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**DEPARTMENT OF THE AIR FORCE**
**377TH AIR BASE WING (AFGSC)**

DEC 19 2017

Colonel Richard W. Gibbs
377th Air Base Wing
2000 Wyoming Blvd SE
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NMED
Hazardous Waste
Bureau

Mr. John Kieling, Bureau Chief
Hazardous Waste Bureau (HWB)
New Mexico Environment Department (NMED)
2905 Rodeo Park Drive East, Building 1
Santa Fe NM 87505-6303

Dear Mr. Kieling

Attached please find the *Quarterly Report for July - September 2017, Bulk Fuels Facility Spill, Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico, dated December 2017.* This report has been prepared to summarize groundwater monitoring and interim measure activities associated with the groundwater capture and treatment system at ST-106/SS-111.

If you have any questions or concerns, please contact Mr. Scott Clark at (505) 846-9017 or at scott.clark@us.af.mil or Holly O'Grady at (505) 853-3484 or at holly.ogrady@us.af.mil.

Sincerely

Richard W. Gibbs

RICHARD W. GIBBS, Colonel, USAF
Commander

Attachment:
*Quarterly Report for July - September 2017, Bulk Fuels Facility Spill, Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico, dated December 2017*; 2 Hard Copies/2 CDs

cc:
NMED (Borrego) letter
NMED GWQB (Agnew, Hunter), letter and CD
EPA Region 6 (King, Ellinger), letter and CD
COA (Faris), letter and CD
ABCWUA (Shean), letter and CD
SAF-IEE (Lynnes), electronic only
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**DEPARTMENT OF THE AIR FORCE**
**377TH AIR BASE WING (AFGSC)**

DEC 1 9 2017

Colonel Richard W. Gibbs
377th Air Base Wing
2000 Wyoming Blvd SE
Kirtland AFB NM 87117

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# KIRTLAND AIR FORCE BASE
# ALBUQUERQUE, NEW MEXICO

# QUARTERLY REPORT – JULY–SEPTEMBER 2017
# BULK FUELS FACILITY
# SOLID WASTE MANAGEMENT UNIT ST-106/SS-111
# KIRTLAND AIR FORCE BASE, NEW MEXICO

**December 2017**

**377 MSG/CEI**
**2050 Wyoming Boulevard SE**
**Kirtland Air Force Base, New Mexico 87117-5270**

# KIRTLAND AIR FORCE BASE
# ALBUQUERQUE, NEW MEXICO

## Quarterly Report – July–September 2017
## Bulk Fuels Facility
## Solid Waste Management Unit ST-106/SS-111
## Kirtland Air Force Base, New Mexico

**December 2017**

**Prepared for**
U.S. Army Corps of Engineers
Albuquerque District
4101 Jefferson Plaza Northeast
Albuquerque, New Mexico 87109-3435

**Prepared by**
EA Engineering, Science, and Technology, Inc., PBC
320 Gold Avenue Southwest, Suite 1300
Albuquerque, New Mexico 87102
Contract No. W912DR-12-D-0006
Delivery Order DM01

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This report was prepared for the U.S. Army Corps of Engineers by EA Engineering, Science, and Technology, Inc., PBC for the purpose of documenting the progress of an Interim Action being implemented by the U.S. Air Force Environmental Restoration Program (ERP) at Kirtland Air Force Base. As the report relates to actual or possible releases of potentially hazardous substances, its release prior to a final decision on remedial action may be in the public's interest. The objectives of this report and the ongoing nature of the ERP, along with the evolving knowledge of site conditions and chemical effects on the environment and health, must be considered when evaluating this report, since subsequent facts may become known that may make this report premature or inaccurate.

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## 14. ABSTRACT

This Quarterly Report summarizes the activities performed from July 1 through September 30, 2017, and the progress of the Resource Conservation and Recovery Act interim measures for soil and groundwater remediation at Solid Waste Management Unit ST-106/SS-111, the Bulk Fuels Facility site, at Kirtland Air Force Base (AFB), New Mexico. Quarterly groundwater, proximal drinking water from supply wells, and groundwater treatment system (GWTS) samples were collected and analyzed for contaminants of concern and other relevant field and laboratory parameters. The GWTS extracted and treated 65,976,800 gallons of groundwater through a granular activated carbon filtration system and discharged the treated effluent to the Kirtland AFB Golf Course main pond and injection well KAFB-7. Concentrations in all treated effluent samples were below regulatory standards before discharge.

**15. SUBJECT TERMS**

Bulk Fuels Facility, Solid Waste Management Unit ST-106/SS-111, Interim Measures, Resource Conservation and Recovery Act, groundwater sampling, groundwater treatment system operation, granular activated carbon, ethylene dibromide, vertical capture, horizontal capture, plume mass, performance assessment

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Richard W. Gibbs — 19 Dec 17

RICHARD W. GIBBS, Colonel, U.S. Air Force
Commander, 377th Air Base Wing

Date

This document has been approved for public release.

[signature] — 19 DEC 17

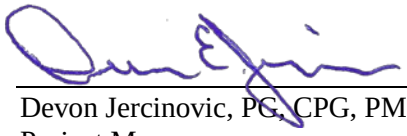
KIRTLAND AIR FORCE BASE
377th Air Base Wing Public Affairs

Date

# PREFACE

This Quarterly Report – July–September 2017 has been prepared by EA Engineering, Science, and Technology, Inc., PBC (EA) for the U.S. Army Corps of Engineers, under Contract Number W912DR-12-D-0006, Delivery Order DM01 and pertains to the Base Bulk Fuels Facility, Solid Waste Management Unit ST-106/SS 111, located in Albuquerque, New Mexico. This report was prepared in accordance with applicable federal, state, and local laws and regulations, including the New Mexico Hazardous Waste Act, New Mexico Statutes Annotated 1978, New Mexico Hazardous Waste Management Regulations, Resource Conservation and Recovery Act, and regulatory correspondence between the New Mexico Environment Department Hazardous Waste Bureau and the U.S. Air Force, dated March 25 and May 20, 2016.

Quarterly monitoring of groundwater and drinking water, and operation of the groundwater treatment system were conducted from July 1 through September 30, 2017. Mr. Trent Simpler, PE, is the U.S. Army Corps of Engineers–Albuquerque District Project Manager. The Environmental Restoration Section Chief for this program is Mr. Scott Clark of Kirtland Air Force Base. Ms. Devon Jercinovic is the EA Project Manager.



Devon Jercinovic, PG, CPG, PMP
Project Manager
EA Engineering, Science, and Technology, Inc., PBC

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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| °C | degree(s) Celsius |
| µg/L | microgram(s) per liter |
| µS/cm | microSiemens per centimeter |
| % | percent |
| AFB | Air Force Base |
| BFF | Bulk Fuels Facility |
| BTEX | benzene, toluene, ethylbenzene, and total xylenes |
| CFR | Code of Federal Regulations |
| DO | dissolved oxygen |
| DP | discharge permit |
| EA | EA Engineering, Science, and Technology, Inc., PBC |
| EDB | ethylene dibromide |
| ELLE | Eurofins Lancaster Laboratories Environmental, LLC |
| EPA | U.S. Environmental Protection Agency |
| ERP | Environmental Restoration Program |
| ft | foot (feet) |
| GAC | granular activated carbon |
| gpm | gallon(s) per minute |
| GWM | groundwater monitoring |
| GWTS | groundwater treatment system |
| IDW | investigation-derived waste |
| LNAPL | light non-aqueous phase liquid |
| MCL | maximum contaminant level |
| mg | milligram(s) |
| mg/L | milligram(s) per liter |
| MTBE | methyl tert-butyl ether |
| NMED | New Mexico Environment Department |
| NMWQCC | New Mexico Water Quality Control Commission |
| No. | number |
| NTU | nephelometric turbidity unit |
| ORP | oxidation reduction potential |

# LIST OF ACRONYMS AND ABBREVIATIONS (CONCLUDED)

| | |
|---|---|
| PLC | programmable logic controller |
| psi | pound(s) per square inch |
| PSL | project screening level |
| Q1 | first quarter of the year, January 1 through March 31 |
| Q2 | second quarter of the year, April 1 through June 30 |
| Q3 | third quarter of the year, July 1 through September 30 |
| Q4 | fourth quarter of the year, October 1 through December 31 |
| RCRA | Resource Conservation and Recovery Act |
| REI | reference elevation interval |
| SE | Southeast |
| SVOC | semivolatile organic compound |
| SVM | soil vapor monitoring |
| SWMU | Solid Waste Management Unit |
| USACE | U.S. Army Corps of Engineers |
| VA | U.S. Department of Veterans Affairs |
| VOC | volatile organic compound |

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# EXECUTIVE SUMMARY

Kirtland Air Force Base (AFB) Bulk Fuels Facility (BFF), designated as Solid Waste Management Unit (SWMU) ST-106/SS-111, became a cleanup site in November 1999, after fuel was observed daylighting from the ground surface near the BFF fuel off-loading rack. Subsequent pressure testing identified three leaks emanating from lines that transferred aircraft fuel from the off-loading rack to the BFF pump house. The leaking lines were immediately taken offline and a temporary, alternate off-loading rack was installed and used until construction of a new state-of-the-art BFF was brought online in March 2011. The ongoing investigation and cleanup activities at the BFF site began in 1999, with characterization of the extent of fuel contamination along with removal of contaminated soil, soil vapor (from the vadose zone), and groundwater. These cleanup efforts are ongoing.

Groundwater monitoring (GWM) and interim measure activities performed at the BFF between July and September 2017, which comprised the third quarter (Q3) of calendar year 2017, included:

- Sampling the Q3 2017 designated wells in the GWM network
- Sampling the drinking water supply wells located in vicinity of the dissolved benzene and ethylene dibromide (EDB), also known as 1,2-dibromoethane, plumes
- Operation and maintenance of the groundwater treatment system (GWTS), including the initiation of sand filter installation.

## ES-1 Vadose Zone Monitoring

No soil vapor samples were collected during Q3 2017 in accordance with the soil vapor monitoring (SVM) optimization plan approved on January 4, 2017. SVM is performed in the second quarter (Q2) and the fourth quarter (Q4) of each monitoring year.

## ES-2 Groundwater Monitoring Network Gauging and Sampling

In Q3 2017, a water level interface probe was used to gauge depths to floating fuel (i.e., light non-aqueous phase liquid [LNAPL]) and groundwater in 138 GWM wells. Groundwater samples were collected from 44 of these GWM wells as part of the Q3 GWM schedule. In addition to the 44 wells that were included as part of the sampling optimization schedule for Q3 2017, well KAFB-106157 was also sampled just prior to abandonment. Findings from the Q3 2017 sampling event include:

- Groundwater levels showed an overall average decline across the GWM network of 0.44 feet (ft) since Q2 2017.
- LNAPL was not present in any of the GWM wells.
- Field parameters were measured in groundwater samples collected from 12 GWM wells using a low-flow sampling technique. Field parameter measurements ranged as follows: temperature from 19.7 to 25.8 degrees Celsius (°C), pH from 6.83 to 7.94 standard units, specific conductivity from 464.0 to 2601.0 microSiemens per centimeter (µS/cm), dissolved oxygen (DO) from 0.22 to 7.62 milligrams per liter (mg/L), oxidation reduction potential (ORP) from -178.7 to 170.1 millivolts, and turbidity from 0.32 to 16.4 nephelometric turbidity units (NTUs). Samples were collected from 32 wells using passive sampling technology and reliable field parameters could not be measured.

- During Q3 2017 sampling, 35 proximal wells were sampled to ensure protectiveness of the downgradient drinking water supply wells. No signal wells were sampled during Q3 2017 (semiannual only). There were no EDB or benzene, toluene, ethylbenzene, and total xylenes (BTEX) detections at concentrations above their respective project screening level (PSL) in any of the 35 sampled proximal wells.

- Toluene was detected or estimated at low concentrations below the PSL in VA proximal wells KAFB-106004, KAFB-106097, KAFB-106098, KAFB-106099, and KAFB-106100. Toluene has been sporadically detected in groundwater samples from all of these wells in the past. No definitive trend in toluene concentrations has emerged in these wells thus far, but data will be further evaluated when the comprehensive results from the Q4 2017 monitoring event are available.

- Six GWM wells installed in Q4 2016 (KAFB-106235-463, KAFB-106235-492, KAFB-106235-521, KAFB-106236-461, KAFB-106236-490, and KAFB-106236-519) were sampled in Q3 2017. This completes the third of four quarters of required baseline sampling for the newly installed wells. EDB and inorganic compounds were not detected at concentrations above the respective PSLs in any of these wells.

- During Q3 2017 sampling, only 3 source area wells (KAFB-106005, KAFB-106009, and KAFB-106012R) were sampled as part of the optimized monitoring schedule. The following summarizes the sampling results:

  — EDB was detected in the groundwater sample collected from KAFB-106005 at 1.3 micrograms per liter (µg/L) which exceeded the 0.05 µg/L PSL. EDB was nondetect in the groundwater samples collected from KAFB-106009 and KAFB-106012R.

  — Benzene was detected in the groundwater sample collected from KAFB-106005 (420 µg/L) which exceeded the 5.0 µg/L PSL. Benzene was detected at an estimated concentration, below the PSL, in the groundwater sample collected from KAFB-106009 (0.5 µg/L), and was nondetect in the groundwater sample collected from KAFB-106012R.

  — Toluene, ethylbenzene, and total xylenes were detected in groundwater samples collected from the three source area wells, but did not exceed their respective PSLs.

  — Samples were collected for inorganic compounds from these wells as a means to assess the high concentrations of inorganics related to a suspected sanitary sewer line leak (Manhole 13). Inorganic compound concentrations were detected in groundwater samples collected from the three source area wells, with the following PSL exceedances. Chloride was detected at an estimated concentration of 315 mg/L in the groundwater sample collected from KAFB-106009 (exceeding 250 mg/L PSL). Nitrate/nitrite nitrogen was detected at a concentration of 12.9 mg/L in the groundwater sample collected from KAFB-106009 (exceeding the 10 mg/L PSL). Sulfate was detected in groundwater samples collected from all three wells at concentrations exceeding the 250 mg/L PSL, with the highest concentration of 433 mg/L in KAFB-106009. Dissolved manganese was detected at an estimated concentration in the groundwater sample collected from KAFB-106005 and detected in the sample collected from KAFB-106009 at concentrations of 0.228 and 1.09 mg/L, respectively (exceeding 0.2 mg/L PSL).

- Extraction well KAFB-106157 was abandoned in July 2017. Prior to well abandonment, a groundwater sample was collected using low-flow technology and submitted for analyses of EDB, volatile organic compounds (VOCs), dissolved iron, and dissolved manganese. EDB was detected at a concentration of 0.058 µg/L, and dissolved manganese was detected at a concentration of 1.24 mg/L, both exceeding the respective PSLs. VOCs 1,2-dichloroethane, isopropylbenzene, methyl tert-butyl ether (MTBE), and dissolved iron were detected, but at concentrations below their respective PSLs.

For Q3 2017 sampling, all of the GWM wells located north of Ridgecrest Drive Southeast (SE) were sampled using passive sampling techniques and all of the wells located south of Ridgecrest Drive SE were sampled using low-flow techniques.

GWM network operation and maintenance activities in Q3 2017 included wellhead cleaning and replacement of vault seals. No dedicated Bennett pumps were removed during Q3 2017.

## ES-3 Drinking Water Supply Well Monitoring

Four drinking water supply wells (KAFB-003, KAFB-015, KAFB-016, and ST106-VA-2) are located in the vicinity of the benzene and EDB plumes. KAFB-003, KAFB-015, and ST106-VA-2 were sampled monthly from July to September of Q3 2017 and analyzed for EDB and BTEX. KAFB-016 was not sampled in July or August of Q3 2017 due to ongoing repairs, which were completed prior to the September sampling event. KAFB-016 was also sampled on September 6, 2017. All samples collected from these four drinking water supply wells were nondetect for EDB and BTEX.

## ES-4 Groundwater Treatment System Operation

During Q3 2017, a calculated 13,419.7 milligrams (mg) of EDB were captured in the lead granulated activated carbon (GAC) vessels. Of this total, 6,687.4 mg were removed by Treatment Train 1, and 6,732.3 mg were removed by Treatment Train 2. The GWTS was 99 percent (%) operational from July 1 to September 30, 2017, and 65,976,800 gallons of groundwater were treated during this period. Of the treated water, 49,351,900 gallons were discharged to the Tijeras Arroyo Golf Course main pond, and 16,624,900 gallons were discharged to gravity-fed injection well KAFB-7. All analyte concentrations for effluent samples collected from Train 1 and Train 2 during Q3 2017 were below their respective limits of detection.

During Q3 2017, multiple, short-term, unscheduled shutdowns occurred due to telemetry interference, construction activities, electrical fluctuations, and vault leak detections from rain water intrusion. None of these events resulted in long-term shutdowns, and most shutdowns involved only one or two of the extraction wells, not the full GWTS. The GWTS was 99% operational during Q3 2017.

In addition to routine maintenance activities for the GWTS, installation of influent sand filters was initiated and the installation of the conveyance line for well KAFB-106239 began in Q3 2017. The sand filter installation is scheduled for completion in first quarter (Q1) of 2018. The conveyance line installation from extraction well KAFB-106239 began on August 14, 2017. Installation activities this quarter included vegetation clearing, site preparation, and delivery and inspection of materials. Extraction well KAFB-106157 was also abandoned in July 2017.

## ES-5 Projected Activities

Planned activities for Q4 2017 include:

- Perform vadose zone monitoring to be conducted in October 2017
- Collect groundwater samples and gauge fluid levels from the entire active GWM network to be conducted in October 2017
- Perform a passive sampling demonstration for select source area wells, comparing data from both the passive and low-flow techniques
- Add well KAFB-106041 to the GWM network for gauging and sampling
- Perform gauging on old soil vapor pneu-log wells in the source area, as well as KAFB-106211 (former airsparge/soil vapor extraction well) and KAFB-106229 (observation well near KAFB-106233)
- Perform monthly drinking water supply well monitoring in October, November, and December 2017 and perform semiannual sampling of drinking water supply wells for inorganic compounds
- Continue groundwater extraction from wells KAFB-106228, KAFB-106233, and KAFB-106234, and operating the GWTS
- Perform GWTS performance assessment and plume capture analysis for Q4 2017
- Continue installation of the sand filters and the conveyance line for KAFB-106239.

# 1. INTRODUCTION

This Quarterly Report for Q3 2017 summarizes the activities performed from July 1 through September 30, 2017, as part of the interim measures for soil and groundwater remediation at SWMU ST-106/SS-111, the BFF site at Kirtland AFB, pursuant to the Resource Conservation and Recovery Act (RCRA) Hazardous Waste Treatment Facility Operating Permit Number (No.) NM9570024423 (hereinafter referred to as the RCRA Permit) (New Mexico Environment Department [NMED], 2010). The BFF site is located within the northwestern portion of Kirtland AFB on the southern end of the city of Albuquerque as shown on the site location map (Figure 1-1). Vadose zone and groundwater investigation and remediation activities are required to address the potential impact of fuels that were released from leaking pipelines at the former fuel off-loading rack.

GWM and interim measures for SWMU ST-106/SS-111 were conducted concurrently. The monitoring program was performed in accordance with multiple work plans: (1) groundwater (NMED, 2016a; U.S. Army Corps of Engineers [USACE], 2016a), and (2) drinking water supply wells (NMED, 2016b; USACE, 2016b). GWTS operations, sampling, and treated effluent discharge were performed under the Operations and Maintenance Plan dated August 18, 2016 (USACE, 2017a) and approved by NMED on December 12, 2016. Appendix A contains key regulatory correspondence. This Q3 2017 Quarterly Report is prepared as a non-cumulative data report (NMED, 2016a; USACE, 2016a). Non-cumulative data reports will be provided for each of Q1, Q2, and Q3 2017 sampling events, while the Q4 2017 Annual Report will be a compilation of the data collected over the four quarters with more in-depth data analyses, conclusions, and recommendations for that calendar year. The Q3 2017 Quarterly Report provides a streamlined structure that focuses on the results of activities completed during the reporting period.

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# 2. VADOSE ZONE MONITORING

No SVM activities were performed during Q3 2017. The SVM program has been optimized to semiannual sampling events performed in Q2 and Q4 of each year (NMED, 2017a). Appendices C and D remain in this report as placeholders; information will be included in these appendices following the semiannual sampling events. The next semiannual SVM event will be performed in Q4 2017.

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# 3. GROUNDWATER MONITORING NETWORK GAUGING AND SAMPLING

The GWM well network for the Kirtland AFB BFF jet fuel dissolved-phase contamination is screened near the top of the saturated interval of the Santa Fe Group aquifer system. Historically, this aquifer system was the sole water supply for the Albuquerque metropolitan area and the groundwater flow was from north-northeast to south-southwest toward the Rio Grande (Bexfield and Anderholm, 2000). As population increased, water demand also increased and the Santa Fe Group aquifer system experienced significant stress resulting in water level declines in excess of 100 ft near Kirtland AFB (Powell and McKean, 2014). Furthermore, the declining water levels resulted in a groundwater flow direction change from south-southwest (toward the Rio Grande) to an easterly and northeasterly direction, away from the Rio Grande and toward the city and its drinking water supply wells (Powell and McKean, 2014). It is important to note the predominant historical groundwater flow direction for the dissolved-phase constituents was north-northeast. To reduce the use of groundwater while maintaining municipal supply, in 2008, the Albuquerque Bernalillo County Water Utility Authority began diverting water from the San Juan-Chama Drinking Water Project. As a result, this surface water diversion has relieved the pumping stress of the Santa Fe Group aquifer system and groundwater levels are rebounding approximately 3-4 ft per year, and rates vary depending upon the proximity to pumping wellfields or historical groundwater sinks (Beman, 2013). A more detailed discussion of the conceptual site model can be found in Section 7 of the RCRA Facility Investigation Report (USACE, 2017b).

Quarterly GWM was conducted as part of the interim measures implemented at the BFF to assess system performance of the GWTS and determine contaminant plume changes over time. At the beginning of Q3 2017, the BFF GWM well network was comprised of 140 GWM wells; however, only a subset of these wells was sampled in Q3 in accordance with the optimization schedule (as discussed in Section 3.4). GWM activities included measuring depths to groundwater, gauging LNAPL thickness, and collecting groundwater samples for field parameter measurements and laboratory analyses. The entire GWM network is shown on Figure 3-1, and the GWM program is presented in Table 3-1.

In reports prior to Q4 2016, the distribution of dissolved-phase EDB in groundwater had been described in terms of shallow, intermediate, and deep aquifer zones. However, with the implementation of the GWTS interim measure north of Ridgecrest Drive SE, combined with the continued water table rebound of approximately 3-4 ft per year for the next decade, the definition of the aquifer zones as shallow, intermediate, and deep has become problematic. Consequently, the description was updated to a more meaningful nomenclature using reference elevation intervals (REIs) as the basis. There are currently three REIs (4857, 4838, and 4814) corresponding to the historically identified shallow, intermediate, and deep zones, respectively. Additional REIs may be added, as needed in the future, as the groundwater rebound continues. A detailed explanation of how the REIs are defined is presented in the Q4 2016 and Annual Report for 2016 (USACE, 2017c).

Tables 3-2 and 3-3 show groundwater elevations and LNAPL thickness. Table 3-4 includes the REI assignations for the GWM network, and the wells included in the Q3 sampling. Potentiometric surfaces for the three REIs are presented in Figures 3-2, 3-3, and 3-4.

Appendices pertinent to GWM are listed below:

- E-1 – Passive Sampling Evaluation and Supplemental Data
- E-2 – Daily Quality Control Reports – Groundwater Sampling
- E-3 – Groundwater and LNAPL Measurements
- E-4 – Groundwater Purge Logs and Sample Collection Logs

- E-5 – Groundwater Sample Chain-of-Custody Forms
- F-1 – Data Quality Evaluation Report – Groundwater Samples
- F-2 – Data Packages – Groundwater Samples.

## 3.1 New Groundwater Monitoring Activities

The transition to passive sampling in the distal portion of the plume, north of Ridgecrest Drive SE, was agreed upon by the Technical Working Group on January 24, 2017, and was formally approved by NMED on May 31, 2017 (NMED, 2017b). For wells sampled in Q3 2017 (Table 3-1), passive sampling was implemented for all wells located north of Ridgecrest Drive SE. All wells located south of Ridgecrest Drive SE were sampled using low-flow techniques.

## 3.2 Groundwater Monitoring Network Optimization

Table 3-1 lists the network GWM wells and their optimized sampling and analytical requirements. Field parameter measurements could not be accurately obtained from the wells that were sampled via passive technology, as discussed in more detail in the Q2 2017 quarterly report (USACE, 2017d).

## 3.3 Groundwater and Light Non-Aqueous Phase Liquid Level Measurement

Depths to LNAPL and groundwater were measured in 136 wells between July 17 and 24, 2017. Depths to water in wells KAFB-106063 and KAFB-106064 could not be attained due to dedicated downhole equipment related to the Environmental Security Technology Certification Program project in the Kirtland BFF. Solinst Model 122 oil-water interface probes were used to measure the depth to LNAPL and depth to groundwater at all locations. LNAPL was not measurable in any of the wells gauged in Q3 2017 (Table 3-2). Thirteen former soil vapor and pneu-log wells with non-submerged (wetted) screens were also gauged in Q3 2017 to determine fluid levels in anticipation of adding these wells into the gauging or sampling network in Q4 2017. Two of these had measurable LNAPL, suggesting that LNAPL is still present in the source area and existing GWM well screens may be too submerged to positively measure LNAPL thickness (Appendix E-3). Prior to each use, the oil-water interface probes probes were checked for proper operation and cable integrity, and were decontaminated before and after each well. Depths to LNAPL and groundwater were recorded in the field on Well Gauging Forms (Appendix E-3). The measurement dates, measured depths of groundwater, and groundwater elevations are provided in Table 3-2. Potentiometric surface maps for the three REIs (4857, 4838, and 4814) are provided on Figures 3-2, 3-3, and 3-4, respectively.

Of the 136 GWM wells that were gauged in Q3 2017, nine wells screened within REI 4857 did not have submerged screens, indicating that since Q2 2017, no additional well screens have become submerged (Table 3-3). Groundwater levels decreased an average of 0.44 ft from Q2 2017 to Q3 2017. The maximum increase in groundwater level from Q2 to Q3 was 0.14 ft observed in KAFB-106044. The maximum decrease in groundwater level was 2.51 ft observed in KAFB-106202.

## 3.4 Quarterly Groundwater Sampling

Quarterly groundwater samples were collected from 44 wells in the GWM network between July 10 and July 20, 2017 using portable low-flow pump systems or passive diffusion bag samplers (Table 3-4); well locations are shown on Figure 3-1. All groundwater samples collected for the Q3 2017 monitoring event were analyzed for EDB. In addition to EDB analysis, VA proximal wells were analyzed for BTEX; source area wells were analyzed for BTEX, metals, anions, and alkalinity; and all newly installed wells were analyzed for metals, anions, and alkalinity (Table 3-4). All samples were analyzed by Eurofins

Lancaster Laboratories Environmental, LLC (ELLE) located in Lancaster, Pennsylvania. ELLE maintains current Department of Defense Environmental Laboratory Accreditation Program certification. The groundwater purge and sampling forms are provided in Appendix E-4 and the chain-of-custody forms are provided in Appendix E-5.

For low-flow samples, water was purged continuously at a flow rate between 0.5 and 1 liter per minute while field parameters (turbidity, temperature, DO, specific conductivity, pH, and ORP) were measured and recorded every 5 minutes. Purging continued until parameters stabilized for three consecutive readings within 10% of one another, at which point samples were collected. If stabilization was not attained for any one of the field parameters within 1 hour, field teams proceeded to collect samples. Field parameters were recorded on the field forms (Appendix E-4) and are summarized in Table 3-5.

Consistent with previous quarterly sampling events, wells that did not have a dedicated low-flow pump sampling system were designated based on historical analytical data as either clean, intermediate, or hazardous. For wells designated clean, decontaminated non-dedicated tubing was used in conjunction with a portable low-flow pump, and was decontaminated following the sampling of each well. Conversely, each well designated as intermediate or hazardous had dedicated tubing that was specific to that well. The dedicated tubing length was measured for each well based on screen depth.

Field parameters were not collected for the 32 wells that were sampled using passive samplers due to the unreliable field parameter data from these samplers (USACE, 2017d); field parameters were measured from the 12 wells that were sampled using low-flow technology (Table 3-5). Measurements from the low-flow sampled wells ranged as follows: temperature from 19.7 to 25.8 °C, pH from 6.83 to 7.94 standard units, specific conductivity from 464.0 to 2601.0 µS/cm, DO from 0.22 to 7.62 mg/L, ORP from -178.7 to 170.1 millivolts, and turbidity from 0.32 to 16.4 NTUs.

## 3.5 Data Review and Usability Results

The Q3 2017 groundwater analytical data underwent U.S. Environmental Protection Agency (EPA) Level 3 data validation by an independent third-party subcontractor. Subsequent to data validation, the data qualifiers were uploaded to the EQuIS® project database. Data were further assessed for accuracy, precision, representativeness, comparability, completeness, and sensitivity and determined to achieve the project data quality objectives in Q3 2017. All groundwater data presented and discussed in this Report are final validated data. The Environmental Resources Program Information Management System data deliverable was submitted on September 11, 2017. The Data Quality Evaluation Report for groundwater samples collected in Q3 2017 is provided in Appendix F-1, and the final laboratory data reports are included in Appendix F-2.

## 3.6 Project Screening Levels

The PSLs were selected to satisfy the requirements of the Kirtland AFB RCRA Permit (NMED, 2010) as the lower of:

1. New Mexico Water Quality Control Commission (NMWQCC) standards per the New Mexico Administrative Code, Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (New Mexico Administrative Code, 2004). For metals, the NMWQCC standard applies to dissolved metals and total mercury.

2. EPA National Primary Drinking Water Regulations, maximum contaminant levels (MCLs) and secondary MCLs, and Title 40 Code of Federal Regulations (CFR) Parts 141 and 143.

If no MCL or NMWQCC standard existed for an analyte, the PSL used was the EPA Tapwater Regional Screening Level (EPA, 2017).

The analytical method utilized to analyze for total nitrate/nitrite nitrogen concentrations cannot identify individual nitrate and nitrite concentrations without modification. Typically, in highly oxidizing and near neutral aquifers, nitrate is the primary nitrogen species found in groundwater (Langmuir, 1997). Previous studies in the Albuquerque Basin have used total nitrate/nitrite nitrogen concentrations as equivalent to nitrate nitrogen concentrations (Longmire, 2016; Anderholm et al., 1995). Therefore, total nitrate/nitrite nitrogen concentrations were compared to the 10 mg/L MCL for nitrate in this Report.

Groundwater PSLs for all analytes are provided in the groundwater analytical tables.

## 3.7 Groundwater Quality Data

All groundwater samples collected in Q3 2017 were analyzed for EDB. A subset of the samples was also analyzed for BTEX, total metals (arsenic, lead, calcium, magnesium, potassium, and sodium), dissolved metals (iron, manganese), anions (bromide, chloride, sulfate, nitrate/nitrite nitrogen), and alkalinity (Table 3-4). Contaminant concentrations were compared to their respective PSLs, and the results of this comparison are discussed in the following sections. The analytical results for field duplicate samples are presented in the tables and are used to assess field and laboratory analytical precision; however, they are not discussed in this text for comparison unless otherwise noted and are not provided on figures. The results for the duplicate sample analyses are included in the Data Quality Evaluation Report (Appendix F-1).

Because the entire well network was not monitored in Q3 2017, contaminant concentrations are displayed for all three REIs on the same figure, unless otherwise noted. Concentrations for the following analytes are depicted on figures, as follows:

- Figure 3-5 – EDB Concentrations, Q3 2017
- Figure 3-6 – BTEX Concentrations, Q3 2017
- Figure 3-7 – Nitrate/Nitrite Nitrogen, Sulfate, and Chloride Concentrations, Q3 2017
- Figure 3-8 – Total Alkalinity as Calcium Carbonate, Bromide, and Dissolved Iron and Manganese Concentrations, Q3 2017
- Figure 3-9 – DO Concentrations and ORP, Q3 2017.

Figure 3-10 shows the GWM wells equipped with passive samplers for Q3 2017.

### 3.7.1 Sample Results for Downgradient Proximal, Veterans Affairs Proximal, and Signal Wells

During Q3 2017 sampling, 35 proximal wells (nine VA and 26 downgradient) were sampled to ensure protectiveness of the downgradient drinking water supply wells. Signal wells were not sampled during Q3 2017 (semiannual only). All downgradient proximal wells were analyzed for EDB, and all VA proximal wells were analyzed for EDB and BTEX. Analytical results for the VA proximal and downgradient wells are presented in Tables 3-6 and 3-7, respectively, and are summarized below.

#### *3.7.1.1 Organic Compound Analytical Results*

There were no EDB or BTEX detections above their respective PSLs for any of the downgradient or VA proximal wells sampled. Although toluene was detected or estimated at low concentrations in wells KAFB-106004, KAFB-106097, KAFB-106098, KAFB-106099, and KAFB-106100, these results are below the PSL (750 µg/L). A summary of the Q3 2017 toluene detections, and a history of all the VA proximal wells with respect to toluene is provided below. No definitive trend in toluene concentrations has emerged in these wells thus far, but data will be further evaluated when the comprehensive results from the Q4 2017 monitoring event are available.

- Toluene was qualified as nondetect in KAFB-106003 (qualified sample results are presented in Appendix F-1); however, toluene has been historically detected in samples collected from this well (40.5 µg/L in Q3 2009, and an estimated concentration of 0.29 µg/L in Q4 2009). The last toluene detection was in Q4 2009.

- Toluene was detected in the groundwater sample collected from KAFB-106004 at a concentration of 1.0 µg/L. This was the first toluene detection since Q4 2015 in KAFB-106004 at a concentration of 0.3 µg/L. Toluene was nondetect in samples collected from this well prior to Q4 2015.

- Toluene was nondetect in the groundwater sample collected from KAFB-106013. Although samples from this well have been nondetect for toluene since Q1 2014, toluene was detected sporadically in samples collected from this well from Q4 2008 to Q4 2013 at concentrations ranging from 0.052 to 170 µg/L. Samples from this well have also shown sporadic detections of other BTEX constituents at low levels in the past.

- Toluene was detected in the groundwater sample collected from KAFB-106097 at an estimated concentration of 0.6 µg/L. Toluene was detected at an estimated concentration of 0.7 µg/L in Q2 2017, but was previously nondetect in samples collected from this well dating back to Q3 2011, when it was detected at 0.4 µg/L.

- Toluene was detected in the groundwater sample collected from KAFB-106098 at a concentration of 2.0 µg/L. This was the first toluene detection in this well since the first sampling event following well completion in Q2 2011 (0.3 µg/L).

- Toluene was detected in the groundwater sample collected from KAFB-106099 at a concentration of 0.6 µg/L. This was the first toluene detection in this well since the first sampling event following well completion in Q2 2011 (0.4 µg/L).

- Toluene was detected in the groundwater sample collected from KAFB-106100 at an estimated concentration of 0.6 µg/L. Toluene was detected at a concentration of 1.0 µg/L in Q2 2017, but was previously nondetect in samples collected from this well dating back to well completion in 2011.

- Toluene was qualified as nondetect in samples collected from wells KAFB-106101 and KAFB-106102 (qualified sample results are presented in Appendix F-1). Toluene has never been detected in these wells since installation in 2011.

#### *3.7.1.2 Inorganic Compounds Analytical Results*

Inorganic compounds were not analyzed for any of the downgradient or VA proximal wells in Q3 2017.

### 3.7.2 Sample Results for Newly Installed Wells

All newly installed GWM wells require four consecutive quarters of baseline sampling following installation (Table 3-8). During Q4 2016, 6 new GWM wells were installed that currently serve as monitoring points: KAFB-106235-463, KAFB-106235-492, KAFB-106235-521, KAFB-106236-461, KAFB-106236-490, and KAFB-106236-519. Two additional GWM wells were installed but were screened at elevations above the current water level in anticipation that they will contain water in the future as the water table continues to rise. Q3 2017 was the third of the four-quarter baseline sampling required by NMED (Table 3-8). All newly installed wells were analyzed for EDB, select total and dissolved metals, anions, and alkalinity. Q3 2017 analytical results for the newly installed wells are presented in Table 3-9 and summarized below.

#### *3.7.2.1 Organic Compounds Analytical Results*

There were no EDB detections in any of the newly installed wells.

#### *3.7.2.2 Inorganic Compounds Analytical Results*

No inorganic compounds were detected at concentrations above their respective PSLs.

### 3.7.3 Sample Results for Source Area Wells

During Q3 2017 sampling, only three source area wells (KAFB-106005, KAFB-106009, and KAFB-106012R) were required to be sampled as part of the optimized monitoring schedule. Groundwater samples collected from these wells were analyzed for the following suite of analytes: BTEX, EDB, select total and dissolved metals, anions, and alkalinity. Analytical results for the source area wells are presented in Table 3-10 and summarized below.

#### *3.7.3.1 Organic Compounds Analytical Results*

Organic compound detections are noted as follows:

- EDB was detected in the groundwater sample collected from KAFB-106005 (1.3 µg/L) which exceeded the 0.05 micrograms per liter (µg/L) PSL. EDB was nondetect in the groundwater samples collected from KAFB-106009 and KAFB-106012R.

- Benzene was detected in the groundwater sample collected from KAFB-106005 (420 µg/L) which exceeded the 5.0 µg/L PSL. Benzene was detected at an estimated concentration, below the PSL, in the groundwater sample collected from KAFB-106009 (0.5 µg/L), and was nondetect in the groundwater sample collected from KAFB-106012R. Benzene concentrations for the source area wells are presented on Figure 3-6.

- Toluene was detected at an estimated concentration in the groundwater sample collected from KAFB-106009 (0.7 µg/L), below the 750 µg/L PSL. Toluene was nondetect in the groundwater samples collected from KAFB-106005 and KAFB-106012R. Toluene concentrations for the source area wells are presented on Figure 3-6.

- Ethylbenzene was detected in the groundwater sample collected from KAFB-106005 (54 µg/L), at concentrations below the 700 µg/L PSL. Ethylbenzene was nondetect in the groundwater samples collected from KAFB-106009 and KAFB-106012R. Ethylbenzene concentrations for the source area wells are presented on Figure 3-6.

- Total xylenes were detected in the groundwater sample collected from KAFB-106005 (110 µg/L), at concentrations below the 620 µg/L PSL. Total xylenes were nondetect in the groundwater samples collected from KAFB-106009 and KAFB-106012R. Total xylene concentrations for the source area wells are presented on Figure 3-6.

#### *3.7.3.2 Inorganic Compounds Analytical Results*

Analyses for inorganic compounds were conducted for all three groundwater samples from the source area wells. Inorganic compound detections are noted as follows:

- Chloride was detected in groundwater samples collected from all three wells, with the concentration in KAFB-106009 (315 mg/L) exceeding the 250 mg/L PSL. Chloride concentrations for the source area wells are presented on Figure 3-7.

- Nitrate/nitrite nitrogen was detected in groundwater samples collected from all three wells, with the concentration in KAFB-106009 (12.9 mg/L) exceeding the 10 mg/L PSL. Nitrate/nitrite nitrogen concentrations for the source area wells are presented on Figure 3-7.

- Sulfate was detected in groundwater samples collected from all three wells at concentrations exceeding the 250 mg/L PSL. The highest sulfate concentration was 433 mg/L in the groundwater sample collected from KAFB-106009. Sulfate concentrations for the source area wells are presented on Figure 3-7.

- Bromide was detected in groundwater samples collected from all three wells at concentrations ranging from 2.4 to 4.7 mg/L; however, there is no PSL for bromide. Bromide concentrations for the source area wells are presented on Figure 3-8.

- Dissolved iron was detected in the groundwater sample collected from KAFB-106005 (0.153 mg/L), at a concentration below the 1 mg/L PSL. Dissolved iron was nondetect in the groundwater samples collected from KAFB-106009 and KAFB-106012R. Dissolved iron concentrations for the source area wells are presented on Figure 3-8.

- Dissolved manganese was detected at concentrations exceeding the 0.2 mg/L PSL in groundwater samples from wells KAFB-106005 (estimated value) and KAFB-106009 (0.228 and 1.09 mg/L, respectively). Dissolved manganese was nondetect in the groundwater sample collected from KAFB-106012R. Dissolved manganese concentrations for the source area wells are presented on Figure 3-8.

Analytical results for groundwater samples collected from the source area wells in Q3 2017 were generally consistent with results from Q2 2017; although not all source area wells were sampled in Q3 2017 due to the sampling optimization protocol.

### 3.7.4 Sample Results for Groundwater Monitoring Network Wells

In accordance with the optimized monitoring program, no GWM network wells were sampled in Q3 2017.

### 3.7.5 Sample Results for KAFB-106157

In addition to the 44 wells that were included as part of the sampling optimization schedule for Q3 2017, well KAFB-106157 was also sampled just prior to abandonment (USACE, 2017e). KAFB-106157 was sampled for organics, including EDB and VOCs, as well as dissolved metals (iron and manganese). Analytical results for KAFB-106157 are presented in Table E-1-1 of Appendix E-1 and summarized below.

#### *3.7.5.1 Organic Compounds Analytical Results*

Organic compound detections are noted as follows:

- EDB was detected at a concentration of 0.058 µg/L, which exceeded the 0.05 µg/L PSL.
- 1,2-Dichloroethane was detected at an estimated concentration of 4 µg/L, below the 5 µg/L PSL.
- Isopropylbenzene was detected at an estimated concentration of 2 µg/L, below the 450 µg/L PSL.
- MTBE was detected at an estimated concentration of 0.6 µg/L, below the 140 µg/L PSL.

#### *3.7.5.2 Inorganic Compounds Analytical Results*

Inorganic compound detections are noted as follows:

- Dissolved iron was detected at a concentration of 0.256 mg/L, below the 1 mg/L PSL.
- Dissolved manganese was detected at a concentration of 1.24 mg/L, which exceeded the 0.2 mg/L PSL.

### 3.7.6 Bioremediation Indicators

In Q3 2017, only nine wells were analyzed for inorganic compounds, six of which were the newly installed wells located northwest of the distal part of the EDB plume. The other three wells were located in the source area and were sampled as a means to assess the high concentrations of inorganics related to a suspected sanitary sewer line leak. As such microbial activity/inactivity should not be inferred from data collected from this area (Table 3-11). An investigation by Kirtland AFB indicated that while the sewer lines are intact, the junction manhole (Manhole 13) may be a source of sanitary waste release to the subsurface. A replacement of the manhole is planned for Q4 2017.

Aerobic microorganisms require the presence of DO to effectively break down organic compounds found in the environment. Decreased DO and ORP can be indicators of microbial degradation in a subsurface environment as increased microbial activity can deplete oxygen and result in anaerobic conditions. These conditions are often associated with microbial growth, which is preceded by the degradation of organic compounds in an environment. Field DO and ORP measurements (Figure 3-9) were generally higher outside of the EDB plume area and became progressively lower with proximity to the EDB plume and the

source area. This indicates that aerobic microbial degradation of the fuel constituents is occurring within the downgradient portion of the source area while DO levels are sufficient to support aerobic hydrocarbon metabolism, after which anaerobic biodegradation occurs once DO levels are depleted (e.g., source area).

## 3.8 Groundwater Monitoring Well Network Operation and Maintenance

The GWM well network was inspected between July 11 and August 3, 2017, to ensure that the condition of protective covers and wellheads met the requirements for performance and security. During the inspection period, EA Engineering, Science, and Technology, Inc., PBC (EA) performed the necessary cleaning and maintenance. No dedicated Bennett pumps were removed during Q3 2017. Well conditions are currently fully serviceable with no outstanding maintenance issues.

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# 4. DRINKING WATER SUPPLY WELL MONITORING

Four drinking water supply wells (KAFB-003, KAFB-015, KAFB-016, and ST106-VA-2) that are located in close proximity to the dissolved-phase EDB and benzene plumes provide drinking water to Kirtland AFB employees and tenants, and VA Medical Center patients, employees, and visitors. As part of the monitoring associated with the Site, these wells are sampled monthly and analyzed for EDB and BTEX. KAFB-016 was not sampled in July or August of Q3 2017 due to ongoing maintenance. The maintenance was completed prior to the September 2017 sampling event and KAFB-016 was sampled on September 6, 2017.

## 4.1 Drinking Water Supply Well Sampling and Analysis Procedures

All field measurements, sample collection, packaging, shipping, and analyses were performed in accordance with the SVM and Drinking Water Monitoring Work Plan with the Quality Assurance Project Plan attached as an appendix (USACE, 2016b).

Field DO, pH, ORP, conductivity, turbidity, and temperature were measured with a water quality parameter meter. Instrument calibration was performed prior to each sampling event to ensure accurate readings. Prior to sample collection, each well pump was turned on and allowed to operate for a minimum of 15 minutes. The sample port at each drinking water wellhead was opened for 30 seconds prior to sampling to purge any entrained sediment. VOC samples were collected first. Upon filling, the sample containers were immediately sealed, checked for headspace bubbles, labeled, and placed in a cooler. Daily field activity logs and calibration logs are included in Appendix G-1. Completed sample collection logs and chain-of-custody forms are included in Appendix G-2.

Drinking water supply samples were collected and submitted for the following analyses:

- EDB using EPA Method 504.1
- BTEX using EPA Method 524.2.

Samples were submitted to TestAmerica Laboratories in Savannah, Georgia, for analytical testing. Analytical results were validated by Laboratory Data Consultants, Inc. The Data Quality Evaluation Reports are included in Appendix H-1. TestAmerica Laboratories' Analytical Reports and Data Validation Reports for July, August, and September 2017 are included in Appendix H-2.

## 4.2 Data Review and Usability

Laboratory Data Consultants, Inc. performed a 100% Level 3 data validation for Q3 2017 organic compound analytical data. All data complied with necessary criteria that determined the data were valid, with no data qualified as rejected. The technical data completeness was 100%. The data met data quality objectives and were appropriate for use in project decision-making. The quality control parameter and data quality indicators (precision, bias [accuracy], representativeness, comparability, completeness, and sensitivity) evaluation results are provided in the Data Quality Evaluation Reports included in Appendix H-1 and Data Validation Reports included in Appendix H-2. Final validated data are presented in Table 4-1.

## 4.3 Drinking Water Supply Well Water Quality

Analytical results for July, August, and September 2017 are presented in Table 4-1 and Appendix H-2, and illustrated on Figure 4-1. PSLs for drinking water supply wells were the lower of either the EPA or NMWQCC screening levels, as discussed in Section 3.6. There were no EDB or BTEX detections at concentrations above the detection limit in samples collected from drinking water supply wells KAFB-003, KAFB-015, KAFB-016, or ST106-VA-2 in Q3 2017. This indicates that all four wells had no detectable concentrations of EDB or BTEX in the drinking water that is supplied to Kirtland AFB employees and tenants, and VA Medical Center patients, employees, and visitors.

Ethylbenzene, toluene, and total xylenes were detected at concentrations below the limit of quantitation in the trip blank sample from the July sampling event. Because these detections only occurred in the trip blank, and not in the primary samples or method blanks, there is no apparent quality issue with current field method procedures. A subsequent review by the laboratory indicated that there may have been carryover from analysis of samples from another sample batch prior to analysis of the trip blank. The laboratory adjusted the order in which the samples were analyzed for the August and September events. There were no detections in trip blanks from these subsequent events.

# 5. GROUNDWATER CAPTURE AND TREATMENT SYSTEM OPERATION

This section presents a Q3 2017 summary of the GWTS operation and evaluation metrics.

## 5.1 Groundwater Treatment System Operation

The GWTS was operated during Q3 2017 to treat groundwater extracted from the distal portion of the EDB plume. The GWTS is currently comprised of four extraction wells (KAFB-106228, KAFB-106233, KAFB-106234, and KAFB-106239), conveyance piping, and a dual train 800-gallon per minute (gpm) capacity carbon treatment system located within the GWTS building (Figure 5-1). During Q3 2017, sand filter installation started and will continue through Q4 2017. During Q3 2017, the GWTS treated 65,976,800 gallons of groundwater with 49,351,900 gallons of treated water discharged to the Tijeras Arroyo Golf Course main pond and 16,624,900 gallons of treated water discharged to gravity injection well KAFB-7. Table 5-2 provides a summary of groundwater quantities extracted, treated, and discharged. During Q3 2017, Trains 1 and 2 treated 34,586,900 and 31,389,900 gallons, respectively. Table 5-3 provides a monthly and quarterly summary of the extraction well performance, which is discussed in Section 5.1.2. Supporting documentation for GWTS performance is located in Appendix I-1. New Mexico 811 line-location tickets are provided in Appendix I-2 for third-party construction activity in the vicinity of the off-Base conveyance lines (Section 5.2.2).

In addition to the operational procedures outlined in the Operations and Maintenance Plan (USACE 2016c), the GWTS is also subject to the terms of the RCRA Operating Permit Number (No.) NM9570024423 (NMED, 2010), and the Discharge Permit (DP) No. 1839 (NMED, 2017c) for injection of treated groundwater to KAFB-7. The DP became effective April 28, 2017. The following requirements are associated with the conditions of the DP, which are also summarized in Table 5-1:

- GWTS sampling and analytical data (see Section 5.1.3)
- Monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to KAFB-7 (Table 5-4)
- Totalized monthly volume transferred to KAFB-7 (Table 5-4)
- Monthly average, maximum, and minimum head values of water in KAFB-7 (Table 5-4)
- Any mechanical integrity (tests) conducted on either the GWTS or an injection well (Section 5.2.1)
- Any replacement of GAC media and the associated data that initiated the decision to replace the media (Section 5.2.3)
- Any injection well rehabilitation conducted (not performed in Q3 2017)
- Any malfunction, repair, or replacement of a flowmeter (not performed in Q3 2017)
- Any additional operational changes with the potential to affect the discharge (Section 5.2.3)
- Collect groundwater samples and monitor aquifer chemistry in the vicinity of KAFB-7 (not performed in Q3 2017)
- Develop groundwater elevation contour maps in the vicinity of KAFB-7 (not performed in Q3 2017)
- Notify NMED of any modifications to the system that would change the discharge volume, location of discharge, or character of water contaminants discharged; or proposal for construction that would change the quantity or quality of discharge that differs from the terms of the DP (not performed in Q3 2017)

### 5.1.1 System Operation and Percentage Run Time

For the purpose of run time evaluation, GWTS operation is defined as the time when groundwater was being pumped from at least one extraction well at a minimum of 50 gpm and was subsequently treated and discharged. From July 1 through September 30, 2017, the GWTS was operational 99% of the time, representing a 2% increase relative to Q2 2017. Table 5-3 provides a monthly and quarterly summary of the extraction well performance.

### 5.1.2 Well Performance Metrics

Average operational extraction rates for each well do not include downtime. Construction and installation of KAFB-106239 have been completed but the well is not yet operational as the conveyance line installation is pending. Conveyance line construction and installation are expected to be completed by Q1 2018. Injection well performance data for permit compliance is provided in Table 5-4.

#### *5.1.2.1 Quarterly Extraction Rates*

Water was extracted from KAFB-106228 during Q3 2017 at an average operational flow rate of 144 gpm with a run time of 98%.

Water was extracted from KAFB-106233 during Q3 2017 at an average operational flow rate of 170 gpm. This well had a run time of 98% for Q3 2017 representing a 32% increase from Q2 2017, when KAFB-106233 was undergoing rehabilitation.

Water was extracted from KAFB-106234 during Q3 2017 at an average operational flow rate of 164 gpm with a run time of 97%.

#### *5.1.2.2 Quarterly Specific Capacity*

The specific capacity calculations discussed herein do not include pump downtime that would, in effect, create zero values for specific capacity (i.e., calculations only include dates when pumps were running). All specific capacities are reported in gallons per minute per foot of drawdown.

The average specific capacity for KAFB-106228 was 7.7 gpm per foot. The average specific capacity for KAFB-106228 decreased between Q2 and Q3 2017 by 0.7 gpm per foot. Average operational flow rate decreased and drawdown has increased consistently since February 2017. This well will be monitored throughout the following quarter to observe if average specific capacity continues to decrease and thus may be indicative of an issue (i.e., decreasing pump efficiency due to impeller abrasion).

The average specific capacity for KAFB-106233 was 22.5 gpm per foot, representing a lower specific capacity than Q2 2017 (28.0 gpm per foot). Average specific capacity for KAFB-106233 decreased between Q2 and Q3 2017. Average operational flow rate decreased and drawdown has increased consistently since the well was restarted in April 2017. The decrease in average specific capacity may be indicative of the entrainment of additional aquifer fines into the well filter pack following rehabilitation. This well will be monitored throughout the following quarter to observe if average specific capacity continues to decrease and thus may be indicative of an issue (i.e., decreasing pump efficiency due to impeller abrasion).

The average specific capacity for KAFB-106234 was 24.1 gpm per foot. The average operational flow rate decreased (by 1 gpm) and drawdown has increased (0.7 ft) consistently since July 2017 (Appendix I-

1). This well will be monitored throughout the following quarter to observe if flow rate continues to decrease and thus may be indicative of an issue (i.e., decreasing pump efficiency due to impeller abrasion).

### 5.1.3 Analytical Metrics and Ethylene Dibromide Removal

Q3 GWTS analytical performance metrics and EDB mass removal are discussed in the following sections.

#### *5.1.3.1 Quarterly Analytical Metrics*

GWTS performance sample collection logs are provided in Appendix I-3. For both Train 1 and 2, GWTS samples were collected monthly from the untreated influent (GWTS-BFF-INF1 and GWTS-BFF-INF2), from a port located after the GAC (GWTS-BFF-GAC1 and GWTS-BFF-GAC2), and from the treated effluent (GWTS-BFF-EFF1 and GWTS-BFF-EFF2). These samples were analyzed for EDB, BTEX, and dissolved metals (iron and manganese). Samples were collected from both Train 1 and Train 2 for the DP-1839 (NMED, 2017c) 5-year and annual analyses requirements on July 25, 2017. The samples were analyzed for semivolatile organic compounds (SVOCs), dissolved metals (aluminum, barium, copper, zinc, tin, arsenic, beryllium, cadmium, chromium, lead, selenium, silver, thallium, and uranium), anions (chloride, fluoride, sulfate, nitrate, and nitrite), free cyanide, mercury, and total phenol, in addition to the monthly analytes. EDB concentrations and mass removal are summarized in Table 5-5 and the sample results and effluent discharge limits (which are the PSLs) are provided in Table 5-6 for Train 1 and Table 5-7 for Train 2.

Monthly treated volumes were calculated using weekly flow measurements. In Q3 2017, an estimated 13,420 mg of EDB was captured in the lead GAC vessels. Of this total, 6,687 mg were removed by Train 1 and 6,732 mg were removed by Train 2. These quantities of mass were calculated by taking the sum of each monthly influent concentration multiplied by the respective total monthly treated volume (Table 5-5).

EDB concentrations in the influent samples of Train 1 were detected at concentrations of 0.054, 0.062, and 0.047 µg/L in July, August, and September, respectively (Table 5-6). EDB concentrations in the influent samples of Train 2 were detected at concentrations of 0.055, 0.058, and 0.054 µg/L in July, August, and September, respectively (Table 5-7). BTEX, iron, and manganese were not detected in any influent samples collected from either train during the quarter (Tables 5-6 and 5-7).

As part of maintaining compliance with DP-1839 (NMED, 2017c) requirements, annual and 5-year samples were collected in July from the GWTS influent, GAC, and effluent. Results for the annual and 5-year samples are provided in Tables 5-8 and 5-9, respectively. Influent and effluent samples collected for annual analysis had detectable anions (chloride, sulfate and nitrite-nitrates) at concentrations below the respective PSLs (Table 5-8) from both Trains. VOCs, SVOCs, and phenols were not detected in any of the samples. The 5-year influent and effluent sample results from both trains had detectable barium, zinc, arsenic, chromium, selenium, uranium, and fluoride at concentrations below their respective PSLs (Table 5-9). All other analytes from the 5-year samples were below their respective detection limits.

Samples were collected from extraction wells KAFB-106228, KAFB-106233, and KAFB-106234 in July 2017. The concentration of EDB, the only analyte, was detected at concentrations above the PSL in wells KAFB-106228 and KAFB-106234 (Table 5-10).

The Q3 2017 GWTS analytical data underwent EPA Stage 3 data validation by an independent third party. Additionally, the data were assessed for accuracy, precision, representativeness, comparability,

completeness, and sensitivity to determine if the project data quality objectives were achieved and usable for their intended purpose. The data validation results are included in the Data Quality Evaluation Report provided in Appendix I-4 and the final laboratory data reports included in Appendix I-5.

## 5.2 Groundwater Treatment System Maintenance and Expansion

All GWTS maintenance and expansion activities are provided in the following sections.

### 5.2.1 Routine Maintenance Activities

Routine maintenance is any activity described as such in the GWTS Operations and Maintenance Plan (USACE 2016c). A summary of routine maintenance activities is provided below.

During Q3 2017, bag filters were changed out for Train 1 on 11 separate occasions. Train 2 filters were changed out on eight separate occasions throughout the quarter. As of September 29, 2017, differential pressure along the lead GAC vessel on Trains 1 and 2 was 5.7 and 4.4 pounds per square inch (psi), respectively. Train 1 and Train 2 showed an increase in differential pressure of 4.0 psi and 0.4 psi, respectively, in their lead GACs during Q3 2017. No GAC skimming was performed this quarter; however, if the pressure differential continues to increase during Q4 2017, skimming will be performed on the lead GAC vessel of each train as necessary. It is anticipated that installation of sand filters should mitigate the need to skim lead GAC vessels in the future.

The influent Y-strainers were cleaned four times throughout Q3 2017 as a part of routine maintenance. Y-strainers were cleaned to maintain equalization of influent tanks.

The GWTS routine maintenance schedule is provided as Table 5-11 and the non-routine system operational issues that were encountered during Q3 2017 are discussed in Section 5.2.3.
During Q3 2017, multiple scheduled system shutdowns occurred as GWTS discharge was directed to KAFB-7 when the Tijeras Arroyo Golf Course main pond was at or near maximum capacity.

On September 11, 2017, extraction well KAFB-106233 was shut down for 3 hours to facilitate GWTS influent and effluent pump oil changes. On September 1, 15, and 26, 2017, this same well was shut down to facilitate influent Y-strainer cleaning.

### 5.2.2 Conveyance Line Security and Administrative Controls

Kirtland AFB is registered as a line-owner with New Mexico 811 for the off-Base portion of the conveyance lines. Permits are required for all on-Base excavation projects.

During Q3 2017, Kirtland AFB responded to 10 off-Base tickets requested through New Mexico 811 (Appendix I-2). During Q3 2017, there were no conveyance line breaches and all off-Base conveyance lines remained intact.

### 5.2.3 Non-Routine Maintenance Activities

Non-routine maintenance activities are defined as maintenance items that fall outside of the scope of the GWTS Operations and Maintenance Plan (USACE, 2017a) but need to be addressed in order to maintain consistent GWTS operation.

The GWTS experienced brief system shutdowns on August 15, August 31, and September 5, 2017 due to telemetry interference activating a high-level alarm for KAFB-7. A system shutdown occurred on August 16, 2017 for approximately six hours due to construction activities associated with the sand filter installation. The following day, the full system was shut down for approximately 1 hour due to construction activities and replacement of a manway gasket on Train 2 GAC vessel B.

Extraction well KAFB-106228 was briefly offline on July 6, 2017 due to a pump failure alarm. This failure did not result in complete system shutdown and was attributed to electrical fluctuations with off-Base utilities.

Two rain events, on July 31 and August 11, 2017, activated the vault leak detection sensor at well KAFB-106234, which disabled the pump. In each instance the rain water was pumped out of the well vault the following day and the well was returned to operation after approximately 15 and 18 hours of downtime, respectively. The GWTS was not completely shut down during either event.

Extraction well KAFB-106233 was shut down for approximately 30 minutes on August 18, 2017 to reseat the gasket that was replaced on the previous day. Extraction well KAFB-106233 was temporarily shut down on September 16, 2017 for approximately 2.75 hours due to suspected telemetry interference. On September 27 and 29, 2017, surface runoff activated the vault leak sensor at KAFB-106233 shutting down the extraction well for approximately 14 and 9.5 hours, respectively.

On September 27, 2017, the KAFB-7 programmable logic controller (PLC) experienced a power failure and the PLC did not reset properly. As a result, KAFB-106228 and KAFB-106233 were cycled offline to mitigate overfilling the Tijeras Arroyo Golf Course main pond as injection could not be performed using KAFB-7 while the PLC was offline. The PLC was reprogrammed and returned to service on September 29, 2017, and all extraction wells were returned to full-time operation.

Extraction well KAFB-106157 was abandoned in July 2017 (USACE, 2017e). A groundwater sample was collected from the well prior to abandonment, as discussed in Section 3.7. The abandonment report was submitted under separate cover (USACE, 2017e).

### 5.2.4 Expansion Activities

Installation of influent sand filters was initiated, and the extraction well KAFB-106239 conveyance line began in Q3 2017. The influent sand filter installation began on August 15, 2017, and is being performed under a separate contract. The sand filter installation is scheduled for completion in Q1 2018. The conveyance line installation from extraction well KAFB-106239 began on August 14, 2017. Installation activities this quarter included vegetation clearing, site preparation, and delivery and inspection of materials. Horizontal drilling, open excavation of conveyance line pipe, installation of electrical infrastructure, and installation of the extraction well vault, pump, and instrumentation are activities anticipated for Q4 2017. Completion of all activities associated with the conveyance line installation is scheduled for Q1 2018.

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# 6. INVESTIGATION-DERIVED WASTE

During Q3 2017, non-hazardous investigation-derived waste (IDW) was generated. No new hazardous waste was generated during Q3. Non-hazardous IDW consisted of both liquid and solid waste that was generated from GWM activities and waste consolidation activities.

In addition to the IDW generated specifically during Q3 2017, additional hazardous and non-hazardous IDW generated during Q1and Q2 2017 were held in storage and managed during Q3 2017. This section discusses details of waste generated and managed during the quarter.

## 6.1 Non-Hazardous Investigation-Derived Waste

Non-hazardous IDW was the only volume of IDW generated during Q3 2017. Liquids generated during the quarterly GWM sampling event comprised the majority of this IDW. Table J-1-1 (Appendix J-1) provides well-specific purge water details as well as disposal information of all liquid IDW during Q3 2017.

### 6.1.1 Groundwater Monitoring Liquid Waste

Non-hazardous liquid IDW purge water from the sampling of monitoring wells was collected in 55-gallon plastic drums. Drums were sealed with plastic lids with locking-ring steel collars, labeled with vinyl non-hazardous waste labels, and transferred to the designated non-hazardous IDW storage yard located on Kirtland AFB. Small volumes of IDW water were placed in 5-gallon plastic buckets with lids and properly labeled.

Disposal of non-hazardous liquid IDW to the GWTS was evaluated by comparing historical, well-specific data from the previous two quarters to the discharge limits of the GWTS. Liquid IDW from monitoring wells that have historically met the GWTS acceptance criteria was discharged to the facility. Liquid IDW was not discharged to the GWTS if historical data from the previous two quarters exceeded the GWTS influent limits. For Q3 2017, a total of 3,309 gallons of non-hazardous purge and decontamination IDW water met GWTS acceptance criteria and was discharged to the GWTS. All water processed through the GWTS was discharged to the Tijeras Arroyo Golf Course main pond.

Liquid IDW that was collected but not disposed of during the quarter (pending disposal) is listed in Table J-1-2 (Appendix J-1). This category includes non-hazardous liquid IDW that contains concentrations of dissolved iron and manganese above their respective permit discharge limits. These particular drums require additional evaluation and handling prior to discharge into the GWTS. For Q3 2017, there was no IDW water managed under this category at the end of the quarter.

One drum of spent calibration fluid, containing approximately 15 gallons of liquid, remained in the "Pending Analysis" area of the IDW yard (Table J-1-2, Appendix J-1). This drum will be characterized at the end of Q4 2017 to determine the proper disposal pathway.

### 6.1.2 Well Drilling and Development Liquid Waste

There was no new well drilling or development liquid IDW generated in Q3 2017. A total of 2,550 gallons of well drilling/development water held over from Q2 2107 was approved for disposal through the GWTS and reported as tote containers in Table J-1-1 (Appendix J-1). The remaining water and soil that could not be pumped from the containers were consolidated into totes and held for further evaluation.

### 6.1.3 Non-Liquid Investigation-Derived Waste

There was no new non-liquid drilling or development IDW generated from well construction in Q3 2017. Approximately 2.7 cubic yards of non-hazardous, non-liquid IDW was managed in the IDW yard during Q3 2017. This IDW includes sediment consolidated from cleaning out the KAFB-106233 DW-2 and KAFB-106233 AC storage tanks combined with sediment from KAFB-106239 I (pot hole) totes, and soil generated from the cleanup of a small truck radiator leak. Table J-2-1 (Appendix J-2) provides a list of non-liquid IDW generated, disposed, and currently being held during Q3 2017.

During Q3 2017, a total of 1.1 cubic yards of non-hazardous IDW was disposed. Off-Base disposal of the 1.1 cubic yards of waste was performed after proper waste profiling and acceptance of the profile by both Kirtland AFB and the waste disposal facility. The waste was transported to permitted disposal facilities by Advanced Chemical Treatment. On-base disposal at the Kirtland AFB landfill of non-liquid waste did not occur during Q3 2017.

Two totes and one drum containing the final, non-hazardous soil/mud and water sourced from the extraction well KAFB-106239 project remained in the IDW yard at the end of Q3 2017. This waste will be further evaluated for off-Base disposal.

Routine, disposable, non-hazardous solid wastes that were generated during GWM activities include single-use passive diffusion bags, disposable in-line filters, and nitrile gloves. These items are disposed of as municipal solid waste and volumes are not tracked.

## 6.2 Hazardous Investigation-Derived Waste

Prior to the start of each quarterly GWM sampling event, a preliminary distinction is made between hazardous and non-hazardous liquid IDW for initial waste segregation purposes. Based on historical analytical data available for each well, the water was suspected hazardous if the concentration of benzene exceeded 500 µg/L in any of the previous two sampling events; liquid IDW from these wells was managed as a potentially hazardous waste until analytical results were received. Purge water is classified as hazardous based on concentrations of benzene above the limit specified in 40 CFR Part 261.24 (500 µg/L). The hazardous waste classification code for benzene is D018.

Purge water deemed potentially hazardous is placed in labeled, 55-gallon steel drums and stored in the Kirtland AFB BFF <90-day accumulation area pending analytical results. Upon receipt of analytical data, this IDW may be kept in the <90-day accumulation area (if confirmed to be hazardous) or moved to the non-hazardous waste storage area if the analytical data indicate the waste does not meet hazardous criteria. All waste containers are properly labeled, sealed, placed on secondary containment pallets, and secured in a locked, fenced area for temporary storage. The waste containers are inspected on a weekly basis as required under 40 CFR 262.34.

All hazardous waste is removed from Kirtland AFB within the required 90-day holding timeframe. In Q3 2017, waste was transported offsite by Advanced Chemical Treatment and taken to a permitted treatment, storage, and disposal facility. All hazardous waste transported off Kirtland AFB was manifested and approved for transport by the Kirtland AFB Hazardous Waste Management Group.

During Q3, no new hazardous waste was generated. However, hazardous waste generated during Q2 2017 was managed during Q3. A hazardous waste storage and disposal summary is provided in Table J-3-1 (Appendix J-3).

One drum of liquid hazardous purge water (KAFB-HPW-2), generated during Q2 2017, was transported offsite for hazardous waste disposal on July 14, 2017. The RCRA <90-day accumulation area schedule required the waste to be transported no later than August 1, 2017. The drum contained approximately 31 gallons of D018 purge water sourced from wells KAFB-106010 and KAFB-106059. Kirtland AFB personnel approved the waste profile, signed the waste manifest, and Advanced Chemical Treatment provided transportation and disposal services of the waste to a permitted hazardous waste facility.

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# 7. PROJECTED ACTIVITIES

Q4 2017 will comprise the period between October 1 and December 31, 2017. Planned Q4 2017 activities are summarized below.

***Vadose Zone Monitoring***

- Perform semiannual SVM in Q4 2017.

***Groundwater Monitoring***

- Perform sampling and gauging of the entire active GWM network in October 2017
- Perform a passive sampling demonstration for select source area wells, comparing data from both the passive and low-flow techniques
- Add Well KAFB-106041 to the GWM network for gauging and sampling
- Perform gauging on old soil vapor pneu-log wells in the source area, as well as KAFB-106211 (former air sparge/soil vapor extraction well) and KAFB-106229 (observation well near KAFB-106233).

***Drinking Water Supply Well Monitoring***

- Perform drinking water supply well monitoring monthly for organic compound analysis in Q4 2017
- Perform additional semiannual sampling for the analysis of inorganic compounds at the drinking water supply wells.

***Groundwater Treatment System Operation***

- Continue operating the GWTS and extraction wells KAFB-106228, KAFB-106233, and KAFB-106234
- Perform GWTS performance assessment and plume capture analysis
- Continue with installation of the sand filters and the conveyance line for KAFB-106239.

***Reporting***

A quarterly and annual report will be prepared to detail the activities conducted during the quarter, and to summarize the activities, GWM data, and performance assessment for the entire year. The report will include the semiannual sampling data collected for the full GWM network as well as the vadose zone. The report will discuss trends observed relative to remediation progress, evaluate the effectiveness of the interim measures, and provide recommendations for continued optimization in 2018.

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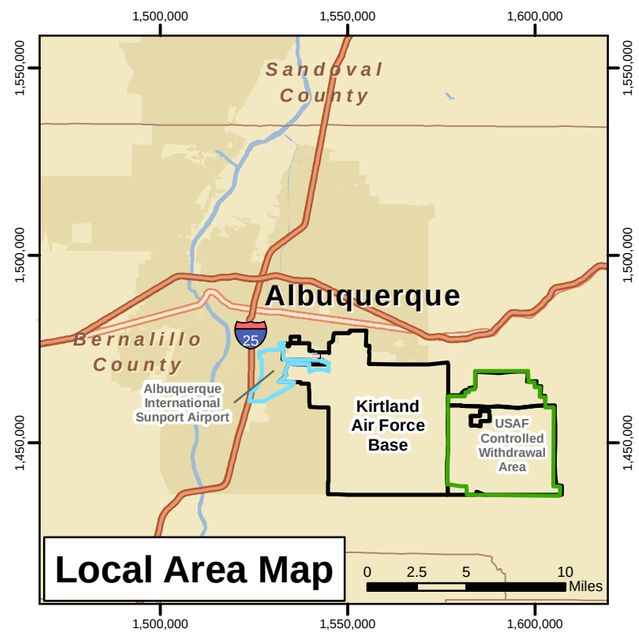
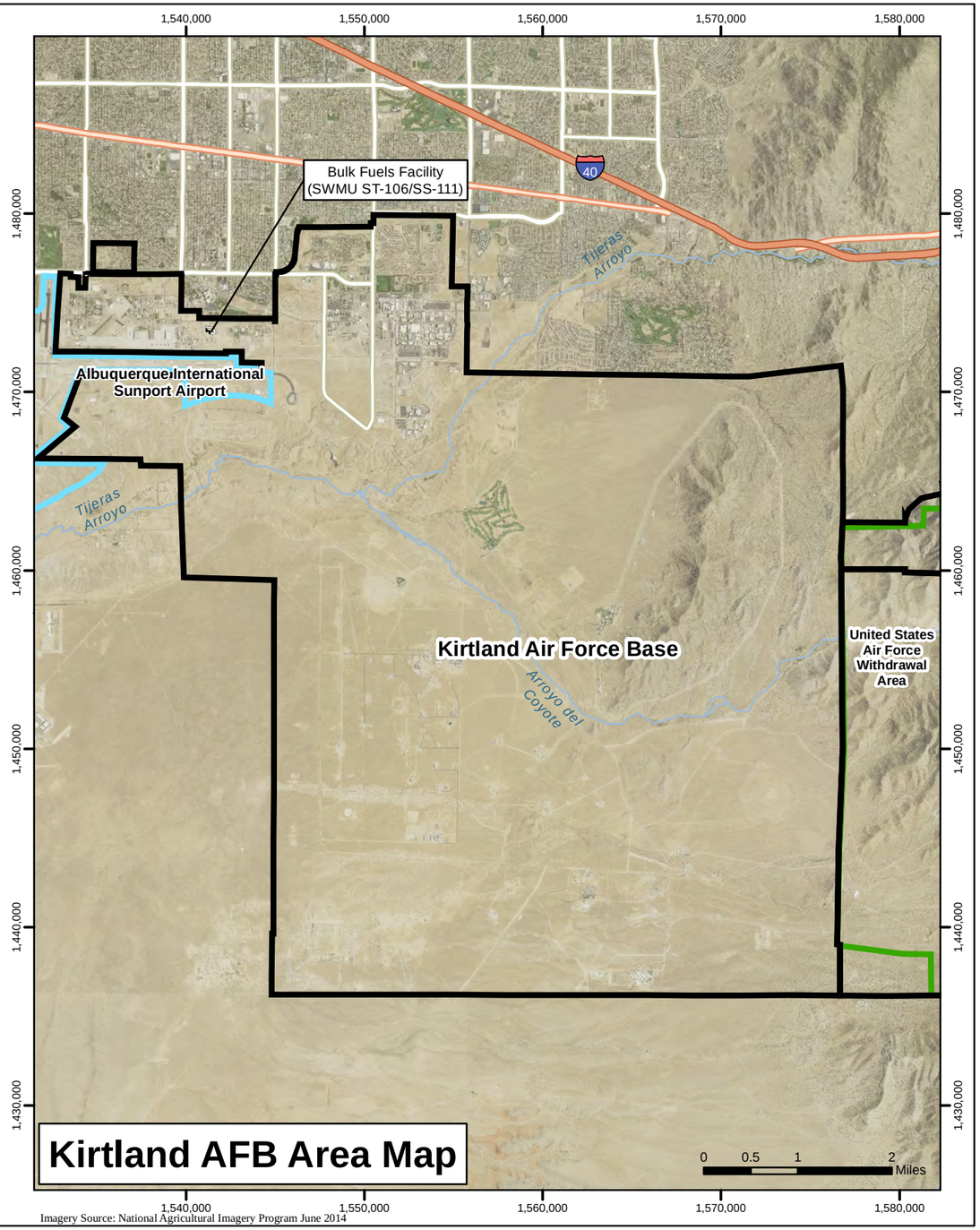
# FIGURES




Imagery Source: National Agricultural Imagery Program June 2014

## Legend

- Kirtland Air Force Base Installation Boundary
- Albuquerque International Sunport Airport
- United States Air Force Controlled Withdrawal Area
- Major Highways
- Highways
- Major Roads
- Rivers
- Source Area

N

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

QUARTERLY REPORT, JULY - SEPTEMBER 2017
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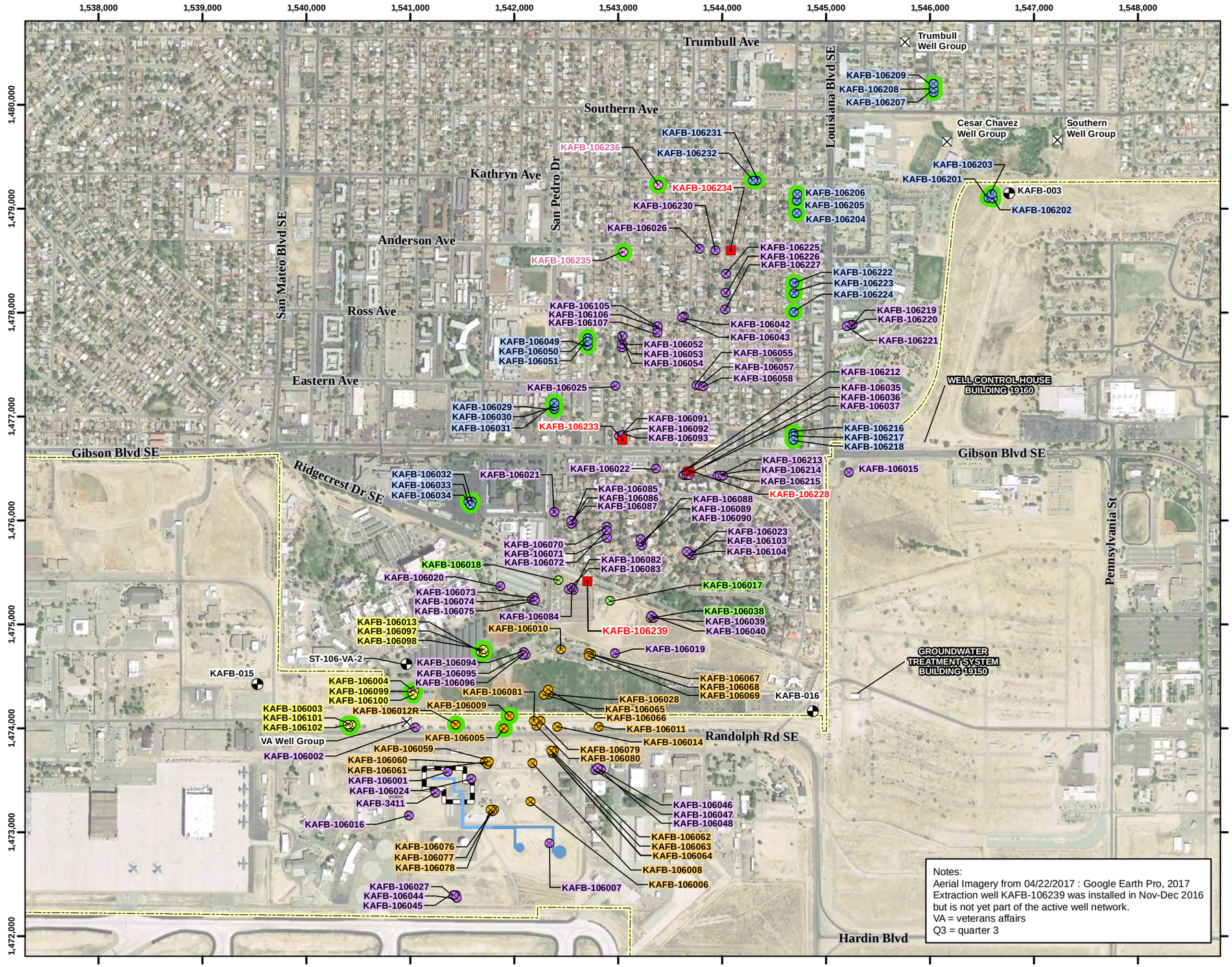
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 1-1

SITE LOCATION MAP

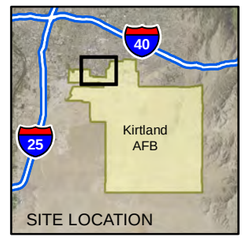
P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\1-1 SiteLocMap.mxd 7/24/2017 EA sbusby




Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
Extraction well KAFB-106239 was installed in Nov-Dec 2016 but is not yet part of the active well network.
VA = veterans affairs
Q3 = quarter 3

## Legend

- Newly Installed Monitoring Well
- Groundwater Monitoring Well
- Signal Monitoring Well
- Source Area Monitoring Well
- VA Proximal Monitoring Well
- Downgradient Proximal Monitoring Well
- USGS Sentinel Well Group
- Groundwater Monitoring Well Sampled in Q3 2017
- Extraction Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Source Area




N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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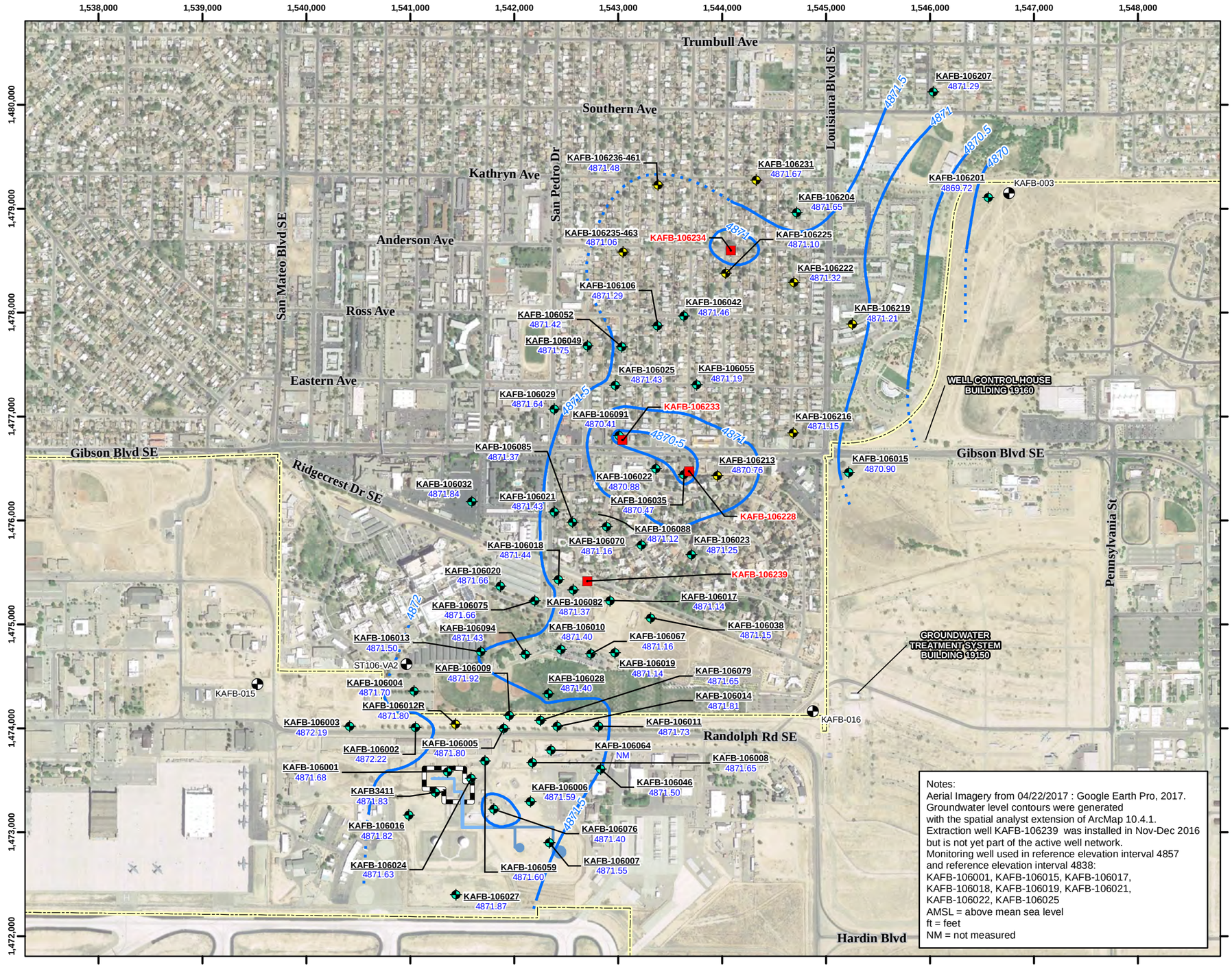
FIGURE 3-1

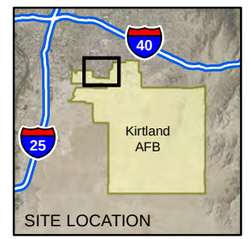
GROUNDWATER MONITORING NETWORK, DRINKING WATER SUPPLY WELLS, AND EXTRACTION WELL LOCATIONS

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\3-1 WellMap.mxd 9/13/2017 EA sbusby




## Legend

- Reference Elevation Interval 4857 Monitoring Well (Screen Submerged)
- Reference Elevation Interval 4857 Monitoring Well (Screen Not Submerged)
- Extraction Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Groundwater Level Contour (ft AMSL)
- Inferred Groundwater Level Contour (ft AMSL)
- Installation Boundary
- Source Area




N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017.
Groundwater level contours were generated with the spatial analyst extension of ArcMap 10.4.1.
Extraction well KAFB-106239 was installed in Nov-Dec 2016 but is not yet part of the active well network.
Monitoring well used in reference elevation interval 4857 and reference elevation interval 4838:
KAFB-106001, KAFB-106015, KAFB-106017, KAFB-106018, KAFB-106019, KAFB-106021, KAFB-106022, KAFB-106025
AMSL = above mean sea level
ft = feet
NM = not measured

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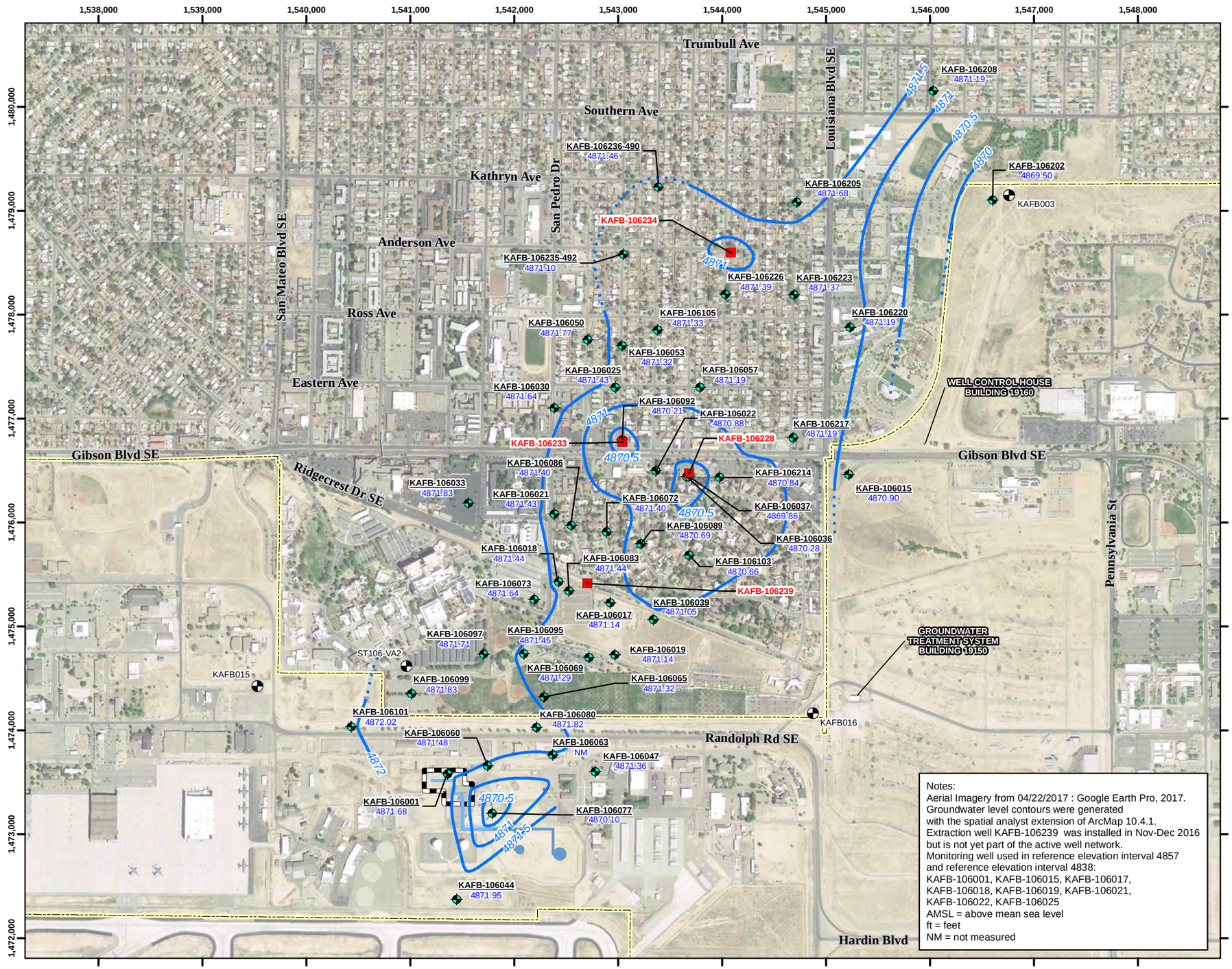
FIGURE 3-2

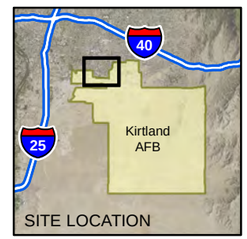
POTENTIOMETRIC SURFACE MAP OF REFERENCE ELEVATION INTERVAL 4857, JULY 17-24, 2017

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\3-2 Interval 4857 PotentiometricSurfaceQ3.mxd 9/13/2017 EA sbusby




## Legend

- Reference Elevation Interval 4838 Monitoring Well (Screen Submerged)
- Extraction Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Groundwater Level Contour (ft AMSL)
- Inferred Groundwater Level Contour (ft AMSL)
- Source Area




N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017.
Groundwater level contours were generated with the spatial analyst extension of ArcMap 10.4.1.
Extraction well KAFB-106239 was installed in Nov-Dec 2016 but is not yet part of the active well network.
Monitoring well used in reference elevation interval 4857 and reference elevation interval 4838:
KAFB-106001, KAFB-106015, KAFB-106017, KAFB-106018, KAFB-106019, KAFB-106021, KAFB-106022, KAFB-106025
AMSL = above mean sea level
ft = feet
NM = not measured

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FIGURE 3-3

POTENTIOMETRIC SURFACE MAP OF REFERENCE ELEVATION INTERVAL 4838, JULY 17-24, 2017

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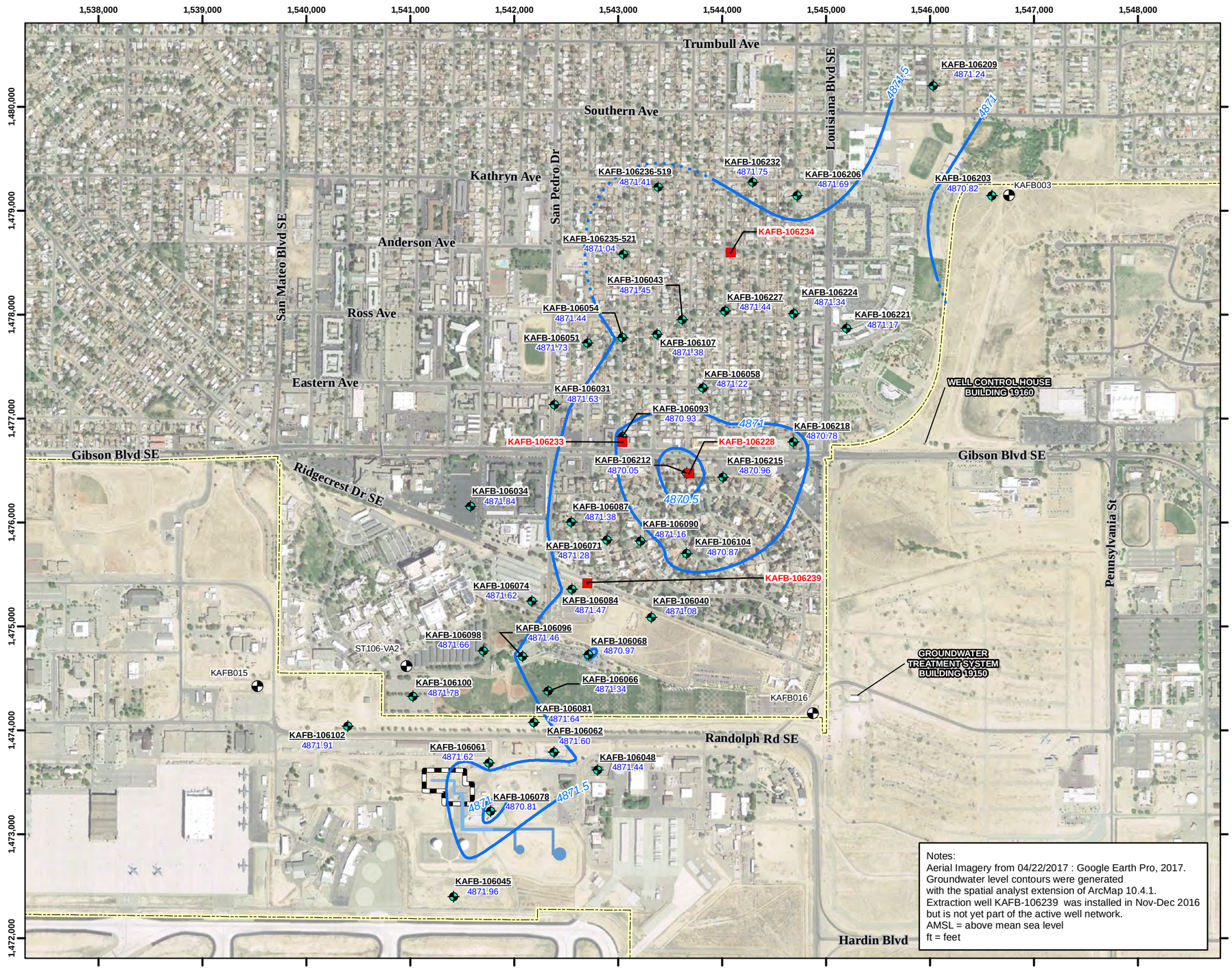
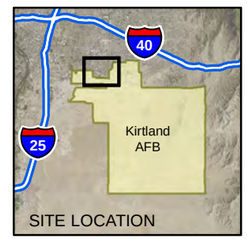



## Legend

- Reference Elevation Interval 4814 Monitoring Well (Screen Submerged)
- Extraction Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Groundwater Level Contour (ft AMSL)
- Inferred Groundwater Level Contour (ft AMSL)
- Source Area




N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017.
Groundwater level contours were generated with the spatial analyst extension of ArcMap 10.4.1.
Extraction well KAFB-106239 was installed in Nov-Dec 2016 but is not yet part of the active well network.
AMSL = above mean sea level
ft = feet

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FIGURE 3-4

POTENTIOMETRIC SURFACE MAP OF REFERENCE ELEVATION INTERVAL 4814, JULY 17-24, 2017

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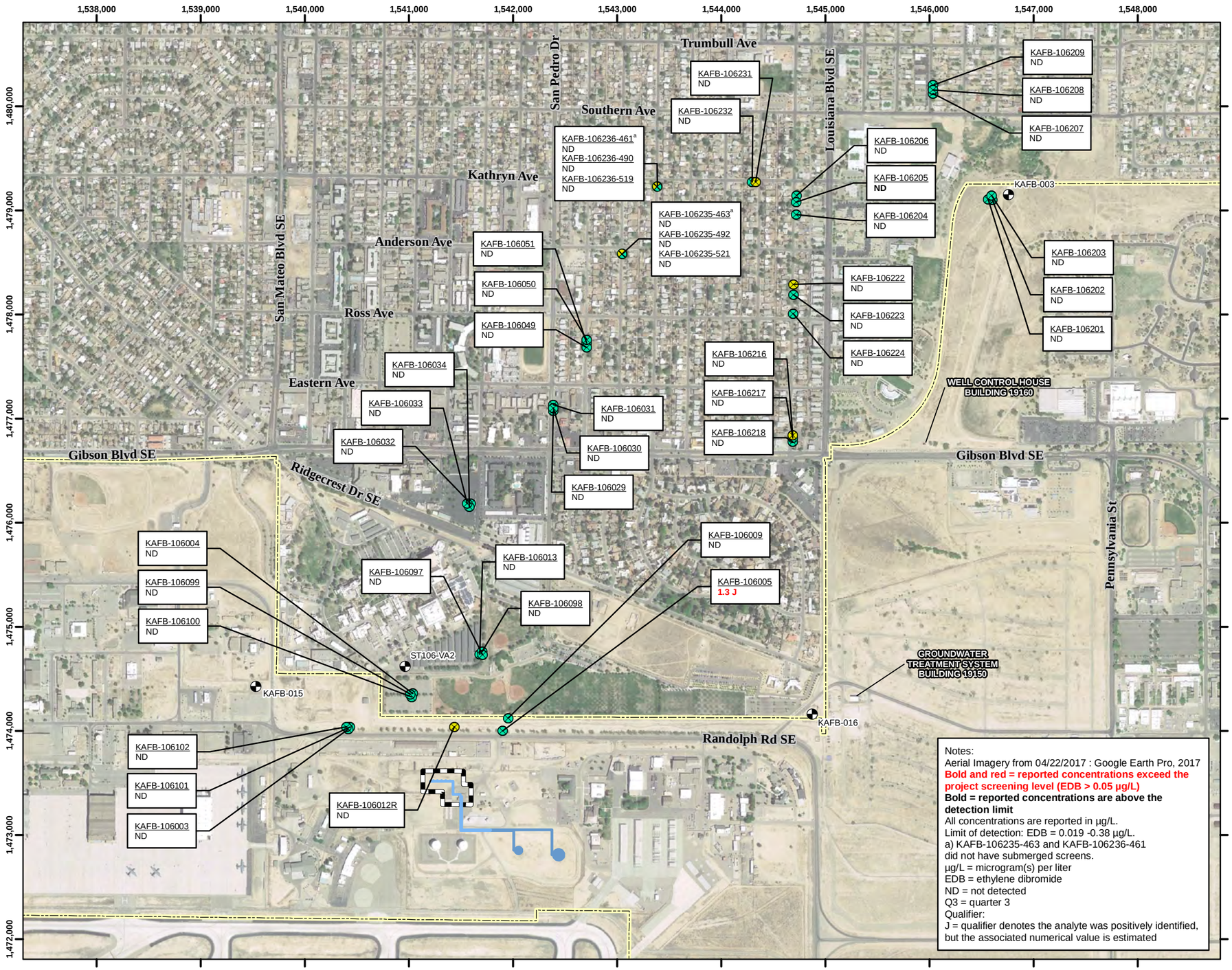
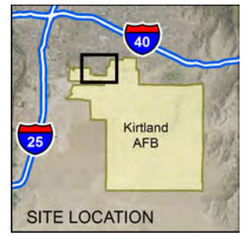



Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
**Bold and red = reported concentrations exceed the project screening level (EDB > 0.05 µg/L)**
**Bold = reported concentrations are above the detection limit**
All concentrations are reported in µg/L.
Limit of detection: EDB = 0.019 -0.38 µg/L.
a) KAFB-106235-463 and KAFB-106236-461 did not have submerged screens.
µg/L = microgram(s) per liter
EDB = ethylene dibromide
ND = not detected
Q3 = quarter 3
Qualifier:
J = qualifier denotes the analyte was positively identified, but the associated numerical value is estimated

## Legend

- Q3 Groundwater Monitoring Well (Screen Submerged)
- Q3 Groundwater Monitoring Well (Screen Not Submerged)
- Nested Monitoring Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Source Area




N

0 500 1,000 2,000
Feet
1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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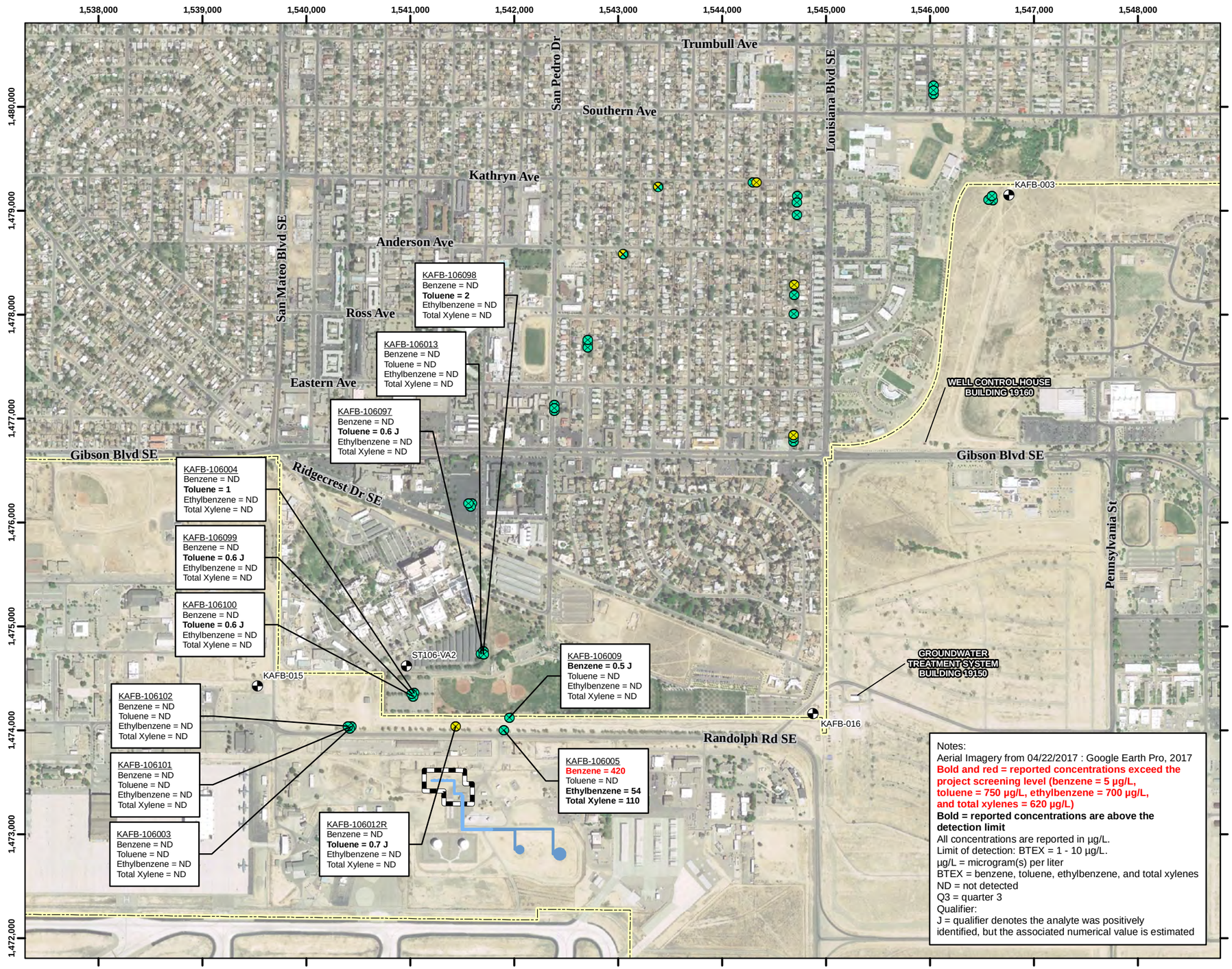
FIGURE 3-5

EDB CONCENTRATIONS, Q3 2017

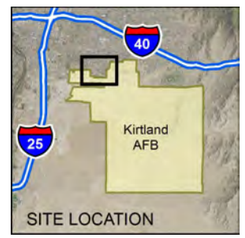
P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\3-5 EDB Q3 2017.mxd 10/13/2017 EA eomalia




Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
**Bold and red = reported concentrations exceed the project screening level (benzene = 5 µg/L, toluene = 750 µg/L, ethylbenzene = 700 µg/L, and total xylenes = 620 µg/L)**
**Bold = reported concentrations are above the detection limit**
All concentrations are reported in µg/L.
Limit of detection: BTEX = 1 - 10 µg/L.
µg/L = microgram(s) per liter
BTEX = benzene, toluene, ethylbenzene, and total xylenes
ND = not detected
Q3 = quarter 3
Qualifier:
J = qualifier denotes the analyte was positively identified, but the associated numerical value is estimated

## Legend

- Q3 Groundwater Monitoring Well (Screen Submerged)
- Q3 Groundwater Monitoring Well (Screen Not Submerged)
- Nested Monitoring Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Source Area




N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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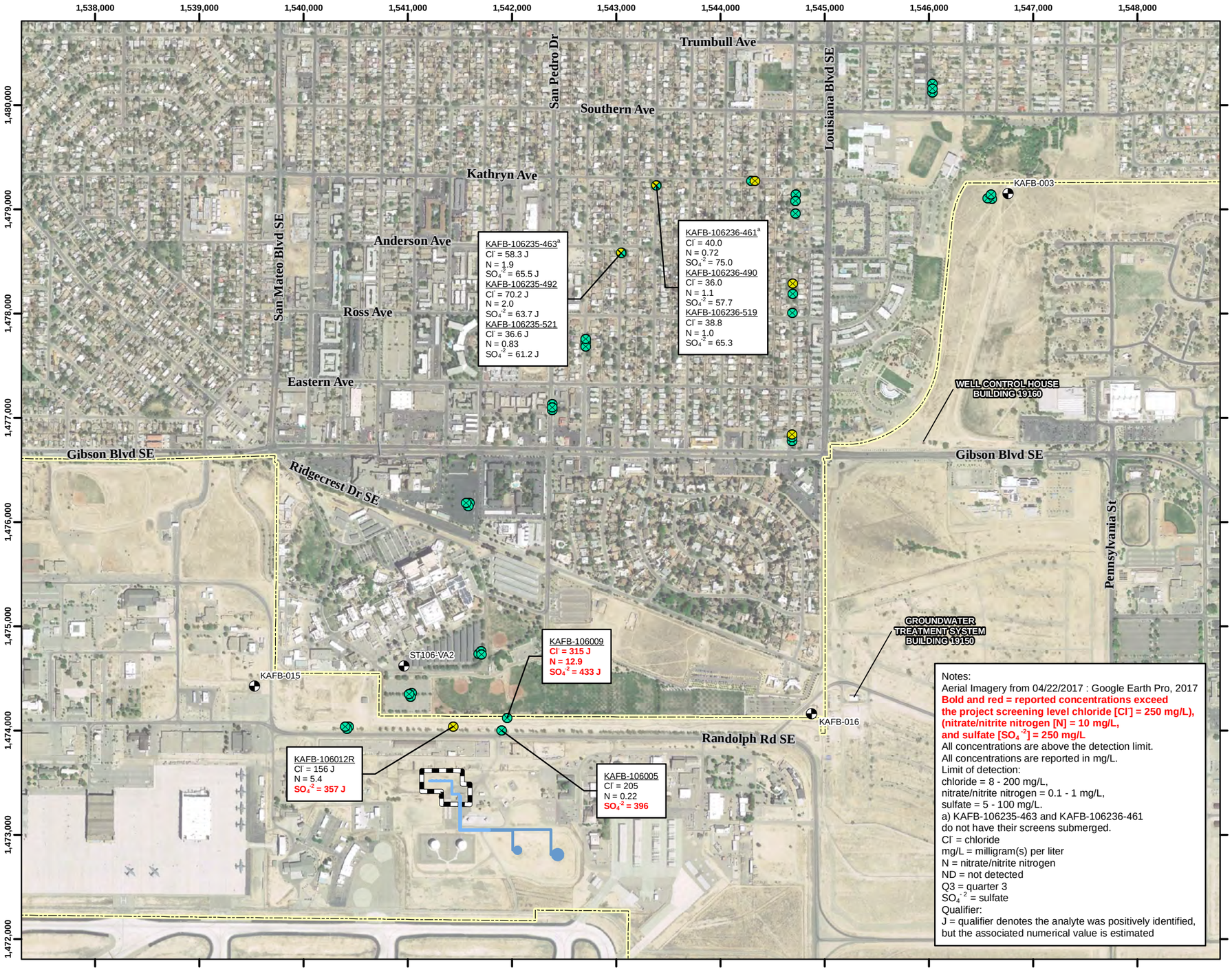
FIGURE 3-6

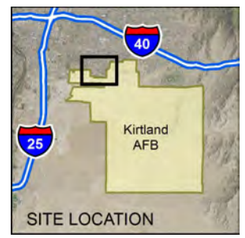
BTEX CONCENTRATIONS, Q3 2017

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\3-6 BTEX Q3 2017.mxd 10/13/2017 EA eomalia




## Legend

- Q3 Groundwater Monitoring Well (Screen Submerged)
- Q3 Groundwater Monitoring Well (Screen Not Submerged)
- Nested Monitoring Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Source Area




Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
**Bold and red = reported concentrations exceed the project screening level chloride [$Cl^-$] = 250 mg/L), (nitrate/nitrite nitrogen [N] = 10 mg/L, and sulfate [$SO_4^{-2}$] = 250 mg/L**
All concentrations are above the detection limit.
All concentrations are reported in mg/L.
Limit of detection:
chloride = 8 - 200 mg/L,
nitrate/nitrite nitrogen = 0.1 - 1 mg/L,
sulfate = 5 - 100 mg/L.
a) KAFB-106235-463 and KAFB-106236-461 do not have their screens submerged.
$Cl^-$ = chloride
mg/L = milligram(s) per liter
N = nitrate/nitrite nitrogen
ND = not detected
Q3 = quarter 3
$SO_4^{-2}$ = sulfate
Qualifier:
J = qualifier denotes the analyte was positively identified, but the associated numerical value is estimated

N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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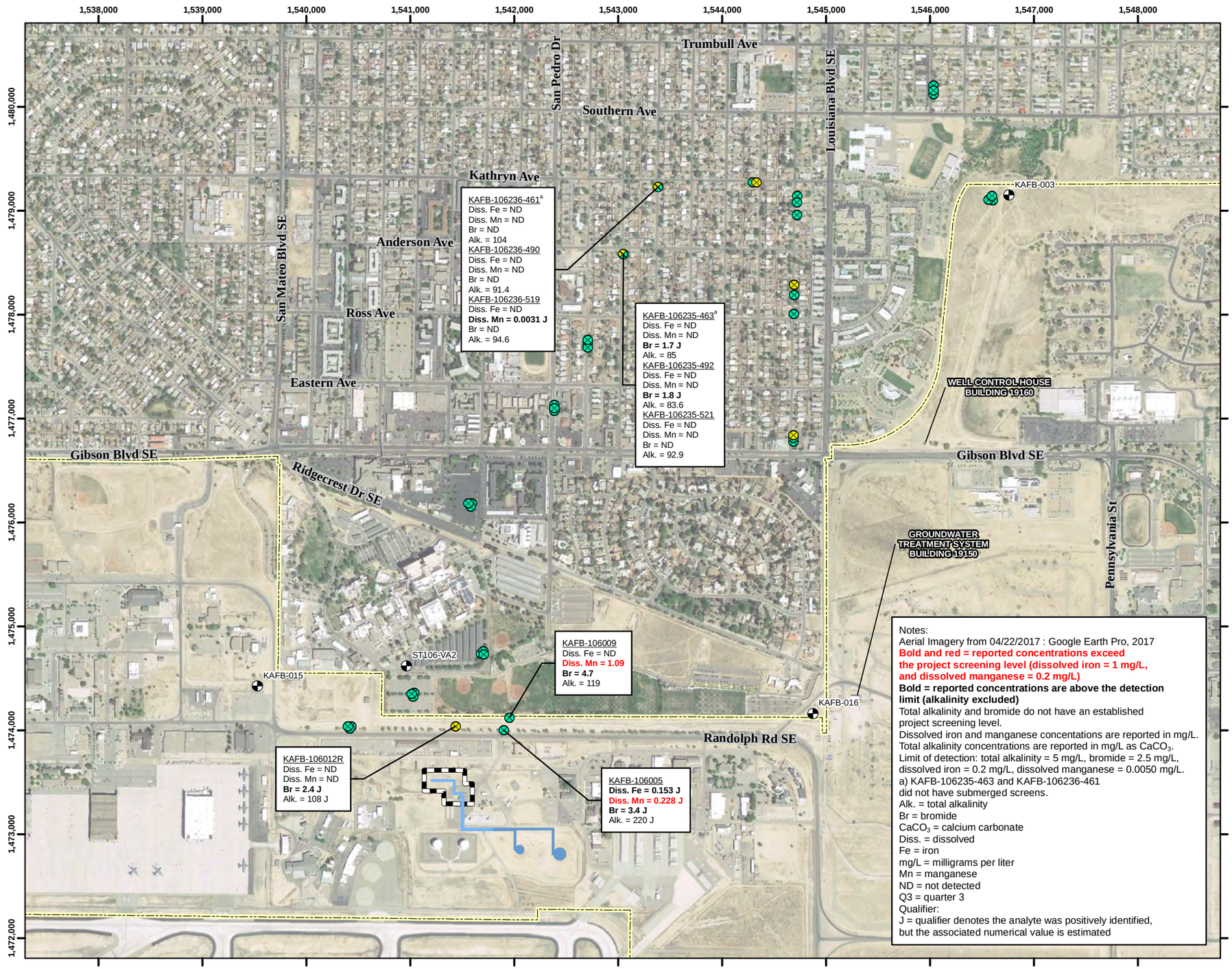
FIGURE 3-7

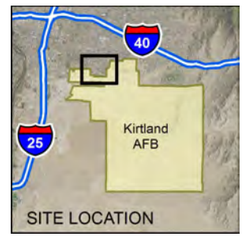
NITRATE/NITRITE NITROGEN, CHLORIDE, AND SULFATE CONCENTRATIONS
Q3 2017

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\3-7 N_SO4_Cl Q3 2017.mxd 10/13/2017 EA eomalia




## Legend

- Q3 Groundwater Monitoring Well (Screen Submerged)
- Q3 Groundwater Monitoring Well (Screen Not Submerged)
- Nested Monitoring Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Source Area




Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
**Bold and red = reported concentrations exceed the project screening level (dissolved iron = 1 mg/L, and dissolved manganese = 0.2 mg/L)**
**Bold = reported concentrations are above the detection limit (alkalinity excluded)**
Total alkalinity and bromide do not have an established project screening level.
Dissolved iron and manganese concentations are reported in mg/L.
Total alkalinity concentrations are reported in mg/L as $CaCO_3$.
Limit of detection: total alkalinity = 5 mg/L, bromide = 2.5 mg/L, dissolved iron = 0.2 mg/L, dissolved manganese = 0.0050 mg/L.
a) KAFB-106235-463 and KAFB-106236-461 did not have submerged screens.
Alk. = total alkalinity
Br = bromide
$CaCO_3$ = calcium carbonate
Diss. = dissolved
Fe = iron
mg/L = milligrams per liter
Mn = manganese
ND = not detected
Q3 = quarter 3
Qualifier:
J = qualifier denotes the analyte was positively identified, but the associated numerical value is estimated

N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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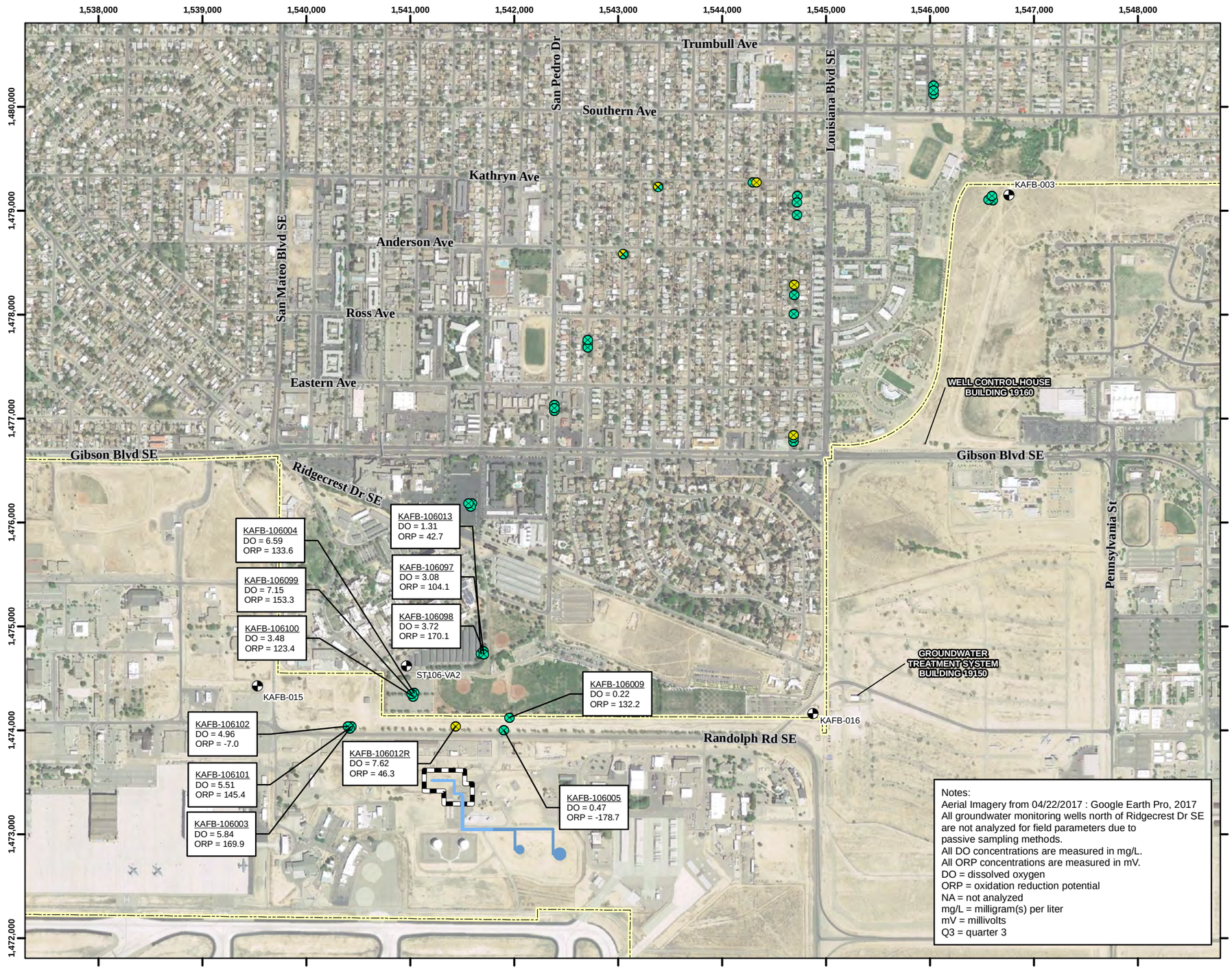
FIGURE 3-8

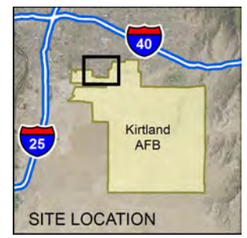
TOTAL ALKALINITY AS CALCIUM CARBONATE, BROMIDE, AND DISSOLVED IRON AND MANGANESE CONCENTRATIONS, Q3 2017

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\3-8 Fe_Mn_B_Alk Q3 2017.mxd 10/13/2017 EA eomalia




## Legend

- Q3 Groundwater Monitoring Well (Screen Submerged)
- Q3 Groundwater Monitoring Well (Screen Not Submerged)
- Nested Monitoring Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Source Area




N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
All groundwater monitoring wells north of Ridgecrest Dr SE are not analyzed for field parameters due to passive sampling methods.
All DO concentrations are measured in mg/L.
All ORP concentrations are measured in mV.
DO = dissolved oxygen
ORP = oxidation reduction potential
NA = not analyzed
mg/L = milligram(s) per liter
mV = millivolts
Q3 = quarter 3

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FIGURE 3-9

DISSOLVED OXYGEN CONCENTRATIONS AND OXIDATION REDUCTION POTENTIAL, Q3 2017

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\3-9 DO_ORP Q3 2017.mxd 10/13/2017 EA eomalia

1,538,000 1,539,000 1,540,000 1,541,000 1,542,000 1,543,000 1,544,000 1,545,000 1,546,000 1,547,000 1,548,000

1,480,000 1,479,000 1,478,000 1,477,000 1,476,000 1,475,000 1,474,000 1,473,000 1,472,000

Trumbull Ave
San Pedro Dr
Southern Ave
Louisiana Blvd SE
Kathryn Ave
San Mateo Blvd SE
Anderson Ave
Ross Ave
Eastern Ave
Gibson Blvd SE
Ridgecrest Dr SE
Randolph Rd SE
Pennsylvania St

KAFB-106209
KAFB-106208
KAFB-106207
KAFB-106231
KAFB-106235
KAFB-106232
KAFB-106206
KAFB-106205
KAFB-106204
KAFB-106203
KAFB-106201
KAFB-106202
KAFB-106236
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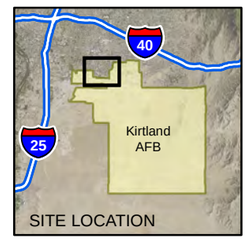
KAFB-106031
KAFB-106216
KAFB-106217
KAFB-106218
KAFB-106032
KAFB-106033
KAFB-106034
KAFB-106013
KAFB-106097
KAFB-106098
KAFB-106004
KAFB-106099
KAFB-106100
KAFB-106003
KAFB-106101
KAFB-106102
KAFB-106009
KAFB-106012R
KAFB-106005

WELL CONTROL HOUSE BUILDING 19160
GROUNDWATER TREATMENT SYSTEM BUILDING 19150

Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
EDB plume model generated with C-Tech MVS Premier Version 9.94.
US EPA MCL = United States Environmental Protection Agency maximum contaminant level
EDB = ethylene dibromide
µg/L = micrograms per liter
Q3 = quarter 3
Q2 = quarter 2

## Legend

- Groundwater Monitoring Well Sampled with Passive Tethers
- Groundwater Monitoring Well Sampled using Portable Bennett Pump in Q3 2017
- Groundwater Monitoring Well Not Sampled in Q3 2017
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- EDB Plume, Q2 2017 >0.05 µg/L (EPA MCL)
- Source Area




N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

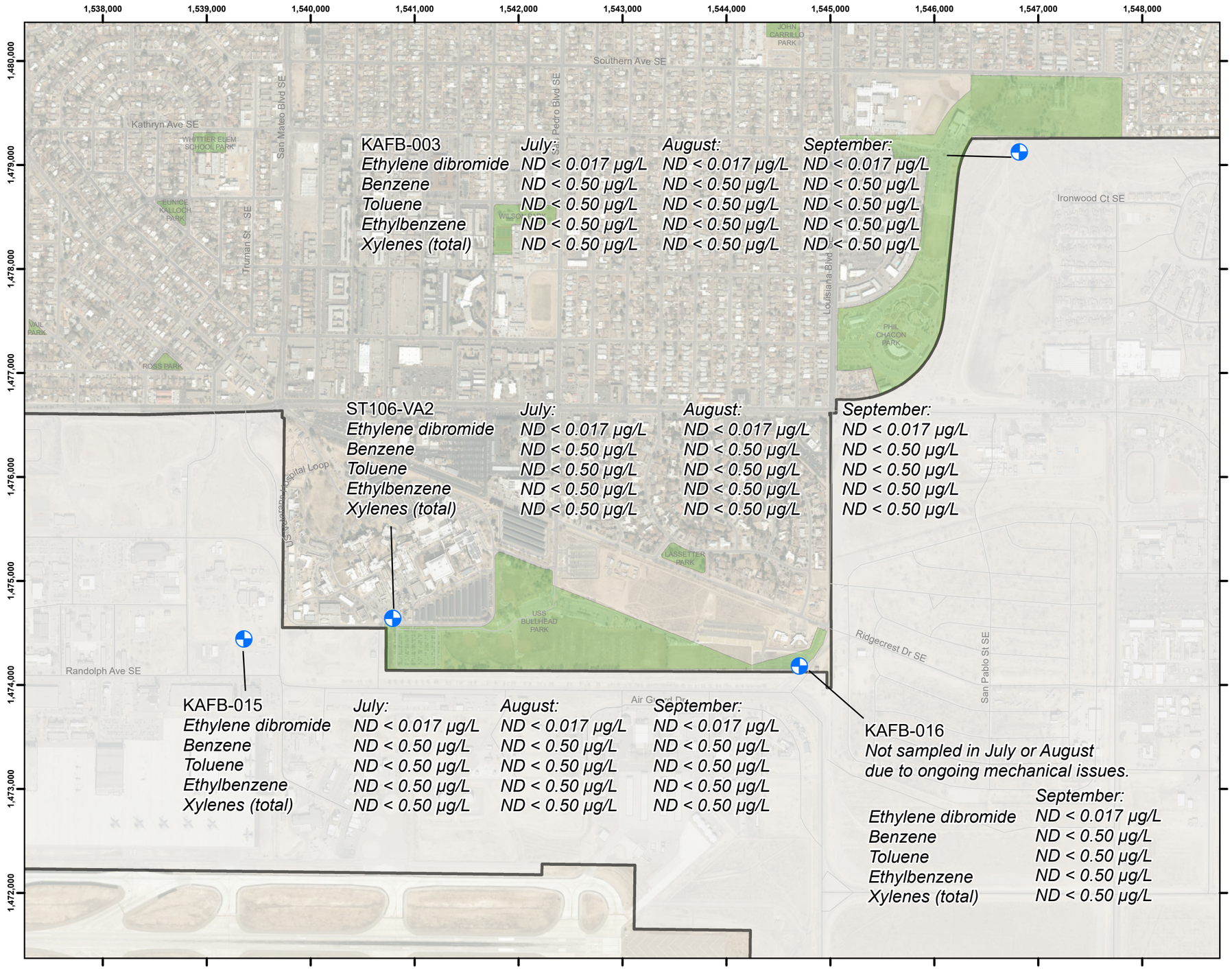
Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

QUARTERLY REPORT, JULY - SEPTEMBER 2017
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNIT ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-10

GROUNDWATER MONITORING WELLS EQUIPPED WITH PASSIVE SAMPLERS, Q3 2017

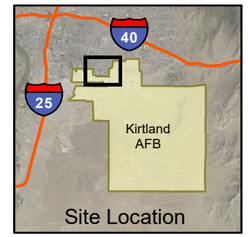
P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\3-10 Passive Sampling Wells Q3.mxd 10/20/2017 EA eomalia




## Legend

- Kirtland Air Force Base (KAFB) Installation Area
- City of Albuquerque Parks
- Roads
- Drinking Water Supply Well Locations

**Acronyms:**
AFB = Air Force Base
BTEX = benzene, toluene, ethylbenzene, and xylene
EDB = ethylene dibromide
ND = nondetect
Q = quarter
µg/L = microgram per Liter




Imagery Source: National Agricultural Imagery Program June 2014

Revision Date: 9/27/2017

N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet
Data Source: ESRI basemap

QUARTERLY REPORT
JULY-SEPTEMBER 2017
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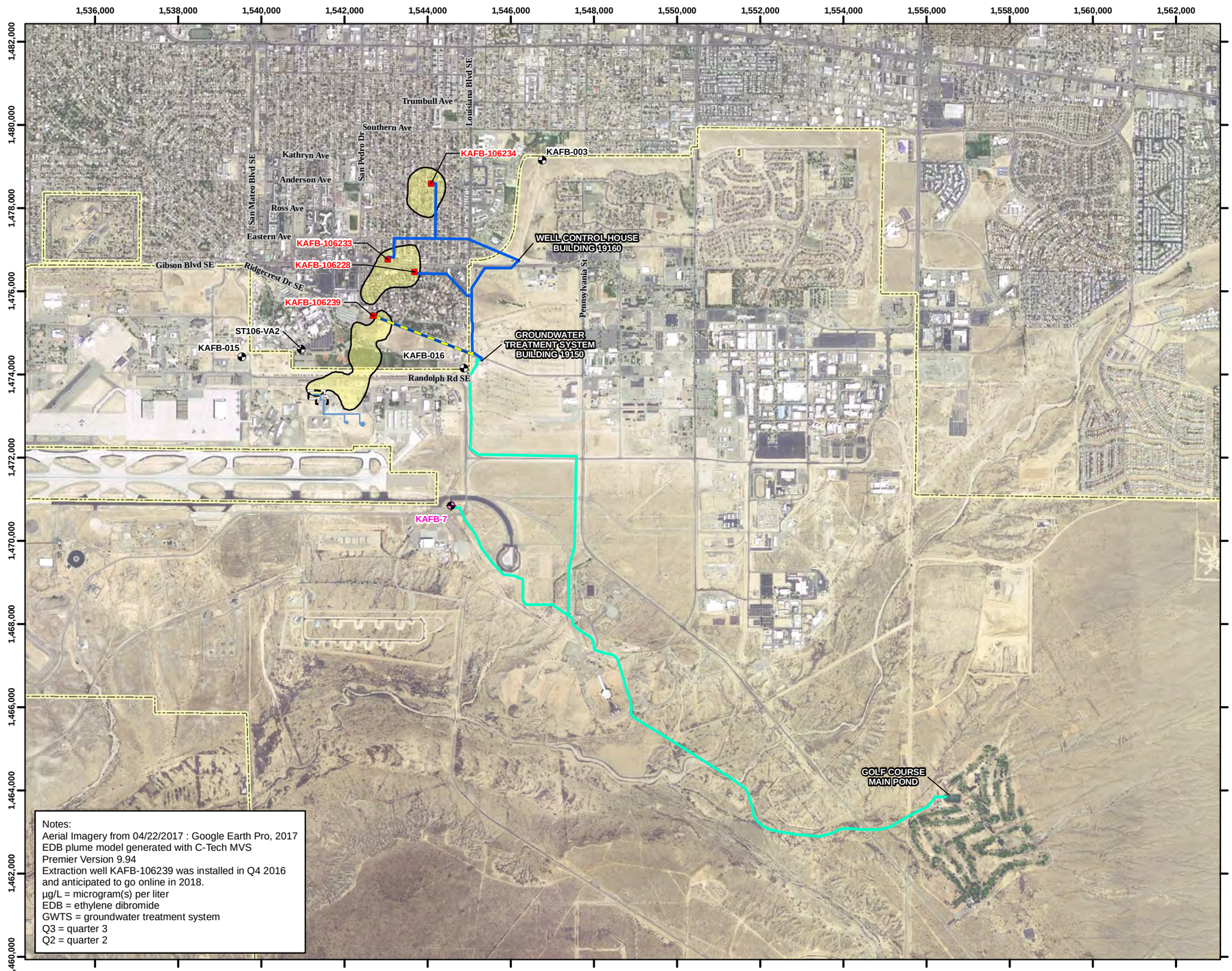
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-1

EDB AND BTEX RESULTS IN DRINKING WATER SUPPLY WELLS, Q3 2017

Document Path: N:\Kirtland\GIS\GIS_Projects\Q3_2017\04-1_EDB_BTEX_DrinkingWaterSupply_Q3_2017.v1_LB.mxd




Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
EDB plume model generated with C-Tech MVS Premier Version 9.94
Extraction well KAFB-106239 was installed in Q4 2016 and anticipated to go online in 2018.
µg/L = microgram(s) per liter
EDB = ethylene dibromide
GWTS = groundwater treatment system
Q3 = quarter 3
Q2 = quarter 2

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q3\Report Figures\5-1 Groundwater Extraction and Treatment System.mxd 10/20/2017 EA eomalia

## Legend

- Extraction Well
- Injection Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Fuel Transfer Line
- GWTS Expansion Influent Piping
- GWTS Influent Piping
- GWTS Effluent Piping
- Installation Boundary
- EDB Plume Q2 2017 (> 0.05 µg/L)
- Source Area




N

0 1,250 2,500 5,000

Feet

1 inch = 2,500 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

QUARTERLY REPORT, JULY - SEPTEMBER 2017
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNIT ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-1

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM LOCATION

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# TABLES

## Table 3-1
## Groundwater Monitoring Program

| Well ID | 1st Quarter (January-March) | 2nd Quarter – Semiannual (April-June) | 3rd Quarter (July-September) | 4th Quarter – Annual (October-December) |
|---|---|---|---|---|
| **GROUNDWATER MONITORING WELLS[a]** | | | | |
| KAFB-3411 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106001 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106002 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106007 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106015 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106016 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106019 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106020 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106021 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106022 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106023 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106024 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106025 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106026[c] | -- | -- | -- | -- |
| KAFB-106027 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106035 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106036 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106037 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106039 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106040 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106042 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106043 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106044 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106045 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106046 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106047 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106048 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106052 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106053 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106054 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106055 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106057 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106058 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106070 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106071 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106072 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |

**Table 3-1**
**Groundwater Monitoring Program**

| Well ID | 1st Quarter (January-March) | 2nd Quarter – Semiannual (April-June) | 3rd Quarter (July-September) | 4th Quarter – Annual (October-December) |
|---|---|---|---|---|
| **GROUNDWATER MONITORING WELLS[a] (continued)** | | | | |
| KAFB-106073 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106074 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106075 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106082 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106083 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106084 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106085 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106086 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106087 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106088 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106089 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106090 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106091 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106092 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106093 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106094 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106095 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106096 | None | EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106103 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106104 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106105 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106106 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106107 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106212 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106213 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106214 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106215 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106219 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106220 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106221 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106225 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106226 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106227 | None | EDB, metals, anions, alkalinity | None | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106230[c] | -- | -- | -- | -- |
| **NEWLY INSTALLED WELLS[a]** | | | | |
| KAFB-106235-463[b,d] | EDB, metals anions, alkalinity | EDB, metals anions, alkalinity | EDB, metals, anions, alkalinity | EDB, VOCs, metals, anions, alkalinity |

**Table 3-1**
**Groundwater Monitoring Program**

| Well ID | 1st Quarter (January-March) | 2nd Quarter – Semiannual (April-June) | 3rd Quarter (July-September) | 4th Quarter – Annual (October-December) |
|---|---|---|---|---|
| **NEWLY INSTALLED WELLS[a] (continued)** | | | | |
| KAFB-106235-492[b,d] | EDB, metals anions, alkalinity | EDB, metals anions, alkalinity | EDB, metals, anions, alkalinity | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106235-521[b,d] | EDB, metals anions, alkalinity | EDB, metals anions, alkalinity | EDB, metals, anions, alkalinity | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106236-461[b,d] | EDB, metals anions, alkalinity | EDB, metals anions, alkalinity | EDB, metals, anions, alkalinity | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106236-490[b,d] | EDB, metals anions, alkalinity | EDB, metals anions, alkalinity | EDB, metals, anions, alkalinity | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106236-519[b,d] | EDB, metals anions, alkalinity | EDB, metals anions, alkalinity | EDB, metals, anions, alkalinity | EDB, VOCs, metals, anions, alkalinity |
| **VA PROXIMAL WELLS[a]** | | | | |
| KAFB-106003 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106004 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106013 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106097 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106098 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106099 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106100 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106101 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106102 | BTEX, EDB, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| **DOWNGRADIENT PROXIMAL WELLS[a]** | | | | |
| KAFB-106029[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106030[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106031[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106032[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106033[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106034[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106049[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106050[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106051[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106201[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106202[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106203[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106204[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106205[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106206[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106207[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106208[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106209[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106216[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106217[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106218[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106222[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |

**Table 3-1**
**Groundwater Monitoring Program**

| Well ID | 1st Quarter (January-March) | 2nd Quarter – Semiannual (April-June) | 3rd Quarter (July-September) | 4th Quarter – Annual (October-December) |
|---|---|---|---|---|
| **DOWNGRADIENT PROXIMAL WELLS[a] (continued)** | | | | |
| KAFB-106223[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106224[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106231[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| KAFB-106232[b] | EDB | EDB, metals, anions, alkalinity | EDB | EDB, VOCs, metals, anions, alkalinity |
| **SOURCE AREA WELLS[a]** | | | | |
| KAFB-106005 | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, metals, anions, alkalinity, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106006 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106008 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106009 | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, metals, anions, alkalinity, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106010 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106011 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106012R | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, metals, anions, alkalinity, FP | BTEX, EDB, metals, anions, alkalinity, FP | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106014 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106028 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106059 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106060 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106061 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106062 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106063 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106064 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106065 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106066 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106067 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106068 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106069 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106076 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106077 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106078 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106079 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106080 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106081 | None | BTEX, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| **SIGNAL WELLS[a]** | | | | |
| KAFB-106017 | None | BTEX, naphthalene, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106018 | None | BTEX, naphthalene, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |
| KAFB-106038 | None | BTEX, naphthalene, EDB, metals, anions, alkalinity, FP | None | EDB, VOCs, metals, anions, alkalinity, FP |

## Table 3-1
## Groundwater Monitoring Program

[a] The groundwater monitoring network consists of all 140 wells (138 wells sampled) that are currently sampled under Solid Waste Management Unit ST106/SS-111 and also includes all source area wells, proximal wells, newly installed wells, and signal wells. Select wells are identified for additional or more frequent monitoring of risk-driving constituents. Metals analysis consists of select total metals (arsenic, calcium, lead, potassium, magnesium, and sodium) and select dissolved metals (iron and manganese). Anions analysis consists of bromide, chloride, nitrate/nitrite nitrogen, and sulfate. FPs include pH, specific conductivity, dissolved oxygen, oxidation reduction potential, temperature, and turbidity.

[b] Well sampled with passive technology; FP measurements are not representative and, therefore, were not collected.

[c] Well no longer sampled due to safety concerns.

[d] Newly installed groundwater monitoring well that was installed in 2016; this well will be sampled for a minimum of four consecutive quarters for full suite parameters, as indicated.

AFB = Air Force Base
BFF = Bulk Fuels Facility
BTEX = benzene, toluene, ethylbenzene, and total xylenes
EDB = ethylene dibromide
FP = field parameter
ID = identification
SWMU = solid waste management unit
VOC = volatile organic compound

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**Table 3-2**
**Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q3 2017**

| Well Location ID | Reference Elevation Interval (ft AMSL) | Date of Measurement | MRP Elevation (ft AMSL) | Depth to LNAPL (ft MRP) | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | LNAPL Elevation (ft AMSL) | Groundwater Elevation Corrected for LNAPL Thickness[a] (ft AMSL) |
|---|---|---|---|---|---|---|---|---|
| KAFB-106001 [b] | 4857/4838 | 7/20/2017 | 5344.897 | - | 473.22 | - | - | 4871.68 |
| KAFB-106002 | 4857 | 7/17/2017 | 5342.244 | - | 470.02 | - | - | 4872.22 |
| KAFB-106003 | 4857 | 7/18/2017 | 5340.276 | - | 468.09 | - | - | 4872.19 |
| KAFB-106004 | 4857 | 7/20/2017 | 5345.806 | - | 474.11 | - | - | 4871.70 |
| KAFB-106005 | 4857 | 7/18/2017 | 5346.909 | - | 475.11 | - | - | 4871.80 |
| KAFB-106006 | 4857 | 7/20/2017 | 5351.479 | - | 479.89 | - | - | 4871.59 |
| KAFB-106007 | 4857 | 7/20/2017 | 5349.601 | - | 478.05 | - | - | 4871.55 |
| KAFB-106008 | 4857 | 7/20/2017 | 5351.765 | - | 480.12 | - | - | 4871.65 |
| KAFB-106009 | 4857 | 7/19/2017 | 5348.545 | - | 476.63 | - | - | 4871.92 |
| KAFB-106010 | 4857 | 7/19/2017 | 5343.255 | - | 471.86 | - | - | 4871.40 |
| KAFB-106011 | 4857 | 7/17/2017 | 5353.150 | - | 481.42 | - | - | 4871.73 |
| KAFB-106012R | 4857 | 7/17/2017 | 5344.998 | - | 473.20 | - | - | 4871.80 |
| KAFB-106013 | 4857 | 7/20/2017 | 5350.619 | - | 479.12 | - | - | 4871.50 |
| KAFB-106014 | 4857 | 7/17/2017 | 5350.219 | - | 478.41 | - | - | 4871.81 |
| KAFB-106015 [b] | 4857/4838 | 7/20/2017 | 5342.437 | - | 471.54 | - | - | 4870.90 |
| KAFB-106016 | 4857 | 7/20/2017 | 5342.425 | - | 470.61 | - | - | 4871.82 |
| KAFB-106017 [b] | 4857/4838 | 7/19/2017 | 5342.516 | - | 471.38 | - | - | 4871.14 |
| KAFB-106018 [b] | 4857/4838 | 7/20/2017 | 5336.310 | - | 464.87 | - | - | 4871.44 |
| KAFB-106019 [b] | 4857/4838 | 7/19/2017 | 5354.615 | - | 483.48 | - | - | 4871.14 |
| KAFB-106020 | 4857 | 7/20/2017 | 5341.045 | - | 469.39 | - | - | 4871.66 |
| KAFB-106021 [b] | 4857/4838 | 7/18/2017 | 5314.327 | - | 442.90 | - | - | 4871.43 |
| KAFB-106022 [b] | 4857/4838 | 7/18/2017 | 5318.063 | - | 447.18 | - | - | 4870.88 |
| KAFB-106023 | 4857 | 7/19/2017 | 5328.758 | - | 457.51 | - | - | 4871.25 |
| KAFB-106024 | 4857 | 7/20/2017 | 5343.547 | - | 471.92 | - | - | 4871.63 |
| KAFB-106025 [b] | 4857/4838 | 7/17/2017 | 5317.284 | - | 445.85 | - | - | 4871.43 |
| KAFB-106027 | 4857 | 7/18/2017 | 5348.617 | - | 476.75 | - | - | 4871.87 |
| KAFB-106028 | 4857 | 7/19/2017 | 5348.894 | - | 477.49 | - | - | 4871.40 |
| KAFB-106029 | 4857 | 7/18/2017 | 5310.936 | - | 439.30 | - | - | 4871.64 |
| KAFB-106030 | 4838 | 7/18/2017 | 5311.026 | - | 439.39 | - | - | 4871.64 |
| KAFB-106031 | 4814 | 7/18/2017 | 5311.060 | - | 439.43 | - | - | 4871.63 |
| KAFB-106032 | 4857 | 7/19/2017 | 5317.603 | - | 445.76 | - | - | 4871.84 |
| KAFB-106033 | 4838 | 7/19/2017 | 5317.757 | - | 445.93 | - | - | 4871.83 |
| KAFB-106034 | 4814 | 7/19/2017 | 5318.627 | - | 446.79 | - | - | 4871.84 |
| KAFB-106035 | 4857 | 7/18/2017 | 5321.577 | - | 451.11 | - | - | 4870.47 |
| KAFB-106036 | 4838 | 7/18/2017 | 5321.847 | - | 451.57 | - | - | 4870.28 |
| KAFB-106037 | 4838 | 7/18/2017 | 5322.103 | - | 452.24 | - | - | 4869.86 |
| KAFB-106038 | 4857 | 7/19/2017 | 5351.610 | - | 480.46 | - | - | 4871.15 |
| KAFB-106039 | 4838 | 7/19/2017 | 5351.324 | - | 480.27 | - | - | 4871.05 |
| KAFB-106040 | 4814 | 7/19/2017 | 5350.263 | - | 479.18 | - | - | 4871.08 |
| KAFB-106042 | 4857 | 7/17/2017 | 5324.069 | - | 452.61 | - | - | 4871.46 |

**Table 3-2**
**Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q3 2017**

| Well Location ID | Reference Elevation Interval (ft AMSL) | Date of Measurement | MRP Elevation (ft AMSL) | Depth to LNAPL (ft MRP) | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | LNAPL Elevation (ft AMSL) | Groundwater Elevation Corrected for LNAPL Thickness[a] (ft AMSL) |
|---|---|---|---|---|---|---|---|---|
| KAFB-106043 | 4814 | 7/17/2017 | 5324.295 | - | 452.85 | - | - | 4871.45 |
| KAFB-106044 | 4838 | 7/18/2017 | 5348.793 | - | 476.84 | - | - | 4871.95 |
| KAFB-106045 | 4814 | 7/18/2017 | 5348.517 | - | 476.56 | - | - | 4871.96 |
| KAFB-106046 | 4857 | 7/20/2017 | 5352.839 | - | 481.34 | - | - | 4871.50 |
| KAFB-106047 | 4838 | 7/20/2017 | 5352.809 | - | 481.45 | - | - | 4871.36 |
| KAFB-106048 | 4814 | 7/20/2017 | 5352.575 | - | 481.14 | - | - | 4871.44 |
| KAFB-106049 | 4857 | 7/17/2017 | 5316.101 | - | 444.35 | - | - | 4871.75 |
| KAFB-106050 | 4838 | 7/17/2017 | 5315.510 | - | 443.74 | - | - | 4871.77 |
| KAFB-106051 | 4814 | 7/17/2017 | 5315.775 | - | 444.05 | - | - | 4871.73 |
| KAFB-106052 | 4857 | 7/17/2017 | 5318.857 | - | 447.44 | - | - | 4871.42 |
| KAFB-106053 | 4838 | 7/17/2017 | 5318.673 | - | 447.35 | - | - | 4871.32 |
| KAFB-106054 | 4814 | 7/17/2017 | 5318.383 | - | 446.94 | - | - | 4871.44 |
| KAFB-106055 | 4857 | 7/18/2017 | 5325.089 | - | 453.90 | - | - | 4871.19 |
| KAFB-106057 | 4838 | 7/18/2017 | 5325.460 | - | 454.27 | - | - | 4871.19 |
| KAFB-106058 | 4814 | 7/18/2017 | 5326.047 | - | 454.83 | - | - | 4871.22 |
| KAFB-106059 | 4857 | 7/20/2017 | 5347.873 | - | 476.27 | - | - | 4871.60 |
| KAFB-106060 | 4838 | 7/20/2017 | 5345.316 | - | 473.84 | - | - | 4871.48 |
| KAFB-106061 | 4814 | 7/20/2017 | 5345.434 | - | 473.81 | - | - | 4871.62 |
| KAFB-106062 | 4814 | 7/21/2017 | 5351.199 | - | 479.60 | - | - | 4871.60 |
| KAFB-106063 [c] | 4838 | - | 5351.858 | - | - | - | - | - |
| KAFB-106064 [c] | 4857 | - | 5351.077 | - | - | - | - | - |
| KAFB-106065 | 4838 | 7/19/2017 | 5348.757 | - | 477.44 | - | - | 4871.32 |
| KAFB-106066 | 4814 | 7/19/2017 | 5349.088 | - | 477.75 | - | - | 4871.34 |
| KAFB-106067 | 4857 | 7/19/2017 | 5347.497 | - | 476.34 | - | - | 4871.16 |
| KAFB-106068 | 4814 | 7/19/2017 | 5347.229 | - | 476.26 | - | - | 4870.97 |
| KAFB-106069 | 4838 | 7/19/2017 | 5347.249 | - | 475.96 | - | - | 4871.29 |
| KAFB-106070 | 4857 | 7/18/2017 | 5318.538 | - | 447.38 | - | - | 4871.16 |
| KAFB-106071 | 4814 | 7/19/2017 | 5320.898 | - | 449.62 | - | - | 4871.28 |
| KAFB-106072 | 4838 | 7/19/2017 | 5319.293 | - | 447.89 | - | - | 4871.40 |
| KAFB-106073 | 4838 | 7/20/2017 | 5339.871 | - | 468.23 | - | - | 4871.64 |
| KAFB-106074 | 4814 | 7/20/2017 | 5340.587 | - | 468.97 | - | - | 4871.62 |
| KAFB-106075 | 4857 | 7/21/2017 | 5340.499 | - | 468.84 | - | - | 4871.66 |
| KAFB-106076 | 4857 | 7/20/2017 | 5344.923 | - | 473.52 | - | - | 4871.40 |
| KAFB-106077 | 4838 | 7/20/2017 | 5344.721 | - | 474.62 | - | - | 4870.10 |
| KAFB-106078 | 4814 | 7/20/2017 | 5344.599 | - | 473.79 | - | - | 4870.81 |
| KAFB-106079 | 4857 | 7/17/2017 | 5349.668 | - | 478.02 | - | - | 4871.65 |
| KAFB-106080 | 4838 | 7/17/2017 | 5348.483 | - | 476.66 | - | - | 4871.82 |
| KAFB-106081 | 4814 | 7/20/2017 | 5349.479 | - | 477.84 | - | - | 4871.64 |
| KAFB-106082 | 4857 | 7/20/2017 | 5335.263 | - | 463.89 | - | - | 4871.37 |
| KAFB-106083 | 4838 | 7/20/2017 | 5335.037 | - | 463.60 | - | - | 4871.44 |
| KAFB-106084 | 4814 | 7/20/2017 | 5337.936 | - | 466.47 | - | - | 4871.47 |
| KAFB-106085 | 4857 | 7/20/2017 | 5317.233 | - | 445.86 | - | - | 4871.37 |

**Table 3-2**
**Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q3 2017**

| Well Location ID | Reference Elevation Interval (ft AMSL) | Date of Measurement | MRP Elevation (ft AMSL) | Depth to LNAPL (ft MRP) | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | LNAPL Elevation (ft AMSL) | Groundwater Elevation Corrected for LNAPL Thickness[a] (ft AMSL) |
|---|---|---|---|---|---|---|---|---|
| KAFB-106086 | 4838 | 7/20/2017 | 5317.646 | - | 446.25 | - | - | 4871.40 |
| KAFB-106087 | 4814 | 7/20/2017 | 5316.872 | - | 445.49 | - | - | 4871.38 |
| KAFB-106088 | 4857 | 7/19/2017 | 5324.274 | - | 453.15 | - | - | 4871.12 |
| KAFB-106089 | 4838 | 7/19/2017 | 5323.537 | - | 452.85 | - | - | 4870.69 |
| KAFB-106090 | 4814 | 7/19/2017 | 5322.846 | - | 451.69 | - | - | 4871.16 |
| KAFB-106091 | 4857 | 7/17/2017 | 5314.330 | - | 443.92 | - | - | 4870.41 |
| KAFB-106092 | 4838 | 7/17/2017 | 5314.509 | - | 444.30 | - | - | 4870.21 |
| KAFB-106093 | 4814 | 7/17/2017 | 5314.624 | - | 443.69 | - | - | 4870.93 |
| KAFB-106094 | 4857 | 7/19/2017 | 5345.069 | - | 473.64 | - | - | 4871.43 |
| KAFB-106095 | 4838 | 7/19/2017 | 5344.657 | - | 473.21 | - | - | 4871.45 |
| KAFB-106096 | 4814 | 7/19/2017 | 5345.306 | - | 473.85 | - | - | 4871.46 |
| KAFB-106097 | 4838 | 7/19/2017 | 5347.741 | - | 476.03 | - | - | 4871.71 |
| KAFB-106098 | 4814 | 7/19/2017 | 5347.825 | - | 476.17 | - | - | 4871.66 |
| KAFB-106099 | 4838 | 7/20/2017 | 5342.854 | - | 471.02 | - | - | 4871.83 |
| KAFB-106100 | 4814 | 7/20/2017 | 5342.852 | - | 471.07 | - | - | 4871.78 |
| KAFB-106101 | 4838 | 7/18/2017 | 5340.320 | - | 468.30 | - | - | 4872.02 |
| KAFB-106102 | 4814 | 7/18/2017 | 5340.323 | - | 468.41 | - | - | 4871.91 |
| KAFB-106103 | 4838 | 7/19/2017 | 5328.443 | - | 457.78 | - | - | 4870.66 |
| KAFB-106104 | 4814 | 7/19/2017 | 5328.075 | - | 457.21 | - | - | 4870.87 |
| KAFB-106105 | 4838 | 7/17/2017 | 5321.961 | - | 450.63 | - | - | 4871.33 |
| KAFB-106106 | 4857 | 7/17/2017 | 5321.799 | - | 450.51 | - | - | 4871.29 |
| KAFB-106107 | 4814 | 7/17/2017 | 5322.117 | - | 450.74 | - | - | 4871.38 |
| KAFB-106201 | 4857 | 7/20/2017 | 5356.997 | - | 487.28 | - | - | 4869.72 |
| KAFB-106202 | 4838 | 7/20/2017 | 5357.796 | - | 488.30 | - | - | 4869.50 |
| KAFB-106203 | 4814 | 7/20/2017 | 5357.518 | - | 486.70 | - | - | 4870.82 |
| KAFB-106204 | 4857 | 7/17/2017 | 5332.857 | - | 461.21 | - | - | 4871.65 |
| KAFB-106205 | 4838 | 7/17/2017 | 5333.291 | - | 461.61 | - | - | 4871.68 |
| KAFB-106206 | 4814 | 7/17/2017 | 5333.462 | - | 461.77 | - | - | 4871.69 |
| KAFB-106207 | 4857 | 7/18/2017 | 5344.195 | - | 472.91 | - | - | 4871.29 |
| KAFB-106208 | 4838 | 7/18/2017 | 5343.851 | - | 472.66 | - | - | 4871.19 |
| KAFB-106209 | 4814 | 7/18/2017 | 5343.376 | - | 472.14 | - | - | 4871.24 |
| KAFB-106212 | 4814 | 7/18/2017 | 5321.799 | - | 451.75 | - | - | 4870.05 |
| KAFB-106213 | 4857 | 7/18/2017 | 5325.191 | - | 454.43 | - | - | 4870.76 |
| KAFB-106214 | 4838 | 7/18/2017 | 5325.451 | - | 454.61 | - | - | 4870.84 |
| KAFB-106215 | 4814 | 7/18/2017 | 5325.771 | - | 454.81 | - | - | 4870.96 |
| KAFB-106216 | 4857 | 7/17/2017 | 5333.911 | - | 462.76 | - | - | 4871.15 |
| KAFB-106217 | 4838 | 7/17/2017 | 5333.845 | - | 462.66 | - | - | 4871.19 |
| KAFB-106218 | 4814 | 7/17/2017 | 5333.637 | - | 462.86 | - | - | 4870.78 |
| KAFB-106219 | 4857 | 7/20/2017 | 5340.410 | - | 469.20 | - | - | 4871.21 |

**Table 3-2**
**Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q3 2017**

| Well Location ID | Reference Elevation Interval (ft AMSL) | Date of Measurement | MRP Elevation (ft AMSL) | Depth to LNAPL (ft MRP) | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | LNAPL Elevation (ft AMSL) | Groundwater Elevation Corrected for LNAPL Thickness[a] (ft AMSL) |
|---|---|---|---|---|---|---|---|---|
| KAFB-106220 | 4838 | 7/18/2017 | 5340.342 | - | 469.15 | - | - | 4871.19 |
| KAFB-106221 | 4814 | 7/18/2017 | 5340.097 | - | 468.93 | - | - | 4871.17 |
| KAFB-106222 | 4857 | 7/17/2017 | 5333.24 | - | 461.92 | - | - | 4871.32 |
| KAFB-106223 | 4838 | 7/17/2017 | 5333.957 | - | 462.59 | - | - | 4871.37 |
| KAFB-106224 | 4814 | 7/17/2017 | 5335.076 | - | 463.74 | - | - | 4871.34 |
| KAFB-106225 | 4857 | 7/17/2017 | 5326.357 | - | 455.26 | - | - | 4871.10 |
| KAFB-106226 | 4838 | 7/17/2017 | 5327.309 | - | 455.92 | - | - | 4871.39 |
| KAFB-106227 | 4814 | 7/17/2017 | 5328.087 | - | 456.65 | - | - | 4871.44 |
| KAFB-106231 | 4857 | 7/18/2017 | 5327.563 | - | 455.89 | - | - | 4871.67 |
| KAFB-106232 | 4814 | 7/18/2017 | 5327.197 | - | 455.45 | - | - | 4871.75 |
| KAFB-106235-463 | 4857 | 7/24/2017 | 5315.510 | - | 444.45 | - | - | 4871.06 |
| KAFB-106235-492 | 4838 | 7/24/2017 | 5315.510 | - | 444.41 | - | - | 4871.10 |
| KAFB-106235-521 | 4814 | 7/24/2017 | 5315.510 | - | 444.47 | - | - | 4871.04 |
| KAFB-106236-461 | 4857 | 7/24/2017 | 5315.700 | - | 444.22 | - | - | 4871.48 |
| KAFB-106236-490 | 4838 | 7/24/2017 | 5315.700 | - | 444.24 | - | - | 4871.46 |
| KAFB-106236-519 | 4814 | 7/24/2017 | 5315.700 | - | 444.29 | - | - | 4871.41 |
| KAFB-3411 | 4857 | 7/18/2017 | 5343.485 | - | 471.66 | - | - | 4871.83 |

**Table 3-2**
**Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q3 2017**

[a] Groundwater elevation corrected for LNAPL thickness was calculated by the following formula: MRP Elevation - Depth to LNAPL + (LNAPL Thickness * Specific Gravity of Weathered JP4/JP8 Fuel) where the specific gravity of JP4/JP8 fuel is 0.803.
[b] Well used in analyses for both REI 4857 and 4838.
[c] Well was not gauged due to presence of monitoring equipment.
AFB = Air Force Base
AMSL = above mean sea level
BFF = Bulk Fuels Facility
ft = foot/feet
ID = identification
JP = jet propellant
LNAPL = light non-aqueous phase liquid
MRP = measurement reference point
REI = reference elevation interval
SWMU = solid waste management unit

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**Table 3-3**
**Changes in Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness between Q2 2017 and Q3 2017**

| Location ID | Q2 2017 | | | | | Q3 2017 | | | | | Change Compared to the Previous Quarter Gauged | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Date of Measurement | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | Groundwater Elevation Corrected for LNAPL Thickness (ft AMSL) | Screen Submerged (Yes/No?) | Date of Measurement | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | Groundwater Elevation Corrected for LNAPL Thickness (ft AMSL) | Screen Submerged (Yes/No?) | Difference between Q2 2017 and Q3 2017 LNAPL Thickness (ft) | Difference between Q2 2017 and Q3 2017 Groundwater Elevations (ft) |
| **Reference Elevation Interval 4857 (ft AMSL) Groundwater Monitoring Wells** | | | | | | | | | | | | |
| KAFB-106001 [a] | 5/10/2017 | 472.97 | - | 4871.93 | Yes | 7/20/2017 | 473.22 | - | 4871.68 | Yes | - | -0.25 |
| KAFB-106002 | 5/10/2017 | 470.13 | - | 4872.11 | Yes | 7/17/2017 | 470.02 | - | 4872.22 | Yes | - | 0.11 |
| KAFB-106003 | 5/10/2017 | 468.20 | - | 4872.08 | Yes | 7/18/2017 | 468.09 | - | 4872.19 | Yes | - | 0.11 |
| KAFB-106004 | 5/10/2017 | 473.63 | - | 4872.18 | Yes | 7/20/2017 | 474.11 | - | 4871.70 | Yes | - | -0.48 |
| KAFB-106005 | 5/8/2017 | 474.98 | - | 4871.93 | Yes | 7/18/2017 | 475.11 | - | 4871.80 | Yes | - | -0.13 |
| KAFB-106006 | 5/10/2017 | 479.71 | - | 4871.77 | Yes | 7/20/2017 | 479.89 | - | 4871.59 | Yes | - | -0.18 |
| KAFB-106007 | 5/10/2017 | 477.86 | - | 4871.74 | Yes | 7/20/2017 | 478.05 | - | 4871.55 | Yes | - | -0.19 |
| KAFB-106008 | 5/10/2017 | 479.93 | - | 4871.84 | Yes | 7/20/2017 | 480.12 | - | 4871.65 | Yes | - | -0.19 |
| KAFB-106009 | 5/8/2017 | 476.66 | - | 4871.89 | Yes | 7/19/2017 | 476.63 | - | 4871.92 | Yes | - | 0.03 |
| KAFB-106010 | 5/9/2017 | 471.43 | - | 4871.83 | Yes | 7/19/2017 | 471.86 | - | 4871.40 | Yes | - | -0.43 |
| KAFB-106011 | 5/8/2017 | 481.47 | - | 4871.68 | Yes | 7/17/2017 | 481.42 | - | 4871.73 | Yes | - | 0.05 |
| KAFB-106012R | 5/10/2017 | 473.29 | - | 4871.71 | No | 7/17/2017 | 473.20 | - | 4871.80 | No | - | 0.09 |
| KAFB-106013 | 5/9/2017 | 478.62 | - | 4872.00 | Yes | 7/20/2017 | 479.12 | - | 4871.50 | Yes | - | -0.50 |
| KAFB-106014 | 5/8/2017 | 478.49 | - | 4871.73 | Yes | 7/17/2017 | 478.41 | - | 4871.81 | Yes | - | 0.08 |
| KAFB-106015 [a] | 5/10/2017 | 470.90 | - | 4871.54 | Yes | 7/20/2017 | 471.54 | - | 4870.90 | Yes | - | -0.64 |
| KAFB-106016 | 5/10/2017 | 470.44 | - | 4871.99 | Yes | 7/20/2017 | 470.61 | - | 4871.82 | Yes | - | -0.17 |
| KAFB-106017 [a] | 5/9/2017 | 470.83 | - | 4871.69 | Yes | 7/19/2017 | 471.38 | - | 4871.14 | Yes | - | -0.55 |
| KAFB-106018 [a] | 5/9/2017 | 464.39 | - | 4871.92 | Yes | 7/20/2017 | 464.87 | - | 4871.44 | Yes | - | -0.48 |
| KAFB-106019 [a] | 5/9/2017 | 482.97 | - | 4871.65 | Yes | 7/19/2017 | 483.48 | - | 4871.14 | Yes | - | -0.51 |
| KAFB-106020 | 5/9/2017 | 468.91 | - | 4872.14 | Yes | 7/20/2017 | 469.39 | - | 4871.66 | Yes | - | -0.48 |
| KAFB-106021 [a] | 5/8/2017 | 442.58 | - | 4871.75 | Yes | 7/18/2017 | 442.90 | - | 4871.43 | Yes | - | -0.32 |
| KAFB-106022 [a] | 5/8/2017 | 446.71 | - | 4871.35 | Yes | 7/18/2017 | 447.18 | - | 4870.88 | Yes | - | -0.47 |
| KAFB-106023 | 5/8/2017 | 457.07 | - | 4871.69 | Yes | 7/19/2017 | 457.51 | - | 4871.25 | Yes | - | -0.44 |
| KAFB-106024 | 5/10/2017 | 471.67 | - | 4871.88 | Yes | 7/20/2017 | 471.92 | - | 4871.63 | Yes | - | -0.25 |
| KAFB-106025 [a] | 5/8/2017 | 445.52 | - | 4871.76 | Yes | 7/17/2017 | 445.85 | - | 4871.43 | Yes | - | -0.33 |
| KAFB-106027 | 5/8/2017 | 476.85 | - | 4871.77 | Yes | 7/18/2017 | 476.75 | - | 4871.87 | Yes | - | 0.10 |
| KAFB-106028 | 5/9/2017 | 477.11 | - | 4871.78 | Yes | 7/19/2017 | 477.49 | - | 4871.40 | Yes | - | -0.38 |
| KAFB-106029 | 5/8/2017 | 438.92 | - | 4872.02 | Yes | 7/18/2017 | 439.30 | - | 4871.64 | Yes | - | -0.38 |
| KAFB-106032 | 5/9/2017 | 445.40 | - | 4872.20 | Yes | 7/19/2017 | 445.76 | - | 4871.84 | Yes | - | -0.36 |
| KAFB-106035 | 5/10/2017 | 450.68 | - | 4870.90 | Yes | 7/18/2017 | 451.11 | - | 4870.47 | Yes | - | -0.43 |
| KAFB-106038 | 5/9/2017 | 479.90 | - | 4871.71 | Yes | 7/19/2017 | 480.46 | - | 4871.15 | Yes | - | -0.56 |
| KAFB-106042 | 5/10/2017 | 452.12 | - | 4871.95 | Yes | 7/17/2017 | 452.61 | - | 4871.46 | Yes | - | -0.49 |
| KAFB-106046 | 5/10/2017 | 481.13 | - | 4871.71 | Yes | 7/20/2017 | 481.34 | - | 4871.50 | Yes | - | -0.21 |
| KAFB-106049 | 5/8/2017 | 443.98 | - | 4872.12 | Yes | 7/17/2017 | 444.35 | - | 4871.75 | Yes | - | -0.37 |
| KAFB-106052 | 5/8/2017 | 446.97 | - | 4871.89 | Yes | 7/17/2017 | 447.44 | - | 4871.42 | Yes | - | -0.47 |
| KAFB-106055 | 5/10/2017 | 453.40 | - | 4871.69 | Yes | 7/18/2017 | 453.90 | - | 4871.19 | Yes | - | -0.50 |

**Table 3-3**
**Changes in Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness between Q2 2017 and Q3 2017**

| Location ID | Q2 2017 | | | | | Q3 2017 | | | | | Change Compared to the Previous Quarter Gauged | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Date of Measurement | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | Groundwater Elevation Corrected for LNAPL Thickness (ft AMSL) | Screen Submerged (Yes/No?) | Date of Measurement | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | Groundwater Elevation Corrected for LNAPL Thickness (ft AMSL) | Screen Submerged (Yes/No?) | Difference between Q2 2017 and Q3 2017 LNAPL Thickness (ft) | Difference between Q2 2017 and Q3 2017 Groundwater Elevations (ft) |
| KAFB-106059 | 5/10/2017 | 476.00 | - | 4871.87 | Yes | 7/20/2017 | 476.27 | - | 4871.60 | Yes | - | -0.27 |
| KAFB-106064 [b] | 5/10/2017 | 479.43 | - | 4871.65 | Yes | - | - | - | - | - | - | - |
| KAFB-106067 | 5/10/2017 | 475.94 | - | 4871.56 | Yes | 7/19/2017 | 476.34 | - | 4871.16 | Yes | - | -0.40 |
| KAFB-106070 | 5/8/2017 | 447.01 | - | 4871.53 | Yes | 7/18/2017 | 447.38 | - | 4871.16 | Yes | - | -0.37 |
| KAFB-106075 | 5/11/2017 | 468.92 | - | 4871.58 | Yes | 7/21/2017 | 468.84 | - | 4871.66 | Yes | - | 0.08 |
| KAFB-106076 | 5/10/2017 | 473.32 | - | 4871.60 | Yes | 7/20/2017 | 473.52 | - | 4871.40 | Yes | - | -0.20 |
| KAFB-106079 | 5/8/2017 | 478.06 | - | 4871.61 | Yes | 7/17/2017 | 478.02 | - | 4871.65 | Yes | - | 0.04 |
| KAFB-106082 | 5/9/2017 | 463.43 | - | 4871.83 | Yes | 7/20/2017 | 463.89 | - | 4871.37 | Yes | - | -0.46 |
| KAFB-106085 | 5/8/2017 | 445.38 | - | 4871.85 | Yes | 7/20/2017 | 445.86 | - | 4871.37 | Yes | - | -0.48 |
| KAFB-106088 | 5/8/2017 | 452.71 | - | 4871.56 | Yes | 7/19/2017 | 453.15 | - | 4871.12 | Yes | - | -0.44 |
| KAFB-106091 | 5/10/2017 | 443.85 | - | 4870.48 | Yes | 7/17/2017 | 443.92 | - | 4870.41 | Yes | - | -0.07 |
| KAFB-106094 | 5/10/2017 | 473.20 | - | 4871.87 | Yes | 7/19/2017 | 473.64 | - | 4871.43 | Yes | - | -0.44 |
| KAFB-106106 | 5/8/2017 | 450.03 | - | 4871.77 | Yes | 7/17/2017 | 450.51 | - | 4871.29 | Yes | - | -0.48 |
| KAFB-106201 | 5/10/2017 | 485.20 | - | 4871.80 | Yes | 7/20/2017 | 487.28 | - | 4869.72 | Yes | - | -2.08 |
| KAFB-106204 | 5/9/2017 | 460.46 | - | 4872.40 | Yes | 7/17/2017 | 461.21 | - | 4871.65 | Yes | - | -0.75 |
| KAFB-106207 | 5/10/2017 | 471.49 | - | 4872.71 | Yes | 7/18/2017 | 472.91 | - | 4871.29 | Yes | - | -1.42 |
| KAFB-106213 | 5/8/2017 | 453.90 | - | 4871.29 | No | 7/18/2017 | 454.43 | - | 4870.76 | No | - | -0.53 |
| KAFB-106216 | 5/9/2017 | 462.15 | - | 4871.76 | No | 7/17/2017 | 462.76 | - | 4871.15 | No | - | -0.61 |
| KAFB-106219 | 5/8/2017 | 468.42 | - | 4871.99 | No | 7/20/2017 | 469.20 | - | 4871.21 | No | - | -0.78 |
| KAFB-106222 | 5/9/2017 | 461.19 | - | 4872.05 | No | 7/17/2017 | 461.92 | - | 4871.32 | No | - | -0.73 |
| KAFB-106225 | 5/10/2017 | 454.81 | - | 4871.55 | No | 7/17/2017 | 455.26 | - | 4871.10 | No | - | -0.45 |
| KAFB-106231 | 5/9/2017 | 455.21 | - | 4872.35 | No | 7/18/2017 | 455.89 | - | 4871.67 | No | - | -0.68 |
| KAFB-106235-463 | 5/10/2017 | 444.15 | - | 4871.36 | No | 7/24/2017 | 444.45 | - | 4871.06 | No | - | -0.30 |
| KAFB-106236-461 | 5/10/2017 | 443.88 | - | 4871.82 | No | 7/24/2017 | 444.22 | - | 4871.48 | No | - | -0.34 |
| KAFB-3411 | 5/10/2017 | 471.59 | - | 4871.90 | Yes | 7/18/2017 | 471.66 | - | 4871.83 | Yes | - | -0.07 |
| **Reference Elevation Interval 4838 (ft AMSL) Groundwater Monitoring Wells** | | | | | | | | | | | | |
| KAFB-106030 | 5/8/2017 | 439.03 | - | 4872.00 | Yes | 7/18/2017 | 439.39 | - | 4871.64 | Yes | - | -0.36 |
| KAFB-106033 | 5/9/2017 | 445.52 | - | 4872.24 | Yes | 7/19/2017 | 445.93 | - | 4871.83 | Yes | - | -0.41 |
| KAFB-106036 | 5/8/2017 | 451.06 | - | 4870.79 | Yes | 7/18/2017 | 451.57 | - | 4870.28 | Yes | - | -0.51 |
| KAFB-106037 | 5/8/2017 | 451.72 | - | 4870.38 | Yes | 7/18/2017 | 452.24 | - | 4869.86 | Yes | - | -0.52 |
| KAFB-106039 | 5/9/2017 | 479.70 | - | 4871.62 | Yes | 7/19/2017 | 480.27 | - | 4871.05 | Yes | - | -0.57 |
| KAFB-106044 | 5/8/2017 | 476.98 | - | 4871.81 | Yes | 7/18/2017 | 476.84 | - | 4871.95 | Yes | - | 0.14 |
| KAFB-106047 | 5/10/2017 | 481.21 | - | 4871.60 | Yes | 7/20/2017 | 481.45 | - | 4871.36 | Yes | - | -0.24 |
| KAFB-106050 | 5/8/2017 | 443.37 | - | 4872.14 | Yes | 7/17/2017 | 443.74 | - | 4871.77 | Yes | - | -0.37 |
| KAFB-106053 | 5/8/2017 | 446.92 | - | 4871.75 | Yes | 7/17/2017 | 447.35 | - | 4871.32 | Yes | - | -0.43 |
| KAFB-106057 | 5/10/2017 | 453.76 | - | 4871.70 | Yes | 7/18/2017 | 454.27 | - | 4871.19 | Yes | - | -0.51 |
| KAFB-106060 | 5/10/2017 | 473.56 | - | 4871.76 | Yes | 7/20/2017 | 473.84 | - | 4871.48 | Yes | - | -0.28 |
| KAFB-106063 [b] | 5/10/2017 | 480.25 | - | 4871.61 | Yes | - | - | - | - | - | - | - |
| KAFB-106065 | 5/10/2017 | 477.10 | - | 4871.66 | Yes | 7/19/2017 | 477.44 | - | 4871.32 | Yes | - | -0.34 |
| KAFB-106069 | 5/10/2017 | 475.55 | - | 4871.70 | Yes | 7/19/2017 | 475.96 | - | 4871.29 | Yes | - | -0.41 |
| KAFB-106072 | 5/8/2017 | 447.51 | - | 4871.78 | Yes | 7/19/2017 | 447.89 | - | 4871.40 | Yes | - | -0.38 |
| KAFB-106073 | 5/11/2017 | 468.19 | - | 4871.68 | Yes | 7/20/2017 | 468.23 | - | 4871.64 | Yes | - | -0.04 |
| KAFB-106077 | 5/10/2017 | 474.43 | - | 4870.29 | Yes | 7/20/2017 | 474.62 | - | 4870.10 | Yes | - | -0.19 |
| KAFB-106080 | 5/8/2017 | 476.62 | - | 4871.86 | Yes | 7/17/2017 | 476.66 | - | 4871.82 | Yes | - | -0.04 |
| KAFB-106083 | 5/9/2017 | 463.13 | - | 4871.91 | Yes | 7/20/2017 | 463.60 | - | 4871.44 | Yes | - | -0.47 |

**Table 3-3**
**Changes in Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness between Q2 2017 and Q3 2017**

| Location ID | Q2 2017 | | | | | Q3 2017 | | | | | Change Compared to the Previous Quarter Gauged | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Date of Measurement | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | Groundwater Elevation Corrected for LNAPL Thickness (ft AMSL) | Screen Submerged (Yes/No?) | Date of Measurement | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | Groundwater Elevation Corrected for LNAPL Thickness (ft AMSL) | Screen Submerged (Yes/No?) | Difference between Q2 2017 and Q3 2017 LNAPL Thickness (ft) | Difference between Q2 2017 and Q3 2017 Groundwater Elevations (ft) |
| KAFB-106086 | 5/8/2017 | 445.75 | - | 4871.90 | Yes | 7/20/2017 | 446.25 | - | 4871.40 | Yes | - | -0.50 |
| KAFB-106089 | 5/8/2017 | 452.44 | - | 4871.10 | Yes | 7/19/2017 | 452.85 | - | 4870.69 | Yes | - | -0.41 |
| KAFB-106092 | 5/8/2017 | 444.01 | - | 4870.50 | Yes | 7/17/2017 | 444.30 | - | 4870.21 | Yes | - | -0.29 |
| KAFB-106095 | 5/10/2017 | 472.76 | - | 4871.90 | Yes | 7/19/2017 | 473.21 | - | 4871.45 | Yes | - | -0.45 |
| KAFB-106097 | 5/9/2017 | 475.56 | - | 4872.18 | Yes | 7/19/2017 | 476.03 | - | 4871.71 | Yes | - | -0.47 |
| KAFB-106099 | 5/10/2017 | 470.59 | - | 4872.26 | Yes | 7/20/2017 | 471.02 | - | 4871.83 | Yes | - | -0.43 |
| KAFB-106101 | 5/8/2017 | 468.13 | - | 4872.19 | Yes | 7/18/2017 | 468.30 | - | 4872.02 | Yes | - | -0.17 |
| KAFB-106103 | 5/8/2017 | 457.33 | - | 4871.11 | Yes | 7/19/2017 | 457.78 | - | 4870.66 | Yes | - | -0.45 |
| KAFB-106105 | 5/8/2017 | 450.13 | - | 4871.83 | Yes | 7/17/2017 | 450.63 | - | 4871.33 | Yes | - | -0.50 |
| KAFB-106202 | 5/10/2017 | 485.79 | - | 4872.01 | Yes | 7/20/2017 | 488.30 | - | 4869.50 | Yes | - | -2.51 |
| KAFB-106205 | 5/9/2017 | 460.87 | - | 4872.42 | Yes | 7/17/2017 | 461.61 | - | 4871.68 | Yes | - | -0.74 |
| KAFB-106208 | 5/10/2017 | 471.28 | - | 4872.57 | Yes | 7/18/2017 | 472.66 | - | 4871.19 | Yes | - | -1.38 |
| KAFB-106214 | 5/8/2017 | 454.06 | - | 4871.39 | Yes | 7/18/2017 | 454.61 | - | 4870.84 | Yes | - | -0.55 |
| KAFB-106217 | 5/9/2017 | 462.11 | - | 4871.74 | Yes | 7/17/2017 | 462.66 | - | 4871.19 | Yes | - | -0.55 |
| KAFB-106220 | 5/8/2017 | 468.29 | - | 4872.05 | Yes | 7/18/2017 | 469.15 | - | 4871.19 | Yes | - | -0.86 |
| KAFB-106223 | 5/9/2017 | 461.86 | - | 4872.10 | Yes | 7/17/2017 | 462.59 | - | 4871.37 | Yes | - | -0.73 |
| KAFB-106226 | 5/8/2017 | 455.34 | - | 4871.97 | Yes | 7/17/2017 | 455.92 | - | 4871.39 | Yes | - | -0.58 |
| KAFB-106235-492 | 5/10/2017 | 444.11 | -- | 4871.40 | Yes | 7/24/2017 | 444.41 | - | 4871.10 | Yes | - | -0.30 |
| KAFB-106236-490 | 5/10/2017 | 443.87 | -- | 4871.83 | Yes | 7/24/2017 | 444.24 | - | 4871.46 | Yes | - | -0.37 |
| **Reference Elevation Interval 4814 (ft AMSL) Groundwater Monitoring Wells** | | | | | | | | | | | | |
| KAFB-106031 | 5/8/2017 | 439.08 | - | 4871.98 | Yes | 7/18/2017 | 439.43 | - | 4871.63 | Yes | - | -0.35 |
| KAFB-106034 | 5/9/2017 | 446.39 | - | 4872.24 | Yes | 7/19/2017 | 446.79 | - | 4871.84 | Yes | - | -0.40 |
| KAFB-106040 | 5/9/2017 | 478.60 | - | 4871.66 | Yes | 7/19/2017 | 479.18 | - | 4871.08 | Yes | - | -0.58 |
| KAFB-106043 | 5/8/2017 | 452.35 | - | 4871.95 | Yes | 7/17/2017 | 452.85 | - | 4871.45 | Yes | - | -0.50 |
| KAFB-106045 | 5/8/2017 | 476.69 | - | 4871.83 | Yes | 7/18/2017 | 476.56 | - | 4871.96 | Yes | - | 0.13 |
| KAFB-106048 | 5/10/2017 | 480.91 | - | 4871.67 | Yes | 7/20/2017 | 481.14 | - | 4871.44 | Yes | - | -0.23 |
| KAFB-106051 | 5/8/2017 | 443.68 | - | 4872.10 | Yes | 7/17/2017 | 444.05 | - | 4871.73 | Yes | - | -0.37 |
| KAFB-106054 | 5/8/2017 | 446.50 | - | 4871.88 | Yes | 7/17/2017 | 446.94 | - | 4871.44 | Yes | - | -0.44 |
| KAFB-106058 | 5/10/2017 | 454.30 | - | 4871.75 | Yes | 7/18/2017 | 454.83 | - | 4871.22 | Yes | - | -0.53 |
| KAFB-106061 | 5/10/2017 | 473.52 | - | 4871.91 | Yes | 7/20/2017 | 473.81 | - | 4871.62 | Yes | - | -0.29 |
| KAFB-106062 | 5/10/2017 | 479.30 | - | 4871.90 | Yes | 7/21/2017 | 479.60 | - | 4871.60 | Yes | - | -0.30 |
| KAFB-106066 | 5/10/2017 | 477.28 | - | 4871.81 | Yes | 7/19/2017 | 477.75 | - | 4871.34 | Yes | - | -0.47 |
| KAFB-106068 | 5/10/2017 | 475.75 | - | 4871.48 | Yes | 7/19/2017 | 476.26 | - | 4870.97 | Yes | - | -0.51 |
| KAFB-106071 | 5/8/2017 | 449.22 | - | 4871.68 | Yes | 7/19/2017 | 449.62 | - | 4871.28 | Yes | - | -0.40 |
| KAFB-106074 | 5/11/2017 | 468.92 | - | 4871.67 | Yes | 7/20/2017 | 468.97 | - | 4871.62 | Yes | - | -0.05 |
| KAFB-106078 | 5/10/2017 | 473.55 | - | 4871.05 | Yes | 7/20/2017 | 473.79 | - | 4870.81 | Yes | - | -0.24 |
| KAFB-106081 | 5/8/2017 | 477.63 | - | 4871.85 | Yes | 7/20/2017 | 477.84 | - | 4871.64 | Yes | - | -0.21 |
| KAFB-106084 | 5/9/2017 | 465.97 | - | 4871.97 | Yes | 7/20/2017 | 466.47 | - | 4871.47 | Yes | - | -0.50 |
| KAFB-106087 | 5/8/2017 | 444.99 | - | 4871.88 | Yes | 7/20/2017 | 445.49 | - | 4871.38 | Yes | - | -0.50 |
| KAFB-106090 | 5/8/2017 | 451.27 | - | 4871.58 | Yes | 7/19/2017 | 451.69 | - | 4871.16 | Yes | - | -0.42 |
| KAFB-106093 | 5/8/2017 | 443.34 | - | 4871.28 | Yes | 7/17/2017 | 443.69 | - | 4870.93 | Yes | - | -0.35 |
| KAFB-106096 | 5/10/2017 | 473.43 | - | 4871.88 | Yes | 7/19/2017 | 473.85 | - | 4871.46 | Yes | - | -0.42 |
| KAFB-106098 | 5/9/2017 | 475.64 | - | 4872.19 | Yes | 7/19/2017 | 476.17 | - | 4871.66 | Yes | - | -0.53 |

**Table 3-3**
**Changes in Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness between Q2 2017 and Q3 2017**

| Location ID | Q2 2017 | | | | | Q3 2017 | | | | | Change Compared to the Previous Quarter Gauged | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Date of Measurement | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | Groundwater Elevation Corrected for LNAPL Thickness (ft AMSL) | Screen Submerged (Yes/No?) | Date of Measurement | Depth to Water (ft MRP) | Measured LNAPL Thickness (ft) | Groundwater Elevation Corrected for LNAPL Thickness (ft AMSL) | Screen Submerged (Yes/No?) | Difference between Q2 2017 and Q3 2017 LNAPL Thickness (ft) | Difference between Q2 2017 and Q3 2017 Groundwater Elevations (ft) |
| KAFB-106100 | 5/10/2017 | 470.59 | - | 4872.26 | Yes | 7/20/2017 | 471.07 | - | 4871.78 | Yes | - | -0.48 |
| KAFB-106102 | 5/8/2017 | 468.29 | - | 4872.03 | Yes | 7/18/2017 | 468.41 | - | 4871.91 | Yes | - | -0.12 |
| KAFB-106104 | 5/8/2017 | 456.75 | - | 4871.33 | Yes | 7/19/2017 | 457.21 | - | 4870.87 | Yes | - | -0.46 |
| KAFB-106107 | 5/8/2017 | 450.23 | - | 4871.89 | Yes | 7/17/2017 | 450.74 | - | 4871.38 | Yes | - | -0.51 |
| KAFB-106203 | 5/10/2017 | 485.68 | - | 4871.84 | Yes | 7/20/2017 | 486.70 | - | 4870.82 | Yes | - | -1.02 |
| KAFB-106206 | 5/9/2017 | 461.04 | - | 4872.42 | Yes | 7/17/2017 | 461.77 | - | 4871.69 | Yes | - | -0.73 |
| KAFB-106209 | 5/10/2017 | 470.63 | - | 4872.75 | Yes | 7/18/2017 | 472.14 | - | 4871.24 | Yes | - | -1.51 |
| KAFB-106212 | 5/8/2017 | 451.22 | - | 4870.58 | Yes | 7/18/2017 | 451.75 | - | 4870.05 | Yes | - | -0.53 |
| KAFB-106215 | 5/8/2017 | 454.26 | - | 4871.51 | Yes | 7/18/2017 | 454.81 | - | 4870.96 | Yes | - | -0.55 |
| KAFB-106218 | 5/9/2017 | 462.26 | - | 4871.38 | Yes | 7/17/2017 | 462.86 | - | 4870.78 | Yes | - | -0.60 |
| KAFB-106221 | 5/8/2017 | 468.06 | - | 4872.04 | Yes | 7/18/2017 | 468.93 | - | 4871.17 | Yes | - | -0.87 |
| KAFB-106224 | 5/9/2017 | 463.02 | - | 4872.06 | Yes | 7/17/2017 | 463.74 | - | 4871.34 | Yes | - | -0.72 |
| KAFB-106227 | 5/8/2017 | 456.09 | - | 4872.00 | Yes | 7/17/2017 | 456.65 | - | 4871.44 | Yes | - | -0.56 |
| KAFB-106232 | 5/8/2017 | 454.73 | - | 4872.47 | Yes | 7/18/2017 | 455.45 | - | 4871.75 | Yes | - | -0.72 |
| KAFB-106235-521 | 5/10/2017 | 444.17 | -- | 4871.34 | Yes | 7/24/2017 | 444.47 | - | 4871.04 | Yes | - | -0.30 |
| KAFB-106236-519 | 5/10/2017 | 443.91 | -- | 4871.79 | Yes | 7/24/2017 | 444.29 | - | 4871.41 | Yes | - | -0.38 |

**Table 3-3**
**Changes in Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness between Q2 2017 and Q3 2017**

[a] Well used in analyses for both REI 4857 and 4838.
[b] Well not gauged due to presence of monitoring equipment
Elevations conform to latest survey data uploaded to ERPIMS on October 15, 2017.
AFB = Air Force Base
AMSL = above mean sea level
ft = foot/feet
ID = identification
LNAPL = light non-aqueous phase liquid
MRP = measurement reference point
NA = not applicable
REI = Reference Elevation Interval

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## Table 3-4
## Groundwater Monitoring Wells Included in Q3 2017 Monitoring Activities

| Well Location ID | | Reference Elevation Interval (ft AMSL) | Well Installation Date | Date Sampled | Screen Interval[a] (ft bgs) | Screen Interval[a] (AMSL) | Sampling System | Screen Submerged (Yes/No)? | Estimated Pump Intake Depth[b] (ft) | Analytical Suite[c] |
|---|---|---|---|---|---|---|---|---|---|---|
| **Downgradient Proximal Wells** | | | | | | | | | | |
| KAFB-106029 | | 4857 | 6/4/2011 | 7/11/2017 | 451-471 | 4860-4840 | Passive sampler | Yes | NA | EDB |
| KAFB-106030 | | 4838 | 5/25/2011 | 7/11/2017 | 469-484 | 4842-4827 | Passive sampler | Yes | NA | EDB |
| KAFB-106031 | | 4814 | 5/25/2011 | 7/11/2017 | 496-510 | 4815-4801 | Passive sampler | Yes | NA | EDB |
| KAFB-106032 | | 4857 | 6/24/2011 | 7/11/2017 | 456-476 | 4862-4842 | Passive sampler | Yes | NA | EDB |
| KAFB-106033 | | 4838 | 6/24/2011 | 7/11/2017 | 477-492 | 4841-4826 | Passive sampler | Yes | NA | EDB |
| KAFB-106034 | | 4814 | 6/24/2011 | 7/11/2017 | 502-517 | 4817-4802 | Passive sampler | Yes | NA | EDB |
| KAFB-106049 | | 4857 | 5/13/2011 | 7/10/2017 | 457-477 | 4859-4839 | Passive sampler | Yes | NA | EDB |
| KAFB-106050 | | 4838 | 5/2/2011 | 7/11/2017 | 474-489 | 4842-4827 | Passive sampler | Yes | NA | EDB |
| KAFB-106051 | | 4814 | 4/26/2011 | 7/12/2017 | 500-515 | 4816-4801 | Passive sampler | Yes | NA | EDB |
| KAFB-106201 | | 4857 | 10/4/2012 | 7/10/2017 | 487-517 | 4867-4837 | Passive sampler | Yes | NA | EDB |
| KAFB-106202 | | 4838 | 9/23/2012 | 7/10/2017 | 517-532 | 4838-4823 | Passive sampler | Yes | NA | EDB |
| KAFB-106203 | | 4814 | 9/9/2012 | 7/10/2017 | 620-635 | 4734-4719 | Passive sampler | Yes | NA | EDB |
| KAFB-106204 | | 4857 | 8/29/2012 | 7/10/2017 | 462-492 | 4871-4841 | Passive sampler | Yes | NA | EDB |
| KAFB-106205 | | 4838 | 8/21/2012 | 7/10/2017 | 492-507 | 4841-4826 | Passive sampler | Yes | NA | EDB |
| KAFB-106206 | | 4814 | 8/9/2012 | 7/10/2017 | 593-608 | 4740-4725 | Passive sampler | Yes | NA | EDB |
| KAFB-106207 | | 4857 | 8/22/2012 | 7/10/2017 | 473-503 | 4871-4841 | Passive sampler | Yes | NA | EDB |
| KAFB-106208 | | 4838 | 8/16/2012 | 7/10/2017 | 503-518 | 4841-4826 | Passive sampler | Yes | NA | EDB |
| KAFB-106209 | | 4814 | 8/7/2012 | 7/11/2017 | 603-617 | 4740-4726 | Passive sampler | Yes | NA | EDB |
| KAFB-106216 | | 4857 | 2/10/2015 | 7/17/2017 | 455-485 | 4879-4849 | Passive sampler | No | NA | EDB |
| KAFB-106217 | | 4838 | 2/17/2015 | 7/17/2017 | 485-500 | 4849-4834 | Passive sampler | Yes | NA | EDB |
| KAFB-106218 | | 4814 | 5/26/2015 | 7/17/2017 | 552-567 | 4782-4767 | Passive sampler | Yes | NA | EDB |
| KAFB-106222 | | 4857 | 1/15/2015 | 7/11/2017 | 458-488 | 4875-4845 | Passive sampler | No | NA | EDB |
| KAFB-106223 | | 4838 | 2/17/2015 | 7/17/2017 | 488-503 | 4846-4831 | Passive sampler | Yes | NA | EDB |
| KAFB-106224 | | 4814 | 5/15/2015 | 7/17/2017 | 555-570 | 4780-4765 | Passive sampler | Yes | NA | EDB |
| KAFB-106231 | | 4857 | 9/8/2015 | 7/11/2017 | 440-475 | 4888-4853 | Passive sampler | No | NA | EDB |
| KAFB-106232 | | 4814 | 9/1/2015 | 7/11/2017 | 503-518 | 4824-4809 | Passive sampler | Yes | NA | EDB |
| **Veterans Affairs Proximal Wells** | | | | | | | | | | |
| KAFB-106003 | | 4857 | 1/25/2003 | 7/18/2017 | 476-501 | 4861-4836 | Portable pump | Yes | 481.15 | BTEX, EDB, FP |
| KAFB-106004 | | 4857 | 1/4/2006 | 7/20/2017 | 484-509 | 4859-4834 | Portable pump | Yes | 488.77 | BTEX, EDB, FP |
| KAFB-106013 | | 4857 | 9/19/2008 | 7/12/2017 | 486-511 | 4861-4836 | Portable pump | Yes | 491.72 | BTEX, EDB, FP |
| KAFB-106097 | | 4838 | 4/27/2011 | 7/19/2017 | 506-521 | 4842-4827 | Portable pump | Yes | 508.14 | BTEX, EDB, FP |
| KAFB-106098 | | 4814 | 4/17/2011 | 7/19/2017 | 531-546 | 4817-4802 | Portable pump | Yes | 533.00 | BTEX, EDB, FP |
| KAFB-106099 | | 4838 | 5/12/2011 | 7/20/2017 | 501-516 | 4842-4827 | Portable pump | Yes | 503.11 | BTEX, EDB, FP |
| KAFB-106100 | | 4814 | 5/3/2011 | 7/20/2017 | 526-541 | 4817-4802 | Portable pump | Yes | 528.09 | BTEX, EDB, FP |
| KAFB-106101 | | 4838 | 2/21/2011 | 7/18/2017 | 496-511 | 4841-4826 | Portable pump | Yes | 501.03 | BTEX, EDB, FP |
| KAFB-106102 | | 4814 | 3/3/2011 | 7/18/2017 | 521-535 | 4816-4802 | Portable pump | Yes | 526.07 | BTEX, EDB, FP |
| **Source Area Wells** | | | | | | | | | | |
| KAFB-106005 | | 4857 | 1/22/2007 | 7/18/2017 | 479-504 | 4865-4840 | Portable pump | Yes | 484.04 | BTEX, EDB, metals, anions, alkalinity, FP |
| KAFB-106009 | | 4857 | 11/28/2007 | 7/12/2017 | 480-505 | 4865-4840 | Portable pump | Yes | 485.70 | BTEX, EDB, metals, anions, alkalinity, FP |
| KAFB-106012R | | 4857 | 4/23/2014 | 7/19/2017 | 465-495 | 4877-4847 | Portable pump | No | 495.52 | BTEX, EDB, metals, anions, alkalinity, FP |
| **Newly-Installed Wells** | | | | | | | | | | |
| KAFB-106235-463 | | 4857 | 10/31/2016 | 7/12/2017 | 438-463 | 4878-4853 | Passive sampler | No | NA | EDB, metals, anions, alkalinity |
| KAFB-106235-492 | | 4838 | 10/31/2016 | 7/12/2017 | 472-492 | 4844-4824 | Passive sampler | Yes | NA | EDB, metals, anions, alkalinity |
| KAFB-106235-521 | | 4814 | 10/31/2016 | 7/12/2017 | 501-521 | 4815-4795 | Passive sampler | Yes | NA | EDB, metals, anions, alkalinity |
| KAFB-106236-461 | | 4857 | 11/23/2016 | 7/10/2017 | 436-461 | 4880-4855 | Passive sampler | No | NA | EDB, metals, anions, alkalinity |
| KAFB-106236-490 | | 4838 | 11/23/2016 | 7/10/2017 | 470-490 | 4846-4826 | Passive sampler | Yes | NA | EDB, metals, anions, alkalinity |
| KAFB-106236-519 | | 4814 | 11/23/2016 | 7/10/2017 | 499-519 | 4817-4797 | Passive sampler | Yes | NA | EDB, metals, anions, alkalinity |

**Table 3-4**
**Groundwater Monitoring Wells Included in Q3 2017 Monitoring Activities**

[a] Screen interval is rounded to the nearest foot.

[b] Portable equipment sampling depths are estimated to the nearest half foot due to slight inaccuracies with the mechanism measuring the pump setting in the field. Pump depths are estimated from the MRP, and are approximately two feet below the top of screen for submerged wells, or two feet below water table for non submerged wells.

[c] The analytical methods for EDB and VOCs are 8011 and 8260C, respectively. Metals analyses consisted of select total metals (arsenic, calcium, lead, potassium, magnesium, and sodium) by analytical Method 6020A/6010C and select and dissolved metals (iron and manganese) by Method 6010C. Anions analysis consisted of bromide by Method 300.0A, chloride by Method 300.0A, nitrate/nitrite nitrogen by Method 353.2, and sulfate by Method 300.0A. FP include pH, specific conductivity, dissolved oxygen, oxidation reduction potential, temperature, and turbidity.

AFB = Air Force Base
AMSL = above mean sea level
BFF = Bulk Fuels Facility
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, and total xylenes
EDB = ethylene dibromide
FP = field parameter
ft = foot/feet
ID = identification
MRP = measuring reference point
NA = not applicable
SWMU = solid waste management unit

## Table 3-5
## Water Quality Field Measurements for Groundwater Monitoring Well Samples, Q3 2017

| Well Location ID | Sample Date | Temperature (°C) | pH (S.U.) | Spec Cond (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) |
|---|---|---|---|---|---|---|---|
| KAFB-106003 | 7/18/2017 | 22.5 | 7.83 | 559.0 | 5.84 | 169.9 | 3.11 |
| KAFB-106004 | 7/20/2017 | 21.2 | 7.81 | 630.0 | 6.59 | 133.6 | 2.09 |
| KAFB-106005 | 7/18/2017 | 19.7 | 7.14 | 2253.0 | 0.47 | -178.7 | 6.04 |
| KAFB-106009 | 7/12/2017 | 20.8 | 6.83 | 2208.0 | 0.22 | 132.2 | 0.56 |
| KAFB-106012R | 7/19/2017 | 25.6 | 7.52 | 2601.0 | 7.62 | 46.3 | 2.02 |
| KAFB-106013 | 7/12/2017 | 22.0 | 7.88 | 479.8 | 1.31 | 42.7 | 16.4 |
| KAFB-106029 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106030 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106031 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106032 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106033 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106034 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106049 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106050 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106051 [a] | 7/12/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106097 | 7/19/2017 | 24.6 | 7.88 | 636.0 | 3.08 | 104.1 | 0.32 |
| KAFB-106098 | 7/19/2017 | 21.2 | 7.80 | 559.0 | 3.72 | 170.1 | 2.63 |
| KAFB-106099 | 7/20/2017 | 25.8 | 7.72 | 793.0 | 7.15 | 153.3 | 2.68 |
| KAFB-106100 | 7/20/2017 | 24.8 | 7.90 | 498.9 | 3.48 | 123.4 | 2.05 |
| KAFB-106101 | 7/18/2017 | 23.7 | 7.84 | 543.0 | 5.51 | 145.4 | 1.43 |
| KAFB-106102 | 7/18/2017 | 25.6 | 7.94 | 464.0 | 4.96 | -7.0 | 1.43 |
| KAFB-106201 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106202 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106203 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106204 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106205 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106206 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106207 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106208 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106209 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106216 [a] | 7/17/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106217 [a] | 7/17/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106218 [a] | 7/17/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106222 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106223 [a] | 7/17/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106224 [a] | 7/17/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106231 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106232 [a] | 7/11/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106235-463 [a] | 7/12/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106235-492 [a] | 7/12/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106235-521 [a] | 7/12/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106236-461 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106236-490 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |
| KAFB-106236-519 [a] | 7/10/2017 | NA | NA | NA | NA | NA | NA |

## Table 3-5
## Water Quality Field Measurements for Groundwater Monitoring Well Samples, Q3 2017

[a] Samples collected via passive sampling methodology.
AFB = Air Force Base
BFF = Bulk Fuels Facility
DO = dissolved oxygen
ID = identification
mg/L = milligram per liter
mV = millivolt
NA = not applicable
NTU = nephelometric turbidity unit
ORP = oxidation reduction potential
Spec Cond = specific conductivity
S.U. = standard unit
SWMU = solid waste management unit
°C = degrees Celsius
µS/cm = microSiemens per centimeter

**Table 3-6**
**Groundwater Analytical Results for Veterans Affairs Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106003 | | | KAFB-106004 | | | KAFB-106013 | | | KAFB-106097 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW003-173 | | | GW004-173 | | | GW013-173 | | | GW097-173 | | |
| | | | Sample Date: | | | | 7/18/2017 | | | 7/20/2017 | | | 7/12/2017 | | | 7/19/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 478 | | | 486 | | | 488.5 | | | 508 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4857 | | | 4857 | | | 4857 | | | 4838 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | 4.5 | 5 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 1,000 | 1,100 | 750 | ND | U | 1 | 1 | -- | 1 | ND | U | 1 | 0.6 | J | 1 |
| | | Xylenes, Total | 620 | 10,000 | 190 | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |

**Table 3-6**
**Groundwater Analytical Results for Veterans Affairs Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106098 | | | KAFB-106099 | | | KAFB-106100 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW098-173 | | | GW099-173 | | | GW100-173 | | |
| | | | Sample Date: | | | | 7/19/2017 | | | 7/20/2017 | | | 7/20/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 533 | | | 503 | | | 528 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4814 | | | 4838 | | | 4814 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | 4.5 | 5 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 1,000 | 1,100 | 750 | 2 | -- | 1 | 0.6 | J | 1 | 0.6 | J | 1 |
| | | Xylenes, Total | 620 | 10,000 | 190 | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 |

**Table 3-6**
**Groundwater Analytical Results for Veterans Affairs Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106101 | | | KAFB-106101 | | | KAFB-106102 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW101-173 | | | GW101-573 | | | GW102-173 | | |
| | | | Sample Date: | | | | 7/18/2017 | | | 7/18/2017 | | | 7/18/2017 | | |
| | | | Sample Type: | | | | REG | | | Field Duplicate | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 497.9 | | | 497.9 | | | 523 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4838 | | | 4838 | | | 4814 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | 4.5 | 5 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 1,000 | 1,100 | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Xylenes, Total | 620 | 10,000 | 190 | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 |

**Table 3-6**
**Groundwater Analytical Results for Veterans Affairs Proximal Wells, Q3 2017**

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004). For metals, the NMWQCC numeric standard applies to dissolved metals.

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2009).

[c] EPA Region 6 RSL for Tapwater (June 2017) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC standard or MCL exists for any analyte, then the project screening level will be the EPA RSL.

µg/L = microgram per liter
AFB = Air Force Base
AMSL = above mean sea level
BFF = Bulk Fuels Facility
bgs = below-ground surface
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ft = foot/feet
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
REG = normal field sample
RSL = regional screening level
SWMU = solid waste management unit
Val Qual = validation qualifier
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

**Table 3-7**
**Groundwater Analytical Results for Downgradient Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106029 | | | KAFB-106030 | | | KAFB-106031 | | | KAFB-106032 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW029-173 | | | GW030-173 | | | GW031-173 | | | GW032-173 | | |
| | | | Sample Date: | | | | 7/11/2017 | | | 7/11/2017 | | | 7/11/2017 | | | 7/11/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 452.8 | | | 476.97 | | | 502.49 | | | 458 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4857 | | | 4838 | | | 4814 | | | 4857 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |

**Table 3-7**
**Groundwater Analytical Results for Downgradient Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106032 | | | KAFB-106033 | | | KAFB-106034 | | | KAFB-106049 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW032-573 | | | GW033-173 | | | GW034-173 | | | GW049-173 | | |
| | | | Sample Date: | | | | 7/11/2017 | | | 7/11/2017 | | | 7/11/2017 | | | 7/10/2017 | | |
| | | | Sample Type: | | | | Field Duplicate | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 458 | | | 479 | | | 509.33 | | | 458.8 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4857 | | | 4838 | | | 4814 | | | 4857 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |

**Table 3-7**
**Groundwater Analytical Results for Downgradient Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106050 | | | KAFB-106051 | | | KAFB-106201 | | | KAFB-106202 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW050-173 | | | GW051-173 | | | GW201-173 | | | GW202-173 | | |
| | | | Sample Date: | | | | 7/11/2017 | | | 7/12/2017 | | | 7/10/2017 | | | 7/10/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 482.57 | | | 508.87 | | | 489 | | | 521.77 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4838 | | | 4814 | | | 4857 | | | 4838 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |

**Table 3-7**
**Groundwater Analytical Results for Downgradient Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106203 | | | KAFB-106204 | | | KAFB-106204 | | | KAFB-106205 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW203-173 | | | GW204-173 | | | GW204-573 | | | GW205-173 | | |
| | | | Sample Date: | | | | 7/10/2017 | | | 7/10/2017 | | | 7/10/2017 | | | 7/10/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | Field Duplicate | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 625.09 | | | 464.2 | | | 464.2 | | | 500.62 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4814 | | | 4857 | | | 4857 | | | 4838 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.020 | ND | U | 0.019 |

**Table 3-7**
**Groundwater Analytical Results for Downgradient Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106206 | | | KAFB-106207 | | | KAFB-106208 | | | KAFB-106209 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW206-173 | | | GW207-173 | | | GW208-173 | | | GW209-173 | | |
| | | | Sample Date: | | | | 7/10/2017 | | | 7/10/2017 | | | 7/10/2017 | | | 7/11/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 601.77 | | | 501 | | | 505 | | | 605 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4814 | | | 4857 | | | 4838 | | | 4814 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |

**Table 3-7**
**Groundwater Analytical Results for Downgradient Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106216 | | | KAFB-106217 | | | KAFB-106218 | | | KAFB-106222 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW216-173 | | | GW217-173 | | | GW218-173 | | | GW222-173 | | |
| | | | Sample Date: | | | | 7/17/2017 | | | 7/17/2017 | | | 7/17/2017 | | | 7/11/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 475.08 | | | 487 | | | 554.58 | | | 475 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4857 | | | 4838 | | | 4814 | | | 4857 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |

**Table 3-7**
**Groundwater Analytical Results for Downgradient Proximal Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106223 | | | KAFB-106224 | | | KAFB-106231 | | | KAFB-106232 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW223-173 | | | GW224-173 | | | GW231-173 | | | GW232-173 | | |
| | | | Sample Date: | | | | 7/17/2017 | | | 7/17/2017 | | | 7/11/2017 | | | 7/11/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 489.5 | | | 554.58 | | | 470 | | | 505 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4838 | | | 4814 | | | 4857 | | | 4814 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |

**Table 3-7**
**Groundwater Analytical Results for Downgradient Proximal Wells, Q3 2017**

[a] NMWQCC numeric standards per the New Mexico Administrative Code Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004).

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2009).

[c] EPA Region 6 RSL for Tapwater (June 2017) for hazard index = 1.0 for non-carcinogens and a $10^{-5}$ cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA RSL.

µg/L = microgram per liter
AFB = Air Force Base
AMSL = above mean sea level
BFF = Bulk Fuels Facility
bgs = below ground surface
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ft = foot/feet
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
REG = normal field sample
RSL = regional screening level
SWMU = solid waste management unit
Val Qual = validation qualifier
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

## Table 3-8
## Status of Quarterly Baseline Sampling Newly Installed Wells and Summary of Q3 2017 Analytical Results

| Location ID | Reference Elevation Interval (ft AMSL) | Dates Newly Installed Wells Sampled | Number of Quarters Sampled | Remaining Quarters to Complete Baseline | Quarter for Baseline Completion | Analytical Results for Samples Collected During Q3 2017 |
|---|---|---|---|---|---|---|
| KAFB-106235-463 | 4857 | 1/26/2017 | 1 | 1 | 3 | EDB was not detected. No inorganic compounds exceeded their respective PSL. |
| | | 4/7/2017 | 2 | | | |
| | | 7/12/2017 | 3 | | | |
| | | TBD | 4 | | | |
| KAFB-106235-492 | 4838 | 1/26/2017 | 1 | 1 | 3 | EDB was not detected. No inorganic compounds exceeded their respective PSL. |
| | | 4/7/2017 | 2 | | | |
| | | 7/12/2017 | 3 | | | |
| | | TBD | 4 | | | |
| KAFB-106235-521 | 4814 | 1/26/2017 | 1 | 1 | 3 | EDB was not detected. No inorganic compounds exceeded their respective PSL. |
| | | 4/7/2017 | 2 | | | |
| | | 7/12/2017 | 3 | | | |
| | | TBD | 4 | | | |
| KAFB-106236-461 | 4857 | 2/2/2017 | 1 | 1 | 3 | EDB was not detected. No inorganic compounds exceeded their respective PSL. |
| | | 4/5/2017 | 2 | | | |
| | | 7/10/2017 | 3 | | | |
| | | TBD | 4 | | | |
| KAFB-106236-490 | 4838 | 2/2/2017 | 1 | 1 | 3 | EDB was not detected. No inorganic compounds exceeded their respective PSL. |
| | | 4/5/2017 | 2 | | | |
| | | 7/10/2017 | 3 | | | |
| | | TBD | 4 | | | |
| KAFB-106236-519 | 4814 | 2/2/2017 | 1 | 1 | 3 | EDB was not detected. No inorganic compounds exceeded their respective PSL. |
| | | 4/5/2017 | 2 | | | |
| | | 7/10/2017 | 3 | | | |
| | | TBD | 4 | | | |

AFB = Air Force Base
AMSL = above mean sea level
BFF = Bulk Fuels Facility
EDB = ethylene dibromide (1,2-dibromoethane)
ft = foot/feet
ID = identification
PSL = project screening level
TBD = to be determined
SWMU = solid waste management unit

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## Table 3-9
## Groundwater Analytical Results for Newly Installed Wells, Q3 2017

| | | | Well Location ID: | | | | KAFB-106235-463 | | | KAFB-106235-492 | | | KAFB-106235-521 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW235-463-173 | | | GW235-492-173 | | | GW235-521-173 | | |
| | | | Sample Date: | | | | 7/12/2017 | | | 7/12/2017 | | | 7/12/2017 | | |
| | | | Sample Type: | | | | REG | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 438-463 | | | 472-492 | | | 501-521 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4857 | | | 4838 | | | 4814 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| Total Metals | Method SW6010C (mg/L) | Calcium | NS | NS | NS | NS | 58.2 | -- | 0.200 | 62.1 | J | 0.200 | 51.4 | -- | 0.200 |
| | | Iron, dissolved | 1.0 | NS | NS | 1.0 | ND | U | 0.200 | ND | U | 0.200 | ND | U | 0.200 |
| | | Magnesium | NS | NS | NS | NS | 8.36 | -- | 0.100 | 8.95 | -- | 0.100 | 6.96 | -- | 0.100 |
| | | Manganese, dissolved | 0.2 | NS | NS | 0.2 | ND | U | 0.0050 | ND | U | 0.0050 | ND | U | 0.0050 |
| | | Potassium | NS | NS | NS | NS | ND | U | 0.500 | ND | U | 0.500 | ND | U | 0.500 |
| | | Sodium | NS | NS | NS | NS | 26.9 | -- | 0.500 | 27.4 | -- | 0.500 | 23.7 | -- | 0.500 |
| | Method SW6020A (mg/L) | Arsenic | 0.1 | 0.01 | 0.00052 | 0.01 | ND | U | 0.0020 | 0.001 | J | 0.0020 | 0.00081 | J | 0.0020 |
| | | Lead | 0.05 | 0.015 | 0.015 | 0.015 | ND | U | 0.00025 | ND | U | 0.00025 | ND | U | 0.00025 |
| Anions | Method E300.0 (mg/L) | Bromide | NS | NS | NS | NS | 1.7 | J | 2.5 | 1.8 | J | 2.5 | ND | U | 2.5 |
| | | Chloride | 250 | 250 | NS | 250 | 58.3 | J | 20.0 | 70.2 | J | 20.0 | 36.6 | J | 8.0 |
| | | Sulfate | 600 | 250 | NS | 250 | 65.5 | J | 5.0 | 63.7 | J | 5.0 | 61.2 | J | 5.0 |
| | Method E353.2 (mg/L) | Nitrate/Nitrite Nitrogen | 10[e] | 10[e] | NS | 10[e] | 1.9 | -- | 0.10 | 2.0 | -- | 0.10 | 0.83 | -- | 0.10 |
| Alkalinity | Method SM2320B (mg/L) | Alkalinity, bicarbonate (as CaCO3) | NS | NS | NS | NS | 85.0 | -- | 5.0 | 83.6 | -- | 5.0 | 92.9 | -- | 5.0 |
| | | Alkalinity, carbonate (as CaCO3) | NS | NS | NS | NS | ND | U | 5.0 | ND | U | 5.0 | ND | U | 5.0 |
| | | Alkalinity, total (as CaCO3) | NS | NS | NS | NS | 85.0 | -- | 5.0 | 83.6 | -- | 5.0 | 92.9 | -- | 5.0 |

## Table 3-9
## Groundwater Analytical Results for Newly Installed Wells, Q3 2017

| | | | Well Location ID: | | | | KAFB-106235-521 | | | KAFB-106236-461 | | | KAFB-106236-490 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW235-521-573 | | | GW236-461-173 | | | GW236-490-173 | | |
| | | | Sample Date: | | | | 7/12/2017 | | | 7/10/2017 | | | 7/10/2017 | | |
| | | | Sample Type: | | | | Field Duplicate | | | REG | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 501-521 | | | 436-461 | | | 470-490 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4814 | | | 4857 | | | 4838 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| Total Metals | Method SW6010C (mg/L) | Calcium | NS | NS | NS | NS | 50.3 | -- | 0.200 | 45.8 | -- | 0.200 | 47.0 | -- | 0.200 |
| | | Iron, dissolved | 1.0 | NS | NS | 1.0 | ND | U | 0.200 | ND | U | 0.200 | ND | U | 0.200 |
| | | Magnesium | NS | NS | NS | NS | 7.09 | -- | 0.100 | 6.16 | -- | 0.100 | 6.65 | -- | 0.100 |
| | | Manganese, dissolved | 0.2 | NS | NS | 0.2 | ND | U | 0.0050 | ND | U | 0.0050 | ND | U | 0.0050 |
| | | Potassium | NS | NS | NS | NS | ND | U | 0.500 | 3.20 | -- | 0.500 | 3.00 | -- | 0.500 |
| | | Sodium | NS | NS | NS | NS | 24.3 | -- | 0.500 | 30.1 | -- | 0.500 | 23.1 | -- | 0.500 |
| | Method SW6020A (mg/L) | Arsenic | 0.1 | 0.01 | 0.00052 | 0.01 | 0.0010 | J | 0.0020 | 0.00078 | J | 0.0020 | 0.00088 | J | 0.0020 |
| | | Lead | 0.05 | 0.015 | 0.015 | 0.015 | ND | U | 0.00025 | ND | U | 0.00025 | 0.00034 | J | 0.00025 |
| Anions | Method E300.0 (mg/L) | Bromide | NS | NS | NS | NS | ND | U | 2.5 | ND | U | 2.5 | ND | U | 2.5 |
| | | Chloride | 250 | 250 | NS | 250 | 34.7 | J | 8.0 | 40.0 | -- | 8.0 | 36.0 | -- | 8.0 |
| | | Sulfate | 600 | 250 | NS | 250 | 61.5 | J | 5.0 | 75.0 | -- | 5.0 | 57.7 | -- | 5.0 |
| | Method E353.2 (mg/L) | Nitrate/Nitrite Nitrogen | 10[e] | 10[e] | NS | 10[e] | 0.81 | -- | 0.10 | 0.72 | -- | 0.10 | 1.1 | -- | 0.10 |
| Alkalinity | Method SM2320B (mg/L) | Alkalinity, bicarbonate (as CaCO3) | NS | NS | NS | NS | 94.3 | -- | 5.0 | 104 | -- | 5.0 | 91.4 | -- | 5.0 |
| | | Alkalinity, carbonate (as CaCO3) | NS | NS | NS | NS | ND | U | 5.0 | ND | U | 5.0 | ND | U | 5.0 |
| | | Alkalinity, total (as CaCO3) | NS | NS | NS | NS | 94.3 | -- | 5.0 | 104 | -- | 5.0 | 91.4 | -- | 5.0 |

**Table 3-9**
**Groundwater Analytical Results for Newly Installed Wells, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106236-490 | | | KAFB-106236-519 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW236-490-573 | | | GW236-519-173 | | |
| | | | Sample Date: | | | | 7/10/2017 | | | 7/10/2017 | | |
| | | | Sample Type: | | | | Field Duplicate | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 470-490 | | | 499-519 | | |
| | | | Reference Elevation Interval (ft AMSL): | | | | 4838 | | | 4814 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 |
| Total Metals | Method SW6010C (mg/L) | Calcium | NS | NS | NS | NS | 46.5 | -- | 0.200 | 48.6 | J | 0.200 |
| | | Iron, dissolved | 1.0 | NS | NS | 1.0 | ND | U | 0.200 | ND | U | 0.200 |
| | | Magnesium | NS | NS | NS | NS | 6.55 | -- | 0.100 | 6.83 | -- | 0.100 |
| | | Manganese, dissolved | 0.2 | NS | NS | 0.2 | 0.0016 | J | 0.0050 | 0.0031 | J | 0.0050 |
| | | Potassium | NS | NS | NS | NS | 2.98 | -- | 0.500 | 2.87 | -- | 0.500 |
| | | Sodium | NS | NS | NS | NS | 22.9 | -- | 0.500 | 27.2 | -- | 0.500 |
| | Method SW6020A (mg/L) | Arsenic | 0.1 | 0.01 | 0.00052 | 0.01 | 0.00083 | J | 0.0020 | 0.00077 | J | 0.0020 |
| | | Lead | 0.05 | 0.015 | 0.015 | 0.015 | 0.00025 | J | 0.00025 | 0.00021 | J | 0.00025 |
| Anions | Method E300.0 (mg/L) | Bromide | NS | NS | NS | NS | ND | U | 2.5 | ND | U | 2.5 |
| | | Chloride | 250 | 250 | NS | 250 | 37.7 | -- | 8.0 | 38.8 | -- | 8.0 |
| | | Sulfate | 600 | 250 | NS | 250 | 56.7 | -- | 5.0 | 65.3 | -- | 5.0 |
| | Method E353.2 (mg/L) | Nitrate/Nitrite Nitrogen | 10[e] | 10[e] | NS | 10[e] | 1.1 | -- | 0.10 | 1.0 | -- | 0.10 |
| Alkalinity | Method SM2320B (mg/L) | Alkalinity, bicarbonate (as CaCO3) | NS | NS | NS | NS | 91.8 | -- | 5.0 | 94.6 | -- | 5.0 |
| | | Alkalinity, carbonate (as CaCO3) | NS | NS | NS | NS | ND | U | 5.0 | ND | U | 5.0 |
| | | Alkalinity, total (as CaCO3) | NS | NS | NS | NS | 91.8 | -- | 5.0 | 94.6 | -- | 5.0 |

# Table 3-9
# Groundwater Analytical Results for Newly Installed Wells, Q3 2017

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004). For metals, the NMWQCC numeric standard applies to dissolved metals.

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40 CFR Part 141, 143 (May 2009).

[c] EPA Region 6 RSL for Tapwater (June 2017) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA RSL.

[e] Based on the geochemical equilibrium of the site groundwater and previous site data analyses, nitrate/nitrite results represent nitrate concentrations.

µg/L = microgram per liter
AFB = Air Force Base
AMSL = above mean sea level
BFF = Bulk Fuels Facility
bgs = below-ground surface
$CaCO_3$ = calcium carbonate
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ft = foot/feet
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L = milligram per liter
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

**Table 3-10**
**Groundwater Analytical Results for Source Area Wells, Q3 2017**

| | | | | | | | Well Location ID: | KAFB-106005 | | KAFB-106005 | | | KAFB-106009 | | | KAFB-106012R | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Field Sample ID: | GW005-173 | | GW005-573 | | | GW009-173 | | | GW012R-173 | | |
| | | | | | | | Sample Date: | 7/18/2017 | | 7/18/2017 | | | 7/12/2017 | | | 7/19/2017 | | |
| | | | | | | | Sample Type: | REG | | Field Duplicate | | | REG | | | REG | | |
| | | | | | | | Sample Depth (ft bgs): | 481 | | 484 | | | 482 | | | 493 | | |
| | | | | | | | Reference Elevation Interval (ft AMSL): | 4857 | | 4857 | | | 4857 | | | 4857 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | **1.3** | J | 0.38 | **0.79** | | 0.19 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | 4.5 | 5 | **420** | | 10 | **420** | | 10 | 0.5 | J | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | 54 | | 1 | 54 | | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 1,000 | 1,100 | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 | 0.7 | J | 1 |
| | | Xylenes, Total | 620 | 10,000 | 190 | 620 | 110 | | 1 | 110 | | 1 | ND | U | 1 | ND | U | 1 |
| Total Metals | Method SW6010C (mg/L) | Calcium | NS | NS | NS | NS | 255 | | 0.200 | 258 | | 0.200 | 265 | | 0.200 | 198 | | 0.200 |
| | | Iron, dissolved | 1.0 | NS | NS | 1.0 | 0.153 | J | 0.200 | 0.163 | J | 0.200 | ND | U | 0.200 | ND | U | 0.200 |
| | | Magnesium | NS | NS | NS | NS | 41.7 | | 0.100 | 42.5 | | 0.100 | 37.9 | | 0.100 | 30.1 | | 0.100 |
| | | Manganese, dissolved | 0.2 | NS | NS | 0.2 | **0.228** | J | 0.0050 | **0.213** | J | 0.0050 | **1.09** | | 0.0050 | ND | U | 0.0050 |
| | | Potassium | NS | NS | NS | NS | 5.78 | | 0.500 | 6.06 | | 0.500 | 5.54 | | 0.500 | 5.10 | | 0.500 |
| | | Sodium | NS | NS | NS | NS | 86.8 | | 0.500 | 87.6 | | 0.500 | 65.7 | | 0.500 | 57.4 | | 0.500 |
| | Method SW6020A (mg/L) | Arsenic | 0.1 | 0.01 | 0.00052 | 0.01 | ND | U | 0.0020 | 0.00074 | J | 0.0020 | ND | U | 0.0020 | ND | U | 0.0020 |
| | | Lead | 0.05 | 0.015 | 0.015 | 0.015 | 0.00017 | J | 0.00025 | 0.00014 | J | 0.00025 | ND | U | 0.00025 | 0.00019 | J | 0.00025 |
| Anions | Method E300.0 (mg/L) | Bromide | NS | NS | NS | NS | 3.4 | J | 2.5 | 3.4 | J | 2.5 | 4.7 | | 2.5 | 2.4 | J | 2.5 |
| | | Chloride | 250 | 250 | NS | 250 | 205 | | 40.0 | 213 | | 40.0 | **315** | J | 200 | 156 | J | 20.0 |
| | | Sulfate | 600 | 250 | NS | 250 | **396** | | 100 | **404** | | 100 | **433** | J | 50.0 | **357** | J | 50.0 |
| | Method E353.2 (mg/L) | Nitrate/Nitrite Nitrogen | 10[e] | 10[e] | NS | 10[e] | 0.22 | | 0.10 | 0.20 | | 0.10 | **12.9** | | 1.0 | 5.4 | | 0.50 |
| Alkalinity | Method SM2320B (mg/L) | Alkalinity, bicarbonate (as CaCO3) | NS | NS | NS | NS | 220 | J | 5.0 | 216 | J | 5.0 | 119 | | 5.0 | 108 | J | 5.0 |
| | | Alkalinity, carbonate (as CaCO3) | NS | NS | NS | NS | ND | U | 5.0 | ND | U | 5.0 | ND | U | 5.0 | ND | U | 5.0 |
| | | Alkalinity, total (as CaCO3) | NS | NS | NS | NS | 220 | J | 5.0 | 216 | J | 5.0 | 119 | | 5.0 | 108 | J | 5.0 |

**Table 3-10**
**Groundwater Analytical Results for Source Area Wells, Q3 2017**

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004). For metals, the NMWQCC standard applies to dissolved metals.

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40 CFR Part 141, 143 (May 2009).

[c] EPA Region 6 RSL for Tapwater (June 2017) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA RSL.

[e] Based on the geochemical equilibrium of the site groundwater and previous site data analyses, nitrate/nitrite results represent nitrate concentrations.

µg/L = microgram per liter
AFB = Air Force Base
AMSL = above mean sea level
BFF = Bulk Fuels Facility
bgs = below-ground surface
$CaCO_3$ = calcium carbonate
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ft = foot/feet
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L = milligram per liter
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.

**Table 3-11**
**Chloride, Sulfate, Nitrate/Nitrite Nitrogen, Calcium, Sodium, and Oxidation Reduction Potential in Wells KAFB-106005, KAFB-106009, and KAFB-106012R, Q3 2017**

| | Chemical Class | | Anions (mg/L) | | | | | | | | | Metals (mg/L) | | | | | | Field Parameter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Parameter | | Chloride | | | Sulfate | | | Nitrate/Nitrite Nitrogen | | | Calcium | | | Sodium | | | ORP (mV) |
| | Analytical Method | | Method E300.0 | | | Method E300.0 | | | Method E353.2 | | | Method SW6010C | | | Method SW6010C | | | -- |
| | NMAC NMWQCC[a] | | 250 | | | 600 | | | 10[e] | | | NS | | | NS | | | NS |
| | EPA MCLs[b] | | 250 | | | 250 | | | 10[e] | | | NS | | | NS | | | NS |
| | EPA RSLs[c] | | NS | | | NS | | | NS | | | NS | | | NS | | | NS |
| | Project Screening Level[d] | | 250 | | | 250 | | | 10[e] | | | NS | | | NS | | | NS |
| **Location ID** | **Field Sample ID** | **Sample Date** | **Result** | **Val Qual** | **LOQ** | **Result** | **Val Qual** | **LOQ** | **Result** | **Val Qual** | **LOQ** | **Result** | **Val Qual** | **LOQ** | **Result** | **Val Qual** | **LOQ** | **Result** |
| KAFB-106005 | ST106-GW-P-1065-16062010 | 6/16/2010 | 133 | -- | 10 | 173 | -- | 10 | -- | -- | -- | 128 | -- | 0.1 | 64.4 | -- | 0.3 | 94.1 |
| | ST106-GW-P-1065-14072010 | 7/14/2010 | 145 | -- | 10 | 181 | -- | 10 | -- | -- | -- | 122 | -- | 0.1 | 64.7 | -- | 0.3 | 288 |
| | ST106-GW-P-1065-20102010 | 10/20/2010 | 161 | -- | 10 | 164 | -- | 10 | -- | -- | -- | 118 | -- | 0.1 | 65.9 | -- | 0.3 | 145 |
| | GW0005 | 2/21/2011 | 160 | -- | 0.5 | 154 | -- | 2.0 | -- | -- | -- | 138 | -- | 5.0 | 79.8 | -- | 5.0 | -61 |
| | GW0045 | 6/10/2011 | 156 | -- | 10 | 101 | J- | 25 | -- | -- | -- | 117 | -- | 5.0 | 67.2 | -- | 5.0 | -25 |
| | GW0134 | 9/20/2011 | 151 | -- | 20 | 20.3 | J | 40 | ND | U | 1.5 | 132 | -- | 5.0 | 69.9 | -- | 5.0 | -114 |
| | GW0259 | 12/12/2011 | 137 | -- | 0.5 | 19.0 | -- | 2.0 | ND | U | 1.5 | 137 | -- | 5.0 | 71.7 | -- | 5.0 | -239 |
| | GW0384 | 3/1/2012 | 130 | -- | 2.5 | 33.3 | -- | 10 | ND | U | 1.5 | 131 | -- | 5.0 | 59.8 | -- | 5.0 | -290 |
| | GW0508 | 5/9/2012 | 175 | -- | 0.5 | 106 | -- | 2.5 | ND | U | 1.5 | 147 | -- | 5.0 | 73.9 | | 5.0 | -295 |
| | GW0632 | 8/9/2012 | 19.3 | -- | 0.5 | 8.73 | -- | 2.5 | ND | U | 1.5 | 44.8 | -- | 5.0 | 27.5 | -- | 5.0 | -293 |
| | GW0756 | 11/12/2012 | 149 | -- | 0.5 | 28.7 | -- | 2.5 | ND | U | 1.5 | 136 | -- | 5.0 | 64.9 | -- | 5.0 | -335 |
| | GW0890 | 3/25/2013 | 154 | -- | 0.5 | 114 | -- | 2.5 | 1.01 | J | 1.5 | 146 | -- | 5.0 | 67.6 | -- | 5.0 | -329 |
| | GW1025 | 5/15/2013 | 149 | -- | 2.5 | 99.6 | -- | 2.5 | 0.67 | J | 1.5 | 138 | -- | 5.0 | 65.1 | -- | 5.0 | -332 |
| | GW1159 | 8/27/2013 | 141 | -- | 0.5 | 69.3 | -- | 2.5 | 0.934 | J | 1.5 | 131 | -- | 5.0 | 62 | -- | 5.0 | -320 |
| | GW1292 | 11/13/2013 | 101 | -- | 0.5 | ND | U | 2.0 | ND | U | 1.5 | 125 | -- | 5.0 | 54 | -- | 5.0 | -300 |
| | GW1425 | 3/13/2014 | 183 | -- | 0.5 | 101 | -- | 2.0 | 0.734 | J | 1.5 | 143 | -- | 5.0 | 71.6 | -- | 5.0 | -276 |
| | GW1558 | 6/3/2014 | 173 | -- | 0.5 | 91 | -- | 2.5 | 0.704 | J | 1.5 | 153 | -- | 5.0 | 75.4 | -- | 5.0 | -329 |
| | GW1722 | 9/4/2014 | 167 | -- | 0.5 | 88.7 | -- | 2.5 | 1.51 | -- | 1.5 | 141 | -- | 5.0 | 72.3 | -- | 5.0 | -341 |
| | GW1855 | 11/20/2014 | 174 | -- | 0.5 | 97.3 | -- | 2.5 | 1.12 | -- | 0.2 | 136 | -- | 5.0 | 69.2 | -- | 5.0 | -309 |
| | GW1988 | 3/12/2015 | 208 | -- | 0.5 | 184 | -- | 2.5 | 1.85 | -- | 0.2 | 176 | -- | 5.0 | 83.1 | -- | 5.0 | -336 |
| | GW2154 | 6/18/2015 | 185 | -- | 0.5 | 123 | -- | 2.5 | 1.11 | -- | 0.2 | 164 | J | 5.0 | 67.6 | -- | 5.0 | -333 |
| | GW2304 | 9/1/2015 | 159 | -- | 0.5 | 108 | -- | 2.5 | 1.62 | -- | 0.2 | 150 | -- | 10 | 73.4 | -- | 5.0 | -329 |
| | GW2445 | 11/30/2015 | 171 | -- | 0.5 | 147 | -- | 2.5 | 2.12 | -- | 0.2 | 138 | -- | 10 | 62.7 | -- | 5.0 | 0.01 |
| | GW005-161 | 2/11/2016 | 147 | -- | 20 | 130 | -- | 50 | 2.3 | J- | 0.10 | 165 | -- | 0.40 | 73.9 | -- | 2.0 | -303.5 |
| | GW005-561 | 2/11/2016 | 144 | -- | 20 | 129 | -- | 50 | 2.2 | J- | 0.10 | 165 | -- | 0.40 | 73.8 | -- | 2.0 | -303.5 |
| | GW005-162 | 5/17/2016 | 155 | -- | 20 | 158 | -- | 20 | 2.3 | -- | 0.10 | 157 | -- | 0.40 | 69.6 | -- | 2.0 | -315.5 |
| | GW005-163 | 8/3/2016 | 154 | -- | 40 | 216 | -- | 100 | 2.7 | -- | 0.10 | 177 | J | 0.2 | 75.1 | -- | 0.5 | -313.9 |
| | GW005-164 | 11/15/2016 | 225 | -- | 20 | **339** | -- | 50 | 0.45 | -- | 0.10 | 226 | -- | 0.200 | 88.0 | -- | 0.500 | -213 |
| | GW005-171 | 1/16/2017 | 202 | -- | 40 | **404** | -- | 100 | 1.2 | J | 0.10 | 245 | -- | 0.200 | 91.1 | J | 0.500 | -207.5 |
| | GW005-172 | 5/2/2017 | **257** | J | 80 | **524** | J | 200 | 0.27 | -- | 0.10 | 247 | -- | 0.400 | 86.8 | -- | 2.00 | -200.5 |
| | GW005-173 | 7/18/2017 | 205 | -- | 40 | **396** | -- | 100 | 0.22 | -- | 0.10 | 255 | -- | 0.200 | 86.8 | -- | 0.500 | -178.7 |
| KAFB-106009 | ST106-GW-1069-06052010 | 5/6/2010 | 26 | -- | 1.0 | 25.3 | -- | 1.0 | -- | -- | -- | 67.9 | -- | 0.1 | 30.6 | -- | 0.3 | NA |
| | ST106-GW-P-1069-16062010 | 6/16/2010 | 25.1 | -- | 1.0 | 29.8 | -- | 1.0 | -- | -- | -- | 61.4 | -- | 0.1 | 27.4 | -- | 0.3 | -215 |
| | ST106-GW-P-1069-14072010 | 7/14/2010 | 39 | -- | 1.0 | 28.7 | -- | 1.0 | -- | -- | -- | 76.7 | -- | 0.1 | 30.2 | -- | 0.3 | 0.2 |
| | ST106-GW-P-1069-20102010 | 10/20/2010 | 47.1 | -- | 2.0 | 17.4 | -- | 1.0 | -- | -- | -- | 89.1 | -- | 0.1 | 34.8 | -- | 0.3 | -2.44 |
| | GW0010 | 2/17/2011 | 50.2 | -- | 0.5 | 14.9 | -- | 2.0 | -- | -- | -- | 110 | -- | 5.0 | 37.7 | -- | 5.0 | -127 |
| | GW0049 | 5/13/2011 | 52.2 | -- | 1.0 | 7.58 | -- | 2.5 | -- | -- | -- | 124 | -- | 5.0 | 38.3 | -- | 5.0 | -203 |
| | GW0139 | 9/28/2011 | 74.5 | -- | 20 | 15.2 | J | 40 | ND | U | 1.5 | 122 | -- | 5.0 | 36.9 | -- | 5.0 | -207 |
| | GW0263 | 11/22/2011 | 83.9 | -- | 10 | 4.13 | J | 20 | ND | U | 1.5 | 120 | -- | 5.0 | 34.5 | -- | 5.0 | -147 |
| | GW0388 | 2/27/2012 | 107 | -- | 2.5 | ND | U | 10 | ND | U | 1.5 | 163 | -- | 5.0 | 44.0 | -- | 5.0 | -145 |
| | GW0513 | 5/9/2012 | 118 | -- | 0.5 | ND | U | 2.5 | ND | U | 1.5 | 174 | -- | 5.0 | 46.3 | -- | 5.0 | -235 |
| | GW0637 | 8/9/2012 | 124 | -- | 0.5 | ND | U | 2.5 | ND | U | 1.5 | 172 | -- | 5.0 | 46.6 | -- | 5.0 | -173 |

**Table 3-11**
**Chloride, Sulfate, Nitrate/Nitrite Nitrogen, Calcium, Sodium, and Oxidation Reduction Potential in Wells KAFB-106005, KAFB-106009, and KAFB-106012R, Q3 2017**

| | | | Anions (mg/L) | | | | | | | | | Metals (mg/L) | | | | | | Field Parameter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Parameter | | Chloride | | | Sulfate | | | Nitrate/Nitrite Nitrogen | | | Calcium | | | Sodium | | | ORP (mV) |
| | Analytical Method | | Method E300.0 | | | Method E300.0 | | | Method E353.2 | | | Method SW6010C | | | Method SW6010C | | | -- |
| | NMAC NMWQCC[a] | | 250 | | | 600 | | | 10[e] | | | NS | | | NS | | | NS |
| | EPA MCLs[b] | | 250 | | | 250 | | | 10[e] | | | NS | | | NS | | | NS |
| | EPA RSLs[c] | | NS | | | NS | | | NS | | | NS | | | NS | | | NS |
| | Project Screening Level[d] | | 250 | | | 250 | | | 10[e] | | | NS | | | NS | | | NS |
| **Location ID** | **Field Sample ID** | **Sample Date** | **Result** | **Val Qual** | **LOQ** | **Result** | **Val Qual** | **LOQ** | **Result** | **Val Qual** | **LOQ** | **Result** | **Val Qual** | **LOQ** | **Result** | **Val Qual** | **LOQ** | **Result** |
| KAFB-106009 | GW0761 | 11/5/2012 | 129 | -- | 0.5 | ND | U | 2.5 | ND | U | 1.5 | 169 | -- | 5.0 | 46.3 | -- | 5.0 | -146 |
| | GW0895 | 1/23/2013 | 129 | -- | 0.5 | ND | U | 2.0 | ND | U | 1.5 | 170 | -- | 5.0 | 48.1 | -- | 5.0 | -175 |
| | GW1030 | 5/21/2013 | 118 | -- | 2.5 | 12.2 | -- | 2.5 | 0.421 | J | 1.5 | 149 | -- | 5.0 | 50.3 | -- | 5.0 | -165 |
| | GW1163 | 8/20/2013 | 135 | -- | 0.5 | 7.95 | -- | 2.5 | ND | U | 1.5 | 171 | -- | 5.0 | 49.2 | -- | 5.0 | -306 |
| | GW1296 | 11/19/2013 | 120 | -- | 0.5 | 2.76 | -- | 2.0 | ND | U | 1.5 | 153 | -- | 5.0 | 42.9 | -- | 5.0 | -302 |
| | GW1429 | 3/5/2014 | 129 | -- | 0.5 | 52.6 | -- | 2.0 | ND | U | 1.5 | 147 | -- | 5.0 | 49.7 | J+ | 5.0 | -127 |
| | GW1430 | 3/5/2014 | 129 | -- | 0.5 | 52.4 | -- | 2.0 | ND | U | 1.5 | 146 | -- | 5.0 | 48.6 | J+ | 5.0 | -127 |
| | GW1562 | 6/3/2014 | 186 | -- | 0.5 | 135 | -- | 2.5 | 5.64 | -- | 1.5 | 164 | -- | 5.0 | 49.7 | -- | 5.0 | -170 |
| | GW1726 | 9/2/2014 | 205 | -- | 0.5 | 129 | -- | 2.5 | 8.18 | -- | 1.5 | 191 | -- | 5.0 | 53.7 | -- | 5.0 | 86 |
| | GW1727 | 9/2/2014 | 208 | -- | 0.5 | 132 | -- | 2.5 | 7.82 | -- | 1.5 | 183 | -- | 5.0 | 52.8 | -- | 5.0 | 86 |
| | GW1859 | 11/18/2014 | 248 | -- | 0.5 | 165 | -- | 2.5 | **15.7** | -- | 1.2 | 184 | -- | 5.0 | 51.3 | -- | 5.0 | -53 |
| | GW1992 | 3/11/2015 | **312** | -- | 1.0 | **292** | -- | 5.0 | **18.7** | -- | 1.0 | 242 | -- | 5.0 | 59.9 | -- | 5.0 | 89 |
| | GW2158 | 6/18/2015 | **312** | -- | 2.5 | **273** | -- | 12.5 | **14.2** | -- | 1.0 | 246 | -- | 5.0 | 52.3 | -- | 5.0 | 88 |
| | GW2308 | 8/27/2015 | **308** | -- | 2.5 | **289** | -- | 12.5 | **15.1** | -- | 2.0 | 244 | -- | 25 | 54.7 | -- | 5.0 | 79 |
| | GW2459 | 11/3/2015 | **330** | J- | 2.5 | **319** | J- | 12.5 | **16.3** | J- | 2.0 | 266 | -- | 25 | 55.4 | -- | 5.0 | NR |
| | GW009-161 | 2/9/2016 | **421** | J+ | 200 | **372** | -- | 50.0 | **14.9** | -- | 0.5 | 285 | -- | 0.40 | 55.4 | -- | 2.0 | 115.7 |
| | GW009-162 | 5/5/2016 | **336** | -- | 40 | **423** | -- | 100.0 | **25.3** | -- | 1.0 | 302 | -- | 0.40 | 59.7 | -- | 2.0 | 14.1 |
| | GW009-163 | 7/21/2016 | **367** | -- | 40 | **446** | -- | 100 | **13.5** | J | 0.5 | 329 | -- | 0.2 | 65 | -- | 0.5 | 80.7 |
| | GW009-563 | 7/21/2016 | **371** | -- | 40 | **455** | -- | 100 | **13.1** | J | 0.5 | 315 | -- | 0.2 | 62.3 | -- | 0.5 | 80.7 |
| | GW009-164 | 11/3/2016 | **411** | -- | 200 | **428** | -- | 50.0 | **19.9** | J | 0.50 | 305 | -- | 0.200 | 62.8 | -- | 0.500 | 55.0 |
| | GW009-171 | 2/1/2017 | **354** | -- | 200 | **468** | -- | 200 | **15.3** | -- | 0.50 | 311 | -- | 0.400 | 67.3 | -- | 2.0 | 165.9 |
| | GW009-571 | 2/1/2017 | **354** | -- | 200 | **468** | -- | 200 | **15.3** | -- | 0.50 | 311 | -- | 0.200 | 67.3 | -- | 0.500 | 165.9 |
| | GW009-172 | 5/1/2017 | **289** | -- | 40.0 | **442** | -- | 100 | **12.5** | -- | 1.0 | 287 | -- | 0.400 | 68.3 | -- | 2.00 | 4.2 |
| | GW009-173 | 7/12/2017 | **315** | J | 200 | **433** | J | 50.0 | **12.9** | -- | 1.0 | 265 | -- | 0.200 | 65.7 | -- | 0.500 | 132.2 |
| KAFB-106012R | GW1565 | 5/20/2014 | 95.4 | -- | 0.5 | 128 | -- | 2.5 | 2.37 | -- | 1.5 | 101 | -- | 5.0 | 35.8 | -- | 5.0 | 103 |
| | GW1730 | 8/12/2014 | 154 | -- | 0.5 | **262** | -- | 5.0 | 4.40 | -- | 1.5 | 175 | -- | 5.0 | 50.8 | -- | 5.0 | 147 |
| | GW1862 | 10/23/2014 | 170 | -- | 1.0 | **302** | -- | 5.0 | 2.22 | -- | 0.2 | 165 | -- | 5.0 | 47.7 | -- | 5.0 | 136 |
| | GW1863 | 10/23/2014 | 170 | -- | 1.0 | **302** | -- | 5.0 | 2.19 | -- | 0.2 | 170 | -- | 5.0 | 48.3 | -- | 5.0 | 136 |
| | GW1995 | 2/2/2015 | 162 | -- | 0.5 | **329** | -- | 5.0 | 4.75 | -- | 0.4 | 165 | -- | 5.0 | 50.6 | -- | 5.0 | 128 |
| | GW2161 | 5/27/2015 | 179 | -- | 0.5 | **330** | -- | 12.5 | 5.21 | -- | 0.4 | 169 | -- | 5.0 | 49.1 | J- | 5.0 | 132.2 |
| | GW2311 | 7/27/2015 | 186 | -- | 0.5 | **336** | -- | 12.5 | 5.36 | -- | 1.0 | 173 | -- | 10 | 50.9 | -- | 5.0 | 122 |
| | GW2462 | 10/21/2015 | 189 | -- | 0.5 | **344** | -- | 12.5 | 5.92 | -- | 1.0 | 189 | -- | 25 | 52.8 | -- | 5.0 | 181 |
| | GW2463 | 10/21/2015 | 189 | -- | 0.5 | **346** | -- | 12.5 | 5.65 | -- | 1.0 | 179 | -- | 25 | 50.8 | -- | 5.0 | 181 |
| | GW012-R-161 | 2/8/2016 | 168 | J+ | 20 | **297** | -- | 50 | 5.7 | -- | 0.5 | 186 | -- | 0.40 | 53.7 | -- | 2.0 | 164.4 |
| | GW012-R-162 | 4/25/2016 | 200 | -- | 40 | **343** | -- | 25 | ND | U | 0.6 | 191 | -- | 0.4 | 55.3 | -- | 2.0 | 106.8 |
| | GW012-R-562 | 4/25/2016 | 215 | -- | 40 | **337** | -- | 25 | ND | U | 0.6 | 193 | -- | 0.4 | 56 | -- | 2.0 | 106.8 |
| | GW012-R-163 | 7/19/2016 | 194 | -- | 40 | **372** | -- | 25 | 5.8 | -- | 0.5 | 214 | -- | 0.2 | 59.3 | -- | 0.5 | 179.2 |
| | GW012R-164 | 11/8/2016 | 175 | -- | 20.0 | **378** | -- | 50.0 | 5.6 | -- | 0.50 | 200 | -- | 0.200 | 56.9 | -- | 0.500 | 150.9 |
| | GW012R-171 | 1/26/2017 | 176 | -- | 20.0 | **396** | J | 50.0 | 6.1 | -- | 0.50 | 192 | -- | 0.200 | 57.0 | -- | 0.500 | 113.4 |
| | GW012R-172 | 4/24/2017 | 158 | -- | 20.0 | **355** | -- | 50.0 | 5.7 | -- | 0.50 | 196 | -- | 0.400 | 56.7 | -- | 2.00 | 157.3 |
| | GW012R-173 | 7/19/2017 | 156 | J | 20.0 | **357** | J | 50.0 | 5.4 | -- | 0.50 | 198 | -- | 0.200 | 57.4 | -- | 0.500 | 46.3 |

**Table 3-11**
**Chloride, Sulfate, Nitrate/Nitrite Nitrogen, Calcium, Sodium, and Oxidation Reduction Potential in Wells KAFB-106005, KAFB-106009, and KAFB-106012R, Q3 2017**

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004).
[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40 CFR Part 141, 143 (May 2009).
[c] EPA Region 6 RSL for Tapwater (June 2015) for hazard index = 1.0 for noncarcinogens and a $10^{-5}$ cancer risk level for carcinogens.
[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA RSL.
[e] Based on the geochemical equilibrium of the site groundwater and previous site data analyses, nitrate/nitrite results represent nitrate concentrations.
mg/L = milligram per liter
mV = millivolt
Location ID
BFF = Bulk Fuels Facility
EPA = U.S. Environmental Protection Agency
ID = identification
LOQ = limit of quantitation
MCL = maximum contaminant level
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
RSL = regional screening level
SWMU = solid waste management unit
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
J- = The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.
J+ = The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample.

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## Table 4-1
## Drinking Water Supply Well Analytical Results, Q3 2017

| | | | | Well Location ID | | | KAFB-003 | | | KAFB-003 | | | KAFB-015 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Field Sample ID | | | GW17025 | | | GW17026 | | | GW17027 | | |
| | | | | Sample Date | | | 7/18/2017 | | | 7/18/2017 | | | 7/18/2017 | | |
| | | | | Sample Type / Laboratory | | | REG | | | Field Duplicate | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** |
| EDB | EPA Method 504.1 (µg/L) | Ethylene Dibromide | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.017 | ND | U | 0.017 | ND | U | 0.017 |
| VOCs | EPA Method 524.2 (µg/L) | Benzene | 10 | 5 | 0.46 | 5 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | | Toluene | 750 | 1000 | 1,100 | 750 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | | Total Xylenes | 620 | 10,000 | 190 | 620 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| Field Parameters | | Temperature (°C) | NS | NS | NS | NS | 20.67 | | | 20.67 | | | 26.09 | | |
| | | pH | NS | NS | NS | NS | 7.64 | | | 7.64 | | | 8.03 | | |
| | | Specific Conductance (µS/cm) | NS | NS | NS | NS | 441 | | | 441 | | | 441 | | |
| | | DO (mg/L) | NS | NS | NS | NS | 4.30 | | | 4.30 | | | 2.61 | | |
| | | ORP (mV) | NS | NS | NS | NS | 208 | | | 208 | | | 197 | | |
| | | Turbidity (NTU) | NS | NS | NS | NS | 0.0 | | | 0.0 | | | 0.0 | | |

## Table 4-1
## Drinking Water Supply Well Analytical Results, Q3 2017

| | | | Well Location ID | | | ST106-VA-2 | | | KAFB-003 | | | KAFB-015 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID | | | GW17028 | | | GW17029 | | | GW17030 | | |
| | | | Sample Date | | | 7/18/2017 | | | 8/8/2017 | | | 8/8/2017 | | |
| | | | Sample Type / Laboratory | | | REG | | | REG | | | REG | | |
| **Analytical Method** | **Analyte** | **NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** |
| EPA Method 504.1 (µg/L) | Ethylene Dibromide | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.017 | ND | U | 0.017 | ND | U | 0.017 |
| EPA Method 524.2 (µg/L) | Benzene | 10 | 5 | 0.46 | 5 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Toluene | 750 | 1000 | 1,100 | 750 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Total Xylenes | 620 | 10,000 | 190 | 620 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Temperature (°C) | NS | NS | NS | NS | 23.84 | | | 21.37 | | | 25.82 | | |
| | pH | NS | NS | NS | NS | 7.89 | | | 7.59 | | | 8.07 | | |
| | Specific Conductance (µS/cm) | NS | NS | NS | NS | 383 | | | 394 | | | 430 | | |
| | DO (mg/L) | NS | NS | NS | NS | 2.37 | | | 7.49 | | | 3.64 | | |
| | ORP (mV) | NS | NS | NS | NS | 208 | | | 165 | | | 201 | | |
| | Turbidity (NTU) | NS | NS | NS | NS | 0.1 | | | 0.3 | | | 0.0 | | |

## Table 4-1
## Drinking Water Supply Well Analytical Results, Q3 2017

| | | | Well Location ID | | | ST106-VA-2 | | | ST106-VA-2 | | | KAFB-003 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID | | | GW17031 | | | GW17032 | | | GW17033 | | |
| | | | Sample Date | | | 8/8/2017 | | | 8/8/2017 | | | 9/6/2017 | | |
| | | | Sample Type / Laboratory | | | REG | | | FD | | | REG | | |
| **Analytical Method** | **Analyte** | **NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** |
| EPA Method 504.1 (µg/L) | Ethylene Dibromide | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.017 | ND | U | 0.017 | ND | U | 0.017 |
| EPA Method 524.2 (µg/L) | Benzene | 10 | 5 | 0.46 | 5 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Toluene | 750 | 1000 | 1,100 | 750 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Total Xylenes | 620 | 10,000 | 190 | 620 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Temperature (°C) | NS | NS | NS | NS | 24.74 | | | 24.74 | | | 22.50 | | |
| | pH | NS | NS | NS | NS | 8.10 | | | 8.10 | | | 8.08 | | |
| | Specific Conductance (µS/cm) | NS | NS | NS | NS | 368 | | | 368 | | | 346 | | |
| | DO (mg/L) | NS | NS | NS | NS | 4.76 | | | 4.76 | | | 6.50 | | |
| | ORP (mV) | NS | NS | NS | NS | 207 | | | 207 | | | 190.0 | | |
| | Turbidity (NTU) | NS | NS | NS | NS | 0.0 | | | 0.0 | | | 0.0 | | |

## Table 4-1
## Drinking Water Supply Well Analytical Results, Q3 2017

| | | Well Location ID | KAFB-016 | | | KAFB-016 | | | KAFB-015 | | | ST106-VA-2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Field Sample ID | GW17034 | | | GW17035 | | | GW17036 | | | GW17037 | | |
| | | Sample Date | 9/6/2017 | | | 9/6/2017 | | | 9/6/2017 | | | 9/6/2017 | | |
| | | Sample Type / Laboratory | REG | | | Field Duplicate | | | REG | | | REG | | |
| **Analytical Method** | **Analyte** | **NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** | **Result** | **VAL QUAL** | **LOQ** |
| EPA Method 504.1 (µg/L) | Ethylene Dibromide | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.017 | ND | U | 0.017 | ND | U | 0.017 | ND | U | 0.017 |
| EPA Method 524.2 (µg/L) | Benzene | 10 | 5 | 0.46 | 5 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Toluene | 750 | 1000 | 1,100 | 750 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Total Xylenes | 620 | 10,000 | 190 | 620 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 | ND | U | 0.5 |
| | Temperature (°C) | NS | NS | NS | NS | 24.49 | | | 24.49 | | | 25.64 | | | 22.17 | | |
| | pH | NS | NS | NS | NS | 7.63 | | | 7.63 | | | 8.08 | | | 8.06 | | |
| | Specific Conductance (µS/cm) | NS | NS | NS | NS | 427 | | | 427 | | | 409 | | | 345 | | |
| | DO (mg/L) | NS | NS | NS | NS | 8.31 | | | 8.31 | | | 2.58 | | | 5.66 | | |
| | ORP (mV) | NS | NS | NS | NS | 124.0 | | | 124.0 | | | 163.0 | | | 173.0 | | |
| | Turbidity (NTU) | NS | NS | NS | NS | 0.3 | | | 0.3 | | | 0.0 | | | 0.0 | | |

**Table 4-1**
**Drinking Water Supply Well Analytical Results, Q3 2017**

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC, 2004). For metals, the NMWQCC numeric standard applies to dissolved metals and total mercury.

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40 CFR Part 141, 143 (May 2009).

[c] EPA Region 6 RSL for Tapwater (June 2017) for hazard index = 1.0 for non-carcinogens and a $10^{-5}$ cancer risk

[d]The project screening level was selected to satisfy the requirements of the Kirtland AFB hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard of (2) EPA MCL If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA RSL. Project screening levels below the LOD are highlighted and these project screening levels are set at the LOQ.
°C = Degrees Celsius
AFB = Air Force Base
CFR = Code of Federal Regulations
DO = dissolved oxygen
EDB = ethylene dibromide
EPA = U.S. Environmental Protection Agency
ID = identification
KAFB = Kirtland Air Force Base
LOQ = limit of quantitation
MCL = maximum contaminant level
µg/L = microgram per Liter
µS/cm = microSiemen per centimeter
mg/L = milligram per Liter
mV = millivolt
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
NTU = nephelometric turbidity unit
ORP = oxidation reduction potential
pH = potential hydrogen
REG = regular or parent sample
RSL = regional screening level
S.U. = standard unit
SWMU = Solid Waste Management Unit
VA = U.S. Department of Veterans Affairs
Val Qual = validation qualifier based on independent data validation
VOC = volatile organic compound

Qualifiers:
U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

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**Table 5-1**
**Permit Terms and Conditions, Operations and Maintenance Plan Cross References**

| Condition No. | Terms and Conditions | Reference Location in Quarterly Report |
|---|---|---|
| 15 | The Permittee shall ensure the treated effluent conveyance system, i.e., piping, between the GWTS and the UIC well(s) does not leak and shall report any such leakage to the NMED GWQB in accordance with 20.6.2.1203(A) NMAC and copy the NMED HWB.<br>Within 1 year of the effective date of this Discharge Permit, the Permittee shall demonstrate the structural integrity of the treated effluent conveyance system between the GWTS and KAFB-7. Prior to testing, the Permittee shall propose for NMED approval the test method to be used. The results of the mechanical integrity testing shall be submitted to NMED within 60 days of test completion.<br>The Permittee shall integrity test the treated effluent conveyance system between GWTS and the UIC well(s) prior to submitting a permit renewal application.<br>[20.6.2.3106(C) NMAC, 20.6.2.3107(A) NMAC] | Not Performed This Quarter |
| 17 | The Permittee shall conduct the monitoring, operations, and reporting listed below. Unless otherwise specified, all periodic monitoring results or general information obtained shall be reported in the forthcoming quarterly report.<br>[20.6.2.3107 NMAC] | Not applicable |
| 18 | Unless otherwise approved by NMED, the Permittee shall conduct sampling in accordance with standard industry practice. Sampling in accordance with the most current version of the GWTS Sampling and Analysis Plan (Appendix L of the O&M Plan), which includes sampling locations, procedures, field measurements, quality control samples, handling and custody, analytical methods, quality control, analytical validation, and reporting requirements, satisfies this Condition.<br>[20.6.2.3107(B) NMAC] | 5.1.3 Analytical Metrics and Ethylene Dibromide Removal |
| 19 | The Permittee shall submit quarterly and annual reports to NMED pursuant to the most recent NMED HWB approved Work Plans. The Permittee shall identify the portions of these reports pertaining to this Discharge Permit with a table in the reports that identifies those portions. Quarterly reports shall be submitted as specified below unless otherwise authorized by NMED:<br>• January 1st through March 31st - due by June 30th<br>• April 1st through June 30th - due by September 30th<br>• July 1st through September 30th - due by December 31st<br>• October 1st through December 31st - due by March 31st<br>Annual reporting requirements for the previous year, i.e., January 1st through December 31st, shall be reported in the March 31st quarterly report.<br>[20.6.2.3107(A) NMAC] | Table 5-1 Permit Terms and Conditions, Operations and Maintenance Plan Cross References |
| 20 | The Permittee shall monitor the concentration of all COCs listed on Table 2 in GWTS treated effluent. Associated sampling and analysis shall be performed monthly at a minimum.<br>When groundwater from a new extraction well is first introduced to the GWTS, COC monitoring of the GWTS treated effluent shall occur daily for the first week of treatment, weekly for the first month of treatment, and monthly thereafter. If alterations to, or conditions at, the GWTS result in a potential impact to effluent quality, the Permittee will repeat this sampling sequence as directed by NMED.<br>A representative sample of GWTS influent and effluent shall be analyzed annually for the constituents identified in Table 3.<br>A representative sample of GWTS influent and effluent shall be analyzed every 5 years for the constituents identified in Table 4. The first analysis of the 5-year constituent list shall occur in July 2017. Any newly identified constituents detected during the 5-year sampling events will be added to the annual sampling constituent list in Table 3.<br>All analysis of GWTS influent and effluent shall utilize analytical methods with detection limits that are sufficiently low to allow comparison to the standards included in the above referenced state and federal regulations.<br>All sampling, analysis, and reporting shall comply with the most recent approved Work Plans.<br>[20.6.2.3107(A) NMAC and 20.6.2.3107(B) NMAC] | 5.1.3 Analytical Metrics and Ethylene Dibromide Removal<br>Tables 5-6 through 5-10 |
| 21 | The Permittee shall report the volume of treated GWTS effluent discharged to each UIC well each quarter. This report shall include the following:<br>a. Monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each UIC well<br>b. The totalized monthly volume of treated effluent transferred to all UIC wells<br>c. Monthly average, maximum, and minimum head values of injection water for each UIC well.<br>The Permittee shall monitor the GWTS effluent volume utilizing an effluent flow meter installed on the effluent pump skid after the GAC units. Each UIC well shall have a dedicated flowmeter. Flowmeters shall be inspected and calibrated in accordance with the associated manufacturer's recommendations.<br>[20.6.2.3107 NMAC] | Table 5-4 Groundwater Treatment System Injection Well Performance, Q3 2017 |

**Table 5-1**
**Permit Terms and Conditions, Operations and Maintenance Plan Cross References**

| Condition No. | Terms and Conditions | Reference Location in Quarterly Report |
|---|---|---|
| 22 | The Permittee shall include the following results and general information in quarterly reports to NMED:<br>a. Any mechanical integrity (tests) conducted on either the GWTS or a UIC well<br>b. Any replacement of GAC media and the associated data that initiated the decision to replace the media<br>c. Any UIC well rehabilitation conducted<br>d. Any malfunction, repair, or replacement of a flowmeter<br>e. Any additional operational changes with the potential to affect the discharge.<br>[20.6.2.3107 NMAC] | a. 5.2.1 Routine Maintenance Activities and 5.2.3 Non-Routine Maintenance<br>b, c, d, e. 5.2.3 Non-Routine Maintenance Activities |
| 23 | The Permittee shall monitor the groundwater wells in the vicinity of KAFB-7 and in the vicinity of any newly installed UIC well(s) to determine any change to aquifer chemistry that may be the result of injection. This monitoring shall be performed annually, shall conform to the procedures of the most current approved Work Plan, and shall measure the COCs listed in Table 2. This chemistry will be reported in the Annual Report for BFF. ST-105 Annual Report includes elevation contour mapping and analytical parameters identified in the Stage 2 Abatement Plan.<br>The Permittee shall develop a groundwater elevation contour map depicting the groundwater flow direction in the vicinity of each UIC well and report it in the ST-105 Annual Report.<br>If the chemical quality of the treated groundwater being injected changes over time, NMED may require the Permittee to repeat geochemical modeling (numeric or analytical) to predict the interaction between the treated effluent and receiving groundwater. | Not Performed This Quarter |
| 24 | The Permittee shall post all reports required by this Discharge Permit on Kirtland AFB's most current website (e.g., https://kirtlandafb.tlisolutions.com/main.aspx.)<br>[20.6.2.3107(A) NMAC] | Not applicable |
| 34 | In the event the Permittee proposes a change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated, or discharged by the facility that differs from the terms and conditions in this Discharge Permit, the Permittee shall notify NMED prior to implementing such changes. The Permittee shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes.<br>[20.6.2.7(P) NMAC, 20.6.2.3107(C) NMAC, 20.6.2.3109(E) and (G) NMAC] | Not Performed This Quarter |
| 35 | In the event the Permittee proposes to construct or change an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the Permittee shall submit construction plans and specifications to NMED for the proposed system or process unit prior to the commencement of construction.<br>In the event the Permittee implements changes to an existing system authorized by this Discharge Permit which will result in only a minor effect on the quality of the discharge, the Permittee shall report such changes (including the submission of record drawings, where applicable) in the next quarterly report to NMED.<br>[20.6.2.1202(A) and (C) NMAC, New Mexico Statutes Annotated 1978, §§ 61-23-1 through 61-23-32] | Not Performed This Quarter |

AFB = Air Force Base
BFF = Bulk Fuels Facility
COC = contaminant of concern
GAC = granular activated carbon
GWTS = groundwater treatment system
GWQB = Groundwater Quality Bureau
HWB = Hazardous Waste Bureau
KAFB = Kirtland Air Force Base
NMAC = New Mexico Administrative Code
NMED = New Mexico Environment Department
No. = number
O&M = Operations and Maintenance
SWMU = Solid Waste Management Unit
UIC = underground injection control

**Table 5-2**
**Quantities of Groundwater Treated and Discharged, Q3 2017**

| GWTS Operation | Train 1 Total Groundwater Treated (gallons) | Train 2 Total Groundwater Treated (gallons) | Total Groundwater Extracted (gallons) | Treated Groundwater Injected to Injection Well KAFB-7 (gallons) | Treated Groundwater Discharged to the Golf Course Main Pond[a] (gallons) |
|---|---|---|---|---|---|
| Dec-15[b] | 17,664,900 | 0 | 17,664,900 | 0 | 17,664,900 |
| 2015 Total | 17,664,900 | 0 | 17,664,900 | 0 | 17,664,900 |
| Jan-16 | 1,777,200 | 0 | 1,777,200 | 0 | 1,777,200 |
| Feb-16 | 881,000 | 0 | 881,000 | 181,300 | 699,700 |
| Mar-16 | 22,168,080 | 0 | 22,168,080 | 1,231,350 | 20,936,730 |
| Apr-16 | 12,649,920 | 0 | 12,649,920 | 582,570 | 12,067,350 |
| May-16 | 12,090,000 | 0 | 12,090,000 | 0 | 12,090,000 |
| Jun-16 | 8,850,000 | 0 | 8,850,000 | 0 | 8,850,000 |
| Jul-16 | 9,940,000 | 0 | 9,940,000 | 0 | 9,940,000 |
| Aug-16 | 9,400,000 | 0 | 9,400,000 | 0 | 9,400,000 |
| Sep-16 | 12,980,000 | 0 | 12,980,000 | 0 | 12,980,000 |
| Oct-16 | 8,300,000 | 0 | 8,300,000 | 0 | 8,300,000 |
| Nov-16 | 7,200,000 | 0 | 7,200,000 | 2,970,000 | 4,230,000 |
| Dec-16 | 14,570,100 | 0 | 14,570,100 | 14,501,190 | 68,910 |
| 2016 Total | 120,806,300 | 0 | 120,806,300 | 19,466,410 | 101,339,890 |
| Jan-17 | 6,089,700 | 87,300 | 6,177,000 | 5,877,600 | 299,400 |
| Feb-17 | 1,637,100 | 2,357,400 | 3,994,500 | 2,216,600 | 1,777,900 |
| Mar-17 | 5,551,200 | 5,705,400 | 11,256,600 | 5,172,800 | 6,083,800 |
| Apr-17 | 7,269,000 | 6,712,700 | 13,981,700 | 2,248,062 | 11,733,638 |
| May-17 | 9,234,900 | 9,453,700 | 18,688,600 | 4,722,563 | 13,966,037 |
| Jun-17 | 9,706,100 | 9,055,100 | 18,761,200 | 1,592,700 | 17,168,500 |
| Jul-17 | 13,260,800 | 10,875,200 | 24,136,000 | 3,023,500 | 21,112,500 |
| Aug-17 | 9,461,200 | 8,999,500 | 18,460,700 | 4,847,500 | 13,613,200 |
| Sep-17[c] | 11,864,900 | 11,515,200 | 23,380,100 | 8,753,900 | 14,626,200 |
| 2017 Total | 74,074,900 | 64,761,500 | 138,836,400 | 38,455,225 | 100,381,175 |
| Cumulative Total | 212,546,100 | 64,761,500 | 277,307,600 | 57,921,635 | 219,385,965 |

[a] Corrected volumes from human machine interface datasets.

[b] December 2015 train 1 treatment volume includes all water treated by the temporary treatment system and water treated by train 1 during December 2015.

[c] September volumes are calculated through October 2, 2017.

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**Table 5-3**
**Groundwater Treatment System Extraction Well Performance, Q3 2017**

| Well ID | Well Parameter | July | August | September | Q3 |
|---|---|---|---|---|---|
| KAFB-106228 | Avg. Operational Flow Rate[a] (gpm) | 145 | 145 | 144 | 144 |
| | Flow Rate Range[b] (gpm) | 144 - 145 | 0 - 145 | 143 - 145 | 0 - 145 |
| | Avg. Drawdown[c] (ft) | 18.6 | 18.7 | 19.1 | 18.8 |
| | Water Level Elevation Range[b] (ft) | 4852.7 - 4853.9 | 4852.6 - 4871.6 | 4852.1 - 4853.3 | 4852.1 - 4871.6 |
| | Avg. Specific Capacity[d] (gpm/ft) | 7.8 | 7.7 | 7.5 | 7.7 |
| | Avg. Transmissivity[d] (gpd/ft) | 11,677 | 11,603 | 11,297 | 11,528 |
| | Run Time %[e] | 99% | 95% | 98% | 98% |
| | Notes | NA | NA | NA | NA |
| KAFB-106233 | Avg. Operational Flow Rate[a] (gpm) | 172 | 170 | 167 | 170 |
| | Flow Rate Range[b] (gpm) | 171 - 175 | 168 - 172 | 0 - 168 | 0 - 175 |
| | Avg. Drawdown[c] (ft) | 7.4 | 7.5 | 8.1 | 7.5 |
| | Water Level Elevation Range[b] (ft) | 4864.9 - 4865.2 | 4864.8 - 4865.3 | 4864.5 - 4870.2 | 4864.5 - 4870.2 |
| | Avg. Specific Capacity[d] (gpm/ft) | 23.1 | 22.7 | 21.5 | 22.5 |
| | Avg. Transmissivity[d] (gpd/ft) | 34,722 | 34,030 | 32,303 | 33,731 |
| | Run Time %[e] | 99% | 98% | 97% | 98% |
| | Notes | NA | NA | NA | NA |
| KAFB-106234 | Avg. Operational Flow Rate[a] (gpm) | 165 | 164 | 164 | 164 |
| | Flow Rate Range[b] (gpm) | 164 - 166 | 1 - 165 | 163 - 165 | 1 - 166 |
| | Avg. Drawdown[c] (ft) | 6.5 | 6.6 | 7.2 | 6.8 |
| | Water Level Elevation Range[b] (ft) | 4864.3 - 4864.7 | 4864.1 - 4871.0 | 4863.3 - 4864.1 | 4863.3 - 4871.0 |
| | Avg. Specific Capacity[d] (gpm/ft) | 24.5 | 25.1 | 22.7 | 24.1 |
| | Avg. Transmissivity[d] (gpd/ft) | 36,770 | 37,623 | 34,060 | 36,142 |
| | Run Time %[e] | 98% | 94% | 98% | 97% |
| | Notes | NA | NA | NA | NA |
| Combined Extraction Well Totals | Combined Avg. Operational Flow Rate[a] (gpm) | 482 | 463 | 464 | 470 |
| | Combined Flow Rate Range (gpm) | 480 - 485 | 0 - 481 | 0 - 477 | 0 - 485 |
| | Run Time %[e] | 99% | 98% | 99% | 99% |

[a] Flow rate calculation is an avg. rate that only includes time while the system was operational; avg. values were computed from daily values throughout Q3 2017.

[b] Ranges are provided from daily values throughout Q2 2017.

[c] Avg. drawdown calculated from approximate static water elevation in January 2017, only includes time while system was operational and does not account for dynamic water elevation increases in the aquifer; avg. values were computed from daily values throughout Q3 that were obtained from the HMI for KAFB-106228 and the transducers for KAFB-106233 and KAFB-106234.

[d] Specific capacity and Transmissivity avg. values only include pump run time (i.e., pump down time is not factored into the calculation); avg. values were computed from daily values throughout Q3.

[e] Percent run time is calculated where any one well is running at a minimum of 50 gpm; dataset includes readings for every minute throughout Q3.

Avg. = average
ft = foot/feet
gpd = gallons per day
gpm = gallons per minute
HMI = human machine interface
NA = not applicable

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## Table 5-4
## Groundwater Treatment System Injection Well Performance, Q3 2017

| Well ID | Well Parameter | July | August | September | Q3 |
|---|---|---|---|---|---|
| KAFB-7 | Avg. Operational Flow Rate[a] (gpm) | 529.7 | 530.8 | 500.1 | 517.4 |
| | Flow Rate Range[b] (gpm) | 0.0 - 960.4 | 0.0 - 969.7 | 0.0 - 965.6 | 0.0 - 969.7 |
| | Volume Injected[c] (gal) | 3,023,500 | 4,847,500 | 8,597,000 | 16,468,000 |
| | Avg. Water Level Elevation[d] (ft AMSL) | 4872.5 | 4874.3 | 4874.9 | 4873.9 |
| | Water Level Elevation Range[d] (ft AMSL) | 4870.9 - 4893.4 | 4870.9 - 4899.8 | 4870.6 - 4899.6 | 4870.6 - 4899.8 |
| | Notes | NA | NA | NA | NA |
| GWTS Effluent | Avg. Operational Flow Rate[a] (gpm) | 487.0 | 479.6 | 474.0 | 480.3 |
| | Flow Rate Range[b] (gpm) | 0.0 - 624.2 | 0.0 - 621.6 | 0.0 - 666.9 | 0.0 - 666.9 |

[a] Flow rate calculation is an avg. rate that only includes time while the system was operational; avg. values were computed from HMI values throughout Q3 2017.

[b] Ranges are provided from HMI values throughout Q3 2017. KAFB-7 flow rate fluctuates due to surging, etc. and is not consistent with GWTS effluent flow rates.

[c] Volume injected is calculated using totalizer readings from flow meters installed on the GWTS effluent skids. September injection volume calculated through October 2, 2017.

[d] Water level elevation averages and ranges include times when injection wells are not being utilized and omit data collected during times when communications between KAFB-7 and the GWTS are interrupted. Communications were interrupted between September 28, 2017 at 0715 through September 29, 2017 at 1330. Data was collected from the water level transducer between July 1 and August 31, 2017 and from the HMI between September 1 and 30, 2017.

AMSL = above mean sea level
Avg. = average
ft = foot/feet
gal = gallons
gpd = gallons per day
gpm = gallons per minute
GWTS = groundwater treatment system
HMI = human machine interface
NA = not applicable

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**Table 5-5**
**Groundwater Treatment System EDB Removal, Q3 2017**

| Treatment Train | Month | Date[1] | Cumulative Volume Extracted (gal) | Monthly Volume Treated (gal) | EDB Concentration (µg/L)[2] | Cumulative Mass of EDB Extracted (mg) | Mass of EDB Removed (mg) |
|---|---|---|---|---|---|---|---|
| **Train 1** | July | 6/26/2017 | 177,959,200 | 13,260,800 | 0.055 | 55334.0 | 2739.7 |
| | | 7/3/2017 | 180,511,400 | | 0.055 | 55865.2 | |
| | | 7/10/2017 | 183,263,200 | | 0.055 | 56438.1 | |
| | | 7/17/2017 | 185,679,200 | | 0.055 | 56941.1 | |
| | | 7/24/2017 | 188,409,100 | | 0.054 | 57499.1 | |
| | | 7/31/2017 | 191,220,000 | | 0.054 | 58073.7 | |
| | August | 8/7/2017 | 193,326,900 | 9,461,200 | 0.054 | 57929.8 | 1441.1 |
| | | 8/14/2017 | 195,459,800 | | 0.054 | 58365.8 | |
| | | 8/21/2017 | 197,983,300 | | 0.054 | 58881.6 | |
| | | 8/28/2017 | 200,681,200 | | 0.062 | 59514.8 | |
| | September | 9/5/2017 | 203,170,300 | 11,864,900 | 0.076 | 60099.0 | 2506.6 |
| | | 9/11/2017 | 205,164,500 | | 0.076 | 60567.0 | |
| | | 9/18/2017 | 207,649,000 | | 0.076 | 61150.1 | |
| | | 9/25/2017 | 210,415,700 | | 0.055 | 61642.4 | |
| | | 10/2/2017 | 212,546,100 | | 0.055 | 62021.4 | |
| **Train 2** | July | 6/26/2017 | 33,371,600 | 10,875,200 | 0.058 | 8604.0 | 2340.7 |
| | | 7/3/2017 | 35,581,200 | | 0.058 | 9089.1 | |
| | | 7/10/2017 | 37,657,500 | | 0.058 | 9545.0 | |
| | | 7/17/2017 | 40,110,000 | | 0.058 | 10083.4 | |
| | | 7/24/2017 | 42,166,300 | | 0.055 | 10511.5 | |
| | | 7/31/2017 | 44,246,800 | | 0.055 | 10944.7 | |
| | August | 8/7/2017 | 46,734,800 | 8,999,500 | 0.055 | 11462.7 | 1898.0 |
| | | 8/14/2017 | 49,255,400 | | 0.055 | 11987.5 | |
| | | 8/21/2017 | 51,103,400 | | 0.055 | 12372.2 | |
| | | 8/28/2017 | 53,246,300 | | 0.058 | 12842.7 | |
| | September | 9/5/2017 | 56,158,800 | 11,515,200 | 0.058 | 13482.2 | 2493.6 |
| | | 9/11/2017 | 58,235,600 | | 0.058 | 13938.1 | |
| | | 9/18/2017 | 60,478,300 | | 0.058 | 14430.5 | |
| | | 9/25/2017 | 62,473,900 | | 0.058 | 14868.7 | |
| | | 10/2/2017 | 64,761,500 | | 0.054 | 15336.3 | |
| Q3 2017 Train 1 Total | | | | 34,586,900 | | | 6,687.4 |
| Q3 2017 Train 2 Total | | | | 31,389,900 | | | 6,732.3 |
| Q3 2017 Total | | | | 65,976,800 | | | 13,419.7 |

[1] Monthly date ranges may include dates falling outside of the actual month as weekly human machine interface data
[2] Estimated EDB concentrations from monthly EDB sampling
µg/L = microgram per liter
EDB = 1,2-dibromoethane
gal = gallon
mg = milligram

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**Table 5-6**
**Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q3 2017**

| | | | Well Location ID: | | GWTS-BFF-INF1 | | | GWTS-BFF-INF1 | | | GWTS-BFF-INF1 | | | GWTS-BFF-GAC1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | GWTS-INF1-072517 | | | GWTS-INF1-082417 | | | GWTS-INF1-092117 | | | GWTS-GAC1-072517 | | |
| | | | Sample Date: | | 7/25/2017 | | | 8/24/2017 | | | 9/21/2017 | | | 7/25/2017 | | |
| | | | Sample Type: | | REG | | | REG | | | REG | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Project Screening Level[b]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | **0.054** | -- | 0.019 | **0.062** | | 0.019 | 0.047 | | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Xylenes, Total | 620 | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Iron, dissolved | 1.0 | 1.0 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | Manganese, dissolved | 0.2 | 0.2 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 |
| Field Parameters | | Temperature (°C) | NS | NS | 20.2 | | | 20.2 | | | 20.1 | | | 20.2 | | |
| | | Spec Cond (µS/cm) | NS | NS | 435 | | | 431.1 | | | 437 | | | 432.7 | | |
| | | pH (S.U.) | NS | NS | 7.81 | | | 7.69 | | | 7.78 | | | 7.63 | | |
| | | ORP (mV) | NS | NS | 103.3 | | | 310.9 | | | 130.9 | | | 107.1 | | |
| | | DO (mg/L) | NS | NS | 6.05 | | | 6.95 | | | 6.22 | | | 4.52 | | |

**Table 5-6**
**Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q3 2017**

| | | | Well Location ID: | | GWTS-BFF-GAC1 | | | GWTS-BFF-GAC1 | | | GWTS-BFF-EFF1 | | | GWTS-BFF-EFF1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | GWTS-GAC1-082417 | | | GWTS-GAC1-092117 | | | GWTS-EFF1-072517 | | | GWTS-EFF1DUP-072517 | | |
| | | | Sample Date: | | 8/24/2017 | | | 9/21/2017 | | | 7/25/2017 | | | 7/25/2017 | | |
| | | | Sample Type: | | REG | | | REG | | | REG | | | Field Duplicate | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Project Screening Level[b]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Xylenes, Total | 620 | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Iron, dissolved | 1.0 | 1.0 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | Manganese, dissolved | 0.2 | 0.2 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 |
| Field Parameters | | Temperature (°C) | NS | NS | 20.2 | | | 20.5 | | | 20.4 | | | --- | | |
| | | Spec Cond (µS/cm) | NS | NS | 424.2 | | | 430.7 | | | 428.6 | | | --- | | |
| | | pH (S.U.) | NS | NS | 7.52 | | | 7.56 | | | 7.55 | | | --- | | |
| | | ORP (mV) | NS | NS | 232.3 | | | 137.2 | | | 123.7 | | | --- | | |
| | | DO (mg/L) | NS | NS | 4.5 | | | 4.42 | | | 6.09 | | | --- | | |

**Table 5-6**
**Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q3 2017**

| | | | Well Location ID: | | GWTS-BFF-EFF1 | | | GWTS-BFF-EFF1 | | | GWTS-BFF-EFF1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | GWTS-EFF1-082417 | | | GWTS-EFF1-092117 | | | GWTS-EFF1DUP-092117 | | |
| | | | Sample Date: | | 8/24/2017 | | | 9/21/2017 | | | 9/21/2017 | | |
| | | | Sample Type: | | REG | | | REG | | | Field Duplicate | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Project Screening Level[b]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Xylenes, Total | 620 | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Iron, dissolved | 1.0 | 1.0 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | Manganese, dissolved | 0.2 | 0.2 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 |
| Field Parameters | | Temperature (°C) | NS | NS | 20.3 | | | 20.3 | | | --- | | |
| | | Spec Cond (µS/cm) | NS | NS | 426.7 | | | 431.4 | | | --- | | |
| | | pH (S.U.) | NS | NS | 7.44 | | | 7.31 | | | --- | | |
| | | ORP (mV) | NS | NS | 277.9 | | | 154.1 | | | --- | | |
| | | DO (mg/L) | NS | NS | 6.36 | | | 6.03 | | | --- | | |

**Table 5-6**
**Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q3 2017**

[a] NMWQCC numeric standards per the New Mexico Administrative Code Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004).
[b] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard or (2) U.S. Environmental Protection Agency MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the U.S. Environmental Protection Agency Regional Screening Level.
µg/L = microgram per liter
µS/cm = microsiemens per centimeter
ºC = degree Celsius
BFF = Bulk Fuels Facility
EDB = ethylene dibromide (1,2-dibromoethane)
EFF = effluent
EPA = U.S. Environmental Protection Agency
ft = foot/feet
GAC = Granular Activated Carbon
GWTS = groundwater treatment system
ID = identification
INF = influent
LOD = limit of detection
MCL = maximum contaminant level
mg/L= milligram per liter
mV = millivolt
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
REG = normal field sample
Spec Cond = Specific Conductivity
S.U. = standard unit
Val Qual = validation qualifier
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

**Table 5-7**
**Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q3 2017**

| | | | Well Location ID: | | GWTS-BFF-INF2 | | | GWTS-BFF-INF2 | | | GWTS-BFF-INF2 | | | GWTS-BFF-GAC2 | | | GWTS-BFF-GAC2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | GWTS-INF2-072517 | | | GWTS-INF2-082417 | | | GWTS-INF2-092117 | | | GWTS-GAC2-072517 | | | GWTS-GAC2-082417 | | |
| | | | Sample Date: | | 7/25/2017 | | | 8/24/2017 | | | 9/21/2017 | | | 7/25/2017 | | | 8/24/2017 | | |
| | | | Sample Type: | | REG | | | REG | | | REG | | | REG | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Project Screening Level[b]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | **0.055** | -- | 0.019 | **0.058** | | 0.019 | **0.054** | | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Xylenes, Total | 620 | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Iron, dissolved | 1.0 | 1.0 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | Manganese, dissolved | 0.2 | 0.2 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 |
| Field Parameters | | Temperature (°C) | NS | NS | 20.3 | | | 20.2 | | | 20.2 | | | 20.3 | | | 20.1 | | |
| | | Spec Cond (µS/cm) | NS | NS | 387.6 | | | 110.8 | | | 382.9 | | | 383.7 | | | 385.2 | | |
| | | pH (S.U.) | NS | NS | 7.84 | | | 7.7 | | | 7.79 | | | 7.68 | | | 7.49 | | |
| | | ORP (mV) | NS | NS | 56.1 | | | 313.5 | | | 77.5 | | | 65.2 | | | 269.5 | | |
| | | DO (mg/L) | NS | NS | 5.85 | | | 5.29 | | | 5.82 | | | 4.12 | | | 3.09 | | |

**Table 5-7**
**Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q3 2017**

| | | | Well Location ID: | | GWTS-BFF-GAC2 | | | GWTS-BFF-EFF2 | | | GWTS-BFF-EFF2 | | | GWTS-BFF-EFF2 | | | GWTS-BFF-EFF2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | GWTS-GAC2-092117 | | | GWTS-EFF2-072517 | | | GWTS-EFF2-082417 | | | GWTS-EFF2DUP-082417 | | | GWTS-EFF2-092117 | | |
| | | | Sample Date: | | 9/21/2017 | | | 7/25/2017 | | | 8/24/2017 | | | 8/24/2017 | | | 9/21/2017 | | |
| | | | Sample Type: | | REG | | | REG | | | REG | | | Field Duplicate | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Project Screening Level[b]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Xylenes, Total | 620 | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Iron, dissolved | 1.0 | 1.0 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | Manganese, dissolved | 0.2 | 0.2 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 |
| Field Parameters | | Temperature (°C) | NS | NS | 20.3 | | | 20.8 | | | 20.3 | | | --- | | | 20.3 | | |
| | | Spec Cond (µS/cm) | NS | NS | 382.8 | | | 345.9 | | | 384.4 | | | --- | | | 381.6 | | |
| | | pH (S.U.) | NS | NS | 7.49 | | | 7.6 | | | 7.31 | | | --- | | | 7.41 | | |
| | | ORP (mV) | NS | NS | 83.2 | | | 32.9 | | | 241.7 | | | --- | | | 91.8 | | |
| | | DO (mg/L) | NS | NS | 3.64 | | | 5.43 | | | 5.04 | | | --- | | | 6.09 | | |

**Table 5-7**
**Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q3 2017**

[a] NMWQCC numeric standards per the New Mexico Administrative Code Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004).
[b] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA Regional Screening Level.

µg/L = microgram per liter
µS/cm = microsiemens per centimeter
ºC = degree Celsius
BFF = Bulk Fuels Facility
EDB = ethylene dibromide (1,2-dibromoethane)
EFF = effluent
EPA = U.S. Environmental Protection Agency
ft = foot/feet
GAC = granular activated carbon
GWTS = groundwater treatment system
ID = identification
INF = influent
LOD = limit of detection
MCL = maximum contaminant level
mg/L= milligram per liter
mV = millivolt
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
REG = normal field sample
Spec Cond = Specific Conductivity
S.U. = standard unit
Val Qual = validation qualifier
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

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**Table 5-8**
**Groundwater Treatment System Annual Sample Analytical Results, Q3 2017**

| | | Well Location ID: | | GWTS-BFF-INF1 | | | GWTS-BFF-INF2 | | | GWTS-BFF-GAC1 | | | GWTS-BFF-GAC2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Field Sample ID: | | GWTS-INF1-072517 | | | GWTS-INF2-072517 | | | GWTS-GAC1-072517 | | | GWTS-GAC2-072517 | | |
| | | Sample Date: | | 7/25/2017 | | | 7/25/2017 | | | 7/25/2017 | | | 7/25/2017 | | |
| | | Sample Type: | | REG | | | REG | | | REG | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.054 | -- | 0.019 | 0.055 | -- | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | 1,1,2,2-tetrachloroethane | 10 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | 1,1,2-trichloroethane | 10 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | 1,1-dichloroethane | 25 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | 1,2-dichloroethane | 5 | ND | UJ | 1 | ND | UJ | 1 | ND | UJ | 1 | ND | UJ | 1 |
| | | Chloroform | 100 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | cis-1,2-dichloroethene | NS | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Dibromochloromethane | NS | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Methylene Chloride | 100 | ND | U | 4 | ND | U | 4 | ND | U | 4 | ND | U | 4 |
| | | Naphthalene | 30 | ND | U | 2 | ND | U | 2 | ND | U | 2 | ND | U | 2 |
| | | Tetrachloroethene (PCE) | 20 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Trichloroethene (TCE) | 100 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| SVOCs | Method SW8270D (µg/L) | 1-Methylnaphthalene | 30 | ND | U | 0.2 | ND | U | 0.2 | -- | -- | -- | -- | -- | -- |
| | | 2-methylnaphthalene | 30 | ND | U | 0.2 | ND | U | 0.2 | -- | -- | -- | -- | -- | -- |
| | | Bis(2-ethylhexyl) phthalate | NS | ND | U | 4 | ND | U | 4 | -- | -- | -- | -- | -- | -- |
| | | Naphthalene | 30[b] | ND | U | 0.4 | ND | U | 0.4 | -- | -- | -- | -- | -- | -- |
| | | Pyrene | NS | ND | U | 0.2 | ND | U | 0.2 | -- | -- | -- | -- | -- | -- |
| Phenols | Method EPA 420.4 (µg/L) | Phenols | 0.005 | ND | U | 0.02 | ND | U | 0.02 | -- | -- | -- | -- | -- | -- |
| Anions | Method E300.0 (mg/L) | Chloride | 250 | 29.6 | J | 8 | 22.2 | J | 2 | -- | -- | -- | -- | -- | -- |
| | | Sulfate | 600 | 54.5 | J | 5 | 43.5 | J | 5 | -- | -- | -- | -- | -- | -- |
| | Method E353.2 (mg/L) | Nitrogen (nitrate-nitrite) | 10[c] | 0.78 | J | 0.1 | 0.46 | J | 0.1 | -- | -- | -- | -- | -- | -- |

**Table 5-8**
**Groundwater Treatment System Annual Sample Analytical Results, Q3 2017**

| | | Well Location ID: | | GWTS-BFF-EFF1 | | | GWTS-BFF-EFF1 | | | GWTS-BFF-EFF2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Field Sample ID: | | GWTS-EFF1-072517 | | | GWTS-EFF1DUP-072517 | | | GWTS-EFF2-072517 | | |
| | | Sample Date: | | 7/25/2017 | | | 7/25/2017 | | | 7/25/2017 | | |
| | | Sample Type: | | REG | | | Field Duplicate | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | 1,1,2,2-tetrachloroethane | 10 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | 1,1,2-trichloroethane | 10 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | 1,1-dichloroethane | 25 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | 1,2-dichloroethane | 5 | ND | UJ | 1 | ND | UJ | 1 | ND | UJ | 1 |
| | | Chloroform | 100 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | cis-1,2-dichloroethene | NS | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Dibromochloromethane | NS | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Methylene Chloride | 100 | ND | U | 4 | ND | U | 4 | ND | U | 4 |
| | | Naphthalene | 30 | ND | U | 2 | ND | U | 2 | ND | U | 2 |
| | | Tetrachloroethene (PCE) | 20 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Trichloroethene (TCE) | 100 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| SVOCs | Method SW8270D (µg/L) | 1-Methylnaphthalene | 30 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | 2-methylnaphthalene | 30 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | Bis(2-ethylhexyl) phthalate | NS | ND | U | 4 | ND | U | 4 | ND | U | 4 |
| | | Naphthalene | 30[b] | ND | U | 0.4 | ND | U | 0.4 | ND | U | 0.4 |
| | | Pyrene | NS | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| Phenols | Method EPA 420.4 (µg/L) | Phenols | 0.005 | ND | U | 0.02 | ND | U | 0.02 | ND | U | 0.02 |
| Anions | Method E300.0 (mg/L) | Chloride | 250 | 28.2 | J | 8 | 27.9 | J | 8 | 22.8 | J | 2 |
| | | Sulfate | 600 | 50.4 | J | 5 | 51 | J | 5 | 44 | J | 5 |
| | Method E353.2 (mg/L) | Nitrogen (nitrate-nitrite) | 10[c] | 0.73 | J | 0.1 | 0.73 | J | 0.1 | 0.4 | J | 0.1 |

**Table 5-8**
**Groundwater Treatment System Annual Sample Analytical Results, Q3 2017**

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004). For metals, the NMWQCC numeric standard applies to dissolved metals.

[b] NMWQCC standard represents total naphthalene and monomethylnaphthalene.

[c] Based on the geochemical equilibrium of the site groundwater and previous site data analyses, nitrate/nitrite results represent nitrate concentrations.

µg/L = microgram per liter
$CaCO_3$ = calcium carbonate
EDB = ethylene dibromide (1,2-dibromoethane)
ID = identification
LOD = limit of detection
mg/L = milligram per liter
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
REG = normal field sample
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

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**Table 5-9**
**Groundwater Treatment System Five-Year Sample Analytical Results, Q3 2017**

| | | **Well Location ID:** | GWTS-BFF-INF1 | | | GWTS-BFF-INF2 | | | GWTS-BFF-GAC1 | | | GWTS-BFF-GAC2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Field Sample ID:** | GWTS-INF1-072517 | | | GWTS-INF2-072517 | | | GWTS-GAC1-072517 | | | GWTS-GAC2-072517 | | |
| | | **Sample Date:** | 7/25/2017 | | | 7/25/2017 | | | 7/25/2017 | | | 7/25/2017 | | |
| | | **Sample Type:** | REG | | | REG | | | REG | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| VOCs | Method SW8260C (µg/L) | Dichloromethane (Methylene Chloride) | 100 | ND | U | 4 | ND | U | 4 | ND | U | 4 | ND | U | 4 |
| | | Methyl tert-butyl ether (MTBE) | NS | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Aluminum | 5 | ND | U | 0.2 | ND | U | 0.2 | -- | -- | -- | -- | -- | -- |
| | | Barium | 1 | 0.097 | -- | 0.0025 | 0.109 | -- | 0.0025 | -- | -- | -- | -- | -- | -- |
| | | Copper | 1 | ND | U | 0.01 | ND | U | 0.01 | -- | -- | -- | -- | -- | -- |
| | | Manganese | 0.2 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 |
| | | Zinc | 10 | 0.0129 | J | 0.01 | 0.0159 | J | 0.01 | -- | -- | -- | -- | -- | -- |
| Dissolved Metals | Method SW6020A (mg/L) | Antimony | NS | ND | U | 0.001 | ND | U | 0.001 | -- | -- | -- | -- | -- | -- |
| | | Arsenic | 0.1 | 0.0011 | J | 0.002 | ND | U | 0.002 | -- | -- | -- | -- | -- | -- |
| | | Beryllium | NS | ND | U | 0.00025 | ND | U | 0.00025 | -- | -- | -- | -- | -- | -- |
| | | Cadmium | 0.01 | ND | U | 0.0005 | ND | U | 0.0005 | -- | -- | -- | -- | -- | -- |
| | | Chromium | 0.05 | 0.0015 | J | 0.002 | 0.0021 | J | 0.002 | -- | -- | -- | -- | -- | -- |
| | | Lead | 0.05 | ND | U | 0.00025 | ND | U | 0.00025 | -- | -- | -- | -- | -- | -- |
| | | Selenium | 0.05 | 0.002 | J | 0.001 | 0.0011 | J | 0.001 | -- | -- | -- | -- | -- | -- |
| | | Silver | 0.05 | ND | U | 0.00025 | ND | U | 0.00025 | -- | -- | -- | -- | -- | -- |
| | | Thallium | NS | ND | U | 0.00025 | ND | U | 0.00025 | -- | -- | -- | -- | -- | -- |
| | | Uranium | 0.03 | 0.0017 | -- | 0.000063 | 0.0015 | -- | 0.000063 | -- | -- | -- | -- | -- | -- |
| Total Metals | Method SW7470A (mg/L) | Mercury | 0.002 | ND | U | 0.0001 | ND | U | 0.0001 | -- | -- | -- | -- | -- | -- |
| Cyanide | Method OIA1677 (mg/L) | Cyanide, Free | 0.2 | ND | U | 0.006 | ND | U | 0.006 | -- | -- | -- | -- | -- | -- |
| Anions | Method E300.0 (mg/L) | Fluoride | 1.6 | 0.72 | -- | 0.5 | 0.76 | -- | 0.5 | -- | -- | -- | -- | -- | -- |

**Table 5-9**
**Groundwater Treatment System Five-Year Sample Analytical Results, Q3 2017**

| | | Well Location ID: | GWTS-BFF-EFF1 | | | GWTS-BFF-EFF1 | | | GWTS-BFF-EFF2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Field Sample ID: | GWTS-EFF1-072517 | | | GWTS-EFF1DUP-072517 | | | GWTS-EFF2-072517 | | |
| | | Sample Date: | 7/25/2017 | | | 7/25/2017 | | | 7/25/2017 | | |
| | | Sample Type: | REG | | | Field Duplicate | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| VOCs | Method SW8260C (µg/L) | Dichloromethane (Methylene Chloride) | 100 | ND | U | 4 | ND | U | 4 | ND | U | 4 |
| | | Methyl tert-butyl ether (MTBE) | NS | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Aluminum | 5 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | Barium | 1 | 0.0953 | -- | 0.0025 | 0.0944 | -- | 0.0025 | 0.108 | -- | 0.0025 |
| | | Copper | 1 | ND | U | 0.01 | ND | U | 0.01 | ND | U | 0.01 |
| | | Manganese | 0.2 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 |
| | | Zinc | 10 | 0.0156 | J | 0.01 | 0.0148 | J | 0.01 | 0.0119 | J | 0.01 |
| Dissolved Metals | Method SW6020A (mg/L) | Antimony | NS | ND | U | 0.001 | ND | U | 0.001 | ND | U | 0.001 |
| | | Arsenic | 0.1 | ND | U | 0.002 | 0.00099 | J | 0.002 | 0.0011 | J | 0.002 |
| | | Beryllium | NS | ND | U | 0.00025 | ND | U | 0.00025 | ND | U | 0.00025 |
| | | Cadmium | 0.01 | ND | U | 0.0005 | ND | U | 0.0005 | ND | U | 0.0005 |
| | | Chromium | 0.05 | 0.0021 | J | 0.002 | 0.0015 | J | 0.002 | 0.0011 | J | 0.002 |
| | | Lead | 0.05 | ND | U | 0.00025 | ND | U | 0.00025 | ND | U | 0.00025 |
| | | Selenium | 0.05 | 0.0018 | J | 0.001 | 0.0019 | J | 0.001 | 0.0011 | J | 0.001 |
| | | Silver | 0.05 | ND | U | 0.00025 | ND | U | 0.00025 | ND | U | 0.00025 |
| | | Thallium | NS | ND | U | 0.00025 | ND | U | 0.00025 | ND | U | 0.00025 |
| | | Uranium | 0.03 | 0.0014 | -- | 0.000063 | 0.0014 | -- | 0.000063 | 0.0012 | -- | 0.000063 |
| Total Metals | Method SW7470A (mg/L) | Mercury | 0.002 | ND | U | 0.0001 | ND | U | 0.0001 | ND | U | 0.0001 |
| Cyanide | Method OIA1677 (mg/L) | Cyanide, Free | 0.2 | ND | U | 0.006 | ND | U | 0.006 | ND | U | 0.006 |
| Anions | Method E300.0 (mg/L) | Fluoride | 1.6 | 0.82 | -- | 0.5 | 0.52 | -- | 0.5 | 0.79 | -- | 0.5 |

**Table 5-9**
**Groundwater Treatment System Five-Year Sample Analytical Results, Q3 2017**

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004). For metals, the NMWQCC numeric standard applies to dissolved metals.

µg/L = microgram per liter
ID = identification
LOD = limit of detection
mg/L = milligram per liter
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
REG = normal field sample
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

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**Table 5-10**
**Analytical Results for Extraction Wells, Q3 2017**

| | | | Well Location ID: | | KAFB-106228 | | | KAFB-106233 | | | KAFB-106234 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | GW228-173 | | | GW233-173 | | | GW234-173 | | |
| | | | Sample Date: | | 7/27/2017 | | | 7/27/2017 | | | 7/27/2017 | | |
| | | | Sample Type: | | REG | | | REG | | | REG | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **Project Screening Level[b]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | **0.056** | -- | 0.019 | 0.048 | -- | 0.019 | **0.064** | -- | 0.019 |
| Field Parameters | | Temperature (°C) | NS | NS | 20.1 | | | 20 | | | 19.9 | | |
| | | Spec Cond (µS/cm) | NS | NS | 349.3 | | | 390 | | | 465.1 | | |
| | | pH (S.U.) | NS | NS | 7.7 | | | 7.72 | | | 7.67 | | |
| | | ORP (mV) | NS | NS | 154.6 | | | 134 | | | 140.5 | | |
| | | DO (mg/L) | NS | NS | 4.13 | | | 2.6 | | | 5.28 | | |

**Table 5-10**
**Analytical Results for Extraction Wells, Q3 2017**

[a] NMWQCC numeric standards per NMAC Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004).
[b] The project screening level was selected to satisfy the requirements of the Kirtland Air Force Base Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA Regional Screening Level.
µg/L = microgram per liter
µS/cm = micro siemens per centimeter
ºC = degree Celsius
BFF = Bulk Fuels Facility
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ft = foot/feet
GWTS = groundwater treatment system
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L= milligram per liter
mV = millivolt
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
REG = normal field sample
Spec Cond = Specific Conductivity
S.U. = standard units
Val Qual = validation qualifier
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening lev**
Qualifiers:
Val Quals based on independent data validation
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

## Table 5-11
## Groundwater Treatment System Routine Maintenance Schedule

| | Frequency | | | |
|---|---|---|---|---|
| **Maintenance Activity** | **Daily** | **Weekly** | **Monthly** | **As Needed** |
| Recording and inspecting influent, GAC vessel, and effluent skid pressure, flow rate, and totalizer readings from their respective gauges and the human machine interface | X | | | |
| Recording extraction well pressure, flow rate, and totalizer readings from the human machine interface | X | | | |
| Recording extraction well pressure, flow rate, and totalizer readings from the gauges at their well vaults | | X | | |
| Inspecting well control house and recording well control house pressure, flow rate, and totalizer | | X | | |
| Recording totalizer reading, and inspecting/testing of hydraulic systems at injection well KAFB-7 | | X | | |
| Running and inspecting the GWTS air compressor | | X | | |
| Maintaining the V-smart valve hydraulic pump (manually actuate open and close) | | X | | |
| Inspecting extraction well, conveyance line, and air release valve vaults | | | X | |
| Inspecting wellhead and associated equipment of injection well KAFB-7 | | | X | |
| Inspecting and performing maintenance of flowmeters throughout the system | | | X | |
| Inspecting and performing maintenance on actuating valves throughout the system | | | X | |
| Performing confined space entries | | | X | |
| Gauging extraction well filter pack | | | X | |
| Logging lockout-tagout entries | | | | X |
| Logging system shutdowns | | | | X |
| Emptying storm water runoff flooded vaults | | | | X |
| Performing air compressor maintenance | | | | X |
| Cleaning GWTS sumps | | | | X |
| Draining air release valve containment vessels | | | | X |
| Grounds keeping including vegetation control | | | | X |
| Inspecting and cleaning the GWTS Y-strainer | | | | X |
| Performing flowmeter calibration | | | | X[a] |
| Greasing pump bearings | | | | X[b] |
| Changing process pump oil | | | | X[b] |
| Changing air filter on control room air conditioner | | | | X[b] |
| Changing bag filters | | | | X[c] |
| Changing out GAC | | | | X[c] |
| Maintaining of the V-smart valve hydraulic pump (oil filter and fluid change) | | | | X[d] |
| Testing of alarms and interlocks | | | | X[d] |
| Cleaning coils and replacing air filter for the Well Control House air conditioner | | | | X[e] |

## Table 5-11
## Groundwater Treatment System Routine Maintenance Schedule

[a] Flow meters are calibrated at a minimum of once per year, but may be calibrated more often as needed.

[b] Changing of process pump oil, greasing pump bearings, and replacing the air filter in the air conditioning unit are required every three months, but may be changed more often as needed.

[c] Bag filters are scheduled for change out when the pressure differential across a bag filter vessel exceeds 15 and GAC is scheduled for change out when the pressure differential across a GAC vessel exceeds 10 pounds

[d] V-smart valve maintenance and testing of alarms and interlocks occur annually or more often as needed.

[e] Cleaning of the coil and replacing of the air filter are scheduled as quarterly activities, but frequency may be adjusted as necessary.

GAC = granular activated carbon
GWTS = groundwater treatment system
KAFB = Kirtland Air Force Base

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# APPENDICES

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# LIST OF APPENDICES

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B New Activities Supporting Information (Not Included in Q3)

C Soil Vapor Field Sampling Records (Not Included in Q3)

D Soil Vapor Data Quality Evaluation Reports and Data Packages (Not Included in Q3)

E Groundwater Monitoring Network Field Sampling Data and Records

- E-1 Passive Sampling Evaluation and Supplemental Data
- E-2 Daily Quality Control Reports – Groundwater Sampling
- E-3 Groundwater and Light Non-Aqueous Phase Liquid Measurements
- E-4 Groundwater Purge Logs and Sample Collection Logs
- E-5 Groundwater Sample Chain-of-Custody Forms
- E-6 Groundwater Quality Trend Data

F Groundwater Monitoring Network Sample Data Quality Evaluation Reports and Data Packages

- F-1 Data Quality Evaluation Report – Groundwater Samples
- F-2 Data Packages – Groundwater Samples

G Drinking Water Supply Well Sampling Documentation

- G-1 Daily Quality Control Reports – Drinking Water Supply Well Sampling
- G-2 Drinking Water Sample Collection Logs and Chain-of-Custody Forms

H Drinking Water Supply Well Data Quality Evaluation Reports and Data Packages

- H-1 Data Quality Evaluation Report – Drinking Water Supply Well Samples
- H-2 Data Packages – Drinking Water Supply Well Samples

I Groundwater Treatment System Performance Sampling

- I-1 Groundwater Treatment System Plant Operation and Maintenance Documentation
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- I-3 Groundwater Treatment System Performance Sample Collection Logs
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- I-5 Data Packages – Groundwater Treatment System Samples

J Waste Disposal Documentation

- J-1 Non-Hazardous Liquid Investigation-Derived Waste Profiling and Disposal Documentation
- J-2 Hazardous Liquid Investigation-Derived Waste Profiling and Disposal Documentation
- J-3 Solid Investigation-Derived Waste Profiling and Disposal Documentation

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# APPENDIX A

# REGULATORY CORRESPONDENCE

AE Doc # 3459

CEANR

# NEW MEXICO ENVIRONMENT DEPARTMENT

## *Hazardous Waste Bureau*


**2905 Rodeo Park Drive East, Building 1**
**Santa Fe, New Mexico 87505-6303**
**Phone (505) 476-6000 Fax (505) 476-6030**
***www.nmenv.state.nm.us***



BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary


**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

June 4, 2010

Colonel Robert L. Maness
Base Commander
377 ABW/CC
2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5606

Mr. John Pike
Director, Environmental Management Section
377 MSG/CEANR
2050 Wyoming Blvd., Suite 116
Kirtland AFB, NM 87117-5270

**RE: REPORTING, SAMPLING, AND ANALYSIS REQUIREMENTS SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111**
**BULK FUELS FACILITY SPILL**
**KIRTLAND AIR FORCE BASE, EPA ID# NM9570024423**
**HWB-KAFB-10-004**

Dear Colonel Maness and Mr. Pike:

This letter sets forth reporting, sampling, and analysis requirements related to the characterization and remediation of contaminated groundwater at the U. S. Air Force Kirtland Air Force Base ("Permittee") Solid Waste Management Units ST-106 and SS-111, collectively known as the Bulk Fuels Facility Spill. In the past, the Permittee has submitted semiannual reports concerning the Bulk Fuels Facility Spill to the New Mexico Environment Department (NMED) Groundwater Quality Bureau. However, due to the severity and urgency of this matter, NMED directs that reporting occur on a more frequent basis. This letter describes how the Permittee must submit reports to the NMED from this time forward. In addition, this letter also sets forth general sampling and analysis requirements to ensure that groundwater and soil-gas data are of high quality and representative of the conditions present in the field.

**Reporting Requirements**

All characterization and remediation activities and data concerning the Bulk Fuels Facility Spill that have been completed or acquired during the last semiannual reporting period (October 2009 through March 31, 2010) are to be reported to the NMED no later

than June 30, 2010.

After June 30, 2010, quarterly reports must be submitted by the Permittee to the NMED for its review and approval. Quarterly reporting shall continue until such time that corrective action is deemed complete for the Bulk Fuels Facility Spill by the NMED, or until NMED approves in writing a different schedule.

Quarterly periods for each year and the due dates for corresponding quarterly reports are summarized in the following table.

| Quarter | Period | Due Date of Quarterly Report |
|---|---|---|
| 1 | January 1 through March 31 | May 30 |
| 2 | April 1 through June 30 | August 29 |
| 3 | July 1 through September 30 | November 29 |
| 4 | October 1 through December 31 | February 28 of the following year |

Each quarterly report shall provide detailed information on all characterization and remediation activities that took place during the period covered by the report, including, but not limited to, as applicable for the reporting period, field and laboratory analytical results for groundwater, soil, and soil gas; graphs showing trends of major contaminants versus time, a table of surveyed well locations; descriptions of the installation of groundwater and soil-gas monitoring wells; measurements of light non-aqueous phase liquid (LNAPL); table of water levels; water-level map; plume contaminant maps and cross-sections; and geologic and geophysical logs of wells and boreholes. Each quarterly report shall also describe the operation, maintenance, and performance of the four soil-vapor extraction (SVE) systems. Each quarterly report shall also include all field and laboratory quality control data for the reporting period and a discussion of data quality as it relates to accuracy, precision, representativeness, and completeness for each analytical parameter that is to be reported.

In addition to the above reporting requirements, the NMED may require submission of data at any time. The Permittee will be notified in writing of any such required submissions and their associated submission due dates.

Also, pursuant to 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.11(d)(1)), all quarterly reports shall include a certification, signed by a chief or senior executive officer of the Facility, stating:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel

properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**General Sampling and Analysis Requirements**

Groundwater and soil-gas monitoring shall be conducted on a quarterly basis with all groundwater and soil-gas monitoring wells sampled each quarter. Sample collection and analysis must be conducted in manner that yields results of high quality and are representative of the conditions of their respective media in the field. Field quality control samples, including duplicates, field blanks, equipment rinsate blanks, and trip blanks shall be collected or prepared as appropriate and analyzed for quality control purposes. Chain-of-custody and proper shipping and handling procedures shall be followed to ensure the integrity of samples.

At a minimum, groundwater shall be sampled and analyzed in a laboratory for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), lead, major ions (calcium, magnesium, potassium, sodium, sulfate, carbonate, bicarbonate, chloride), nitrate, ammonia, sulfide, dissolved iron, and dissolved manganese. Except for sample fractions taken for dissolved iron and manganese, groundwater samples shall not be filtered. Groundwater shall also be sampled and analyzed in the field for temperature, pH, specific conductance, alkalinity, turbidity, dissolved oxygen, and Eh.

Groundwater samples shall be obtained from a well only after temperature, pH, and specific conductance measurements have stabilized within ±10% for three consecutive measurements and after purging at least one well-bore volume of stagnant water. A well-bore volume is herein defined as the volume of water in the saturated filter pack plus the volume of all standing water within the well screen and casing, including the sump. Field measurements taken during purging, including purge volumes and the date and time of each measurement, and the type and serial number of each field instrument used shall be recorded in a log book. The thickness of LNAPL shall be measured and recorded for every well location where LNAPL is present.

The detection limit for each groundwater constituent shall not exceed 50% of the constituent's U. S. Environmental Protection Agency's Maximum Concentration Level or its New Mexico Water Quality Control Commission standard (20.6.2.3103 NMAC), whichever is more stringent. For naturally occurring groundwater constituents, the detection limit for a given constituent shall also not exceed the constituent's background concentration as approved by the NMED for the KAFB area.

Soil-gas samples shall be collected from all monitoring intervals (all depths) for each soil-gas monitoring well. At a minimum, soil gas shall be sampled and analyzed in a laboratory for VOCs. The Permittee shall continually monitor the concentrations of soil vapor with an appropriate field instrument (e.g., photoionization detector of appropriate lamp energy) while purging. The Permittee shall collect soil-gas samples only after field instrument readings have stabilized within ±10% for three consecutive measurements and after the sampling tubing and the soil-gas monitoring well have been purged to remove all stagnant vapor. Soil-gas measurements taken in the field during purging, the date and time of each measurement, and the type and serial number of field instrument used shall be recorded in a log book.

The reporting and sampling and analysis requirements set forth in this letter are in effect, until and unless superseded by subsequent direction in an approved work plan or implementation plan.

If you have any questions concerning the technical matters in this letter, you may contact William McDonald or Sid Brandwein of my staff at (505) 222-9582 and (505) 222-9504, respectively. If you have other questions, you may contact me directly at 505-476-6000.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: M. Leavitt, Director, NMED WWMD
J. Kieling, NMED HWB
W. Moats, NMED HWB
B. McDonald, NMED HWB
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B. Olsen, HWB GWQB
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File: Reading and KAFB 2010
KAFB-10-004

# NEW MEXICO
# ENVIRONMENT DEPARTMENT

## *Hazardous Waste Bureau*

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BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

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Deputy Secretary


**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

August 6, 2010

Colonel Robert L. Maness
Base Commander
377 ABW/CC
2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5606

Mr. John Pike
Director, Environmental Management Section
377 MSG/CEANR
2050 Wyoming Blvd., Suite 116
Kirtland AFB, NM 87117-5270

**RE: BULK FUELS FACILITY SPILL, SWMUS ST-106 AND SS-111**
**DIRECTIVE FOR CONDUCTING INTERIM MEASURES AND NOTICE OF DISAPPROVAL**
**INTERIM MEASURES WORK PLAN, JUNE 2010;**
**VADOSE ZONE WORK PLAN, JUNE 2010;**
**GROUNDWATER INVESTIGATION WORK PLAN, JUNE 2010**
**KIRTLAND AIR FORCE BASE, EPA ID# NM9570024423**
**HWB-KAFB-10-015, HWB-KAFB-10-016, HWB-KAFB-10-019**

Dear Col. Maness and Mr. Pike:

The contamination caused by the Bulk Fuels Facility Spill at Kirtland Air Force Base (KAFB) represents a significant threat to human health and the environment, particularly to well water that supplies drinking water to portions of Albuquerque, KAFB, and the Veterans' Administration Hospital. Even though this release was first discovered 10 years ago, the U. S. Air Force (Permittee) has not characterized the nature and extent of Bulk Fuels Facility Spill, nor conducted adequate remediation. The threat posed by this release demands immediate and aggressive action as called for in the New Mexico Environment Department's (NMED's) April 2, 2010 letter.

The NMED has reviewed the Interim Measures Work Plan (June 2010), Vadose Zone Work Plan (June 2010), and Groundwater Investigation Work Plan (June 2010) regarding the KAFB Bulk Fuels Facility Spill, Solid Waste Management Units (SWMUs) ST-106 and SS-111. The plans were submitted in response to the NMED's letter of April 2, 2010, which concerned the need for

additional site characterization and interim measures to remediate contamination in groundwater, source areas, and fuel floating on the water table.

NMED finds that all three plans are deficient. This Notice of Disapproval (NOD) is issued to the Permittee with the intent that the Permittee correct the deficiencies identified herein. This NOD includes general comments that apply to all three documents, and general and specific comments concerning deficiencies found in each of the individual plans. These comments comprise Part 1 of this letter.

Due to the urgent need to accelerate certain aspects of remediation and characterization, the Permittee is also directed herein to implement interim measures in the form of additional soil vapor extraction and to take various other actions including establishing sentry groundwater monitoring wells and providing NMED certain critical information. This direction comprises Part 2 of this letter, and also sets forth requirements related to well construction, sampling of environmental media, field and laboratory quality assurance, and reporting.

# PART 1

## A. Deficiencies Common to All Three Plans

***1. Appendix A of the Vadose Zone and Interim Measures Work Plans and Appendix D of the Groundwater Investigation Work Plan –*** Appendix A and Appendix D are exactly the same plan (about 500 pages, dated April 2004), appended to and occupying 80% or more (by number of pages) of the Vadose Zone, Interim Measures, and Groundwater Investigation Work Plans. Although the plan presented in Appendices A and D is voluminous, it is only a general plan that lays out the Permittee's internal requirements for conducting corrective action for the entire base. Furthermore, the copies of this plan provided to the NMED are missing figures (Figure 3-4), have their own appendices that are noted as "to be provided at a later date", and, in places, have outdated information (Table B7.2-1, page B-177 of Appendix B of Appendix A).

Because Appendices A and D are not specific to the Bulk Fuels Facility Spill, they do not describe in sufficient detail how, for example, project organization, data management, and quality assurance will be implemented under the Vadose Zone, Groundwater Investigation, and Interim Measures Work Plans. For example, under the project management plan, the organizational chart only shows KAFB management. The field sampling plan discusses the various types of field quality control (QC) samples that could be utilized during an investigation, but does not set forth the specific types of QC samples that should be prepared or collected for the Bulk Fuels Facility Project. Furthermore, because it is only a general plan for the entire base, the plan does not commit to the collection of QC samples for any project.

Appendices A and D must be deleted from the Vadose Zone, Groundwater Investigation, and Interim Measures Work Plans. They have little value because they do not contain the appropriate level of detail for characterization and clean up of the Bulk Fuels Facility Spill and do not

commit the Permittee to do anything. The Permittee shall revise the Vadose Zone, Groundwater Investigation, and Interim Measures Work Plans to include the appropriate level of detail and commitment on project organization, data management, and field and laboratory quality assurance.

***2. Appendix B of the Vadose Zone and Interim Measures Work Plans and Appendix A of the Groundwater Investigation Work Plan –*** These appendices include only a 2006 NMED guidance document. The guidance is outdated and adds little, if any, value to the Vadose Zone, Interim Measures, and Groundwater Investigation Work Plans, and thus, must be deleted from all three plans. NMED guidance documents may be cited, if necessary, in future submittals.

***3. Community Relations*** - The community relations plan is not included in Appendix A of the Vadose Zone and Interim Measures Work Plans and Appendix D of the Groundwater Investigation Work Plan. Instead, the appendices state "*Appendix I, Community Relations Plan, (to be provided at a later date)*". The Permittee shall revise the Vadose Zone, Interim Measures, and Groundwater Investigation Work Plans to include a community relations plan specific to the Bulk Fuels Facility spill. The plan must specify how the Permittee will inform the public, including the Albuquerque Bernalillo County Water Utility Authority (WUA), the City of Albuquerque, and the Veterans Administration of progress made on characterization and clean up of the Bulk Fuels Facility spill.

***4. Schedules –*** Characterization and clean up of the Bulk Fuels Facility Spill is expected to be a large, complex, and interactive project with many deadlines that will have to be met by the Permittee. The Gantt charts provided in the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans do not contain sufficient detail and are unacceptable because they over simplify field work on the schedules as only a few tasks. A Gantt chart showing all major tasks, their dependency if any on other tasks, and their early/late starts, early/late completions and critical paths must be provided in each of the plans. NMED expects that charts of sufficient detail would likely require presentation on sheets larger than 11" x 17".

The Permittee must also submit to the NMED a Gantt chart that integrates all of the work to be done under the three plans. This Gantt chart must be submitted with the Vadose Zone Work Plan.

***5. Organization*** - The organization plans in the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans only include mention of a project manager and a field team manager, and again reference the general site plan under Appendix A of the Vadose Zone and Interim Measures Work Plans and Appendix D of the Groundwater Investigation Work Plan. NMED notes that there are personnel mentioned by name under the Project Management Plan of Appendix A and Appendix D that have not worked for the Permittee at KAFB for the last several years.

It is likely that more than a project manager and a field team manager will be required to manage and execute a project of this size and complexity. Furthermore, it is unclear if there will be a separate field team manager for different tasks, such as conducting geophysical logging, drilling

and installation of wells, operating and maintaining soil vapor extraction (SVE) units, and sampling of environmental media. Also, the plans do not include details on the responsibilities and the qualifications of the personnel (by position) that will be involved.

Simply stating that a kick off meeting " ...will outline roles and responsibilities of all participants..." is not acceptable. It must be clearly understood in writing prior to project start who (by position) will be responsible for overseeing and conducting the myriad of events that need to happen such as field work, interpretation and management of various data, data validation, updating of the conceptual site model, communicating and reporting, and so forth. The Permittee must revise the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans to correct these deficiencies.

***6. Data Management*** - The Data Management Plan provided in Appendix D of Appendix A of the Vadose Zone and Interim Measures Work Plans and Appendix D of Appendix D in the Groundwater Investigation Work Plan is a general plan for entire base (see Comment #1 of Section A, Part 1) and, thus, is not specific to the Bulk Fuels Facility Spill. The plan specifically fails to provide detail concerning the types of data that are to be managed, schedules for data submittals and entries into the database, how accuracy and completeness of the data will be ensured, and data availability to the NMED. The Permittee must revise the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans to correct these deficiencies.

***7. Identification of and Approach to Addressing Data Gaps*** - Section 1.2 of each of the plans states "following previous investigations at the BFF, data gaps were identified...". Because these work plans are meant at a minimum to address data gaps identified in NMED's letter of April 2, 1010, the Permittee must list the data gaps that apply to each of the three plans, as appropriate for the topic of the plan, and indicate where in each of the plans the data gaps are addressed. The Permittee must revise the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans to include a description of the data gaps identified by the NMED and point specifically to where in each the document these data gaps are addressed.

***8. Extent of Contamination and Clean Up Criteria*** – The extent of contamination in the various media (soil, soil vapor, groundwater) shall be based upon determining at what locations hazardous constituents occur at levels that exceed approved background concentrations. This was stated in the NMED's letter of April 2, 2010, and applies to all RCRA facilities in New Mexico that must conduct correction action.

Regarding clean up criteria, any soil contamination left in place within 20 feet of the surface must meet NMED's risk requirements for an acceptable level of risk for all hazardous constituents ($10^{-5}$ for carcinogens and Hazards Index < 1 for noncarcinogens under a residential land-use scenario). Any soil contamination left in place at any depth must also have sufficiently low concentrations of hazardous constituents to be protective of groundwater. The Permittee may use the NMED's Soil Screening Levels in lieu of conducting a baseline risk assessment to determine the risk of contaminants.

While the use of total petroleum hydrocarbons (TPH) as an indicator of contamination is convenient for field screening, the risk to human health and the environment must be assessed through the use of laboratory analysis of hazardous constituents (e.g., benzene, toluene, ethylene dibromide (EDB), naphthalene, xylenes). The Permittee must revise the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans accordingly.

***9. Site Specific Conceptual Model*** - The plans continue to provide what appears to be an outdated conceptual model of geologic, hydrologic, and contaminant conditions. However, regardless of the use of current data or the lack thereof, graphical representations of the conceptual model are of poor quality because the graphics are not always legible, are often too small to convey details, don't present sufficient numbers of cross-sections, and rely too much on the presentation of cartoons in lieu of detailed and accurate drawings (for example, Figures 2-8 and 2-9 in the Groundwater Investigation Work Plan).

NMED expected more in the discussion of site specific geology, as what was provided is similar to that presented in reports for the last 8 years or so. A site conceptual model encompassing the source area(s), the fuel percolation area, the light non-aqueous phased liquid (LNAPL) plume floating on groundwater, and the dissolved-phase contaminant plume in groundwater must be included in each of the plans. The model should be illustrated through the liberal use of detailed, accurate, and scaled geologic cross-sections, maps in plan view, and any other necessary graphical representations to clearly and accurately show geologic and hydrologic features, and contaminant levels.

NMED suggests that the geophysical logs, especially the electric logs, for KAFB-0115, KAFB-10624, KAFB-16 and Ridgecrest-3 wells would be useful for assisting in the interpretation of the stratigraphy of the area of interest, as these logs clearly show certain stratigraphic horizons in the vadose zone that are distinctive and widespread units ("marker beds"). The site-specific conceptual model in the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans must be revised to correct the above noted deficiencies.

***10. Failure to Provide Graphics and Data Submittals*** – Section E of NMED's April 2, 2010 letter states "The investigation plans required under this letter shall include relevant maps and cross-sections that show concentration data for contaminants and other relevant information with supporting data posted on the maps and cross-sections in a ***legible*** (emphasis added) manner, and clearly showing which borings/wells contributed data towards construction of the maps and cross-sections and which did not. Tables including all existing soil borings, soil-gas monitoring wells, and groundwater monitoring wells, listing their surveyed location, sampling points and maximum depth of exploration shall also be included in the reports and plans. For soil-gas monitoring wells, tables and graphs shall also be included providing trends of TPH concentration versus time for the depths below ground surface of 25, 50, 150, 250, 350, and 450 feet."

Many of the figures in the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans are illegible and the required tables and graphs were not included, or were not provided in the format required. These tables and graphs are necessary to assess the adequacy of proposed

locations of borings/wells/SVE units. These tables and graphs of the required types, formats, and in legible form must be included in the revised Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans.

***11. Quality Assurance (QA)/Quality Control (QC) plan*** - The Quality Assurance Plan provided in Appendix D of Appendix A (or Appendix D of Appendix D in the GW Plan) is a general plan for the entire base (see Comment #1, Section A, Part 1 of this letter) and is not specific to the Bulk Fuels Spill Project. The Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans must specify exactly what field and laboratory quality control samples are to be prepared or collected, as appropriate, and other aspects about quality control that are important to the Bulk Fuels Facility project, including the quality control targets that will be considered acceptable for each of the analytes of concern for each given media. The Permittee must revise the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans to correct these deficiencies.

***12. Certification Statements*** - The Vadose Zone, Interim Measures, and Groundwater Investigation Work Plans and associated transmittal letters do not contain the required signed certification statement under RCRA and the New Mexico Hazardous Waste Act. Pursuant to 20.4.1.900 NMAC, incorporating 40 C.F.R. § 270.1 1 (d)(1), all plans and reports shall include a certification, signed by a chief or senior executive officer of the Facility stating:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The revised Vadose Zone, Interim Measures, and Groundwater Investigation Work Plans or associated transmittal letters must include this signed certification.

***13. Waste Management*** - The Waste Management Plan provided in Appendix E of Appendix A of the Vadose Zone and Interim Measures Work Plan, and Appendix E of Appendix D in the Groundwater Investigation Work Plan) is a general plan for entire base (see Comment #1, Section A, Part 1 of this letter) and is not specific to the Bulk Fuels Facility Spill project.

Investigation Derived Waste (IDW) includes, but is not limited to, general refuse, drill cuttings, excess sample material, water (e.g., decontamination, development, purge), spent materials, and used disposable equipment generated during the course of investigation, corrective action, or monitoring activities. All IDW shall be properly characterized and disposed of, and otherwise

managed in accordance with all federal, state, and local laws and regulations. The Permittee shall include a description of the anticipated IDW management process as a revision to the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans.

## B. Interim Measures Work Plan

### *1. General Comments on Interim Measures Work Plan*

The Interim Measures Work Plan was to address two major requirements of NMED's letter of April 2, 2010: 1) remove the Fuel Offloading Rack and excavate to a depth of 20 feet contaminated soil surrounding the Fuel Offloading Rack; and 2) conduct interim measures to remediate the LNAPL plume within five years. This Part (Part 1) of this letter addresses the deficiencies on addressing the first requirement; Part 2 addresses the second requirement to immediately take action to remediate the LNAPL plume floating on the groundwater. Rather than complying with NMED's April 2, 2010 direction to take immediate action vis à vis LNAPL remediation, the Permittee proposes characterization of the vadose zone for some unspecified time period, followed later by SVE. More specifically, the Interim Measures Work Plan includes: testing six wells to determine LNAPL transmissivity (Tn); conducting air sparging and multi-phase extraction pilot tests, and conducting characterization studies using PneuLog tests.

NMED emphasizes that interim measures are actions quickly taken to reduce or prevent the migration of contaminants, or reduce or prevent exposure to contaminants while long-term remedies are evaluated. While characterization studies may be useful for improving remediation efforts, or for proposing and designing a final remedy, interim measures for remediating LNAPL floating on groundwater need to be implemented immediately. Any effort to successfully remove LNAPL floating on groundwater must also involve the removal of LNAPL from the source(s) and fuel percolation areas within the vadose zone.

### *2. Specific Comments on Interim Measures Work Plan*

*1. Page 2-10, Section 2.4* – This section of the plan indicates that the Permittee is preparing a report on indoor air quality, and that the report is currently in draft. A copy of the final indoor air quality report must be provided to the NMED by **October 6, 2010**, and as indicated in the Compliance Schedule of Table 5 of this letter.
*2. Page 3-1, Section 3* - Throughout Section 3 (for example, Sections 3.2, 3.2.2, 3.4.1, 3.4.2, 3.5) the Permittee states its intent to characterize and excavate only soils with "mobile LNAPL", and to leave any other contaminated soil for later remediation under the Corrective Measures Implementation Plan (CMI), which the Permittee referred to as a Corrective Measures Evaluation (CME). The term "mobile LNAPL" was coined by the Permittee and apparently means soil containing such a high concentration of fuel contamination that the soil is dripping wet with fuel.

The reasons given by the Permittee not to excavate other contaminated soils (soil without mobile LNAPL) is that a risk assessment would have to be developed separately for such soils, and the Permittee expresses its desire to delay excavation of such soils until long-term corrective actions

are initiated for the site. Due to the urgent need for action at this site, such an approach is not acceptable. The Permittee can rapidly develop target clean up goals based on NMED's risk requirements noted above, or simply use NMED's soil screening levels for hazardous constituents. Soils do not need to be dripping wet with fuel to pose a risk to human health or the environment. NMED estimates that a Corrective Measures Implementation Plan will not be approved for at least several years because of the inadequate state of site characterization today. Leaving contaminated soil in the ground that poses a significant risk to human health or the environment for what will likely be a fairly long time period before long-term corrective actions are initiated is unacceptable. As indicated in Comment #8 in Section A of Part 1 of this letter, all contaminated soil to a depth of 20 feet that represents an unacceptable risk to human health or the environment shall be excavated and removed from the Fuel Offloading Rack area.

As mentioned above, due to the urgent need to accelerate remediation, the Permittee is directed in Part 2 of this letter to implement interim measures, which includes removal of the remaining components of the Fuel Offloading Rack and excavation of contaminated soil. This work shall be completed in accordance with the Interim Measures Work Plan as modified by the requirements of this letter and in accordance with the Compliance Schedule in Table 5 of this letter.

*3. Page 3-2, Section 3.2.2* – This section indicates that soil samples will be analyzed in the laboratory only if samples do not respond to a field test kit. This is an unacceptable approach. The Permittee shall use laboratory analysis all soil samples in shallow borings for TPH, VOCs, SVOCs, and lead.

*4. Page 3-4, Section 3.4.2* – This section indicates that a detailed excavation plan for the Fuel Offloading Rack will be submitted to the NMED at a later date. NMED's April 2, 2010 letter intended for the Interim Measure Work Plan to be the detailed plan.

The excavation of contaminated soil and removal of structures at the Fuel Offloading Rack is a relatively simple "dig and haul" operation, and represents by far the easiest of the two major interim measures that the Permittee was directed to accomplish in NMED's letter of April 2, 2010. NMED requires the Permittee to begin excavation and removal of structures at the Fuel Offloading Rack immediately (see Section A of Part 2 of this letter).

*5. Page 4-1, Section 4.2* – In part, this section states "Kirtland AFB proposes to install an IRM to remove, to the extent practicable within five years of work plan approval, mobile LNAPL present at the water table that has the potential to migrate along the water table and potentially further endanger the regional aquifer that provides drinking water for ABCWUA. Immobile LANPL and sorbed and dissolved fuel contamination in groundwater will be addressed by the future CME."

The NMED finds several unacceptable concepts related to these statements. First, as previously mentioned, NMED does not agree with the Permittee-coined terms "mobile LNAPL" and "immobile LNAPL." The point of the interim measure is to clean up contamination (LNAPL)

that poses a threat to groundwater, regardless of contaminant concentrations. Even LNAPL that is not migrating along the water table has the potential to contaminate groundwater with concentrations of hazardous constituents that are at unsafe levels for human consumption. Second, the phrase "to the extent practicable" suggests that the Permittee has already admitted defeat without even attempting to clean up the groundwater and the floating LNAPL. Third, the LNAPL floating on the water table endangers water supply wells in addition to those operated by the WUA. Lastly, like the cleaning up of contaminated soil around the Fuel Offloading Rack, the Permittee is stating its desire to delay clean up for at least several years while a final remedy through an approved CMI Plan is implemented, which is unacceptable. The Permittee must revise the Interim Measures Work Plan to remove the above-noted deficiencies.

6. *Page 4-4, Section 4.6* - In the last paragraph the Permittee states that "Routine system optimization will be performed ... to maintain the highest mass extraction rate..."

The Permittee shall revise this section to explain in detail how the system will be optimized.

7. *Page 5-1, Section 5* - The Permittee states: "Vadose zone interim remedial measures will be implemented if data collected during the PneuLog profiling, supplemented by results of the concurrent vadose zone investigation, identify the presence of potentially mobile LNAPL within the vadose zone."

As mentioned above, the NMED does not agree with the Permittee-coined terms "mobile LNAPL" and "immobile LNAPL." It should be inarguable that fuel infiltrated from near or at the ground surface and has percolated through the vadose zone to groundwater. Some fuel is likely still draining to groundwater. However, hazardous constituents can still migrate to groundwater as vapor even in areas where the draining of liquid fuel to groundwater has stopped or never took place. The Permittee must revise the Interim Measures Work Plan to indicate that remediation of the vadose zone will be conducted to accomplish clean up of LNAPL floating on the groundwater, regardless of whether fuel-saturated conditions exist in the vadose zone in a given area.

8. *Page 5-2, Section 5.2* - The fourth paragraph states: "PneuLog will be performed at three locations...starting from the point(s) of release to the water table."

Figure 5-1 shows the proposed locations for PneuLog testing about 750 feet northeast of the Fuel Offloading Rack and approximately 750 feet north of the southern extent of the LNAPL plume that is floating on groundwater. According to the conceptual model provided in the Interim Measures Work Plan, the proposed locations for PneuLog testing could lead to missing the path of percolation that the fuel took to groundwater.

The Permittee must revise the Interim Measures Work Plan to include some PneuLog testing in the fuel percolation area. See Comment #4 in Section C of Part 1 of this letter for information on the area NMED has identified as the fuel percolation area. Indicate also in the Interim Measures Work Plan the significance of using three locations for PneuLog testing and explain in more

detail how the air flow potential of the geologic units will be assessed and used in the design to optimize SVE.

The Interim Measures Work Plan shall also be revised to indicate that geologic and geophysical (induction, gamma, and neutron) logs will be made for the boreholes used for PneuLog testing.

*9. Figures.* Figures 2-2 through 2-5 are very difficult, and in some cases impossible to read. Cross-section A-A' is not the view seen in Figure 2-8.

The Permittee shall revise the Interim Measures Work Plan to include corrected and legible figures.

## C. Vadose Zone Work Plan

### *1. General Comments on Vadose Zone Work Plan*

In NMED's letter of April 2, 2010, the Permittee was directed to submit a Vadose Zone Investigation Plan that describes the additional actions the Permittee will take to investigate vadose zone hydrology and geology, to identify and characterize the source of the releases at the Bulk Fuel Facility, and to identify the extent of soil and soil-gas contamination in the vadose zone from the surface to groundwater. The Vadose Zone Plan was to describe in detail all research, locations, depths and methods of exploration, field procedures, sampling and analysis of soil and soil gas and related quality control procedures, the results and the means by which the results are to be reported, and a schedule of the work.

The Vadose Zone Work Plan that has been submitted is inadequate to accomplish the objectives established in NMED's letter of April 2, 2010. A major reason is that the proposed borings and soil-vapor wells are located too far apart to characterize in adequate detail the contaminant and geologic conditions in the vadose zone. NMED therefore directs herein a general increase in the number of sampling points. The Permittee shall revise the Vadose Zone Work Plan to include all of the soil borings and soil-vapor well installations required by this letter.

For the convenience of providing further discussion in this letter, NMED has divided the vadose zone into five principal areas: the tank farm, pipeline, Fuel Offloading Rack, fuel percolation area, and the far field area of the soil-vapor plume. Each of these areas is discussed below.

*1. Tank Farm* – Contamination is known to occur from the surface to deep levels at the Tank Farm. In its letter of April 2, 2010, NMED directed that nine deep soil borings/soil-vapor wells be completed in the tank farm area; the Permittee proposed only three. Through its direction in it April 2, 2010 letter, NMED was hoping to avoid the time-consuming process of "dickering" with the Permittee on numbers of borings (and wells, to be discussed later). Nevertheless, in the interest of comity and upon further consideration, NMED agrees that by adjusting locations and completing some shallow borings, the tank farm area could be covered at least initially by five deep soil borings/soil-vapor wells and five shallow soil borings. Depending on what is found,

additional soil borings/soil-vapor wells may be needed, and NMED reserves its rights to require such additional borings, wells, or both in the future.

The Permittee shall complete the soil borings/soil-vapor wells at locations #16, 17, 19 and 20; and the soil vapor well at location #6 that are listed in Tables 1 and 2 of this letter, respectively, and shown on Figure 1 enclosed with this letter. The Permittee shall also complete shallow soil borings to a depth of at least 20 feet at locations #1 through 5, which are listed in Table 3 of this letter and shown also on Figure 1. Soil samples from the shallow borings shall be collected at depths of 0, 5, 10, 15, and 20 feet and shall be analyzed for TPH, VOCs, SVOCs, and lead.

*2. Pipeline* – The Permittee has not investigated the pipeline that runs between the tank farm, the pump house, and the Fuel Offloading Rack. In NMED's letter of April 2, 2010, the Permittee was directed to complete four deep soil borings/soil-vapor wells along the buried and exposed portions of the pipeline. The Permittee proposed none.

In lieu of completing deep soil borings/soil-vapor wells, the Permittee proposed to complete shallow borings along the buried portion of the pipeline extending south of the pump house. However, the Vadose Zone Work Plan is unclear as to the number of shallow boreholes that would be completed. Additionally, the proposed plan is inadequate because the entire length of pipeline between the tank farm and the Fuel Offloading Rack is not included in the investigation.

The Permittee shall complete the deep soil borings/soil-vapor wells at locations #4, 6, 7, 8, and 24 that are listed in Table 1 of this letter and shown on Figure 1. The Permittee shall also complete shallow borings along the entire length of the pipeline between the tank farm and the Fuel Offloading Rack, regardless of whether the pipeline runs underground or on the surface. The borings shall be spaced at intervals not to exceed 25 feet and are to be located on both sides of the pipeline. Soil samples from the shallow borings shall be collected at depths of 0, 5, 10, 15, and 20 feet. The soil samples from deep and shallow borings shall be analyzed for TPH, VOCs, SVOCs, and lead. Depending on the results, NMED may require further investigation of this area, including more and deeper borings.

*3. Fuel Offloading Rack* – The Fuel Offloading Rack is supposedly the main source of the fuel spill, but it has not been adequately characterized since discovery of the fuel leak 10 years ago. Previous investigative efforts appear to have been arbitrarily terminated once TPH concentrations were found to be less than 100 mg/kg in soil and below 100 ppmv in soil vapor. In NMED's letter of April 2, 2010, the Permittee was directed to complete a ***minimum*** of six deep soil sampling/vapor wells at the Fuel Offloading Rack to determine the full extent of contamination; the Permittee proposed four. NMED reaffirms its previous direction. The Permittee shall complete the soil borings/soil-vapor wells at locations #1, 2, 3, 4, 11, and 12 that are listed in Table 1 of this letter and shown in Figure 1.

*4. Fuel percolation area* – This area, east of the Fuel Offloading Rack, is currently believed to constitute the core of the contamination in the vadose zone, and represents the place where fuel presumably migrated to groundwater. In NMED's letter of April 2, 2010, the Permittee was

directed to complete a ***minimum*** of six deep soil sampling/vapor wells in order to significantly improve characterization of this area. This is critical to understanding the amount of fuel contamination in the vadose zone that must be remediated. The Permittee proposed to complete only two of the deep soil sampling/vapor wells that the NMED specified.

The Permittee did, however, propose an additional 3 deep soil sampling/vapor wells at locations further to the east. NMED agrees that these latter locations are necessary to properly characterize this area. Thus, to improve the understanding of the amount of fuel contamination in the vadose zone that must be remediated, the Permittee shall complete the soil borings/soil-vapor wells at locations #5, 9, 10, 21, 22, 23, 25, 26, and 27 listed in Table 1 and shown on Figure 1.

*5. Far field area of Soil-Vapor plume* – In its letter of April 2, 2010, NMED directed the Permittee to install six soil-vapor wells at locations north of the Fuel Offloading Rack and fuel percolation area to investigate the concentrations of hazardous constituents in soil gas that overlies groundwater in these areas. The Permittee shall complete the soil-vapor wells at locations #1, 2, 4, 3, 5, 6, 8, and 9; and the soil boring/soil-vapor well at location #24, that are listed in Tables 2 and 1, respectively, and shown on Figure 1.

*6. Sampling Requirements Applicable to all Five Vadose Zone Areas* - Soil samples from the deep borings shall be collected at a frequency of at least one sample every 10 feet for the first 50 feet, and at least one sample thereafter every 50 feet to total depth, and at least one sample at total depth in each boring. Each deep boring at each location shall be drilled from the surface to the water table, and each deep boring shall be completed as a permanent soil-gas monitoring well. The soil-gas monitoring wells shall be capable of yielding discrete samples of soil gas recovered from depths of 25, 50, 150, 250, 350, and 450 feet below the ground surface.

All boreholes that will have soil-vapor monitoring wells constructed in them shall be logged using induction (medium and deep), neutron, and gamma tools. Geologic logs shall also be prepared for these boreholes showing the geologic conditions from the surface to the total depth of each borehole.

The coordinates in Tables 1-3 are State Plane Coordinates in feet, NAD83. All boring/soil vapor well locations are also shown on Figure 1 enclosed with this letter.

**Table 1. Borehole Locations for Soil Sampling and for Conversion to Soil-Vapor Monitoring Wells.**

| Location # | Easting | Northing | Characterization Purpose |
|---|---|---|---|
| 1 | 1541119 | 1473793 | Step out from Fuel Offloading Rack |
| 2 | 1540808 | 1473503 | Step out from Fuel Offloading Rack |
| 3 | 1541123 | 1473310 | Step out from Fuel Offloading Rack |
| 4 | 1541425 | 1473313 | Step out from Fuel Offloading Rack and piping |

| | | | |
|---|---|---|---|
| 5 | 1541961 | 1473492 | Fuel percolation area |
| 6 | 1542002 | 1473057 | Piping |
| 7 | 1541794 | 1473061 | Piping |
| 8 | 1542370 | 1473058 | Piping |
| 9 | 1541898 | 1473276 | Fuel percolation area |
| 10 | 1541720 | 1473369 | Fuel percolation area |
| 11 | 1541776 | 1473740 | Step out from Fuel Offloading Rack |
| 12 | 1541658 | 1473505 | Fuel percolation area and Fuel Offloading Rack |
| 16 | 1541992 | 1472768 | Fuel tanks |
| 17 | 1542229 | 1472916 | Fuel tanks |
| 19 | 1542485 | 1472911 | Fuel tanks |
| 20 | 1542428 | 1472716 | Fuel tanks |
| 21 | 1541611 | 1473238 | Fuel percolation area |
| 22 | 1542137 | 1473266 | Fuel percolation area |
| 23 | 1542131 | 1473571 | Fuel percolation area |
| 24 | 1541620 | 1472955 | Far Field and piping |
| 25 | 1542807 | 1473592 | Fuel percolation area |
| 26 | 1542422 | 1473506 | Fuel percolation area |
| 27 | 1542360 | 1473808 | Fuel percolation area |

**Table 2. Locations for Soil-Gas Monitoring Wells.**

| Location # | Easting | Northing | Characterization Purpose |
|---|---|---|---|
| 1 | 1542900 | 1474092 | Far Field |
| 2 | 1543194 | 1474680 | Far Field |
| 3 | 1542306 | 1474093 | Far Field |
| 4 | 1541555 | 1475049 | Far Field |
| 5 | 1541248 | 1474141 | Far Field |
| 6 | 1542259 | 1472591 | Far Field and fuel tanks |
| 8 | 1542504 | 1475414 | Far Field |
| 9 | 1542436 | 1474878 | Far Field |

**Table 3. Locations for Shallow Soil Borings in Tank Farm Area.**

| Location # | Easting | Northing |
|---|---|---|
| 1 | 1542544 | 1472810 |
| 2 | 1542282 | 1472806 |
| 3 | 1542125 | 1472784 |
| 4 | 1542081 | 1472959 |
| 5 | 1541941 | 1472867 |

The Permittee shall revise the Vadose Zone Work Plan to incorporate the general comments and correct the deficiencies noted above.

***2. Specific Comments on Vadose Zone Work Plan***

*1. Downhole Geophysical Logging* - Section 3.2.1.1, Table 3-1, Topic 3, states "If proposed vapor monitoring points are screened in zones determined to be fine grained lithologic units adjust the screen location vapor monitoring points up or down to the nearest coarser grained unit."

Because individual fine grained or coarse grained beds do not necessarily extend laterally for any significant distances, any geophysical logs used to adjust screen locations must be generated for that particular borehole.

The Permittee must revise the Vadose Zone Work Plan to indicate the maximum distance that screened zones are to be adjusted from the required screen depths should adjustment be necessary. For screens that are to be set 100 feet apart as directed under this letter, the Permittee may adjust screens by no more than 25 feet. For screens that are to be set 25 feet apart, the Permittee may adjust screens by no more than 5 feet.
*2. Seismic Refraction, Section 3.2.1.2* - NMED encourages the use of geophysical techniques; however, NMED is doubtful that seismic refraction will prove useful in this case. NMED is concerned that refraction will only detect shallow loose material near the surface, somewhat more dense subsurface material, and saturated material beginning at the water table. Although KAFB is free to conduct the refraction survey, the NMED will not allow such survey to delay completion of other work required for characterizing and cleaning up the Bulk Fuels Facility Spill.

If the Permittee proceeds with conducting the refraction survey, the following issues must be addressed in the revised work plan.

A. Explain why seismic refraction was chosen and not shallow reflection.

B. Explain how seismic refraction is expected to identify the difference between a fine-grained unit and a coarse-grained unit above the saturated zone at depths of 450-500 feet (see DQO step 5 for topic 1 on Table 3-1). Table 3-1, DQO step 6, topic 1 implies that refraction will be able to define a unit within 1-foot depth at a depth of 500 feet. These Data Quality Objectives cannot likely be achieved.

C. If the 1-foot depth is actually referring to the location of geophones, specify what the QC targets are for the seismic survey (for example, how close should the interpreted seismic interface be to the actual depth to water). Specify the site-specific conceptual model of the seismic layering. Indicate the expected thicknesses versus depth of units to be detected.

D. Explain what seismic source is planned to be used in this "noisy" environment that can carry an off-the-end shot for the 1500 foot line. Conceptually, specify how many shot points and what locations are planned per line.

E. Figure 3-1 shows 13 seismic lines that are all oriented in an east-west direction. Section 3.2.1.2 discusses orthogonal lines. Clarify how many lines are planned. Specify how the orthogonal lines will be placed, and show them on a corrected Figure 3-1. Explain why the proposed seismic lines are shown crossing buildings.

*3. Resistivity, Section 3.2.1.3* – Like the refraction survey discussed in the proceeding comment, the NMED is doubtful that the IP/RES techniques will prove useful in this case. Although KAFB is free to conduct the resistivity survey, the NMED will not allow such a survey to delay completion of other work required for characterizing and cleaning up the Bulk Fuels Facility Spill.

If the Permittee proceeds with conducting the survey, the following issues must be addressed in the revised work plan.

A. As described in Section 3.2.1.3 of the plan, 56 stakes are proposed to be situated along 1,850 feet transects. This amounts to an electrode separation of about 30 feet, which would yield a shallowest apparent resistivity of the upper nominal 30 feet, with a value every 30 feet horizontally. Explain how the resistivity survey is expected to provide good results with all the surface interferences, cultural conditions, pipelines, surface topography changes, utilities, and other conditions known to be present at the site. Explain how close, for example, does the interpreted depth to groundwater need to be to meet the "Specify Limits on Decision Errors" concept on Table 3-1. Specify the QC procedures to be performed, such as calibrating to a known resistance and reciprocity tests.

B. Explain why the proposed resistivity lines are shown crossing buildings.

C. Indicate whether the geophysical parameters measured in the Sunbelt Geophysics report were taken into account in planning the resistivity investigation.

D. Specify what size transmitter is to be used to be able to measure the appropriate parameters with appropriate detail at large depths, and what electrode arrays are to be used.

E. Indicate if an analysis has been conducted modeling what MN, AB, and AB-MN spacings seem plausible based upon site-specific resistivities (estimated from resistivity or induction logs) and equipment specifications.

F. F. Indicate and explain the computer model by which the data are to be interpreted.

*4. Page 3-5, Section 3.2.3* – Substitute semi-volatile organic compounds (SVOCs) for polycyclic aromatic hydrocarbons (PAHs) and add lead to the parameters to be analyzed for in soil. The Permittee must revise the Vadose Zone Work Plan accordingly.

*5. Page 3-6, Section 3.2.3* – The first paragraph on this page says that soil samples containing LNAPL will not be sent to the laboratory for chemical analysis. All soil samples, including those containing LNAPL, must be sent to a laboratory and analyzed for TPH, VOCs, SVOCs, and lead. The Permittee must revise the Vadose Zone Work Plan accordingly.

*6. Page 3-6, Section 3.2.4* – This section states that screens on soil-vapor monitoring wells will be set to "anticipated depths" of 25, 50, 150, 250, 350, and 450 feet. The Permittee must revise the Vadose Zone Work Plan to indicate the maximum distance that screened zones are to be adjusted from the required screen depths, should adjustment be necessary. For screens that are to be set 100 feet apart as directed under this letter, the Permittee may adjust screens by no more than 25 feet. For screens that are to be set 25 feet apart, the Permittee may adjust screens by no more than 5 feet. The Permittee must revise the Vadose Zone Work Plan accordingly.

*7. Cross-section "A-A"* - Cross-section A-A' location shown on Figures 2-2 through 2-5 does not correspond to Cross-Section A-A' shown in Figure 2-8. Supply the intended cross-section A-A' with data shown clearly and legibly, and with appropriate data.

## D. Groundwater Investigation Work Plan

***General Comments on Groundwater Investigation Work Plan***

In NMED's letter of April 2, 2010, the Permittee was directed to submit a Groundwater Investigation Work Plan that describes the additional actions the Permittee will take to characterize the nature, horizontal and vertical extent, and the fate and rate of migration of the groundwater contamination. The Groundwater Investigation Work Plan was also to include construction details and the locations and depths of the groundwater monitoring wells to be installed, actions to characterize the geology and hydrogeology at and below the water table,

groundwater flow direction and velocity, field procedures, and the sampling and analysis of groundwater and related quality control. The Groundwater Investigation Work Plan was also to describe the means *(e.g.,* cross-sections, plan views) by which results would be reported after the investigation and include a schedule to complete the work.

The leading (northern) edge and the eastern and western margins of the dissolved-phase and LNAPL plumes are as yet undefined, and the nature and concentrations of contaminants in the core of each of the plumes are poorly characterized because existing wells are located too far apart (generally at distances greater than 500 feet), vertical characterization information is nonexistent, and water quality beneath the LNAPL plume has not been assessed. Additionally, the vertical extent of contaminated groundwater, key aspects of the hydrology of the groundwater (hydraulic conductivity, velocity), and the geology (horizontal and vertical characteristics) of the saturated zone are poorly defined or are unknown.

In general, the Groundwater Investigation Work Plan proposes too few wells, both in a vertical and horizontal sense, than is needed to adequately characterize the geology, hydrology, and the nature and extent of contamination over such a large area of groundwater contamination. As mentioned earlier, NMED was hoping to avoid the time-consuming process of "dickering" with the Permittee on numbers of borings and wells by providing clear and specific direction in its April 2, 2010 letter. Nevertheless, in the interest of comity and upon further consideration, NMED agrees that by adjusting locations some well locations directed in NMED's April 2, 2010 letter can be replaced with some proposed by the Permittee in the Groundwater Investigation Work Plan. NMED nonetheless directs an increase in the number of sampling points over that proposed by the Permittee, with the goal of achieving adequate site characterization more quickly to address the urgent matter of cleaning up the Bulk Fuels Facility Spill. Depending on what is found, additional wells may be needed, and NMED reserves its rights to require such additional borings, wells, or both in the future. The Permittee shall revise the Groundwater Investigation Work Plan to include all of the well installations required by this letter.

NMED has identified several other general deficiencies with the Groundwater Investigation Work Plan, which includes issues related to background water quality, vertical characterization, water quality beneath the LNPAL plume, rate of contaminant migration, cluster/nested wells, and characterization of plume cores and margins. These general deficiencies are discussed below.

*1. Background Water Quality* - Only two upgradient wells have been installed that potentially may yield groundwater samples that are free from contamination. Both of these wells were only recently completed; none is screened appreciably below the water table to provide vertical characterization of water quality, geology, and hydrologic conditions. The Permittee must complete the background cluster/nested wells at location #6 listed in Table 4 of this letter and shown on Figure 2 (enclosed).

*2. Vertical Characterization* – The plan identifies proposed wells that are to be screened at various depths below the water table as "B" and "C" wells, with the "C" wells the deepest screened well at a given cluster/nested well location. Due to urgency of this matter, the NMED

does not approve of "C" well installation being contingent on "B" well results. Given that the pumping of water supply wells is known to induce vertical gradients in groundwater, can cause significant components of vertical flow in the vicinity of such wells, and draws water preferentially from productive zones that may be deeper than the water table, vertical characterization of groundwater quality, hydrology, and geology is required for all well installations specified by this letter.

*3. Water Quality Beneath the LNAPL Plume* - Although the lack of water quality information was identified specifically by the NMED as a data gap, the Groundwater Investigation Work Plan states that groundwater at well locations within the boundaries of the LNAPL plume will not be sampled and analyzed. This is an unacceptable approach. Knowledge of water quality beneath the LNAPL plume is crucial to understand the full extent and magnitude of the groundwater contamination.

*4. Rate of Contaminant Migration* - Although a critical question to be answered, it was not clear in the Groundwater Investigation Work Plan if the Permittee has a plan to address the rate of migration of either the dissolved-phase or LNAPL contaminant plumes, and in particular, the time it would take for the dissolved-phase plume to reach surrounding well fields. The Permittee must clarify this point.

*5. Cluster versus Nested Wells* – The NMED has no objections to the use of nested wells instead of cluster wells, provided the nested wells are properly constructed. However, in this case the NMED will not accept wells that are constructed with 3-inch diameter casing and screens. Three-inch diameter casing and screens are inappropriate for constructing groundwater monitoring wells that will be installed to depths of 500 feet or more. The Permittee shall design wells to be constructed in cluster or nested configurations using casing and screen that are no smaller than 5 inches in diameter. The borehole surrounding the well casing for a nested or cluster well must be of sufficient diameter to allow for an adequate annular space between the borehole and well casing and screen. The annular space must be of sufficient size to allow for proper construction of filter packs and seals, and for the installation of grouting (see the groundwater monitoring well construction requirements set forth in Part 2 of this letter).

*6. Characterization of Plume Cores* – The dissolved-phase and LNAPL plumes extend off base to nearly 0.9 to 0.5 miles, respectively from the presumed source, yet a total of only eight wells currently exist off-base to characterize the cores of both plumes. Of these eight wells, this includes two wells where groundwater has not been sampled for water quality in the past and one well that was only very recently installed at Bullhead Park for which no water quality data has been submitted to the NMED.

In NMED's letter of April 2, 2010, the Permittee was directed to install groundwater monitoring wells at a ***minimum*** of eight additional locations to characterize the concentrations of contaminants, and the geologic and hydrologic conditions that exist off-base in the plume cores; instead, the Permittee proposed only four.

To achieve the objective of providing initial plume-core characterization, the Permittee shall install the groundwater monitoring wells at locations #11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 23 listed in Table 4 and shown on Figure 2.

*7. Characterization of Plume Margins* – Only five existing wells define the edge of the plume off-base (including one well recently installed). In NMED's letter of April 2, 2010, the Permittee was directed to install groundwater monitoring wells at a ***minimum*** of eight additional locations to characterize the concentrations of contaminants, and the geologic and hydrologic conditions that exist off base along the plume margins; instead, the Permittee proposed five.

To adequately provide initial plume-edge characterization, the Permittee shall install the groundwater monitoring wells at locations #1, 2, 3, 4, 5, 7, 8, 9, 10, 24, 25, 26, 27, and 28 that are listed in Table 4 and shown on Figure 2.

Three groundwater monitoring wells shall be installed at different depths at each of the well locations listed in Table 4. The screen depths shown in Table 4 are distances (in feet) that the top of the screens shall be set below the water table, except wells screened across the water table (those with screen depths of zero in Table 4) may have screens that extend above the water table. Screen lengths for wells shall not exceed 15 feet, with the exception that wells screened across the water table shall have screens 20 feet long, with no more than 15 feet of screen length situated below the water table.

The geologic conditions encountered from the surface to the total depth of the borings at each well location shall be logged. Boreholes completed for well installations at all locations shall also be logged using induction (medium and deep), neutron, and gamma (large crystal) tools. Geophysical and geologic logging at a given cluster well location is required only in the well at the location having the deepest screened interval.

Coordinates in Table 4 are State Plane Coordinates in feet, NAD83. All of the locations listed in Table 4 are also shown on Figure 2 enclosed with this letter.

**Table 4. Well locations and screen depths relative to the water table.**

| Location # | Easting | Northing | Screen Depths | Characterization Purpose |
|---|---|---|---|---|
| 1 | 1542189 | 1476725 | 0, 15, 40 | Plume margin, deep characterization |
| 2 | 1541984 | 1476042 | 0, 15, 40 | Plume margin, deep characterization |
| 3 | 1543703 | 1476600 | 0, 15, 40 | Plume margin, deep characterization |
| 4 | 1543372 | 1475065 | 0, 15, 40 | Plume margin, deep characterization |
| 5 | 1543643 | 1477939 | 0, 15, 85 | Plume margin, deep characterization |
| 6 | 1541430 | 1472370 | 15, 40* | Background water quality, deep characterization |

| | | | | |
|---|---|---|---|---|
| 7 | 1542812 | 1473601 | 0, 15, 40 | Plume margin, deep characterization |
| 8 | 1542722 | 1477726 | 0, 15, 40 | Plume margin, deep characterization |
| 9 | 1543054 | 1477788 | 0, 15, 40 | Plume margin, deep characterization |
| 10 | 1543774 | 1477304 | 0, 15, 40 | Plume margin, deep characterization |
| 11 | 1541774 | 1473718 | 0, 15, 85 | Plume core, deep characterization |
| 12 | 1542362 | 1473801 | 0, 15, 85 | Plume core, deep characterization |
| 13 | 1542305 | 1474340 | 15, 85* | Plume core, deep characterization |
| 14 | 1542736 | 1474715 | 0, 15, 85 | Plume core, deep characterization |
| 15 | 1542860 | 1475860 | 0, 15, 85 | Plume core, deep characterization |
| 16 | 1542189 | 1475207 | 0, 15, 85 | Plume core, deep characterization |
| 17 | 1541731 | 1473291 | 0, 15, 85 | Plume core, deep characterization |
| 18 | 1542203 | 1474071 | 0, 15, 85 | Plume core, deep characterization |
| 19 | 1542565 | 1475360 | 0, 15, 85 | Plume core, deep characterization |
| 20 | 1542535 | 1475975 | 0, 15, 85 | Plume core, deep characterization |
| 21 | 1543199 | 1475767 | 0, 15, 85 | Plume core, deep characterization |
| 22 | 1543068 | 1476494 | 0, 15, 85 | Plume core, deep characterization |
| 23 | 1541968 | 1474648 | 0, 15, 85 | Plume core, deep characterization |
| 24 | 1541682 | 1474703 | 15, 40* | Plume margin, deep characterization |
| 25 | 1541025 | 1474360 | 15, 40* | Plume margin, deep characterization |
| 26 | 1540407 | 1474016 | 15, 40* | Plume margin, deep characterization |
| 27 | 1543712 | 1475683 | 15, 40* | Plume margin, deep characterization |
| 28 | 1543364 | 1477684 | 0, 15, 40 | Plume margin, deep characterization |

* - water table well already exists

The Permittee shall revise the Groundwater Investigation Work Plan to incorporate the general comments and correct the deficiencies noted above.

***Specific Comments on Groundwater Investigation Work Plan***

*1. Page 3-6, Section 3.3.4 and Figure 3-3* – Well construction details are missing, as the wrong figure was submitted for a well construction diagram in the Work Plan. The Permittee shall revise the Groundwater Investigation Work Plan to correct the deficiency noted above.

2. *Page 3-4, Section 3.3.2* – This section states that "NMED will be notified regarding any deviations in well constructions per Section 4.0." Aside from the fact that there is no Section 4.0, well construction and any changes thereto must be approved in advance by the NMED. E-mail or telephone approval may suffice to facilitate in-field decision-making. The Permittee shall revise the Groundwater Investigation Work Plan accordingly.

3. *Page 3-5, Section 3.3.3* – Soil samples shall be collected at well locations #11, 12, 17, and 18 listed in Table 4 from the deepest borehole at each location. The samples shall be collected at a frequency of at least one sample every 10 feet for the first 50 feet of the borehole, then at least one sample every 50 feet to the bottom of the borehole, and at total depth of the borehole. The soil samples must be analyzed in the laboratory for TPH, VOCs, SVOCs, and lead. The Permittee shall revise the Groundwater Investigation Work Plan accordingly.

4. *Page 3-7, Section 3.3.5* – This section indicates that wells screened below the water table will be considered by the Permittee to be "piezometers" (normally for measuring only hydraulic head). Groundwater samples must be collected from all wells, regardless if the wells are screened at the water table or deeper, and all samples must be analyzed for TPH and hazardous constituents. The Permittee shall revise the Groundwater Investigation Work Plan accordingly.

5. *Page 3-7, Section 3.3.5* – This section states that wells located within the area of the floating LNAPL will not be developed. All wells, including those within the LNAPL plume, shall be properly developed to provide representative water samples. The Permittee shall revise the Groundwater Investigation Work Plan accordingly.

6. *Page 3-7, Section 3.3.6* – This section states that groundwater at wells located within the area of the floating LNAPL will not be sampled. Groundwater in all wells will be sampled, including those within the LNAPL plume. The Permittee shall revise the Groundwater Investigation Work Plan accordingly.

7. *Page 3-7, Section 3.3.6* – For analysis of groundwater samples, add lead and substitute SVOCs for PAHs, and dissolved iron and dissolved manganese for iron and manganese, respectively. Samples must not be filtered, except for sample fractions for dissolved iron and dissolved manganese.

Add alkalinity and pH to the list of field parameters.

The Permittee shall revise the Groundwater Investigation Work Plan accordingly.

8. *Page 3-6, Section 3.3.4* - It is not clear how many wells are actually proposed because wells KAFB-10629, KAFB-10630, and KAFB-10638 are not listed on Table 3-2 of the Groundwater Investigation Work Plan. The Permittee must clarify or resolve this discrepancy in a revision to the Groundwater Investigation Work Plan.

9. *Page 3-1, Section 3.1.1* - Indicate what geophysical logs will be run and at what stage of the borehole/well installation process. The discussion should be included in Section 3.3 instead of Section 3.1.1. The Permittee shall revise the Groundwater Investigation Work Plan accordingly.

10. *Page 3-2, Section 3.3.1* - See specific Comments #2 and 3 for the Vadose Zone Work Plan regarding surface geophysical surveys.

# PART 2

## A. Direction to Conduct Interim Measures and Other Actions

In NMED's letter of April 2, 2010, the Permittee was informed that the NMED has determined that the Bulk Fuel Facility Spill poses a threat to human health and the environment, and furthermore, endangers the groundwater resource – including water supply wells – relied upon by the WUA for delivery of safe drinking water to its customers. The contamination also threatens KAFB and the Veterans Administration ("VA") Hospital water-supply wells. The large extent of this contamination and its proximity to water supply wells requires that urgent action be taken.

The NMED has estimated that nearly 8 million gallons of fuel have been released at the Bulk Fuels Facility. The Permittee is operating four SVE units on the Permittee's property; however, these soil-vapor extraction units will not clean up the contamination thus far known to occur from the Bulk Fuels Facility Spill in a reasonable time frame. Because the Permittee's Interim Measures Work Plan does not contain any interim measures that could be implemented immediately, the NMED herein is directing the Permittee to:

1. conduct additional soil vapor extraction,
2. improve the Operation and Maintenance Plan for the SVE units,
3. begin immediate excavation of contaminated soil at the Fuel Offloading Rack,
4. provide an estimate of the contaminant migration rate,
5. install sentry wells,
6. log existing wells, including using geophysical methods,
7. submit critical data to the NMED, and
8. provide adequate funding to the WUA for sampling and analysis of well water.

SVE and these other actions must be initiated or completed, as appropriate, by the deadlines indicated in this letter and in the Compliance Schedule in Table 5. Additionally, this letter specifies minimum requirements that the Permittee must meet regarding well installations, well development, sampling, geophysical logging, preparing geologic logs, notification of activities, field and laboratory quality control, and reporting.

*1. Soil Vapor Extraction*

a. The Permittee has demonstrated that SVE has worked to remove contaminate vapors from the vadose zone. The Permittee shall install and operate additional SVE units at the following locations:

i. No later than **October 6, 2010** (Table 5) at existing groundwater monitoring wells KAFB-3411, KAFB-10614, and KAFB-10624, which are located in the core of the vadose zone contamination.
ii. No later than **November 8, 2010** (Table 5) at soil boring/soil-vapor monitoring well locations #4, 5, 9, 10, 11, 12, and 21 that are listed in Table 1 of this letter. These wells, to be located in the core of contamination, should be designed to serve both as vapor extraction wells and as soil-vapor monitoring wells. The Permittee must also conduct geologic logging and borehole geophysical logging at each location. The Permittee shall comply with the collection and analysis of soil samples as specified in Part 1 of this letter for well installations.
iii. No later than **October 6, 2010** (Table 5) or 60 days after required access is granted, which ever is later, at existing groundwater monitoring wells KAFB-10617 and 10618 which are located at the northern extent of the LNAPL plume.
iv. No later than **November 8, 2010** (Table 5) or 60 days after required access is granted, which ever is later, at existing groundwater monitoring wells KAFB-10610 which is located at the northern extent of the 1-foot thick layer of LNAPL plume.
v. No later than **November 8, 2010** (Table 5) or 60 days after required access is granted, which ever is later, locations #3, 8 and 9 on Table 2 of this letter shall be made ready for conducting future soil vapor extraction by completing soil-vapor monitoring/extraction wells at this location. The Permittee must conduct geologic logging and borehole geophysical logging at this location and shall comply with the collection and analysis of soil samples as specified in Part 1 of this letter for well installations.

b. The Permittee shall continue to operate SVE units at the locations of the four existing SVE units (located at the Fuel Offloading Rack, KAFB-1065, KAFB-1066, and KAFB-1068).

Until such time that the interim measures plan is approved by the NMED, the Permittee shall continue to operate all SVE units 24 hours per day, 7 days a week, except when necessary to perform maintenance or repairs. If maintenance or repairs are necessary, the maintenance or repairs shall be completed as quickly as practicable, and the unit returned to service immediately after maintenance or repairs are completed. Any maintenance or repairs that will take more than 3 calendar days shall be reported in writing to the NMED within 24 hours of discovery that the maintenance or repairs will take more than 3 days. The Permittee shall explain in the report why the maintenance or repairs will take more than 3 calendar days and why the delay is beyond the control of the Permittee.

The SVE units shall be similar to those currently in use for the Bulk Fuels Facility Spill and shall be capable of extracting soil vapor at a minimum flow rate of 27 SCFM. The SVE units shall also average over a period of 12 months an operating efficiency (operating time relative to down time) of no less than 85%. The SVE units shall meet the regulatory requirements for air emissions enforced by the City of Albuquerque Environmental Health Department. The Permittee is responsible for obtaining all necessary permissions and permits to construct and operate the SVE units.

If the City of Albuquerque Environmental Health Department will not issue an air permit to operate the SVE units specified by this letter, the Permittee shall immediately notify the NMED in writing and shall substitute a different technology for conducting SVE and treating emissions that will meet the regulatory requirements enforced by the City of Albuquerque Environmental Health Department and the deadlines set forth in this letter in the Compliance Schedule shown in Table 5.

*2. Operation and Maintenance (O&M) Plan*

The Permittee shall modify its O&M Plan to reduce down time of SVE units by maintaining in inventory commonly-needed spare parts for maintenance and repairs, and keeping a spare engine available for SVE units that suffer catastrophic engine failures. The spare parts and engine shall be maintained by the Permittee in inventory by **September 7, 2010**. The Permittee shall provide NMED with a written list of the spare parts and spare engine kept in inventory by **October 6, 2010** (Table 5).

*3. Excavation of Soil and Removal of Fuel Offloading Rack*

The Permittee shall by **October 6, 2010** (Table 5) begin removal of the remaining components of the Fuel Offloading Rack and excavation of contaminated soil to 20 feet. The excavation of soil and removal of the Fuel Offloading Rack shall be completed by **October 6, 2011** (Table 5), and a report on completion of the work submitted to the NMED by **January 15, 2012** (Table 5). Any soil contamination left in place must meet NMED's requirements for clean up (see Comment # 8 of Section A of Part 1 of this letter). The Permittee may use direct push sampling and field analysis to help determine which soils require excavation. However, laboratory analysis shall be conducted to determine the concentrations of hazardous constituents in soil for the purpose of defining the final extent of excavation, for risk assessment, and for waste determinations.

Soil shall be sampled to determine whether all contaminated soil that poses an unacceptable risk to human health or the environment has been removed to a depth of at least 20 feet. Soil samples shall be analyzed in the laboratory for TPH, VOCs, SVOCs, and lead, and collected on all sides and the bottom of the excavation at a spacing not to exceed 25 feet.

*4. Estimates of Contaminant Migration Rate*

The Permittee must provide NMED by **September 7, 2010** (Table 5) with calculations showing the estimated velocity of and the travel time for the dissolved-phase contaminant plume to first reach the closest well in the Ridgecrest well field, the Veteran Administration (VA) Hospital Well, and KAFB production wells KAFB-3, KAFB-15, and KAFB-16. The calculations shall consider the direction and gradient of groundwater flow, and the geologic and hydrologic properties of the aquifer under a worse-case scenario. The Permittee shall provide the source of all information used to support the required calculations.

*5. Installation of Sentry Wells*

a. The Permittee must install groundwater monitoring wells (water table, intermediate, and deep wells referred to as A, B, and C wells) at location #28 of Table 4 of this letter, north of the leading edge of the dissolved-phase contaminant plume, by no later than **November 8, 2010** (Table 5) or 90 days after required access is granted, which ever is later. These wells will serve as sentry wells for the northern extent of the dissolved-phase plume.
b. The Permittee must install B and C groundwater monitoring wells at existing well locations KAFB-10613 and KAFB-1064, near the V.A. Hospital, by no later than **November 8, 2010** (Table 5) or 90 days after required access is granted, which ever is later. These wells will serve as sentry wells for the V.A. Hospital.
c. The Permittee must install A, B, and C groundwater monitoring wells at location #3 listed in Table 4 of this letter, on the east edge of the dissolved-phase contaminant plume, by no later than **November 8, 2010** (Table 5) or 90 days after required access is granted, which ever is later. These wells will serve as sentry wells for the northeastern extent of the dissolved-phase plume.
d. The Permittee must install A, B, and C groundwater monitoring wells at location #1 listed in Table 4 of this letter, on the west edge of the dissolved-phase contaminant plume no later than **November 8, 2010** (Table 5) or 90 days after required access is granted, which ever is later. These wells will serve as sentry wells for the northwestern extent of the dissolved-phase plume.
e. The Permittee must also conduct geologic and borehole geophysical logging of each well discussed in paragraphs a-d of this section. Geologic logging must be completed during the drilling of the boreholes; geophysical logging must be completed within 30 days of well completion (Table 5). Copies of the geologic and geophysical logs must be provided to the NMED by the submittal dates for quarterly reports specified in NMED's letter of June 4, 2010.

Wells constructed in cluster or nested configuration must meet the requirements set forth in Comment # 5 of Section D of Part 1 of this letter. Groundwater samples shall be collected and analyzed in a laboratory at a quarterly frequency from each sentry well in accordance with the direction in NMED's letter of June 4, 2010, and directions under this letter.

*6. Geophysical logging of Existing Wells*

The Permittee must conduct borehole geophysical logging (medium and deep induction, gamma, and neutron) at all existing groundwater monitoring wells. Copies of the geophysical logs must be provided to the NMED by **October 6, 2010** (Table 5).

*7. Submitting Critical Data to NMED*

The Permittee failed to provide certain critical information required in NMED's April 2, 2010 letter. The Permittee must provide the following information to the NMED by **September 7, 2010** (Table 5):

i. tables in electronic format (Excel™) showing the locations (x, y, z), sampling points, and maximum depths of all soil borings and vapor and groundwater monitoring wells;
ii. Survey plats for all wells.
iii. tabulated data in electronic format (Excel™) and graphs showing hydrocarbons (HC) and trends of major hazardous constituent (such as benzene, toluene, ethylene dibromide, xylenes, naphthalene, ethylbenzene, and lead) concentrations versus time for soil vapor for each extraction and each soil-vapor and groundwater monitoring well, as applicable.
iv. tabulated data in electronic format (Excel™) and graphs showing trends of TPH and major hazardous constituent (such as benzene, toluene, ethylene dibromide, xylenes, naphthalene, ethylbenzene, and lead) concentrations versus time for groundwater for each groundwater monitoring well.
v. Cross-sections showing the geology of the site drawn to a horizontal scale of 1 inch equals 50 feet, a vertical scale of 1 inch = 50 feet, and along the orientations A-A', B-B', C-C', and D-D' as shown on Figure 3 enclosed with this letter.
vi. Cross-sections showing the geology of the site drawn to a horizontal scale of 1 inch equals 300 feet, a vertical scale of 1 inch = 50 feet, and along the orientations A-A', B-B', C-C', and D-D' as shown on Figure 4 enclosed with this letter.
vii. Cross-sections showing concentrations of major hazardous constituents in soil, drawn to a horizontal scale of 1 inch equals 50 feet, a vertical scale of 1 inch = 50 feet, and along the orientations A-A', B-B', C-C', and D-D' as shown on Figure 3 enclosed with this letter.
viii. Cross-sections showing concentrations of major hazardous constituents in soil vapor, drawn to a horizontal scale of 1 inch equals 50 feet, a vertical scale of 1 inch = 50 feet, and along the orientations A-A', B-B', C-C', and D-D' as shown on Figure 3 enclosed with this letter.
ix. Cross-sections showing concentrations of major hazardous constituents in groundwater, drawn to a horizontal scale of 1 inch equals 300 feet, a vertical scale of 1 inch = 50 feet, and along the orientations A-A', B-B', C-C', and D-D' as shown on Figure 4 enclosed with this letter.

***8. Sampling and Analysis of Water Production Wells***

NMED understands that the Permittee is providing funding to the WUA to analyze groundwater samples from WUA water-supply wells threatened by contamination originating from the Bulk Fuels Facility Spill. NMED has also become aware that the analytical method used by the WUA to test for ethylene dibromide (EDB) is 524.2 rather than Method 504.1, the latter which is normally used for purposes of determining compliance with Safe Drinking Water Act.

NMED does not consider analysis by Method 524.2 to be sufficiently sensitive to provide adequate early-warning protection for the WUA wells. The Permittee shall continue to collaborate with the WUA to ensure that water quality is safe for human consumption, but will also ensure the samples are analyzed by Method 504.1. The Permittee shall provide copies of the laboratory results to the NMED in quarterly reports in accordance with the reporting requirements of NMED's letter of June 4, 2010.

## B. Technical Requirements for Conducting Interim Measures

### *1. Notification of Sampling and other Field Activities*

The Permittee shall notify the NMED in writing of field sampling or other field activities undertaken in accordance with the requirements of this letter, and shall provide the NMED the opportunity to collect split samples upon request by the NMED. For such sampling or other field activities, the Permittee shall provide the NMED with as much advance notice as is practicable, but no less than 15 days prior to the conduct of such sampling. The Permittee shall notify the NMED in writing a minimum of 15 days prior to the implementation of the Interim Measures, Groundwater Investigation and Vadose Zone Work Plans. Notification of sampling or other field activities may be made by email, fax, or letter.

### *2. Soil-Vapor Well Construction*

Soil-vapor monitoring wells shall be designed and constructed in a manner that will yield high-quality samples. Soil vapor wells shall not be installed with the use of any fluids. Soil vapor wells may be completed by backfilling with native materials. The Permittee shall not sample the well before the expiration of the 24-hour equilibration period following completion of installation. Information on the design and construction of soil-vapor monitoring wells shall be recorded as for groundwater monitoring wells.

### *3. Groundwater Monitoring Well Construction*

Groundwater monitoring wells shall be designed and constructed in a manner that will yield high quality samples, ensure that the well will last the duration of the project, and ensure that the well will not serve as a conduit for hazardous constituents to migrate between different stratigraphic

units or aquifers. The design and construction of groundwater monitoring wells shall comply with the guidelines established in various RCRA guidance, including, but not limited to:

EPA, *RCRA Groundwater Monitoring Technical Enforcement Guidance Document*, OSWER-9950.1, September, 1986; and

Aller, L., Bennett, T.W., Hackett, G., Petty, R.J., Lehr, J.H., Sedoris, H., Nielsen, D.M., and Denne, J.E., *Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells*, EPA 600/4-89/034, 1989.

*1. Drilling Methods*

The Permittee shall abide by the following conditions:

1. Drilling shall be performed in a manner that minimizes impacts to the natural properties of the subsurface materials;
2. Drilling shall be performed in a manner that contamination and cross-contamination of groundwater and aquifer materials is avoided;

1. The drilling method shall allow for the collection of representative samples of rock, unconsolidated sediment, and soil;
2. The drilling method shall allow the Permittee to determine when the appropriate location for the screened interval(s) has been encountered;
3. The drilling method shall allow for the proper placement of a filter pack and annular sealant for each monitored zone, and the borehole diameter shall be at least four inches larger in diameter than the nominal diameter of the well casing and screen to allow adequate space for emplacement of the filter pack and annular sealants;
4. The drilling method shall also allow for the collection of representative groundwater samples; and
5. Drilling fluids, including air, shall be used only when minimal impact to the surrounding formation and groundwater can be ensured.

All drilling equipment shall be in good working condition and capable of performing the planned tasks. Drilling rigs and equipment shall be operated by properly trained crews. Drilling equipment shall be properly decontaminated before initiation of drilling for each boring. Precautions shall be taken to prevent the migration of contaminants between geologic, hydrologic, or other identifiable zones during drilling and well installation activities. The drilling and sampling shall be conducted under the direction of a qualified engineer or geologist. Known site features and/or site survey grid markers shall be used as references to locate each boring prior to surveying the location.

*2. Well Construction Materials*

When selecting construction materials, the primary concern shall be selecting well construction materials that will not contribute to or remove hazardous waste or constituents from groundwater

samples. Other factors to be considered include the tensile strength, compressive strength, and collapse strength of the materials; the length of time the monitoring well will be in service; and the material's resistance to chemical and microbiological corrosion.

*3. Design and Construction of Screens and Filter Packs*

Screens and filter packs shall be designed to allow accurate sampling of the saturated zone that the well is intended to sample, minimize the passage of formation materials (turbidity) into the well, and ensure sufficient structural integrity to prevent the collapse of the intake structure. The filter pack shall be installed in a manner that prevents bridging and particle-size segregation. Filter packs shall be installed by the tremie pipe method. At least two inches of filter pack material shall be installed between the screen and the borehole wall, and two feet of filter pack material shall extend above the top of the screen. A minimum of six inches and a maximum of two feet of filter pack material shall also be placed under the bottom of the screen. The precise volume of filter pack material required shall be calculated and recorded before placement, and the actual volume used shall be determined and recorded during construction. Any significant discrepancy between the calculated and actual volume shall be explained. Prior to installing the filter pack annular seal, a one to two-foot layer of chemically inert fine sand shall be placed over the filter pack to prevent the intrusion of annular sealants into the filter pack.

*4. Design and Construction of Annular Seals*

The annular space between the casing and the borehole wall shall be properly sealed to prevent cross-contamination. The materials used for annular sealants shall be chemically inert with respect to the highest anticipated concentration of chemical constituents expected in the groundwater. The precise volume of annular sealant required shall be calculated and recorded before placement, and the actual volume shall be determined and recorded during construction. Any significant discrepancy between the calculated volume and the actual volume shall be explained.

During construction, an annular seal shall be placed on top of the filter pack. This seal shall normally consist of a high solids (10 to 30 percent) bentonite material in the form of bentonite pellets, granular bentonite, or bentonite chips. The seal shall be placed in the annulus through a tremie pipe. A tamping device shall be used to ensure that the seal is emplaced at the proper depth. The bentonite seal shall be placed above the filter pack with a minimum of two-foot vertical thickness. The bentonite seal shall be allowed to completely hydrate in conformance with the manufacturer's specifications prior to installing the overlying annular grout seal.
A grout seal shall be installed on top of the filter pack seal. The grout shall be placed into the annular space by the tremie pipe method, from the top of the filter pack annular seal to within a few feet of the ground surface; however, the grout shall be installed at intervals necessary to allow it time to cure and not damage the filter pack or filter pack annular seal during installation of the grout. The grout seal shall be allowed to cure for a minimum of 24 hours before the concrete surface pad is installed. All grouts shall be prepared in accordance with the manufacturer's specifications.

*5. Surface Completion Methods*

Monitoring wells may be completed either as flush-mounted wells, or as above-ground completions. A surface seal shall be installed over the grout seal and extended vertically up the well annulus to the land surface. The lower end of the surface seal shall extend a minimum of one foot below the frost line to prevent damage from frost heaving. The composition of the surface seal shall be neat cement or concrete. In above-ground completions wherein the well casing rises or sticks up above ground level, a three-foot square by four-inch thick concrete surface pad shall be installed around the well immediately after the protective casing is installed. The surface pad shall be sloped so that drainage will be off the pad and away from the protective casing. In addition, a minimum of one inch of the finished pad shall be below grade or ground elevation to prevent washing and undermining by soil erosion.

Protective casing with a locking cover shall be installed around the well casing (stickup or riser) to prevent damage or unauthorized entry. The protective casing shall be anchored in the concrete surface pad below the frost line and extend at least several inches above the casing stickup. A weep hole shall be drilled into the protective casing just above the top of the concrete surface pad to prevent water from accumulating and freezing inside the protective casing. A cap shall be placed on the well riser to prevent the entry of foreign materials into the well, and a lock shall be installed on the cover of the protective casing to provide security against tampering. If a well is located in an area that receives vehicular traffic, a minimum of three bumper guards consisting of steel pipes three to four inches in diameter and a minimum of five-feet in length shall be installed next to the concrete surface pad. The bumper guards shall be installed to a minimum depth of two feet below the ground surface in a concrete footing and extend a minimum of three feet above ground surface. The pipes that form the bumper guards shall be filled with concrete to provide additional strength, and shall be painted a bright color to make them readily visible.
If flush-mounted completions are required (e.g., in active roadway areas), a protective structure such as a traffic-rated utility vault or meter box shall be installed around the casing. In addition, measures should be taken to prevent the accumulation of surface water in the protective structure and around the well intake. These measures shall include outfitting the protective structure with a steel lid or manhole cover that has a rubber seal or gasket, and ensuring that the bond between the cement surface seal and the protective structure is watertight. A lock shall be installed on the lid or cover of the protective structure to prevent unauthorized access to the well.

*6. Well Development Methods*

All monitoring wells shall be developed to create an effective filter pack around the screen, correct damage to the formation caused by drilling, remove residual drilling mud or other drilling additives, if present, and fine particles from the formation near the borehole, and assist in restoring the original water quality of the aquifer in the vicinity of the well. Monitoring wells shall be developed until the column of water in each well is free of visible sediment, and the pH, temperature, turbidity, and specific conductance have stabilized to within 10%. If a well is pumped dry, the water level shall be allowed to sufficiently recover before the next development period is initiated.

If water is introduced to a borehole during drilling and completion, then at minimum the same volume of water shall be removed from the well during development. In addition, the volume of water withdrawn from or introduced into a well during development shall be recorded. Well development must be completed within 30 days of installation.

***4. Surveying Requirements for Groundwater Monitoring and Soil-Vapor Wells***

The horizontal and vertical coordinates of the measuring point at the top of each monitoring well casing and the ground surface elevation at each monitoring well location shall be determined by a registered New Mexico professional land surveyor or licensed Professional Engineer. Horizontal coordinates shall be measured in accordance with the State Plane Coordinate System. Horizontal positions shall be measured to the nearest 0.1 foot, and vertical elevations shall be measured to the nearest 0.01 foot.

***5. Well Completion Reports***

For each monitoring well, the Permittee shall submit to the NMED a completion summary report which shall include a well construction log and diagram, a geologic log, and a well development log. The report for each well shall be submitted in accordance with the quarterly schedule set forth in NMED's letter of June 4, 2010.

***6. Well Construction Diagrams and Logs***

Information on the design, construction, and development of each monitoring well shall be recorded. Construction diagrams and logs shall include the following information:

1. Well, boring name/number;
2. Date/time of construction;
3. Borehole diameter and casing diameter;
4. Surveyed location coordinates;
5. Total depth, expressed both as depth below ground surface and elevation above sea level;
6. Name of drilling contractor;
7. Casing length;
8. Casing materials;
9. Casing and screen joint type;
10. Screened intervals, expressed both as depth(s) below ground surface and elevation(s) above sea level;
11. Screen materials;
12. Screen slot size and design;
13. Filter-pack material and size;
14. Filter-pack volume (calculated and actual);
15. Filter-pack placement method;

16. Filter-pack interval(s), expressed both as depth(s) below ground surface and elevation(s) above sea level;
17. Annular sealant composition;
18. Annular sealant placement method;
19. Annular sealant volume (calculated and actual);
20. Annular sealant interval, expressed both as depth below ground surface and elevation above sea level;
21. Surface sealant composition;
22. Surface seal placement method;
23. Surface sealant volume (calculated and actual);
24. Surface sealant interval, expressed both as depth below ground surface and elevation above sea level;
25. Surface seal and well apron design and construction;
26. Development procedure and turbidity measurements;
27. Well development purge volume(s) and stabilization parameter measurements;
28. Type, design, and construction of protective casing;
29. Type of cap and lock;
30. Ground surface elevation above sea level;
31. Survey reference point elevation above sea level on well casing;
32. Top of casing elevation above sea level;
33. Top of protective steel casing elevation above sea level;
34. Drilling method(s); and
35. Types, quantities, and dates/times that additives were introduced, if any.

***7. Measurement of Groundwater Levels***

Groundwater levels shall be measured in all monitoring wells associated with the Bulk Fuels Facility Spill within 72 hours from the start of monitoring the water level in the first well. Groundwater levels shall be obtained prior to purging for any sampling event. Measurement data and the date and time of each measurement shall be recorded on a field log. The depth to groundwater shall be measured to the nearest 0.01 foot. The depth to groundwater shall be recorded relative to the surveyed well casing rim.

***8. Sampling of Environmental Media***

Sampling of environmental media (groundwater, soil, and soil vapor) shall comply with the requirements set forth in NMED's letter of June 4, 2010, and in accordance with the additional requirements provided herein.

*1. Soil Sampling Requirements*

Relatively undisturbed discrete soil and rock samples shall be obtained during the advancement of each boring for the purpose of logging and analytical testing. A split-barrel sampler lined with brass sleeves, a coring device, or other method approved in advance by the NMED shall be used to obtain samples during the drilling of each boring.

Soil samples are subject to the same field quality assurance, laboratory quality assurance, data validation, and reporting requirements as for groundwater and soil-vapor samples; including requirements to collect or prepare, as appropriate, and analyze field quality control samples. Soil samples collected for the purpose of analyzing for VOCs and SVOCs shall not be mixed to homogenize samples for any reason.

*2. Groundwater Sample Collection*

Groundwater samples shall be obtained within eight hours of the completion of well purging. Groundwater in monitoring wells with low recharge rates and that purge dry shall be sampled when the water level in the well has recovered sufficiently to collect the required samples. Sample collection methods shall be documented in field monitoring logs. Samples shall be placed into appropriate clean containers. Decontamination procedures shall be established and, implemented, for nondedicated water sampling equipment.

The Permittee shall obtain groundwater samples for dissolved metals analysis using disposable in-line filters with a 0.45 micron mesh size.

***9. Field Quality Control***

Field duplicates shall consist of two samples collected sequentially. Field duplicate samples shall be collected and analyzed at a frequency of at least 10 percent of the total number of environmental samples submitted for analysis. At a minimum, one duplicate sample per sampling event shall always be collected and analyzed.

Field blanks shall be prepared and analyzed at a frequency of no less than one per day. Field blanks shall be generated by filling sample containers in the field with deionized water and submitting the field blank, along with the groundwater samples, to an analytical laboratory.

Equipment blanks shall be prepared and analyzed at a rate of at least five percent of the total number of environmental samples submitted for analysis, but no less than one equipment blank per sampling day. Equipment blanks shall be generated by rinsing decontaminated sampling equipment with deionized water, and capturing the rinsate water in an appropriate clean container. The equipment blank then shall be submitted with the groundwater samples to the analytical laboratory for the same analyses as the environmental samples.

Trip blanks shall be prepared using deionized water. Trip blanks shall be managed exactly the same as environmental samples. Trip blanks shall accompany sampling personnel into the field

throughout sampling activities, and then shall be placed into a shipping container with environmental samples for shipment to the analytical laboratory. Trip blanks shall be analyzed at a frequency of one for each shipping container holding samples for VOC analysis.

***10. Laboratory Quality Assurance***

The Permittee shall ensure that contract analytical laboratories maintain internal quality assurance programs in accordance with EPA and industry-accepted practices and procedures. At a minimum, the laboratories shall use a combination of standards, blanks, surrogates, duplicates, matrix spike/matrix spike duplicates (MS/MSD), and other laboratory control samples to assess data quality. The laboratories shall establish control limits for individual chemicals or groups of chemicals based on the long-term performance of the test methods. In addition, the laboratories shall establish internal QA/QC procedures that meet EPA's laboratory certification requirements. Specific procedures to be completed are identified in the following sections. If a laboratory is unable or unwilling to meet the requirements of this Permit, the Permittee shall select a different laboratory that can and will meet the requirements.

*1. Laboratory Equipment Calibration Procedures*

The laboratories' equipment calibration procedures, calibration frequency, and calibration standards shall be in accordance with the EPA test method requirements and documented in quality assurance and standard operating procedures manuals. All instruments and equipment used by laboratories shall be operated, calibrated, and maintained according to manufacturers' guidelines and recommendations. Operation, calibration, and maintenance shall be performed by personnel who have been properly trained in these procedures. A routine schedule and record of instrument calibration and maintenance shall be kept on file at the laboratories.

*2. Laboratory QC Samples*

Analytical procedures shall be evaluated for quality by analyzing reagent blanks or method blanks, surrogates, MS/MSDs, and laboratory duplicates, as appropriate for each method. At a minimum, laboratories shall analyze laboratory blanks, MS/MSDs, and laboratory duplicates at a frequency of at least one in 20 for all batch runs requiring EPA test methods and at a frequency of at least one in 10 for non-EPA test methods. All laboratory quality control data reported with the Facility's sample analysis results must be related to the analysis of the Facility's samples.

***11. Data Validation***

The Permittee shall evaluate all sample data, and all field and laboratory QC results for acceptability. Each group of samples shall be evaluated using data validation guidelines contained in EPA guidance documents, the latest version of SW-846, and industry-accepted methods and procedures. Additionally, the Permittee shall evaluate all data for compliance with the following parameters:

1. Representativeness -- The Permittee shall implement procedures to assure representative samples are collected and analyzed, such as repeated measurements of the same parameter at the same location over several distinct sampling events. The Permittee shall note any procedures or variations that may affect the collection or analysis of representative samples and shall qualify the data accordingly;

2. Comparability -- To assure comparability of data, the Permittee shall implement standard collection and analytical procedures, and shall report analytical results in appropriate units for comparison with other data (e.g., past studies, comparable sites, screening levels, and cleanup standards). Any procedure or variation that may affect comparability shall be noted, and the data shall be qualified appropriately;

3. Completeness -- The Permittee shall evaluate all laboratory data for completeness with respect to data quality objectives. The degree of completeness shall be reported with the data in any reports in which the data are referenced;

4. Accuracy -- The Permittee shall evaluate all data for accuracy with respect to percent recovered of spiked samples. Results shall be reported for each analyte in any report in which the data are cited; and

5. Precision -- The Permittee shall evaluate all data for precision with respect to RPDs of duplicate samples. Results shall be reported for each analyte in any report in which the data are cited.

***12. Waste Management***

Waste management of investigation derived waste shall be in accordance with that set forth in Part 1 of this letter.

***13. Geophysical Logs***

Geophysical logging shall be conducted using induction (deep, medium), neutron, and gamma (large crystal) tools. Geophysical logging at cluster/nested well locations is required in only the well at each location that has the deepest screened interval.

Geophysical logs submitted to the NMED must show results of the induction logging (medium and deep) in millimhos per meter, neutron logging in American Petroleum Institute (API) neutron units, and gamma logging in API calibrated counts per second, the results of each method plotted versus depth from the surface to total depth of the borehole for which the log represents. The name of the borehole, location of the borehole, the date(s) that the borehole was completed, the drilling method, and the elevation of the top of the borehole shall also be noted on the boring log. The data must be provided to the NMED in hard copy and in digital format.

### *14. Field and Geologic Logs*

The physical characteristics of soil and rock samples, such as mineralogy and lithic content, ASTM soil classification, moisture content, texture, color, presence of stains or odors, field screening results, depth, location, method of sample collection, the presence of any water-bearing zones and any unusual or notable conditions encountered during drilling shall be recorded in a field log. Field logs shall be completed by a qualified geologist.

The Permittee shall prepare geologic logs for each borehole showing relative to borehole depth the rock types, thickness of rock units, and water bearing zones (including that at and below the water table). The name of the borehole, location of the borehole, the date(s) that the borehole was completed, the drilling method, and the elevation of the top of the borehole shall also be noted on the boring log. The data must be provided to the NMED in hard copy and in digital format.

### *15. Reporting*

Unless specified otherwise in this letter, the Permittee shall report to the NMED the information that is required by NMED's letter of June 4, 2010, and by the indicated schedules in that letter. Reporting for the additional SVE units required to be installed under Part 2 of this letter shall also be in accordance with NMED's letter of June 4, 2010.

## Final Direction

The Permittee shall meet the deadlines specified in the Compliance Schedule of Table 5 of this letter. The Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans must be completely revised and resubmitted. The Permittee shall submit to NMED by **September 7, 2010** (Table 5) revisions of the Vadose Zone, Interim Measures, and Groundwater Investigation Work Plans that correct the deficiencies noted herein and incorporate the requirements set forth in this letter. The Permittee shall also implement the interim measures and other actions as directed under Part 2 of this letter by the dates indicated and in accordance with the schedule in Table 5.

The investigation plans required under this letter shall include relevant maps and cross-sections that show concentration data for contaminants and other relevant information with supporting data posted on the maps and cross-sections in a legible manner, and clearly showing which borings/wells contributed data towards construction of the maps and cross-sections and which did not. Tables including all existing soil borings, soil-gas monitoring wells, and groundwater monitoring wells, listing their surveyed location, sampling points and maximum depth of exploration shall also be included in the reports and plans. For soil-gas monitoring wells, tables and graphs shall also be included providing trends of TPH concentrations versus time for the depths below ground surface of 25, 50, 150, 250, 350, and 450 feet.

To the extent any requirement of this letter requires access to property not owned or controlled by the Permittee, the Permittee shall use its best efforts to obtain access from the present owners of such property to conduct the required activities. In the event that access is not obtained when necessary, the Permittee shall immediately notify the NMED in writing regarding its best efforts and its failure to obtain such access.

**Table 5. Compliance Schedule.**

| **Revisions to Work Plans** | |
|---|---|
| Submittal | Due Date |
| Interim Measures Work Plan | September 7, 2010 |
| Vadose Zone Work Plan | September 7, 2010 |
| Groundwater Investigation Work Plan | September 7, 2010 |
| | |
| **Other Document Submittals** | |
| Indoor Air Quality Report | October 6, 2010 |
| | |
| **Interim Measures and other Actions** | |
| Install and operate SVE units at KAFB-3411, KAFB-10614, and KAFB-10624 | October 6, 2010 |
| Install and operate SVE units at soil boring/monitoring well locations #4, 5, 9, 10, 11, and 12 (see Table 1) | November 8, 2010 or 60 days after required access is granted, which ever is later |
| Install and operate SVE units at KAFB-10617 and KAFB-10618 | October 6, 2010 |
| Install and operate SVE units at soil boring/monitoring well location KAFB-10610 | November 8, 2010 or 60 days after required access is granted, which ever is later |
| Prepare for SVE operation at soil boring/monitoring well locations #3, 8, and 9 (see Table 2) | November 8, 2010 or 60 days after required access is granted, which ever is later |
| Operate SVE units at Fuel Offloading Rack and KAFB-1065, KAFB-1066, and KAFB-1068 | Immediately, except operation of SVE Unit at Fuel Offloading Rack may be temporarily suspended while excavating soil and removing remaining components of the Fuel Offloading Rack. |
| Maintain spare parts and spare engine for SVE units in inventory | September 7, 2010 |
| Report that spare parts and spare engine for SVE units is in inventory | October 6, 2010 |
| Begin excavation of contaminated soil and removing remaining components of the Fuel Offloading Rack. | October 6, 2010 |
| Complete excavation of contaminated soil and | October 6, 2011 |

| | |
|---|---|
| removing remaining components of the Fuel Offloading Rack. | |
| Report on completion of excavation of contaminated soil and removing remaining components of the Fuel Offloading Rack. | January 15, 2012 |
| Submit estimate of contaminant migration rate to NMED | September 7, 2010 |
| Complete A, B, and C sentry wells at location #28 (see Table 4) | November 8, 2010 or 90 days after required access is granted, which ever is later |
| Complete B and C sentry wells at KAFB-10613 and KAFB-1064 | November 8, 2010 or 90 days after required access is granted, which ever is later |
| Complete A, B, and C sentry wells at location #3 (see Table 4) | November 8, 2010 or 90 days after required access is granted, which ever is later |
| Complete A, B, and C sentry wells at location #1 (see Table 4) | November 8, 2010 or 90 days after required access is granted, which ever is later |
| Complete geologic logs of new wells at locations #1, 3, 28, KAFB-10613 and KAFB-1064 | During drilling of each well |
| Complete geophysical logs of new wells at locations #1, 3, 28, KAFB-10613 and KAFB-1064 | Within 30 days of well completion |
| Submit copies of geologic and geophysical logs for locations #1, 3, 28, KAFB-10613 and KAFB-1064 | In accordance with NMED letter of June 4, 2010 |
| Submit copies of geophysical logs of existing wells | October 6, 2010 |
| Submit critical data to NMED (Section A.7 of Part 2). | September 7, 2010 |
| Notification of sampling and other field activities (Section B.1 of Part 2) | No less than 15 days prior to implementation |
| Submit geologic and geophysical logs for sentry wells | In accordance with NMED letter of June 4, 2010 |
| Submit water quality data for WUA wells | In accordance with NMED letter of June 4, 2010 |
| Submit well completion reports | In accordance with NMED letter of June 4, 2010 |
| Submit report on all SVE units | In accordance with NMED letter of June 4, 2010 |
| Report to NMED if any SVE units will not receive an air emissions permit to operate | Immediately |
| Report to NMED down time of SVE units that will exceed a duration of 72 hours | Within 24 hours of discovery that repairs or maintenance will take more than 72 hours to complete |

The Permittee shall respond directly to my attention, with copy to Mr. Bill Olson of the NMED's Ground Water Quality Bureau, and Mr. William Moats (NMED HWB, 5500 San Antonio NE, Albuquerque, NM 87109), on all correspondence and required plans and reports related to the Bulk Fuels Facility Spill, unless otherwise directed by NMED. All submittals and correspondence must be submitted in hardcopy and electronic format.

If you have any questions regarding the technical aspects of this letter, please contact Mr. William Moats of my staff at (505) 222-9551. Any other questions should be directed to me at 505-476-6016.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

Enclosures: Figures 1-4

cc: J. Kieling, NMED HWB
W. Moats, NMED HWB
W. McDonald, NMED HWB
S. Brandwein, NMED HWB
B. Olsen, HWB GWQB
A. Puglisi, HWB GWQB
B. Swanson, HWB GWQB
L. Barnhart, NMED OGC
B. Gallegos, AEHD
B. Gastian, ABCWUA
L. King, EPA-Region 6 (6PD-N)
File: Reading and KAFB 2010

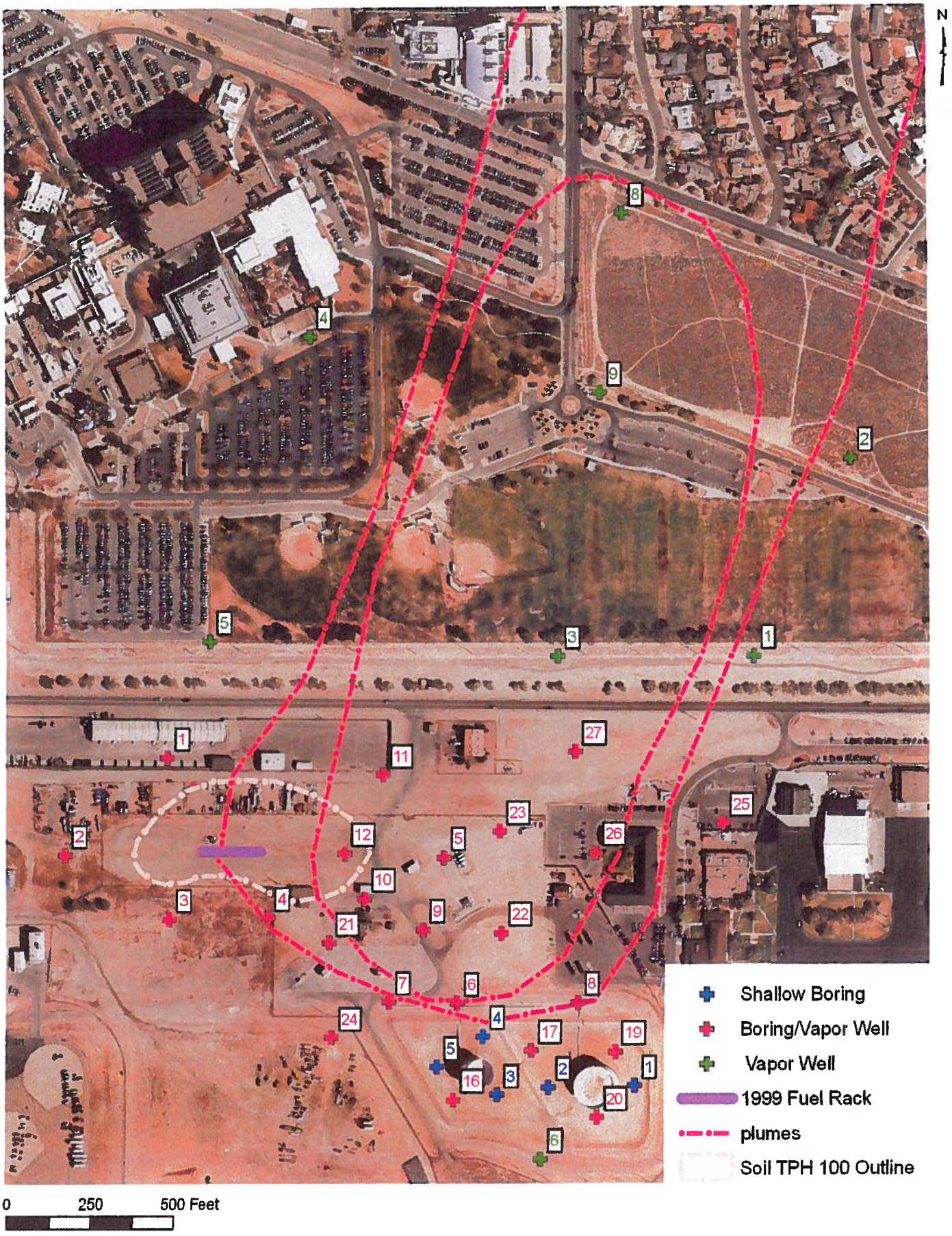


Figure 1. Soil Boring and
Soil-Vapor Monitoring Well Locations

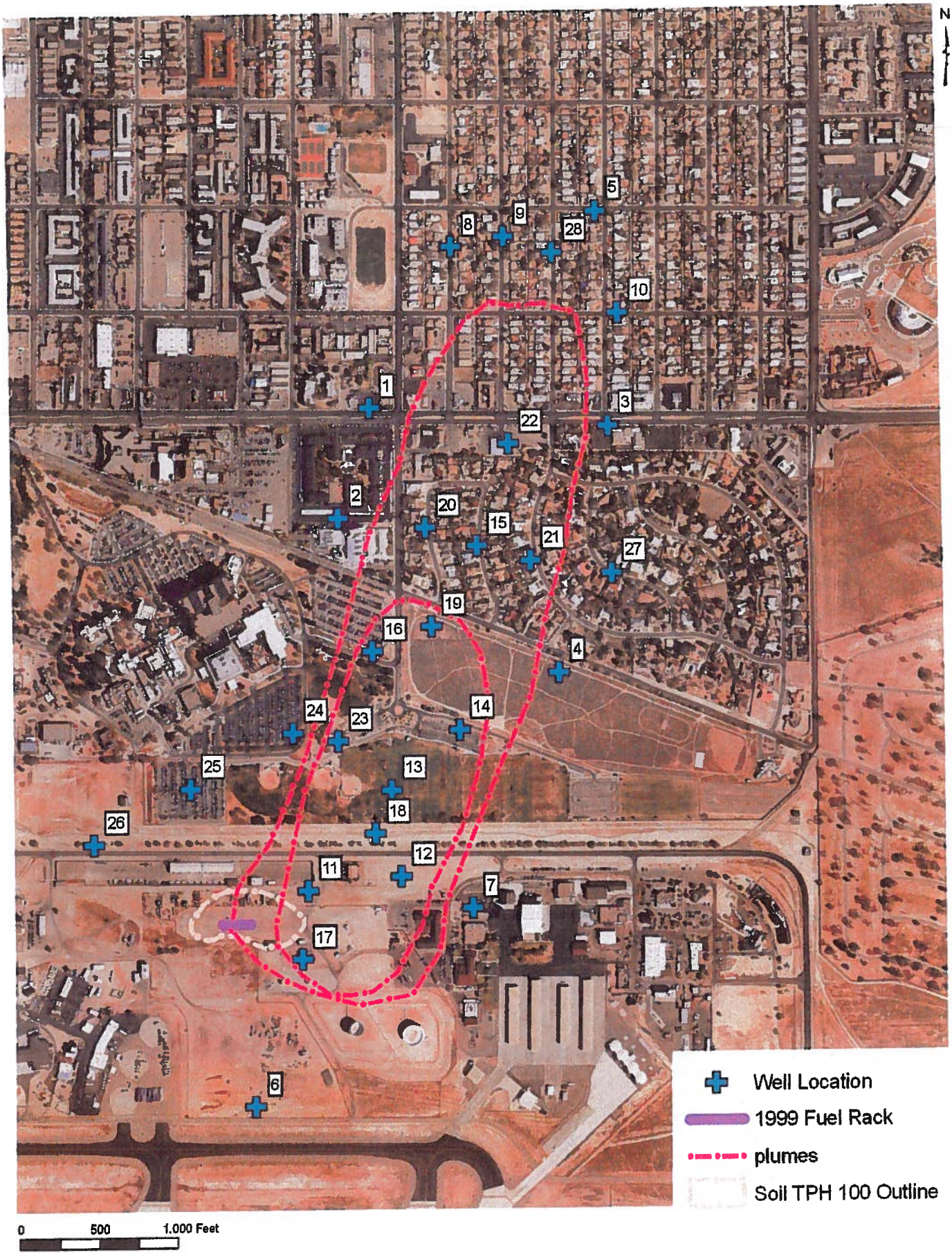


Figure 2. Groundwater Monitoring Well Locations

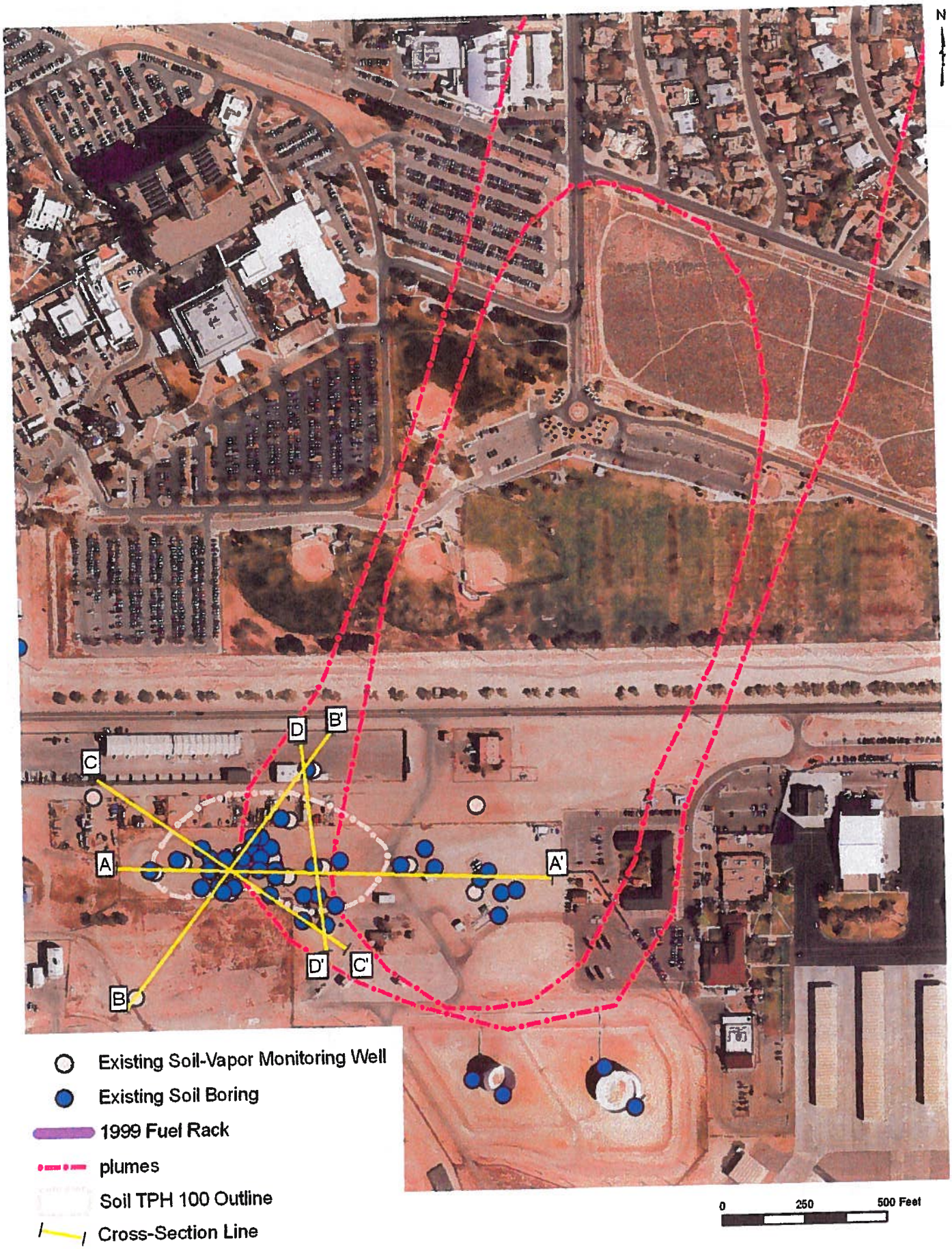


Figure 3 Existing Soil Boring, Soil-Vapor Monitoring Well and Cross-Section Locations

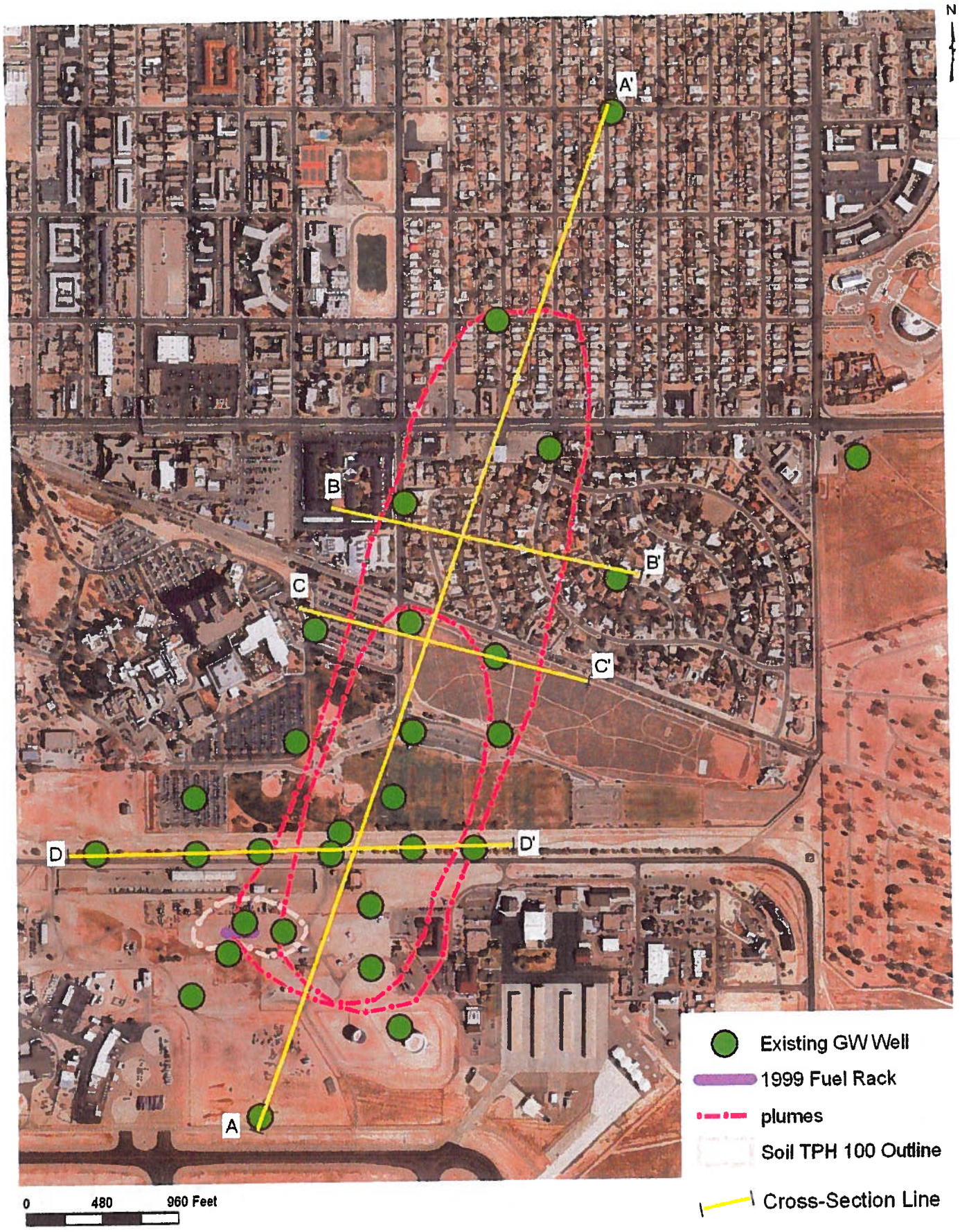


Figure 4. Existing Well and Cross-Section Locations

# NEW MEXICO ENVIRONMENT DEPARTMENT

## *Hazardous Waste Bureau*

**2905 Rodeo Park Drive East, Building 1**
**Santa Fe, New Mexico 87505-6303**
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BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary


**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

December 10, 2010

Colonel Robert L. Maness
Base Commander
377 ABW/CC
2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5606

Mr. John Pike
Director, Environmental Management Section
377 MSG/CEANR
2050 Wyoming Blvd., Suite 116
Kirtland AFB, NM 87117-5270

**RE: BULK FUELS FACILITY SPILL (SWMUS ST-106 AND SS-111)**
**NOTICE OF PARTIAL APPROVAL WITH MODIFICATIONS AND NOTICE OF DISAPPROVAL**
**INTERIM MEASURES, VADOSE ZONE, AND GROUNDWATER INVESTIGATION WORK PLANS, NOVEMBER 2010**
**KIRTLAND AIR FORCE BASE, EPA ID# NM9570024423**
**HWB-KAFB-10-015, HWB-KAFB-10-016, HWB-KAFB-10-019**

Dear Col. Maness and Mr. Pike:

The New Mexico Environment Department (NMED) has reviewed the revised Interim Measures, Vadose Zone, and Groundwater Investigation Work Plans, concerning the Kirtland Air Force Base (KAFB) Bulk Fuels Facility Spill, Solid Waste Management Units (SWMUs) ST-106 and SS-111. The revised plans were submitted November 4, 2010, in response to the NMED's Notice of Disapproval (NOD) issued August 6, 2010.

NMED finds the plans to be deficient, and provides the following comments. However, NMED must also ensure that commencement of the vadose zone and groundwater investigations and interim measures not be further delayed. NMED is therefore partially approving with modifications the Work Plans in accordance with Permit Part 1.38 of the Permittee's Hazardous Waste Operating Permit (Permit), issued July 15, 2010. Those aspects of the Work Plans that are approved with modifications are addressed in Part 1 of this letter. Under Part 1 of this letter, the Permittee must conduct certain activities to

begin the investigation of the vadose zone and groundwater at the Bulk Fuels Facility immediately, and to conduct interim measures at the former Fuel Offloading Rack, prior to approval of the remainder of the Work Plans. These activities are to be conducted as described in this letter, and without delay. The work to be conducted under Part 1 must also be included in the revised Work Plans even if the Permittee believes that such work has been completed when it submits the revised Work Plans for approval. NMED reserves the right to require the Permittee to correct work completed under Part 1 that does not meet the corrective action requirements of Permit Part 6 or the modifications specified in this letter for such work.

Part 2 of this letter concerns those aspects of the Work Plans that are disapproved. The Permittee is further directed, in Part 2 of this letter, to make additional revisions to the three Work Plans, which are necessary before NMED can approve the plans.

## PART 1
## PARTIAL APPROVAL WITH MODIFICATIONS

The Permittee must begin immediate investigation of the vadose zone and groundwater in accordance with the corrective action requirements of Permit Part 6, and with the modifications to the three Work Plans that are specified in this letter. The Permittee shall also complete the removal of the former Fuel Offloading Rack and the excavation of contaminated soil exceeding NMED Soil Screening Levels (SSLs).

### A. Installation of New Groundwater Monitoring Wells

NMED approves the well installations as described in the revised Groundwater Investigation Work Plan submitted November 4, 2010 with the following modifications. The Permittee shall therefore immediately commence installation of the 78 groundwater monitoring wells provided for in Section 5.2.4 of the revised Groundwater Investigation Work Plan. The installation of the wells shall be completed by **April 28, 2011** (Appendix B of the Groundwater Investigation Work Plan).

Because steel well screens and casing would render most of the geophysical logs useless the Permittee must use polyvinyl chloride (PVC) screens and casing for the deep wells. The Permittee may substitute PVC screens and casing for the intermediate-depth wells, and may use PVC screens and casing for wells screened across the water table at locations where LNAPL is not present.

Section 5.2.4.1 of the Groundwater Investigation Work Plan, *Monitoring Well Installation Procedures*, item #6 states that three PVC centralizers would be used in well construction, one installed directly above and one below the well screen and one installed at the midpoint of the well. In lieu of a centralizer installed at the midpoint, the Permittees shall install PVC centralizers approximately every 100 feet between the top of screen and the ground surface.

The borehole of each well shall be logged in accordance with Permit Part 6.5.15 by a registered professional geologist.

Screen lengths for wells shall not exceed 15 feet, with the exception that wells screened across the water table shall have screens 20 feet long, with no more than 15 feet of screen length situated below the water table.

Each of the new wells shall be developed pursuant to Permit Part 6.5.17.10.6. Pursuant to Permit Part 6.5.17.3, initial groundwater samples shall be obtained from newly-installed monitoring wells within 30 days after completion of well development. Groundwater sampling and reporting requirements shall be conducted as directed in NMED's letter of June 4, 2010, and as specified in Permit Part 6.5.17.5.

## B. Development of Existing Wells

In NMED's letter of April 2, 2010, the Permittee was directed to develop all existing wells located within the LNAPL plume, and to make such wells available to sample groundwater below the floating LNAPL so that concentrations of dissolved-phase contaminants can be assessed in this area. This work was to be completed by July 6, 2010. The Permittee failed to complete this work. Furthermore, the revised Groundwater Investigation Work Plan does not contain any provisions for developing the existing wells within the LNAPL plume.

NMED is again directing the Permittee to develop all existing wells located within the LNAPL plume, and to make such wells available to sample groundwater. Well development shall be conducted in accordance with Permit Part 6.5.17.10.6. The work must be completed no later than **February 15, 2011**.

## C. Geophysical Logging of Existing Wells

In the August 6, 2010, NOD, the Permittee was directed to conduct borehole geophysical logging (medium and deep induction, gamma, and neutron) at all existing groundwater monitoring wells, and to submit copies of the geophysical logs to the NMED by October 6, 2010. The Permittee failed to complete this work on time, but provides for the geophysical logging of existing wells in the revised Groundwater Investigation Work Plan.

NMED approves the Permittee's proposal to conduct borehole geophysical logging (medium and deep induction, gamma, and neutron) at all existing groundwater monitoring wells. Copies of the logs must be submitted to the NMED by no later than **February 15, 2011**.

## D. Completion of Soil Borings

NMED approves the projects in Sections D and E of this letter as described in the revised Vadose Zone Investigation Work Plan submitted November 4, 2010 with the following modifications The Permittee shall immediately complete the 35 deep and 5 shallow soil borings provided for in Section 5.2.10 of the revised Vadose Zone Investigation Work Plan. The work shall be completed by **February 11, 2011**(Appendix B of the Vadose Zone Investigation Work Plan). Each deep boring at each location shall be drilled from the surface to the water table.

Soil samples from the deep borings shall be collected at a frequency of at least one sample every 10 feet for the first 50 feet, and at least one sample thereafter every 50 feet to total depth, and at least one sample at total depth in each boring. The soil samples shall be analyzed for TPH, VOCs, SVOCs, and lead.

Soil samples from shallow borings shall be collected at depths of 0, 5, 10, 15, and 20 feet and shall be analyzed for TPH, VOCs, SVOCs, and lead.

Each soil boring shall be logged in accordance with Permit Part 6.5.15 by a registered professional geologist.

## E. Installation of New Soil-Gas Monitoring Wells

The Permittee shall immediately install the 35 soil-gas monitoring wells provided for in Section 5.2.11 of the revised Vadose Zone Investigation Work Plan submitted November 4, 2010. The well installations shall be completed by **February 11, 2011** (Appendix B of the Vadose Zone Investigation Work Plan).

The soil-gas monitoring wells shall be capable of yielding discrete samples of soil gas recovered from depths of 25, 50, 150, 250, 350, and 450 feet below the ground surface.

The borehole of each well shall be logged in accordance with Permit Part 6.5.15 by a professional geologist.

Vapor sampling and reporting requirements shall be conducted as directed in NMED's letter of June 4, 2010.

## F. Geophysical Logging of New Groundwater and Soil-Vapor Wells

NMED approves the Permittee's proposal to conduct borehole geophysical logging (medium and deep induction, gamma, and neutron) at all new groundwater and soil-vapor monitoring wells. Copies of the logs must be submitted to the NMED by no later than **June 1, 2011**.

## G. Interim Measures at Former Fuel Offloading Rack

The NOD issued August 6, 2010, specified that the Permittee begin removal of the remaining components of the former Fuel Offloading Rack and excavation of contaminated soil exceeding NMED SSLs to 20 feet (SSLs shall be those based on residential land use) by October 6, 2010. The Permittee was also instructed that laboratory analysis of soil samples shall be conducted to determine the concentrations of hazardous constituents for the purpose of defining the final extent of excavation, for risk assessment, and for waste determination. NMED approves the Permittee's proposal for sample analysis, with the following modification: Soil samples shall be analyzed in the laboratory for TPH, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and lead, and collected on all sides and the bottom of the excavation at a spacing not to exceed 25 feet. Additionally, the excavation of soil and removal of the former Fuel Offloading Rack shall be completed by October 6, 2011, and a report on completion of the work submitted to the NMED by January 15, 2012.

NMED approves the Permittee's soil sampling plan except as modified below. Section 4.5.2 of the Interim Measures Work Plan, *FFOR Soil Investigation and Sampling*, indicates that the direct-push technology (DPT) samples are to be collected at the former Fuel Offloading Rack (FFOR) and along the remaining aboveground and underground piping on 25-ft centers. The Permittee does not adequately describe the locations of the samples nor are the locations individually depicted on Figure 4-2. No additional sampling is proposed for the known three locations of pipeline leaks, which occurred approximately 18 ft, 150 ft, and 200 ft from the west end of FFOR.

For underground piping from Building 1033 (Pump House) to its terminus at the west end of the FFOR, the Permittee shall instead collect soil samples on 10-ft centers along a line oriented directly over what was once the centerline of the now-excavated pipeline (hereafter referred to as the former pipe centerline). Soil samples shall also be collected at locations spaced no further than 10 ft apart along two lines oriented parallel to the former pipe centerline, with the two lines situated no further than 5 ft from and on opposite sides of the former pipe centerline. Sampling shall also be conducted directly beneath each of the three known leak locations.

At each of the three known leak locations, sampling shall be increased by collecting soil samples at 5 ft by 5 ft grid nodes.

At each sampling location, soil samples shall be collected at depths of 0, 5, 10, 15, and 20 feet.

If lead, VOCs, or SVOCs are detected in soil at concentrations exceeding the NMED SSLs at a given location, the soil at the location shall be excavated, removed from the site, and properly disposed of. The Permittee shall also increase the sampling grid at the location by using the same method as directed above for sampling the three known leak locations, and collect and analyze the additional samples. Expansion of sampling and the collection and analysis of additional samples shall continue until all soil containing VOCs, SVOCs, or lead at concentrations exceeding the NMED SSLs have been excavated.

Section 4.5.2.1, Bullet 4, of the Work Plan states "The field Geologist will collect samples for laboratory analysis that appear to contain the greatest degree of contamination based on visual observation and headspace VOC screening...", suggesting that not all samples will be submitted to the laboratory for analysis. Because headspace analysis will not detect lead and may not detect SVOCs, all soil samples must be submitted to the laboratory for analysis.

Confirmation samples are samples collected to verify that all contaminated soil with concentrations of hazardous constituents exceeding the NMED SSLs has been excavated and removed. In Section 4.5.3.6, *Confirmation Sampling*, the Interim Measures Work Plan indicates that confirmation samples will not be collected from the sidewalls of the excavation. In contrast, the Interim Measures Work Plan in Section 4.5.1 indicates that sidewalls will be sampled for confirmation.

Confirmation samples must be collected from the bottom and sides of all excavations at intervals not to exceed 25 feet. This includes any areas excavated to depths of 20 ft. The Permittee can collect sidewall conformation samples ahead of, behind, or through shoring via portholes cut through the shoring.

Excavation of contaminated soil at the former Fuel Offloading Rack must be completed by **October 6, 2011**.

## H. Piping From Building 1033 to Tanks

NMED approves the Permittee's soil sampling plan, except as modified below. The Permittee must excavate to a depth of up to 20 feet any contaminated soil exceeding NMED SSLs that occurs along the piping from Building 1033 to the jet-fuel fuel storage tanks. In lieu of what the Permittee proposed, for the underground and aboveground piping from Building 1033 to the jet-fuel storage tanks, the Permittee shall collect soil samples at locations spaced no further than 20 ft apart along two lines oriented parallel to the pipe centerline, with the two lines situated no further than 5 ft from and on opposite sides of the pipeline. Soil samples shall be collected at depths of 0, 5, 10, 15, and 20 feet and shall be analyzed in the laboratory for TPH, VOCs, SVOCs, and lead.

If lead, VOCs, or SVOCs are detected in soil at concentrations exceeding the NMED SSLs at a given location, the soil at the location shall be excavated and removed from the site for proper disposal. The Permittee shall also increase sampling at the location by using the same method as directed above for sampling the three known leak locations at the former Fuel Offloading Rack, and collect and analyze the additional samples. Expansion of the sampling and the collection and analysis of additional samples shall continue until all soil containing VOCs, SVOCs, or lead at concentrations exceeding the NMED SSLs are excavated and removed from the site for disposal.

Section 4.5.2.1, Bullet 4, of the Work Plan states "The field Geologist will collect samples for laboratory analysis that appear to contain the greatest degree of contamination based on visual

observation and headspace VOC screening...", suggesting that not all samples will be submitted to the laboratory for analysis. Because headspace analysis will not detect lead and may not detect SVOCs, all soil samples shall be submitted to the laboratory for analysis.

Confirmation samples must be collected from the bottom and sides of all excavations at intervals not to exceed 25 feet. This includes any areas excavated to depths of 20 ft. The Permittee can collect sidewall conformation samples ahead of, behind, or through shoring via portholes cut through the shoring.

Sampling along the pipeline from Building 1033 to the storage tanks shall be completed by **March 7, 2011**.

## I. Soil-Vapor Extraction

In the August 6, 2010, NOD, the Permittee was directed to install and operate additional SVE units, or prepare for SVE operations at the following 16 locations: existing groundwater monitoring wells KAFB-3411, KAFB-10614, KAFB-10624, KAFB-10617, KAFB-10618, and KAFB-10610, at soil boring/soil-vapor monitoring well locations # 4, 5, 9, 10, 11, 12, and 21 listed in Table 1 of the NOD, and soil-vapor monitoring well locations #3, 8 and 9 on Table 2 of the NOD. The Permittee did not accomplish this work, and did not propose any alterative work for NMED to consider. Furthermore, the Permittee has not done anything in the past four months to accelerate the reduction of the soil-vapor mass in the vadose zone at the Bulk Fuels Facility.

Nevertheless, NMED has reconsidered its earlier position to expand the number of SVE Units. Instead of expanding the number of operating SVE Units, the Permittee is directed to prepare the locations of existing groundwater monitoring wells KAFB-3411, KAFB-10614, KAFB-10624, KAFB-10617, KAFB-10618, and KAFB-10610 for conducting SVE by no later than **February 15, 2011**. The Permittee is also directed to prepare an SVE Optimization Plan for the four existing SVE Units, with the concept that the four SVE units will be moved periodically between the six aforementioned locations and the four locations where SVE is currently conducted to maximize the removal of contaminants (by mass) via vapor extraction. Furthermore, the Permittee must propose in the SVE Optimization Plan alternative technologies for the removal and treatment of soil-vapor contamination that do not rely on the use of internal combustion engines. The SVE Optimization Plan must be submitted to NMED by **March 31, 2011**.

## J. Special Tests under Interim Measures Work Plan

NMED approves the ROI, hydrocarbon baildown, and Pneulog tests. The Permittee shall conduct the Radius of Influence, the Hydrocarbon Baildown, and PneuLog tests by **April 6, 2011**; **March 2, 2011;** and **December 21, 2011**, respectively.

## K. Collection of LNAPL Sample

The Permittee shall collect a sample of LNAPL from one of the groundwater monitoring wells within the LNAPL plume and provide the sample to the Scientific Laboratory Division (SLD) of the New Mexico Department of Health by no later than **March 31, 2011**. The Permittee shall notify the NMED in writing of the delivery of the LNAPL sample to the SLD no later than **1 business day** following delivery of the sample.

The Permittee is directed to conduct all activities required in Part 1 of this letter in accordance with the terms described in each section of this letter and to resubmit the Work Plans with the required revisions along with the changes required by Part 2 of this letter. Any portion of a Work Plan that was not specifically approved and modified as described above is disapproved and must be corrected as described in Part 2.

# PART 2
# PORTIONS OF WORK PLANS THAT ARE DISAPPROVED

## A. Deficiencies Common to All Three Plans

1. Part 1, A.7 of the NOD issued on August 6, 2010, required that the Permittee list the data gaps that apply to each of the three plans, as appropriate for the topic of a plan. The Permittee was also instructed to revise the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans to include a description of at least the data gaps identified by the NMED and point specifically to where in each of the documents the data gaps are addressed.

This deficiency was not corrected in any of the revised Work Plans submitted on November 4, 2010. The NMED is directing the Permittee again to revise the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans to include a description of the data gaps identified by the NMED and point specifically to where the data gaps are addressed in each of the documents.

2. Part 1, A.9 of the NOD issued on August 6, 2010, required that the Permittee include a site conceptual model encompassing the source area(s), the fuel percolation area, the light non-aqueous phased liquid (LNAPL) plume floating on groundwater, and the dissolved-phase contaminant plume in groundwater in each of the plans. However, none of the revised Work Plans contains a site conceptual model. Instead, the issue was addressed under the Work Plans by stating that a model will be provided later by the Permittee.

The NMED is directing the Permittee again to revise the Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans to include a site conceptual model encompassing the source area(s), the fuel percolation area, the light non-aqueous phased liquid (LNAPL) plume floating on groundwater, and the dissolved-phase contaminant plume in groundwater in each of the plans. The model should be illustrated through the liberal use of detailed, accurate, and scaled geologic cross-sections, maps in plan view, and any other necessary graphical

representations to clearly and accurately show geologic and hydrologic features, and contaminant levels. NMED invites the Permittee to meet to discuss NMED's expectations with respect to the conceptual model and graphic representation of data.

3. Part 1, A.10 of the NOD issued on August 6, 2010, required that the Permittee meet Section E of the NMED's letter of April 2, 2010, which directed that investigation plans are to include relevant maps and cross-sections that show concentration data for contaminants and other relevant information with supporting data posted on the maps and cross-sections, and clearly show which borings/wells contributed data towards construction of the maps and cross-sections and which did not. Additionally, tables including all existing soil borings, soil-gas monitoring wells, and groundwater monitoring wells, listing their surveyed location, sampling points and maximum depth of exploration were also to be included in the plans. For soil-gas monitoring wells, tables and graphs were also to be included providing trends of TPH concentration versus time for the depths below ground surface of 25, 50, 150, 250, 350, and 450 feet.

The required maps, cross-sections, tables, and graphs were not included in the Work Plans submitted November 4, 2010. Revise the Work Plans accordingly.

4. Appendix E, Uniform *Federal Policy-Quality Assurance Project Plan* – This plan is incorporated into the Vadose Zone Investigation, Groundwater Investigation, and Interim Measures Work Plans. The plan, as written, appears to be a combination of many types of plans, such as project management, training, data validation, quality assurance, and sampling and analysis plans. Additionally, much of the information presented appears to be overly burdensome and not particularly useful in the present format. For example, a tabulated listing of field quality control samples to be collected for every quarter/year is unnecessary as the types and frequencies of such samples are not likely to change every quarter or even every year. Listings of quality control targets (in particular, limits for laboratory control samples) from three different entities are also not useful – instead only those that will actually be used for this particular project should be listed.

The Permittee must revise Appendix E into multiple appendices to separate the various types of plans (e.g. project management, training, data validation, quality assurance, and sampling and analysis). The various listings of laboratory analytes per media (QAPP Worksheet # 18a-c), field quality control samples (QAPP Worksheet # 20a-c), quality control targets (Appendix A of Appendix E) should be revised to simplify the information presented and contain only the necessary information to support the Bulk Fuels Facility Spill project. Some tables, such as QAPP Worksheets # 3, 4, 9, 16, 24c, 25, 28a-d, do not provide useful information to the NMED and should be deleted.

NMED is expecting a Quality Assurance (QA) Plan that contains specific quality assurance and quality control activities for the Bulk Fuels Facility Spill project. The QA plan is to integrate all technical and quality aspects of the project to ensure that the necessary type and quality of data are obtained to adequately characterize the release, the contaminated media, and for conducting and verifying clean up. NMED invites the Permittee to meet and discuss NMED's expectation

with respect to what should be in the QA Plan, as well as project management, training, data validation, and sampling and analysis plans.

## B. Groundwater Investigation Work Plan

1. The Permittee must describe in the first paragraph of Section 5.2.5 what geophysical logging has been previously conducted at existing wells.

2. The last paragraph on page 5-19, Section 5.2.5.1, states "The logs will be run from the groundwater table (approximately 500 ft bgs) to ground surface through the well casing." Correct the text to read "The logs will be run from the bottom of the well to the ground surface." Also, change all references to "groundwater table" in the Groundwater Investigation Work Plan to the correct term "water table".

3. The first sentence on page 5-20, Section 5.2.5.1, references a proposed seismic survey. Discuss the survey, or remove the reference to the seismic survey if such a survey will not be conducted.

4. Section 5.2.5.2, *Induction Logging*, on page 5-22, 3rd paragraph, 1st sentence states: "The borehole induction system can be used in boreholes that range from 2 to 8 inches diameter without significant borehole effects." Because the Permittee is proposing to drill boreholes with diameters of 9-5/8 and 11-3/4 inches, indicate whether the borehole induction system can be used properly in boreholes with diameters greater than 8 inches, or modify the plan to indicate that another, more appropriate tool will be used to log the boreholes.

5. Section 5.2.5.2, *Induction Logging*, page 5-22, the last sentence of the 3rd paragraph states; "The maximum depth of measurement for the most induction logging systems is 650 ft (200) meters)." Explain what this sentence means, as wells many thousands of feet deep are logged using induction logging. If the sentence is incorrect, correct the sentence or delete it from the Work Plan.

6. The last paragraph and bullets in Section 5.2.5.2, *Induction Logging*, discusses general procedures for all geophysical logging. This discussion needs to be moved to a more general section, such as Section 5.2.5 *Logging Requirements*. Also:

   a. Add total depth from the logger to the list of bullets.

   b. Add the same information to the list of bullets that is to be recorded in the first bullet of Section 5.2.3.2 of the Vadose Zone Investigation Work Plan (e.g., logging tool serial number, sensitivity range setting).

   c. The Permittee must include the measured deviation between the "zero point" of the tool at ground level at the start of the logging run and after completing the logging run.

7. Describe in Section 5.2.5.1 of the Work Plan if tools are to be run centralized, decentralized, or free in casing and describe where that information will be recorded.

8. Section 5.2.6.1, Logging System, p.5-25, last sentence, states "The logging system will be equipped with.... cable long enough to log 600-ft.depths." Because some of the groundwater monitoring wells may be 610-620 ft deep, the logging system must be capable of logging the full depth of all wells, even those in excess of 600 ft depth.

9. Table 4-1, Data Quality Objectives Summary Table, in the 3rd and 4th column in row 4, *Define the Study Boundary* states "Study boundaries are indicated on Figure 2-1". Many wells are outside the study boundary shown on the figure. Correct the statement or the figure as appropriate.

Revise Table 4-1 in accordance with the directives in this letter, or delete the table. Although the Permittee may use the EPA's DQO process to plan work, NMED prefers that Table 4-1 and Section 4 be deleted from the Work Plan, as they add little additional useful information. Items in the table should be included in the text of the Work Plan with additional details and as modified in accordance with the directives of this letter.

10. Table 4-1, Data Quality Objectives Summary Table, in the 3rd and 4th column in row 6, *Specify Limits on Decision Errors* states "Borehole geophysics measurements obtained is less than 1 ft." Explain what this sentence means, especially in light of the second sentence in Section 5.2.5.2 on page 5-22, which states "The intercoil spacing resolves conductivity layers 20 inches thick." See comment # 9 above about the deletion of Table 4-1 and Section 4.

11. Section 5.2.7, *Borehole Geophysics Equipment Decontamination* – Revise the Work Plan to indicate clearly that both the cable and probe will be decontaminated.

12. The 2nd paragraph, last sentence of the *Preface* states "Part II will consist of the evaluation of all existing and new data, and development of the risk assessment (including the conceptual site model), and the Groundwater Investigation Report (including cross sections and plan views)."

Revise the Work Plan to include a detailed description of what is to be included in the Part II Work Plan. NMED notes further that the inclusion of a "report" in a work plan is unusual and generally inappropriate. Information derived from newly completed work is normally submitted as a stand alone report, not as a section of a work plan.

Furthermore, the schedule in Appendix B lists the Part II Work Plans as being submitted by August 6, 2011. Because the contents of the Phase II plans are unknown to the NMED, the NMED can not agree to this submittal due date.

13. There are few details of reporting in the Work Plan, and most of those are aimed at the geophysical logging. Revise the Work Plan to include details for reporting on well installation, monitoring, and sampling results.

14. Section 3.5.3, *Identification of Contaminants of Potential Concern*, page 3-10 lists WQCC water quality standards from 20.6.2 NMAC. The cleanup levels for groundwater shall be the New Mexico Water Quality Control Commission (WQCC) water quality standards (20.6.2.3103 and 20.6.2.4103 NMAC) and the drinking water maximum contaminant levels (MCLs) adopted by EPA under the Federal Safe Drinking Water Act (42 U.S.C. §§ 300f to 300j-26). If both a WQCC standard and a MCL have been established for a contaminant, then the most stringent of the two levels shall be the cleanup level for that contaminant.

If a WQCC standard or MCL has not been established for a contaminant, the EPA Regional Screening Level (RSL) (EPA, 2009) for tap water shall be used as the cleanup level. If a RSL for tap water does not exist for a contaminant, and toxicological information is available, the Permittee shall propose a cleanup level based on a residential scenario, a total target human health excess cancer risk level of $10^{-5}$ and for non-carcinogenic contaminants a HQ of one (1.0). Revise the Work Plan accordingly.

See Permit Section 6.2.3.1.

15. Section 3.5.4, *Light Non-Aqueous Phase Liquid Distribution*, contains a list of wells where LNAPL has been detected. Add well KAFB-10628 to the list.

16. Section 5.2.3.1, page 5-6, 3rd bullet, discusses a scale of 1 inch =10 feet for drilling logs for wells shallower than 200 feet, but does not address a scale for wells greater than 200 feet. Because all wells are likely to be greater than 200 feet deep, identify the scale to be used.

17. Section 5.2.4, Groundwater Monitoring Wells, page 5-14, 2nd paragraph, last sentence states "A schematic showing a well construction detail is included in Appendix D, Forms 4, 5, 6, and 7." None of the four forms seems to fit the proposed construction details with a single cased, telescoped borehole, as shown on Figure 5-1. Revise the Work Plan to include appropriate well-construction field forms.

18. Section 5.2.4.3, *Well Development*, 2nd bullet discusses stabilization of groundwater field parameters during well development. Water stability indicators must be as described in the Permit, not as listed in this section, or as listed in Appendix D. Form 8, *Well Development Record and Water Quality Field Data Sheet (Continued 5 of 6).*

19. Appendix D. Form 8, *Well Development Record and Water Quality Field Data Sheet (Continued 5 of 6)* lists conversion factors to determine the volume of well water to be purged for development and sampling based upon the height of the water column in the well. A distinction is made between a dedicated and non-dedicated system. NMED does not recognize such a

distinction and requires that all well development meet Permit Part 6.5.17.10.6 and that well purging be conducted as directed in NMED's letter of June 4, 2010, and Permit Part 6.5.17.4.

20. Appendix C, *Waste Management Plan*, Table 2 implies that the preferred method of disposal of non-hazardous waste water, a form of investigation-derived waste (IDW), is to discharge it to the ground surface. NMED encourages the Permittee to dispose such non-hazardous waste water into the City of Albuquerque's Publically-Owned Treatment Works (POTW) sewer system. Furthermore, all such water must be containerized and tested prior to disposal in accordance with 20.4.1.300 NMAC incorporating 40 CFR § 262.11. Waste water from one well can not be commingled with that from any other well or wells unless demonstrated not to be a hazardous waste.

21. The Permittee shall address the following concerning Appendix E, *Uniform Federal Policy-Quality Assurance Project Plan.*

a) Appendix E is shown as "(Pending Review)". This suggests that Appendix E is a draft document. Revise the Work Plan to contain only finished products, ready for NMED review.

b) Appendix E, page 77, Section 17.2, first paragraph, correct "April 2009" to the appropriate date.

c) Appendix E, page 77, Section 17.2 must clearly state quarterly groundwater monitoring will occur until a change is approved by NMED.

d) Describe what risk evaluation the Permittee is expecting to do and why.

e) List the data quality objectives that the QAPP must address.

f) Describe the Quality Assurance for geophysical logging.

g) Appendix E, Section 17.5 (and elsewhere) – Samples must be analyzed at an EPA-certified laboratory. Also, the Permittee must indicate whether the referenced Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) laboratory is EPA-certified. Revise the Work Plan accordingly.

h) Appendix E, Section 17.8, *Investigation-Derived Waste* –This section needs to clearly state that no IDW water from individual wells will be comingled before appropriate testing.

i) Appendix E, Section 17.9.4 states that no trip blanks will be collected for soil samples for VOC analysis. Revise the Work Plan to indicate that trip blanks are required for soil samples that are to be analyzed for VOCs.

j) Appendix E, Section 17.9 must include percent frequency of field quality control samples in each subsection. The sampling frequency must be as described in Permit 6.5.17.6.

k) Appendix E, Section 17.9.5, states field (ambient) blanks will be collected for groundwater only. Revise the Work Plan to include field blanks for soil sampling.

l) Appendix E mainly addresses sampling only for laboratory and field analyses. Other field activities, such as surveying and geophysical logging need to be addressed.

m) Appendix E, Section 17.2.2, *MNA Groundwater Monitoring*, states "30 groundwater monitoring wells will be installed for the monitored natural attenuation (MNA) investigation effort." Specify which wells these are and the purpose of this monitoring given that NMED has not made any decision concerning MNA as a remedy. Additionally, Section 11.2 of Appendix E, indicates that there are 35 wells to be included in the study. Specify which number of wells is correct.

22. Revise the Work Plan to provide for the collection and maintenance of representative soil samples encountered during well installations and to indicate that said samples will be made available for NMED inspection upon request by the NMED. Additionally, Section 11.2 of Appendix E indicates that there are 35 wells to be included in the study. Specify which number of wells is correct.

23. Revise the Work Plan to specify the frequency that soil samples will be tested for grain size via sieve analysis. Indicate the specific sieve screen sizes that will be utilized for the testing.

24. Table 6-2 lists only two soil samples each to be collected for grain size, residual LNAPL saturation, Water/LNAPL Drainage Capillary Pressure and Water LNAPL Relative Permeability and only one LNAPL sample each for testing for viscosity, fluid density and surface and interfacial tension. Revise the Work Plan to describe why these few numbers of samples are sufficient for the range of conditions at the site. Also, clarify in the table if the column titled "No. of Field Samples" is correct, and if the column "Total No. of Samples to Laboratory" is correct.

25. Saturated hydraulic conductivity and porosity are important variables in groundwater flow considerations. Specify field or laboratory tests that will be conducted to arrive at a range of site specific values. Revise the Work Plan to indicate how values for saturated hydraulic conductivity and porosity will be assessed.

## C. Vadose Zone Investigation Work Plan

1. Geophysics – Revise the Vadose Zone Investigation Work Plan in accordance with the above Comments 1-8 and 10-11 concerning Groundwater Investigation Work Plan.

2. Geophysical logging is proposed in soil-gas wells with 2-inch casing. Confirm that all tools fit in 2-inch casing, given the neutron probe is described as being 60 mm in diameter (2.36 inches, see page 5-24 of the Groundwater Investigation Work Plan, first paragraph, last sentence) or make an appropriate change in tool size or casing size.

3. For the soil vapor wells, describe where the 2-inch casing will be located in the borehole (e.g., in the center, closer to one side), and if so, how geophysical logging conducted in the 2-inch casing could be affected by the other soil-vapor monitoring points attached to 0.75-inch diameter casing in the same nested borehole.

4. The Work Plan does not include a detailed discussion of soil-vapor sampling. Revise the Vadose Zone Investigation Work Plan to include a section describing soil-vapor sampling in detail, with discussion of sampling methods, analytical methods, sampling frequency, laboratory and field quality control, handling, shipping and packaging, and reporting of results.

5. Section 5.2, top line on page 5-3 references Table 4 of the August 6, 2010, NOD for number, location, and depths of soil borings/soil-vapor wells. The table number is incorrect. The correct reference is Tables 1, 2 and 3.

6. Table 5-2 of the Work Plan does not show an exact correspondence to the August 6 letter. However, NMED will accept the locations as described in Table 5-2.

7. Section 5.2.10, *Soil Borings/Drilling*, page 5-18, last sentence, 1st paragraph, mentions "10 ¾" O.D. casing whereas Figure 5-2 shows "11 ¾" casing. Correct, as appropriate, the figure or the text.

8. Section 5.2.10, *Soil Borings/Drilling*, page 5-18, last sentence, 1st paragraph, mentions telescoping to a smaller diameter borehole at 200 feet, while Figure 5-2 shows telescoping to a smaller diameter borehole at 150 feet. Correct, as appropriate, the figure or the text.

9. Revise the Work Plan to add total depth from the logger to the first bullet of Section 5.2.3.2.

10. In the bullets of Section 5.2.3.2, define what "Assemble the downhole logging tool" means as a type of information recorded, or remove the bullet.

11. Section 6.1, *Soil Sampling*, Revise the Work Plan to indicate that additional samples will be collected and analyzed, beyond those obtained at the planned sampling intervals, if field evidence suggests contamination may be present as required in Permit Part 6.5.11.

12. Describe what will be submitted in Part 2 Vadose Zone Investigation Work Plan, indicate when the information will it be submitted, and explain why any of the information that was required by November 8, 2010, was not included in Part 1.

13. Appendix E, Section 17.3, *Pre-remedy Quarterly Monitoring Program – Soil Vapor*, discusses soil-vapor monitoring. Describe the risk evaluation the Permittee is proposing to conduct and the purpose of the evaluation. Revise the Work Plan to state that soil-gas

monitoring will be conducted quarterly until a change in frequency or termination of soil-gas monitoring is approved by the NMED.

14. Table 5-2 – Correct the date of the "August 8" letter to "August 6" in the title and last column heading.

15. Table 5-2 – Correct the locations listed in the last column under Shallow Borings. The same location is given for the five separate borings. Revise the Work Plan to correct the location numbers.

16. There are few details of reporting in the Work Plan, and most of those are aimed at the geophysical logging. Revise the Work Plan to include details for reporting on well installation, monitoring, and sampling results.

17. Section 5.2.11, Soil Vapor Monitoring Wells, p.5-27, 1st paragraph, discusses movement of the monitoring point by up to 20 feet if the point lies in a fine-grained layer. This is acceptable for the four deepest points (150, 250, 350, 450) but not for the two shallow points (25, 50). Movement of up to +/-5 feet for the shallow points will be acceptable. Screen depths can only be changed if the adjustment sets the screen in a more permeable geologic unit.

18. Section 5.2.11, Soil Vapor Monitoring Wells, p.5-27, 1st paragraph, states "If a large deviation is required, the NMED will be notified in writing of the deviation." All deviations must have prior written approval from NMED.

## D. Interim Measures Work Plan

1. Section 2. 4.5.3.2, Waste Profiling – The Work Plan states that soil will be characterized in place by sampling waste, but is unclear how sample locations will be selected and at what frequency that samples will be collected. Revise the Work Plan accordingly.

2. Section 4.6.11, Radius of Influence (ROI) Testing – The Work Plan does not indicate which existing wells will be used for the testing. Revise the Work Plan to list the wells to be used in the ROI tests.

3. Section 4.6.2.4 states that soil-gas wells will be constructed with 2-inch casing. Figure 4-4 indicates that the deepest monitoring point will be constructed using 3-inch casing. Revise the Work Plan to indicate the correct casing diameter. If 2-inch casing is correct, confirm that all geophysical tools will fit in 2-inch casing, given the neutron probe is described as being 60 mm in diameter (2.36 inches, see p.5-24 of the Groundwater Investigation Work Plan, first paragraph, last sentence) or make an appropriate change in tool size or casing size.

If 2-inch casing is correct, describe where the 2-inch casing will be located in the borehole (e.g., in the center, closer to one side), and if so, how geophysical logging conducted in the 2-inch

casing could be affected by the other soil-vapor monitoring points attached to 0.75-inch diameter casing in the same nested borehole.

## Final Direction

The Permittee must meet the deadlines specified in the Compliance Schedule at the end of this letter. The Interim Measures, Groundwater Investigation, and Vadose Zone Work Plans must be revised and resubmitted by the Permittee to the NMED for its review and approval by **March 31, 2011**. The revisions of the Vadose Zone, Interim Measures, and Groundwater Investigation Work Plans must address the comments noted herein and incorporate the requirements set forth in this letter. The Permittee shall also implement the interim measures and other actions as directed under Part 1 of this letter by the dates indicated and in accordance with the Compliance Schedule.

To the extent any requirement of this letter requires access to property not owned or controlled by the Permittee, the Permittee shall use its best efforts to obtain access from the present owners of such property to conduct the required activities. In the event that access is not obtained when necessary, the Permittee shall immediately notify the Department in writing regarding its best efforts and its failure to obtain such access.

The Permittee must document all field activities in accordance with Permit Part 6.5.2. All equipment that is not disposable must be decontaminated pursuant to Permit Part 6.5.3. All equipment that requires calibration must be calibrated as required under Permit Part 6.5.4. Sample handing, shipping, and custody procedures must comply with Permit Part 6.5.5. The collection and management of investigation-derived waste must conform to Permit Part 6.5.7. Well and boring locations must be surveyed in accordance with Permit Part 6.5.8. Field quality control samples must be collected and analyzed for all environmental media pursuant to Permit Parts 6.5.14 and 6.5.17.6. Laboratory analyses, including laboratory quality control samples, must be conducted as required under Permit Part 6.5.18. Field and laboratory quality control data must be reviewed and validated in accordance with Permit Part 6.5.18.3. Reporting of field activities, including sampling and analysis results, completion of soil borings, geologic and geophysical logging, and well installations, must be as directed by NMED's letter of June 4, 2010, for quarterly reporting.

The requirement under Permit Part 6.1.2 that the Permittee is to notify the NMED a minimum of 15 days in advance of field activities is waived for the work to be completed in the following sections of Part 1 of this letter: *A. Installation of New Groundwater Monitoring Wells, B. Development of Existing Wells, C. Geophysical Logging of Existing Wells, D. Completion of Soil Borings, Installation of New Soil-Gas Monitoring Wells, and I. Soil-Vapor Extraction.* The Permittee shall instead notify the NMED of these field activities by e-mail or letter by no later than the date that each of the activities begins.

## Compliance Schedule

| Revisions to Work Plans | |
|---|---|
| **Submittal** | **Due Date** |
| Interim Measures Work Plan | March 31, 2011 |
| Vadose Zone Work Plan | March 31, 2011 |
| Groundwater Investigation Work Plan | March 31, 2011 |
| **Well Installations, Soil Borings, Interim Measures, and other Actions** | |
| **Activity** | **Completion Due Date** |
| Complete installation of new groundwater monitoring wells | April 28, 2011 |
| Complete development of existing wells | February 15, 2011 |
| Complete geophysical logging of existing wells | February 15, 2011 |
| Complete soil borings | February 11, 2011 |
| Complete installation of new soil-gas monitoring wells | February 11, 2011 |
| Complete geophysical logging of new groundwater and soil-gas wells | June 1, 2011 |
| Complete excavation of soil at former Fuel Offloading Rack | October 6, 2011 |
| Complete investigation of piping from Building 1033 to storage tanks | March 7, 2011 |
| Complete preparation of locations for soil-vapor extraction | February 15, 2011 |
| Submit SVE Optimization Plan to NMED | March 31, 2011 |
| Complete Radius of Influence tests | April 6, 2011 |
| Complete Hydrocarbon Baildown tests | March 2, 2011 |
| Complete PneuLog tests | December 21, 2011 |
| Provide LNAPL sample to Scientific Laboratory Division of NM Department of Health | March 31, 2011 |
| Notify NMED that LNAPL sample has been delivered to Scientific Laboratory Division of NM Department of Health | No later than 1 business day following delivery of the sample. |

## LNAPL Plume

NMED's directives as expressed in its April 2, 2010, letter and the August 6, 2010, NOD required the Permittee to provide an Interim Measures Work Plan to conduct interim measures to remediate the LNAPL plume within five years. The revised Interim Measures Work Plan submitted November 4, 2010, does not contain such a plan. Rather than complying with NMED's direction to take immediate action to conduct LNAPL remediation, the Permittee proposes in the revised Interim Measures Work

Plan to conduct various tests. This same approach was proposed in the Permittee's June 18, 2010 version of the Work Plan, and was found unacceptable by NMED (*see* August 6, 2010 NOD).

On December 1, 2010, the Permittee submitted a separate plan to contain the LNAPL plume by proposing to pump and treat contaminated groundwater at the leading edge of the LNAPL plume. NMED will review this plan to determine whether it meets NMED's directives of April 2, 2010, and the NOD issued August 6, 2010, and otherwise proposes a sound technical approach. NMED's action on that plan will be provided under separate cover.

The Permittee must respond to this letter to my attention, with copy to Mr. Bill Olson of the NMED Ground Water Quality Bureau, and Mr. William Moats (NMED HWB, 5500 San Antonio NE, Albuquerque, NM 87109), on all correspondence and required plans and reports related to the Bulk Fuels Facility Spill, unless otherwise directed by NMED. All submittals and correspondence must be submitted in hardcopy and electronic format.

Please contact me directly at 505-476-6016 should you have any questions. Questions of a technical nature may also be directed to William Moats of my staff at (505) 222-9551.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
W. Moats, NMED HWB
W. McDonald, NMED HWB
S. Brandwein, NMED HWB
B. Olson, NMED GWQB
B. Swanson, NMED GWQB
L. Barnhart, NMED OGC
B. Gallegos, AEHD
B. Gastian, ABCWUA
L. King, EPA-Region 6 (6PD-N)
T. Chapman, DOH SLD
File: Reading and KAFB 2010

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)

ENTERED
MAY 12 2015

RECEIVED
MAY 14 2015

Colonel Tom D. Miller
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB NM 87117-5600

Mr. John Kieling, Manager
RCRA Permits Management Program
Hazardous Waste Bureau (HWB)
New Mexico Environment Department (NMED)
2905 Rodeo Park Road
Santa Fe New Mexico 87505

Dear Mr. Kieling

We are pleased to submit the attached technical memorandum outlining proposed changes to the Quarterly Pre-Remedy Monitoring and Site Investigation Reports for the Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) spill site. The technical memo outlines three initial changes that are proposed for the quarterly reports, beginning with the First Quarter calendar year (CY) 2015. These recommendations are a direct result of the collaborative efforts of the hydrogeology working group, which identified the need to evaluate and optimize current monitoring and reporting practices to better align with requirements under NMED guidance and industry standards to achieve a more effective monitoring and reporting program.

In addition to evaluation of groundwater sampling and reporting, the team continues to work collaboratively to evaluate all aspects of the project. As a result of the collaboration of the vadose zone working group, in-situ respiration testing was performed from April 6, 2015 through April 17, 2015 to inform the location and design of a more robust remedial strategy for the BFF vadose zone. Groundwater measurements and sampling for Second Quarter CY 2015 were postponed until April 20, 2015 in order to prevent any effects on barometric pressure in the vadose zone caused by opening and closing the groundwater monitoring well heads. We request that the Second Quarter CY quarterly report deadline be extended from September 30, 2015 to October 31, 2015 to accommodate this delay in groundwater sampling.

We appreciate your attention to this matter to initiate the first phase of monitoring and reporting optimization. The intention of the attached-requested changes is to make the quarterly report more usable for all stakeholders and the public, and we look forward to continued collaboration to improve project documents and activities. Please contact Mr. Wayne Bitner at 505.853.3484 or at ludie.bitner@us.af.mil, or Mr. Scott C. Clark at 505.846.9017 or at scott.clark@us.af.mil if you have any questions or concerns.

Sincerely,

TOM D. MILLER, Colonel, USAF
Commander

KAFB4252

cc:
NMED-EHD (Roberts, McQuillan)
NMED (Longmire)
NMED-HWB (Cobrain, McDonald)
NMED-GWQB (Cook, Bustamante, Huddleson)
NMED-PSTB (Reuter)
NMED-OGC (Kendall)
EPA Region 6 (King, Ellinger)
AFCEC-CZRX (Bodour)
USACE-ABQ District Office (Simpler, McBee, Phaneuf)
Public Info Repository (Central New Mexico Community College), Administrative Record/Information Repository (AR/IR), and File

# Technical Memorandum:
# Requested Changes to the First Quarter Calendar Year (CY) 2015 and Subsequent Reports

This technical memorandum presents the initial requests for the phased optimization of the Quarterly Pre-Remedy Monitoring and Site Investigation Reports (hereafter referred to as Quarterly Reports) for the Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) Spill Site. This memo outlines three initial changes that are proposed for the quarterly reports, beginning with the First Quarter CY 2015. The goals of these revisions are to make the Quarterly Reports more accessible and understandable to the public, to make the reports more manageable for stakeholders interested in evaluating monitoring data, and to make regulatory reviews less onerous, all while still adhering to the initial requirements set forth in the June 4, 2010 letter from the New Mexico Environment Department (NMED).

The following changes have been identified by collaborative efforts of the hydrogeology working group to prioritize data-driven decision making within the quarterly report. We respectfully request to implement these changes starting in the First Quarter CY 2015 Report:

## 1. Reduction of 97 Non-Detect Analytes

An initial analyte screening was performed as a result of hydrogeologic- and biogeochemistry-working group meetings in February 2015. The screening was completed per New Mexico Administrative Code (NMAC) 20.6.2.4103 part D, which allows discontinuation of sampling for an individual analyte after eight consecutive sampling quarters documenting the results are below the applicable enforceable groundwater standard. The analyte screening was performed by reviewing individual analyte data for all BFF sampling network wells for the most recent eight consecutive quarters, First Quarter CY 2013 through the Fourth Quarter CY 2014. Analytical data were compared against the U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs) and the New Mexico Water Quality Control Commission (NM WQCC) Standards (NMAC 20.6.2.3103). The analyte screening identified 97 analytes for which there were no detections above regulatory standards from First Quarter CY 2013 through Fourth Quarter CY 2014, and therefore sampling is no longer required.

KAFB proposes immediate discontinuation of sampling/reporting for these specific analytes and respectfully requests your review of the attached Table 1, "Kirtland AFB BFF Analyte Screening," for concurrence. Groundwater sampling for all other analytes and potential contaminants of concern will continue using the current sampling network at a quarterly frequency as required in the June 4, 2010 letter from the NMED.

## 2. Change to the Cumulative Nature of the Report

To support continued collaborative change the working group outlined additional changes that will make report data more accessible. This included the revision of text, tables, figures, and appendices beginning with the First Quarter CY 2015 report to include data only from that specific quarter. The quarterly reports are currently cumulative in response to the NMED Comment No. 31 from the August 17, 2011 letter requesting that, "quarterly reports should be updated each quarter to show the sum total knowledge (data and interpretation) of soil, soil vapor, and groundwater contamination."

This change would manifest itself in the First Quarter CY 2015 and subsequent Quarterly Reports in the following ways:

- Appendices documenting activities that occurred only during previous quarters will be removed. For example, Appendix N, which documents Pneulog® sampling performed in Second Quarter CY 2012, will be removed.

- Appendices documenting activities that occurred during First Quarter CY 2015 and during previous quarters will be amended to include only data from First Quarter CY 2015. For example, Appendix G, which documents field sampling data from First Quarter CY 2011 through the present, will be amended to only include data from the current quarter.

- The text will be amended to focus only on activities that took place during First Quarter CY 2015. However, operational information requiring the evaluation of data from past quarters will still be included. For example, the total mass recovery of the CATOX SVE system will continue to be included.

- Tables documenting activities that did not occur in First Quarter CY 2015 will be removed.

Although this change is requested, the Air Force still intends to respect the intention of Comment No. 31 in the August 17, 2011 letter. Appendix E, which includes data exports of all current and historical soil, soil vapor, and groundwater analytical data, along with a table of current and historical water level and light non-aqueous phase liquid (LNAPL) data, will continue to be included in First Quarter CY 2015. In addition, cumulative tables of surveyed wells and geophysically logged wells will also be included in the First Quarter CY 2015 report. By making the report non-cumulative, the text will be more concise and understandable, thus making the data more accessible for all users. In addition, report production will be more ecologically sustainable.

**3. Reduction of Figures**

The technical team identified specific figures in the quarterly report that do not represent the data currently driving decisions. In order to streamline the report, and highlight pertinent data, it is requested that selected figures be removed from the quarterly report beginning in First Quarter CY 2015. Although the following figures are requested to be removed for First Quarter CY 2015, the raw data will continue to be included in the report analytical tables. Additionally, these figures may be included in future reports, or created for working group meetings as requested. The following changes are requested:

- It is requested that total petroleum hydrocarbon (TPH) concentration figures for diesel range organics (DRO) and gasoline range organics (GRO) no longer be presented.

- 1,2,4-trimethylbenzene and naphthalene concentration figures will no longer be presented. Very few wells show detections for these analytes, and concentrations above regulatory groundwater standards are all located within the historical LNAPL area.

- Piper and stiff diagrams will not be included beginning in the First Quarter CY 2015 report. The conclusions drawn from these diagrams confirm the conclusions drawn from the analysis of degradation parameters, and are therefore non-unique.

- It is requested that potentiometric surface maps for intermediate and deep wells no longer be presented for the purpose of providing the most relevant and concise hydrologic conditions of the aquifer. This will not impact the distinction between shallow, intermediate, and deep zones for the purpose of plume definition. The technical team has recognized through the review of stratigraphic and analytical data as well as observation of rising groundwater trends, that due to overlapping filter-

pack depths of shallow and intermediate wells, distinct potentiometric surface maps for these zones do not represent hydrologically separate zones. Deep wells on the Kirtland AFB BFF site are screened at multiple depths in the aquifer, in accordance with NMED directive, and while this supports vertical plume definition, it does not represent a consistent hydrologic horizon that can be used for comparison. A comprehensive posting of water level elevations that consolidates the water levels measured at all shallow, intermediate, and deep wells will continued to be presented in quarterly reports.

**Table 1**
**Kirtland AFB BFF Analyte Screening**

| Analyte | Analytical Method (EPA method) | Number Results | Analyte Detections above MCL in Last 8 Quarters (Q1-2013 - Q4-2014) |
|---|---|---|---|
| CALCIUM | Metals Method 6010C | 1635 | 0 |
| MAGNESIUM | Metals Method 6010C | 1634 | 0 |
| POTASSIUM | Metals Method 6010C | 1630 | 0 |
| SODIUM | Metals Method 6010C | 1636 | 0 |
| ACENAPHTHENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| ACENAPHTHYLENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| ANTHRACENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| BENZO(A)ANTHRACENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| BENZO(A)PYRENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| BENZO(B)FLUORANTHENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| BENZO(GHI)PERYLENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| BENZO(K)FLUORANTHENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| CHRYSENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| DIBENZO(A,H)ANTHRACENE | PAHs Method 8270D, Low Detection Limit | 1546 | 0 |
| 2,4,5-TRICHLOROPHENOL | SVOCs Method 8270D | 904 | 0 |
| 2,4,6-TRICHLOROPHENOL | SVOCs Method 8270D | 904 | 0 |
| 2,4-DICHLOROPHENOL | SVOCs Method 8270D | 904 | 0 |
| 2,4-DINITROPHENOL | SVOCs Method 8270D | 904 | 0 |
| 2,4-DINITROTOLUENE | SVOCs Method 8270D | 904 | 0 |
| 2,6-DINITROTOLUENE | SVOCs Method 8270D | 904 | 0 |
| 2-CHLORONAPHTHALENE | SVOCs Method 8270D | 904 | 0 |
| 2-CHLOROPHENOL | SVOCs Method 8270D | 904 | 0 |
| 2-NITROANILINE | SVOCs Method 8270D | 904 | 0 |
| 2-NITROPHENOL | SVOCs Method 8270D | 904 | 0 |
| 3,3'-DICHLOROBENZIDINE | SVOCs Method 8270D | 904 | 0 |
| 3-NITROANILINE | SVOCs Method 8270D | 904 | 0 |
| 4,6-DINITRO-2-METHYLPHENOL | SVOCs Method 8270D | 904 | 0 |
| 4-BROMOPHENYL PHENYL ETHER | SVOCs Method 8270D | 904 | 0 |
| 4-CHLORO-3-METHYLPHENOL | SVOCs Method 8270D | 904 | 0 |

**Table 1**

**Kirtland AFB BFF Analyte Screening**

| | | | |
|---|---|---|---|
| 4-CHLOROANILINE | SVOCs Method 8270D | 904 | 0 |
| 4-CHLOROPHENYL PHENYL ETHER | SVOCs Method 8270D | 904 | 0 |
| 4-NITROANILINE | SVOCs Method 8270D | 904 | 0 |
| 4-NITROPHENOL | SVOCs Method 8270D | 904 | 0 |
| ACENAPHTHENE | SVOCs Method 8270D | 904 | 0 |
| ACENAPHTHYLENE | SVOCs Method 8270D | 904 | 0 |
| ANTHRACENE | SVOCs Method 8270D | 904 | 0 |
| ATRAZINE | SVOCs Method 8270D | 904 | 0 |
| BENZALDEHYDE | SVOCs Method 8270D | 904 | 0 |
| BENZIDINE | SVOCs Method 8270D | 904 | 0 |
| BENZO(A)ANTHRACENE | SVOCs Method 8270D | 904 | 0 |
| BENZO(A)PYRENE | SVOCs Method 8270D | 904 | 0 |
| BENZO(B)FLUORANTHENE | SVOCs Method 8270D | 904 | 0 |
| BENZO(GHI)PERYLENE | SVOCs Method 8270D | 904 | 0 |
| BENZO(K)FLUORANTHENE | SVOCs Method 8270D | 904 | 0 |
| BENZOIC ACID | SVOCs Method 8270D | 904 | 0 |
| BIS(2-CHLOROETHOXY)METHANE | SVOCs Method 8270D | 904 | 0 |
| BIS(2-CHLOROETHYL)ETHER | SVOCs Method 8270D | 904 | 0 |
| BIS(2-CHLOROISOPROPYL)ETHER | SVOCs Method 8270D | 650 | 0 |
| CARBAZOLE | SVOCs Method 8270D | 904 | 0 |
| CHRYSENE | SVOCs Method 8270D | 904 | 0 |
| DIBENZO(A,H)ANTHRACENE | SVOCs Method 8270D | 904 | 0 |
| DIMETHYL PHTHALATE | SVOCs Method 8270D | 904 | 0 |
| DI-N-BUTYL PHTHALATE | SVOCs Method 8270D | 904 | 0 |
| DI-N-OCTYL PHTHALATE | SVOCs Method 8270D | 904 | 0 |
| HEXACHLOROBENZENE | SVOCs Method 8270D | 904 | 0 |
| HEXACHLOROBUTADIENE | SVOCs Method 8270D | 874 | 0 |
| HEXACHLOROCYCLOPENTADIENE | SVOCs Method 8270D | 904 | 0 |
| HEXACHLOROETHANE | SVOCs Method 8270D | 904 | 0 |
| NITROBENZENE | SVOCs Method 8270D | 904 | 0 |
| N-NITROSO-DI-N-PROPYLAMINE | SVOCs Method 8270D | 904 | 0 |
| N-NITROSODIPHENYLAMINE | SVOCs Method 8270D | 904 | 0 |
| 1,1,1,2-TETRACHLOROETHANE | VOCs Method 8260B | 905 | 0 |
| 1,1,1-TRICHLOROETHANE | VOCs Method 8260B | 905 | 0 |
| 1,1,2,2-TETRACHLOROETHANE | VOCs Method 8260B | 905 | 0 |
| 1,1-DICHLOROETHANE | VOCs Method 8260B | 906 | 0 |

**Table 1**

**Kirtland AFB BFF Analyte Screening**

| | | | |
|---|---|---|---|
| 1,1-DICHLOROETHENE | VOCs Method 8260B | 905 | 0 |
| 1,1-DICHLOROPROPENE | VOCs Method 8260B | 905 | 0 |
| 1,2,3-TRICHLOROBENZENE | VOCs Method 8260B | 905 | 0 |
| 1,2,3-TRICHLOROPROPANE | VOCs Method 8260B | 905 | 0 |
| 1,2,4-TRICHLOROBENZENE | VOCs Method 8260B | 905 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | VOCs Method 8260B | 905 | 0 |
| 1,2-DICHLOROBENZENE | VOCs Method 8260B | 905 | 0 |
| 1,2-DICHLOROPROPANE | VOCs Method 8260B | 905 | 0 |
| 1,3-DICHLOROBENZENE | VOCs Method 8260B | 905 | 0 |
| 1,3-DICHLOROPROPANE | VOCs Method 8260B | 905 | 0 |
| 1,4-DICHLOROBENZENE | VOCs Method 8260B | 905 | 0 |
| 2,2-DICHLOROPROPANE | VOCs Method 8260B | 905 | 0 |
| 4-CHLOROTOLUENE | VOCs Method 8260B | 905 | 0 |
| BROMOBENZENE | VOCs Method 8260B | 905 | 0 |
| BROMOCHLOROMETHANE | VOCs Method 8260B | 905 | 0 |
| BROMODICHLOROMETHANE | VOCs Method 8260B | 905 | 0 |
| BROMOFORM | VOCs Method 8260B | 905 | 0 |
| BROMOMETHANE | VOCs Method 8260B | 905 | 0 |
| CARBON TETRACHLORIDE | VOCs Method 8260B | 905 | 0 |
| CHLOROBENZENE | VOCs Method 8260B | 906 | 0 |
| CHLOROETHANE | VOCs Method 8260B | 905 | 0 |
| CHLOROFORM | VOCs Method 8260B | 907 | 0 |
| CIS-1,2-DICHLOROETHENE | VOCs Method 8260B | 905 | 0 |
| CIS-1,3-DICHLOROPROPENE | VOCs Method 8260B | 905 | 0 |
| DIBROMOCHLOROMETHANE | VOCs Method 8260B | 905 | 0 |
| DIBROMOMETHANE | VOCs Method 8260B | 905 | 0 |
| HEXACHLOROBUTADIENE | VOCs Method 8260B | 1544 | 0 |
| STYRENE | VOCs Method 8260B | 905 | 0 |
| TETRACHLOROETHENE | VOCs Method 8260B | 906 | 0 |
| TRANS-1,2-DICHLOROETHENE | VOCs Method 8260B | 905 | 0 |
| TRANS-1,3-DICHLOROPROPENE | VOCs Method 8260B | 905 | 0 |
| VINYL CHLORIDE | VOCs Method 8260B | 905 | 0 |

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RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

July 17, 2015

Colonel Eric H. Froehlich
Base Commander
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2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5606

John Pike
Director, Environmental Management Services
377 MSG
2050 Wyoming Blvd. SE, Suite 116
Kirtland AFB, NM 87117-5270

**RE: REVISED QUARTERLY PRE-REMEDY MONITORING AND SITE INVESTIGATION REPORTS**
**BULK FUELS FACILITY SPILL**
**SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111**
**KIRTLAND AIR FORCE BASE**
**EPA ID# NM9570024423, HWB-KAFB-15-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) is in receipt of the Kirtland Air Force Base (the Permittee) proposed changes to the *Quarterly Pre-Remedy Monitoring and Site Investigation Reports*, dated May 12, 2015. The proposed changes include:

- Discontinuation of sampling/reporting for 97 specific analytes for which there were no detections above regulatory standards in quarterly sampling during 2013-2014.
- Revising text, tables, figures and appendices to be non-cumulative and to only include data from the specific quarter addressed by the report. The Permittee, however, still intends to comply with Comment No. 31 in NMED's August 17, 2011 letter with respect to data exports in Appendix E.
- Reduction of report figures to only include data that are currently driving decisions.

The Permittee's proposed changes to the quarterly monitoring and reporting practices are hereby approved with the following conditions:

1. The Permittee shall continue to monitor for calcium, magnesium, potassium and sodium in groundwater, and shall report the test results in the quarterly reports.

2. The Permittee shall summarize vapor, groundwater, and remediation system monitoring data in tables. All data tables shall include only detected analytes and data quality exceptions that could potentially mask detections. Data presented in the tables shall include the current data plus data from the three previous monitoring events or, if data from fewer than three monitoring events is available, data acquired from the three most recent monitoring events during previous investigations, if any, must be provided. The dates of data collection shall be included in the tables.
3. The Permittee shall submit, in addition to the full Quarterly Report, an Executive Summary of the Quarterly Report, written for the lay public and with embedded figures, that includes the following information:
    a. A brief summary of ongoing investigation and cleanup actions, with reference to availability of the full Quarterly Report for those who are interested;
    b. Figures and written summaries of cumulative amounts of product recovered/biodegraded in the soil and groundwater;
    c. Descriptions of new groundwater or soil vapor wells and new test parameters, if any;
    d. Identification and discussion of any significant changes in contamination concentrations or distributions;
    e. Cumulative groundwater maps for benzene, EDB, and dissolved oxygen;
    f. A map of groundwater natural attenuation parameters including electron acceptors, alkalinity and bromide (or split into multiple maps if necessary for clarity);
    g. Cumulative soil vapor maps and depth slices for total VOCs and benzene;
    h. Any other monitoring data deemed by the Permittee to be important in driving decisions; and
    i. Descriptions of newly initiated or planned investigations, tests or studies.
4. The Permittee shall, no later than by August 1, 2015, submit a draft of the Executive Summary described in Condition #2 above for data gathered in the first quarter of 2015.
5. The Permittee shall fully implement the changes to sampling and reporting approved in this letter for data gathered in the second quarter of 2015.

NMED technical staff will assist you and your contractor in any way possible to evaluate and optimize sampling and reporting practices.

If you have any questions, please contact me at 505-827-2855.

Sincerely,

Kathryn Roberts
Director
Resource Protection Division

KR/DM

cc: Col. T. Haught, KAFB
Wayne Bitner, KAFB
Herbert Bohannon, KAFB
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
J. Kieling, NMED-HWB
D. McQuillan, NMED KAFB Fuel Spill Cleanup Team Leader

File: KAFB 2015 Bulk Fuels Facility Spill Library and Reading File

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Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

January 7, 2016

Wayne L. Bitner
Chief, Environmental Restoration
2000 Wyoming Blvd SE
Kirtland AFB NM 87117-5600

**RE: Approval with Conditions, Request for Temporary Permission to Discharge to KAFB-7, Kirtland Air Force Base, Bulk Fuels Facility, DP-1839**

Dear Mr. Bitner:

This letter supersedes the letter inadvertently dated January 5, 2015.

The New Mexico Environment Department (NMED) is in receipt of Kirtland Air Force Base's (KAFB) *Request for Temporary Permission to Discharge for Pilot Test KAFB-7 Gravity Injection*, dated December 21, 2015, (Request). Hereafter, KAFB will be referred to as the "Permittee." The Request pertains to a 120 day pilot test of the discharge, *i.e.,* injection, of a maximum of 500 gallons per minute (gpm) of treated groundwater to the retrofitted groundwater extraction well KAFB-7. NMED has reviewed the Request and hereby issues an associated approval pursuant to Subsection B of 20.6.2.3106 NMAC of the New Mexico Water Quality Control Commission Regulations, with the conditions specified below.

The Request is associated with the Permittee's groundwater discharge permit application titled *Class V Underground Injection Control (UIC) Permit* (Application), received by NMED on December 4, 2015, proposing up to five injection wells to support the ethylene dibromide (EDB) plume Interim Measure (IM) for the historical fuel leak from the former Bulk Fuels Facility (BFF) at KAFB. The Permittee's stated objective of the pilot test is twofold: to evaluate the feasibility of using KAFB-7 as an injection well, and to have an additional winter 2016 water disposition option for the treated groundwater from the full-scale groundwater treatment system (GWTS).

The NMED deemed the Class V UIC permit application administratively complete on December 17, 2015, and issued an associated public notice on December 22, 2015. The NMED refers to the pending associated discharge permit as DP-1839. Class V groundwater remediation UIC wells (as defined in 20.6.2.5002.B(5)(d)(i) NMAC) are used to inject groundwater that has been treated to meet applicable groundwater quality standards. All UIC wells must operate in conformance with appropriate and applicable ground and surface water protection requirements as required by 20.6.2.5003.B NMAC.

The water to be injected is treated groundwater from extraction wells KAFB-106228, KAFB-106233 and KAFB-106234 that has been impacted with EDB and possibly other constituents of concern (COCs). The extraction wells are intended to collapse the downgradient portion of the dissolved phase contaminant plume, with extracted groundwater treated prior to injection using granular activated carbon to remove all organic constituents to below the drinking water standards specified below. The scope of this approval for temporary discharge for a period of 120 days is limited to the authorization of the injection of sufficiently treated groundwater to KAFB-7 and is not intended to define, limit, or approve the design of the GWTS. The proposed discharge location is within the boundaries of KAFB, south of Southgate Avenue and Ordnance Street SE, in Township T10N, Range R4E, Section S6, Albuquerque, Bernalillo County.

Temporary permission to discharge is hereby granted for 120 days from the initiation of injection of the treated groundwater, pursuant to Subsection B of 20.6.2.3106 NMAC. NMED considers the Permittee to have shown the good cause necessary for a temporary permission to discharge by demonstrating that the discharge will expedite the arrest the migration of the EDB plume.

This approval is contingent on the Permittee discharging and reporting as described in the Request and upon the following conditions:

1. Prior to initiating the discharge, the Permittee must verbally notify NMED of the date the temporary discharge is to commence.
2. Prior to occurrence, the Permittee must notify NMED in writing of any increase of the discharge volume or any process modification that would result in any significant modification in the temporary discharge of water contaminants. (20.6.2.3107.C NMAC)
3. Anthropogenic chemicals in injected water shall not exceed the more stringent value of either New Mexico Water Quality Control Commission standards (Section 20.6.2.3103 NMAC) or the Safe Drinking Water Act maximum contaminant levels (MCLs) for drinking water. For NMWQCC listed Toxic Pollutants without 3103 standards or MCLs, injected water shall not exceed the most current Tap Water Limits in Table A-1 of the NMED Risk Assessment Guidance. The contaminants of concern (COCs) associated with the EDB plume and their applicable standard are:
    a. Benzene: 5 µg/L
    b. Ethylene dibromide (EDB): 0.05 µg/L
    c. Iron: 1 mg/L
    d. Manganese: 0.2 mg/L
    e. Toluene: 750 µg/L
    f. Total xylenes: 620 µg/L

4. The Permittee shall submit documentation demonstrating that the GWTS effluent achieves the standards specified in Condition #3 above to NMED prior to the commencement of the temporary discharge.
5. After commencement of the temporary discharge, the GWTS effluent shall be sampled daily for the first week of operation with 24-hour analytical turnaround times. After the first week of operation, weekly samples shall be collected for the first month of operation with 5-day analytical turnaround times. After one month, and once it is determined that that constituents in effluent samples are not exceeding the standards specified in Condition #3, the sampling frequency may be reduced to monthly in accordance with Application Attachment D (*Monitoring and Contingency Plan),* Subsection 2.1.
6. Each time a new extraction well is brought on-line, the same sampling frequency specified in Condition #5 shall be utilized.
7. Should any COCs be detected above applicable standards in the effluent of the GWTS, the pumping shall cease immediately and the Permittee shall implement the response and notification procedures specified at Application Attachment D, Section 3 (*Contingency Plan*), Subsection 3.2. Should the concentrations of iron or manganese exceed applicable standards, the Permittee shall propose to NMED additional appropriate treatment methods for installation in addition to the GWTS.
8. Injected water shall not overtop the KAFB-7 well casing liner installed in 1979.
9. Water levels will be monitored with transducers in associated monitoring wells (KAFB-10523, KAFB-10524, KAFB-10507, KAFB-10508) as well as downhole in KAFB-7. System controls shall ensure shutdown of all associated components should conditions warrant.
10. The injection flow-rate monitoring, inspection, and calibration shall be performed in accordance with Application Attachment D, Subsection 2.2.
11. The injection of treated water into KAFB-7 shall be manually supervised for the first 24 hours of injection.
12. Well KAFB-7 shall be configured as represented in Application Figure 7.
13. All equipment placed in KAFB-7 shall be decontaminated utilizing a steam pressure wash prior to insertion in the well.
14. No chemicals shall be placed into KAFB-7 without the prior approval of NMED.
15. Access of unauthorized personnel to both the GWTS and KAFB-7 shall be restricted.
16. NMED representatives shall be allowed to inspect any treatment works and monitoring equipment, and to sample any associated effluent. (See 20.6.2.3107.D)
17. A final report shall be submitted to NMED within 60 days of cessation of the temporary discharge. The report shall include the following information:
    i. Total effluent volumes from the GWTS and injection volumes to KAFB-7, with any discrepancy explained.
    ii. Daily total injection volumes.
    iii. Effluent sampling analytical results.
    iv. Any operations and maintenance activities performed during the period.
    v. A comparison of injection flow rates and associated changes to hydraulic head.
    vi. Groundwater elevation contour map(s) illustrating the aquifer's response to injection, including maps illustrating changed to the aquifer resulting from the discharge changes referred to in Condition #2.

This approval does not relieve the Permittee of the responsibility to comply with any other applicable federal, state, and/or local laws, regulations, zoning requirements, and nuisance ordinances. Also, this approval does not relieve the Permittee of liability should its operation result in actual pollution of ground or surface waters.

If you have any questions, please contact Steve Pullen of the Ground Water Pollution Prevention Section at 505-827-2962.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

MH:sp

cc: (e-copies)
John Kieling, NMED-HWB
William Chavez, NMED-DI
Dennis McQuillan, NMED
Diane Agnew, NMED
Steve Huddleson, NMED-GWQB
Steve Pullen, NMED-GWQB
Caitlin LaChance, CB&I

files: Read
DP-1770
DP-1839

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**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

January 20, 2016

Colonel Eric H. Froehlich
Base Commander
377 ABW/CC
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Kirtland AFB, NM 87117-5606

John Pike
Director, Environmental Management Services
377 MSG
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Kirtland AFB, NM 87117-5270

**Re: REQUESTED OPTIMIZATION OF MONITORING AND REPORTING, SECOND PHASE, BULK FUELS FACILITY SPILL**
**SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111**
**KIRTLAND AIR FORCE BASE**
**EPA ID#NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) is in receipt of the Kirtland Air Force Base (AFB) (the Permittee) *Technical Memorandum: Requested Optimization of Monitoring and Reporting, Second Phase, Bulk Fuels Facility Spill Site*, dated December 9, 2015. The Memorandum proposed further optimization to the groundwater monitoring program and quarterly reports including:

- Removal of five analyses from the site groundwater analytical program. These five analyses were evaluated by the optimization subgroup of the Hydrogeology Working Group as not being necessary to inform risk, monitor site conditions, or use in support of site decisions:
  - Total petroleum hydrocarbons-diesel range organics (EPA Method 8015C)
  - Total petroleum hydrocarbons-gasoline range organics (EPA Method 8015C)
  - Semivolatile organic compounds (EPA Method 8270D)
  - Polynuclear aromatic hydrocarbons (EPA Method 8270D Mod)

  - Field analysis for alkalinity
- Reduced frequency of sampling of groundwater monitoring wells within the benzene plume footprint. These wells are defined as "Source Area Wells" and are proposed for semi-annual sampling for benzene, toluene, ethylbenzene, and xylene (BTEX), ethylene dibromide (EDB), metals, anions, alkalinity, and field parameters.
- Reduced frequency of sampling of groundwater monitoring wells located outside of the downgradient portion of the benzene plume that could indicate migration of the BTEX constituents. These wells are defined as "Signal Wells" and are proposed for semi-annual sampling for BTEX plus naphthalene, EDB, metals, anions, alkalinity, and field parameters. The signal wells would indicate migration of BTEX constituents and concentration data trends from these wells could prompt a re-evaluation of sampling frequency of BTEX or naphthalene.
- Revised frequency of sampling for metals, anions, and alkalinity at groundwater monitoring wells located between the dissolved-phase plume and the VA Medical Center drinking water supply wells. These wells are defined as "VA Proximal Wells" and are proposed for quarterly sampling of BTEX, EDB, and field parameters and semi-annual sampling for metals, anions, and alkalinity. This well category is inclusive of the VA sentinel wells.
- Revised frequency of sampling for metals, anions, and alkalinity at groundwater monitoring wells located between the leading edge of the EDB plume and drinking water supply wells KAFB-3, Ridgecrest-3, and Burton-5. These wells are defined as "Downgradient Proximal Wells" and are proposed for quarterly sampling for EDB and field parameters and semi-annual sampling for metals, anions, and alkalinity. Additionally, the Permittee proposes no longer monitoring these wells for BTEX. This category is inclusive of downgradient sentinel wells.
- Revised frequency of sampling for metals, anions, and alkalinity at the groundwater monitoring wells installed in the calendar year 2015. These wells are defined as "Newly Installed Wells" and are proposed for quarterly monitoring for EDB and field parameters and semi-annual monitoring for metals, anions, and alkalinity. Additionally, the Permittee proposes not sampling for BTEX at these wells.
- Revised frequency of sampling and reduction in analysis at 139 groundwater monitoring wells. These wells are defined as "Extended Well Network" and are proposed for semi-annual monitoring for EDB, metals, anions, alkalinity, and field parameters.
- Revisions to the quarterly reporting format to include the compilation of a robust annual report with the annual sampling event in the Fourth Quarter and non-cumulative data reports for each of the First, Second, and Third Quarter sampling events.

The proposed optimizations in the analytical program, sampling frequency, and reporting in the Permittee's Technical Memorandum: Requested Optimization of Monitoring and Reporting are hereby approved with the following conditions:

1. The Permittee shall continue quarterly sampling for EDB, metals, anions, alkalinity, and field parameters at the "Newly Installed Wells" until each well has four consecutive quarters. At the end of the fourth consecutive quarter, the Permittee may change to a

semi-annual sampling program for metals, anions, and alkalinity and continue with quarterly sampling for EDB and field parameters.

2. The Permittee shall continue quarterly sampling for BTEX, EDB, metals, anions, alkalinity, and field parameters in the groundwater monitoring wells with observed increasing trends in nitrate, chloride, and sulfate, as discussed at the December 8, 2015 Hydrogeology Working Group. At a minimum, this includes wells KAFB-1065, KAFB-1069, and KAFB-10612R.
3. Sampling frequency of metals and alkalinity for the VA and downgradient proximal wells may be revised based on recommendations of the Hydrogeology Working Group for indicator parameters.

Should you have any questions regarding this letter please contact Ms. Diane Agnew at (505) 222-9555.

Sincerely,

Kathryn Roberts
Director
Resource Protection Division

KR/DM

cc: Col. T. Haught, KAFB
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
J. Kieling, NMED-HWB
D. McQuillan, NMED KAFB Fuel Spill Cleanup Team Leader

File: KAFB 2015 Bulk Fuels Facility Spill Library and Reading

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

April 4, 2016

Mr. L. Wayne Bitner
Chief, Environmental Restoration
2050 Wyoming Blvd SE
Kirtland AFB, New Mexico 87117-5600

RE: DP-1770 Modification Application and Termination

Dear Mr. Bitner:

On December 4, 2015, the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) received Kirtland Air Force Base's (KAFB) application (Application) to modify Discharge Permit 1770 (DP-1770). The Application requested authorization to apply treated groundwater as an irrigation source to the KAFB Tijeras Arroyo Golf Course (Golf Course), to utilize the treated groundwater for dust suppression, and to infiltrate a portion of the water. The source of this discharge is groundwater contaminated with ethylene dibromide (EDB) extracted from wells KAFB-106228R, KAFB-106233 and KAFB-106234, which is then treated using granular activated carbon (GAC) for EDB removal to below the constituent's 0.05 µg/L Maximum Contaminant Level prior to discharge. KAFB has established a treatment goal for the GAC system of non-detectable EDB. The proposed discharge is on or near the northwest edge of the Golf Course, Kirtland Air Force Base, Albuquerque in Section 9, Township 9N, Range 4E, Bernalillo County, New Mexico.

In addition to the land application procedures addressed in the Application, KAFB has requested authorization to utilize underground injection wells as a means to dispose of the treated groundwater in a separate discharge permit application (DP-1839). The groundwater that is the subject of DP-1770 is undergoing remediation, *i.e.*, extracted and treated, pursuant to KAFB's Hazardous Waste Treatment Facility Operating Permit, EPA ID No. NM9570024423, and meets Federal Drinking Water Standards. The GWQB also notes that KAFB has been irrigating the Golf Course with water of similar chemistry and quality for over fifteen years, with no adverse effects to public health or the environment.

KAFB is abating water pollution under Resource Conservation and Recovery Act (RCRA) authority delegated to NMED, pursuant to a hazardous waste permit and the Hazardous Waste Management Regulations, 20.4.1 NMAC. Therefore, KAFB is exempt from abatement plan requirements for this activity pursuant to 20.6.2.4105.A(2) and (3) NMAC. As would be the case if the abatement was occurring strictly under an abatement plan approved pursuant to the Ground and Surface Water Protection Regulations, 20.6.2 NMAC, a discharge permit for land application of treated effluent is not required. Therefore, the GWQB hereby terminates DP-1770 as it is not required for the activity of irrigating the Golf Course with treated effluent regulated pursuant to Hazardous Waste Permit No. NM9570024423.

Should any of these circumstances change, please contact NMED immediately so that we may re-evaluate the regulatory status of this activity. DP-1839 is not impacted by this determination.

If you have any questions, please contact Steve Pullen of the Ground Water Quality Bureau's Pollution Prevention Section at (505) 827-2962.

Sincerely,

Trais Kliphuis, Director
Water Protection Division

Cc: (via e-mail)
Kathryn Roberts, NMED Resource Protection Division
Dennis McQuillan, NMED Chief Scientist
Michelle Hunter, NMED Ground Water Quality Bureau
John Kieling, NMED Hazardous Waste Bureau
Steve Huddleson, NMED Ground Water Quality Bureau
Steve Pullen, NMED Ground Water Quality Bureau
Jennifer Hower, NMED Office of General Counsel
John Verheul, NMED Office of General Counsel

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RYAN FLYNN
Cabinet Secretary

BUTCH TONGATE
Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

April 25, 2016

Wayne L. Bitner
Chief, Environmental Restoration
2000 Wyoming Blvd SE
Kirtland AFB NM 87117-5600

**RE: Approval with Conditions, Request for Temporary Permission to Discharge IDW, Kirtland Air Force Base, Bulk Fuels Facility, DP-1839**

Dear Mr. Bitner:

The New Mexico Environment Department (NMED) is in receipt of Kirtland Air Force Base's (KAFB) *Request for Temporary Permission to Discharge, Bulk Fuels Facility, Kirtland Air Force Base, New Mexico, Investigation Derived Waste*, dated April 12, 2016, (Request). Hereafter, KAFB will be referred to as the "Permittee." The Request pertains to the inclusion of investigative derived waste (IDW) to the allowable fluids discharged under Discharge Permit 1839. NMED has reviewed the Request and hereby issues an associated approval pursuant to Subsection B of 20.6.2.3106 NMAC of the New Mexico Water Quality Control Commission Regulations, with the conditions specified below.

The Request is associated with the Permittee's groundwater discharge permit application titled *Class V Underground Injection Control (UIC) Permit* (Application), received by NMED on December 4, 2015, proposing up to five injection wells to support the ethylene dibromide (EDB) plume Interim Measure (IM) for the historical fuel leak from the former Bulk Fuels Facility (BFF) at KAFB. The NMED deemed the Application administratively complete on December 17, 2015, and issued an associated public notice on December 22, 2015. The Permittee's stated objective of the Request is to protect the health and safety of workers accumulating IDW and to prevent unintentional releases to the environment.

Class V groundwater remediation UIC wells (as defined in 20.6.2.5002.B(5)(d)(i) NMAC) are utilized to inject groundwater that has been treated to meet applicable groundwater quality standards. All UIC wells must operate in conformance with appropriate and applicable ground and surface water protection requirements as required by 20.6.2.5003.B NMAC. The Permittee is currently injecting effluent from the BFF groundwater treatment system (GWTS) into well KAFB-7 as authorized by a Temporary Permission to Discharge issued by NMED dated January 7, 2016.

This temporary permission is associated with IDW generated within the EDB plume and may consist of fluids purged from groundwater monitoring wells, decontamination fluids, development waters, and extraction well aquifer testing water. In addition to this IDW, the Permittee is currently authorized to treat and inject groundwaters from extraction wells KAFB-106228, KAFB-106233, and KAFB-106234. All injected fluids, including the IDW, are treated prior to injection using granular activated carbon to remove all organic constituents to below the drinking water standards. The scope of this temporary approval is limited to the authorization of the injection of sufficiently treated IDW and is not intended to define, limit, or approve the design of the GWTS. The proposed discharge location is within the boundaries of KAFB, south of Southgate Avenue and Ordnance Street SE, in Township T10N, Range R4E, Section S6, Albuquerque, Bernalillo County.

Temporary permission to discharge is hereby granted for 120 days from the initiation of inclusion of IDW into the GWTS pursuant to Subsection B of 20.6.2.3106 NMAC. This approval is contingent on the Permittee discharging and reporting as described in the Request and upon the following conditions:

1. Prior to initiating the inclusion of IDW into the GWTS, the Permittee must verbally notify NMED of the date the temporary inclusion is to commence.
2. Prior to occurrence, the Permittee must notify NMED in writing of any significant modification in the discharge of water contaminants. (20.6.2.3107.C NMAC)
3. Anthropogenic chemicals in injected water shall not exceed the more stringent value of either New Mexico Water Quality Control Commission standards (Section 20.6.2.3103 NMAC) or the Safe Drinking Water Act maximum contaminant levels (MCLs) for drinking water. For NMWQCC listed Toxic Pollutants without 3103 standards or MCLs, injected water shall not exceed the most current Tap Water Limits in Table A-1 of the NMED Risk Assessment Guidance. The contaminants of concern (CoCs) associated with the EDB plume and their applicable standard are:
    a. Benzene: 5 µg/L
    b. Ethylene dibromide (EDB): 0.05 µg/L
    c. Iron: 1 mg/L
    d. Manganese: 0.2 mg/L
    e. Toluene: 750 µg/L
    f. Total xylenes: 620 µg/L

4. Should any CoCs be detected above applicable standards in the GWTS effluent, the discharge shall cease immediately and the Permittee shall implement the contingencies specified in the Request. Should the concentrations of iron or manganese exceed applicable standards, the Permittee shall propose to NMED additional appropriate treatment methods for installation in addition to the GWTS.
5. NMED representatives shall be allowed to inspect any treatment works and monitoring equipment, and to sample any associated effluent. (20.6.2.3107.D NMAC)

This approval does not relieve the Permittee of the responsibility to comply with any other applicable federal, state, and/or local laws, regulations, zoning requirements, and nuisance ordinances. Also, this approval does not relieve the Permittee of liability should its operation result in actual pollution of ground or surface waters.

If you have any questions, please contact Steve Pullen of the Ground Water Pollution Prevention Section at 505-827-2962.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

MH:SP

cc: (e-copies)
John Kieling, NMED-HWB
William Chavez, NMED-DI
Dennis McQuillan, NMED
Diane Agnew, NMED
Steve Huddleson, NMED-GWQB
Steve Pullen, NMED-GWQB
Kathryn Lynnes, SAF-IEE
Adria Bodour, AFCEC-CZRX
Trent Simpler, USACE

files: Read
DP-1839

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Lt. Governor

RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

June 30, 2016

Colonel Eric H. Froehlich
Base Commander
377 ABW/CC
2000 Wyoming Blvd.SE
Kirtland AFB, NM 87117-5606

John Pike
Director, Environmental Management Services
377 MSG
2050 Wyoming Blvd. SE, Suite 116
Kirtland AFB, NM 87117-5270

**Re: WORK PLAN FOR SOIL VAPOR MONITORING AND DRINKING WATER MONITORING**
**SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111**
**KIRTLAND AIR FORCE BASE**
**EPA ID#NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) is in receipt of the Kirtland Air Force Base (KAFB) (the Permittee) *Work Plan for Soil Vapor Monitoring and Drinking Water Monitoring* (Work Plan), dated April 25, 2016. The Work Plan addresses activities to be performed at the Bulk Fuels Facility site, including:

- Performance of sampling of the soil vapor monitoring network on a quarterly basis;
- Performance of sampling of drinking water production wells on a monthly basis;
- Annual maintenance of the soil vapor monitoring network;
- Abandonment and installation of soil vapor monitoring locations; and
- Quarterly reporting of soil vapor and drinking water production well sample results and analysis.

Future revisions and updates of this Work Plan are anticipated to provide the required information on soil vapor monitoring well design and installation; abandonment of soil vapor monitoring locations; and any revisions to the equipment decontamination and IDW

management sections associated with soil monitoring location installation. The Work Plan tasks, procedures, and quality control are hereby approved with the following conditions:

1. The Horiba instrument(s) shall be calibrated at the start, middle, and end of the day as specified and approved in the Pilot SVE Shutdown Test Work Plan for Soil Vapor Sampling and Field Measurements, dated December 23, 2015.
2. Section 3.6 of the Work Plan and Section 3.3.1 in Appendix C of the Work Plan address equipment decontamination. Both sections reference Section 3.2.1.2 of the Work Plan which is specifically written for soil vapor sampling equipment; there is no description of decontamination procedures to be used for equipment utilized during sampling of drinking water supply wells. The Permittee shall revise Section 3.6 of the Work Plan and Section 3.3.1 of Appendix C to include decontamination procedures to be used for instrumentation and sampling equipment used in both soil vapor and drinking water supply well monitoring and sampling (e.g., YSI multi-probe system). These revised sections must be submitted to the NMED for review and approval a minimum of two weeks prior to the start of work.
3. Section 3.11, Investigation-Derived Waste, states that:
   > "In addition, any excess drinking water will be disposed of via KAFB's waste water treatment system, or will be disposed of to the ground."

   The Permittee may discharge water to the KAFB waste water treatment system as long as the excess drinking water meets the KAFB waste water treatment system requirements for accepting the IDW water. Discharge of IDW water to the ground surface must follow the NMED Ground Water Quality Bureau *Kirtland AFB Development and Sampling Purge Water Decision Tree for Ground Water Restoration Activities* dated June 1, 2015 (attached).

The NMED understands that the Air Force intends for this Work Plan to be a single source for details related to work conducted under the soil vapor monitoring and drinking water supply well monitoring. As such, this Work Plan shall be updated, as necessary, to reflect changes resulting from modifications to scope and detail of identified tasks. Future revisions to the Work Plan are subject to NMED review and approval.

The Permittee shall submit revisions of sections 3.6 and 3.11 to address the conditions identified in this approval. Additionally, as stated above, the Permittee shall submit revisions to Section 3.6 and 3.3.1 of Appendix C for review and approval a minimum of two weeks prior to the start of work.

Should you have any questions regarding this letter please contact Ms. Diane Agnew at (505) 222-9555.

Sincerely,

Kathryn Roberts
Director
Resource Protection Division

KR/DM

Attachment:
Kirtland AFB Development and Sampling Purge Water Decision Tree for Ground Water Restoration Activities dated June 1, 2015

cc: Col. T. Haught, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
K. Kieling, NMED-HWB
D. McQuillan, NMED
D. Agnew, NMED-HWB

File: KAFB 2016 Bulk Fuels Facility Spill

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Cabinet Secretary - Designate

**J. C. BORREGO**
Acting Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

November 8, 2016

Wayne L. Bitner
Chief, Environmental Restoration
2000 Wyoming Blvd SE
Kirtland AFB NM 87117-5600

RE: Approval with Conditions, Request for Temporary Permission to Discharge to UIC Well KAFB-7, Kirtland Air Force Base, Bulk Fuels Facility, DP-1839

Dear Mr. Bitner:

The New Mexico Environment Department (NMED) has received Kirtland Air Force Base's (KAFB) *Request for Temporary Permission to Discharge to Underground Injection Control Well KAFB-7*, dated October 27, 2016, (Request). Hereafter, KAFB will be referred to as the "Permittee." The Request pertains to the discharge, *i.e.*, injection, of a maximum of 500 gallons per minute (gpm) of treated groundwater to groundwater extraction well KAFB-7. NMED has reviewed the Request and hereby issues an associated approval pursuant to Subsection B of 20.6.2.3106 NMAC of the New Mexico Water Quality Control Commission Regulations, with the conditions specified below. This letter supersedes the approval letter dated November 7, 2016.

The Request is associated with the Permittee's groundwater discharge permit application titled *Class V Underground Injection Control (UIC) Permit* (Application), received by NMED on December 4, 2015, and a revised application submitted September 28, 2016, proposing up to five UIC wells to support the ethylene dibromide (EDB) plume Interim Measure (IM) for the historical fuel leak from the former Bulk Fuels Facility (BFF) at KAFB.

The NMED deemed the Class V UIC permit application administratively complete on December 17, 2015, and issued an associated public notice on December 22, 2015. A draft permit is currently being prepared and this temporary permission is required to maintain hydraulic capture of the dissolved phase plume pending approval of the discharge permit. Class V groundwater remediation UIC wells (as defined in 20.6.2.5002.B(5)(d)(i) NMAC) are used to inject groundwater from a remediation project that has been treated to meet applicable groundwater

quality standards. All UIC wells must operate in conformance with appropriate and applicable ground and surface water protection requirements as required by 20.6.2.5003.B NMAC.

The water to be injected is treated groundwater from extraction wells KAFB-106228, KAFB-106233, and KAFB-106234 that has been impacted with EDB and other possible contaminants of concern (COCs). An additional extraction well (KAFB-106239) may be added during the term of this temporary permission. The extraction wells are intended to collapse the downgradient portion of the dissolved phase contaminant plume, with extracted groundwater treated prior to injection using granular activated carbon to remove all organic constituents to below the COC standards specified below. The scope of this approval for temporary discharge is limited to the authorization of the injection of sufficiently treated groundwater to KAFB-7 and is not intended to define, limit, or approve the design of the GWTS. The proposed discharge location is within the boundaries of KAFB, south of Southgate Avenue and Ordnance Street SE, in Township T9N, Range R4E, Section S6, (35° 2' 31.819" N, 106° 34' 11.447" W) Albuquerque, Bernalillo County.

Temporary permission to discharge is hereby granted for 120 days from the initiation of injection of the treated groundwater, pursuant to Subsection B of 20.6.2.3106 NMAC. NMED considers the Permittee to have shown the good cause necessary for a temporary permission to discharge.

This approval is contingent on the Permittee discharging and reporting as described in the Request and upon the following conditions:

1. Prior to initiating the discharge, the Permittee must verbally notify NMED of the date the temporary discharge is to commence.
2. Anthropogenic chemicals in injected water shall not, upon discharge, exceed the more stringent value of either New Mexico Water Quality Control Commission standards (Section 20.6.2.3103 NMAC) or the Safe Drinking Water Act maximum contaminant levels (MCLs) for drinking water. For NMWQCC listed Toxic Pollutants without 3103 standards or MCLs, injected water shall not exceed the most current Tap Water Limits in Table A-1 of the NMED Risk Assessment Guidance.
3. The COCs associated with the EDB plume and their applicable standard are as follows:
    a. Benzene: 5 µg/L
    b. Ethylene dibromide (EDB): 0.05 µg/L
    c. Ethylbenzene 700 µg/L
    d. Iron: 1 mg/L
    e. Manganese: 0.2 mg/L
    f. Toluene: 750 µg/L
    g. Total xylenes: 620 µg/L

    The Permittee shall sample the treated discharge for the COCs on a monthly basis and provide the results and analytical reports in the final report (condition 12).
4. After commencement of the temporary discharge, if a new extraction well is brought on-line the effluent from the groundwater treatment system shall be sampled daily for the first week of operation for the COCs with 24-hour analytical turnaround times. After the first week of operation, weekly samples shall be collected for the first month of operation with 5-day analytical turnaround times. After one month, and once it is determined that that constituents

in effluent samples are not exceeding the COC standards specified in Condition #3 herein, the sampling frequency may be reduced to monthly in accordance with the Permittee's Application.

5. Should any COCs be detected above applicable standards in the effluent of the GWTS, the pumping shall cease immediately and the Permittee shall implement the response and notification procedures specified in the contingency plan procedures in most recent Operations and Maintenance Plan. Should the concentrations of iron or manganese exceed applicable standards, the Permittee shall propose to NMED additional appropriate treatment methods for installation to the GWTS.
6. Injected water shall not overtop the KAFB-7 well casing liner installed in 1979.
7. Water levels will be monitored with transducers in associated monitoring wells as well as downhole in KAFB-7. System controls shall ensure shutdown of all associated components should conditions warrant.
8. The injection flow-rate monitoring, inspection, and calibration shall be performed in accordance with Application and applicable work plans.
9. No chemicals shall be placed into KAFB-7 without the prior approval of NMED.
10. Access of unauthorized personnel to both the GWTS and KAFB-7 shall be restricted.
11. NMED representatives shall be allowed to inspect any treatment and monitoring equipment, and to sample any associated effluent (See 20.6.2.3107.D);
12. A final report shall be submitted to NMED within 60 days of cessation of the temporary discharge. The report shall include the following information:
    i. Total effluent volumes from the GWTS and injection volumes to KAFB-7, with any discrepancy explained.
    ii. Monthly total injection volumes.
    iii. Effluent sampling analytical results.
    iv. Any operations and maintenance activities performed during the period.
    v. A comparison of injection flow rates and associated changes to hydraulic head.
    vi. Groundwater elevation contour maps illustrating the aquifer's response to injection.

This approval does not relieve the Permittee of the responsibility to comply with any other applicable federal, state, and/or local laws, regulations, zoning requirements, and nuisance ordinances. Also, this approval does not relieve the Permittee of liability should its operation result in actual pollution of ground or surface waters. An invoice for $150 for the temporary permission is being sent under separate cover. Payment of the Temporary Permission Fee must be received by NMED within 30 days.

If you have any questions, please contact Steve Pullen of the Ground Water Pollution Prevention Section at 505-827-2962.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

MH:smh

cc: (e-copies)
John Kieling, NMED-HWB
William Chavez, NMED-DI
Dennis McQuillan, NMED
Diane Agnew, NMED
Steve Huddleson, NMED-GWQB
Steve Pullen, NMED-GWQB

files: Reading
DP-1839

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 16, 2016

Colonel Eric H. Froehlich
Base Commander
377 ABW/CC
2000 Wyoming Blvd.SE
Kirtland AFB, NM 87117-5606

Mr. John Pike
Director, Environmental Management Services
377 MSG
2050 Wyoming Blvd. SE, Suite 116
Kirtland AFB, NM 87117-5270

**Re: BULK FUELS FACILITY EXPANSION OF THE DISSOLVED-PHASE PLUME GROUNDWATER TREATMENT SYSTEM DESIGN, REVISION 1**
**SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111**
**KIRTLAND AIR FORCE BASE**
**EPA ID#NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) received the Kirtland Air Force Base (KAFB) (the Permittee) *Work Plan for Bulk Fuels Facility Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design Revision 1* (Work Plan), dated September 20, 2016. The revised work plan addresses the conditions in the NMED conditional approval letter dated March 25, 2016 as well as additional site activities to be performed at the Bulk Fuels Facility site, including:

- Installation of External Controls for Variable Frequency Drives on Existing Skid Pumps;
- Miscellaneous Building Changes at the Groundwater Treatment Facility (GWTS); and
- GWTS Sand Filter Design.

Revisions of this Work Plan are anticipated to provide the required information on aquifer testing of existing and newly installed extraction wells; final design drawings for the pre-treatment sand filter(s); conveyance lines for future injection wells; injection well location, design, and installation; and updates to monitoring requirements in the final discharge permit for underground injection (NMED Ground Water Quality Bureau Discharge Permit [DP] 1839). The

work plan tasks, procedures, and quality control are hereby approved with the following conditions:

1. Section 3.1.4 refers to a fifth extraction well, KAFB-106240, and working group approval of the location and design of this well. The working group and NMED have not approved the location and design of a fifth extraction well. The working group decision was to wait for a year of operation of the initial four extraction wells so that site-specific data could be evaluated to determine the optimal location, pumping rate, and well design. Therefore, the proposed location and design of KAFB-106240 listed in this revision of the work plan is not approved pending additional data collection and analysis.
2. Section 3.1.4 states that extraction wells will be logged using dual resistivity, Self Potential, and gamma logging tools. The work plan must be revised to include information on what methods and practices are to be followed for borehole logging, as well as information on equipment calibration, equipment decontamination, and quality control metrics. Additionally, Appendix A must be revised to include field forms and logs to be used during geophysical borehole logging.
3. Before the start of well construction, NMED requires that the Permittee provide a PDF copy of the lithologic log on a daily basis and the proposed screen interval via email to NMED for approval, ahead of the start of well construction. The NMED will provide approval of the proposed screen within 24-hours of receipt. If the geophysical logging data is used for final design of the extraction well, NMED requests that the geophysical data be provided with the proposed screen intervals.
4. Section 3.1.5 must be revised to reflect the changes made to the groundwater monitoring well design as described in email correspondence dated October 20, 2016 (Permittee to NMED). The Permittee cites changes to the well construction design based on a *Final Constructability Review* with the contracted drilling company.
5. The proposed nested well design is approved with the understanding that adjustments may be necessary based on changed conditions in the field. NMED requests an email notification of any deviations from the submitted well design which includes the proposed well design/screen interval for NMED approval a minimum of 24 hours ahead of the start of well construction. The proposed well design can be submitted via email in PDF format. NMED requests the proposed well design be sent no sooner than 24 hours ahead of start of well construction.
6. Section 3.1.7 includes the conceptual design of sand filters for pre-treatment at the GWTS. The Permittee must provide the final sand filter design and specifications to NMED a minimum of 30 days prior to the start of construction. NMED will notify the Permittee within 2 weeks of receipt whether the design is approved or if a period of further review is required.
7. Section 3.1.7 references daily, weekly, and monthly sampling that will occur with the "shakedown and QC functions of the expanded GWTS." It is not clear how shakedown is defined and what actions will initiate the sampling frequency. Additionally, the NMED requires that the treatment system be sampled daily for one week, weekly samples for one month, and monthly samples thereafter once a new extraction well has been brought online. The Permittee shall revise the work plan to clarify shakedown and actions that will trigger the sampling frequency.

8. Section 3.1.11.1 states that 19 newly installed groundwater monitoring wells have completed the quarterly baseline sampling as of Q1 2016 and are now going to a semi-annual monitoring frequency. The Permittee has reclassified all 19 newly installed wells as "Extended Network" wells as defined in *Requested Optimization of Monitoring and Reporting, Second Phase, Bulk Fuels Facility Spill Site* dated December 9, 2015. This categorical change to reclassify the 19 wells is not approved. Eleven of the newly installed wells are in sentinel well locations and therefore meet the definition of "Downgradient Proximal Wells." The work plan and Table 3-2 shall be revised to reflect the well classification and sampling frequency below:

| Well ID | Updated Well Classification | Sample Frequency |
|---|---|---|
| KAFB-106216 | Downgradient Proximal Wells | EDB and field parameters – quarterly<br>Metals, Anions, Alkalinity – Semi-annually<br>VOCs – Annually |
| KAFB-106217 | | |
| KAFB-106218 | | |
| KAFB-106222 | | |
| KAFB-106223 | | |
| KAFB-106224 | | |
| KAFB-106231 | | |
| KAFB-106232 | | |
| KAFB-106212 | Extended Network Wells | EDB, Metals, Anions, Alkalinity – Semi-annually<br>VOCs – Annually |
| KAFB-106213 | | |
| KAFB-106214 | | |
| KAFB-106215 | | |
| KAFB-106219 | | |
| KAFB-106220 | | |
| KAFB-106221 | | |
| KAFB-106225 | | |
| KAFB-106226 | | |
| KAFB-106227 | | |
| KAFB-106230 | | |

9. The Permittee shall revise Table 3-2 to indicate that the two new groundwater monitoring well nests, KAFB-106235 and KAFB-106236, will be sampled quarterly as "Newly Installed Monitoring Wells" in accordance with the approved *Requested Optimization of Monitoring and Reporting, Second Phase, Bulk Fuels Facility Spill Site* dated December 9, 2015.
10. Section 3.2.15 states that extraction well development will follow KAFB Standard Operating Procedures and a 2004 update to the Base-Wide Plans. NMED requests that these documents be made available for reference/review.
11. Conditions defined in the discharge permit DP-1839 for underground injection at KAFB-7 and future injection wells must be incorporated and addressed in the work plan. Specifically, the work plan and the Quality Assurance Project Plan must include the

permit sampling and monitoring requirements for the GWTS; requested information on the scope, purpose, location, and design of future injection wells and the associated conveyance piping; reporting requirements; and any other conditions in DP-1839 relevant to the tasks in the work plan.

Section 3.2.16.5, *Collection of Groundwater Sampling from Monitoring Wells Not Equipped with Dedicated Pumps Using Passive Sampling Techniques* is not approved at this time, and is pending NMED review and analysis of validation study data provided in the *Quarterly Report – April-June 2016, Bulk Fuels Facility, Solid Waste Management Unit ST106/SS-11, Kirtland Air Force Base, New Mexico* dated September 23, 2016.

The NMED understands that the Air Force intends for this Work Plan to be a single source for details related to work conducted under the dissolved-phase plume collapse interim measure. As such, this Work Plan shall be updated, as necessary, to reflect changes resulting from new or modified permitting requirements; revisions to GWTS monitoring and contingency plans; and modifications to scope and detail of identified tasks. Future revisions to the work plan are subject to NMED review and approval. Please submit a revised Work Plan that addresses the conditions identified in this approval.

Should you have any questions regarding this letter please contact Ms. Diane Agnew at (505) 222-9555.

Sincerely,

Kathryn Roberts
Director
Resource Protection Division

KR/DA

cc: Col. M. Harner, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
K. Kieling, NMED-HWB
D. McQuillan, NMED
D. Agnew, NMED-HWB

File: KAFB 2016 Bulk Fuels Facility Spill

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 16, 2016

Colonel Eric H. Froehlich
Base Commander
377 ABW/CC
2000 Wyoming Blvd.SE
Kirtland AFB, NM 87117-5606

Mr. John Pike
Director, Environmental Management Services
377 MSG
2050 Wyoming Blvd. SE, Suite 116
Kirtland AFB, NM 87117-5270

**Re: BULK FUELS FACILITY EXPANSION OF THE DISSOLVED-PHASE PLUME GROUNDWATER TREATMENT SYSTEM DESIGN, REVISION 1**
**SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111**
**KIRTLAND AIR FORCE BASE**
**EPA ID#NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) received the Kirtland Air Force Base (KAFB) (the Permittee) *Work Plan for Bulk Fuels Facility Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design Revision 1* (Work Plan), dated September 20, 2016. The revised work plan addresses the conditions in the NMED conditional approval letter dated March 25, 2016 as well as additional site activities to be performed at the Bulk Fuels Facility site, including:

- Installation of External Controls for Variable Frequency Drives on Existing Skid Pumps;
- Miscellaneous Building Changes at the Groundwater Treatment Facility (GWTS); and
- GWTS Sand Filter Design.

Revisions of this Work Plan are anticipated to provide the required information on aquifer testing of existing and newly installed extraction wells; final design drawings for the pre-treatment sand filter(s); conveyance lines for future injection wells; injection well location, design, and installation; and updates to monitoring requirements in the final discharge permit for underground injection (NMED Ground Water Quality Bureau Discharge Permit [DP] 1839). The

work plan tasks, procedures, and quality control are hereby approved with the following conditions:

1. Section 3.1.4 refers to a fifth extraction well, KAFB-106240, and working group approval of the location and design of this well. The working group and NMED have not approved the location and design of a fifth extraction well. The working group decision was to wait for a year of operation of the initial four extraction wells so that site-specific data could be evaluated to determine the optimal location, pumping rate, and well design. Therefore, the proposed location and design of KAFB-106240 listed in this revision of the work plan is not approved pending additional data collection and analysis.
2. Section 3.1.4 states that extraction wells will be logged using dual resistivity, Self Potential, and gamma logging tools. The work plan must be revised to include information on what methods and practices are to be followed for borehole logging, as well as information on equipment calibration, equipment decontamination, and quality control metrics. Additionally, Appendix A must be revised to include field forms and logs to be used during geophysical borehole logging.
3. Before the start of well construction, NMED requires that the Permittee provide a PDF copy of the lithologic log on a daily basis and the proposed screen interval via email to NMED for approval, ahead of the start of well construction. The NMED will provide approval of the proposed screen within 24-hours of receipt. If the geophysical logging data is used for final design of the extraction well, NMED requests that the geophysical data be provided with the proposed screen intervals.
4. Section 3.1.5 must be revised to reflect the changes made to the groundwater monitoring well design as described in email correspondence dated October 20, 2016 (Permittee to NMED). The Permittee cites changes to the well construction design based on a *Final Constructability Review* with the contracted drilling company.
5. The proposed nested well design is approved with the understanding that adjustments may be necessary based on changed conditions in the field. NMED requests an email notification of any deviations from the submitted well design which includes the proposed well design/screen interval for NMED approval a minimum of 24 hours ahead of the start of well construction. The proposed well design can be submitted via email in PDF format. NMED requests the proposed well design be sent no sooner than 24 hours ahead of start of well construction.
6. Section 3.1.7 includes the conceptual design of sand filters for pre-treatment at the GWTS. The Permittee must provide the final sand filter design and specifications to NMED a minimum of 30 days prior to the start of construction. NMED will notify the Permittee within 2 weeks of receipt whether the design is approved or if a period of further review is required.
7. Section 3.1.7 references daily, weekly, and monthly sampling that will occur with the "shakedown and QC functions of the expanded GWTS." It is not clear how shakedown is defined and what actions will initiate the sampling frequency. Additionally, the NMED requires that the treatment system be sampled daily for one week, weekly samples for one month, and monthly samples thereafter once a new extraction well has been brought online. The Permittee shall revise the work plan to clarify shakedown and actions that will trigger the sampling frequency.

8. Section 3.1.11.1 states that 19 newly installed groundwater monitoring wells have completed the quarterly baseline sampling as of Q1 2016 and are now going to a semi-annual monitoring frequency. The Permittee has reclassified all 19 newly installed wells as "Extended Network" wells as defined in *Requested Optimization of Monitoring and Reporting, Second Phase, Bulk Fuels Facility Spill Site* dated December 9, 2015. This categorical change to reclassify the 19 wells is not approved. Eleven of the newly installed wells are in sentinel well locations and therefore meet the definition of "Downgradient Proximal Wells." The work plan and Table 3-2 shall be revised to reflect the well classification and sampling frequency below:

| Well ID | Updated Well Classification | Sample Frequency |
|---|---|---|
| KAFB-106216 | Downgradient Proximal Wells | EDB and field parameters – quarterly<br>Metals, Anions, Alkalinity – Semi-annually<br>VOCs – Annually |
| KAFB-106217 | | |
| KAFB-106218 | | |
| KAFB-106222 | | |
| KAFB-106223 | | |
| KAFB-106224 | | |
| KAFB-106231 | | |
| KAFB-106232 | | |
| KAFB-106212 | Extended Network Wells | EDB, Metals, Anions, Alkalinity – Semi-annually<br>VOCs – Annually |
| KAFB-106213 | | |
| KAFB-106214 | | |
| KAFB-106215 | | |
| KAFB-106219 | | |
| KAFB-106220 | | |
| KAFB-106221 | | |
| KAFB-106225 | | |
| KAFB-106226 | | |
| KAFB-106227 | | |
| KAFB-106230 | | |

9. The Permittee shall revise Table 3-2 to indicate that the two new groundwater monitoring well nests, KAFB-106235 and KAFB-106236, will be sampled quarterly as "Newly Installed Monitoring Wells" in accordance with the approved *Requested Optimization of Monitoring and Reporting, Second Phase, Bulk Fuels Facility Spill Site* dated December 9, 2015.
10. Section 3.2.15 states that extraction well development will follow KAFB Standard Operating Procedures and a 2004 update to the Base-Wide Plans. NMED requests that these documents be made available for reference/review.
11. Conditions defined in the discharge permit DP-1839 for underground injection at KAFB-7 and future injection wells must be incorporated and addressed in the work plan. Specifically, the work plan and the Quality Assurance Project Plan must include the

permit sampling and monitoring requirements for the GWTS; requested information on the scope, purpose, location, and design of future injection wells and the associated conveyance piping; reporting requirements; and any other conditions in DP-1839 relevant to the tasks in the work plan.

Section 3.2.16.5, *Collection of Groundwater Sampling from Monitoring Wells Not Equipped with Dedicated Pumps Using Passive Sampling Techniques* is not approved at this time, and is pending NMED review and analysis of validation study data provided in the *Quarterly Report – April-June 2016, Bulk Fuels Facility, Solid Waste Management Unit ST106/SS-11, Kirtland Air Force Base, New Mexico* dated September 23, 2016.

The NMED understands that the Air Force intends for this Work Plan to be a single source for details related to work conducted under the dissolved-phase plume collapse interim measure. As such, this Work Plan shall be updated, as necessary, to reflect changes resulting from new or modified permitting requirements; revisions to GWTS monitoring and contingency plans; and modifications to scope and detail of identified tasks. Future revisions to the work plan are subject to NMED review and approval. Please submit a revised Work Plan that addresses the conditions identified in this approval.

Should you have any questions regarding this letter please contact Ms. Diane Agnew at (505) 222-9555.

Sincerely,

Kathryn Roberts
Director
Resource Protection Division

KR/DA

cc: Col. M. Harner, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
K. Kieling, NMED-HWB
D. McQuillan, NMED
D. Agnew, NMED-HWB

File: KAFB 2016 Bulk Fuels Facility Spill

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Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

January 4, 2017

Colonel Eric. H. Froelich
Base Commander
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5606

Lieutenant Colonel Wayne J. Acosta
Civil Engineer Office
377 Civil Engineering Division
2050 Wyoming Blvd SE, Suite 116
Kirtland AFB, NM 87117-5270

**RE: TECHNICAL MEMO REQUESTING THE OPTIMIZATION OF SOIL VAPOR MONITORING, BULK FUELS FACILITY**
**SOLID WASTE MANAGEMENT UNIT ST-106/SS-111**
**KIRTLAND AIR FORCE BASE**
**EPA ID# NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froelich and Lt. Colonel Acosta:

The New Mexico Environment Department (NMED) received the Kirtland Air Force Base (KAFB) (the Permittee) *Technical Memo Requesting Optimization of Soil Vapor Monitoring*, dated November 22, 2016. The technical memo proposes optimization to the soil vapor monitoring program including:

- Optimization of sampling frequency to semi-annual for all 284 soil vapor monitoring points (SVMPs);
- Removal of Laboratory Total Petroleum Hydrocarbon (TPH) analyses with continued field measurements of air-phase petroleum hydrocarbons (HC) using a Horiba MEXA 582L;
- Removal of Laboratory Fixed Gases analyses; and
- Discontinuation of sampling for TO-15 analytes detected 20 times or fewer.

The proposed optimizations to the soil vapor monitoring program outlined in the technical memo are hereby approved.

If you have any questions regarding this letter, please contact Diane Agnew at (505) 222-9555.

Sincerely,

Kathryn Roberts
Director
Resource Protection Division

cc: Col. M. Harner, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
K. Kieling, NMED-HWB
D. McQuillan, NMED
D. Agnew, NMED-HWB

File: KAFB 2016 Bulk Fuels Facility Spill

| | |
|---|---|
| **From:** | Agnew, Diane, NMENV |
| **To:** | Jercinovic, Devon |
| **Cc:** | Simpler, Trent SPA; Adria Bodour |
| **Subject:** | Groundwater monitoring wells in downgradient plume |
| **Date:** | Tuesday, February 07, 2017 11:33:53 AM |

Hi Devon,

Per our discussions at the Hydrogeology Working Group meeting on January 24th we are proceeding with a condition in the work plan approval to transition down-gradient plume groundwater monitoring wells to passive diffusion bags. I was wondering if you have a list of the wells that would be changed to passive diffusion bags as that will help me as part of the review/approval of the change in monitoring.

Thanks in advance,
Diane

**Diane Agnew**
Hydrologist
New Mexico Environment Department
121 Tijeras Avenue, NE Ste 1000
Albuquerque, NM 87102
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Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

March 14, 2017

Dr. Adria Bodour
Program Manager, Air Force Civil Engineering Center
2000 Wyoming Blvd SE
Kirtland AFB NM 87117-5600

**RE: Approval with Conditions, Request for Temporary Permission to Discharge to UIC Well KAFB-7, Kirtland Air Force Base, Bulk Fuels Facility, DP-1839**

Dear Dr. Bodour:

The New Mexico Environment Department (NMED) received Kirtland Air Force Base's (KAFB or Permittee) *Request for Temporary Permission to Discharge to Underground Injection Control Well KAFB-7*, dated March 10, 2017 (Request). The Request pertains to the discharge, *i.e.,* injection, of treated groundwater to groundwater injection well KAFB-7. NMED has reviewed the Request and hereby issues an associated approval pursuant to Subsection B of 20.6.2.3106 NMAC of the New Mexico Water Quality Control Commission Regulations, with the conditions specified below.

The Request is associated with the Permittee's groundwater discharge permit application titled *Class V Underground Injection Control (UIC) Permit* (Application), received by NMED on December 4, 2015, and a revised application submitted September 28, 2016, proposing up to five UIC wells to support the ethylene dibromide (EDB) plume Interim Measure (IM) for the historical fuel leak from the former Bulk Fuels Facility (BFF) at KAFB. The NMED deemed the Class V UIC permit application administratively complete on December 17, 2015, and issued associated public notices for a draft discharge permit (DP-1839) on November 7, 2016, and March 3, 2017.

NMED understands this temporary permission is necessary to maintain hydraulic capture of the dissolved phase plume pending approval of DP-1839. Class V groundwater remediation UIC wells (as defined in 20.6.2.5002.B(5)(d)(i) NMAC) are used to inject groundwater from a remediation project that has been treated to meet applicable groundwater quality standards. All UIC wells must

operate in conformance with appropriate and applicable ground and surface water protection requirements as required by 20.6.2.5003.B NMAC.

The water to be injected is treated groundwater from extraction wells KAFB-106228, KAFB-106233, and KAFB-106234 that has been impacted with EDB and other possible contaminants of concern (COCs). An additional extraction well (KAFB-106239) may be added during the term of this temporary permission. The extraction wells are intended to collapse the downgradient portion of the dissolved phase contaminant plume, with extracted groundwater treated prior to injection using granular activated carbon to remove all organic constituents to below the COC standards specified below. The scope of this approval for temporary discharge is limited to the authorization of the injection of sufficiently treated groundwater to KAFB-7 and is not intended to define, limit, or approve the design of the GWTS. The proposed discharge location is within the boundaries of KAFB, south of Southgate Avenue and Ordnance Street SE, in Township T9N, Range R4E, Section S6, (35° 2' 31.819" N, 106° 34' 11.447" W) Albuquerque, Bernalillo County.

Temporary permission to discharge is hereby granted for 120 days from the date of this letter, or until July 11, 2017, pursuant to Subsection B of 20.6.2.3106 NMAC. NMED considers the Permittee to have shown the good cause necessary for a temporary permission to discharge.

This approval is contingent on the Permittee discharging and reporting as described in the Request and upon the following conditions:

1. Anthropogenic chemicals in injected water shall not, upon discharge, exceed the more stringent value of either New Mexico Water Quality Control Commission standards (Section 20.6.2.3103 NMAC) or the Safe Drinking Water Act maximum contaminant levels (MCLs) for drinking water. For NMWQCC listed Toxic Pollutants without 3103 standards or MCLs, injected water shall not exceed the most current Tap Water Limits in Table A-1 of the NMED Risk Assessment Guidance.

2. The COCs associated with the EDB plume and their applicable standard are as follows:
    a. Benzene: 5 µg/L
    b. Ethylene dibromide (EDB): 0.05 µg/L
    c. Ethylbenzene 700 µg/L
    d. Iron: 1 mg/L
    e. Manganese: 0.2 mg/L
    f. Toluene: 750 µg/L
    g. Total xylenes: 620 µg/L

    The Permittee shall sample the treated discharge for the COCs on a monthly basis and provide the results and analytical reports in the final report (Condition 11).

3. If a new extraction well is brought on-line, the effluent from the groundwater treatment system shall be sampled daily for the first week of operation for the COCs with 24-hour analytical turnaround times. After the first week of operation, weekly samples shall be collected for the first month of operation with 5-day analytical turnaround times. After one month, and once it

is determined that that constituents in effluent samples are not exceeding the COC standards specified in Condition #3 herein, the sampling frequency may be reduced to monthly in accordance with the Permittee's Application.

4. Should any COCs be detected above applicable standards in the effluent of the GWTS, the pumping shall cease immediately and the Permittee shall implement the response and notification procedures specified in the contingency plan procedures in most recent Operations and Maintenance Plan. Should the concentrations of iron or manganese exceed applicable standards, the Permittee shall propose to NMED additional appropriate treatment methods for installation to the GWTS.

5. Injected water shall not overtop the KAFB-7 well casing liner.

6. Water levels will be monitored with transducers in associated monitoring wells as well as downhole in KAFB-7. System controls shall ensure shutdown of all associated components should conditions warrant.

7. The injection flow-rate monitoring, inspection, and calibration shall be performed in accordance with Application and other applicable work plans.

8. No chemicals shall be placed into KAFB-7 without the prior approval of NMED.

9. Access of unauthorized personnel to both the GWTS and KAFB-7 shall be restricted.

10. NMED representatives shall be allowed to inspect any treatment and monitoring equipment, and to sample any associated effluent (See 20.6.2.3107.D).

11. A final report associated with the temporary discharge shall be submitted to NMED in the subsequent KAFB Bulk Fuels Facility (BFF) Quarterly Report. The report shall include the following information:
    i. Total effluent volumes from the GWTS and injection volumes to KAFB-7, with any discrepancy explained.
    ii. Monthly total injection volumes.
    iii. Effluent sampling analytical results.
    iv. Any operations and maintenance activities performed during the period.
    v. A comparison of injection flow rates and associated changes to hydraulic head.
    vi. Groundwater elevation contour maps illustrating the aquifer's response to injection.

This approval does not relieve the Permittee of the responsibility to comply with any other applicable federal, state, and/or local laws, regulations, zoning requirements, and nuisance ordinances. Also, this approval does not relieve the Permittee of liability should its operation result in actual pollution of ground or surface waters.

NMED will send an invoice for a Temporary Permission Fee of $150 under separate cover; NMED must receive payment of this Fee within 30 days.

If you have any questions, please contact Steve Pullen of the Ground Water Pollution Prevention Section at 505-827-2962.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

MH:sp

cc: (e-copies)
John Kieling, NMED-HWB
William Chavez, NMED-DI
Diane Agnew, NMED
Steve Pullen, NMED-GWQB
Kathryn Lynnes, USAF-SAF-IEE
Adria Bodour, USAF-AFCEC-CZRX

files: Reading
DP-1839

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BUTCH TONGATE
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J.C. BORREGO
Deputy Secretary

March 17, 2017

Colonel Eric H. Froehlich
377 ABW/CC
2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5000

**RE: Corrective Action Report Approval, Kirtland Air Force Base Bulk Fuels Facility, Extraction Well KAFB-106239 Development Water Release, Kirtland Air Force Base, New Mexico**

Dear Col. Froehlich:

The New Mexico Environment Department (NMED) received a Corrective Action Report (CAR) dated February 27, 2017 for the site referenced above. The Bulk Fuels Facility (BFF) project site is an identified Solid Waste Management Unit (SWMU) with the NMED Hazardous Waste Bureau. Kirtland Air Force Base (KAFB) is currently conducting interim corrective action activities at the BFF project site under a Resource Conservation and Recovery Act (RCRA) permit (EPA ID No. NM9570024423). The CAR addresses the excavation of soil following the release of approximately 150 gallons of water from an on-site storage tank containing well-development water that originated from extraction well KAFB-106239. The well development water contained dissolved constituents associated with the jet fuel leak at the BFF site. The CAR was submitted pursuant to Section 1203.A of the New Mexico Ground and Surface Water Protection Regulations (20.6.2 NMAC).

Corrective action consisted of excavation of the impacted soil, collection of pre- and post-excavation soil samples for laboratory analysis, and transportation of the soil to the KAFB landfill for disposal. Approximately two cubic yards of soil were excavated in response to the release. Six confirmatory soil samples were collected following excavation and the samples were analyzed for benzene, ethylbenzene, toluene, and total xylenes (BTEX) by EPA Method 8010B, ethylene dibromide (EDB) by EPA Method 8011, and total metals by EPA Method 6010 as well as mercury by EPA Method 7471A. No benzene, ethylbenzene, or total xylenes were detected in the confirmation soil samples. Toluene was detected in a single confirmation soil sample (SP239-006); the detected concentration was greater than the laboratory detection limit but less than the limit of quantification (J-qualified) and below the NMED residential soil screening level (SSL). Arsenic, barium, cadmium, chromium, and lead were detected in the six confirmation soil samples. The barium, cadmium, chromium, and lead detections were all J-qualified and were

below their respective NMED SSLs. Arsenic was detected in two samples (SP239-004 and SP239-006 [field duplicate]) at concentrations greater than the NMED residential SSL of 4.25 milligrams per kilogram (mg/kg); the respective concentrations are 4.78 and 4.31 mg/kg which are below the background concentration of 5.6 mg/kg for arsenic. Groundwater is at a depth of approximately 480 feet below ground surface.

This CAR is hereby approved pursuant to Section 1203.A of the New Mexico Ground and Surface Water Protection Regulations (20.6.2 NMAC) and no further action is required. Please be advised that this CAR approval does not relieve the U.S. Air Force/KAFB of its responsibility if the CAR failed to adequately assess and remediate the contamination at this site. NMED approval does not relieve the U.S. Air Force/KAFB of its responsibility for compliance with any other federal, state, or local laws and regulations, including zoning requirements and nuisance ordinances. If additional information becomes available indicating that this corrective action was inadequate, further efforts may be required in the future.

If you have questions concerning this correspondence, please contact Diane Agnew, Project Manager, at (505) 222-9555 or Justin Ball, State Cleanup Program Team Leader, at (505) 222-9522. Thank you for your cooperation in this matter.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

cc: Col. Harner, Kirtland Air Force Base, 377 ABW/CC, 2000 Wyoming Blvd SE, Kirtland AFB, NM 87117-5000
Kate Lynnes, Kirtland Air Force Base, kathryn.lynnes@us.af.mil
Adria Bodour, Kirtland Air Force Base -Air Force Civil Engineer Center, adria.bodour.1@us.af.mil
Trent Simpler, U.S. Army Corps of Engineers, Trent.Simpler@usace.army.mil
Mary Lou Leonard, Albuquerque Environmental Health Department, mleonard@cabq.gov
Rick Shean, Albuquerque Bernalillo County Water Utility Authority, flshean@abcwua.org
John Kieling, Chief, HWB
Diane Agnew, Project Manager, GWQB-ROS-SCP
Justin Ball, Team Leader, GWQB-ROS-SCP
Ali Furmall, Program Manager, GWQB-ROS
ROS Reading File

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**J.C. BORREGO**
Deputy Secretary

April 14, 2017

Colonel Eric H. Froehlich
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5000

**RE: Conditional Approval of Corrective Action Report, Kirtland Air Force Base Bulk Fuels Facility, Water/Condensate Release, Kirtland Air Force Base, New Mexico**

Dear Col. Froehlich:

The New Mexico Environment Department (NMED) received a Revised Corrective Action Report (CAR) dated March 14, 2017 for the site referenced above. The Bulk Fuels Facility (BFF) project site is an identified Solid Waste Management Unit (SWMU) with the NMED Hazardous Waste Bureau. Kirtland Air Force Base (KAFB) is currently conducting interim corrective action activities at the BFF project site under a Resource Conservation and Recovery Act (RCRA) permit (EPA ID No. NM9570024423). The CAR addresses the excavation of soil impacted by the release of approximately 30 gallons of water/condensate from a soil vapor extraction (SVE) system during dismantlement operations. The CAR was submitted pursuant to Section 1203.A of the New Mexico Ground and Surface Water Protection Regulations (20.6.2 NMAC).

Corrective action consisted of the excavation of impacted soil. Approximately one cubic yard of soil was excavated from an area of approximately 150 square feet. Three confirmatory soil samples were collected following excavation and analyzed for volatile organic compounds (VOCs) by EPA Method 8260. No VOCs were detected in the confirmation soil samples. Additionally, a sample of the water/condensate was collected and analyzed for semi-volatile organic compounds (SVOCs) by EPA Method 8270C, gasoline range organic compounds (GRO) by EPA Method 8015D, and diesel range organic compounds (DRO)/motor range oil organic compounds (MRO) by EPA Method 8015D/M. The water/condensate sample contained the following detected compounds:

*VOCs*:

- 2-Butanone: 900 micrograms per liter (µg/L);
- Acetone: 3,500 µg/L;
- Benzene: 54 µg/L;
- Toluene: 280 µg/L; and
- Xylenes: 270 µg/L.

*Petroleum Hydrocarbon Compounds:*

- GRO: 1,600 µg/L;

- DRO: 34,000 µg/L; and
- MRO: 52 µg/L.

*SVOCs:*

- Benzyl Alcohol: 270 µg/L and
- Bis(2-ethylhexyl)phthalate: 52 µg/L.

Confirmatory soil samples were not analyzed for SVOCs, GRO, or DRO/MRO. The water/condensate sample indicates the presence of SVOCs in the water/condensate released to the ground but the soil samples cannot verify the absence of SVOCs in the ground. Groundwater is at a depth of approximately 480 feet below ground surface.

This CAR is hereby conditionally approved pursuant to Section 20.6.2.1203.A NMAC. Confirmatory soil samples from the excavated area must be analyzed for SVOCs to verify removal of water/condensate released and reported to NMED within 30 days of the date of this letter.

Please be advised that this CAR approval does not relieve the U.S. Air Force/KAFB of its responsibility if the CAR failed to adequately assess and remediate the contamination at this site. NMED approval does not relieve the U.S. Air Force/KAFB of its responsibility for compliance with any other federal, state, or local laws and regulations, including zoning requirements and nuisance ordinances. If additional information becomes available indicating that this corrective action was inadequate, further efforts may be required in the future.

If you have questions concerning this correspondence, please contact Diane Agnew, Project Manager, at (505) 222-9555 or Justin Ball, Team Leader, at (505) 222-9522. Thank you for your cooperation in this matter.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

cc: Col. Harner, Kirtland Air Force Base, 377 ABW/CC, 2000 Wyoming Blvd SE, Kirtland AFB, NM 87117-5000
Kate Lynnes, Kirtland Air Force Base, kathryn.lynnes@us.af.mil
Adria Bodour, Kirtland Air Force Base -Air Force Civil Engineer Center, adria.bodour.1@us.af.mil
Trent Simpler, U.S. Army Corps of Engineers, Trent.Simpler@usace.army.mil
Bart Faris, Albuquerque Environmental Health Department, bfaris@cabq.gov
Rick Shean, Albuquerque Bernalillo County Water Utility Authority, flshean@abcwua.org
John Kieling, Chief, NMED-HWB
Diane Agnew, Project Manager, ROS-SCP
Justin Ball, Team Leader, ROS-SCP
Ali Furmall, Program Manager, ROS
ROS Reading File

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SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

BUTCH TONGATE
Cabinet Secretary
J. C. BORREGO
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

April 27, 2017

Colonel Eric. H. Froehlich
Base Commander
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5606

Lieutenant Colonel Wayne J. Acosta
Civil Engineer Office
377 Civil Engineering Division
2050 Wyoming Blvd SE, Suite 116
Kirtland AFB, NM 87117-5270

**RE: MODIFICATION REQUEST TO THE WORK PLAN FOR SOIL VAPOR AND DRINKING WATER MONITORING, AUGUST 2016**
**SOLID WASTE MANAGEMENT UNIT ST-106/SS-111**
**KIRTLAND AIR FORCE BASE**
**EPA ID# NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Lt. Colonel Acosta:

The New Mexico Environment Department ("NMED") is in receipt of the Kirtland Air Force Base ("KAFB" or the "Permittee") request for modification to *Work Plan for Soil Vapor Monitoring and Drinking Water Monitoring, August 2016* ("Work Plan"), dated April 3, 2017. The Permittee is requesting to discontinue analysis of ethylene dibromide ("EDB") in soil vapor by Method California Air Resource Board ("CARB") 422 for soil vapor monitoring events. The Summary Memorandum ("Memo") attached to the Work Plan documents lower detection limits for EDB by TO-15 in the majority of soil vapor samples. Additionally, the Memo documents that results for EDB from method CARB 422 were biased high compared to the TO-15 method. The Permittee is requesting to continue to use United States Environmental Protection Agency ("EPA") Method TO-15 for the analysis of EDB in soil vapor.

In the Memo, the Permittee identifies ten quarterly reports, submitted to NMED, that present EDB results using method CARB 422. The Resource Conservation Recovery Act Facility

Investigation ("RFI") Report submitted to NMED in January 2017 also presents EDB results from method CARB 422.

The Permittee has used the TO-15 method in conjunction with the CARB 422 method. The TO-15 method is considered more reliable than method CARB 422 after reviewing the results and data quality. Therefore, NMED is approving the request and requiring the Permittee to submit replacement pages to the RFI Report providing EDB results from the TO-15 method in the figures, tables, and text. Revisions to the previously submitted quarterly reports, and identified in the Memo, are not required. Future quarterly reports and submittals shall present the results of the TO-15 method beginning with the Second Quarter 2017 sampling event.

If you have any questions regarding this letter, please contact Diane Agnew at (505) 222-9555.

Sincerely,

JCB

Juan Carlos Borrego
Deputy Secretary
Environment Department

cc: Col. M. Harner, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
J. Kieling, NMED-HWB
D. Agnew, NMED-GWQB
S. Pullen, NMED-GWQB
M. Hunter, NMED-GWQB

File: KAFB 2017 Bulk Fuels Facility Spill

**NEW MEXICO**
**ENVIRONMENT DEPARTMENT**

*Ground Water Quality Bureau*
**1190 South St. Francis Drive (87505)**
**P.O. Box 5469, Santa Fe, New Mexico 87502-5469**
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**J.C. BORREGO**
Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

April 28, 2017

Colonel Eric H. Froelich, Commander
337 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5606

**RE: Discharge Permit Issuance, DP-1839, Kirtland Air Force Base**

Dear Col. Froelich:

The New Mexico Environment Department (NMED) issues the enclosed Discharge Permit, DP-1839, to Kirtland Air Force Base (Permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Ground and Surface Water Protection Regulations, 20.6.2 NMAC, under the authority of the New Mexico Water Quality Control Commission (WQCC).

The Discharge Permit contains terms and conditions that shall be complied with by the Permittee and are enforceable by NMED pursuant to Section 20.6.2.3104 NMAC, WQA, NMSA 1978 §74-6-5 and §74-6-10. Please be aware that this Discharge Permit may contain conditions that require the Permittee to implement operational, monitoring or closure actions by a specified deadline. Such conditions are listed at the beginning of the operational, monitoring and closure plans of this Discharge Permit.

Issuance of this Discharge Permit does not relieve the Permittee of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state, and/or local laws, regulations, zoning requirements, and nuisance ordinances.

Pursuant to Paragraph (4) of 20.6.2.3109.H NMAC, the term of the Discharge Permit shall be five years from the effective date. The term of this Discharge Permit will end on April 28, 2022.

NMED requests that the Permittee submit an application for renewal (or renewal and modification) at least 180 days prior to the date the Discharge Permit term ends.

An invoice for the Discharge Permit Fee of $1,600.00 is being sent under separate cover. Payment of the Discharge Permit Fee must be received by NMED within 30 days of the date the Discharge Permit is issued.

If you have any questions, please contact Steve Pullen at (505) 827-2962. Thank you for your cooperation during this Discharge Permit review.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

MH:sdp

Encs: Discharge Permit, DP-1839

cc (electronic w/enclosure):
J. Kieling, NMED-HWB
D. Agnew, NMED-GWQB
S. Pullen, NMED-GWQB
L. King, EPA-Region 6 (6PD-N)
S. Clark, AFCEC-CZOW
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE

file:
Read File
DP1839 File

**GROUND WATER DISCHARGE PERMIT**
**Kirtland Air Force Base**
**Underground Injection Control Wells**
**DP-1839**

## I. INTRODUCTION

The New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) issues this Discharge Permit (DP-1839) for discharges via Class V underground injection control (UIC) well(s) to Kirtland Air Force Base (KAFB or Permittee) pursuant to the New Mexico Water Quality Act (WQA), New Mexico Statutes Annotated (NMSA) 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 New Mexico Administrative Code (NMAC).

The discharge that is covered by this Discharge Permit is limited to groundwater associated with the KAFB's Bulk Fuel Facility (BFF) corrective action. The groundwater is specifically the dissolved-phase portion of the contaminant plume within the regional aquifer that is elevated above the standards of 20.6.2.3103 NMAC and investigation derived waste (IDW) that meets the design parameters of the treatment system. This groundwater is being treated as an interim measure implemented pursuant to the corrective action provisions in Part 6 of KAFB's Hazardous Waste Treatment Facility Operating Permit (HWTF Permit No. NM9570024423 – "RCRA Permit").

The NMED GWQB's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants so as to protect groundwater for present and potential future use as domestic and agricultural water supply and other uses and to protect public health. In issuing this Discharge Permit, NMED has determined that the requirements of Subsection C of 20.6.2.3109 NMAC have been or will be met. Pursuant with Section 20.6.2.3104 NMAC, it is the responsibility of the Permittee to comply with the terms and conditions of this Discharge Permit; failure to do so may result in an enforcement action(s) by NMED (20.6.2.1220 NMAC).

The NMED's Hazardous Waste Bureau (HWB) and GWQB both provide regulatory oversight at the BFF project site. The HWB regulates the evaluation and remediation of the KAFB BFF dissolved-phase plume and the associated groundwater treatment system (GWTS). The GWQB regulates the procedures that ensure treated groundwater discharged from the GWTS to UIC well(s) meet Discharge Permit requirements. This Discharge Permit is not intended to conflict or supersede the remedial actions selected for the BFF under the Resource Conservation and Recovery Act (RCRA), any implementing agreements, or the corrective action provisions of the RCRA Permit.

In the event that an associated comprehensive Work Plan or report is submitted to the NMED, NMED's HWB and GWQB will coordinate review of the comprehensive documents to ensure there is no conflict with any agency response. Associated documents will be submitted to the apparent lead bureau, copied to the other bureau, and NMED will determine which bureau will respond.

The activities which produce the discharge, the location of the discharge, and the quantity, quality, and flow characteristics of the discharge are described as follows.

The constituents of concern (CoC) within the dissolved-phase portion of the contaminant plume have been extensively investigated at the KAFB BFF under the RCRA Permit and have been narrowed to seven CoCs based on groundwater monitoring of the dissolved-phase portion of the contaminant plume within the regional aquifer. These seven CoCs have been identified as being present in untreated groundwater at concentrations potentially exceeding their respective regulatory action levels, and include ethylene dibromide (EDB), benzene, toluene, ethylbenzene, total xylenes, dissolved iron, and dissolved manganese. The CoCs and their respective effluent standards are listed in Table 2. The term "effluent standard" is used in this Discharge Permit to refer to the New Mexico Water Quality Control Commission (WQCC) groundwater standard or the federal Environmental Protection Agency (EPA) maximum contaminant level (MCL); whichever is more stringent.

Under the RCRA interim measure, contaminated groundwater is pumped from extraction wells and distributed through a piping system to a GWTS. Contaminated groundwater may also originate from groundwater monitoring or newly installed extraction wells within the dissolved-phase portion of the contaminant plume undergoing development, testing, or sampling. This liquid IDW will be transported by truck to the GWTS and added to the influent stream for treatment. This work is being completed in accordance with Work Plans approved by the NMED HWB.

The GWTS consists of a series of lead-lag granulated activated carbon (GAC) treatment vessels designed to adsorb the groundwater organic CoCs, thus reducing contaminant concentrations to at or below the effluent standards cited in Permit Condition #6 and identified in Permit Table #2. Adherence to the numeric standards will be assured by sampling the associated fluids at numerous stages of plume delineation, extraction, and treatment. Sampling associated with treatment is conducted at the influent to the GWTS, between the lead-lag GAC tanks, and at the effluent port prior to discharge to the UIC well(s). Samples collected between the lead-lag GAC tanks will notify operators when breakthrough is beginning to occur and replacement of the lead GAC tank is needed. The treatment capacity of the GWTS will be doubled in 2017 by adding a second treatment train to support the increased volume (not to exceed the permitted volume) that will be produced as additional extraction wells are installed and begin operation. Additional design changes are also planned to add additional pre-treatment and to optimize operations. This expansion/optimization of the treatment system will include two additional lead-lag GAC tanks, sand filters, and/or equipment and piping upgrades to the GWTS.

Treated effluent will be conveyed to UIC wells as defined by 20.6.2.5002.B(5)(d)(i) NMAC, including the well identified as KAFB-7 and up to four additional wells, for injection into the regional aquifer within the KAFB facility boundary. This Discharge Permit authorizes the discharge of a maximum of 1,440,000 gallons per day (gpd) via the NMED approved UIC well(s). Treated effluent is pumped from the GWTS through single-walled piping and distributed to the UIC well(s). Appendix A includes the specifics of a typical UIC well design. Final design plans will be submitted for NMED approval prior to mobilization for drilling and installation of new UIC well(s). Total discharge volume will be metered at the GWTS effluent port and at the UIC

well(s). The combined treated effluent rate of discharge employed by the Permittee will not exceed 1,000 gallons per minute (gpm), which is the maximum design treatment rate of the GWTS.

Monitoring of the extraction, treatment, and injection systems will be performed to ensure proper system operation using an automated monitoring system with a centrally located programmable logic controller (PLC) or an equivalent system. The PLC allows the operator to evaluate and control operations to maintain GWTS efficiency and effectiveness in treating the CoCs, and ensure proper discharge to the UIC well(s). Incoming data includes flowrates, pressures (*i.e.*, hydraulic head), liquid levels, groundwater levels, pump status, and alarms from the system sites. The treated effluent pumped to the UIC well(s) will be controlled via monitoring devices (*i.e.*, water level transducers and pressure head gauges) to prevent overfilling of the UIC well(s), to keep the down-hole discharge injection pipe(s) filled, and to prevent cascading of the effluent water into the UIC well(s). Effluent water will enter the UIC well casing and gravity flow through the well screen into the formation. The PLC will be programmed to alarm the operator in the event that the water level within the UIC well casing reaches the high-level set point.

The discharge, including all activities associated with the extraction and treatment of contaminated groundwater, and all associated procedures to maintain regulatory compliance with the RCRA Permit, are described in the Permittee's *Operation and Maintenance Plan* (O&M Plan). The O&M Plan is a HWB approved document that provides the procedures for management of the contaminated groundwater extraction and conveyance systems, the GWTS, and the sampling and quality assurance requirements. The O&M Plan also complies with the requirements in this Discharge Permit.

A Contingency Plan, which describes the actions that the Permittee will take in the event of a failure of the system that generates and discharges the treated effluent to a UIC well(s), is attached to this Discharge Permit at Appendix C.

KAFB is located southeast of Albuquerque in Bernalillo County. The discharge authorized by this Discharge Permit is located within the Designated UIC Area in Section 01 of T9N R3E, Sections 05, 06, 07, 08, and 09 of T9N R4E, and Section 31 of T10N R4E in the southern portion of the facility proximal to the groundwater monitoring wells associated with the existing nitrate plume (SWMU ST-105). Permit Appendix B identifies the Designated UIC Area and the current footprint of the 10 milligrams per liter (mg/L) nitrate plume within the regional aquifer. Additional UIC wells and associated infrastructure installed within the Designated UIC Area are subject to the conditions of this Discharge Permit and would not require a permit modification in accordance with 20.6.2.7(P) NMAC.

The nitrate plume is being remediated under the *Site ST-105 Stage 2 Abatement Plan for Nitrate Contaminated Water* (Abatement Plan) dated October 2007, which was approved by the GWQB Remediation Oversight Section in correspondence dated September 26, 2008. The most current version of the approved Abatement Plan may be viewed at the GWQB's web site at https://www.env.nm.gov/gwb/RemediationOversight.htm.

The regional groundwater beneath the SWMU ST-105 where KAFB-7 and the proposed UIC well(s) are located ranges from a depth of 202 to 709 feet (ft) below ground surface (bgs) with an average of 434 ft bgs and has a total dissolved solids (TDS) concentration ranging from 160 to 1200 mg/L with an average of 345 mg/L.

The application consists of the *Discharge Permit Application* (Application) submitted by the Permittee on December 4, 2015, a revised Application submitted by the Permittee on September 28, 2016, and additional information submitted as requested by NMED. The discharge shall be managed in accordance with all conditions and requirements of this Discharge Permit.

Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a discharge permit modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of groundwater quality and that more stringent requirements to protect groundwater quality may be required by NMED. Though conformance with this Discharge Permit and the RCRA Permit would result in a very low probability of there being a discharge causing groundwater contamination above applicable standards, NMED reserves the right to require remediation of such a discharge.

Issuance of this Discharge Permit does not relieve the Permittee of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state, and/or local laws, regulations, zoning requirements, and nuisance ordinances.

The following acronyms and abbreviations may be used in this Discharge Permit:

| Abbreviation | Explanation | Abbreviation | Explanation |
|---|---|---|---|
| bgs | below ground surface | MCL | maximum contaminant level |
| BFF | Bulk Fuels Facility | mg/L | milligrams per liter |
| CFR | Code of Federal Regulations | mL | milliliters |
| CoCs | constituents of concern | NMAC | New Mexico Administrative Code |
| DP | Discharge Permit | NMED | New Mexico Environment Department |
| EDB | ethylene dibromide | NMSA | New Mexico Statutes Annotated |
| EPA | United States Environmental Protection Agency | $NO_3$-N | nitrate-nitrogen |
| GAC | granulated activated carbon | O&M Plan | Operation and Maintenance Plan |
| gpd | gallons per day | PLC | programmable logic controller |
| gpm | gallons per minute | RCRA | Resource Conservation and Recovery Act |
| GWTS | groundwater treatment system | SWMU | solid waste management unit |
| GWQB | Ground Water Quality Bureau | TDS | total dissolved solids |
| ft | feet | total nitrogen | = TKN + $NO_3$-N |
| HWB | Hazardous Waste Bureau | UIC | underground injection control |
| HWTF | Hazardous Waste Treatment Facility | VOC | volatile organic carbon |
| IDW | investigation derived waste | WQA | New Mexico Water Quality Act |
| KAFB | Kirtland Air Force Base | WQCC | Water Quality Control Commission |

## II. FINDINGS

In issuing this Discharge Permit, NMED finds the following:

1. The Permittee is discharging effluent treated to at or below regulatory standards from the facility so that such effluent may move directly or indirectly into groundwater within the meaning of Section 20.6.2.3104 NMAC.

2. The Permittee is discharging effluent from the facility so that such effluent may move into groundwater of the State of New Mexico which has an existing concentration of 10,000 mg/L or less of TDS within the meaning of 20.6.2.3101(A) NMAC.

3. The discharge from the facility is not subject to any of the exemptions of Section 20.6.2.3105 NMAC.

4. The Permittee is operating UIC recharge well(s) within the meaning of 20.6.2.5002(A)(1) and 20.6.2.5002(B)(5)(d)(i) NMAC which is subject to the prohibitions listed under 20.6.2.5004(A)(4) NMAC.

## III. AUTHORIZATION TO DISCHARGE

Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the Permittee to ensure that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein.

The Permittee is authorized to discharge up to 1,440,000 gpd of treated effluent via a maximum of five UIC wells to the groundwater aquifer within the Designated UIC Area in Section 01 of T9N R3E (KAFB-7), Sections 05, 06, 07, 08, and 09 of T9N R4E, and Section 31 of T10N R4E, Bernalillo County, NM. The Designated UIC Area is identified in Appendix B. UIC wells currently authorized by this Discharge Permit are identified in Table 1. Up to four additional UIC wells may be proposed pursuant to Permit Condition #11 of this Discharge Permit.

[20.6.2.3104 NMAC, 20.6.2.3106(C) NMAC, 20.6.2.3109(C) NMAC]

## IV. CONDITIONS

The following conditions shall be complied with by the Permittee and are enforceable by NMED. Any reference in this Discharge Permit to communication with NMED shall be inferred to mean communication with the Bureau Chiefs of the GWQB and the HWB. The Permittee is authorized to discharge treated effluent subject to the following conditions.

### A. OPERATIONAL PLAN

| # | **Terms and Conditions** |
|---|---|
| 1. | The Permittee shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 2 and 4 NMAC.<br><br>[20.6.2.3109.C NMAC] |
| 2. | The Permittee shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated.<br><br>[20.6.2.3101 NMAC, 20.6.2.3103 NMAC, 20.6.2.3109(C) NMAC] |
| 3. | The Permittee shall ensure that the most recent versions of all Work Plans associated with the GWTS, the effluent conveyance pipeline, and the UIC well(s) are consistent with the requirements of this Discharge Permit.<br><br>[20.6.2.3101 NMAC, 20.6.2.3103 NMAC, 20.6.2.3109(C) NMAC] |
| 4. | The Permittee shall ensure all discharges associated with this Discharge Permit are located within the Designated UIC Area within Section 01 of T9N R3E, Sections 05, 06, 07, 08, and 09 of T9N R4E, and Section 31 of T10N R4E (See Appendix B).<br><br>[20.6.2.3101 NMAC, 20.6.2.3103 NMAC, 20.6.2.3109(C) NMAC] |
| 5. | The Permittee shall ensure that proposed UIC well locations (see Appendix B) and associated discharges are consistent with the most recent approved Stage 2 Abatement Plan for SWMU ST-105.<br><br>[20.6.2.3101 NMAC, 20.6.2.3103 NMAC, 20.6.2.3109(C) NMAC] |
| 6. | The Permittee shall ensure that discharged groundwater effluent is less than or equal to the effluent standards for all constituents referenced in 20.6.2.3103 NMAC. The term "effluent standard" is used in this Discharge Permit to refer to the New Mexico Water Quality Control Commission (WQCC) groundwater standard or the federal Environmental Protection Agency (EPA) maximum contaminant level (MCL); whichever is more stringent. |

| # | **Terms and Conditions** |
|---|---|
| | [20.6.2.3109(C) NMAC, 20.7.10.100 NMAC] |
| 7. | The Permittee shall ensure that GWTS influent chemistry is consistent with the design basis of the GWTS.<br><br>[20.6.2.3109(C) NMAC, 20.7.10.100 NMAC] |
| 8. | The Permittee is authorized to install and operate not more than five UIC wells. Authorized UIC wells are listed in Table 1.<br><br>[20.6.2.3109(C) NMAC, 20.7.10.100 NMAC] |
| 9. | The Permittee shall ensure that the total discharge from the facility via UIC wells does not exceed 1,440,000 gpd.<br><br>[20.6.2.3109(C) NMAC, 20.7.10.100 NMAC] |
| 10. | Prior to the installation of a new UIC well, the Permittee shall submit a Work Plan for NMED approval that satisfies the requirements of this Discharge Permit and the corrective action provisions at Part 6 of the RCRA Permit. This Work Plan shall, at a minimum, include the following information unless the Permittee can demonstrate to NMED that an item is not applicable or appropriate under the proposed activity or if an item has been provided separately under another submission:<br>a. A statement of purpose and need for the additional UIC well(s);<br>b. A list of groundwater monitoring wells which may be added to the monitoring program to effectively monitor performance of the new UIC well(s);<br>c. A map showing the location of the proposed UIC well(s) and the location of all associated monitoring well(s);<br>d. The geographic coordinates of the location of the UIC well(s) including township/range and section;<br>e. A map showing the location of the nearest production well;<br>f. A proposal of how the structural integrity of the treated effluent conveyance system between the GWTS and the new well will be demonstrated;<br>g. Existing data showing the depth to water and general groundwater quality at the proposed new UIC well discharge location;<br>h. A detailed description of groundwater flow modeling (numeric or analytical) predicting the effect of injection on the groundwater flow direction at the discharge location;<br>i. A detailed description of geochemical modeling (numeric or analytical) evaluating the interaction between the treated effluent and receiving groundwater. Prior to any such geochemical modeling the treated effluent and receiving groundwater shall be |

| # | **Terms and Conditions** |
|---|---|
| | tested for the analytes listed in Table 5 unless the Permittee can demonstrate that testing for a particular analyte is unnecessary;<br>j. A detailed description of the impact that the proposed injection will have on any known groundwater contaminant plumes, e.g., the nitrate plume(s) addressed in the Site ST-105 Stage 2 Abatement Plan for Nitrate Contaminated Water;<br>k. Maximum estimated monthly discharge volume to the UIC well(s);<br>l. Project schedule, including the date the discharge is to commence and the anticipated duration; and<br>m. Necessary changes to this Discharge Permit's language should the proposal be approved, *e.g.*, the listing of authorized injection wells and associated monitoring wells in Table 1.<br><br>These Work Plans shall be submitted for NMED approval at least 90 days prior to the scheduled installation of any UIC well.<br><br>Proposed changes to this Discharge Permit constituting a "permit modification" as defined at 20.6.2.7.P NMAC shall not be submitted as a Work Plan, but shall instead be submitted as a discharge permit modification request as specified at 20.6.2.3109.G NMAC. A proposal to locate a discharge at a location outside the areas specified in Permit Condition #4 shall be considered a permit modification. A proposal to locate a UIC well at a location within the Designated UIC Area shall not be considered a permit modification unless the discharge quality or quantity is modified from that permitted herein.<br><br>The Permittee shall post the approved Work Plan to the appropriate web site, *i.e.*, KAFB/Environment/Kirtland AFB Fuel Plume Project Documents.<br><br>[20.6.2.7(P) NMAC, 20.6.2.3107(A) NMAC, 20.6.2.3109(G) NMAC, 20.6.2.5003 NMAC] |
| 11. | Prior to discharging to a newly installed UIC well, the Permittee shall submit written notification to NMED stating the date that the discharge is to commence.<br><br>[20.6.2.3107(A) NMAC] |
| 12. | The Permittee shall ensure that the GWTS is secured to control access by the general public.<br><br>[20.6.2.3109(B) and(C) NMAC, NMSA 1978, §74-6-5(D)] |
| 13. | The Permittee shall maintain signs in English and Spanish (unless otherwise prohibited by KAFB policy) at appropriate locations indicating that the GWTS effluent is non-potable. Signs shall be posted at the UIC wellheads, at the GWTS, and any associated UIC well-related infrastructure. |

| # | **Terms and Conditions** |
|---|---|
| | [20.6.2.3109(B) and(C) NMAC, NMSA 1978, § 74-6-5(D)] |
| 14. | The Permittee shall ensure that the UIC well(s) include monitoring devices, *i.e.,* water level and pressure head transducers, to prevent overfilling of the well.<br><br>The Permittee shall measure the volume of treated effluent discharged to each UIC well and maintain a record of these volumes.<br><br>[20.6.2.3107 and 20.6.2.3109(C)(3)(c)(i) NMAC] |
| 15. | The Permittee shall ensure the treated effluent conveyance system, *i.e.*, piping, between the GWTS and the UIC well(s) does not leak and shall report any such leakage to the NMED GWQB in accordance with 20.6.2.1203(A) NMAC and copy the NMED HWB.<br><br>Within one year of the effective date of this Discharge Permit, the Permittee shall demonstrate the structural integrity of the treated effluent conveyance system between the GWTS and KAFB-7. Prior to testing, the Permittee shall propose for NMED approval the test method to be used. The results of the mechanical integrity testing shall be submitted to NMED within 60 days of test completion.<br><br>The Permittee shall integrity test the treated effluent conveyance system between GWTS and the UIC well(s) prior to submitting a permit renewal application.<br><br>[20.6.2.3106(C) NMAC, 20.6.2.3107(A) NMAC] |
| 16. | Prior to an initial discharge from the GWTS of treated effluent associated with a new extraction well, the Permittee shall submit documentation to NMED demonstrating that the treated effluent is at or below the effluent standards specified for the CoCs listed in Table 2.<br><br>[20.6.2.1202(A) and (C) NMAC, 20.6.2.3109(C) NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32] |

## B. MONITORING, REPORTING, AND OTHER REQUIREMENTS

| # | **Terms and Conditions** |
|---|---|
| 17. | The Permittee shall conduct the monitoring, operations, and reporting listed below. Unless otherwise specified, all periodic monitoring results or general information obtained shall be reported in the forthcoming quarterly report.<br><br>[20.6.2.3107 NMAC] |

| # | **Terms and Conditions** |
|---|---|
| 18. | Unless otherwise approved by NMED, the Permittee shall conduct sampling in accordance with standard industry practice. Sampling in accordance with the most current version of the GWTS Sampling and Analysis Plan (Appendix L of the O&M Plan), which includes sampling locations, procedures, field measurements, quality control samples, handling and custody, analytical methods, quality control, analytical validation, and reporting requirements, satisfies this Condition.<br><br>[20.6.2.3107(B) NMAC] |
| 19. | The Permittee shall submit quarterly and annual reports to NMED pursuant to the most recent NMED HWB approved Work Plans. The Permittee shall identify the portions of these reports pertaining to this Discharge Permit with a table in the reports that identifies those portions.<br><br>Quarterly reports shall be submitted as specified below unless otherwise authorized by NMED:<br><br>• January 1st through March 31st – due by June 30th<br>• April 1st through June 30th – due by September 30th<br>• July 1st through September 30th – due by December 31st<br>• October 1st through December 31st – due by March 31st<br><br>Annual reporting requirements for the previous year, i.e., January 1st through December 31st, shall be reported in the March 31st quarterly report.<br><br>[20.6.2.3107(A) NMAC] |
| 20. | The Permittee shall monitor the concentration of all CoCs listed on Table 2 in GWTS treated effluent. Associated sampling and analysis shall be performed monthly at a minimum.<br><br>When groundwater from a new extraction well is first introduced to the GWTS, CoC monitoring of the GWTS treated effluent shall occur daily for the first week of treatment, weekly for the first month of treatment, and monthly thereafter. If alterations to, or conditions at, the GWTS result in a potential impact to effluent quality, the Permittee will repeat this sampling sequence as directed by NMED.<br><br>A representative sample of GWTS influent and effluent shall be analyzed annually for the constituents identified in Table 3.<br><br>A representative sample of GWTS influent and effluent shall be analyzed every five years for the constituents identified in Table 4. The first analysis of the five-year constituent list shall occur in July 2017. Any newly identified constituents detected during the five-years sampling events will be added to the annual sampling constituent list in Table 3. |

| # | **Terms and Conditions** |
|---|---|
| | All analysis of GWTS influent and effluent shall utilize analytical methods with detection limits that are sufficiently low to allow comparison to the standards included in the above referenced state and federal regulations.<br><br>All sampling, analysis, and reporting shall comply with the most recent approved Work Plans.<br><br>[20.6.2.3107(A) NMAC and 20.6.2.3107(B) NMAC] |
| 21. | The Permittee shall report the volume of treated GWTS effluent discharged to each UIC well each quarter. This report shall include the following:<br>a. Monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each UIC well;<br>b. The totalized monthly volume of treated effluent transferred to all UIC wells; and<br>c. Monthly average, maximum, and minimum head values of injection water for each UIC well.<br><br>The Permittee shall monitor the GWTS effluent volume utilizing an effluent flow meter installed on the effluent pump skid after the GAC units. Each UIC well shall have a dedicated flow meter. Flow meters shall be inspected and calibrated in accordance with the associated manufacturer's recommendations.<br><br>[20.6.2.3107 NMAC] |
| 22. | The Permittee shall include the following results and general information in quarterly reports to NMED:<br>a. Any mechanical integrity conducted on either the GWTS or a UIC well;<br>b. Any replacement of GAC media and the associated data that initiated the decision to replace the media;<br>c. Any UIC well rehabilitation conducted;<br>d. Any malfunction, repair, or replacement of a flow meter; and<br>e. Any additional operational changes with the potential to affect the discharge.<br><br>[20.6.2.3107 NMAC] |
| 23. | The Permittee shall monitor the groundwater wells in the vicinity of KAFB-7 and in the vicinity of any newly installed UIC well(s) to determine any change to aquifer chemistry that may be the result of injection. This monitoring shall be performed annually, shall conform to the procedures of the most current approved Work Plan, and shall measure the CoCs listed in Table 2. This chemistry will be reported in the Annual Report for BFF. ST-105 Annual Report includes elevation contour mapping and analytical parameters identified in the Stage 2 Abatement Plan. |

| # | Terms and Conditions |
|---|---|
| | The Permittee shall develop a groundwater elevation contour map depicting the groundwater flow direction in the vicinity of each UIC well and report it in the ST-105 Annual Report.<br><br>If the chemical quality of the treated groundwater being injected changes over time, NMED may require the Permittee to repeat geochemical modeling (numeric or analytical) to predict the interaction between the treated effluent and receiving groundwater.<br><br>[20.6.2.3107 NMAC] |
| 24. | The Permittee shall post all reports required by this Discharge Permit on KAFB's most current web site (e.g., https://kirtlandafb.tlisolutions.com/main.aspx.)<br>[20.6.2.3107(A) NMAC] |

## C. CONTINGENCY PLAN

| # | Terms and Conditions |
|---|---|
| 25. | If the automated monitoring system records a system alarm indicating a threat condition to a UIC well, and that threat condition is confirmed, at a minimum the affected UIC well will be taken off-line. If the alarm condition is confirmed during the response investigation, the UIC well(s) will be taken off-line and the discharge to the UIC well(s) will not be resumed until the problem is identified and corrected.<br><br>[20.6.2.3107(A) NMAC] |
| 26. | In accordance with this Discharge Permit, if the discharge to a UIC well exceeds effluent standards, the Permittee shall enact the Contingency Plan (Appendix C). The Permittee may be required to remediate water pollution in accordance with the corrective action provisions in Part 6 of the RCRA Permit except as provided in 20.6.2.4105(B) NMAC.<br><br>[20.6.2.3107(A) NMAC, 20.6.2.3109(E) NMAC, 20.6.2.4105(A)(2) and (3) NMAC] |
| 27. | In the event that a release or a spill occurs that is not authorized under this Discharge Permit, the Permittee shall notify the NMED GWQB in accordance with 20.6.2.1203(A) NMAC, shall include any additional reporting requirements specified at RCRA Permit Section 1.27, and shall copy the NMED HWB. The Permittee shall also take measures to mitigate damage from the unauthorized discharge and initiate corrective actions specified in the Contingency Plan (Appendix C).<br><br>The Permittee may be required to remediate water pollution in accordance with the corrective action provisions in Part 6 of the RCRA Permit except as provided in 20.6.2.4105(B) NMAC. |

| # | **Terms and Conditions** |
|---|---|
| | Nothing in this condition shall be construed as relieving the Permittee of the obligation to comply with all requirements of Section 20.6.2.1203 NMAC.<br><br>[20.6.2.1203 NMAC, 20.6.2.4105(A)(2) and (3) NMAC] |
| 28. | In the event that information indicates that a UIC well referenced at Table 1 is not constructed in a manner consistent with its intended use or is not completed in a manner that is protective of groundwater quality, the Permittee shall submit a Work Plan to the NMED with a proposal for well rehabilitation, abandonment only, or abandonment and replacement. This Work Plan shall include a project schedule and shall be submitted for NMED approval within 120 days following confirmation of the above referenced problems. The Permittee may propose an alternate use for the well.<br><br>The UIC well requiring replacement shall be properly plugged and abandoned in accordance with Part 6.5.17.10.9 of the RCRA permit.<br><br>[20.6.2.3107(A) NMAC, 20.6.2.5005 NMAC] |
| 29. | In the event that NMED or the Permittee identifies any failures of the Application or this Discharge Permit not specifically noted herein, NMED may require the Permittee to submit a corrective action plan and a schedule for completion of corrective actions to address the failures. Additionally, NMED may require a modification to this Discharge Permit to achieve compliance with 20.6.2 NMAC.<br><br>[20.6.2.3107(A) NMAC, 20.6.2.3109(E) NMAC] |

## D. CLOSURE PLAN

| # | **Terms and Conditions** |
|---|---|
| 30. | Upon permanent cessation of discharge to a UIC well(s), the Permittee shall perform the following closure measures upon NMED approval, unless UIC well(s) and/or conveyance pipelines are needed for another use:<br>a) Cap, plug, or remove all conveyance pipelines to prevent the discharge of GWTS treated effluent to all UIC well(s);<br>b) Abandon UIC well(s) in accordance with Part 6.5.17.10.9 of the RCRA permit, which reference OSE regulation 19.27.4.30 and 31 NMAC and associated well abandonment guidance; and<br>c) Appropriately dispose of any wastes associated with UIC well plugging and abandonment.<br><br>The Permittee may, instead of abandoning a UIC well, propose an alternate use for the well. |

| | |
|---|---|
| | Upon cessation of the closure measures, the Permittee shall perform the following post-closure measures:<br>a) Continue monitoring CoCs in groundwater for at least two years, or as appropriate and in concurrence with NMED; and<br>b) Enact the release notification requirements of the Contingency Plan if groundwater standards are exceeded. The Permittee may be required to remediate water pollution in accordance with the corrective action provisions in Part 6 of the RCRA Permit except as provided in 20.6.2.4105(B) NMAC.<br><br>When all post-closure requirements have been met, the Permittee may request to terminate the Discharge Permit.<br><br>[20.6.2.3107 (A)11 NMAC] |

## E. GENERAL TERMS AND CONDITIONS

| # | Terms and Conditions |
|---|---|
| 31. | The Permittee shall maintain a written record of the following information:<br>a) Information and data used to complete the Application for this Discharge Permit;<br>b) Records of any releases or spills not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC;<br>c) Records of the operation, maintenance, and repair of all facilities/equipment used to treat, store, or inject the treated groundwater;<br>d) Facility record drawings (plans and specifications) showing the actual construction of the facility and that the construction complies with all applicable statutes, regulations, and codes including applicable Department of Defense Engineering Standards;<br>e) Copies of quarterly reports completed and/or submitted to NMED pursuant to this Discharge Permit;<br>f) The volume of treated water discharged pursuant to this Discharge Permit;<br>g) Groundwater quality and injected water quality data collected pursuant to this Discharge Permit;<br>h) Copies of construction records and well logs for all groundwater monitoring wells required to be sampled pursuant to this Discharge Permit;<br>i) Records of the maintenance, repair, replacement, or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit; and<br>j) Data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit. The following information shall be recorded and made available to NMED upon request:<br>i) The dates, location, and times of sampling or field measurements;<br>ii) The sample analysis date of each sample;<br>iii) The name and address of the laboratory, and the name of the signatory authority for the laboratory analysis; |

| # | **Terms and Conditions** |
|---|---|
| | iv) The analytical technique or method used to analyze each sample or collect each field measurement;<br>v) The results of each analysis or field measurement;<br>vi) The results of any split, spiked, duplicate or repeat sample; and<br>vii) A copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used.<br><br>The written record shall be maintained by the Permittee so that it is accessible within a reasonable time period during or following a facility inspection by NMED through the post-closure period and shall be made available to NMED upon request.<br><br>[20.6.2.3107(A) and (C) NMAC] |
| 32. | The Permittee shall allow NMED representatives to inspect the facility and its operations which are subject to this Discharge Permit and the WQCC regulations. NMED representatives may, upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which any records are located regarding this discharge permit or related discharges required to be maintained by regulations of the federal government or the WQCC.<br><br>The Permittee shall allow NMED representatives to have access to any copy of the records, and to perform assessments, sampling, or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations.<br><br>Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other local, state, or federal regulations.<br><br>[20.6.2.3107(D) NMAC, NMSA 1978, §§ 74-6-9(B) and 74-6-9(E)] |
| 33. | The Permittee shall, upon NMED's request, allow for NMED's duplication of records required by this Discharge Permit and/or furnish to NMED electronic copies of such records.<br><br>[20.6.2.3107(D) NMAC] |
| 34. | In the event the Permittee proposes a change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated, or discharged by the facility that differs from the terms and conditions in this Discharge Permit, the Permittee shall notify NMED prior to implementing such changes. The Permittee shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes. |

| # | **Terms and Conditions** |
|---|---|
| | [20.6.2.7(P) NMAC, 20.6.2.3107(C) NMAC, 20.6.2.3109(E) and (G) NMAC] |
| 35. | In the event the Permittee proposes to construct or change an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the Permittee shall submit construction plans and specifications to NMED for the proposed system or process unit prior to the commencement of construction.<br><br>In the event the Permittee implements changes to an existing system authorized by this Discharge Permit which will result in only a minor effect on the quality of the discharge, the Permittee shall report such changes (including the submission of record drawings, where applicable) in the next quarterly report to NMED.<br><br>[20.6.2.1202(A) and (C) NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32] |
| 36. | Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow properly credentialed NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information required to be maintained by this Discharge Permit or related regulation may subject the Permittee to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10(C) and 74-6-10.1, civil penalties of up to $15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to $10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the Permittee waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit.<br><br>[20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10 and 74-6-10.1] |
| 37. | No person shall:<br>1) make any false material statement, representation, certification, or omission of material fact in an application, record, report, plan, or other document filed, submitted, or required to be maintained under the WQA;<br>2) falsify, tamper with, or render inaccurate any monitoring device, method, or record required to be maintained under the WQA; or<br>3) fail to monitor, sample, or report as required by a permit issued pursuant to a state or federal law or regulation. |

| # | **Terms and Conditions** |
|---|---|
| | Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition and knows at the time of the violation that he is creating a substantial danger of death or serious bodily injury to any other person is guilty of a second degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15.<br><br>[20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10.2(A) through 74-6-10.2.F] |
| 38. | Nothing in this Discharge Permit shall be construed in any way as relieving the Permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits, or orders.<br><br>[NMSA 1978, § 74-6-5.L] |
| 39. | The Permittee may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC within thirty days of the receipt of postal notice of this Discharge Permit and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review.<br><br>[20.6.2.3112 NMAC, NMSA 1978, § 74-6-5.O] |
| 40. | Prior to the transfer of any ownership, control, or possession of this facility or any portion thereof, the Permittee shall:<br>1) notify the proposed transferee in writing of the existence of this Discharge Permit;<br>2) include a copy of this Discharge Permit with the notice; and<br>3) Deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee.<br><br>Until both ownership and possession of the facility have been transferred to the transferee, the Permittee shall continue to be responsible for any discharge from the facility.<br><br>[20.6.2.3111 NMAC] |

| # | **Terms and Conditions** |
|---|---|
| 41. | Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Single payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date. Initial installment payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date; subsequent installment payments shall be remitted to NMED no later than the anniversary of the Discharge Permit effective date.<br><br>Permit fees are associated with issuance of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the Permittee of the obligation to pay all permit fees assessed by NMED. A Permittee that ceases discharging or does not commence discharging from the facility during the term of the Discharge Permit shall pay all permit fees assessed by NMED. An approved discharge permit shall be suspended or terminated if the facility fails to remit an installment payment by its due date.<br><br>[20.6.2.3114(F) NMAC, NMSA 1978, § 74-6-5(K)] |

**TABLE 1 - Authorized Underground Injection Control Wells**

| Well Identifier | Well Location | Associated Monitoring Wells |
|---|---|---|
| KAFB-7 | Latitude 35° 02' 31.41" N<br>Longitude 106° 34' 10.79" W<br>Section 01 of T9N R3E | KAFB-0505, KAFB-0507, KAFB-0508 |

**TABLE 2 - Constituents of Concern (CoCs)**

(Constituents measured in the dissolved-phase portion of BFF plume at concentrations exceeding effluent standards.)

| Constituent | Effluent Standards |
|---|---|
| Ethylene dibromide (EDB) | 0.05 µg/L |
| Benzene | 5.0 µg/L |
| Ethylbenzene | 700 µg/L |
| Toluene | 750 µg/L |
| Total xylenes | 620 µg/L |
| Iron | 1,000 µg/L |
| Manganese | 200 µg/L |

## TABLE 3 - Annual Monitoring Constituent List

(Constituents having 20.6.2.3103 NMAC Human Health Standards and Federal Drinking Water Primary Maximum Contaminant Levels (MCLs) that have ever been detected within KAFB BFF site wells. Permittee may petition NMED to change a constituent monitoring frequency from annual to once every five years, i.e., move to Table 4, if after eight consecutive quarters of monitoring the constituent is not detected in any BFF site wells.)

| Category | Constituent |
|---|---|
| *Anions* | |
| | chloride |
| | nitrogen (nitrate-nitrite) |
| | sulfate |
| *Organic compounds* | |
| | 1,1,2,2-tetrachloroethane |
| | 1,1,2,2-tetrachloroethylene (PCE) |
| | 1,1,2-trichloroethane |
| | 1,1,2-trichloroethylene (TCE) |
| | 1,2-dichloroethane (EDC) |
| | 1,1-dichloroethane |
| | 1,2-dibromomethane |
| | bis(2-ethylhexyl) phthalate |
| | Chloroform |
| | cis-1,2-dichloroethylene |
| | Dibromochloromethane |
| | Methylene chloride |
| | Naphthalenes |
| | Phenols |
| | Pyrene |

## TABLE 4 – Five-year Monitoring Constituent List

(Constituents with 20.6.2.3103 NMAC action levels and Federal Drinking Water maximum contaminant levels (MCLs) – this list is not meant to be redundant with Table 3)

| Category | Constituent |
|---|---|
| *Anion* | |
| | Fluoride |
| *Metals* | |
| | Aluminum |
| | Antimony |
| | Arsenic |
| | Barium |
| | Beryllium |
| | Cadmium |
| | Chromium |
| | Copper |
| | Cyanide (as free Cyanide) |
| | Lead |
| | Manganese |
| | Mercury (total) |
| | Selenium |
| | Silver |
| | Thallium |
| | Uranium |
| | Zinc |
| *Organic compounds* | |
| | Dichloromethane |
| | Methyl tertiary butyl ether (MTBE) |

**TABLE 5 – Geochemical Modeling Analyte List**

| Analyte |
|---|
| Calcium |
| Magnesium |
| Sodium |
| Potassium |
| Chloride |
| Sulfate |
| Total Carbonate Alkalinity |
| Silica |
| Iron |
| Manganese |
| Dissolved Organic Carbon |
| Aluminum |
| Arsenic |
| Barium |
| Nitrate-Nitrite(N) |
| Strontium |
| Temperature (°C) |
| pH |
| ORP (mV), Eh (mV) |
| DO |
| Charge Balance (%) |

## PERMIT TERM & SIGNATURE

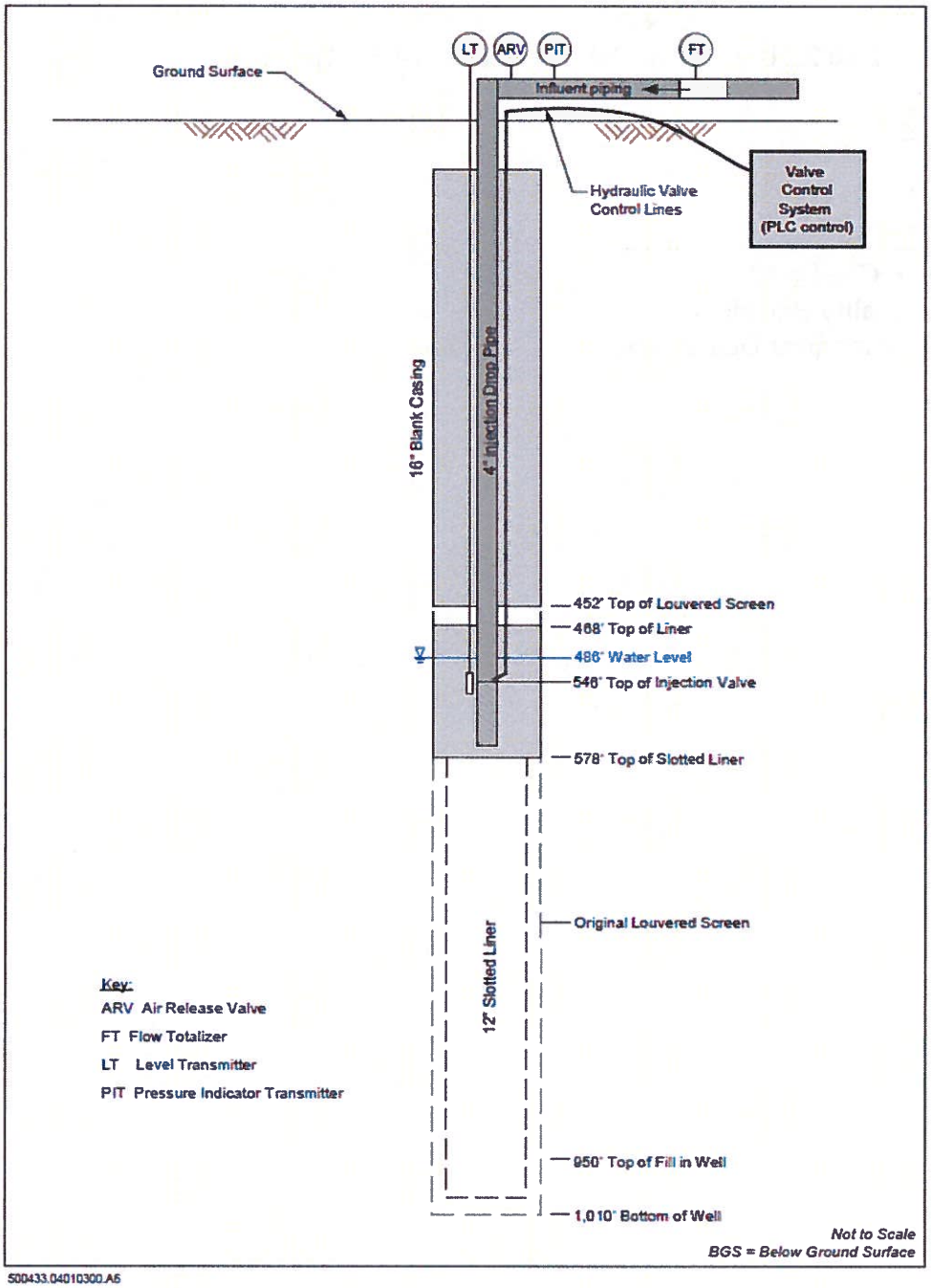
EFFECTIVE DATE: April 28, 2017
EXPIRATION DATE: April 28, 2022

[Subsection H of 20.6.2.3109 NMAC, NMSA 1978, § 74-6-5.I]

Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department

# Appendix A

## Injection Well Configuration (KAFB-7)



# Appendix B

## Designated UIC Area and Nitrate Plume

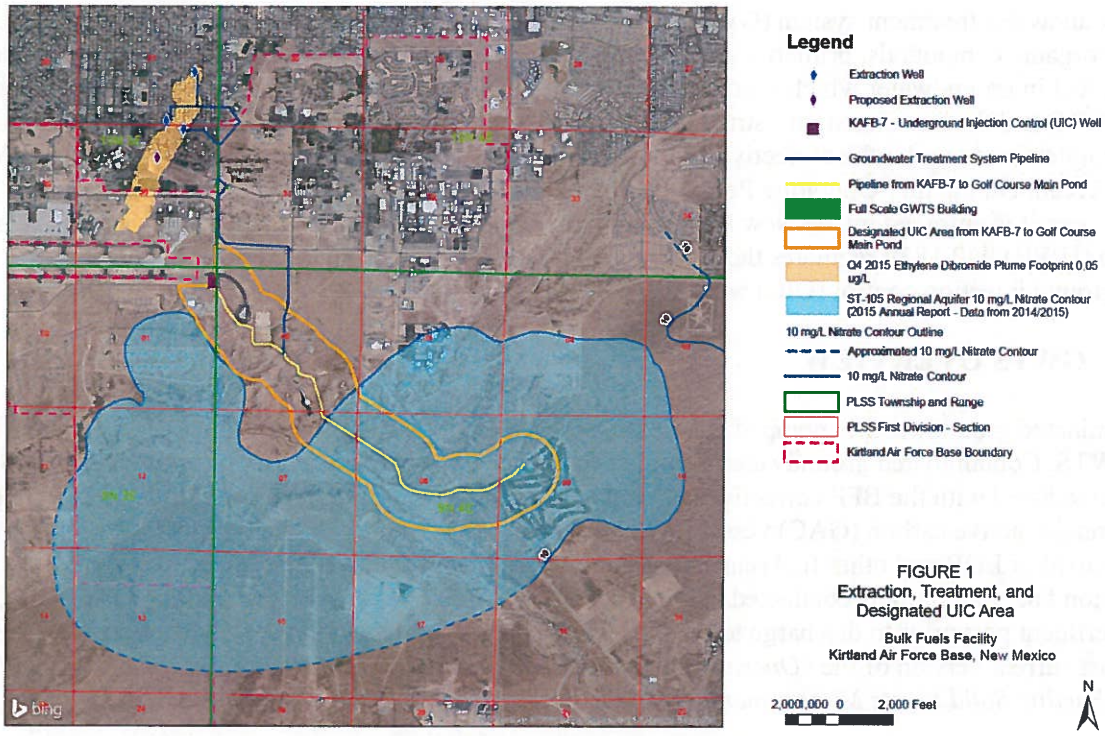



FIGURE 1
Extraction, Treatment, and Designated UIC Area
Bulk Fuels Facility
Kirtland Air Force Base, New Mexico

## Appendix C

## Contingency Plan

This Contingency Plan (Plan) has been developed for DP-1839 pursuant to 20.6.2.3107(A)(10) NMAC to cope with a failure of the Discharge Permit or system. This Plan describes the actions that Kirtland Air Force Base (AFB) will take in the event of a failure of Discharge Permit 1839 (DP-1839) or the systems that generates and discharges the treated effluent that is the subject of DP-1839. The provisions of this Plan will be carried out immediately whenever there is a release which could threaten human health or the environment.

### 1.0 BACKGROUND

The groundwater treatment system (GWTS) treats groundwater that contains low concentrations of fuel-related organic compounds, primarily ethylene dibromide (EDB), from a historic leak of aviation gasoline and jet fuel in groundwater which is conveyed to the GWTS from the extraction well network off-base. The GWTS and the associated infrastructure are part of an interim measure pump and treat system that is being implemented under the corrective action provisions in Part 6.2.2.2.12 of Kirtland AFB's Hazardous Waste Treatment Facility Operating Permit (HWTF Permit No. NM9570024423 –"RCRA Permit"). The RCRA permit is enforced by the New Mexico Environment Department's (NMED's) Hazardous Waste Bureau (HWB). DP-1839 regulates the discharge of treated effluent from the GWTS to one or more underground injection control (UIC) wells.

### 2.0 GWTS OVERVIEW

Contaminated groundwater is pumped from extraction wells and distributed through a piping system to the GWTS. Contaminated groundwater may also originate from groundwater monitoring or extraction wells associated with the BFF corrective action that are undergoing development, testing, or sampling. The granular active carbon (GAC) vessels are arranged in series to provide the contact time required for the removal of EDB and other fuel related organic compounds to achieve the effluent standards in Condition #6. Sampling is conducted at the influent to the GWTS, between the lead-lag GAC tanks, and at the effluent port prior to discharge to the UIC well(s) in accordance with the frequencies established in the most current version of the "*Operations and Maintenance Plan Groundwater Treatment System Bulk Fuels Facility Solid Waste Management Unit ST-106/SS-111*" that has been approved by the NMED HWB.

To ensure that the treated effluent meets all applicable effluent standards in DP-1839, Kirtland AFB has conservatively defined breakthrough as contaminant removal of equal to 90% of the applicable effluent standard as measured between the GAC vessels. If contaminant breakthrough occurs in the lead GAC vessel, the vessels are switched in the lead-lag position and GAC change-out is scheduled. Sampling frequency is increased for any GWTS system change (i.e., new extraction wells added to system).

Samples are collected from the GTWS effluent pipe on a monthly basis. Sampling frequency is increased for any GWTS system change (i.e., new extraction wells added to system). In the unlikely event that the GWTS cannot achieve all applicable effluent standards, the affected treatment train will be shut-down until system modifications can be approved and implemented.

The GWTS is designed and instrumented to efficiently operate 24-hours per day with minimal operator attention. A control system and operator interface panel is installed to allow remote control of the GWTS

and the extraction and injection well network. The control system includes telemetry and web access to alert operators of off-hour alarm conditions. Subcontractor staff are scheduled for on-call responses on weekends and after hours for any emergency response if alarm conditions warrant.

## 3.0 CONTINGENCY PLAN OVERVIEW

In the event of a spill, leak or unplanned release to the environment associated with the treated effluent from the GWTS or the treated effluent conveyance system, Kirtland AFB will assess possible hazards to human health and/or the environment and will implement this Plan. Possible failures of DP-1839 or the treatment system include the following:

- Treated effluent exceeds one of more of the effluent standards in Condition # 6.
- A leak from the treated effluent conveyance system.
- UIC well is not constructed in a manner consistent with its intended use or completed in a manner that is protective of groundwater.
- The automated monitoring system records a system alarm that indicates a possible threat to a UIC well.

The Permittee's planned response to each of these possible contingencies is described below.

### 3.1 Treated effluent exceeds one or more effluent standards

As discussed above, the GWTS is operated very conservatively to ensure that effluent standards are never exceeded between the two lead-lag GAC vessels. This is done to ensure that there will be no effluent standard exceedances at the effluent discharge point. In the unlikely event that treated effluent that exceeds one or more effluent standards is discharged to a permitted UIC well, the Permittee will submit a "Notification of Discharge-Removal" to the NMED Groundwater Quality Bureau (GWQB) pursuant to 20.6.2.1203(A) NMAC as required in Condition # 27. The Permittee will copy the NMED HWB on the initial and all subsequent release reports.

In the event of such an exceedance, one or both treatment trains at the GWTS will be promptly shut-down as necessary until system modifications can be approved by the NMED HWB and implemented. If the exceedance is related to concentrations of one or more contaminants in the influent, the Permittees will submit a work plan to the NMED HWB to sample one or more extraction wells. If necessary, an extraction well with an exceedance will be taken off line until the problem is addressed and the NMED HWB authorizes the well to begin pumping again. If plant adjustments are necessary, the Permittee will make the necessary changes. If the required corrective actions are considered to be outside the scope of work for plant operations, one or both treatment trains at the GWTS will be shut down and Kirtland AFB will submit a corrective action plan to the NMED HWB and copy the GWQB. One or both treatment trains at the GWTS will remain shut down pending the approval of the corrective action plan from the NMED HWB.

Following the necessary changes, the effluent groundwater will be re-tested, and the GWTS monitoring frequency will be increased as required in Discharge Permit (i.e., daily for the first week and weekly for three additional weeks). After 4 consecutive weeks of analytical results below the applicable effluent standards, monitoring will return to a monthly frequency.

If necessary, Kirtland AFB will sample groundwater associated with the affected UIC well(s) for all relevant constituents and will provide the data to the NMED HWB and GWQB. Any groundwater

corrective actions will be implemented pursuant to Part 6.2.2 of the RCRA Permit. The Permittee will copy the NMED GWQB on all documents related to the corrective action required in Condition # 26.

### 3.2 Leak from treated effluent conveyance system

As discussed above, the treated effluent meets all applicable effluent standards in Condition #6. In the event there is a leak from the treated effluent conveyance system that transports the treated effluent to a UIC well, the Permittee will conservatively submit a "Notification of Discharge-Removal" to the NMED GWQB pursuant to 20.6.2.1203(A) NMAC, which includes an estimate of the volumes released, the location of the release and the likely cause of the failure. The Permittee will copy the NMED HWB on the initial and all subsequent release reports.

If necessary, corrective actions will be implemented pursuant to Part 6.2.2 of the RCRA Permit. The Permittee will copy the NMED GWQB on all documents related to the corrective action as required in Condition # 27.

### 3.3 UIC well is not constructed in a manner consistent with its intended use or not completed in a manner that is protective of groundwater

The design of any new UIC well installed under DP-1839 is subject to approval in accordance with Condition #10. In the unlikely event that a well is not constructed or completed to meet the approved specifications and a design change has not been approved by NMED, the Permittee will submit a work plan to NMED with a proposal for well rehabilitation, abandonment only or abandonment and replacement as detailed in Condition #28.

### 3.4 The automated monitoring system records a system alarm that indicates a possible threat to a UIC well

Alarms may be activated in the UIC well either due to pressure reading in the discharge pipe or a fluid level in the well casing outside of the operating parameters. Both alarms automatically shut-down the GWTS. Operators will be notified immediately by email of the alarm condition, and proceed to investigate the alarms through the human machine interface (HMI) at the site or remote access after-hours to determine if the alarm represents actual field conditions. Corrective action and subsequent reporting will depend on the condition causing the alarm condition.

## 4.0 RELEASE NOTIFICATION REQUIREMENTS

### 4.1 External Notification Procedures

In the event of a spill, leak or unplanned release to the environment associated with the treated effluent from the GWTS or the treated effluent conveyance system, Kirtland AFB will follow the release reporting requirements in 20.6.2.1203(A) NMAC. These requirements are fundamentally equivalent to the "Twenty-Four Hour and Subsequent Reporting" requirements in Part 1.27 of the RCRA Permit. The NMED HWB will be copied on all notifications and any subsequent reports.

### 4.2 Internal Notification Procedures

GWTS Operators/Contractor staff notify the Chief of Environmental Restoration Program at Kirtland AFB by telephone and by email immediately following any accidental releases of untreated/treated water

at the GWTS, immediately upon having knowledge of a non-compliance event (i.e., sampling results), or if the GWTS operation has to be shut down continuously for more than 24 hours (may include normal maintenance, equipment repairs, or alarm investigations).

**NEW MEXICO**
**ENVIRONMENT DEPARTMENT**

*Ground Water Quality Bureau*
**1190 South St. Francis Drive (87505)**
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**BUTCH TONGATE**
Cabinet Secretary

**J.C. BORREGO**
Deputy Secretary

April 28, 2017

Colonel Eric H. Froehlich
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5000

**RE: Approval of Corrective Action Report, Kirtland Air Force Base Bulk Fuels Facility, Extraction Well KAFB-106239 Drilling Fluids Leak, Kirtland Air Force Base, New Mexico**

Dear Col. Froehlich:

The New Mexico Environment Department (NMED) received a Corrective Action Report (CAR) dated April 7, 2017 for the site referenced above. The Bulk Fuels Facility (BFF) project site is an identified Solid Waste Management Unit (SWMU) with the NMED Hazardous Waste Bureau. Kirtland Air Force Base (KAFB) is currently conducting interim corrective action activities at the BFF project site under a Resource Conservation and Recovery Act (RCRA) permit (EPA ID No. NM9570024423). The CAR addresses the removal of soil impacted by the release of approximately 50 gallons of drilling fluid (water) leaking from a lined roll-off bin. The drilling fluid that leaked is associated with extraction well KAFB-106239. The CAR was submitted pursuant to Section 1203.A of the New Mexico Ground and Surface Water Protection Regulations (20.6.2 NMAC).

Corrective action consisted of the excavation of impacted soil. Approximately one cubic yard of soil was excavated from an area of 3 to 4 feet in width and 20 feet in length. No confirmatory soil samples were collected based on the analytical results of the drilling fluid leaked to the ground surface. The drilling fluid (water) containerized in the roll-off, and leaked to the ground, was analyzed for:

- EPA Method 6010B/7470 for total metals;
- EPA Method 8260B for volatile organic compounds;
- EPA Method 8270C for semi-volatile organic compounds;
- EPA Method 9012B for reactive cyanide;
- EPA Method 9034-9030B for reactive sulfide;
- EPA Method 9040C for corrosivity by pH; and
- EPA Method 1010A/ASTM D93 for flashpoint.

All analytes were non-detect except for a single detection of chloroform which is a suspected laboratory contaminant. Groundwater is at a depth of approximately 480 feet below ground surface.

This CAR is hereby approved pursuant to Section 20.6.2.1203.A NMAC and no further action is required at this time. Please be advised that this CAR approval does not relieve the U.S. Air Force/KAFB of its responsibility if the CAR failed to adequately assess and remediate the contamination at this site. NMED approval does not relieve the U.S. Air Force/KAFB of its responsibility for compliance with any other federal, state, or local laws and regulations, including zoning requirements and nuisance ordinances. If additional information becomes available indicating that this corrective action was inadequate, further efforts may be required in the future.

If you have questions concerning this correspondence, please contact Diane Agnew, Project Manager, at (505) 222-9555 or Justin Ball, Team Leader, at (505) 222-9522. Thank you for your cooperation in this matter.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

cc: Col. Harner, Kirtland Air Force Base, 377 ABW/CC, 2000 Wyoming Blvd SE, Kirtland AFB, NM 87117-5000
Kate Lynnes, Kirtland Air Force Base, kathryn.lynnes@us.af.mil
Adria Bodour, Kirtland Air Force Base -Air Force Civil Engineer Center, adria.bodour.1@us.af.mil
Trent Simpler, U.S. Army Corps of Engineers, Trent.Simpler@usace.army.mil
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Rick Shean, Albuquerque Bernalillo County Water Utility Authority, flshean@abcwua.org
John Kieling, Chief, NMED-HWB
Diane Agnew, Project Manager, ROS-SCP
Justin Ball, Team Leader, ROS-SCP
Ali Furmall, Program Manager, ROS
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BUTCH TONGATE
Cabinet Secretary
J. C. BORREGO
Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

May 31, 2017

Colonel Eric. H. Froehlich
Base Commander
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5606

Lieutenant Colonel Wayne J. Acosta
Civil Engineer Office
377 Civil Engineering Division
2050 Wyoming Blvd SE, Suite 116
Kirtland AFB, NM 87117-5270

**RE: BULK FUELS FACILITY EXPANSION OF THE DISSOLVED-PHASE PLUME GROUNDWATER TREATMENT SYSTEM DESIGN, REVISION 2**
**SOLID WASTE MANAGEMENT UNIT ST-106/SS-111**
**KIRTLAND AIR FORCE BASE**
**EPA ID# NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froelich and Lt. Colonel Acosta:

The New Mexico Environment Department ("NMED") received the Kirtland Air Force Base ("KAFB" or "the Permittee") *Work Plan for Bulk Fuels Facility Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design Revision 2* ("Work Plan"), dated January 31, 2017. The revisions to the Work Plan address the conditions in the NMED conditional approval letter dated November 16, 2016, as well as additional site activities to be performed at the Bulk Fuels Facility ("BFF") site, including:

- Design and installation of pre-treatment sand filters at the groundwater treatment system ("GWTS");
- Equipment changes to new pump skids;
- Change to passive diffusion sampling at select groundwater monitoring wells; and
- Rehabilitation and re-development of KAFB-106233.

NMED is also in receipt of the KAFB *Technical Memorandum Maximum Concentration Limits for Kirtland BFF Groundwater Treatment System* ("Memo"), dated May 10, 2017. This Memo documents modeling completed by KAFB's contractor to determine maximum loading criteria for operations and maintenance of the groundwater treatment system, using a 6-month lead change out for the granulated activated carbon lead tank. The Memo also includes maximum concentrations of iron and manganese for the sand filter pre-treatment to be installed in Summer 2017. It is NMED's understanding that the influent criteria presented in the Memo will be part of the Operations and Maintenance Plan revisions anticipated to be formally submitted by December 31, 2017.

NMED understands that the intention of the Air Force is to make this a programmatic document and to submit revisions to add new or revised tasks. NMED's review of the current Work Plan, conducted with the Air Force, highlighted problems in making continuous revisions to an "original" document, including increased review times, inconsistencies, and a general lack of transparency. Consequently, and as discussed with the Air Force on several occasions, NMED will no longer accept revisions to the original document. Additional tasks will need to be submitted as new, stand-alone work plan documents or appendices. Changes to this Work Plan, including appendices and other Work Plan documents, made or added in response to the conditions in this letter, must be done as tracked changes and limited to the relevant text and sections.

The Work Plan, as revised, extends beyond the original scope approved in Section 1.2. Additionally, revisions to the Work Plan contain unnecessary documentation of work that has been completed which is not appropriate for a planning document such as this Work Plan. Work completed should be removed from this Work Plan and documented in the appropriate and applicable submittal document (e.g., quarterly and/or annual report, work plan, etc.).

The Work Plan tasks, procedures, and quality control are hereby approved with the following conditions:

1. The revisions to Section 3.1.5 delete what was originally proposed and approved for the groundwater monitoring well nests. Additionally, it is not clear what will be done for future groundwater monitoring wells and instead, the revised language in the Work Plan appears to document what was done for the already completed wells; the added text references specific depths and design details. This section of the Work Plan must be revised to keep the original well design language as well as details on what design will be used relative to the water table. Well completion discussion and detail should be included in the applicable and appropriate well completion report, quarterly and or annual report.

2. In Section 3.2.15.2, the Work Plan revisions indicate a deviation from KAFB Standard Operating Procedures ("SOPs") and previously approved metrics for well development specific to turbidity. The Permittee states turbidity stabilization at less than 100 NTUs is acceptable and that since "these wells were decided for passive sampling, the 0.010 slot size should minimize formation fines in these wells." There is no referenced technical justification for these statements. The Permittee must provide technical justification to

change the NTU goal for the development of groundwater monitoring well nests, particularly with respect to analysis of metals in groundwater samples using the passive sampling technique.

3. The change to the use of passive diffusion bags and dual membrane samplers is approved for the following groundwater monitoring wells located north of Ridgecrest Drive in residential areas:

| | | |
|---|---|---|
| KAFB-106015 | KAFB-106070 | KAFB-106212 |
| KAFB-106021 | KAFB-106071 | KAFB-106213 |
| KAFB-106022 | KAFB-106072 | KAFB-106214 |
| KAFB-106023 | KAFB-106085 | KAFB-106215 |
| KAFB-106025 | KAFB-106086 | KAFB-106216 |
| KAFB-106026 | KAFB-106087 | KAFB-106217 |
| KAFB-106029 | KAFB-106088 | KAFB-106218 |
| KAFB-106030 | KAFB-106089 | KAFB-106219 |
| KAFB-106031 | KAFB-106090 | KAFB-106220 |
| KAFB-106032 | KAFB-106091 | KAFB-106221 |
| KAFB-106033 | KAFB-106092 | KAFB-106222 |
| KAFB-106034 | KAFB-106093 | KAFB-106223 |
| KAFB-106035 | KAFB-106103 | KAFB-106224 |
| KAFB-106036 | KAFB-106104 | KAFB-106225 |
| KAFB-106037 | KAFB-106105 | KAFB-106226 |
| KAFB-106042 | KAFB-106106 | KAFB-106227 |
| KAFB-106043 | KAFB-106107 | KAFB-106230 |
| KAFB-106049 | KAFB-106201 | KAFB-106231 |
| KAFB-106050 | KAFB-106202 | KAFB-106232 |
| KAFB-106051 | KAFB-106203 | KAFB-106235-463 |
| KAFB-106052 | KAFB-106204 | KAFB-106235-492 |
| KAFB-106053 | KAFB-106205 | KAFB-106235-521 |
| KAFB-106054 | KAFB-106206 | KAFB-106236-461 |
| KAFB-106055 | KAFB-106207 | KAFB-106236-490 |
| KAFB-106057 | KAFB-106208 | KAFB-106236-519 |
| KAFB-106058 | KAFB-106209 | |

4. Appendix F appears to have been revised to include the actual well construction diagrams for completed groundwater monitoring well nests KAFB-106235 and KAFB-106236. These diagrams should be included in the applicable report(s). The Work Plan should only include the proposed well design for groundwater monitoring wells, as described in Section 3.1.5.

5. Appendix J includes an unidentified geophysical log. It is unclear if this is meant as an example of what may be generated by the proposed geophysical logging tools or if it is an

actual log from the BFF site. If the log is from the BFF site, it should be removed from this Work Plan and included in the applicable report. If the log is an example, the Permittee must revise Appendix J to clarify.

6. Appendix K, Section 2.5 details well inspection and equipment reinstallation at extraction well KAFB-106233 following completion of well rehabilitation and re-development. There is no indication on the planned sampling of influent at the GWTS following resumed operation of this extraction well. The Fourth Quarter 2016 Annual Report groundwater data shows a low-level detection of benzene (0.7 J µg/L) at groundwater monitoring well KAFB-106225, located approximately 1,500 feet northeast of extraction well KAFB-106233. Additionally, toluene was detected at a concentration of 2 µg/L in groundwater monitoring well KAFB-106025, located roughly 500 feet due north of the extraction well. These recent detections of benzene and toluene, combined with the existence of EPS in the rehabilitated extraction well, indicates a potential hydrocarbon source near the extraction well and therefore potentially changing groundwater concentrations for hydrocarbon constituents. The Permittee must therefore follow the sampling frequency for newly installed extraction wells which specifies daily sampling for 7 days, then weekly until the end of the first month, and monthly thereafter.

The following sections of the Work Plan are not approved:

1. Section 3.1.2 states that the Quality Assurance Project Plan ("QAPjP") has been updated to be a programmatic document, capturing "all activities performed by EA on the Kirtland BFF project under multiple contracts." The original QAPjP, as submitted and approved, was specific to "Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design" and in Section 2.3 of the approved QAPjP the scope of the document is stated to be:

   "The QAPjP addresses all the quality aspects of the following tasks: installation of groundwater extraction, observation, and monitoring wells in the area north of KAFB; installation of conveyance lines from extraction wellhead vaults to the GWTS building located on KAFB; expansion of the treatment train in the GWTS Building; and installation of regional injection wells and associated conveyance lines for discharge of the treated effluent on KAFB, as well as operation and maintenance of the GWTS and groundwater monitoring."

   NMED sent an email, dated December 8, 2016, to the Air Force stating that vadose zone activities must be submitted under a separate work plan, which includes the QAPjP. Expansion of the QAPjP to a programmatic scale to include vadose zone activities is not approved.

2. Bullet 2 in Section 3.1.7 on Page 3-11 under Treatment Train #2 testing reads:

   "Operational status of the Treatment Train #2 will be confirmed with weekly samples for one month, followed by monthly sampling specified in the O&M Plan (USACE, 2016a)."

This change is not approved. The Permittee must follow the sampling frequency for a new treatment train, as approved in Section L.2.2 of the Sampling and Analysis Plan (Appendix L of the O&M Plan [USACE, 2016]), which is daily sampling for 7 consecutive days, then sampling will occur once weekly until the end of the first month, and finally, sampling will occur once monthly thereafter.

3. Section 3.2.22 states that the Permittee will reduce data validation to 10 percent for all groundwater monitoring samples except for "newly installed wells," which will undergo 100 percent Stage 3 data validation for four quarters, and drinking water data which will maintain 100 percent Stage 3 data validation. This reduction of data validation is not approved.

If you have any questions regarding this letter, please contact Diane Agnew at (505) 222-9555.

Sincerely,

Juan Carlos Borrego
Deputy Secretary
Environment Department

cc: Col. M. Harner, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
J. Kieling, NMED-HWB
D. Agnew, NMED-GWQB
S. Pullen, NMED-GWQB
M. Hunter, NMED-GWQB

File: KAFB 2017 Bulk Fuels Facility Spill

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# APPENDIX B

# NEW ACTIVITIES SUPPORTING INFORMATION (NOT INCLUDED IN Q3)

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# APPENDIX C

# SOIL VAPOR FIELD SAMPLING RECORDS (NOT INCLUDED IN Q3)

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# APPENDIX D

# SOIL VAPOR DATA QUALITY EVALUATION REPORTS AND DATA PACKAGES (NOT INCLUDED IN Q3)

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# APPENDIX E

# GROUNDWATER MONITORING NETWORK FIELD SAMPLING DATA AND RECORDS

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# APPENDIX E-1

# PASSIVE SAMPLING EVALUATION AND SUPPLEMENTAL DATA

**Table E-1-1**
**KAFB-106157 Analytical Results, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106157 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW157-173 | | |
| | | | Sample Date: | | | | 7/17/2017 | | |
| | | | Sample Type: | | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 475 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Lab Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | **0.058** | -- | 0.019 |
| VOCs | Method SW8260C (µg/L) | 1,1,1,2-tetrachloroethane | NS | NS | 5.7 | 5.7 | ND | U | 1 |
| | | 1,1,1-trichloroethane | 60 | 200 | 8,000 | 60 | ND | U | 1 |
| | | 1,1,2,2-tetrachloroethane | 10 | NS | 0.76 | 10 | ND | U | 1 |
| | | 1,1,2-trichloroethane | 10 | 5 | 2.8 | 5 | ND | U | 1 |
| | | 1,1-dichloroethane | 25 | NS | 27 | 25 | ND | U | 1 |
| | | 1,1-dichloroethene | 5 | 7 | 280 | 5 | ND | U | 1 |
| | | 1,1-dichloropropene | NS | NS | NS | NS | ND | U | 2 |
| | | 1,2,3-trichlorobenzene | NS | NS | 7 | 7 | ND | U | 2 |
| | | 1,2,3-trichloropropane | NS | NS | 0.0075 | 5 | ND | U | 2 |
| | | 1,2,4-trichlorobenzene | NS | 70 | 11 | 70 | ND | U | 2 |
| | | 1,2,4-trimethylbenzene | NS | NS | 56 | 56 | ND | U | 2 |
| | | 1,2-Dibromo-3-chloropropane | NS | 0.2 | 0.0033 | 5 | ND | U | 4 |
| | | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 1 |
| | | 1,2-dichlorobenzene | NS | 600 | 300 | 600 | ND | U | 2 |
| | | 1,2-dichloroethane | 10 | 5 | 1.7 | 5 | 4 | J | 1 |
| | | 1,2-dichloropropane | NS | 5 | 8.25 | 5 | ND | U | 1 |
| | | 1,3,5-trimethylbenzene | NS | NS | 120 | 120 | ND | U | 2 |
| | | 1,3-dichlorobenzene | NS | 600 | 300 | 600 | ND | U | 2 |
| | | 1,3-dichloropropane | NS | NS | 370 | 370 | ND | U | 1 |
| | | 1,4-dichlorobenzene | NS | 75 | 4.8 | 75 | ND | U | 2 |
| | | 2,2-dichloropropane | NS | NS | NS | NS | ND | UJ | 1 |
| | | 2-butanone | NS | NS | 5,600 | 5,600 | ND | U | 8 |
| | | 2-chlorotoluene | NS | NS | 240 | 240 | ND | U | 2 |
| | | 2-hexanone | NS | NS | 38 | 38 | ND | U | 8 |

**Table E-1-1**
**KAFB-106157 Analytical Results, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106157 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW157-173 | | |
| | | | Sample Date: | | | | 7/17/2017 | | |
| | | | Sample Type: | | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 475 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Lab Qual** | **LOD** |
| VOCs | Method SW8260C (µg/L) | 4-chlorotoluene | NS | NS | 250 | 250 | ND | U | 2 |
| | | 4-Isopropyltoluene | NS | NS | NS | NS | ND | U | 2 |
| | | 4-methyl-2-pentanone | NS | NS | 1,200 | 1,200 | ND | U | 8 |
| | | Acetone | NS | NS | 14,000 | 14,000 | ND | U | 20 |
| | | Acrolein | NS | NS | 0.042 | 100 | ND | U | 100 |
| | | Acrylonitrile | NS | NS | 0.52 | 20 | ND | U | 10 |
| | | Benzene | 10 | 5 | 4.5 | 5 | ND | U | 1 |
| | | Bromobenzene | NS | NS | 62 | 62 | ND | U | 2 |
| | | Bromochloromethane | NS | NS | 83 | 83 | ND | U | 2 |
| | | Bromodichloromethane | NS | 80 | 1.3 | 80 | ND | U | 1 |
| | | Bromoform | NS | 80 | 33 | 80 | ND | UJ | 1 |
| | | Bromomethane | NS | NS | 7.5 | 7.5 | ND | U | 1 |
| | | Carbon disulfide | NS | NS | 810 | 810 | ND | U | 2 |
| | | Carbon tetrachloride | 10 | 5 | 4.5 | 5 | ND | UJ | 1 |
| | | Chlorobenzene | NS | 100 | 78 | 100 | ND | U | 1 |
| | | Chloroethane | NS | NS | 21,000 | 21,000 | ND | U | 1 |
| | | Chloroform | 100 | 80 | 2.2 | 80 | ND | U | 1 |
| | | Chloromethane | NS | NS | 190 | 190 | ND | U | 1 |
| | | cis-1,2-dichloroethene | NS | 70 | 36 | 70 | ND | U | 1 |
| | | cis-1,3-dichloropropene | NS | NS | 4.7 | 4.7 | ND | U | 1 |
| | | Dibromochloromethane | NS | 80 | 1.7 | 80 | ND | U | 1 |
| | | Dibromomethane | NS | NS | 8 | 8 | ND | U | 1 |
| | | Dichlorodifluoromethane | NS | NS | 200 | 200 | ND | U | 1 |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 1 |
| | | Hexachloro-1,3-butadiene | NS | NS | 1.4 | 5 | ND | U | 4 |

**Table E-1-1**
**KAFB-106157 Analytical Results, Q3 2017**

| | | | Well Location ID: | | | | KAFB-106157 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Field Sample ID: | | | | GW157-173 | | |
| | | | Sample Date: | | | | 7/17/2017 | | |
| | | | Sample Type: | | | | REG | | |
| | | | Sample Depth (ft bgs): | | | | 475 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Lab Qual** | **LOD** |
| VOCs | Method SW8260C (µg/L) | Isopropylbenzene | NS | NS | 450 | 450 | 2 | J | 2 |
| | | m,p-Xylene | NS | 10,000 | 190 | 10,000 | ND | U | 1 |
| | | Methyl tert-butyl ether | NS | NS | 140 | 140 | 0.6 | J | 1 |
| | | Methylene Chloride | 100 | 5 | 110 | 5 | ND | U | 4 |
| | | Naphthalene | 30 | NS | 1.7 | 30 | ND | U | 2 |
| | | n-Butylbenzene | NS | NS | 1000 | 1000 | ND | U | 2 |
| | | N-propylbenzene | NS | NS | 660 | 660 | ND | U | 2 |
| | | o-Xylene | NS | 10,000 | 190 | 10,000 | ND | U | 1 |
| | | Sec-butylbenzene | NS | NS | 2,000 | 2,000 | ND | U | 2 |
| | | Styrene | NS | 100 | 1,200 | 100 | ND | U | 2 |
| | | Tert-butylbenzene | NS | NS | 690 | 690 | ND | U | 2 |
| | | Tetrachloroethene | 20 | 5 | 110 | 5 | ND | U | 1 |
| | | Toluene | 750 | 1000 | 1,100 | 750 | ND | U | 1 |
| | | trans-1,2-dichloroethene | NS | 100 | 360 | 100 | ND | U | 1 |
| | | trans-1,3-dichloropropene | NS | NS | 4.7 | 4.7 | ND | U | 1 |
| | | Trichloroethene | 100 | 5 | 4.9 | 5 | ND | U | 1 |
| | | Trichlorofluoromethane | NS | NS | 1,100 | 1,100 | ND | U | 1 |
| | | Vinyl acetate | NS | NS | 410 | 410 | ND | U | 4 |
| | | Vinyl chloride | 1 | 2 | 0.19 | 1 | ND | U | 1 |
| | | Xylenes, Total | 620 | 10,000 | 190 | 620 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Iron, dissolved | 1 | NS | NS | 1 | 0.256 | J | 0.200 |
| | | Manganese, dissolved | 0.2 | NS | NS | 0.2 | **1.24** | -- | 0.0050 |

# Table E-1-1
# KAFB-106157 Analytical Results, Q3 2017

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3103A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004). For metals, the NMWQCC numeric standard applies to dissolved metals.

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2009).

[c] EPA Region 6 RSL for Tapwater (June 2017) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC standard or MCL exists for any analyte, then the project screening level will be the EPA RSL.

µg/L = microgram per liter
bgs = below-ground surface
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ft = foot/feet
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L = milligram per liter
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**
Qualifiers:
Lab Quals based on laboratory data review.
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

## Table E-1-2
## Groundwater Field Parameter Measurements for KAFB-106157

| Date | Time | Temperature (°C) | pH (S.U.) | Specific Conductivity (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) |
|---|---|---|---|---|---|---|---|
| 7/17/2017 | 0945 | 19.7 | 7.07 | 719.0 | 1.40 | 8.2 | 12.30 |
| 7/17/2017 | 1000 | 19.6 | 7.12 | 717.0 | 0.48 | -63.5 | 12.90 |
| 7/17/2017 | 1015 | 19.6 | 7.13 | 715.0 | 0.47 | -68.2 | 12.70 |
| 7/17/2017 | 1030 | 19.7 | 7.14 | 715.0 | 0.49 | -68.4 | 14.00 |
| 7/17/2017 | 1045 | 19.4 | 7.15 | 715.0 | 0.54 | -65.8 | 13.80 |
| 7/17/2017 | 1055 | 19.5 | 7.16 | 715.0 | 0.61 | -63.3 | 13.00 |
| 7/17/2017 | 1100 | 19.6 | 7.16 | 714.0 | 0.67 | -62.3 | 13.80 |
| 7/17/2017 | 1115 | 19.4 | 7.17 | 714.0 | 0.66 | -59.2 | 14.20 |
| 7/17/2017 | 1130 | 19.5 | 7.18 | 714.0 | 0.65 | -59.7 | 12.60 |
| 7/17/2017 | 1145 | 19.7 | 7.20 | 714.0 | 0.69 | -55.8 | 13.90 |
| 7/17/2017 | 1150 | 19.6 | 7.20 | 715.0 | 0.68 | -55.8 | 13.40 |
| 7/17/2017 | 1155 | 19.6 | 7.20 | 714.0 | 0.72 | -55.2 | 15.30 |
| 7/17/2017 | 1200 | 19.5 | 7.21 | 716.0 | 0.73 | -54.0 | 13.10 |

## Table E-1-2
## Groundwater Field Parameter Measurements for KAFB-106157

[a] DO measurements that were not stabilized within 10% of the three previous readings.
[b] Turbidity measurements (>10 NTU) that were not stabilized within 10% of the three previous readings.
[c] Samples collected via passive sampling methodology
°C = degree Celsius
µS/cm = microSiemens per centimeter
mg/L = milligrams per liter
DO = dissolved oxygen
ID = identification
mV = millivolt
NA = not applicable
NTU = nephelometric turbidity unit
ORP = oxidation reduction potential
Spec Cond = specific conductivity
S.U. = standard unit

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# APPENDIX E-2

# DATA QUALITY CONTROL REPORTS – GROUNDWATER SAMPLING

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

ROLE: Sample Team 1 DATE: 7/10/17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Carlos Montoya | EA - Sampler |
| Stephen Bushy | EA - Sampler |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☑ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☑ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

Sample wells KAFB-106049 KAFB-106236

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0740 | Left field trailer |
| 0747 | Arrived @ gas station for Ice |
| 0751 | Left gas Station |
| 0756 | Arrived @ field trailer |
| 0757 | Left field trailer |



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-10-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7/10/17

| 4. WORK PERFORMED (Continued) | |
|---|---|
| 0810 | Arrived @ KAFB-106049. |
| 0820 | Sampled KAFB-106049 |
| 0841 | Left KAFB-106049 |
| 0850 | Stopped @ field trailer to get correct reels |
| 0851 | Left field trailer |
| 0858 | Arrived @ KAFB-106236 |
| 0930 | Sampled KAFB-106236-519 |
| 1010 | Sampled KAFB-106236--490 |
| 1035 | Sampled KAFB-106236-461 |
| 1051 | Left KAFB-106236 |
| 1105 | Met up w/ Team 2 to collect samples |
| 1120 | Arrived @ field trailer |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Stephen Bushy
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Mashoff Initials: CM Reviewed date: 7-10-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

ROLE: Sampling Team 2 DATE: 7/10/17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Elon O'malia | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Shamim Sultana | EA - Sampler |
| Joshua Messenger | EA - Sampler |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☒ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☒ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0742 | left field office ~~for KAFB-106~~ JM |
| 0746 | Arrived @ gas station for ice |
| 0750 | left gasstation for wells KAFB-106201, -202, -203 |
| 0755 | Arrived @ wells KAFB-106201, -202, -203 |
| 0820 | Sampled KAFB-106203 — 0838 Sampled KAFB-106202 |



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-10-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-10-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| 0914 | Sampled KAFB-106201. — 0930 left KAFB-106201. |
| 0935 | Arrived @ McDonalds — 0942 left McDonalds |
| 0948 | Arrived @ KAFB-106206 — 1012 Sampled KAFB-106206 |
| 1035 | Sampled KAFB-106205 — 1102 Sampled KAFB-106204 |
| 1137 | left KAFB-106204 — 1143 Arrived @ KAFB-106208 |
| 1205 | Sampled KAFB-106208 — 1225 Sampled KAFB-106207 |
| 1236 | left KAFB-106207 — 1242 Arrived @ field office |
| | - Download truck |
| | - IDW management |
| | - Paperwork |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Name: Joshua Messenger

Signature:

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-10-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

ROLE: Sampling + Shipping DATE: 7-11-17

WEATHER:

| 1. ONSITE PERSONNEL (including subcontractors and government employees) | |
|---|---|
| Name | Organization |
| Elon O'malia | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Shanmin Sultana | EA - Sampling |
| Carlos Montoya | EA - Sampling |
| | |
| | |
| | |
| | |

| 2. OPERATING EQUIPMENT | | | | | |
|---|---|---|---|---|---|
| Team #1 | | Team #2 | | Spare | |
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☒ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

| 3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied) | |
|---|---|
| | |

| 4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors) | |
|---|---|
| 0718 | left field office for KAFB-106050 |
| 0740 | Sampled from KAFB-106050 |
| 0805 | Sampled from KAFB-106033 |
| 0825 | Sampled from KAFB-106032 |
| 0845 | Sampled from KAFB-106034 |



Reviewed by: C Montoya Initials: CM Reviewed date: 7-11-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-11-17

| 4. WORK PERFORMED (Continued) | |
|---|---|
| 0915 | Collected samples from other Team |
| 0930 | back to the field trailer - started |
| | shipping |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

SHARMIN SULTANA
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-11-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

ROLE: Sampling Team #2 DATE: 7-11-17

WEATHER:

| 1. ONSITE PERSONNEL (including subcontractors and government employees) | |
|---|---|
| Name | Organization |
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Samplers |
| Stephen Busby | EA - Samplers |
| | |
| | |
| | |
| | |

2. OPERATING EQUIPMENT

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☒ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☐ |

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

| | |
|---|---|
| 0715 | left field office. — 0725 Arrived @ KAFB-106209 |
| 0741 | Sampled KAFB-106209 — 0754 left KAFB-106209 |
| 0800 | Arrived @ KAFB-106231 — 0820 Sampled KAFB-106231 |
| 0852 | Sampled KAFB-106232 — 0905 left KAFB-106232 |
| 0909 | Arrived @ KAFB-106031 — 0925 Sampled KAFB-106031 |



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-11-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-11-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| 0945 | Sampled KAFB-106030 — 1010 Sampled KAFB-106029 |
| 1018 | left KAFB-106029 — 1023 Arrived @ KAFB-106222 |
| 1041 | Sampled KAFB-106222 — 1049 left KAFB-106222 |
| 1054 | Arrived @ McDonalds — 1059 left McDonalds |
| 1103 | Arrived @ field trailer |
| | - IDW Management |
| | - download vehicle |
| | - dropped off Stephen Busby |
| 1147 | left field office to KAFB-106231 to replace vault seal |
| 1198 | Arrived @ KAFB-106231 — 1230 replaced vault seal |
| 1240 | left KAFB-106231 — 1447 Arrived @ field office JM |
| | Pump hose broke — 1303 left field office for Action Hose JM |
| 1328 | Arrived @ Action Hose — 1352 left action hose |
| 1415 | Returned to field office — JM |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-11-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: EA Sampling Team #1 DATE: 7-12-17

WEATHER:

| 1. ONSITE PERSONNEL (including subcontractors and government employees) | |
|---|---|
| Name | Organization |
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Carlos Montoya | EA - Sampler |
| ~~Joshua Messenger~~ JM Sharmin Sultana | EA - Sampler |
| | |
| | |
| | |
| | |

| 2. OPERATING EQUIPMENT | | | | | |
|---|---|---|---|---|---|
| Team #1 | | Team #2 | | Spare | |
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☒ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

54

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0725 | left field office — 0735 Arrived @ KAFB-106051 |
| 0750 | Sampled KAFB-106051 |
| 0802 | arrived at KAFB-106235 |
| 0825 | Sampled from KAFB-106235-492 |
| * 0950 | Sampled from KAFB-106235-463 |



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-12-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

## Daily Quality Control Report – Non-Construction

DATE: 7-12-17

**4. WORK PERFORMED (Continued)**

| | |
|---|---|
| 1015 | going to collect samples from other team |
| * 0859 | sampled from KAFB-106235-SQ1 |
| 1100 | arrived at field trailer, Carlos starts slipping prep. |

**5. CONTRACTOR'S VERIFICATION:** I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above. SHARMIN SULTANA

Joshua Messenger JS
Name

Shm Sultana
Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-12-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

ROLE: EA Sample Team #2 DATE: 7-12-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Stephen Busby | EA - Sampler |
| Joshua Messenger | EA - Sampler |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☒ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☐ | MiniRAE 3000 592-915790 Wh0004 | ☒ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☒ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☒ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

JM

Pump 1807B-658 failure — replaced with pump 1807B-800 — took equipment rinsate

JM

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0736 | left ~~KAFB-106 JM~~ field office — ~~Arrived @ KAF JM~~ |
| 0740 | Arrived @ gas station — 0752 left gas station |
| 0802 | Arrived @ ~~KAFB-106~~ JM field office to get graduated cylinder |
| 0804 | left field office — 0806 Arrived @ KAFB-106009 |
| 1008 | Sampled KAFB-106009 — 1040 left KAFB-106009 |



Reviewed by: J. Messenger Initials: JM Reviewed date: 7-12-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-12-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| 1150 | Arrived @ KAFB-106013 — 1515 Sampled KAFB-106013 |
| 1403 | left KAFB-106013 — 1408 Arrived @ KAFB-106041 |
| 1414 | left KAFB-106041 — 1421 Arrived @ field office |
| | - IDW Management |
| | - Download Vehicle — Complete shipping |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. Messenger Initials: JM Reviewed date: ~~7-12-17~~ JM 7-12-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Team #1 Passive Sampling DATE: 07/17/17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferragni | EA - Site Health and Safetly Office |
| Carlos Montoya | EA |
| Elon OMalia | EA |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☒ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☒ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0736 | Left field office |
| 0742 | Arrived at KAFB-106216 |
| 0800 | Sampled KAFB-106216 |
| 0810 | Left KAFB-106216 Arrived @ KAFB-106217 |
| 0820 | Sampled KAFB-106217 |



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-17-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7/17/17

| 4. WORK PERFORMED (Continued) | |
|---|---|
| 0830 | Left KAFB-106217 for KAFB-106218. |
| 0845 | Sampled KAFB-106818 |
| 0902 | Left KAFB-106218. |
| 0915 | Break & supplies to other trucks |
| 0932 | Arrived @ KAFB-106223 |
| 0950 | Sampled KAFB-106223 |
| 1001 | Moved to KAFB-106224 |
| 1012 | Sampled KAFB-106224 |
| 1024 | Left well KAFB-106224 headed to KAFB-106157 to pick up Sample |
| 1027 | Arrived @ KAFB-106157 |
| 1037 | Sample Team not Ready to sample, headed to Field trailer to start shipping |
| 1045 | Arrived at Field Trailer<br>- Download Truck<br>- Start Shipping |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Carlos Montoya
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C Montoya Initials: CM Reviewed date: 7-17-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Sampling DATE: 7-17-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Elon O'malia | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Shanmin Sultana | EA - Sampler |
| Stephen Busby | EA - Sampler |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☒ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☐ | MiniRAE 3000 592-915790 Wh0004 | ☒ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☒ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0750 | prepared truck and leaving field office for well KAFB-106157. |
| | depth- 472.71' (well-106157) |
| 0830 | returned to field trailer to grab reel for KAFB-106157. Grabed the reel for KAFB-106226 |



Reviewed by: C Montoya Initials: CM Reviewed date: 7-17-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-17-17

| 4. WORK PERFORMED (Continued) | |
|---|---|
| 0845 | back to KAFB - 106 157 sampled |
| 1300 | back to field trailer |
| | - made shipping labels / COCs |
| | - IDW yard (drop barrels) |
| | - clean truck |
| 1410 | going out again for gauging! |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

SHARMIN CULTANA
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date: 7/17/17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

ROLE: EA Ganging (Team #3) DATE: 7-17-17

WEATHER:

1. ONSITE PERSONNEL (including subcontractors and government employees)

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Ganging Team |
| Curtis Smith | EA - Ganging Team |
| | |
| | |
| | |
| | |

2. OPERATING EQUIPMENT

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☒ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☐ |

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

| | |
|---|---|
| | Using rental water meter — 036367 |
| | Using spare MiniRAE WH0006 |
| 1200 | Saw lightning — on standby for 30 min |

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

| | |
|---|---|
| 0732 | left field office — 0743 arrived @ KAFB-106041 |
| | KAFB-106042 + KAFB-106043 — 0822 left KAFB-106043 |
| 0828 | Arrived @ KAFB-106052 — 0914 left KAFB-106052 |
| 0916 | Arrived @ KAFB-106049 — 0956 left KAFB-106049 |
| 1000 | Arrived @ KAFB-106091 — 1035 left KAFB-106091 |



Reviewed by: J. Messenger Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-17-17

| 4. WORK PERFORMED (Continued) | |
|---|---|
| 1038 | Arrived @ KAFB-106105 — 1117 left KAFB-106105 |
| 1126 | Arrived @ field office — 1152 left field office |
| 1204 | Arrived @ KAFB-106216 — 1206 Saw lightning - ordered to |
| | standby for 30 min or until told otherwise |
| 1254 | left KAFB-106216 — 1256 Arrived @ KAFB-106224 |
| 1331 | left KAFB-106224 — ~~1330~~ 1335 Arrived @ KAFB-106204 |
| 1412 | left KAFB-106204 — 1414 Arrived @ KAFB-106225 |
| 1450 | left KAFB-106025 — 1450 Arrived @ KAFB-106025 |
| 1503 | left KAFB-106025 — 1513 Arrived @ field office |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 7-18-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Greaves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Carlos Montoya | EA |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☑ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☑ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☑ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☑ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

ER 173-04

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0745 | Tim Setup to take ER |
| 0815 | Took ER |
| 0835 | Left Sample Trailer Head to KAFB-106003 |
| 0840 | Arrived @ Wells KAFB-106003, 101, 102 |
| 1402 | Left Wells KAFB106003, 101, 102, headed to Field Trailer |



Reviewed by: C. Montoya Initials: CM Reviewed date: 8-24-17

CM

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

DATE: 7-18-17

**4. WORK PERFORMED (Continued)**

| | |
|---|---|
| 1406 | Arrived @ Field Trailer, Shipped/Pack, Download Truck |

**5. CONTRACTOR'S VERIFICATION:** I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Carlos Montoya
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-26-17 CM

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Sample Team 2 DATE: 7/18/17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Stephen Bushy | EA - Sampler |
| Curtis Smith | EA - Sampler |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☑ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☑ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☑ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☑ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

Stephen Bushy

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0745 | Left field trailer |
| 0800 | Got gas for equipment |
| 0810 | Arrived @ KAFB-106005 |
| 1000 | Sampled KAFB-106005 |
| 1120 | Left KAFB-106005 |



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-24-17 CM

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7/18/17

| 4. WORK PERFORMED (Continued) | |
|---|---|
| 1130 | Arrived @ field trailer. |
| 1130 | Left to give team 1 Supplies |
| 1210 | Lunch |
| 1238 | Left field trailer to gauge wells |
| 1335 | Arrived back @ trailer to ship Samples. |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Stephen Busby
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date 7-24-17
CM

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

ROLE: Sampling / Gauging (Team #3) DATE: 7-18-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves ~~Eton O'matic~~ JM | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA- gauging |
| Shanmin Sultana | EA - gauging |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☒ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

Used rental water level meter – ~~33438~~ JM 036367

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0725 | leaving field trailer for gauging and O&M |
| 0735 | arrived @ KAFB-106231 |
| 0810 | finished gauging KAFB-106231 and 106232 |
| 0820 | returned to field office — 0825 left field office |
| 0840 | checking flags / signs on kathryn road closure |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-18-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| 0843 | arrived at KAFB-106029, 030, 031 to gauge and inspect signs/flags |
| 0925 | finished gauging well KAFB-106029, 030, 031 and arrived at KAFB-106021 |
| 0955 | finished gauging KAFB-106021, going to Continental loop. |
| 1037 | finished gauging KAFB-106221, 220. |
| 1110 | restroom- Mcdonalds, came back to well KAFB-106207 |
| 1145 | finished gauging well KAFB-106207, 208, 209 |
| 1232 | finished gauging KAFB-106058, 057, 055 |
| 1240 | back to field trailer, lunch, restroom, other teams gauging list. |
| 1300 | arrived at church lot with gauging list Team 2 |
| 1442 | finished 7 wells on church lot, now arrived at KAFB-106021, gauged. |
| 1510 | back to field trailer |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Sharmin Sultana
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 7-19-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Farlavi | EA - Site Health and Safetly Office |
| Carlos Montoya | EA |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☑ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☑ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☑ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☑ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0730 | Left Field Trailer, headed to Team 3's location (Bill Heal Park) |
| | to drop off tape safer. |
| 0740 | Arrived @ Team 3's Location |
| 0741 | Left Team 3's ~~total~~ cm location headed to Wells KAFB- |
| | 106097 & '98 |



Reviewed by: C. Montoya Initials: CM Reviewed date: ~~7-~~24-17 cm

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-19-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| 0747 | Arrived @ Wells KAFB-106097 + 98 |
| 1134 | Left Wells KAFB-106097 + 98, headed to well KAFB-106012R |
| 1145 | Arrived @ Wells KAFB-106012R |
| 1349 | Left Wells KAFB-106012R; headed to Field Trailer |
| 1353 | Arrived @ Field Trailer, Downloaded Truck, packed Samples and shipped. |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Carlos Montoya
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date: 7/24-17 CM

**Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01**

**Daily Quality Control Report – Non-Construction**

ROLE: Gauging (Team 2) DATE: 7-19-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Elon O'malia | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Shannin Sultana | EA - gauging |
| Stephen Bushy | EA - gauging |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☒ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☒ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

gauged SVM wells (Sandance)

Kept Out

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0725 | leaving field office for gauging SVM wells |
| 1325 | finished gauging SVM wells, tagging bottom of wells. 13 total wells gauged |
| 1330 | arrived at well KAFB-106211 |



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-24-17 CM

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

**Daily Quality Control Report – Non-Construction**

DATE: 7-19-17

**4. WORK PERFORMED (Continued)**

| | |
|---|---|
| 1337 | finished gauging KAFB-106211 |
| 1342 | arrived at KAFB-106229 |
| 1352 | finished gauging KAFB-106229 |
| 1410 | arrived at field trailer, prepared for shipping |

**5. CONTRACTOR'S VERIFICATION:** I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

SHARMIN SULTANA
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: C. Montoya Initials: CM Reviewed date: 7-24-17
CM

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: EA Gauging Team #3 DATE: 7-19-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Gauger |
| Curtis Smith | EA - Gauger |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☒ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☒ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

Rental Water level meter SN: 036367 — Heron Interface Meter, 036367, inoperable while gauging KAFB-106090. Switched out for WH0010

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0715 | left field office — 0729. Arrived @ KAFB-106095 |
| 0800 | left KAFB-106095 for field office — 0808 Arrived @ field office |
| 0811 | left field office — 0820 Arrived @ KAFB-106097 to drop off large security bit to Carlos — 0820 left KAFB-106097 |
| 0822 | Arrived @ KAFB-106096 — 0826 left KAFB-106096 |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

4. WORK PERFORMED (Continued) DATE: 7-19-17

| | |
|---|---|
| 0828 | Arrived @ KAFB-106010 — 0855 left KAFB-106010 |
| 0856 | Arrived @ KAFB-106067 — 0925 left KAFB-106067 |
| 0933 | Arrived @ KAFB-106065 — 1000 left KAFB-106065 |
| 1015 | Arrived @ KAFB-106019 — 1031 left KAFB-106019 |
| 1033 | Arrived @ KAFB-106039 — 1100 left KAFB-R6039 |
| 1101 | Arrived @ KAFB-106017 — 1116 left KAFB-106017 |
| 1125 | Arrived @ field office — 1144 Left field office |
| 1153 | Arrived @ KAFB-106032 — 1220 Left KAFB-106032 |
| 1230 | Arrived @ KAFB-106090 — 1255 left KAFB-106090 |
| 1307 | Met Carlos @ KAFB-106128 to take water interface |
| 1310 | left Carlos location — 1320 Returned to KAFB-106090 |
| 1349 | left KAFB-106090 — 1400 Arrived @ KAFB-106103 |
| 1426 | left KAFB-106103 — 1433 Arrived @ KAFB-106071 |
| 1500 | left KAFB-106071 — 1510 Arrived @ field office |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: _____

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 7-20-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Farrar | EA - Site Health and Safetly Office |
| Carlos Montoya | ~~EA~~ |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☒ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☒ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☒ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| ~~Solinst Water Level Meter 253054~~ #3001 | ☒ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

Truck Engine Light came on, called Dustin to inform

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 726 | Left Field Trailer headed to Wells KAFB-106004, 99, 100 |
| 742 | Arrived @ Wells KAFB-106004, 99, 100 |
| 1258 | Left Wells KAFB-106004, 99, 100, headed to ~~Field~~ Field Trailer |
| 1300 | Arrived @ Field TrailER - packed, shipped samples, Downloaded Truck |



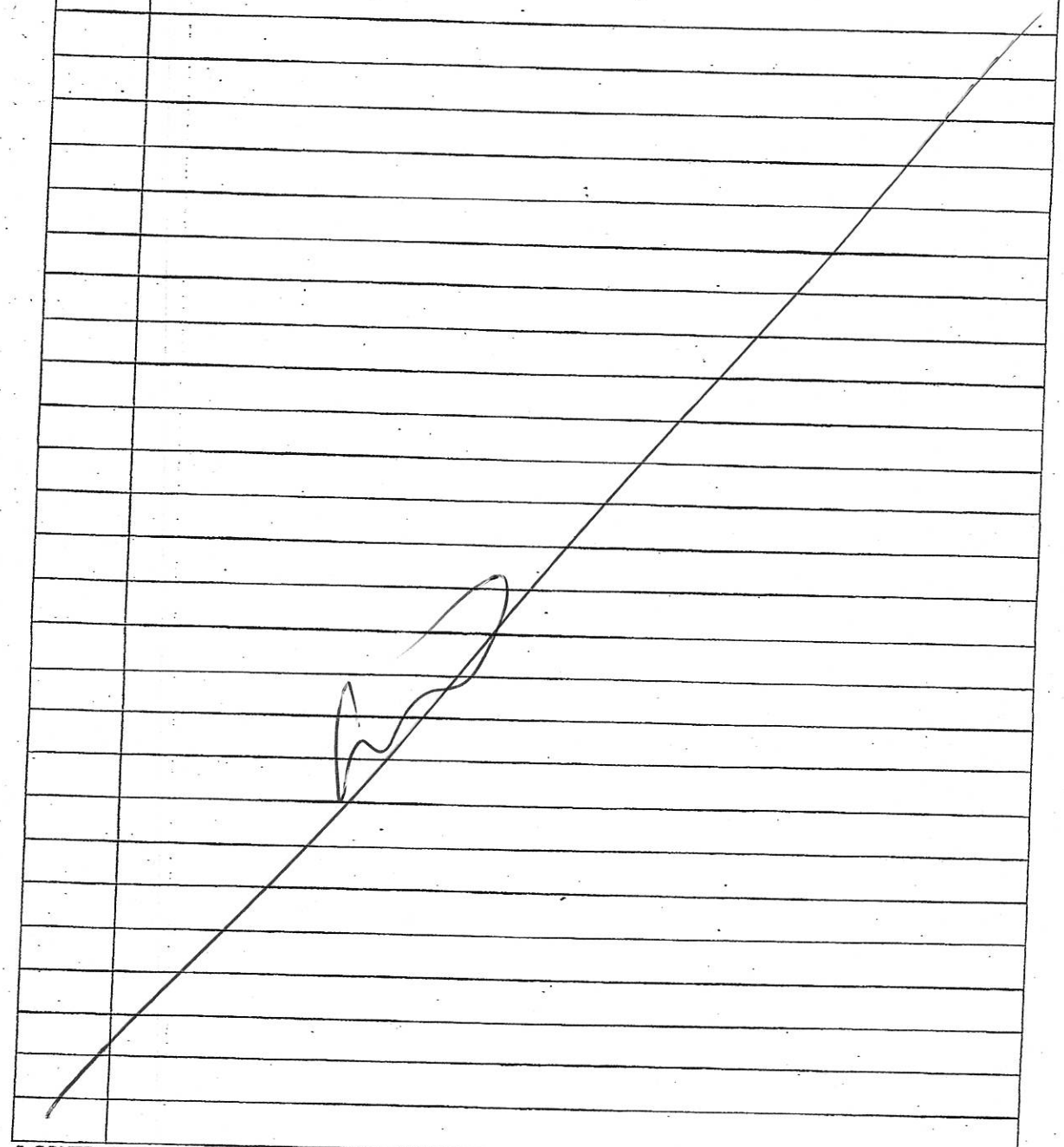
Reviewed by: C. Montoya Initials: CM Reviewed date: 7-24-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

DATE: 7-20-17

4. WORK PERFORMED (Continued)



5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Carlos Montoya
Name

Signature

EA Engineering, Science and Technology Inc., PBC

Reviewed by: con C. Montoya 7-24-17



Initials: CM

Reviewed date: 7-24-17 CM

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Gauging Team 2 DATE: 7-20-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| ~~Tim Elton Ginetta~~ Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Stephen Busby | EA - gauging |
| Shammin Sultana | EA - gauging |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☒ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☒ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

55

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0708 | Left field office for gauging wells |
| 0740 | gauged KAFB-106046, 047, 048 |
| 0835 | gauged KAFB-106059, 060, 061 |
| 0840 | back to field trailer to grab barrels for |
| | KAFB-106009 |



Reviewed by: J. Messenger Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

DATE: 7-20-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| 0850 | dropped bannels off @ KAFB-106009, arrived |
| | at well KAFB-106016 |
| 0905 | gauged KAFB-106016 |
| 0935 | finished gauging 106176, 078 going to |
| | field trailer. Stephen needs to take it. |
| | Pete will join. |
| 1010 | left field trailer with Pete for gauging |
| 1140 | finished gauging all well except for |
| | GB4J, they would open gate at 3:30 |
| 1200 | back to the field trailer, stopped at |
| | Mcdonalds for 10 min to get lunch |
| 1205 | prepared coolers for shipping. |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

SHARMIN SULTANA — Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

ROLE: EA Gauging Team #3 DATE: 7-20-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Gauger |
| Curtis Smith | EA - Gauger |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☒ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☒ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0705 | left field office — 0711 Arrived @ KAFB-106073 |
| | KAFB-106074 + KAFB-106020 — 0745 left KAFB-106020 |
| 0746 | Arrived @ VA East Parking lot — 0835 left VA parking lot |
| 0839 | Arrived @ KAFB-106085 cluster — 0908 left KAFB-106085 |
| 0915 | Arrived @ KAFB-106212 — 0927 left KAFB-106212 |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

DATE: 7-20-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| ~~0720~~ | ~~JM~~ |
| 0937 | Arrived @ KAFB-106013 |
| 1000 | Arrived @ field office — 1010 left field office |
| 1015 | Arrived @ KAFB-106015 — 1024 left KAFB-106015 |
| 1036 | Arrived @ KAFB-106201 cluster |
| 1109 | Left KAFB-106201 cluster |
| | ~~Arrived @ field office~~ JM |
| 1134 | Arrived @ field office |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-20-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Team 4- USGS DATE: 7/20/17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferraci | EA - Site Health and Safetly Office |
| Elon O'Malia | EO |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☐ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

| | |
|---|---|
| 1450 | off-load 3 50 gallon full barrels. |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

EO

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0835 | Loaded truck w/ 5 poly barrels. |
| 0840 | Left for KAFB-106009 |
| 0845 | Arrived @ KAFB-106009 |
| 0902 | 1st USGS truck arrived |
| 0908 | 2nd USGS truck arrived |



Reviewed by: _____ Initials: _____ Reviewed date: _____

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

4. WORK PERFORMED (Continued) DATE: 7/20/17

| | |
|---|---|
| 0921 | 3rd USGS truck arrives |
| 0923 | 4th USGS truck arrives |
| 0925 | Safety talk |
| 1020 | finished pump decon |
| 1035 | Began deployment |
| 1042 | Pump deployed |
| 1050 | Began purge |
| 1135 | Stopped purge, ~~Began sampling~~ 1144 EW |
| 1144 | Sampling began |
| 1259 | Finished sampling |
| 1410 | Finished second decon 1430 Left KAFB. 10600 |
| 1426 | Loaded barrels |
| 1450 | off-loaded & unpacked end of day |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Elon Omalia
Name

Elon Omalia
Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: _____ Initials: _____ Reviewed date: _____

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: EA Gauging + Well Inspection (Team #1) DATE: 7-21-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Gauger/Inspector |
| Curtis Smith | EA - Gauger/Inspector |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☒ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☒ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

KAFB-6211 DTW — no water in well

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0715 | Left field office — 0723 Arrived @ KAFB-106075 |
| 0736 | Left KAFB-106075 — 0748 Arrived @ field office |
| 0811 | Left field office — 0814 Arrived @ CB&I yard |
| 0820 | Entered CB&I yard — 0844 left CB&I yard |
| 0856 | Arrived @ KAFB-106075 — 0945 Left KAFB-106075 + VA lot |



Reviewed by: J. MESSENGER Initials: JM Reviewed date: 7-21-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-21-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| 0956 | Arrived @ field office — 1003 left field office |
| 1012 | Arrived @ Well #211 to check for water |
| 1038 | left well #211 — 1043 Arrived @ KAFB-106069 cluster |
| 1125 | left KAFB-106069 cluster — 1134 Arrived @ field trailer |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-21-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

ROLE: Well Inspector Team #1 DATE: 7-24-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Fenn | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Well Inspector |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☒ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☒ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

Used Wh0001a to gauge KAFB-106235+236

236 – 462 : 444.22'

236 – 490 : 444.24'

236 – 519 : 444.29'

235 – 463 : 444.45'

235 – 492 : 444.41'

235 – 521 : 444.47'

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0730 | left field office — 0734 Arrived @ KAFB-106311 |
| 0744 | left KAFB-106311 — 0745 Arrived @ KAFB-106016 |
| 0752 | left KAFB-106016 — 0754 Arrived @ KAFB-106045 cluster |
| 0818 | left KAFB-106045 cluster — 0824 Arrived @ field trailer to |
| | let Crystal Springs guys in + swap empties for fulls |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-24-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-24-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| 0835 | Left field office — 0844 Arrived @ KAFB-106059 |
| 0855 | Left KAFB-106059 — 0858 Entered BFF |
| 0859 | Arrived @ KAFB-106001 — 0905 Left KAFB-106001 — 0906 Arrived @ KAFB-106006 |
| 0915 | left KAFB-106006 — 0916 Arrived @ KAFB-106007 — 0922 left KAFB-106007 |
| 0925 | Left BFF — 0926 Arrived @ KAFB-106008 — 0931 Left KAFB-106008 |
| 0934 | Arrived @ KAFB-106003 cluster — 0956 Left KAFB-106003 cluster |
| 0957 | Arrived @ KAFB-106002 — 1006 Left KAFB-106002 — 1007 Arrived @ KAFB-106012R |
| 1012 | Left KAFB-106012R — 1014 Arrived @ KAFB-106005 — 1021 Left KAFB-106005 |
| 1027 | Arrived @ KAFB-106009 — 1028 Left KAFB-106009 — 1029 Arrived @ KAFB-106081 cluster |
| 1049 | Left KAFB-106081 cluster — 1052 Arrived @ field office — picked up Pete F. |
| 1115 ~~1105~~ JM | Left field office — 1129 Arrived @ KAFB-106236 |
| 1156 | Left KAFB-106236 — 1157 Arrived @ KAFB-106235 |
| 1220 | Left KAFB-106235 — 1228 Arrived @ field office |
| 1250 | Left field office — 1253 Arrived @ KAFB-106011 |
| 1300 | Left KAFB-106011 — 1301 Arrived @ KAFB-106014 |
| 1310 | Left KAFB-106014 — 1314 Arrived @ KAFB-106015 |
| 1317 | Left KAFB-106015 — 1328 Arrived @ KAFB-106201 cluster |
| 1344 | Left KAFB-106201 cluster — 1353 Arrived @ field office |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J MESSENGER Initials: JMM Reviewed date: 7-24-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: EA - Vehicle Maintenance + Well Inspections/Maintenance (Team #1) DATE: 7-25-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Well Inspector |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☒ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

JMM

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0718 | Left field office — 0731 Arrived @ McKinney Auto — Dropped off gray tk. |
| 0737 | Left McKinney's — 0755 Arrived @ field office — load truck for O+M |
| 0841 | Left field office — 0851 Arrived @ KAFB-106019 — 0900 left KAFB-106019 |
| 0901 | Arrived @ KAFB-106017 — 0907 left KAFB-106017 — 0908 Arrived @ KAFB-106039 cluster |
| 0923 | left KAFB-106039 cluster — 0928 Arrived KAFB-106018 + KAFB-106084 |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-28-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-25-17

| 4. WORK PERFORMED (Continued) | |
|---|---|
| 0939 | left KAFB-106018 & KAFB-106084 — 0944 Arrived @ KAFB-106013 |
| 0950 | left KAFB-106013 — 0952 Arrived @ KAFB-106004 |
| 0957 | left KAFB-106004 — 1009 Arrived @ KAFB-106046 cluster |
| 1028 | left KAFB-106046 cluster — 1031 Arrived @ KAFB-106060 cluster |
| 1053 | left KAFB-106060 cluster — 1055 Arrived @ KAFB-106074 (BFF) |
| 1108 | Left KAFB-106024 — 1110 Arrived @ KAFB-106076 cluster |
| 1158 | Left KAFB-106076 cluster — 1210 Arrived @ KAFB-106095 cluster |
| 1240 | Left KAFB-106095 cluster — 1242 Arrived @ KAFB-106065 cluster |
| 1418 | Left KAFB-106065 — 1430 Arrived @ field office |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JM Reviewed date: 7-28-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: EA - Vehicle + Well Maintenance (Team #1) DATE: 7-26-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Well Inspector |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☒ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0729 | Left field office to McKinney Auto to drop off Green/pick up Gray |
| 0746 | Arrived @ McKinney — 0754 left McKinney — 0756 Arrived @ 7-eleven |
| 0800 | Left 7-eleven — 0815 Arrived @ field office — 0830 Left field office |
| 0843 | Arrived @ KAFB-106098 cluster — 0915 left KAFB-106098 cluster |
| 0918 | Arrived @ KAFB-106100 cluster — 0939 left KAFB-106100 cluster |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-28-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

Daily Quality Control Report – Non-Construction

DATE: 7-26-17

**4. WORK PERFORMED (Continued)**

| | |
|---|---|
| 0945 | Arrived @ KAFB-106032 cluster — 1025 left KAFB-106032 cluster. |
| 1035 | Arrived @ KAFB-106010 — 1047 left KAFB-106010 |
| 1053 | Arrived @ KAFB-106212 cluster (church) — 1229 left church |
| 1232 | Arrived @ KAFB-106071 cluster — 1303 left KAFB-106071 cluster |
| 1304 | Arrived @ KAFB-106087 cluster — 1352 left KAFB-106087 cluster |
| 1355 | Arrived @ KAFB-106022 — 1410 left KAFB-106022 |
| 1421 | Arrived @ field office |

**5. CONTRACTOR'S VERIFICATION:** I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-28-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Well Inspections (Team #1) DATE: 7-28-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Well Inspector |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☒ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0905 | left field office — 0915 arrived @ KAFB-106025 — 1930 left KAFB-106025 |
| 0932 | arrived @ KAFB-106105 cluster — 1011 left KAFB-106105 cluster - |
| 1016 | arrived @ KAFB-106236 cluster — 1027 left KAFB-106236 cluster |
| 1029 | arrived @ KAFB-106235 cluster — 1040 left KAFB-106235 cluster |
| 1049 | arrived @ field office — downloaded inspection gear |



Reviewed by: J. MESSENGER Initials: JM Reviewed date: 7-28-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 7-28-17

4. WORK PERFORMED (Continued)

| | |
|---|---|
| | loaded up gear for ARV repair. Pete Ferrari joined. |
| 1130 | left GWTS to repair ARV – 1135 arrived at busted ARV |
| 1230 | replaced ARV — 1310 left Vault |
| 1320 | returned to field office |

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

JOSHUA MESSENGER
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 7-28-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: Well Inspection Team (Team #1) DATE: 7-31-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Well Inspector |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☒ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0720 | Left field office — 0730 Arrived @ KAFB-106082 cluster (VA lot) |
| 0800 | left KAFB-106082 cluster — 0802 Arrived @ KAFB-106020 |
| 0814 | left KAFB-106020 — 0820 Arrived @ KAFB-106104 cluster |
| 0900 | Left KAFB-106104 cluster — 0903 Arrived @ KAFB-106090 cluster |
| 0940 | left KAFB-106090 cluster — 0946 Arrived @ KAFB-106091 cluster |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 8-1-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

**Daily Quality Control Report – Non-Construction**

DATE: 7-31-17

**4. WORK PERFORMED (Continued)**

| | |
|---|---|
| 1035 | Left KAFB-106093 cluster — 1042 Arrived @ KAFB-106222 cluster |
| 1140 | Left KAFB-106222 cluster — 1141 Arrived @ KAFB-106205 cluster |
| 1218 | Left KAFB-106205 cluster — 1221 Arrived @ KAFB-106207 cluster |
| 1311 | Left KAFB-106207 cluster — 1317 Arrived @ KAFB-106218 cluster |
| 1357 | Left KAFB-106218 cluster — 1401 Arrived @ KAFB-106225 cluster |
| 1406 | Left KAFB-106225 cluster — 1433 Arrived @ field office |

**5. CONTRACTOR'S VERIFICATION:** I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 8-1-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: EA Well Inspector (Team #1) DATE: 8-1-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Well Inspector |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | | Team #2 | | Spare | |
|---|---|---|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 | ☐ | YSI Professional Plus 15K101396 Wh0001 | ☐ | YSI Professional Plus 15L100541 Wh0002 | ☐ |
| MiniRAE 3000 592-915778 Wh0005 | ☒ | MiniRAE 3000 592-915790 Wh0004 | ☐ | MiniRAE 3000 592-915579 Wh0006 | ☐ |
| Hach 2100Q 15100C045034 Wh0008 | ☐ | Hach 2100Q 15100C044633 Wh0009 | ☐ | Hach 2100Q 15100C045025 Wh0007 | ☐ |
| Solinst Water Level Meter 253054 | ☐ | Solinst Water Level Meter 253053 | ☐ | Solinst Water Level Meter 253056 | ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0610 | left field office to barricade KAFB-106048 + KAFB-106073 |
| 0650 | returned to field office — 0715 — left field office |
| 0718 | arrived @ KAFB-106048 — 0733 left KAFB-106048 |
| 0745 | Arrived @ KAFB-106073 — 0803 left KAFB-106073 |
| 0812 | Arrived @ KAFB-106225 cluster — 0907 left KAFB-106225 cluster |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 8-1-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

DATE: 8-1-17

**4. WORK PERFORMED (Continued)**

| | |
|---|---|
| 0908 | Arrived @ KAFB-106042 cluster — 0934 left KAFB-106042 cluster |
| 0937 | Arrived @ KAFB-106054 cluster — 1020 left KAFB-106054 cluster |
| 1022 | Arrived @ KAFB-106050 cluster — 1113 left KAFB-106050 cluster |
| 1125 | Arrived @ KAFB-106055 cluster — 1205 left KAFB-106055 cluster |
| 1212 | Arrived @ field office |

**5. CONTRACTOR'S VERIFICATION:** I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 8-1-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01

# Daily Quality Control Report – Non-Construction

ROLE: EA Well Maintenance Team #1 DATE: 8-3-17

WEATHER:

**1. ONSITE PERSONNEL (including subcontractors and government employees)**

| Name | Organization |
|---|---|
| Dustin Graves | EA - Site Manager/Supervisor |
| Pete Ferrari | EA - Site Health and Safetly Office |
| Joshua Messenger | EA - Well Maintenance Tech |
| | |
| | |
| | |
| | |
| | |

**2. OPERATING EQUIPMENT**

| Team #1 | Team #2 | Spare |
|---|---|---|
| YSI Professional Plus 15K101398 Wh0003 ☐ | YSI Professional Plus 15K101396 Wh0001 ☐ | YSI Professional Plus 15L100541 Wh0002 ☐ |
| MiniRAE 3000 592-915778 Wh0005 ☐ | MiniRAE 3000 592-915790 Wh0004 ☐ | MiniRAE 3000 592-915579 Wh0006 ☐ |
| Hach 2100Q 15100C045034 Wh0008 ☐ | Hach 2100Q 15100C044633 Wh0009 ☐ | Hach 2100Q 15100C045025 Wh0007 ☐ |
| Solinst Water Level Meter 253054 ☐ | Solinst Water Level Meter 253053 ☐ | Solinst Water Level Meter 253056 ☐ |

**3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)**

Well seals to replace: KAFB-106204, 205, 206, 217, 218, 224

**4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)**

| | |
|---|---|
| 0800 | Left field office — 0807 - Arrived @ KAFB-106217 cluster |
| 0950 | Left KAFB-106217 cluster — 1002 Arrived @ KAFB-106224 |
| 1053 | Left KAFB106224 — 1057 Arrived @ KAFB-106205 cluster |
| 1142 | Left KAFB-106205 cluster — 1151 Arrived @ field office |
| 1153 | Left field office — 1200 Arrived @ KAFB-106205 cluster |



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 8-3-17

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- 62599DM01
Daily Quality Control Report – Non-Construction

DATE: 8-3-17

**4. WORK PERFORMED (Continued)**

| | |
|---|---|
| 1314 | Left KAFB- 106705 cluster |
| 1322 | Arrived @ field office |

**5. CONTRACTOR'S VERIFICATION:** I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Joshua Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC



Reviewed by: J. MESSENGER Initials: JMM Reviewed date: 8-3-17

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# APPENDIX E-3

# GROUNDWATER AND LIGHT NON-AQUEOUS PHASE LIQUID MEASUREMENTS

| | Well Gauging Form Team 1 | Total Wells 40 | 2017 |
|---|---|---|---|
| | Project: Kirtland AFB BFF ST-106/SS-111 | | Quarter : 3nd |

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106001 | - | 472.97 | 7/20/17 | 0.3 | - | 473.22 | SS/SB | | TWV |
| KAFB-106002 | - | 470.13 | 7/17/17 | 0.0 | — | 470.02 | SB | | TWV |
| KAFB-106003 | - | 468.20 | 7/18/17 | 0.0 | — | 468.09 | CM | | TWV |
| KAFB-106007 | - | 477.86 | 7/20/17 | 0.0 | — | 478.05 | SS/PF | | TOPC |
| KAFB-106008 | | 479.93 | 7/20/17 | 0.9 | — | 480.12 | SS/PF | | TOPC |
| KAFB-106009 | - | 476.66 | 7-17-17 | 0.0 | - | 476.63 | SS | - | TWV |
| KAFB-106011 | - | 481.47 | 7-17-17 | 0.0 | - | 481.42 | SB | | TOPC |
| KAFB-106012R | - | 473.29 | 7/17/17 | 0.0 | — | 473.20 | SB | | TOPC |
| KAFB-106014 | - | 478.49 | 7/17/17 | 0.0 | — | 478.41 | SB | | TOPC |
| KAFB-106015 | - | 470.90 | 7-20-17 | 0.0 | — | 471.54 | JM/CS | | TOPC |
| KAFB-106016 | - | 470.44 | 7/20/17 | 0.0 | — | 470.61 | SS/SB | | TOPC |
| KAFB-106024 | - | 471.67 | 7/20/17 | 0.0 | - | 471.92 | PF/SS | | TWV |
| KAFB-106027 | - | 476.85 | 7/18/17 | 0.4 | — | 476.75 | SB | | TOPC |
| KAFB-106044 | - | 476.98 | 7/18/17 | 0.0 | — | 476.84 | SB | | TOPC |
| KAFB-106045 | - | 476.69 | 7/18/17 | 0.6 | — | 476.56 | SB | | TOPC |
| KAFB-106046 | - | 481.13 | 7/20/17 | 0.0 | - | 481.34 | SB/SS | EA Barricade | TWV |
| KAFB-106047 | - | 481.21 | 7/20/17 | 0.0 SS | - | 481.45 | SS/SB | EA Barricade | TWV |
| KAFB-106048 | - | 480.91 | 7/20/17 | 0.0 | - | 481.14 | SS/SB | EA Barricade | TWV |
| KAFB-106060 | - | 473.56 | 7/20/17 | 0.0 | - | 473.84 | SB/SS | | TWV |
| KAFB-106061 | - | 473.52 | 7/20/17 | 0.0 | - | 473.81 | SS/SB | | TWV |
| KAFB-106062 | - | 479.30 | 7-21-17 | 0.0 | — | 479.60 | JM/CS | | TOPC |

| | Well Gauging Form Team 1 | Total Wells 40 | 2017 |
|---|---|---|---|
| | Project: Kirtland AFB BFF ST-106/SS-111 | | Quarter : 3nd |

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106063 | - | 480.25 | — | — | NOT | GAUGED | — | — | TOPC |
| KAFB-106076 | - | 473.32 | 7/20/17 | 0.3 | — | 473.52 | SS/SB | | TWV |
| KAFB-106077 | - | 474.43 | 7/20/17 | 0.0 | — | 474.62 | PF/SS | | TWV |
| KAFB-106078 | - | 473.55 | 7/20/17 | 0.0 | — | 473.79 | SB/SS | | TWV |
| KAFB-106079 | - | 478.06 | 7/17/17 | 0.0 | — | 478.02 | SB | | TOPC |
| KAFB-106080 | - | 476.62 | 7/17/17 | 0.0 | — | 476.66 | SB | | TOPC |
| KAFB-106101 | - | 468.13 | 7/18/17 | 0.0 | — | 468.30 | CM | | TOPC |
| KAFB-106102 | - | 468.29 | 7/18/17 | 0.0 | — | 468.41 | CM | | TOPC |
| KAFB-106201 | - | 485.20 | 7-20-17 | 0.6 | — | 487.28 | JM/CS | | TOPC |
| KAFB-106202 | - | 485.79 | 7-20-17 | 0.0 | — | 488.30 | JM/CS | | TOPC |
| KAFB-106203 | - | 485.68 | 7-20-17 | 0.0 | — | 486.70 | JM/CS | | TOPC |
| KAFB-106081 | - | 477.63 | 7/20/17 | 0.0 | — | 477.84 | SB | | TOPC |
| KAFB-3411 | - | 471.59 | 7/18/17 | 0.2 | — | 471.65 | SB | | TOPC |
| KAFB-106005 | - | 474.98 | 7/18/17 | SB LS | — | 475.11 | SB | | TOPC |
| KAFB-106006 | - | 479.71 | 7/20/17 | 0.0 | — | 479.89 | SS/PF | | TOPC |
| KAFB-106010 | - | 471.43 | 7-19-17 | 0.0 | — | 471.86 | JM/CS | | TWV |
| KAFB-106028 | - | 477.11 | 7-19-17 | 0.0 | — | 477.49 | JM/CS | USS Bullhead | TWV |
| KAFB-106059 | - | 476.00 | 7/20/17 | 1.5 | — | 476.27 | SB/SS | | TWV |
| KAFB-106064 | - | 479.43 | — | — | NOT | GAUGED | — | — | TOPC |

Current Hazardous Well

KAFB-106081 — 7/17/17 0.0 ~~487.84~~ 477.84 SB

**Well Gauging Form Team 2** | **Total Wells 51** | **2017**

Project: Kirtland AFB BFF ST-106/SS-111 | Quarter : 3nd

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106004 | ~~Carlos~~ JM | 473.63 | 7-20-17 | 0.0 | — | 474.11 | CM | EA Barricade | TOPC |
| KAFB-106013 | ~~Carlos~~ JM | 478.62 | 7-20-17 | 0.0 | — | 479.12 | JM/CS | Call VA Police | TOPC |
| KAFB-106017 | - | 470.83 | 7-19-17 | 0.0 | — | ~~471.38~~ ~~471.37~~ | JM/CS | | TOPC |
| KAFB-106018 | - | 464.39 | 7-20-17 | 0.0 | — | 464.87 | JM/CS | | TOPC |
| KAFB-106019 | - | 482.97 | 7-19-17 | 0.2 | — | 483.48 | JM/CS | | TOPC |
| KAFB-106020 | - | 468.91 | 7-20-17 | 0.0 | — | 469.34 | JM/CS | Call VA Police | TWV |
| KAFB-106021 | - | 442.58 | 7-18-17 | 0.0 | — | 442.90 | JM/SS | Barricades by SWSS | TWV |
| KAFB-106022 | - | 446.71 | 7-18-17 | 0.0 | — | 447.18 | JM/SS | | TWV |
| KAFB-106023 | - | 457.07 | 7-19-17 | 0.0 | — | 457.51 | JM/CS | | TWV |
| KAFB-106032 | - | 445.40 | 7-19-17 | 0.0 | — | 445.76 | JM/CS | Gibson Med. Ctr. | TWV |
| KAFB-106033 | - | 445.52 | 7-19-17 | 0.0 | — | 445.93 | JM/CS | Gibson Med. Ctr. | TWV |
| KAFB-106034 | - | 446.39 | 7-19-17 | 0.0 | — | 446.79 | JM/CS | Gibson Med. Ctr. | TWV |
| KAFB-106035 | - | 450.68 | 7-18-17 | 0.0 | — | 451.11 | JM/SS | (Church) | TWV |
| KAFB-106036 | - | 451.06 | 7-18-17 | 0.0 | — | 451.57 | JM/SS | (Church) | TWV |
| KAFB-106037 | - | 451.72 | 7-18-17 | 0.0 | — | 452.24 | JM/SS | (Church) | TWV |
| KAFB-106038 | - | 479.90 | 7-19-17 | 0.3 | — | 480.46 | JM/CS | | TOPC |
| KAFB-106039 | - | 479.70 | 7-19-17 | 0.0 | — | 480.27 | JM/CS | | TOPC |
| KAFB-106040 | - | 478.60 | 7-19-17 | 0.4 | — | 479.18 | JM/CS | | TOPC |
| KAFB-106065 | - | 477.10 | 7-19-17 | 0.0 | — | 477.44 | JM/CS | USS Bullhead | TWV |

**Well Gauging Form Team 2** | **Total Wells 51** | **2017**

Project: Kirtland AFB BFF ST-106/SS-111 | Quarter : 3nd

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106066 | - | 477.28 | 7-19-17 | 0.0 | — | 477.75 | JM/CS | USS Bullhead | TWV |
| KAFB-106067 | - | 475.94 | 7-19-17 | 0.0 | — | 476.34 | JM/CS | | TWV |
| KAFB-106068 | - | 475.75 | 7-19-17 | 0.0 | — | 476.26 | JM/CS | | TWV |
| KAFB-106069 | - | 475.55 | 7-19-17 | 0.0 | — | 475.96 | JM/CS | | TWV |
| KAFB-106070 | - | 447.01 | 7-19-17 | 0.0 | — | 447.38 | JM/CS | | TWV |
| KAFB-106071 | - | 449.22 | 7-19-17 | 0.0 | — | 449.62 | JM/CS | | TWV |
| KAFB-106072 | - | 447.51 | 7-19-17 | 0.0 | — | 447.89 | JM/CS | | TWV |
| KAFB-106073 | - | 468.19 | 7-20-17 | 0.0 | — | 468.23 | JM/CS | Call VA Police | TWV |
| KAFB-106074 | - | 468.92 | 7-20-17 | 0.0 | — | 468.97 | JM/CS | Call VA Police | TWV |
| KAFB-106075 | VA west | 468.92 | 7-21-17 | 0.0 | — | 468.84 | JM/CS | Call VA Police | TWV |
| KAFB-106082 | - | 463.43 | 7-20-17 | 0.0 | — | 463.89 | JM/CS | Call VA Police | TWV |
| KAFB-106083 | - | 463.13 | 7-20-17 | 0.0 | — | 463.60 | JM/CS | Call VA Police | TWV |
| KAFB-106084 | - | 465.97 | 7-20-17 | 0.0 | — | 466.47 | JM/CS | Call VA Police | TWV |
| KAFB-106085 | - | 445.38 | 7-20-17 | 0.0 | — | 445.86 | JM/CS | | TWV |
| KAFB-106086 | - | 445.75 | 7-20-17 | 0.0 | — | 446.25 | JM/CS | | TWV |
| KAFB-106087 | - | 444.99 | 7-20-17 | 0.0 | — | 445.49 | JM/CS | | TWV |
| KAFB-106088 | - | 452.71 | 7-19-17 | 0.0 | — | 453.15 | JM/CS | | TWV |
| KAFB-106089 | - | 452.44 | 7-19-17 | 0.0 | — | 452.85 | JM/CS | | TWV |
| KAFB-106090 | - | 451.27 | 7-19-17 | 0.0 | — | 451.69 | JM/CS | | TWV |

**Well Gauging Form Team 2** | **Total Wells 51** | **2017**

Project: Kirtland AFB BFF ST-106/SS-111 | Quarter : 3nd

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106094 | - | 473.20 | 7-19-17 | 0.0 | — | 473.64 | JM/CS | | TWV |
| KAFB-106095 | - | 472.76 | 7-19-17 | 0.0 | — | 473.21 | JM/CS | | TWV |
| KAFB-106096 | - | 473.43 | 7-19-17 | 0.0 | — | 473.85 | JM/CS | | TWV |
| KAFB-106097 Carlos | - | 475.56 | 7-19-17 | 0.0 | — | 476.03 | CM | Call VA Police | TWV |
| KAFB-106098 Carlos | - | 475.64 | 7-19-17 | 0.0 | — | 476.17 | CM | Call VA Police | TWV |
| KAFB-106099 Carlos | - | 470.59 | 7-20-17 | 0.0 | — | 471.02 | CM | EA Barricade | TWV |
| KAFB-106100 Carlos | - | 470.59 | 7-20-17 | 0.0 | — | 471.07 | CM | EA Barricade | TWV |
| KAFB-106103 | - | 457.33 | 7-19-17 | 0.0 | — | 457.78 | JM/CS | | TWV |
| KAFB-106104 | - | 456.75 | 7-19-17 | 0.0 | — | 457.21 | JM/CS | | TWV |
| KAFB-106212 | - | 451.22 | 7-18-17 | 0.0 | — | 451.75 | JM/SS | Church | TWV |
| KAFB-106213 | - | 453.90 | 7-18-17 | 0.0 | — | 454.43 | JM/SS | | TWV |
| KAFB-106214 | - | 454.06 | 7-18-17 | 0.0 | — | 454.61 | JM/SS | | TWV |
| KAFB-106215 | - | 454.26 | 7-18-17 | 0.0 | — | 454.81 | JM/SS | | TWV |
| KAFB-106015 | | | 7-20-17 | 0.0 | — | 471.54 | JM/CS | | |
| KAFB-106201 | | | 7-20-17 | 0.6 | — | 487.28 | JM/CS | | |
| KAFB-106207 | | | 7-20-17 | 0.0 | — | 488.30 | JM/CS | | |
| ~~KAFB-106203~~ | | | | | | | | | |
| KAFB-106010 | | | 7-19-17 | 0.0 | — | 471.86 | JM/~~SS~~ JM CS | | |
| KAFB-106028 | | | 7-19-17 | 0.0 | — | 477.49 | JM/CS | | |
| KAFB-106203 | | | 7-20-17 | 0.0 | — | 486.70 | JM/CS | | |

Well Gauging Form Team 3 | Total Wells 48 | 2017

Project: Kirtland AFB BFF ST-106/SS-111 | Quarter : 3nd

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106025 | - | 445.52 | 7-17-17 | 0.0 | — | 445.85 | JM/CS | Barricades by SWSS | TWV |
| KAFB-106029 | - | 438.92 | 7-18-17 | 0.0 | — | 439.30 | JM/SS | Barricades by SWSS | TWV |
| KAFB-106030 | - | 439.03 | 7-18-17 | 0.0 | — | 439.39 | JM/SS | Barricades by SWSS | TWV |
| KAFB-106031 | - | 439.08 | 7-18-17 | 0.0 | — | 439.43 | | Barricades by SWSS | TWV |
| KAFB-106041 | NA | NA | 7-17-17 | 0.0 | — | 452.86 | JM/CS | | TWV |
| KAFB-106042 | - | 452.12 | 7-17-17 | ~~8.8~~ 0.2 | — | 452.61 | JM/CS | | TWV |
| KAFB-106043 | - | 452.35 | 7-17-17 | 0.0 | — | 452.85 | JM/CS | | TWV |
| KAFB-106049 | - | 443.98 | 7-17-17 | 0.1 | — | 444.35 | JM/CS | | TWV |
| KAFB-106050 | - | 443.37 | 7-17-17 | 0.0 | — | 443.74 | JM/CS | | TWV |
| KAFB-106051 | - | 443.68 | 7-17-17 | 0.1 | — | 444.05 | JM/CS | | TWV |
| KAFB-106052 | - | 446.97 | 7-17-17 | 0.2 | — | 447.44 | JM/SC | | TWV |
| KAFB-106053 | - | 446.92 | 7-17-17 | 0.0 | — | 447.35 | JM/CS ~~SC~~ JM | | TWV |
| KAFB-106054 | - | 446.50 | 7-17-17 | 0.0 | — | 446.94 | JM/CS | | TWV |
| KAFB-106055 | - | 453.40 | 7-18-17 | 0.0 | — | 453.90 | JM/SS | | TWV |
| KAFB-106057 | - | 453.76 | 7-18-17 | 0.0 | — | 454.27 | JM/SS | | TWV |
| KAFB-106058 | - | 454.30 | 7-18-17 | 0.0 | — | 454.83 | JM/SS | | TWV |
| KAFB-106091 | - | 443.85 | 7-17-17 | 0.0 | — | 443.92 | JM/CS | | TWV |
| KAFB-106092 D | - | 444.01 | 7-17-17 | 0.0 | — | 444.30 | JM/CS | | TWV |
| KAFB-106093 | - | 443.34 | 7-17-17 | 0.1 | — | 443.69 | JM/CS | | TWV |

Well Gauging Form Team 3 | Total Wells 48 | 2017

Project: Kirtland AFB BFF ST-106/SS-111 | Quarter : 3nd

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106105 | - | 450.13 | 7-17-17 | 0.0 | — | 450.63 | JM/CS | | TWV |
| KAFB-106106 | - | 450.03 | 7-17-17 | 0.0 | — | 450.51 | JM/CS | | TWV |
| KAFB-106107 | - | 450.23 | 7-17-17 | 0.2 | — | 450.74 | JM/CS | | TWV |
| KAFB-106204 | - | 460.46 | 7-17-17 | 0.0 | — | 461.21 | JM/CS | | TWV |
| KAFB-106205 | - | 460.87 | 7-17-17 | 0.0 | — | 461.61 | JM/CS | | TWV |
| KAFB-106206 | - | 461.04 | 7-17-17 | 0.0 | — | 461.77 | JM/CS | | TWV |
| KAFB-106207 | - | 471.58 | 7-18-17 | 0.0 | — | 472.91 | JM/SS | | TWV |
| KAFB-106208 | - | 471.28 | 7-18-17 | 0.0 | — | 472.66 | JM/SS | | TWV |
| KAFB-106209 | - | 470.63 | 7-18-17 | 0.0 | — | 472.14 | JM/SS | | TWV |
| KAFB-106216 | - | 462.15 | 7-17-17 | 0.0 | — | 462.76 | JM/CS | | TWV |
| KAFB-106217 | - | 462.11 | 7-17-17 | 0.1 | — | 462.66 | JM/CS | | TWV |
| KAFB-106218 | - | 462.26 | 7-17-17 | 0.0 | — | 462.86 | JM/CS | | TWV |
| KAFB-106219 | - | 468.42 | 7-20-17 | 0.0 | — | 469.20 | JM/CS | Barricades by SWSS | TWV |
| KAFB-106220 | - | 468.29 | 7-18-17 | 0.0 | — | 469.15 | JM/SS | Barricades by SWSS | TWV |
| KAFB-106221 | - | 468.06 | 7-18-17 | 0.0 | — | 468.93 | JM/SS | Barricades by SWSS | TWV |
| KAFB-106231 | - | 455.21 | 7-18-17 | 0.0 | — | 455.89 | JM/SS | Barricades by SWSS | TWV |
| KAFB-106232 | - | 454.73 | 7-18-17 | 0.0 | — | 455.45 | JM/SS | Barricades by SWSS | TWV |
| KAFB-106222 | - | 461.19 | 7-17-17 | 0.0 | — | 461.92 | JM/CS | | TWV |
| KAFB-106223 | - | 461.86 | 7-17-17 | 0.0 | — | 462.59 | JM/CS | | TWV |

Well Gauging Form Team 3 | Total Wells 48 | 2017

Project: Kirtland AFB BFF ST-106/SS-111 | Quarter : 3nd

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106224 | - | 463.02 | 7-17-17 | 0.0 | — | 463.74 | JM/CS | | TWV |
| KAFB-106225 | - | 454.81 | 7-17-17 | 0.0 | — | 455.26 | JM/CS | | TWV |
| KAFB-106226 | - | 455.34 | 7-17-17 | 0.0 | — | 455.92 | JM/CS | | TWV |
| KAFB-106227 | - | 456.09 | 7-17-17 | 0.0 | — | 456.65 | JM/CS | | TWV |
| KAFB-106021 | — | (?) | 7-18-17 | 0.0 | — | 442.90 | JM/SS | SWSS | TWV |

| | Well Gauging Form Team Extra | Total Wells 13 | 2017 |
|---|---|---|---|
| | Project: Kirtland AFB BFF ST-106/SS-111 | | Quarter : 3nd |

| Well ID | Previous DTW 2017 Q2 (ft MRP) | | Date | PID (ppm) | Depth to NAPL (ft MRP) | DTW (ft MRP) | Initials | Contact | Reference Point |
|---|---|---|---|---|---|---|---|---|---|
| | Depth to NAPL | DTW | | | | | | | |
| KAFB-106148-484 | NA | NA | JM 4/19/17 | 0.0 | — | 472.51 | SS/SB | | |
| KAFB-106149-149 | NA | NA | JM 4/19/17 | 0.0 | ~~474.49~~ SS | 474.49 | SS/SB | | |
| KAFB-106150-484 | NA | NA | JM 4/19/17 | 0.0 | 472.74 | ~~472.89~~ | SS/SB | | |
| KAFB-106151-484 | NA | NA | JM 4/19/17 | 0.0 | — | 474.32 | SS/SB | | |
| KAFB-106152-484 | NA | NA | JM 4/19/17 | 0.0 | — | 476.14 | SS/SB | | |
| KAFB-106153-484 | NA | NA | 4/19/17 JM | 0.0 | — | 477.48 | SS/SB | | |
| KAFB-106154-484 | NA | NA | JM 4/19/17 | 0.0 | 475.68 | 476.05 | SS/SB | | |
| KAFB-106155-484 | NA | NA | JM 4/19/17 | 0.0 | — | 476.06 | SS/SB | | |
| KAFB-106156-484 | NA | NA | JM 4/19/17 | 0.0 | — | 469.49 | SS/SB | | |
| KAFB-106160 | NA | NA | JM 4/19/17 | 0.0 | — | 475.64 | SS/SB | | |
| KAFB-106161 | NA | NA | JM 4/19/17 | 0.0 | — | 477.90 | SS/SB * | | |
| KAFB-106211 | NA | NA | JM 4/19/17 | 0.0 | — | Dry [477 ish bottom | SB/SS | | |
| KAFB-106229 | NA | NA | 4/19/17 JM | 0.0 | — | 444.34 | SB/SS | | |

SVM 09 — top — 453.10

SVM 05 — depth — 460.60 / 460.58 ✓
453.00

* too rusty

476.05 } well
475.68 } SS

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# APPENDIX E-4

# GROUNDWATER PURGE LOGS AND SAMPLE COLLECTION LOGS

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106003
Project No: 62599DM01
Samplers: C. Montoya
Date: 7-18-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
Well Depth: 506.15 ft MRP
**SCREEN SUBMERGED on 5/10/2017 (previous gauging date)**
Top of Screen: 479.15 ft MRP
Barricade/Notification: ☐
Bottom of Screen: 504.15 ft MRP
Measurement Reference Point (MRP): Top of Protective Casing
Reference Elevation Interval: 4857
IDW will be taken to: GWTS/Pending Disposal Area
IDW Label: Green Non-hazardous

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: — ft
LNAPL NOT observed during last gauging event: 5/10/2017

Previous Depth to water: 468.2 ft MRP
**Depth to Water (DTW): 468.09 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 18078-730

Non-Dedicated Pump Depth: 481.15 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | 14H0003 |
| PID: | MiniRAE 3000 | Serial No: | 14H0015 |
| Water Level Meter: | Solinst 500 ft | Serial No: | 14H0005 |
| Turbidity Meter: | Hach 2100Q | Serial No: | 14H0008 |

## Sample Information

Sample ID: GW003-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW003-573
Sampling Medium: Water
COC#: COC-003-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17 CM

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106003

Date: 7-18-17

## *Purge Information and Field Parameter*

Purge Start Time: 0915 Purge Rate: 0.800 L/min X 0.265 = 0.212 gal/min

Description of first water purged: clear, no odor

Drawdown Limit: 10.95 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 468.2 | 0.34 | 18.4 | ------- | 6.07 | 472 | 7.83 | 135.6 |
| 0920 | 468.07 | 0.85 | 23.5 | 79.9 | 6.77 | 22.2 | 4.60 | 128.9 |
| 0925 | 468.08 | 0.94 | 24.5 | 82.0 | 6.80 | 552 | 7.75 | 184.7 |
| 0930 | 468.09 | 2.36 | 23.2 | 67.7 | 5.80 | 554 | 7.81 | 178.9 |
| 0935 | 468.09 | 2.61 | 22.7 | 66.8 | 5.75 | 531 | 7.83 | 174.0 |
| 0940 | 468.09 | 3.11 | 22.5 | 67.0 | 5.84 | 559 | 7.83 | 169.9 |

Sample Time: 0945 Sample Date: 7-18-17

Purge End Time: 0948

6mm

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: Carlos Montoya Sampler Signature:

## *IDW Management*

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | ~15 |
| 2 | |
| Total | |

**IDW will be taken to:** GWTS/Pending Disposal Area

**IDW Label:** Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17 CM

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106004
Project No: 62599DM01
Samplers: Carlos Montoya
Date: 7-20-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
**SCREEN SUBMERGED on 5/10/2017 (previous gauging date)**
Barricade/Notification: X
Measurement Reference Point (MRP): Top of Protective Casing
IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 512.77 ft MRP
Top of Screen: 486.77 ft MRP
Bottom of Screen: 511.77 ft MRP
Reference Elevation Interval: 4857
IDW Label: Green Non-hazardous

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: — ft
LNAPL NOT observed during last gauging event: 5/10/2017

Previous Depth to water: 473.63 ft MRP
**Depth to Water (DTW): 474.11 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 18078-730

Non-Dedicated Pump Depth: 488.77 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | 14003 |
| PID: | MiniRAE 3000 | Serial No: | 14005 |
| Water Level Meter: | Solinst 500 ft | Serial No: | 0001 |
| Turbidity Meter: | Hach 2100Q | Serial No: | 14008 |

## Sample Information

Sample ID: GW004-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW004-573
Sampling Medium: Water
COC#: COC-004-173

Reviewed by: C Montoya Initials: CM Review Date: 7-24-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106004

***Purge Information and Field Parameter***

Date: 7-20-17

Purge Start Time: 0814 Purge Rate: 0.800 L/min X 0.265 = 0.212 gal/min

Description of first water purged: Clear, no odor

Drawdown Limit: 13.14 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 473.63 | 0.93 | 18.5 | ------- | 5.38 | 776 | 7.88 | 185.4 |
| 0820 | 474.10 | 2.79 | 23.0 | 95.6 | 8.27 | 382.3 | 7.30 | 138.4 |
| 0825 | 474.10 | 5.04 | 22.1 | 73.7 | 6.40 | 631 | 7.80 | 134.9 |
| 0830 | 474.10 | 2.32 | 21.5 | 71.1 | 6.23 | 629 | 7.81 | 134.2 |
| 0835 | 474.10 | 2.09 | 21.2 | 74.2 | 6.59 | 630 | 7.81 | 133.6 |

Sample Time: 0840 Sample Date: 7-20-17

Purge End Time: 0841

6mm

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: C. Montoya Sampler Signature:

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | ~14 |
| 2 | |
| Total | |

**IDW will be taken to:** GWTS/Pending Disposal Area

**IDW Label:** Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 8/24/17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Project No: 62599DM01
Date: 7-18-17
Well ID: KAFB-106005
Samplers: Stephen Bailey, Curtis Smith
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
**SCREEN SUBMERGED on 5/8/2017 (previous gauging date)**
Barricade/Notification: ☐
Measurement Reference Point (MRP): Top of Protective Casing
IDW will be taken to: Pending Analysis Yard

Well Depth: 510.04 ft MRP
Top of Screen: 482.04 ft MRP
Bottom of Screen: 507.04 ft MRP
Reference Elevation Interval: 4857
IDW Label: White Pending Analysis

Protective Casing/Vault: Intact Damaged
Well Locked/Security Bolt Present: Yes No
Well ID Marked: Yes No

Photoionization Measurements at Wellhead: 1.5 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: ____ ft
LNAPL NOT observed during last gauging event: 5/8/2017

Previous Depth to water: 474.98 ft MRP
**Depth to Water (DTW): 475.11 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: SN18073 – 800

Non-Dedicated Pump Depth: 494.04 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | Wh0001 |
| PID: | MiniRAE 3000 | Serial No: | Wh0004 |
| Water Level Meter: | Solinst 500 ft | Serial No: | Wh0012 |
| Turbidity Meter: | Hach 2100Q | Serial No: | Wh0009 |

## Sample Information

Sample ID: GW005-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW005-573
Sampling Medium: Water
COC#: COC-005-173

Reviewed by: C. Montoya Initials: CM Review Date: 8-24-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106005

Date: 7/18/17

## Purge Information and Field Parameter

Purge Start Time: 0920 Purge Rate: 0.92 L/min X 0.265 = 0.2438 gal/min

Description of first water purged: clear w/ odor & sheen

Drawdown Limit: 7.06 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 474.98 | 8.48 | 18.4 | ------- | 0.1 | 3309 | 7.56 | -213 |
| 0930 | 475.25 | 5.27 | 19.5 | 6.8 | 0.62 | 2268 | 7.02 | -106.6 |
| 0935 | 475.24 | 3.74 | 19.5 | 5.6 | 0.52 | 2264 | 7.04 | -136.9 |
| 0940 | 475.24 | 4.84 | 19.5 | 5.2 | 0.47 | 2256 | 7.09 | -162.8 |
| 0945 | 475.24 | 6.04 | 19.7 | 5.1 | 0.47 | 2253 | 7.14 | -178.7 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Sample Time: 1000 Sample Date: 7/18/17

Purge End Time: 1020

6mm

Bubbles in the vials? ☐ Yes ☑ No Where? Amount Size

Sampled by: Stephen Gusky Sampler Signature:

## IDW Management

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | 16 gal |
| 2 | |
| Total | |

IDW will be taken to: Pending Analysis Yard

IDW Label: White Pending Analysis

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7-26-17 CM

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106009
Project No: 62599DM01
Samplers: Stephen Busby Joshua Messenger
Date: 7-12-17
Crew Signature: Stephen Busby

## Well Information

Well was NOT HAZARDOUS
Well Depth: 511.20 ft MRP
**SCREEN SUBMERGED on 5/8/2017 (previous gauging date)**
Top of Screen: 483.70 ft MRP
Barricade/Notification: ☐
Bottom of Screen: 508.70 ft MRP
Measurement Reference Point (MRP): Top of Protective Casing
Reference Elevation Interval: 4857
IDW will be taken to: Pending Analysis Yard
IDW Label: White Pending Analysis

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: — ft
LNAPL NOT observed during last gauging event: 5/8/2017

Previous Depth to water: 476.66 ft MRP
**Depth to Water (DTW): 476.72 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 18078-658

Non-Dedicated Pump Depth: 485.70 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | WH0001 |
| PID: | MiniRAE 3000 | Serial No: | WH0004 |
| Water Level Meter: | Solinst 500 ft | Serial No: | WH0012 |
| Turbidity Meter: | Hach 2100Q | Serial No: | WH0009 |

## Sample Information

Sample ID: GW009-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW009-573
Sampling Medium: Water
COC#: COC-009-173

Reviewed by: J. Messenger Initials: JM Review Date: 7-13-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106009

Date: 7-12-17

***Purge Information and Field Parameter***

Purge Start Time: 0855 Purge Rate: 0.82 L/min X 0.265 = 0.2173 gal/min

Description of first water purged: No odor; moderately aerated

Drawdown Limit: 7.04 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 476.66 | 0.49 | 18.4 | ------- | 1.81 | 4547 | 6.77 | 55 |
| 0905 | 476.80 | 2.57 | 21.5 | 12.3 | 1.07 | 2215 | 6.79 | 148.0 |
| 0910 | 476.80 | 1.12 | 21.0 | 7.3 | 0.65 | 2205 | 6.77 | 145.4 |
| 0915 | 476.81 | 0.78 | 20.8 | 5.7 | 0.51 | 2204 | 6.78 | 144.0 |
| 0920 | 476.80 | 0.97 | 20.8 | 5.0 | 0.44 | 2203 | 6.78 | 143.0 |
| 0925 | 476.80 | 0.53 | 20.7 | 4.3 | 0.38 | 2201 | 6.78 | 141.7 |
| 0930 | 476.80 | 1.05 | 20.7 | 3.9 | 0.34 | 2202 | 6.79 | 140.3 |
| 0935 | 476.80 | 0.85 | 20.7 | 3.5 | 0.31 | 2200 | 6.80 | 139.3 |
| 0940 | 476.81 | 0.92 | 20.9 | 3.3 | 0.29 | 2203 | 6.80 | 138.1 |
| 0945 | 476.81 | 0.92 | 20.9 | 3.0 | 0.27 | 2200 | 6.81 | 136.6 |
| 0950 | 476.81 | 0.93 | 20.9 | 2.9 | 0.26 | 2203 | 6.82 | 135.7 |
| 0955 | 476.81 | 0.57 | 20.8 | 2.7 | 0.24 | 2207 | 6.82 | 134.4 |
| 1000 | 476.81 | 0.53 | 20.8 | 2.6 | 0.23 | 2209 | 6.83 | 133.4 |
| 1005 | 476.81 | 0.56 | 20.8 | 2.5 | 0.22 | 2208 | 6.83 | 132.2 |

Sample Time: 1008 Sample Date: 7-12-17

Purge End Time: ~~JM 1117~~ JM ~~1004~~ 1020

6mm

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: Stephen Busby Sampler Signature: Stephen Busby

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | JM ~~22~~ JM ~~15~~ 20 |
| 2 | |
| Total | |

Pending barrel

IDW will be taken to: Pending Analysis Yard

IDW Label: White Pending Analysis

Comments: Stabilized in last 3 measurements < last purge at 1020

Reviewed by: J. Messenger Initials: JM Review Date: 7-12-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106012R
Project No: 62599DM01
Samplers: C. Montoya
Date: 7-19-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
**SCREEN NOT SUBMERGED on 5/10/2017 (previous gauging date)**
Barricade/Notification: ☐
Measurement Reference Point (MRP): Top of Protective Casing
IDW will be taken to: GWTS/Pending Disposal Area
IDW Label: Green Non-hazardous

Well Depth: 502.69 ft MRP
Top of Screen: 468.27 ft MRP
Bottom of Screen: 497.52 ft MRP
Reference Elevation Interval: 4857

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: — ft
LNAPL NOT observed during last gauging event: 5/10/2017

Previous Depth to water: 473.29 ft MRP
**Depth to Water (DTW):** 473.44 **ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 1807B-730

Non-Dedicated Pump Depth: 495.52 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | WH0003 |
| PID: | MiniRAE 3000 | Serial No: | WH0005 |
| Water Level Meter: | Solinst 500 ft | Serial No: | WH0010 |
| Turbidity Meter: | Hach 2100Q | Serial No: | WH0008 |

## Sample Information

Sample ID: GW012R-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW012R-573
Sampling Medium: Water
COC#: COC-012R-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106012R

Date: 7-19-17

***Purge Information and Field Parameter***

Purge Start Time: 1218 Purge Rate: 0.880 L/min X 0.265 = 0.233 gal/min

Description of first water purged: clear, no odor

Drawdown Limit: 6.06 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| **Historical Data:** | **473.29** | **1.33** | **19.2** | ------- | **7.58** | **3329** | **7.39** | **150.9** |
| 1225 | 473.45 | 0.78 | 30.9 | 119.3 | 8.78 | 2622 | 7.45 | 136.1 |
| 1230 | 473.46 | 1.60 | 27.8 | 102.1 | 7.95 | 2611 | 7.47 | 89.0 |
| 1235 | 473.46 | 1.89 | 26.3 | 94.7 | 7.58 | 2606 | 7.46 | 58.2 |
| 1240 | 473.46 | 2.02 | 25.6 | 93.9 | 7.62 | 2601 | 7.52 | 46.3 |

Sample Time: 1245 Sample Date: 7-19-17

Purge End Time: 1250 6mm

Bubbles in the vials? ☐ Yes ☑ No Where? — Amount — Size —

Sampled by: Carlos Montoya Sampler Signature:

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | ~14 |
| 2 | |
| Total | |

**IDW will be taken to:** GWTS/Pending Disposal Area

**IDW Label:** Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17 CM

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106013
Project No: 62599DM01
Samplers: Stephen Busby Joshua Messenger
Date: 7-12-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
Well Depth: 519.72 ft MRP
**SCREEN SUBMERGED on 5/9/2017 (previous gauging date)**
Top of Screen: 489.72 ft MRP
Barricade/Notification: X
Bottom of Screen: 514.72 ft MRP
Measurement Reference Point (MRP): Top of Protective Casing
Reference Elevation Interval: 4857
IDW will be taken to: GWTS/Pending Disposal Area
IDW Label: Green Non-hazardous

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: — ft
LNAPL NOT observed during last gauging event: 5/9/2017

Previous Depth to water: 478.62 ft MRP
**Depth to Water (DTW): 478.99 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 1807B-800

Non-Dedicated Pump Depth: 491.72 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | 16N0001 |
| PID: | MiniRAE 3000 | Serial No: | 16N0004 |
| Water Level Meter: | Solinst 500 ft | Serial No: | 16N0012 |
| Turbidity Meter: | Hach 2100Q | Serial No: | 16N0009 |

## Sample Information

Sample ID: GW013-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW013-573
Sampling Medium: Water
COC#: COC-013-173

Reviewed by: J. Messenger Initials: JM Review Date: 7-12-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106013

Date: 7-12-17

***Purge Information and Field Parameter***

Purge Start Time: 1233 Purge Rate: 0.88 L/min X 0.265 = 0.2332 gal/min

Description of first water purged: Clear; No odor - moderately aerated

Drawdown Limit: 11.10 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 478.62 | 0.58 | 19 | ------- JM | 0.44 | 507.4 | 7.73 | 178.4 |
| 1235 | 479.05 | 18.3 | 24.0 | 2 17.5 | 1.48 | 486.9 | 7.76 | 85.1 |
| 1240 | 479.04 | 15.2 | 22.8 | 11.5 | 0.99 | 482.8 | 7.79 | 76.5 |
| 1245 | 479.04 | 11.7 | 22.0 | 10.8 | 0.95 | 481.4 | 7.84 | 68.4 |
| 1250 | 479.04 | 12.7 | 22.1 | 11.3 | 0.98 | 483.5 | 7.80 | 61.4 |
| 1255 | 479.04 | 16.6 | 22.0 | 12.8 | 1.11 | 483.3 | 7.85 | 55.5 |
| 1300 | 479.05 | 15.4 | 21.6 | 13.7 | 1.21 | 481.8 | 7.83 | 52.1 |
| 1305 | 479.05 | 15.9 | 21.5 | 15.3 | 1.35 | 480.4 | 7.84 | 48.2 |
| 1310 | 479.05 | 16.4 | 22.0 | 13.0 | 1.31 | 479.8 | 7.88 | 42.7 |
| ~~1315~~ JM | | | | | | | | |

Sample Time: 1315 Sample Date: 7-12-17

Purge End Time: 1316

6mm

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: Stephen Ansley Sampler Signature: Stephen Ansley

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | 12 |
| 2 | |
| Total | |

**IDW will be taken to:** GWTS/Pending Disposal Area

**IDW Label:** Green Non-hazardous

Comments:

Reviewed by: J. Messenger Initials: JM Review Date: 7-12-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW029-173

Well Location ID: KAFB-106029 **Sampling**

Date Sampled: 7-11-17 Time Sampled: 1010 Sampling Team: Joshua Messenger Stephen Busby

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | — | Water Level Meter: | Solinst 500 ft | Serial No: | ⌒ |
| PID: | MiniRAE 3000 | Serial No: | WH0004 | Turbidity Meter: | Hach 2100Q | Serial No: | — |

**Notes:**

Sample ID: GW029-173
Duplicate ID: (if applicable) GW029-573
COC#: COC-029-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106029** ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW029-173

***Well Information***

Screen Interval Length (ft): 20
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 475.87 ft MRP
Top of Screen: 450.87 ft MRP
Bottom of Screen: 470.87 ft MRP

Deployment Team: Team 1 (Stephen Busby, Sharmin Sultana)

Date Deployed: 5/8/17 Time Deployed: ~~1345~~ CM 1349

PID: MiniRAE 3000 Serial No: WH0005

Water Level Meter: Solinst 500 ft Serial No: Rental (33438)

PID Reading: 0.0 ppm

Depth to Water: 438.92'

***QC sample notes. (If blank, no QC samples required):***

Notes: 1 PDB deployed on 3rd Ring

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 452.87 | DMS | PDB |
| 2 | 455.47 | DMS | PDB |
| 3 | 458.07 | DMS | PDB |
| 4 | 460.67 | DMS | PDB |
| 5 | 463.27 | DMS | PDB |
| 6 | 465.87 | DMS | PDB |
| 7 | 468.47 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW030-173

Well Location ID: KAFB-106030 **Sampling**

Date Sampled: 7/11/17 Time Sampled: 0943 Sampling Team: Stephen Bushy Josh Messenger

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

| | | | | | Choose only one | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | |
|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: WH0004 | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW030-173
Duplicate ID: (if applicable) GW030-573
COC#: COC-030-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-17-17 11 cm

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106030** ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW030-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 489.96 ft MRP
Top of Screen: 469.56 ft MRP
Bottom of Screen: 484.56 ft MRP

Deployment Team: Team 1 (Stephen Busby, Shamin Sultana

Date Deployed: 5/8/17 Time Deployed: 1329

PID: MiniRAE 3000 Serial No: WH0005

Water Level Meter: Solinst 500 ft Serial No: Rental (33438)

PID Reading: 0.0 ppm

Depth to Water: 439.03'

***QC sample notes. (If blank, no QC samples required):***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 471.56 | DMS | PDB |
| 2 | 474.16 | DMS | PDB |
| 3 | 476.76 | DMS | PDB |
| 4 | 479.36 | DMS | PDB |
| 5 | 481.96 | DMS | PDB |

Notes:

1 PDB deployed on 3rd Ring

Reviewed by: C. Montoya Initials: CM Review Date: 5/10/17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106031 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW031-173

***Well Information***

Screen Interval Length (ft): 14

Previous Depth to Water (MRP): ~~439.08~~ ' ss (Gauged on ) ~~5/8/17~~ ss

Well Depth: 514.95 ft MRP
Top of Screen: 495.85 ft MRP
Bottom of Screen: 509.55 ft MRP

Deployment Team: Stephen Busby , Sharmin Sultana

Date Deployed: 5/8/17 Time Deployed: 1256

PID: MiniRAE 3000 Serial No: WH0005

Water Level Meter: Solinst 500 ft Serial No: Rental (33438)

PID Reading: 0.0 ppm

Depth to Water: 439.08'

***QC sample notes. (If blank, no QC samples required):***

Notes: 1 pdB deployed for EDB on 3rd ring !

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 497.85 | DMS | PDB |
| 2 | 500.45 | DMS | PDB |
| 3 | 503.05 | DMS | (PDB) |
| 4 | 505.65 | DMS | PDB |
| 5 | 508.25 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW031-173

Well Location ID: KAFB-106031 *Sampling*

Date Sampled: 7-11-17 Time Sampled: 0925 Sampling Team: Joshua Messenger Stephen Busby

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | |
|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: — |
| PID: | MiniRAE 3000 | Serial No: WH0004 | Turbidity Meter: | Hach 2100Q | Serial No: — |

**Notes:**

Sample ID: GW031-173
Duplicate ID: (if applicable) GW031-573
COC#: COC-031-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW032-173

Well Location ID: KAFB-106032 **Sampling**

Date Sampled: 7/11/17 Time Sampled: 0825 Sampling Team: Carlos Montoya, Shannon Sedam

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☑ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: WH 0005 | | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW032-173
Duplicate ID: (if applicable) GW032-573
COC#: COC-032-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106032** ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW032-173

***Well Information***

Screen Interval Length (ft): 20
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 480.55 ft MRP
Top of Screen: 456.05 ft MRP
Bottom of Screen: 476.05 ft MRP

Deployment Team: KG PF

Date Deployed: 5/9/17 Time Deployed: 1053

PID: MiniRAE 3000 Serial No: WH0004

Water Level Meter: Solinst 500 ft Serial No: WH0010

PID Reading: 0.0 ppm

Depth to Water: 445.40

***QC sample notes. (If blank, no QC samples required):***

***Duplicate sample required. Please deploy additional DMS below the 'spare' DMS*** ✓

Notes:

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 458.05 | DMS | PDB |
| 2 | 460.65 | DMS | PDB |
| 3 | 463.25 | DMS | PDB |
| 4 | 465.85 | DMS | PDB |
| 5 | 468.45 | DMS | PDB |
| 6 | 471.05 | DMS | PDB |
| 7 | 473.65 | DMS | PDB |

Reviewed by: SHARMIN SULTANA Initials: SS Review Date: 5/16/17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW033-173

Well Location ID: KAFB-106033 *Sampling*

Date Sampled: 7/11/17 Time Sampled: 0805 Sampling Team: Shanmin Sultana, Carlos Montoya

PID Reading: 0.0

## Type of Analysis (circle appropriate)

| Sampler Number (shallow to deep) | Choose only one | | | | | | | | Document in notes: Dup? | Document in notes: MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☑ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: WH00005 | | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW033-173
Duplicate ID: (if applicable) GW033-573
COC#: COC-033-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106033 *Deployment*

Year: 2017
Quarter: 3
Sample ID: GW033-173

***Well Information***

Screen Interval Length (ft): 15

Previous Depth to Water (MRP): (Gauged on )

Well Depth: 496.69 ft MRP
Top of Screen: 477.09 ft MRP
Bottom of Screen: 492.09 ft MRP

Deployment Team: KG PF

Date Deployed: 5/9/17 Time Deployed: 1115

PID: MiniRAE 3000 Serial No: WH00004

Water Level Meter: Solinst 500 ft Serial No: WH0010

PID Reading: 0.0 ppm

Depth to Water: 445.52

***QC sample notes. (If blank, no QC samples required):***

MS/MSD ✓

Notes:

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 479.09 | DMS | PDB |
| 2 | 481.69 | DMS | PDB |
| 3 | 484.29 | DMS | PDB |
| 4 | 486.89 | DMS | PDB |
| 5 | 489.49 | DMS | PDB |

Reviewed by: SHARMIN SULTANA Initials: SS Review Date: 5/16/17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106034 ***Sampling***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW034-173

**Date Sampled:** 7/11/17 **Time Sampled:** 0845 **Sampling Team:** Carlos Montoya, Shamim Sultana

**PID Reading:** 0.0

**Sampler Number:**
(shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | — | Water Level Meter: | Solinst 500 ft | Serial No: | ~ |
| PID: | MiniRAE 3000 | Serial No: | WH0005 | Turbidity Meter: | Hach 2100Q | Serial No: | — |

**Notes:**

Sample ID: GW034-173
Duplicate ID: (if applicable) GW034-573
COC#: COC-034-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW049-173

Well Location ID: KAFB-106049 *Sampling*

Date Sampled: 7/10/17 Time Sampled: 0830 Sampling Team: Stephen Busby, Carlos Montoya

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | [redacted] | Water Level Meter: | Solinst 500 ft | Serial No: | [redacted] |
| PID: | MiniRAE 3000 | Serial No: | WH0003 | Turbidity Meter: | Hach 2100Q | Serial No: | [redacted] |

**Notes:**

Sample ID: GW049-173
Duplicate ID: (if applicable) GW049-573
COC#: COC-049-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-13-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106049** ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW049-173

***Well Information***

Screen Interval Length (ft): 20
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 480.74 ft MRP
Top of Screen: 456.84 ft MRP
Bottom of Screen: 476.84 ft MRP

Deployment Team: Joshua Messenger Elon O'Malia

Date Deployed: 5-8-17 Time Deployed: 0949

PID: MiniRAE 3000 Serial No: WH0006

Water Level Meter: Solinst 500 ft Serial No: 1881012

PID Reading: 0.1 ppm

Depth to Water: 443.98'

***QC sample notes. (If blank, no QC samples required):***

Notes:

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 458.84 | DMS | PDB |
| 2 | 461.44 | DMS | PDB |
| 3 | 464.04 | DMS | PDB |
| 4 | 466.64 | DMS | PDB |
| 5 | 469.24 | DMS | PDB |
| 6 | 471.84 | DMS | PDB |
| 7 | 474.44 | DMS | PDB |

Reviewed by: Elon O'Malia Initials: EO Review Date: 5/11/17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106050 ***Sampling***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW050-173

**Date Sampled:** 7/11/17 **Time Sampled:** 0740 **Sampling Team:** Carlos Montoya, Shamim Sultan

**PID Reading:** 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: WH0005 | | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW050-173
Duplicate ID: (if applicable) GW050-573
COC#: COC-050-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106050 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW050-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 494.80 ft MRP
Top of Screen: 474.40 ft MRP
Bottom of Screen: 489.40 ft MRP

Deployment Team: Joshua Messenger Elon D'Mello

Date Deployed: 5-8-17 Time Deployed: 0958

PID: MiniRAE 3000 Serial No: W40006

Water Level Meter: Solinst 500 ft Serial No: W40012

PID Reading: 0.1 ppm

Depth to Water: 443.37'

***QC sample notes. (If blank, no QC samples required):***

Notes:

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 476.40 | DMS | PDB |
| 2 | 479.00 | DMS | PDB |
| 3 | 481.60 | DMS | (PDB) |
| 4 | 484.20 | DMS | PDB |
| 5 | 486.80 | DMS | PDB |

Reviewed by: C Montoya Initials: CM Review Date: 5-9-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW051-173

Well Location ID: KAFB-106051 **Sampling**

Date Sampled: 7-12-17 Time Sampled: 0750 Sampling Team: Carlos Montoya, Shaonmin Sultana

PID Reading: 0.0

**Sampler Number:**
(shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: | WH0005 | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW051-173
Duplicate ID: (if applicable) GW051-573
COC#: COC-051-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-12-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106051 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW051-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 521.26 ft MRP
Top of Screen: 500.86 ft MRP
Bottom of Screen: 515.86 ft MRP

Deployment Team: Joshua Messenger Ejon O'Malia

Date Deployed: ~~0940~~ 5-8-17 JM Time Deployed: JM ~~5-8-17~~ 0940

PID: MiniRAE 3000 Serial No: WH0006

Water Level Meter: Solinst 500 ft Serial No: WH0012

PID Reading: 0.1 ppm

Depth to Water: 443.68

***QC sample notes. (If blank, no QC samples required):***

Notes:

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 502.86 | DMS | PDB |
| 2 | 505.46 | DMS | PDB |
| 3 | 508.06 | DMS | (PDB) |
| 4 | 510.66 | DMS | PDB |
| 5 | 513.26 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-9-17

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# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106097
Project No: 62599DM01
Samplers: Carlos Montoya
Date: 7-19-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
**SCREEN SUBMERGED on 5/9/2017 (previous gauging date)**
Barricade/Notification: X
Measurement Reference Point (MRP): Top of Well Vault
IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 526.14 ft MRP
Top of Screen: 506.14 ft MRP
Bottom of Screen: 521.14 ft MRP
Reference Elevation Interval: 4838
IDW Label: Green Non-hazardous

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: — ft
LNAPL NOT observed during last gauging event: 5/9/2017

Previous Depth to water: 475.56 ft MRP
**Depth to Water (DTW): 476.03 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 18078-730

Non-Dedicated Pump Depth: 508.14 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | WH0003 |
| PID: | MiniRAE 3000 | Serial No: | WH0005 |
| Water Level Meter: | Solinst 500 ft | Serial No: | WH010 |
| Turbidity Meter: | Hach 2100Q | Serial No: | WH006 |

## Sample Information

Sample ID: GW097-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW097-573
Sampling Medium: Water
COC#: COC-097-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17 CM

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106097

## Purge Information and Field Parameter

Date: 7-19-17

Purge Start Time: 1015 Purge Rate: 0.880 L/min X 0.265 = 0.233 gal/min

Description of first water purged: Clear, no odor

Drawdown Limit: 30.58 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 475.56 | 0.25 | 19.5 | ------- | 1.77 | 425.3 | 7.75 | 162.3 |
| 1020 | 476.05 | 0.61 | 28.2 | 88.9 | 7.30 | 3.7 | 6.27 | 55.7 |
| 1025 | 476.06 | 3.74 | 26.8 | 42.9 | 3.42 | 640 | 7.80 | 158.0 |
| 1030 | 476.08 | 1.25 | 25.4 | 39.1 | 3.16 | 638 | 7.82 | 146.9 |
| 1035 | 476.08 | 0.41 | 24.8 | 36.1 | 3.00 | 633 | 7.85 | 130.0 |
| 1040 | 476.08 | 0.32 | 24.6 | 36.9 | 3.08 | 636 | 7.88 | 104.1 |

Sample Time: 1045 Sample Date: 7-19-17

Purge End Time: 1046 6mm

Bubbles in the vials? ☐ Yes ☑ No Where? — Amount — Size —

Sampled by: C. Montoya Sampler Signature:

## IDW Management

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | ~15 |
| 2 | |
| Total | |

IDW will be taken to: GWTS/Pending Disposal Area

IDW Label: Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7/24/17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106098
Project No: 62599DM01
Samplers: Carlos Montoya
Date: 7-19-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS

**SCREEN SUBMERGED on 5/9/2017 (previous gauging date)**

Barricade/Notification: [X]

Measurement Reference Point (MRP): Top of Well Vault

IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 551.10 ft MRP
Top of Screen: 531.00 ft MRP
Bottom of Screen: 546.00 ft MRP
Reference Elevation Interval: 4814

IDW Label: Green Non-hazardous

Protective Casing/Vault: (Intact) Damaged

Well Locked/Security Bolt Present: (Yes) No

Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)

LNAPL Thickness: — ft

LNAPL NOT observed during last gauging event: 5/9/2017

Previous Depth to water: 475.64 ft MRP

**Depth to Water (DTW): 476.17 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 1807B730

Non-Dedicated Pump Depth: 533.00 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | WH0003 |
| PID: | MiniRAE 3000 | Serial No: | WH0005 |
| Water Level Meter: | Solinst 500 ft | Serial No: | WH0012 |
| Turbidity Meter: | Hach 2100Q | Serial No: | WH0006 |

## Sample Information

Sample ID: GW098-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW098-573
Sampling Medium: Water
COC#: COC-098-173

Reviewed by: C. Montoya Initials: CM Review Date: 8-24-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106098

Date: 7-19-17

## Purge Information and Field Parameter

Purge Start Time: 0826 Purge Rate: 0.800 L/min X 0.265 = 0.212 gal/min

Description of first water purged: Clear, no odor

Drawdown Limit: 55.36 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 475.64 | 0.65 | 18.8 | ------- | 3.24 | 359.7 | 7.76 | 164.2 |
| 0830 | 476.18 | 1.48 | 23.3 | 84.2 | 7.16 | 466.7 | 7.56 | 187.7 |
| 0835 | 476.20 | 2.35 | 21.9 | 47.6 | 4.16 | 560 | 7.79 | 187.4 |
| 0840 | 476.21 | 2.23 | 21.5 | 42.0 | 3.68 | 559 | 7.80 | 177.9 |
| 0845 | 476.4 | 1.77 | 21.2 | 40.9 | 3.63 | 559 | 7.80 | 173.4 |
| 0850 | 476.20 | 2.63 | 21.2 | 42.0 | 6.cm 3.72 | 559 | 7.80 | 170.1 |

Sample Time: 0855 Sample Date: 7-19-17

Purge End Time: 0854 6mm

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: C. Montoya Sampler Signature:

## IDW Management

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | |
| 2 | |
| Total | |

IDW will be taken to: GWTS/Pending Disposal Area

IDW Label: Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106099
Project No: 62599DM01
Samplers: C Montoya
Date: 7-20-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS

**SCREEN SUBMERGED on 5/10/2017 (previous gauging date)**

Barricade/Notification: [X]

Measurement Reference Point (MRP): Top of Well Vault

IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 521.11 ft MRP
Top of Screen: 501.11 ft MRP
Bottom of Screen: 516.11 ft MRP
Reference Elevation Interval: 4838

IDW Label: Green Non-hazardous

Protective Casing/Vault: (Intact) Damaged

Well Locked/Security Bolt Present: (Yes) No

Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: _____ ppm

LNAPL Present (circle one)? Yes (No)

LNAPL Thickness: _____ ft

LNAPL NOT observed during last gauging event: 5/10/2017

Previous Depth to water: 470.59 ft MRP

**Depth to Water (DTW):** 471.02 **ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 18078-730

Non-Dedicated Pump Depth: 503.11 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

pH, Conductivity, ORP, DO, Temperature: YSI Professional Plus — Serial No: WH0003

PID: MiniRAE 3000 — Serial No: WH0005

Water Level Meter: Solinst 500 ft — Serial No: 0001

Turbidity Meter: Hach 2100Q — Serial No: WH0008

## Sample Information

Sample ID: GW099-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW099-573
Sampling Medium: Water
COC#: COC-099-173

Reviewed by: C. Montoya Initials: CM Review Date: 8/24/17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106099

Date: 7-20-17

## Purge Information and Field Parameter

Purge Start Time: 1143 Purge Rate: 0.800 L/min X 0.265 = 0.212 gal/min

Description of first water purged: clear, no odor

Drawdown Limit: 30.52 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 470.59 | 0.57 | 17 | ------- | 5.68 | 1033 | 7.91 | 171.5 |
| 1150 | 471.02 | 1.98 | 18.6 | 95.2 | 7.33 | 801 | 7.71 | 153.8 |
| 1155 | 471.02 | 0.44 | 21.2 | 93.1 | 7.38 | 798 | 7.72 | 153.8 |
| 1200 | 471.02 | 2.68 | 25.8 | 87.9 | 7.15 | 793 | 7.72 | 153.3 |

Sample Time: 1205 Sample Date: 7-20-17

Purge End Time: 1207

6mm

Bubbles in the vials? ☐ Yes ☑ No Where? — Amount — Size —

Sampled by: C. Montoya Sampler Signature:

## IDW Management

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | ~10 |
| 2 | |
| Total | |

IDW will be taken to: GWTS/Pending Disposal Area

IDW Label: Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106100
Project No: 62599DM01
Samplers: Carlos Montoya
Date: 7-20-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
**SCREEN SUBMERGED on 5/10/2017 (previous gauging date)**
Barricade/Notification: X
Measurement Reference Point (MRP): Top of Well Vault
IDW will be taken to: GWTS/Pending Disposal Area
IDW Label: Green Non-hazardous

Well Depth: 546.09 ft MRP
Top of Screen: 526.09 ft MRP
Bottom of Screen: 541.09 ft MRP
Reference Elevation Interval: 4814

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: ft
LNAPL NOT observed during last gauing event: 5/10/2017

Previous Depth to water: 470.59 ft MRP
**Depth to Water (DTW): 471.07 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 18078-730

Non-Dedicated Pump Depth: 528.09 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | WH0003 |
| PID: | MiniRAE 3000 | Serial No: | WH0005 |
| Water Level Meter: | Solinst 500 ft | Serial No: | 0001 |
| Turbidity Meter: | Hach 2100Q | Serial No: | WH0008 |

## Sample Information

Sample ID: GW100-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW100-573
Sampling Medium: Water
COC#: COC-100-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106100

Date: 7-20-17

***Purge Information and Field Parameter***

Purge Start Time: 0956 Purge Rate: 0.960 L/min X 0.265 = 0.254 gal/min

Description of first water purged: clear, no odor

Drawdown Limit: 55.50 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| **Historical Data:** | **470.59** | **0.63** | **18.7** | ------- | **6.26** | **337.7** | **7.26** | **145** |
| 1005 | 471.07 | 4.17 | 27.4 | 63.9 | 4.90 | 494.0 | 7.85 | 146.5 |
| 1010 | 471.10 | 3.36 | 25.9 | 44.3 | 3.59 | 494.0 | 7.87 | 140.5 |
| 1015 | 471.07 | 2.21 | 25.2 | 41.7 | 3.43 | 497.2 | 7.89 | 132.6 |
| 1020 | 471.08 | 2.05 | 24.8 | 42.2 | 3.48 | 498.9 | 7.90 | 123.4 |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Sample Time: 1025 Sample Date: 7-20-17

Purge End Time: 1027

Bubbles in the vials? ☑ Yes ☐ No Where? Vial Amount One Size ~~cm~~ mm <6mm

Sampled by: Carlos Montoya Sampler Signature:

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | |
| 2 | |
| Total | |

**IDW will be taken to:** GWTS/Pending Disposal Area

**IDW Label:** Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106101
Project No: 62599DM01
Samplers: Carlos Montoya
Date: 7-18-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
**SCREEN SUBMERGED on 5/8/2017 (previous gauging date)**
Barricade/Notification: ☐
Measurement Reference Point (MRP): Top of Protective Casing

Well Depth: 518.23 ft MRP
Top of Screen: 499.03 ft MRP
Bottom of Screen: 514.33 ft MRP
Reference Elevation Interval: 4838

IDW will be taken to: GWTS/Pending Disposal Area
IDW Label: Green Non-hazardous

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: — ft
LNAPL NOT observed during last gauging event: 5/8/2017

Previous Depth to water: 468.13 ft MRP
**Depth to Water (DTW): 468.30 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 180137-730

Non-Dedicated Pump Depth: 501.03 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | WH0003 |
| PID: | MiniRAE 3000 | Serial No: | WH0005 |
| Water Level Meter: | Solinst 500 ft | Serial No: | WH0010 |
| Turbidity Meter: | Hach 2100Q | Serial No: | WH0008 |

## Sample Information

Sample ID: GW101-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW101-573
Sampling Medium: Water
COC#: COC-101-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17 CM

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106101

***Purge Information and Field Parameter*** Date:

Purge Start Time: 1100 Purge Rate: 0.800 L/min X 0.265 = 0.212 gal/min

Description of first water purged: Clear, no odor

Drawdown Limit: 30.90 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| Historical Data: | 468.13 | 0.52 | 18 | ------- | 6.92 | 422.3 | 8.1 | 133.5 |
| 1105 | 468.32 | 1.64 | 21.7 | 94.6 | ~~7.54~~ CM | 527 | 7.77 | 162.9 |
| 1110 | 468.33 | 1.90 | 25.8 | 78.0 | 6.32 | 546 | 7.83 | 158.1 |
| 1115 | 468.34 | 1.75 | 24.6 | 67.4 | 5.61 | 544 | 7.84 | 155.0 |
| 1120 | 468.34 | 1.18 | 24.0 | 64.9 | 5.47 | 544 | 7.85 | 149.7 |
| 1125 | 468.34 | 1.43 | 23.7 | 65.2 | 5.51 | 543 | 7.84 | 145.4 CM |
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Sample Time: 1130 Sample Date: 7-18-17

Purge End Time: 1137

6mm

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: Carlos Montoya Sampler Signature:

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | ~14 |
| 2 | |
| Total | |

**IDW will be taken to:** GWTS/Pending Disposal Area

**IDW Label:** Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7 8-24-17 CM

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106102
Project No: 62599DM01
Samplers: Carlos Montoya
Date: 7-18-17
Crew Signature:

## Well Information

Well was NOT HAZARDOUS
**SCREEN SUBMERGED on 5/8/2017 (previous gauging date)**
Barricade/Notification: ☐
Measurement Reference Point (MRP): Top of Protective Casing
IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 543.17 ft MRP
Top of Screen: 524.07 ft MRP
Bottom of Screen: 537.77 ft MRP
Reference Elevation Interval: 4814
IDW Label: Green Non-hazardous

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.4 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: 0 ft
LNAPL NOT observed during last gauing event: 5/8/2017

Previous Depth to water: 468.29 ft MRP
**Depth to Water (DTW): 468.41 ft MRP**

## Pump Information

**Non-Dedicated Pump**

Bennett Pump Serial No.: 18078-730
Non-Dedicated Pump Depth: 526.07 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

## Field Instrumentation

| | | | |
|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | WH0003 |
| PID: | MiniRAE 3000 | Serial No: | WH0005 |
| Water Level Meter: | Solinst 500 ft | Serial No: | WH0010 |
| Turbidity Meter: | Hach 2100Q | Serial No: | WH0004 |

## Sample Information

Sample ID: GW102-173
Sampling Method: Low-flow
Duplicate ID: (if applicable) GW102-573
Sampling Medium: Water
COC#: COC-102-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17 CM

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: 3 (Jul-Sep)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106102

Date:

***Purge Information and Field Parameter***

Purge Start Time: 1253 Purge Rate: 0.800 L/min X 0.265 = 0.212 gal/min

Description of first water purged: clear, no odor

Drawdown Limit: 55.78 ft (based on previous water level)

| Time | DTW (ft) | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|
| Stabilization Requirements | ------- | If >10,±10% | ±10% | ------- | ±10% | ±10% | ±0.5 | ------- |
| **Historical Data:** | **468.29** | **5.56** | **19.5** | ------- | **4.61** | **745** | **7.9** | **179.8** |
| 1300 | 468.44 | 1.13 | 30.3 | 75.1 | 5.69 | 465 | 7.83 | 89.7 |
| 1305 | 468.45 | 0.87 | 27.4 | 67.5 | 5.35 | ~~465.9~~ 468 µS/cm | 7.89 | 52.1 |
| 1310 | 468.46 | 0.97 | 25.6 | 63.2 | 5.16 | 465.1 | 7.94 | 4.6 |
| 1315 | 468.46 | 1.43 | 25.6 µS/cm | 60.7 | 4.96 | 464.0 | 7.94 | -7.0 |
| | | | | | | | | |
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Sample Time: 1320 Sample Date: 7-18-17

Purge End Time: 1324 6mm

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: Carlos Montoya Sampler Signature:

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | ~14 |
| 2 | |
| Total | |

**IDW will be taken to:** GWTS/Pending Disposal Area

**IDW Label:** Green Non-hazardous

Comments:

Reviewed by: C. Montoya Initials: CM Review Date: 7-24-17 CM

7/17/17 [06]

KAFB - 106157 Field Parameter

| | Temp | DO % | DO mg/L | SPC | pH | ORP | Turbidity |
|---|---|---|---|---|---|---|---|
| 0945 | 19.7 | 15.7 | 1.40 | 719 | 7.07 | 8.2 | 12.3 |
| 1000 | 19.6 | 5.2 | 0.48 | 717 | 7.12 | -63.5 | 12.9 |
| 1015 | 19.6 | 5.1 | 0.47 | 715 | 7.13 | -68.2 | 12.7 |
| 1030 | 19.7 | 5.5 | 0.49 | 715 | 7.14 | -68.4 | 14.0 |
| 1045 | 19.4 | 5.9 | 0.54 | 715 | 7.15 | -65.8 | 13.8 |
| 1055 | 19.5 | 6.7 | 0.61 | 715 | 7.16 | -63.3 | 13.0 |
| 1100 | 19.6 | 7.3 | 0.67 | 714 | 7.16 | -62.3 | 13.8 |
| 1115 | 19.4 | 7.2 | 0.66 | 714 | 7.17 | -59.2 | 14.2 |
| 1130 | 19.5 | 7.1 | 0.65 | 714 | 7.18 | -59.7 | 12.6 |
| 1145 | 19.7 | 7.5 | 0.69 | 714 | 7.20 | -55.8 | 13.9 |
| 1150 | 19.6 | 7.4 | 0.68 | 715 | 7.20 | -55.8 | 13.4 |
| 1155 | 19.6 | 8.0 | 0.72 | 714 | 7.20 | -55.2 | 15.3 |
| 1200 | 19.5 | 8.0 | 0.73 | 716 | 7.21 | -54.0 | 13.1 |

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# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106201 *Deployment*

Year: 2017
Quarter: 3
Sample ID: GW201-173

***Well Information***

Screen Interval Length (ft): 30
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 524.75 ft MRP
Top of Screen: 489.75 ft MRP
Bottom of Screen: 519.75 ft MRP

Deployment Team: EO, KG

Date Deployed: 5/10/17 Time Deployed: 1340

PID: MiniRAE 3000 Serial No: WH00004

Water Level Meter: Solinst 500 ft Serial No: WH0010

PID Reading: 0.0 ppm

Depth to Water: 485.20

***QC sample notes. (If blank, no QC samples required):***

~~*MS/MSD required. Please deploy additional DMS below the 'spare' DMS*~~ ao

Notes:

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 491.75 | DMS | PDB |
| 2 | 494.35 | DMS | PDB |
| 3 | 496.95 | DMS | PDB |
| 4 | 499.55 | DMS | PDB |
| 5 | 502.15 | DMS | PDB |
| 6 | 504.75 | DMS | PDB |
| 7 | 507.35 | DMS | PDB |
| 8 | 509.95 | DMS | PDB |
| 9 | 512.55 | DMS | PDB |
| 10 | 515.15 | DMS | PDB |

Reviewed by: SHARMIN SULTANA Initials: SS Review Date: 5/16/17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106201 *Sampling*

Year: 2017
Quarter: 3
Sample ID: GW201-173

Date Sampled: 7/10/17 Time Sampled: ~~0820~~ JM 0914 Sampling Team: Joshua Messenger, Sharmin Sultana

PID Reading: 0.2

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB JM | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: | WH6012 |
| PID: | MiniRAE 3000 | Serial No: | WH6004 | Turbidity Meter: | Hach 2100Q | Serial No: | — |

**Notes:** ~~488.22'~~ JM DTW 487.82' DTW

Sample ID: GW201-173
Duplicate ID: (if applicable) GW201-573
COC#: COC-201-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW202-173

Well Location ID: KAFB-106202 **Sampling**

Date Sampled: 7-10-17 Time Sampled: 0838 Sampling Team: Joshua Messenger Sharmin Sultana

PID Reading: 0.7

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

pH, Conductivity, ORP, DO, Temperature: YSI Professional Plus Serial No: —

Water Level Meter: Solinst 500 ft Serial No: 1417007Z

PID: MiniRAE 3000 Serial No: 1417000Y

Turbidity Meter: Hach 2100Q Serial No: —

**Notes:** 487.81' DTW

Sample ID: GW202-173

Duplicate ID: (if applicable) GW202-573

COC#: COC-202-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106202 *Deployment*

Year: 2017
Quarter: 3
Sample ID: GW202-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): 487.55 (Gauged on )

Well Depth: 539.83 ft MRP
Top of Screen: 519.83 ft MRP
Bottom of Screen: 534.83 ft MRP

Deployment Team: Sharmin Sultana, Carlos Montoya

Date Deployed: 5/22/17 Time Deployed: 0900

PID: MiniRAE 3000 Serial No: 401+0004

Water Level Meter: Solinst 500 ft Serial No: 401+0092

PID Reading: 0.0 ppm

Depth to Water: 486.45'

***QC sample notes. (If blank, no QC samples required):***

Notes: PDBs deployed on 3rd and 4th rings

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | PDB |
| 4 | | PDB |
| 5 | | |

Reviewed by: Stephen Busby Initials: SB Review Date: 5/22/17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106203** ***Sampling***

Year: 2017
Quarter: 3
Sample ID: GW203-173

Date Sampled: 7/10/17 Time Sampled: ~~0914~~ JM 0820 Sampling Team: Joshua Messenger, Sharmin Sultana

PID Reading: ~~5.9~~ 0.4

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)** — *Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | — | Water Level Meter: | Solinst 500 ft | Serial No: | Wilfred |
| PID: | MiniRAE 3000 | Serial No: | WH00641 | Turbidity Meter: | Hach 2100Q | Serial No: | — |

**Notes:** 488.22 ' DTW

Sample ID: GW203-173
Duplicate ID: (if applicable) GW203-573
COC#: COC-203-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-20-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106203 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW203-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): 487.54 (Gauged on )

Well Depth: 643.15 ft MRP
Top of Screen: 623.15 ft MRP
Bottom of Screen: 638.15 ft MRP

Deployment Team: Carlos Montoya, Shermin Sultana

Date Deployed: 5/22/17 Time Deployed: 0820

PID: MiniRAE 3000 Serial No: WH0004

Water Level Meter: Solinst 500 ft Serial No: WH000

PID Reading: 0.0 ppm

Depth to Water: 486.87'

***QC sample notes. (If blank, no QC samples required):***

Notes: PDBs deployed on 3rd and 4th rings!

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | PDB |
| 4 | | PDB |
| 5 | | |

Reviewed by: Stephen Busby Initials: SB Review Date: 5/22/17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106204 ***Sampling***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW204-173

**Date Sampled:** 7-10-17 **Time Sampled:** 1102 **Sampling Team:** Sharmin Sultana, Joshua Messenger

**PID Reading:** 0.1

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB (circled) | Alkalinity | ☑ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | |
|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: CW H012 |
| PID: | MiniRAE 3000 | Serial No: CW H0004 | Turbidity Meter: | Hach 2100Q | Serial No: — |

**Notes:** —

Sample ID: GW204-173
Duplicate ID: (if applicable) GW204-573
COC#: COC-204-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106204 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW204-173

***Well Information***

Screen Interval Length (ft): 30
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 497.57 ft MRP
Top of Screen: 462.57 ft MRP
Bottom of Screen: 492.57 ft MRP

Deployment Team: Joshua Brown Joshua Messenger

Date Deployed: 5-9-17 Time Deployed: 1058

PID: MiniRAE 3000 Serial No: 411 0006

Water Level Meter: Solinst 500 ft Serial No: 411 0012

PID Reading: 0.0 ppm

Depth to Water: 460.46

***QC sample notes. (If blank, no QC samples required):***

Notes: Deploy Spare ~~DTMS~~ JB PDB

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 464.57 | DMS | PDB |
| 2 | 467.17 | DMS | PDB |
| 3 | 469.77 | DMS | (PDB) |
| 4 | 472.37 | DMS | (PDB) |
| 5 | 474.97 | DMS | PDB |
| 6 | 477.57 | DMS | PDB |
| 7 | 480.17 | DMS | PDB |
| 8 | 482.77 | DMS | PDB |
| 9 | 485.37 | DMS | PDB |
| 10 | 487.97 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-15-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106205** ***Sampling***

Year: 2017
Quarter: 3
Sample ID: GW205-173

Date Sampled: 7-10-17 Time Sampled: 1035 Sampling Team: Joshua Messenger, Sharmin Sultana

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☑ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | |
|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: WH012 |
| PID: | MiniRAE 3000 | Serial No: WH00004 | Turbidity Meter: | Hach 2100Q | Serial No: — |

**Notes:** 461.46' DTW

Sample ID: GW205-173
Duplicate ID: (if applicable) GW205-573
COC#: COC-205-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106205 *Deployment*

Year: 2017
Quarter: 3
Sample ID: GW205-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 512.50 ft MRP
Top of Screen: 492.50 ft MRP
Bottom of Screen: 507.50 ft MRP

Deployment Team: Joshua Brown Joshua Messenger

Date Deployed: 5-9-17 Time Deployed: 1040

PID: MiniRAE 3000 Serial No: wH000 6

Water Level Meter: Solinst 500 ft Serial No: wH0012

PID Reading: 0.0 ppm

Depth to Water: 460.87

Notes: Deploy Spare ~~DMS~~ PDB

***QC sample notes. (If blank, no QC samples required):***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 494.50 | DMS | PDB |
| 2 | 497.10 | DMS | PDB |
| (3) | 499.70 | DMS | (PDB) |
| (4) | 502.30 | DMS | (PDB) |
| 5 | 504.90 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW206-173

Well Location ID: KAFB-106206 **Sampling**

Date Sampled: 7-10-17 Time Sampled: 1012 Sampling Team: Joshua Messenger, Sharmin Sultana

PID Reading: 0.1

## Type of Analysis (circle appropriate)

| Sampler Number (shallow to deep) | | | | | Choose only one | | | | Document in notes: Dup? | Document in notes: MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: | 40H012 |
| PID: | MiniRAE 3000 | Serial No: | WH0004 | Turbidity Meter: | Hach 2100Q | Serial No: | — |

**Notes:** 461.65'

Sample ID: GW206-173
Duplicate ID: (if applicable) GW206-573
COC#: COC-206-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106206 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW206-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 613.20 ft MRP
Top of Screen: 593.50 ft MRP
Bottom of Screen: 608.20 ft MRP

Deployment Team: Joshua Messenger Joshua Brown

Date Deployed: 5-9-17 Time Deployed: 1018

PID: MiniRAE 3000 Serial No: WH00206

Water Level Meter: Solinst 500 ft Serial No: WH00112

PID Reading: 0.0 ppm

Depth to Water: 461.04

Notes: Deployed Spare PDB

***QC sample notes. (If blank, no QC samples required):***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 595.50 | DMS | PDB |
| 2 | 598.10 | DMS | PDB |
| 3 | 600.70 | DMS | (PDB) |
| 4 | 603.30 | DMS | (PDB) |
| 5 | 605.90 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106207 **Sampling**

Year: 2017
Quarter: 3
Sample ID: GW207-173

Date Sampled: 7-10-17 Time Sampled: 1225 Sampling Team: Joshua Messenger Sharmin Sultana

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

pH, Conductivity, ORP, DO, Temperature: YSI Professional Plus Serial No: —

Water Level Meter: Solinst 500 ft Serial No: —

PID: MiniRAE 3000 Serial No: 590004

Turbidity Meter: Hach 2100Q Serial No: —

**Notes:** No depth reading

Sample ID: GW207-173

Duplicate ID: (if applicable) GW207-573

COC#: COC-207-173

Reviewed by: C Montoya Initials: CM Review Date: 7-6-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106207** ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW207-173

***Well Information***

Screen Interval Length (ft): 30
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 508.00 ft MRP
Top of Screen: 473.00 ft MRP
Bottom of Screen: 503.00 ft MRP

Deployment Team: Team1 (Stephen Bushy) (Shamin Sultana)

Date Deployed: 5/11/17 Time Deployed: 0843

PID: 0.0 MiniRAE 3000 Serial No: WH0005

Water Level Meter: Solinst 500 ft Serial No: Rental

PID Reading: 0.0 ppm

Depth to Water: 471.59'

***QC sample notes. (If blank, no QC samples required):***

Notes: PDBs are deployed on 3rd & 4th rings

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 475.00 | DMS | PDB |
| 2 | 477.60 | DMS | PDB |
| 3 | 480.20 | DMS | (PDB) |
| 4 | 482.80 | DMS | (PDB) |
| 5 | 485.40 | DMS | PDB |
| 6 | 488.00 | DMS | PDB |
| 7 | 490.60 | DMS | PDB |
| 8 | 493.20 | DMS | PDB |
| 9 | 495.80 | DMS | PDB |
| 10 | 498.40 | DMS | PDB |

Reviewed by: Stephen Bushy Initials: SB Review Date: 5/15/17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106208** ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW208-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 523.30 ft MRP
Top of Screen: 503.30 ft MRP
Bottom of Screen: 518.30 ft MRP

Deployment Team: Team1 (Stephen Busby, Shamim Sultana)

Date Deployed: 5/11/17 Time Deployed: 0856

PID: 0.0 MiniRAE 3000 Serial No: WH0005

Water Level Meter: Solinst 500 ft Serial No: Rental

PID Reading: 0.0 ppm

Depth to Water: 471.30'

***QC sample notes. (If blank, no QC samples required):***

Notes: deployed PDBs on 3rd and 4th rings

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 505.30 | DMS | PDB |
| 2 | 507.90 | DMS | PDB |
| 3 | 510.50 | DMS | (PDB) |
| 4 | 513.10 | DMS | (PDB) |
| 5 | 515.70 | DMS | PDB |

Reviewed by: Stephen Busby Initials: SB Review Date: 5/15/17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106208 ***Sampling***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW208-173

**Date Sampled:** 7-10-17 **Time Sampled:** 1205 **Sampling Team:** Sharmin Sultana, Joshua messenger

**PID Reading:** 0.0

**Sampler Number:**
(shallow to deep)

**Type of Analysis (circle appropriate)**

| | | | | | *Choose only one* | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | |
|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: WH0004 | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:** No depth reading taken!

Sample ID: GW208-173
Duplicate ID: (if applicable) GW208-573
COC#: COC-208-173

Reviewed by: C. Montop Initials: CM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW209-173

Well Location ID: KAFB-106209 **Sampling**

Date Sampled: 7-11-17 Time Sampled: 0741 Sampling Team: Joshua Messenger Stephen Busby

PID Reading: 0.0

## Type of Analysis (circle appropriate)

| Sampler Number (shallow to deep) | | | | | Choose only one | | | | Document in notes: Dup? | Document in notes: MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | — | Water Level Meter: | Solinst 500 ft | Serial No: | — |
| PID: | MiniRAE 3000 | Serial No: | WH0004 | Turbidity Meter: | Hach 2100Q | Serial No: | / |

**Notes:**

Sample ID: GW209-173
Duplicate ID: (if applicable) GW209-573
COC#: COC-209-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106209** ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW209-173

***Well Information***

Screen Interval Length (ft): 14
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 622.00 ft MRP
Top of Screen: 603.00 ft MRP
Bottom of Screen: 617.00 ft MRP

Deployment Team: Team 1 (Stephen Busby, Sharmin Sultana

Date Deployed: 5/11/17 Time Deployed: 0918

PID: 0.0 MiniRAE 3000 Serial No: WH0005

Water Level Meter: Solinst 500 ft Serial No: Rental

PID Reading: 0.0 ppm

Depth to Water: 470.63'

***QC sample notes. (If blank, no QC samples required):***

Notes: PDBs deployed on 3rd & 4th rings!

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 605.00 | DMS | PDB |
| 2 | 607.60 | DMS | PDB |
| 3 | 610.20 | DMS | (PDB) |
| 4 | 612.80 | DMS | (PDB) |
| 5 | 615.40 | DMS | PDB |

Reviewed by: Stephen Busby Initials: SB Review Date: 5/15/17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106216 ***Sampling***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW216-173

**Date Sampled:** 7-17-17 **Time Sampled:** 0800 **Sampling Team:** C. Montoya E. Dimas

**PID Reading:** 0.0

**Sampler Number:**
(shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | Document in notes: MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | |
|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | | Water Level Meter: Solinst 500 ft | Serial No: |
| PID: | MiniRAE 3000 | Serial No: | µHo005 | Turbidity Meter: Hach 2100Q | Serial No: |

**Notes:**

Sample ID: GW216-173
Duplicate ID: (if applicable) GW216-573
COC#: COC-216-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-17-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106216 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW216-173

***Well Information***

Screen Interval Length (ft): 30
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 490.50 ft MRP
Top of Screen: 455.50 ft MRP
Bottom of Screen: 485.50 ft MRP

Deployment Team: JOSHUA MESSENGER JOSHUA BROWN

Date Deployed: 5-9-17 Time Deployed: 1235

PID: MiniRAE 3000 Serial No: WH00006

Water Level Meter: Solinst 500 ft Serial No: 1410012

PID Reading: 0.0 ppm

Depth to Water: 462.15

***QC sample notes. (If blank, no QC samples required):***

Notes: Spare Deployed
Moved down 1 position due to water interface

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 457.50 | DMS | PDB |
| 2 | 460.10 | DMS | PDB |
| ~~3~~ | ~~462.70~~ | DMS | ~~PDB~~ JM |
| 4 | 465.30 | DMS | PDB |
| 5 | 467.90 | DMS | PDB |
| 6 | 470.50 | DMS | PDB |
| 7 | 473.10 | DMS | PDB |
| 8 | 475.70 | DMS | PDB |
| 9 | 478.30 | DMS | PDB |
| 10 | 480.90 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106217 **Sampling**

Year: 2017
Quarter: 3
Sample ID: GW217-173

Date Sampled: 7-17-17 Time Sampled: 0820 Sampling Team: C. Montoya, E. Amalia

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

| | | | | | Choose only one | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

pH, Conductivity, ORP, DO, Temperature: YSI Professional Plus Serial No: —

Water Level Meter: Solinst 500 ft Serial No: —

PID: MiniRAE 3000 Serial No: WH0005

Turbidity Meter: Hach 2100Q Serial No: —

**Notes:** Slighty corrosion on weights

Sample ID: GW217-173
Duplicate ID: (if applicable) GW217-573
COC#: COC-217-173

Reviewed by: C. Montoya Initials: CM Review Date: 7.17.17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106217 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW217-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 505.06 ft MRP
Top of Screen: 485.06 ft MRP
Bottom of Screen: 500.06 ft MRP

Deployment Team: Joshua Messenger Joshua Brown

Date Deployed: 5-9-17 Time Deployed: 1211

PID: MiniRAE 3000 Serial No: 0W40003

Water Level Meter: Solinst 500 ft Serial No: W40010

PID Reading: 0.0 ppm

Depth to Water: 462.11

Notes: Spare Deployed

***QC sample notes. (If blank, no QC samples required):***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 487.06 | DMS | PDB |
| 2 | 489.66 | DMS | PDB |
| 3 | 492.26 | DMS | PDB |
| 4 | 494.86 | DMS | PDB |
| 5 | 497.46 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106218 *Sampling*

Year: 2017
Quarter: 3
Sample ID: GW218-173

Date Sampled: 7/17/17 Time Sampled: 0845 Sampling Team: E. O'Malia, C. Montoya

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: | WH0005 | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW218-173
Duplicate ID: (if applicable) GW218-573
COC#: COC-218-173

Reviewed by: C. Montoya Initials: CM Review Date: 7.17.17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106218 *Deployment*

Year: 2017
Quarter: 3
Sample ID: GW218-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 572.45 ft MRP
Top of Screen: 552.00 ft MRP
Bottom of Screen: 567.00 ft MRP

Deployment Team: Joshua Messenger Joshua Brown

Date Deployed: 5-9-17 Time Deployed: 1146

PID: MiniRAE 3000 Serial No: 401006

Water Level Meter: Solinst 500 ft Serial No: 401012

PID Reading: 0.1 ppm

Depth to Water: 462.26'

Notes: Spare PDB deployed

***QC sample notes. (If blank, no QC samples required):***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 554.00 | DMS | PDB |
| 2 | 556.60 | DMS | PDB |
| 3 | 559.20 | DMS | (PDB) |
| 4 | 561.80 | DMS | (PDB) |
| 5 | 564.40 | DMS | PDB |

Reviewed by: C Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW222-173

Well Location ID: KAFB-106222 **Sampling**

Date Sampled: 7-11-17 Time Sampled: 1041 Sampling Team: Joshua Messenger Stephen Busby

PID Reading: 0.2

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | ~ | Water Level Meter: | Solinst 500 ft | Serial No: | ~ |
| PID: | MiniRAE 3000 | Serial No: | WH0004 | Turbidity Meter: | Hach 2100Q | Serial No: | ~ |

**Notes:**

Sample ID: GW222-173
Duplicate ID: (if applicable) GW222-573
COC#: COC-222-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106222 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW222-173

***Well Information***

Screen Interval Length (ft): 30
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 493.52 ft MRP
Top of Screen: 458.12 ft MRP
Bottom of Screen: 488.12 ft MRP

Deployment Team: Joshua Messenger Joshua Brown

Date Deployed: 5-9-17 Time Deployed: 1400

PID: MiniRAE 3000 Serial No: WH0006

Water Level Meter: Solinst 500 ft Serial No: 1040012

PID Reading: 0.0 ppm

Depth to Water: 461.19

Notes: Spare Deployed

***QC sample notes. (If blank, no QC samples required):***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 460.12 | DMS | PDB |
| 2 | 462.72 | DMS | PDB |
| 3 | 465.32 | DMS | PDB |
| 4 | 467.92 | DMS | PDB |
| 5 | 470.52 | DMS | PDB |
| 6 | 473.12 | DMS | PDB |
| 7 | 475.72 | DMS | PDB |
| 8 | 478.32 | DMS | PDB |
| 9 | 480.92 | DMS | PDB |
| 10 | 483.52 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106223** ***Sampling***

Year: 2017
Quarter: 3
Sample ID: GW223-173

Date Sampled: 7/17/17 Time Sampled: 0950 Sampling Team: C. Montoya, E. O'Malia

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

| | | | | | *Choose only one* | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | | Water Level Meter: | Solinst 500 ft | Serial No: | |
| PID: | MiniRAE 3000 | Serial No: | WH005 | Turbidity Meter: | Hach 2100Q | Serial No: | |

**Notes:**

Sample ID: GW223-173
Duplicate ID: (if applicable) GW223-573
COC#: COC-223-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-17-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106223 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW223-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 508.03 ft MRP
Top of Screen: 487.83 ft MRP
Bottom of Screen: 502.83 ft MRP

Deployment Team: Joshua Brown Joshua Messenger

Date Deployed: 5-9-17 Time Deployed: 1337

PID: MiniRAE 3000 Serial No: WH0006

Water Level Meter: Solinst 500 ft Serial No: WH0012

PID Reading: 0.0 ppm

Depth to Water: 461.86

Notes: Spare Deployed

***QC sample notes. (If blank, no QC samples required):***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 489.83 | DMS | PDB |
| 2 | 492.43 | DMS | PDB |
| 3 | 495.03 | DMS | (PDB) |
| 4 | 497.63 | DMS | (PDB) |
| 5 | 500.23 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: CM 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106224 **Sampling**

Year: 2017
Quarter: 3
Sample ID: GW224-173

Date Sampled: 7/17/17 Time Sampled: 1018 Sampling Team: E. O'Malia, C. Montoya

PID Reading: 0.1

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

| | | | | | Choose only one | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | ~ | Water Level Meter: | Solinst 500 ft | Serial No: | ~ |
| PID: | MiniRAE 3000 | Serial No: | WH00005 | Turbidity Meter: | Hach 2100Q | Serial No: | ~ |

**Notes:**

Sample ID: GW224-173
Duplicate ID: (if applicable) GW224-573
COC#: COC-224-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-17-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106224 **Deployment**

Year: 2017
Quarter: 3
Sample ID: GW224-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 575.51 ft MRP
Top of Screen: 555.01 ft MRP
Bottom of Screen: 570.01 ft MRP

Deployment Team: Joshua Messenger Joshua Brown

Date Deployed: 5-9-17 Time Deployed: 1315

PID: MiniRAE 3000 Serial No: WH0006

Water Level Meter: Solinst 500 ft Serial No: WH0012

PID Reading: 0.0 ppm

Depth to Water: 463.07

Notes: Spare deployed

***QC sample notes. (If blank, no QC samples required):***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 557.01 | DMS | PDB |
| 2 | 559.61 | DMS | PDB |
| 3 | 562.21 | DMS | (PDB) |
| 4 | 564.81 | DMS | (PDB) |
| 5 | 567.41 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW231-173

Well Location ID: KAFB-106231 **Sampling**

Date Sampled: 7-11-17 Time Sampled: 0820 Sampling Team: Joshua Messenger Stephen Busby

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: | ~ | Water Level Meter: | Solinst 500 ft | Serial No: | ~ |
| PID: | MiniRAE 3000 | Serial No: | WH00074 | Turbidity Meter: | Hach 2100Q | Serial No: | ~ |

**Notes:**

Sample ID: GW231-173
Duplicate ID: (if applicable) GW231-573
COC#: COC-231-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: **KAFB-106231** ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW231-173

***Well Information***

Screen Interval Length (ft): 35
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 480.09 ft MRP
Top of Screen: 440.09 ft MRP
Bottom of Screen: 475.09 ft MRP

Deployment Team: Team1 (Stephen Busby) (Sharmin Sultana)

Date Deployed: 5/9/17 Time Deployed: 1245

PID: MiniRAE 3000 Serial No: 401000S

Water Level Meter: Solinst 500 ft Serial No: —

PID Reading: 0.0 ppm

Depth to Water: 455.21'

***QC sample notes. (If blank, no QC samples required):***

Notes: Deployed PDBs on 3rd & 4th rings

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 442.09 | DMS | PDB |
| 2 | 444.69 | DMS | PDB |
| 3 | 447.29 | DMS | PDB |
| 4 | 449.89 | DMS | PDB |
| 5 | 452.49 | DMS | PDB |
| 6 | 455.09 | DMS | PDB |
| 7 | 457.69 | DMS | PDB |
| 8 | 460.29 | DMS | PDB |
| 9 | 462.89 | DMS | PDB |
| 10 | 465.49 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW232-173

Well Location ID: KAFB-106232 **Sampling**

Date Sampled: 7-11-17 Time Sampled: 0852 Sampling Team: Joshua Messenger Stephen Busby

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: WH00021 | | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW232-173
Duplicate ID: (if applicable) GW232-573
COC#: COC-232-173

Reviewed by: C Montoya Initials: CM Review Date: 7-11-17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106232 ***Deployment***

Year: 2017
Quarter: 3
Sample ID: GW232-173

***Well Information***

Screen Interval Length (ft): 15
Previous Depth to Water (MRP): (Gauged on )

Well Depth: 523.14 ft MRP
Top of Screen: 503.14 ft MRP
Bottom of Screen: 518.14 ft MRP

Deployment Team: Team1 (Stephen Busby, Sharmin Sultana

Date Deployed: 05/08/17 Time Deployed: 1458

PID: MiniRAE 3000 Serial No: 401005

Water Level Meter: Solinst 500 ft Serial No: Rental (~~443~~ SS 33438)

PID Reading: 0.0 ppm

Depth to Water: 454.73'

***QC sample notes. (If blank, no QC samples required):***

Notes:

1 PDB deployed on 3rd ring!

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 505.14 | DMS | PDB |
| 2 | 507.74 | DMS | PDB |
| 3 | 510.34 | DMS | (PDB) |
| 4 | 512.94 | DMS | PDB |
| 5 | 515.54 | DMS | PDB |

Reviewed by: C. Montoya Initials: CM Review Date: 5-10-17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106235-463 ***Sampling***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW235-463-173

**Date Sampled:** 7-12-17 **Time Sampled:** 0950 **Sampling Team:** Carlos Montoya, Shannon Sultana

**PID Reading:** 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | | |
|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: W 410005 | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW235-463-173
Duplicate ID: (if applicable) GW235-463-573
COC#: COC-235-463-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-12-17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106235-463 ***Deployment***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW235-463-172

***Well Information***

**Screen Interval Length (ft):** 25

**Previous Depth to Water (MRP):** 446.16 **(Gauged on 1/12/2017)**

Well Depth: 465.00 ft MRP
Top of Screen: 438.00 ft MRP
Bottom of Screen: 463.00 ft MRP

**Deployment Team:** Carlos Montoya, ~~Shannon Sullard~~ Joshua Brown

**Date Deployed:** 5/22/17 **Time Deployed:** 0949

**PID:** MiniRAE 3000 **Serial No:** WH000 4

**Water Level Meter:** Solinst 500 ft **Serial No:** WH0010

**PID Reading:** 0.0 ppm

**Depth to Water:** 444.11

***QC sample notes. (If blank, no QC samples required):***

**Notes:**

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 440.00 | DMS | PDB |
| 2 | 442.60 | DMS | PDB |
| 3 | 445.20 | DMS | PDB |
| 4 | 447.80 | DMS | PDB |
| 5 | 450.40 | DMS | PDB |
| 6 | 453.00 | DMS | PDB |
| 7 | 455.60 | DMS | PDB |

No sampler here

**Reviewed by:** Stephen Busby **Initials:** SB **Review Date:** 5/22/17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106235-492 **Sampling**

Year: 2017
Quarter: 3
Sample ID: GW235-492-173

Date Sampled: 7-12-17 Time Sampled: 0825 Sampling Team: Shanmin Sultana, Carlos Mantoya

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

Choose only one

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

Cap open

6mm

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | | Water Level Meter: | Solinst 500 ft | Serial No: — | |
| PID: | MiniRAE 3000 | Serial No: | W110005 | Turbidity Meter: | Hach 2100Q | Serial No: — | |

**Notes:**

Sample ID: GW235-492-173
Duplicate ID: (if applicable) GW235-492-573
COC#: COC-235-492-173

Reviewed by: C. Mantoya Initials: CM Review Date: 7-12-17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106235-492 ***Deployment***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW235-492-172

***Well Information***

**Screen Interval Length (ft):** 20
**Previous Depth to Water (MRP):** 446.08 **(Gauged on 1/12/2017)**

Well Depth: 494.00 ft MRP
Top of Screen: 472.00 ft MRP
Bottom of Screen: 492.00 ft MRP

**Deployment Team:** Carlos Montoya, ~~Sharmin~~ TB Sultana Joshua Brown

**Date Deployed:** 5/22/17 **Time Deployed:** 1038

**PID:** MiniRAE 3000 **Serial No:** W40004

**Water Level Meter:** Solinst 500 ft **Serial No:** W40010

**PID Reading:** 0.0 ppm

**Depth to Water:** 444.05

***QC sample notes. (If blank, no QC samples required):***

**Notes:**

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 474.00 | DMS | PDB |
| 2 | 476.60 | DMS | PDB |
| 3 | 479.20 | DMS | PDB |
| 4 | 481.80 | DMS | PDB |
| 5 | 484.40 | DMS | PDB |
| 6 | 487.00 | DMS | PDB |
| 7 | 489.60 | DMS | PDB |

Reviewed by: Stephen Busby Initials: SB Review Date: 5/22/17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106235-521 **Sampling**

Year: 2017
Quarter: 3
Sample ID: GW235-521-173

Date Sampled: 7-12-17 Time Sampled: 0859 Sampling Team: Carlos Montoya, Shamim Sultana

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)** — *Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | X | |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | X | |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | X | |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | X | |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | X | |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | | |

6mm

| | | | | | |
|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: — |
| PID: | MiniRAE 3000 | Serial No: W H00005 | Turbidity Meter: | Hach 2100Q | Serial No: — |

**Notes:**

Sample ID: GW235-521-173
Duplicate ID: (if applicable) GW235-521-573
COC#: COC-235-521-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-12-17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106235-521 *Deployment*

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW235-521-172

***Well Information***

**Screen Interval Length (ft):** 20

**Previous Depth to Water (MRP):** 446.14 (Gauged on 1/12/2017)

Well Depth: 523.00 ft MRP
Top of Screen: 501.00 ft MRP
Bottom of Screen: 521.00 ft MRP

**Deployment Team:** Carlos Montoya, ~~Stephen~~ SB Sultana Josh Bym

**Date Deployed:** 5-22-17 **Time Deployed:** 1125

**PID:** MiniRAE 3000 **Serial No:** WM00054

**Water Level Meter:** Solinst 500 ft **Serial No:** WH0010

**PID Reading:** 0.0 ppm

**Depth to Water:** 444.09

***QC sample notes. (If blank, no QC samples required):***

***Duplicate sample required. Please deploy additional DMS below the 'spare' DMS***

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 503.00 | DMS | PDB |
| 2 | 505.60 | DMS | PDB |
| 3 | 508.20 | DMS | PDB |
| 4 | 510.80 | DMS | PDB |
| 5 | 513.40 | DMS | PDB |
| 6 | 516.00 | DMS | PDB |
| 7 | 518.60 | DMS | PDB |

**Notes:**

Reviewed by: Stephen Busby Initials: SB Review Date: 5/22/17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106236-461 ***Deployment***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW236-461-172

***Well Information***

**Screen Interval Length (ft):** 25

**Previous Depth to Water (MRP):** 445.93 **(Gauged on 1/10/2017)**

Well Depth: 463.00 ft MRP
Top of Screen: 436.00 ft MRP
Bottom of Screen: 461.00 ft MRP

**Deployment Team:** Team 1 (Stephen Bosby, Sharmin Sultana)

**Date Deployed:** 5/10/17 **Time Deployed:** 1016

**PID:** MiniRAE 3000 **Serial No:** W10005

**Water Level Meter:** Solinst 500 ft **Serial No:** — Rental

**PID Reading:** 0.0 ppm

***QC sample notes. (If blank, no QC samples required):***

**Depth to Water:** 443.88'

**Notes:** Screen not Submerged.

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 438.00 | DMS | PDB |
| 2 | 440.60 | DMS | PDB |
| 3 | 443.20 | DMS | PDB |
| 4 | 445.80 | DMS | PDB |
| 5 | 448.40 | DMS | PDB |
| 6 | 451.00 | DMS | PDB |
| 7 | 453.60 | DMS | PDB |

Reviewed by: SHARMIN SULTANA Initials: SS Review Date: 5/16/17

# Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106236-461 *Sampling*

Year: 2017
Quarter: 3
Sample ID: GW236-461-173

Date Sampled: 7/10/17 Time Sampled: 1035 Sampling Team: Stephen Bushy Carlos Montoya

PID Reading: 0.0

**Sampler Number:**
(shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | (EDB) | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | |
|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: ~ | Water Level Meter: | Solinst 500 ft | Serial No: — |
| PID: | MiniRAE 3000 | Serial No: W1A005 | Turbidity Meter: | Hach 2100Q | Serial No: — |

**Notes:**

Sample ID: GW236-461-173
Duplicate ID: (if applicable) GW236-461-573
COC#: COC-236-461-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW236-490-173

Well Location ID: KAFB-106236-490 *Sampling*

Date Sampled: 7/10/17 Time Sampled: 1010 Sampling Team: Stephen Bushy Carlos Montoya

PID Reading: 0.0

**Sampler Number:** (shallow to deep)

**Type of Analysis (circle appropriate)**

| | | | | | *Choose only one* | | | | Document in notes: Dup? | MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ✓ | |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ✓ | |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ✓ | |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ✓ | |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ✓ | |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ✓ | |

6mm

| | | | | | |
|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: — |
| PID: | MiniRAE 3000 | Serial No: W10005 | Turbidity Meter: | Hach 2100Q | Serial No: — |

**Notes:**

Sample ID: GW236-490-173
Duplicate ID: (if applicable) GW236-490-573
COC#: COC-236-490-173

Reviewed by: C. Montoya Initials: CM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106236-490 ***Deployment***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW236-490-172

***Well Information***

**Screen Interval Length (ft):** 20

**Previous Depth to Water (MRP):** 445.86 **(Gauged on 1/10/2017)**

Well Depth: 492.00 ft MRP
Top of Screen: 470.00 ft MRP
Bottom of Screen: 490.00 ft MRP

**Deployment Team:** Team 1 (Stephen Busby, Sharmin Sultana)

**Date Deployed:** 5/10/17 **Time Deployed:** 1039

**PID:** MiniRAE 3000 **Serial No:** 401+0005

**Water Level Meter:** Solinst 500 ft **Serial No:** Rental

**PID Reading:** 0.0 ppm

**Depth to Water:** 443.87 '

***QC sample notes. (If blank, no QC samples required):***

***Duplicate sample required. Please deploy additional DMS below the 'spare' DMS*** ✓

**Notes:** Screen Submerged !

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 472.00 | DMS | PDB |
| 2 | 474.60 | DMS | PDB |
| 3 | 477.20 | DMS | PDB |
| 4 | 479.80 | DMS | PDB |
| 5 | 482.40 | DMS | PDB |
| 6 | 485.00 | DMS | PDB |
| 7 | 487.60 | DMS | PDB |

**Reviewed by:** SHARMIN SULTANA **Initials:** SS **Review Date:** 5/16/17

# Passive Diffusion Water Sampling Data Sheet

Year: 2017
Quarter: 3
Sample ID: GW236-519-173

Well Location ID: KAFB-106236-519 *Sampling*

Date Sampled: 7/10/17 Time Sampled: 0930 Sampling Team: Stephen Bushy Carlos Montoya

PID Reading: 0.0

**Sampler Number:**
(shallow to deep)

**Type of Analysis (circle appropriate)**

*Choose only one*

| | | | | | | | | | Document in notes: Dup? | Document in notes: MS/MSD? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☑ |
| 2 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☑ |
| 3 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |
| 4 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☑ |
| 5 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☑ |
| 6 | Metals (Total) | Metals (Dissolved) | Anions | Nitrate / Nitrite | VOCs | BTEX (N) | EDB | Alkalinity | ☐ | ☐ |

6mm

| | | | | | |
|---|---|---|---|---|---|
| pH, Conductivity, ORP, DO, Temperature | YSI Professional Plus | Serial No: — | Water Level Meter: | Solinst 500 ft | Serial No: — |
| PID: | MiniRAE 3000 | Serial No: WT0005 | Turbidity Meter: | Hach 2100Q | Serial No: — |

**Notes:**

Sample ID: GW236-519-173
Duplicate ID: (if applicable) GW236-519-573
COC#: COC-236-519-173

Reviewed by: C. Montoya Initials: JCM Review Date: 7-10-17

# Passive Diffusion Water Sampling Data Sheet

**Well Location ID:** KAFB-106236-519 ***Deployment***

**Year:** 2017
**Quarter:** 3
**Sample ID:** GW236-519-172

***Well Information***

**Screen Interval Length (ft):** 20

**Previous Depth to Water (MRP):** 445.90 **(Gauged on 1/10/2017)**

**Well Depth:** 521.00 ft MRP
**Top of Screen:** 499.00 ft MRP
**Bottom of Screen:** 519.00 ft MRP

**Deployment Team:** Team 1 (Sharmin Sultana, Stephen Busby)

**Date Deployed:** 5/10/17 **Time Deployed:** 1102

**PID:** MiniRAE 3000 **Serial No:** W1c005

**Water Level Meter:** Solinst 500 ft **Serial No:** Rental

**PID Reading:** 0.0 ppm

***QC sample notes. (If blank, no QC samples required):***

**Depth to Water:** 443.91'

**Notes:** Tubing Submersed

| Sampler Number: | Sampler Mid-point Depth (MRP) | Type of Sampler (circle one type) | |
|---|---|---|---|
| 1 | 501.00 | DMS | PDB |
| 2 | 503.60 | DMS | PDB |
| 3 | 506.20 | DMS | PDB |
| 4 | 508.80 | DMS | PDB |
| 5 | 511.40 | DMS | PDB |
| 6 | 514.00 | DMS | PDB |
| 7 | 516.60 | DMS | PDB |

Reviewed by: SHARMIN SULTANA Initials: SS Review Date: 5/16/17

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# APPENDIX E-5

# GROUNDWATER SAMPLE CHAIN-OF-CUSTODY FORMS

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-003-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW003-173 | 7-18-17 | 0945 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Pump 18073-730

TB173-24

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734458

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-18-17 | 1430 | Stephen Bushy | 7/18/17 | 1430 |
| Stephen Bushy | 7/18/17 | 1600 | | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-004-173

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles): Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW004-173 | 7-20-17 | 0840 | 5 | – | 3 | – | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 27

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 810487647802

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-20-17 | 1430 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-005-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017; QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg)a (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW005-173 | 7/18/17 | 1000 | 25 | | ~~4~~ 3 | | ~~6~~ 2 | ~~3~~ 1 | ~~3~~ 1* | 2 | 1 | 1 | |
| 2 | GW005-573 | 7/18/17 | 1000 | 11 | — | 3 | — | 2 | 1 | 1* | 2 | 1 | 1 | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Please run MS/MSD on the following analytes only:
BTEX, EDB, Total (As, Pb, Ca, K, Na, Mg), & Dissolved (Fe, Mn)

Pump 18073-800

TB173- 22

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734469

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7/18/17 | 1600 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-009-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW009-173 | 7-12-17 | 1008 | ~~25~~ 11 | ~~-~~ | ~~30~~ | ~~-~~ | ~~6~~ 2 | ~~8~~ 1 | ~~8~~* 1 | 2 | 1 | 1 | ~~Please see Comments for requested MS/MSD analytes~~ |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

CM

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

~~Please run MS/MSD on the following analytes only:~~ CM
~~VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe~~

1X Disolved Metals only half volume (~125 mL)
1X Alkalinity only half volume (~125 ~~mL~~ CM mL)

TB173- 18

| SAMPLER(S): Stephen Busby | COURIER AND SHIPPING NUMBER: FedEx 811156734973 | | | |
|---|---|---|---|---|
| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
| Printed Name and Signature: Stephen Busby | 7-12-17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-012R-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | (Total, Carbonate, and Bicarbonate) Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW012R-173 | 7-19-17 | 1245 | 11 | — | 3 | — | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB173- 25

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734470

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-19-17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-013-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW013-173 | 7-12-17 | 1315 | 5 | - | 3 | — | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Pump: 1807B-800

TB173-17

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734962

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME | RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Busby | 7-12-17 | 1700 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-029-173

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW029-173 | 7-11-17 | 1010 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 13

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734734

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Busby | 7/11/17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7/11/17 | 1400 | | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-030-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW030-173 | 7/11/17 | 0945 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 13

SAMPLER(S): Josh Messenger

COURIER AND SHIPPING NUMBER: FedEx 871156734734

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Josh Messenger | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 |
| | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-11-17 | 1100 |
| | | |
| | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-031-173

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | GW031-173 | 7-11-17 | 0925 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

SAMPLER(S): Stephen Bushy

TB173- 14

COURIER AND SHIPPING NUMBER: FedEx 811156734745

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Bushy | 7-11-17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-032-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017
QUARTER: 3 (Jul-Sep)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW032-173 | 7/11/17 | 0825 | 2 | | | | 2 | | | | | | |
| 2 | GW032-573 | 7/11/17 | 0825 | 2 | | | | 2 | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | 54 | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

SAMPLER(S): SHARMIN SULTANA

TB173-09

COURIER AND SHIPPING NUMBER: FedEx 811156734697

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA | 7/11/17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7/11/17 | 1400 | | | |
| | | | | | |

EA

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-033-173

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW033-173 | 07/11/17 | 0805 | 6 | — | | | 6 | | | — | | | Please see Comments for requested MS/MSD analytes |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | SS | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Please run MS/MSD on the following analytes only:
VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811956734677 701 CM

TB173- 10

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA Sharmin Sultana | 7/11/17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-034-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA<br>LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | QUARTER: 3 (Jul-Sep) |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | GW034-173 | 7/11/17 | 0845 | 2 | — | | | 2 | | — | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | SS | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 09

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734697

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| SHARMIN SULTANA | 7/11/17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-11-17 | 1400 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-049-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | GW049-173 | 7/10/17 | 0830 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 04

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734507

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Busby | 7/10/17 | 1130 | Carlos Montoya | 7-10-17 | 1130 |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-050-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW050-173 | 7/11/17 | 0740 | 2 | — | — | | 2 | | — | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | 55 | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 11

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734712

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA | 7/11/17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-051-173

PROJECT NAME: **Kirtland AFB Bulk Fuels Facility**

PROJECT NUMBER: **62599DM01**

LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601**

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3 (Jul-Sep)

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | | |
| 1 | GW051-173 | 7-12-17 | 0750 | 2 | | | | 2 | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |

55

COMMENTS:

TB173-17

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734962

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA Shan Sultan | 7-12-17 | 1440 | Stephen Busby Stephen Busby | 7/12/17 | 1440 |
| Stephen Busby Stephen Busby | 7/12/17 | 1700 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-097-173

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | YEAR: 2017 |
| | | | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | GW097-173 | 7-13-17 | 1045 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- CW 25

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734470

| RELINQUISHED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-14-17 | 1600 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-098-173

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories
2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3 (Jul-Sep)

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW098-173 | 7-19-17 | 0855 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 26

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156739480

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-19-17 | 1600 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-099-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | GW099-173 | 7-20-17 | 1205 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 27

SAMPLER(S): Carlos Montoya

COURIER AND SHIPPING NUMBER: FedEx 810487647802

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-20-17 | 1430 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-100-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW100-173 | 7-20-17 | 1025 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 28

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 810487647813

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-20-17 | 1430 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-101-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | (Total, Carbonate, and Bicarbonate) Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW101-173 | 7-18-17 | 1130 | 5 | — | 3 | — | 2 | | | | | | |
| 2 | GW101-573 | 7-18-17 | 1130 | 5 | — | 3 | — | 2 | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Pump 18073-730

TB173-23

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811567334767

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME | RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-18-17 | 1430 | Stephen Busby | 7/18/17 | 1430 |
| Stephen Busby | 7/18/17 | 1600 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-102-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
| 1 | GW102-173 | 7-18-17 | 1320 | 5 | – | 3 | – | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Pump 180713-730

TB173-24

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734458

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-18-17 | 1430 | Stephen Busby | 7/18/17 | 1430 |
| Stephen Busby | 7/18/17 | 1600 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-157-173

PROJECT NAME: **Kirtland AFB Bulk Fuels Facility**

PROJECT NUMBER: **62599DM01**

LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories**
**2425 New Holland Pike Lancaster PA 17601**

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Natalie Luciano NatalieLuciano@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Ammonia (SM4500NH3) | Sulfide (SM4500S2CF) | Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW-157-173 (CM) | 7-17-17 | 1205 | 6 | 3 | — | | 2 | — | 1* | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): S. Busby

TB173-21

COURIER AND SHIPPING NUMBER: 811156732444

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME | RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Busby | 7-17-17 | 1330 | Carlos Montoya | 7-17-17 | 1330 |
| Carlos Montoya | 7-17-17 | 1400 | | | |
| | | | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-201-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW201-173 | 7/10/17 | ~~0820~~ 0914 SM | 2 | | — | | 2 | — | — | — | — | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | SS | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-05

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734918

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA Shem Sulta | 7-10-17 | 1130 | Carlos Monta | 7-10-17 | 1130 |
| Carlos Monta | 7-10-17 | 1400 1700 CM | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-202-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW202-173 | 7-10-17 | 0838 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-05

SAMPLER(S): Joshua Messenger

COURIER AND SHIPPING NUMBER: FedEx 811156734718

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME | RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|---|---|---|
| Joshua Messenger | 7-10-17 | 1130 | Carlos Montes | 7-10-17 | 1130 |
| Carlos Montes | 7-10-17 | 1400 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-203-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | GW203-173 | 7/10/17 | ~~0914~~ 0820 JM | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

SS

COMMENTS:

TB173-05

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734929

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin Sultana | 7-10-17 | 1130 | Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-204-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
| 1 | GW204-173 | 7-10-17 | 1102 | 2 | | | | 2 | | | | | | |
| 2 | GW204-573 | 7-10-17 | 1102 | 2 | | | | 2 | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

SS

COMMENTS:

TB173-06

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734929

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA | 7-10-17 | 1130 | Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-205-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | GW205-173 | 7-10-17 | 1035 | 6 | — | | — | 6 | — | | — | | | Please see Comments for requested MS/MSD analytes |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | SS |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Please run MS/MSD on the following analytes only:
VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe

TB173- 07

SAMPLER(S): Joshua Messenger

COURIER AND SHIPPING NUMBER: FedEx 811156734930

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME | RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|---|---|---|
| Joshua Messenger | 7-10-17 | 1130 | Carlos Montoya | 7-10-17 | 1830 |
| Carlos Montoya | 7-10-17 | 1900 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-206-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW206-173 | 07-10-17 | 1012 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | S S | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 07

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734930

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA | 7-10-17 | 1130 | Printed Name and Signature: Carlos Mantoya | 7-10-17 | 1130 |
| Printed Name and Signature: Carlos Mantoya | 7-10-17 | 1450 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-207-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW207-173 | 7-10-17 | 1225 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | SS | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-08

SAMPLER(S): Sharmin Sultana

COURIER AND SHIPPING NUMBER: FedEx 811156734940

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA Sharmin Sultana | 7-10-17 | 1254 | Carlos Montoya | 7-10-17 | 1256 |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-208-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW208-173 | 7-10-17 | 1205 | 2 | — | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | SS | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-08

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734940

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin Sultana | 7-10-17 | 1256 | Carlos Montoya | 7-10-17 | 1252 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-209-173

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories
2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3 (Jul-Sep)

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW209-173 | 7-11-17 | 0741 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

SAMPLER(S): Joshua Messenger

TB173- 12

COURIER AND SHIPPING NUMBER: FedEx 811156734723

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Joshua Messenger | 7-11-17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No. (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-216-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW216-173 | 7-17-17 | 0800 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 19

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732466

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-17-17 | 1400 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-217-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW217-173 | 7/17/17 | 0820 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 19

SAMPLER(S): Elon O'Malia

COURIER AND SHIPPING NUMBER: FedEx 811506732466

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Elon O'Malia | 7/17/17 | 1130 | Carlos Montoya | 7-17-17 | 1130 |
| Carlos Montoya | 7/17/17 | 1400 | | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-218-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW218-173 | 7/17/17 | 0845 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 20

SAMPLER(S): Elan O'Malia

COURIER AND SHIPPING NUMBER: FedEx 811567324777

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Elan O'Malia | 7/17/17 | 1130 | Carlos Montoya | 7/17/17 | 1130 |
| Carlos Montoya | 7/17/17 | 1400 | | | |
| | | | | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-222-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles): Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | (Total, Carbonate, and Bicarbonate) Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW222-173 | 7-11-17 | 1041 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

SAMPLER(S): Josh Messenger

TB173- 14

COURIER AND SHIPPING NUMBER: FedEx 811567347745

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Josh Messenger | 7-11-17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-223-173

PROJECT NAME: **Kirtland AFB Bulk Fuels Facility**

PROJECT NUMBER: **62599DM01**

LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories**
**2425 New Holland Pike Lancaster PA 17601**

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3 (Jul-Sep)

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW223-173 | 7/17/17 | 0950 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 20

SAMPLER(S): Elon O'Malia

COURIER AND SHIPPING NUMBER: FedEx 811156732477

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Elon O'Malia | 7/17/17 | 1130 | Carlos Montoya | 7/17/17 | 1130 |
| Carlos Montoya | 7/17/17 | 1400 | | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-224-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | GW224-173 | 7/17/17 | 1012 | 2 | — | — | — | 2 | — | — | — | — | — | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-2.1

SAMPLER(S): Elon OMalia

COURIER AND SHIPPING NUMBER: FedEx 811156732444

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Elon OMalia Elon OMalia | 7/17/17 | 1130 |
| Carlos Montoya | 7.17.17 | 1400 |
| | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-17-17 | 1630 |
| | | |
| | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-231-173

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories
2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3 (Jul-Sep)

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW231-173 | 7-11-17 | 0820 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 12

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734723

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Busby | 7-11-17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| | | | | | |

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-232-173

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA; LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW232-173 | 7-11-17 | 0852 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 11

SAMPLER(S): Josh Messenger

COURIER AND SHIPPING NUMBER: FedEx 811567314712

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Josh Messenger | 7-11-17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| | | | | | |

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-463-173

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW235-463-173 | 7-12-17 | 0950 | 8 | | — | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | S | S | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB173- 15

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156731780

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|
| SHARMIN SULTANA Sharmin Sultana | 7-12-17 | 1440 |
| Stephen Bushy Stephen Bushy | 7/12/17 | 1700 |
| | | |

| RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|
| Stephen Bushy Stephen Bushy | 7/12/17 | 1440 |
| | | |
| | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-492-173

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| YEAR: 2017 | QUARTER: 3 (Jul-Sep) | | |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW235-492-173 | 7-12-17 | 0825 | 8 | | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | SS | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB173- 15

SAMPLER(S): S HARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156731780

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|
| S HARMIN SULTANA | 7-12-17 | 1440 |
| Stephen Busby | 7/12/17 | 1700 |
| | | |

| RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|
| Stephen Busby | 7/12/17 | 1440 |
| | | |
| | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-521-173

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3 (Jul-Sep)

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW235-521-173 | 7-12-17 | 0859 | 8 | — | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | GW235-521-573 | 7-12-17 | 0859 | 8 | — | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | SS | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Alkalinity (SM2320B) → 125 ml X2
Dissolved Fe, Mn (6010C) → 200 ml X2
Total Metals (6020A/6010C) → 220 ml X1
Nitrite-Nitrate (353.2) → 220 ml X2

SAMPLER(S): SHARMON SULTANA

TB173-16

COURIER AND SHIPPING NUMBER: FedEx 811156734951

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| SHARMON SULTANA Sharmon Sultana | 7-12-17 | 1440 |
| Stephen Busby Stephen Busby | 7/12/17 | 1700 |
| | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Stephen Busby Stephen Busby | 7/12/17 | 1440 |
| | | |
| | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-461-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW236-461-173 | 7/10/17 | 1035 | 8 | — | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB173-04

SAMPLER(S): Stephen Bushy

COURIER AND SHIPPING NUMBER: FedEx 811567341907

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Bushy | 7/10/17 | 1130 | Carlos Montoya | 7-10-17 | 1130 |
| Carlos Montoya | 7/10/17 | 1400 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-490-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE:<br>ST106/SS110 | LAB PO NUMBER:<br>14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | Chloride, bromide, sulfate (300.0) | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | GW236-490-173 | 7/10/17 | 1010 | 8 | — | — | — | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | GW236-490-573 | 7/10/17 | 1010 | 7 | — | — | — | 2 | 1 | 1* | [illegible] | 1 | 1 | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Only one Bottle (40 mL) for Chloride, Bromide, Sulfate on GW236-490-573

TB173- 03

SAMPLER(S): Stephen Bushy

COURIER AND SHIPPING NUMBER: FedEx 811156734892

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Bushy | 7/10/17 | 1130 | Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-519-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW236-519-173 | 7/10/17 | 0930 | 11 | — | — | — | 2 | 3 | 3* | X1 | 1 | 1 | Please see Comments for requested MS/MSD analytes |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Please run MS/MSD on the following analytes only:
Total As and Pb, and dissolved Mn and Fe

Only 1 bottle (40 mL) for chloride, bromide, sulfate

Total Metal sample volume ~125 mL Dissolved Metal sample volume ~125 mL

TB173- CZ

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734881

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Busby | 7/10/17 | 1130 | Carlos Montoya | 7/10/17 | 1130 |
| Carlos Montoya | 7/10/17 | 1400 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-2819-173

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62735DM02.1049

LABORATORY NAME AND CONTACT: TestAmerica, 5102 La Roche Ave, Savannah, GA 31404

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3 (Jul-Sep)

PROJECT SITE AND PHASE: ST106/SS110

PO NUMBER: 16065

TA Project Number: 44017773

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (504.1) | BTEX (524.2) | BTEXN (504.1) | EDB (504.1) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW2819-173 | 07/11/2017 | 1029 | 18 | | 9 | | 9 | | | | | | Please see Comments for requested MS/MSD analytes. |
| 2 | GW2819-573 | 07/11/2017 | 1029 | 6 | | 3 | | 3 | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

7/11/17

7/11/17

Please run MS/MSD on the following analytes only:
BTEX and EDB

PRESERVATIVES: HCl, $Na_2S_2O_3$, $C_6H_8O_3$

TB173-01

SAMPLER(S): Kayla Copeland and Ryan Wortman (Sundance)

COURIER AND SHIPPING NUMBER: FedEx, Tracking # 7164 8313 6992

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: KAYLA COPELAND | 07/11/2017 | 1245 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: SB COC-~~TB173~~-ER173-01

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SB ~~TB173~~-ER173-01 | 7-11-17 | 1400 | 6 | - | 3 | - | 2 | 1 | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106009

Pump: 18073-658

TB173-18

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811567341973

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7/12/17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-~~TB173-~~ 3B ER173-02

YEAR: 2017

QUARTER: 3

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: |
|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** |

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | ~~SB~~ ~~TB173-~~ ER173-02 | 7-12-17 | 1134 | 6 | - | 3 | - | 2 | 1 | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106013

Pump: 1807B-800

TB173-16

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734957

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Stephen Busby Stephen Busby | 7/12/17 | 1700 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-ER173-04

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: ~~05~~ 2017<br>QUARTER: 03 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | ER173-04 | 7-18-17 | 0815 | 5 | - | 3 | - | 2 | | * | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

Associated with:
GW003-173
GW101-173, GW101-573
GW102-173, TB173-23

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: 811156734767

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-18-17 | 1430 | Stephen Busby | 7/18/17 | 1430 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby | 7/18/17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

COPY

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-01

PROJECT NAME: **Kirtland AFB Bulk Fuels Facility**

PROJECT NUMBER: **62735DM02.1049**

LABORATORY NAME AND CONTACT:
**TestAmerica**
**5102 La Roche Ave**
**Savannah, GA 31404**

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3 (Jul – Sep)

PROJECT SITE AND PHASE: ST106/SS110

PO NUMBER: 16065

TA Project Number: 44017773

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (504.1) VOCs | (524.2) BTEX | (504.1) BTEXN | (504.1) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-01 | 07/11/2017 | 0800 | 5 | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

KCL 7/11/17

KCL 7/11/17

PRESERVATIVES: HCl, $Na_2S_2O_3$

Associated with GW2819-173

SAMPLER(S): Kayla Copeland and Ryan Wortman (Sundance)

COURIER AND SHIPPING NUMBER: FedEx, Tracking # 7164 8313 6992

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| KAYLA COPELAND KCL | 07/11/2017 | 1245 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-02

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-02 | 7-10-17 | 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106 236-519
CM
~~TB173-02~~

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734881

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-12-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 03

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173-03 | 7-10-17 | 1211 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with ~~811156734892~~ Cm
K4FB-106236-490

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx ~~811156734892~~

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 ~~1211~~ Cm | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 04

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
| 1 | TB173-04 | 7-10-17 | ~~1410~~ 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106236-461 and KAFB-106049

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811567734907

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-05

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-05 | 7-10-17 | 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106201 and KAFB-106202

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811567349 18

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 06

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173- 06 | 7-10-17 | 1211 | 2 | — | — | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106203 & KAFB-106204

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734929

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-10-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 07

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | TB173- 07 | 7-10-17 | 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106205, KAFB-106206.

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734930

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-08

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | TB173-08 | 7-10-17 | 1211 | 2 | — | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
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Associated with KAFB-106207 & KAFB-106208

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734940

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-09

| | | | |
|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173- 09 | 7-11-17 | 0945 | 2 | — | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106032 & KAFB-106034

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734697

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | ~~7-11-17~~ 7-11-17 LM | 1400 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-10

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173-10 | 7-11-17 | 0945 | 2 | — | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106033

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734701

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-11-17 | 1400 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 11

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA; LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173- 11 | 7-11-17 | 0945 | 2 | — | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106050 & KAFB-106232

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734712

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-11-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-12

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-12 | 7-11-17 | 0945 | 2 | | | | (2) | OK on | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106231 & KAFB-106209

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734723

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-11-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 13

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | TB173-13 | 7-11-17 | 0945 | 2 | — | — | — | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106029 & KAFB-106030

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734734

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-11-17 | 1400 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 14

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173- 14 | 7-11-17 | 0945 | 2 | — | — | — | 2 | | — | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106031 & KAFB-101222

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811567347745

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-11-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 15

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173- 15 | 7-12-17 | 1200 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with ICAFB-106235-463 & ICAFB-106235-492

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156731780

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-12-17 | 1440 |
| Stephen Busby | 7/12/17 | 1700 |
| | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Stephen Busby | 7/12/17 | 1440 |
| | | |
| | | |

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400 Hunt Valley MD
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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-16

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-16 | 7-12-17 | 1200 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106235-521-173
KAFB-106235-521-573
ER173-02

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734951

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Busby | 7-12-17 | ~~1520~~ 1700 JM | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-17

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173-17 | 7-12-17 | 1200 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106013 + KAFB-106051

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734962

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby Stephen Busby | 7-12-17 | 1700 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 18

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173- 18 | 7-12-17 | 1200 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with ER173-01 & KAFB-106009

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734973

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-12-17 | 1440 | Stephen Busby | 7/12/17 | 1440 |
| Stephen Busby | 7/12/17 | 1700 | | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 19

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | TB173- 19 | 7/17/17 | 1200 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106216 & KAFB-106217

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732466

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-17-17 | 1405 CM | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 20

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173- 20 | 7-17-17 | 1200 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106218 & KAFB-106223

SAMPLER(S): Carlos Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732477

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-17-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-21

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| | | | YEAR: 2017 |
| | | | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | TB173-21 | 7-17-17 | 1200 | 4 | 2 | — | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106157 + KAFB-106224

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732444

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-17-17 | 1900 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

# CHAIN-OF-CUSTODY RECORD

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

COC NUMBER: COC-TB173-22

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | 2017<br>QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
| 1 | TB173-22 | 7/18/17 | 1400 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Stephen Busby

Associated with GW005-173
GW005-573

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811136734469

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby Stephen Busby | 7/18/17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-23

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-23 | 7/18/17 | 1400 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with GW01-173
~~GW01-173~~ SB
GW01-573
ER173-0X4
SB

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734767

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby Stephen Busby | 7/18/17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-24

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017<br>QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-24 | 7/18/17 | 1400 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with GW003-173
~~GW00SB~~
GW102-173

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734458

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby Stephen Busby | 7/18/17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 25

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

PROJECT NAME: rtland AFB Bulk Fuels acility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601

LAB PO NUMBER: 14800

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

LAB CONTACT: Kay Hower KayHower@eurofnsUS.com Eurofins 1 (717) 556-7258

YEAR: 2017

QUARTER: 3

PROJECT SITE AND PHASE: ST106/SS110

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, Bromide, Sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-25 | 7-19-17 | 1430 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |

Associated with KAFB-106012R and KAFB-106097

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811567344 70

| RELINQUISHED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: | 7-19-17 | 1600 |
| Carlos Montoya | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 26

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

PROJECT NAME: rtland AFB Bulk Fuels acility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories
2425 New Holland Pike Lancaster PA 17601

LAB PO NUMBER: 14800

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

YEAR: 2017

QUARTER: 3

PROJECT SITE AND PHASE: T106/SS110

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-26 | 7-19-17 | 1430 | 4 | — | 2 | — | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |

Associated with LAFB-106098

4480

COURIER AND SHIPPING NUMBER: FedEx 811156734~~580~~ 55

SAMPLER(S): C. Montoya

| RELINQUISHED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-19-17 | 1600 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 27

| | |
|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 |
| LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA |
| | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 |
| | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017

QUARTER: 3

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173- 27 | 7/20/17 | 1215 | 4 | – | 2 | – | 2 | 1 | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | SS | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with

GW 004-173 and GW 099-173

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 810487647802

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| SHARMIN SULTANA | 7/20/17 | 1430 |
| Printed Name and Signature: Carlos Montoya | 7-20-17 | 1430 |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-20-17 | 1430 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 28

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: 3

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173- 28 | 7/20/17 | 1215 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | SS | | | | | | |
| | | | | | | | | | | | | | | |

Associated with

GW 100 - 173

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 810487647813

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA | 7/20/17 | 1430 | Carlos Montoya | 7-20-17 | 1430 |
| Carlos Montoya | 7-20-17 | 1430 | | | |
| | | | | | |

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# APPENDIX F

# GROUNDWATER MONITORING NETWORK SAMPLE DATA QUALITY EVALUATION REPORTS AND DATA PACKAGES

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# APPENDIX F-1

# DATA QUALITY EVALUATION REPORT – GROUNDWATER SAMPLES

# F-1. DATA QUALITY EVALUATION REPORT GROUNDWATER SAMPLES (JULY–SEPTEMBER 2017)

## 1. LABORATORY DATA QUALITY SUMMARY

This Data Quality Evaluation Report describes the findings of the data validation performed for the third quarter (Q3) 2017 groundwater monitoring chemical analytical data collected in support of the *Work Plan, Bulk Fuels Facility (BFF) Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design Revision 2, Solid Waste Management Unit (SWMU) ST-106/SS-111, Kirtland Air Force Base (AFB), New Mexico (*U.S. Army Corps of Engineers [USACE], 2017*).* Sampling and analysis for the Q3 2017 groundwater monitoring were conducted in accordance with the procedures and overall quality control (QC) and quality assurance protocols presented in the Work Plan and *Quality Assurance Project Plan (QAPjP)* (USACE, 2016).

Samples were collected from 45 groundwater monitoring wells between July 10 and July 20, 2017 from the BFF well network, including well KAFB-106157 that was sampled prior to abandonment and not as part of compliance monitoring. The groundwater monitoring wells were sampled using Bennett pumps and low flow methodology, passive diffusion bag samplers, or dual membrane passive samplers as appropriate.

The following field QC samples were associated with the field event: 6 field duplicates, 3 equipment rinse blanks (EBs), and 24 trip blanks. All samples were shipped to Eurofins Lancaster Laboratories Environmental, LLC (Eurofins), Lancaster, Pennsylvania, for analysis. Eurofins maintains a current U.S. Department of Defense (DoD) Environmental Laboratory Accreditation Program certification to perform the analyses required for this project. Sample analyses were performed in accordance with the following guidance documents:

- DoD *Quality Systems Manual* (QSM), Version 5.0 (2013)
- U.S. Environmental Protection Agency (EPA) *Solid Waste (SW) 846 – Test Methods for Evaluating Solid Waste*, *Third Edition and Updates*, 1986
- *Standard Methods (SM) for the Examination of Water and Wastewater, 22nd Edition* (American Public Health Association, 2005)
- *EPA Methods for Chemical Analysis of Water and Waste*, EPA-600/4-79-020 (1983).

Q3 2017 groundwater samples were analyzed for a varying suite of analyses as shown in Appendix F-1, Table 1. The following is a list of parameters and methods, as required:

- ***Volatile Organic Compounds (VOCs)***—Method SW8260C.
- ***Benzene, toluene, ethylbenzene, and xylenes (BTEX)—***Method SW8260C.
- ***Ethylene Dibromide (EDB)***—Method SW8011.
- ***Total Arsenic and Lead***—Method SW6020A.

- ***Total Calcium, Magnesium, Potassium, Sodium, Dissolved Iron, and Manganese*—**Method SW6010C.

- ***Anions (Bromide, Chloride, and Sulfate)***—Method EPA 300.0A.

- ***Nitrate/Nitrite Nitrogen***—Method EPA 353.2.

- ***Total Alkalinity (Bicarbonate and Carbonate)*—**Method SM2320B.

Chemical analytical data for Q3 2017 were reported by Eurofins in 7 sample delivery groups (KR184–KR190). Appendix F-1 – Table 1 summarizes samples collected from monitoring wells and the associated field QC samples, collection date, laboratory sample delivery group, and analytical parameters for the Q3 monitoring program.

A third-party subcontractor, Environmental Data Services, Newport News, Virginia, conducted EPA Stage 3 data validation on 100 percent (%) of the Q3 2017 sample data associated with the network monitoring wells.

Analytical data validation was performed using the quality criteria specified in the following analytical guidelines and methods:

- Work Plan and QAPjP (USACE, 2017, 2016)

- DoD QSM for Environmental Laboratories, Version 5.0 (July 2013)

- EPA Test Methods for Evaluating Solids Waste, Physical/Chemical Methods (SW 846, Third Edition and updates) (1986)

- American Public Health Association, Standard Methods for the Examination of Water and Wastewater, 22nd Edition (2005)

- EPA Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020 (1983)

- EPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review (EPA, 2014a)

- EPA Contract Laboratory Program, National Functional Guidelines for Inorganic Superfund Data Review (EPA, 2014b).

The following QC criteria were included in the EPA Stage 3 validation per the QAPjP, as applicable to the analytical method:

- Sample preservation and extraction and analysis holding times
- Laboratory method blank contamination
- Surrogate spike recoveries (organic analyses)
- Laboratory control sample (LCS) and LCS duplicate (LCSD) recoveries
- Matrix spike (MS) and matrix spike duplicate (MSD) sample recoveries
- Relative percent difference (RPD)
- Initial and continuing calibrations

- Inductively coupled plasma (ICP) interference check samples (metals)
- ICP serial dilutions (metals)
- Second column confirmation (for EDB only)
- Trip, equipment rinse, field blank, and source water blank results
- Field duplicate sample precision.

Analytical data were reviewed to evaluate precision, accuracy (bias), representativeness, comparability, completeness, and sensitivity as defined below:

- *Precision* is expressed as the RPD between the results of replicate sample analyses: sample duplicates, LCSDs, and MSDs. When analyte RPDs exceed the acceptance criteria, the data are qualified accordingly.

- *Accuracy (bias*) is demonstrated by recovery of target analytes from fortified blank and sample matrices, LCS/LCSD, and MS/MSD, respectively. For organic methods, bias is also demonstrated through recovery of surrogates from each field and QC sample. A comparison was made from the recovery of target analytes from fortified samples to the acceptance criteria defined in the QAPjP (USACE, 2016) and DoD QSM (2013). When the acceptance criteria are not available in the QAPjP or DoD QSM, results are compared with the laboratory in-house control limits. When these criteria are not met, the data are qualified accordingly. Bias may be indicated as high or low.

- *Representativeness* of the samples submitted for analysis is ensured by adherence to standard sampling techniques and standard analytical method protocols.

- *Comparability* of sample results is ensured through the use of approved sampling and analysis methods and comparison of sample results to historical sample data.

- *Completeness* of data is evaluated based on contractual, analytical, and technical criteria for the Q3 2017 data. Technical completeness of data is used to assess overall project data completeness and is expressed as a percentage of the ratio of the number of usable data results to the total number of analytical data results. Only rejected data (R-qualified) are considered not usable to achieve project objectives.

- *Sensitivity* is determined by the ability to achieve the established method-specific reporting limits in accordance with DoD QSM requirements and includes establishing the detection limit (DL), limit of detection (LOD), and limit of quantitation (LOQ). For this project, the laboratory reported positive results to the DL, and results between the DL and LOQ are flagged with a J-qualifier and reported as estimated data. Sensitivity will be evaluated based on comparison of the sample reporting limits to the project screening levels.

The following sections present the EPA Stage 3 data validation findings. The discussion summarizes data quality exceedances and their potential impact on the quality and usability of analytical results.

Appendix F-1 – Table 2 presents the definitions of data qualification and the reason why these codes were applied to the analytical results. Appendix F-1 – Table 3 summarizes the qualified analytical data for Q3 2017 based on data validation findings.

## 1.1 DATA QUALITY FINDINGS

### 1.1.1 Sample Preservation and Sample Extraction and Analysis Holding Times (Reason Code HT)

The sample coolers and samples contained within the coolers were received intact at the laboratory at ≤6 degrees Celsius, per EPA guidelines. All samples were preserved appropriately per the requirements of EPA and SM methods with no exceptions. Sample holding times were evaluated by comparing (1) the sample collection date to the sample extraction date, and (2) the extraction date to the analysis date to determine if the method-specified holding times were exceeded. Q3 2017 sample extraction and analysis holding times were met for all reported sample data.

### 1.1.2 Laboratory Method Blanks (Reason Code MB)

The field sample results were evaluated with respect to the laboratory method blank prepared and analyzed for each analytical batch for each analytical method. No sample data required qualification based on method blank detections.

Based on the DoD QSM requirements (2013), laboratory method blank concentrations are considered acceptable when contaminant levels in the blank are less than one-half the LOQ for target analytes and less than the LOQ for common laboratory contaminants.

### 1.1.3 Initial and Continuing Calibration Blanks (Reason Code CB/CCB)

Initial and continuing calibration blank criteria were reviewed to ensure that the instruments were free of contamination prior to sample analysis. All percent relative standard deviation and/or correlation coefficients and relative response factor criteria were met and no data were qualified based on initial and continuing calibration blank criteria.

Based on the DoD QSM requirements (2013), calibration blank concentrations are considered acceptable when contaminant levels in the blank are less than one-half the LOQ for target analytes and less than the LOQ for common laboratory contaminants. Initial and continuing calibration blank data were within control criteria for the Q3 2017 sample analyses.

### 1.1.4 Surrogate Recoveries (Reason Code SURR)

Surrogate compounds are added to field and laboratory QC samples for organic analysis to evaluate the matrix effect and method performance on an individual sample basis. All surrogate compound recoveries for the Q3 2017 sample data were within method control criteria with exception of the surrogate recovery for sample GW005-173 for EDB analysis. The associated EDB result was flagged "J," signifying estimated data.

### 1.1.5 Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries and Precision (Reason Codes LCS/RPD)

The LCS is an aliquot of an analyte-free matrix spiked with target analytes that are prepared with each analytical batch for each analytical method. The recovery of target analytes from the LCS analysis is a measurement of method performance in an interference-free sample matrix. All LCS recoveries for the Q3 2017 data were within method control limits with the exception of the calcium LCS recovery for

samples GW235-492-173 and GW236-519-173. Affected sample results were flagged "J," signifying estimated detect values.

### 1.1.6 Matrix Spike/Matrix Spike Duplicate Recoveries and Laboratory Duplicate Sample Precision (Reason Codes MS/MSD and RPD)

The MS and MSD samples are a portion of a field sample spiked with target analytes that are prepared with each analytical batch and method as appropriate. The MS/MSD results are used to evaluate any bias introduced to the method due to matrix interference, and to measure bias and precision for each analytical batch. For some analytical parameters (inorganic and general chemistry), standard reference materials were also analyzed to determine analytical method precision and accuracy. Also discussed in this section are laboratory duplicate samples analyzed by the laboratory to assess method precision for metals analysis.

In accordance with the QAPjP requirements, the additional volume for MS/MSD samples was collected at a rate of 1 per 20 groundwater samples. During the Q3 2017 sampling event, 4 MS/MSD samples were collected associated with the 45 monitoring well locations and analyzed for the well-specific analytical parameters as identified on Appendix F-1 – Table 1. Additional MS/MSD samples were analyzed by the laboratory as necessary to meet method and analytical batch requirements.

Sample-specific MS/MSD or standard reference analyte recoveries exceeded control criteria for the following list of analytes in groundwater samples: dissolved manganese, bromide, chloride, sulfate, and alkalinity. As a result, the analytes in the associated samples were J-qualified as estimated detect data. All other MS/MSD recoveries were within method control criteria.

Laboratory duplicate samples were analyzed by the laboratory to meet metals method requirements to assess method precision. Laboratory duplicate sample results were within method control limits or did not result in data qualification since the associated sample results were already qualified for MS/MSD recoveries.

Qualified Q3 2017 sample data based on MS/MSD and laboratory duplicate sample recoveries are presented on Appendix F-1 – Table 3.

### 1.1.7 Initial and Continuing Calibration Verification (Reason Code CCV)

Instrument calibration is performed for all analyses in accordance with method requirements. The linear analytical range is established for each method by analysis of calibration standards prepared at increasing concentrations that cover the expected sample concentration range. The acceptability of the initial calibration is determined by calculation of a percent relative standard deviation or coefficient. Routinely during sample analysis, the stability of the analytical system is monitored by analysis of continuing calibration standards at concentrations near the mid-point of the instrument calibration range. The percent difference values between the relative response factor in the initial calibration and the relative response factor in the continuing calibration are reviewed to ensure instrument calibration criteria are within method control limits. Initial and continuing calibration verification met the method-specific control criteria for the Q3 2017 analytical data with the exception of the full VOC analysis run on sample GW157-173. Four VOC analytes (bromoform, carbon tetrachloride, 1,2-dichloroethane, and 2,2-dichloropropane) exceeded the continuing calibration verification criteria. The analytes in sample GW157-173 were flagged "J" and "UJ," signifying estimated detect and non-detect data. The continuing calibration verification criteria were met for all other VOC analytes.

### 1.1.8 Interference Check Sample (Reason Code ICS)

The interference check sample (ICS) verifies the inter-element and background correction factors for metals analysis using ICP instrumentation. The ICS samples were analyzed at the required frequencies, and all ICS results are within the established control criteria for the ICP analytical methods for the Q3 2017 analytical data.

### 1.1.9 Inductively Coupled Plasma Serial Dilution (Reason Code SD)

The ICP serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. When the concentration of an analyte exceeds 50 and 100 times the DL for ICP and ICP mass spectrometry analysis, respectively, the ICP serial dilution is performed and the results between the original analysis and the diluted analysis are compared. The results of the ICP serial dilution are deemed acceptable when a percent difference between the original analysis and the diluted analysis is less than or equal to 10%. An ICP serial dilution was performed based on the above criteria for the Q3 samples as deemed appropriate. ICP serial dilution results were within the above criteria for all samples and analytes for the Q3 2017 data.

### 1.1.10 Sample Confirmation (Reason Code RPD)

As required by DoD and EPA analytical method guidance, sample detections for EDB require confirmation using a second column analysis. EDB samples for Q3 2017 were analyzed by EPA Method SW8011 and were confirmed by a second column analysis and reported from the primary column. Any detection of EDB on the second column is considered confirmation unless it appears to be associated with matrix interferences. There were no data reporting issues associated with EDB detections and second column confirmation for Q3 2017.

### 1.1.11 Field Blanks for Volatile Organic Compounds (Reason Code FB)

Field blanks serve as a check for possible VOCs in air associated with a sampling location. The field blanks are prepared in the field during sampling by pouring ultra-pure water into EPA-certified clean sample containers and exposing the container to the environment at a particular sample location that may be associated with airborne VOCs.

Field blank samples are collected as deemed necessary at the time of sampling based on site conditions and potential for airborne VOC contamination. During the Q3 2017 groundwater monitoring event, no field blank samples were deemed necessary for collection.

### 1.1.12 Trip Blanks (Reason Code TB)

Trip blanks were prepared by the laboratory and are stored with the containers to be used for collection of aqueous samples to be analyzed for VOCs and EDB. As samples are collected for volatile-type analyses, trip blanks are placed in the cooler with the sample containers so they are exposed to any potential contamination along with the field samples. In accordance with the QAPjP requirements, trip blank samples are to be included at a rate of one per cooler when collecting water samples for volatile-type analyses. A total of 24 trip blank samples were shipped during Q3 accompanying samples for VOCs and EDB analysis; no detections of VOCs or EDB were reported in trip blank samples. Trip blank samples were inadvertently omitted from the sample shipment for the samples collected on July 17, 2017. The groundwater samples included GW216-173, GW217-173, GW218-173, GW223-173, and GW224-173 for EDB analysis. There were no detections of EDB reported in these samples. Also included with this

shipment was sample GW157-173 for VOCs and EDB. This well was being sampled prior to abandonment so the data were not associated with the compliance monitoring. Appendix F-1 – Table 4 summarizes the results for trip blank samples for the Q3 2017 sampling event.

### 1.1.13 Equipment Rinse Blanks (Reason Code EB)

EBs are collected in the field to assess potential contamination from sampling equipment. Results for the EB samples are used to evaluate the efficiency of equipment decontamination procedures in the field.

In accordance with the QAPjP, 3 EB samples were collected during the Q3 2017 sampling event. The EB samples were prepared by rinsing the decontaminated sampling equipment with the ultra-pure laboratory grade water, and then collecting the final rinse water into appropriate sample containers for analysis. The EB samples associated with the Q3 sampling event were analyzed for VOCs, EDB, and total metals. Appendix F-1 – Table 4 presents the results of the Q3 EB samples. Detections of target analytes reported in EB samples that resulted in data qualification include: toluene, lead, and potassium. Sample data qualified based on EB detections are presented on Appendix F-1 – Table 3. The EB sample results were acceptable and demonstrated that equipment decontamination procedures for the Q3 2017 sampling event achieved project objectives.

### 1.1.14 Field Duplicate Samples

In accordance with the project QAPjP requirements (USACE, 2016), field duplicate samples are collected at a frequency of 10% of the total number of groundwater samples for the Q3 event. Six field duplicate samples were collected for a total of 45 samples for the Q3 event, or 13%.

Field duplicate RPD is evaluated by calculating the RPD between the parent sample and the duplicate sample. The RPD was calculated using the following equation:

$$RPD = |(S-D)/[(S+D)/2]| \times 100$$

where

S = Sample result.
D = Duplicate result.

Acceptable precision control criteria are established at less than or equal to 35% for water samples. The RPD was calculated between pairs of field duplicate samples when both results are reported at or above the LOQ.

- Three field duplicate pairs were collected for the Q3 2017 sampling event for VOCs, EDB, metals, anions, and alkalinity to assess the reproducibility of sampling procedures. The duplicate samples were collected from the following wells: KAFB-106005, KAFB-106235-521, and KAFB-106236-490.

- Two field duplicate pairs were collected for the Q3 sampling event for EDB only. The duplicate samples were collected from wells KAFB-106032 and KAFB-106204.

- One field duplicate pair was collected for the Q3 sampling event for BTEX and EDB. The duplicate pair was collected from well KAFB-106101.

The results for the field duplicate samples collected during Q3 2017 are presented on Appendix F-1 – Table 5. Field duplicate sample precision was calculated for detected analyte concentrations in both the field sample and associated duplicate. The method and analyte RPDs for the 6 samples and associated field duplicate samples meet the precision control criteria of 35% RPD for all samples with the exception of the detected EDB result for well KAFB-106005. This result was already flagged "J" due to the elevated surrogate recovery. The field duplicate results demonstrate acceptable overall field sampling procedures and analytical method precision.

### 1.1.15 Estimated Sample Data above Project Screening Levels

During Q3 2017, estimated (J-flagged) analyte detections of two results for dissolved manganese, one EDB result, one chloride result, and one sulfate result were reported above their respective project screening levels in two wells (KAFB-106005 and KAFB-106009). The estimated analyte detections are a result of matrix interferences with the method QC samples and one surrogate value resulting in recoveries outside of the control limits due to sample matrix or caused by the elevated analyte concentrations in the field samples. Estimated sample results are still usable to achieve project objectives. Estimated detections above project screening levels are presented on Appendix F-1 – Table 6.

### 1.1.16 Professional Judgement

Professional judgement may be applied by a third-party data validation subcontractor or the project chemist during the data review process to apply validation qualifiers based on site-specific knowledge, historical data, comparability of data, and analytical expertise. There were no exceptions to the validation qualifiers as applied to the data in accordance with the project QAPjP and other guidelines used in the validation review for the Q3 2017 data.

## 1.2 COMPLETENESS

The following sections present a discussion of contractual, analytical, and technical completeness for the Q3 2017 analytical data. Completeness calculations were performed for the samples that are used for project decisions. Completeness results are presented in the following sections.

### 1.2.1 Contractual Completeness

Contractual completeness is a quantitative determination of the number of unqualified results compared to the total number of sample results expressed as a percentage, based on data qualified for QC outliers related to analytical method performance. These include data qualified for calibration or method blank contamination, missed holding times, LCS recovery, and/or precision. The contractual completeness goal is 95%. Contractual completeness was calculated as follows:

$$\text{Percent Contractual Completeness} = \frac{\text{Number of Unqualified Results}}{\text{Total Number of Results}} \times 100$$

For the contractual completeness for groundwater samples, 4 VOC analytes and 2 calcium results were "J"-qualified out of a total number of 358 sample and field duplicate results based on the contractual completeness criteria for calibration and LCS recovery, respectively. Groundwater sample contractual completeness for Q3 is 98.3%. The 95% contractual completeness objective was achieved for all of the methods for the Q3 2017 sampling event for the groundwater samples.

### 1.2.2 Analytical Completeness

Analytical completeness is a quantitative measure of the number of unqualified data results compared to the total number of results expressed as a percentage, based on the target analytes qualified for exceedances of QC requirements based on calibration, LCS, MS/MSD, surrogate, method precision, and laboratory method blank contamination results. The analytical completeness goal is 90% for the project. Analytical completeness was calculated as follows:

$$\text{Percent Analytical Completeness} = \frac{\text{Number of Unqualified Results}}{\text{Total Number of Results}} \times 100$$

A total of 44 groundwater sample results were qualified U, UJ, and J based on EB contamination, LCS and MS/MSD recovery, calibration criteria, and surrogate recovery out of a total number of 358 results, for an analytical completeness of 88%. Analytical completeness exceeded the 90% completeness objective for the Q3 2017 sampling event, with the exception of anions, alkalinity, and total metals (SW6010C/6020A).

Estimated data (J and UJ-qualified) are usable to achieve project objectives. No analytical data for groundwater monitoring samples were rejected (R-qualified) and qualified unusable based on analytical completeness for the Q3 2017 sampling event.

### 1.2.3 Technical Completeness

Technical completeness is a quantitative measure of the data usability based on the number of rejected data compared to the total number of sample results. The technical completeness goal for each method is equal to or greater than 95%. The technical completeness calculation considers all data that are not rejected (R-qualified) are usable data to achieve project objectives. The technical completeness was calculated as follows:

$$\text{Percent Technical Completeness} = \frac{\text{Number of Usable Results}}{\text{Total Number of Results}} \times 100$$

The project data quality objectives were achieved for all methods for the Q3 2017 sampling event. The technical completeness for the Q3 2017 groundwater data is 100% for all parameters and is presented in Appendix F-1 – Table 7.

### 1.2.4 Data Analysis Completeness

As a part of the data review process, chain-of-custody forms and project data deliverables are reviewed against Table 3-4 – Groundwater Monitoring Wells included in Q3 2017 Monitoring Activities to ensure compliance with the sampling plan and that analytical results were reported for all planned methods and samples. Data completeness for the Q3 data deliverables was determined to be 100% complete. Level 4 analytical data packages for Q3 2017 groundwater data are provided in Appendix F-2.

## 1.3 REPRESENTATIVENESS AND COMPARABILITY

Q3 2017 BFF well network sampling was conducted in accordance with the sampling and analysis protocols and standard operating procedures documented in the Work Plan (USACE, 2017). Approved procedures were used to collect, preserve, document, and ship samples to the Eurofins laboratory, thus ensuring the samples collected for the Q3 2017 sampling event were representative of the project site and conditions.

Groundwater samples for VOCs and EDB analyses were collected in 40-milliliter volatile organic analysis (VOA) vials preserved with hydrochloric acid and shipped to Eurofins at ≤6 degrees Celsius. Samples received in VOA vials were inspected to evaluate the presence of any headspace (estimated in millimeters) and documented as sample condition on the laboratory sample receipt report. One trip blank sample (TB173-08) was received with greater than 6 millimeters of headspace in one of the VOA vials; however, this vial was not used for analysis. Following EPA guidance and laboratory standard operating procedure, the laboratory analyzed the VOC and EDB VOA vials without headspace, if available, to ensure that the reported data were representative. The presence of bubbles in the vials could be attributed to imperfections of the septa seal and/or septa expansion and contraction due to temperature changes during shipping samples from the field to the laboratory. To minimize VOC losses and possible low-biased data reported from the laboratory, samplers perform a visual inspection of the VOA vials prior to sample shipping to avoid shipping any VOA vials with headspace to the laboratory. If large bubbles appear in the vials upon closing the lid over the sample container, the samples are re-collected; containers are never topped off with additional volume. Analysts at the laboratory also perform a visual inspection of VOA vials prior to analysis to ensure analysis of sample vials without headspace, if available. No samples were analyzed from VOA vials with headspace measured at greater than 6 millimeters for Q3 2017.

The project laboratory, Eurofins, maintains current DoD Environmental Laboratory Accreditation Program certification and adhered to the analytical methods documented in the project QAPjP and DoD QSM requirements to prepare and analyze samples and report the data. This certification ensures the comparability of the analytical results between different samples and different sampling events. For the Q3 2017 groundwater data, an EPA Stage 3 data review was performed on 100% of the analytical data to verify that the laboratory complied with the DoD QSM, project QAPjP, and method requirements. QC results that exceeded method control criteria resulted in data qualification as presented in the previous sections. Based on a review of the completed sample collection logs, chain-of-custody forms, sample receipt forms, and laboratory data packages, the analytical data reported for the Q3 2017 monitoring event achieved the project data representativeness and comparability requirements.

## 1.4 SENSITIVITY

Data sensitivity for Q3 2017 was achieved by complying with the analytical method guidelines and reporting limits specified in the project QAPjP. The analytical methods used for groundwater analysis achieve the project screening levels for the monitoring well samples: *EPA National Drinking Water Regulations, Maximum Contaminant Levels* (EPA, 2009); *New Mexico Administrative Code Title 20.6.23103, Standards for Groundwater of 10,000 Milligrams per Liter Total Dissolved Solids Concentration or Less* (New Mexico Administrative Code, 2004); and EPA Region 6 *Regional Screening Levels for Tapwater* (EPA, 2017), as applicable. Project screening levels for well samples are presented in the QAPjP, Attachment 1, Table 1-1 (USACE, 2016).

Elevated sample reporting limits are associated with elevated concentrations of target analytes in the samples requiring dilution or sample matrix interference. For the analytical results, detections of target compounds reported below the LOQ are "J"-flagged as estimated values. Non-detect analytes are reported at the LOD per the DoD QSM requirements unless as noted above.

## 1.5 CONCLUSIONS

The analytical data reported for the groundwater monitoring effort during Q3 2017 have been reviewed for precision, accuracy (bias), representativeness, comparability, completeness, and sensitivity. Data quality exceedances that resulted in data qualification consist of: (1) LCS recovery for calcium; (2) MS/MSD recovery for dissolved manganese, anions, and alkalinity; (3) low-level equipment rinse blank contamination for toluene, lead, and potassium; (4) surrogate recovery for EDB; and (5) continuing calibration verification for VOCs. Analytical data are qualified as estimated detect, estimated non-detect, and non-detect data results. Estimated sample data are still usable to achieve project objectives. The 95% technical completeness goal was achieved for all analytical methods for the Q3 2017 sampling event. Data are usable to achieve the project data quality objectives as qualified based on validation.

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## Table 1
## Groundwater Sample Collection Summary, Q3 2017

| Sample Location ID | Field Sample ID | Sample Date | Sample Delivery Group | Analytical Parameter[a] | Comments |
|---|---|---|---|---|---|
| KAFB-106003 | GW003-173 | 7/18/2017 | KR188 | EDB, BTEX | |
| KAFB-106004 | GW004-173 | 7/20/2017 | KR190 | EDB, BTEX | |
| KAFB-106005 | GW005-173 | 7/18/2017 | KR188 | EDB, BTEX, metals, anions, alkalinity | Field Duplicate, MS/MSD |
| KAFB-106009 | GW009-173 | 7/12/2017 | KR186 | EDB, BTEX, metals, anions, alkalinity | |
| KAFB-106012R | GW012R-173 | 7/19/2017 | KR189 | EDB, BTEX, metals, anions, alkalinity | |
| KAFB-106013 | GW013-173 | 7/12/2017 | KR186 | EDB, BTEX | |
| KAFB-106029 | GW029-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106030 | GW030-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106031 | GW031-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106032 | GW032-173 | 7/11/2017 | KR185 | EDB | Field Duplicate |
| KAFB-106033 | GW033-173 | 7/11/2017 | KR185 | EDB | MS/MSD |
| KAFB-106034 | GW034-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106049 | GW049-173 | 7/10/2017 | KR184 | EDB | |
| KAFB-106050 | GW050-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106051 | GW051-173 | 7/12/2017 | KR186 | EDB | |
| KAFB-106097 | GW097-173 | 7/19/2017 | KR189 | EDB, BTEX | |
| KAFB-106098 | GW098-173 | 7/19/2017 | KR189 | EDB, BTEX | |
| KAFB-106099 | GW099-173 | 7/20/2017 | KR190 | EDB, BTEX | |
| KAFB-106100 | GW100-173 | 7/20/2017 | KR190 | EDB, BTEX | |
| KAFB-106101 | GW101-173 | 7/18/2017 | KR188 | EDB, BTEX | Field Duplicate |
| KAFB-106102 | GW102-173 | 7/18/2017 | KR188 | EDB, BTEX | |
| KAFB-106157 | GW157-173 | 7/17/2017 | KR187 | VOCs, EDB, metals | |
| KAFB-106201 | GW201-173 | 7/10/2017 | KR184 | EDB | |
| KAFB-106202 | GW202-173 | 7/10/2017 | KR184 | EDB | |
| KAFB-106203 | GW203-173 | 7/10/2017 | KR184 | EDB | |
| KAFB-106204 | GW204-173 | 7/10/2017 | KR184 | EDB | Field Duplicate |
| KAFB-106205 | GW205-173 | 7/10/2017 | KR184 | EDB | MS/MSD |
| KAFB-106206 | GW206-173 | 7/10/2017 | KR184 | EDB | |
| KAFB-106207 | GW207-173 | 7/10/2017 | KR184 | EDB | |
| KAFB-106208 | GW208-173 | 7/10/2017 | KR184 | EDB | |
| KAFB-106209 | GW209-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106216 | GW216-173 | 7/17/2017 | KR187 | EDB | |
| KAFB-106217 | GW217-173 | 7/17/2017 | KR187 | EDB | |
| KAFB-106218 | GW218-173 | 7/17/2017 | KR187 | EDB | |
| KAFB-106222 | GW222-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106223 | GW223-173 | 7/17/2017 | KR187 | EDB | |
| KAFB-106224 | GW224-173 | 7/17/2017 | KR187 | EDB | |
| KAFB-106231 | GW231-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106232 | GW232-173 | 7/11/2017 | KR185 | EDB | |
| KAFB-106235-463 | GW235-463-173 | 7/12/2017 | KR186 | EDB, metals, anions, alkalinity | |
| KAFB-106235-492 | GW235-492-173 | 7/12/2017 | KR186 | EDB, metals, anions, alkalinity | |
| KAFB-106235-521 | GW235-521-173 | 7/12/2017 | KR186 | EDB, metals, anions, alkalinity | Field Duplicate |
| KAFB-106236-461 | GW236-461-173 | 7/10/2017 | KR184 | EDB, metals, anions, alkalinity | |
| KAFB-106236-490 | GW236-490-173 | 7/10/2017 | KR184 | EDB, metals, anions, alkalinity | Field Duplicate |
| KAFB-106236-519 | GW236-519-173 | 7/10/2017 | KR184 | EDB, metals, anions, alkalinity | MS/MSD |
| Equipment Blank | ER173-01 | 7/11/2017 | KR186 | EDB, BTEX, metals | |
| Equipment Blank | ER173-02 | 7/12/2017 | KR186 | EDB, BTEX | |
| Equipment Blank | ER173-04 | 7/18/2017 | KR188 | EDB, BTEX | |
| Trip Blank | TB173-02 | 7/10/2017 | KR184 | EDB | |
| Trip Blank | TB173-03 | 7/10/2017 | KR184 | EDB | |
| Trip Blank | TB173-04 | 7/10/2017 | KR184 | EDB | |

## Table 1
## Groundwater Sample Collection Summary, Q3 2017

| Sample Location ID | Field Sample ID | Sample Date | Sample Delivery Group | Analytical Parameter[a] | Comments |
|---|---|---|---|---|---|
| Trip Blank | TB173-05 | 7/10/2017 | KR184 | EDB | |
| Trip Blank | TB173-06 | 7/10/2017 | KR184 | EDB | |
| Trip Blank | TB173-07 | 7/10/2017 | KR184 | EDB | |
| Trip Blank | TB173-08 | 7/10/2017 | KR184 | EDB | |
| Trip Blank | TB173-09 | 7/11/2017 | KR185 | EDB | |
| Trip Blank | TB173-10 | 7/11/2017 | KR185 | EDB | |
| Trip Blank | TB173-11 | 7/11/2017 | KR185 | EDB | |
| Trip Blank | TB173-12 | 7/11/2017 | KR185 | EDB | |
| Trip Blank | TB173-13 | 7/11/2017 | KR185 | EDB | |
| Trip Blank | TB173-14 | 7/11/2017 | KR185 | EDB | |
| Trip Blank | TB173-15 | 7/12/2017 | KR186 | EDB | |
| Trip Blank | TB173-16 | 7/12/2017 | KR186 | EDB, BTEX | |
| Trip Blank | TB173-17 | 7/12/2017 | KR186 | EDB, BTEX | |
| Trip Blank | TB173-18 | 7/12/2017 | KR186 | EDB, BTEX | |
| Trip Blank | TB173-22 | 7/18/2017 | KR188 | EDB, BTEX | |
| Trip Blank | TB173-23 | 7/18/2017 | KR188 | EDB, BTEX | |
| Trip Blank | TB173-24 | 7/18/2017 | KR188 | EDB, BTEX | |
| Trip Blank | TB173-25 | 7/19/2017 | KR189 | EDB, BTEX | |
| Trip Blank | TB173-26 | 7/19/2017 | KR189 | EDB, BTEX | |
| Trip Blank | TB173-27 | 7/20/2017 | KR190 | EDB, BTEX | |
| Trip Blank | TB173-28 | 7/20/2017 | KR190 | EDB, BTEX | |

[a]Analytical methods include: Method SW8260C for BTEX; Method SW8011 for EDB; Methods SW6010C/6020A for total metals (calcium, potassium, magnesium, sodium /arsenic and lead); Method SW6010C for dissolved iron and manganese. Anions analyses include Method E300.0A for bromide, chloride and sulfate; Method E353.2 for nitrate/nitrite nitrogen. Alkalinity is analyzed using Method SM2320B.

BTEX = benzene, toluene, ethylbenzene, xylenes
EDB = ethylene dibromide
ID = identification
MS = matrix spike
MSD = matrix spike duplicate

## Table 2
## Data Qualification Flags and Reason Codes

### Data Qualifier Definitions for Data Validation

| Qualifier | Definition |
|---|---|
| | **No Qualifier** indicates that the data are acceptable both qualitatively and quantitatively. |
| U | The analyte was analyzed for but was not detected above the detection limit. The value associated with the U-qualifier is the limit of detection. |
| J | The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample. Results are estimated, although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain. |
| J- | The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample. |
| J+ | The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample. |
| UJ | The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise. |
| R | The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Re-sampling and re-analysis may be necessary to confirm or deny the presence of the analyte. Results are rejected, and data are unusable for any purposes. |

### Reason Codes for Data Validation

| Reason Code | Description |
|---|---|
| CB/CCB | Calibration blank or continuing calibration blank outside of control limits |
| CCV | Calibration verification outside of control limits |
| EB | Equipment rinse blank contamination |
| FB | Field blank contamination |
| FD | Field duplicate sample results out of control criteria |
| HT | Holding time exceedance |
| ICS | Interference check sample |
| LCS | Laboratory control sample recovery out of control criteria |
| MB | Method blank contamination |
| MS/MSD | Matrix spike/ matrix spike duplicate recovery outside of control criteria |
| RPD | Relative percent difference outside of control limits |
| SD | ICP serial dilution out of control criteria |
| SURR | Surrogate recovery outside of control limits |
| TB | Trip blank contamination |

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**Table 3**
**Qualified Sample Results, Q3 2017**

| Well Location ID | Sample Name | Sample Delivery Group | Collection Method | Sample Type | Analyte | Data Qualifier | Validation Reason Code |
|---|---|---|---|---|---|---|---|
| KAFB-106003 | GW003-173 | KR188 | LF | N | Toluene | U | EB - Equipment rinse blank |
| KAFB-106005 | GW005-173 | KR188 | LF | N | Bicarbonate Alkalinity | J | MS/MSD - Percent recovery |
| KAFB-106005 | GW005-573 | KR188 | LF | FD | Bicarbonate Alkalinity | J | MS/MSD - Percent recovery |
| KAFB-106005 | GW005-173 | KR188 | LF | N | Bromide | J | MS/MSD - Percent recovery |
| KAFB-106005 | GW005-573 | KR188 | LF | FD | Bromide | J | MS/MSD - Percent recovery |
| KAFB-106005 | GW005-173 | KR188 | LF | N | Ethylene dibromide | J | Surrogate Recovery |
| KAFB-106005 | GW005-173 | KR188 | LF | N | Manganese, dissolved | J | MS/MSD - Percent recovery |
| KAFB-106005 | GW005-573 | KR188 | LF | FD | Manganese, dissolved | J | MS/MSD - Percent recovery |
| KAFB-106005 | GW005-173 | KR188 | LF | N | Toluene | U | EB - Equipment rinse blank |
| KAFB-106005 | GW005-573 | KR188 | LF | FD | Toluene | U | EB - Equipment rinse blank |
| KAFB-106005 | GW005-173 | KR188 | LF | N | Total Alkalinity to pH 4.5 | J | MS/MSD - Percent recovery |
| KAFB-106005 | GW005-573 | KR188 | LF | FD | Total Alkalinity to pH 4.5 | J | MS/MSD - Percent recovery |
| KAFB-106009 | GW009-173 | KR186 | LF | N | Chloride | J | MS/MSD - Percent recovery |
| KAFB-106009 | GW009-173 | KR186 | LF | N | Sulfate | J | MS/MSD - Percent recovery |
| KAFB-106012R | GW012R-173 | KR189 | LF | N | Bicarbonate Alkalinity | J | MS/MSD - Percent recovery |
| KAFB-106012R | GW012R-173 | KR189 | LF | N | Bromide | J | MS/MSD - Percent recovery |
| KAFB-106012R | GW012R-173 | KR189 | LF | N | Chloride | J | MS/MSD - Percent recovery |
| KAFB-106012R | GW012R-173 | KR189 | LF | N | Sulfate | J | MS/MSD - Percent recovery |
| KAFB-106012R | GW012R-173 | KR189 | LF | N | Total Alkalinity to pH 4.5 | J | MS/MSD - Percent recovery |
| KAFB-106101 | GW101-173 | KR188 | LF | N | Toluene | U | EB - Equipment rinse blank |
| KAFB-106101 | GW101-573 | KR188 | LF | FD | Toluene | U | EB - Equipment rinse blank |
| KAFB-106102 | GW102-173 | KR188 | LF | N | Toluene | U | EB - Equipment rinse blank |
| KAFB-106157 | GW157-173 | KR187 | LF | N | 1,2-Dichloroethane | J | CCV - Calibration verification |
| KAFB-106157 | GW157-173 | KR187 | LF | N | 2,2-Dichloropropane | UJ | CCV - Calibration verification |
| KAFB-106157 | GW157-173 | KR187 | LF | N | Bromoform | UJ | CCV - Calibration verification |
| KAFB-106157 | GW157-173 | KR187 | LF | N | Carbon Tetrachloride | UJ | CCV - Calibration verification |
| KAFB-106235-463 | GW235-463-173 | KR186 | DF | N | Chloride | J | MS/MSD - Percent recovery |
| KAFB-106235-463 | GW235-463-173 | KR186 | DF | N | Potassium | U | EB - Equipment rinse blank |
| KAFB-106235-463 | GW235-463-173 | KR186 | DF | N | Sulfate | J | MS/MSD - Percent recovery |
| KAFB-106235-463 | GW235-463-173 | KR186 | DF | N | Lead | U | EB - Equipment rinse blank |
| KAFB-106235-492 | GW235-492-173 | KR186 | DF | N | Lead | U | EB - Equipment rinse blank |
| KAFB-106235-492 | GW235-492-173 | KR186 | DF | N | Calcium | J | LCS Recovery |
| KAFB-106235-492 | GW235-492-173 | KR186 | DF | N | Chloride | J | MS/MSD - Percent recovery |
| KAFB-106235-492 | GW235-492-173 | KR186 | DF | N | Potassium | U | EB - Equipment rinse blank |
| KAFB-106235-492 | GW235-492-173 | KR186 | DF | N | Sulfate | J | MS/MSD - Percent recovery |
| KAFB-106235-521 | GW235-521-173 | KR186 | DF | N | Lead | U | EB - Equipment rinse blank |
| KAFB-106235-521 | GW235-521-573 | KR186 | DF | FD | Lead | U | EB - Equipment rinse blank |
| KAFB-106235-521 | GW235-521-173 | KR186 | DF | N | Chloride | J | MS/MSD - Percent recovery |
| KAFB-106235-521 | GW235-521-573 | KR186 | DF | FD | Chloride | J | MS/MSD - Percent recovery |
| KAFB-106235-521 | GW235-521-173 | KR186 | DF | N | Potassium | U | EB - Equipment rinse blank |
| KAFB-106235-521 | GW235-521-573 | KR186 | DF | FD | Potassium | U | EB - Equipment rinse blank |
| KAFB-106235-521 | GW235-521-173 | KR186 | DF | N | Sulfate | J | MS/MSD - Percent recovery |
| KAFB-106235-521 | GW235-521-573 | KR186 | DF | FD | Sulfate | J | MS/MSD - Percent recovery |
| KAFB-106236-519 | GW236-519-173 | KR184 | DF | N | Calcium | J | LCS Recovery |

CCV = continuing calibration verification

DF = passive diffusion

EB = equipment blank

FD = field duplicate

ID = identification

LF = low-flow sampling

## Table 3
## Qualified Sample Results, Q3 2017

| Well Location ID | Sample Name | Sample Delivery Group | Collection Method | Sample Type | Analyte | Data Qualifier | Validation Reason Code |
|---|---|---|---|---|---|---|---|

LCS = laboratory control sample

MS/MSD = matrix spike/ matrix spike duplicate

N = normal field sample

Data qualifier based on independent valiation:

J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.

U = Qualifier denotes the analyte was analyzed for but was not detected above the detection limit.

UJ = Qualifier denotes the analyte was analyzed for but was not detected. The reported quantitation limit is approximate.

**Table 4**
**Field Quality Control Sample Results, Q3 2017**

| | | Field Sample ID: | ER173-01 | | | ER173-02 | | | ER173-04 | | | TB173-02 | | | TB173-03 | | | TB173-04 | | | TB173-05 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date: | 7/11/2017 | | | 7/12/2017 | | | 7/18/2017 | | | 7/10/2017 | | | 7/10/2017 | | | 7/10/2017 | | | 7/10/2017 | | |
| | | Sample Type: | EB | | | EB | | | EB | | | TB | | | TB | | | TB | | | TB | | |
| **Parameter** | **Analytical Method** | **Analyte** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-Dibromoethane | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | ND | U | 1 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Ethylbenzene | ND | U | 1 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Toluene | ND | U | 1 | ND | U | 1 | 2 | -- | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Xylenes, Total | ND | U | 1 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total and Dissolved Metals | Method SW6010C (mg/L) | Calcium | 0.832 | | 0.200 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Iron, dissolved | ND | U | 0.200 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Magnesium | ND | U | 0.100 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Manganese, dissolved | 0.0051 | J | 0.0050 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Potassium | 0.377 | J | 0.500 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Sodium | 1.29 | J | 0.500 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Method SW6020A (mg/L) | Arsenic | ND | U | 0.0020 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Lead | 0.00058 | J | 0.00025 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 4**
**Field Quality Control Sample Results, Q3 2017**

| | | Field Sample ID: | TB173-06 | | | TB173-07 | | | TB173-08 | | | TB173-09 | | | TB173-10 | | | TB173-11 | | | TB173-12 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date: | 7/10/2017 | | | 7/10/2017 | | | 7/10/2017 | | | 7/11/2017 | | | 7/11/2017 | | | 7/11/2017 | | | 7/11/2017 | | |
| | | Sample Type: | TB | | | TB | | | TB | | | TB | | | TB | | | TB | | | TB | | |
| **Parameter** | **Analytical Method** | **Analyte** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-Dibromoethane | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Ethylbenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Toluene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Xylenes, Total | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total and Dissolved Metals | Method SW6010C (mg/L) | Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Iron, dissolved | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Manganese, dissolved | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Method SW6020A (mg/L) | Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 4**
**Field Quality Control Sample Results, Q3 2017**

| | | Field Sample ID: | TB173-13 | | | TB173-14 | | | TB173-15 | | | TB173-16 | | | TB173-17 | | | TB173-18 | | | TB173-22 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date: | 7/11/2017 | | | 7/11/2017 | | | 7/12/2017 | | | 7/12/2017 | | | 7/12/2017 | | | 7/12/2017 | | | 7/18/2017 | | |
| | | Sample Type: | TB | | | TB | | | TB | | | TB | | | TB | | | TB | | | TB | | |
| **Parameter** | **Analytical Method** | **Analyte** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-Dibromoethane | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Xylenes, Total | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Total and Dissolved Metals | Method SW6010C (mg/L) | Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Iron, dissolved | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Manganese, dissolved | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Method SW6020A (mg/L) | Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 4**
**Field Quality Control Sample Results, Q3 2017**

| | | Field Sample ID: | TB173-23 | | | TB173-24 | | | TB173-25 | | | TB173-26 | | | TB173-27 | | | TB173-28 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date: | 7/18/2017 | | | 7/18/2017 | | | 7/19/2017 | | | 7/19/2017 | | | 7/20/2017 | | | 7/20/2017 | | |
| | | Sample Type: | TB | | | TB | | | TB | | | TB | | | TB | | | TB | | |
| **Parameter** | **Analytical Method** | **Analyte** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-Dibromoethane | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Ethylbenzene | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Toluene | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Xylenes, Total | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Total and Dissolved Metals | Method SW6010C (mg/L) | Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Iron, dissolved | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Manganese, dissolved | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Method SW6020A (mg/L) | Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 4**
**Field Quality Control Samples, Q3 2017**

-- = Parameter or analyte not required for analysis or no qualifier required
µg/L = microgram per liter.
EB = equipment rinse blank
EDB = ethylene dibromide
ID = identification
LOD = limit of detection
mg/L = milligram per liter
ND = not detected above the detection limit
TB = trip blank
Val Qual = validation qualifier
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
Qualifiers:
Val Qual based on independent data validation.
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.

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**Table 5**
**Field Duplicate Sample Results, Q3 2017**

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Well Location ID:** | KAFB-106005 | | | KAFB-106005 | | | KAFB-106032 | | | KAFB-106032 | | |
| | | | | | | **Field Sample ID:** | GW005-173 | | | GW005-573 | | | GW032-173 | | | GW032-573 | | |
| | | | | | | **Sample Date:** | 7/18/2017 | | | 7/18/2017 | | | 7/11/2017 | | | 7/11/2017 | | |
| | | | | | | **Sample Type:** | REG | | | Field Duplicate | | | REG | | | Field Duplicate | | |
| | | | | | | **Sample Depth (ft bgs):** | 481 | | | 484 | | | 458 | | | 458 | | |
| | | | | | | **Reference Elevation Interval (ft AMSL):** | 4857 | | | 4857 | | | 4857 | | | 4857 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | **1.3** | J | 0.38 | **0.79** | -- | 0.19 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | 4.5 | 5 | **420** | -- | 10 | **420** | -- | 10 | -- | -- | -- | -- | -- | -- |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | 54 | -- | 1 | 54 | -- | 1 | -- | -- | -- | -- | -- | -- |
| | | Toluene | 750 | 1,000 | 1,100 | 750 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Xylenes, Total | 620 | 10,000 | 190 | 620 | 110 | -- | 1 | 110 | -- | 1 | -- | -- | -- | -- | -- | -- |
| Total Metals | Method SW6010C (mg/L) | Calcium | NS | NS | NS | NS | 255 | -- | 0.200 | 258 | -- | 0.200 | -- | -- | -- | -- | -- | -- |
| | | Iron, dissolved | 1.0 | NS | NS | 1.0 | 0.153 | J | 0.200 | 0.163 | J | 0.200 | -- | -- | -- | -- | -- | -- |
| | | Magnesium | NS | NS | NS | NS | 41.7 | -- | 0.100 | 42.5 | -- | 0.100 | -- | -- | -- | -- | -- | -- |
| | | Manganese, dissolved | 0.2 | NS | NS | 0.2 | **0.228** | J | 0.0050 | **0.213** | J | 0.0050 | -- | -- | -- | -- | -- | -- |
| | | Potassium | NS | NS | NS | NS | 5.78 | -- | 0.500 | 6.06 | -- | 0.500 | -- | -- | -- | -- | -- | -- |
| | | Sodium | NS | NS | NS | NS | 86.8 | -- | 0.500 | 87.6 | -- | 0.500 | -- | -- | -- | -- | -- | -- |
| | Method SW6020A (mg/L) | Arsenic | NS | 0.01 | 0.00052 | 0.01 | ND | U | 0.0020 | 0.00074 | J | 0.0020 | -- | -- | -- | -- | -- | -- |
| | | Lead | NS | 0.015 | 0.015 | 0.015 | 0.00017 | J | 0.00025 | 0.00014 | J | 0.00025 | -- | -- | -- | -- | -- | -- |
| Anions | Method E300.0 (mg/L) | Bromide | NS | NS | NS | NS | 3.4 | J | 2.5 | 3.4 | J | 2.5 | -- | -- | -- | -- | -- | -- |
| | | Chloride | 250 | 250 | NS | 250 | 205 | -- | 40.0 | 213 | -- | 40.0 | -- | -- | -- | -- | -- | -- |
| | | Sulfate | 600 | 250 | NS | 250 | **396** | -- | 100 | **404** | -- | 100 | -- | -- | -- | -- | -- | -- |
| | Method E353.2 (mg/L) | Nitrate/Nitrite Nitrogen | 10[e] | 10[e] | NS | 10[e] | 0.22 | -- | 0.10 | 0.20 | -- | 0.10 | -- | -- | -- | -- | -- | -- |
| Alkalinity | Method SM2320B (mg/L) | Alkalinity, bicarbonate (as CaCO3) | NS | NS | NS | NS | 220 | J | 5.0 | 216 | J | 5.0 | -- | -- | -- | -- | -- | -- |
| | | Alkalinity, carbonate (as CaCO3) | NS | NS | NS | NS | ND | U | 5.0 | ND | U | 5.0 | -- | -- | -- | -- | -- | -- |
| | | Alkalinity, total (as CaCO3) | NS | NS | NS | NS | 220 | J | 5.0 | 216 | J | 5.0 | -- | -- | -- | -- | -- | -- |

**Table 5**
**Field Duplicate Sample Results, Q3 2017**

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Well Location ID:** | KAFB-106101 | | | KAFB-106101 | | | KAFB-106204 | | | KAFB-106204 | | |
| | | | | | | **Field Sample ID:** | GW101-173 | | | GW101-573 | | | GW204-173 | | | GW204-573 | | |
| | | | | | | **Sample Date:** | 7/18/2017 | | | 7/18/2017 | | | 7/10/2017 | | | 7/10/2017 | | |
| | | | | | | **Sample Type:** | REG | | | Field Duplicate | | | REG | | | Field Duplicate | | |
| | | | | | | **Sample Depth (ft bgs):** | 497.9 | | | 497.9 | | | 464.2 | | | 464.2 | | |
| | | | | | | **Reference Elevation Interval (ft AMSL):** | 4838 | | | 4838 | | | 4857 | | | 4857 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.020 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | 4.5 | 5 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Toluene | 750 | 1,000 | 1,100 | 750 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Xylenes, Total | 620 | 10,000 | 190 | 620 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| Total Metals | Method SW6010C (mg/L) | Calcium | NS | NS | NS | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Iron, dissolved | 1.0 | NS | NS | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Magnesium | NS | NS | NS | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Manganese, dissolved | 0.2 | NS | NS | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Potassium | NS | NS | NS | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Sodium | NS | NS | NS | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Method SW6020A (mg/L) | Arsenic | NS | 0.01 | 0.00052 | 0.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Lead | NS | 0.015 | 0.015 | 0.015 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Anions | Method E300.0 (mg/L) | Bromide | NS | NS | NS | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Chloride | 250 | 250 | NS | 250 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Sulfate | 600 | 250 | NS | 250 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Method E353.2 (mg/L) | Nitrate/Nitrite Nitrogen | 10[e] | 10[e] | NS | 10[e] | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Alkalinity | Method SM2320B (mg/L) | Alkalinity, bicarbonate (as CaCO3) | NS | NS | NS | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Alkalinity, carbonate (as CaCO3) | NS | NS | NS | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Alkalinity, total (as CaCO3) | NS | NS | NS | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 5**
**Field Duplicate Sample Results, Q3 2017**

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Well Location ID:** | KAFB-106235-521 | | | KAFB-106235-521 | | | KAFB-106236-490 | | | KAFB-106236-490 | | |
| | | | | | | **Field Sample ID:** | GW235-521-173 | | | GW235-521-573 | | | GW236-490-173 | | | GW236-490-573 | | |
| | | | | | | **Sample Date:** | 7/12/2017 | | | 7/12/2017 | | | 7/10/2017 | | | 7/10/2017 | | |
| | | | | | | **Sample Type:** | REG | | | Field Duplicate | | | REG | | | Field Duplicate | | |
| | | | | | | **Sample Depth (ft bgs):** | 521 | | | 521 | | | 490 | | | 490 | | |
| | | | | | | **Reference Elevation Interval (ft AMSL):** | 4814 | | | 4814 | | | 4838 | | | 4838 | | |
| **Parameter** | **Analytical Method** | **Analyte** | **NMAC NMWQCC[a]** | **EPA MCL[b]** | **EPA RSL[c]** | **Project Screening Level[d]** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | 0.05 | 0.075 | 0.05 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | Benzene | 10 | 5 | 4.5 | 5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Ethylbenzene | 750 | 700 | 15 | 700 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Toluene | 750 | 1,000 | 1,100 | 750 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Xylenes, Total | 620 | 10,000 | 190 | 620 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Metals | Method SW6010C (mg/L) | Calcium | NS | NS | NS | NS | 51.4 | -- | 0.200 | 50.3 | -- | 0.200 | 47.0 | -- | 0.200 | 46.5 | -- | 0.200 |
| | | Iron, dissolved | 1.0 | NS | NS | 1.0 | ND | U | 0.200 | ND | U | 0.200 | ND | U | 0.200 | ND | U | 0.200 |
| | | Magnesium | NS | NS | NS | NS | 6.96 | -- | 0.100 | 7.09 | -- | 0.100 | 6.65 | -- | 0.100 | 6.55 | -- | 0.100 |
| | | Manganese, dissolved | 0.2 | NS | NS | 0.2 | ND | U | 0.0050 | ND | U | 0.0050 | ND | U | 0.0050 | 0.0016 | J | 0.0050 |
| | | Potassium | NS | NS | NS | NS | ND | U | ND | 3.00 | U | 0.500 | 3.00 | -- | 0.500 | 2.98 | -- | 0.500 |
| | | Sodium | NS | NS | NS | NS | 23.7 | -- | 0.500 | 24.3 | -- | 0.500 | 23.1 | -- | 0.500 | 22.9 | -- | 0.500 |
| | Method SW6020A (mg/L) | Arsenic | NS | 0.01 | 0.00052 | 0.01 | 0.00081 | J | 0.0020 | 0.0010 | J | 0.0020 | 0.00088 | J | 0.0020 | 0.00083 | J | 0.0020 |
| | | Lead | NS | 0.015 | 0.015 | 0.015 | ND | U | 0.00025 | ND | U | 0.00025 | 0.00034 | J | 0.00025 | 0.00025 | J | 0.00025 |
| Anions | Method E300.0 (mg/L) | Bromide | NS | NS | NS | NS | ND | U | 2.5 | ND | U | 2.5 | ND | U | 2.5 | ND | U | 2.5 |
| | | Chloride | 250 | 250 | NS | 250 | 36.6 | J | 8.0 | 34.7 | J | 8.0 | 36.0 | -- | 8.0 | 37.7 | -- | 8.0 |
| | | Sulfate | 600 | 250 | NS | 250 | 61.2 | J | 5.0 | 61.5 | J | 5.0 | 57.7 | -- | 5.0 | 56.7 | -- | 5.0 |
| | Method E353.2 (mg/L) | Nitrate/Nitrite Nitrogen | 10[e] | 10[e] | NS | 10[e] | 0.83 | -- | 0.10 | 0.81 | -- | 0.10 | 1.1 | -- | 0.10 | 1.1 | -- | 0.10 |
| Alkalinity | Method SM2320B (mg/L) | Alkalinity, bicarbonate (as CaCO3) | NS | NS | NS | NS | 92.9 | -- | 5.0 | 94.3 | -- | 5.0 | 91.4 | -- | 5.0 | 91.8 | -- | 5.0 |
| | | Alkalinity, carbonate (as CaCO3) | NS | NS | NS | NS | ND | U | 5.0 | ND | U | 5.0 | ND | U | 5.0 | ND | U | 5.0 |
| | | Alkalinity, total (as CaCO3) | NS | NS | NS | NS | 92.9 | -- | 5.0 | 94.3 | -- | 5.0 | 91.4 | -- | 5.0 | 91.8 | -- | 5.0 |

**Table 5**
**Field Duplicate Sample Results, Q3 2017**

[a] NMWQCC standards per the New Mexico Administrative Code Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (New Mexico Administrative Code 2004). For metals, the NMWQCC standard applies to dissolved metals and total mercury.

[b] U.S. Environmental Protection Agency (EPA) National Primary Drinking Water Regulations, Maximum Contaminant Levels and Secondary Maximum Contaminant Levels, Title 40 CFR Part 141, 143 (May 2009).

[c] EPA Region 6 Regional Screening Levels for Tapwater (June 2017) for hazard index = 1.0 for noncarcinogens and a $10^{-5}$ cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit No. NM9570024423 as the lowest of (1) NMWQCC standard or (2) EPA MCL. If no MCL or NMWQCC standard exists for any analyte, then the project screening level will be the EPA Tapwater RSL. Project screening levels below the LOD are highlighted and the screening level is set at the LOQ.

[e] Based on the geochemical equilibrium of the site groundwater and previous site data analyses, nitrate/nitrite results represent nitrate concentrations.

-- = parameter or analyte not required for analysis or no qualifier required

AFB = Air Force Base
AMSL = above mean sea level
bgs = below-ground surface
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ft = foot/feet
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L = milligram per liter
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
**Bold = reported concentrations exceed the project screening level**

Qualifiers:
Val Quals based on independent data validation
J = denotes the analyte was positively identified, but the associated numerical value is estimated.
U = denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.

## Table 6
## Estimated Sample Data Above Project Screening Levels, Q3 2017

| Well Location ID | Field Sample ID | Sample Date | Sample Type | Analytical Method | Analyte | Result | LOD | Unit | Val Qual | Validation Reason Code | Project Screening Level [a] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KAFB-106005 | GW005-173 | 7/18/2017 | N | SW8011 | Ethylene dibromide | 1.3 | 0.38 | µg/L | J | Surrogate recovery | 0.05 |
| KAFB-106005 | GW005-173 | 7/18/2017 | N | SW6010C | Manganese, dissolved | 0.228 | 0.0050 | mg/L | J | MS/MSD - percent recovery | 0.2 |
| KAFB-106005 | GW005-573 | 7/18/2017 | FD | SW6010C | Manganese, dissolved | 0.213 | 0.0050 | mg/L | J | MS/MSD - percent recovery | 0.2 |
| KAFB-106009 | GW009-173 | 7/12/2017 | N | E300.0 | Sulfate | 433 | 50.0 | mg/L | J | MS/MSD - percent recovery | 250 |
| KAFB-106009 | GW009-173 | 7/12/2017 | N | E300.0 | Chloride | 315 | 200 | mg/L | J | MS/MSD - percent recovery | 250 |

[a] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit No. NM9570024423 as the lowest of (1) NMWQCC standard or (2) EPA MCL.
If no MCL or NMWQCC standard exists for any analyte, then the project screening level will be the EPA Tapwater RSL. Project screening levels below the LOD are highlighted and the screening level is set at the LOQ.

FD = field duplicate

ID = identification

LOD = limit of detection

mg/l = milligram per liter

MS/MSD = matrix spike/matrix spike duplicate

N = field sample

Val Qual = validation qualifier

Qualifiers:

Val Quals based on independent data validation

J = Denotes the analyte was positively identified, but the associated numerical value is estimated.

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**Table 7**
**Technical Data Completeness - Groundwater, Q3 2017**

| Analytical Parameter | Field/Field Duplicate Sample Analytes | Quality Control Sample Analytes (TB, FB, EB) | Qualified Analytes | Percent Technical Completeness[a] |
|---|---|---|---|---|
| VOCs (SW8260C)[b] | 125 | 52 | 10 | 100 |
| Ethylene dibromide (SW8011) | 51 | 27 | 1 | 100 |
| Total metals (SW6010C)[c] | 48 | 6 | 6 | 100 |
| Dissolved metals (SW6010C)[d] | 26 | 0 | 2 | 100 |
| Total metals (SW6020A)[e] | 24 | 2 | 4 | 100 |
| Anions (E300.0)[f] | 36 | 0 | 15 | 100 |
| Nitrate/nitrite nitrogen (E353.2) | 12 | 0 | 0 | 100 |
| Alkalinity (SM2320B) | 36 | 0 | 6 | 100 |
| Ammonia nitrogen (SM4500 NH3B/C) | 0 | 0 | 0 | 100 |
| Sulfide (SM4500 S2F) | 0 | 0 | 0 | 100 |

Notes:

[a] Percent technical completeness including analytes qualified as estimated data. No data were rejected.

[b] Samples were only analyzed for benzene, toluene, ethylbenzene, and total xylenes.

[c] Total metals (SW6010C) = calcium, magnesium, potassium, sodium.

[d] Dissolved metals (SW6010C) = dissolved iron, manganese.

[e] Total metals (SW6020A) = arsenic, lead.

[f] Anions = bromide, chloride, sulfate.

EB = equipment rinse blank
FB = field blank
TB = trip blank
VOC = volatile organic compound

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# APPENDIX F-2

# DATA PACKAGES – GROUNDWATER SAMPLES

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# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

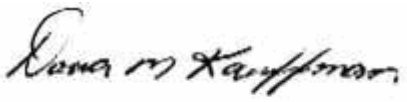
Project: Kirtland AFB
Water Samples
Collected on 07/10/17

# SDG# KR184

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1823609 | 9095954-9095986 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** 

Dana M. Kauffman
Manager

**Date: 08/03/2017**

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

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## Sample Reference List for SDG Number KR184 with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9095954 | GW049-173 | 07/10/2017 08:30 | 07/11/2017 10:00 |
| 9095955 | GW201-173 | 07/10/2017 09:14 | 07/11/2017 10:00 |
| 9095956 | GW202-173 | 07/10/2017 08:38 | 07/11/2017 10:00 |
| 9095957 | GW203-173 | 07/10/2017 08:20 | 07/11/2017 10:00 |
| 9095958 | GW204-173 | 07/10/2017 11:02 | 07/11/2017 10:00 |
| 9095959 | GW204-573 | 07/10/2017 11:02 | 07/11/2017 10:00 |
| 9095960 | GW205-173 | 07/10/2017 10:35 | 07/11/2017 10:00 |
| 9095961 | GW205-173MS | 07/10/2017 10:35 | 07/11/2017 10:00 |
| 9095962 | GW205-173MSD | 07/10/2017 10:35 | 07/11/2017 10:00 |
| 9095963 | GW206-173 | 07/10/2017 10:12 | 07/11/2017 10:00 |
| 9095964 | GW207-173 | 07/10/2017 12:25 | 07/11/2017 10:00 |
| 9095965 | GW208-173 | 07/10/2017 12:05 | 07/11/2017 10:00 |
| 9095966 | GW236-490-173 | 07/10/2017 10:10 | 07/11/2017 10:00 |
| 9095967 | GW236-490-173 | 07/10/2017 10:10 | 07/11/2017 10:00 |
| 9095968 | GW236-490-573 | 07/10/2017 10:10 | 07/11/2017 10:00 |
| 9095969 | GW236-490-573 | 07/10/2017 10:10 | 07/11/2017 10:00 |
| 9095970 | GW236-461-173 | 07/10/2017 10:35 | 07/11/2017 10:00 |
| 9095971 | GW236-461-173 | 07/10/2017 10:35 | 07/11/2017 10:00 |
| 9095972 | GW236-519-173 | 07/10/2017 09:30 | 07/11/2017 10:00 |
| 9095973 | GW236-519-173MS | 07/10/2017 09:30 | 07/11/2017 10:00 |
| 9095974 | GW236-519-173MSD | 07/10/2017 09:30 | 07/11/2017 10:00 |
| 9095975 | GW236-519-173DUP | 07/10/2017 09:30 | 07/11/2017 10:00 |
| 9095976 | GW236-519-173 | 07/10/2017 09:30 | 07/11/2017 10:00 |
| 9095977 | GW236-519-173MS | 07/10/2017 09:30 | 07/11/2017 10:00 |
| 9095978 | GW236-519-173MSD | 07/10/2017 09:30 | 07/11/2017 10:00 |
| 9095979 | GW236-519-173DUP | 07/10/2017 09:30 | 07/11/2017 10:00 |
| 9095980 | TB173-02 | 07/10/2017 12:11 | 07/11/2017 10:00 |
| 9095981 | TB173-03 | 07/10/2017 12:11 | 07/11/2017 10:00 |
| 9095982 | TB173-04 | 07/10/2017 12:11 | 07/11/2017 10:00 |
| 9095983 | TB173-05 | 07/10/2017 12:11 | 07/11/2017 10:00 |
| 9095984 | TB173-06 | 07/10/2017 12:11 | 07/11/2017 10:00 |
| 9095985 | TB173-07 | 07/10/2017 12:11 | 07/11/2017 10:00 |
| 9095986 | TB173-08 | 07/10/2017 12:11 | 07/11/2017 10:00 |

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# Sample pH Log

**SDG: KR184**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9095966 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:26:22AM | 12616 |
| 9095966 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:25:41AM | 12616 |
| 9095967 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:26:35AM | 12616 |
| 9095968 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:25:55AM | 12616 |
| 9095968 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:25:26AM | 12616 |
| 9095969 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:27:00AM | 12616 |
| 9095970 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:20:07AM | 12616 |
| 9095970 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:19:40AM | 12616 |
| 9095971 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:19:19AM | 12616 |
| 9095972 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:19:54AM | 12616 |
| 9095972 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:27:15AM | 12616 |
| 9095973 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:26:09AM | 12616 |
| 9095974 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:21:15AM | 12616 |
| 9095976 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:20:35AM | 12616 |
| 9095977 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:18:52AM | 12616 |
| 9095978 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/12/2017 8:19:06AM | 12616 |

| Check Code Key |
|---|
| **PK** = Original container checked - pH is within the correct range. (No preservative was added) |
| **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) |
| **PV** = Volatile container checked |
| **PC** = pH checked (unpreserved container) |
| **SPK** = Subsampled from an original container. Original container checked - pH is within correct range |
| **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. |
| **SPC** = Subsampled from an original container. pH checked (unpreserved container). |
| **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. |
| **UP** = Unable to preserve due to matrix of the sample. |
| **NA** = Not applicable |

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**10635 ICP-WW, 3005A (tot rec) - U4**

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

---

**10639 ICPMS - Water, 3020A - U4**

The sample is digested with nitric and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3020A, July 1992

---

**01750 Calcium**
**01754 Iron**
**01757 Magnesium**
**07058 Manganese**
**01762 Potassium**
**01767 Sodium**

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

---

**06025 Arsenic**
**06035 Lead**

The solution resulting from the metals digestion is analyzed by ICP/MS.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6020A, February 2007.

---

**10398 8011 Master Master**

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07786 EDB Extraction (8011)**

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

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**07882 Total Nitrite/Nitrate Nitrogen**

Nitrate ions are reduced to nitrite by passing through a cadmium coil. The nitrite ions then react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dihydrochloride to form a soluble, highly-colored dye. The result is determined colorimetrically.

Reference: Method 353.2, Revision 2.0 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

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**01505 Bromide**

**00224 Chloride**
**00228 Sulfate**

A small volume of sample is introduced into an ion chromatograph. The anions are then separated and measured by a system consisting of a guard column, separator column, suppressor, and conductivity detector.

Reference: Method 300.0, Revision 2.1 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

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**12150 Total Alkalinity to pH 4.5**

Alkalinity is determined by titrating the sample with standardized sulfuric acid to a pH of 4.5 for the total alkalinity.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

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**12149 Bicarbonate Alkalinity**

Bicarbonate is determined by a calculation based on the Alkalinity results.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

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**12148 Carbonate Alkalinity**

Carbonate is determined by a calculation based on the Alkalinity results.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

# Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: August 02, 2017

**Project: Kirtland AFB**

Submittal Date: 07/11/2017
Group Number: 1823609
SDG: KR184
PO Number: 14800
State of Sample Origin: NM

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| GW049-173 Water | 9095954 |
| GW201-173 Water | 9095955 |
| GW202-173 Water | 9095956 |
| GW203-173 Water | 9095957 |
| GW204-173 Water | 9095958 |
| GW204-573 Water | 9095959 |
| GW205-173 Water | 9095960 |
| GW205-173MS Water | 9095961 |
| GW205-173MSD Water | 9095962 |
| GW206-173 Water | 9095963 |
| GW207-173 Water | 9095964 |
| GW208-173 Water | 9095965 |
| GW236-490-173 Water | 9095966 |
| GW236-490-173 Filtered Water | 9095967 |
| GW236-490-573 Water | 9095968 |
| GW236-490-573 Filtered Water | 9095969 |
| GW236-461-173 Water | 9095970 |
| GW236-461-173 Filtered Water | 9095971 |
| GW236-519-173 Water | 9095972 |
| GW236-519-173MS Water | 9095973 |
| GW236-519-173MSD Water | 9095974 |
| GW236-519-173DUP Water | 9095975 |
| GW236-519-173 Filtered Water | 9095976 |
| GW236-519-173MS Filtered Water | 9095977 |
| GW236-519-173MSD Filtered Water | 9095978 |
| GW236-519-173DUP Filtered Water | 9095979 |
| TB173-02 Water | 9095980 |
| TB173-03 Water | 9095981 |
| TB173-04 Water | 9095982 |
| TB173-05 Water | 9095983 |

| | |
|---|---|
| TB173-06 Water | 9095984 |
| TB173-07 Water | 9095985 |
| TB173-08 Water | 9095986 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

Respectfully Submitted,

Kay Hower

(717) 556-7364

Project Name: Kirtland AFB
LL Group #: 1823609

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

SW-846 8011, Volatiles by Extraction

Batch #: 172010025A (Sample number(s): 9095972 UNSPK: P9095972-P109771)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Ethylene dibromide

SW-846 6010C, Metals

Sample #s: 9095972

The LCS that was digested with this sample was out of specification for calcium with a recovery of 116%. The data was accepted after consultation with the client.

Batch #: 171931063502 (Sample number(s): 9095966-9095971, 9095976-9095979 UNSPK: 9095976 BKG: 9095976)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Calcium

Batch #: 171951063502 (Sample number(s): 9095972 UNSPK: P100479 BKG: P100479)

The recovery(ies) for the following analyte(s) in the LCS exceeded the acceptance window indicating a positive bias: Calcium

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Calcium

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Calcium

**SW-846 6020A, Metals**

Batch #: 171931063903A (Sample number(s): 9095966, 9095968, 9095970, 9095972-9095975 UNSPK: 9095972 BKG: 9095972)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:
Arsenic

**Sample Description: GW049-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095954**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 08:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18401 SDG#: KR184-01

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 02:21 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW201-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095955**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:14 by SS

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18402 SDG#: KR184-02

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 02:37 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW202-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095956**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 08:38 by JM

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18403 SDG#: KR184-03

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 02:53 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW203-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9095957**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 08:20 by SS

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18404 SDG#: KR184-04

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 03:09 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW204-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9095958**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 11:02 by SS

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18405 SDG#: KR184-05

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 03:57 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW204-573 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095959**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 11:02 by SS

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18406 SDG#: KR184-06FD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.020 U | 0.0098 | 0.020 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 04:13 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW205-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9095960**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:35 by JM

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18407 SDG#: KR184-07BKG

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 04:29 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW205-173MS Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095961**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:35 by JM

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18407 SDG#: KR184-07MS

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.15 | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 04:45 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW205-173MSD Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095962**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:35 by JM

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18407 SDG#: KR184-07MSD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.16 | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 05:01 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW206-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095963**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:12 by SS

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18408 SDG#: KR184-08

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0097 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 05:17 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW207-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095964**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 12:25 by SS

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18409 SDG#: KR184-09

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 05:33 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW208-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095965**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 12:05 by SS

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18410 SDG#: KR184-10

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0097 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 05:49 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW236-490-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9095966
**LL Group #** 1823609
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/10/2017 10:10 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18411 SDG#: KR184-11

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 47.0 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 6.65 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 3.00 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 23.1 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.00088 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00034 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 2.5 U | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 36.0 | 4.0 | 8.0 | 8.0 | 20 |
| 00228 | Sulfate | 14808-79-8 | 57.7 | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 1.1 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 91.4 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 91.4 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 06:04 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:37 | Scott R Yanos | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:37 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:37 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:37 | Scott R Yanos | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:35 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:35 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW236-490-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095966**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:10 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18411 SDG#: KR184-11

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171931063903 | 07/12/2017 18:10 | Barbara A Kane | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17192249115B | 07/12/2017 10:15 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17192249115B | 07/12/2017 10:31 | Zachary W Enck | 20 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17192249115B | 07/12/2017 10:15 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17197118101A | 07/16/2017 15:25 | Joseph E McKenzie | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 20:23 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 20:23 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 20:23 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW236-490-173 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095967**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:10 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18412 SDG#: KR184-12

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:40 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:40 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW236-490-573 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9095968
**LL Group #** 1823609
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/10/2017 10:10 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18413 SDG#: KR184-13FD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 46.5 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 6.55 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 2.98 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 22.9 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.00083 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 2.5 U | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 37.7 | 4.0 | 8.0 | 8.0 | 20 |
| 00228 | Sulfate | 14808-79-8 | 56.7 | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 1.1 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 91.8 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 91.8 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 06:20 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:50 | Scott R Yanos | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:50 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:50 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:50 | Scott R Yanos | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:36 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:36 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW236-490-573 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095968**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:10 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18413 SDG#: KR184-13FD

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171931063903 | 07/12/2017 18:10 | Barbara A Kane | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17192249115B | 07/12/2017 09:10 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17192249115B | 07/12/2017 09:59 | Zachary W Enck | 20 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17192249115B | 07/12/2017 09:10 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17197118101A | 07/16/2017 15:27 | Joseph E McKenzie | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 20:16 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 20:16 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 20:16 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW236-490-573 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095969**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:10 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18414 SDG#: KR184-14FD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0016 J | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:52 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:52 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW236-461-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9095970
**LL Group #** 1823609
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/10/2017 10:35 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18415 SDG#: KR184-15

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 45.8 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 6.16 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 3.20 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 30.1 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.00078 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 U | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 2.5 U | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 40.0 | 4.0 | 8.0 | 8.0 | 20 |
| 00228 | Sulfate | 14808-79-8 | 75.0 | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.72 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 104 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 104 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 07:08 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:55 | Scott R Yanos | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:55 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:55 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:55 | Scott R Yanos | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:38 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:38 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW236-461-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095970**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:35 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18415 SDG#: KR184-15

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171931063903 | 07/12/2017 18:10 | Barbara A Kane | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17192249115B | 07/12/2017 08:38 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17192249115B | 07/12/2017 08:54 | Zachary W Enck | 20 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17192249115B | 07/12/2017 08:38 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17197118101A | 07/16/2017 15:28 | Joseph E McKenzie | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 21:45 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 21:45 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 21:45 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW236-461-173 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095971**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 10:35 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18416 SDG#: KR184-16

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:58 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:58 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW236-519-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9095972**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18417 SDG#: KR184-17BKG

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.028 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 48.6 | 0.0600 | 0.200 | 0.400 | 1 |
| | The LCS that was digested with this sample was out of specification for calcium with a recovery of 116%. The data was accepted after consultation with the client. | | | | | | |
| 01757 | Magnesium | 7439-95-4 | 6.83 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 2.87 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 27.2 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.00077 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00021 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 2.5 U | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 38.8 | 4.0 | 8.0 | 8.0 | 20 |
| 00228 | Sulfate | 14808-79-8 | 65.3 | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 1.0 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 94.6 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 94.6 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 18:32 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 02:58 | Scott R Yanos | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 02:58 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 02:58 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 02:58 | Scott R Yanos | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW236-519-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095972**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18417 SDG#: KR184-17BKG

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06025 | Arsenic | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:21 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:21 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171931063903 | 07/12/2017 18:10 | Barbara A Kane | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17192249115B | 07/12/2017 07:01 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17192249115B | 07/12/2017 07:49 | Zachary W Enck | 20 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17192249115B | 07/12/2017 07:01 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17197118101A | 07/16/2017 15:19 | Joseph E McKenzie | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 21:22 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 21:22 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17193003202A | 07/12/2017 21:22 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW236-519-173MS Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095973**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18417 SDG#: KR184-17MS

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6020A** | | mg/l | mg/l | mg/l | mg/l | |
| 06025 | Arsenic | 7440-38-2 | 0.0108 | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.0154 | 0.00011 | 0.00025 | 0.0020 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06025 | Arsenic | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:26 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:26 | Choon Y Tian | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171931063903 | 07/12/2017 18:10 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW236-519-173MSD Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095974**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

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Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18417 SDG#: KR184-17MSD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6020A** | | mg/l | mg/l | mg/l | mg/l | |
| 06025 | Arsenic | 7440-38-2 | 0.0094 | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.0152 | 0.00011 | 0.00025 | 0.0020 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06025 | Arsenic | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:28 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:28 | Choon Y Tian | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171931063903 | 07/12/2017 18:10 | Barbara A Kane | 1 |

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# Analysis Report

**Sample Description: GW236-519-173DUP Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095975**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

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405 State Highway 121 Bypass
Lewisville TX 75067-8192

18417 SDG#: KR184-17DUP

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6020A** | | mg/l | mg/l | mg/l | mg/l | |
| 06025 | Arsenic | 7440-38-2 | 0.0020 U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00023 J | 0.00011 | 0.00025 | 0.0020 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06025 | Arsenic | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:24 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171931063903A | 07/18/2017 10:24 | Choon Y Tian | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171931063903 | 07/12/2017 18:10 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW236-519-173 Filtered Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9095976**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18418 SDG#: KR184-18BKG

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0031 J | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:19 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:19 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

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# Analysis Report

**Sample Description: GW236-519-173MS Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095977**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

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Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18418 SDG#: KR184-18MS

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.962 | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.484 | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:28 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:28 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

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# Analysis Report

**Sample Description: GW236-519-173MSD Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095978**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

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Lewisville TX 75067-8192

18418 SDG#: KR184-18MSD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 1.01 | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.493 | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:31 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:31 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW236-519-173DUP Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095979**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 09:30 by SB

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18418 SDG#: KR184-18DUP

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0032 J | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:25 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171931063502 | 07/13/2017 06:25 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171931063502 | 07/12/2017 17:08 | Barbara A Kane | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-02 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095980**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 12:11

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18419 SDG#: KR184-19TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 07:24 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** TB173-03 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9095981**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 12:11

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
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18420 SDG#: KR184-20TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 07:40 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** TB173-04 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9095982**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 12:11

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18421 SDG#: KR184-21TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 07:56 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** TB173-05 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9095983
**LL Group #** 1823609
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/10/2017 12:11

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18422 SDG#: KR184-22TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 08:12 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-06 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095984**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 12:11

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18423 SDG#: KR184-23TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 08:28 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-07 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9095985**
**LL Group # 1823609**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/10/2017 12:11

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18424 SDG#: KR184-24TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 08:44 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** TB173-08 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9095986
**LL Group #** 1823609
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/10/2017 12:11

Submitted: 07/11/2017 10:00
Reported: 08/02/2017 12:37

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18425 SDG#: KR184-25TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0097 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 171980026A | 07/20/2017 09:00 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 171980026A | 07/18/2017 09:45 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 12:37

Group Number: 1823609

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | DL** | LOD | LOQ |
|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l |
| Batch number: 171980026A | Sample number(s): 9095954-9095966,9095968,9095970,9095980-9095986 | | | |
| Ethylene dibromide | 0.020 U | 0.010 | 0.020 | 0.030 |
| Batch number: 172010025A | Sample number(s): 9095972 | | | |
| Ethylene dibromide | 0.020 U | 0.010 | 0.020 | 0.030 |
| | mg/l | mg/l | mg/l | mg/l |
| Batch number: 171931063502 | Sample number(s): 9095966-9095971,9095976-9095979 | | | |
| Calcium | 0.200 U | 0.0600 | 0.200 | 0.400 |
| Iron | 0.200 U | 0.0805 | 0.200 | 0.400 |
| Magnesium | 0.100 U | 0.0374 | 0.100 | 0.200 |
| Manganese | 0.0050 U | 0.0016 | 0.0050 | 0.0100 |
| Potassium | 0.500 U | 0.179 | 0.500 | 1.00 |
| Sodium | 0.500 U | 0.321 | 0.500 | 2.00 |
| Batch number: 171931063903A | Sample number(s): 9095966,9095968,9095970,9095972-9095975 | | | |
| Arsenic | 0.0020 U | 0.00072 | 0.0020 | 0.0040 |
| Lead | 0.00025 U | 0.00011 | 0.00025 | 0.0020 |
| Batch number: 171951063502 | Sample number(s): 9095972 | | | |
| Calcium | 0.200 U | 0.0600 | 0.200 | 0.400 |
| Magnesium | 0.100 U | 0.0374 | 0.100 | 0.200 |
| Potassium | 0.500 U | 0.179 | 0.500 | 1.00 |
| Sodium | 0.500 U | 0.321 | 0.500 | 2.00 |
| Batch number: 17192249115B | Sample number(s): 9095966,9095968,9095970,9095972 | | | |
| Bromide | 0.50 U | 0.25 | 0.50 | 0.50 |
| Chloride | 0.40 U | 0.20 | 0.40 | 0.40 |
| Sulfate | 1.0 U | 0.30 | 1.0 | 1.0 |
| Batch number: 17197118101A | Sample number(s): 9095966,9095968,9095970,9095972 | | | |
| Total Nitrite/Nitrate Nitrogen | 0.10 U | 0.040 | 0.10 | 0.10 |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 |
| Batch number: 17193003202A | Sample number(s): 9095966,9095968,9095970,9095972 | | | |
| Total Alkalinity to pH 4.5 | 5.0 U | 1.7 | 5.0 | 5.0 |

## LCS/LCSD

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 12:37

Group Number: 1823609

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 171980026A | Sample number(s): 9095954-9095966,9095968,9095970,9095980-9095986 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.122 | 0.128 | 0.144 | 95 | 113 | 60-140 | 17 | 20 |
| Batch number: 172010025A | Sample number(s): 9095972 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.146 | 0.128 | 0.163 | 114 | 128 | 60-140 | 12 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 171931063502 | Sample number(s): 9095966-9095971,9095976-9095979 | | | | | | | | |
| Calcium | 4.00 | 4.04 | | | 101 | | 87-113 | | |
| Iron | 1.00 | 1.02 | | | 102 | | 87-115 | | |
| Magnesium | 2.00 | 2.04 | | | 102 | | 85-113 | | |
| Manganese | 0.500 | 0.510 | | | 102 | | 90-114 | | |
| Potassium | 10 | 10.09 | | | 101 | | 86-114 | | |
| Sodium | 10 | 10.11 | | | 101 | | 87-115 | | |
| Batch number: 171931063903A | Sample number(s): 9095966,9095968,9095970,9095972-9095975 | | | | | | | | |
| Arsenic | 0.0100 | 0.0102 | | | 102 | | 84-116 | | |
| Lead | 0.0150 | 0.0139 | | | 93 | | 88-115 | | |
| Batch number: 171951063502 | Sample number(s): 9095972 | | | | | | | | |
| Calcium | 4.00 | 4.64 | | | 116* | | 87-113 | | |
| Magnesium | 2.00 | 2.12 | | | 106 | | 85-113 | | |
| Potassium | 10 | 10.05 | | | 101 | | 86-114 | | |
| Sodium | 10 | 10.13 | | | 101 | | 87-115 | | |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17192249115B | Sample number(s): 9095966,9095968,9095970,9095972 | | | | | | | | |
| Bromide | 7.50 | 7.45 | | | 99 | | 90-110 | | |
| Chloride | 3.00 | 2.94 | | | 98 | | 90-110 | | |
| Sulfate | 7.50 | 7.40 | | | 99 | | 90-110 | | |
| Batch number: 17197118101A | Sample number(s): 9095966,9095968,9095970,9095972 | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 2.50 | 2.41 | | | 97 | | 90-110 | | |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | | | | | |
| Batch number: 17193003202A | Sample number(s): 9095966,9095968,9095970,9095972 | | | | | | | | |
| Total Alkalinity to pH 4.5 | 188 | 182.7 | | | 97 | | 77-114 | | |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 12:37

Group Number: 1823609

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 171980026A | Sample number(s): 9095954-9095966,9095968,9095970,9095980-9095986 UNSPK: 9095960 | | | | | | | | | |
| Ethylene dibromide | 0.019 U | 0.123 | 0.151 | 0.122 | 0.160 | 123 | 132 | 60-140 | 6 | 20 |
| Batch number: 172010025A | Sample number(s): 9095972 UNSPK: P109771 | | | | | | | | | |
| Ethylene dibromide | 1.29 | 0.121 | 1.17 | 0.122 | 1.20 | -101 (2) | -74 (2) | 60-140 | 3 | 20 |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 171931063502 | Sample number(s): 9095966-9095971,9095976-9095979 UNSPK: 9095976, P095976 | | | | | | | | | |
| Calcium | 48.29 | 4.00 | 50.93 | 4.00 | 51.06 | 66 (2) | 69 (2) | 87-113 | 0 | 20 |
| Iron | 0.200 U | 1.00 | 0.962 | 1.00 | 1.01 | 96 | 101 | 87-115 | 5 | 20 |
| Magnesium | 6.57 | 2.00 | 8.29 | 2.00 | 8.33 | 86 | 88 | 85-113 | 0 | 20 |
| Manganese | 0.00309 | 0.500 | 0.484 | 0.500 | 0.493 | 96 | 98 | 90-114 | 2 | 20 |
| Potassium | 2.76 | 10 | 12.38 | 10 | 12.62 | 96 | 99 | 86-114 | 2 | 20 |
| Sodium | 26.59 | 10 | 36.25 | 10 | 36.34 | 97 | 98 | 87-115 | 0 | 20 |
| Batch number: 171931063903A | Sample number(s): 9095966,9095968,9095970,9095972-9095975 UNSPK: 9095972 | | | | | | | | | |
| Arsenic | 0.000774 | 0.0100 | 0.0108 | 0.0100 | 0.00936 | 101 | 86 | 84-116 | 15 | 20 |
| Lead | 0.000209 | 0.0150 | 0.0154 | 0.0150 | 0.0152 | 102 | 100 | 88-115 | 2 | 20 |
| Batch number: 171951063502 | Sample number(s): 9095972 UNSPK: P100479 | | | | | | | | | |
| Calcium | 266.26 | 4.00 | 268.39 | 4.00 | 270.82 | 53 (2) | 114 (2) | 87-113 | 1 | 20 |
| Magnesium | 37.94 | 2.00 | 39.7 | 2.00 | 39.96 | 88 (2) | 101 (2) | 85-113 | 1 | 20 |
| Potassium | 5.54 | 10 | 15.86 | 10 | 16.01 | 103 | 105 | 86-114 | 1 | 20 |
| Sodium | 65.7 | 10 | 74.88 | 10 | 75.53 | 92 (2) | 98 (2) | 87-115 | 1 | 20 |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17192249115B | Sample number(s): 9095966,9095968,9095970,9095972 UNSPK: 9095972 | | | | | | | | | |
| Bromide | 2.5 U | 25 | 26.61 | | | 106 | | 90-110 | | |
| Chloride | 38.84 | 40 | 82.7 | | | 110 | | 90-110 | | |
| Sulfate | 65.26 | 25 | 88.17 | | | 92 | | 90-110 | | |
| Batch number: 17197118101A | Sample number(s): 9095966,9095968,9095970,9095972 UNSPK: 9095972 | | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 0.997 | 1.00 | 2.02 | | | 102 | | 90-110 | | |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | | | | | |
| Batch number: 17193003202A | Sample number(s): 9095966,9095968,9095970,9095972 UNSPK: P094121 | | | | | | | | | |
| Total Alkalinity to pH 4.5 | 58.39 | 188 | 219.6 | | | 86 | | 77-114 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 12:37

Group Number: 1823609

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | mg/l | mg/l | | |
| Batch number: 171931063502 | Sample number(s): 9095966-9095971,9095976-9095979 BKG: 9095976, P095976 | | | |
| Calcium | 48.29 | 48.45 | 0 | 20 |
| Iron | 0.200 U | 0.200 U | 0 (1) | 20 |
| Magnesium | 6.57 | 6.58 | 0 | 20 |
| Manganese | 0.00309 | 0.00318 | 3 (1) | 20 |
| Potassium | 2.76 | 2.79 | 1 (1) | 20 |
| Sodium | 26.59 | 26.62 | 0 | 20 |
| Batch number: 171931063903A | Sample number(s): 9095966,9095968,9095970,9095972-9095975 BKG: 9095972 | | | |
| Arsenic | 0.000774 | 0.0020 U | 200* (1) | 20 |
| Lead | 0.000209 | 0.000233 | 11 (1) | 20 |
| Batch number: 171951063502 | Sample number(s): 9095972 BKG: P100479 | | | |
| Calcium | 266.26 | 272.74 | 2 | 20 |
| Magnesium | 37.94 | 38.78 | 2 | 20 |
| Potassium | 5.54 | 5.66 | 2 | 20 |
| Sodium | 65.7 | 67.16 | 2 | 20 |
| | mg/l | mg/l | | |
| Batch number: 17192249115B | Sample number(s): 9095966,9095968,9095970,9095972 BKG: 9095972 | | | |
| Bromide | 2.5 U | 2.5 U | 0 (1) | 15 |
| Chloride | 38.84 | 38.57 | 1 (1) | 15 |
| Sulfate | 65.26 | 65.42 | 0 | 15 |
| Batch number: 17197118101A | Sample number(s): 9095966,9095968,9095970,9095972 BKG: 9095972 | | | |
| Total Nitrite/Nitrate Nitrogen | 0.997 | 1.00 | 0 | 10 |
| | mg/l as CaCO3 | mg/l as CaCO3 | | |
| Batch number: 17193003202A | Sample number(s): 9095966,9095968,9095970,9095972 BKG: P094121 | | | |
| Total Alkalinity to pH 4.5 | 58.39 | 59.1 | 1 | 5 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EDB 8011 Water
Batch number: 171980026A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9095954 | 79 | 0.0067 |
| 9095955 | 89 | 0.0067 |
| 9095956 | 80 | 0.0067 |

*- Outside of specification
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(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 12:37

Group Number: 1823609

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EDB 8011 Water
Batch number: 171980026A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9095957 | 87 | 0.0068 |
| 9095958 | 75 | 0.0067 |
| 9095959 | 70 | 0.0068 |
| 9095960 | 71 | 0.0067 |
| 9095961 | 95 | 0.0067 |
| 9095962 | 109 | 0.0067 |
| 9095963 | 77 | 0.0068 |
| 9095964 | 76 | 0.0067 |
| 9095965 | 78 | 0.0068 |
| 9095966 | 74 | 0.0067 |
| 9095968 | 67 | 0.0067 |
| 9095970 | 75 | 0.0067 |
| 9095980 | 77 | 0.0068 |
| 9095981 | 71 | 0.0067 |
| 9095982 | 81 | 0.0067 |
| 9095983 | 76 | 0.0067 |
| 9095984 | 76 | 0.0067 |
| 9095985 | 81 | 0.0067 |
| 9095986 | 94 | 0.0068 |
| Blank | 85 | 0.0070 |
| LCS | 85 | 0.0070 |
| LCSD | 95 | 0.0070 |
| MS | 95 | 0.0067 |
| MSD | 109 | 0.0067 |
| Limits: | 46-136 | |

Analysis Name: EDB 8011 Water
Batch number: 172010025A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9095972 | 90 | 0.0066 |
| Blank | 103 | 0.0070 |
| LCS | 106 | 0.0070 |
| LCSD | 112 | 0.0070 |
| MS | 91 | 0.13 (3) |
| MSD | 125 | 0.13 (3) |
| Limits: | 46-136 | |

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 | 1823609 | 9095954-86

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-049-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE:<br>ST106/SS110 | LAB PO NUMBER:<br>14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW049-173 | 7/10/17 | 0830 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 04

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734907

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature:<br>Stephen Busby | 7/10/17 | 1130 | Printed Name and Signature:<br>Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature:<br>Carlos Montoya | 7-10-17 | 1430 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature:<br>Thursby Cubberley | 7-11-17 | 1000 |

31675 | 1823609 | 9095954-86

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-201-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW201-173 | 7/10/17 | ~~0820~~ JM 0914 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | S,S | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-05

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734918

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin Sultana | 7-10-17 | 1130 | Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | ~~1400~~ 1405 CM | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Timothy Lawlor | 7-11-17 | 1000 |

31675 | 1823609 | 9095954-86

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-202-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW202-173 | 7-10-17 | 0838 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-05

SAMPLER(S): Joshua Messenger

COURIER AND SHIPPING NUMBER: FedEx 811156734918

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Joshua Messenger | 7-10-17 | 1130 | Printed Name and Signature: Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: Carlos Montoya | 7-10-17 | 1430 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Attorney Lobbying | 7.11.17 | 1000 |

31675 | 1823609 | 9095954-86

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-203-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017<br>QUARTER: 3 (Jul-Sep) |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW203-173 | 7/10/17 | ~~0914~~ 0820 JM | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

SS

COMMENTS:

TB173-06

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734929

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin Sultana | 7-10-17 | 1130 | Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Timothy Cubberly | 7.11.17 | 1000 |

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-204-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW204-173 | 7-10-17 | 1102 | 2 | | | | 2 | | | | | | |
| 2 | GW204-573 | 7-10-17 | 1102 | 2 | | | | 2 | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | SS |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-06

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734929

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA | 7-10-17 | 1130 | Printed Name and Signature: Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: Carlos Montoya | 7-10-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | 7-11-17 | 1000 |

7-11-17

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-205-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW205-173 | 7-10-17 | 1035 | 6 | | | | 6 | | | | | | Please see Comments for requested MS/MSD analytes |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | SS |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Please run MS/MSD on the following analytes only:
VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe

TB173- 07

SAMPLER(S): Joshua Messenger

COURIER AND SHIPPING NUMBER: FedEx 811156734930

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Joshua Messenger | 7-10-17 | 1130 | Printed Name and Signature: Carlos Montoya | 7-10-17 | 1830 |
| Printed Name and Signature: Carlos Montoya | 7-10-17 | 1900 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Cabberley | 7.11.17 | 1000 |

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-206-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW206-173 | 07-10-17 | 1012 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | S S | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 07

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734930

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA | 7-10-17 | 1130 | Printed Name and Signature: Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: Carlos Montoya | 7-10-17 | 1450 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Kimberly Clevenger | 7.11.17 | 1000 |

31675 | 1823609 | 9095954-86

225 Schilling Circle Suite
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Tel No: (410) 584-7000
Fax No. (410) 771-1625.

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-207-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017<br>QUARTER: 3 (Jul-Sep) |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW207-173 | 7-10-17 | 1225 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | SS | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-08

SAMPLER(S): Sharmin Sultana

COURIER AND SHIPPING NUMBER: FedEx 811156734940

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin Sultana | 7-10-17 | 1254 | Carlos Montoya | 7-10-17 | 1256 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Fedex Laboratory | 7.11.17 | 1000 |

31675 | 1823609 | 9095954-86

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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-208-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017; QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW208-173 | 7-10-17 | 1205 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | SS | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-08

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734940

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA | 7-10-17 | 1254 | Carlos Montoya | 7-10-17 | 1254 |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| | | | Johnston Cubbedge | 7.11.17 | 1000 |

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-490-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE:<br>ST106/SS110 | LAB PO NUMBER:<br>14800 | | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW236-490-173 | 7/10/17 | 1010 | 8 | | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | GW236-490-573 | 7/10/17 | 1010 | 7 | | | | 2 | 1 | 1* | X1 | 1 | 1 | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Only one bottle (40 mL) for Chloride, Bromide, Sulfate on GW236-490-573

TB173- 03

SAMPLER(S): Stephen Bushy

COURIER AND SHIPPING NUMBER: FedEx 811156734892

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Bushy | 7/10/17 | 1130 | Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Hoppe, Catherine | 7.11.17 | 1000 |

31675 | 1823609 | 9095954-86

225 Schilling Circle Suite
400 Hunt Valley MD
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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-461-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
| 1 | GW236-461-173 | 7/10/17 | 1035 | 8 | | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB173-04

SAMPLER(S): Stephen Bushy

COURIER AND SHIPPING NUMBER: FedEx 811156734907

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Bushy | 7/10/17 | 1130 | Printed Name and Signature: Carlos Montoya | 7-10-17 | 1130 |
| Printed Name and Signature: Carlos Montoya | 7/10/17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Dmsky Laboratory | | 1000 |

31675 | 1823609 | 9095954-86

226 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-519-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017; QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW236-519-173 | 7/10/17 | 0930 | 11 | — | | | 2 | 3 | 3* | X1 | 1 | 1 | Please see Comments for requested MS/MSD analytes |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Please run MS/MSD on the following analytes only:
Total As and Pb, and dissolved Mn and Fe

Only 1 bottle (40 mL) for chloride, bromide, sulfate

Total Metal sample volume ~125 mL Dissolved Metal sample volume ~125 mL

TB173- OZ

SAMPLER(S): Stephen Bushy

COURIER AND SHIPPING NUMBER: FedEx 811156734881

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Bushy | 7/10/17 | 1130 | Carlos Montoya | 7/10/17 | 1130 |
| Carlos Montoya | 7/10/17 | 1400 | | | |
| | | | Tracy Colaluca | 7.11.17 | 1000 |

31675 | 1823609 | 909595-86

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-02

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173-02 | 7.10.17 | 1211 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106 236-519 CM
~~TB173-02~~

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734881

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7.10.17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Tamara Chesney | 7.11.17 | 1000 |

31675/1829609/9095954-86

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-03

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017; QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles): Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-03 | 7-10-17 | 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with ~~811156734892~~ cm
KAFB-106236-490

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734892

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 ~~1211~~ cm | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Timothy Lukawsky | 7-11-17 | 1000 |

31675 | 1823609 | 9095954-86

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 04

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-04 | 7-10-17 | CM ~~1400~~ 1411 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106236-461 and KAFB-106049

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734907

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-10-17 | 1420 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Cubberly | 7-11-17 | 1000 |

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Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-05

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-05 | 7-10-17 | 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106201 and KAFB-106202

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734918

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-10-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Amanda Cubberly | 7.11.17 | 1000 |

31675/1823609 | 9095954-B6

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 06

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173- 06 | 7-10-17 | 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106203 & KAFB-106204

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734929

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Thanh Lhuan | 7.11.17 | 1000 |

31675 | 1823609 | 909595Y-86

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 07

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | TB173- 07 | 7-10-17 | 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106205,
KAFB-106206.

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734930

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | 7.11.17 | 1000 |

31675 | 1823609 | 9095954-86

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Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-08

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
| 1 | TB173-08 | 7-10-17 | 1211 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106207 & KAFB-106208

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734940

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-10-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Amanda Cubbage | 7.11.17 | 1000 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 188444

Group Number(s): 1823609

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/11/2017 10:00 |
| Number of Packages: | 7 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | Yes |
| Samples Chilled: | Yes | VOA IDs (≥ 6mm): | See Below |
| Paperwork Enclosed: | Yes | Total Trip Blank Qty: | 14 |
| Samples Intact: | Yes | Trip Blank Type: | HCL |
| Missing Samples: | No | Air Quality Samples Present: | No |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

VOA Vial IDs (Headspace ≥ 6mm): TB173-08 (1 HCL)

*Unpacked by Timothy Cubberley (6520) at 11:34 on 07/11/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT131 | 0.7 | DT | Wet | Y | Loose | N |
| 2 | DT131 | 0.7 | DT | Wet | Y | Loose | N |
| 3 | DT131 | 0.4 | DT | Wet | Y | Loose | N |
| 4 | DT131 | 2.4 | DT | Wet | Y | Loose | N |
| 5 | DT131 | 1.1 | DT | Wet | Y | Loose | N |
| 6 | DT131 | 0.7 | DT | Wet | Y | Loose | N |
| 7 | DT131 | 1.6 | DT | Wet | Y | Loose | N |



2425 New Holland Pike
Lancaster, PA 17601-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | non-detect |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| E | Concentration exceeds the calibration range |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9095954 | GW049-173 | X | | 1 | |
| 9095955 | GW201-173 | X | | 1 | |
| 9095956 | GW202-173 | X | | 1 | |
| 9095957 | GW203-173 | X | | 1 | |
| 9095958 | GW204-173 | X | | 1 | |
| 9095959 | GW204-573 | X | | 1 | Field Duplicate Sample |
| 9095960 | GW205-173 | X | | 1 | Unspiked |
| 9095961 | GW205-173MS | X | | 1 | Matrix Spike |
| 9095962 | GW205-173MSD | X | | 1 | Matrix Spike Duplicate |
| 9095963 | GW206-173 | X | | 1 | |
| 9095964 | GW207-173 | X | | 1 | |
| 9095965 | GW208-173 | X | | 1 | |
| 9095966 | GW236-490-173 | X | | 1 | |
| 9095968 | GW236-490-573 | X | | 1 | Field Duplicate Sample |
| 9095970 | GW236-461-173 | X | | 1 | |
| 9095972 | GW236-519-173 | X | | 1 | |
| 9095980 | TB173-02 | X | | 1 | Trip Blank |
| 9095981 | TB173-03 | X | | 1 | Trip Blank |
| 9095982 | TB173-04 | X | | 1 | Trip Blank |
| 9095983 | TB173-05 | X | | 1 | Trip Blank |
| 9095984 | TB173-06 | X | | 1 | Trip Blank |
| 9095985 | TB173-07 | X | | 1 | Trip Blank |
| 9095986 | TB173-08 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9095954-9095966, 9095968, 9095970, 9095972, 9095980-9095986: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

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# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 171980026A | PBLK26198 | 07/20/2017 01:33:00 |
| | | LCS26198 | 07/20/2017 01:49:00 |
| | | LCSD26198 | 07/20/2017 02:05:00 |
| | | 9095954 | 07/20/2017 02:21:00 |
| | | 9095955 | 07/20/2017 02:37:00 |
| | | 9095956 | 07/20/2017 02:53:00 |
| | | 9095957 | 07/20/2017 03:09:00 |
| | | 9095958 | 07/20/2017 03:57:00 |
| | | 9095959 | 07/20/2017 04:13:00 |
| | | 9095960 UNSPK | 07/20/2017 04:29:00 |
| | | 9095961 MS | 07/20/2017 04:45:00 |
| | | 9095962 MSD | 07/20/2017 05:01:00 |
| | | 9095963 | 07/20/2017 05:17:00 |
| | | 9095964 | 07/20/2017 05:33:00 |
| | | 9095965 | 07/20/2017 05:49:00 |
| | | 9095966 | 07/20/2017 06:04:00 |
| | | 9095968 | 07/20/2017 06:20:00 |
| | | 9095970 | 07/20/2017 07:08:00 |
| | | 9095980 | 07/20/2017 07:24:00 |
| | | 9095981 | 07/20/2017 07:40:00 |
| | | 9095982 | 07/20/2017 07:56:00 |
| | | 9095983 | 07/20/2017 08:12:00 |
| | | 9095984 | 07/20/2017 08:28:00 |
| | | 9095985 | 07/20/2017 08:44:00 |
| | | 9095986 | 07/20/2017 09:00:00 |
| EDB 8011 Water | 172010025A | PBLK25201 | 07/21/2017 17:46:00 |
| | | LCS25201 | 07/21/2017 18:01:00 |
| | | LCSD25201 | 07/21/2017 18:17:00 |
| | | 9095972 UNSPK | 07/21/2017 18:32:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR184**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 171980026A / PBLK26198<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/20/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

| 172010025A / PBLK25201<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/21/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR184**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 171980026A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK26198 | 85 | 46 - 136 |
| LCS26198 | 85 | 46 - 136 |
| LCSD26198 | 95 | 46 - 136 |
| 9095954 | 79 | 46 - 136 |
| 9095955 | 89 | 46 - 136 |
| 9095956 | 80 | 46 - 136 |
| 9095957 | 87 | 46 - 136 |
| 9095958 | 75 | 46 - 136 |
| 9095959 | 70 | 46 - 136 |
| 9095960 UNSPK | 71 | 46 - 136 |
| 9095961 MS | 95 | 46 - 136 |
| 9095962 MSD | 109 | 46 - 136 |
| 9095963 | 77 | 46 - 136 |
| 9095964 | 76 | 46 - 136 |
| 9095965 | 78 | 46 - 136 |
| 9095966 | 74 | 46 - 136 |
| 9095968 | 67 | 46 - 136 |
| 9095970 | 75 | 46 - 136 |
| 9095980 | 77 | 46 - 136 |
| 9095981 | 71 | 46 - 136 |
| 9095982 | 81 | 46 - 136 |
| 9095983 | 76 | 46 - 136 |
| 9095984 | 76 | 46 - 136 |
| 9095985 | 81 | 46 - 136 |
| 9095986 | 94 | 46 - 136 |

| 172010025A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK25201 | 103 | 46 - 136 |
| LCS25201 | 106 | 46 - 136 |
| LCSD25201 | 112 | 46 - 136 |
| 9095972 UNSPK | 90 | 46 - 136 |

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| UNSPK: 9095960<br>MS: 9095961<br>MSD: 9095962<br>**Analyte** | Batch: **171980026A** (Sample number(s): 9095954-9095966, 9095968, 9095970, 9095980-9095986 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l MS/MSD** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.123 / 0.122 | N.D. | 0.151 | 0.160 | 123 | 132 | 60-140 | 6 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR184**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS26198<br>LCSD: LCSD26198 | Batch: **171980026A** (Sample number(s): 9095954-9095966, 9095968, 9095970, 9095980-9095986 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.122 | 0.144 | 95 | 113 | 60-140 | 17 | 20 |

| LCS: LCS25201<br>LCSD: LCSD25201 | Batch: **172010025A** (Sample number(s): 9095972 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.146 | 0.163 | 114 | 128 | 60-140 | 12 | 20 |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1720001

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/19/2017  7/19/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 | 3.81 | 3.87 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.32 | 5.33 | 5.32 | 5.32 | 5.32 | 5.32 | 5.29 | 5.35 |
| 1,2,3-Trichloropropane | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.37 | 5.43 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.65 | 7.71 |

7/20/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Calibration File: 18EDBS1720001

GC Column (1) : ZB MR1 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/19/2017 7/19/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 9.75E+03 | 1.13E+04 | 1.05E+04 | 1.08E+04 | 9.36E+03 | 8.90E+03 | 1.01E+04 | 9 |
| 1,1,2,2-TETRACHLOROETHANE | 1.27E+04 | 1.23E+04 | 1.14E+04 | 1.19E+04 | 1.09E+04 | 1.05E+04 | 1.16E+04 | 7 |
| 1,2,3-Trichloropropane | 1.83E+03 | 1.78E+03 | 1.68E+03 | 1.66E+03 | 1.48E+03 | 1.44E+03 | 1.64E+03 | 10 |
| 1,2-DIBROMO-3-CHLOROPROPA | 2.56E+04 | 2.54E+04 | 2.48E+04 | 2.36E+04 | 2.21E+04 | 2.20E+04 | 2.39E+04 | 7 |

Average % RSD: 8

File Name: V:\CP18\18EDBS1720001.CAL
Version: 8

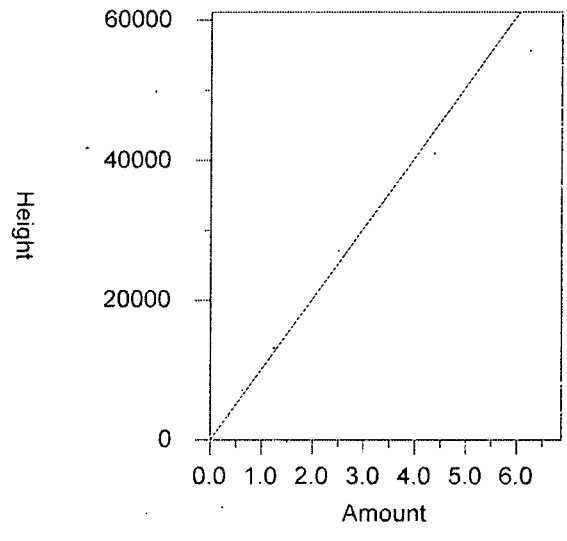
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.843 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

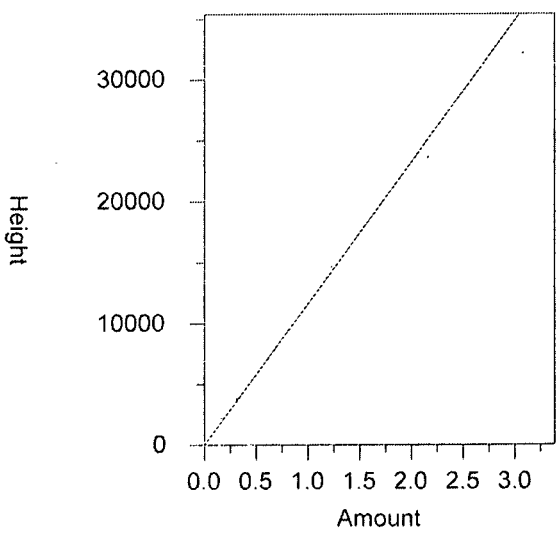
Single peak quantification by height

Y = 10110.53 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.965791
Average error: 7.663%
Average CF: 10110.53
RSD: 9.144%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 3413 | 9751.429 | -3.552 | Manual |
| 2 | 0.63 | 7117.266 | 11297.25 | 11.738 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.004.BN |
| 3 | 1.25 | 13150.41 | 10520.33 | 4.053 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.005.BN |
| 4 | 2.5 | 27095.39 | 10838.16 | 7.197 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.006.BN |
| 5 | 4.38 | 40997.25 | 9360.103 | -7.422 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.007.BN |
| 6 | 6.25 | 55599.3 | 8895.888 | -12.014 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.008.BN |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.324 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

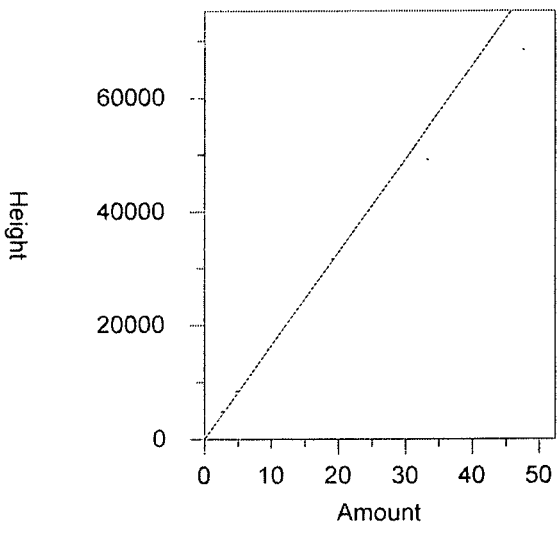
Y = 11616.67 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9787557 |
| Average error: | 5.853% |
| Average CF: | 11616.67 |
| RSD: | 7.325% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 2204.49 | 12742.72 | 9.693 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 2 | 0.308 | 3779.204 | 12270.14 | 5.625 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 3 | 0.616 | 7036.816 | 11423.4 | -1.664 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 4 | 1.23 | 14608.41 | 11876.76 | 2.239 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 5 | 2.16 | 23616.85 | 10933.73 | -5.879 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 6 | 3.08 | 32196.12 | 10453.29 | -10.015 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.396 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

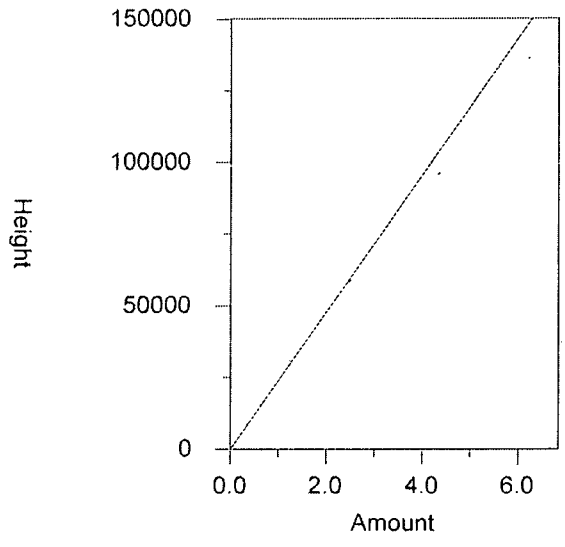
Y = 1644.101 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.958999 |
| Average error: | 7.584% |
| Average CF: | 1644.101 |
| RSD: | 9.570% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 4882.192 | 1828.536 | 11.218 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 2 | 4.76 | 8449.503 | 1775.106 | 7.968 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 3 | 9.52 | 16015.88 | 1682.34 | 2.326 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 4 | 19.05 | 31708.71 | 1664.499 | 1.241 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 5 | 33.34 | 49228.07 | 1476.547 | -10.191 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 6 | 47.63 | 68471.91 | 1437.579 | -12.561 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.678 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 23891.74 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9833609 |
| Average error: | 5.650% |
| Average CF: | 23891.74 |
| RSD: | 6.715% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 8943.764 | 25553.61 | 6.956 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 2 | 0.62 | 15740.62 | 25388.1 | 6.263 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 3 | 1.24 | 30731.03 | 24783.09 | 3.731 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 4 | 2.49 | 58698.52 | 23573.7 | -1.331 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 5 | 4.35 | 96116.34 | 22095.71 | -7.517 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |
| 6 | 6.22 | 136567.8 | 21956.24 | -8.101 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.0( |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1720001B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/19/2017  7/19/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.78 | 2.79 | 2.79 | 2.79 | 2.79 | 2.79 | 2.79 | 2.76 | 2.82 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.01 | 4.07 |
| 1,2,3-Trichloropropane | 4.15 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.13 | 4.19 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.41 | 6.47 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1720001B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/19/2017  7/19/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.10E+04 | 1.50E+04 | 1.45E+04 | 1.42E+04 | 1.28E+04 | 1.24E+04 | 1.33E+04 | 11 |
| 1,1,2,2-TETRACHLOROETHANE | 1.80E+04 | 1.69E+04 | 1.62E+04 | 1.59E+04 | 1.45E+04 | 1.40E+04 | 1.59E+04 | 9 |
| 1,2,3-Trichloropropane | 2.29E+03 | 2.25E+03 | 2.22E+03 | 2.14E+03 | 1.93E+03 | 1.85E+03 | 2.11E+03 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPA | 3.23E+04 | 3.19E+04 | 2.96E+04 | 2.78E+04 | 2.49E+04 | 2.31E+04 | 2.83E+04 | 13 |
| | | | | | | Average % RSD: | | 11 |

File Name: V:\CP18\18EDBS1720001b.CAL
Version: 8

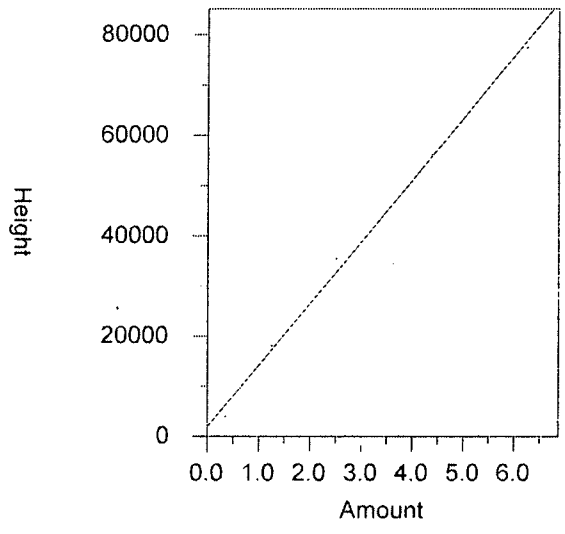
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 2.786 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

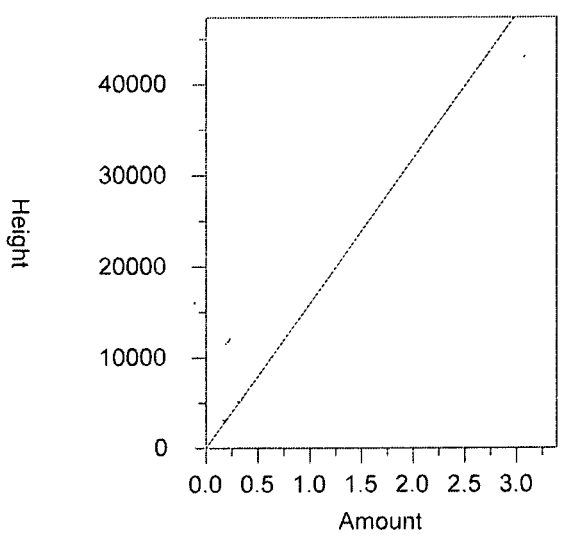
Single peak quantification by height

Y = 12293.72 X + 1906.21

Linear fit with equal weighting
Coefficient of determination: 0.9961013
Average error: 9.335%
Average CF: 13297.52
RSD: 11.370%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 3842.474 | 10978.5 | -38.115 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B.003.B |
| 2 | 0.63 | 9429.616 | 14967.64 | -2.296 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B.004.B |
| 3 | 1.25 | 18096.7 | 14477.36 | 4.766 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B.005.B |
| 4 | 2.5 | 35457.88 | 14183.15 | 8.631 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B.006.B |
| 5 | 4.38 | 56034.22 | 12793.2 | 0.505 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B.007.B |
| 6 | 6.25 | 77407.98 | 12385.28 | -1.694 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B.008.B |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.041 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

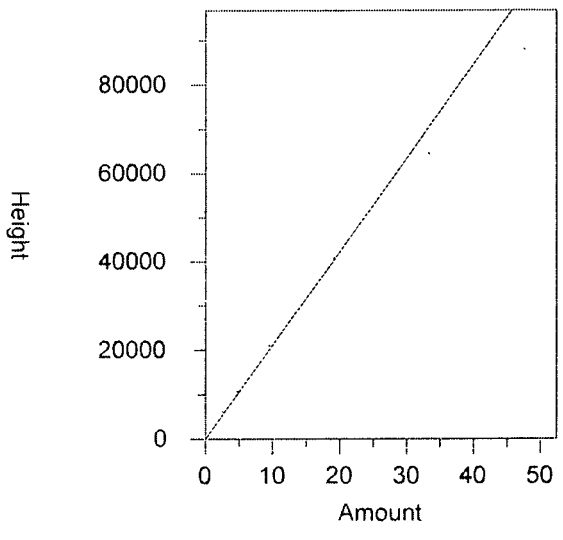
Y = 15905.86 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9649535 |
| Average error: | 6.995% |
| Average CF: | 15905.86 |
| RSD: | 9.365% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 3119.283 | 18030.54 | 13.358 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 2 | 0.308 | 5197.167 | 16873.92 | 6.086 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 3 | 0.616 | 9949.005 | 16150.98 | 1.541 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 4 | 1.23 | 19513.72 | 15864.81 | -0.258 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 5 | 2.16 | 31382.98 | 14529.16 | -8.655 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 6 | 3.08 | 43076.11 | 13985.75 | -12.072 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.159 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

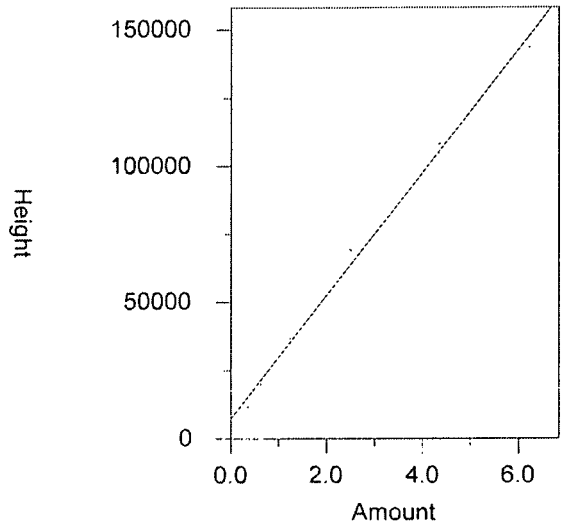
Y = 2114.814 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.961604 |
| Average error: | 7.069% |
| Average CF: | 2114.814 |
| RSD: | 8.644% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 6126.914 | 2294.724 | 8.507 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 2 | 4.76 | 10714.31 | 2250.905 | 6.435 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 3 | 9.53 | 21150.29 | 2219.338 | 4.942 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 4 | 19.05 | 40820.04 | 2142.784 | 1.323 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 5 | 33.34 | 64506.1 | 1934.796 | -8.512 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B. |
| 6 | 47.63 | 87941 | 1846.336 | -12.695 | Manual |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.436 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 22550.98 X + 7416.059

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9945891 |
| Average error: | 8.573% |
| Average CF: | 28262.33 |
| RSD: | 13.226% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 11303.34 | 32295.26 | -26.165 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B |
| 2 | 0.62 | 19793.08 | 31924.32 | -7.499 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B |
| 3 | 1.24 | 36705.45 | 29601.17 | 3.748 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B |
| 4 | 2.49 | 69191.04 | 27787.57 | 8.846 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B |
| 5 | 4.35 | 108143.9 | 24860.67 | 2.494 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B |
| 6 | 6.22 | 143713 | 23104.98 | -2.688 | Manual |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.07 | 3.06 | 3.07 | 3.07 | 3.07 | 3.07 | 3.04 | 3.10 |
| 1,1,2,2-TETRACHLOROETHANE | 4.52 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.48 | 4.54 |
| 1,2,3-Trichloropropane | 4.58 | 4.58 | 4.57 | 4.58 | 4.58 | 4.58 | 4.58 | 4.55 | 4.61 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.87 | 6.93 |

HWM 7243 7/24/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.23E+04 | 2.14E+04 | 1.79E+04 | 2.05E+04 | 2.10E+04 | | 2.06E+04 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 2.54E+04 | 2.41E+04 | 2.18E+04 | 2.29E+04 | 2.30E+04 | | 2.35E+04 | 6 |
| 1,2,3-Trichloropropane | 4.01E+03 | 4.33E+03 | 3.23E+03 | 3.30E+03 | 3.06E+03 | | 3.59E+03 | 15 |
| 1,2-DIBROMO-3-CHLOROPROPA | 4.18E+04 | 4.15E+04 | 4.01E+04 | 4.01E+04 | 3.97E+04 | | 4.06E+04 | 2 |

Average % RSD: 8

linear

File Name: V:\CP16\16edbs1720201.CAL
Version: 8

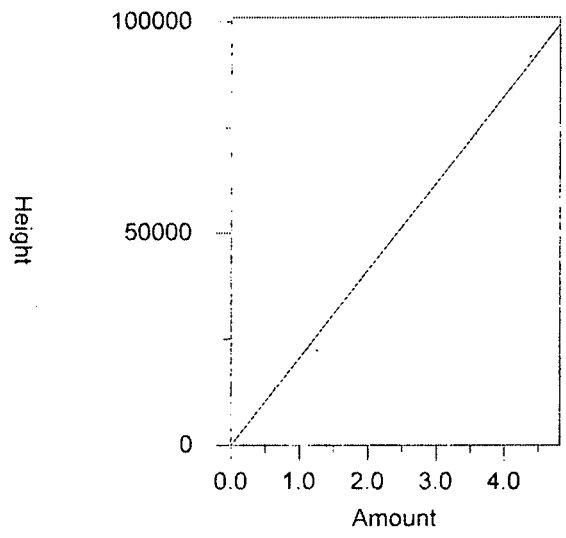
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.072 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

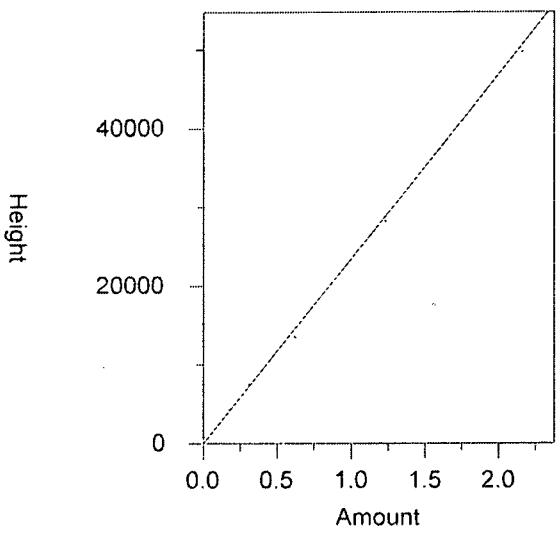
Single peak quantification by height

Y = 20615.34 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9970039
Average error: 5.382%
Average CF: 20615.34
RSD: 7.972%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 7802.336 | 22292.39 | 8.135 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0006.E |
| 2 | 0.63 | 13452.58 | 21353.3 | 3.580 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.E |
| 3 | 1.25 | 22388.71 | 17910.97 | -13.118 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.E |
| 4 | 2.5 | 51364.3 | 20545.72 | -0.338 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.E |
| 5 | 4.38 | 91867.52 | 20974.32 | 1.741 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.E |
| 6 | (6.25) | (92950.38) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.E |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.513 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

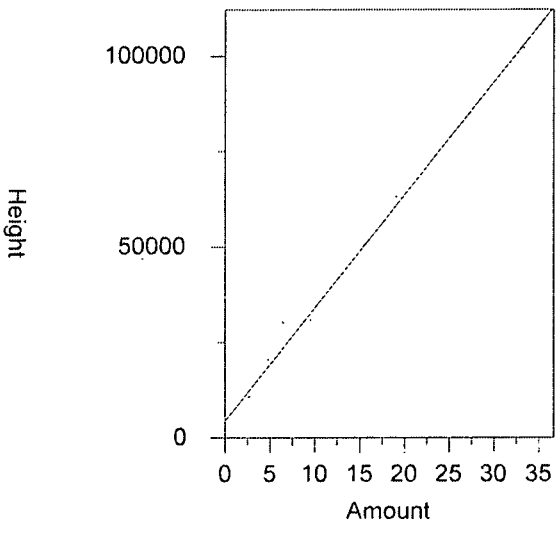
Y = 23460.12 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9982876 |
| Average error: | 4.390% |
| Average CF: | 23460.12 |
| RSD: | 5.778% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 4321.91 | 25423 | 8.367 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 0.31 | 7462.229 | 24071.71 | 2.607 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 0.62 | 13531.2 | 21824.52 | -6.972 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 1.23 | 28210.36 | 22935.25 | -2.237 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 2.16 | 49779.61 | 23046.12 | -1.765 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (3.08) | (53019.96) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.58 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

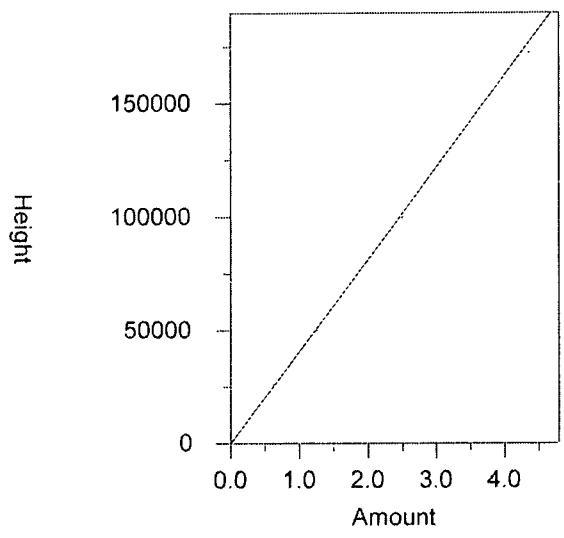
Y = 2956.05 X + 4430.097

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9971222 |
| Average error: | 6.902% |
| Average CF: | 3588.12 |
| RSD: | 15.344% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 10707.98 | 4010.479 | -13.104 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 4.76 | 20611.94 | 4330.239 | 11.411 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 9.53 | 30821.48 | 3234.153 | -5.459 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 19.05 | 62951.91 | 3304.562 | 3.637 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 33.34 | 102059.2 | 3061.164 | -0.899 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (47.63) | (104273.1) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.895 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 40636.84 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9988161 |
| Average error: | 1.953% |
| Average CF: | 40636.84 |
| RSD: | 2.286% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 14619.25 | 41769.29 | 2.787 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 0.62 | 25722.95 | 41488.63 | 2.096 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 1.24 | 49779.49 | 40144.75 | -1.211 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 2.49 | 99853.48 | 40101.8 | -1.317 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 4.35 | 172606.8 | 39679.72 | -2.355 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (6.22) | (183007.9) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT (CAL#6) RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.34 | 4.33 | 4.32 | 4.33 | 4.33 | 4.33 | 4.33 | 4.30 | 4.36 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.61 | 5.67 |
| 1,2,3-Trichloropropane | 5.77 | 5.76 | 5.76 | 5.77 | 5.77 | 5.77 | 5.77 | 5.74 | 5.80 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.92 | 7.98 |

7/24/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | %RSD |
| ETHYLENE DIBROMIDE | 6.54E+03 | 6.19E+03 | 5.36E+03 | 5.68E+03 | 5.69E+03 | | 5.89E+03 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 1.08E+04 | 9.08E+03 | 7.96E+03 | 8.67E+03 | 8.36E+03 | | 8.97E+03 | 12 |
| 1,2,3-Trichloropropane | 5.16E+03 | 2.81E+03 | 1.85E+03 | 1.46E+03 | 1.28E+03 | | 2.51E+03 | 63 |
| 1,2-DIBROMO-3-CHLOROPROPA | 1.62E+04 | 1.70E+04 | 1.47E+04 | 1.48E+04 | 1.45E+04 | | 1.54E+04 | 7 |

Average % RSD: 23

linear linear + lmm 7/24/17

File Name: V:\CP16\16edbs1720201b.CAL
Version: 9

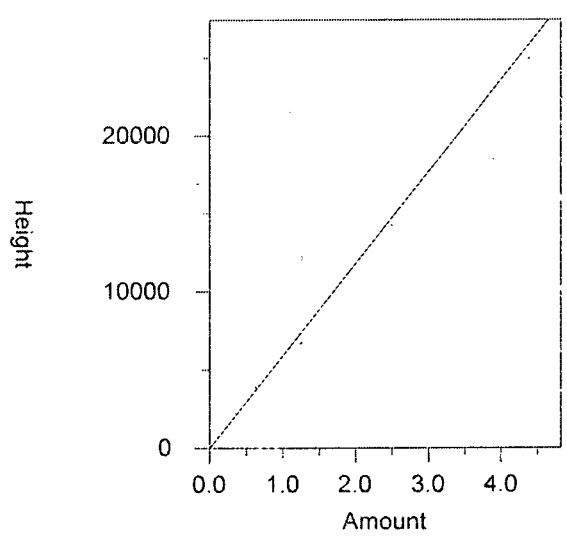
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 4.331 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

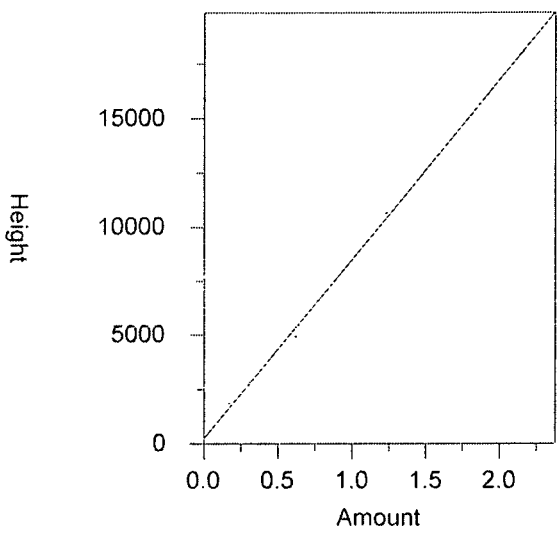
Single peak quantification by height

Y = 5892.757 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.995377
Average error: 6.423%
Average CF: 5892.757
RSD: 7.957%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 2290.409 | 6544.026 | 11.052 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0006 |
| 2 | 0.63 | 3898.299 | 6187.776 | 5.006 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0007 |
| 3 | 1.25 | 6702.179 | 5361.743 | -9.011 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0008 |
| 4 | 2.5 | 14203.42 | 5681.368 | -3.587 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0009 |
| 5 | 4.38 | 24917.26 | 5688.872 | -3.460 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0010 |
| 6 | (6.25) | (25336.41) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0011 |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.641 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

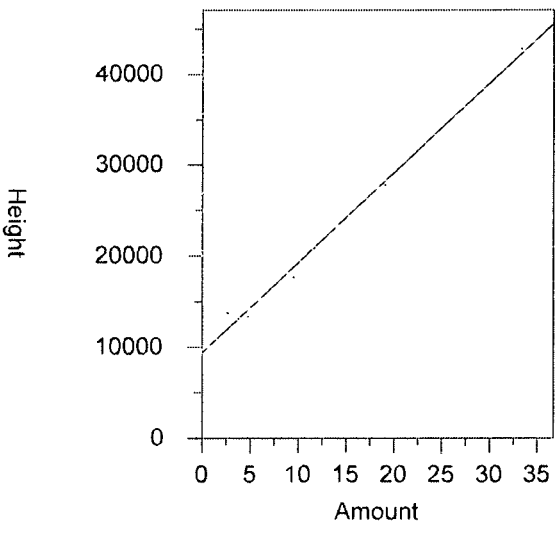
Single peak quantification by height

Y = 8267.026 X + 234.1029

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9984474 |
| Average error: | 4.569% |
| Average CF: | 8965.972 |
| RSD: | 12.109% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 1829.887 | 10764.04 | 11.613 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 0.31 | 2815.249 | 9081.448 | 0.657 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 0.62 | 4937.143 | 7963.134 | -7.883 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 1.23 | 10658.26 | 8665.252 | 2.458 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 2.16 | 18048.92 | 8355.981 | -0.232 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (3.08) | (18434.59) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.769 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

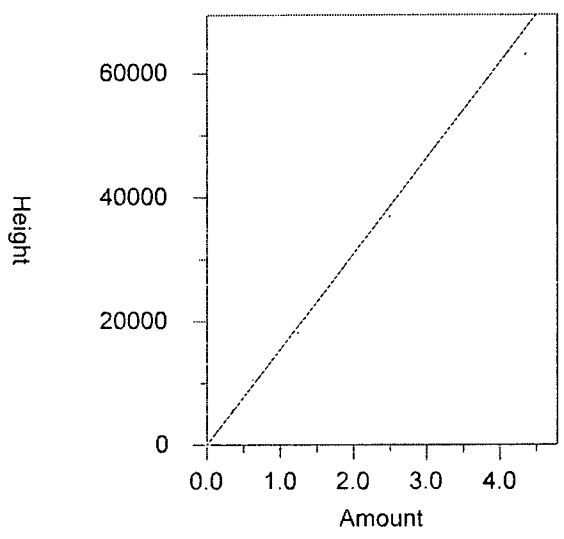
Single peak quantification by height

Y = 987.5696 X + 9390.728

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9914809 |
| Average error: | 5.673% |
| Average CF: | 2512.737 |
| RSD: | 63.371% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 13775.76 | 5159.46 | 14.535 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 4.76 | 13358.03 | 2806.309 | -5.205 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 9.53 | 17655.38 | 1852.611 | -6.100 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 19.05 | 27829.8 | 1460.882 | -1.327 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 33.34 | 42822.62 | 1284.422 | 1.197 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (47.63) | (43781.29) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.946 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 15449.69 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9905829 |
| Average error: | 5.905% |
| Average CF: | 15449.69 |
| RSD: | 7.042% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5659.925 | 16171.21 | 4.670 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 2 | 0.62 | 10545.45 | 17008.79 | 10.091 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 3 | 1.24 | 18270.78 | 14734.5 | -4.629 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 4 | 2.49 | 36898.79 | 14818.79 | -4.084 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 5 | 4.35 | 63140.97 | 14515.17 | -6.049 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 6 | (6.22) | (67644.8) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/20/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 0:14

Lab File ID: 18EDBS17200001.034.RAW Initial Calibration: 18EDBS1720001

Lab Standard ID: EDB_4QI Init. Calib Date(s): 07/19/17 07/19/17

Calibration: 18EDBS1720001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 2.38 | 2.50 | -5 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 1.23 | 1.23 | 0 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 19.09 | 19.05 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 2.34 | 2.49 | -6 |

Compounds 4 Average of %D: 3

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/20/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 0:14

Lab File ID: 18EDBS17200001B.034.RAW Initial Calibration: 18EDBS1720001B

Lab Standard ID: EDB_4QI Init. Calib Date(s): 07/19/17 07/19/17

Calibration: 18EDBS1720001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 2.50 | 2.50 | 0 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 1.25 | 1.23 | 1 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 19.36 | 19.05 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 2.77 | 2.49 | 11 |

Compounds 4 Average of %D: 4

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKOU Sample ID: OU **Batchnumber: 1719899999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 00:30:00
Instrument : CP18--19846A
Result file : 18EDBS17200001.035.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.064471

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13106 | 0.064471 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 489 | 0.016985 |

## Analysis Report (B)

Injected on : Jul 20, 2017 00:30:00
Instrument : CP18--19846B
Result file : 18EDBS17200001B.035.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 93% (46-136) Conc.: 0.062616

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 17429 | 0.062616 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 470 | 0.012711 |
| **DBCP** | 6.41 | 6.45 | 6.47 | 1388 | -0.015275 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064471 | | | | 2.92 | |
| ☑ 1,2,3-TCP | A | 0.016985 | | | | 28.78 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 20 2017

Verified by: SM 7/20/16
Date: 07/20/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/20/2017 10:52:25

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/20/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 3:25

Lab File ID: 18EDBS17200001.046.RAW Initial Calibration: 18EDBS1720001

Lab Standard ID: EDB_3OY Init. Calib Date(s): 07/19/17 07/19/17

Calibration: 18EDBS1720001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 1.35 | 1.25 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 0.65 | 0.62 | 5 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 10.30 | 9.53 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 1.22 | 1.24 | -2 |

Compounds 4 Average of %D: 6

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/20/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 3:25

Lab File ID: 18EDBS17200001B.046.RAW Initial Calibration: 18EDBS1720001B

Lab Standard ID: EDB_3OY Init. Calib Date(s): 07/19/17 07/19/17

Calibration: 18EDBS1720001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 1.38 | 1.25 | 11 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 0.65 | 0.62 | 6 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 10.28 | 9.53 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 1.27 | 1.24 | 2 |

Compounds 4 Average of %D: 7

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKOV Sample ID: OV **Batchnumber: 1719899999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 03:41:29
Instrument : CP18--19846A
Result file : 18EDBS17200001.047.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.068637

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13953 | 0.068637 |
| **1,2,3-TCP** | 5.37 | 5.38 | 5.43 | 294 | 0.010202 |

## Analysis Report (B)

Injected on : Jul 20, 2017 03:41:29
Instrument : CP18--19846B
Result file : 18EDBS17200001B.047.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.068263

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.80 | 2.82 | 667 | -0.005758 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19001 | 0.068263 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 558 | 0.015081 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.068637 | | | | 0.55 | |
| ☑ 1,2,3-TCP | A | 0.010202 | | | | 38.59 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

Verified by: [illegible]
Date: 07/20/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/20/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 6:36

Lab File ID: 18EDBS17200001.058.RAW Initial Calibration: 18EDBS1720001

Lab Standard ID: EDB_5LR Init. Calib Date(s): 07/19/17 07/19/17

Calibration: 18EDBS1720001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 4.60 | 4.38 | 5 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 2.26 | 2.16 | 5 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 33.64 | 33.34 | 1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 4.43 | 4.35 | 2 |

Compounds 4 Average of %D: 3

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/20/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 6:36

Lab File ID: 18EDBS17200001B.058.RAW Initial Calibration: 18EDBS1720001B

Lab Standard ID: EDB_5LR Init. Calib Date(s): 07/19/17 07/19/17

Calibration: 18EDBS1720001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 4.99 | 4.38 | 14 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 2.24 | 2.16 | 4 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 34.07 | 33.34 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 4.82 | 4.35 | 11 |

Compounds 4 Average of %D: 8

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKOW Sample ID: OW **Batchnumber: 1719899999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 06:52:48
Instrument : CP18--19846A
Result file : 18EDBS17200001.059.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.064915

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13197 | 0.064915 |
| **1,2,3-TCP** | 5.37 | 5.37 | 5.43 | 377 | 0.013120 |

## Analysis Report (B)

Injected on : Jul 20, 2017 06:52:48
Instrument : CP18--19846B
Result file : 18EDBS17200001B.059.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.066862

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 18611 | 0.066862 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1250 | 0.033778 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064915 | | | | 2.96 | |
| ☑ 1,2,3-TCP | A | 0.013120 | | | | 88.10 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

Verified by: SDR2316
Date: 07/20/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/20/2017 10:55:58

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/20/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 9:16

Lab File ID: 18EDBS17200001.068.RAW Initial Calibration: 18EDBS1720001

Lab Standard ID: EDB_4QJ Init. Calib Date(s): 07/19/17 07/19/17

Calibration: 18EDBS1720001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 2.70 | 2.50 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 1.32 | 1.23 | 7 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 20.10 | 19.05 | 6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 2.35 | 2.49 | -5 |

Compounds 4 Average of %D: 7

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/20/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 9:16

Lab File ID: 18EDBS17200001B.068.RAW Initial Calibration: 18EDBS1720001B

Lab Standard ID: EDB_4QJ Init. Calib Date(s): 07/19/17 07/19/17

Calibration: 18EDBS1720001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 2.82 | 2.50 | 13 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 1.32 | 1.23 | 7 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 20.49 | 19.05 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 2.67 | 2.49 | 7 |

Compounds 4 Average of %D: 9

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKOX Sample ID: OX **Batchnumber: 1719899999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 09:32:32
Instrument : CP18--19846A
Result file : 18EDBS17200001.069.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 105% (46-136) Conc.: 0.071284

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14492 | 0.071284 |
| **1,2,3-TCP** | 5.37 | 5.38 | 5.43 | 568 | 0.019738 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 424 | 0.001014 |

## Analysis Report (B)

Injected on : Jul 20, 2017 09:32:32
Instrument : CP18--19846B
Result file : 18EDBS17200001B.069.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 104% (46-136) Conc.: 0.070445

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19608 | 0.070445 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 464 | 0.012546 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.071284 | | | | 1.18 | |
| ☑ 1,2,3-TCP | A | 0.019738 | | | | 44.56 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: JUL 20 2017

Verified by: 8/1/23/16
Date: 07/20/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 17:14

Lab File ID: 16EDBS17202001.0013.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_3AA Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 1.33 | 1.25 | 6 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 0.62 | 0.62 | 1 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 10.32 | 9.53 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 1.31 | 1.24 | 5 |

Compounds 4 Average of %D: 5

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 17:14

Lab File ID: 16EDBS17202001B.0013.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_3AA Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 1.27 | 1.25 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 0.62 | 0.62 | 0 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 9.48 | 9.53 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 1.31 | 1.24 | 5 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKAA Sample ID: AA **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 21, 2017 17:30:25
Instrument : CP16--19853A
Result file : 16EDBS17202001.0014.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 21, 2017 17:30:25
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0014.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.08 | 3.10 | 465 | 0.001289 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25794 | 0.062828 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 7915 | 0.067370 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9419 | 0.063489 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 590 | -0.509210 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062828 | | | | 1.05 | |
| ☐ 1,2,3-TCP | A | 0.067370 | | | | 260.99 | ** |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: [signature]
Date: 7/24/17

%RPD = High - Low Amount divided by the Average times 100 unless RPD > 40
** %Difference > 40, lower amount found reported
* Recovery outside QC Limits


Printed on: 7/24/2017 11:10:54

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 20:22

Lab File ID: 16EDBS17202001.0025.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_5LS Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 4.43 | 4.38 | 1 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 2.08 | 2.16 | -4 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 32.14 | 33.34 | -4 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 4.38 | 4.35 | 1 |

Compounds 4 Average of %D: 3

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 20:22

Lab File ID: 16EDBS17202001B.0025.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_5LS Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 4.27 | 4.38 | -2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 2.17 | 2.16 | 1 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 34.04 | 33.34 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 4.32 | 4.35 | -1 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSC Sample ID: SC **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

| | |
|---|---|
| Injected on | : Jul 21, 2017 20:37:50 |
| Instrument | : CP16--19853A |
| Result file | : 16EDBS17202001.0026.RAW |
| Calibration file | : 16EDBS1720201.CAL |
| Method file | : 16EDBS.MET |

## Analysis Report (B)

| | |
|---|---|
| Injected on | : Jul 21, 2017 20:37:50 |
| Instrument | : CP16--19853B |
| Result file | : 16EDBS17202001B.0026.RAW |
| Calibration file | : 16EDBS1720201B.CAL |
| Method file | : 16EDBSB.MET |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.10 | 3.10 | 383 | 0.001061 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25471 | 0.062041 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 9137 | 0.090989 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9566 | 0.064505 |
| **DBCP** | 7.92 | 7.93 | 7.98 | 949 | 0.003512 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062041 | | | | 3.89 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Sample
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 18EDBS17200001
Instrument CP18--19846A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17200001.001 | CONDITIONER | | 7/19/17 15:27 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.002 | EIBKX1724C | PIBLKAA | 7/19/17 15:43 | 1719999999 | 2.00 |
| 7848 | 18EDBS17200001.003 | EDB_11724DR | EDB_1AA | 7/19/17 15:59 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.004 | EDB_21724DR | EDB_2AA | 7/19/17 16:15 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.005 | EDB_31724DR | EDB_3AA | 7/19/17 16:31 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.006 | EDB_41724DR | EDB_4AA | 7/19/17 16:47 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.007 | EDB_51724DR | EDB_5AA | 7/19/17 17:03 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.008 | EDB_61724DR | EDB_6AA | 7/19/17 17:19 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.009 | MDEDX1724DR | MDEDXAA | 7/19/17 17:35 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.010 | EDB_31724DR | EDB_3AA | 7/19/17 17:51 | 1719999999 | 1.00 |
| 7848 | 18EDBS17200001.011 | EIBKX1724C | PIBLKAA | 7/19/17 18:07 | 1719999999 | 2.00 |
| 7848 | 18EDBS17200001.012 | BLANKA 7/18/17 | PBLK27198 | 7/19/17 18:23 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.013 | LCSA 7/18/17 | LCS27198 | 7/19/17 18:38 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.014 | LCSDA 7/18/17 | LCSD27198 | 7/19/17 18:54 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.015 | 9091215 | 71435 | 7/19/17 19:10 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.016 | 9091216 | 71440 | 7/19/17 19:26 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.017 | 9091217 | 06281 | 7/19/17 19:42 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.018 | 9098289 | W2101 | 7/19/17 19:58 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.019 | 9098290 | W2102 | 7/19/17 20:14 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.020 | 9098291 | W2103 | 7/19/17 20:30 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.021 | 9098292MS | W2103 | 7/19/17 20:46 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.022 | EDB_51724DR | EDB_5LQ | 7/19/17 21:02 | 1719899999 | 1.00 |
| 7848 | 18EDBS17200001.023 | EIBKX1724C | PIBLKOT | 7/19/17 21:18 | 1719899999 | 2.00 |
| 7848 | 18EDBS17200001.024 | 9098293MSD | W2103 | 7/19/17 21:34 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.025 | 9098294 | W2104 | 7/19/17 21:50 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.026 | 9098295 | W2105 | 7/19/17 22:06 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.027 | 9102847 | GCL06 | 7/19/17 22:22 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.028 | 9102848 | GCL07 | 7/19/17 22:38 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.029 | 9102849 | GCL08 | 7/19/17 22:54 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.030 | 9103537 | 14001 | 7/19/17 23:10 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.031 | 9103538 | 14002 | 7/19/17 23:26 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.032 | 9103539 | 14003 | 7/19/17 23:42 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.033 | 9103540 | 14004 | 7/19/17 23:58 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.034 | EDB_41724DR | EDB_4QI | 7/20/17 0:14 | 1719899999 | 1.00 |
| 7848 | 18EDBS17200001.035 | EIBKX1724C | PIBLKOU | 7/20/17 0:30 | 1719899999 | 2.00 |
| 7848 | 18EDBS17200001.036 | 9104426 | 02751 | 7/20/17 0:45 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.037 | 9104427 | 02752 | 7/20/17 1:01 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.038 | 9105157 | C7412 | 7/20/17 1:17 | 171980027A | 2.00 |
| 7848 | 18EDBS17200001.039 | BLANKA 7/18/17 | PBLK26198 | 7/20/17 1:33 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.040 | LCSA 7/18/17 | LCS26198 | 7/20/17 1:49 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.041 | LCSDA 7/18/17 | LCSD26198 | 7/20/17 2:05 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.042 | 9095954 | 18401 | 7/20/17 2:21 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.043 | 9095955 | 18402 | 7/20/17 2:37 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.044 | 9095956 | 18403 | 7/20/17 2:53 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.045 | 9095957 | 18404 | 7/20/17 3:09 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.046 | EDB_31724DR | EDB_3OY | 7/20/17 3:25 | 1719899999 | 1.00 |
| 7848 | 18EDBS17200001.047 | EIBKX1724C | PIBLKOV | 7/20/17 3:41 | 1719899999 | 2.00 |
| 7848 | 18EDBS17200001.048 | 9095958 | 18405 | 7/20/17 3:57 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.049 | 9095959 | 18406 | 7/20/17 4:13 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.050 | 9095960 | 18407 | 7/20/17 4:29 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.051 | 9095961MS | 18407 | 7/20/17 4:45 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.052 | 9095962MSD | 18407 | 7/20/17 5:01 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.053 | 9095963 | 18408 | 7/20/17 5:17 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.054 | 9095964 | 18409 | 7/20/17 5:33 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.055 | 9095965 | 18410 | 7/20/17 5:49 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.056 | 9095966 | 18411 | 7/20/17 6:04 | 171980026A | 2.00 |

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17200001.057 | 9095968 | 18413 | 7/20/17 6:20 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.058 | EDB_51724DR | EDB_5LR | 7/20/17 6:36 | 1719899999 | 1.00 |
| 7848 | 18EDBS17200001.059 | EIBKX1724C | PIBLKOW | 7/20/17 6:52 | 1719899999 | 2.00 |
| 7848 | 18EDBS17200001.060 | 9095970 | 18415 | 7/20/17 7:08 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.061 | 9095980 | 18419 | 7/20/17 7:24 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.062 | 9095981 | 18420 | 7/20/17 7:40 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.063 | 9095982 | 18421 | 7/20/17 7:56 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.064 | 9095983 | 18422 | 7/20/17 8:12 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.065 | 9095984 | 18423 | 7/20/17 8:28 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.066 | 9095985 | 18424 | 7/20/17 8:44 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.067 | 9095986 | 18425 | 7/20/17 9:00 | 171980026A | 2.00 |
| 7848 | 18EDBS17200001.068 | EDB_41724DR | EDB_4QJ | 7/20/17 9:16 | 1719899999 | 1.00 |
| 7848 | 18EDBS17200001.069 | EIBKX1724C | PIBLKOX | 7/20/17 9:32 | 1719899999 | 2.00 |

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 16EDBS17202001
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0001 | CONDITIONER | | 7/21/17 14:07 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0002 | CONDITIONER | | 7/21/17 14:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0003 | CONDITIONER | | 7/21/17 14:38 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0004 | CONDITIONER | | 7/21/17 14:54 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0005 | EIBKX1724C | PIBLKAA | 7/21/17 15:09 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0006 | EDB_11724DS | EDB_1AA | 7/21/17 15:25 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0007 | EDB_21724DS | EDB_2AA | 7/21/17 15:40 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0008 | EDB_31724DS | EDB_3AA | 7/21/17 15:56 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0009 | EDB_41724DS | EDB_4AA | 7/21/17 16:12 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0010 | EDB_51724DS | EDB_5AA | 7/21/17 16:27 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0011 | EDB_61724DS | EDB_6AA | 7/21/17 16:43 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0012 | MDEDX1724DS | MDEDXAA | 7/21/17 16:59 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0013 | EDB_31724DS | EDB_3AA | 7/21/17 17:14 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0014 | EIBKX1724C | PIBLKAA | 7/21/17 17:30 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0015 | BLANKA 7/21/17 | PBLK25201 | 7/21/17 17:46 | 172010025A | 2.00 |
| Administra16EDBS17202001.0016 | LCSA 7/21/17 | LCS25201 | 7/21/17 18:01 | 172010025A | 2.00 |
| Administra16EDBS17202001.0017 | LCSDA 7/21/17 | LCSD25201 | 7/21/17 18:17 | 172010025A | 2.00 |
| Administra16EDBS17202001.0018 | 9095972 | 18417 | 7/21/17 18:32 | 172010025A | 2.00 |
| Administra16EDBS17202001.0019 | 9100482 | 18604 | 7/21/17 18:48 | 172010025A | 2.00 |
| Administra16EDBS17202001.0020 | 9100483 | 18605 | 7/21/17 19:04 | 172010025A | 2.00 |
| Administra16EDBS17202001.0021 | 9100485 | 18607 | 7/21/17 19:19 | 172010025A | 2.00 |
| Administra16EDBS17202001.0022 | 9100487 | 18609 | 7/21/17 19:35 | 172010025A | 2.00 |
| Administra16EDBS17202001.0023 | 9100489 | 18611 | 7/21/17 19:51 | 172010025A | 2.00 |
| Administra16EDBS17202001.0024 | 9100491 | 18613 | 7/21/17 20:06 | 172010025A | 2.00 |
| Administra16EDBS17202001.0025 | EDB_51724DS | EDB_5LS | 7/21/17 20:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0026 | EIBKX1724C | PIBLKSC | 7/21/17 20:37 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0027 | 9100492 | 18614 | 7/21/17 20:53 | 172010025A | 2.00 |
| Administra16EDBS17202001.0028 | 9100493 | 18615 | 7/21/17 21:09 | 172010025A | 2.00 |
| Administra16EDBS17202001.0029 | 9100494 | 18616 | 7/21/17 21:24 | 172010025A | 2.00 |
| Administra16EDBS17202001.0030 | 9100495 | 18617 | 7/21/17 21:40 | 172010025A | 2.00 |
| Administra16EDBS17202001.0031 | 9100496 | 18618 | 7/21/17 21:55 | 172010025A | 2.00 |
| Administra16EDBS17202001.0032 | 9107402 | 18701 | 7/21/17 22:11 | 172010025A | 2.00 |
| Administra16EDBS17202001.0033 | 9107403 | 18702 | 7/21/17 22:27 | 172010025A | 2.00 |
| Administra16EDBS17202001.0034 | 9107404 | 18703 | 7/21/17 22:42 | 172010025A | 2.00 |
| Administra16EDBS17202001.0035 | 9107405 | 18704 | 7/21/17 22:58 | 172010025A | 2.00 |
| Administra16EDBS17202001.0036 | 9107406 | 18705 | 7/21/17 23:13 | 172010025A | 2.00 |
| Administra16EDBS17202001.0037 | EDB_41724DS | EDB_4QK | 7/21/17 23:29 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0038 | EIBKX1724C | PIBLKSD | 7/21/17 23:44 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0039 | 9107407 | 18706 | 7/22/17 0:00 | 172010025A | 2.00 |
| Administra16EDBS17202001.0040 | 9109771 | 18801 | 7/22/17 0:16 | 172010025A | 2.00 |
| Administra16EDBS17202001.0041 | 9109772MS | 18801 | 7/22/17 0:31 | 172010025A | 2.00 |
| Administra16EDBS17202001.0042 | 9109773MSD | 18801 | 7/22/17 0:47 | 172010025A | 2.00 |
| Administra16EDBS17202001.0043 | 9109779 | 18803 | 7/22/17 1:03 | 172010025A | 2.00 |
| Administra16EDBS17202001.0044 | BLANKA 7/21/17 | PBLK21201 | 7/22/17 1:18 | 172010021A | 2.00 |
| Administra16EDBS17202001.0045 | LCSA 7/21/17 | LCS21201 | 7/22/17 1:34 | 172010021A | 2.00 |
| Administra16EDBS17202001.0046 | LCSDA 7/21/17 | LCSD21201 | 7/22/17 1:49 | 172010021A | 2.00 |
| Administra16EDBS17202001.0047 | 9098344 | 18501 | 7/22/17 2:05 | 172010021A | 2.00 |
| Administra16EDBS17202001.0048 | 9098345 | 18502 | 7/22/17 2:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0049 | EDB_31724DS | EDB_3PB | 7/22/17 2:36 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0050 | EIBKX1724C | PIBLKSE | 7/22/17 2:52 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0051 | 9098346 | 18503 | 7/22/17 3:07 | 172010021A | 2.00 |
| Administra16EDBS17202001.0052 | 9098347 | 18504 | 7/22/17 3:23 | 172010021A | 2.00 |
| Administra16EDBS17202001.0053 | 9098348 | 18505 | 7/22/17 3:39 | 172010021A | 2.00 |
| Administra16EDBS17202001.0054 | 9098349 | 18506 | 7/22/17 3:54 | 172010021A | 2.00 |
| Administra16EDBS17202001.0055 | 9098350MS | 18506 | 7/22/17 4:10 | 172010021A | 2.00 |
| Administra16EDBS17202001.0056 | 9098351MSD | 18506 | 7/22/17 4:25 | 172010021A | 2.00 |

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0057 | 9098352 | 18507 | 7/22/17 4:41 | 172010021A | 2.00 |
| Administra16EDBS17202001.0058 | 9098353 | 18508 | 7/22/17 4:57 | 172010021A | 2.00 |
| Administra16EDBS17202001.0059 | 9098354 | 18509 | 7/22/17 5:12 | 172010021A | 2.00 |
| Administra16EDBS17202001.0060 | 9098355 | 18510 | 7/22/17 5:28 | 172010021A | 2.00 |
| Administra16EDBS17202001.0061 | EDB_51724DS | EDB_5LT | 7/22/17 5:44 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0062 | EIBKX1724C | PIBLKSF | 7/22/17 5:59 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0063 | 9098356 | 18511 | 7/22/17 6:15 | 172010021A | 2.00 |
| Administra16EDBS17202001.0064 | 9098357 | 18512 | 7/22/17 6:30 | 172010021A | 2.00 |
| Administra16EDBS17202001.0065 | 9098358 | 18513 | 7/22/17 6:46 | 172010021A | 2.00 |
| Administra16EDBS17202001.0066 | 9098359 | 18514 | 7/22/17 7:02 | 172010021A | 2.00 |
| Administra16EDBS17202001.0067 | 9098360 | 18515 | 7/22/17 7:17 | 172010021A | 2.00 |
| Administra16EDBS17202001.0068 | 9098361 | 18516 | 7/22/17 7:33 | 172010021A | 2.00 |
| Administra16EDBS17202001.0069 | 9098362 | 18517 | 7/22/17 7:48 | 172010021A | 2.00 |
| Administra16EDBS17202001.0070 | 9098363 | 18518 | 7/22/17 8:04 | 172010021A | 2.00 |
| Administra16EDBS17202001.0071 | 9100479 | 18601 | 7/22/17 8:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0072 | 9100481 | 18603 | 7/22/17 8:35 | 172010021A | 2.00 |
| Administra16EDBS17202001.0073 | EDB_41724DS | EDB_4QL | 7/22/17 8:51 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0074 | EIBKX1724C | PIBLKSG | 7/22/17 9:06 | 1720199999 | 2.00 |

# Sample Data

# EDB/DBCP

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095954** 18401 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.64 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 02:21:45 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.042.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 79% ( 46 - 136 ) Conc: 0.053218

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 02:21:45 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.042.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 81% ( 46 - 136 ) Conc: 0.054407

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 11326 | 0.053218 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 609 | 0.020217 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 642 | 0.001466 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15854 | 0.054407 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 532 | 0.013735 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.053218 | 0.0033 | 0.0067 | 0.0067 | | 2.21 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2579 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valorio L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:23

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095954** 18401 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.64 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 02:21:45
Instrument : CP18--19846A
Result file : 18EDBS17200001.042.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 79% (46-136) Conc.: 0.053218

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 11326 | 0.053218 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 609 | 0.020217 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 642 | 0.001466 |

## Analysis Report (B)

Injected on : Jul 20, 2017 02:21:45
Instrument : CP18--19846B
Result file : 18EDBS17200001B.042.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 81% (46-136) Conc.: 0.054407

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 15854 | 0.054407 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 532 | 0.013735 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.053218 | | | | 2.21 | |
| ☐ 1,2,3-TCP | | | <0.2579 | <0.0955 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Valerie L. Tomeyko
Principal Specialist

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: JUL 20 2017

Verified by: _____

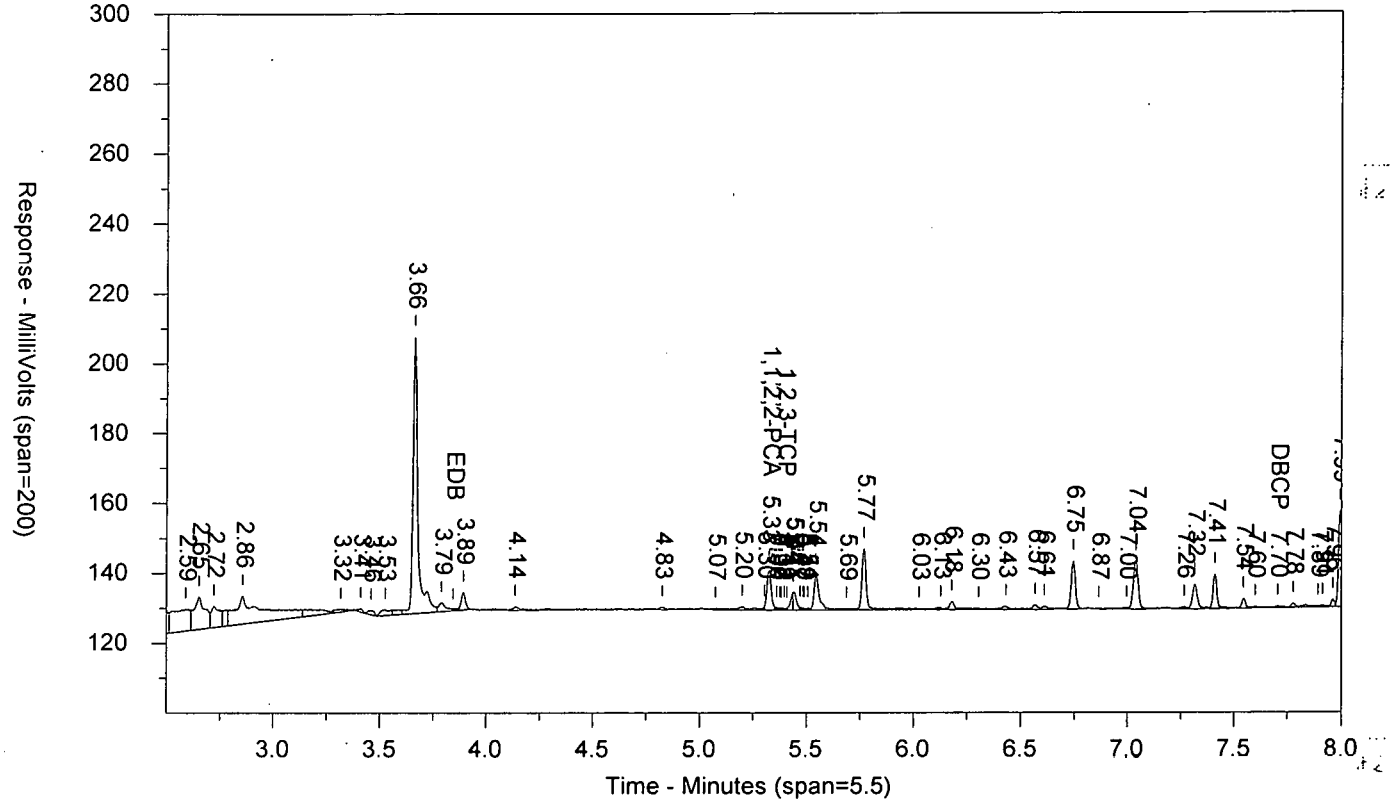
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

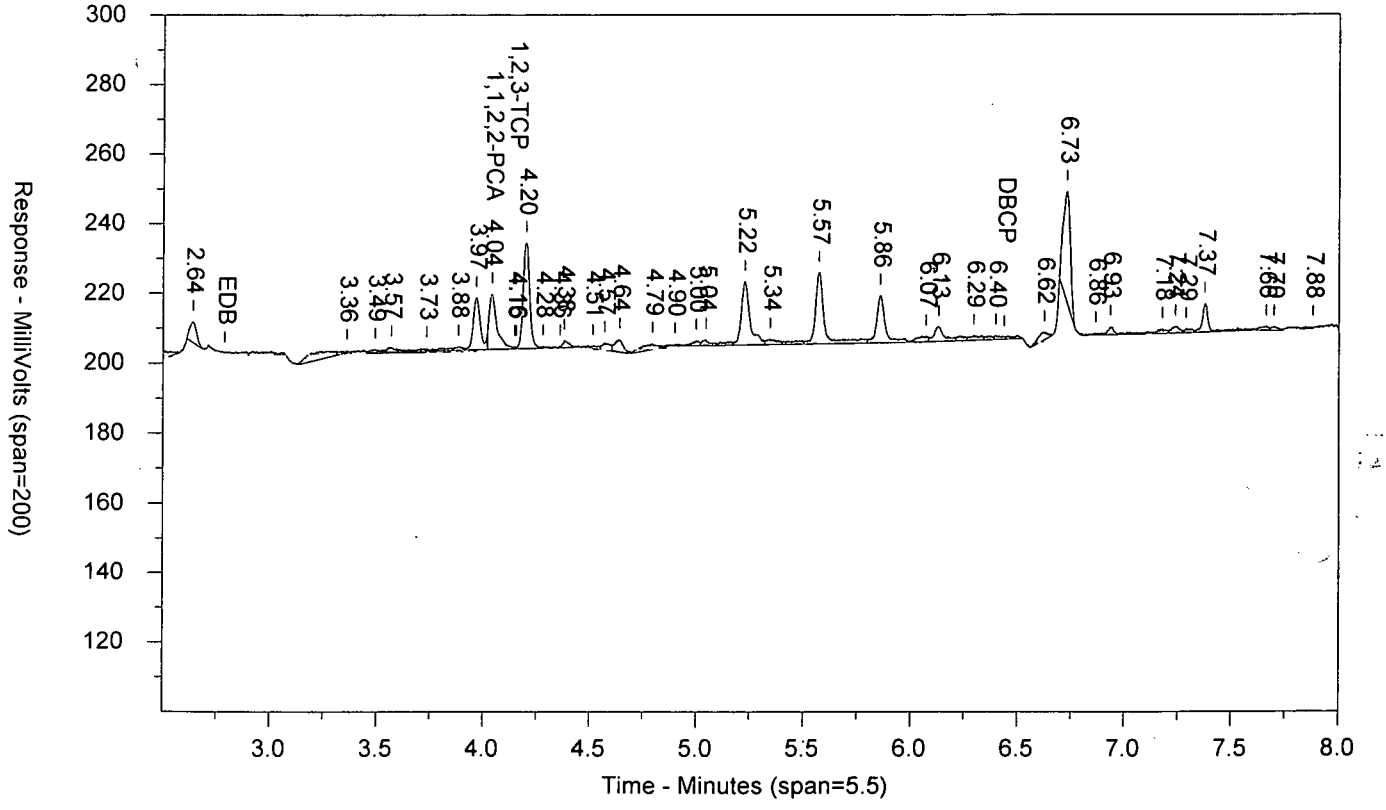
* Recovery outside QC Limits

9095954 AA18401 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.042.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B.042.RAW



LANCASTER LABORATORIES

Sample Number: 9095954 AA18401 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 2:21:45 AM Sample Weight: 36.64
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 11326 | .053 | 1,1,2,2-PCA | 4.04 | 15854 | .054 | 1,1,2,2-PCA |
| 5.395 | 609 | .02 | 1,2,3-TCP | 4.155 | 532 | .014 | 1,2,3-TCP |
| 7.704 | 642 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.042.RAW
Area File: 18EDBS17200001B.042.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:29 AM
File Reported On: 7/20/2017 at 10:39:44 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095955** 18402 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.61 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 02:37:41 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.043.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.059905

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 02:37:41 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.043.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 91% ( 46 - 136 ) Conc: 0.061456

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 12738 | 0.059905 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 394 | 0.013084 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 376 | 0.000859 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 17893 | 0.061456 |
| 1,2,3-Trichloropropane | 4.13 | 4.17 | 4.19 | 2223 | 0.057419 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.059905 | 0.0033 | 0.0067 | 0.0067 | | 2.56 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2581 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:24

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095955** 18402 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.61 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 02:37:41
Instrument : CP18--19846A
Result file : 18EDBS17200001.043.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.059905

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 12738 | 0.059905 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 394 | 0.013084 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 376 | 0.000859 |

## Analysis Report (B)

Injected on : Jul 20, 2017 02:37:41
Instrument : CP18--19846B
Result file : 18EDBS17200001B.043.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 91% (46-136) Conc.: 0.061456

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 17893 | 0.061456 |
| **1,2,3-TCP** | 4.13 | 4.17 | 4.19 | 2223 | 0.057419 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.059905 | | | | 2.56 | |
| ☐ 1,2,3-TCP | | | <0.2581 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 20 2017

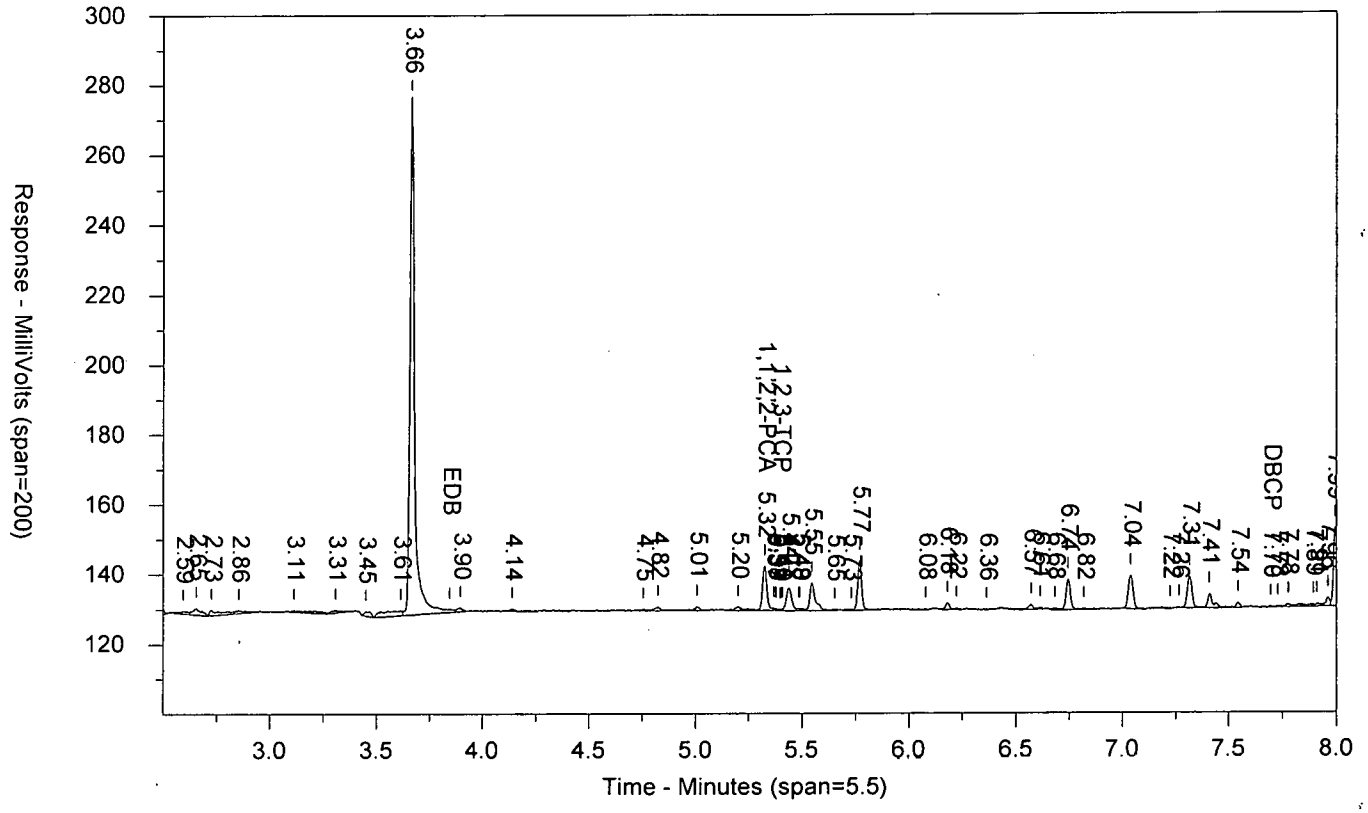
Verified by: Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095955 AA18402 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.043.RAW

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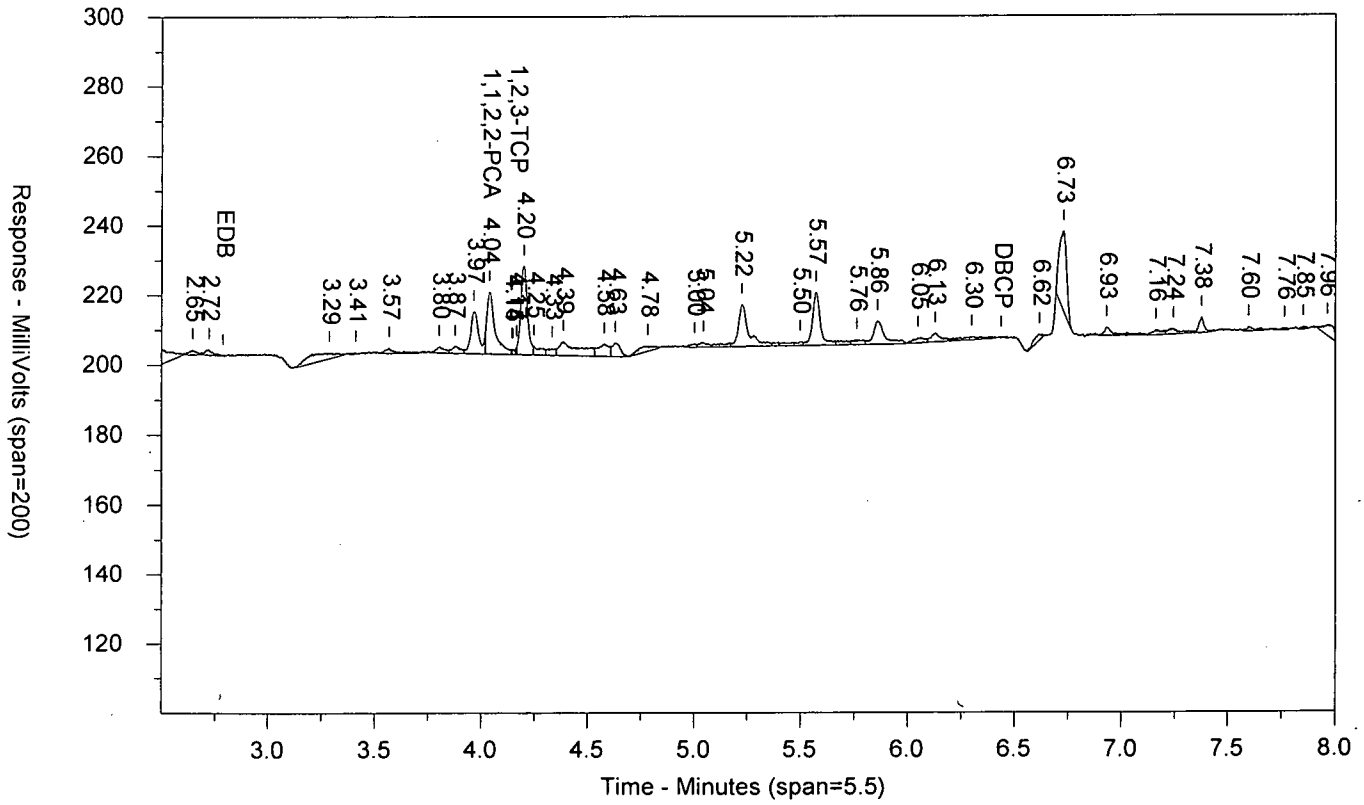

LANCASTER LABORATORIES

Sample Number: 9095955 AA18402 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 2:37:41 AM Sample Weight: 36.61
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 12738 | .06 | 1,1,2,2-PCA | 4.039 | 17893 | .061 | 1,1,2,2-PCA |
| 5.396 | 394 | .013 | 1,2,3-TCP | 4.167 | 2223 | .057 | 1,2,3-TCP |
| 7.695 | 376 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.043.RAW
Area File: 18EDBS17200001B.043.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:29 AM
File Reported On: 7/20/2017 at 10:40:00 AM

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# Data Summary

**Sample Name: 9095956** 18403 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.6 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 02:53:38 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.044.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 80% ( 46 - 136 ) Conc: 0.053905

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 02:53:38 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.044.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 79% ( 46 - 136 ) Conc: 0.053009

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 11459 | 0.053905 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 567 | 0.018848 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15430 | 0.053009 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 702 | 0.018147 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.053905 | 0.0033 | 0.0067 | 0.0067 | | 1.68 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2582 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:26

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095956** 18403 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.6 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 02:53:38
Instrument : CP18--19846A
Result file : 18EDBS17200001.044.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 80% (46-136) Conc.: 0.053905

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 11459 | 0.053905 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 567 | 0.018848 |

## Analysis Report (B)

Injected on : Jul 20, 2017 02:53:38
Instrument : CP18--19846B
Result file : 18EDBS17200001B.044.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 79% (46-136) Conc.: 0.053009

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 15430 | 0.053009 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 702 | 0.018147 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.053905 | | | | 1.68 | |
| ☐ 1,2,3-TCP | | | <0.2582 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

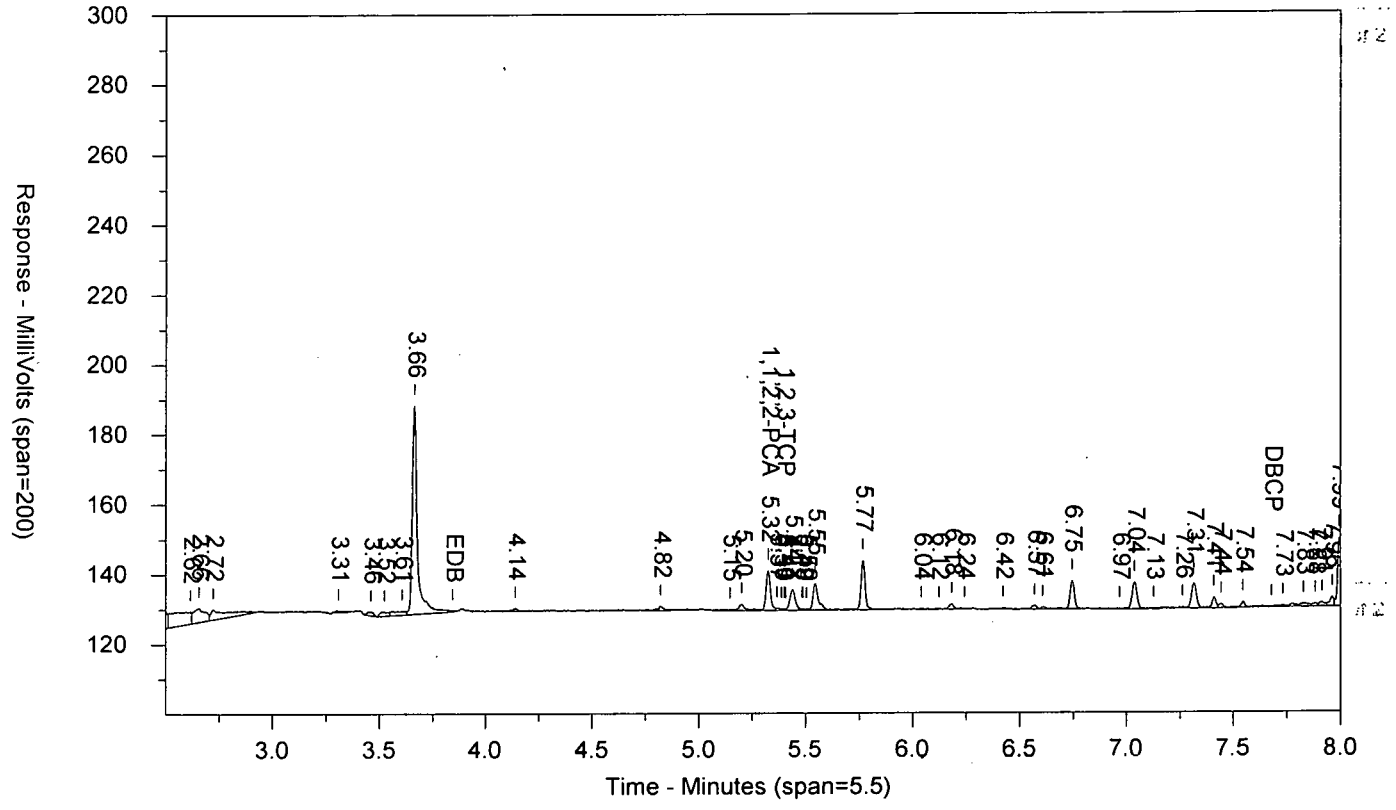
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095956 AA18403 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.044.RAW

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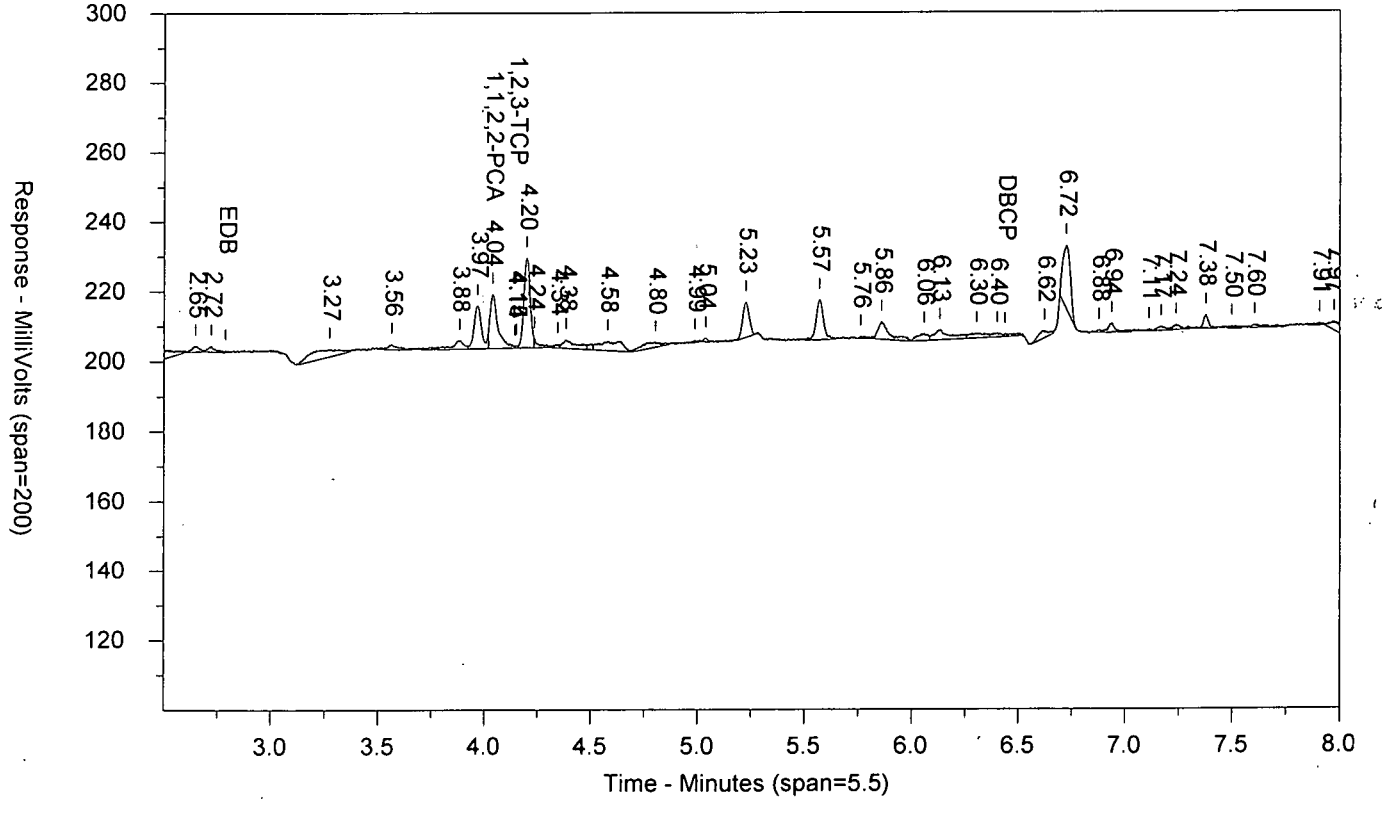


LANCASTER LABORATORIES

Sample Number: 9095956 AA18403 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 2:53:38 AM Sample Weight: 36.6
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 11459 | .054 | 1,1,2,2-PCA | 4.039 | 15430 | .053 | 1,1,2,2-PCA |
| 5.4 | 567 | .019 | 1,2,3-TCP | 4.152 | 702 | .018 | 1,2,3-TCP |

Files:
Area File: 18EDBS17200001.044.RAW
Area File: 18EDBS17200001B.044.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:30 AM
File Reported On: 7/20/2017 at 10:40:20 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095957** 18404 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.29 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 03:09:38 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.045.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.059419

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 03:09:38 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.045.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.057388

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 12525 | 0.059419 |
| 1,2,3-Trichloropropane | 5.37 | 5.41 | 5.43 | 620 | 0.020782 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.69 | 7.71 | 396 | 0.000913 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 16563 | 0.057388 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 384 | 0.010017 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.059419 | 0.0034 | 0.0068 | 0.0068 | | 3.48 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2604 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:27

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095957** 18404 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.29 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 03:09:38
Instrument : CP18--19846A
Result file : 18EDBS17200001.045.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.059419

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 12525 | 0.059419 |
| **1,2,3-TCP** | 5.37 | 5.41 | 5.43 | 620 | 0.020782 |
| **DBCP** | 7.65 | 7.69 | 7.71 | 396 | 0.000913 |

## Analysis Report (B)

Injected on : Jul 20, 2017 03:09:38
Instrument : CP18--19846B
Result file : 18EDBS17200001B.045.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.057388

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 16563 | 0.057388 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 384 | 0.010017 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.059419 | | | | 3.48 | |
| ☐ 1,2,3-TCP | | | <0.2604 | <0.0964 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

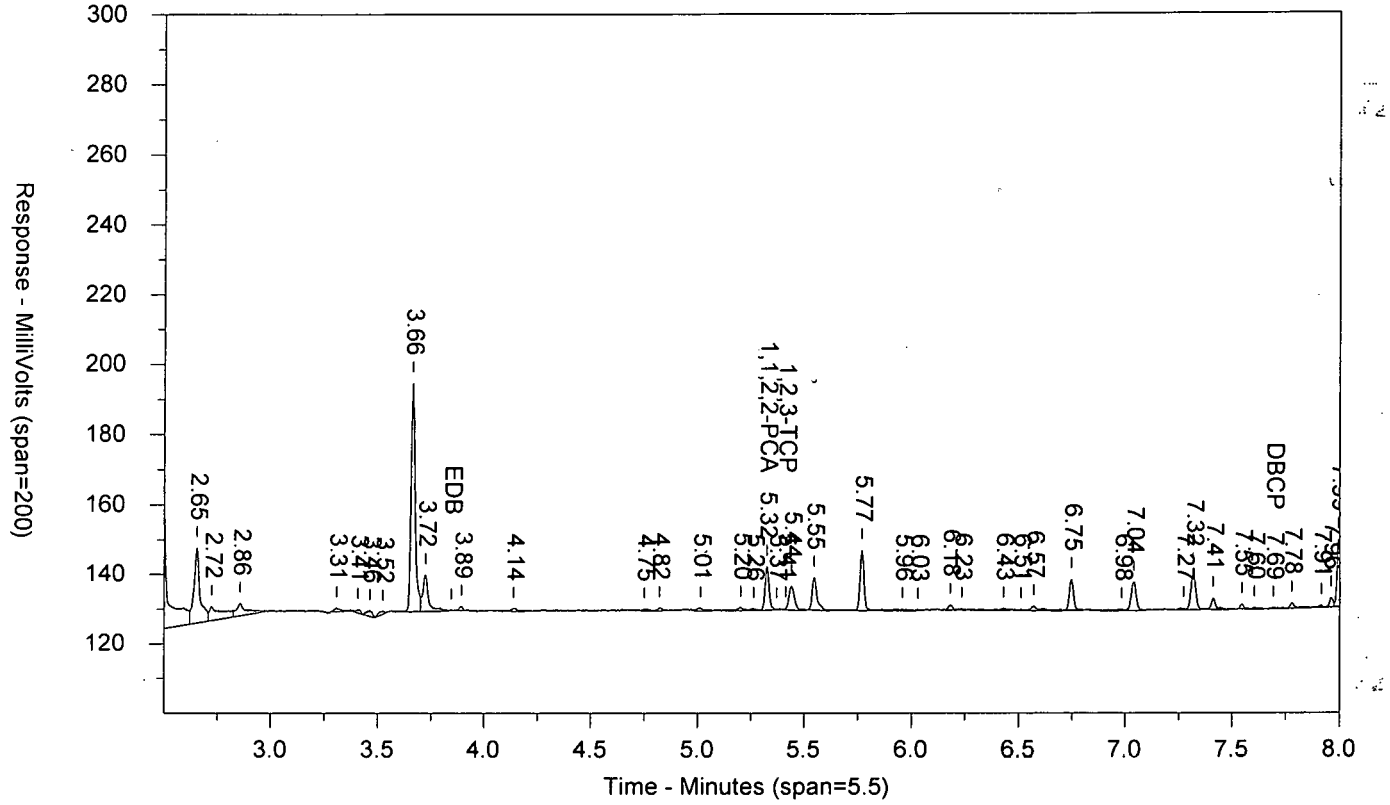
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095957 AA18404 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.045.RAW

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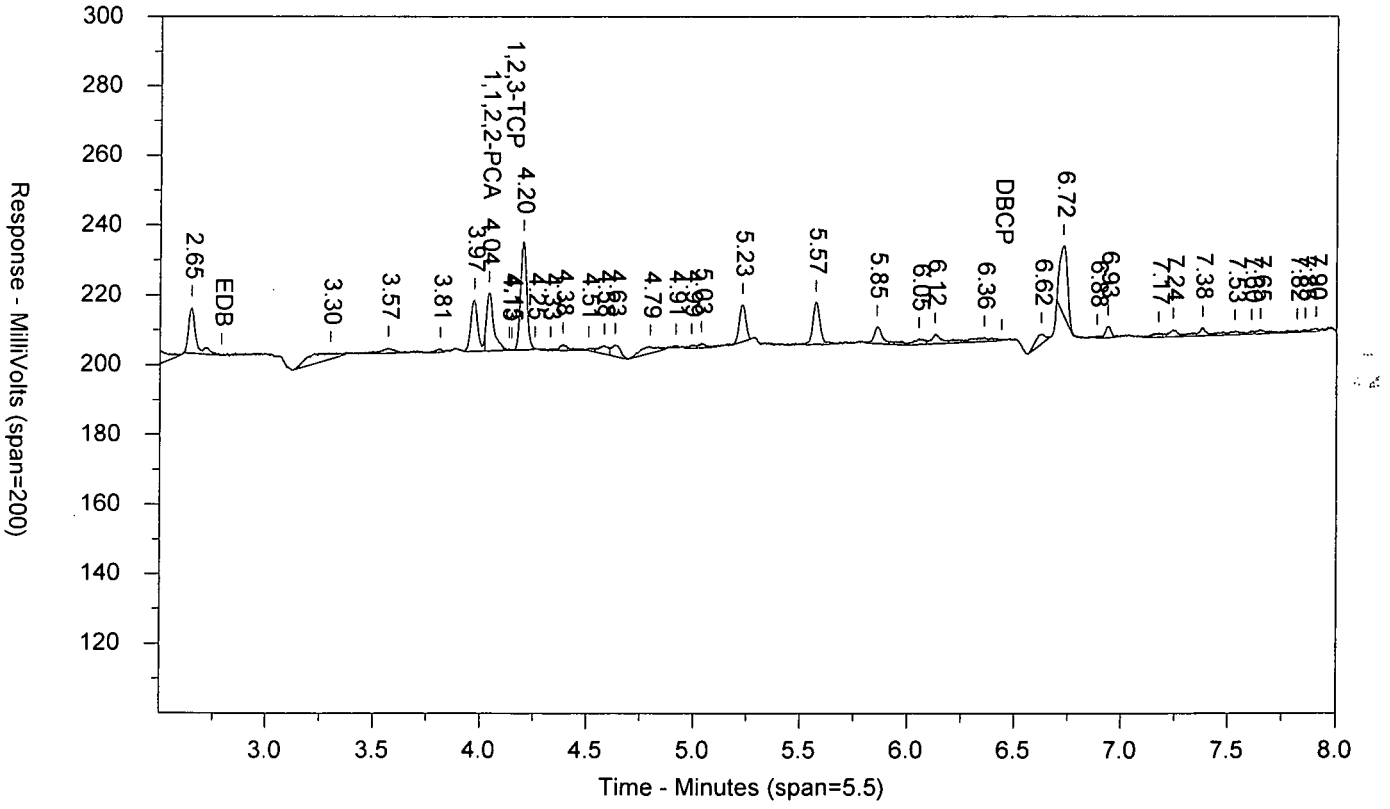


LANCASTER LABORATORIES

Sample Number: 9095957 AA18404 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 3:09:38 AM Sample Weight: 36.29
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 12525 | .059 | 1,1,2,2-PCA | 4.039 | 16563 | .057 | 1,1,2,2-PCA |
| 5.412 | 620 | .021 | 1,2,3-TCP | 4.147 | 384 | .01 | 1,2,3-TCP |
| 7.69 | 396 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.045.RAW
Area File: 18EDBS17200001B.045.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:30 AM
File Reported On: 7/20/2017 at 10:40:36 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095958** 18405 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.35 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 03:57:29 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.048.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.050653

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 03:57:29 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.048.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 83% ( 46 - 136 ) Conc: 0.056325

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10695 | 0.050653 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 324 | 0.010857 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.65 | 7.71 | 418 | 0.000962 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 16283 | 0.056325 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1607 | 0.041808 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.050653 | 0.0034 | 0.0067 | 0.0067 | | 10.60 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.26 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:29

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095958** 18405 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.35 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 03:57:29
Instrument : CP18--19846A
Result file : 18EDBS17200001.048.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.050653

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10695 | 0.050653 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 324 | 0.010857 |
| **DBCP** | 7.65 | 7.65 | 7.71 | 418 | 0.000962 |

## Analysis Report (B)

Injected on : Jul 20, 2017 03:57:29
Instrument : CP18--19846B
Result file : 18EDBS17200001B.048.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 83% (46-136) Conc.: 0.056325

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 16283 | 0.056325 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1607 | 0.041808 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.050653 | | | | 10.60 | |
| ☐ 1,2,3-TCP | | | <0.26 | <0.0963 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

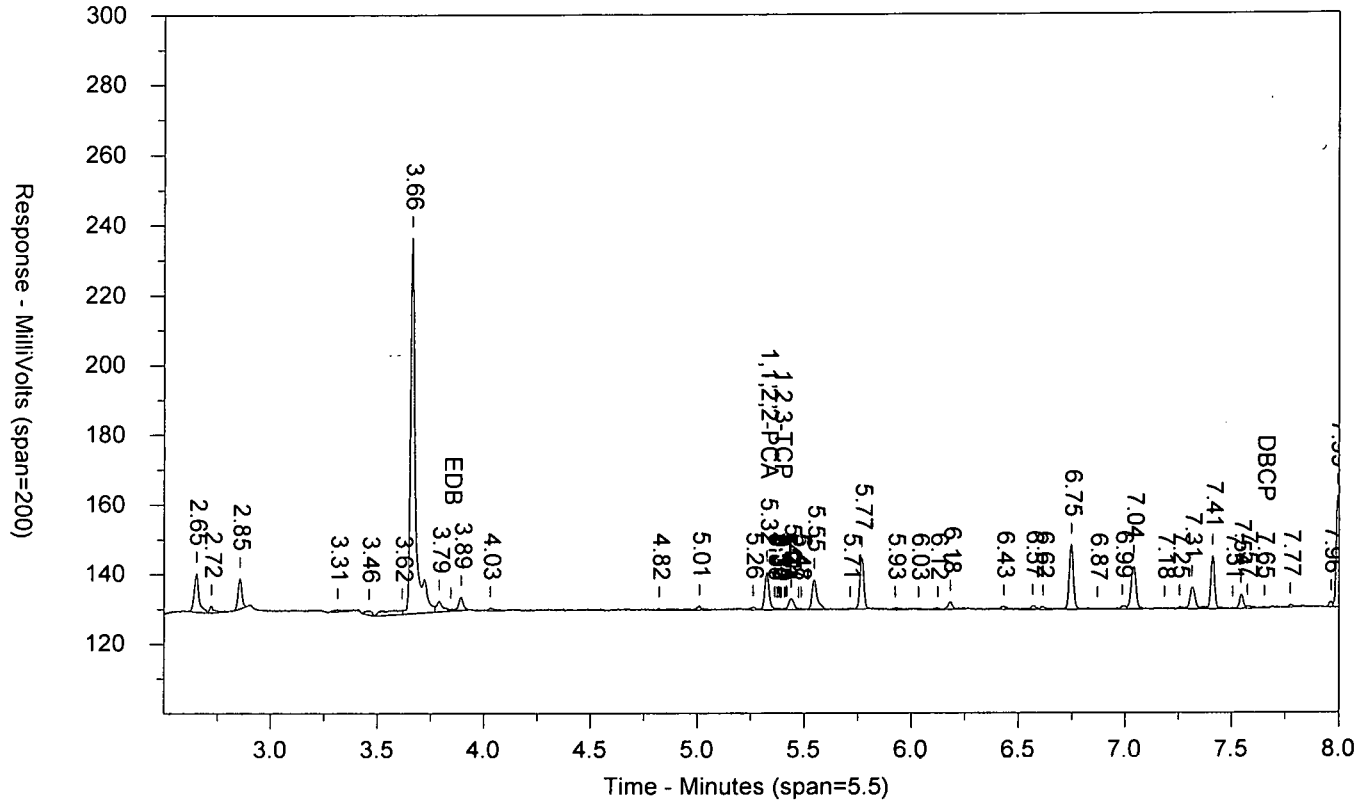
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095958 AA18405 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.048.RAW

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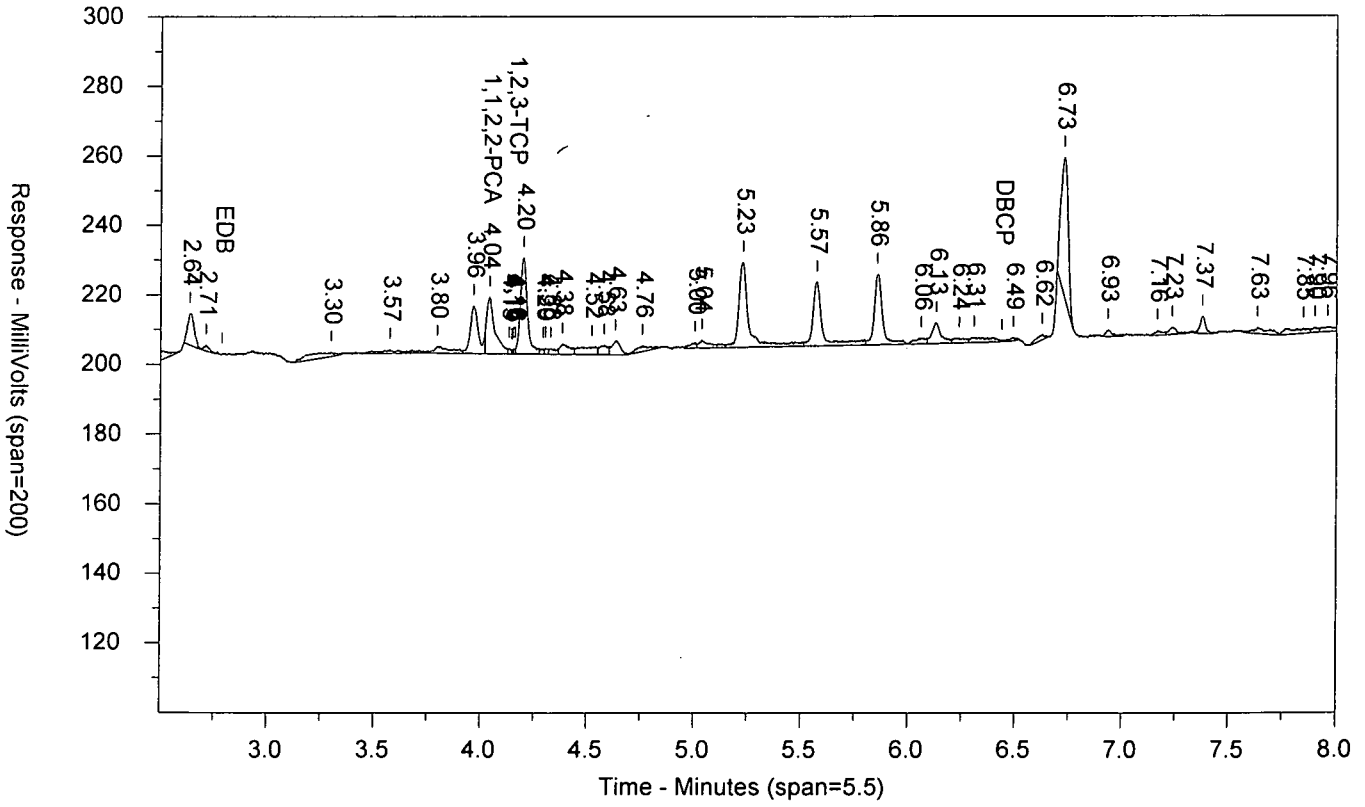

LANCASTER LABORATORIES

Sample Number: 9095958 AA18405 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 3:57:29 AM Sample Weight: 36.35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 10695 | .051 | 1,1,2,2-PCA | 4.04 | 16283 | .056 | 1,1,2,2-PCA |
| 5.39 | 324 | .011 | 1,2,3-TCP | 4.162 | 1607 | .042 | 1,2,3-TCP |
| 7.652 | 418 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.048.RAW
Area File: 18EDBS17200001B.048.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:30 AM
File Reported On: 7/20/2017 at 10:41:33 AM

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# Data Summary

**Sample Name: 9095959** 18406 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 35.86 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 04:13:27 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.049.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 70% ( 46 - 136 ) Conc: 0.048206

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 04:13:27 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.049.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 74% ( 46 - 136 ) Conc: 0.05106

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10041 | 0.048206 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 441 | 0.014969 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.69 | 7.71 | 608 | 0.001419 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 14562 | 0.05106 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 930 | 0.024517 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0098 | <0.0195 | <0.0293 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.048206 | 0.0034 | 0.0068 | 0.0068 | | 5.75 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2635 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0098 | <0.0195 | <0.0293 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomeyko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:30

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095959** 18406 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 35.86 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 04:13:27
Instrument : CP18--19846A
Result file : 18EDBS17200001.049.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 70% (46-136) Conc.: 0.048206

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10041 | 0.048206 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 441 | 0.014969 |
| **DBCP** | 7.65 | 7.69 | 7.71 | 608 | 0.001419 |

## Analysis Report (B)

Injected on : Jul 20, 2017 04:13:27
Instrument : CP18--19846B
Result file : 18EDBS17200001B.049.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 74% (46-136) Conc.: 0.05106

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 14562 | 0.051060 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 930 | 0.024517 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0293 | <0.0098 | | | |
| ☐ 1,1,2,2-PCA | A | 0.048206 | | | | 5.75 | |
| ☐ 1,2,3-TCP | | | <0.2635 | <0.0976 | | | |
| ☐ DBCP | | | <0.0293 | <0.0098 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095959 AA18406 T 171980026A 10398 SW-846 8011

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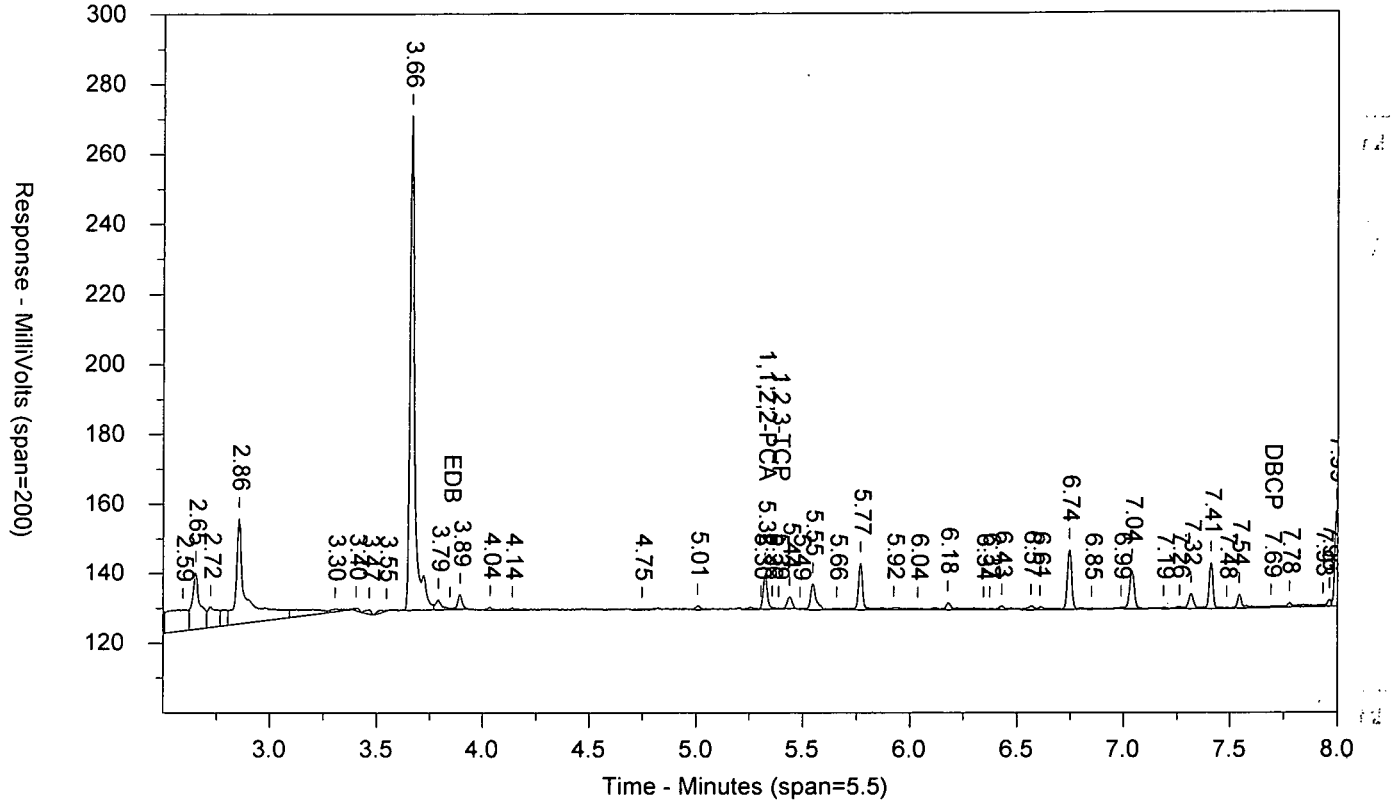


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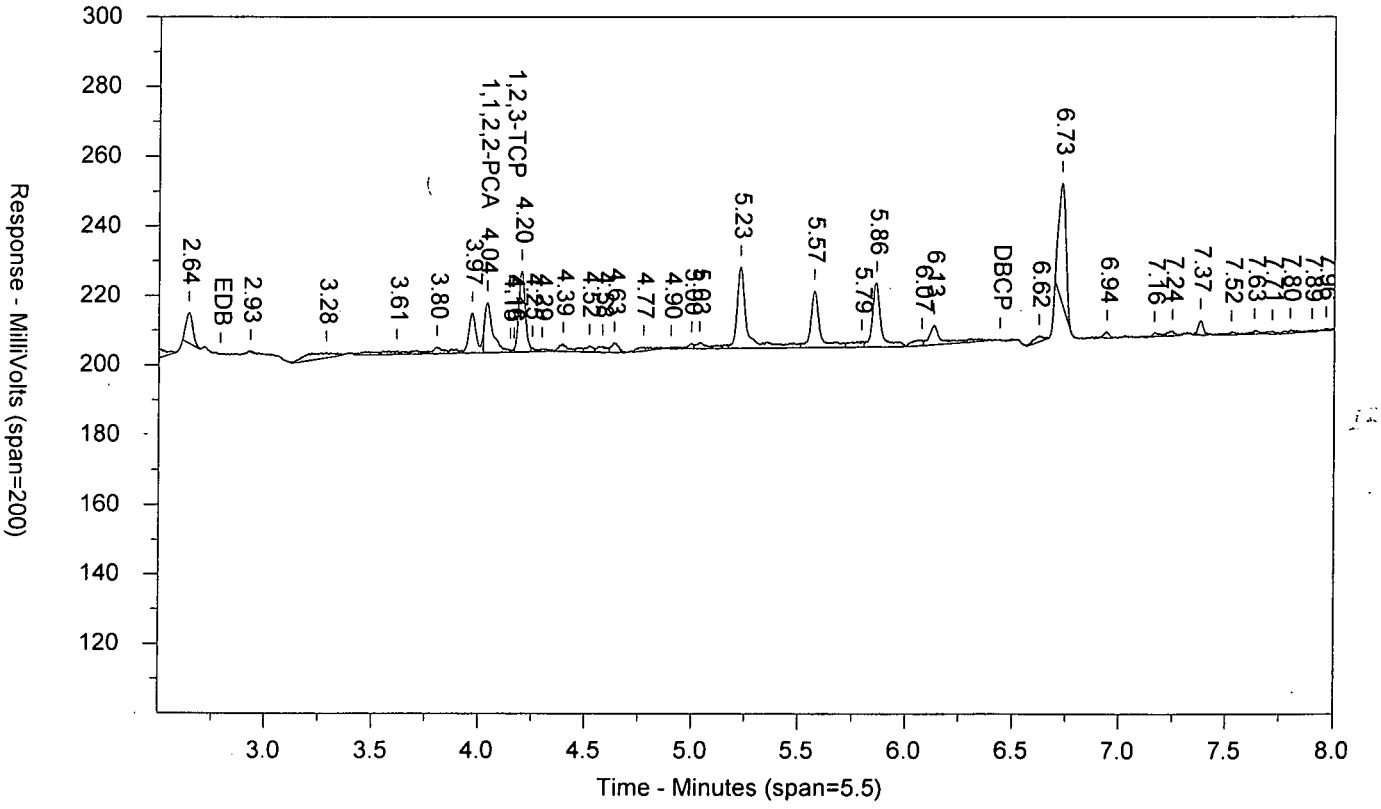

LANCASTER LABORATORIES

Sample Number: 9095959 AA18406 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 4:13:27 AM Sample Weight: 35.86
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 10041 | .048 | 1,1,2,2-PCA | 4.04 | 14562 | .051 | 1,1,2,2-PCA |
| 5.387 | 441 | .015 | 1,2,3-TCP | 4.163 | 930 | .025 | 1,2,3-TCP |
| 7.691 | 608 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.049.RAW
Area File: 18EDBS17200001B.049.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:30 AM
File Reported On: 7/20/2017 at 10:41:53 AM

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# Data Summary

**Sample Name: 9095960** 18407 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.3 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 04:29:19 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.050.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 71% ( 46 - 136 ) Conc: 0.048339

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 04:29:19 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.050.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.051084

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 3090 | 0.01684 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10192 | 0.048339 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 444 | 0.014893 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.69 | 7.71 | 585 | 0.001349 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 3873 | 0.008813 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 14747 | 0.051084 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 958 | 0.024967 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.048339 | 0.0034 | 0.0067 | 0.0067 | | 5.52 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2603 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:32

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095960** 18407 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.3 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 04:29:19
Instrument : CP18--19846A
Result file : 18EDBS17200001.050.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 71% (46-136) Conc.: 0.048339

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 3090 | 0.016840 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10192 | 0.048339 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 444 | 0.014893 |
| **DBCP** | 7.65 | 7.69 | 7.71 | 585 | 0.001349 |

## Analysis Report (B)

Injected on : Jul 20, 2017 04:29:19
Instrument : CP18--19846B
Result file : 18EDBS17200001B.050.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.051084

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 3873 | 0.008813 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 14747 | 0.051084 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 958 | 0.024967 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.048339 | | | | 5.52 | |
| ☐ 1,2,3-TCP | | | <0.2603 | <0.0964 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

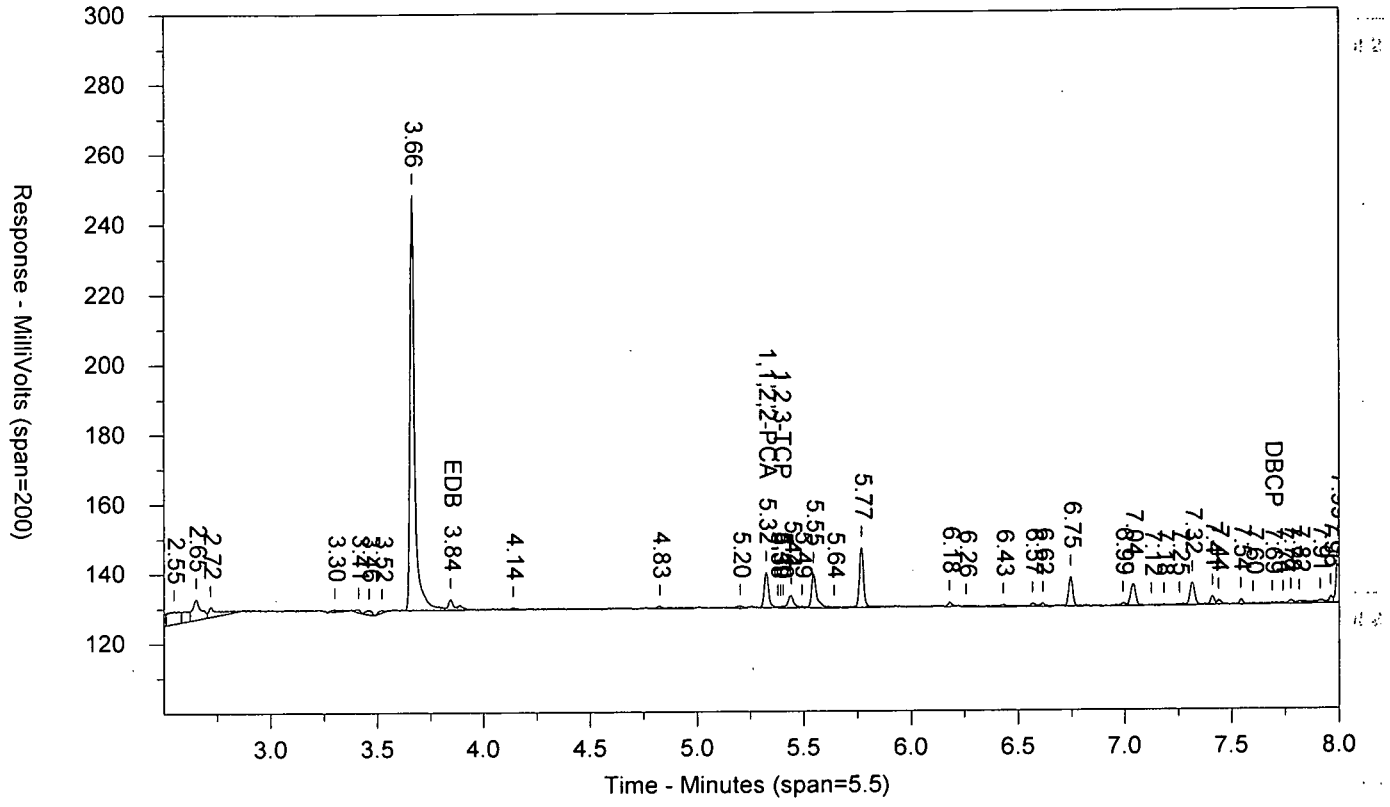
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095960 AA18407 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.050.RAW

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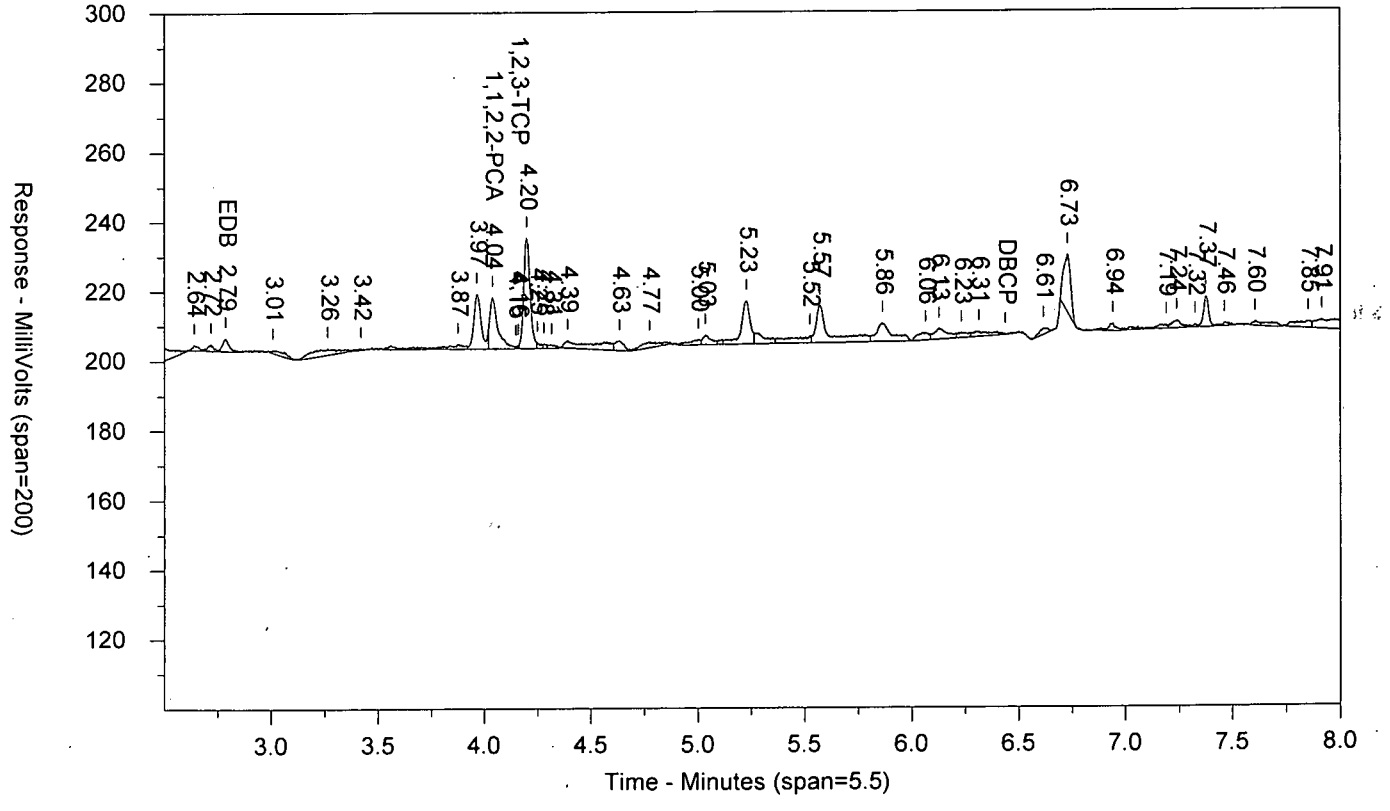

LANCASTER LABORATORIES

Sample Number: 9095960 AA18407 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 4:29:19 AM Sample Weight: 36.3
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 3090 | .017 | EDB | 2.786 | 3873 | .009 | EDB |
| 5.324 | 10192 | .048 | 1,1,2,2-PCA | 4.039 | 14747 | .051 | 1,1,2,2-PCA |
| 5.391 | 444 | .015 | 1,2,3-TCP | 4.159 | 958 | .025 | 1,2,3-TCP |
| 7.688 | 585 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.050.RAW
Area File: 18EDBS17200001B.050.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:30 AM
File Reported On: 7/20/2017 at 10:42:13 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095963** 18408 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.27 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 05:17:07 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.053.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 77% ( 46 - 136 ) Conc: 0.052036

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 05:17:07 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.053.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 78% ( 46 - 136 ) Conc: 0.053232

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10962 | 0.052036 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 404 | 0.013559 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15355 | 0.053232 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 670 | 0.017465 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.41 | 6.47 | 1083 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.052036 | 0.0034 | 0.0068 | 0.0068 | | 2.27 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2605 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:36

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095963** 18408 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.27 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 05:17:07
Instrument : CP18--19846A
Result file : 18EDBS17200001.053.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 77% (46-136) Conc.: 0.052036

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10962 | 0.052036 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 404 | 0.013559 |

## Analysis Report (B)

Injected on : Jul 20, 2017 05:17:07
Instrument : CP18--19846B
Result file : 18EDBS17200001B.053.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 78% (46-136) Conc.: 0.053232

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 15355 | 0.053232 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 670 | 0.017465 |
| **DBCP** | 6.41 | 6.41 | 6.47 | 1083 | -0.015485 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.052036 | | | | 2.27 | |
| ☐ 1,2,3-TCP | | | <0.2605 | <0.0965 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095963 AA18408 T 171980026A 10398 SW-846 8011

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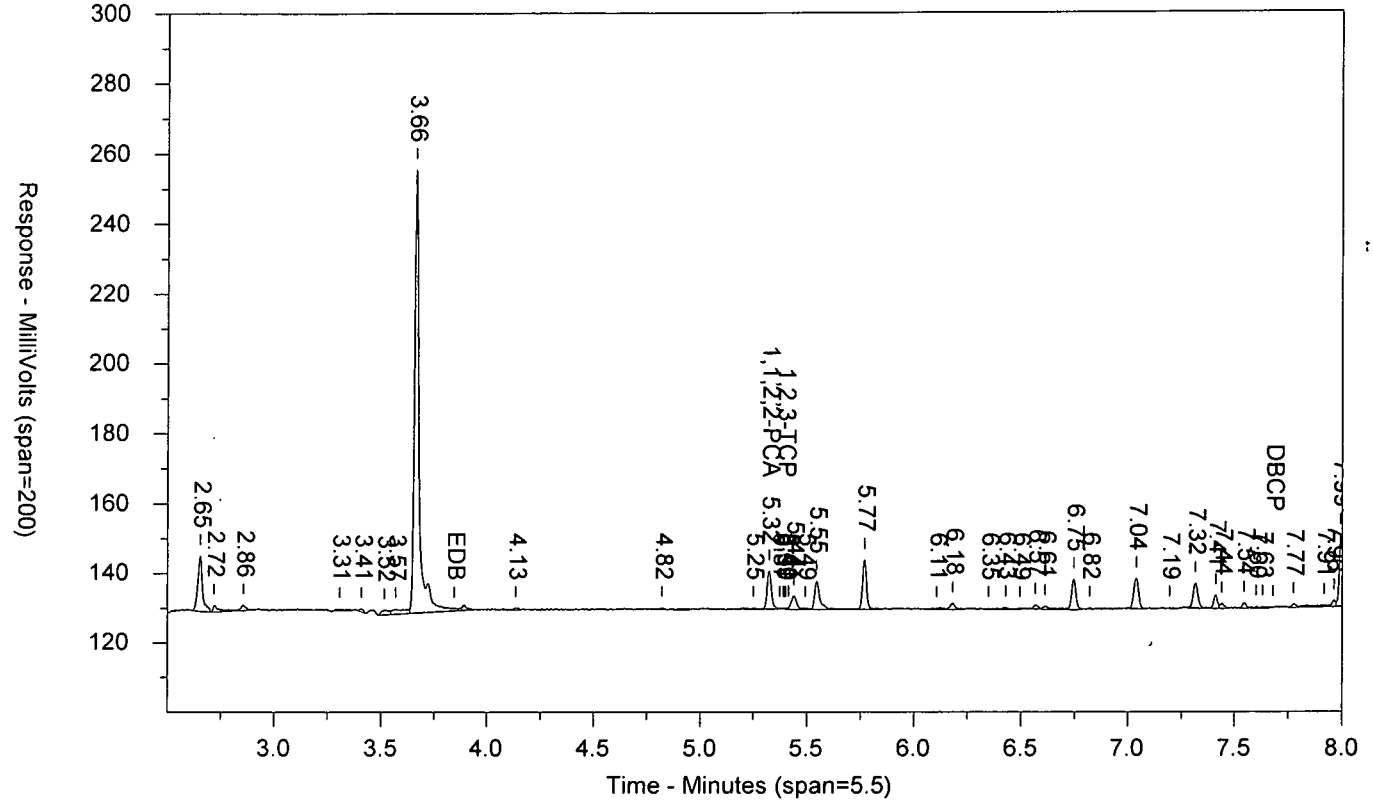


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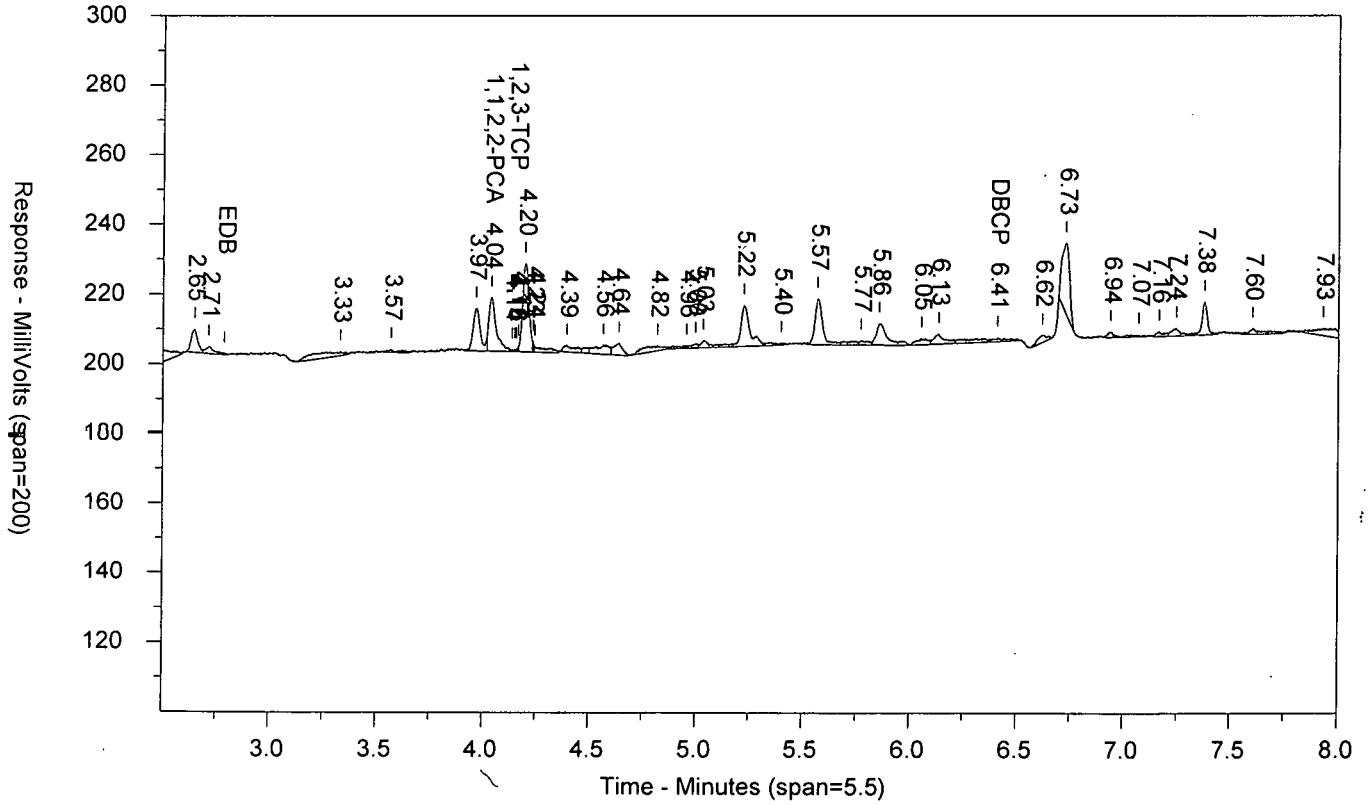

LANCASTER LABORATORIES

Sample Number: 9095963 AA18408 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 5:17:07 AM Sample Weight: 36.27
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 10962 | .052 | 1,1,2,2-PCA | 4.041 | 15355 | .053 | 1,1,2,2-PCA |
| 5.395 | 404 | .014 | 1,2,3-TCP | 4.157 | 670 | .017 | 1,2,3-TCP |
| | 0 | | DBCP | 6.407 | 1083 | -.015 | DBCP |

Files:
Area File: 18EDBS17200001.053.RAW
Area File: 18EDBS17200001B.053.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:25:42 AM
File Reported On: 7/20/2017 at 10:43:11 AM

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# Data Summary

**Sample Name: 9095964** 18409 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.72 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 05:33:03 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.054.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 76% ( 46 - 136 ) Conc: 0.05096

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 05:33:03 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.054.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.050329

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10869 | 0.05096 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 458 | 0.015182 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.69 | 7.71 | 476 | 0.001085 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 14698 | 0.050329 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 552 | 0.014223 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.05096 | 0.0033 | 0.0067 | 0.0067 | | 1.25 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2574 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomzyko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:37

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095964** 18409 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.72 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 05:33:03
Instrument : CP18--19846A
Result file : 18EDBS17200001.054.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 76% (46-136) Conc.: 0.05096

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10869 | 0.050960 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 458 | 0.015182 |
| **DBCP** | 7.65 | 7.69 | 7.71 | 476 | 0.001085 |

## Analysis Report (B)

Injected on : Jul 20, 2017 05:33:03
Instrument : CP18--19846B
Result file : 18EDBS17200001B.054.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.050329

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 14698 | 0.050329 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 552 | 0.014223 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.050960 | | | | 1.25 | |
| ☐ 1,2,3-TCP | | | <0.2574 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: JUL 20 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist

Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095964 AA18409 T 171980026A 10398 SW-846 8011

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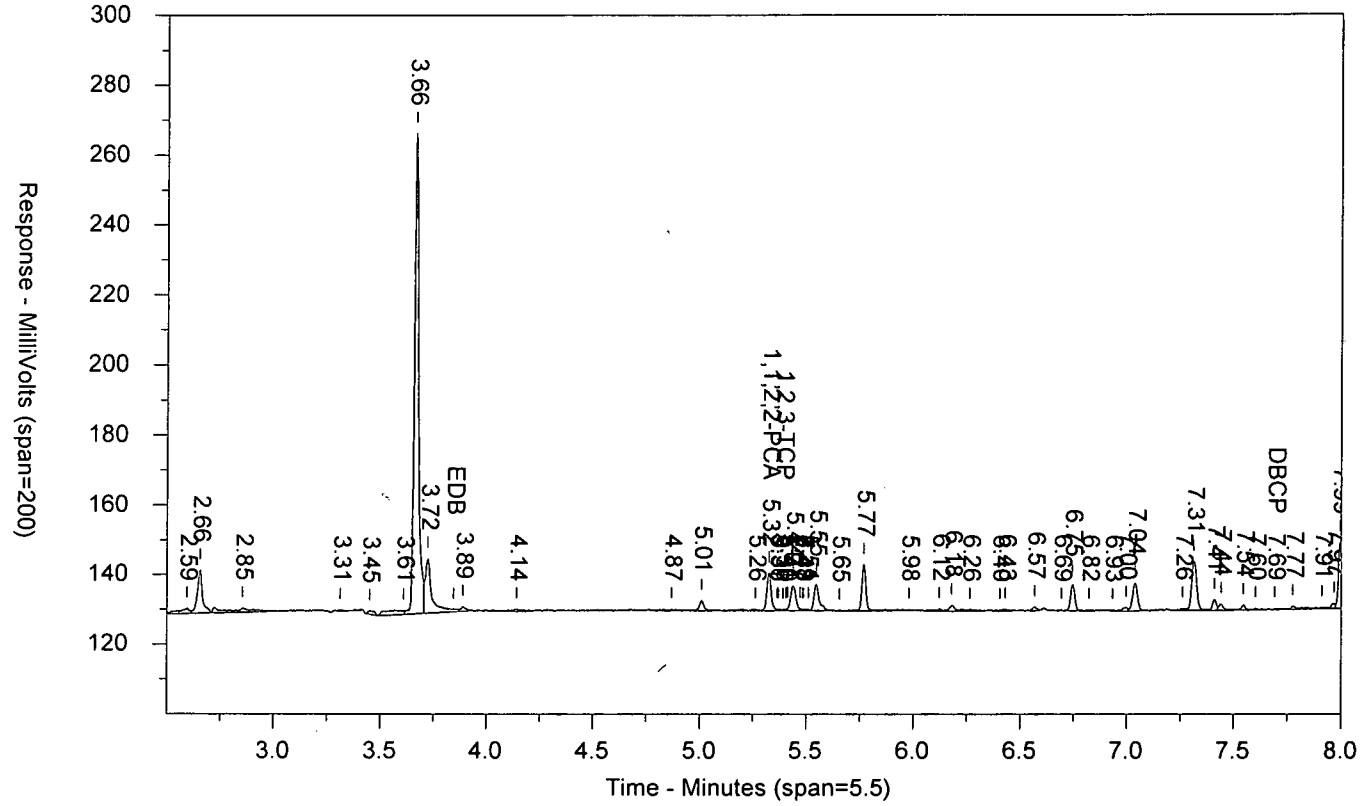


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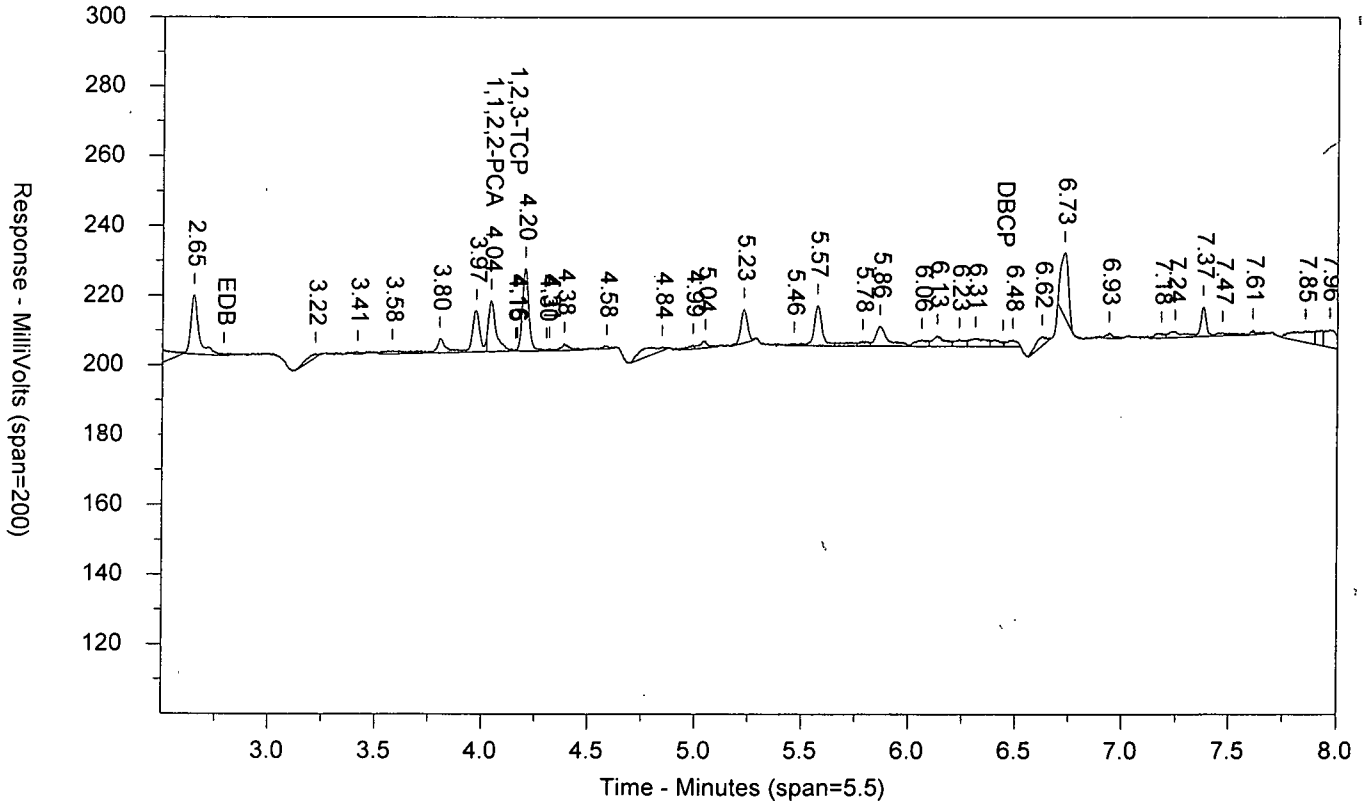

LANCASTER LABORATORIES

Sample Number: 9095964 AA18409 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 5:33:03 AM Sample Weight: 36.72
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 10869 | .051 | 1,1,2,2-PCA | 4.04 | 14698 | .05 | 1,1,2,2-PCA |
| 5.39 | 458 | .015 | 1,2,3-TCP | 4.155 | 552 | .014 | 1,2,3-TCP |
| 7.69 | 476 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.054.RAW
Area File: 18EDBS17200001B.054.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:41:39 AM
File Reported On: 7/20/2017 at 10:43:29 AM

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# Data Summary

**Sample Name: 9095965** 18410 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.01 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 05:49:01 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.055.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 78% ( 46 - 136 ) Conc: 0.053624

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 05:49:01 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.055.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 80% ( 46 - 136 ) Conc: 0.054696

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 11216 | 0.053624 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 381 | 0.01287 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.66 | 7.71 | 481 | 0.001119 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15664 | 0.054696 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1232 | 0.032367 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0097 | <0.0194 | <0.0292 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.053624 | 0.0034 | 0.0068 | 0.0068 | | 1.98 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2624 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0097 | <0.0194 | <0.0292 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:39

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095965** 18410 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.01 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 05:49:01
Instrument : CP18--19846A
Result file : 18EDBS17200001.055.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 78% (46-136) Conc.: 0.053624

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 11216 | 0.053624 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 381 | 0.012870 |
| **DBCP** | 7.65 | 7.66 | 7.71 | 481 | 0.001119 |

## Analysis Report (B)

Injected on : Jul 20, 2017 05:49:01
Instrument : CP18--19846B
Result file : 18EDBS17200001B.055.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 80% (46-136) Conc.: 0.054696

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 15664 | 0.054696 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1232 | 0.032367 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0292 | <0.0097 | | | |
| ☐ 1,1,2,2-PCA | A | 0.053624 | | | | 1.98 | |
| ☐ 1,2,3-TCP | | | <0.2624 | <0.0972 | | | |
| ☐ DBCP | | | <0.0292 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 20 2017

Verified by: Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095965 AA18410 T 171980026A 10398 SW-846 8011

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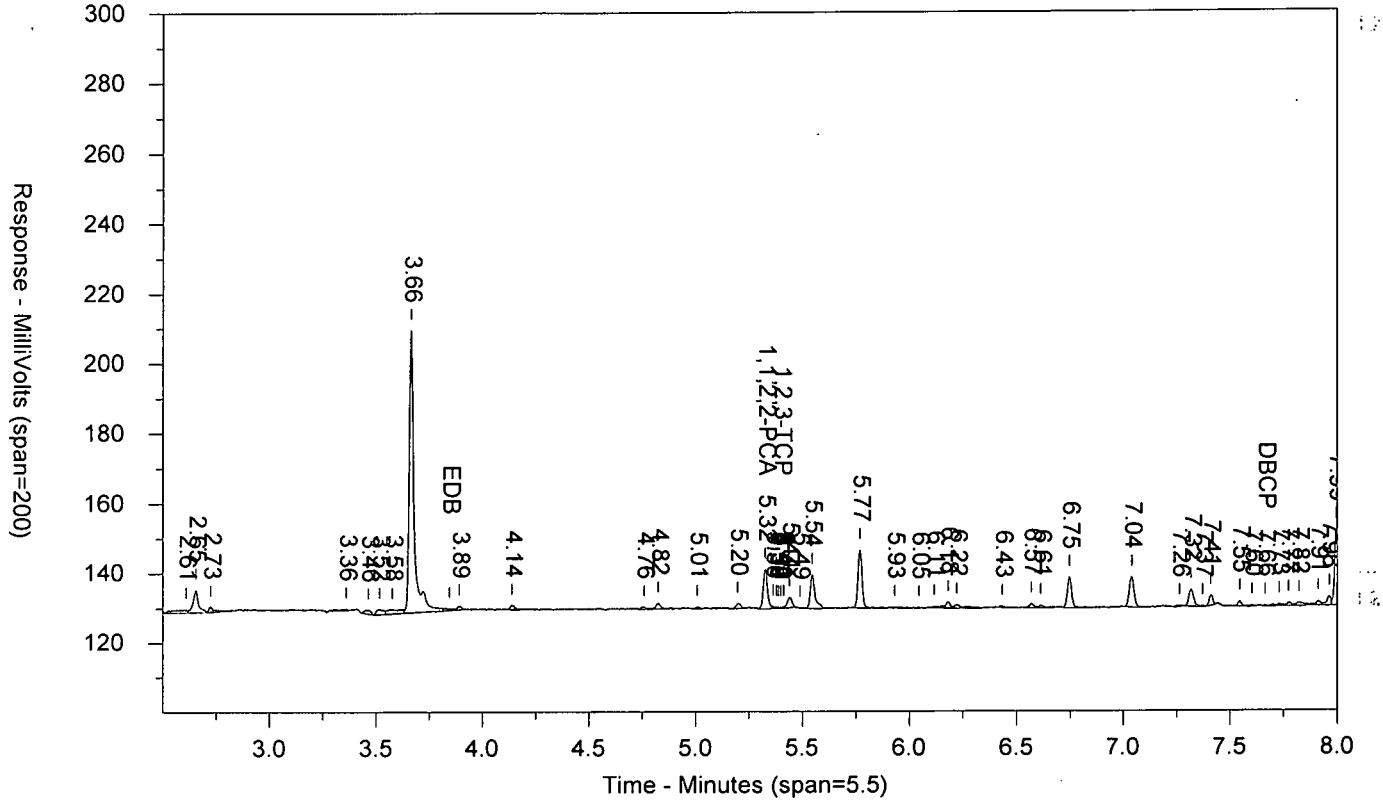


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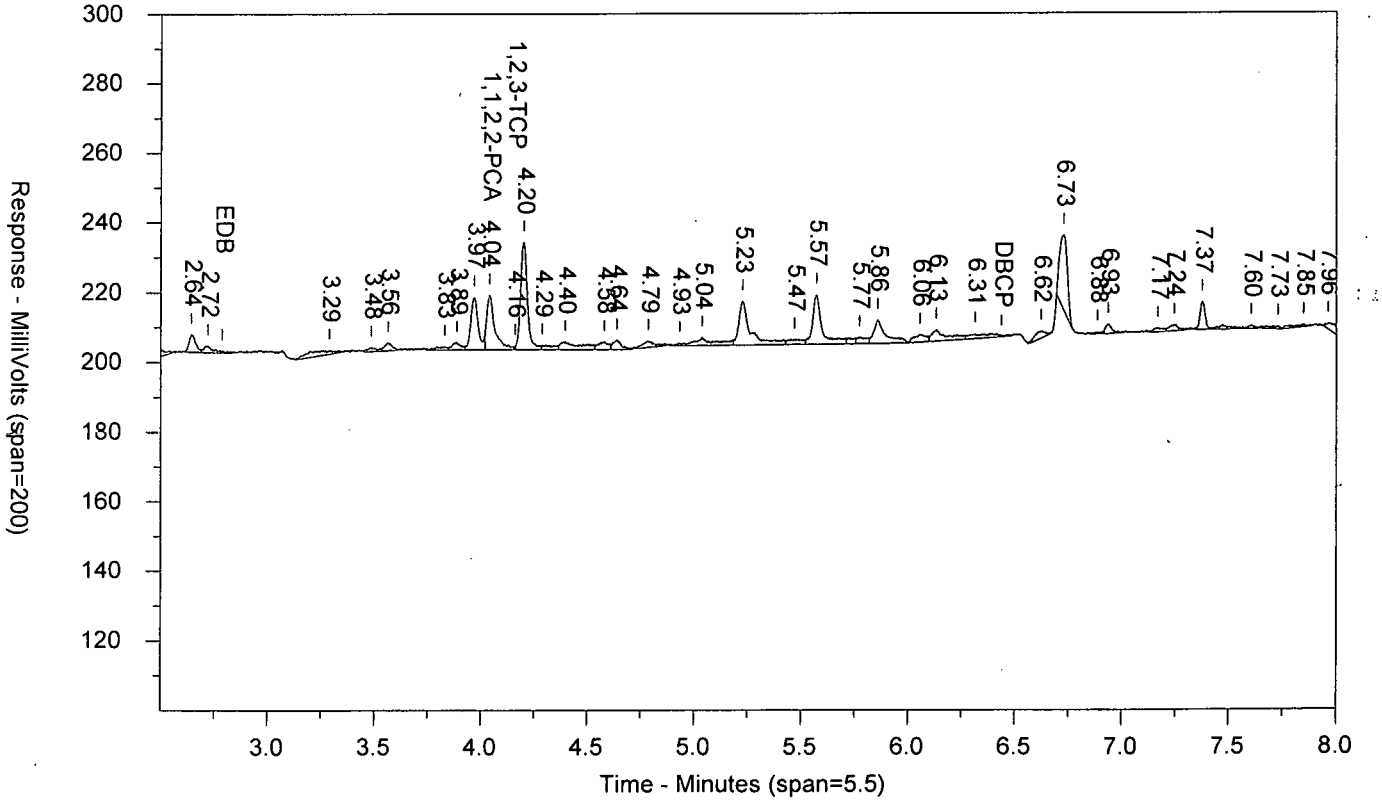


LANCASTER LABORATORIES

Sample Number: 9095965 AA18410 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 5:49:01 AM Sample Weight: 36.01
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 11216 | .054 | 1,1,2,2-PCA | 4.04 | 15664 | .055 | 1,1,2,2-PCA |
| 5.398 | 381 | .013 | 1,2,3-TCP | 4.16 | 1232 | .032 | 1,2,3-TCP |
| 7.663 | 481 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.055.RAW
Area File: 18EDBS17200001B.055.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:57:33 AM
File Reported On: 7/20/2017 at 10:43:45 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095966** 18411 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.38 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 06:04:57 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.056.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 74% ( 46 - 136 ) Conc: 0.050281

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 06:04:57 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.056.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 77% ( 46 - 136 ) Conc: 0.052379

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 10625 | 0.050281 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15155 | 0.052379 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1230 | 0.031965 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.050281 | 0.0034 | 0.0067 | 0.0067 | | 4.09 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2598 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valeria L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:40

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095966** 18411 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.38 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 06:04:57
Instrument : CP18--19846A
Result file : 18EDBS17200001.056.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 74% (46-136) Conc.: 0.050281

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.29 | 5.33 | 5.35 | 10625 | 0.050281 |

## Analysis Report (B)

Injected on : Jul 20, 2017 06:04:57
Instrument : CP18--19846B
Result file : 18EDBS17200001B.056.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 77% (46-136) Conc.: 0.052379

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.01 | 4.04 | 4.07 | 15155 | 0.052379 |
| 1,2,3-TCP | 4.13 | 4.16 | 4.19 | 1230 | 0.031965 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.050281 | | | | 4.09 | |
| ☐ 1,2,3-TCP | | | <0.2598 | <0.0962 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

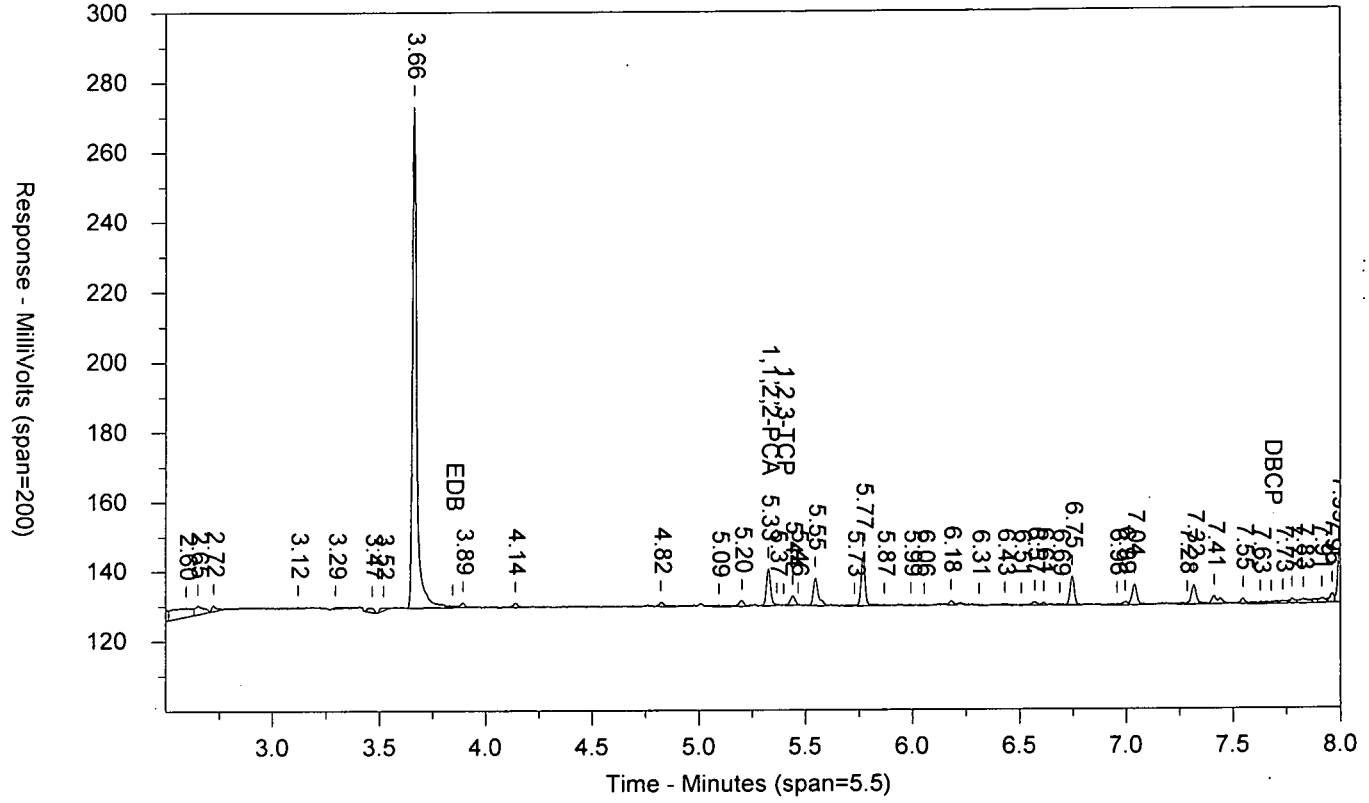
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

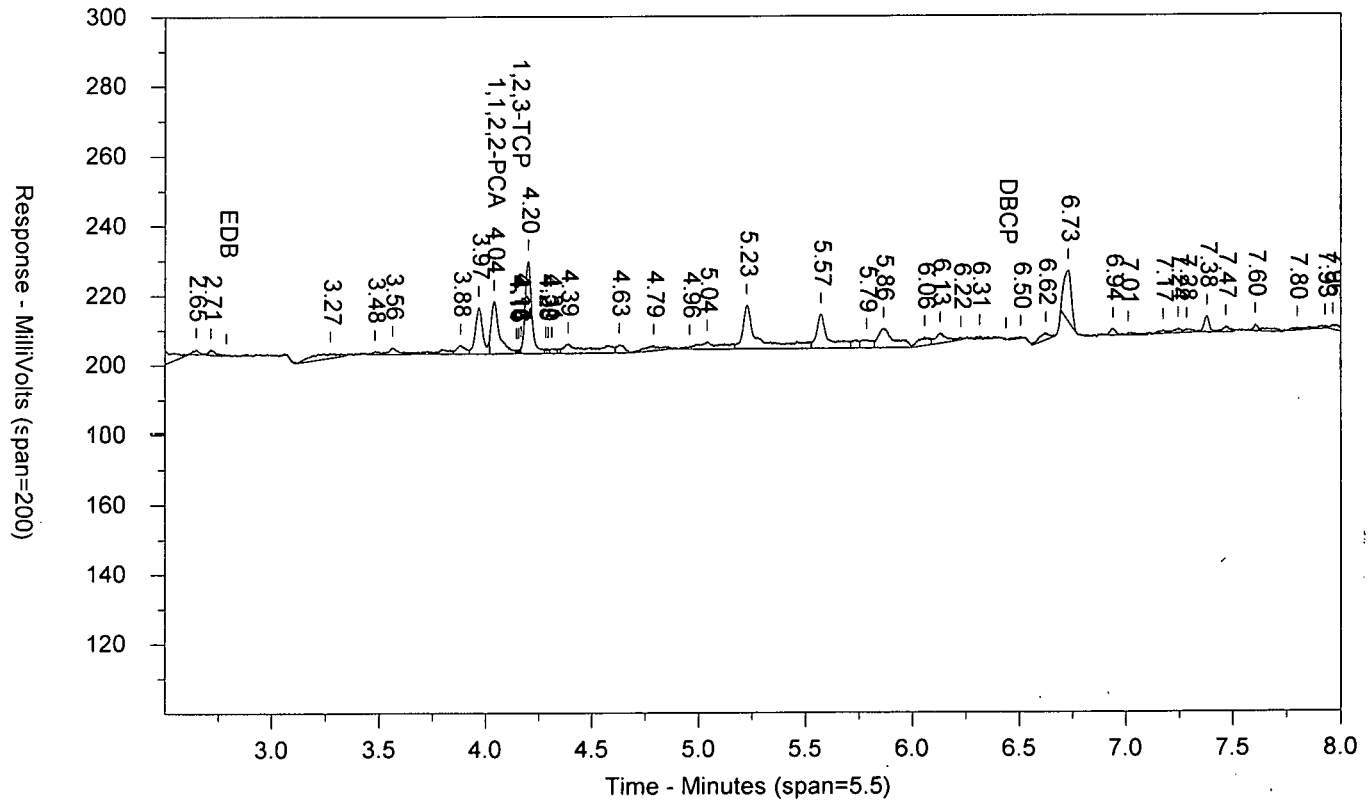
* Recovery outside QC Limits

9095966 AA18411 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.056.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001B.056.RAW



LANCASTER LABORATORIES

Sample Number: 9095966 AA18411 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 6:04:57 AM Sample Weight: 36.38
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 10625 | .05 | 1,1,2,2-PCA | 4.04 | 15155 | .052 | 1,1,2,2-PCA |
| | 0 | | 1,2,3-TCP | 4.157 | 1230 | .032 | 1,2,3-TCP |

Files:
Area File: 18EDBS17200001.056.RAW
Area File: 18EDBS17200001B.056.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 6:13:31 AM
File Reported On: 7/20/2017 at 10:44:04 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095968** 18413 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.34 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 06:20:52 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.057.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 67% ( 46 - 136 ) Conc: 0.045402

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 06:20:52 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.057.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 70% ( 46 - 136 ) Conc: 0.047548

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 9583 | 0.045402 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 13742 | 0.047548 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 759 | 0.019744 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.045402 | 0.0034 | 0.0067 | 0.0067 | | 4.62 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.26 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:42

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095968** 18413 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.34 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 06:20:52
Instrument : CP18--19846A
Result file : 18EDBS17200001.057.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 67% (46-136) Conc.: 0.045402

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 9583 | 0.045402 |

## Analysis Report (B)

Injected on : Jul 20, 2017 06:20:52
Instrument : CP18--19846B
Result file : 18EDBS17200001B.057.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 70% (46-136) Conc.: 0.047548

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 13742 | 0.047548 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 759 | 0.019744 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.045402 | | | | 4.62 | |
| ☐ 1,2,3-TCP | | | <0.26 | <0.0963 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 20 2017

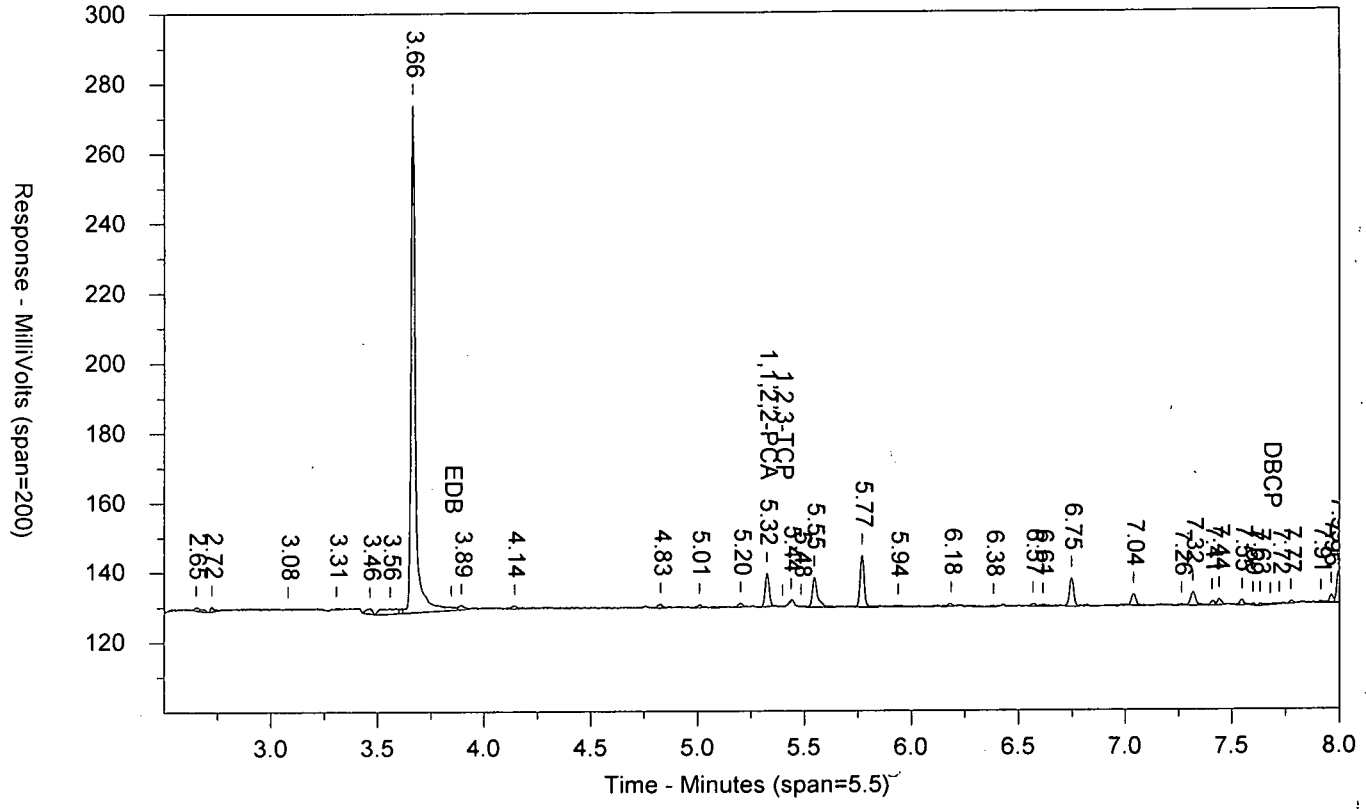
Verified by: Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095968 AA18413 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.057.RAW

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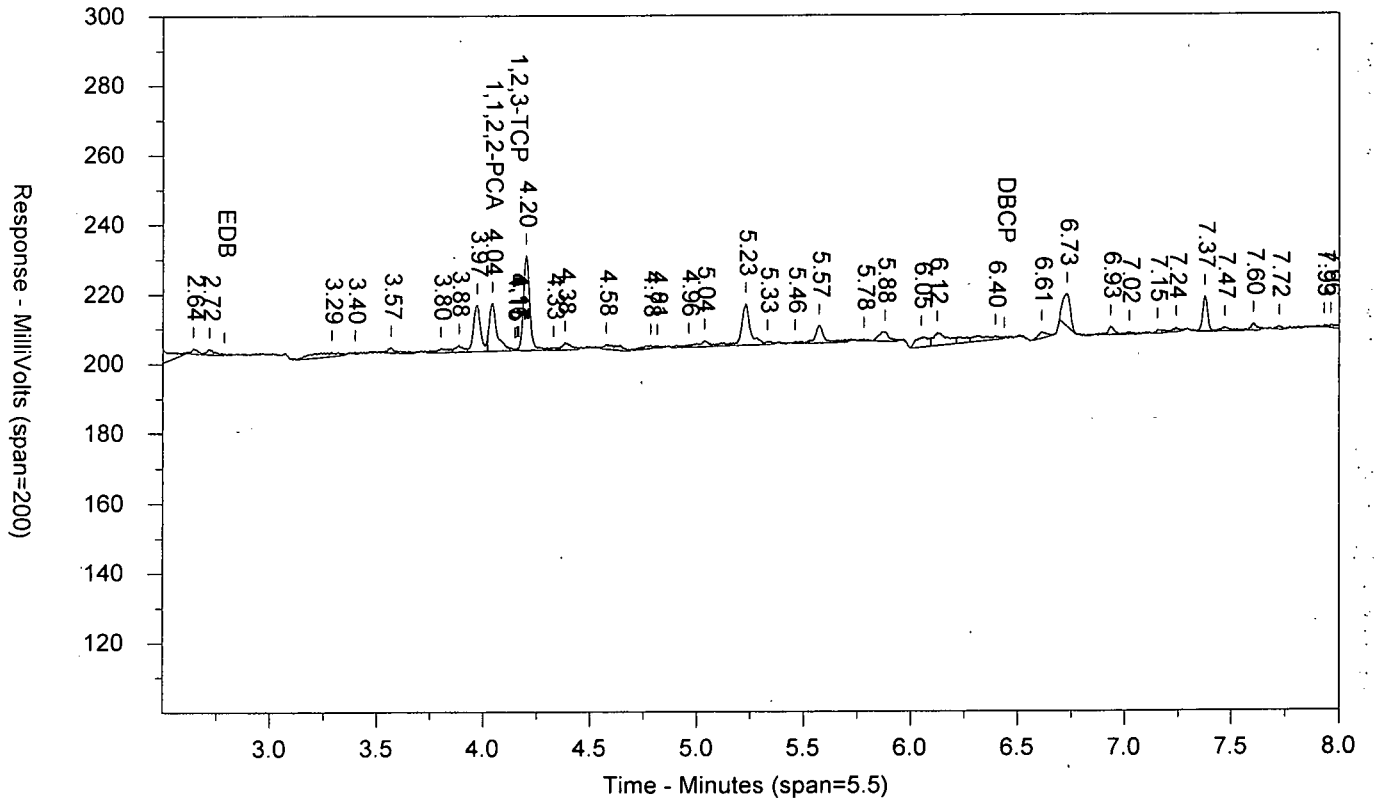

LANCASTER LABORATORIES

Sample Number: 9095968 AA18413 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 6:20:52 AM Sample Weight: 36.34
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 9583 | .045 | 1,1,2,2-PCA | 4.043 | 13742 | .048 | 1,1,2,2-PCA |
| | 0 | | 1,2,3-TCP | 4.158 | 759 | .02 | 1,2,3-TCP |

Files:
Area File: 18EDBS17200001.057.RAW
Area File: 18EDBS17200001B.057.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 6:29:27 AM
File Reported On: 7/20/2017 at 10:44:22 AM

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# Data Summary

**Sample Name: 9095970** 18415 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.77 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 07:08:46 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.060.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.050281

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 07:08:46 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.060.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 79% ( 46 - 136 ) Conc: 0.05263

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10739 | 0.050281 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 620 | 0.020519 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15391 | 0.05263 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1255 | 0.032279 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.050281 | 0.0033 | 0.0067 | 0.0067 | | 4.57 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.257 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerio L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:43

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095970** 18415 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.77 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 07:08:46
Instrument : CP18--19846A
Result file : 18EDBS17200001.060.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.050281

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10739 | 0.050281 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 620 | 0.020519 |

## Analysis Report (B)

Injected on : Jul 20, 2017 07:08:46
Instrument : CP18--19846B
Result file : 18EDBS17200001B.060.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 79% (46-136) Conc.: 0.05263

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 15391 | 0.052630 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1255 | 0.032279 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.050281 | | | | 4.57 | |
| ☐ 1,2,3-TCP | | | <0.257 | <0.0952 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

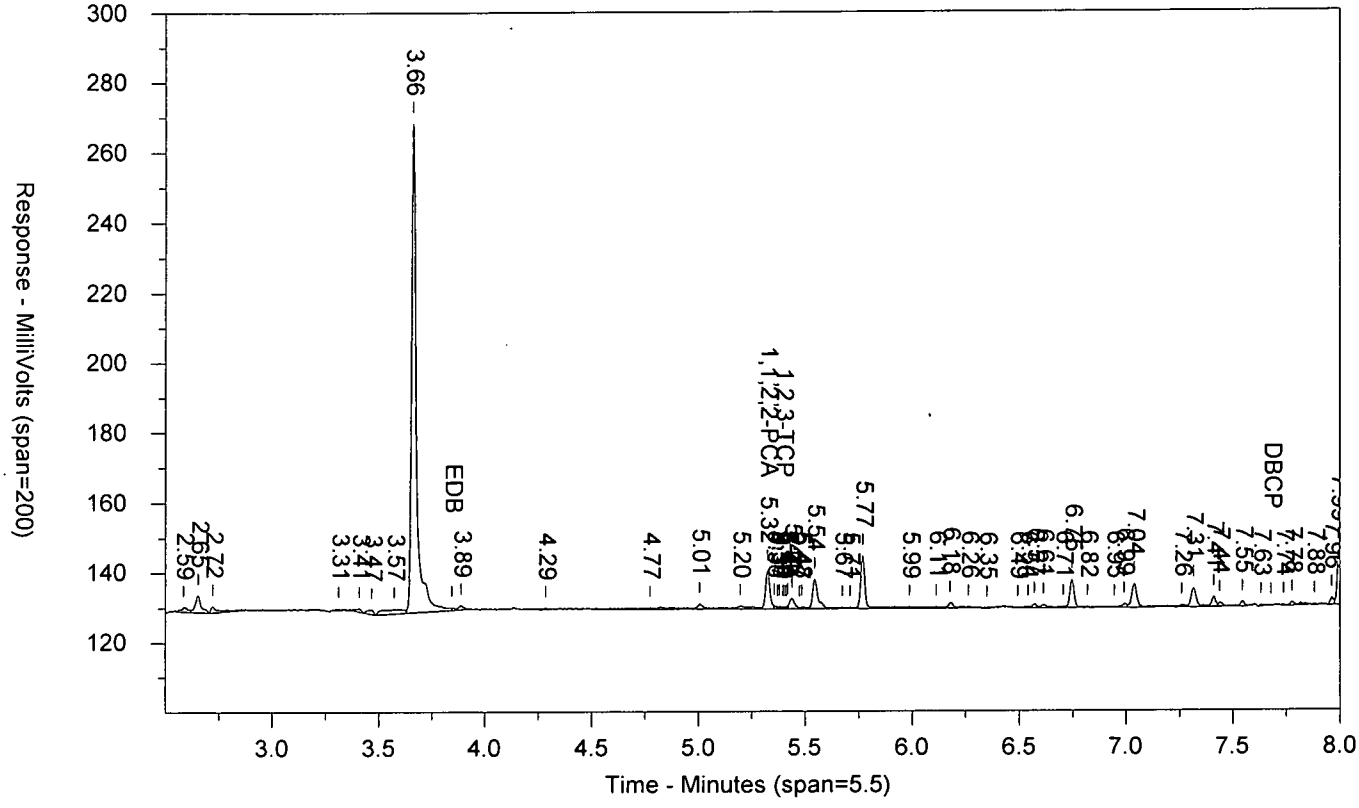
Verified by: Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095970 AA18415 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.060.RAW

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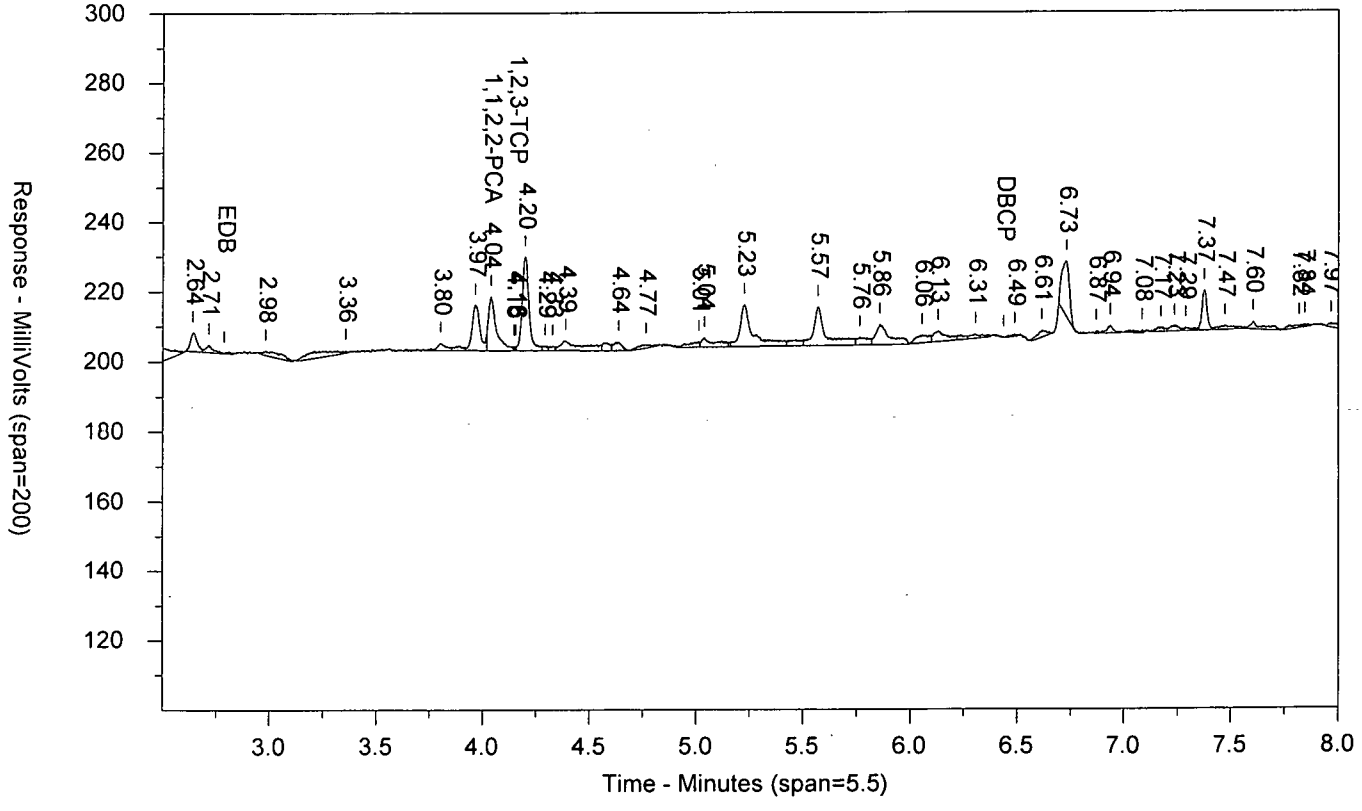

LANCASTER LABORATORIES

Sample Number: 9095970 AA18415 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 7:08:46 AM Sample Weight: 36.77
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 10739 | .05 | 1,1,2,2-PCA | 4.039 | 15391 | .053 | 1,1,2,2-PCA |
| 5.396 | 620 | .021 | 1,2,3-TCP | 4.157 | 1255 | .032 | 1,2,3-TCP |

Files:
Area File: 18EDBS17200001.060.RAW
Area File: 18EDBS17200001B.060.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 7:17:21 AM
File Reported On: 7/20/2017 at 10:45:08 AM

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# Data Summary

**Sample Name: 9095972** 18417 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.92 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:32:57 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0018.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.05987

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:32:57 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0018.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.059703

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 25928 | 0.05987 |
| 1,2,3-Trichloropropane | 4.55 | 4.56 | 4.61 | 4188 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9345 | 0.059703 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 11228 | 0.100774 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0284 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.05987 | 0.0033 | 0.0066 | 0.0066 | | 0.28 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.256 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0284 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:04

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095972** 18417 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.92 mL Total Volume: 2 ml Analyst: Administr SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:32:57
Instrument : CP16--19853A
Result file : 16EDBS17202001.0018.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.05987

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25928 | 0.059870 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 4188 | -0.004446 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:32:57
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0018.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.059703

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9345 | 0.059703 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 11228 | 0.100774 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0284 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.059870 | | | | 0.28 | |
| ☐ 1,2,3-TCP | | | <0.256 | <0.0948 | | | |
| ☐ DBCP | | | <0.0284 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

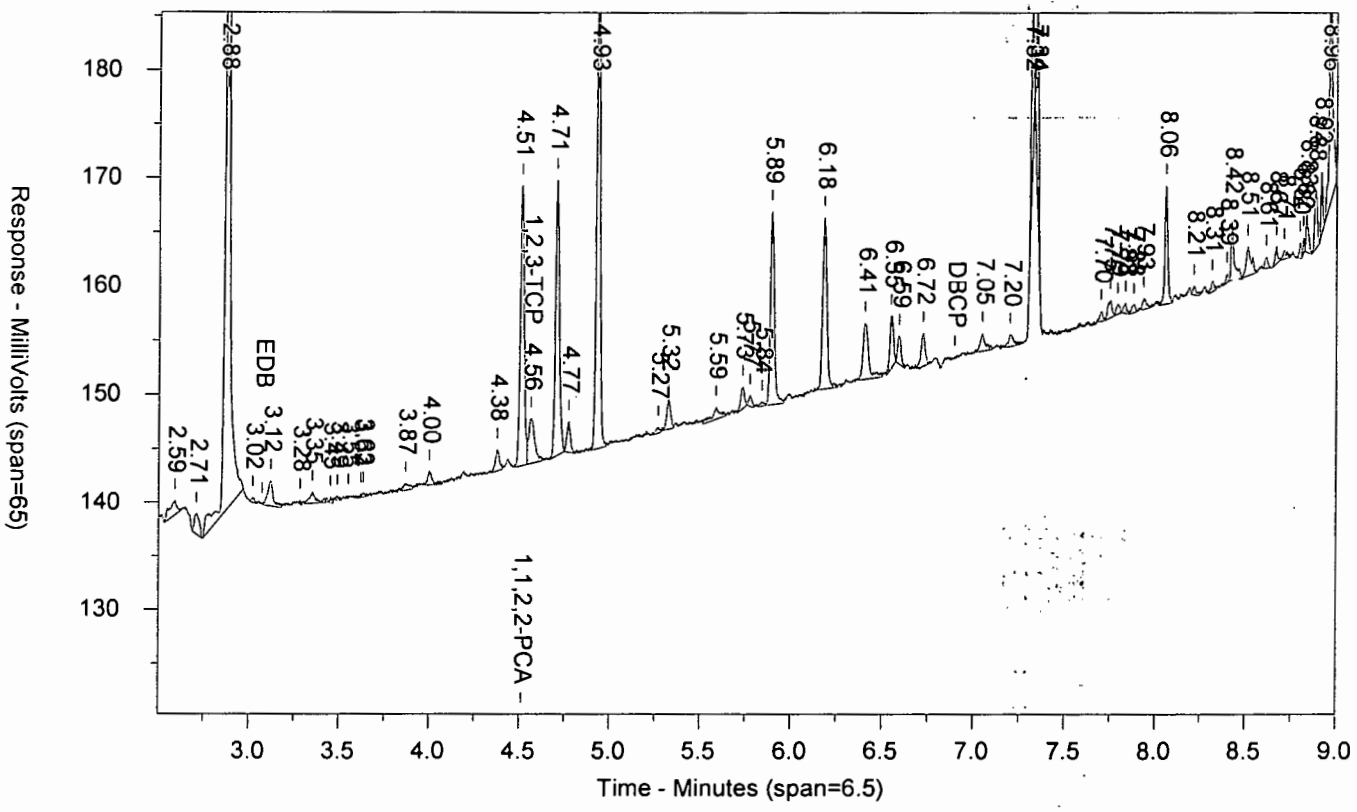
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:11:19

9095972 AA18417 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0018.RAW

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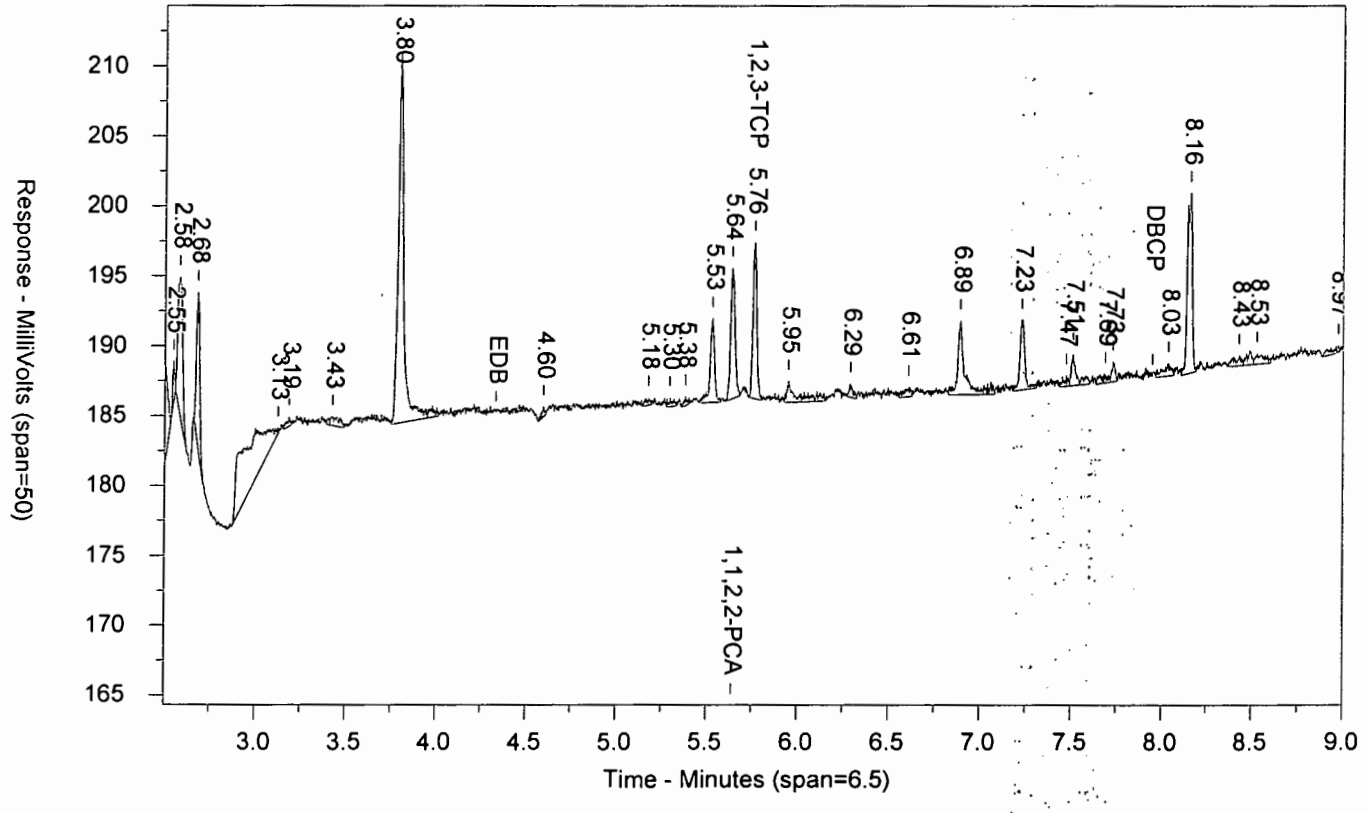


LANCASTER LABORATORIES

Sample Number: 9095972 AA18417 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:32:57 PM Sample Weight: 36.92
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.512 | 25928 | .06 | 1,1,2,2-PCA | 5.639 | 9345 | .06 | 1,1,2,2-PCA |
| 4.564 | 4188 | -.004 | 1,2,3-TCP | 5.763 | 11228 | .101 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0018.RAW
Area File: 16EDBS17202001B.0018.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:41:59 PM
File Reported On: 7/24/2017 at 10:54:41 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095980** 18419 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.29 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 07:24:48 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.061.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 77% ( 46 - 136 ) Conc: 0.052001

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 07:24:48 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.061.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 76% ( 46 - 136 ) Conc: 0.051537

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10961 | 0.052001 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 568 | 0.019044 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.67 | 7.71 | 399 | 0.000919 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 14874 | 0.051537 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 692 | 0.018045 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.052001 | 0.0034 | 0.0068 | 0.0068 | | 0.90 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2604 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:45

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095980** 18419 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.29 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 07:24:48
Instrument : CP18--19846A
Result file : 18EDBS17200001.061.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 77% (46-136) Conc.: 0.052001

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10961 | 0.052001 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 568 | 0.019044 |
| **DBCP** | 7.65 | 7.67 | 7.71 | 399 | 0.000919 |

## Analysis Report (B)

Injected on : Jul 20, 2017 07:24:48
Instrument : CP18--19846B
Result file : 18EDBS17200001B.061.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 76% (46-136) Conc.: 0.051537

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 14874 | 0.051537 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 692 | 0.018045 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.052001 | | | | 0.89 | |
| ☐ 1,2,3-TCP | | | <0.2604 | <0.0964 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 20 2017

Verified by: Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

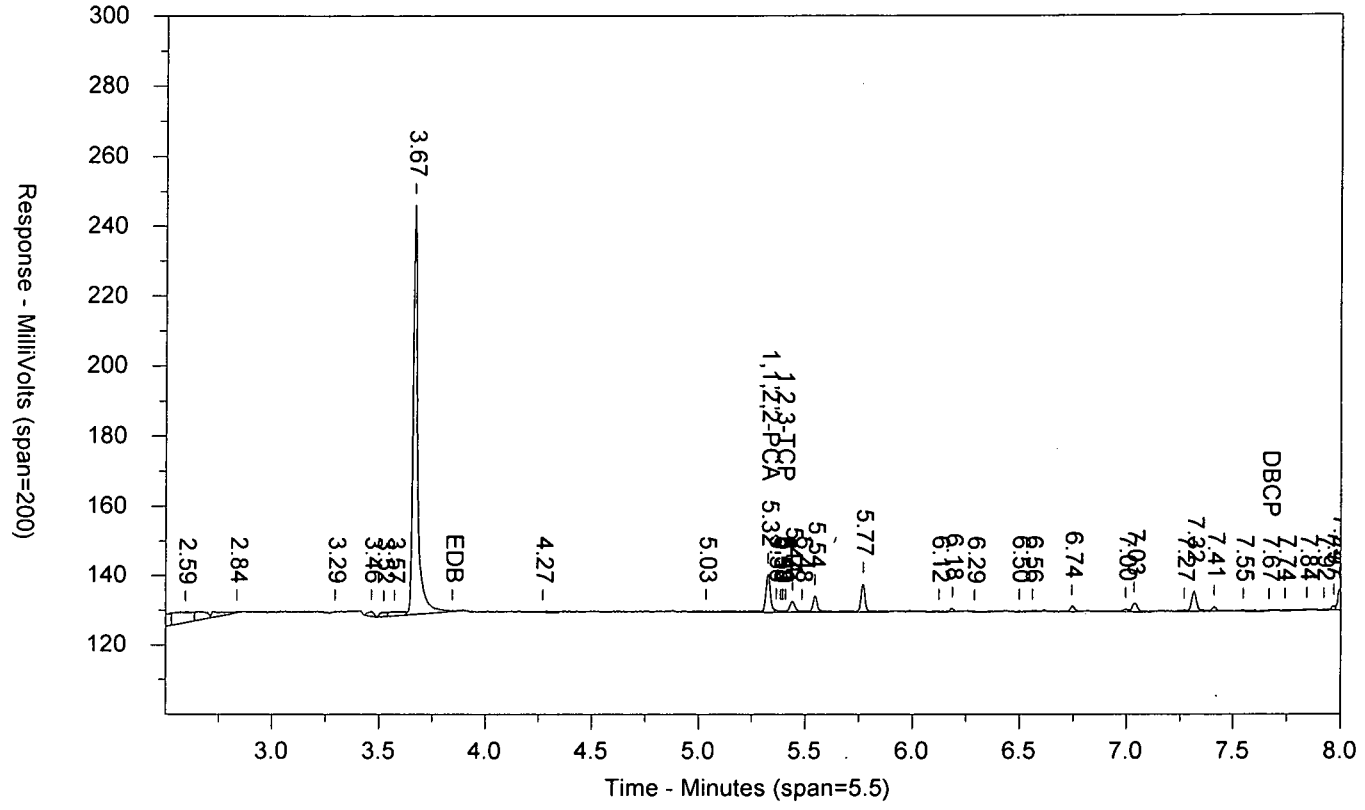
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/20/2017 10:56:24

9095980 AA18419 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.061.RAW

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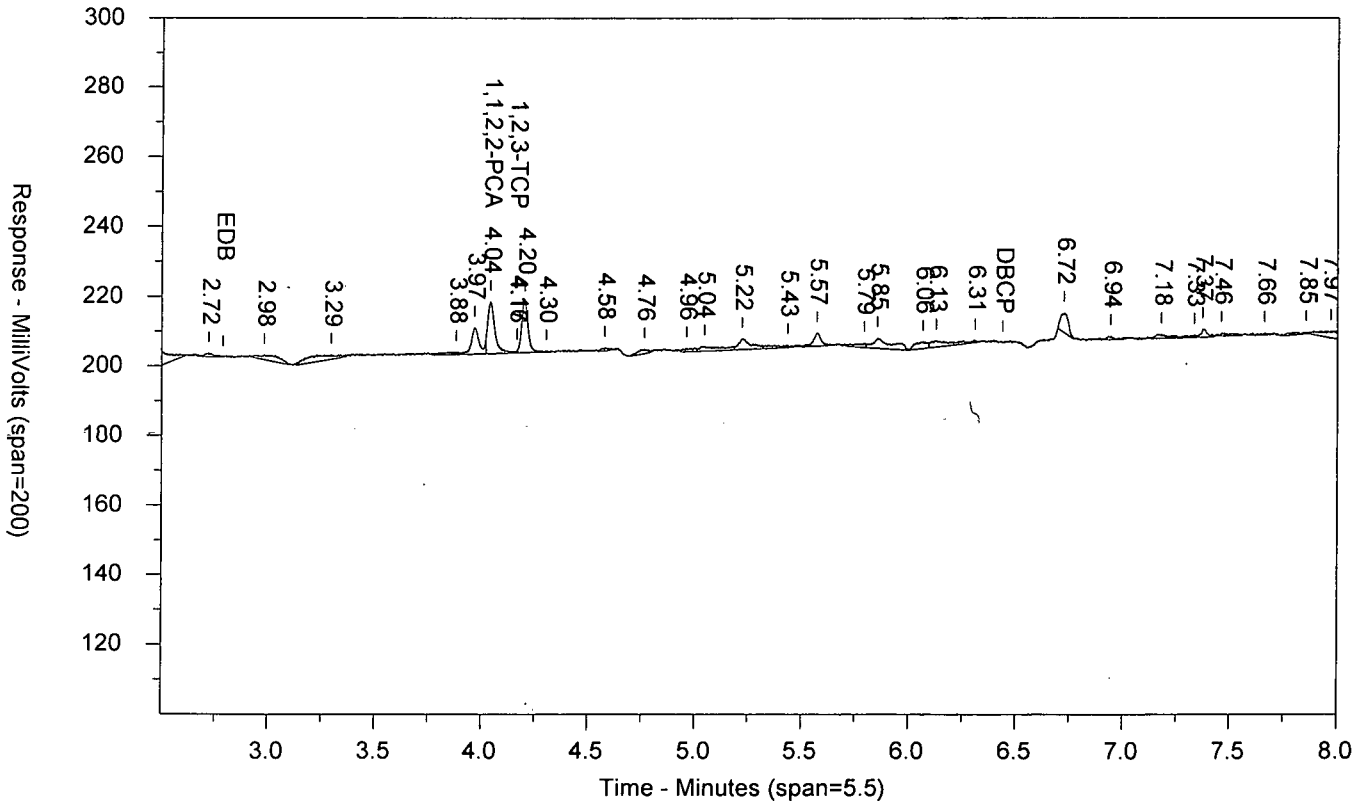

LANCASTER LABORATORIES

Sample Number: 9095980 AA18419 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 7:24:48 AM Sample Weight: 36.29
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 10961 | .052 | 1,1,2,2-PCA | 4.041 | 14874 | .052 | 1,1,2,2-PCA |
| 5.395 | 568 | .019 | 1,2,3-TCP | 4.163 | 692 | .018 | 1,2,3-TCP |
| 7.666 | 399 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.061.RAW
Area File: 18EDBS17200001B.061.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 7:33:20 AM
File Reported On: 7/20/2017 at 10:45:24 AM

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# Data Summary

**Sample Name: 9095981** 18420 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.53 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 07:40:42 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.062.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 71% ( 46 - 136 ) Conc: 0.048139

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 07:40:42 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.062.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 73% ( 46 - 136 ) Conc: 0.049539

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10214 | 0.048139 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 423 | 0.014102 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 365 | 0.000837 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 14392 | 0.049539 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 498 | 0.012895 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.048139 | 0.0034 | 0.0067 | 0.0067 | | 2.87 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2587 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:46

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095981** 18420 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.53 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 07:40:42
Instrument : CP18--19846A
Result file : 18EDBS17200001.062.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 71% (46-136) Conc.: 0.048139

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10214 | 0.048139 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 423 | 0.014102 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 365 | 0.000837 |

## Analysis Report (B)

Injected on : Jul 20, 2017 07:40:42
Instrument : CP18--19846B
Result file : 18EDBS17200001B.062.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 73% (46-136) Conc.: 0.049539

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 14392 | 0.049539 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 498 | 0.012895 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.048139 | | | | 2.87 | |
| ☐ 1,2,3-TCP | | | <0.2587 | <0.0958 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 20 2017

Verified by: Valerie L. Tomayko Principal Specialist
Date: JUL 23 2017

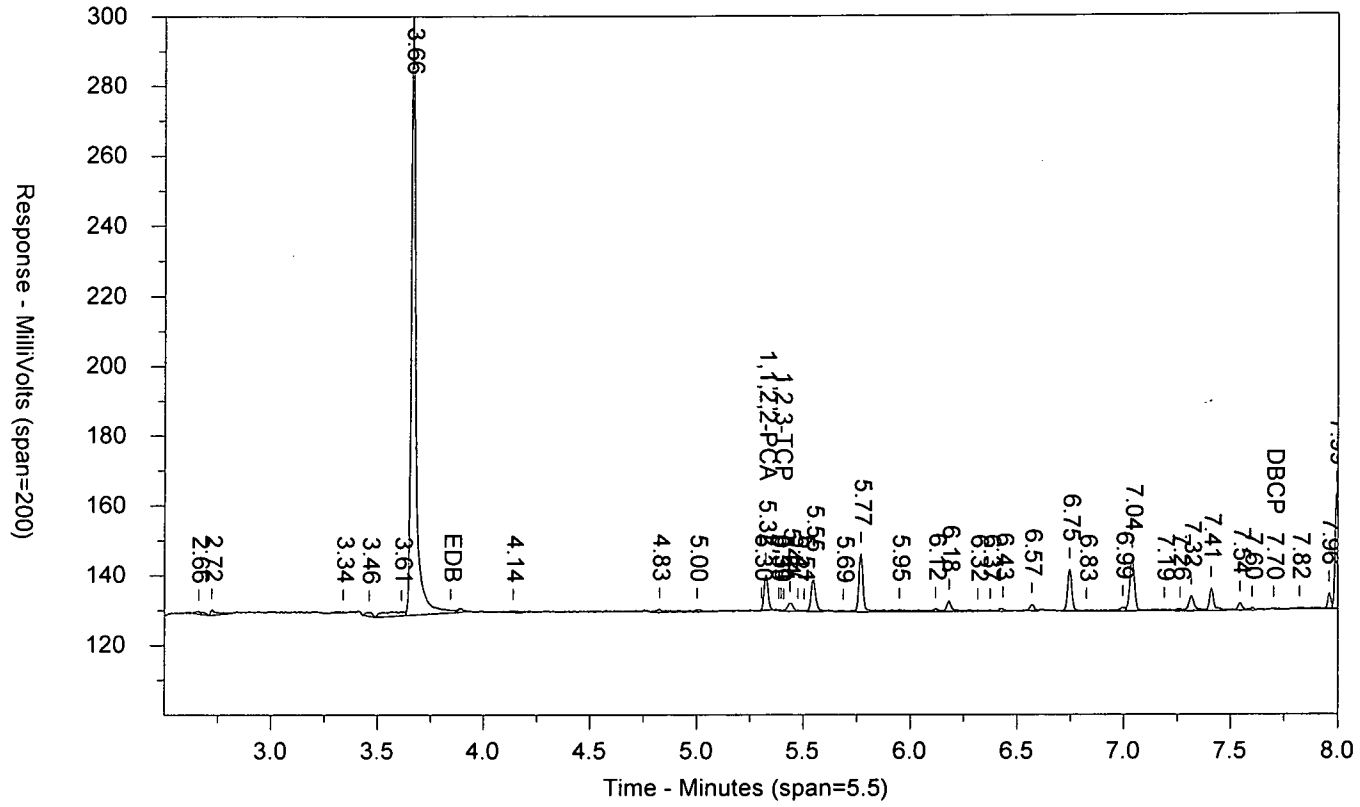
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/20/2017 10:56:35

9095981 AA18420 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.062.RAW

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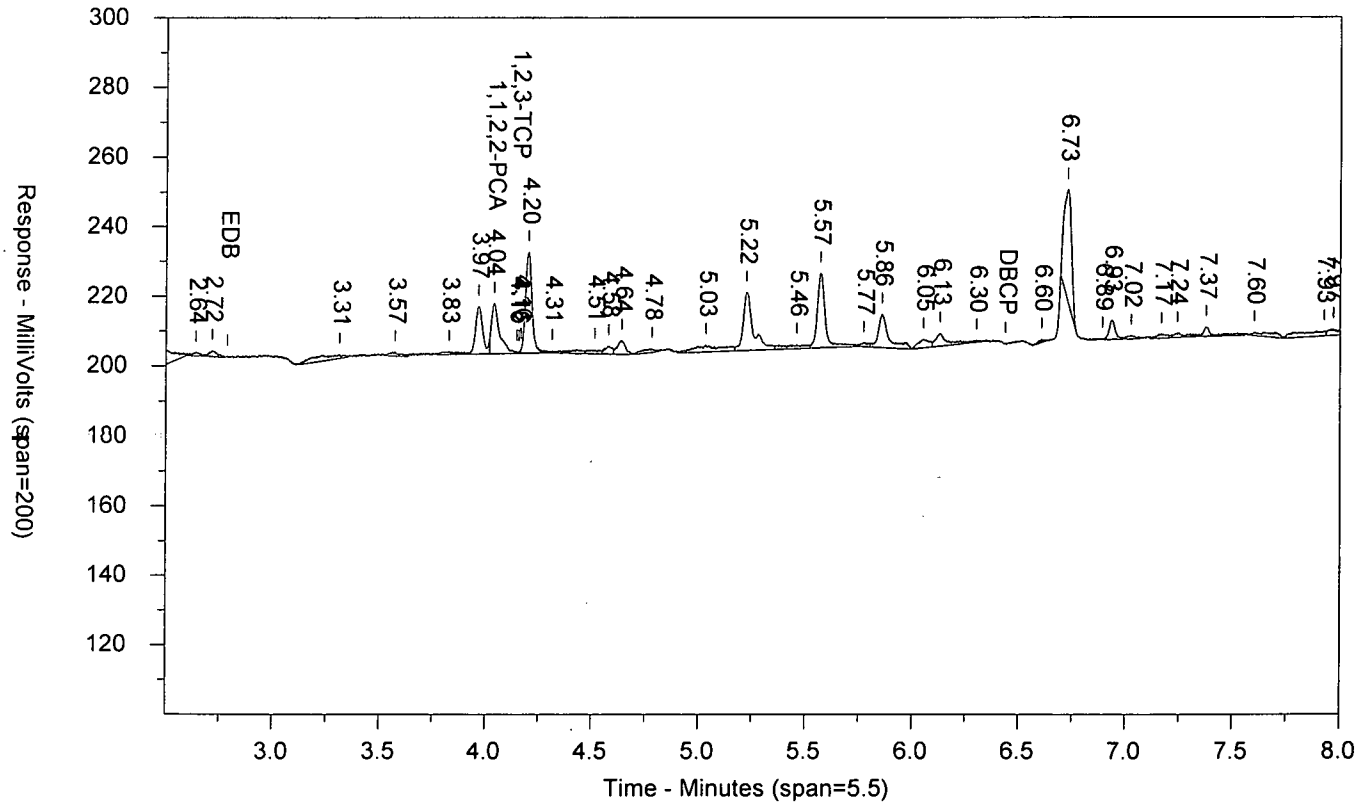

LANCASTER LABORATORIES

Sample Number: 9095981 AA18420 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 7:40:42 AM Sample Weight: 36.53
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 10214 | .048 | 1,1,2,2-PCA | 4.041 | 14392 | .05 | 1,1,2,2-PCA |
| 5.395 | 423 | .014 | 1,2,3-TCP | 4.156 | 498 | .013 | 1,2,3-TCP |
| 7.701 | 365 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.062.RAW
Area File: 18EDBS17200001B.062.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 7:49:15 AM
File Reported On: 7/20/2017 at 10:45:42 AM

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# Data Summary

**Sample Name: 9095982** 18421 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.45 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 07:56:38 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.063.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 81% ( 46 - 136 ) Conc: 0.054907

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 07:56:38 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.063.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 82% ( 46 - 136 ) Conc: 0.055405

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 11625 | 0.054907 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 383 | 0.012781 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 468 | 0.001075 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 16061 | 0.055405 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 877 | 0.02275 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.054907 | 0.0034 | 0.0067 | 0.0067 | | 0.90 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2593 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:48

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095982** 18421 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.45 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 07:56:38
Instrument : CP18--19846A
Result file : 18EDBS17200001.063.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 81% (46-136) Conc.: 0.054908

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 11625 | 0.054908 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 383 | 0.012781 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 468 | 0.001075 |

## Analysis Report (B)

Injected on : Jul 20, 2017 07:56:38
Instrument : CP18--19846B
Result file : 18EDBS17200001B.063.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 82% (46-136) Conc.: 0.055405

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 16061 | 0.055405 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 877 | 0.022750 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.054908 | | | | 0.90 | |
| ☐ 1,2,3-TCP | | | <0.2593 | <0.096 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

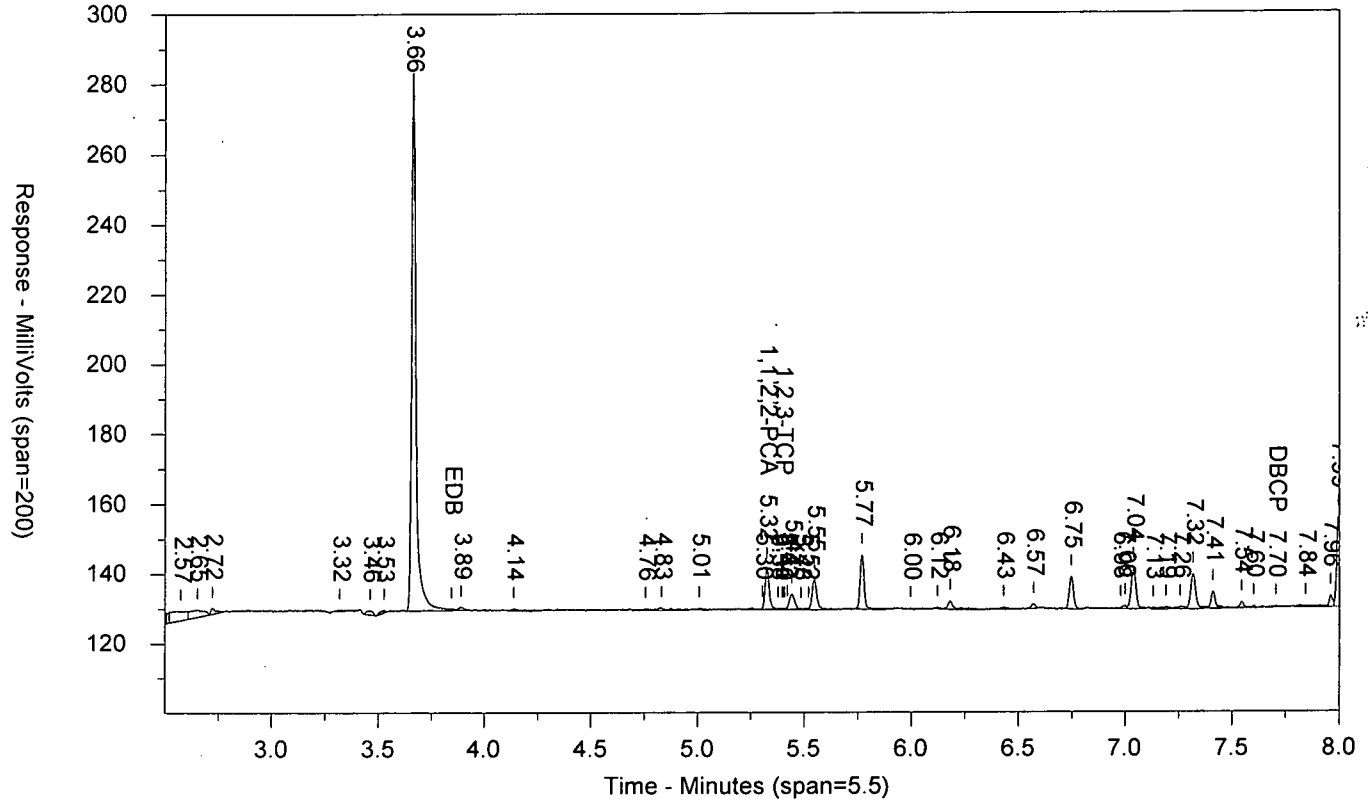
Verified by: Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095982 AA18421 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.063.RAW

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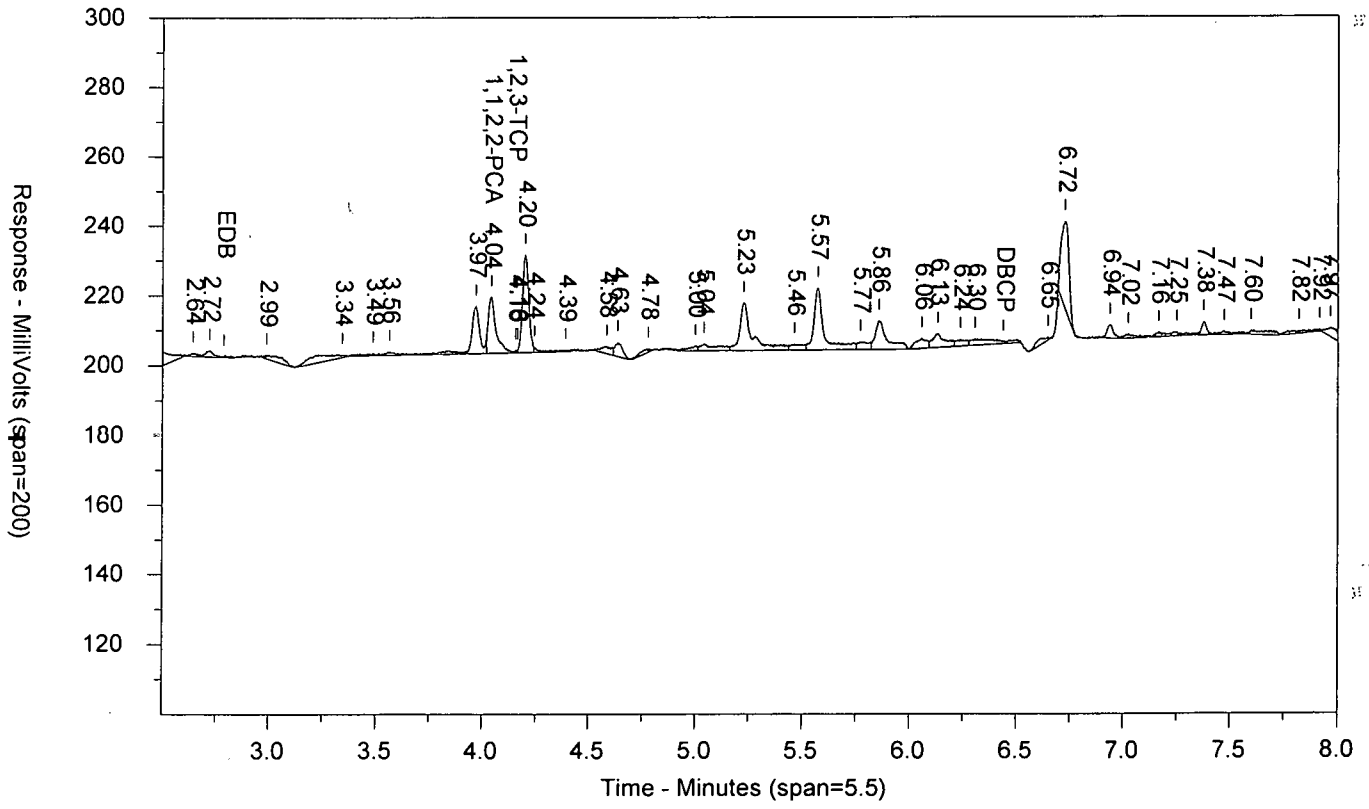


LANCASTER LABORATORIES

Sample Number: 9095982 AA18421 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 7:56:38 AM Sample Weight: 36.45
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 11625 | .055 | 1,1,2,2-PCA | 4.042 | 16061 | .055 | 1,1,2,2-PCA |
| 5.396 | 383 | .013 | 1,2,3-TCP | 4.155 | 877 | .023 | 1,2,3-TCP |
| 7.705 | 468 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.063.RAW
Area File: 18EDBS17200001B.063.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 8:05:13 AM
File Reported On: 7/20/2017 at 10:46:00 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095983** 18422 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.3 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 08:12:36 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.064.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 76% ( 46 - 136 ) Conc: 0.051677

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 08:12:36 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.064.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.050917

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 10896 | 0.051677 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 616 | 0.020632 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 14699 | 0.050917 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 469 | 0.012208 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.41 | 6.47 | 1188 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.051677 | 0.0034 | 0.0067 | 0.0067 | | 1.48 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2603 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:49

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095983** 18422 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.3 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 08:12:36
Instrument : CP18--19846A
Result file : 18EDBS17200001.064.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 76% (46-136) Conc.: 0.051677

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 10896 | 0.051677 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 616 | 0.020632 |

## Analysis Report (B)

Injected on : Jul 20, 2017 08:12:36
Instrument : CP18--19846B
Result file : 18EDBS17200001B.064.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.050917

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 14699 | 0.050917 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 469 | 0.012208 |
| **DBCP** | 6.41 | 6.41 | 6.47 | 1188 | -0.015217 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.051677 | | | | 1.48 | |
| ☐ 1,2,3-TCP | | | <0.2603 | <0.0964 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

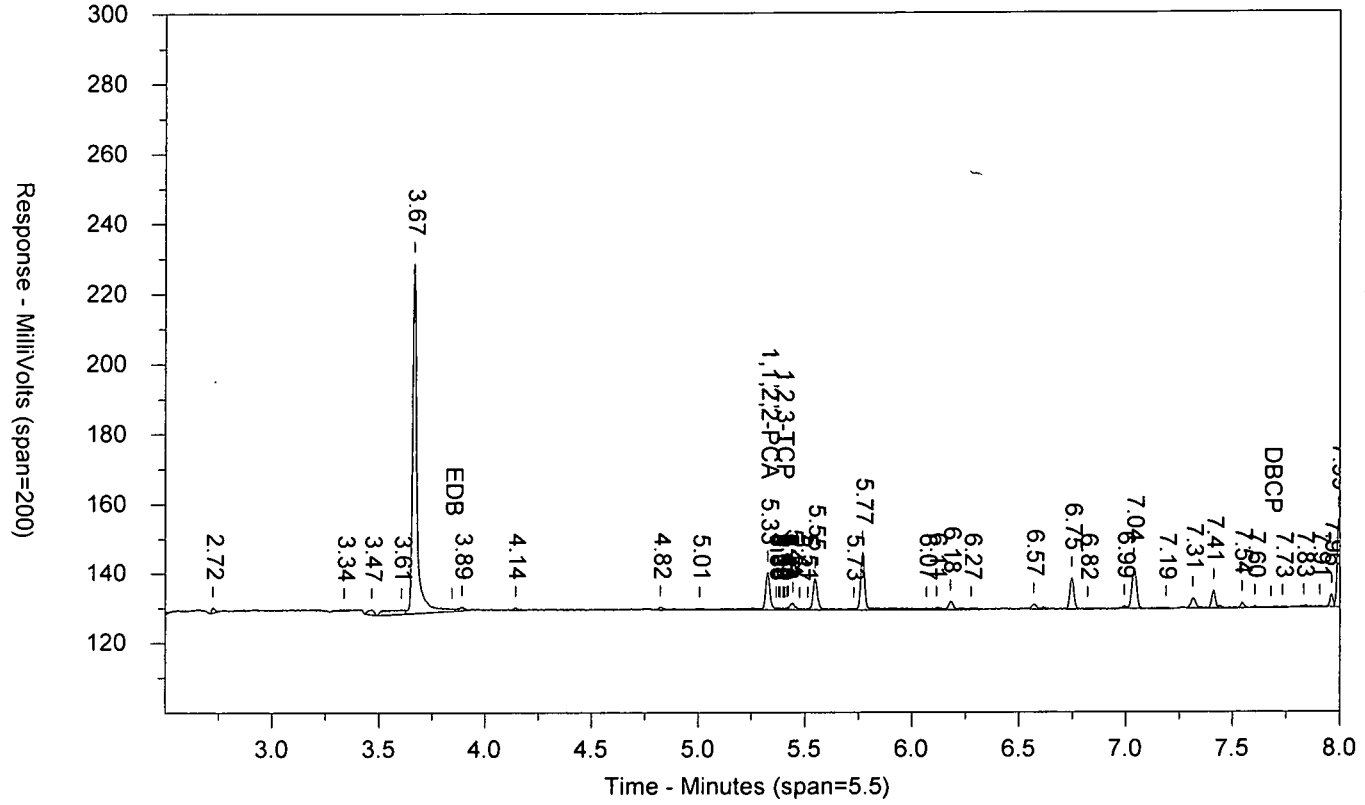
* Recovery outside QC Limits



Printed on: 7/20/2017 10:56:55

9095983 AA18422 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.064.RAW

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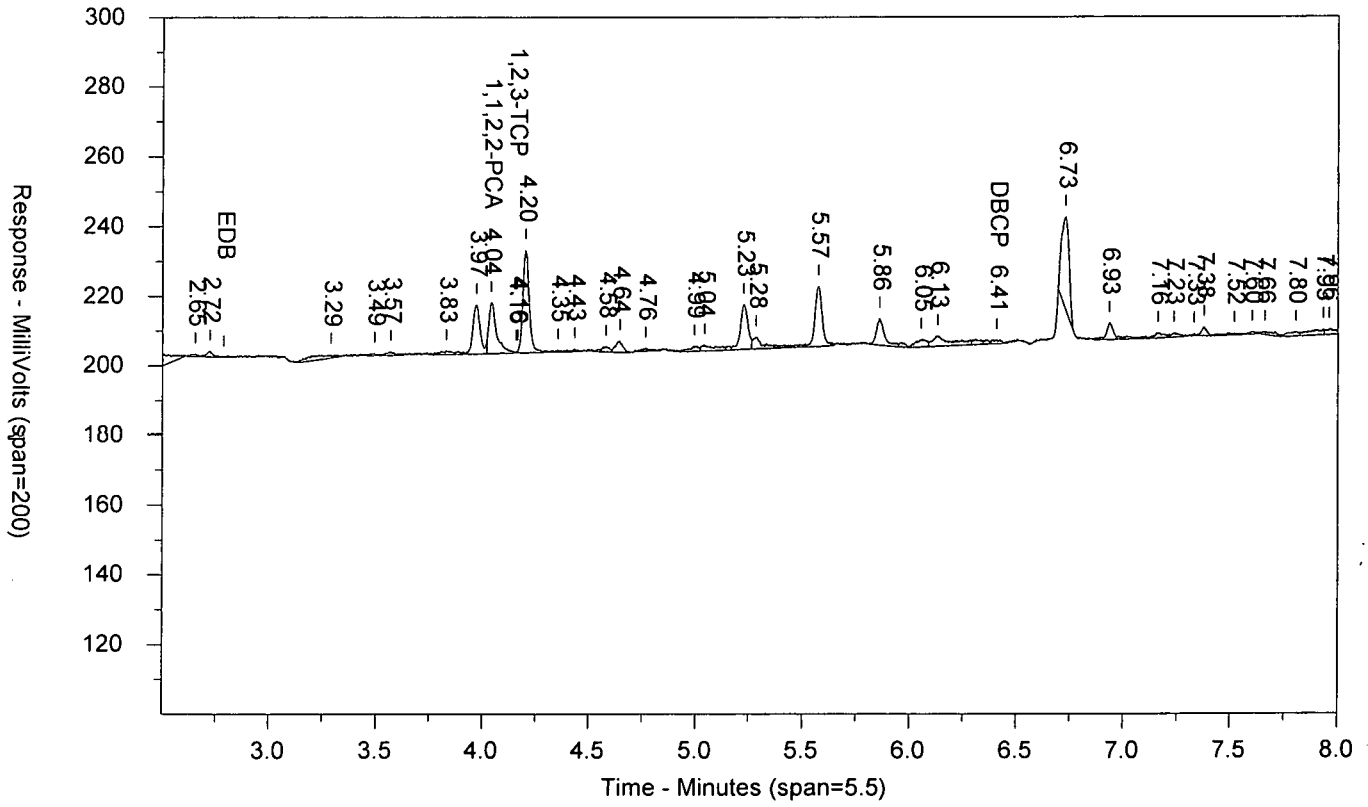

LANCASTER LABORATORIES

Sample Number: 9095983 AA18422 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 8:12:36 AM Sample Weight: 36.3
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 10896 | .052 | 1,1,2,2-PCA | 4.039 | 14699 | .051 | 1,1,2,2-PCA |
| 5.395 | 616 | .021 | 1,2,3-TCP | 4.156 | 469 | .012 | 1,2,3-TCP |
| | 0 | | DBCP | 6.406 | 1188 | -.015 | DBCP |

Files:
Area File: 18EDBS17200001.064.RAW
Area File: 18EDBS17200001B.064.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 8:21:11 AM
File Reported On: 7/20/2017 at 10:46:18 AM

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# Data Summary

**Sample Name: 9095984** 18423 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.48 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 08:28:39 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.065.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 76% ( 46 - 136 ) Conc: 0.051128

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 08:28:39 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.065.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 78% ( 46 - 136 ) Conc: 0.052988

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10833 | 0.051128 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 402 | 0.013402 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.65 | 7.71 | 432 | 0.000992 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15373 | 0.052988 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 472 | 0.01223 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.051128 | 0.0034 | 0.0067 | 0.0067 | | 3.57 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.259 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:50

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095984** 18423 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.48 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 08:28:39
Instrument : CP18--19846A
Result file : 18EDBS17200001.065.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 76% (46-136) Conc.: 0.051128

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10833 | 0.051128 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 402 | 0.013402 |
| **DBCP** | 7.65 | 7.65 | 7.71 | 432 | 0.000992 |

## Analysis Report (B)

Injected on : Jul 20, 2017 08:28:39
Instrument : CP18--19846B
Result file : 18EDBS17200001B.065.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 78% (46-136) Conc.: 0.052988

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 15373 | 0.052988 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 472 | 0.012230 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.051128 | | | | 3.57 | |
| ☐ 1,2,3-TCP | | | <0.259 | <0.0959 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

Verified by: Valerio L. Tomzyko
Principal Specialist
Date: JUL 23 2017

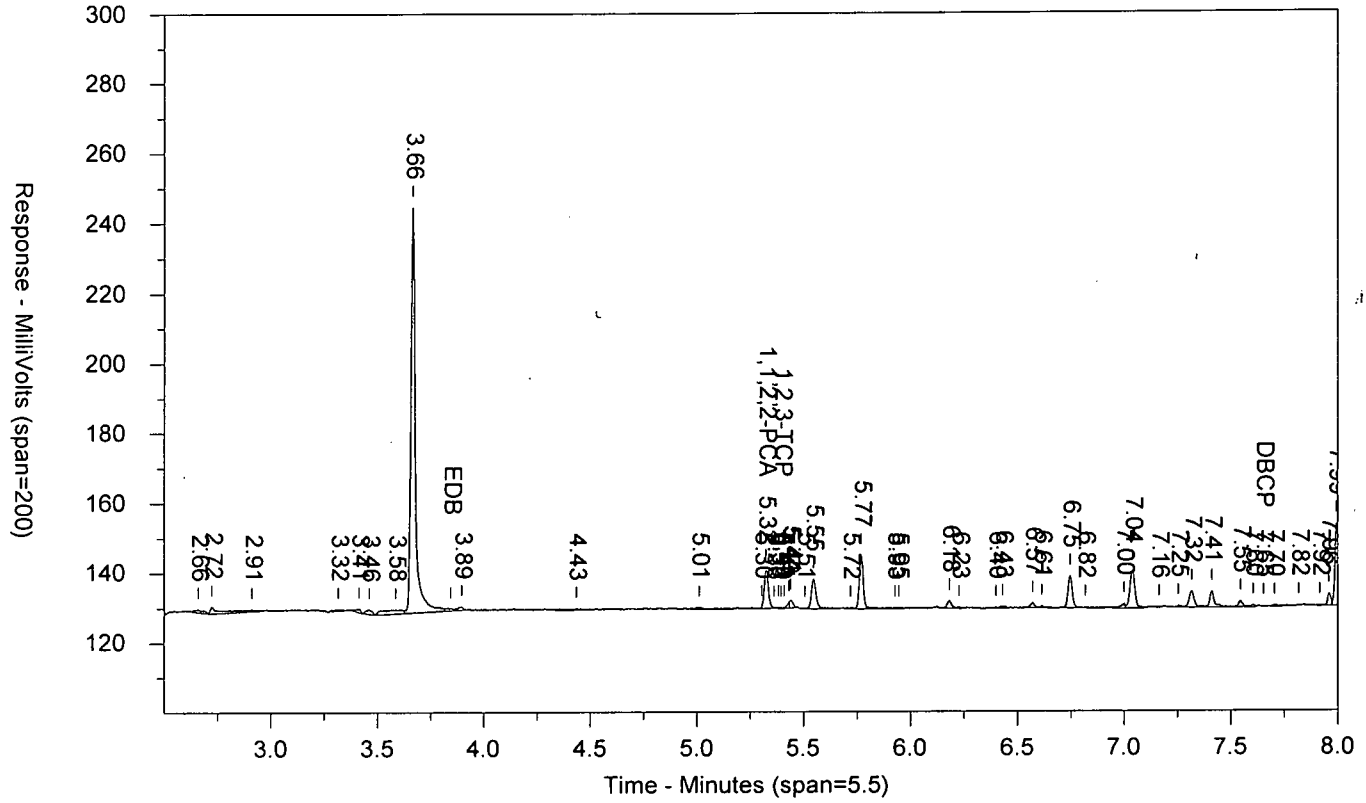
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/20/2017 10:57:07

9095984 AA18423 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.065.RAW

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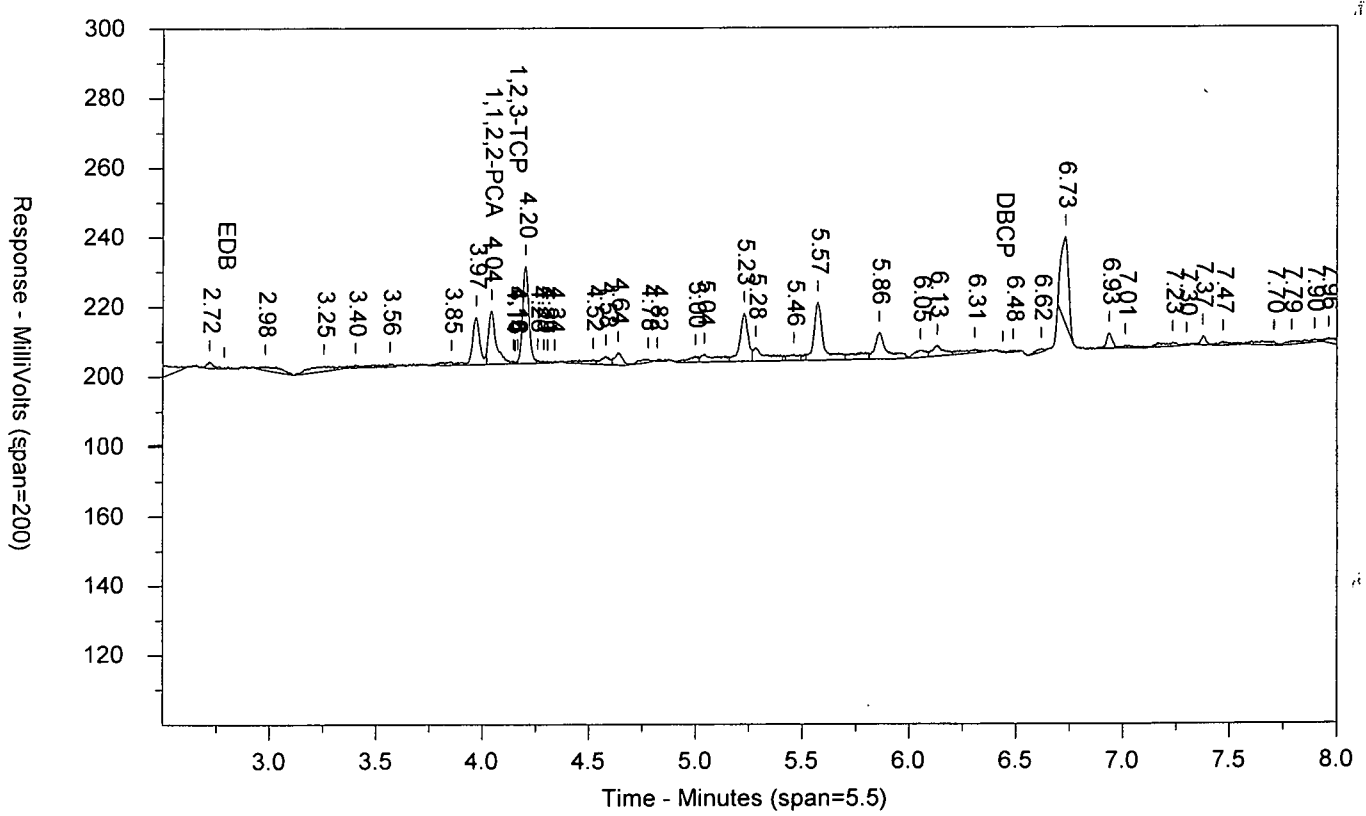

LANCASTER LABORATORIES

Sample Number: 9095984 AA18423 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 8:28:39 AM Sample Weight: 36.48
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 10833 | .051 | 1,1,2,2-PCA | 4.042 | 15373 | .053 | 1,1,2,2-PCA |
| 5.395 | 402 | .013 | 1,2,3-TCP | 4.155 | 472 | .012 | 1,2,3-TCP |
| 7.653 | 432 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.065.RAW
Area File: 18EDBS17200001B.065.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 8:37:10 AM
File Reported On: 7/20/2017 at 10:46:36 AM

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# Data Summary

**Sample Name: 9095985** 18424 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 08:44:35 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.066.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 81% ( 46 - 136 ) Conc: 0.054574

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 08:44:35 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.066.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 82% ( 46 - 136 ) Conc: 0.055152

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 11611 | 0.054574 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 321 | 0.010659 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 16067 | 0.055152 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 712 | 0.018382 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.054574 | 0.0033 | 0.0067 | 0.0067 | | 1.05 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.258 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:52

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9095985** 18424 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 08:44:35
Instrument : CP18--19846A
Result file : 18EDBS17200001.066.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 81% (46-136) Conc.: 0.054574

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 11611 | 0.054574 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 321 | 0.010659 |

## Analysis Report (B)

Injected on : Jul 20, 2017 08:44:35
Instrument : CP18--19846B
Result file : 18EDBS17200001B.066.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 82% (46-136) Conc.: 0.055152

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 16067 | 0.055152 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 712 | 0.018382 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.054574 | | | | 1.05 | |
| ☐ 1,2,3-TCP | | | <0.258 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 20 2017

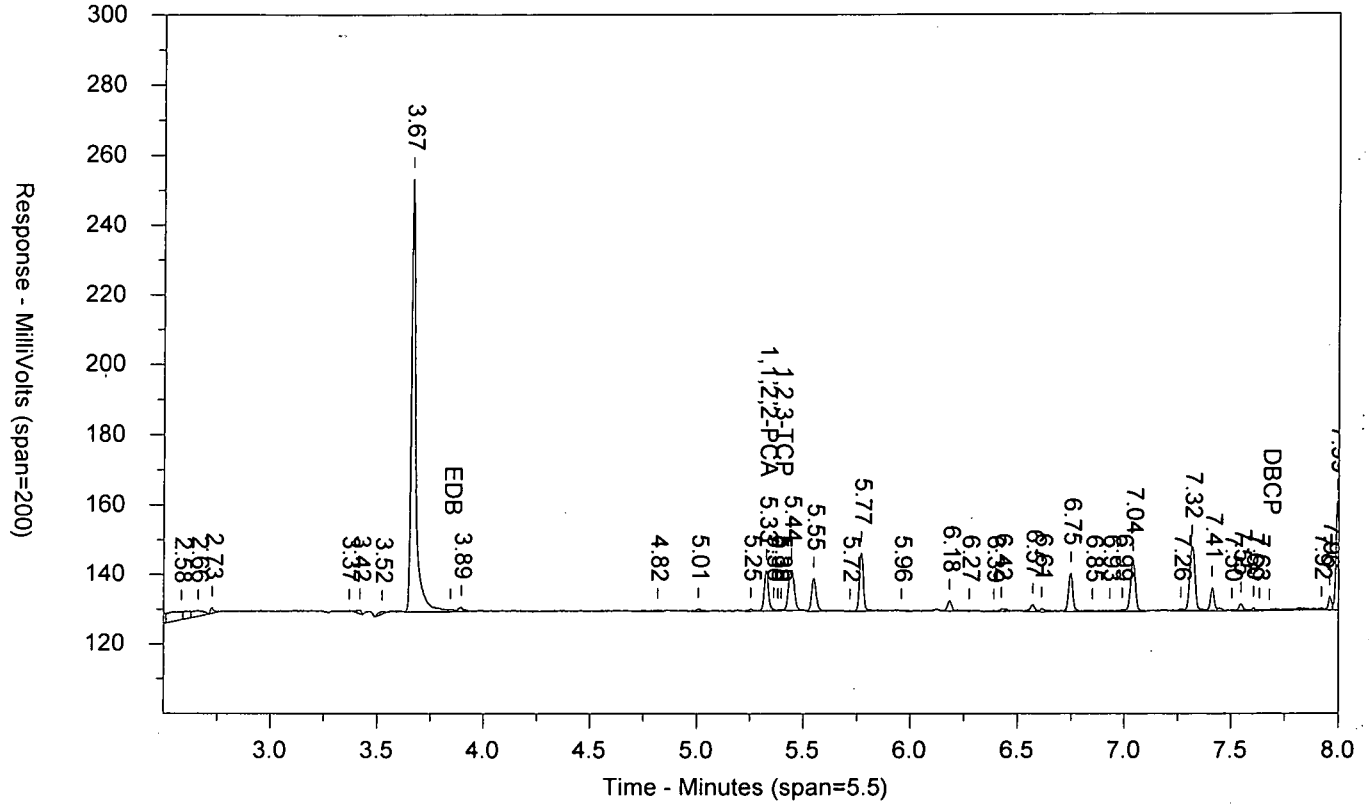
Verified by: Valerie L. Tomayko Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095985 AA18424 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.066.RAW

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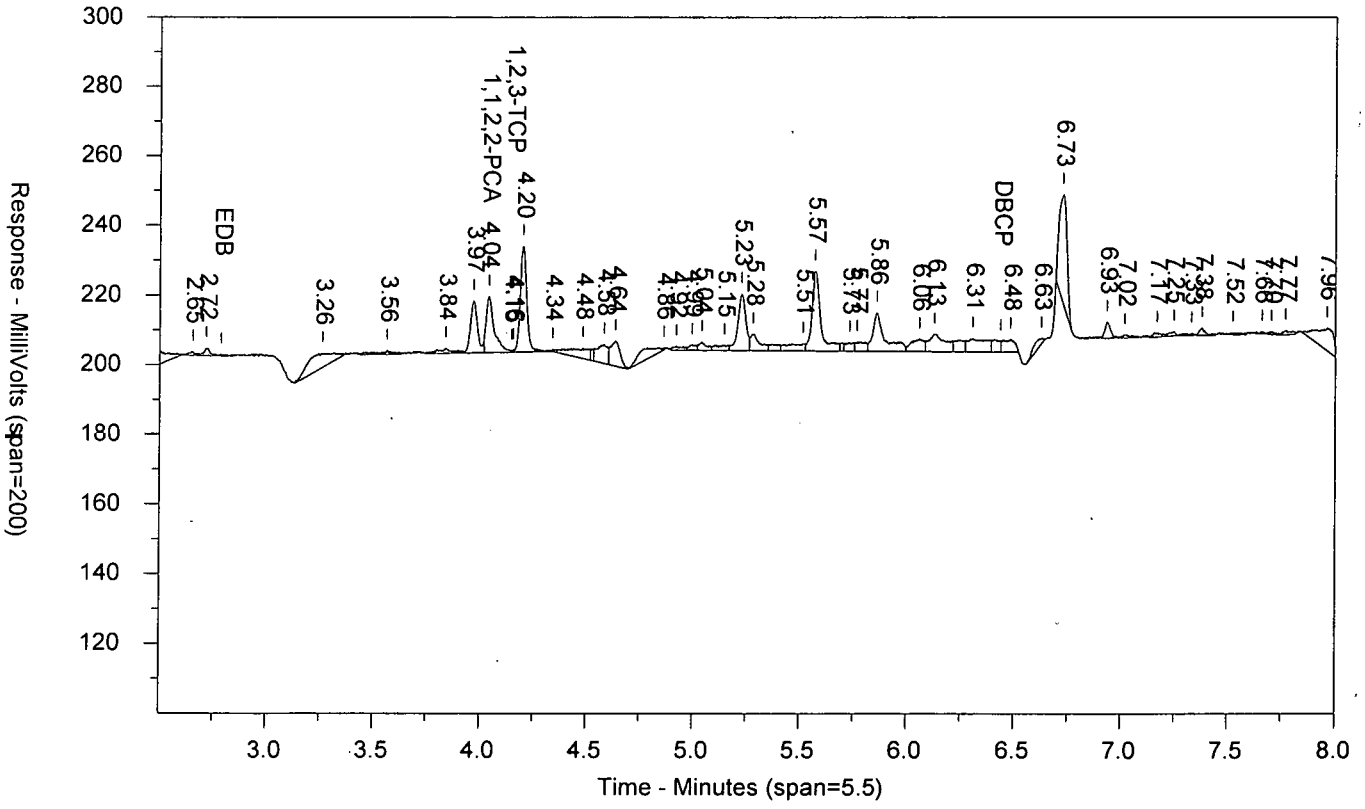


LANCASTER LABORATORIES

Sample Number: 9095985 AA18424 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 8:44:35 AM Sample Weight: 36.63
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 11611 | .055 | 1,1,2,2-PCA | 4.042 | 16067 | .055 | 1,1,2,2-PCA |
| 5.395 | 321 | .011 | 1,2,3-TCP | 4.158 | 712 | .018 | 1,2,3-TCP |

Files:
Area File: 18EDBS17200001.066.RAW
Area File: 18EDBS17200001B.066.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 8:53:10 AM
File Reported On: 7/20/2017 at 10:46:51 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095986** 18425 Sample ID: AA **Batchnumber: 171980026A**

Sample Amount: 36.17 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 09:00:29 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.067.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.063995

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 09:00:29 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.067.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.065517

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 13444 | 0.063995 |
| 1,2,3-Trichloropropane | 5.37 | 5.42 | 5.43 | 358 | 0.012041 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 18847 | 0.065517 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 924 | 0.024157 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0097 | <0.0194 | <0.029 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063995 | 0.0034 | 0.0068 | 0.0068 | | 2.35 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2613 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0097 | <0.0194 | <0.029 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:53

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9095986** 18425 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.17 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 09:00:29
Instrument : CP18--19846A
Result file : 18EDBS17200001.067.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063995

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13444 | 0.063995 |
| **1,2,3-TCP** | 5.37 | 5.42 | 5.43 | 358 | 0.012041 |

## Analysis Report (B)

Injected on : Jul 20, 2017 09:00:29
Instrument : CP18--19846B
Result file : 18EDBS17200001B.067.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.065517

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 18847 | 0.065517 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 924 | 0.024157 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.029 | <0.0097 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063995 | | | | 2.35 | |
| ☐ 1,2,3-TCP | | | <0.2613 | <0.0968 | | | |
| ☐ DBCP | | | <0.029 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 20 2017

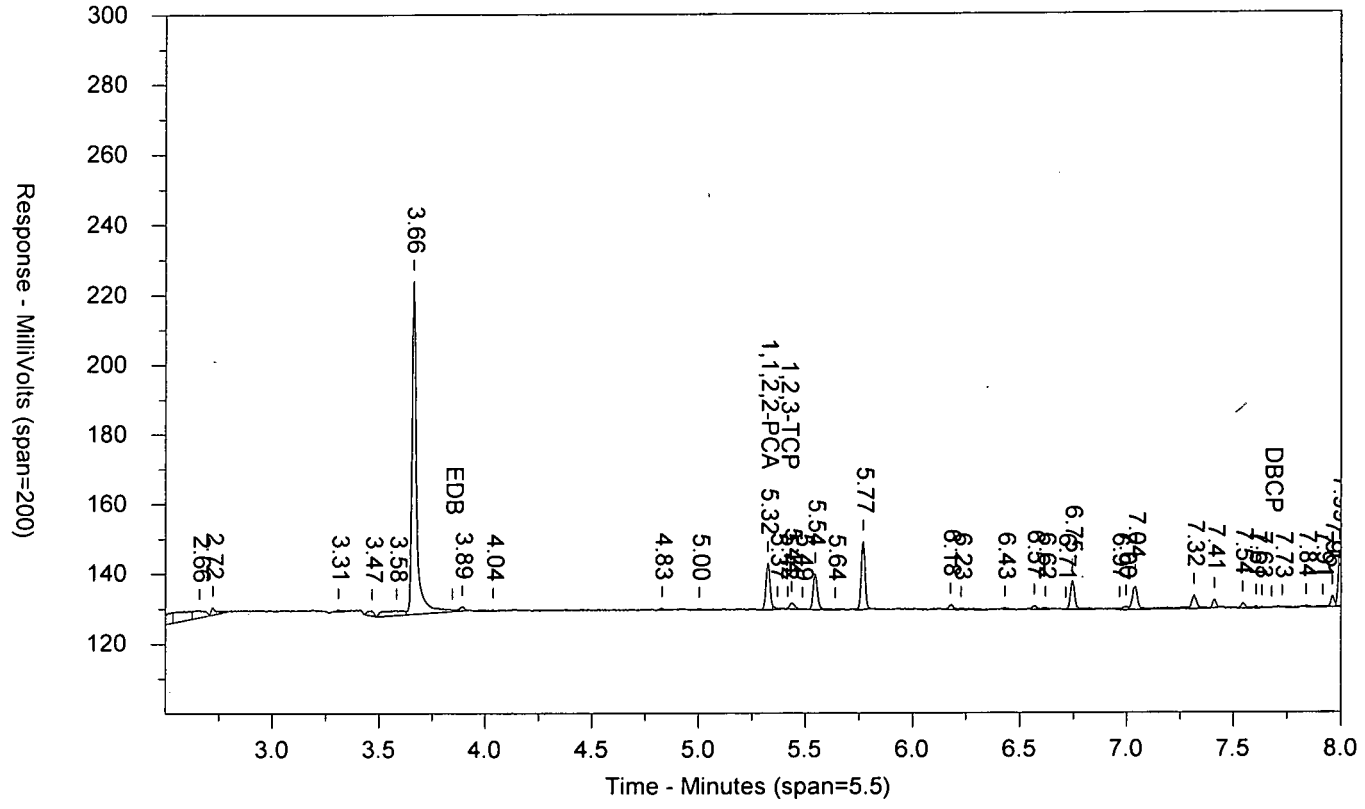
Verified by: Valerie L. Tomayko Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095986 AA18425 T 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.067.RAW

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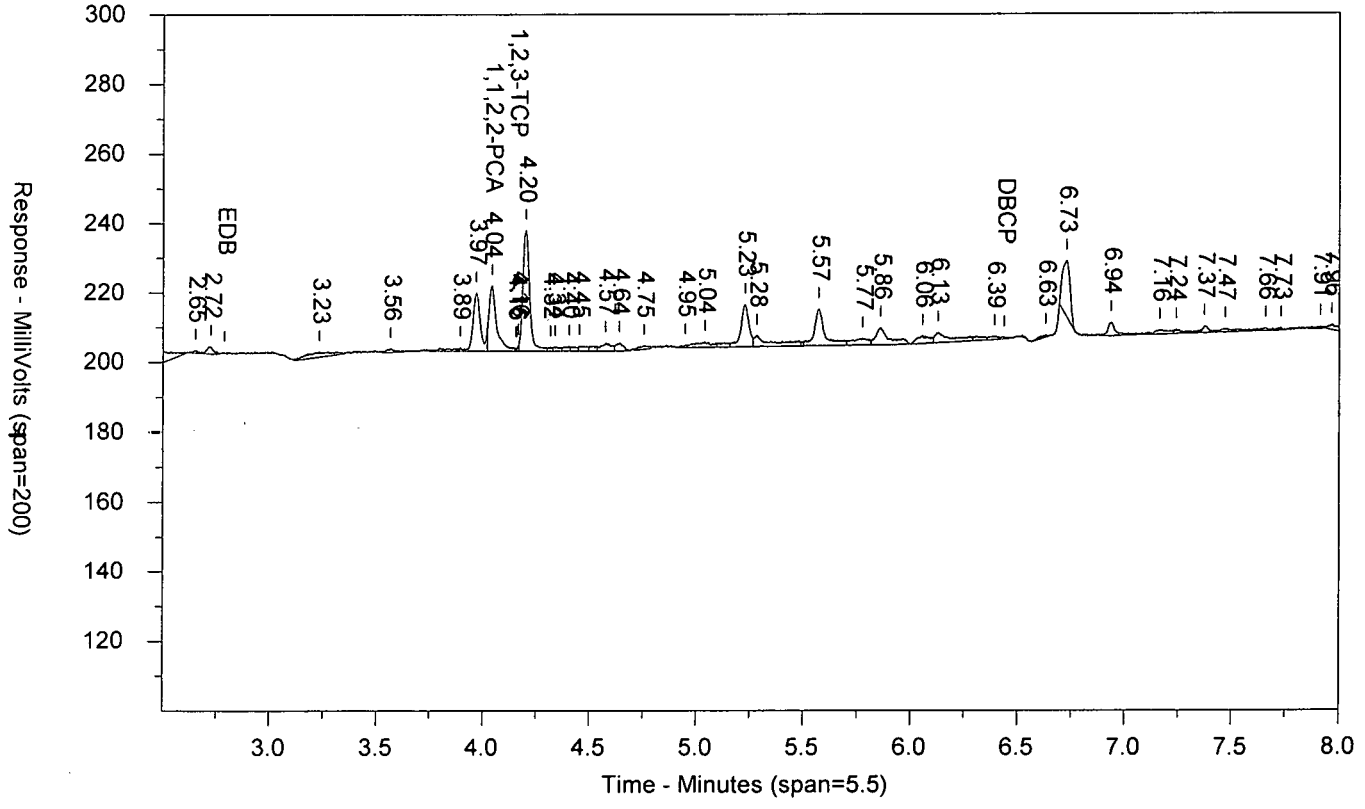

LANCASTER LABORATORIES

Sample Number: 9095986 AA18425 T 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 9:00:29 AM Sample Weight: 36.17
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.323 | 13444 | .064 | 1,1,2,2-PCA | 4.042 | 18847 | .066 | 1,1,2,2-PCA |
| 5.418 | 358 | .012 | 1,2,3-TCP | 4.158 | 924 | .024 | 1,2,3-TCP |

Files:
Area File: 18EDBS17200001.067.RAW
Area File: 18EDBS17200001B.067.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 9:09:03 AM
File Reported On: 7/20/2017 at 10:47:09 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17200001.seq

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Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 69

| | Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1719999999 | |
| 2 | EIBKX1724C | 2 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1719999999 | 10398 |
| 3 | EDB_11724DR | 3 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 1 | 1719999999 | 10398 |
| 4 | EDB_21724DR | 4 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 2 | 1719999999 | 10398 |
| 5 | EDB_31724DR | 5 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 3 | 1719999999 | 10398 |
| 6 | EDB_41724DR | 6 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 4 | 1719999999 | 10398 |
| 7 | EDB_51724DR | 7 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 5 | 1719999999 | 10398 |
| 8 | EDB_61724DR | 8 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 6 | 1719999999 | 10398 |
| 9 | MDEDX1724DR | 9 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1719999999 | 10398 |
| 10 | EDB_31724DR | 10 | CCAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1719999999 | 10398 |
| 11 | EIBKX1724C | 11 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1719999999 | 10398 |
| 12 | BLANKA 7/18/17 | 12 | BLK | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 171980027A | 10398 |
| 13 | LCSA 7/18/17 | 13 | LCS | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 171980027A | 10398 |
| 14 | LCSDA 7/18/17 | 14 | LCSD | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 171980027A | 10398 |
| 15 | 9091215 | 15 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.38 | 2 | 1 | 0 | 171980027A | 10398 |
| 16 | 9091216 | 16 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.34 | 2 | 1 | 0 | 171980027A | 10398 |
| 17 | 9091217 | 17 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.34 | 2 | 1 | 0 | 171980027A | 10398 |
| 18 | 9098289 | 18 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.1 | 2 | 1 | 0 | 171980027A | 10398 |
| 19 | 9098290 | 19 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.24 | 2 | 1 | 0 | 171980027A | 10398 |
| 20 | 9098291 | 20 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.24 | 2 | 1 | 0 | 171980027A | 10398 |
| 21 | 9098292MS | 21 | MS | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 34.99 | 2 | 1 | 0 | 171980027A | 10398 |
| 22 | EDB_51724DR | 22 | CCAL | LQ | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1719899999 | 10398 |
| 23 | EIBKX1724C | 23 | PIBLK | OT | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1719899999 | 10398 |
| 24 | 9098293MSD | 24 | MSD | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.49 | 2 | 1 | 0 | 171980027A | 10398 |
| 25 | 9098294 | 25 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.3 | 2 | 1 | 0 | 171980027A | 10398 |
| 26 | 9098295 | 26 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.12 | 2 | 1 | 0 | 171980027A | 10398 |
| 27 | 9102847 | 27 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.12 | 2 | 1 | 0 | 171980027A | 10398 |
| 28 | 9102848 | 28 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 34.94 | 2 | 1 | 0 | 171980027A | 10398 |
| 29 | 9102849 | 29 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.43 | 2 | 1 | 0 | 171980027A | 10398 |
| 30 | 9103537 | 30 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.02 | 2 | 1 | 0 | 171980027A | 10398 |
| 31 | 9103538 | 31 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.67 | 2 | 1 | 0 | 171980027A | 10398 |
| 32 | 9103539 | 32 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.84 | 2 | 1 | 0 | 171980027A | 10398 |
| 33 | 9103540 | 33 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.97 | 2 | 1 | 0 | 171980027A | 10398 |
| 34 | EDB_41724DR | 34 | CCAL | QI | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1719899999 | 10398 |
| 35 | EIBKX1724C | 35 | PIBLK | OU | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1719899999 | 10398 |
| 36 | 9104426 | 36 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 34.25 | 2 | 1 | 0 | 171980027A | 10398 |
| 37 | 9104427 | 37 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 34.43 | 2 | 1 | 0 | 171980027A | 10398 |
| 38 | 9105157 | 38 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.12 | 2 | 1 | 0 | 171980027A | 10398 |
| 39 | BLANKA 7/18/17 | 39 | BLK | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 171980026A | 10398 |
| 40 | LCSA 7/18/17 | 40 | LCS | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 171980026A | 10398 |
| 41 | LCSDA 7/18/17 | 41 | LCSD | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 171980026A | 10398 |
| 42 | 9095954 | 42 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.64 | 2 | 1 | 0 | 171980026A | 10398 |
| 43 | 9095955 | 43 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.61 | 2 | 1 | 0 | 171980026A | 10398 |
| 44 | 9095956 | 44 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.6 | 2 | 1 | 0 | 171980026A | 10398 |
| 45 | 9095957 | 45 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.29 | 2 | 1 | 0 | 171980026A | 10398 |
| 46 | EDB_31724DR | 46 | CCAL | OY | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1719899999 | 10398 |
| 47 | EIBKX1724C | 47 | PIBLK | OV | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1719899999 | 10398 |
| 48 | 9095958 | 48 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.35 | 2 | 1 | 0 | 171980026A | 10398 |
| 49 | 9095959 | 49 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35.86 | 2 | 1 | 0 | 171980026A | 10398 |
| 50 | 9095960 | 50 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.3 | 2 | 1 | 0 | 171980026A | 10398 |

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## CHROM PERFECT SEQUENCE FILE

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Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 69

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 51 9095961MS | 51 | MS | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.67 | 2 | 1 | 0 | 171980026A | 10398 |
| 52 9095962MSD | 52 | MSD | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.72 | 2 | 1 | 0 | 171980026A | 10398 |
| 53 9095963 | 53 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.27 | 2 | 1 | 0 | 171980026A | 10398 |
| 54 9095964 | 54 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.72 | 2 | 1 | 0 | 171980026A | 10398 |
| 55 9095965 | 55 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.01 | 2 | 1 | 0 | 171980026A | 10398 |
| 56 9095966 | 56 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.38 | 2 | 1 | 0 | 171980026A | 10398 |
| 57 9095968 | 57 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.34 | 2 | 1 | 0 | 171980026A | 10398 |
| 58 EDB_51724DR | 58 | CCAL | LR | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1719899999 | 10398 |
| 59 EIBKX1724C | 59 | PIBLK | OW | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1719899999 | 10398 |
| 60 9095970 | 60 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.77 | 2 | 1 | 0 | 171980026A | 10398 |
| 61 9095980 | 61 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.29 | 2 | 1 | 0 | 171980026A | 10398 |
| 62 9095981 | 62 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.53 | 2 | 1 | 0 | 171980026A | 10398 |
| 63 9095982 | 63 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.45 | 2 | 1 | 0 | 171980026A | 10398 |
| 64 9095983 | 64 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.3 | 2 | 1 | 0 | 171980026A | 10398 |
| 65 9095984 | 65 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.48 | 2 | 1 | 0 | 171980026A | 10398 |
| 66 9095985 | 66 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.63 | 2 | 1 | 0 | 171980026A | 10398 |
| 67 9095986 | 67 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.17 | 2 | 1 | 0 | 171980026A | 10398 |
| 68 EDB_41724DR | 68 | CCAL | QJ | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1719899999 | 10398 |
| 69 EIBKX1724C | 69 | PIBLK | OX | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1719899999 | 10398 |

VOC9051
7/20/17

Heather Miller
Heather M. Miller
Chemist

JUL 19 2017

Set-up by: _____ Date: _____

7/19/2017

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

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Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 4 CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 5 EIBKX1724C | 5 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 6 EDB_11724DS | 6 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 1 | 1720199999 | |
| 7 EDB_21724DS | 7 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 2 | 1720199999 | |
| 8 EDB_31724DS | 8 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 3 | 1720199999 | |
| 9 EDB_41724DS | 9 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 4 | 1720199999 | |
| 10 EDB_51724DS | 10 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 5 | 1720199999 | |
| 11 EDB_61724DS | 11 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 6 | 1720199999 | |
| 12 MDEDX1724DS | 12 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 13 EDB_31724DS | 13 | CCAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 14 EIBKX1724C | 14 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 15 BLANKA 7/21/17 | 15 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 16 LCSA 7/21/17 | 16 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 17 LCSDA 7/21/17 | 17 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 18 9095972 | 18 | T | AA | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010025A | 10398 |
| 19 9100482 | 19 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 20 9100483 | 20 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010025A | 10398 |
| 21 9100485 | 21 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 22 9100487 | 22 | T | AA | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010025A | 10398 |
| 23 9100489 | 23 | T | AA | 16EDBS.MET | 36.84 | 2 | 1 | 0 | 172010025A | 10398 |
| 24 9100491 | 24 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 25 EDB_51724DS | 25 | CCAL | LS | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 26 EIBKX1724C | 26 | PIBLK | SC | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 27 9100492 | 27 | T | AA | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010025A | 10398 |
| 28 9100493 | 28 | T | AA | 16EDBS.MET | 36.82 | 2 | 1 | 0 | 172010025A | 10398 |
| 29 9100494 | 29 | T | AA | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010025A | 10398 |
| 30 9100495 | 30 | T | AA | 16EDBS.MET | 36.76 | 2 | 1 | 0 | 172010025A | 10398 |
| 31 9100496 | 31 | T | AA | 16EDBS.MET | 36.83 | 2 | 1 | 0 | 172010025A | 10398 |
| 32 9107402 | 32 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 33 9107403 | 33 | T | AA | 16EDBS.MET | 36.65 | 2 | 1 | 0 | 172010025A | 10398 |
| 34 9107404 | 34 | T | AA | 16EDBS.MET | 37.04 | 2 | 1 | 0 | 172010025A | 10398 |
| 35 9107405 | 35 | T | AA | 16EDBS.MET | 37.01 | 2 | 1 | 0 | 172010025A | 10398 |
| 36 9107406 | 36 | T | AA | 16EDBS.MET | 36.48 | 2 | 1 | 0 | 172010025A | 10398 |
| 37 EDB_41724DS | 37 | CCAL | QK | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 38 EIBKX1724C | 38 | PIBLK | SD | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 39 9107407 | 39 | T | AA | 16EDBS.MET | 36.73 | 2 | 1 | 0 | 172010025A | 10398 |
| 40 9109771 | 40 | T | AA | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010025A | 10398 |
| 41 9109772MS | 41 | MS | AA | 16EDBS.MET | 37.02 | 2 | 1 | 0 | 172010025A | 10398 |
| 42 9109773MSD | 42 | MSD | AA | 16EDBS.MET | 36.96 | 2 | 1 | 0 | 172010025A | 10398 |
| 43 9109779 | 43 | T | AA | 16EDBS.MET | 36.35 | 2 | 1 | 0 | 172010025A | 10398 |
| 44 BLANKA 7/21/17 | 44 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 45 LCSA 7/21/17 | 45 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 46 LCSDA 7/21/17 | 46 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 47 9098344 | 47 | T | AA | 16EDBS.MET | 36.51 | 2 | 1 | 0 | 172010021A | 10398 |
| 48 9098345 | 48 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010021A | 10398 |
| 49 EDB_31724DS | 49 | CCAL | PB | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 50 EIBKX1724C | 50 | PIBLK | SE | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

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Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

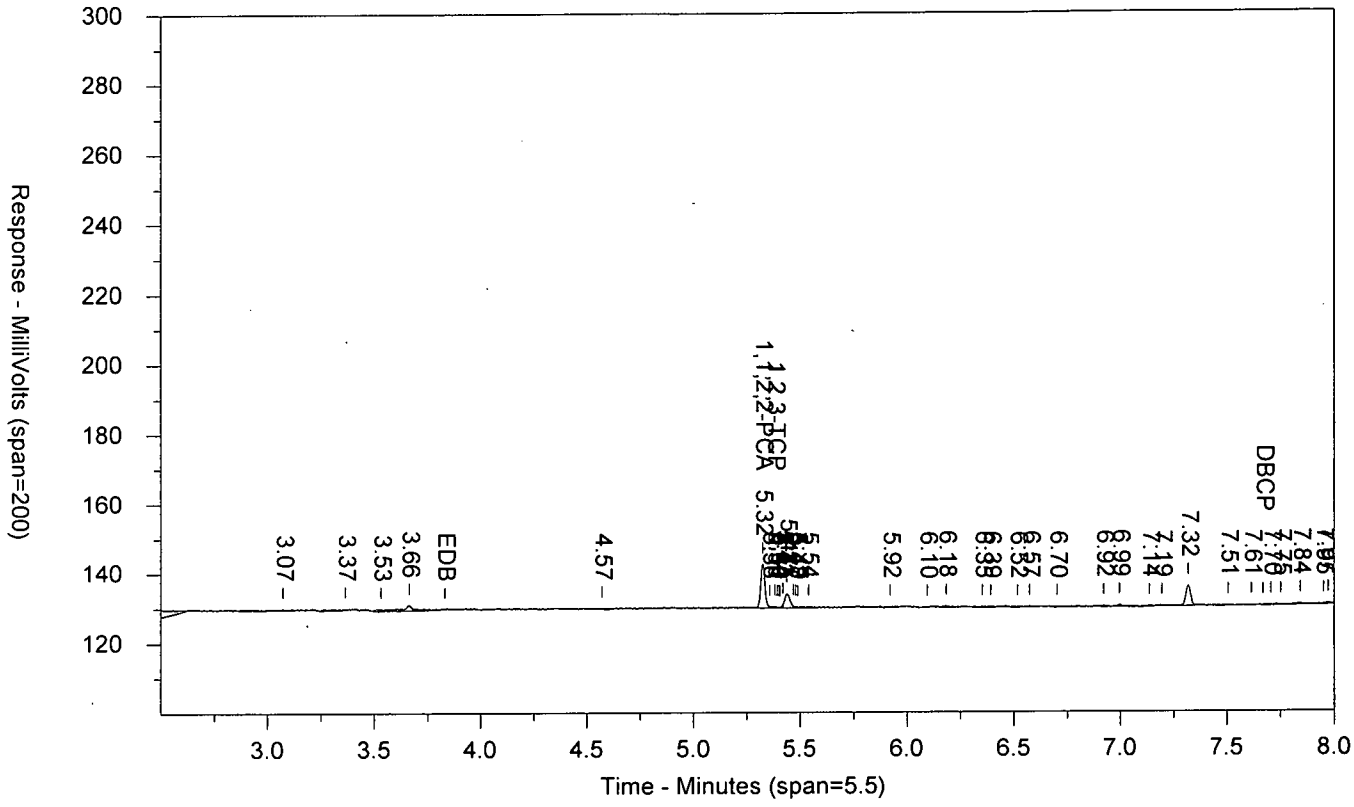
| Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 9098346 | 51 | T | AA | | 16EDBS.MET | 36.12 | 2 | 1 | 0 | 172010021A | 10398 |
| 52 9098347 | 52 | T | AA | | 16EDBS.MET | 36.56 | 2 | 1 | 0 | 172010021A | 10398 |
| 53 9098348 | 53 | T | AA | | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010021A | 10398 |
| 54 9098349 | 54 | T | AA | | 16EDBS.MET | 36.66 | 2 | 1 | 0 | 172010021A | 10398 |
| 55 9098350MS | 55 | MS | AA | | 16EDBS.MET | 36.45 | 2 | 1 | 0 | 172010021A | 10398 |
| 56 9098351MSD | 56 | MSD | AA | | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010021A | 10398 |
| 57 9098352 | 57 | T | AA | | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010021A | 10398 |
| 58 9098353 | 58 | T | AA | | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010021A | 10398 |
| 59 9098354 | 59 | T | AA | | 16EDBS.MET | 36.9 | 2 | 1 | 0 | 172010021A | 10398 |
| 60 9098355 | 60 | T | AA | | 16EDBS.MET | 36.42 | 2 | 1 | 0 | 172010021A | 10398 |
| 61 EDB_51724DS | 61 | CCAL | LT | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 62 EIBKX1724C | 62 | PIBLK | SF | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 63 9098356 | 63 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 64 9098357 | 64 | T | AA | | 16EDBS.MET | 36.77 | 2 | 1 | 0 | 172010021A | 10398 |
| 65 9098358 | 65 | T | AA | | 16EDBS.MET | 37.09 | 2 | 1 | 0 | 172010021A | 10398 |
| 66 9098359 | 66 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 67 9098360 | 67 | T | AA | | 16EDBS.MET | 36.6 | 2 | 1 | 0 | 172010021A | 10398 |
| 68 9098361 | 68 | T | AA | | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010021A | 10398 |
| 69 9098362 | 69 | T | AA | | 16EDBS.MET | 36.39 | 2 | 1 | 0 | 172010021A | 10398 |
| 70 9098363 | 70 | T | AA | | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010021A | 10398 |
| 71 9100479 | 71 | T | AA | | 16EDBS.MET | 36.55 | 2 | 1 | 0 | 172010021A | 10398 |
| 72 9100481 | 72 | T | AA | | 16EDBS.MET | 36.13 | 2 | 1 | 0 | 172010021A | 10398 |
| 73 EDB_41724DS | 73 | CCAL | QL | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 74 EIBKX1724C | 74 | PIBLK | SG | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

Set-up by: _____ Date: 7/21/17

7/21/2017

EIBKX1724C AAPIBLKAA PIBLK1719999999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.002.RAW

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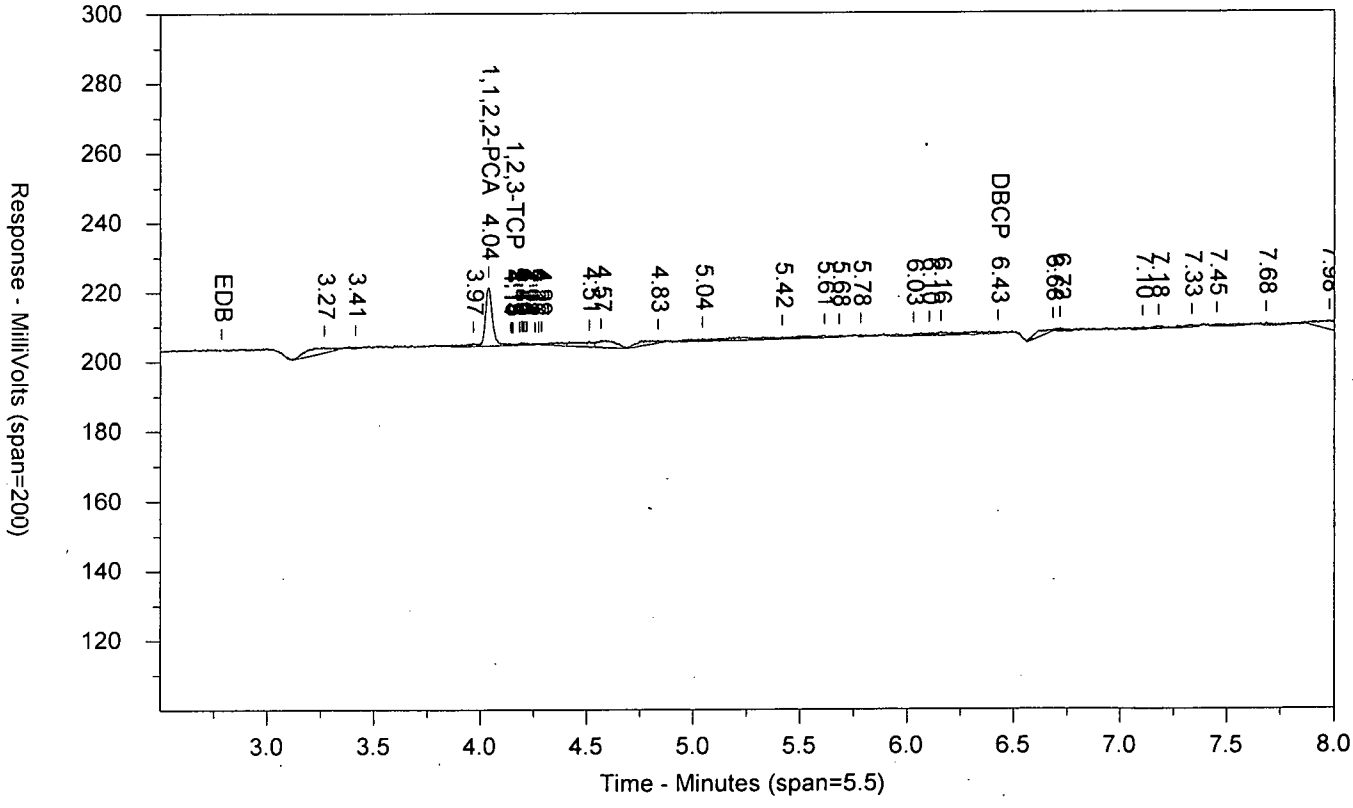


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1719999999 10398 SW-846 8011
Injected On: 7/19/2017 3:43:17 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

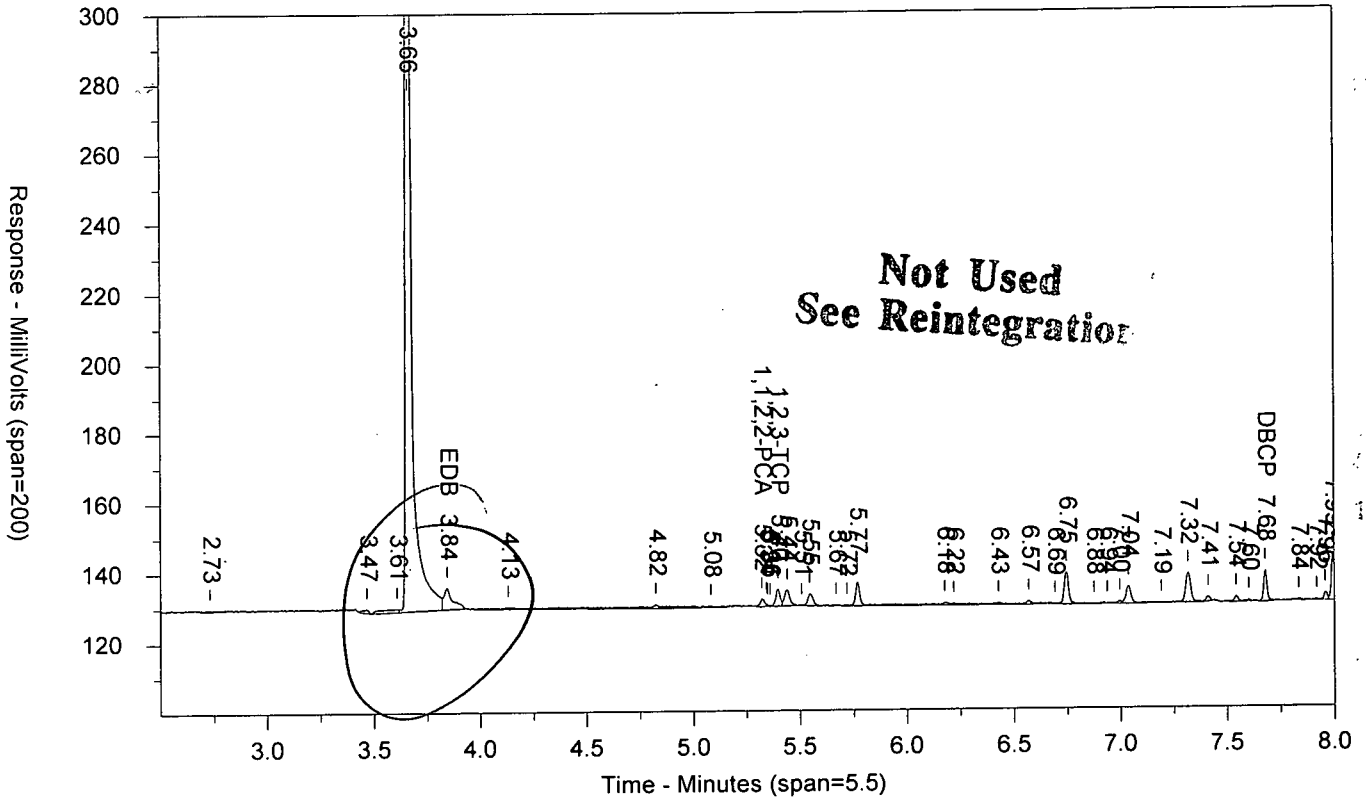
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 12779 | .053 | 1,1,2,2-PCA | 4.039 | 16714 | .049 | 1,1,2,2-PCA |
| 5.381 | 557 | -.055 | 1,2,3-TCP | 4.155 | 450 | .01 | 1,2,3-TCP |
| | 0 | | DBCP | 6.428 | 767 | .001 | DBCP |

Files:
Area File: 18EDBS17200001.002.RAW
Area File: 18EDBS17200001B.002.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 3:51:50 PM
File Reported On: 7/19/2017 at 5:47:06 PM

EDB_11724DR AAEDB_1AA ICAL 1719999999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.003.RAW

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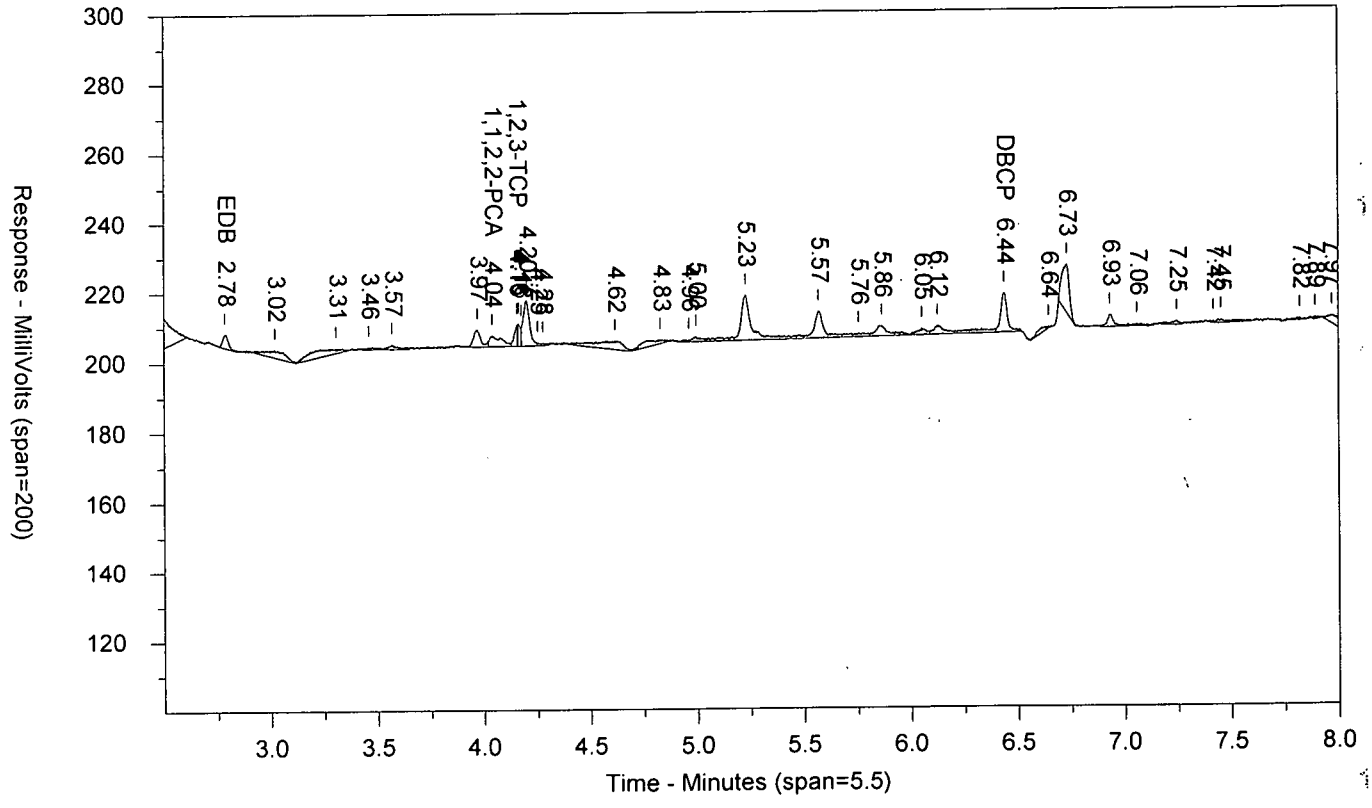


LANCASTER LABORATORIES

Sample Number: EDB_11724DR AAEDB_1AA ICAL 1719999999 10398 SW-846 8011
Injected On: 7/19/2017 3:59:17 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

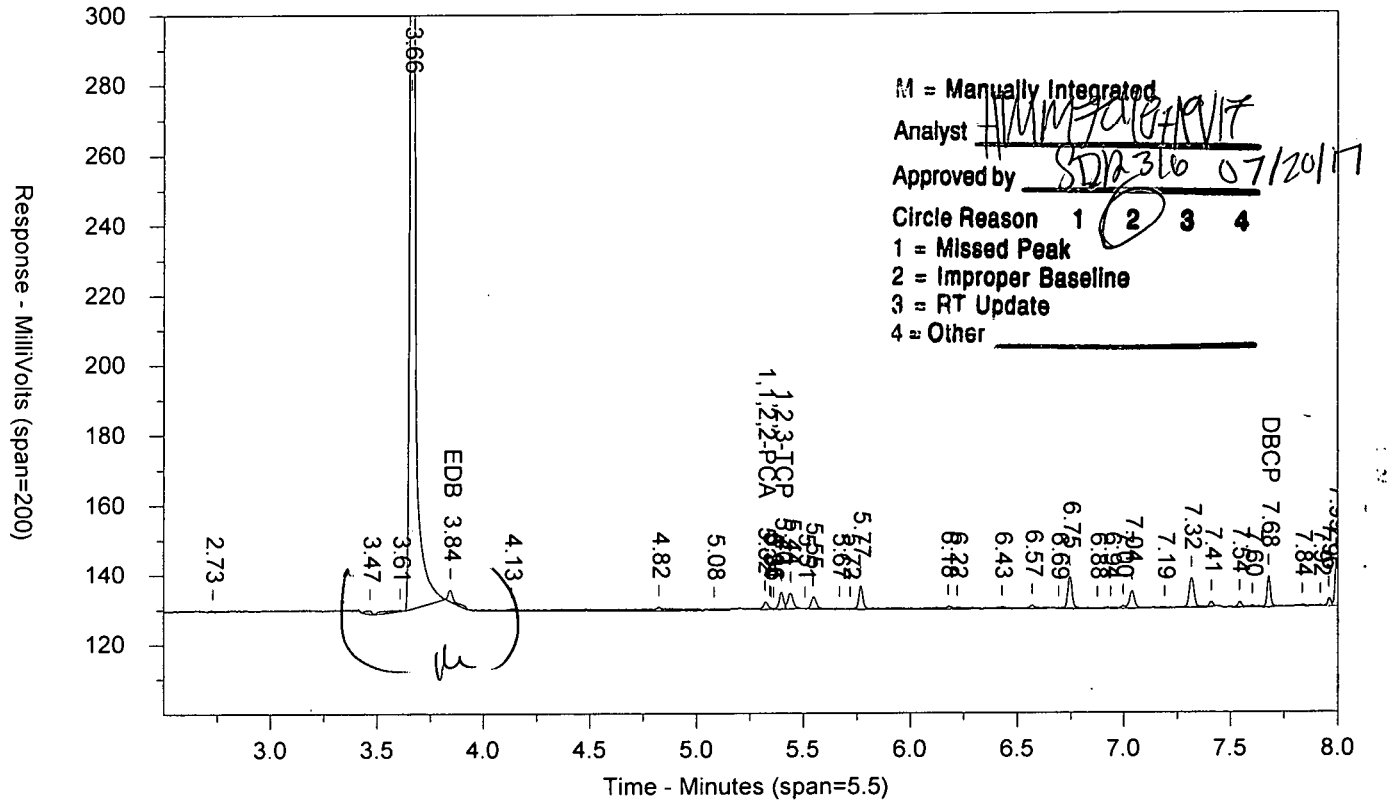
| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 6119 | .38 | EDB | 2.784 | 3842 | .222 | EDB |
| 5.321 | 2204 | .161 | 1,1,2,2-PCA | 4.04 | 3119 | .161 | 1,1,2,2-PCA |
| 5.397 | 4882 | 1.684 | 1,2,3-TCP | 4.154 | 6127 | 2.306 | 1,2,3-TCP |
| 7.679 | 8944 | .341 | DBCP | 6.436 | 11303 | .332 | DBCP |

Files:
Area File: 18EDBS17200001.003.RAW
Area File: 18EDBS17200001B.003.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 4:07:50 PM
File Reported On: 7/19/2017 at 5:47:22 PM

Not Used
See Reintegration

EDB_11724DR AAEDB_1AA ICAL 1719999999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.003.BND

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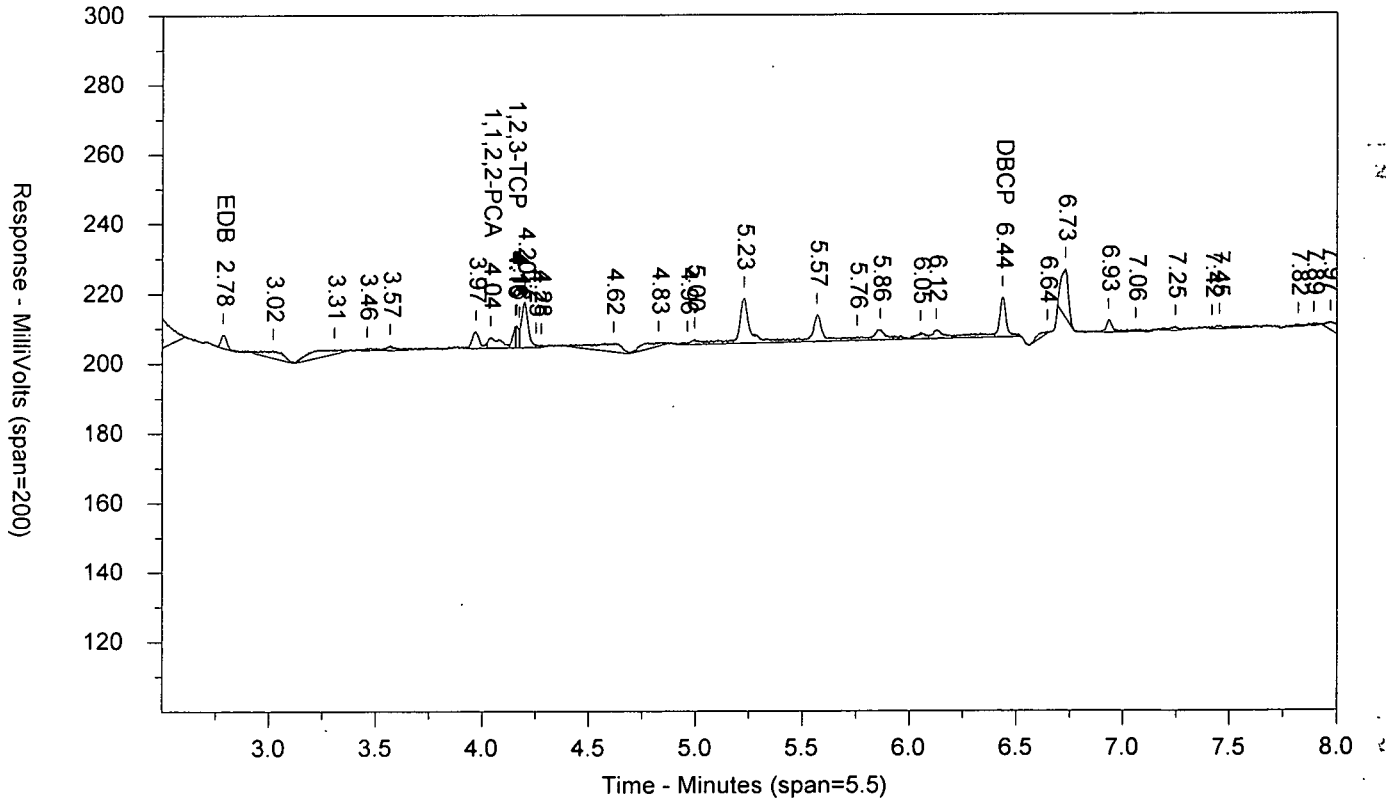

LANCASTER LABORATORIES

Sample Number: EDB_11724DR AAEDB_1AA ICAL 1719999999 10398 SW-846 8011
Injected On: 7/19/2017 3:59:17 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 3413 | .04 | EDB | 2.784 | 3842 | .222 | EDB |
| 5.321 | 2204 | .19 | 1,1,2,2-PCA | 4.04 | 3119 | .161 | 1,1,2,2-PCA |
| 5.397 | 4882 | 1.79 | 1,2,3-TCP | 4.154 | 6127 | 2.306 | 1,2,3-TCP |
| 7.679 | 8944 | .374 | DBCP | 6.436 | 11303 | .332 | DBCP |

Files:
Area File: 18EDBS17200001.003.BND
Area File: 18EDBS17200001B.003.BND
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 5:55:16 PM
File Reported On: 7/19/2017 at 5:55:53 PM

EDB_21724DR AAEDB_2AA ICAL 1719999999 10398 SW-846 8011

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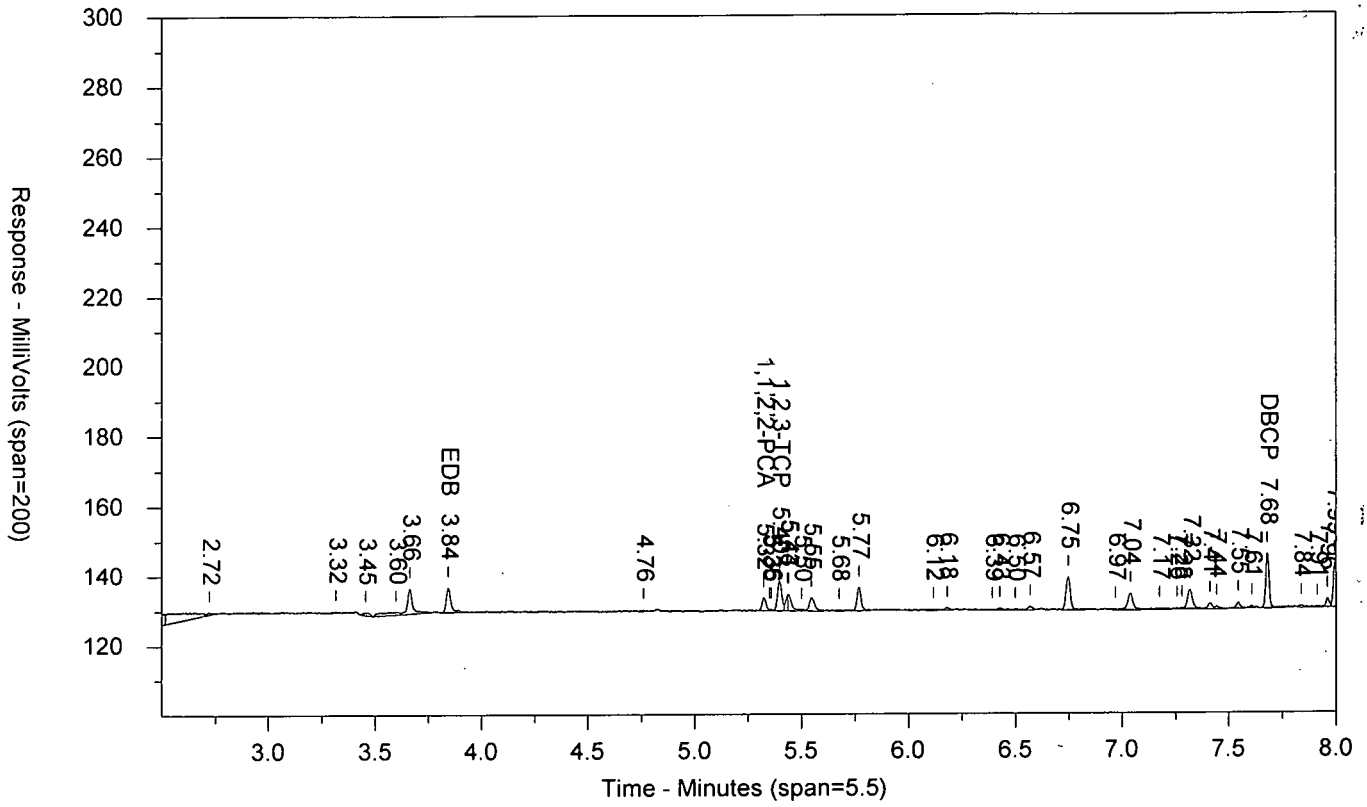


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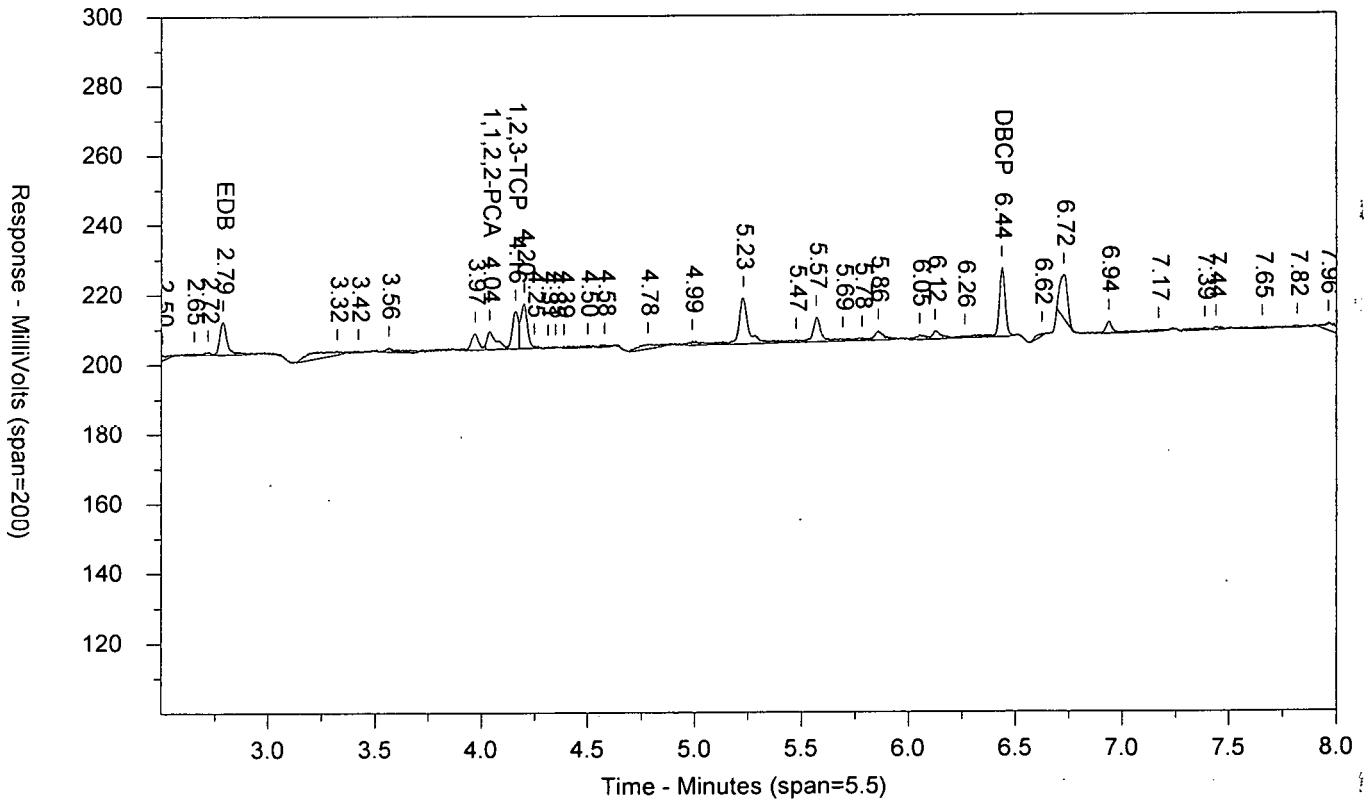


LANCASTER LABORATORIES

Sample Number: EDB_21724DR AAEDB_2AA ICAL 1719999999 10398 SW-846 8011
Injected On: 7/19/2017 4:15:20 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

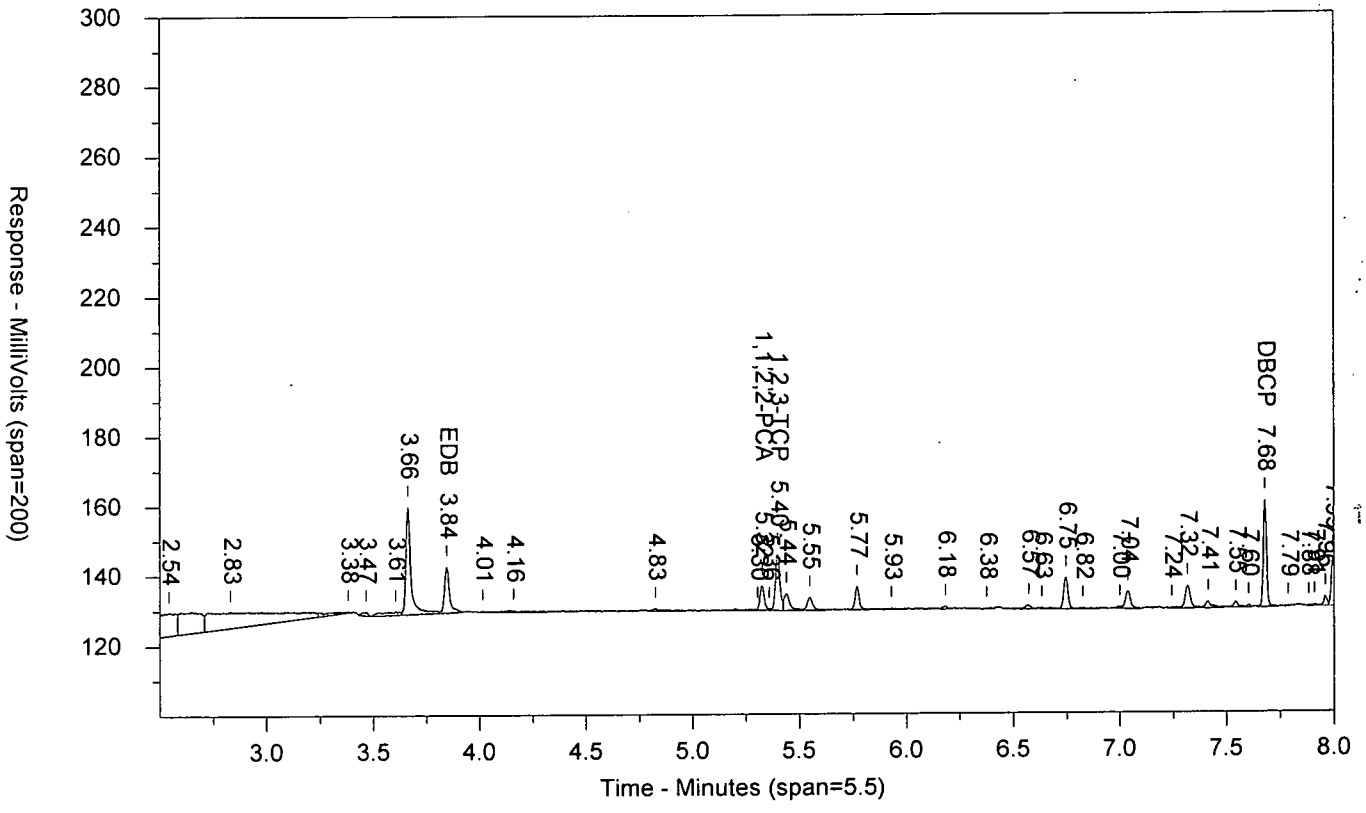
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 7117 | .442 | EDB | 2.787 | 9430 | .59 | EDB |
| 5.322 | 3779 | .287 | 1,1,2,2-PCA | 4.038 | 5197 | .278 | 1,1,2,2-PCA |
| 5.396 | 8450 | 4.065 | 1,2,3-TCP | 4.159 | 10714 | 4.243 | 1,2,3-TCP |
| 7.678 | 15741 | .612 | DBCP | 6.435 | 19793 | .598 | DBCP |

Files:
Area File: 18EDBS17200001.004.RAW
Area File: 18EDBS17200001B.004.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 4:23:54 PM
File Reported On: 7/19/2017 at 5:47:36 PM

EDB_31724DR AAEDB_3AA ICAL 1719999999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.005.RAW

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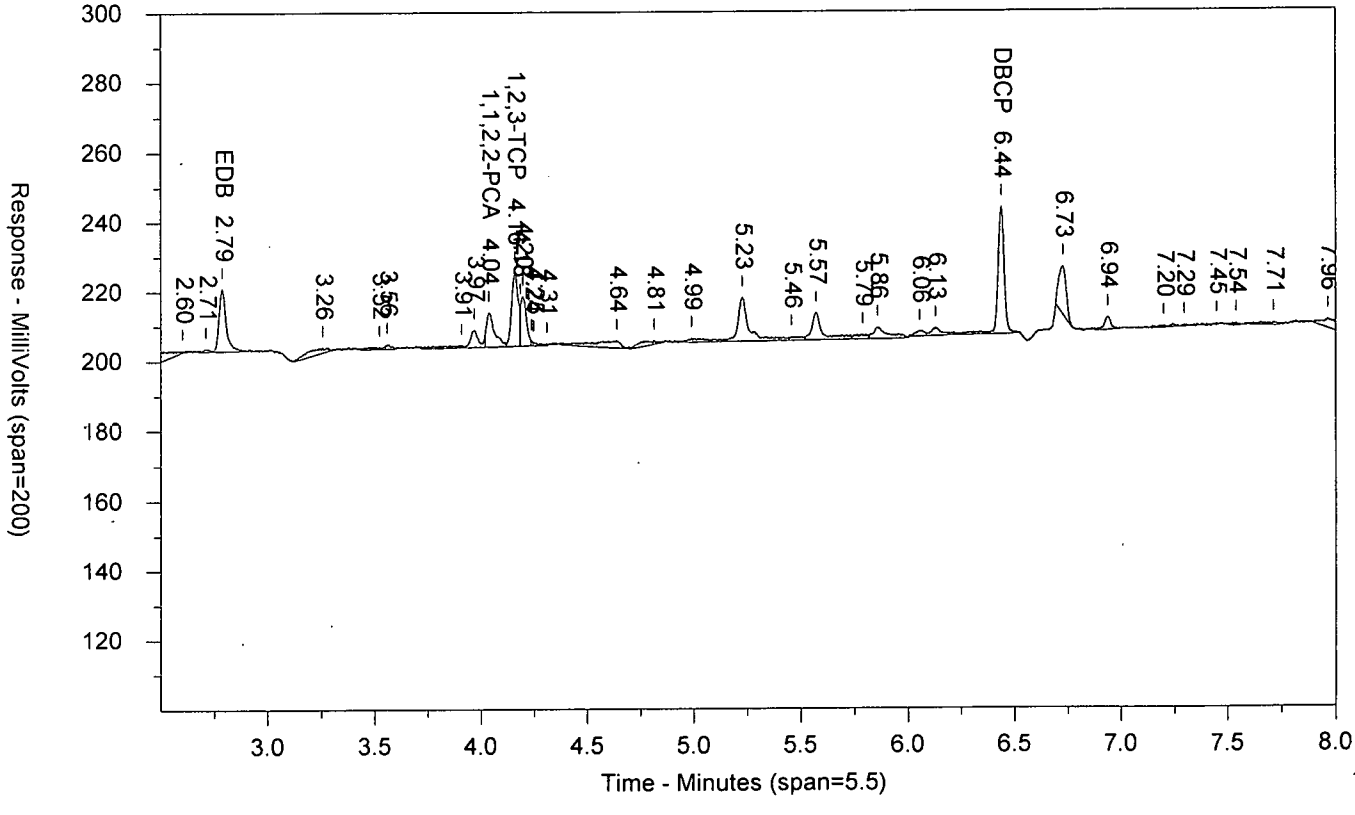


LANCASTER LABORATORIES

Sample Number: EDB_31724DR AAEDB_3AA ICAL 1719999999 10398 SW-846 8011
Injected On: 7/19/2017 4:31:19 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

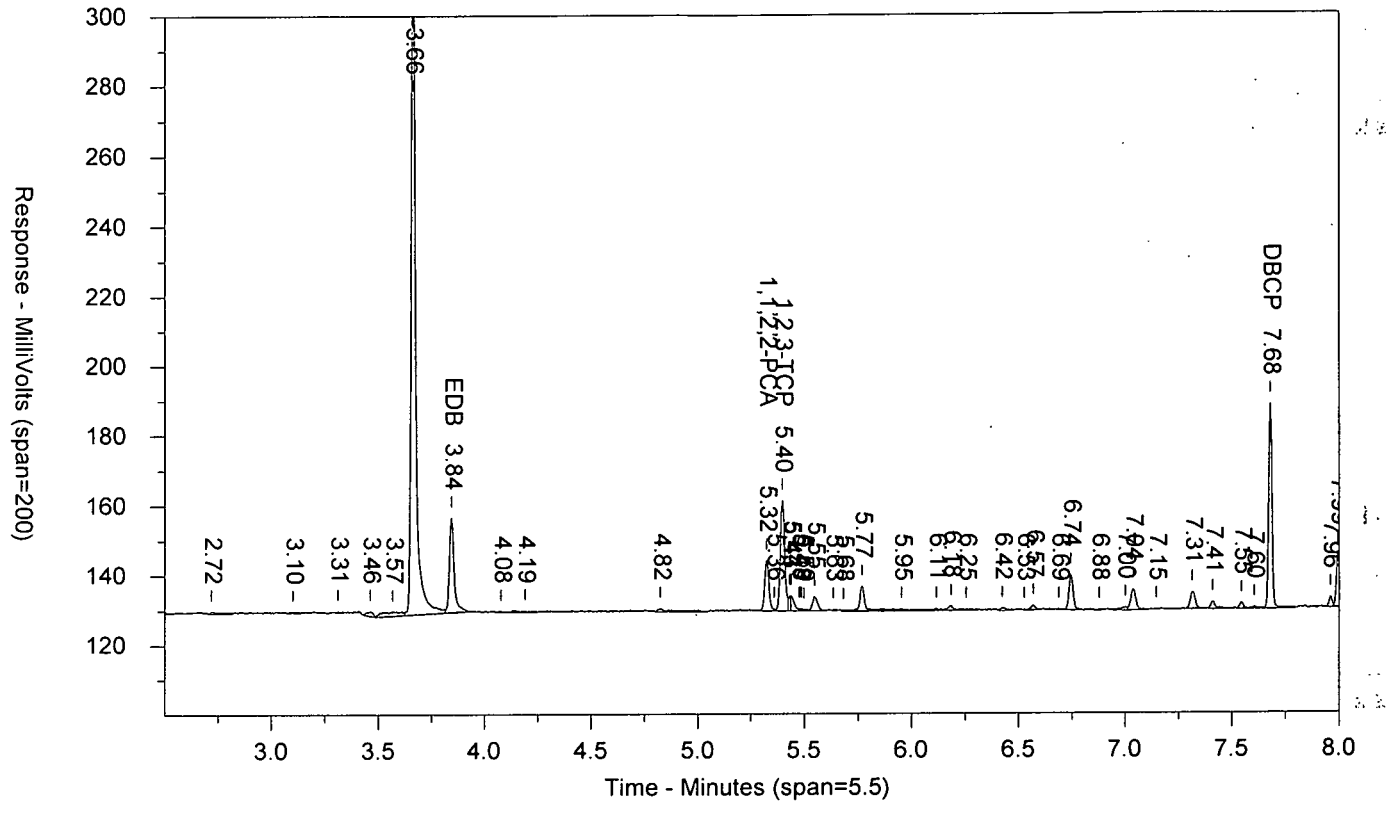
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 13150 | 1.038 | EDB | 2.787 | 18097 | 1.177 | EDB |
| 5.325 | 7037 | .552 | 1,1,2,2-PCA | 4.038 | 9949 | .552 | 1,1,2,2-PCA |
| 5.397 | 16016 | 8.815 | 1,2,3-TCP | 4.161 | 21150 | 8.748 | 1,2,3-TCP |
| 7.678 | 30731 | 1.213 | DBCP | 6.437 | 36705 | 1.141 | DBCP |

Files:
Area File: 18EDBS17200001.005.RAW
Area File: 18EDBS17200001B.005.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 4:39:54 PM
File Reported On: 7/19/2017 at 5:47:54 PM

EDB_41724DR AAEDB_4AA ICAL 1719999999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.006.RAW

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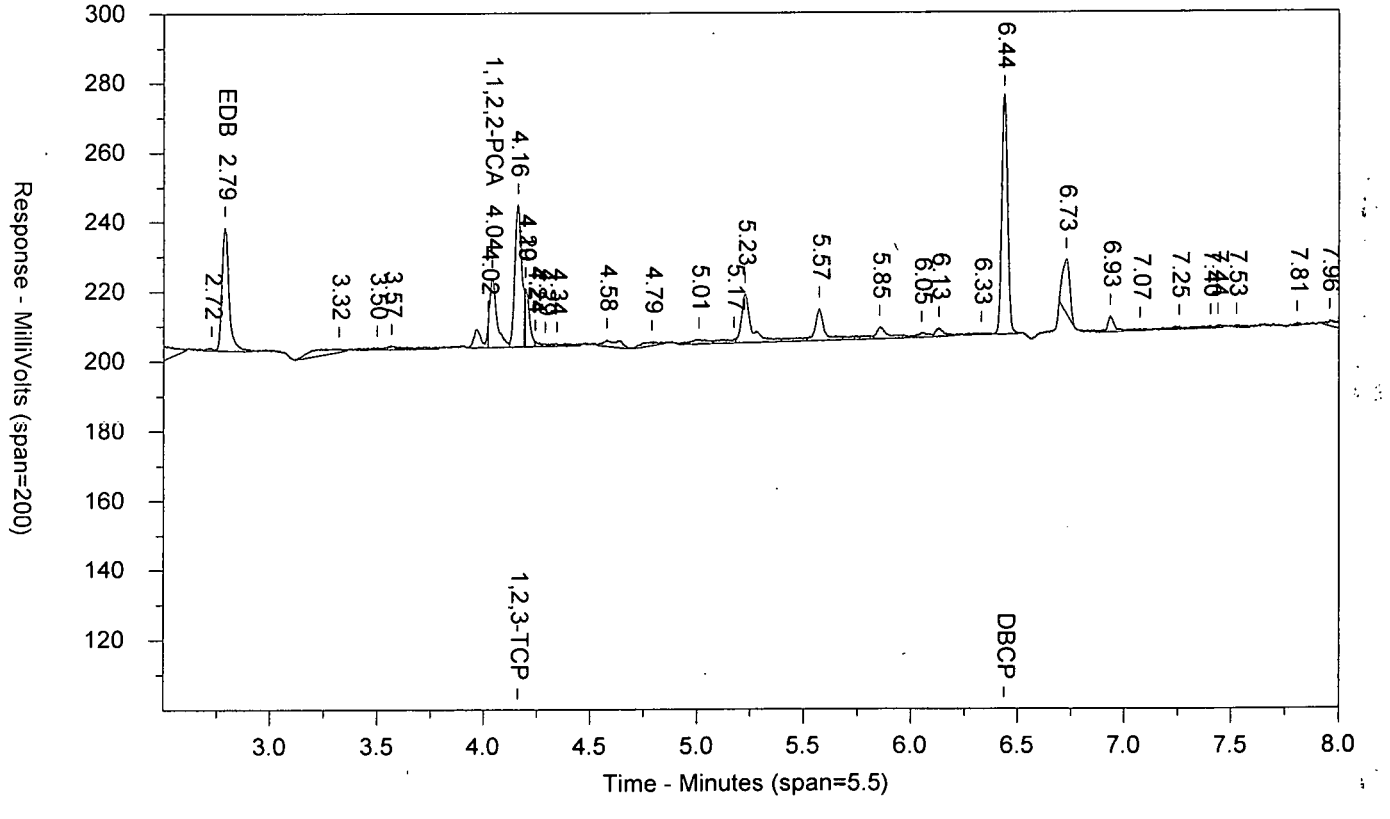


LANCASTER LABORATORIES

Sample Number: EDB_41724DR AAEDB_4AA ICAL 1719999999 10398 SW-846 8011
Injected On: 7/19/2017 4:47:19 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

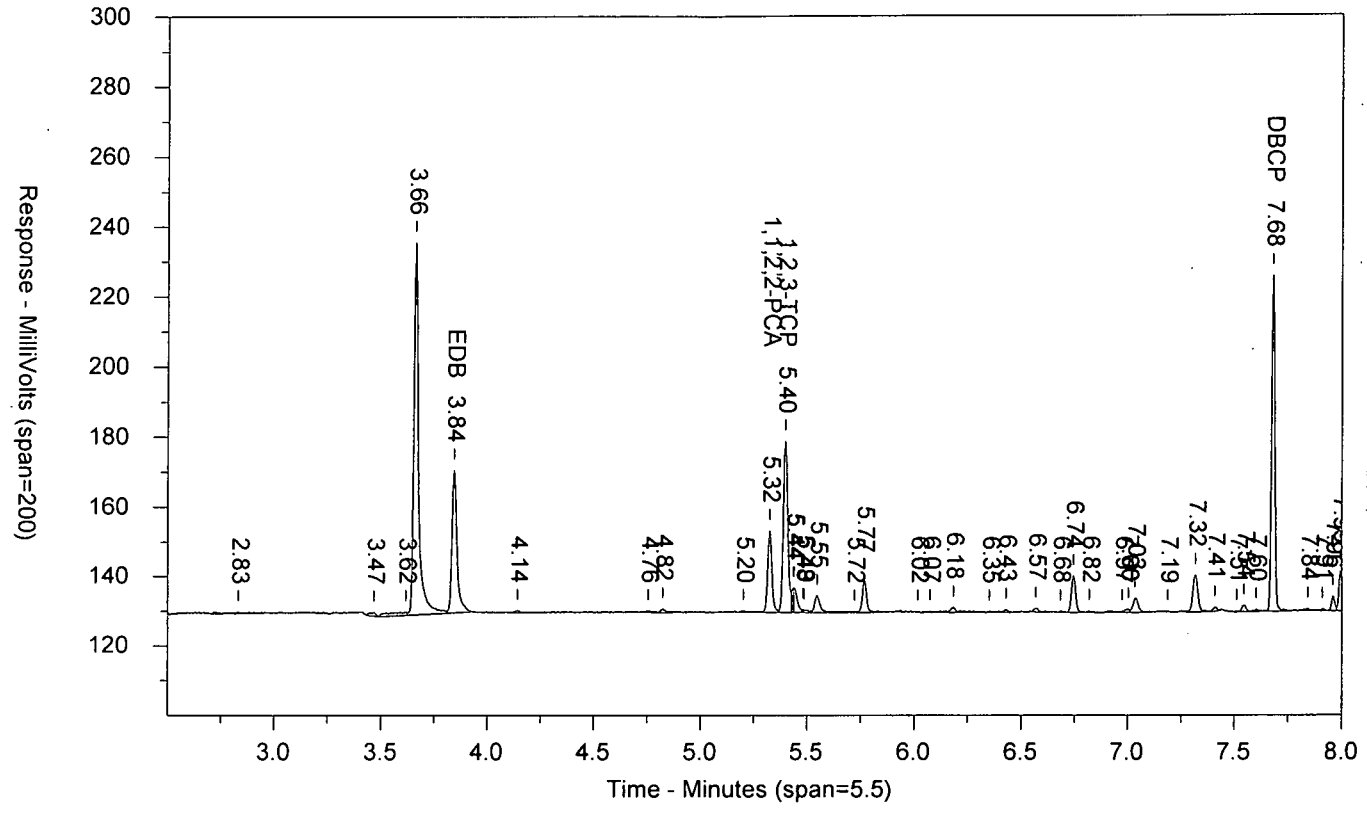
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 27095 | 2.371 | EDB | 2.787 | 35458 | 2.379 | EDB |
| 5.324 | 14608 | 1.17 | 1,1,2,2-PCA | 4.039 | 19514 | 1.106 | 1,1,2,2-PCA |
| 5.397 | 31709 | 18.424 | 1,2,3-TCP | 4.16 | 40820 | 17.357 | 1,2,3-TCP |
| 7.678 | 58699 | 2.318 | DBCP | 6.436 | 69191 | 2.186 | DBCP |

Files:
Area File: 18EDBS17200001.006.RAW
Area File: 18EDBS17200001B.006.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 4:55:53 PM
File Reported On: 7/19/2017 at 5:48:11 PM

EDB_51724DR AAEDB_5AA ICAL 1719999999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.007.RAW

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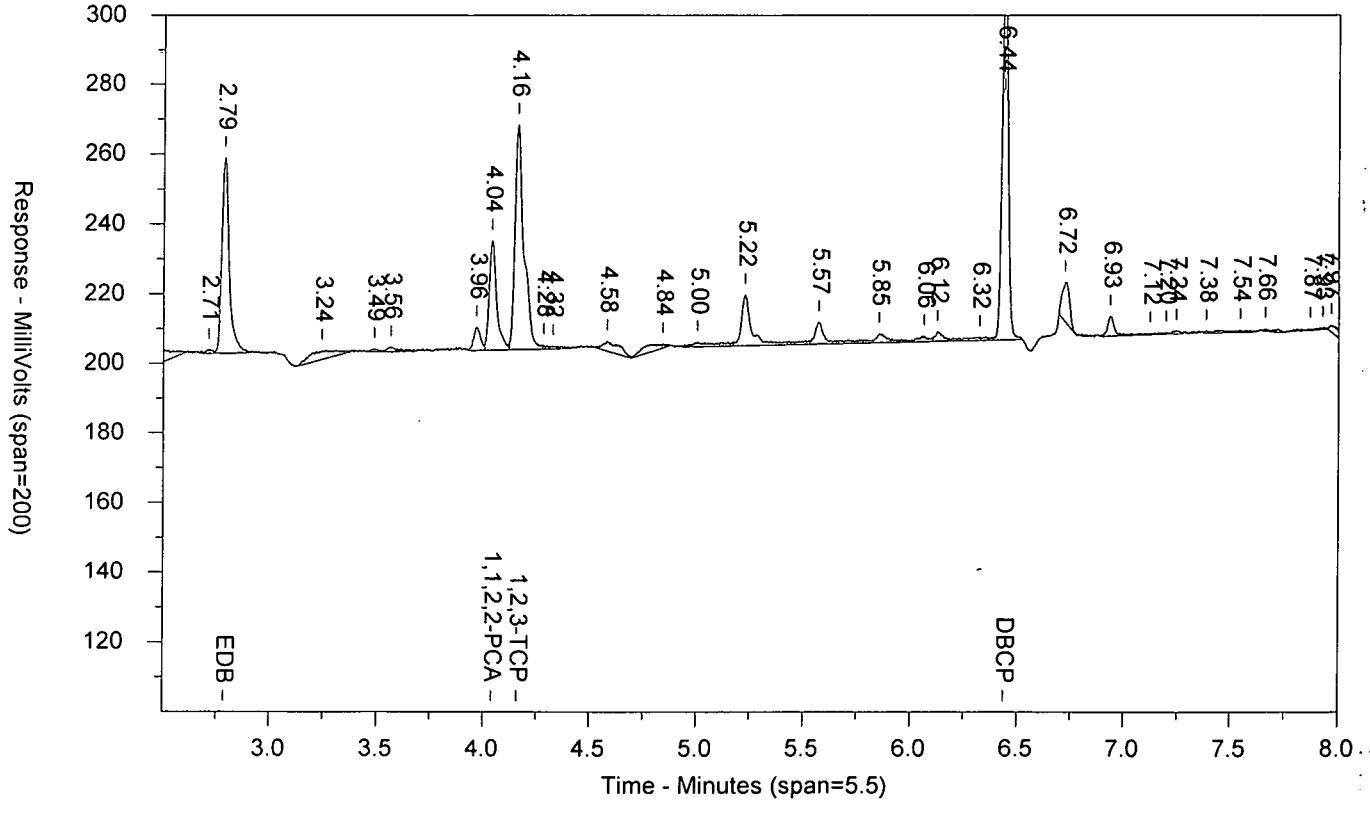


LANCASTER LABORATORIES

Sample Number: EDB_51724DR AAEDB_5AA ICAL 1719999999 10398 SW-846 8011
Injected On: 7/19/2017 5:03:14 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

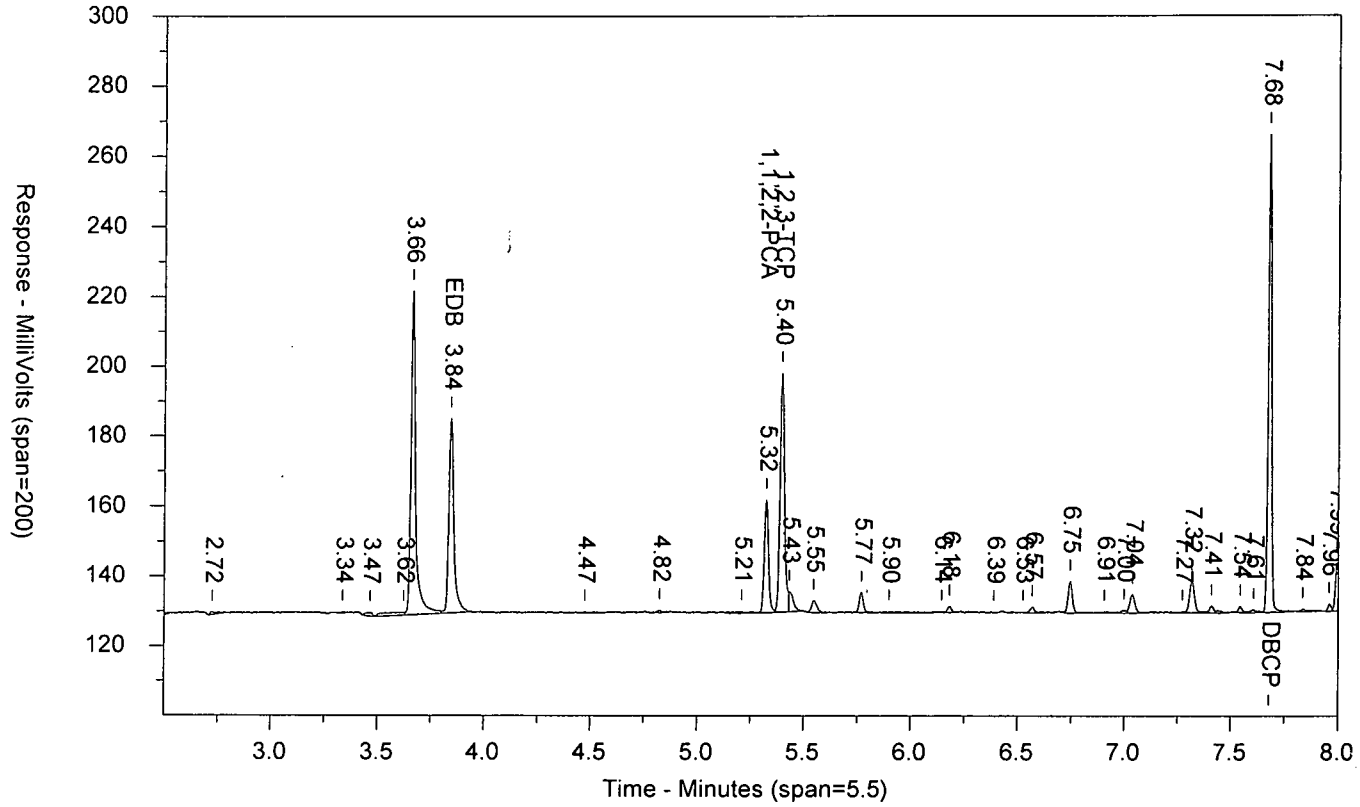
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 40997 | 3.708 | EDB | 2.786 | 56034 | 3.897 | EDB |
| 5.323 | 23617 | 1.93 | 1,1,2,2-PCA | 4.04 | 31383 | 1.83 | 1,1,2,2-PCA |
| 5.396 | 49228 | 29.233 | 1,2,3-TCP | 4.16 | 64506 | 28.33 | 1,2,3-TCP |
| 7.678 | 96116 | 3.837 | DBCP | 6.437 | 108144 | 3.518 | DBCP |

Files:
Area File: 18EDBS17200001.007.RAW
Area File: 18EDBS17200001B.007.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 5:11:48 PM
File Reported On: 7/19/2017 at 5:48:25 PM

EDB_61724DR AAEDB_6AA ICAL 1719999999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.008.RAW

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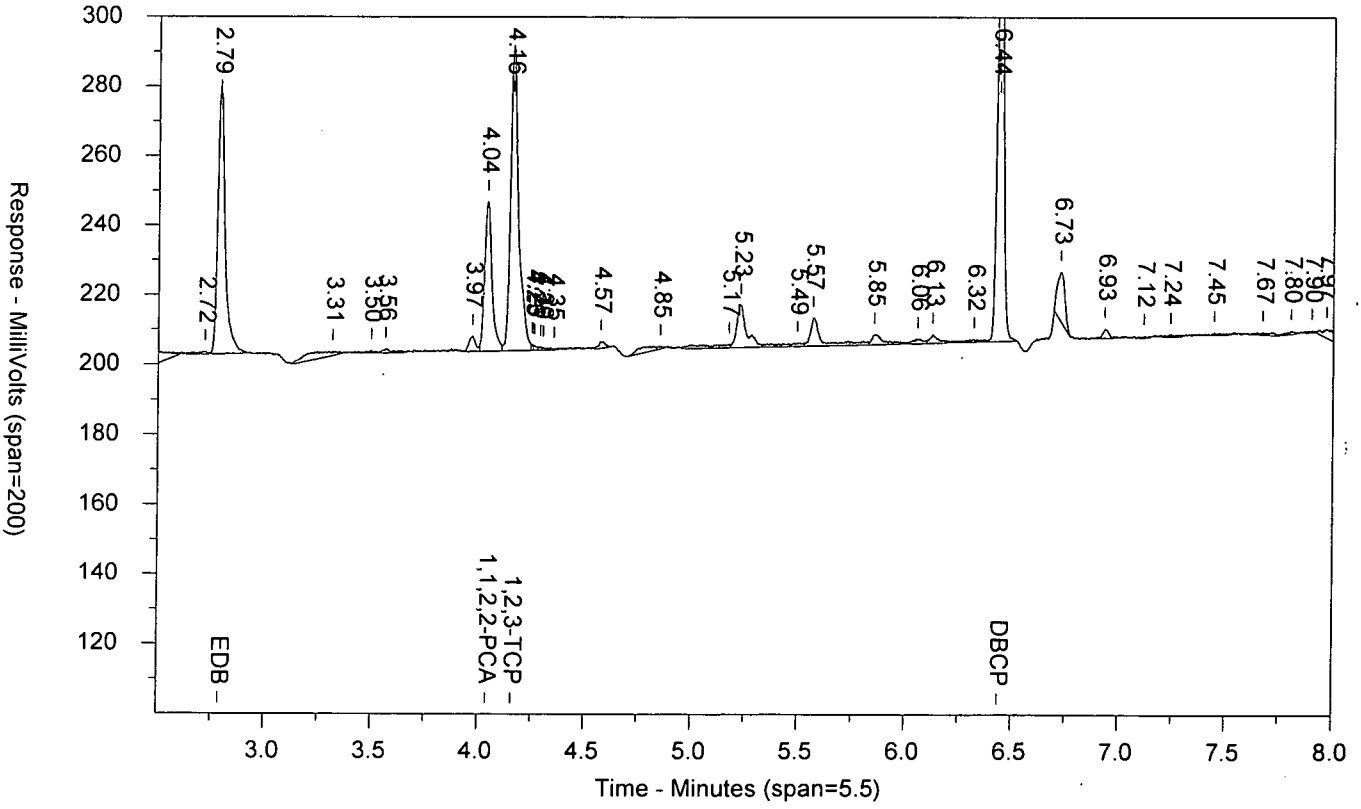


LANCASTER LABORATORIES

Sample Number: EDB_61724DR AAEDB_6AA ICAL 1719999999 10398 SW-846 8011
Injected On: 7/19/2017 5:19:14 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

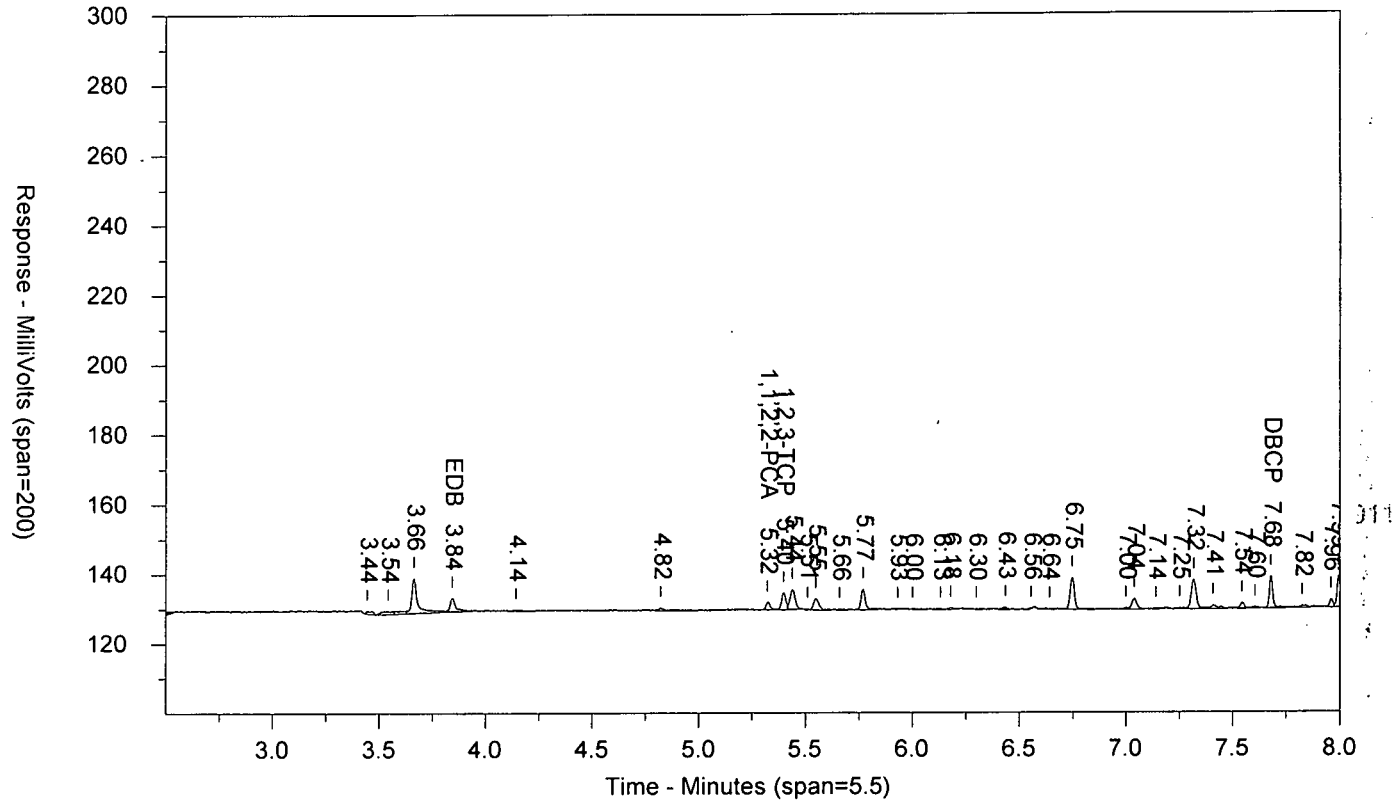
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 55599 | 5.41 | EDB | 2.786 | 77408 | 5.649 | EDB |
| 5.324 | 32196 | 2.718 | 1,1,2,2-PCA | 4.041 | 43076 | 2.628 | 1,1,2,2-PCA |
| 5.396 | 68472 | 43.132 | 1,2,3-TCP | 4.159 | 87941 | 40.554 | 1,2,3-TCP |
| 7.678 | 136568 | 5.641 | DBCP | 6.436 | 143713 | 4.906 | DBCP |

Files:
Area File: 18EDBS17200001.008.RAW
Area File: 18EDBS17200001B.008.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 5:27:47 PM
File Reported On: 7/19/2017 at 5:48:41 PM

MDEDX1724DR AAMDEDXAA ICAL 1719999999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.009.RAW

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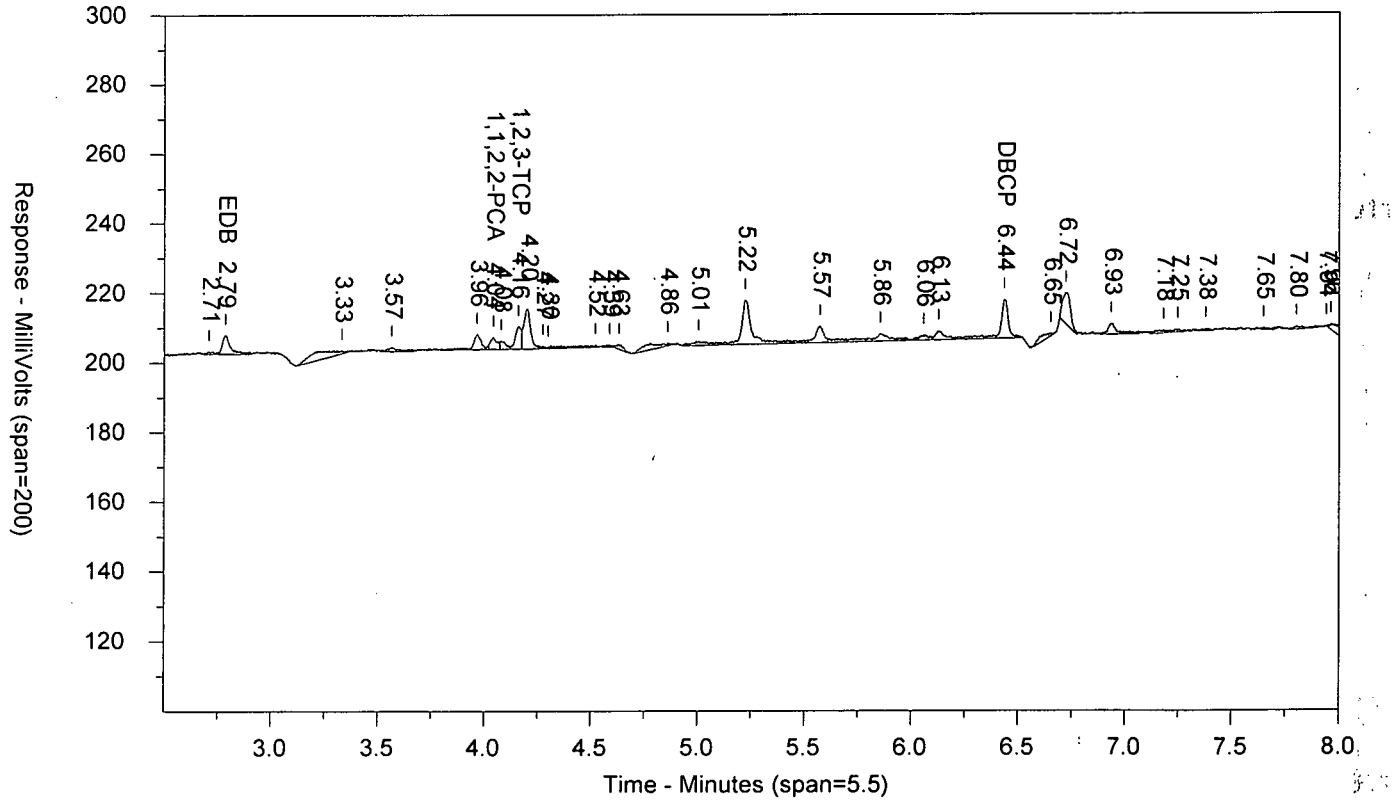


LANCASTER LABORATORIES

Sample Number: MDEDX1724DR AAMDEDXAA ICAL 1719999999 10398 SW-846 8011
Injected On: 7/19/2017 5:35:14 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

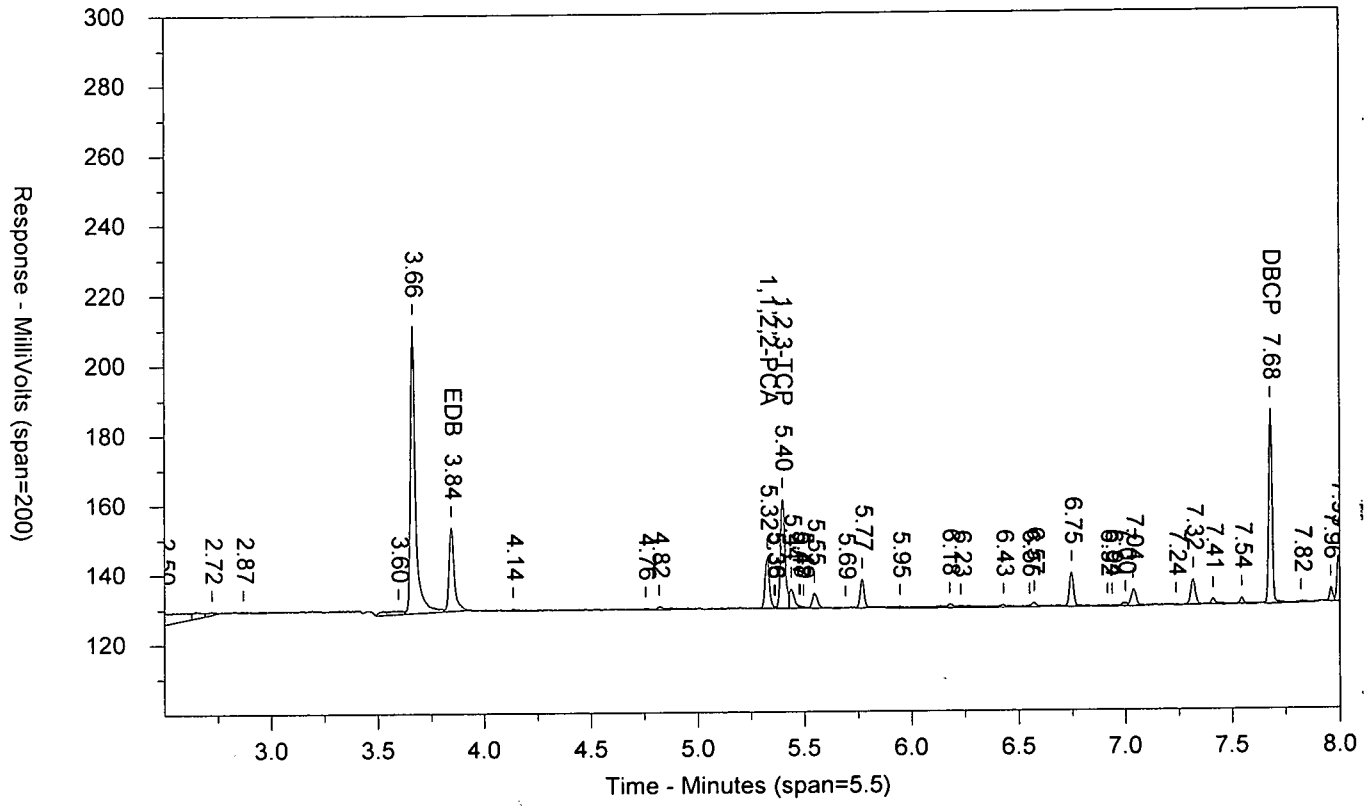
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 3988 | .394 | EDB | 2.785 | 5389 | .283 | EDB |
| 5.321 | 2198 | .189 | 1,1,2,2-PCA | 4.043 | 3517 | .221 | 1,1,2,2-PCA |
| 5.397 | 4834 | 2.94 | 1,2,3-TCP | 4.16 | 6439 | 3.045 | 1,2,3-TCP |
| 7.678 | 9152 | .383 | DBCP | 6.435 | 11203 | .168 | DBCP |

Files:
Area File: 18EDBS17200001.009.RAW
Area File: 18EDBS17200001B.009.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/19/2017 5:43:45 PM
File Reported On: 7/20/2017 at 10:29:46 AM

EDB_41724DR QIEDB_4QI CCAL 1719899999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.034.RAW

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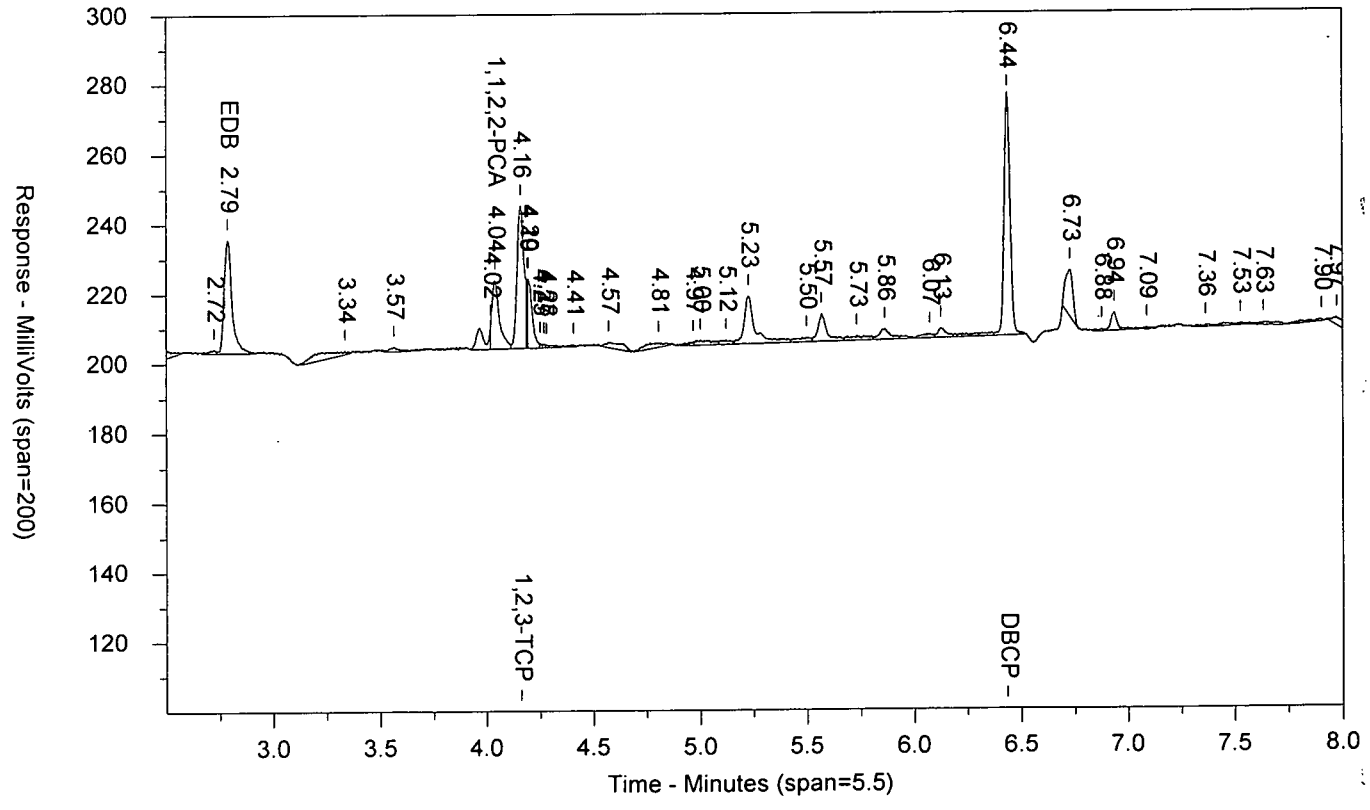


LANCASTER LABORATORIES

Sample Number: EDB_41724DR QIEDB_4QI CCAL 1719899999 10398 SW-846 8011
Injected On: 7/20/2017 12:14:04 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

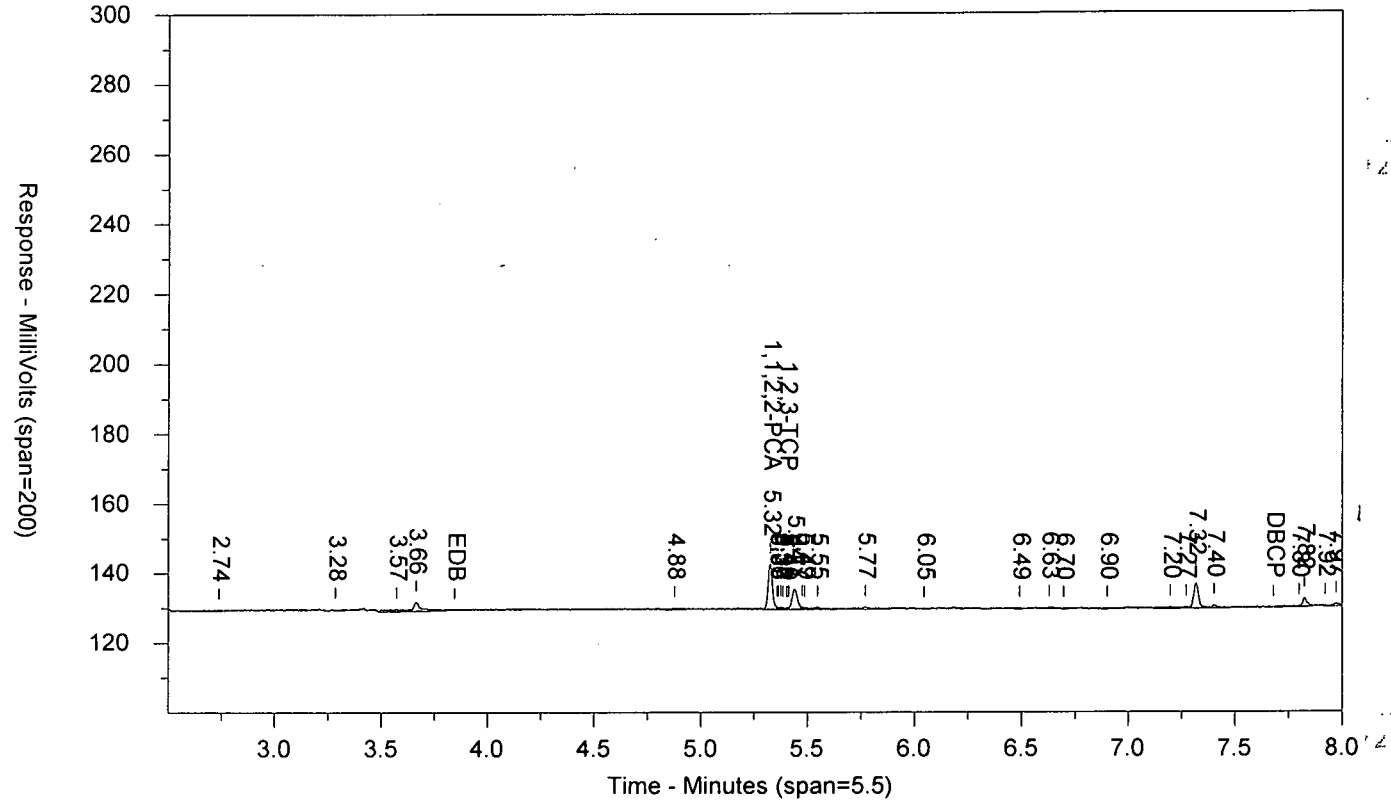
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 24032 | 2.377 | EDB | 2.787 | 32657 | 2.501 | EDB |
| 5.324 | 14297 | 1.231 | 1,1,2,2-PCA | 4.04 | 19873 | 1.249 | 1,1,2,2-PCA |
| 5.397 | 31392 | 19.094 | 1,2,3-TCP | 4.161 | 40948 | 19.363 | 1,2,3-TCP |
| 7.678 | 55912 | 2.34 | DBCP | 6.436 | 69946 | 2.773 | DBCP |

Files:
Area File: 18EDBS17200001.034.RAW
Area File: 18EDBS17200001B.034.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 12:22:39 AM
File Reported On: 7/20/2017 at 10:37:23 AM

EIBKX1724C OUPIBLKOU PIBLK1719899999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.035.RAW

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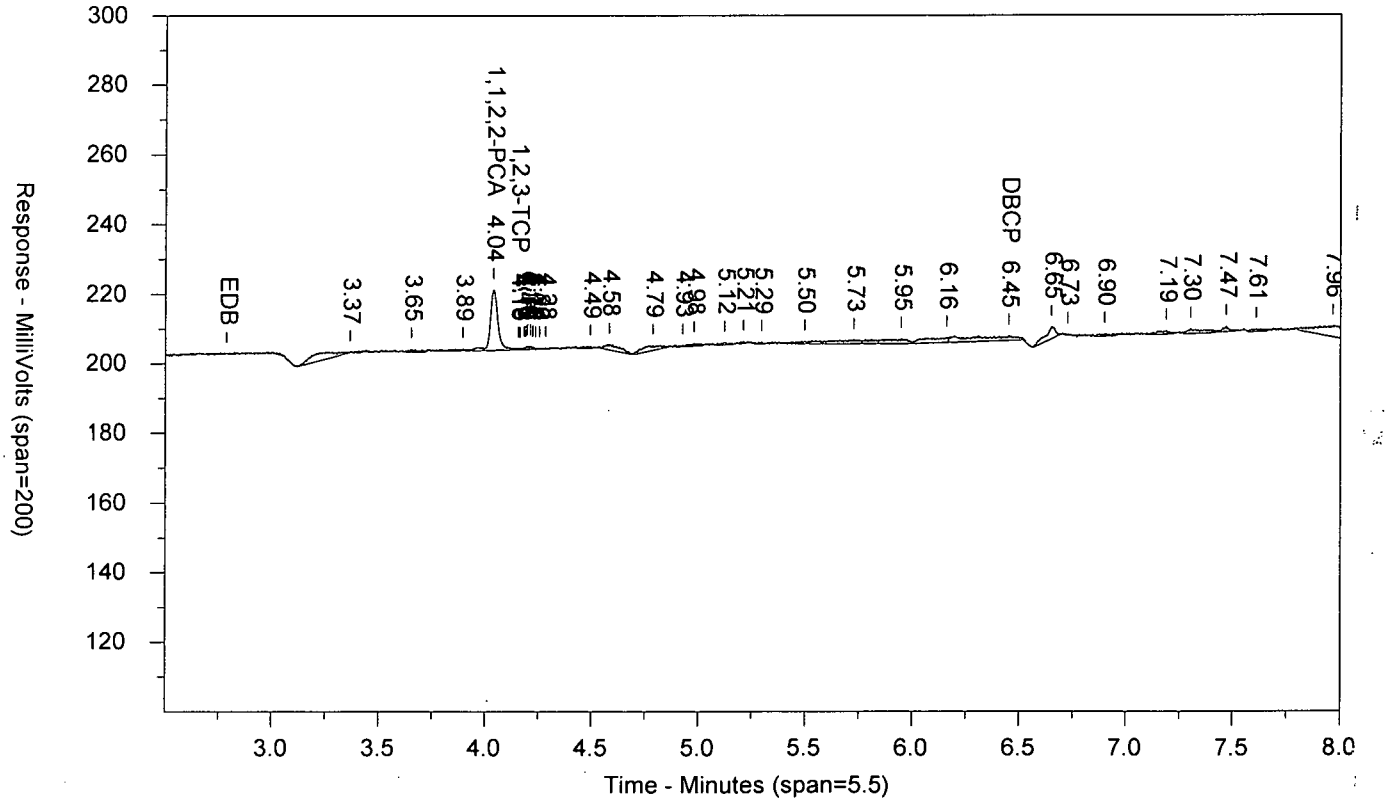


LANCASTER LABORATORIES

Sample Number: EIBKX1724C OUPIBLKOU PIBLK1719899999 10398 SW-846 8011
Injected On: 7/20/2017 12:30:00 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

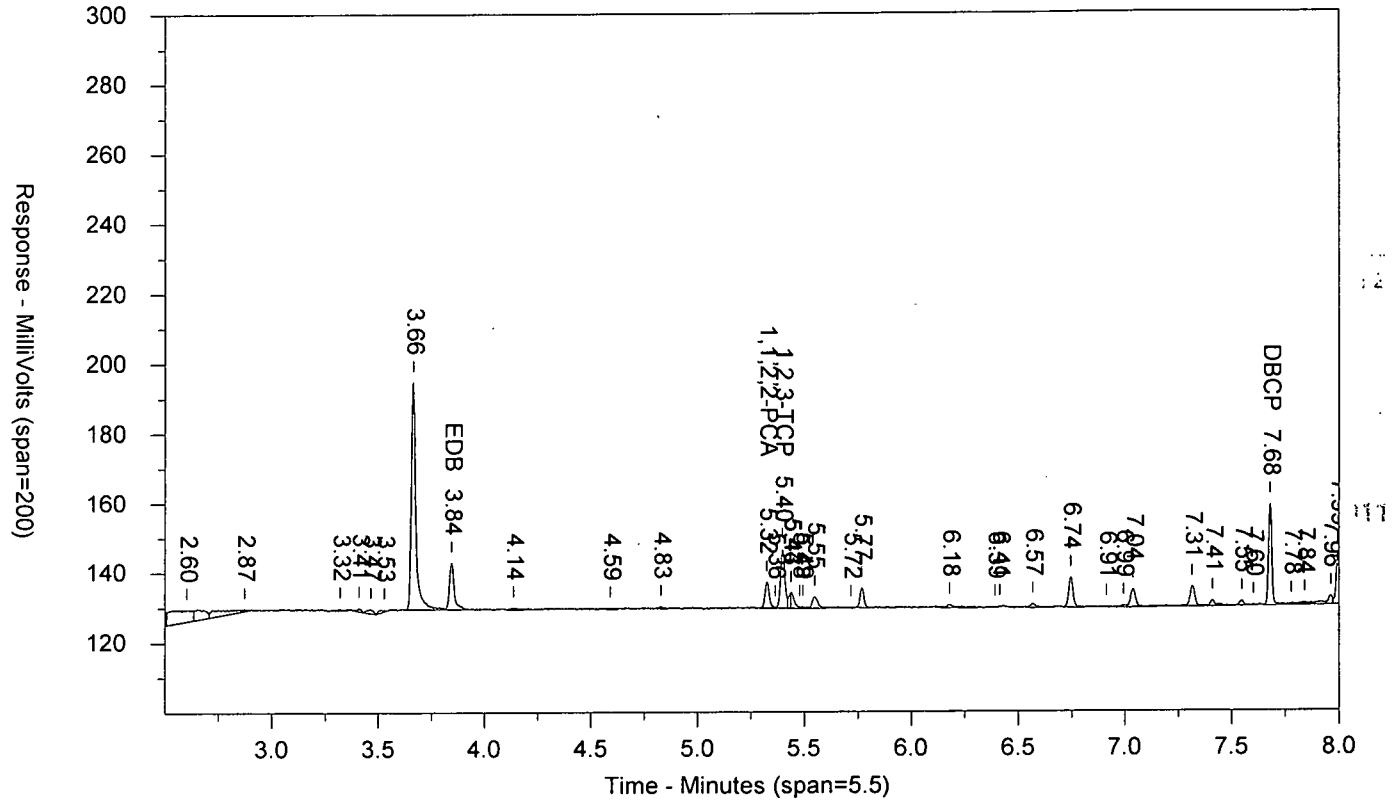
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 13106 | .064 | 1,1,2,2-PCA | 4.039 | 17429 | .063 | 1,1,2,2-PCA |
| 5.402 | 489 | .017 | 1,2,3-TCP | 4.155 | 470 | .013 | 1,2,3-TCP |
| | 0 | | DBCP | 6.451 | 1388 | -.015 | DBCP |

Files:
Area File: 18EDBS17200001.035.RAW
Area File: 18EDBS17200001B.035.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 12:38:35 AM
File Reported On: 7/20/2017 at 10:37:43 AM

EDB_31724DR OYEDB_3OY CCAL 1719899999 10398 SW-846 80

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.046.RAW

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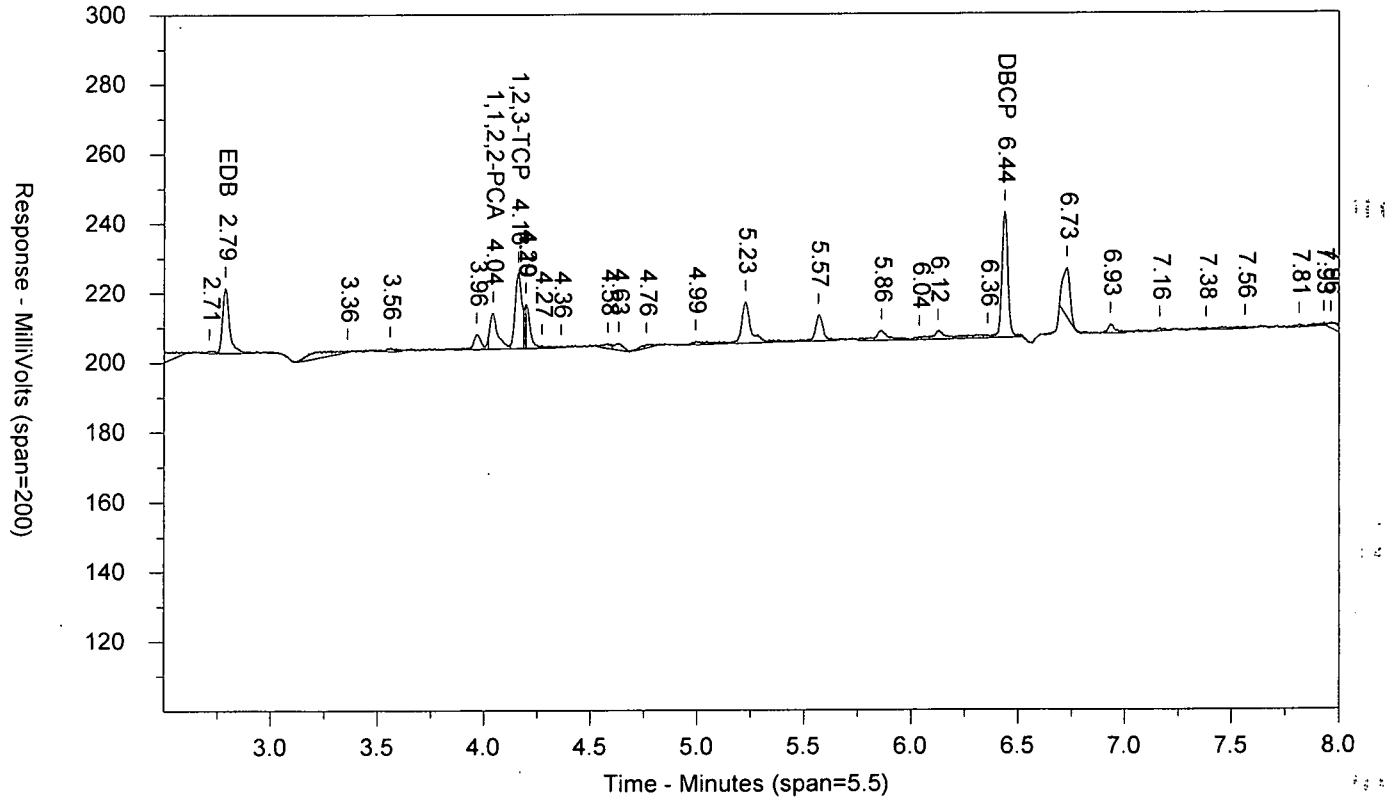


LANCASTER LABORATORIES

Sample Number: EDB_31724DR OYEDB_3OY CCAL 1719899999 10398 SW-846 8011
Injected On: 7/20/2017 3:25:33 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

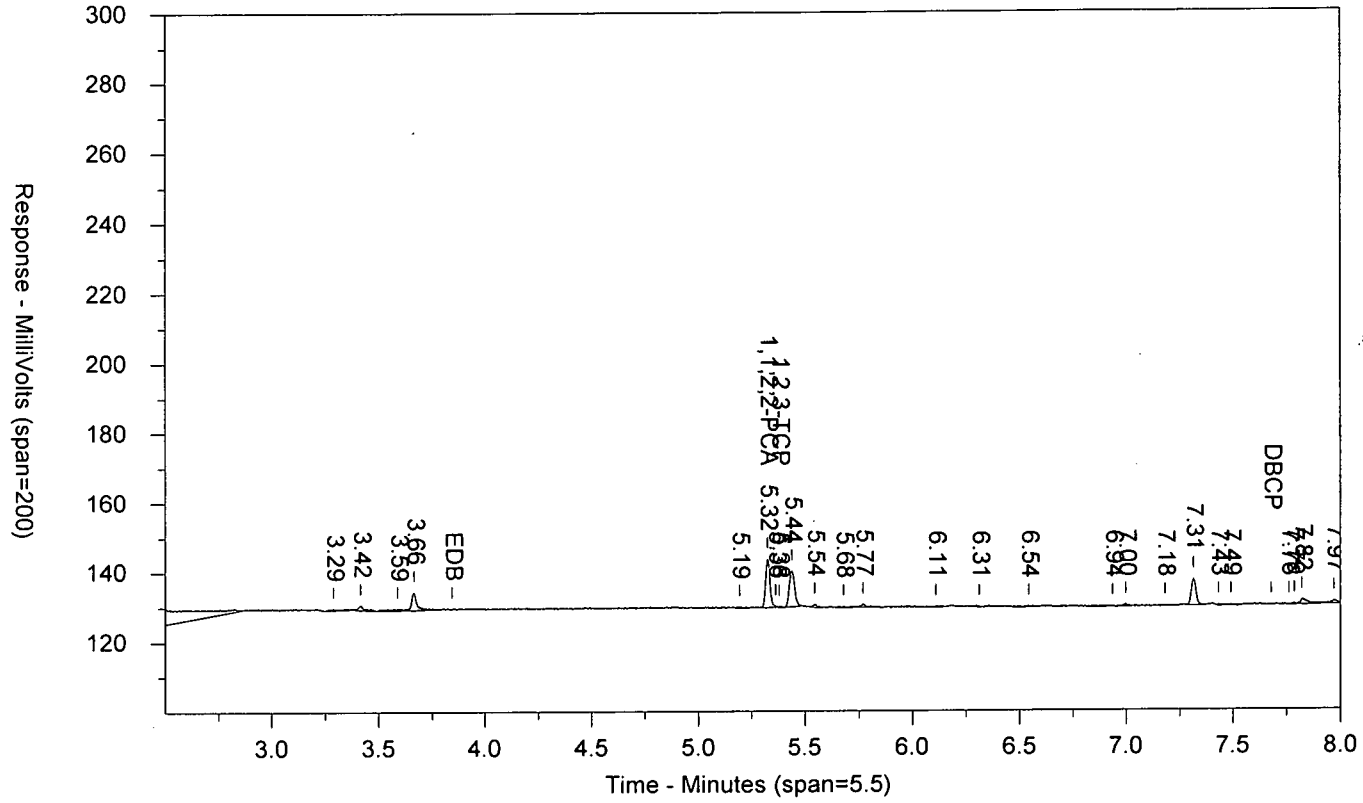
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 13601 | 1.345 | EDB | 2.788 | 18897 | 1.382 | EDB |
| 5.324 | 7540 | .649 | 1,1,2,2-PCA | 4.042 | 10392 | .653 | 1,1,2,2-PCA |
| 5.397 | 16932 | 10.299 | 1,2,3-TCP | 4.161 | 21748 | 10.284 | 1,2,3-TCP |
| 7.679 | 29214 | 1.223 | DBCP | 6.437 | 36094 | 1.272 | DBCP |

Files:
Area File: 18EDBS17200001.046.RAW
Area File: 18EDBS17200001B.046.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:30 AM
File Reported On: 7/20/2017 at 10:40:54 AM

EIBKX1724C OVPIBLKOV PIBLK1719899999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.047.RAW

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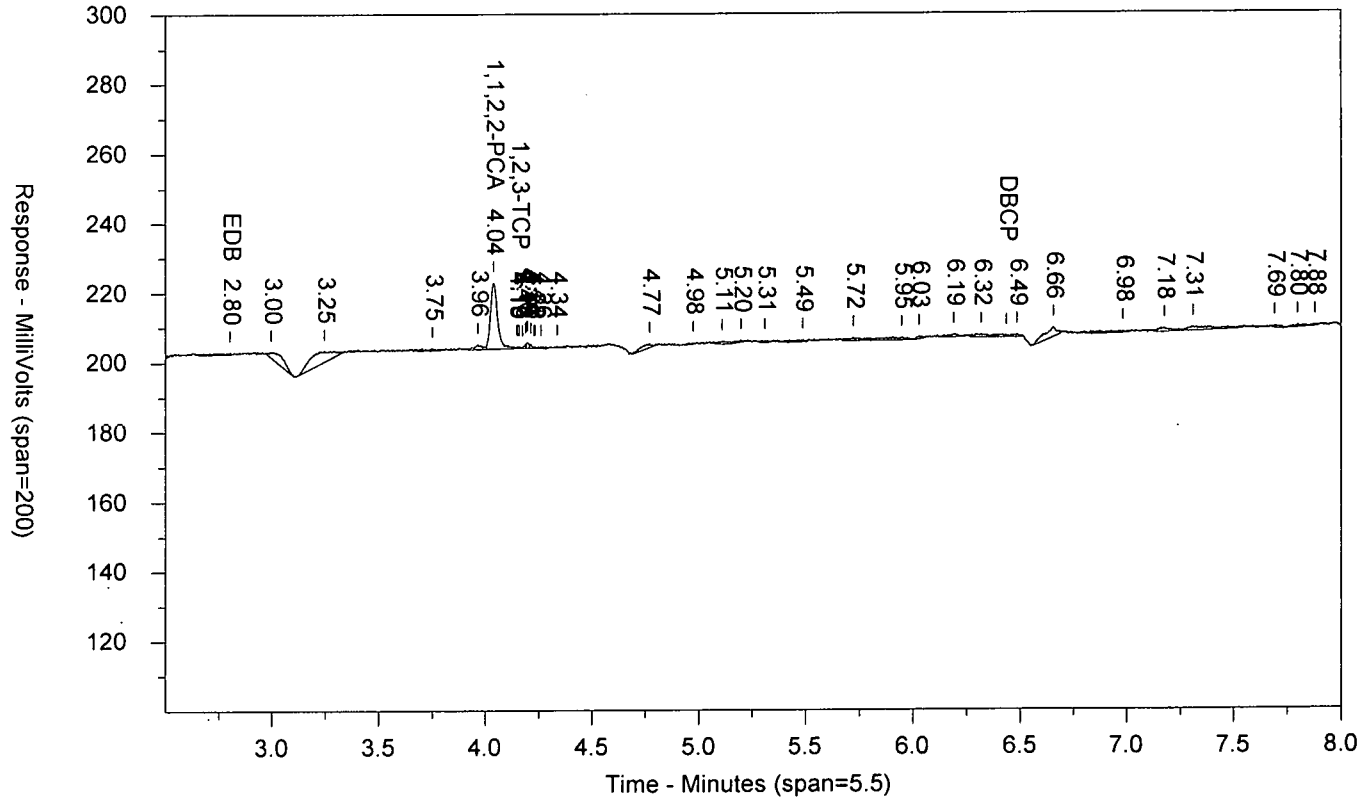


LANCASTER LABORATORIES

Sample Number: EIBKX1724C OVPIBLKOV PIBLK1719899999 10398 SW-846 8011
Injected On: 7/20/2017 3:41:29 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

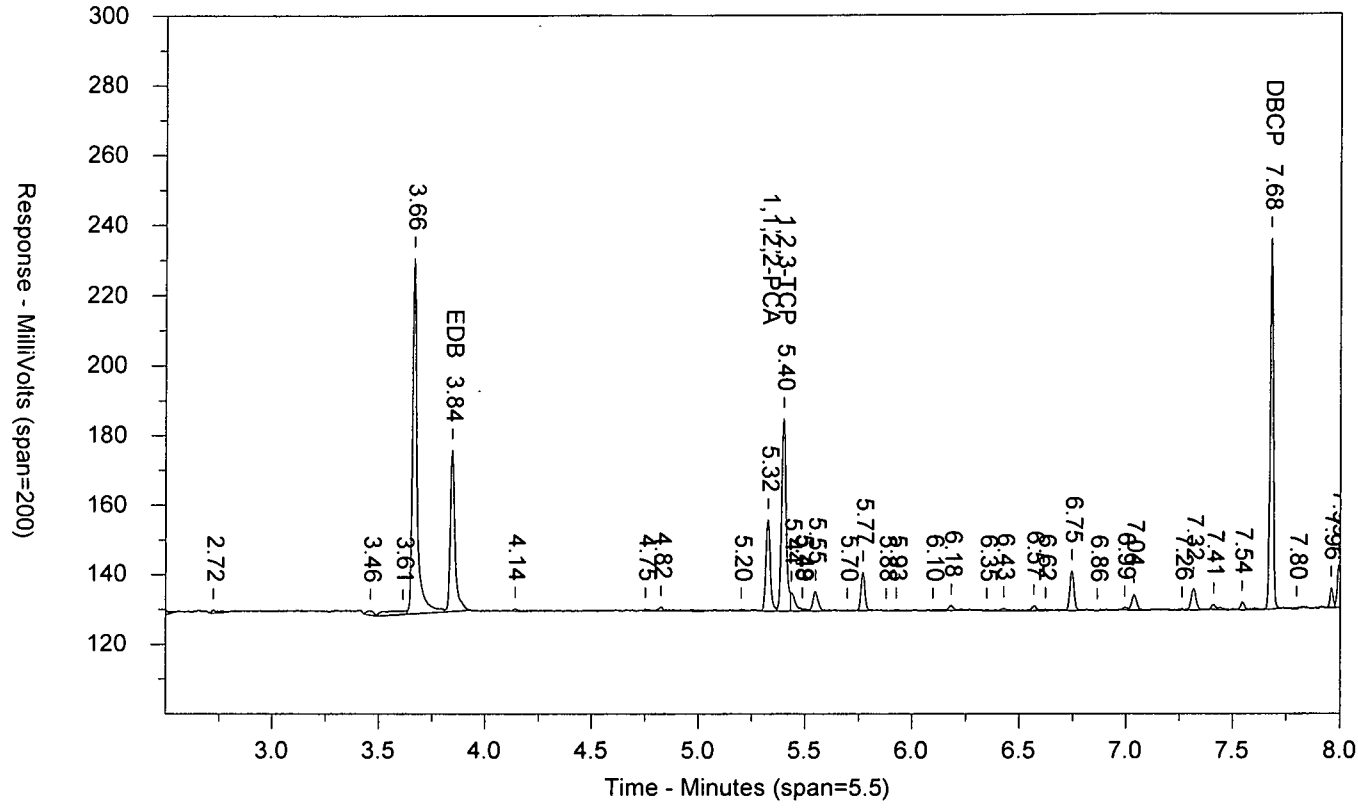
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 2.803 | 667 | -.006 | EDB |
| 5.324 | 13953 | .069 | 1,1,2,2-PCA | 4.039 | 19001 | .068 | 1,1,2,2-PCA |
| 5.379 | 294 | .01 | 1,2,3-TCP | 4.157 | 558 | .015 | 1,2,3-TCP |

Files:
Area File: 18EDBS17200001.047.RAW
Area File: 18EDBS17200001B.047.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:30 AM
File Reported On: 7/20/2017 at 10:41:13 AM

EDB_51724DR LREDB_5LR CCAL 1719899999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.058.RAW

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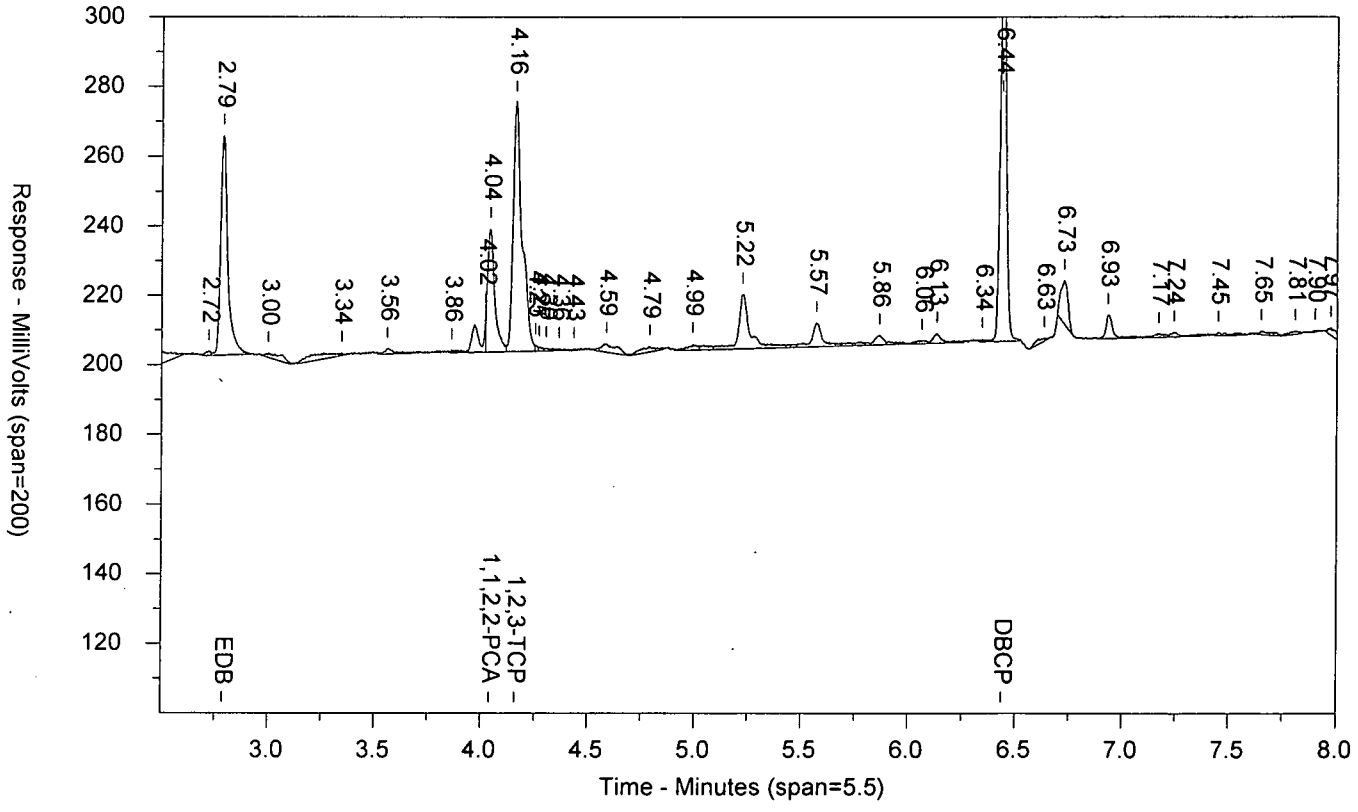


LANCASTER LABORATORIES

Sample Number: EDB_51724DR LREDB_5LR CCAL 1719899999 10398 SW-846 8011
Injected On: 7/20/2017 6:36:48 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

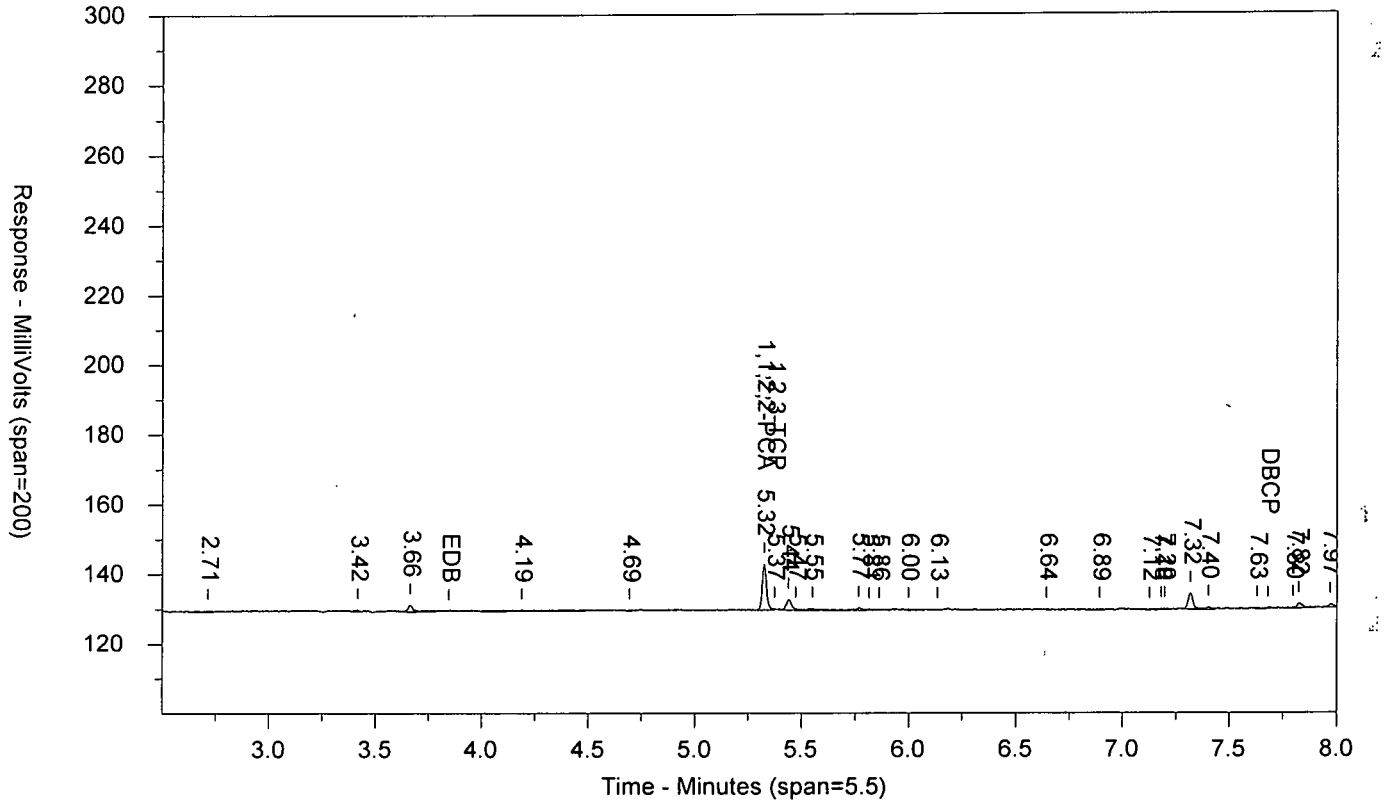
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 46521 | 4.601 | EDB | 2.787 | 63191 | 4.985 | EDB |
| 5.325 | 26253 | 2.26 | 1,1,2,2-PCA | 4.04 | 35624 | 2.24 | 1,1,2,2-PCA |
| 5.397 | 55304 | 33.638 | 1,2,3-TCP | 4.159 | 72049 | 34.068 | 1,2,3-TCP |
| 7.679 | 105952 | 4.435 | DBCP | 6.437 | 116046 | 4.817 | DBCP |

Files:
Area File: 18EDBS17200001.058.RAW
Area File: 18EDBS17200001B.058.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 6:45:22 AM
File Reported On: 7/20/2017 at 10:44:36 AM

EIBKX1724C OWPIBLKOW PIBLK1719899999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.059.RAW

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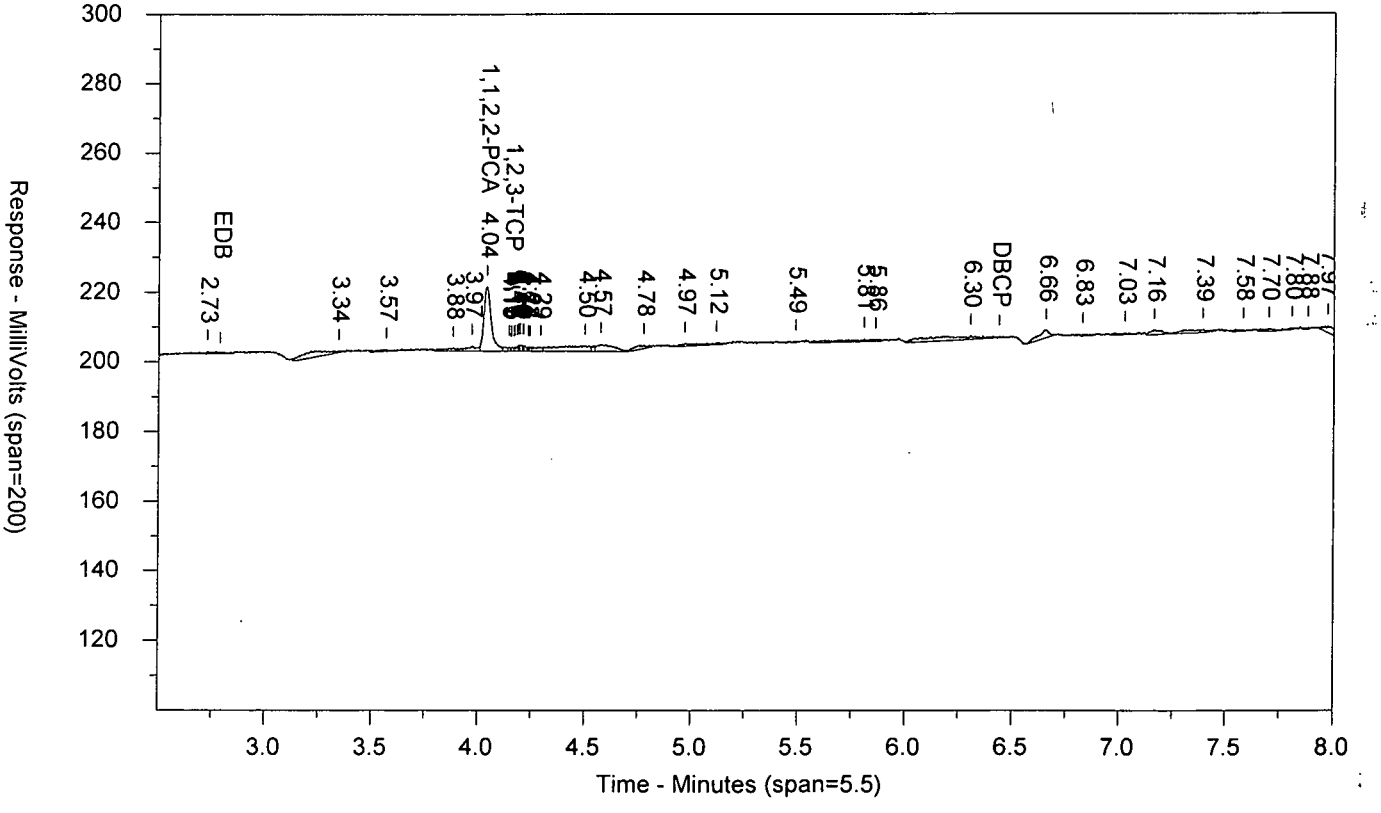


LANCASTER LABORATORIES

Sample Number: EIBKX1724C OWPIBLKOW PIBLK1719899999 10398 SW-846 8011
Injected On: 7/20/2017 6:52:48 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

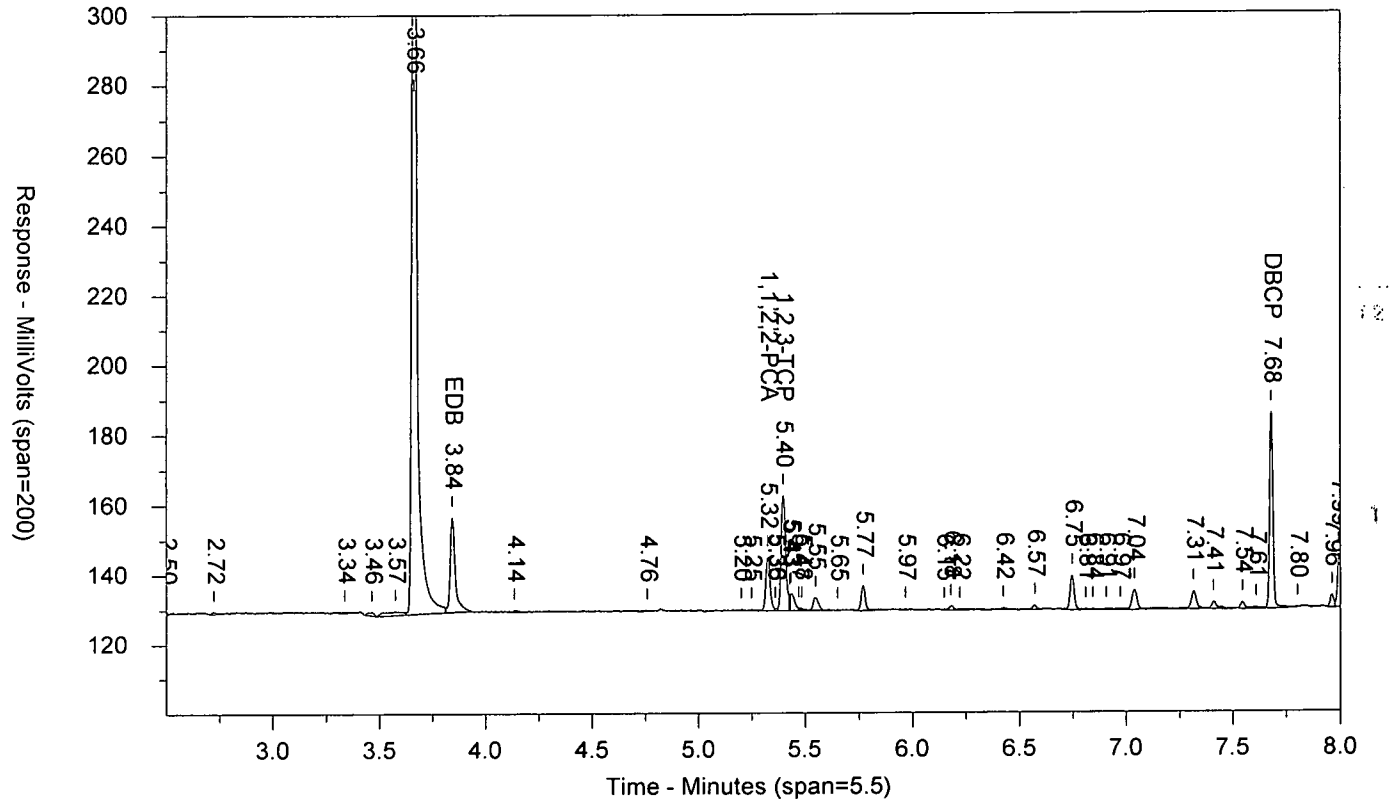
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 13197 | .065 | 1,1,2,2-PCA | 4.041 | 18611 | .067 | 1,1,2,2-PCA |
| 5.373 | 377 | .013 | 1,2,3-TCP | 4.158 | 1250 | .034 | 1,2,3-TCP |

Files:
Area File: 18EDBS17200001.059.RAW
Area File: 18EDBS17200001B.059.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 7:01:19 AM
File Reported On: 7/20/2017 at 10:44:52 AM

EDB_41724DR QJEDB_4QJ CCAL 1719899999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.068.RAW

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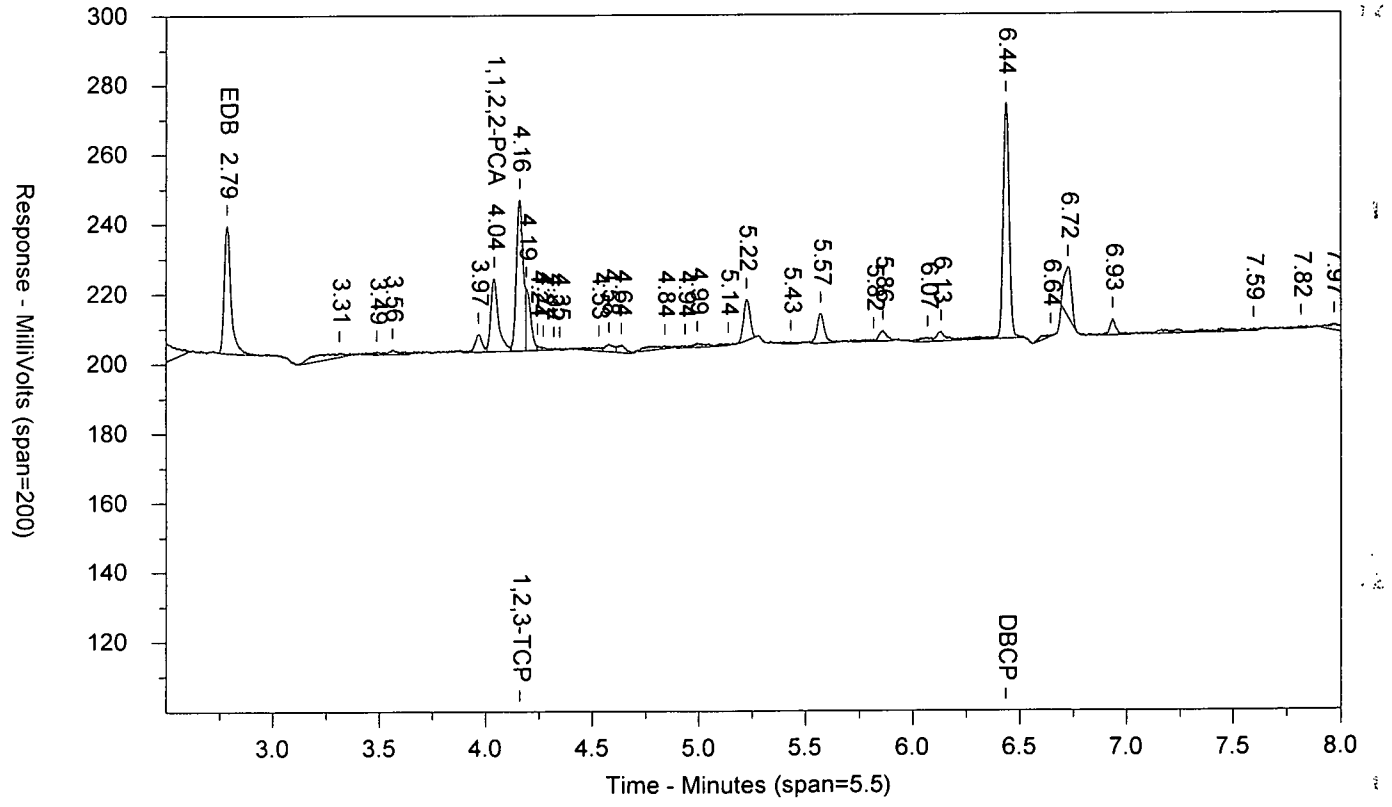


LANCASTER LABORATORIES

Sample Number: EDB_41724DR QJEDB_4QJ CCAL 1719899999 10398 SW-846 8011
Injected On: 7/20/2017 9:16:29 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

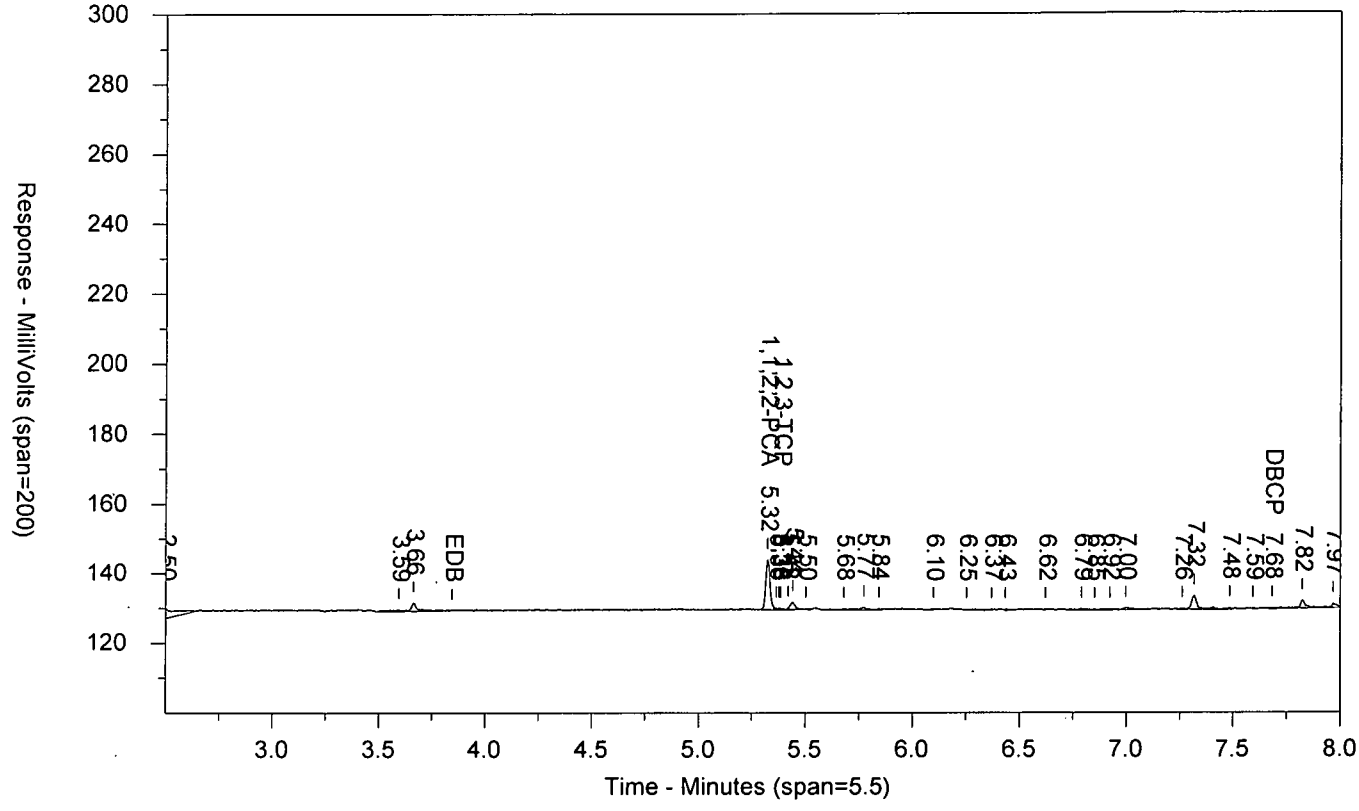
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 27262 | 2.696 | EDB | 2.786 | 36519 | 2.815 | EDB |
| 5.324 | 15388 | 1.325 | 1,1,2,2-PCA | 4.041 | 20927 | 1.316 | 1,1,2,2-PCA |
| 5.397 | 33051 | 20.103 | 1,2,3-TCP | 4.159 | 43336 | 20.492 | 1,2,3-TCP |
| 7.679 | 56166 | 2.351 | DBCP | 6.435 | 67716 | 2.674 | DBCP |

Files:
Area File: 18EDBS17200001.068.RAW
Area File: 18EDBS17200001B.068.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 9:25:02 AM
File Reported On: 7/20/2017 at 10:47:27 AM

EIBKX1724C OXPIBLKOX PIBLK1719899999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.069.RAW

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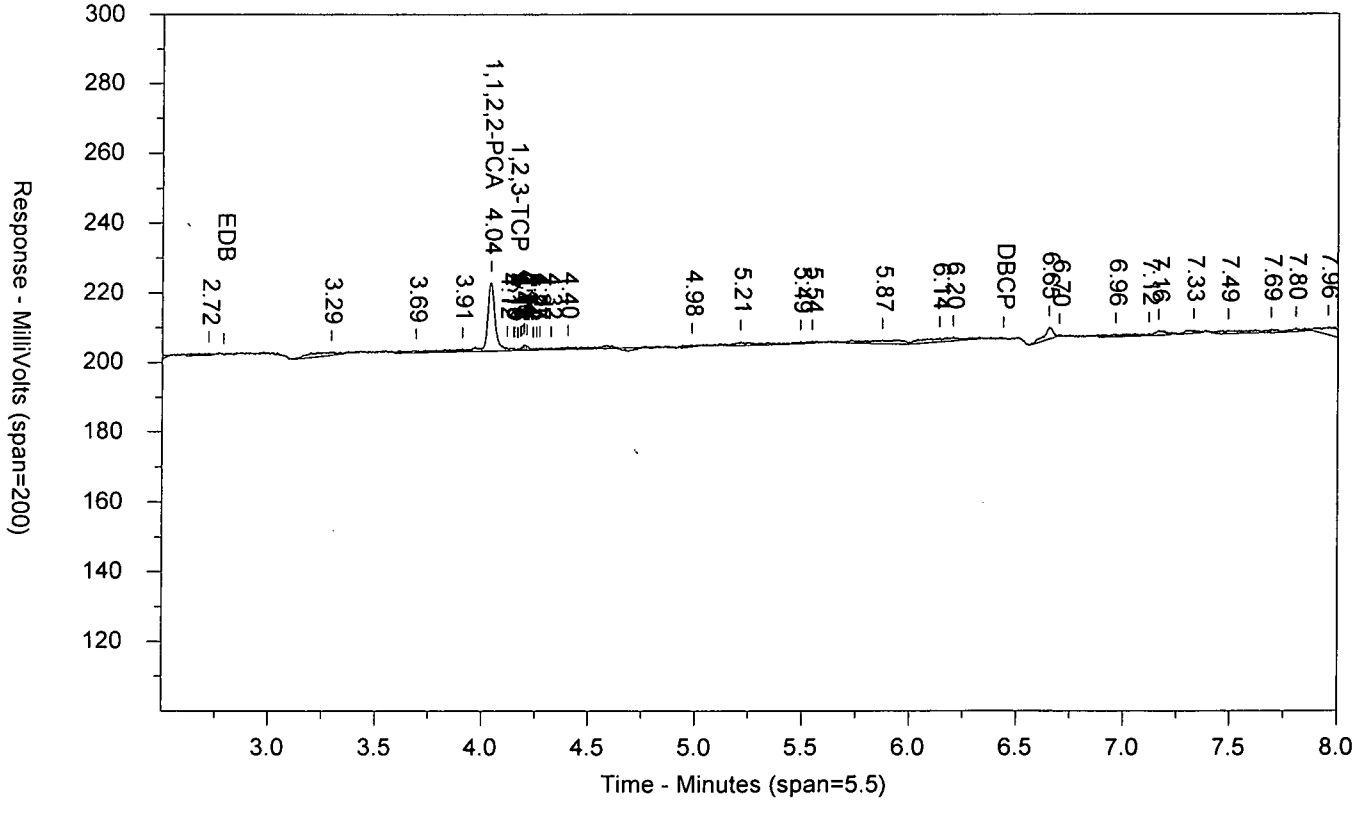


LANCASTER LABORATORIES

Sample Number: EIBKX1724C OXPIBLKOX PIBLK1719899999 10398 SW-846 8011
Injected On: 7/20/2017 9:32:32 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

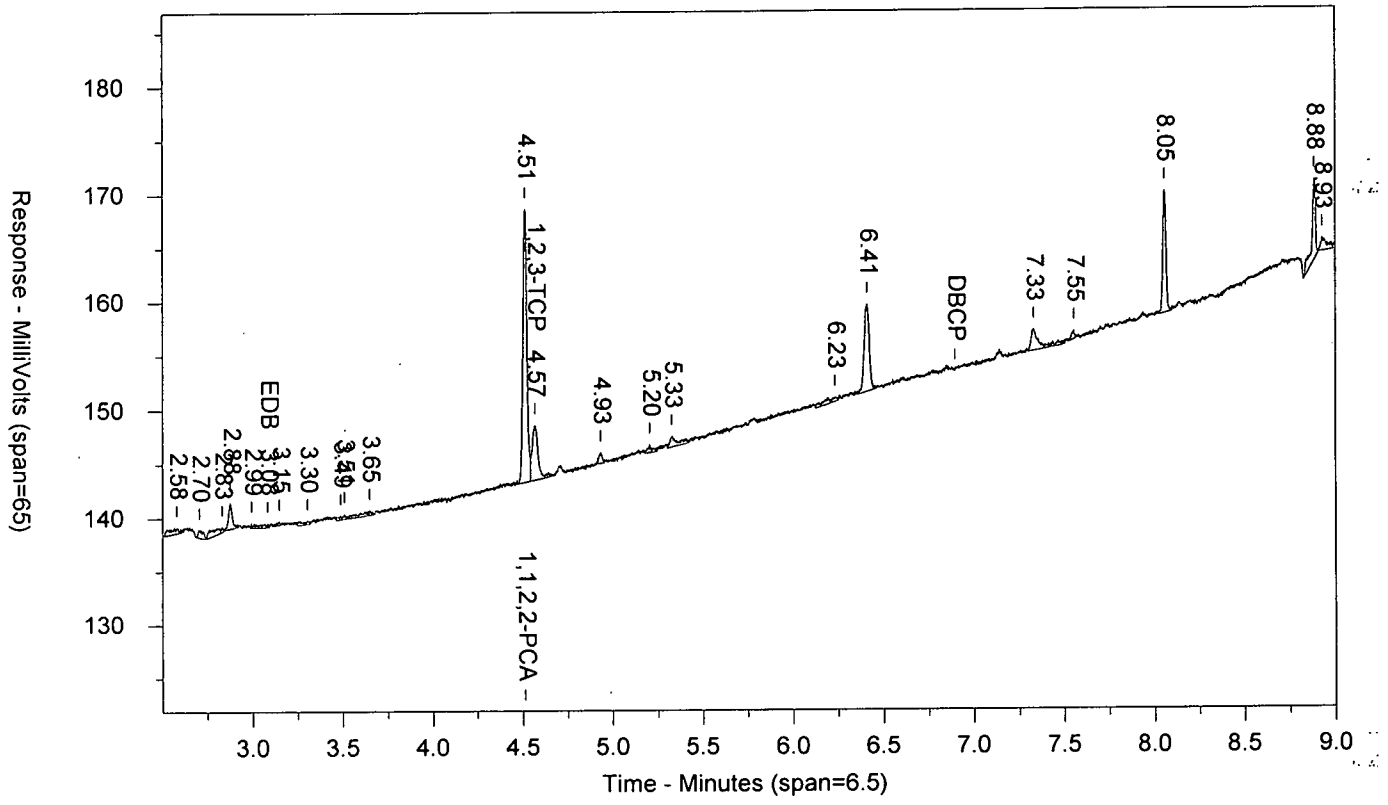
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.323 | 14492 | .071 | 1,1,2,2-PCA | 4.041 | 19608 | .07 | 1,1,2,2-PCA |
| 5.385 | 568 | .02 | 1,2,3-TCP | 4.164 | 464 | .013 | 1,2,3-TCP |
| 7.681 | 424 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17200001.069.RAW
Area File: 18EDBS17200001B.069.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 9:41:04 AM
File Reported On: 7/20/2017 at 10:47:41 AM

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0005.RAW

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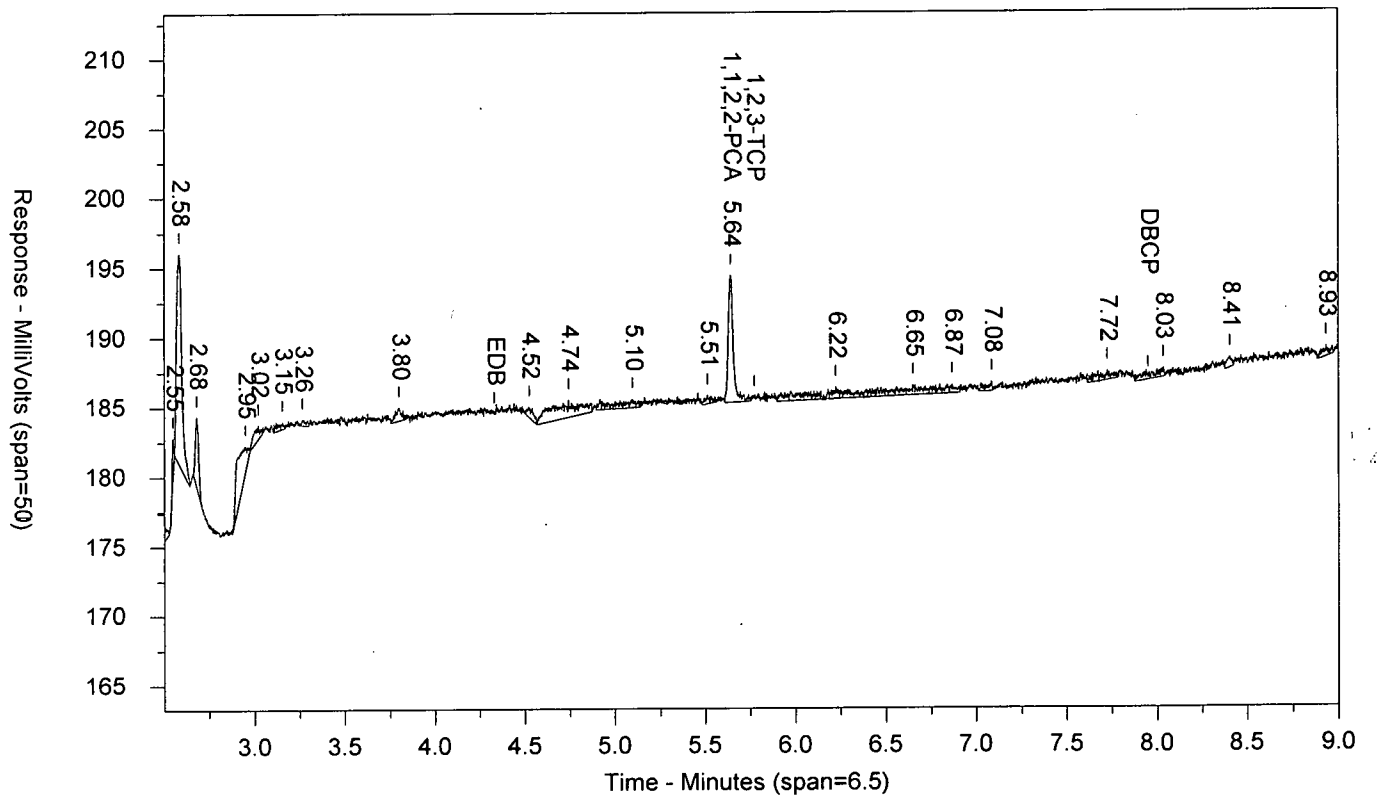


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 3:09:45 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

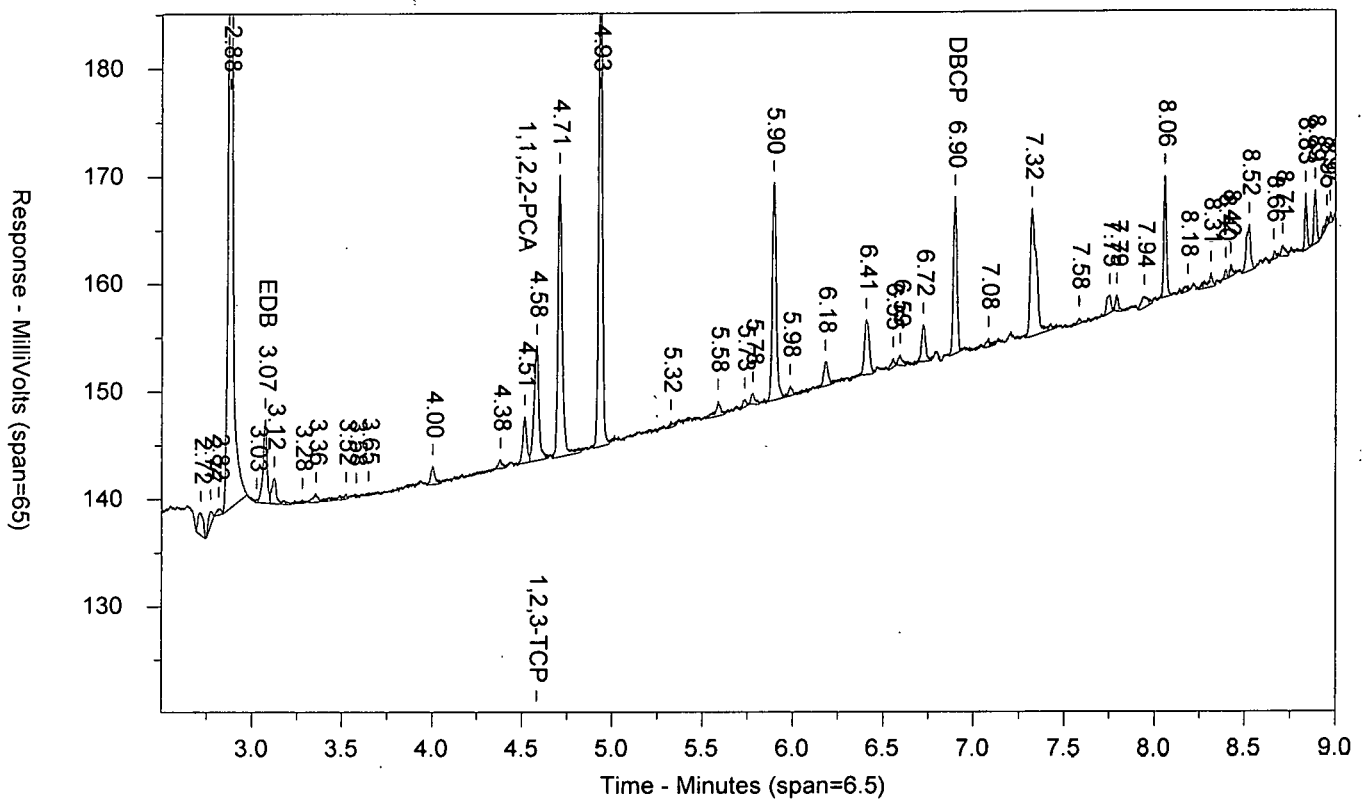
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.083 | 400 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25406 | .066 | 1,1,2,2-PCA | 5.641 | 9102 | .066 | 1,1,2,2-PCA |
| 4.567 | 5116 | .008 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0005.RAW
Area File: 16EDBS17202001B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:18:48 PM
File Reported On: 7/24/2017 at 10:43:10 AM

EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0006.RAW

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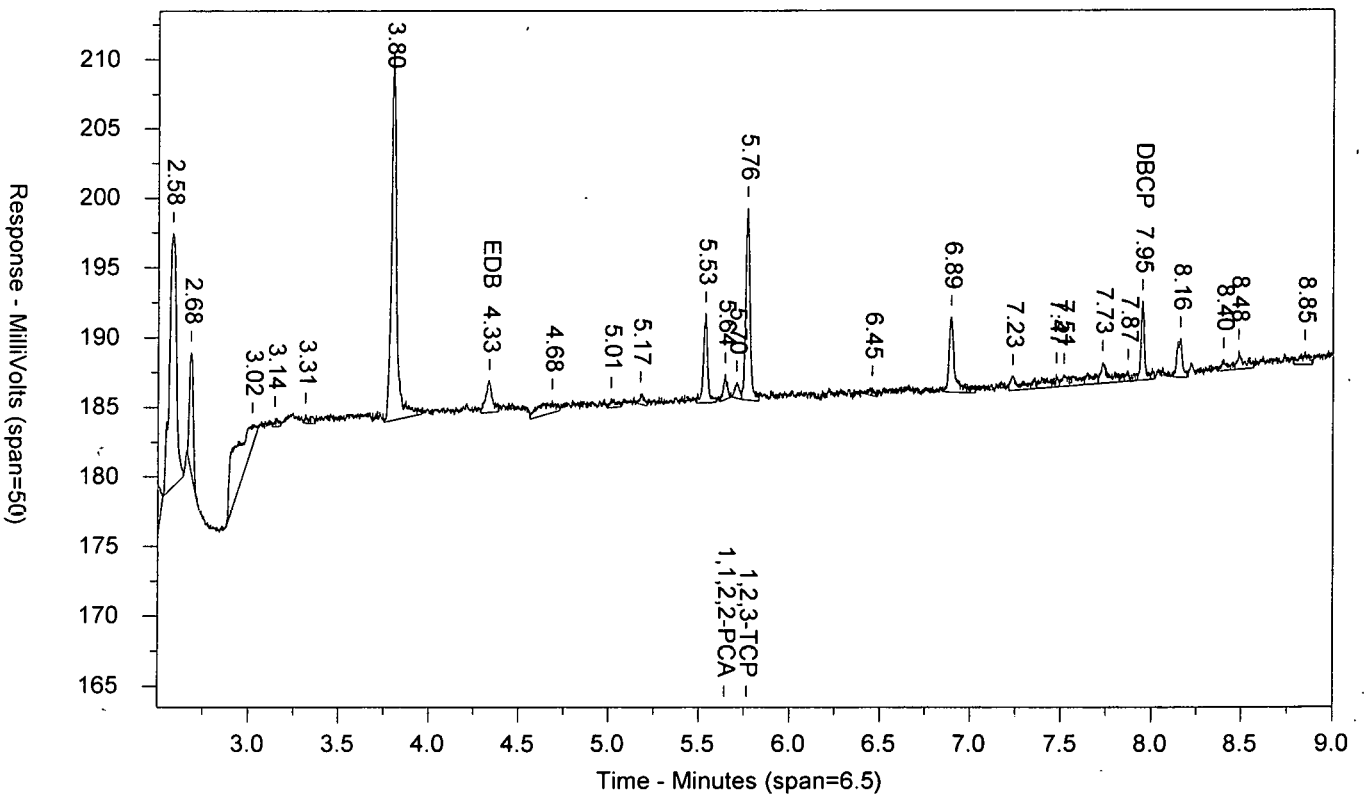


LANCASTER LABORATORIES

Sample Number: EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:25:23 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

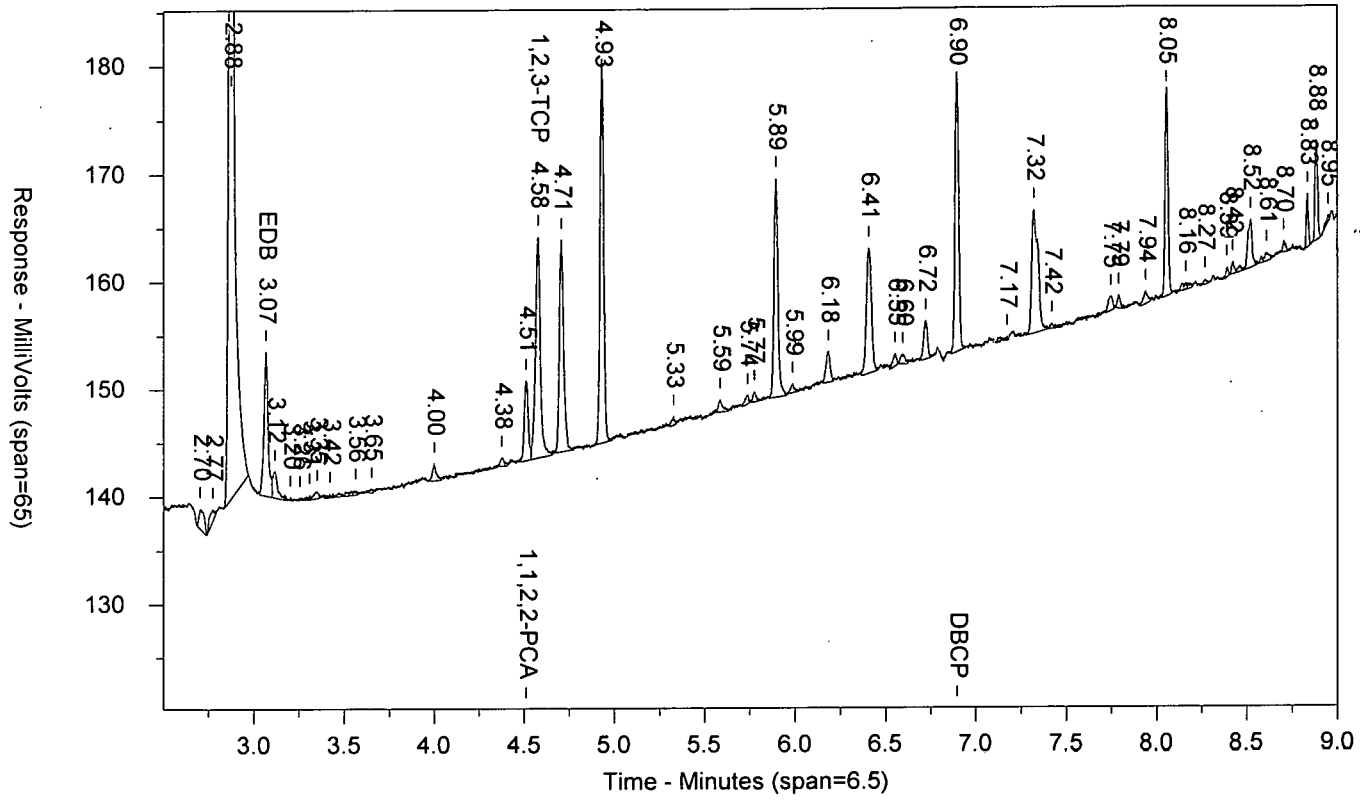
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 7802 | .405 | EDB | 4.335 | 2290 | .405 | EDB |
| 4.515 | 4322 | .196 | 1,1,2,2-PCA | 5.641 | 1830 | .199 | 1,1,2,2-PCA |
| 4.58 | 10708 | 2.318 | 1,2,3-TCP | 5.765 | 13776 | 3.87 | 1,2,3-TCP |
| 6.897 | 14619 | .372 | DBCP | 7.947 | 5660 | .377 | DBCP |

Files:
Area File: 16EDBS17202001.0006.RAW
Area File: 16EDBS17202001B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:34:24 PM
File Reported On: 7/24/2017 at 10:43:26 AM

EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.RAW

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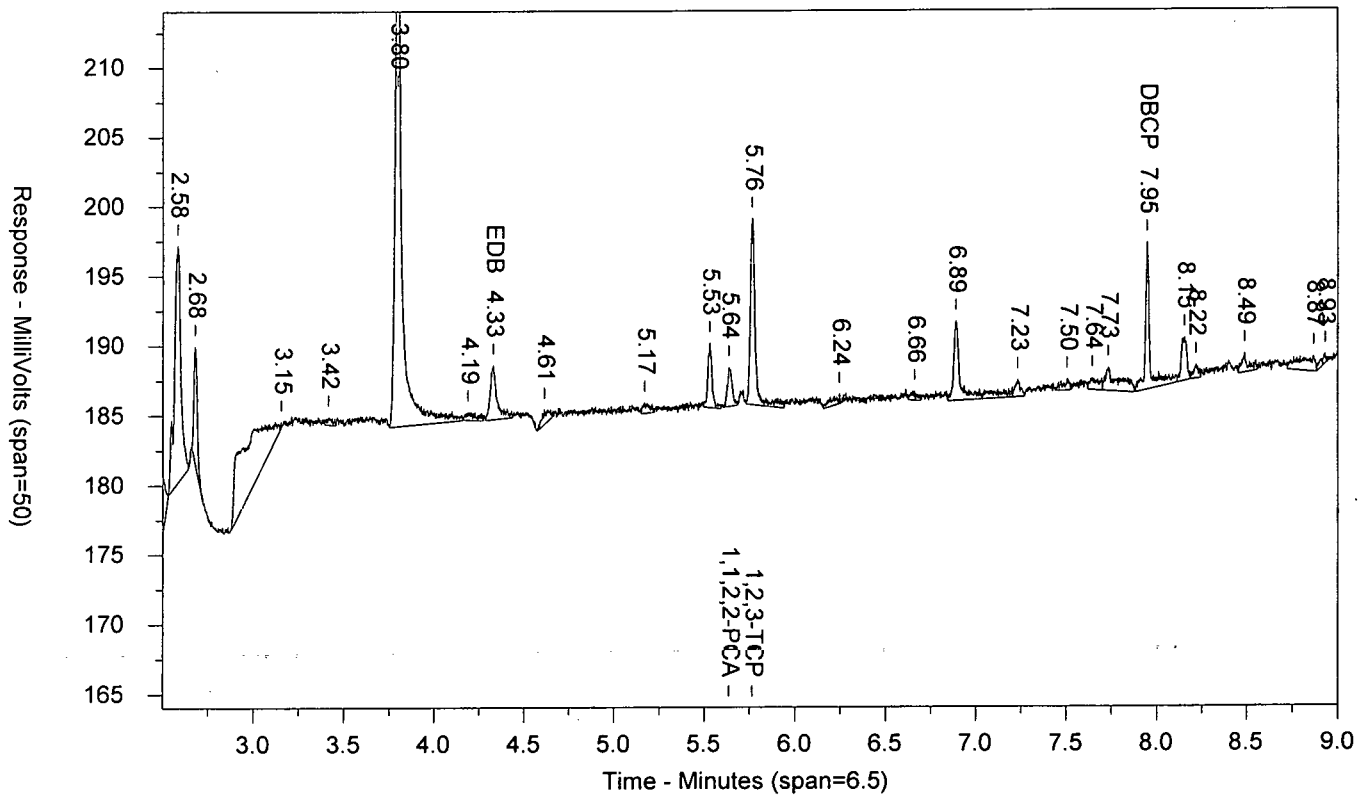


LANCASTER LABORATORIES

Sample Number: EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:40:59 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

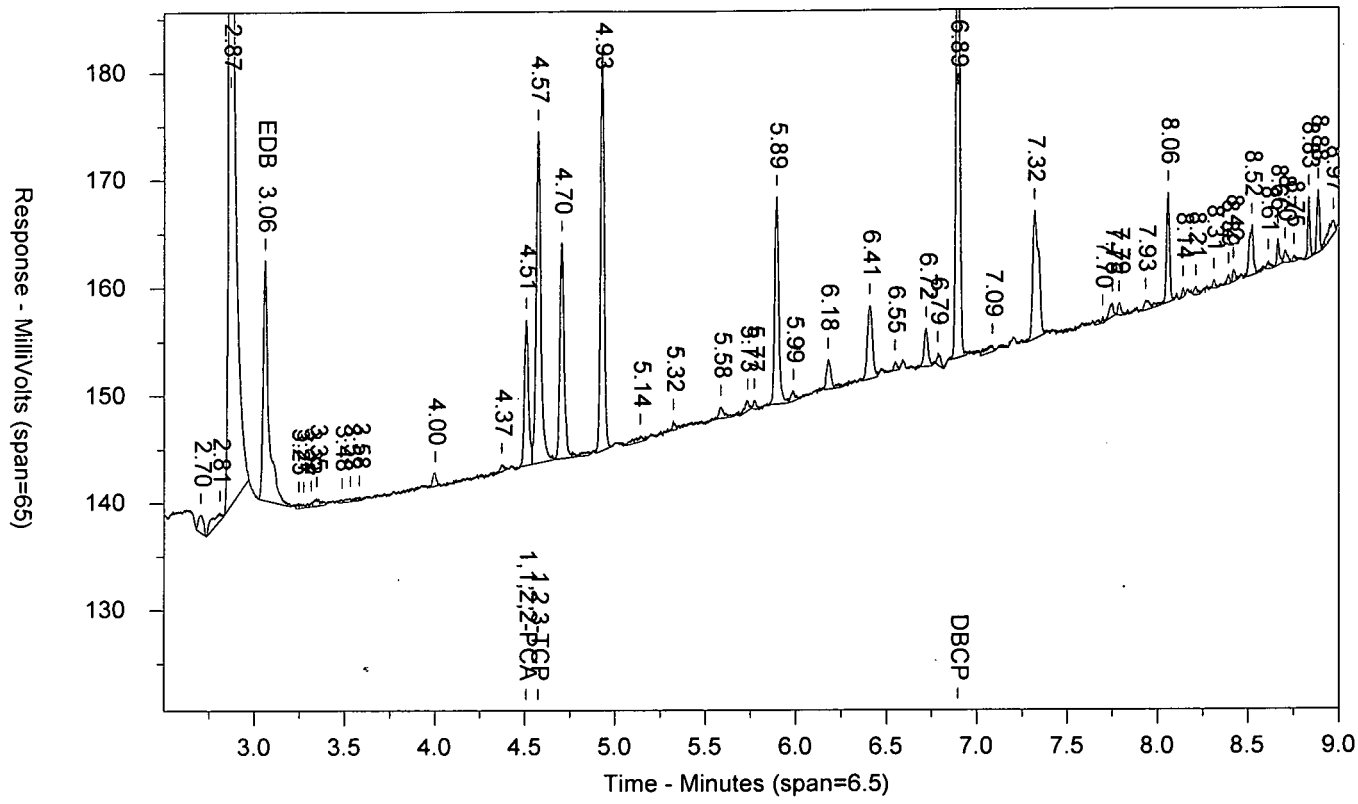
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.067 | 13453 | .69 | EDB | 4.33 | 3898 | .686 | EDB |
| 4.511 | 7462 | .337 | 1,1,2,2-PCA | 5.637 | 2815 | .325 | 1,1,2,2-PCA |
| 4.578 | 20612 | 6.251 | 1,2,3-TCP | 5.764 | 13358 | 2.692 | 1,2,3-TCP |
| 6.895 | 25723 | .653 | DBCP | 7.946 | 10545 | .701 | DBCP |

Files:
Area File: 16EDBS17202001.0007.RAW
Area File: 16EDBS17202001B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:50:00 PM
File Reported On: 7/24/2017 at 10:43:42 AM

EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.RAW

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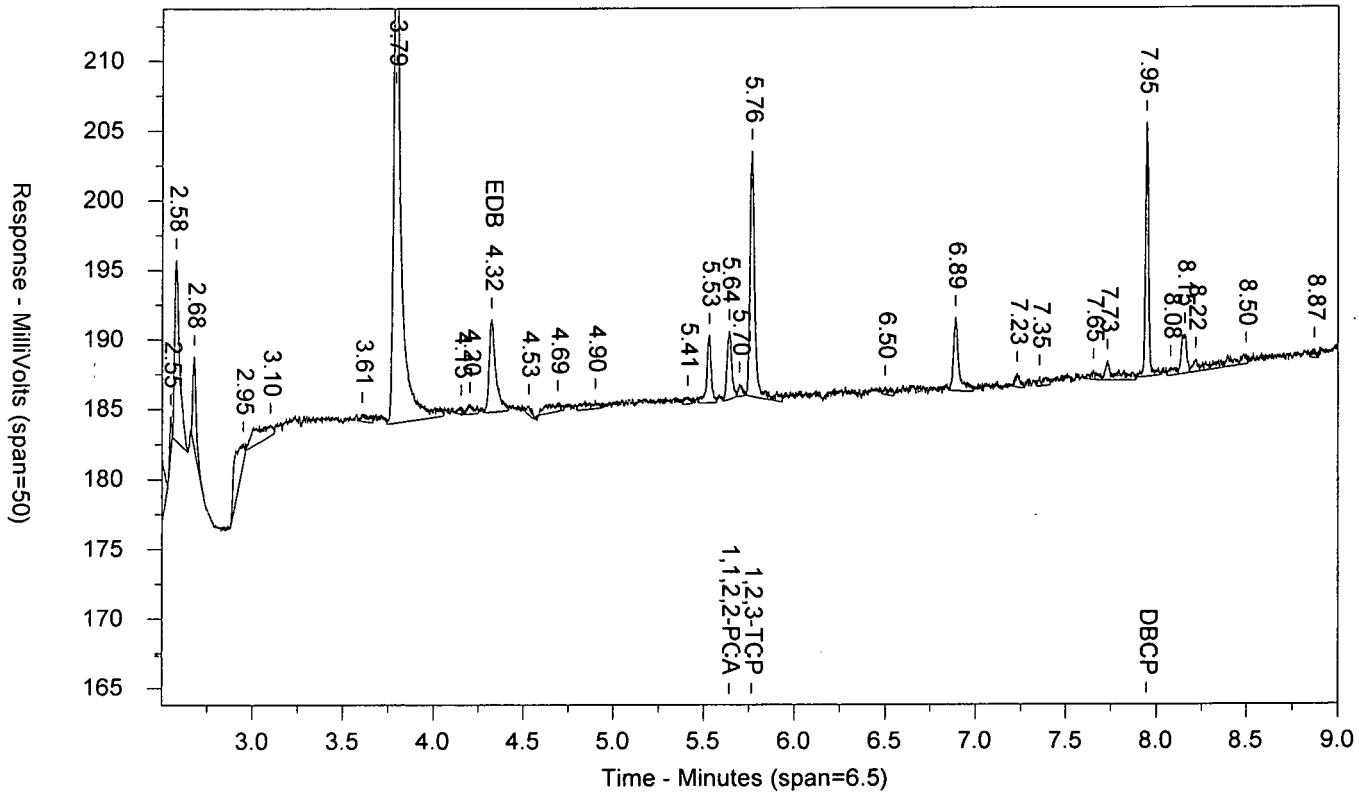


LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:56:33 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

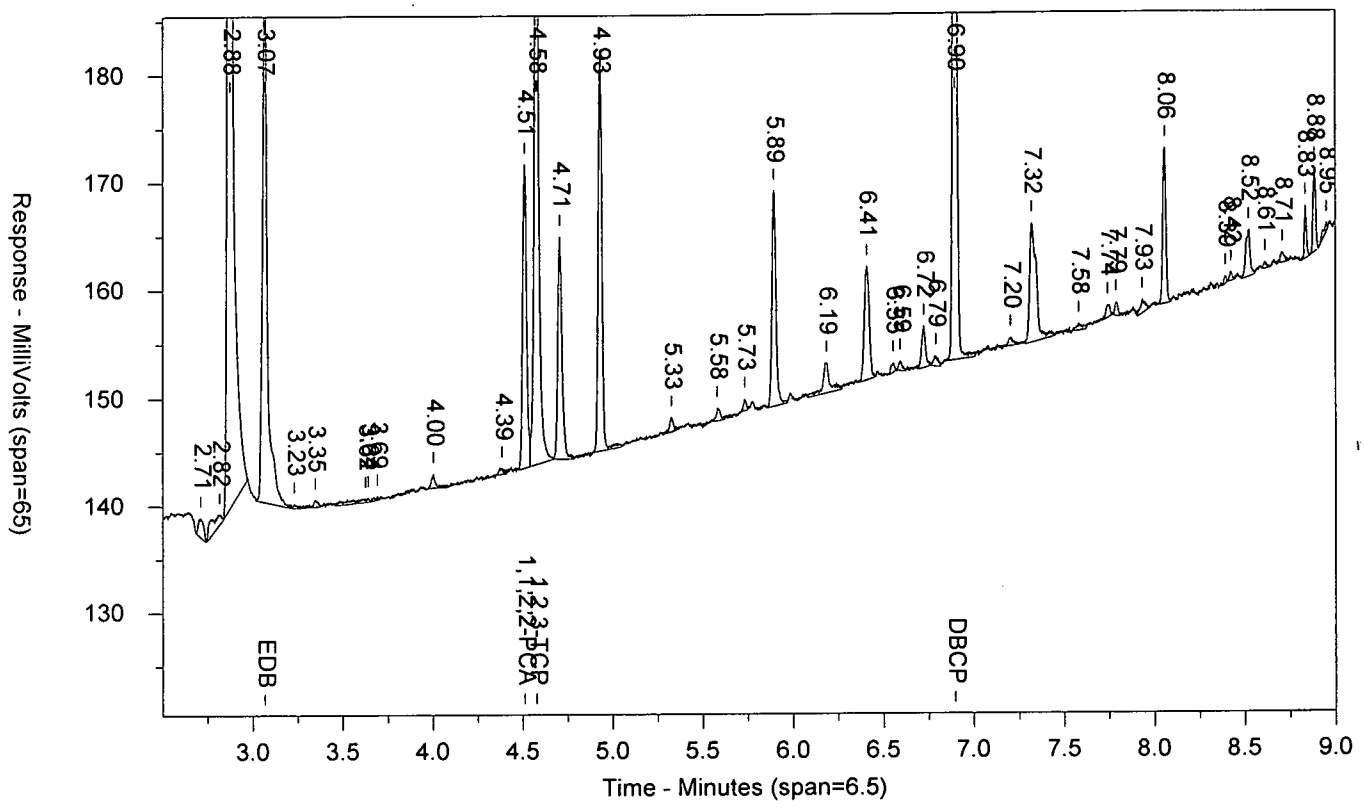
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.06 | 22389 | 1.134 | EDB | 4.324 | 6702 | 1.179 | EDB |
| 4.508 | 13531 | .604 | 1,1,2,2-PCA | 5.64 | 4937 | .598 | 1,1,2,2-PCA |
| 4.574 | 30821 | 9.822 | 1,2,3-TCP | 5.763 | 17655 | 8.34 | 1,2,3-TCP |
| 6.895 | 49779 | 1.263 | DBCP | 7.946 | 18271 | 1.205 | DBCP |

Files:
Area File: 16EDBS17202001.0008.RAW
Area File: 16EDBS17202001B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:05:35 PM
File Reported On: 7/24/2017 at 10:43:58 AM

EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.RAW

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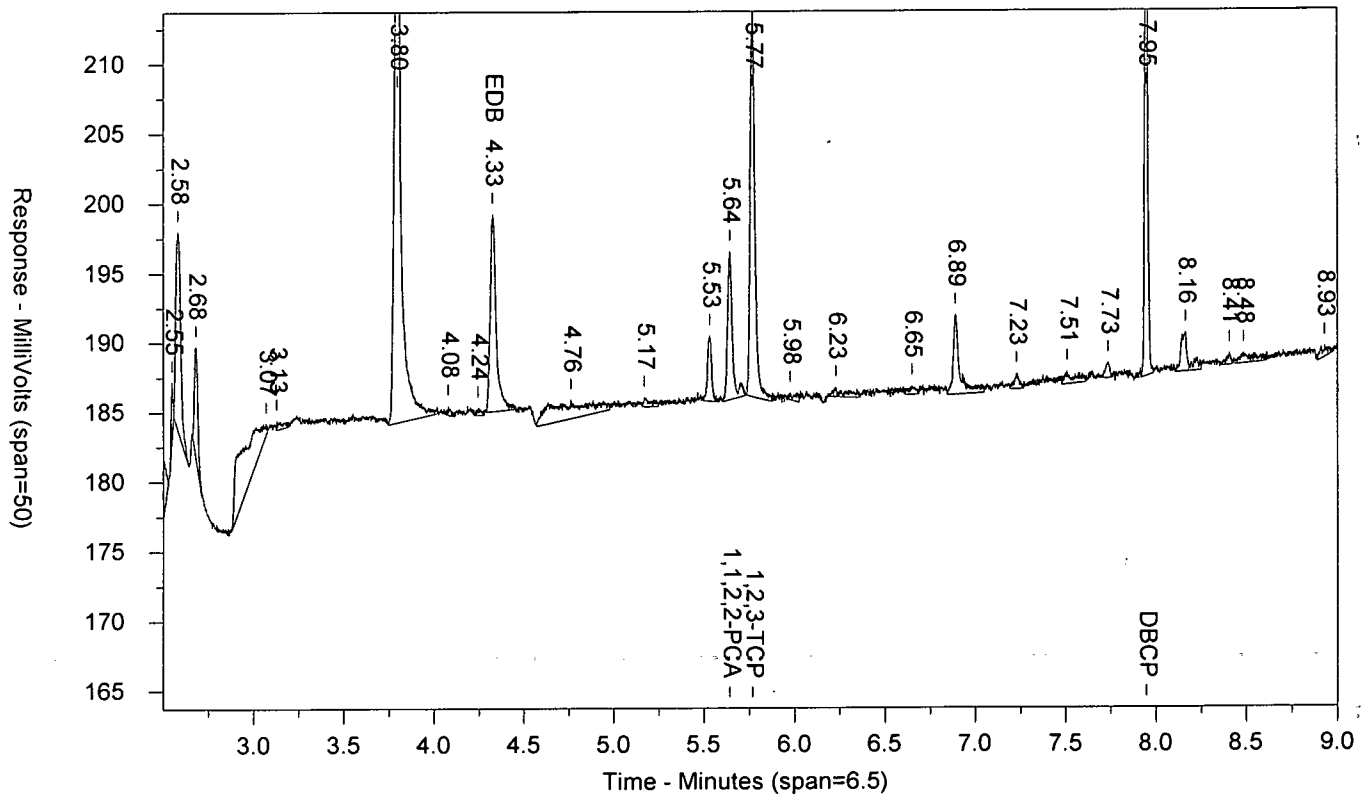


LANCASTER LABORATORIES

Sample Number: EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:12:13 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

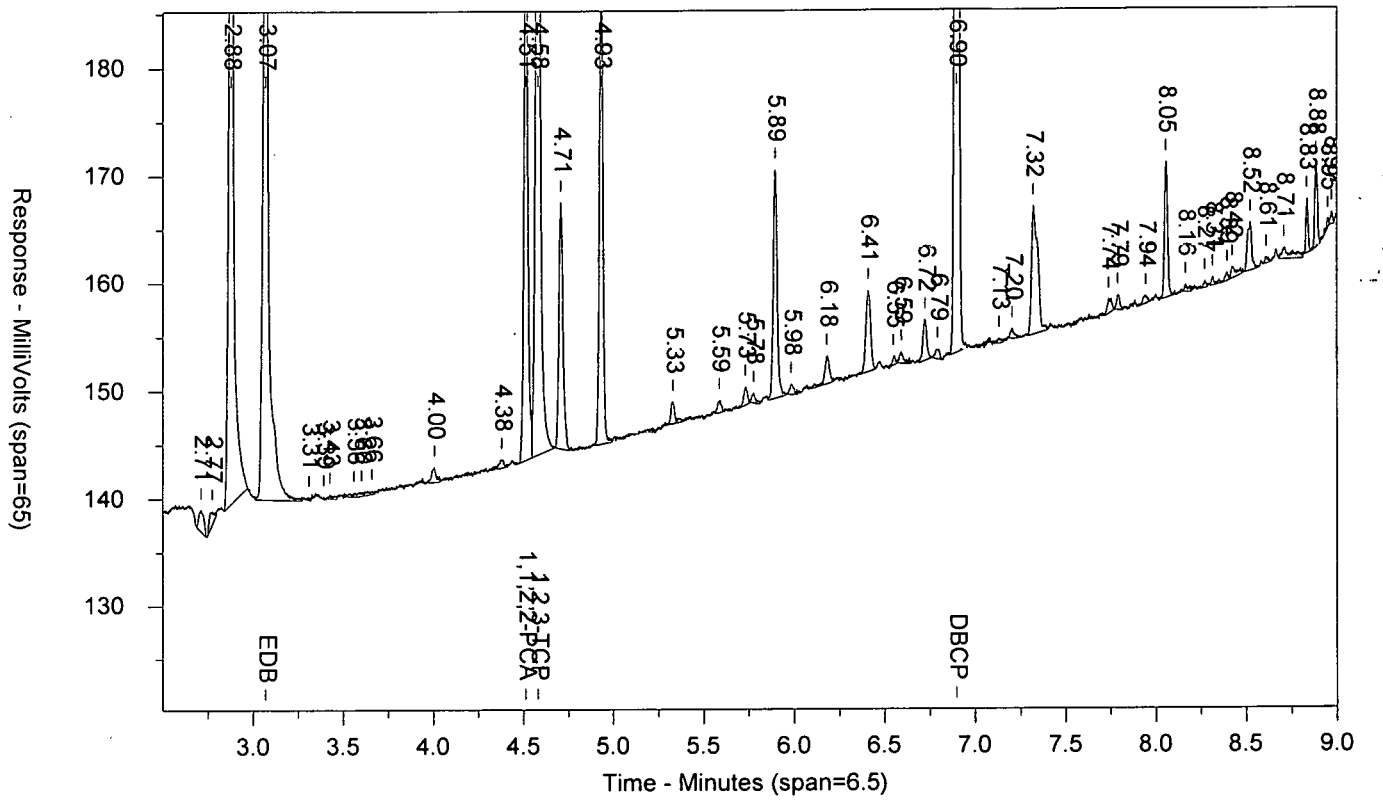
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 51364 | 2.628 | EDB | 4.327 | 14203 | 2.519 | EDB |
| 4.511 | 28210 | 1.267 | 1,1,2,2-PCA | 5.641 | 10658 | 1.354 | 1,1,2,2-PCA |
| 4.578 | 62952 | 22.383 | 1,2,3-TCP | 5.767 | 27830 | 20.965 | 1,2,3-TCP |
| 6.896 | 99853 | 2.548 | DBCP | 7.946 | 36899 | 2.475 | DBCP |

Files:
Area File: 16EDBS17202001.0009.RAW
Area File: 16EDBS17202001B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:21:14 PM
File Reported On: 7/24/2017 at 10:44:14 AM

EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.RAW

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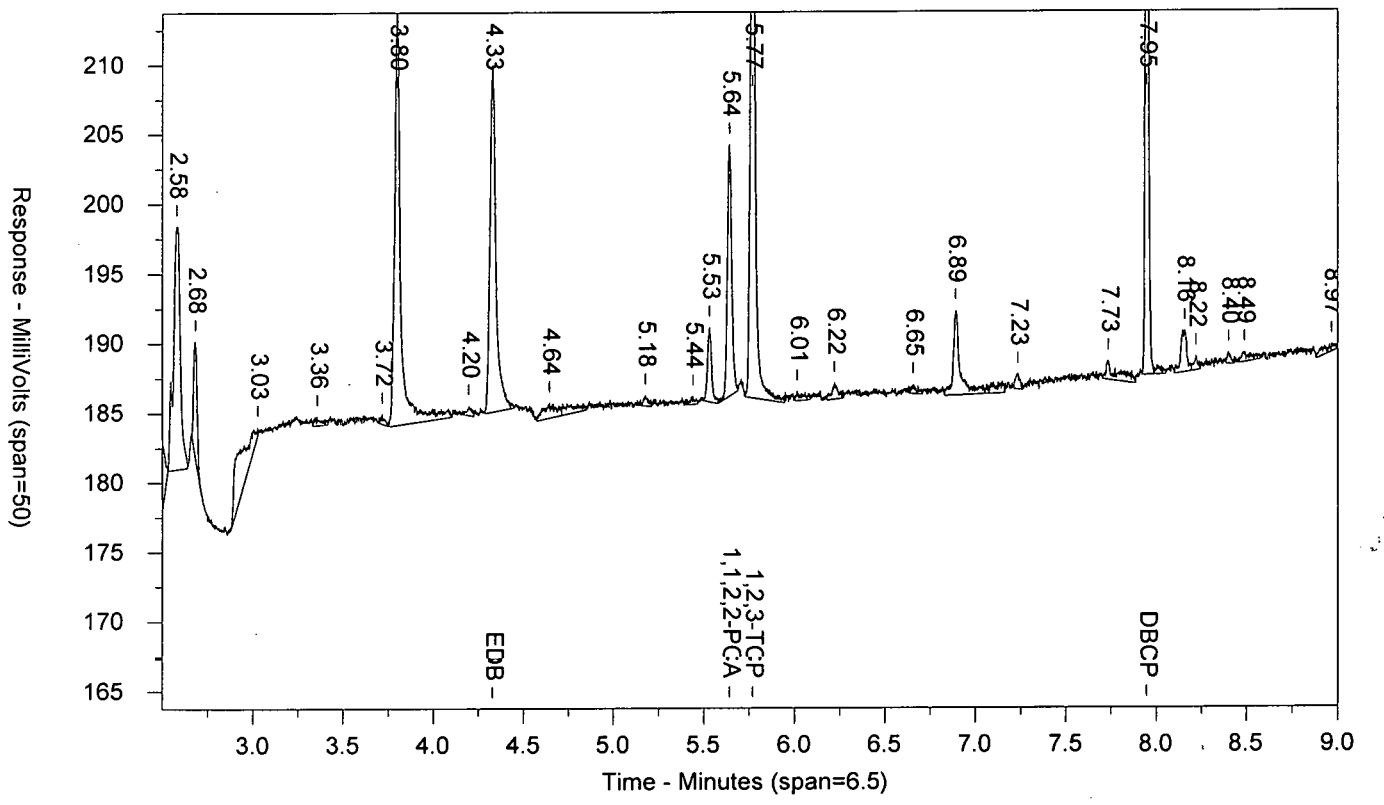


LANCASTER LABORATORIES

Sample Number: EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:27:52 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

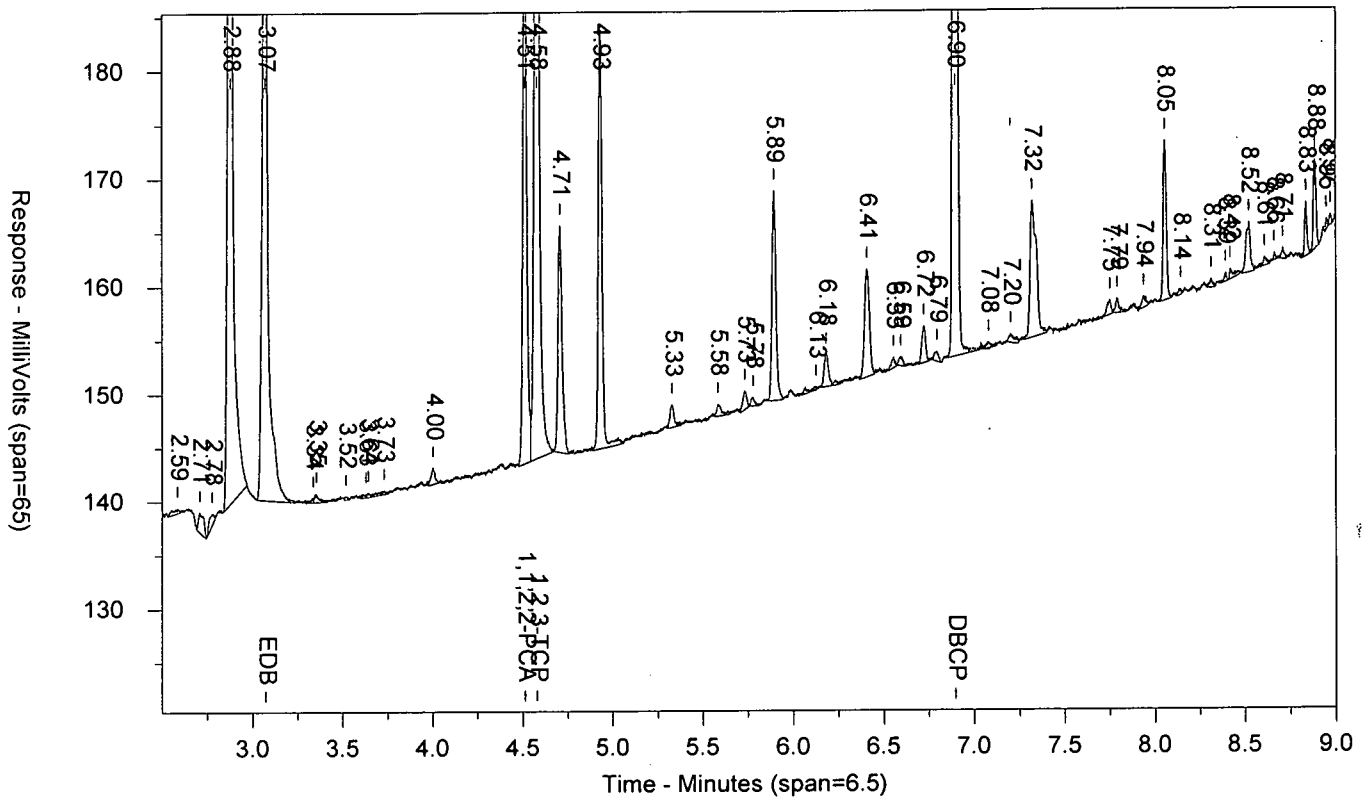
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 91868 | 4.604 | EDB | 4.329 | 24917 | 4.368 | EDB |
| 4.512 | 49780 | 2.2 | 1,1,2,2-PCA | 5.641 | 18049 | 2.296 | 1,1,2,2-PCA |
| 4.579 | 102059 | 37.347 | 1,2,3-TCP | 5.768 | 42823 | 38.187 | 1,2,3-TCP |
| 6.895 | 172607 | 4.369 | DBCP | 7.946 | 63141 | 4.208 | DBCP |

Files:
Area File: 16EDBS17202001.0010.RAW
Area File: 16EDBS17202001B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:36:53 PM
File Reported On: 7/24/2017 at 10:44:30 AM

EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.RAW

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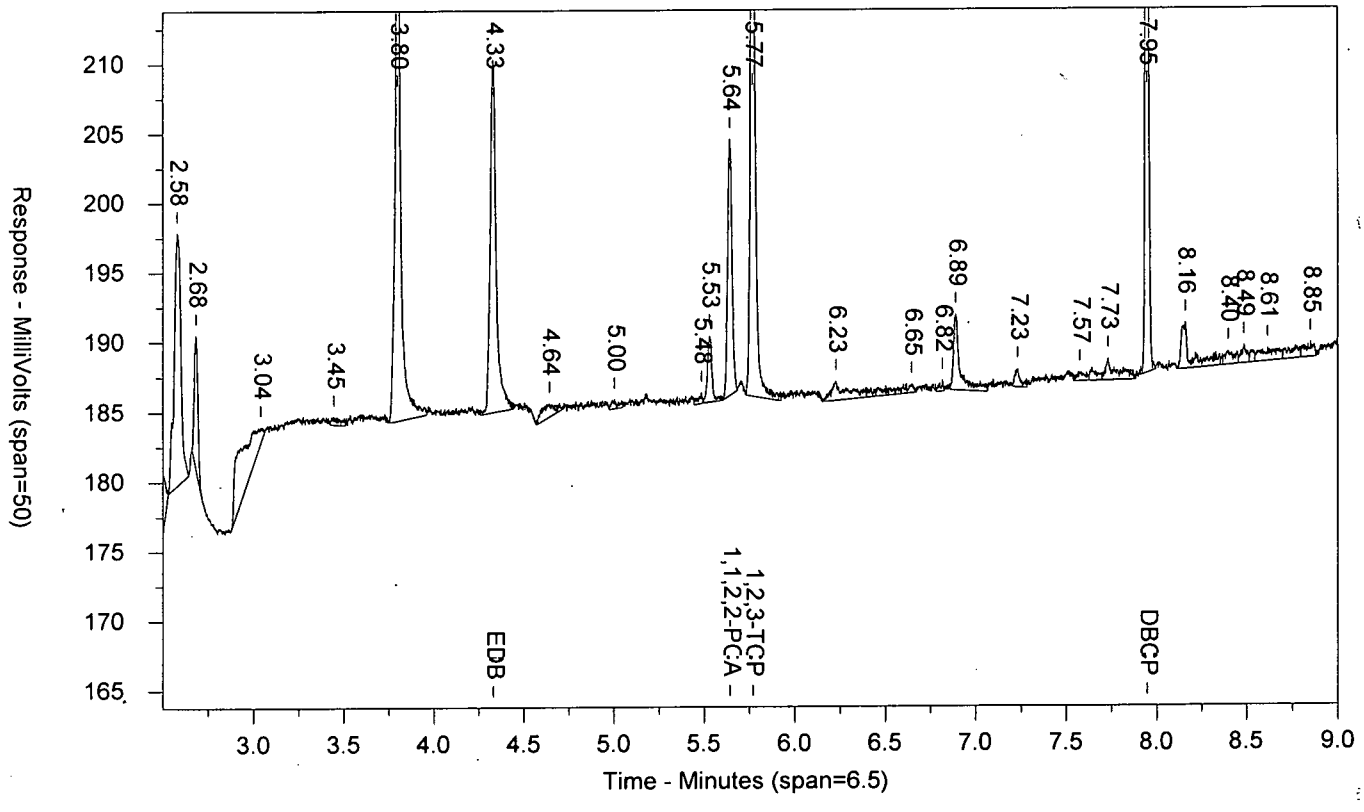


LANCASTER LABORATORIES

Sample Number: EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:43:27 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

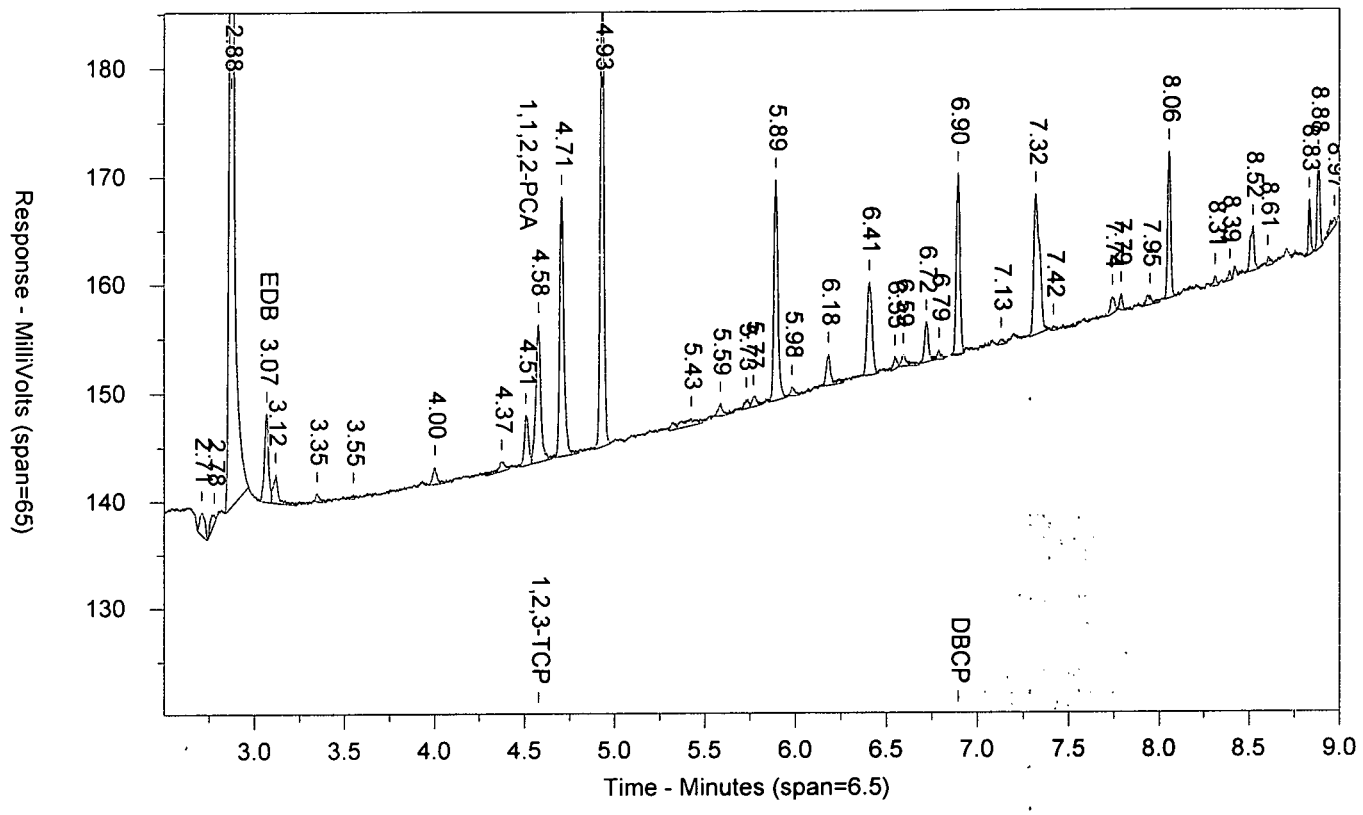
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 92950 | 4.561 | EDB | 4.331 | 25336 | 4.375 | EDB |
| 4.513 | 53020 | 2.296 | 1,1,2,2-PCA | 5.641 | 18435 | 2.295 | 1,1,2,2-PCA |
| 4.58 | 104273 | 36.659 | 1,2,3-TCP | 5.769 | 43781 | 37.288 | 1,2,3-TCP |
| 6.895 | 183008 | 4.592 | DBCP | 7.946 | 67645 | 4.471 | DBCP |

Files:
Area File: 16EDBS17202001.0011.RAW
Area File: 16EDBS17202001B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:52:27 PM
File Reported On: 7/24/2017 at 10:44:46 AM

MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0012.RAW

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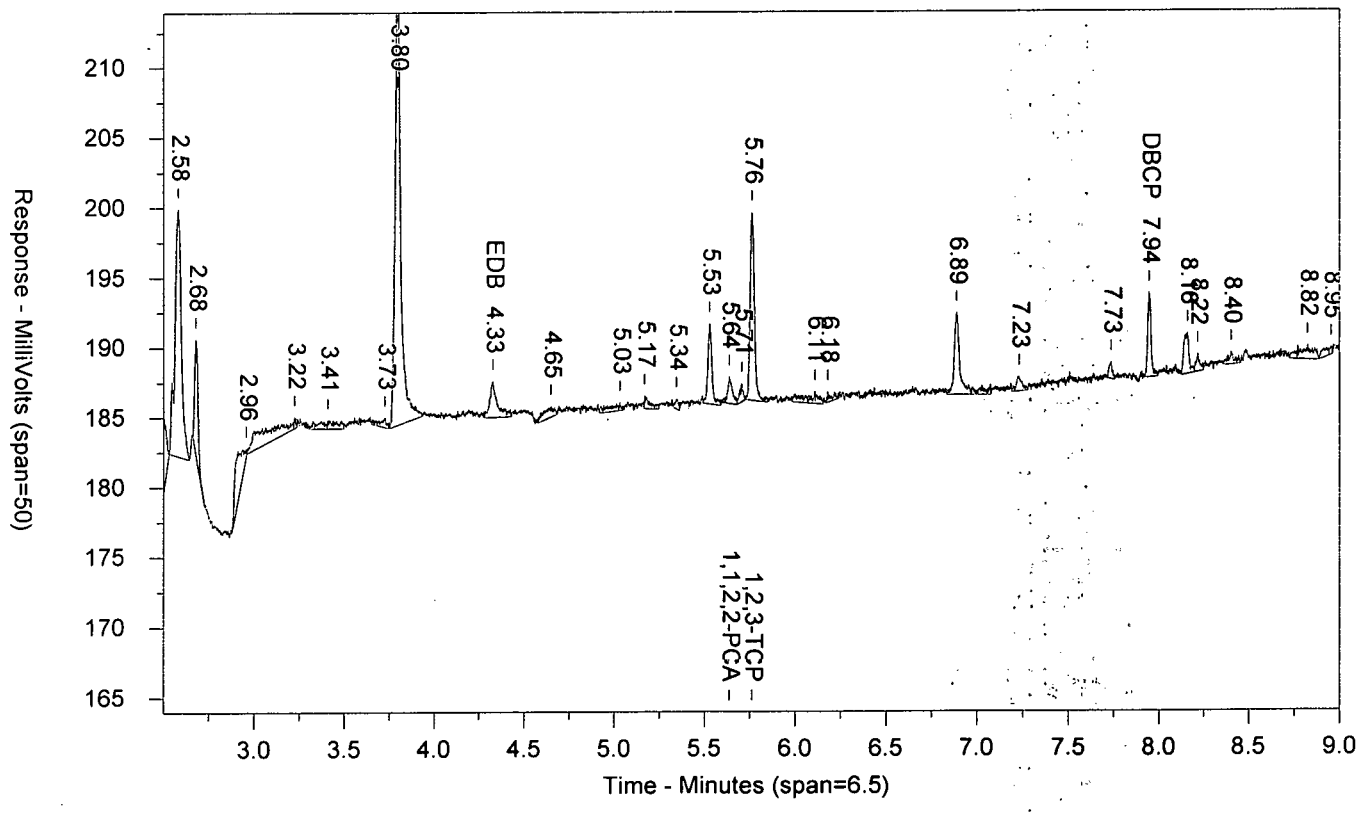


LANCASTER LABORATORIES

Sample Number: MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:59:04 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

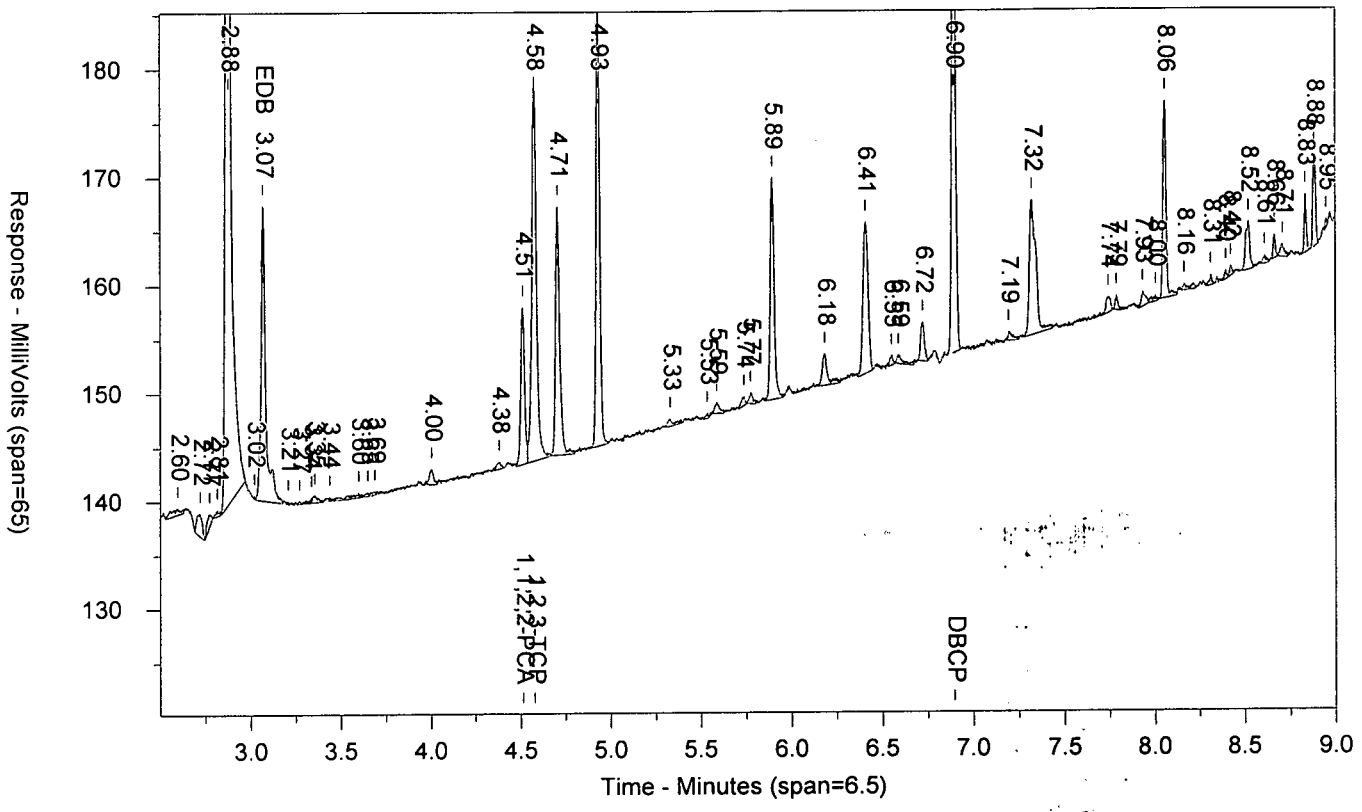
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 8227 | .399 | EDB | 4.328 | 2605 | .442 | EDB |
| 4.508 | 4705 | .201 | 1,1,2,2-PCA | 5.637 | 1947 | .207 | 1,1,2,2-PCA |
| 4.577 | 12707 | 2.8 | 1,2,3-TCP | 5.762 | 13463 | 4.124 | 1,2,3-TCP |
| 6.895 | 16774 | .413 | DBCP | 7.944 | 6091 | .394 | DBCP |

Files:
Area File: 16EDBS17202001.0012.RAW
Area File: 16EDBS17202001B.0012.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:08:05 PM
File Reported On: 7/24/2017 at 10:53:41 AM

EDB_31724DS AAEDB_3AA CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0013.RAW

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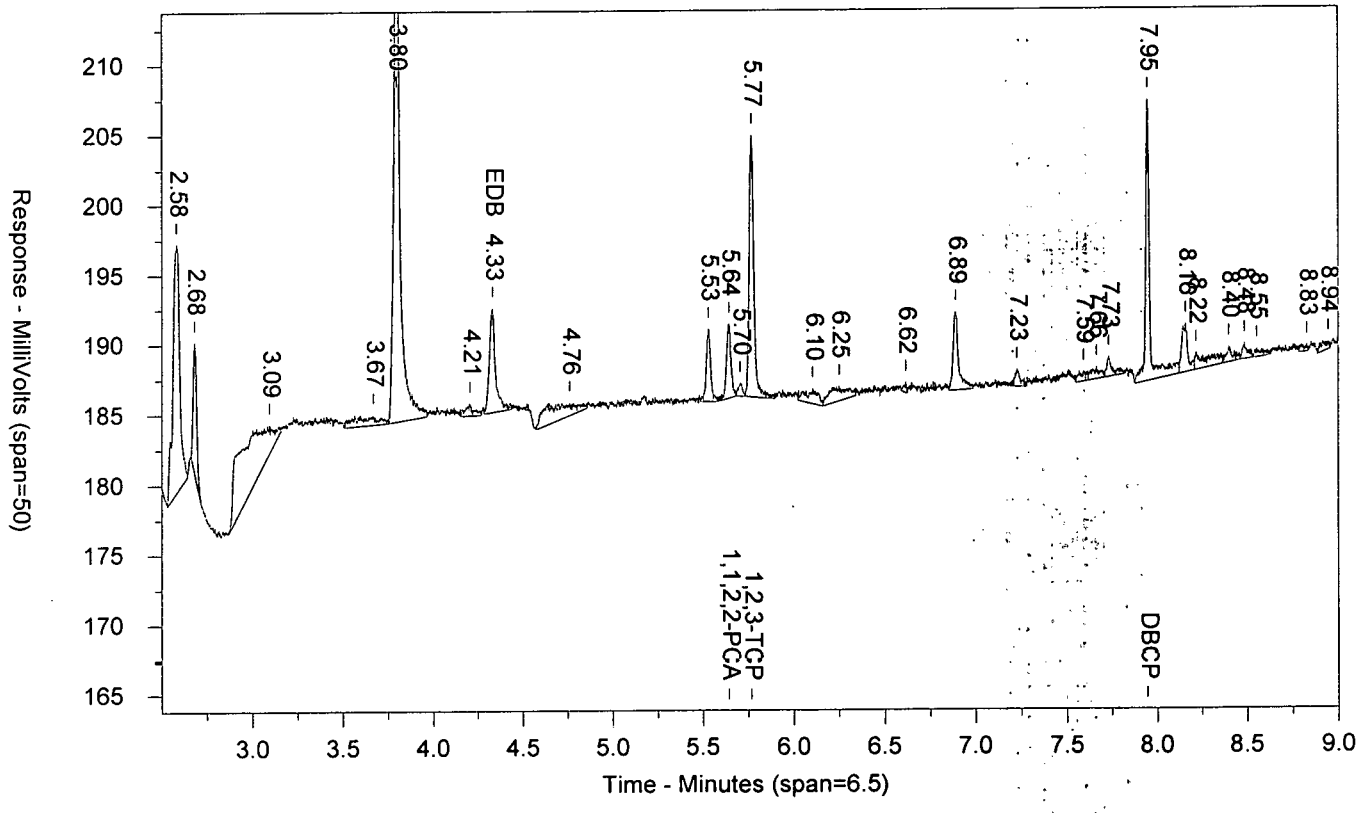


LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 5:14:46 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

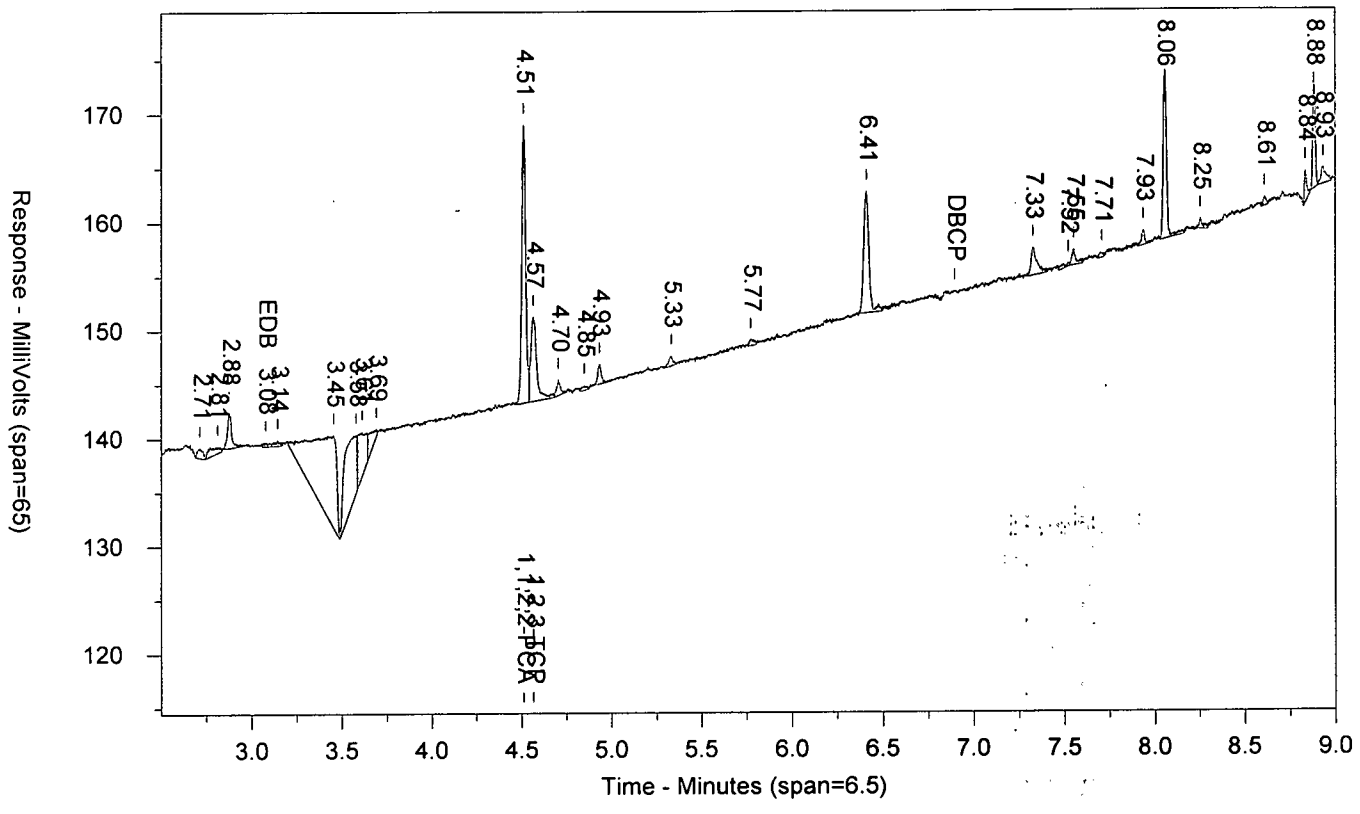
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 27334 | 1.326 | EDB | 4.332 | 7493 | 1.272 | EDB |
| 4.513 | 14601 | .622 | 1,1,2,2-PCA | 5.641 | 5326 | .616 | 1,1,2,2-PCA |
| 4.578 | 34941 | 10.322 | 1,2,3-TCP | 5.765 | 18757 | 9.484 | 1,2,3-TCP |
| 6.896 | 53176 | 1.309 | DBCP | 7.946 | 20164 | 1.305 | DBCP |

Files:
Area File: 16EDBS17202001.0013.RAW
Area File: 16EDBS17202001B.0013.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:23:47 PM
File Reported On: 7/24/2017 at 10:53:52 AM

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0014.RAW

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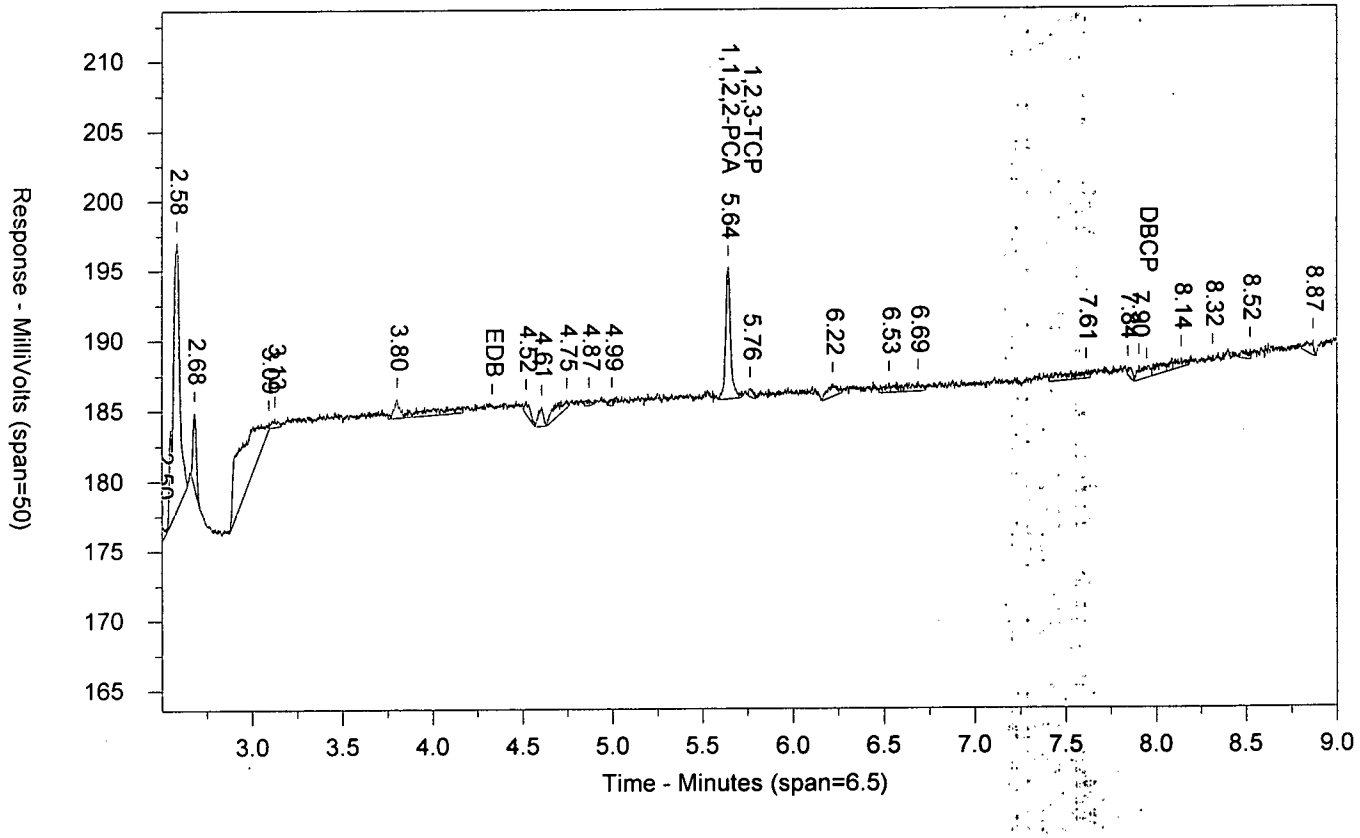


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 5:30:25 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

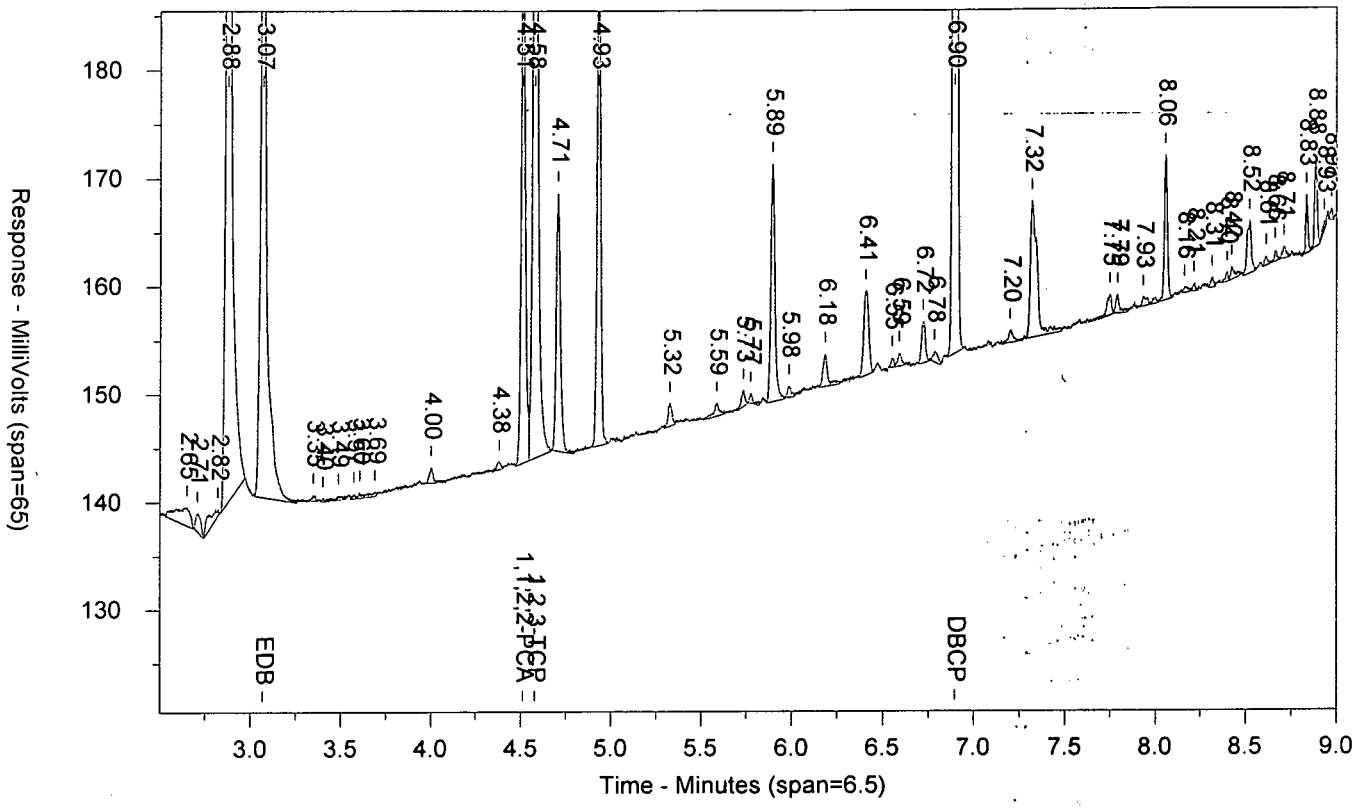
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.077 | 465 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25794 | .063 | 1,1,2,2-PCA | 5.642 | 9419 | .063 | 1,1,2,2-PCA |
| 4.565 | 7915 | .067 | 1,2,3-TCP | 5.764 | 590 | -.509 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0014.RAW
Area File: 16EDBS17202001B.0014.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:39:27 PM
File Reported On: 7/24/2017 at 10:54:01 AM

EDB_51724DS LSEDB_5LS CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0025.RAW

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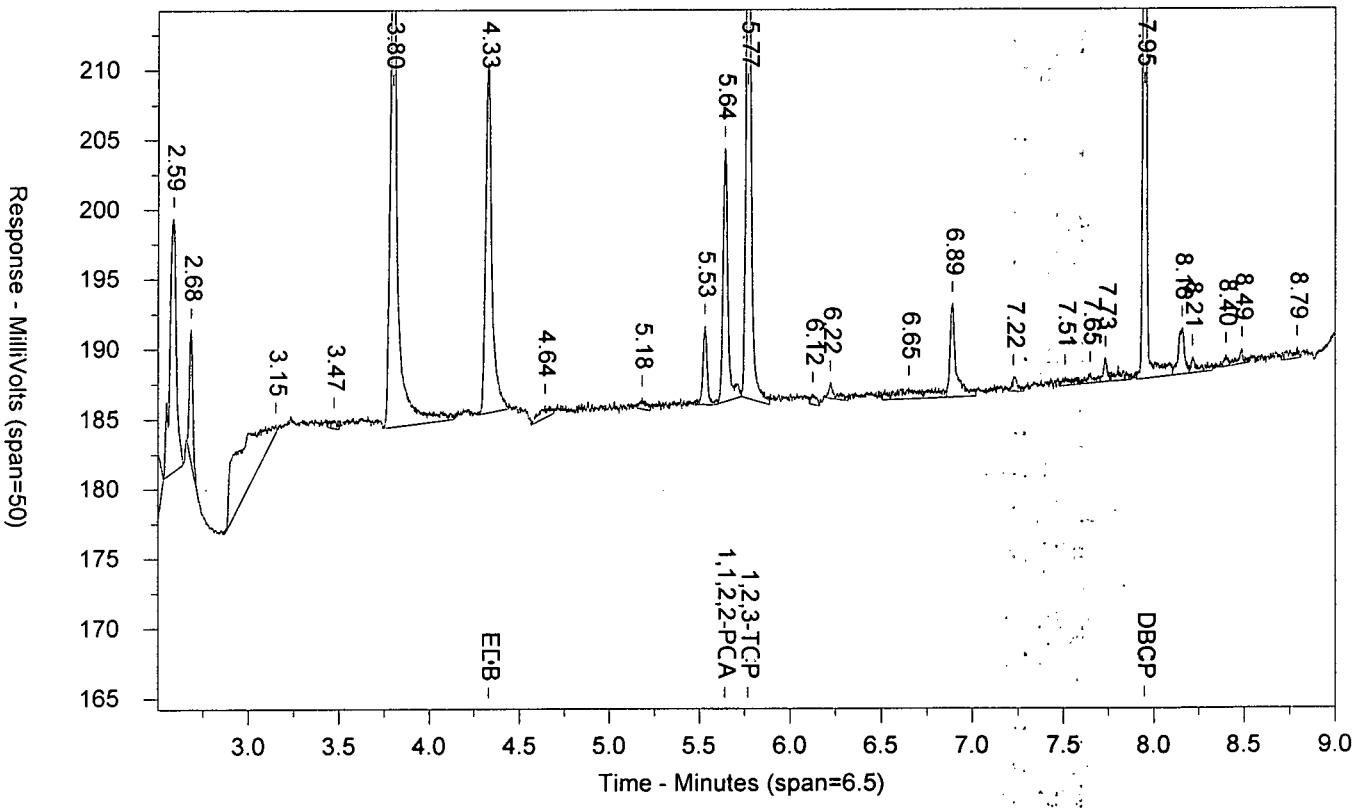


LANCASTER LABORATORIES

Sample Number: EDB_51724DS LSEDB_5LS CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 8:22:17 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

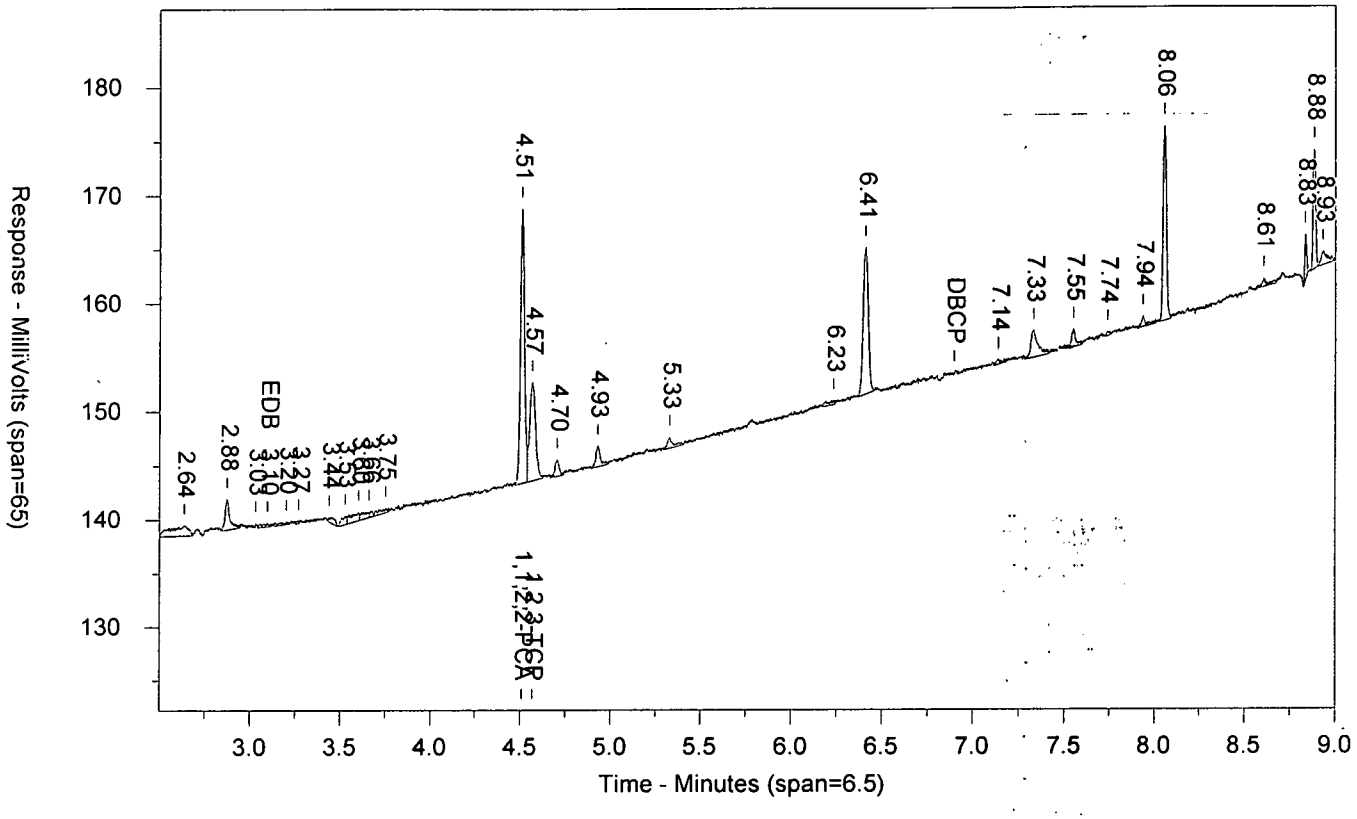
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 91403 | 4.434 | EDB | 4.329 | 25137 | 4.266 | EDB |
| 4.511 | 48710 | 2.076 | 1,1,2,2-PCA | 5.64 | 18183 | 2.171 | 1,1,2,2-PCA |
| 4.578 | 99451 | 32.145 | 1,2,3-TCP | 5.767 | 43011 | 34.043 | 1,2,3-TCP |
| 6.896 | 177937 | 4.379 | DBCP | 7.946 | 66694 | 4.317 | DBCP |

Files:
Area File: 16EDBS17202001.0025.RAW
Area File: 16EDBS17202001B.0025.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:31:18 PM
File Reported On: 7/24/2017 at 10:56:08 AM

EIBKX1724C SCPIBLKSC PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0026.RAW

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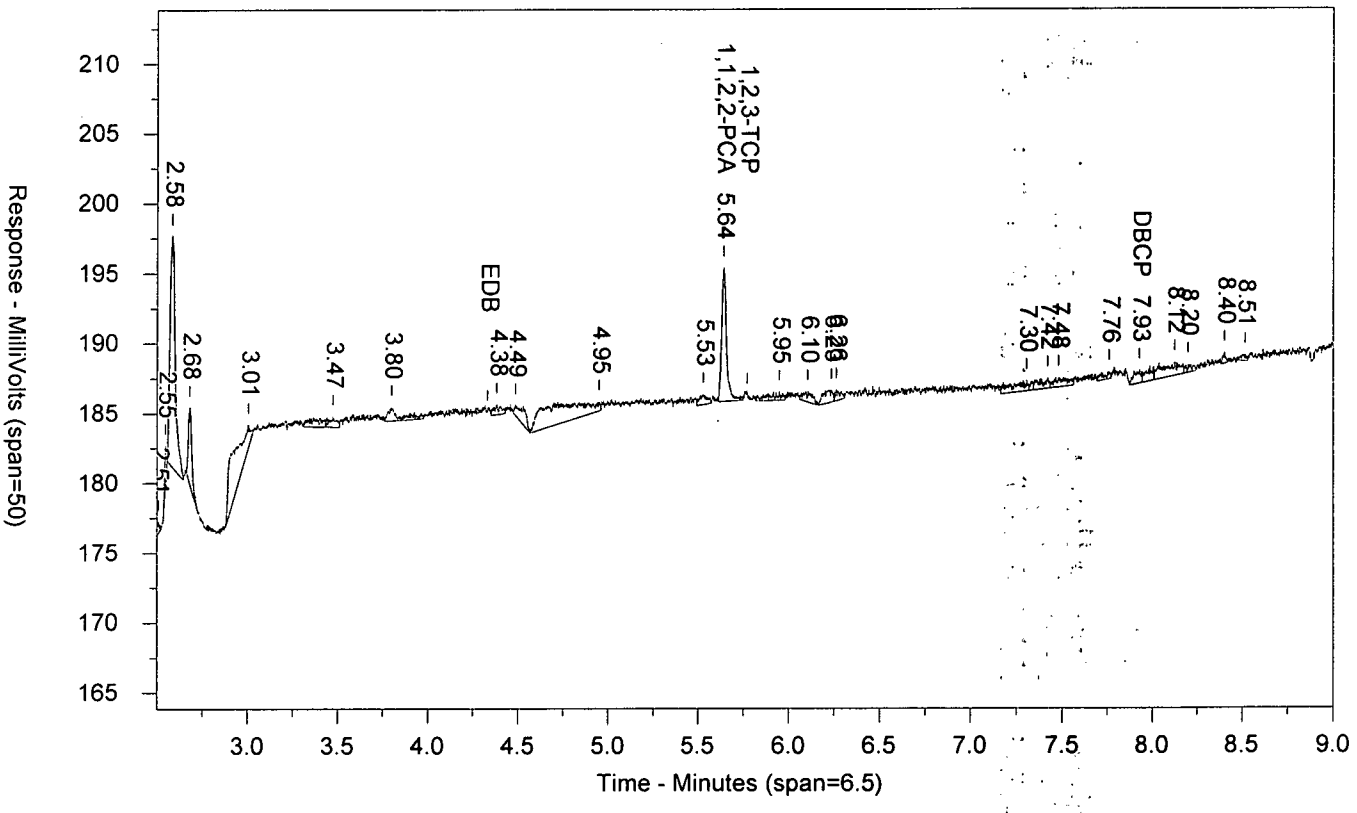

LANCASTER LABORATORIES

Sample Number: EIBKX1724C SCPIBLKSC PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 8:37:50 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.098 | 383 | .001 | EDB | | 0 | | EDB |
| 4.51 | 25471 | .062 | 1,1,2,2-PCA | 5.64 | 9566 | .065 | 1,1,2,2-PCA |
| 4.568 | 9137 | .091 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |
| | 0 | | DBCP | 7.927 | 949 | .004 | DBCP |

Files:
Area File: 16EDBS17202001.0026.RAW
Area File: 16EDBS17202001B.0026.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:46:51 PM
File Reported On: 7/24/2017 at 10:56:18 AM

# Raw QC Data

# EDB/DBCP

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# Data Summary

**Sample Name: BLANKA** 7/18/17 PBLK26198 BLK Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 01:33:49 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.039.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 85% ( 46 - 136 ) Conc: 0.059681

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 01:33:49 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.039.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.059322

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 12133 | 0.059681 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 449 | 0.015617 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 16512 | 0.059322 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 641 | 0.017322 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 1196 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.059681 | 0.0035 | 0.007 | 0.007 | | 0.60 | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomzyko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:18

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 7/18/17 PBLK26198Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 01:33:49
Instrument : CP18--19846A
Result file : 18EDBS17200001.039.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 85% (46-136) Conc.: 0.059681

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 12133 | 0.059681 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 449 | 0.015617 |

## Analysis Report (B)

Injected on : Jul 20, 2017 01:33:49
Instrument : CP18--19846B
Result file : 18EDBS17200001B.039.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.059322

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 16512 | 0.059322 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 641 | 0.017322 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 1196 | -0.015760 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.059681 | | | | 0.60 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

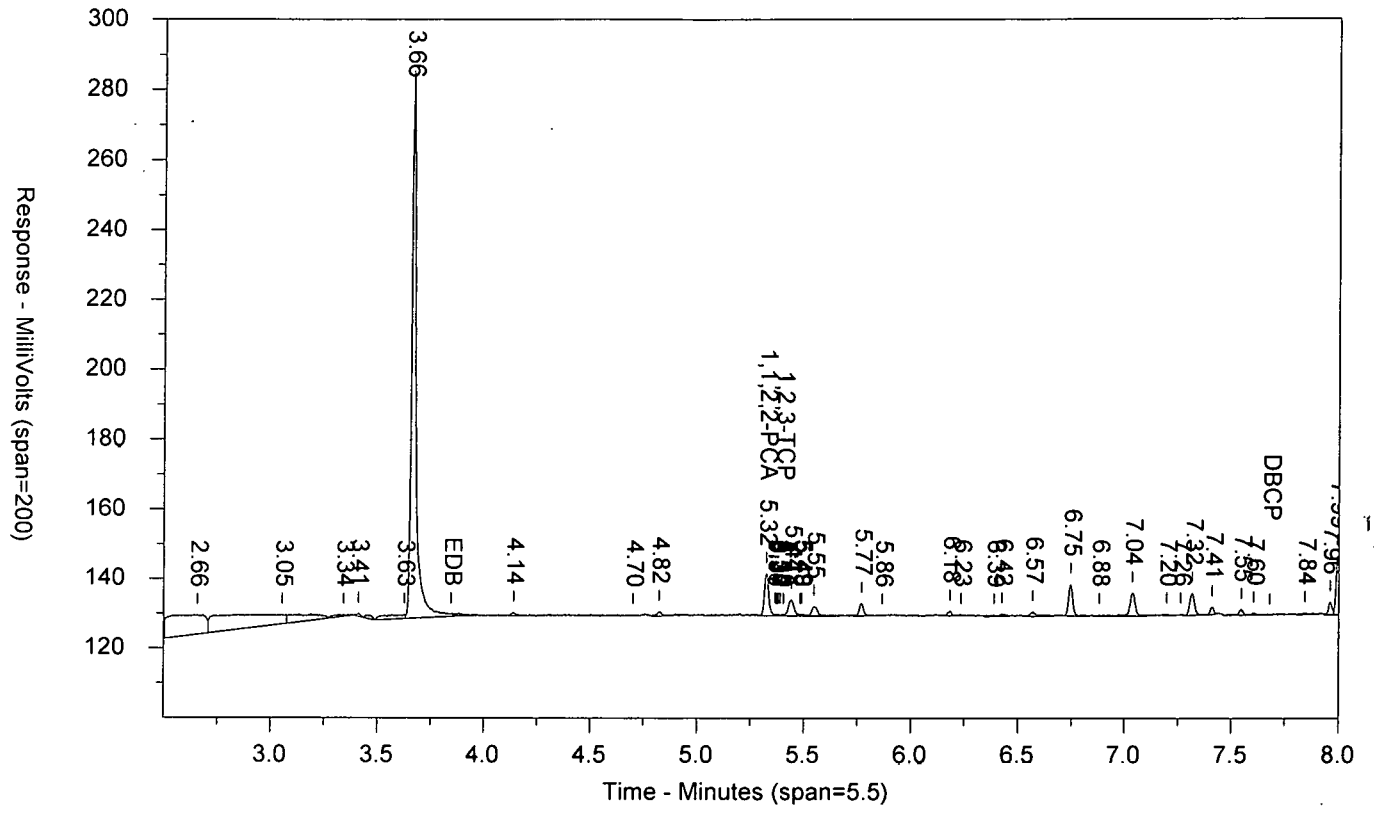
Verified by:
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

BLANKA 7/18/17 AAPBLK26198 BLK 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.039.RAW

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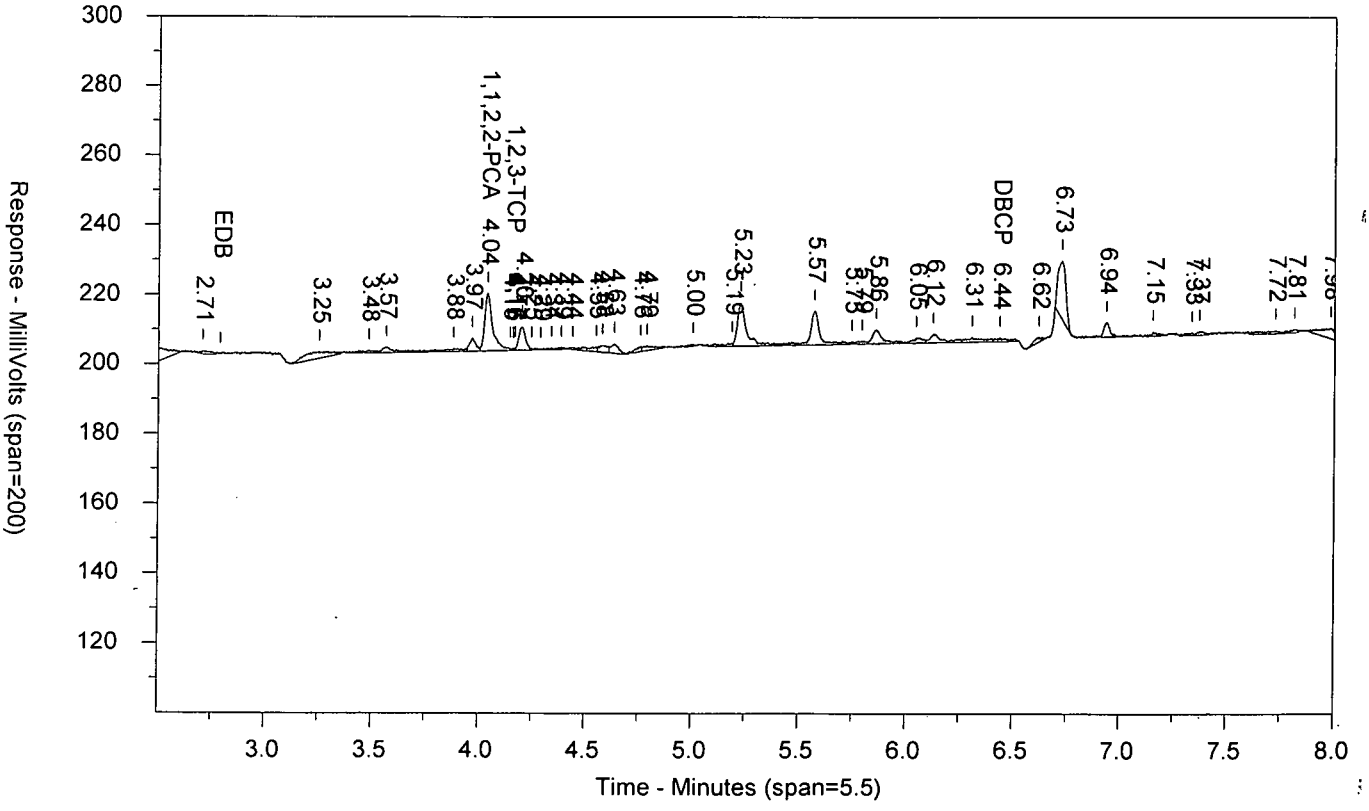

LANCASTER LABORATORIES

Sample Number: BLANKA 7/18/17 AAPBLK26198 BLK 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 1:33:49 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 12133 | .06 | 1,1,2,2-PCA | 4.04 | 16512 | .059 | 1,1,2,2-PCA |
| 5.403 | 449 | .016 | 1,2,3-TCP | 4.159 | 641 | .017 | 1,2,3-TCP |
| | 0 | | DBCP | 6.436 | 1196 | -.016 | DBCP |

Files:
Area File: 18EDBS17200001.039.RAW
Area File: 18EDBS17200001B.039.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 1:42:22 AM
File Reported On: 7/20/2017 at 10:38:50 AM

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# Data Summary

**Sample Name: 9095961** MS 18407 MS Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.67 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 04:45:18 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.051.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.064081

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 04:45:18 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.051.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.064308

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 28000 | 0.151045 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 13649 | 0.064081 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 34742 | 1.152503 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 54867 | 0.125252 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 38352 | 0.161688 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 18754 | 0.064308 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 46169 | 1.190686 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 66115 | 0.141967 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.151045 | 0.0095 | 0.0191 | 0.0286 | | 6.81 | |
| 1,1,2,2-TETRACHLOROE | A | 0.064081 | 0.0033 | 0.0067 | 0.0067 | | 0.35 | |
| 1,2,3-Trichloropropane | A | 1.152503 | | | 0.2577 | | 3.26 | |
| 1,2-Dibromo-3-chloroprop | A | 0.125252 | 0.0095 | 0.0191 | 0.0286 | | 12.51 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:33

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9095961** MS 18407 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.67 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 04:45:18
Instrument : CP18--19846A
Result file : 18EDBS17200001.051.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.064081

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 28000 | 0.151045 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13649 | 0.064081 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 34742 | 1.152503 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 54867 | 0.125252 |

## Analysis Report (B)

Injected on : Jul 20, 2017 04:45:18
Instrument : CP18--19846B
Result file : 18EDBS17200001B.051.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.064308

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 38352 | 0.161688 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 18754 | 0.064308 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 46169 | 1.190686 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 66115 | 0.141967 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.151045 | 0.0286 | 0.0095 | | 6.81 | |
| ☐ 1,1,2,2-PCA | A | 0.064081 | | | | 0.35 | |
| ☐ 1,2,3-TCP | A | 1.152503 | 0.2577 | 0.0954 | | 3.26 | |
| ☐ DBCP | A | 0.125252 | 0.0286 | 0.0095 | | 12.51 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist

Date: JUL 20 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist

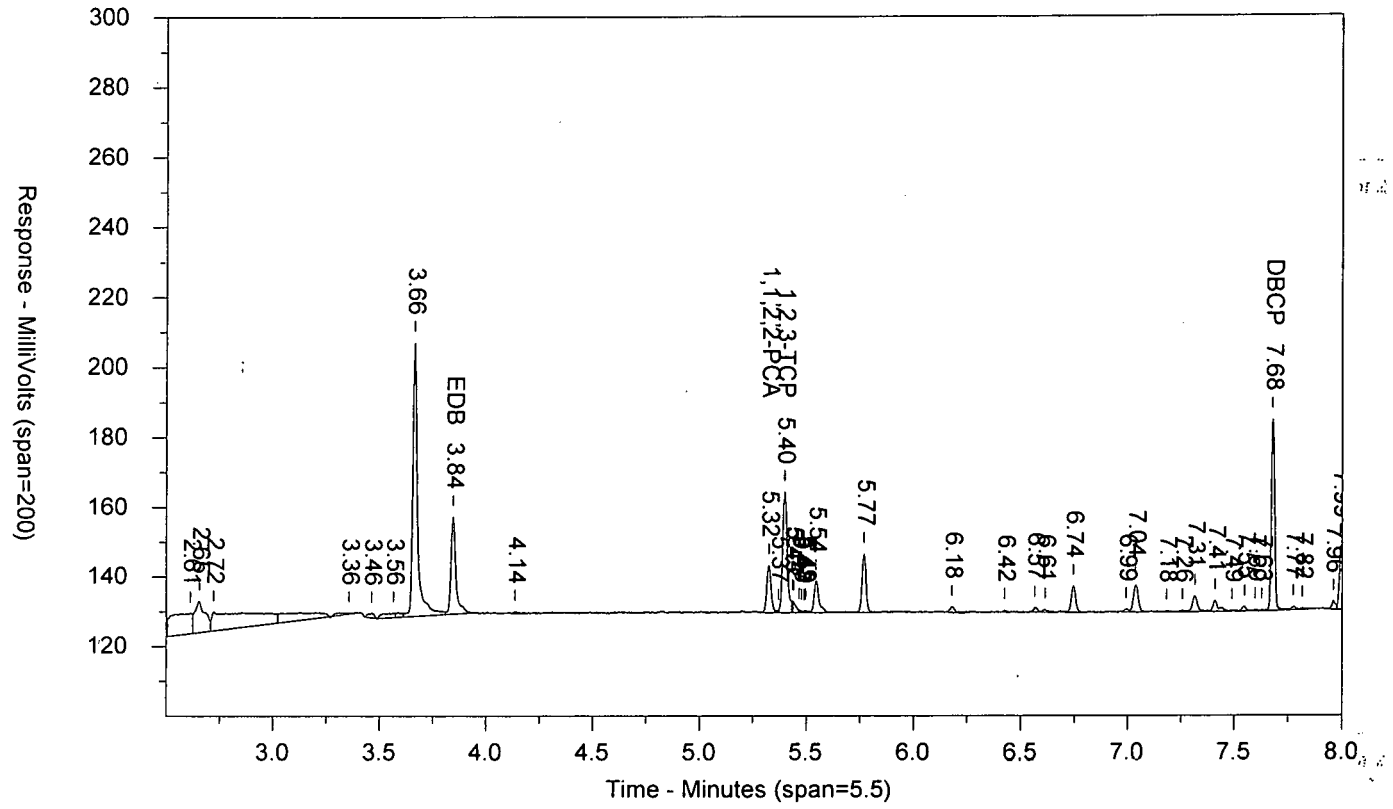
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095961MS AA18407 MS 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.051.RAW

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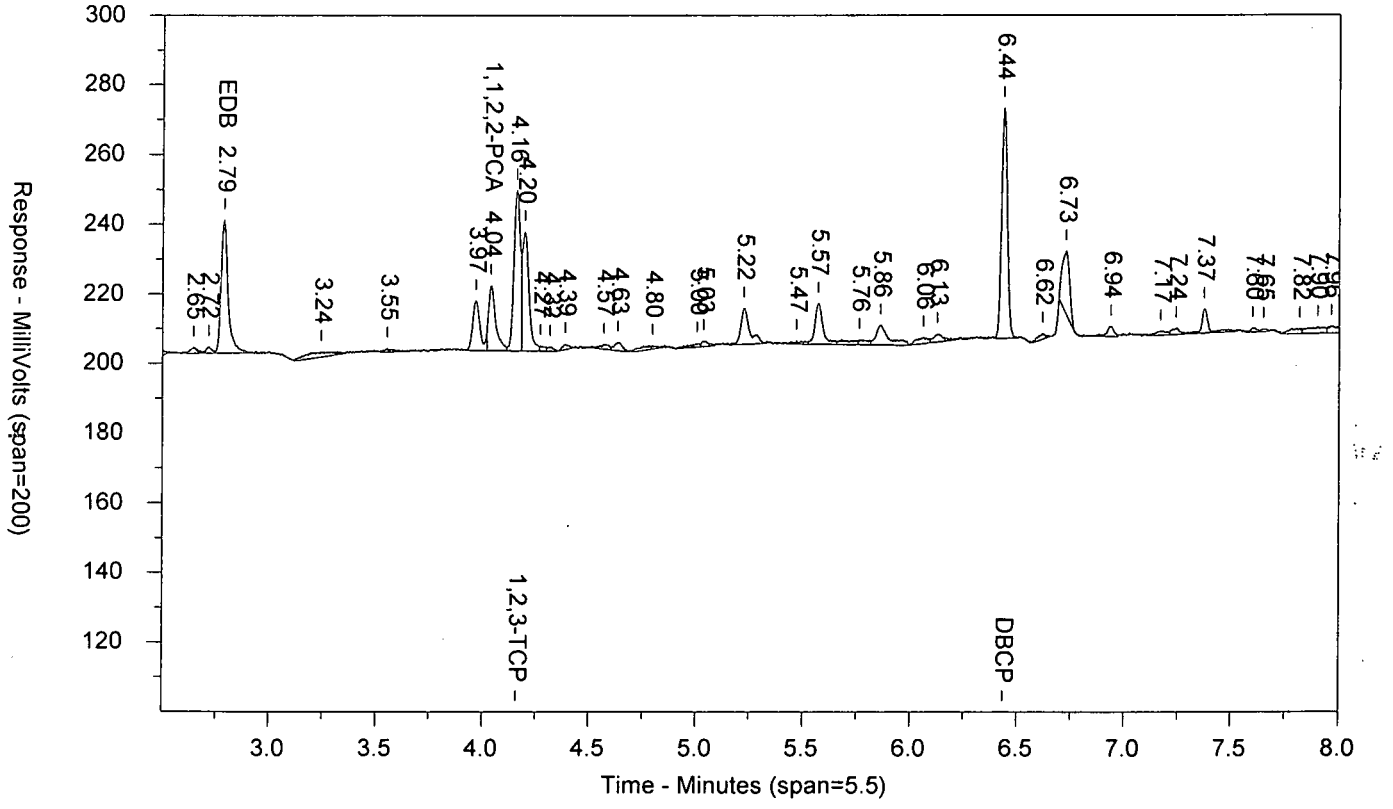


LANCASTER LABORATORIES

Sample Number: 9095961MS AA18407 MS 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 4:45:18 AM Sample Weight: 36.67
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 28000 | .151 | EDB | 2.788 | 38352 | .162 | EDB |
| 5.324 | 13649 | .064 | 1,1,2,2-PCA | 4.039 | 18754 | .064 | 1,1,2,2-PCA |
| 5.397 | 34742 | 1.153 | 1,2,3-TCP | 4.159 | 46169 | 1.191 | 1,2,3-TCP |
| 7.678 | 54867 | .125 | DBCP | 6.436 | 66115 | .142 | DBCP |

Files:
Area File: 18EDBS17200001.051.RAW
Area File: 18EDBS17200001B.051.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:07:30 AM
File Reported On: 7/20/2017 at 10:42:33 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9095962** MSD 18407 MSD Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.72 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 05:01:14 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.052.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 109% ( 46 - 136 ) Conc: 0.072954

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 05:01:14 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.052.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 108% ( 46 - 136 ) Conc: 0.07246

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 29790 | 0.160479 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15560 | 0.072954 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 35807 | 1.186212 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 57695 | 0.131528 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 39705 | 0.167462 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21161 | 0.07246 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 46706 | 1.202895 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 68502 | 0.147538 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | A | 0.160479 | 0.0095 | 0.0191 | 0.0286 | | 4.26 | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.072954 | 0.0033 | 0.0067 | 0.0067 | | 0.68 | |
| ☐ 1,2,3-Trichloropropane | A | 1.186212 | | | 0.2574 | | 1.40 | |
| ☐ 1,2-Dibromo-3-chloroprop | A | 0.131528 | 0.0095 | 0.0191 | 0.0286 | | 11.47 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:35

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9095962** MSD 18407 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 36.72 mL Total Volume: 2 ml Analyst: 7848 SDG: KR184 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 05:01:14
Instrument : CP18--19846A
Result file : 18EDBS17200001.052.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 109% (46-136) Conc.: 0.072954

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 29790 | 0.160479 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15560 | 0.072954 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 35807 | 1.186212 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 57695 | 0.131528 |

## Analysis Report (B)

Injected on : Jul 20, 2017 05:01:14
Instrument : CP18--19846B
Result file : 18EDBS17200001B.052.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 108% (46-136) Conc.: 0.07246

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 39705 | 0.167462 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21161 | 0.072460 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 46706 | 1.202895 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 68502 | 0.147538 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.160479 | 0.0286 | 0.0095 | | 4.26 | |
| ☐ 1,1,2,2-PCA | A | 0.072954 | | | | 0.68 | |
| ☐ 1,2,3-TCP | A | 1.186212 | 0.2574 | 0.0953 | | 1.40 | |
| ☐ DBCP | A | 0.131528 | 0.0286 | 0.0095 | | 11.47 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 20 2017

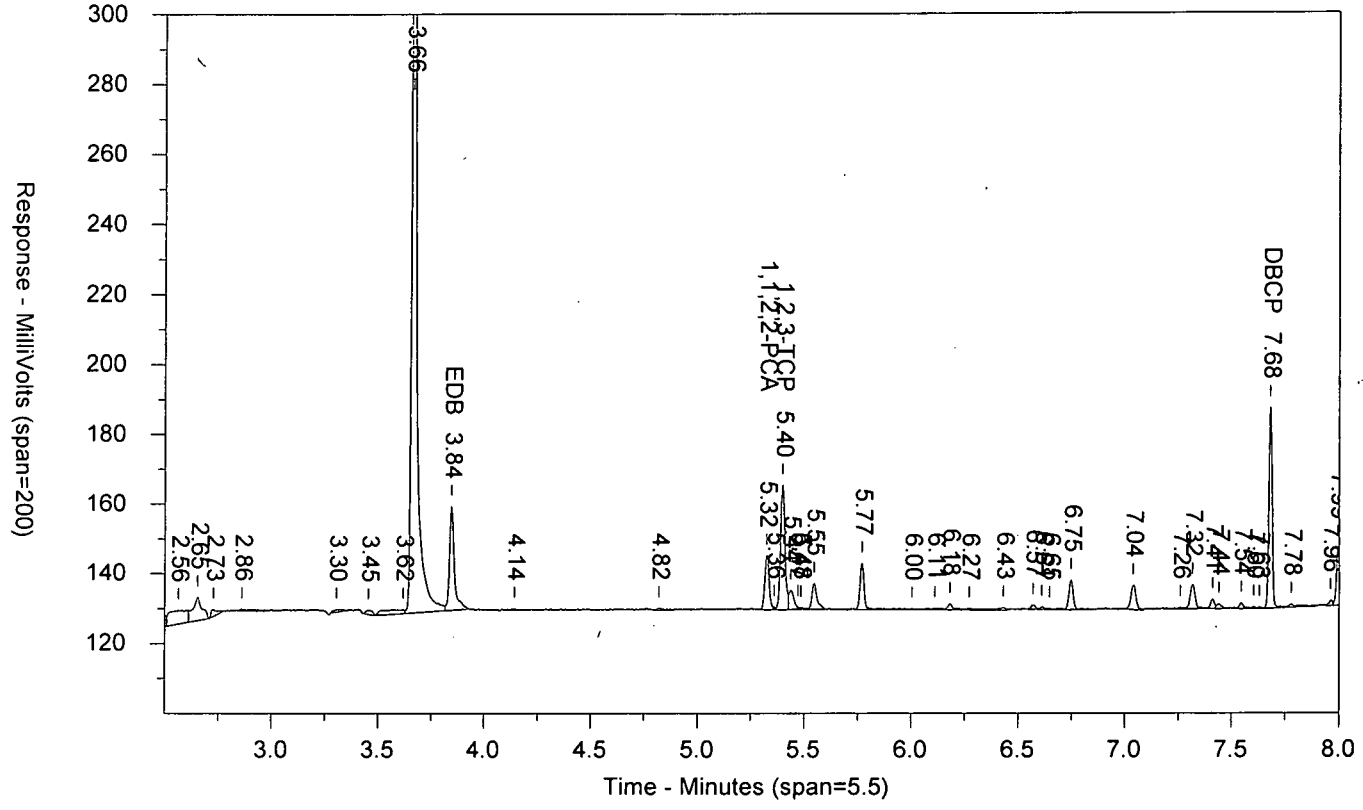
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9095962MSD AA18407 MSD 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.052.RAW

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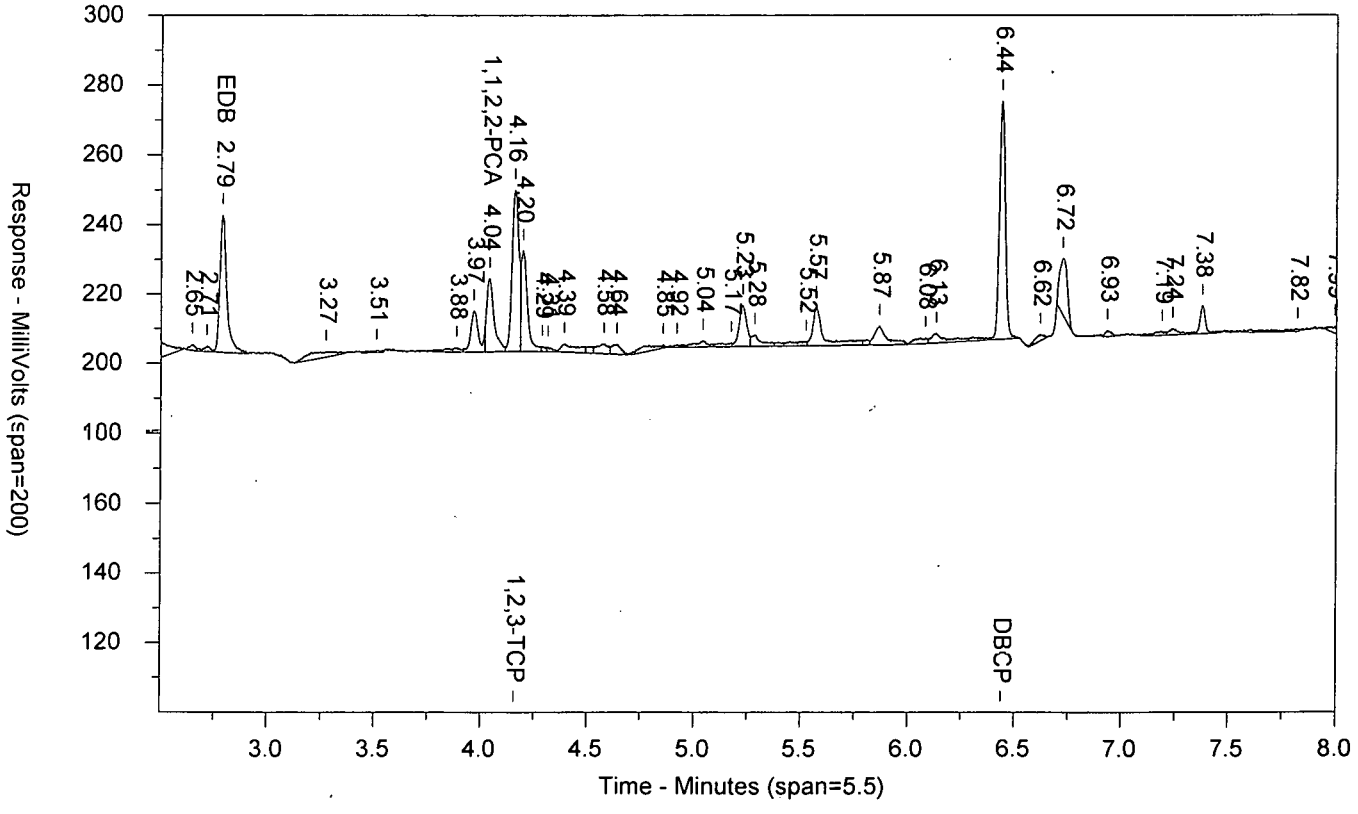

LANCASTER LABORATORIES

Sample Number: 9095962MSD AA18407 MSD 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 5:01:14 AM Sample Weight: 36.72
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 29790 | .16 | EDB | 2.786 | 39705 | .167 | EDB |
| 5.324 | 15560 | .073 | 1,1,2,2-PCA | 4.041 | 21161 | .072 | 1,1,2,2-PCA |
| 5.397 | 35807 | 1.186 | 1,2,3-TCP | 4.16 | 46706 | 1.203 | 1,2,3-TCP |
| 7.679 | 57695 | .132 | DBCP | 6.437 | 68502 | .148 | DBCP |

Files:
Area File: 18EDBS17200001.052.RAW
Area File: 18EDBS17200001B.052.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 5:09:49 AM
File Reported On: 7/20/2017 at 10:42:53 AM

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# Data Summary

**Sample Name: LCSA** 7/18/17 LCS26198 LCS Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 01:49:49 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.040.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 85% ( 46 - 136 ) Conc: 0.059902

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 01:49:49 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.040.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.05936

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 21567 | 0.121894 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 12178 | 0.059902 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 31234 | 1.085595 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 50453 | 0.12067 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 29400 | 0.127795 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 16523 | 0.05936 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 40521 | 1.094884 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 61995 | 0.1383 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.121894 | 0.01 | 0.02 | 0.03 | | 4.73 | |
| 1,1,2,2-TETRACHLOROE | A | 0.059902 | 0.0035 | 0.007 | 0.007 | | 0.91 | |
| 1,2,3-Trichloropropane | A | 1.085595 | | | 0.27 | | 0.85 | |
| 1,2-Dibromo-3-chloropropa | A | 0.12067 | 0.01 | 0.02 | 0.03 | | 13.62 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:20

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/18/17 LCS26198 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 01:49:49
Instrument : CP18--19846A
Result file : 18EDBS17200001.040.RAW.
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 85% (46-136) Conc.: 0.059902

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 21567 | 0.121894 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 12178 | 0.059902 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 31234 | 1.085595 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 50453 | 0.120670 |

## Analysis Report (B)

Injected on : Jul 20, 2017 01:49:49
Instrument : CP18--19846B
Result file : 18EDBS17200001B.040.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.05936

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 29400 | 0.127795 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 16523 | 0.059360 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 40521 | 1.094884 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 61995 | 0.138300 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.121894 | 0.03 | 0.01 | | 4.73 | |
| ☐ 1,1,2,2-PCA | A | 0.059902 | | | | 0.91 | |
| ☑ 1,2,3-TCP | A | 1.085595 | 0.27 | 0.1 | | 0.85 | |
| ☑ DBCP | A | 0.120670 | 0.03 | 0.01 | | 13.62 | |

Units: ug/l

Valerie L. Tomayko
Principal Specialist

Reviewed by: Heather M. Miller
Chemist
Date: JUL 20 2017

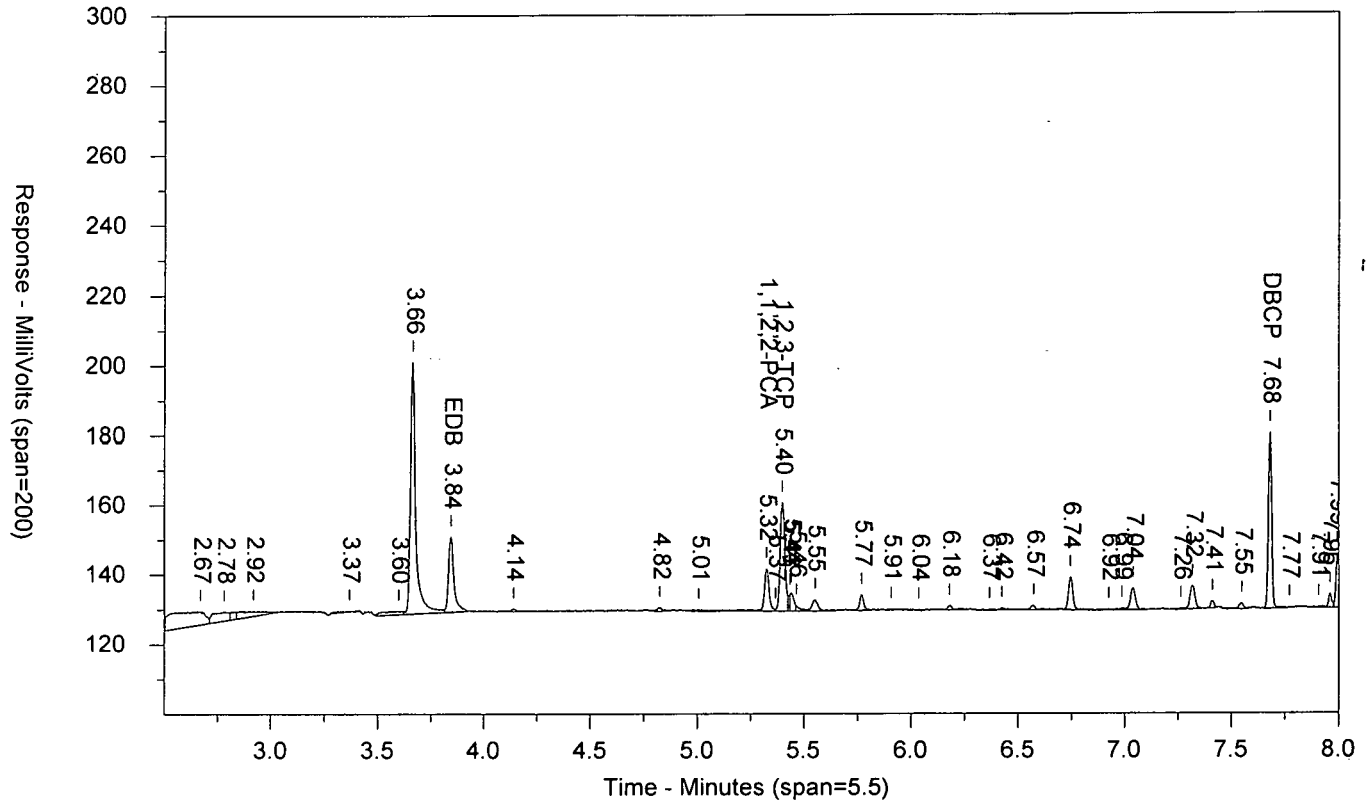
Verified by:
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSA 7/18/17 AALCS26198 LCS 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.040.RAW

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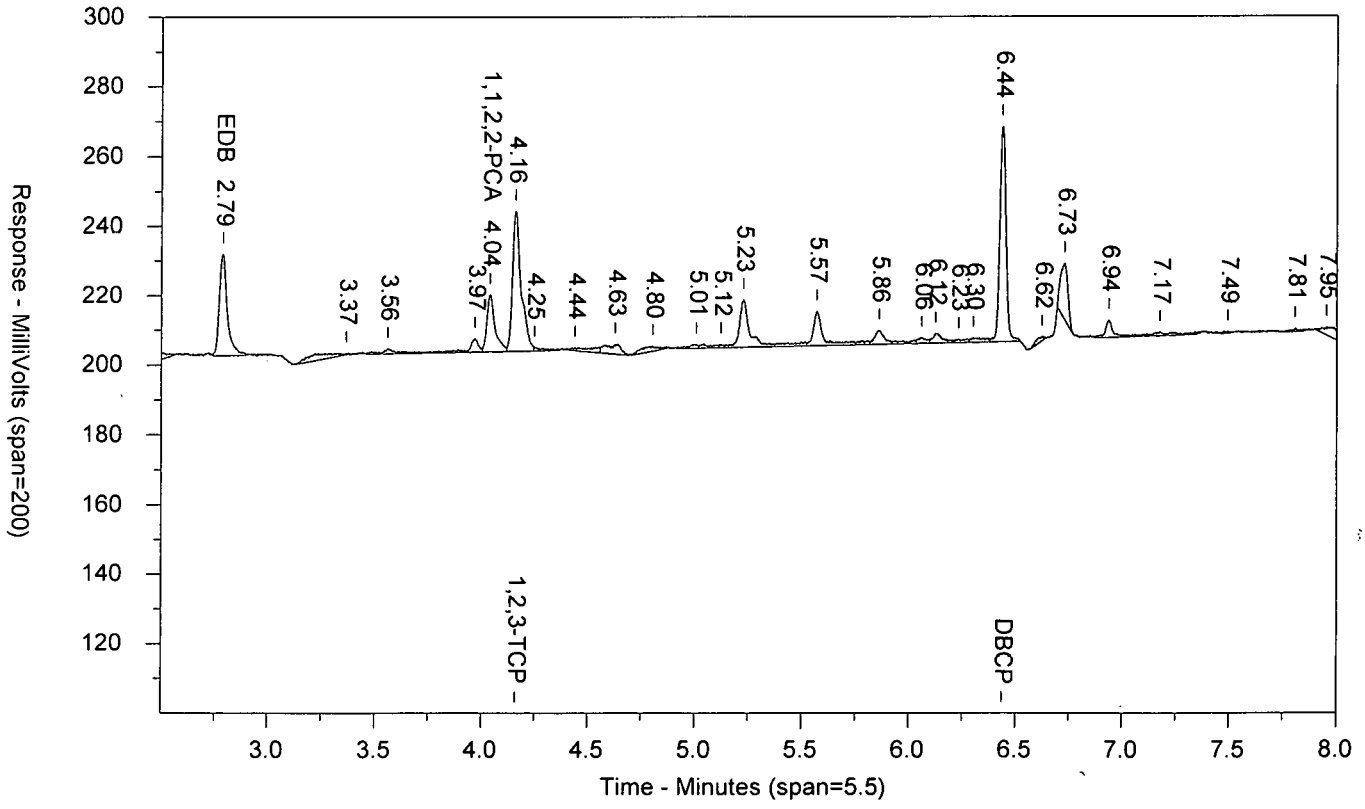

LANCASTER LABORATORIES

Sample Number: LCSA 7/18/17 AALCS26198 LCS 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 1:49:49 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 21567 | .122 | EDB | 2.789 | 29400 | .128 | EDB |
| 5.324 | 12178 | .06 | 1,1,2,2-PCA | 4.039 | 16523 | .059 | 1,1,2,2-PCA |
| 5.397 | 31234 | 1.086 | 1,2,3-TCP | 4.159 | 40521 | 1.095 | 1,2,3-TCP |
| 7.679 | 50453 | .121 | DBCP | 6.437 | 61995 | .138 | DBCP |

Files:
Area File: 18EDBS17200001.040.RAW
Area File: 18EDBS17200001B.040.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 1:58:23 AM
File Reported On: 7/20/2017 at 10:39:08 AM

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# Data Summary

**Sample Name: LCSDA** 7/18/17 LCSD26198 LCSD Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 02:05:45 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17200001.041.RAW |
| **Calibration file** | 18EDBS1720001 |
| **Method file** | 18EDBS |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.066854

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 20, 2017 02:05:45 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17200001B.041.RAW |
| **Calibration file** | 18EDBS1720001B |
| **Method file** | 18EDBSB |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.067335

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 25522 | 0.144243 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 13591 | 0.066854 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 33666 | 1.170104 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 54347 | 0.129985 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 34649 | 0.152191 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 18743 | 0.067335 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 44771 | 1.209737 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 67526 | 0.152315 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.144243 | 0.01 | 0.02 | 0.03 | | 5.36 | |
| 1,1,2,2-TETRACHLOROE | A | 0.066854 | 0.0035 | 0.007 | 0.007 | | 0.72 | |
| 1,2,3-Trichloropropane | A | 1.170104 | | | 0.27 | | 3.33 | |
| 1,2-Dibromo-3-chloropropa | A | 0.129985 | 0.01 | 0.02 | 0.03 | | 15.82 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valorie L Tomayko
Principal Specialist

JUL 23 2017

Reviewed and digitally signed by Heather M Miller on 7/21/2017 08:35:21

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/18/17 LCSD26198 Sample ID: AA **Batchnumber: 171980026A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 20, 2017 02:05:45
Instrument : CP18--19846A
Result file : 18EDBS17200001.041.RAW
Calibration file : 18EDBS1720001.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.066854

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 25522 | 0.144243 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13591 | 0.066854 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 33666 | 1.170104 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 54347 | 0.129985 |

## Analysis Report (B)

Injected on : Jul 20, 2017 02:05:45
Instrument : CP18--19846B
Result file : 18EDBS17200001B.041.RAW
Calibration file : 18EDBS1720001B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.067335

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 34649 | 0.152191 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 18743 | 0.067335 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 44771 | 1.209737 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 67526 | 0.152315 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.144243 | 0.03 | 0.01 | | 5.36 | |
| ☐ 1,1,2,2-PCA | A | 0.066854 | | | | 0.72 | |
| ☑ 1,2,3-TCP | A | 1.170104 | 0.27 | 0.1 | | 3.33 | |
| ☑ DBCP | A | 0.129985 | 0.03 | 0.01 | | 15.82 | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 20 2017

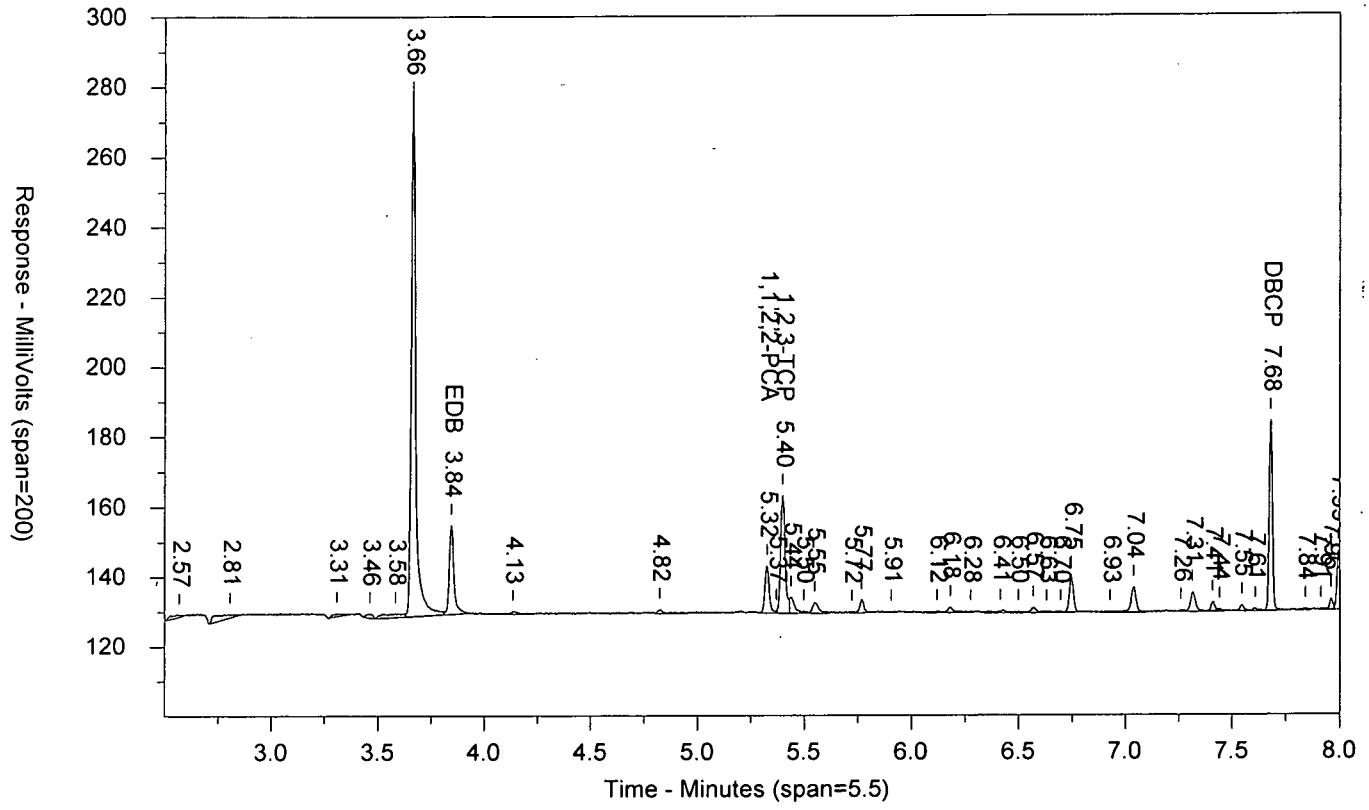
Verified by: Valorie L. Tomayko
Principal Specialist
Date: JUL 23 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSDA 7/18/17 AALCSD26198 LCSD 171980026A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17200001.041.RAW

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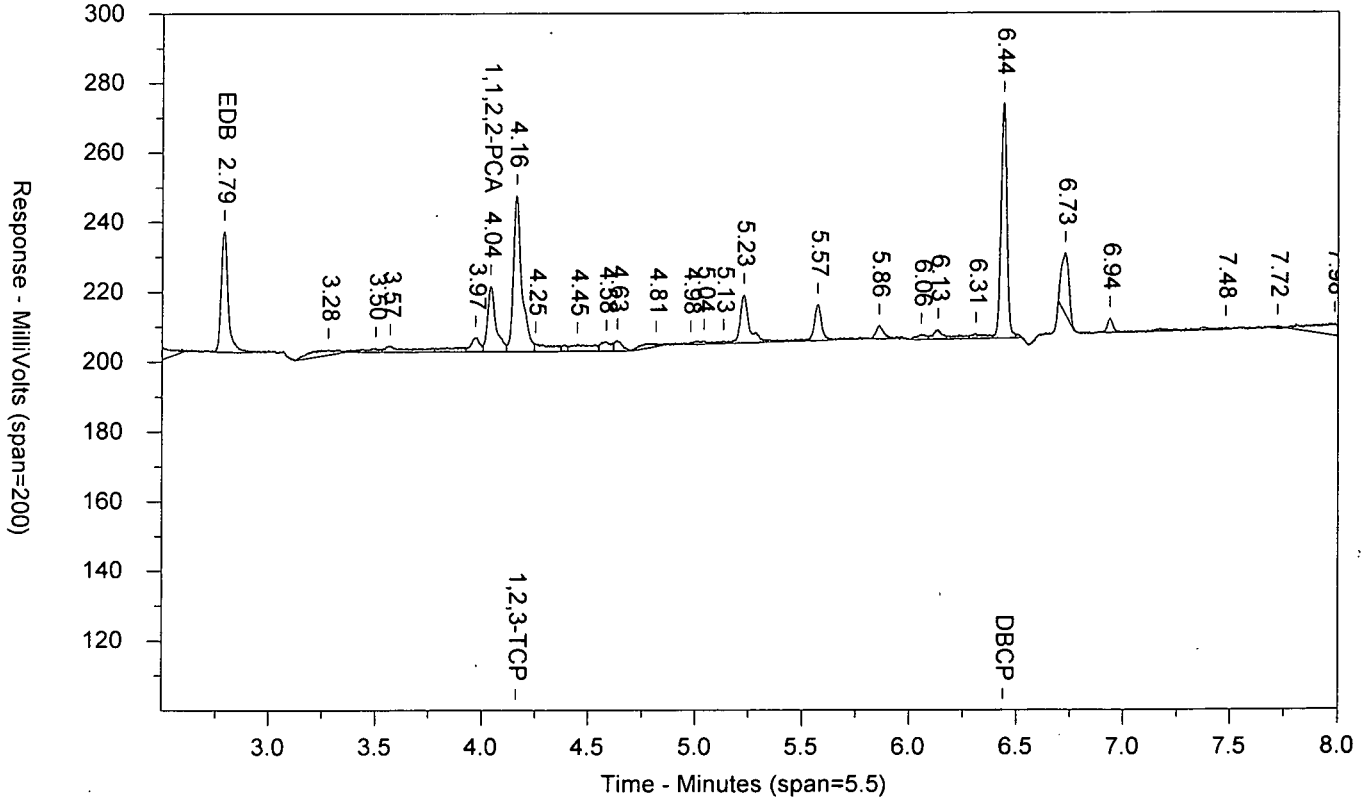


LANCASTER LABORATORIES

Sample Number: LCSDA 7/18/17 AALCSD26198 LCSD 171980026A 10398 SW-846 8011
Injected On: 7/20/2017 2:05:45 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 25522 | .144 | EDB | 2.788 | 34649 | .152 | EDB |
| 5.325 | 13591 | .067 | 1,1,2,2-PCA | 4.04 | 18743 | .067 | 1,1,2,2-PCA |
| 5.398 | 33666 | 1.17 | 1,2,3-TCP | 4.16 | 44771 | 1.21 | 1,2,3-TCP |
| 7.679 | 54347 | .13 | DBCP | 6.438 | 67526 | .152 | DBCP |

Files:
Area File: 18EDBS17200001.041.RAW
Area File: 18EDBS17200001B.041.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720001.CAL
Calibration File B: 18EDBS1720001b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/20/2017 2:14:20 AM
File Reported On: 7/20/2017 at 10:39:26 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK25201 BLK Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 17:46:04 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0015.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.072447

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 17:46:04 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0015.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.071731

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.09 | 3.10 | 404 | 0.00112 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29743 | 0.072447 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6141 | 0.033067 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10612 | 0.071731 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 12217 | 0.163532 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.072447 | 0.0035 | 0.007 | 0.007 | | 0.99 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:53:57

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK25201Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 17:46:04
Instrument : CP16--19853A
Result file : 16EDBS17202001.0015.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.072447

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.09 | 3.10 | 404 | 0.001120 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29743 | 0.072447 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6141 | 0.033067 |

## Analysis Report (B)

Injected on : Jul 21, 2017 17:46:04
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0015.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.071731

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10612 | 0.071731 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 12217 | 0.163532 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.072447 | | | | 0.99 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 24 2017

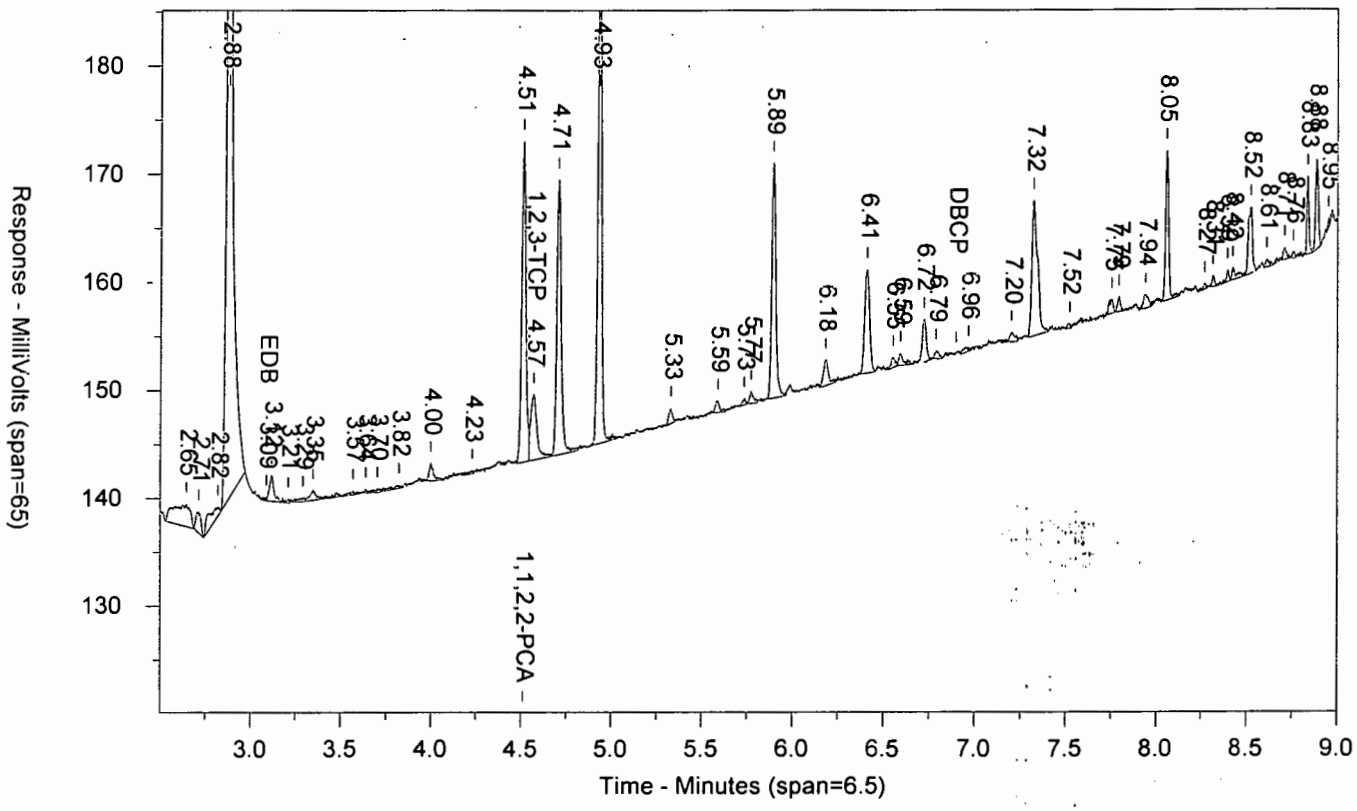
Verified by: Susan M. Goshert Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

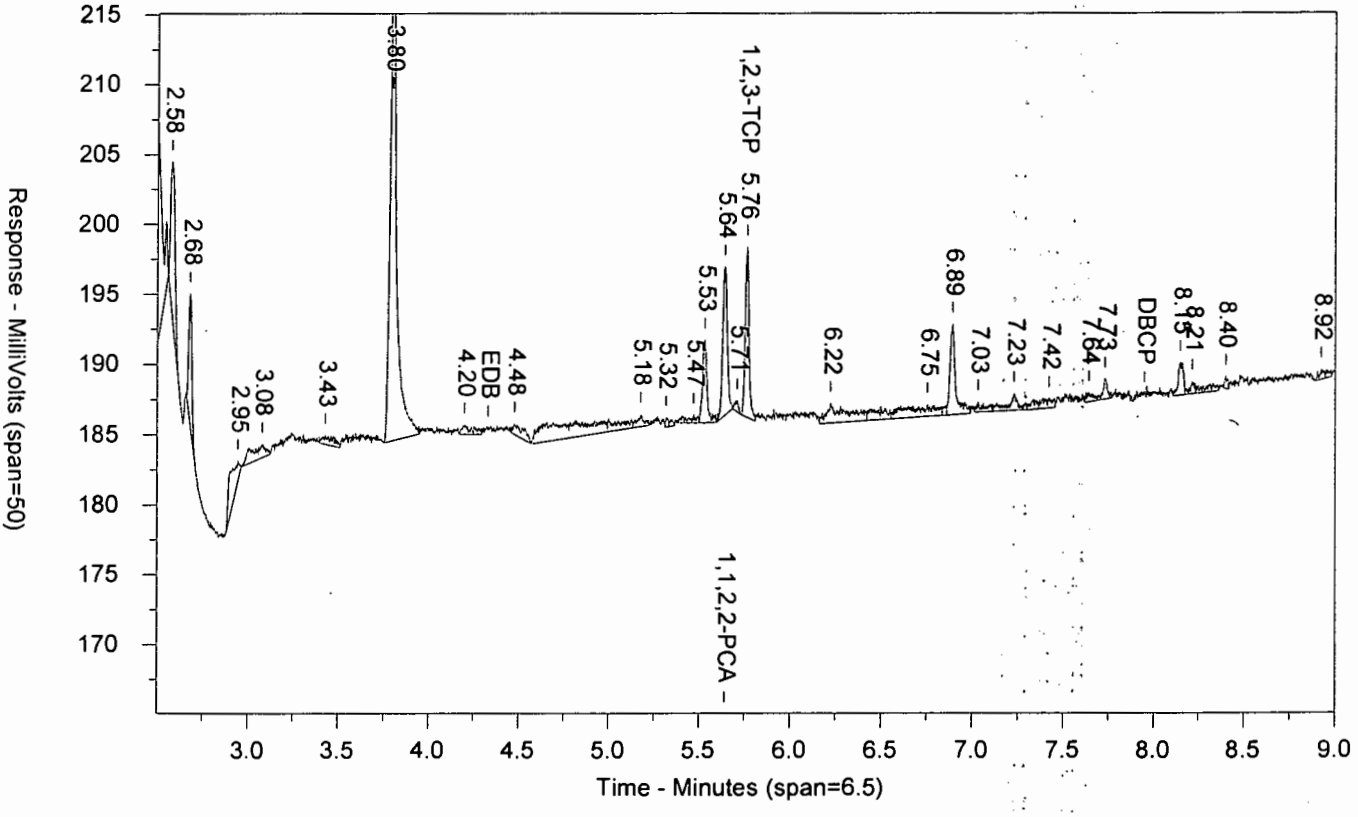
* Recovery outside QC Limits

BLANKA 7/21/17 AAPBLK25201 BLK 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0015.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0015.RAW



LANCASTER LABORATORIES

Sample Number: BLANKA 7/21/17 AAPBLK25201 BLK 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 5:46:04 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.089 | 404 | .001 | EDB | | 0 | | EDB |
| 4.512 | 29743 | .072 | 1,1,2,2-PCA | 5.641 | 10612 | .072 | 1,1,2,2-PCA |
| 4.568 | 6141 | .033 | 1,2,3-TCP | 5.763 | 12217 | .164 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0015.RAW
Area File: 16EDBS17202001B.0015.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:55:05 PM
File Reported On: 7/24/2017 at 10:54:09 AM

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# Data Summary

**Sample Name: LCSA** 7/21/17 LCS25201 LCS Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:01:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0016.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.074565

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:01:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0016.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.075029

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 52492 | 0.145502 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30613 | 0.074565 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 68897 | 1.246207 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 104866 | 0.14746 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 14869 | 0.144185 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11089 | 0.075029 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 31933 | 1.304341 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 39352 | 0.14555 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.145502 | 0.01 | 0.02 | 0.03 | | 0.91 | |
| 1,1,2,2-TETRACHLOROE | A | 0.074565 | 0.0035 | 0.007 | 0.007 | | 0.62 | |
| 1,2,3-Trichloropropane | A | 1.246207 | | | 0.27 | | 4.56 | |
| 1,2-Dibromo-3-chloropropa | A | 0.14746 | 0.01 | 0.02 | 0.03 | | 1.30 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:53:59

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/21/17 LCS25201 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:01:40
Instrument : CP16--19853A
Result file : 16EDBS17202001.0016.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.074565

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 52492 | 0.145502 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 30613 | 0.074565 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 68897 | 1.246207 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 104866 | 0.147461 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:01:40
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0016.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.075029

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 14869 | 0.144185 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11089 | 0.075029 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 31933 | 1.304341 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 39352 | 0.145550 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.145502 | 0.03 | 0.01 | | 0.91 | |
| ☐ 1,1,2,2-PCA | A | 0.074565 | | | | 0.62 | |
| ☑ 1,2,3-TCP | A | 1.246207 | 0.27 | 0.1 | | 4.56 | |
| ☑ DBCP | A | 0.147461 | 0.03 | 0.01 | | 1.30 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

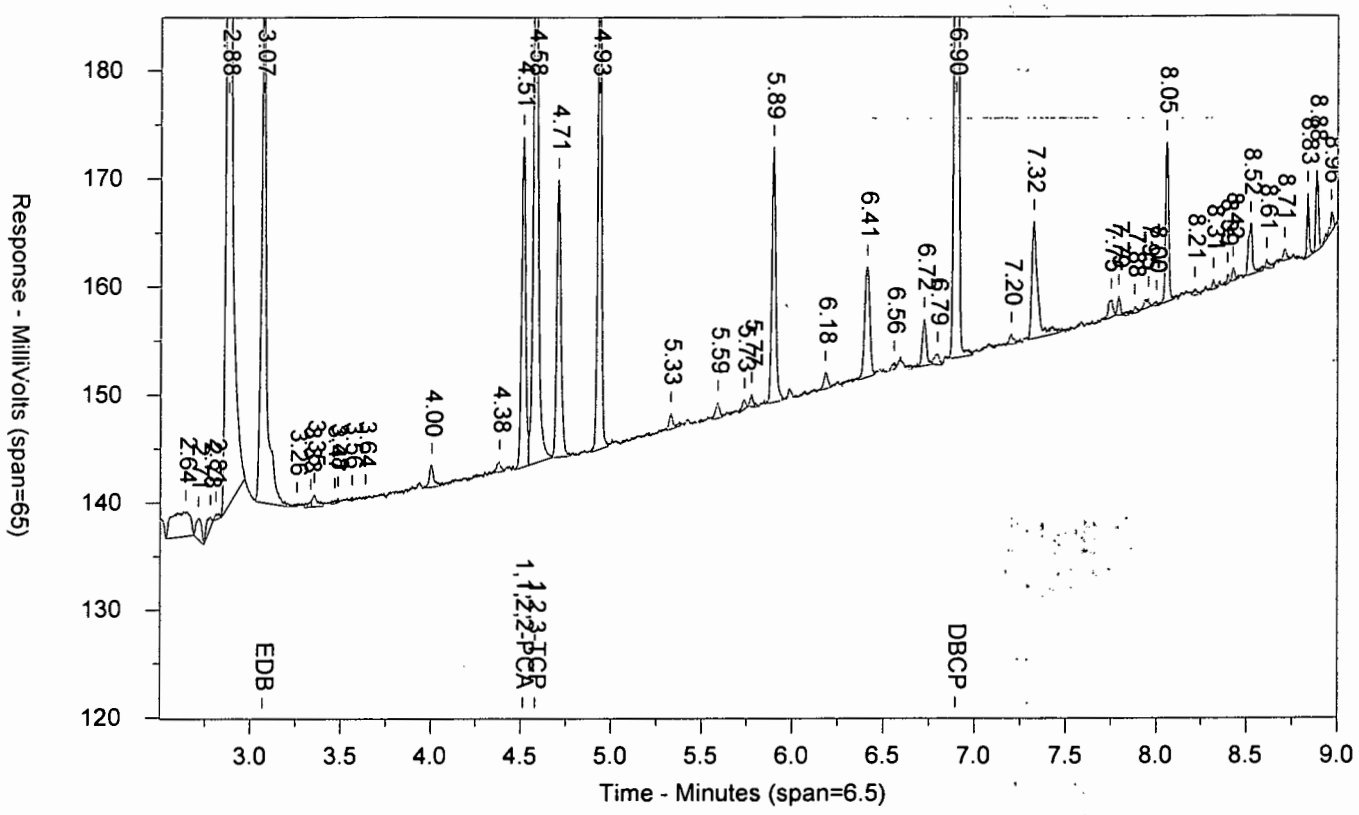
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:11:06

LCSA 7/21/17 AALCS25201 LCS 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0016.RAW

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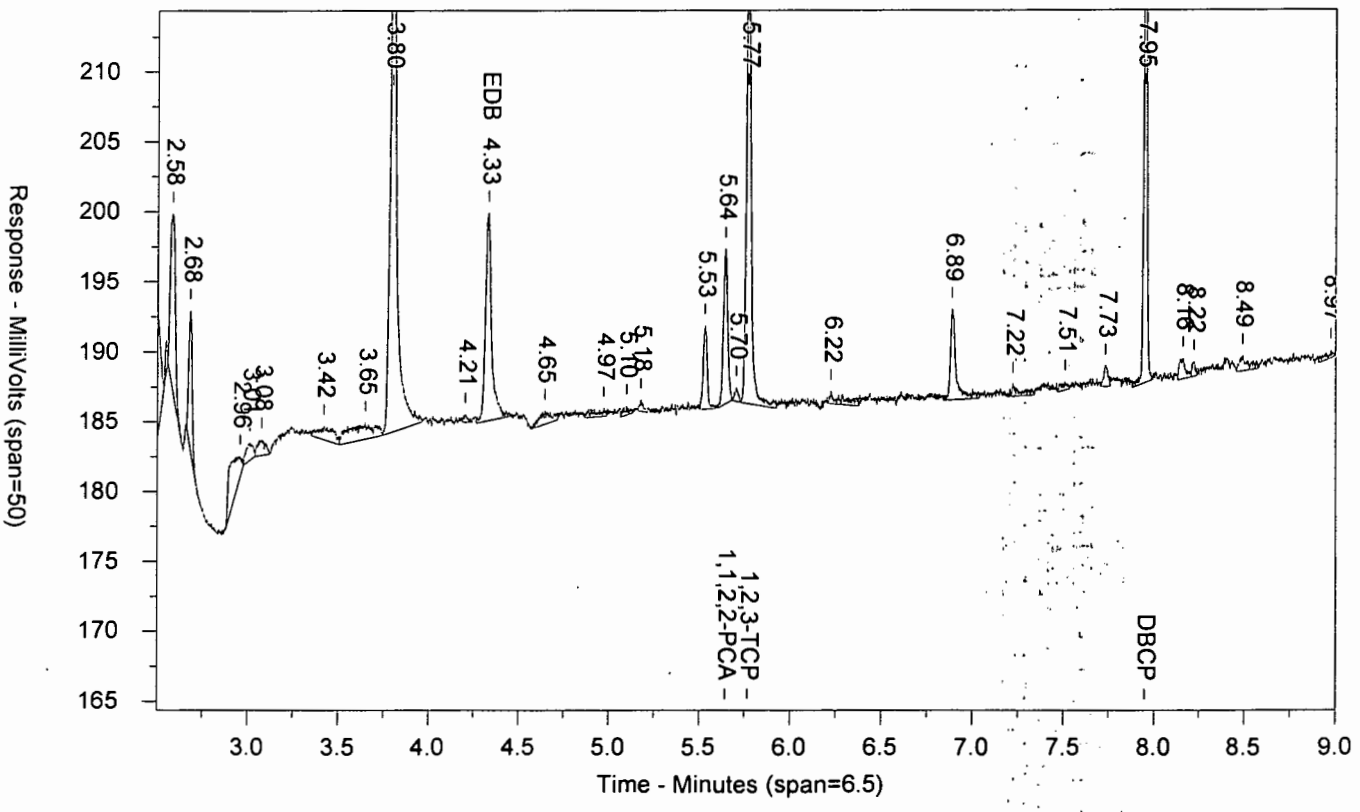


LANCASTER LABORATORIES

Sample Number: LCSA 7/21/17 AALCS25201 LCS 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:01:40 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 52492 | .146 | EDB | 4.331 | 14869 | .144 | EDB |
| 4.512 | 30613 | .075 | 1,1,2,2-PCA | 5.641 | 11089 | .075 | 1,1,2,2-PCA |
| 4.579 | 68897 | 1.246 | 1,2,3-TCP | 5.766 | 31933 | 1.304 | 1,2,3-TCP |
| 6.896 | 104866 | .147 | DBCP | 7.947 | 39352 | .146 | DBCP |

Files:
Area File: 16EDBS17202001.0016.RAW
Area File: 16EDBS17202001B.0016.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:10:41 PM
File Reported On: 7/24/2017 at 10:54:17 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 7/21/17 LCSD25201 LCSD Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:17:18 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0017.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 112% ( 46 - 136 ) Conc: 0.079144

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:17:18 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0017.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 113% ( 46 - 136 ) Conc: 0.079835

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 58918 | 0.163313 | Ethylene dibromide | 4.30 | 4.33 | 4.36 | 16042 | 0.155566 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 32493 | 0.079144 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11784 | 0.079835 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 71820 | 1.302697 | 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 33931 | 1.419971 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 113994 | 0.160297 | 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 41886 | 0.154921 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | A | 0.163313 | 0.01 | 0.02 | 0.03 | | 4.86 | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.079144 | 0.0035 | 0.007 | 0.007 | | 0.87 | |
| ☐ 1,2,3-Trichloropropane | A | 1.302697 | | | 0.27 | | 8.61 | |
| ☐ 1,2-Dibromo-3-chloroprop | A | 0.160297 | 0.01 | 0.02 | 0.03 | | 3.41 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:02

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/21/17 LCSD25201Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:17:18
Instrument : CP16--19853A
Result file : 16EDBS17202001.0017.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 112% (46-136) Conc.: 0.079144

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 58918 | 0.163313 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 32493 | 0.079144 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 71820 | 1.302697 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 113994 | 0.160297 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:17:18
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0017.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 113% (46-136) Conc.: 0.079835

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 16042 | 0.155566 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11784 | 0.079835 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 33931 | 1.419971 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 41886 | 0.154921 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.163313 | 0.03 | 0.01 | | 4.86 | |
| ☐ 1,1,2,2-PCA | A | 0.079144 | | | | 0.87 | |
| ☑ 1,2,3-TCP | A | 1.302697 | 0.27 | 0.1 | | 8.61 | |
| ☑ DBCP | A | 0.160297 | 0.03 | 0.01 | | 3.41 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

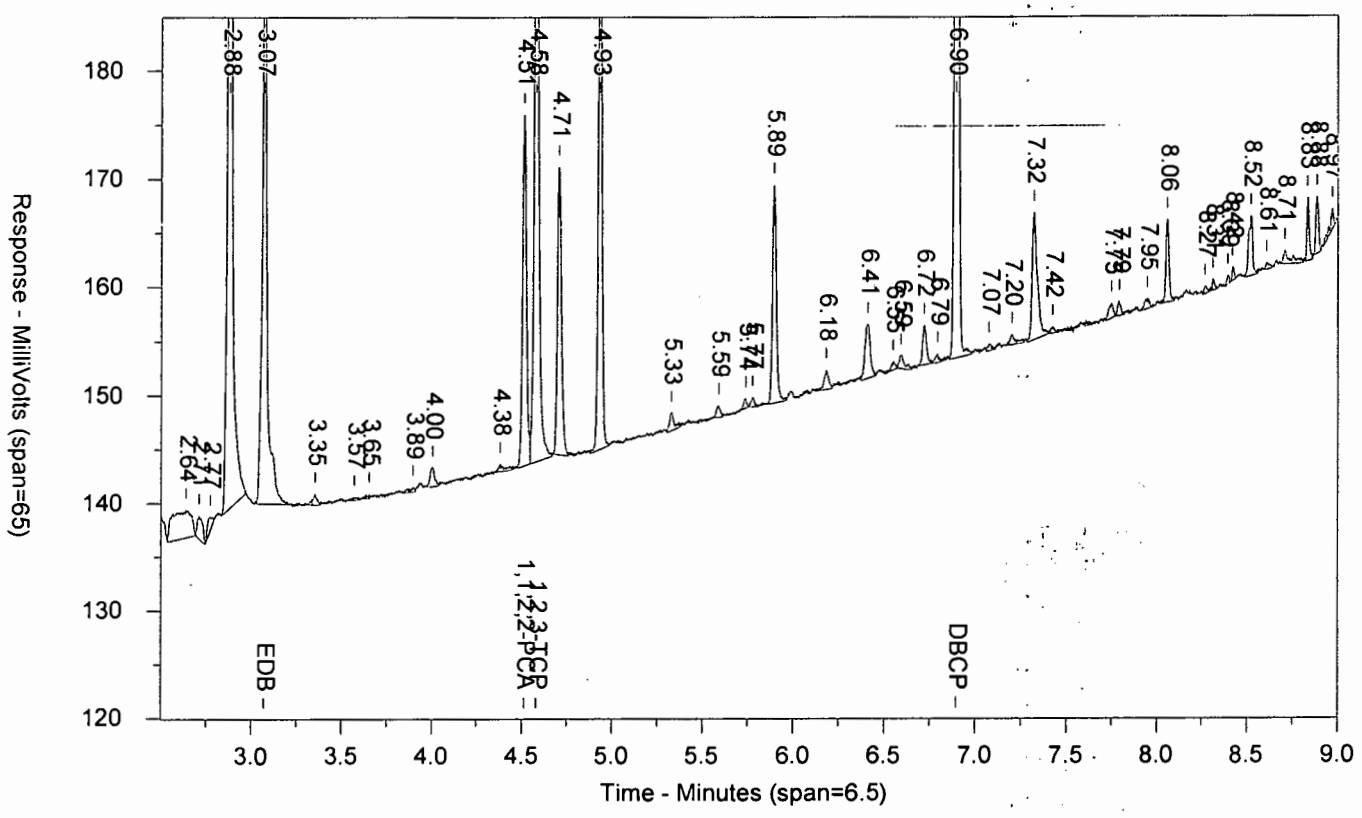
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

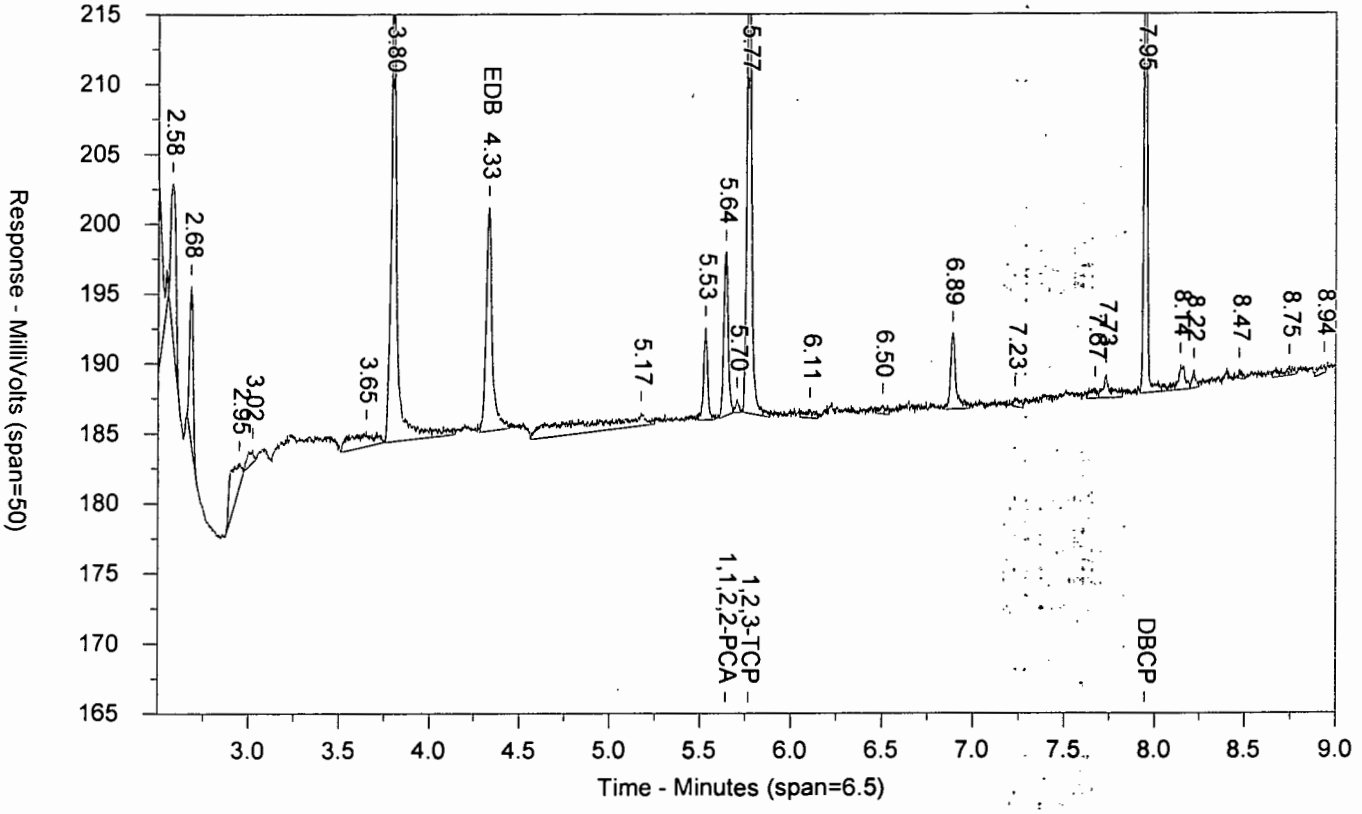
* Recovery outside QC Limits

LCSDA 7/21/17 AALCSD25201 LCSD 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0017.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0017.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 7/21/17 AALCSD25201 LCSD 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:17:18 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 58918 | .163 | EDB | 4.331 | 16042 | .156 | EDB |
| 4.513 | 32493 | .079 | 1,1,2,2-PCA | 5.642 | 11784 | .08 | 1,1,2,2-PCA |
| 4.579 | 71820 | 1.303 | 1,2,3-TCP | 5.766 | 33931 | 1.42 | 1,2,3-TCP |
| 6.896 | 113994 | .16 | DBCP | 7.946 | 41886 | .155 | DBCP |

Files:
Area File: 16EDBS17202001.0017.RAW
Area File: 16EDBS17202001B.0017.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:26:20 PM
File Reported On: 7/24/2017 at 10:54:29 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 898 Olivia Arosemena Reviewed by: #11117643 Start Date: 07/18/2017 Start Time: 09:45

**171980026A** Tech 1: 02898 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9095961MS | 18407 | 36.67 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | <2 | 057b | clear |
| 9095962MSD | 18407 | 36.72 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | <2 | 057b | clear |
| BLANKA | PBLK26198 | 35 | SS1718724B | .1 | | | 2 | Z | Z | | DI H2O |
| LCSA | LCS26198 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | Z | Z | | DI H2O |
| LCSDA | LCSD26198 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | Z | Z | | DI H2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17137A |
| Vial Lot# | 2391F |
| Vial Preservative Lot# | 2391 |
| | |

Spike Solutions: Witness: —

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9095954 | 18401 | 36.64 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 2 | 9095955 | 18402 | 36.61 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 3 | 9095956 | 18403 | 36.60 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 4 | 9095957 | 18404 | 36.29 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 5 | 9095958 | 18405 | 36.35 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 6 | 9095959 | 18406 | 35.86 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 7 | 9095960BKG | 18407 | 36.30 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 8 | 9095963 | 18408 | 36.27 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 9 | 9095964 | 18409 | 36.72 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 10 | 9095965 | 18410 | 36.01 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 11 | 9095966 | 18411 | 36.38 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 12 | 9095968 | 18413 | 36.34 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 13 | 9095970 | 18415 | 36.77 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 14 | 9095980 | 18419 | 36.29 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 15 | 9095981 | 18420 | 36.53 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 16 | 9095982 | 18421 | 36.45 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 17 | 9095983 | 18422 | 36.30 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 18 | 9095984 | 18423 | 36.48 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 19 | 9095985 | 18424 | 36.63 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |
| 20 | 9095986 | 18425 | 36.17 | SS1718724B | 0.10 | 2.00 | N | <2 | 057b | clear | 10398 | 17641 | 07/21/2017 | N |

KR1841 Page 311 of 610

| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 171980026A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

**Organic Extraction Batchlog** Assigned to: 1236 Samantha Metzgar Reviewed by: HMM7/26 Start Date: 07/21/2017 Start Time: 09:00

**172010025A**

Tech 1: SM 12362 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9109772MS | 18801 | 37.02 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| 9109773MSD | 18801 | 36.96 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| BLANKA | PBLK25201 | 35 | SS1718724B | .1 | — | — | 2 | N | 2 | — | DIH2O |
| LCSA | LCS25201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | — | DIH2O |
| LCSDA | LCSD25201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | — | DIH2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391 |
| Vial Preservative Lot# | 2391F |
| | |

Spike Solutions: Witness: N/A

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9095972BKG | 18417 | 36.92 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/21/2017 | N |
| 2 9100482 | 18604 | 36.62 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 3 9100483 | 18605 | 36.75 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 4 9100485 | 18607 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 5 9100487 | 18609 | 36.74 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 6 9100489 | 18611 | 36.84 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 7 9100491 | 18613 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 8 9100492 | 18614 | 36.63 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 9 9100493 | 18615 | 36.82 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 10 9100494 | 18616 | 36.81 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 11 9100495 | 18617 | 36.76 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 12 9100496 | 18618 | 36.83 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 13 9107402 | 18701 | 36.62 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 14 9107403 | 18702 | 36.65 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 15 9107404 | 18703 | 37.04 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 16 9107405 | 18704 | 37.01 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 17 9107406 | 18705 | 36.48 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 18 9107407 | 18706 | 36.73 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 19 9109771BKG | 18801 | 36.85 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/31/2017 | N |
| 20 9109779 | 18803 | 36.35 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/31/2017 | N |

KR184 Page 312 of 610

| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172010025A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

# Metals in Liquid Data

# Case Narrative/Conformance Summary

# Metals in Liquid

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

## ICP Metals

**Fraction: Metals in Liquid**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9095966 | GW236-490-173 | X | | 1 | |
| 9095967 | GW236-490-173 | X | | 1 | |
| 9095968 | GW236-490-573 | X | | 1 | Field Duplicate Sample |
| 9095969 | GW236-490-573 | X | | 1 | Field Duplicate Sample |
| 9095970 | GW236-461-173 | X | | 1 | |
| 9095971 | GW236-461-173 | X | | 1 | |
| 9095972 | GW236-519-173 | X | | 1 | Background/Unspiked |
| 9095973 | GW236-519-173MS | X | | 1 | Matrix Spike |
| 9095974 | GW236-519-173MSD | X | | 1 | Matrix Spike Duplicate |
| 9095975 | GW236-519-173DUP | X | | 1 | Duplicate |
| 9095976 | GW236-519-173 | X | | 1 | Background/ |
| 9095977 | GW236-519-173MS | X | | 1 | Matrix Spike |
| 9095978 | GW236-519-173MSD | X | | 1 | Matrix Spike Duplicate |
| 9095979 | GW236-519-173DUP | X | | 1 | Duplicate |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

## ICP Metals

**Fraction: Metals in Liquid**

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**LCS/LCSD**

Batch#: 171951063502 (Sample number(s): 9095972)
The recovery(ies) for the following analyte(s) in the LCS exceeded the acceptance window indicating a positive bias: Calcium
Since the recovery is high and no analytes are detected above the quantitation limit, the data is reported.

**Sample Duplicate**

Batch#: 171931063903A (Sample number(s): 9095966, 9095968, 9095970, 9095972-9095975, UNSPK: 9095972, BKG: 9095972)
The duplicate RPD for the following analyte(s) is outside the acceptance window: Arsenic

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

(Sample number(s): 9095972: Analysis: 01750)
The LCS that was digested with this sample was out of specification for calcium with a recovery of 116%. The data was accepted after consultation with the client.

**Abbreviation Key**

| | |
|---|---|
| BKG – Background | AF - Cold Vapor Atomic Fluorescence |
| DUP – Duplicate | U - Below MDL |
| MS - Matrix Spike | B - Below LOQ |
| MSD - Matrix Spike Dup | N - Matrix Spike out of specifications |
| B – Blank | * - Duplicate out of specifications |
| Q - Laboratory Control Sample | E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution |
| Y - Laboratory Control Sample Duplicate | A - Post Digestion Spike |
| P - ICP Atomic Emission Spectrometer | L - Serial Dilution |
| MS - ICP Mass Spectrometry | R - Internal Standard Relative Intensity OOS |
| CV - Cold Vapor | NR - Not Required |

# Sample Data

# Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095966 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.88 | B | | MS |
| 7440-70-2 | Calcium | 47000 | | | P |
| 7439-92-1 | Lead | 0.34 | B | | MS |
| 7439-95-4 | Magnesium | 6650 | | | P |
| 7440-09-7 | Potassium | 3000 | | | P |
| 7440-23-5 | Sodium | 23100 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095967 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095968 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.83 | B | | MS |
| 7440-70-2 | Calcium | 46500 | | | P |
| 7439-92-1 | Lead | 0.25 | B | | MS |
| 7439-95-4 | Magnesium | 6550 | | | P |
| 7440-09-7 | Potassium | 2980 | | | P |
| 7440-23-5 | Sodium | 22900 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095969 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095970 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.78 | B | | MS |
| 7440-70-2 | Calcium | 45800 | | | P |
| 7439-92-1 | Lead | 0.11 | U | | MS |
| 7439-95-4 | Magnesium | 6160 | | | P |
| 7440-09-7 | Potassium | 3200 | | | P |
| 7440-23-5 | Sodium | 30100 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095971 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095972, 9095972BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.77 | B | | MS |
| 7440-70-2 | Calcium | 48600 | | | P |
| 7439-92-1 | Lead | 0.21 | B | | MS |
| 7439-95-4 | Magnesium | 6830 | | | P |
| 7440-09-7 | Potassium | 2870 | | | P |
| 7440-23-5 | Sodium | 27200 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095973MS % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 10.8 | | | MS |
| 7439-92-1 | Lead | 15.4 | | | MS |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095974MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 9.4 | | | MS |
| 7439-92-1 | Lead | 15.2 | | | MS |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095975DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7439-92-1 | Lead | 0.23 | B | | MS |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095976BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 3.1 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095977MS % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 962 | | | P |
| 7439-96-5 | Manganese | 484 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095978MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 1010 | | | P |
| 7439-96-5 | Manganese | 493 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

eurofins | Lancaster Laboratories Environmental

QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9095979DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 07/11/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 3.2 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

# Quality Control and Calibration Summary Forms

# Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR184
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Calcium | 171931063502 | 9095966 |
| Iron | | 9095967 |
| Magnesium | | 9095968 |
| Manganese | | 9095969 |
| Potassium | | 9095970 |
| Sodium | | 9095971 |
| | | 9095976BKG |
| | | 9095977MS |
| | | 9095978MSD |
| | | 9095979DUP |
| | | P19363BB |
| | | P19363BQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR184
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Calcium | 171951063502 | 9095972 |
| Magnesium | | *00479BKG |
| Potassium | | *00479MS |
| Sodium | | *00479MSD |
| | | *00479DUP |
| | | P19563BB |
| | | P19563BQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR184
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Arsenic | 171931063903 | 9095966 |
| Lead | | 9095968 |
| | | 9095970 |
| | | 9095972BKG |
| | | 9095973MS |
| | | 9095974MSD |
| | | 9095975DUP |
| | | P19363CB |
| | | P19363CQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR184

Method: P
Run Name: 1719404T73
Calibration Date(s): 07/13/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | 30000.0 | 29605.42 | 98.7 | 25000.0 | 24443.06 | 97.8 | 25000.0 | 24513.11 | 98.1 |
| Iron | | 30000.0 | 29220.24 | 97.4 | 25000.0 | 24617.49 | 98.5 | 25000.0 | 24573.01 | 98.3 |
| Magnesium | | 30000.0 | 29317.49 | 97.7 | 25000.0 | 24233.74 | 96.9 | 25000.0 | 24418.41 | 97.7 |
| Manganese | | 600.0 | 579.01 | 96.5 | 500.0 | 486.86 | 97.4 | 500.0 | 488.61 | 97.7 |
| Potassium | | 30000.0 | 29349.98 | 97.8 | 25000.0 | 24359.91 | 97.4 | 25000.0 | 24519.29 | 98.1 |
| Sodium | | 30000.0 | 28836.57 | 96.1 | 25000.0 | 24499.17 | 98.0 | 25000.0 | 24561.68 | 98.2 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR184

Method: P
Run Name: 1719404T73
Calibration Date(s): 07/13/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | | | 25000.0 | 24818.34 | 99.3 | | | |
| Iron | | | | | 25000.0 | 24846.79 | 99.4 | | | |
| Magnesium | | | | | 25000.0 | 24755.39 | 99.0 | | | |
| Manganese | | | | | 500.0 | 492.10 | 98.4 | | | |
| Potassium | | | | | 25000.0 | 24752.28 | 99.0 | | | |
| Sodium | | | | | 25000.0 | 24805.34 | 99.2 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR184

Method: P
Run Name: 1719901T71
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | 30000.0 | 30076.32 | 100.3 | 25000.0 | 24961.90 | 99.8 | 25000.0 | 25737.66 | 103.0 |
| Iron | | | | | | | | | | |
| Magnesium | | 30000.0 | 29772.75 | 99.2 | 25000.0 | 24852.59 | 99.4 | 25000.0 | 25171.09 | 100.7 |
| Manganese | | | | | | | | | | |
| Potassium | | 30000.0 | 29751.89 | 99.2 | 25000.0 | 24531.12 | 98.1 | 25000.0 | 25183.45 | 100.7 |
| Sodium | | 30000.0 | 29316.26 | 97.7 | 25000.0 | 24842.34 | 99.4 | 25000.0 | 25711.34 | 102.8 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR184

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 500.0 | 495.30 | 99.1 | 250.0 | 240.40 | 96.2 | 250.0 | 245.40 | 98.2 |
| Lead | 208 | 50.0 | 49.92 | 99.8 | 25.0 | 24.70 | 98.8 | 25.0 | 24.78 | 99.1 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR184

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | | | 250.0 | 249.80 | 99.9 | | | |
| Lead | 208 | | | | 25.0 | 25.77 | 103.1 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Run Name: 1719404T73
Calibration Date(s): 07/13/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | 400.0 | 419.20 | 104.8 | | |
| Iron | | 400.0 | 426.26 | 106.6 | | |
| Magnesium | | 200.0 | 212.56 | 106.3 | | |
| Manganese | | 10.0 | 10.96 | 109.6 | | |
| Potassium | | 1000.0 | 1070.36 | 107.0 | | |
| Sodium | | 2000.0 | 2075.22 | 103.8 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Run Name: 1719901T71
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | 400.0 | 503.16 | 125.8 | | |
| Iron | | | | | | |
| Magnesium | | 200.0 | 226.46 | 113.2 | | |
| Manganese | | | | | | |
| Potassium | | 1000.0 | 1184.38 | 118.4 | | |
| Sodium | | 2000.0 | 2345.27 | 117.3 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR184

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Arsenic | 75 | 4.0 | 4.07 | 101.8 | | |
| Lead | 208 | 2.0 | 2.02 | 101.0 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Run Name: 1719404T73
Calibration Date(s): 07/13/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | 33.4 | U | 33.4 | U | 33.4 | U | 33.4 | U | | 60.000 | U | 171931063502 |
| Iron | | 33.4 | U | 33.4 | U | 33.4 | U | 33.4 | U | | 80.500 | U | 171931063502 |
| Magnesium | | 16.7 | U | 16.7 | U | 16.7 | U | 16.7 | U | | 37.400 | U | 171931063502 |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | 0.83 | U | | 1.600 | U | 171931063502 |
| Potassium | | 127 | U | 127 | U | 127 | U | 127 | U | | 179.000 | U | 171931063502 |
| Sodium | | 167 | U | 167 | U | 167 | U | 167 | U | | 321.000 | U | 171931063502 |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence | U= Below IDL/MDL<br>B= Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR184

Method: P
Run Name: 1719901T71
Calibration Date(s): 07/18/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | 33.4 | U | 68.7 | B | 33.4 | U | | | | 60.000 | U | 171951063502 |
| Iron | | | | | | | | | | | | | |
| Magnesium | | 16.7 | U | 60.5 | B | 16.7 | U | | | | 37.400 | U | 171951063502 |
| Manganese | | | | | | | | | | | | | |
| Potassium | | 127 | U | 127 | U | 127 | U | | | | 179.000 | U | 171951063502 |
| Sodium | | 167 | U | 167 | U | 167 | U | | | | 321.000 | U | 171951063502 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR184

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Arsenic | 75 | 0.40 | U | 0.40 | U | 0.40 | U | 0.40 | B | 75 | 0.720 | U | 171931063903A |
| Lead | 208 | 0.038 | U | 0.038 | U | 0.038 | U | 0.038 | U | 208 | 0.110 | U | 171931063903A |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below IDL/MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR184

Instrument ID: 18255
Run Name: 1719404T73
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 489021 | 97.8 | 490950.3 | 98.2 | | | | |
| Calcium | 500000 | 500000 | 494078 | 98.8 | 493722.1 | 98.7 | | | | |
| Iron | 200000 | 200000 | 196598 | 98.3 | 197386.3 | 98.7 | | | | |
| Magnesium | 500000 | 500000 | 558508 | 111.7 | 555520.7 | 111.1 | | | | |
| Manganese | 0 | 500 | 4 | | 471.8 | 94.4 | | | | |
| Potassium | 0 | 0 | 55 | | 11.7 | | | | | |
| Sodium | 0 | 0 | 53 | | 57.0 | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR184

Instrument ID: 16315
Run Name: 1719901T71
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 466461 | 93.3 | 469822.5 | 94.0 | | | | |
| Calcium | 500000 | 500000 | 476363 | 95.3 | 480484.4 | 96.1 | | | | |
| Iron | 200000 | 200000 | 188513 | 94.3 | 190652.6 | 95.3 | | | | |
| Magnesium | 500000 | 500000 | 509964 | 102.0 | 518778.1 | 103.8 | | | | |
| Manganese | | | | | | | | | | |
| Potassium | 0 | 0 | 4 | | 26.7 | | | | | |
| Sodium | 0 | 0 | 155 | | 138.5 | | | | | |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR184

Instrument ID: 11332
Run Name: 1719906E03
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 111500 | 111.5 | 106000.0 | 106.0 |
| Arsenic | 75 | 0 | 100 | 1 | | 98.5 | 98.5 |
| Calcium | 44 | 300000 | 300000 | 314900 | 105.0 | 298000.0 | 99.3 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Iron | 57 | 250000 | 250000 | 273800 | 109.5 | 256300.0 | 102.5 |
| Lead | 208 | 0 | 0 | 0 | | 0.3 | |
| Magnesium | 24 | 100000 | 100000 | 110900 | 110.9 | 104300.0 | 104.3 |
| Molybdenum | 98 | 2000 | 2000 | 2148 | 107.4 | 2208.0 | 110.4 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 119100 | 119.1 | 113800.0 | 113.8 |
| Sodium | 23 | 250000 | 250000 | 265600 | 106.2 | 253800.0 | 101.5 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Titanium | 47 | 2000 | 2000 | 2372 | 118.6 | 2194.0 | 109.7 |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: *00479BKG Matrix Spike Lab Sample ID: *00479MS Matrix Spike Duplicate Lab Sample ID: *00479MSD
Batch Number(s): 171951063502

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Calcium | | 266259.1200 | | 268390.3800 | | 270822.9900 | | 4000.0000 | 4000.0000 | UG/L | 53 | | 114 | | 1 | | | 20 | P |
| Magnesium | | 37941.4800 | | 39696.0900 | | 39958.0900 | | 2000.0000 | 2000.0000 | UG/L | 88 | | 101 | | 1 | | | 20 | P |
| Potassium | | 5540.6300 | | 15855.2000 | | 16008.2300 | | 10000.0000 | 10000.0000 | UG/L | 103 | | 105 | | 1 | | 86 - 114 | 20 | P |
| Sodium | | 65702.2300 | | 74875.0000 | | 75527.7800 | | 10000.0000 | 10000.0000 | UG/L | 92 | | 98 | | 1 | | | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9095972BKG Matrix Spike Lab Sample ID: 9095973MS Matrix Spike Duplicate Lab Sample ID: 9095974MSD
Batch Number(s): 171931063903

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Arsenic | 75 | 0.7735 | B | 10.8400 | | 9.3600 | | 10.0000 | 10.0000 | UG/L | 101 | | 86 | | 15 | | 84 - 116 | 20 | MS |
| Lead | 208 | 0.2091 | B | 15.4400 | | 15.2000 | | 15.0000 | 15.0000 | UG/L | 102 | | 100 | | 2 | | 88 - 115 | 20 | MS |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9095976BKG Matrix Spike Lab Sample ID: 9095977MS Matrix Spike Duplicate Lab Sample ID: 9095978MSD
Batch Number(s): 171931063502

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Calcium | | 48294.1300 | | 50927.4300 | | 51061.1700 | | 4000.0000 | 4000.0000 | UG/L | 66 | | 69 | | 0 | | | 20 | P |
| Iron | | 80.5000 | U | 962.4200 | | 1008.4800 | | 1000.0000 | 1000.0000 | UG/L | 96 | | 101 | | 5 | | 87 - 115 | 20 | P |
| Magnesium | | 6571.3300 | | 8291.2000 | | 8330.1500 | | 2000.0000 | 2000.0000 | UG/L | 86 | | 88 | | 0 | | 85 - 113 | 20 | P |
| Manganese | | 3.0900 | B | 483.9600 | | 492.9400 | | 500.0000 | 500.0000 | UG/L | 96 | | 98 | | 2 | | 90 - 114 | 20 | P |
| Potassium | | 2763.0300 | | 12383.1000 | | 12624.6700 | | 10000.0000 | 10000.0000 | UG/L | 96 | | 99 | | 2 | | 86 - 114 | 20 | P |
| Sodium | | 26586.0900 | | 36246.5700 | | 36340.9100 | | 10000.0000 | 10000.0000 | UG/L | 97 | | 98 | | 0 | | 87 - 115 | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: *00479BKG Duplicate Lab Sample ID: *00479DUP
Batch Number(s): 171951063502
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | 266259.1200 | | 272737.3000 | | 2 | | P |
| Magnesium | | | 37941.4800 | | 38782.6200 | | 2 | | P |
| Potassium | | | 5540.6300 | | 5659.7000 | | 2 | | P |
| Sodium | | | 65702.2300 | | 67161.1300 | | 2 | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | FLAGS: |
| AF = Cold Vapor Atomic Fluorescence | * = Duplicate Out of Spec |

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9095972BKG Duplicate Lab Sample ID: 9095975DUP
Batch Number(s): 171931063903
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | 0.7735 | B | 0.7230 | U | 200 | | MS |
| Lead | 208 | | 0.2091 | B | 0.2331 | B | 11 | | MS |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9095976BKG Duplicate Lab Sample ID: 9095979DUP
Batch Number(s): 171931063502
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | 48294.1300 | | 48448.3400 | | 0 | | P |
| Iron | | | 80.5000 | U | 80.5000 | U | | | P |
| Magnesium | | | 6571.3300 | | 6580.9600 | | 0 | | P |
| Manganese | | | 3.0900 | B | 3.1800 | B | 3 | | P |
| Potassium | | 1000.0 | 2763.0300 | | 2792.6600 | | 1 | | P |
| Sodium | | | 26586.0900 | | 26623.5300 | | 0 | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR184
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 171931063903 | UG/L | 10.000 | 10.230 | | 84 - 116 | 102 | MS | Yes |
| Calcium | | 171931063502 | UG/L | 4000.000 | 4044.960 | | 87 - 113 | 101 | P | Yes |
| Iron | | 171931063502 | UG/L | 1000.000 | 1019.940 | | 87 - 115 | 102 | P | Yes |
| Lead | 208 | 171931063903 | UG/L | 15.000 | 13.910 | | 88 - 115 | 93 | MS | Yes |
| Magnesium | | 171931063502 | UG/L | 2000.000 | 2042.630 | | 85 - 113 | 102 | P | Yes |
| Manganese | | 171931063502 | UG/L | 500.000 | 510.380 | | 90 - 114 | 102 | P | Yes |
| Potassium | | 171931063502 | UG/L | 10000.000 | 10093.350 | | 86 - 114 | 101 | P | Yes |
| Sodium | | 171931063502 | UG/L | 10000.000 | 10109.460 | | 87 - 115 | 101 | P | Yes |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ

eurofins | Lancaster Laboratories Environmental

QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR184
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | 171951063502 | UG/L | 4000.000 | 4637.400 | | 87 - 113 | 116 | P | No |
| Magnesium | | 171951063502 | UG/L | 2000.000 | 2118.300 | | 85 - 113 | 106 | P | Yes |
| Potassium | | 171951063502 | UG/L | 10000.000 | 10051.730 | | 86 - 114 | 101 | P | Yes |
| Sodium | | 171951063502 | UG/L | 10000.000 | 10125.040 | | 87 - 115 | 101 | P | Yes |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: *00479BKG Serial Dilution Lab Sample ID: *00479L
Batch Number(s): 171951063502
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Calcium | | 266259.1200 | | 259380.5500 | | 3 | | P |
| Magnesium | | 37941.4800 | | 37788.2500 | | 0 | | P |
| Potassium | | 5540.6300 | | 5601.9500 | | 1 | | P |
| Sodium | | 65702.2300 | | 64115.5500 | | 2 | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9095972BKG Serial Dilution Lab Sample ID: 9095972L
Batch Number(s): 171931063903
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 0.7735 | B | 3.6150 | U | 100 | | MS |
| Lead | 208 | 0.2091 | B | 0.5550 | U | 100 | | MS |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR184
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9095976BKG Serial Dilution Lab Sample ID: 9095976L
Batch Number(s): 171931063502
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Calcium | | 48294.1300 | | 47706.7000 | | 1 | | P |
| Iron | | 80.5000 | U | 402.5000 | U | | | P |
| Magnesium | | 6571.3300 | | 6543.5000 | | 0 | | P |
| Manganese | | 3.0900 | B | 8.0000 | U | 100 | | P |
| Potassium | | 2763.0300 | | 2916.9500 | B | 6 | | P |
| Sodium | | 26586.0900 | | 26126.4000 | | 2 | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Calcium | 317.93 | | 33.4 |
| Iron | | | |
| Magnesium | 285.21 | | 16.7 |
| Manganese | | | |
| Potassium | 766.49 | | 127 |
| Sodium | 589.59 | | 167 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Instrument ID: 18255
Date: 04/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Calcium | 317.93 | | 33.4 |
| Iron | 261.19 | | 33.4 |
| Magnesium | 285.21 | | 16.7 |
| Manganese | 257.61 | | 0.83 |
| Potassium | 766.49 | | 83.4 |
| Sodium | 589.59 | | 167 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS (QUARTERLY)
SDG No.: KR184

Method: MS
Instrument ID: 11332
Date: 07/2017

| Analyte | MASS (amu) | Background | IDL (UG/L) |
|---|---|---|---|
| Arsenic | 75 | | 0.40 |
| Lead | 208 | | 0.038 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR184
Matrix: WATER

Method: P
Date: 06/2017

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Calcium | 317.93 | | 400 | 60.0 |
| Iron | 261.19 | | 400 | 80.5 |
| Magnesium | 285.21 | | 200 | 37.4 |
| Manganese | 257.61 | | 10.0 | 1.6 |
| Potassium | 766.49 | | 1000 | 179 |
| Sodium | 589.59 | | 2000 | 321 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR184
Matrix: WATER

Method: MS
Date: 06/2017

| Analyte | Mass | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Arsenic | 75 | | 4.0 | 0.72 |
| Lead | 208 | | 2.0 | 0.11 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR184

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Calcium | 317.93 | 10.00 | 600000.0 |
| Iron | | | |
| Magnesium | 285.21 | 10.00 | 600000.0 |
| Manganese | | | |
| Potassium | 766.49 | 10.00 | 500000.0 |
| Sodium | 589.59 | 10.00 | 500000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR184

Method: P
Instrument ID: 18255
Date: 04/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Calcium | 317.93 | 10.00 | 600000.0 |
| Iron | 261.19 | 10.00 | 300000.0 |
| Magnesium | 285.21 | 10.00 | 600000.0 |
| Manganese | 257.61 | 10.00 | 20000.0 |
| Potassium | 766.49 | 10.00 | 500000.0 |
| Sodium | 589.59 | 10.00 | 500000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Batch Number: 171931063502

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9095966 | 07/12/2017 | 50.00 | 50 |
| 9095967 | 07/12/2017 | 50.00 | 50 |
| 9095968 | 07/12/2017 | 50.00 | 50 |
| 9095969 | 07/12/2017 | 50.00 | 50 |
| 9095970 | 07/12/2017 | 50.00 | 50 |
| 9095971 | 07/12/2017 | 50.00 | 50 |
| 9095976BKG | 07/12/2017 | 50.00 | 50 |
| 9095979DUP | 07/12/2017 | 50.00 | 50 |
| 9095978MSD | 07/12/2017 | 50.00 | 50 |
| 9095977MS | 07/12/2017 | 50.00 | 50 |
| P19363BB | 07/12/2017 | 50.00 | 50 |
| P19363BQ | 07/12/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: P
Batch Number: 171951063502

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9095972 | 07/17/2017 | 50.00 | 50 |
| *00479BKG | 07/17/2017 | 50.00 | 50 |
| *00479DUP | 07/17/2017 | 50.00 | 50 |
| *00479MSD | 07/17/2017 | 50.00 | 50 |
| *00479MS | 07/17/2017 | 50.00 | 50 |
| P19563BB | 07/17/2017 | 50.00 | 50 |
| P19563BQ | 07/17/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: MS
Batch Number: 171931063903

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9095966 | 07/12/2017 | 50.00 | 50 |
| 9095968 | 07/12/2017 | 50.00 | 50 |
| 9095970 | 07/12/2017 | 50.00 | 50 |
| 9095972BKG | 07/12/2017 | 50.00 | 50 |
| 9095975DUP | 07/12/2017 | 50.00 | 50 |
| 9095974MSD | 07/12/2017 | 50.00 | 50 |
| 9095973MS | 07/12/2017 | 50.00 | 50 |
| P19363CB | 07/12/2017 | 50.00 | 50 |
| P19363CQ | 07/12/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR184

Method: P
Instrument ID: 18255
Run Name: 1719404T73

Run Start Date: 07/13/2017
Run End Date: 07/13/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 05:39 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 05:42 | | X | X | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 05:45 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 05:48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 05:51 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 05:54 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 05:58 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 06:01 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 06:04 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 06:07 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 06:10 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19363BB | 1.00 | 06:13 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19363BQ | 1.00 | 06:16 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095976BKG | 1.00 | 06:19 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095976A | 1.00 | 06:22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095979DUP | 1.00 | 06:25 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095977MS | 1.00 | 06:28 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095978MSD | 1.00 | 06:31 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095976L | 5.00 | 06:34 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095966 | 1.00 | 06:37 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095967 | 1.00 | 06:40 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 06:43 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 06:46 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095968 | 1.00 | 06:50 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095969 | 1.00 | 06:52 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095970 | 1.00 | 06:55 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095971 | 1.00 | 06:58 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 07:01 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 07:04 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR184

Method: P
Instrument ID: 16315
Run Name: 1719901T71

Run Start Date: 07/18/2017
Run End Date: 07/18/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 01:58 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 02:02 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 02:05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 02:08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 02:11 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 02:14 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 02:17 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 02:20 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 02:24 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 02:27 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 02:30 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| P19563BB | 1.00 | 02:33 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| P19563BQ | 1.00 | 02:36 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| *00479BKG | 1.00 | 02:39 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| *00479A | 1.00 | 02:42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *00479DUP | 1.00 | 02:45 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| *00479MS | 1.00 | 02:49 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| *00479MSD | 1.00 | 02:52 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| *00479L | 5.00 | 02:55 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9095972 | 1.00 | 02:58 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 03:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 03:04 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 03:07 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR184

Method: MS
Instrument ID: 11332
Run Name: 1719906E03

Run Start Date: 07/18/2017
Run End Date: 07/18/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 09:56 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 09:58 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 10:00 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 10:02 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 10:04 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 10:06 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 10:08 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 10:09 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 10:11 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:14 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:16 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19363CB | 1.00 | 10:18 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19363CQ | 1.00 | 10:19 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095972BKG | 1.00 | 10:21 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095972A | 1.00 | 10:23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095975DUP | 1.00 | 10:24 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095973MS | 1.00 | 10:26 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095974MSD | 1.00 | 10:28 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095972L | 5.00 | 10:30 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:31 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:33 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095966 | 1.00 | 10:35 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095968 | 1.00 | 10:36 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095970 | 1.00 | 10:38 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9095970 | 10.00 | 10:40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:42 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:43 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 15
ICP-MS TUNE
SDG No.: KR184
Matrix: WATER

Instrument ID: 11332
Date: 07/17/2017

| Analyte | Mass | Avg. Measured Mass (amu) | Avg. Peak Width at 5% Peak Height (amu) | %RSD |
|---|---|---|---|---|
| Lithium | 6.000 | 5.90 | 0.70 | 2.9 |
| Magnesium | 24.000 | 23.90 | 0.65 | 4.9 |
| Rhodium | 103.000 | 103.00 | 0.65 | 1.7 |
| Indium | 115.000 | 115.00 | 0.65 | 1.3 |
| Cerium | 140.000 | 140.00 | 0.65 | 1.8 |
| Lead | 208.000 | 207.95 | 0.60 | 2.2 |
| Uranium | 238.000 | 237.95 | 0.55 | 2.2 |

Comments:

_____
_____
_____
_____

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR184

Instrument ID: 11332
Run Name: 1719906E03

Start Date: 07/18/2017
End Date: 07/18/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| BI-1-209 | PB | IN-1-115 | AS |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element BI-1-209 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S0 | 09:56 | 100 | | 100 | | | | | | | | | | | |
| S | 09:58 | 96 | | 96 | | | | | | | | | | | |
| CCS | 10:00 | 101 | | 101 | | | | | | | | | | | |
| CCS | 10:02 | 97 | | 99 | | | | | | | | | | | |
| ICV | 10:04 | 98 | | 99 | | | | | | | | | | | |
| ICB | 10:06 | 98 | | 100 | | | | | | | | | | | |
| LLC | 10:08 | 97 | | 100 | | | | | | | | | | | |
| ICSA | 10:09 | 90 | | 85 | | | | | | | | | | | |
| ICSAB | 10:11 | 92 | | 88 | | | | | | | | | | | |
| ZZZZZZ | 10:13 | | | | | | | | | | | | | | |
| CCV | 10:14 | 105 | | 106 | | | | | | | | | | | |
| CCB | 10:16 | 102 | | 106 | | | | | | | | | | | |
| P19363CB | 10:18 | 106 | | 108 | | | | | | | | | | | |
| P19363CQ | 10:19 | 106 | | 108 | | | | | | | | | | | |
| 9095972BKG | 10:21 | 105 | | 104 | | | | | | | | | | | |
| 9095972A | 10:23 | 106 | | 106 | | | | | | | | | | | |
| 9095975DUP | 10:24 | 104 | | 104 | | | | | | | | | | | |
| 9095973MS | 10:26 | 97 | | 98 | | | | | | | | | | | |
| 9095974MSD | 10:28 | 100 | | 98 | | | | | | | | | | | |
| 9095972L | 10:30 | 101 | | 103 | | | | | | | | | | | |
| CCV | 10:31 | 98 | | 102 | | | | | | | | | | | |
| CCB | 10:33 | 93 | | 97 | | | | | | | | | | | |
| 9095966 | 10:35 | 100 | | 101 | | | | | | | | | | | |
| 9095968 | 10:36 | 99 | | 102 | | | | | | | | | | | |
| 9095970 | 10:38 | 101 | | 104 | | | | | | | | | | | |
| 9095970 | 10:40 | | | | | | | | | | | | | | |
| CCV | 10:42 | 96 | | 99 | | | | | | | | | | | |
| CCB | 10:43 | 94 | | 99 | | | | | | | | | | | |

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike

FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

# Raw Data

# Metals in Liquid

# ICP Data

# Metals in Liquid

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# ICP-AES Run Data Report

Reviewed By
Scott R Yanos

Reviewed Date
07/13/2017 7:27AM

Data File Name 1719404T73.TXT
Run Name: 1719404T73

Method Reference Name(s):

Verified By:
Tara L Snyder

Verified Date
07/16/2017 9:40PM

Analyst Employee: 12404

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 1 Date/Time: 07/13/2017 05:39

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -24.78611 | 48.403 | -0.00896 | -0.00552 | -0.00327 |
| AL | 0.000 | 6.92133 | 62.903 | 0.01828 | 0.04113 | 0.01261 |
| AS | 0.000 | -0.37637 | 27.144 | -0.00416 | -0.00240 | -0.00389 |
| B | 0.000 | 0.10513 | 1624.398 | -0.00005 | 0.00004 | 0.00001 |
| BA | 0.000 | 190.71676 | 1.064 | 0.00090 | 0.00091 | 0.00092 |
| BE | 0.000 | -281.49866 | 1.136 | -0.06677 | -0.06807 | -0.06672 |
| CA | 0.000 | 57.63895 | 4.924 | 0.00378 | 0.00409 | 0.00414 |
| CD | 0.000 | -4.23959 | 5.878 | -0.04028 | -0.04084 | -0.03660 |
| CO | 0.000 | -2.96109 | 90.607 | -0.00203 | -0.02855 | -0.05170 |
| CR | 0.000 | 20.84747 | 13.570 | 0.00011 | 0.00010 | 0.00008 |
| CU | 0.000 | -19.09892 | 25.411 | -0.00590 | -0.00396 | -0.00382 |
| FE | 0.000 | 4.57351 | 33.935 | 0.00035 | 0.00020 | 0.00040 |
| K | 0.000 | 69.74872 | 11.650 | 0.26741 | 0.24746 | 0.21172 |
| LI | 0.000 | -41.16720 | 17.613 | -0.00343 | -0.00247 | -0.00268 |
| MG | 0.000 | -5.17243 | 15.011 | -0.00030 | -0.00038 | -0.00040 |
| MN | 0.000 | 6.02159 | 52.858 | 0.00232 | 0.00104 | 0.00096 |
| MO | 0.000 | 0.04683 | 1329.428 | 0.00249 | -0.00610 | 0.00491 |
| NA | 0.000 | 19.33843 | 60.814 | 0.00147 | 0.00208 | 0.00047 |
| NI | 0.000 | 3.21146 | 84.347 | 0.03178 | 0.00370 | 0.05374 |
| P | 0.000 | 0.52970 | 89.895 | 0.00013 | 0.00000 | 0.00016 |
| PB | 0.000 | 0.93790 | 57.653 | 0.00970 | 0.01309 | 0.00324 |
| S | 0.000 | -0.42281 | 112.491 | -0.00009 | -0.00016 | 0.00002 |
| SB | 0.000 | 1.66872 | 53.646 | 0.00048 | 0.00015 | 0.00030 |
| SE | 0.000 | -0.93221 | 101.237 | -0.00554 | -0.01848 | -0.00185 |
| SI | 0.000 | 0.98304 | 273.495 | -0.00013 | 0.00023 | 0.00011 |
| SN | 0.000 | -0.03992 | 808.053 | 0.00286 | -0.00305 | -0.00093 |
| SR | 0.000 | -118.33511 | 16.155 | -0.00066 | -0.00055 | -0.00048 |
| TI | 0.000 | 50.36596 | 1.454 | 0.01210 | 0.01182 | 0.01214 |
| TL | 0.000 | 0.39311 | 129.382 | 0.00794 | -0.00139 | 0.00435 |
| V | 0.000 | -17.72057 | 35.475 | -0.00419 | -0.00575 | -0.00275 |
| Y1 | 0.000 | 5401.90445 | 0.126 | 5407.99960 | 5403.17955 | 5394.53419 |
| Y2A | 0.000 | 209488.17054 | 0.231 | 208929.26391 | 209760.18777 | 209775.05993 |
| Y2R | 0.000 | 14397.23742 | 0.310 | 14396.13546 | 14442.47805 | 14353.09876 |
| ZN | 0.000 | 5.47505 | 18.155 | 0.04148 | 0.05988 | 0.05068 |
| ZR | 0.000 | -17.04688 | 34.221 | -0.00131 | -0.00073 | -0.00151 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 2 Date/Time: 07/13/2017 05:42

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 7679.82267 | 0.751 | 26.91984 | 26.76442 | 26.52128 |
| CA | 50.000 | 56982.03715 | 0.750 | 3.98522 | 3.98380 | 3.93299 |
| FE | 50.000 | 12803.39518 | 0.296 | 0.89247 | 0.89335 | 0.88840 |
| K | 50.000 | 22285.65153 | 0.374 | 77.56339 | 77.87712 | 77.29706 |
| MG | 50.000 | 98964.66964 | 0.698 | 6.91482 | 6.92122 | 6.83494 |
| NA | 50.000 | 78667.39805 | 0.467 | 5.48119 | 5.50032 | 5.44967 |
| S | 50.000 | 3374.43066 | 0.429 | 0.63965 | 0.64181 | 0.63637 |
| SI | 50.000 | 9808.91029 | 0.329 | 0.68409 | 0.68435 | 0.68034 |
| Y1 | 50.000 | 5278.56663 | 0.502 | 5283.84808 | 5249.83020 | 5302.02160 |
| Y2R | 50.000 | 14363.35656 | 0.825 | 14263.95929 | 14331.52282 | 14494.58758 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 3 Date/Time: 07/13/2017 05:45

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 12789.37778 | 0.861 | 3.10939 | 3.05973 | 3.10113 |
| AS | 1.000 | 133.38339 | 0.235 | 1.25236 | 1.24687 | 1.25145 |
| B | 1.000 | 7683.70467 | 0.846 | 0.03741 | 0.03679 | 0.03719 |
| BA | 1.000 | 630714.74359 | 0.588 | 3.03498 | 3.03979 | 3.06816 |
| BE | 1.000 | 457405.97957 | 1.397 | 111.68159 | 108.76718 | 111.10767 |
| CD | 1.000 | 8060.60612 | 0.327 | 75.38791 | 75.43653 | 75.83818 |
| CO | 1.000 | 4192.06934 | 0.415 | 39.17381 | 39.22753 | 39.47912 |
| CU | 1.000 | 12780.53311 | 0.729 | 3.10168 | 3.06195 | 3.10013 |
| LI | 1.000 | 9306.22217 | 1.438 | 0.63436 | 0.65205 | 0.63861 |
| MN | 1.000 | 60453.42703 | 0.950 | 14.71475 | 14.45010 | 14.65446 |
| NI | 1.000 | 2589.29056 | 0.280 | 24.23231 | 24.22926 | 24.34864 |
| P | 1.000 | 119.27652 | 0.991 | 0.02243 | 0.02211 | 0.02254 |
| PB | 1.000 | 670.42905 | 0.549 | 6.24750 | 6.28894 | 6.31600 |
| SE | 1.000 | 109.46329 | 0.747 | 1.01729 | 1.03157 | 1.02924 |
| SR | 1.000 | 657485.55427 | 0.811 | 3.17401 | 3.15298 | 3.20425 |
| TL | 1.000 | 122.32338 | 0.295 | 1.15023 | 1.14356 | 1.14588 |
| Y1 | 1.000 | 5334.37118 | 0.449 | 5354.78374 | 5340.31184 | 5308.01796 |
| Y2A | 1.000 | 206952.38325 | 0.865 | 205437.81412 | 208929.45752 | 206489.87810 |
| Y2R | 1.000 | 14504.55136 | 1.110 | 14635.17964 | 14324.66054 | 14553.81390 |
| ZN | 1.000 | 3995.43291 | 0.302 | 37.42580 | 37.35105 | 37.57365 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 4 Date/Time: 07/13/2017 05:48

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 9197.04106 | 0.373 | 0.04299 | 0.04269 | 0.04296 |
| MO | 1.000 | 1127.17881 | 0.256 | 10.31104 | 10.26308 | 10.30617 |
| SB | 1.000 | 254.99982 | 0.312 | 0.04646 | 0.04674 | 0.04652 |
| SN | 1.000 | 367.73999 | 0.285 | 3.35185 | 3.35357 | 3.36924 |
| TI | 1.000 | 49137.33435 | 0.165 | 11.43769 | 11.47495 | 11.45061 |
| V | 1.000 | 16724.79352 | 0.274 | 3.88870 | 3.90993 | 3.89756 |
| Y1 | 1.000 | 5475.24605 | 0.257 | 5482.33989 | 5484.37719 | 5459.02108 |
| Y2A | 1.000 | 214491.43903 | 0.357 | 215375.48844 | 214086.00917 | 214012.81949 |
| Y2R | 1.000 | 14657.74229 | 1.322 | 14762.59215 | 14434.13711 | 14776.49760 |
| ZR | 1.000 | 2777.23869 | 1.481 | 0.18751 | 0.19271 | 0.18827 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 5 Date/Time: 07/13/2017 05:51

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.58847 | 7 516.20 | 0.412 | 0.58575 | 0.59041 | 0.58925 |
| ____ AL | 29.84485 | 4 629.04 | 0.159 | 29.83638 | 29.89587 | 29.80229 |
| ____ AS | 0.57553 | 75.14 | 0.531 | 0.57466 | 0.57892 | 0.57300 |
| ____ B | 0.57257 | 4 527.60 | 0.305 | 0.57258 | 0.57082 | 0.57431 |
| ____ BA | 0.58382 | 368 302.61 | 0.579 | 0.58279 | 0.58107 | 0.58760 |
| ____ BE | 0.56819 | 259 850.34 | 0.178 | 0.56706 | 0.56902 | 0.56849 |
| ____ CA | 29.60542 | 34 168.90 | 0.095 | 29.58795 | 29.59044 | 29.63788 |
| ____ CD | 0.58137 | 4 663.41 | 0.118 | 0.58081 | 0.58116 | 0.58214 |
| ____ CO | 0.56839 | 2 369.79 | 0.047 | 0.56813 | 0.56837 | 0.56867 |
| ____ CR | 0.59190 | 5 259.37 | 0.076 | 0.59165 | 0.59242 | 0.59162 |
| ____ CU | 0.57931 | 7 374.69 | 0.367 | 0.57988 | 0.58109 | 0.57696 |
| ____ FE | 29.22024 | 7 599.50 | 0.272 | 29.12931 | 29.27541 | 29.25601 |
| ____ K | 29.34998 | 13 233.97 | 0.218 | 29.27628 | 29.38162 | 29.39204 |
| ____ LI | 0.58822 | 5 483.59 | 0.536 | 0.58736 | 0.58559 | 0.59172 |
| ____ MG | 29.31749 | 59 339.86 | 0.058 | 29.32921 | 29.29799 | 29.32527 |
| ____ MN | 0.57901 | 34 998.39 | 0.283 | 0.57761 | 0.58081 | 0.57862 |
| ____ MO | 0.60422 | 658.61 | 0.343 | 0.60608 | 0.60199 | 0.60459 |
| ____ NA | 28.83657 | 45 806.10 | 0.167 | 28.78092 | 28.86668 | 28.86209 |
| ____ NI | 0.57764 | 1 485.50 | 0.210 | 0.57637 | 0.57775 | 0.57879 |
| ____ P | 0.58327 | 69.30 | 0.373 | 0.58480 | 0.58078 | 0.58424 |
| ____ PB | 0.58050 | 387.76 | 0.555 | 0.57746 | 0.58388 | 0.58017 |
| ____ S | 30.40765 | 2 059.26 | 0.312 | 30.32077 | 30.39307 | 30.50911 |
| ____ SB | 0.60382 | 150.39 | 0.965 | 0.61023 | 0.60238 | 0.59885 |
| ____ SE | 0.58201 | 62.74 | 2.539 | 0.56567 | 0.59444 | 0.58592 |
| ____ SI | 29.56307 | 5 859.72 | 0.397 | 29.47553 | 29.51710 | 29.69659 |
| ____ SN | 0.58914 | 209.57 | 0.499 | 0.58653 | 0.59232 | 0.58856 |
| ____ SR | 0.57996 | 381 175.98 | 1.023 | 0.58180 | 0.57333 | 0.58476 |
| ____ TI | 0.60761 | 28 977.76 | 0.140 | 0.60807 | 0.60813 | 0.60662 |
| ____ TL | 0.58245 | 71.18 | 1.217 | 0.57711 | 0.59049 | 0.57973 |
| ____ V | 0.61381 | 9 905.89 | 0.156 | 0.61281 | 0.61390 | 0.61472 |
| ____ Y1 | 5296.86459 | 5 296.86 | 0.432 | 5322.92595 | 5287.61990 | 5280.04792 |
| ____ Y2A | 206898.27553 | 206 898.28 | 0.637 | 208223.24955 | 206884.59924 | 205586.97781 |
| ____ Y2R | 14498.53215 | 14 498.53 | 0.121 | 14494.60324 | 14483.29675 | 14517.69646 |
| ____ ZN | 0.57483 | 2 294.70 | 0.248 | 0.57357 | 0.57453 | 0.57638 |
| ____ ZR | 0.61528 | 1 684.90 | 0.520 | 0.61240 | 0.61471 | 0.61873 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 6 Date/Time: 07/13/2017 05:54

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00063 | -20.20 | 28.074 | -0.00083 | -0.00050 | -0.00055 |
| ____ AL | 0.02537 | 10.83 | 141.710 | 0.01048 | 0.06638 | -0.00074 |
| ____ AS | -0.00371 | -1.90 | 130.572 | -0.00873 | -0.00332 | 0.00093 |
| ____ B | 0.00205 | 8.01 | 32.591 | 0.00135 | 0.00268 | 0.00211 |
| ____ BA | 0.00015 | 288.08 | 99.331 | 0.00000 | 0.00015 | 0.00029 |
| ____ BE | -0.00013 | -206.86 | 93.008 | -0.00025 | -0.00014 | -0.00001 |
| ____ CA | -0.00331 | 53.90 | 118.306 | -0.00012 | -0.00213 | -0.00769 |
| ____ CD | 0.00008 | -5.87 | 205.143 | 0.00022 | -0.00010 | 0.00011 |
| ____ CO | 0.00020 | -2.46 | 203.972 | -0.00025 | 0.00057 | 0.00029 |
| ____ CR | -0.00004 | 20.78 | 710.246 | -0.00002 | -0.00034 | 0.00024 |
| ____ CU | 0.00039 | -8.03 | 169.763 | -0.00036 | 0.00061 | 0.00092 |
| ____ FE | 0.00005 | 4.60 | 2107.753 | 0.00336 | -0.00724 | 0.00404 |
| ____ K | 0.05110 | 92.63 | 61.644 | 0.03832 | 0.02800 | 0.08698 |
| ____ LI | -0.00315 | -26.09 | 7.976 | -0.00325 | -0.00333 | -0.00286 |
| ____ MG | 0.00093 | -6.88 | 46.623 | 0.00101 | 0.00046 | 0.00132 |
| ____ MN | 0.00006 | 9.94 | 277.267 | -0.00014 | 0.00016 | 0.00017 |
| ____ MO | 0.00095 | 0.36 | 46.076 | 0.00046 | 0.00109 | 0.00131 |
| ____ NA | 0.01082 | 36.41 | 69.156 | 0.01542 | 0.01486 | 0.00219 |
| ____ NI | 0.00054 | 4.67 | 96.890 | 0.00058 | 0.00000 | 0.00104 |
| ____ P | 0.00281 | 0.88 | 57.850 | 0.00386 | 0.00364 | 0.00094 |
| ____ PB | 0.00457 | 0.16 | 55.490 | 0.00246 | 0.00738 | 0.00387 |
| ____ S | 0.00626 | 0.01 | 65.864 | 0.00439 | 0.00340 | 0.01098 |
| ____ SB | 0.00459 | 2.86 | 52.269 | 0.00728 | 0.00384 | 0.00266 |
| ____ SE | 0.00972 | 0.16 | 79.380 | 0.01382 | 0.01452 | 0.00082 |
| ____ SI | 0.01176 | 3.31 | 39.709 | 0.00695 | 0.01628 | 0.01205 |
| ____ SN | 0.00092 | 0.30 | 327.876 | -0.00093 | -0.00071 | 0.00439 |
| ____ SR | 0.00018 | -1.64 | 65.127 | 0.00006 | 0.00018 | 0.00029 |
| ____ TI | 0.00033 | 66.88 | 66.562 | 0.00016 | 0.00025 | 0.00058 |
| ____ TL | 0.00143 | 0.58 | 59.403 | 0.00063 | 0.00232 | 0.00133 |
| ____ V | -0.00106 | -16.72 | 44.543 | -0.00056 | -0.00150 | -0.00111 |
| ____ Y1 | 5451.54643 | 5 451.55 | 0.432 | 5425.81553 | 5472.10916 | 5456.71460 |
| ____ Y2A | 212686.52944 | 212 686.53 | 1.209 | 214787.50750 | 213453.80543 | 209818.27538 |
| ____ Y2R | 14416.19419 | 14 416.19 | 0.296 | 14367.50499 | 14433.76649 | 14447.31108 |
| ____ ZN | 0.00002 | 5.61 | 1118.294 | -0.00011 | 0.00024 | -0.00008 |
| ____ ZR | -0.00127 | -17.81 | 240.166 | -0.00323 | 0.00225 | -0.00285 |

LANCASTER LABORATORIES

Run Name: 1719404T73

Instrument ID: 18255

Tube: 7

Date/Time: 07/13/2017 05:58

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01072 | 132.11 | 4.374 | 0.01040 | 0.01051 | 0.01126 |
| ____ AL | 0.45569 | 78.07 | 4.136 | 0.47733 | 0.44688 | 0.44286 |
| ____ AS | 0.04304 | 4.53 | 8.473 | 0.04431 | 0.04587 | 0.03892 |
| ____ B | 0.09924 | 776.85 | 1.323 | 0.09902 | 0.10065 | 0.09806 |
| ____ BA | 0.01069 | 7 123.02 | 0.939 | 0.01057 | 0.01076 | 0.01073 |
| ____ BE | 0.01004 | 4 569.03 | 0.424 | 0.00999 | 0.01006 | 0.01007 |
| ____ CA | 0.41920 | 546.57 | 2.044 | 0.41364 | 0.42906 | 0.41489 |
| ____ CD | 0.01095 | 83.92 | 3.818 | 0.01059 | 0.01086 | 0.01141 |
| ____ CO | 0.01089 | 43.52 | 1.922 | 0.01109 | 0.01067 | 0.01091 |
| ____ CR | 0.03154 | 307.58 | 1.978 | 0.03115 | 0.03226 | 0.03122 |
| ____ CU | 0.02124 | 263.59 | 1.088 | 0.02138 | 0.02097 | 0.02136 |
| ____ FE | 0.42626 | 117.11 | 1.621 | 0.43323 | 0.42615 | 0.41941 |
| ____ K | 1.07036 | 554.15 | 1.932 | 1.04695 | 1.07797 | 1.08616 |
| ____ LI | 0.03760 | 355.36 | 8.930 | 0.03380 | 0.03880 | 0.04019 |
| ____ MG | 0.21256 | 432.29 | 0.967 | 0.21473 | 0.21064 | 0.21232 |
| ____ MN | 0.01096 | 685.95 | 1.608 | 0.01077 | 0.01100 | 0.01112 |
| ____ MO | 0.02218 | 24.19 | 2.253 | 0.02221 | 0.02267 | 0.02167 |
| ____ NA | 2.07522 | 3 337.50 | 1.223 | 2.09212 | 2.08750 | 2.04605 |
| ____ NI | 0.02171 | 60.64 | 4.891 | 0.02107 | 0.02113 | 0.02294 |
| ____ P | 0.20273 | 25.13 | 1.032 | 0.20035 | 0.20429 | 0.20356 |
| ____ PB | 0.03281 | 19.59 | 8.134 | 0.03490 | 0.02980 | 0.03373 |
| ____ S | 1.08153 | 74.94 | 1.034 | 1.06891 | 1.08546 | 1.09021 |
| ____ SB | 0.04421 | 12.88 | 1.623 | 0.04455 | 0.04339 | 0.04469 |
| ____ SE | 0.05135 | 4.85 | 15.167 | 0.05587 | 0.05583 | 0.04236 |
| ____ SI | 0.11156 | 23.44 | 8.215 | 0.10157 | 0.11958 | 0.11353 |
| ____ SN | 0.04178 | 15.26 | 0.558 | 0.04162 | 0.04205 | 0.04168 |
| ____ SR | 0.01057 | 7 011.51 | 0.819 | 0.01047 | 0.01061 | 0.01064 |
| ____ TI | 0.02166 | 1 106.14 | 0.643 | 0.02150 | 0.02175 | 0.02172 |
| ____ TL | 0.06242 | 8.51 | 7.858 | 0.06322 | 0.06687 | 0.05716 |
| ____ V | 0.00981 | 159.82 | 5.697 | 0.00918 | 0.01023 | 0.01002 |
| ____ Y1 | 5449.53338 | 5 449.53 | 0.155 | 5453.65907 | 5455.09686 | 5439.84422 |
| ____ Y2A | 212290.93795 | 212 290.94 | 0.758 | 212652.88021 | 210530.95381 | 213688.97984 |
| ____ Y2R | 14599.61869 | 14 599.62 | 0.361 | 14562.61495 | 14576.32104 | 14659.92008 |
| ____ ZN | 0.04218 | 177.05 | 2.259 | 0.04115 | 0.04238 | 0.04302 |
| ____ ZR | 0.10719 | 283.58 | 0.934 | 0.10699 | 0.10827 | 0.10629 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 8 Date/Time: 07/13/2017 06:01

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00251 | -179.41 | 28.651 | -0.00214 | -0.00204 | -0.00333 |
| ____ AL | 489.02106 | 72 549.59 | 1.077 | 493.85840 | 489.79443 | 483.41034 |
| ____ AS | 0.00205 | -5.93 | 416.099 | -0.00780 | 0.00653 | 0.00743 |
| ____ B | 0.04465 | 1 098.48 | 4.303 | 0.04245 | 0.04549 | 0.04600 |
| ____ BA | 0.00026 | 315.00 | 4.499 | 0.00027 | 0.00027 | 0.00025 |
| ____ BE | -0.00052 | -340.93 | 4.937 | -0.00049 | -0.00054 | -0.00054 |
| ____ CA | 494.07763 | 509 681.14 | 0.639 | 491.26770 | 497.49097 | 493.47424 |
| ____ CD | 0.00106 | 80.28 | 28.894 | 0.00075 | 0.00107 | 0.00137 |
| ____ CO | 0.00113 | 1.30 | 48.935 | 0.00157 | 0.00131 | 0.00051 |
| ____ CR | 0.00174 | 32.20 | 40.326 | 0.00223 | 0.00093 | 0.00204 |
| ____ CU | 0.00223 | 136.03 | 45.373 | 0.00138 | 0.00335 | 0.00197 |
| ____ FE | 196.59798 | 46 259.64 | 1.008 | 198.32593 | 197.03338 | 194.43462 |
| ____ K | 0.05472 | 90.16 | 122.875 | -0.02277 | 0.08928 | 0.09764 |
| ____ LI | -0.00778 | -2.63 | 21.171 | -0.00945 | -0.00616 | -0.00773 |
| ____ MG | 558.50751 | 718 682.53 | 2.976 | 574.16017 | 560.30367 | 541.05869 |
| ____ MN | 0.00371 | 206.33 | 0.722 | 0.00368 | 0.00373 | 0.00373 |
| ____ MO | -0.00246 | -3.07 | 35.521 | -0.00216 | -0.00345 | -0.00179 |
| ____ NA | 0.05297 | 98.54 | 33.993 | 0.03309 | 0.05765 | 0.06818 |
| ____ NI | 0.00397 | 12.15 | 3.830 | 0.00398 | 0.00412 | 0.00381 |
| ____ P | 0.01032 | 1.58 | 128.040 | -0.00188 | 0.02435 | 0.00849 |
| ____ PB | 0.00252 | 51.58 | 130.292 | 0.00371 | -0.00119 | 0.00503 |
| ____ S | 0.06417 | 3.58 | 33.544 | 0.04191 | 0.08487 | 0.06572 |
| ____ SB | 0.00526 | 7.28 | 96.292 | 0.00131 | 0.01097 | 0.00350 |
| ____ SE | -0.00814 | -3.61 | 149.291 | -0.02218 | -0.00096 | -0.00129 |
| ____ SI | 0.01128 | 3.04 | 55.032 | 0.01545 | 0.01425 | 0.00415 |
| ____ SN | 0.00348 | 1.09 | 66.810 | 0.00593 | 0.00319 | 0.00131 |
| ____ SR | 0.01635 | 9 522.20 | 0.860 | 0.01619 | 0.01644 | 0.01643 |
| ____ TI | -0.00268 | -69.75 | 4.672 | -0.00255 | -0.00280 | -0.00270 |
| ____ TL | -0.01885 | -0.70 | 8.286 | -0.01736 | -0.02047 | -0.01873 |
| ____ V | -0.00016 | -0.41 | 462.145 | -0.00019 | -0.00086 | 0.00058 |
| ____ Y1 | 4822.39676 | 4 822.40 | 0.442 | 4799.41705 | 4826.31337 | 4841.45985 |
| ____ Y2A | 185267.22851 | 185 267.23 | 0.910 | 187101.13636 | 184913.81000 | 183786.73917 |
| ____ Y2R | 13777.79505 | 13 777.80 | 0.825 | 13696.14388 | 13729.57354 | 13907.66773 |
| ____ ZN | 0.00758 | 104.30 | 2.194 | 0.00777 | 0.00750 | 0.00747 |
| ____ ZR | -0.01683 | -57.81 | 16.546 | -0.01946 | -0.01711 | -0.01391 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 9 Date/Time: 07/13/2017 06:04

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.20544 | 2 193.44 | 1.354 | 0.20732 | 0.20225 | 0.20676 |
| ____ AL | 490.95029 | 72 610.50 | 0.518 | 492.95251 | 491.80620 | 488.09216 |
| ____ AS | 0.09187 | 5.02 | 5.330 | 0.08720 | 0.09697 | 0.09145 |
| ____ B | 0.04209 | 1 078.98 | 3.975 | 0.04344 | 0.04022 | 0.04261 |
| ____ BA | 0.49077 | 275 871.59 | 0.290 | 0.49082 | 0.48932 | 0.49216 |
| ____ BE | 0.47850 | 195 005.87 | 0.695 | 0.48143 | 0.47488 | 0.47918 |
| ____ CA | 493.72207 | 507 727.98 | 0.056 | 493.40375 | 493.86396 | 493.89851 |
| ____ CD | 0.89532 | 6 584.95 | 0.514 | 0.89006 | 0.89861 | 0.89729 |
| ____ CO | 0.45011 | 1 699.72 | 0.355 | 0.44833 | 0.45058 | 0.45142 |
| ____ CR | 0.48273 | 3 826.11 | 0.579 | 0.48491 | 0.47958 | 0.48370 |
| ____ CU | 0.51307 | 5 958.38 | 0.659 | 0.51503 | 0.50917 | 0.51501 |
| ____ FE | 197.38627 | 46 289.53 | 0.337 | 197.52313 | 197.97149 | 196.66420 |
| ____ K | 0.01170 | 71.51 | 177.998 | 0.03375 | -0.00765 | 0.00901 |
| ____ LI | -0.00689 | 5.47 | 32.617 | -0.00531 | -0.00947 | -0.00590 |
| ____ MG | 555.52068 | 714 781.11 | 1.409 | 558.47874 | 561.44022 | 546.64307 |
| ____ MN | 0.47182 | 25 417.83 | 0.559 | 0.47433 | 0.46907 | 0.47207 |
| ____ MO | -0.00285 | -3.44 | 58.226 | -0.00191 | -0.00187 | -0.00476 |
| ____ NA | 0.05699 | 104.16 | 11.686 | 0.06273 | 0.04969 | 0.05856 |
| ____ NI | 0.88538 | 2 067.39 | 0.523 | 0.88031 | 0.88647 | 0.88936 |
| ____ P | 0.01721 | 2.32 | 34.308 | 0.02232 | 0.01855 | 0.01075 |
| ____ PB | 0.49157 | 348.58 | 0.348 | 0.49176 | 0.49318 | 0.48977 |
| ____ S | 0.05608 | 3.07 | 52.874 | 0.06413 | 0.08087 | 0.02323 |
| ____ SB | 0.60958 | 143.25 | 1.514 | 0.61157 | 0.59952 | 0.61765 |
| ____ SE | 0.50444 | 47.41 | 2.092 | 0.50033 | 0.49656 | 0.51643 |
| ____ SI | 0.00021 | 0.95 | 5950.677 | -0.00664 | 0.01437 | -0.00711 |
| ____ SN | 0.00696 | 2.21 | 55.405 | 0.00251 | 0.00905 | 0.00932 |
| ____ SR | 0.01633 | 9 463.32 | 0.386 | 0.01639 | 0.01633 | 0.01627 |
| ____ TI | -0.00346 | -52.33 | 8.770 | -0.00363 | -0.00311 | -0.00364 |
| ____ TL | 0.09776 | 10.20 | 7.927 | 0.09386 | 0.10669 | 0.09273 |
| ____ V | 0.51119 | 7 492.00 | 0.593 | 0.51168 | 0.50794 | 0.51395 |
| ____ Y1 | 4809.82860 | 4 809.83 | 0.379 | 4830.09581 | 4804.66407 | 4794.72591 |
| ____ Y2A | 184390.44442 | 184 390.44 | 0.125 | 184126.28116 | 184496.42074 | 184548.63137 |
| ____ Y2R | 13734.19968 | 13 734.20 | 0.324 | 13733.07094 | 13690.32483 | 13779.20327 |
| ____ ZN | 0.94803 | 3 484.69 | 0.562 | 0.94201 | 0.94995 | 0.95213 |
| ____ ZR | -0.01644 | -56.65 | 10.023 | -0.01539 | -0.01834 | -0.01559 |

LANCASTER LABORATORIES

Run Name: 1719404T73

Instrument ID: 18255

Tube: 10

Date/Time: 07/13/2017 06:07

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.48780 | 6 186.19 | 1.843 | 0.49641 | 0.48850 | 0.47848 |
| ____ AL | 24.63947 | 3 770.96 | 1.315 | 24.31344 | 24.96130 | 24.64368 |
| ____ AS | 0.48939 | 63.47 | 2.025 | 0.48757 | 0.48051 | 0.50008 |
| ____ B | 0.47830 | 3 756.45 | 1.506 | 0.48265 | 0.48226 | 0.46998 |
| ____ BA | 0.48935 | 306 687.56 | 0.932 | 0.49405 | 0.48907 | 0.48494 |
| ____ BE | 0.47374 | 215 181.18 | 1.463 | 0.47901 | 0.47632 | 0.46589 |
| ____ CA | 24.44306 | 27 858.23 | 1.144 | 24.23297 | 24.76052 | 24.33568 |
| ____ CD | 0.49077 | 3 922.13 | 0.295 | 0.49010 | 0.48978 | 0.49243 |
| ____ CO | 0.48693 | 2 022.62 | 0.241 | 0.48702 | 0.48572 | 0.48806 |
| ____ CR | 0.49167 | 4 342.95 | 1.494 | 0.49689 | 0.49485 | 0.48326 |
| ____ CU | 0.48864 | 6 176.86 | 1.530 | 0.49383 | 0.49201 | 0.48007 |
| ____ FE | 24.61749 | 6 324.93 | 1.498 | 24.24152 | 24.97853 | 24.63242 |
| ____ K | 24.35991 | 10 847.68 | 0.999 | 24.17777 | 24.63626 | 24.26570 |
| ____ LI | 0.49194 | 4 524.64 | 1.453 | 0.48483 | 0.49912 | 0.49187 |
| ____ MG | 24.23374 | 48 540.56 | 1.284 | 23.97611 | 24.57954 | 24.14558 |
| ____ MN | 0.48686 | 29 231.93 | 1.503 | 0.49179 | 0.49033 | 0.47845 |
| ____ MO | 0.50305 | 546.32 | 0.566 | 0.50403 | 0.49984 | 0.50527 |
| ____ NA | 24.49917 | 38 394.31 | 1.159 | 24.27710 | 24.81912 | 24.40128 |
| ____ NI | 0.48772 | 1 250.46 | 0.146 | 0.48691 | 0.48798 | 0.48827 |
| ____ P | 0.49307 | 58.46 | 1.094 | 0.49297 | 0.48773 | 0.49851 |
| ____ PB | 0.48844 | 324.64 | 0.652 | 0.48996 | 0.48478 | 0.49058 |
| ____ S | 25.01216 | 1 687.97 | 0.510 | 25.09331 | 24.86524 | 25.07794 |
| ____ SB | 0.50754 | 126.24 | 0.841 | 0.50761 | 0.50324 | 0.51178 |
| ____ SE | 0.47948 | 51.36 | 1.873 | 0.48912 | 0.47136 | 0.47797 |
| ____ SI | 24.53362 | 4 797.43 | 1.112 | 24.32960 | 24.84335 | 24.42790 |
| ____ SN | 0.49531 | 175.58 | 0.288 | 0.49376 | 0.49559 | 0.49656 |
| ____ SR | 0.49165 | 320 969.19 | 0.774 | 0.49407 | 0.49361 | 0.48727 |
| ____ TI | 0.50875 | 24 107.72 | 1.233 | 0.51222 | 0.51252 | 0.50151 |
| ____ TL | 0.49741 | 60.62 | 0.148 | 0.49822 | 0.49722 | 0.49679 |
| ____ V | 0.51098 | 8 191.23 | 1.775 | 0.51679 | 0.51562 | 0.50052 |
| ____ Y1 | 5278.62189 | 5 278.62 | 0.114 | 5280.71728 | 5283.32167 | 5271.82671 |
| ____ Y2A | 205532.40533 | 205 532.41 | 0.999 | 203952.99282 | 204789.65414 | 207854.56903 |
| ____ Y2R | 14303.92571 | 14 303.93 | 0.834 | 14401.90885 | 14171.03373 | 14338.83456 |
| ____ ZN | 0.48849 | 1 943.93 | 0.397 | 0.48669 | 0.48823 | 0.49054 |
| ____ ZR | 0.50639 | 1 365.45 | 1.866 | 0.49701 | 0.51590 | 0.50627 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 11 Date/Time: 07/13/2017 06:10

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00040 | -17.27 | 185.729 | -0.00060 | 0.00042 | -0.00103 |
| ____ AL | 0.04759 | 14.22 | 59.279 | 0.07623 | 0.04670 | 0.01983 |
| ____ AS | 0.00032 | -1.34 | 2922.899 | -0.00992 | 0.00278 | 0.00809 |
| ____ B | 0.00218 | 9.14 | 53.928 | 0.00134 | 0.00353 | 0.00168 |
| ____ BA | 0.00071 | 654.88 | 175.719 | -0.00002 | 0.00215 | 0.00000 |
| ____ BE | 0.00043 | 56.58 | 291.005 | -0.00029 | 0.00186 | -0.00028 |
| ____ CA | 0.00792 | 66.70 | 71.611 | 0.01214 | 0.00147 | 0.01014 |
| ____ CD | 0.00021 | -4.73 | 104.099 | 0.00044 | 0.00021 | -0.00001 |
| ____ CO | 0.00026 | -2.19 | 88.797 | 0.00050 | 0.00025 | 0.00003 |
| ____ CR | 0.00038 | 24.66 | 384.014 | -0.00096 | 0.00196 | 0.00015 |
| ____ CU | 0.00119 | 2.58 | 41.491 | 0.00157 | 0.00138 | 0.00063 |
| ____ FE | 0.00754 | 6.54 | 42.270 | 0.01034 | 0.00822 | 0.00407 |
| ____ K | 0.06761 | 99.79 | 22.974 | 0.07064 | 0.05078 | 0.08140 |
| ____ LI | -0.00198 | -15.25 | 101.622 | -0.00151 | -0.00024 | -0.00418 |
| ____ MG | 0.01234 | 16.50 | 31.373 | 0.01678 | 0.01058 | 0.00967 |
| ____ MN | 0.00064 | 45.96 | 195.506 | 0.00003 | 0.00208 | -0.00019 |
| ____ MO | 0.00031 | -0.36 | 225.709 | -0.00050 | 0.00080 | 0.00063 |
| ____ NA | -0.00344 | 13.85 | 211.352 | -0.00616 | 0.00480 | -0.00898 |
| ____ NI | 0.00017 | 3.66 | 46.365 | 0.00008 | 0.00018 | 0.00023 |
| ____ P | 0.00164 | 0.73 | 440.901 | -0.00656 | 0.00700 | 0.00446 |
| ____ PB | 0.00244 | -1.30 | 23.022 | 0.00229 | 0.00196 | 0.00306 |
| ____ S | 0.00712 | 0.07 | 40.246 | 0.00540 | 0.01043 | 0.00554 |
| ____ SB | 0.00369 | 2.61 | 49.689 | 0.00408 | 0.00169 | 0.00529 |
| ____ SE | -0.00343 | -1.32 | 157.718 | -0.00753 | 0.00271 | -0.00548 |
| ____ SI | -0.00296 | 0.40 | 396.746 | 0.00047 | 0.00668 | -0.01603 |
| ____ SN | 0.00025 | 0.05 | 1272.993 | -0.00068 | 0.00373 | -0.00231 |
| ____ SR | 0.00045 | 186.73 | 150.309 | 0.00006 | 0.00124 | 0.00006 |
| ____ TI | 0.00041 | 71.06 | 205.866 | 0.00012 | 0.00137 | -0.00025 |
| ____ TL | 0.00250 | 0.72 | 167.170 | 0.00680 | -0.00156 | 0.00227 |
| ____ V | -0.00069 | -10.21 | 159.383 | -0.00033 | 0.00019 | -0.00191 |
| ____ Y1 | 5422.02231 | 5 422.02 | 0.075 | 5419.94809 | 5426.70262 | 5419.41623 |
| ____ Y2A | 212337.21857 | 212 337.22 | 0.432 | 212032.81031 | 213367.77867 | 211611.06672 |
| ____ Y2R | 14386.96890 | 14 386.97 | 0.358 | 14432.20559 | 14330.83599 | 14397.86512 |
| ____ ZN | -0.00013 | 4.99 | 178.665 | -0.00037 | 0.00009 | -0.00010 |
| ____ ZR | -0.00390 | -24.98 | 22.736 | -0.00288 | -0.00449 | -0.00433 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 12 Date/Time: 07/13/2017 06:13

Sample Number: **PBW** Class: **** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00078 | -22.29 | 134.480 | -0.00130 | -0.00146 | 0.00043 |
| ____ AL | 0.04992 | 14.95 | 87.814 | 0.06515 | 0.08412 | 0.00050 |
| ____ AS | -0.00346 | -1.88 | 88.972 | -0.00339 | -0.00657 | -0.00042 |
| ____ B | 0.00178 | 6.02 | 54.664 | 0.00288 | 0.00103 | 0.00142 |
| ____ BA | 0.00050 | 517.39 | 121.802 | 0.00119 | 0.00016 | 0.00013 |
| ____ BE | 0.00008 | -107.26 | 771.468 | 0.00078 | -0.00026 | -0.00029 |
| ____ CA | 0.02161 | 84.34 | 72.774 | 0.03972 | 0.01156 | 0.01353 |
| ____ CD | 0.00113 | 2.92 | 145.928 | 0.00031 | 0.00303 | 0.00006 |
| ____ CO | 0.00080 | 0.14 | 179.218 | -0.00020 | 0.00245 | 0.00016 |
| ____ CR | 0.00018 | 22.92 | 488.970 | 0.00088 | 0.00049 | -0.00083 |
| ____ CU | -0.00003 | -13.51 | 4717.168 | 0.00171 | -0.00140 | -0.00041 |
| ____ FE | 0.02038 | 10.10 | 48.080 | 0.02490 | 0.00914 | 0.02711 |
| ____ K | 0.05267 | 95.36 | 81.050 | 0.09954 | 0.04249 | 0.01599 |
| ____ LI | -0.00488 | -43.07 | 13.460 | -0.00514 | -0.00538 | -0.00414 |
| ____ MG | 0.02146 | 36.00 | 76.895 | 0.04040 | 0.01374 | 0.01023 |
| ____ MN | 0.00059 | 42.91 | 120.446 | 0.00141 | 0.00018 | 0.00018 |
| ____ MO | 0.00050 | -0.15 | 64.913 | 0.00013 | 0.00069 | 0.00068 |
| ____ NA | 0.00163 | 22.39 | 122.499 | 0.00034 | 0.00393 | 0.00062 |
| ____ NI | 0.00145 | 7.14 | 101.711 | 0.00111 | 0.00307 | 0.00018 |
| ____ P | 0.00073 | 0.63 | 1041.006 | 0.00077 | 0.00831 | -0.00688 |
| ____ PB | 0.00407 | -0.17 | 81.532 | 0.00222 | 0.00791 | 0.00210 |
| ____ S | 0.04155 | 2.50 | 106.806 | 0.02426 | 0.09197 | 0.00841 |
| ____ SB | 0.00227 | 2.28 | 123.089 | 0.00102 | 0.00547 | 0.00032 |
| ____ SE | 0.01248 | 0.47 | 43.265 | 0.01688 | 0.00645 | 0.01411 |
| ____ SI | 0.02286 | 5.61 | 15.997 | 0.02262 | 0.02664 | 0.01933 |
| ____ SN | 0.00055 | 0.17 | 494.353 | 0.00093 | 0.00309 | -0.00235 |
| ____ SR | 0.00032 | 99.15 | 130.043 | 0.00081 | 0.00009 | 0.00007 |
| ____ TI | 0.00038 | 69.73 | 63.016 | 0.00065 | 0.00020 | 0.00029 |
| ____ TL | 0.00039 | 0.45 | 417.973 | -0.00007 | 0.00219 | -0.00095 |
| ____ V | -0.00042 | -5.86 | 225.286 | 0.00038 | -0.00017 | -0.00147 |
| ____ Y1 | 5479.93708 | 5 479.94 | 1.001 | 5468.30136 | 5539.70242 | 5431.80747 |
| ____ Y2A | 213272.73083 | 213 272.73 | 0.532 | 214575.41392 | 212497.73272 | 212745.04585 |
| ____ Y2R | 14725.65512 | 14 725.66 | 0.573 | 14750.27944 | 14794.98201 | 14631.70391 |
| ____ ZN | 0.00118 | 10.41 | 120.151 | 0.00023 | 0.00280 | 0.00049 |
| ____ ZR | -0.00275 | -22.31 | 75.692 | -0.00315 | -0.00050 | -0.00459 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 13 Date/Time: 07/13/2017 06:16

Sample Number: **LCSW** Class: **** Batch: 171931063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05293 | 708.33 | 0.463 | 0.05285 | 0.05320 | 0.05273 |
| ____ AL | 2.10510 | 336.61 | 1.598 | 2.12561 | 2.12340 | 2.06628 |
| ____ AS | 0.13863 | 18.43 | 6.834 | 0.14849 | 0.12960 | 0.13780 |
| ____ B | 1.90084 | 14 793.09 | 0.329 | 1.89372 | 1.90548 | 1.90331 |
| ____ BA | 1.99872 | 1 275 709.55 | 0.098 | 1.99879 | 2.00064 | 1.99672 |
| ____ BE | 0.04899 | 22 602.59 | 0.274 | 0.04887 | 0.04914 | 0.04897 |
| ____ CA | 4.04496 | 4 726.04 | 0.321 | 4.04112 | 4.05944 | 4.03432 |
| ____ CD | 0.05082 | 408.39 | 0.398 | 0.05061 | 0.05102 | 0.05083 |
| ____ CO | 0.50939 | 2 165.59 | 0.711 | 0.51046 | 0.50535 | 0.51235 |
| ____ CR | 0.20496 | 1 857.13 | 0.528 | 0.20387 | 0.20603 | 0.20499 |
| ____ CU | 0.25830 | 3 267.83 | 0.749 | 0.25610 | 0.25972 | 0.25908 |
| ____ FE | 1.01994 | 271.40 | 1.265 | 1.02596 | 1.02873 | 1.00513 |
| ____ K | 10.09335 | 4 590.01 | 0.444 | 10.04184 | 10.12303 | 10.11518 |
| ____ LI | 1.01668 | 9 444.04 | 0.224 | 1.01479 | 1.01921 | 1.01603 |
| ____ MG | 2.04263 | 4 190.11 | 0.255 | 2.04104 | 2.04845 | 2.03842 |
| ____ MN | 0.51038 | 31 228.70 | 0.191 | 0.50928 | 0.51113 | 0.51074 |
| ____ MO | 2.05479 | 2 281.47 | 0.736 | 2.06374 | 2.03734 | 2.06331 |
| ____ NA | 10.10946 | 16 046.15 | 0.394 | 10.12553 | 10.13871 | 10.06413 |
| ____ NI | 0.51614 | 1 356.56 | 0.640 | 0.51864 | 0.51240 | 0.51739 |
| ____ P | 0.98124 | 118.31 | 1.345 | 0.99532 | 0.96915 | 0.97924 |
| ____ PB | 0.15251 | 97.63 | 1.137 | 0.15419 | 0.15073 | 0.15261 |
| ____ S | 1.01652 | 70.10 | 0.738 | 1.01838 | 1.02292 | 1.00827 |
| ____ SB | 0.46403 | 108.11 | 1.487 | 0.45653 | 0.46542 | 0.47012 |
| ____ SE | 0.16535 | 17.51 | 7.947 | 0.15096 | 0.16837 | 0.17671 |
| ____ SI | 0.98387 | 212.53 | 0.168 | 0.98248 | 0.98343 | 0.98569 |
| ____ SN | 3.96519 | 1 436.00 | 0.548 | 3.96314 | 3.94458 | 3.98785 |
| ____ SR | 0.99896 | 664 688.06 | 0.381 | 0.99481 | 0.99975 | 1.00231 |
| ____ TI | 1.02314 | 49 101.81 | 0.178 | 1.02104 | 1.02415 | 1.02423 |
| ____ TL | 0.17616 | 19.95 | 1.588 | 0.17696 | 0.17847 | 0.17305 |
| ____ V | 0.53265 | 8 212.23 | 0.250 | 0.53133 | 0.53400 | 0.53263 |
| ____ Y1 | 5391.68867 | 5 391.69 | 0.504 | 5394.65960 | 5417.25902 | 5363.14739 |
| ____ Y2A | 209431.80337 | 209 431.80 | 0.073 | 209342.07743 | 209346.14847 | 209607.18419 |
| ____ Y2R | 14475.93559 | 14 475.94 | 0.170 | 14497.07293 | 14448.85298 | 14481.88087 |
| ____ ZN | 0.49739 | 2 011.08 | 0.777 | 0.49902 | 0.49297 | 0.50016 |
| ____ ZR | 1.03907 | 2 850.89 | 0.237 | 1.04034 | 1.04065 | 1.03624 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 14 Date/Time: 07/13/2017 06:19

Sample Number: **9095976** Class: U*** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00120 | -27.38 | 60.936 | -0.00141 | -0.00039 | -0.00181 |
| ____ AL | 0.04676 | 14.26 | 44.948 | 0.05555 | 0.02277 | 0.06195 |
| ____ AS | -0.00402 | -1.92 | 44.561 | -0.00446 | -0.00205 | -0.00555 |
| ____ B | 0.04607 | 351.39 | 2.380 | 0.04665 | 0.04480 | 0.04675 |
| ____ BA | 0.14570 | 93 341.20 | 0.354 | 0.14593 | 0.14511 | 0.14606 |
| ____ BE | -0.00030 | -283.45 | 3.691 | -0.00029 | -0.00031 | -0.00030 |
| ____ CA | 48.29413 | 55 788.97 | 0.341 | 48.47131 | 48.14572 | 48.26534 |
| ____ CD | 0.00009 | -5.68 | 463.168 | 0.00017 | 0.00045 | -0.00036 |
| ____ CO | 0.00014 | -2.69 | 564.053 | -0.00073 | 0.00080 | 0.00036 |
| ____ CR | 0.00152 | 34.56 | 23.260 | 0.00120 | 0.00190 | 0.00146 |
| ____ CU | 0.00007 | 1.36 | 752.144 | 0.00019 | -0.00054 | 0.00057 |
| ____ FE | 0.03129 | 12.86 | 13.515 | 0.02815 | 0.02962 | 0.03610 |
| ____ K | 2.76303 | 1 314.70 | 1.433 | 2.72376 | 2.76239 | 2.80296 |
| ____ LI | 0.01271 | 121.74 | 6.334 | 0.01268 | 0.01192 | 0.01353 |
| ____ MG | 6.57133 | 13 535.60 | 0.348 | 6.59653 | 6.55190 | 6.56557 |
| ____ MN | 0.00309 | 195.44 | 2.736 | 0.00318 | 0.00301 | 0.00308 |
| ____ MO | 0.00762 | 7.72 | 3.639 | 0.00730 | 0.00774 | 0.00781 |
| ____ NA | 26.58609 | 42 397.61 | 0.359 | 26.68892 | 26.56905 | 26.50029 |
| ____ NI | 0.00095 | 4.60 | 107.037 | -0.00020 | 0.00173 | 0.00134 |
| ____ P | 0.01163 | 1.92 | 21.878 | 0.00921 | 0.01140 | 0.01428 |
| ____ PB | 0.00426 | -0.07 | 30.391 | 0.00276 | 0.00496 | 0.00505 |
| ____ S | 19.47522 | 1 335.79 | 0.371 | 19.55857 | 19.43297 | 19.43413 |
| ____ SB | 0.00092 | 1.89 | 92.280 | 0.00024 | 0.00187 | 0.00065 |
| ____ SE | 0.00829 | -0.01 | 55.093 | 0.00669 | 0.01344 | 0.00473 |
| ____ SI | 14.20489 | 2 824.71 | 0.303 | 14.25122 | 14.16629 | 14.19717 |
| ____ SN | 0.00102 | 0.33 | 252.570 | 0.00041 | 0.00382 | -0.00120 |
| ____ SR | 0.31777 | 211 775.88 | 0.505 | 0.31786 | 0.31613 | 0.31933 |
| ____ TI | 0.00205 | 148.78 | 7.338 | 0.00221 | 0.00204 | 0.00191 |
| ____ TL | 0.00132 | 0.56 | 329.148 | 0.00011 | -0.00229 | 0.00614 |
| ____ V | 0.00216 | 35.03 | 17.989 | 0.00171 | 0.00240 | 0.00238 |
| ____ Y1 | 5365.57951 | 5 365.58 | 0.201 | 5376.10917 | 5366.02398 | 5354.60539 |
| ____ Y2A | 209843.16137 | 209 843.16 | 0.050 | 209940.55212 | 209858.57486 | 209730.35714 |
| ____ Y2R | 14555.39666 | 14 555.40 | 0.832 | 14415.96530 | 14616.05468 | 14634.17000 |
| ____ ZN | 0.00477 | 24.49 | 6.903 | 0.00445 | 0.00511 | 0.00475 |
| ____ ZR | -0.00103 | -17.30 | 81.970 | -0.00187 | -0.00018 | -0.00104 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 15 Date/Time: 07/13/2017 06:22

Sample Number: **9095976** Class: UP** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.02196 | 301.55 | 2.753 | 0.02130 | 0.02249 | 0.02210 |
| ____ AL | 0.95750 | 156.12 | 1.700 | 0.94582 | 0.97609 | 0.95060 |
| ____ AS | 0.47092 | 62.30 | 0.600 | 0.47074 | 0.46818 | 0.47382 |
| ____ B | 0.22232 | 1 712.31 | 1.504 | 0.22127 | 0.22606 | 0.21963 |
| ____ BA | 0.19015 | 120 804.35 | 0.727 | 0.18930 | 0.19174 | 0.18940 |
| ____ BE | 0.01780 | 8 050.16 | 0.795 | 0.01775 | 0.01795 | 0.01768 |
| ____ CA | 48.24294 | 55 734.70 | 1.547 | 48.46659 | 48.85194 | 47.41028 |
| ____ CD | 0.04546 | 361.32 | 0.505 | 0.04526 | 0.04540 | 0.04571 |
| ____ CO | 0.09126 | 381.23 | 0.742 | 0.09072 | 0.09104 | 0.09202 |
| ____ CR | 0.18730 | 1 686.60 | 0.810 | 0.18653 | 0.18905 | 0.18632 |
| ____ CU | 0.46297 | 5 934.62 | 0.844 | 0.46042 | 0.46747 | 0.46102 |
| ____ FE | 0.49686 | 135.34 | 1.894 | 0.49836 | 0.50543 | 0.48679 |
| ____ K | 4.53979 | 2 114.83 | 1.224 | 4.52013 | 4.60251 | 4.49673 |
| ____ LI | 0.93291 | 8 714.19 | 1.546 | 0.93588 | 0.94563 | 0.91724 |
| ____ MG | 7.33929 | 15 112.62 | 1.462 | 7.34875 | 7.44152 | 7.22760 |
| ____ MN | 0.05847 | 3 557.18 | 0.256 | 0.05842 | 0.05864 | 0.05835 |
| ____ MO | 0.19728 | 216.54 | 1.003 | 0.19715 | 0.19536 | 0.19932 |
| ____ NA | 27.84866 | 44 414.93 | 1.135 | 27.91564 | 28.12600 | 27.50433 |
| ____ NI | 0.13865 | 361.77 | 0.927 | 0.13979 | 0.13726 | 0.13890 |
| ____ P | 0.93558 | 111.86 | 0.516 | 0.93084 | 0.93540 | 0.94050 |
| ____ PB | 0.45981 | 307.11 | 0.651 | 0.45668 | 0.46008 | 0.46265 |
| ____ S | 20.10012 | 1 373.53 | 0.402 | 20.05406 | 20.05278 | 20.19351 |
| ____ SB | 0.37227 | 93.50 | 1.084 | 0.37482 | 0.36761 | 0.37437 |
| ____ SE | 0.70376 | 76.92 | 1.477 | 0.69221 | 0.70674 | 0.71234 |
| ____ SI | 14.80053 | 2 945.12 | 1.328 | 14.83589 | 14.97701 | 14.58869 |
| ____ SN | 0.55845 | 200.48 | 1.002 | 0.55203 | 0.56110 | 0.56224 |
| ____ SR | 0.33158 | 218 950.50 | 0.761 | 0.33060 | 0.33444 | 0.32969 |
| ____ TI | 0.09880 | 4 756.91 | 0.851 | 0.09845 | 0.09976 | 0.09819 |
| ____ TL | 0.88068 | 113.08 | 1.053 | 0.87804 | 0.87301 | 0.89100 |
| ____ V | 0.09941 | 1 581.47 | 0.787 | 0.09974 | 0.09997 | 0.09851 |
| ____ Y1 | 5345.44636 | 5 345.45 | 0.147 | 5339.71409 | 5354.39521 | 5342.22977 |
| ____ Y2A | 207923.54103 | 207 923.54 | 0.535 | 207986.10000 | 206780.96948 | 209003.55360 |
| ____ Y2R | 14557.72704 | 14 557.73 | 0.943 | 14528.94212 | 14437.08616 | 14707.15285 |
| ____ ZN | 0.11223 | 456.61 | 0.311 | 0.11263 | 0.11207 | 0.11200 |
| ____ ZR | 0.96289 | 2 655.49 | 1.354 | 0.96565 | 0.97431 | 0.94869 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 16 Date/Time: 07/13/2017 06:25

Sample Number: **9095979** Class: D*** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00054 | -18.86 | 50.980 | -0.00081 | -0.00027 | -0.00053 |
| ____ AL | 0.07374 | 18.47 | 16.490 | 0.07986 | 0.05974 | 0.08163 |
| ____ AS | -0.00264 | -1.73 | 91.508 | -0.00506 | -0.00265 | -0.00022 |
| ____ B | 0.04398 | 336.06 | 1.212 | 0.04403 | 0.04343 | 0.04449 |
| ____ BA | 0.14378 | 92 371.76 | 0.437 | 0.14352 | 0.14450 | 0.14332 |
| ____ BE | -0.00031 | -289.17 | 6.583 | -0.00032 | -0.00033 | -0.00029 |
| ____ CA | 48.44834 | 56 001.37 | 0.571 | 48.25407 | 48.76514 | 48.32582 |
| ____ CD | 0.00004 | -6.03 | 266.035 | 0.00018 | 0.00001 | -0.00005 |
| ____ CO | -0.00055 | -5.60 | 76.118 | -0.00030 | -0.00104 | -0.00032 |
| ____ CR | 0.00155 | 34.89 | 26.273 | 0.00178 | 0.00108 | 0.00179 |
| ____ CU | -0.00012 | -1.05 | 209.483 | 0.00015 | -0.00034 | -0.00016 |
| ____ FE | 0.02615 | 11.51 | 24.281 | 0.02996 | 0.02967 | 0.01882 |
| ____ K | 2.79266 | 1 328.77 | 0.707 | 2.77072 | 2.79821 | 2.80904 |
| ____ LI | 0.01311 | 125.53 | 15.624 | 0.01083 | 0.01373 | 0.01478 |
| ____ MG | 6.58096 | 13 563.97 | 0.536 | 6.54700 | 6.61741 | 6.57848 |
| ____ MN | 0.00318 | 201.53 | 3.481 | 0.00313 | 0.00331 | 0.00311 |
| ____ MO | 0.00545 | 5.31 | 19.183 | 0.00547 | 0.00439 | 0.00648 |
| ____ NA | 26.62353 | 42 484.38 | 0.449 | 26.49160 | 26.72505 | 26.65394 |
| ____ NI | 0.00099 | 4.69 | 76.312 | 0.00187 | 0.00054 | 0.00057 |
| ____ P | 0.00943 | 1.65 | 53.807 | 0.00744 | 0.00565 | 0.01520 |
| ____ PB | 0.00566 | 0.88 | 20.704 | 0.00601 | 0.00662 | 0.00435 |
| ____ S | 19.34107 | 1 323.29 | 0.541 | 19.45997 | 19.30050 | 19.26274 |
| ____ SB | 0.00256 | 2.30 | 131.264 | -0.00008 | 0.00142 | 0.00635 |
| ____ SE | 0.01460 | 0.69 | 73.591 | 0.00262 | 0.02337 | 0.01780 |
| ____ SI | 14.24404 | 2 834.27 | 0.513 | 14.17756 | 14.32229 | 14.23226 |
| ____ SN | -0.00049 | -0.22 | 511.549 | 0.00019 | -0.00328 | 0.00161 |
| ____ SR | 0.31454 | 210 205.08 | 0.292 | 0.31418 | 0.31558 | 0.31385 |
| ____ TI | 0.00192 | 143.00 | 11.473 | 0.00172 | 0.00189 | 0.00216 |
| ____ TL | -0.00194 | 0.14 | 28.253 | -0.00257 | -0.00160 | -0.00165 |
| ____ V | 0.00179 | 29.49 | 26.798 | 0.00136 | 0.00230 | 0.00170 |
| ____ Y1 | 5352.27896 | 5 352.28 | 0.116 | 5345.32840 | 5354.31968 | 5357.18881 |
| ____ Y2A | 210432.10167 | 210 432.10 | 0.480 | 210921.84572 | 209271.10734 | 211103.35196 |
| ____ Y2R | 14564.55646 | 14 564.56 | 0.357 | 14620.24332 | 14517.09000 | 14556.33606 |
| ____ ZN | 0.00484 | 24.71 | 3.127 | 0.00488 | 0.00468 | 0.00497 |
| ____ ZR | -0.00190 | -19.75 | 53.221 | -0.00252 | -0.00073 | -0.00245 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 17 Date/Time: 07/13/2017 06:28

Sample Number: **9095977** Class: R*** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05263 | 696.63 | 0.853 | 0.05259 | 0.05310 | 0.05221 |
| ____ AL | 2.00615 | 323.17 | 0.779 | 2.02288 | 2.00366 | 1.99192 |
| ____ AS | 0.14110 | 18.49 | 1.387 | 0.13886 | 0.14196 | 0.14247 |
| ____ B | 1.89417 | 14 590.96 | 0.205 | 1.89829 | 1.89364 | 1.89058 |
| ____ BA | 2.05271 | 1 296 831.89 | 0.369 | 2.04549 | 2.06059 | 2.05205 |
| ____ BE | 0.04731 | 21 599.28 | 0.284 | 0.04746 | 0.04721 | 0.04725 |
| ____ CA | 50.92743 | 58 827.26 | 0.840 | 51.40512 | 50.58038 | 50.79679 |
| ____ CD | 0.04811 | 380.82 | 0.758 | 0.04769 | 0.04834 | 0.04831 |
| ____ CO | 0.47887 | 2 007.36 | 0.789 | 0.47454 | 0.48155 | 0.48051 |
| ____ CR | 0.19740 | 1 771.21 | 0.492 | 0.19844 | 0.19725 | 0.19652 |
| ____ CU | 0.24627 | 3 094.04 | 0.413 | 0.24655 | 0.24515 | 0.24713 |
| ____ FE | 0.96242 | 257.85 | 1.412 | 0.96039 | 0.94996 | 0.97690 |
| ____ K | 12.38310 | 5 647.98 | 0.733 | 12.48706 | 12.34309 | 12.31914 |
| ____ LI | 0.98586 | 9 210.94 | 0.804 | 0.99437 | 0.97870 | 0.98450 |
| ____ MG | 8.29120 | 17 067.81 | 0.935 | 8.37854 | 8.23061 | 8.26446 |
| ____ MN | 0.48396 | 29 310.74 | 0.301 | 0.48553 | 0.48265 | 0.48368 |
| ____ MO | 2.03926 | 2 232.26 | 0.637 | 2.02467 | 2.04956 | 2.04354 |
| ____ NA | 36.24657 | 57 815.80 | 0.506 | 36.45720 | 36.12127 | 36.16124 |
| ____ NI | 0.48157 | 1 247.23 | 0.468 | 0.47898 | 0.48303 | 0.48270 |
| ____ P | 0.97027 | 115.33 | 1.545 | 0.95310 | 0.97693 | 0.98078 |
| ____ PB | 0.14607 | 91.94 | 2.028 | 0.14332 | 0.14920 | 0.14569 |
| ____ S | 20.03821 | 1 362.02 | 0.513 | 19.93026 | 20.04929 | 20.13509 |
| ____ SB | 0.46143 | 106.12 | 0.225 | 0.46174 | 0.46229 | 0.46027 |
| ____ SE | 0.14077 | 14.56 | 9.232 | 0.15552 | 0.13098 | 0.13583 |
| ____ SI | 14.88361 | 2 977.52 | 0.656 | 14.99627 | 14.82948 | 14.82507 |
| ____ SN | 3.89955 | 1 392.29 | 0.790 | 3.86520 | 3.92474 | 3.90871 |
| ____ SR | 1.26107 | 830 593.03 | 0.549 | 1.26047 | 1.25447 | 1.26828 |
| ____ TI | 1.01397 | 48 167.32 | 0.233 | 1.01665 | 1.01219 | 1.01308 |
| ____ TL | 0.16183 | 18.02 | 3.443 | 0.15547 | 0.16420 | 0.16583 |
| ____ V | 0.52018 | 7 928.07 | 0.109 | 0.52083 | 0.51988 | 0.51982 |
| ____ Y1 | 5315.60103 | 5 315.60 | 0.497 | 5345.15987 | 5294.34162 | 5307.30159 |
| ____ Y2A | 207301.41182 | 207 301.41 | 0.150 | 207117.38652 | 207126.34205 | 207660.50688 |
| ____ Y2R | 14560.28427 | 14 560.28 | 0.583 | 14470.27512 | 14638.78000 | 14571.79769 |
| ____ ZN | 0.47389 | 1 889.07 | 0.731 | 0.46992 | 0.47627 | 0.47550 |
| ____ ZR | 1.01918 | 2 812.25 | 0.920 | 1.02989 | 1.01522 | 1.01244 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 18 Date/Time: 07/13/2017 06:31

Sample Number: **9095978** Class: M*** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05086 | 672.66 | 1.398 | 0.05125 | 0.05004 | 0.05129 |
| ____ AL | 2.02798 | 324.87 | 1.825 | 2.05283 | 2.04567 | 1.98545 |
| ____ AS | 0.14350 | 18.71 | 2.876 | 0.14703 | 0.14450 | 0.13896 |
| ____ B | 1.91999 | 14 783.73 | 0.146 | 1.91678 | 1.92130 | 1.92189 |
| ____ BA | 2.07295 | 1 309 041.94 | 0.147 | 2.06982 | 2.07311 | 2.07591 |
| ____ BE | 0.04781 | 21 819.61 | 0.064 | 0.04778 | 0.04784 | 0.04780 |
| ____ CA | 51.06117 | 58 701.02 | 0.585 | 51.30274 | 51.15346 | 50.72731 |
| ____ CD | 0.04851 | 382.34 | 0.626 | 0.04873 | 0.04816 | 0.04862 |
| ____ CO | 0.48548 | 2 025.93 | 0.520 | 0.48822 | 0.48325 | 0.48497 |
| ____ CR | 0.20029 | 1 796.07 | 0.929 | 0.19904 | 0.20243 | 0.19941 |
| ____ CU | 0.24805 | 3 117.10 | 0.097 | 0.24777 | 0.24823 | 0.24814 |
| ____ FE | 1.00848 | 268.69 | 0.703 | 1.01420 | 1.00054 | 1.01069 |
| ____ K | 12.62467 | 5 729.48 | 0.114 | 12.61131 | 12.63981 | 12.62289 |
| ____ LI | 1.00038 | 9 302.21 | 0.647 | 1.00583 | 1.00208 | 0.99322 |
| ____ MG | 8.33015 | 17 066.42 | 0.531 | 8.37023 | 8.33746 | 8.28275 |
| ____ MN | 0.49294 | 29 841.68 | 0.102 | 0.49244 | 0.49293 | 0.49344 |
| ____ MO | 1.99249 | 2 171.60 | 0.276 | 1.99826 | 1.98731 | 1.99190 |
| ____ NA | 36.34091 | 57 690.93 | 0.279 | 36.43190 | 36.35905 | 36.23177 |
| ____ NI | 0.49024 | 1 263.96 | 0.346 | 0.49210 | 0.48880 | 0.48980 |
| ____ P | 0.99302 | 117.52 | 0.750 | 1.00049 | 0.98559 | 0.99297 |
| ____ PB | 0.14851 | 93.25 | 1.445 | 0.15099 | 0.14726 | 0.14728 |
| ____ S | 20.30824 | 1 374.37 | 0.547 | 20.34693 | 20.18294 | 20.39486 |
| ____ SB | 0.45213 | 103.56 | 0.351 | 0.45033 | 0.45274 | 0.45332 |
| ____ SE | 0.14826 | 15.32 | 3.344 | 0.14257 | 0.15057 | 0.15164 |
| ____ SI | 14.97723 | 2 981.56 | 0.382 | 15.03078 | 14.91705 | 14.98387 |
| ____ SN | 3.81491 | 1 356.18 | 0.286 | 3.82593 | 3.80411 | 3.81468 |
| ____ SR | 1.27574 | 839 882.29 | 1.004 | 1.26130 | 1.28024 | 1.28570 |
| ____ TI | 0.98542 | 46 792.22 | 0.211 | 0.98303 | 0.98676 | 0.98647 |
| ____ TL | 0.16375 | 18.15 | 1.561 | 0.16642 | 0.16132 | 0.16351 |
| ____ V | 0.52700 | 8 051.58 | 0.243 | 0.52567 | 0.52823 | 0.52708 |
| ____ Y1 | 5292.49215 | 5 292.49 | 0.357 | 5273.08953 | 5310.82043 | 5293.56650 |
| ____ Y2A | 207211.99712 | 207 212.00 | 0.198 | 207515.27694 | 207375.15466 | 206745.55977 |
| ____ Y2R | 14490.90512 | 14 490.91 | 0.318 | 14498.56173 | 14441.46171 | 14532.69192 |
| ____ ZN | 0.48454 | 1 922.98 | 0.231 | 0.48520 | 0.48325 | 0.48518 |
| ____ ZR | 0.98935 | 2 716.59 | 0.397 | 0.99330 | 0.98544 | 0.98930 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 19 Date/Time: 07/13/2017 06:34

Sample Number: **9095976** Class: UL** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00074 | -21.66 | 76.690 | -0.00130 | -0.00016 | -0.00077 |
| ____ AL | 0.05207 | 15.00 | 53.265 | 0.08259 | 0.02842 | 0.04518 |
| ____ AS | -0.00392 | -1.94 | 118.399 | -0.00506 | -0.00788 | 0.00118 |
| ____ B | 0.01531 | 113.00 | 11.595 | 0.01498 | 0.01723 | 0.01373 |
| ____ BA | 0.02988 | 19 570.29 | 6.546 | 0.02902 | 0.03211 | 0.02849 |
| ____ BE | -0.00026 | -266.42 | 24.127 | -0.00027 | -0.00019 | -0.00031 |
| ____ CA | 9.54134 | 11 064.31 | 0.646 | 9.60282 | 9.47963 | 9.54159 |
| ____ CD | 0.00015 | -5.30 | 131.421 | 0.00029 | 0.00024 | -0.00008 |
| ____ CO | -0.00017 | -4.08 | 169.950 | -0.00006 | 0.00005 | -0.00050 |
| ____ CR | -0.00008 | 20.42 | 282.290 | 0.00015 | -0.00031 | -0.00009 |
| ____ CU | -0.00132 | -27.74 | 56.200 | -0.00206 | -0.00058 | -0.00130 |
| ____ FE | 0.00703 | 6.44 | 69.696 | 0.00591 | 0.01239 | 0.00279 |
| ____ K | 0.58339 | 331.43 | 6.458 | 0.62689 | 0.56132 | 0.56196 |
| ____ LI | -0.00124 | -8.46 | 72.934 | -0.00226 | -0.00091 | -0.00055 |
| ____ MG | 1.30870 | 2 683.28 | 0.615 | 1.31242 | 1.29946 | 1.31423 |
| ____ MN | 0.00098 | 67.03 | 47.757 | 0.00066 | 0.00151 | 0.00075 |
| ____ MO | 0.00280 | 2.45 | 34.965 | 0.00384 | 0.00264 | 0.00191 |
| ____ NA | 5.22528 | 8 305.24 | 0.400 | 5.24819 | 5.22035 | 5.20730 |
| ____ NI | 0.00084 | 5.29 | 6.494 | 0.00086 | 0.00089 | 0.00078 |
| ____ P | 0.00538 | 1.19 | 23.194 | 0.00461 | 0.00470 | 0.00682 |
| ____ PB | 0.00128 | -2.12 | 123.169 | 0.00299 | -0.00011 | 0.00095 |
| ____ S | 3.77925 | 264.20 | 0.584 | 3.77476 | 3.80320 | 3.75977 |
| ____ SB | 0.00543 | 3.09 | 25.002 | 0.00697 | 0.00438 | 0.00496 |
| ____ SE | 0.00258 | -0.65 | 399.677 | 0.00222 | -0.00755 | 0.01307 |
| ____ SI | 2.77933 | 550.61 | 0.739 | 2.79414 | 2.75587 | 2.78797 |
| ____ SN | 0.00121 | 0.41 | 336.536 | 0.00587 | -0.00177 | -0.00046 |
| ____ SR | 0.06286 | 42 396.22 | 1.552 | 0.06278 | 0.06387 | 0.06193 |
| ____ TI | 0.00132 | 115.60 | 97.306 | 0.00060 | 0.00281 | 0.00056 |
| ____ TL | -0.00093 | 0.28 | 347.499 | -0.00167 | -0.00371 | 0.00260 |
| ____ V | -0.00022 | -3.11 | 417.706 | -0.00056 | 0.00081 | -0.00090 |
| ____ Y1 | 5475.78997 | 5 475.79 | 0.717 | 5518.76822 | 5466.87238 | 5441.72931 |
| ____ Y2A | 212842.47986 | 212 842.48 | 0.974 | 210450.75894 | 214144.56413 | 213932.11650 |
| ____ Y2R | 14479.58654 | 14 479.59 | 0.289 | 14442.58927 | 14525.10460 | 14471.06574 |
| ____ ZN | 0.00153 | 11.81 | 2.792 | 0.00158 | 0.00153 | 0.00149 |
| ____ ZR | -0.00099 | -17.11 | 190.634 | -0.00223 | 0.00118 | -0.00192 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 20 Date/Time: 07/13/2017 06:37

Sample Number: **9095966** Class: **** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00056 | -19.59 | 170.215 | 0.00054 | -0.00119 | -0.00105 |
| ____ AL | 0.54357 | 91.35 | 1.217 | 0.54342 | 0.55026 | 0.53703 |
| ____ AS | 0.00020 | -1.37 | 2597.065 | -0.00499 | 0.00534 | 0.00024 |
| ____ B | 0.04426 | 338.70 | 1.154 | 0.04402 | 0.04485 | 0.04392 |
| ____ BA | 0.09655 | 61 519.57 | 0.308 | 0.09650 | 0.09629 | 0.09687 |
| ____ BE | -0.00029 | -274.01 | 6.066 | -0.00028 | -0.00027 | -0.00031 |
| ____ CA | 47.04919 | 54 299.48 | 0.497 | 46.79464 | 47.25392 | 47.09901 |
| ____ CD | 0.00022 | -4.24 | 112.401 | 0.00037 | -0.00007 | 0.00037 |
| ____ CO | 0.00002 | -2.98 | 2310.587 | -0.00018 | -0.00035 | 0.00059 |
| ____ CR | 0.00491 | 64.54 | 15.965 | 0.00569 | 0.00412 | 0.00492 |
| ____ CU | 0.00183 | 23.04 | 56.927 | 0.00190 | 0.00075 | 0.00283 |
| ____ FE | 0.81583 | 218.97 | 0.545 | 0.82073 | 0.81473 | 0.81204 |
| ____ K | 3.00354 | 1 421.29 | 0.585 | 3.02110 | 2.98596 | 3.00356 |
| ____ LI | 0.01595 | 151.96 | 14.896 | 0.01592 | 0.01833 | 0.01358 |
| ____ MG | 6.64736 | 13 676.11 | 0.620 | 6.61829 | 6.69453 | 6.62927 |
| ____ MN | 0.03240 | 1 979.20 | 0.443 | 0.03227 | 0.03238 | 0.03256 |
| ____ MO | 0.00713 | 7.20 | 23.620 | 0.00605 | 0.00627 | 0.00907 |
| ____ NA | 23.12371 | 36 837.20 | 0.155 | 23.16364 | 23.11331 | 23.09418 |
| ____ NI | 0.00241 | 8.21 | 21.300 | 0.00182 | 0.00274 | 0.00267 |
| ____ P | 0.02829 | 3.91 | 18.352 | 0.02680 | 0.03406 | 0.02400 |
| ____ PB | 0.00664 | 1.60 | 1.956 | 0.00678 | 0.00660 | 0.00653 |
| ____ S | 17.81698 | 1 223.70 | 0.457 | 17.76464 | 17.91085 | 17.77546 |
| ____ SB | 0.00139 | 2.02 | 196.542 | -0.00171 | 0.00343 | 0.00245 |
| ____ SE | 0.01000 | 0.18 | 88.709 | 0.01601 | -0.00019 | 0.01417 |
| ____ SI | 16.72388 | 3 321.71 | 0.229 | 16.70489 | 16.76788 | 16.69889 |
| ____ SN | 0.00453 | 1.59 | 70.771 | 0.00189 | 0.00809 | 0.00361 |
| ____ SR | 0.30412 | 201 357.17 | 0.408 | 0.30337 | 0.30344 | 0.30555 |
| ____ TI | 0.02492 | 1 238.83 | 6.230 | 0.02353 | 0.02659 | 0.02462 |
| ____ TL | -0.00118 | 0.24 | 254.621 | -0.00145 | 0.00195 | -0.00403 |
| ____ V | 0.00360 | 58.95 | 13.294 | 0.00305 | 0.00395 | 0.00379 |
| ____ Y1 | 5373.03026 | 5 373.03 | 0.386 | 5361.37621 | 5360.74251 | 5396.97206 |
| ____ Y2A | 208483.14631 | 208 483.15 | 0.155 | 208244.86000 | 208851.32000 | 208353.25892 |
| ____ Y2R | 14538.79796 | 14 538.80 | 0.433 | 14535.54205 | 14477.48655 | 14603.36529 |
| ____ ZN | 0.02055 | 87.85 | 1.993 | 0.02011 | 0.02061 | 0.02092 |
| ____ ZR | -0.00230 | -20.83 | 105.865 | -0.00443 | 0.00035 | -0.00283 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 21 Date/Time: 07/13/2017 06:40

Sample Number: **9095967** Class: **** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00109 | -25.73 | 27.545 | -0.00138 | -0.00110 | -0.00078 |
| ____ AL | 0.02658 | 11.17 | 15.243 | 0.02224 | 0.02724 | 0.03027 |
| ____ AS | 0.00573 | -0.59 | 48.003 | 0.00494 | 0.00346 | 0.00879 |
| ____ B | 0.04274 | 323.39 | 0.992 | 0.04285 | 0.04309 | 0.04227 |
| ____ BA | 0.09002 | 57 407.32 | 0.364 | 0.09036 | 0.08998 | 0.08971 |
| ____ BE | -0.00032 | -291.10 | 4.309 | -0.00032 | -0.00031 | -0.00034 |
| ____ CA | 46.26826 | 53 639.01 | 0.654 | 46.50569 | 45.92753 | 46.37156 |
| ____ CD | 0.00006 | -5.90 | 457.738 | 0.00005 | 0.00034 | -0.00021 |
| ____ CO | -0.00024 | -4.26 | 313.016 | 0.00015 | -0.00109 | 0.00023 |
| ____ CR | 0.00036 | 23.98 | 58.996 | 0.00012 | 0.00053 | 0.00043 |
| ____ CU | -0.00011 | -1.48 | 703.282 | -0.00085 | 0.00065 | -0.00012 |
| ____ FE | 0.00369 | 5.62 | 159.985 | -0.00128 | 0.01022 | 0.00213 |
| ____ K | 2.93236 | 1 395.44 | 1.103 | 2.93639 | 2.96252 | 2.89818 |
| ____ LI | 0.01299 | 124.70 | 6.535 | 0.01340 | 0.01201 | 0.01355 |
| ____ MG | 6.43804 | 13 305.28 | 0.518 | 6.46768 | 6.40189 | 6.44455 |
| ____ MN | 0.00068 | 47.13 | 13.349 | 0.00061 | 0.00063 | 0.00078 |
| ____ MO | 0.00549 | 5.34 | 6.567 | 0.00582 | 0.00510 | 0.00553 |
| ____ NA | 22.90032 | 36 642.16 | 0.385 | 22.99694 | 22.82409 | 22.87992 |
| ____ NI | 0.00138 | 5.61 | 12.695 | 0.00118 | 0.00145 | 0.00151 |
| ____ P | 0.00967 | 1.67 | 5.309 | 0.00978 | 0.00911 | 0.01012 |
| ____ PB | 0.00447 | 0.07 | 36.889 | 0.00273 | 0.00466 | 0.00601 |
| ____ S | 17.54860 | 1 198.88 | 0.073 | 17.56290 | 17.54467 | 17.53823 |
| ____ SB | 0.00326 | 2.46 | 86.224 | 0.00594 | 0.00034 | 0.00348 |
| ____ SE | 0.01060 | 0.25 | 40.973 | 0.01541 | 0.00698 | 0.00939 |
| ____ SI | 15.15429 | 3 023.24 | 0.701 | 15.26537 | 15.05367 | 15.14384 |
| ____ SN | 0.00141 | 0.47 | 50.368 | 0.00069 | 0.00211 | 0.00142 |
| ____ SR | 0.29863 | 197 852.83 | 0.503 | 0.30032 | 0.29810 | 0.29746 |
| ____ TI | 0.00138 | 115.93 | 1.208 | 0.00137 | 0.00140 | 0.00138 |
| ____ TL | -0.00055 | 0.32 | 1385.321 | 0.00040 | 0.00655 | -0.00861 |
| ____ V | 0.00323 | 53.16 | 6.256 | 0.00346 | 0.00314 | 0.00309 |
| ____ Y1 | 5344.53371 | 5 344.53 | 0.008 | 5344.20054 | 5344.98901 | 5344.41159 |
| ____ Y2A | 208627.94478 | 208 627.94 | 0.488 | 207452.76613 | 209234.87907 | 209196.18915 |
| ____ Y2R | 14603.00183 | 14 603.00 | 0.616 | 14532.68234 | 14704.43379 | 14571.88935 |
| ____ ZN | 0.00424 | 22.30 | 5.083 | 0.00437 | 0.00436 | 0.00399 |
| ____ ZR | -0.00118 | -17.81 | 99.394 | -0.00072 | -0.00252 | -0.00031 |

LANCASTER LABORATORIES

Run Name: 1719404T73

Instrument ID: 18255

Tube: 22

Date/Time: 07/13/2017 06:43

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49041 | 6 239.15 | 1.201 | 0.48911 | 0.49684 | 0.48528 |
| ____ AL | 24.56819 | 3 813.96 | 1.229 | 24.23997 | 24.83416 | 24.63042 |
| ____ AS | 0.49075 | 64.09 | 1.130 | 0.49655 | 0.49021 | 0.48550 |
| ____ B | 0.48123 | 3 790.75 | 0.677 | 0.47987 | 0.48495 | 0.47888 |
| ____ BA | 0.48652 | 305 870.26 | 0.758 | 0.48350 | 0.49062 | 0.48543 |
| ____ BE | 0.47601 | 216 902.37 | 1.018 | 0.47525 | 0.48120 | 0.47160 |
| ____ CA | 24.51311 | 28 338.09 | 1.160 | 24.19232 | 24.73370 | 24.61333 |
| ____ CD | 0.48749 | 3 922.72 | 0.829 | 0.49093 | 0.48850 | 0.48304 |
| ____ CO | 0.48445 | 2 026.18 | 0.916 | 0.48862 | 0.48494 | 0.47979 |
| ____ CR | 0.49321 | 4 370.40 | 0.821 | 0.49268 | 0.49750 | 0.48945 |
| ____ CU | 0.48949 | 6 207.42 | 0.931 | 0.48606 | 0.49466 | 0.48775 |
| ____ FE | 24.57301 | 6 404.03 | 1.547 | 24.13933 | 24.84825 | 24.73143 |
| ____ K | 24.51929 | 11 074.48 | 1.311 | 24.15905 | 24.77735 | 24.62147 |
| ____ LI | 0.49159 | 4 586.36 | 0.851 | 0.48709 | 0.49536 | 0.49232 |
| ____ MG | 24.41841 | 49 605.96 | 1.258 | 24.06852 | 24.64418 | 24.54254 |
| ____ MN | 0.48861 | 29 430.42 | 0.993 | 0.48791 | 0.49378 | 0.48414 |
| ____ MO | 0.50406 | 551.19 | 0.939 | 0.50750 | 0.50601 | 0.49866 |
| ____ NA | 24.56168 | 39 043.85 | 1.198 | 24.23091 | 24.79462 | 24.65951 |
| ____ NI | 0.48531 | 1 252.84 | 0.808 | 0.48757 | 0.48756 | 0.48078 |
| ____ P | 0.48389 | 57.78 | 1.248 | 0.48940 | 0.48483 | 0.47744 |
| ____ PB | 0.48993 | 327.86 | 1.240 | 0.49540 | 0.49100 | 0.48339 |
| ____ S | 24.91422 | 1 692.95 | 0.655 | 25.06905 | 24.92962 | 24.74398 |
| ____ SB | 0.50429 | 126.29 | 1.782 | 0.50826 | 0.51061 | 0.49400 |
| ____ SE | 0.48881 | 52.73 | 5.016 | 0.51433 | 0.48665 | 0.46544 |
| ____ SI | 24.62902 | 4 885.16 | 1.061 | 24.32753 | 24.77239 | 24.78715 |
| ____ SN | 0.49393 | 176.30 | 1.174 | 0.50059 | 0.49116 | 0.49003 |
| ____ SR | 0.48723 | 319 075.76 | 1.499 | 0.48892 | 0.49355 | 0.47923 |
| ____ TI | 0.51029 | 24 257.26 | 0.972 | 0.50929 | 0.51567 | 0.50591 |
| ____ TL | 0.48888 | 59.97 | 1.311 | 0.49491 | 0.48960 | 0.48214 |
| ____ V | 0.51219 | 8 236.98 | 1.139 | 0.50959 | 0.51888 | 0.50812 |
| ____ Y1 | 5315.15725 | 5 315.16 | 0.666 | 5284.25077 | 5307.42464 | 5353.79634 |
| ____ Y2A | 206176.94098 | 206 176.94 | 0.921 | 207258.28669 | 203984.65139 | 207287.88485 |
| ____ Y2R | 14509.14792 | 14 509.15 | 1.040 | 14664.69180 | 14363.35063 | 14499.40132 |
| ____ ZN | 0.48543 | 1 945.19 | 0.750 | 0.48889 | 0.48576 | 0.48164 |
| ____ ZR | 0.50455 | 1 380.00 | 1.087 | 0.49835 | 0.50875 | 0.50656 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 23 Date/Time: 07/13/2017 06:46

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00072 | -21.61 | 99.862 | -0.00054 | -0.00011 | -0.00152 |
| ____ AL | 0.02432 | 10.74 | 116.189 | 0.05432 | -0.00178 | 0.02042 |
| ____ AS | 0.00029 | -1.35 | 1082.125 | -0.00196 | -0.00102 | 0.00385 |
| ____ B | 0.00307 | 16.13 | 17.270 | 0.00333 | 0.00342 | 0.00246 |
| ____ BA | 0.00004 | 219.31 | 40.674 | 0.00006 | 0.00003 | 0.00003 |
| ____ BE | -0.00027 | -273.00 | 10.386 | -0.00024 | -0.00030 | -0.00028 |
| ____ CA | 0.00152 | 59.71 | 395.318 | -0.00427 | 0.00773 | 0.00109 |
| ____ CD | 0.00042 | -3.03 | 35.167 | 0.00041 | 0.00028 | 0.00057 |
| ____ CO | 0.00025 | -2.27 | 55.398 | 0.00039 | 0.00023 | 0.00012 |
| ____ CR | 0.00026 | 23.51 | 167.988 | 0.00075 | 0.00005 | -0.00003 |
| ____ CU | -0.00001 | -13.25 | 5755.469 | -0.00085 | 0.00033 | 0.00048 |
| ____ FE | 0.00297 | 5.37 | 317.615 | -0.00758 | 0.00590 | 0.01058 |
| ____ K | 0.03777 | 87.18 | 116.319 | 0.07739 | -0.00948 | 0.04539 |
| ____ LI | -0.00347 | -29.30 | 55.442 | -0.00556 | -0.00178 | -0.00307 |
| ____ MG | -0.00119 | -11.26 | 163.604 | -0.00035 | -0.00342 | 0.00020 |
| ____ MN | 0.00001 | 6.45 | 1125.718 | -0.00005 | 0.00007 | 0.00000 |
| ____ MO | 0.00054 | -0.10 | 110.828 | -0.00013 | 0.00074 | 0.00102 |
| ____ NA | 0.00252 | 23.38 | 212.403 | -0.00053 | 0.00869 | -0.00061 |
| ____ NI | 0.00068 | 5.00 | 89.733 | 0.00049 | 0.00136 | 0.00019 |
| ____ P | 0.00155 | 0.72 | 108.962 | 0.00159 | -0.00016 | 0.00322 |
| ____ PB | 0.00276 | -1.09 | 9.889 | 0.00297 | 0.00286 | 0.00245 |
| ____ S | 0.01422 | 0.56 | 29.121 | 0.01813 | 0.00988 | 0.01463 |
| ____ SB | 0.00212 | 2.21 | 245.414 | 0.00382 | 0.00625 | -0.00372 |
| ____ SE | 0.00253 | -0.65 | 310.180 | -0.00448 | 0.01102 | 0.00105 |
| ____ SI | 0.01180 | 3.33 | 13.763 | 0.01339 | 0.01015 | 0.01186 |
| ____ SN | -0.00028 | -0.14 | 80.405 | -0.00054 | -0.00014 | -0.00016 |
| ____ SR | 0.00005 | -90.14 | 14.188 | 0.00004 | 0.00005 | 0.00005 |
| ____ TI | 0.00004 | 53.01 | 322.320 | -0.00011 | 0.00009 | 0.00014 |
| ____ TL | -0.00594 | -0.38 | 63.884 | -0.00536 | -0.00247 | -0.01000 |
| ____ V | -0.00090 | -14.07 | 26.975 | -0.00066 | -0.00091 | -0.00114 |
| ____ Y1 | 5417.52049 | 5 417.52 | 0.671 | 5457.38071 | 5386.24126 | 5408.93948 |
| ____ Y2A | 212876.07699 | 212 876.08 | 0.353 | 212662.47756 | 212253.84769 | 213711.90571 |
| ____ Y2R | 14483.48690 | 14 483.49 | 0.770 | 14586.97211 | 14365.48381 | 14498.00479 |
| ____ ZN | 0.00003 | 5.61 | 1088.123 | 0.00023 | -0.00028 | 0.00012 |
| ____ ZR | -0.00428 | -26.19 | 6.123 | -0.00428 | -0.00454 | -0.00401 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 24 Date/Time: 07/13/2017 06:50

Sample Number: **9095968** Class: **** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00112 | -26.93 | 71.310 | -0.00176 | -0.00023 | -0.00137 |
| ____ AL | 0.36798 | 64.37 | 5.993 | 0.35424 | 0.35628 | 0.39341 |
| ____ AS | 0.00014 | -1.38 | 823.610 | 0.00080 | 0.00084 | -0.00121 |
| ____ B | 0.04197 | 326.06 | 1.007 | 0.04224 | 0.04219 | 0.04148 |
| ____ BA | 0.09348 | 60 729.01 | 0.671 | 0.09414 | 0.09290 | 0.09340 |
| ____ BE | -0.00029 | -279.54 | 1.445 | -0.00029 | -0.00028 | -0.00029 |
| ____ CA | 46.49421 | 53 867.00 | 0.817 | 46.72678 | 46.69974 | 46.05612 |
| ____ CD | 0.00008 | -5.58 | 201.768 | 0.00013 | 0.00020 | -0.00010 |
| ____ CO | -0.00064 | -5.88 | 57.746 | -0.00097 | -0.00070 | -0.00024 |
| ____ CR | 0.00341 | 52.13 | 4.326 | 0.00338 | 0.00356 | 0.00327 |
| ____ CU | 0.00128 | 16.24 | 19.728 | 0.00099 | 0.00135 | 0.00148 |
| ____ FE | 0.56794 | 154.48 | 3.618 | 0.55611 | 0.55605 | 0.59167 |
| ____ K | 2.97579 | 1 414.31 | 1.195 | 2.93567 | 2.98834 | 3.00336 |
| ____ LI | 0.01271 | 122.34 | 14.589 | 0.01211 | 0.01123 | 0.01479 |
| ____ MG | 6.54808 | 13 524.09 | 0.520 | 6.56256 | 6.57253 | 6.50916 |
| ____ MN | 0.01849 | 1 154.22 | 0.412 | 0.01852 | 0.01841 | 0.01855 |
| ____ MO | 0.00559 | 5.52 | 13.842 | 0.00491 | 0.00643 | 0.00543 |
| ____ NA | 22.85305 | 36 544.50 | 0.775 | 22.91307 | 22.99229 | 22.65379 |
| ____ NI | 0.00185 | 6.84 | 9.459 | 0.00203 | 0.00185 | 0.00168 |
| ____ P | 0.02367 | 3.38 | 17.371 | 0.01958 | 0.02780 | 0.02363 |
| ____ PB | 0.00447 | 0.12 | 106.654 | 0.00613 | -0.00091 | 0.00819 |
| ____ S | 17.53565 | 1 212.21 | 0.557 | 17.61987 | 17.55857 | 17.42853 |
| ____ SB | 0.00348 | 2.56 | 41.326 | 0.00225 | 0.00506 | 0.00312 |
| ____ SE | 0.00224 | -0.68 | 405.655 | 0.00910 | -0.00806 | 0.00568 |
| ____ SI | 16.11950 | 3 213.83 | 0.925 | 16.17047 | 16.23648 | 15.95154 |
| ____ SN | 0.00090 | 0.29 | 135.092 | 0.00184 | -0.00047 | 0.00132 |
| ____ SR | 0.29968 | 202 287.04 | 0.638 | 0.30150 | 0.29769 | 0.29987 |
| ____ TI | 0.01758 | 906.01 | 1.537 | 0.01785 | 0.01731 | 0.01759 |
| ____ TL | 0.00171 | 0.62 | 374.631 | -0.00464 | 0.00815 | 0.00160 |
| ____ V | 0.00409 | 68.93 | 7.896 | 0.00372 | 0.00426 | 0.00430 |
| ____ Y1 | 5407.96749 | 5 407.97 | 0.258 | 5411.60452 | 5392.56344 | 5419.73453 |
| ____ Y2A | 212552.82182 | 212 552.82 | 0.634 | 211390.51277 | 214031.09378 | 212236.85891 |
| ____ Y2R | 14594.73364 | 14 594.73 | 1.057 | 14487.33027 | 14525.42356 | 14771.44708 |
| ____ ZN | 0.01673 | 72.98 | 1.075 | 0.01658 | 0.01669 | 0.01693 |
| ____ ZR | 0.00015 | -14.11 | 756.468 | 0.00124 | 0.00021 | -0.00100 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 25 Date/Time: 07/13/2017 06:52

Sample Number: **9095969** Class: **** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00097 | -24.33 | 29.887 | -0.00068 | -0.00126 | -0.00096 |
| ____ AL | 0.03623 | 12.66 | 87.184 | 0.04815 | 0.00042 | 0.06011 |
| ____ AS | -0.00030 | -1.42 | 1388.408 | -0.00362 | 0.00435 | -0.00163 |
| ____ B | 0.04322 | 329.03 | 0.439 | 0.04327 | 0.04301 | 0.04338 |
| ____ BA | 0.09133 | 58 571.45 | 0.294 | 0.09102 | 0.09152 | 0.09145 |
| ____ BE | -0.00035 | -307.13 | 6.148 | -0.00038 | -0.00035 | -0.00033 |
| ____ CA | 47.70454 | 55 227.01 | 0.645 | 47.63127 | 48.04233 | 47.44002 |
| ____ CD | 0.00017 | -5.11 | 62.780 | 0.00028 | 0.00008 | 0.00013 |
| ____ CO | -0.00007 | -3.59 | 530.788 | -0.00039 | -0.00014 | 0.00032 |
| ____ CR | 0.00109 | 30.69 | 55.125 | 0.00175 | 0.00096 | 0.00057 |
| ____ CU | 0.00045 | 6.09 | 66.340 | 0.00055 | 0.00011 | 0.00068 |
| ____ FE | 0.00671 | 6.41 | 8.106 | 0.00726 | 0.00617 | 0.00670 |
| ____ K | 2.99612 | 1 422.52 | 1.030 | 2.96071 | 3.01051 | 3.01715 |
| ____ LI | 0.01423 | 136.18 | 6.590 | 0.01374 | 0.01363 | 0.01531 |
| ____ MG | 6.62630 | 13 676.78 | 0.599 | 6.62314 | 6.66750 | 6.58827 |
| ____ MN | 0.00163 | 105.75 | 4.337 | 0.00166 | 0.00155 | 0.00167 |
| ____ MO | 0.00489 | 4.74 | 6.160 | 0.00455 | 0.00511 | 0.00502 |
| ____ NA | 23.36425 | 37 339.63 | 0.445 | 23.31748 | 23.48328 | 23.29200 |
| ____ NI | 0.00062 | 3.65 | 42.410 | 0.00090 | 0.00039 | 0.00056 |
| ____ P | 0.00949 | 1.67 | 33.688 | 0.00786 | 0.00744 | 0.01318 |
| ____ PB | 0.00419 | -0.11 | 49.330 | 0.00299 | 0.00658 | 0.00301 |
| ____ S | 17.76000 | 1 227.05 | 0.407 | 17.84140 | 17.73546 | 17.70314 |
| ____ SB | 0.00304 | 2.43 | 76.768 | 0.00554 | 0.00264 | 0.00093 |
| ____ SE | 0.00199 | -0.71 | 454.185 | -0.00846 | 0.00759 | 0.00685 |
| ____ SI | 15.50006 | 3 088.54 | 0.601 | 15.53134 | 15.57351 | 15.39535 |
| ____ SN | 0.00258 | 0.90 | 94.004 | 0.00006 | 0.00489 | 0.00279 |
| ____ SR | 0.30298 | 201 872.68 | 0.382 | 0.30170 | 0.30395 | 0.30330 |
| ____ TI | 0.00123 | 109.19 | 13.077 | 0.00122 | 0.00140 | 0.00107 |
| ____ TL | -0.00091 | 0.28 | 839.188 | -0.00542 | 0.00793 | -0.00524 |
| ____ V | 0.00311 | 51.74 | 6.138 | 0.00294 | 0.00309 | 0.00332 |
| ____ Y1 | 5404.94520 | 5 404.95 | 0.405 | 5417.32680 | 5417.81618 | 5379.69261 |
| ____ Y2A | 209805.52304 | 209 805.52 | 0.322 | 210537.19354 | 209208.39816 | 209670.97741 |
| ____ Y2R | 14585.55734 | 14 585.56 | 0.359 | 14572.07234 | 14541.27698 | 14643.32270 |
| ____ ZN | 0.00599 | 29.56 | 8.456 | 0.00584 | 0.00656 | 0.00558 |
| ____ ZR | -0.00087 | -16.90 | 140.915 | -0.00137 | 0.00053 | -0.00175 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 26 Date/Time: 07/13/2017 06:55

Sample Number: **9095970** Class: **** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00105 | -25.46 | 64.885 | -0.00159 | -0.00028 | -0.00128 |
| ____ AL | 0.04140 | 13.60 | 31.130 | 0.04476 | 0.02716 | 0.05227 |
| ____ AS | -0.00193 | -1.62 | 107.047 | -0.00031 | -0.00122 | -0.00426 |
| ____ B | 0.04646 | 355.04 | 1.356 | 0.04677 | 0.04574 | 0.04688 |
| ____ BA | 0.08157 | 52 418.96 | 0.419 | 0.08179 | 0.08118 | 0.08174 |
| ____ BE | -0.00028 | -271.59 | 11.932 | -0.00031 | -0.00024 | -0.00028 |
| ____ CA | 45.81536 | 53 515.00 | 0.416 | 46.00880 | 45.80966 | 45.62763 |
| ____ CD | 0.00014 | -5.26 | 150.774 | 0.00037 | 0.00005 | -0.00001 |
| ____ CO | -0.00007 | -3.56 | 507.060 | 0.00030 | -0.00042 | -0.00010 |
| ____ CR | 0.00026 | 23.18 | 205.782 | 0.00051 | -0.00035 | 0.00061 |
| ____ CU | -0.00013 | -2.06 | 603.464 | -0.00086 | -0.00024 | 0.00071 |
| ____ FE | 0.04334 | 16.21 | 22.707 | 0.05027 | 0.03208 | 0.04768 |
| ____ K | 3.20237 | 1 528.68 | 0.848 | 3.23258 | 3.19451 | 3.18003 |
| ____ LI | 0.01573 | 151.56 | 2.138 | 0.01542 | 0.01569 | 0.01609 |
| ____ MG | 6.16303 | 12 833.87 | 0.576 | 6.19138 | 6.17452 | 6.12317 |
| ____ MN | 0.01994 | 1 230.15 | 1.245 | 0.02012 | 0.01966 | 0.02004 |
| ____ MO | 0.01191 | 12.41 | 4.237 | 0.01142 | 0.01243 | 0.01188 |
| ____ NA | 30.10951 | 48 531.16 | 0.273 | 30.17148 | 30.14099 | 30.01607 |
| ____ NI | 0.00043 | 3.23 | 136.374 | 0.00057 | 0.00094 | -0.00021 |
| ____ P | 0.01808 | 2.68 | 44.839 | 0.02443 | 0.02087 | 0.00895 |
| ____ PB | 0.00469 | 0.21 | 54.167 | 0.00183 | 0.00670 | 0.00553 |
| ____ S | 20.73315 | 1 416.02 | 0.426 | 20.71209 | 20.83011 | 20.65726 |
| ____ SB | 0.00024 | 1.71 | 1899.664 | 0.00106 | -0.00467 | 0.00433 |
| ____ SE | 0.01025 | 0.21 | 50.004 | 0.00623 | 0.00849 | 0.01602 |
| ____ SI | 14.23747 | 2 861.70 | 0.267 | 14.25263 | 14.26561 | 14.19416 |
| ____ SN | 0.00129 | 0.42 | 142.382 | 0.00072 | 0.00334 | -0.00020 |
| ____ SR | 0.29642 | 197 829.77 | 0.301 | 0.29703 | 0.29539 | 0.29684 |
| ____ TI | 0.00182 | 137.90 | 5.441 | 0.00191 | 0.00171 | 0.00185 |
| ____ TL | -0.00101 | 0.26 | 205.178 | -0.00216 | 0.00138 | -0.00225 |
| ____ V | 0.00111 | 16.00 | 15.020 | 0.00120 | 0.00091 | 0.00120 |
| ____ Y1 | 5342.67339 | 5 342.67 | 0.147 | 5351.71677 | 5338.84232 | 5337.46108 |
| ____ Y2A | 210159.28781 | 210 159.29 | 1.052 | 209737.32774 | 212551.42914 | 208189.10654 |
| ____ Y2R | 14712.03090 | 14 712.03 | 0.451 | 14675.20941 | 14672.26103 | 14788.62228 |
| ____ ZN | 0.00285 | 16.76 | 9.048 | 0.00295 | 0.00304 | 0.00256 |
| ____ ZR | -0.00289 | -22.72 | 64.044 | -0.00106 | -0.00284 | -0.00476 |

LANCASTER LABORATORIES

Run Name: 1719404T73 Instrument ID: 18255

Tube: 27 Date/Time: 07/13/2017 06:58

Sample Number: **9095971** Class: **** Batch: 171931063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00099 | -24.47 | 25.976 | -0.00095 | -0.00076 | -0.00127 |
| ____ AL | 0.02956 | 11.67 | 73.996 | 0.00702 | 0.03096 | 0.05070 |
| ____ AS | 0.00466 | -0.73 | 222.517 | 0.01364 | -0.00669 | 0.00704 |
| ____ B | 0.05141 | 388.81 | 0.707 | 0.05164 | 0.05099 | 0.05160 |
| ____ BA | 0.07894 | 50 126.48 | 0.161 | 0.07887 | 0.07886 | 0.07909 |
| ____ BE | -0.00033 | -291.12 | 2.192 | -0.00032 | -0.00033 | -0.00032 |
| ____ CA | 48.68269 | 56 536.15 | 0.198 | 48.70981 | 48.76256 | 48.57572 |
| ____ CD | 0.00007 | -5.77 | 234.285 | 0.00019 | -0.00013 | 0.00016 |
| ____ CO | -0.00010 | -3.67 | 239.163 | 0.00008 | -0.00001 | -0.00037 |
| ____ CR | 0.00048 | 24.90 | 88.390 | 0.00036 | 0.00094 | 0.00013 |
| ____ CU | -0.00043 | -5.07 | 277.523 | -0.00145 | 0.00089 | -0.00073 |
| ____ FE | 0.00178 | 5.11 | 486.134 | -0.00426 | 0.01167 | -0.00209 |
| ____ K | 3.21176 | 1 524.74 | 0.589 | 3.19057 | 3.22695 | 3.21775 |
| ____ LI | 0.01457 | 139.76 | 10.755 | 0.01513 | 0.01577 | 0.01279 |
| ____ MG | 6.60743 | 13 682.63 | 0.203 | 6.60246 | 6.62258 | 6.59724 |
| ____ MN | 0.00046 | 33.96 | 12.449 | 0.00040 | 0.00048 | 0.00051 |
| ____ MO | 0.01224 | 12.75 | 8.175 | 0.01144 | 0.01336 | 0.01191 |
| ____ NA | 38.41662 | 61 584.09 | 0.109 | 38.44118 | 38.44043 | 38.36824 |
| ____ NI | 0.00079 | 4.09 | 47.900 | 0.00082 | 0.00115 | 0.00039 |
| ____ P | 0.01902 | 2.78 | 37.306 | 0.01172 | 0.01944 | 0.02589 |
| ____ PB | 0.00269 | -1.13 | 38.789 | 0.00349 | 0.00307 | 0.00151 |
| ____ S | 24.29170 | 1 655.96 | 0.280 | 24.21576 | 24.31276 | 24.34659 |
| ____ SB | -0.00044 | 1.54 | 794.495 | -0.00072 | 0.00320 | -0.00380 |
| ____ SE | 0.01175 | 0.38 | 63.091 | 0.01163 | 0.01921 | 0.00439 |
| ____ SI | 15.03176 | 3 005.14 | 0.061 | 15.04079 | 15.02233 | 15.03216 |
| ____ SN | -0.00082 | -0.33 | 128.099 | -0.00141 | -0.00143 | 0.00039 |
| ____ SR | 0.31052 | 204 760.14 | 0.078 | 0.31036 | 0.31080 | 0.31040 |
| ____ TI | 0.00136 | 114.45 | 24.873 | 0.00107 | 0.00174 | 0.00129 |
| ____ TL | -0.00219 | 0.11 | 234.005 | -0.00325 | -0.00669 | 0.00338 |
| ____ V | 0.00137 | 19.99 | 30.235 | 0.00177 | 0.00095 | 0.00137 |
| ____ Y1 | 5332.51004 | 5 332.51 | 0.720 | 5374.58054 | 5323.61058 | 5299.33899 |
| ____ Y2A | 207635.00043 | 207 635.00 | 0.175 | 208050.44848 | 207381.31857 | 207473.23424 |
| ____ Y2R | 14633.21265 | 14 633.21 | 0.517 | 14709.90415 | 14558.77000 | 14630.96381 |
| ____ ZN | 0.00331 | 18.53 | 6.525 | 0.00326 | 0.00312 | 0.00355 |
| ____ ZR | -0.00379 | -25.12 | 57.417 | -0.00398 | -0.00153 | -0.00587 |

LANCASTER LABORATORIES

Run Name: 1719404T73

Instrument ID: 18255

Tube: 28

Date/Time: 07/13/2017 07:01

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49489 | 6 199.05 | 0.965 | 0.49078 | 0.50013 | 0.49376 |
| ____ AL | 24.95662 | 3 757.18 | 0.195 | 24.90036 | 24.98538 | 24.98411 |
| ____ AS | 0.50184 | 64.91 | 1.242 | 0.50175 | 0.50812 | 0.49565 |
| ____ B | 0.48293 | 3 746.02 | 1.313 | 0.47592 | 0.48827 | 0.48460 |
| ____ BA | 0.48833 | 302 257.83 | 1.112 | 0.48222 | 0.49262 | 0.49014 |
| ____ BE | 0.47918 | 214 969.91 | 1.141 | 0.47354 | 0.48446 | 0.47954 |
| ____ CA | 24.81834 | 27 822.50 | 0.366 | 24.73390 | 24.80661 | 24.91451 |
| ____ CD | 0.49192 | 3 918.18 | 0.941 | 0.49303 | 0.49590 | 0.48684 |
| ____ CO | 0.48711 | 2 016.57 | 1.053 | 0.48791 | 0.49179 | 0.48163 |
| ____ CR | 0.49869 | 4 350.34 | 1.194 | 0.49321 | 0.50503 | 0.49783 |
| ____ CU | 0.49231 | 6 146.54 | 1.393 | 0.48510 | 0.49876 | 0.49307 |
| ____ FE | 24.84679 | 6 279.41 | 0.252 | 24.82847 | 24.79529 | 24.91661 |
| ____ K | 24.75228 | 10 841.48 | 0.394 | 24.63954 | 24.80940 | 24.80790 |
| ____ LI | 0.49487 | 4 477.38 | 0.821 | 0.49182 | 0.49330 | 0.49948 |
| ____ MG | 24.75539 | 48 761.50 | 0.423 | 24.65993 | 24.73898 | 24.86725 |
| ____ MN | 0.49210 | 29 181.93 | 1.296 | 0.48547 | 0.49819 | 0.49264 |
| ____ MO | 0.50669 | 548.44 | 0.696 | 0.50927 | 0.50813 | 0.50267 |
| ____ NA | 24.80534 | 38 240.01 | 0.341 | 24.71873 | 24.80937 | 24.88794 |
| ____ NI | 0.48787 | 1 246.61 | 0.880 | 0.48881 | 0.49161 | 0.48319 |
| ____ P | 0.48553 | 57.38 | 1.531 | 0.49326 | 0.47844 | 0.48488 |
| ____ PB | 0.49187 | 325.86 | 0.754 | 0.49461 | 0.49336 | 0.48765 |
| ____ S | 25.04621 | 1 684.64 | 0.431 | 25.10505 | 25.11197 | 24.92161 |
| ____ SB | 0.50780 | 125.88 | 0.296 | 0.50607 | 0.50877 | 0.50856 |
| ____ SE | 0.47641 | 50.84 | 3.060 | 0.47882 | 0.48963 | 0.46078 |
| ____ SI | 24.88335 | 4 786.42 | 0.577 | 24.71849 | 24.98195 | 24.94961 |
| ____ SN | 0.49858 | 176.15 | 0.806 | 0.50232 | 0.49908 | 0.49433 |
| ____ SR | 0.49362 | 318 285.09 | 0.285 | 0.49253 | 0.49521 | 0.49313 |
| ____ TI | 0.51341 | 24 028.18 | 0.994 | 0.50779 | 0.51775 | 0.51468 |
| ____ TL | 0.49424 | 60.02 | 1.376 | 0.49855 | 0.49778 | 0.48640 |
| ____ V | 0.51505 | 8 154.98 | 1.152 | 0.50895 | 0.52080 | 0.51541 |
| ____ Y1 | 5261.16887 | 5 261.17 | 0.998 | 5246.02997 | 5217.89432 | 5319.58233 |
| ____ Y2A | 202992.37219 | 202 992.37 | 1.037 | 205293.24701 | 201163.44773 | 202520.42183 |
| ____ Y2R | 14069.84051 | 14 069.84 | 0.206 | 14096.51209 | 14073.98723 | 14039.02220 |
| ____ ZN | 0.48892 | 1 939.21 | 1.013 | 0.49097 | 0.49252 | 0.48328 |
| ____ ZR | 0.50941 | 1 351.32 | 0.433 | 0.50751 | 0.50889 | 0.51183 |

LANCASTER LABORATORIES

Run Name: 1719404T73

Instrument ID: 18255

Tube: 29

Date/Time: 07/13/2017 07:04

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00088 | -23.23 | 22.819 | -0.00106 | -0.00091 | -0.00066 |
| ____ AL | 0.03238 | 11.81 | 17.677 | 0.03881 | 0.03048 | 0.02785 |
| ____ AS | -0.00439 | -1.98 | 120.777 | -0.00088 | -0.01048 | -0.00179 |
| ____ B | 0.00211 | 8.50 | 7.822 | 0.00214 | 0.00194 | 0.00227 |
| ____ BA | 0.00000 | 190.36 | 2556.173 | 0.00004 | 0.00000 | -0.00003 |
| ____ BE | -0.00028 | -273.36 | 3.052 | -0.00027 | -0.00028 | -0.00029 |
| ____ CA | 0.02015 | 80.21 | 210.552 | 0.00008 | 0.06888 | -0.00852 |
| ____ CD | 0.00024 | -4.51 | 120.309 | 0.00003 | 0.00012 | 0.00056 |
| ____ CO | 0.00050 | -1.19 | 70.140 | 0.00032 | 0.00028 | 0.00090 |
| ____ CR | -0.00015 | 19.56 | 748.829 | 0.00089 | -0.00127 | -0.00006 |
| ____ CU | -0.00060 | -20.66 | 94.635 | -0.00083 | 0.00005 | -0.00102 |
| ____ FE | 0.01730 | 9.02 | 175.945 | -0.00101 | 0.05243 | 0.00047 |
| ____ K | 0.05559 | 93.77 | 62.874 | 0.01528 | 0.07751 | 0.07398 |
| ____ LI | -0.00507 | -43.45 | 20.690 | -0.00603 | -0.00395 | -0.00521 |
| ____ MG | 0.01095 | 13.57 | 200.879 | -0.00062 | 0.03631 | -0.00285 |
| ____ MN | -0.00005 | 2.71 | 223.748 | 0.00002 | -0.00019 | 0.00001 |
| ____ MO | 0.00058 | -0.06 | 30.980 | 0.00040 | 0.00059 | 0.00076 |
| ____ NA | 0.02882 | 64.30 | 102.314 | 0.01015 | 0.06282 | 0.01350 |
| ____ NI | 0.00070 | 5.05 | 81.941 | 0.00011 | 0.00126 | 0.00073 |
| ____ P | -0.00412 | 0.03 | 77.996 | -0.00599 | -0.00041 | -0.00597 |
| ____ PB | 0.00411 | -0.16 | 36.694 | 0.00346 | 0.00584 | 0.00304 |
| ____ S | 0.03723 | 2.16 | 117.783 | 0.01119 | 0.01264 | 0.08785 |
| ____ SB | 0.00593 | 3.18 | 39.818 | 0.00365 | 0.00836 | 0.00577 |
| ____ SE | -0.00662 | -1.67 | 119.136 | -0.00526 | -0.01510 | 0.00050 |
| ____ SI | 0.02273 | 5.41 | 152.190 | -0.00500 | 0.06150 | 0.01170 |
| ____ SN | -0.00085 | -0.35 | 92.486 | -0.00041 | -0.00177 | -0.00038 |
| ____ SR | 0.00003 | -97.62 | 45.305 | 0.00001 | 0.00004 | 0.00004 |
| ____ TI | -0.00004 | 48.11 | 453.717 | -0.00022 | 0.00017 | -0.00008 |
| ____ TL | -0.00255 | 0.06 | 184.284 | -0.00031 | -0.00794 | 0.00061 |
| ____ V | -0.00154 | -24.36 | 51.424 | -0.00142 | -0.00081 | -0.00238 |
| ____ Y1 | 5405.57527 | 5 405.58 | 0.596 | 5381.08006 | 5393.61056 | 5442.03519 |
| ____ Y2A | 209560.64698 | 209 560.65 | 0.126 | 209764.81149 | 209654.04515 | 209263.08430 |
| ____ Y2R | 14289.33143 | 14 289.33 | 0.309 | 14322.49501 | 14306.26496 | 14239.23431 |
| ____ ZN | 0.00014 | 6.08 | 311.013 | -0.00017 | -0.00005 | 0.00065 |
| ____ ZR | -0.00368 | -24.21 | 39.979 | -0.00536 | -0.00262 | -0.00306 |

eurofins | Lancaster Laboratories Environmental

# ICP-AES Run Data Report

| Reviewed By | Reviewed Date |
|---|---|
| Nina C Haller | 08/02/2017 11:58AM |
| Scott R Yanos | 07/18/2017 4:50AM |

| Verified By: | Verified Date |
|---|---|
| Nina C Haller | 08/02/2017 12:33PM |
| Parker D Lindstrom | 07/19/2017 2:15PM |

Data File Name 1719901T71.TXT
Run Name: 1719901T71

Method Reference Name(s):

Analyst Employee: 12404

Instrument Parameters:

Individual Integration Time: 10.00 sec Total Integration Time: 30.00 sec Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 1 Date/Time: 07/18/2017 01:58

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -16.33085 | 31.080 | -0.00667 | -0.00364 | -0.00671 |
| AL | 0.000 | 26.36667 | 16.497 | 0.14502 | 0.20153 | 0.18699 |
| AS | 0.000 | -0.30667 | 346.502 | -0.00319 | 0.00966 | -0.01882 |
| B | 0.000 | -1.84854 | 137.900 | 0.00001 | -0.00002 | -0.00003 |
| BA | 0.000 | 184.57284 | 12.258 | 0.00125 | 0.00146 | 0.00115 |
| BE | 0.000 | -130.56129 | 1.921 | -0.04455 | -0.04527 | -0.04628 |
| CA | 0.000 | 42.93333 | 8.529 | 0.00632 | 0.00534 | 0.00570 |
| CD | 0.000 | -3.21000 | 21.930 | -0.04606 | -0.04975 | -0.03204 |
| CO | 0.000 | -0.80333 | 62.284 | -0.00319 | -0.01297 | -0.01588 |
| CR | 0.000 | -0.04994 | 3910.032 | 0.00001 | -0.00001 | 0.00000 |
| CU | 0.000 | -17.04245 | 20.394 | -0.00727 | -0.00555 | -0.00495 |
| FE | 0.000 | 1.65000 | 97.529 | 0.00033 | -0.00003 | 0.00036 |
| K | 0.000 | 39.33333 | 16.459 | 0.29609 | 0.21512 | 0.28368 |
| LI | 0.000 | 3.51667 | 404.886 | 0.00213 | -0.00158 | 0.00085 |
| MG | 0.000 | 18.16667 | 1.631 | 0.00248 | 0.00247 | 0.00240 |
| MN | 0.000 | -5.82807 | 56.893 | -0.00193 | -0.00092 | -0.00322 |
| MO | 0.000 | -1.14867 | 69.101 | -0.00312 | -0.02055 | -0.02213 |
| NA | 0.000 | -39.73333 | 5.566 | -0.00517 | -0.00570 | -0.00520 |
| NI | 0.000 | 8.09333 | 8.543 | 0.10274 | 0.10175 | 0.11813 |
| P | 0.000 | 0.41667 | 72.828 | 0.00015 | 0.00002 | 0.00017 |
| PB | 0.000 | -2.42778 | 61.346 | -0.05376 | -0.02801 | -0.01491 |
| S | 0.000 | 8.17333 | 4.228 | 0.00227 | 0.00209 | 0.00215 |
| SB | 0.000 | 1.30000 | 7.235 | 0.00035 | 0.00032 | 0.00037 |
| SE | 0.000 | 0.51111 | 93.965 | 0.00111 | 0.01367 | 0.00556 |
| SI | 0.000 | 1.23333 | 130.511 | 0.00041 | 0.00010 | -0.00001 |
| SN | 0.000 | 0.34333 | 206.473 | -0.00292 | 0.00146 | 0.01522 |
| SR | 0.000 | -24.27935 | 26.541 | -0.00013 | -0.00022 | -0.00016 |
| TI | 0.000 | 18.16489 | 42.505 | 0.00621 | 0.00367 | 0.00903 |
| TL | 0.000 | -0.96333 | 45.608 | -0.00863 | -0.01032 | -0.01949 |
| V | 0.000 | -7.73896 | 69.314 | -0.00481 | -0.00130 | -0.00195 |
| Y1 | 0.000 | 3763.79500 | 0.447 | 3766.63500 | 3779.01000 | 3745.74000 |
| Y2A | 0.000 | 143899.68569 | 0.413 | 143751.09802 | 143393.60906 | 144554.35000 |
| Y2R | 0.000 | 7416.70833 | 0.704 | 7447.00000 | 7356.40000 | 7446.72500 |
| ZN | 0.000 | 1.37667 | 56.315 | 0.02841 | 0.00781 | 0.01869 |
| ZR | 0.000 | 3.66667 | 10.366 | 0.00045 | 0.00055 | 0.00048 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 2 Date/Time: 07/18/2017 02:02

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 3345.41313 | 0.935 | 22.91249 | 22.52178 | 22.86361 |
| CA | 50.000 | 30785.00539 | 0.651 | 4.21291 | 4.15973 | 4.19693 |
| FE | 50.000 | 5712.95167 | 1.243 | 0.78241 | 0.76643 | 0.78384 |
| K | 50.000 | 15516.72804 | 0.869 | 105.90122 | 104.56135 | 106.31670 |
| MG | 50.000 | 40197.23342 | 1.011 | 5.49485 | 5.40774 | 5.51033 |
| NA | 50.000 | 54650.89001 | 0.640 | 7.46841 | 7.38316 | 7.46250 |
| S | 50.000 | 2492.78000 | 1.520 | 0.68902 | 0.67500 | 0.69541 |
| SI | 50.000 | 4571.69940 | 0.902 | 0.62568 | 0.61574 | 0.62523 |
| Y1 | 50.000 | 3631.29667 | 0.054 | 3629.91500 | 3633.55000 | 3630.42500 |
| Y2R | 50.000 | 7347.72199 | 0.722 | 7324.56009 | 7408.37997 | 7310.22591 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 3 Date/Time: 07/18/2017 02:05

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 8042.03436 | 0.297 | 2.91546 | 2.91134 | 2.89886 |
| AS | 1.000 | 102.58667 | 2.181 | 1.43053 | 1.37799 | 1.37766 |
| B | 1.000 | 5178.84474 | 0.474 | 0.03765 | 0.03745 | 0.03729 |
| BA | 1.000 | 497077.50777 | 1.190 | 3.62398 | 3.61654 | 3.54644 |
| BE | 1.000 | 319947.36842 | 0.519 | 116.18509 | 115.92394 | 115.03861 |
| CD | 1.000 | 5079.89000 | 0.852 | 69.75297 | 68.89244 | 68.62604 |
| CO | 1.000 | 2231.60333 | 1.074 | 30.67980 | 30.34785 | 30.02801 |
| CU | 1.000 | 8028.93789 | 1.348 | 2.94092 | 2.86290 | 2.90775 |
| LI | 1.000 | 5136.68873 | 0.940 | 0.69261 | 0.70180 | 0.68918 |
| MN | 1.000 | 33213.07791 | 0.405 | 12.06686 | 11.99624 | 11.97346 |
| NI | 1.000 | 1448.30667 | 0.120 | 19.72425 | 19.68396 | 19.68293 |
| P | 1.000 | 27.51333 | 9.836 | 0.00785 | 0.00664 | 0.00796 |
| PB | 1.000 | 469.20000 | 0.485 | 6.37972 | 6.35081 | 6.41263 |
| SE | 1.000 | 82.02778 | 2.011 | 1.14137 | 1.09971 | 1.10611 |
| SR | 1.000 | 523226.87243 | 0.808 | 3.81472 | 3.78598 | 3.75361 |
| TL | 1.000 | 111.15000 | 0.648 | 1.51565 | 1.50048 | 1.51882 |
| Y1 | 1.000 | 3676.48833 | 1.102 | 3630.12500 | 3694.15000 | 3705.19000 |
| Y2A | 1.000 | 138249.40812 | 0.547 | 137470.10978 | 138297.90000 | 138980.21457 |
| Y2R | 1.000 | 7396.02522 | 0.283 | 7393.12787 | 7376.72466 | 7418.22313 |
| ZN | 1.000 | 3216.53000 | 0.174 | 43.72935 | 43.67717 | 43.82677 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 4 Date/Time: 07/18/2017 02:08

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 7040.56756 | 0.854 | 0.04836 | 0.04918 | 0.04893 |
| MO | 1.000 | 822.69333 | 0.151 | 10.77391 | 10.79034 | 10.75772 |
| SB | 1.000 | 180.70667 | 0.574 | 0.04704 | 0.04757 | 0.04738 |
| SN | 1.000 | 308.07333 | 0.605 | 4.00960 | 4.05836 | 4.03550 |
| TI | 1.000 | 31044.68943 | 0.426 | 10.72494 | 10.75393 | 10.81469 |
| V | 1.000 | 9472.38181 | 0.803 | 3.29027 | 3.25573 | 3.30756 |
| Y1 | 1.000 | 3817.95000 | 0.341 | 3807.98500 | 3832.70500 | 3813.16000 |
| Y2A | 1.000 | 144199.57960 | 0.291 | 144031.61149 | 144676.88585 | 143890.24147 |
| Y2R | 1.000 | 7547.59167 | 0.611 | 7512.75000 | 7530.10000 | 7599.92500 |
| ZR | 1.000 | 1227.51667 | 1.065 | 0.16342 | 0.16386 | 0.16066 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 5 Date/Time: 07/18/2017 02:11

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.59942 | 4 849.22 | 0.243 | 0.60043 | 0.60009 | 0.59775 |
| ____ AL | 29.96974 | 2 012.18 | 0.670 | 29.90727 | 30.19436 | 29.80758 |
| ____ AS | 0.60553 | 61.31 | 1.072 | 0.61216 | 0.59918 | 0.60525 |
| ____ B | 0.57849 | 3 240.61 | 0.224 | 0.57700 | 0.57938 | 0.57909 |
| ____ BA | 0.60298 | 302 081.50 | 0.074 | 0.60316 | 0.60248 | 0.60331 |
| ____ BE | 0.57204 | 184 352.47 | 0.232 | 0.57078 | 0.57192 | 0.57343 |
| ____ CA | 30.07632 | 18 563.19 | 0.470 | 30.11611 | 30.19367 | 29.91919 |
| ____ CD | 0.60014 | 3 023.40 | 0.643 | 0.60416 | 0.59646 | 0.59981 |
| ____ CO | 0.59005 | 1 303.78 | 0.550 | 0.59331 | 0.58682 | 0.59001 |
| ____ CR | 0.57140 | 3 886.13 | 0.313 | 0.56995 | 0.57340 | 0.57085 |
| ____ CU | 0.58026 | 4 685.59 | 0.399 | 0.57813 | 0.57991 | 0.58273 |
| ____ FE | 29.50748 | 3 377.14 | 0.650 | 29.70541 | 29.49458 | 29.32246 |
| ____ K | 29.75189 | 9 253.16 | 0.759 | 29.95942 | 29.78492 | 29.51134 |
| ____ LI | 0.59792 | 3 055.93 | 0.667 | 0.60240 | 0.59475 | 0.59661 |
| ____ MG | 29.77275 | 24 204.90 | 0.580 | 29.87875 | 29.86608 | 29.57341 |
| ____ MN | 0.59393 | 19 893.15 | 0.184 | 0.59273 | 0.59416 | 0.59488 |
| ____ MO | 0.59637 | 466.71 | 0.268 | 0.59723 | 0.59736 | 0.59452 |
| ____ NA | 29.31626 | 32 040.82 | 0.367 | 29.37511 | 29.38169 | 29.19197 |
| ____ NI | 0.59365 | 852.70 | 0.620 | 0.59489 | 0.59655 | 0.58952 |
| ____ P | 0.61648 | 16.93 | 12.466 | 0.66850 | 0.65274 | 0.52821 |
| ____ PB | 0.60137 | 281.88 | 0.756 | 0.60476 | 0.60315 | 0.59620 |
| ____ S | 30.52369 | 1 527.14 | 1.233 | 30.70678 | 30.77359 | 30.09069 |
| ____ SB | 0.59508 | 102.87 | 1.217 | 0.59228 | 0.60330 | 0.58965 |
| ____ SE | 0.59804 | 48.49 | 0.944 | 0.59665 | 0.59322 | 0.60425 |
| ____ SI | 30.43449 | 2 785.42 | 0.534 | 30.51432 | 30.54156 | 30.24760 |
| ____ SN | 0.58096 | 170.62 | 0.389 | 0.58313 | 0.57862 | 0.58112 |
| ____ SR | 0.59407 | 313 182.80 | 0.117 | 0.59376 | 0.59487 | 0.59359 |
| ____ TI | 0.59692 | 17 946.23 | 0.079 | 0.59663 | 0.59746 | 0.59666 |
| ____ TL | 0.60991 | 63.60 | 0.080 | 0.60959 | 0.61047 | 0.60968 |
| ____ V | 0.60635 | 5 545.80 | 0.096 | 0.60602 | 0.60702 | 0.60602 |
| ____ Y1 | 3636.78167 | 3 636.78 | 0.639 | 3610.66500 | 3655.23500 | 3644.44500 |
| ____ Y2A | 139296.08832 | 139 296.09 | 0.195 | 139530.03295 | 139360.69862 | 138997.53339 |
| ____ Y2R | 7351.08126 | 7 351.08 | 0.610 | 7324.68019 | 7325.71372 | 7402.84987 |
| ____ ZN | 0.59793 | 1 911.25 | 0.057 | 0.59775 | 0.59832 | 0.59771 |
| ____ ZR | 0.61057 | 731.42 | 0.559 | 0.60672 | 0.61321 | 0.61178 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 6 Date/Time: 07/18/2017 02:14

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00032 | -11.40 | 350.290 | -0.00086 | 0.00044 | 0.00138 |
| ____ AL | 0.03335 | 28.70 | 92.430 | 0.04030 | 0.06011 | -0.00036 |
| ____ AS | 0.00193 | -0.28 | 298.861 | 0.00146 | 0.00791 | -0.00358 |
| ____ B | 0.00231 | 8.76 | 15.321 | 0.00270 | 0.00222 | 0.00201 |
| ____ BA | 0.00017 | 267.78 | 14.187 | 0.00014 | 0.00016 | 0.00019 |
| ____ BE | 0.00019 | -79.74 | 15.427 | 0.00023 | 0.00017 | 0.00018 |
| ____ CA | 0.00545 | 46.50 | 82.547 | 0.00027 | 0.00837 | 0.00771 |
| ____ CD | -0.00010 | -3.68 | 316.745 | 0.00028 | -0.00029 | -0.00030 |
| ____ CO | 0.00039 | 0.11 | 156.773 | -0.00011 | 0.00107 | 0.00020 |
| ____ CR | 0.00016 | 1.10 | 426.634 | 0.00058 | -0.00064 | 0.00055 |
| ____ CU | 0.00074 | -6.69 | 128.566 | 0.00033 | 0.00006 | 0.00183 |
| ____ FE | 0.00463 | 2.18 | 192.303 | 0.00337 | -0.00358 | 0.01408 |
| ____ K | -0.01100 | 36.18 | 713.541 | -0.08675 | -0.01612 | 0.06990 |
| ____ LI | 0.00237 | 15.70 | 56.562 | 0.00223 | 0.00111 | 0.00378 |
| ____ MG | -0.00527 | 13.80 | 72.880 | -0.00187 | -0.00943 | -0.00450 |
| ____ MN | 0.00028 | 8.18 | 53.026 | 0.00035 | 0.00037 | 0.00011 |
| ____ MO | 0.00146 | -0.45 | 45.744 | 0.00070 | 0.00194 | 0.00174 |
| ____ NA | 0.05277 | 15.63 | 3.904 | 0.05202 | 0.05510 | 0.05119 |
| ____ NI | -0.00017 | 7.86 | 437.535 | -0.00087 | 0.00060 | -0.00023 |
| ____ P | 0.02012 | 0.98 | 125.083 | -0.00816 | 0.02848 | 0.04004 |
| ____ PB | 0.00403 | -2.17 | 103.030 | 0.00545 | -0.00065 | 0.00727 |
| ____ S | 0.00941 | 8.67 | 45.678 | 0.01374 | 0.00935 | 0.00514 |
| ____ SB | 0.00273 | 1.78 | 30.935 | 0.00181 | 0.00292 | 0.00347 |
| ____ SE | -0.01512 | -0.75 | 72.614 | -0.02778 | -0.00811 | -0.00948 |
| ____ SI | 0.01277 | 2.43 | 89.079 | -0.00014 | 0.01711 | 0.02133 |
| ____ SN | -0.00044 | 0.22 | 712.953 | -0.00342 | -0.00068 | 0.00279 |
| ____ SR | 0.00022 | 83.04 | 15.895 | 0.00020 | 0.00026 | 0.00021 |
| ____ TI | 0.00028 | 26.79 | 79.331 | 0.00042 | 0.00041 | 0.00002 |
| ____ TL | -0.00306 | -0.59 | 185.346 | -0.00961 | 0.00041 | 0.00002 |
| ____ V | 0.00063 | -4.63 | 90.079 | 0.00111 | 0.00001 | 0.00077 |
| ____ Y1 | 3769.32500 | 3 769.33 | 0.596 | 3746.40500 | 3770.25500 | 3791.31500 |
| ____ Y2A | 142871.93362 | 142 871.93 | 0.571 | 143751.17055 | 142723.38356 | 142141.24675 |
| ____ Y2R | 7441.97500 | 7 441.98 | 1.718 | 7298.37500 | 7543.37500 | 7484.17500 |
| ____ ZN | 0.00040 | 2.68 | 78.018 | 0.00025 | 0.00076 | 0.00019 |
| ____ ZR | 0.00165 | 5.67 | 159.233 | 0.00084 | -0.00048 | 0.00457 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 7 Date/Time: 07/18/2017 02:17

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01093 | 80.75 | 5.814 | 0.01155 | 0.01097 | 0.01028 |
| ____ AL | 0.39836 | 54.00 | 8.027 | 0.41715 | 0.36144 | 0.41649 |
| ____ AS | 0.04701 | 4.57 | 8.181 | 0.04455 | 0.04505 | 0.05144 |
| ____ B | 0.10603 | 580.02 | 1.946 | 0.10365 | 0.10730 | 0.10713 |
| ____ BA | 0.01175 | 6 350.12 | 0.945 | 0.01174 | 0.01187 | 0.01165 |
| ____ BE | 0.01134 | 3 684.44 | 2.115 | 0.01107 | 0.01152 | 0.01144 |
| ____ CA | 0.50316 | 363.32 | 0.809 | 0.49962 | 0.50224 | 0.50761 |
| ____ CD | 0.01154 | 58.22 | 2.211 | 0.01154 | 0.01128 | 0.01179 |
| ____ CO | 0.01201 | 27.29 | 5.574 | 0.01230 | 0.01124 | 0.01247 |
| ____ CR | 0.03289 | 234.21 | 2.579 | 0.03191 | 0.03340 | 0.03335 |
| ____ CU | 0.02315 | 183.16 | 4.410 | 0.02268 | 0.02433 | 0.02246 |
| ____ FE | 0.48855 | 59.30 | 0.800 | 0.48446 | 0.48895 | 0.49224 |
| ____ K | 1.18438 | 417.87 | 4.983 | 1.14632 | 1.25236 | 1.15446 |
| ____ LI | 0.04969 | 264.57 | 2.514 | 0.04848 | 0.04962 | 0.05097 |
| ____ MG | 0.22646 | 210.85 | 3.495 | 0.23560 | 0.22200 | 0.22178 |
| ____ MN | 0.01289 | 450.90 | 1.319 | 0.01270 | 0.01303 | 0.01294 |
| ____ MO | 0.02413 | 18.34 | 2.139 | 0.02400 | 0.02470 | 0.02369 |
| ____ NA | 2.34527 | 2 599.08 | 0.525 | 2.34165 | 2.33519 | 2.35898 |
| ____ NI | 0.02297 | 42.83 | 2.380 | 0.02237 | 0.02344 | 0.02311 |
| ____ P | 0.24591 | 7.39 | 11.461 | 0.21351 | 0.26468 | 0.25955 |
| ____ PB | 0.03873 | 14.99 | 6.505 | 0.03592 | 0.04078 | 0.03951 |
| ____ S | 1.13543 | 68.01 | 0.361 | 1.13749 | 1.13071 | 1.13810 |
| ____ SB | 0.04478 | 9.36 | 12.275 | 0.03986 | 0.04375 | 0.05071 |
| ____ SE | 0.03548 | 3.54 | 37.482 | 0.04424 | 0.04202 | 0.02018 |
| ____ SI | 0.14505 | 14.94 | 8.568 | 0.13924 | 0.13658 | 0.15931 |
| ____ SN | 0.04322 | 13.73 | 2.900 | 0.04266 | 0.04466 | 0.04235 |
| ____ SR | 0.01184 | 6 502.31 | 0.600 | 0.01181 | 0.01193 | 0.01179 |
| ____ TI | 0.02363 | 760.77 | 1.596 | 0.02319 | 0.02384 | 0.02384 |
| ____ TL | 0.06980 | 7.80 | 2.362 | 0.06834 | 0.07158 | 0.06946 |
| ____ V | 0.01136 | 96.55 | 7.468 | 0.01106 | 0.01071 | 0.01232 |
| ____ Y1 | 3840.13833 | 3 840.14 | 0.098 | 3838.92000 | 3844.37000 | 3837.12500 |
| ____ Y2A | 145903.98537 | 145 903.99 | 0.559 | 146407.77911 | 144963.16341 | 146341.01359 |
| ____ Y2R | 7569.00833 | 7 569.01 | 0.935 | 7598.65000 | 7620.17500 | 7488.20000 |
| ____ ZN | 0.05253 | 177.32 | 0.544 | 0.05239 | 0.05285 | 0.05234 |
| ____ ZR | 0.11481 | 144.65 | 1.576 | 0.11666 | 0.11305 | 0.11472 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 8 Date/Time: 07/18/2017 02:20

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00114 | -89.48 | 91.529 | 0.00204 | 0.00137 | 0.00000 |
| ____ AL | 466.46126 | 31 954.27 | 2.001 | 472.06221 | 471.63692 | 455.68466 |
| ____ AS | -0.00358 | -0.54 | 270.794 | 0.00670 | -0.01257 | -0.00487 |
| ____ B | 0.04294 | 1 491.08 | 11.963 | 0.04256 | 0.03800 | 0.04826 |
| ____ BA | 0.00051 | 391.97 | 10.927 | 0.00049 | 0.00046 | 0.00057 |
| ____ BE | -0.00037 | -232.79 | 12.648 | -0.00038 | -0.00031 | -0.00040 |
| ____ CA | 476.36310 | 277 994.53 | 2.137 | 482.44657 | 482.02915 | 464.61359 |
| ____ CD | 0.00193 | 56.25 | 11.168 | 0.00169 | 0.00199 | 0.00211 |
| ____ CO | 0.00073 | 0.77 | 193.589 | 0.00105 | 0.00196 | -0.00082 |
| ____ CR | -0.00051 | -3.16 | 130.416 | -0.00037 | -0.00123 | 0.00007 |
| ____ CU | -0.00542 | 1.37 | 9.265 | -0.00524 | -0.00504 | -0.00599 |
| ____ FE | 188.51259 | 20 773.41 | 1.629 | 190.07720 | 190.48628 | 184.97428 |
| ____ K | 0.00393 | 38.83 | 1339.226 | 0.03564 | 0.03304 | -0.05689 |
| ____ LI | -0.00157 | 24.15 | 90.955 | -0.00307 | -0.00140 | -0.00023 |
| ____ MG | 509.96444 | 303 270.80 | 2.058 | 517.92158 | 513.89980 | 498.07194 |
| ____ MN | 0.00066 | 122.62 | 33.174 | 0.00082 | 0.00041 | 0.00074 |
| ____ MO | -0.00198 | -2.82 | 121.564 | 0.00062 | -0.00414 | -0.00242 |
| ____ NA | 0.15484 | 123.46 | 4.275 | 0.14733 | 0.15733 | 0.15985 |
| ____ NI | 0.00048 | 7.64 | 542.041 | -0.00233 | 0.00285 | 0.00093 |
| ____ P | 0.04490 | 1.44 | 23.371 | 0.04237 | 0.05643 | 0.03590 |
| ____ PB | 0.02591 | 54.47 | 17.083 | 0.03078 | 0.02211 | 0.02485 |
| ____ S | 0.23227 | 17.46 | 2.424 | 0.22599 | 0.23397 | 0.23686 |
| ____ SB | -0.00697 | 0.07 | 127.645 | -0.01672 | 0.00073 | -0.00493 |
| ____ SE | 0.00841 | -0.31 | 242.308 | 0.00081 | -0.00708 | 0.03150 |
| ____ SI | -0.00465 | 0.77 | 201.343 | 0.00210 | -0.01533 | -0.00072 |
| ____ SN | -0.00042 | 0.19 | 1367.714 | -0.00544 | 0.00582 | -0.00163 |
| ____ SR | 0.01699 | 8 068.39 | 0.550 | 0.01694 | 0.01693 | 0.01709 |
| ____ TI | -0.00380 | -87.15 | 5.048 | -0.00361 | -0.00381 | -0.00399 |
| ____ TL | -0.00859 | -1.40 | 51.694 | -0.00480 | -0.01348 | -0.00750 |
| ____ V | 0.00077 | -2.48 | 42.441 | 0.00087 | 0.00103 | 0.00040 |
| ____ Y1 | 3263.26667 | 3 263.27 | 0.546 | 3259.57500 | 3282.62500 | 3247.60000 |
| ____ Y2A | 126004.67120 | 126 004.67 | 0.186 | 126202.16697 | 126066.55844 | 125745.28819 |
| ____ Y2R | 7136.11073 | 7 136.11 | 1.596 | 7068.79613 | 7071.93184 | 7267.60423 |
| ____ ZN | 0.00737 | 69.79 | 5.235 | 0.00708 | 0.00722 | 0.00781 |
| ____ ZR | 0.00604 | 10.52 | 101.936 | 0.00013 | 0.01242 | 0.00558 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 9 Date/Time: 07/18/2017 02:24

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21546 | 1 462.74 | 0.736 | 0.21439 | 0.21469 | 0.21728 |
| ____ AL | 469.82247 | 31 454.74 | 1.523 | 466.21724 | 478.06430 | 465.18586 |
| ____ AS | 0.10819 | 9.59 | 12.779 | 0.11743 | 0.09230 | 0.11485 |
| ____ B | 0.03646 | 1 454.88 | 8.930 | 0.03974 | 0.03323 | 0.03641 |
| ____ BA | 0.50236 | 224 543.34 | 0.708 | 0.50109 | 0.49960 | 0.50637 |
| ____ BE | 0.48500 | 139 419.54 | 0.648 | 0.48376 | 0.48267 | 0.48857 |
| ____ CA | 480.48444 | 273 851.07 | 1.565 | 477.76106 | 488.98414 | 474.70812 |
| ____ CD | 0.92639 | 4 187.20 | 1.166 | 0.93601 | 0.92846 | 0.91470 |
| ____ CO | 0.45653 | 895.26 | 0.997 | 0.46102 | 0.45664 | 0.45192 |
| ____ CR | 0.46519 | 2 822.58 | 0.925 | 0.46832 | 0.46698 | 0.46028 |
| ____ CU | 0.49299 | 3 604.57 | 0.431 | 0.49487 | 0.49341 | 0.49069 |
| ____ FE | 190.65259 | 20 520.38 | 1.383 | 189.22759 | 193.69455 | 189.03564 |
| ____ K | 0.02667 | 44.64 | 188.357 | -0.01533 | 0.08231 | 0.01302 |
| ____ LI | 0.00081 | 35.17 | 409.853 | 0.00336 | 0.00197 | -0.00292 |
| ____ MG | 518.77807 | 299 481.65 | 3.338 | 521.35617 | 534.66260 | 500.31544 |
| ____ MN | 0.48388 | 14 548.92 | 0.725 | 0.48265 | 0.48115 | 0.48784 |
| ____ MO | -0.00330 | -3.71 | 58.485 | -0.00321 | -0.00141 | -0.00527 |
| ____ NA | 0.13850 | 103.43 | 12.742 | 0.14460 | 0.15228 | 0.11861 |
| ____ NI | 0.89341 | 1 138.52 | 1.238 | 0.90061 | 0.89894 | 0.88067 |
| ____ P | 0.06429 | 1.89 | 10.638 | 0.06659 | 0.06969 | 0.05660 |
| ____ PB | 0.52853 | 263.39 | 0.319 | 0.53039 | 0.52809 | 0.52711 |
| ____ S | 0.24820 | 18.01 | 8.116 | 0.22588 | 0.26504 | 0.25367 |
| ____ SB | 0.59602 | 91.52 | 1.772 | 0.60801 | 0.59196 | 0.58809 |
| ____ SE | 0.54697 | 38.31 | 5.137 | 0.51502 | 0.55810 | 0.56781 |
| ____ SI | -0.01591 | -0.22 | 32.899 | -0.01202 | -0.02186 | -0.01384 |
| ____ SN | -0.00411 | -0.78 | 96.034 | -0.00180 | -0.00866 | -0.00186 |
| ____ SR | 0.01700 | 7 963.97 | 0.955 | 0.01695 | 0.01687 | 0.01718 |
| ____ TI | -0.00419 | -84.09 | 12.718 | -0.00469 | -0.00424 | -0.00363 |
| ____ TL | 0.10509 | 7.34 | 2.615 | 0.10361 | 0.10341 | 0.10827 |
| ____ V | 0.50997 | 4 222.83 | 1.705 | 0.51855 | 0.51021 | 0.50116 |
| ____ Y1 | 3232.19500 | 3 232.20 | 1.633 | 3173.08500 | 3248.88500 | 3274.61500 |
| ____ Y2A | 124270.22516 | 124 270.23 | 0.457 | 124696.59636 | 124488.47961 | 123625.59952 |
| ____ Y2R | 6970.54825 | 6 970.55 | 1.554 | 6997.90545 | 6851.13932 | 7062.60000 |
| ____ ZN | 0.99699 | 2 864.96 | 1.255 | 1.00371 | 1.00470 | 0.98256 |
| ____ ZR | 0.00991 | 14.68 | 49.209 | 0.01484 | 0.00509 | 0.00979 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 10 Date/Time: 07/18/2017 02:27

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50134 | 4 081.07 | 0.501 | 0.50164 | 0.49868 | 0.50368 |
| ____ AL | 24.87107 | 1 705.72 | 0.441 | 24.82930 | 24.78849 | 24.99541 |
| ____ AS | 0.50225 | 51.46 | 0.973 | 0.49748 | 0.50725 | 0.50200 |
| ____ B | 0.48893 | 2 759.01 | 0.119 | 0.48915 | 0.48827 | 0.48938 |
| ____ BA | 0.50258 | 253 546.37 | 0.416 | 0.50485 | 0.50074 | 0.50213 |
| ____ BE | 0.47928 | 155 499.95 | 0.319 | 0.48094 | 0.47895 | 0.47794 |
| ____ CA | 24.96190 | 15 719.04 | 0.155 | 24.92701 | 24.95512 | 25.00357 |
| ____ CD | 0.50376 | 2 571.78 | 1.225 | 0.50276 | 0.51036 | 0.49815 |
| ____ CO | 0.50350 | 1 127.47 | 1.337 | 0.50214 | 0.51080 | 0.49754 |
| ____ CR | 0.48042 | 3 289.90 | 0.462 | 0.48042 | 0.48264 | 0.47820 |
| ____ CU | 0.49227 | 4 000.52 | 0.223 | 0.49142 | 0.49187 | 0.49350 |
| ____ FE | 25.16758 | 2 937.56 | 0.255 | 25.21991 | 25.18699 | 25.09585 |
| ____ K | 24.53112 | 7 785.53 | 0.562 | 24.54871 | 24.65924 | 24.38541 |
| ____ LI | 0.49536 | 2 581.74 | 0.102 | 0.49515 | 0.49593 | 0.49498 |
| ____ MG | 24.85259 | 20 654.39 | 0.164 | 24.89476 | 24.84962 | 24.81340 |
| ____ MN | 0.50819 | 17 138.66 | 0.463 | 0.50994 | 0.50551 | 0.50911 |
| ____ MO | 0.50101 | 397.13 | 0.868 | 0.50128 | 0.50521 | 0.49653 |
| ____ NA | 24.84234 | 27 674.62 | 0.138 | 24.81467 | 24.83155 | 24.88081 |
| ____ NI | 0.50075 | 730.26 | 0.517 | 0.49847 | 0.50356 | 0.50020 |
| ____ P | 0.53094 | 14.85 | 7.116 | 0.56704 | 0.49168 | 0.53408 |
| ____ PB | 0.50933 | 241.28 | 0.312 | 0.51110 | 0.50888 | 0.50802 |
| ____ S | 25.32144 | 1 285.44 | 0.468 | 25.43779 | 25.32572 | 25.20082 |
| ____ SB | 0.50521 | 88.71 | 0.806 | 0.50776 | 0.50051 | 0.50736 |
| ____ SE | 0.50967 | 41.97 | 2.104 | 0.52132 | 0.50022 | 0.50745 |
| ____ SI | 24.92787 | 2 326.25 | 0.288 | 24.87349 | 24.90104 | 25.00908 |
| ____ SN | 0.48387 | 144.10 | 0.304 | 0.48557 | 0.48306 | 0.48298 |
| ____ SR | 0.50886 | 270 104.00 | 0.283 | 0.51034 | 0.50876 | 0.50747 |
| ____ TI | 0.50696 | 15 349.00 | 0.411 | 0.50750 | 0.50466 | 0.50872 |
| ____ TL | 0.52651 | 55.71 | 2.044 | 0.52962 | 0.53537 | 0.51453 |
| ____ V | 0.50567 | 4 654.67 | 0.102 | 0.50622 | 0.50520 | 0.50559 |
| ____ Y1 | 3686.19667 | 3 686.20 | 1.094 | 3694.85000 | 3642.23000 | 3721.51000 |
| ____ Y2A | 140257.25898 | 140 257.26 | 0.077 | 140336.70000 | 140300.70943 | 140134.36751 |
| ____ Y2R | 7494.49261 | 7 494.49 | 0.248 | 7483.38497 | 7515.98924 | 7484.10361 |
| ____ ZN | 0.50560 | 1 638.28 | 0.532 | 0.50282 | 0.50819 | 0.50578 |
| ____ ZR | 0.50471 | 617.04 | 0.746 | 0.50298 | 0.50212 | 0.50903 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 11 Date/Time: 07/18/2017 02:30

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00003 | -14.01 | 1866.818 | 0.00064 | -0.00022 | -0.00033 |
| ____ AL | 0.04632 | 30.15 | 99.964 | 0.00253 | 0.09478 | 0.04164 |
| ____ AS | 0.00917 | 0.48 | 72.950 | 0.01599 | 0.00262 | 0.00891 |
| ____ B | 0.00111 | 2.61 | 11.292 | 0.00121 | 0.00116 | 0.00097 |
| ____ BA | 0.00015 | 261.62 | 8.511 | 0.00015 | 0.00016 | 0.00013 |
| ____ BE | 0.00018 | -84.62 | 8.738 | 0.00020 | 0.00018 | 0.00017 |
| ____ CA | 0.06872 | 87.63 | 10.445 | 0.07406 | 0.07153 | 0.06056 |
| ____ CD | 0.00022 | -1.95 | 213.418 | 0.00016 | 0.00073 | -0.00022 |
| ____ CO | 0.00048 | 0.31 | 73.832 | 0.00071 | 0.00007 | 0.00066 |
| ____ CR | 0.00022 | 1.50 | 236.560 | -0.00034 | 0.00032 | 0.00069 |
| ____ CU | -0.00023 | -14.87 | 307.358 | -0.00020 | 0.00046 | -0.00095 |
| ____ FE | 0.03494 | 5.82 | 36.013 | 0.02159 | 0.04658 | 0.03665 |
| ____ K | 0.04004 | 52.93 | 150.706 | 0.10657 | -0.01117 | 0.02473 |
| ____ LI | 0.00138 | 10.77 | 204.687 | 0.00225 | 0.00367 | -0.00178 |
| ____ MG | 0.06047 | 70.03 | 11.925 | 0.06879 | 0.05650 | 0.05612 |
| ____ MN | 0.00018 | 4.99 | 178.055 | -0.00011 | 0.00013 | 0.00053 |
| ____ MO | 0.00105 | -0.78 | 113.512 | 0.00012 | 0.00238 | 0.00064 |
| ____ NA | 0.03891 | 0.35 | 40.575 | 0.02069 | 0.04861 | 0.04743 |
| ____ NI | -0.00066 | 7.11 | 103.756 | -0.00042 | -0.00142 | -0.00013 |
| ____ P | 0.01460 | 0.82 | 56.064 | 0.00515 | 0.01945 | 0.01919 |
| ____ PB | 0.00553 | -1.42 | 40.239 | 0.00304 | 0.00731 | 0.00625 |
| ____ S | 0.00022 | 8.17 | 4040.162 | 0.01062 | -0.00402 | -0.00593 |
| ____ SB | 0.00515 | 2.20 | 85.832 | 0.00038 | 0.00597 | 0.00910 |
| ____ SE | -0.01664 | -0.87 | 37.069 | -0.02279 | -0.01666 | -0.01046 |
| ____ SI | 0.01369 | 2.56 | 137.236 | -0.00747 | 0.02841 | 0.02014 |
| ____ SN | -0.00022 | 0.28 | 455.870 | -0.00050 | -0.00104 | 0.00089 |
| ____ SR | 0.00018 | 61.19 | 17.407 | 0.00020 | 0.00020 | 0.00015 |
| ____ TI | 0.00019 | 24.20 | 131.340 | -0.00010 | 0.00034 | 0.00034 |
| ____ TL | -0.00354 | -0.64 | 132.304 | -0.00430 | -0.00778 | 0.00148 |
| ____ V | 0.00023 | -8.47 | 280.307 | -0.00043 | 0.00086 | 0.00026 |
| ____ Y1 | 3757.46167 | 3 757.46 | 1.500 | 3694.44500 | 3774.90000 | 3803.04000 |
| ____ Y2A | 144411.73978 | 144 411.74 | 0.467 | 145177.25594 | 144155.61888 | 143902.34453 |
| ____ Y2R | 7587.30000 | 7 587.30 | 0.701 | 7528.67500 | 7600.65000 | 7632.57500 |
| ____ ZN | 0.00016 | 1.90 | 196.115 | 0.00053 | 0.00002 | -0.00006 |
| ____ ZR | -0.00149 | 1.92 | 280.450 | -0.00002 | -0.00621 | 0.00176 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 12 Date/Time: 07/18/2017 02:33

Sample Number: **PBW** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00018 | -12.86 | 652.326 | 0.00151 | -0.00039 | -0.00059 |
| ____ AL | -0.01727 | 25.68 | 166.342 | -0.00853 | 0.00607 | -0.04936 |
| ____ AS | 0.00095 | -0.39 | 593.420 | 0.00365 | -0.00550 | 0.00469 |
| ____ B | 0.00161 | 5.11 | 8.660 | 0.00166 | 0.00172 | 0.00146 |
| ____ BA | 0.00001 | 194.56 | 146.882 | -0.00001 | 0.00002 | 0.00003 |
| ____ BE | 0.00006 | -126.02 | 39.516 | 0.00006 | 0.00008 | 0.00004 |
| ____ CA | 0.02503 | 59.58 | 24.138 | 0.02124 | 0.02185 | 0.03200 |
| ____ CD | -0.00030 | -4.67 | 111.034 | -0.00002 | -0.00066 | -0.00020 |
| ____ CO | 0.00039 | 0.11 | 101.273 | 0.00028 | 0.00083 | 0.00006 |
| ____ CR | 0.00011 | 0.70 | 234.346 | 0.00038 | 0.00001 | -0.00008 |
| ____ CU | -0.00096 | -21.23 | 83.306 | -0.00162 | -0.00120 | -0.00007 |
| ____ FE | 0.00157 | 1.85 | 639.977 | 0.00726 | 0.00744 | -0.01000 |
| ____ K | -0.04541 | 25.62 | 47.813 | -0.06510 | -0.04900 | -0.02213 |
| ____ LI | 0.00010 | 4.08 | 2445.683 | -0.00168 | 0.00302 | -0.00102 |
| ____ MG | 0.01977 | 35.25 | 6.306 | 0.01915 | 0.02121 | 0.01896 |
| ____ MN | 0.00025 | 7.59 | 37.081 | 0.00026 | 0.00016 | 0.00034 |
| ____ MO | 0.00107 | -0.76 | 134.179 | -0.00043 | 0.00244 | 0.00122 |
| ____ NA | 0.02195 | -18.78 | 21.094 | 0.02199 | 0.01730 | 0.02656 |
| ____ NI | 0.00004 | 8.17 | 3211.573 | -0.00144 | 0.00119 | 0.00038 |
| ____ P | 0.00549 | 0.57 | 124.681 | 0.00742 | 0.01117 | -0.00211 |
| ____ PB | 0.00296 | -2.69 | 121.596 | 0.00328 | -0.00079 | 0.00639 |
| ____ S | -0.00358 | 7.99 | 225.691 | -0.01031 | -0.00584 | 0.00539 |
| ____ SB | 0.00340 | 1.90 | 129.052 | 0.00032 | 0.00146 | 0.00843 |
| ____ SE | -0.00925 | -0.26 | 70.398 | -0.01274 | -0.01328 | -0.00174 |
| ____ SI | 0.01001 | 2.19 | 79.474 | 0.01915 | 0.00620 | 0.00467 |
| ____ SN | 0.00064 | 0.54 | 302.163 | -0.00150 | 0.00119 | 0.00221 |
| ____ SR | 0.00007 | -0.77 | 30.073 | 0.00006 | 0.00009 | 0.00006 |
| ____ TI | 0.00015 | 23.20 | 89.594 | 0.00025 | 0.00022 | 0.00000 |
| ____ TL | -0.00745 | -1.08 | 17.263 | -0.00798 | -0.00598 | -0.00838 |
| ____ V | -0.00009 | -11.67 | 1351.015 | -0.00137 | 0.00004 | 0.00106 |
| ____ Y1 | 3765.41167 | 3 765.41 | 0.519 | 3742.83000 | 3776.83500 | 3776.57000 |
| ____ Y2A | 145825.43705 | 145 825.44 | 0.098 | 145852.38593 | 145953.08438 | 145670.84083 |
| ____ Y2R | 7551.52500 | 7 551.53 | 1.024 | 7470.95000 | 7558.47500 | 7625.15000 |
| ____ ZN | 0.00039 | 2.65 | 60.618 | 0.00014 | 0.00061 | 0.00042 |
| ____ ZR | -0.00081 | 2.77 | 452.296 | -0.00499 | 0.00189 | 0.00067 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 13 Date/Time: 07/18/2017 02:36

Sample Number: **LCSW** Class: **** Batch: 171951063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04966 | 424.14 | 1.286 | 0.04899 | 0.04972 | 0.05026 |
| ____ AL | 2.01885 | 165.57 | 1.367 | 2.04741 | 2.01682 | 1.99231 |
| ____ AS | 0.16145 | 16.68 | 4.426 | 0.15970 | 0.16932 | 0.15535 |
| ____ B | 1.80684 | 9 777.65 | 0.291 | 1.81195 | 1.80144 | 1.80712 |
| ____ BA | 2.00077 | 1 037 878.11 | 0.407 | 2.00004 | 1.99303 | 2.00925 |
| ____ BE | 0.04823 | 15 968.32 | 0.330 | 0.04838 | 0.04807 | 0.04824 |
| ____ CA | 4.63740 | 2 961.74 | 0.707 | 4.65048 | 4.66162 | 4.60011 |
| ____ CD | 0.05034 | 261.12 | 0.872 | 0.04984 | 0.05067 | 0.05051 |
| ____ CO | 0.51347 | 1 185.70 | 0.034 | 0.51361 | 0.51328 | 0.51353 |
| ____ CR | 0.19367 | 1 364.36 | 0.180 | 0.19397 | 0.19328 | 0.19375 |
| ____ CU | 0.25068 | 2 079.54 | 0.475 | 0.25201 | 0.25031 | 0.24972 |
| ____ FE | 1.02649 | 121.68 | 1.358 | 1.02777 | 1.01194 | 1.03974 |
| ____ K | 10.05173 | 3 216.88 | 0.888 | 10.13841 | 10.05671 | 9.96008 |
| ____ LI | 1.01359 | 5 281.74 | 0.076 | 1.01305 | 1.01325 | 1.01447 |
| ____ MG | 2.11830 | 1 799.55 | 0.430 | 2.12566 | 2.12114 | 2.10811 |
| ____ MN | 0.51459 | 17 838.70 | 0.188 | 0.51570 | 0.51396 | 0.51411 |
| ____ MO | 2.00580 | 1 640.81 | 0.340 | 2.01104 | 1.99809 | 2.00828 |
| ____ NA | 10.12504 | 11 265.09 | 0.973 | 10.13990 | 10.21532 | 10.01991 |
| ____ NI | 0.51665 | 775.80 | 0.560 | 0.51899 | 0.51341 | 0.51754 |
| ____ P | 0.91765 | 26.08 | 12.217 | 0.90929 | 1.03370 | 0.80995 |
| ____ PB | 0.15522 | 71.89 | 2.211 | 0.15605 | 0.15817 | 0.15145 |
| ____ S | 1.28098 | 74.72 | 0.538 | 1.27302 | 1.28485 | 1.28506 |
| ____ SB | 0.51100 | 91.00 | 1.241 | 0.50430 | 0.51179 | 0.51691 |
| ____ SE | 0.14776 | 12.93 | 3.762 | 0.14848 | 0.15292 | 0.14188 |
| ____ SI | 1.12522 | 108.48 | 1.998 | 1.14153 | 1.09957 | 1.13455 |
| ____ SN | 3.81281 | 1 165.79 | 0.156 | 3.81705 | 3.80603 | 3.81535 |
| ____ SR | 1.00793 | 550 451.23 | 0.298 | 1.01031 | 1.00455 | 1.00893 |
| ____ TI | 0.99469 | 30 903.53 | 0.279 | 0.99789 | 0.99308 | 0.99309 |
| ____ TL | 0.16764 | 16.26 | 2.090 | 0.16455 | 0.17145 | 0.16693 |
| ____ V | 0.49867 | 4 497.51 | 0.377 | 0.49955 | 0.49651 | 0.49995 |
| ____ Y1 | 3792.41333 | 3 792.41 | 1.077 | 3837.86500 | 3758.83500 | 3780.54000 |
| ____ Y2A | 144295.01770 | 144 295.02 | 0.340 | 143966.35286 | 144858.15532 | 144060.54493 |
| ____ Y2R | 7502.41799 | 7 502.42 | 0.899 | 7502.72446 | 7434.79345 | 7569.73605 |
| ____ ZN | 0.49718 | 1 651.05 | 0.319 | 0.49887 | 0.49572 | 0.49694 |
| ____ ZR | 1.01582 | 1 239.43 | 0.676 | 1.01063 | 1.02360 | 1.01322 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 14 Date/Time: 07/18/2017 02:39

Sample Number: **9100479** Class: U*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00052 | -9.25 | 288.865 | -0.00101 | 0.00058 | 0.00198 |
| ____ AL | 0.02110 | 27.62 | 68.611 | 0.00949 | 0.01648 | 0.03731 |
| ____ AS | -0.00465 | -0.92 | 69.442 | -0.00760 | -0.00120 | -0.00513 |
| ____ B | 0.09630 | 485.20 | 0.752 | 0.09632 | 0.09701 | 0.09556 |
| ____ BA | 0.07071 | 34 569.75 | 0.063 | 0.07074 | 0.07066 | 0.07073 |
| ____ BE | -0.00020 | -197.39 | 17.547 | -0.00024 | -0.00018 | -0.00018 |
| ____ CA | 266.25912 | 162 328.70 | 1.174 | 269.32349 | 266.37878 | 263.07511 |
| ____ CD | -0.00037 | -4.75 | 55.007 | -0.00015 | -0.00042 | -0.00055 |
| ____ CO | 0.00159 | 2.19 | 30.405 | 0.00214 | 0.00140 | 0.00123 |
| ____ CR | 0.00057 | 3.73 | 170.893 | -0.00039 | 0.00055 | 0.00156 |
| ____ CU | 0.00592 | 65.94 | 17.770 | 0.00472 | 0.00664 | 0.00641 |
| ____ FE | 0.01979 | 3.89 | 68.394 | 0.03069 | 0.02404 | 0.00464 |
| ____ K | 5.54063 | 1 759.26 | 0.322 | 5.54161 | 5.52232 | 5.55795 |
| ____ LI | 0.03719 | 209.98 | 8.113 | 0.04057 | 0.03621 | 0.03478 |
| ____ MG | 37.94148 | 30 784.71 | 1.285 | 38.38475 | 38.02070 | 37.41900 |
| ____ MN | 1.02880 | 33 448.64 | 0.247 | 1.03043 | 1.02588 | 1.03010 |
| ____ MO | 0.00427 | 1.72 | 13.426 | 0.00390 | 0.00398 | 0.00493 |
| ____ NA | 65.70223 | 72 030.50 | 1.215 | 66.48436 | 65.73339 | 64.88895 |
| ____ NI | 0.00691 | 16.57 | 3.320 | 0.00670 | 0.00715 | 0.00686 |
| ____ P | 0.00635 | 0.56 | 389.419 | 0.03326 | 0.00122 | -0.01542 |
| ____ PB | 0.00199 | -2.38 | 204.044 | 0.00443 | -0.00270 | 0.00425 |
| ____ S | 138.69668 | 6 706.98 | 2.084 | 139.43173 | 141.14912 | 135.50919 |
| ____ SB | -0.00033 | 1.17 | 2554.192 | 0.00629 | -0.00968 | 0.00241 |
| ____ SE | 0.01515 | 1.66 | 87.380 | 0.02087 | 0.02457 | 0.00001 |
| ____ SI | 18.21077 | 1 670.79 | 0.126 | 18.18823 | 18.21015 | 18.23394 |
| ____ SN | 0.00151 | 0.75 | 161.005 | -0.00121 | 0.00226 | 0.00347 |
| ____ SR | 1.37075 | 702 107.07 | 0.256 | 1.36671 | 1.37269 | 1.37286 |
| ____ TI | -0.00009 | 14.36 | 190.084 | -0.00023 | 0.00011 | -0.00016 |
| ____ TL | 0.00022 | -0.21 | 2903.535 | -0.00552 | 0.00697 | -0.00079 |
| ____ V | 0.00114 | -0.20 | 57.964 | 0.00143 | 0.00159 | 0.00038 |
| ____ Y1 | 3529.59973 | 3 529.60 | 0.737 | 3536.91631 | 3500.70965 | 3551.17324 |
| ____ Y2A | 135330.53389 | 135 330.53 | 0.293 | 135113.27734 | 135788.61728 | 135089.70706 |
| ____ Y2R | 7369.06643 | 7 369.07 | 1.256 | 7282.22422 | 7358.52443 | 7466.45065 |
| ____ ZN | 0.12267 | 377.68 | 0.099 | 0.12259 | 0.12281 | 0.12261 |
| ____ ZR | 0.00000 | 3.61 | 0936.529 | 0.00427 | -0.00117 | -0.00309 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 15 Date/Time: 07/18/2017 02:42

Sample Number: **9100479** Class: UP** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01816 | 148.63 | 3.721 | 0.01763 | 0.01892 | 0.01793 |
| ____ AL | 0.91025 | 86.90 | 5.600 | 0.93690 | 0.94238 | 0.85147 |
| ____ AS | 0.48153 | 47.35 | 1.150 | 0.47825 | 0.48793 | 0.47842 |
| ____ B | 0.27797 | 1 412.87 | 0.789 | 0.27681 | 0.27659 | 0.28050 |
| ____ BA | 0.11627 | 56 838.43 | 0.266 | 0.11592 | 0.11646 | 0.11644 |
| ____ BE | 0.01879 | 5 761.65 | 0.187 | 0.01879 | 0.01875 | 0.01882 |
| ____ CA | 262.93219 | 160 688.82 | 1.845 | 267.99667 | 262.47356 | 258.32636 |
| ____ CD | 0.04589 | 221.89 | 0.473 | 0.04579 | 0.04614 | 0.04574 |
| ____ CO | 0.09305 | 199.23 | 0.792 | 0.09264 | 0.09262 | 0.09390 |
| ____ CR | 0.18463 | 1 222.22 | 1.369 | 0.18574 | 0.18174 | 0.18642 |
| ____ CU | 0.47464 | 3 761.12 | 1.240 | 0.47342 | 0.46946 | 0.48104 |
| ____ FE | 0.47813 | 56.67 | 0.561 | 0.47757 | 0.47577 | 0.48104 |
| ____ K | 7.44787 | 2 356.80 | 0.352 | 7.47813 | 7.43284 | 7.43265 |
| ____ LI | 0.99495 | 5 120.66 | 0.490 | 0.99222 | 0.99205 | 1.00058 |
| ____ MG | 38.35703 | 31 185.43 | 1.729 | 39.05033 | 38.29221 | 37.72854 |
| ____ MN | 1.05973 | 34 519.43 | 0.453 | 1.05428 | 1.06332 | 1.06158 |
| ____ MO | 0.19246 | 145.61 | 0.812 | 0.19296 | 0.19371 | 0.19071 |
| ____ NA | 66.45985 | 73 025.34 | 1.814 | 67.67928 | 66.43171 | 65.26856 |
| ____ NI | 0.14045 | 201.91 | 0.475 | 0.14031 | 0.14118 | 0.13987 |
| ____ P | 0.96500 | 25.60 | 6.582 | 0.98199 | 0.89471 | 1.01829 |
| ____ PB | 0.46148 | 207.16 | 0.522 | 0.46388 | 0.46149 | 0.45907 |
| ____ S | 136.97573 | 6 646.30 | 0.732 | 136.42560 | 136.36923 | 138.13236 |
| ____ SB | 0.38803 | 65.16 | 0.763 | 0.38811 | 0.39095 | 0.38503 |
| ____ SE | 0.78436 | 62.08 | 0.748 | 0.79017 | 0.77844 | 0.78447 |
| ____ SI | 18.85921 | 1 734.48 | 0.187 | 18.86840 | 18.82018 | 18.88905 |
| ____ SN | 0.54639 | 156.27 | 0.638 | 0.54959 | 0.54691 | 0.54267 |
| ____ SR | 1.36615 | 701 067.28 | 0.291 | 1.36311 | 1.36469 | 1.37064 |
| ____ TI | 0.09821 | 2 883.25 | 1.125 | 0.09768 | 0.09747 | 0.09948 |
| ____ TL | 0.91570 | 97.32 | 0.902 | 0.91891 | 0.92186 | 0.90631 |
| ____ V | 0.09939 | 863.15 | 1.054 | 0.09935 | 0.09836 | 0.10046 |
| ____ Y1 | 3541.20676 | 3 541.21 | 0.570 | 3557.28854 | 3518.54129 | 3547.79044 |
| ____ Y2A | 135586.15833 | 135 586.16 | 0.163 | 135836.55000 | 135416.10000 | 135505.82500 |
| ____ Y2R | 7386.29009 | 7 386.29 | 1.580 | 7267.30769 | 7391.03905 | 7500.52353 |
| ____ ZN | 0.23259 | 719.90 | 0.297 | 0.23222 | 0.23338 | 0.23215 |
| ____ ZR | 0.94863 | 1 139.85 | 0.478 | 0.94666 | 0.94541 | 0.95381 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 16 Date/Time: 07/18/2017 02:45

Sample Number: **9100479** Class: D*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00060 | -17.67 | 90.039 | -0.00001 | -0.00106 | -0.00073 |
| ____ AL | -0.03742 | 23.61 | 122.033 | 0.01064 | -0.04266 | -0.08023 |
| ____ AS | 0.00170 | -0.29 | 367.733 | -0.00493 | 0.00745 | 0.00256 |
| ____ B | 0.09368 | 464.47 | 1.396 | 0.09504 | 0.09244 | 0.09356 |
| ____ BA | 0.07246 | 34 870.34 | 0.904 | 0.07175 | 0.07258 | 0.07305 |
| ____ BE | -0.00023 | -203.40 | 5.122 | -0.00023 | -0.00021 | -0.00023 |
| ____ CA | 272.73730 | 165 292.24 | 1.096 | 270.87329 | 276.18548 | 271.15312 |
| ____ CD | -0.00016 | -3.66 | 183.074 | -0.00005 | 0.00006 | -0.00048 |
| ____ CO | 0.00189 | 2.81 | 59.977 | 0.00072 | 0.00197 | 0.00299 |
| ____ CR | 0.00067 | 4.31 | 78.262 | 0.00127 | 0.00044 | 0.00030 |
| ____ CU | 0.00616 | 67.49 | 18.478 | 0.00698 | 0.00486 | 0.00663 |
| ____ FE | -0.00182 | 1.41 | 861.972 | -0.01812 | -0.00051 | 0.01317 |
| ____ K | 5.65970 | 1 786.09 | 1.168 | 5.58672 | 5.67684 | 5.71553 |
| ____ LI | 0.03831 | 215.09 | 9.347 | 0.03667 | 0.03584 | 0.04242 |
| ____ MG | 38.78262 | 31 277.66 | 1.318 | 38.49639 | 39.37264 | 38.47882 |
| ____ MN | 1.05868 | 33 885.73 | 0.786 | 1.05483 | 1.05297 | 1.06823 |
| ____ MO | 0.00304 | 0.78 | 26.740 | 0.00213 | 0.00331 | 0.00368 |
| ____ NA | 67.16113 | 73 220.81 | 1.024 | 66.67103 | 67.94712 | 66.86525 |
| ____ NI | 0.00660 | 16.03 | 4.450 | 0.00664 | 0.00629 | 0.00688 |
| ____ P | 0.02489 | 1.03 | 32.149 | 0.03391 | 0.02214 | 0.01863 |
| ____ PB | -0.00086 | -3.65 | 286.312 | -0.00120 | 0.00176 | -0.00315 |
| ____ S | 142.42601 | 6 840.84 | 0.855 | 141.62903 | 141.82094 | 143.82805 |
| ____ SB | -0.00658 | 0.14 | 64.141 | -0.00262 | -0.01102 | -0.00610 |
| ____ SE | 0.01575 | 1.70 | 51.945 | 0.00649 | 0.01878 | 0.02198 |
| ____ SI | 18.56743 | 1 693.90 | 0.579 | 18.44870 | 18.59565 | 18.65794 |
| ____ SN | 0.00227 | 0.96 | 63.054 | 0.00391 | 0.00163 | 0.00127 |
| ____ SR | 1.41565 | 713 861.86 | 0.402 | 1.40943 | 1.42061 | 1.41692 |
| ____ TI | -0.00061 | -0.62 | 42.240 | -0.00042 | -0.00090 | -0.00050 |
| ____ TL | -0.00044 | -0.27 | 1198.017 | -0.00221 | 0.00547 | -0.00458 |
| ____ V | 0.00128 | 1.22 | 49.584 | 0.00074 | 0.00197 | 0.00112 |
| ____ Y1 | 3505.58594 | 3 505.59 | 0.226 | 3514.64389 | 3499.90005 | 3502.21389 |
| ____ Y2A | 133232.85706 | 133 232.86 | 0.535 | 133800.41409 | 133464.60708 | 132433.55000 |
| ____ Y2R | 7327.73258 | 7 327.73 | 0.898 | 7371.90248 | 7252.07293 | 7359.22233 |
| ____ ZN | 0.12515 | 382.65 | 0.441 | 0.12545 | 0.12549 | 0.12451 |
| ____ ZR | 0.00456 | 9.02 | 58.822 | 0.00439 | 0.00731 | 0.00196 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 17 Date/Time: 07/18/2017 02:49

Sample Number: **9100479** Class: R*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05168 | 412.20 | 2.591 | 0.05322 | 0.05082 | 0.05100 |
| ____ AL | 1.97526 | 161.04 | 0.406 | 1.96859 | 1.98417 | 1.97303 |
| ____ AS | 0.16392 | 15.59 | 1.983 | 0.16128 | 0.16291 | 0.16755 |
| ____ B | 2.00065 | 10 107.63 | 0.441 | 2.00321 | 1.99083 | 2.00791 |
| ____ BA | 2.03370 | 984 955.56 | 0.585 | 2.02145 | 2.03444 | 2.04521 |
| ____ BE | 0.04887 | 15 106.76 | 0.416 | 0.04872 | 0.04877 | 0.04910 |
| ____ CA | 268.39038 | 164 780.70 | 1.200 | 267.53958 | 265.68183 | 271.94974 |
| ____ CD | 0.04926 | 235.17 | 0.094 | 0.04923 | 0.04924 | 0.04931 |
| ____ CO | 0.48795 | 1 037.07 | 0.393 | 0.48869 | 0.48938 | 0.48577 |
| ____ CR | 0.19592 | 1 288.66 | 1.332 | 0.19689 | 0.19791 | 0.19297 |
| ____ CU | 0.25665 | 2 018.88 | 0.474 | 0.25535 | 0.25775 | 0.25686 |
| ____ FE | 1.01740 | 119.30 | 2.123 | 0.99850 | 1.01276 | 1.04095 |
| ____ K | 15.85520 | 4 996.90 | 0.396 | 15.83639 | 15.80399 | 15.92522 |
| ____ LI | 1.06131 | 5 487.05 | 0.357 | 1.05872 | 1.05956 | 1.06566 |
| ____ MG | 39.69609 | 32 409.41 | 1.138 | 39.60206 | 39.29882 | 40.18738 |
| ____ MN | 1.52463 | 49 346.91 | 0.334 | 1.52671 | 1.51883 | 1.52836 |
| ____ MO | 2.10806 | 1 587.51 | 0.259 | 2.11065 | 2.11174 | 2.10177 |
| ____ NA | 74.87500 | 82 681.49 | 1.098 | 74.63066 | 74.20246 | 75.79188 |
| ____ NI | 0.49161 | 679.32 | 0.343 | 0.49338 | 0.49143 | 0.49002 |
| ____ P | 1.01475 | 26.52 | 3.120 | 1.01969 | 1.04364 | 0.98091 |
| ____ PB | 0.14340 | 61.42 | 1.133 | 0.14370 | 0.14165 | 0.14486 |
| ____ S | 141.30882 | 6 758.68 | 1.035 | 141.18293 | 139.91317 | 142.83035 |
| ____ SB | 0.54010 | 88.47 | 0.565 | 0.54160 | 0.53659 | 0.54211 |
| ____ SE | 0.17312 | 13.87 | 2.977 | 0.17697 | 0.16726 | 0.17513 |
| ____ SI | 19.17661 | 1 774.10 | 0.686 | 19.07369 | 19.13138 | 19.32477 |
| ____ SN | 3.95484 | 1 113.12 | 0.097 | 3.95672 | 3.95737 | 3.95043 |
| ____ SR | 2.32702 | 1 186 557.35 | 0.129 | 2.32897 | 2.32854 | 2.32355 |
| ____ TI | 1.03485 | 30 017.41 | 0.567 | 1.03715 | 1.02818 | 1.03922 |
| ____ TL | 0.16006 | 14.06 | 3.489 | 0.15609 | 0.15765 | 0.16645 |
| ____ V | 0.51721 | 4 351.71 | 0.620 | 0.51781 | 0.52007 | 0.51374 |
| ____ Y1 | 3491.06964 | 3 491.07 | 1.060 | 3498.53690 | 3523.78219 | 3450.88982 |
| ____ Y2A | 134719.86487 | 134 719.86 | 0.063 | 134797.82348 | 134629.54636 | 134732.22477 |
| ____ Y2R | 7421.72373 | 7 421.72 | 1.028 | 7450.33493 | 7479.57500 | 7335.26127 |
| ____ ZN | 0.62441 | 1 905.29 | 0.120 | 0.62492 | 0.62355 | 0.62475 |
| ____ ZR | 1.03255 | 1 246.17 | 1.114 | 1.02777 | 1.02420 | 1.04567 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 18 Date/Time: 07/18/2017 02:52

Sample Number: **9100479** Class: M*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05088 | 408.24 | 2.804 | 0.04988 | 0.05024 | 0.05251 |
| ____ AL | 2.01806 | 163.30 | 1.593 | 2.03369 | 2.03940 | 1.98109 |
| ____ AS | 0.16603 | 16.07 | 1.868 | 0.16902 | 0.16624 | 0.16283 |
| ____ B | 2.01005 | 10 218.52 | 0.672 | 2.02259 | 1.99575 | 2.01180 |
| ____ BA | 2.02904 | 988 850.68 | 0.696 | 2.04520 | 2.02276 | 2.01915 |
| ____ BE | 0.04886 | 15 200.37 | 0.428 | 0.04902 | 0.04863 | 0.04894 |
| ____ CA | 270.82299 | 165 721.58 | 0.769 | 272.89526 | 268.73213 | 270.84158 |
| ____ CD | 0.04848 | 235.27 | 0.523 | 0.04824 | 0.04875 | 0.04845 |
| ____ CO | 0.48315 | 1 044.01 | 0.087 | 0.48299 | 0.48363 | 0.48284 |
| ____ CR | 0.19421 | 1 285.41 | 0.539 | 0.19429 | 0.19312 | 0.19521 |
| ____ CU | 0.25739 | 2 037.81 | 0.804 | 0.25932 | 0.25520 | 0.25764 |
| ____ FE | 1.00731 | 117.76 | 1.032 | 1.00252 | 1.01924 | 1.00017 |
| ____ K | 16.00823 | 5 028.50 | 0.117 | 16.00099 | 15.99415 | 16.02954 |
| ____ LI | 1.07137 | 5 521.14 | 0.462 | 1.07455 | 1.07390 | 1.06566 |
| ____ MG | 39.95809 | 32 514.65 | 0.699 | 40.25966 | 39.70871 | 39.90589 |
| ____ MN | 1.52445 | 49 649.24 | 0.896 | 1.53731 | 1.51012 | 1.52593 |
| ____ MO | 2.05998 | 1 577.25 | 0.106 | 2.05755 | 2.06179 | 2.06060 |
| ____ NA | 75.52778 | 83 136.09 | 0.750 | 76.12507 | 74.99910 | 75.45918 |
| ____ NI | 0.49016 | 688.68 | 0.164 | 0.49050 | 0.48924 | 0.49073 |
| ____ P | 1.04109 | 27.64 | 6.734 | 0.96672 | 1.10598 | 1.05055 |
| ____ PB | 0.14532 | 63.35 | 0.683 | 0.14646 | 0.14479 | 0.14471 |
| ____ S | 140.97692 | 6 856.06 | 1.654 | 138.96714 | 143.53432 | 140.42931 |
| ____ SB | 0.52781 | 87.93 | 2.309 | 0.51682 | 0.54092 | 0.52569 |
| ____ SE | 0.16789 | 13.69 | 5.164 | 0.15866 | 0.16917 | 0.17586 |
| ____ SI | 19.45254 | 1 793.72 | 0.529 | 19.54640 | 19.34255 | 19.46867 |
| ____ SN | 3.88124 | 1 110.73 | 0.154 | 3.88794 | 3.87645 | 3.87934 |
| ____ SR | 2.32667 | 1 193 774.56 | 1.163 | 2.35333 | 2.29924 | 2.32745 |
| ____ TI | 1.01283 | 29 562.48 | 0.844 | 1.02166 | 1.00460 | 1.01223 |
| ____ TL | 0.15772 | 14.05 | 3.517 | 0.15673 | 0.15273 | 0.16369 |
| ____ V | 0.51683 | 4 382.25 | 0.592 | 0.51555 | 0.51461 | 0.52032 |
| ____ Y1 | 3549.62604 | 3 549.63 | 0.533 | 3558.39248 | 3527.91197 | 3562.57368 |
| ____ Y2A | 135566.49130 | 135 566.49 | 0.657 | 134667.58816 | 136447.82110 | 135584.06462 |
| ____ Y2R | 7397.62311 | 7 397.62 | 0.493 | 7362.37500 | 7435.21934 | 7395.27500 |
| ____ ZN | 0.62238 | 1 931.01 | 0.395 | 0.62347 | 0.61957 | 0.62410 |
| ____ ZR | 1.02146 | 1 228.92 | 0.094 | 1.02086 | 1.02095 | 1.02256 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 19 Date/Time: 07/18/2017 02:55

Sample Number: **9100479** Class: UL** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00029 | -16.23 | 135.524 | 0.00015 | -0.00042 | -0.00061 |
| ____ AL | -0.04376 | 23.66 | 86.613 | -0.02235 | -0.02141 | -0.08752 |
| ____ AS | 0.00454 | -0.01 | 45.576 | 0.00325 | 0.00344 | 0.00692 |
| ____ B | 0.02405 | 123.34 | 2.771 | 0.02480 | 0.02384 | 0.02352 |
| ____ BA | 0.01462 | 7 576.16 | 0.632 | 0.01471 | 0.01462 | 0.01453 |
| ____ BE | -0.00004 | -152.93 | 91.978 | 0.00000 | -0.00004 | -0.00006 |
| ____ CA | 51.87611 | 32 501.16 | 0.446 | 51.80589 | 52.13444 | 51.68798 |
| ____ CD | -0.00029 | -4.56 | 70.792 | -0.00040 | -0.00042 | -0.00005 |
| ____ CO | 0.00039 | 0.02 | 34.961 | 0.00028 | 0.00035 | 0.00054 |
| ____ CR | 0.00093 | 6.33 | 28.510 | 0.00112 | 0.00104 | 0.00063 |
| ____ CU | 0.00043 | -2.73 | 174.734 | 0.00114 | -0.00036 | 0.00051 |
| ____ FE | 0.00437 | 2.16 | 225.290 | -0.00566 | 0.00476 | 0.01402 |
| ____ K | 1.12039 | 392.58 | 2.169 | 1.12446 | 1.14240 | 1.09431 |
| ____ LI | 0.01171 | 67.51 | 7.038 | 0.01265 | 0.01138 | 0.01110 |
| ____ MG | 7.55765 | 6 335.00 | 0.307 | 7.53125 | 7.57458 | 7.56714 |
| ____ MN | 0.21334 | 7 212.00 | 1.190 | 0.21064 | 0.21371 | 0.21568 |
| ____ MO | 0.00345 | 1.14 | 22.431 | 0.00287 | 0.00314 | 0.00432 |
| ____ NA | 12.82311 | 14 232.21 | 0.558 | 12.81957 | 12.89633 | 12.75344 |
| ____ NI | 0.00172 | 10.31 | 30.440 | 0.00167 | 0.00227 | 0.00123 |
| ____ P | 0.02001 | 0.95 | 58.754 | 0.01058 | 0.01626 | 0.03318 |
| ____ PB | 0.00190 | -3.03 | 264.687 | -0.00389 | 0.00510 | 0.00449 |
| ____ S | 26.90698 | 1 366.99 | 1.491 | 26.53607 | 27.33299 | 26.85188 |
| ____ SB | 0.00248 | 1.70 | 114.771 | -0.00077 | 0.00455 | 0.00367 |
| ____ SE | 0.00674 | 1.05 | 158.658 | -0.00490 | 0.00899 | 0.01612 |
| ____ SI | 3.49302 | 326.19 | 1.073 | 3.48082 | 3.53508 | 3.46315 |
| ____ SN | 0.00247 | 1.07 | 13.076 | 0.00211 | 0.00257 | 0.00274 |
| ____ SR | 0.27812 | 148 110.37 | 0.330 | 0.27722 | 0.27809 | 0.27905 |
| ____ TI | 0.00167 | 68.20 | 3.627 | 0.00161 | 0.00167 | 0.00173 |
| ____ TL | 0.00071 | -0.15 | 347.441 | -0.00210 | 0.00250 | 0.00172 |
| ____ V | 0.00004 | -10.33 | 1185.747 | 0.00052 | -0.00051 | 0.00011 |
| ____ Y1 | 3690.45000 | 3 690.45 | 0.333 | 3704.60000 | 3682.66000 | 3684.09000 |
| ____ Y2A | 140732.67845 | 140 732.68 | 0.241 | 141115.35000 | 140467.10658 | 140615.57877 |
| ____ Y2R | 7477.81399 | 7 477.81 | 0.572 | 7505.02400 | 7428.51796 | 7499.90002 |
| ____ ZN | 0.02362 | 77.14 | 0.238 | 0.02357 | 0.02368 | 0.02361 |
| ____ ZR | 0.00089 | 4.78 | 208.811 | 0.00221 | 0.00171 | -0.00124 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 20 Date/Time: 07/18/2017 02:58

Sample Number: **9095972** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00071 | -19.89 | 12.669 | -0.00065 | -0.00067 | -0.00081 |
| ____ AL | 0.22097 | 41.67 | 29.830 | 0.14486 | 0.25953 | 0.25853 |
| ____ AS | 0.00556 | 0.10 | 81.833 | 0.00092 | 0.00575 | 0.01002 |
| ____ B | 0.04920 | 260.12 | 1.393 | 0.04979 | 0.04936 | 0.04844 |
| ____ BA | 0.15496 | 78 534.53 | 0.618 | 0.15606 | 0.15437 | 0.15443 |
| ____ BE | -0.00001 | -143.54 | 419.124 | 0.00001 | 0.00001 | -0.00004 |
| ____ CA | 48.62942 | 30 641.51 | 0.639 | 48.98392 | 48.49923 | 48.40509 |
| ____ CD | -0.00027 | -4.28 | 33.489 | -0.00037 | -0.00020 | -0.00024 |
| ____ CO | 0.00073 | 0.50 | 135.469 | 0.00156 | 0.00101 | -0.00037 |
| ____ CR | 0.00298 | 20.39 | 11.554 | 0.00283 | 0.00337 | 0.00273 |
| ____ CU | 0.00203 | 9.80 | 29.926 | 0.00245 | 0.00232 | 0.00134 |
| ____ FE | 0.55933 | 67.20 | 1.277 | 0.55904 | 0.56662 | 0.55235 |
| ____ K | 2.86510 | 947.45 | 0.604 | 2.85079 | 2.88432 | 2.86021 |
| ____ LI | 0.01961 | 108.88 | 12.575 | 0.01937 | 0.01727 | 0.02218 |
| ____ MG | 6.83407 | 5 763.79 | 0.538 | 6.80807 | 6.81803 | 6.87611 |
| ____ MN | 0.04634 | 1 565.11 | 0.958 | 0.04684 | 0.04603 | 0.04613 |
| ____ MO | 0.00650 | 3.57 | 19.838 | 0.00550 | 0.00795 | 0.00603 |
| ____ NA | 27.19783 | 30 399.84 | 0.765 | 27.43744 | 27.09447 | 27.06157 |
| ____ NI | 0.00071 | 8.45 | 140.910 | -0.00033 | 0.00080 | 0.00166 |
| ____ P | 0.03992 | 1.50 | 34.035 | 0.03640 | 0.05493 | 0.02844 |
| ____ PB | 0.00013 | -3.44 | 772.579 | -0.00021 | 0.00125 | -0.00065 |
| ____ S | 19.48618 | 992.32 | 0.526 | 19.53485 | 19.55527 | 19.36841 |
| ____ SB | 0.00353 | 1.88 | 228.937 | -0.00158 | -0.00068 | 0.01286 |
| ____ SE | 0.00788 | 1.14 | 132.449 | 0.01125 | -0.00382 | 0.01620 |
| ____ SI | 15.49984 | 1 451.16 | 0.432 | 15.42662 | 15.51472 | 15.55817 |
| ____ SN | -0.00071 | 0.13 | 278.533 | 0.00122 | -0.00060 | -0.00276 |
| ____ SR | 0.33102 | 176 227.14 | 0.589 | 0.33327 | 0.32975 | 0.33006 |
| ____ TI | 0.01492 | 469.41 | 1.444 | 0.01474 | 0.01516 | 0.01487 |
| ____ TL | -0.00193 | -0.47 | 303.335 | -0.00834 | 0.00316 | -0.00061 |
| ____ V | 0.00342 | 20.97 | 9.486 | 0.00305 | 0.00365 | 0.00355 |
| ____ Y1 | 3690.78833 | 3 690.79 | 0.299 | 3690.65500 | 3701.88000 | 3679.83000 |
| ____ Y2A | 140685.17836 | 140 685.18 | 0.812 | 139370.73183 | 141245.63024 | 141439.17299 |
| ____ Y2R | 7518.72975 | 7 518.73 | 0.604 | 7466.82299 | 7551.30000 | 7538.06625 |
| ____ ZN | 0.00841 | 28.49 | 2.308 | 0.00832 | 0.00828 | 0.00863 |
| ____ ZR | 0.00288 | 7.22 | 59.510 | 0.00466 | 0.00275 | 0.00124 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 21 Date/Time: 07/18/2017 03:01

Sample Number: **9100480** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00050 | -9.36 | 197.107 | 0.00138 | -0.00055 | 0.00066 |
| ____ AL | -0.07047 | 21.54 | 37.713 | -0.09249 | -0.04095 | -0.07796 |
| ____ AS | 0.00410 | -0.05 | 43.735 | 0.00617 | 0.00306 | 0.00307 |
| ____ B | 0.10171 | 504.26 | 0.580 | 0.10219 | 0.10188 | 0.10105 |
| ____ BA | 0.07606 | 36 579.29 | 0.301 | 0.07629 | 0.07583 | 0.07606 |
| ____ BE | -0.00026 | -212.37 | 7.309 | -0.00026 | -0.00024 | -0.00027 |
| ____ CA | 283.62888 | 172 585.22 | 0.377 | 284.71905 | 283.58368 | 282.58392 |
| ____ CD | -0.00020 | -3.84 | 67.456 | -0.00021 | -0.00006 | -0.00033 |
| ____ CO | 0.00221 | 3.40 | 25.029 | 0.00285 | 0.00185 | 0.00193 |
| ____ CR | 0.00066 | 4.24 | 21.444 | 0.00050 | 0.00070 | 0.00077 |
| ____ CU | 0.00427 | 54.08 | 9.739 | 0.00386 | 0.00425 | 0.00469 |
| ____ FE | -0.01007 | 0.48 | 168.452 | -0.02734 | 0.00656 | -0.00943 |
| ____ K | 6.03968 | 1 912.17 | 1.021 | 6.00856 | 5.99977 | 6.11072 |
| ____ LI | 0.04339 | 242.64 | 4.802 | 0.04546 | 0.04129 | 0.04344 |
| ____ MG | 40.06681 | 32 440.97 | 0.549 | 40.31427 | 39.99283 | 39.89334 |
| ____ MN | 1.09310 | 34 973.50 | 0.281 | 1.09648 | 1.09233 | 1.09050 |
| ____ MO | 0.00253 | 0.37 | 53.480 | 0.00406 | 0.00200 | 0.00151 |
| ____ NA | 69.98717 | 76 656.22 | 0.437 | 70.24086 | 70.07306 | 69.64758 |
| ____ NI | 0.00733 | 16.77 | 14.376 | 0.00682 | 0.00855 | 0.00664 |
| ____ P | 0.02668 | 1.07 | 49.103 | 0.01201 | 0.03720 | 0.03082 |
| ____ PB | 0.00351 | -1.63 | 14.330 | 0.00300 | 0.00400 | 0.00353 |
| ____ S | 149.23077 | 7 069.04 | 1.416 | 149.90448 | 150.92426 | 146.86356 |
| ____ SB | 0.00423 | 1.87 | 157.428 | 0.01152 | -0.00151 | 0.00267 |
| ____ SE | 0.01675 | 1.75 | 74.110 | 0.02254 | 0.02521 | 0.00250 |
| ____ SI | 19.57896 | 1 794.30 | 0.541 | 19.55477 | 19.48725 | 19.69485 |
| ____ SN | 0.00117 | 0.65 | 167.813 | -0.00037 | 0.00050 | 0.00338 |
| ____ SR | 1.48194 | 746 971.93 | 0.346 | 1.48476 | 1.47603 | 1.48503 |
| ____ TI | -0.00040 | 5.34 | 62.043 | -0.00046 | -0.00061 | -0.00013 |
| ____ TL | 0.00193 | -0.02 | 584.655 | -0.00267 | -0.00632 | 0.01477 |
| ____ V | 0.00187 | 6.52 | 21.682 | 0.00228 | 0.00148 | 0.00184 |
| ____ Y1 | 3457.65737 | 3 457.66 | 1.229 | 3408.99910 | 3476.50675 | 3487.46627 |
| ____ Y2A | 133176.67570 | 133 176.68 | 0.485 | 132437.86170 | 133634.07319 | 133458.09220 |
| ____ Y2R | 7361.22223 | 7 361.22 | 0.524 | 7316.75484 | 7385.03686 | 7381.87500 |
| ____ ZN | 0.14967 | 451.11 | 0.145 | 0.14964 | 0.14947 | 0.14990 |
| ____ ZR | -0.00396 | -1.08 | 11.453 | -0.00448 | -0.00367 | -0.00372 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 22 Date/Time: 07/18/2017 03:04

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50280 | 4 050.33 | 0.290 | 0.50115 | 0.50390 | 0.50337 |
| ____ AL | 25.38740 | 1 715.42 | 0.788 | 25.22567 | 25.61115 | 25.32538 |
| ____ AS | 0.51506 | 52.51 | 2.293 | 0.50517 | 0.52814 | 0.51187 |
| ____ B | 0.49883 | 2 781.84 | 0.173 | 0.49855 | 0.49815 | 0.49980 |
| ____ BA | 0.51552 | 257 330.94 | 0.248 | 0.51659 | 0.51410 | 0.51586 |
| ____ BE | 0.49225 | 158 029.46 | 0.247 | 0.49266 | 0.49089 | 0.49321 |
| ____ CA | 25.73766 | 15 969.79 | 1.000 | 25.72202 | 26.00240 | 25.48856 |
| ____ CD | 0.50711 | 2 575.91 | 1.125 | 0.50074 | 0.51174 | 0.50886 |
| ____ CO | 0.50250 | 1 119.60 | 1.199 | 0.49555 | 0.50627 | 0.50568 |
| ____ CR | 0.49228 | 3 335.57 | 0.659 | 0.49205 | 0.48916 | 0.49564 |
| ____ CU | 0.50579 | 4 067.60 | 0.110 | 0.50638 | 0.50527 | 0.50572 |
| ____ FE | 25.21979 | 2 900.83 | 0.884 | 25.14202 | 25.47120 | 25.04614 |
| ____ K | 25.18345 | 7 875.26 | 1.058 | 24.96576 | 25.48051 | 25.10406 |
| ____ LI | 0.52140 | 2 677.83 | 0.417 | 0.52044 | 0.52389 | 0.51987 |
| ____ MG | 25.17109 | 20 611.16 | 1.029 | 25.14305 | 25.44291 | 24.92733 |
| ____ MN | 0.51301 | 17 118.76 | 0.291 | 0.51348 | 0.51134 | 0.51421 |
| ____ MO | 0.49973 | 394.15 | 0.378 | 0.49760 | 0.50037 | 0.50121 |
| ____ NA | 25.71134 | 28 227.68 | 0.915 | 25.60419 | 25.98115 | 25.54869 |
| ____ NI | 0.50146 | 727.67 | 0.240 | 0.50017 | 0.50168 | 0.50254 |
| ____ P | 0.43300 | 12.12 | 4.548 | 0.44663 | 0.44196 | 0.41042 |
| ____ PB | 0.51226 | 241.54 | 0.647 | 0.51025 | 0.51045 | 0.51609 |
| ____ S | 24.65780 | 1 245.74 | 0.695 | 24.69486 | 24.80754 | 24.47102 |
| ____ SB | 0.51194 | 89.44 | 0.811 | 0.51604 | 0.51204 | 0.50774 |
| ____ SE | 0.51451 | 42.13 | 2.939 | 0.50043 | 0.53050 | 0.51262 |
| ____ SI | 25.38173 | 2 334.10 | 1.290 | 25.17021 | 25.75897 | 25.21602 |
| ____ SN | 0.48711 | 144.33 | 0.616 | 0.48413 | 0.49013 | 0.48705 |
| ____ SR | 0.52075 | 273 505.70 | 0.230 | 0.52075 | 0.52195 | 0.51955 |
| ____ TI | 0.50932 | 15 257.67 | 0.321 | 0.50988 | 0.50748 | 0.51060 |
| ____ TL | 0.52966 | 55.71 | 1.338 | 0.52191 | 0.53581 | 0.53125 |
| ____ V | 0.51730 | 4 713.54 | 0.352 | 0.51597 | 0.51656 | 0.51937 |
| ____ Y1 | 3667.92833 | 3 667.93 | 1.987 | 3742.09000 | 3596.37000 | 3665.32500 |
| ____ Y2A | 138779.25030 | 138 779.25 | 0.231 | 138956.12286 | 138972.12804 | 138409.50000 |
| ____ Y2R | 7385.82759 | 7 385.83 | 0.737 | 7392.56446 | 7328.30245 | 7436.61586 |
| ____ ZN | 0.50674 | 1 633.87 | 0.160 | 0.50749 | 0.50684 | 0.50588 |
| ____ ZR | 0.52588 | 633.44 | 1.463 | 0.51699 | 0.53007 | 0.53057 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 23 Date/Time: 07/18/2017 03:07

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00048 | -17.96 | 279.843 | -0.00084 | 0.00101 | -0.00161 |
| ____ AL | -0.02862 | 24.58 | 179.916 | -0.05927 | -0.05740 | 0.03083 |
| ____ AS | 0.00841 | 0.41 | 65.779 | 0.00224 | 0.01006 | 0.01294 |
| ____ B | 0.00343 | 14.59 | 26.428 | 0.00284 | 0.00448 | 0.00299 |
| ____ BA | 0.00021 | 290.78 | 18.705 | 0.00025 | 0.00022 | 0.00017 |
| ____ BE | 0.00007 | -118.52 | 10.553 | 0.00007 | 0.00008 | 0.00007 |
| ____ CA | 0.03232 | 63.25 | 29.528 | 0.04315 | 0.02870 | 0.02512 |
| ____ CD | 0.00003 | -2.97 | 591.817 | 0.00017 | -0.00020 | 0.00014 |
| ____ CO | 0.00027 | -0.17 | 107.084 | 0.00023 | 0.00057 | 0.00000 |
| ____ CR | -0.00034 | -2.40 | 180.703 | 0.00035 | -0.00056 | -0.00081 |
| ____ CU | -0.00016 | -14.10 | 412.245 | 0.00056 | -0.00028 | -0.00076 |
| ____ FE | -0.01195 | 0.27 | 114.450 | -0.00083 | -0.02723 | -0.00779 |
| ____ K | -0.00115 | 39.08 | 2690.145 | -0.03656 | 0.02027 | 0.01285 |
| ____ LI | 0.00386 | 23.38 | 100.137 | 0.00008 | 0.00781 | 0.00369 |
| ____ MG | -0.01292 | 7.45 | 10.029 | -0.01272 | -0.01430 | -0.01173 |
| ____ MN | 0.00031 | 9.39 | 41.553 | 0.00046 | 0.00027 | 0.00021 |
| ____ MO | 0.00234 | 0.26 | 13.919 | 0.00200 | 0.00265 | 0.00237 |
| ____ NA | 0.09452 | 61.90 | 6.020 | 0.09974 | 0.08845 | 0.09537 |
| ____ NI | -0.00059 | 7.29 | 83.937 | -0.00025 | -0.00115 | -0.00035 |
| ____ P | 0.01106 | 0.73 | 80.986 | 0.00826 | 0.02107 | 0.00384 |
| ____ PB | 0.00137 | -3.48 | 153.269 | 0.00006 | 0.00025 | 0.00380 |
| ____ S | 0.02130 | 9.35 | 10.260 | 0.01996 | 0.02012 | 0.02383 |
| ____ SB | 0.00188 | 1.64 | 81.594 | 0.00355 | 0.00053 | 0.00157 |
| ____ SE | -0.01124 | -0.43 | 104.959 | -0.00254 | -0.00651 | -0.02467 |
| ____ SI | 0.00613 | 1.80 | 132.729 | 0.01464 | 0.00533 | -0.00158 |
| ____ SN | -0.00103 | 0.03 | 175.619 | -0.00199 | 0.00105 | -0.00215 |
| ____ SR | 0.00035 | 150.48 | 4.185 | 0.00037 | 0.00034 | 0.00034 |
| ____ TI | 0.00031 | 27.53 | 63.715 | 0.00008 | 0.00043 | 0.00043 |
| ____ TL | -0.00519 | -0.84 | 82.179 | -0.00907 | -0.00588 | -0.00062 |
| ____ V | 0.00072 | -3.85 | 100.712 | 0.00089 | 0.00135 | -0.00008 |
| ____ Y1 | 3794.45333 | 3 794.45 | 0.320 | 3783.46500 | 3792.40000 | 3807.49500 |
| ____ Y2A | 142282.24237 | 142 282.24 | 0.316 | 142171.79078 | 142776.84095 | 141898.09538 |
| ____ Y2R | 7443.17500 | 7 443.18 | 0.708 | 7435.92500 | 7394.47500 | 7499.12500 |
| ____ ZN | 0.00023 | 2.12 | 187.472 | 0.00024 | 0.00064 | -0.00021 |
| ____ ZR | 0.00034 | 4.08 | 526.153 | 0.00060 | 0.00200 | -0.00157 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 24 Date/Time: 07/18/2017 03:10

Sample Number: **9100483** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00072 | -19.69 | 34.216 | -0.00060 | -0.00100 | -0.00055 |
| ____ AL | -0.03068 | 24.43 | 120.659 | -0.02255 | 0.00160 | -0.07109 |
| ____ AS | 0.00173 | -0.30 | 544.954 | 0.00353 | -0.00846 | 0.01010 |
| ____ B | 0.04697 | 243.50 | 3.169 | 0.04574 | 0.04862 | 0.04653 |
| ____ BA | 0.14455 | 72 849.94 | 0.361 | 0.14439 | 0.14513 | 0.14412 |
| ____ BE | -0.00003 | -149.91 | 96.468 | -0.00006 | -0.00002 | -0.00001 |
| ____ CA | 57.17787 | 35 634.84 | 1.051 | 57.79544 | 57.14358 | 56.59458 |
| ____ CD | -0.00036 | -4.89 | 31.757 | -0.00024 | -0.00039 | -0.00046 |
| ____ CO | 0.00051 | -0.12 | 33.346 | 0.00035 | 0.00048 | 0.00069 |
| ____ CR | 0.00138 | 9.35 | 13.395 | 0.00130 | 0.00124 | 0.00159 |
| ____ CU | 0.00036 | -2.65 | 35.954 | 0.00025 | 0.00050 | 0.00034 |
| ____ FE | 0.10823 | 14.20 | 12.007 | 0.09327 | 0.11466 | 0.11676 |
| ____ K | 3.68087 | 1 193.46 | 0.903 | 3.71132 | 3.68585 | 3.64544 |
| ____ LI | 0.02304 | 126.12 | 18.782 | 0.02008 | 0.02103 | 0.02800 |
| ____ MG | 8.36003 | 6 969.16 | 0.255 | 8.36053 | 8.33849 | 8.38107 |
| ____ MN | 0.09822 | 3 299.40 | 1.152 | 0.09788 | 0.09948 | 0.09730 |
| ____ MO | 0.00737 | 4.28 | 4.005 | 0.00771 | 0.00717 | 0.00723 |
| ____ NA | 26.91948 | 29 780.12 | 1.037 | 27.22939 | 26.84141 | 26.68765 |
| ____ NI | 0.00043 | 7.99 | 301.659 | 0.00190 | -0.00058 | -0.00003 |
| ____ P | -0.00220 | 0.35 | 649.691 | -0.01320 | -0.00738 | 0.01397 |
| ____ PB | 0.00542 | -0.89 | 93.791 | 0.00377 | 0.00136 | 0.01112 |
| ____ S | 20.25844 | 1 033.53 | 1.130 | 19.99427 | 20.38068 | 20.40036 |
| ____ SB | 0.00670 | 2.43 | 64.647 | 0.01009 | 0.00182 | 0.00819 |
| ____ SE | -0.00776 | -0.13 | 217.694 | -0.00386 | 0.00684 | -0.02625 |
| ____ SI | 17.68507 | 1 638.59 | 0.344 | 17.73981 | 17.61944 | 17.69595 |
| ____ SN | 0.00056 | 0.51 | 198.612 | 0.00004 | 0.00183 | -0.00020 |
| ____ SR | 0.39879 | 211 083.81 | 0.348 | 0.39839 | 0.40033 | 0.39764 |
| ____ TI | 0.00246 | 91.65 | 8.583 | 0.00227 | 0.00242 | 0.00269 |
| ____ TL | -0.00322 | -0.62 | 169.335 | -0.00053 | 0.00037 | -0.00949 |
| ____ V | 0.00514 | 36.78 | 2.382 | 0.00527 | 0.00503 | 0.00513 |
| ____ Y1 | 3698.64667 | 3 698.65 | 0.394 | 3688.02500 | 3715.26000 | 3692.65500 |
| ____ Y2A | 139868.90647 | 139 868.91 | 0.093 | 139769.35000 | 139820.45455 | 140016.91485 |
| ____ Y2R | 7441.79572 | 7 441.80 | 0.644 | 7401.31974 | 7429.31637 | 7494.75105 |
| ____ ZN | 0.00914 | 30.76 | 1.808 | 0.00906 | 0.00903 | 0.00933 |
| ____ ZR | -0.00114 | 2.32 | 367.002 | 0.00045 | -0.00587 | 0.00201 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 25 Date/Time: 07/18/2017 03:14

Sample Number: **9100484** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00023 | -15.57 | 527.130 | -0.00065 | 0.00113 | -0.00117 |
| ____ AL | -0.04051 | 24.00 | 147.077 | 0.02827 | -0.07619 | -0.07360 |
| ____ AS | 0.00474 | 0.02 | 155.028 | 0.00111 | 0.01321 | -0.00009 |
| ____ B | 0.04752 | 244.96 | 1.102 | 0.04811 | 0.04712 | 0.04733 |
| ____ BA | 0.13545 | 68 123.56 | 0.386 | 0.13568 | 0.13485 | 0.13581 |
| ____ BE | -0.00003 | -150.20 | 35.232 | -0.00003 | -0.00004 | -0.00002 |
| ____ CA | 57.14517 | 35 955.11 | 0.797 | 57.41261 | 57.40372 | 56.61916 |
| ____ CD | -0.00019 | -4.01 | 124.838 | 0.00004 | -0.00043 | -0.00018 |
| ____ CO | 0.00011 | -1.00 | 395.704 | 0.00039 | -0.00039 | 0.00032 |
| ____ CR | 0.00134 | 9.08 | 54.640 | 0.00084 | 0.00218 | 0.00100 |
| ____ CU | -0.00166 | -19.06 | 74.279 | -0.00114 | -0.00078 | -0.00307 |
| ____ FE | -0.00988 | 0.52 | 126.224 | -0.01892 | -0.01507 | 0.00435 |
| ____ K | 3.76645 | 1 232.02 | 1.804 | 3.69108 | 3.82298 | 3.78527 |
| ____ LI | 0.02351 | 129.63 | 14.850 | 0.02215 | 0.02748 | 0.02091 |
| ____ MG | 8.34323 | 7 021.51 | 0.749 | 8.31485 | 8.41484 | 8.30000 |
| ____ MN | 0.00059 | 18.36 | 18.431 | 0.00061 | 0.00068 | 0.00047 |
| ____ MO | 0.00860 | 5.22 | 4.990 | 0.00901 | 0.00815 | 0.00864 |
| ____ NA | 27.57957 | 30 802.90 | 0.884 | 27.73126 | 27.70925 | 27.29822 |
| ____ NI | -0.00069 | 6.32 | 41.276 | -0.00087 | -0.00036 | -0.00085 |
| ____ P | 0.03909 | 1.47 | 12.556 | 0.03434 | 0.04415 | 0.03879 |
| ____ PB | 0.00039 | -3.27 | 809.162 | 0.00163 | 0.00270 | -0.00317 |
| ____ S | 20.59366 | 1 043.40 | 0.623 | 20.65465 | 20.44615 | 20.68017 |
| ____ SB | -0.00049 | 1.19 | 1107.569 | 0.00521 | -0.00116 | -0.00552 |
| ____ SE | 0.00683 | 1.06 | 59.649 | 0.00614 | 0.01120 | 0.00314 |
| ____ SI | 17.51361 | 1 638.18 | 0.945 | 17.42431 | 17.70465 | 17.41188 |
| ____ SN | 0.00011 | 0.37 | 313.324 | 0.00035 | 0.00028 | -0.00029 |
| ____ SR | 0.40544 | 214 130.79 | 0.258 | 0.40619 | 0.40425 | 0.40588 |
| ____ TI | 0.00119 | 53.43 | 13.477 | 0.00109 | 0.00111 | 0.00138 |
| ____ TL | -0.00204 | -0.47 | 186.589 | 0.00232 | -0.00475 | -0.00370 |
| ____ V | 0.00294 | 15.96 | 21.031 | 0.00308 | 0.00347 | 0.00226 |
| ____ Y1 | 3673.76333 | 3 673.76 | 0.507 | 3679.59000 | 3688.77500 | 3652.92500 |
| ____ Y2A | 139559.57889 | 139 559.58 | 0.231 | 139426.59086 | 139926.55283 | 139325.59298 |
| ____ Y2R | 7512.99166 | 7 512.99 | 0.921 | 7485.28238 | 7461.95110 | 7591.74152 |
| ____ ZN | 0.00534 | 18.38 | 3.480 | 0.00523 | 0.00556 | 0.00524 |
| ____ ZR | 0.00018 | 3.89 | 2946.221 | 0.00349 | 0.00281 | -0.00577 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 26 Date/Time: 07/18/2017 03:17

Sample Number: **9100485** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00034 | -16.65 | 369.548 | -0.00057 | -0.00149 | 0.00102 |
| ____ AL | 0.01202 | 27.69 | 162.530 | -0.01009 | 0.01922 | 0.02693 |
| ____ AS | 0.01076 | 0.63 | 69.181 | 0.01922 | 0.00790 | 0.00517 |
| ____ B | 0.04679 | 243.98 | 2.057 | 0.04782 | 0.04592 | 0.04661 |
| ____ BA | 0.13493 | 68 235.67 | 0.410 | 0.13458 | 0.13464 | 0.13557 |
| ____ BE | -0.00007 | -165.24 | 41.639 | -0.00007 | -0.00005 | -0.00011 |
| ____ CA | 62.11419 | 39 255.00 | 1.412 | 63.12415 | 61.67507 | 61.54337 |
| ____ CD | -0.00027 | -4.38 | 120.625 | 0.00006 | -0.00028 | -0.00059 |
| ____ CO | 0.00051 | -0.05 | 82.987 | 0.00037 | 0.00099 | 0.00017 |
| ____ CR | 0.00132 | 8.96 | 33.032 | 0.00099 | 0.00115 | 0.00181 |
| ____ CU | 0.00075 | 1.08 | 24.392 | 0.00057 | 0.00093 | 0.00074 |
| ____ FE | 0.19055 | 24.08 | 9.532 | 0.20407 | 0.16991 | 0.19767 |
| ____ K | 3.45074 | 1 137.60 | 0.533 | 3.43143 | 3.45272 | 3.46808 |
| ____ LI | 0.02053 | 114.98 | 6.106 | 0.02172 | 0.02065 | 0.01922 |
| ____ MG | 8.95112 | 7 566.03 | 0.417 | 8.98343 | 8.91032 | 8.95961 |
| ____ MN | 0.10945 | 3 688.57 | 0.590 | 0.10966 | 0.10872 | 0.10995 |
| ____ MO | 0.00838 | 5.05 | 5.877 | 0.00842 | 0.00786 | 0.00885 |
| ____ NA | 27.41332 | 30 764.02 | 1.448 | 27.86213 | 27.26894 | 27.10890 |
| ____ NI | 0.00052 | 8.14 | 72.267 | 0.00028 | 0.00033 | 0.00095 |
| ____ P | 0.02410 | 1.06 | 75.323 | 0.04166 | 0.02522 | 0.00541 |
| ____ PB | 0.00253 | -2.31 | 160.590 | -0.00216 | 0.00475 | 0.00498 |
| ____ S | 22.72567 | 1 150.44 | 0.800 | 22.85760 | 22.51815 | 22.80126 |
| ____ SB | 0.00080 | 1.41 | 586.490 | -0.00087 | -0.00282 | 0.00608 |
| ____ SE | 0.00689 | 1.06 | 163.153 | -0.00423 | 0.01826 | 0.00666 |
| ____ SI | 15.56713 | 1 463.32 | 0.748 | 15.66229 | 15.43730 | 15.60179 |
| ____ SN | -0.00116 | 0.00 | 260.177 | -0.00452 | 0.00136 | -0.00034 |
| ____ SR | 0.42527 | 225 834.65 | 0.246 | 0.42495 | 0.42442 | 0.42644 |
| ____ TI | 0.00215 | 82.51 | 6.833 | 0.00227 | 0.00199 | 0.00218 |
| ____ TL | -0.00095 | -0.36 | 220.579 | -0.00084 | -0.00309 | 0.00109 |
| ____ V | 0.00508 | 36.18 | 6.451 | 0.00534 | 0.00471 | 0.00519 |
| ____ Y1 | 3673.23667 | 3 673.24 | 1.059 | 3635.12000 | 3671.71500 | 3712.87500 |
| ____ Y2A | 140323.65631 | 140 323.66 | 0.257 | 140525.40853 | 140538.72500 | 139906.83539 |
| ____ Y2R | 7549.38209 | 7 549.38 | 0.971 | 7465.33193 | 7582.65968 | 7600.15466 |
| ____ ZN | 0.03463 | 111.95 | 0.513 | 0.03446 | 0.03482 | 0.03461 |
| ____ ZR | 0.00396 | 8.60 | 77.976 | 0.00141 | 0.00308 | 0.00739 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 27 Date/Time: 07/18/2017 03:20

Sample Number: **9100486** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00031 | -16.29 | 114.866 | -0.00024 | -0.00069 | 0.00000 |
| ____ AL | -0.05233 | 23.20 | 153.990 | -0.03478 | 0.01803 | -0.14025 |
| ____ AS | 0.00169 | -0.30 | 554.038 | -0.00459 | -0.00280 | 0.01246 |
| ____ B | 0.04729 | 244.52 | 3.079 | 0.04615 | 0.04679 | 0.04893 |
| ____ BA | 0.12931 | 65 258.35 | 0.189 | 0.12957 | 0.12908 | 0.12928 |
| ____ BE | -0.00006 | -158.98 | 12.685 | -0.00006 | -0.00005 | -0.00007 |
| ____ CA | 61.94055 | 38 923.77 | 0.365 | 61.81413 | 62.20145 | 61.80606 |
| ____ CD | -0.00057 | -5.96 | 17.210 | -0.00068 | -0.00049 | -0.00054 |
| ____ CO | 0.00025 | -0.62 | 84.791 | 0.00048 | 0.00021 | 0.00006 |
| ____ CR | 0.00070 | 4.76 | 25.460 | 0.00086 | 0.00074 | 0.00051 |
| ____ CU | -0.00118 | -14.63 | 47.145 | -0.00179 | -0.00071 | -0.00104 |
| ____ FE | -0.01689 | -0.32 | 37.088 | -0.02397 | -0.01464 | -0.01206 |
| ____ K | 3.39748 | 1 114.18 | 0.227 | 3.40217 | 3.40172 | 3.38856 |
| ____ LI | 0.02017 | 112.50 | 20.664 | 0.01990 | 0.02447 | 0.01614 |
| ____ MG | 8.94150 | 7 514.46 | 0.404 | 8.90817 | 8.93640 | 8.97992 |
| ____ MN | 0.00157 | 51.37 | 10.227 | 0.00175 | 0.00144 | 0.00151 |
| ____ MO | 0.00793 | 4.69 | 11.206 | 0.00718 | 0.00770 | 0.00891 |
| ____ NA | 27.33733 | 30 504.60 | 0.427 | 27.23961 | 27.46642 | 27.30598 |
| ____ NI | -0.00034 | 6.91 | 339.957 | 0.00096 | -0.00077 | -0.00121 |
| ____ P | 0.02702 | 1.14 | 23.901 | 0.03167 | 0.02974 | 0.01965 |
| ____ PB | 0.00257 | -2.31 | 75.365 | 0.00050 | 0.00288 | 0.00433 |
| ____ S | 22.51049 | 1 140.25 | 1.881 | 22.02147 | 22.75747 | 22.75255 |
| ____ SB | -0.00240 | 0.86 | 309.714 | 0.00442 | -0.01034 | -0.00128 |
| ____ SE | -0.00373 | 0.19 | 87.735 | -0.00387 | -0.00694 | -0.00039 |
| ____ SI | 15.41834 | 1 441.03 | 0.473 | 15.39318 | 15.36128 | 15.50056 |
| ____ SN | 0.00068 | 0.54 | 492.902 | -0.00154 | -0.00093 | 0.00450 |
| ____ SR | 0.42065 | 222 894.42 | 0.224 | 0.42159 | 0.41970 | 0.42066 |
| ____ TI | 0.00155 | 64.46 | 8.414 | 0.00140 | 0.00162 | 0.00163 |
| ____ TL | -0.00443 | -0.74 | 12.190 | -0.00399 | -0.00426 | -0.00503 |
| ____ V | 0.00374 | 23.64 | 14.314 | 0.00431 | 0.00325 | 0.00367 |
| ____ Y1 | 3675.37833 | 3 675.38 | 0.305 | 3686.80000 | 3664.39500 | 3674.94000 |
| ____ Y2A | 140016.26989 | 140 016.27 | 0.226 | 139759.32500 | 139920.15968 | 140369.32500 |
| ____ Y2R | 7505.90074 | 7 505.90 | 0.475 | 7544.45221 | 7499.10000 | 7474.15000 |
| ____ ZN | 0.01034 | 34.36 | 0.816 | 0.01024 | 0.01038 | 0.01039 |
| ____ ZR | -0.00033 | 3.30 | 960.673 | -0.00395 | 0.00193 | 0.00103 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 28 Date/Time: 07/18/2017 03:23

Sample Number: **9100487** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00062 | -19.25 | 180.431 | -0.00186 | -0.00033 | 0.00032 |
| ____ AL | 0.09026 | 32.74 | 64.815 | 0.04296 | 0.15567 | 0.07213 |
| ____ AS | 0.00246 | -0.22 | 91.505 | 0.00029 | 0.00478 | 0.00230 |
| ____ B | 0.04587 | 244.36 | 2.183 | 0.04703 | 0.04531 | 0.04527 |
| ____ BA | 0.15005 | 76 363.40 | 0.559 | 0.15101 | 0.14945 | 0.14969 |
| ____ BE | -0.00002 | -149.41 | 16.761 | -0.00003 | -0.00002 | -0.00003 |
| ____ CA | 49.99342 | 31 397.54 | 0.861 | 50.39674 | 50.04367 | 49.53984 |
| ____ CD | -0.00018 | -3.80 | 154.480 | -0.00044 | 0.00011 | -0.00020 |
| ____ CO | 0.00078 | 0.58 | 86.138 | 0.00113 | 0.00001 | 0.00120 |
| ____ CR | 0.00167 | 11.46 | 29.571 | 0.00137 | 0.00140 | 0.00224 |
| ____ CU | 0.00018 | -5.16 | 588.622 | 0.00079 | 0.00075 | -0.00101 |
| ____ FE | 0.66394 | 79.20 | 1.438 | 0.67488 | 0.65731 | 0.65963 |
| ____ K | 2.92110 | 962.13 | 0.349 | 2.92689 | 2.90933 | 2.92710 |
| ____ LI | 0.01702 | 95.13 | 9.446 | 0.01886 | 0.01589 | 0.01631 |
| ____ MG | 6.95677 | 5 848.05 | 0.069 | 6.95148 | 6.95796 | 6.96086 |
| ____ MN | 0.03429 | 1 162.86 | 1.580 | 0.03390 | 0.03407 | 0.03491 |
| ____ MO | 0.00792 | 4.75 | 13.187 | 0.00748 | 0.00911 | 0.00716 |
| ____ NA | 23.72946 | 26 433.75 | 0.776 | 23.90894 | 23.73852 | 23.54091 |
| ____ NI | 0.00069 | 8.52 | 76.769 | 0.00105 | 0.00008 | 0.00095 |
| ____ P | 0.07100 | 2.37 | 11.314 | 0.06777 | 0.06509 | 0.08015 |
| ____ PB | 0.00108 | -3.04 | 65.853 | 0.00185 | 0.00045 | 0.00093 |
| ____ S | 19.75392 | 1 016.47 | 0.356 | 19.71872 | 19.70806 | 19.83496 |
| ____ SB | 0.00065 | 1.40 | 1155.974 | 0.00774 | 0.00147 | -0.00725 |
| ____ SE | -0.01102 | -0.41 | 64.267 | -0.01168 | -0.01775 | -0.00363 |
| ____ SI | 15.41977 | 1 439.10 | 0.231 | 15.42833 | 15.38067 | 15.45030 |
| ____ SN | 0.00082 | 0.59 | 310.085 | 0.00049 | 0.00349 | -0.00154 |
| ____ SR | 0.34115 | 182 355.56 | 0.413 | 0.34275 | 0.34011 | 0.34058 |
| ____ TI | 0.00601 | 200.55 | 3.720 | 0.00583 | 0.00595 | 0.00626 |
| ____ TL | -0.00191 | -0.47 | 282.665 | -0.00629 | 0.00413 | -0.00359 |
| ____ V | 0.00329 | 19.59 | 17.018 | 0.00264 | 0.00366 | 0.00355 |
| ____ Y1 | 3729.80667 | 3 729.81 | 0.153 | 3733.63500 | 3723.24500 | 3732.54000 |
| ____ Y2A | 141254.72283 | 141 254.72 | 0.393 | 140616.82126 | 141517.98184 | 141629.36540 |
| ____ Y2R | 7495.04134 | 7 495.04 | 0.817 | 7438.18599 | 7487.12500 | 7559.81304 |
| ____ ZN | 0.01619 | 54.04 | 1.334 | 0.01623 | 0.01595 | 0.01638 |
| ____ ZR | 0.00322 | 7.61 | 50.405 | 0.00299 | 0.00494 | 0.00172 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 29 Date/Time: 07/18/2017 03:26

Sample Number: **9100488** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00003 | -14.19 | 796.471 | 0.00000 | 0.00023 | -0.00033 |
| ____ AL | 0.02328 | 28.18 | 269.878 | -0.01773 | 0.09563 | -0.00805 |
| ____ AS | 0.00111 | -0.37 | 743.744 | 0.00546 | -0.00838 | 0.00624 |
| ____ B | 0.04431 | 230.92 | 0.677 | 0.04466 | 0.04411 | 0.04417 |
| ____ BA | 0.14337 | 72 952.59 | 0.106 | 0.14339 | 0.14352 | 0.14321 |
| ____ BE | -0.00006 | -159.71 | 0.689 | -0.00006 | -0.00006 | -0.00005 |
| ____ CA | 49.82073 | 31 168.39 | 1.580 | 49.80674 | 49.04044 | 50.61500 |
| ____ CD | 0.00000 | -3.07 | 1178.472 | -0.00016 | -0.00002 | 0.00020 |
| ____ CO | -0.00025 | -1.74 | 199.380 | 0.00032 | -0.00055 | -0.00051 |
| ____ CR | 0.00059 | 4.04 | 43.183 | 0.00040 | 0.00050 | 0.00088 |
| ____ CU | -0.00105 | -15.17 | 13.266 | -0.00091 | -0.00106 | -0.00119 |
| ____ FE | -0.00702 | 0.85 | 158.870 | -0.01550 | 0.00561 | -0.01116 |
| ____ K | 2.92732 | 960.21 | 4.920 | 2.79234 | 2.91069 | 3.07893 |
| ____ LI | 0.02037 | 112.12 | 7.919 | 0.01862 | 0.02068 | 0.02180 |
| ____ MG | 6.91832 | 5 792.73 | 2.468 | 6.83739 | 6.80310 | 7.11447 |
| ____ MN | 0.00081 | 26.20 | 8.392 | 0.00088 | 0.00075 | 0.00079 |
| ____ MO | 0.00721 | 4.17 | 14.520 | 0.00793 | 0.00601 | 0.00768 |
| ____ NA | 23.81604 | 26 428.34 | 1.367 | 23.73836 | 23.53629 | 24.17346 |
| ____ NI | -0.00083 | 6.29 | 46.224 | -0.00056 | -0.00067 | -0.00127 |
| ____ P | 0.05330 | 1.88 | 12.833 | 0.05342 | 0.06007 | 0.04639 |
| ____ PB | 0.00310 | -2.09 | 41.329 | 0.00235 | 0.00458 | 0.00238 |
| ____ S | 19.78222 | 1 016.09 | 0.494 | 19.83835 | 19.83895 | 19.66937 |
| ____ SB | 0.00531 | 2.20 | 12.305 | 0.00605 | 0.00507 | 0.00481 |
| ____ SE | 0.00431 | 0.86 | 130.693 | -0.00147 | 0.00977 | 0.00463 |
| ____ SI | 15.00319 | 1 394.71 | 2.515 | 14.73854 | 14.83586 | 15.43518 |
| ____ SN | 0.00023 | 0.41 | 490.758 | 0.00043 | 0.00122 | -0.00097 |
| ____ SR | 0.33800 | 180 622.43 | 0.078 | 0.33779 | 0.33830 | 0.33792 |
| ____ TI | 0.00150 | 63.22 | 10.707 | 0.00163 | 0.00153 | 0.00132 |
| ____ TL | -0.00458 | -0.77 | 102.106 | -0.00953 | -0.00023 | -0.00399 |
| ____ V | 0.00316 | 18.42 | 20.118 | 0.00242 | 0.00355 | 0.00349 |
| ____ Y1 | 3723.09667 | 3 723.10 | 0.388 | 3723.87000 | 3737.13000 | 3708.29000 |
| ____ Y2A | 141211.89937 | 141 211.90 | 0.081 | 141343.25753 | 141133.56301 | 141158.87757 |
| ____ Y2R | 7467.08287 | 7 467.08 | 1.798 | 7455.15897 | 7606.92861 | 7339.16101 |
| ____ ZN | 0.01102 | 36.99 | 0.687 | 0.01110 | 0.01100 | 0.01095 |
| ____ ZR | -0.00030 | 3.35 | 1082.158 | 0.00307 | -0.00062 | -0.00334 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 30 Date/Time: 07/18/2017 03:29

Sample Number: **9100489** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00050 | -9.83 | 13.891 | 0.00057 | 0.00044 | 0.00048 |
| ____ AL | -0.01274 | 25.75 | 371.094 | -0.00498 | 0.03019 | -0.06344 |
| ____ AS | -0.00298 | -0.79 | 93.003 | -0.00221 | -0.00606 | -0.00068 |
| ____ B | 0.04595 | 240.08 | 2.803 | 0.04453 | 0.04703 | 0.04629 |
| ____ BA | 0.15206 | 76 586.69 | 0.873 | 0.15240 | 0.15318 | 0.15059 |
| ____ BE | -0.00003 | -151.34 | 65.266 | -0.00003 | -0.00002 | -0.00006 |
| ____ CA | 50.99063 | 31 926.35 | 0.583 | 50.96574 | 50.70660 | 51.29956 |
| ____ CD | -0.00011 | -3.51 | 18.364 | -0.00013 | -0.00011 | -0.00009 |
| ____ CO | -0.00014 | -1.50 | 184.489 | -0.00012 | -0.00040 | 0.00011 |
| ____ CR | 0.00125 | 8.48 | 16.230 | 0.00109 | 0.00118 | 0.00148 |
| ____ CU | 0.00111 | 2.66 | 31.880 | 0.00149 | 0.00079 | 0.00104 |
| ____ FE | 0.37245 | 45.02 | 3.523 | 0.36530 | 0.36446 | 0.38760 |
| ____ K | 3.00270 | 984.93 | 0.339 | 2.99243 | 3.00289 | 3.01279 |
| ____ LI | 0.01876 | 104.00 | 14.954 | 0.01899 | 0.02144 | 0.01584 |
| ____ MG | 7.09075 | 5 942.00 | 0.480 | 7.05189 | 7.10490 | 7.11545 |
| ____ MN | 0.02211 | 741.71 | 0.716 | 0.02195 | 0.02227 | 0.02212 |
| ____ MO | 0.00809 | 4.86 | 9.173 | 0.00728 | 0.00873 | 0.00827 |
| ____ NA | 24.29229 | 26 981.44 | 0.549 | 24.27719 | 24.16705 | 24.43265 |
| ____ NI | -0.00033 | 6.97 | 324.958 | 0.00018 | -0.00155 | 0.00039 |
| ____ P | 0.03418 | 1.34 | 4.871 | 0.03560 | 0.03461 | 0.03235 |
| ____ PB | 0.00133 | -2.91 | 63.314 | 0.00162 | 0.00199 | 0.00038 |
| ____ S | 20.13585 | 1 027.95 | 1.178 | 20.38468 | 20.11078 | 19.91209 |
| ____ SB | 0.00345 | 1.87 | 150.651 | 0.00936 | -0.00037 | 0.00135 |
| ____ SE | -0.01414 | -0.66 | 108.701 | -0.03168 | -0.00304 | -0.00769 |
| ____ SI | 15.44471 | 1 437.08 | 0.579 | 15.35144 | 15.45286 | 15.52985 |
| ____ SN | -0.00009 | 0.31 | 1722.508 | 0.00140 | 0.00006 | -0.00174 |
| ____ SR | 0.34908 | 184 675.78 | 0.847 | 0.34954 | 0.35178 | 0.34592 |
| ____ TI | 0.00300 | 107.94 | 3.139 | 0.00310 | 0.00292 | 0.00298 |
| ____ TL | 0.00708 | 0.54 | 77.750 | 0.00149 | 0.00725 | 0.01250 |
| ____ V | 0.00346 | 20.98 | 19.724 | 0.00270 | 0.00365 | 0.00403 |
| ____ Y1 | 3701.17000 | 3 701.17 | 0.757 | 3668.97500 | 3714.44500 | 3720.09000 |
| ____ Y2A | 139804.80381 | 139 804.80 | 0.724 | 139560.86348 | 138936.39127 | 140917.15667 |
| ____ Y2R | 7472.57270 | 7 472.57 | 0.346 | 7482.36380 | 7492.14072 | 7443.21357 |
| ____ ZN | 0.01593 | 52.68 | 1.343 | 0.01568 | 0.01602 | 0.01608 |
| ____ ZR | 0.00310 | 7.45 | 35.367 | 0.00283 | 0.00217 | 0.00431 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 31 Date/Time: 07/18/2017 03:32

Sample Number: **9100490** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00027 | -11.77 | 237.995 | -0.00045 | 0.00051 | 0.00074 |
| ____ AL | -0.04304 | 23.85 | 100.624 | -0.09065 | -0.00601 | -0.03244 |
| ____ AS | 0.00007 | -0.48 | 7560.599 | 0.00147 | 0.00431 | -0.00558 |
| ____ B | 0.04460 | 234.58 | 1.830 | 0.04466 | 0.04539 | 0.04376 |
| ____ BA | 0.14196 | 72 881.32 | 0.152 | 0.14220 | 0.14178 | 0.14190 |
| ____ BE | -0.00004 | -155.31 | 27.395 | -0.00005 | -0.00003 | -0.00003 |
| ____ CA | 49.58010 | 31 231.42 | 1.099 | 49.77062 | 50.00418 | 48.96551 |
| ____ CD | -0.00035 | -4.91 | 40.235 | -0.00046 | -0.00039 | -0.00019 |
| ____ CO | 0.00105 | 1.19 | 37.004 | 0.00149 | 0.00086 | 0.00079 |
| ____ CR | 0.00107 | 7.42 | 59.241 | 0.00155 | 0.00035 | 0.00132 |
| ____ CU | -0.00037 | -9.66 | 260.690 | 0.00027 | -0.00147 | 0.00010 |
| ____ FE | 0.00037 | 1.71 | 2319.678 | 0.00589 | -0.00948 | 0.00470 |
| ____ K | 2.89276 | 955.86 | 3.400 | 2.84747 | 3.00558 | 2.82523 |
| ____ LI | 0.01915 | 106.63 | 17.691 | 0.02131 | 0.01524 | 0.02089 |
| ____ MG | 6.84051 | 5 767.95 | 0.694 | 6.86874 | 6.86713 | 6.78567 |
| ____ MN | 0.00046 | 14.53 | 15.817 | 0.00050 | 0.00038 | 0.00051 |
| ____ MO | 0.00765 | 4.56 | 6.950 | 0.00816 | 0.00710 | 0.00768 |
| ____ NA | 23.65842 | 26 432.82 | 0.985 | 23.75123 | 23.83070 | 23.39333 |
| ____ NI | 0.00013 | 7.75 | 260.646 | 0.00043 | 0.00021 | -0.00025 |
| ____ P | 0.14548 | 4.43 | 7.534 | 0.15038 | 0.15314 | 0.13293 |
| ____ PB | 0.00222 | -2.54 | 93.527 | 0.00420 | 0.00006 | 0.00238 |
| ____ S | 19.22869 | 993.08 | 0.165 | 19.25275 | 19.19268 | 19.24064 |
| ____ SB | 0.00133 | 1.52 | 181.116 | -0.00145 | 0.00266 | 0.00278 |
| ____ SE | -0.00640 | -0.02 | 106.760 | 0.00148 | -0.01076 | -0.00992 |
| ____ SI | 14.77695 | 1 383.25 | 0.428 | 14.82693 | 14.79797 | 14.70595 |
| ____ SN | -0.00016 | 0.29 | 1126.813 | -0.00223 | 0.00100 | 0.00075 |
| ____ SR | 0.33492 | 180 578.62 | 0.003 | 0.33492 | 0.33491 | 0.33493 |
| ____ TI | 0.00105 | 50.14 | 10.784 | 0.00097 | 0.00100 | 0.00118 |
| ____ TL | -0.00350 | -0.65 | 125.738 | 0.00016 | -0.00228 | -0.00839 |
| ____ V | 0.00281 | 15.20 | 27.842 | 0.00224 | 0.00370 | 0.00249 |
| ____ Y1 | 3742.69333 | 3 742.69 | 0.626 | 3762.81000 | 3716.98500 | 3748.28500 |
| ____ Y2A | 142477.52677 | 142 477.53 | 0.188 | 142490.60564 | 142203.28383 | 142738.69083 |
| ____ Y2R | 7517.59905 | 7 517.60 | 1.210 | 7486.33007 | 7446.35729 | 7620.10978 |
| ____ ZN | 0.00665 | 23.00 | 2.238 | 0.00652 | 0.00662 | 0.00681 |
| ____ ZR | 0.00193 | 6.05 | 218.561 | -0.00182 | 0.00650 | 0.00111 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 32 Date/Time: 07/18/2017 03:35

Sample Number: **9100491** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00012 | -15.45 | 286.238 | -0.00042 | -0.00020 | 0.00026 |
| ____ AL | 0.01767 | 28.15 | 291.166 | -0.01784 | 0.07666 | -0.00582 |
| ____ AS | 0.00224 | -0.26 | 251.179 | -0.00028 | 0.00867 | -0.00169 |
| ____ B | 0.00418 | 19.31 | 11.140 | 0.00465 | 0.00417 | 0.00372 |
| ____ BA | 0.00698 | 3 853.11 | 1.204 | 0.00703 | 0.00688 | 0.00701 |
| ____ BE | -0.00001 | -148.47 | 347.696 | -0.00002 | -0.00001 | 0.00001 |
| ____ CA | 0.82719 | 569.57 | 2.104 | 0.82066 | 0.81399 | 0.84691 |
| ____ CD | 0.00001 | -3.13 | 698.244 | 0.00010 | 0.00002 | -0.00008 |
| ____ CO | 0.00038 | 0.09 | 58.970 | 0.00012 | 0.00050 | 0.00052 |
| ____ CR | 0.00031 | 2.15 | 254.012 | 0.00069 | -0.00059 | 0.00083 |
| ____ CU | 0.00614 | 39.23 | 15.517 | 0.00571 | 0.00548 | 0.00724 |
| ____ FE | 0.01785 | 3.78 | 67.404 | 0.02416 | 0.00398 | 0.02541 |
| ____ K | 0.37659 | 160.40 | 16.814 | 0.39124 | 0.43129 | 0.30722 |
| ____ LI | 0.00199 | 14.00 | 144.218 | 0.00263 | -0.00115 | 0.00447 |
| ____ MG | 0.01020 | 27.22 | 26.763 | 0.00710 | 0.01124 | 0.01225 |
| ____ MN | 0.00570 | 198.86 | 1.797 | 0.00566 | 0.00562 | 0.00581 |
| ____ MO | 0.00108 | -0.78 | 96.238 | 0.00212 | 0.00005 | 0.00106 |
| ____ NA | 1.28687 | 1 407.77 | 0.152 | 1.28626 | 1.28906 | 1.28528 |
| ____ NI | 0.00230 | 11.79 | 29.525 | 0.00155 | 0.00249 | 0.00287 |
| ____ P | 0.02028 | 1.01 | 150.668 | 0.02378 | -0.01188 | 0.04892 |
| ____ PB | 0.00147 | -3.49 | 261.144 | 0.00590 | -0.00109 | -0.00039 |
| ____ S | 0.09348 | 13.34 | 12.834 | 0.10593 | 0.09254 | 0.08199 |
| ____ SB | 0.00408 | 2.07 | 43.289 | 0.00456 | 0.00212 | 0.00556 |
| ____ SE | -0.00636 | -0.02 | 152.692 | -0.01096 | 0.00480 | -0.01293 |
| ____ SI | 0.07039 | 7.90 | 29.251 | 0.09110 | 0.07014 | 0.04993 |
| ____ SN | 0.00019 | 0.41 | 1303.675 | 0.00293 | -0.00075 | -0.00162 |
| ____ SR | 0.00311 | 1 683.30 | 0.847 | 0.00313 | 0.00308 | 0.00312 |
| ____ TI | 0.00069 | 40.08 | 26.076 | 0.00083 | 0.00049 | 0.00075 |
| ____ TL | -0.00333 | -0.63 | 24.960 | -0.00281 | -0.00289 | -0.00429 |
| ____ V | 0.00037 | -7.17 | 244.017 | -0.00045 | 0.00021 | 0.00135 |
| ____ Y1 | 3864.24833 | 3 864.25 | 0.288 | 3877.03000 | 3856.83500 | 3858.88000 |
| ____ Y2A | 146201.20577 | 146 201.21 | 0.244 | 145854.65407 | 146567.67086 | 146181.29238 |
| ____ Y2R | 7575.70000 | 7 575.70 | 0.526 | 7609.17500 | 7586.27500 | 7531.65000 |
| ____ ZN | 0.02785 | 95.00 | 0.865 | 0.02786 | 0.02761 | 0.02809 |
| ____ ZR | -0.00119 | 2.30 | 243.196 | 0.00003 | 0.00089 | -0.00448 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 33 Date/Time: 07/18/2017 03:38

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50449 | 4 029.26 | 0.354 | 0.50435 | 0.50278 | 0.50634 |
| ____ AL | 25.16231 | 1 689.44 | 1.336 | 25.15952 | 24.82757 | 25.49984 |
| ____ AS | 0.51442 | 52.57 | 0.577 | 0.51773 | 0.51355 | 0.51198 |
| ____ B | 0.49694 | 2 748.27 | 0.521 | 0.49539 | 0.49550 | 0.49993 |
| ____ BA | 0.51792 | 256 327.89 | 0.475 | 0.51706 | 0.51600 | 0.52069 |
| ____ BE | 0.49574 | 157 795.64 | 0.500 | 0.49460 | 0.49403 | 0.49858 |
| ____ CA | 25.41564 | 15 669.90 | 0.880 | 25.45428 | 25.17514 | 25.61748 |
| ____ CD | 0.50847 | 2 588.48 | 0.800 | 0.50668 | 0.51313 | 0.50561 |
| ____ CO | 0.50310 | 1 123.40 | 0.748 | 0.50188 | 0.50732 | 0.50010 |
| ____ CR | 0.49382 | 3 317.55 | 0.796 | 0.49302 | 0.49036 | 0.49809 |
| ____ CU | 0.50916 | 4 059.91 | 0.740 | 0.50640 | 0.50763 | 0.51345 |
| ____ FE | 25.20114 | 2 880.16 | 0.712 | 25.17527 | 25.03614 | 25.39202 |
| ____ K | 25.23751 | 7 841.31 | 1.279 | 25.27619 | 24.89717 | 25.53918 |
| ____ LI | 0.51664 | 2 636.30 | 1.097 | 0.51780 | 0.51048 | 0.52164 |
| ____ MG | 25.12493 | 20 442.40 | 0.800 | 25.10575 | 24.93417 | 25.33487 |
| ____ MN | 0.51139 | 16 919.63 | 0.266 | 0.51079 | 0.51043 | 0.51294 |
| ____ MO | 0.50255 | 397.23 | 0.322 | 0.50157 | 0.50442 | 0.50167 |
| ____ NA | 25.57274 | 27 895.22 | 1.015 | 25.57371 | 25.31268 | 25.83183 |
| ____ NI | 0.50373 | 732.46 | 0.274 | 0.50215 | 0.50469 | 0.50435 |
| ____ P | 0.49089 | 13.71 | 6.689 | 0.45783 | 0.49136 | 0.52349 |
| ____ PB | 0.51071 | 241.28 | 0.440 | 0.50954 | 0.51330 | 0.50929 |
| ____ S | 24.94655 | 1 262.90 | 0.669 | 24.76370 | 24.98500 | 25.09094 |
| ____ SB | 0.51235 | 89.69 | 1.469 | 0.50686 | 0.52093 | 0.50925 |
| ____ SE | 0.51226 | 42.04 | 3.984 | 0.49585 | 0.53511 | 0.50580 |
| ____ SI | 25.36332 | 2 317.49 | 0.947 | 25.38052 | 25.11493 | 25.59452 |
| ____ SN | 0.49178 | 146.03 | 0.638 | 0.48976 | 0.49018 | 0.49539 |
| ____ SR | 0.52354 | 272 628.75 | 1.071 | 0.52660 | 0.51706 | 0.52694 |
| ____ TI | 0.50920 | 15 124.49 | 0.229 | 0.50832 | 0.50875 | 0.51052 |
| ____ TL | 0.52902 | 55.74 | 0.425 | 0.52834 | 0.53153 | 0.52719 |
| ____ V | 0.52173 | 4 713.75 | 0.664 | 0.52223 | 0.51804 | 0.52492 |
| ____ Y1 | 3675.60333 | 3 675.60 | 0.858 | 3693.64000 | 3639.19000 | 3693.98000 |
| ____ Y2A | 137599.53012 | 137 599.53 | 0.311 | 137942.32500 | 137737.31053 | 137118.95484 |
| ____ Y2R | 7338.67103 | 7 338.67 | 1.067 | 7345.57650 | 7413.28874 | 7257.14784 |
| ____ ZN | 0.50894 | 1 644.37 | 0.399 | 0.50688 | 0.50901 | 0.51094 |
| ____ ZR | 0.51637 | 618.07 | 0.302 | 0.51676 | 0.51465 | 0.51769 |

LANCASTER LABORATORIES

Run Name: 1719901T71

Instrument ID: 16315

Tube: 34

Date/Time: 07/18/2017 03:41

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00013 | -13.12 | 749.512 | -0.00080 | 0.00111 | 0.00008 |
| ____ AL | -0.03448 | 24.25 | 99.081 | -0.02339 | -0.07281 | -0.00724 |
| ____ AS | 0.00521 | 0.06 | 95.381 | 0.00694 | -0.00039 | 0.00909 |
| ____ B | 0.00171 | 5.63 | 28.964 | 0.00217 | 0.00118 | 0.00178 |
| ____ BA | 0.00015 | 262.39 | 40.076 | 0.00021 | 0.00009 | 0.00015 |
| ____ BE | 0.00012 | -105.79 | 17.183 | 0.00014 | 0.00012 | 0.00010 |
| ____ CA | 0.00748 | 47.97 | 290.521 | -0.00065 | -0.00901 | 0.03209 |
| ____ CD | 0.00002 | -3.01 | 58.101 | 0.00003 | 0.00001 | 0.00003 |
| ____ CO | -0.00003 | -0.85 | 1227.318 | -0.00001 | -0.00035 | 0.00028 |
| ____ CR | 0.00026 | 1.80 | 231.868 | 0.00096 | 0.00000 | -0.00017 |
| ____ CU | -0.00041 | -16.41 | 240.916 | 0.00010 | -0.00156 | 0.00022 |
| ____ FE | 0.00879 | 2.70 | 403.278 | 0.00014 | -0.02153 | 0.04775 |
| ____ K | 0.00623 | 41.62 | 1200.947 | 0.01093 | -0.07085 | 0.07862 |
| ____ LI | 0.00261 | 17.02 | 2.803 | 0.00270 | 0.00259 | 0.00256 |
| ____ MG | -0.00633 | 13.05 | 167.823 | -0.01241 | -0.01251 | 0.00593 |
| ____ MN | 0.00020 | 5.65 | 33.472 | 0.00018 | 0.00027 | 0.00014 |
| ____ MO | 0.00146 | -0.45 | 33.075 | 0.00178 | 0.00169 | 0.00090 |
| ____ NA | 0.06896 | 33.87 | 40.417 | 0.05624 | 0.04971 | 0.10091 |
| ____ NI | -0.00052 | 7.34 | 64.102 | -0.00064 | -0.00078 | -0.00014 |
| ____ P | 0.00713 | 0.62 | 35.484 | 0.00528 | 0.00609 | 0.01001 |
| ____ PB | 0.00425 | -2.08 | 71.839 | 0.00231 | 0.00267 | 0.00778 |
| ____ S | 0.00677 | 8.55 | 43.202 | 0.00365 | 0.00944 | 0.00722 |
| ____ SB | 0.00455 | 2.10 | 65.323 | 0.00139 | 0.00497 | 0.00728 |
| ____ SE | -0.01207 | -0.50 | 49.358 | -0.01836 | -0.00651 | -0.01134 |
| ____ SI | 0.01794 | 2.91 | 40.462 | 0.01627 | 0.01166 | 0.02588 |
| ____ SN | 0.00050 | 0.50 | 29.377 | 0.00062 | 0.00034 | 0.00052 |
| ____ SR | 0.00023 | 87.27 | 21.649 | 0.00028 | 0.00023 | 0.00018 |
| ____ TI | 0.00031 | 27.87 | 35.038 | 0.00019 | 0.00038 | 0.00037 |
| ____ TL | -0.00144 | -0.40 | 573.054 | 0.00556 | -0.01057 | 0.00068 |
| ____ V | 0.00034 | -7.48 | 31.037 | 0.00022 | 0.00043 | 0.00036 |
| ____ Y1 | 3774.74500 | 3 774.75 | 0.945 | 3803.74000 | 3785.59000 | 3734.90500 |
| ____ Y2A | 144248.02101 | 144 248.02 | 0.185 | 144320.72270 | 144470.83083 | 143952.50950 |
| ____ Y2R | 7464.15833 | 7 464.16 | 1.217 | 7378.65000 | 7454.27500 | 7559.55000 |
| ____ ZN | 0.00006 | 1.57 | 180.239 | 0.00015 | 0.00008 | -0.00006 |
| ____ ZR | 0.00046 | 4.22 | 595.417 | 0.00334 | 0.00005 | -0.00203 |

# ICP-MS Data

# Metals in Liquid

eurofins | Lancaster Laboratories Environmental

# ICP-MS Run Data Report

Method Reference Name(s):

Date File Name: 17G18G00.E03

Run Name: 1719906E03

Analyst: 1242

Reviewed By: Choon Y Tian

Reviewed Date: 07/18/2017 11:33

Verified By: Parker D Lindstrom

Verified Date: 07/18/2017 21:16

Instrument Parameters:

Rinse Time (sec): 25.00

| INTERNAL STD. | ELEMENT | MASS |
|---|---|---|
| **SC-1** | | 45 |
| | NA | 23 |
| | MG | 24 |
| | AL | 27 |
| | K | 39 |
| | CA | 44 |
| | TI | 47 |
| | V | 51 |
| | CR | 52 |
| | MN | 55 |
| | FE | 57 |
| **IN-1** | | 115 |
| | CO | 59 |
| | NI | 60 |
| | CU | 63 |
| | ZN | 66 |
| | AS | 75 |
| | SR | 88 |
| | MO | 98 |
| | AG | 107 |
| | CD | 111 |
| | SN | 120 |
| | SB | 121 |
| | BA | 137 |
| **BI-1** | | 209 |
| | TL | 203 |
| | PB | 208 |
| | U | 238 |

Run Name: 1719906E03 Date/Time: 07/18/2017 9:56:00
Tube Number: 1
Sample Number: **S0**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| *NA* | 23 | 0.00000 | 7232.25000 | 403011000 | 2.80038 | 3.07037 | -5.87100 |
| *MG* | 24 | 0.00000 | 96.67100 | 556775000 | -0.44591 | -0.07352 | 0.51944 |
| *AL* | 27 | 0.00000 | 16.66730 | -1350130000 | 0.13570 | 0.16702 | -0.30272 |
| *K* | 39 | -0.00002 | 38584.60000 | -80403100 | -16.20552 | 11.14489 | 5.06345 |
| *CA* | 44 | -0.00001 | 423.36200 | -263218000 | 13.59383 | 7.24235 | -20.83605 |
| *SC-1* | 45 | 46058.60000 | 0.00000 | 1.976 | 46614.10000 | 45008.50000 | 46553.20000 |
| *TI* | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *V* | 51 | 0.00000 | 26.66770 | 3462980000 | 0.03070 | -0.03823 | 0.00754 |
| *CR* | 52 | 0.00000 | 70.00260 | -18106200000 | 0.05402 | -0.01587 | -0.03816 |
| *MN* | 55 | 0.00000 | 10.00040 | 82081300000 | -0.03274 | 0.06548 | -0.03274 |
| *FE* | 57 | 0.00000 | 33.33460 | -563539000 | -0.33455 | 0.66565 | -0.33111 |
| *CO* | 59 | 0.00000 | 66.66950 | -8978320000 | -0.00673 | -0.05849 | 0.06522 |
| *NI* | 60 | 0.00000 | 30.00160 | 1331990000 | -0.07611 | 0.00016 | 0.07594 |
| *CU* | 63 | 0.00000 | 40.00150 | -2065580000 | 0.01418 | -0.01405 | -0.00013 |
| *ZN* | 66 | 0.00000 | 26.66770 | 14334200000 | 0.25591 | -0.18237 | -0.07354 |
| *GE-1* | 72 | 100760.00000 | 0.00000 | 0.656 | 100975.00000 | 101287.00000 | 100018.00000 |
| *AS* | 75 | 0.00000 | 41.33370 | 941493000 | 0.28623 | 0.05191 | -0.33814 |
| *SR* | 88 | 0.00000 | 6.66692 | -6361140000 | -0.01739 | 0.03478 | -0.01739 |
| *MO* | 98 | 0.00000 | 16.66730 | 448441000 | 0.00650 | 0.00646 | -0.01296 |
| *AG* | 107 | 0.00000 | 13.33380 | 4875000000 | 0.01448 | -0.01156 | -0.00292 |
| *CD* | 111 | 0.00000 | 10.00010 | 3114570000 | -0.04110 | 0.00009 | 0.04101 |
| *IN-1* | 115 | 50964.50000 | 0.00000 | 0.193 | 50885.00000 | 50934.00000 | 51074.50000 |
| *SN* | 120 | 0.00000 | 13.33390 | 4555980000 | -0.00745 | 0.01498 | -0.00753 |
| *SB* | 121 | 0.00000 | 10.00040 | -5665570 | 0.00006 | 0.00002 | -0.00008 |
| *BA* | 137 | 0.00000 | 3.33347 | 1435410000 | -0.02457 | -0.02457 | 0.04915 |
| *TB-1* | 159 | 162806.00000 | 0.00000 | 1.565 | 162066.00000 | 160709.00000 | 165642.00000 |
| *TL* | 203 | 0.00000 | 13.33390 | -677808000 | -0.00404 | -0.00369 | 0.00772 |
| *PB* | 208 | 0.00000 | 126.67300 | 583105000 | -0.01028 | 0.00924 | 0.00104 |
| *BI-1* | 209 | 111367.00000 | 0.00000 | 1.519 | 112975.00000 | 109602.00000 | 111522.00000 |
| *U* | 238 | 0.00000 | 6.66695 | 12798200000 | -0.00219 | 0.00437 | -0.00219 |

Run Name: 1719906E03 Date/Time: 07/18/2017 9:58:00
Tube Number: 2
Sample Number: **S1**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45644.00000 | 0.00000 | 3.676 | 47045.80000 | 46102.10000 | 43784.20000 |
| AL | 27 | 10000.00000 | 223010.00000 | 1.924 | 10027.12827 | 9795.45741 | 10177.40385 |
| CA | 44 | 10000.00000 | 23011.10000 | 4.151 | 9609.40758 | 9954.60487 | 10435.96260 |
| CR | 52 | 1000.00000 | 530594.00000 | 1.675 | 1016.19580 | 982.73686 | 1001.06824 |
| FE | 57 | 10000.00000 | 111822.00000 | 3.123 | 9697.04146 | 9982.06145 | 10320.84550 |
| K | 39 | 10000.00000 | 453581.00000 | 3.305 | 9876.18742 | 9749.26455 | 10374.53829 |
| MG | 24 | 10000.00000 | 610237.00000 | 1.494 | 9902.78980 | 9925.10420 | 10172.01048 |
| MN | 55 | 1000.00000 | 309619.00000 | 2.415 | 993.49683 | 979.76586 | 1026.73557 |
| NA | 23 | 10000.00000 | 1330310.00000 | 1.728 | 9804.11301 | 10064.62825 | 10131.13668 |
| TI | 47 | 1000.00000 | 13313.90000 | 3.403 | 968.86774 | 1036.32364 | 994.80336 |
| V | 51 | 1000.00000 | 421051.00000 | 1.103 | 994.98933 | 992.37001 | 1012.64134 |
| **IN-1** | 115 | 48860.90000 | 0.00000 | 4.339 | 50108.70000 | 50060.50000 | 46413.60000 |
| AG | 107 | 100.00000 | 110520.00000 | 3.509 | 99.45723 | 96.79369 | 103.74907 |
| AS | 75 | 1000.00000 | 49331.90000 | 4.233 | 987.53923 | 965.29561 | 1047.15736 |
| BA | 137 | 1000.00000 | 129637.00000 | 3.679 | 979.59231 | 977.93319 | 1042.47717 |
| CD | 111 | 100.00000 | 13959.10000 | 3.804 | 98.23103 | 97.40169 | 104.36603 |
| CO | 59 | 1000.00000 | 927048.00000 | 2.941 | 988.01890 | 978.47201 | 1033.50896 |
| CU | 63 | 1000.00000 | 681010.00000 | 2.200 | 998.94078 | 978.54561 | 1022.50396 |
| MO | 98 | 100.00000 | 49521.10000 | 5.007 | 102.34034 | 94.25052 | 103.40797 |
| NI | 60 | 1000.00000 | 251324.00000 | 2.048 | 988.19595 | 988.14992 | 1023.65395 |
| SB | 121 | 100.00000 | 26873.00000 | 2.973 | 100.26339 | 96.90382 | 102.83292 |
| SN | 120 | 100.00000 | 42733.90000 | 2.084 | 102.04323 | 97.87632 | 100.08054 |
| SR | 88 | 100.00000 | 36784.10000 | 1.058 | 101.22041 | 99.34789 | 99.43122 |
| ZN | 66 | 1000.00000 | 87650.80000 | 2.486 | 1012.75837 | 971.34835 | 1015.89573 |
| **BI-1** | 209 | 107111.00000 | 0.00000 | 2.245 | 109431.00000 | 107272.00000 | 104629.00000 |
| PB | 208 | 100.00000 | 265438.00000 | 0.846 | 100.13927 | 100.76907 | 99.09263 |
| TL | 203 | 100.00000 | 82713.70000 | 0.677 | 100.61464 | 99.27410 | 100.11155 |
| U | 238 | 100.00000 | 297924.00000 | 0.882 | 99.20159 | 99.85239 | 100.94652 |
| *GE-1* | 72 | 95970.50000 | 0.00000 | 2.041 | 98193.30000 | 95222.30000 | 94495.90000 |
| *TB-1* | 159 | 160367.00000 | 0.00000 | 2.668 | 165287.00000 | 157508.00000 | 158307.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:00:00
Tube Number: 3
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45767.90000 | 0.00000 | 3.483 | 47497.30000 | 45450.00000 | 44356.40000 |
| AL | 27 | 1.63600 | 53.33580 | 54.914 | 2.27362 | 0.60844 | 2.02583 |
| CA | 44 | -33.87000 | 343.35200 | -43.578 | -45.36059 | -39.04344 | -17.22809 |
| CR | 52 | 0.57280 | 373.35400 | 10.965 | 0.50350 | 0.58886 | 0.62600 |
| FE | 57 | 0.93340 | 43.33520 | 245.447 | -1.24239 | 3.32365 | 0.71896 |
| K | 39 | -0.21680 | 38347.20000 | -5184.500 | 12.65244 | -8.09280 | -5.21067 |
| MG | 24 | 1.32700 | 176.67500 | 32.773 | 0.95029 | 1.22829 | 1.80307 |
| MN | 55 | 0.11800 | 46.66870 | 19.644 | 0.09136 | 0.12937 | 0.13337 |
| NA | 23 | 2.10600 | 7472.41000 | 99.478 | 3.55792 | -0.29521 | 3.05593 |
| TI | 47 | 1.24200 | 16.66730 | 32.786 | 1.44345 | 1.50847 | 0.77283 |
| V | 51 | 0.13380 | 83.33720 | 39.170 | 0.18871 | 0.12847 | 0.08430 |
| **IN-1** | 115 | 51352.90000 | 0.00000 | 0.488 | 51627.10000 | 51136.40000 | 51295.30000 |
| AG | 107 | 0.02284 | 40.00160 | 65.149 | 0.03122 | 0.03163 | 0.00566 |
| AS | 75 | 0.76400 | 81.33420 | 50.170 | 1.11438 | 0.82300 | 0.35472 |
| BA | 137 | 0.24460 | 36.66840 | 46.239 | 0.12129 | 0.34359 | 0.26905 |
| CD | 111 | -0.02769 | 6.00006 | -98.917 | -0.02794 | -0.00018 | -0.05496 |
| CO | 59 | 0.12260 | 186.67700 | 34.486 | 0.15561 | 0.13716 | 0.07491 |
| CU | 63 | 0.23690 | 210.00900 | 23.136 | 0.29098 | 0.23822 | 0.18138 |
| MO | 98 | 0.03180 | 33.33490 | 92.987 | 0.02504 | 0.06416 | 0.00619 |
| NI | 60 | 0.17600 | 76.67010 | 33.597 | 0.11155 | 0.22772 | 0.18878 |
| SB | 121 | 0.04686 | 23.33420 | 42.680 | 0.06996 | 0.03543 | 0.03521 |
| SN | 120 | 0.04430 | 33.33460 | 57.923 | 0.05869 | 0.05954 | 0.01467 |
| SR | 88 | 0.04291 | 23.33420 | 69.261 | 0.05982 | 0.00859 | 0.06032 |
| ZN | 66 | 0.10570 | 36.66810 | 155.251 | 0.24804 | -0.07380 | 0.14286 |
| **BI-1** | 209 | 112427.00000 | 0.00000 | 0.777 | 113066.00000 | 112784.00000 | 111431.00000 |
| PB | 208 | 0.01736 | 176.67500 | 111.694 | 0.03968 | 0.00768 | 0.00471 |
| TL | 203 | 0.00376 | 16.66740 | 471.653 | 0.00741 | -0.01550 | 0.01937 |
| U | 238 | 0.02859 | 96.67130 | 100.210 | 0.05823 | 0.02650 | 0.00104 |
| *GE-1* | 72 | 100656.00000 | 0.00000 | 2.264 | 103213.00000 | 99915.90000 | 98839.30000 |
| *TB-1* | 159 | 162438.00000 | 0.00000 | 0.702 | 163719.00000 | 162067.00000 | 161528.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:02:00
Tube Number: 4
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45587.10000 | 0.00000 | 3.734 | 45670.70000 | 47246.10000 | 43844.60000 |
| AL | 27 | 0.94420 | 36.66830 | 173.268 | 1.05002 | -0.74230 | 2.52484 |
| CA | 44 | -24.43000 | 363.35600 | -75.031 | -8.81297 | -44.61196 | -19.86617 |
| CR | 52 | 0.59750 | 386.68700 | 16.072 | 0.52886 | 0.70721 | 0.55633 |
| FE | 57 | 2.15900 | 56.66880 | 101.621 | 3.29322 | -0.36967 | 3.55368 |
| K | 39 | -2.09500 | 38109.90000 | -343.723 | -10.09306 | 3.87244 | -0.06398 |
| MG | 24 | -0.25940 | 80.00370 | -44.449 | -0.25895 | -0.14435 | -0.37496 |
| MN | 55 | 0.04398 | 23.33420 | 119.804 | 0.03179 | -0.00155 | 0.10170 |
| NA | 23 | -0.91520 | 7038.81000 | -289.226 | 1.93784 | -3.29253 | -1.39142 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.03163 | 40.00200 | 194.499 | 0.08008 | 0.05240 | -0.03759 |
| **IN-1** | 115 | 49364.90000 | 0.00000 | 0.634 | 49248.20000 | 49127.20000 | 49719.30000 |
| AG | 107 | 0.00337 | 16.66730 | 155.427 | 0.00638 | 0.00642 | -0.00268 |
| AS | 75 | 0.18610 | 49.33380 | 123.160 | 0.44306 | 0.00276 | 0.11264 |
| BA | 137 | 0.05194 | 10.00040 | 147.208 | 0.12834 | 0.05207 | -0.02457 |
| CD | 111 | -0.00725 | 8.66674 | -293.023 | -0.02598 | -0.01163 | 0.01584 |
| CO | 59 | 0.00942 | 73.33610 | 67.346 | 0.01672 | 0.00621 | 0.00532 |
| CU | 63 | 0.10370 | 110.00500 | 42.661 | 0.14758 | 0.10428 | 0.05910 |
| MO | 98 | -0.01227 | 10.00040 | -163.570 | -0.03226 | 0.00788 | -0.01243 |
| NI | 60 | 0.03027 | 36.66810 | 200.628 | 0.08300 | 0.04393 | -0.03613 |
| SB | 121 | 0.03830 | 20.00110 | 255.640 | 0.00124 | 0.14933 | -0.03567 |
| SN | 120 | 0.04727 | 33.33490 | 56.357 | 0.01652 | 0.06320 | 0.06209 |
| SR | 88 | 0.00961 | 10.00040 | 280.720 | 0.03657 | 0.00966 | -0.01739 |
| ZN | 66 | 0.34830 | 56.66910 | 19.790 | 0.38731 | 0.38897 | 0.26875 |
| **BI-1** | 209 | 110664.00000 | 0.00000 | 0.784 | 111664.00000 | 110210.00000 | 110117.00000 |
| PB | 208 | -0.01077 | 96.67070 | -49.740 | -0.00625 | -0.00939 | -0.01669 |
| TL | 203 | -0.01163 | 3.33347 | -57.584 | -0.00390 | -0.01550 | -0.01550 |
| U | 238 | 0.00652 | 26.66780 | 126.074 | -0.00219 | 0.00760 | 0.01414 |
| *GE-1* | 72 | 98540.10000 | 0.00000 | 1.998 | 100501.00000 | 96562.80000 | 98556.20000 |
| *TB-1* | 159 | 157831.00000 | 0.00000 | 0.449 | 157314.00000 | 158638.00000 | 157539.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:04:00
Tube Number: 5
Sample Number: **ICV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 47048.90000 | 0.00000 | 2.988 | 47256.10000 | 48340.30000 | 45550.30000 |
| AL | 27 | 4964.00000 | 114107.00000 | 2.585 | 5038.36098 | 4815.99996 | 5038.07344 |
| CA | 44 | 4926.00000 | 11902.50000 | 5.104 | 4852.54083 | 4718.62430 | 5205.38567 |
| CR | 52 | 496.10000 | 271278.00000 | 1.520 | 495.59566 | 488.88089 | 503.93113 |
| FE | 57 | 4938.00000 | 56959.50000 | 2.163 | 5019.42248 | 4816.91631 | 4977.15555 |
| K | 39 | 4955.00000 | 251614.00000 | 2.674 | 5016.19929 | 4803.04608 | 5046.04434 |
| MG | 24 | 4995.00000 | 314259.00000 | 2.182 | 5033.00816 | 4872.56663 | 5080.63554 |
| MN | 55 | 496.30000 | 158441.00000 | 1.578 | 499.90638 | 487.33399 | 501.71953 |
| NA | 23 | 4533.00000 | 625561.00000 | 2.261 | 4556.80136 | 4420.41923 | 4621.14865 |
| TI | 47 | 510.90000 | 7005.49000 | 5.447 | 518.08266 | 480.20740 | 534.47176 |
| V | 51 | 497.70000 | 215942.00000 | 3.355 | 497.28494 | 481.24462 | 514.64409 |
| **IN-1** | 115 | 50144.50000 | 0.00000 | 0.946 | 50521.40000 | 50300.50000 | 49611.60000 |
| AG | 107 | 51.23000 | 58172.30000 | 1.236 | 51.61115 | 51.58116 | 50.49950 |
| AS | 75 | 495.30000 | 25123.80000 | 0.448 | 492.70381 | 496.68787 | 496.39562 |
| BA | 137 | 496.50000 | 66123.80000 | 1.601 | 487.47594 | 499.62171 | 502.43877 |
| CD | 111 | 50.87000 | 7300.15000 | 1.087 | 50.86284 | 51.42068 | 50.31497 |
| CO | 59 | 490.40000 | 466950.00000 | 0.109 | 490.94628 | 489.90294 | 490.21204 |
| CU | 63 | 497.00000 | 347609.00000 | 0.514 | 496.35908 | 499.87784 | 494.90497 |
| MO | 98 | 50.54000 | 25710.40000 | 2.095 | 49.38359 | 50.76006 | 51.46556 |
| NI | 60 | 498.90000 | 128797.00000 | 2.327 | 506.07214 | 505.17750 | 485.53584 |
| SB | 121 | 54.95000 | 15169.80000 | 2.249 | 53.56718 | 55.93741 | 55.35690 |
| SN | 120 | 49.89000 | 21886.60000 | 4.049 | 48.16341 | 52.11149 | 49.39392 |
| SR | 88 | 49.17000 | 18560.90000 | 1.752 | 49.72959 | 48.17528 | 49.59601 |
| ZN | 66 | 487.90000 | 43919.00000 | 1.379 | 486.22040 | 482.23677 | 495.35912 |
| **BI-1** | 209 | 110385.00000 | 0.00000 | 1.437 | 112210.00000 | 109603.00000 | 109343.00000 |
| PB | 208 | 49.92000 | 136599.00000 | 1.169 | 49.26083 | 50.14041 | 50.36461 |
| TL | 203 | 50.01000 | 42630.60000 | 2.126 | 49.04919 | 51.15239 | 49.83557 |
| U | 238 | 49.79000 | 152874.00000 | 1.854 | 49.29408 | 50.85136 | 49.21469 |
| *GE-1* | 72 | 99081.10000 | 0.00000 | 1.725 | 100795.00000 | 99071.30000 | 97376.70000 |
| *TB-1* | 159 | 160988.00000 | 0.00000 | 0.915 | 162316.00000 | 161245.00000 | 159403.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:06:00
Tube Number: 6
Sample Number: **ICB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45831.40000 | 0.00000 | 3.906 | 47898.50000 | 44797.90000 | 44797.80000 |
| AL | 27 | 0.56900 | 30.00110 | 194.728 | 1.82109 | 0.17130 | -0.28550 |
| CA | 44 | 12.49000 | 450.02600 | 200.480 | 16.67808 | 35.18172 | -14.38019 |
| CR | 52 | 0.52330 | 346.68600 | 22.072 | 0.39040 | 0.58013 | 0.59934 |
| FE | 57 | -0.89420 | 23.33420 | -112.279 | -0.40496 | -2.04965 | -0.22808 |
| K | 39 | -93.43000 | 34476.30000 | -24.414 | -119.09005 | -75.43838 | -85.77157 |
| MG | 24 | -0.42910 | 70.00330 | -99.720 | -0.31986 | -0.06651 | -0.90119 |
| MN | 55 | 0.10770 | 43.33520 | 128.134 | 0.05955 | 0.26331 | 0.00015 |
| NA | 23 | -4.92000 | 6548.57000 | -37.846 | -4.41778 | -3.36140 | -6.98156 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.19810 | 110.00500 | 5.022 | 0.18660 | 0.20383 | 0.20384 |
| **IN-1** | 115 | 50030.60000 | 0.00000 | 4.719 | 52339.60000 | 50131.10000 | 47621.10000 |
| AG | 107 | 0.01809 | 33.33460 | 105.694 | 0.02220 | -0.00275 | 0.03482 |
| AS | 75 | 0.23800 | 52.66720 | 23.050 | 0.29378 | 0.18411 | 0.23616 |
| BA | 137 | 0.04948 | 10.00040 | 151.839 | 0.04737 | 0.12564 | -0.02457 |
| CD | 111 | -0.02143 | 6.66673 | -110.033 | -0.02849 | -0.04068 | 0.00487 |
| CO | 59 | 0.07169 | 133.33900 | 34.342 | 0.05192 | 0.09926 | 0.06388 |
| CU | 63 | 0.13370 | 133.33900 | 26.515 | 0.16294 | 0.14399 | 0.09430 |
| MO | 98 | -0.01942 | 6.66692 | -57.312 | -0.01342 | -0.01259 | -0.03226 |
| NI | 60 | -0.04900 | 16.66750 | -164.041 | -0.11430 | 0.04076 | -0.07349 |
| SB | 121 | -0.02357 | 3.33347 | -88.799 | -0.03567 | 0.00059 | -0.03567 |
| SN | 120 | 0.07630 | 46.66850 | 72.071 | 0.12304 | 0.01570 | 0.09016 |
| SR | 88 | 0.00883 | 10.00040 | 287.865 | 0.03338 | -0.01739 | 0.01051 |
| ZN | 66 | -0.14660 | 13.33380 | -85.812 | -0.07881 | -0.06943 | -0.29181 |
| **BI-1** | 209 | 111413.00000 | 0.00000 | 2.028 | 113207.00000 | 112157.00000 | 108876.00000 |
| PB | 208 | -0.00377 | 116.67200 | -95.860 | 0.00034 | -0.00642 | -0.00523 |
| TL | 203 | 0.00768 | 20.00110 | 297.930 | 0.03026 | -0.01550 | 0.00829 |
| U | 238 | 0.00857 | 33.33470 | 21.051 | 0.00734 | 0.01063 | 0.00772 |
| *GE-1* | 72 | 98103.80000 | 0.00000 | 1.457 | 99736.10000 | 97075.10000 | 97500.30000 |
| *TB-1* | 159 | 161444.00000 | 0.00000 | 2.119 | 164965.00000 | 161233.00000 | 158133.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:08:00
Tube Number: 7
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45747.90000 | 0.00000 | 2.174 | 45420.10000 | 44958.70000 | 46865.00000 |
| AL | 27 | 206.70000 | 4634.34000 | 4.142 | 206.09431 | 215.50264 | 198.40696 |
| CA | 44 | 335.70000 | 1180.12000 | 13.366 | 361.03772 | 362.16729 | 283.88887 |
| CR | 52 | 4.60500 | 2513.68000 | 11.533 | 4.81449 | 4.99926 | 4.00092 |
| FE | 57 | 198.20000 | 2253.62000 | 7.422 | 213.55133 | 196.71237 | 184.23750 |
| K | 39 | 342.20000 | 52569.70000 | 7.309 | 361.04403 | 351.62963 | 313.78873 |
| MG | 24 | 208.70000 | 12863.30000 | 3.639 | 217.36141 | 203.12611 | 205.65852 |
| MN | 55 | 4.98600 | 1556.83000 | 5.788 | 5.15846 | 5.14625 | 4.65258 |
| NA | 23 | 370.80000 | 56378.70000 | 1.975 | 378.84753 | 369.26655 | 364.46072 |
| TI | 47 | 28.84000 | 383.35600 | 36.338 | 39.24699 | 28.97441 | 18.28687 |
| V | 51 | 1.00500 | 450.02700 | 8.461 | 1.03544 | 1.07081 | 0.90908 |
| **IN-1** | 115 | 49531.30000 | 0.00000 | 0.749 | 49171.80000 | 49509.40000 | 49912.50000 |
| AG | 107 | 1.09200 | 1236.78000 | 14.423 | 1.27323 | 0.98782 | 1.01516 |
| AS | 75 | 4.07400 | 244.00400 | 10.572 | 4.43184 | 3.59621 | 4.19544 |
| BA | 137 | 4.41000 | 583.37300 | 17.571 | 3.88083 | 5.29924 | 4.04917 |
| CD | 111 | 1.04200 | 157.33600 | 12.217 | 0.92759 | 1.01975 | 1.17920 |
| CO | 59 | 1.04100 | 1043.42000 | 9.483 | 1.14155 | 1.03755 | 0.94420 |
| CU | 63 | 4.28000 | 2993.79000 | 9.411 | 4.62591 | 4.37661 | 3.83781 |
| MO | 98 | 0.81670 | 426.69100 | 20.889 | 0.62959 | 0.96373 | 0.85688 |
| NI | 60 | 3.57400 | 940.07000 | 4.813 | 3.75881 | 3.41844 | 3.54560 |
| SB | 121 | 1.88400 | 523.36500 | 17.192 | 1.51690 | 2.13048 | 2.00372 |
| SN | 120 | 4.09400 | 1786.89000 | 12.638 | 3.78500 | 3.80521 | 4.69110 |
| SR | 88 | 2.03900 | 766.72600 | 8.244 | 1.87433 | 2.21034 | 2.03262 |
| ZN | 66 | 30.96000 | 2777.09000 | 0.946 | 31.22621 | 31.01095 | 30.64681 |
| **BI-1** | 209 | 111749.00000 | 0.00000 | 1.545 | 109904.00000 | 113328.00000 | 112015.00000 |
| PB | 208 | 2.01700 | 5710.77000 | 1.650 | 1.99679 | 1.99920 | 2.05561 |
| TL | 203 | 1.00500 | 880.07400 | 6.884 | 1.08058 | 0.94459 | 0.99054 |
| U | 238 | 0.91870 | 2863.80000 | 7.789 | 0.91054 | 0.99402 | 0.85160 |
| *GE-1* | 72 | 98389.00000 | 0.00000 | 1.376 | 98516.60000 | 99674.90000 | 96975.50000 |
| *TB-1* | 159 | 159404.00000 | 0.00000 | 0.385 | 158767.00000 | 159992.00000 | 159452.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:09:00
Tube Number: 8
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 40821.80000 | 0.00000 | 1.834 | 40213.70000 | 40593.80000 | 41657.90000 |
| AL | 27 | 111500.00000 | 2224540.00000 | 3.038 | 114045.89800 | 112913.49855 | 107695.96545 |
| CA | 44 | 314900.00000 | 637070.00000 | 2.588 | 319777.43236 | 319439.57405 | 305493.42385 |
| CR | 52 | 1.80800 | 920.07000 | 4.636 | 1.83805 | 1.71363 | 1.87312 |
| FE | 57 | 273800.00000 | 2739440.00000 | 1.871 | 275560.74418 | 277896.30872 | 268087.71757 |
| K | 39 | 119100.00000 | 4460040.00000 | 1.864 | 121425.67641 | 118827.09413 | 117009.14033 |
| MG | 24 | 110900.00000 | 6054470.00000 | 2.044 | 111609.37800 | 112788.40041 | 108407.65396 |
| MN | 55 | 84.98000 | 23538.90000 | 4.735 | 88.98566 | 85.02207 | 80.93725 |
| NA | 23 | 265600.00000 | 31442100.00000 | 2.858 | 268109.78811 | 271683.80187 | 257116.06368 |
| TI | 47 | 2372.00000 | 28237.90000 | 1.530 | 2385.10761 | 2399.15258 | 2330.43877 |
| V | 51 | 0.09658 | 60.00250 | 52.526 | 0.09941 | 0.04449 | 0.14584 |
| **IN-1** | 115 | 45838.10000 | 0.00000 | 3.100 | 44501.10000 | 45683.20000 | 47330.10000 |
| AG | 107 | 0.34040 | 366.68700 | 24.780 | 0.30610 | 0.27854 | 0.43646 |
| AS | 75 | 0.60590 | 65.33400 | 20.878 | 0.57603 | 0.49699 | 0.74460 |
| BA | 137 | 1.15000 | 143.34000 | 27.757 | 0.82155 | 1.45903 | 1.16874 |
| CD | 111 | 0.38010 | 58.66730 | 12.573 | 0.43460 | 0.36030 | 0.34538 |
| CO | 59 | 0.92130 | 860.05900 | 11.484 | 0.98452 | 0.98033 | 0.79915 |
| CU | 63 | 0.97410 | 660.04100 | 21.148 | 0.99121 | 0.76003 | 1.17105 |
| MO | 98 | 2148.00000 | 997752.00000 | 2.914 | 2203.10629 | 2160.46166 | 2079.85109 |
| NI | 60 | 1.23100 | 316.68300 | 10.975 | 1.32677 | 1.28948 | 1.07641 |
| SB | 121 | 1.12100 | 290.01500 | 33.060 | 1.35309 | 1.31716 | 0.69401 |
| SN | 120 | 0.09580 | 50.00200 | 107.724 | 0.20139 | -0.00489 | 0.09090 |
| SR | 88 | 10.61000 | 3664.01000 | 4.991 | 11.21151 | 10.42643 | 10.20339 |
| ZN | 66 | 2.75000 | 250.01200 | 19.509 | 2.46392 | 3.36875 | 2.41699 |
| **BI-1** | 209 | 94820.70000 | 0.00000 | 3.024 | 91832.80000 | 95079.30000 | 97550.10000 |
| PB | 208 | 0.24080 | 673.37000 | 8.725 | 0.23537 | 0.26398 | 0.22302 |
| TL | 203 | 0.11070 | 93.33750 | 59.006 | 0.04091 | 0.12072 | 0.17039 |
| U | 238 | 0.06736 | 183.34300 | 4.253 | 0.06828 | 0.06965 | 0.06415 |
| *GE-1* | 72 | 90086.80000 | 0.00000 | 3.153 | 86816.30000 | 91927.70000 | 91516.20000 |
| *TB-1* | 159 | 138864.00000 | 0.00000 | 2.238 | 136022.00000 | 138387.00000 | 142182.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:11:00
Tube Number: 9
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 43630.30000 | 0.00000 | 0.970 | 43583.50000 | 43232.50000 | 44075.00000 |
| AL | 27 | 106000.00000 | 2259660.00000 | 1.896 | 106119.61719 | 107935.89413 | 103921.31073 |
| CA | 44 | 298000.00000 | 644520.00000 | 1.366 | 302667.69424 | 295378.78840 | 295885.62944 |
| CR | 52 | 211.00000 | 107029.00000 | 1.694 | 212.46206 | 213.54522 | 206.88386 |
| FE | 57 | 256300.00000 | 2740650.00000 | 0.317 | 256617.42399 | 256880.44798 | 255359.02616 |
| K | 39 | 113800.00000 | 4558870.00000 | 2.285 | 116200.70861 | 114259.38650 | 111052.60517 |
| MG | 24 | 104300.00000 | 6085180.00000 | 0.745 | 104350.59380 | 105054.93926 | 103503.18096 |
| MN | 55 | 288.20000 | 85340.60000 | 0.900 | 290.98151 | 287.75146 | 285.84804 |
| NA | 23 | 253800.00000 | 32110500.00000 | 1.684 | 258104.06006 | 253605.04498 | 249556.71070 |
| TI | 47 | 2194.00000 | 27927.40000 | 1.633 | 2188.08764 | 2161.33979 | 2232.29875 |
| V | 51 | 219.60000 | 88443.60000 | 1.222 | 217.51989 | 222.66864 | 218.78292 |
| **IN-1** | 115 | 46954.80000 | 0.00000 | 1.619 | 47831.50000 | 46557.10000 | 46475.80000 |
| AG | 107 | 47.37000 | 50368.50000 | 2.128 | 47.70549 | 46.23854 | 48.17040 |
| AS | 75 | 98.50000 | 4708.89000 | 2.497 | 97.49581 | 96.69744 | 101.30075 |
| BA | 137 | 1.26300 | 160.00700 | 39.398 | 0.76263 | 1.26942 | 1.75779 |
| CD | 111 | 92.75000 | 12454.20000 | 2.178 | 90.78491 | 92.65483 | 94.82108 |
| CO | 59 | 200.50000 | 178795.00000 | 0.613 | 199.51167 | 200.06761 | 201.86365 |
| CU | 63 | 194.20000 | 127172.00000 | 0.848 | 192.72312 | 193.84896 | 195.96722 |
| MO | 98 | 2208.00000 | 1051320.00000 | 3.083 | 2153.56407 | 2187.32918 | 2284.64496 |
| NI | 60 | 196.00000 | 47377.20000 | 3.090 | 191.70876 | 193.35707 | 202.92702 |
| SB | 121 | 1.13600 | 303.34800 | 20.643 | 1.37040 | 0.90133 | 1.13764 |
| SN | 120 | 0.15630 | 76.67000 | 30.307 | 0.20919 | 0.14204 | 0.11773 |
| SR | 88 | 10.43000 | 3694.02000 | 2.363 | 10.70771 | 10.23033 | 10.36259 |
| ZN | 66 | 85.96000 | 7265.63000 | 3.400 | 85.85395 | 88.93010 | 83.08680 |
| **BI-1** | 209 | 98292.00000 | 0.00000 | 2.226 | 100806.00000 | 96814.40000 | 97255.70000 |
| PB | 208 | 0.25120 | 723.37300 | 14.136 | 0.24237 | 0.22089 | 0.29026 |
| TL | 203 | 0.09032 | 80.00330 | 40.633 | 0.06159 | 0.13166 | 0.07772 |
| U | 238 | 0.09649 | 270.01600 | 43.942 | 0.09767 | 0.05351 | 0.13828 |
| *GE-1* | 72 | 92381.00000 | 0.00000 | 0.482 | 92723.90000 | 91877.60000 | 92541.50000 |
| *TB-1* | 159 | 143507.00000 | 0.00000 | 0.622 | 144111.00000 | 142483.00000 | 143928.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:13:00
Tube Number: 10
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45985.30000 | 0.00000 | 2.046 | 44948.40000 | 46222.90000 | 46784.50000 |
| AL | 27 | 18.03000 | 420.02300 | 32.751 | 24.75359 | 15.63865 | 13.69220 |
| CA | 44 | 47.32000 | 530.03400 | 48.753 | 65.88329 | 54.57770 | 21.49504 |
| CR | 52 | 0.53850 | 356.68600 | 22.470 | 0.67347 | 0.50237 | 0.43959 |
| FE | 57 | 46.81000 | 560.03400 | 13.800 | 54.22804 | 43.82402 | 42.39061 |
| K | 39 | -57.12000 | 36117.50000 | -59.559 | -18.01043 | -73.61245 | -79.76684 |
| MG | 24 | 17.29000 | 1156.76000 | 22.233 | 21.55906 | 16.22893 | 14.09695 |
| MN | 55 | 0.08528 | 36.66860 | 46.623 | 0.13118 | 0.06290 | 0.06175 |
| NA | 23 | 71.10000 | 16677.90000 | 22.743 | 87.77808 | 70.04408 | 55.48942 |
| TI | 47 | 0.74270 | 10.00060 | 98.680 | 0.76265 | 0.00000 | 1.46549 |
| V | 51 | 0.01579 | 33.33460 | 372.134 | -0.03820 | 0.07838 | 0.00719 |
| **IN-1** | 115 | 51251.90000 | 0.00000 | 2.072 | 50150.40000 | 51336.00000 | 52269.30000 |
| AG | 107 | -0.00593 | 6.66693 | -164.570 | -0.01156 | -0.01156 | 0.00534 |
| AS | 75 | 0.16530 | 50.00050 | 133.817 | 0.42064 | 0.04522 | 0.03006 |
| BA | 137 | 0.00045 | 3.33347 | 9573.760 | 0.05051 | -0.02457 | -0.02457 |
| CD | 111 | 0.01816 | 12.66680 | 161.454 | 0.02907 | 0.04045 | -0.01505 |
| CO | 59 | 0.02073 | 86.67070 | 205.885 | 0.04669 | 0.04402 | -0.02853 |
| CU | 63 | 0.09310 | 106.67200 | 11.504 | 0.10101 | 0.09737 | 0.08091 |
| MO | 98 | 0.39880 | 223.34300 | 24.060 | 0.49869 | 0.39037 | 0.30735 |
| NI | 60 | 0.01322 | 33.33490 | 687.670 | 0.11820 | -0.03859 | -0.03994 |
| SB | 121 | -0.02358 | 3.33347 | -88.719 | 0.00058 | -0.03567 | -0.03567 |
| SN | 120 | 0.04416 | 33.33490 | 55.865 | 0.01569 | 0.05919 | 0.05760 |
| SR | 88 | 0.03412 | 20.00080 | 72.948 | 0.00910 | 0.03438 | 0.05887 |
| ZN | 66 | 0.35920 | 60.00280 | 59.104 | 0.15279 | 0.57685 | 0.34805 |
| **BI-1** | 209 | 116472.00000 | 0.00000 | 0.932 | 117397.00000 | 116741.00000 | 115278.00000 |
| PB | 208 | 0.00599 | 150.00700 | 117.734 | -0.00131 | 0.01278 | 0.00652 |
| TL | 203 | -0.00808 | 6.66694 | -79.567 | -0.00447 | -0.01550 | -0.00427 |
| U | 238 | 0.00502 | 23.33430 | 93.704 | 0.00088 | 0.01013 | 0.00405 |
| *GE-1* | 72 | 101698.00000 | 0.00000 | 1.501 | 100391.00000 | 101327.00000 | 103375.00000 |
| *TB-1* | 159 | 164339.00000 | 0.00000 | 0.590 | 165451.00000 | 163893.00000 | 163674.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:14:00
Tube Number: 11
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 47998.90000 | 0.00000 | 0.290 | 47838.30000 | 48079.70000 | 48078.80000 |
| AL | 27 | 2486.00000 | 58316.10000 | 2.992 | 2568.22158 | 2424.07894 | 2464.34065 |
| CA | 44 | 2420.00000 | 6195.07000 | 5.298 | 2519.69972 | 2275.08394 | 2464.12766 |
| CR | 52 | 254.10000 | 141824.00000 | 2.981 | 261.40556 | 246.28562 | 254.66395 |
| FE | 57 | 2477.00000 | 29173.60000 | 1.525 | 2515.07612 | 2476.05949 | 2439.53972 |
| K | 39 | 2427.00000 | 146294.00000 | 2.248 | 2474.98087 | 2438.49738 | 2367.66167 |
| MG | 24 | 2492.00000 | 160067.00000 | 2.339 | 2554.19395 | 2438.42712 | 2484.49723 |
| MN | 55 | 251.40000 | 81918.10000 | 0.568 | 252.01148 | 249.82352 | 252.50867 |
| NA | 23 | 2305.00000 | 328295.00000 | 1.810 | 2352.07908 | 2274.06945 | 2287.36060 |
| TI | 47 | 243.10000 | 3403.93000 | 6.150 | 235.78560 | 260.27515 | 233.17880 |
| V | 51 | 254.60000 | 112796.00000 | 2.388 | 260.70925 | 248.54789 | 254.69330 |
| **IN-1** | 115 | 53707.50000 | 0.00000 | 0.736 | 54017.80000 | 53262.50000 | 53842.20000 |
| AG | 107 | 24.92000 | 30314.20000 | 1.594 | 25.10090 | 25.19917 | 24.46739 |
| AS | 75 | 240.40000 | 13085.40000 | 2.344 | 246.65506 | 235.72452 | 238.81031 |
| BA | 137 | 246.10000 | 35113.90000 | 0.683 | 247.42706 | 246.75618 | 244.24044 |
| CD | 111 | 24.82000 | 3819.94000 | 3.058 | 25.66328 | 24.58245 | 24.20007 |
| CO | 59 | 242.60000 | 247483.00000 | 0.403 | 242.88140 | 243.43144 | 241.53162 |
| CU | 63 | 247.00000 | 185043.00000 | 1.445 | 250.16428 | 247.74141 | 243.14090 |
| MO | 98 | 24.57000 | 13397.60000 | 2.267 | 23.96958 | 25.06980 | 24.67150 |
| NI | 60 | 247.00000 | 68294.10000 | 2.838 | 252.05879 | 249.91706 | 238.98913 |
| SB | 121 | 24.70000 | 7309.11000 | 2.866 | 24.46806 | 25.49855 | 24.14278 |
| SN | 120 | 24.36000 | 11455.70000 | 1.545 | 24.79697 | 24.11748 | 24.17654 |
| SR | 88 | 24.77000 | 10017.60000 | 1.927 | 25.30524 | 24.59081 | 24.39992 |
| ZN | 66 | 244.70000 | 23612.30000 | 2.028 | 241.59980 | 242.20024 | 250.47805 |
| **BI-1** | 209 | 117933.00000 | 0.00000 | 2.403 | 120982.00000 | 115378.00000 | 117437.00000 |
| PB | 208 | 24.70000 | 72281.80000 | 1.207 | 24.64380 | 25.02542 | 24.43781 |
| TL | 203 | 24.83000 | 22628.80000 | 3.464 | 25.56552 | 25.04176 | 23.88456 |
| U | 238 | 24.36000 | 79903.00000 | 1.157 | 24.18894 | 24.68316 | 24.20083 |
| *GE-1* | 72 | 106283.00000 | 0.00000 | 1.253 | 107437.00000 | 104825.00000 | 106589.00000 |
| *TB-1* | 159 | 172284.00000 | 0.00000 | 2.585 | 177314.00000 | 168846.00000 | 170691.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:16:00
Tube Number: 12
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 46728.00000 | 0.00000 | 2.118 | 45761.00000 | 47738.70000 | 46684.20000 |
| AL | 27 | 2.62200 | 76.67000 | 70.633 | 4.17681 | 3.11569 | 0.57273 |
| CA | 44 | -46.84000 | 320.01600 | -81.255 | -13.57518 | -88.35303 | -38.59366 |
| CR | 52 | 0.51010 | 346.68800 | 31.719 | 0.65919 | 0.33808 | 0.53299 |
| FE | 57 | 3.44500 | 73.33640 | 15.216 | 3.28094 | 3.02231 | 4.03143 |
| K | 39 | -111.00000 | 34409.40000 | -34.712 | -69.16706 | -119.17151 | -144.95126 |
| MG | 24 | 1.19800 | 173.34200 | 49.165 | 0.88243 | 1.87751 | 0.83397 |
| MN | 55 | 0.00954 | 13.33380 | 200.860 | 0.03166 | -0.00187 | -0.00118 |
| NA | 23 | 6.31300 | 8189.49000 | 67.638 | 11.10190 | 2.90340 | 4.93254 |
| TI | 47 | 0.24480 | 3.33346 | 173.162 | 0.00000 | 0.00000 | 0.73429 |
| V | 51 | 0.06898 | 56.66930 | 107.147 | 0.10349 | 0.11933 | -0.01588 |
| **IN-1** | 115 | 52166.20000 | 0.00000 | 1.127 | 51777.70000 | 52842.60000 | 51878.30000 |
| AG | 107 | -0.00304 | 10.00040 | -280.843 | 0.00550 | -0.01156 | -0.00305 |
| AS | 75 | 0.05623 | 45.33380 | 221.946 | -0.07675 | 0.17092 | 0.07452 |
| BA | 137 | 0.04756 | 10.00040 | 152.607 | -0.02457 | 0.04668 | 0.12058 |
| CD | 111 | -0.02835 | 6.00005 | -1.590 | -0.02806 | -0.02887 | -0.02814 |
| CO | 59 | 0.08256 | 150.00700 | 10.575 | 0.08375 | 0.09064 | 0.07330 |
| CU | 63 | 0.10390 | 116.67200 | 25.756 | 0.09607 | 0.13371 | 0.08195 |
| MO | 98 | 0.03728 | 36.66840 | 107.216 | 0.08201 | 0.00506 | 0.02477 |
| NI | 60 | 0.06045 | 46.66840 | 200.165 | 0.14842 | -0.07752 | 0.11045 |
| SB | 121 | -0.02398 | 3.33347 | -84.362 | -0.03567 | -0.03567 | -0.00063 |
| SN | 120 | 0.07279 | 46.66850 | 77.002 | 0.12470 | 0.01336 | 0.08031 |
| SR | 88 | -0.00901 | 3.33346 | -161.154 | -0.01739 | 0.00775 | -0.01739 |
| ZN | 66 | -0.14970 | 13.33380 | -39.886 | -0.18416 | -0.08084 | -0.18436 |
| **BI-1** | 209 | 117626.00000 | 0.00000 | 2.135 | 118668.00000 | 119449.00000 | 114761.00000 |
| PB | 208 | -0.00138 | 130.00700 | -69.653 | -0.00179 | -0.00208 | -0.00028 |
| TL | 203 | 0.02095 | 33.33500 | 166.969 | 0.06090 | 0.00618 | -0.00422 |
| U | 238 | 0.00586 | 26.66780 | 129.339 | 0.00690 | 0.01286 | -0.00219 |
| *GE-1* | 72 | 103882.00000 | 0.00000 | 0.934 | 103243.00000 | 104998.00000 | 103404.00000 |
| *TB-1* | 159 | 169424.00000 | 0.00000 | 1.888 | 171096.00000 | 171438.00000 | 165737.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:18:00
Tube Number: 13 Batch: 171931063903A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 48708.60000 | 0.00000 | 3.632 | 49203.30000 | 50177.30000 | 46745.10000 |
| AL | 27 | 1.51300 | 53.33560 | 47.925 | 0.92131 | 1.29685 | 2.32215 |
| CA | 44 | -14.77000 | 410.02400 | -285.240 | -5.09750 | -60.89634 | 21.67046 |
| CR | 52 | 0.47760 | 343.35100 | 14.070 | 0.46403 | 0.41819 | 0.55052 |
| FE | 57 | 1.80400 | 56.66910 | 74.279 | 2.84423 | 0.29213 | 2.27670 |
| K | 39 | -142.50000 | 34450.00000 | -29.109 | -176.35236 | -155.00830 | -96.25757 |
| MG | 24 | 1.55100 | 203.34300 | 8.904 | 1.47090 | 1.71000 | 1.47078 |
| MN | 55 | 0.35080 | 126.67300 | 48.489 | 0.53629 | 0.20220 | 0.31402 |
| NA | 23 | -0.04761 | 7642.50000 | -2358.750 | -0.54872 | -0.83314 | 1.23867 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.01160 | 33.33490 | 435.172 | 0.06986 | -0.01911 | -0.01594 |
| **IN-1** | 115 | 54157.70000 | 0.00000 | 1.607 | 54689.80000 | 53153.50000 | 54629.80000 |
| AG | 107 | 0.00475 | 20.00080 | 5.568 | 0.00459 | 0.00506 | 0.00461 |
| AS | 75 | 0.03698 | 46.00050 | 413.467 | 0.21042 | -0.02105 | -0.07844 |
| BA | 137 | 0.02199 | 6.66693 | 183.447 | 0.04427 | 0.04626 | -0.02457 |
| CD | 111 | -0.04299 | 4.00003 | -59.595 | -0.04301 | -0.06860 | -0.01737 |
| CO | 59 | -0.02340 | 46.66870 | -25.705 | -0.03031 | -0.01929 | -0.02063 |
| CU | 63 | 0.04529 | 76.66980 | 18.998 | 0.03550 | 0.05165 | 0.04873 |
| MO | 98 | -0.01422 | 10.00040 | -126.793 | 0.00380 | -0.03226 | -0.01421 |
| NI | 60 | -0.05472 | 16.66730 | -74.415 | -0.00770 | -0.07774 | -0.07873 |
| SB | 121 | 0.00898 | 13.33390 | 210.556 | 0.03081 | -0.00147 | -0.00239 |
| SN | 120 | 0.03305 | 30.00140 | 108.623 | 0.05373 | -0.00841 | 0.05382 |
| SR | 88 | 0.00715 | 10.00040 | 5.568 | 0.00690 | 0.00761 | 0.00693 |
| ZN | 66 | 0.32580 | 60.00230 | 31.338 | 0.42165 | 0.33740 | 0.21836 |
| **BI-1** | 209 | 120040.00000 | 0.00000 | 1.512 | 122072.00000 | 119468.00000 | 118581.00000 |
| PB | 208 | -0.01914 | 80.00330 | -15.517 | -0.01625 | -0.01898 | -0.02219 |
| TL | 203 | -0.01186 | 3.33347 | -53.170 | -0.01550 | -0.01550 | -0.00458 |
| U | 238 | 0.00179 | 13.33390 | 92.570 | 0.00370 | 0.00082 | 0.00084 |
| *GE-1* | 72 | 104527.00000 | 0.00000 | 0.870 | 105249.00000 | 104826.00000 | 103506.00000 |
| *TB-1* | 159 | 170857.00000 | 0.00000 | 1.388 | 173207.00000 | 170902.00000 | 168463.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:19:00
Tube Number: 14 Batch: 171931063903A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 49853.00000 | 0.00000 | 3.615 | 48651.20000 | 48982.80000 | 51924.80000 |
| AL | 27 | 1910.00000 | 46503.10000 | 5.190 | 2022.73511 | 1869.02876 | 1837.43077 |
| CA | 44 | 3880.00000 | 10037.60000 | 3.941 | 4056.18566 | 3780.01527 | 3804.31069 |
| CR | 52 | 48.43000 | 28081.20000 | 7.791 | 50.98680 | 50.20036 | 44.09383 |
| FE | 57 | 964.70000 | 11805.80000 | 6.414 | 1008.91360 | 991.22696 | 893.99939 |
| K | 39 | 9669.00000 | 480195.00000 | 4.889 | 10062.18432 | 9800.02916 | 9144.50317 |
| MG | 24 | 1903.00000 | 126787.00000 | 6.374 | 2011.50082 | 1925.84322 | 1772.02090 |
| MN | 55 | 50.43000 | 17065.10000 | 3.337 | 52.37073 | 49.39550 | 49.52128 |
| NA | 23 | 9315.00000 | 1353140.00000 | 4.102 | 9665.79133 | 9370.34146 | 8907.68547 |
| TI | 47 | 231.50000 | 3363.93000 | 5.054 | 243.82796 | 230.27709 | 220.53130 |
| V | 51 | 46.55000 | 21418.40000 | 5.540 | 49.41628 | 45.82333 | 44.41558 |
| **IN-1** | 115 | 54133.70000 | 0.00000 | 1.545 | 54250.80000 | 54905.40000 | 53244.80000 |
| AG | 107 | 48.09000 | 58939.10000 | 2.373 | 48.51995 | 46.80210 | 48.96135 |
| AS | 75 | 10.23000 | 603.35200 | 1.965 | 10.11049 | 10.12463 | 10.46545 |
| BA | 137 | 48.12000 | 6922.21000 | 5.694 | 51.28142 | 46.55228 | 46.51929 |
| CD | 111 | 4.64400 | 728.69300 | 6.960 | 4.54935 | 4.37958 | 5.00461 |
| CO | 59 | 232.90000 | 239413.00000 | 1.767 | 237.18212 | 228.98488 | 232.42338 |
| CU | 63 | 47.78000 | 36111.40000 | 3.579 | 49.73218 | 47.02977 | 46.56708 |
| MO | 98 | 47.24000 | 25940.60000 | 3.633 | 47.80779 | 45.31183 | 48.60073 |
| NI | 60 | 48.46000 | 13527.60000 | 4.785 | 50.38410 | 45.88468 | 49.10978 |
| SB | 121 | 5.84500 | 1750.20000 | 9.641 | 6.19666 | 5.19532 | 6.14373 |
| SN | 120 | 48.16000 | 22808.10000 | 3.762 | 50.00365 | 46.38130 | 48.10845 |
| SR | 88 | 37.02000 | 15082.80000 | 5.081 | 37.79888 | 34.87642 | 38.38835 |
| ZN | 66 | 477.80000 | 46434.20000 | 0.490 | 477.20317 | 480.38208 | 475.82022 |
| **BI-1** | 209 | 120268.00000 | 0.00000 | 1.080 | 121456.00000 | 120468.00000 | 118882.00000 |
| PB | 208 | 13.91000 | 41583.80000 | 1.532 | 13.98586 | 13.67474 | 14.08238 |
| TL | 203 | 1.76200 | 1650.19000 | 3.451 | 1.70158 | 1.82319 | 1.76058 |
| U | 238 | 0.00383 | 20.00110 | 137.654 | 0.00077 | 0.00080 | 0.00991 |
| *GE-1* | 72 | 104238.00000 | 0.00000 | 0.162 | 104150.00000 | 104433.00000 | 104130.00000 |
| *TB-1* | 159 | 174820.00000 | 0.00000 | 0.205 | 174421.00000 | 175119.00000 | 174920.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:21:00
Tube Number: 15 Batch: 171931063903A
Sample Number: **9095972** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 49491.40000 | 0.00000 | 4.661 | 52144.60000 | 47959.40000 | 48370.20000 |
| AL | 27 | 230.60000 | 5584.74000 | 6.032 | 214.75442 | 240.81629 | 236.22690 |
| CA | 44 | 45300.00000 | 111478.00000 | 1.880 | 44321.83972 | 45833.45240 | 45757.24876 |
| CR | 52 | 2.45300 | 1483.48000 | 14.122 | 2.31180 | 2.84793 | 2.19994 |
| FE | 57 | 422.30000 | 5157.92000 | 4.449 | 423.57371 | 440.36810 | 402.85167 |
| K | 39 | 2564.00000 | 156869.00000 | 4.653 | 2432.74956 | 2665.41381 | 2594.75485 |
| MG | 24 | 6346.00000 | 419532.00000 | 4.634 | 6042.24634 | 6629.28955 | 6366.79558 |
| MN | 55 | 41.42000 | 13901.30000 | 5.147 | 39.04222 | 43.16000 | 42.06114 |
| NA | 23 | 24560.00000 | 3527990.00000 | 4.874 | 23300.96928 | 25683.12531 | 24705.41797 |
| TI | 47 | 11.71000 | 170.00800 | 23.621 | 13.80545 | 8.57724 | 12.75677 |
| V | 51 | 3.23700 | 1503.48000 | 7.130 | 2.97263 | 3.39574 | 3.34394 |
| **IN-1** | 115 | 53621.00000 | 0.00000 | 4.577 | 55783.00000 | 54126.70000 | 50953.40000 |
| AG | 107 | -0.00076 | 13.33380 | -1591.210 | 0.01219 | -0.01156 | -0.00289 |
| AS | 75 | 0.77350 | 85.33430 | 10.212 | 0.68753 | 0.84290 | 0.78998 |
| BA | 137 | 144.10000 | 20467.70000 | 8.897 | 134.40508 | 139.21569 | 158.62267 |
| CD | 111 | -0.02481 | 6.66672 | -38.988 | -0.03097 | -0.02982 | -0.01367 |
| CO | 59 | 0.12660 | 200.00900 | 55.624 | 0.11056 | 0.20362 | 0.06554 |
| CU | 63 | 1.34000 | 1043.42000 | 3.113 | 1.29364 | 1.37470 | 1.35121 |
| MO | 98 | 4.83600 | 2647.07000 | 6.226 | 4.61788 | 5.17933 | 4.71013 |
| NI | 60 | 0.74300 | 236.67900 | 12.771 | 0.82629 | 0.63968 | 0.76290 |
| SB | 121 | 0.03223 | 20.00080 | 9.780 | 0.02950 | 0.03150 | 0.03568 |
| SN | 120 | 0.26310 | 136.67400 | 22.543 | 0.19561 | 0.28704 | 0.30678 |
| SR | 88 | 295.40000 | 119141.00000 | 2.626 | 286.56843 | 298.63497 | 301.05084 |
| ZN | 66 | 8.07600 | 806.72800 | 14.847 | 7.80245 | 9.38904 | 7.03809 |
| **BI-1** | 209 | 115490.00000 | 0.00000 | 1.189 | 117055.00000 | 114488.00000 | 114926.00000 |
| PB | 208 | 0.20910 | 730.04100 | 9.718 | 0.22648 | 0.18674 | 0.21396 |
| TL | 203 | -0.00045 | 13.33390 | -2911.360 | -0.01550 | 0.00712 | 0.00704 |
| U | 238 | 1.71800 | 5528.21000 | 5.083 | 1.73345 | 1.79752 | 1.62480 |
| *GE-1* | 72 | 103046.00000 | 0.00000 | 0.576 | 103728.00000 | 102760.00000 | 102649.00000 |
| *TB-1* | 159 | 174777.00000 | 0.00000 | 2.316 | 178005.00000 | 176088.00000 | 170236.00000 |

Run Name: 1719906E03
Tube Number: 16
Sample Number: **9095972**

Date/Time: 07/18/2017 10:23:00
Batch: 171931063903A
Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 49076.80000 | 0.00000 | 3.162 | 48521.60000 | 50829.90000 | 47878.90000 |
| AL | 27 | 399.30000 | 9583.83000 | 7.503 | 430.02586 | 370.17604 | 397.74134 |
| CA | 44 | 43900.00000 | 107110.00000 | 3.995 | 45218.71687 | 41909.15847 | 44571.52622 |
| CR | 52 | 6.06600 | 3527.29000 | 10.331 | 6.53832 | 5.35492 | 6.30424 |
| FE | 57 | 602.90000 | 7285.63000 | 2.276 | 592.55137 | 597.62992 | 618.44701 |
| K | 39 | 2797.00000 | 165975.00000 | 5.824 | 2948.96453 | 2624.90144 | 2815.98744 |
| MG | 24 | 6352.00000 | 416725.00000 | 3.445 | 6573.42096 | 6135.93793 | 6345.86401 |
| MN | 55 | 44.10000 | 14698.80000 | 4.685 | 46.30768 | 43.76755 | 42.21579 |
| NA | 23 | 24170.00000 | 3444630.00000 | 3.867 | 24909.67085 | 23117.86328 | 24475.62479 |
| TI | 47 | 37.93000 | 543.36400 | 13.401 | 43.09652 | 37.76719 | 32.93518 |
| V | 51 | 4.27500 | 1960.22000 | 10.692 | 4.67378 | 3.77626 | 4.37509 |
| **IN-1** | 115 | 53848.50000 | 0.00000 | 1.841 | 53256.30000 | 54992.70000 | 53296.40000 |
| AG | 107 | 0.92670 | 1143.44000 | 10.541 | 1.03366 | 0.90425 | 0.84221 |
| AS | 75 | 4.43400 | 284.67200 | 5.974 | 4.43932 | 4.16576 | 4.69546 |
| BA | 137 | 137.00000 | 19592.90000 | 4.360 | 143.68798 | 132.15436 | 135.22886 |
| CD | 111 | 0.72400 | 122.00200 | 12.786 | 0.81177 | 0.73307 | 0.62728 |
| CO | 59 | 1.07500 | 1170.11000 | 13.284 | 0.91026 | 1.14753 | 1.16649 |
| CU | 63 | 4.93500 | 3744.03000 | 8.869 | 5.20962 | 4.43029 | 5.16539 |
| MO | 98 | 5.76300 | 3163.85000 | 2.867 | 5.94977 | 5.63527 | 5.70467 |
| NI | 60 | 3.81700 | 1090.09000 | 6.869 | 3.79024 | 4.09102 | 3.56854 |
| SB | 121 | 1.91200 | 576.70100 | 9.179 | 2.11460 | 1.81531 | 1.80602 |
| SN | 120 | 4.03200 | 1913.55000 | 4.412 | 3.85752 | 4.21325 | 4.02633 |
| SR | 88 | 283.00000 | 114691.00000 | 2.382 | 290.46971 | 277.30355 | 281.37814 |
| ZN | 66 | 37.07000 | 3607.32000 | 4.953 | 38.85896 | 35.18997 | 37.15605 |
| **BI-1** | 209 | 117848.00000 | 0.00000 | 3.481 | 121680.00000 | 118345.00000 | 113520.00000 |
| PB | 208 | 2.02800 | 6054.19000 | 1.674 | 2.06459 | 1.99781 | 2.02065 |
| TL | 203 | 0.94810 | 876.73700 | 9.083 | 1.00644 | 0.84916 | 0.98861 |
| U | 238 | 11.33000 | 37133.30000 | 2.259 | 11.42667 | 11.03566 | 11.51754 |
| *GE-1* | 72 | 103118.00000 | 0.00000 | 3.455 | 106419.00000 | 103595.00000 | 99341.00000 |
| *TB-1* | 159 | 173617.00000 | 0.00000 | 1.858 | 177333.00000 | 171542.00000 | 171977.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:24:00
Tube Number: 17 Batch: 171931063903A
Sample Number: **9095975** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 49096.70000 | 0.00000 | 1.943 | 48571.20000 | 48521.10000 | 50197.90000 |
| AL | 27 | 222.10000 | 5341.29000 | 9.743 | 223.44312 | 243.08200 | 199.86622 |
| CA | 44 | 43530.00000 | 106294.00000 | 2.998 | 44900.99516 | 43370.97939 | 42304.84183 |
| CR | 52 | 2.54000 | 1523.49000 | 3.536 | 2.52694 | 2.63610 | 2.45798 |
| FE | 57 | 422.90000 | 5121.23000 | 7.236 | 454.11062 | 421.77959 | 392.95194 |
| K | 39 | 2422.00000 | 149396.00000 | 3.062 | 2495.51435 | 2424.23961 | 2347.24448 |
| MG | 24 | 6155.00000 | 404126.00000 | 1.742 | 6211.17376 | 6223.02920 | 6031.68489 |
| MN | 55 | 41.04000 | 13684.40000 | 2.761 | 42.34231 | 40.25874 | 40.52821 |
| NA | 23 | 24000.00000 | 3424590.00000 | 1.173 | 24102.13883 | 24221.32133 | 23685.35275 |
| TI | 47 | 8.16200 | 116.67200 | 33.472 | 6.35188 | 11.30409 | 6.82901 |
| V | 51 | 3.09100 | 1426.80000 | 8.253 | 3.30751 | 3.15462 | 2.80961 |
| **IN-1** | 115 | 53218.90000 | 0.00000 | 0.849 | 52710.10000 | 53373.30000 | 53573.30000 |
| AG | 107 | -0.00882 | 3.33346 | -54.010 | -0.01156 | -0.01156 | -0.00332 |
| AS | 75 | 0.72220 | 82.00110 | 37.012 | 0.66175 | 1.01455 | 0.49029 |
| BA | 137 | 138.90000 | 19632.90000 | 2.903 | 142.59995 | 139.48600 | 134.60148 |
| CD | 111 | -0.00732 | 9.33340 | -370.730 | -0.02877 | 0.02317 | -0.01635 |
| CO | 59 | 0.06320 | 133.33900 | 25.554 | 0.08105 | 0.04958 | 0.05897 |
| CU | 63 | 1.26900 | 983.41800 | 4.052 | 1.31794 | 1.27397 | 1.21544 |
| MO | 98 | 4.71800 | 2563.69000 | 6.399 | 4.64563 | 4.45813 | 5.04896 |
| NI | 60 | 0.48320 | 163.34300 | 47.289 | 0.73368 | 0.28621 | 0.42980 |
| SB | 121 | 0.05522 | 26.66770 | 127.490 | 0.03330 | -0.00161 | 0.13398 |
| SN | 120 | 0.35030 | 176.67400 | 29.974 | 0.46915 | 0.27008 | 0.31166 |
| SR | 88 | 284.50000 | 113944.00000 | 2.199 | 291.06486 | 278.61015 | 283.82760 |
| ZN | 66 | 8.37000 | 826.72900 | 7.772 | 9.12051 | 7.95899 | 8.03226 |
| **BI-1** | 209 | 116330.00000 | 0.00000 | 2.667 | 114438.00000 | 119911.00000 | 114640.00000 |
| PB | 208 | 0.23310 | 803.37900 | 9.614 | 0.25741 | 0.21326 | 0.22870 |
| TL | 203 | -0.00796 | 6.66694 | -81.981 | -0.00419 | -0.01550 | -0.00421 |
| U | 238 | 1.65900 | 5368.15000 | 6.721 | 1.71659 | 1.53016 | 1.72924 |
| *GE-1* | 72 | 103999.00000 | 0.00000 | 0.715 | 103143.00000 | 104373.00000 | 104481.00000 |
| *TB-1* | 159 | 174313.00000 | 0.00000 | 0.734 | 174725.00000 | 172878.00000 | 175336.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:26:00
Tube Number: 18 Batch: 171931063903A
Sample Number: **9095973** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45881.40000 | 0.00000 | 1.183 | 46032.40000 | 45279.00000 | 46332.60000 |
| AL | 27 | 2141.00000 | 48001.40000 | 3.078 | 2122.23939 | 2213.79321 | 2085.87575 |
| CA | 44 | 51520.00000 | 117513.00000 | 2.787 | 51952.55394 | 52689.47416 | 49917.52349 |
| CR | 52 | 51.89000 | 27733.70000 | 1.985 | 51.87110 | 52.92658 | 50.86580 |
| FE | 57 | 1293.00000 | 14578.70000 | 0.913 | 1302.49014 | 1280.02301 | 1297.55415 |
| K | 39 | 13010.00000 | 581919.00000 | 1.265 | 12964.80850 | 13191.71725 | 12871.78731 |
| MG | 24 | 8715.00000 | 534728.00000 | 2.304 | 8855.76271 | 8804.07513 | 8485.01084 |
| MN | 55 | 95.47000 | 29738.30000 | 1.061 | 94.86115 | 94.90699 | 96.63757 |
| NA | 23 | 35720.00000 | 4758740.00000 | 3.038 | 35618.29298 | 36854.10554 | 34690.44206 |
| TI | 47 | 260.30000 | 3483.94000 | 1.491 | 261.42421 | 255.92786 | 263.42512 |
| V | 51 | 52.26000 | 22146.30000 | 4.342 | 54.42485 | 52.45375 | 49.90018 |
| **IN-1** | 115 | 49271.80000 | 0.00000 | 1.845 | 48226.60000 | 49876.30000 | 49712.50000 |
| AG | 107 | 49.24000 | 54914.20000 | 2.861 | 50.80918 | 48.08748 | 48.81795 |
| AS | 75 | 10.84000 | 578.68500 | 12.611 | 12.21288 | 9.47959 | 10.82800 |
| BA | 137 | 202.70000 | 26512.60000 | 4.162 | 212.41470 | 198.05125 | 197.56480 |
| CD | 111 | 4.90900 | 701.35800 | 9.287 | 4.63282 | 4.65972 | 5.43549 |
| CO | 59 | 242.90000 | 227210.00000 | 3.496 | 252.61403 | 239.15096 | 236.91247 |
| CU | 63 | 51.63000 | 35499.70000 | 2.555 | 53.14884 | 50.92650 | 50.80541 |
| MO | 98 | 55.46000 | 27711.00000 | 4.241 | 58.16926 | 54.24287 | 53.96406 |
| NI | 60 | 50.43000 | 12810.10000 | 4.099 | 52.65791 | 48.57284 | 50.06385 |
| SB | 121 | 6.64000 | 1810.21000 | 6.904 | 6.40977 | 6.34238 | 7.16791 |
| SN | 120 | 51.14000 | 22040.10000 | 2.968 | 52.23882 | 51.77347 | 49.40840 |
| SR | 88 | 355.50000 | 131818.00000 | 2.120 | 364.16823 | 352.31696 | 350.17424 |
| ZN | 66 | 494.40000 | 43725.10000 | 1.485 | 502.64149 | 488.46740 | 492.22389 |
| **BI-1** | 209 | 108763.00000 | 0.00000 | 2.392 | 109664.00000 | 105829.00000 | 110794.00000 |
| PB | 208 | 15.44000 | 41690.30000 | 3.203 | 15.63850 | 15.79782 | 14.87281 |
| TL | 203 | 2.06900 | 1750.20000 | 1.713 | 2.02796 | 2.08978 | 2.08896 |
| U | 238 | 1.86600 | 5648.28000 | 7.615 | 1.92261 | 1.97194 | 1.70495 |
| *GE-1* | 72 | 97247.50000 | 0.00000 | 0.631 | 96542.90000 | 97659.60000 | 97540.10000 |
| *TB-1* | 159 | 161850.00000 | 0.00000 | 1.731 | 163100.00000 | 158641.00000 | 163808.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:28:00
Tube Number: 19 Batch: 171931063903A
Sample Number: **9095974** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 46510.70000 | 0.00000 | 1.000 | 46152.30000 | 47036.40000 | 46343.50000 |
| AL | 27 | 2153.00000 | 48941.70000 | 2.294 | 2209.30637 | 2117.96195 | 2131.02373 |
| CA | 44 | 49300.00000 | 114018.00000 | 1.693 | 49628.69411 | 48349.94934 | 49918.80506 |
| CR | 52 | 50.79000 | 27523.10000 | 2.717 | 52.35254 | 50.28458 | 49.73648 |
| FE | 57 | 1332.00000 | 15222.80000 | 0.718 | 1340.70963 | 1334.55418 | 1321.93399 |
| K | 39 | 12530.00000 | 569543.00000 | 2.225 | 12846.71705 | 12325.57863 | 12414.35634 |
| MG | 24 | 8425.00000 | 524020.00000 | 1.996 | 8609.82690 | 8281.25208 | 8383.40441 |
| MN | 55 | 81.04000 | 25589.30000 | 3.550 | 84.11981 | 80.59109 | 78.42017 |
| NA | 23 | 34870.00000 | 4709740.00000 | 0.852 | 35137.30537 | 34548.79108 | 34915.32376 |
| TI | 47 | 254.20000 | 3450.60000 | 9.158 | 262.97100 | 271.87909 | 227.85349 |
| V | 51 | 53.20000 | 22860.80000 | 3.284 | 53.67154 | 54.66926 | 51.27109 |
| **IN-1** | 115 | 50744.60000 | 0.00000 | 2.323 | 49383.40000 | 51460.30000 | 51390.20000 |
| AG | 107 | 47.24000 | 54254.70000 | 3.110 | 48.92707 | 46.23697 | 46.55819 |
| AS | 75 | 9.36000 | 520.68200 | 2.842 | 9.66240 | 9.16305 | 9.25371 |
| BA | 137 | 189.50000 | 25533.90000 | 4.604 | 197.73335 | 180.36844 | 190.52811 |
| CD | 111 | 4.56600 | 672.02300 | 3.254 | 4.67858 | 4.62297 | 4.39788 |
| CO | 59 | 232.40000 | 223901.00000 | 1.651 | 236.04210 | 232.64004 | 228.38578 |
| CU | 63 | 49.52000 | 35061.90000 | 3.259 | 51.33401 | 48.96618 | 48.25007 |
| MO | 98 | 53.49000 | 27530.70000 | 3.249 | 55.10451 | 51.65047 | 53.72090 |
| NI | 60 | 47.13000 | 12336.30000 | 2.852 | 47.56194 | 48.20780 | 45.62454 |
| SB | 121 | 6.19900 | 1736.87000 | 14.301 | 7.21595 | 5.79282 | 5.58849 |
| SN | 120 | 48.54000 | 21542.60000 | 4.363 | 50.15567 | 49.33303 | 46.14509 |
| SR | 88 | 336.70000 | 128595.00000 | 0.948 | 339.92644 | 336.77755 | 333.54215 |
| ZN | 66 | 468.00000 | 42611.20000 | 3.628 | 487.34328 | 455.49560 | 461.23029 |
| **BI-1** | 209 | 109166.00000 | 0.00000 | 1.297 | 107544.00000 | 109793.00000 | 110160.00000 |
| PB | 208 | 15.20000 | 41209.90000 | 1.915 | 15.32756 | 15.39924 | 14.86297 |
| TL | 203 | 2.06200 | 1750.21000 | 3.801 | 2.11644 | 2.09636 | 1.97175 |
| U | 238 | 1.79600 | 5461.49000 | 1.290 | 1.79667 | 1.77291 | 1.81922 |
| *GE-1* | 72 | 96373.50000 | 0.00000 | 0.594 | 97003.50000 | 95886.00000 | 96231.10000 |
| *TB-1* | 159 | 166257.00000 | 0.00000 | 0.778 | 164812.00000 | 166655.00000 | 167305.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:30:00
Tube Number: 20 Batch: 171931063903A
Sample Number: **9095972** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 46731.50000 | 0.00000 | 2.213 | 45791.40000 | 47839.30000 | 46563.70000 |
| AL | 27 | 47.01000 | 1090.10000 | 2.744 | 48.41843 | 45.88621 | 46.72369 |
| CA | 44 | 9183.00000 | 21685.40000 | 1.853 | 9369.95289 | 9036.97005 | 9141.98068 |
| CR | 52 | 0.74280 | 473.36100 | 16.559 | 0.84658 | 0.60689 | 0.77494 |
| FE | 57 | 100.30000 | 1183.44000 | 11.286 | 107.53300 | 106.21440 | 87.29641 |
| K | 39 | 355.00000 | 54236.10000 | 12.848 | 406.27254 | 318.85244 | 339.98226 |
| MG | 24 | 1301.00000 | 81330.00000 | 3.801 | 1356.71271 | 1263.48637 | 1281.48463 |
| MN | 55 | 8.51400 | 2707.06000 | 11.216 | 8.78559 | 7.45295 | 9.30401 |
| NA | 23 | 4868.00000 | 666687.00000 | 3.283 | 5041.50999 | 4727.16377 | 4834.47831 |
| TI | 47 | 1.22600 | 16.66730 | 92.741 | 2.24582 | 1.43313 | 0.00000 |
| V | 51 | 0.84620 | 390.02200 | 31.789 | 1.07388 | 0.54943 | 0.91536 |
| **IN-1** | 115 | 51385.70000 | 0.00000 | 2.431 | 51988.80000 | 49949.40000 | 52218.90000 |
| AG | 107 | 0.01108 | 26.66820 | 290.433 | 0.04792 | -0.01156 | -0.00310 |
| AS | 75 | 0.25770 | 55.33380 | 157.936 | 0.68207 | -0.12944 | 0.22047 |
| BA | 137 | 28.16000 | 3844.08000 | 8.899 | 29.89189 | 29.30374 | 25.28816 |
| CD | 111 | -0.03668 | 4.66670 | -23.877 | -0.04168 | -0.02657 | -0.04180 |
| CO | 59 | 0.02926 | 96.67060 | 239.815 | 0.02234 | -0.03720 | 0.10263 |
| CU | 63 | 0.26550 | 230.01200 | 37.604 | 0.15063 | 0.33136 | 0.31451 |
| MO | 98 | 1.07900 | 580.03700 | 14.736 | 1.08696 | 0.91546 | 1.23311 |
| NI | 60 | 0.16430 | 73.33660 | 127.267 | -0.07692 | 0.27476 | 0.29506 |
| SB | 121 | 0.04591 | 23.33480 | 307.776 | 0.20908 | -0.03567 | -0.03567 |
| SN | 120 | 0.11830 | 66.66960 | 20.457 | 0.14607 | 0.10746 | 0.10149 |
| SR | 88 | 59.10000 | 22851.10000 | 3.687 | 59.64061 | 60.95700 | 56.70136 |
| ZN | 66 | 2.13000 | 223.34400 | 10.784 | 2.38868 | 2.05175 | 1.94988 |
| **BI-1** | 209 | 115247.00000 | 0.00000 | 1.544 | 115833.00000 | 116660.00000 | 113248.00000 |
| PB | 208 | 0.03218 | 223.34400 | 22.558 | 0.02718 | 0.04050 | 0.02885 |
| TL | 203 | -0.00037 | 13.33390 | -4790.700 | -0.01550 | -0.00440 | 0.01881 |
| U | 238 | 0.35400 | 1140.11000 | 17.811 | 0.37026 | 0.28441 | 0.40734 |
| *GE-1* | 72 | 100721.00000 | 0.00000 | 2.335 | 101893.00000 | 98013.10000 | 102257.00000 |
| *TB-1* | 159 | 167502.00000 | 0.00000 | 1.236 | 169810.00000 | 165805.00000 | 166892.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:31:00
Tube Number: 21
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45914.90000 | 0.00000 | 1.402 | 45610.60000 | 45480.00000 | 46654.20000 |
| AL | 27 | 2478.00000 | 55598.30000 | 3.198 | 2553.11079 | 2485.02184 | 2395.13429 |
| CA | 44 | 2289.00000 | 5624.78000 | 7.182 | 2395.01131 | 2371.33825 | 2099.21994 |
| CR | 52 | 248.40000 | 132580.00000 | 3.039 | 253.69598 | 251.72890 | 239.74839 |
| FE | 57 | 2480.00000 | 27944.10000 | 0.889 | 2505.35905 | 2471.20605 | 2464.16131 |
| K | 39 | 2299.00000 | 134554.00000 | 4.255 | 2316.36390 | 2386.94079 | 2193.59558 |
| MG | 24 | 2449.00000 | 150438.00000 | 2.172 | 2504.62018 | 2443.79293 | 2398.61329 |
| MN | 55 | 250.60000 | 78065.80000 | 3.767 | 257.98743 | 253.80724 | 239.95121 |
| NA | 23 | 2232.00000 | 304307.00000 | 3.933 | 2314.99794 | 2240.96607 | 2140.10903 |
| TI | 47 | 258.60000 | 3463.94000 | 2.259 | 254.82025 | 255.55048 | 265.28440 |
| V | 51 | 245.80000 | 104138.00000 | 2.197 | 247.39196 | 250.24498 | 239.79838 |
| **IN-1** | 115 | 49963.30000 | 0.00000 | 0.348 | 50145.90000 | 49799.40000 | 49944.60000 |
| AG | 107 | 25.85000 | 29248.00000 | 0.558 | 25.92696 | 25.68068 | 25.93404 |
| AS | 75 | 245.40000 | 12426.70000 | 1.324 | 245.72186 | 248.55251 | 242.07280 |
| BA | 137 | 245.70000 | 32613.90000 | 0.446 | 245.15335 | 247.01427 | 245.08160 |
| CD | 111 | 25.30000 | 3623.21000 | 1.742 | 25.70971 | 24.83490 | 25.36511 |
| CO | 59 | 244.00000 | 231529.00000 | 1.062 | 243.51620 | 246.77833 | 241.66142 |
| CU | 63 | 245.20000 | 170902.00000 | 1.119 | 248.39691 | 243.66001 | 243.63349 |
| MO | 98 | 24.98000 | 12673.50000 | 2.377 | 25.60650 | 24.91240 | 24.42484 |
| NI | 60 | 244.60000 | 62929.80000 | 1.381 | 244.88795 | 247.88697 | 241.14545 |
| SB | 121 | 24.85000 | 6842.12000 | 5.030 | 26.17872 | 23.69496 | 24.68218 |
| SN | 120 | 24.77000 | 10835.00000 | 1.784 | 24.70481 | 25.24506 | 24.36896 |
| SR | 88 | 23.69000 | 8913.46000 | 9.472 | 22.43426 | 22.35023 | 26.27883 |
| ZN | 66 | 247.00000 | 22163.10000 | 0.219 | 247.47189 | 246.39537 | 247.01407 |
| **BI-1** | 209 | 113490.00000 | 0.00000 | 1.443 | 111601.00000 | 114529.00000 | 114338.00000 |
| PB | 208 | 24.78000 | 69745.80000 | 3.794 | 25.85599 | 24.14417 | 24.32640 |
| TL | 203 | 24.84000 | 21773.90000 | 3.576 | 25.78534 | 24.71804 | 24.02169 |
| U | 238 | 24.34000 | 76835.80000 | 2.192 | 24.88626 | 23.82002 | 24.31586 |
| *GE-1* | 72 | 97523.00000 | 0.00000 | 1.512 | 98930.30000 | 95989.10000 | 97649.50000 |
| *TB-1* | 159 | 164451.00000 | 0.00000 | 0.472 | 163697.00000 | 164407.00000 | 165248.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:33:00
Tube Number: 22
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 42651.20000 | 0.00000 | 1.867 | 43564.30000 | 42290.30000 | 42099.00000 |
| AL | 27 | 0.22770 | 20.00070 | 368.906 | -0.74230 | 0.70936 | 0.71596 |
| CA | 44 | -38.99000 | 310.01600 | -30.957 | -28.06697 | -51.95790 | -36.96795 |
| CR | 52 | 0.44710 | 286.68100 | 13.751 | 0.50149 | 0.45949 | 0.38041 |
| FE | 57 | -0.39560 | 26.66770 | -705.763 | -2.02386 | 2.82830 | -1.99126 |
| K | 39 | -142.80000 | 30179.20000 | -27.136 | -168.52079 | -98.24994 | -161.70882 |
| MG | 24 | -0.74980 | 46.66870 | -49.440 | -0.88229 | -0.33108 | -1.03603 |
| MN | 55 | -0.03273 | 0.00000 | 0.000 | -0.03274 | -0.03274 | -0.03274 |
| NA | 23 | -3.49000 | 6268.40000 | -39.341 | -4.21949 | -4.34579 | -1.90654 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.21680 | 110.00500 | 29.788 | 0.26113 | 0.14273 | 0.24664 |
| **IN-1** | 115 | 47200.10000 | 0.00000 | 3.201 | 48365.40000 | 45493.40000 | 47741.40000 |
| AG | 107 | -0.00852 | 3.33346 | -61.897 | -0.00243 | -0.01156 | -0.01156 |
| AS | 75 | 0.17850 | 46.66710 | 140.168 | -0.10737 | 0.28478 | 0.35797 |
| BA | 137 | 0.10620 | 16.66760 | 113.183 | 0.13113 | -0.02457 | 0.21203 |
| CD | 111 | -0.00987 | 8.00006 | -283.977 | 0.01821 | -0.03784 | -0.00997 |
| CO | 59 | 0.00497 | 66.66970 | 643.979 | 0.04006 | -0.02252 | -0.00264 |
| CU | 63 | 0.05095 | 70.00370 | 86.752 | 0.03268 | 0.10135 | 0.01882 |
| MO | 98 | -0.01135 | 10.00040 | -5.986 | -0.01187 | -0.01059 | -0.01161 |
| NI | 60 | -0.04613 | 16.66730 | -47.778 | -0.03394 | -0.07158 | -0.03289 |
| SB | 121 | 0.00287 | 10.00040 | 43.609 | 0.00192 | 0.00429 | 0.00241 |
| SN | 120 | 0.03423 | 26.66800 | 142.127 | 0.08831 | 0.02035 | -0.00597 |
| SR | 88 | 0.00104 | 6.66692 | 1531.160 | 0.01008 | -0.01739 | 0.01044 |
| ZN | 66 | 0.02431 | 26.66790 | 307.075 | -0.06131 | 0.07577 | 0.05847 |
| **BI-1** | 209 | 107783.00000 | 0.00000 | 3.685 | 110484.00000 | 103222.00000 | 109642.00000 |
| PB | 208 | -0.00494 | 110.00500 | -103.159 | -0.00217 | -0.01082 | -0.00183 |
| TL | 203 | -0.00372 | 10.00040 | -317.473 | -0.00378 | -0.01550 | 0.00812 |
| U | 238 | 0.00224 | 13.33390 | 80.859 | 0.00432 | 0.00130 | 0.00109 |
| *GE-1* | 72 | 92937.50000 | 0.00000 | 3.229 | 94742.20000 | 89473.50000 | 94596.90000 |
| *TB-1* | 159 | 154821.00000 | 0.00000 | 3.144 | 159022.00000 | 149486.00000 | 155955.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:35:00
Tube Number: 23 Batch: 171931063903A
Sample Number: **9095966** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 46292.80000 | 0.00000 | 1.596 | 46714.60000 | 45439.50000 | 46724.40000 |
| AL | 27 | 600.30000 | 13594.10000 | 2.499 | 583.92342 | 613.40326 | 603.53052 |
| CA | 44 | 45080.00000 | 103807.00000 | 1.262 | 44515.27087 | 45653.26549 | 45071.35343 |
| CR | 52 | 3.03600 | 1703.52000 | 3.046 | 3.12992 | 3.03208 | 2.94509 |
| FE | 57 | 933.40000 | 10624.80000 | 0.386 | 937.21742 | 933.05399 | 930.03464 |
| K | 39 | 2712.00000 | 153051.00000 | 4.122 | 2656.74546 | 2840.47159 | 2638.17987 |
| MG | 24 | 6529.00000 | 404242.00000 | 0.974 | 6481.01352 | 6601.37342 | 6505.42177 |
| MN | 55 | 33.23000 | 10451.30000 | 2.650 | 32.34419 | 33.25306 | 34.10501 |
| NA | 23 | 21440.00000 | 2885180.00000 | 2.924 | 21062.51356 | 22168.40518 | 21103.40012 |
| TI | 47 | 22.05000 | 296.68300 | 35.038 | 16.87795 | 30.93126 | 18.34168 |
| V | 51 | 5.45300 | 2356.98000 | 6.378 | 5.48358 | 5.09050 | 5.78402 |
| **IN-1** | 115 | 51101.50000 | 0.00000 | 0.656 | 51402.50000 | 51162.10000 | 50739.90000 |
| AG | 107 | -0.00294 | 10.00040 | -293.374 | -0.00297 | 0.00570 | -0.01156 |
| AS | 75 | 0.87650 | 86.66770 | 25.294 | 0.85311 | 0.66737 | 1.10890 |
| BA | 137 | 92.88000 | 12610.20000 | 1.769 | 94.66422 | 91.42658 | 92.55856 |
| CD | 111 | -0.03671 | 4.66671 | -42.686 | -0.02776 | -0.02757 | -0.05481 |
| CO | 59 | 0.17860 | 240.01200 | 17.956 | 0.17708 | 0.14735 | 0.21143 |
| CU | 63 | 1.54000 | 1136.76000 | 10.747 | 1.35287 | 1.59778 | 1.66809 |
| MO | 98 | 4.91000 | 2560.37000 | 4.271 | 4.72625 | 4.86430 | 5.13833 |
| NI | 60 | 0.77300 | 233.34600 | 45.614 | 0.52840 | 1.17714 | 0.61339 |
| SB | 121 | 0.13000 | 46.66850 | 68.492 | 0.14114 | 0.21303 | 0.03598 |
| SN | 120 | 0.64130 | 300.01600 | 15.703 | 0.61535 | 0.75253 | 0.55616 |
| SR | 88 | 285.20000 | 109707.00000 | 0.847 | 287.69796 | 285.12822 | 282.87096 |
| ZN | 66 | 22.65000 | 2103.59000 | 2.589 | 22.37441 | 22.26280 | 23.32974 |
| **BI-1** | 209 | 112581.00000 | 0.00000 | 0.868 | 112440.00000 | 113621.00000 | 111682.00000 |
| PB | 208 | 0.34380 | 1086.74000 | 11.367 | 0.31308 | 0.33067 | 0.38782 |
| TL | 203 | -0.00022 | 13.33390 | -5900.980 | 0.00754 | 0.00730 | -0.01550 |
| U | 238 | 1.48100 | 4644.45000 | 2.076 | 1.45285 | 1.51369 | 1.47560 |
| *GE-1* | 72 | 97615.50000 | 0.00000 | 1.982 | 98073.00000 | 99281.10000 | 95492.30000 |
| *TB-1* | 159 | 164968.00000 | 0.00000 | 1.080 | 164921.00000 | 166771.00000 | 163211.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:36:00
Tube Number: 24 Batch: 171931063903A
Sample Number: **9095968** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 46313.10000 | 0.00000 | 3.731 | 48200.10000 | 44807.50000 | 45931.70000 |
| AL | 27 | 330.50000 | 7499.10000 | 4.581 | 328.81253 | 316.29583 | 346.42592 |
| CA | 44 | 46020.00000 | 105944.00000 | 3.296 | 44290.01987 | 47108.38393 | 46671.94986 |
| CR | 52 | 2.63200 | 1486.82000 | 7.101 | 2.52958 | 2.51969 | 2.84825 |
| FE | 57 | 525.20000 | 5998.29000 | 3.698 | 531.30849 | 503.43629 | 540.81078 |
| K | 39 | 2784.00000 | 156135.00000 | 3.360 | 2699.27283 | 2884.54349 | 2769.23571 |
| MG | 24 | 6699.00000 | 414700.00000 | 2.544 | 6535.51331 | 6875.55547 | 6685.05970 |
| MN | 55 | 19.12000 | 6018.31000 | 1.347 | 19.17117 | 19.34190 | 18.83574 |
| NA | 23 | 22230.00000 | 2990180.00000 | 4.157 | 21212.21804 | 23012.49790 | 22475.70877 |
| TI | 47 | 14.00000 | 190.00900 | 17.471 | 16.35778 | 11.47572 | 14.18016 |
| V | 51 | 4.82900 | 2086.92000 | 8.192 | 4.41302 | 4.87279 | 5.20049 |
| **IN-1** | 115 | 50550.80000 | 0.00000 | 3.258 | 52398.00000 | 50018.50000 | 49236.00000 |
| AG | 107 | -0.00558 | 6.66693 | -185.563 | -0.01156 | -0.01156 | 0.00638 |
| AS | 75 | 0.82760 | 83.33430 | 21.544 | 0.93501 | 0.62182 | 0.92599 |
| BA | 137 | 93.13000 | 12493.50000 | 5.439 | 88.26355 | 92.76397 | 98.37346 |
| CD | 111 | -0.02266 | 6.66672 | -67.167 | -0.01518 | -0.01264 | -0.04018 |
| CO | 59 | 0.03855 | 103.33700 | 108.197 | 0.04173 | 0.07858 | -0.00465 |
| CU | 63 | 1.19500 | 880.06300 | 12.435 | 1.03866 | 1.33450 | 1.21094 |
| MO | 98 | 4.49100 | 2316.97000 | 5.609 | 4.25936 | 4.75932 | 4.45484 |
| NI | 60 | 0.74520 | 223.34600 | 6.189 | 0.70163 | 0.74045 | 0.79350 |
| SB | 121 | 0.04841 | 23.33420 | 44.846 | 0.03371 | 0.07335 | 0.03817 |
| SN | 120 | 0.28540 | 140.00700 | 32.260 | 0.34116 | 0.33594 | 0.17914 |
| SR | 88 | 292.20000 | 111142.00000 | 1.713 | 288.32285 | 290.45755 | 297.85640 |
| ZN | 66 | 16.12000 | 1483.48000 | 17.363 | 13.00650 | 18.43163 | 16.91763 |
| **BI-1** | 209 | 113144.00000 | 0.00000 | 1.254 | 114075.00000 | 111511.00000 | 113845.00000 |
| PB | 208 | 0.24550 | 816.71500 | 7.967 | 0.22298 | 0.25813 | 0.25545 |
| TL | 203 | 0.01490 | 26.66780 | 158.389 | 0.00720 | -0.00389 | 0.04138 |
| U | 238 | 1.44900 | 4567.78000 | 3.124 | 1.47615 | 1.47464 | 1.39700 |
| *GE-1* | 72 | 98916.00000 | 0.00000 | 0.696 | 99564.30000 | 98194.10000 | 98989.50000 |
| *TB-1* | 159 | 166456.00000 | 0.00000 | 3.004 | 171226.00000 | 161253.00000 | 166890.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:38:00
Tube Number: 25 Batch: 171931063903A
Sample Number: **9095970** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 47574.30000 | 0.00000 | 1.914 | 48611.50000 | 47206.30000 | 46904.90000 |
| AL | 27 | 11.06000 | 273.34600 | 36.438 | 6.83510 | 14.86379 | 11.47372 |
| CA | 44 | 42430.00000 | 100422.00000 | 1.395 | 41850.45421 | 42395.96492 | 43032.64082 |
| CR | 52 | 1.13300 | 696.71500 | 26.646 | 0.82529 | 1.14543 | 1.42881 |
| FE | 57 | 46.75000 | 580.03700 | 5.474 | 49.07983 | 47.17126 | 44.01344 |
| K | 39 | 2839.00000 | 162846.00000 | 1.737 | 2818.89303 | 2803.33819 | 2895.46531 |
| MG | 24 | 5817.00000 | 370104.00000 | 1.858 | 5711.62497 | 5812.85937 | 5927.65827 |
| MN | 55 | 19.02000 | 6148.38000 | 3.271 | 18.61450 | 18.70095 | 19.73286 |
| NA | 23 | 27200.00000 | 3760080.00000 | 1.273 | 26806.37612 | 27381.96734 | 27427.69436 |
| TI | 47 | 0.47710 | 6.66692 | 86.628 | 0.70518 | 0.72617 | 0.00000 |
| V | 51 | 2.02000 | 913.40300 | 9.203 | 1.89990 | 2.23383 | 1.92507 |
| **IN-1** | 115 | 51626.30000 | 0.00000 | 0.421 | 51826.90000 | 51656.70000 | 51395.30000 |
| AG | 107 | -0.00301 | 10.00040 | -1.200 | -0.00304 | -0.00301 | -0.00297 |
| AS | 75 | 0.78220 | 82.66770 | 8.352 | 0.72492 | 0.76829 | 0.85334 |
| BA | 137 | 78.85000 | 10815.10000 | 1.004 | 79.70858 | 78.14909 | 78.69174 |
| CD | 111 | -0.04143 | 4.00004 | -57.060 | -0.05510 | -0.05506 | -0.01414 |
| CO | 59 | 0.02295 | 90.00440 | 88.061 | 0.02263 | 0.04332 | 0.00290 |
| CU | 63 | 0.38350 | 316.68300 | 14.360 | 0.44186 | 0.33243 | 0.37627 |
| MO | 98 | 11.61000 | 6095.05000 | 6.553 | 12.30151 | 10.79494 | 11.73300 |
| NI | 60 | 0.04881 | 43.33500 | 44.356 | 0.03568 | 0.07380 | 0.03694 |
| SB | 121 | 0.08177 | 33.33490 | 89.935 | 0.10462 | -0.00048 | 0.14117 |
| SN | 120 | 0.08071 | 50.00200 | 98.389 | 0.16869 | 0.01436 | 0.05909 |
| SR | 88 | 271.30000 | 105411.00000 | 0.273 | 272.08191 | 270.61453 | 271.15592 |
| ZN | 66 | 2.37200 | 246.67800 | 18.487 | 1.96681 | 2.83754 | 2.31118 |
| **BI-1** | 209 | 115644.00000 | 0.00000 | 0.894 | 116822.00000 | 114884.00000 | 115226.00000 |
| PB | 208 | -0.00283 | 123.33900 | -793.494 | -0.02874 | 0.01021 | 0.01004 |
| TL | 203 | 0.01063 | 23.33430 | 161.712 | 0.00667 | -0.00423 | 0.02946 |
| U | 238 | 3.08900 | 9944.65000 | 2.515 | 3.02408 | 3.06888 | 3.17535 |
| *GE-1* | 72 | 99340.10000 | 0.00000 | 0.722 | 99221.60000 | 98689.60000 | 100109.00000 |
| *TB-1* | 159 | 169145.00000 | 0.00000 | 1.467 | 171658.00000 | 169078.00000 | 166698.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:40:00
Tube Number: 26 Batch: 171931063903A
Sample Number: **9095970** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 10.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45533.40000 | 0.00000 | 1.951 | 46402.70000 | 44627.10000 | 45570.50000 |
| AL | 27 | 1.50800 | 50.00210 | 78.913 | 0.58074 | 1.09190 | 2.85016 |
| CA | 44 | 4736.00000 | 11098.50000 | 4.818 | 4483.73637 | 4796.24597 | 4928.07844 |
| CR | 52 | 0.48610 | 326.68400 | 12.399 | 0.55555 | 0.44788 | 0.45478 |
| FE | 57 | 5.97400 | 100.00500 | 36.726 | 8.47054 | 4.35379 | 5.09765 |
| K | 39 | 173.10000 | 45342.60000 | 15.095 | 196.60223 | 144.97445 | 177.81389 |
| MG | 24 | 669.20000 | 40840.60000 | 1.026 | 671.05771 | 674.95814 | 661.60581 |
| MN | 55 | 2.42900 | 760.05000 | 14.767 | 2.50783 | 2.74099 | 2.03682 |
| NA | 23 | 2948.00000 | 396419.00000 | 0.579 | 2929.43183 | 2962.67132 | 2952.75601 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.36520 | 180.00800 | 21.202 | 0.45157 | 0.30200 | 0.34203 |
| **IN-1** | 115 | 51563.00000 | 0.00000 | 2.213 | 50723.40000 | 51104.00000 | 52861.50000 |
| AG | 107 | -0.01156 | 0.00000 | 0.000 | -0.01156 | -0.01156 | -0.01156 |
| AS | 75 | 0.09648 | 46.66720 | 269.797 | 0.25066 | 0.24281 | -0.20403 |
| BA | 137 | 8.90600 | 1220.11000 | 17.179 | 10.44282 | 8.89105 | 7.38349 |
| CD | 111 | -0.02752 | 6.00005 | -258.539 | -0.06860 | 0.05464 | -0.06860 |
| CO | 59 | -0.05529 | 13.33380 | -10.005 | -0.05845 | -0.05853 | -0.04891 |
| CU | 63 | 0.09216 | 106.67100 | 32.259 | 0.07095 | 0.12614 | 0.07938 |
| MO | 98 | 1.18000 | 633.37300 | 17.271 | 1.07599 | 1.41511 | 1.04981 |
| NI | 60 | 0.01167 | 33.33490 | 508.398 | 0.07726 | -0.03825 | -0.00401 |
| SB | 121 | -0.01234 | 6.66693 | -163.695 | -0.03567 | -0.00010 | -0.00128 |
| SN | 120 | 0.05864 | 40.00160 | 64.802 | 0.08282 | 0.01483 | 0.07826 |
| SR | 88 | 28.20000 | 10948.50000 | 0.984 | 28.49702 | 28.15414 | 27.94747 |
| ZN | 66 | 1.08300 | 126.67300 | 51.893 | 1.02691 | 1.67156 | 0.55178 |
| **BI-1** | 209 | 116469.00000 | 0.00000 | 0.995 | 115985.00000 | 117792.00000 | 115630.00000 |
| PB | 208 | -0.01139 | 100.00400 | -78.402 | -0.00773 | -0.00489 | -0.02158 |
| TL | 203 | -0.01183 | 3.33347 | -53.669 | -0.01550 | -0.00451 | -0.01550 |
| U | 238 | 0.36630 | 1193.45000 | 5.558 | 0.36668 | 0.34576 | 0.38647 |
| *GE-1* | 72 | 99597.40000 | 0.00000 | 0.884 | 100401.00000 | 98655.90000 | 99735.80000 |
| *TB-1* | 159 | 162794.00000 | 0.00000 | 0.839 | 162631.00000 | 161517.00000 | 164234.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:42:00
Tube Number: 27
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 43674.40000 | 0.00000 | 3.260 | 42059.50000 | 44747.80000 | 44215.80000 |
| AL | 27 | 2523.00000 | 53807.30000 | 4.388 | 2643.17099 | 2425.56617 | 2499.36848 |
| CA | 44 | 2434.00000 | 5658.10000 | 9.018 | 2675.29813 | 2246.19963 | 2380.49158 |
| CR | 52 | 261.00000 | 132371.00000 | 5.766 | 278.02140 | 249.47960 | 255.45053 |
| FE | 57 | 2607.00000 | 27917.50000 | 3.122 | 2696.74706 | 2538.20463 | 2585.41667 |
| K | 39 | 2446.00000 | 133742.00000 | 7.024 | 2644.52899 | 2336.89997 | 2358.03166 |
| MG | 24 | 2557.00000 | 149286.00000 | 4.889 | 2701.28346 | 2476.38586 | 2494.20907 |
| MN | 55 | 263.80000 | 78101.70000 | 5.023 | 278.95763 | 254.67937 | 257.64006 |
| NA | 23 | 2348.00000 | 303862.00000 | 5.247 | 2486.77507 | 2252.32711 | 2304.07667 |
| TI | 47 | 255.20000 | 3250.56000 | 7.880 | 261.65748 | 271.22717 | 232.61517 |
| V | 51 | 258.30000 | 104020.00000 | 4.963 | 273.11896 | 251.82170 | 250.10914 |
| **IN-1** | 115 | 49029.10000 | 0.00000 | 4.716 | 46368.50000 | 50545.60000 | 50173.20000 |
| AG | 107 | 26.23000 | 29081.00000 | 4.971 | 27.73461 | 25.42427 | 25.53329 |
| AS | 75 | 249.80000 | 12383.30000 | 6.277 | 267.85696 | 240.55609 | 240.84780 |
| BA | 137 | 252.30000 | 32787.70000 | 6.667 | 271.47741 | 240.07927 | 245.32237 |
| CD | 111 | 25.37000 | 3557.19000 | 6.973 | 27.34182 | 24.84119 | 23.92390 |
| CO | 59 | 246.70000 | 229195.00000 | 6.907 | 266.22656 | 235.07580 | 238.67903 |
| CU | 63 | 251.50000 | 171587.00000 | 6.966 | 271.58328 | 239.57116 | 243.23353 |
| MO | 98 | 25.01000 | 12433.20000 | 4.846 | 26.28979 | 24.85669 | 23.88021 |
| NI | 60 | 251.40000 | 63288.60000 | 8.099 | 274.61953 | 236.77247 | 242.69226 |
| SB | 121 | 26.07000 | 7042.25000 | 2.768 | 25.96105 | 26.83488 | 25.40316 |
| SN | 120 | 25.12000 | 10775.10000 | 3.116 | 25.53514 | 24.21506 | 25.60407 |
| SR | 88 | 25.05000 | 9237.07000 | 4.970 | 26.44284 | 24.67747 | 24.03860 |
| ZN | 66 | 247.40000 | 21752.30000 | 6.475 | 260.67051 | 229.60428 | 251.89860 |
| **BI-1** | 209 | 109719.00000 | 0.00000 | 5.701 | 102532.00000 | 113933.00000 | 112693.00000 |
| PB | 208 | 25.77000 | 69996.50000 | 6.294 | 27.61008 | 25.15544 | 24.54566 |
| TL | 203 | 26.19000 | 22141.30000 | 6.987 | 28.21965 | 24.66508 | 25.68520 |
| U | 238 | 25.59000 | 77873.70000 | 7.991 | 27.88231 | 23.95464 | 24.93098 |
| *GE-1* | 72 | 94299.80000 | 0.00000 | 4.699 | 89192.50000 | 97116.00000 | 96590.90000 |
| *TB-1* | 159 | 157736.00000 | 0.00000 | 4.654 | 149555.00000 | 163748.00000 | 159905.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:43:00
Tube Number: 28
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44700.90000 | 0.00000 | 1.457 | 44827.40000 | 45279.90000 | 43995.40000 |
| AL | 27 | -0.13370 | 13.33380 | -191.324 | -0.28580 | 0.16157 | -0.27717 |
| CA | 44 | -42.65000 | 316.68300 | -30.363 | -28.00368 | -47.40715 | -52.55061 |
| CR | 52 | 0.49860 | 326.68200 | 10.588 | 0.54126 | 0.43954 | 0.51485 |
| FE | 57 | -0.23010 | 30.00140 | -1045.200 | 2.50074 | -1.15825 | -2.03304 |
| K | 39 | -173.00000 | 30399.50000 | -14.278 | -190.93026 | -183.39134 | -144.87128 |
| MG | 24 | -0.34310 | 73.33630 | -72.340 | -0.06748 | -0.41282 | -0.54905 |
| MN | 55 | 0.04436 | 23.33420 | 45.649 | 0.03300 | 0.03235 | 0.06774 |
| NA | 23 | -6.48800 | 6181.69000 | -21.393 | -5.08824 | -7.86466 | -6.51293 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.20320 | 110.00500 | 61.663 | 0.25202 | 0.29675 | 0.06087 |
| **IN-1** | 115 | 48109.60000 | 0.00000 | 1.191 | 48324.20000 | 47460.10000 | 48544.60000 |
| AG | 107 | 0.00061 | 13.33380 | 2289.040 | 0.01586 | -0.01156 | -0.00246 |
| AS | 75 | 0.40230 | 58.66730 | 66.642 | 0.30299 | 0.19797 | 0.70588 |
| BA | 137 | 0.05417 | 10.00040 | 146.465 | -0.02457 | 0.13410 | 0.05299 |
| CD | 111 | -0.00550 | 8.66674 | -167.236 | -0.01068 | 0.00512 | -0.01094 |
| CO | 59 | 0.03334 | 93.33710 | 18.026 | 0.04016 | 0.03104 | 0.02881 |
| CU | 63 | 0.07293 | 86.67050 | 82.230 | 0.13663 | 0.06459 | 0.01757 |
| MO | 98 | -0.01856 | 6.66692 | -63.955 | -0.03226 | -0.01149 | -0.01195 |
| NI | 60 | 0.08744 | 50.00240 | 44.339 | 0.12699 | 0.04949 | 0.08586 |
| SB | 121 | 0.01489 | 13.33390 | 151.511 | 0.00195 | 0.04093 | 0.00178 |
| SN | 120 | 0.10500 | 56.66920 | 27.838 | 0.08842 | 0.13877 | 0.08788 |
| SR | 88 | 0.08393 | 36.66860 | 19.492 | 0.06510 | 0.09460 | 0.09210 |
| ZN | 66 | -0.10020 | 16.66780 | -238.523 | -0.17646 | -0.29181 | 0.16751 |
| **BI-1** | 209 | 110243.00000 | 0.00000 | 0.667 | 109746.00000 | 109895.00000 | 111088.00000 |
| PB | 208 | -0.00091 | 123.34100 | -1888.250 | -0.02027 | 0.00542 | 0.01213 |
| TL | 203 | 0.00004 | 13.33390 | 63320.000 | -0.01550 | -0.01550 | 0.03114 |
| U | 238 | 0.00757 | 30.00130 | 85.244 | 0.00109 | 0.00763 | 0.01399 |
| *GE-1* | 72 | 95456.60000 | 0.00000 | 1.514 | 96985.20000 | 94113.50000 | 95271.20000 |
| *TB-1* | 159 | 158225.00000 | 0.00000 | 1.637 | 160321.00000 | 155330.00000 | 159024.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:45:00
Tube Number: 29 Batch: 171951063903A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44740.80000 | 0.00000 | 0.621 | 44446.50000 | 44998.50000 | 44777.30000 |
| AL | 27 | 2.45700 | 70.00390 | 31.502 | 2.02022 | 3.35063 | 1.99988 |
| CA | 44 | 17.60000 | 450.02700 | 242.500 | 64.17832 | -19.62842 | 8.23671 |
| CR | 52 | 0.49800 | 326.68200 | 29.237 | 0.50830 | 0.34749 | 0.63810 |
| FE | 57 | 0.99340 | 43.33500 | 55.456 | 1.62949 | 0.66646 | 0.68437 |
| K | 39 | -155.90000 | 31134.60000 | -17.056 | -149.27034 | -133.27706 | -185.19958 |
| MG | 24 | 1.99600 | 213.34300 | 28.908 | 1.45972 | 1.92116 | 2.60647 |
| MN | 55 | 0.90120 | 283.34800 | 24.023 | 1.06136 | 0.65495 | 0.98745 |
| NA | 23 | 12.62000 | 8666.53000 | 5.450 | 13.03312 | 11.82495 | 12.99871 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.17190 | 96.67110 | 45.218 | 0.20594 | 0.22673 | 0.08292 |
| **IN-1** | 115 | 49272.30000 | 0.00000 | 1.527 | 50119.80000 | 48682.70000 | 49014.30000 |
| AG | 107 | -0.00260 | 10.00040 | -5.237 | -0.00275 | -0.00249 | -0.00255 |
| AS | 75 | 0.16190 | 48.00050 | 71.402 | 0.10532 | 0.29485 | 0.08542 |
| BA | 137 | 0.07672 | 13.33390 | 114.364 | 0.12568 | -0.02457 | 0.12907 |
| CD | 111 | -0.01654 | 7.33339 | -48.573 | -0.01275 | -0.01111 | -0.02577 |
| CO | 59 | -0.04363 | 23.33420 | -62.434 | -0.06883 | -0.01474 | -0.04734 |
| CU | 63 | 0.15770 | 146.67400 | 52.473 | 0.11542 | 0.25306 | 0.10465 |
| MO | 98 | -0.01224 | 10.00040 | -2.480 | -0.01259 | -0.01201 | -0.01214 |
| NI | 60 | 0.05603 | 43.33520 | 102.356 | 0.11834 | 0.00546 | 0.04429 |
| SB | 121 | -0.03566 | 0.00000 | 0.000 | -0.03567 | -0.03567 | -0.03567 |
| SN | 120 | 0.47220 | 216.67600 | 37.781 | 0.51777 | 0.27549 | 0.62346 |
| SR | 88 | 0.13520 | 56.66960 | 29.416 | 0.16820 | 0.14638 | 0.09105 |
| ZN | 66 | 4.46500 | 420.02400 | 13.064 | 3.93452 | 5.08975 | 4.37102 |
| **BI-1** | 209 | 112440.00000 | 0.00000 | 1.137 | 113855.00000 | 112095.00000 | 111369.00000 |
| PB | 208 | 0.00661 | 146.67400 | 119.773 | 0.01072 | 0.01161 | -0.00252 |
| TL | 203 | 0.01141 | 23.33430 | 60.535 | 0.00725 | 0.00761 | 0.01939 |
| U | 238 | 0.00206 | 13.33390 | 178.745 | 0.00413 | 0.00423 | -0.00219 |
| *GE-1* | 72 | 99426.40000 | 0.00000 | 0.303 | 99765.70000 | 99322.00000 | 99191.40000 |
| *TB-1* | 159 | 159327.00000 | 0.00000 | 0.781 | 159738.00000 | 160313.00000 | 157930.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:47:00
Tube Number: 30 Batch: 171951063903A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45858.10000 | 0.00000 | 0.719 | 46012.30000 | 46082.30000 | 45479.80000 |
| AL | 27 | 1925.00000 | 43158.20000 | 0.452 | 1927.71253 | 1915.41362 | 1932.22237 |
| CA | 44 | 3858.00000 | 9186.94000 | 4.686 | 3649.75768 | 3955.11051 | 3970.01884 |
| CR | 52 | 48.54000 | 25940.10000 | 2.612 | 49.96377 | 47.53074 | 48.12468 |
| FE | 57 | 978.00000 | 11025.10000 | 2.179 | 962.22593 | 969.60459 | 1002.26972 |
| K | 39 | 9656.00000 | 441653.00000 | 0.789 | 9711.56586 | 9569.44747 | 9688.10217 |
| MG | 24 | 1923.00000 | 118033.00000 | 1.845 | 1941.54470 | 1945.45748 | 1882.16332 |
| MN | 55 | 48.31000 | 15042.70000 | 2.327 | 47.13534 | 48.40859 | 49.37594 |
| NA | 23 | 9492.00000 | 1269480.00000 | 1.228 | 9487.28108 | 9610.25425 | 9377.21321 |
| TI | 47 | 246.50000 | 3297.23000 | 1.654 | 251.10265 | 244.77336 | 243.48549 |
| V | 51 | 48.65000 | 20613.60000 | 3.435 | 50.48377 | 48.26387 | 47.20918 |
| **IN-1** | 115 | 51272.50000 | 0.00000 | 1.804 | 52253.80000 | 51147.50000 | 50416.20000 |
| AG | 107 | 48.16000 | 55905.70000 | 0.561 | 48.09074 | 47.92499 | 48.45288 |
| AS | 75 | 9.41300 | 529.34800 | 5.773 | 10.03489 | 9.03043 | 9.17305 |
| BA | 137 | 49.33000 | 6718.73000 | 3.714 | 48.26687 | 48.28030 | 51.44724 |
| CD | 111 | 4.71800 | 701.35900 | 3.389 | 4.59191 | 4.89795 | 4.66462 |
| CO | 59 | 229.20000 | 223207.00000 | 0.752 | 227.32129 | 229.66545 | 230.68190 |
| CU | 63 | 47.77000 | 34192.90000 | 1.264 | 47.23117 | 48.42251 | 47.65695 |
| MO | 98 | 47.15000 | 24534.60000 | 1.586 | 47.99119 | 46.88572 | 46.56655 |
| NI | 60 | 46.82000 | 12383.10000 | 2.640 | 45.72505 | 48.16139 | 46.58565 |
| SB | 121 | 5.91800 | 1680.18000 | 7.822 | 6.29574 | 5.40189 | 6.05774 |
| SN | 120 | 47.19000 | 21158.40000 | 4.314 | 45.62249 | 46.45386 | 49.49078 |
| SR | 88 | 37.31000 | 14405.30000 | 4.229 | 38.22570 | 35.49018 | 38.22093 |
| ZN | 66 | 464.50000 | 42761.40000 | 1.760 | 473.82960 | 458.60343 | 461.04754 |
| **BI-1** | 209 | 112265.00000 | 0.00000 | 1.102 | 113630.00000 | 111219.00000 | 111946.00000 |
| PB | 208 | 14.40000 | 40177.90000 | 1.379 | 14.52142 | 14.51395 | 14.17375 |
| TL | 203 | 1.98000 | 1730.20000 | 4.806 | 2.03646 | 2.03434 | 1.87058 |
| U | 238 | 0.00103 | 10.00040 | 542.634 | -0.00219 | -0.00219 | 0.00745 |
| *GE-1* | 72 | 97240.00000 | 0.00000 | 0.937 | 98214.30000 | 96409.90000 | 97095.80000 |
| *TB-1* | 159 | 162450.00000 | 0.00000 | 1.823 | 163857.00000 | 164446.00000 | 159046.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:48:00
Tube Number: 31 Batch: 171951063903A
Sample Number: **9100485** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 43892.00000 | 0.00000 | 5.370 | 45419.90000 | 45078.60000 | 41177.50000 |
| AL | 27 | 35.27000 | 770.05800 | 9.240 | 33.04985 | 33.75964 | 39.01679 |
| CA | 44 | 63630.00000 | 138475.00000 | 6.093 | 60463.47768 | 62470.08399 | 67953.57318 |
| CR | 52 | 1.67000 | 916.73500 | 13.042 | 1.42296 | 1.83559 | 1.75018 |
| FE | 57 | 214.40000 | 2333.63000 | 5.965 | 212.65580 | 202.51683 | 227.93039 |
| K | 39 | 3358.00000 | 170760.00000 | 5.155 | 3232.54756 | 3286.98517 | 3555.81318 |
| MG | 24 | 9443.00000 | 553228.00000 | 5.565 | 9115.86330 | 9163.90799 | 10049.21316 |
| MN | 55 | 107.40000 | 31943.50000 | 6.854 | 107.03519 | 100.27601 | 114.98111 |
| NA | 23 | 27270.00000 | 3470570.00000 | 5.728 | 26024.36038 | 26759.13177 | 29020.51490 |
| TI | 47 | 1.11000 | 13.33410 | 173.243 | 0.00000 | 0.00000 | 3.33002 |
| V | 51 | 4.53900 | 1860.21000 | 5.135 | 4.42438 | 4.38622 | 4.80769 |
| **IN-1** | 115 | 48685.00000 | 0.00000 | 4.593 | 49497.10000 | 50401.50000 | 46156.40000 |
| AG | 107 | 0.02191 | 36.66840 | 64.674 | 0.03306 | 0.00596 | 0.02672 |
| AS | 75 | 1.02000 | 89.33440 | 22.069 | 0.99688 | 0.80743 | 1.25590 |
| BA | 137 | 135.40000 | 17476.30000 | 6.390 | 132.50794 | 128.55803 | 145.12266 |
| CD | 111 | -0.02525 | 6.00005 | -112.713 | 0.00209 | -0.05472 | -0.02312 |
| CO | 59 | 0.15430 | 203.34400 | 67.077 | 0.10142 | 0.08791 | 0.27349 |
| CU | 63 | 1.49900 | 1056.76000 | 8.946 | 1.65345 | 1.40932 | 1.43533 |
| MO | 98 | 6.59900 | 3263.89000 | 10.088 | 6.30446 | 6.13205 | 7.36148 |
| NI | 60 | 0.62640 | 186.67600 | 42.034 | 0.43535 | 0.92674 | 0.51724 |
| SB | 121 | 0.02599 | 16.66730 | 74.259 | 0.03778 | 0.03646 | 0.00372 |
| SN | 120 | 0.35280 | 163.34000 | 9.067 | 0.36290 | 0.37854 | 0.31699 |
| SR | 88 | 418.00000 | 152860.00000 | 6.321 | 409.16492 | 397.10359 | 447.69047 |
| ZN | 66 | 33.96000 | 2990.46000 | 2.503 | 34.62343 | 33.00093 | 34.25162 |
| **BI-1** | 209 | 106495.00000 | 0.00000 | 5.649 | 109734.00000 | 110199.00000 | 99553.30000 |
| PB | 208 | 0.18910 | 616.70200 | 22.618 | 0.19315 | 0.14451 | 0.22977 |
| TL | 203 | 0.02975 | 36.66820 | 70.050 | 0.03171 | 0.00800 | 0.04955 |
| U | 238 | 1.67800 | 4971.25000 | 4.495 | 1.59688 | 1.69131 | 1.74595 |
| *GE-1* | 72 | 93921.30000 | 0.00000 | 6.377 | 98557.00000 | 96047.70000 | 87159.30000 |
| *TB-1* | 159 | 160223.00000 | 0.00000 | 5.918 | 165633.00000 | 165761.00000 | 149274.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:50:00
Tube Number: 32 Batch: 171951063903A
Sample Number: **9100485** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45573.80000 | 0.00000 | 1.597 | 45119.20000 | 46413.10000 | 45189.10000 |
| AL | 27 | 231.20000 | 5161.20000 | 6.977 | 242.40843 | 212.69528 | 238.41057 |
| CA | 44 | 61210.00000 | 138603.00000 | 2.023 | 62277.26358 | 59854.48137 | 61503.96371 |
| CR | 52 | 5.62000 | 3047.14000 | 5.617 | 5.76305 | 5.83988 | 5.25876 |
| FE | 57 | 373.10000 | 4200.85000 | 3.728 | 387.75672 | 371.59704 | 360.06367 |
| K | 39 | 3559.00000 | 185848.00000 | 1.874 | 3611.26891 | 3483.80810 | 3581.58619 |
| MG | 24 | 9097.00000 | 554349.00000 | 2.012 | 9243.63703 | 8891.65943 | 9154.63548 |
| MN | 55 | 104.50000 | 32337.90000 | 2.079 | 106.14392 | 102.07213 | 105.42437 |
| NA | 23 | 26320.00000 | 3485350.00000 | 0.979 | 26429.89716 | 26027.03606 | 26506.52653 |
| TI | 47 | 31.61000 | 420.02400 | 7.374 | 31.15084 | 29.54379 | 34.13696 |
| V | 51 | 5.59100 | 2376.98000 | 7.036 | 5.27121 | 5.47288 | 6.03062 |
| **IN-1** | 115 | 48501.80000 | 0.00000 | 2.087 | 49629.80000 | 48201.60000 | 47673.90000 |
| AG | 107 | 1.01500 | 1130.10000 | 19.202 | 1.16345 | 1.08827 | 0.79463 |
| AS | 75 | 4.96500 | 282.00600 | 20.927 | 4.14414 | 4.61938 | 6.13319 |
| BA | 137 | 140.60000 | 18113.90000 | 3.939 | 135.57279 | 146.55189 | 139.79092 |
| CD | 111 | 0.80780 | 121.33500 | 13.989 | 0.69280 | 0.91861 | 0.81211 |
| CO | 59 | 1.18600 | 1156.77000 | 4.762 | 1.24712 | 1.17685 | 1.13539 |
| CU | 63 | 5.42200 | 3704.00000 | 3.921 | 5.21867 | 5.64276 | 5.40494 |
| MO | 98 | 7.57100 | 3740.72000 | 3.749 | 7.83791 | 7.27287 | 7.60216 |
| NI | 60 | 4.42800 | 1133.43000 | 2.956 | 4.38882 | 4.32059 | 4.57357 |
| SB | 121 | 2.12800 | 576.70600 | 15.221 | 1.86883 | 2.49094 | 2.02327 |
| SN | 120 | 4.23200 | 1806.87000 | 2.175 | 4.16471 | 4.19402 | 4.33673 |
| SR | 88 | 414.00000 | 151081.00000 | 2.911 | 402.67340 | 412.76634 | 426.67237 |
| ZN | 66 | 60.36000 | 5277.94000 | 0.667 | 60.82051 | 60.08524 | 60.16943 |
| **BI-1** | 209 | 108053.00000 | 0.00000 | 2.772 | 111501.00000 | 106557.00000 | 106100.00000 |
| PB | 208 | 2.18300 | 5964.16000 | 7.604 | 2.11964 | 2.37171 | 2.05861 |
| TL | 203 | 1.00900 | 853.40000 | 8.166 | 0.91385 | 1.05422 | 1.05883 |
| U | 238 | 11.85000 | 35605.00000 | 2.710 | 11.49967 | 12.13140 | 11.91536 |
| *GE-1* | 72 | 94821.30000 | 0.00000 | 2.608 | 97498.10000 | 94344.60000 | 92621.20000 |
| *TB-1* | 159 | 162548.00000 | 0.00000 | 2.033 | 165866.00000 | 159258.00000 | 162520.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:52:00
Tube Number: 33 Batch: 171951063903A
Sample Number: **9100485** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45771.00000 | 0.00000 | 1.713 | 46664.60000 | 45449.50000 | 45199.00000 |
| AL | 27 | 26.54000 | 610.03700 | 9.412 | 25.13155 | 29.42550 | 25.06492 |
| CA | 44 | 57360.00000 | 130506.00000 | 0.830 | 57891.60228 | 57210.95457 | 56974.87962 |
| CR | 52 | 1.54300 | 890.06700 | 3.465 | 1.52904 | 1.49768 | 1.60189 |
| FE | 57 | 190.20000 | 2166.93000 | 4.283 | 188.53869 | 199.04640 | 183.00895 |
| K | 39 | 3027.00000 | 164473.00000 | 1.919 | 2970.84035 | 3022.31205 | 3086.75299 |
| MG | 24 | 8509.00000 | 520873.00000 | 0.840 | 8439.39163 | 8506.41392 | 8582.22255 |
| MN | 55 | 98.55000 | 30624.00000 | 2.813 | 98.22964 | 101.47335 | 95.95818 |
| NA | 23 | 24790.00000 | 3297730.00000 | 1.447 | 24913.08011 | 25070.10273 | 24385.13428 |
| TI | 47 | 0.50280 | 6.66692 | 173.210 | 0.00000 | 1.50848 | 0.00000 |
| V | 51 | 4.28600 | 1836.88000 | 13.460 | 4.35122 | 4.82698 | 3.67884 |
| **IN-1** | 115 | 48416.30000 | 0.00000 | 1.814 | 49428.00000 | 47849.50000 | 47971.50000 |
| AG | 107 | -0.00552 | 6.66693 | -95.014 | -0.00263 | -0.01156 | -0.00236 |
| AS | 75 | 0.84110 | 80.66760 | 52.990 | 1.31989 | 0.43812 | 0.76519 |
| BA | 137 | 130.50000 | 16782.00000 | 5.700 | 125.21594 | 139.04175 | 127.37102 |
| CD | 111 | -0.02522 | 6.00007 | -58.208 | -0.02613 | -0.01010 | -0.03943 |
| CO | 59 | 0.18930 | 236.67700 | 31.638 | 0.12297 | 0.23936 | 0.20564 |
| CU | 63 | 1.34700 | 946.73900 | 11.039 | 1.20603 | 1.50246 | 1.33403 |
| MO | 98 | 6.71200 | 3310.57000 | 3.443 | 6.61271 | 6.97618 | 6.54713 |
| NI | 60 | 0.66340 | 193.34300 | 31.339 | 0.51475 | 0.90103 | 0.57436 |
| SB | 121 | 0.03950 | 20.00080 | 192.380 | 0.03788 | 0.11628 | -0.03567 |
| SN | 120 | 0.19840 | 96.67150 | 30.257 | 0.20147 | 0.25691 | 0.13697 |
| SR | 88 | 389.10000 | 141760.00000 | 1.006 | 384.60732 | 391.88344 | 390.73996 |
| ZN | 66 | 31.70000 | 2780.41000 | 5.568 | 33.65675 | 30.23290 | 31.20101 |
| **BI-1** | 209 | 111131.00000 | 0.00000 | 3.355 | 114862.00000 | 111128.00000 | 107404.00000 |
| PB | 208 | 0.20100 | 680.03600 | 1.598 | 0.20356 | 0.19741 | 0.20209 |
| TL | 203 | 0.01146 | 23.33430 | 147.469 | 0.02960 | -0.00385 | 0.00862 |
| U | 238 | 1.50500 | 4661.13000 | 3.365 | 1.55994 | 1.46032 | 1.49428 |
| *GE-1* | 72 | 97048.30000 | 0.00000 | 0.588 | 97226.90000 | 97508.50000 | 96409.40000 |
| *TB-1* | 159 | 164824.00000 | 0.00000 | 2.015 | 168604.00000 | 163488.00000 | 162379.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:53:00
Tube Number: 34 Batch: 171951063903A
Sample Number: **9100485** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 43844.70000 | 0.00000 | 0.333 | 43995.40000 | 43704.20000 | 43834.70000 |
| AL | 27 | 2077.00000 | 44519.30000 | 2.233 | 2024.04046 | 2097.65993 | 2109.68891 |
| CA | 44 | 65900.00000 | 143553.00000 | 2.668 | 64763.26595 | 65009.90148 | 67924.79565 |
| CR | 52 | 51.27000 | 26193.90000 | 0.767 | 51.63385 | 50.85399 | 51.33132 |
| FE | 57 | 1215.00000 | 13093.80000 | 3.660 | 1195.84076 | 1184.18663 | 1266.38487 |
| K | 39 | 13590.00000 | 579171.00000 | 0.725 | 13690.57941 | 13572.68931 | 13495.04559 |
| MG | 24 | 11150.00000 | 653781.00000 | 0.552 | 11151.82131 | 11086.57921 | 11209.51425 |
| MN | 55 | 156.90000 | 46701.60000 | 2.076 | 154.61216 | 160.65237 | 155.51525 |
| NA | 23 | 35870.00000 | 4567030.00000 | 1.129 | 35601.03201 | 35665.24941 | 36332.14924 |
| TI | 47 | 264.60000 | 3383.93000 | 0.907 | 267.29200 | 263.57952 | 262.79716 |
| V | 51 | 55.44000 | 22453.40000 | 2.374 | 56.28123 | 53.92373 | 56.11591 |
| **IN-1** | 115 | 48323.80000 | 0.00000 | 1.866 | 47350.70000 | 49130.60000 | 48490.20000 |
| AG | 107 | 48.42000 | 52968.80000 | 2.102 | 49.41624 | 47.38218 | 48.46459 |
| AS | 75 | 10.92000 | 572.01700 | 9.377 | 11.74269 | 11.24789 | 9.77351 |
| BA | 137 | 181.50000 | 23289.40000 | 1.769 | 185.10969 | 180.24575 | 179.04932 |
| CD | 111 | 4.66400 | 653.35500 | 4.498 | 4.86759 | 4.67451 | 4.44852 |
| CO | 59 | 233.00000 | 213789.00000 | 2.370 | 238.58030 | 227.53873 | 232.86896 |
| CU | 63 | 49.22000 | 33203.60000 | 0.891 | 49.72805 | 48.94954 | 48.98878 |
| MO | 98 | 55.79000 | 27350.20000 | 2.223 | 56.51135 | 54.36233 | 56.50777 |
| NI | 60 | 48.03000 | 11966.00000 | 5.182 | 49.52735 | 45.15490 | 49.40273 |
| SB | 121 | 6.35500 | 1700.19000 | 7.891 | 6.18341 | 6.92023 | 5.96237 |
| SN | 120 | 49.76000 | 21031.60000 | 2.864 | 51.36662 | 48.64145 | 49.28424 |
| SR | 88 | 442.60000 | 160948.00000 | 2.454 | 445.74835 | 430.52953 | 451.55820 |
| ZN | 66 | 495.40000 | 42955.50000 | 3.837 | 516.89832 | 480.74789 | 488.59983 |
| **BI-1** | 209 | 106735.00000 | 0.00000 | 1.716 | 108131.00000 | 107413.00000 | 104660.00000 |
| PB | 208 | 14.95000 | 39644.00000 | 0.404 | 14.89234 | 14.94705 | 15.01295 |
| TL | 203 | 2.03900 | 1690.19000 | 14.282 | 1.90119 | 1.84164 | 2.37322 |
| U | 238 | 1.62100 | 4821.20000 | 3.897 | 1.68713 | 1.56112 | 1.61599 |
| *GE-1* | 72 | 94123.80000 | 0.00000 | 1.417 | 95333.80000 | 92692.90000 | 94344.50000 |
| *TB-1* | 159 | 158687.00000 | 0.00000 | 0.487 | 159549.00000 | 158056.00000 | 158456.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:55:00
Tube Number: 35 Batch: 171951063903A
Sample Number: **9100485** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 47313.70000 | 0.00000 | 1.889 | 46413.40000 | 47326.70000 | 48200.80000 |
| AL | 27 | 2513.00000 | 58091.60000 | 3.238 | 2570.92612 | 2547.34511 | 2419.68495 |
| CA | 44 | 59060.00000 | 138836.00000 | 3.175 | 61226.54844 | 57941.44474 | 58017.11246 |
| CR | 52 | 50.59000 | 27874.10000 | 5.173 | 53.50664 | 49.83044 | 48.44101 |
| FE | 57 | 1943.00000 | 22563.90000 | 4.534 | 1949.38201 | 2028.32049 | 1852.42895 |
| K | 39 | 12780.00000 | 590172.00000 | 3.099 | 13237.63336 | 12519.48348 | 12589.37375 |
| MG | 24 | 10320.00000 | 652755.00000 | 2.490 | 10598.31466 | 10265.35970 | 10092.73336 |
| MN | 55 | 151.10000 | 48501.60000 | 3.710 | 157.19838 | 149.88342 | 146.18223 |
| NA | 23 | 33070.00000 | 4542660.00000 | 2.575 | 33955.32630 | 32983.00459 | 32258.33154 |
| TI | 47 | 244.10000 | 3367.23000 | 5.444 | 254.10469 | 249.19814 | 229.03067 |
| V | 51 | 52.31000 | 22857.40000 | 2.279 | 52.92463 | 53.07190 | 50.93704 |
| **IN-1** | 115 | 51293.00000 | 0.00000 | 1.618 | 50507.40000 | 52161.50000 | 51210.20000 |
| AG | 107 | 47.12000 | 54696.10000 | 5.028 | 49.41017 | 44.67879 | 47.26748 |
| AS | 75 | 9.95900 | 557.35000 | 4.525 | 10.13523 | 9.44670 | 10.29445 |
| BA | 137 | 171.60000 | 23382.70000 | 3.956 | 168.60909 | 166.87787 | 179.40621 |
| CD | 111 | 4.72400 | 702.69200 | 3.851 | 4.55909 | 4.69408 | 4.91920 |
| CO | 59 | 224.00000 | 218166.00000 | 1.742 | 228.46758 | 221.46982 | 221.97238 |
| CU | 63 | 47.91000 | 34303.10000 | 2.553 | 49.26507 | 47.57634 | 46.88916 |
| MO | 98 | 54.00000 | 28102.20000 | 1.118 | 54.66141 | 53.47604 | 53.87171 |
| NI | 60 | 46.72000 | 12363.00000 | 3.251 | 47.80982 | 47.37194 | 44.98769 |
| SB | 121 | 5.74300 | 1630.17000 | 4.583 | 6.04663 | 5.57502 | 5.60826 |
| SN | 120 | 47.37000 | 21252.00000 | 4.055 | 49.47043 | 46.93355 | 45.70282 |
| SR | 88 | 411.90000 | 159002.00000 | 1.023 | 416.74897 | 409.02495 | 409.97330 |
| ZN | 66 | 490.70000 | 45176.60000 | 4.402 | 512.70569 | 490.00396 | 469.51379 |
| **BI-1** | 209 | 113472.00000 | 0.00000 | 1.781 | 115791.00000 | 112540.00000 | 112086.00000 |
| PB | 208 | 14.99000 | 42264.50000 | 1.227 | 14.97617 | 14.81717 | 15.18413 |
| TL | 203 | 2.02900 | 1790.22000 | 6.491 | 1.88629 | 2.05633 | 2.14563 |
| U | 238 | 1.52600 | 4817.88000 | 9.043 | 1.37037 | 1.57299 | 1.63394 |
| *GE-1* | 72 | 97878.30000 | 0.00000 | 2.622 | 99221.40000 | 94919.50000 | 99494.10000 |
| *TB-1* | 159 | 167495.00000 | 0.00000 | 0.641 | 166278.00000 | 167894.00000 | 168311.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:57:00
Tube Number: 36 Batch: 171951063903A
Sample Number: **9100485** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 47112.40000 | 0.00000 | 1.864 | 47136.30000 | 47978.50000 | 46222.40000 |
| AL | 27 | 7.80500 | 196.68000 | 9.500 | 7.07229 | 7.78868 | 8.55506 |
| CA | 44 | 11800.00000 | 27970.80000 | 1.223 | 11851.55282 | 11636.13356 | 11910.25284 |
| CR | 52 | 0.73850 | 476.70200 | 20.081 | 0.65441 | 0.90968 | 0.65131 |
| FE | 57 | 40.91000 | 506.70100 | 3.312 | 42.05213 | 41.26208 | 39.41112 |
| K | 39 | 407.00000 | 56920.60000 | 9.349 | 442.36834 | 366.72560 | 411.79962 |
| MG | 24 | 1748.00000 | 110224.00000 | 2.814 | 1795.03774 | 1697.00836 | 1753.06374 |
| MN | 55 | 20.38000 | 6525.23000 | 4.338 | 21.19968 | 19.44417 | 20.50315 |
| NA | 23 | 4957.00000 | 684549.00000 | 1.456 | 4983.70485 | 4875.65670 | 5012.50490 |
| TI | 47 | 0.48480 | 6.66692 | 173.226 | 1.45450 | 0.00000 | 0.00000 |
| V | 51 | 0.93390 | 433.35900 | 7.575 | 0.97248 | 0.97690 | 0.85223 |
| **IN-1** | 115 | 53123.00000 | 0.00000 | 1.781 | 54127.70000 | 52991.80000 | 52249.60000 |
| AG | 107 | 0.01895 | 36.66810 | 51.108 | 0.01292 | 0.03012 | 0.01380 |
| AS | 75 | 0.11570 | 49.33390 | 74.676 | 0.18437 | 0.01870 | 0.14408 |
| BA | 137 | 24.30000 | 3430.61000 | 3.527 | 24.18662 | 23.49744 | 25.20137 |
| CD | 111 | -0.03782 | 4.66670 | -80.698 | -0.05567 | -0.00258 | -0.05521 |
| CO | 59 | -0.00989 | 60.00230 | -506.268 | 0.04793 | -0.03902 | -0.03859 |
| CU | 63 | 0.31740 | 276.68000 | 16.689 | 0.27494 | 0.37677 | 0.30057 |
| MO | 98 | 1.16300 | 643.37600 | 24.678 | 0.98807 | 1.49382 | 1.00587 |
| NI | 60 | 0.00787 | 33.33460 | 293.325 | -0.00659 | -0.00428 | 0.03447 |
| SB | 121 | 0.07780 | 33.33490 | 64.280 | 0.13224 | 0.06724 | 0.03391 |
| SN | 120 | 0.07076 | 46.66880 | 78.010 | 0.07573 | 0.01324 | 0.12330 |
| SR | 88 | 76.39000 | 30550.60000 | 0.628 | 76.89036 | 76.35141 | 75.93327 |
| ZN | 66 | 7.55100 | 746.71900 | 11.657 | 7.12307 | 6.96644 | 8.56325 |
| **BI-1** | 209 | 118000.00000 | 0.00000 | 1.346 | 119063.00000 | 116175.00000 | 118761.00000 |
| PB | 208 | 0.03964 | 250.01200 | 33.047 | 0.03198 | 0.05477 | 0.03217 |
| TL | 203 | 0.00652 | 20.00080 | 292.459 | 0.01713 | 0.01794 | -0.01550 |
| U | 238 | 0.32100 | 1060.10000 | 7.832 | 0.31789 | 0.34751 | 0.29751 |
| *GE-1* | 72 | 100657.00000 | 0.00000 | 1.705 | 102014.00000 | 98727.50000 | 101228.00000 |
| *TB-1* | 159 | 166824.00000 | 0.00000 | 0.560 | 167902.00000 | 166330.00000 | 166241.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:59:00
Tube Number: 37
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45055.60000 | 0.00000 | 3.296 | 45450.40000 | 46302.90000 | 43413.40000 |
| AL | 27 | 2488.00000 | 54784.40000 | 1.996 | 2505.59531 | 2432.37703 | 2527.10043 |
| CA | 44 | 2433.00000 | 5834.86000 | 8.767 | 2457.43306 | 2208.11766 | 2632.58835 |
| CR | 52 | 251.30000 | 131580.00000 | 2.996 | 252.88682 | 243.10701 | 257.91097 |
| FE | 57 | 2455.00000 | 27122.40000 | 3.158 | 2462.95193 | 2373.37918 | 2527.77452 |
| K | 39 | 2276.00000 | 131097.00000 | 1.787 | 2287.30029 | 2230.88023 | 2309.84937 |
| MG | 24 | 2470.00000 | 148844.00000 | 2.943 | 2483.12992 | 2392.16149 | 2535.82487 |
| MN | 55 | 250.00000 | 76428.80000 | 3.422 | 255.99105 | 240.23744 | 253.90023 |
| NA | 23 | 2248.00000 | 300566.00000 | 2.803 | 2262.69604 | 2178.31039 | 2301.57699 |
| TI | 47 | 253.60000 | 3327.22000 | 9.334 | 260.24510 | 227.31075 | 273.24012 |
| V | 51 | 249.00000 | 103466.00000 | 3.561 | 248.84364 | 240.25119 | 257.98105 |
| **IN-1** | 115 | 49706.50000 | 0.00000 | 3.050 | 51456.50000 | 48786.10000 | 48876.80000 |
| AG | 107 | 25.91000 | 29154.60000 | 2.853 | 25.43834 | 26.75887 | 25.52279 |
| AS | 75 | 245.00000 | 12340.00000 | 1.611 | 242.17893 | 249.54701 | 243.40451 |
| BA | 137 | 247.10000 | 32624.00000 | 1.647 | 244.56115 | 251.83200 | 245.03172 |
| CD | 111 | 25.35000 | 3611.21000 | 0.767 | 25.31165 | 25.18003 | 25.56276 |
| CO | 59 | 243.00000 | 229346.00000 | 1.221 | 239.99567 | 245.92921 | 243.02568 |
| CU | 63 | 246.40000 | 170712.00000 | 2.990 | 237.95619 | 251.63837 | 249.53979 |
| MO | 98 | 23.88000 | 12046.20000 | 2.746 | 23.14988 | 24.41900 | 24.07038 |
| NI | 60 | 248.00000 | 63463.10000 | 0.786 | 247.90976 | 246.07751 | 249.97289 |
| SB | 121 | 25.56000 | 7002.21000 | 4.308 | 26.11152 | 26.27569 | 24.29202 |
| SN | 120 | 24.18000 | 10521.50000 | 4.413 | 24.25285 | 25.20669 | 23.07555 |
| SR | 88 | 24.86000 | 9307.06000 | 2.098 | 24.85988 | 24.34118 | 25.38416 |
| ZN | 66 | 244.80000 | 21845.80000 | 4.477 | 236.92913 | 240.18181 | 257.33321 |
| **BI-1** | 209 | 112659.00000 | 0.00000 | 2.750 | 115974.00000 | 112168.00000 | 109836.00000 |
| PB | 208 | 24.72000 | 69107.90000 | 0.850 | 24.54799 | 24.66782 | 24.95698 |
| TL | 203 | 24.65000 | 21443.40000 | 3.163 | 23.86163 | 24.67192 | 25.42060 |
| U | 238 | 24.13000 | 75602.00000 | 1.842 | 23.68269 | 24.13483 | 24.57170 |
| *GE-1* | 72 | 97868.00000 | 0.00000 | 1.409 | 98898.80000 | 98404.00000 | 96301.40000 |
| *TB-1* | 159 | 163823.00000 | 0.00000 | 2.788 | 167185.00000 | 165661.00000 | 158622.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:00:00
Tube Number: 38
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45152.70000 | 0.00000 | 2.200 | 45379.80000 | 46012.70000 | 44065.50000 |
| AL | 27 | 0.61090 | 30.00140 | 194.795 | 1.96340 | 0.14718 | -0.27791 |
| CA | 44 | 2.16800 | 420.02300 | 696.033 | 19.00824 | -10.12786 | -2.37483 |
| CR | 52 | 0.47350 | 316.68200 | 8.817 | 0.47620 | 0.43046 | 0.51382 |
| FE | 57 | -0.25270 | 30.00110 | -346.854 | -1.16222 | 0.58651 | -0.18267 |
| K | 39 | -237.00000 | 28071.00000 | -10.490 | -225.03675 | -265.67884 | -220.53698 |
| MG | 24 | -0.35820 | 73.33660 | -91.206 | -0.08576 | -0.26869 | -0.72038 |
| MN | 55 | 0.03302 | 20.00080 | 103.452 | 0.03220 | -0.00071 | 0.06758 |
| NA | 23 | -9.31100 | 5871.51000 | -20.331 | -9.41189 | -11.15218 | -7.37110 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.26560 | 136.67300 | 25.568 | 0.34373 | 0.22037 | 0.23286 |
| **IN-1** | 115 | 49542.20000 | 0.00000 | 1.704 | 50321.80000 | 48645.70000 | 49659.10000 |
| AG | 107 | 0.02142 | 36.66840 | 135.387 | -0.01156 | 0.04292 | 0.03291 |
| AS | 75 | 0.08948 | 44.66710 | 144.278 | -0.01638 | 0.05144 | 0.23338 |
| BA | 137 | 0.15450 | 23.33430 | 103.819 | -0.02457 | 0.28504 | 0.20289 |
| CD | 111 | -0.00746 | 8.66674 | -97.706 | 0.00093 | -0.01106 | -0.01224 |
| CO | 59 | -0.00872 | 56.66910 | -179.420 | -0.00604 | -0.02553 | 0.00541 |
| CU | 63 | 0.06871 | 86.67070 | 61.258 | 0.11472 | 0.03216 | 0.05924 |
| MO | 98 | -0.01911 | 6.66692 | -59.602 | -0.01267 | -0.03226 | -0.01241 |
| NI | 60 | 0.02887 | 36.66810 | 200.104 | 0.07879 | -0.03440 | 0.04223 |
| SB | 121 | 0.01333 | 13.33440 | 318.455 | 0.03658 | 0.03907 | -0.03567 |
| SN | 120 | 0.05454 | 36.66810 | 87.477 | 0.03826 | 0.01710 | 0.10826 |
| SR | 88 | 0.01817 | 13.33380 | 225.151 | 0.00901 | -0.01739 | 0.06288 |
| ZN | 66 | -0.06772 | 20.00080 | -327.230 | 0.15127 | -0.06264 | -0.29181 |
| **BI-1** | 209 | 113799.00000 | 0.00000 | 0.666 | 113498.00000 | 113238.00000 | 114661.00000 |
| PB | 208 | 0.00836 | 153.34000 | 60.863 | 0.00378 | 0.00746 | 0.01384 |
| TL | 203 | 0.00353 | 16.66740 | 673.759 | 0.03014 | -0.00407 | -0.01550 |
| U | 238 | 0.00836 | 33.33470 | 44.294 | 0.01048 | 0.01051 | 0.00408 |
| *GE-1* | 72 | 98120.20000 | 0.00000 | 1.784 | 97438.00000 | 100109.00000 | 96813.70000 |
| *TB-1* | 159 | 163604.00000 | 0.00000 | 1.045 | 162450.00000 | 165568.00000 | 162793.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:02:00
Tube Number: 39 Batch: 171951063903A
Sample Number: **9100479** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 44928.20000 | 0.00000 | 1.997 | 45299.50000 | 45580.30000 | 43904.90000 |
| AL | 27 | 5.79200 | 143.34000 | 6.851 | 5.58224 | 5.54315 | 6.24917 |
| CA | 44 | 264100.00000 | 588264.00000 | 1.179 | 263174.99325 | 261607.89803 | 267611.19751 |
| CR | 52 | 0.62210 | 393.36000 | 24.803 | 0.80022 | 0.53018 | 0.53579 |
| FE | 57 | 43.45000 | 510.03000 | 16.730 | 42.97609 | 36.42674 | 50.94088 |
| K | 39 | 5419.00000 | 259301.00000 | 2.198 | 5417.40311 | 5301.35908 | 5539.46877 |
| MG | 24 | 39530.00000 | 2374880.00000 | 1.262 | 39184.96721 | 39312.04974 | 40105.38950 |
| MN | 55 | 1027.00000 | 313031.00000 | 1.120 | 1023.08641 | 1017.56253 | 1039.66329 |
| NA | 23 | 62820.00000 | 8189990.00000 | 1.912 | 62533.30169 | 61794.18553 | 64142.75786 |
| TI | 47 | 0.75210 | 10.00040 | 173.248 | 0.00000 | 2.25622 | 0.00000 |
| V | 51 | 1.86200 | 796.73000 | 13.303 | 1.97156 | 1.57855 | 2.03622 |
| **IN-1** | 115 | 48604.30000 | 0.00000 | 0.020 | 48614.10000 | 48604.10000 | 48594.70000 |
| AG | 107 | 0.00055 | 13.33380 | 1897.960 | 0.00661 | 0.00661 | -0.01156 |
| AS | 75 | 0.69040 | 73.33410 | 18.018 | 0.66299 | 0.82626 | 0.58208 |
| BA | 137 | 67.21000 | 8680.04000 | 2.982 | 69.16562 | 67.31890 | 65.16146 |
| CD | 111 | 0.06578 | 18.66680 | 45.591 | 0.03216 | 0.07537 | 0.08980 |
| CO | 59 | 1.46600 | 1416.81000 | 7.892 | 1.49133 | 1.56751 | 1.34022 |
| CU | 63 | 8.56200 | 5841.53000 | 2.182 | 8.38345 | 8.54760 | 8.75610 |
| MO | 98 | 0.54940 | 286.68100 | 22.570 | 0.41403 | 0.65761 | 0.57657 |
| NI | 60 | 6.27000 | 1596.83000 | 3.681 | 6.40181 | 6.00334 | 6.40449 |
| SB | 121 | 0.08899 | 33.33490 | 48.511 | 0.11389 | 0.11393 | 0.03914 |
| SN | 120 | 0.18190 | 90.00430 | 34.222 | 0.15829 | 0.25246 | 0.13483 |
| SR | 88 | 1383.00000 | 505721.00000 | 0.711 | 1380.60622 | 1393.17326 | 1373.77743 |
| ZN | 66 | 108.40000 | 9480.51000 | 4.098 | 103.62841 | 109.27350 | 112.39225 |
| **BI-1** | 209 | 104223.00000 | 0.00000 | 0.344 | 104590.00000 | 103874.00000 | 104204.00000 |
| PB | 208 | 0.06637 | 290.01400 | 31.460 | 0.05049 | 0.09003 | 0.05860 |
| TL | 203 | 0.03428 | 40.00190 | 130.805 | -0.01550 | 0.04684 | 0.07151 |
| U | 238 | 1.01800 | 2957.16000 | 3.346 | 1.00161 | 1.05700 | 0.99497 |
| *GE-1* | 72 | 94372.60000 | 0.00000 | 1.513 | 94475.90000 | 95746.30000 | 92895.40000 |
| *TB-1* | 159 | 165512.00000 | 0.00000 | 1.036 | 167417.00000 | 165024.00000 | 164093.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:04:00
Tube Number: 40 Batch: 171951063903A
Sample Number: **9100483** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45737.60000 | 0.00000 | 2.547 | 46323.30000 | 46493.40000 | 44396.00000 |
| AL | 27 | 40.10000 | 910.07800 | 18.362 | 36.36666 | 35.35068 | 48.58175 |
| CA | 44 | 54180.00000 | 123151.00000 | 1.688 | 53652.09602 | 53643.96999 | 55231.85675 |
| CR | 52 | 1.72100 | 983.41100 | 8.420 | 1.80135 | 1.55365 | 1.80770 |
| FE | 57 | 127.70000 | 1466.81000 | 10.838 | 137.97513 | 133.07094 | 111.92489 |
| K | 39 | 3300.00000 | 175712.00000 | 1.564 | 3257.19914 | 3284.55007 | 3357.08733 |
| MG | 24 | 7928.00000 | 484894.00000 | 1.435 | 8000.03659 | 7796.35851 | 7986.23993 |
| MN | 55 | 87.68000 | 27216.10000 | 2.199 | 87.06072 | 86.13897 | 89.84289 |
| NA | 23 | 24780.00000 | 3292400.00000 | 1.960 | 24281.06447 | 24794.66788 | 25252.13127 |
| TI | 47 | 0.51480 | 6.66692 | 173.193 | 0.00000 | 0.00000 | 1.54428 |
| V | 51 | 4.09500 | 1753.52000 | 7.768 | 3.72843 | 4.29749 | 4.25926 |
| **IN-1** | 115 | 49202.50000 | 0.00000 | 2.410 | 50199.80000 | 47890.90000 | 49516.80000 |
| AG | 107 | 0.00049 | 13.33380 | 1125.200 | -0.00276 | 0.00688 | -0.00264 |
| AS | 75 | 0.67980 | 74.00080 | 57.414 | 1.09002 | 0.31300 | 0.63626 |
| BA | 137 | 141.90000 | 18544.50000 | 0.882 | 142.74550 | 142.46412 | 140.44982 |
| CD | 111 | -0.03062 | 5.33337 | -27.655 | -0.02678 | -0.02477 | -0.04034 |
| CO | 59 | 0.15250 | 206.67600 | 10.898 | 0.16198 | 0.16211 | 0.13326 |
| CU | 63 | 0.56450 | 426.69000 | 12.650 | 0.61515 | 0.48280 | 0.59544 |
| MO | 98 | 5.24600 | 2633.73000 | 1.042 | 5.23325 | 5.19883 | 5.30594 |
| NI | 60 | 0.37610 | 123.33900 | 55.570 | 0.23410 | 0.61610 | 0.27815 |
| SB | 121 | 0.00171 | 10.00040 | 2224.370 | 0.00054 | 0.04024 | -0.03567 |
| SN | 120 | 0.28860 | 136.67300 | 19.373 | 0.26626 | 0.35219 | 0.24725 |
| SR | 88 | 371.80000 | 137650.00000 | 4.008 | 376.04434 | 384.16444 | 355.27748 |
| ZN | 66 | 8.95700 | 816.72600 | 8.585 | 8.59169 | 8.43787 | 9.83999 |
| **BI-1** | 209 | 111110.00000 | 0.00000 | 1.875 | 109522.00000 | 113469.00000 | 110339.00000 |
| PB | 208 | 0.12130 | 460.02400 | 12.391 | 0.11988 | 0.10699 | 0.13695 |
| TL | 203 | -0.00007 | 13.33390 | -19713.900 | -0.01550 | 0.00733 | 0.00797 |
| U | 238 | 1.71700 | 5311.42000 | 4.899 | 1.81343 | 1.65834 | 1.67940 |
| *GE-1* | 72 | 95607.80000 | 0.00000 | 0.783 | 96109.30000 | 95967.20000 | 94747.00000 |
| *TB-1* | 159 | 165447.00000 | 0.00000 | 1.640 | 162513.00000 | 167864.00000 | 165963.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:05:00
Tube Number: 41 Batch: 171951063903A
Sample Number: **9100487** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44837.80000 | 0.00000 | 3.229 | 46423.00000 | 43583.60000 | 44506.70000 |
| AL | 27 | 221.90000 | 4867.75000 | 10.604 | 201.62459 | 247.68888 | 216.31853 |
| CA | 44 | 45390.00000 | 101160.00000 | 3.479 | 43683.01216 | 46802.17272 | 45672.06235 |
| CR | 52 | 4.46600 | 2393.65000 | 3.556 | 4.35538 | 4.64772 | 4.39387 |
| FE | 57 | 921.50000 | 10157.80000 | 2.701 | 903.54762 | 911.08084 | 949.92146 |
| K | 39 | 2543.00000 | 141336.00000 | 3.418 | 2444.80835 | 2609.07229 | 2576.19252 |
| MG | 24 | 6533.00000 | 391508.00000 | 3.649 | 6280.31001 | 6753.87339 | 6565.58828 |
| MN | 55 | 33.38000 | 10157.70000 | 4.386 | 31.91211 | 34.83916 | 33.38753 |
| NA | 23 | 21440.00000 | 2793590.00000 | 2.396 | 20855.90460 | 21814.87513 | 21655.26015 |
| TI | 47 | 11.10000 | 146.67300 | 48.901 | 16.98389 | 6.29224 | 10.01290 |
| V | 51 | 3.44900 | 1450.13000 | 8.452 | 3.15988 | 3.74290 | 3.44476 |
| **IN-1** | 115 | 49095.60000 | 0.00000 | 1.487 | 48975.40000 | 49878.20000 | 48433.20000 |
| AG | 107 | 0.00357 | 16.66730 | 389.636 | 0.00648 | -0.01156 | 0.01580 |
| AS | 75 | 0.81040 | 80.00080 | 17.880 | 0.97563 | 0.70523 | 0.75023 |
| BA | 137 | 135.50000 | 17669.90000 | 3.715 | 140.77187 | 130.73969 | 135.02894 |
| CD | 111 | 0.00271 | 10.00010 | 919.099 | 0.03142 | -0.01248 | -0.01081 |
| CO | 59 | 0.14650 | 200.01100 | 58.840 | 0.18926 | 0.04732 | 0.20303 |
| CU | 63 | 1.42800 | 1016.75000 | 11.548 | 1.56914 | 1.46783 | 1.24675 |
| MO | 98 | 6.14900 | 3077.17000 | 4.910 | 5.80804 | 6.25600 | 6.38255 |
| NI | 60 | 1.02000 | 286.68000 | 5.375 | 0.95705 | 1.05453 | 1.04927 |
| SB | 121 | 0.08793 | 33.33460 | 26.146 | 0.07568 | 0.07366 | 0.11445 |
| SN | 120 | 0.38180 | 176.67600 | 5.013 | 0.39044 | 0.35990 | 0.39515 |
| SR | 88 | 308.10000 | 113836.00000 | 1.802 | 303.95596 | 305.95576 | 314.41504 |
| ZN | 66 | 14.86000 | 1333.46000 | 17.308 | 12.91131 | 13.90171 | 17.77865 |
| **BI-1** | 209 | 107495.00000 | 0.00000 | 2.469 | 110462.00000 | 105347.00000 | 106675.00000 |
| PB | 208 | 0.29640 | 910.05100 | 14.663 | 0.26102 | 0.34492 | 0.28328 |
| TL | 203 | -0.00750 | 6.66694 | -92.583 | -0.00378 | -0.00321 | -0.01550 |
| U | 238 | 1.71900 | 5141.34000 | 8.144 | 1.58634 | 1.70443 | 1.86526 |
| *GE-1* | 72 | 95357.10000 | 0.00000 | 0.594 | 95606.10000 | 94708.90000 | 95756.30000 |
| *TB-1* | 159 | 160573.00000 | 0.00000 | 0.086 | 160658.00000 | 160413.00000 | 160649.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:07:00
Tube Number: 42 Batch: 171951063903A
Sample Number: **9100489** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 44998.40000 | 0.00000 | 2.449 | 44687.50000 | 46222.60000 | 44085.10000 |
| AL | 27 | 42.81000 | 956.74300 | 5.833 | 43.67894 | 39.99017 | 44.74982 |
| CA | 44 | 47680.00000 | 106696.00000 | 1.225 | 48267.89423 | 47099.30072 | 47670.47118 |
| CR | 52 | 1.92700 | 1076.76000 | 11.546 | 2.12240 | 1.97312 | 1.68471 |
| FE | 57 | 364.30000 | 4047.46000 | 5.295 | 361.39765 | 346.64715 | 384.89148 |
| K | 39 | 2696.00000 | 148138.00000 | 2.060 | 2736.99232 | 2632.73751 | 2718.13764 |
| MG | 24 | 6714.00000 | 404004.00000 | 1.780 | 6729.43953 | 6588.11582 | 6825.72390 |
| MN | 55 | 21.12000 | 6461.82000 | 3.031 | 21.60413 | 21.36404 | 20.39512 |
| NA | 23 | 22210.00000 | 2904080.00000 | 1.531 | 22172.57747 | 21884.49664 | 22562.18279 |
| TI | 47 | 0.77410 | 10.00040 | 100.452 | 0.76710 | 0.00000 | 1.55517 |
| V | 51 | 2.67300 | 1136.76000 | 8.208 | 2.77564 | 2.82210 | 2.42100 |
| **IN-1** | 115 | 49199.70000 | 0.00000 | 1.775 | 49657.00000 | 49749.30000 | 48192.80000 |
| AG | 107 | 0.00335 | 16.66730 | 551.313 | 0.02402 | -0.01156 | -0.00240 |
| AS | 75 | 1.03300 | 91.33450 | 19.545 | 0.91133 | 1.26638 | 0.92234 |
| BA | 137 | 143.80000 | 18791.50000 | 3.082 | 144.45853 | 139.11218 | 147.90837 |
| CD | 111 | -0.00656 | 8.66675 | -522.627 | -0.02633 | -0.02640 | 0.03304 |
| CO | 59 | 0.02730 | 90.00440 | 73.187 | 0.02662 | 0.04762 | 0.00767 |
| CU | 63 | 1.53600 | 1093.42000 | 8.418 | 1.51796 | 1.67360 | 1.41695 |
| MO | 98 | 5.57000 | 2793.74000 | 5.242 | 5.60858 | 5.26113 | 5.84141 |
| NI | 60 | 0.60950 | 183.34200 | 8.495 | 0.66839 | 0.58881 | 0.57120 |
| SB | 121 | 0.03824 | 20.00080 | 3.465 | 0.03754 | 0.03741 | 0.03977 |
| SN | 120 | 0.26610 | 126.67200 | 52.048 | 0.15434 | 0.22297 | 0.42099 |
| SR | 88 | 310.20000 | 114829.00000 | 2.502 | 302.07676 | 310.89907 | 317.54681 |
| ZN | 66 | 16.07000 | 1443.47000 | 7.293 | 15.20001 | 15.61943 | 17.40604 |
| **BI-1** | 209 | 112816.00000 | 0.00000 | 1.074 | 113155.00000 | 113823.00000 | 111471.00000 |
| PB | 208 | 0.20220 | 693.37200 | 6.256 | 0.18948 | 0.20229 | 0.21478 |
| TL | 203 | -0.00408 | 10.00040 | -280.706 | 0.00739 | -0.00412 | -0.01550 |
| U | 238 | 1.75400 | 5511.54000 | 4.132 | 1.68204 | 1.82699 | 1.75265 |
| *GE-1* | 72 | 96870.70000 | 0.00000 | 2.036 | 95442.90000 | 99120.90000 | 96048.30000 |
| *TB-1* | 159 | 162921.00000 | 0.00000 | 1.914 | 163464.00000 | 165731.00000 | 159567.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:09:00
Tube Number: 43 Batch: 171951063903A
Sample Number: **9100491** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44697.40000 | 0.00000 | 1.734 | 45440.50000 | 43894.30000 | 44757.60000 |
| AL | 27 | 19.98000 | 453.36000 | 22.097 | 19.97391 | 15.57515 | 24.40513 |
| CA | 44 | 761.20000 | 2096.91000 | 5.666 | 791.72041 | 780.15498 | 711.90353 |
| CR | 52 | 0.97320 | 573.37000 | 25.021 | 0.81626 | 0.84962 | 1.25367 |
| FE | 57 | 22.92000 | 283.34800 | 6.283 | 21.28323 | 23.99650 | 23.47636 |
| K | 39 | 162.50000 | 44058.50000 | 15.348 | 160.10585 | 188.61963 | 138.92714 |
| MG | 24 | 29.74000 | 1870.21000 | 9.502 | 26.74027 | 30.12315 | 32.35259 |
| MN | 55 | 5.35900 | 1636.83000 | 9.300 | 5.51296 | 4.80176 | 5.76212 |
| NA | 23 | 1071.00000 | 145852.00000 | 1.898 | 1054.31651 | 1093.82746 | 1065.78246 |
| TI | 47 | 1.03600 | 13.33380 | 115.347 | 0.00000 | 2.34288 | 0.76590 |
| V | 51 | 0.60810 | 276.68000 | 9.890 | 0.67714 | 0.57971 | 0.56733 |
| **IN-1** | 115 | 50187.50000 | 0.00000 | 1.094 | 50431.60000 | 50572.20000 | 49558.80000 |
| AG | 107 | 0.09995 | 126.67200 | 5.667 | 0.09355 | 0.10199 | 0.10431 |
| AS | 75 | 0.13150 | 47.33380 | 128.821 | -0.01810 | 0.09719 | 0.31539 |
| BA | 137 | 5.94500 | 796.72400 | 18.335 | 6.54584 | 6.60207 | 4.68608 |
| CD | 111 | -0.00793 | 8.66674 | -452.264 | -0.01310 | -0.04093 | 0.03024 |
| CO | 59 | 0.07124 | 133.34000 | 43.711 | 0.08782 | 0.03531 | 0.09058 |
| CU | 63 | 5.81700 | 4110.80000 | 5.860 | 5.46192 | 6.14164 | 5.84856 |
| MO | 98 | 0.05982 | 46.66900 | 116.984 | -0.01271 | 0.06524 | 0.12693 |
| NI | 60 | 2.56700 | 693.37800 | 16.475 | 2.85284 | 2.76774 | 2.08159 |
| SB | 121 | 0.00080 | 10.00040 | 4585.000 | 0.00038 | -0.03567 | 0.03769 |
| SN | 120 | 0.18290 | 93.33910 | 15.150 | 0.19688 | 0.15100 | 0.20086 |
| SR | 88 | 2.87900 | 1093.42000 | 8.458 | 2.67023 | 2.82045 | 3.14662 |
| ZN | 66 | 25.99000 | 2366.98000 | 1.753 | 26.23782 | 26.27417 | 25.46741 |
| **BI-1** | 209 | 112985.00000 | 0.00000 | 1.792 | 115145.00000 | 112681.00000 | 111129.00000 |
| PB | 208 | 0.57740 | 1743.46000 | 8.509 | 0.55712 | 0.54164 | 0.63342 |
| TL | 203 | -0.01161 | 3.33347 | -57.959 | -0.01550 | -0.01550 | -0.00385 |
| U | 238 | 0.01473 | 53.33590 | 30.788 | 0.01967 | 0.01377 | 0.01075 |
| *GE-1* | 72 | 97122.80000 | 0.00000 | 1.524 | 98605.80000 | 97116.70000 | 95645.90000 |
| *TB-1* | 159 | 161332.00000 | 0.00000 | 0.312 | 161893.00000 | 160920.00000 | 161183.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:11:00
Tube Number: 44
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 41975.80000 | 0.00000 | 9.384 | 43101.80000 | 37595.90000 | 45229.60000 |
| AL | 27 | 2630.00000 | 53639.80000 | 9.361 | 2545.36571 | 2906.80094 | 2436.52068 |
| CA | 44 | 2681.00000 | 5944.91000 | 5.476 | 2573.33518 | 2848.44676 | 2622.09767 |
| CR | 52 | 268.20000 | 130094.00000 | 9.922 | 263.47758 | 296.84872 | 244.26768 |
| FE | 57 | 2680.00000 | 27363.20000 | 14.269 | 2704.50075 | 3048.82984 | 2285.17910 |
| K | 39 | 2522.00000 | 130753.00000 | 13.438 | 2439.92946 | 2894.23578 | 2231.38092 |
| MG | 24 | 2688.00000 | 149913.00000 | 11.440 | 2656.67302 | 3010.28672 | 2397.62715 |
| MN | 55 | 268.20000 | 75958.80000 | 9.504 | 265.81635 | 294.77428 | 243.96350 |
| NA | 23 | 2442.00000 | 301842.00000 | 10.643 | 2388.29373 | 2724.20854 | 2212.79094 |
| TI | 47 | 262.60000 | 3197.18000 | 9.235 | 261.69393 | 287.25056 | 238.76862 |
| V | 51 | 265.50000 | 102160.00000 | 10.539 | 259.72333 | 295.87474 | 240.80893 |
| **IN-1** | 115 | 46271.30000 | 0.00000 | 8.913 | 48286.70000 | 41526.80000 | 49000.50000 |
| AG | 107 | 27.34000 | 28456.20000 | 11.576 | 25.23855 | 30.98034 | 25.80126 |
| AS | 75 | 260.30000 | 12131.80000 | 10.154 | 251.47805 | 290.06349 | 239.47027 |
| BA | 137 | 266.30000 | 32510.10000 | 11.078 | 254.82745 | 299.76955 | 244.18026 |
| CD | 111 | 27.08000 | 3571.86000 | 8.796 | 25.81803 | 29.82974 | 25.59809 |
| CO | 59 | 258.60000 | 225957.00000 | 9.544 | 251.64621 | 285.95179 | 238.05801 |
| CU | 63 | 263.80000 | 169170.00000 | 10.754 | 252.85885 | 296.00839 | 242.53624 |
| MO | 98 | 26.78000 | 12510.00000 | 9.511 | 25.48921 | 29.71542 | 25.13796 |
| NI | 60 | 261.00000 | 61774.90000 | 10.935 | 244.33581 | 293.95562 | 244.72112 |
| SB | 121 | 27.85000 | 7072.30000 | 7.181 | 28.05460 | 29.73666 | 25.75210 |
| SN | 120 | 26.39000 | 10601.60000 | 13.839 | 25.25405 | 30.47291 | 23.43838 |
| SR | 88 | 26.70000 | 9247.04000 | 10.614 | 25.03361 | 29.97611 | 25.10299 |
| ZN | 66 | 262.20000 | 21695.60000 | 7.803 | 258.97747 | 284.10488 | 243.57623 |
| **BI-1** | 209 | 106587.00000 | 0.00000 | 6.857 | 111219.00000 | 98160.60000 | 110381.00000 |
| PB | 208 | 26.07000 | 68713.90000 | 7.955 | 25.34815 | 28.41335 | 24.45971 |
| TL | 203 | 26.23000 | 21520.20000 | 7.659 | 24.90575 | 28.53851 | 25.23611 |
| U | 238 | 25.86000 | 76346.40000 | 9.849 | 24.94909 | 28.73638 | 23.89284 |
| *GE-1* | 72 | 91679.50000 | 0.00000 | 8.603 | 96551.30000 | 82580.30000 | 95906.90000 |
| *TB-1* | 159 | 154992.00000 | 0.00000 | 7.471 | 163515.00000 | 141808.00000 | 159654.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:12:00
Tube Number: 45
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44971.60000 | 0.00000 | 2.513 | 46263.10000 | 44165.20000 | 44486.40000 |
| AL | 27 | 0.17180 | 20.00070 | 710.128 | -0.29997 | -0.74230 | 1.55770 |
| CA | 44 | -11.93000 | 386.69000 | -57.368 | -19.80243 | -7.35626 | -8.64458 |
| CR | 52 | 0.43740 | 296.68200 | 6.909 | 0.40882 | 0.43444 | 0.46905 |
| FE | 57 | -0.87900 | 23.33450 | -251.991 | 1.44933 | -2.96044 | -1.12611 |
| K | 39 | -199.40000 | 29511.00000 | -9.589 | -199.04102 | -180.49957 | -218.73802 |
| MG | 24 | -0.79230 | 46.66910 | -53.692 | -0.76067 | -0.38363 | -1.23274 |
| MN | 55 | 0.04293 | 23.33420 | 111.158 | 0.09467 | 0.00063 | 0.03351 |
| NA | 23 | -8.89700 | 5901.57000 | -32.843 | -10.56424 | -5.52382 | -10.60615 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.13060 | 80.00380 | 3.665 | 0.12512 | 0.13402 | 0.13260 |
| **IN-1** | 115 | 50740.60000 | 0.00000 | 2.856 | 51165.20000 | 49127.10000 | 51929.40000 |
| AG | 107 | 0.01157 | 26.66770 | 38.591 | 0.01434 | 0.00642 | 0.01396 |
| AS | 75 | 0.13160 | 48.00040 | 69.688 | 0.12545 | 0.04306 | 0.22618 |
| BA | 137 | 0.04902 | 10.00040 | 260.098 | 0.19620 | -0.02457 | -0.02457 |
| CD | 111 | -0.01309 | 8.00007 | -285.256 | -0.05493 | 0.01686 | -0.00122 |
| CO | 59 | 0.00077 | 66.66940 | 3084.020 | -0.01736 | 0.02765 | -0.00798 |
| CU | 63 | 0.04711 | 73.33660 | 29.123 | 0.05584 | 0.03130 | 0.05419 |
| MO | 98 | -0.01924 | 6.66692 | -58.680 | -0.03226 | -0.01219 | -0.01327 |
| NI | 60 | 0.01224 | 33.33510 | 693.464 | -0.03834 | -0.03519 | 0.11024 |
| SB | 121 | 0.02369 | 16.66760 | 81.764 | 0.03539 | 0.00133 | 0.03434 |
| SN | 120 | 0.05242 | 36.66810 | 45.975 | 0.03713 | 0.03992 | 0.08020 |
| SR | 88 | 0.04331 | 23.33420 | 90.718 | 0.08649 | 0.00966 | 0.03378 |
| ZN | 66 | -0.07251 | 20.00080 | -147.152 | -0.18287 | -0.06488 | 0.03021 |
| **BI-1** | 209 | 116804.00000 | 0.00000 | 2.591 | 113985.00000 | 116426.00000 | 120001.00000 |
| PB | 208 | -0.01472 | 90.00400 | -86.821 | 0.00003 | -0.02175 | -0.02247 |
| TL | 203 | -0.00441 | 10.00040 | -6.489 | -0.00414 | -0.00438 | -0.00471 |
| U | 238 | 0.00400 | 20.00080 | 78.336 | 0.00412 | 0.00708 | 0.00081 |
| *GE-1* | 72 | 97122.50000 | 0.00000 | 1.984 | 95101.20000 | 97327.00000 | 98939.20000 |
| *TB-1* | 159 | 164373.00000 | 0.00000 | 0.595 | 164599.00000 | 163303.00000 | 165218.00000 |

# Instrument Tuning Report (ICPMS #11332)

| | |
|---|---|
| File Name: | default.tun |
| File Path: | C:\elandata\Tuning |
| Sample Date/Time: | 7/17/2017 11:18:00PM |
| Number of Replicates: | 6 |
| Method File: | c:\elandata\Method\dailytune.mth |

**Measured Mass must be within +/- 0.1 amu of the Exact Mass.**

**Measured Peak Width must be > or = to 0.640 AND < or = to 0.660.**

| Analyte | EXACT MASS | MEAS. MASS | Mass DAC | RES. DAC | MEAS. PK. WIDTH |
|---|---|---|---|---|---|
| Ce | 140.000 | 140.000 | 0 | 0 | 0.650 |
| In | 115.000 | 115.000 | 0 | 0 | 0.650 |
| Li | 6.000 | 5.900 | 0 | 0 | 0.700 |
| Mg | 24.000 | 23.900 | 0 | 0 | 0.650 |
| Pb | 208.000 | 207.950 | 0 | 0 | 0.600 |
| Rh | 103.000 | 103.000 | 0 | 0 | 0.650 |
| U | 238.000 | 237.950 | 0 | 0 | 0.550 |

**Summary: Verify that the RSD is less than 5 for the following masses.**

| Mass | Meas. Intens. Mean | Meas. Intens. RSD |
|---|---|---|
| 140.000 | 19995.000 | 1.780 |
| 115.000 | 20219.000 | 1.320 |
| 6.000 | 4513.000 | 2.940 |
| 24.000 | 5440.000 | 4.890 |
| 208.000 | 9360.000 | 2.180 |
| 103.000 | 16706.000 | 1.730 |
| 238.000 | 17943.000 | 2.170 |

# Extraction/Distillation/Digestion Logs

# Metals in Liquid

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 193 10635 02

**Start Time:** 7/12/17 17:08 **End Time:** 7/12/17 21:08 **Hot Block:** 12

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | p17182b | 5.00 |
| 1:1 HNO3 | p17164b | 2.00 |
| ICP Spike 1A | 171032714 | 1.00 |
| ICP Spike 1B | 171034014 | 1.00 |
| LCS A1 | 171032714 | 1.00 |
| LCS B1 | 171034014 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9095966 | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 4) | 9095967 | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 5) | 9095968FD | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 6) | 9095969FD | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 7) | 9095970 | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 8) | 9095971 | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 9) | **9095976U** | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 10) | **9095977R** | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 11) | **9095978M** | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 12) | **9095979D** | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/12/2017

v 1.1.0

# Batch# 17 193 1063 502

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/12/17 11:08 | 8853 |
| 2) | Sample Vol | | 7/12/17 17:09 | 8853 |
| 3) | Final Vol | CLEAR | 7/12/17 17:09 | 8853 |
| 4) | Trial | | 7/12/17 17:09 | 8853 |
| 5) | Upload Prep | US19PCC06785 | 7/12/17 20:55 | 8853 |

| | | | | | Original Entry | | | | Data Changed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Analysis | D | Operation | Measurement | Date/Time | Data | Units | Analyst | Date/Time | Analyst | Reason |

Analysis: 0635 SW846 Water

Batch# 17 193 1063 502

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9095966 | 07/21/17 | N8 | 18411 | KR184-11 | 50.0000 | 50.0000 | 1 |
| 9095967 | 07/21/17 | N8 | 18412 | KR184-12 | 50.0000 | 50.0000 | 1 |
| 9095968FD | 07/21/17 | N8 | 18413 | KR184-13FD | 50.0000 | 50.0000 | 1 |
| 9095969FD | 07/21/17 | N8 | 18414 | KR184-14FD | 50.0000 | 50.0000 | 1 |
| 9095970 | 07/21/17 | N8 | 18415 | KR184-15 | 50.0000 | 50.0000 | 1 |
| 9095971 | 07/21/17 | N8 | 18416 | KR184-16 | 50.0000 | 50.0000 | 1 |
| **9095976U** | 07/21/17 | N8 | 18418 | KR184-18BKG | 50.0000 | 50.0000 | 1 |
| **9095977R** | 07/21/17 | N8 | 18418 | KR184-18MS | 50.0000 | 50.0000 | 1 |
| **9095978M** | 07/21/17 | N8 | 18418 | KR184-18MSD | 50.0000 | 50.0000 | 1 |
| **9095979D** | 07/21/17 | N8 | 18418 | KR184-18DUP | 50.0000 | 50.0000 | 1 |

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 195 10635 02

**Start Time:** 7/17/17 15:20 **End Time:** 7/17/17 19:30 **Hot Block:** 13

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17-182B | 5.00 |
| 1:1 HNO3 | P17-182A | 2.00 |
| ICP Spike 1A | 1710327#15 | 1.00 |
| ICP Spike 1B | 1710340#15 | 1.00 |
| LCS A1 | 1710327#15 | 1.00 |
| LCS B1 | 1710340#15 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9095972 | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 4) | **9100479U** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 5) | 9100480 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 6) | 9100483 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 7) | 9100484 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 8) | 9100485 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 9) | 9100486 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 10) | 9100487 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 11) | 9100488 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 12) | 9100489FD | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 13) | 9100490FD | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 14) | 9100491EB | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 15) | **9100479D** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 16) | **9100479R** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 17) | **9100479M** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/17/2017

v 1.1.0

# Batch# 17 195 1063 502

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/14/17 15:52 | 1364 |
| 2) | Sample Vol | | 7/17/17 13:20 | 12425 |
| 3) | Final Vol | CLEAR | 7/17/17 13:20 | 12425 |
| 4) | Trial | | 7/17/17 13:20 | 12425 |
| 5) | Trial | | 7/17/17 13:20 | 12425 |
| 6) | Trial | | 7/17/17 13:30 | 12425 |
| 7) | Sample Vol | | 7/17/17 13:39 | 12425 |
| 8) | Final Vol | CLEAR | 7/17/17 13:39 | 12425 |
| 9) | Trial | | 7/17/17 13:39 | 12425 |
| 10) | Upload Prep | US19PCC06698 | 7/17/17 19:55 | 1364 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

Analysis: 0635 SW846 Water

Batch# 17 195 1063 502

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9095972 | 07/21/17 | N8 | 18417 | KR184-17BKG | 50.0000 | 50.0000 | 1 |
| **9100479U** | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |
| 9100480 | 07/25/17 | N8 | 18602 | KR186-02 | 50.0000 | 50.0000 | 1 |
| 9100483 | 07/25/17 | N8 | 18605 | KR186-05 | 50.0000 | 50.0000 | 1 |
| 9100484 | 07/25/17 | N8 | 18606 | KR186-06 | 50.0000 | 50.0000 | 1 |
| 9100485 | 07/25/17 | N8 | 18607 | KR186-07 | 50.0000 | 50.0000 | 1 |
| 9100486 | 07/25/17 | N8 | 18608 | KR186-08 | 50.0000 | 50.0000 | 1 |
| 9100487 | 07/25/17 | N8 | 18609 | KR186-09 | 50.0000 | 50.0000 | 1 |
| 9100488 | 07/25/17 | N8 | 18610 | KR186-10 | 50.0000 | 50.0000 | 1 |
| 9100489FD | 07/25/17 | N8 | 18611 | KR186-11FD | 50.0000 | 50.0000 | 1 |
| 9100490FD | 07/25/17 | N8 | 18612 | KR186-12FD | 50.0000 | 50.0000 | 1 |
| 9100491EB | 07/25/17 | N8 | 18613 | KR186-13EB | 50.0000 | 50.0000 | 1 |
| **9100479D** | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |
| **9100479R** | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |
| **9100479M** | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |

# LLENS Worksheet for 0639 ICP/MS SW846 Water

Batch# 17 193 10639 03

**Start Time:** 7/12/17 18:10 **End Time:** 7/12/17 22:10 **Hot Block:** 13

**Pipette ID:** JU06758
**Reflux Cap Lot#:** 16101387076nq

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| HNO3 | 152495 | 3.00 |
| ICP/MS Spike | 17150014 | 0.50 |
| LCS | 17150014 | 0.50 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9095966 | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 4) | 9095968FD | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 5) | 9095970 | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9095972U** | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 7) | **9095973R** | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 8) | **9095974M** | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 9) | **9095975D** | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/18/2017

v 1.1.0

# Batch# 17 193 1063 903

## LLENS Batch Chronology and Change Log - ICP/MS SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/12/17 11:08 | 8853 |
| 2) | Sample Vol | | 7/12/17 17:33 | 8853 |
| 3) | Final Vol | CLEAR | 7/12/17 17:33 | 8853 |
| 4) | Trial | | 7/12/17 17:33 | 8853 |
| 5) | Upload Prep | US19PCC06785 | 7/12/17 21:28 | 8853 |
| 6) | Upload Prep | US19LAP104107 | 7/18/17 8:19 | 3282 |
| 7) | Upload Prep | US19LAP104107 | 7/18/17 8:42 | 3282 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

## Analysis: 0639 ICP/MS SW846 Water

## Batch# 17 193 1063 903

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9095966 | 07/21/17 | N8 | 18411 | KR184-11 | 50.0000 | 50.0000 | 1 |
| 9095968FD | 07/21/17 | N8 | 18413 | KR184-13FD | 50.0000 | 50.0000 | 1 |
| 9095970 | 07/21/17 | N8 | 18415 | KR184-15 | 50.0000 | 50.0000 | 1 |
| **9095972U** | 07/21/17 | N8 | 18417 | KR184-17BKG | 50.0000 | 50.0000 | 1 |
| **9095973R** | 07/21/17 | N8 | 18417 | KR184-17MS | 50.0000 | 50.0000 | 1 |
| **9095974M** | 07/21/17 | N8 | 18417 | KR184-17MSD | 50.0000 | 50.0000 | 1 |
| **9095975D** | 07/21/17 | N8 | 18417 | KR184-17DUP | 50.0000 | 50.0000 | 1 |

# Instrumental Wet Chemistry Data

# Case Narrative/Conformance Summary

# Instrumental Wet Chemistry

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | Comments |
|---|---|---|---|---|
| 9095966 | GW236-490-173 | X | | |
| 9095968 | GW236-490-573 | X | | Field Duplicate Sample |
| 9095970 | GW236-461-173 | X | | |
| 9095972 | GW236-519-173 | X | | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

| Samples | Bromide | Chloride | Sulfate | Total Nitrite/Nitrate Nitrogen |
|---|---|---|---|---|
| 9095966 | DF5 | DF20 | DF5 | DF1 |
| 9095968 | DF5 | DF20 | DF5 | DF1 |
| 9095970 | DF5 | DF20 | DF5 | DF1 |
| 9095972 | UNSPK/BKG/ DF5 | UNSPK/BKG/ DF20 | UNSPK/BKG/ DF5 | UNSPK/BKG/ DF1 |

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# Quality Control and Calibration Summary Forms

# Instrumental Wet Chemistry

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

**Fraction: Instrumental Wet Chemistry**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | 17197118101A | P19718AB | 07/16/2017 15:12:00 |
| | | P19718AQ | 07/16/2017 15:14:00 |
| | | 9095966 | 07/16/2017 15:25:00 |
| | | 9095968 | 07/16/2017 15:27:00 |
| | | 9095970 | 07/16/2017 15:28:00 |
| | | 9095972 UNSPK/BKG | 07/16/2017 15:19:00 |
| | | 9095972 DUP | 07/16/2017 15:21:00 |
| | | 9095972 MS | 07/16/2017 15:23:00 |

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

**Fraction: Instrumental Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Bromide | Chloride | Sulfate |
|---|---|---|---|---|---|
| 17192249115A | P19249OB | 07/12/2017 00:48:00 | X | X | X |
| | P19249OQ | 07/12/2017 00:32:00 | X | X | X |
| 17192249115B | 9095966 | 07/12/2017 10:15:00 | X | | X |
| | 9095966 | 07/12/2017 10:31:00 | | X | |
| | 9095968 | 07/12/2017 09:10:00 | X | | X |
| | 9095968 | 07/12/2017 09:59:00 | | X | |
| | 9095970 | 07/12/2017 08:38:00 | X | | X |
| | 9095970 | 07/12/2017 08:54:00 | | X | |
| | 9095972 UNSPK/BKG | 07/12/2017 07:01:00 | X | | X |
| | 9095972 DUP | 07/12/2017 07:17:00 | X | | X |
| | 9095972 MS | 07/12/2017 07:33:00 | X | | X |
| | 9095972 UNSPK/BKG | 07/12/2017 07:49:00 | | X | |
| | 9095972 DUP | 07/12/2017 08:06:00 | | X | |
| | 9095972 MS | 07/12/2017 08:22:00 | | X | |

**Quality Control Summary**
**Method Blank**
**Instrumental Water Quality**
**SDG: KR184**
**Matrix: LIQUID**

**Fraction: Instrumental Wet Chemistry**

| 17192249115A / P19249OB Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Bromide | IC | 07/12/17 | N.D. | mg/l | 0.25 | 0.50 | 0.50 |
| Chloride | IC | 07/12/17 | N.D. | mg/l | 0.20 | 0.40 | 0.40 |
| Sulfate | IC | 07/12/17 | N.D. | mg/l | 0.30 | 1.0 | 1.0 |

| 17197118101A / P19718AB Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 07/16/17 | N.D. | mg/l | 0.040 | 0.10 | 0.10 |

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| UNSPK: 9095972<br>MS: 9095972 | Batch: **17192249115B** (Sample number(s): 9095966, 9095968, 9095970, 9095972 ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Bromide | IC | 25 | N.D. | 26.61 | NA | 106 | NA | 90-110 | NA | NA |
| Chloride | IC | 40 | 38.84 | 82.7 | NA | 110 | NA | 90-110 | NA | NA |
| Sulfate | IC | 25 | 65.26 | 88.17 | NA | 92 | NA | 90-110 | NA | NA |

| UNSPK: 9095972<br>MS: 9095972 | Batch: **17197118101A** (Sample number(s): 9095966, 9095968, 9095970, 9095972 ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 1.00 | 0.997 | 2.02 | NA | 102 | NA | 90-110 | NA | NA |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| BKG: 9095972<br>DUP: 9095972<br><br>**Parameter** | Batch: **17192249115B** (Sample number(s): 9095966, 9095968, 9095970, 9095972 )<br>**ME** | **Unspiked Conc mg/l** | **DUP Conc mg/l** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|
| Bromide | IC | N.D. | N.D. | 0 (1) | 15 |
| Chloride | IC | 38.84 | 38.57 | 1 (1) | 15 |
| Sulfate | IC | 65.26 | 65.42 | 0 | 15 |

| BKG: 9095972<br>DUP: 9095972<br><br>**Parameter** | Batch: **17197118101A** (Sample number(s): 9095966, 9095968, 9095970, 9095972 )<br>**ME** | **Unspiked Conc mg/l** | **DUP Conc mg/l** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 1. | 1. | 0 | 10 |

Comments:
(1) The sample and/or duplicate result is less than five times the LOQ.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR184**
**Matrix: LIQUID**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| LCS: P19249OQ | Batch: **17192249115B** (Sample number(s): 9095966, 9095968, 9095970, 9095972 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Bromide | IC | 7.50 | 7.45 | NA | 99 | NA | 90-110 | NA | NA |
| Chloride | IC | 3.00 | 2.94 | NA | 98 | NA | 90-110 | NA | NA |
| Sulfate | IC | 7.50 | 7.40 | NA | 99 | NA | 90-110 | NA | NA |

| LCS: P19718AQ | Batch: **17197118101A** (Sample number(s): 9095966, 9095968, 9095970, 9095972 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 2.50 | 2.41 | NA | 97 | NA | 90-110 | NA | NA |

Instrument ID: 07411
Calibration Date: 07/16/2017

Acceptance Range:
ICV/CCV: +/- 10%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17197118101A
Run Start Dates: 07/16/2017
Run Names: 1719701C05

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | AUTO CAL6 | AUTO CAL7 | CC |
|---|---|---|---|---|---|---|---|---|
| Nitrate/Nitrite Nitrogen | 668357.8000 | 513019.1000 | 174026.2000 | 85603.0000 | 33392.7000 | 16594.9000 | 952.8000 | 0.9997 |

| | Nitrate/Nitrite Nitrogen | | |
|---|---|---|---|
| Sample | True | Result | %Rec |
| ICV | 2.5 | 2.52670 | 101 |
| ICB | 0 | ND | NA |
| CCV2 | 2.5 | 2.40280 | 96 |
| CCB 7 | 0 | ND | NA |
| CCV2 | 2.5 | 2.33360 | 93 |
| CCB 8 | 0 | ND | NA |
| CCV2 | 2.5 | 2.30550 | 92 |
| CCB 9 | 0 | ND | NA |

* = Out of Specifications

Instrument ID: 12115
Calibration Date: 07/07/2017

Acceptance Range:
ICV/CCV: 90%-110%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17192249115B
Run Start Dates: 07/11/2017
Run Names: 1719201D15

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | $R^2$ | CC |
|---|---|---|---|---|---|---|---|
| Bromide | 0.315489 | 1.356408 | 3.617506 | 7.695615 | 12.009107 | 0.9997 | 0.9999 |
| Chloride | 1.045200 | 2.310405 | 5.678044 | 12.269198 | 19.157873 | 0.9992 | 0.9996 |
| Sulfate | 0.663420 | 1.359771 | 3.529348 | 7.415997 | 11.392968 | 0.9997 | 0.9999 |

| | Chloride | | | Sulfate | | | Bromide | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample | True | Result | %Rec | True | Result | %Rec | True | Result | %Rec |
| ICV | 3 | 2.7491 | 92 | 7.5 | 7.0390 | 94 | 7.5 | 7.1737 | 96 |
| ICB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| Low Chk | 1.5 | 1.4889 | 99 | 3.75 | 3.6558 | 97 | 3.75 | 3.7013 | 99 |
| High Chk | 4.5 | 4.5932 | 102 | 11.25 | 11.2146 | 100 | 11.25 | 11.3171 | 101 |
| CCV2 | 3 | 2.8960 | 97 | 7.5 | 7.2873 | 97 | 7.5 | 7.3880 | 99 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.9304 | 98 | 7.5 | 7.3665 | 98 | 7.5 | 7.4256 | 99 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.9019 | 97 | 7.5 | 7.3138 | 98 | 7.5 | 7.3658 | 98 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.8784 | 96 | 7.5 | 7.2328 | 96 | 7.5 | 7.3413 | 98 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.9174 | 97 | 7.5 | 7.3331 | 98 | 7.5 | 7.4115 | 99 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |

* = Out of Specifications

# Raw Data

# Instrumental Wet Chemistry

**Fraction: Instrumental Wet Chemistry**

| 01505: Bromide<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bromide | .25 | .5 | 0.50 | mg/l |

| 00224: Chloride<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Chloride | .2 | .4 | 0.40 | mg/l |

| 00228: Sulfate<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Sulfate | .3 | 1 | 1.0 | mg/l |

| 07882: Total Nitrite/Nitrate Nitrogen<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | .04 | .1 | 0.10 | mg/l |

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# Inorganic Anions by Ion Chromatography

System Name ICS-2000 Analyst CW7987

Instrument ID 12115 Run Start Date 7-7-17

IDAT Run Number 171880 1015 Run Name 171881SC (ICAL)

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405 | 34

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: ———

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | < 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1718815C

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TEST | | 93 | Check Standard | | 07/07/2017 10:03:35 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 2 | CAL 0 | | 1 | Calibration Standard | 01 | 07/07/2017 10:19:48 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 3 | CAL 1 | | 2 | Calibration Standard | 02 | 07/07/2017 10:36:00 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 4 | CAL 2 | | 3 | Calibration Standard | 03 | 07/07/2017 10:52:12 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 5 | CAL 3 | | 4 | Calibration Standard | 04 | 07/07/2017 11:08:24 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 6 | CAL 4 | | 5 | Calibration Standard | 05 | 07/07/2017 11:24:36 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 7 | CAL 5 | | 6 | Calibration Standard | 06 | 07/07/2017 11:40:49 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 8 | ICV | | 7 | Check Standard | | 07/07/2017 11:57:02 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 9 | ICB | | 8 | Check Standard | | 07/07/2017 12:13:14 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 10 | QRS | | 2 | Check Standard | | 07/07/2017 12:29:27 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 11 | CRDL | | 2 | Check Standard | | 07/07/2017 12:45:39 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

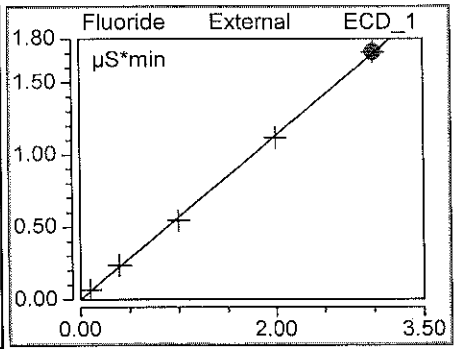
# Calibration Batch Report

| | | | |
|---|---|---|---|
| *Sequence:* | **1718815C** | *Injection Volu A* | **75.00** |
| *Instrument Method:* | **AnionsAS** | *Channel:* | **ECD_1** |
| *Instrument Number:* | **12115** | *Run Time (min):* | **15** |
| *Inj. Date / Time:* | **07-Jul-2017 / 11:40** | *Column Type-Serial #:* | AG14-170304242, AS14-160520235 |

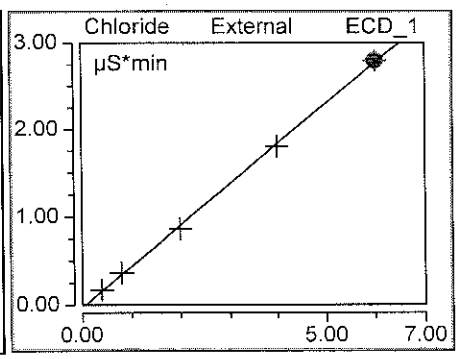
**Calibration Summary**

| Peak Name | Eval.Type | Cal.Type | Points | Offset (C0) | Slope (C1) | Curve (C2) | R-Squared % | r= |
|---|---|---|---|---|---|---|---|---|
| Fluoride | Area | Lin, WithOffset | 5.000 | -0.002 | 0.566 | 0.000 | 99.9510479 | 0.999755 |
| Chloride | Area | Lin, WithOffset | 5.000 | -0.034 | 0.467 | 0.000 | 99.9224708 | 0.999612 |
| Nitrite | Area | Lin, WithOffset | 5.000 | -0.035 | 0.967 | 0.000 | 99.9780968 | 0.999895 |
| Bromide | Area | Lin, WithOffset | 5.000 | -0.039 | 0.194 | 0.000 | 99.9723145 | 0.999861 |
| Nitrate | Area | Lin, WithOffset | 5.000 | -0.039 | 1.052 | 0.000 | 99.9716811 | 0.999858 |
| Phosphate | Area | Lin, WithOffset | 4.000 | -0.516 | 0.342 | 0.000 | 99.5751782 | 0.997873 |
| Sulfate | Area | Lin, WithOffset | 5.000 | -0.067 | 0.329 | 0.000 | 99.9740265 | 0.999870 |
| | | **AVERAGE:** | | -0.1045 | 0.5595 | 0.0000 | 99.9064 | |

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Fluoride | Fluoride | Fluoride | Fluoride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 3.160 | 0.0664 | 0.241 | 0.120 |
| CAL 2 | 3.157 | 0.2324 | 0.991 | 0.413 |
| CAL 3 | 3.157 | 0.5437 | 2.699 | 0.963 |
| CAL 4 | 3.160 | 1.1204 | 5.811 | 1.981 |
| CAL 5 | 3.163 | 1.7099 | 9.004 | 3.022 |
| **Average** | 3.159 | | | |
| **Rel. Std. Dev.** | 0.088 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Chloride | Chloride | Chloride | Chloride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 4.560 | 0.1689 | 1.045 | 0.434 |
| CAL 2 | 4.560 | 0.3618 | 2.310 | 0.848 |
| CAL 3 | 4.567 | 0.8631 | 5.678 | 1.922 |
| CAL 4 | 4.577 | 1.8037 | 12.269 | 3.937 |
| CAL 5 | 4.583 | 2.7940 | 19.158 | 6.059 |
| **Average** | 4.569 | | | |
| **Rel. Std. Dev.** | 0.227 % | | | |

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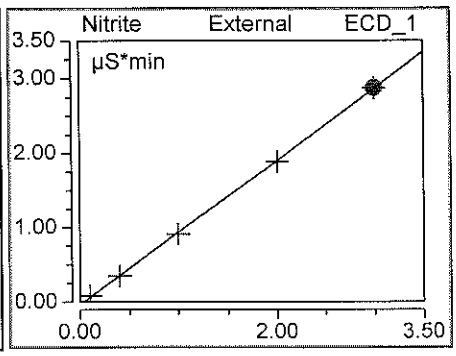
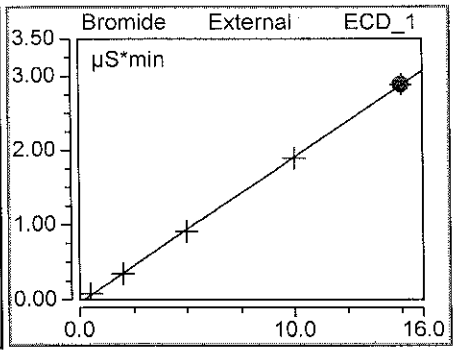
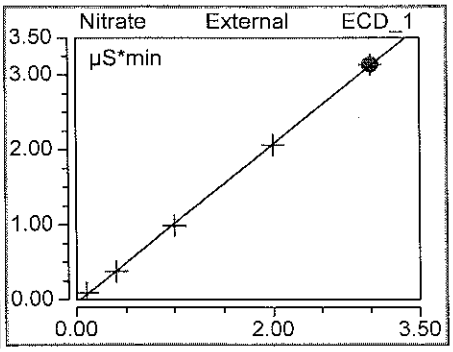
| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrite | Nitrite | Nitrite | Nitrite |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 5.540 | 0.0828 | 0.411 | 0.122 |
| CAL 2 | 5.537 | 0.3477 | 1.723 | 0.396 |
| CAL 3 | 5.533 | 0.9094 | 4.545 | 0.977 |
| CAL 4 | 5.537 | 1.8899 | 9.537 | 1.992 |
| CAL 5 | 5.537 | 2.8769 | 14.561 | 3.013 |
| **Average** | 5.537 | | | |
| **Rel. Std. Dev.** | 0.043 % | | | |



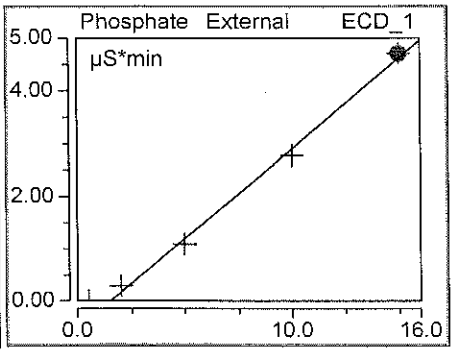

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Bromide | Bromide | Bromide | Bromide |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 7.173 | 0.0814 | 0.315 | 0.619 |
| CAL 2 | 7.157 | 0.3470 | 1.356 | 1.988 |
| CAL 3 | 7.137 | 0.9051 | 3.618 | 4.864 |
| CAL 4 | 7.123 | 1.8939 | 7.696 | 9.959 |
| CAL 5 | 7.103 | 2.8859 | 12.009 | 15.070 |
| **Average** | 7.139 | | | |
| **Rel. Std. Dev.** | 0.384 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrate | Nitrate | Nitrate | Nitrate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 8.500 | 0.0908 | 0.277 | 0.123 |
| CAL 2 | 8.447 | 0.3815 | 1.178 | 0.399 |
| CAL 3 | 8.393 | 0.9841 | 3.097 | 0.972 |
| CAL 4 | 8.353 | 2.0564 | 6.480 | 1.991 |
| CAL 5 | 8.310 | 3.1337 | 9.987 | 3.015 |
| **Average** | 8.401 | | | |
| **Rel. Std. Dev.** | 0.893 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Phosphate | Phosphate | Phosphate | Phosphate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | n.a. | n.a. | n.a. | n.a. |
| CAL 2 | 10.643 | 0.2904 | 0.449 | 2.362 |
| CAL 3 | 10.537 | 1.0903 | 2.090 | 4.703 |
| CAL 4 | 10.467 | 2.7815 | 6.025 | 9.654 |
| CAL 5 | 10.430 | 4.7040 | 10.736 | 15.282 |
| **Average** | 10.519 | | | |
| **Rel. Std. Dev.** | 0.892 % | | | |

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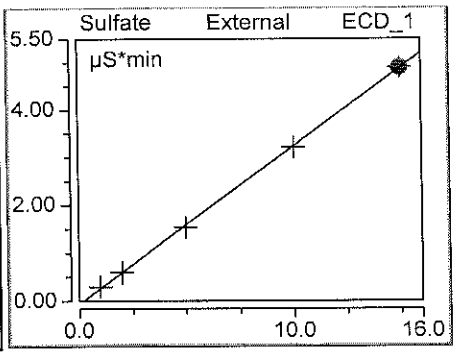
| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Sulfate | Sulfate | Sulfate | Sulfate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 12.680 | 0.2951 | 0.663 | 1.101 |
| CAL 2 | 12.677 | 0.5953 | 1.360 | 2.014 |
| CAL 3 | 12.670 | 1.5338 | 3.529 | 4.867 |
| CAL 4 | 12.650 | 3.2047 | 7.416 | 9.948 |
| CAL 5 | 12.643 | 4.8893 | 11.393 | 15.070 |
| **Average** | 12.664 | | | |
| **Rel. Std. Dev.** | 0.129 % | | | |




Clinton M. Wilson
Chemist
JUL 10 2017

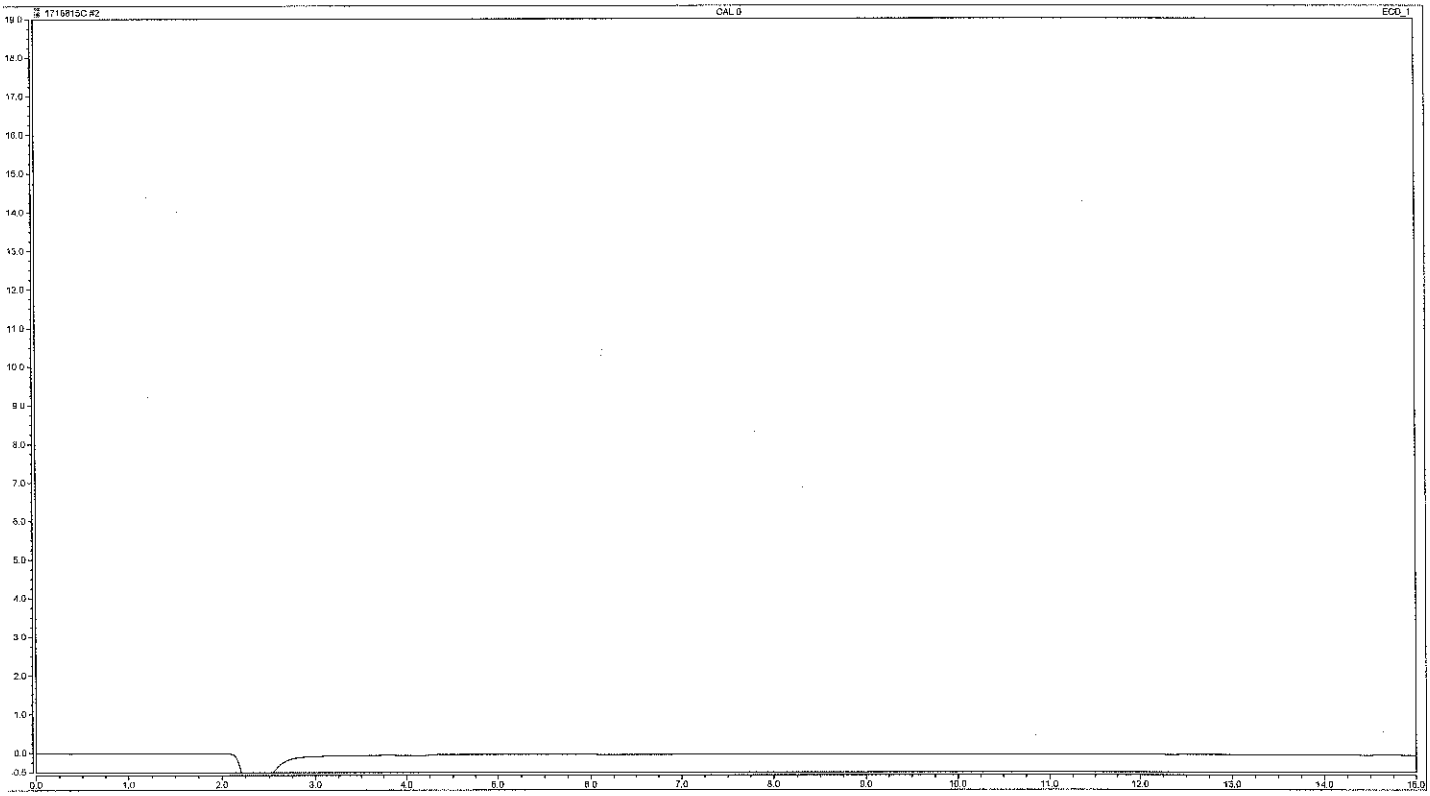
Sandra J. Miller
Chemist
JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 0** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:19** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **002** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:**

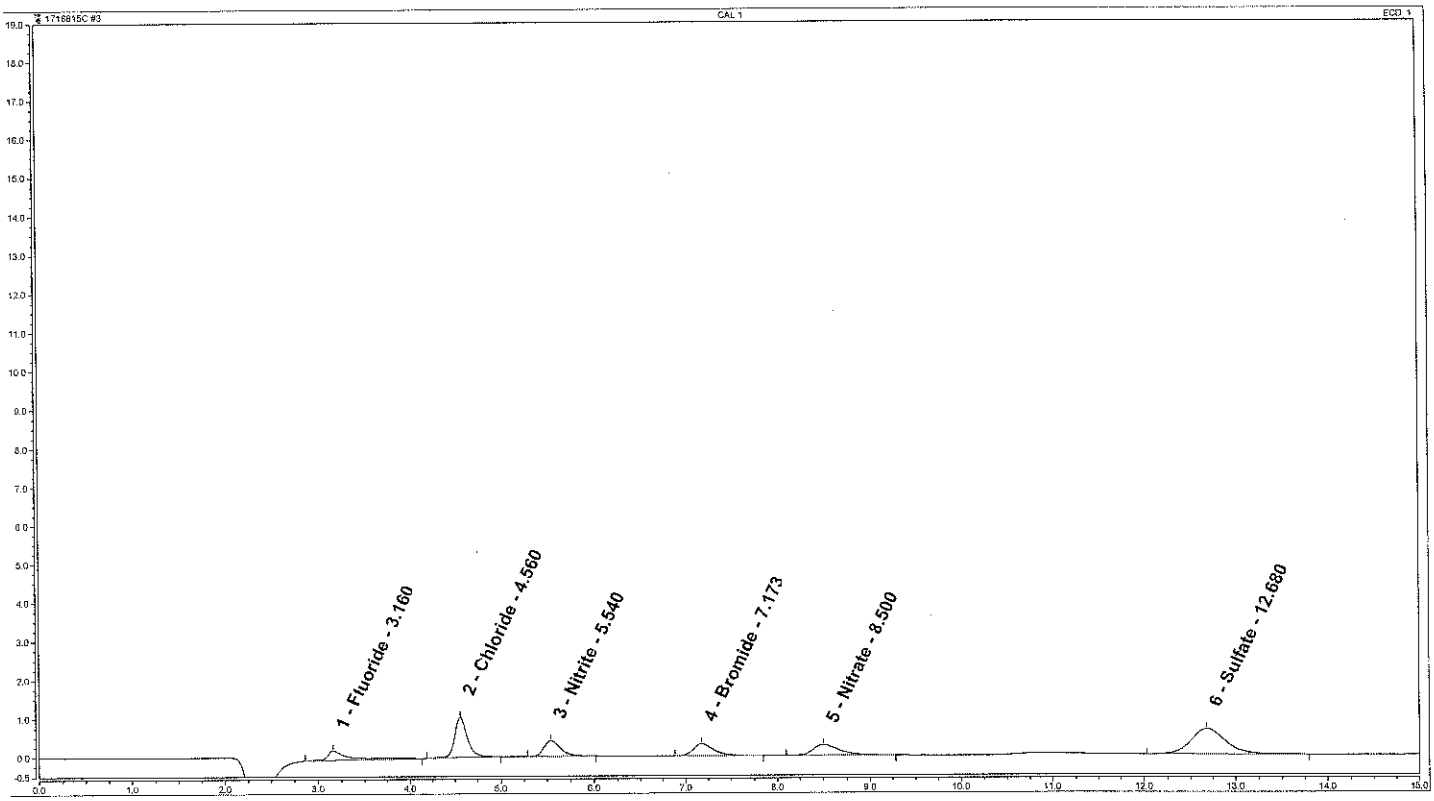
**Date:** Sandra J. Miller, Chemist — JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 1** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:36** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **003** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.066 | 0.241 | 0.1201 |
| 2 | 4.56 | Chloride | M | 0.169 | 1.045 | 0.4342 |
| 3 | 5.54 | Nitrite | M | 0.083 | 0.411 | 0.1220 |
| 4 | 7.17 | Bromide | M | 0.081 | 0.315 | 0.6192 |
| 5 | 8.50 | Nitrate | M | 0.091 | 0.277 | 0.1231 |
| 6 | 12.68 | Sulfate | M | 0.295 | 0.663 | 1.1008 |
| | | TOTAL: | | 0.79 | 2.95 | 2.52 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

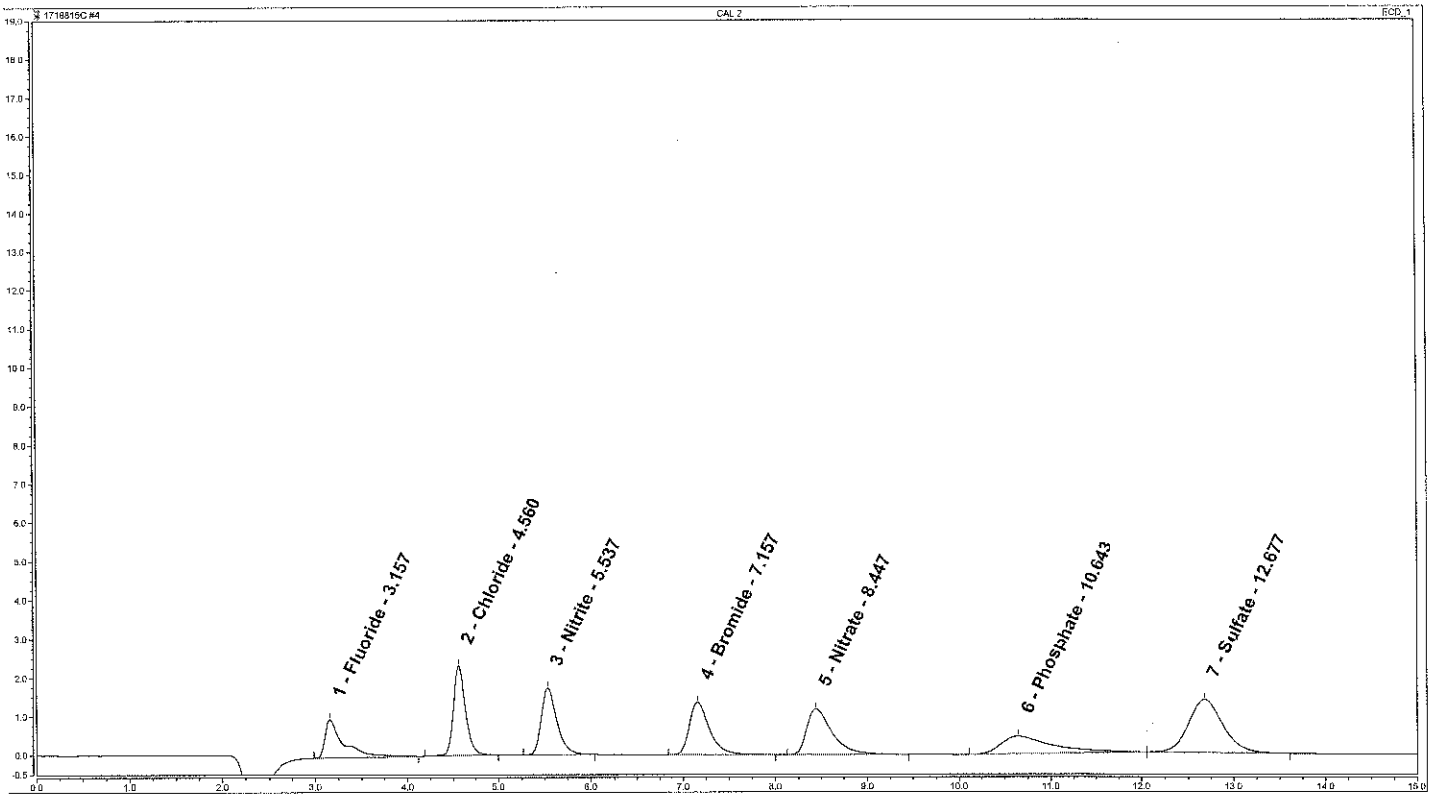
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:52** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **004** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.232 | 0.991 | 0.4132 |
| 2 | 4.56 | Chloride | M | 0.362 | 2.310 | 0.8476 |
| 3 | 5.54 | Nitrite | M | 0.348 | 1.723 | 0.3961 |
| 4 | 7.16 | Bromide | M | 0.347 | 1.356 | 1.9877 |
| 5 | 8.45 | Nitrate | M | 0.382 | 1.178 | 0.3993 |
| 6 | 10.64 | Phosphate | M | 0.290 | 0.449 | 2.3616 |
| 7 | 12.68 | Sulfate | M | 0.595 | 1.360 | 2.0137 |
| | | TOTAL: | | 2.56 | 9.37 | 8.42 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 10 2017

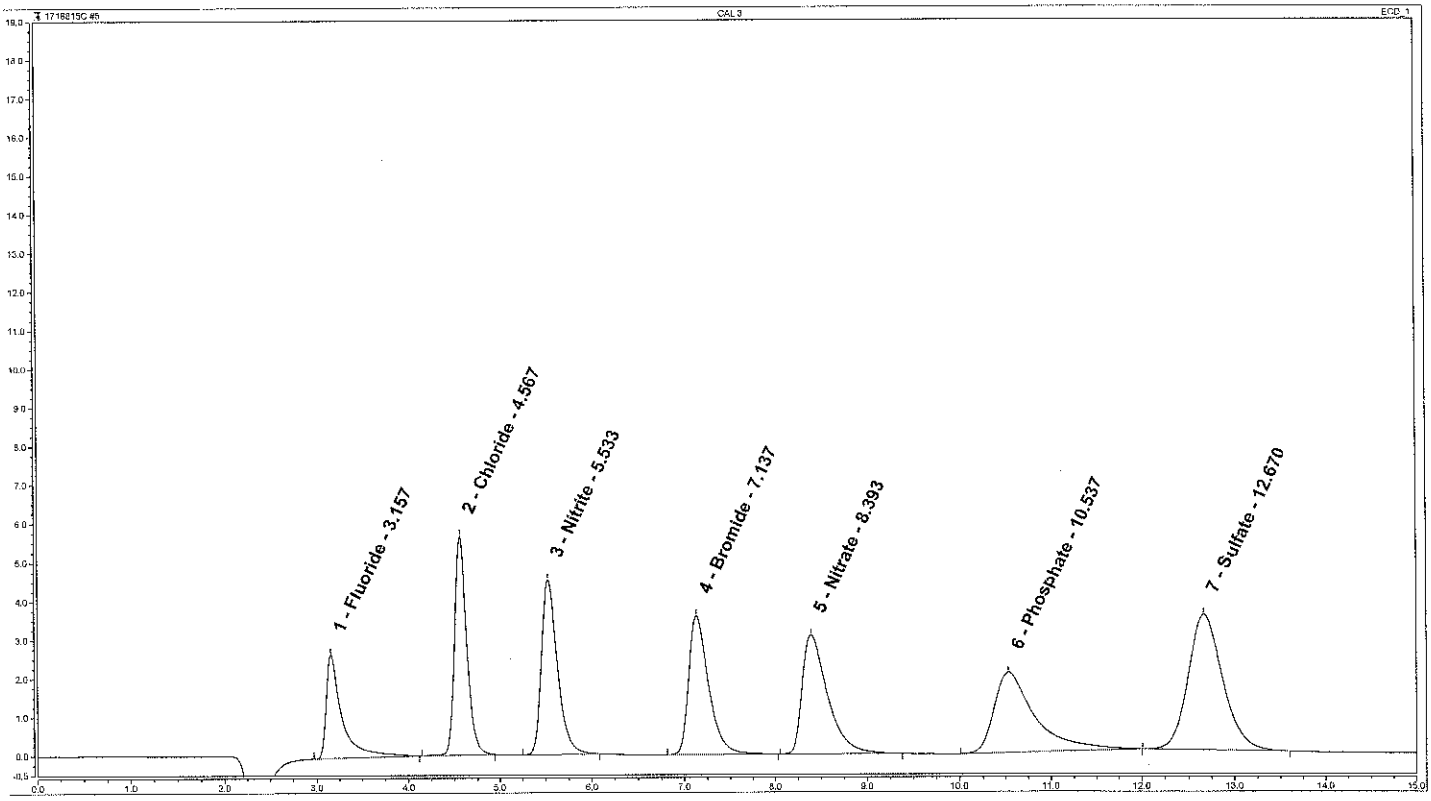
**Verifier:** Sandra J. Miller, Chemist — **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 3** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:08** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **005** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.544 | 2.699 | 0.9630 |
| 2 | 4.57 | Chloride | M | 0.863 | 5.678 | 1.9217 |
| 3 | 5.53 | Nitrite | M | 0.909 | 4.545 | 0.9773 |
| 4 | 7.14 | Bromide | M | 0.905 | 3.618 | 4.8636 |
| 5 | 8.39 | Nitrate | M | 0.984 | 3.097 | 0.9719 |
| 6 | 10.54 | Phosphate | M | 1.090 | 2.090 | 4.7031 |
| 7 | 12.67 | Sulfate | M | 1.534 | 3.529 | 4.8672 |
| | | TOTAL: | | 6.83 | 25.26 | 19.27 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

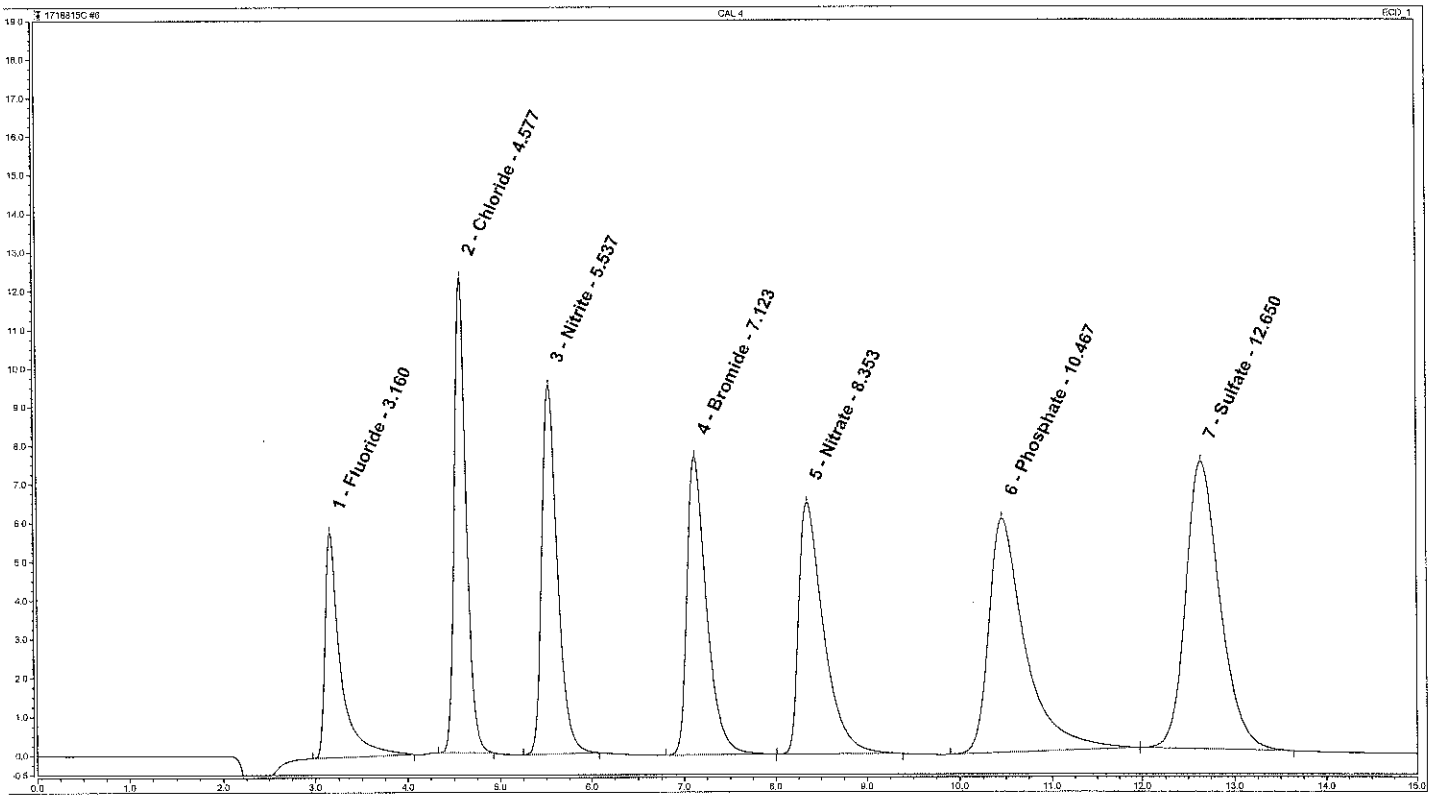
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 4** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:24** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **006** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 1.120 | 5.811 | 1.9813 |
| 2 | 4.58 | Chloride | M | 1.804 | 12.269 | 3.9372 |
| 3 | 5.54 | Nitrite | M | 1.890 | 9.537 | 1.9917 |
| 4 | 7.12 | Bromide | M | 1.894 | 7.696 | 9.9590 |
| 5 | 8.35 | Nitrate | M | 2.056 | 6.480 | 1.9909 |
| 6 | 10.47 | Phosphate | M | 2.781 | 6.025 | 9.6537 |
| 7 | 12.65 | Sulfate | M | 3.205 | 7.416 | 9.9480 |
| | | TOTAL: | | 14.75 | 55.23 | 39.46 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

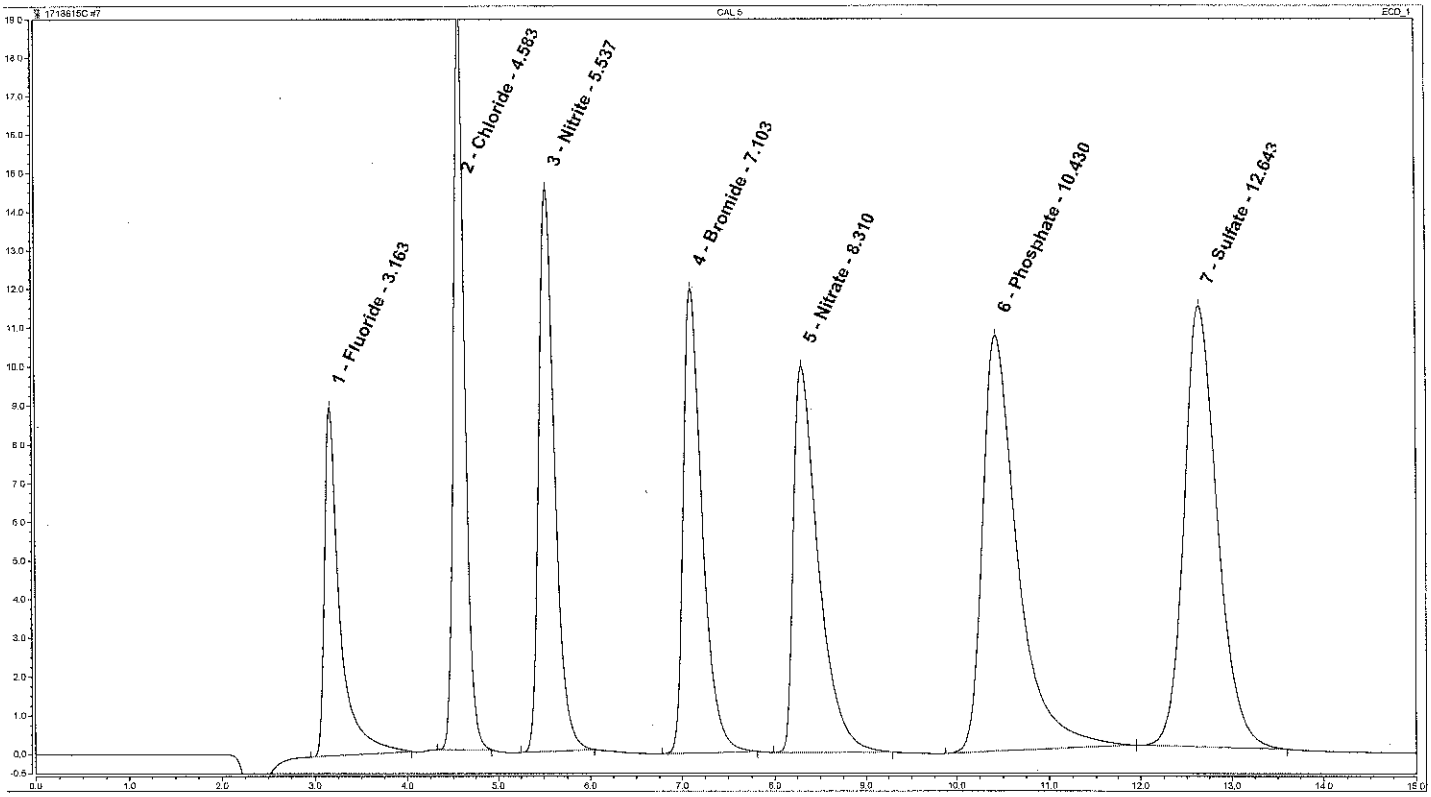
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 5** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:40** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **007** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 1.710 | 9.004 | 3.0224 |
| 2 | 4.58 | Chloride | M | 2.794 | 19.158 | 6.0593 |
| 3 | 5.54 | Nitrite | M | 2.877 | 14.561 | 3.0129 |
| 4 | 7.10 | Bromide | M | 2.886 | 12.009 | 15.0705 |
| 5 | 8.31 | Nitrate | M | 3.134 | 9.987 | 3.0147 |
| 6 | 10.43 | Phosphate | M | 4.704 | 10.736 | 15.2816 |
| 7 | 12.64 | Sulfate | M | 4.889 | 11.393 | 15.0704 |
| | | TOTAL: | | 22.99 | 86.85 | 60.53 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

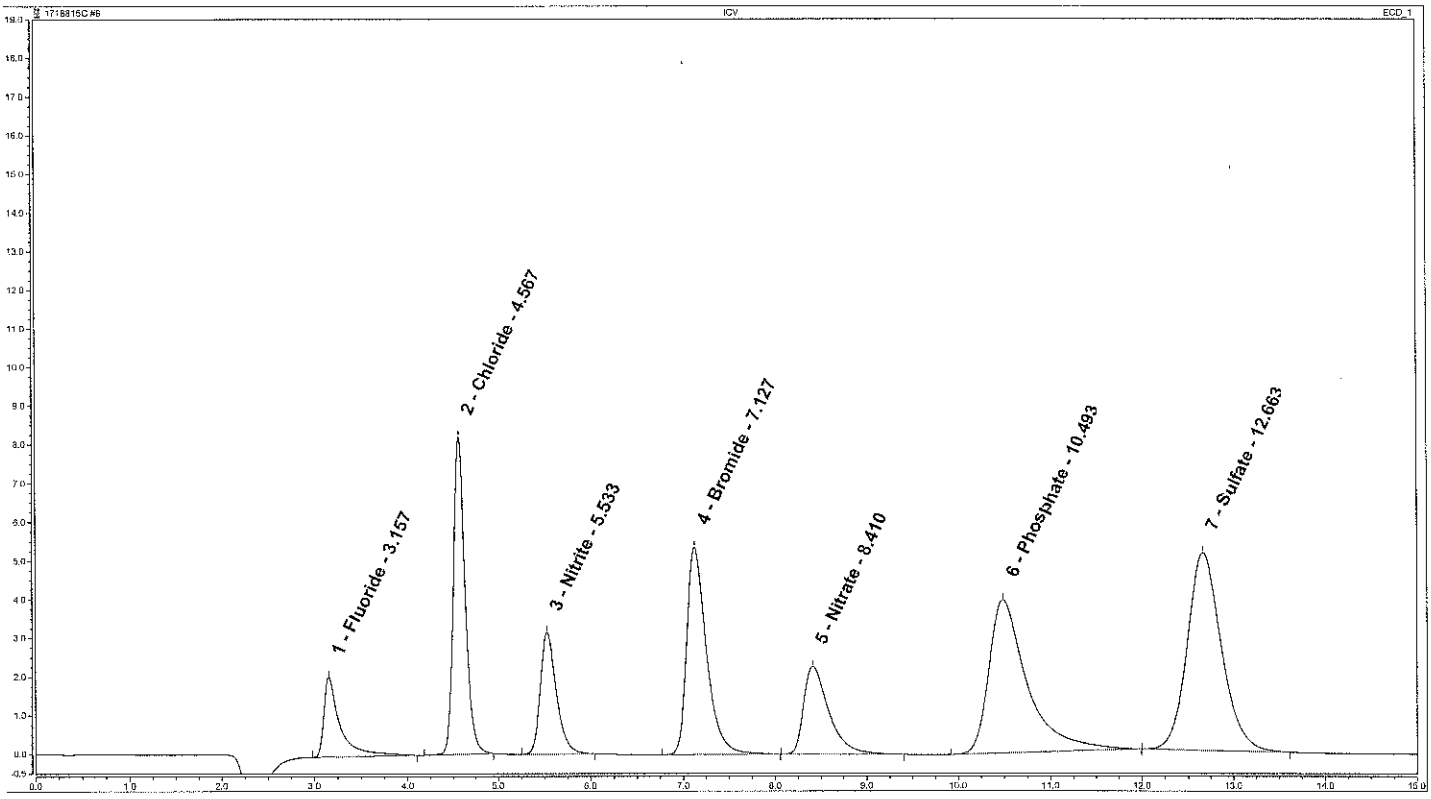
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:57** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **008** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.418 | 2.068 | 0.7411 |
| 2 | 4.57 | Chloride | M | 1.249 | 8.207 | 2.7491 |
| 3 | 5.53 | Nitrite | M | 0.640 | 3.158 | 0.6988 |
| 4 | 7.13 | Bromide | M | 1.353 | 5.379 | 7.1737 |
| 5 | 8.41 | Nitrate | M | 0.736 | 2.285 | 0.7359 |
| 6 | 10.49 | Phosphate | M | 1.922 | 3.980 | 7.1372 |
| 7 | 12.66 | Sulfate | M | 2.248 | 5.134 | 7.0390 |
| | | TOTAL: | | 8.57 | 30.21 | 26.27 |

Cl, $NO_2$ SGW
OS SW




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

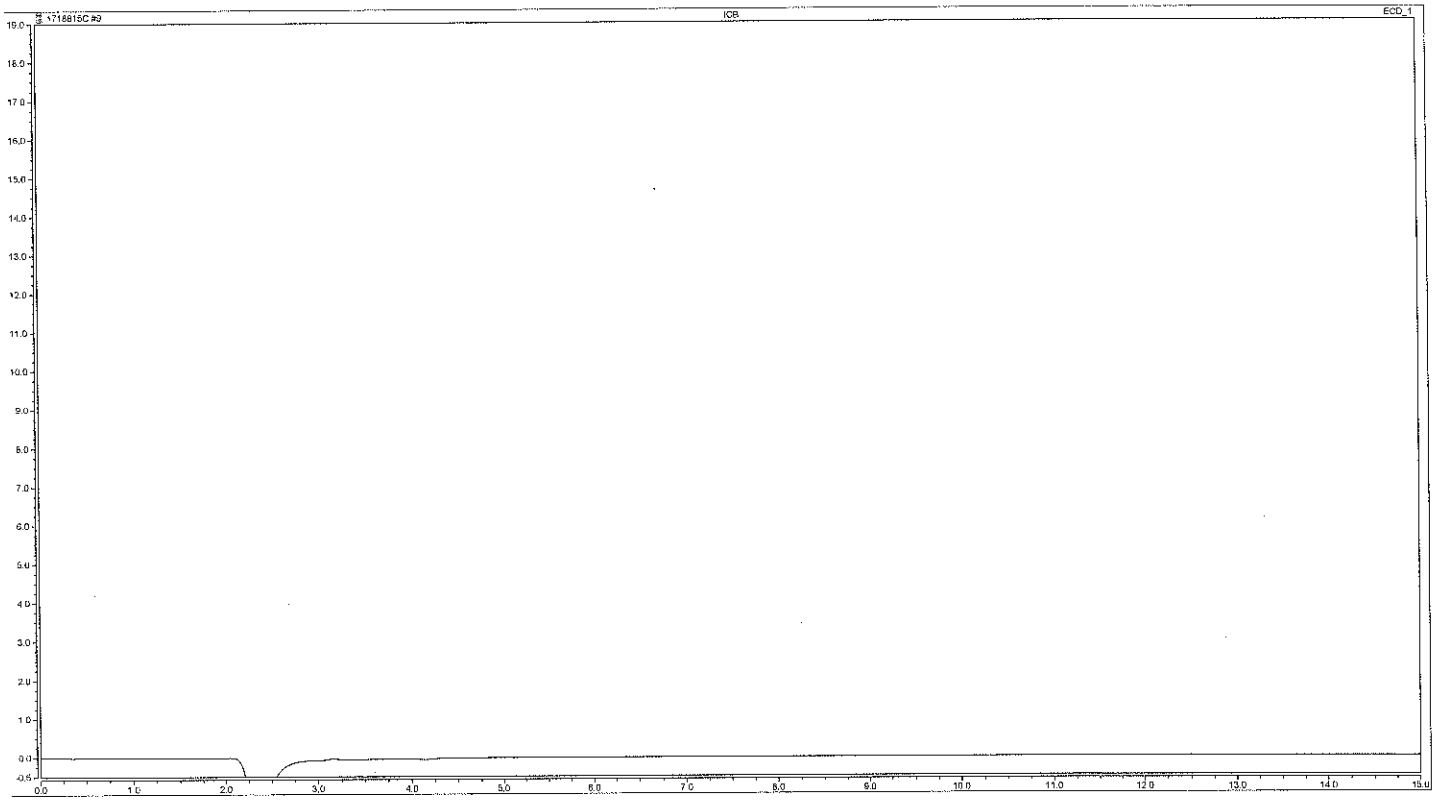
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 12:13** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **009** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist — Date: JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist — Date: JUL 11 2017

eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-2000 Analyst ZWE 24932

Instrument ID 12115 Run Start Date 7-11-17

IDAT Run Number 171920\D15 Run Name 171915

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405/38

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: _____

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | < 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1719215

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LOW | | 89 | Check Standard | | 07/11/2017 10:33:14 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 2 | HIGH | | 90 | Check Standard | | 07/11/2017 10:49:25 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 3 | CCV2 | | 91 | Check Standard | | 07/11/2017 11:05:38 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 4 | CCB | | 92 | Check Standard | | 07/11/2017 11:21:50 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 5 | CCV2 | | 91 | Check Standard | | 07/11/2017 17:08:43 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 6 | CCB | | 92 | Check Standard | | 07/11/2017 17:24:54 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 7 | LCSW | 17186249612C-24932 | 93 | Unknown | | 07/11/2017 17:47:20 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 8 | PBW | 17186249612C-24932 | 94 | Unknown | | 07/11/2017 18:03:31 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 9 | 9073828-U | 17186249612C-24932 | 1 | Unknown | | 07/11/2017 18:19:43 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 10 | 9073828-D | 17186249612C-24932 | 1 | Unknown | | 07/11/2017 18:35:55 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 11 | 9073828-R | 17186249612C-24932 | 2 | Unknown | | 07/11/2017 18:52:07 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 12 | LCSW | 17180249512C-24932 | 93 | Unknown | | 07/11/2017 19:08:19 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 13 | PBW | 17180249512C-24932 | 94 | Unknown | | 07/11/2017 19:24:31 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 14 | 9077620-U | 17180249512C-24932 | 3 | Unknown | | 07/11/2017 19:40:44 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 15 | 9077620-D | 17180249512C-24932 | 3 | Unknown | | 07/11/2017 19:56:57 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 16 | 9077620-R | 17180249512C-24932 | 4 | Unknown | | 07/11/2017 20:13:09 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 17 | CCV2 | | 91 | Check Standard | | 07/11/2017 20:29:21 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 18 | CCB | | 92 | Check Standard | | 07/11/2017 20:45:34 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 19 | 9077620-U | 17180249512C-24932 | 5 | Unknown | | 07/11/2017 21:01:45 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 20 | 9077620-D | 17180249512C-24932 | 5 | Unknown | | 07/11/2017 21:17:58 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 21 | 9077620-R | 17180249512C-24932 | 6 | Unknown | | 07/11/2017 21:34:10 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 22 | 9077622 | 17180249512C-24932 | 7 | Unknown | | 07/11/2017 21:50:23 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 23 | 9077622 | 17180249512C-24932 | 8 | Unknown | | 07/11/2017 22:06:36 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 24 | 9074291 | 17180249512C-24932 | 9 | Unknown | | 07/11/2017 22:22:47 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 25 | 9074300 | 17180249512C-24932 | 10 | Unknown | | 07/11/2017 22:39:00 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 26 | 9083739-U | 17191249117B-24932 | 11 | Unknown | | 07/11/2017 22:55:13 | 75.00 | AnionsAS | Anions | 1.00 | 200 | Finished |
| 27 | 9083739-D | 17191249117B-24932 | 11 | Unknown | | 07/11/2017 23:11:25 | 75.00 | AnionsAS | Anions | 1.00 | 200 | Finished |
| 28 | 9083739-R | 17191249117B-24932 | 12 | Unknown | | 07/11/2017 23:27:37 | 75.00 | AnionsAS | Anions | 1.00 | 200 | Finished |
| 29 | CCV2 | | 91 | Check Standard | | 07/11/2017 23:43:48 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 30 | CCB | | 92 | Check Standard | | 07/12/2017 00:00:01 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 31 | 9063418 | 17191249117B-24932 | 13 | Unknown | | 07/12/2017 00:16:13 | 75.00 | AnionsAS | Anions | 1.00 | 100 | Finished |
| 32 | LCSW | 17192249115A-24932 | 93 | Unknown | | 07/12/2017 00:32:24 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 33 | PBW | 17192249115A-24932 | 94 | Unknown | | 07/12/2017 00:48:37 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 34 | 9095448-U | 17192249115A-24932 | 14 | Unknown | | 07/12/2017 01:04:50 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 35 | 9095448-D | 17192249115A-24932 | 14 | Unknown | | 07/12/2017 01:21:02 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 36 | 9095448-R | 17192249115A-24932 | 15 | Unknown | | 07/12/2017 01:37:13 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 37 | 9095442 | 17192249115A-24932 | 16 | Unknown | | 07/12/2017 01:53:25 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 38 | 9095442 | 17192249115A-24932 | 17 | Unknown | | 07/12/2017 02:09:37 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 39 | 9095444 | 17192249115A-24932 | 18 | Unknown | | 07/12/2017 02:25:49 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 40 | 9095444 | 17192249115A-24932 | 19 | Unknown | | 07/12/2017 02:42:02 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 41 | CCV2 | | 91 | Check Standard | | 07/12/2017 02:58:14 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

# Sequence Overview: 1719215

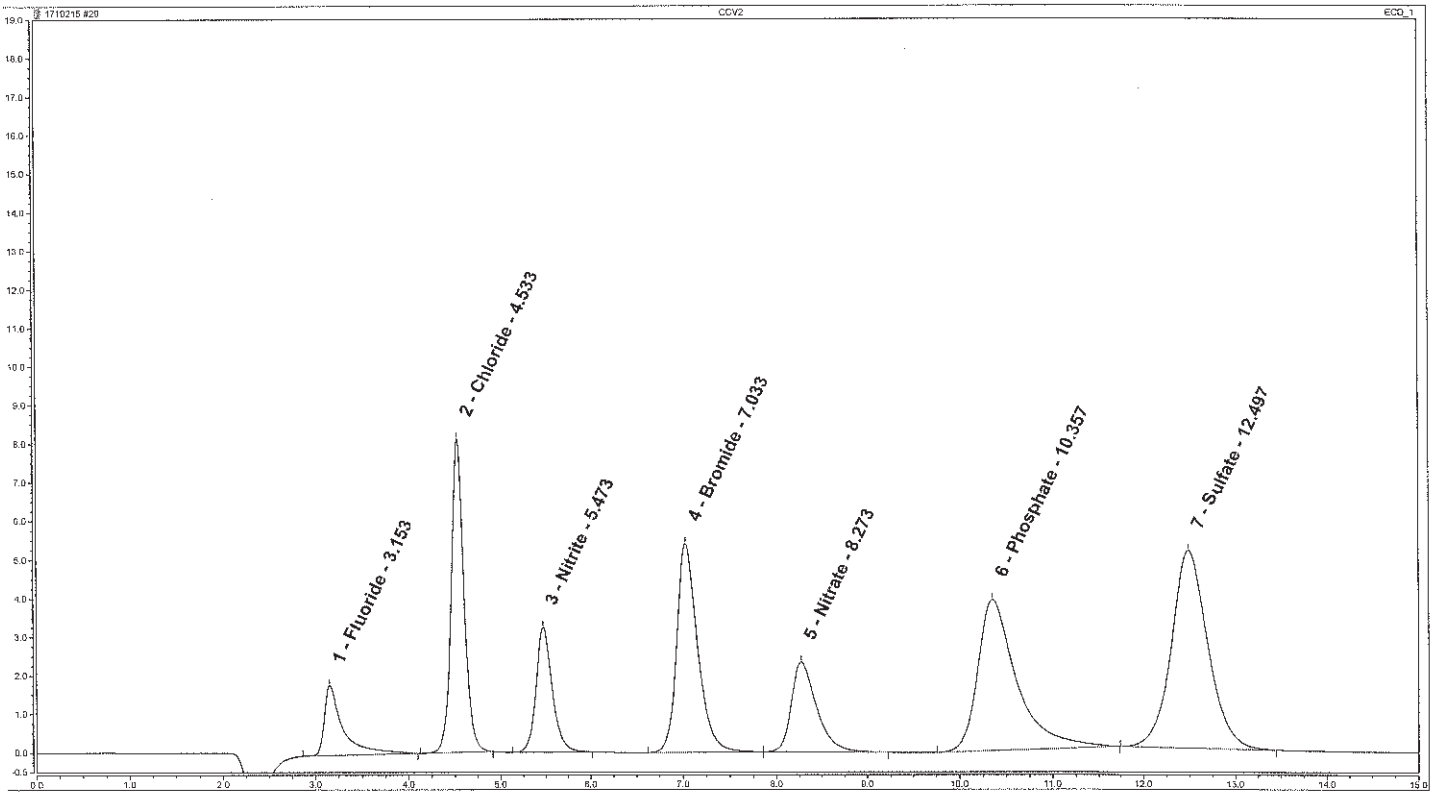
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | CCB | | 92 | Check Standard | | 07/12/2017 03:14:26 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 43 | 9095446 | 17192249115A-24932 | 20 | Unknown | | 07/12/2017 03:30:38 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 44 | 9095446 | 17192249115A-24932 | 21 | Unknown | | 07/12/2017 03:46:51 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 45 | 9095450 | 17192249115A-24932 | 22 | Unknown | | 07/12/2017 04:03:03 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 46 | 9095450 | 17192249115A-24932 | 23 | Unknown | | 07/12/2017 04:19:15 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 47 | 9095452 | 17192249115A-24932 | 24 | Unknown | | 07/12/2017 04:35:27 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 48 | 9095452 | 17192249115A-24932 | 25 | Unknown | | 07/12/2017 04:51:39 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 49 | 9095454 | 17192249115A-24932 | 26 | Unknown | | 07/12/2017 05:07:51 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 50 | 9095454 | 17192249115A-24932 | 27 | Unknown | | 07/12/2017 05:24:03 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 51 | 9095569 | 17192249115A-24932 | 28 | Unknown | | 07/12/2017 05:40:16 | 75.00 | AnionsAS | Anions | 1.00 | 10 | Finished |
| 52 | 9095571 | 17192249115A-24932 | 29 | Unknown | | 07/12/2017 05:56:28 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 53 | CCV2 | | 91 | Check Standard | | 07/12/2017 06:12:39 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 54 | CCB | | 92 | Check Standard | | 07/12/2017 06:28:51 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 55 | 9095573 | 17192249115A-24932 | 30 | Unknown | | 07/12/2017 06:45:03 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 56 | 9095972-U | 17192249115B-24932 | 31 | Unknown | | 07/12/2017 07:01:15 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 57 | 9095972-D | 17192249115B-24932 | 31 | Unknown | | 07/12/2017 07:17:28 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 58 | 9095972-R | 17192249115B-24932 | 32 | Unknown | | 07/12/2017 07:33:41 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 59 | 9095972-U | 17192249115B-24932 | 33 | Unknown | | 07/12/2017 07:49:53 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 60 | 9095972-D | 17192249115B-24932 | 33 | Unknown | | 07/12/2017 08:06:06 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 61 | 9095972-R | 17192249115B-24932 | 34 | Unknown | | 07/12/2017 08:22:18 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 62 | 9095970 | 17192249115B-24932 | 35 | Unknown | | 07/12/2017 08:38:30 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 63 | 9095970 | 17192249115B-24932 | 36 | Unknown | | 07/12/2017 08:54:43 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 64 | 9095968 | 17192249115B-24932 | 37 | Unknown | | 07/12/2017 09:10:56 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 65 | CCV2 | | 91 | Check Standard | | 07/12/2017 09:27:07 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 66 | CCB | | 92 | Check Standard | | 07/12/2017 09:43:19 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 67 | 9095968 | 17192249115B-24932 | 38 | Unknown | | 07/12/2017 09:59:31 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 68 | 9095966 | 17192249115B-24932 | 39 | Unknown | | 07/12/2017 10:15:44 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 69 | 9095966 | 17192249115B-24932 | 40 | Unknown | | 07/12/2017 10:31:56 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 70 | 9095575 | 17192249115B-24932 | 41 | Unknown | | 07/12/2017 10:48:07 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 71 | 9094125 | 17192972117A-9972 | 47 | Unknown | | 07/12/2017 11:04:19 | 75.00 | AnionsAS | Anions | 1.00 | 10 | Finished |
| 72 | 9095577 | 17192249115B-24932 | 42 | Unknown | | 07/12/2017 11:20:32 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 73 | 9095579 | 17192249115B-24932 | 43 | Unknown | | 07/12/2017 11:36:43 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 74 | 9095581 | 17192249115B-24932 | 44 | Unknown | | 07/12/2017 11:52:56 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 75 | 9095583 | 17192249115B-24932 | 45 | Unknown | | 07/12/2017 12:09:09 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 76 | 9095585 | 17192249115B-24932 | 46 | Unknown | | 07/12/2017 12:25:21 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 77 | CCV2 | | 91 | Check Standard | | 07/12/2017 12:41:33 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 78 | CCB | | 92 | Check Standard | | 07/12/2017 12:57:46 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 79 | 9094125 | 17192972117A-9972 | 48 | Unknown | | 07/12/2017 13:13:57 | 75.00 | AnionsAS | Anions | 1.00 | 200 | Finished |
| 80 | CCV2 | | 91 | Check Standard | | 07/12/2017 13:30:09 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 81 | CCB | | 92 | Check Standard | | 07/12/2017 13:46:21 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/11/2017 / 23:43** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **029** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.424 | 1.814 | 0.7513 |
| 2 | 4.53 | Chloride | M | 1.318 | 8.123 | 2.8960 |
| 3 | 5.47 | Nitrite | M | 0.684 | 3.237 | 0.7439 |
| 4 | 7.03 | Bromide | M | 1.395 | 5.394 | 7.3880 |
| 5 | 8.27 | Nitrate | M | 0.752 | 2.315 | 0.7516 |
| 6 | 10.36 | Phosphate | M | 1.898 | 3.883 | 7.0685 |
| 7 | 12.50 | Sulfate | M | 2.330 | 5.084 | 7.2873 |
| | | TOTAL: | | 8.80 | 29.85 | 26.89 |




**Analyst:** ZWE 24932

**Verifier:**

**Date:** 7/12/17

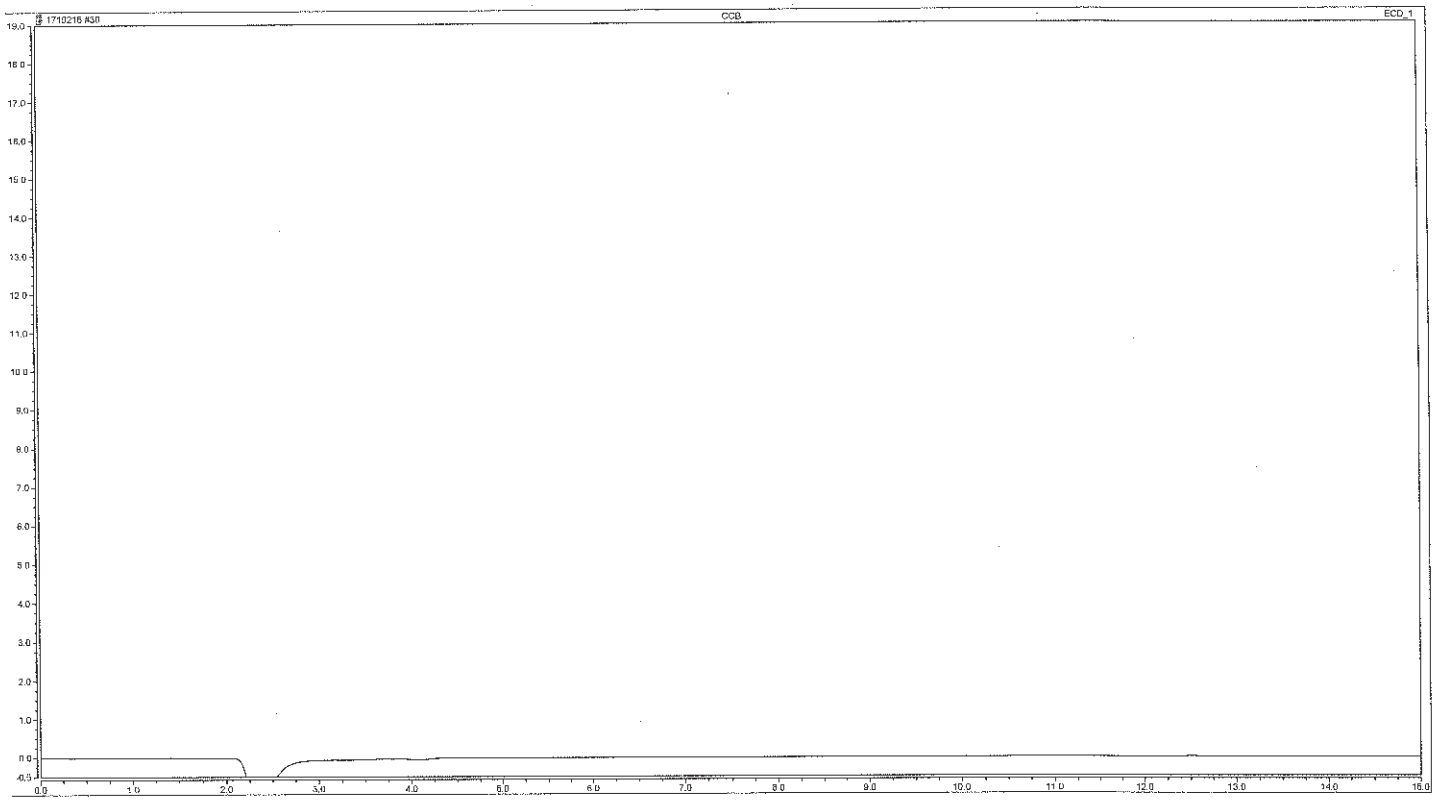
**Date:** Sandra J. Miller
Chemist
JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 00:00** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **030** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWG 24932

**Date:** 7-12-17

**Verifier:**

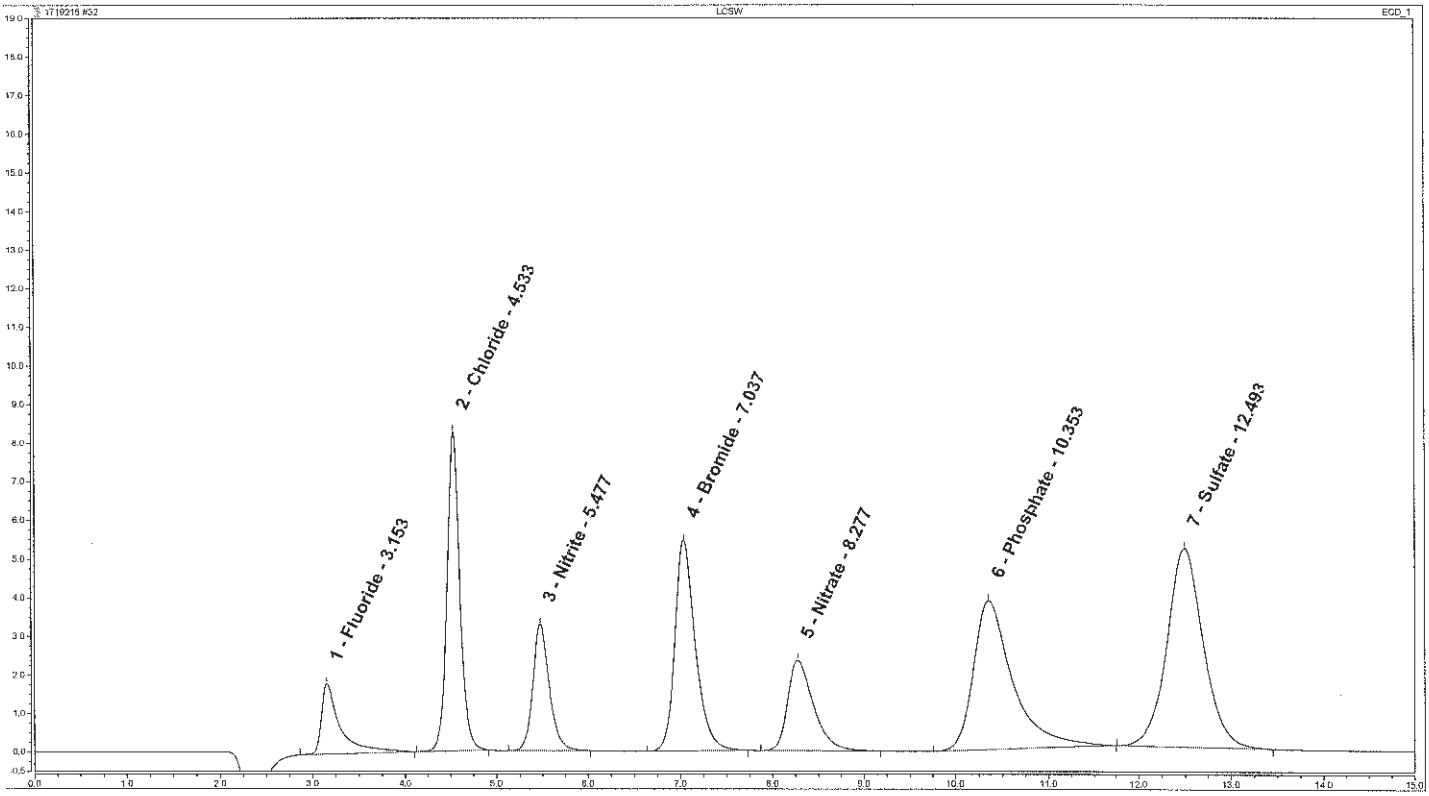
**Date:** Sandra J. Miller
Chemist
JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **LCSW** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 00:32** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **032** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.429 | 1.838 | 0.7609 |
| 2 | 4.53 | Chloride | M | 1.337 | 8.274 | 2.9376 |
| 3 | 5.48 | Nitrite | M | 0.696 | 3.296 | 0.7562 |
| 4 | 7.04 | Bromide | M | 1.408 | 5.480 | 7.4528 |
| 5 | 8.28 | Nitrate | M | 0.762 | 2.350 | 0.7611 |
| 6 | 10.35 | Phosphate | M | 1.888 | 3.872 | 7.0387 |
| 7 | 12.49 | Sulfate | M | 2.365 | 5.179 | 7.3952 |
| | | TOTAL: | | 8.89 | 30.29 | 27.10 |




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:** Sandra J. Miller

Sandra J. Miller
Chemist

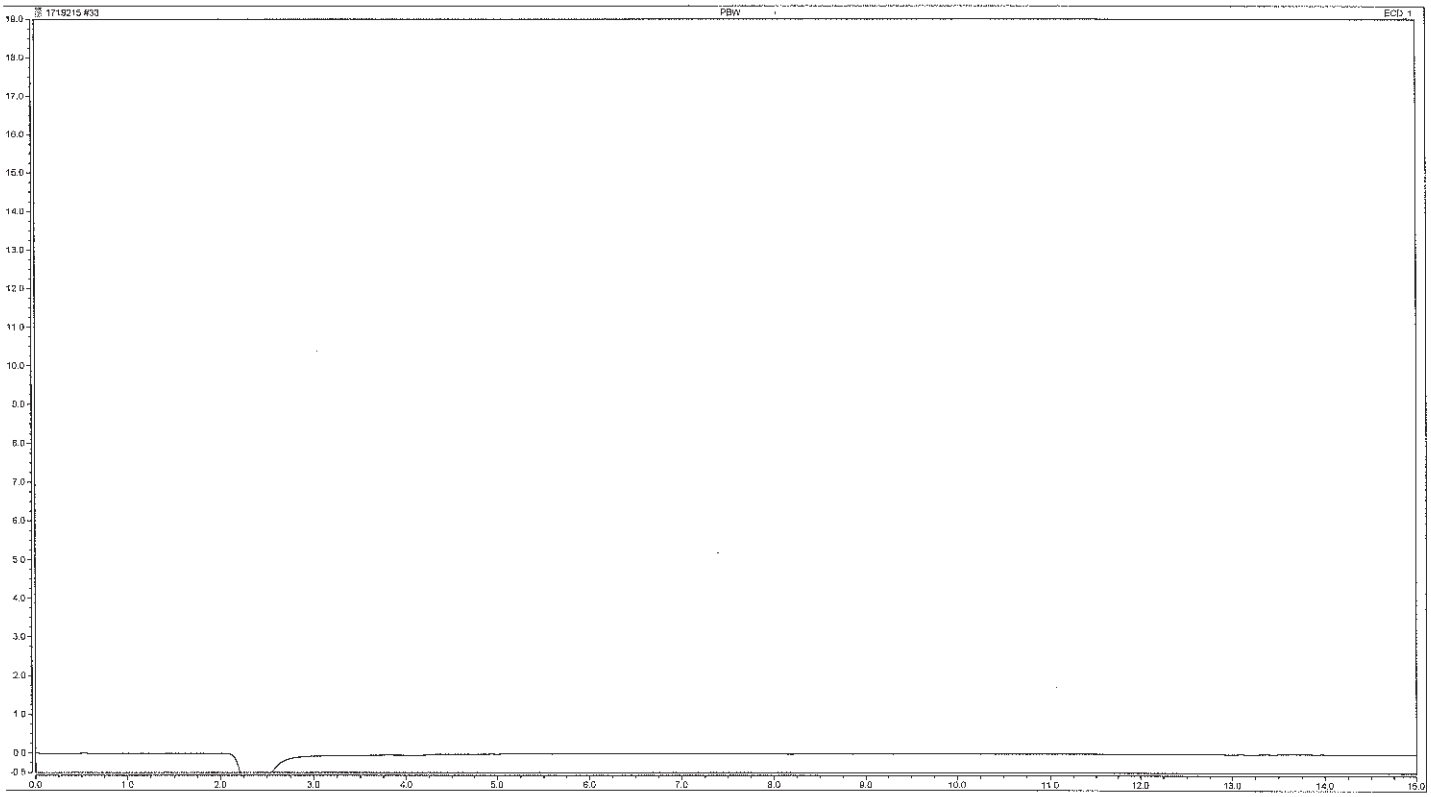
**Date:** JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **PBW** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 00:48** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **033** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWG 24932

**Date:** 7-12-17

**Verifier:**

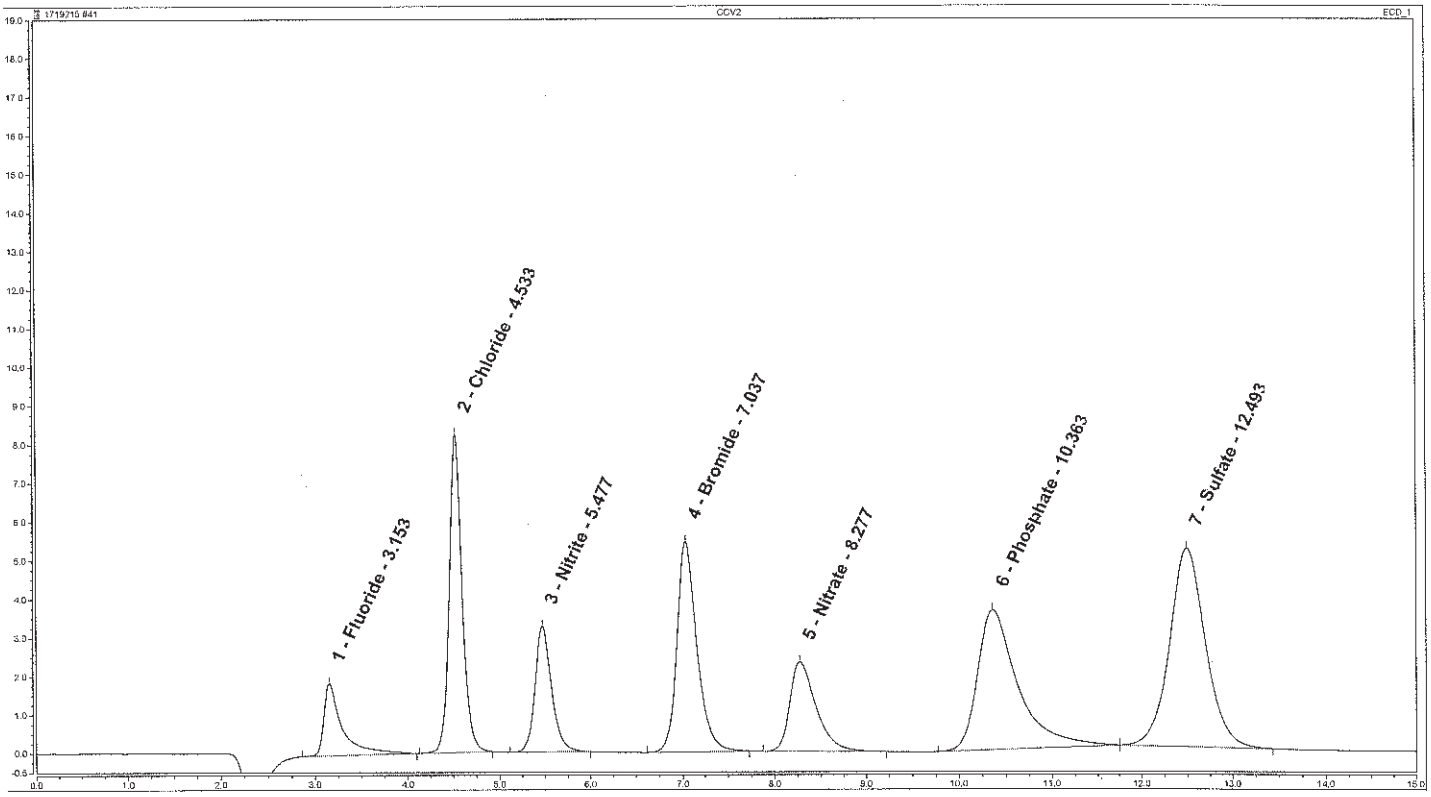
**Date:** Sandra J. Miller
Chemist
JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 02:58** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **041** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.433 | 1.877 | 0.7683 |
| 2 | 4.53 | Chloride | M | 1.334 | 8.243 | 2.9304 |
| 3 | 5.48 | Nitrite | M | 0.691 | 3.278 | 0.7509 |
| 4 | 7.04 | Bromide | M | 1.402 | 5.453 | 7.4256 |
| 5 | 8.28 | Nitrate | M | 0.763 | 2.339 | 0.7616 |
| 6 | 10.36 | Phosphate | M | 1.813 | 3.647 | 6.8193 |
| 7 | 12.49 | Sulfate | M | 2.356 | 5.152 | 7.3665 |
| | | TOTAL: | | 8.79 | 29.99 | 26.82 |




**Analyst:** ZWC 24932

**Date:** 7/12/17

**Verifier:**

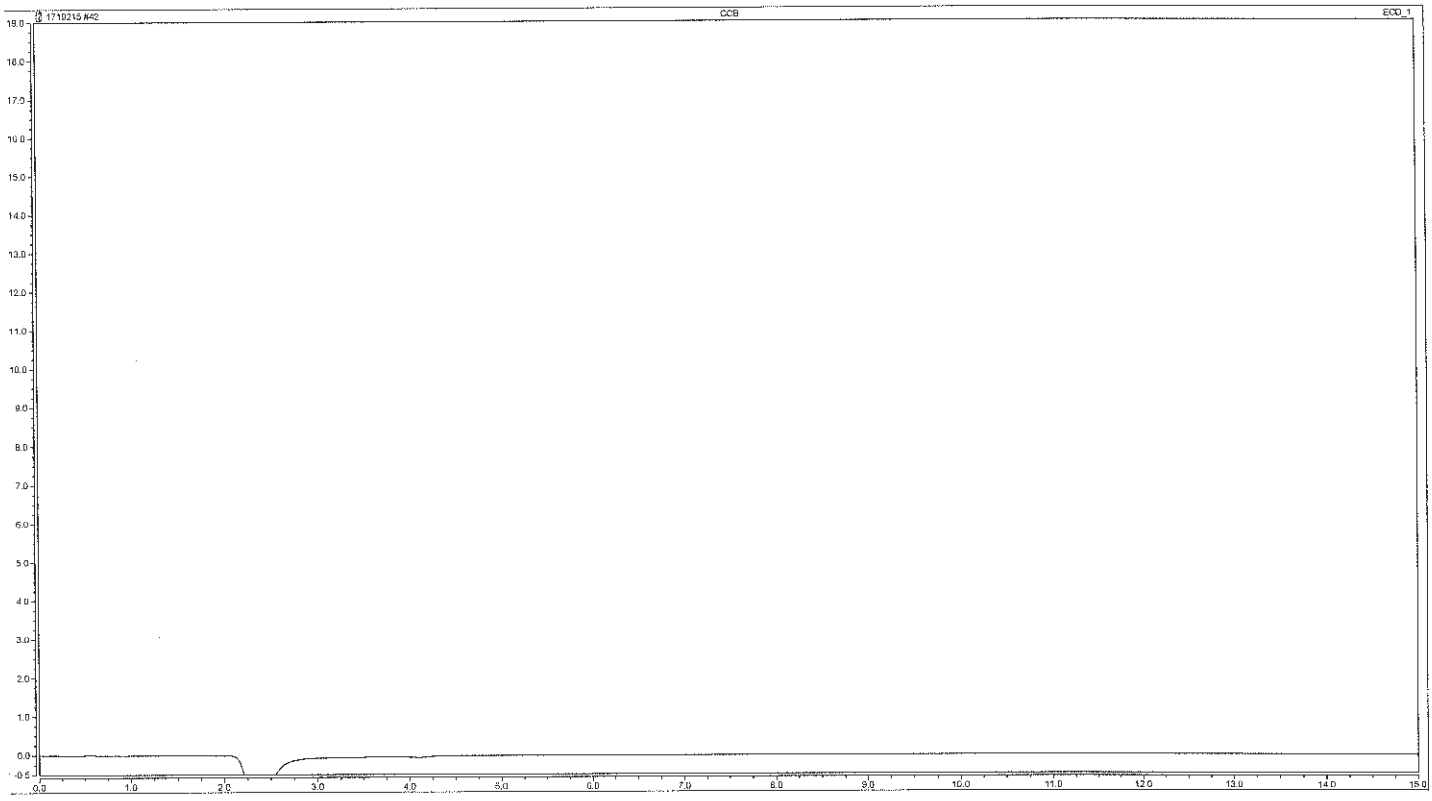
**Date:** Sandra J. Miller
Chemist
JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 03:14** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **042** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:**

Sandra J. Miller
Chemist

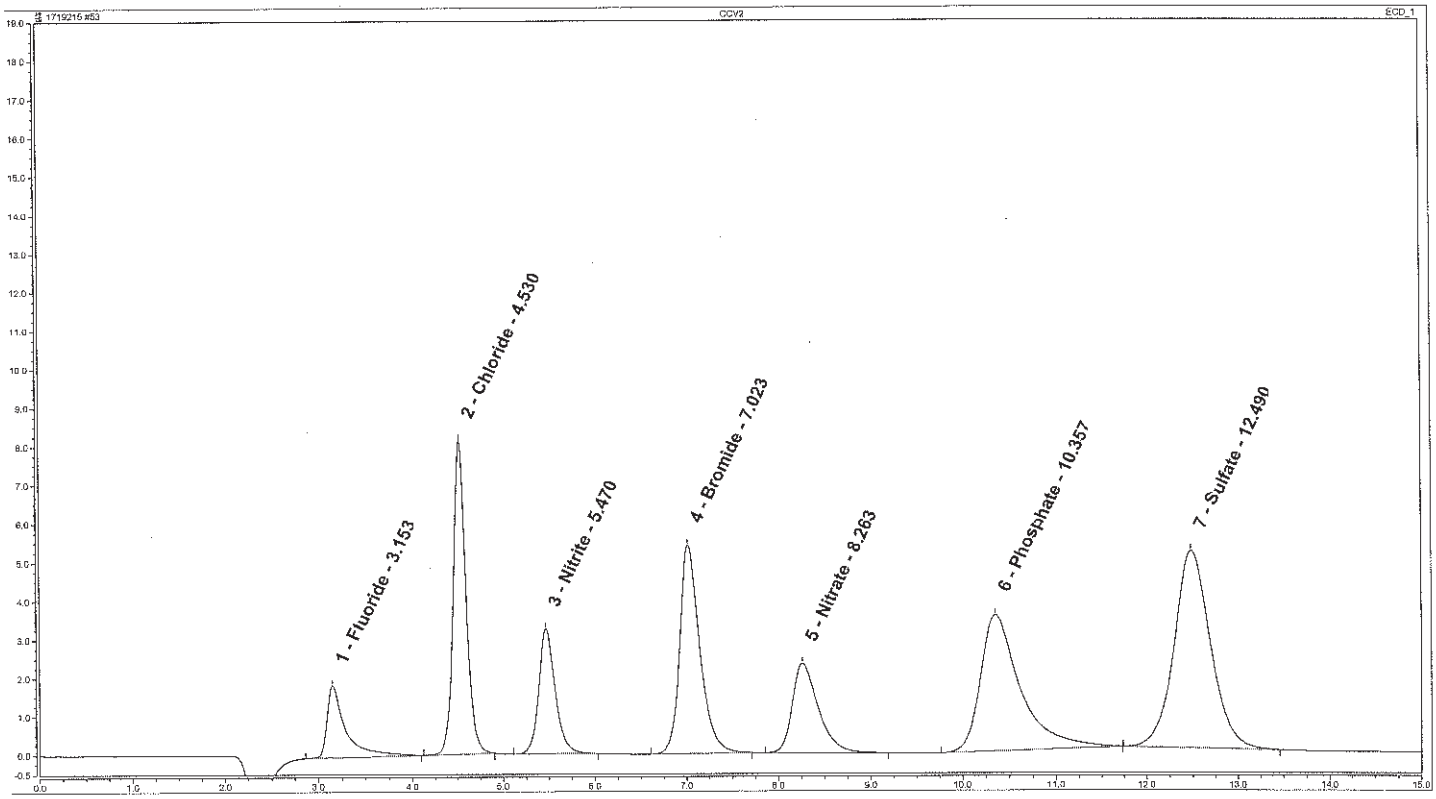
**Date:** JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 06:12** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **053** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.429 | 1.872 | 0.7611 |
| 2 | 4.53 | Chloride | M | 1.321 | 8.134 | 2.9019 |
| 3 | 5.47 | Nitrite | M | 0.687 | 3.242 | 0.7469 |
| 4 | 7.02 | Bromide | M | 1.391 | 5.397 | 7.3658 |
| 5 | 8.26 | Nitrate | M | 0.753 | 2.317 | 0.7527 |
| 6 | 10.36 | Phosphate | M | 1.748 | 3.517 | 6.6286 |
| 7 | 12.49 | Sulfate | M | 2.338 | 5.092 | 7.3138 |
| | | TOTAL: | | 8.67 | 29.57 | 26.47 |




**Analyst:** ZWC 24932

**Date:** 7-12-17

**Verifier:** Sandra J Miller Chemist

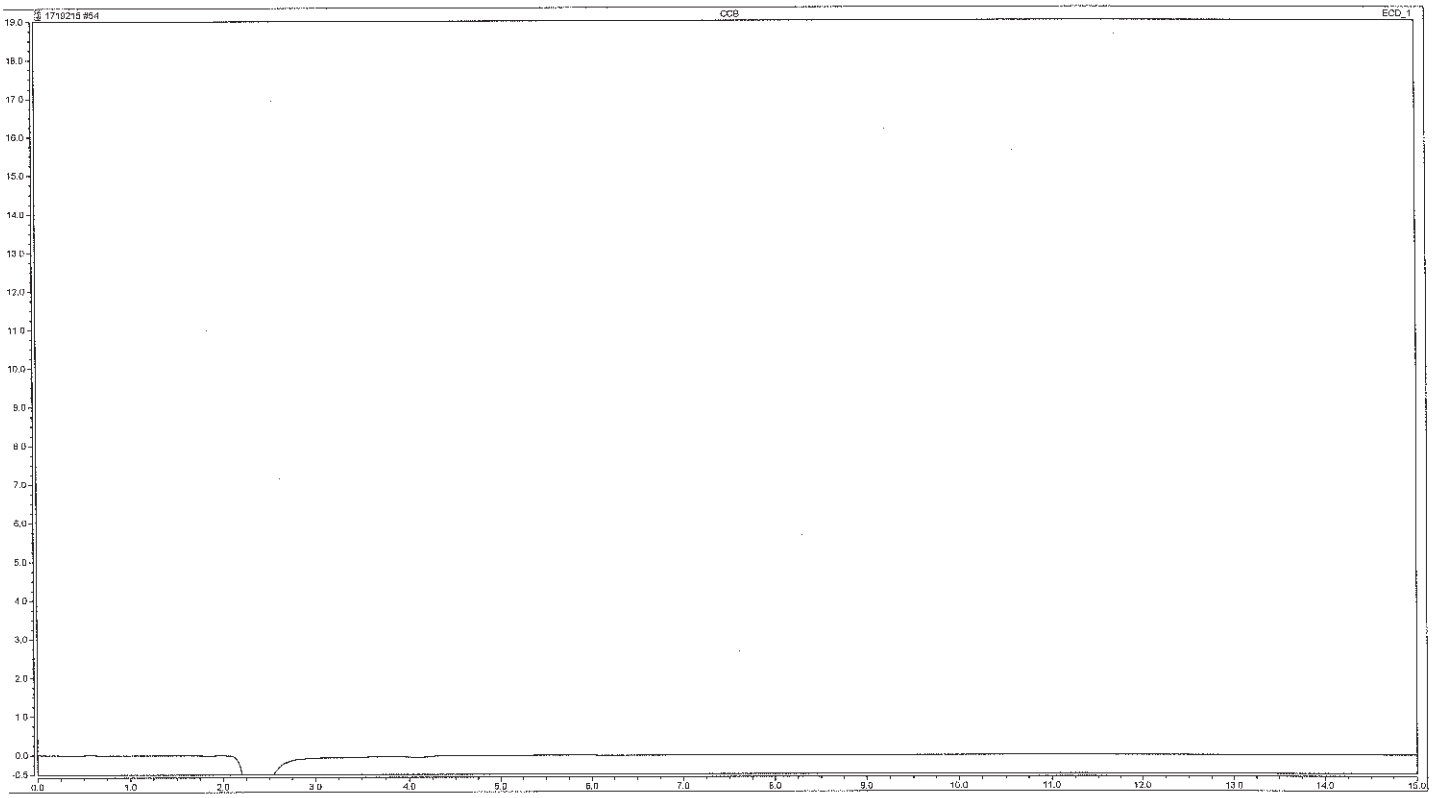
**Date:** JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 06:28** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **054** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:**

Sandra J. Miller

**Date:** Sandra J. Miller
Chemist

JUL 14 2017

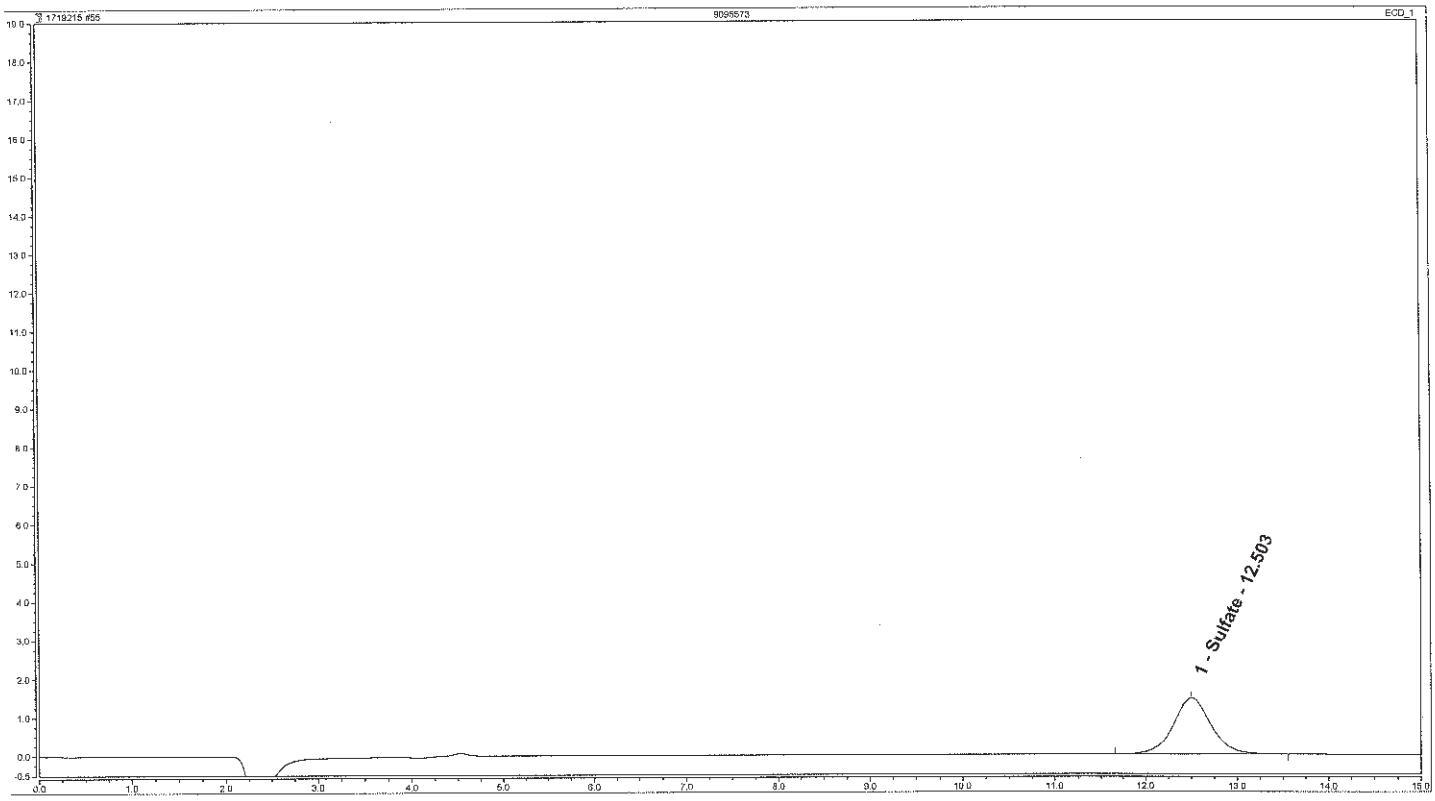
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095573** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 06:45** | *Dilution Factor:* | **500** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **055** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

SO4

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 12.50 | Sulfate | M | 0.684 | 1.447 | 1142.3601 |
| | | TOTAL: | | 0.68 | 1.45 | 1142.36 |




**Analyst:** ZWE 24932

**Verifier:**

**Date:** 7-12-17

**Date:**

Sandra J. Miller
Chemist

JUL 14 2017

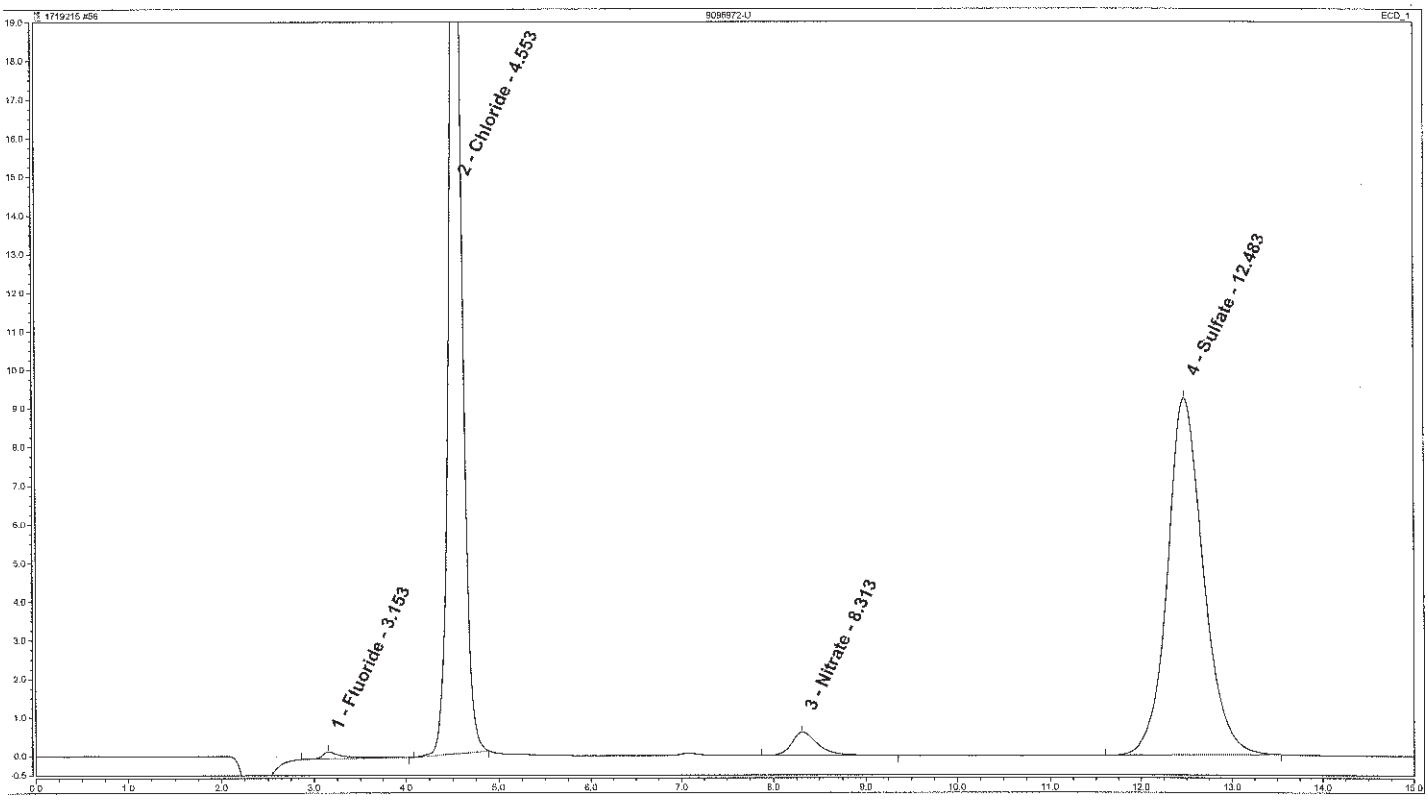
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095972-U** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 07:01** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **056** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.055 | 0.187 | 0.4974 |
| 2 | 4.55 | Chloride | M | 4.307 | 27.976 | 46.5083 |
| 3 | 8.31 | Nitrate | M | 0.204 | 0.609 | 1.1521 |
| 4 | 12.48 | Sulfate | M | 4.226 | 9.243 | 65.2621 |
| | | TOTAL: | | 8.79 | 38.02 | 113.42 |

Br, SO4




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:** Sandra J. Miller

Sandra J. Miller
Chemist

**Date:** JUL 14 2017

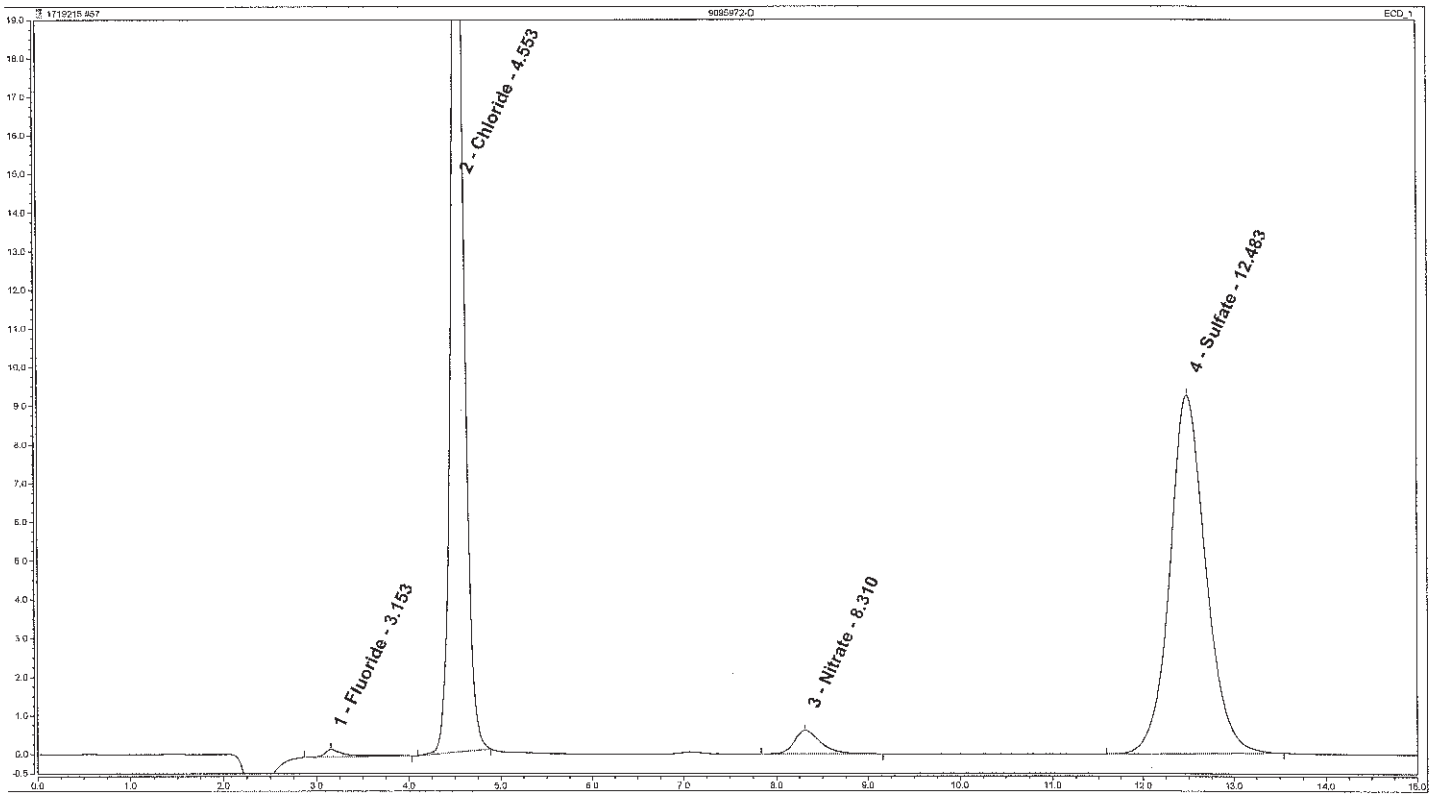
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095972-D** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 07:17** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **057** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

Br, SO4

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.056 | 0.194 | 0.5097 |
| 2 | 4.55 | Chloride | M | 4.325 | 28.108 | 46.6996 |
| 3 | 8.31 | Nitrate | M | 0.202 | 0.611 | 1.1448 |
| 4 | 12.48 | Sulfate | M | 4.236 | 9.275 | 65.4234 |
| | | TOTAL: | | 8.82 | 38.19 | 113.78 |




**Analyst:** ZWE24932

**Date:** 7-12-17

**Verifier:**

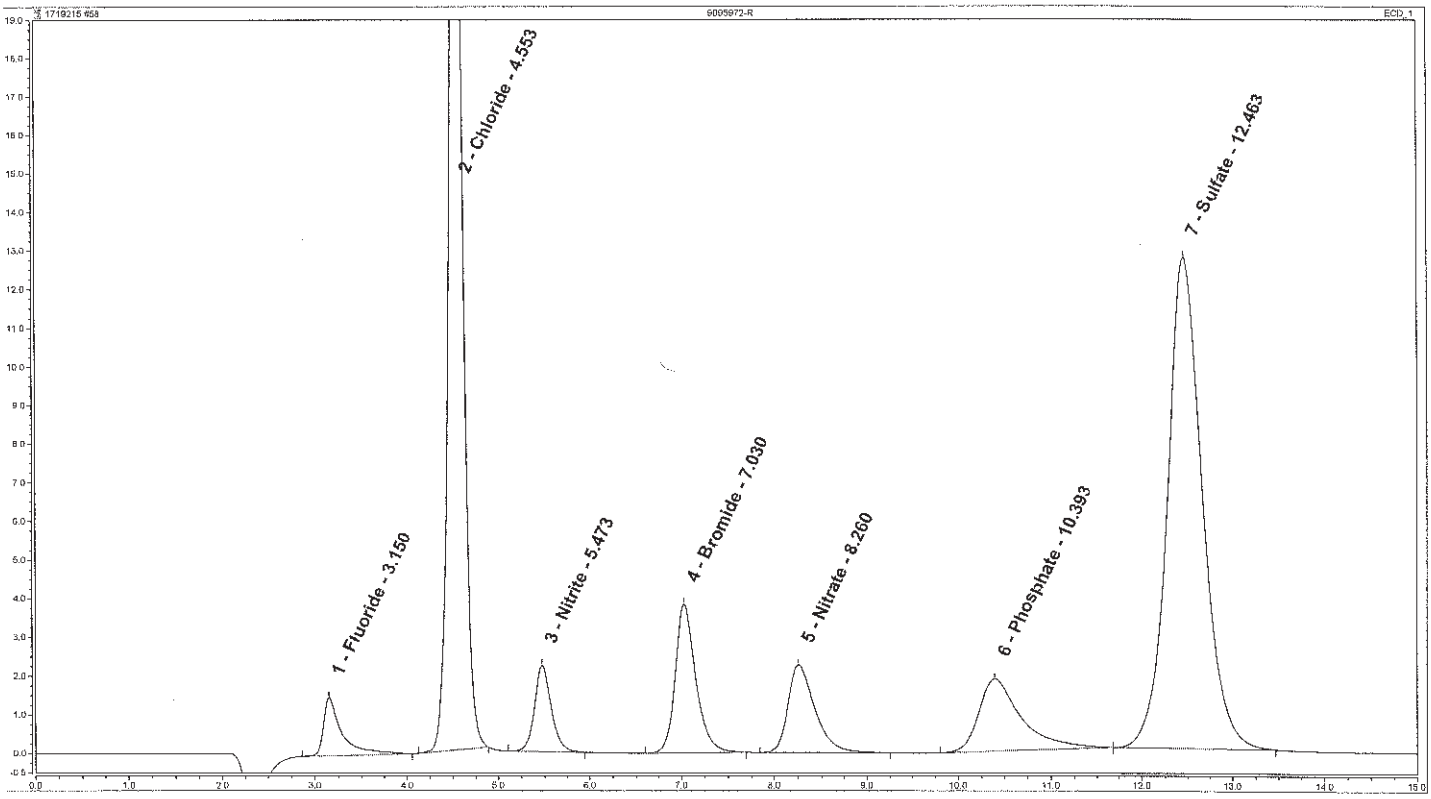
**Date:** Sandra J. Miller
Chemist
JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095972-R** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 07:33** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **058** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.347 | 1.498 | 3.0745 |
| 2 | 4.55 | Chloride | M | 5.133 | 33.286 | 55.3527 |
| 3 | 5.47 | Nitrite | M | 0.463 | 2.220 | 2.5760 |
| 4 | 7.03 | Bromide | M | 0.994 | 3.843 | 26.6101 |
| 5 | 8.26 | Nitrate | M | 0.738 | 2.261 | 3.6915 |
| 6 | 10.39 | Phosphate | M | 0.994 | 1.861 | 22.1019 |
| 7 | 12.46 | Sulfate | M | 5.732 | 12.703 | 88.1688 |
| | | TOTAL: | | 14.40 | 57.67 | 201.58 |




Analyst: ZWE 24932

Date: 7-12-17

Verifier: Sandra J. Miller
Chemist

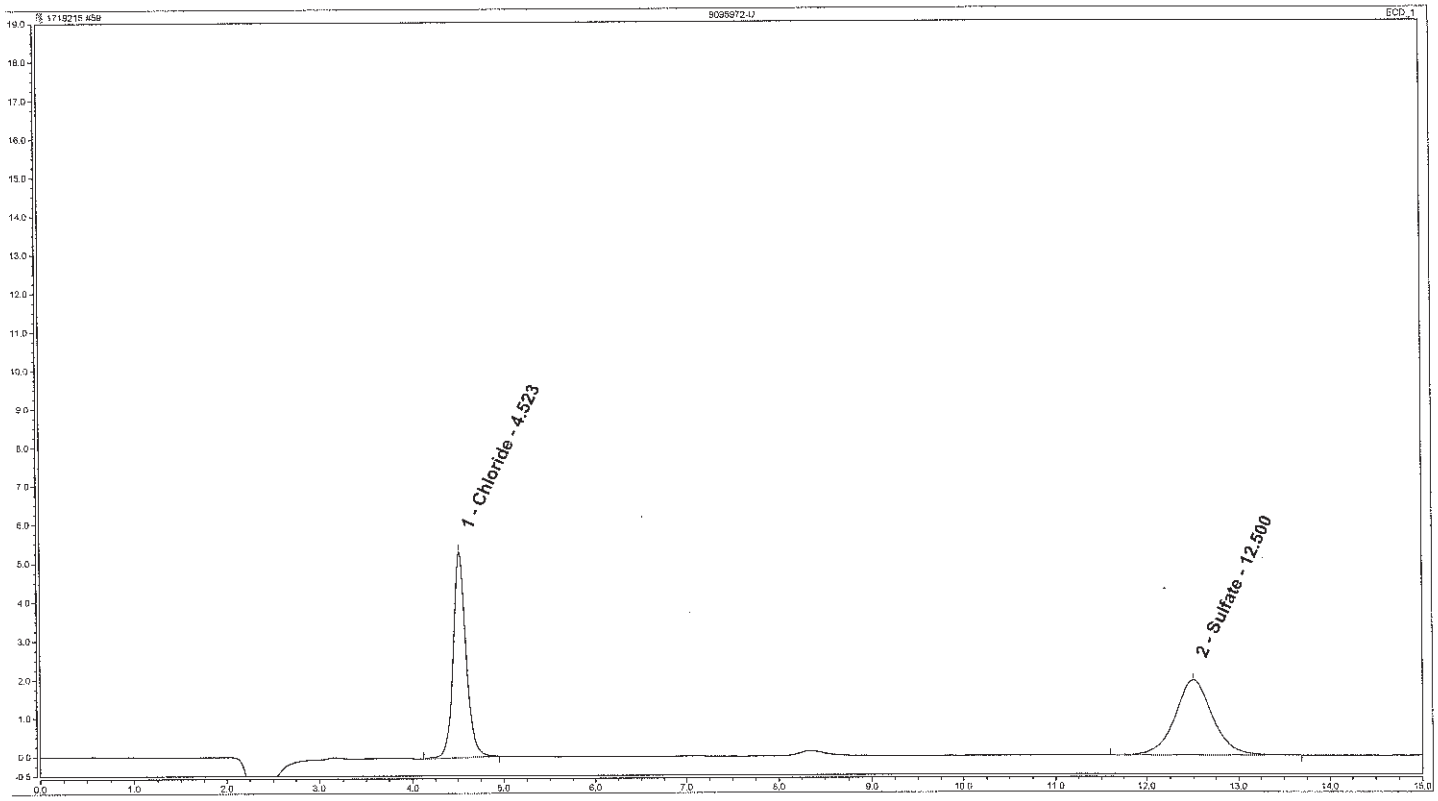
Date: JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095972-U** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 07:49** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **059** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.52 | Chloride | M | 0.873 | 5.321 | 38.8388 |
| 2 | 12.50 | Sulfate | M | 0.910 | 1.928 | 59.4122 |
| | | TOTAL: | | 1.78 | 7.25 | 98.25 |




Analyst: ZWE 24932

Date: 7-12-17

Verifier:

Date: Sandra J. Miller
Chemist

JUL 14 2017

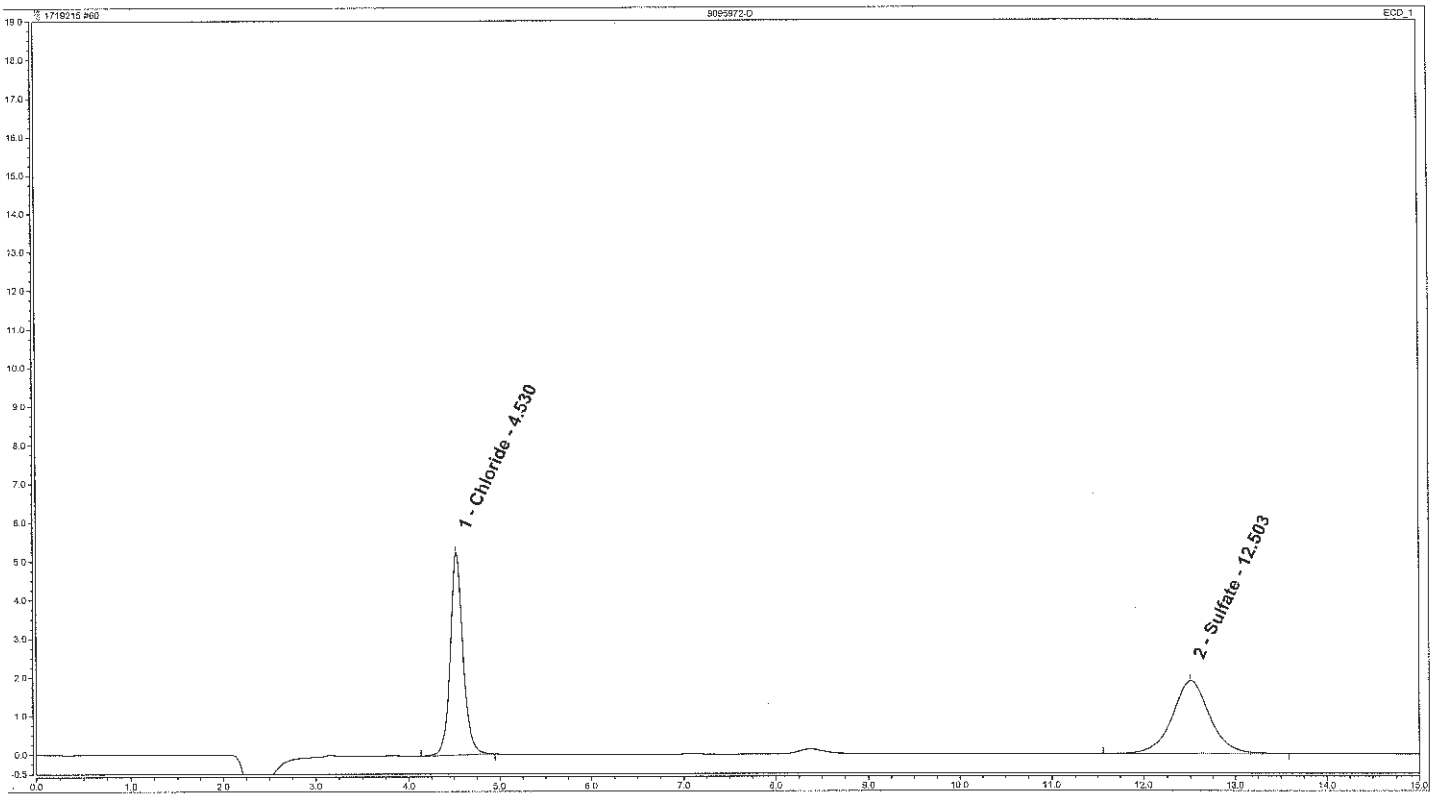
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095972-D** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 08:06** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **060** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.53 | Chloride | M | 0.866 | 5.255 | 38.5725 |
| 2 | 12.50 | Sulfate | M | 0.901 | 1.904 | 58.8655 |
| | | TOTAL: | | 1.77 | 7.16 | 97.44 |

CY




**Analyst:** ZWE 24932

**Date:** 7-24-17

**Verifier:**

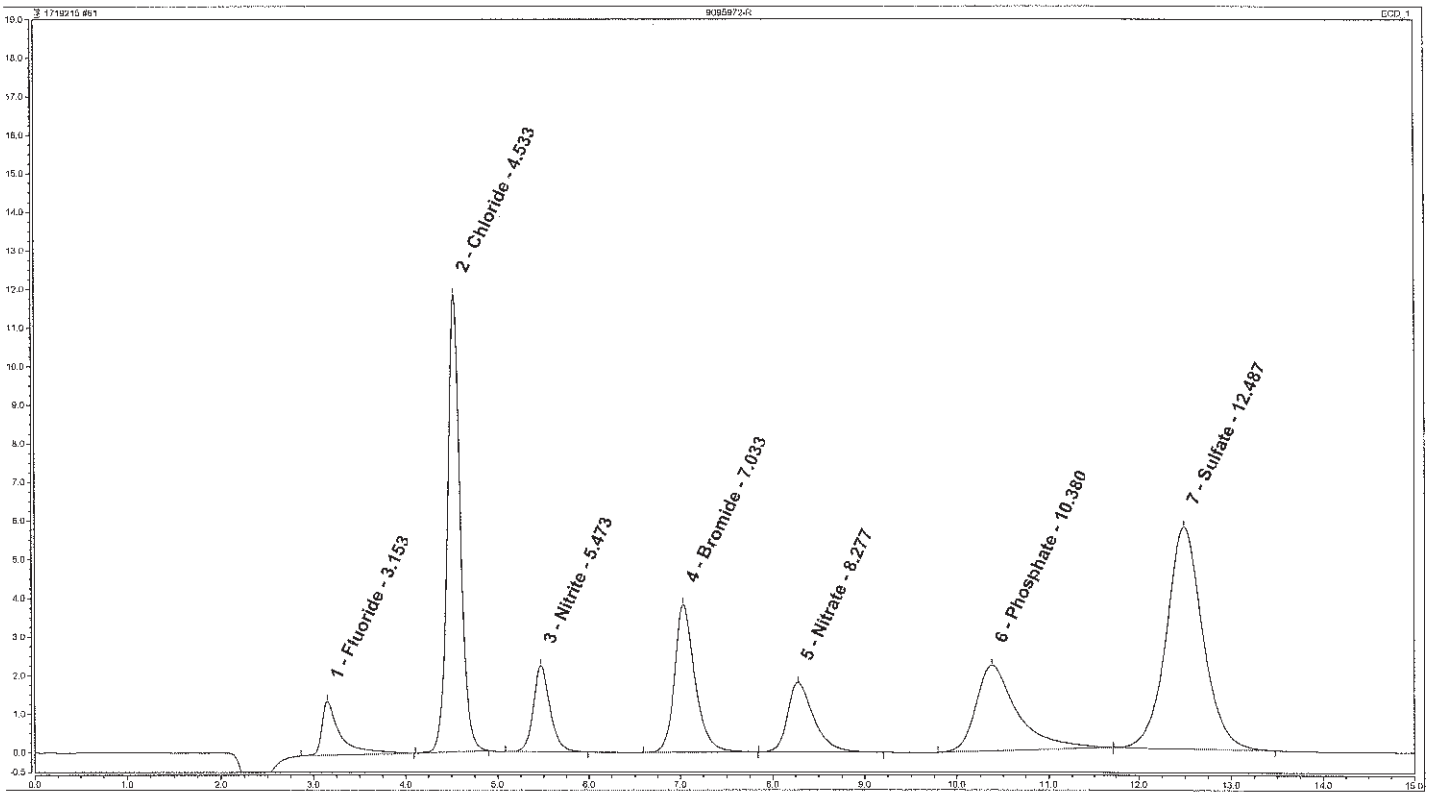
**Date:** Sandra J. Miller
Chemist
JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095972-R** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 08:22** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **061** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.328 | 1.401 | 11.6545 |
| 2 | 4.53 | Chloride | M | 1.896 | 11.857 | 82.6960 |
| 3 | 5.47 | Nitrite | M | 0.475 | 2.239 | 10.5499 |
| 4 | 7.03 | Bromide | M | 1.006 | 3.839 | 107.6283 |
| 5 | 8.28 | Nitrate | M | 0.595 | 1.813 | 12.0464 |
| 6 | 10.38 | Phosphate | M | 1.156 | 2.228 | 97.9161 |
| 7 | 12.49 | Sulfate | M | 2.646 | 5.750 | 165.0049 |
| | | TOTAL: | | 8.10 | 29.13 | 487.50 |




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:**

**Date:** Sandra J. Miller
Chemist

JUL 14 2017

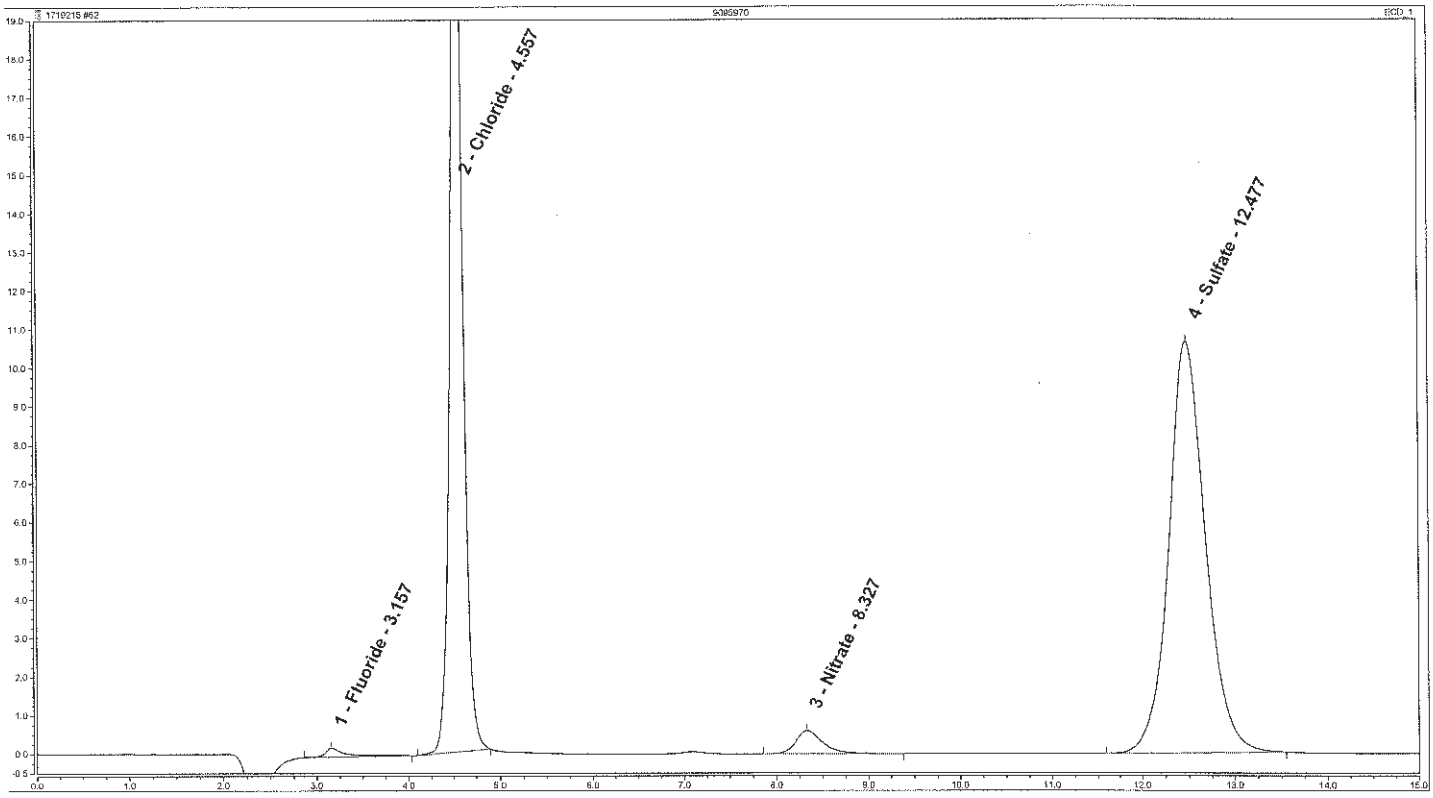
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095970** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 08:38** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **062** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

Br, SO4

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.063 | 0.223 | 0.5670 |
| 2 | 4.56 | Chloride | M | 4.170 | 27.012 | 45.0379 |
| 3 | 8.33 | Nitrate | M | 0.204 | 0.600 | 1.1532 |
| 4 | 12.48 | Sulfate | M | 4.863 | 10.658 | 74.9598 |
| | | TOTAL: | | 9.30 | 38.49 | 121.72 |




**Analyst:** ZWE 24932

**Date:** 7/12/17

**Verifier:** Sandra J. Miller

Sandra J. Miller
Chemist

**Date:** JUL 14 2017

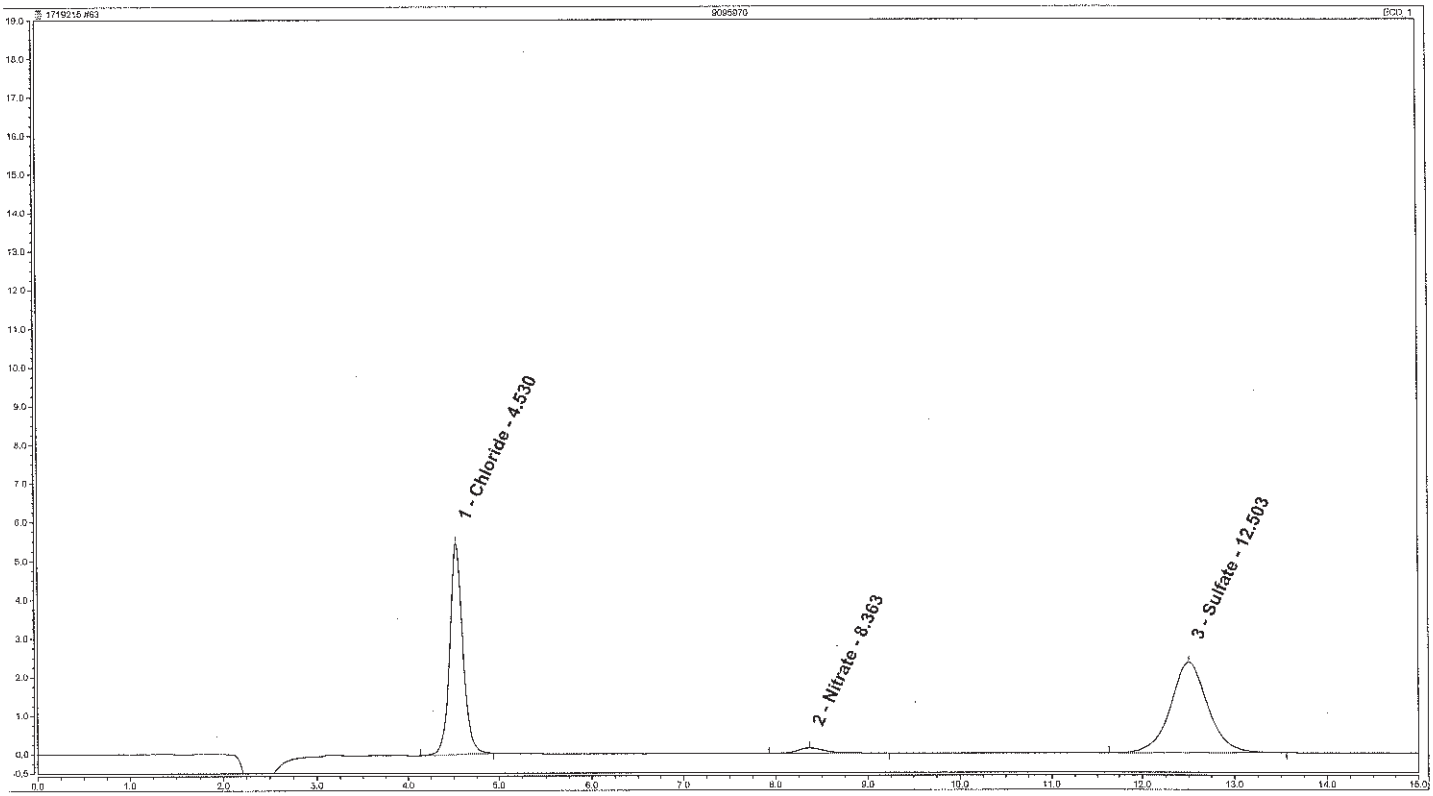
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095970** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 08:54** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **063** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.53 | Chloride | M | 0.901 | 5.470 | 40.0436 |
| 2 | 8.36 | Nitrate | M | 0.049 | 0.141 | 1.6741 |
| 3 | 12.50 | Sulfate | M | 1.105 | 2.345 | 71.2570 |
| | | TOTAL: | | 2.05 | 7.96 | 112.97 |

C4




**Analyst:** ZWE 24932

**Date:** 7/27/17

**Verifier:** Sandra J. Miller

Sandra J. Miller
Chemist

**Date:** JUL 14 2017

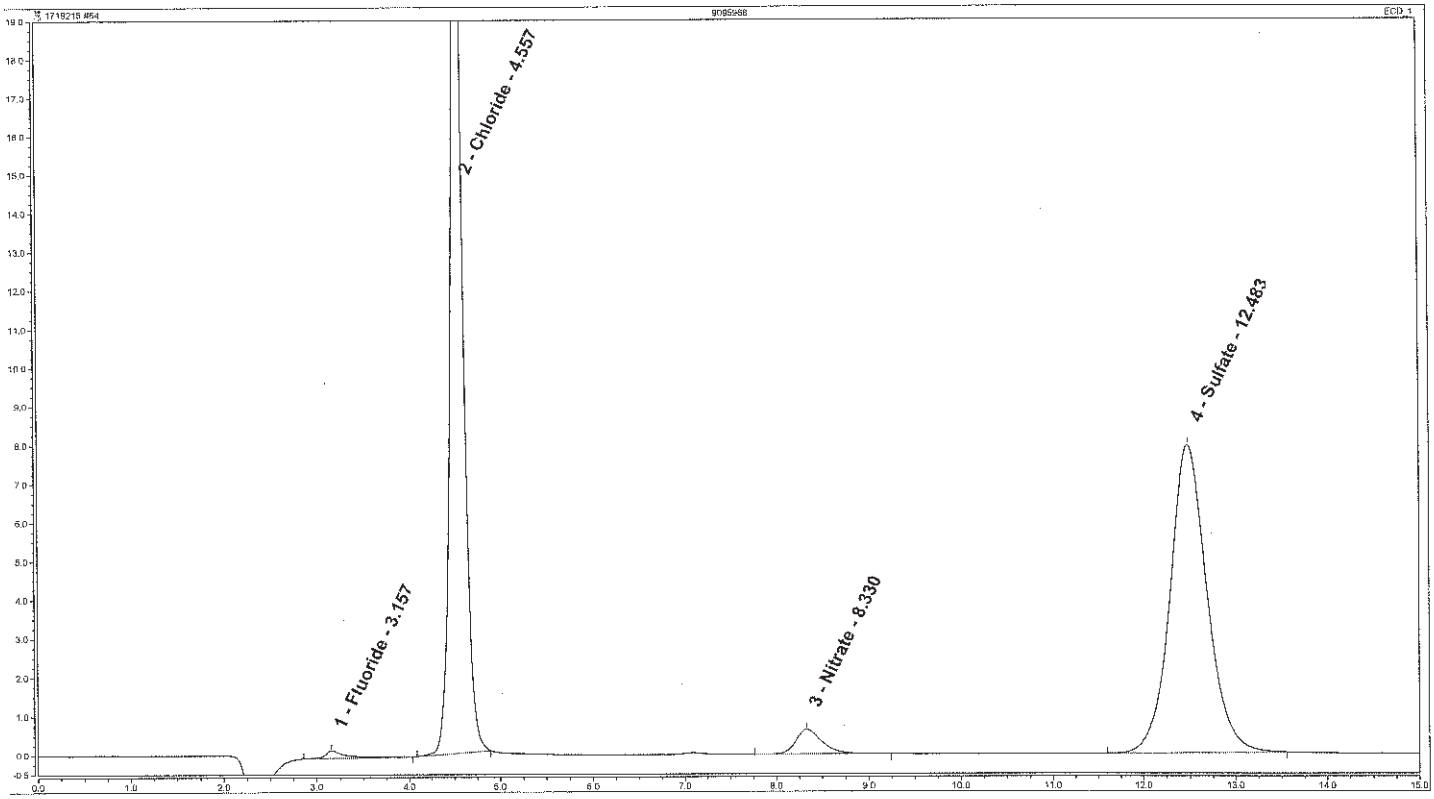
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095968** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 09:10** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **064** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

Br, SO4

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.056 | 0.196 | 0.5058 |
| 2 | 4.56 | Chloride | M | 3.877 | 25.107 | 41.9006 |
| 3 | 8.33 | Nitrate | M | 0.213 | 0.639 | 1.1965 |
| 4 | 12.48 | Sulfate | M | 3.665 | 7.976 | 56.7325 |
| | | TOTAL: | | 7.81 | 33.92 | 100.34 |




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:**

Sandra J. Miller
Chemist

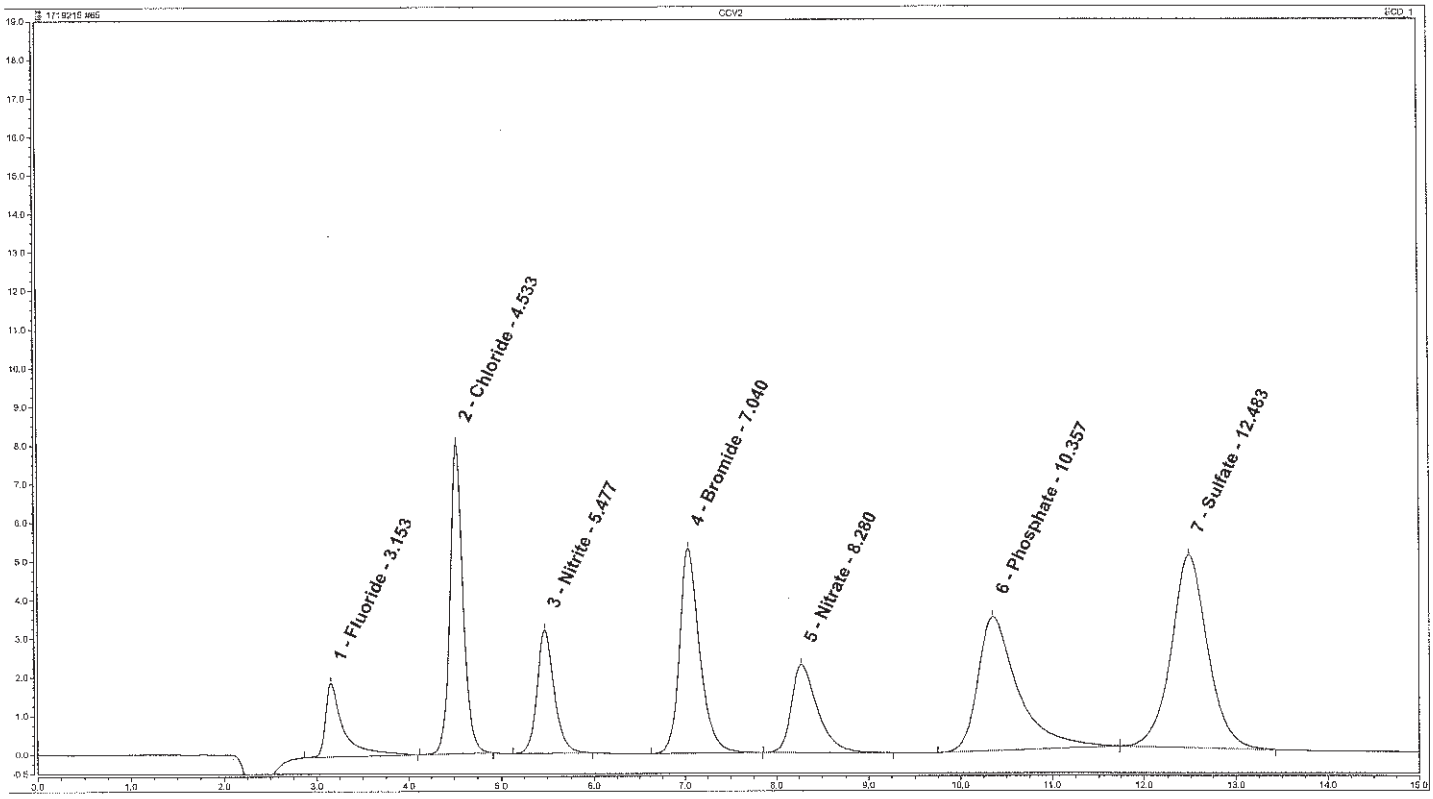
**Date:** JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 09:27** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **065** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.435 | 1.907 | 0.7706 |
| 2 | 4.53 | Chloride | M | 1.310 | 8.028 | 2.8784 |
| 3 | 5.48 | Nitrite | M | 0.680 | 3.201 | 0.7397 |
| 4 | 7.04 | Bromide | M | 1.386 | 5.322 | 7.3413 |
| 5 | 8.28 | Nitrate | M | 0.750 | 2.285 | 0.7491 |
| 6 | 10.36 | Phosphate | M | 1.752 | 3.479 | 6.6406 |
| 7 | 12.48 | Sulfate | M | 2.312 | 5.009 | 7.2328 |
| | | TOTAL: | | 8.62 | 29.23 | 26.35 |




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:**

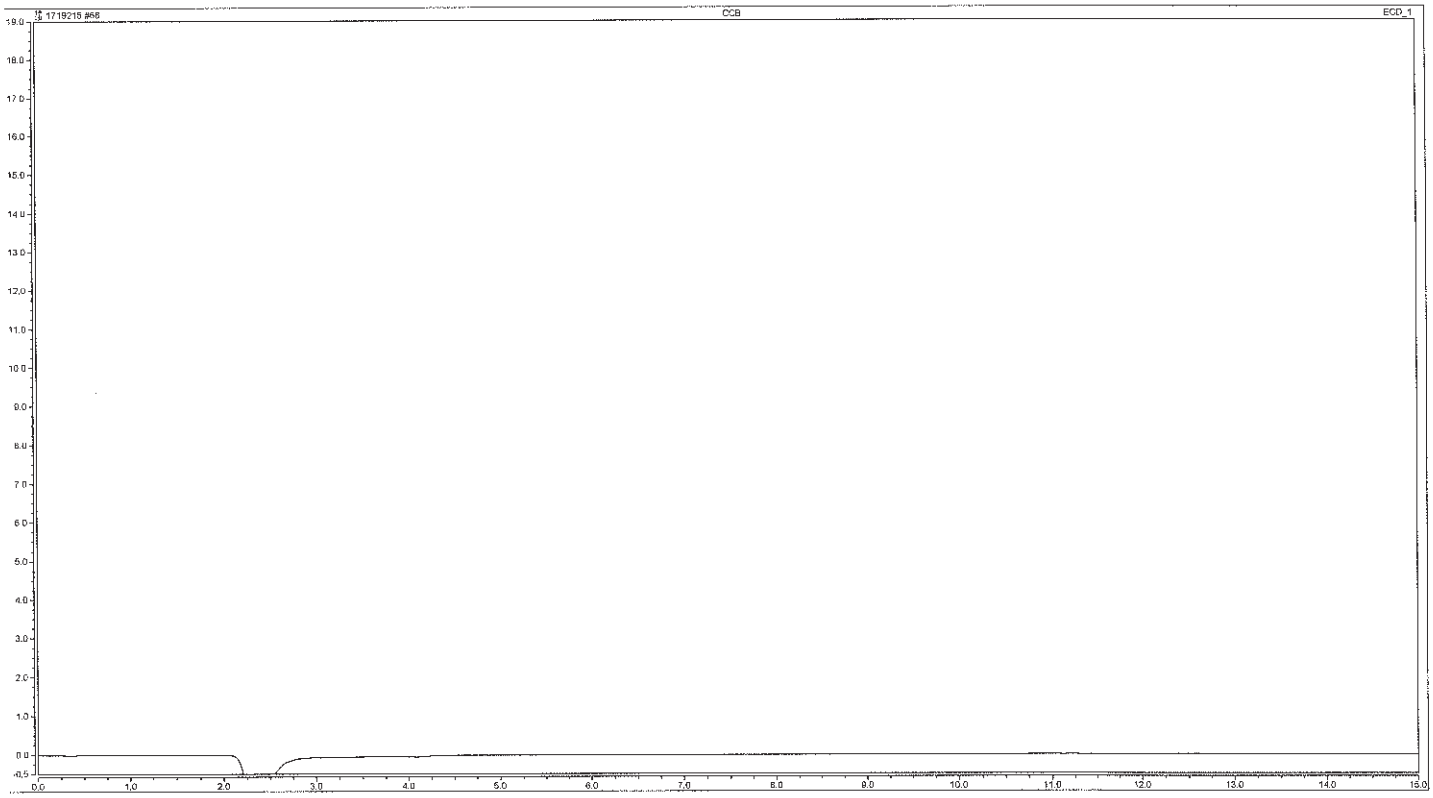
**Date:** Sandra J. Miller Chemist JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 09:43** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **066** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 7/12/17

**Date:** 7-12-17

**Verifier:**

**Date:** Sandra [illegible] Chemist

JUL 14 2017

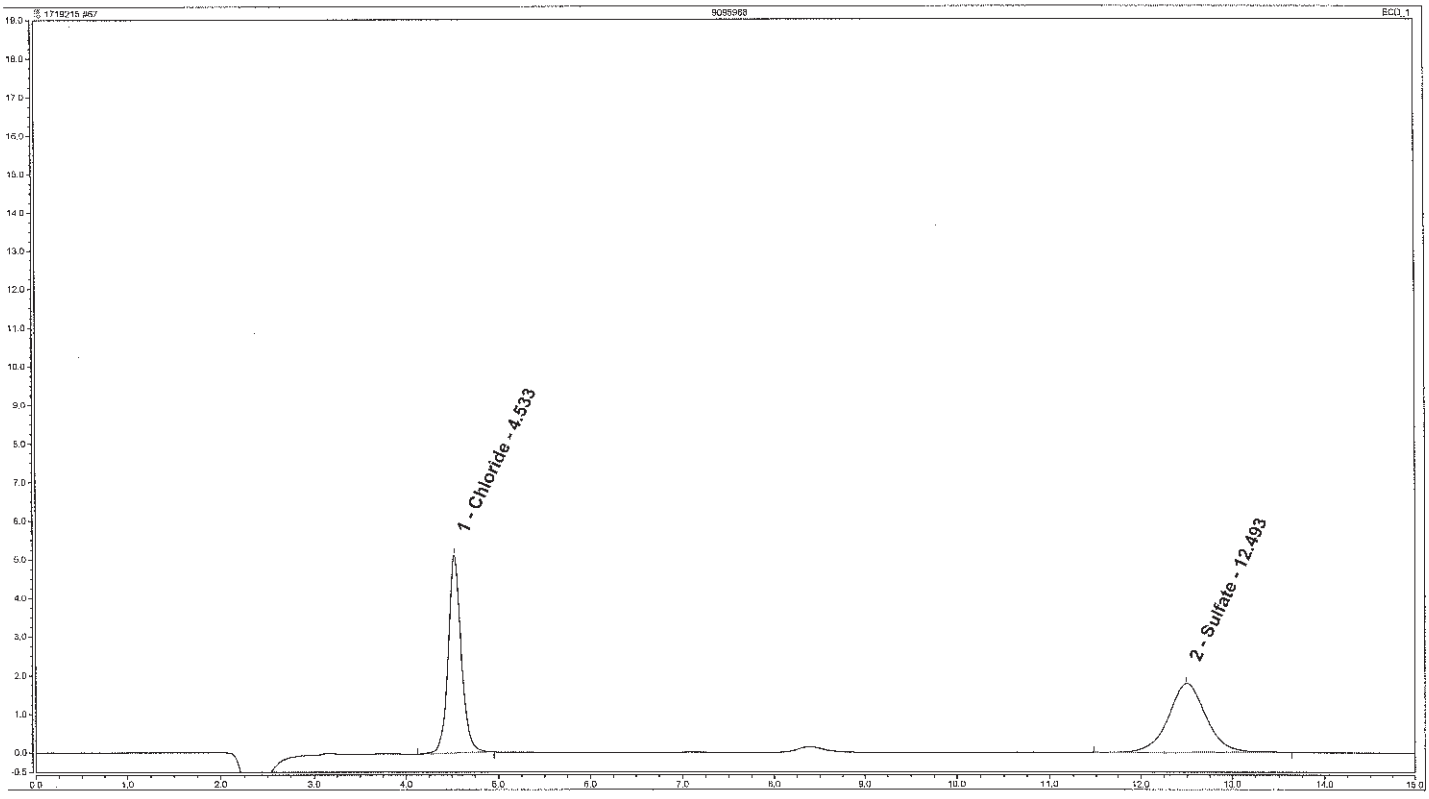
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095968** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 09:59** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **067** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

Cl

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.53 | Chloride | M | 0.847 | 5.119 | 37.7415 |
| 2 | 12.49 | Sulfate | M | 0.854 | 1.796 | 55.9841 |
| | | TOTAL: | | 1.70 | 6.92 | 93.73 |




**Analyst:** ZWE 24932

**Verifier:**

**Date:** 7-12-17

**Date:** JUL 14 2017

Sandra J. Miller
Chemist

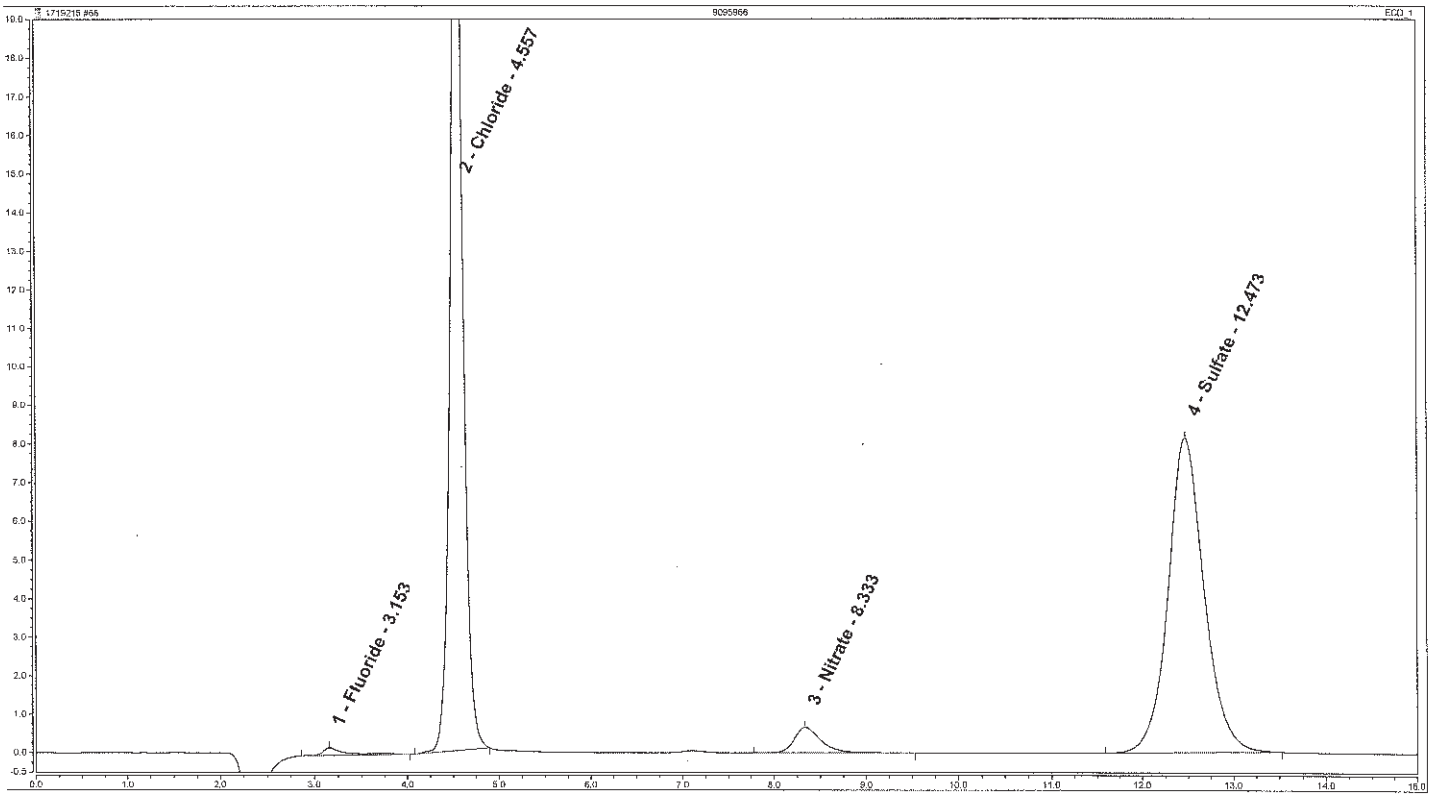
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095966** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 10:15** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **068** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.057 | 0.199 | 0.5155 |
| 2 | 4.56 | Chloride | M | 3.943 | 25.557 | 42.6047 |
| 3 | 8.33 | Nitrate | M | 0.223 | 0.656 | 1.2420 |
| 4 | 12.47 | Sulfate | M | 3.729 | 8.140 | 57.7119 |
| | | TOTAL: | | 7.95 | 34.55 | 102.07 |

$Br, SO_4$




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:**

**Date:** Sandra J. Miller
Chemist

JUL 14 2017

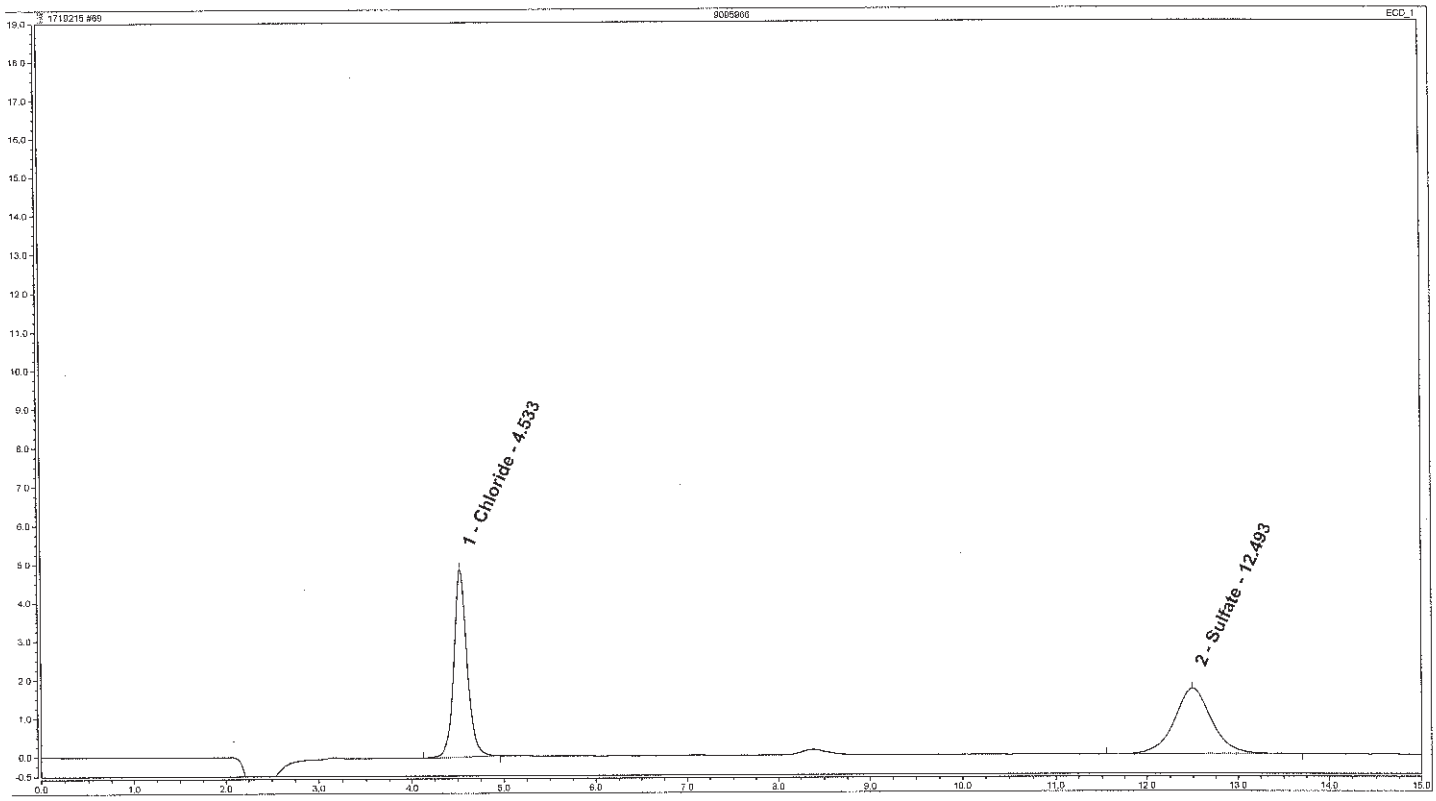
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9095966** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17192249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 10:31** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **069** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

Cl

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.53 | Chloride | M | 0.806 | 4.877 | 36.0085 |
| 2 | 12.49 | Sulfate | M | 0.811 | 1.707 | 53.3950 |
| | | TOTAL: | | 1.62 | 6.58 | 89.40 |




**Analyst:** ZWE 24932

**Verifier:**

**Date:** 7-12-17

**Date:**

Sandra J. Miller
Chemist

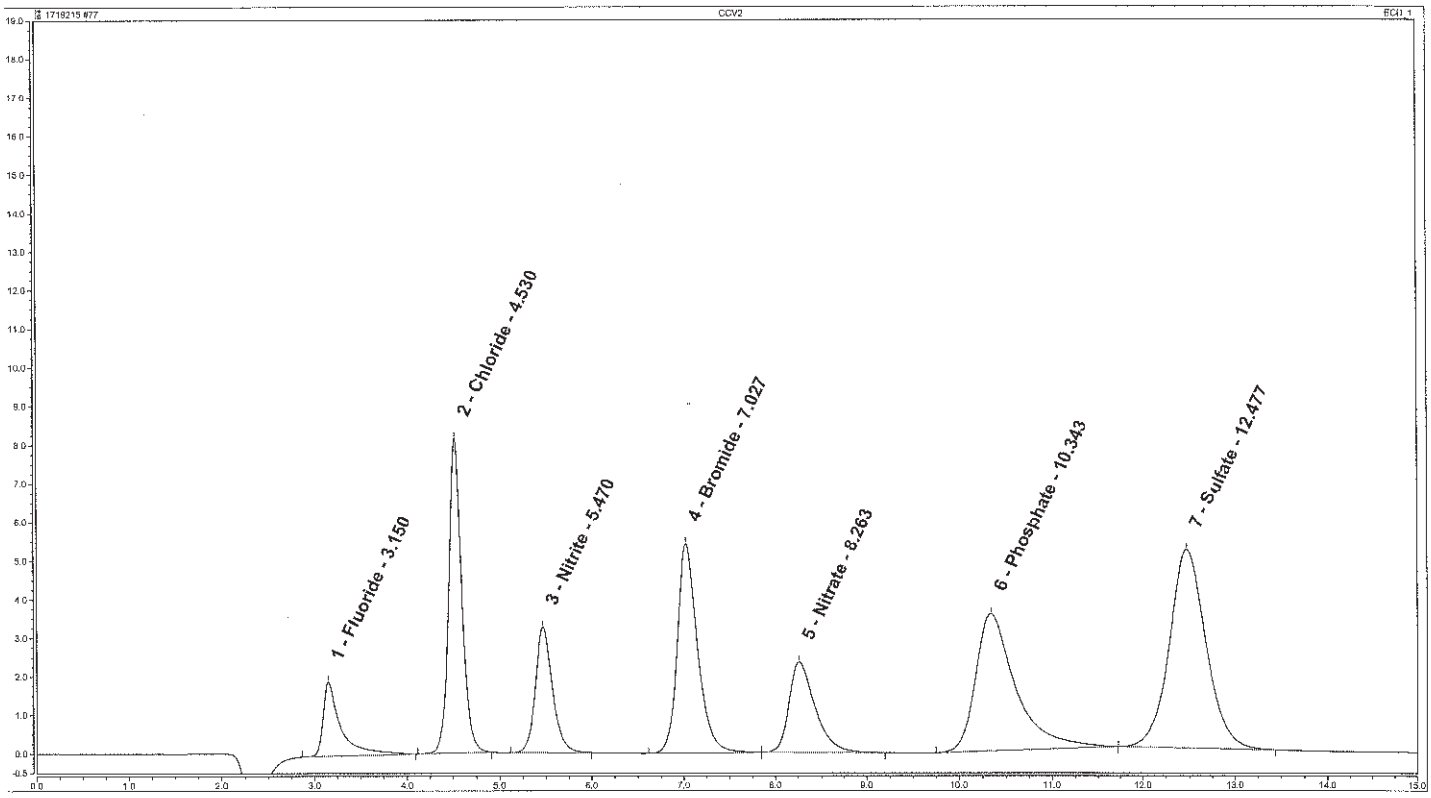
JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 12:41** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **077** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.436 | 1.921 | 0.7726 |
| 2 | 4.53 | Chloride | M | 1.328 | 8.159 | 2.9174 |
| 3 | 5.47 | Nitrite | M | 0.688 | 3.248 | 0.7479 |
| 4 | 7.03 | Bromide | M | 1.400 | 5.405 | 7.4115 |
| 5 | 8.26 | Nitrate | M | 0.757 | 2.329 | 0.7562 |
| 6 | 10.34 | Phosphate | M | 1.757 | 3.535 | 6.6542 |
| 7 | 12.48 | Sulfate | M | 2.345 | 5.111 | 7.3331 |
| | | TOTAL: | | 8.71 | 29.71 | 26.59 |




**Analyst:** ZWE 24932

**Date:** 7-12-17

**Verifier:** Sandra J. Miller

**Date:** Sandra J. Miller
Chemist

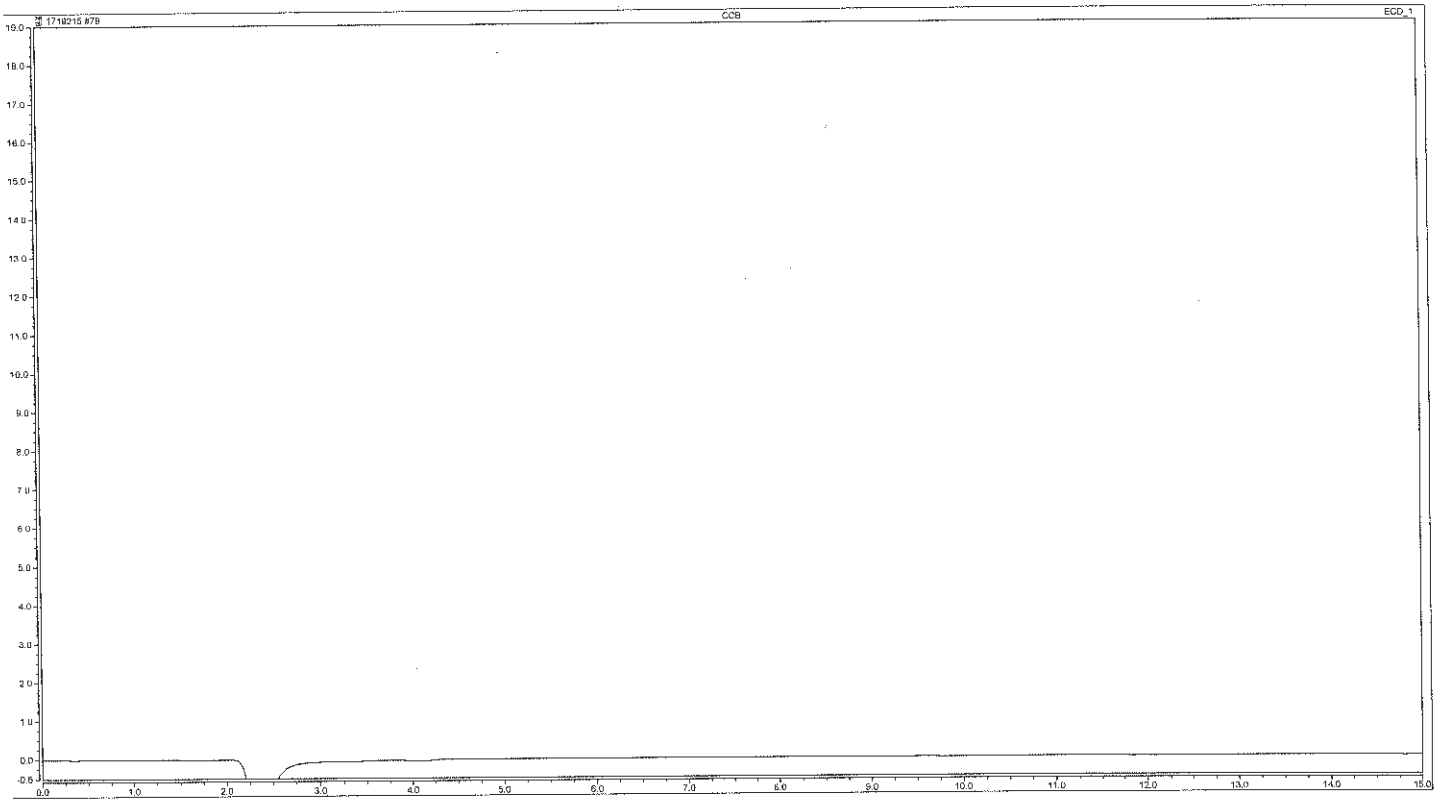
JUL 14 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/12/2017 / 12:57** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **078** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719215** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 24432

**Date:** 7-12-17

**Verifier:**

**Date:**

Sandra J. Miller
Chemist

JUL 14 2017

# Instrumental Water Quality Report

Analyte: Nitrate-N
Run Start Date/Time: 7/16/2017 11:48:48AM
Instrument Name: 07411

## Calibration Information

Curve Information Location:
Book # 254061
Page # 45

| Sample Names | Volts | Detected Result | True Result |
|---|---|---|---|
| S1 | 668357.8000 | ~~4.00000~~ 3.9644 | 4 |
| S2 | 513019.1000 | 3.00000 3.0406 | 3 |
| S3 | 174026.2000 | 1.00000 1.0346 | 1 |
| S4 | 85603.0000 | 0.50000 0.4987 | 0.5 |
| S5 | 33392.7000 | 0.20000 0.1888 | 0.2 |
| S6 | 16594.9000 | 0.10000 0.0883 | 0.1 |
| S7 | 952.8000 | ~~0.00000~~ -0.0043 | - |

Number of Calibrants: 7
Correlation Coefficient: 0.99975
Y-Intercept: -0.01042
Slope: 0.00001

## QC Information

| QC Names | Units | True Values | QC Ranges |
|---|---|---|---|
| ICV | mg/L | 2.5 | 2.2375 - 2.76 |
| ICB/CCB | mg/L | 0 | 0 - 0.04 |
| CCV2 | mg/L | 2.5 | 2.2375 - 2.76 |
| PB Waters | mg/L | 0 | 0 - 0.04 |
| LCS Waters | mg/L | 2.5 | 2.25 - 2.75 |

Analyst: [signature] Date: 7/16/17

Verifier: [signature] Date: 7/17/17

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| SYNC | 1 | | | 7/16/2017 11:48:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 679807.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| Carryov | 2 | | | 7/16/2017 11:50:38AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 2728.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 3 | | | 7/16/2017 11:52:28AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 737.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S1 | 4 | | | 7/16/2017 11:54:18AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 4.00000 | | 668357.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S2 | 5 | | | 7/16/2017 11:56:08AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.00000 | | 513019.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S3 | 6 | | | 7/16/2017 11:57:58AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.00000 | | 174026.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S4 | 7 | | | 7/16/2017 11:59:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.50000 | | 85603.00 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S5 | 8 | | | 7/16/2017 12:01:38PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.20000 | | 33392.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S6 | 9 | | | 7/16/2017 12:03:28PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.10000 | | 16594.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S7 | 10 | | | 7/16/2017 12:05:18PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 952.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 11 | | | 7/16/2017 12:07:08PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00420 | | 1042.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 12 | | | 7/16/2017 12:08:58PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00770 | | 453.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 13 | | | 7/16/2017 12:10:48PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.18150 | | 368557.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 14 | | | 7/16/2017 12:12:38PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00210 | | 1397.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 15 | | | 7/16/2017 12:14:28PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.15800 | | 364604.60 | 1.0000 | 1.0 | 1 | 99 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 16 | | | 7/16/2017 12:16:18PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00330 | | 1200.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 17 | | | 7/16/2017 12:18:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00670 | | 626.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICV | 18 | | | 7/16/2017 12:19:59PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.52670 | | 426604.60 | 1.0000 | 1.0 | 1 | 101 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICB | 19 | | | 7/16/2017 12:21:49PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00500 | | 914.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 20 | B | 17197106101A | 7/16/2017 12:23:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01050 | -0.011 | -11.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 21 | Q | 17197106101A | 7/16/2017 12:25:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.54890 | 2.549 | 430332.10 | 1.0000 | 1.0 | 1 | 102 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091900 | 22 | R | 17197106101A | 7/16/2017 12:27:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.56795 | 5.136 | 433538.50 | 1.0000 | 1.0 | 2 | 101 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091900 | 23 | R | 17197106101A | 7/16/2017 12:29:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.56370 | 5.127 | 432824.60 | 1.0000 | 1.0 | 2 | 256 | 2 | ☐ |

Comments: Analyst Decision Sec 22

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091900 | 24 | U | 17197106101A | 7/16/2017 12:30:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.56095 | 3.122 | 264221.00 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091898 | 25 | | 17197106101A | 7/16/2017 12:32:49PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.03980 | 2.080 | 176588.10 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091697 | 26 | | 17197106101A | 7/16/2017 12:34:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.07780 | 5.389 | 182980.40 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091947 | 27 | | 17197106101A | 7/16/2017 12:36:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.43235 | 2.865 | 242592.60 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091899 | 28 | | 17197106101A | 7/16/2017 12:38:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.08730 | 5.436 | 184576.90 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091875 | 29 | | 17197106101A | 7/16/2017 12:40:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.38778 | 6.939 | 235101.70 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 30 | | | 7/16/2017 12:41:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.54940 | | 430415.00 | 1.0000 | 1.0 | 1 | 102 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 1 | 31 | | | 7/16/2017 12:43:49PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00360 | | 1147.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9097337 | 32 | | 17197106101A | 7/16/2017 12:45:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.31740 | 0.317 | 55127.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091893 | 33 | | 17197106101A | 7/16/2017 12:47:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.42550 | 1.426 | 241442.20 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091874 | 34 | | 17197106101A | 7/16/2017 12:49:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.09692 | 5.485 | 186192.70 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091897 | 35 | | 17197106101A | 7/16/2017 12:51:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.43080 | 2.862 | 242331.60 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091466 | 36 | U | 17197106101B | 7/16/2017 12:52:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.00480 | 2.005 | 338844.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091466 | 37 | D | 17197106101B | 7/16/2017 12:54:49PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 1.98200 | 1.982 | 335011.70 | 1.0000 | 1.0 | 1 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091466 | 38 | R | 17197106101B | 7/16/2017 12:56:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.93750 | 2.938 | 495684.30 | 1.0000 | 1.0 | 1 | 93 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091526 | 39 | | 17197106101B | 7/16/2017 12:58:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.31985 | 2.640 | 223678.90 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091888 | 40 | | 17197106101B | 7/16/2017 1:00:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.86750 | 1.868 | 315758.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9097411 | 41 | | 17197106101B | 7/16/2017 1:02:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.25790 | 1.258 | 213266.80 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 42 | | | 7/16/2017 1:03:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.46690 | | 416549.70 | 1.0000 | 1.0 | 1 | 99 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 2 | 43 | | | 7/16/2017 1:05:49PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00600 | | 747.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9097414 | 44 | | 17197106101B | 7/16/2017 1:07:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.86800 | 4.340 | 147701.00 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091892 | 45 | | 17197106101B | 7/16/2017 1:09:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00360 | -0.004 | 1144.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9097418 | 46 | | 17197106101B | 7/16/2017 1:11:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.04640 | 2.046 | 345842.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9097423 | 47 | | 17197106101B | 7/16/2017 1:13:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.14762 | 15.738 | 531010.90 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9097416 | 48 | | 17197106101B | 7/16/2017 1:14:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.69680 | 2.697 | 455207.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9094286 | 49 | | 17197106101B | 7/16/2017 1:16:49PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.14940 | 0.149 | 26873.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 50 | B | 17197106102A | 7/16/2017 1:18:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01130 | -0.011 | -142.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 51 | Q | 17197106102A | 7/16/2017 1:20:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.51130 | 2.511 | 424017.80 | 1.0000 | 1.0 | 1 | 100 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090054 | 52 | U | 17197106102A | 7/16/2017 1:22:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.79948 | 19.987 | 136181.90 | 1.0000 | 1.0 | 25 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090054 | 53 | D | 17197106102A | 7/16/2017 1:24:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 0.78713 | 19.678 | 134104.00 | 1.0000 | 1.0 | 25 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 54 | | | 7/16/2017 1:25:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.37990 | | 401917.50 | 1.0000 | 1.0 | 1 | 95 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 3 | 55 | | | 7/16/2017 1:27:49PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00360 | | 1152.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090054 | 56 | R | 17197106102A | 7/16/2017 1:29:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.78186 | 44.546 | 301363.50 | 1.0000 | 1.0 | 25 | 98 | 25 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091459 | 57 | | 17197106102A | 7/16/2017 1:31:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.05860 | 0.059 | 11612.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9094995 | 58 | | 17197106102A | 7/16/2017 1:33:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00610 | 0.006 | 2778.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091566 | 59 | | 17197106102A | 7/16/2017 1:35:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 10.49925 | 209.985 | 1767157.70 | 1.0000 | 1.0 | 20 | ☐ |

Comments: Analyst Decision Over Range SCC 131

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091463 | 60 | | 17197106102A | 7/16/2017 1:36:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.04910 | 1.049 | 178155.90 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091456 | 61 | | 17197106102A | 7/16/2017 1:38:49PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.06540 | 0.065 | 12750.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091457 | 62 | | 17197106102A | 7/16/2017 1:40:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.24620 | 0.246 | 43141.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091460 | 63 | | 17197106102A | 7/16/2017 1:42:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01650 | 0.016 | 4521.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091465 | 64 | | 17197106102A | 7/16/2017 1:44:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00680 | -0.007 | 609.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091461 | 65 | | 17197106102A | 7/16/2017 1:46:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.02420 | 0.024 | 5817.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 66 | | | 7/16/2017 1:47:59PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.43430 | | 411065.00 | 1.0000 | 1.0 | 1 | 97 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 4 | 67 | | | 7/16/2017 1:49:49PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00610 | | 722.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090084 | 68 | U | 17197106102B | 7/16/2017 1:51:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.42168 | 7.108 | 240803.10 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090084 | 69 | D | 17197106102B | 7/16/2017 1:53:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 1.42502 | 7.125 | 241363.20 | 1.0000 | 1.0 | 5 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090084 | 70 | R | 17197106102B | 7/16/2017 1:55:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.41352 | 12.068 | 407576.60 | 1.0000 | 1.0 | 5 | 99 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9099526 | 71 | | 17197106102B | 7/16/2017 1:57:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.62650 | 1.627 | 275244.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9099524 | 72 | | 17197106102B | 7/16/2017 1:58:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00100 | -0.001 | 1586.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091938 | 73 | | 17197106102B | 7/16/2017 2:00:49PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01950 | 0.020 | 5025.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091458 | 74 | | 17197106102B | 7/16/2017 2:02:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.04350 | 0.043 | 9058.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091455 | 75 | | 17197106102B | 7/16/2017 2:04:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.53890 | 0.539 | 92361.90 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090110 | 76 | | 17197106102B | 7/16/2017 2:06:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.73130 | 0.731 | 124713.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091464 | 77 | | 17197106102B | 7/16/2017 2:08:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09050 | 0.091 | 16977.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 78 | | | 7/16/2017 2:09:59PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.37920 | | 401799.80 | 1.0000 | 1.0 | 1 | 95 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 5 | 79 | | | 7/16/2017 2:11:49PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00340 | | 1173.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091454 | 80 | | 17197106102B | 7/16/2017 2:13:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.14840 | 0.148 | 26704.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091462 | 81 | | 17197106102B | 7/16/2017 2:15:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.77240 | 0.772 | 131619.90 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 82 | B | 17197106103A | 7/16/2017 2:17:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00770 | -0.008 | 456.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 83 | Q | 17197106103A | 7/16/2017 2:19:09PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.44980 | 2.450 | 413683.90 | 1.0000 | 1.0 | 1 | 98 | 2.5 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091950 | 84 | U | 17197106103A | 7/16/2017 2:20:59PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.15610 | 6.312 | 532437.60 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091950 | 85 | D | 17197106103A | 7/16/2017 2:22:49PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 3.17075 | 6.341 | 534901.70 | 1.0000 | 1.0 | 2 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091950 | 86 | R | 17197106103A | 7/16/2017 2:24:39PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 4.13810 | 8.276 | 697558.60 | 1.0000 | 1.0 | 2 | 98 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090046 | 87 | | 17197106103A | 7/16/2017 2:26:29PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.96860 | 1.969 | 332761.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091952 | 88 | | 17197106103A | 7/16/2017 2:28:19PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.69790 | 2.698 | 455389.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091951 | 89 | | 17197106103A | 7/16/2017 2:30:10PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.47980 | 0.480 | 82426.80 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 90 | | | 7/16/2017 2:32:00PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.46130 | | 415611.80 | 1.0000 | 1.0 | 1 | 98 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 6 | 91 | | | 7/16/2017 2:33:50PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00420 | | 1047.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9092076 | 92 | | 17197106103A | 7/16/2017 2:35:40PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00540 | -0.005 | 843.20 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9092081 | 93 | | 17197106103A | 7/16/2017 2:37:30PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00440 | -0.004 | 1009.20 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9092082 | 94 | | 17197106103A | 7/16/2017 2:39:20PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.55808 | 55.808 | 95590.50 | 1.0000 | 1.0 | 100 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090109 | 95 | | 17197106103A | 7/16/2017 2:41:10PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00780 | 0.008 | 3061.80 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9090101 | 96 | | 17197106103A | 7/16/2017 2:43:00PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.54196 | 30.839 | 261027.10 | 1.0000 | 1.0 | 20 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9089846 | 97 | | 17197106103A | 7/16/2017 2:44:50PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.40895 | 4.818 | 406808.10 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091577 | 98 | U | 17197106103B | 7/16/2017 2:46:40PM | CQ694 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01200 | -0.012 | -260.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091577 | 99 | D | 17197106103B | 7/16/2017 2:48:30PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| -0.01520 | -0.015 | -798.10 | 1.0000 | 1.0 | 1 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091577 | 100 | R | 17197106103B | 7/16/2017 2:50:20PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.01210 | 1.012 | 171924.90 | 1.0000 | 1.0 | 1 | 101 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091418 | 101 | | 17197106103B | 7/16/2017 2:52:10PM | CS578 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01290 | -0.013 | -410.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 102 | | | 7/16/2017 2:54:00PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.40280 | | 405774.10 | 1.0000 | 1.0 | 1 | 96 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 7 | 103 | | | 7/16/2017 2:55:50PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00490 | | 930.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091579 | 104 | | 17197106103B | 7/16/2017 2:57:40PM | CQ694 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00670 | -0.007 | 623.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091417 | 105 | | 17197106103B | 7/16/2017 2:59:30PM | CS578 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00310 | -0.003 | 1233.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091415 | 106 | | 17197106103B | 7/16/2017 3:01:20PM | CS578 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00560 | 0.006 | 2689.20 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091419 | 107 | | 17197106103B | 7/16/2017 3:03:10PM | CS578 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.02380 | 0.024 | 5757.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091416 | 108 | | 17197106103B | 7/16/2017 3:05:00PM | CS578 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00760 | 0.008 | 3027.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9094155 | 109 | | 17197106103B | 7/16/2017 3:06:50PM | CQ697 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01140 | -0.011 | -165.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9094151 | 110 | | 17197106103B | 7/16/2017 3:08:40PM | CQ697 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01360 | -0.014 | -534.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9094297 | 111 | | 17197106103B | 7/16/2017 3:10:30PM | RKT03 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01322 | 0.066 | 3974.30 | 1.0000 | 1.0 | 5 | ☑ |

3706

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 112 | B | 17197118101A | 7/16/2017 3:12:20PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01650 | -0.016 | -1023.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 113 | Q | 17197118101A | 7/16/2017 3:14:10PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.41400 | 2.414 | 407651.60 | 1.0000 | 1.0 | 1 | 97 | 2.5 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 114 | | | 7/16/2017 3:16:00PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.33360 | | 394138.70 | 1.0000 | 1.0 | 1 | 93 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 8 | 115 | | | 7/16/2017 3:17:50PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00490 | | 928.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9095972 | 116 | U | 17197118101A | 7/16/2017 3:19:40PM | KR184 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.99690 | 0.997 | 169380.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9095972 | 117 | D | 17197118101A | 7/16/2017 3:21:30PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 1.00100 | 1.001 | 170057.80 | 1.0000 | 1.0 | 1 | 0 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9095972 | 118 | R | 17197118101A | 7/16/2017 3:23:20PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.01530 | 2.015 | 340619.60 | 1.0000 | 1.0 | 1 | 102 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9095966 | 119 | | 17197118101A | 7/16/2017 3:25:10PM | KR184 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.08840 | 1.088 | 184763.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9095968 | 120 | | 17197118101A | 7/16/2017 3:27:00PM | KR184 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.08210 | 1.082 | 183704.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9095970 | 121 | | 17197118101A | 7/16/2017 3:28:50PM | KR184 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.71730 | 0.717 | 122354.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9086170 | 122 | | 17197118101A | 7/16/2017 3:30:40PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00120 | -0.001 | 1557.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9086171 | 123 | | 17197118101A | 7/16/2017 3:32:30PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.75980 | 1.760 | 297661.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9096066 | 124 | | 17197118101A | 7/16/2017 3:34:20PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.12680 | 1.127 | 191216.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9096067 | 125 | | 17197118101A | 7/16/2017 3:36:10PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.65680 | 1.657 | 280342.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 126 | | | 7/16/2017 3:38:00PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.30550 | | 389408.30 | 1.0000 | 1.0 | 1 | 92 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 9 | 127 | | | 7/16/2017 3:39:50PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00480 | | 950.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098546 | 128 | | 17197118101A | 7/16/2017 3:41:41PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01820 | 0.018 | 4804.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098547 | 129 | | 17197118101A | 7/16/2017 3:43:31PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.69090 | 1.691 | 286063.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091900 | 130 | D | 17197106101A | 7/16/2017 3:45:21PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 1.47960 | 2.959 | 250544.40 | 1.0000 | 1.0 | 2 | 5 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091566 | 131 | | 17197106102A | 7/16/2017 3:47:10PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.02140 | 404.279 | 341641.20 | 1.0000 | 1.0 | 200 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 132 | | | 7/16/2017 3:49:00PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.34460 | | 395992.30 | 1.0000 | 1.0 | 1 | 94 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 10 | 133 | | | 7/16/2017 3:50:50PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00680 | | 602.00 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 134 | | | 7/16/2017 3:52:40PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.77130 | | 299593.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 135 | | | 7/16/2017 3:54:30PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00670 | | 617.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 136 | | | 7/16/2017 3:56:20PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 1.77430 | | 300086.10 | 1.0000 | 1.0 | 1 | 100 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 137 | | | 7/16/2017 3:58:10PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01000 | | 62.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 138 | | | 7/16/2017 4:00:00PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01540 | | -845.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 139 | | | 7/16/2017 4:01:50PM | | TNO3 |

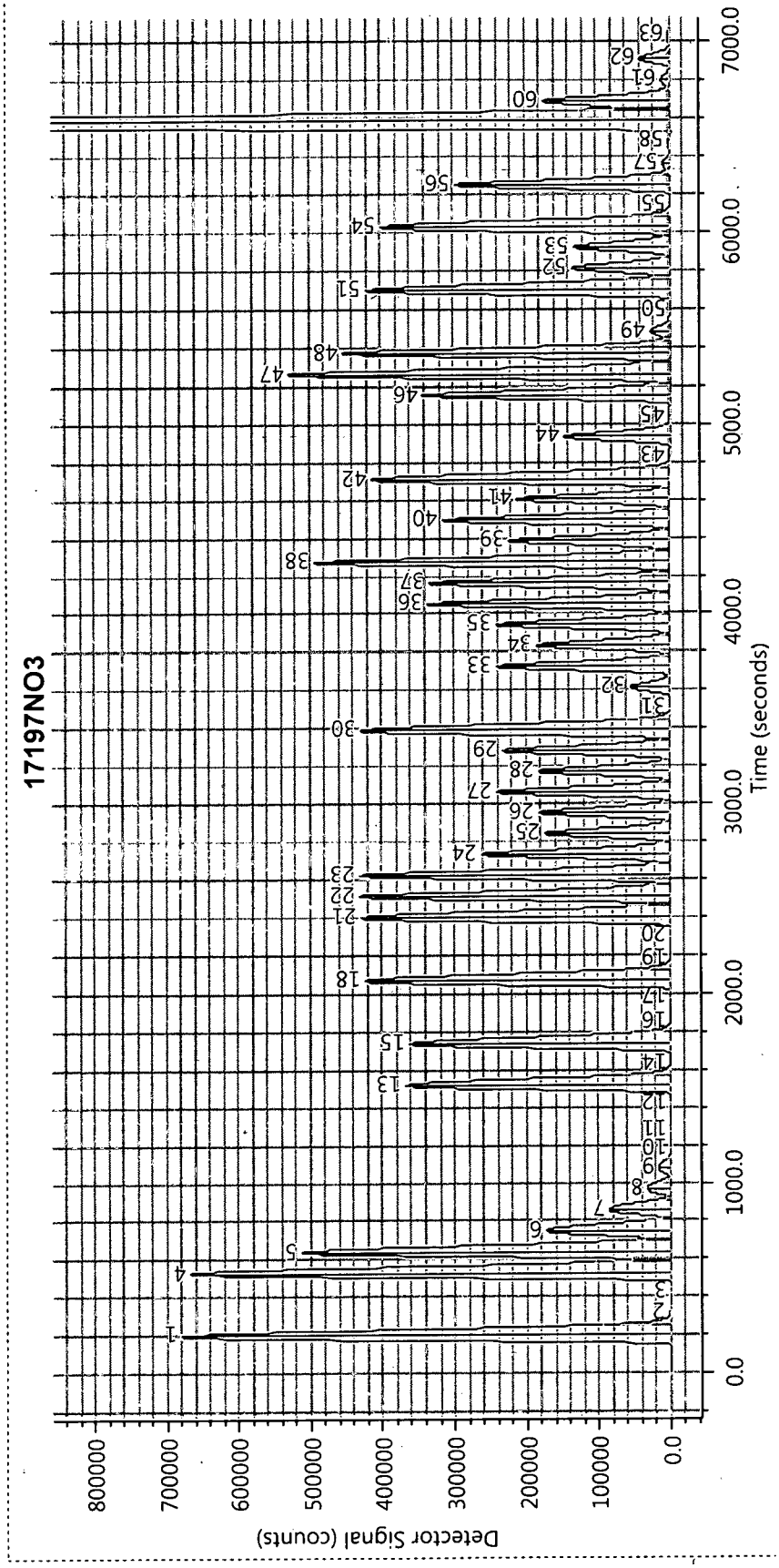
| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01690 | | -1085.70 | 1.0000 | 1.0 | 1 | ☐ |

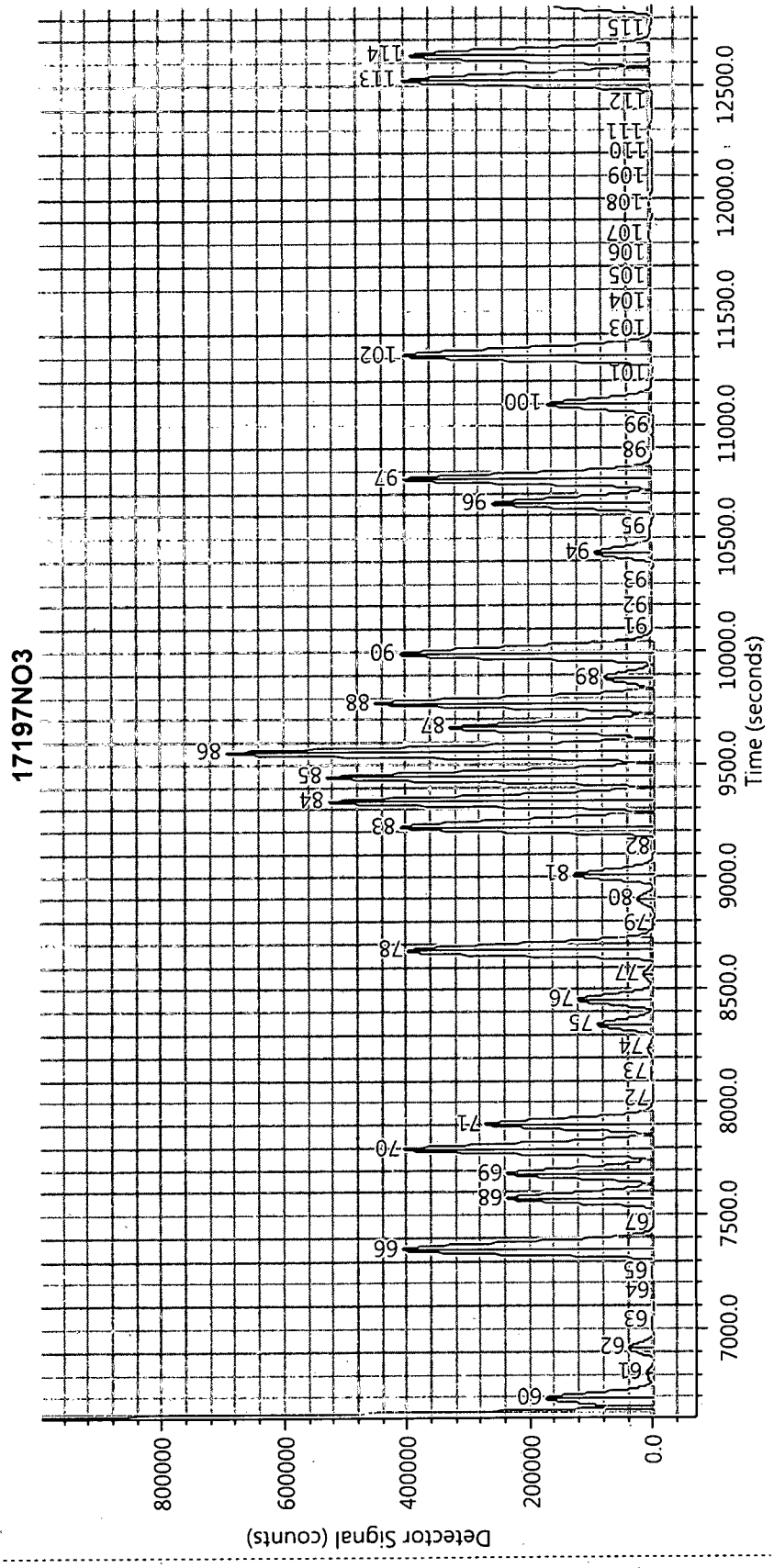
Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 140 | | | 7/16/2017 4:03:40PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01770 | | -1223.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:


17197NO3
Detector Signal (counts)
800000
700000
600000
500000
400000
300000
200000
100000
0.0
0.0
1000.0
2000.0
3000.0
4000.0
5000.0
6000.0
7000.0
Time (seconds)


17197NO3
Detector Signal (counts)
800000
600000
400000
200000
0.0
7000.0
7500.0
8000.0
8500.0
9000.0
9500.0
10000.0
10500.0
11000.0
11500.0
12000.0
12500.0
Time (seconds)
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
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89
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92
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95
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100
101
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103
104
105
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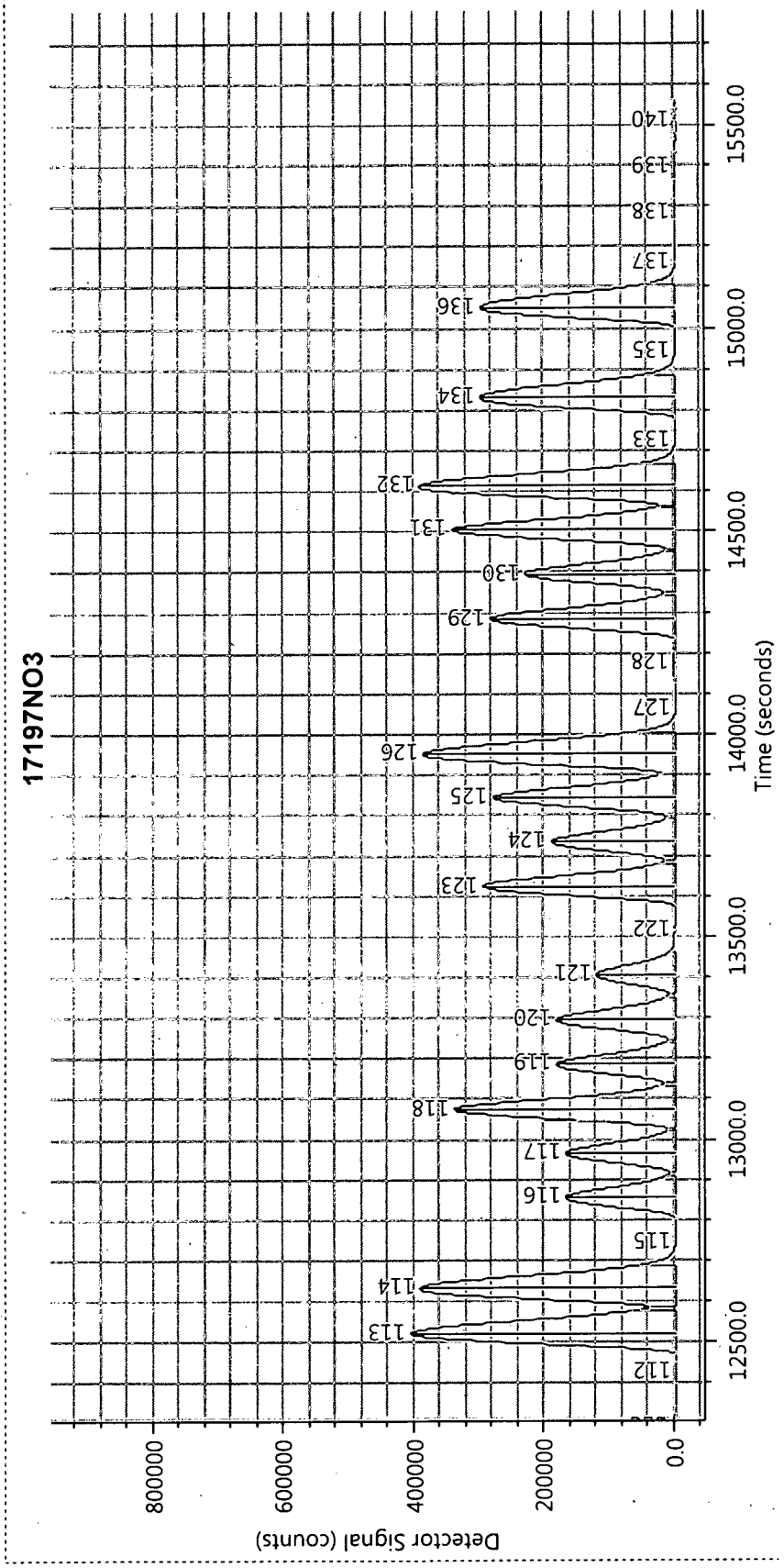
114
115


17197NO3
Detector Signal (counts)
800000
600000
400000
200000
0.0
12500.0
13000.0
13500.0
14000.0
14500.0
15000.0
15500.0
Time (seconds)
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140

# FlowView - Result

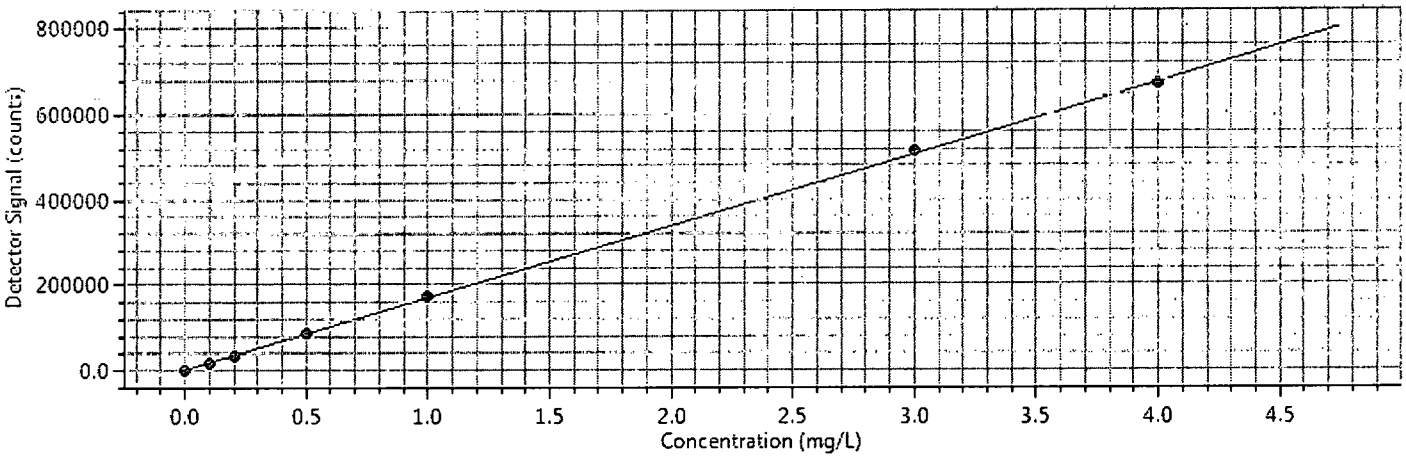
InstrumentID: A452837411
Operator ID: 2373
File Version: 110
Created On: 7/16/2017 11:48:34 AM
Last Modified On: 07/16/2017 16:12:09

Calibration Results - Channel2

## Calibration Summary

| | | | |
|---|---|---|---|
| Curve Fit = | Linear | | |
| R2 = | 0.99974949 | a = | n/a |
| RF = | 5.947213E-006 | b = | n/a |
| Offset = | -0.01041773 | c = | n/a |
| HLCAVG = | 0.00000000 | LHCAVG = | 0.00000000 |

## Calibration Details




| Name | Type | Std Conc(mg/L) | Avg Height | Calc Avg Conc (mg/L) | %RSD | Flags |
|---|---|---|---|---|---|---|
| S1 | STD1 | 4.0000 | 668357.8 | 3.9644 | 0.0 | |
| S2 | STD2 | 3.0000 | 513019.1 | 3.0406 | 0.0 | |
| S3 | STD3 | 1.0000 | 174026.2 | 1.0246 | 0.0 | |
| S4 | STD4 | 0.5000 | 85603.0 | 0.4987 | 0.0 | |
| S5 | STD5 | 0.2000 | 33392.7 | 0.1882 | 0.0 | |
| S6 | STD6 | 0.1000 | 16594.9 | 0.0883 | 0.0 | |
| S7 | STD7 | 0.0000 | 952.8 | -0.0048 | 0.0 | |

# Wet Chemistry Data

# Case Narrative/Conformance Summary

# Wet Chemistry

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

## Water Quality

**Fraction: Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9095966 | GW236-490-173 | X | | 1 | |
| 9095968 | GW236-490-573 | X | | 1 | Field Duplicate Sample |
| 9095970 | GW236-461-173 | X | | 1 | |
| 9095972 | GW236-519-173 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

## Water Quality

**Fraction: Wet Chemistry**

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# QC Summary

# Wet Chemistry

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# Quality Control Reference List
## Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR184**

**Fraction: Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Bicarbonate Alkalinity | Carbonate Alkalinity | Total Alkalinity to pH 4.5 |
|---|---|---|---|---|---|
| 17193003202A | 9095966 | 07/12/2017 20:23:00 | X | X | X |
| | 9095968 | 07/12/2017 20:16:00 | X | X | X |
| | 9095970 | 07/12/2017 21:45:00 | X | X | X |
| | 9095972 | 07/12/2017 21:22:00 | X | X | X |
| | P003202B | 07/12/2017 18:49:00 | | | X |
| | P003202Q | 07/12/2017 18:55:00 | | | X |

**Quality Control Summary**
**Method Blank**
**Water Quality**
**SDG: KR184**
**Matrix: LIQUID**

**Fraction: Wet Chemistry**

| 17193003202A / P003202B<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | TI | 07/12/17 | N.D. | mg/l as CaCO3 | 1.7 | 5.0 | 5.0 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR184**
**Matrix: LIQUID**

## Water Quality
**Fraction: Wet Chemistry**

| LCS: P003202Q | Batch: **17193003202A** (Sample number(s): 9095966, 9095968, 9095970, 9095972 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l as CaCO3** | **LCS Conc mg/l as CaCO3** | **LCSD Conc mg/l as CaCO3** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Alkalinity to pH 4.5 | TI | 188 | 182.7 | NA | 97 | NA | 77-114 | NA | NA |

# Raw Data

# Wet Chemistry

**Fraction: Wet Chemistry**

| 12149: Bicarbonate Alkalinity<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bicarbonate Alkalinity | 1.7 | 5.0 | 5.0 | mg/l as CaCO3 |

| 12148: Carbonate Alkalinity<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Carbonate Alkalinity | 1.7 | 5.0 | 5.0 | mg/l as CaCO3 |

| 12150: Total Alkalinity to pH 4.5<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | 1.7 | 5 | 5.0 | mg/l as CaCO3 |

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# Water Quality Run Report

**Run Name: 20170712-32** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Analysis Name | Units |
|---|---|
| Bicarbonate | mg/l as CaCO3 |
| Carbonate | mg/l as CaCO3 |
| Phenolphthalein Alkalinity | mg/l as CaCO3 |
| Specific Conductance | umhos/cm |
| Temperature of pH | Degrees C |
| Total Alkalinity | mg/l as CaCO3 |
| pH | Std. Units |

| Analysis Name | QC Check | True Value | Acceptance Range |
|---|---|---|---|
| Specific Conductance | CCVSC1 | 147.00 | 132.30 - 161.70 |
| Specific Conductance | CCVSC2 | 1413.00 | 1271.70 - 1554.30 |
| Specific Conductance | CCVSC3 | 12900.00 | 11610.00 - 14190.00 |
| pH | CCVPH2 | 7.00 | 6.27 - 7.73 |
| pH | CCVPH8 | 8.00 | 7.20 - 8.80 |

| Analysis Name | QC Check | Acceptance Range |
|---|---|---|
| Specific Conductance | CCB | < 5.00 |
| Specific Conductance | PBW | < 5.00 |
| Total Alkalinity | CCB | < 5.00 |
| Total Alkalinity | PBW | < 5.00 |

| Analysis Name | LCS | True Value | Acceptance Range | Lot Information |
|---|---|---|---|---|
| Specific Conductance | LCSSC | 147.00 | 140.39 - 153.47 | 251897P6 |
| Total Alkalinity | LCSAK | 188.00 | 144.76 - 214.32 | 251897P9 |
| pH | LCSPH | 7.00 | 6.62 - 7.38 | G053-09 |

# Water Quality Run Report

**Run Name: 20170712-32** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **Tap** | **107154** | | | 1.00 | 07/12/2017 | 14:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 245.10 | 245.10 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 889.00 | 889.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.04 | 8.04 | | | | |
| Total Alkalinity | 245.10 | 245.10 | | | | |
| Temperature of pH | 23.33 | 23.33 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **107155** | CCV | | 1.00 | 07/12/2017 | 14:44 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.01 | 7.01 | | |
| Temperature of pH | 23.11 | 23.11 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVSC1** | **107156** | CCV | | 1.00 | 07/12/2017 | 14:47 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 144.90 | 144.90 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **107157** | CCB | | 1.00 | 07/12/2017 | 14:54 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.46 | 0.46 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.06 | 0.06 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.94 | 5.94 | | |
| Total Alkalinity | 0.46 | 0.46 | | |
| Temperature of pH | 23.01 | 23.01 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **107158** | B | 17193003201A | 1.00 | 07/12/2017 | 15:00 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.18 | 0.18 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | -0.09 | -0.09 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.60 | 5.60 | | | | |
| Total Alkalinity | 0.18 | 0.18 | Y | Y | | |
| Temperature of pH | 22.86 | 22.86 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **107159** | Q | 17193003201A | 1.00 | 07/12/2017 | 15:07 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 177.49 | 177.49 | | | | |
| Hydroxide | 5.54 | 5.54 | | | | |
| Phenolphthalein Alkali | 94.29 | 94.29 | | | | |
| pH | 10.66 | 10.66 | | Y | | |
| Total Alkalinity | 183.03 | 183.03 | Y | Y | | |
| Temperature of pH | 21.90 | 21.90 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **107160** | Q | 17193003201A | 1.00 | 07/12/2017 | 15:10 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.00 | 7.00 | Y | Y | | |
| Temperature of pH | 22.92 | 22.92 | | | | |

# Water Quality Run Report

**Run Name: 20170712-32** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| LCSSC | 107161 | Q | 17193003201A | 1.00 | 07/12/2017 | 15:13 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Specific Conductance | 146.10 | 146.10 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097079 | 107162 | U | 17193003201A | 1.00 | 005A | 07/12/2017 | 15:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 186.58 | 186.58 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Specific Conductance | 894.00 | 894.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.25 | 7.25 | Y | Y | | |
| Total Alkalinity | 186.58 | 186.58 | Y | Y | | |
| Temperature of pH | 22.81 | 22.81 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097079 | 107163 | R | 17193003201A | 1.00 | 005A | 07/12/2017 | 15:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 221.08 | 221.08 | Y | | | |
| Carbonate | 139.36 | 139.36 | Y | | | |
| Specific Conductance | 1083.00 | 1,083.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 69.68 | 69.68 | Y | | | |
| pH | 9.03 | 9.03 | Y | | | |
| Total Alkalinity | 360.44 | 360.44 | Y | Y | | |
| Temperature of pH | 22.60 | 22.60 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097079 | 107164 | D | 17193003201A | 1.00 | 005A | 07/12/2017 | 15:36 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 186.61 | 186.61 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Specific Conductance | 886.00 | 886.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.26 | 7.26 | Y | Y | | |
| Total Alkalinity | 186.61 | 186.61 | Y | Y | | |
| Temperature of pH | 22.57 | 22.57 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097048 | 107165 | U | 17193003201B | 1.00 | 005A | 07/12/2017 | 15:44 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 91.00 | 91.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 614.00 | 614.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.73 | 7.73 | | | | |
| Total Alkalinity | 91.00 | 91.00 | Y | Y | | |
| Temperature of pH | 22.61 | 22.61 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097048 | 107166 | D | 17193003201B | 1.00 | 005A | 07/12/2017 | 15:51 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 91.54 | 91.54 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 614.00 | 614.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.74 | 7.74 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Total Alkalinity | 91.54 | 91.54 | Y | Y | |
| Temperature of pH | 22.60 | 22.60 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097080 | 107167 | | 17193003201A | 1.00 | 005A | 07/12/2017 | 15:59 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 48.96 | 48.96 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 891.00 | 891.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.23 | 7.23 | | | | |
| Total Alkalinity | 48.96 | 48.96 | Y | Y | | |
| Temperature of pH | 22.64 | 22.64 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107168 | CCV | | 1.00 | 07/12/2017 | 16:03 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.01 | 7.01 | | |
| Temperature of pH | 22.70 | 22.70 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVSC2 | 107169 | CCV | | 1.00 | 07/12/2017 | 16:05 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 1373.00 | 1,373.00 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 107170 | CCB | | 1.00 | 07/12/2017 | 16:13 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.36 | 0.36 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.14 | 0.14 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.84 | 5.84 | | |
| Total Alkalinity | 0.36 | 0.36 | | |
| Temperature of pH | 23.27 | 23.27 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097022 | 107171 | | 17193003201A | 1.00 | 004A | 07/12/2017 | 16:19 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 3.83 | 3.83 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 670.00 | 670.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.05 | 6.05 | | | | |
| Total Alkalinity | 3.83 | 3.83 | Y | Y | | |
| Temperature of pH | 23.19 | 23.19 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9091939 | 107172 | | 17193003201A | 1.00 | 005A | 07/12/2017 | 16:27 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 127.53 | 127.53 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 333.00 | 333.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.12 | 8.12 | Y | Y | | |
| Total Alkalinity | 127.53 | 127.53 | Y | Y | | |
| Temperature of pH | 23.06 | 23.06 | Y | Y | | |

# Water Quality Run Report

**Run Name: 20170712-32** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9097021 | 107173 | | 17193003201A | 1.00 | 004A | 07/12/2017 | 16:34 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 232.32 | 232.32 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 683.00 | 683.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.69 | 7.69 | | | | |
| Total Alkalinity | 232.32 | 232.32 | Y | Y | | |
| Temperature of pH | 22.92 | 22.92 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9088746 | 107174 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 16:41 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.20 | 0.20 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 0.26 | 0.26 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 5.82 | 5.82 | | | | |
| Total Alkalinity | 0.20 | 0.20 | Y | Y | | |
| Temperature of pH | 22.80 | 22.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9091416 | 107175 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 16:52 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 976.01 | 976.01 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1976.00 | 1,976.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.75 | 6.75 | | | | |
| Total Alkalinity | 976.01 | 976.01 | Y | Y | | |
| Temperature of pH | 22.70 | 22.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9091417 | 107176 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 17:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 363.57 | 363.57 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1166.00 | 1,166.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.88 | 6.88 | | | | |
| Total Alkalinity | 363.57 | 363.57 | Y | Y | | |
| Temperature of pH | 22.72 | 22.72 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9091415 | 107177 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 17:09 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 330.70 | 330.70 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 2600.00 | 2,600.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.41 | 6.41 | | | | |
| Total Alkalinity | 330.70 | 330.70 | Y | Y | | |
| Temperature of pH | 22.66 | 22.66 | | | | |

# Water Quality Run Report

**Run Name: 20170712-32** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9091419 | 107178 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 17:17 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 320.90 | 320.90 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 2570.00 | 2,570.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.42 | 6.42 | | | | |
| Total Alkalinity | 320.90 | 320.90 | Y | Y | | |
| Temperature of pH | 22.70 | 22.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9091418 | 107179 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 17:24 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 23.93 | 23.93 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 2670.00 | 2,670.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 5.37 | 5.37 | | | | |
| Total Alkalinity | 23.93 | 23.93 | Y | Y | | |
| Temperature of pH | 22.84 | 22.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9094126 | 107180 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 17:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.51 | 0.51 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Specific Conductance | 0.53 | 0.53 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 5.85 | 5.85 | Y | Y | | |
| Total Alkalinity | 0.51 | 0.51 | Y | Y | | |
| Temperature of pH | 23.04 | 23.04 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107181 | CCV | | 1.00 | 07/12/2017 | 17:35 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.02 | 7.02 | | |
| Temperature of pH | 22.99 | 22.99 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCVSC3 | 107182 | CCV | | 1.00 | 07/12/2017 | 17:38 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 11800.00 | 11,800.00 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCB | 107183 | CCB | | 1.00 | 07/12/2017 | 17:47 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.45 | 0.45 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.30 | 0.30 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.74 | 5.74 | | |
| Total Alkalinity | 0.45 | 0.45 | | |
| Temperature of pH | 22.84 | 22.84 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9094127 | 107184 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 17:53 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.12 | 0.12 | Y | Y | | |

| | | | | |
|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | Y | Y |
| Specific Conductance | 0.06 | 0.06 | Y | Y |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y |
| pH | 5.54 | 5.54 | Y | Y |
| Total Alkalinity | 0.12 | 0.12 | Y | Y |
| Temperature of pH | 22.84 | 22.84 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9096532 | 107185 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 17:59 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.01 | 0.01 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Specific Conductance | 0.14 | 0.14 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 5.51 | 5.51 | Y | Y | | |
| Total Alkalinity | 0.01 | 0.01 | Y | Y | | |
| Temperature of pH | 22.80 | 22.80 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9096531 | 107186 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 18:06 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.44 | 0.44 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Specific Conductance | 0.20 | 0.20 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.15 | 6.15 | Y | Y | | |
| Total Alkalinity | 0.44 | 0.44 | Y | Y | | |
| Temperature of pH | 22.80 | 22.80 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094123 | 107187 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 18:13 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 24.70 | 24.70 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 139.50 | 139.50 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.15 | 7.15 | Y | Y | | |
| Total Alkalinity | 24.70 | 24.70 | Y | Y | | |
| Temperature of pH | 22.90 | 22.90 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094122 | 107188 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 18:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 18.07 | 18.07 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 131.30 | 131.30 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.09 | 7.09 | Y | Y | | |
| Total Alkalinity | 18.07 | 18.07 | Y | Y | | |
| Temperature of pH | 22.95 | 22.95 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094125 | 107189 | | 17193003201A | 1.00 | 070A | 07/12/2017 | 18:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1207.66 | 1,207.66 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Specific Conductance | 4110.00 | 4,110.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y |
| pH | 7.50 | 7.50 | Y | Y |
| Total Alkalinity | 1207.66 | 1,207.66 | Y | Y |
| Temperature of pH | 23.09 | 23.09 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9096324** | **107190** | | 17193003201A | 1.00 | 070A | 07/12/2017 | 18:41 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 183.99 | 183.99 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1327.00 | 1,327.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.03 | 8.03 | | | | |
| Total Alkalinity | 183.99 | 183.99 | Y | Y | | |
| Temperature of pH | 23.41 | 23.41 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **107191** | B | 17193003202A | 1.00 | 07/12/2017 | 18:49 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.45 | 0.45 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 0.10 | 0.10 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.81 | 5.81 | | | | |
| Total Alkalinity | 0.45 | 0.45 | Y | Y | | |
| Temperature of pH | 23.30 | 23.30 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **107192** | Q | 17193003202A | 1.00 | 07/12/2017 | 18:55 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 5.48 | 5.48 | | | | |
| Carbonate | 177.22 | 177.22 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 88.61 | 88.61 | | | | |
| pH | 10.55 | 10.55 | | Y | | |
| Total Alkalinity | 182.70 | 182.70 | Y | Y | | |
| Temperature of pH | 23.01 | 23.01 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **107193** | Q | 17193003202A | 1.00 | 07/12/2017 | 19:00 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.01 | 7.01 | Y | Y | | |
| Temperature of pH | 22.98 | 22.98 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **107194** | CCV | | 1.00 | 07/12/2017 | 19:05 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.00 | 7.00 | | |
| Temperature of pH | 22.86 | 22.86 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVSC2** | **107195** | CCV | | 1.00 | 07/12/2017 | 19:08 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 1368.00 | 1,368.00 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **107196** | CCB | | 1.00 | 07/12/2017 | 19:16 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.33 | 0.33 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.24 | 0.24 | | |

| | | |
|---|---|---|
| Hydroxide | 0.00 | 0.00 |
| Phenolphthalein Alkali | 0.00 | 0.00 |
| pH | 5.86 | 5.86 |
| Total Alkalinity | 0.33 | 0.33 |
| Temperature of pH | 22.95 | 22.95 |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| LCSSC | 107197 | Q | 17193003202A | 1.00 | 07/12/2017 | 19:18 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Specific Conductance | 143.30 | 143.30 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094121 | 107198 | U | 17193003202A | 1.00 | 070A | 07/12/2017 | 19:24 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 58.39 | 58.39 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Specific Conductance | 156.70 | 156.70 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 8.26 | 8.26 | Y | Y | | |
| Total Alkalinity | 58.39 | 58.39 | Y | Y | | |
| Temperature of pH | 23.01 | 23.01 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094121 | 107199 | R | 17193003202A | 1.00 | 070A | 07/12/2017 | 19:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 47.19 | 47.19 | Y | | | |
| Carbonate | 172.41 | 172.41 | Y | | | |
| Specific Conductance | 469.00 | 469.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 86.20 | 86.20 | Y | | | |
| pH | 10.17 | 10.17 | Y | | | |
| Total Alkalinity | 219.60 | 219.60 | Y | Y | | |
| Temperature of pH | 23.12 | 23.12 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094121 | 107200 | D | 17193003202A | 1.00 | 070A | 07/12/2017 | 19:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 58.07 | 58.07 | Y | | | |
| Carbonate | 1.03 | 1.03 | Y | | | |
| Specific Conductance | 158.30 | 158.30 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.51 | 0.51 | Y | Y | | |
| pH | 8.34 | 8.34 | Y | Y | | |
| Total Alkalinity | 59.10 | 59.10 | Y | Y | | |
| Temperature of pH | 23.36 | 23.36 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094124 | 107201 | U | 17193003202B | 1.00 | 070A | 07/12/2017 | 19:47 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 24.10 | 24.10 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 142.30 | 142.30 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.32 | 7.32 | Y | Y | | |
| Total Alkalinity | 24.10 | 24.10 | Y | Y | | |
| Temperature of pH | 23.38 | 23.38 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094124 | 107202 | D | 17193003202B | 1.00 | 070A | 07/12/2017 | 19:54 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 24.38 | 24.38 | | | | |

| | | | | |
|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 141.30 | 141.30 | Y | Y |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 7.30 | 7.30 | Y | Y |
| Total Alkalinity | 24.38 | 24.38 | Y | Y |
| Temperature of pH | 23.23 | 23.23 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095934 | 107203 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 20:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 66.04 | 66.04 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 287.00 | 287.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.88 | 7.88 | | | | |
| Total Alkalinity | 66.04 | 66.04 | Y | Y | | |
| Temperature of pH | 23.17 | 23.17 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095452 | 107204 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 20:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 79.11 | 79.11 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1060.00 | 1,060.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.64 | 7.64 | | | | |
| Total Alkalinity | 79.11 | 79.11 | Y | Y | | |
| Temperature of pH | 23.12 | 23.12 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095968 | 107205 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 20:16 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 91.77 | 91.77 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Specific Conductance | 414.00 | 414.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.94 | 7.94 | | | | |
| Total Alkalinity | 91.77 | 91.77 | Y | Y | | |
| Temperature of pH | 23.09 | 23.09 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095966 | 107206 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 20:23 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 91.40 | 91.40 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Specific Conductance | 416.00 | 416.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.93 | 7.93 | | | | |
| Total Alkalinity | 91.40 | 91.40 | Y | Y | | |
| Temperature of pH | 23.11 | 23.11 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107207 | CCV | | 1.00 | 07/12/2017 | 20:27 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.02 | 7.02 | | |
| Temperature of pH | 23.01 | 23.01 | | |

# Water Quality Run Report

**Run Name: 20170712-32** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCVSC1 | 107208 | CCV | | 1.00 | 07/12/2017 | 20:29 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 144.80 | 144.80 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCB | 107209 | CCB | | 1.00 | 07/12/2017 | 20:36 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.46 | 0.46 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.13 | 0.13 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.01 | 6.01 | | |
| Total Alkalinity | 0.46 | 0.46 | | |
| Temperature of pH | 23.17 | 23.17 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9095446 | 107210 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 20:44 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 95.75 | 95.75 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1149.00 | 1,149.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.65 | 7.65 | | | | |
| Total Alkalinity | 95.75 | 95.75 | Y | Y | | |
| Temperature of pH | 23.38 | 23.38 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9095448 | 107211 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 20:52 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 67.76 | 67.76 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1483.00 | 1,483.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.44 | 7.44 | | | | |
| Total Alkalinity | 67.76 | 67.76 | Y | Y | | |
| Temperature of pH | 23.54 | 23.54 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9095450 | 107212 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 21:00 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 97.58 | 97.58 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1002.00 | 1,002.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.72 | 7.72 | | | | |
| Total Alkalinity | 97.58 | 97.58 | Y | Y | | |
| Temperature of pH | 23.35 | 23.35 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9095454 | 107213 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 21:07 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 249.91 | 249.91 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 2560.00 | 2,560.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.65 | 6.65 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Total Alkalinity | 249.91 | 249.91 | Y | Y | |
| Temperature of pH | 23.27 | 23.27 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9096317 | 107214 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 21:14 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 50.17 | 50.17 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1024.00 | 1,024.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.75 | 5.75 | | | | |
| Total Alkalinity | 50.17 | 50.17 | Y | Y | | |
| Temperature of pH | 23.19 | 23.19 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095972 | 107215 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 21:22 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 94.63 | 94.63 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Specific Conductance | 440.00 | 440.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.76 | 7.76 | | | | |
| Total Alkalinity | 94.63 | 94.63 | Y | Y | | |
| Temperature of pH | 23.36 | 23.36 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095444 | 107216 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 21:29 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 71.89 | 71.89 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 907.00 | 907.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.24 | 7.24 | | | | |
| Total Alkalinity | 71.89 | 71.89 | Y | Y | | |
| Temperature of pH | 23.28 | 23.28 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095930 | 107217 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 21:37 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 162.48 | 162.48 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 785.00 | 785.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.14 | 8.14 | | | | |
| Total Alkalinity | 162.48 | 162.48 | Y | Y | | |
| Temperature of pH | 23.20 | 23.20 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095970 | 107218 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 21:45 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 104.42 | 104.42 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Specific Conductance | 498.00 | 498.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.96 | 7.96 | | | | |
| Total Alkalinity | 104.42 | 104.42 | Y | Y | | |
| Temperature of pH | 23.43 | 23.43 | | | | |

# Water Quality Run Report

**Run Name: 20170712-32** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9095442 | 107219 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 21:52 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 81.60 | 81.60 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 922.00 | 922.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.39 | 7.39 | | | | |
| Total Alkalinity | 81.60 | 81.60 | Y | Y | | |
| Temperature of pH | 23.35 | 23.35 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107220 | CCV | | 1.00 | 07/12/2017 | 21:57 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.02 | 7.02 | | |
| Temperature of pH | 23.44 | 23.44 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCVSC2 | 107221 | CCV | | 1.00 | 07/12/2017 | 22:00 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 1391.00 | 1,391.00 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCB | 107222 | CCB | | 1.00 | 07/12/2017 | 22:07 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.87 | 0.87 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.36 | 0.36 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.82 | 5.82 | | |
| Total Alkalinity | 0.87 | 0.87 | | |
| Temperature of pH | 23.43 | 23.43 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9086096 | 107223 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 22:13 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.89 | 1.89 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 6.40 | 6.40 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.57 | 6.57 | Y | Y | | |
| Total Alkalinity | 1.89 | 1.89 | Y | Y | | |
| Temperature of pH | 23.31 | 23.31 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9088376 | 107224 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 22:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.51 | 0.51 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | -0.03 | -0.03 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 5.48 | 5.48 | Y | Y | | |
| Total Alkalinity | 0.51 | 0.51 | Y | Y | | |
| Temperature of pH | 23.51 | 23.51 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9096601 | 107225 | | 17193003202A | 1.00 | 070A | 07/12/2017 | 22:26 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.32 | 0.32 | | | | |

| | | | | |
|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | -0.02 | -0.02 | Y | Y |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y |
| pH | 5.46 | 5.46 | Y | Y |
| Total Alkalinity | 0.32 | 0.32 | Y | Y |
| Temperature of pH | 23.46 | 23.46 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9096600** | **107226** | | 17193003202A | 1.00 | 070A | 07/12/2017 | 22:33 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.63 | 0.63 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 0.22 | 0.22 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.03 | 6.03 | Y | Y | | |
| Total Alkalinity | 0.63 | 0.63 | Y | Y | | |
| Temperature of pH | 23.35 | 23.35 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **107227** | B | 17193003203A | 1.00 | 07/12/2017 | 22:39 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.42 | 0.42 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 0.04 | 0.04 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.50 | 5.50 | | | | |
| Total Alkalinity | 0.42 | 0.42 | Y | Y | | |
| Temperature of pH | 23.52 | 23.52 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **107228** | Q | 17193003203A | 1.00 | 07/12/2017 | 22:46 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 13.12 | 13.12 | | | | |
| Carbonate | 169.75 | 169.75 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 84.88 | 84.88 | | | | |
| pH | 10.46 | 10.46 | | Y | | |
| Total Alkalinity | 182.87 | 182.87 | Y | Y | | |
| Temperature of pH | 23.36 | 23.36 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **107229** | Y | 17193003203A | 1.00 | 07/12/2017 | 22:53 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 14.09 | 14.09 | | | | |
| Carbonate | 169.42 | 169.42 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 84.71 | 84.71 | | | | |
| pH | 10.45 | 10.45 | | Y | | |
| Total Alkalinity | 183.51 | 183.51 | Y | Y | | |
| Temperature of pH | 23.33 | 23.33 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **107230** | Q | 17193003203A | 1.00 | 07/12/2017 | 22:57 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.02 | 7.02 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **107231** | Y | 17193003203A | 1.00 | 07/12/2017 | 23:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| pH | 7.02 | 7.02 | Y | Y | |
| Temperature of pH | 23.52 | 23.52 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSSC** | **107232** | Q | 17193003203A | 1.00 | 07/12/2017 | 23:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Specific Conductance | 147.00 | 147.00 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **107233** | CCV | | 1.00 | 07/12/2017 | 23:08 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.02 | 7.02 | | |
| Temperature of pH | 23.31 | 23.31 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVSC3** | **107234** | CCV | | 1.00 | 07/12/2017 | 23:10 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 12160.00 | 12,160.00 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **107235** | CCB | | 1.00 | 07/12/2017 | 23:19 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.72 | 0.72 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.44 | 0.44 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.00 | 6.00 | | |
| Total Alkalinity | 0.72 | 0.72 | | |
| Temperature of pH | 23.64 | 23.64 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSSC** | **107236** | Y | 17193003203A | 1.00 | 07/12/2017 | 23:21 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Specific Conductance | 145.80 | 145.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9088551** | **107237** | U | 17193003203A | 1.00 | 070A | 07/12/2017 | 23:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 139.48 | 139.48 | Y | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 499.00 | 499.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.85 | 7.85 | Y | Y | | |
| Total Alkalinity | 139.48 | 139.48 | Y | Y | | |
| Temperature of pH | 23.47 | 23.47 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9088551** | **107238** | R | 17193003203A | 1.00 | 070A | 07/12/2017 | 23:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 141.18 | 141.18 | Y | | | |
| Carbonate | 130.85 | 130.85 | | | | |
| Specific Conductance | 690.00 | 690.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 65.43 | 65.43 | Y | | | |
| pH | 9.36 | 9.36 | Y | | | |
| Total Alkalinity | 272.04 | 272.04 | Y | Y | | |
| Temperature of pH | 23.54 | 23.54 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9088551** | **107239** | D | 17193003203A | 1.00 | 070A | 07/12/2017 | 23:42 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 140.59 | 140.59 | Y | | | |

| | | | | |
|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 494.00 | 494.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y |
| pH | 7.86 | 7.86 | Y | Y |
| Total Alkalinity | 140.59 | 140.59 | Y | Y |
| Temperature of pH | 23.62 | 23.62 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9090686 | 107240 | | 17193003203A | 1.00 | 005A | 07/12/2017 | 23:50 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 88.24 | 88.24 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 235.00 | 235.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.02 | 8.02 | Y | Y | | |
| Total Alkalinity | 88.24 | 88.24 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095107 | 107241 | | 17193003203A | 1.00 | 070A | 07/12/2017 | 23:57 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 35.19 | 35.19 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 145.10 | 145.10 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.69 | 7.69 | | | | |
| Total Alkalinity | 35.19 | 35.19 | Y | Y | | |
| Temperature of pH | 23.96 | 23.96 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9096099 | 107242 | | 17193003203A | 1.00 | 070A | 07/13/2017 | 0:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 37.61 | 37.61 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 239.00 | 239.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.67 | 7.67 | | | | |
| Total Alkalinity | 37.61 | 37.61 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9095372 | 107243 | | 17193003203A | 1.00 | 070A | 07/13/2017 | 0:11 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 221.40 | 221.40 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1352.00 | 1,352.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.04 | 8.04 | | | | |
| Total Alkalinity | 221.40 | 221.40 | Y | Y | | |
| Temperature of pH | 23.72 | 23.72 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097121 | 107244 | | 17193003203A | 1.00 | 070A | 07/13/2017 | 0:18 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 158.86 | 158.86 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 949.00 | 949.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 7.97 | 7.97 | | |
| Total Alkalinity | 158.86 | 158.86 | Y | Y |
| Temperature of pH | 23.80 | 23.80 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097114 | 107245 | | 17193003203A | 1.00 | 070A | 07/13/2017 | 0:26 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 41.87 | 41.87 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 139.40 | 139.40 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.59 | 7.59 | | | | |
| Total Alkalinity | 41.87 | 41.87 | Y | Y | | |
| Temperature of pH | 23.60 | 23.60 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107246 | CCV | | 1.00 | 07/13/2017 | 0:30 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.03 | 7.03 | | |
| Temperature of pH | 23.65 | 23.65 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVSC2 | 107247 | CCV | | 1.00 | 07/13/2017 | 0:33 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 1399.00 | 1,399.00 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 107248 | CCB | | 1.00 | 07/13/2017 | 0:41 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.31 | 0.31 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.29 | 0.29 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.99 | 5.99 | | |
| Total Alkalinity | 0.31 | 0.31 | | |
| Temperature of pH | 23.57 | 23.57 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097088 | 107249 | | 17193003203A | 1.00 | 070A | 07/13/2017 | 0:47 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 96.64 | 96.64 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 9230.00 | 9,230.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.63 | 7.63 | | | | |
| Total Alkalinity | 96.64 | 96.64 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094286 | 107250 | | 17193003203A | 1.00 | 070A | 07/13/2017 | 0:55 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 93.12 | 93.12 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 612.00 | 612.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 8.17 | 8.17 | Y | Y | | |
| Total Alkalinity | 93.12 | 93.12 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | Y | Y | | |

# Water Quality Run Report

**Run Name: 20170712-32** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9090663 | 107251 | | 17193003203A | 1.00 | 005A | 07/13/2017 | 1:02 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 80.53 | 80.53 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 216.00 | 216.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.07 | 8.07 | Y | Y | | |
| Total Alkalinity | 80.53 | 80.53 | Y | Y | | |
| Temperature of pH | 23.67 | 23.67 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| PBW | 107252 | B | 17193003204A | 1.00 | 07/13/2017 | 1:09 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.32 | 0.32 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 0.18 | 0.18 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.02 | 6.02 | | | | |
| Total Alkalinity | 0.32 | 0.32 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| LCSAK | 107253 | Q | 17193003204A | 1.00 | 07/13/2017 | 1:15 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 23.40 | 23.40 | | | | |
| Carbonate | 159.89 | 159.89 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 79.94 | 79.94 | | | | |
| pH | 10.38 | 10.38 | | | | |
| Total Alkalinity | 183.29 | 183.29 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| LCSPH | 107254 | Q | 17193003204A | 1.00 | 07/13/2017 | 1:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.01 | 7.01 | | | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| LCSSC | 107255 | Q | 17193003204A | 1.00 | 07/13/2017 | 1:23 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Specific Conductance | 147.80 | 147.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9088483 | 107256 | U | 17193003204A | 1.00 | 023A | 07/13/2017 | 1:30 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 102.81 | 102.81 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 613.00 | 613.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.73 | 7.73 | | | | |
| Total Alkalinity | 102.81 | 102.81 | Y | Y | | |
| Temperature of pH | 23.67 | 23.67 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9088483 | 107257 | R | 17193003204A | 1.00 | 023A | 07/13/2017 | 1:38 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 121.53 | 121.53 | | | | |
| Carbonate | 144.27 | 144.27 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Specific Conductance | 806.00 | 806.00 | | | |
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 72.13 | 72.13 | | | |
| pH | 9.50 | 9.50 | | | |
| Total Alkalinity | 265.80 | 265.80 | Y | Y | |
| Temperature of pH | 23.65 | 23.65 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9088483 | 107258 | D | 17193003204A | 1.00 | 023A | 07/13/2017 | 1:45 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 97.98 | 97.98 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 601.00 | 601.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.77 | 7.77 | | | | |
| Total Alkalinity | 97.98 | 97.98 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107259 | CCV | | 1.00 | 07/13/2017 | 1:49 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.02 | 7.02 | | |
| Temperature of pH | 23.62 | 23.62 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVSC1 | 107260 | CCV | | 1.00 | 07/13/2017 | 1:52 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 147.20 | 147.20 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 107261 | CCB | | 1.00 | 07/13/2017 | 1:59 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.55 | 0.55 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.21 | 0.21 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.97 | 5.97 | | |
| Total Alkalinity | 0.55 | 0.55 | | |
| Temperature of pH | 23.64 | 23.64 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9088973 | 107262 | | 17193003204A | 1.00 | 005A | 07/13/2017 | 2:05 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 172.41 | 172.41 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 1687.00 | 1,687.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.76 | 7.76 | | | | |
| Total Alkalinity | 172.41 | 172.41 | Y | Y | | |
| Temperature of pH | 23.60 | 23.60 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9094686 | 107263 | | 17193003204A | 1.00 | 070A | 07/13/2017 | 2:13 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 56.73 | 56.73 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Specific Conductance | 4000.00 | 4,000.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.42 | 7.42 | | | | |

| | | | | |
|---|---|---|---|---|
| Total Alkalinity | 56.73 | 56.73 | Y | Y |
| Temperature of pH | 23.80 | 23.80 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: |
|---|---|---|---|---|---|
| **CCVPH2** | **107264** | CCV | | 1.00 | 07/13/2017 2:17 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 7.02 | 7.02 | | |
| Temperature of pH | 23.56 | 23.56 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: |
|---|---|---|---|---|---|
| **CCVSC2** | **107265** | CCV | | 1.00 | 07/13/2017 2:20 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Specific Conductance | 1401.00 | 1,401.00 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: |
|---|---|---|---|---|---|
| **CCB** | **107266** | CCB | | 1.00 | 07/13/2017 2:27 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.27 | 0.27 | | |
| Carbonate | 0.00 | 0.00 | | |
| Specific Conductance | 0.52 | 0.52 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.95 | 5.95 | | |
| Total Alkalinity | 0.27 | 0.27 | | |
| Temperature of pH | 23.56 | 23.56 | | |

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2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 07/11/17

# SDG# KR185

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1824281 | 9098344-9098363 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date: 08/01/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR185
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9098344 | GW029-173 | 07/11/2017 10:10 | 07/12/2017 09:40 |
| 9098345 | GW030-173 | 07/11/2017 09:45 | 07/12/2017 09:40 |
| 9098346 | GW031-173 | 07/11/2017 09:25 | 07/12/2017 09:40 |
| 9098347 | GW032-173 | 07/11/2017 08:25 | 07/12/2017 09:40 |
| 9098348 | GW032-573 | 07/11/2017 08:25 | 07/12/2017 09:40 |
| 9098349 | GW033-173 | 07/11/2017 08:05 | 07/12/2017 09:40 |
| 9098350 | GW033-173MS | 07/11/2017 08:05 | 07/12/2017 09:40 |
| 9098351 | GW033-173MSD | 07/11/2017 08:05 | 07/12/2017 09:40 |
| 9098352 | GW034-173 | 07/11/2017 08:45 | 07/12/2017 09:40 |
| 9098353 | GW050-173 | 07/11/2017 07:40 | 07/12/2017 09:40 |
| 9098354 | GW209-173 | 07/11/2017 07:41 | 07/12/2017 09:40 |
| 9098355 | GW222-173 | 07/11/2017 10:41 | 07/12/2017 09:40 |
| 9098356 | GW231-173 | 07/11/2017 08:20 | 07/12/2017 09:40 |
| 9098357 | GW232-173 | 07/11/2017 08:52 | 07/12/2017 09:40 |
| 9098358 | TB173-09 | 07/11/2017 09:45 | 07/12/2017 09:40 |
| 9098359 | TB173-10 | 07/11/2017 09:45 | 07/12/2017 09:40 |
| 9098360 | TB173-11 | 07/11/2017 09:45 | 07/12/2017 09:40 |
| 9098361 | TB173-12 | 07/11/2017 09:45 | 07/12/2017 09:40 |
| 9098362 | TB173-13 | 07/11/2017 09:45 | 07/12/2017 09:40 |
| 9098363 | TB173-14 | 07/11/2017 09:45 | 07/12/2017 09:40 |

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

### 10398 8011 Master Master

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

### 07786 EDB Extraction (8011)

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

# Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: July 25, 2017

**Project: Kirtland AFB**

Submittal Date: 07/12/2017
Group Number: 1824281
SDG: KR185
PO Number: 14800
State of Sample Origin: NM

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| GW029-173 Water | 9098344 |
| GW030-173 Water | 9098345 |
| GW031-173 Water | 9098346 |
| GW032-173 Water | 9098347 |
| GW032-573 Water | 9098348 |
| GW033-173 Water | 9098349 |
| GW033-173MS Water | 9098350 |
| GW033-173MSD Water | 9098351 |
| GW034-173 Water | 9098352 |
| GW050-173 Water | 9098353 |
| GW209-173 Water | 9098354 |
| GW222-173 Water | 9098355 |
| GW231-173 Water | 9098356 |
| GW232-173 Water | 9098357 |
| TB173-09 Water | 9098358 |
| TB173-10 Water | 9098359 |
| TB173-11 Water | 9098360 |
| TB173-12 Water | 9098361 |
| TB173-13 Water | 9098362 |
| TB173-14 Water | 9098363 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

Respectfully Submitted,

(717) 556-7364

Project Name: Kirtland AFB
LL Group #: 1824281

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

No additional comments are necessary.

**Sample Description:** GW029-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9098344**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 10:10 by SB

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18501 SDG#: KR185-01

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 02:05 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW030-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098345**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 09:45 by JM

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18502 SDG#: KR185-02

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 02:20 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW031-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098346**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 09:25 by SB

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18503 SDG#: KR185-03

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0097 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 03:07 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW032-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098347**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 08:25 by SS

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18504 SDG#: KR185-04

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 03:23 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW032-573 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098348**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 08:25 by SS

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18505 SDG#: KR185-05FD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.028 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 03:39 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW033-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098349**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 08:05 by SS

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18506 SDG#: KR185-06BKG

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 03:54 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW033-173MS Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098350**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 08:05 by SS

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18506 SDG#: KR185-06MS

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.15 | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 04:10 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW033-173MSD Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098351**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 08:05 by SS

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18506 SDG#: KR185-06MSD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.15 | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 04:25 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW034-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098352**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 08:45 by SS

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18507 SDG#: KR185-07

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.028 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 04:41 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW050-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098353**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 07:40 by SS

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18508 SDG#: KR185-08

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 04:57 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW209-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098354**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 07:41 by JM

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18509 SDG#: KR185-09

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.028 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 05:12 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW222-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098355**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 10:41 by JM

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18510 SDG#: KR185-10

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 05:28 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW231-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098356**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 08:20 by SB

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18511 SDG#: KR185-11

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 06:15 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW232-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098357**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 08:52 by JM

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18512 SDG#: KR185-12

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 06:30 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** TB173-09 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9098358**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 09:45

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18513 SDG#: KR185-13TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0094 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 06:46 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-10 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098359**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 09:45

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18514 SDG#: KR185-14TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 07:02 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-11 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098360**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 09:45

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18515 SDG#: KR185-15TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 07:17 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-12 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098361**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 09:45

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18516 SDG#: KR185-16TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 07:33 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-13 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098362**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 09:45

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18517 SDG#: KR185-17TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 07:48 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-14 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9098363**
**LL Group # 1824281**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 09:45

Submitted: 07/12/2017 09:40
Reported: 07/25/2017 09:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18518 SDG#: KR185-18TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

**Sample Comments**

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 08:04 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/25/2017 09:02

Group Number: 1824281

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | DL** | LOD | LOQ |
|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l |
| Batch number: 172010021A | Sample number(s): 9098344-9098363 | | | |
| Ethylene dibromide | 0.020 U | 0.010 | 0.020 | 0.030 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172010021A | Sample number(s): 9098344-9098363 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.154 | 0.128 | 0.139 | 120 | 108 | 60-140 | 10 | 20 |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172010021A | Sample number(s): 9098344-9098363 UNSPK: 9098349 | | | | | | | | | |
| Ethylene dibromide | 0.019 U | 0.123 | 0.149 | 0.122 | 0.147 | 121 | 121 | 60-140 | 1 | 20 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EDB 8011 Water
Batch number: 172010021A

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Group Number: 1824281
Reported: 07/25/2017 09:02

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EDB 8011 Water
Batch number: 172010021A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9098344 | 86 | 0.0067 |
| 9098345 | 85 | 0.0067 |
| 9098346 | 102 | 0.0068 |
| 9098347 | 98 | 0.0067 |
| 9098348 | 101 | 0.0066 |
| 9098349 | 101 | 0.0067 |
| 9098350 | 87 | 0.0067 |
| 9098351 | 87 | 0.0067 |
| 9098352 | 99 | 0.0066 |
| 9098353 | 91 | 0.0067 |
| 9098354 | 98 | 0.0066 |
| 9098355 | 92 | 0.0067 |
| 9098356 | 88 | 0.0067 |
| 9098357 | 95 | 0.0067 |
| 9098358 | 97 | 0.0066 |
| 9098359 | 94 | 0.0067 |
| 9098360 | 102 | 0.0067 |
| 9098361 | 97 | 0.0067 |
| 9098362 | 96 | 0.0067 |
| 9098363 | 100 | 0.0067 |
| Blank | 87 | 0.0070 |
| LCS | 95 | 0.0070 |
| LCSD | 86 | 0.0070 |
| MS | 87 | 0.0067 |
| MSD | 87 | 0.0067 |
| Limits: | 46-136 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-029-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW029-173 | 7-11-17 | 1010 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 13

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811567347347

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7/11/17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7/11/17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-030-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW030-173 | 7/11/17 | 0945 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 13

SAMPLER(S): Josh Messenger

COURIER AND SHIPPING NUMBER: FedEx 811156734734

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Josh Messenger | 7-11-17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Labberton | 7.12.17 | 940 |

31675/1824281/9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-031-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW031-173 | 7-11-17 | 0925 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 14

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734745

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7-11-17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Cutherbertson | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-032-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017 |
| | | | | QUARTER: 3 (Jul-Sep) |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW032-173 | 7/11/17 | 0825 | 2 | | | | 2 | | | | | | |
| 2 | GW032-573 | 7/11/17 | 0825 | 2 | | | | 2 | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | 5 | 5 | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-09

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734697

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA | 7/11/17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7/11/17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Timothy Cubberly | 7.12.17 | 940 |

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-033-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW033-173 | 07/11/17 | 0805 | 6 | | | | 6 | | | | | | Please see Comments for requested MS/MSD analytes |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | SS | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Please run MS/MSD on the following analytes only:
VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe

TB173- 10

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811567341701

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA Sharmin Sultana | 7/11/17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Eberhart | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-034-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW034-173 | 7/11/17 | 0845 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | SS | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 09

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734697

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA | 7/11/17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Thirty Laboratory | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-050-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW050-173 | 7/11/17 | 0740 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | SS | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 11

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734712

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA | 7/11/17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | 7.12.17 | 940 |

31675 / 1824281 / 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-209-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW209-173 | 7-11-17 | 0741 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 12

SAMPLER(S): Joshua Messenger

COURIER AND SHIPPING NUMBER: FedEx 811156734723

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Joshua Messenger | 7-11-17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-222-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW222-173 | 7-11-17 | 1041 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 14

SAMPLER(S): Josh Messenger

COURIER AND SHIPPING NUMBER: FedEx 811567347745

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Josh Messenger | 7-11-17 | 1100 | Carlos Montoya | 7-11-17 | 1100 |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| | | | Trinity Cubberly | 7.12.17 | 940 |

31675/1824281/9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-231-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW231-173 | 7-11-17 | 0820 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 12

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734723

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7-11-17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Chudzinski | 7.12.17 | 940 |

31675 | 18242 81 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-232-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW232-173 | 7-11-17 | 0852 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 11

SAMPLER(S): Josh Messenger

COURIER AND SHIPPING NUMBER: FedEx 811567347 12

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Josh Messenger | 7-11-17 | 1100 | Printed Name and Signature: Carlos Montoya | 7-11-17 | 1100 |
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Cubberley | 7-12-17 | 940 |

31675 | 1824281 | 909834-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-09

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles): Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173- 09 | 7-11-17 | 0945 | 2 | — | | | 2 | | — | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106032 & KAFB-106034

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734697

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME | RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | ~~1400~~ 7-11-17 CM | 1400 | | | |
| | | | | | |
| | | | Timothy Cubberly | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-10

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017 |
| | | | | QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-10 | 7-11-17 | 0945 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106033

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734701

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Montoya | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 11

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | TB173- 11 | 7-11-17 | 0945 | 2 | — | | | 2 | | — | | | — | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | C | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106050 & KAFB-106232

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734712

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-11-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Tamara Culberson | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-12

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173-12 | 7-11-17 | 0945 | 2 | | | | (2) | Ok cm | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB106231 & KAFB-106209

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734723

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-11-17 | 1450 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Timothy Cumberland | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 13

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-13 | 7-11-17 | 0945 | 2 | — | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106029 & KAFB-106030

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734734

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Tracy Colbert | 7.12.17 | 940 |

31675 | 1824281 | 9098344-63

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-14

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | TB173- 14 | 7-11-17 | 0945 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with 1KAFB-106031 & 1KAFB-101222

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734745

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-11-17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Cobberley | 7.12.17 | 940 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 188593

Group Number(s): 1824281

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/12/2017 9:40 |
| Number of Packages: | 6 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 10 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Timothy Cubberley (6520) at 11:52 on 07/12/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT131 | 1.6 | DT | Wet | Y | Loose | N |
| 2 | DT131 | 0.4 | DT | Wet | Y | Loose | N |
| 3 | DT131 | 1.1 | DT | Wet | Y | Loose | N |
| 4 | DT131 | 2.1 | DT | Wet | Y | Loose | N |
| 5 | DT131 | 1.0 | DT | Wet | Y | Loose | N |
| 6 | DT131 | 2.3 | DT | Wet | Y | Loose | N |



2425 New Holland Pike
Lancaster, PA 17601-2422
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | none detected |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

**<** less than

**>** greater than

**ppm** parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

**ppb** parts per billion

**Dry weight basis** Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

*Laboratory Data Qualifiers:*

C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR185**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9098344 | GW029-173 | X | | 1 | |
| 9098345 | GW030-173 | X | | 1 | |
| 9098346 | GW031-173 | X | | 1 | |
| 9098347 | GW032-173 | X | | 1 | |
| 9098348 | GW032-573 | X | | 1 | Field Duplicate Sample |
| 9098349 | GW033-173 | X | | 1 | Unspiked |
| 9098350 | GW033-173MS | X | | 1 | Matrix Spike |
| 9098351 | GW033-173MSD | X | | 1 | Matrix Spike Duplicate |
| 9098352 | GW034-173 | X | | 1 | |
| 9098353 | GW050-173 | X | | 1 | |
| 9098354 | GW209-173 | X | | 1 | |
| 9098355 | GW222-173 | X | | 1 | |
| 9098356 | GW231-173 | X | | 1 | |
| 9098357 | GW232-173 | X | | 1 | |
| 9098358 | TB173-09 | X | | 1 | Trip Blank |
| 9098359 | TB173-10 | X | | 1 | Trip Blank |
| 9098360 | TB173-11 | X | | 1 | Trip Blank |
| 9098361 | TB173-12 | X | | 1 | Trip Blank |
| 9098362 | TB173-13 | X | | 1 | Trip Blank |
| 9098363 | TB173-14 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9098344-9098363: Analysis: 10398)

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR185**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

## QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

## SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

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# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR185**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172010021A | PBLK21201 | 07/22/2017 01:18:00 |
| | | LCS21201 | 07/22/2017 01:34:00 |
| | | LCSD21201 | 07/22/2017 01:49:00 |
| | | 9098344 | 07/22/2017 02:05:00 |
| | | 9098345 | 07/22/2017 02:20:00 |
| | | 9098346 | 07/22/2017 03:07:00 |
| | | 9098347 | 07/22/2017 03:23:00 |
| | | 9098348 | 07/22/2017 03:39:00 |
| | | 9098349 UNSPK | 07/22/2017 03:54:00 |
| | | 9098350 MS | 07/22/2017 04:10:00 |
| | | 9098351 MSD | 07/22/2017 04:25:00 |
| | | 9098352 | 07/22/2017 04:41:00 |
| | | 9098353 | 07/22/2017 04:57:00 |
| | | 9098354 | 07/22/2017 05:12:00 |
| | | 9098355 | 07/22/2017 05:28:00 |
| | | 9098356 | 07/22/2017 06:15:00 |
| | | 9098357 | 07/22/2017 06:30:00 |
| | | 9098358 | 07/22/2017 06:46:00 |
| | | 9098359 | 07/22/2017 07:02:00 |
| | | 9098360 | 07/22/2017 07:17:00 |
| | | 9098361 | 07/22/2017 07:33:00 |
| | | 9098362 | 07/22/2017 07:48:00 |
| | | 9098363 | 07/22/2017 08:04:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR185**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172010021A / PBLK21201<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/22/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR185**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172010021A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK21201 | 87 | 46 - 136 |
| LCS21201 | 95 | 46 - 136 |
| LCSD21201 | 86 | 46 - 136 |
| 9098344 | 86 | 46 - 136 |
| 9098345 | 85 | 46 - 136 |
| 9098346 | 102 | 46 - 136 |
| 9098347 | 98 | 46 - 136 |
| 9098348 | 101 | 46 - 136 |
| 9098349 UNSPK | 101 | 46 - 136 |
| 9098350 MS | 87 | 46 - 136 |
| 9098351 MSD | 87 | 46 - 136 |
| 9098352 | 99 | 46 - 136 |
| 9098353 | 91 | 46 - 136 |
| 9098354 | 98 | 46 - 136 |
| 9098355 | 92 | 46 - 136 |
| 9098356 | 88 | 46 - 136 |
| 9098357 | 95 | 46 - 136 |
| 9098358 | 97 | 46 - 136 |
| 9098359 | 94 | 46 - 136 |
| 9098360 | 102 | 46 - 136 |
| 9098361 | 97 | 46 - 136 |
| 9098362 | 96 | 46 - 136 |
| 9098363 | 100 | 46 - 136 |

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| UNSPK: 9098349<br>MS: 9098350<br>MSD: 9098351<br>**Analyte** | Batch: **172010021A** (Sample number(s): 9098344-9098363 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l MS/MSD** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.123 / 0.122 | N.D. | 0.149 | 0.147 | 121 | 121 | 60-140 | 1 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR185**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS21201<br>LCSD: LCSD21201<br><br>**Analyte** | Batch: **172010021A** (Sample number(s): 9098344-9098363 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 0.128 | 0.154 | 0.139 | 120 | 108 | 60-140 | 10 | 20 |

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.07 | 3.06 | 3.07 | 3.07 | 3.07 | 3.07 | 3.04 | 3.10 |
| 1,1,2,2-TETRACHLOROETHANE | 4.52 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.48 | 4.54 |
| 1,2,3-Trichloropropane | 4.58 | 4.58 | 4.57 | 4.58 | 4.58 | 4.58 | 4.58 | 4.55 | 4.61 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.87 | 6.93 |

HMM 7243 7/24/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 2.23E+04 | 2.14E+04 | 1.79E+04 | 2.05E+04 | 2.10E+04 | | 2.06E+04 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 2.54E+04 | 2.41E+04 | 2.18E+04 | 2.29E+04 | 2.30E+04 | | 2.35E+04 | 6 |
| 1,2,3-Trichloropropane | 4.01E+03 | 4.33E+03 | 3.23E+03 | 3.30E+03 | 3.06E+03 | | 3.59E+03 | 15 |
| 1,2-DIBROMO-3-CHLOROPROPA | 4.18E+04 | 4.15E+04 | 4.01E+04 | 4.01E+04 | 3.97E+04 | | 4.06E+04 | 2 |

Average % RSD: 8

linear fit mm 7/24/17

File Name: V:\CP16\16edbs1720201.CAL
Version: 8

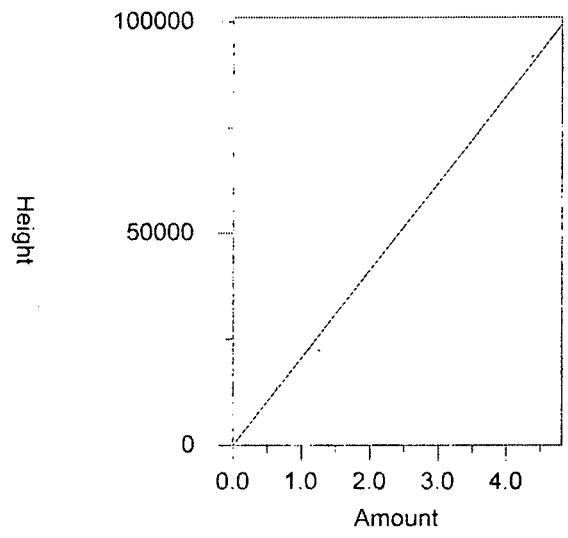
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.072 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

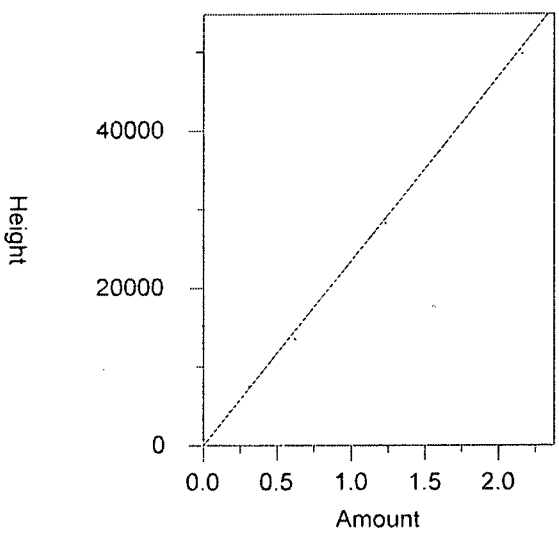
Single peak quantification by height

Y = 20615.34 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9970039
Average error: 5.382%
Average CF: 20615.34
RSD: 7.972%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 7802.336 | 22292.39 | 8.135 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0006.E |
| 2 | 0.63 | 13452.58 | 21353.3 | 3.580 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.E |
| 3 | 1.25 | 22388.71 | 17910.97 | -13.118 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.E |
| 4 | 2.5 | 51364.3 | 20545.72 | -0.338 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.E |
| 5 | 4.38 | 91867.52 | 20974.32 | 1.741 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.E |
| 6 | (6.25) | (92950.38) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.E |

2 1,1,2,2-PCA




Expected retention time: 4.513 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

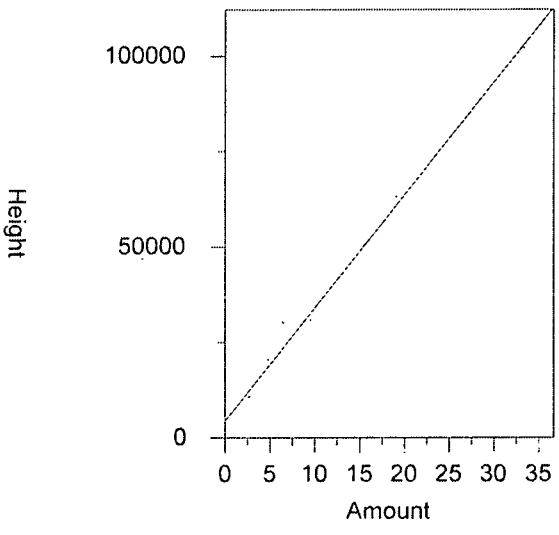
Single peak quantification by height

Y = 23460.12 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9982876
Average error: 4.390%
Average CF: 23460.12
RSD: 5.778%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 4321.91 | 25423 | 8.367 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 2 | 0.31 | 7462.229 | 24071.71 | 2.607 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 3 | 0.62 | 13531.2 | 21824.52 | -6.972 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 4 | 1.23 | 28210.36 | 22935.25 | -2.237 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 5 | 2.16 | 49779.61 | 23046.12 | -1.765 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 6 | (3.08) | (53019.96) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |

3 1,2,3-TCP




Expected retention time: 4.58 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

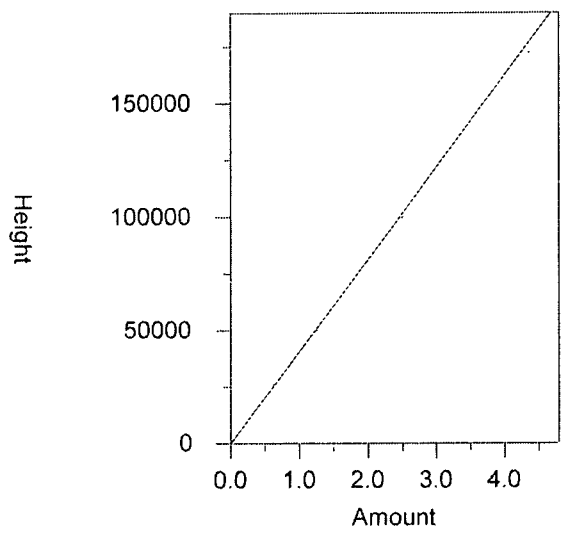
Single peak quantification by height

Y = 2956.05 X + 4430.097

Linear fit with equal weighting
Coefficient of determination: 0.9971222
Average error: 6.902%
Average CF: 3588.12
RSD: 15.344%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 10707.98 | 4010.479 | -13.104 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 2 | 4.76 | 20611.94 | 4330.239 | 11.411 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 3 | 9.53 | 30821.48 | 3234.153 | -5.459 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 4 | 19.05 | 62951.91 | 3304.562 | 3.637 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 5 | 33.34 | 102059.2 | 3061.164 | -0.899 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 6 | (47.63) | (104273.1) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.895 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 40636.84 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9988161 |
| Average error: | 1.953% |
| Average CF: | 40636.84 |
| RSD: | 2.286% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 14619.25 | 41769.29 | 2.787 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 0.62 | 25722.95 | 41488.63 | 2.096 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 1.24 | 49779.49 | 40144.75 | -1.211 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 2.49 | 99853.48 | 40101.8 | -1.317 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 4.35 | 172606.8 | 39679.72 | -2.355 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (6.22) | (183007.9) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT (CAL#6) RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.34 | 4.33 | 4.32 | 4.33 | 4.33 | 4.33 | 4.33 | 4.30 | 4.36 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.61 | 5.67 |
| 1,2,3-Trichloropropane | 5.77 | 5.76 | 5.76 | 5.77 | 5.77 | 5.77 | 5.77 | 5.74 | 5.80 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.92 | 7.98 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 6.54E+03 | 6.19E+03 | 5.36E+03 | 5.68E+03 | 5.69E+03 | | 5.89E+03 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 1.08E+04 | 9.08E+03 | 7.96E+03 | 8.67E+03 | 8.36E+03 | | 8.97E+03 | 12 |
| 1,2,3-Trichloropropane | 5.16E+03 | 2.81E+03 | 1.85E+03 | 1.46E+03 | 1.28E+03 | | 2.51E+03 | 63 |
| 1,2-DIBROMO-3-CHLOROPROPA | 1.62E+04 | 1.70E+04 | 1.47E+04 | 1.48E+04 | 1.45E+04 | | 1.54E+04 | 7 |

Average % RSD: 23

linear linear + lumm 7/24/17

File Name: V:\CP16\16edbs1720201b.CAL
Version: 9

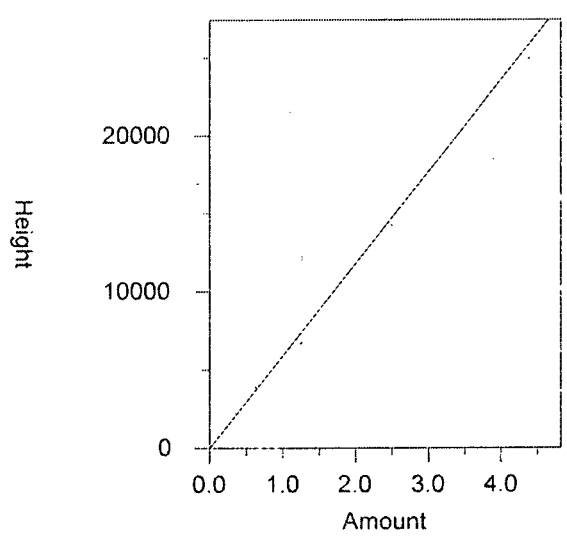
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 4.331 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

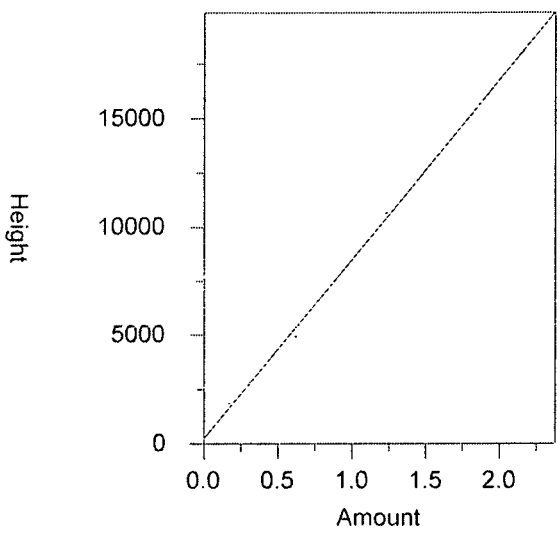
Single peak quantification by height

Y = 5892.757 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.995377
Average error: 6.423%
Average CF: 5892.757
RSD: 7.957%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 2290.409 | 6544.026 | 11.052 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0006 |
| 2 | 0.63 | 3898.299 | 6187.776 | 5.006 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0007 |
| 3 | 1.25 | 6702.179 | 5361.743 | -9.011 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0008 |
| 4 | 2.5 | 14203.42 | 5681.368 | -3.587 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0009 |
| 5 | 4.38 | 24917.26 | 5688.872 | -3.460 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0010 |
| 6 | (6.25) | (25336.41) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0011 |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.641 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

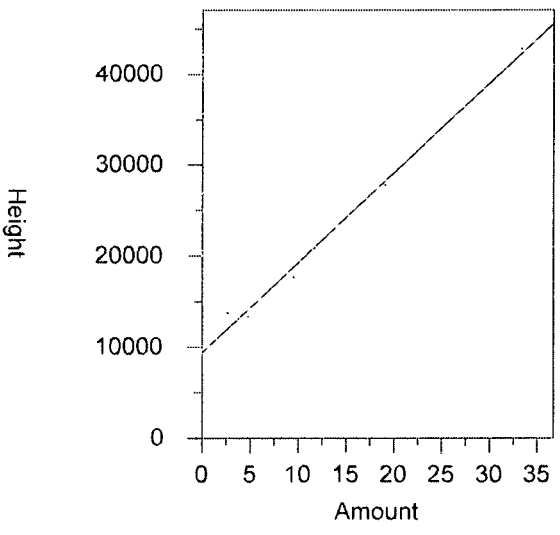
Single peak quantification by height

Y = 8267.026 X + 234.1029

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9984474 |
| Average error: | 4.569% |
| Average CF: | 8965.972 |
| RSD: | 12.109% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 1829.887 | 10764.04 | 11.613 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 0.31 | 2815.249 | 9081.448 | 0.657 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 0.62 | 4937.143 | 7963.134 | -7.883 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 1.23 | 10658.26 | 8665.252 | 2.458 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 2.16 | 18048.92 | 8355.981 | -0.232 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (3.08) | (18434.59) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.769 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

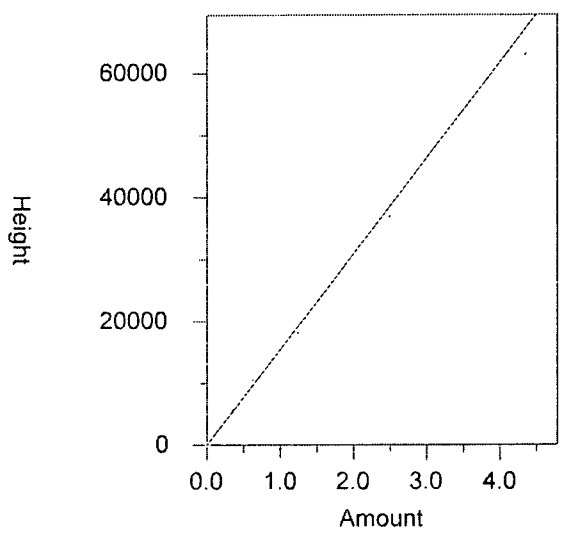
Single peak quantification by height

Y = 987.5696 X + 9390.728

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9914809 |
| Average error: | 5.673% |
| Average CF: | 2512.737 |
| RSD: | 63.371% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 13775.76 | 5159.46 | 14.535 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 4.76 | 13358.03 | 2806.309 | -5.205 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 9.53 | 17655.38 | 1852.611 | -6.100 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 19.05 | 27829.8 | 1460.882 | -1.327 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 33.34 | 42822.62 | 1284.422 | 1.197 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (47.63) | (43781.29) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.946 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 15449.69 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9905829 |
| Average error: | 5.905% |
| Average CF: | 15449.69 |
| RSD: | 7.042% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5659.925 | 16171.21 | 4.670 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 2 | 0.62 | 10545.45 | 17008.79 | 10.091 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 3 | 1.24 | 18270.78 | 14734.5 | -4.629 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 4 | 2.49 | 36898.79 | 14818.79 | -4.084 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 5 | 4.35 | 63140.97 | 14515.17 | -6.049 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 6 | (6.22) | (67644.8) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 23:29

Lab File ID: 16EDBS17202001.0037.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_4QK Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 2.84 | 2.50 | 14 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 1.27 | 1.23 | 3 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 19.89 | 19.05 | 4 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 2.69 | 2.49 | 8 |

Compounds 4 Average of %D: 7

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 23:29

Lab File ID: 16EDBS17202001B.0037.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_4QK Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 2.80 | 2.50 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 1.33 | 1.23 | 8 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 20.12 | 19.05 | 6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 2.77 | 2.49 | 11 |

Compounds 4 Average of %D: 9

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSD Sample ID: SD **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

Analysis Report (A)

| | |
|---|---|
| Injected on | : Jul 21, 2017 23:44:59 |
| Instrument | : CP16--19853A |
| Result file | : 16EDBS17202001.0038.RAW |
| Calibration file | : 16EDBS1720201.CAL |
| Method file | : 16EDBS.MET |

Analysis Report (B)

| | |
|---|---|
| Injected on | : Jul 21, 2017 23:44:59 |
| Instrument | : CP16--19853B |
| Result file | : 16EDBS17202001B.0038.RAW |
| Calibration file | : 16EDBS1720201B.CAL |
| Method file | : 16EDBSB.MET |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 360 | 0.000998 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 26524 | 0.064606 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 7094 | 0.051494 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10066 | 0.067956 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 937 | -0.489145 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064606 | | | | 5.05 | |
| ☐ 1,2,3-TCP | A | 0.051494 | | | | 247.06 | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: [signature]
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits



Printed on: 7/24/2017 11:13:53

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Date Analyzed: 07/22/17

GC Column (1) : DB CLP1  ID: .32 (mm)  Time Analyzed: 2:36

Lab File ID: 16EDBS17202001.0049.RAW  Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_3PB  Init. Calib Date(s): 07/21/17  07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 1.44 | 1.25 | 15 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 0.66 | 0.62 | 8 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 9.66 | 9.53 | 1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 1.65 | 1.24 | 32 |

Compounds 4  Average of %D: 14

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/22/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 2:36

Lab File ID: 16EDBS17202001B.0049.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_3PB Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 1.53 | 1.25 | 22 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 0.67 | 0.62 | 9 |
| 1,2,3-Trichloropropane | 5.76 | 5.74 | 5.80 | 10.38 | 9.53 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 1.76 | 1.24 | 42 |

Compounds 4 Average of %D: 21

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSE Sample ID: SE **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 22, 2017 02:52:14
Instrument : CP16--19853A
Result file : 16EDBS17202001.0050.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 22, 2017 02:52:14
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0050.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.04 | 3.08 | 3.10 | 311 | 0.000861 |
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 26464 | 0.064460 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 5344 | 0.017669 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 9592 | 0.064684 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064460 | | | | 0.35 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: SMM316
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:15:15

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/22/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 5:44

Lab File ID: 16EDBS17202001.0061.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_5LT Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 4.88 | 4.38 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 2.18 | 2.16 | 1 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 34.92 | 33.34 | 5 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 5.13 | 4.35 | 18 |

Compounds 4 Average of %D: 9

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/22/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 5:44

Lab File ID: 16EDBS17202001B.0061.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_5LT Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 4.89 | 4.38 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 2.31 | 2.16 | 7 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 35.73 | 33.34 | 7 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 5.52 | 4.35 | 27 |

Compounds 4 Average of %D: 13

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSF Sample ID: SF **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 22, 2017 05:59:41
Instrument : CP16--19853A
Result file : 16EDBS17202001.0062.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 22, 2017 05:59:41
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0062.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 27257 | 0.066392 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 4235 | -0.003781 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10423 | 0.070430 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.066392 | | | | 5.90 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: JUL 24 2017

Verified by: SMB
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/22/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 8:51

Lab File ID: 16EDBS17202001.0073.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_4QL Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 2.61 | 2.50 | 4 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 1.22 | 1.23 | -1 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 18.94 | 19.05 | -1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 2.79 | 2.49 | 12 |

Compounds 4 Average of %D: 5

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/22/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 8:51

Lab File ID: 16EDBS17202001B.0073.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_4QL Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 2.71 | 2.50 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 1.20 | 1.23 | -2 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 19.09 | 19.05 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 2.91 | 2.49 | 17 |

Compounds 4 Average of %D: 7

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSG Sample ID: SG **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 22, 2017 09:06:59
Instrument : CP16--19853A
Result file : 16EDBS17202001.0074.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 26587 | 0.064760 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 9963 | 0.106953 |

## Analysis Report (B)

Injected on : Jul 22, 2017 09:06:59
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0074.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9852 | 0.066482 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 922 | -0.489991 |
| **DBCP** | 7.92 | 7.93 | 7.98 | 654 | 0.002419 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064760 | | | | 2.62 | |
| ☐ 1,2,3-TCP | A | 0.106953 | | | | 311.69 | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: SM2316
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 16EDBS17202001
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0001 | CONDITIONER | | 7/21/17 14:07 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0002 | CONDITIONER | | 7/21/17 14:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0003 | CONDITIONER | | 7/21/17 14:38 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0004 | CONDITIONER | | 7/21/17 14:54 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0005 | EIBKX1724C | PIBLKAA | 7/21/17 15:09 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0006 | EDB_11724DS | EDB_1AA | 7/21/17 15:25 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0007 | EDB_21724DS | EDB_2AA | 7/21/17 15:40 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0008 | EDB_31724DS | EDB_3AA | 7/21/17 15:56 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0009 | EDB_41724DS | EDB_4AA | 7/21/17 16:12 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0010 | EDB_51724DS | EDB_5AA | 7/21/17 16:27 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0011 | EDB_61724DS | EDB_6AA | 7/21/17 16:43 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0012 | MDEDX1724DS | MDEDXAA | 7/21/17 16:59 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0013 | EDB_31724DS | EDB_3AA | 7/21/17 17:14 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0014 | EIBKX1724C | PIBLKAA | 7/21/17 17:30 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0015 | BLANKA 7/21/17 | PBLK25201 | 7/21/17 17:46 | 172010025A | 2.00 |
| Administra16EDBS17202001.0016 | LCSA 7/21/17 | LCS25201 | 7/21/17 18:01 | 172010025A | 2.00 |
| Administra16EDBS17202001.0017 | LCSDA 7/21/17 | LCSD25201 | 7/21/17 18:17 | 172010025A | 2.00 |
| Administra16EDBS17202001.0018 | 9095972 | 18417 | 7/21/17 18:32 | 172010025A | 2.00 |
| Administra16EDBS17202001.0019 | 9100482 | 18604 | 7/21/17 18:48 | 172010025A | 2.00 |
| Administra16EDBS17202001.0020 | 9100483 | 18605 | 7/21/17 19:04 | 172010025A | 2.00 |
| Administra16EDBS17202001.0021 | 9100485 | 18607 | 7/21/17 19:19 | 172010025A | 2.00 |
| Administra16EDBS17202001.0022 | 9100487 | 18609 | 7/21/17 19:35 | 172010025A | 2.00 |
| Administra16EDBS17202001.0023 | 9100489 | 18611 | 7/21/17 19:51 | 172010025A | 2.00 |
| Administra16EDBS17202001.0024 | 9100491 | 18613 | 7/21/17 20:06 | 172010025A | 2.00 |
| Administra16EDBS17202001.0025 | EDB_51724DS | EDB_5LS | 7/21/17 20:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0026 | EIBKX1724C | PIBLKSC | 7/21/17 20:37 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0027 | 9100492 | 18614 | 7/21/17 20:53 | 172010025A | 2.00 |
| Administra16EDBS17202001.0028 | 9100493 | 18615 | 7/21/17 21:09 | 172010025A | 2.00 |
| Administra16EDBS17202001.0029 | 9100494 | 18616 | 7/21/17 21:24 | 172010025A | 2.00 |
| Administra16EDBS17202001.0030 | 9100495 | 18617 | 7/21/17 21:40 | 172010025A | 2.00 |
| Administra16EDBS17202001.0031 | 9100496 | 18618 | 7/21/17 21:55 | 172010025A | 2.00 |
| Administra16EDBS17202001.0032 | 9107402 | 18701 | 7/21/17 22:11 | 172010025A | 2.00 |
| Administra16EDBS17202001.0033 | 9107403 | 18702 | 7/21/17 22:27 | 172010025A | 2.00 |
| Administra16EDBS17202001.0034 | 9107404 | 18703 | 7/21/17 22:42 | 172010025A | 2.00 |
| Administra16EDBS17202001.0035 | 9107405 | 18704 | 7/21/17 22:58 | 172010025A | 2.00 |
| Administra16EDBS17202001.0036 | 9107406 | 18705 | 7/21/17 23:13 | 172010025A | 2.00 |
| Administra16EDBS17202001.0037 | EDB_41724DS | EDB_4QK | 7/21/17 23:29 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0038 | EIBKX1724C | PIBLKSD | 7/21/17 23:44 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0039 | 9107407 | 18706 | 7/22/17 0:00 | 172010025A | 2.00 |
| Administra16EDBS17202001.0040 | 9109771 | 18801 | 7/22/17 0:16 | 172010025A | 2.00 |
| Administra16EDBS17202001.0041 | 9109772MS | 18801 | 7/22/17 0:31 | 172010025A | 2.00 |
| Administra16EDBS17202001.0042 | 9109773MSD | 18801 | 7/22/17 0:47 | 172010025A | 2.00 |
| Administra16EDBS17202001.0043 | 9109779 | 18803 | 7/22/17 1:03 | 172010025A | 2.00 |
| Administra16EDBS17202001.0044 | BLANKA 7/21/17 | PBLK21201 | 7/22/17 1:18 | 172010021A | 2.00 |
| Administra16EDBS17202001.0045 | LCSA 7/21/17 | LCS21201 | 7/22/17 1:34 | 172010021A | 2.00 |
| Administra16EDBS17202001.0046 | LCSDA 7/21/17 | LCSD21201 | 7/22/17 1:49 | 172010021A | 2.00 |
| Administra16EDBS17202001.0047 | 9098344 | 18501 | 7/22/17 2:05 | 172010021A | 2.00 |
| Administra16EDBS17202001.0048 | 9098345 | 18502 | 7/22/17 2:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0049 | EDB_31724DS | EDB_3PB | 7/22/17 2:36 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0050 | EIBKX1724C | PIBLKSE | 7/22/17 2:52 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0051 | 9098346 | 18503 | 7/22/17 3:07 | 172010021A | 2.00 |
| Administra16EDBS17202001.0052 | 9098347 | 18504 | 7/22/17 3:23 | 172010021A | 2.00 |
| Administra16EDBS17202001.0053 | 9098348 | 18505 | 7/22/17 3:39 | 172010021A | 2.00 |
| Administra16EDBS17202001.0054 | 9098349 | 18506 | 7/22/17 3:54 | 172010021A | 2.00 |
| Administra16EDBS17202001.0055 | 9098350MS | 18506 | 7/22/17 4:10 | 172010021A | 2.00 |
| Administra16EDBS17202001.0056 | 9098351MSD | 18506 | 7/22/17 4:25 | 172010021A | 2.00 |

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0057 | 9098352 | 18507 | 7/22/17 4:41 | 172010021A | 2.00 |
| Administra16EDBS17202001.0058 | 9098353 | 18508 | 7/22/17 4:57 | 172010021A | 2.00 |
| Administra16EDBS17202001.0059 | 9098354 | 18509 | 7/22/17 5:12 | 172010021A | 2.00 |
| Administra16EDBS17202001.0060 | 9098355 | 18510 | 7/22/17 5:28 | 172010021A | 2.00 |
| Administra16EDBS17202001.0061 | EDB_51724DS | EDB_5LT | 7/22/17 5:44 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0062 | EIBKX1724C | PIBLKSF | 7/22/17 5:59 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0063 | 9098356 | 18511 | 7/22/17 6:15 | 172010021A | 2.00 |
| Administra16EDBS17202001.0064 | 9098357 | 18512 | 7/22/17 6:30 | 172010021A | 2.00 |
| Administra16EDBS17202001.0065 | 9098358 | 18513 | 7/22/17 6:46 | 172010021A | 2.00 |
| Administra16EDBS17202001.0066 | 9098359 | 18514 | 7/22/17 7:02 | 172010021A | 2.00 |
| Administra16EDBS17202001.0067 | 9098360 | 18515 | 7/22/17 7:17 | 172010021A | 2.00 |
| Administra16EDBS17202001.0068 | 9098361 | 18516 | 7/22/17 7:33 | 172010021A | 2.00 |
| Administra16EDBS17202001.0069 | 9098362 | 18517 | 7/22/17 7:48 | 172010021A | 2.00 |
| Administra16EDBS17202001.0070 | 9098363 | 18518 | 7/22/17 8:04 | 172010021A | 2.00 |
| Administra16EDBS17202001.0071 | 9100479 | 18601 | 7/22/17 8:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0072 | 9100481 | 18603 | 7/22/17 8:35 | 172010021A | 2.00 |
| Administra16EDBS17202001.0073 | EDB_41724DS | EDB_4QL | 7/22/17 8:51 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0074 | EIBKX1724C | PIBLKSG | 7/22/17 9:06 | 1720199999 | 2.00 |

# Sample Data

# EDB/DBCP

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

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# Data Summary

**Sample Name: 9098344** 18501 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.51 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 02:05:21 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0047.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 86% ( 46 - 136 ) Conc: 0.058261

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 02:05:21 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0047.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 88% ( 46 - 136 ) Conc: 0.05936

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 24951 | 0.058261 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4272 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.34 | 4.36 | 674 | 0.006265 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9192 | 0.05936 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2875 | 0 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.94 | 7.98 | 672 | 0.002384 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.058261 | 0.0034 | 0.0067 | 0.0067 | | 1.87 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2588 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:12

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098344** 18501 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.51 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 02:05:21
Instrument : CP16--19853A
Result file : 16EDBS17202001.0047.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 86% (46-136) Conc.: 0.058261

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 24951 | 0.058261 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4272 | -0.002933 |

## Analysis Report (B)

Injected on : Jul 22, 2017 02:05:21
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0047.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 88% (46-136) Conc.: 0.05936

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.34 | 4.36 | 674 | 0.006265 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9192 | 0.059360 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2875 | -0.361409 |
| **DBCP** | 7.92 | 7.94 | 7.98 | 672 | 0.002384 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.058261 | | | | 1.87 | |
| ☐ 1,2,3-TCP | | | <0.2588 | <0.0959 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

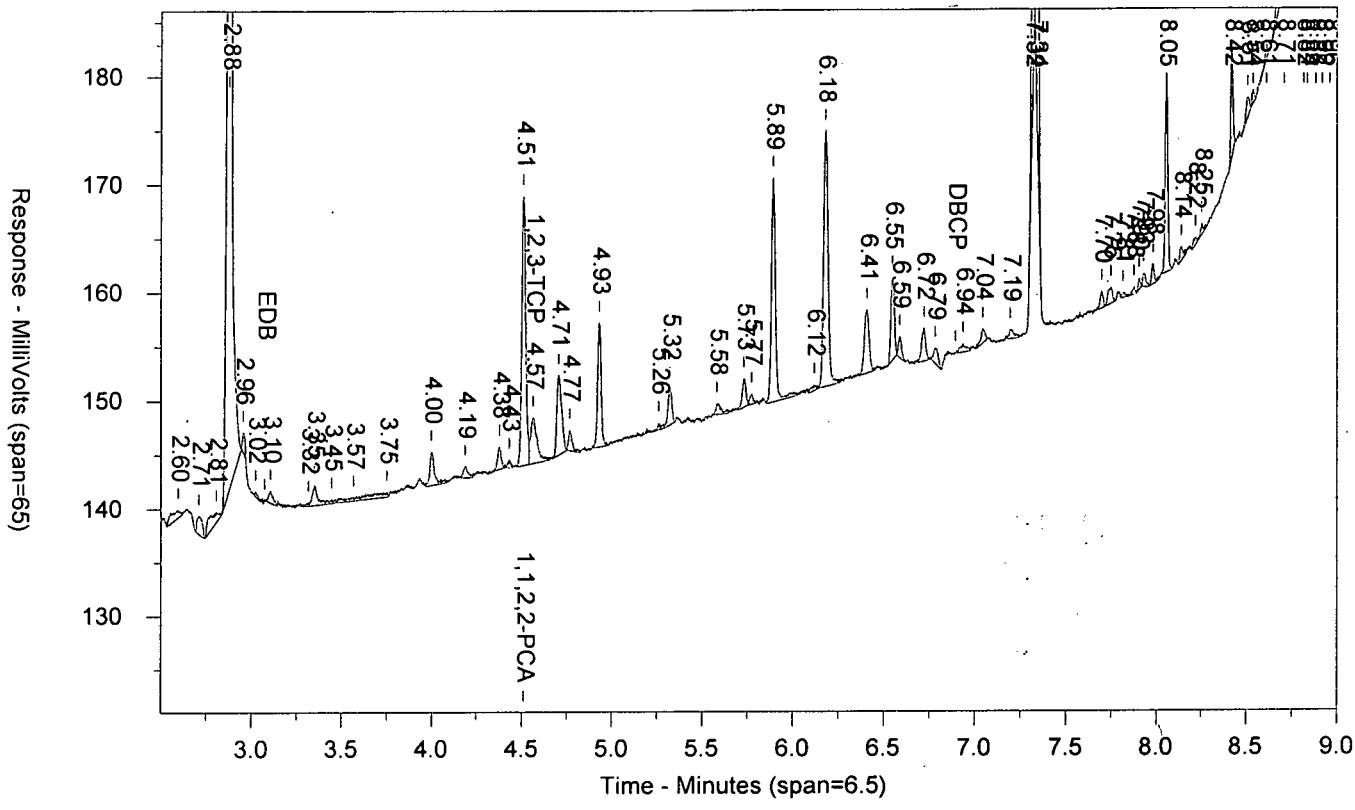
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9098344 AA18501 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0047.RAW

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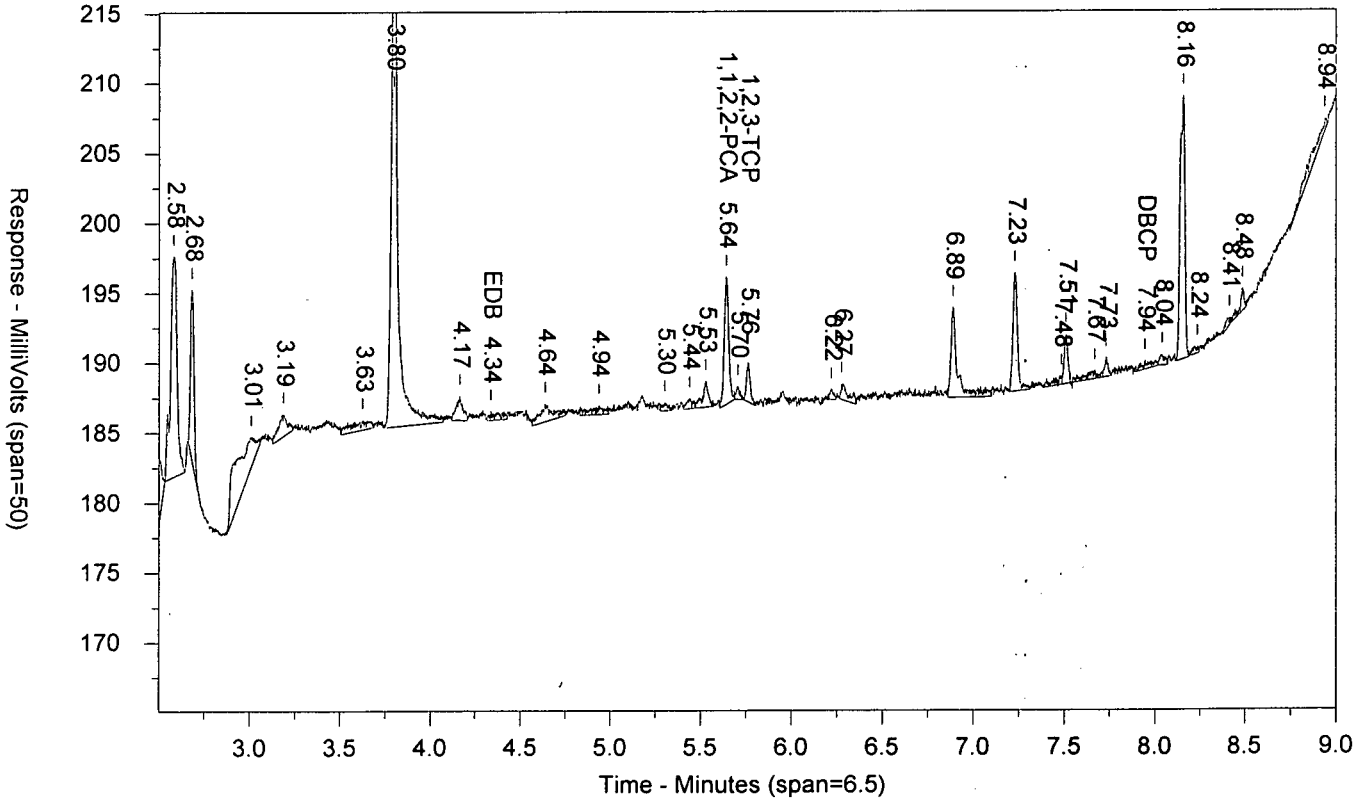

LANCASTER LABORATORIES

Sample Number: 9098344 AA18501 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 2:05:21 AM Sample Weight: 36.51
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 4.338 | 674 | .006 | EDB |
| 4.512 | 24951 | .058 | 1,1,2,2-PCA | 5.639 | 9192 | .059 | 1,1,2,2-PCA |
| 4.566 | 4272 | -.003 | 1,2,3-TCP | 5.761 | 2875 | -.361 | 1,2,3-TCP |
| | 0 | | DBCP | 7.944 | 672 | .002 | DBCP |

Files:
Area File: 16EDBS17202001.0047.RAW
Area File: 16EDBS17202001B.0047.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 2:14:23 AM
File Reported On: 7/24/2017 at 11:00:09 AM

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# Data Summary

**Sample Name: 9098345** 18502 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.75 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 02:20:59 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0048.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 85% ( 46 - 136 ) Conc: 0.057185

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 02:20:59 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0048.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.060154

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 24651 | 0.057185 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 3415 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9372 | 0.060154 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2861 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.057185 | 0.0033 | 0.0067 | 0.0067 | | 5.06 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2571 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:14

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098345** 18502 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.75 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 02:20:59
Instrument : CP16--19853A
Result file : 16EDBS17202001.0048.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 85% (46-136) Conc.: 0.057185

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 24651 | 0.057185 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 3415 | -0.018691 |

## Analysis Report (B)

Injected on : Jul 22, 2017 02:20:59
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0048.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060154

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9372 | 0.060154 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2861 | -0.359845 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.057185 | | | | 5.06 | |
| ☐ 1,2,3-TCP | | | <0.2571 | <0.0952 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Valerie L. Tomayko
Principal Specialist

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

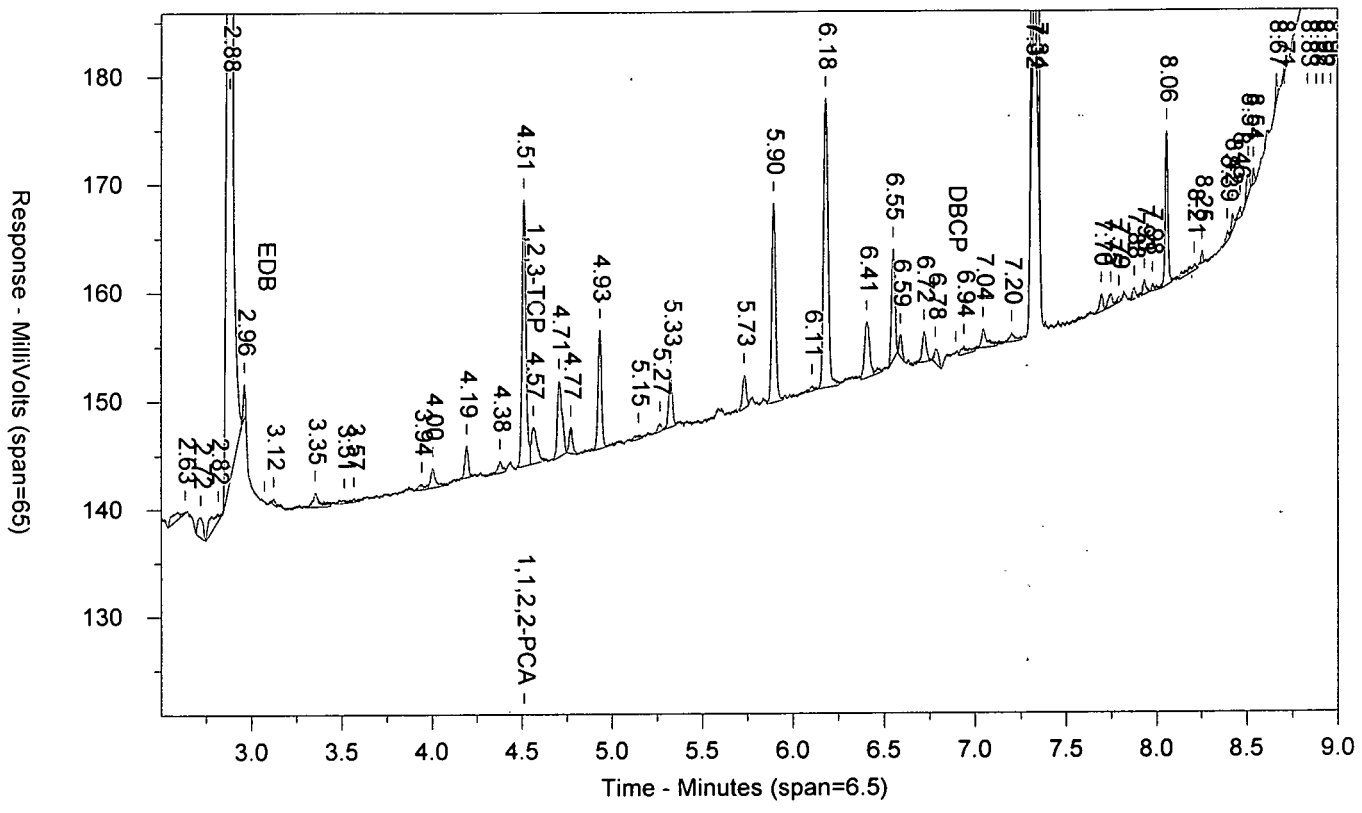
Verified by:
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9098345 AA18502 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0048.RAW

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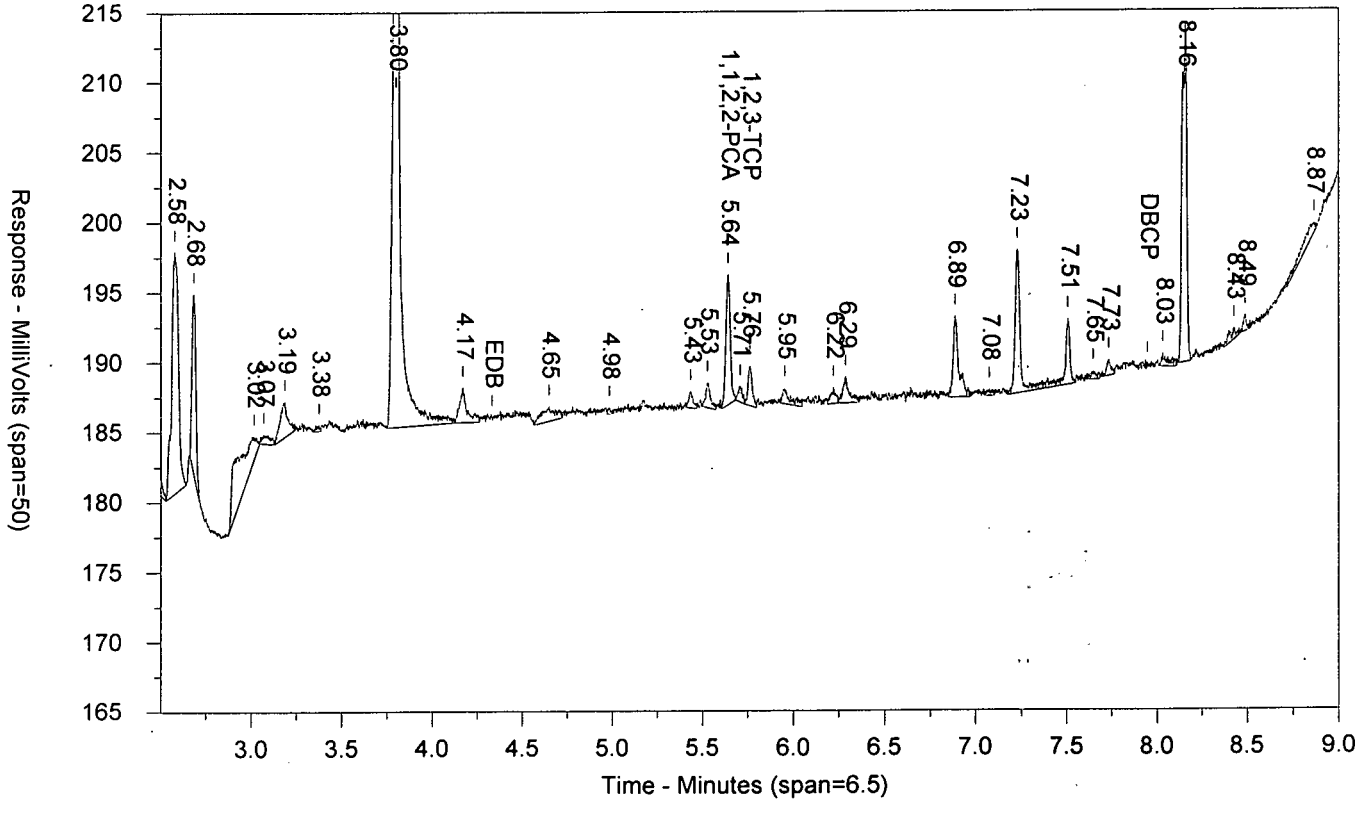

LANCASTER LABORATORIES

Sample Number: 9098345 AA18502 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 2:20:59 AM Sample Weight: 36.75
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 24651 | .057 | 1,1,2,2-PCA | 5.641 | 9372 | .06 | 1,1,2,2-PCA |
| 4.566 | 3415 | -.019 | 1,2,3-TCP | 5.762 | 2861 | -.36 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0048.RAW
Area File: 16EDBS17202001B.0048.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 2:29:59 AM
File Reported On: 7/24/2017 at 11:00:21 AM

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# Data Summary

**Sample Name: 9098346** 18503 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.12 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 03:07:53 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0051.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.069291

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 03:07:53 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0051.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.068604

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29358 | 0.069291 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6642 | 0.041428 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10477 | 0.068604 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 4360 | 0 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.92 | 7.98 | 827 | 0.002965 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0097 | <0.0194 | <0.0291 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.069291 | 0.0034 | 0.0068 | 0.0068 | | 1.00 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2616 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0097 | <0.0194 | <0.0291 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:16

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098346** 18503 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.12 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 03:07:53
Instrument : CP16--19853A
Result file : 16EDBS17202001.0051.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.069291

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29358 | 0.069291 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6642 | 0.041428 |

## Analysis Report (B)

Injected on : Jul 22, 2017 03:07:53
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0051.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.068604

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10477 | 0.068604 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 4360 | -0.282045 |
| **DBCP** | 7.92 | 7.92 | 7.98 | 827 | 0.002965 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0291 | <0.0097 | | | |
| ☐ 1,1,2,2-PCA | A | 0.069291 | | | | 1.00 | |
| ☐ 1,2,3-TCP | | | <0.2616 | <0.0969 | | | |
| ☐ DBCP | | | <0.0291 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist

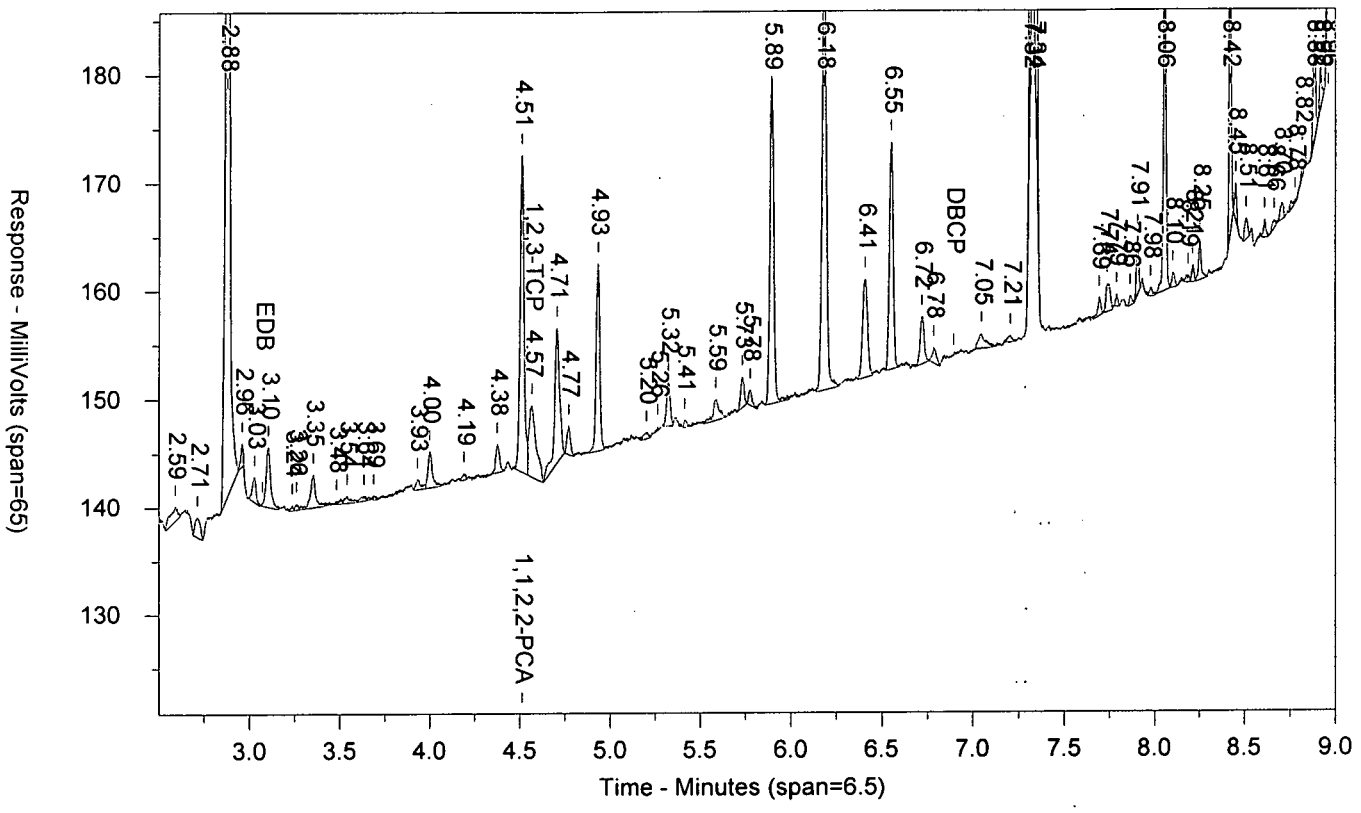
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9098346 AA18503 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0051.RAW

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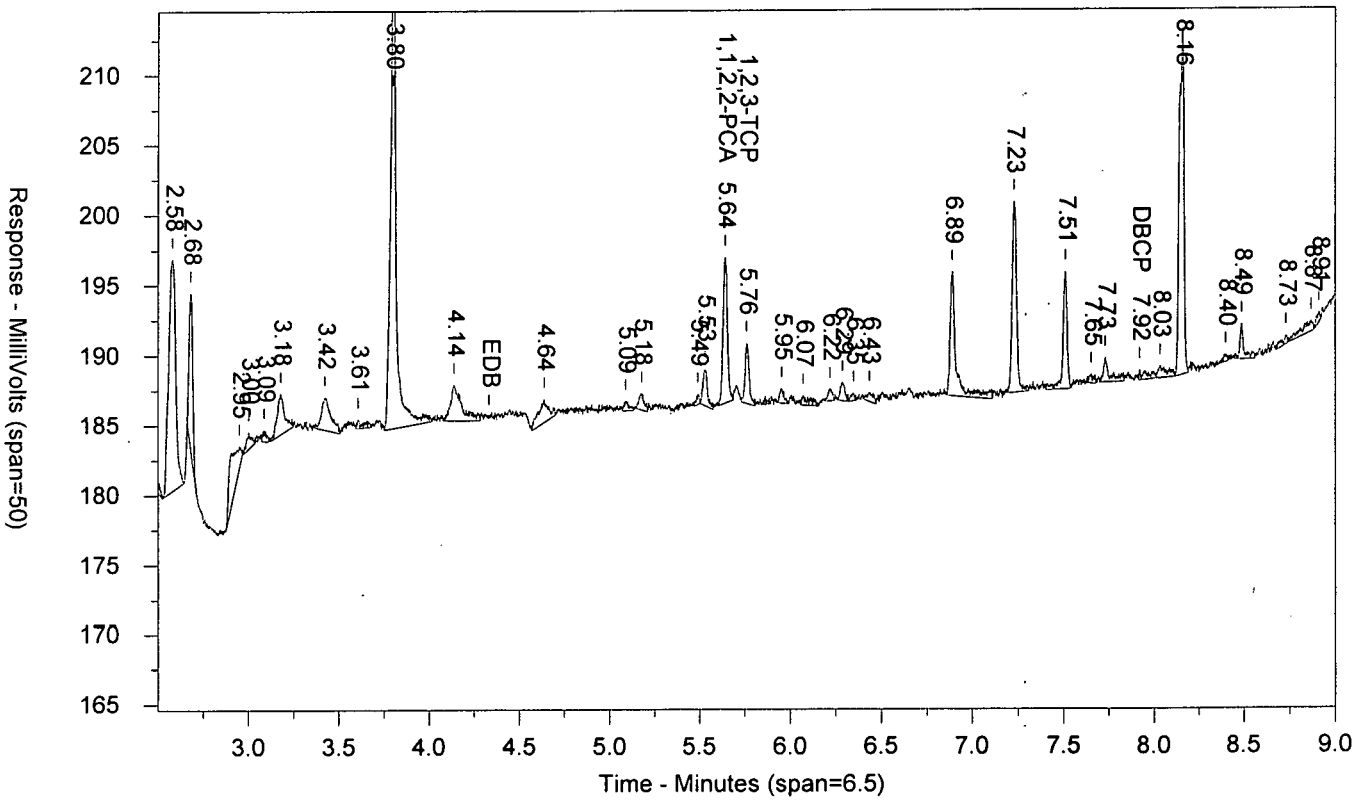


LANCASTER LABORATORIES

Sample Number: 9098346 AA18503 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 3:07:53 AM Sample Weight: 36.12
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 29358 | .069 | 1,1,2,2-PCA | 5.64 | 10477 | .069 | 1,1,2,2-PCA |
| 4.568 | 6642 | .041 | 1,2,3-TCP | 5.758 | 4360 | -.282 | 1,2,3-TCP |
| | 0 | | DBCP | 7.919 | 827 | .003 | DBCP |

Files:
Area File: 16EDBS17202001.0051.RAW
Area File: 16EDBS17202001B.0051.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 3:16:54 AM
File Reported On: 7/24/2017 at 11:01:16 AM

# Data Summary

**Sample Name: 9098347** 18504 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.56 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 03:23:25 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0052.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 98% ( 46 - 136 ) Conc: 0.065966

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 03:23:25 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0052.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.068045

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 28290 | 0.065966 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5245 | 0.015084 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.89 | 6.93 | 811 | 0.001092 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10517 | 0.068045 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2963 | 0. |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.94 | 7.98 | 570 | 0.002019 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.065966 | 0.0034 | 0.0067 | 0.0067 | | 3.10 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2585 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:17

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098347** 18504 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.56 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 03:23:25
Instrument : CP16--19853A
Result file : 16EDBS17202001.0052.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 98% (46-136) Conc.: 0.065966

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 28290 | 0.065966 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 5245 | 0.015084 |
| **DBCP** | 6.86 | 6.89 | 6.93 | 811 | 0.001092 |

## Analysis Report (B)

Injected on : Jul 22, 2017 03:23:25
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0052.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.068045

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10517 | 0.068045 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2963 | -0.356047 |
| **DBCP** | 7.92 | 7.94 | 7.98 | 570 | 0.002019 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065966 | | | | 3.10 | |
| ☐ 1,2,3-TCP | | | <0.2585 | <0.0957 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Valerie L. Tomayko
Principal Specialist

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

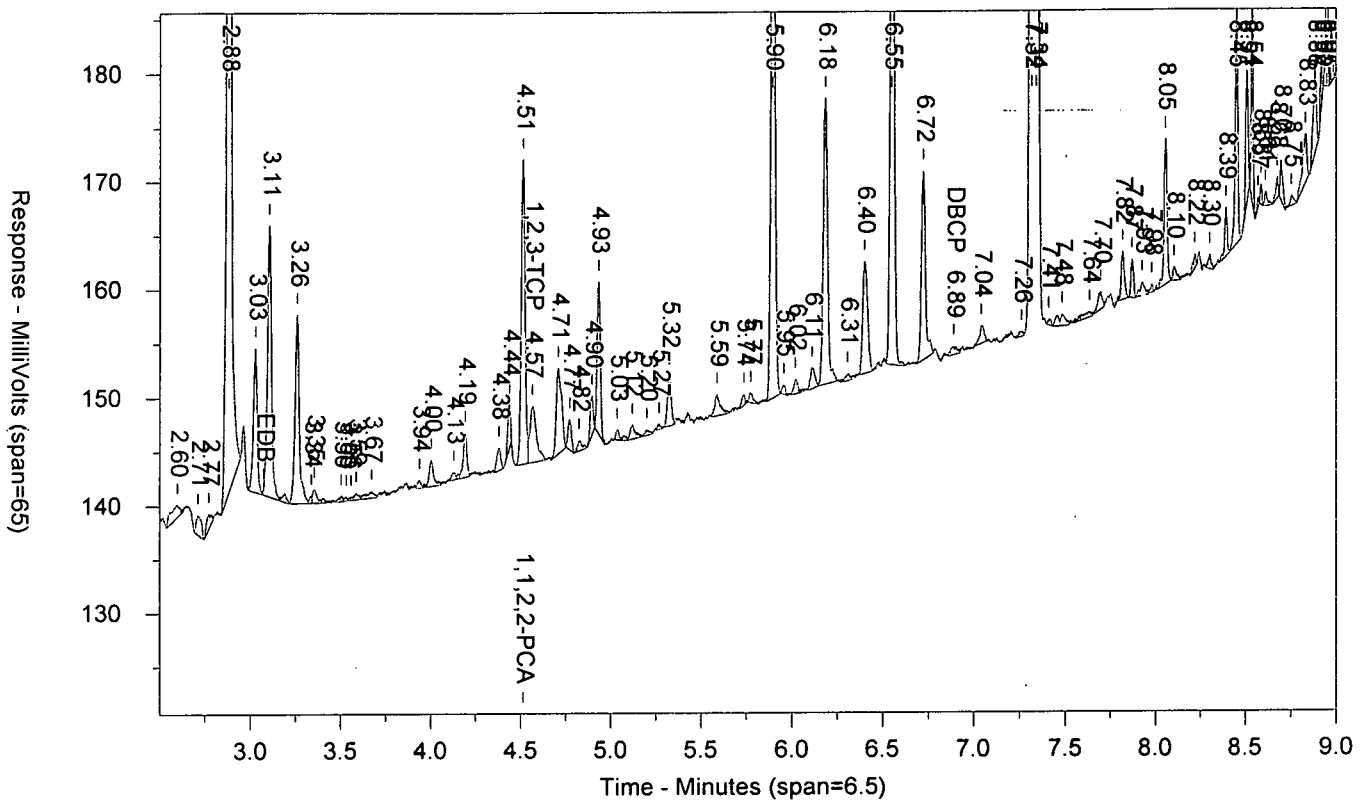
Verified by:
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

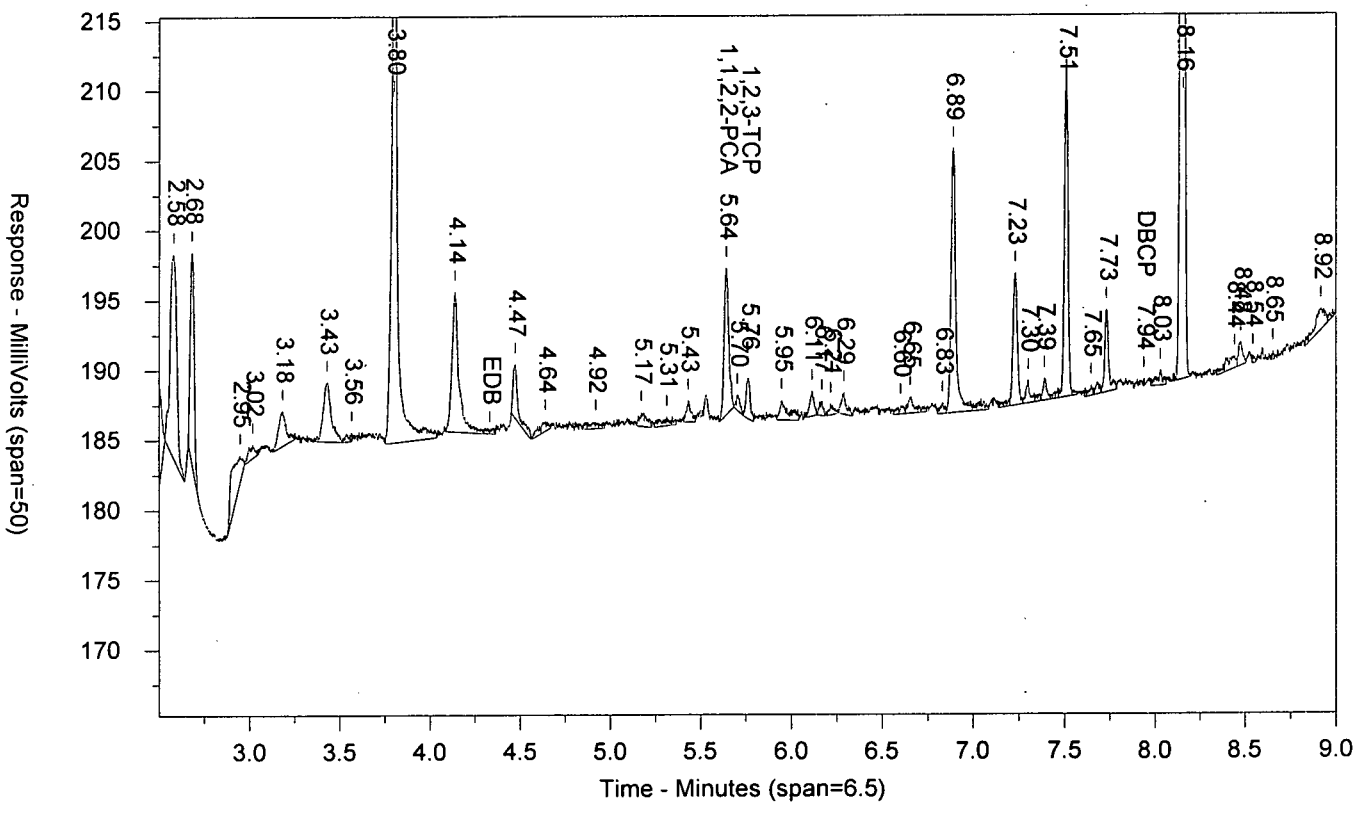
* Recovery outside QC Limits

9098347 AA18504 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0052.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0052.RAW



LANCASTER LABORATORIES

Sample Number: 9098347 AA18504 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 3:23:25 AM Sample Weight: 36.56
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 28290 | .066 | 1,1,2,2-PCA | 5.641 | 10517 | .068 | 1,1,2,2-PCA |
| 4.566 | 5245 | .015 | 1,2,3-TCP | 5.763 | 2963 | -.356 | 1,2,3-TCP |
| 6.891 | 811 | .001 | DBCP | 7.938 | 570 | .002 | DBCP |

Files:
Area File: 16EDBS17202001.0052.RAW
Area File: 16EDBS17202001B.0052.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 3:32:28 AM
File Reported On: 7/24/2017 at 11:01:28 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9098348** 18505 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.92 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 03:39:05 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0053.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.067418

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 03:39:05 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0053.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 105% ( 46 - 136 ) Conc: 0.069806

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29197 | 0.067418 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4937 | 0.00929 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10887 | 0.069806 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 3458 | 0 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.94 | 7.98 | 404 | 0.001417 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0284 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.067418 | 0.0033 | 0.0066 | 0.0066 | | 3.48 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.256 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0095 | <0.019 | <0.0284 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomzyko
Valerie L. Tomzyko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:19

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098348** 18505 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.92 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 03:39:05
Instrument : CP16--19853A
Result file : 16EDBS17202001.0053.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.067418

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29197 | 0.067418 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4937 | 0.009290 |

## Analysis Report (B)

Injected on : Jul 22, 2017 03:39:05
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0053.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 105% (46-136) Conc.: 0.069806

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10887 | 0.069806 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 3458 | -0.325415 |
| **DBCP** | 7.92 | 7.94 | 7.98 | 404 | 0.001417 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0284 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.067418 | | | | 3.48 | |
| ☐ 1,2,3-TCP | | | <0.256 | <0.0948 | | | |
| ☐ DBCP | | | <0.0284 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist

Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist

Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

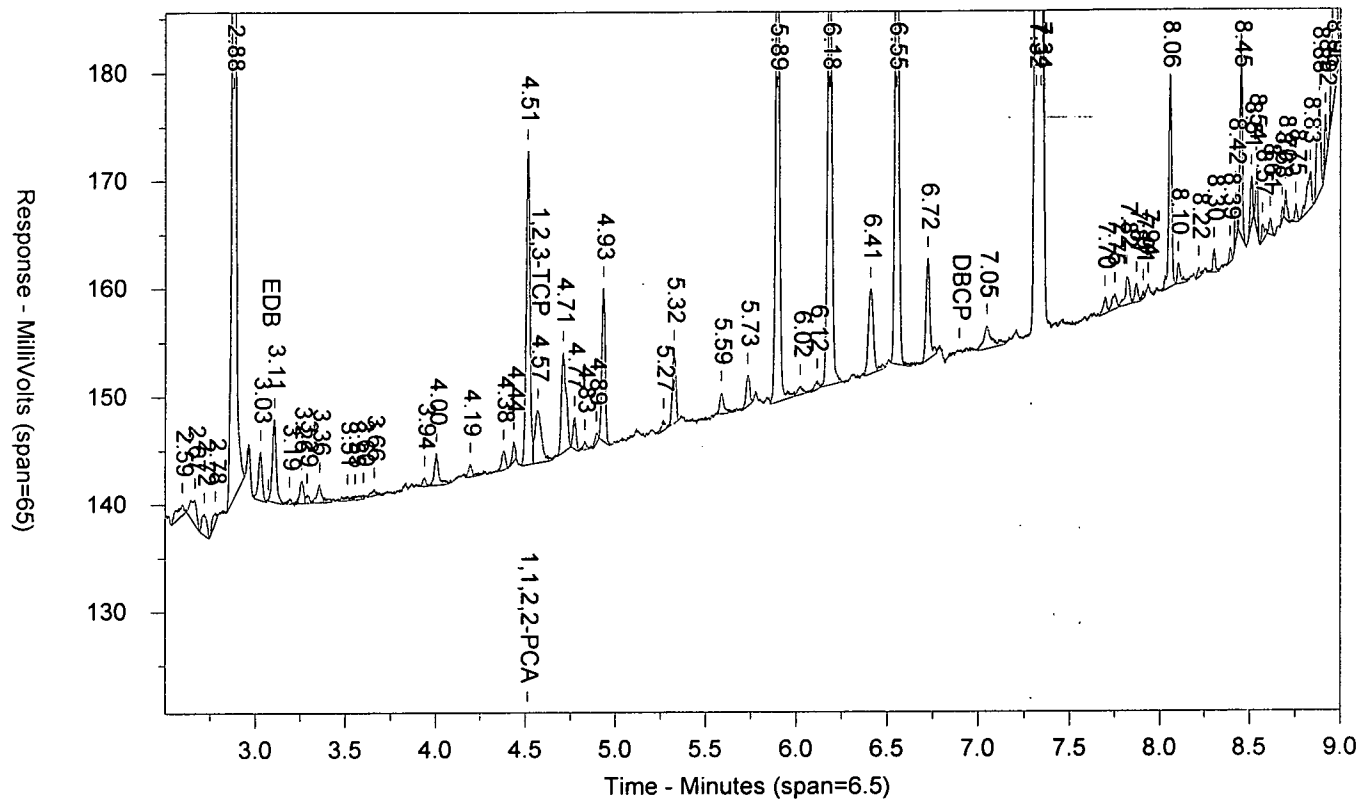
* Recovery outside QC Limits



Printed on: 7/24/2017 11:15:41

9098348 AA18505 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0053.RAW

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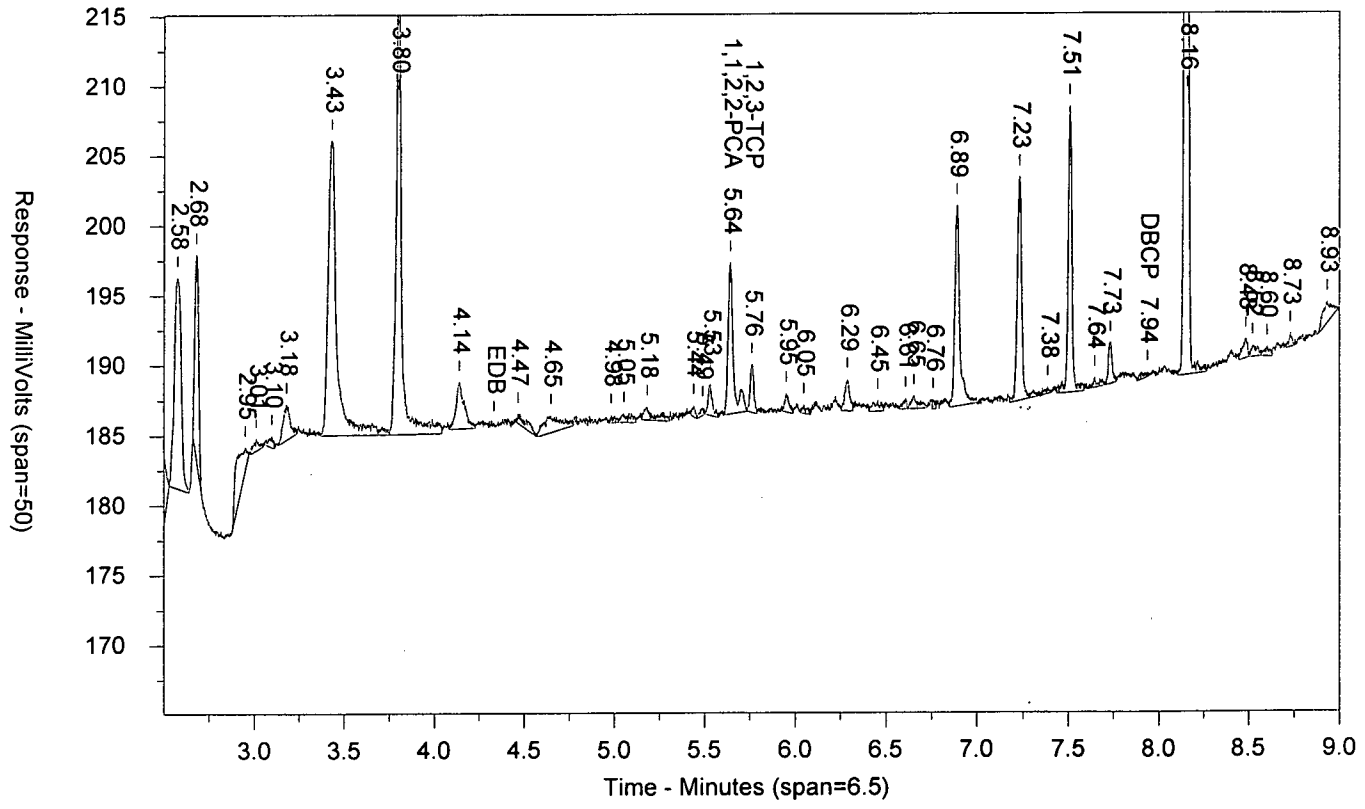

LANCASTER LABORATORIES

Sample Number: 9098348 AA18505 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 3:39:05 AM Sample Weight: 36.92
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 29197 | .067 | 1,1,2,2-PCA | 5.641 | 10887 | .07 | 1,1,2,2-PCA |
| 4.569 | 4937 | .009 | 1,2,3-TCP | 5.76 | 3458 | -.325 | 1,2,3-TCP |
| | 0 | | DBCP | 7.936 | 404 | .001 | DBCP |

Files:
Area File: 16EDBS17202001.0053.RAW
Area File: 16EDBS17202001B.0053.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 3:48:06 AM
File Reported On: 7/24/2017 at 11:01:40 AM

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# Data Summary

**Sample Name: 9098349** 18506 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.66 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 03:54:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0054.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.068239

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 03:54:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0054.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.068665

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29344 | 0.068239 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10639 | 0.068665 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 7056 | 0.048458 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2767 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.068239 | 0.0033 | 0.0067 | 0.0067 | | 0.62 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2578 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:21

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098349** 18506 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.66 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 03:54:40
Instrument : CP16--19853A
Result file : 16EDBS17202001.0054.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.068239

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29344 | 0.068239 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 7056 | 0.048458 |

## Analysis Report (B)

Injected on : Jul 22, 2017 03:54:40
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0054.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.068665

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10639 | 0.068665 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2767 | -0.365905 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.068239 | | | | 0.62 | |
| ☐ 1,2,3-TCP | | | <0.2578 | <0.0955 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

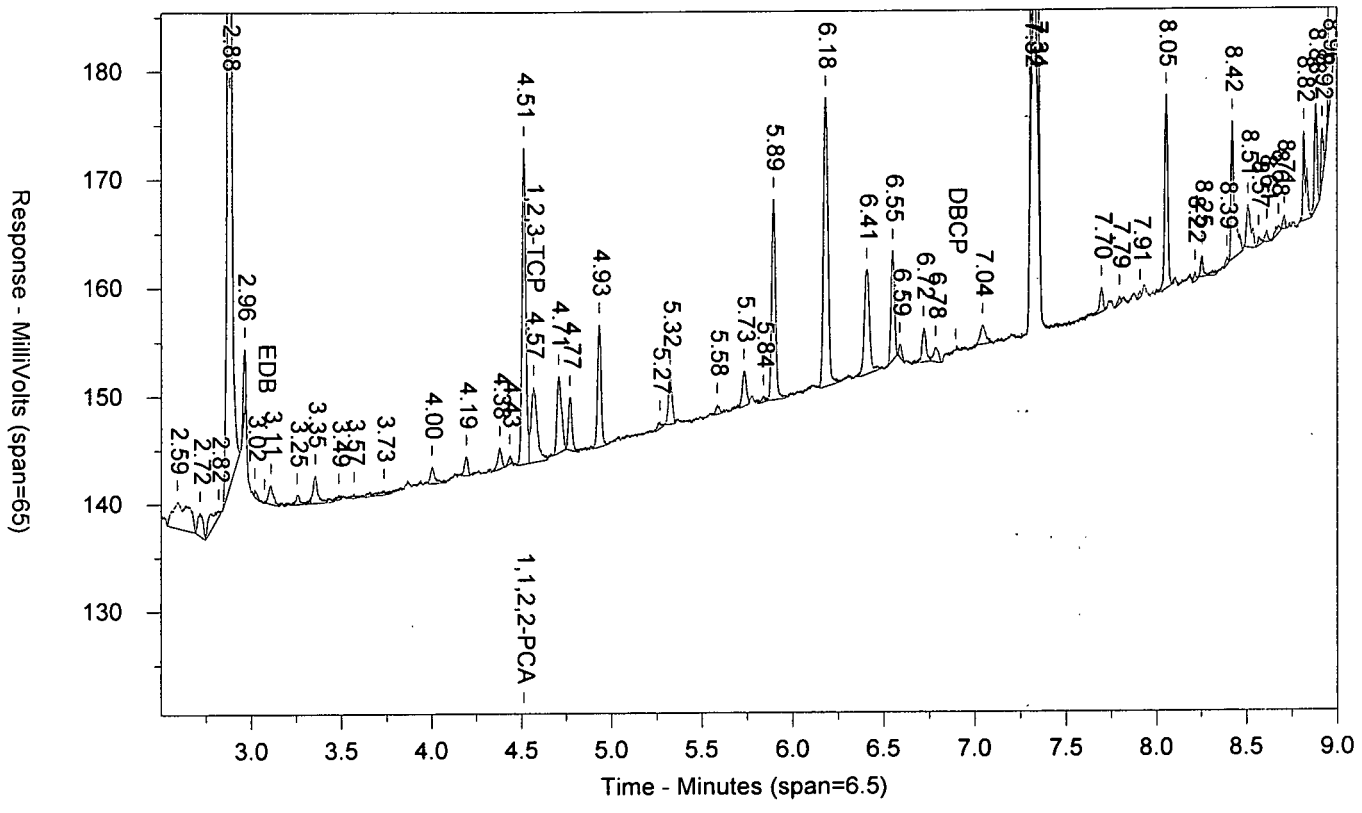
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9098349 AA18506 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0054.RAW

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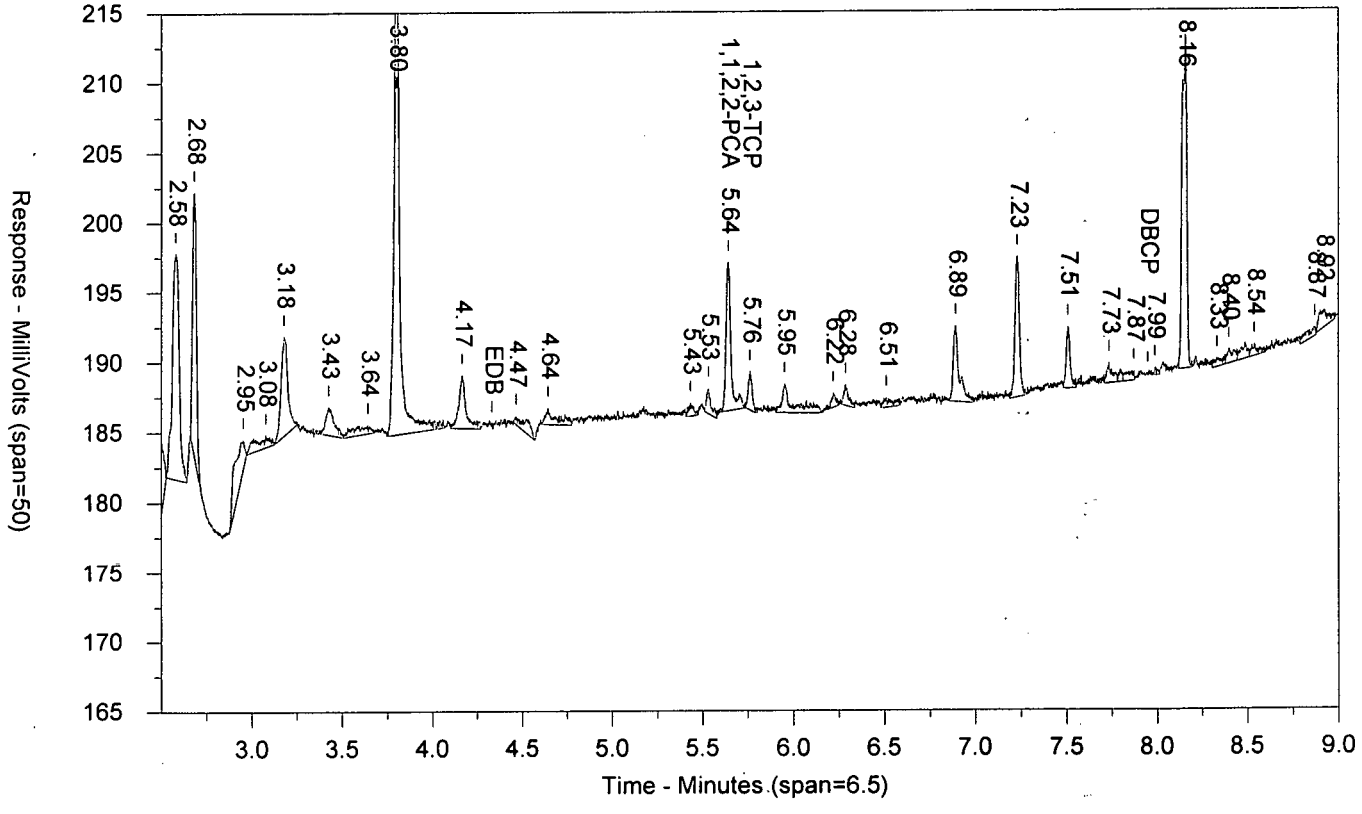

LANCASTER LABORATORIES

Sample Number: 9098349 AA18506 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 3:54:40 AM Sample Weight: 36.66
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 29344 | .068 | 1,1,2,2-PCA | 5.641 | 10639 | .069 | 1,1,2,2-PCA |
| 4.567 | 7056 | .048 | 1,2,3-TCP | 5.76 | 2767 | -.366 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0054.RAW
Area File: 16EDBS17202001B.0054.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 4:03:42 AM
File Reported On: 7/24/2017 at 11:01:52 AM

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# Data Summary

**Sample Name: 9098352** 18507 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.85 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 04:41:31 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0057.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.066371

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 04:41:31 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0057.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.069215

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 28689 | 0.066371 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 8070 | 0.066838 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10777 | 0.069215 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2714 | 0 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.93 | 7.98 | 778 | 0.002733 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.066371 | 0.0033 | 0.0066 | 0.0066 | | 4.20 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2564 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:26

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098352** 18507 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.85 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 04:41:31
Instrument : CP16--19853A
Result file : 16EDBS17202001.0057.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.066371

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 28689 | 0.066371 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 8070 | 0.066838 |

## Analysis Report (B)

Injected on : Jul 22, 2017 04:41:31
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0057.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.069215

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10777 | 0.069215 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2714 | -0.366915 |
| **DBCP** | 7.92 | 7.93 | 7.98 | 778 | 0.002733 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.066371 | | | | 4.20 | |
| ☐ 1,2,3-TCP | | | <0.2564 | <0.095 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

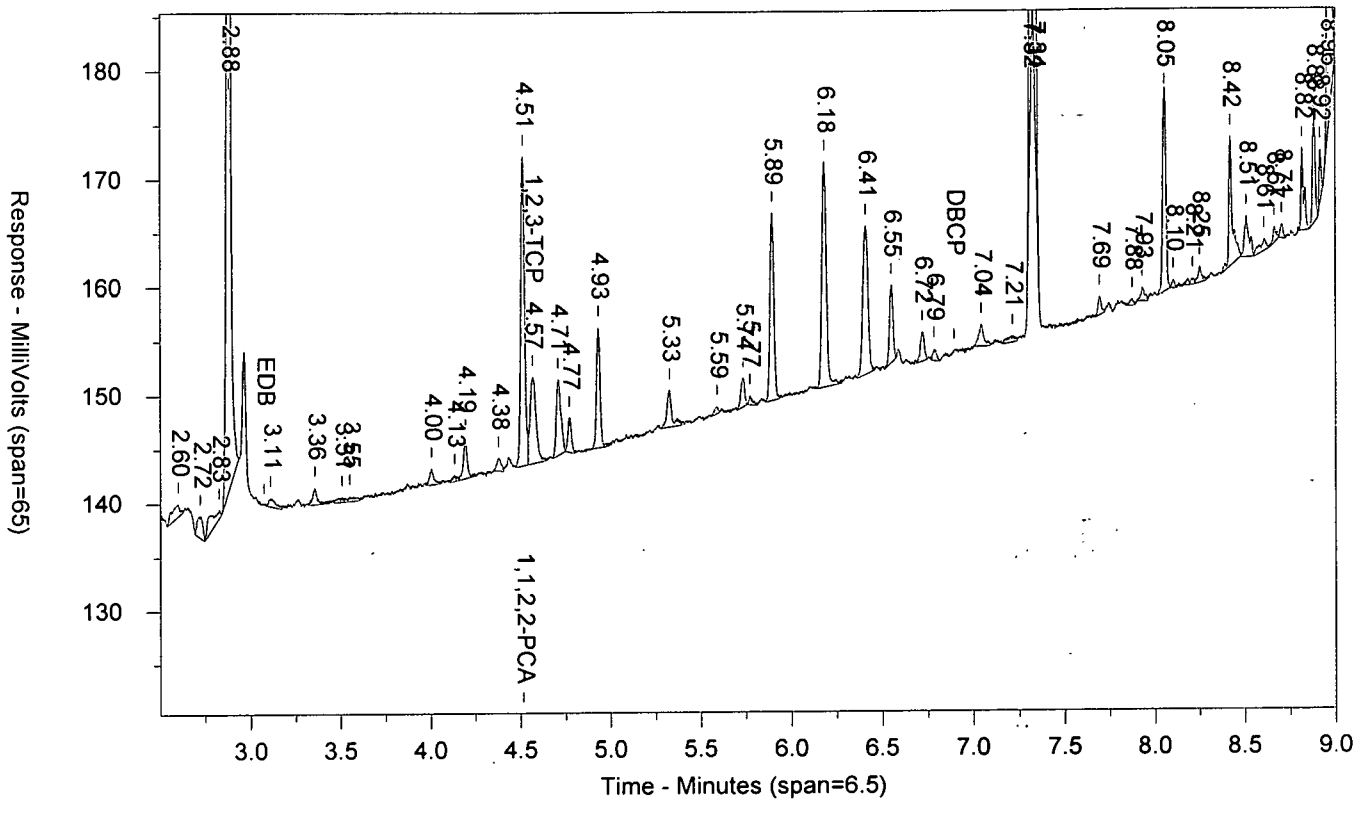
Verified by: Valerie L Tomayko
Valerie L Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9098352 AA18507 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0057.RAW

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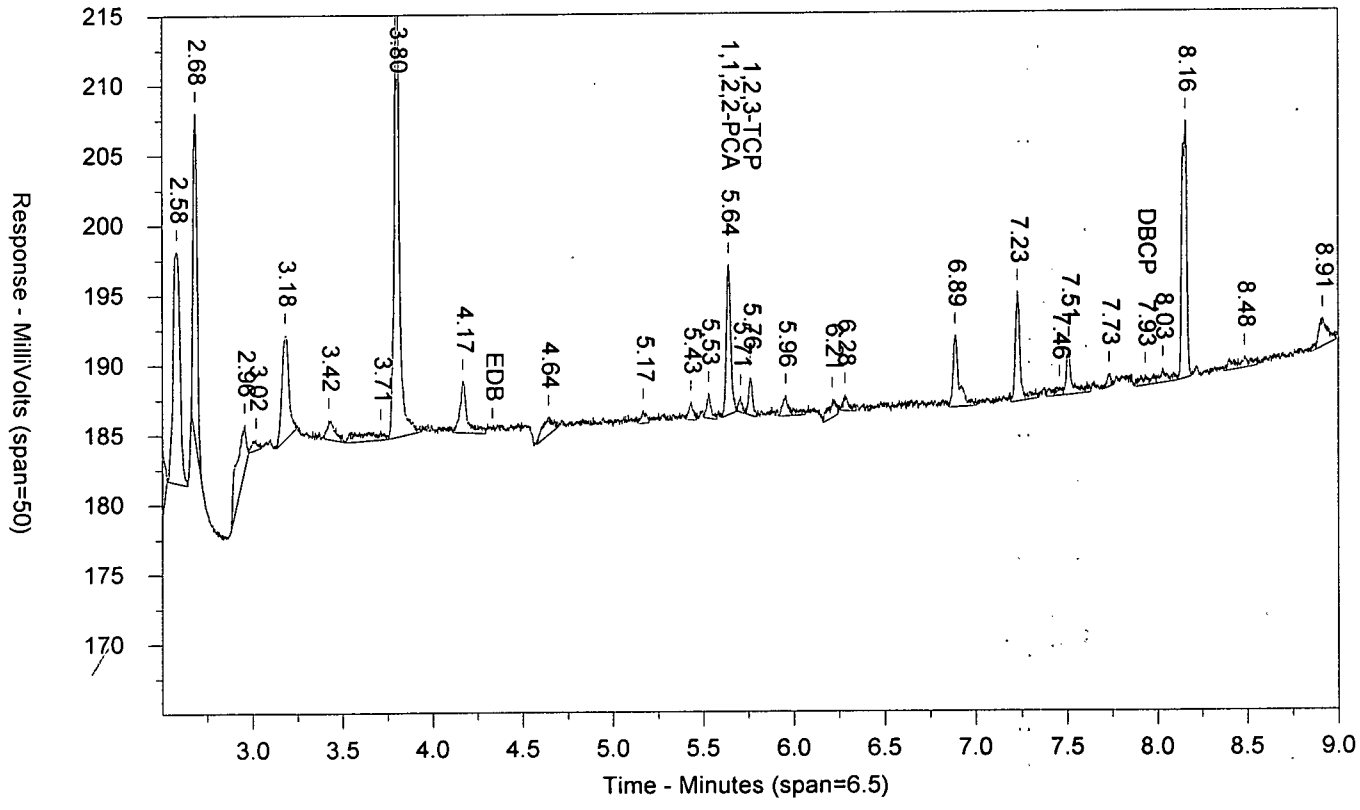

LANCASTER LABORATORIES

Sample Number: 9098352 AA18507 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 4:41:31 AM Sample Weight: 36.85
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 28689 | .066 | 1,1,2,2-PCA | 5.642 | 10777 | .069 | 1,1,2,2-PCA |
| 4.567 | 8070 | .067 | 1,2,3-TCP | 5.759 | 2714 | -.367 | 1,2,3-TCP |
| | 0 | | DBCP | 7.933 | 778 | .003 | DBCP |

Files:
Area File: 16EDBS17202001.0057.RAW
Area File: 16EDBS17202001B.0057.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 4:50:33 AM
File Reported On: 7/24/2017 at 11:02:28 AM

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# Data Summary

**Sample Name: 9098353** 18508 Sample ID: AA **Batchnumber: 172010021A**

Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 04:57:07 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0058.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 91% ( 46 - 136 ) Conc: 0.061222

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 04:57:07 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0058.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.060624

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 26305 | 0.061222 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4403 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9413 | 0.060624 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 3196 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.061222 | 0.0033 | 0.0067 | 0.0067 | | 0.98 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.258 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerio L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:28

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098353** 18508 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 04:57:07
Instrument : CP16--19853A
Result file : 16EDBS17202001.0058.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 91% (46-136) Conc.: 0.061222

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 26305 | 0.061222 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4403 | -0.000498 |

## Analysis Report (B)

Injected on : Jul 22, 2017 04:57:07
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0058.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060624

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9413 | 0.060624 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 3196 | -0.342508 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.061222 | | | | 0.98 | |
| ☐ 1,2,3-TCP | | | <0.258 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

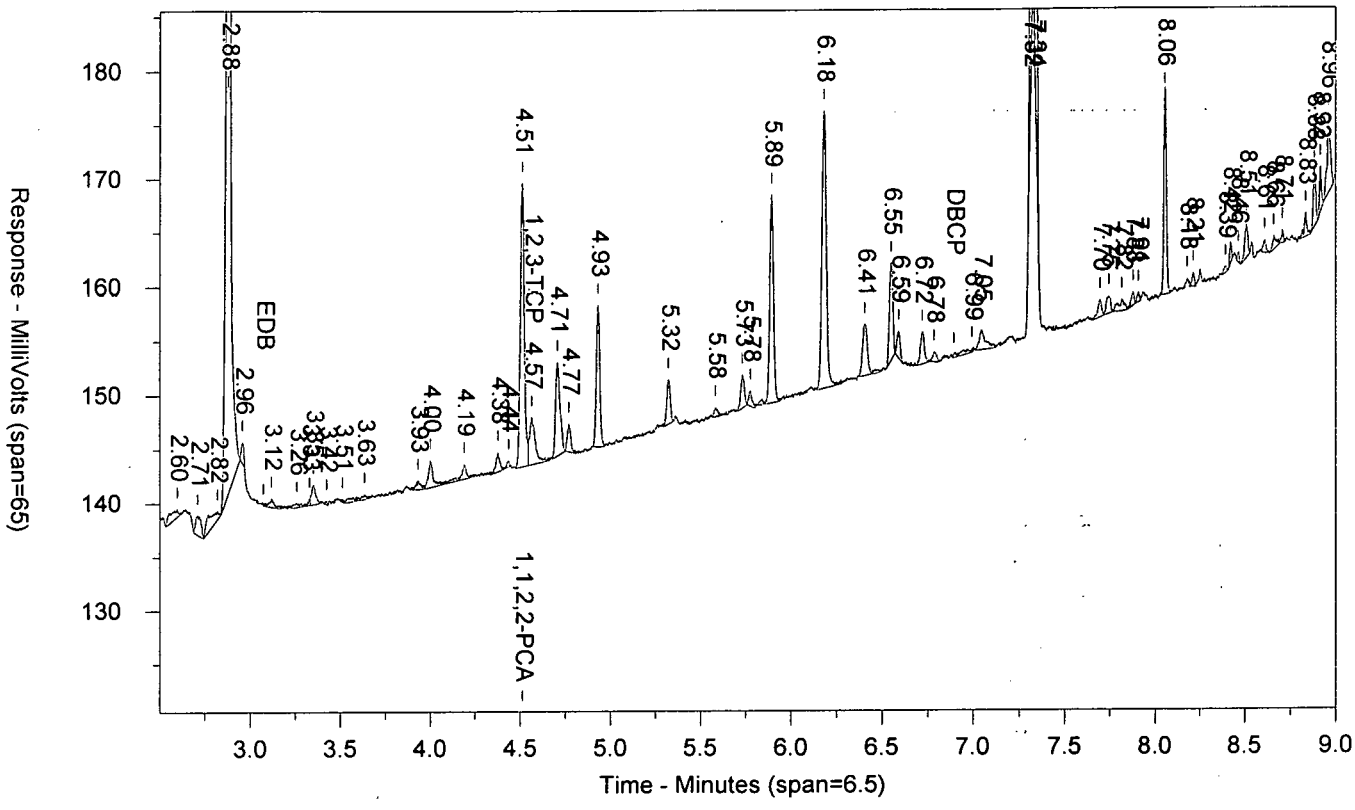
Verified by: Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9098353 AA18508 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0058.RAW

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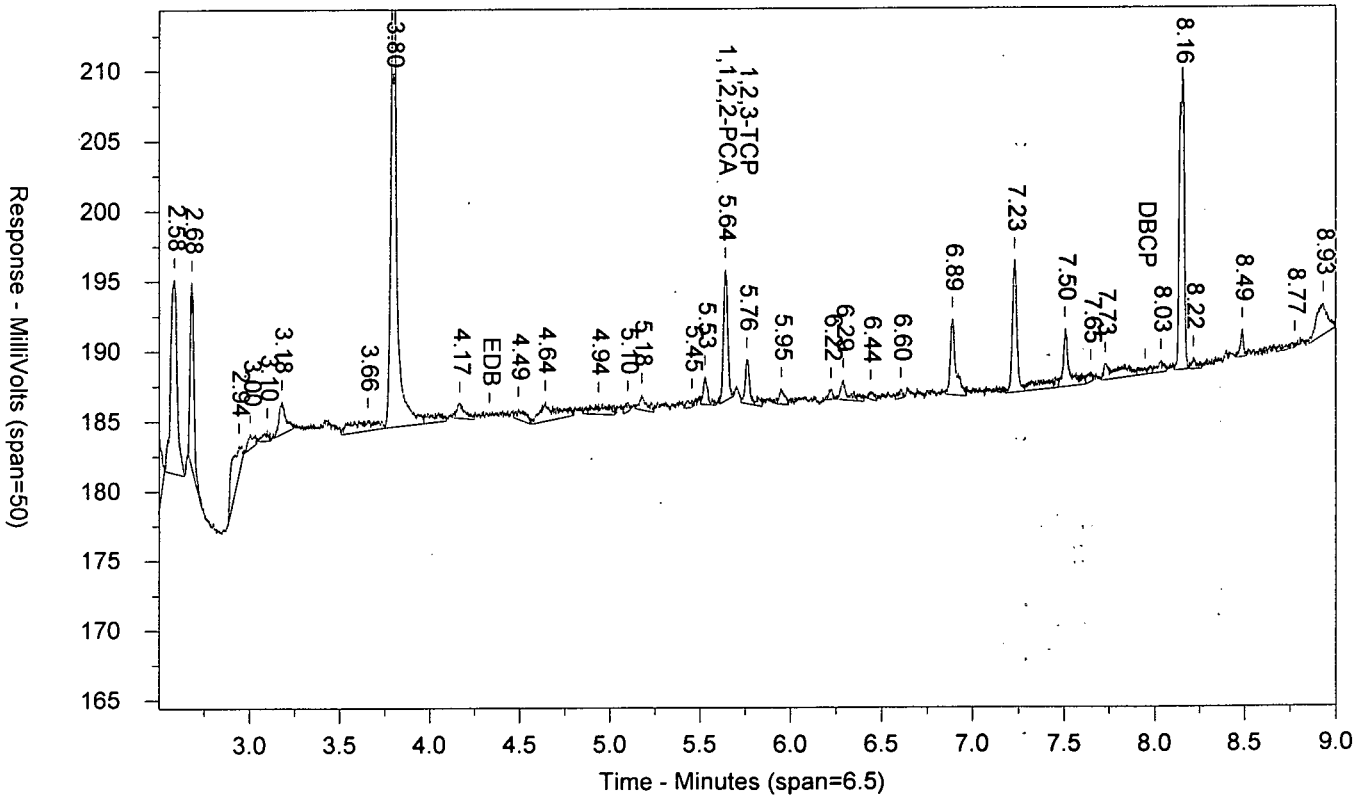

LANCASTER LABORATORIES

Sample Number: 9098353 AA18508 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 4:57:07 AM Sample Weight: 36.63
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.512 | 26305 | .061 | 1,1,2,2-PCA | 5.64 | 9413 | .061 | 1,1,2,2-PCA |
| 4.565 | 4403 | | 1,2,3-TCP | 5.758 | 3196 | .343 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0058.RAW
Area File: 16EDBS17202001B.0058.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 5:06:09 AM
File Reported On: 7/24/2017 at 11:02:38 AM

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# Data Summary

**Sample Name: 9098354** 18509 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.9 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 05:12:46 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0059.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 98% ( 46 - 136 ) Conc: 0.065384

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 05:12:46 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0059.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.066802

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.09 | 3.10 | 485 | 0.001275 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 28301 | 0.065384 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5740 | 0.024019 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10423 | 0.066802 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 3559 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.065384 | 0.0033 | 0.0066 | 0.0066 | | 2.15 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2561 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:30

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098354** 18509 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.9 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 05:12:46
Instrument : CP16--19853A
Result file : 16EDBS17202001.0059.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 98% (46-136) Conc.: 0.065384

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.09 | 3.10 | 485 | 0.001275 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 28301 | 0.065384 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 5740 | 0.024019 |

## Analysis Report (B)

Injected on : Jul 22, 2017 05:12:46
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0059.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.066802

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10423 | 0.066802 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 3559 | -0.320071 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065384 | | | | 2.15 | |
| ☐ 1,2,3-TCP | | | <0.2561 | <0.0949 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 24 2017

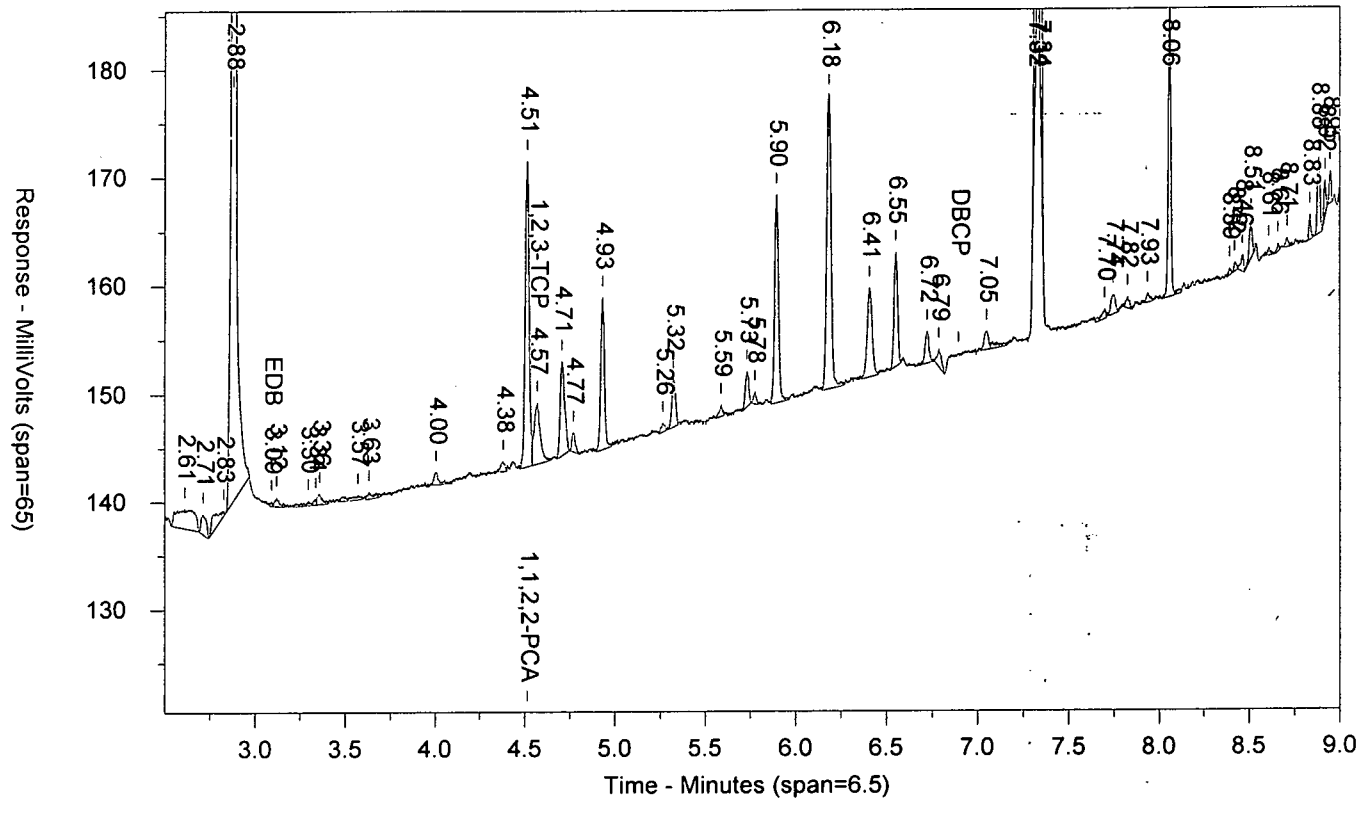
Verified by: Valerie L. Tomayko Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9098354 AA18509 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0059.RAW

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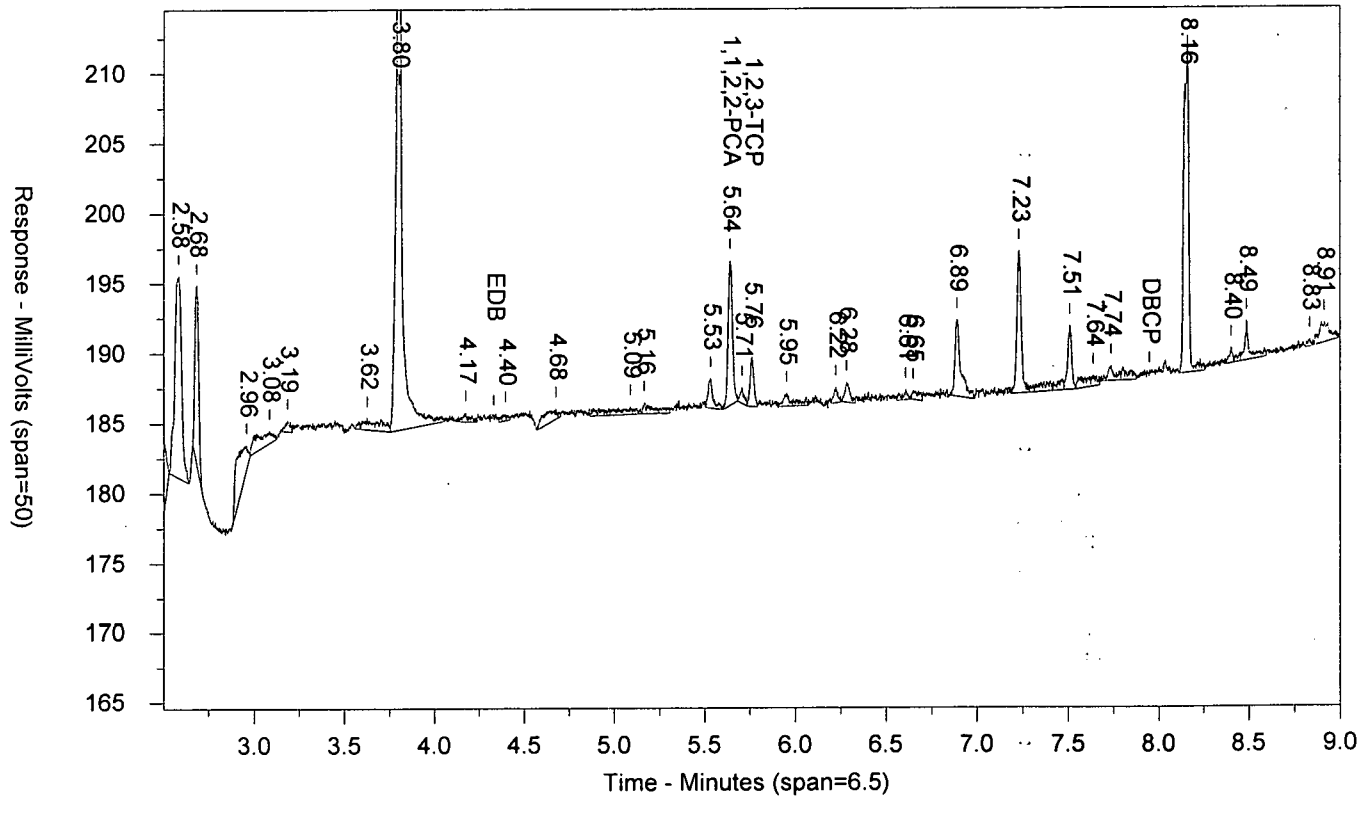

LANCASTER LABORATORIES

Sample Number: 9098354 AA18509 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 5:12:46 AM Sample Weight: 36.9
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.091 | 485 | .001 | EDB | | 0 | | EDB |
| 4.514 | 28301 | .065 | 1,1,2,2-PCA | 5.64 | 10423 | .067 | 1,1,2,2-PCA |
| 4.571 | 5740 | .024 | 1,2,3-TCP | 5.762 | 3559 | -.32 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0059.RAW
Area File: 16EDBS17202001B.0059.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 5:21:48 AM
File Reported On: 7/24/2017 at 11:02:48 AM

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# Data Summary

**Sample Name: 9098355** 18510 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.42 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 05:28:21 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0060.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.062573

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 05:28:21 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0060.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.062525

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 26732 | 0.062573 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9647 | 0.062525 |
| 1,2,3-Trichloropropane | 4.55 | 4.56 | 4.61 | 4960 | 0.009835 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 3845 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.062573 | 0.0034 | 0.0067 | 0.0067 | | 0.08 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2595 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerio L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:32

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098355** 18510 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.42 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 05:28:21
Instrument : CP16--19853A
Result file : 16EDBS17202001.0060.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.062573

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 26732 | 0.062573 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 4960 | 0.009835 |

## Analysis Report (B)

Injected on : Jul 22, 2017 05:28:21
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0060.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.062525

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9647 | 0.062525 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 3845 | -0.308349 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.062573 | | | | 0.08 | |
| ☐ 1,2,3-TCP | | | <0.2595 | <0.0961 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L Tomayko
Valerie L Tomayko
Principal Specialist
Date: JUL 25 2017

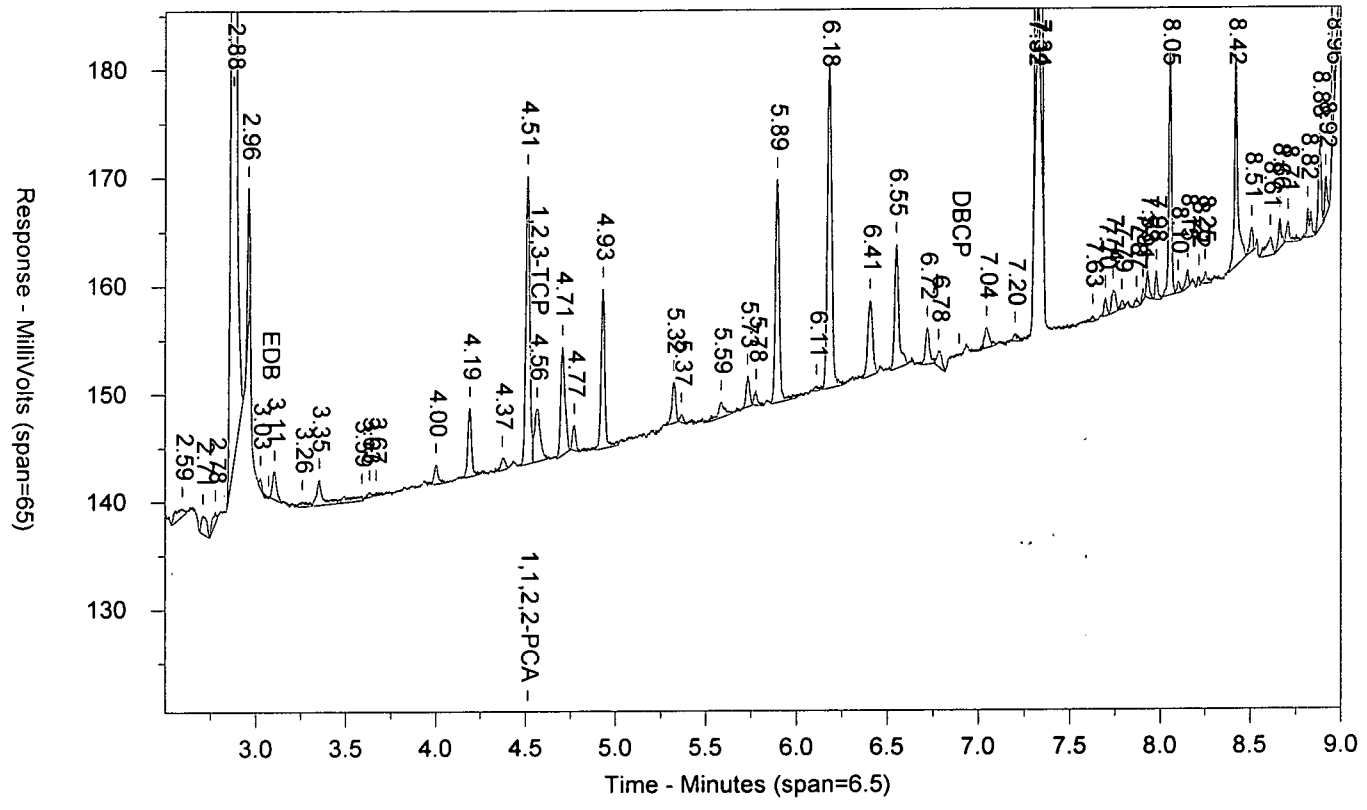
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:16:41

9098355 AA18510 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0060.RAW

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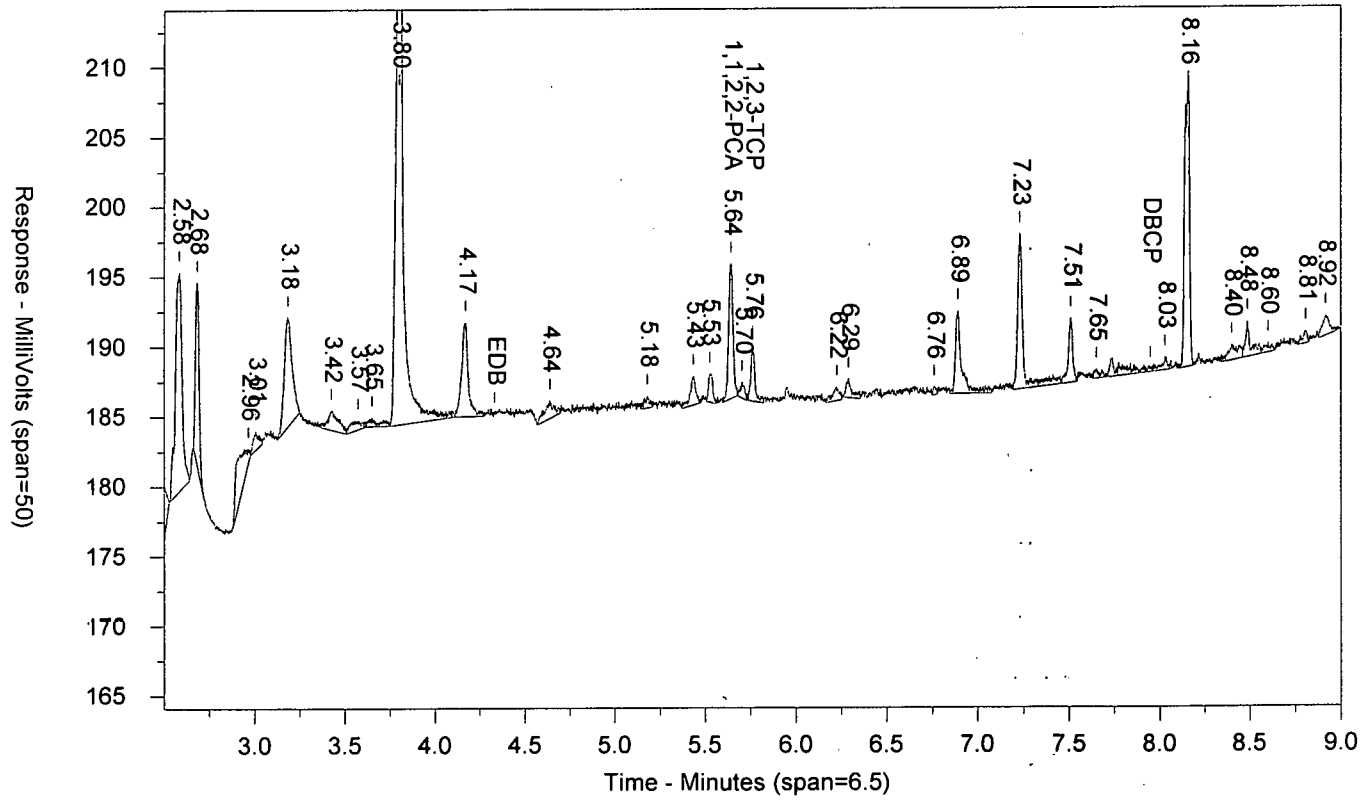

LANCASTER LABORATORIES

Sample Number: 9098355 AA18510 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 5:28:21 AM Sample Weight: 36.42
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 26732 | .063 | 1,1,2,2-PCA | 5.642 | 9647 | .063 | 1,1,2,2-PCA |
| 4.565 | 4960 | .01 | 1,2,3-TCP | 5.759 | 3845 | -.308 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0060.RAW
Area File: 16EDBS17202001B.0060.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 5:37:24 AM
File Reported On: 7/24/2017 at 11:03:00 AM

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# Data Summary

**Sample Name: 9098356** 18511 Sample ID: AA **Batchnumber: 172010021A**

Sample Amount: 36.7 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 06:15:16 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0063.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 88% ( 46 - 136 ) Conc: 0.05938

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 06:15:16 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0063.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.061843

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 25563 | 0.05938 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4751 | 0.005921 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9616 | 0.061843 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 3166 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.05938 | 0.0033 | 0.0067 | 0.0067 | | 4.06 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2575 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:34

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098356** 18511 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.7 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 06:15:16
Instrument : CP16--19853A
Result file : 16EDBS17202001.0063.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 88% (46-136) Conc.: 0.05938

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25563 | 0.059380 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4751 | 0.005921 |

## Analysis Report (B)

Injected on : Jul 22, 2017 06:15:16
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0063.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.061843

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9616 | 0.061843 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 3166 | -0.343499 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.059380 | | | | 4.06 | |
| ☐ 1,2,3-TCP | | | <0.2575 | <0.0954 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

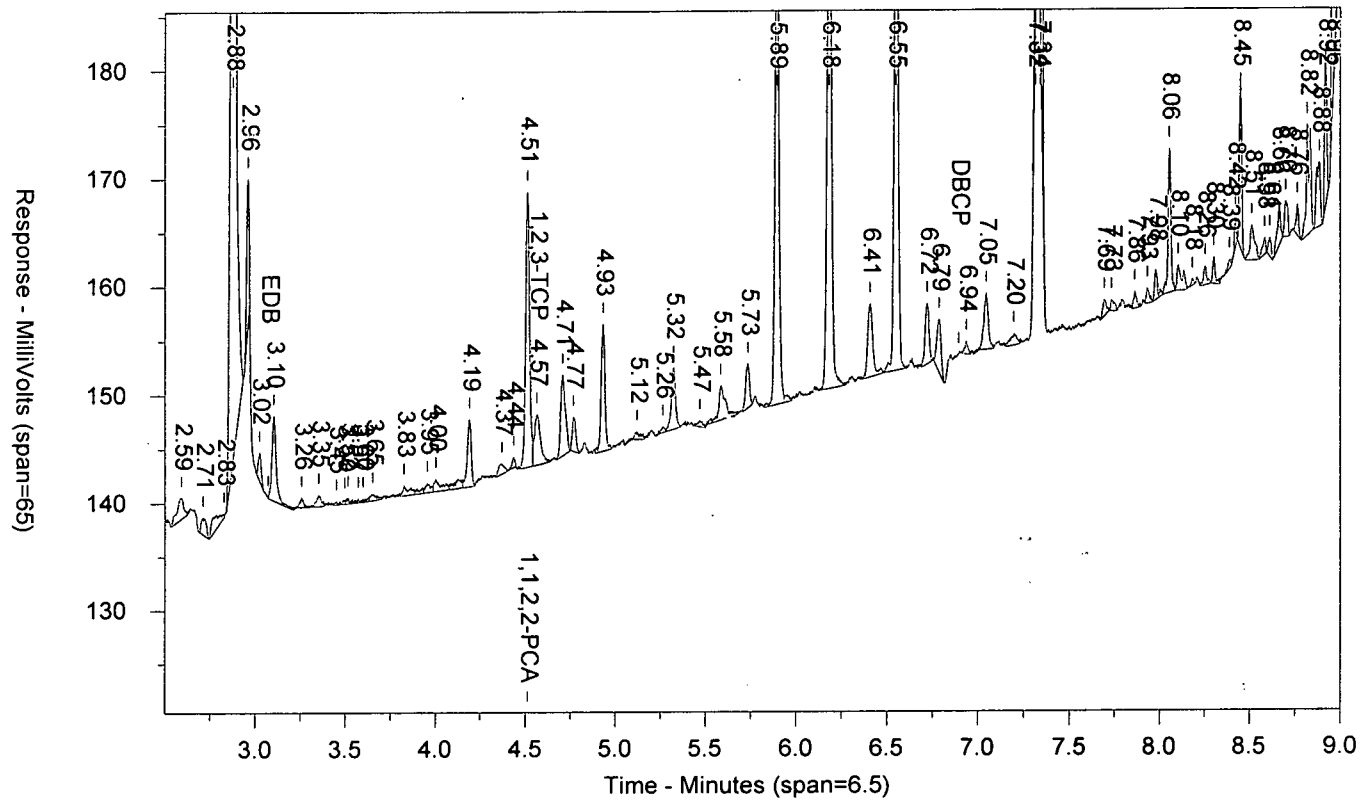
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:16:57

9098356 AA18511 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0063.RAW

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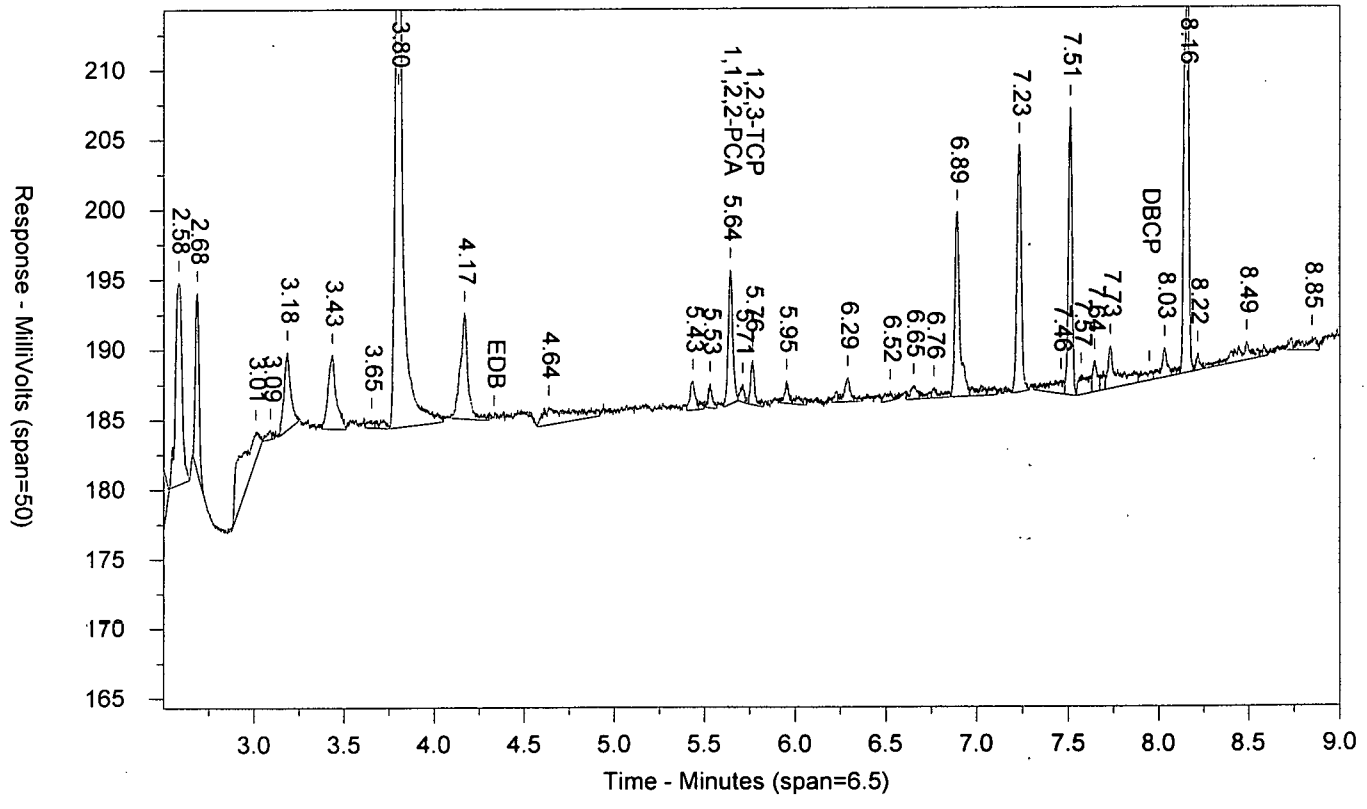

LANCASTER LABORATORIES

Sample Number: 9098356 AA18511 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 6:15:16 AM Sample Weight: 36.7
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 25563 | .059 | 1,1,2,2-PCA | 5.641 | 9616 | .062 | 1,1,2,2-PCA |
| 4.566 | 4751 | .006 | 1,2,3-TCP | 5.764 | 3166 | -.343 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0063.RAW
Area File: 16EDBS17202001B.0063.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 6:24:17 AM
File Reported On: 7/24/2017 at 11:03:39 AM

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# Data Summary

**Sample Name: 9098357** 18512 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.77 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 06:30:50 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0064.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.063741

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 06:30:50 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0064.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.065042

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 27493 | 0.063741 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6219 | 0.032919 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10120 | 0.065042 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 3172 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063741 | 0.0033 | 0.0067 | 0.0067 | | 2.02 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.257 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:36

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098357** 18512 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.77 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 06:30:50
Instrument : CP16--19853A
Result file : 16EDBS17202001.0064.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.063741

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 27493 | 0.063741 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6219 | 0.032919 |

## Analysis Report (B)

Injected on : Jul 22, 2017 06:30:50
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0064.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.065042

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10120 | 0.065042 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 3172 | -0.342535 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063741 | | | | 2.02 | |
| ☐ 1,2,3-TCP | | | <0.257 | <0.0952 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

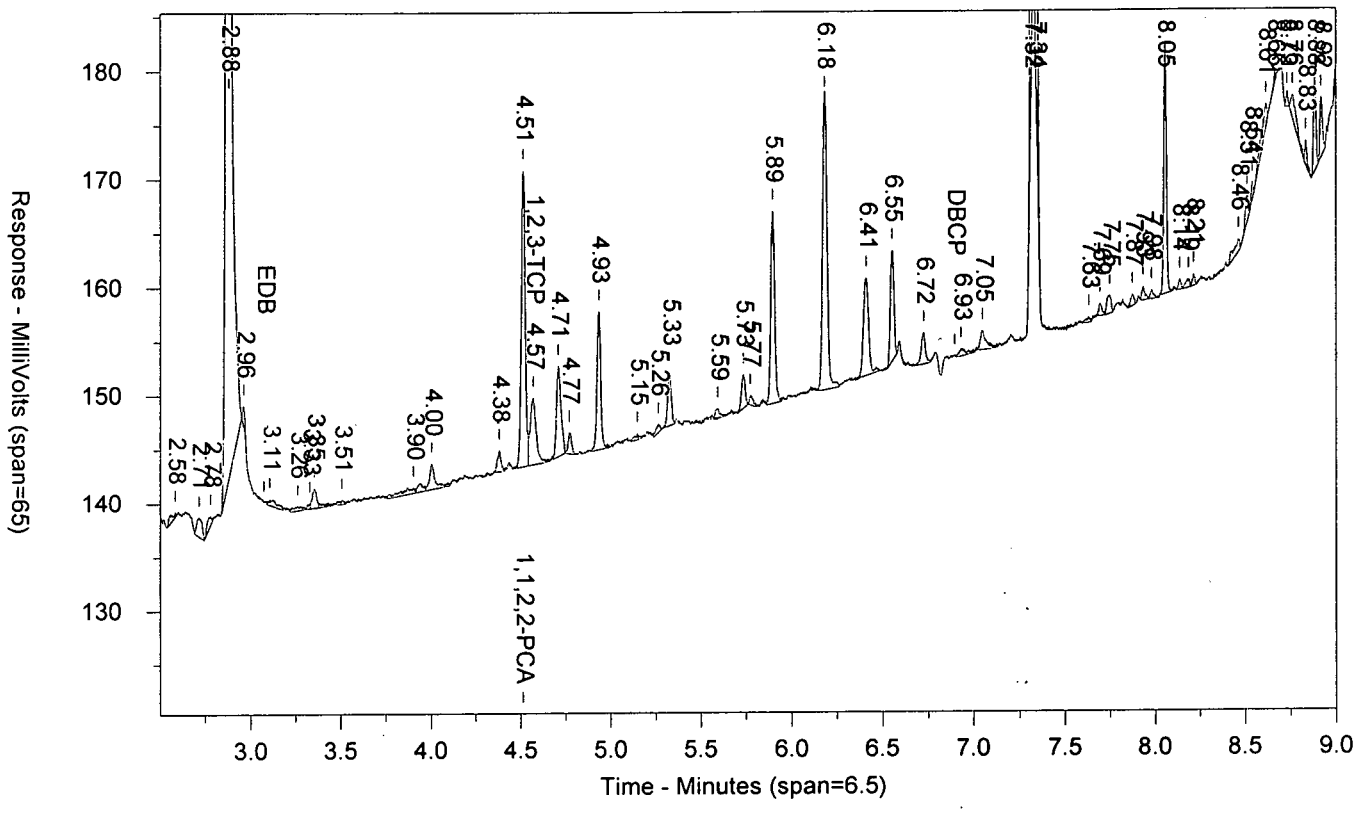
* Recovery outside QC Limits



Printed on: 7/24/2017 11:17:05

9098357 AA18512 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0064.RAW

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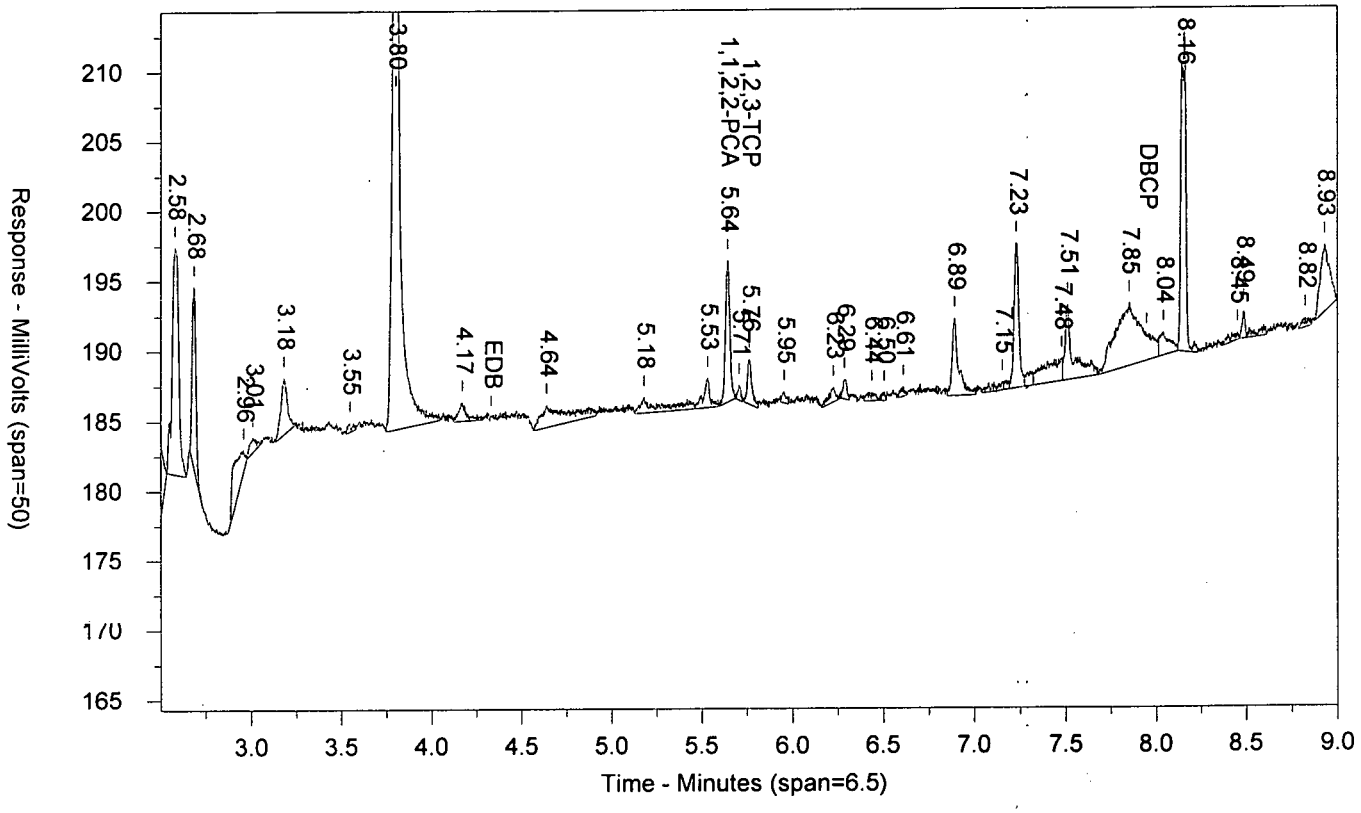

LANCASTER LABORATORIES

Sample Number: 9098357 AA18512 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 6:30:50 AM Sample Weight: 36.77
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 27493 | .064 | 1,1,2,2-PCA | 5.642 | 10120 | .065 | 1,1,2,2-PCA |
| 4.569 | 6219 | .033 | 1,2,3-TCP | 5.762 | 3172 | -.343 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0064.RAW
Area File: 16EDBS17202001B.0064.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 6:39:52 AM
File Reported On: 7/24/2017 at 11:03:49 AM

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# Data Summary

**Sample Name: 9098358** 18513 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 37.09 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 06:46:30 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0065.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.064487

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 06:46:30 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0065.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.066365

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.06 | 3.10 | 361 | 0.000944 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10409 | 0.066365 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 28056 | 0.064487 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2637 | 0 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5794 | 0.024883 | | | | | | |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0094 | <0.0189 | <0.0283 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.064487 | 0.0033 | 0.0066 | 0.0066 | | 2.87 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2548 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0094 | <0.0189 | <0.0283 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:37

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098358** 18513 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 37.09 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 06:46:30
Instrument : CP16--19853A
Result file : 16EDBS17202001.0065.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.064487

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.06 | 3.10 | 361 | 0.000944 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 28056 | 0.064487 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 5794 | 0.024883 |

## Analysis Report (B)

Injected on : Jul 22, 2017 06:46:30
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0065.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.066365

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10409 | 0.066365 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2637 | -0.368767 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0283 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.064487 | | | | 2.87 | |
| ☐ 1,2,3-TCP | | | <0.2548 | <0.0944 | | | |
| ☐ DBCP | | | <0.0283 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerio L. Tomayko
Valerio L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

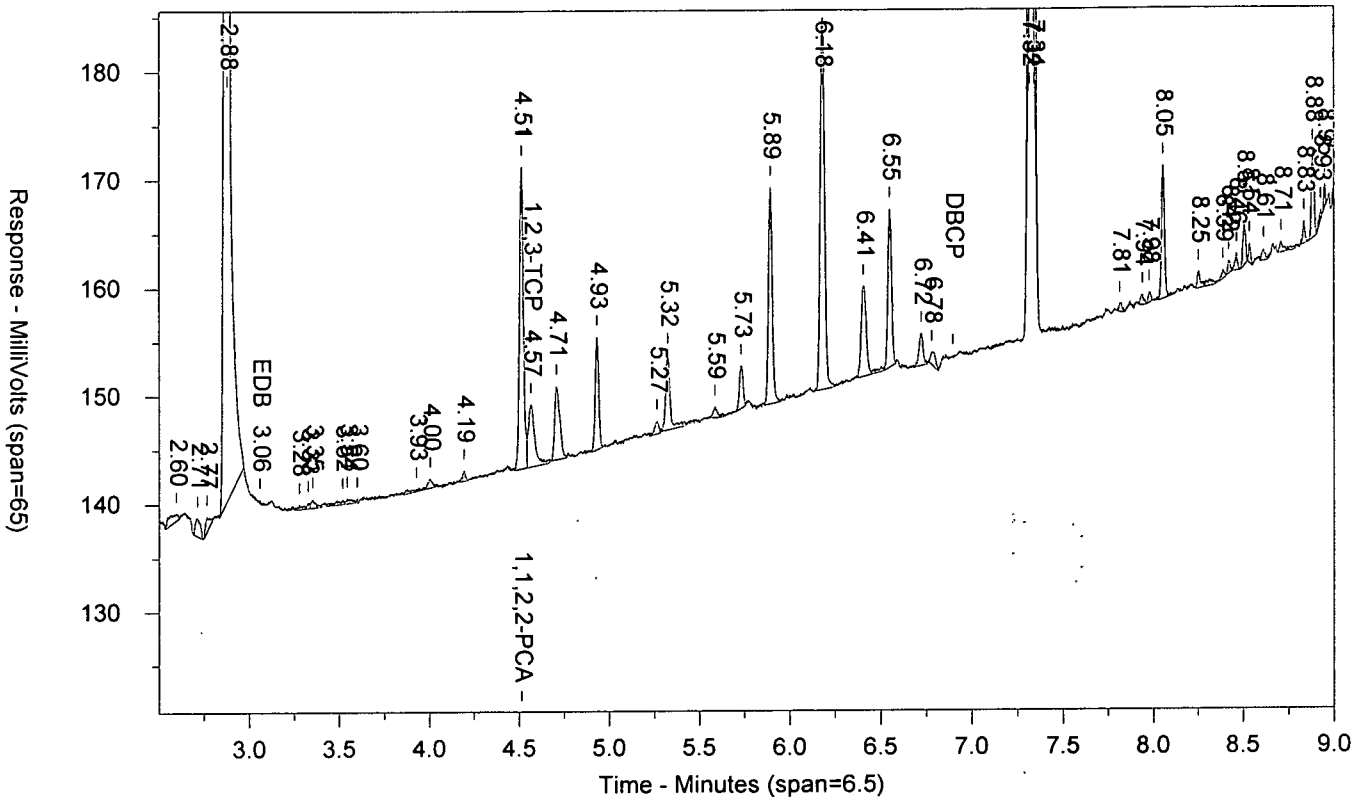
* Recovery outside QC Limits



Printed on: 7/24/2017 11:17:12

9098358 AA18513 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0065.RAW

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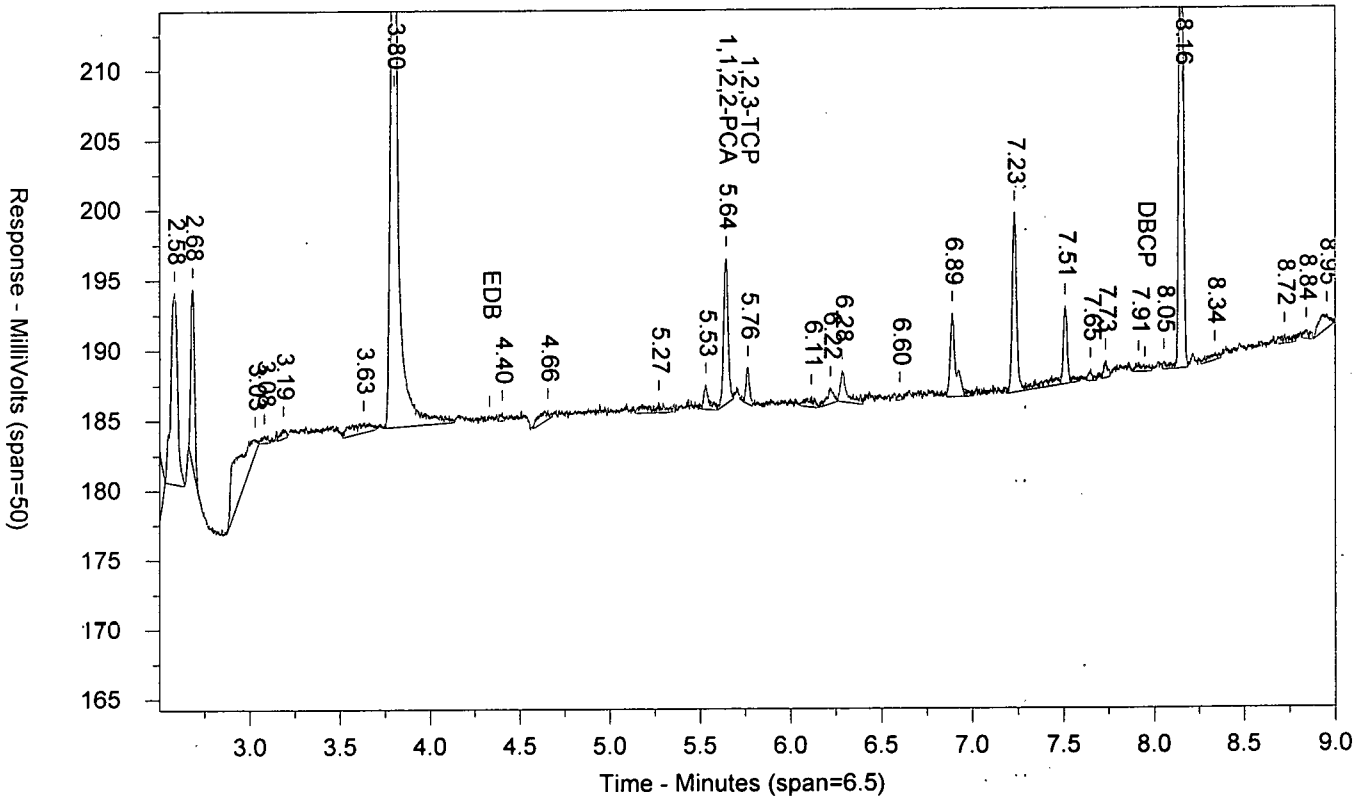

LANCASTER LABORATORIES

Sample Number: 9098358 AA18513 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 6:46:30 AM Sample Weight: 37.09
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.06 | 361 | .001 | EDB | | 0 | | EDB |
| 4.514 | 28056 | .064 | 1,1,2,2-PCA | 5.643 | 10409 | .066 | 1,1,2,2-PCA |
| 4.566 | 5794 | .025 | 1,2,3-TCP | 5.763 | 2637 | -.369 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0065.RAW
Area File: 16EDBS17202001B.0065.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 6:55:31 AM
File Reported On: 7/24/2017 at 11:04:01 AM

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# Data Summary

**Sample Name: 9098359** 18514 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.7 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 07:02:05 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0066.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.063265

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 07:02:05 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0066.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.066296

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 27235 | 0.063265 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6890 | 0.045355 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10291 | 0.066296 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2618 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063265 | 0.0033 | 0.0067 | 0.0067 | | 4.68 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2575 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:39

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098359** 18514 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.7 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 07:02:05
Instrument : CP16--19853A
Result file : 16EDBS17202001.0066.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063265

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 27235 | 0.063265 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6890 | 0.045355 |

## Analysis Report (B)

Injected on : Jul 22, 2017 07:02:05
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0066.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.066296

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10291 | 0.066296 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2618 | -0.373729 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063265 | | | | 4.68 | |
| ☐ 1,2,3-TCP | | | <0.2575 | <0.0954 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomayko Principal Specialist
Date: JUL 25 2017

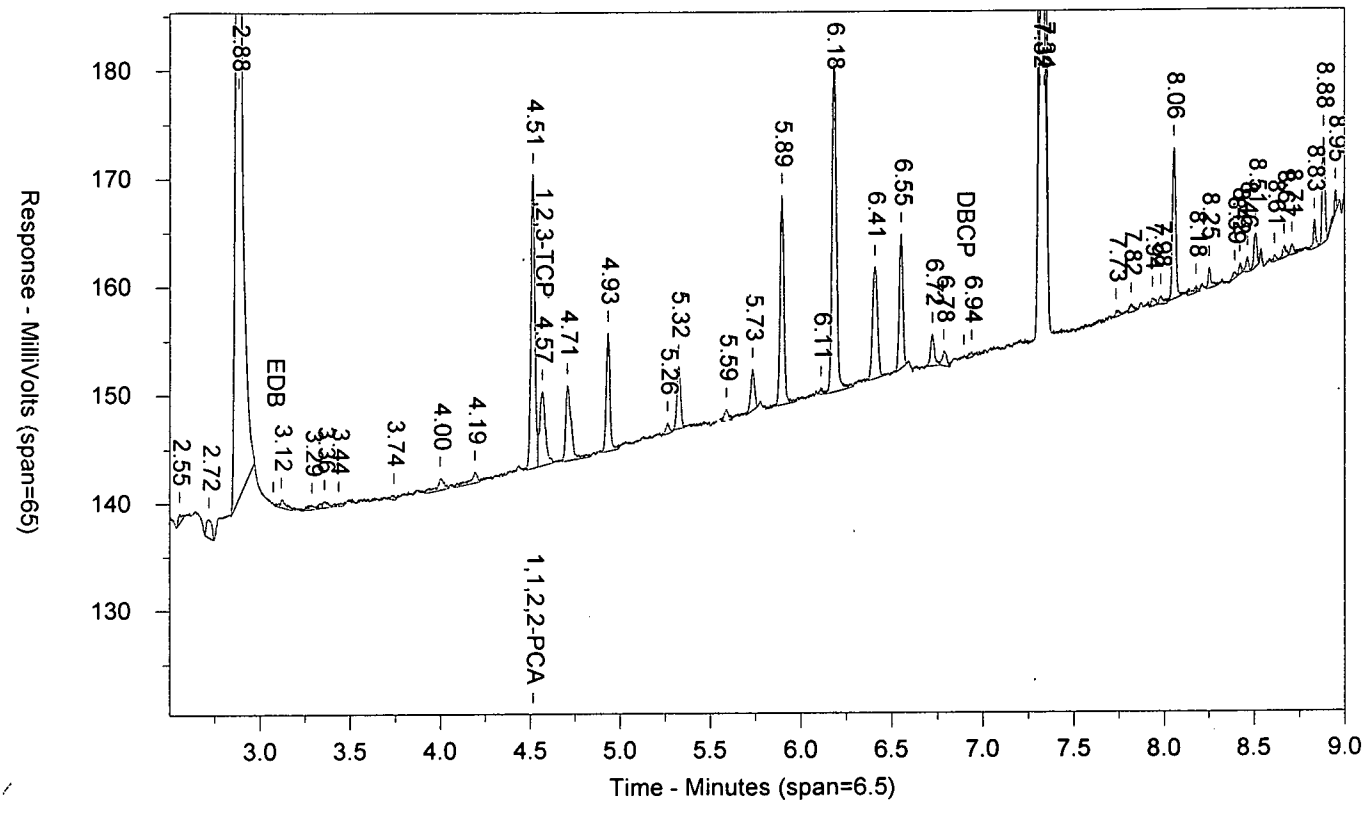
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

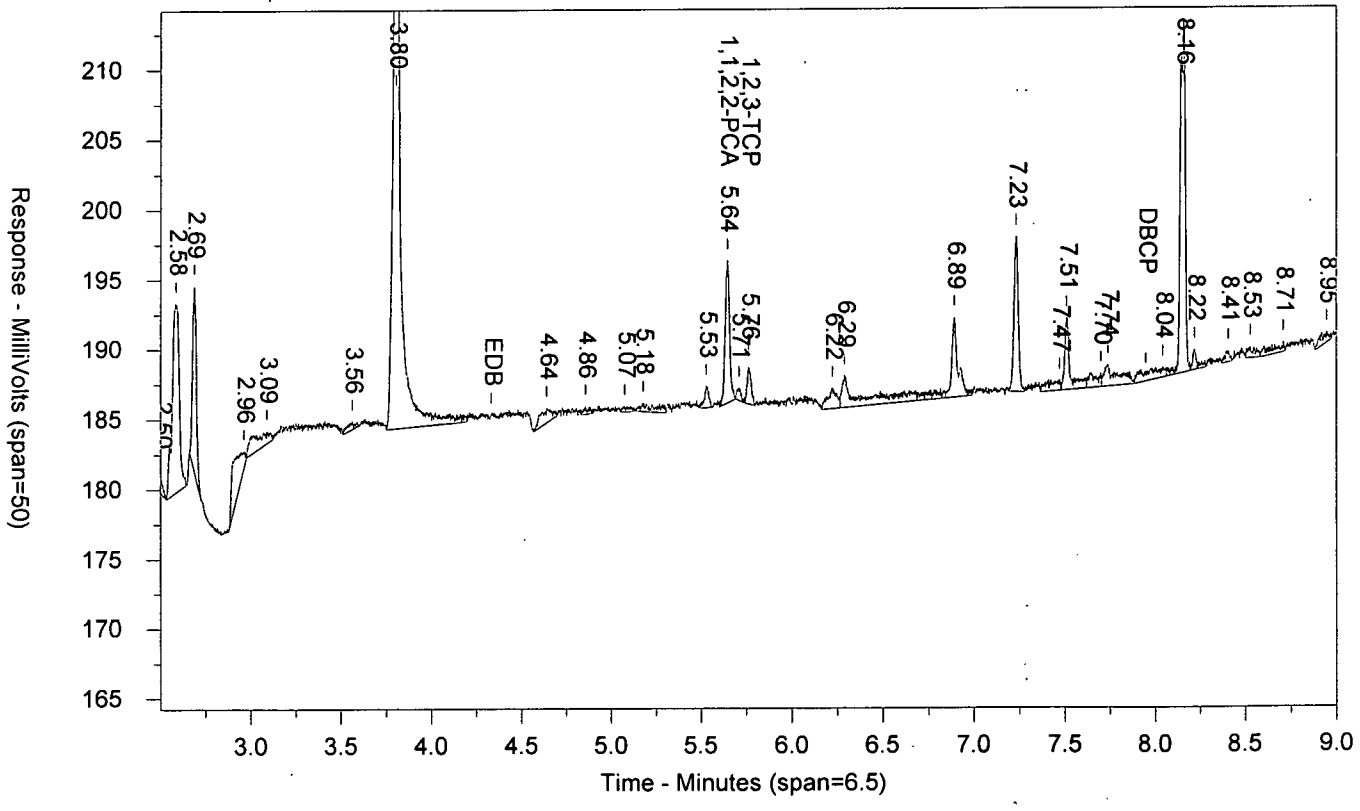
Printed on: 7/24/2017 11:17:19

9098359 AA18514 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0066.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0066.RAW



LANCASTER LABORATORIES

Sample Number: 9098359 AA18514 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 7:02:05 AM Sample Weight: 36.7
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 27235 | .063 | 1,1,2,2-PCA | 5.643 | 10291 | .066 | 1,1,2,2-PCA |
| 4.568 | 6890 | .045 | 1,2,3-TCP | 5.759 | 2618 | -.374 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0066.RAW
Area File: 16EDBS17202001B.0066.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 7:11:06 AM
File Reported On: 7/24/2017 at 11:04:13 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9098360** 18515 Sample ID: AA **Batchnumber: 172010021A**

Sample Amount: 36.6 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 07:17:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0067.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.068646

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 07:17:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0067.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.069058

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.05 | 3.10 | 368 | 0.000975 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10682 | 0.069058 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29471 | 0.068646 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2733 | 0 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4456 | 0.000474 | | | | | | |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.91 | 6.93 | 323 | 0.000434 | | | | | | |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.068646 | 0.0033 | 0.0067 | 0.0067 | | 0.60 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2582 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:41

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098360** 18515 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.6 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 07:17:40
Instrument : CP16--19853A
Result file : 16EDBS17202001.0067.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.068646

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.05 | 3.10 | 368 | 0.000975 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29471 | 0.068646 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4456 | 0.000474 |
| **DBCP** | 6.86 | 6.91 | 6.93 | 323 | 0.000434 |

## Analysis Report (B)

Injected on : Jul 22, 2017 07:17:40
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0067.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.069058

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10682 | 0.069058 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2733 | -0.368401 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.068646 | | | | 0.60 | |
| ☐ 1,2,3-TCP | | | <0.2582 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Heather M. Miller Chemist
Date: JUL 24 2017

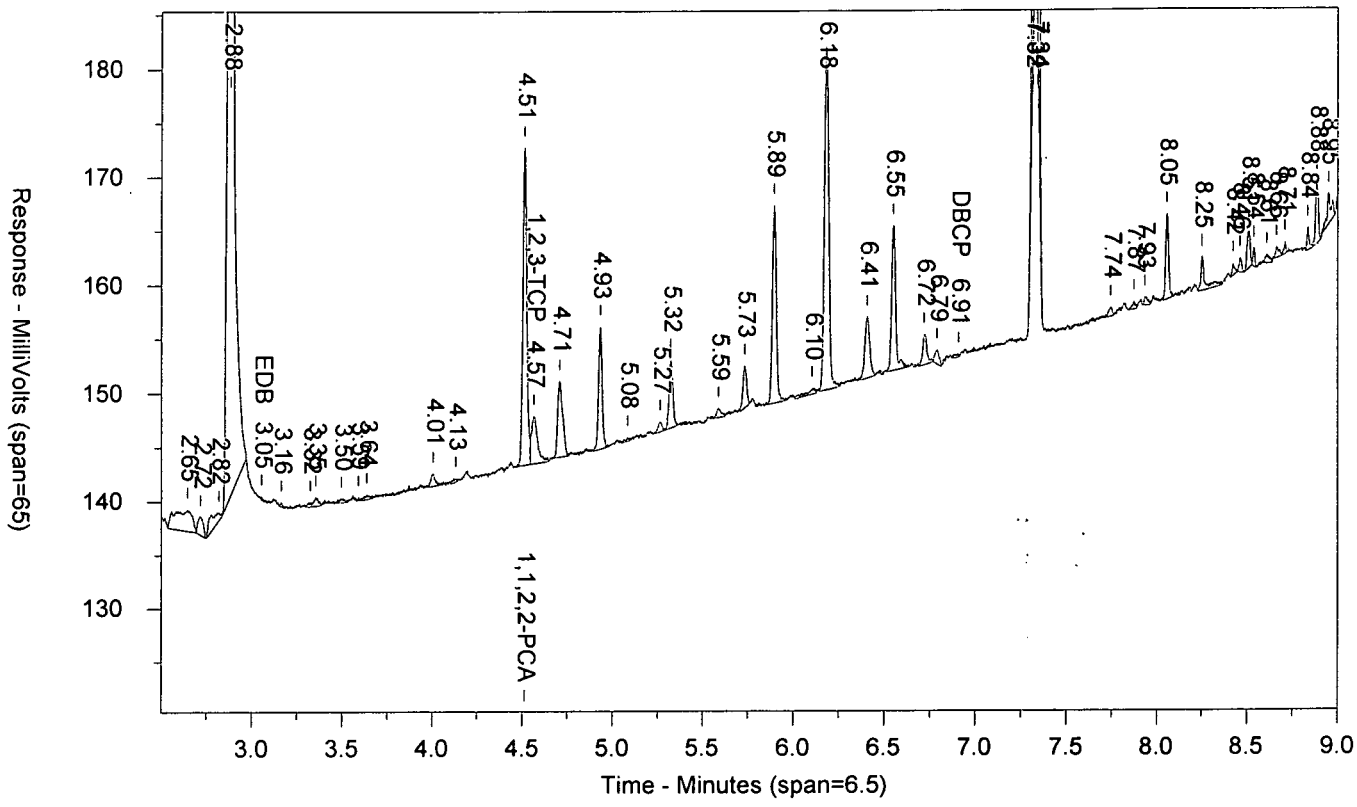
Verified by: Valerie L. Tomeyko Valerie L. Tomeyko Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9098360 AA18515 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0067.RAW

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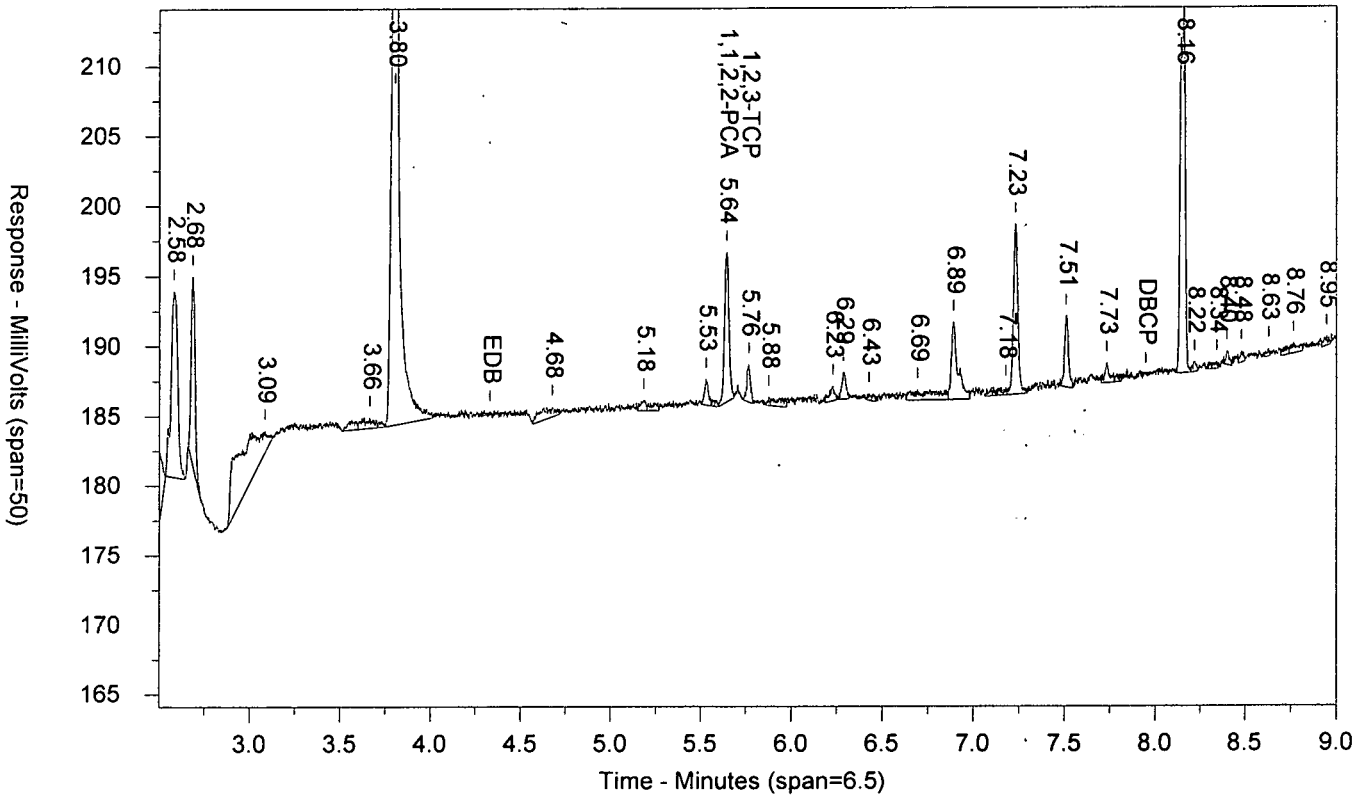

LANCASTER LABORATORIES

Sample Number: 9098360 AA18515 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 7:17:40 AM Sample Weight: 36.6
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.054 | 368 | .001 | EDB | | 0 | | EDB |
| 4.513 | 29471 | .069 | 1,1,2,2-PCA | 5.644 | 10682 | .069 | 1,1,2,2-PCA |
| 4.566 | 4456 | | 1,2,3-TCP | 5.765 | 2733 | -.368 | 1,2,3-TCP |
| 6.908 | 323 | | DBCP | | 0 | | DBCP |

Files:
Area File: 16EDBS17202001.0067.RAW
Area File: 16EDBS17202001B.0067.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 7:26:42 AM
File Reported On: 7/24/2017 at 11:04:25 AM

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# Data Summary

**Sample Name: 9098361** 18516 Sample ID: AA **Batchnumber: 172010021A**

Sample Amount: 36.74 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 07:33:11 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0068.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.065214

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 07:33:11 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0068.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 105% ( 46 - 136 ) Conc: 0.070503

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 453 | 0.001196 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10941 | 0.070503 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 28105 | 0.065214 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 1797 | 0 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6097 | 0.03069 | | | | | | |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.065214 | 0.0033 | 0.0067 | 0.0067 | | 7.79 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2572 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:43

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098361** 18516 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.74 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 07:33:11
Instrument : CP16--19853A
Result file : 16EDBS17202001.0068.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.065214

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 453 | 0.001196 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 28105 | 0.065214 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6097 | 0.030690 |

## Analysis Report (B)

Injected on : Jul 22, 2017 07:33:11
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0068.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 105% (46-136) Conc.: 0.070503

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10941 | 0.070503 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 1797 | -0.418597 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065214 | | | | 7.79 | |
| ☐ 1,2,3-TCP | | | <0.2572 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomcyko
Valerie L. Tomcyko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

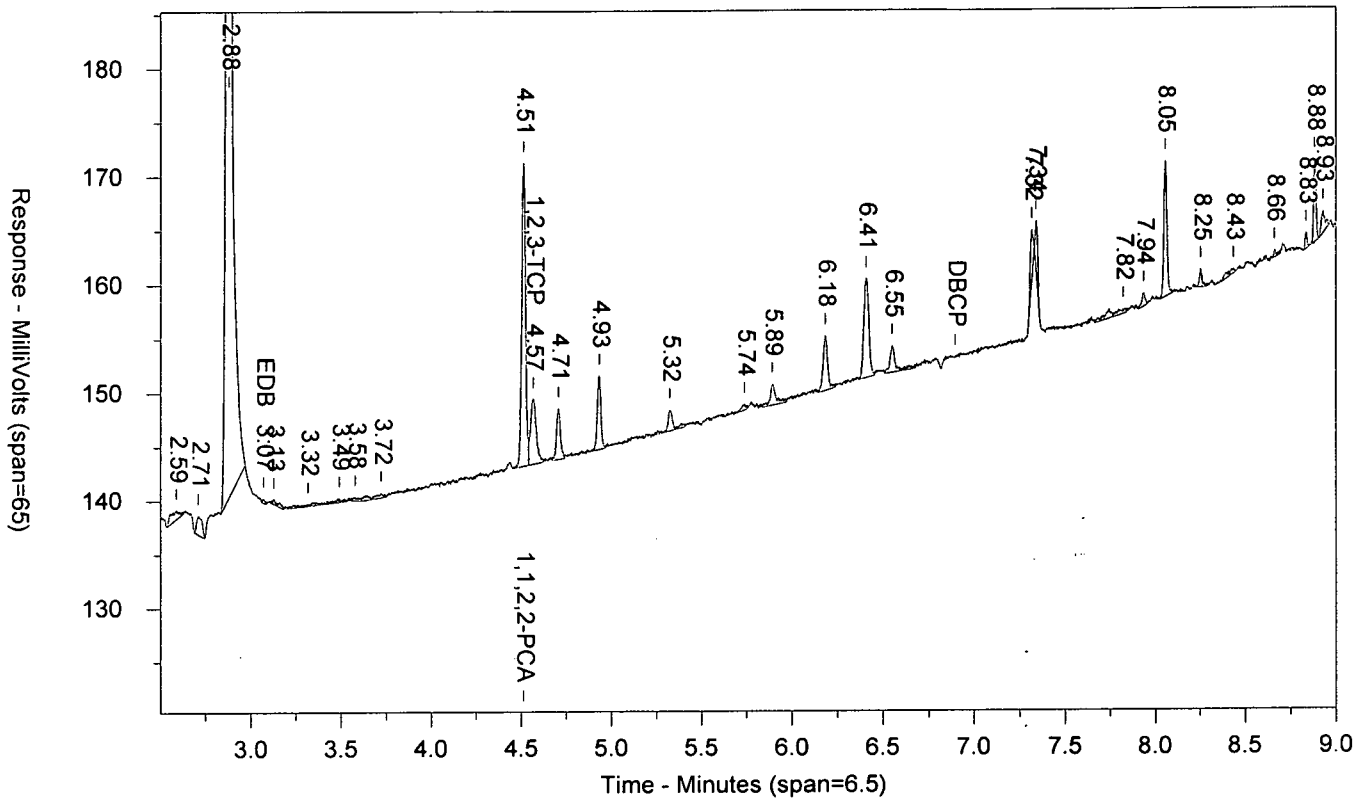
* Recovery outside QC Limits



Printed on: 7/24/2017 11:17:34

9098361 AA18516 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0068.RAW

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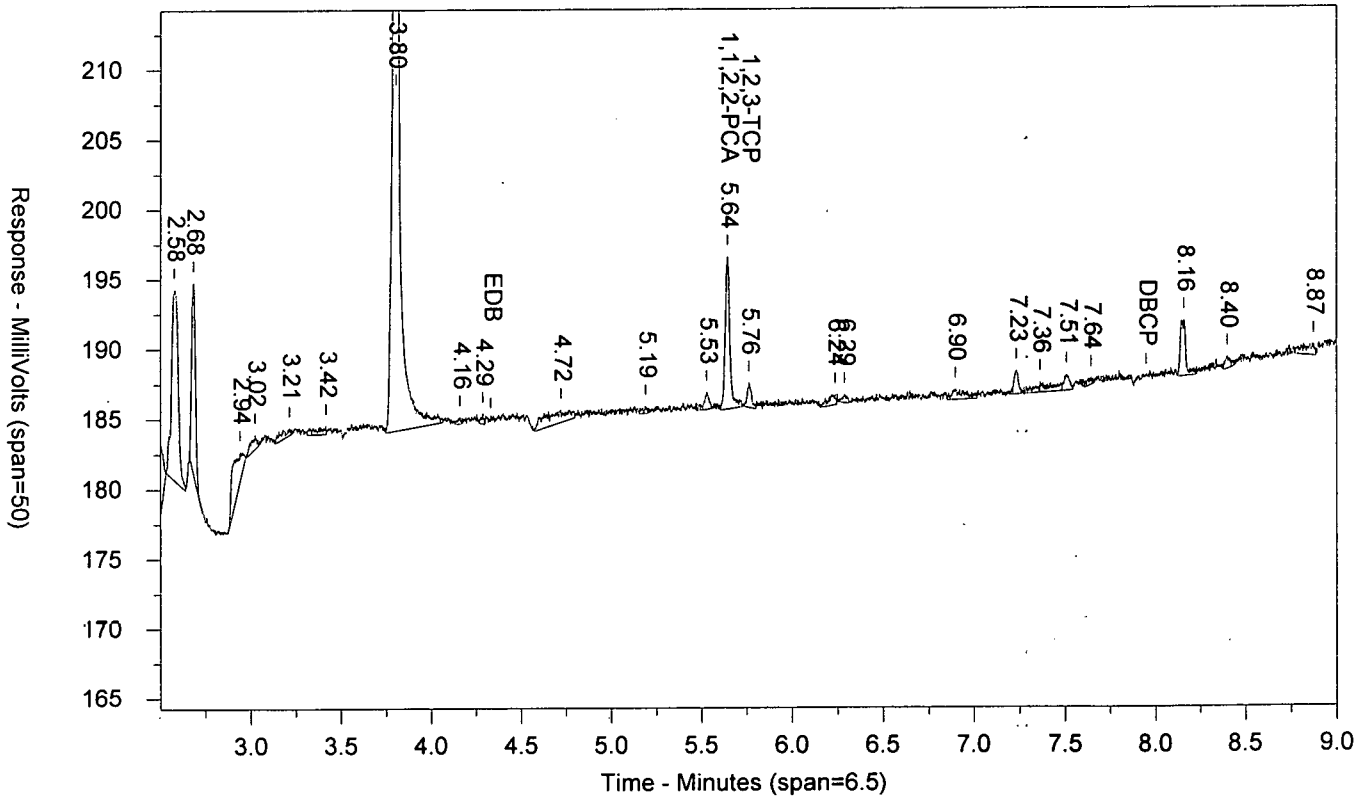


LANCASTER LABORATORIES

Sample Number: 9098361 AA18516 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 7:33:11 AM Sample Weight: 36.74
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.07 | 453 | .001 | EDB | | 0 | | EDB |
| 4.513 | 28105 | .065 | 1,1,2,2-PCA | 5.642 | 10941 | .071 | 1,1,2,2-PCA |
| 4.566 | 6097 | .031 | 1,2,3-TCP | 5.762 | 1797 | -.419 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0068.RAW
Area File: 16EDBS17202001B.0068.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 7:42:12 AM
File Reported On: 7/24/2017 at 11:04:37 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9098362** 18517 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.39 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 07:48:53 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0069.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.065038

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 07:48:53 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0069.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.068518

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 27762 | 0.065038 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4800 | 0.006886 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10541 | 0.068518 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 2788 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.065038 | 0.0034 | 0.0067 | 0.0067 | | 5.21 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2597 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:45

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098362** 18517 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.39 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 07:48:53
Instrument : CP16--19853A
Result file : 16EDBS17202001.0069.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.065038

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 27762 | 0.065038 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4800 | 0.006886 |

## Analysis Report (B)

Injected on : Jul 22, 2017 07:48:53
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0069.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.068518

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10541 | 0.068518 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 2788 | -0.367443 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065038 | | | | 5.21 | |
| ☐ 1,2,3-TCP | | | <0.2597 | <0.0962 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: JUL 24 2017

Verified by: Valerie L Tomayko Valerie L. Tomayko Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

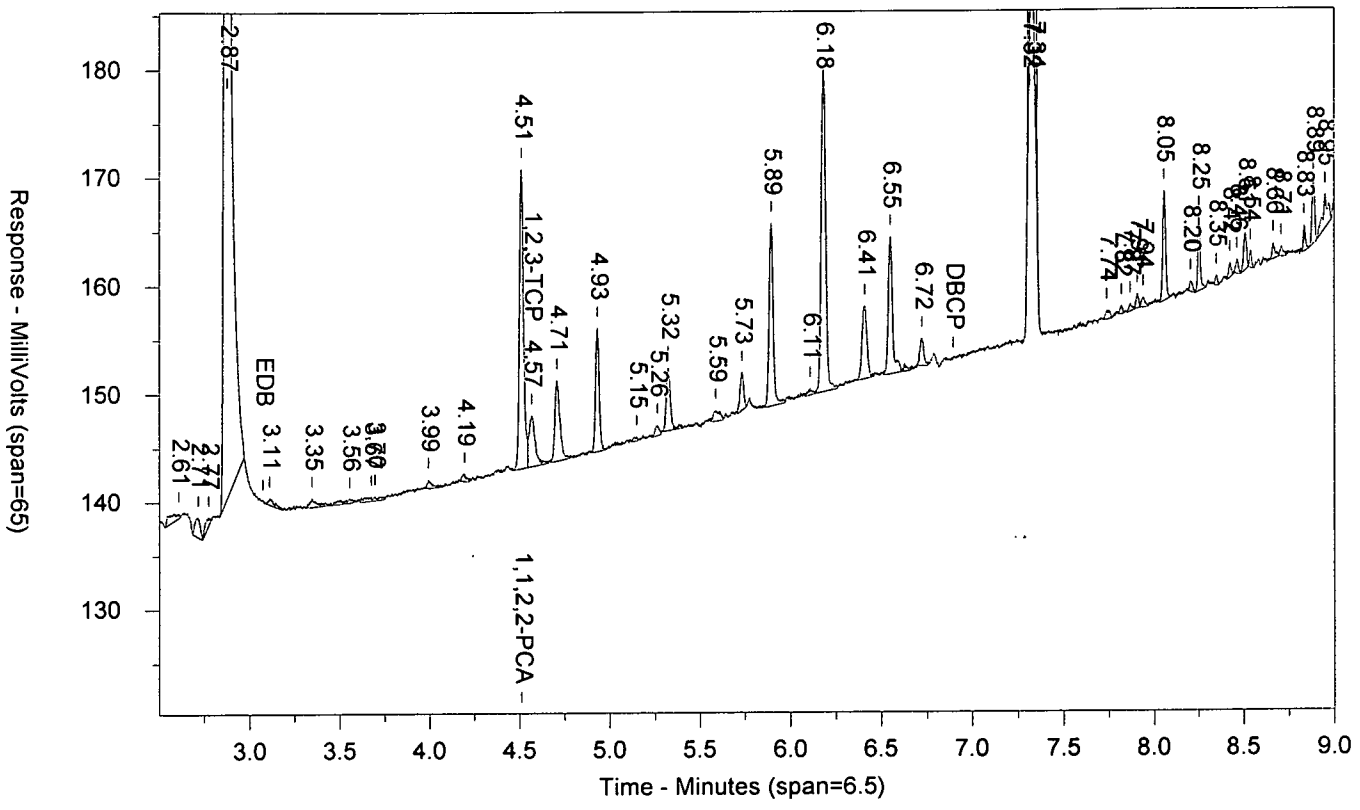
* Recovery outside QC Limits



Printed on: 7/24/2017 11:17:42

9098362 AA18517 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0069.RAW

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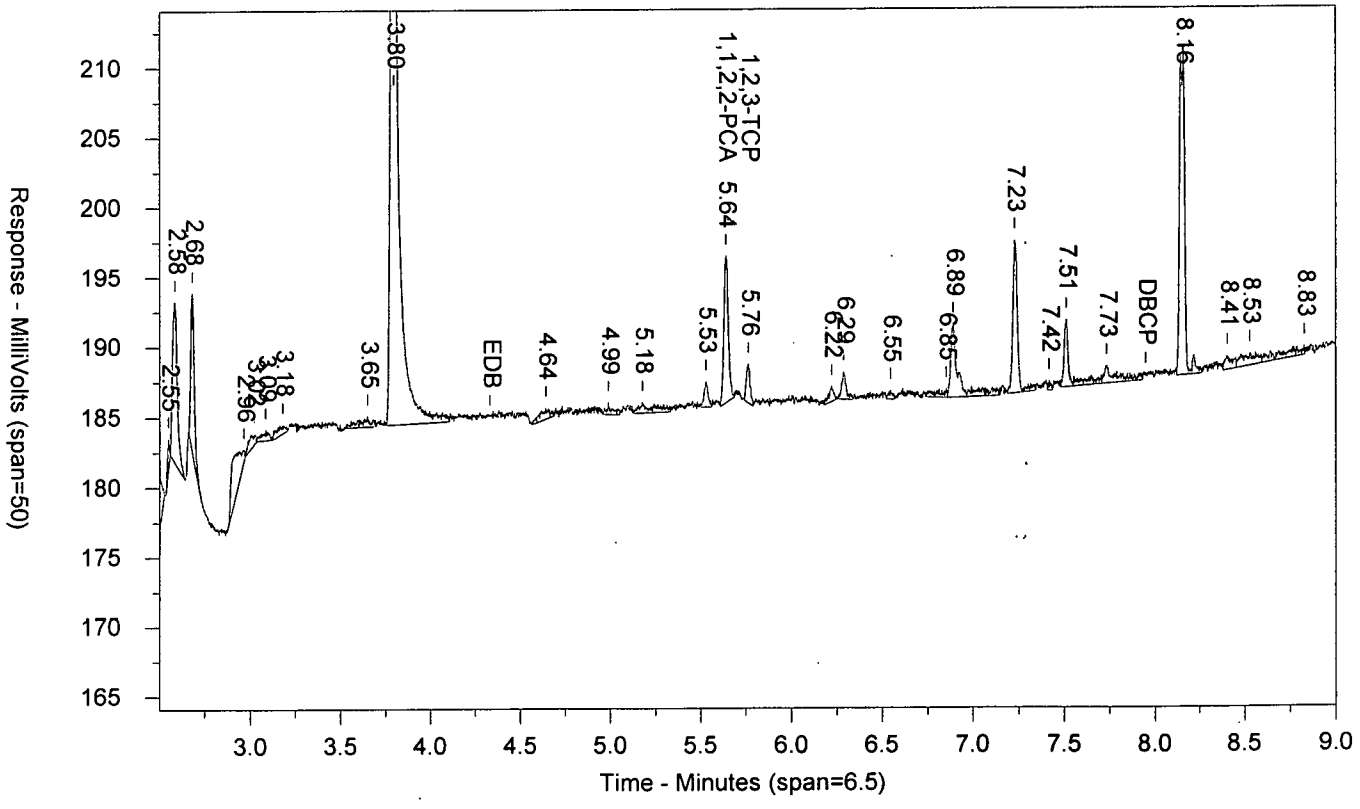


LANCASTER LABORATORIES

Sample Number: 9098362 AA18517 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 7:48:53 AM Sample Weight: 36.39
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.511 | 27762 | .065 | 1,1,2,2-PCA | 5.64 | 10541 | .069 | 1,1,2,2-PCA |
| 4.568 | 4800 | .007 | 1,2,3-TCP | 5.764 | 2788 | -.367 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0069.RAW
Area File: 16EDBS17202001B.0069.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 7:57:53 AM
File Reported On: 7/24/2017 at 11:04:49 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9098363** 18518 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.71 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 08:04:29 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0070.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.067145

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 08:04:29 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0070.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.068439

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 28913 | 0.067145 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10619 | 0.068439 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4620 | 0.003493 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 3150 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.067145 | 0.0033 | 0.0067 | 0.0067 | | 1.91 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2574 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:47

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9098363** 18518 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.71 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 08:04:29
Instrument : CP16--19853A
Result file : 16EDBS17202001.0070.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.067145

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 28913 | 0.067145 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4620 | 0.003493 |

## Analysis Report (B)

Injected on : Jul 22, 2017 08:04:29
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0070.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.068439

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10619 | 0.068439 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 3150 | -0.344257 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.067145 | | | | 1.91 | |
| ☐ 1,2,3-TCP | | | <0.2574 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

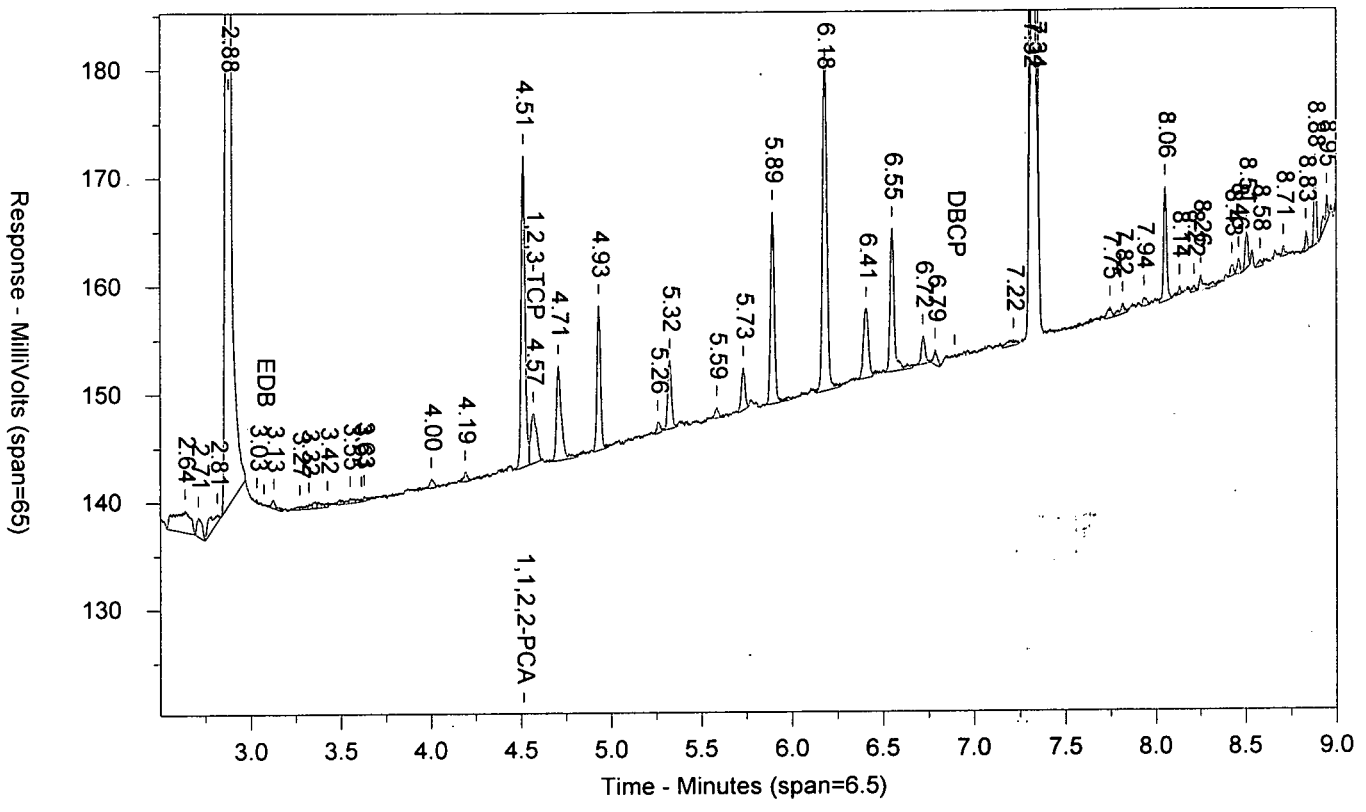
* Recovery outside QC Limits



Printed on: 7/24/2017 11:17:49

9098363 AA18518 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0070.RAW

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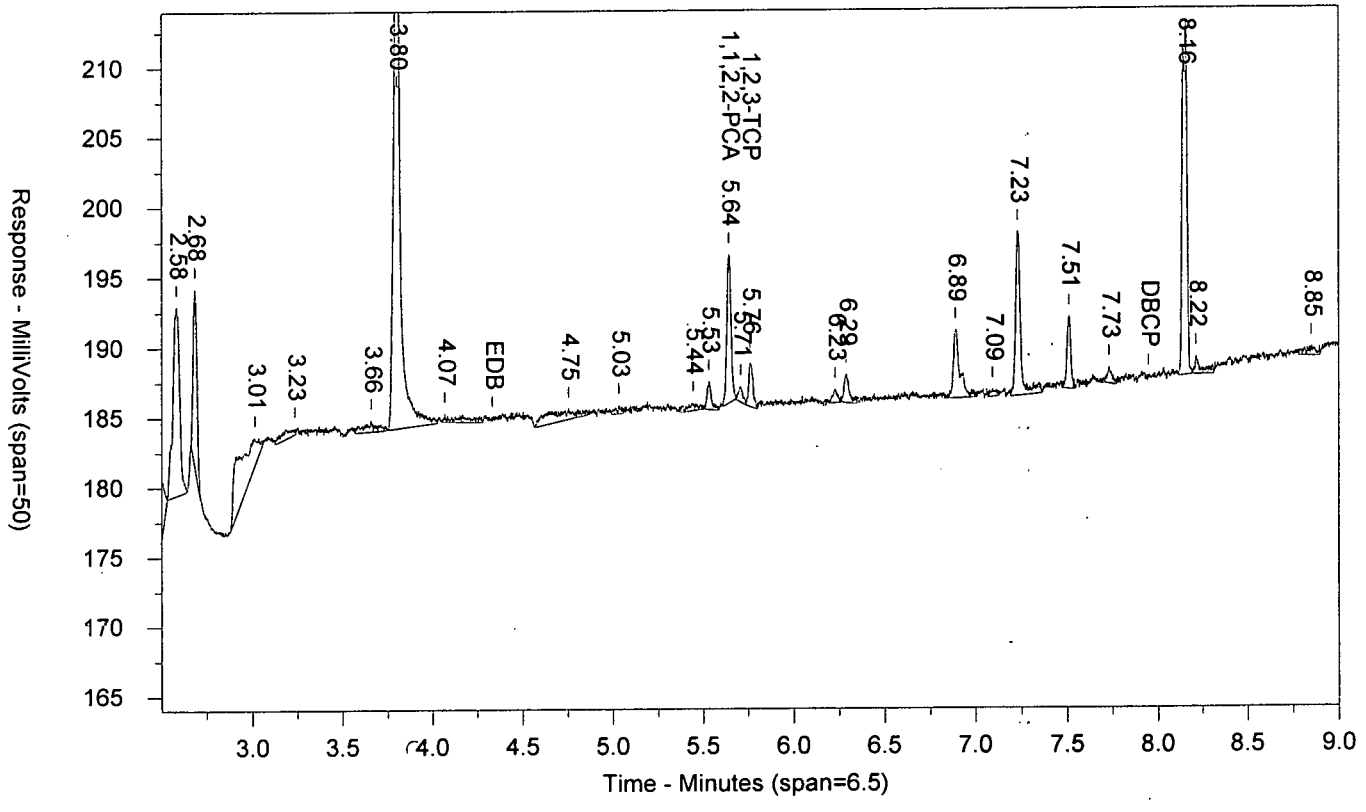

LANCASTER LABORATORIES

Sample Number: 9098363 AA18518 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 8:04:29 AM Sample Weight: 36.71
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 28913 | .067 | 1,1,2,2-PCA | 5.642 | 10619 | .068 | 1,1,2,2-PCA |
| 4.568 | 4620 | .003 | 1,2,3-TCP | 5.759 | 3150 | -.344 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0070.RAW
Area File: 16EDBS17202001B.0070.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 8:13:30 AM
File Reported On: 7/24/2017 at 11:05:01 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 4 CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 5 EIBKX1724C | 5 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 6 EDB_11724DS | 6 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 1 | 1720199999 | |
| 7 EDB_21724DS | 7 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 2 | 1720199999 | |
| 8 EDB_31724DS | 8 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 3 | 1720199999 | |
| 9 EDB_41724DS | 9 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 4 | 1720199999 | |
| 10 EDB_51724DS | 10 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 5 | 1720199999 | |
| 11 EDB_61724DS | 11 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 6 | 1720199999 | |
| 12 MDEDX1724DS | 12 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 13 EDB_31724DS | 13 | CCAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 14 EIBKX1724C | 14 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 15 BLANKA 7/21/17 | 15 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 16 LCSA 7/21/17 | 16 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 17 LCSDA 7/21/17 | 17 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 18 9095972 | 18 | T | AA | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010025A | 10398 |
| 19 9100482 | 19 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 20 9100483 | 20 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010025A | 10398 |
| 21 9100485 | 21 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 22 9100487 | 22 | T | AA | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010025A | 10398 |
| 23 9100489 | 23 | T | AA | 16EDBS.MET | 36.84 | 2 | 1 | 0 | 172010025A | 10398 |
| 24 9100491 | 24 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 25 EDB_51724DS | 25 | CCAL | LS | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 26 EIBKX1724C | 26 | PIBLK | SC | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 27 9100492 | 27 | T | AA | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010025A | 10398 |
| 28 9100493 | 28 | T | AA | 16EDBS.MET | 36.82 | 2 | 1 | 0 | 172010025A | 10398 |
| 29 9100494 | 29 | T | AA | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010025A | 10398 |
| 30 9100495 | 30 | T | AA | 16EDBS.MET | 36.76 | 2 | 1 | 0 | 172010025A | 10398 |
| 31 9100496 | 31 | T | AA | 16EDBS.MET | 36.83 | 2 | 1 | 0 | 172010025A | 10398 |
| 32 9107402 | 32 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 33 9107403 | 33 | T | AA | 16EDBS.MET | 36.65 | 2 | 1 | 0 | 172010025A | 10398 |
| 34 9107404 | 34 | T | AA | 16EDBS.MET | 37.04 | 2 | 1 | 0 | 172010025A | 10398 |
| 35 9107405 | 35 | T | AA | 16EDBS.MET | 37.01 | 2 | 1 | 0 | 172010025A | 10398 |
| 36 9107406 | 36 | T | AA | 16EDBS.MET | 36.48 | 2 | 1 | 0 | 172010025A | 10398 |
| 37 EDB_41724DS | 37 | CCAL | QK | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 38 EIBKX1724C | 38 | PIBLK | SD | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 39 9107407 | 39 | T | AA | 16EDBS.MET | 36.73 | 2 | 1 | 0 | 172010025A | 10398 |
| 40 9109771 | 40 | T | AA | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010025A | 10398 |
| 41 9109772MS | 41 | MS | AA | 16EDBS.MET | 37.02 | 2 | 1 | 0 | 172010025A | 10398 |
| 42 9109773MSD | 42 | MSD | AA | 16EDBS.MET | 36.96 | 2 | 1 | 0 | 172010025A | 10398 |
| 43 9109779 | 43 | T | AA | 16EDBS.MET | 36.35 | 2 | 1 | 0 | 172010025A | 10398 |
| 44 BLANKA 7/21/17 | 44 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 45 LCSA 7/21/17 | 45 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 46 LCSDA 7/21/17 | 46 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 47 9098344 | 47 | T | AA | 16EDBS.MET | 36.51 | 2 | 1 | 0 | 172010021A | 10398 |
| 48 9098345 | 48 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010021A | 10398 |
| 49 EDB_31724DS | 49 | CCAL | PB | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 50 EIBKX1724C | 50 | PIBLK | SE | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

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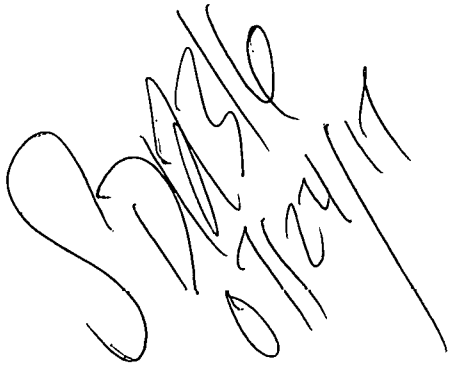
Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

| Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 9098346 | 51 | T | AA | | 16EDBS.MET | 36.12 | 2 | 1 | 0 | 172010021A | 10398 |
| 52 9098347 | 52 | T | AA | | 16EDBS.MET | 36.56 | 2 | 1 | 0 | 172010021A | 10398 |
| 53 9098348 | 53 | T | AA | | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010021A | 10398 |
| 54 9098349 | 54 | T | AA | | 16EDBS.MET | 36.66 | 2 | 1 | 0 | 172010021A | 10398 |
| 55 9098350MS | 55 | MS | AA | | 16EDBS.MET | 36.45 | 2 | 1 | 0 | 172010021A | 10398 |
| 56 9098351MSD | 56 | MSD | AA | | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010021A | 10398 |
| 57 9098352 | 57 | T | AA | | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010021A | 10398 |
| 58 9098353 | 58 | T | AA | | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010021A | 10398 |
| 59 9098354 | 59 | T | AA | | 16EDBS.MET | 36.9 | 2 | 1 | 0 | 172010021A | 10398 |
| 60 9098355 | 60 | T | AA | | 16EDBS.MET | 36.42 | 2 | 1 | 0 | 172010021A | 10398 |
| 61 EDB_51724DS | 61 | CCAL | LT | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 62 EIBKX1724C | 62 | PIBLK | SF | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 63 9098356 | 63 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 64 9098357 | 64 | T | AA | | 16EDBS.MET | 36.77 | 2 | 1 | 0 | 172010021A | 10398 |
| 65 9098358 | 65 | T | AA | | 16EDBS.MET | 37.09 | 2 | 1 | 0 | 172010021A | 10398 |
| 66 9098359 | 66 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 67 9098360 | 67 | T | AA | | 16EDBS.MET | 36.6 | 2 | 1 | 0 | 172010021A | 10398 |
| 68 9098361 | 68 | T | AA | | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010021A | 10398 |
| 69 9098362 | 69 | T | AA | | 16EDBS.MET | 36.39 | 2 | 1 | 0 | 172010021A | 10398 |
| 70 9098363 | 70 | T | AA | | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010021A | 10398 |
| 71 9100479 | 71 | T | AA | | 16EDBS.MET | 36.55 | 2 | 1 | 0 | 172010021A | 10398 |
| 72 9100481 | 72 | T | AA | | 16EDBS.MET | 36.13 | 2 | 1 | 0 | 172010021A | 10398 |
| 73 EDB_41724DS | 73 | CCAL | QL | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 74 EIBKX1724C | 74 | PIBLK | SG | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

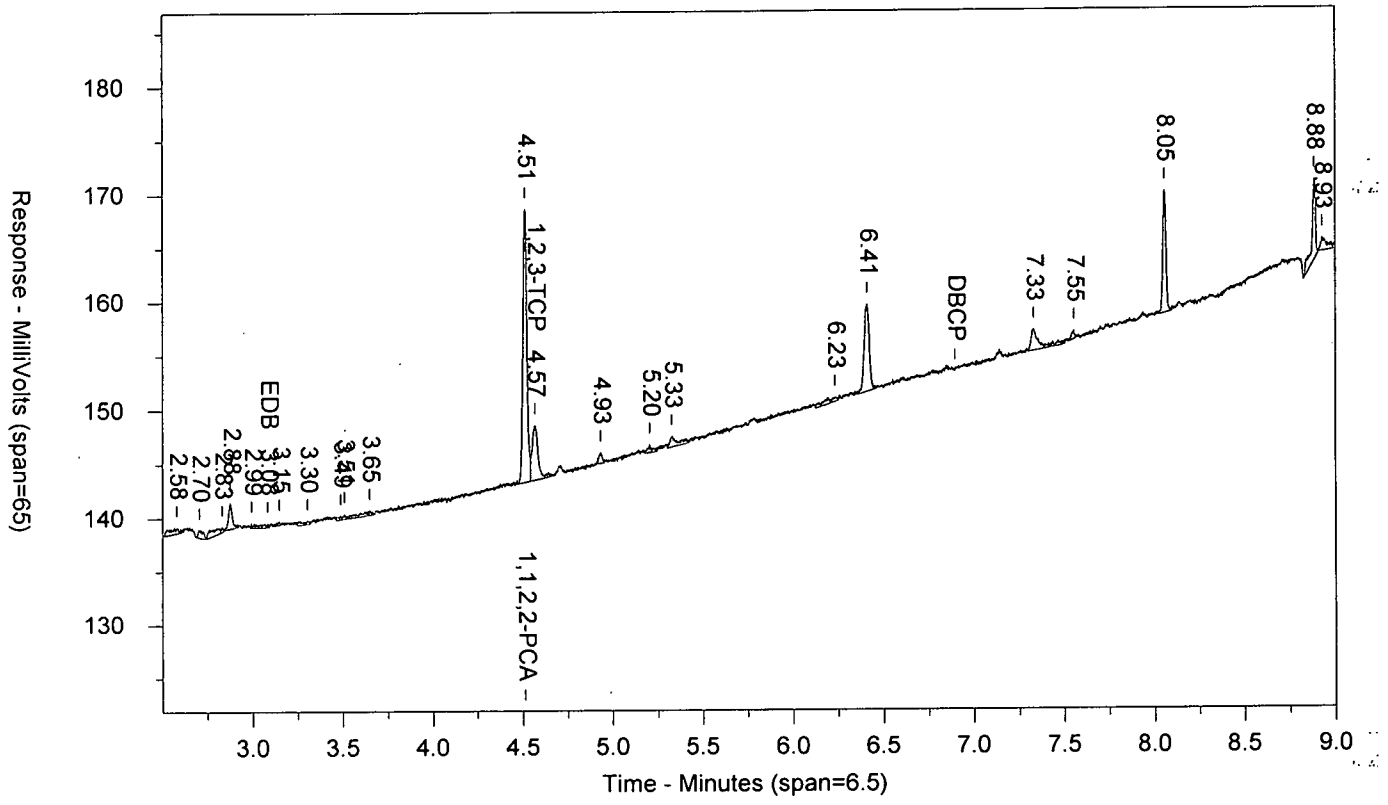


Set-up by: _____ Date: 7/21/17

7/21/2017

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0005.RAW

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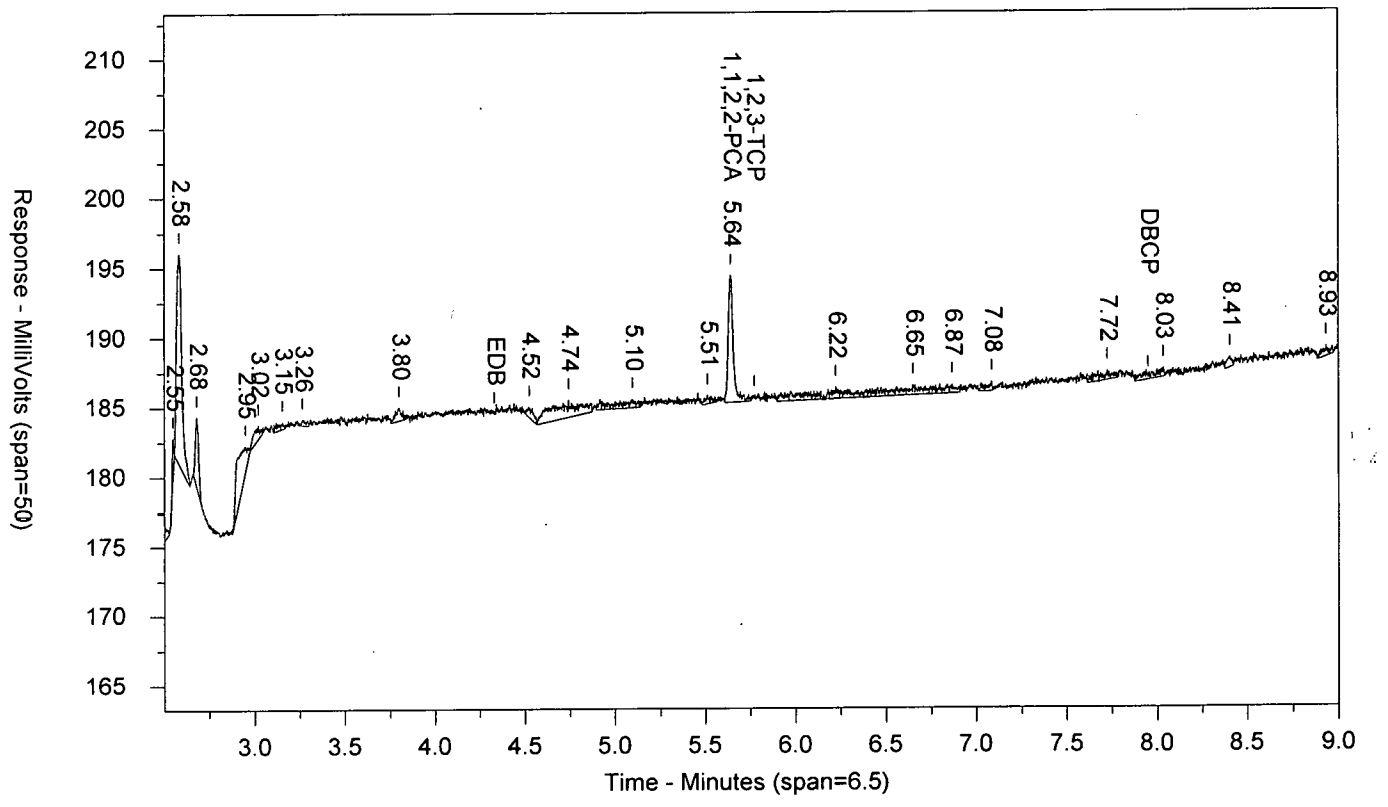

LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 3:09:45 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.083 | 400 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25406 | .066 | 1,1,2,2-PCA | 5.641 | 9102 | .066 | 1,1,2,2-PCA |
| 4.567 | 5116 | .008 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0005.RAW
Area File: 16EDBS17202001B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:18:48 PM
File Reported On: 7/24/2017 at 10:43:10 AM

EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011

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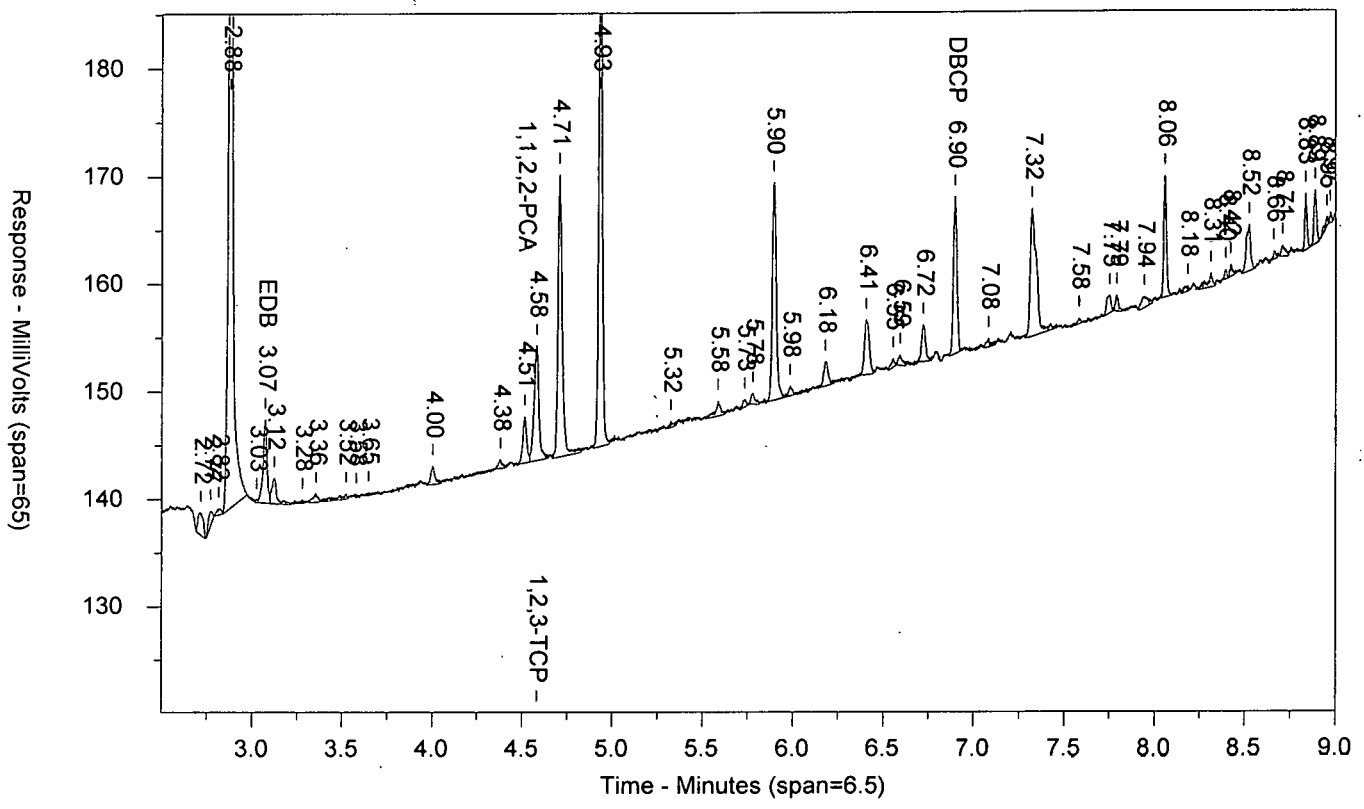


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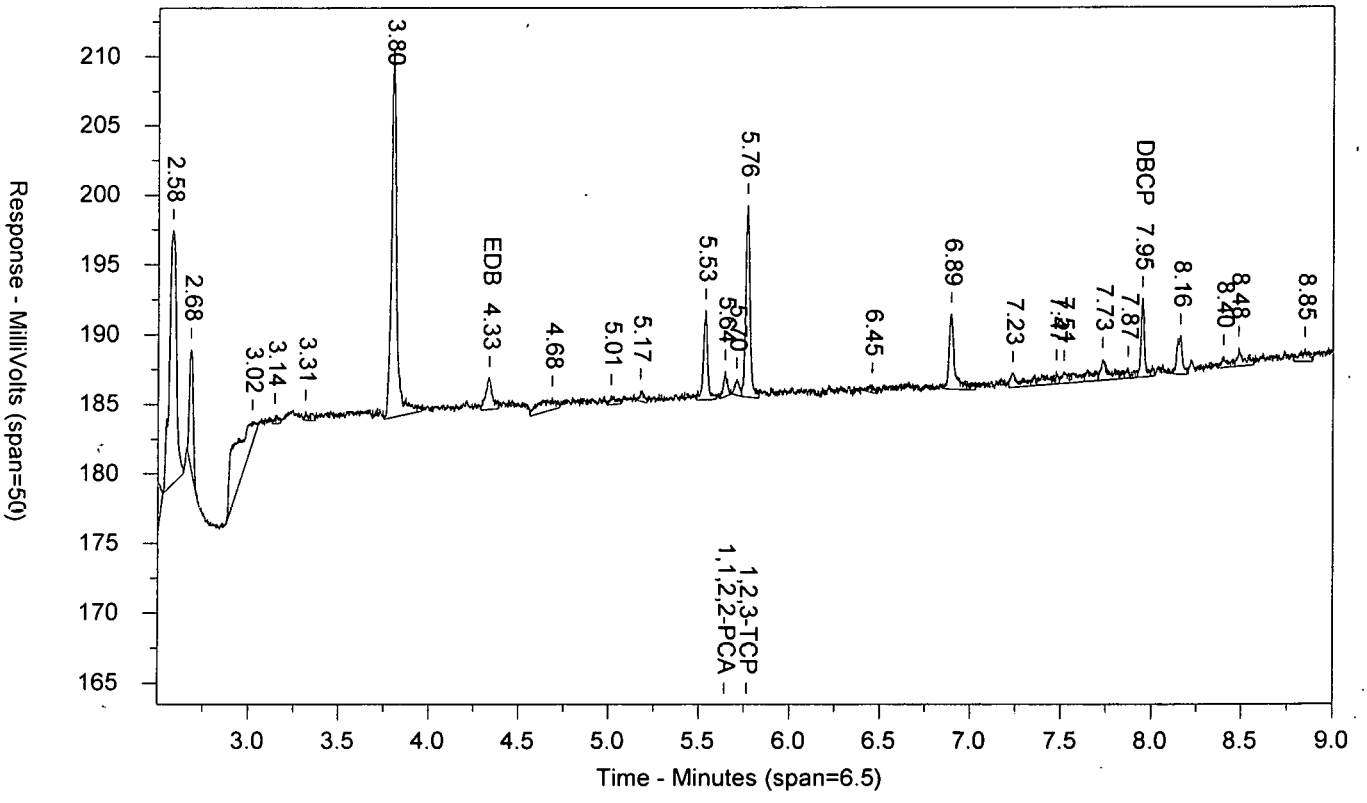


LANCASTER LABORATORIES

Sample Number: EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:25:23 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

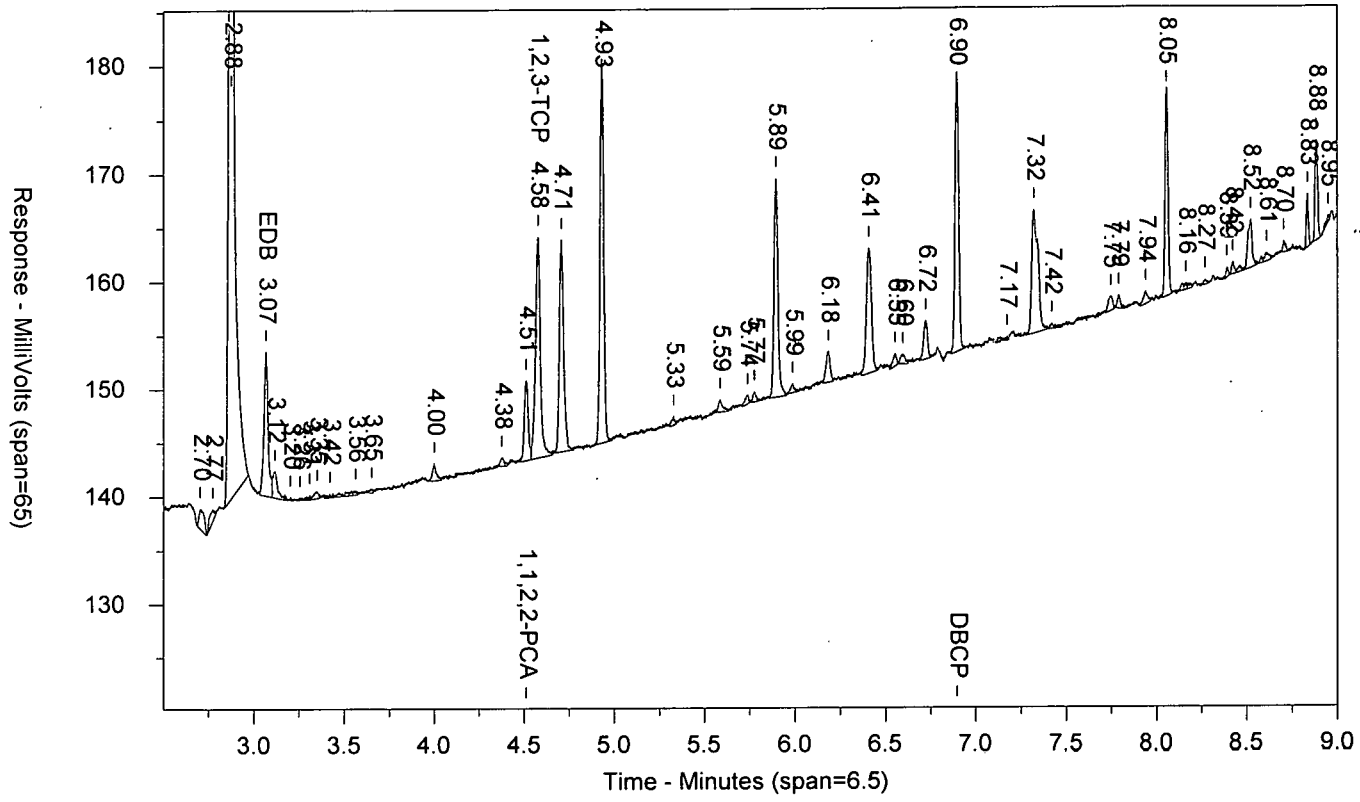
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 7802 | .405 | EDB | 4.335 | 2290 | .405 | EDB |
| 4.515 | 4322 | .196 | 1,1,2,2-PCA | 5.641 | 1830 | .199 | 1,1,2,2-PCA |
| 4.58 | 10708 | 2.318 | 1,2,3-TCP | 5.765 | 13776 | 3.87 | 1,2,3-TCP |
| 6.897 | 14619 | .372 | DBCP | 7.947 | 5660 | .377 | DBCP |

Files:
Area File: 16EDBS17202001.0006.RAW
Area File: 16EDBS17202001B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:34:24 PM
File Reported On: 7/24/2017 at 10:43:26 AM

EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.RAW

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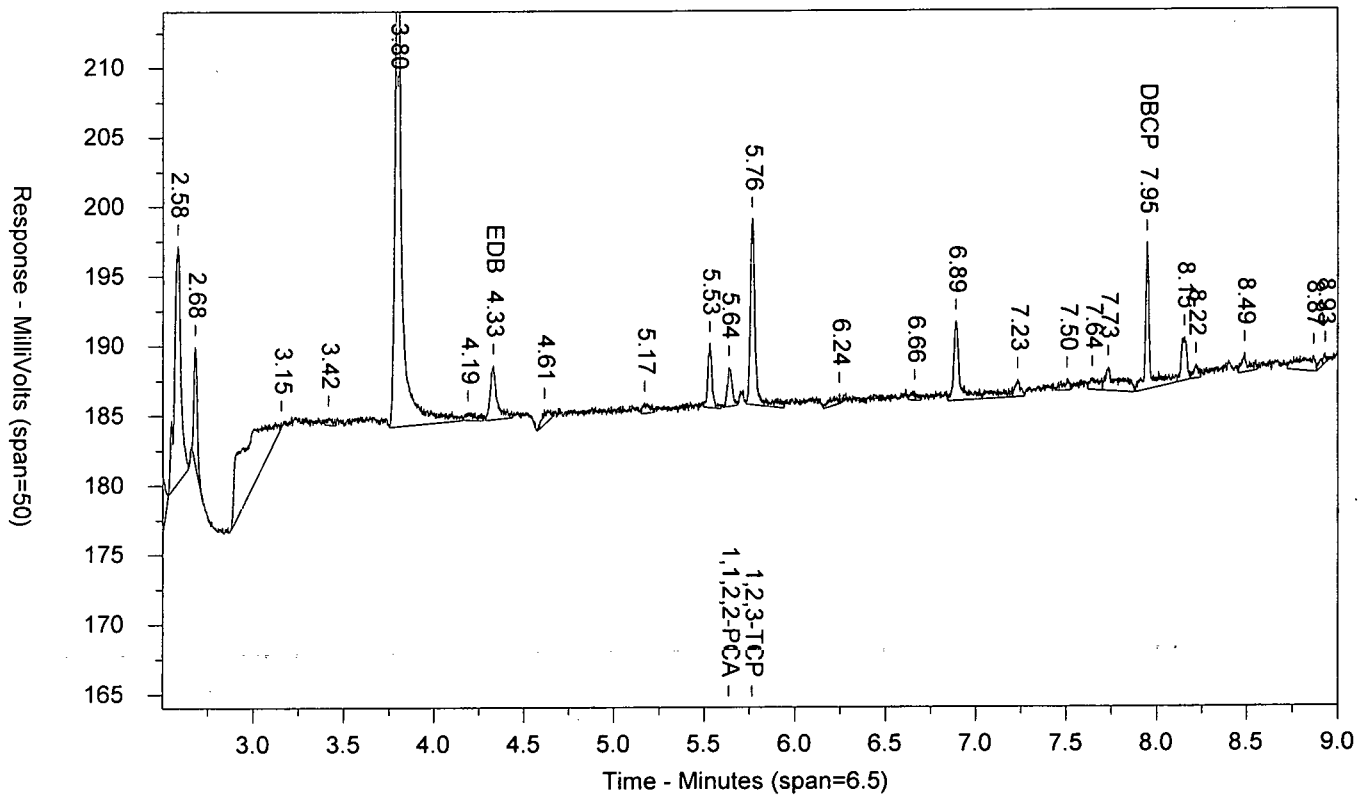


LANCASTER LABORATORIES

Sample Number: EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:40:59 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

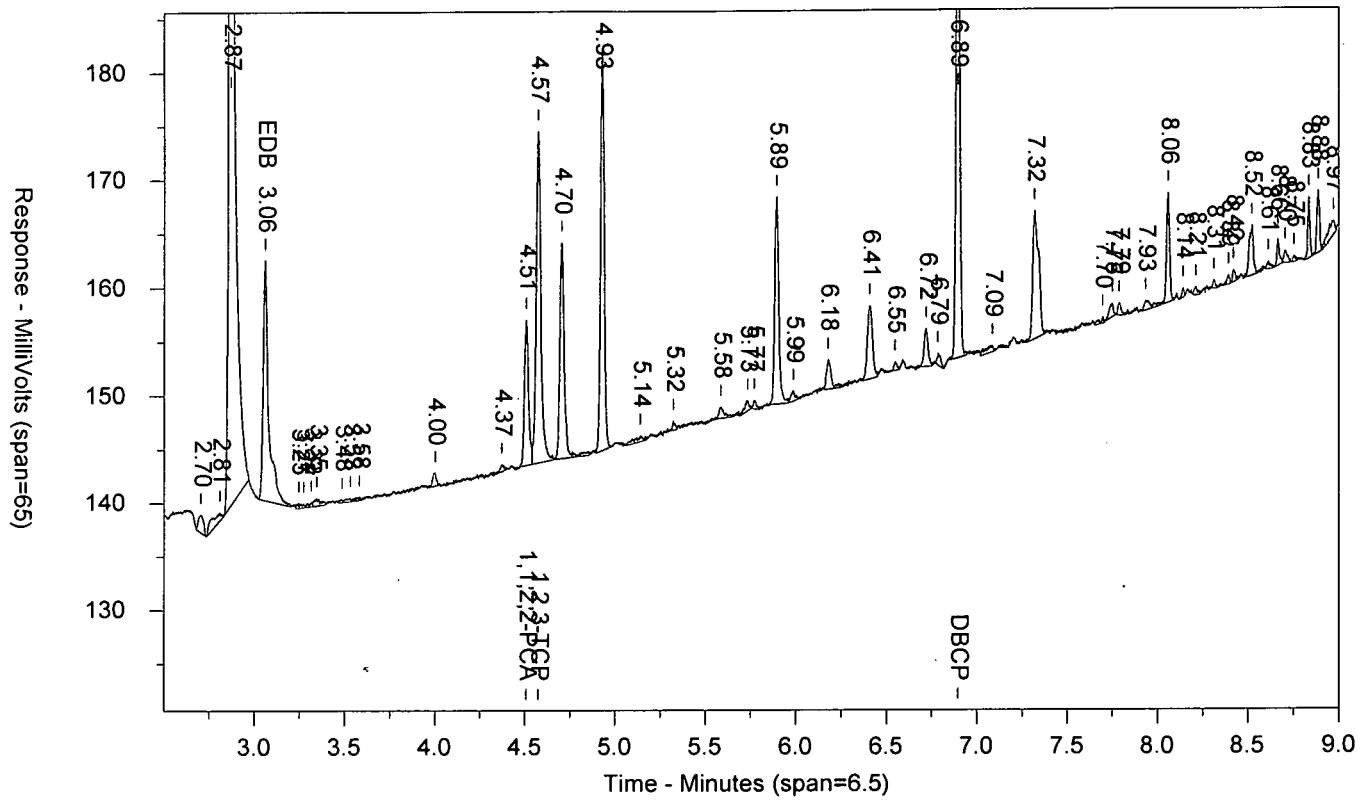
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.067 | 13453 | .69 | EDB | 4.33 | 3898 | .686 | EDB |
| 4.511 | 7462 | .337 | 1,1,2,2-PCA | 5.637 | 2815 | .325 | 1,1,2,2-PCA |
| 4.578 | 20612 | 6.251 | 1,2,3-TCP | 5.764 | 13358 | 2.692 | 1,2,3-TCP |
| 6.895 | 25723 | .653 | DBCP | 7.946 | 10545 | .701 | DBCP |

Files:
Area File: 16EDBS17202001.0007.RAW
Area File: 16EDBS17202001B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:50:00 PM
File Reported On: 7/24/2017 at 10:43:42 AM

EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.RAW

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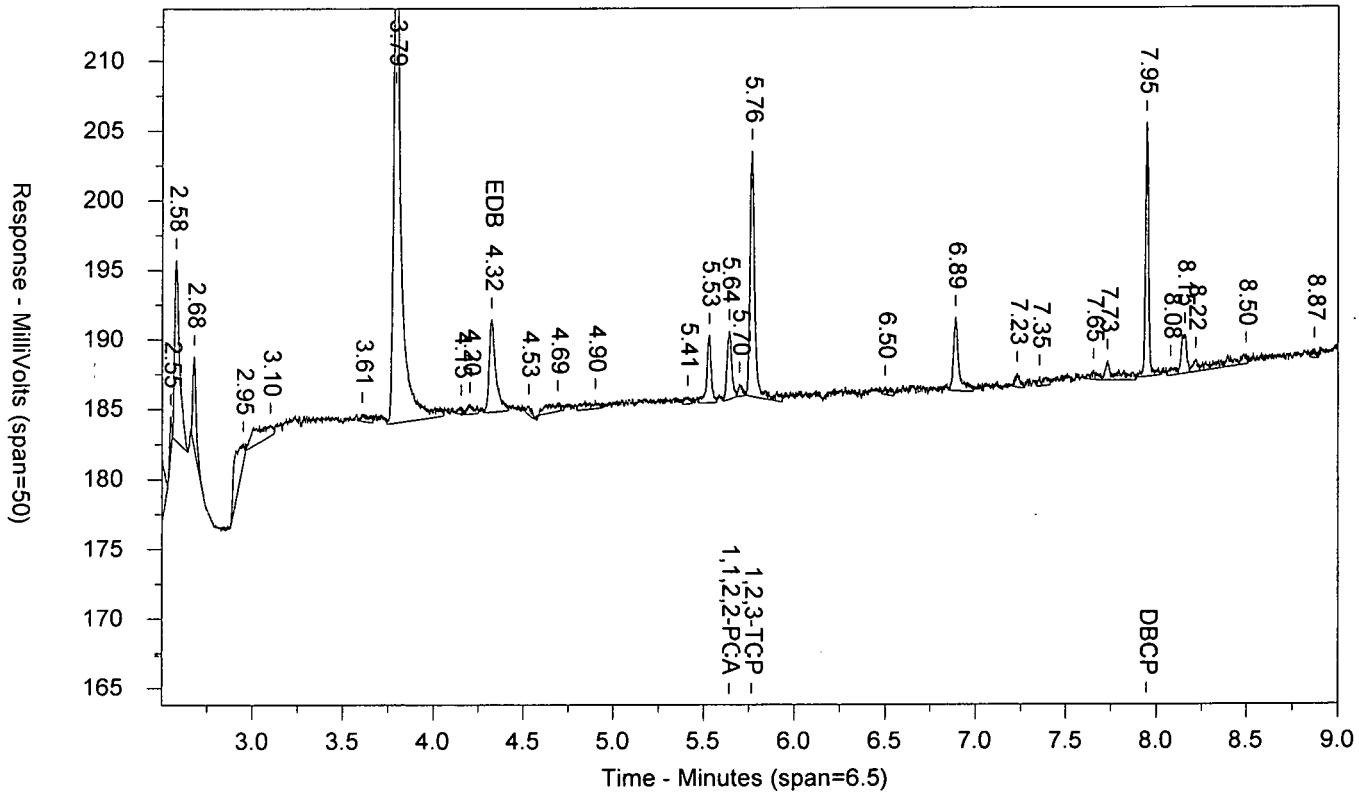


LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:56:33 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

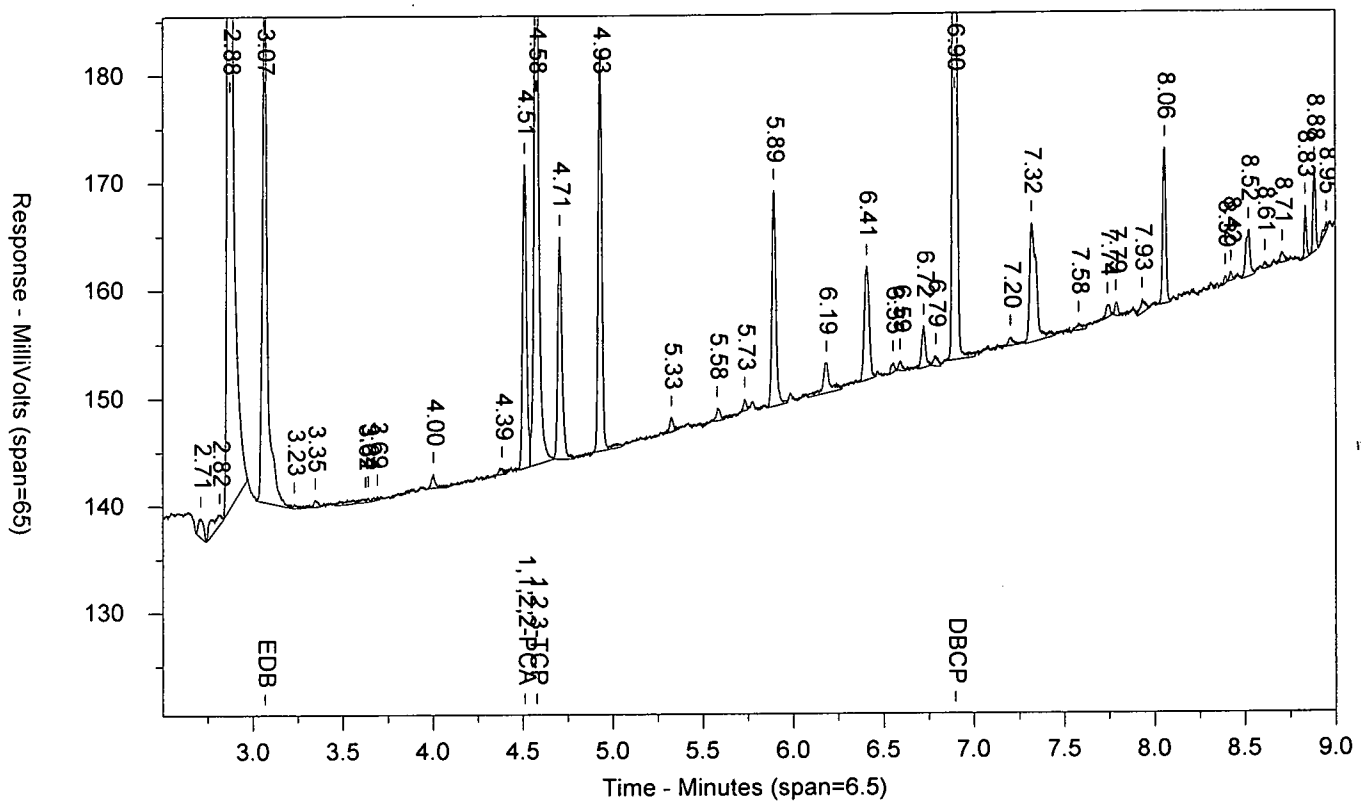
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.06 | 22389 | 1.134 | EDB | 4.324 | 6702 | 1.179 | EDB |
| 4.508 | 13531 | .604 | 1,1,2,2-PCA | 5.64 | 4937 | .598 | 1,1,2,2-PCA |
| 4.574 | 30821 | 9.822 | 1,2,3-TCP | 5.763 | 17655 | 8.34 | 1,2,3-TCP |
| 6.895 | 49779 | 1.263 | DBCP | 7.946 | 18271 | 1.205 | DBCP |

Files:
Area File: 16EDBS17202001.0008.RAW
Area File: 16EDBS17202001B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:05:35 PM
File Reported On: 7/24/2017 at 10:43:58 AM

EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.RAW

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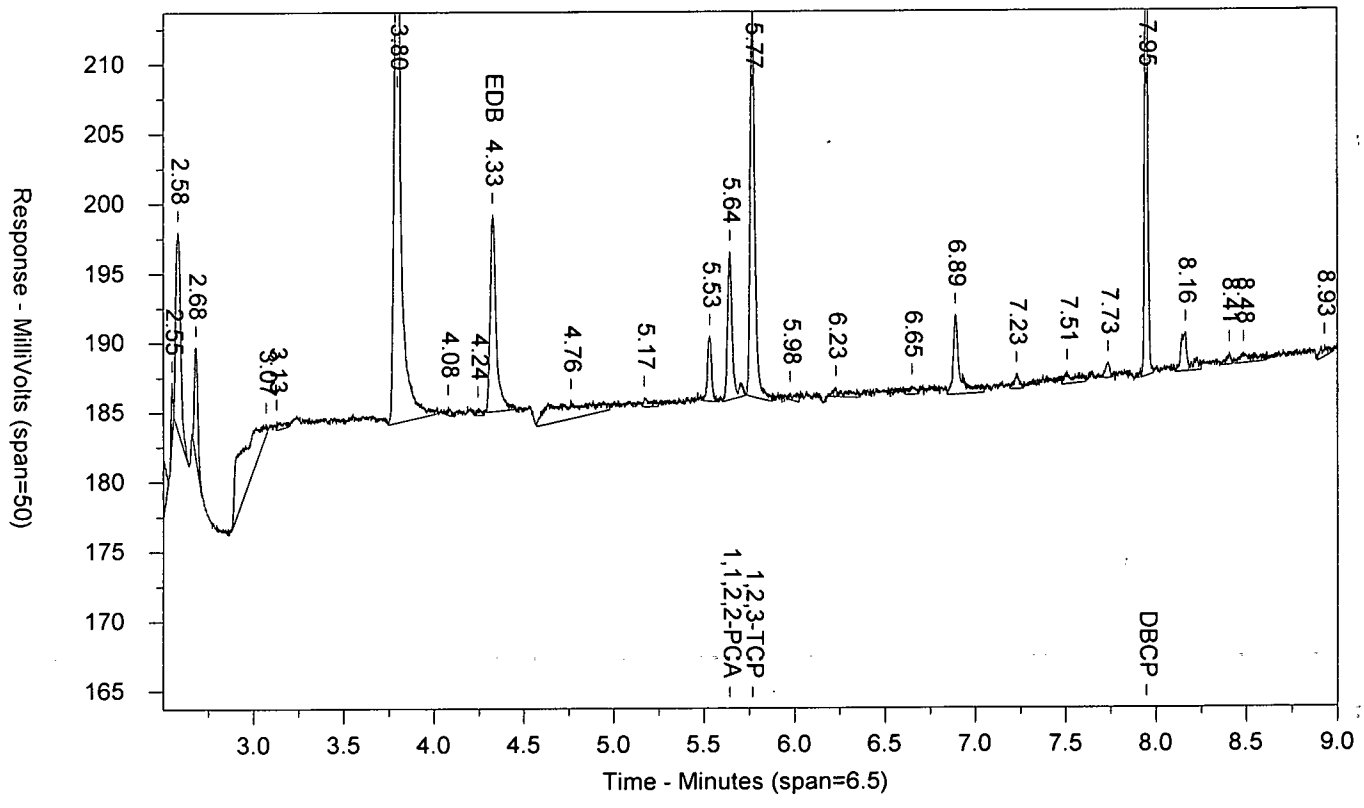


LANCASTER LABORATORIES

Sample Number: EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:12:13 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

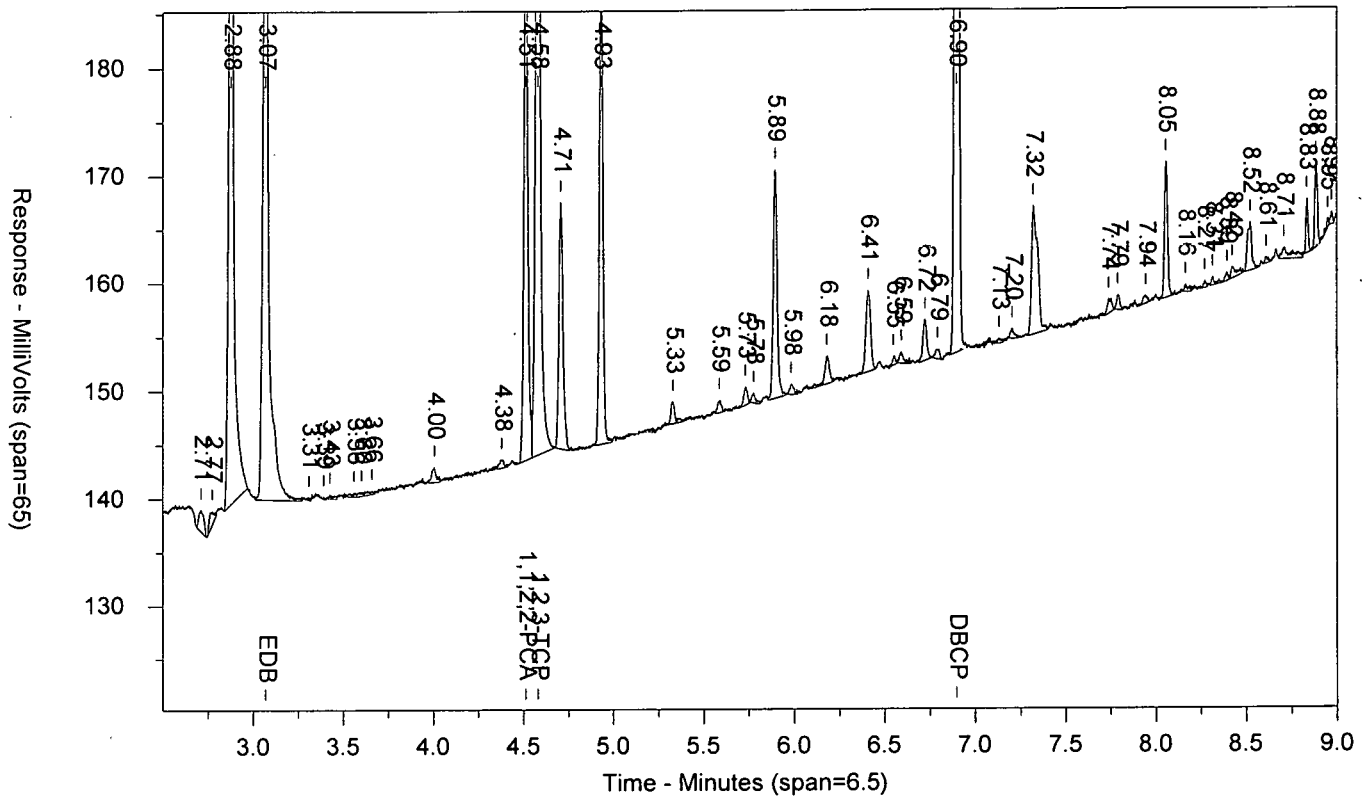
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 51364 | 2.628 | EDB | 4.327 | 14203 | 2.519 | EDB |
| 4.511 | 28210 | 1.267 | 1,1,2,2-PCA | 5.641 | 10658 | 1.354 | 1,1,2,2-PCA |
| 4.578 | 62952 | 22.383 | 1,2,3-TCP | 5.767 | 27830 | 20.965 | 1,2,3-TCP |
| 6.896 | 99853 | 2.548 | DBCP | 7.946 | 36899 | 2.475 | DBCP |

Files:
Area File: 16EDBS17202001.0009.RAW
Area File: 16EDBS17202001B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:21:14 PM
File Reported On: 7/24/2017 at 10:44:14 AM

EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.RAW

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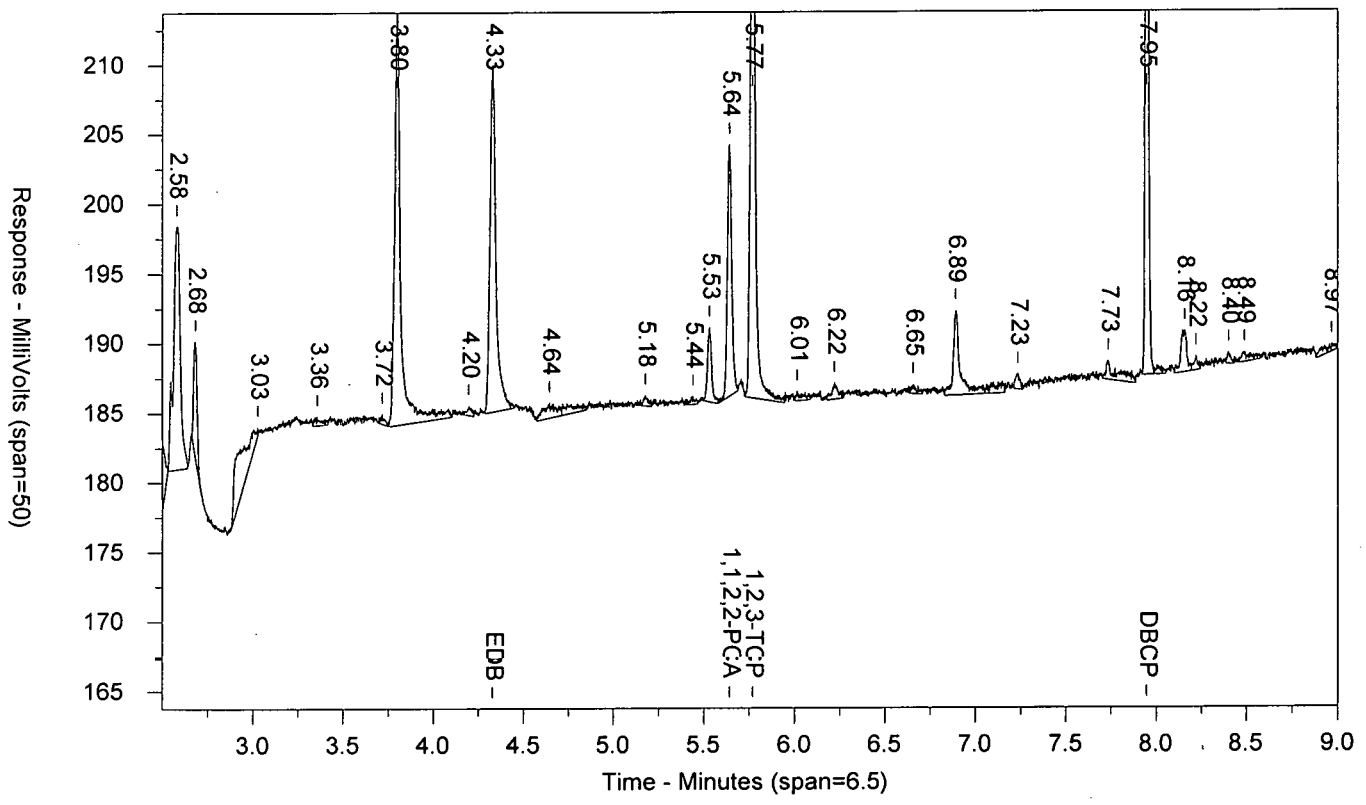


LANCASTER LABORATORIES

Sample Number: EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:27:52 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

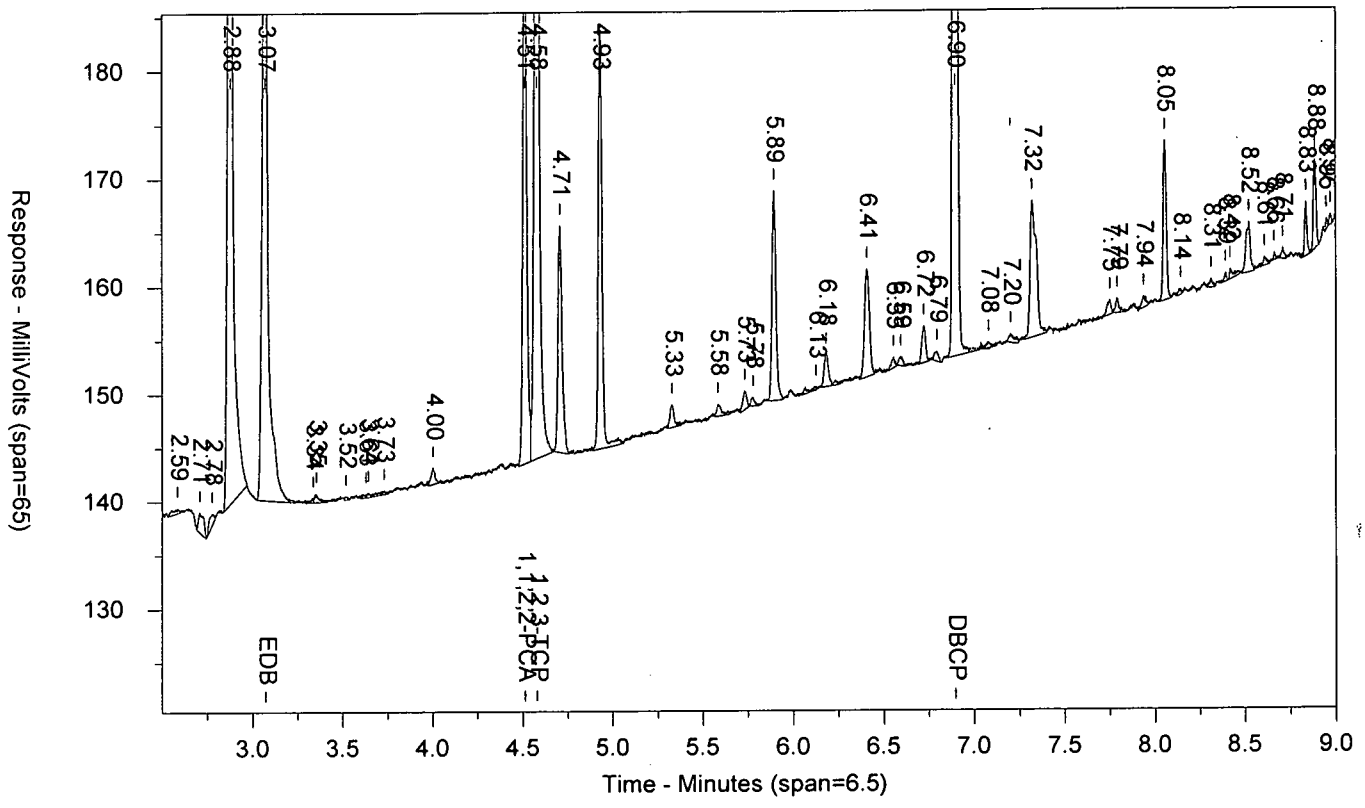
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 91868 | 4.604 | EDB | 4.329 | 24917 | 4.368 | EDB |
| 4.512 | 49780 | 2.2 | 1,1,2,2-PCA | 5.641 | 18049 | 2.296 | 1,1,2,2-PCA |
| 4.579 | 102059 | 37.347 | 1,2,3-TCP | 5.768 | 42823 | 38.187 | 1,2,3-TCP |
| 6.895 | 172607 | 4.369 | DBCP | 7.946 | 63141 | 4.208 | DBCP |

Files:
Area File: 16EDBS17202001.0010.RAW
Area File: 16EDBS17202001B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:36:53 PM
File Reported On: 7/24/2017 at 10:44:30 AM

EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.RAW

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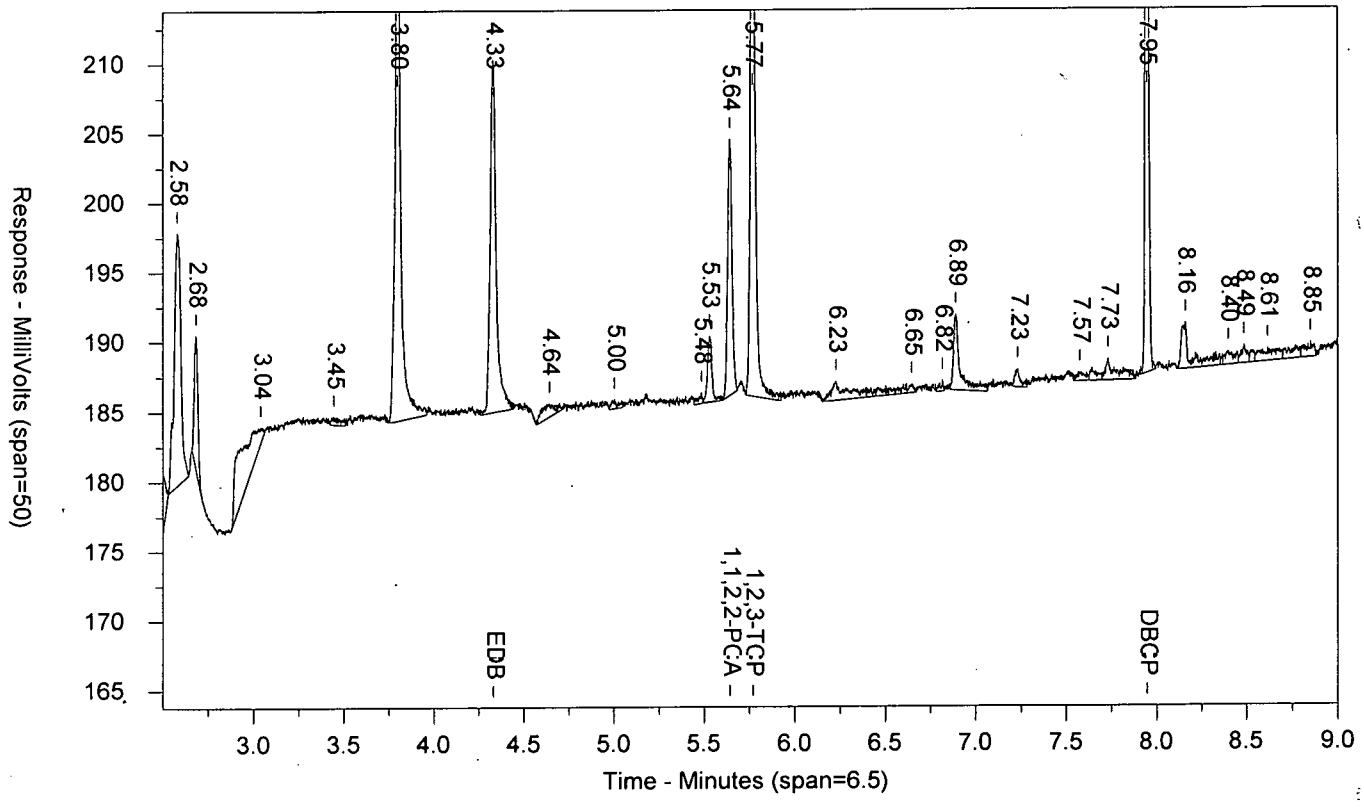


LANCASTER LABORATORIES

Sample Number: EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:43:27 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

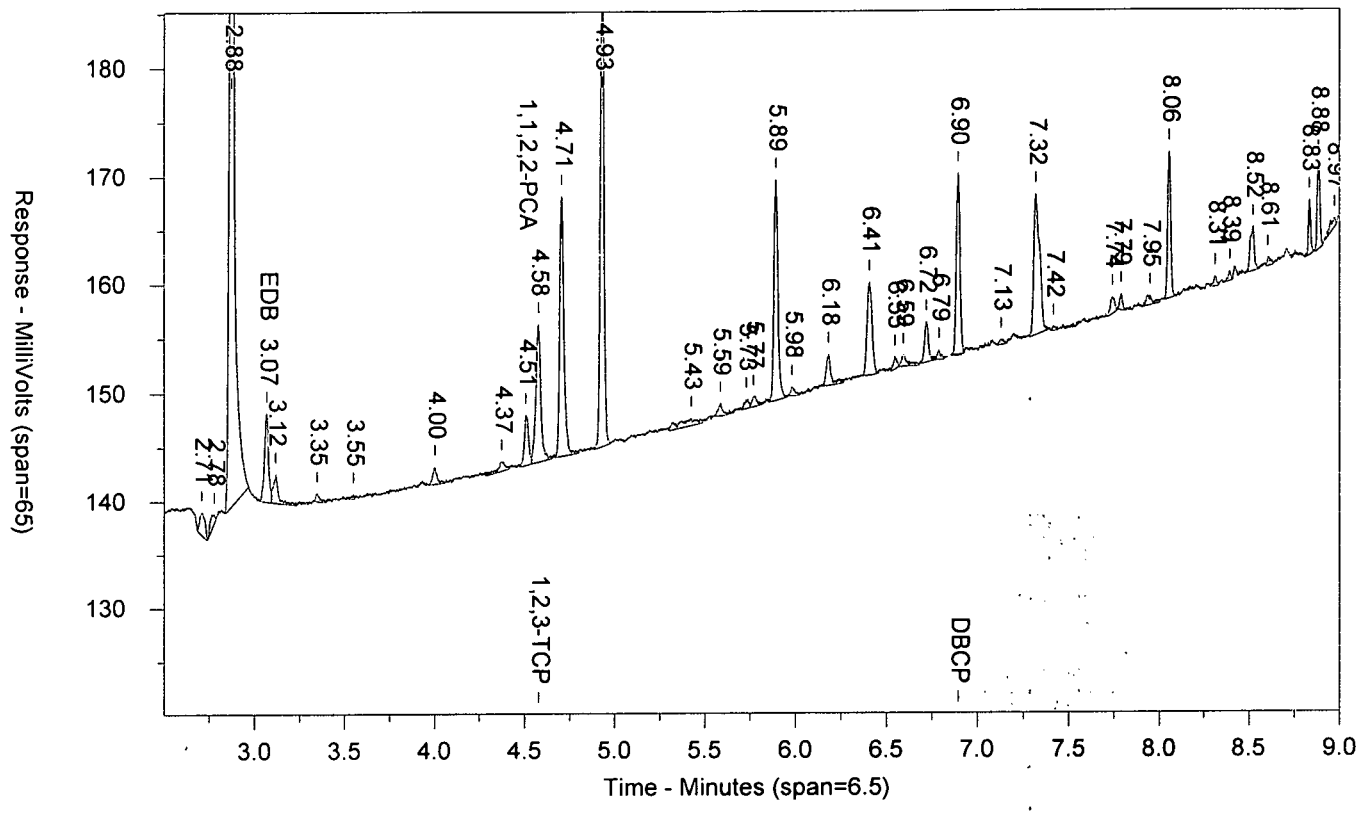
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 92950 | 4.561 | EDB | 4.331 | 25336 | 4.375 | EDB |
| 4.513 | 53020 | 2.296 | 1,1,2,2-PCA | 5.641 | 18435 | 2.295 | 1,1,2,2-PCA |
| 4.58 | 104273 | 36.659 | 1,2,3-TCP | 5.769 | 43781 | 37.288 | 1,2,3-TCP |
| 6.895 | 183008 | 4.592 | DBCP | 7.946 | 67645 | 4.471 | DBCP |

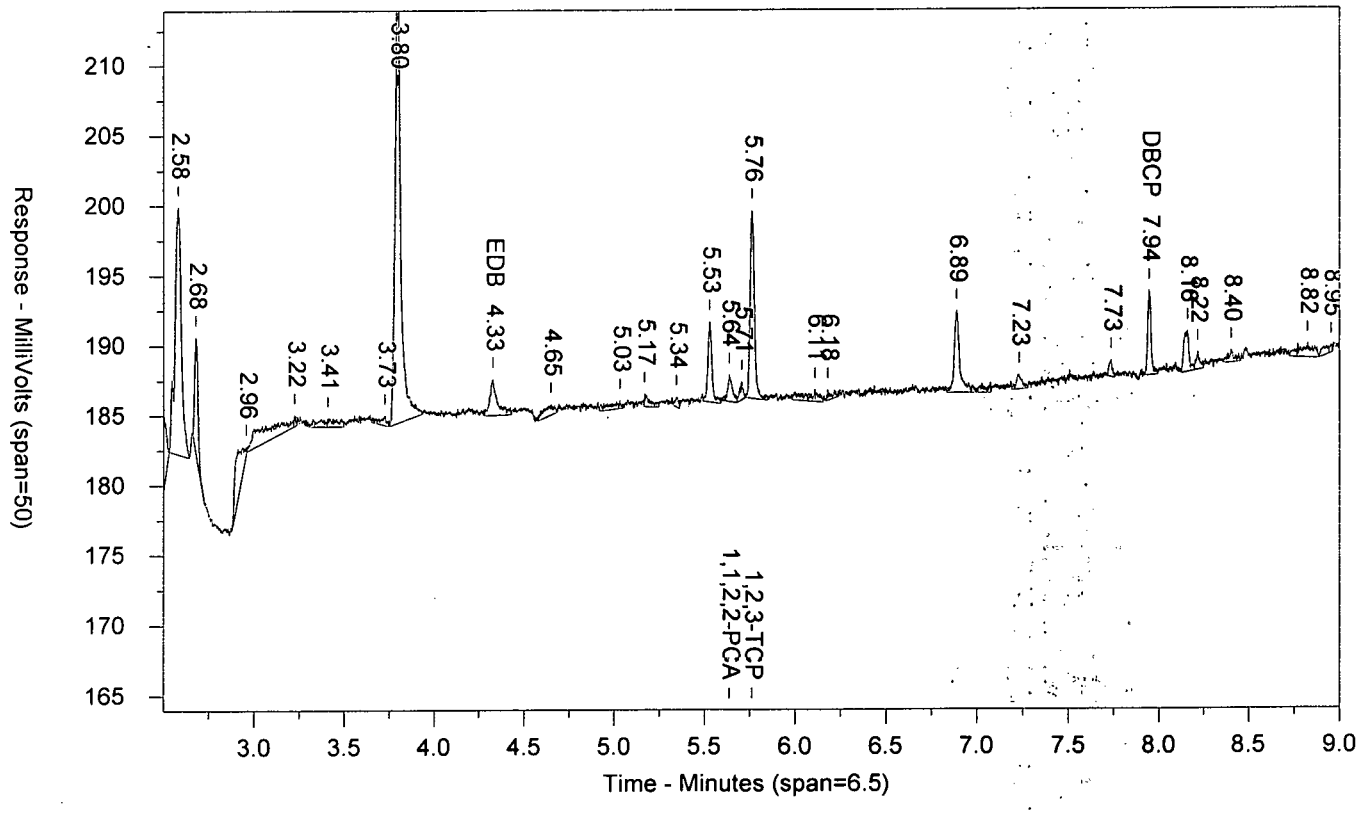
Files:
Area File: 16EDBS17202001.0011.RAW
Area File: 16EDBS17202001B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:52:27 PM
File Reported On: 7/24/2017 at 10:44:46 AM

MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0012.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0012.RAW



LANCASTER LABORATORIES

Sample Number: MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:59:04 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

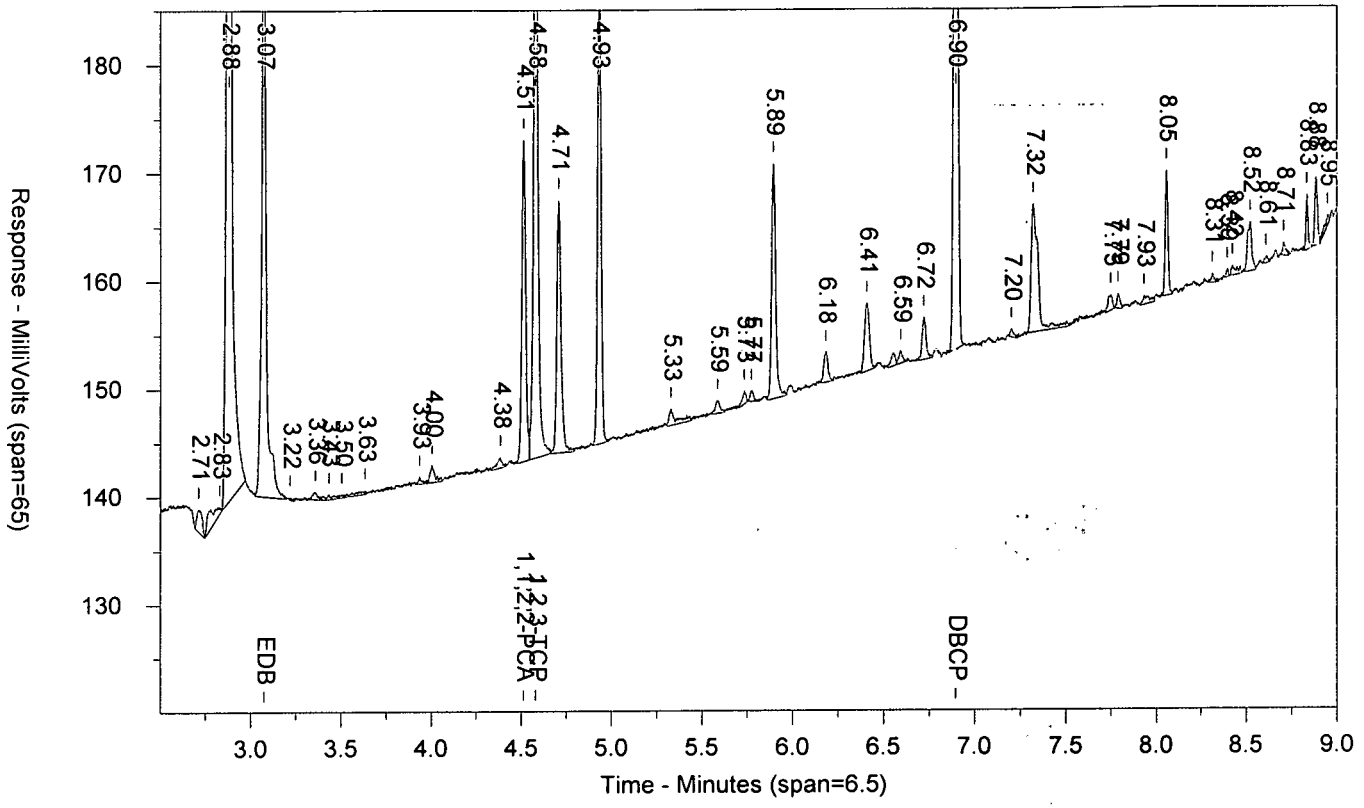
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 8227 | .399 | EDB | 4.328 | 2605 | .442 | EDB |
| 4.508 | 4705 | .201 | 1,1,2,2-PCA | 5.637 | 1947 | .207 | 1,1,2,2-PCA |
| 4.577 | 12707 | 2.8 | 1,2,3-TCP | 5.762 | 13463 | 4.124 | 1,2,3-TCP |
| 6.895 | 16774 | .413 | DBCP | 7.944 | 6091 | .394 | DBCP |

Files:
Area File: 16EDBS17202001.0012.RAW
Area File: 16EDBS17202001B.0012.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:08:05 PM
File Reported On: 7/24/2017 at 10:53:41 AM

EDB_41724DS QKEDB_4QK CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0037.RAW

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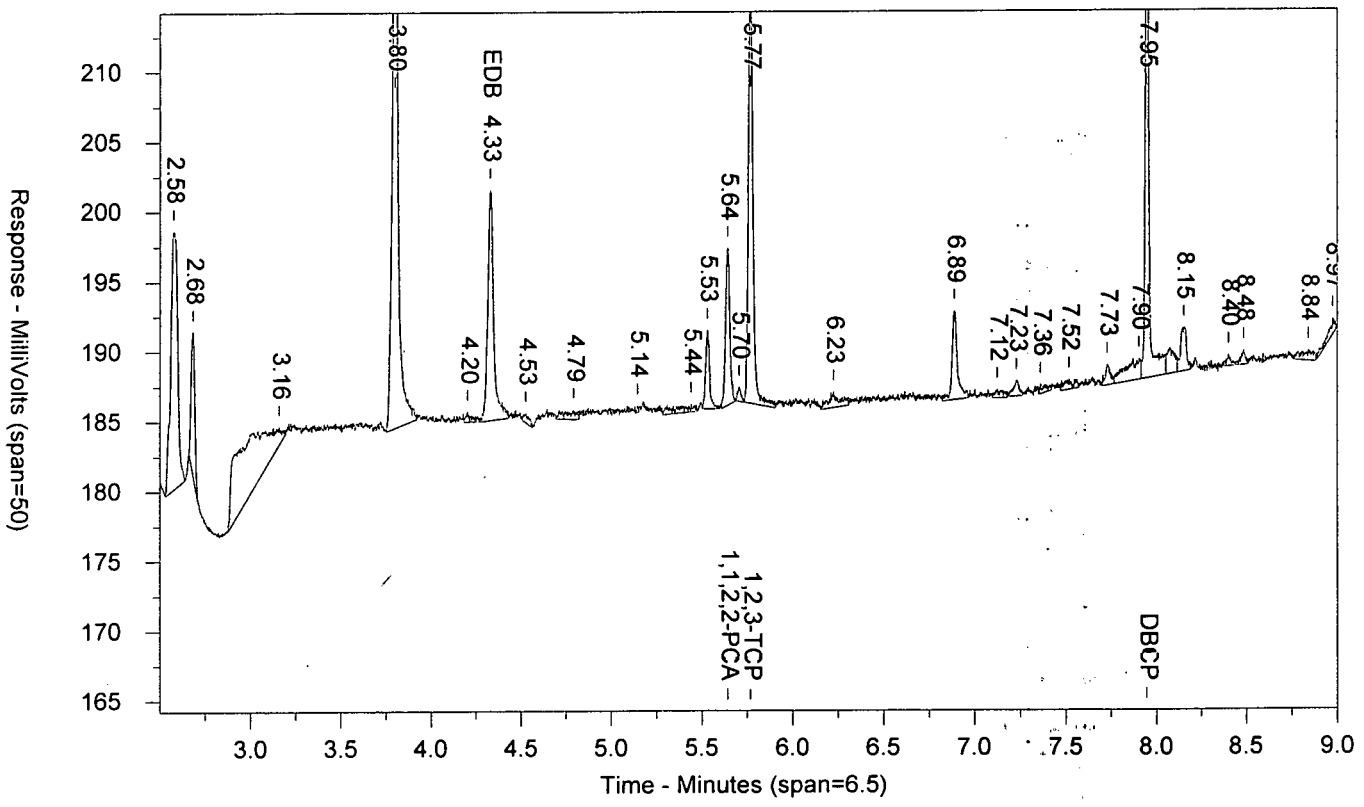


LANCASTER LABORATORIES

Sample Number: EDB_41724DS QKEDB_4QK CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 11:29:26 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

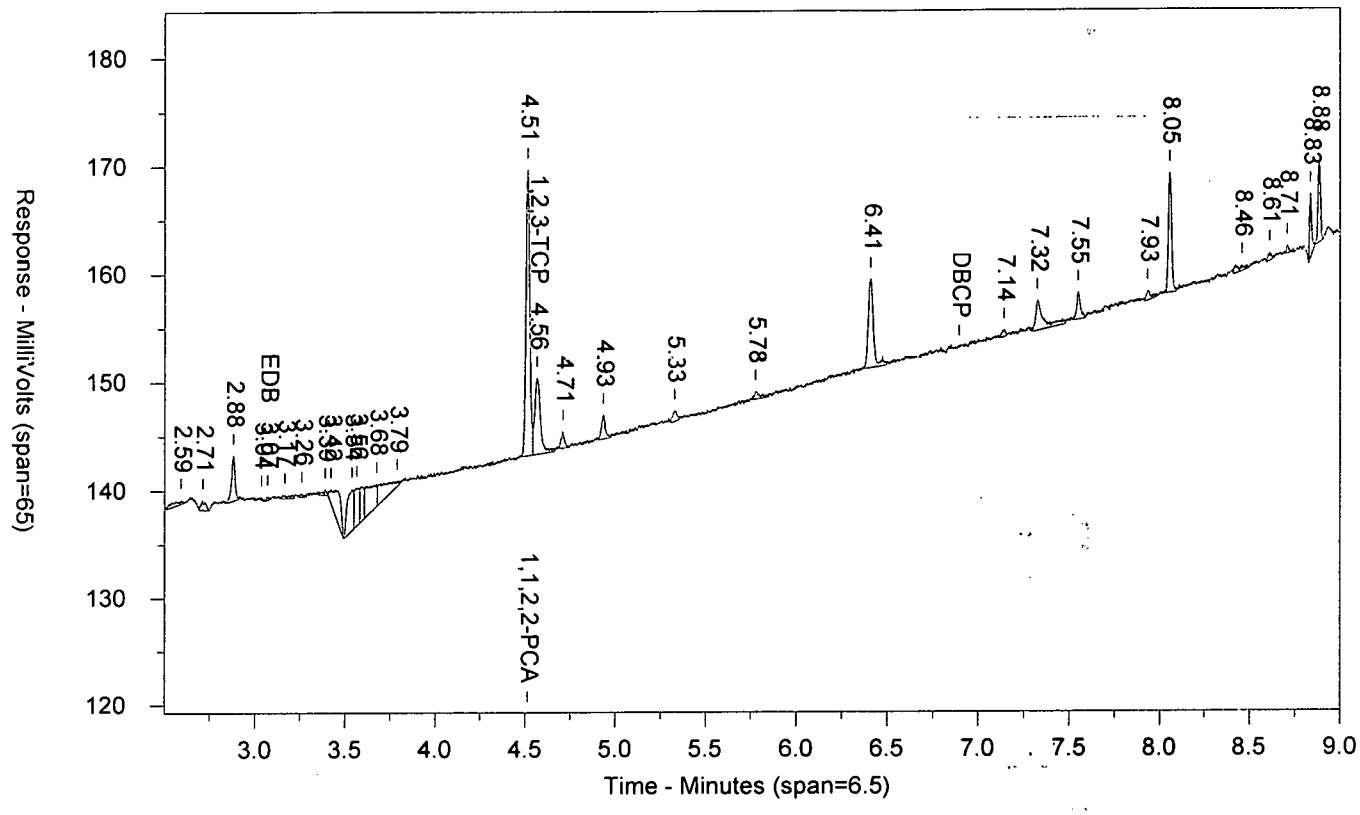
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.073 | 58501 | 2.838 | EDB | 4.33 | 16488 | 2.798 | EDB |
| 4.513 | 29839 | 1.272 | 1,1,2,2-PCA | 5.642 | 11232 | 1.33 | 1,1,2,2-PCA |
| 4.58 | 63220 | 19.888 | 1,2,3-TCP | 5.768 | 29261 | 20.121 | 1,2,3-TCP |
| 6.896 | 109308 | 2.69 | DBCP | 7.946 | 42789 | 2.77 | DBCP |

Files:
Area File: 16EDBS17202001.0037.RAW
Area File: 16EDBS17202001B.0037.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 11:38:27 PM
File Reported On: 7/24/2017 at 10:58:29 AM

EIBKX1724C SDPIBLKSD PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0038.RAW

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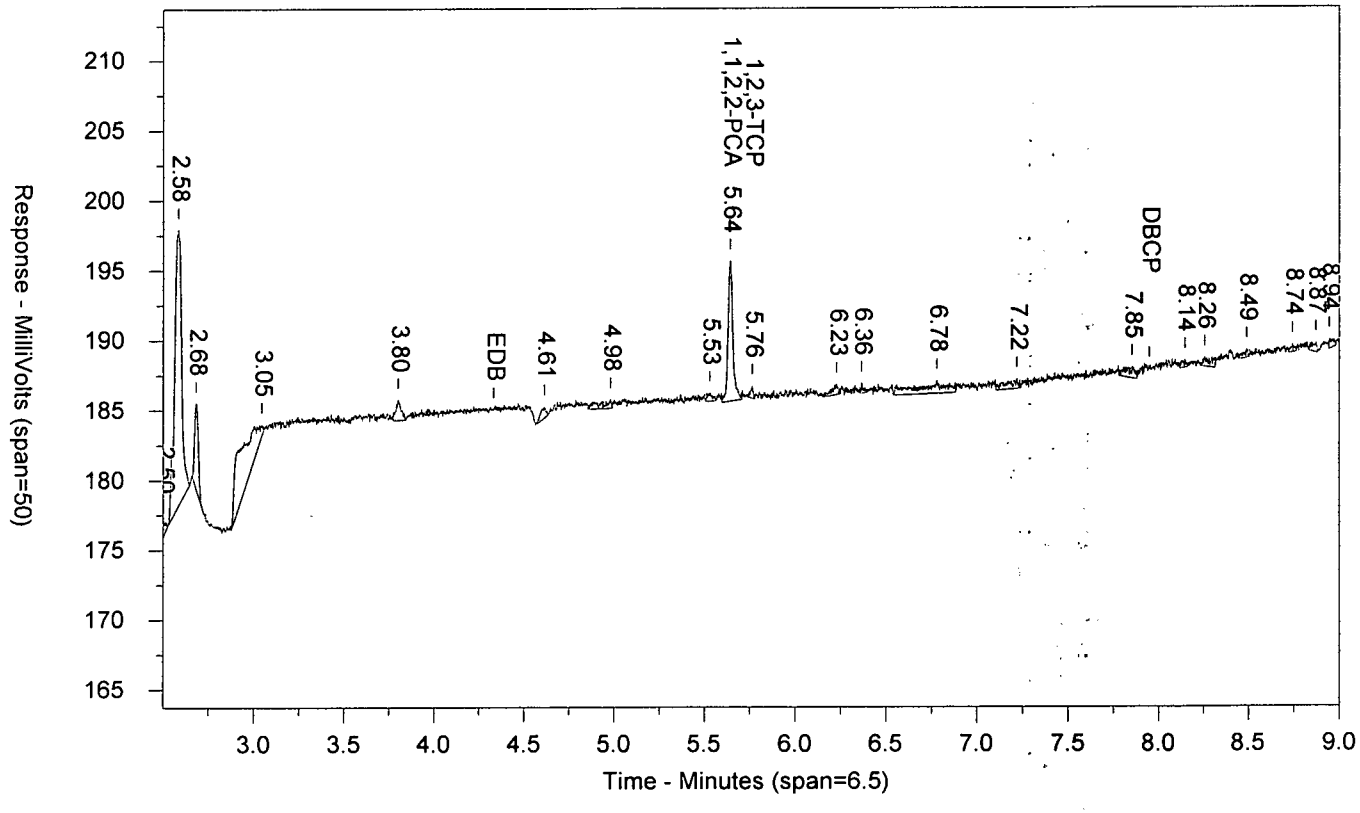


LANCASTER LABORATORIES

Sample Number: EIBKX1724C SDPIBLKSD PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 11:44:59 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

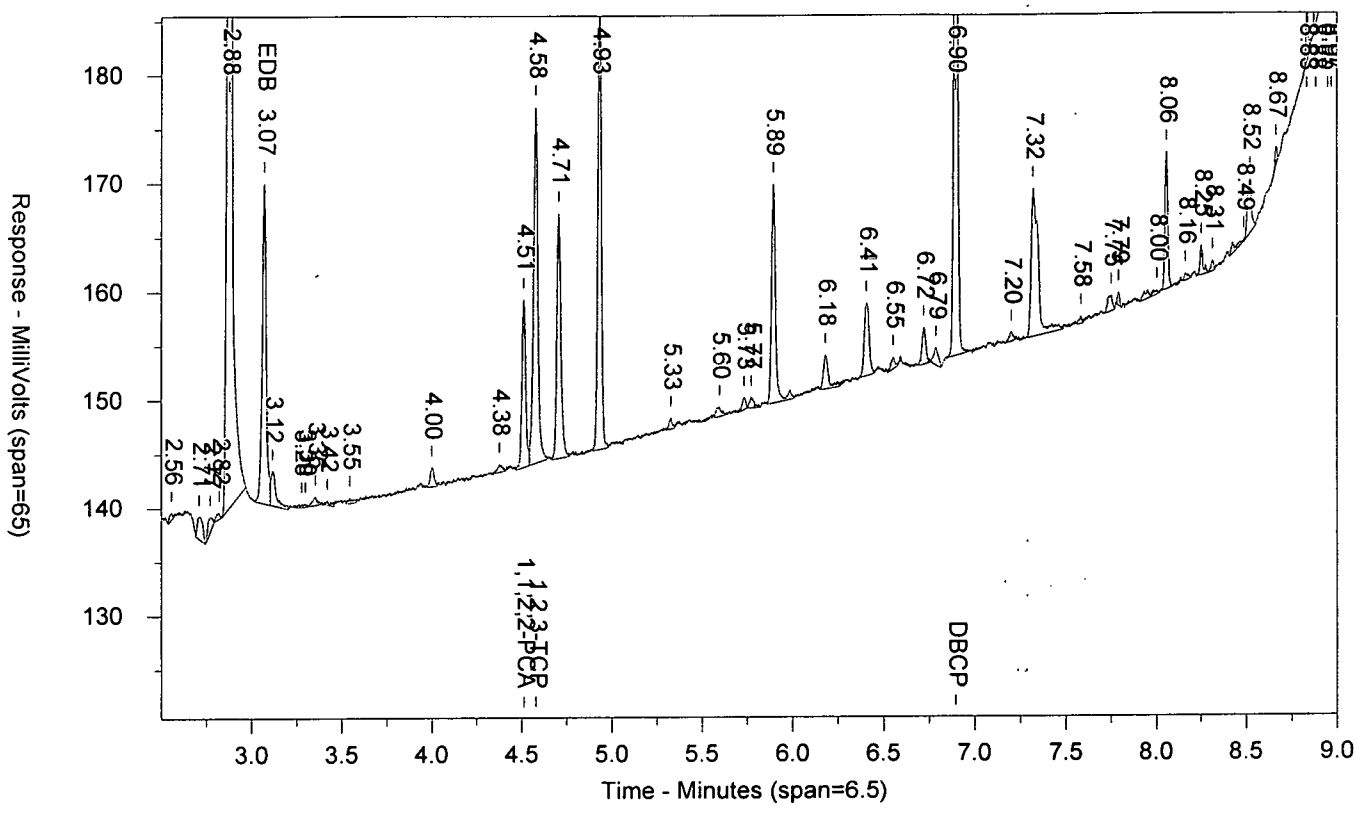
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 360 | .001 | EDB | | 0 | | EDB |
| 4.513 | 26524 | .065 | 1,1,2,2-PCA | 5.642 | 10066 | .068 | 1,1,2,2-PCA |
| 4.564 | 7094 | .051 | 1,2,3-TCP | 5.763 | 937 | -.489 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0038.RAW
Area File: 16EDBS17202001B.0038.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 11:54:02 PM
File Reported On: 7/24/2017 at 10:58:39 AM

EDB_31724DS PBEDB_3PB CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0049.RAW

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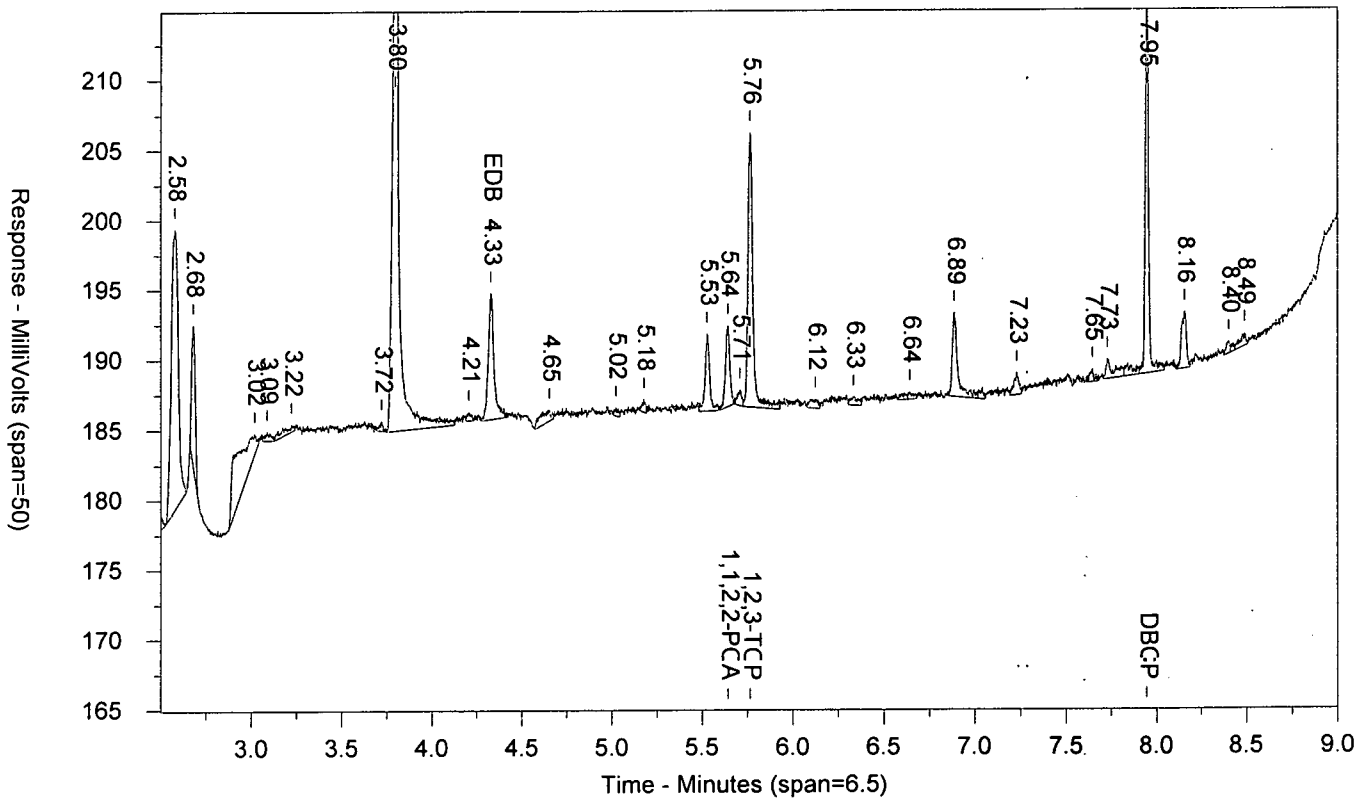


LANCASTER LABORATORIES

Sample Number: EDB_31724DS PBEDB_3PB CCAL 1720199999 SW-846 8011
Injected On: 7/22/2017 2:36:41 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

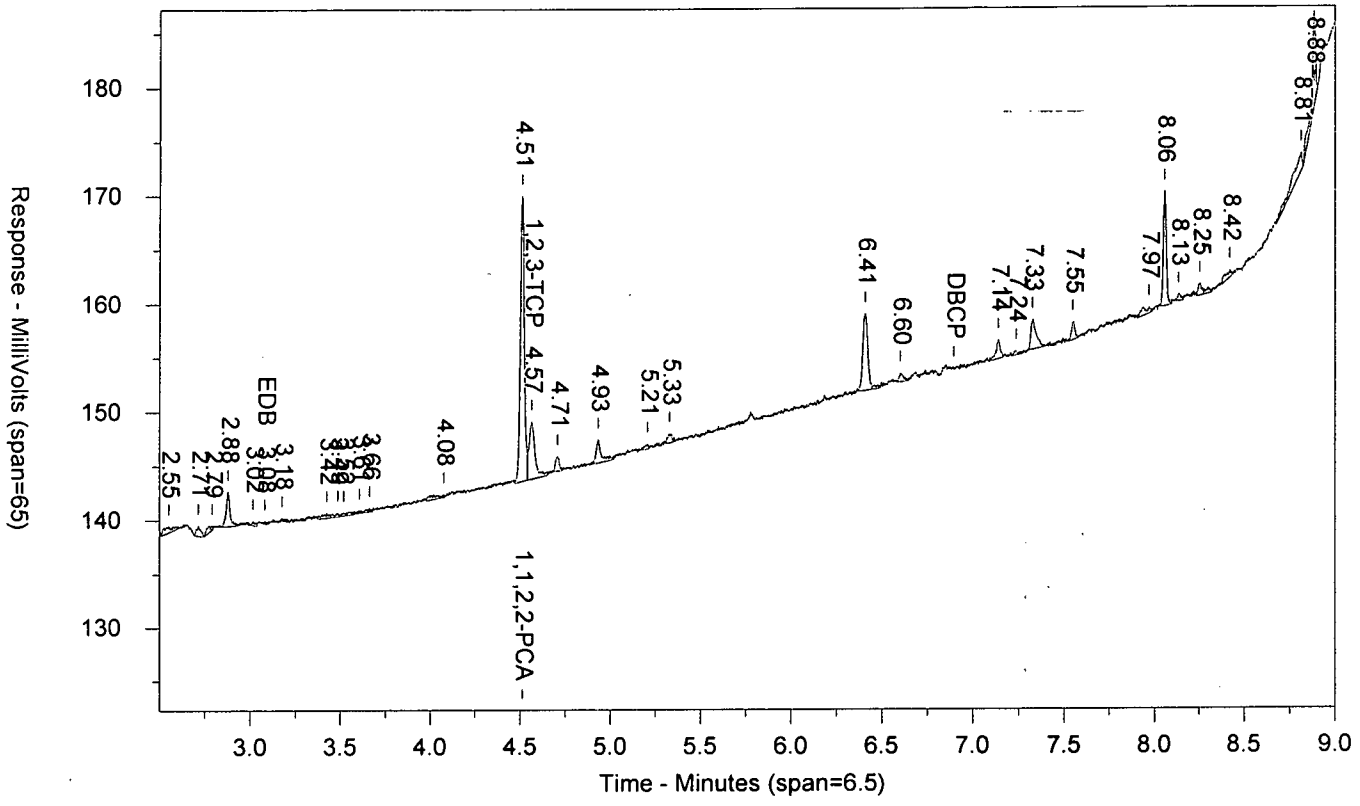
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 29622 | 1.437 | EDB | 4.328 | 9023 | 1.531 | EDB |
| 4.514 | 15581 | .664 | 1,1,2,2-PCA | 5.642 | 5796 | .673 | 1,1,2,2-PCA |
| 4.58 | 32980 | 9.658 | 1,2,3-TCP | 5.764 | 19646 | 10.384 | 1,2,3-TCP |
| 6.896 | 66898 | 1.646 | DBCP | 7.945 | 27247 | 1.764 | DBCP |

Files:
Area File: 16EDBS17202001.0049.RAW
Area File: 16EDBS17202001B.0049.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 2:45:42 AM
File Reported On: 7/24/2017 at 11:00:36 AM

EIBKX1724C SEPIBLKSE PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0050.RAW

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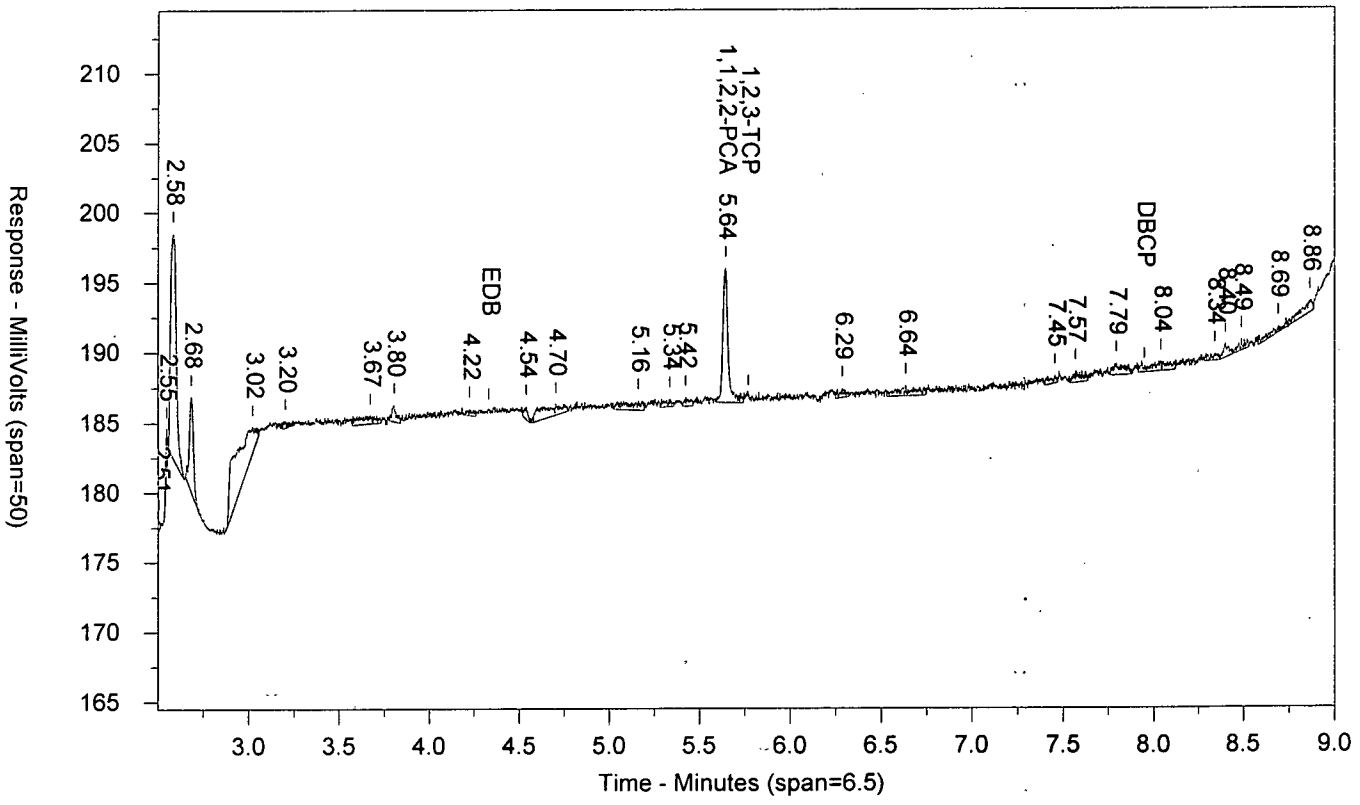


LANCASTER LABORATORIES

Sample Number: EIBKX1724C SEPIBLKSE PIBLK1720199999 SW-846 8011
Injected On: 7/22/2017 2:52:14 AM Sample Weight: .35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

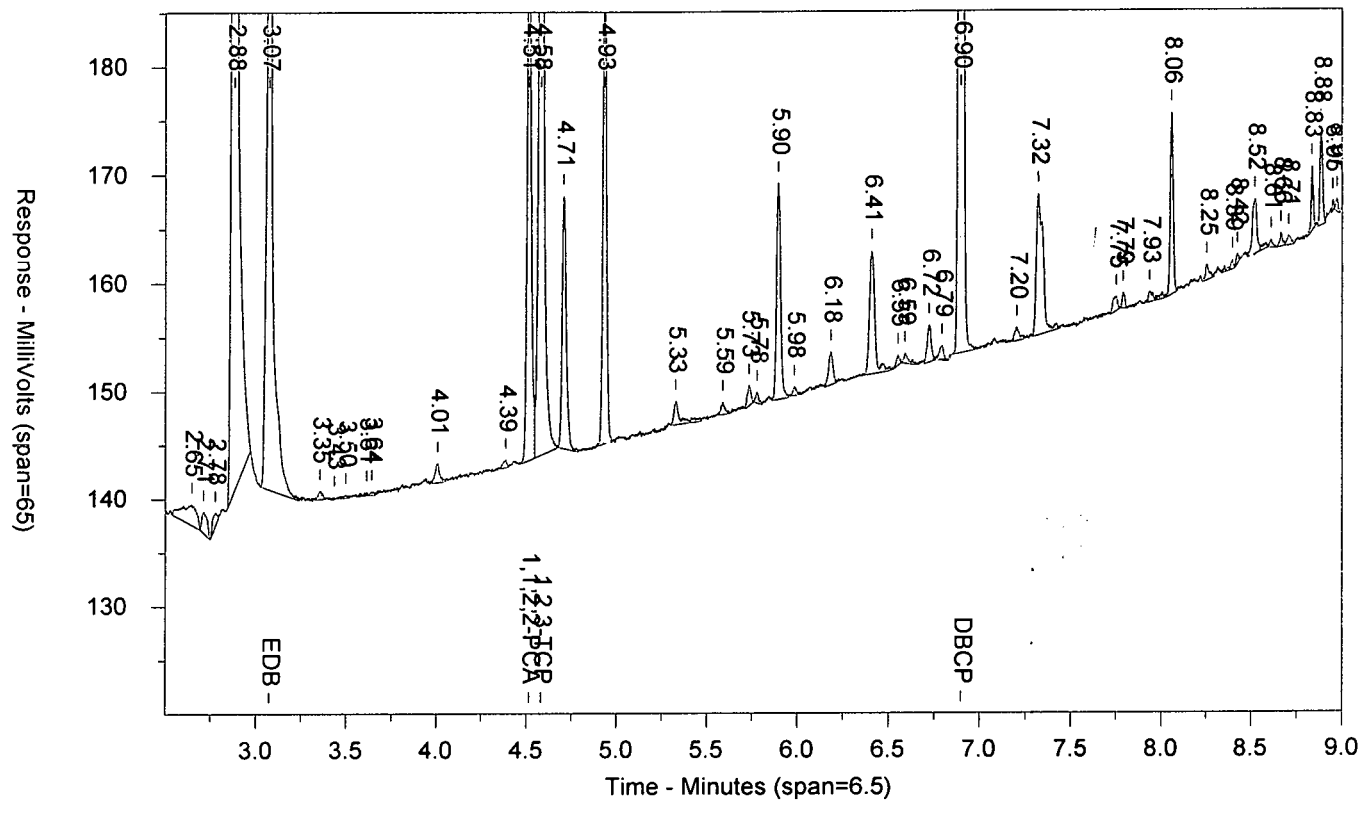
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.082 | 311 | .001 | EDB | | 0 | | EDB |
| 4.513 | 26464 | .064 | 1,1,2,2-PCA | 5.642 | 9592 | .065 | 1,1,2,2-PCA |
| 4.565 | 5344 | .018 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

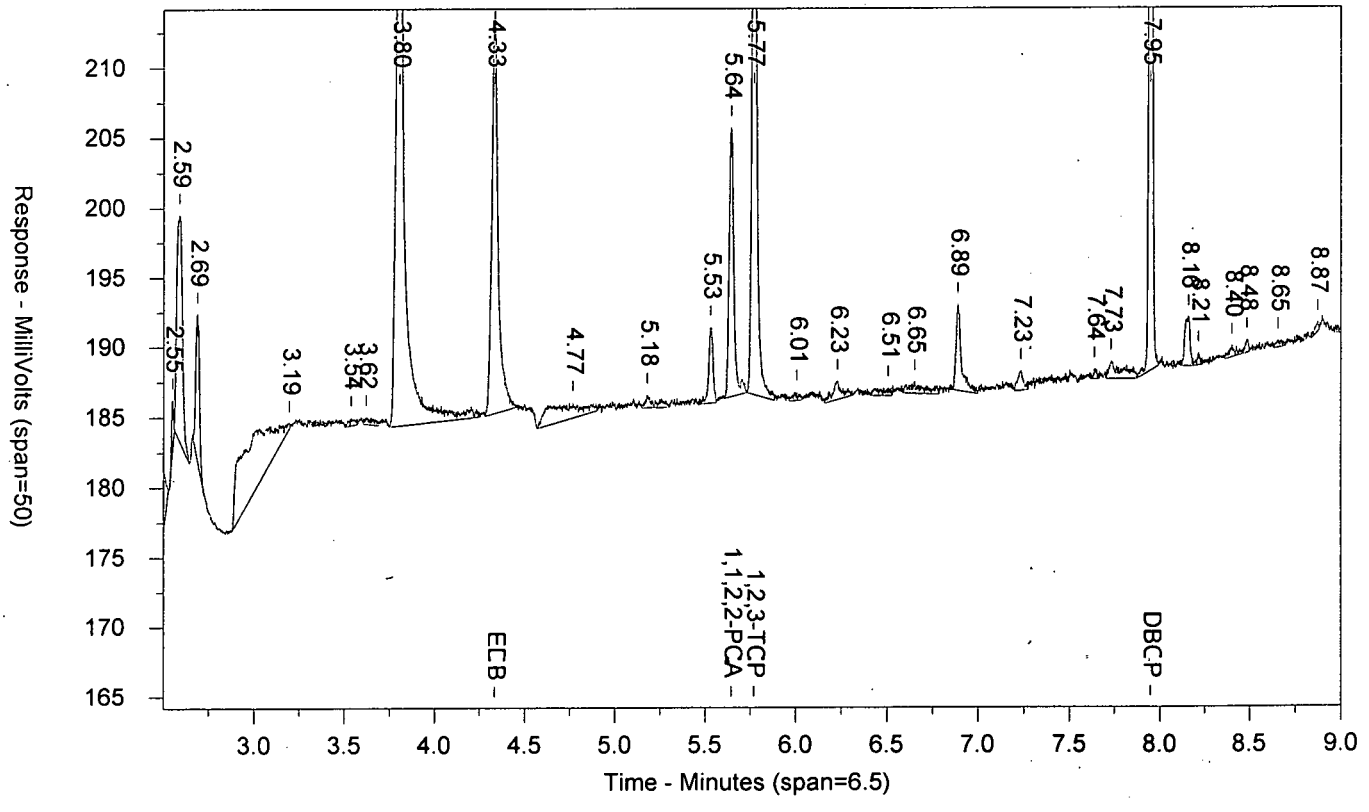
Files:
Area File: 16EDBS17202001.0050.RAW
Area File: 16EDBS17202001B.0050.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 3:01:15 AM
File Reported On: 7/24/2017 at 11:00:58 AM

EDB_51724DS LTEDB_5LT CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0061.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0061.RAW



LANCASTER LABORATORIES

Sample Number: EDB_51724DS LTEDB_5LT CCAL 1720199999 SW-846 8011
Injected On: 7/22/2017 5:44:03 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

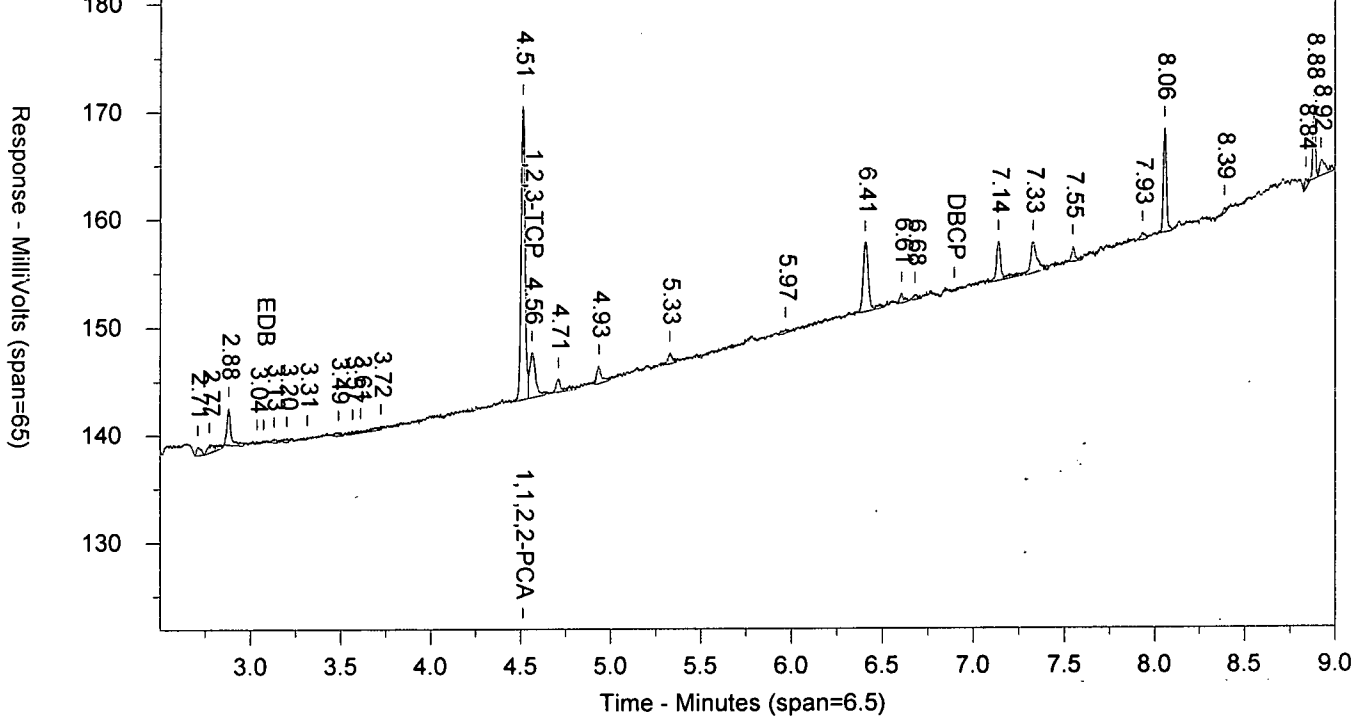
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.074 | 100582 | 4.879 | EDB | 4.334 | 28823 | 4.891 | EDB |
| 4.514 | 51239 | 2.184 | 1,1,2,2-PCA | 5.642 | 19291 | 2.305 | 1,1,2,2-PCA |
| 4.581 | 107670 | 34.925 | 1,2,3-TCP | 5.769 | 44672 | 35.725 | 1,2,3-TCP |
| 6.897 | 208456 | 5.13 | DBCP | 7.946 | 85264 | 5.519 | DBCP |

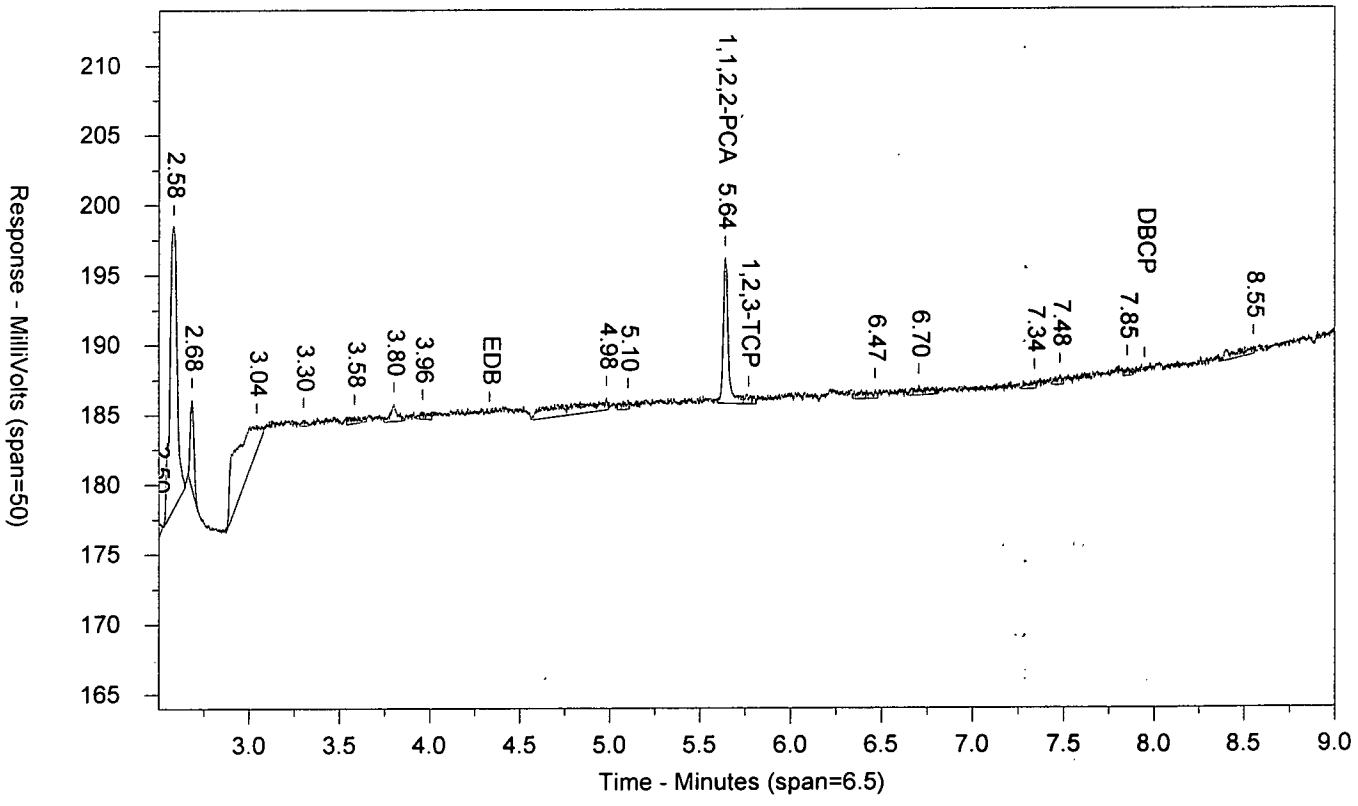
Files:
Area File: 16EDBS17202001.0061.RAW
Area File: 16EDBS17202001B.0061.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 5:53:05 AM
File Reported On: 7/24/2017 at 11:03:17 AM

EIBKX1724C SFPIBLKSF PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0062.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0062.RAW



LANCASTER LABORATORIES

Sample Number: EIBKX1724C SFPIBLKSF PIBLK1720199999 SW-846 8011
Injected On: 7/22/2017 5:59:41 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

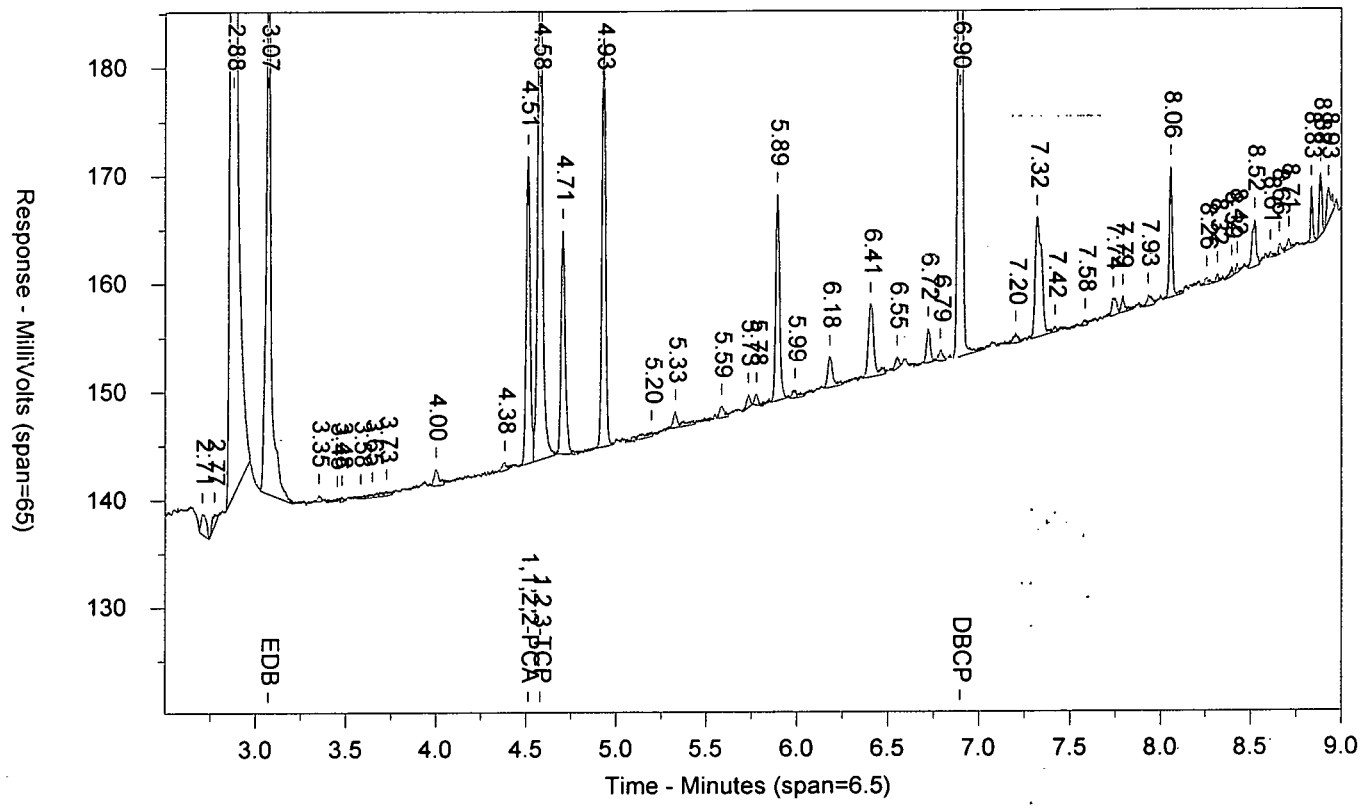
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 27257 | .066 | 1,1,2,2-PCA | 5.64 | 10423 | .07 | 1,1,2,2-PCA |
| 4.563 | 4235 | -.004 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0062.RAW
Area File: 16EDBS17202001B.0062.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 6:08:43 AM
File Reported On: 7/24/2017 at 11:03:27 AM

EDB_41724DS QLEDB_4QL CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0073.RAW

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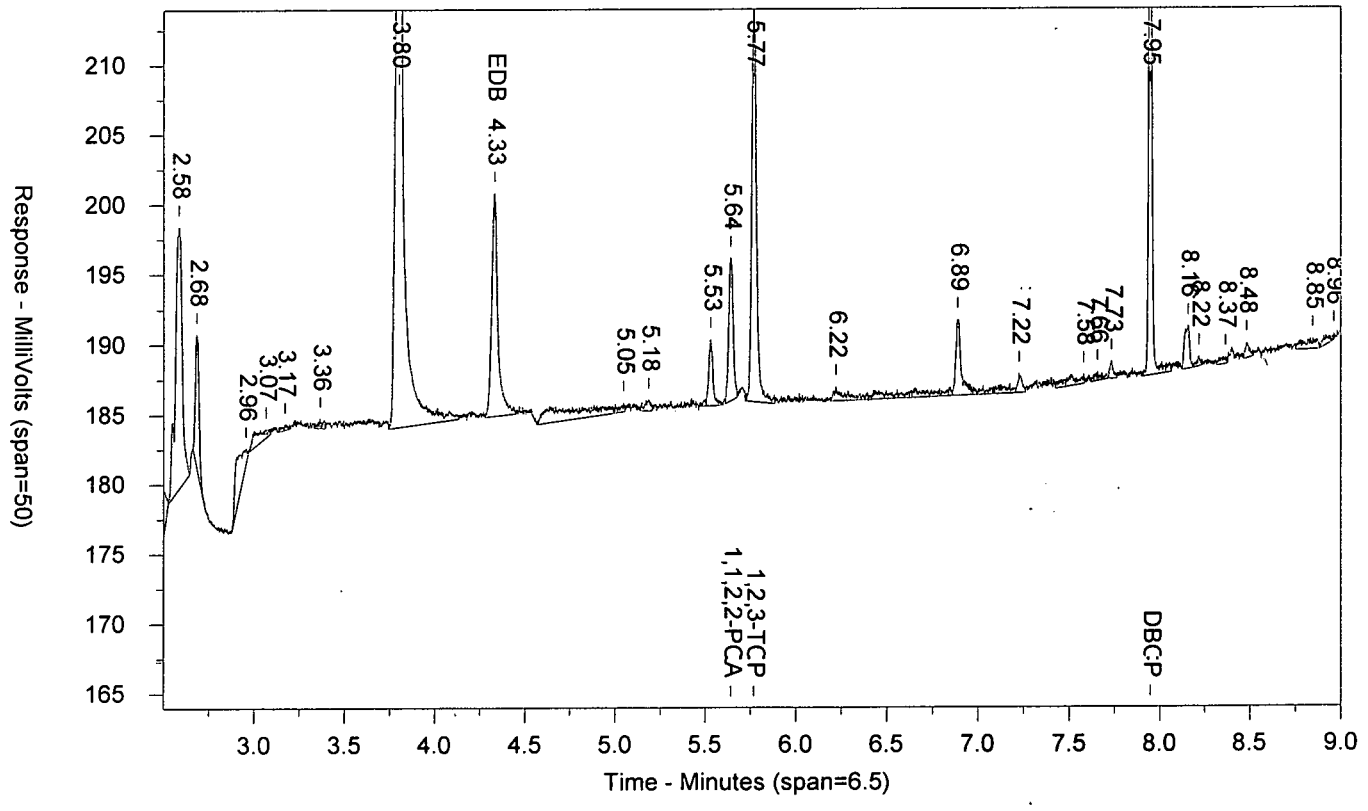


LANCASTER LABORATORIES

Sample Number: EDB_41724DS QLEDB_4QL CCAL 1720199999 SW-846 8011
Injected On: 7/22/2017 8:51:24 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

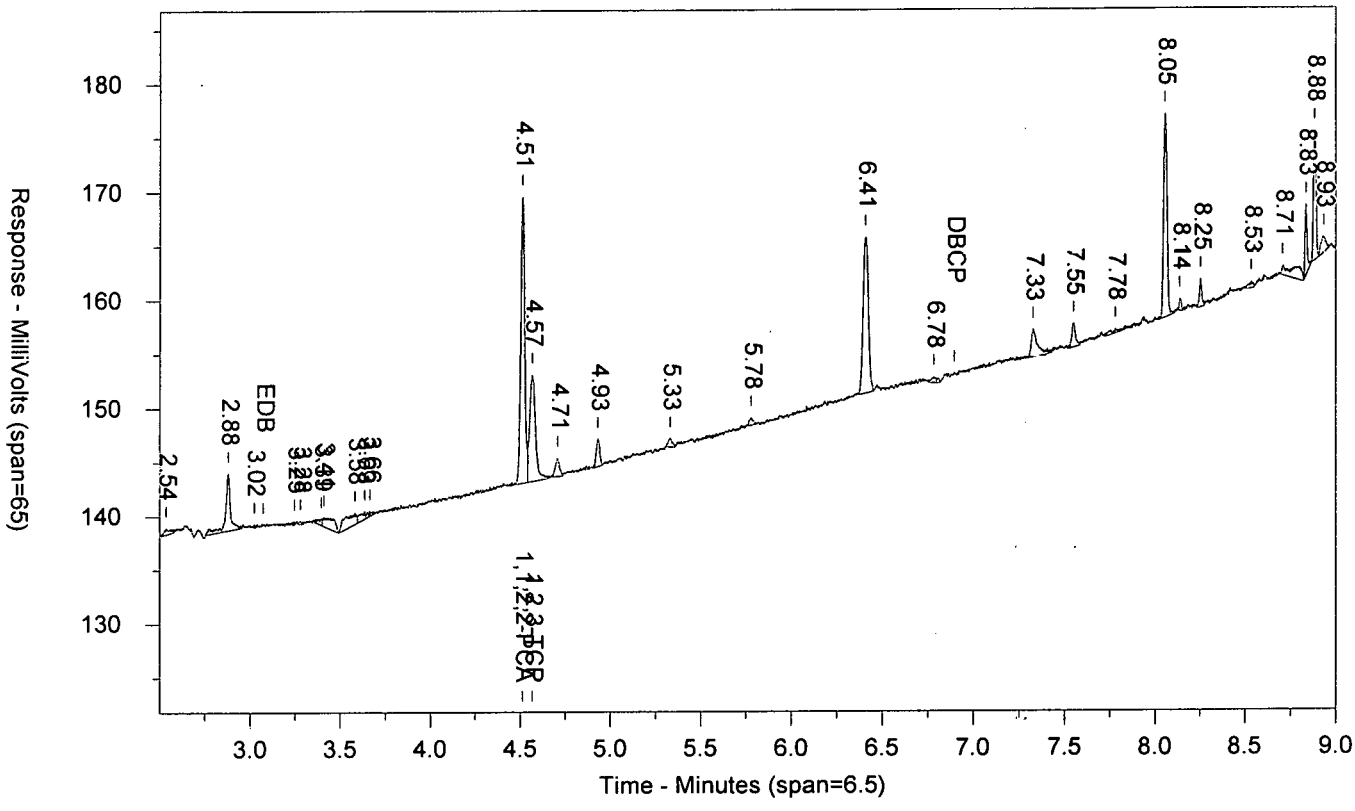
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 53806 | 2.61 | EDB | 4.333 | 15958 | 2.708 | EDB |
| 4.513 | 28539 | 1.216 | 1,1,2,2-PCA | 5.641 | 10192 | 1.205 | 1,1,2,2-PCA |
| 4.579 | 60431 | 18.944 | 1,2,3-TCP | 5.767 | 28240 | 19.086 | 1,2,3-TCP |
| 6.896 | 113437 | 2.791 | DBCP | 7.947 | 45036 | 2.915 | DBCP |

Files:
Area File: 16EDBS17202001.0073.RAW
Area File: 16EDBS17202001B.0073.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 9:00:24 AM
File Reported On: 7/24/2017 at 11:05:39 AM

EIBKX1724C SGPIBLKSG PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0074.RAW

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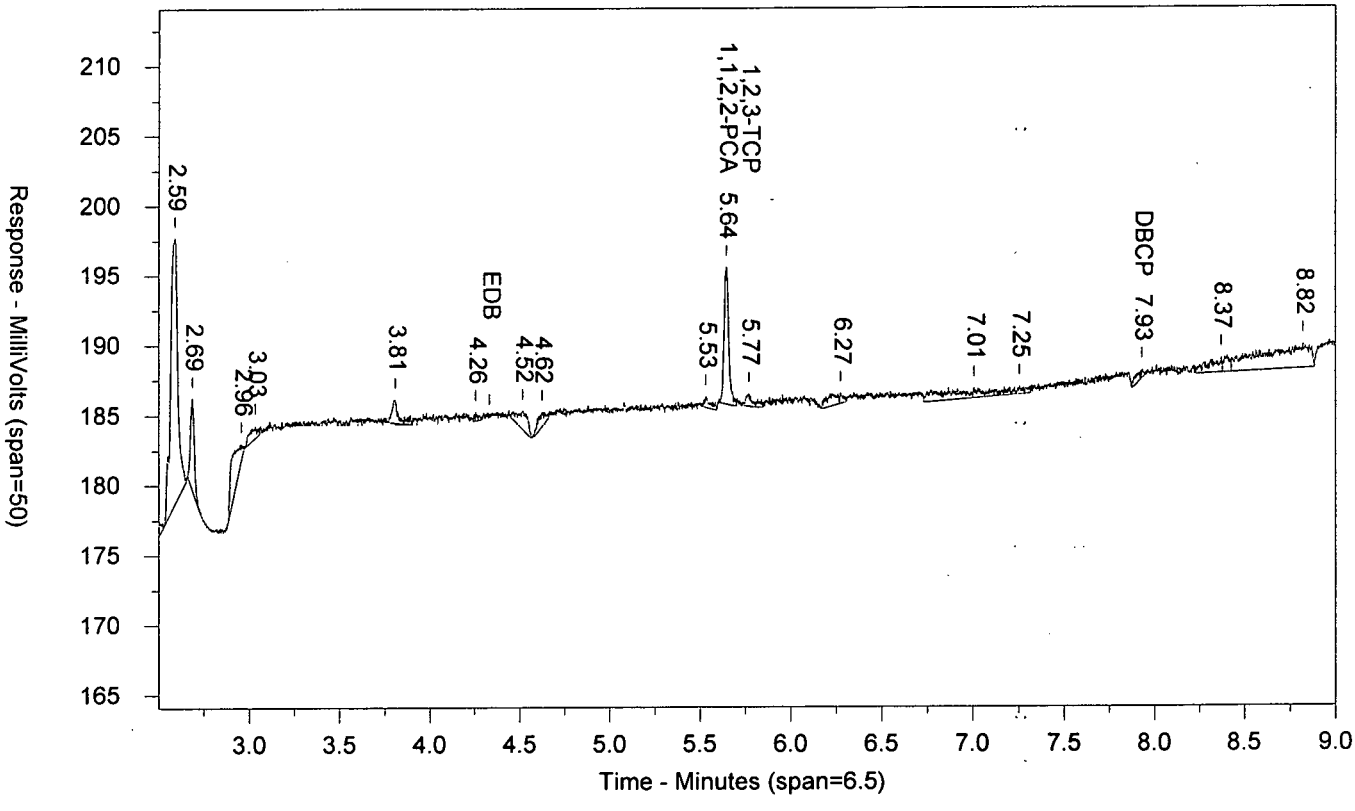


LANCASTER LABORATORIES

Sample Number: EIBKX1724C SGPIBLKSG PIBLK1720199999 SW-846 8011
Injected On: 7/22/2017 9:06:59 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 26587 | .065 | 1,1,2,2-PCA | 5.644 | 9852 | .066 | 1,1,2,2-PCA |
| 4.566 | 9963 | .107 | 1,2,3-TCP | 5.769 | 922 | -.49 | 1,2,3-TCP |
| | 0 | | DBCP | 7.93 | 654 | .002 | DBCP |

Files:
Area File: 16EDBS17202001.0074.RAW
Area File: 16EDBS17202001B.0074.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 9:16:01 AM
File Reported On: 7/24/2017 at 11:05:53 AM

# Raw QC Data

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK21201 BLK Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:18:37 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0044.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.061355

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:18:37 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0044.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.063022

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 25189 | 0.061355 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5717 | 0.024876 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9352 | 0.063022 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 1916 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.061355 | 0.0035 | 0.007 | 0.007 | | 2.68 | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:06

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **BLANKA** 7/21/17 PBLK21201Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 01:18:37
Instrument : CP16--19853A
Result file : 16EDBS17202001.0044.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.061355

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 25189 | 0.061355 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 5717 | 0.024876 |

## Analysis Report (B)

Injected on : Jul 22, 2017 01:18:37
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0044.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.063022

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 9352 | 0.063022 |
| 1,2,3-TCP | 5.74 | 5.77 | 5.80 | 1916 | -0.432517 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.061355 | | | | 2.68 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Valorie L. Tomayko
Principal Specialist

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by:
Date: JUL 25 2017

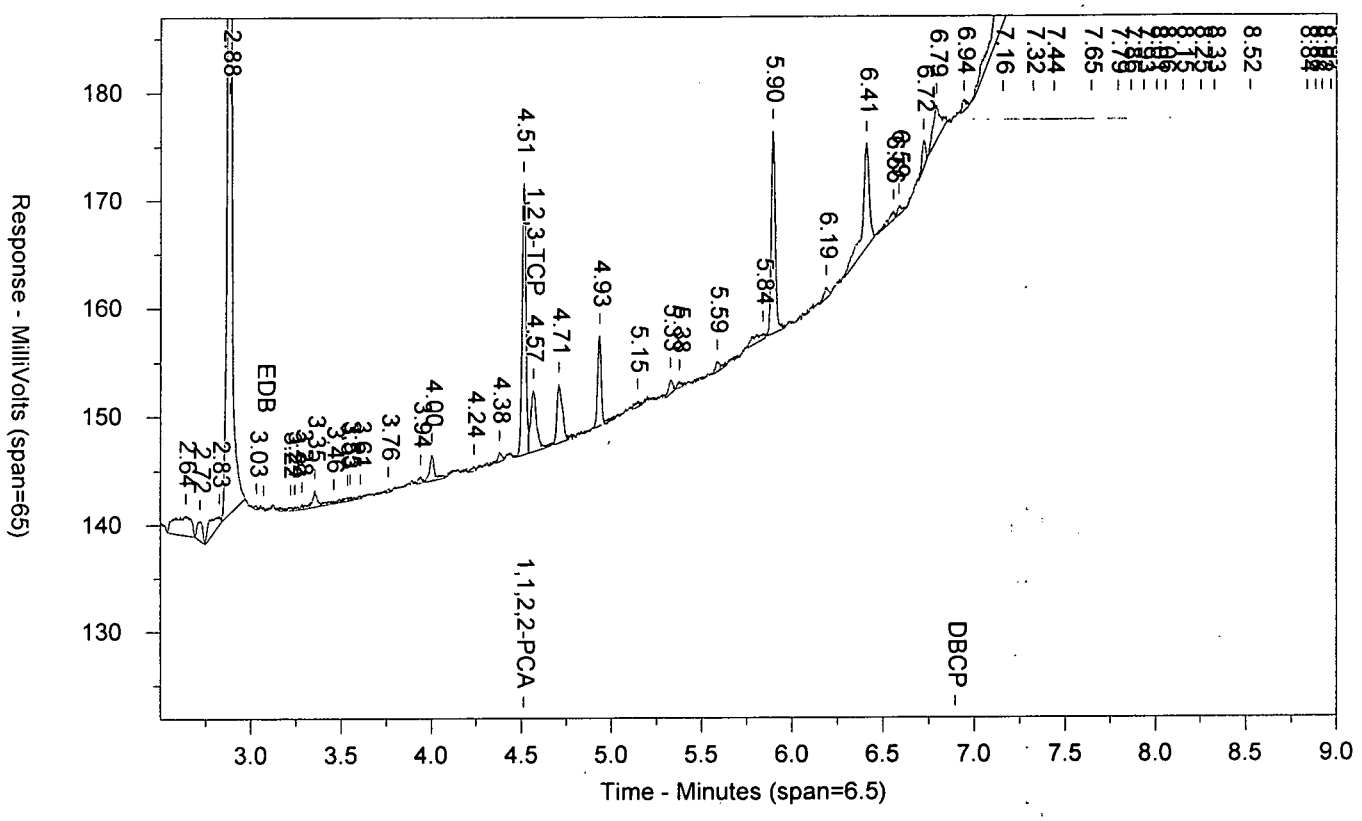
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:14:43

BLANKA 7/21/17 AAPBLK21201 BLK 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0044.RAW

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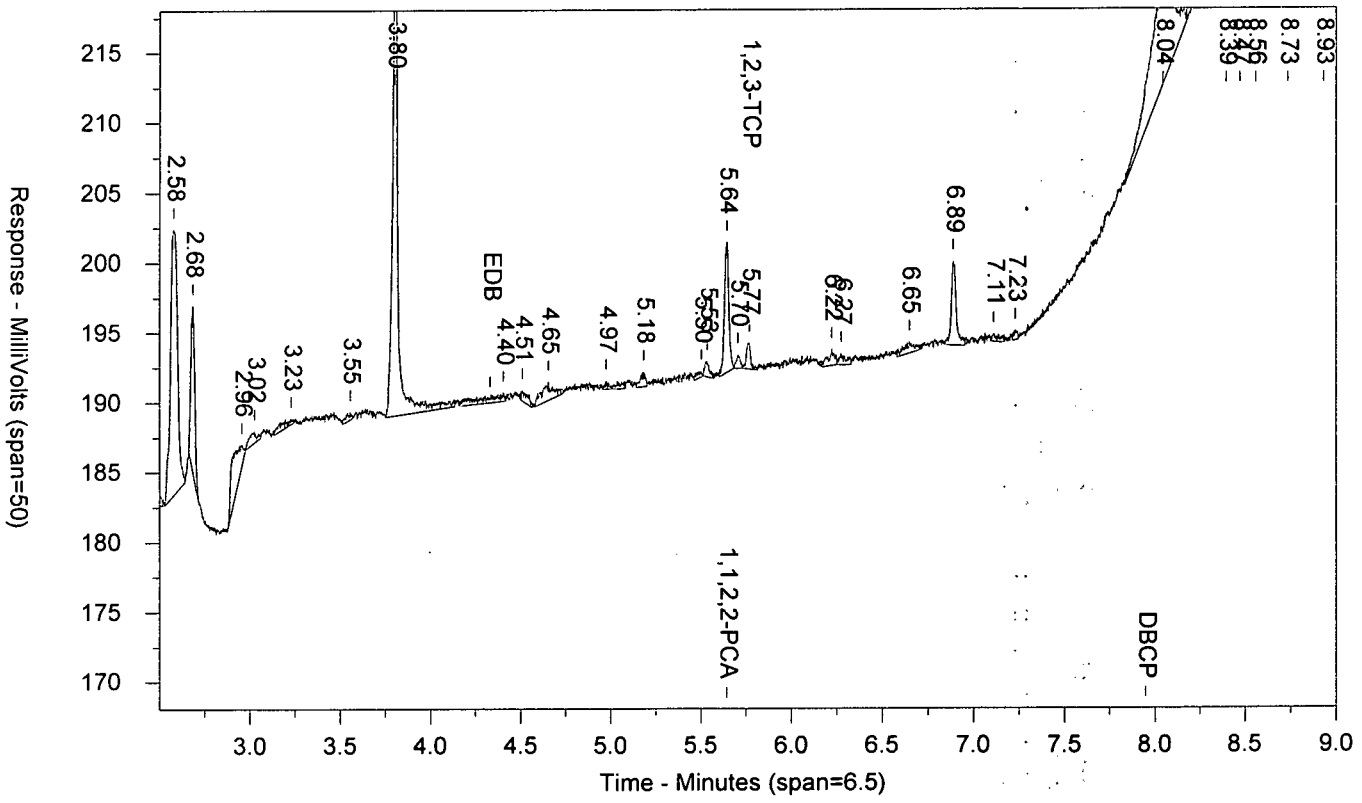


LANCASTER LABORATORIES

Sample Number: BLANKA 7/21/17 AAPBLK21201 BLK 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 1:18:37 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 25189 | .061 | 1,1,2,2-PCA | 5.643 | 9352 | .063 | 1,1,2,2-PCA |
| 4.566 | 5717 | .025 | 1,2,3-TCP | 5.767 | 1916 | -.433 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0044.RAW
Area File: 16EDBS17202001B.0044.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 1:27:39 AM
File Reported On: 7/24/2017 at 10:59:39 AM

# Data Summary

**Sample Name: 9098350** MS 18506 MS Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.45 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 04:10:17 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0055.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.059093

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 04:10:17 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0055.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.059991

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 55866 | 0.148692 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 25266 | 0.059093 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 69233 | 1.202869 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 121685 | 0.164305 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 16683 | 0.155339 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9273 | 0.059991 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 25117 | 0.873751 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 49968 | 0.177462 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.148692 | 0.0096 | 0.0192 | 0.0288 | | 4.37 | |
| 1,1,2,2-TETRACHLOROE | A | 0.059093 | 0.0034 | 0.0067 | 0.0067 | | 1.51 | |
| 1,2,3-Trichloropropane | A | 1.202869 | | | 0.2593 | | 31.70 | |
| 1,2-Dibromo-3-chloroprop | A | 0.164305 | 0.0096 | 0.0192 | 0.0288 | | 7.70 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerio L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:23

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9098350** MS 18506 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.45 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 04:10:17
Instrument : CP16--19853A
Result file : 16EDBS17202001.0055.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.059093

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 55866 | 0.148692 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25266 | 0.059093 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 69233 | 1.202869 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 121685 | 0.164305 |

## Analysis Report (B)

Injected on : Jul 22, 2017 04:10:17
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0055.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.059991

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 16683 | 0.155339 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9273 | 0.059991 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 25117 | 0.873751 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 49968 | 0.177462 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.148692 | 0.0288 | 0.0096 | | 4.37 | |
| ☐ 1,1,2,2-PCA | A | 0.059093 | | | | 1.51 | |
| ☐ 1,2,3-TCP | A | 1.202869 | 0.2593 | 0.096 | | 31.70 | |
| ☐ DBCP | A | 0.164305 | 0.0288 | 0.0096 | | 7.70 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

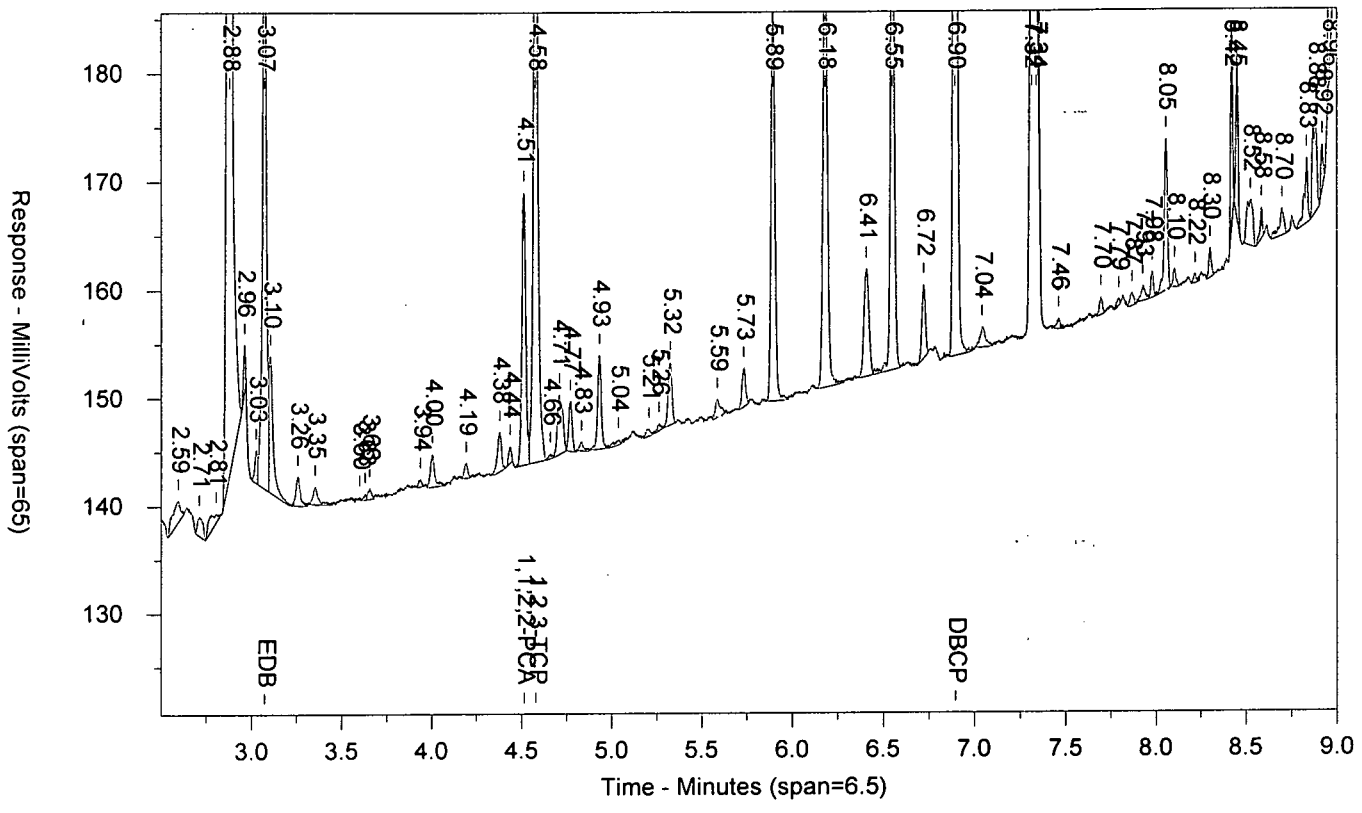
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:15:59

9098350MS AA18506 MS 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0055.RAW

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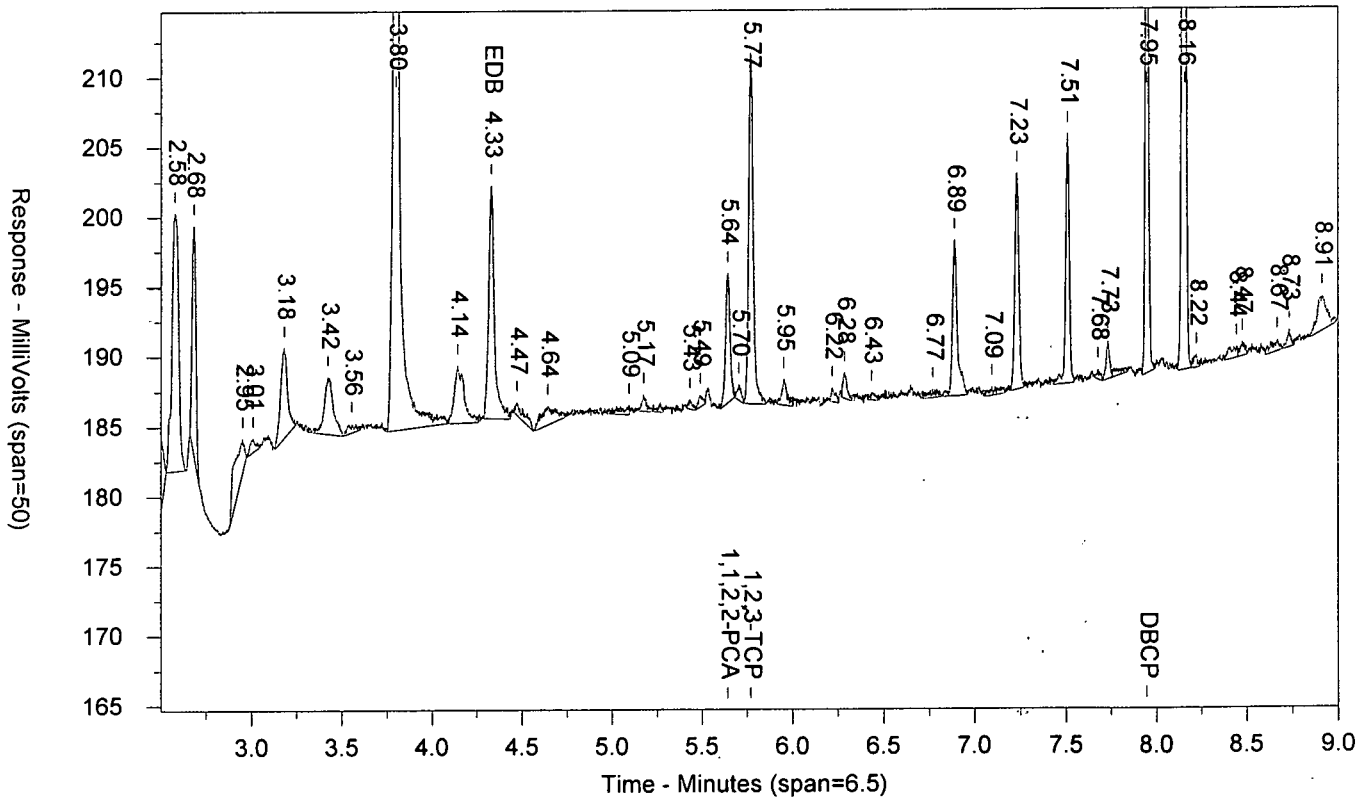

LANCASTER LABORATORIES

Sample Number: 9098350MS AA18506 MS 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 4:10:17 AM Sample Weight: 36.45
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.073 | 55866 | .149 | EDB | 4.332 | 16683 | .155 | EDB |
| 4.514 | 25266 | .059 | 1,1,2,2-PCA | 5.642 | 9273 | .06 | 1,1,2,2-PCA |
| 4.58 | 69233 | 1.203 | 1,2,3-TCP | 5.769 | 25117 | .874 | 1,2,3-TCP |
| 6.896 | 121685 | .164 | DBCP | 7.946 | 49968 | .177 | DBCP |

Files:
Area File: 16EDBS17202001.0055.RAW
Area File: 16EDBS17202001B.0055.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 4:19:18 AM
File Reported On: 7/24/2017 at 11:02:06 AM

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# Data Summary

**Sample Name: 9098351** MSD 18506 MSD Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.81 mL Total Volume: 2 ml Analyst: 7848 SDG: KR185 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 04:25:54 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0056.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.058036

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 04:25:54 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0056.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.063226

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 55828 | 0.147138 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 25059 | 0.058036 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 67650 | 1.161999 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 120764 | 0.161466 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 16257 | 0.149899 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9854 | 0.063226 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 25313 | 0.875981 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 48257 | 0.169709 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.147138 | 0.0095 | 0.019 | 0.0285 | | 1.86 | |
| 1,1,2,2-TETRACHLOROE | A | 0.058036 | 0.0033 | 0.0067 | 0.0067 | | 8.56 | |
| 1,2,3-Trichloropropane | A | 1.161999 | | | 0.2567 | | 28.07 | |
| 1,2-Dibromo-3-chloropropa | A | 0.161466 | 0.0095 | 0.019 | 0.0285 | | 4.98 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:25

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9098351** MSD 18506 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.81 mL Total Volume: 2 ml Analyst: Administr SDG: KR185 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 04:25:54
Instrument : CP16--19853A
Result file : 16EDBS17202001.0056.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.058036

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 55828 | 0.147138 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25059 | 0.058036 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 67650 | 1.161999 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 120764 | 0.161466 |

## Analysis Report (B)

Injected on : Jul 22, 2017 04:25:54
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0056.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063226

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 16257 | 0.149899 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9854 | 0.063226 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 25313 | 0.875982 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 48257 | 0.169709 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.147138 | 0.0285 | 0.0095 | | 1.86 | |
| ☐ 1,1,2,2-PCA | A | 0.058036 | | | | 8.56 | |
| ☐ 1,2,3-TCP | A | 1.161999 | 0.2567 | 0.0951 | | 28.07 | |
| ☐ DBCP | A | 0.161466 | 0.0285 | 0.0095 | | 4.98 | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

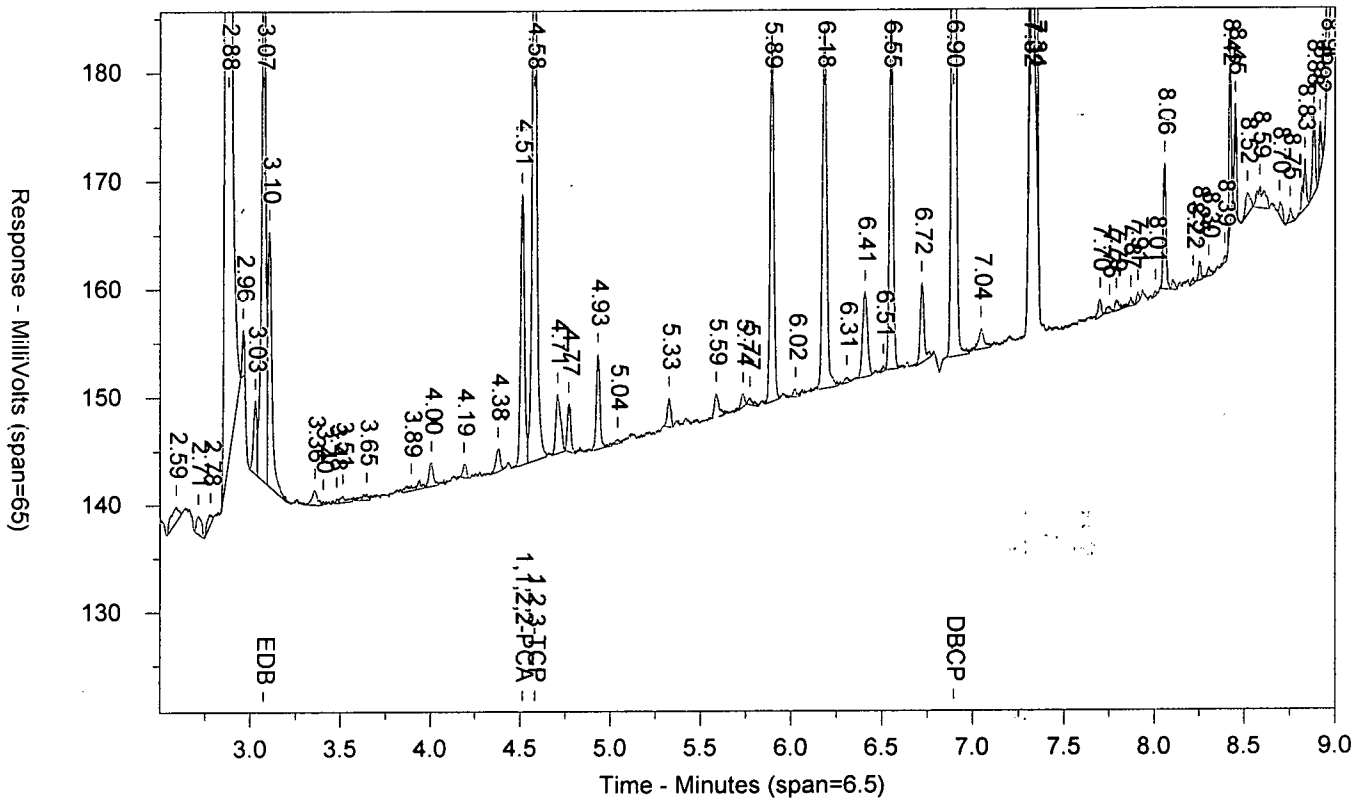
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

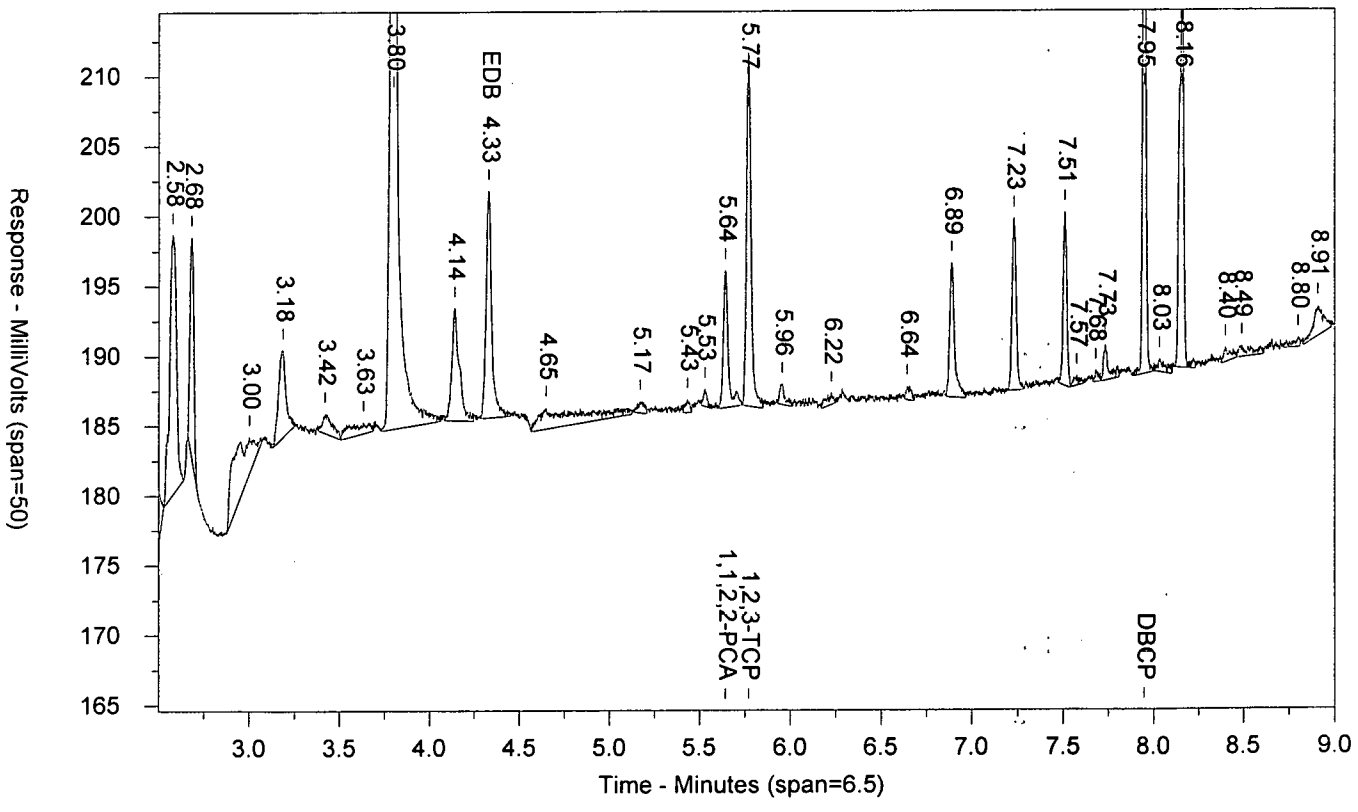
Printed on: 7/24/2017 11:16:07

9098351MSD AA18506 MSD 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0056.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0056.RAW



LANCASTER LABORATORIES

Sample Number: 9098351MSD AA18506 MSD 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 4:25:54 AM Sample Weight: 36.81
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.073 | 55828 | .147 | EDB | 4.331 | 16257 | .15 | EDB |
| 4.514 | 25059 | .058 | 1,1,2,2-PCA | 5.641 | 9854 | .063 | 1,1,2,2-PCA |
| 4.58 | 67650 | 1.162 | 1,2,3-TCP | 5.769 | 25313 | .876 | 1,2,3-TCP |
| 6.896 | 120764 | .161 | DBCP | 7.946 | 48257 | .17 | DBCP |

Files:
Area File: 16EDBS17202001.0056.RAW
Area File: 16EDBS17202001B.0056.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 4:34:54 AM
File Reported On: 7/24/2017 at 11:02:18 AM

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# Data Summary

**Sample Name: LCSA** 7/21/17 LCS21201 LCS Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:34:14 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0045.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.066712

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:34:14 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0045.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.069798

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 55385 | 0.153519 | Ethylene dibromide | 4.30 | 4.33 | 4.36 | 15977 | 0.154928 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 27389 | 0.066712 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10332 | 0.069798 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 69987 | 1.267275 | 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 24243 | 0.859359 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 125210 | 0.176069 | 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 51462 | 0.190338 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.153519 | 0.01 | 0.02 | 0.03 | | 0.91 | |
| 1,1,2,2-TETRACHLOROE | A | 0.066712 | 0.0035 | 0.007 | 0.007 | | 4.52 | |
| 1,2,3-Trichloropropane | A | 1.267275 | | | 0.27 | | 38.36 | |
| 1,2-Dibromo-3-chloroprop | A | 0.176069 | 0.01 | 0.02 | 0.03 | | 7.79 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valorie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:08

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/21/17 LCS21201 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 01:34:14
Instrument : CP16--19853A
Result file : 16EDBS17202001.0045.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.066712

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 55385 | 0.153519 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 27389 | 0.066712 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 69987 | 1.267275 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 125210 | 0.176069 |

## Analysis Report (B)

Injected on : Jul 22, 2017 01:34:14
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0045.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.069798

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 15977 | 0.154928 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10332 | 0.069798 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 24243 | 0.859359 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 51462 | 0.190339 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.153519 | 0.03 | 0.01 | | 0.91 | |
| ☐ 1,1,2,2-PCA | A | 0.066712 | | | | 4.52 | |
| ☑ 1,2,3-TCP | A | 1.267275 | 0.27 | 0.1 | | 38.36 | |
| ☑ DBCP | A | 0.176069 | 0.03 | 0.01 | | 7.79 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

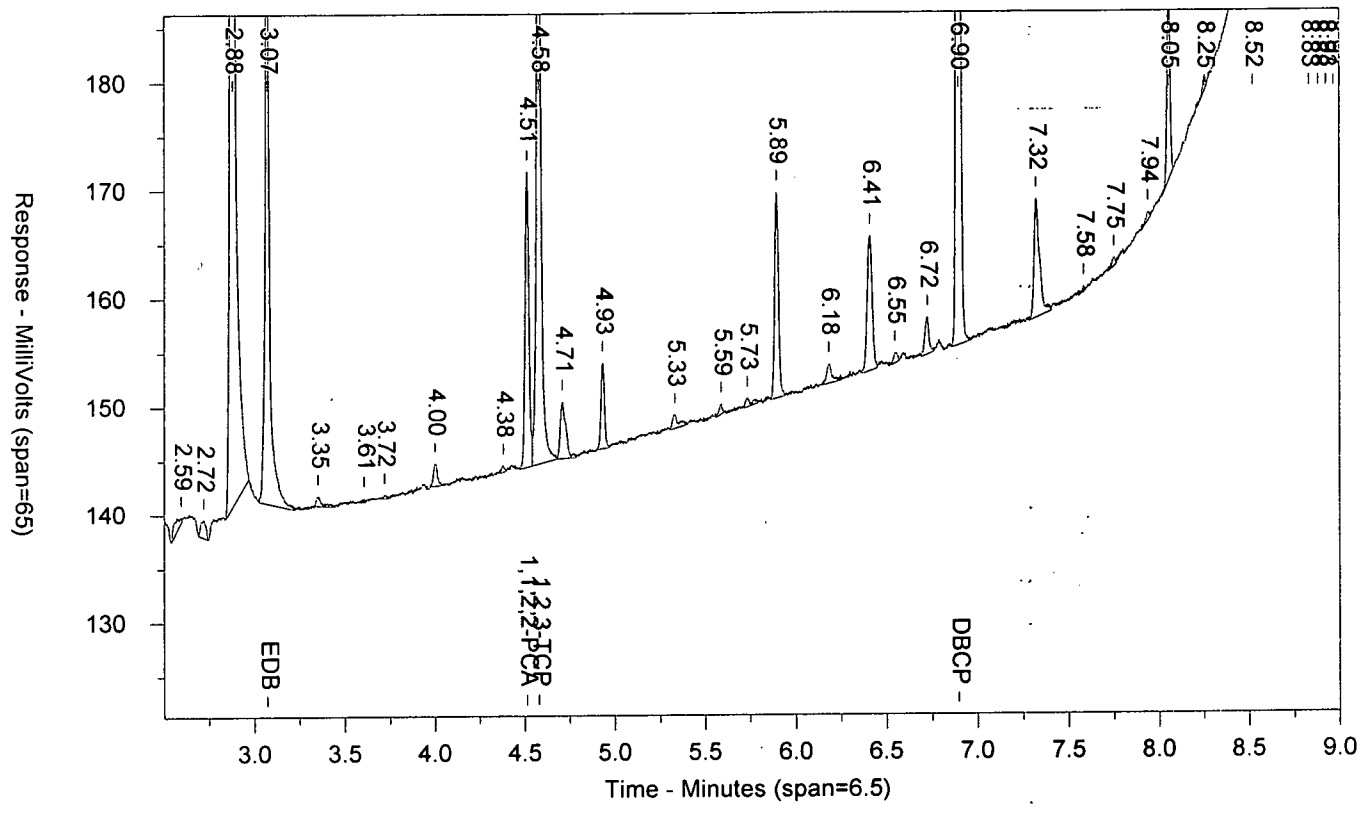
* Recovery outside QC Limits



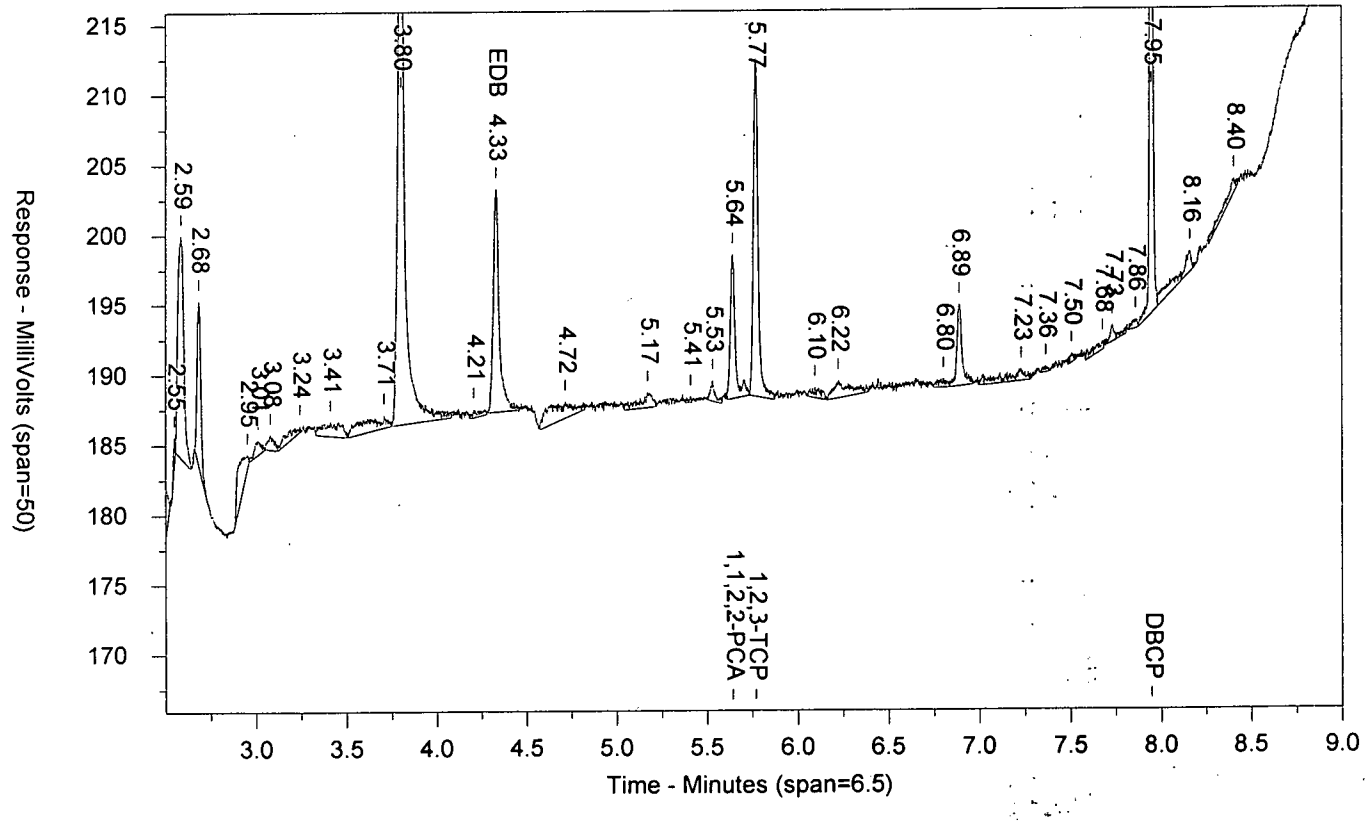
Printed on: 7/24/2017 11:14:48

LCSA 7/21/17 AALCS21201 LCS 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0045.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0045.RAW



LANCASTER LABORATORIES

Sample Number: LCSA 7/21/17 AALCS21201 LCS 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 1:34:14 AM Sample Weight: .35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 55385 | .154 | EDB | 4.331 | 15977 | .155 | EDB |
| 4.514 | 27389 | .067 | 1,1,2,2-PCA | 5.641 | 10332 | .07 | 1,1,2,2-PCA |
| 4.58 | 69987 | 1.267 | 1,2,3-TCP | 5.769 | 24243 | .859 | 1,2,3-TCP |
| 6.896 | 125210 | .176 | DBCP | 7.946 | 51462 | .19 | DBCP |

Files:
Area File: 16EDBS17202001.0045.RAW
Area File: 16EDBS17202001B.0045.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 1:43:15 AM
File Reported On: 7/24/2017 at 10:59:49 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 7/21/17 LCSD21201 LCSD Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:49:50 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0046.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 86% ( 46 - 136 ) Conc: 0.060539

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:49:50 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0046.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 88% ( 46 - 136 ) Conc: 0.062044

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 50060 | 0.138759 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 24855 | 0.060539 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 65767 | 1.185697 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 126552 | 0.177955 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 15383 | 0.149175 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9210 | 0.062044 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 24529 | 0.875958 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 53342 | 0.197294 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.138759 | 0.01 | 0.02 | 0.03 | | 7.23 | |
| 1,1,2,2-TETRACHLOROE | A | 0.060539 | 0.0035 | 0.007 | 0.007 | | 2.46 | |
| 1,2,3-Trichloropropane | A | 1.185697 | | | 0.27 | | 30.05 | |
| 1,2-Dibromo-3-chloroprop | A | 0.177955 | 0.01 | 0.02 | 0.03 | | 10.31 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomcyko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:10

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/21/17 LCSD21201 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 01:49:50
Instrument : CP16--19853A
Result file : 16EDBS17202001.0046.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 86% (46-136) Conc.: 0.060539

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 50060 | 0.138759 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 24855 | 0.060539 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 65767 | 1.185697 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 126552 | 0.177955 |

## Analysis Report (B)

Injected on : Jul 22, 2017 01:49:50
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0046.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 88% (46-136) Conc.: 0.062044

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 15383 | 0.149176 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9210 | 0.062044 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 24529 | 0.875958 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 53342 | 0.197294 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.138759 | 0.03 | 0.01 | | 7.24 | |
| ☐ 1,1,2,2-PCA | A | 0.060539 | | | | 2.45 | |
| ☑ 1,2,3-TCP | A | 1.185697 | 0.27 | 0.1 | | 30.05 | |
| ☑ DBCP | A | 0.177955 | 0.03 | 0.01 | | 10.31 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

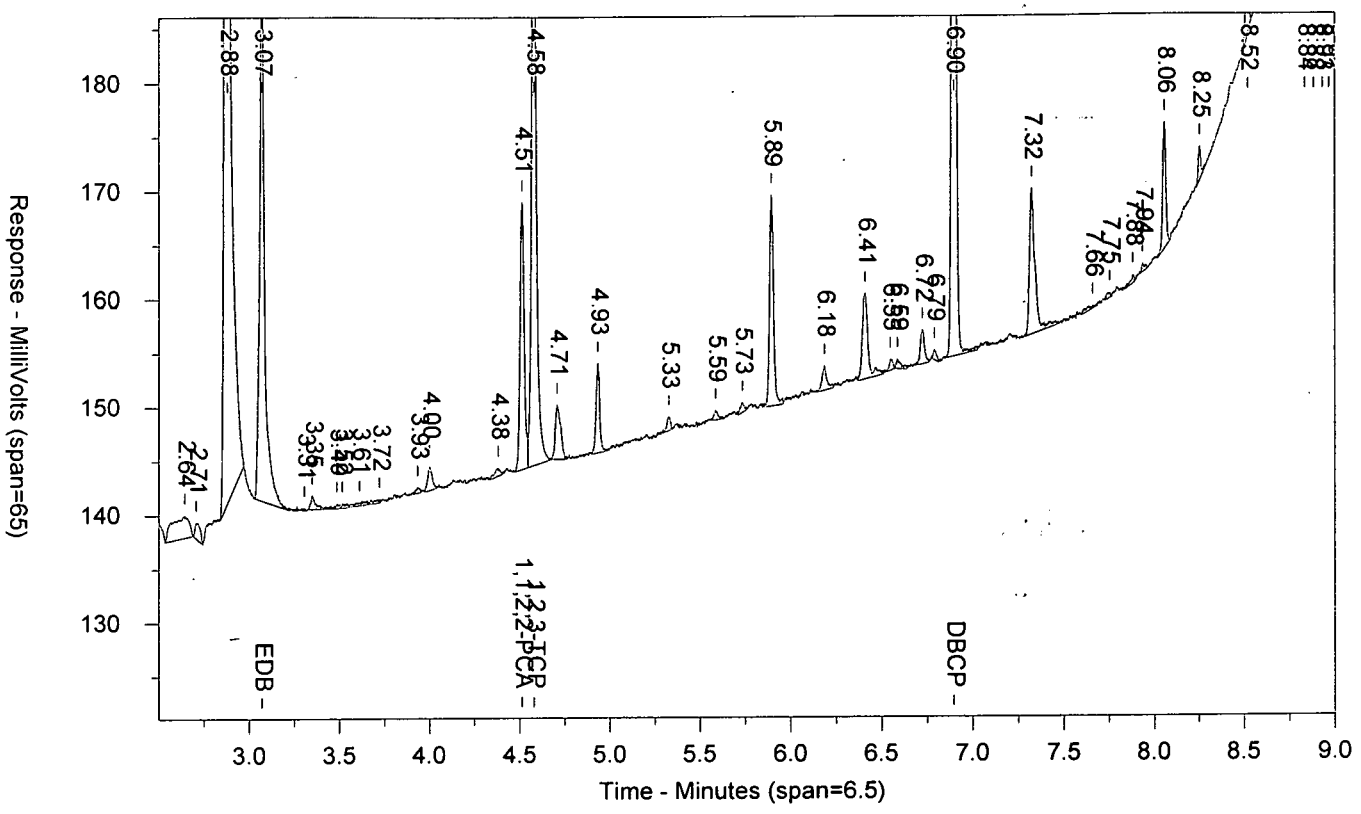
Verified by: Valorie L. Tomaydo
Valorie L. Tomaydo
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

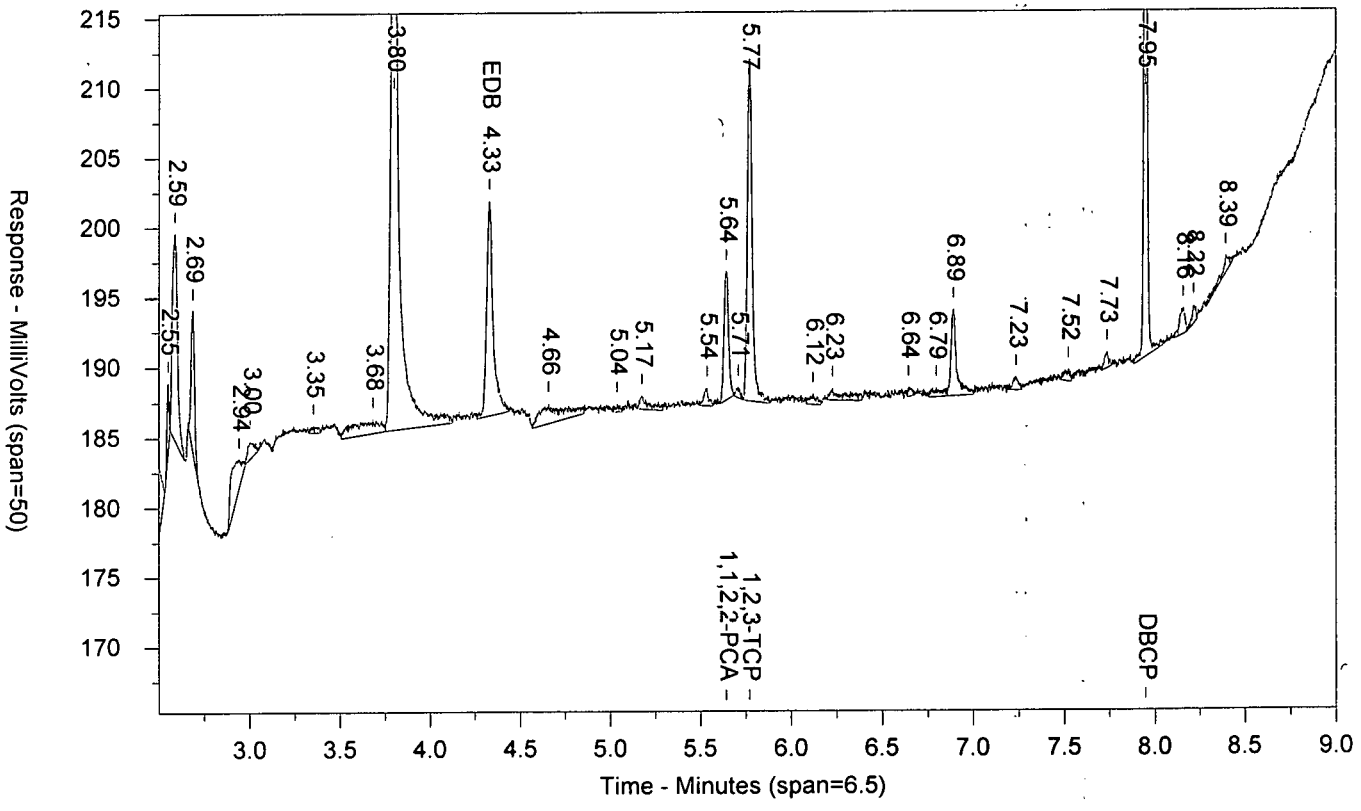
* Recovery outside QC Limits

LCSDA 7/21/17 AALCSD21201 LCSD 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0046.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0046.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 7/21/17 AALCSD21201 LCSD 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 1:49:50 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 50060 | .139 | EDB | 4.33 | 15383 | .149 | EDB |
| 4.513 | 24855 | .061 | 1,1,2,2-PCA | 5.641 | 9210 | .062 | 1,1,2,2-PCA |
| 4.579 | 65767 | 1.186 | 1,2,3-TCP | 5.77 | 24529 | .876 | 1,2,3-TCP |
| 6.896 | 126552 | .178 | DBCP | 7.946 | 53342 | .197 | DBCP |

Files:
Area File: 16EDBS17202001.0046.RAW
Area File: 16EDBS17202001B.0046.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 1:58:51 AM
File Reported On: 7/24/2017 at 10:59:57 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 1236 Samantha Metzgar Reviewed by: HMM7/21/17 Start Date: 07/21/2017 Start Time: 09:00

**172010021A** Tech 1: SM 12362 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9098350MS | 18506 | 36.45 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| 9098351MSD | 18506 | 36.81 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| BLANKA | PBLK21201 | 35 | SS1718724B | .1 | — | — | 2 | N | 2 | — | DIH2O |
| LCSA | LCS21201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | | DIH2O |
| LCSDA | LCSD21201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | | DIH2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391 |
| Vial Preservative Lot# | 2391F |
| | |

Spike Solutions: Witness: N/A

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9098344 | 18501 | 36.51 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 2 9098345 | 18502 | 36.75 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 3 9098346 | 18503 | 36.12 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 4 9098347 | 18504 | 36.56 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 5 9098348 | 18505 | 36.92 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 6 9098349BKG | 18506 | 36.66 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 7 9098352 | 18507 | 36.85 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 8 9098353 | 18508 | 36.63 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 9 9098354 | 18509 | 36.90 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 10 9098355 | 18510 | 36.42 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 11 9098356 | 18511 | 36.70 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 12 9098357 | 18512 | 36.77 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 13 9098358 | 18513 | 37.09 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 14 9098359 | 18514 | 36.70 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 15 9098360 | 18515 | 36.60 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 16 9098361 | 18516 | 36.74 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 17 9098362 | 18517 | 36.39 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 18 9098363 | 18518 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 19 9100479 | 18601 | 36.55 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 20 9100481 | 18603 | 36.13 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR; SEDIMENT | 10398 | 17641 | 07/25/2017 | N |

KR185 Page 215 of 215

| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172010021A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

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# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 07/11/17-07/12/17

# SDG# KR186

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1824892 | 9100479-9100496 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **08/03/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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    c. Raw Data .....851

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## Sample Reference List for SDG Number KR186 with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9100479 | GW009-173 | 07/12/2017 10:08 | 07/13/2017 09:40 |
| 9100480 | GW009-173 | 07/12/2017 10:08 | 07/13/2017 09:40 |
| 9100481 | GW013-173 | 07/12/2017 13:15 | 07/13/2017 09:40 |
| 9100482 | GW051-173 | 07/12/2017 07:50 | 07/13/2017 09:40 |
| 9100483 | GW235-463-173 | 07/12/2017 09:50 | 07/13/2017 09:40 |
| 9100484 | GW235-463-173 | 07/12/2017 09:50 | 07/13/2017 09:40 |
| 9100485 | GW235-492-173 | 07/12/2017 08:25 | 07/13/2017 09:40 |
| 9100486 | GW235-492-173 | 07/12/2017 08:25 | 07/13/2017 09:40 |
| 9100487 | GW235-521-173 | 07/12/2017 08:59 | 07/13/2017 09:40 |
| 9100488 | GW235-521-173 | 07/12/2017 08:59 | 07/13/2017 09:40 |
| 9100489 | GW235-521-573 | 07/12/2017 08:59 | 07/13/2017 09:40 |
| 9100490 | GW235-521-573 | 07/12/2017 08:59 | 07/13/2017 09:40 |
| 9100491 | ER173-01 | 07/11/2017 14:00 | 07/13/2017 09:40 |
| 9100492 | ER173-02 | 07/12/2017 11:34 | 07/13/2017 09:40 |
| 9100493 | TB173-15 | 07/12/2017 12:00 | 07/13/2017 09:40 |
| 9100494 | TB173-16 | 07/12/2017 12:00 | 07/13/2017 09:40 |
| 9100495 | TB173-17 | 07/12/2017 12:00 | 07/13/2017 09:40 |
| 9100496 | TB173-18 | 07/12/2017 12:00 | 07/13/2017 09:40 |

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# Sample pH Log

**SDG: KR186**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9100479 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:50:24PM | 12665 |
| 9100479 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/18/2017 4:01:47PM | 7970 |
| 9100479 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:50:08PM | 12665 |
| 9100480 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:56:08PM | 12665 |
| 9100481 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/18/2017 4:01:47PM | 7970 |
| 9100483 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:47:29PM | 12665 |
| 9100483 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:48:24PM | 12665 |
| 9100484 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:48:41PM | 12665 |
| 9100485 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:54:01PM | 12665 |
| 9100485 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:55:55PM | 12665 |
| 9100486 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:49:24PM | 12665 |
| 9100487 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:48:08PM | 12665 |
| 9100487 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:47:50PM | 12665 |
| 9100488 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:54:15PM | 12665 |
| 9100489 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:53:45PM | 12665 |
| 9100489 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:55:13PM | 12665 |
| 9100490 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:58:05PM | 12665 |
| 9100491 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:49:09PM | 12665 |
| 9100491 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/18/2017 4:01:47PM | 7970 |
| 9100492 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/13/2017 7:49:39PM | 12665 |
| 9100492 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/18/2017 4:01:47PM | 7970 |
| 9100494 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/18/2017 4:01:48PM | 7970 |
| 9100495 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/18/2017 4:01:48PM | 7970 |
| 9100496 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/18/2017 4:01:48PM | 7970 |

| Check Code Key |
|---|
| **PK** = Original container checked - pH is within the correct range. (No preservative was added) |
| **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) |
| **PV** = Volatile container checked |
| **PC** = pH checked (unpreserved container) |
| **SPK** = Subsampled from an original container. Original container checked - pH is within correct range |
| **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. |
| **SPC** = Subsampled from an original container. pH checked (unpreserved container). |
| **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. |
| **UP** = Unable to preserve due to matrix of the sample. |
| **NA** = Not applicable |

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**01163 GC/MS VOA Water Prep**

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

---

**11997 VOCs- 5ml Water by 8260C**

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

---

**10635 ICP-WW, 3005A (tot rec) - U4**

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

---

**10639 ICPMS - Water, 3020A - U4**

The sample is digested with nitric and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3020A, July 1992

---

**01750 Calcium**
**01754 Iron**
**01757 Magnesium**
**07058 Manganese**
**01762 Potassium**
**01767 Sodium**

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

---

**06025 Arsenic**
**06035 Lead**

The solution resulting from the metals digestion is analyzed by ICP/MS.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6020A, February 2007.

---

**10398 8011 Master Master**

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07786 EDB Extraction (8011)**

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07882 Total Nitrite/Nitrate Nitrogen**

Nitrate ions are reduced to nitrite by passing through a cadmium coil. The nitrite ions then react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dihydrochloride to form a soluble, highly-colored dye. The result is determined colorimetrically.

Reference: Method 353.2, Revision 2.0 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

---

**01505 Bromide**
**00224 Chloride**
**00228 Sulfate**

A small volume of sample is introduced into an ion chromatograph. The anions are then separated and measured by a system consisting of a guard column, separator column, suppressor, and conductivity detector.

Reference: Method 300.0, Revision 2.1 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

---

**12150 Total Alkalinity to pH 4.5**

Alkalinity is determined by titrating the sample with standardized sulfuric acid to a pH of 4.5 for the total alkalinity.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

---

**12149 Bicarbonate Alkalinity**

Bicarbonate is determined by a calculation based on the Alkalinity results.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

---

**12148 Carbonate Alkalinity**

Carbonate is determined by a calculation based on the Alkalinity results.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

# Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: August 02, 2017

**Project: Kirtland AFB**

Submittal Date: 07/13/2017
Group Number: 1824892
SDG: KR186
PO Number: 14800
State of Sample Origin: NM

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| GW009-173 Water | 9100479 |
| GW009-173 Filtered Water | 9100480 |
| GW013-173 Water | 9100481 |
| GW051-173 Water | 9100482 |
| GW235-463-173 Water | 9100483 |
| GW235-463-173 Filtered Water | 9100484 |
| GW235-492-173 Water | 9100485 |
| GW235-492-173 Filtered Water | 9100486 |
| GW235-521-173 Water | 9100487 |
| GW235-521-173 Filtered Water | 9100488 |
| GW235-521-573 Water | 9100489 |
| GW235-521-573 Filtered Water | 9100490 |
| ER173-01 Water | 9100491 |
| ER173-02 Water | 9100492 |
| TB173-15 Water | 9100493 |
| TB173-16 Water | 9100494 |
| TB173-17 Water | 9100495 |
| TB173-18 Water | 9100496 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |

Electronic Copy To EA Engineering, Science & Tech Attn: Pamela Moss

Respectfully Submitted,

Kay Hower

(717) 556-7364

Project Name: Kirtland AFB
LL Group #: 1824892

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

SW-846 8011, Volatiles by Extraction

Batch #: 172010025A (Sample number(s): 9100482-9100483, 9100485, 9100487, 9100489, 9100491-9100496 UNSPK: P95972, P109771)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Ethylene dibromide

SW-846 6010C, Metals

Sample #s: 9100485

The LCS that was digested with this sample was out of specification for calcium with a recovery of 116%. The data was accepted after consultation with the client.

Batch #: 171951063502 (Sample number(s): 9100479-9100480, 9100483-9100491 UNSPK: 9100479 BKG: 9100479)

The recovery(ies) for the following analyte(s) in the LCS exceeded the acceptance window indicating a positive bias: Calcium

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Calcium

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Calcium

EPA 300.0, Wet Chemistry

Batch #: 17194249115B (Sample number(s): 9100487, 9100489 UNSPK: 9100487 BKG: 9100487)

The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Chloride, Sulfate

**Sample Description:** GW009-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9100479
**LL Group #** 1824892
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/12/2017 10:08 by SB

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18601 SDG#: KR186-01

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 0.5 | J | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 265 | | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 37.9 | | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 5.54 | | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 65.7 | | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0020 | U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 | U | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 4.7 | | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 315 | | 100 | 200 | 200 | 500 |
| 00228 | Sulfate | 14808-79-8 | 433 | | 15.0 | 50.0 | 50.0 | 50 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 12.9 | | 0.40 | 1.0 | 1.0 | 10 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 119 | | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 119 | | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 | U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L171991AA | 07/18/2017 12:59 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L171991AA | 07/18/2017 12:59 | Jennifer K Howe | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 08:20 | Heather M Miller | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW009-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100479**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 10:08 by SB

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18601 SDG#: KR186-01

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172131063502 | 08/02/2017 09:56 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 02:39 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 02:39 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 02:39 | Scott R Yanos | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:02 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:02 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 2 | 172131063502 | 08/01/2017 22:00 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171951063903 | 07/17/2017 15:10 | JoElla L Rice | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17194249115A | 07/14/2017 01:42 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17194249115A | 07/14/2017 02:46 | Zachary W Enck | 500 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17194249115A | 07/14/2017 02:30 | Zachary W Enck | 50 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 2 | 17200118101B | 07/19/2017 17:50 | Brianna A White | 10 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 13:05 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 13:05 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 13:05 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW009-173 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100480**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 10:08 by SB

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18602 SDG#: KR186-02

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 1.09 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:01 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:01 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW013-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9100481**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 13:15 by SB

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18603 SDG#: KR186-03

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0097 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L171991AA | 07/18/2017 13:21 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L171991AA | 07/18/2017 13:21 | Jennifer K Howe | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010021A | 07/22/2017 08:35 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010021A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW051-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100482**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 07:50 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18604 SDG#: KR186-04

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 18:48 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW235-463-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9100483
**LL Group #** 1824892
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/12/2017 09:50 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18605 SDG#: KR186-05

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 58.2 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 8.36 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 3.68 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 26.9 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0020 U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00012 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 1.7 J | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 58.3 | 10.0 | 20.0 | 20.0 | 50 |
| 00228 | Sulfate | 14808-79-8 | 65.5 | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 1.9 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 85.0 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 85.0 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 19:04 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172131063502 | 08/02/2017 10:05 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:10 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:10 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:10 | Scott R Yanos | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:04 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:04 | Choon Y Tian | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW235-463-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100483**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 09:50 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18605 SDG#: KR186-05

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 2 | 172131063502 | 08/01/2017 22:00 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171951063903 | 07/17/2017 15:10 | JoElla L Rice | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17194249115A | 07/14/2017 03:03 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17194249115A | 07/14/2017 03:19 | Zachary W Enck | 50 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17194249115A | 07/14/2017 03:03 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17200118101B | 07/19/2017 17:55 | Brianna A White | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:52 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:52 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:52 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW235-463-173 Filtered Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9100484**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 09:50 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18606 SDG#: KR186-06

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:14 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:14 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW235-492-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9100485**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 08:25 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18607 SDG#: KR186-07

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 62.1 | 0.0600 | 0.200 | 0.400 | 1 |
| | The LCS that was digested with this sample was out of specification for calcium with a recovery of 116%. The data was accepted after consultation with the client. | | | | | | |
| 01757 | Magnesium | 7439-95-4 | 8.95 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 3.45 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 27.4 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0010 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00019 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 1.8 J | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 70.2 | 10.0 | 20.0 | 20.0 | 50 |
| 00228 | Sulfate | 14808-79-8 | 63.7 | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 2.0 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 83.6 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 83.6 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 19:19 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:17 | Scott R Yanos | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:17 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:17 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:17 | Scott R Yanos | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW235-492-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100485**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 08:25 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18607 SDG#: KR186-07

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06025 | Arsenic | SW-846 6020A | 1 | 171951063903A | 07/18/2017 10:48 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171951063903A | 07/18/2017 10:48 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171951063903 | 07/17/2017 15:10 | JoElla L Rice | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17194249115A | 07/14/2017 03:35 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17194249115A | 07/14/2017 03:51 | Zachary W Enck | 50 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17194249115A | 07/14/2017 03:35 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17200118101B | 07/19/2017 17:57 | Brianna A White | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:59 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:59 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:59 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW235-492-173 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100486**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 08:25 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18608 SDG#: KR186-08

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:20 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:20 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW235-521-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100487**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 08:59 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18609 SDG#: KR186-09

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 51.4 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 6.96 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 2.92 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 23.7 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.00081 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00030 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 2.5 U | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 36.6 | 4.0 | 8.0 | 8.0 | 20 |
| 00228 | Sulfate | 14808-79-8 | 61.2 | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.83 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 92.9 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 92.9 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 19:35 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172131063502 | 08/02/2017 10:08 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:23 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:23 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:23 | Scott R Yanos | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:05 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:05 | Choon Y Tian | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW235-521-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100487**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 08:59 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18609 SDG#: KR186-09

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 2 | 172131063502 | 08/01/2017 22:00 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171951063903 | 07/17/2017 15:10 | JoElla L Rice | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17194249115B | 07/14/2017 04:40 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17194249115B | 07/14/2017 06:01 | Zachary W Enck | 20 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17194249115B | 07/14/2017 04:40 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17200118101B | 07/19/2017 17:59 | Brianna A White | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 13:49 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 13:49 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 13:49 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW235-521-173 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100488**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 08:59 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18610 SDG#: KR186-10

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:26 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:26 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW235-521-573 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9100489
**LL Group #** 1824892
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/12/2017 08:59 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18611 SDG#: KR186-11FD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 50.3 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 7.09 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 3.00 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 24.3 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0010 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00020 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 2.5 U | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 34.7 | 4.0 | 8.0 | 8.0 | 20 |
| 00228 | Sulfate | 14808-79-8 | 61.5 | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.81 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 94.3 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 94.3 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 19:51 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172131063502 | 08/02/2017 10:11 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:29 | Scott R Yanos | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:29 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:29 | Scott R Yanos | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:07 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:07 | Choon Y Tian | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW235-521-573 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100489**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 08:59 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18611 SDG#: KR186-11FD

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 2 | 172131063502 | 08/01/2017 22:00 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171951063903 | 07/17/2017 15:10 | JoElla L Rice | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17194249115B | 07/14/2017 06:49 | Zachary W Enck | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17194249115B | 07/14/2017 07:06 | Zachary W Enck | 20 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17194249115B | 07/14/2017 06:49 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17200118101B | 07/19/2017 18:05 | Brianna A White | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:46 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:46 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17195002202A | 07/14/2017 12:46 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW235-521-573 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100490**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 08:59 by SS

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18612 SDG#: KR186-12FD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:32 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:32 | Scott R Yanos | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** ER173-01 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9100491
**LL Group #** 1824892
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/11/2017 14:00 by SB

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18613 SDG#: KR186-13EB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 0.832 | | 0.0600 | 0.200 | 0.400 | 1 |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 0.100 | U | 0.0374 | 0.100 | 0.200 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0051 | J | 0.0016 | 0.0050 | 0.0100 | 1 |
| 01762 | Potassium | 7440-09-7 | 0.377 | J | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 1.29 | J | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0020 | U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00058 | J | 0.00011 | 0.00025 | 0.0020 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L171991AA | 07/18/2017 13:42 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L171991AA | 07/18/2017 13:42 | Jennifer K Howe | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 20:06 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172131063502 | 08/02/2017 11:46 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:35 | Scott R Yanos | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:35 | Scott R Yanos | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 171951063502 | 07/19/2017 01:07 | Jonathan J Allen | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:35 | Scott R Yanos | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 171951063502 | 07/18/2017 03:35 | Scott R Yanos | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:09 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 171951063903A | 07/18/2017 11:09 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 171951063502 | 07/17/2017 15:20 | JoElla L Rice | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 2 | 172131063502 | 08/01/2017 22:00 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: ER173-01 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100491**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/11/2017 14:00 by SB

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18613 SDG#: KR186-13EB

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 171951063903 | 07/17/2017 15:10 | JoElla L Rice | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** ER173-02 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9100492**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 11:34 by SB

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18614 SDG#: KR186-14EB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L171991AA | 07/18/2017 14:04 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L171991AA | 07/18/2017 14:04 | Jennifer K Howe | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 20:53 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-15 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100493**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 12:00

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18615 SDG#: KR186-15TB

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 21:09 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: TB173-16 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100494**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 12:00

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18616 SDG#: KR186-16TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L171991AA | 07/18/2017 14:26 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L171991AA | 07/18/2017 14:26 | Jennifer K Howe | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 21:24 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: TB173-17 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100495**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 12:00

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18617 SDG#: KR186-17TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L171991AA | 07/18/2017 14:48 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L171991AA | 07/18/2017 14:48 | Jennifer K Howe | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 21:40 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-18 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9100496**
**LL Group # 1824892**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/12/2017 12:00

Submitted: 07/13/2017 09:40
Reported: 08/02/2017 14:04

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18618 SDG#: KR186-18TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L171991AA | 07/18/2017 15:10 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L171991AA | 07/18/2017 15:10 | Jennifer K Howe | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 21:55 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 14:04

Group Number: 1824892

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Batch number: L171991AA | Sample number(s): 9100479,9100481,9100491-9100492,9100494-9100496 | | | | |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Ethylbenzene | 1 | U | 0.5 | 1 | 1 |
| Toluene | 1 | U | 0.5 | 1 | 1 |
| Xylene (Total) | 1 | U | 0.5 | 1 | 1 |
| Batch number: 172010021A | Sample number(s): 9100479,9100481 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| Batch number: 172010025A | Sample number(s): 9100482-9100483,9100485,9100487,9100489,9100491-9100496 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| | mg/l | | mg/l | mg/l | mg/l |
| Batch number: 171951063502 | Sample number(s): 9100479-9100480,9100483-9100491 | | | | |
| Calcium | 0.200 | U | 0.0600 | 0.200 | 0.400 |
| Iron | 0.200 | U | 0.0805 | 0.200 | 0.400 |
| Magnesium | 0.100 | U | 0.0374 | 0.100 | 0.200 |
| Manganese | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 |
| Potassium | 0.500 | U | 0.179 | 0.500 | 1.00 |
| Sodium | 0.500 | U | 0.321 | 0.500 | 2.00 |
| Batch number: 171951063903A | Sample number(s): 9100479,9100483,9100485,9100487,9100489,9100491 | | | | |
| Arsenic | 0.0020 | U | 0.00072 | 0.0020 | 0.0040 |
| Lead | 0.00025 | U | 0.00011 | 0.00025 | 0.0020 |
| Batch number: 172131063502 | Sample number(s): 9100479,9100483,9100487,9100489,9100491 | | | | |
| Calcium | 0.200 | U | 0.0600 | 0.200 | 0.400 |
| Batch number: 17194249115A | Sample number(s): 9100479,9100483,9100485 | | | | |
| Bromide | 0.50 | U | 0.25 | 0.50 | 0.50 |
| Chloride | 0.40 | U | 0.20 | 0.40 | 0.40 |
| Sulfate | 1.0 | U | 0.30 | 1.0 | 1.0 |
| Batch number: 17194249115B | Sample number(s): 9100487,9100489 | | | | |
| Bromide | 0.50 | U | 0.25 | 0.50 | 0.50 |
| Chloride | 0.40 | U | 0.20 | 0.40 | 0.40 |
| Sulfate | 1.0 | U | 0.30 | 1.0 | 1.0 |
| Batch number: 17200118101B | Sample number(s): 9100479,9100483,9100485,9100487,9100489 | | | | |
| Total Nitrite/Nitrate Nitrogen | 0.10 | U | 0.040 | 0.10 | 0.10 |
| | mg/l as CaCO3 | | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 |
| Batch number: 17195002202A | Sample number(s): 9100479,9100483,9100485,9100487,9100489 | | | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 14:04

Group Number: 1824892

## Method Blank (continued)

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | mg/l as CaCO3 | | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 |
| Total Alkalinity to pH 4.5 | 5.0 | U | 1.7 | 5.0 | 5.0 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L171991AA | Sample number(s): 9100479,9100481,9100491-9100492,9100494-9100496 | | | | | | | | |
| Benzene | 20 | 19.61 | | | 98 | | 79-120 | | |
| Ethylbenzene | 20 | 20.59 | | | 103 | | 79-121 | | |
| Toluene | 20 | 19.79 | | | 99 | | 80-121 | | |
| Xylene (Total) | 60 | 60.97 | | | 102 | | 79-121 | | |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172010021A | Sample number(s): 9100479,9100481 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.154 | 0.128 | 0.139 | 120 | 108 | 60-140 | 10 | 20 |
| Batch number: 172010025A | Sample number(s): 9100482-9100483,9100485,9100487,9100489,9100491-9100496 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.146 | 0.128 | 0.163 | 114 | 128 | 60-140 | 12 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 171951063502 | Sample number(s): 9100479-9100480,9100483-9100491 | | | | | | | | |
| Calcium | 4.00 | 4.64 | | | 116* | | 87-113 | | |
| Iron | 1.00 | 0.968 | | | 97 | | 87-115 | | |
| Magnesium | 2.00 | 2.12 | | | 106 | | 85-113 | | |
| Manganese | 0.500 | 0.515 | | | 103 | | 90-114 | | |
| Potassium | 10 | 10.05 | | | 101 | | 86-114 | | |
| Sodium | 10 | 10.13 | | | 101 | | 87-115 | | |
| Batch number: 171951063903A | Sample number(s): 9100479,9100483,9100485,9100487,9100489,9100491 | | | | | | | | |
| Arsenic | 0.0100 | 0.00941 | | | 94 | | 84-116 | | |
| Lead | 0.0150 | 0.0144 | | | 96 | | 88-115 | | |
| Batch number: 172131063502 | Sample number(s): 9100479,9100483,9100487,9100489,9100491 | | | | | | | | |
| Calcium | 4.00 | 4.03 | 4.00 | 4.11 | 101 | 103 | 87-113 | 2 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17194249115A | Sample number(s): 9100479,9100483,9100485 | | | | | | | | |
| Bromide | 7.50 | 7.48 | | | 100 | | 90-110 | | |
| Chloride | 3.00 | 2.90 | | | 97 | | 90-110 | | |
| Sulfate | 7.50 | 7.17 | | | 96 | | 90-110 | | |
| Batch number: 17194249115B | Sample number(s): 9100487,9100489 | | | | | | | | |
| Bromide | 7.50 | 7.48 | | | 100 | | 90-110 | | |
| Chloride | 3.00 | 2.90 | | | 97 | | 90-110 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 14:04

Group Number: 1824892

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Sulfate | 7.50 | 7.17 | | | 96 | | 90-110 | | |
| Batch number: 17200118101B | Sample number(s): 9100479,9100483,9100485,9100487,9100489 | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 2.50 | 2.52 | | | 101 | | 90-110 | | |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | | | | | |
| Batch number: 17195002202A | Sample number(s): 9100479,9100483,9100485,9100487,9100489 | | | | | | | | |
| Total Alkalinity to pH 4.5 | 188 | 189.16 | | | 101 | | 77-114 | | |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L171991AA | Sample number(s): 9100479,9100481,9100491-9100492,9100494-9100496 UNSPK: P091111 | | | | | | | | | |
| Benzene | 1 U | 20 | 21.67 | 20 | 21.77 | 108 | 109 | 79-120 | 0 | 20 |
| Ethylbenzene | 1 U | 20 | 22.71 | 20 | 22.93 | 114 | 115 | 79-121 | 1 | 20 |
| Toluene | 1 U | 20 | 21.87 | 20 | 22.2 | 109 | 111 | 80-121 | 2 | 20 |
| Xylene (Total) | 1 U | 60 | 67.49 | 60 | 67.39 | 112 | 112 | 79-121 | 0 | 20 |
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172010021A | Sample number(s): 9100479,9100481 UNSPK: P098349 | | | | | | | | | |
| Ethylene dibromide | 0.019 U | 0.123 | 0.149 | 0.122 | 0.147 | 121 | 121 | 60-140 | 1 | 20 |
| Batch number: 172010025A | Sample number(s): 9100482-9100483,9100485,9100487,9100489,9100491-9100496 UNSPK: P109771 | | | | | | | | | |
| Ethylene dibromide | 1.29 | 0.121 | 1.17 | 0.122 | 1.20 | -101 (2) | -74 (2) | 60-140 | 3 | 20 |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 171951063502 | Sample number(s): 9100479-9100480,9100483-9100491 UNSPK: 9100479, P100479 | | | | | | | | | |
| Calcium | 266.26 | 4.00 | 268.39 | 4.00 | 270.82 | 53 (2) | 114 (2) | 87-113 | 1 | 20 |
| Iron | 0.200 U | 1.00 | 0.911 | 1.00 | 0.905 | 91 | 90 | 87-115 | 1 | 20 |
| Magnesium | 37.94 | 2.00 | 39.7 | 2.00 | 39.96 | 88 (2) | 101 (2) | 85-113 | 1 | 20 |
| Manganese | 1.03 | 0.500 | 1.52 | 0.500 | 1.52 | 99 | 99 | 90-114 | 0 | 20 |
| Potassium | 5.54 | 10 | 15.86 | 10 | 16.01 | 103 | 105 | 86-114 | 1 | 20 |
| Sodium | 65.7 | 10 | 74.88 | 10 | 75.53 | 92 (2) | 98 (2) | 87-115 | 1 | 20 |
| Batch number: 171951063903A | Sample number(s): 9100479,9100483,9100485,9100487,9100489,9100491 UNSPK: 9100485 | | | | | | | | | |
| Arsenic | 0.00102 | 0.0100 | 0.0109 | 0.0100 | 0.00996 | 99 | 89 | 84-116 | 9 | 20 |
| Lead | 0.000189 | 0.0150 | 0.0150 | 0.0150 | 0.0150 | 98 | 99 | 88-115 | 0 | 20 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 14:04

Group Number: 1824892

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17194249115A | Sample number(s): 9100479,9100483,9100485 UNSPK: P100384 | | | | | | | | | |
| Bromide | 2.5 U | 25 | 25.09 | | | 100 | | 90-110 | | |
| Chloride | 56.07 | 100 | 161.48 | | | 105 | | 90-110 | | |
| Sulfate | 46.36 | 25 | 70.69 | | | 97 | | 90-110 | | |
| Batch number: 17194249115B | Sample number(s): 9100487,9100489 UNSPK: 9100487 | | | | | | | | | |
| Bromide | 2.5 U | 25 | 22.44 | | | 90 | | 90-110 | | |
| Chloride | 36.57 | 40 | 81.26 | | | 112* | | 90-110 | | |
| Sulfate | 61.22 | 25 | 93.76 | | | 130* | | 90-110 | | |
| Batch number: 17200118101B | Sample number(s): 9100479,9100483,9100485,9100487,9100489 UNSPK: 9100479 | | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 12.89 | 10 | 23.1 | | | 102 | | 90-110 | | |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | | | | | |
| Batch number: 17195002202A | Sample number(s): 9100479,9100483,9100485,9100487,9100489 UNSPK: P100152 | | | | | | | | | |
| Total Alkalinity to pH 4.5 | 402.38 | 188 | 560.76 | | | 84 | | 77-114 | | |

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | mg/l | mg/l | | |
| Batch number: 171951063502 | Sample number(s): 9100479-9100480,9100483-9100491 BKG: 9100479, P100479 | | | |
| Calcium | 266.26 | 272.74 | 2 | 20 |
| Iron | 0.200 U | 0.200 U | 0 (1) | 20 |
| Magnesium | 37.94 | 38.78 | 2 | 20 |
| Manganese | 1.03 | 1.06 | 3 | 20 |
| Potassium | 5.54 | 5.66 | 2 | 20 |
| Sodium | 65.7 | 67.16 | 2 | 20 |
| Batch number: 171951063903A | Sample number(s): 9100479,9100483,9100485,9100487,9100489,9100491 BKG: 9100485 | | | |
| Arsenic | 0.00102 | 0.000841 | 19 (1) | 20 |
| Lead | 0.000189 | 0.000201 | 6 (1) | 20 |
| | mg/l | mg/l | | |
| Batch number: 17194249115A | Sample number(s): 9100479,9100483,9100485 BKG: P100384 | | | |
| Bromide | 2.5 U | 2.5 U | 0 (1) | 15 |
| Chloride | 56.07 | 56.22 | 0 (1) | 15 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 14:04

Group Number: 1824892

## Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | mg/l | mg/l | | |
| Sulfate | 46.36 | 46.02 | 1 | 15 |
| Batch number: 17194249115B | Sample number(s): 9100487,9100489 BKG: 9100487 | | | |
| Bromide | 2.5 U | 2.5 U | 0 (1) | 15 |
| Chloride | 36.57 | 36.23 | 1 (1) | 15 |
| Sulfate | 61.22 | 61.8 | 1 | 15 |
| Batch number: 17200118101B | Sample number(s): 9100479,9100483,9100485,9100487,9100489 BKG: 9100479 | | | |
| Total Nitrite/Nitrate Nitrogen | 12.89 | 12.87 | 0 | 10 |
| | mg/l as CaCO3 | mg/l as CaCO3 | | |
| Batch number: 17195002202A | Sample number(s): 9100479,9100483,9100485,9100487,9100489 BKG: P100152 | | | |
| Total Alkalinity to pH 4.5 | 402.38 | 406.86 | 1 | 5 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C Water
Batch number: L171991AA

| | Dibromofluoromethane %Rec | LOD (ug/l) | 1,2-Dichloroethane-d4 %Rec | LOD (ug/l) | Toluene-d8 %Rec | LOD (ug/l) | 4-Bromofluorobenzene %Rec | LOD (ug/l) |
|---|---|---|---|---|---|---|---|---|
| 9100479 | 110 | 1 | 103 | 1 | 97 | 1 | 101 | 1 |
| 9100481 | 110 | 1 | 104 | 1 | 98 | 1 | 101 | 1 |
| 9100491 | 111 | 1 | 101 | 1 | 96 | 1 | 100 | 1 |
| 9100492 | 114 | 1 | 106 | 1 | 96 | 1 | 101 | 1 |
| 9100494 | 113 | 1 | 105 | 1 | 94 | 1 | 102 | 1 |
| 9100495 | 113 | 1 | 103 | 1 | 92 | 1 | 102 | 1 |
| 9100496 | 113 | 1 | 107 | 1 | 95 | 1 | 101 | 1 |
| Blank | 111 | 1 | 103 | 1 | 97 | 1 | 101 | 1 |
| LCS | 108 | 1 | 101 | 1 | 98 | 1 | 105 | 1 |
| MS | 110 | 1 | 103 | 1 | 98 | 1 | 106 | 1 |
| MSD | 110 | 1 | 102 | 1 | 97 | 1 | 108 | 1 |
| Limits: | 80-119 | | 81-118 | | 89-112 | | 85-114 | |

Analysis Name: EDB 8011 Water
Batch number: 172010021A

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/02/2017 14:04

Group Number: 1824892

## Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EDB 8011 Water
Batch number: 172010021A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9100479 | 100 | 0.0067 |
| 9100481 | 87 | 0.0068 |
| Blank | 87 | 0.0070 |
| LCS | 95 | 0.0070 |
| LCSD | 86 | 0.0070 |
| MS | 87 | 0.0067 |
| MSD | 87 | 0.0067 |
| Limits: | 46-136 | |

Analysis Name: EDB 8011 Water
Batch number: 172010025A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9100482 | 99 | 0.0067 |
| 9100483 | 82 | 0.0067 |
| 9100485 | 118 | 0.0067 |
| 9100487 | 106 | 0.0067 |
| 9100489 | 119 | 0.0067 |
| 9100491 | 107 | 0.0067 |
| 9100492 | 106 | 0.0067 |
| 9100493 | 116 | 0.0067 |
| 9100494 | 103 | 0.0067 |
| 9100495 | 106 | 0.0067 |
| 9100496 | 107 | 0.0067 |
| Blank | 103 | 0.0070 |
| LCS | 106 | 0.0070 |
| LCSD | 112 | 0.0070 |
| MS | 91 | 0.13 (3) |
| MSD | 125 | 0.13 (3) |
| Limits: | 46-136 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 | 1824892 | 9100479-96

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-009-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW009-173 | 7-12-17 | 1008 | 25 | 3 | — | 6 | 3 | 3* | 2 | 1 | 1 | — | ~~Please see Comments for requested MS/MSD analytes~~ |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

~~Please run MS/MSD on the following analytes only:~~
~~VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe~~

1X Dissolved Metals only half volume (~125 mL)
1X Alkalinity only half volume (~125 mL)

TB173- 18

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734973

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7-12-17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Coberly | 7.13.17 | 940 |

31675/1824892/9100479-96

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-013-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE:<br>ST106/SS110 | LAB PO NUMBER:<br>14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity, (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW013-173 | 7-12-17 | 1315 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Pump: 1807B-E00

TB173-17

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734962

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7-12-17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: [illegible] Cutberlay | 7.13.17 | 940 |

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400 Hunt Valley MD
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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-051-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE:<br>ST106/SS110 | | LAB PO NUMBER:<br>14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | (Total, Carbonate, and Bicarbonate) Alkalinity (SM2320B) | COMMENTS |
| 1 | GW051-173 | 7-12-17 | 0750 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | 55 | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-17

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734962

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature:<br>SHARMIN SULTANA Sharmin Sultana | 7-12-17 | 1440 | Printed Name and Signature:<br>Stephen Busby | 7/12/17 | 1440 |
| Printed Name and Signature:<br>Stephen Busby | 7/12/17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature:<br>Timothy Culberson | 7.13.17 | 940 |

31675 / 1824892 / 9100479-96

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Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-463-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
| 1 | GW235-463-173 | 7-12-17 | 0950 | 8 | — | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | 5 | 5 | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB173- 15

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156731780

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin | 7-12-17 | 1440 | Stephen Busby | 7/12/17 | 1440 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby | 7/12/17 | 1700 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | 7.13.17 | 940 |

31675 | 1824892 | 9100479-96

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-492-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW235-492-173 | 7-12-17 | 0825 | 8 | | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB173- 15

SAMPLER(S): S HARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156731780

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| S HARMIN SULTANA | 7-12-17 | 1440 | Stephen Busby | 7/12/17 | 1440 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby | 7/12/17 | 1700 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | [illegible] Laboratory | 7.13.17 | 940 |

31675 / 1824892 / 9100479-96

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400 Hunt Valley MD
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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-521-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW235-521-173 | 7-12-17 | 0859 | 8 | — | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | GW235-521-573 | 7-12-17 | 0859 | 8 | — | | | 2 | 1 | 1* | 2 | 1 | 1 | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | 55 | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Alkalinity (SM2320B) → 125 ml X 2
Dissolved Fe, Mn (6010C) → 200 ml X 2
Total Metals (6020A/6010C) → 220 ml X 1
Nitrate-Nitrate (353.2) → 220 ml X 2

TB173- 16

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 811156734951

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin Sultana | 7-12-17 | 1440 | Stephen Busby Stephen Busby | 7/12/17 | 1440 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby Stephen Busby | 7/12/17 | 1700 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Thomas Cabrales 3 | 7-13-17 | 940 |

31675 | 1824892 | 9100479-96

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: SB ~~TB173~~-ER173-01

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017<br>QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | SB ~~TB173~~-ER173-01 | 7-11-17 | 1400 | 6 | - | 3 | - | 2 | 1 | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106009

Pump: 18073-658

TB173-18

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734973

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7/12/17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Lukenbaugh 3 | 7.13.17 | 940 |

31675 | 1824892 | 9100479-96

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: ~~TB173~~ ER173-02

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | ~~TB173~~ ER173-02 | 7-12-17 | 1134 | 6 | - | 3 | - | 2 | 1 | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106013

Pump: 1807B-800

TB173-16

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734951

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7/12/17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Tamara L. Moberly | 7/13/17 | 940 |

31675 | 1824892 | 9100479-96

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 15

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017; QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173- 15 | 7-12-17 | 1200 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106235-463 & KAFB-106235-492

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156731780

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-12-17 | 1440 | Printed Name and Signature: Stephen Busby | 7/12/17 | 1440 |
| Printed Name and Signature: Stephen Busby | 7/12/17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | 7.13.17 | 940 |

31675 | 1824892 | 9100479-96

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-16

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017 |
| | | | | QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | TB173-16 | 7-12-17 | 1200 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106235-521-173
KAFB-106235-521-573
ER173-02

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734951

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby | 7-12-17 | 1700 1520 JM | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Timothy Culberlay | 7-13-17 | 940 |

31675 | 1824892 | 9100479-96

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-17

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | TB173-17 | 7-12-17 | 1200 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106013 + KAFB-106051

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734962

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Stephen Busby Stephen Busby | 7-12-17 | 1700 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Timothy Cubberley | 7.13.17 | 940 |

31675 | 1824892 | 9100479-96

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 18

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
| 1 | TB173- 18 | 7-12-17 | 1200 | 4 | – | 2 | – | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | C | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with ER173-01 + KAFB-106009

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734973

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-12-17 | 1440 | Printed Name and Signature: Stephen Busby | 7/12/17 | 1440 |
| Printed Name and Signature: Stephen Busby | 7/12/17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | 7-13-17 | 940 |

(1) Add metals – Fe and Mn (total) – gross 7/13/17

31675/1824892/9100479-96 ~~1824281~~

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: SB-TB173-ER173-01

YEAR: 2017

QUARTER: 3

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62899DM01

PROJECT SITE AND PHASE: 81100/88110

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

LAB PO NUMBER: 14800

FAX AND MAIL REPORT TO/COD TO: Tara Lamond (tlamond@eaest.com) EA; Amanda Bradley (abradley@eaest.com) EA; Paul Moss (pmoss@eaest.com) EA

LAB CONTACT: Kay Flower (KayFlower@EurofinsUS.com) PHONE: 1 (717) 656-2300

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | TPH-DRO/GRO | VOCs | SVOCs | PAHs | PCBs | TAL Metals | Dissolved Fe | Dissolved Mn | Mercury | Total Fe | |
| 1 | SB-TB173-ER173-01 | 7-11-17 | 1400 | 6 | - | 3 | - | 2 | 1 | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106009

PUMP: 18073-658

TB173-18

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811567541973

| RELINQUISHED BY | DATE | TIME | RECEIVED BY | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7/12/17 | 1700 | Printed Name and Signature: | | |
| Printed Name and Signature | | | Printed Name and Signature | | |
| Printed Name and Signature | | | Printed Name and Signature | | |

(1) No metals- 106013 is EDB & BTEX pmoss 7/13/17

31675/1824892/9100479-96 ~~1824281~~

225 Schilling Circle Suite 400 Hunt Valley MD
Tel No: (410) 584-7000 Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB~~173~~-ER173-02

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA; LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |
| PROJECT SITE AND PHASE: ST109/SS110 | | LAB PO NUMBER: 14800 | YEAR: 2017; QUARTER: 3 |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | ~~TB173~~- ER173-02 | 7-12-17 | 1124 | 6 | - | 3 | - | 2 | X | X | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Om 7/13/17

Associated with K4FB-106013

Pump: 1807B-800

TB173-16

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156754957

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|
| Stephen Busby Stephen Busby | 7/12/17 | 1700 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

1824281

## Kay Hower

**From:** Moss, Pamela <pmoss@eaest.com>
**Sent:** Thursday, July 13, 2017 12:29 PM
**To:** Kay Hower
**Subject:** RE: Kirtland samples 7-11-17
**Attachments:** revCOC_7-11-17.pdf

Here you go thx.

**From:** Kay Hower [mailto:KayHower@eurofinsus.com]
**Sent:** Thursday, July 13, 2017 10:21 AM
**To:** Moss, Pamela <pmoss@eaest.com>
**Subject:** RE: Kirtland samples 7-11-17

HI Pam, there wasn't an attachment to the email.

---

**From:** Moss, Pamela [mailto:pmoss@eaest.com]
**Sent:** Thursday, July 13, 2017 12:19 PM
**To:** Kay Hower
**Subject:** Kirtland samples 7-11-17

HI Kay, plz see attached revised COCs for this batch. Thx.

*Pam*

**PLZ NOTE NEW ADDRESS BELOW**

Pamela J. Moss
Senior Scientist
**EA Engineering, Science, and Technology, Inc., PBC**
7995 E. Prentice Ave, Suite 206E
Greenwood Village, CO 80111
303-590-9143 (office)
303-810-6903 (cell)
**pmoss@eaest.com**

**IMPROVING THE QUALITY OF THE ENVIRONMENT IN WHICH WE LIVE, ONE PROJECT AT A TIME®**

Notify us here to report this email as spam.

eurofins | Lancaster Laboratories Environmental

# Sample Administration Receipt Documentation Log

Doc Log ID: 188713

Group Number(s): 1824892

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/13/2017 9:40 |
| Number of Packages: | 4 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 14 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Timothy Cubberley (6520) at 11:16 on 07/13/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT131 | 2.0 | DT | Wet | Y | Loose | N |
| 2 | DT131 | 1.6 | DT | Wet | Y | Loose | N |
| 3 | DT131 | 1.7 | DT | Wet | Y | Loose | N |
| 4 | DT131 | 1.9 | DT | Wet | Y | Loose | N |



2425 New Holland Pike
Lancaster, PA 17601-2422
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | non-detect |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| E | Concentration exceeds the calibration range |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# Volatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Volatiles by GC/MS

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9100479 | GW009-173 | X | | 1 | |
| 9100481 | GW013-173 | X | | 1 | |
| 9100491 | ER173-01 | X | | 1 | Equipment Blank |
| 9100492 | ER173-02 | X | | 1 | Equipment Blank |
| 9100494 | TB173-16 | X | | 1 | Trip Blank |
| 9100495 | TB173-17 | X | | 1 | Trip Blank |
| 9100496 | TB173-18 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Volatiles by GC/MS

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# Quality Control Reference List
## GC/MS Volatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

**Fraction: Volatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| BTEX 8260C Water | L171991AA | VBLKL63 | 07/18/2017 08:23:00 |
| | | LCSL63 | 07/18/2017 08:45:00 |
| | | 9100479 | 07/18/2017 12:59:00 |
| | | 9100481 | 07/18/2017 13:21:00 |
| | | 9100491 | 07/18/2017 13:42:00 |
| | | 9100492 | 07/18/2017 14:04:00 |
| | | 9100494 | 07/18/2017 14:26:00 |
| | | 9100495 | 07/18/2017 14:48:00 |
| | | 9100496 | 07/18/2017 15:10:00 |

**Quality Control Summary**
**Method Blank**
**GC/MS Volatiles**
**SDG: KR186**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L171991AA / VBLKL63<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Benzene | 07/18/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Toluene | 07/18/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Ethylbenzene | 07/18/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Xylene (Total) | 07/18/17 | N.D. | ug/l | 0.5 | 1 | 1 |

**Quality Control Summary**
**Surrogates**
**GC/MS Volatiles**
**SDG: KR186**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L171991AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKL63 | 103 | 81 - 118 | 101 | 85 - 114 | 111 | 80 - 119 | 97 | 89 - 112 |
| LCSL63 | 101 | 81 - 118 | 105 | 85 - 114 | 108 | 80 - 119 | 98 | 89 - 112 |
| 9100479 | 103 | 81 - 118 | 101 | 85 - 114 | 110 | 80 - 119 | 97 | 89 - 112 |
| 9100481 | 104 | 81 - 118 | 101 | 85 - 114 | 110 | 80 - 119 | 98 | 89 - 112 |
| 9100491 | 101 | 81 - 118 | 100 | 85 - 114 | 111 | 80 - 119 | 96 | 89 - 112 |
| 9100492 | 106 | 81 - 118 | 101 | 85 - 114 | 114 | 80 - 119 | 96 | 89 - 112 |
| 9100494 | 105 | 81 - 118 | 102 | 85 - 114 | 113 | 80 - 119 | 94 | 89 - 112 |
| 9100495 | 103 | 81 - 118 | 102 | 85 - 114 | 113 | 80 - 119 | 92 | 89 - 112 |
| 9100496 | 107 | 81 - 118 | 101 | 85 - 114 | 113 | 80 - 119 | 95 | 89 - 112 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR186**
**Matrix: LIQUID**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSL63 | Batch: **L171991AA** (Sample number(s): 9100479, 9100481, 9100491-9100492, 9100494-9100496 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | 19.61 | NA | 98 | NA | 79-120 | NA | NA |
| Toluene | 20 | 19.79 | NA | 99 | NA | 80-121 | NA | NA |
| Ethylbenzene | 20 | 20.59 | NA | 103 | NA | 79-121 | NA | NA |
| Xylene (Total) | 60 | 60.97 | NA | 102 | NA | 79-121 | NA | NA |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR186___

Lab File ID: la26t01.d  BFB Injection Date: 04/26/17

Instrument ID: HP09915  BFB Injection Time: 12:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.10 |
| 75 | 30.0 - 60.0% of mass 95 | 44.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.79 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.54)1 |
| 174 | Greater than 50.0% of mass 95 | 90.09 |
| 175 | 5.0 - 9.0% of mass 174 | 6.12 ( 6.79)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 86.74 (96.29)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.56 ( 6.41)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | la26i01.d | 04/26/17 | 13:20 |
| 02 | VSTD100 | la26i02.d | 04/26/17 | 13:42 |
| 03 | VSTD50 | la26i03.d | 04/26/17 | 14:04 |
| 04 | VSTD20 | la26i04.d | 04/26/17 | 14:26 |
| 05 | VSTD10 | la26i05.d | 04/26/17 | 14:48 |
| 06 | VSTD4 | la26i06.d | 04/26/17 | 15:10 |
| 07 | VSTD1 | la26i07.d | 04/26/17 | 15:32 |
| 08 | MDL0.5 - MDL0.5 | la26m01.d | 04/26/17 | 15:54 |
| 09 | VBLKL48 | la26b31.d | 04/26/17 | 17:03 |
| 10 | LCSL46 | la26s01.d | 04/26/17 | 17:25 |
| 11 | LCSL48 | la26s31.d | 04/26/17 | 17:25 |
| 12 | ACRICV | la26s01a.d | 04/26/17 | 18:34 |
| 13 | 8944378 | la26s32.d | 04/26/17 | 19:15 |
| 14 | 8944379 | la26s33.d | 04/26/17 | 19:37 |
| 15 | 8947184 | la26s34.d | 04/26/17 | 19:59 |
| 16 | 8944352 | la26s35.d | 04/26/17 | 20:21 |
| 17 | 8944353MS | la26s36.d | 04/26/17 | 20:43 |
| 18 | 8944354MSD | la26s37.d | 04/26/17 | 21:05 |
| 19 | 8944360 | la26s38.d | 04/26/17 | 21:27 |
| 20 | 8944366 | la26s39.d | 04/26/17 | 21:49 |
| 21 | 8944368 | la26s40.d | 04/26/17 | 22:11 |
| 22 | 8944370 | la26s41.d | 04/26/17 | 22:33 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR186___

Lab File ID: la26t01.d  BFB Injection Date: 04/26/17

Instrument ID: HP09915  BFB Injection Time: 12:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.10 |
| 75 | 30.0 - 60.0% of mass 95 | 44.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.79 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.54)1 |
| 174 | Greater than 50.0% of mass 95 | 90.09 |
| 175 | 5.0 - 9.0% of mass 174 | 6.12 ( 6.79)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 86.74 (96.29)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.56 ( 6.41)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 8947174 | la26s42.d | 04/26/17 | 22:55 |
| 24 | 8947180 | la26s43.d | 04/26/17 | 23:17 |
| 25 | SECC050 | la26ec1.d | 04/26/17 | 23:38 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR186___

Lab File ID: ll18t01.d  BFB Injection Date: 07/18/17

Instrument ID: HP09915  BFB Injection Time: 07:26

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.69 |
| 75 | 30.0 - 60.0% of mass 95 | 49.95 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 7.10 |
| 173 | Less than 2.0% of mass 174 | 0.56 ( 0.62)1 |
| 174 | Greater than 50.0% of mass 95 | 91.57 |
| 175 | 5.0 - 9.0% of mass 174 | 6.30 ( 6.88)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.33 (97.55)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.63 ( 6.30)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | ll18c01.d | 07/18/17 | 08:01 |
| 02 | VBLKL63 | ll18b01.d | 07/18/17 | 08:23 |
| 03 | LCSL63 | ll18l01.d | 07/18/17 | 08:45 |
| 04 | 9091105 | ll18s02.d | 07/18/17 | 09:20 |
| 05 | 9091106 | ll18s03.d | 07/18/17 | 09:42 |
| 06 | 9091107 | ll18s04.d | 07/18/17 | 10:04 |
| 07 | 9091108 | ll18s05.d | 07/18/17 | 10:26 |
| 08 | 9091109 | ll18s06.d | 07/18/17 | 10:48 |
| 09 | 9091110 | ll18s07.d | 07/18/17 | 11:09 |
| 10 | 9091111 | ll18s08.d | 07/18/17 | 11:31 |
| 11 | 9091112MS | ll18s09.d | 07/18/17 | 11:53 |
| 12 | 9091113MSD | ll18s10.d | 07/18/17 | 12:15 |
| 13 | 9091114 | ll18s11.d | 07/18/17 | 12:37 |
| 14 | 9100479 | ll18s12.d | 07/18/17 | 12:59 |
| 15 | 9100481 | ll18s13.d | 07/18/17 | 13:21 |
| 16 | 9100491 | ll18s14.d | 07/18/17 | 13:42 |
| 17 | 9100492 | ll18s15.d | 07/18/17 | 14:04 |
| 18 | 9100494 | ll18s16.d | 07/18/17 | 14:26 |
| 19 | 9100495 | ll18s17.d | 07/18/17 | 14:48 |
| 20 | 9100496 | ll18s18.d | 07/18/17 | 15:10 |
| 21 | SECC050 | ll18c02.d | 07/18/17 | 15:32 |

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 04/26/17  04/26/17

Heated Purge: (Y/N) Y  Calibration Times: 13:20  15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d  RRF 4 = la26i06.d  RRF 10= la26i05.d
RRF 20= la26i04.d  RRF 50= la26i03.d  RRF100= la26i02.d  RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | #0.2475 | 0.3109 | 0.2816 | 0.2855 | 0.3296 | 0.3182 | 0.3116 | 0.2979 | 9 | AVG | # |
| Chloromethane | #0.2728 | 0.3009 | 0.2971 | 0.3105 | 0.3299 | 0.3276 | 0.3031 | 0.3060 | 6 | AVG | # |
| 1,3-Butadiene | 0.1870 | 0.2029 | 0.1572 | 0.1857 | 0.1788 | 0.1756 | 0.1743 | 0.1802 | 8 | AVG | |
| Vinyl Chloride | #0.2596 | 0.2956 | 0.2812 | 0.2907 | 0.3269 | 0.3169 | 0.2974 | 0.2955 | 8 | AVG | # |
| Bromomethane | #0.1784 | 0.1942 | 0.1974 | 0.1985 | 0.2158 | 0.2102 | 0.1966 | 0.1987 | 6 | AVG | # |
| Chloroethane | #0.1512 | 0.1679 | 0.1637 | 0.1665 | 0.1796 | 0.1749 | 0.1619 | 0.1665 | 6 | AVG | # |
| Dichlorofluoromethane | 0.3565 | 0.4027 | 0.3929 | 0.4138 | 0.4398 | 0.4365 | 0.4009 | 0.4062 | 7 | AVG | |
| n-Pentane | 0.2779 | 0.3107 | 0.2558 | 0.2941 | 0.2818 | 0.2797 | 0.2725 | 0.2818 | 6 | AVG | |
| Trichlorofluoromethane | #0.2818 | 0.3506 | 0.3242 | 0.3264 | 0.3829 | 0.3708 | 0.3584 | 0.3422 | 10 | AVG | # |
| Ethyl ether | 0.1717 | 0.1900 | 0.1802 | 0.1983 | 0.2030 | 0.1997 | 0.1904 | 0.1905 | 6 | AVG | |
| Freon 123a | 0.2093 | 0.2464 | 0.2048 | 0.2441 | 0.2326 | 0.2304 | 0.2276 | 0.2279 | 7 | AVG | |
| Acrolein | 1.6997 | 1.7547 | 2.0438 | 2.0158 | 2.1800 | 2.3475 | 2.2840 | 2.0465 | 12 | AVG | |
| 1,1-Dichloroethene | #0.1731 | 0.1915 | 0.1632 | 0.1881 | 0.1862 | 0.1822 | 0.1833 | 0.1811 | 5 | AVG | # |
| 1,1-Dichloroethene(2) | #0.0849 | 0.0966 | 0.0823 | 0.0976 | 0.0939 | 0.0935 | 0.0931 | 0.0917 | 6 | AVG | #<- |
| Acetone | #0.7871 | 0.8113 | 0.9514 | 0.8091 | 0.9410 | 0.9228 | 0.9949 | 0.8882 | 9 | AVG | # |
| Freon 113 | #0.1559 | 0.1939 | 0.1621 | 0.1954 | 0.1881 | 0.1902 | 0.1903 | 0.1823 | 9 | AVG | # |
| 2-Propanol | 0.6182 | 0.6115 | 0.5764 | 0.6050 | 0.5447 | 0.5811 | 0.5848 | 0.5888 | 4 | AVG | |
| Methyl Iodide | 0.3218 | 0.3593 | 0.3218 | 0.3715 | 0.3659 | 0.3574 | 0.3612 | 0.3513 | 6 | AVG | |
| Carbon Disulfide | #0.5351 | 0.6016 | 0.5236 | 0.6223 | 0.6181 | 0.6105 | 0.6139 | 0.5893 | 7 | AVG | # |
| Allyl Chloride | 0.3475 | 0.3734 | 0.3447 | 0.3759 | 0.3727 | 0.3634 | 0.3616 | 0.3627 | 3 | AVG | |
| Methyl Acetate | #0.2908 | 0.2561 | 0.2535 | 0.2717 | 0.2645 | 0.2509 | 0.2524 | 0.2628 | 5 | AVG | # |
| Methylene Chloride | #0.2903 | 0.2500 | 0.2150 | 0.2388 | 0.2329 | 0.2250 | 0.2226 | 0.2392 | 11 | AVG | # |
| t-Butyl alcohol | 1.0273 | 0.9259 | 0.9637 | 0.9834 | 0.9700 | 0.9707 | 0.9301 | 0.9673 | 4 | AVG | |
| Acrylonitrile | 0.1150 | 0.1324 | 0.1390 | 0.1386 | 0.1542 | 0.1476 | 0.1394 | 0.1380 | 9 | AVG | |
| trans-1,2-Dichloroethene | #0.1880 | 0.2213 | 0.1984 | 0.2258 | 0.2203 | 0.2168 | 0.2167 | 0.2125 | 7 | AVG | # |
| Methyl Tertiary Butyl Ether | #0.6379 | 0.6679 | 0.6247 | 0.7026 | 0.6961 | 0.6730 | 0.6419 | 0.6634 | 4 | AVG | # |
| n-Hexane | 0.2805 | 0.3406 | 0.3182 | 0.3412 | 0.3308 | 0.3375 | 0.3312 | 0.3257 | 7 | AVG | |
| 1,1-Dichloroethane | #0.3662 | 0.4103 | 0.3686 | 0.4216 | 0.4181 | 0.4088 | 0.4012 | 0.3993 | 6 | AVG | # |
| di-Isopropyl ether | 0.7192 | 0.7694 | 0.7224 | 0.8149 | 0.8086 | 0.7840 | 0.7457 | 0.7663 | 5 | AVG | |
| 2-Chloro-1,3-butadiene | 0.2922 | 0.3422 | 0.3064 | 0.3592 | 0.3555 | 0.3527 | 0.3492 | 0.3368 | 8 | AVG | |
| Ethyl t-butyl ether | 0.6073 | 0.6490 | 0.6229 | 0.7065 | 0.7083 | 0.6819 | 0.6404 | 0.6595 | 6 | AVG | |
| cis-1,2-Dichloroethene | #0.2327 | 0.2468 | 0.2228 | 0.2546 | 0.2536 | 0.2482 | 0.2457 | 0.2435 | 5 | AVG | # |
| 2-Butanone | #0.1686 | 0.1714 | 0.1875 | 0.1858 | 0.2021 | 0.1923 | 0.1859 | 0.1848 | 6 | AVG | # |
| 2,2-Dichloropropane | 0.2099 | 0.2545 | 0.2401 | 0.2836 | 0.2893 | 0.2940 | 0.2945 | 0.2666 | 12 | AVG | |
| Propionitrile | 1.3266 | 1.3235 | 1.3715 | 1.3990 | 1.4565 | 1.5001 | 1.5052 | 1.4118 | 5 | AVG | |
| Methacrylonitrile | 0.1279 | 0.1312 | 0.1333 | 0.1469 | 0.1449 | 0.1412 | 0.1379 | 0.1376 | 5 | AVG | |
| Bromochloromethane | 0.1202 | 0.1246 | 0.1239 | 0.1349 | 0.1321 | 0.1301 | 0.1324 | 0.1283 | 4 | AVG | |
| Tetrahydrofuran | 1.0421 | 1.0386 | 1.2419 | 1.1297 | 1.3657 | 1.4221 | 1.4886 | 1.2470 | 15 | AVG | |
| Chloroform | #0.3575 | 0.3896 | 0.3506 | 0.4000 | 0.3966 | 0.3873 | 0.3822 | 0.3805 | 5 | AVG | # |
| 1,1,1-Trichloroethane | #0.3319 | 0.3922 | 0.3194 | 0.3655 | 0.3422 | 0.3419 | 0.3412 | 0.3478 | 7 | AVG | # |
| Cyclohexane | #0.3470 | 0.4113 | 0.3645 | 0.4180 | 0.4101 | 0.4134 | 0.4075 | 0.3959 | 7 | AVG | # |
| Cyclohexane(2) | #0.2687 | 0.3423 | 0.2971 | 0.3432 | 0.3342 | 0.3422 | 0.3382 | 0.3237 | 9 | AVG | # |
| Cyclohexane(3) | #0.0964 | 0.1208 | 0.1042 | 0.1221 | 0.1184 | 0.1210 | 0.1205 | 0.1148 | 9 | AVG | # |
| 1,1-Dichloropropene | 0.2765 | 0.3166 | 0.2837 | 0.3287 | 0.3218 | 0.3200 | 0.3194 | 0.3095 | 7 | AVG | |
| Carbon Tetrachloride | #0.2046 | 0.2490 | 0.2225 | 0.2690 | 0.2712 | 0.2774 | 0.2834 | 0.2539 | 12 | AVG | # |
| Isobutyl Alcohol | 0.3182 | 0.3284 | 0.3287 | 0.3597 | 0.3519 | 0.3476 | 0.3429 | 0.3396 | 4 | AVG | |
| Benzene | #0.8572 | 0.9361 | 0.8525 | 0.9667 | 0.9477 | 0.9252 | 0.9015 | 0.9124 | 5 | AVG | # |
| 1,2-Dichloroethane | #0.2889 | 0.3116 | 0.2915 | 0.3214 | 0.3232 | 0.3161 | 0.3080 | 0.3087 | 4 | AVG | # |
| 1,2-Dichloroethane(2) | #0.0134 | 0.0275 | 0.0279 | 0.0320 | 0.0308 | 0.0302 | 0.0298 | 0.0274 | 23 | AVG | #<- |
| t-Amyl methyl ether | 0.5956 | 0.6302 | 0.6087 | 0.7002 | 0.7074 | 0.6895 | 0.6501 | 0.6545 | 7 | AVG | |
| n-Heptane | 0.3402 | 0.4010 | 0.3501 | 0.3663 | 0.3616 | 0.3739 | 0.3594 | 0.3647 | 5 | AVG | |
| n-Butanol | 0.2321 | 0.2408 | 0.2553 | 0.2948 | 0.2885 | 0.3038 | 0.3010 | 0.2738 | 11 | AVG | |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 04/26/17  04/26/17

Heated Purge: (Y/N) Y  Calibration Times: 13:20  15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d  RRF 4 = la26i06.d  RRF 10= la26i05.d
RRF 20= la26i04.d  RRF 50= la26i03.d  RRF100= la26i02.d  RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | #0.2291 | 0.2376 | 0.2171 | 0.2444 | 0.2420 | 0.2413 | 0.2390 | 0.2358 | 4 | AVG # |
| Methylcyclohexane | #0.3425 | 0.4354 | 0.3756 | 0.4391 | 0.4392 | 0.4349 | 0.4416 | 0.4155 | 10 | AVG # |
| Methylcyclohexane(2) | #0.1527 | 0.1938 | 0.1685 | 0.1974 | 0.1996 | 0.1987 | 0.2016 | 0.1875 | 10 | AVG # |
| 1,2-Dichloropropane | #0.2227 | 0.2483 | 0.2358 | 0.2634 | 0.2654 | 0.2596 | 0.2533 | 0.2498 | 6 | AVG # |
| Dibromomethane | 0.1469 | 0.1540 | 0.1453 | 0.1634 | 0.1659 | 0.1621 | 0.1620 | 0.1571 | 5 | AVG |
| 1,4-Dioxane | 0.0843 | 0.0764 | 0.0797 | 0.1053 | 0.0898 | 0.0835 | 0.0793 | 0.0855 | 11 | AVG |
| Methyl Methacrylate | 0.1770 | 0.2008 | 0.1983 | 0.2262 | 0.2326 | 0.2311 | 0.2307 | 0.2138 | 10 | AVG |
| Bromodichloromethane | #0.2481 | 0.2673 | 0.2555 | 0.2955 | 0.3066 | 0.3052 | 0.3061 | 0.2835 | 9 | AVG # |
| 2-Nitropropane | 0.0655 | 0.0668 | 0.0740 | 0.0780 | 0.0927 | 0.0915 | 0.0942 | 0.0804 | 15 | AVG |
| 2-Chloroethyl Vinyl Ether | 0.1508 | 0.1784 | 0.1836 | 0.2048 | 0.2093 | 0.2102 | 0.2070 | 0.1920 | 12 | AVG |
| cis-1,3-Dichloropropene | #0.2930 | 0.3410 | 0.3372 | 0.3925 | 0.4071 | 0.4071 | 0.4084 | 0.3695 | 12 | AVG # |
| 4-Methyl-2-pentanone | #0.3194 | 0.3294 | 0.3796 | 0.3953 | 0.4247 | 0.4132 | 0.4041 | 0.3808 | 11 | AVG # |
| Toluene | #0.6827 | 0.7517 | 0.7064 | 0.7999 | 0.7677 | 0.7520 | 0.7330 | 0.7419 | 5 | AVG # |
| trans-1,3-Dichloropropene | #0.3059 | 0.3663 | 0.3795 | 0.4472 | 0.4726 | 0.4689 | 0.4716 | 0.4160 | 16 | AVG # |
| Ethyl Methacrylate | 0.3763 | 0.4210 | 0.4425 | 0.5116 | 0.5217 | 0.5113 | 0.4957 | 0.4686 | 12 | AVG |
| 1,1,2-Trichloroethane | #0.2665 | 0.2762 | 0.2728 | 0.3034 | 0.3049 | 0.2920 | 0.2854 | 0.2859 | 5 | AVG # |
| Tetrachloroethene | #0.2930 | 0.3299 | 0.3192 | 0.3548 | 0.3312 | 0.3339 | 0.3351 | 0.3281 | 6 | AVG # |
| 1,3-Dichloropropane | 0.4716 | 0.4813 | 0.4656 | 0.5287 | 0.5239 | 0.5079 | 0.4934 | 0.4961 | 5 | AVG |
| 2-Hexanone | #0.2828 | 0.3057 | 0.3608 | 0.3898 | 0.3977 | 0.3931 | 0.3768 | 0.3581 | 13 | AVG # |
| Dibromochloromethane | #0.2375 | 0.2630 | 0.2641 | 0.3102 | 0.3298 | 0.3308 | 0.3374 | 0.2961 | 14 | AVG # |
| 1,2-Dibromoethane | #0.2767 | 0.2967 | 0.2975 | 0.3352 | 0.3339 | 0.3278 | 0.3230 | 0.3130 | 7 | AVG # |
| 1-Chlorohexane | 0.4536 | 0.4352 | 0.4043 | 0.4273 | 0.4181 | 0.4234 | 0.4205 | 0.4261 | 4 | AVG |
| Chlorobenzene | #0.7867 | 0.8528 | 0.8140 | 0.9180 | 0.8874 | 0.8733 | 0.8605 | 0.8561 | 5 | AVG # |
| 1,1,1,2-Tetrachloroethane | 0.2410 | 0.2658 | 0.2572 | 0.3009 | 0.3047 | 0.3045 | 0.3048 | 0.2827 | 10 | AVG |
| Ethylbenzene | #1.3005 | 1.4333 | 1.3909 | 1.5359 | 1.4779 | 1.4625 | 1.4167 | 1.4311 | 5 | AVG # |
| m+p-Xylene | #0.4994 | 0.5538 | 0.5367 | 0.5978 | 0.5772 | 0.5732 | 0.5619 | 0.5571 | 6 | AVG # |
| o-Xylene | #0.4903 | 0.5421 | 0.5360 | 0.5924 | 0.5812 | 0.5730 | 0.5635 | 0.5541 | 6 | AVG # |
| Styrene | #0.7531 | 0.8692 | 0.8880 | 1.0054 | 0.9833 | 0.9681 | 0.9446 | 0.9159 | 10 | AVG # |
| Bromoform | #0.1549 | 0.1771 | 0.1880 | 0.2267 | 0.2449 | 0.2513 | 0.2622 | 0.2150 | 19 | AVG # |
| Isopropylbenzene | #1.2079 | 1.4227 | 1.4232 | 1.5063 | 1.4687 | 1.4666 | 1.4168 | 1.4160 | 7 | AVG # |
| Cyclohexanone | 0.2990 | 0.2968 | 0.3246 | 0.3566 | 0.3401 | 0.3292 | 0.3106 | 0.3224 | 7 | AVG |
| Bromobenzene | 0.6537 | 0.7071 | 0.6780 | 0.7611 | 0.7396 | 0.7364 | 0.7270 | 0.7147 | 5 | AVG |
| 1,1,2,2-Tetrachloroethane | #0.8142 | 0.8692 | 0.8499 | 0.9481 | 0.9471 | 0.9256 | 0.8583 | 0.8875 | 6 | AVG # |
| 1,2,3-Trichloropropane | 0.2342 | 0.2517 | 0.2412 | 0.2638 | 0.2643 | 0.2577 | 0.2432 | 0.2509 | 5 | AVG |
| trans-1,4-Dichloro-2-butene | 0.2210 | 0.2407 | 0.2456 | 0.2735 | 0.2756 | 0.2705 | 0.2534 | 0.2543 | 8 | AVG |
| n-Propylbenzene | 2.8221 | 3.2015 | 3.2581 | 3.3397 | 3.2365 | 3.2414 | 3.0068 | 3.1580 | 6 | AVG |
| 2-Chlorotoluene | 0.5895 | 0.6545 | 0.6517 | 0.6887 | 0.6778 | 0.6784 | 0.6601 | 0.6573 | 5 | AVG |
| 4-Chlorotoluene | 0.6274 | 0.6695 | 0.6724 | 0.7240 | 0.7029 | 0.7028 | 0.6895 | 0.6841 | 5 | AVG |
| 1,3,5-Trimethylbenzene | 1.8650 | 2.2247 | 2.2970 | 2.3886 | 2.3617 | 2.3625 | 2.2642 | 2.2520 | 8 | AVG |
| tert-Butylbenzene | 0.4332 | 0.4662 | 0.4786 | 0.4996 | 0.5085 | 0.5149 | 0.5065 | 0.4868 | 6 | AVG |
| Pentachloroethane | 0.3051 | 0.3420 | 0.3506 | 0.4009 | 0.4186 | 0.4307 | 0.4424 | 0.3843 | 14 | AVG |
| 1,2,4-Trimethylbenzene | 1.9827 | 2.2719 | 2.3523 | 2.4469 | 2.4266 | 2.4253 | 2.3321 | 2.3197 | 7 | AVG |
| sec-Butylbenzene | 2.4903 | 2.8982 | 2.9677 | 2.9884 | 2.9562 | 2.9854 | 2.8220 | 2.8726 | 6 | AVG |
| 1,3-Dichlorobenzene | #1.3064 | 1.3716 | 1.3473 | 1.4172 | 1.3858 | 1.3710 | 1.3255 | 1.3607 | 3 | AVG # |
| p-Isopropyltoluene | 2.1849 | 2.5019 | 2.5974 | 2.6342 | 2.6235 | 2.6717 | 2.5408 | 2.5364 | 7 | AVG |
| 1,4-Dichlorobenzene | #1.4027 | 1.4149 | 1.3899 | 1.4733 | 1.4246 | 1.4029 | 1.3406 | 1.4070 | 3 | AVG # |
| 1,2,3-Trimethylbenzene | 2.2649 | 2.4023 | 2.4235 | 2.6015 | 2.4902 | 2.4528 | 2.3775 | 2.4304 | 4 | AVG |
| Benzyl Chloride |  | 1.0778 | 1.2005 | 1.5200 | 1.6375 | 1.7029 | 1.6917 | 1.4717 | 18 | AVG |
| 1,3-Diethylbenzene | 1.3296 | 1.4969 | 1.5112 | 1.6363 | 1.5648 | 1.5488 | 1.5197 | 1.5153 | 6 | AVG |
| 1,4-Diethylbenzene | 1.4533 | 1.6043 | 1.5938 | 1.6958 | 1.6245 | 1.6050 | 1.5624 | 1.5913 | 5 | AVG |
| 1,2-Dichlorobenzene | #1.2897 | 1.3533 | 1.3092 | 1.4015 | 1.3684 | 1.3483 | 1.2923 | 1.3375 | 3 | AVG # |
| n-Butylbenzene | 1.2065 | 1.3017 | 1.3115 | 1.2971 | 1.2671 | 1.2809 | 1.2043 | 1.2670 | 4 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 04/26/17 04/26/17

Heated Purge: (Y/N) Y Calibration Times: 13:20 15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d RRF 4 = la26i06.d RRF 10= la26i05.d
RRF 20= la26i04.d RRF 50= la26i03.d RRF100= la26i02.d RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diethylbenzene | 1.1319 | 1.2774 | 1.2787 | 1.3659 | 1.3106 | 1.2945 | 1.2676 | 1.2752 | 6 | AVG |
| 1,2-Dibromo-3-chloropropane# | 0.1623 | 0.1719 | 0.1751 | 0.2007 | 0.2065 | 0.2045 | 0.1928 | 0.1877 | 9 | AVG # |
| 1,3,5-Trichlorobenzene | | 1.1060 | 1.0957 | 1.0943 | 1.0851 | 1.0959 | 1.0293 | 1.0844 | 3 | AVG |
| 1,2,4-Trichlorobenzene # | | 1.0544 | 1.0590 | 1.0780 | 1.0666 | 1.0670 | 0.9865 | 1.0519 | 3 | AVG # |
| Hexachlorobutadiene | | 0.4890 | 0.4549 | 0.4629 | 0.4481 | 0.4651 | 0.4211 | 0.4568 | 5 | AVG |
| Naphthalene | 3.0754 | 3.0911 | 3.1332 | 3.3963 | 3.3573 | 3.2808 | 2.8858 | 3.1742 | 6 | AVG |
| 1,2,3-Trichlorobenzene | | 1.0198 | 1.0312 | 1.0550 | 1.0298 | 1.0226 | 0.9306 | 1.0148 | 4 | AVG |
| 2-Methylnaphthalene | | 1.9258 | 2.0069 | 2.2473 | 2.1829 | 2.1335 | 1.8189 | 2.0525 | 8 | AVG |
| Dibromofluoromethane | 0.2444 | 0.2422 | 0.2443 | 0.2417 | 0.2460 | 0.2463 | 0.2442 | 0.2441 | 1 | AVG |
| Dibromofluoromethane(2) | 0.2484 | 0.2493 | 0.2512 | 0.2479 | 0.2518 | 0.2517 | 0.2511 | 0.2502 | 1 | AVG |
| 1,2-Dichloroethane-d4 | 0.0609 | 0.0612 | 0.0603 | 0.0600 | 0.0609 | 0.0616 | 0.0602 | 0.0607 | 1 | AVG |
| 1,2-Dichloroethane-d4(2) | 0.2880 | 0.2902 | 0.2913 | 0.2865 | 0.2857 | 0.2879 | 0.2807 | 0.2872 | 1 | AVG |
| 1,2-Dichloroethane-d4(3) | 0.0378 | 0.0385 | 0.0394 | 0.0383 | 0.0385 | 0.0387 | 0.0385 | 0.0385 | 1 | AVG |
| Toluene-d8 | 1.2792 | 1.2789 | 1.2799 | 1.2875 | 1.2795 | 1.2720 | 1.2596 | 1.2766 | 1 | AVG |
| Toluene-d8(2) | 0.8411 | 0.8411 | 0.8400 | 0.8460 | 0.8426 | 0.8383 | 0.8385 | 0.8411 | 0 | AVG |
| 4-Bromofluorobenzene | 0.4774 | 0.4787 | 0.4758 | 0.4766 | 0.4724 | 0.4722 | 0.4686 | 0.4745 | 1 | AVG |
| 4-Bromofluorobenzene(2) | 0.4208 | 0.4208 | 0.4169 | 0.4148 | 0.4132 | 0.4117 | 0.4155 | 0.4162 | 1 | AVG |

Average %RSD 7

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

| | |
|---|---|
| /chem/HP09915.i/17apr26a.b/la26i01.d | VSTD300 |
| /chem/HP09915.i/17apr26a.b/la26i02.d | VSTD100 |
| /chem/HP09915.i/17apr26a.b/la26i03.d | VSTD050 |
| /chem/HP09915.i/17apr26a.b/la26i04.d | VSTD020 |
| /chem/HP09915.i/17apr26a.b/la26i05.d | VSTD010 |
| /chem/HP09915.i/17apr26a.b/la26i06.d | VSTD004 |
| /chem/HP09915.i/17apr26a.b/la26i07.d | VSTD001 |

Area Summary

File ID:

| Internal Standard Name | la26i01.d | la26i02.d | la26i03.d | la26i04.d | la26i05.d | la26i06.d | la26i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 169188 | 183612 | 194134 | 210810 | 194850 | 205105 | 204400 | 194586 | 7 | Yes |
| Fluorobenzene | 1047200 | 1062919 | 1036296 | 1038230 | 1049965 | 1046774 | 1036977 | 1045480 | 1 | Yes |
| Chlorobenzene-d5 | 832450 | 834937 | 803001 | 793538 | 806654 | 805037 | 790373 | 809427 | 2 | Yes |
| 1,4-Dichlorobenzene-d4 | 451513 | 443338 | 430663 | 425437 | 429808 | 433758 | 428650 | 434738 | 2 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | la26i01.d | la26i02.d | la26i03.d | la26i04.d | la26i05.d | la26i06.d | la26i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 3.578 | 3.584 | 3.565 | 3.578 | 3.565 | 3.574 | 3.581 | 3.575 |
| Fluorobenzene | 7.057 | 7.057 | 7.053 | 7.053 | 7.050 | 7.053 | 7.050 | 7.053 |
| Chlorobenzene-d5 | 10.712 | 10.713 | 10.712 | 10.709 | 10.709 | 10.709 | 10.709 | 10.711 |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 04/26/2017 at 16:04.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.2979 | 0.2605 | 17.49 | 20 | -13 | # |
| # | Chloromethane | 0.3060 | 0.2823 | 18.45 | 20 | -8 | # |
| \| | 1,3-Butadiene | 0.1802 | 0.2800 | 31.07 | 20 | 55 | \|<- |
| # | Vinyl Chloride | 0.2955 | 0.2777 | 18.80 | 20 | -6 | # |
| # | Bromomethane | 0.1987 | 0.1876 | 18.88 | 20 | -6 | # |
| # | Chloroethane | 0.1665 | 0.1559 | 18.73 | 20 | -6 | # |
| \| | Dichlorofluoromethane | 0.4062 | 0.4016 | 19.77 | 20 | -1 | \| |
| \| | n-Pentane | 0.2818 | 0.3710 | 26.34 | 20 | 32 | \|<- |
| # | Trichlorofluoromethane | 0.3422 | 0.3370 | 19.70 | 20 | -1 | # |
| \| | Ethyl ether | 0.1905 | 0.1869 | 19.62 | 20 | -2 | \| |
| \| | Freon 123a | 0.2279 | 0.2357 | 20.69 | 20 | 3 | \| |
| \| | Acrolein | 2.0465 | 1.2690 | 93.01 | 150 | -38 | \|<- |
| # | 1,1-Dichloroethene | 0.1811 | 0.2024 | 22.36 | 20 | 12 | # |
| # | Acetone | 0.8882 | 0.8195 | 138.39 | 150 | -8 | # |
| # | Freon 113 | 0.1823 | 0.2076 | 22.78 | 20 | 14 | # |
| \| | 2-Propanol | 0.5888 | 0.5195 | 132.34 | 150 | -12 | \| |
| \| | Methyl Iodide | 0.3513 | 0.3762 | 21.42 | 20 | 7 | \| |
| # | Carbon Disulfide | 0.5893 | 0.6570 | 22.30 | 20 | 11 | # |
| \| | Allyl Chloride | 0.3627 | 0.3572 | 19.69 | 20 | -2 | \| |
| # | Methyl Acetate | 0.2628 | 0.2584 | 19.66 | 20 | -2 | # |
| # | Methylene Chloride | 0.2392 | 0.2381 | 19.90 | 20 | 0 | # |
| \| | t-Butyl alcohol | 0.9673 | 0.8975 | 185.56 | 200 | -7 | \| |
| \| | Acrylonitrile | 0.1380 | 0.1313 | 95.14 | 100 | -5 | \| |
| # | trans-1,2-Dichloroethene | 0.2125 | 0.2299 | 21.64 | 20 | 8 | # |
| # | Methyl Tertiary Butyl Ether | 0.6634 | 0.6558 | 19.77 | 20 | -1 | # |
| \| | n-Hexane | 0.3257 | 0.3535 | 21.71 | 20 | 9 | \| |
| # | 1,1-Dichloroethane | 0.3993 | 0.4121 | 20.64 | 20 | 3 | # |
| \| | di-Isopropyl ether | 0.7663 | 0.7768 | 20.28 | 20 | 1 | \| |
| \| | 2-Chloro-1,3-butadiene | 0.3368 | 0.3399 | 20.18 | 20 | 1 | \| |
| \| | Ethyl t-butyl ether | 0.6595 | 0.6369 | 19.32 | 20 | -3 | \| |
| # | cis-1,2-Dichloroethene | 0.2435 | 0.2490 | 20.45 | 20 | 2 | # |
| # | 2-Butanone | 0.1848 | 0.1714 | 139.09 | 150 | -7 | # |
| \| | 2,2-Dichloropropane | 0.2666 | 0.2562 | 19.23 | 20 | -4 | \| |
| \| | Propionitrile | 1.4118 | 1.3352 | 141.87 | 150 | -5 | \| |
| \| | Methacrylonitrile | 0.1376 | 0.1355 | 147.71 | 150 | -2 | \| |
| \| | Bromochloromethane | 0.1283 | 0.1260 | 19.64 | 20 | -2 | \| |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.2470 | 1.1660 | 93.51 | 100 | -6 | |
| # | Chloroform | 0.3805 | 0.3823 | 20.09 | 20 | 0 | # |
| # | 1,1,1-Trichloroethane | 0.3478 | 0.3382 | 19.45 | 20 | -3 | # |
| # | Cyclohexane | 0.3959 | 0.3959 | 20.00 | 20 | 0 | # |
| | 1,1-Dichloropropene | 0.3095 | 0.2993 | 19.34 | 20 | -3 | |
| # | Carbon Tetrachloride | 0.2539 | 0.2483 | 19.57 | 20 | -2 | # |
| | Isobutyl Alcohol | 0.3396 | 0.3237 | 476.51 | 500 | -5 | |
| # | Benzene | 0.9124 | 0.9212 | 20.19 | 20 | 1 | # |
| # | 1,2-Dichloroethane | 0.3087 | 0.3133 | 20.30 | 20 | 2 | # |
| | t-Amyl methyl ether | 0.6545 | 0.6265 | 19.14 | 20 | -4 | |
| | n-Heptane | 0.3647 | 0.3640 | 19.96 | 20 | 0 | |
| | n-Butanol | 0.2738 | 0.2575 | 940.39 | 1000 | -6 | |
| # | Trichloroethene | 0.2358 | 0.2353 | 19.96 | 20 | 0 | # |
| # | Methylcyclohexane | 0.4155 | 0.4168 | 20.06 | 20 | 0 | # |
| # | 1,2-Dichloropropane | 0.2498 | 0.2524 | 20.21 | 20 | 1 | # |
| | Dibromomethane | 0.1571 | 0.1582 | 20.14 | 20 | 1 | |
| | 1,4-Dioxane | 0.0855 | 0.0944 | 552.41 | 500 | 10 | |
| | Methyl Methacrylate | 0.2138 | 0.2084 | 19.49 | 20 | -3 | |
| # | Bromodichloromethane | 0.2835 | 0.2745 | 19.37 | 20 | -3 | # |
| | 2-Nitropropane | 0.0804 | 0.0666 | 16.57 | 20 | -17 | |
| | 2-Chloroethyl Vinyl Ether | 0.1920 | 0.1805 | 18.80 | 20 | -6 | |
| # | cis-1,3-Dichloropropene | 0.3695 | 0.3611 | 19.55 | 20 | -2 | # |
| # | 4-Methyl-2-pentanone | 0.3808 | 0.3600 | 94.52 | 100 | -5 | # |
| # | Toluene | 0.7419 | 0.7452 | 20.09 | 20 | 0 | # |
| # | trans-1,3-Dichloropropene | 0.4160 | 0.4154 | 19.97 | 20 | 0 | # |
| | Ethyl Methacrylate | 0.4686 | 0.4750 | 20.27 | 20 | 1 | |
| # | 1,1,2-Trichloroethane | 0.2859 | 0.2905 | 20.32 | 20 | 2 | # |
| # | Tetrachloroethene | 0.3281 | 0.3228 | 19.68 | 20 | -2 | # |
| | 1,3-Dichloropropane | 0.4961 | 0.4971 | 20.04 | 20 | 0 | |
| # | 2-Hexanone | 0.3581 | 0.3396 | 94.83 | 100 | -5 | # |
| # | Dibromochloromethane | 0.2961 | 0.2792 | 18.86 | 20 | -6 | # |
| # | 1,2-Dibromoethane | 0.3130 | 0.3224 | 20.60 | 20 | 3 | # |
| | 1-Chlorohexane | 0.4261 | 0.4012 | 18.83 | 20 | -6 | |
| # | Chlorobenzene | 0.8561 | 0.8413 | 19.65 | 20 | -2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2827 | 0.2699 | 19.10 | 20 | -5 | |
| # | Ethylbenzene | 1.4311 | 1.4100 | 19.70 | 20 | -1 | # |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | m+p-Xylene | 0.5571 | 0.5494 | 39.45 | 40 | -1 | # |
| # | o-Xylene | 0.5541 | 0.5404 | 19.51 | 20 | -2 | # |
| # | Styrene | 0.9159 | 0.9324 | 20.36 | 20 | 2 | # |
| # | Bromoform | 0.2150 | 0.1947 | 18.11 | 20 | -9 | # |
| # | Isopropylbenzene | 1.4160 | 1.4202 | 20.06 | 20 | 0 | # |
| | Cyclohexanone | 0.3224 | 0.3366 | 522.07 | 500 | 4 | |
| | Bromobenzene | 0.7147 | 0.6986 | 19.55 | 20 | -2 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8875 | 0.8909 | 20.08 | 20 | 0 | # |
| | 1,2,3-Trichloropropane | 0.2509 | 0.2569 | 20.48 | 20 | 2 | |
| | trans-1,4-Dichloro-2-butene | 0.2543 | 0.2468 | 97.04 | 100 | -3 | |
| | n-Propylbenzene | 3.1580 | 3.0963 | 19.61 | 20 | -2 | |
| | 2-Chlorotoluene | 0.6573 | 0.6330 | 19.26 | 20 | -4 | |
| | 4-Chlorotoluene | 0.6841 | 0.6691 | 19.56 | 20 | -2 | |
| | 1,3,5-Trimethylbenzene | 2.2520 | 2.1982 | 19.52 | 20 | -2 | |
| | tert-Butylbenzene | 0.4868 | 0.4796 | 19.70 | 20 | -1 | |
| | Pentachloroethane | 0.3843 | 0.3671 | 19.10 | 20 | -4 | |
| | 1,2,4-Trimethylbenzene | 2.3197 | 2.2673 | 19.55 | 20 | -2 | |
| | sec-Butylbenzene | 2.8726 | 2.8359 | 19.74 | 20 | -1 | |
| # | 1,3-Dichlorobenzene | 1.3607 | 1.2946 | 19.03 | 20 | -5 | # |
| | p-Isopropyltoluene | 2.5364 | 2.4766 | 19.53 | 20 | -2 | |
| # | 1,4-Dichlorobenzene | 1.4070 | 1.3571 | 19.29 | 20 | -4 | # |
| | 1,2,3-Trimethylbenzene | 2.4304 | 2.4322 | 20.02 | 20 | 0 | |
| | Benzyl Chloride | 1.4717 | 1.2688 | 17.24 | 20 | -14 | |
| | 1,3-Diethylbenzene | 1.5153 | 1.4812 | 19.55 | 20 | -2 | |
| | 1,4-Diethylbenzene | 1.5913 | 1.5419 | 19.38 | 20 | -3 | |
| # | 1,2-Dichlorobenzene | 1.3375 | 1.2970 | 19.39 | 20 | -3 | # |
| | n-Butylbenzene | 1.2670 | 1.2177 | 19.22 | 20 | -4 | |
| | 1,2-Diethylbenzene | 1.2752 | 1.2547 | 19.68 | 20 | -2 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1877 | 0.1770 | 18.86 | 20 | -6 | # |
| | 1,3,5-Trichlorobenzene | 1.0844 | 1.0144 | 18.71 | 20 | -6 | |
| # | 1,2,4-Trichlorobenzene | 1.0519 | 0.9806 | 18.64 | 20 | -7 | # |
| | Hexachlorobutadiene | 0.4568 | 0.3983 | 17.44 | 20 | -13 | |
| | Naphthalene | 3.1742 | 3.1214 | 19.67 | 20 | -2 | |
| | 1,2,3-Trichlorobenzene | 1.0148 | 0.9259 | 18.25 | 20 | -9 | |
| | 2-Methylnaphthalene | 2.0525 | 1.8562 | 18.09 | 20 | -10 | |

Average %Drift 5

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

page 3 of 3 FORM VII VOA

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 18:34

Lab File ID: la26s01a.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Acrolein | 2.0465 | 1.8187 | 133.30 | 150 | -11 |

Average %Drift 11

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

# Lancaster Laboratories

## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09915.i/17apr26a.b/la26i07.d
/chem/HP09915.i/17apr26a.b/la26i06.d
/chem/HP09915.i/17apr26a.b/la26i05.d
/chem/HP09915.i/17apr26a.b/la26i04.d
/chem/HP09915.i/17apr26a.b/la26i03.d
/chem/HP09915.i/17apr26a.b/la26i02.d
/chem/HP09915.i/17apr26a.b/la26i01.d

File /chem/HP09915.i/17apr26a.b/la26i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP09915.i/17jul18a.b/ll18c01.d

RT Summary

| Internal Standard Name | File ID: ll18c01.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 3.584 | 3.565 | Yes |
| Fluorobenzene | 7.054 | 7.053 | Yes |
| Chlorobenzene-d5 | 10.709 | 10.712 | Yes |
| 1,4-Dichlorobenzene-d4 | 12.639 | 12.642 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: ll18c01.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 153283 | 194134 | 97067 | 388268 | Yes |
| Fluorobenzene | 751819 | 1036296 | 518148 | 2072592 | Yes |
| Chlorobenzene-d5 | 621821 | 803001 | 401500 | 1606002 | Yes |
| 1,4-Dichlorobenzene-d4 | 347358 | 430663 | 215332 | 861326 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments:_____

report generated on 07/18/2017 at 08:34

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/18/17 Time: 08:01

Lab File ID: l118c01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Dichlorodifluoromethane | 0.2979 | 0.3655 | 61.35 | 50 | 23 | #<- |
| # Chloromethane | 0.3060 | 0.2713 | 44.32 | 50 | -11 | # |
| 1,3-Butadiene | 0.1802 | 0.2762 | 76.62 | 50 | 53 | <- |
| # Vinyl Chloride | 0.2955 | 0.2703 | 45.74 | 50 | -9 | # |
| # Bromomethane | 0.1987 | 0.2114 | 53.18 | 50 | 6 | # |
| # Chloroethane | 0.1665 | 0.1581 | 47.47 | 50 | -5 | # |
| n-Pentane | 0.2818 | 0.2983 | 52.93 | 50 | 6 | |
| # Trichlorofluoromethane | 0.3422 | 0.4312 | 63.01 | 50 | 26 | #<- |
| Ethyl ether | 0.1905 | 0.0959 | 25.18 | 50 | -50 | <- |
| Freon 123a | 0.2279 | 0.2489 | 54.60 | 50 | 9 | |
| Acrolein | 2.0465 | 1.5051 | 367.72 | 500 | -26 | <- |
| # 1,1-Dichloroethene | 0.1811 | 0.1955 | 53.97 | 50 | 8 | # |
| # 1,1-Dichloroethene(2) | 0.0917 | 0.1005 | 54.79 | 50 | 10 | # |
| # Acetone | 0.8882 | 0.7122 | 80.19 | 100 | -20 | # |
| # Freon 113 | 0.1823 | 0.2199 | 60.31 | 50 | 21 | #<- |
| 2-Propanol | 0.5888 | 0.5698 | 241.93 | 250 | -3 | |
| Methyl Iodide | 0.3513 | 0.4132 | 58.82 | 50 | 18 | |
| # Carbon Disulfide | 0.5893 | 0.6530 | 55.41 | 50 | 11 | # |
| Allyl Chloride | 0.3627 | 0.2995 | 41.28 | 50 | -17 | |
| # Methyl Acetate | 0.2628 | 0.2164 | 41.17 | 50 | -18 | # |
| # Methylene Chloride | 0.2392 | 0.2295 | 47.97 | 50 | -4 | # |
| t-Butyl alcohol | 0.9673 | 1.0765 | 278.22 | 250 | 11 | |
| Acrylonitrile | 0.1380 | 0.1145 | 41.47 | 50 | -17 | |
| # trans-1,2-Dichloroethene | 0.2125 | 0.2267 | 53.36 | 50 | 7 | # |
| # Methyl Tertiary Butyl Ether | 0.6634 | 0.7518 | 56.66 | 50 | 13 | # |
| n-Hexane | 0.3257 | 0.2984 | 45.81 | 50 | -8 | |
| # 1,1-Dichloroethane | 0.3993 | 0.3995 | 50.04 | 50 | 0 | # |
| di-Isopropyl ether | 0.7663 | 0.6514 | 42.50 | 50 | -15 | |
| 2-Chloro-1,3-butadiene | 0.3368 | 0.3783 | 56.17 | 50 | 12 | |
| Ethyl t-butyl ether | 0.6595 | 0.6983 | 52.95 | 50 | 6 | |
| # cis-1,2-Dichloroethene | 0.2435 | 0.2554 | 52.45 | 50 | 5 | # |
| # 2-Butanone | 0.1848 | 0.1543 | 83.47 | 100 | -17 | # |
| 2,2-Dichloropropane | 0.2666 | 0.3476 | 65.19 | 50 | 30 | <- |
| Propionitrile | 1.4118 | 1.1775 | 208.52 | 250 | -17 | |
| Methacrylonitrile | 0.1376 | 0.1297 | 117.81 | 125 | -6 | |
| Bromochloromethane | 0.1283 | 0.1389 | 54.14 | 50 | 8 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/18/17 Time: 08:01

Lab File ID: l118c01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| Tetrahydrofuran | 1.2470 | 1.0402 | 83.42 | 100 | -17 | |
| # Chloroform | 0.3805 | 0.4410 | 57.94 | 50 | 16 | # |
| # 1,1,1-Trichloroethane | 0.3478 | 0.3931 | 56.52 | 50 | 13 | # |
| # Cyclohexane | 0.3959 | 0.3514 | 44.37 | 50 | -11 | # |
| # Cyclohexane(2) | 0.3237 | 0.3214 | 49.64 | 50 | -1 | # |
| # Cyclohexane(3) | 0.1148 | 0.1141 | 49.69 | 50 | -1 | # |
| 1,1-Dichloropropene | 0.3095 | 0.3222 | 52.05 | 50 | 4 | |
| # Carbon Tetrachloride | 0.2539 | 0.3253 | 64.08 | 50 | 28 | #<- |
| Isobutyl Alcohol | 0.3396 | 0.3339 | 614.43 | 625 | -2 | |
| # Benzene | 0.9124 | 0.9018 | 49.42 | 50 | -1 | # |
| # 1,2-Dichloroethane | 0.3087 | 0.3958 | 64.12 | 50 | 28 | #<- |
| # 1,2-Dichloroethane(2) | 0.0274 | 0.0192 | 35.10 | 50 | -30 | #<- |
| t-Amyl methyl ether | 0.6545 | 0.7060 | 53.94 | 50 | 8 | |
| n-Heptane | 0.3647 | 0.3119 | 42.77 | 50 | -14 | |
| n-Butanol | 0.2738 | 0.2591 | 1182.86 | 1250 | -5 | |
| # Trichloroethene | 0.2358 | 0.2535 | 53.75 | 50 | 8 | # |
| # Methylcyclohexane | 0.4155 | 0.4002 | 48.16 | 50 | -4 | # |
| # Methylcyclohexane(2) | 0.1875 | 0.1873 | 49.96 | 50 | 0 | # |
| # 1,2-Dichloropropane | 0.2498 | 0.2244 | 44.92 | 50 | -10 | # |
| Dibromomethane | 0.1571 | 0.1745 | 55.56 | 50 | 11 | |
| 1,4-Dioxane | 0.0855 | 0.0971 | 710.10 | 625 | 14 | |
| Methyl Methacrylate | 0.2138 | 0.2084 | 48.73 | 50 | -3 | |
| # Bromodichloromethane | 0.2835 | 0.3328 | 58.70 | 50 | 17 | # |
| 2-Nitropropane | 0.0804 | 0.0945 | 117.51 | 100 | 18 | |
| 2-Chloroethyl Vinyl Ether | 0.1920 | 0.1731 | 45.08 | 50 | -10 | |
| # cis-1,3-Dichloropropene | 0.3695 | 0.3810 | 51.56 | 50 | 3 | # |
| # 4-Methyl-2-pentanone | 0.3808 | 0.3245 | 85.22 | 100 | -15 | # |
| # Toluene | 0.7419 | 0.7107 | 47.90 | 50 | -4 | # |
| # trans-1,3-Dichloropropene | 0.4160 | 0.4353 | 52.31 | 50 | 5 | # |
| Ethyl Methacrylate | 0.4686 | 0.4536 | 48.40 | 50 | -3 | |
| # 1,1,2-Trichloroethane | 0.2859 | 0.2859 | 50.00 | 50 | 0 | # |
| # Tetrachloroethene | 0.3281 | 0.3288 | 50.10 | 50 | 0 | # |
| 1,3-Dichloropropane | 0.4961 | 0.4727 | 47.64 | 50 | -5 | |
| # 2-Hexanone | 0.3581 | 0.2941 | 82.11 | 100 | -18 | # |
| # Dibromochloromethane | 0.2961 | 0.3292 | 55.59 | 50 | 11 | # |
| # 1,2-Dibromoethane | 0.3130 | 0.3298 | 52.69 | 50 | 5 | # |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/18/17 Time: 08:01

Lab File ID: l118c01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1-Chlorohexane | 0.4261 | 0.4022 | 47.20 | 50 | -6 | |
| # | Chlorobenzene | 0.8561 | 0.8759 | 51.16 | 50 | 2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2827 | 0.3207 | 56.73 | 50 | 13 | |
| # | Ethylbenzene | 1.4311 | 1.4987 | 52.36 | 50 | 5 | # |
| # | m+p-Xylene | 0.5571 | 0.5835 | 104.74 | 100 | 5 | # |
| # | o-Xylene | 0.5541 | 0.5839 | 52.70 | 50 | 5 | # |
| # | Styrene | 0.9159 | 0.9838 | 53.70 | 50 | 7 | # |
| # | Bromoform | 0.2150 | 0.2367 | 55.04 | 50 | 10 | # |
| # | Isopropylbenzene | 1.4160 | 1.5305 | 54.04 | 50 | 8 | # |
| | Cyclohexanone | 0.3224 | 0.3155 | 611.69 | 625 | -2 | |
| | Bromobenzene | 0.7147 | 0.7323 | 51.23 | 50 | 2 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8875 | 0.8288 | 46.69 | 50 | -7 | # |
| | 1,2,3-Trichloropropane | 0.2509 | 0.2698 | 53.77 | 50 | 8 | |
| | trans-1,4-Dichloro-2-butene | 0.2543 | 0.1992 | 97.89 | 125 | -22 | <- |
| | n-Propylbenzene | 3.1580 | 3.1913 | 50.53 | 50 | 1 | |
| | 2-Chlorotoluene | 0.6573 | 0.6489 | 49.36 | 50 | -1 | |
| | 4-Chlorotoluene | 0.6841 | 0.6750 | 49.33 | 50 | -1 | |
| | 1,3,5-Trimethylbenzene | 2.2520 | 2.3973 | 53.23 | 50 | 6 | |
| | tert-Butylbenzene | 0.4868 | 0.4869 | 50.01 | 50 | 0 | |
| | Pentachloroethane | 0.3843 | 0.4335 | 56.40 | 50 | 13 | |
| | 1,2,4-Trimethylbenzene | 2.3197 | 2.5136 | 54.18 | 50 | 8 | |
| | sec-Butylbenzene | 2.8726 | 2.9821 | 51.91 | 50 | 4 | |
| # | 1,3-Dichlorobenzene | 1.3607 | 1.3821 | 50.79 | 50 | 2 | # |
| | p-Isopropyltoluene | 2.5364 | 2.6728 | 52.69 | 50 | 5 | |
| # | 1,4-Dichlorobenzene | 1.4070 | 1.4120 | 50.18 | 50 | 0 | # |
| | 1,2,3-Trimethylbenzene | 2.4304 | 2.6124 | 53.75 | 50 | 7 | |
| | Benzyl Chloride | 1.4717 | 1.6954 | 57.60 | 50 | 15 | |
| | 1,3-Diethylbenzene | 1.5153 | 1.6057 | 52.98 | 50 | 6 | |
| | 1,4-Diethylbenzene | 1.5913 | 1.6570 | 52.06 | 50 | 4 | |
| # | 1,2-Dichlorobenzene | 1.3375 | 1.3784 | 51.53 | 50 | 3 | # |
| | n-Butylbenzene | 1.2670 | 1.2787 | 50.46 | 50 | 1 | |
| | 1,2-Diethylbenzene | 1.2752 | 1.3349 | 52.34 | 50 | 5 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1877 | 0.2037 | 54.27 | 50 | 9 | # |
| | 1,3,5-Trichlorobenzene | 1.0844 | 1.0530 | 48.55 | 50 | -3 | |
| # | 1,2,4-Trichlorobenzene | 1.0519 | 1.0168 | 48.33 | 50 | -3 | # |
| | Hexachlorobutadiene | 0.4568 | 0.4759 | 52.08 | 50 | 4 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/18/17 Time: 08:01

Lab File ID: l118c01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Naphthalene | 3.1742 | 3.2268 | 50.83 | 50 | 2 |
| 1,2,3-Trichlorobenzene | 1.0148 | 0.9970 | 49.12 | 50 | -2 |
| 2-Methylnaphthalene | 2.0525 | 1.9366 | 47.18 | 50 | -6 |
| Dibromofluoromethane | 0.2441 | 0.2692 | 55.13 | 50 | 10 |
| Dibromofluoromethane(2) | 0.2502 | 0.2737 | 54.69 | 50 | 9 |
| 1,2-Dichloroethane-d4 | 0.0607 | 0.0619 | 50.97 | 50 | 2 |
| 1,2-Dichloroethane-d4(2) | 0.2872 | 0.3617 | 62.97 | 50 | 26 |
| 1,2-Dichloroethane-d4(3) | 0.0385 | 0.0396 | 51.43 | 50 | 3 |
| Toluene-d8 | 1.2766 | 1.2094 | 47.36 | 50 | -5 |
| Toluene-d8(2) | 0.8411 | 0.7820 | 46.49 | 50 | -7 |
| 4-Bromofluorobenzene | 0.4745 | 0.4973 | 52.40 | 50 | 5 |
| 4-Bromofluorobenzene(2) | 0.4162 | 0.4381 | 52.63 | 50 | 5 |

Average %Drift 10

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem/HP09915.i/17jul18a.b/l118c02.d
Report Date: 07/18/2017 15:53

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i
Client ID: SECC050
Lab Sample ID: SECC050
Sublist used: L17199.sub

Injection Date and Time: 18-JUL-2017 15:32
Initial Calibration Date(s): 13-FEB-2017 28-APR-2017
Initial Calibration Time(s): 13:59 12:18
Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Vinyl Chloride | 0.29547 | 0.25239 | 0.01 | -14.6 | 50.0 |
| trans-1,2-Dichloroethene | 0.21247 | 0.21839 | 0.01 | 2.8 | 50.0 |
| cis-1,2-Dichloroethene | 0.24347 | 0.24691 | 0.01 | 1.4 | 50.0 |
| Benzene | 0.91241 | 0.88566 | 0.01 | -2.9 | 50.0 |
| Trichloroethene | 0.23579 | 0.25248 | 0.01 | 7.1 | 50.0 |
| Toluene | 0.74189 | 0.72709 | 0.01 | -2.0 | 50.0 |
| Ethylbenzene | 1.43108 | 1.48272 | 0.01 | 3.6 | 50.0 |
| m+p-Xylene | 0.55713 | 0.57711 | 0.01 | 3.6 | 50.0 |
| o-Xylene | 0.55407 | 0.57400 | 0.01 | 3.6 | 50.0 |
| Xylene (Total) | 0.55611 | 0.57607 | 0.01 | 3.6 | 50.0 |

| Surrogate Standards | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Dibromofluoromethane | 0.24416 | 0.27229 | 0.01 | 11.5 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06071 | 0.06168 | 0.01 | 1.6 | 20.5 |
| Toluene-d8 | 1.27666 | 1.25736 | 0.01 | -1.5 | 20.5 |
| 4-Bromofluorobenzene | 0.47452 | 0.51236 | 0.01 | 8.0 | 20.5 |

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR186___

Lab File ID (Standard): ll18c01.d Date Analyzed: 07/18/17

Instrument ID: HP09915 Time Analyzed: 08:01

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 153283 | 3.584 | 751819 | 7.054 | 621821 | 10.709 | 347358 | 12.638 |
| UPPER LIMIT | 306566 | 4.084 | 1503638 | 7.554 | 1243642 | 11.209 | 694716 | 13.138 |
| LOWER LIMIT | 76642 | 3.084 | 375910 | 6.554 | 310910 | 10.209 | 173679 | 12.138 |
| LAB SAMPLE ID | | | | | | | | |
| 01 VBLKL63 | 152545 | 3.581 | 712112 | 7.047 | 565947 | 10.709 | 318271 | 12.642 |
| 02 LCSL63 | 149139 | 3.568 | 723967 | 7.047 | 578171 | 10.709 | 326331 | 12.642 |
| 03 9091105 | 164118 | 3.568 | 739537 | 7.044 | 587160 | 10.709 | 324120 | 12.642 |
| 04 9091106 | 141266 | 3.571 | 668621 | 7.050 | 538408 | 10.709 | 309554 | 12.642 |
| 05 9091107 | 140123 | 3.574 | 670369 | 7.050 | 536832 | 10.709 | 296986 | 12.638 |
| 06 9091108 | 140819 | 3.584 | 671134 | 7.053 | 531433 | 10.709 | 293359 | 12.642 |
| 07 9091109 | 135292 | 3.574 | 661451 | 7.050 | 549083 | 10.709 | 298560 | 12.642 |
| 08 9091110 | 131592 | 3.581 | 655261 | 7.054 | 571525 | 10.709 | 313678 | 12.638 |
| 09 9091111 | 126747 | 3.590 | 646890 | 7.053 | 526481 | 10.709 | 283813 | 12.638 |
| 10 9091112MS | 137385 | 3.571 | 683188 | 7.047 | 549361 | 10.709 | 314237 | 12.638 |
| 11 9091113MSD | 146724 | 3.578 | 708341 | 7.050 | 595410 | 10.709 | 362950 | 12.642 |
| 12 9091114 | 144422 | 3.587 | 704067 | 7.053 | 559590 | 10.709 | 313426 | 12.642 |
| 13 9100479 | 134458 | 3.581 | 666120 | 7.050 | 532234 | 10.709 | 296121 | 12.638 |
| 14 9100481 | 133992 | 3.562 | 658449 | 7.050 | 525324 | 10.709 | 287047 | 12.642 |
| 15 9100491 | 126833 | 3.574 | 655962 | 7.050 | 527959 | 10.709 | 291140 | 12.642 |
| 16 9100492 | 133424 | 3.574 | 656761 | 7.054 | 528781 | 10.709 | 291056 | 12.642 |
| 17 9100494 | 134046 | 3.574 | 636256 | 7.050 | 522967 | 10.709 | 291596 | 12.642 |
| 18 9100495 | 126056 | 3.571 | 640085 | 7.053 | 540056 | 10.709 | 292322 | 12.642 |
| 19 9100496 | 127152 | 3.574 | 633781 | 7.050 | 517582 | 10.709 | 286288 | 12.642 |
| 20 SECC050 | 130728 | 3.591 | 677229 | 7.053 | 547969 | 10.709 | 314938 | 12.638 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

# Sample Data

# Volatiles by GC/MS

**Fraction: Volatiles by GC/MS**

| 11997: BTEX 8260C Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Benzene | .5 | 1 | 1 | ug/l |
| Toluene | .5 | 1 | 1 | ug/l |
| Ethylbenzene | .5 | 1 | 1 | ug/l |
| Xylene (Total) | .5 | 1 | 1 | ug/l |

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18s12.d Injection date and time: **18-JUL-2017 12:59**
Data file Sample Info. Line: 18601;9100479;1;0;;KR186;DODWW;;ll18b01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 13:16 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.003) | 653 | 65 | 134458 ( -12) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.003) | 1732 | 96 | 666120 ( -11) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 532234 ( -14) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 296121 ( -15) | 50.00 | |

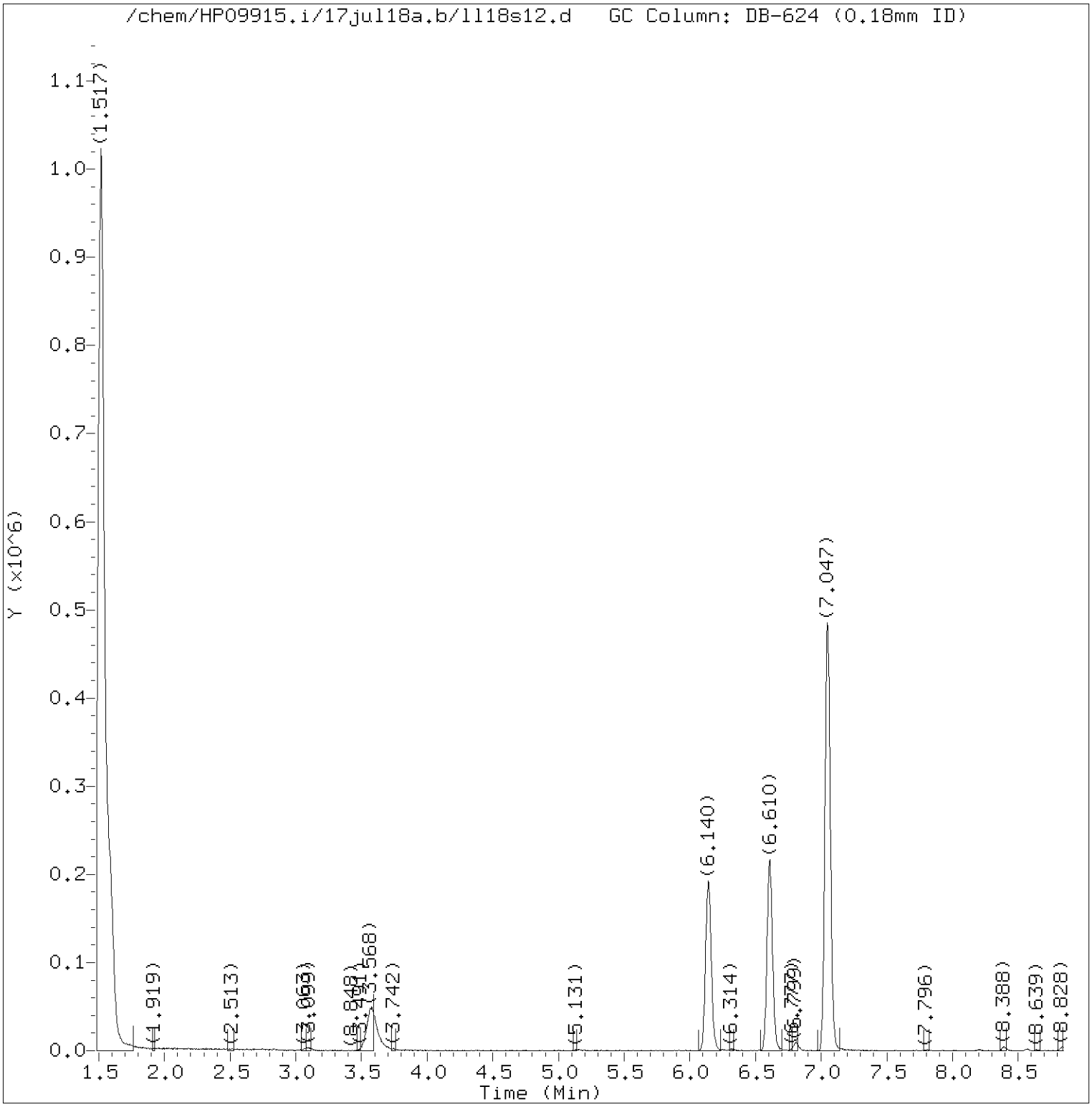
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.001) | 113 | 179543 | 55.197 | 110% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 41804 | 51.683 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 659868 | 48.557 | 97% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 256021 | 50.686 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.629( 0.000) | 78 | 6138 | 0.505 | 0.51 | | J | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 07/18/2017 at 13:44. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

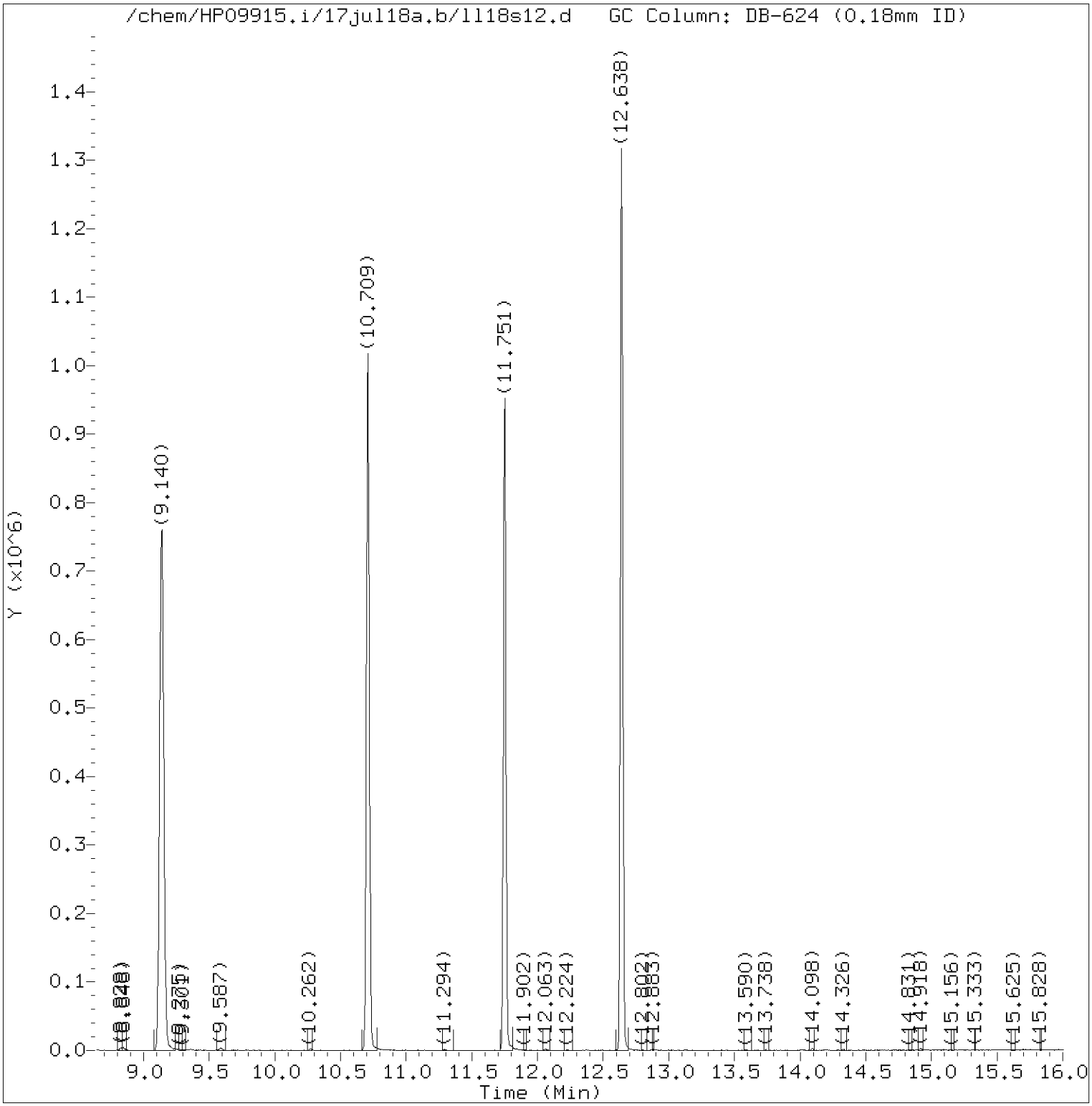
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s12.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 12:59 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 13:16 Automation

Sample Name: 18601 Lab Sample ID: 9100479

Digitally signed by Jennifer K. Howe
on 07/18/2017 at 13:44.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s12.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 12:59 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 13:16 Automation

Sample Name: 18601 Lab Sample ID: 9100479

Digitally signed by Jennifer K. Howe
on 07/18/2017 at 13:44.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s12.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 12:59 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 13:16 Automation

Sample Name: 18601 Lab Sample ID: 9100479

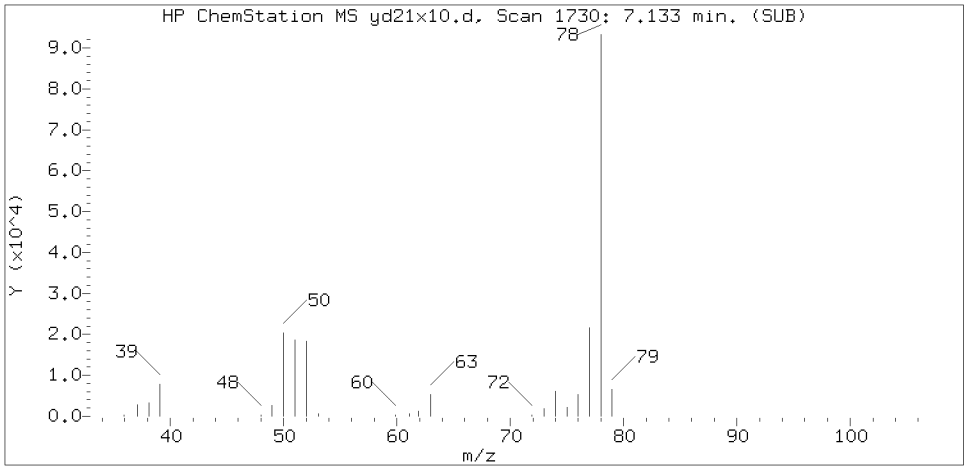
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 134458 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 179543 | 55.197 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 41804 | 51.683 |
| 60) Benzene | (2) | 6.629 | 78 | 6138 | 0.505 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 666120 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 659868 | 48.557 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 532234 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 256021 | 50.686 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 296121 | 50.000 |

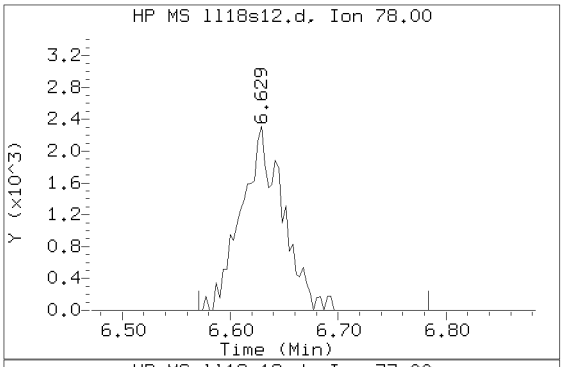
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



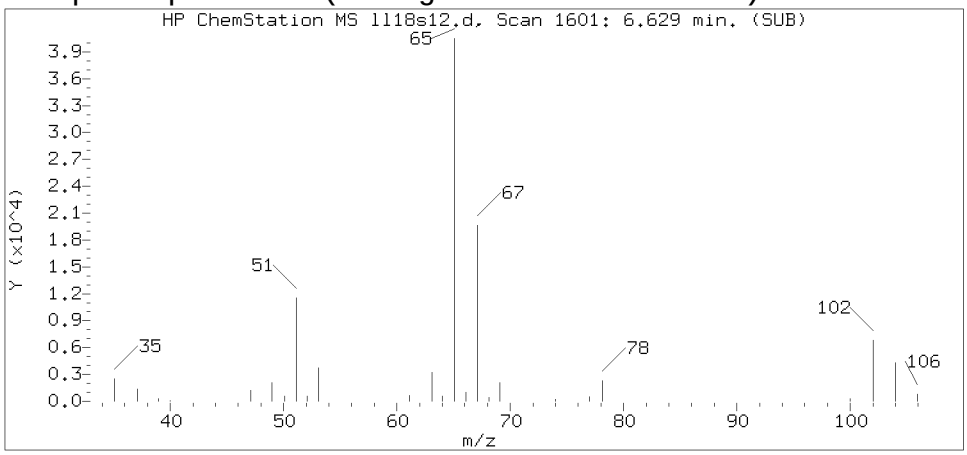
Digitally signed by Jennifer K. Howe
on 07/18/2017 at 13:44.
Target 3.5 esignature user ID: jkh09052

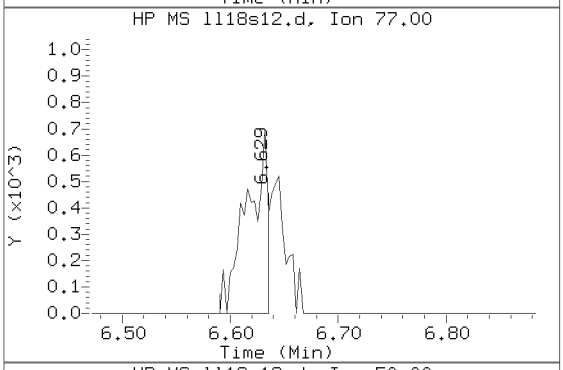
Reference Standard Spectrum for Benzene

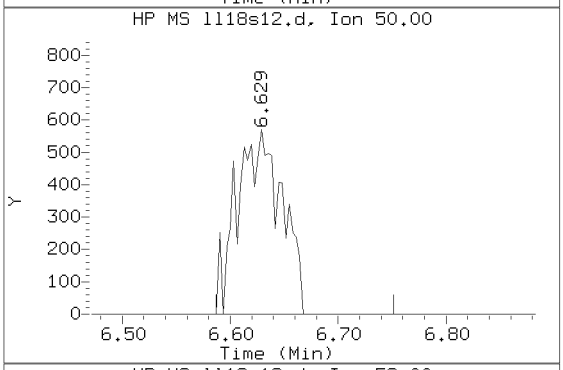


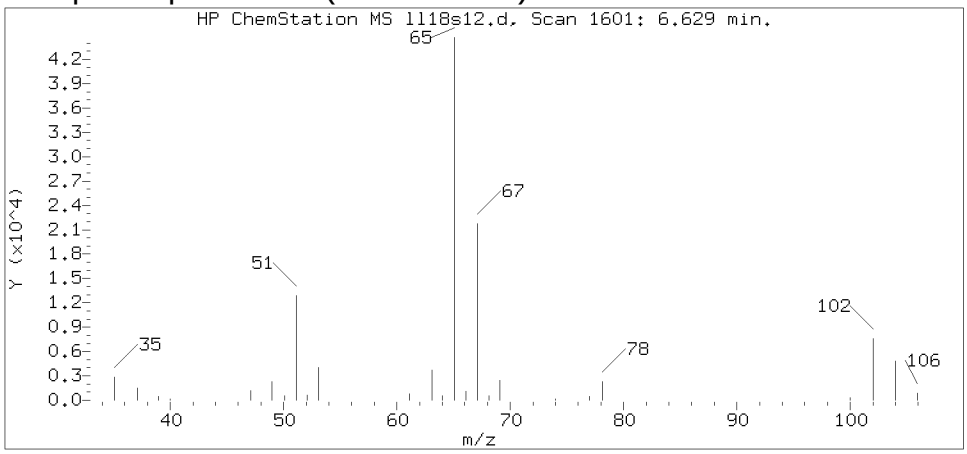

Sample Spectrum (Background Subtracted)

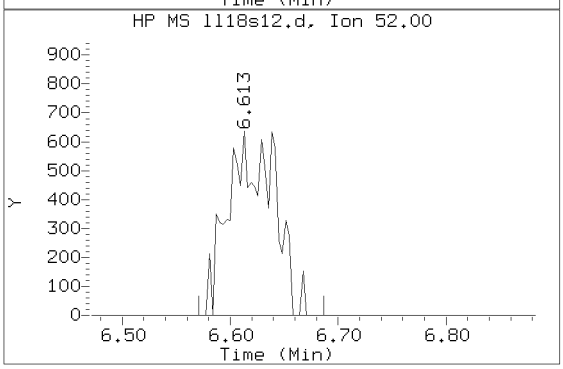



Sample Spectrum (Unaltered)




Data File: /chem/HP09915.i/17jul18a.b/ll18s12.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 12:59 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 13:16 Automation

Sample Name: 18601 Lab Sample ID: 9100479

Compound Number : 60
Compound Name : Benzene
Scan Number : 1601
Retention Time (minutes): 6.629
Relative Retention Time : 0.00048
Quant Ion : 78.00
Area (flag) : 6138
On-Column Amount (ng) : 0.5050

Digitally signed by Jennifer K. Howe on 07/18/2017 at 13:44.
Target 3.5 esignature user ID: jkh09052

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18s13.d Injection date and time: **18-JUL-2017 13:21**
Data file Sample Info. Line: 18603;9100481;1;0;;KR186;DODWW;;ll18b01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 13:38 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.562( 0.022) | 647 | 65 | 133992 ( -13) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.003) | 1732 | 96 | 658449 ( -12) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 525324 ( -16) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642(-0.003) | 3471 | 152 | 287047 ( -17) | 50.00 | |

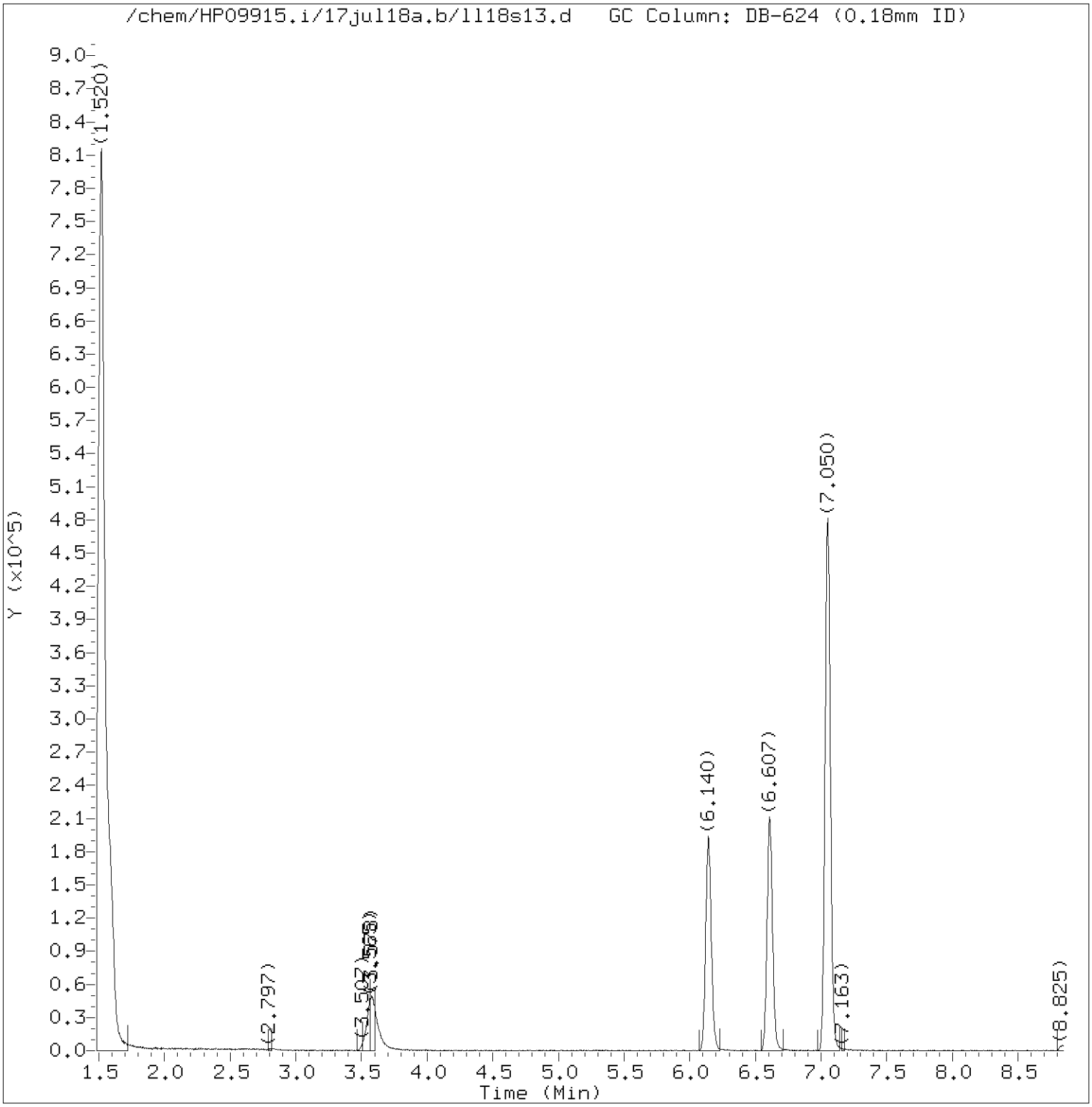
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 176949 | 55.033 | 110% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 41380 | 51.755 | 104% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 656997 | 48.981 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 251888 | 50.524 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 07/18/2017 at 13:44. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

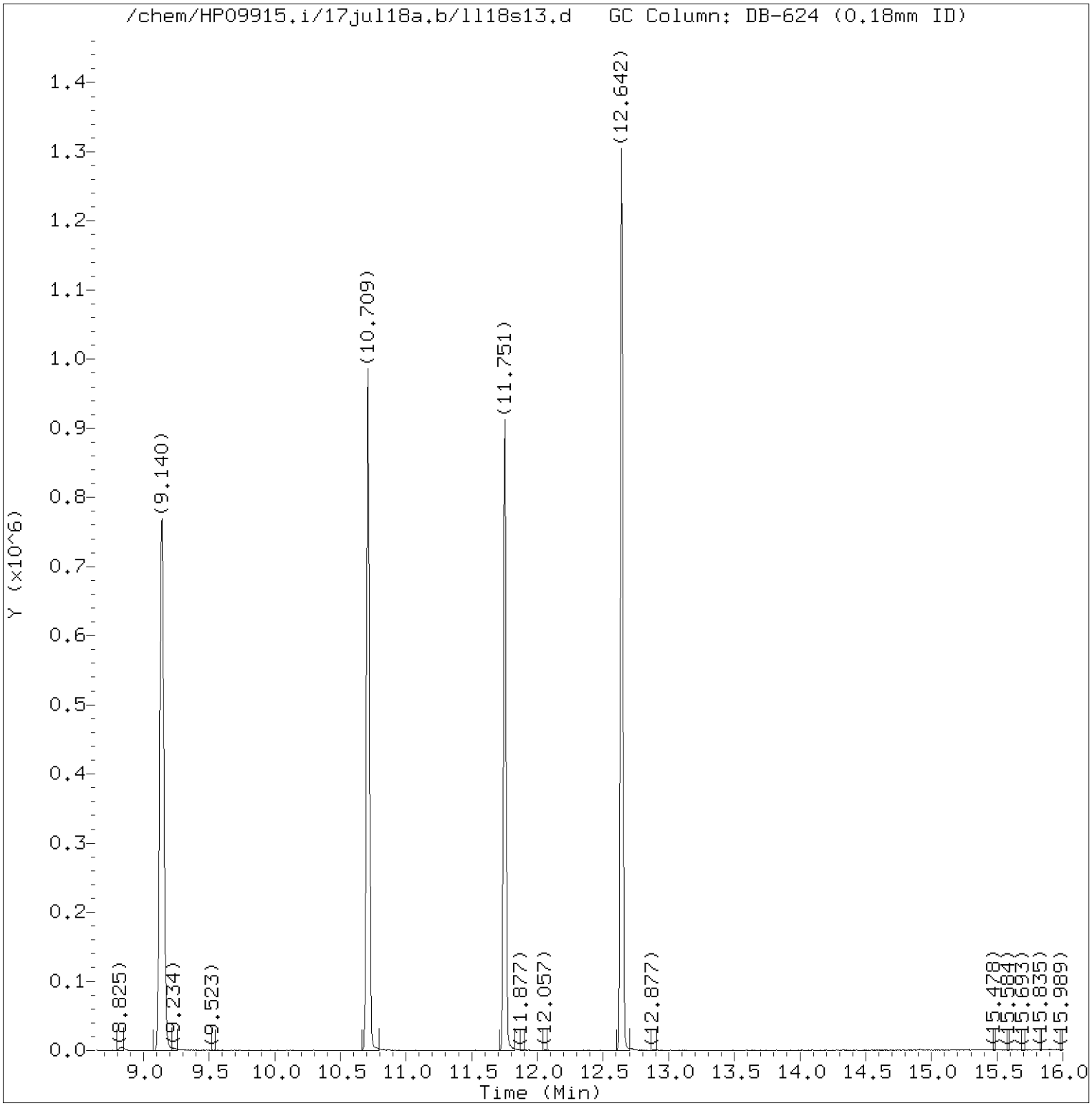
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s13.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 13:21 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 13:38 Automation

Sample Name: 18603 Lab Sample ID: 9100481

Digitally signed by Jennifer K. Howe
on 07/18/2017 at 13:44.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s13.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 13:21 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 13:38 Automation

Sample Name: 18603 Lab Sample ID: 9100481

Digitally signed by Jennifer K. Howe
on 07/18/2017 at 13:44.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s13.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 13:21 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 13:38 Automation

Sample Name: 18603 Lab Sample ID: 9100481

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.562 | 65 | 133992 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 176949 | 55.033 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 41380 | 51.755 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 658449 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 656997 | 48.981 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 525324 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 251888 | 50.524 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 287047 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 07/18/2017 at 13:44.
Target 3.5 esignature user ID: jkh09052

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18s14.d Injection date and time: **18-JUL-2017 13:42**
Data file Sample Info. Line: 18613;9100491;1;0;;KR186;DODWW;;ll18b01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 14:00 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.575( 0.010) | 651 | 65 | 126833 ( -17) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.003) | 1732 | 96 | 655962 ( -13) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 527959 ( -15) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642(-0.003) | 3471 | 152 | 291140 ( -16) | 50.00 | |

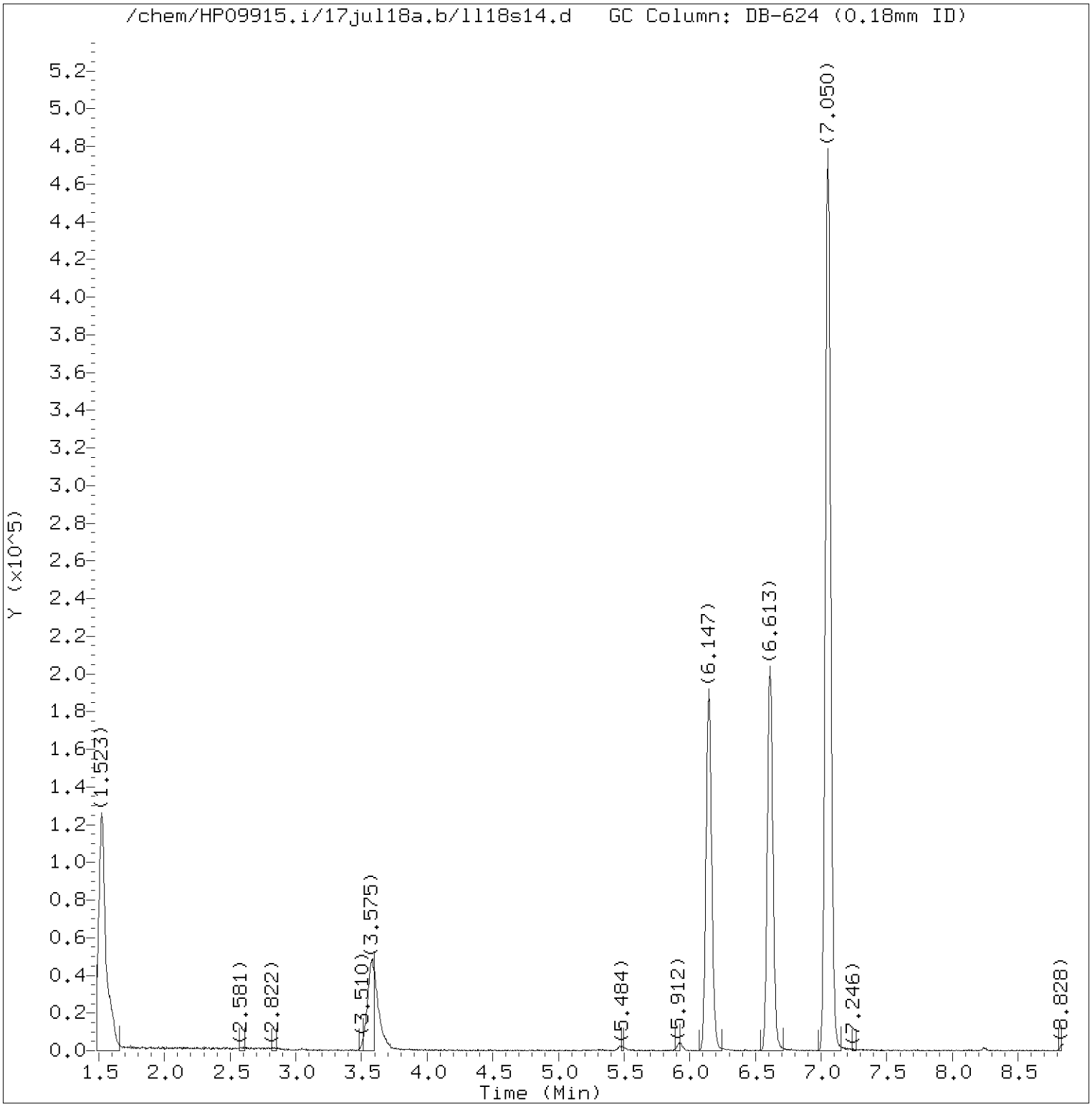
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 177605 | 55.446 | 111% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 40152 | 50.410 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 650215 | 48.234 | 96% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 251619 | 50.218 | 100% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Matthew S. Krause on 07/18/2017 at 14:33. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

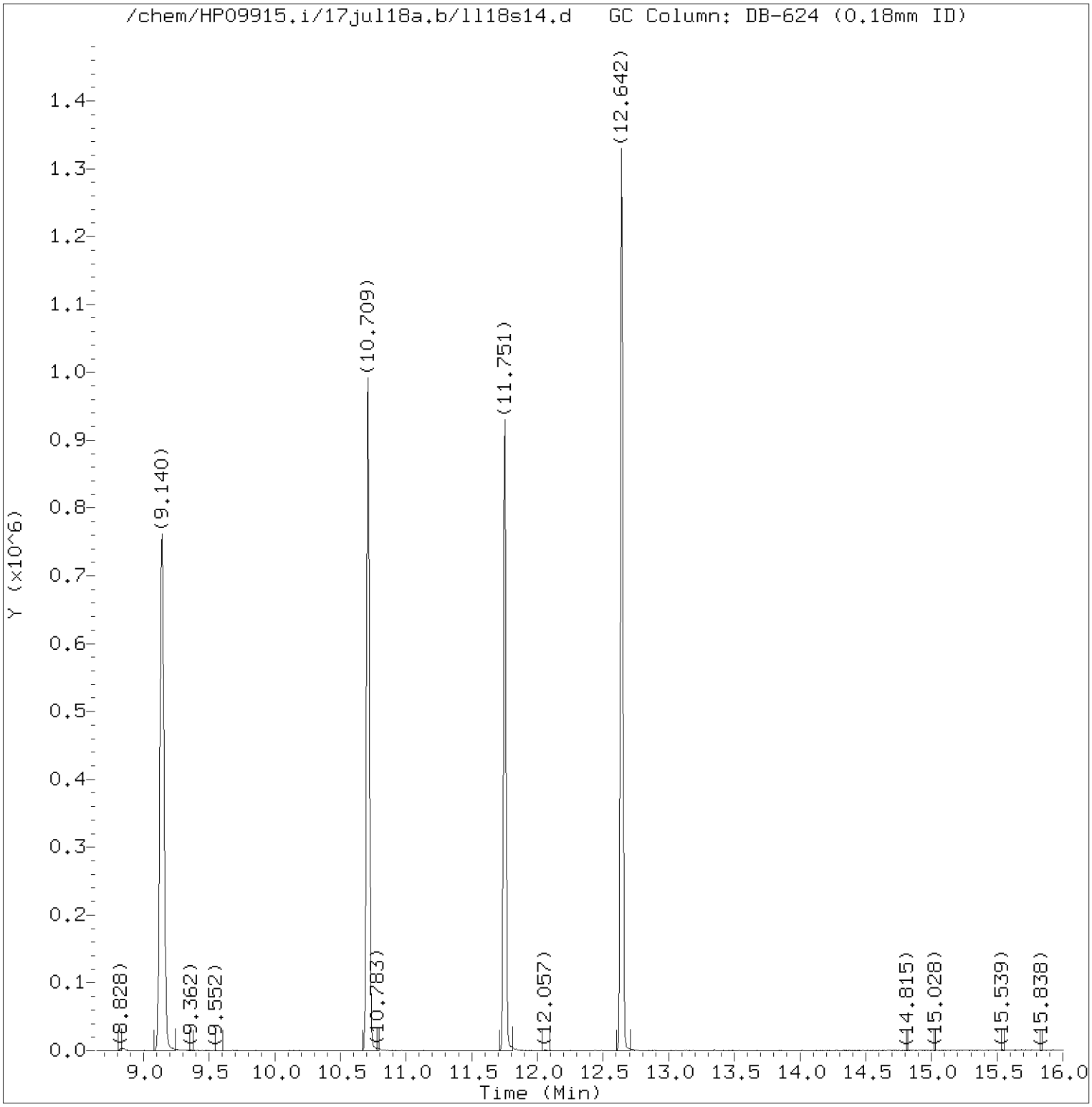
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s14.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 13:42 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:00 Automation

Sample Name: 18613 Lab Sample ID: 9100491

Digitally signed by Matthew S. Krause
on 07/18/2017 at 14:33.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s14.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 13:42 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:00 Automation

Sample Name: 18613 Lab Sample ID: 9100491

Digitally signed by Matthew S. Krause
on 07/18/2017 at 14:33.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s14.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 13:42 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:00 Automation

Sample Name: 18613 Lab Sample ID: 9100491

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 126833 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 177605 | 55.446 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 40152 | 50.410 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 655962 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 650215 | 48.234 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 527959 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 251619 | 50.218 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 291140 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 07/18/2017 at 14:33.
Target 3.5 esignature user ID: msk07970

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18s15.d Injection date and time: **18-JUL-2017 14:04**
Data file Sample Info. Line: 18614;9100492;1;0;;KR186;DODWW;;ll18b01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 14:22 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.575( 0.010) | 651 | 65 | 133424 ( -13) | 250.00 | |
| 66) Fluorobenzene | 7.054( 0.000) | 1733 | 96 | 656761 ( -13) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 528781 ( -15) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642(-0.003) | 3471 | 152 | 291056 ( -16) | 50.00 | |

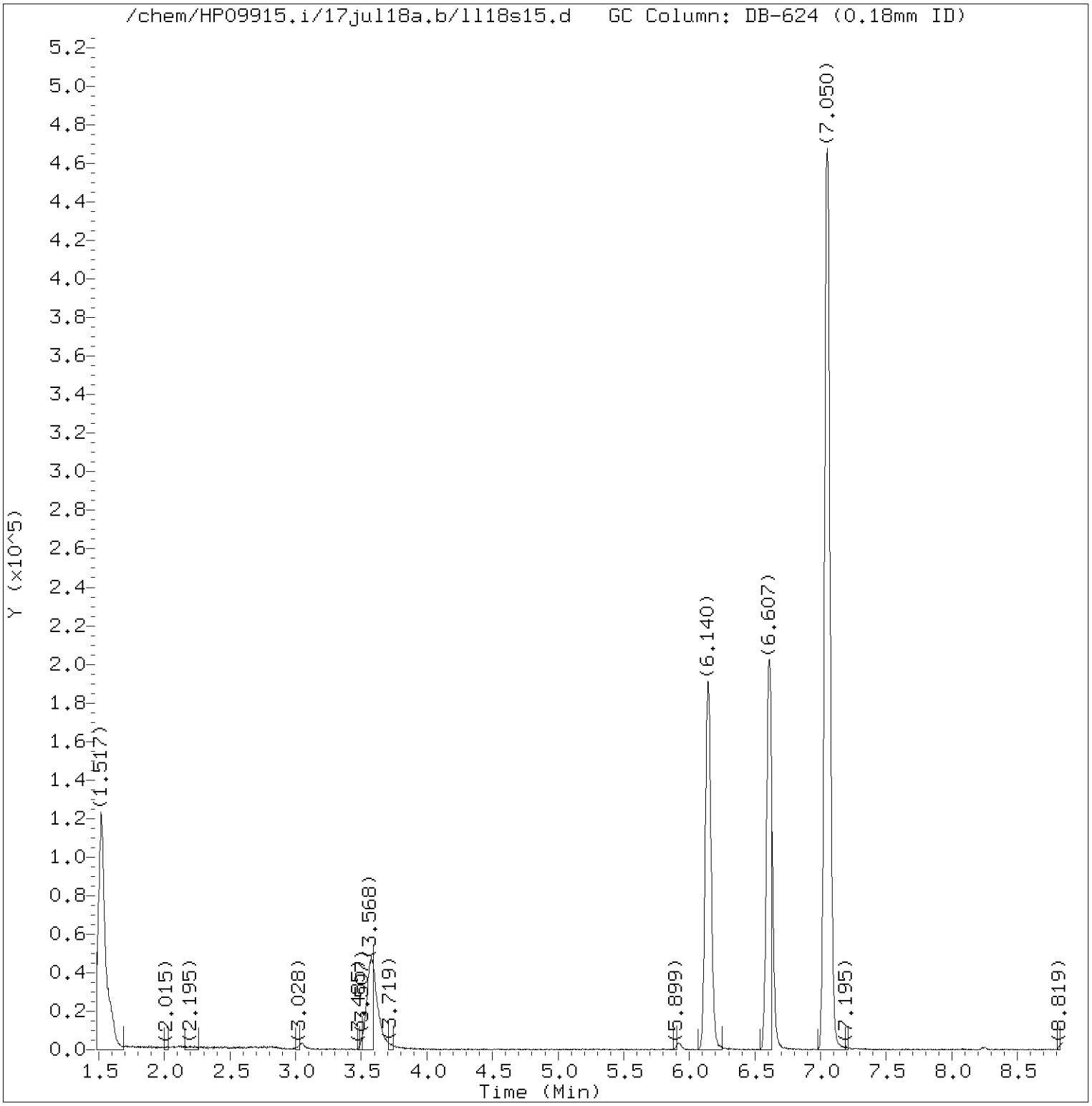
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.001) | 113 | 182882 | 57.024 | 114% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613( 0.000) | 102 | 42252 | 52.981 | 106% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 648349 | 48.021 | 96% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 253188 | 50.452 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Matthew S. Krause on 07/18/2017 at 14:33. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

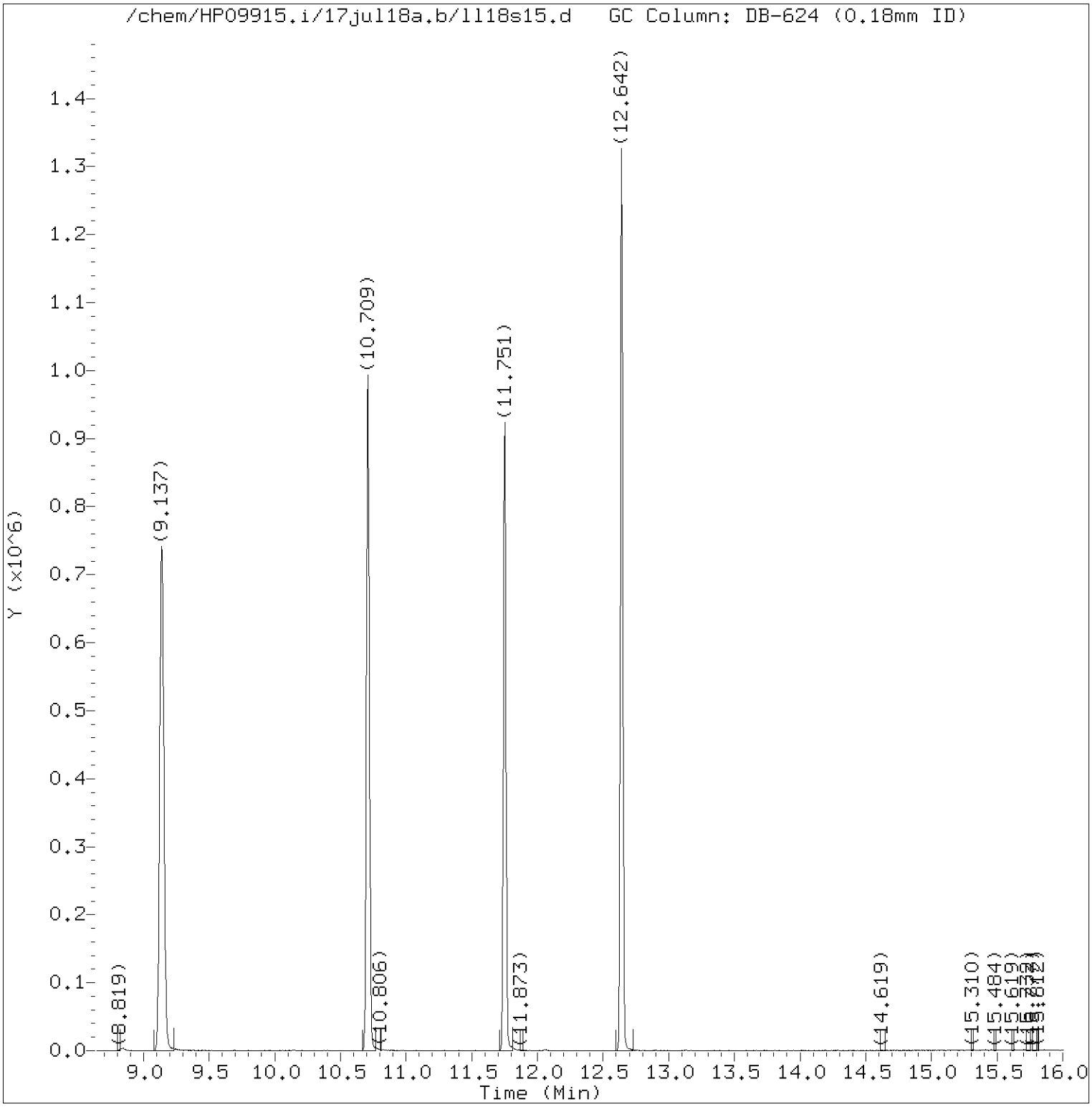
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s15.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:04 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:22 Automation

Sample Name: 18614 Lab Sample ID: 9100492

Digitally signed by Matthew S. Krause
on 07/18/2017 at 14:33.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s15.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:04 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:22 Automation

Sample Name: 18614 Lab Sample ID: 9100492

Digitally signed by Matthew S. Krause
on 07/18/2017 at 14:33.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s15.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:04 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:22 Automation

Sample Name: 18614 Lab Sample ID: 9100492

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 133424 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 182882 | 57.024 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 42252 | 52.981 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 656761 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 648349 | 48.021 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 528781 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 253188 | 50.452 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 291056 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 07/18/2017 at 14:33.
Target 3.5 esignature user ID: msk07970

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18s16.d Injection date and time: **18-JUL-2017 14:26**
Data file Sample Info. Line: 18616;9100494;1;0;;KR186;DODWW;;ll18b01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 14:44 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.574( 0.010) | 651 | 65 | 134046 ( -13) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.003) | 1732 | 96 | 636256 ( -15) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 522967 ( -16) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642(-0.003) | 3471 | 152 | 291596 ( -16) | 50.00 | |

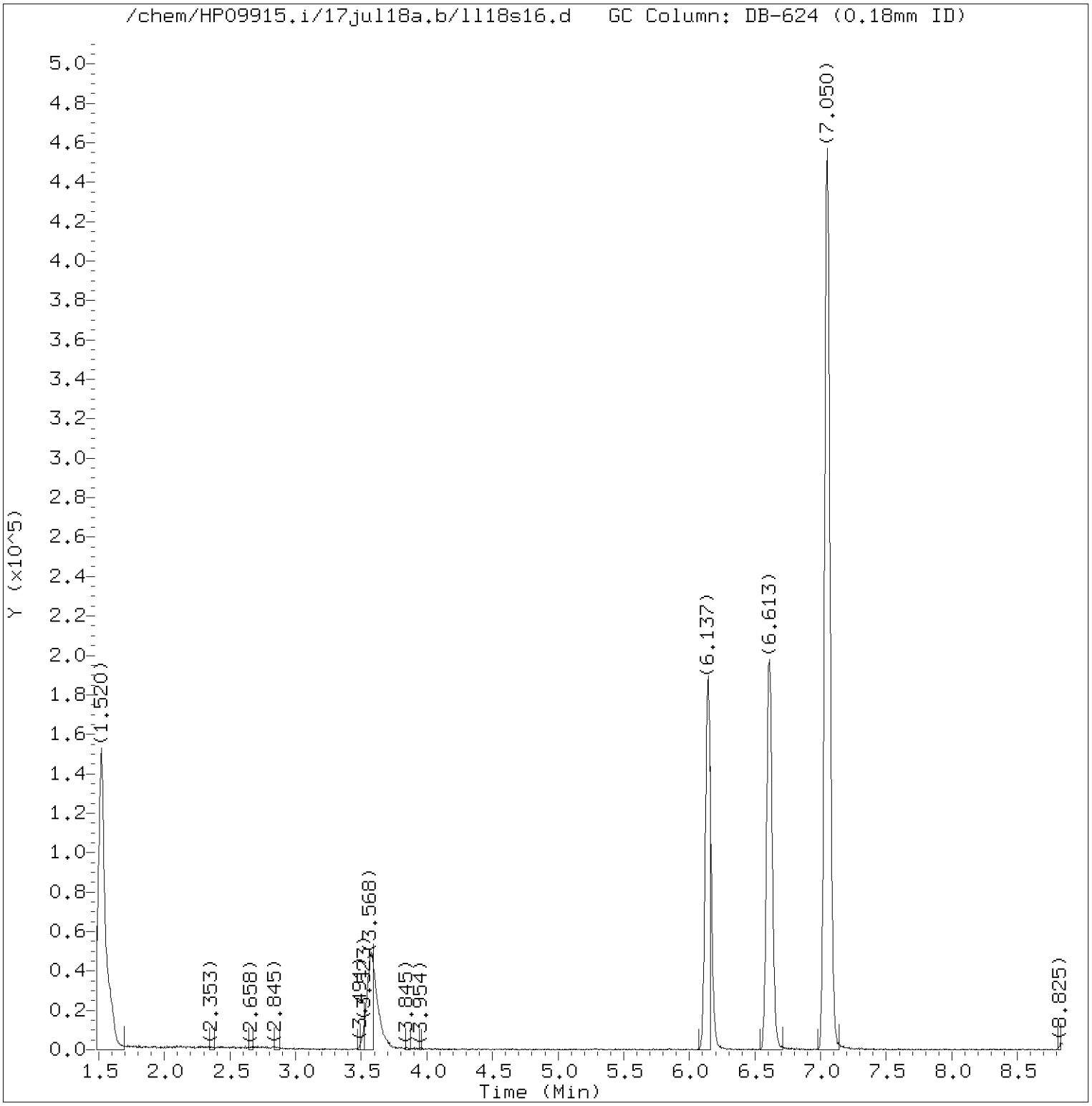
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.001) | 113 | 176136 | 56.691 | 113% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613( 0.000) | 102 | 40402 | 52.294 | 105% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 628920 | 47.100 | 94% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 252377 | 50.850 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Matthew S. Krause on 07/18/2017 at 15:43. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

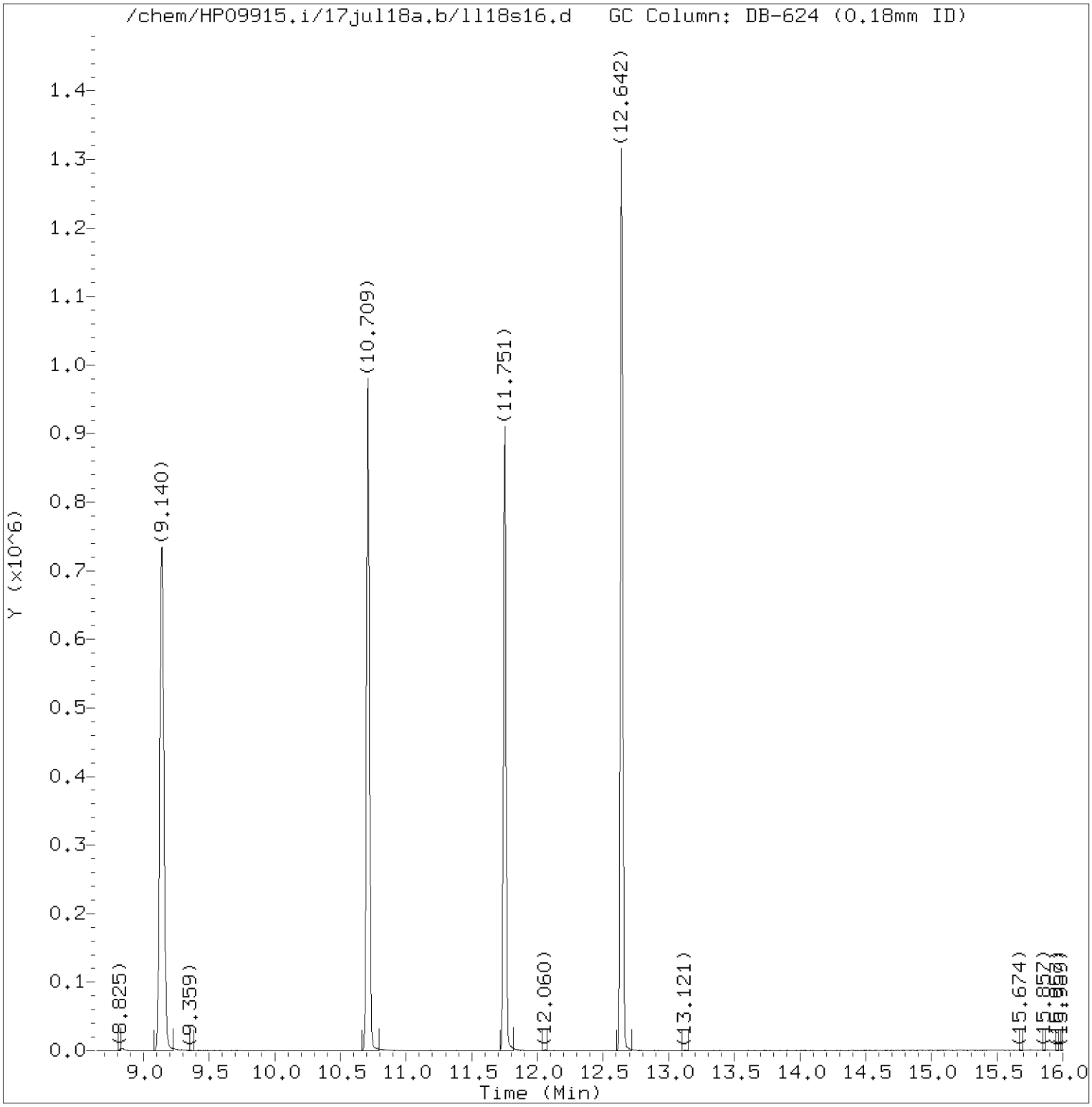
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s16.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:26 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:44 Automation

Sample Name: 18616 Lab Sample ID: 9100494

Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s16.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:26 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:44 Automation

Sample Name: 18616 Lab Sample ID: 9100494

Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s16.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:26 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 14:44 Automation

Sample Name: 18616 Lab Sample ID: 9100494

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 134046 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 176136 | 56.691 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 40402 | 52.294 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 636256 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 628920 | 47.100 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 522967 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 252377 | 50.850 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 291596 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18s17.d Injection date and time: **18-JUL-2017 14:48**
Data file Sample Info. Line: 18617;9100495;1;0;;KR186;DODWW;;ll18b01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 15:06 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.013) | 650 | 65 | 126056 ( -18) | 250.00 | |
| 66) Fluorobenzene | 7.053( 0.000) | 1733 | 96 | 640085 ( -15) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 540056 ( -13) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642(-0.003) | 3471 | 152 | 292322 ( -16) | 50.00 | |

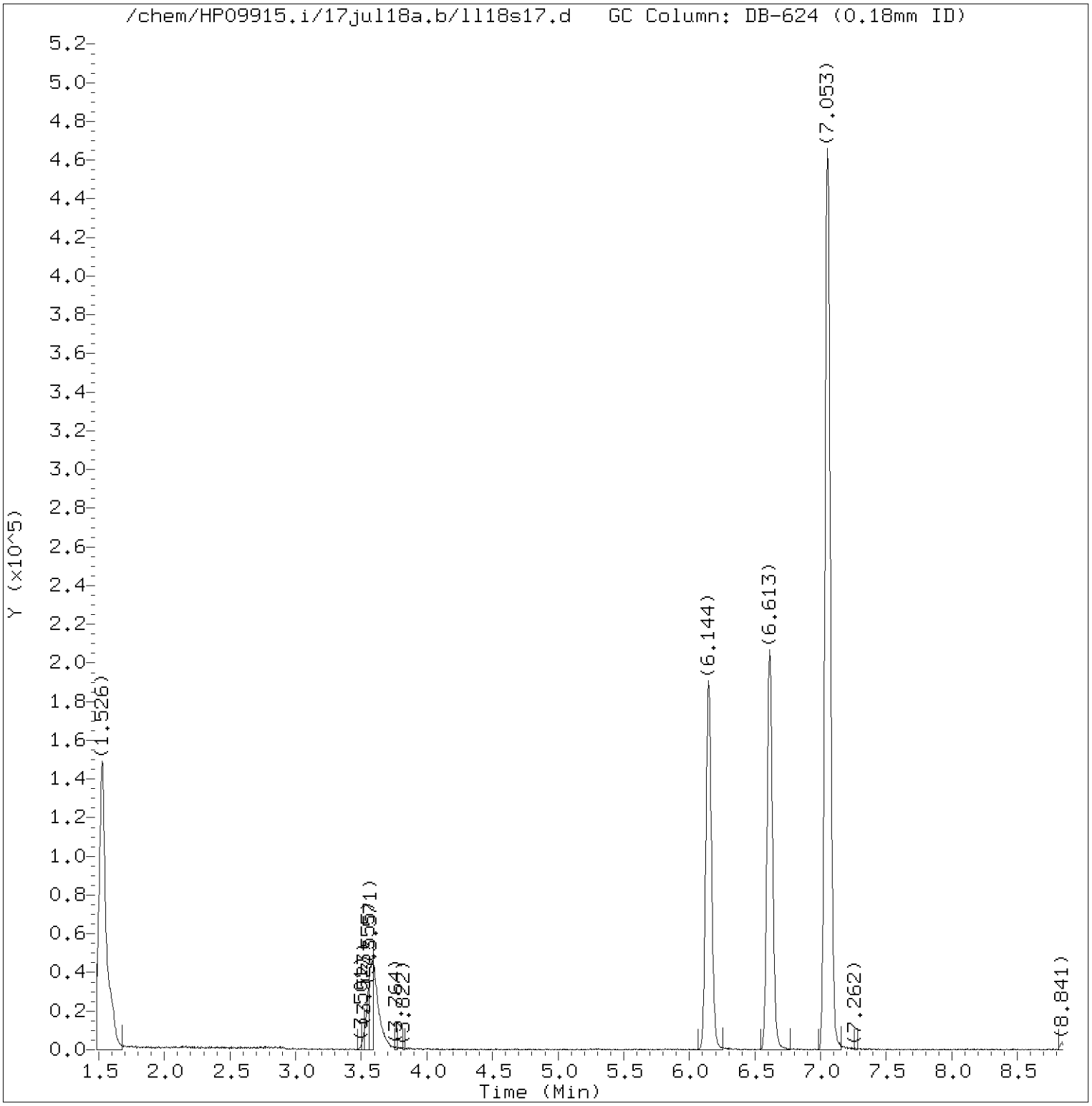
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 176031 | 56.318 | 113% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 40087 | 51.576 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 631233 | 45.777 | 92% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 261348 | 50.991 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Matthew S. Krause on 07/18/2017 at 15:43. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

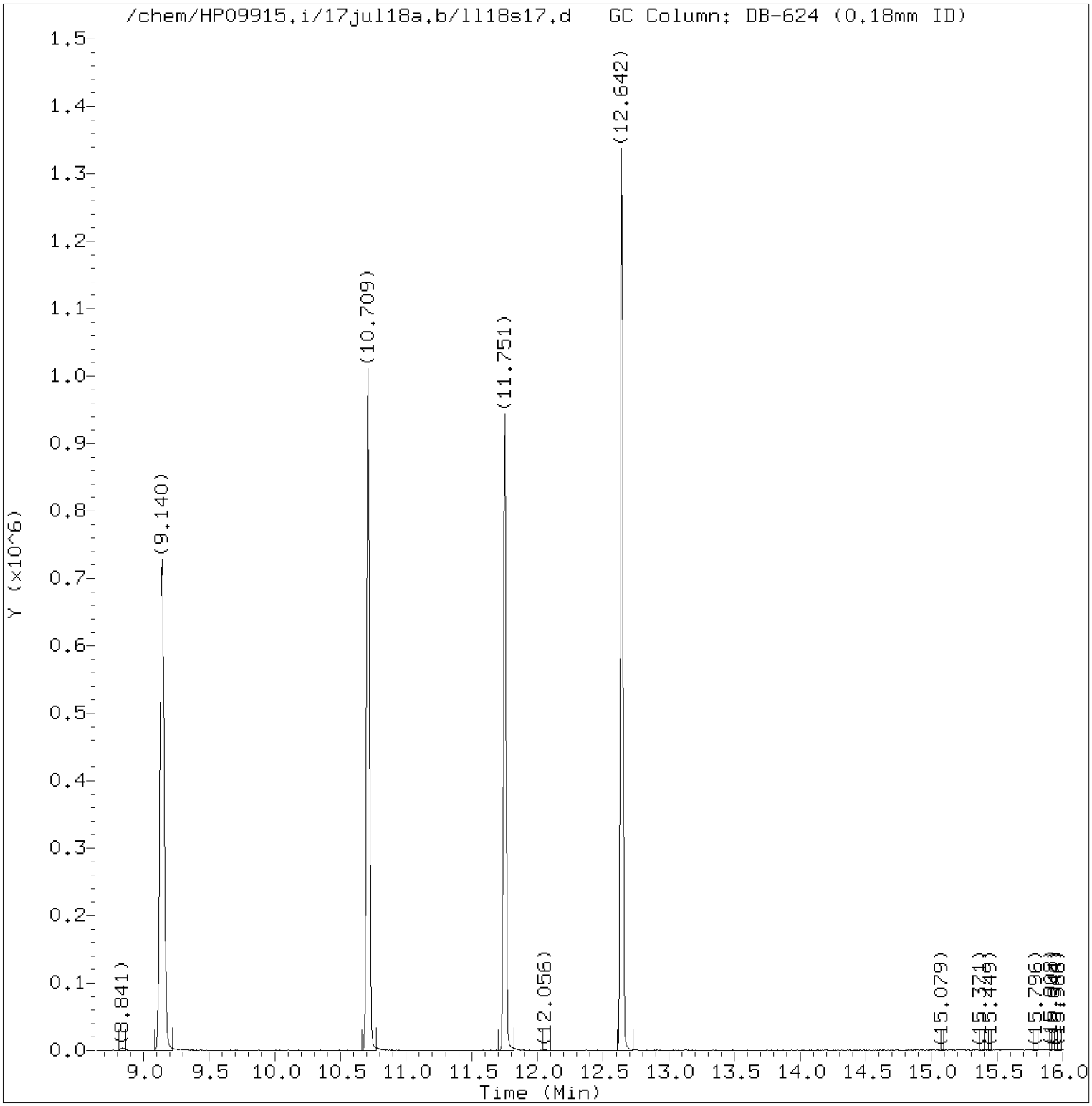
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s17.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:48 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:06 Automation

Sample Name: 18617 Lab Sample ID: 9100495

Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s17.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:48 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:06 Automation

Sample Name: 18617 Lab Sample ID: 9100495

Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s17.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 14:48 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:06 Automation

Sample Name: 18617 Lab Sample ID: 9100495

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 126056 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 176031 | 56.318 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 40087 | 51.576 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 640085 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 631233 | 45.777 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 540056 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 261348 | 50.991 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 292322 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18s18.d Injection date and time: **18-JUL-2017 15:10**
Data file Sample Info. Line: 18618;9100496;1;0;;KR186;DODWW;;ll18b01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 15:28 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.575( 0.010) | 651 | 65 | 127152 ( -17) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.003) | 1732 | 96 | 633781 ( -16) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 517582 ( -17) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642(-0.003) | 3471 | 152 | 286288 ( -18) | 50.00 | |

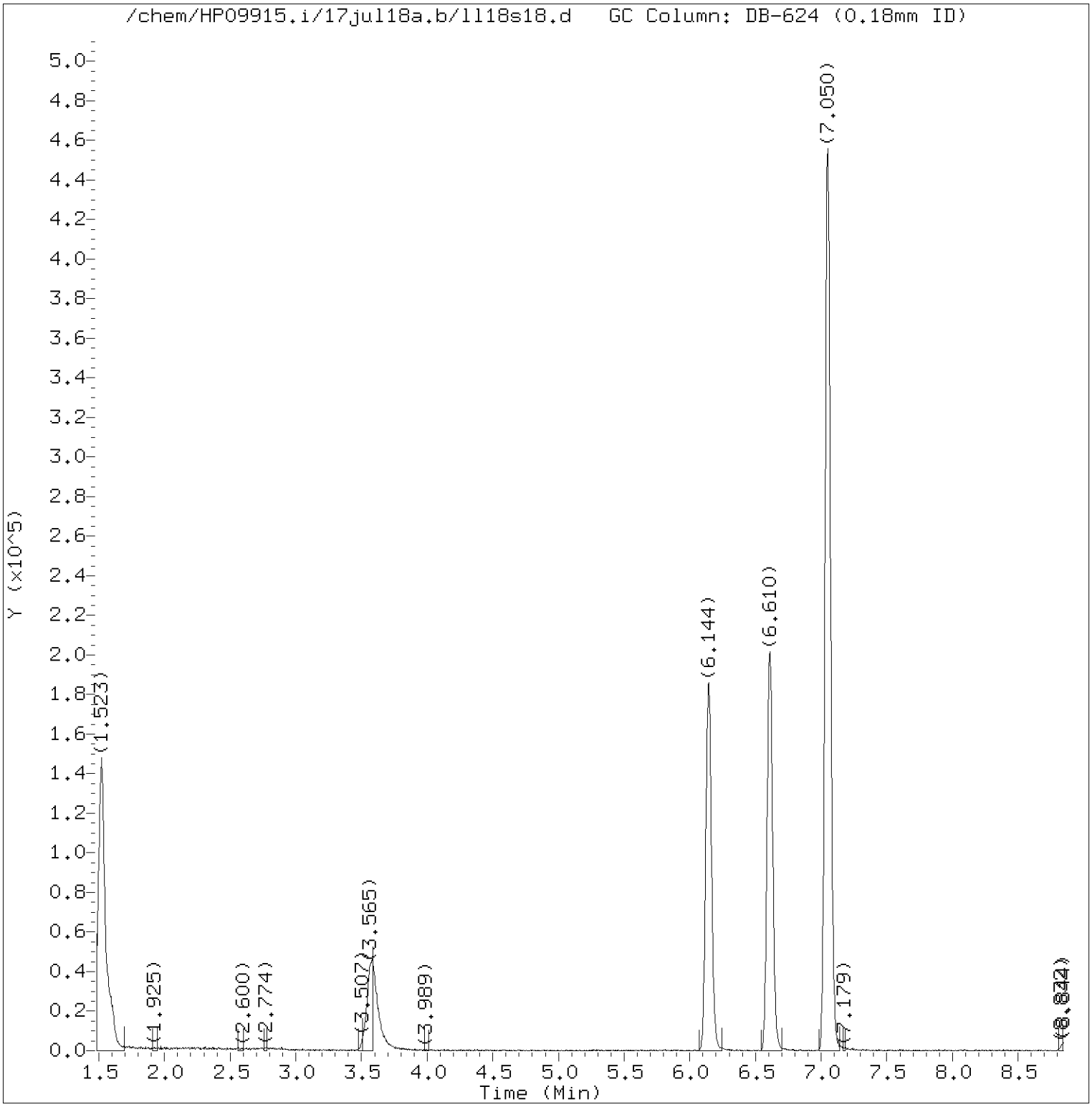
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 174819 | 56.487 | 113% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 41257 | 53.609 | 107% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 630936 | 47.742 | 95% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 248078 | 50.504 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Matthew S. Krause on 07/18/2017 at 15:43. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

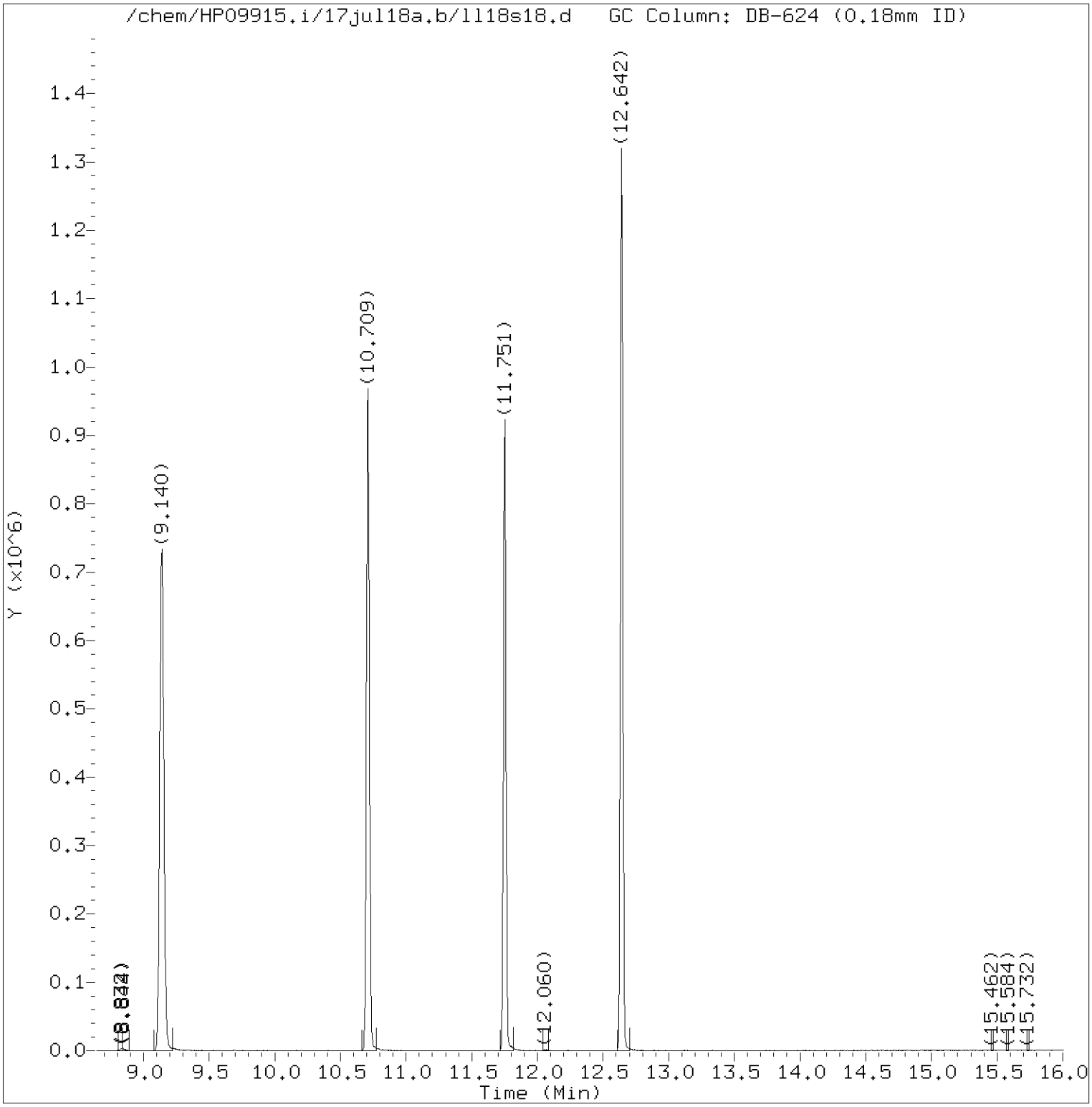
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s18.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 15:10 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:28 Automation

Sample Name: 18618 Lab Sample ID: 9100496

Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s18.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 15:10 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:28 Automation

Sample Name: 18618 Lab Sample ID: 9100496

Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18s18.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 15:10 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:28 Automation

Sample Name: 18618 Lab Sample ID: 9100496

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 127152 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 174819 | 56.487 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 41257 | 53.609 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 633781 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 630936 | 47.742 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 517582 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 248078 | 50.504 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 286288 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:43.
Target 3.5 esignature user ID: msk07970

# Standards Data

# Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17APR26A\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| KAS02648 | LA26T01.D | 50NG BFB | 04/26/2017 | 12:45 | | |
| KAS02648 | LA26X01.D | BLK | 04/26/2017 | 12:58 | | |
| KAS02648 | LA26I01.D | VSTD300 | 04/26/2017 | 13:20 | | |
| KAS02648 | LA26I02.D | VSTD100 | 04/26/2017 | 13:42 | | |
| KAS02648 | LA26I03.D | VSTD050 | 04/26/2017 | 14:04 | | |
| KAS02648 | LA26I04.D | VSTD020 | 04/26/2017 | 14:26 | | |
| KAS02648 | LA26I05.D | VSTD010 | 04/26/2017 | 14:48 | | |
| KAS02648 | LA26I06.D | VSTD004 | 04/26/2017 | 15:10 | | |
| KAS02648 | LA26I07.D | VSTD001 | 04/26/2017 | 15:32 | | |
| KAS02648 | LA26M01.D | MDL0.5 | 04/26/2017 | 15:54 | | |
| KAS02648 | LA26C01.D | VSTD050 | 04/26/2017 | 16:41 | L171161AA | |
| KAS02648 | LA26B01.D | VBLKL46 | 04/26/2017 | 17:03 | L171161AA | |
| KAS02648 | LA26S01.D | LCSL46 | 04/26/2017 | 17:25 | L171161AA | |
| KAS02648 | LA26S02.D | LCSL47 | 04/26/2017 | 17:47 | L171161AA | |
| KAS02648 | LA26M02.D | MDL001 | 04/26/2017 | 18:09 | L171161AA | |
| KAS02648 | LA26S01A.D | LCSL46 | 04/26/2017 | 18:34 | L171161AA | |
| KAS02648 | LA26S32.D | 8944378 | 04/26/2017 | 19:15 | L171162AA | |
| KAS02648 | LA26S33.D | 8944379 | 04/26/2017 | 19:37 | L171162AA | |
| KAS02648 | LA26S34.D | 8947184 | 04/26/2017 | 19:59 | L171162AA | |
| KAS02648 | LA26S35.D | 8944352 | 04/26/2017 | 20:21 | L171162AA | |
| KAS02648 | LA26S36.D | 8944353MS | 04/26/2017 | 20:43 | L171162AA | |
| KAS02648 | LA26S37.D | 8944354MSD | 04/26/2017 | 21:05 | L171162AA | |
| KAS02648 | LA26S38.D | 8944360 | 04/26/2017 | 21:27 | L171162AA | |
| KAS02648 | LA26S39.D | 8944366 | 04/26/2017 | 21:49 | L171162AA | |
| KAS02648 | LA26S40.D | 8944368 | 04/26/2017 | 22:11 | L171162AA | |
| KAS02648 | LA26S41.D | 8944370 | 04/26/2017 | 22:33 | L171162AA | |
| KAS02648 | LA26S42.D | 8947174 | 04/26/2017 | 22:55 | L171162AA | |
| KAS02648 | LA26S43.D | 8947180 | 04/26/2017 | 23:17 | L171162AA | |
| KAS02648 | LA26EC1.D | SECC050 | 04/26/2017 | 23:38 | L171162AA | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - D:\DATA\17JUL18A\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| JKH09052 | LL18T01.D | 50NG BFB | 07/18/2017 | 07:26 | | |
| jkh09052 | LL18X00.D | VBLKL63 | 07/18/2017 | 07:39 | L171991AA | |
| jkh09052 | LL18C01.D | VSTD050 | 07/18/2017 | 08:01 | L171991AA | |
| jkh09052 | LL18B01.D | VBLKL63 | 07/18/2017 | 08:23 | L171991AA | |
| jkh09052 | LL18L01.D | LCSL63 | 07/18/2017 | 08:45 | L171991AA | |
| jkh09052 | LL18S02.D | 9091105 | 07/18/2017 | 09:20 | L171991AA | |
| jkh09052 | LL18S03.D | 9091106 | 07/18/2017 | 09:42 | L171991AA | |
| jkh09052 | LL18S04.D | 9091107 | 07/18/2017 | 10:04 | L171991AA | |
| jkh09052 | LL18S05.D | 9091108 | 07/18/2017 | 10:26 | L171991AA | |
| jkh09052 | LL18S06.D | 9091109 | 07/18/2017 | 10:48 | L171991AA | |
| jkh09052 | LL18S07.D | 9091110 | 07/18/2017 | 11:09 | L171991AA | |
| jkh09052 | LL18S08.D | 9091111 | 07/18/2017 | 11:31 | L171991AA | |
| jkh09052 | LL18S09.D | 9091112MS | 07/18/2017 | 11:53 | L171991AA | |
| jkh09052 | LL18S10.D | 9091113MSD | 07/18/2017 | 12:15 | L171991AA | |
| jkh09052 | LL18S11.D | 9091114 | 07/18/2017 | 12:37 | L171991AA | |
| jkh09052 | LL18S12.D | 9100479 | 07/18/2017 | 12:59 | L171991AA | |
| jkh09052 | LL18S13.D | 9100481 | 07/18/2017 | 13:21 | L171991AA | |
| jkh09052 | LL18S14.D | 9100491 | 07/18/2017 | 13:42 | L171991AA | |
| jkh09052 | LL18S15.D | 9100492 | 07/18/2017 | 14:04 | L171991AA | |
| jkh09052 | LL18S16.D | 9100494 | 07/18/2017 | 14:26 | L171991AA | |
| jkh09052 | LL18S17.D | 9100495 | 07/18/2017 | 14:48 | L171991AA | |
| jkh09052 | LL18S18.D | 9100496 | 07/18/2017 | 15:10 | L171991AA | |
| jkh09052 | LL18C02.D | SECC050 | 07/18/2017 | 15:32 | L171991AA | |

Data File: /chem/HP09915.i/17apr26a.b/la26t01.d



Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017

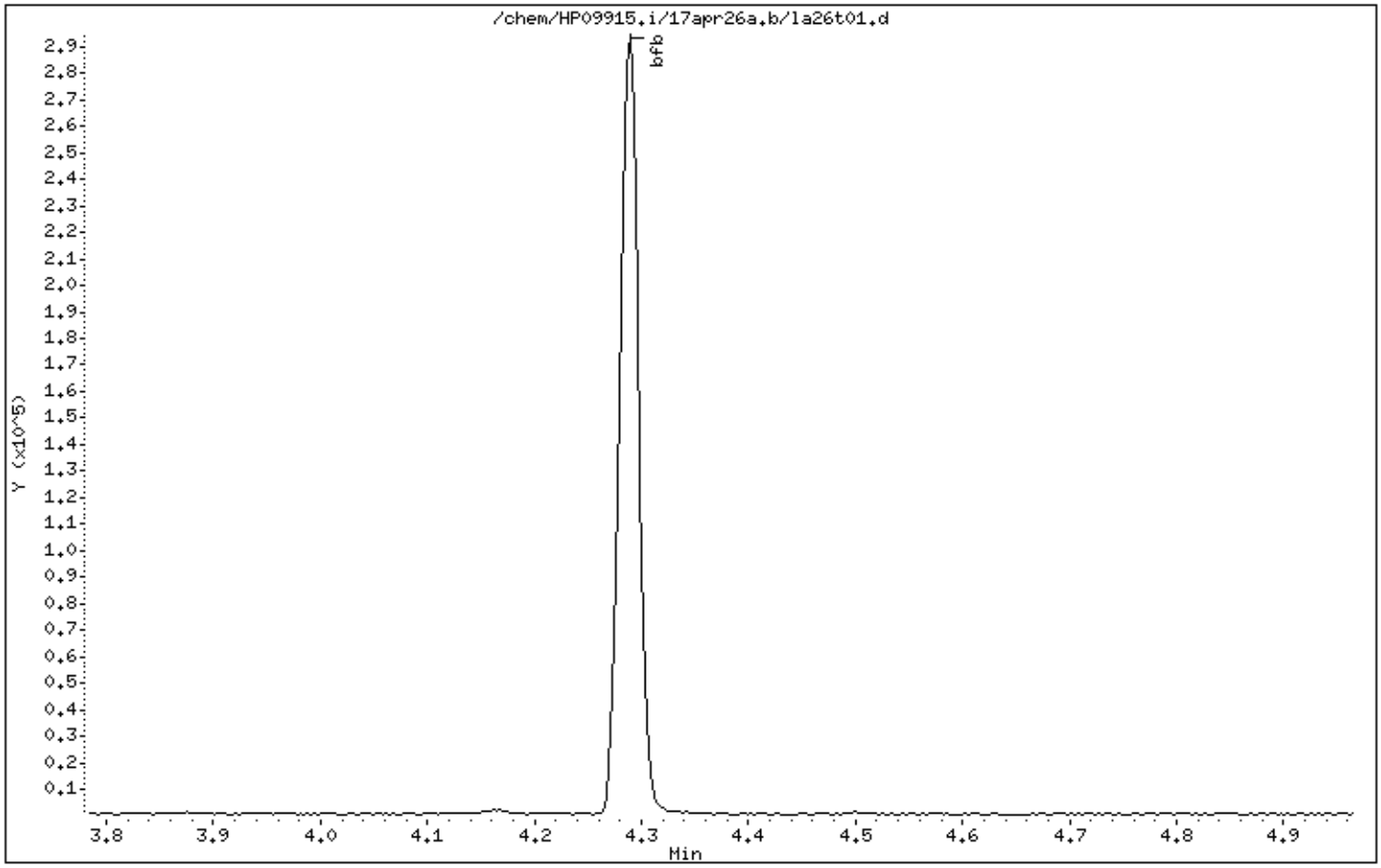
Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17apr26a.b/la26t01.d



Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017

Instrument: HP09915.i

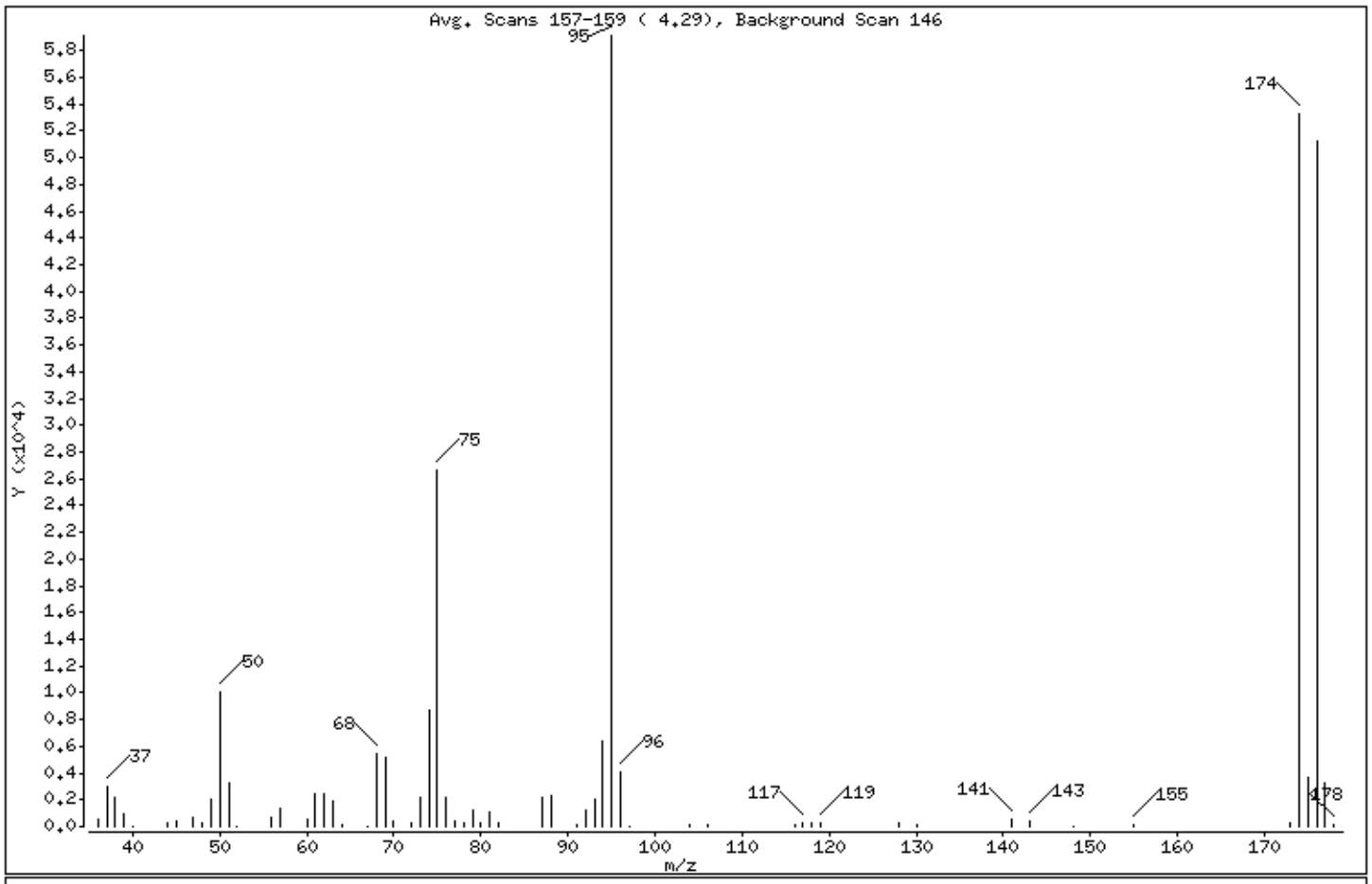
Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.10 |
| 75 | 30.00 - 60.00% of mass 95 | 44.97 |
| 96 | 5.00 - 9.00% of mass 95 | 6.79 |
| 173 | Less than 2.00% of mass 174 | 0.49 ( 0.54) |
| 174 | 50.00 - 100.00% of mass 95 | 90.09 |
| 175 | 5.00 - 9.00% of mass 174 | 6.12 ( 6.79) |
| 176 | 95.00 - 101.00% of mass 174 | 86.74 ( 96.29) |
| 177 | 5.00 - 9.00% of mass 176 | 5.56 ( 6.41) |

Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648

Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017 Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

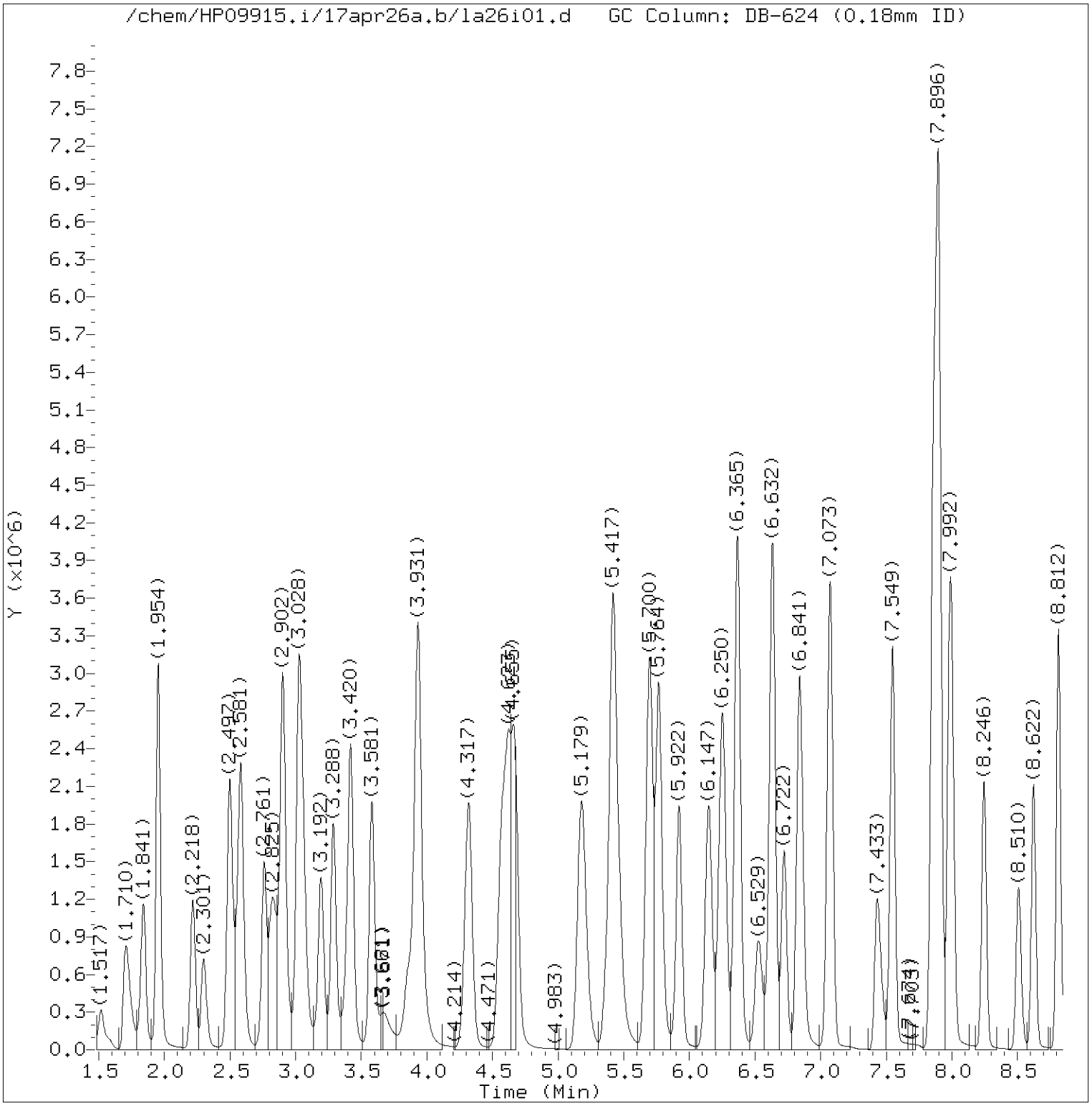
Operator: KAS02648

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: la26t01.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 146
Location of Maximum: 95.00
Number of points: 62

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 581 | 61.00 | 2433 | 80.00 | 261 | 118.00 | 213 |
| 37.00 | 2955 | 62.00 | 2451 | 81.00 | 1135 | 119.00 | 269 |
| 38.00 | 2227 | 63.00 | 1939 | 82.00 | 248 | 128.00 | 225 |
| 39.00 | 905 | 64.00 | 156 | 87.00 | 2238 | 130.00 | 116 |
| 40.00 | 18 | 67.00 | 61 | 88.00 | 2301 | 141.00 | 493 |
| 44.00 | 266 | 68.00 | 5493 | 91.00 | 177 | 143.00 | 436 |
| 45.00 | 425 | 69.00 | 5219 | 92.00 | 1262 | 148.00 | 51 |
| 47.00 | 688 | 70.00 | 432 | 93.00 | 2027 | 155.00 | 68 |
| 48.00 | 283 | 72.00 | 236 | 94.00 | 6417 | 173.00 | 287 |
| 49.00 | 2054 | 73.00 | 2174 | 95.00 | 59120 | 174.00 | 53256 |
| 50.00 | 10110 | 74.00 | 8666 | 96.00 | 4015 | 175.00 | 3618 |
| 51.00 | 3256 | 75.00 | 26584 | 97.00 | 51 | 176.00 | 51280 |
| 52.00 | 55 | 76.00 | 2212 | 104.00 | 202 | 177.00 | 3288 |
| 56.00 | 714 | 77.00 | 371 | 106.00 | 68 | 178.00 | 74 |
| 57.00 | 1411 | 78.00 | 215 | 116.00 | 182 | | |
| 60.00 | 513 | 79.00 | 1182 | 117.00 | 318 | | |

Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

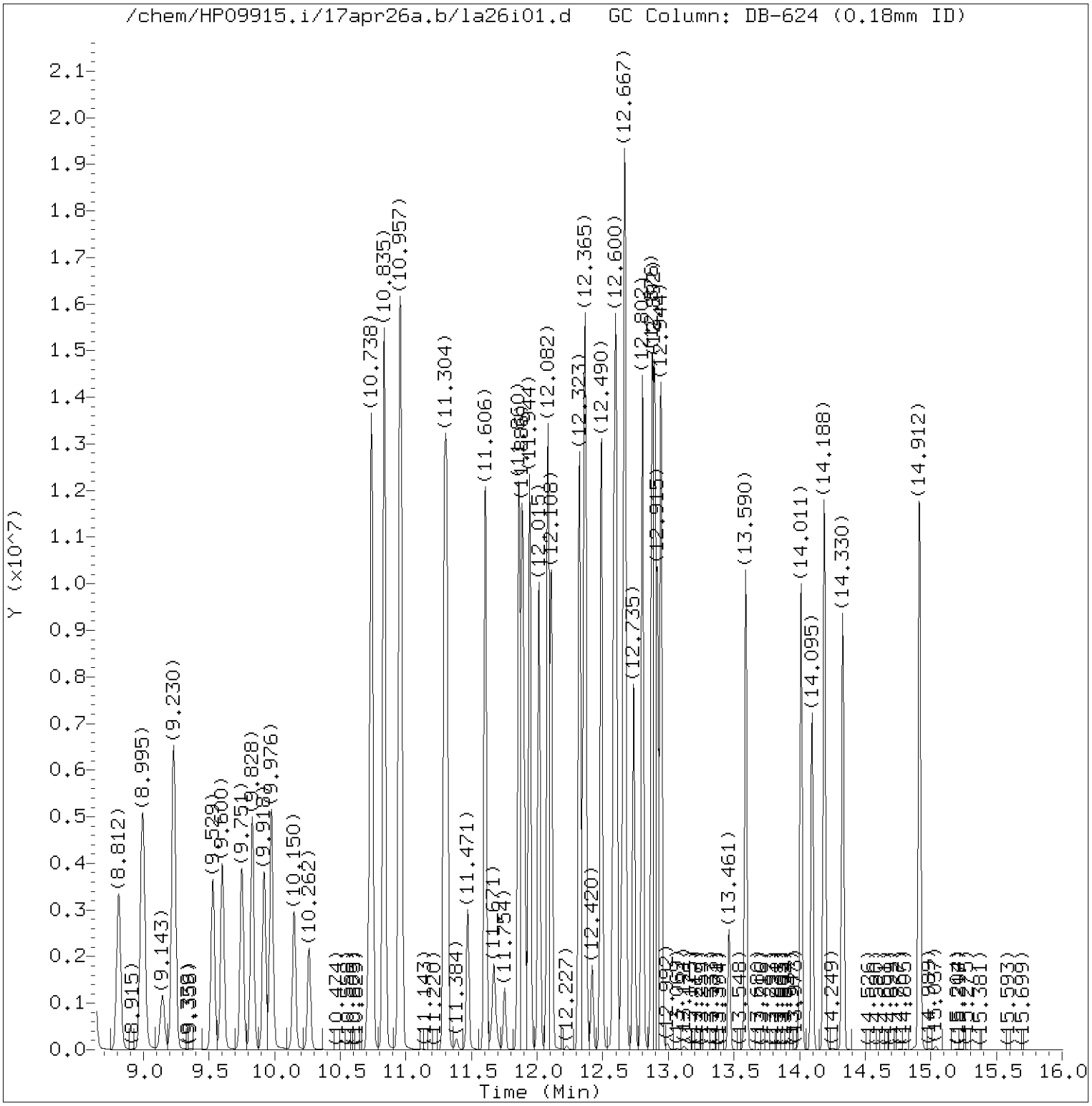
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 1958047 | 313.882 |
| 4) Chloromethane | (2) | 1.841 | 50 | 1904237 | 297.140 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 1095441 | 290.215 |
| 6) Vinyl Chloride | (2) | 1.954 | 62 | 1868685 | 301.966 |
| 8) Bromomethane | (2) | 2.218 | 94 | 1235545 | 296.846 |
| 9) Chloroethane | (2) | 2.301 | 64 | 1017254 | 291.687 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 2518637 | 296.081 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 2251585 | 314.196 |
| 11) n-Pentane | (2) | 2.587 | 43 | 1712208 | 290.122 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 1196266 | 299.857 |
| 15) Freon 123a | (2) | 2.822 | 67 | 1429955 | 299.625 |
| 16) Acrolein | (1) | 2.902 | 56 | 4637155 | 3348.162 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 1151917 | 303.712 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 63 | 584950 | 304.648 |
| 18) Acetone | (1) | 3.037 | 58 | 403999 | 672.085 |
| 19) Freon 113 | (2) | 3.054 | 101 | 1196009 | 313.286 |
| 21) 2-Propanol | (1) | 3.173 | 45 | 593623 | 1489.698 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 2269414 | 308.478 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 3857476 | 312.534 |
| 27) Methyl Acetate | (2) | 3.391 | 43 | 1585782 | 288.068 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 2271974 | 299.058 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 169188M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 1398327 | 279.081 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 944135 | 1442.270 |
| 31) Acrylonitrile | (2) | 3.851 | 53 | 875676 | 302.918 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 4032886 | 290.250 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 1361677 | 305.995 |
| 34) n-Hexane | (2) | 4.317 | 57 | 2081106 | 305.081 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 2520546 | 301.428 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 4685474 | 291.938 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 2194166 | 311.075 |
| 40) Ethyl t-butyl ether | (2) | 5.182 | 59 | 4023920 | 291.328 |
| 44) 2-Butanone | (2) | 5.385 | 43 | 2335957 | 603.500 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 1543601 | 302.715 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 1850165 | 331.391 |
| 47) Propionitrile | (1) | 5.468 | 54 | 1527979 | 1599.274 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 2165702 | 751.439 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 831794 | 309.503 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 604452 | 716.270 |
| 51) Chloroform | (2) | 5.922 | 83 | 2401549 | 301.309 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 255745 | 50.012 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 111 | 262971 | 50.184 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 2144080 | 294.382 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 2905278 | 608.709 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 2560169 | 308.719 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 2125161 | 309.600 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 756981 | 314.913 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 1780485 | 334.890 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2006976 | 309.593 |
| 58) Isobutyl Alcohol | (1) | 6.529 | 41 | 870124 | 3785.822 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 63036 | 49.572 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 293986 | 48.877 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 104 | 40289 | 49.952 |
| 60) Benzene | (2) | 6.635 | 78 | 5664323 | 296.413 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 1935203 | 299.340 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 98 | 187547 | 329.010 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 4084653 | 297.970 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1047200 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 2258430 | 295.708 |
| 69) n-Butanol | (1) | 7.433 | 56 | 1528004M | 8247.101 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 1501811 | 304.105 |
| 72) Methylcyclohexane | (2) | 7.860 | 83 | 2774376 | 318.844 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 1266884 | 322.636 |
| 73) 1,2-Dichloropropane | (2) | 7.893 | 63 | 1591407 | 304.211 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 201278M | 3479.803 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 1449583 | 323.724 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 1017942 | 309.424 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 1923473 | 323.978 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 1184003 | 703.267 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.622 | 63 | 1300550 | 323.419 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 2566038 | 331.609 |
| 82) 4-Methyl-2-pentanone | (2) | 8.995 | 43 | 5077972 | 636.634 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1048562 | 49.332 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 698016 | 49.847 |
| 88) Toluene | (3) | 9.230 | 92 | 3661123 | 296.405 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 2355530 | 340.103 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 2475882 | 317.369 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 1425551 | 299.507 |
| 93) Tetrachloroethene | (3) | 9.831 | 166 | 1673578 | 306.339 |
| 94) 1,3-Dichloropropane | (3) | 9.921 | 76 | 2464344 | 298.391 |
| 96) 2-Hexanone | (3) | 9.976 | 43 | 3763816 | 631.277 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 4921568 | 671.712 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 1685181 | 341.825 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 1613118 | 309.581 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 832450 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 2100198 | 296.072 |
| 102) Chlorobenzene | (3) | 10.741 | 112 | 4297711 | 301.535 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 1522321 | 323.444 |
| 104) Ethylbenzene | (3) | 10.838 | 91 | 7075752 | 296.976 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 5612991 | 605.130 |
| 107) o-Xylene | (3) | 11.294 | 106 | 2814653 | 305.123 |
| 109) Styrene | (3) | 11.314 | 104 | 4717754 | 309.374 |
| 110) Bromoform | (3) | 11.471 | 173 | 1309455 | 365.799 |
| 111) Isopropylbenzene | (3) | 11.606 | 105 | 7076637 | 300.169 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 788204 | 3612.463 |
| 114)$4-Bromofluorobenzene | (3) | 11.754 | 95 | 390072 | 49.374 |
| 114)$4-Bromofluorobenzene | (3) | 11.754 | 174 | 345842 | 49.906 |
| 108) Xylene (Total) | (3) | | 106 | 8427644 | 910.253 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.860 | 83 | 2325327 | 290.148 |
| 115) Bromobenzene | (4) | 11.863 | 156 | 1969582 | 305.174 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 1716308 | 747.363 |
| 117) 1,2,3-Trichloropropane | (4) | 11.905 | 110 | 658906 | 290.845 |
| 119) n-Propylbenzene | (4) | 11.944 | 91 | 8145618 | 285.633 |
| 120) 2-Chlorotoluene | (4) | 12.015 | 126 | 1788274 | 301.293 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 6133887 | 301.630 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 1867872 | 302.377 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 1372178M | 312.149 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1198514 | 345.326 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 6317724 | 301.599 |
| 127) sec-Butylbenzene | (4) | 12.490 | 105 | 7645015 | 294.717 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 3590968 | 292.247 |
| 130) p-Isopropyltoluene | (4) | 12.603 | 119 | 6883297 | 300.529 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 451513 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 3631810 | 285.849 |

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 6440778 | 293.471 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 4582840 | 364.666 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 4116951 | 300.860 |
| 137) 1,4-Diethylbenzene | (4) | 12.876 | 119 | 4232692 | 294.554 |
| 139) n-Butylbenzene | (4) | 12.896 | 92 | 3262571 | 285.151 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 3500895 | 289.855 |
| 140) 1,2-Diethylbenzene | (4) | 12.944 | 119 | 3434155 | 298.215 |
| 141) Diethylbenzene (total) | (4) | | 100 | 11783798 | 893.629 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.461 | 75 | 522343 | 308.197 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 2788456 | 284.760 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 2672501 | 281.341 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 1140885 | 276.553 |
| 148) Naphthalene | (4) | 14.188 | 128 | 7817799 | 272.736 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 2521047 | 275.101 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 4927545 | 265.852 |



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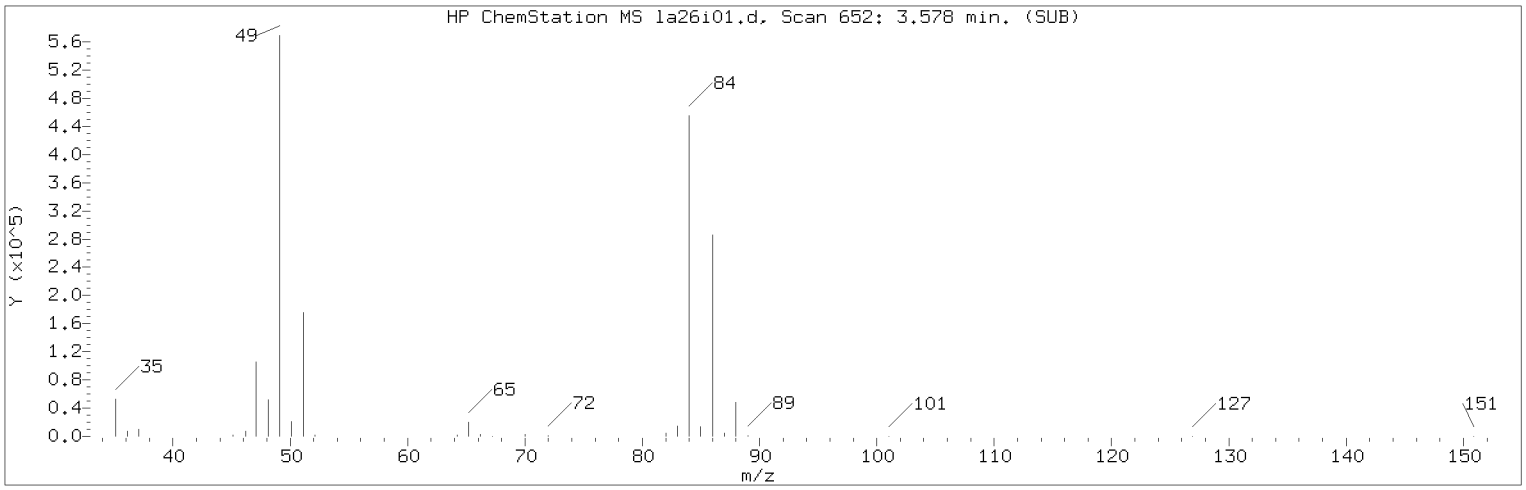
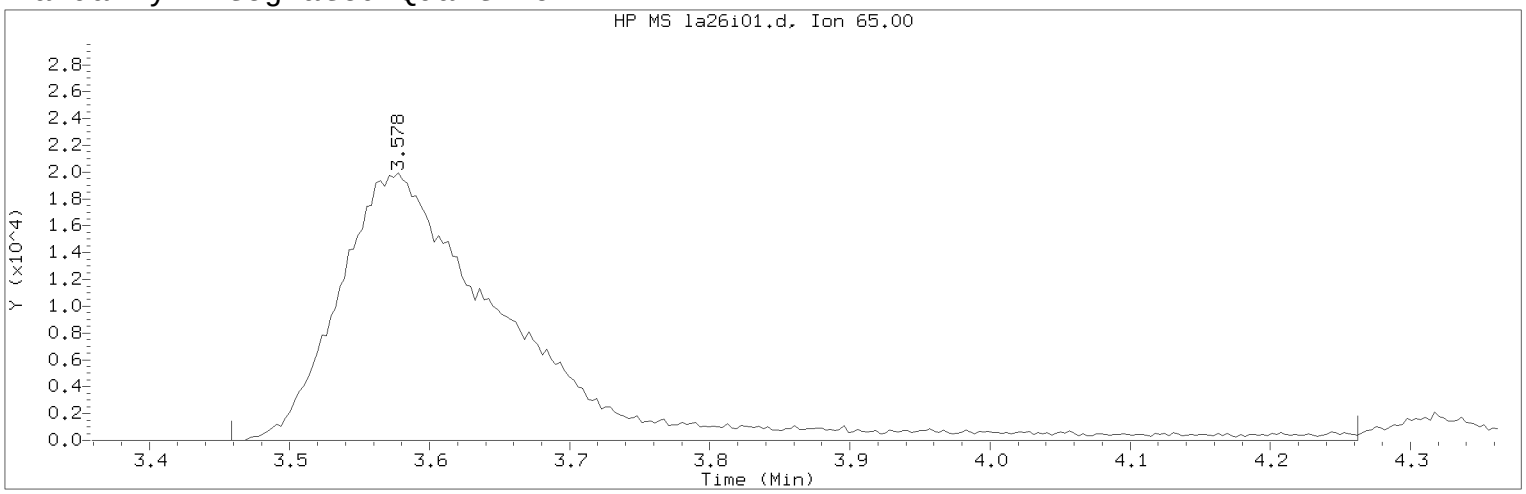
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

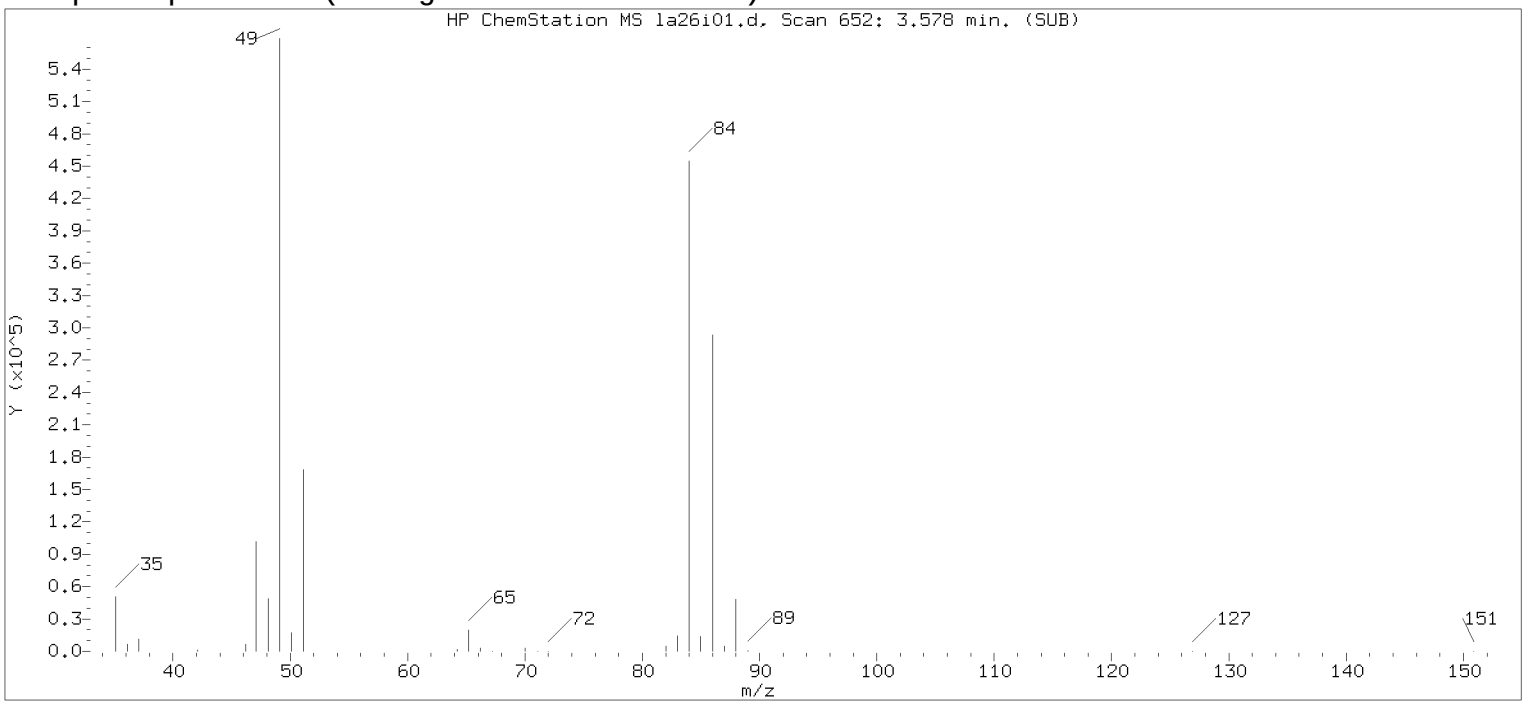
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area (flag) : 169188M
On-Column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 864
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

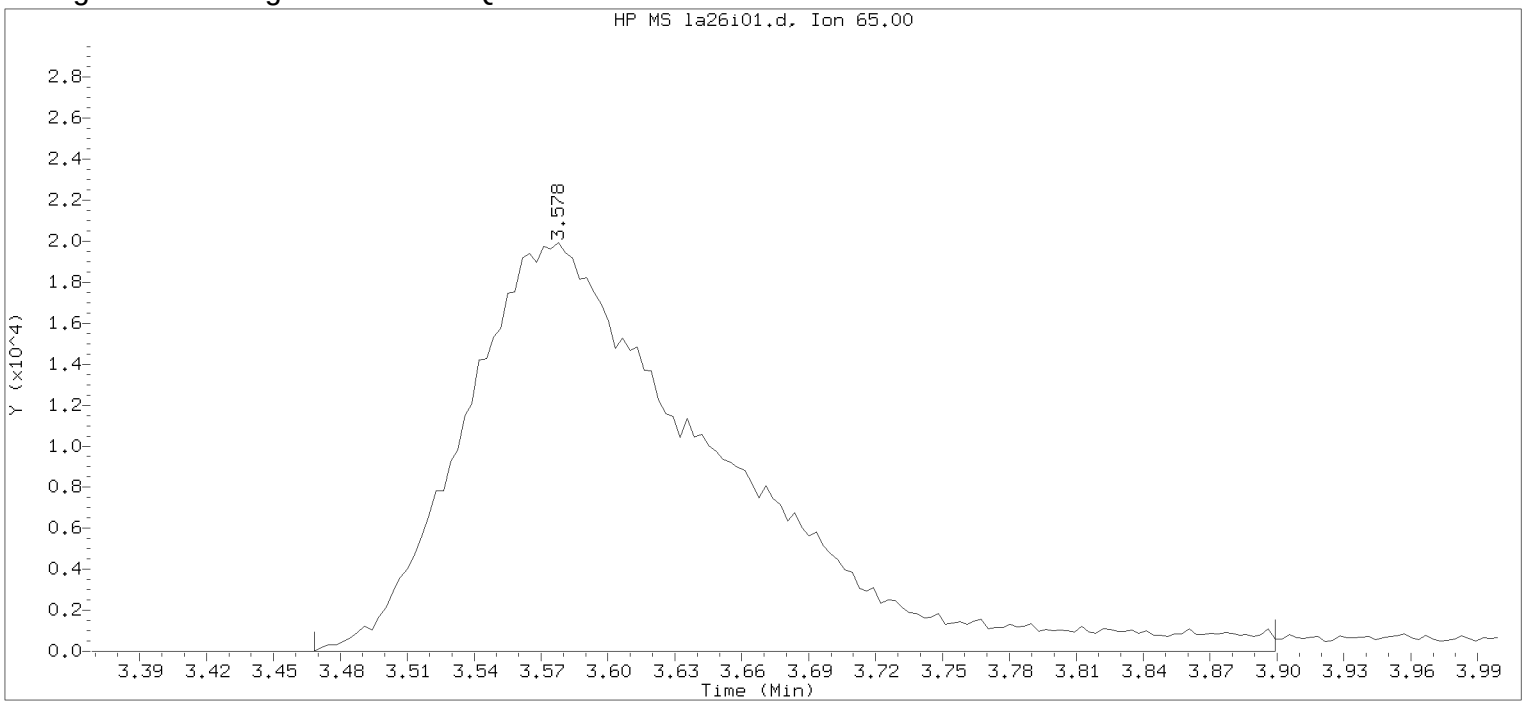
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

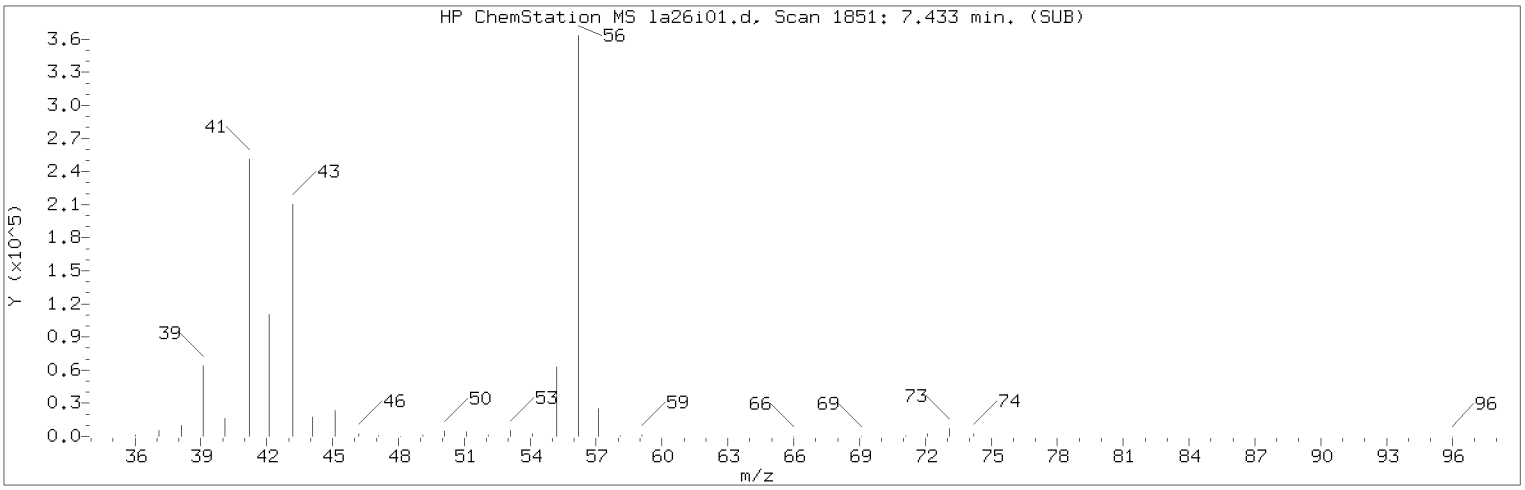
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

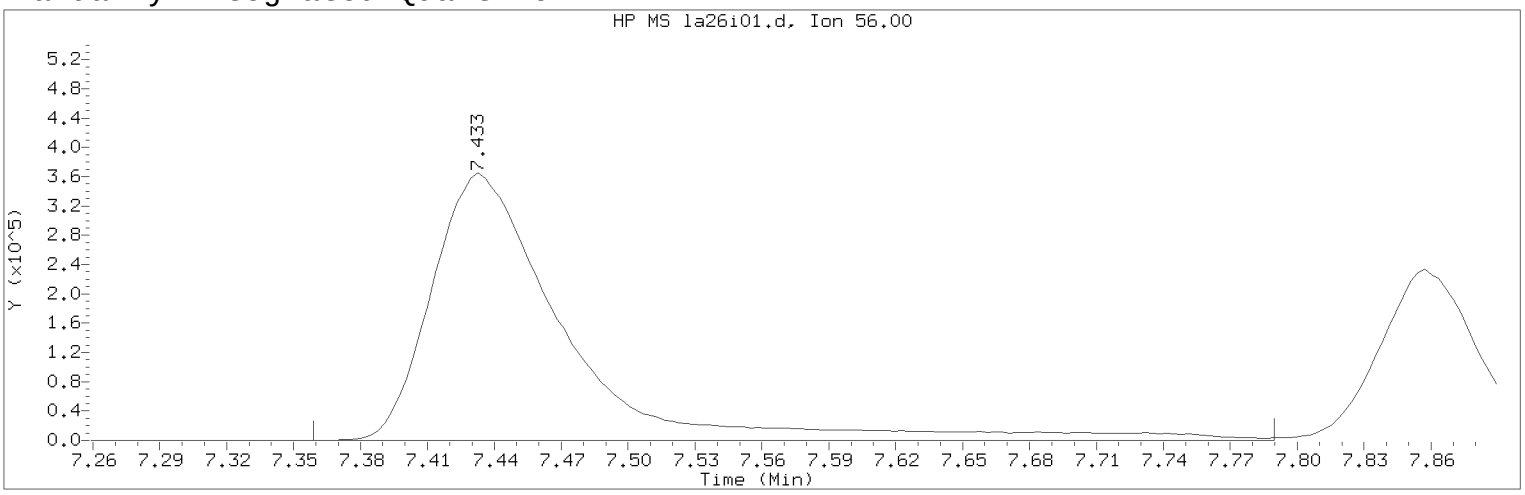
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 158080
On-column Amount (ng) : 250.0000
Integration start scan : 617 Integration stop scan: 751
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

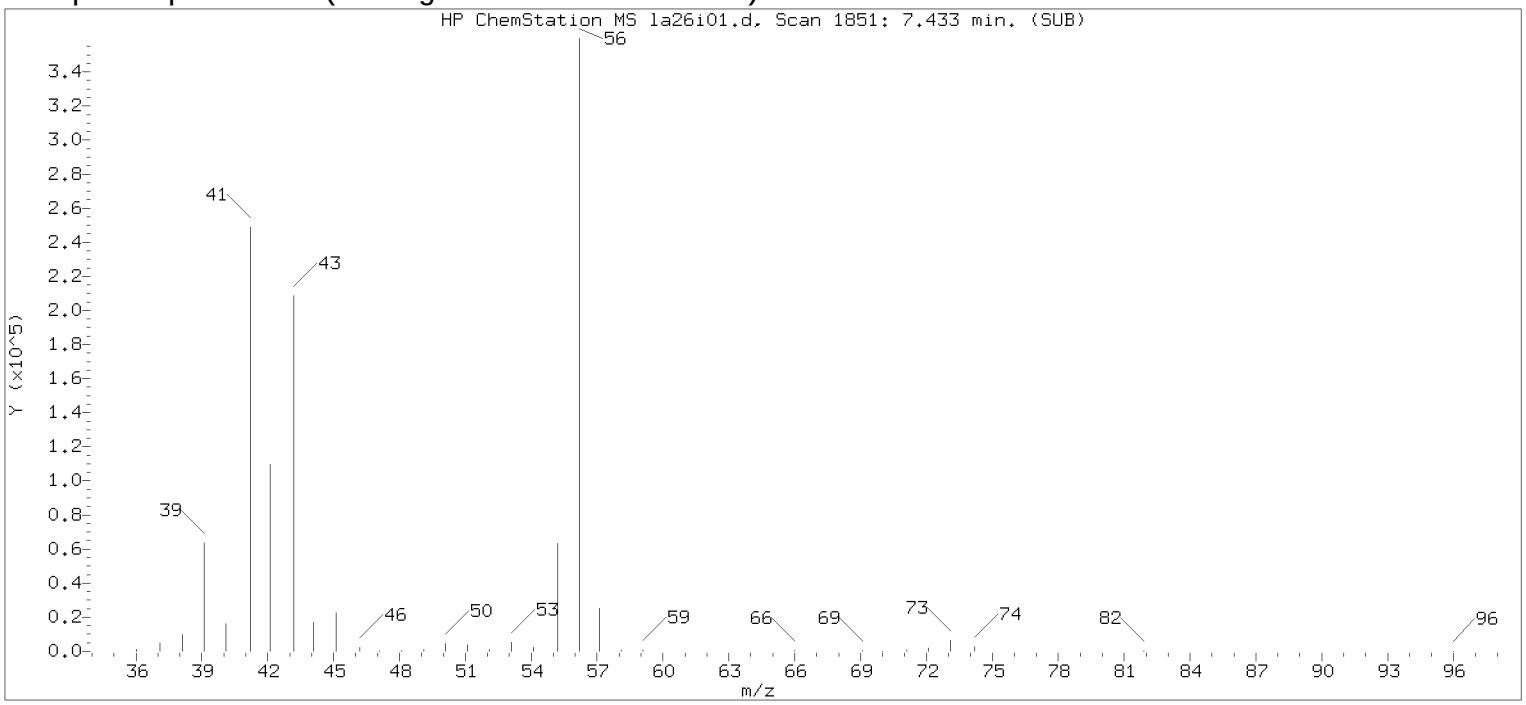
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1851
Retention Time (minutes): 7.433
Quant Ion : 56.00
Area (flag) : 1528004M
On-Column Amount (ng) : 8247.1010
Integration start scan : 1827 Integration stop scan: 1961
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

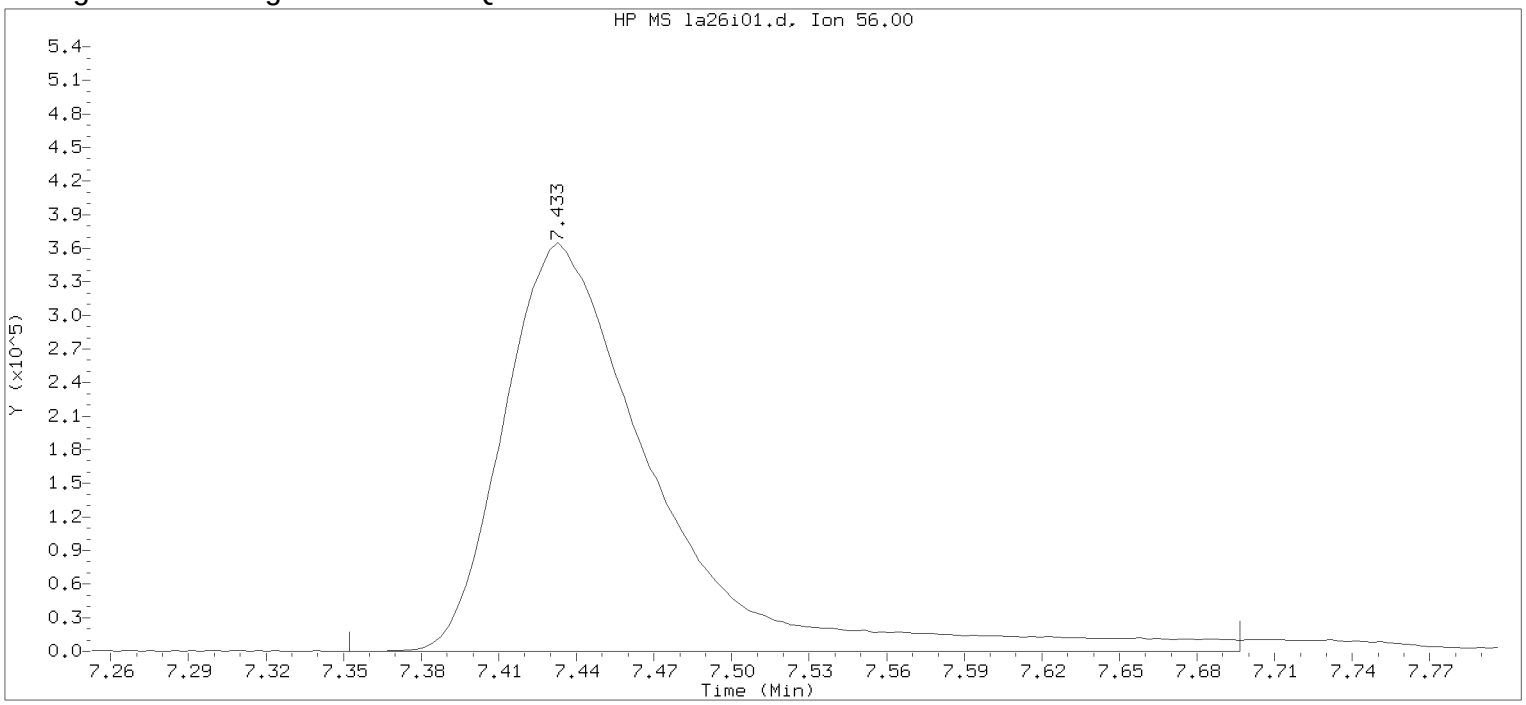
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1851
Retention Time (minutes): 7.433
Quant Ion : 56.00
Area : 1485088
On-column Amount (ng) : 7806.8912
Integration start scan : 1825 Integration stop scan: 1932
Y at integration start : 0 Y at integration end: 0

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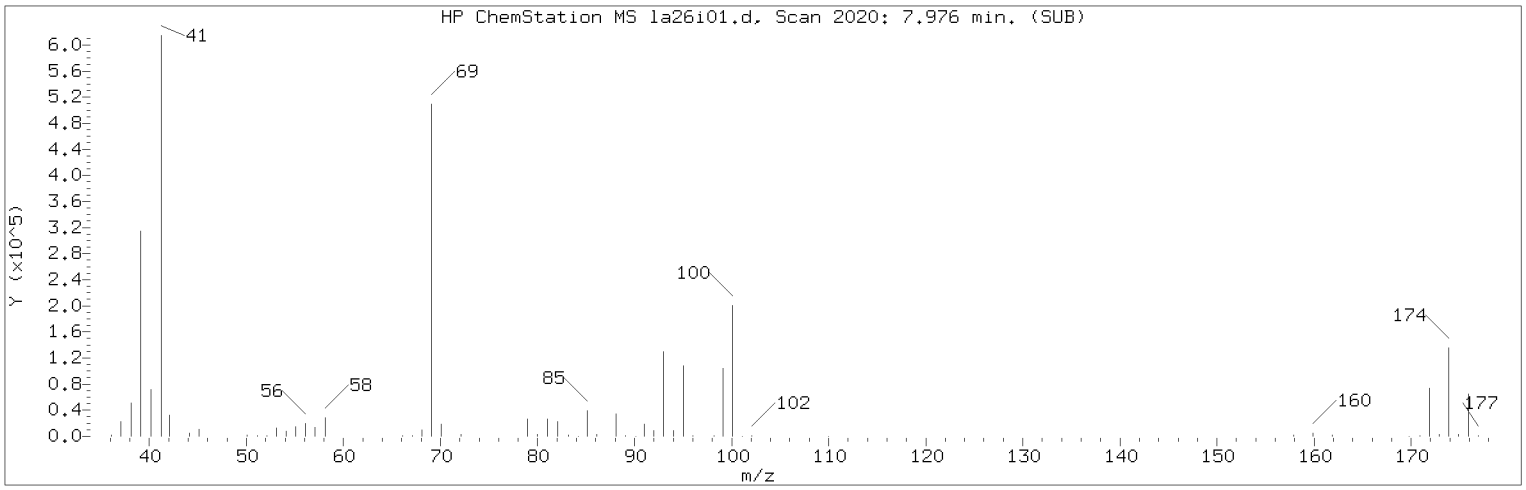
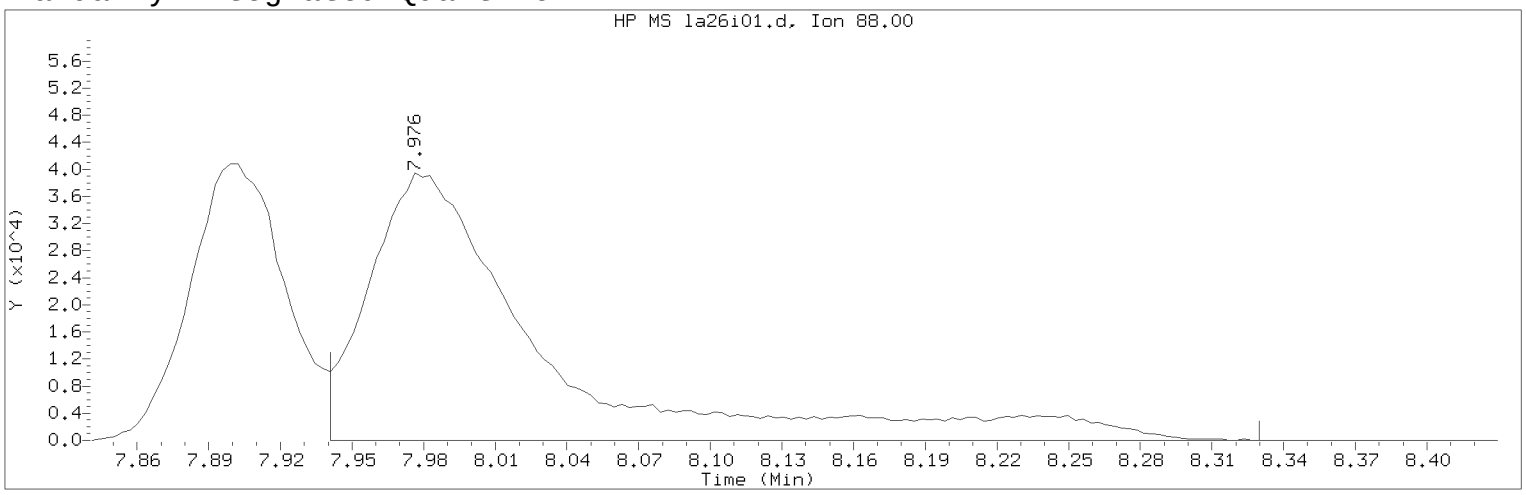
Target 3.5 esignature userKAS02648 Page 134 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

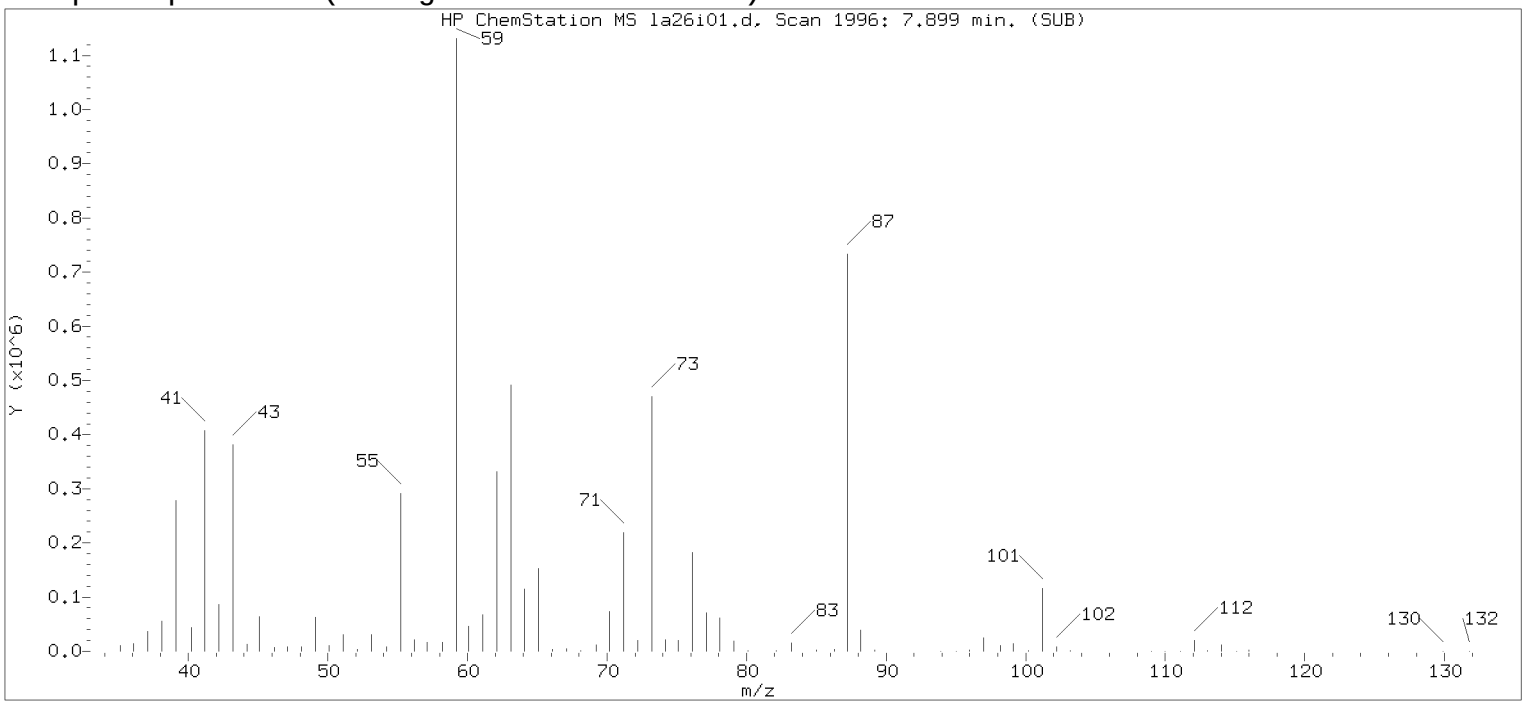
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 201278M
On-Column Amount (ng) : 3479.8034
Integration start scan : 2008 Integration stop scan: 2129
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

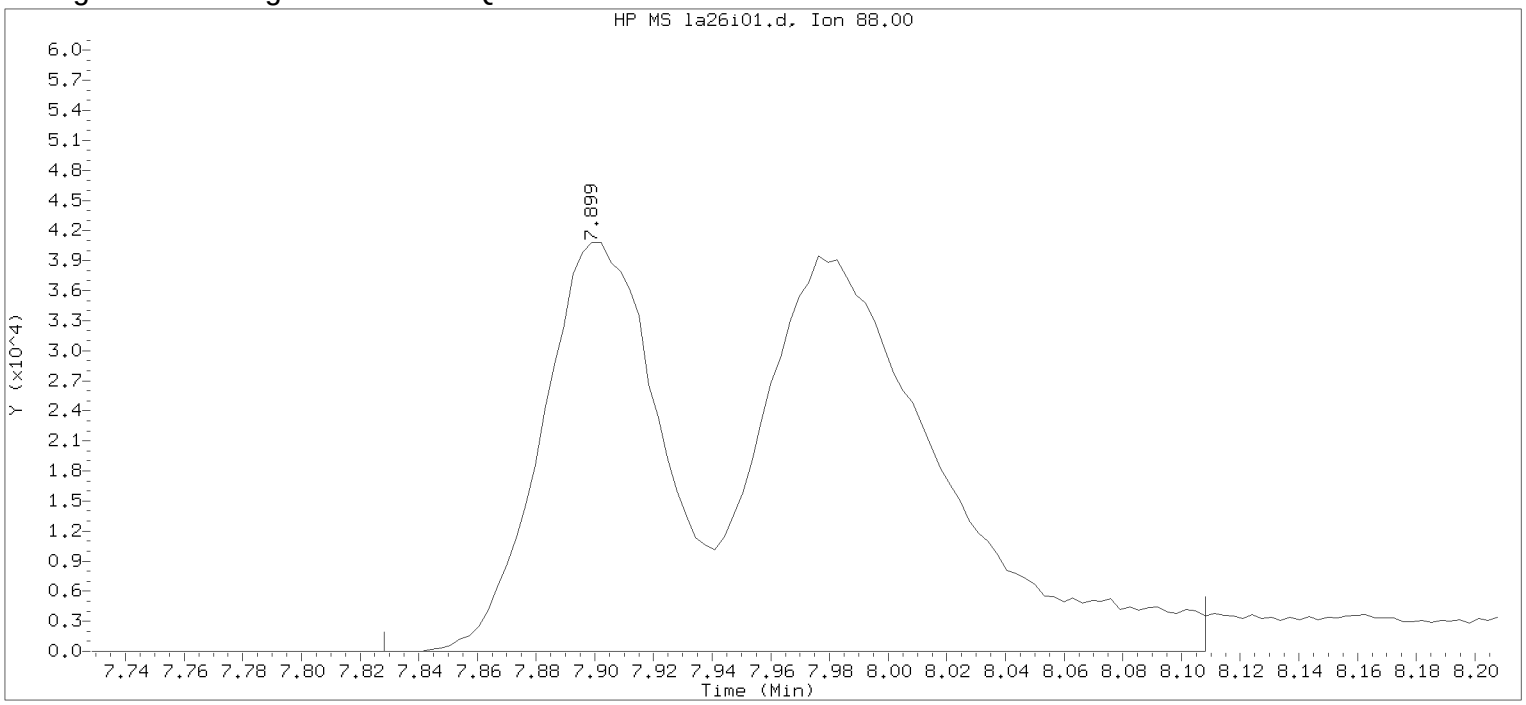
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1996
Retention Time (minutes): 7.899
Quant Ion : 88.00
Area : 279960
On-column Amount (ng) : 4259.9914
Integration start scan : 1973 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

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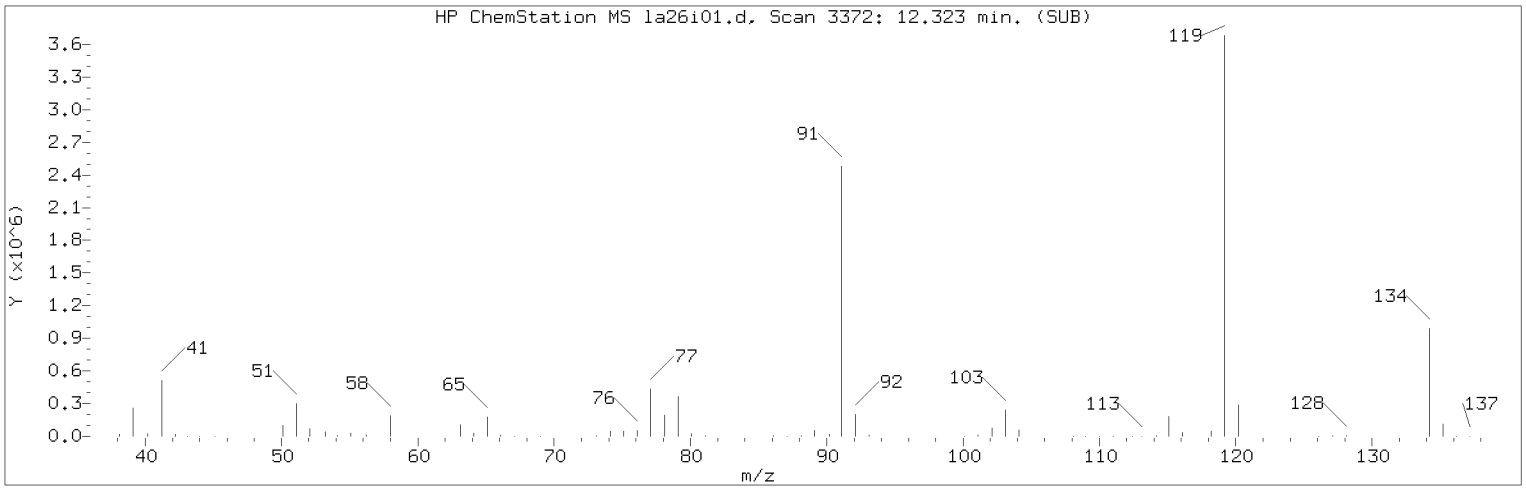
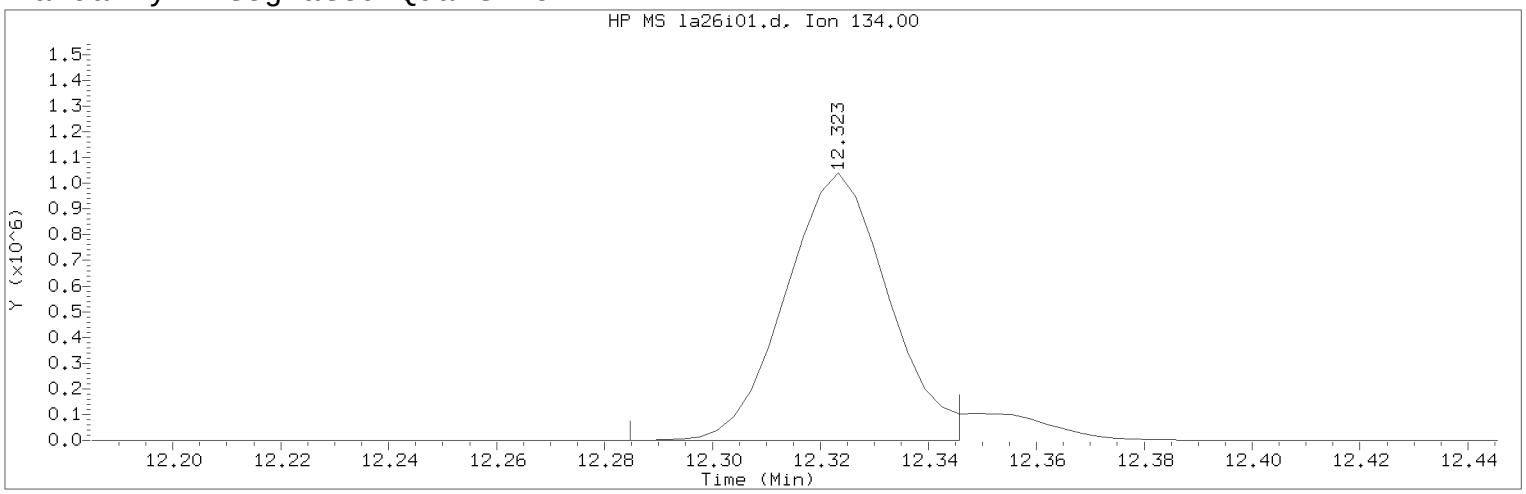
Target 3.5 esignature userKAS02648 Page 136 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

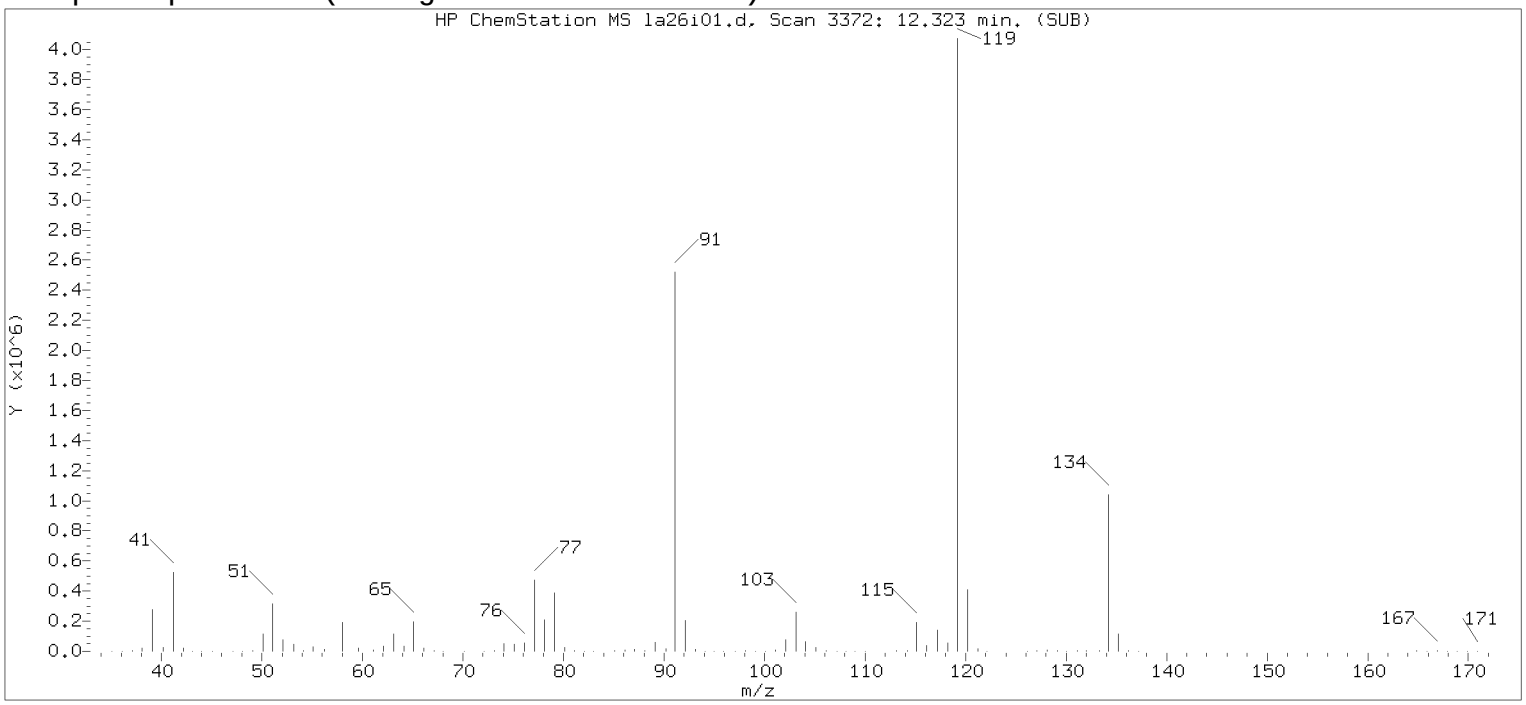
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area (flag) : 1372178M
On-Column Amount (ng) : 312.1487
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

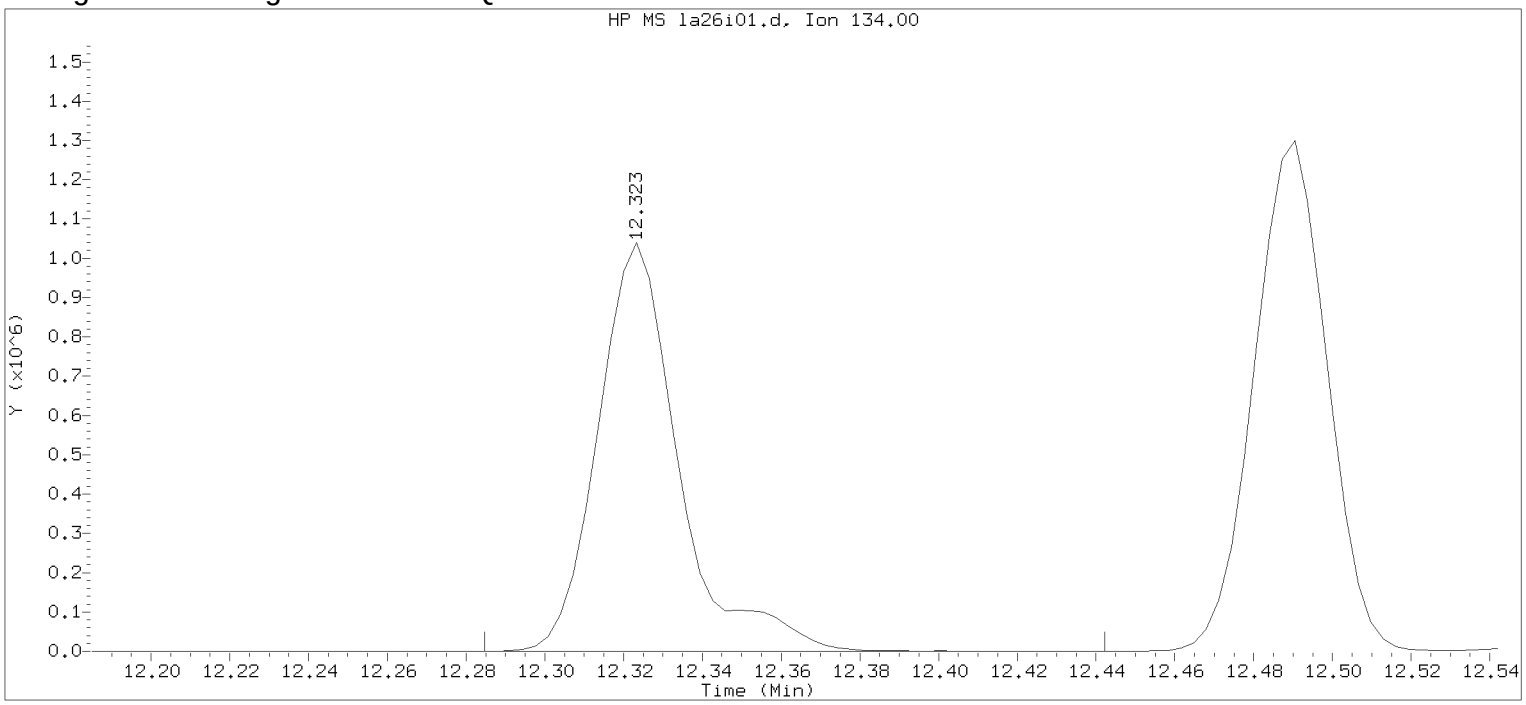
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area : 1481292
On-column Amount (ng) : 310.8715
Integration start scan : 3359 Integration stop scan: 3408
Y at integration start : 0 Y at integration end: 0

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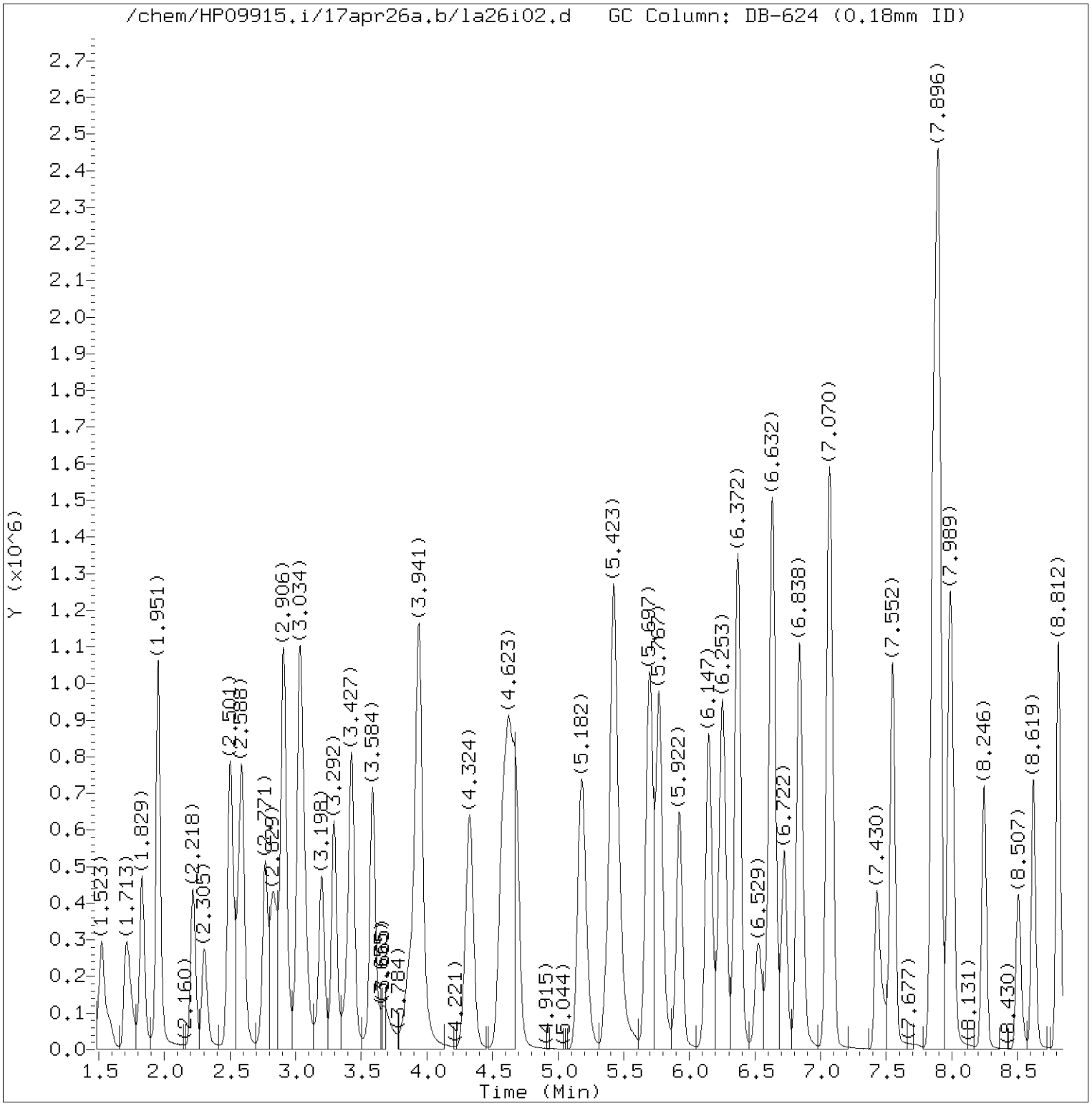
Target 3.5 esignature userKAS02648 Page 138 of 867




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

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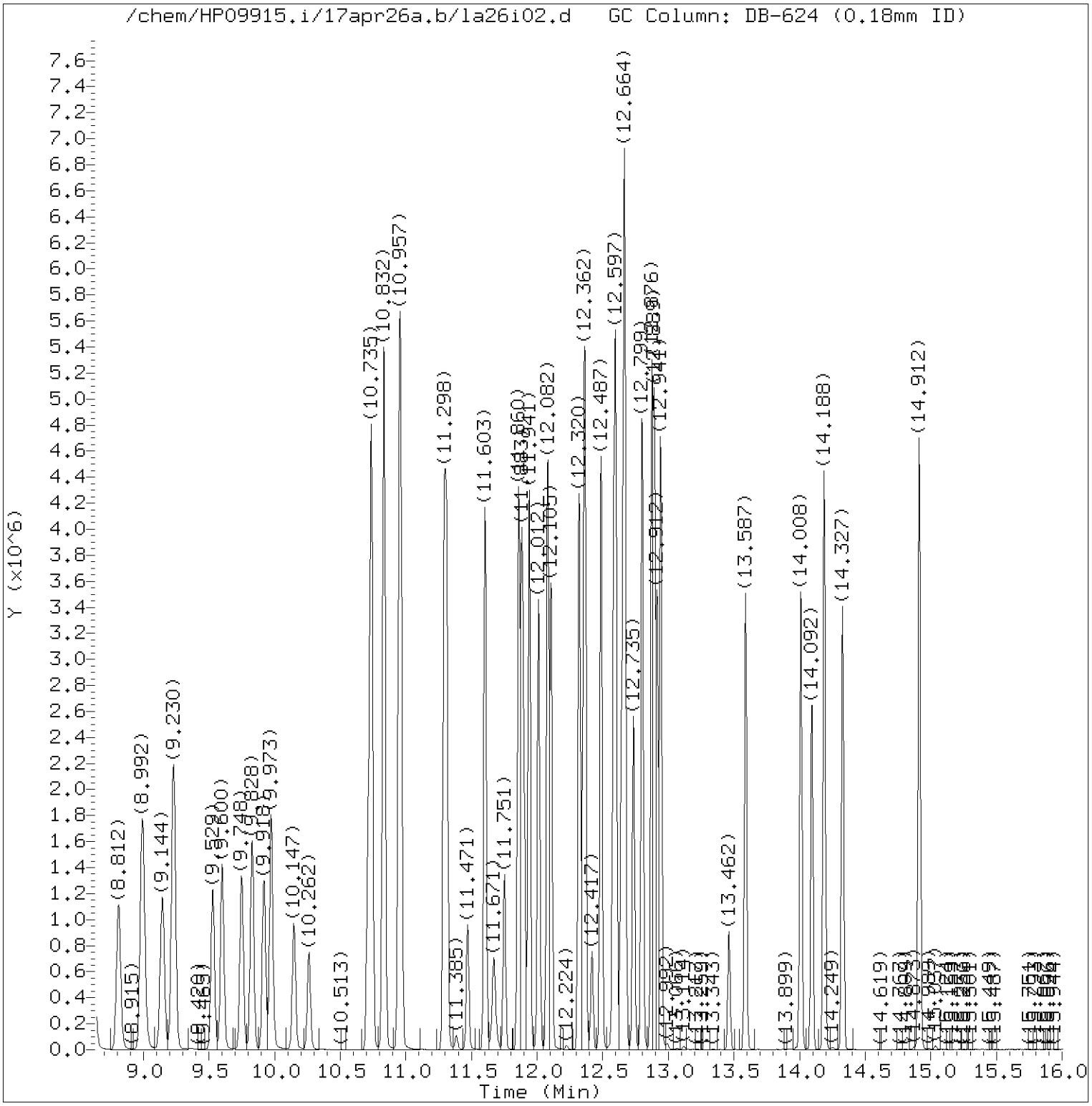
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 676369 | 106.821 |
| 4) Chloromethane | (2) | 1.832 | 50 | 696329 | 107.049 |
| 6) Vinyl Chloride | (2) | 1.948 | 62 | 673578 | 107.236 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 373286 | 97.432 |
| 8) Bromomethane | (2) | 2.221 | 94 | 446773M | 105.752 |
| 9) Chloroethane | (2) | 2.305 | 64 | 371704 | 105.006 |
| 10) Dichlorofluoromethane | (2) | 2.498 | 67 | 927938 | 107.471 |
| 12) Trichlorofluoromethane | (2) | 2.568 | 101 | 788292 | 108.375 |
| 11) n-Pentane | (2) | 2.591 | 43 | 594640 | 99.268 |
| 14) Ethyl ether | (2) | 2.771 | 59 | 424582 | 104.852 |
| 15) Freon 123a | (2) | 2.829 | 67 | 489753 | 101.103 |
| 16) Acrolein | (1) | 2.906 | 56 | 1724138 | 1147.084 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 387264 | 100.595 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 198662 | 101.935 |
| 18) Acetone | (1) | 3.047 | 58 | 135546M | 207.778 |
| 19) Freon 113 | (2) | 3.057 | 101 | 404388 | 104.360 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 213396M | 493.449 |
| 22) Methyl Iodide | (2) | 3.198 | 142 | 759847 | 101.758 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 1297816 | 103.594 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 533323 | 95.449 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 772442 | 100.172 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 183612M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 478418 | 94.072 |
| 30) t-Butyl alcohol | (1) | 3.674 | 59 | 356471M | 501.770 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 313741 | 106.926 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 1430590 | 101.438 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 460884 | 102.038 |
| 34) n-Hexane | (2) | 4.324 | 57 | 717390 | 103.611 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 868994 | 102.385 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 1666588 | 102.304 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.681 | 53 | 749751 | 104.723 |
| 40) Ethyl t-butyl ether | (2) | 5.179 | 59 | 1449530 | 103.393 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 817585 | 208.101 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 527726 | 101.961 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 625083 | 110.306 |
| 47) Propionitrile | (1) | 5.465 | 54 | 550872 | 531.282 |
| 48) Methacrylonitrile | (2) | 5.700 | 67 | 750559 | 256.572 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 276608 | 101.401 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 208895 | 228.093 |
| 51) Chloroform | (2) | 5.922 | 83 | 823317 | 101.769 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 261749 | 50.429 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 267507 | 50.295 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 726792 | 98.313 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 988610 | 203.999 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 878754 | 104.398 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 727430 | 104.407 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 257243 | 105.433 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 680358 | 103.399 |
| 56) Carbon Tetrachloride | (2) | 6.372 | 117 | 589658 | 109.268 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 319107 | 1279.334 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 65444 | 50.705 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 306047 | 50.130 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 41083 | 50.183 |
| 60) Benzene | (2) | 6.639 | 78 | 1966914 | 101.406 |
| 61) 1,2-Dichloroethane | (2) | 6.726 | 62 | 672041 | 102.415 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 64097 | 110.781 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 1465784 | 105.346 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1062919 | 50.000 |
| 67) n-Heptane | (2) | 7.079 | 43 | 794949 | 102.548 |
| 69) n-Butanol | (1) | 7.430 | 56 | 557797M | 2774.096 |
| 71) Trichloroethene | (2) | 7.552 | 95 | 513037 | 102.350 |
| 72) Methylcyclohexane | (2) | 7.861 | 83 | 924633 | 104.692 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 422409 | 105.983 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 551772 | 103.916 |
| 75) 1,4-Dioxane | (1) | 7.980 | 88 | 76692M | 1221.735 |
| 76) Methyl Methacrylate | (2) | 7.980 | 69 | 491230 | 108.080 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 344598 | 103.199 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 648848 | 107.672 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 389115 | 227.706 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 446824 | 109.472 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 865511 | 110.196 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 1756835 | 217.000 |
| 83)$Toluene-d8 | (3) | 9.144 | 98 | 1062057 | 49.818 |
| 83)$Toluene-d8 | (3) | 9.144 | 100 | 699948 | 49.836 |
| 88) Toluene | (3) | 9.230 | 92 | 1255687 | 101.358 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 782955 | 112.710 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 853753 | 109.112 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 487635 | 102.147 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 557539 | 101.750 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 848064 | 102.380 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 1313009 | 219.565 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1648466 | 222.906 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 552445 | 111.725 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 547365 | 104.734 |
| 100)*Chlorobenzene-d5 | (3) | 10.713 | 117 | 834937 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 707076 | 99.382 |
| 102) Chlorobenzene | (3) | 10.742 | 112 | 1458292 | 102.011 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 508422 | 107.701 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 2442108 | 102.192 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 1914407 | 205.775 |
| 107) o-Xylene | (3) | 11.291 | 106 | 956788 | 103.412 |
| 109) Styrene | (3) | 11.311 | 104 | 1616649 | 105.698 |
| 110) Bromoform | (3) | 11.471 | 173 | 419593 | 116.865 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 2449038 | 103.571 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 302205 | 1276.247 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 394235 | 49.753 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 343734 | 49.454 |
| 108) Xylene (Total) | (3) | | 106 | 2871195 | 309.187 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 820749 | 104.299 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 652939 | 103.034 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 599531 | 265.878 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 228521 | 102.730 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 2874087 | 102.641 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 601559 | 103.221 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 2094753 | 104.908 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 623137 | 102.736 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 456579M | 105.780 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 381883 | 112.060 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 2150464 | 104.553 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 2647066 | 103.927 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 1215672 | 100.760 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 2368950 | 105.337 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 443338 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 1243887 | 99.708 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.668 | 105 | 2174826 | 100.922 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 1509958 | 122.366 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 1373318 | 102.211 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 1423124 | 100.862 |
| 139) n-Butylbenzene | (4) | 12.893 | 92 | 1135761 | 101.097 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 1195487 | 100.805 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 1147775 | 101.508 |
| 141) Diethylbenzene (total) | (4) | | 100 | 3944217 | 304.580 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 181306 | 108.948 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 971739 | 101.065 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 946069 | 101.432 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 412377 | 101.804 |
| 148) Naphthalene | (4) | 14.188 | 128 | 2908962 | 103.355 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 906692 | 100.764 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 1891682 | 103.943 |



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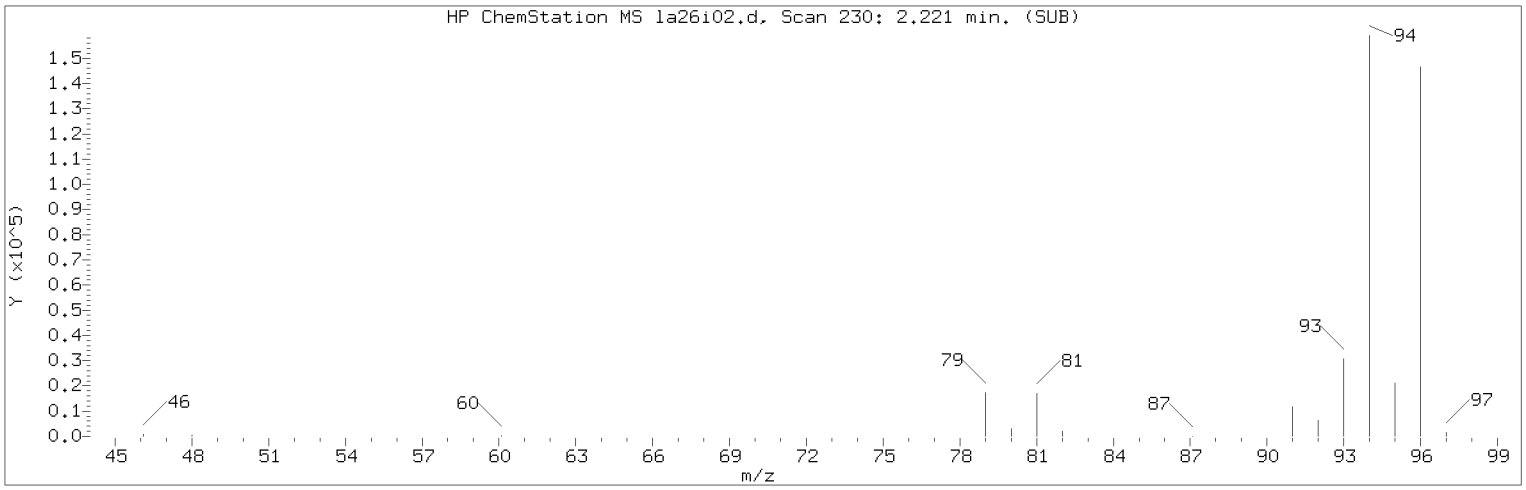
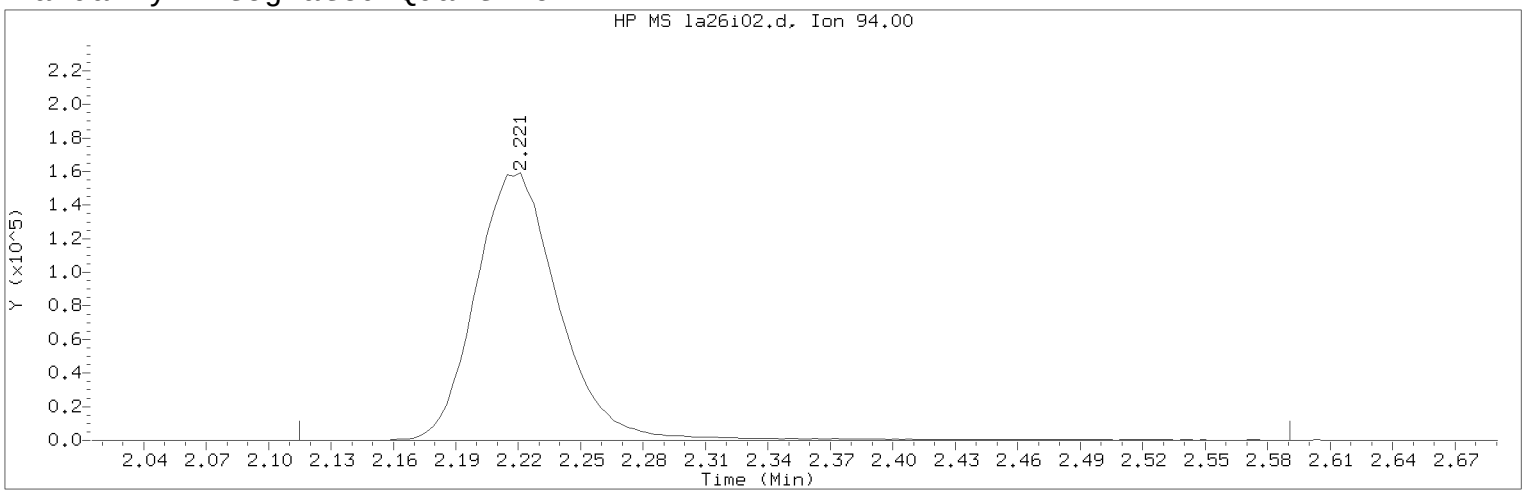
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

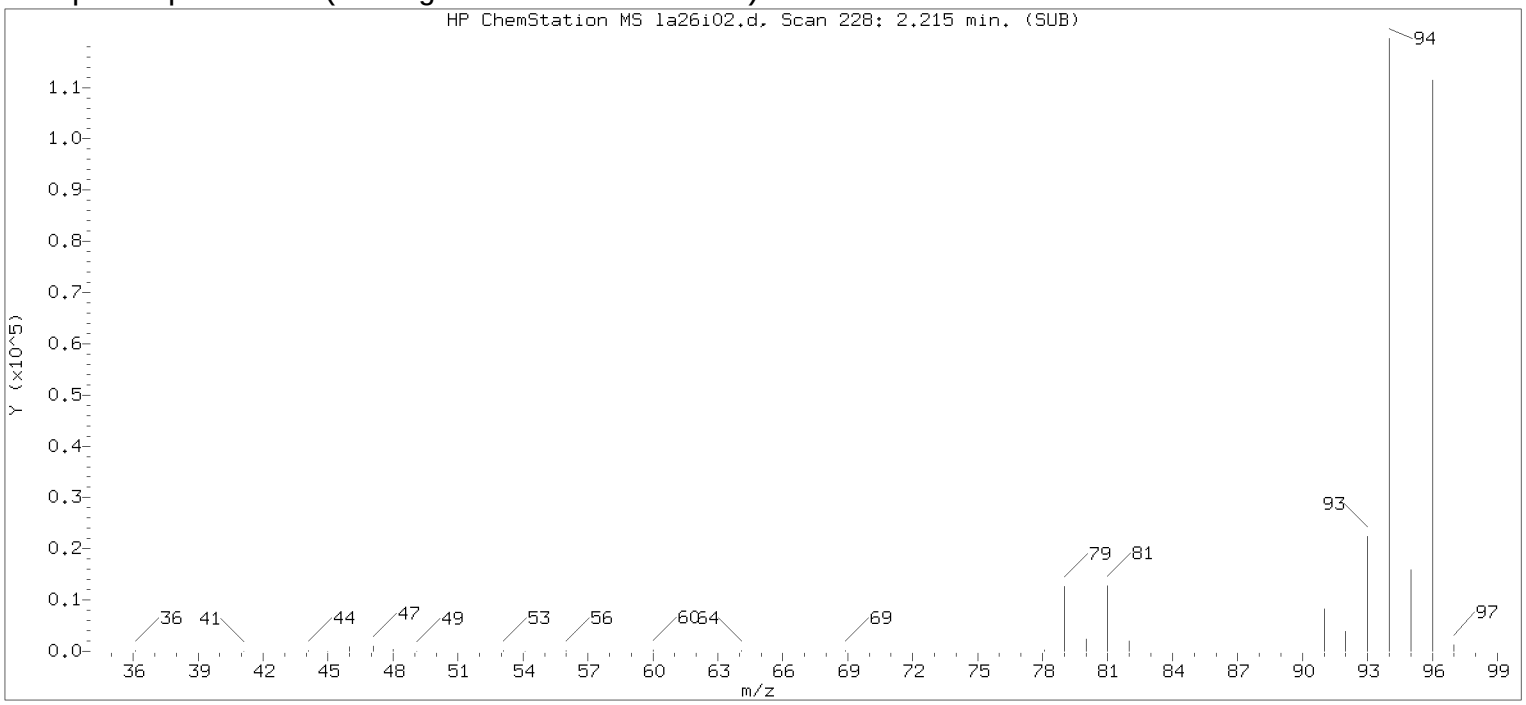
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 230
Retention Time (minutes): 2.221
Quant Ion : 94.00
Area (flag) : 446773M
On-Column Amount (ng) : 105.7521
Integration start scan : 196 Integration stop scan: 344
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

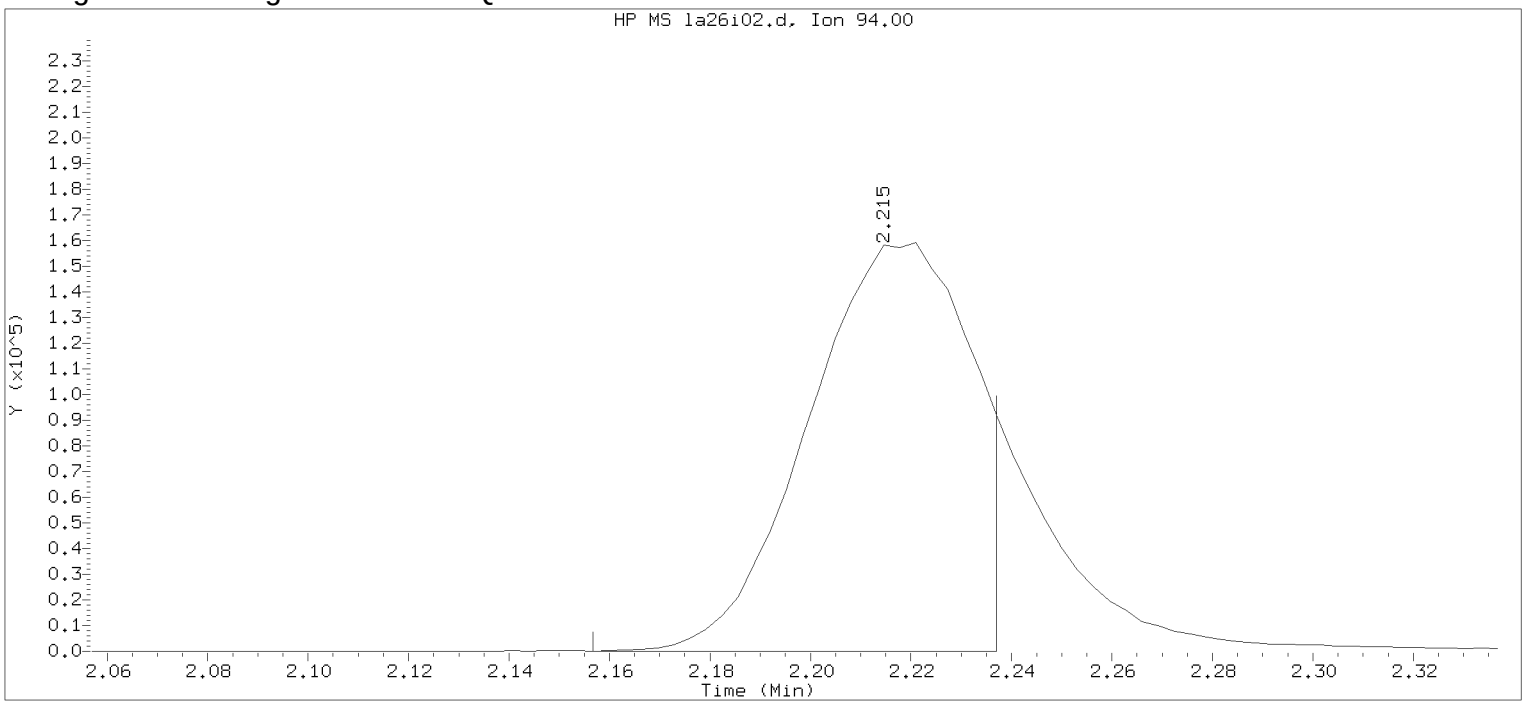
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

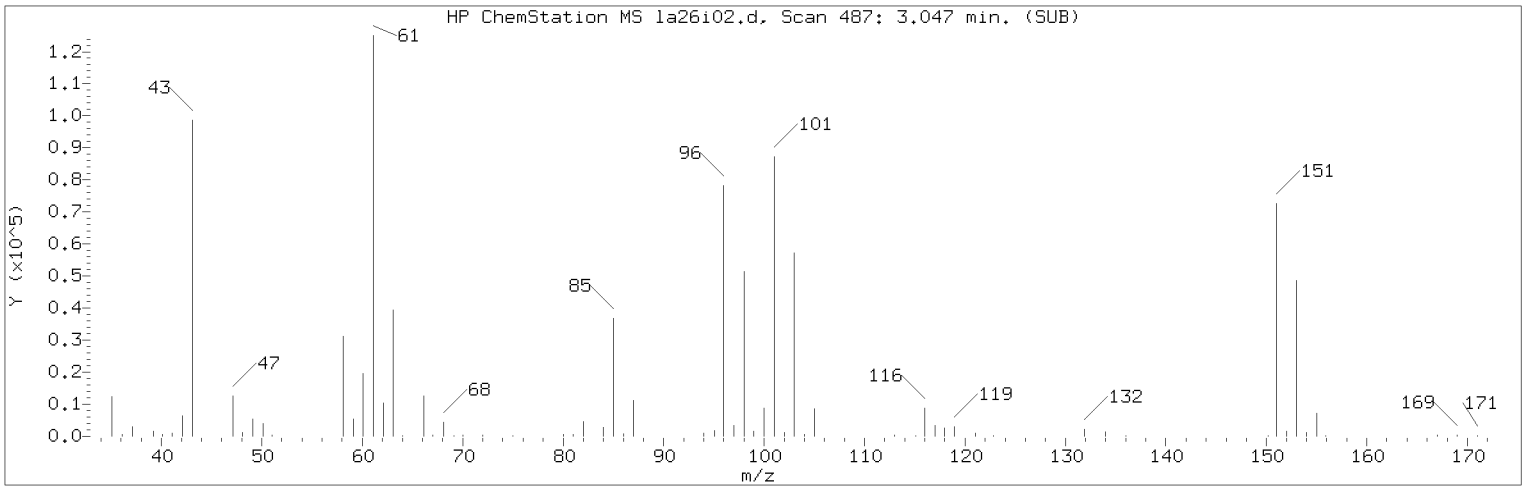
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

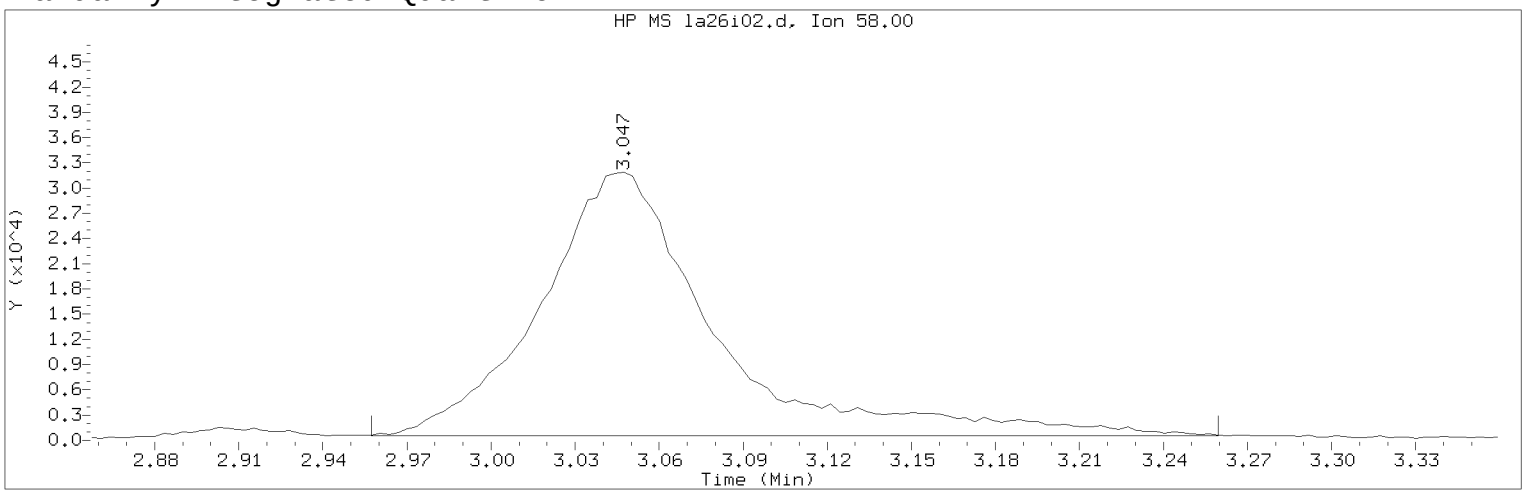
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 228
Retention Time (minutes): 2.215
Quant Ion : 94.00
Area : 353561
On-column Amount (ng) : 86.2140
Integration start scan : 209 Integration stop scan: 234
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 148 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

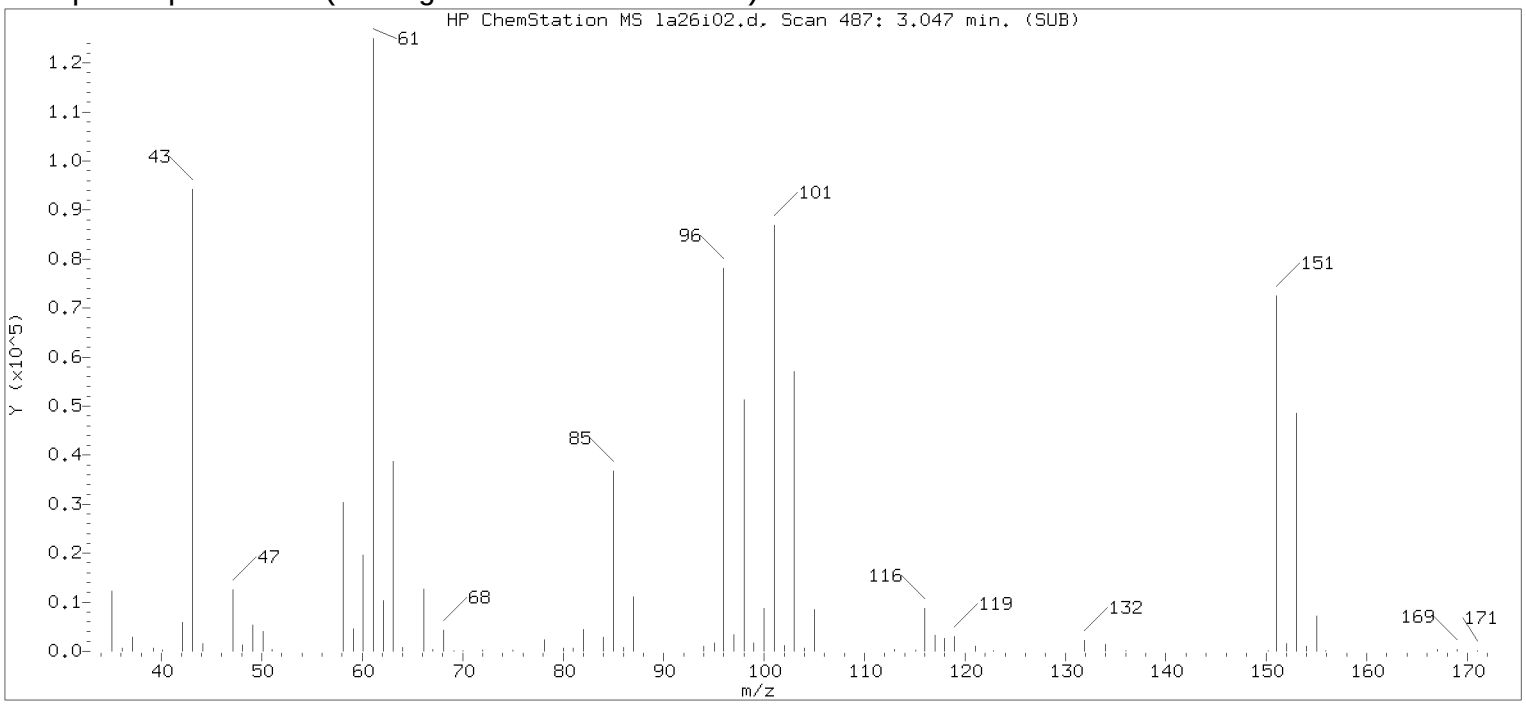
Compound Number : 18
Compound Name : Acetone
Scan Number : 487
Retention Time (minutes): 3.047
Quant Ion : 58.00
Area (flag) : 135546M
On-Column Amount (ng) : 207.7778
Integration start scan : 458 Integration stop scan: 552
Y at integration start : 496 Y at integration end: 496

Reason for manual integration: improper integration

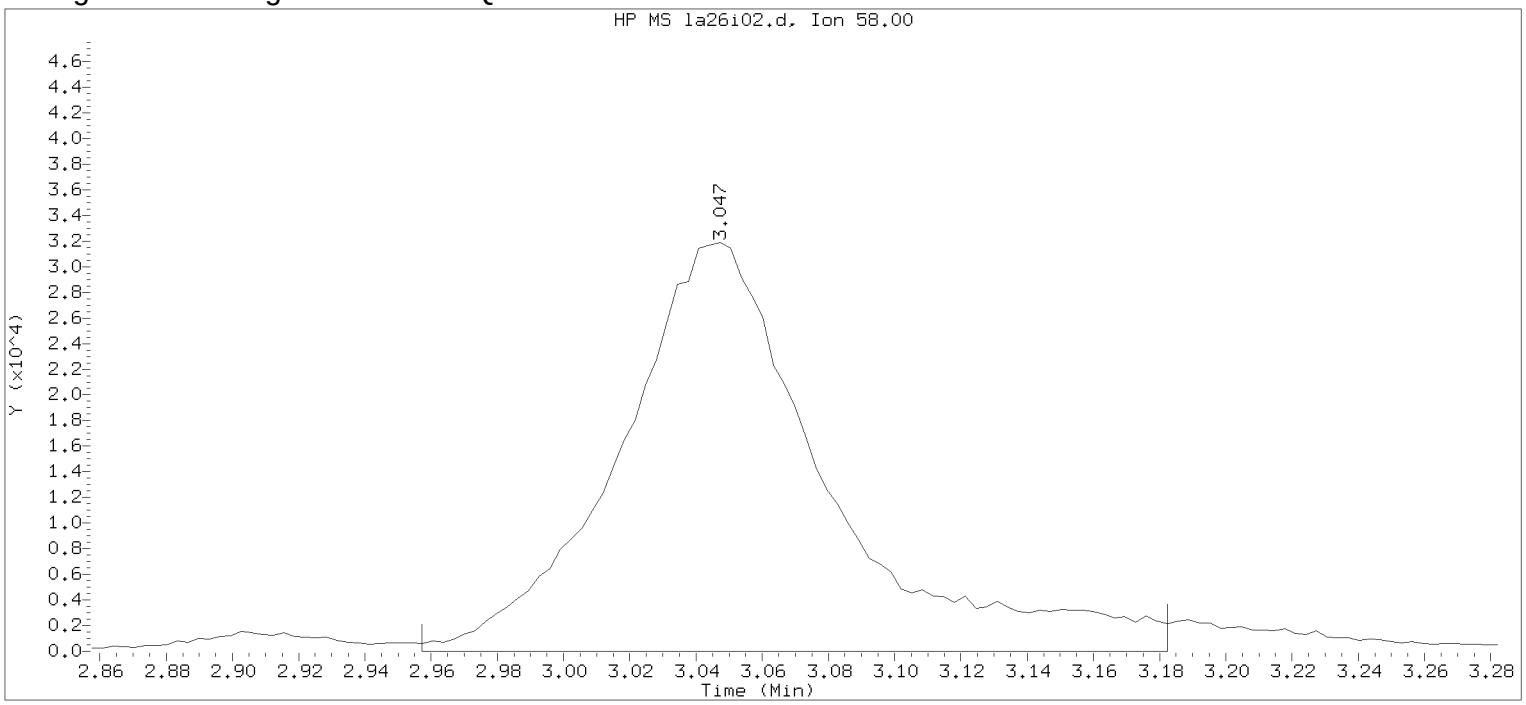
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

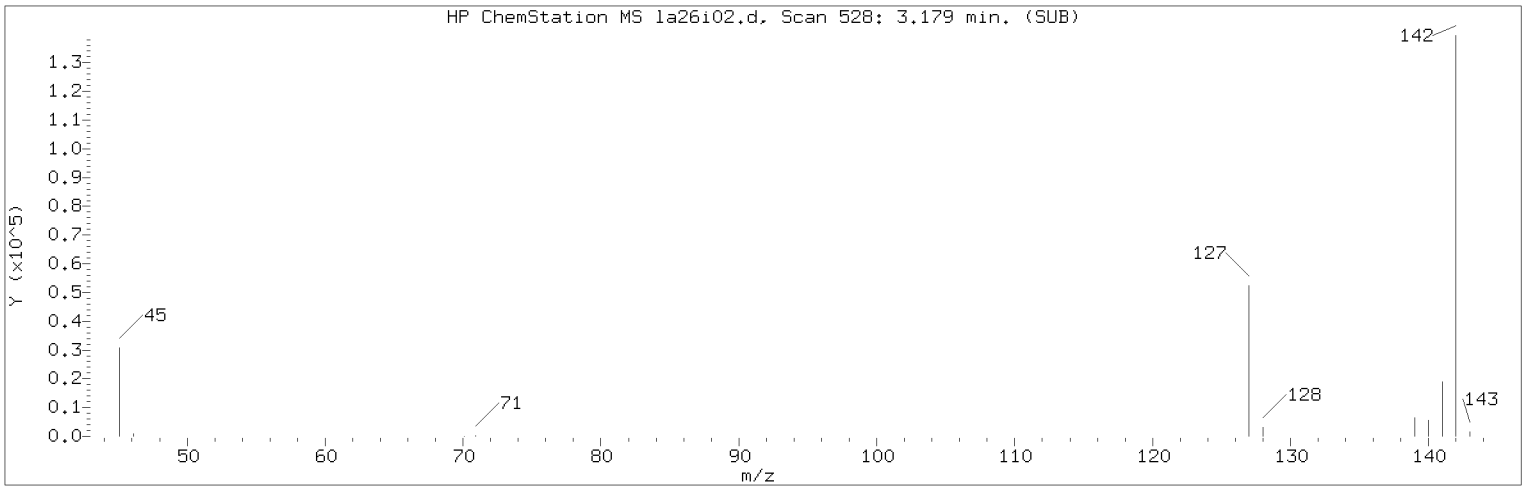
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

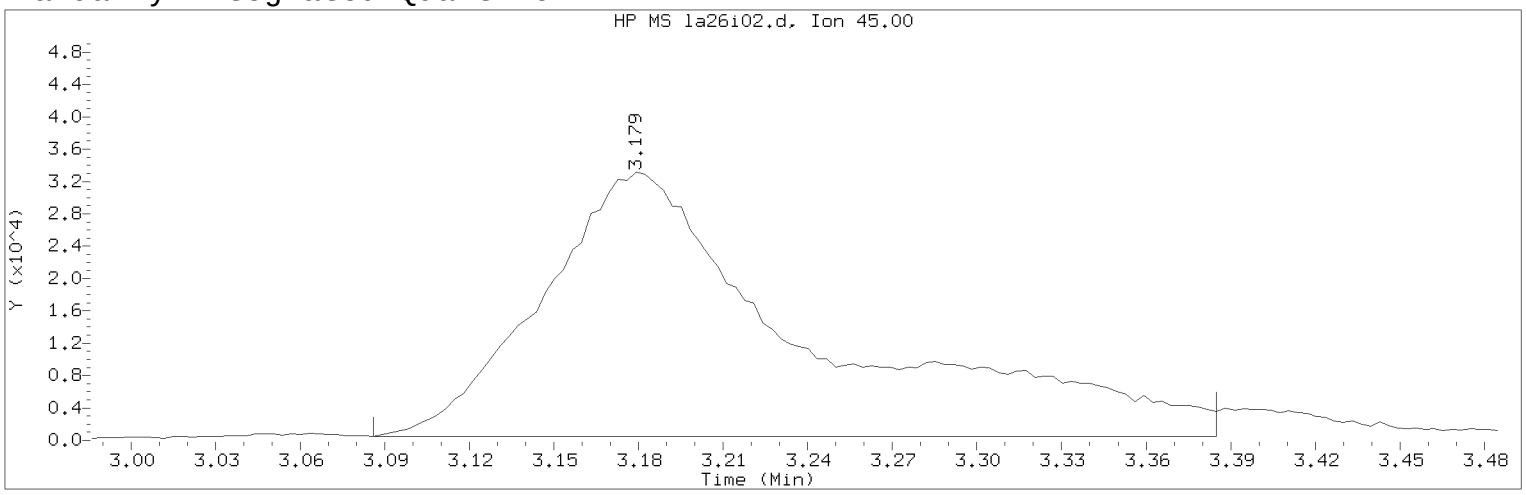
| | | | |
|---|---|---|---|
| Compound Number | : 18 | | |
| Compound Name | : Acetone | | |
| Scan Number | : 487 | | |
| Retention Time (minutes) | : 3.047 | | |
| Quant Ion | : 58.00 | | |
| Area | : 137735 | | |
| On-column Amount (ng) | : 199.5156 | | |
| Integration start scan | : 458 | Integration stop scan: | 528 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

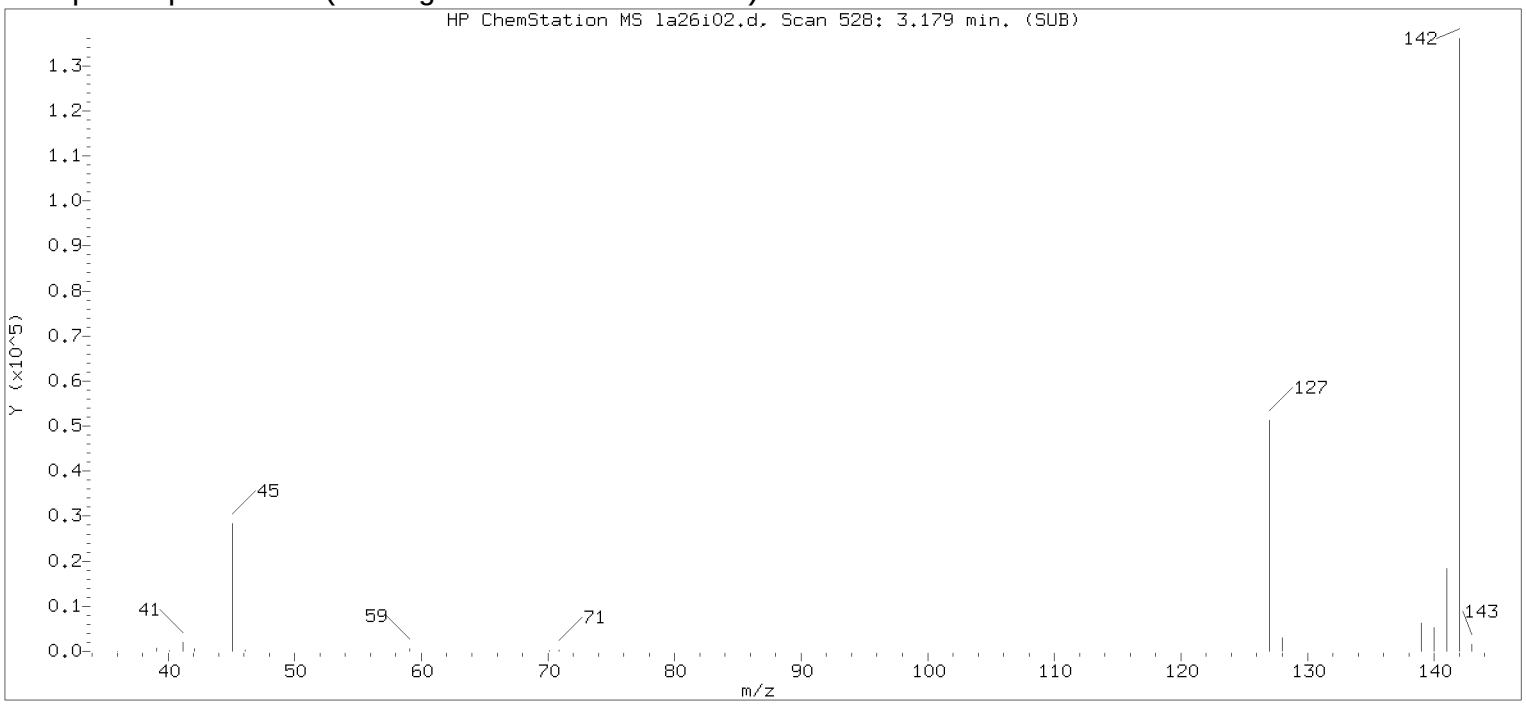
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 528
Retention Time (minutes): 3.179
Quant Ion : 45.00
Area (flag) : 213396M
On-Column Amount (ng) : 493.4490
Integration start scan : 498 Integration stop scan: 591
Y at integration start : 488 Y at integration end: 488

Reason for manual integration: improper integration

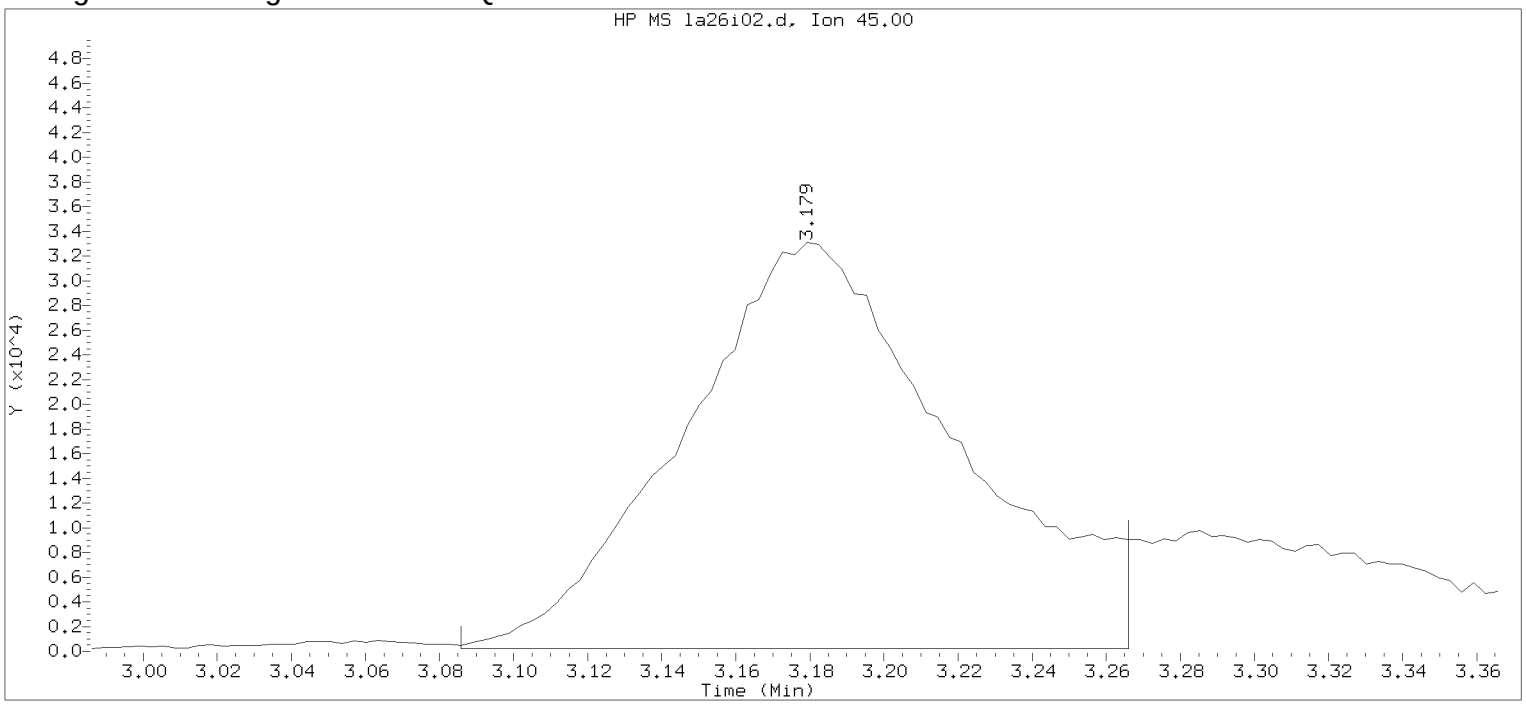
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

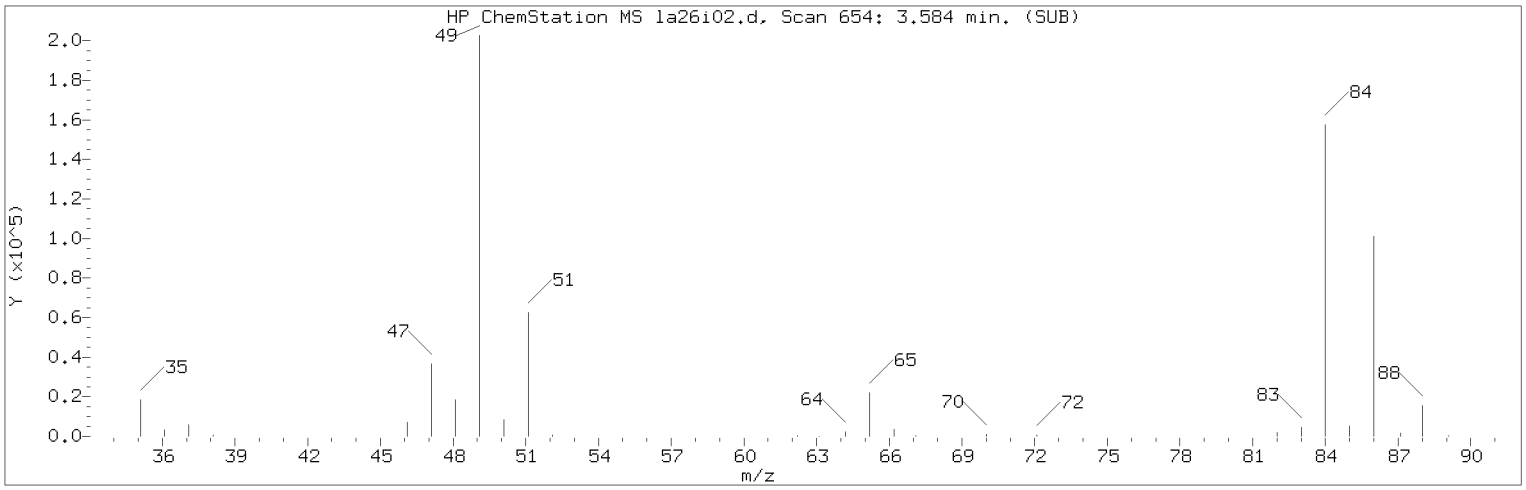
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

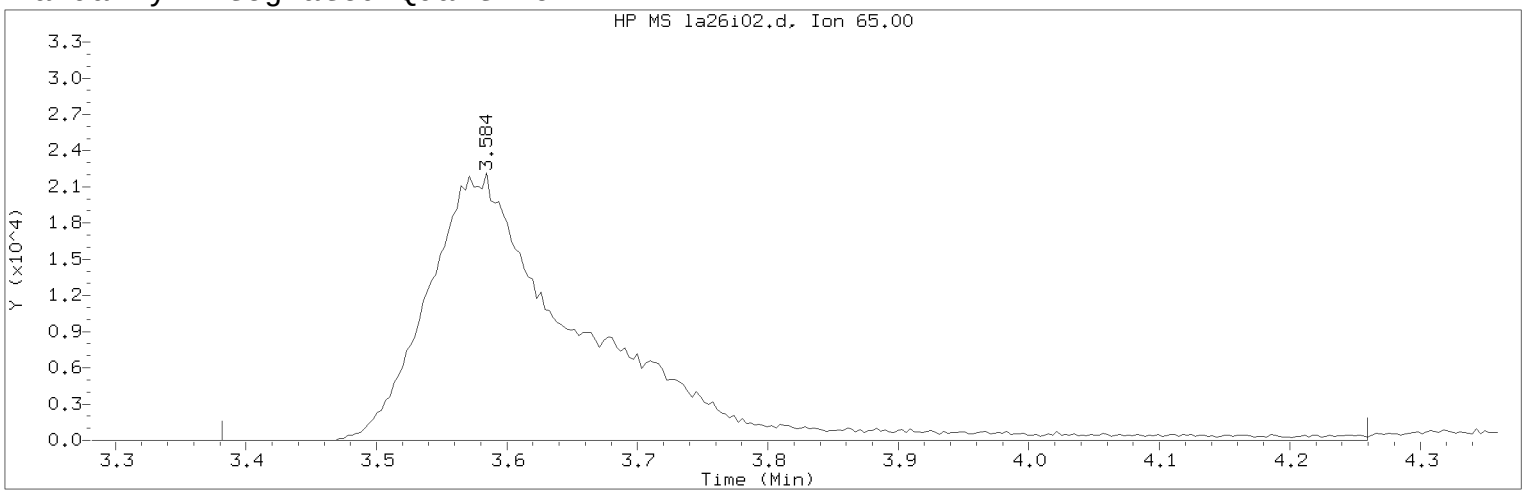
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 528
Retention Time (minutes): 3.179
Quant Ion : 45.00
Area : 167823
On-column Amount (ng) : 440.7134
Integration start scan : 498 Integration stop scan: 554
Y at integration start : 223 Y at integration end: 223

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 150

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

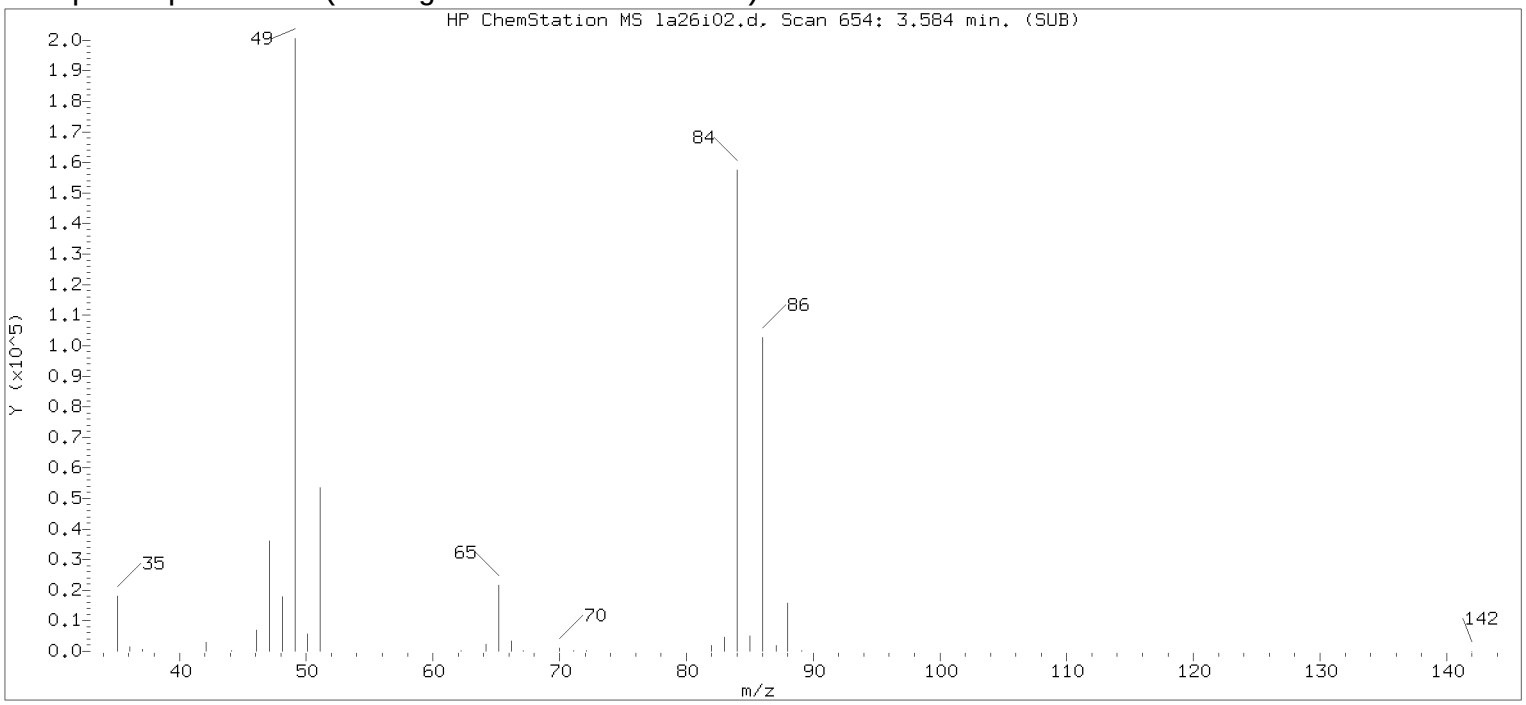
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 654
Retention Time (minutes): 3.584
Quant Ion : 65.00
Area (flag) : 183612M
On-Column Amount (ng) : 250.0000
Integration start scan : 590 Integration stop scan: 863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

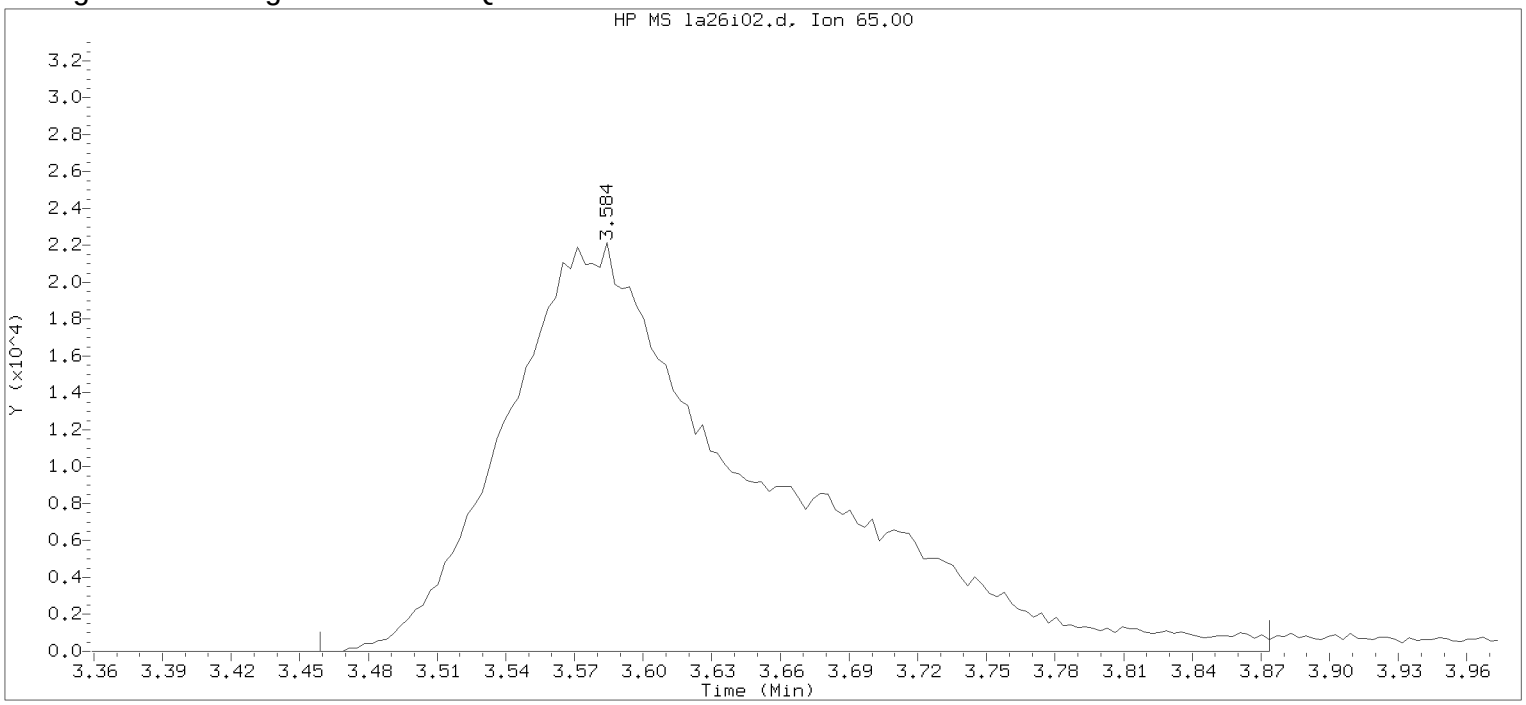
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 654
Retention Time (minutes): 3.584
Quant Ion : 65.00
Area : 172293
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 743
Y at integration start : 0 Y at integration end: 0

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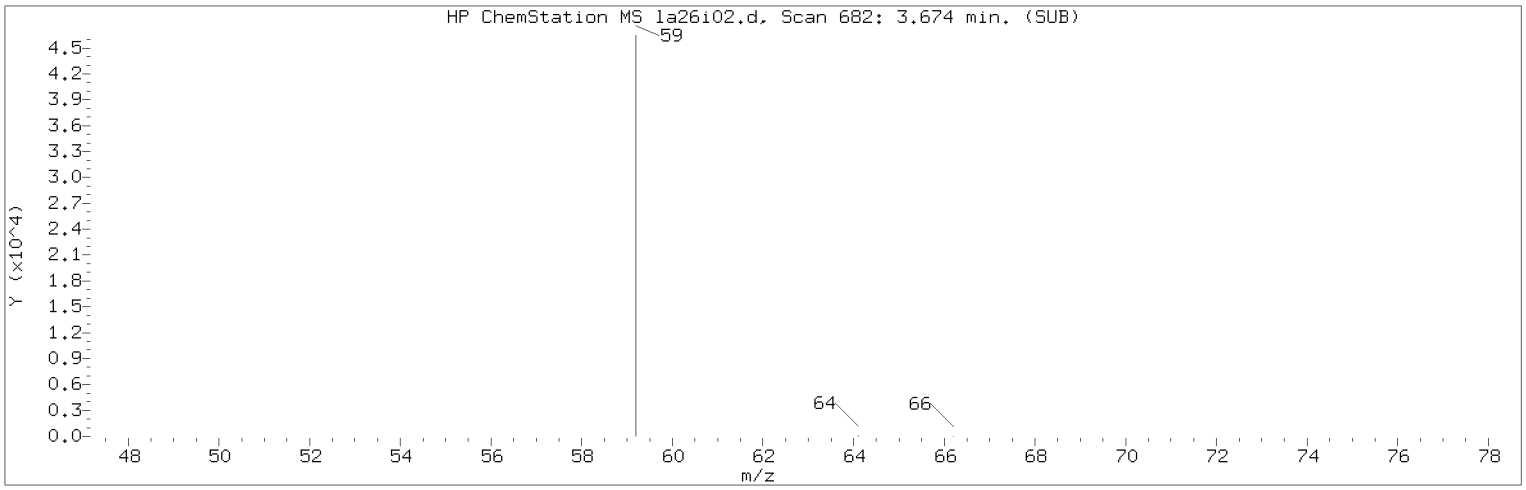
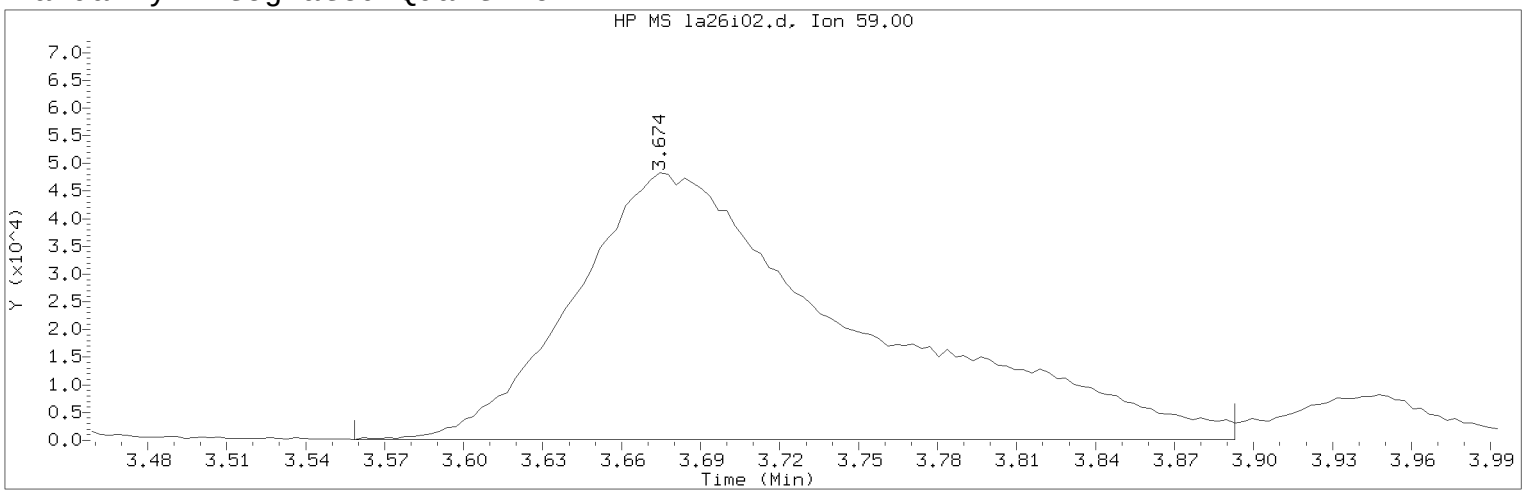
Target 3.5 esignature userKAS02648 Page 152 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

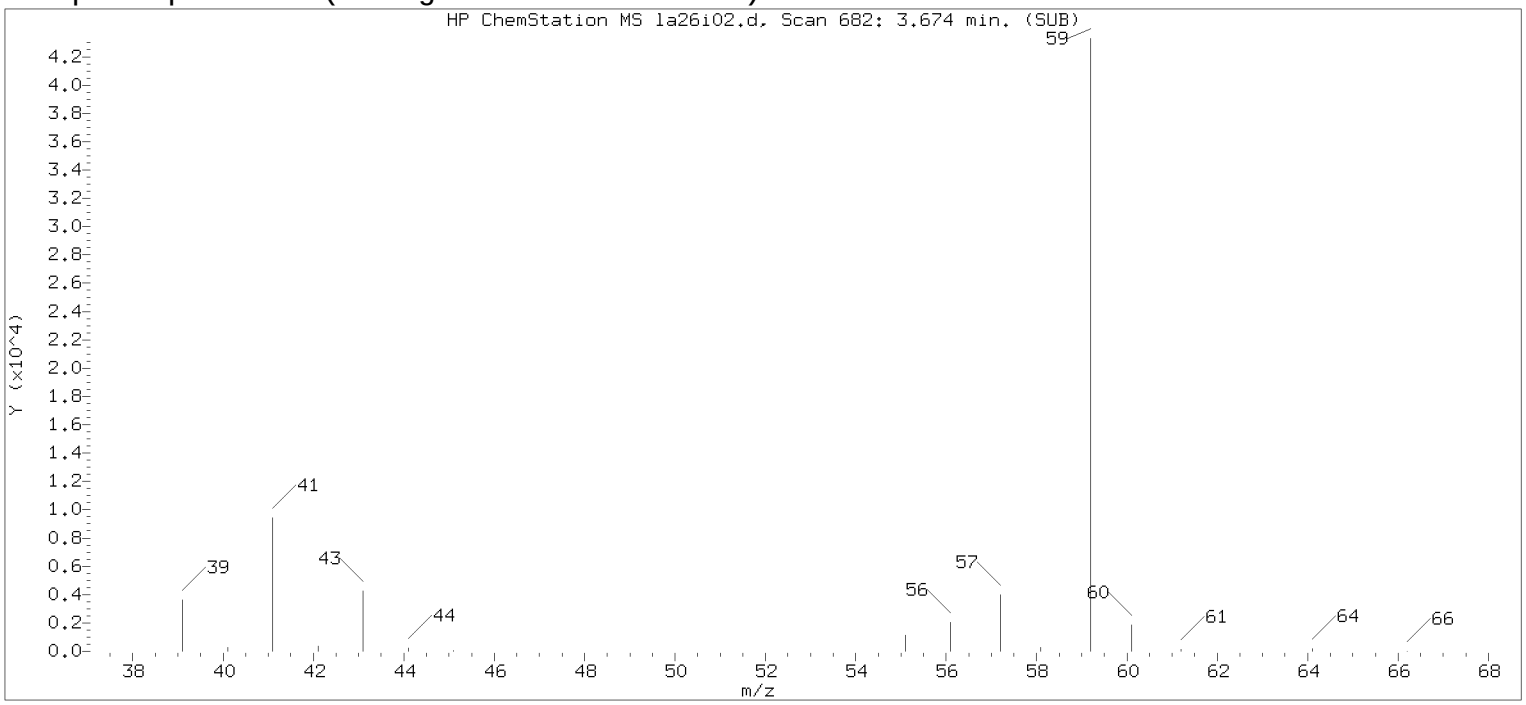
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 682
Retention Time (minutes): 3.674
Quant Ion : 59.00
Area (flag) : 356471M
On-Column Amount (ng) : 501.7705
Integration start scan : 645 Integration stop scan: 749
Y at integration start : 168 Y at integration end: 168

Reason for manual integration: improper integration

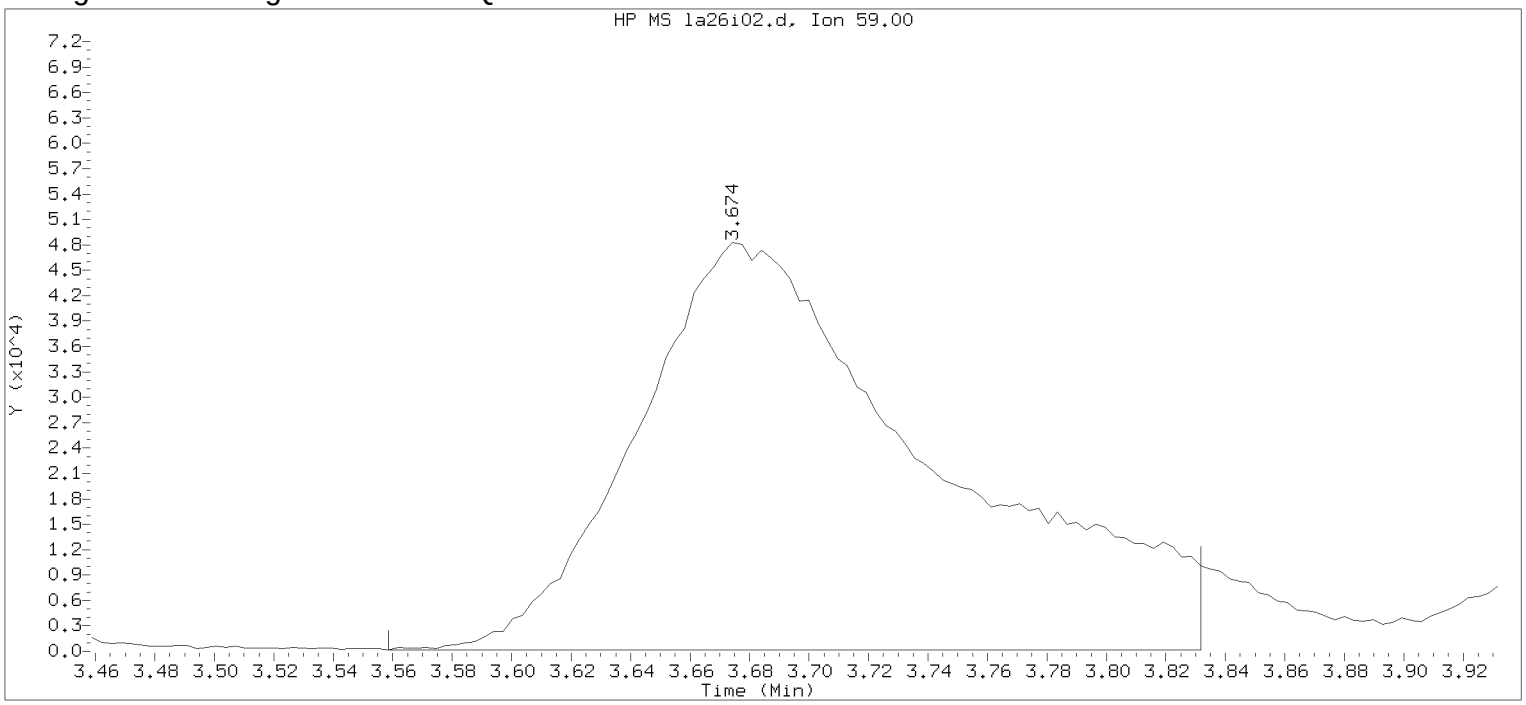
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 682
Retention Time (minutes): 3.674
Quant Ion : 59.00
Area : 335006
On-column Amount (ng) : 496.4294
Integration start scan : 645 Integration stop scan: 730
Y at integration start : 169 Y at integration end: 169

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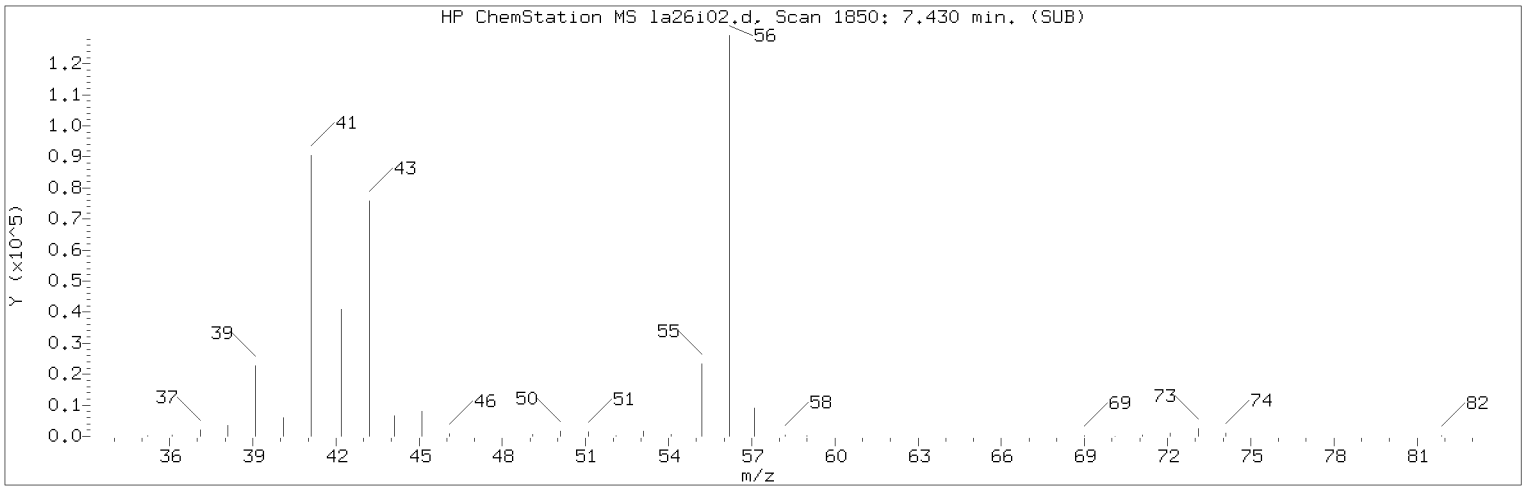
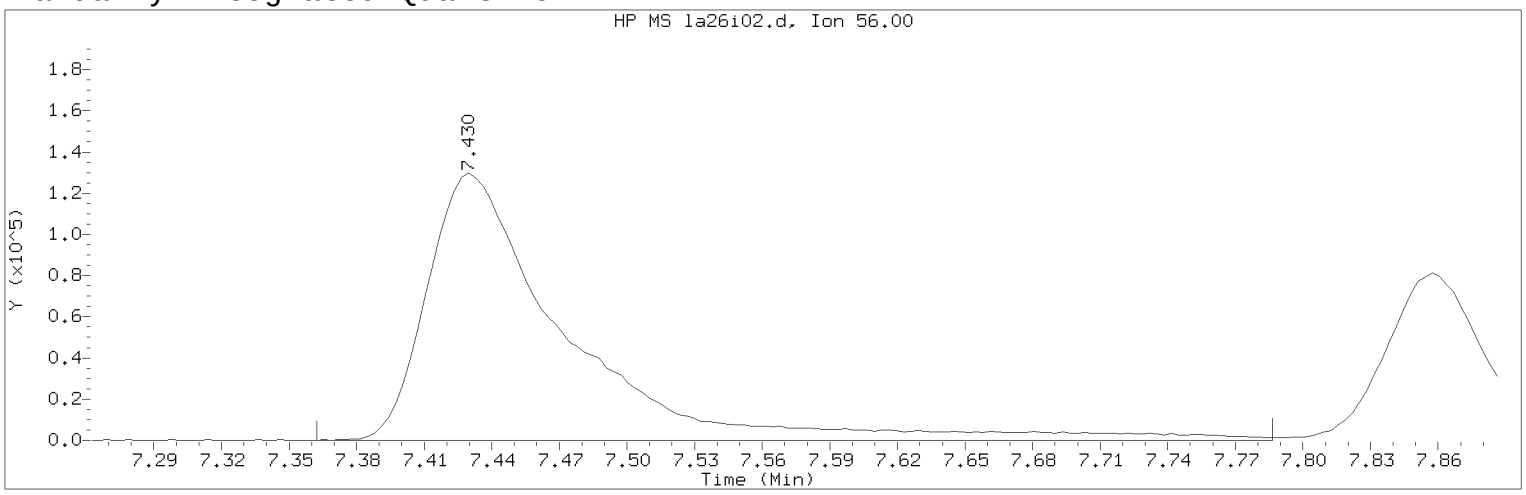
Target 3.5 esignature userKAS02648 Page 154 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

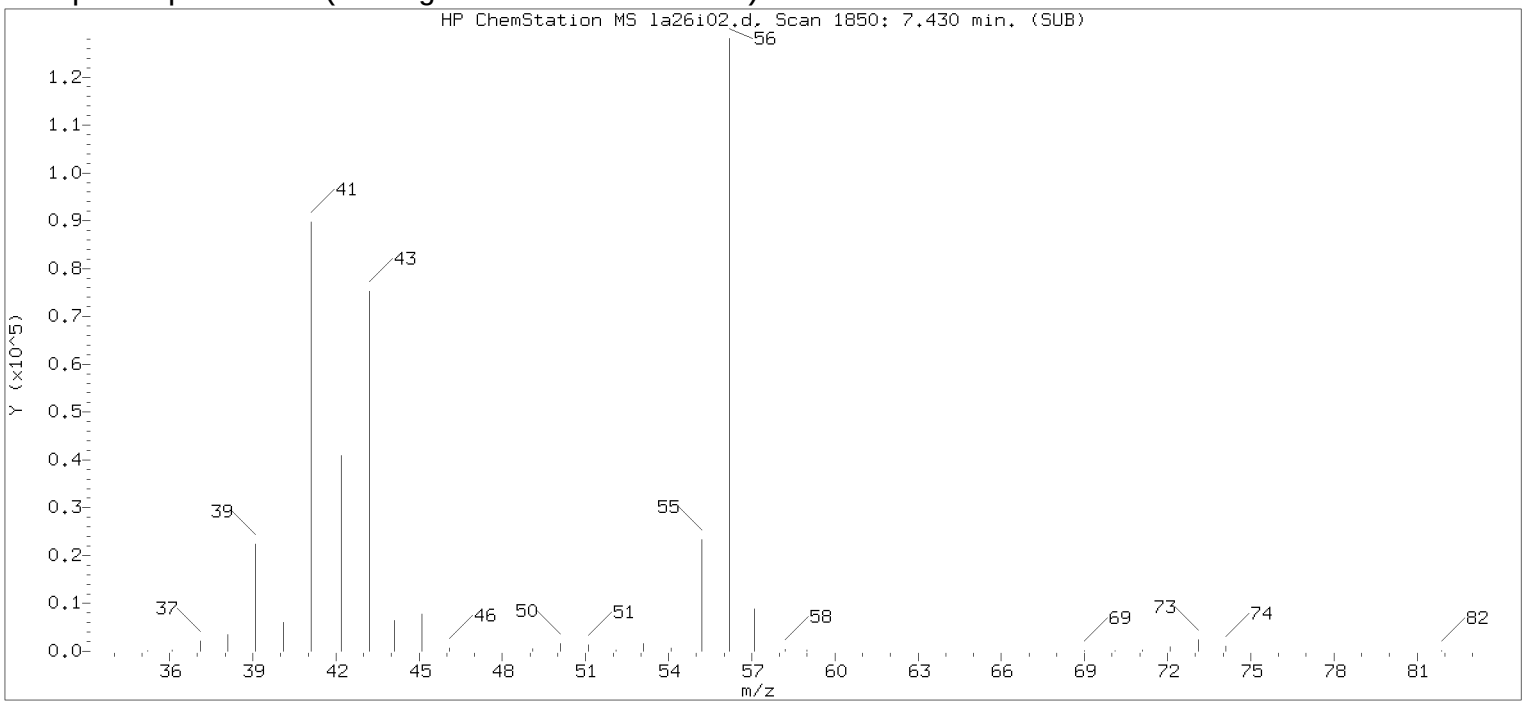
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1850
Retention Time (minutes): 7.430
Quant Ion : 56.00
Area (flag) : 557797M
On-Column Amount (ng) : 2774.0960
Integration start scan : 1828 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

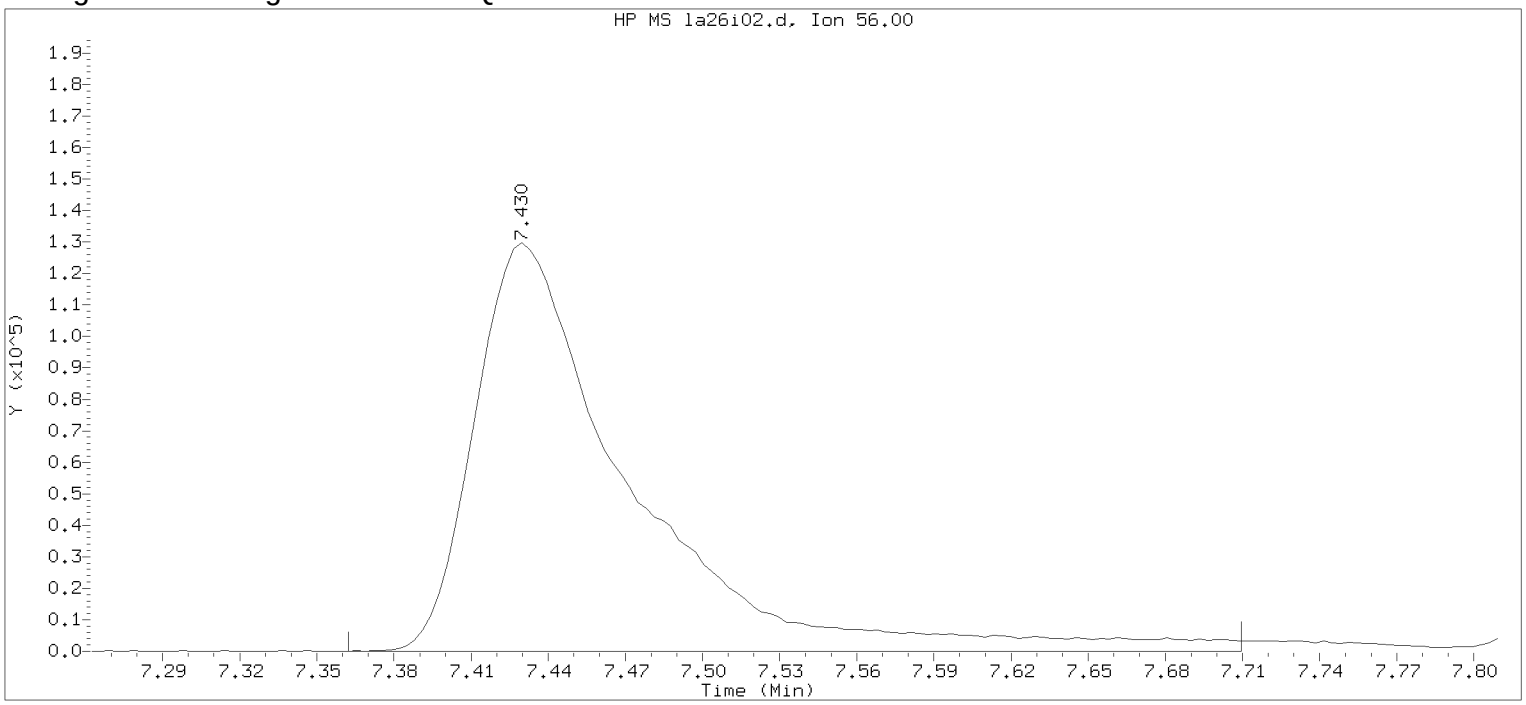
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

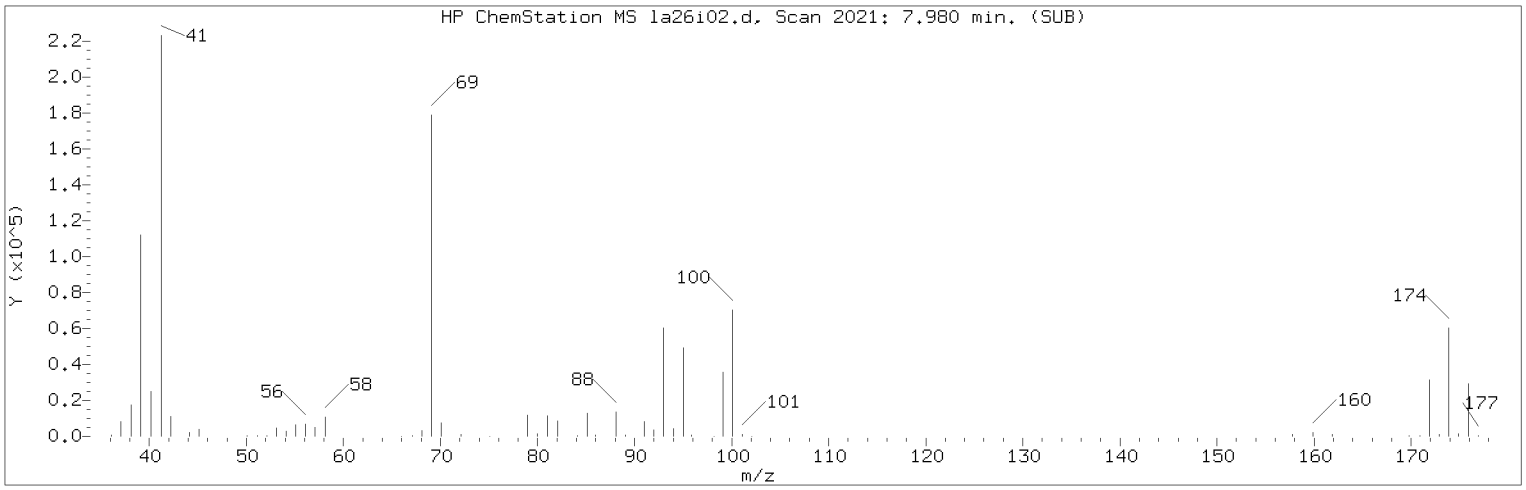
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

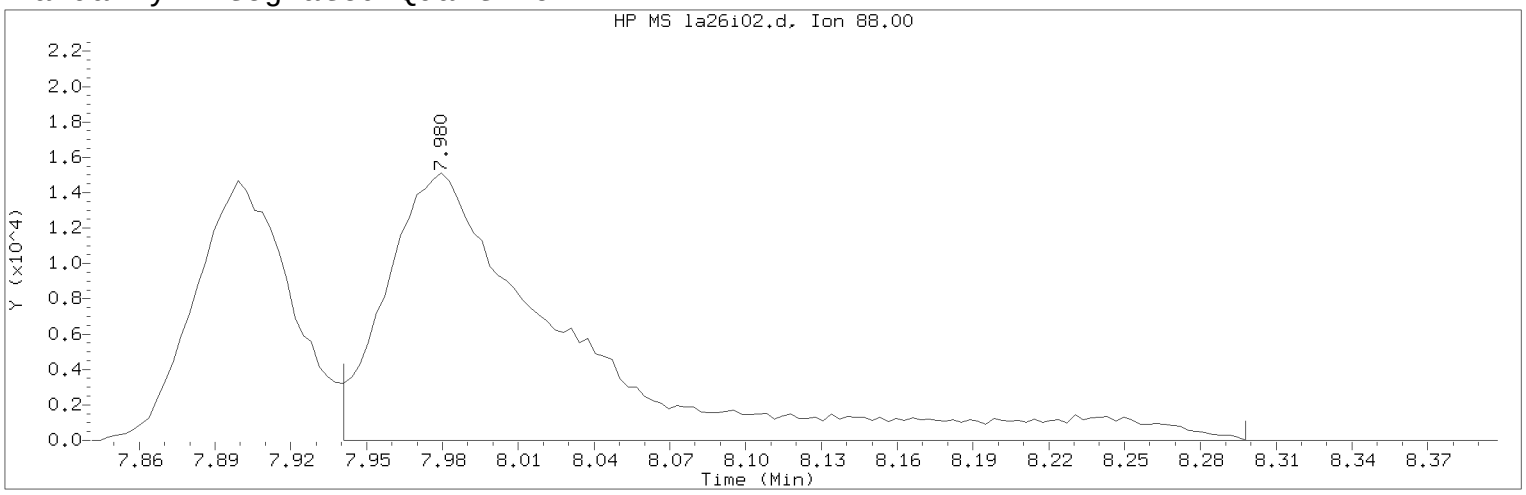
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1850
Retention Time (minutes): 7.430
Quant Ion : 56.00
Area : 545706
On-column Amount (ng) : 2586.5087
Integration start scan : 1828 Integration stop scan: 1936
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 RD186 Page 156

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

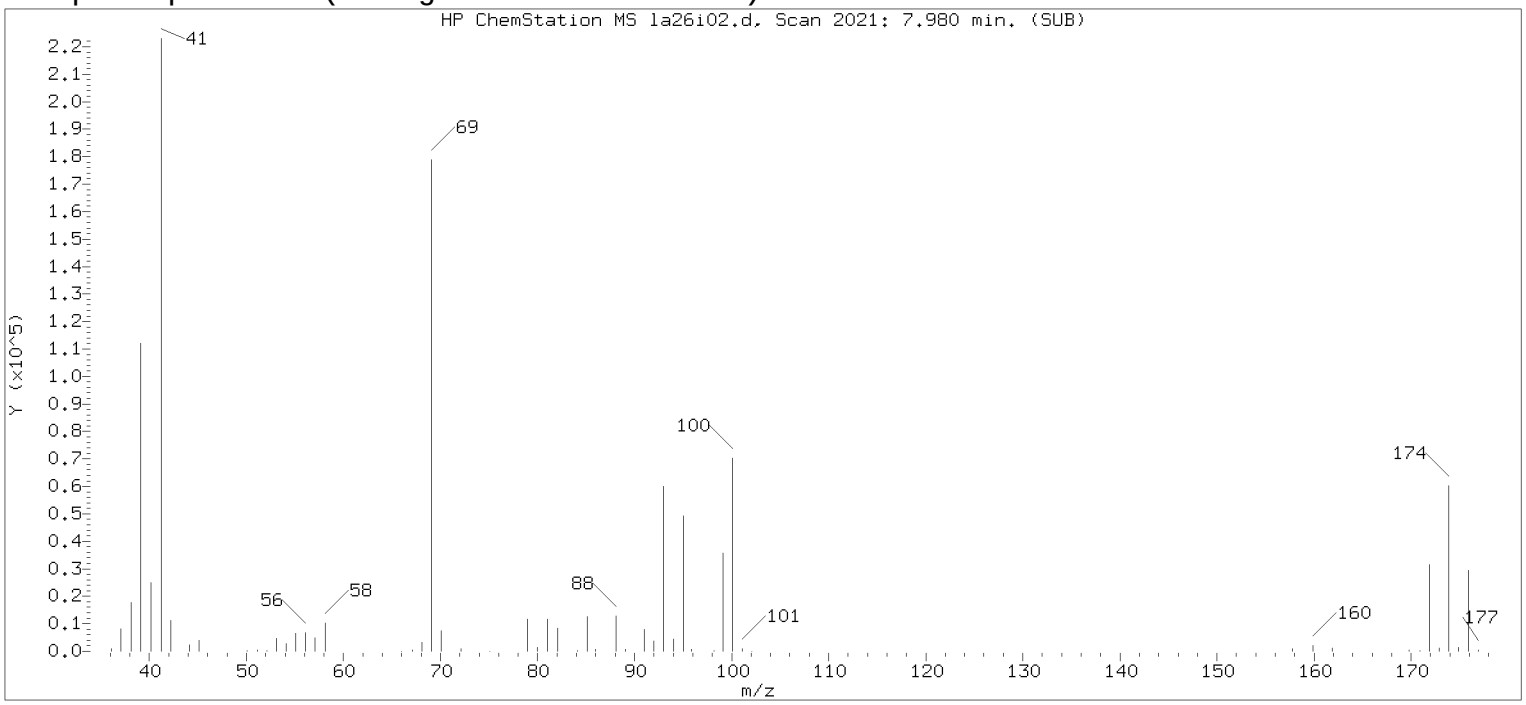
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 88.00
Area (flag) : 76692M
On-Column Amount (ng) : 1221.7348
Integration start scan : 2008 Integration stop scan: 2119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

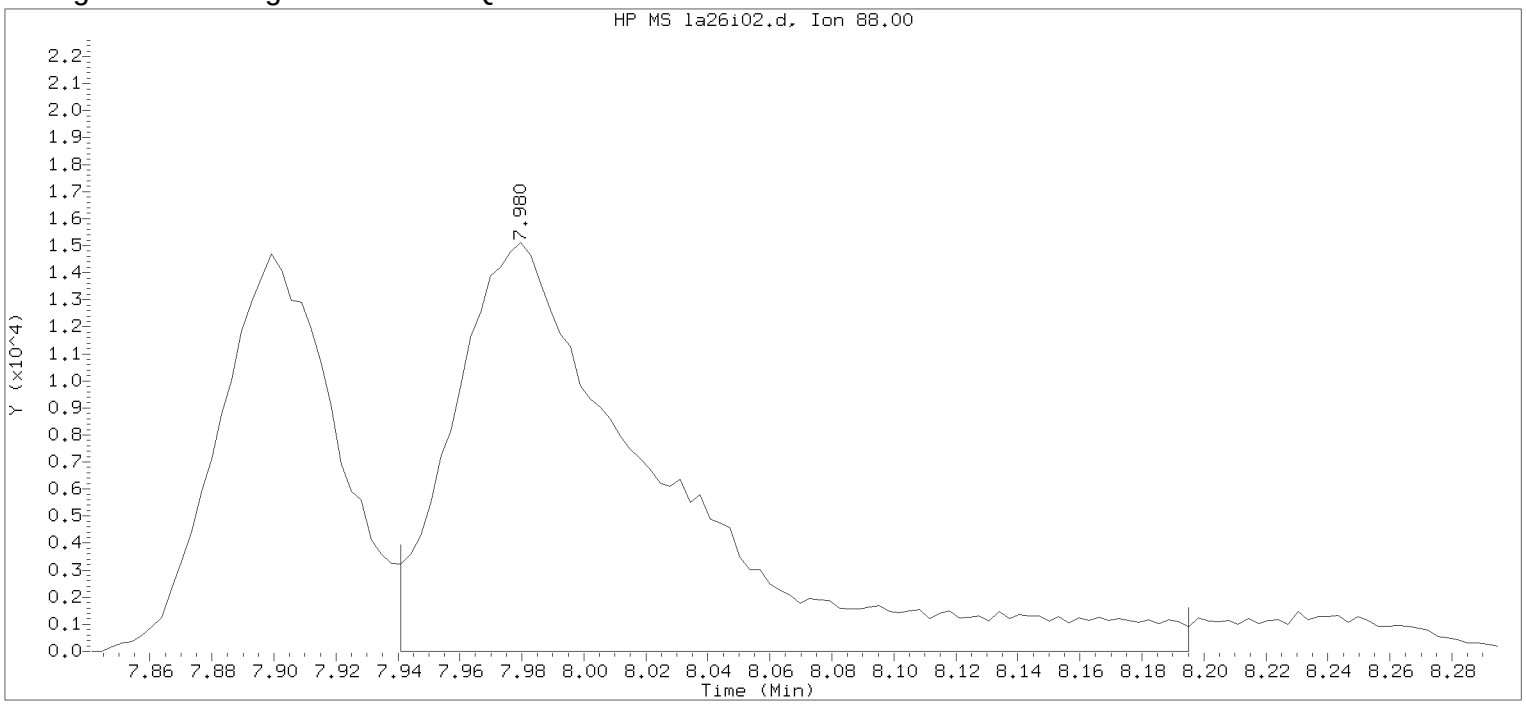
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

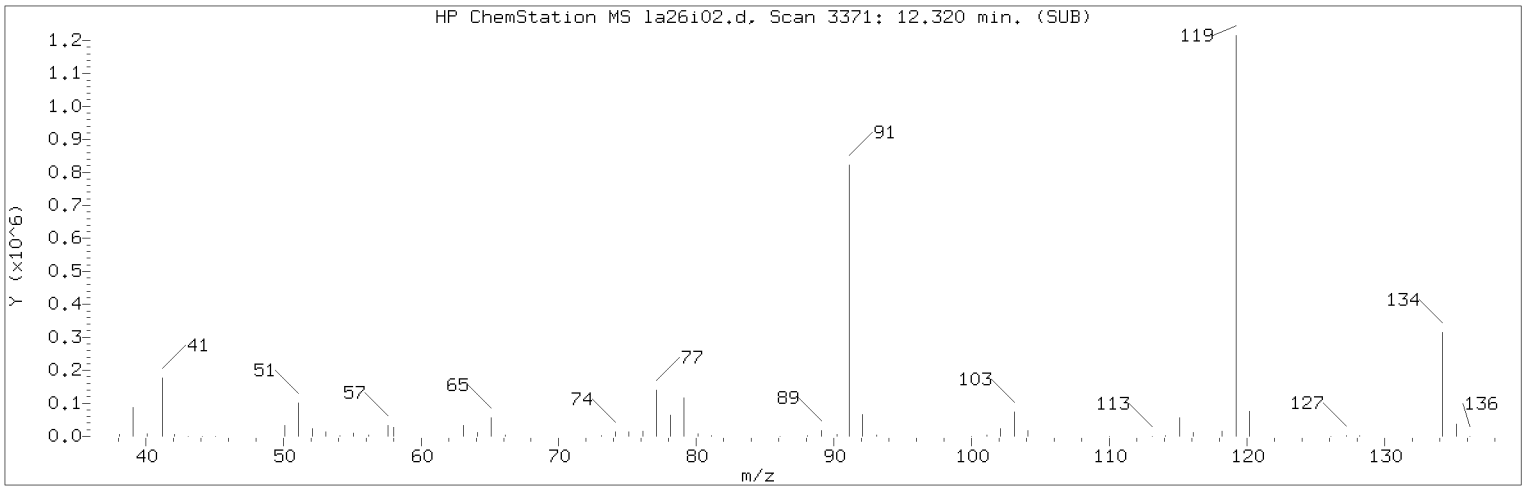
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

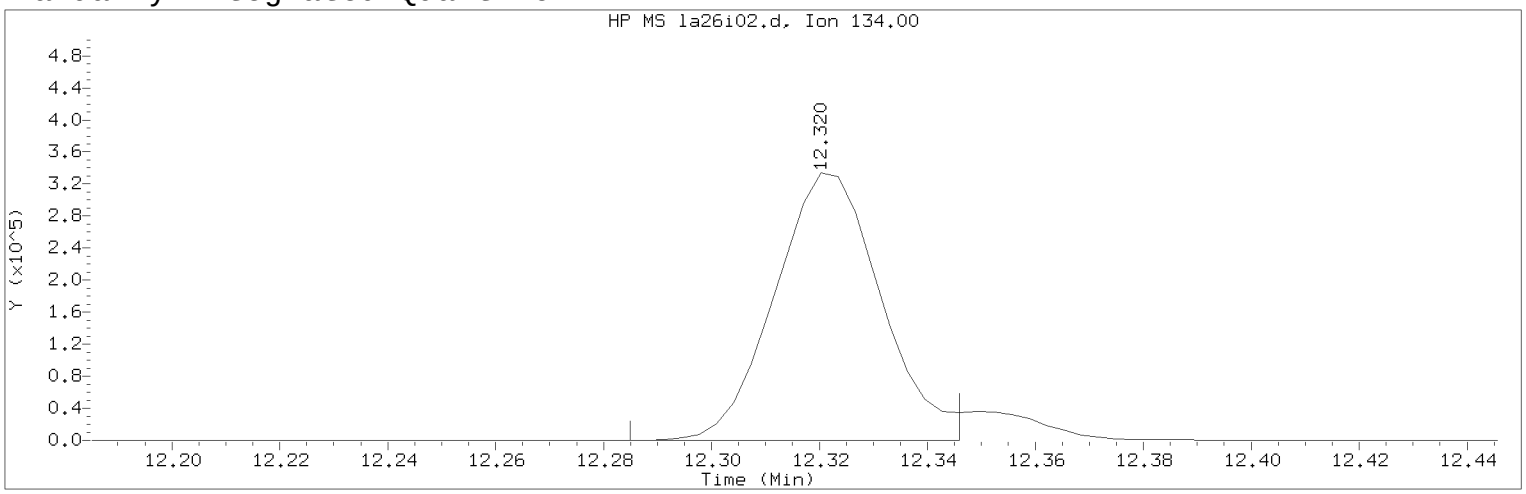
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 88.00
Area : 70705
On-column Amount (ng) : 1061.5410
Integration start scan : 2008 Integration stop scan: 2087
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

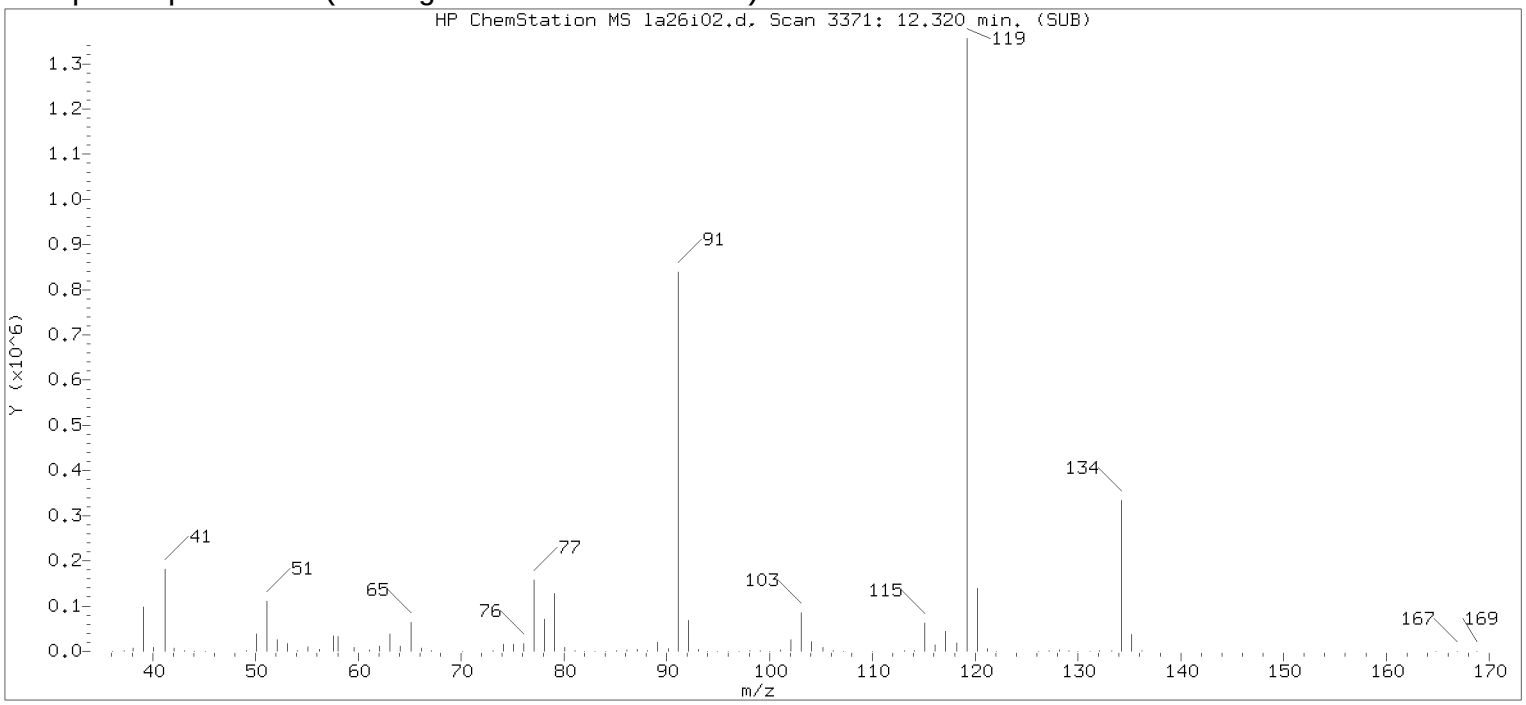
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 456579M
On-Column Amount (ng) : 105.7797
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

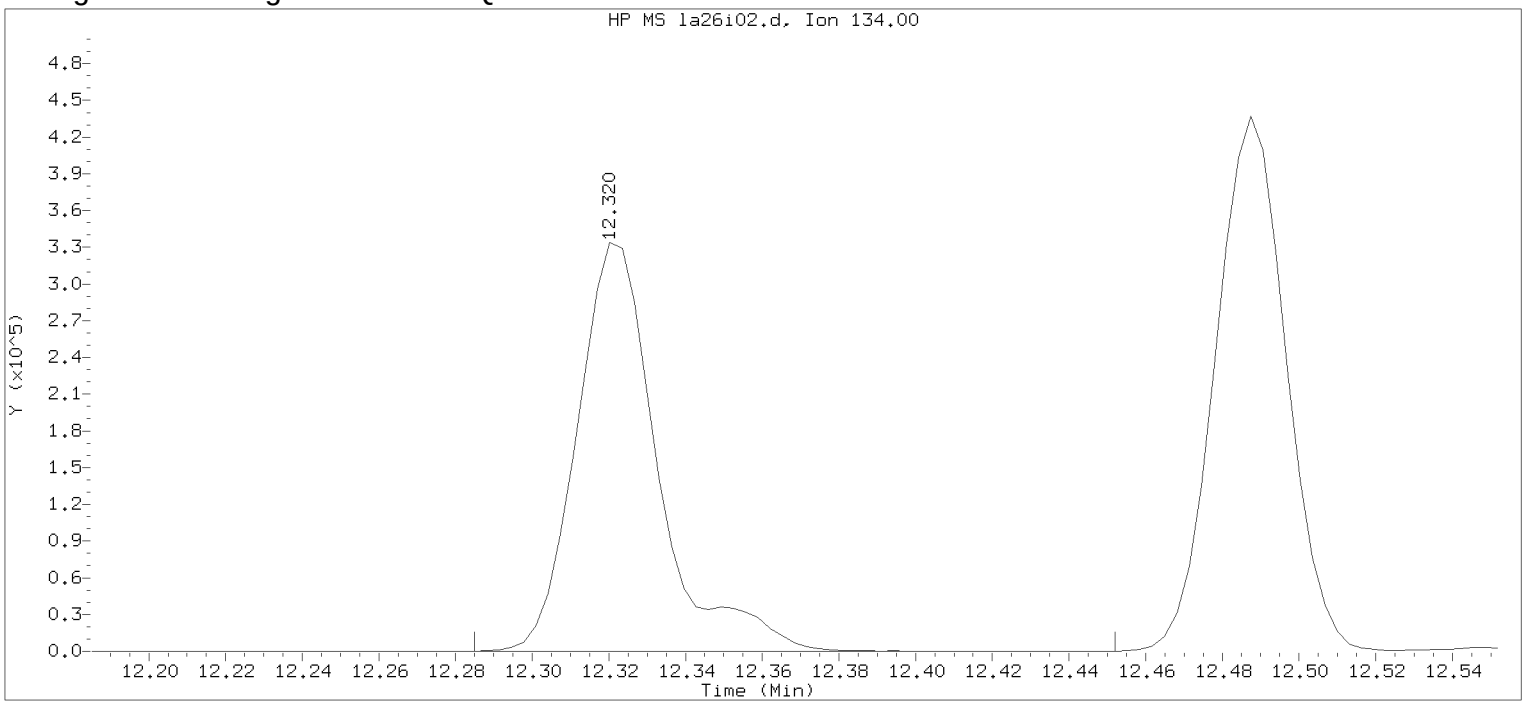
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



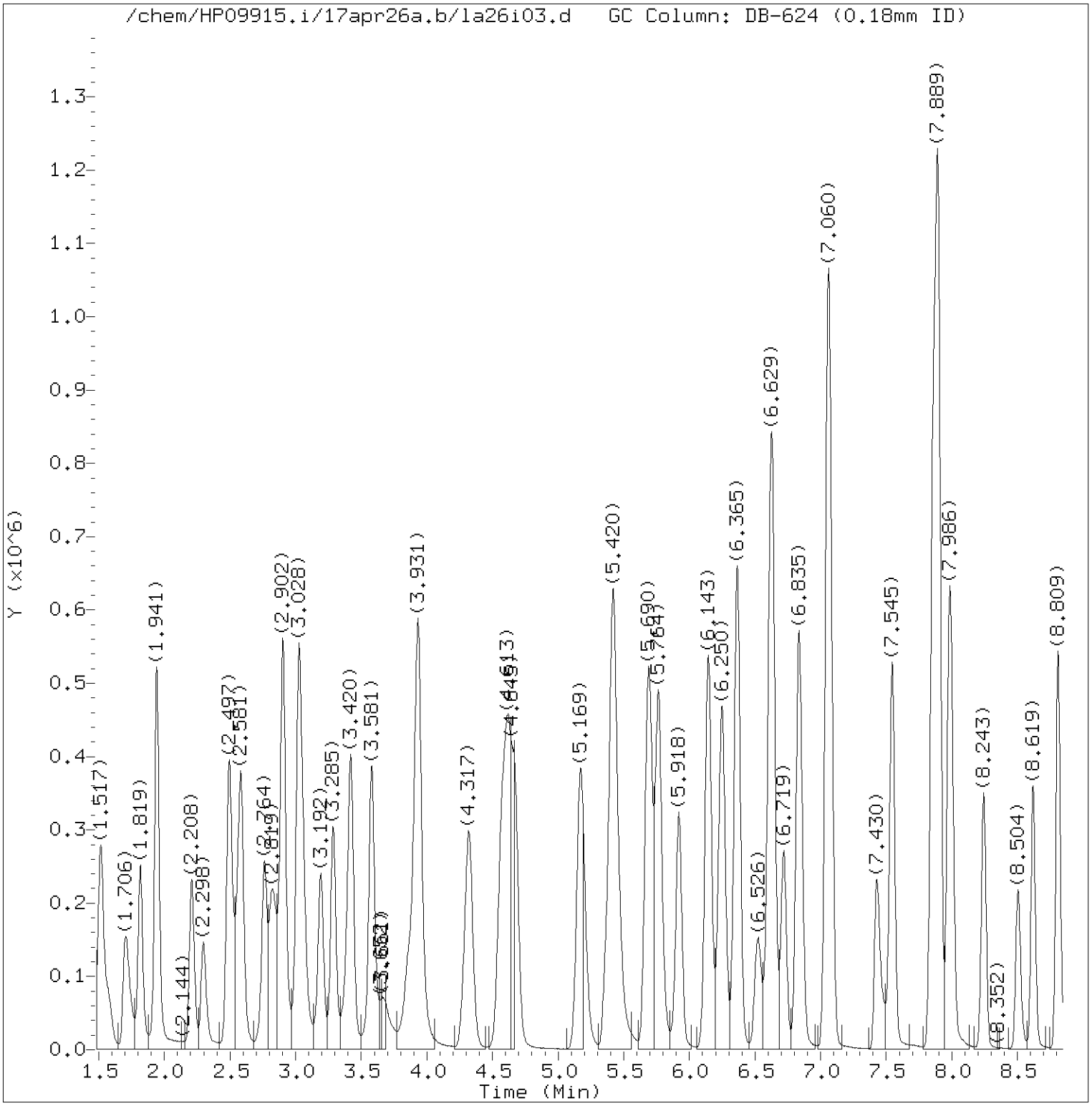

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 491130
On-column Amount (ng) : 103.2605
Integration start scan : 3359 Integration stop scan: 3411
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 140 of 867




Total Ion Chromatogram (TIC)

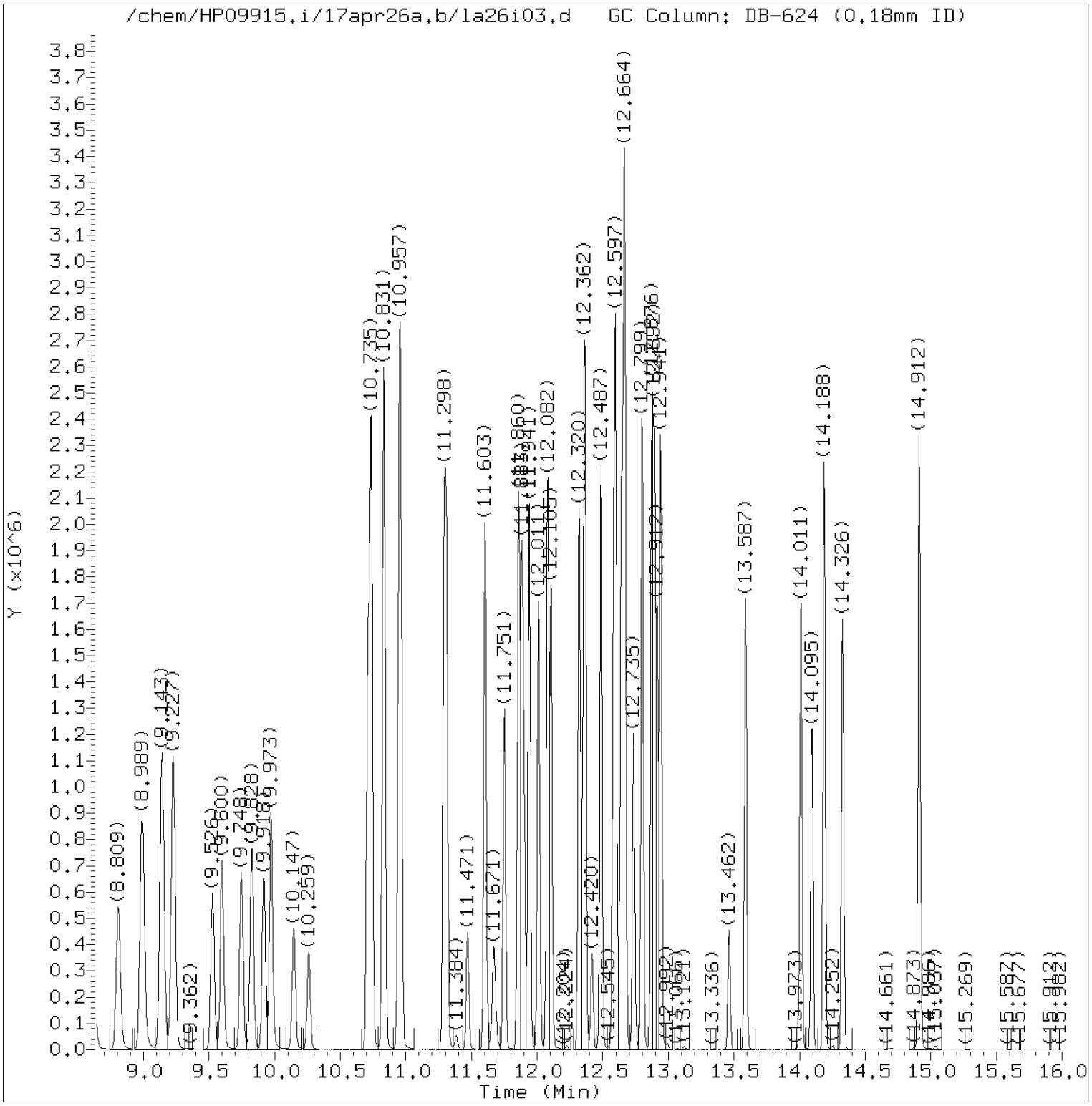
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 341531 | 55.325 |
| 4) Chloromethane | (2) | 1.819 | 50 | 341915 | 53.914 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 338740 | 55.314 |
| 5) 1,3-Butadiene | (2) | 1.948 | 39 | 185287 | 49.605 |
| 8) Bromomethane | (2) | 2.211 | 94 | 223606 | 54.288 |
| 9) Chloroethane | (2) | 2.301 | 64 | 186081 | 53.918 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 455798 | 54.146 |
| 12) Trichlorofluoromethane | (2) | 2.562 | 101 | 396809 | 55.955 |
| 11) n-Pentane | (2) | 2.584 | 43 | 292021 | 50.002 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 210376 | 53.288 |
| 15) Freon 123a | (2) | 2.819 | 67 | 241023 | 51.034 |
| 16) Acrolein | (1) | 2.902 | 56 | 846420 | 532.609 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 192923 | 51.401 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 97269 | 51.192 |
| 18) Acetone | (1) | 3.041 | 58 | 73070M | 105.938 |
| 19) Freon 113 | (2) | 3.047 | 101 | 194876 | 51.583 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 105752 | 231.283 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 379144 | 52.079 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 640566 | 52.445 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 274054 | 50.308 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 386191 | 51.369 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 194134M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 241364 | 48.679 |
| 30) t-Butyl alcohol | (1) | 3.677 | 59 | 188301 | 250.688 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 159848 | 55.877 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 721326 | 52.461 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 228348 | 51.854 |
| 34) n-Hexane | (2) | 4.320 | 57 | 342791 | 50.780 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 433276 | 52.360 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 837918 | 52.757 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 368443 | 52.785 |
| 40) Ethyl t-butyl ether | (2) | 5.172 | 59 | 734026 | 53.702 |
| 44) 2-Butanone | (2) | 5.378 | 43 | 418947 | 109.375 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 262755 | 52.071 |
| 45) 2,2-Dichloropropane | (2) | 5.433 | 77 | 299786 | 54.261 |
| 47) Propionitrile | (1) | 5.462 | 54 | 282765 | 257.928 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 375487 | 131.654 |
| 49) Bromochloromethane | (2) | 5.758 | 128 | 136891 | 51.472 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 106051 | 109.521 |
| 51) Chloroform | (2) | 5.918 | 83 | 411040 | 52.113 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 254980 | 50.387 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 111 | 260921 | 50.317 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 354588 | 49.197 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 491103 | 103.925 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 424936 | 51.780 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 346297 | 50.980 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 122692 | 51.578 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 281006 | 53.410 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 333440 | 51.977 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 170793 | 647.615 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 63118 | 50.159 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 296089 | 49.745 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 39897 | 49.986 |
| 60) Benzene | (2) | 6.629 | 78 | 982091 | 51.933 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 334956 | 52.357 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 31873 | 56.503 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 733093 | 54.041 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1036296 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 374695 | 49.577 |
| 69) n-Butanol | (1) | 7.430 | 56 | 280068 | 1317.372 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 250765 | 51.312 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 455106 | 52.853 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 206857 | 53.234 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 275068 | 53.135 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 43582M | 656.649 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 241048 | 54.398 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 171942 | 52.815 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 317704 | 54.075 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 192161 | 115.340 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 216850 | 54.493 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 421854 | 55.090 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 880332 | 111.530 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1027431 | 50.111 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 676600 | 50.089 |
| 88) Toluene | (3) | 9.227 | 92 | 616434 | 51.737 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 379484 | 56.801 |

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$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 418944 | 55.671 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 244835 | 53.326 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 265915 | 50.459 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 420710 | 52.809 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 638735 | 111.059 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 801338 | 111.891 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 264807 | 55.684 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 268109 | 53.341 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 803001 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 335726 | 49.064 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 712548 | 51.827 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 244656 | 53.888 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1186726 | 51.635 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 926946 | 103.598 |
| 107) o-Xylene | (3) | 11.291 | 106 | 466673 | 52.445 |
| 109) Styrene | (3) | 11.310 | 104 | 789557 | 53.675 |
| 110) Bromoform | (3) | 11.471 | 173 | 196645 | 56.948 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 1179385 | 51.860 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 165040 | 659.207 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379333 | 49.776 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 331825 | 49.640 |
| 108) Xylene (Total) | (3) | | 106 | 1393619 | 156.043 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 407876 | 53.358 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 318530 | 51.744 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 296713 | 135.458 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 113804 | 52.666 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 1393854 | 51.243 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 291915 | 51.564 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 1017107 | 52.437 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 302722 | 51.378 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 219011M | 52.234 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 180272 | 54.456 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 1045061 | 52.305 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 1273140 | 51.456 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 596808 | 50.922 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1129862 | 51.719 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 430663 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 613522 | 50.626 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 1072423 | 51.230 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 705215 | 58.832 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 673907 | 51.632 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 699626 | 51.044 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 545695 | 50.003 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 589322 | 51.155 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 564439 | 51.388 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1937972 | 154.064 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 88925 | 55.008 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 467325 | 50.034 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 459337 | 50.697 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 192963 | 49.039 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1445873 | 52.884 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 443490 | 50.737 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 940076 | 53.175 |



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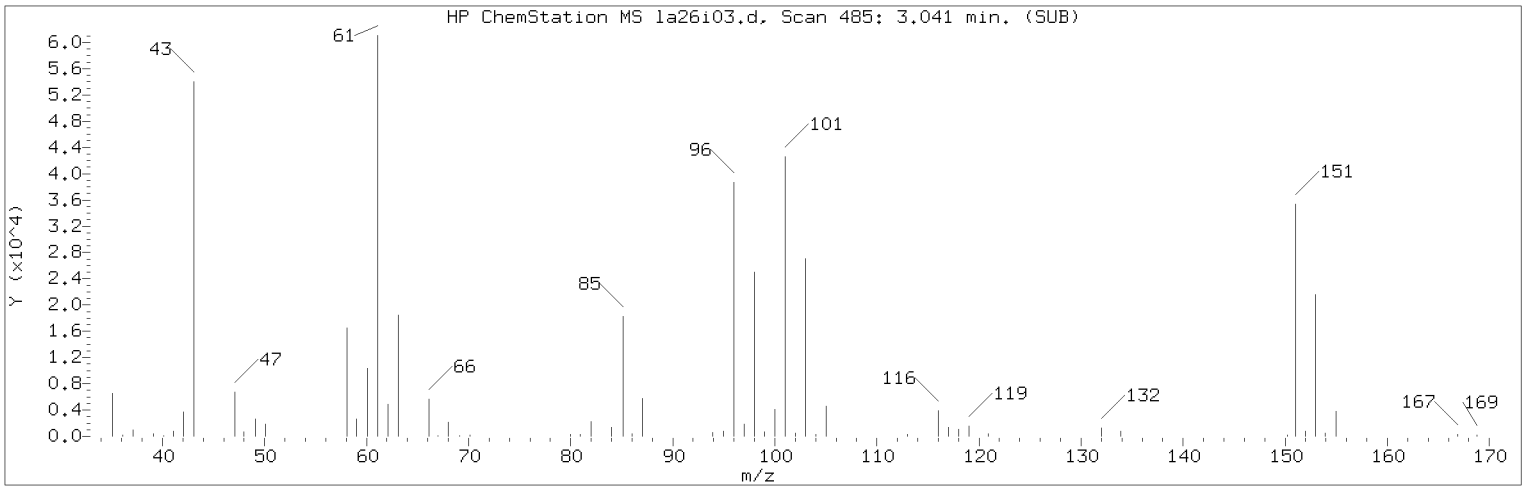
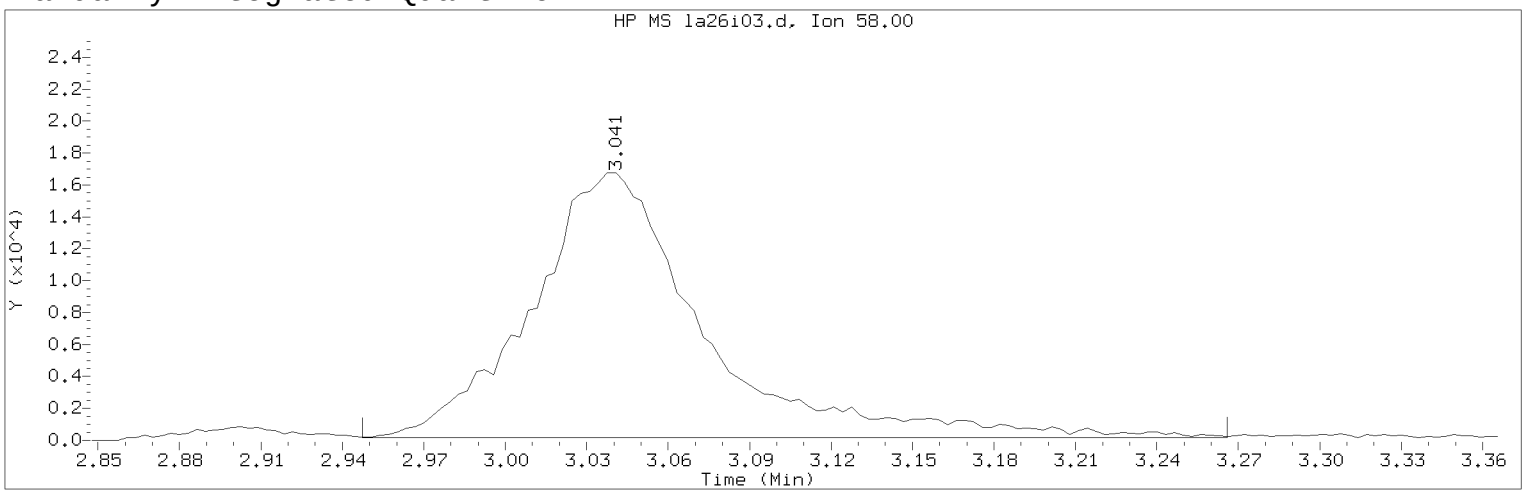
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

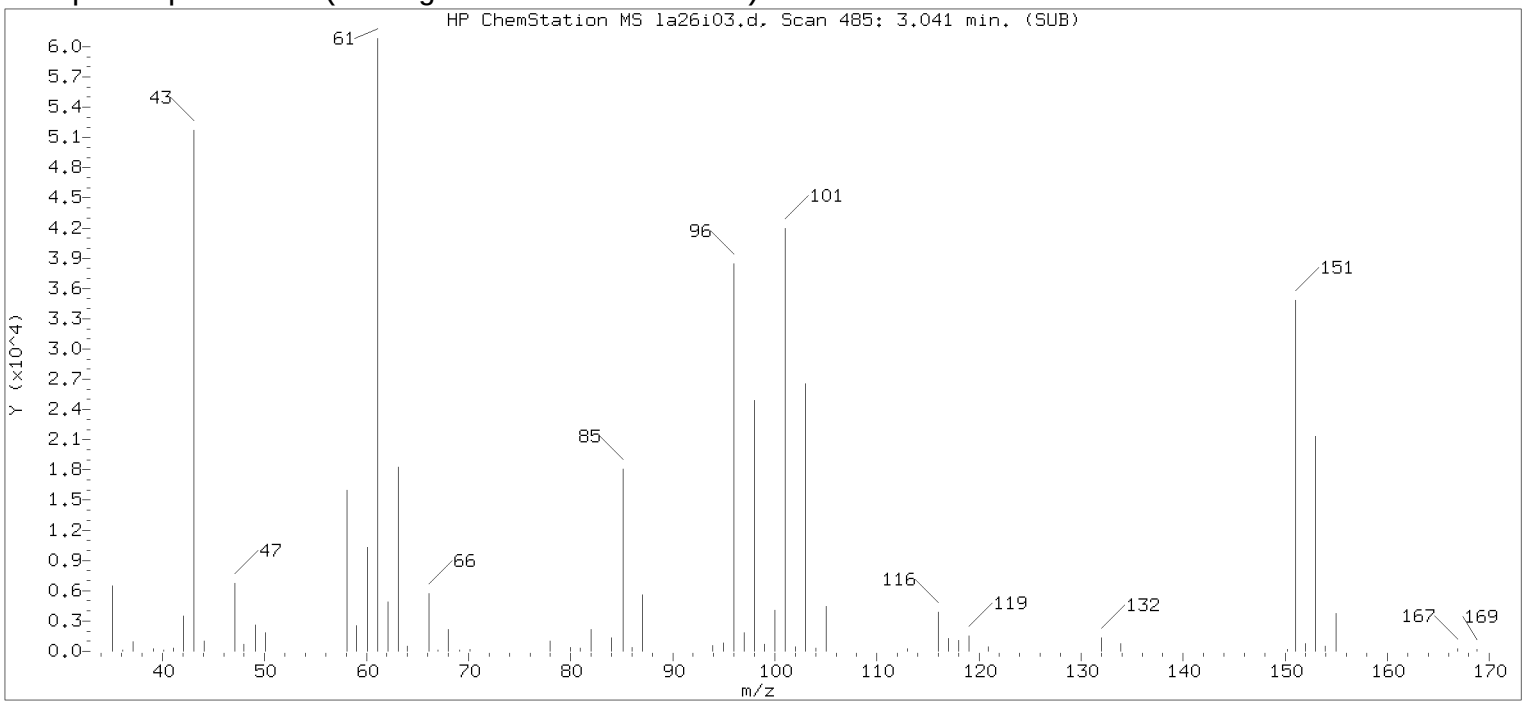
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area (flag) : 73070M
On-Column Amount (ng) : 105.9378
Integration start scan : 455 Integration stop scan: 554
Y at integration start : 159 Y at integration end: 159

Reason for manual integration: improper integration

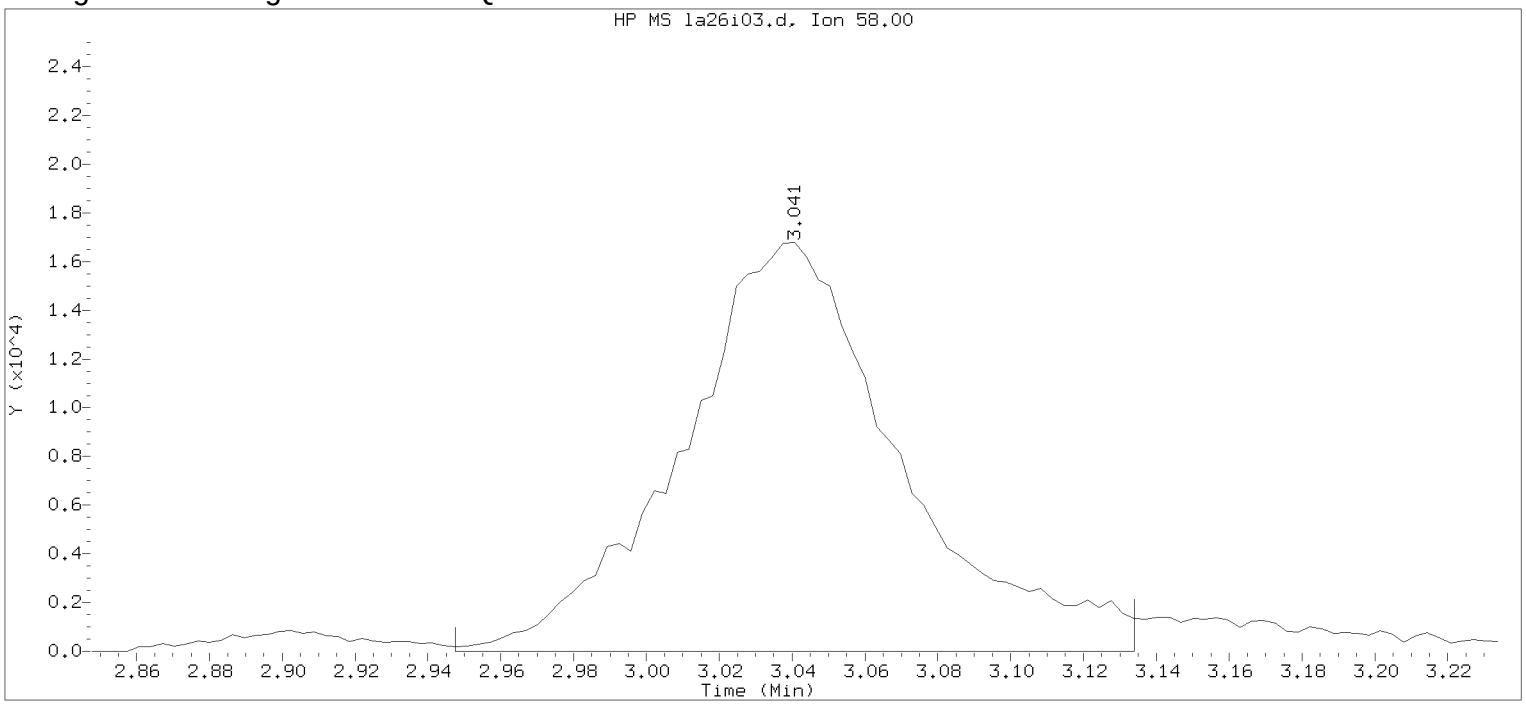
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

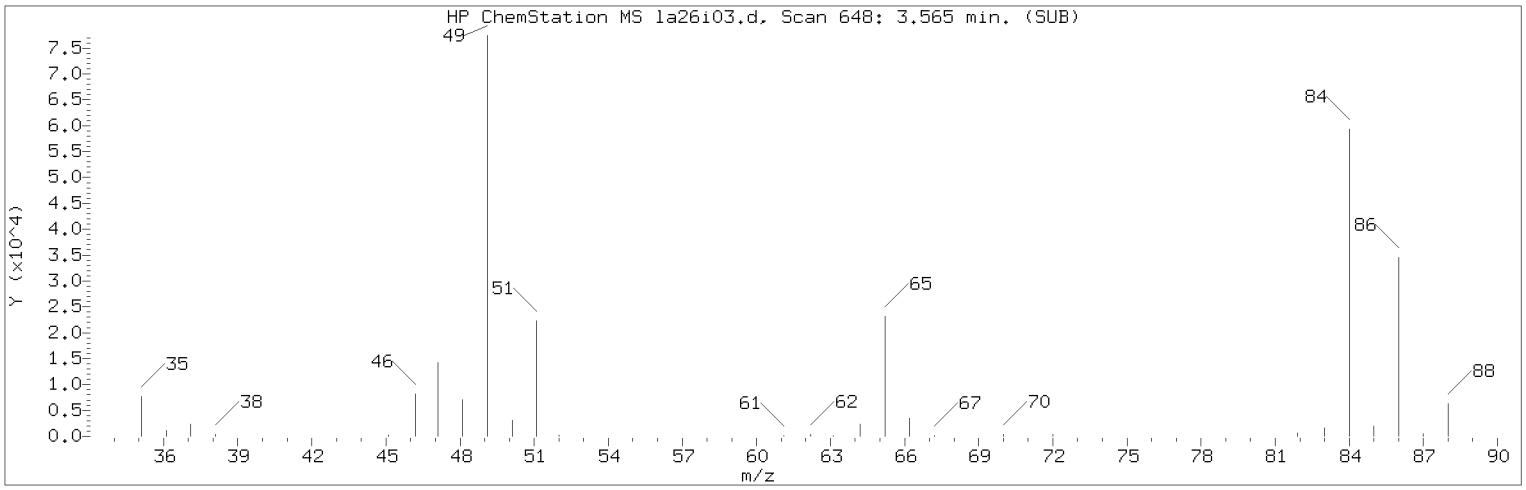
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

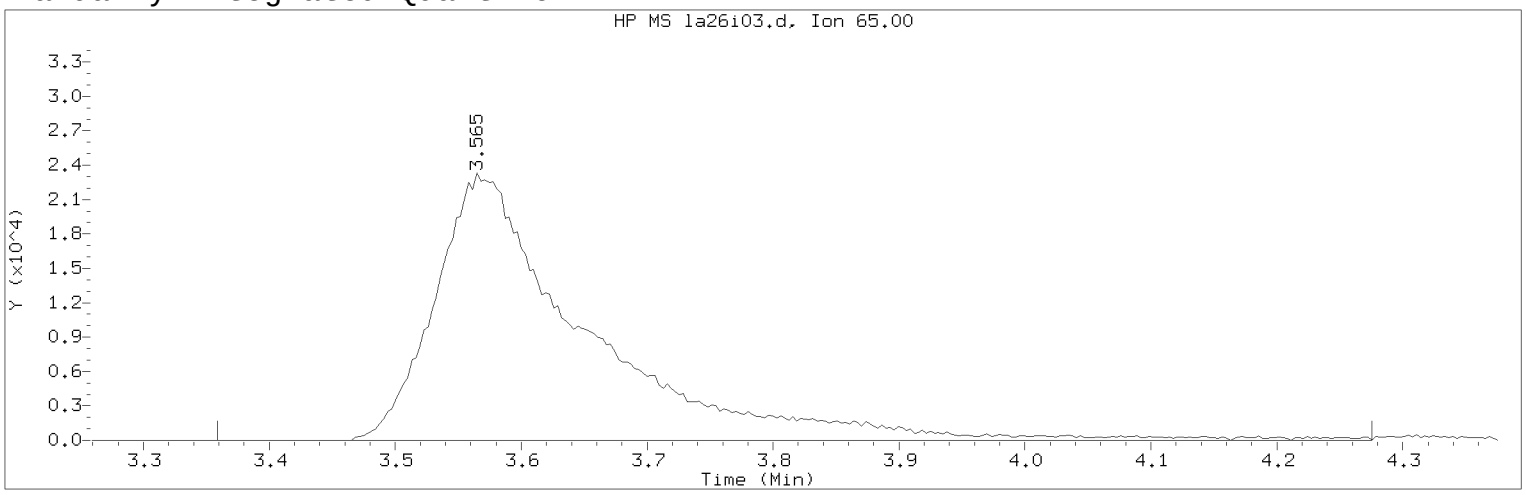
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area : 69964
On-column Amount (ng) : 100.7133
Integration start scan : 455 Integration stop scan: 513
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 RD186

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

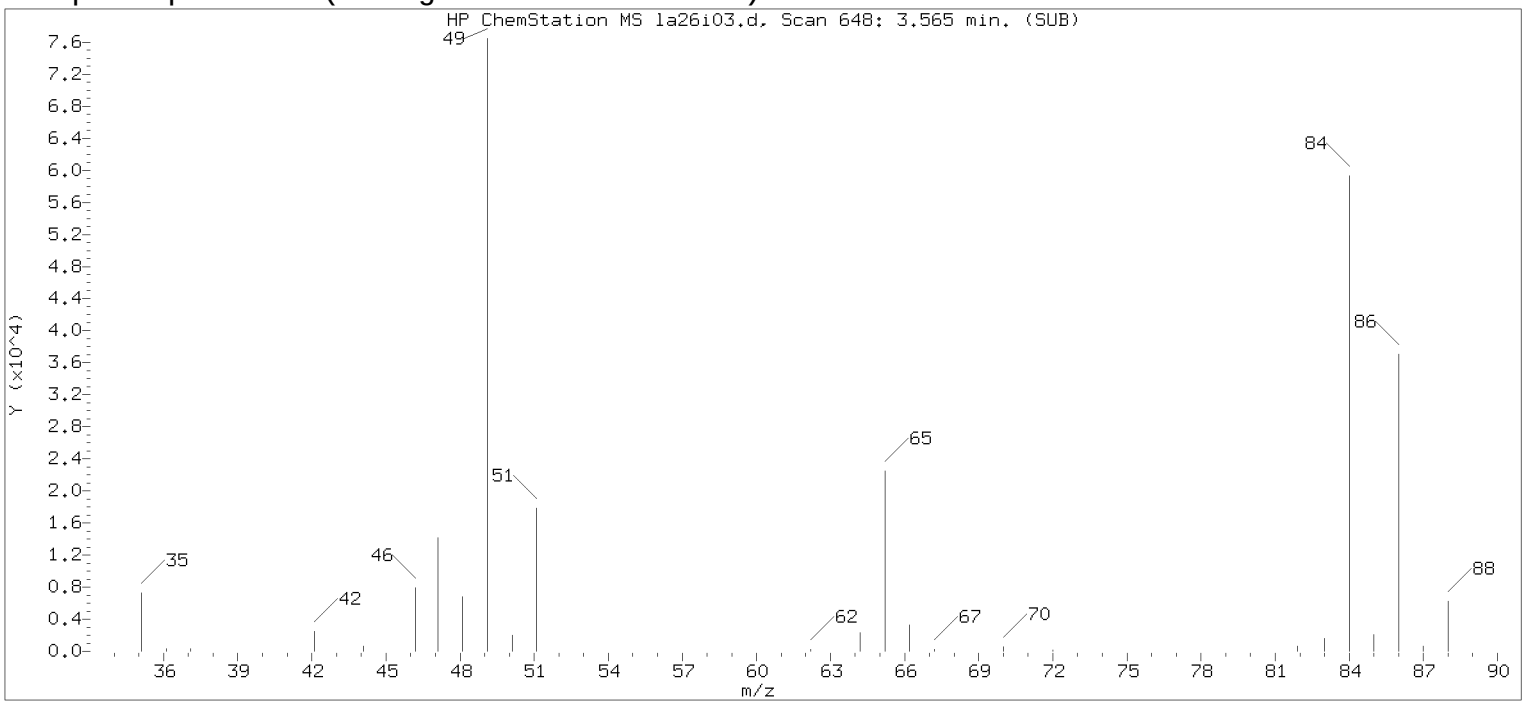
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area (flag) : 194134M
On-Column Amount (ng) : 250.0000
Integration start scan : 583 Integration stop scan: 868
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

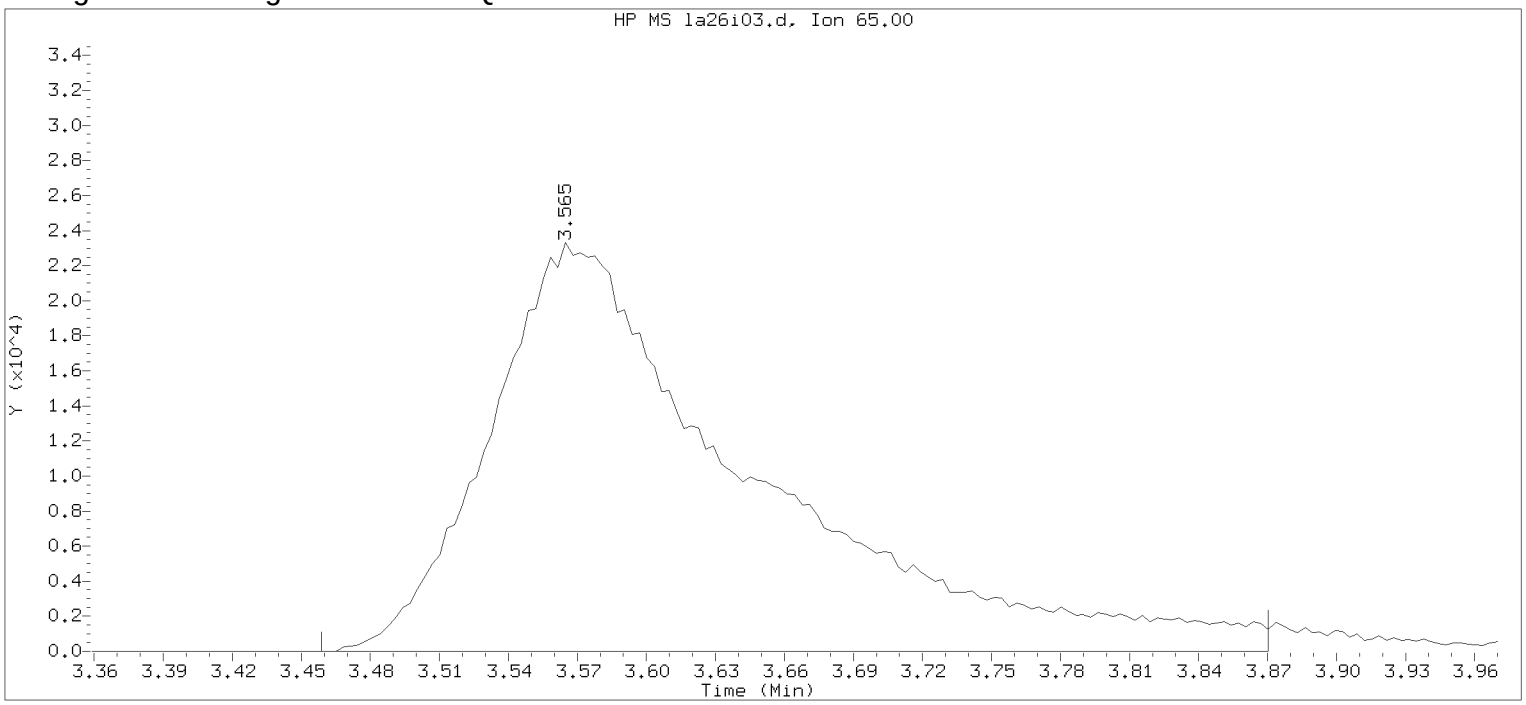
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

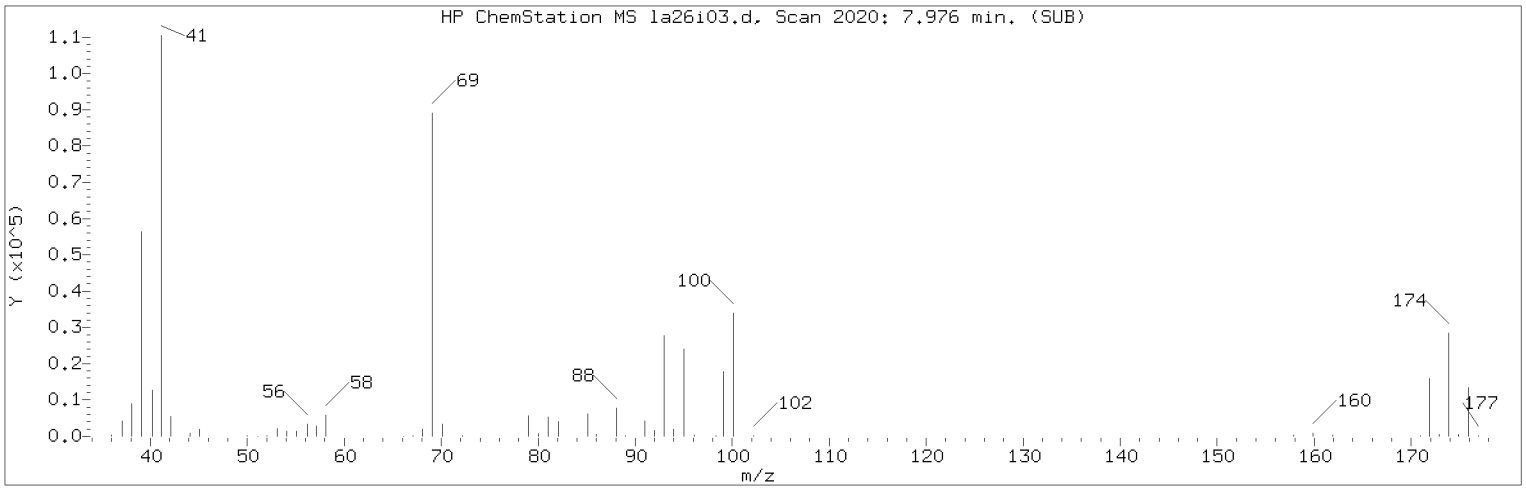
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

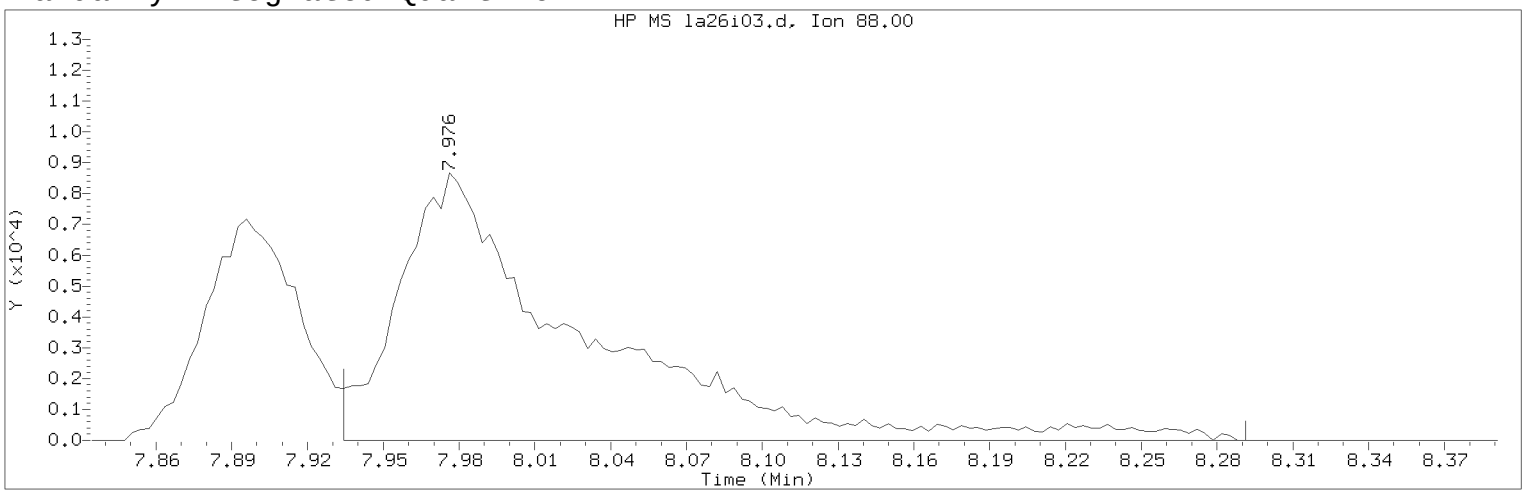
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area : 184407
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 742
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 148 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

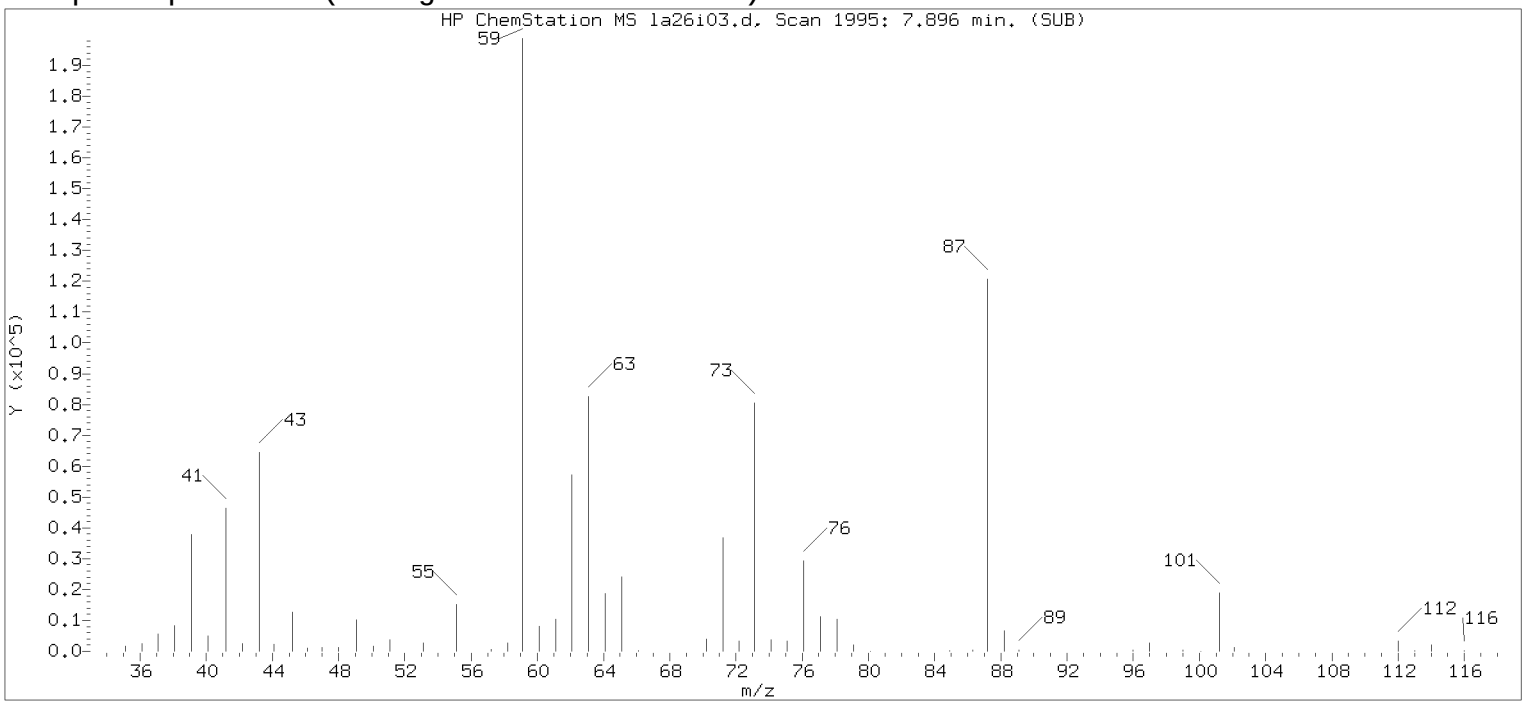
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 43582M
On-Column Amount (ng) : 656.6493
Integration start scan : 2006 Integration stop scan: 2117
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

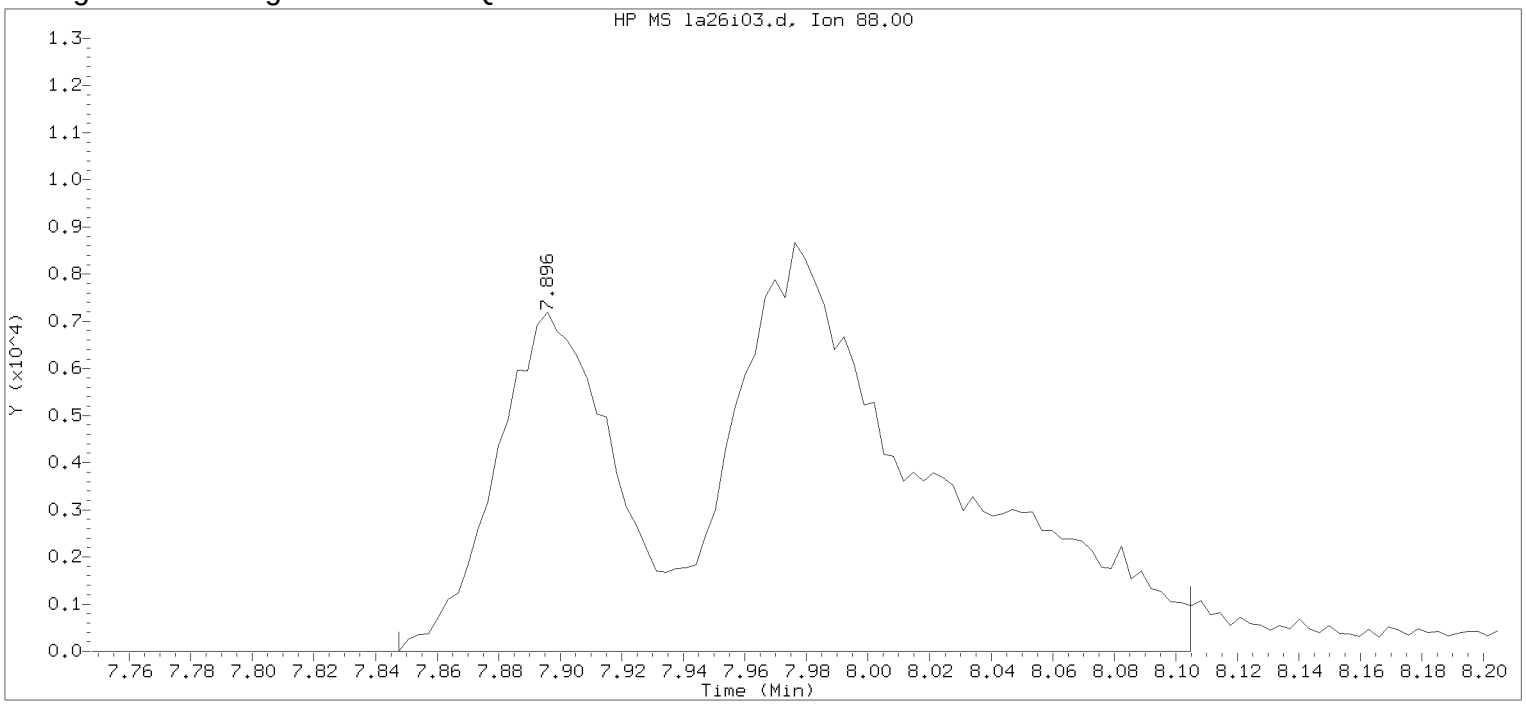
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 57387
On-column Amount (ng) : 846.7526
Integration start scan : 1979 Integration stop scan: 2059
Y at integration start : 0 Y at integration end: 0

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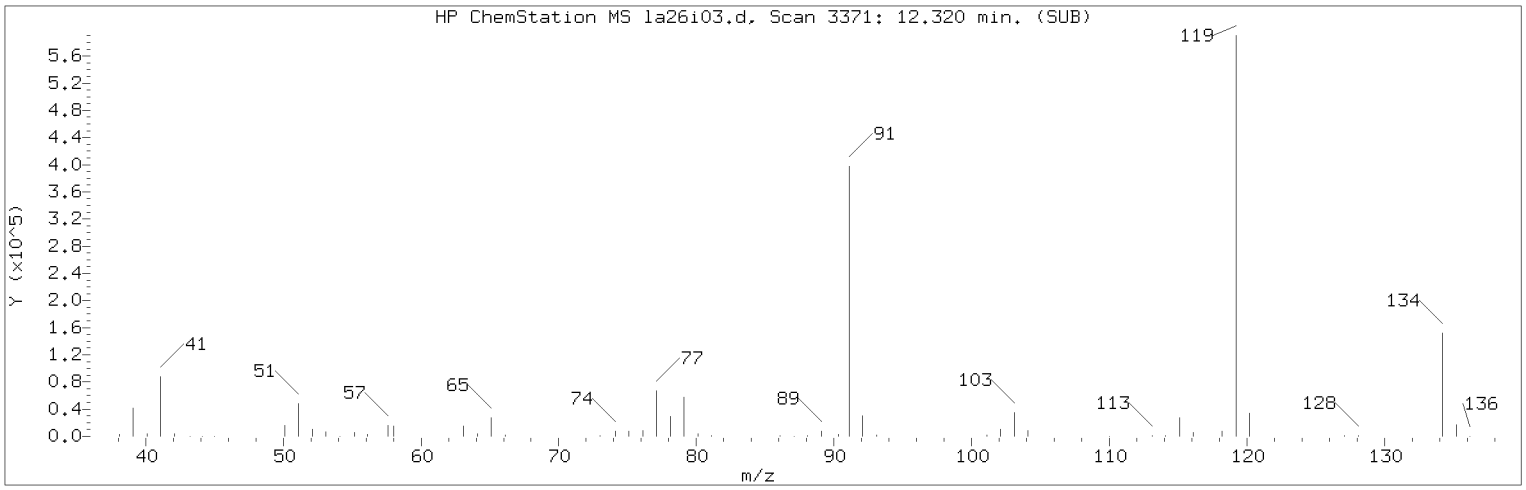
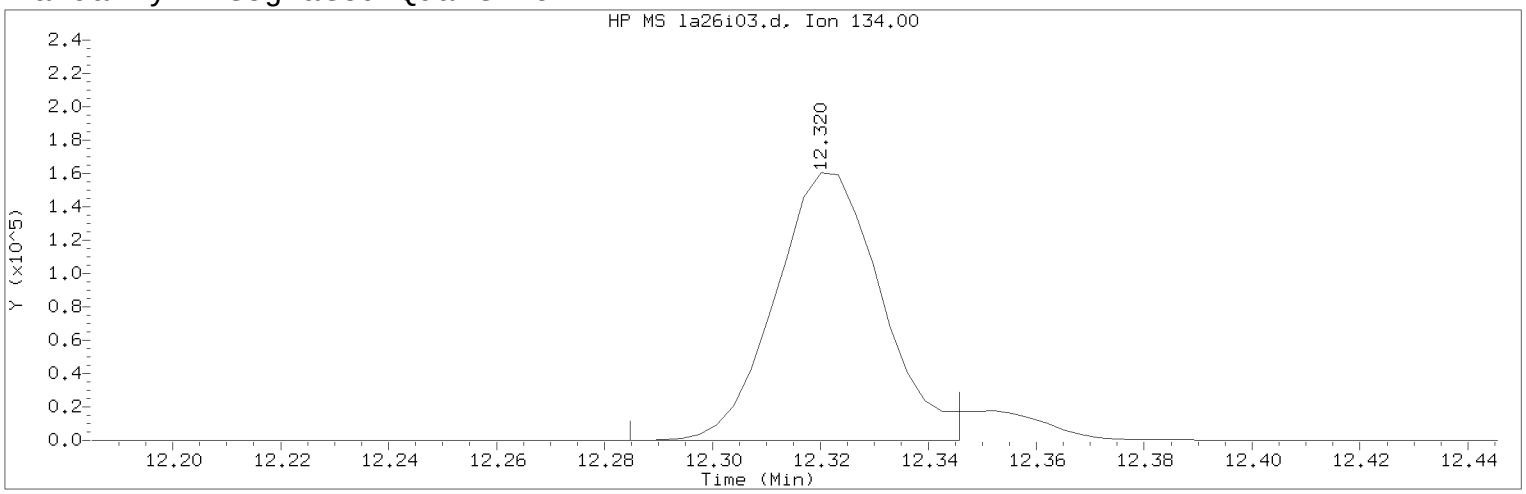
Target 3.5 esignature userKAS02648 Page 142 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

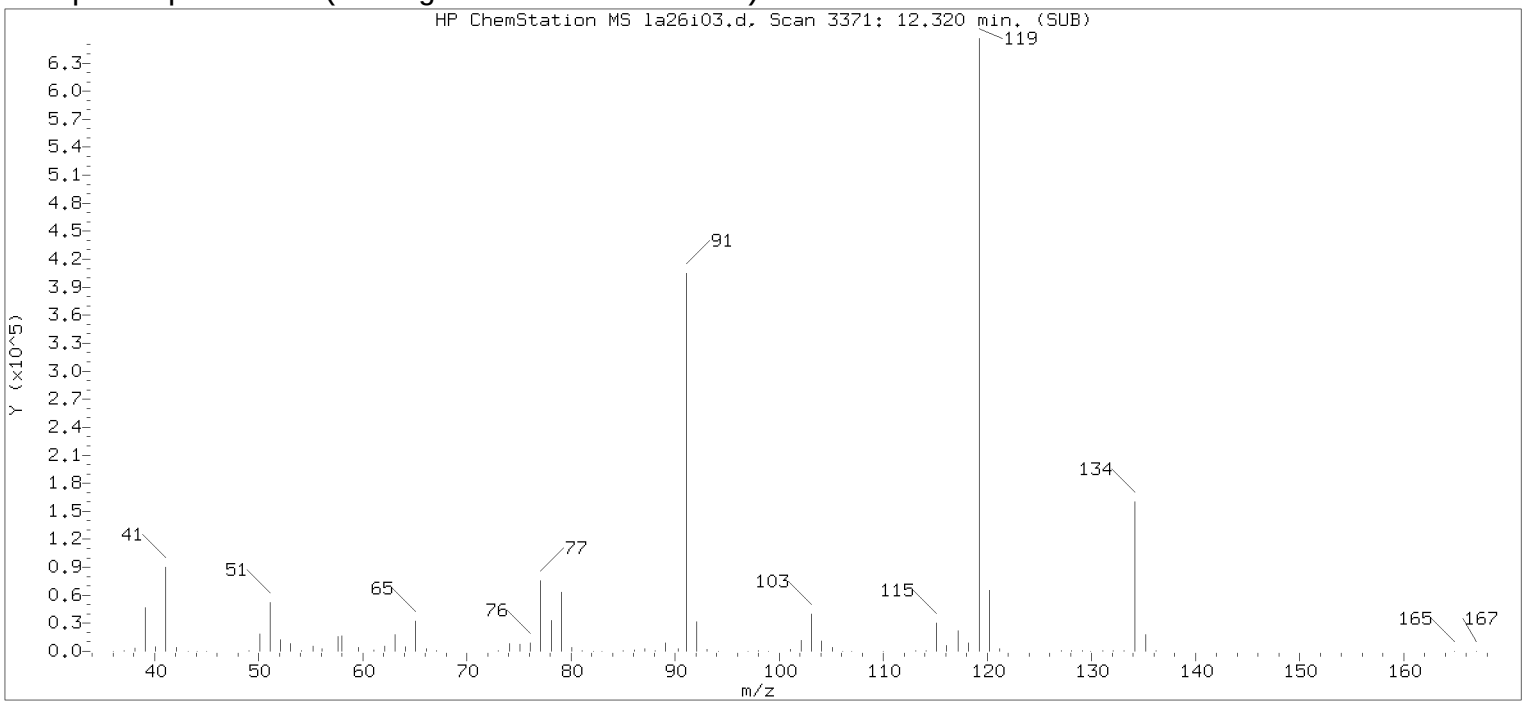
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 219011M
On-Column Amount (ng) : 52.2336
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

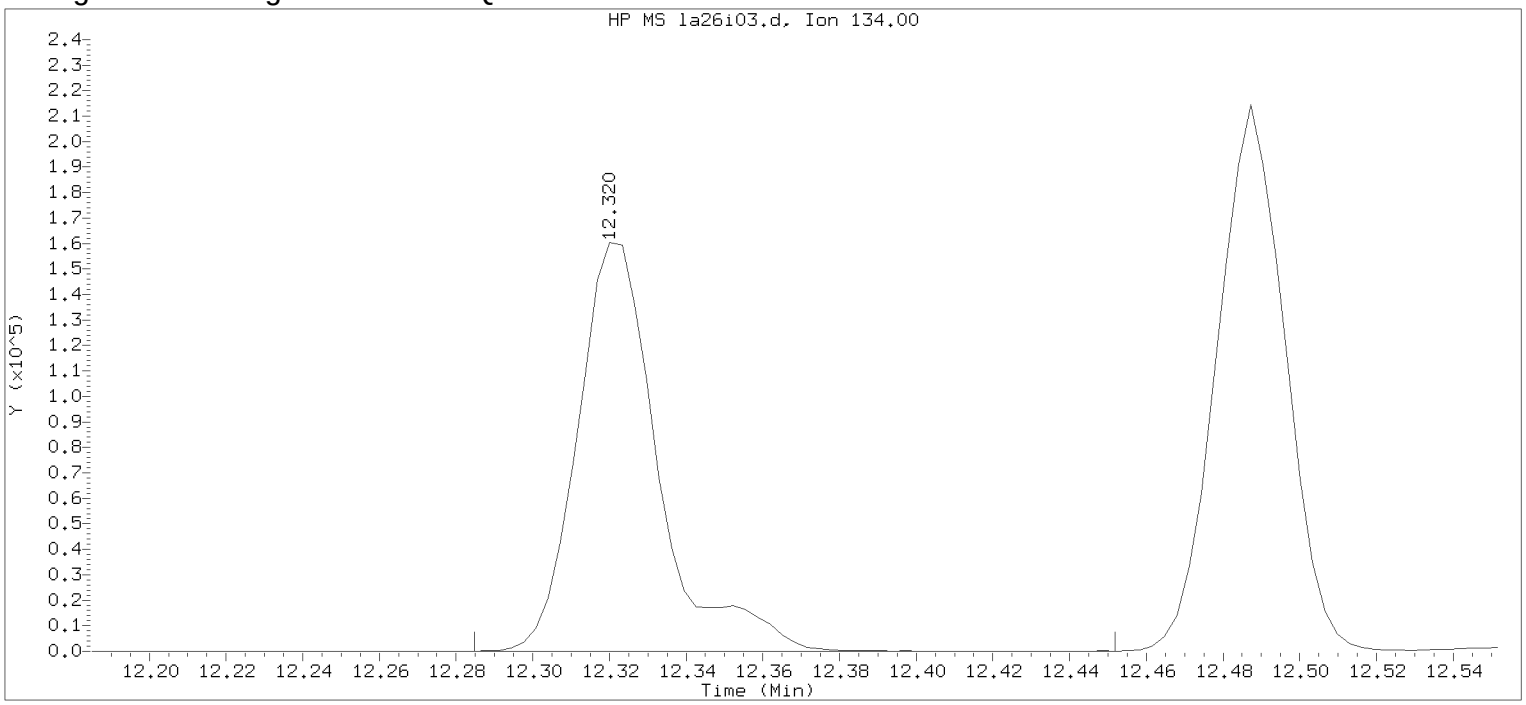
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 236254
On-column Amount (ng) : 52.1386
Integration start scan : 3359 Integration stop scan: 3411
Y at integration start : 0 Y at integration end: 0

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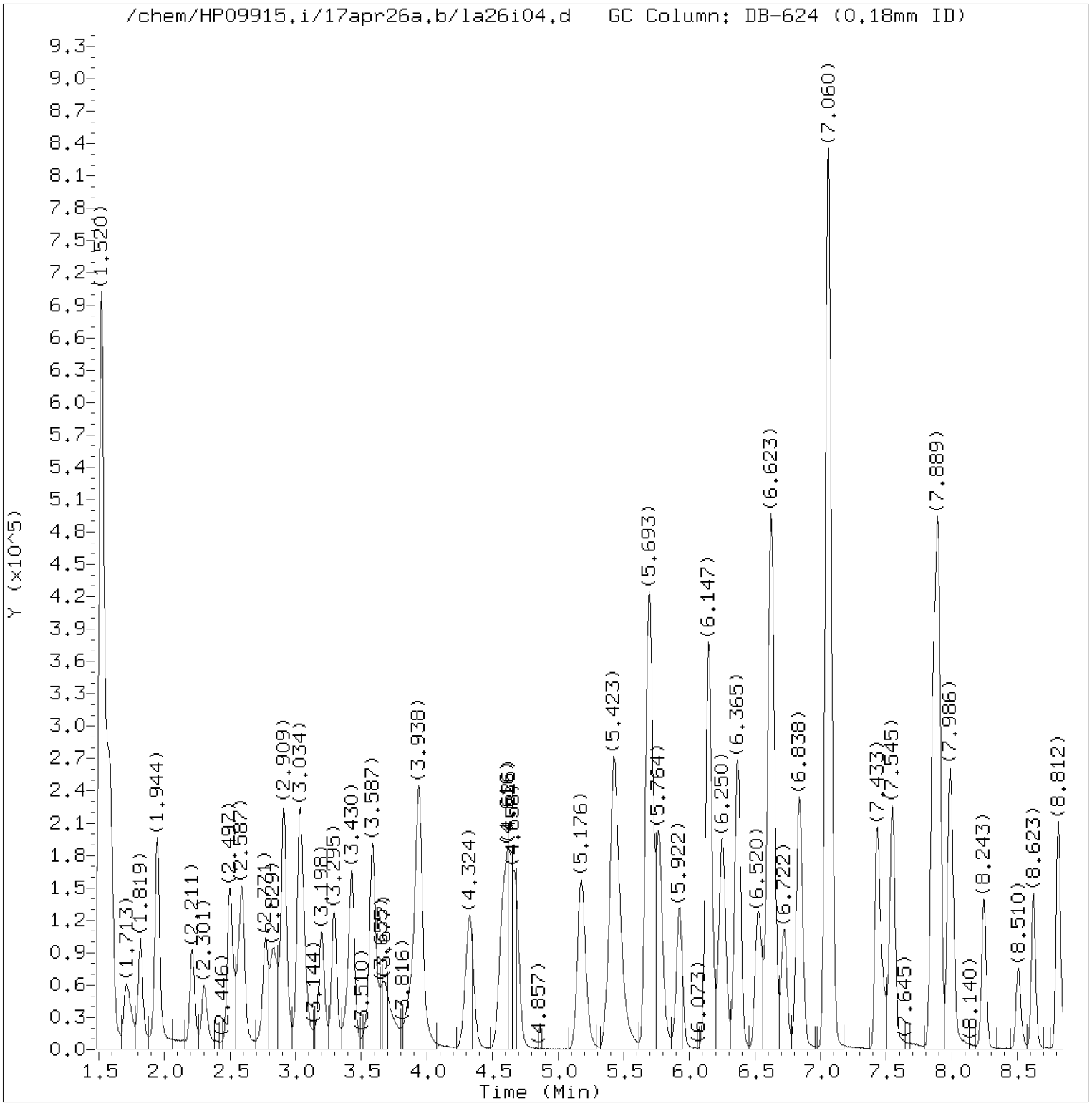
Target 3.5 esignature userKAS02648 Page 144 of 867




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

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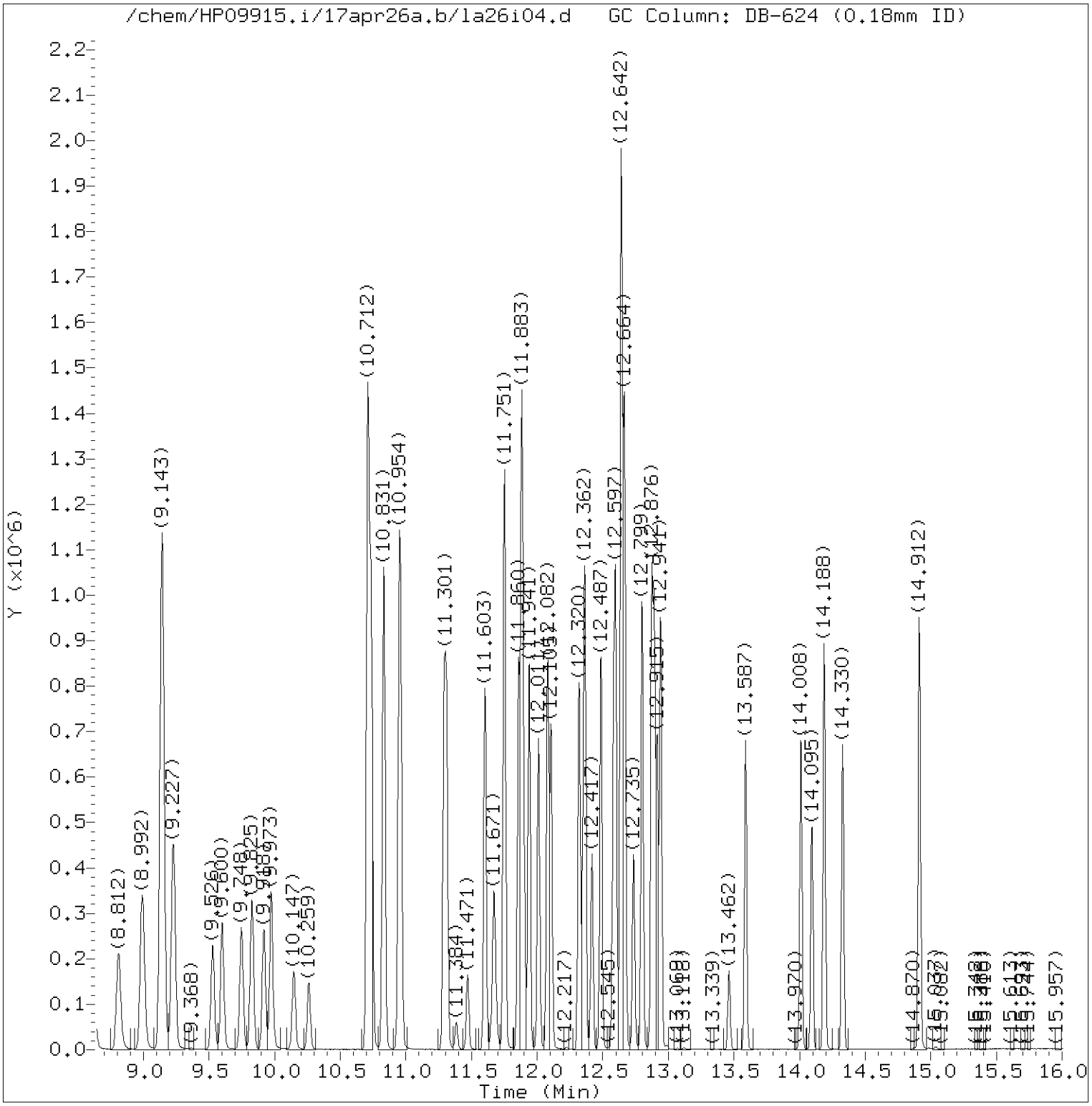
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 118583 | 19.173 |
| 4) Chloromethane | (2) | 1.819 | 50 | 128941 | 20.294 |
| 6) Vinyl Chloride | (2) | 1.935 | 62 | 120731 | 19.678 |
| 5) 1,3-Butadiene | (2) | 1.951 | 39 | 77112 | 20.606 |
| 8) Bromomethane | (2) | 2.208 | 94 | 82440 | 19.978 |
| 9) Chloroethane | (2) | 2.304 | 64 | 69158 | 20.002 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 171864 | 20.378 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 135555 | 19.079 |
| 11) n-Pentane | (2) | 2.594 | 43 | 122151 | 20.876 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 82347 | 20.820 |
| 15) Freon 123a | (2) | 2.829 | 67 | 101357 | 21.421 |
| 16) Acrolein | (1) | 2.909 | 56 | 339968 | 197.002 |
| 17) 1,1-Dichloroethene | (2) | 3.031 | 96 | 78125 | 20.776 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 40512 | 21.281 |
| 18) Acetone | (1) | 3.047 | 58 | 27291 | 36.437 |
| 19) Freon 113 | (2) | 3.060 | 101 | 81156 | 21.442 |
| 21) 2-Propanol | (1) | 3.185 | 45 | 102028M | 205.487 |
| 22) Methyl Iodide | (2) | 3.202 | 142 | 154277 | 21.152 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 258440 | 21.120 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 112854 | 20.678 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 156101 | 20.725 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 210810M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 99182 | 19.966 |
| 30) t-Butyl alcohol | (1) | 3.684 | 59 | 165846 | 203.327 |
| 31) Acrylonitrile | (2) | 3.864 | 53 | 57543 | 20.078 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.928 | 73 | 291785 | 21.181 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 93758 | 21.251 |
| 34) n-Hexane | (2) | 4.324 | 57 | 141702 | 20.952 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 175099 | 21.121 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 338404 | 21.267 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 149170 | 21.331 |
| 40) Ethyl t-butyl ether | (2) | 5.173 | 59 | 293404 | 21.426 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 154336 | 40.218 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 105715 | 20.911 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 117791 | 21.280 |
| 47) Propionitrile | (1) | 5.472 | 54 | 235941 | 198.193 |
| 48) Methacrylonitrile | (2) | 5.697 | 67 | 304947 | 106.722 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 56020 | 21.025 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 38105 | 36.239 |
| 51) Chloroform | (2) | 5.928 | 83 | 166128 | 21.023 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 250917 | 49.492 |
| 52)$Dibromofluoromethane | (2) | 6.150 | 111 | 257391 | 49.544 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 151774 | 21.019 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 199473 | 42.162 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 173572 | 21.111 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 142535 | 20.944 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 50722 | 21.283 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 111699 | 21.191 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 136486 | 21.236 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 151646 | 529.527 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 62253 | 49.379 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 297412 | 49.874 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.619 | 104 | 39719 | 49.671 |
| 60) Benzene | (2) | 6.632 | 78 | 401463 | 21.190 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 62 | 133462 | 20.822 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 13310 | 23.551 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 290768 | 21.394 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1038230 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 152105 | 20.088 |
| 69) n-Butanol | (1) | 7.433 | 56 | 248560 | 1076.679 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 101480 | 20.726 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 182363 | 21.139 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 81992 | 21.061 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 109388 | 21.091 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 44394M | 615.972 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 93921 | 21.156 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 67846 | 20.801 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 122710 | 20.847 |
| 79) 2-Nitropropane | (2) | 8.510 | 41 | 64758 | 38.797 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 85040 | 21.330 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 163005 | 21.247 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 328366 | 41.523 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1021680 | 50.425 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 671346 | 50.293 |
| 88) Toluene | (3) | 9.230 | 92 | 253889 | 21.563 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 141943 | 21.499 |

M = Compound was manually integrated.
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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 162375 | 21.835 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 96297 | 21.224 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 112611 | 21.624 |
| 94) 1,3-Dichloropropane | (3) | 9.922 | 76 | 167817 | 21.316 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 247487 | 43.545 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 304948 | 42.746 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 98456 | 20.950 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 106400 | 21.421 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 793538 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 135630 | 20.058 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 291376 | 21.446 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 95498 | 21.285 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 487509 | 21.465 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 379488 | 42.918 |
| 107) o-Xylene | (3) | 11.291 | 106 | 188046 | 21.385 |
| 109) Styrene | (3) | 11.311 | 104 | 319117 | 21.953 |
| 110) Bromoform | (3) | 11.471 | 173 | 71969 | 21.091 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 478133 | 21.275 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 150358 | 553.057 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 378161 | 50.214 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 329178 | 49.831 |
| 108) Xylene (Total) | (3) | | 106 | 567534 | 64.303 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 161347 | 21.366 |
| 115) Bromobenzene | (4) | 11.864 | 156 | 129515 | 21.297 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 232678 | 107.529 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 44888 | 21.028 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 568331 | 21.150 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 117207 | 20.958 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 406477 | 21.213 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 123204 | 21.167 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 85014M | 20.525 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 68219 | 20.861 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 416404 | 21.097 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 508544 | 20.806 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 241164 | 20.830 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 448274 | 20.772 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 425437 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 250724 | 20.943 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 442708 | 21.408 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 258669 | 21.844 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 278453 | 21.596 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 288580 | 21.313 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 220740 | 20.475 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 238492 | 20.956 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 232437 | 21.421 |
| 141) Diethylbenzene (total) | (4) | | 100 | 799470 | 64.331 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 34158 | 21.389 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 186215 | 20.182 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 183451 | 20.496 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 78778 | 20.266 |
| 148) Naphthalene | (4) | 14.188 | 128 | 577965 | 21.399 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 179538 | 20.792 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 382427 | 21.897 |



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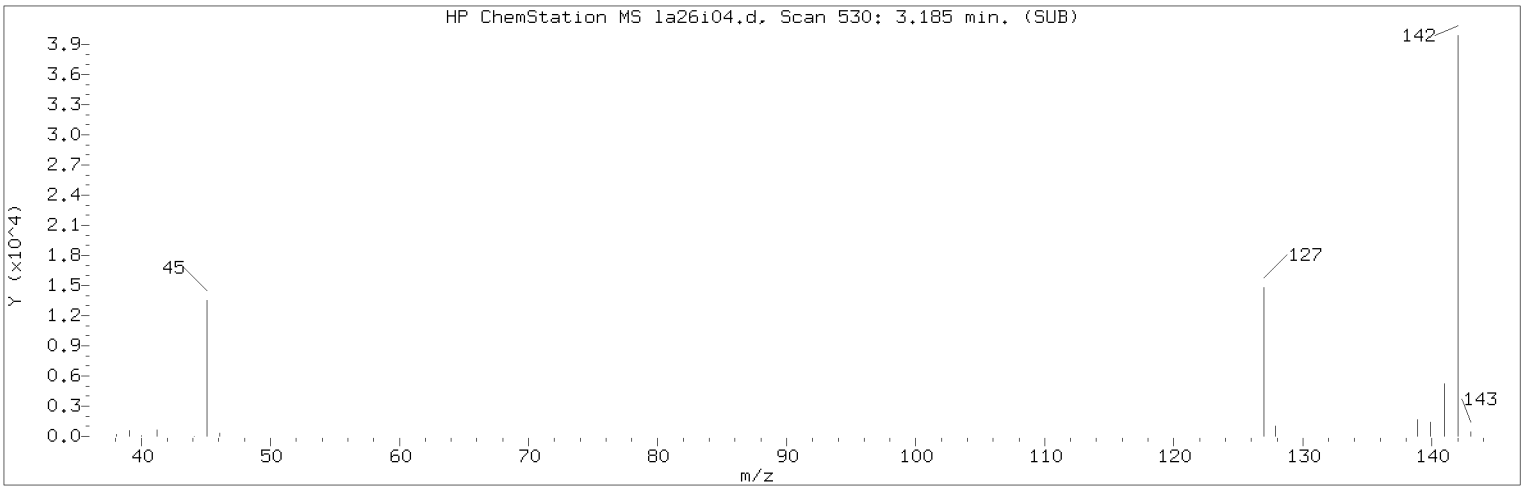
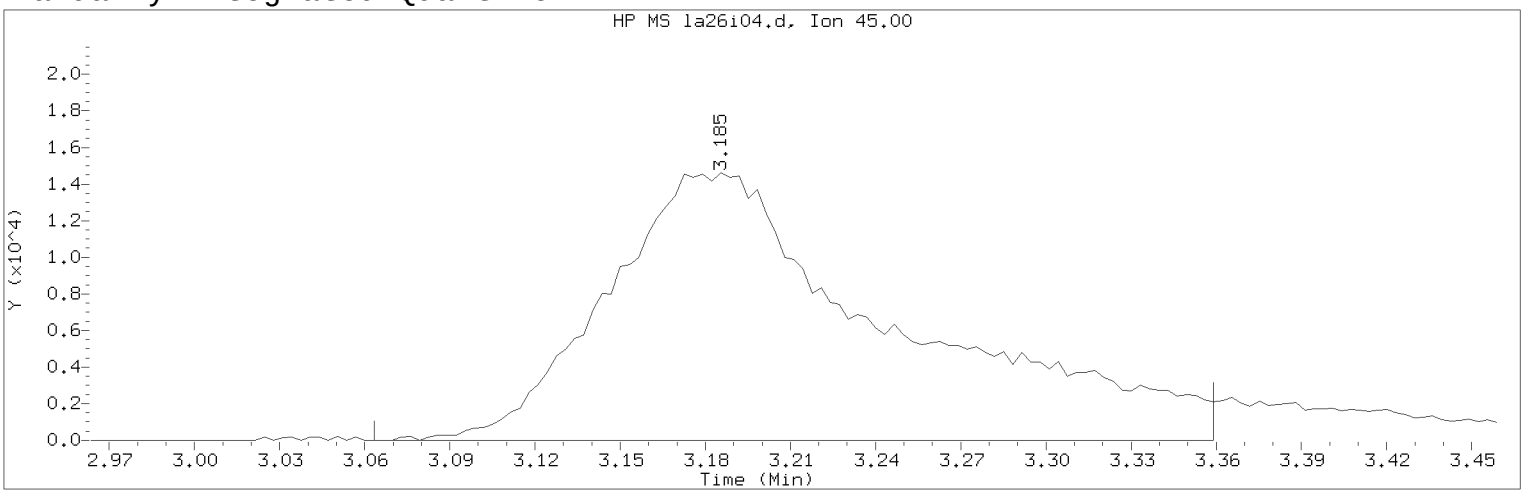
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

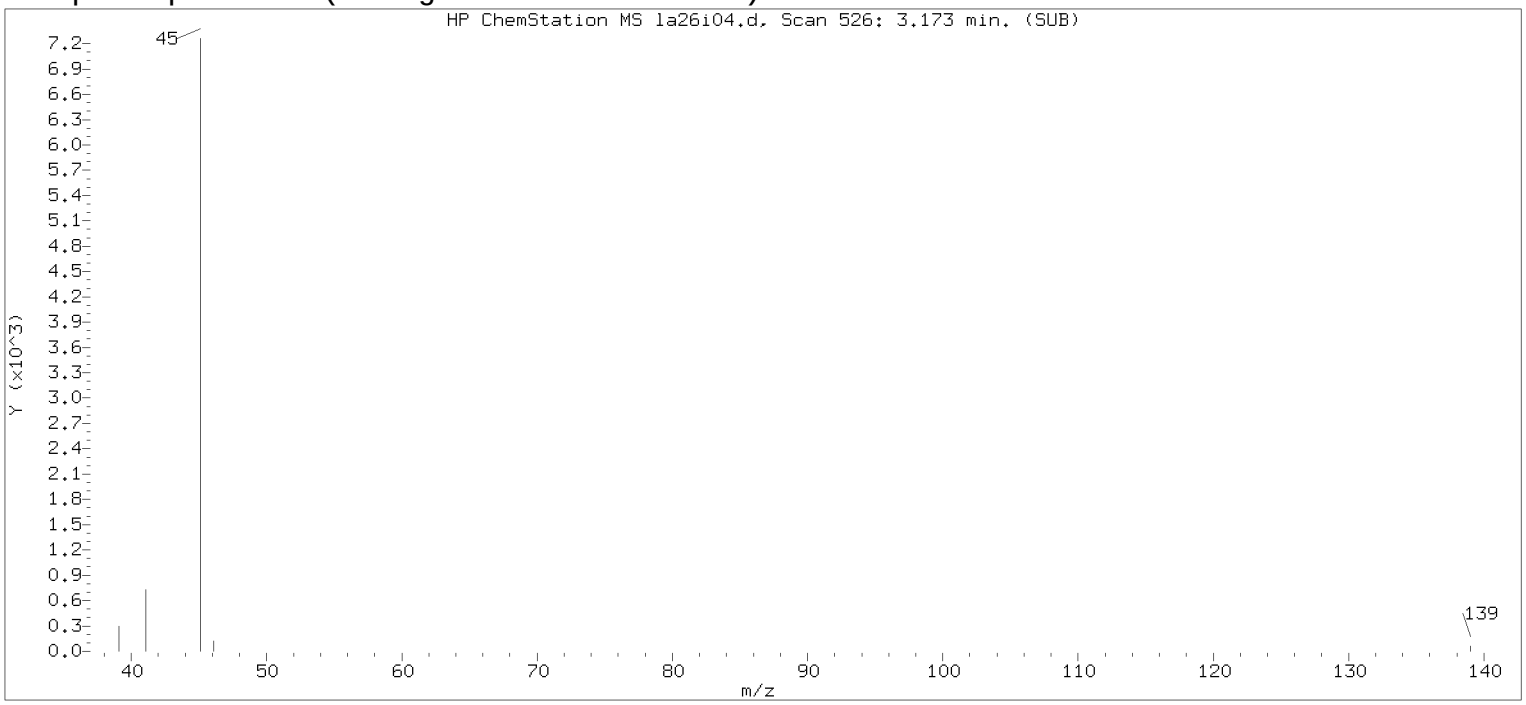
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 530
Retention Time (minutes): 3.185
Quant Ion : 45.00
Area (flag) : 102028M
On-Column Amount (ng) : 205.4874
Integration start scan : 491 Integration stop scan: 583
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

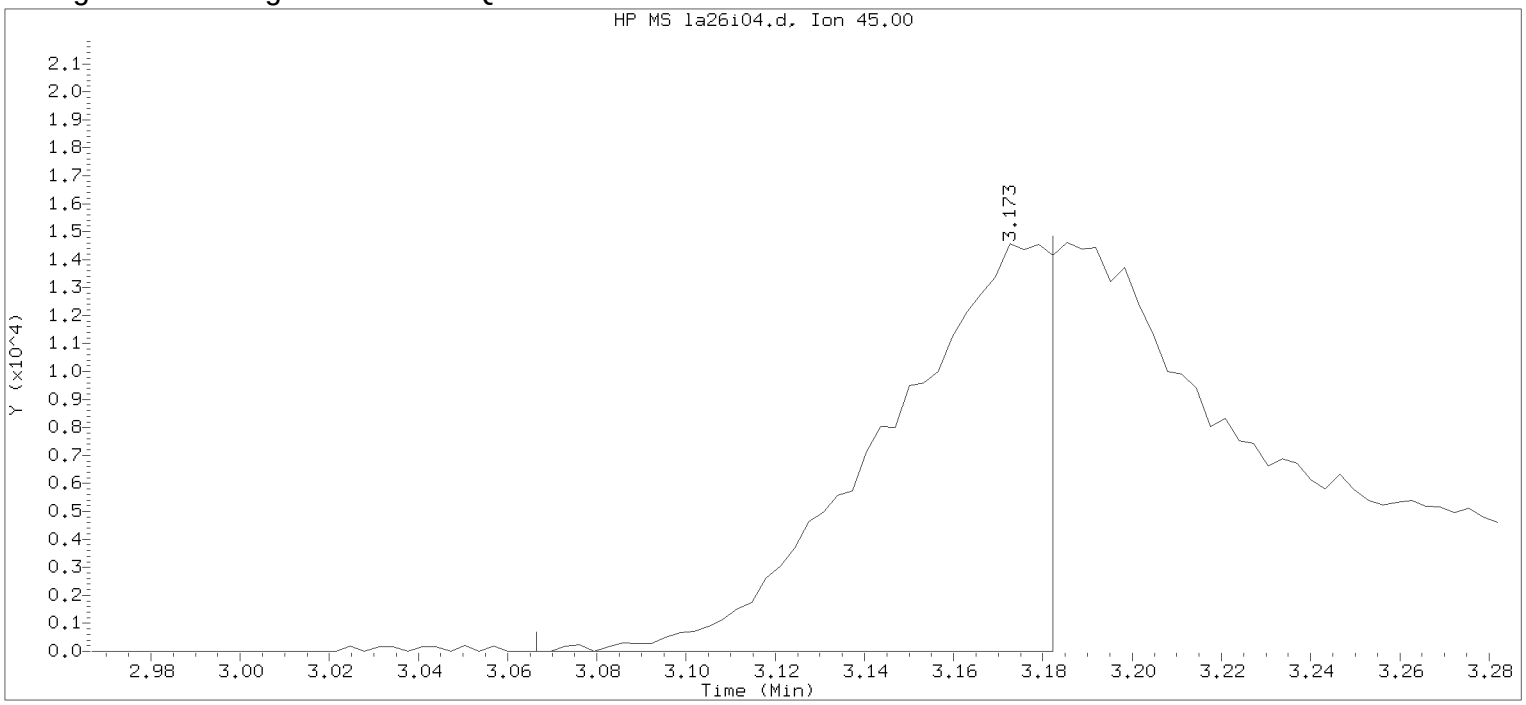
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

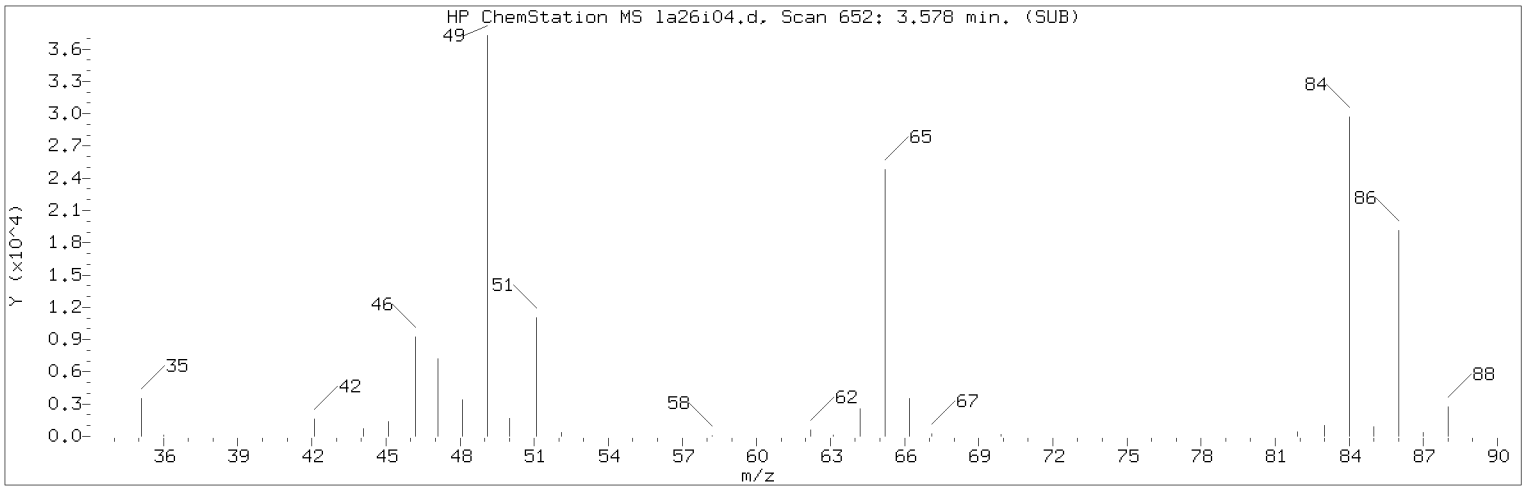
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

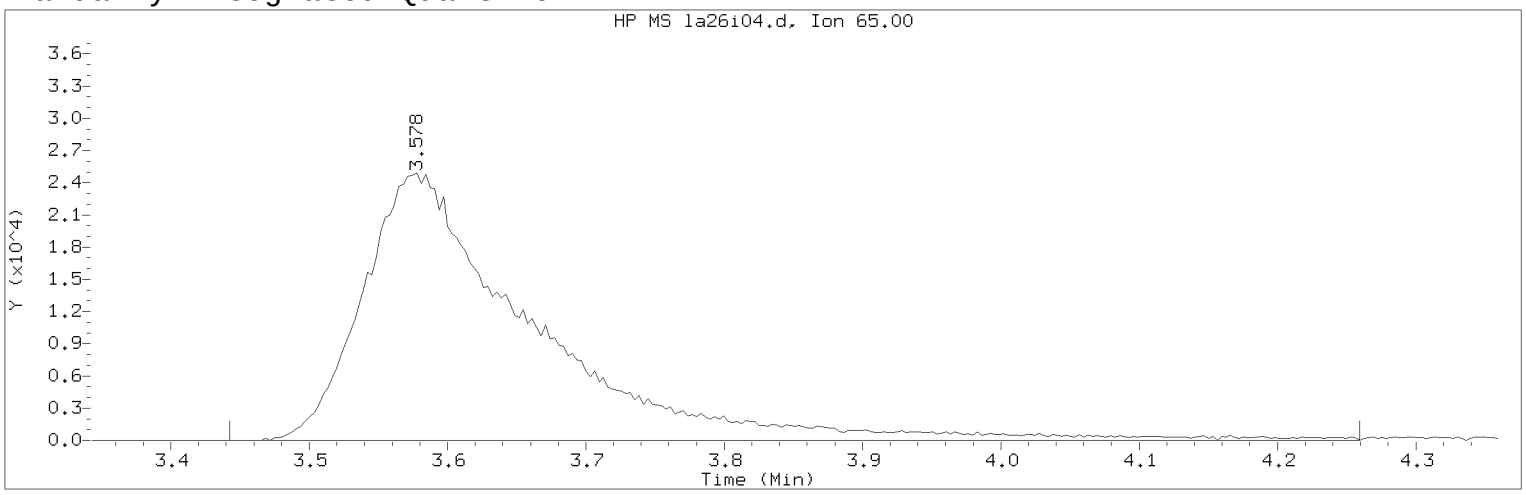
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 526
Retention Time (minutes): 3.173
Quant Ion : 45.00
Area : 36897
On-column Amount (ng) : 95.5026
Integration start scan : 492 Integration stop scan: 528
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020  Lab Sample ID: VSTD020

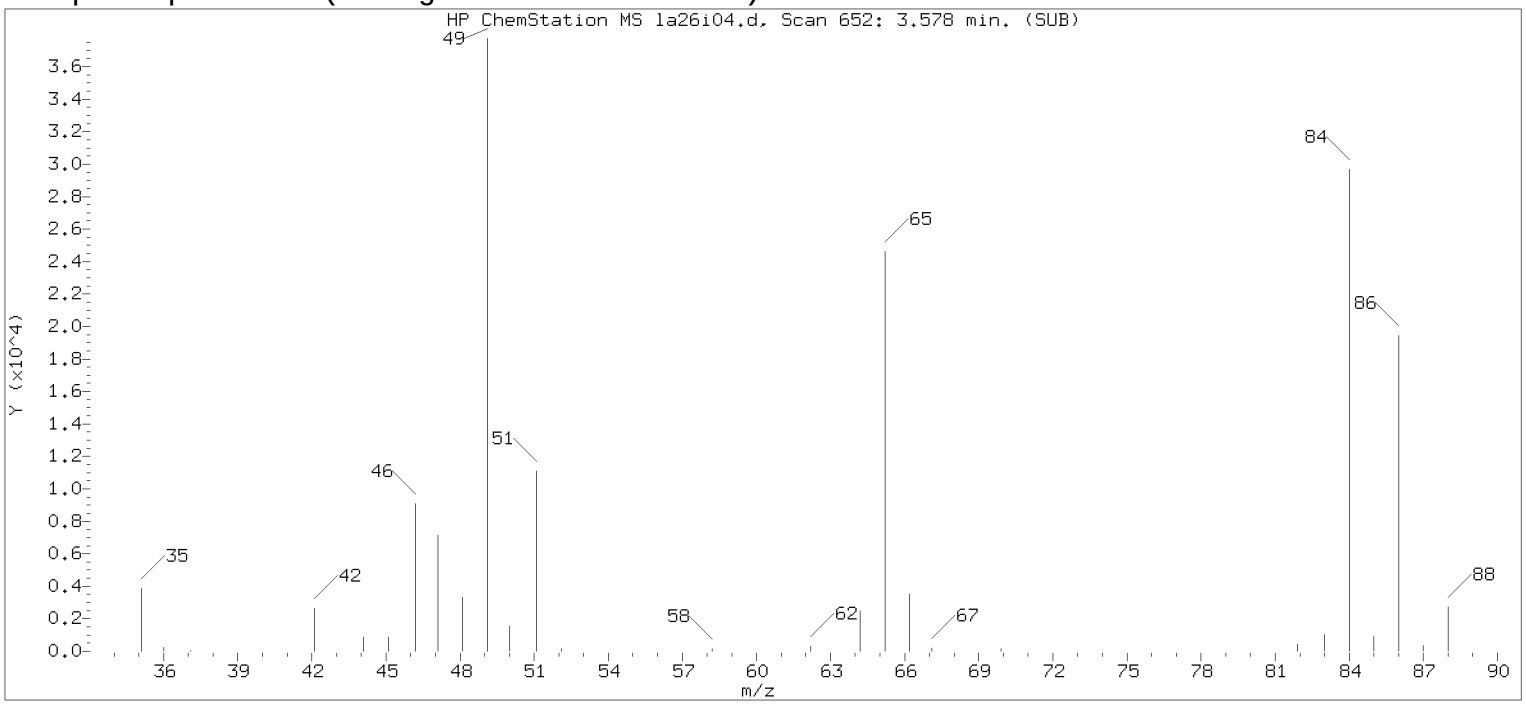
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area (flag) : 210810M
On-Column Amount (ng) : 250.0000
Integration start scan : 609  Integration stop scan: 863
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

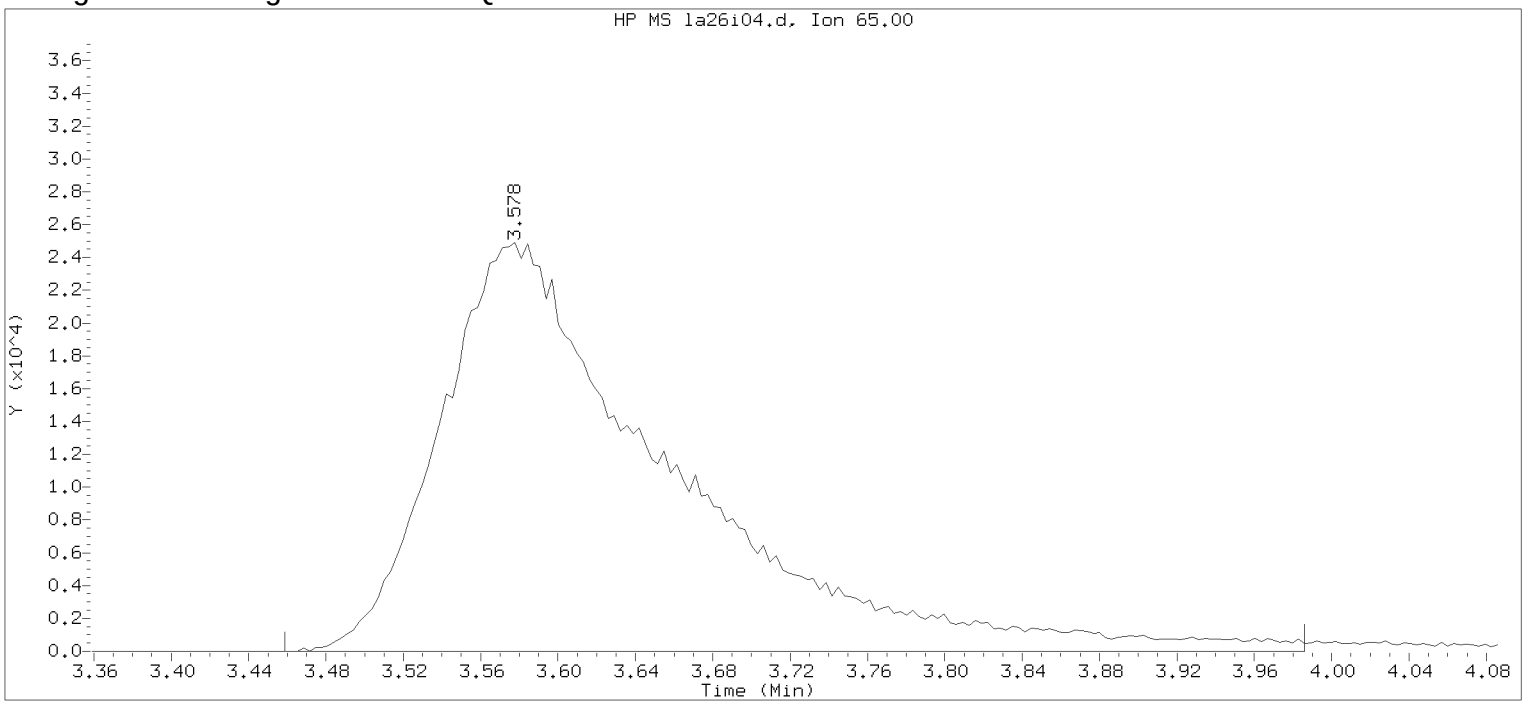
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

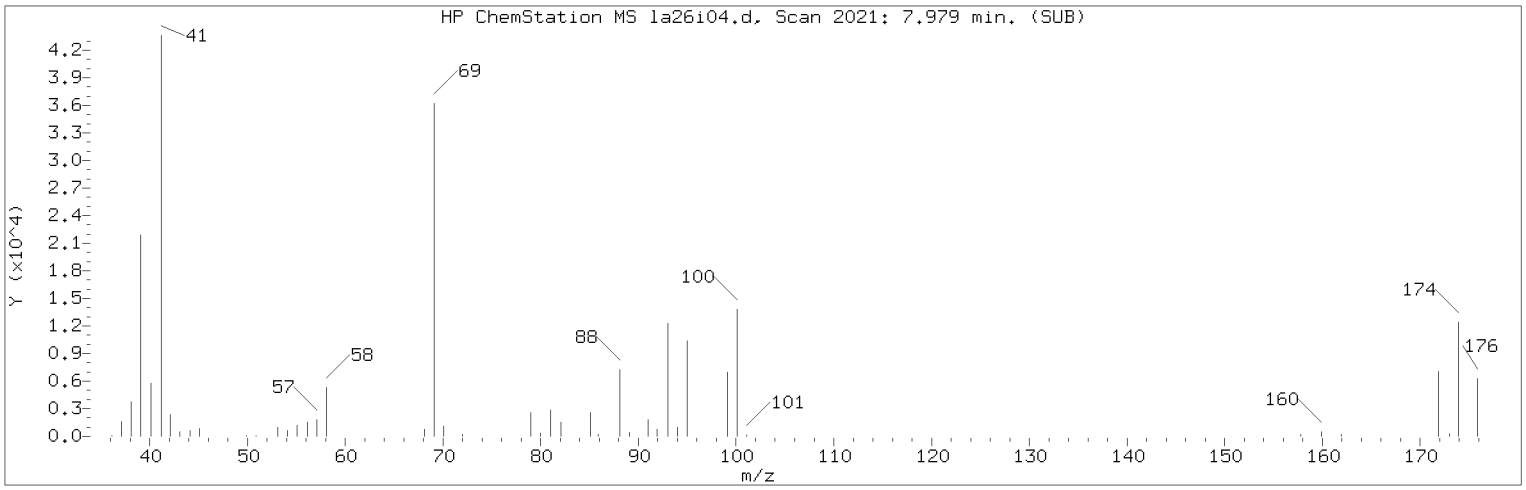
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

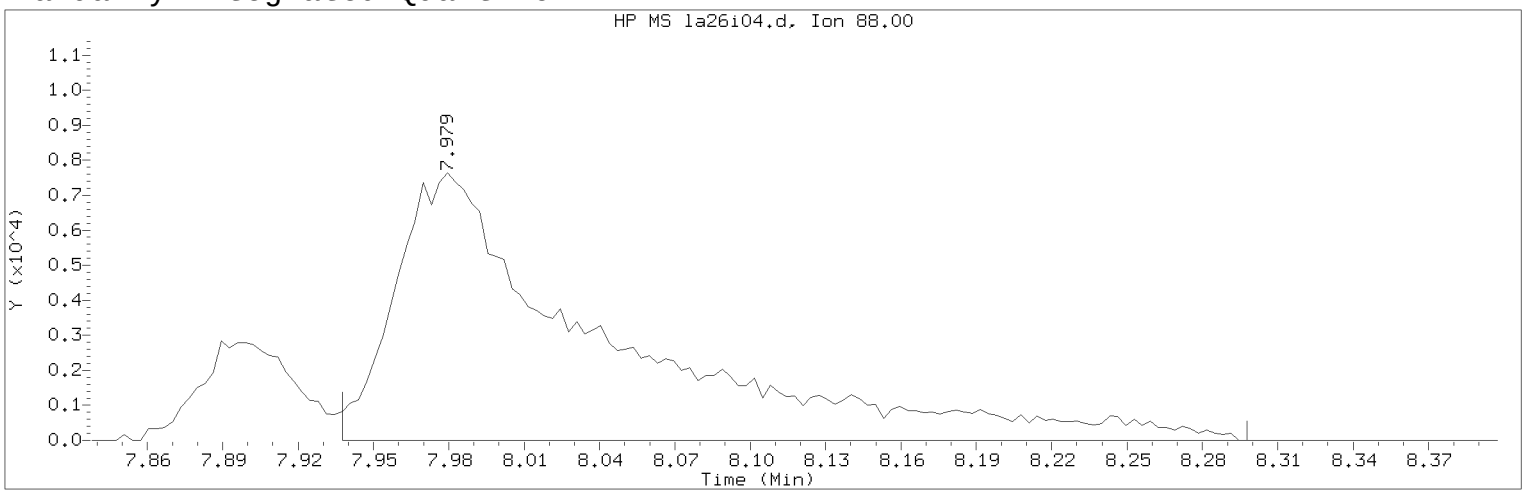
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 205251
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 778
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

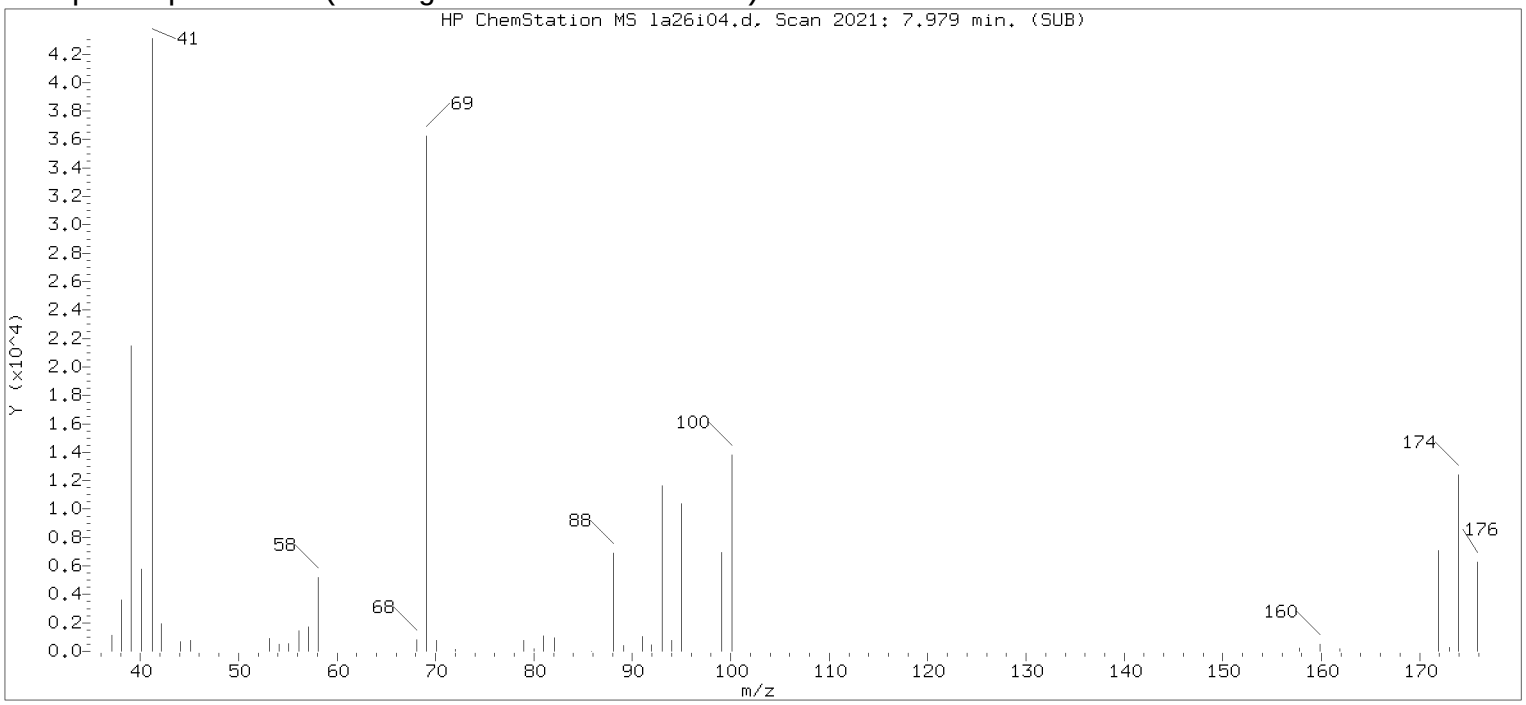
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area (flag) : 44394M
On-Column Amount (ng) : 615.9721
Integration start scan : 2007 Integration stop scan: 2119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

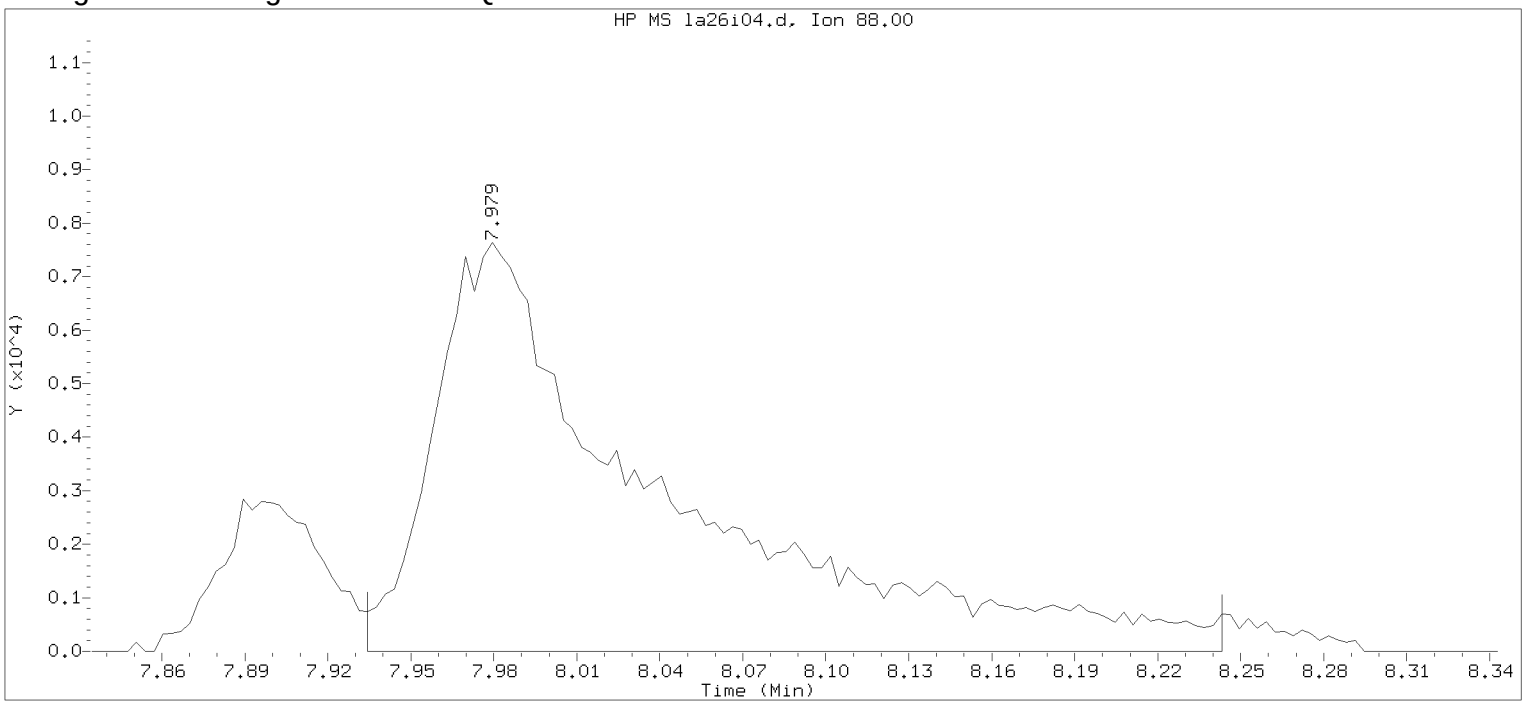
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area : 43334
On-column Amount (ng) : 533.8251
Integration start scan : 2006 Integration stop scan: 2102
Y at integration start : 0 Y at integration end: 0

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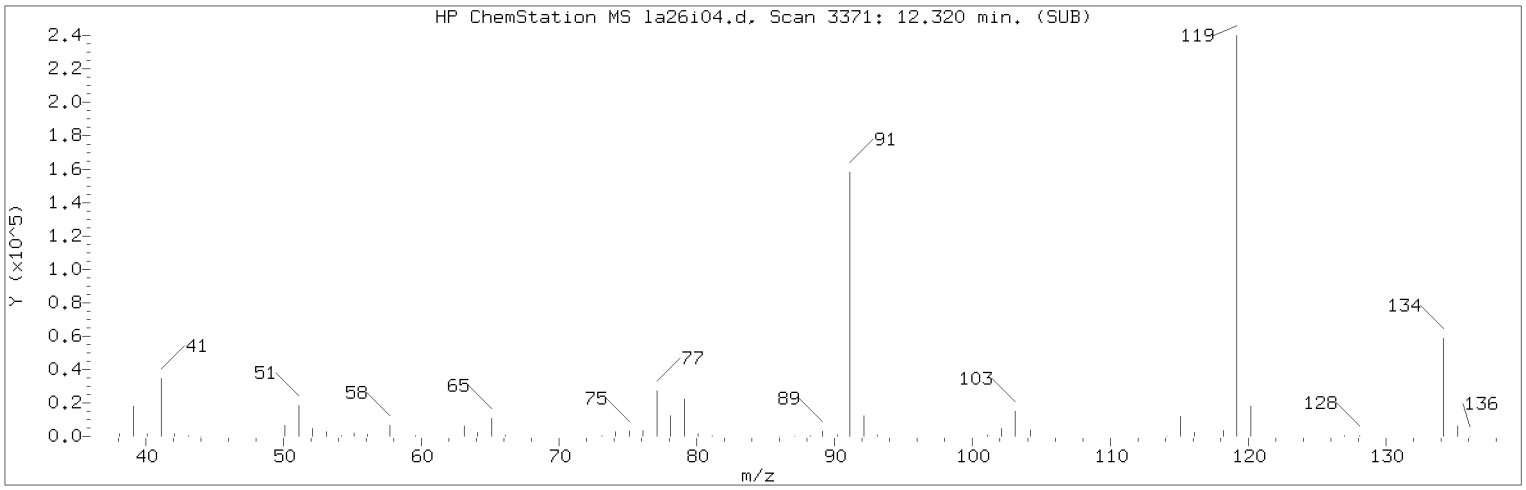
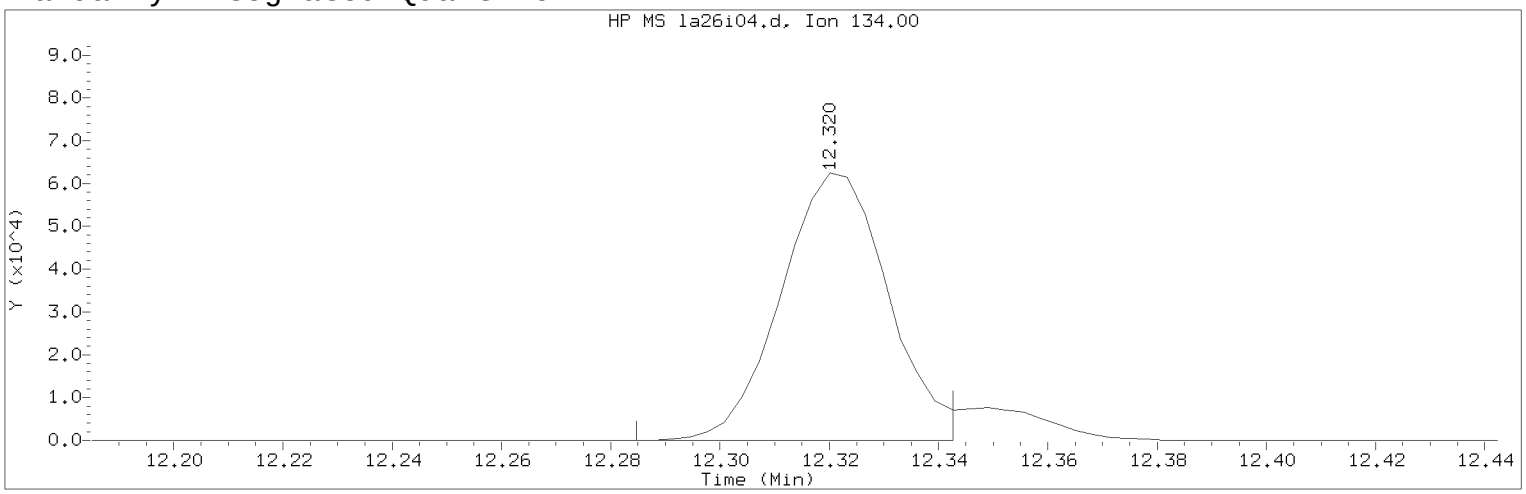
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

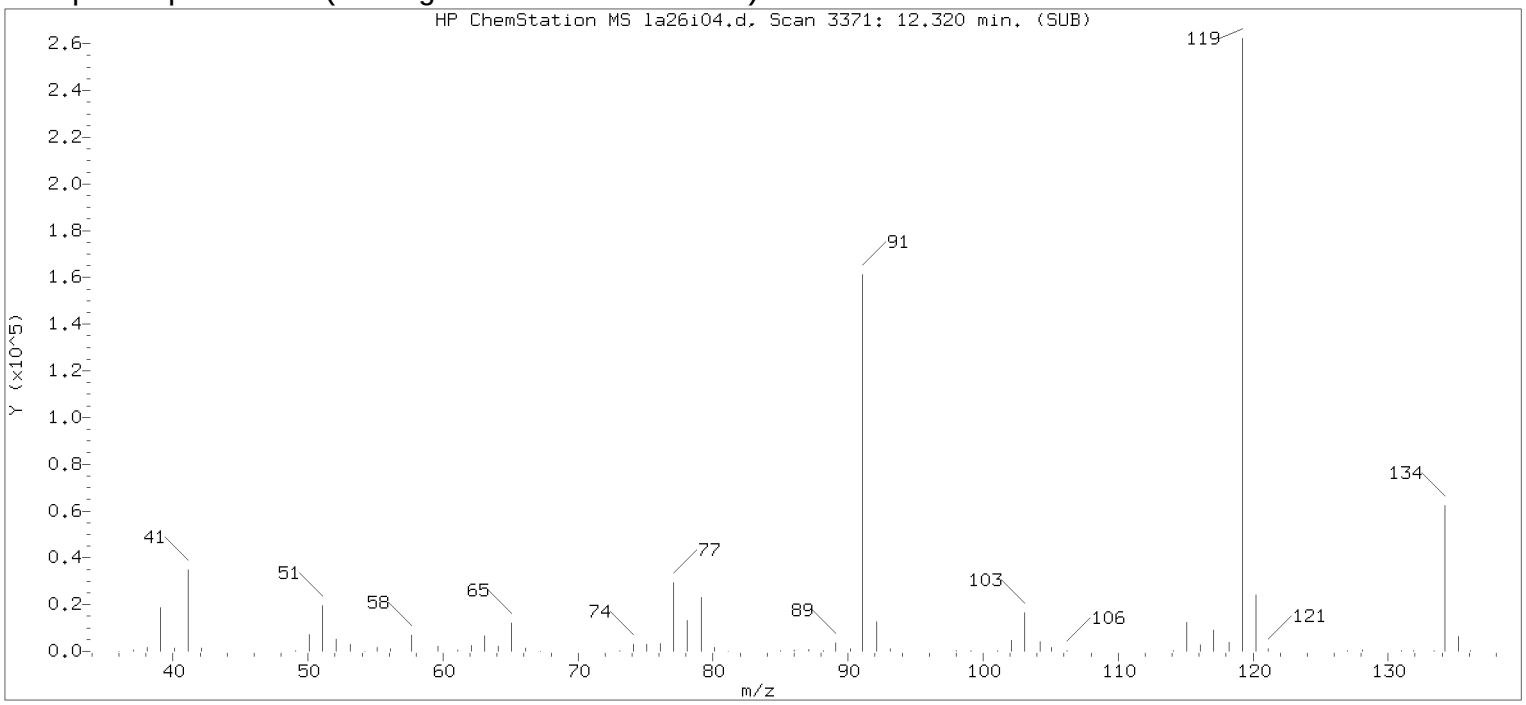
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 85014M
On-Column Amount (ng) : 20.5247
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

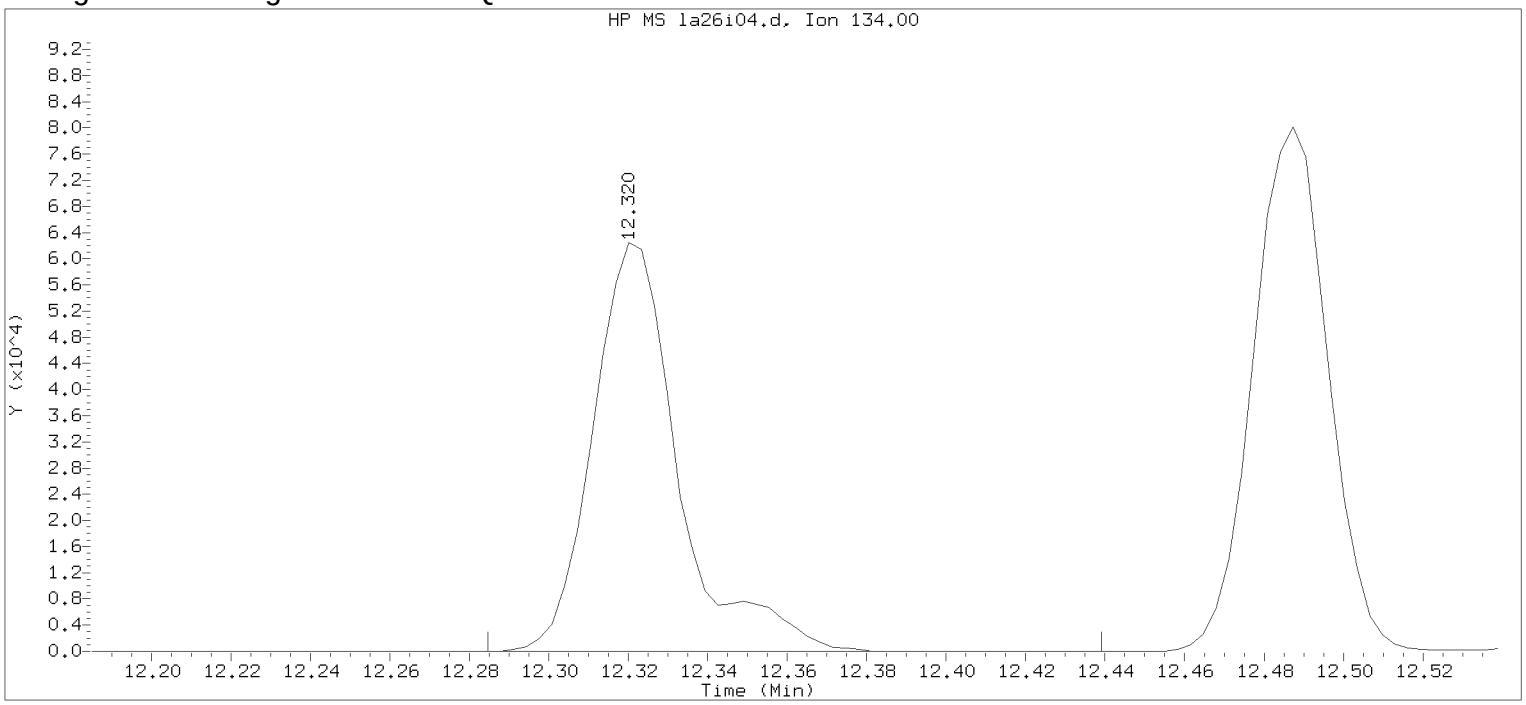
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



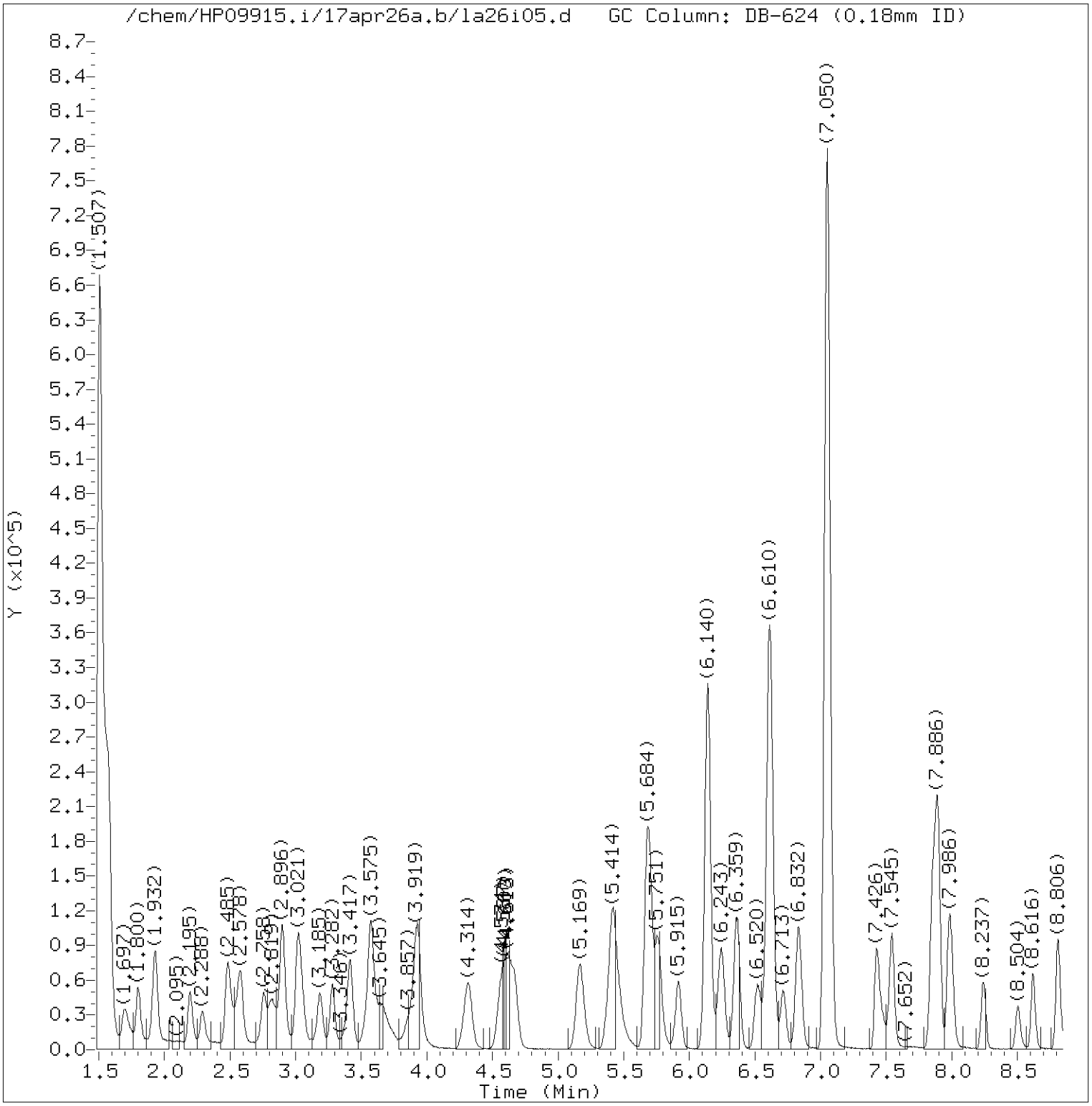

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 93218
On-column Amount (ng) : 20.3163
Integration start scan : 3359 Integration stop scan: 3407
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648




Total Ion Chromatogram (TIC)

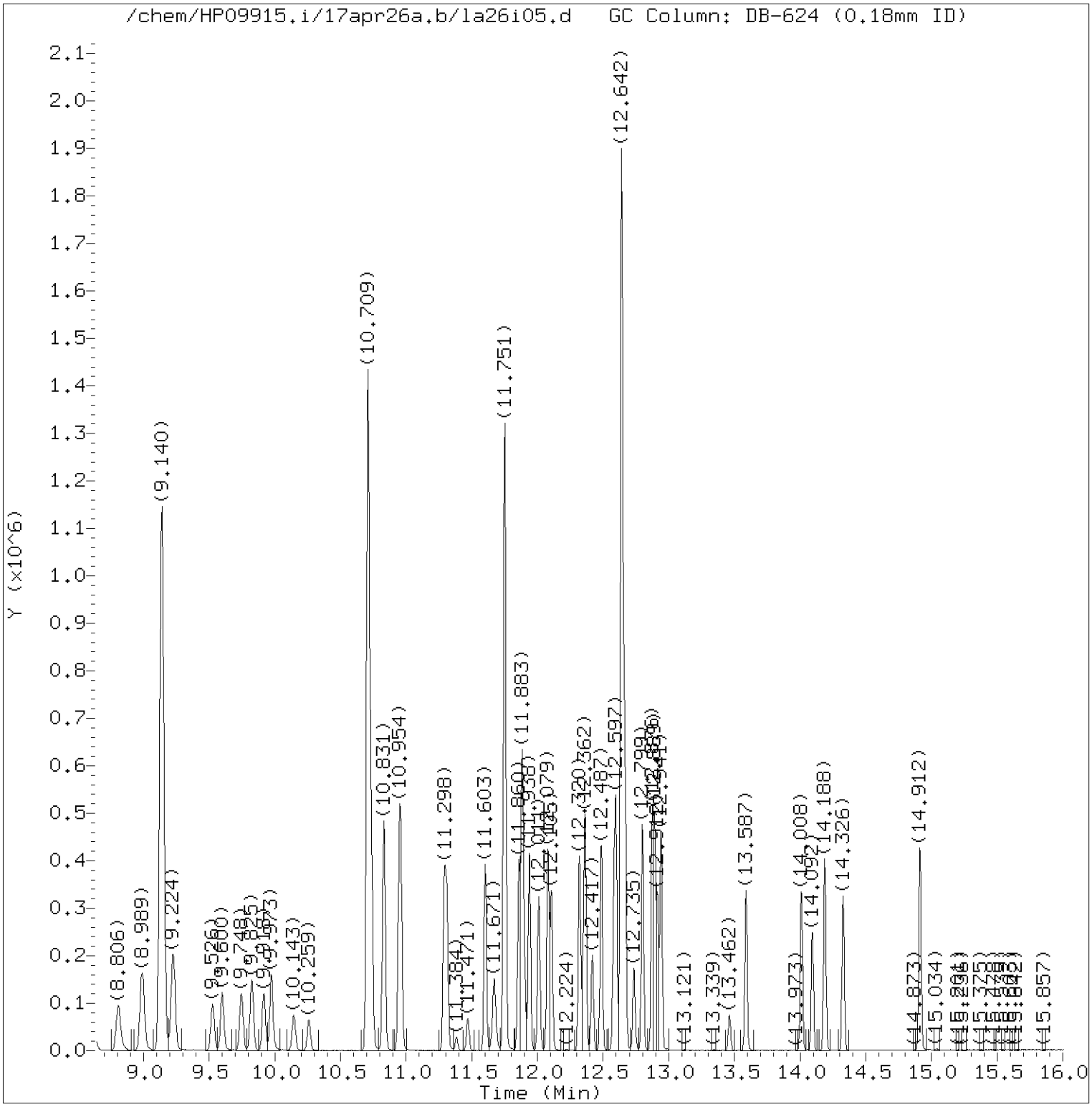
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.694 | 85 | 59129 | 9.454 |
| 4) Chloromethane | (2) | 1.800 | 50 | 62392 | 9.710 |
| 6) Vinyl Chloride | (2) | 1.915 | 62 | 59051 | 9.517 |
| 5) 1,3-Butadiene | (2) | 1.935 | 39 | 33003 | 8.720 |
| 8) Bromomethane | (2) | 2.195 | 94 | 41463M | 9.935 |
| 9) Chloroethane | (2) | 2.288 | 64 | 34369 | 9.829 |
| 10) Dichlorofluoromethane | (2) | 2.485 | 67 | 82511 | 9.674 |
| 12) Trichlorofluoromethane | (2) | 2.536 | 101 | 68090 | 9.477 |
| 11) n-Pentane | (2) | 2.584 | 43 | 53715 | 9.078 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 37841 | 9.460 |
| 15) Freon 123a | (2) | 2.812 | 67 | 43016 | 8.990 |
| 16) Acrolein | (1) | 2.896 | 56 | 159296 | 99.869 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 96 | 34274 | 9.013 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 17277 | 8.974 |
| 18) Acetone | (1) | 3.038 | 58 | 14831M | 21.423 |
| 19) Freon 113 | (2) | 3.044 | 101 | 34042 | 8.894 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 44925M | 97.891 |
| 22) Methyl Iodide | (2) | 3.185 | 142 | 67573 | 9.161 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 109946 | 8.884 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 53241 | 9.646 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 72375 | 9.502 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 194850M | 250.000 |
| 28) Methylene Chloride | (2) | 3.575 | 84 | 45146 | 8.987 |
| 30) t-Butyl alcohol | (1) | 3.665 | 59 | 75108M | 99.625 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 29199 | 10.074 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.909 | 73 | 131184 | 9.417 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 41659 | 9.337 |
| 34) n-Hexane | (2) | 4.314 | 57 | 66816 | 9.769 |
| 36) 1,1-Dichloroethane | (2) | 4.555 | 63 | 77409 | 9.233 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 151698 | 9.427 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.668 | 53 | 64336 | 9.097 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 130812 | 9.446 |
| 44) 2-Butanone | (2) | 5.382 | 43 | 78761 | 20.295 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 46779 | 9.150 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 50428 | 9.009 |
| 47) Propionitrile | (1) | 5.459 | 54 | 106892 | 97.145 |
| 48) Methacrylonitrile | (2) | 5.681 | 67 | 139926 | 48.423 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 26022 | 9.657 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 19359 | 19.919 |
| 51) Chloroform | (2) | 5.915 | 83 | 73627 | 9.213 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 256526 | 50.033 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 111 | 263734 | 50.197 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 67074 | 9.185 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 88438 | 18.487 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 76539 | 9.205 |
| 54) Cyclohexane | (2) | 6.246 | 84 | 62394 | 9.066 |
| 54) Cyclohexane | (2) | 6.243 | 69 | 21874 | 9.076 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 46720 | 8.764 |
| 55) 1,1-Dichloropropene | (2) | 6.359 | 75 | 59578 | 9.166 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 64054 | 241.988 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63277 | 49.631 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 65 | 305872 | 50.719 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 41354 | 51.137 |
| 60) Benzene | (2) | 6.632 | 78 | 179018 | 9.343 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 61212 | 9.443 |
| 61) 1,2-Dichloroethane | (2) | 6.709 | 98 | 5860 | 10.253 |
| 65) t-Amyl methyl ether | (2) | 6.828 | 73 | 127821 | 9.300 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1049965 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 73529 | 9.602 |
| 69) n-Butanol | (1) | 7.426 | 56 | 99502 | 466.313 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 45597 | 9.209 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 78864 | 9.040 |
| 72) Methylcyclohexane | (2) | 7.851 | 98 | 35389 | 8.989 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 49507 | 9.439 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 15525M | 233.055 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 41640M | 9.275 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 30502 | 9.247 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 53652 | 9.013 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 31065 | 18.403 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 38546 | 9.560 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 70800 | 9.125 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 159436 | 19.936 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1032472 | 50.129 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 677627 | 49.938 |
| 88) Toluene | (3) | 9.224 | 92 | 113958 | 9.521 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 61223 | 9.122 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 71393 | 9.444 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 44018 | 9.544 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 51504 | 9.729 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 75121 | 9.387 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 116413 | 20.149 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 132023 | 18.248 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 42605 | 8.918 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 48002 | 9.507 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 806654 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 65231 | 9.490 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 131328 | 9.509 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 41501 | 9.100 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 224396 | 9.719 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 173163 | 19.266 |
| 107) o-Xylene | (3) | 11.291 | 106 | 86473 | 9.674 |
| 109) Styrene | (3) | 11.311 | 104 | 143254 | 9.695 |
| 110) Bromoform | (3) | 11.471 | 173 | 30332 | 8.744 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 229604 | 10.051 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 63246 | 251.691 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 383820 | 50.137 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 336286 | 50.079 |
| 108) Xylene (Total) | (3) | | 106 | 259636 | 28.939 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 73056 | 9.576 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 58282 | 9.486 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 105547 | 48.281 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 20738 | 9.616 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 280075 | 10.317 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 56022 | 9.915 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 197456 | 10.200 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 57797 | 9.829 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 41143M | 9.832 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 30142 | 9.123 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 202204 | 10.140 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 255110 | 10.331 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 115818 | 9.902 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 223274 | 10.241 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 429808 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 119475 | 9.878 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 208329 | 9.972 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 103198 | 8.626 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 129904 | 9.973 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 137007 | 10.016 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 112742 | 10.351 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 112538 | 9.788 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 109919 | 10.027 |
| 141) Diethylbenzene (total) | (4) | | 100 | 376830 | 30.016 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 15055 | 9.331 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 94185 | 10.104 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 91035 | 10.067 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 39102 | 9.957 |
| 148) Naphthalene | (4) | 14.188 | 128 | 269332 | 9.871 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 88643 | 10.161 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 172519 | 9.778 |



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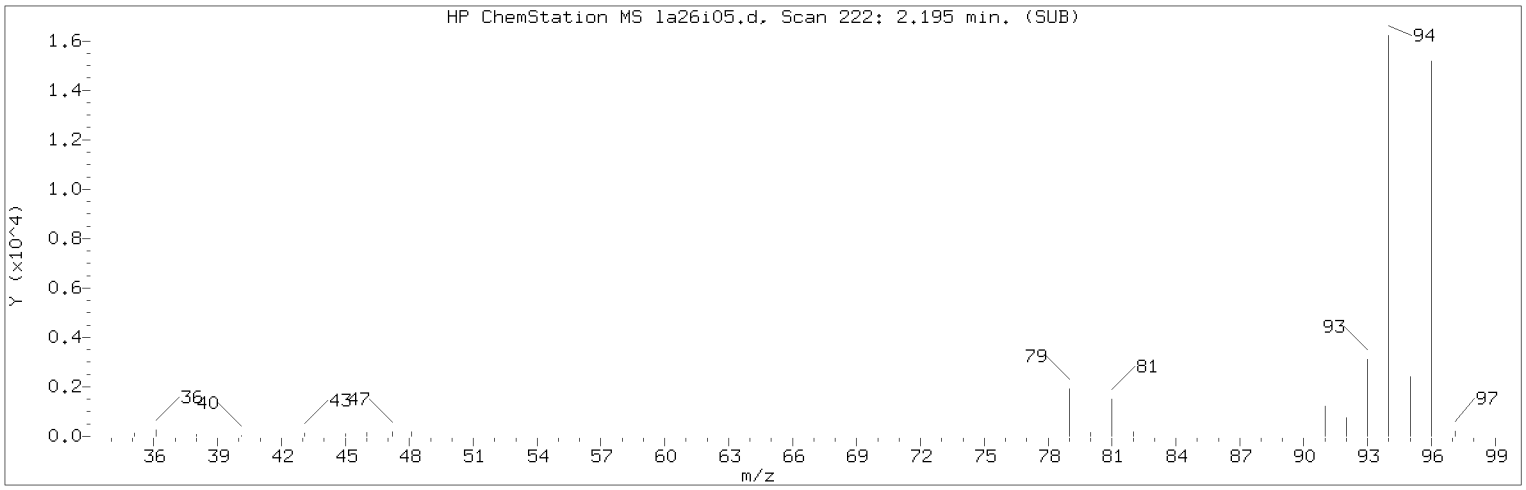
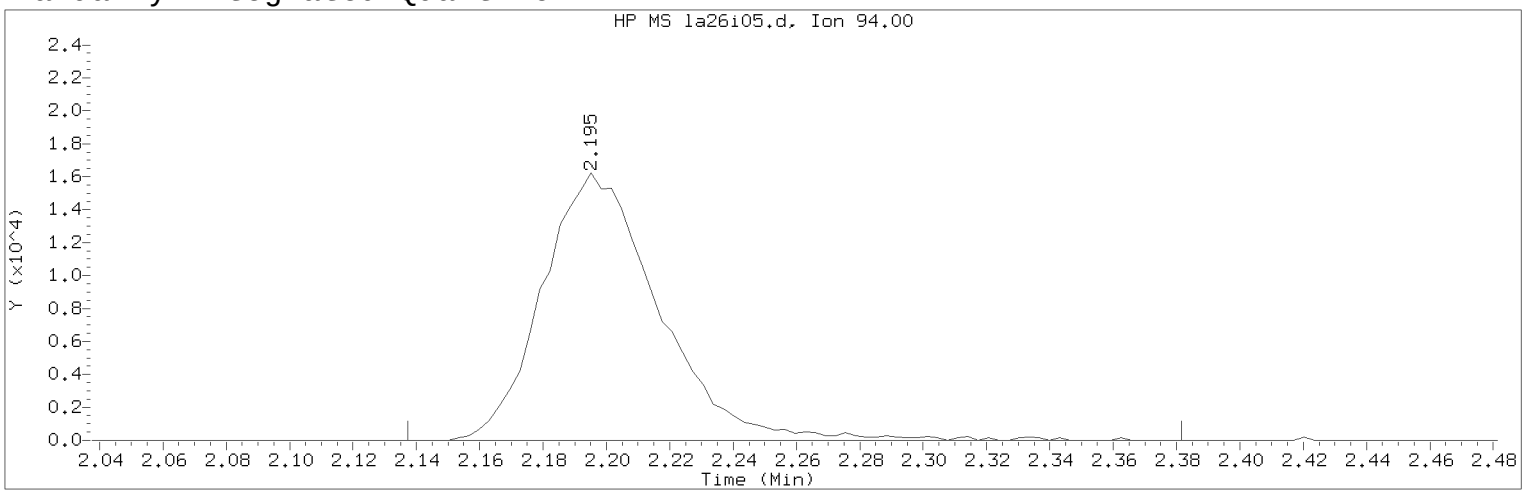
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

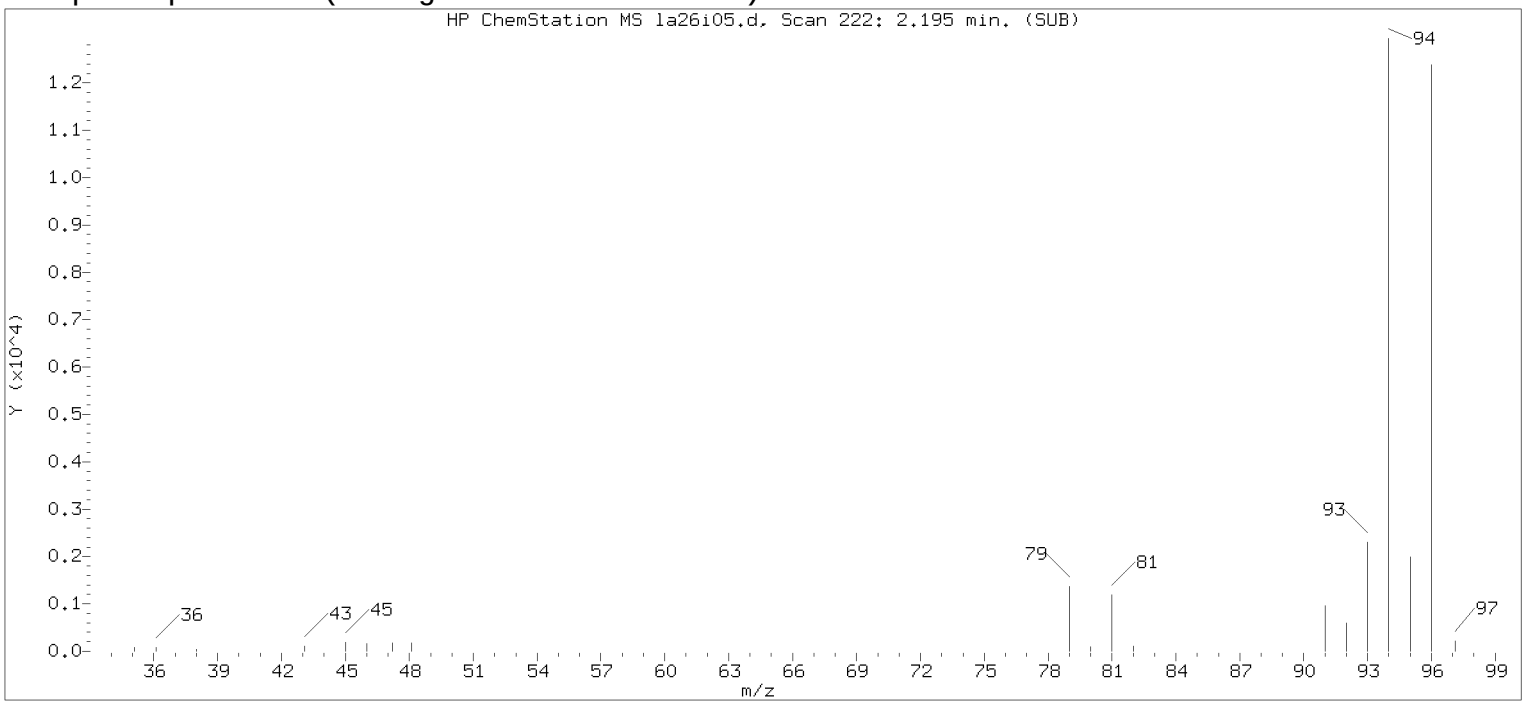
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area (flag) : 41463M
On-Column Amount (ng) : 9.9355
Integration start scan : 203 Integration stop scan: 279
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

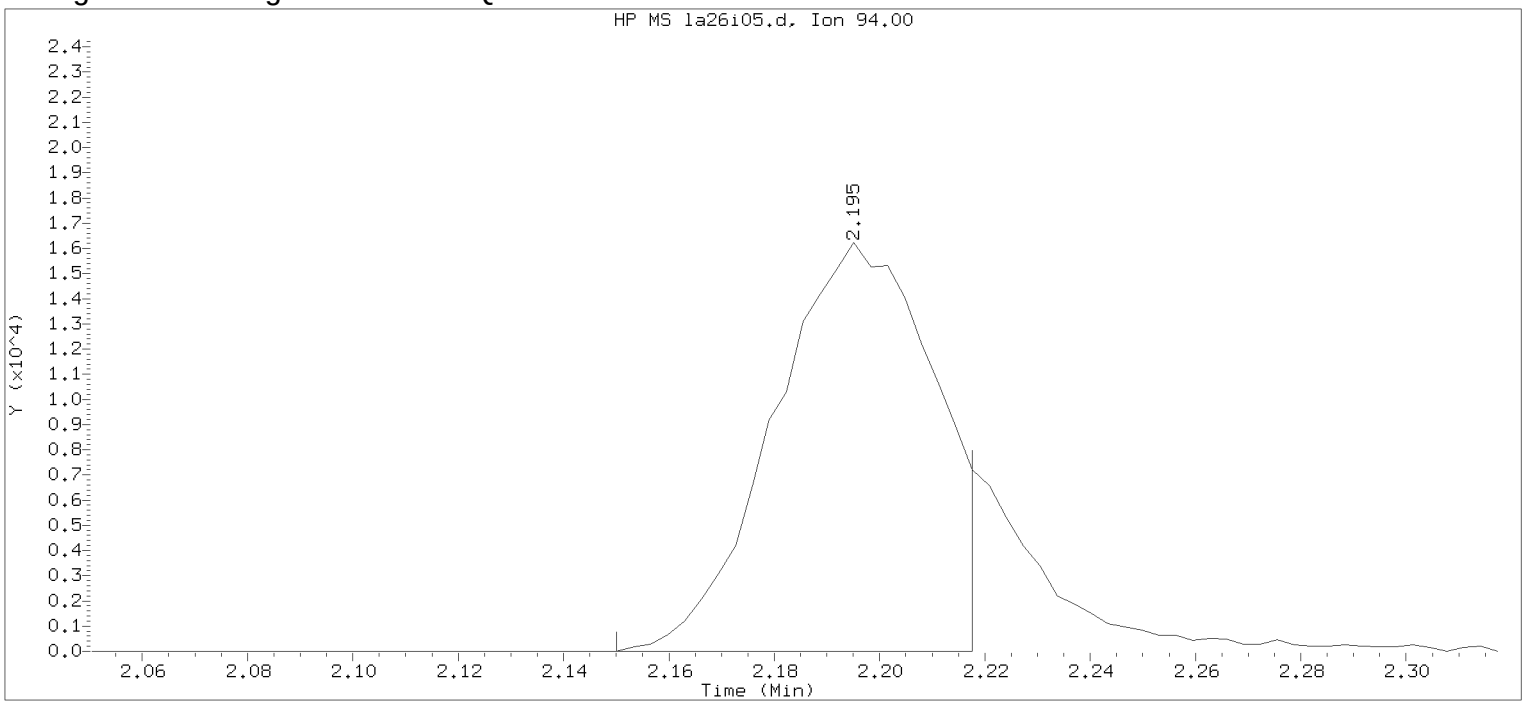
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 34035
On-column Amount (ng) : 8.6274
Integration start scan : 207 Integration stop scan: 228
Y at integration start : 0 Y at integration end: 0

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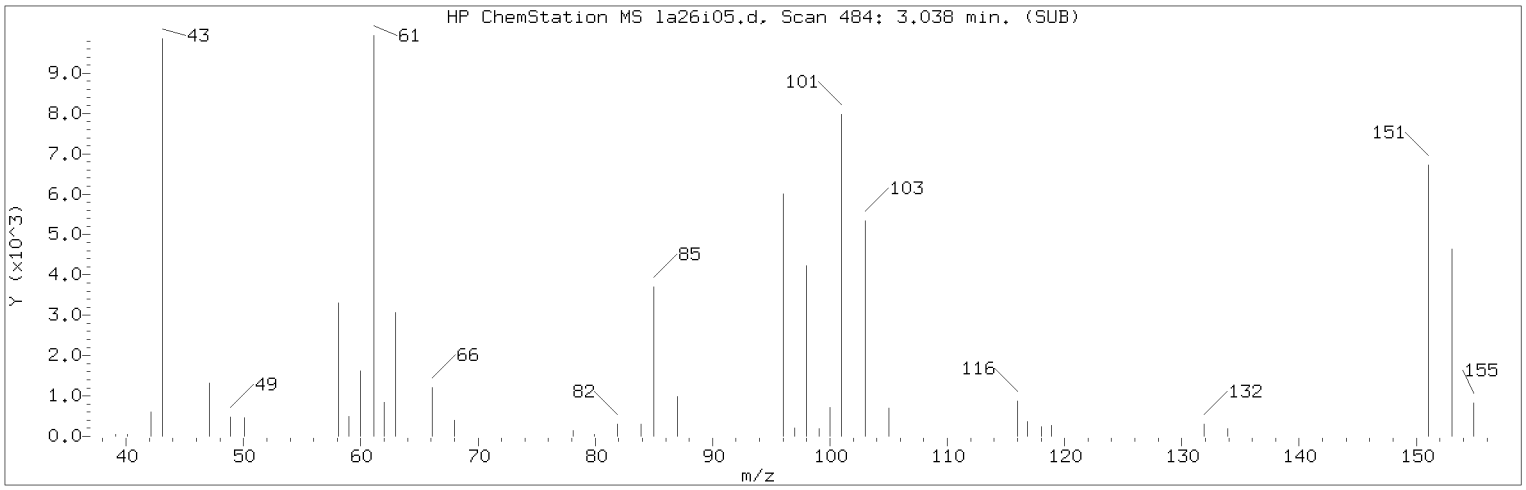
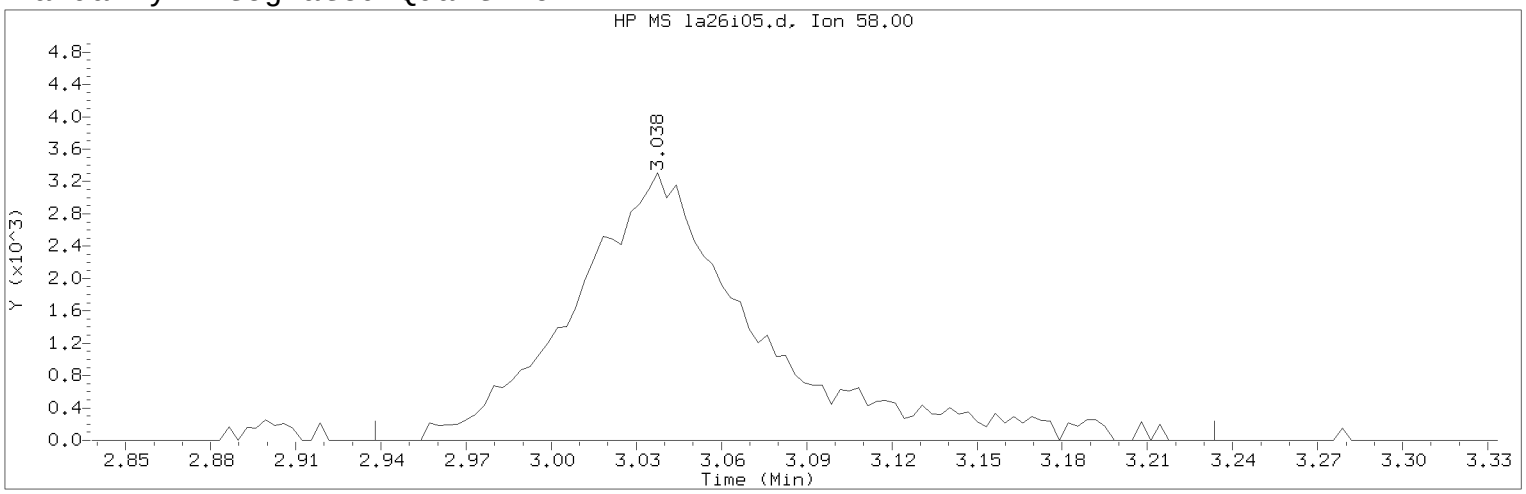
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

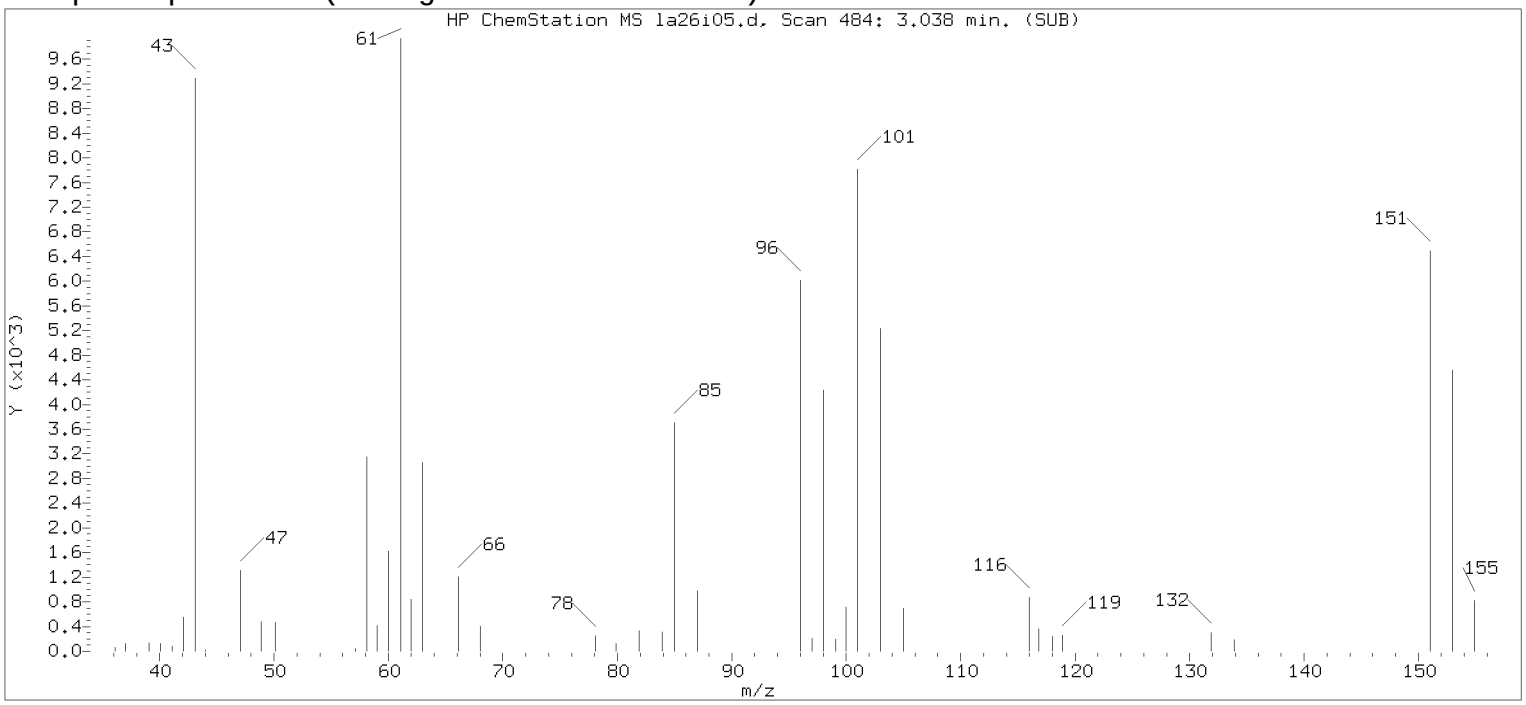
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area (flag) : 14831M
On-Column Amount (ng) : 21.4232
Integration start scan : 452 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

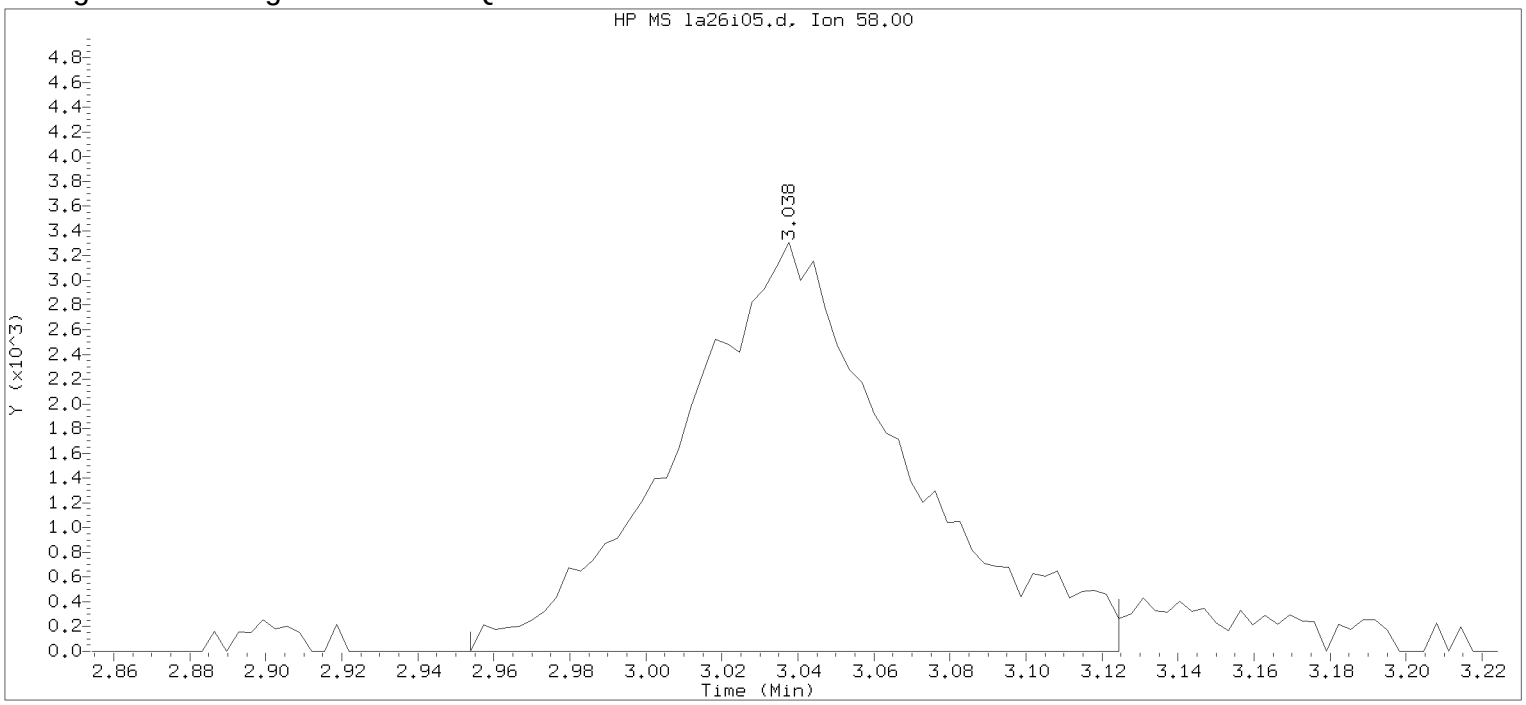
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area : 13613
On-column Amount (ng) : 19.2845
Integration start scan : 457 Integration stop scan: 510
Y at integration start : 0 Y at integration end: 0

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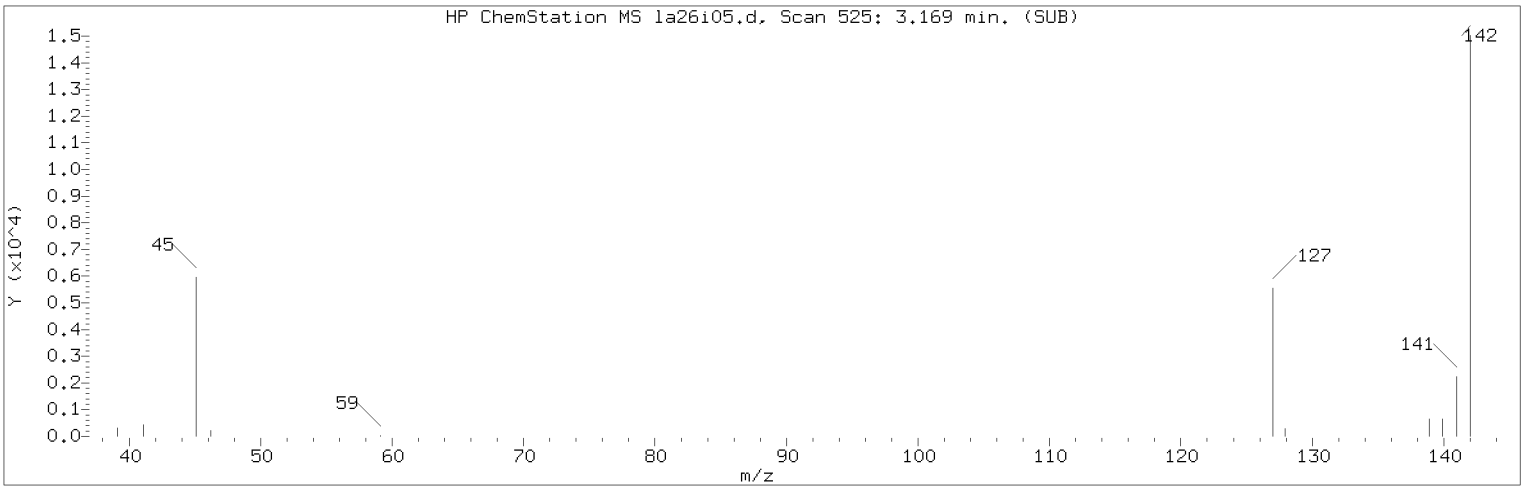
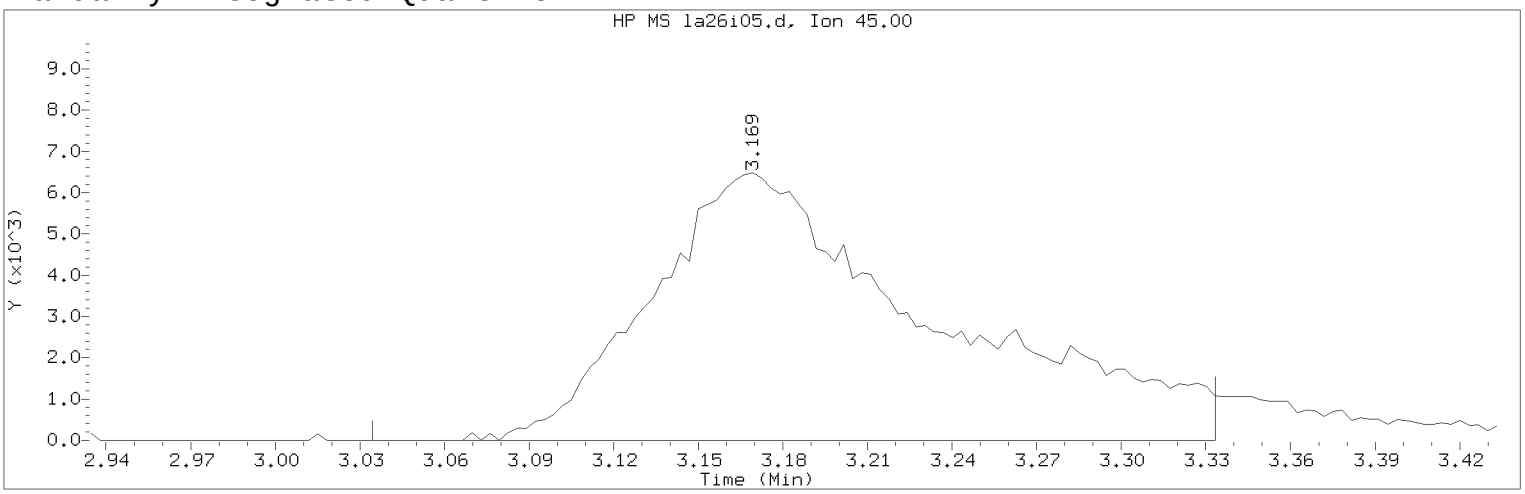
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

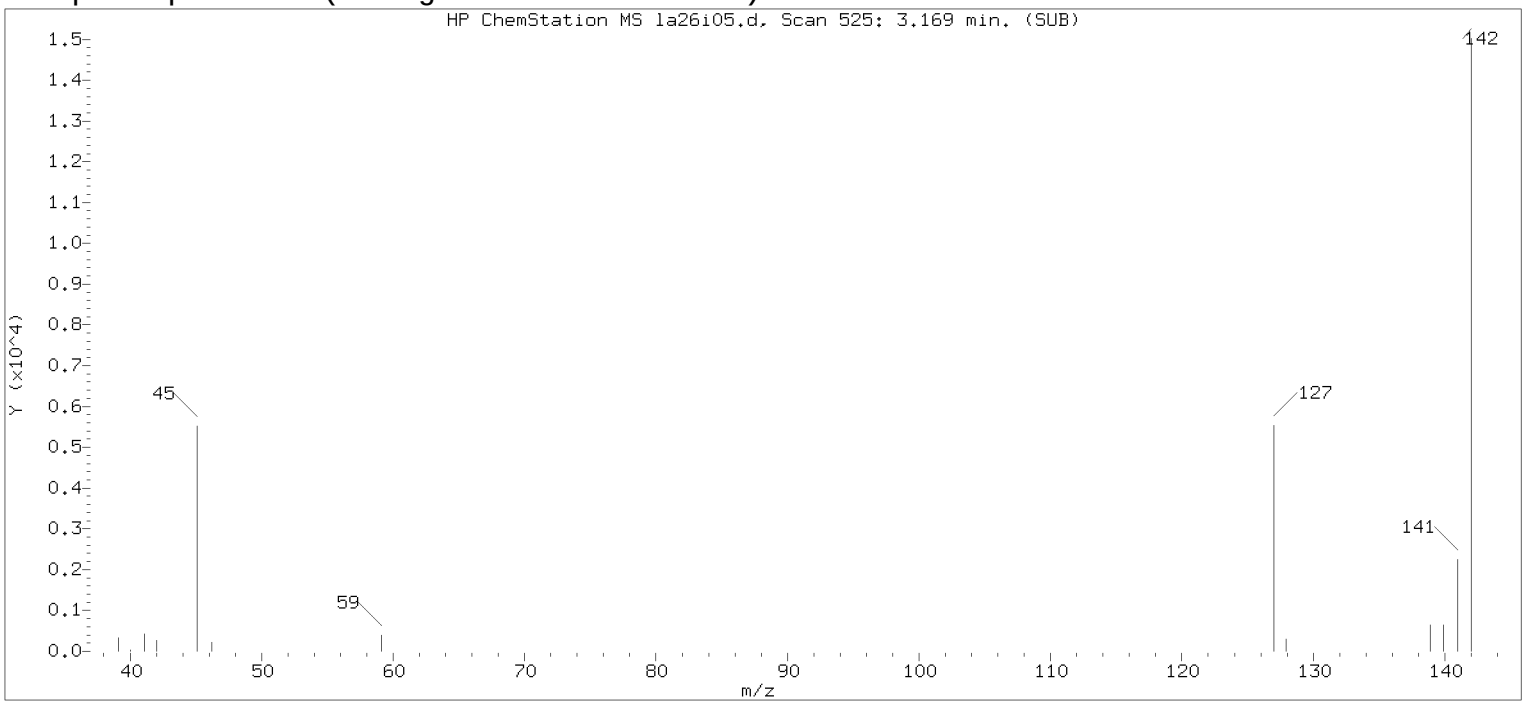
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area (flag) : 44925M
On-Column Amount (ng) : 97.8914
Integration start scan : 482 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

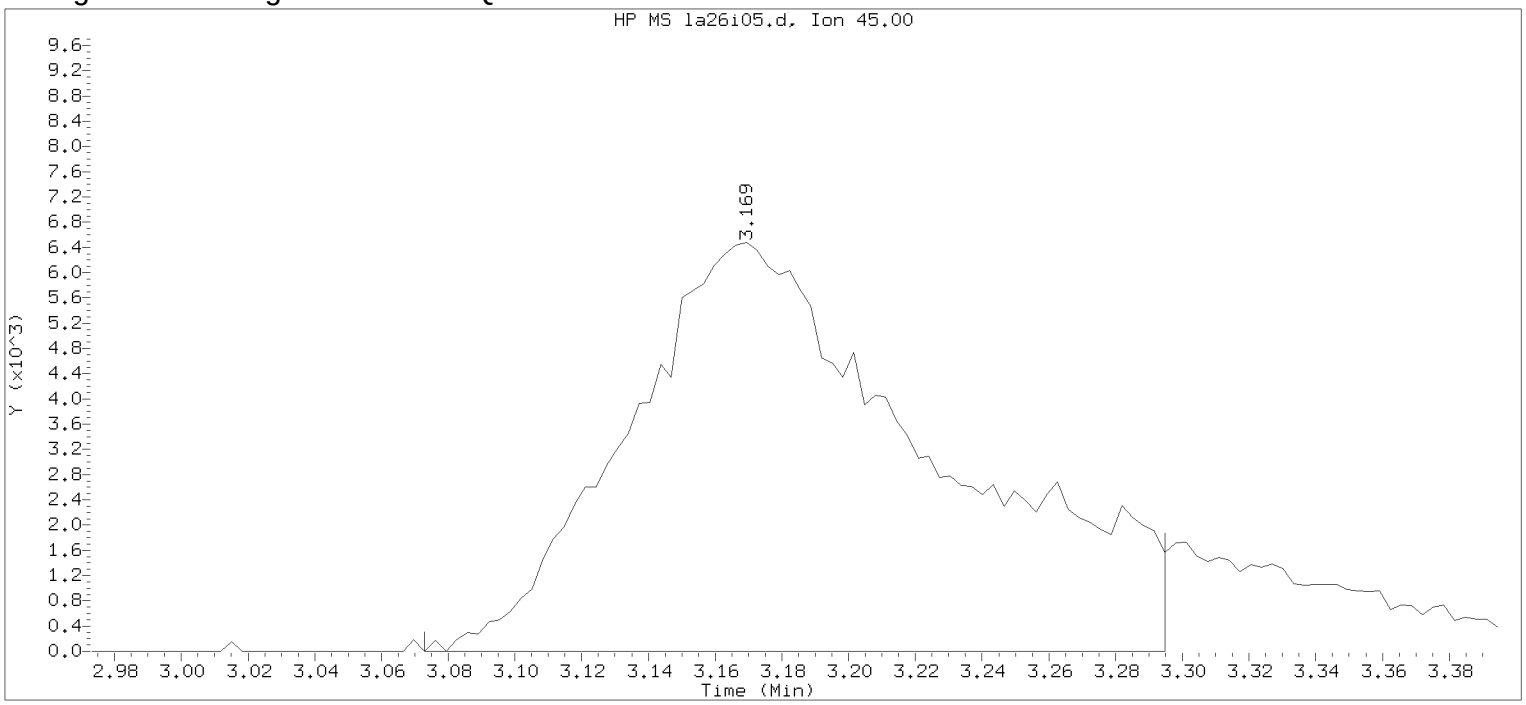
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area : 41457
On-column Amount (ng) : 114.3657
Integration start scan : 494 Integration stop scan: 563
Y at integration start : 0 Y at integration end: 0

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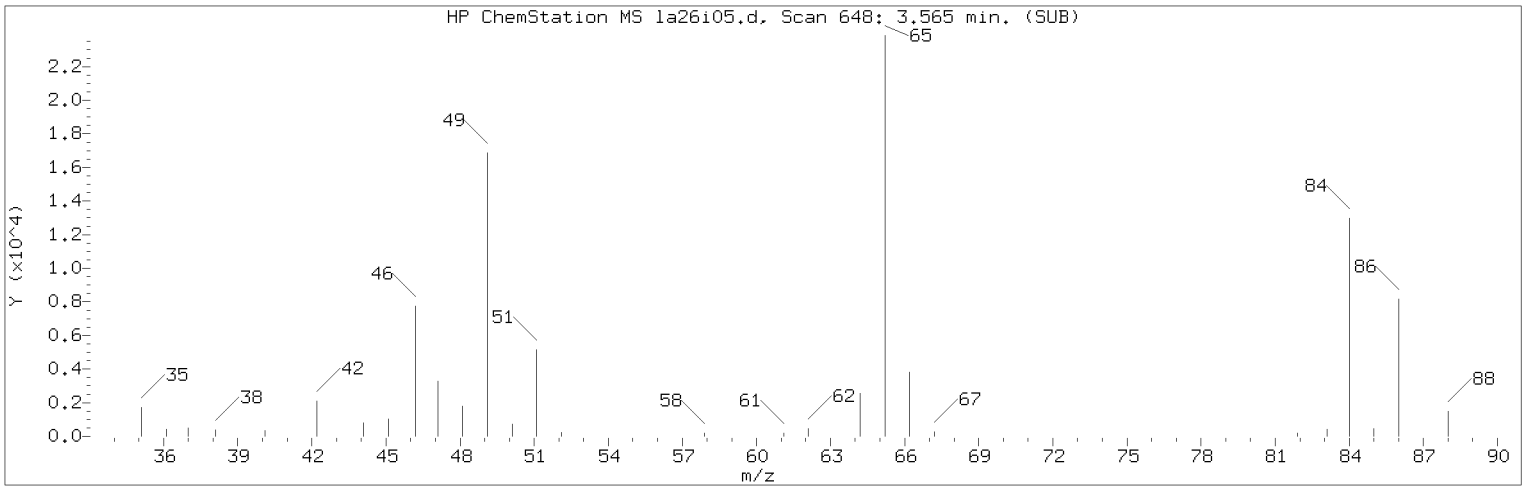
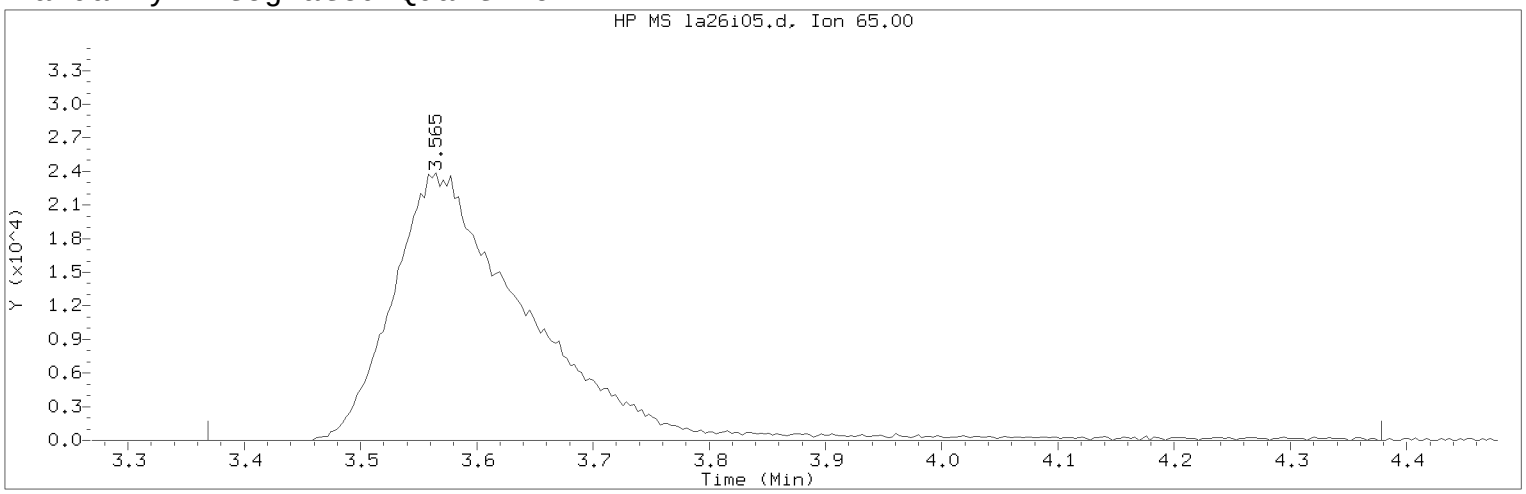
Target 3.5 esignature userKAS02648 R0002400

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

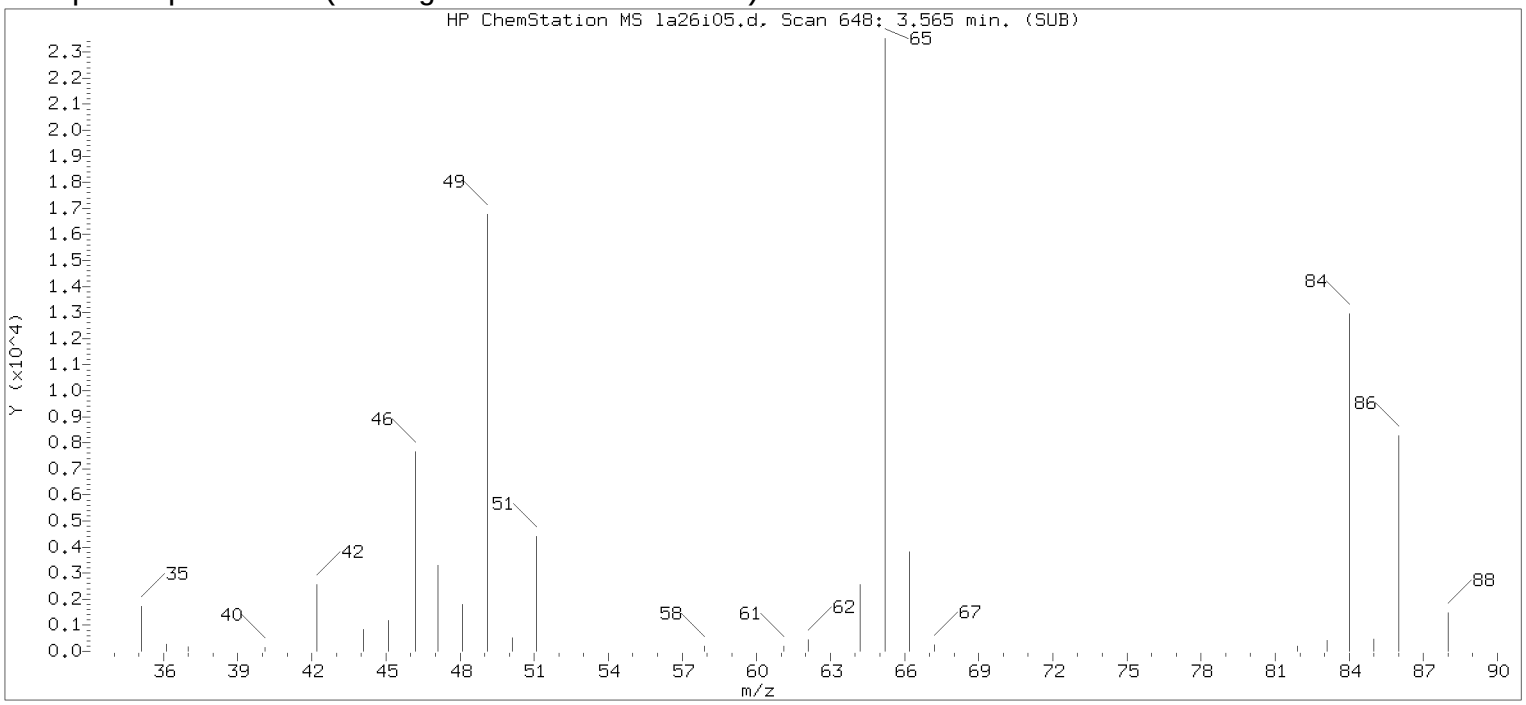
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area (flag) : 194850M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 900
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

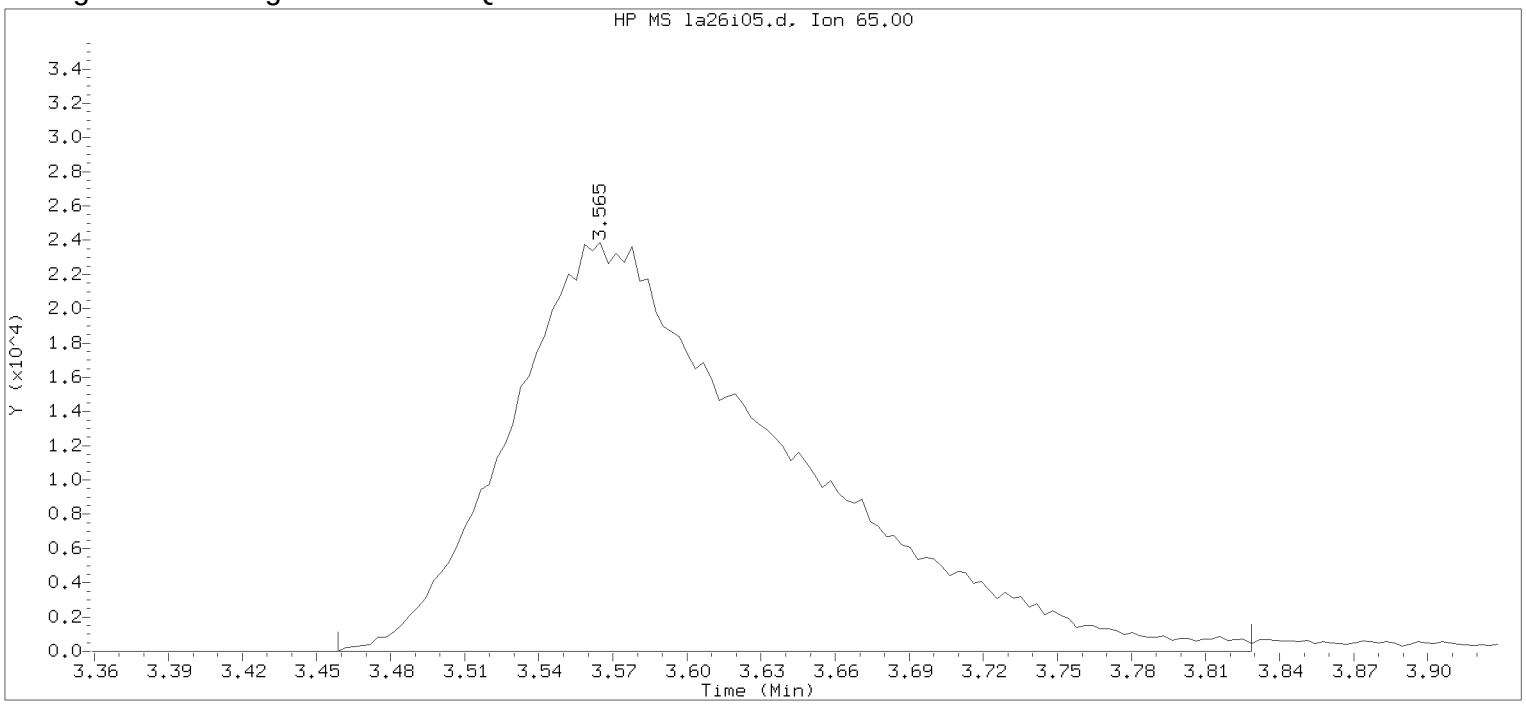
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

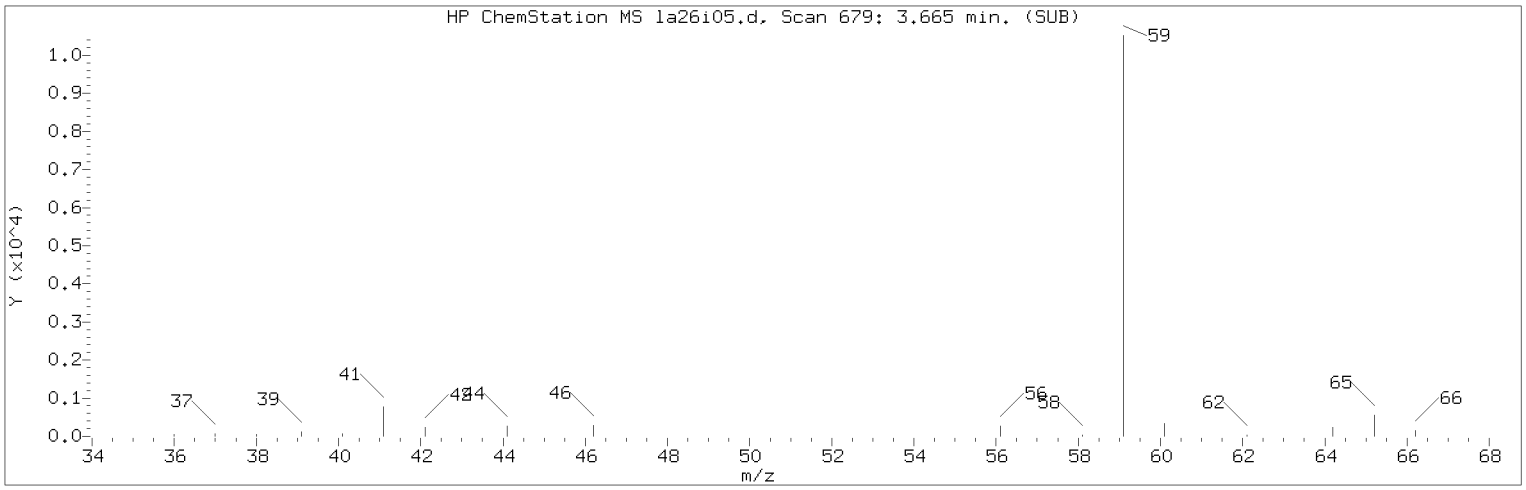
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

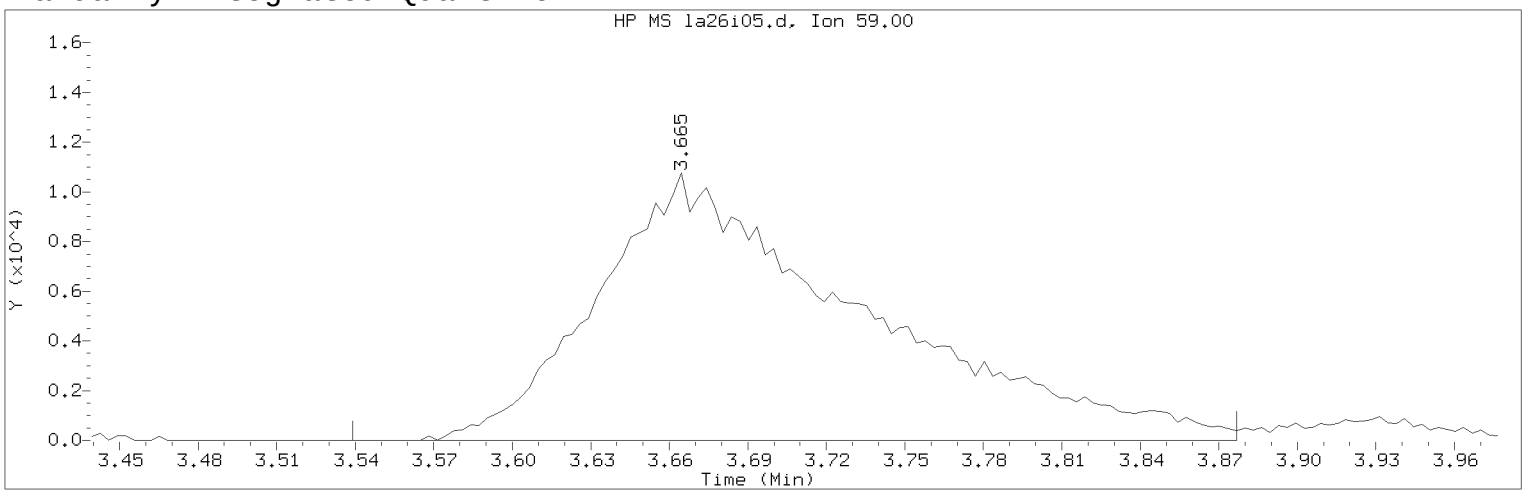
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area : 185663
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 729
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

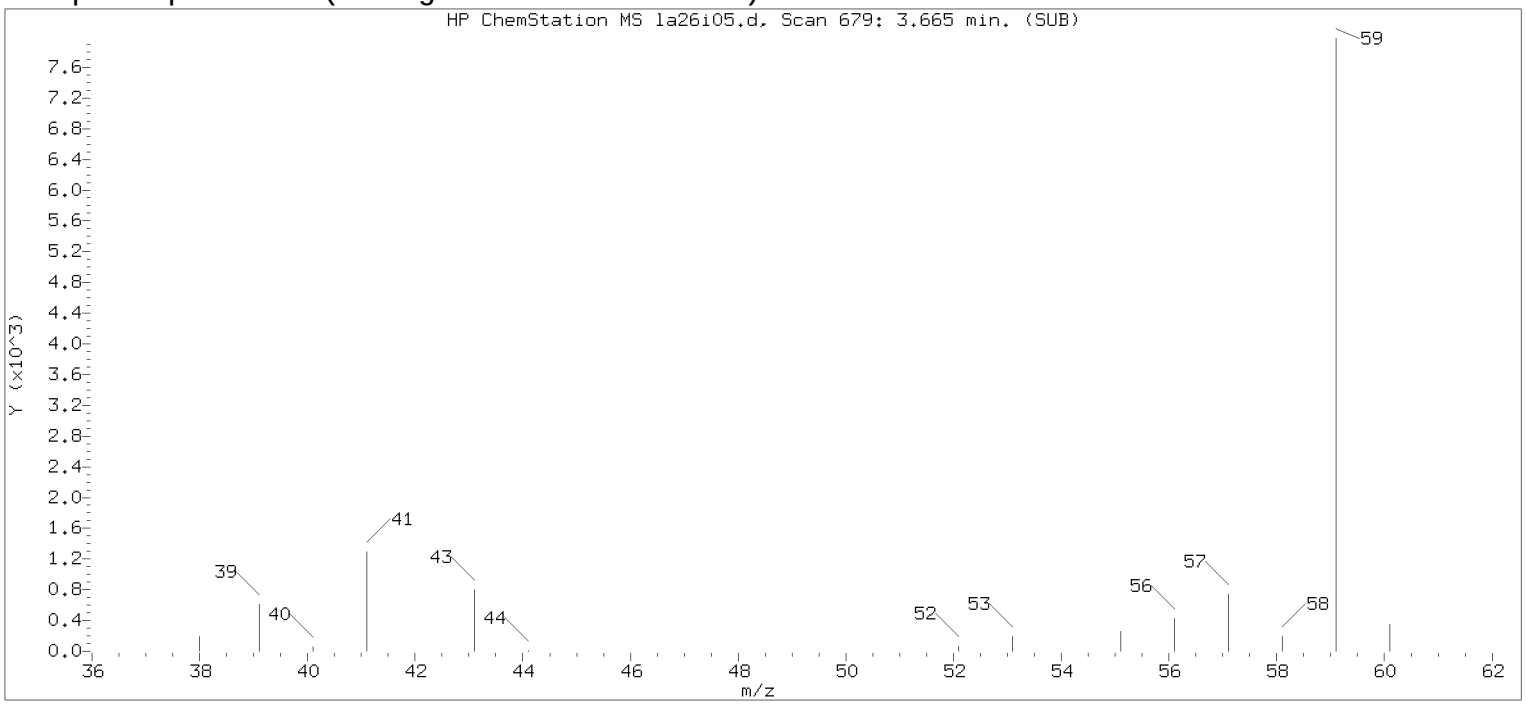
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 679
Retention Time (minutes): 3.665
Quant Ion : 59.00
Area (flag) : 75108M
On-Column Amount (ng) : 99.6249
Integration start scan : 639 Integration stop scan: 744
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

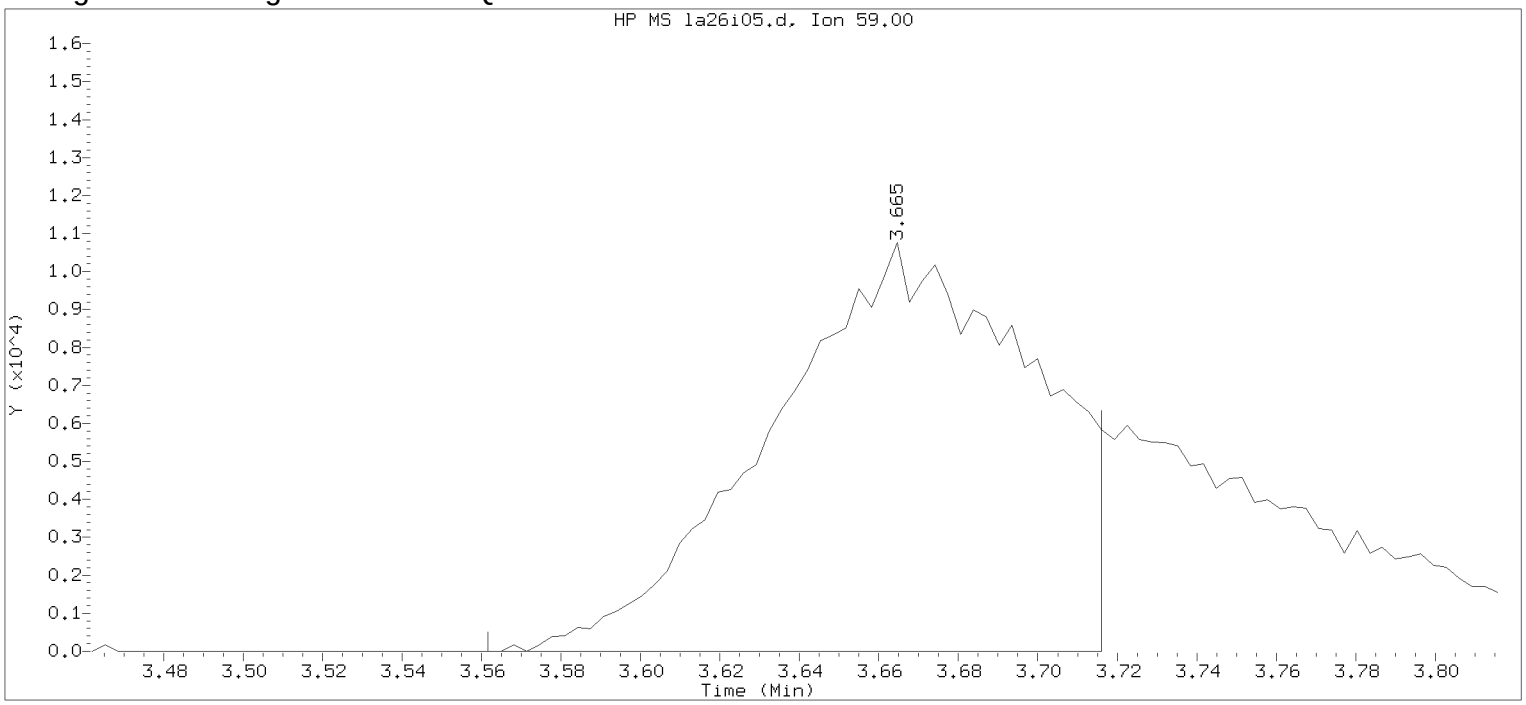
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

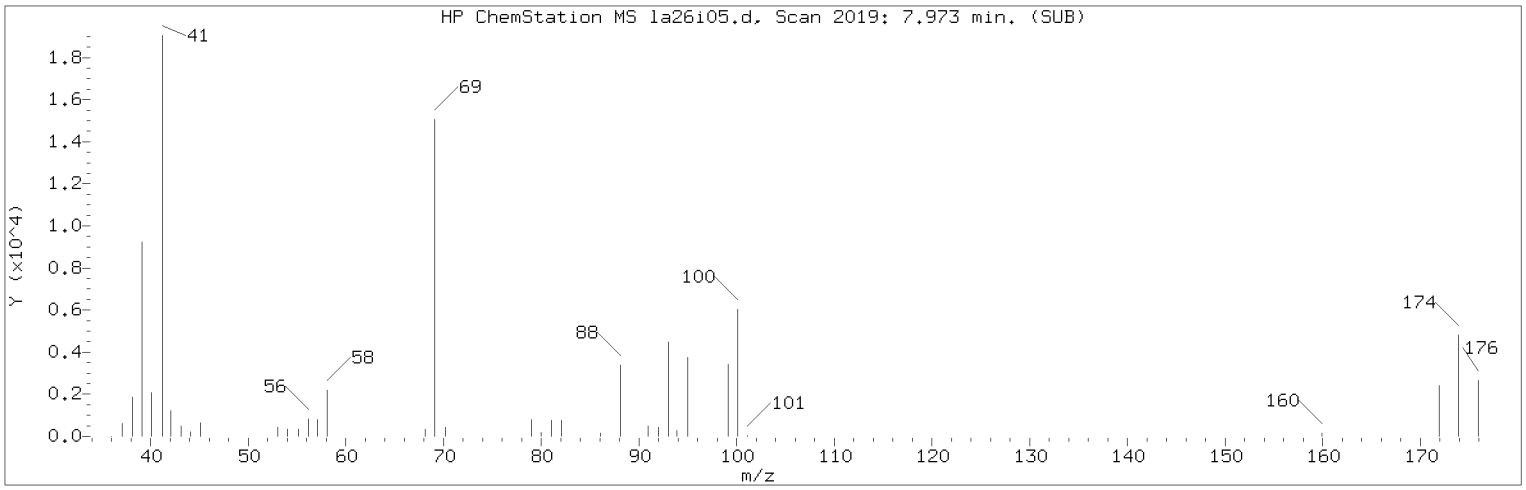
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

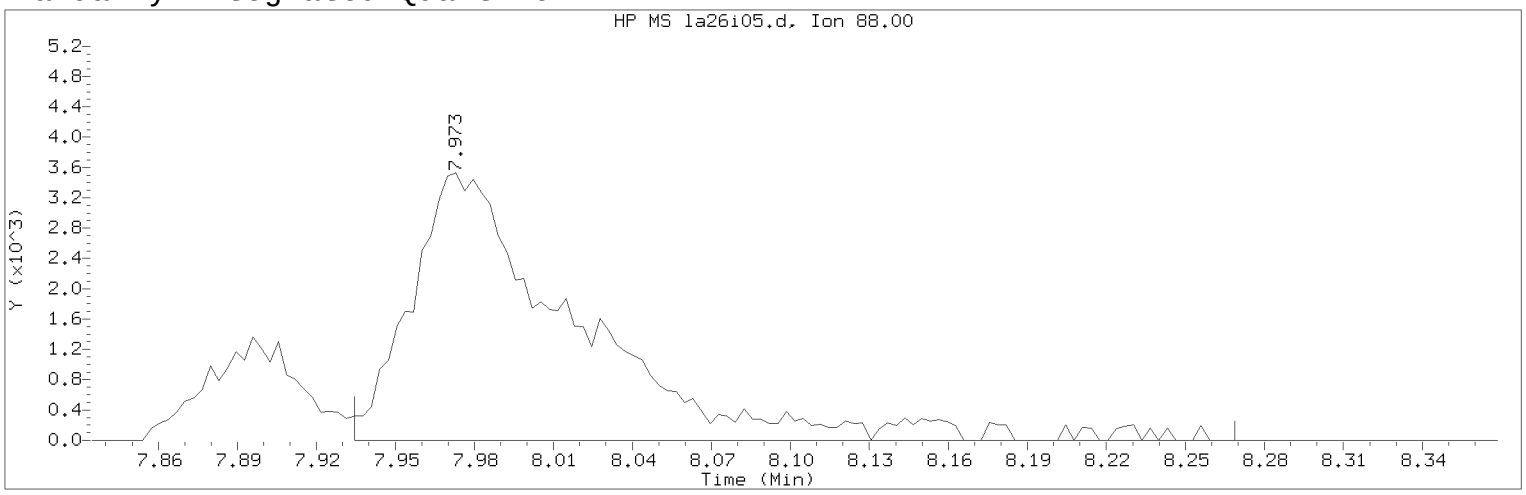
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 679
Retention Time (minutes): 3.665
Quant Ion : 59.00
Area : 49216
On-column Amount (ng) : 71.8732
Integration start scan : 646 Integration stop scan: 694
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

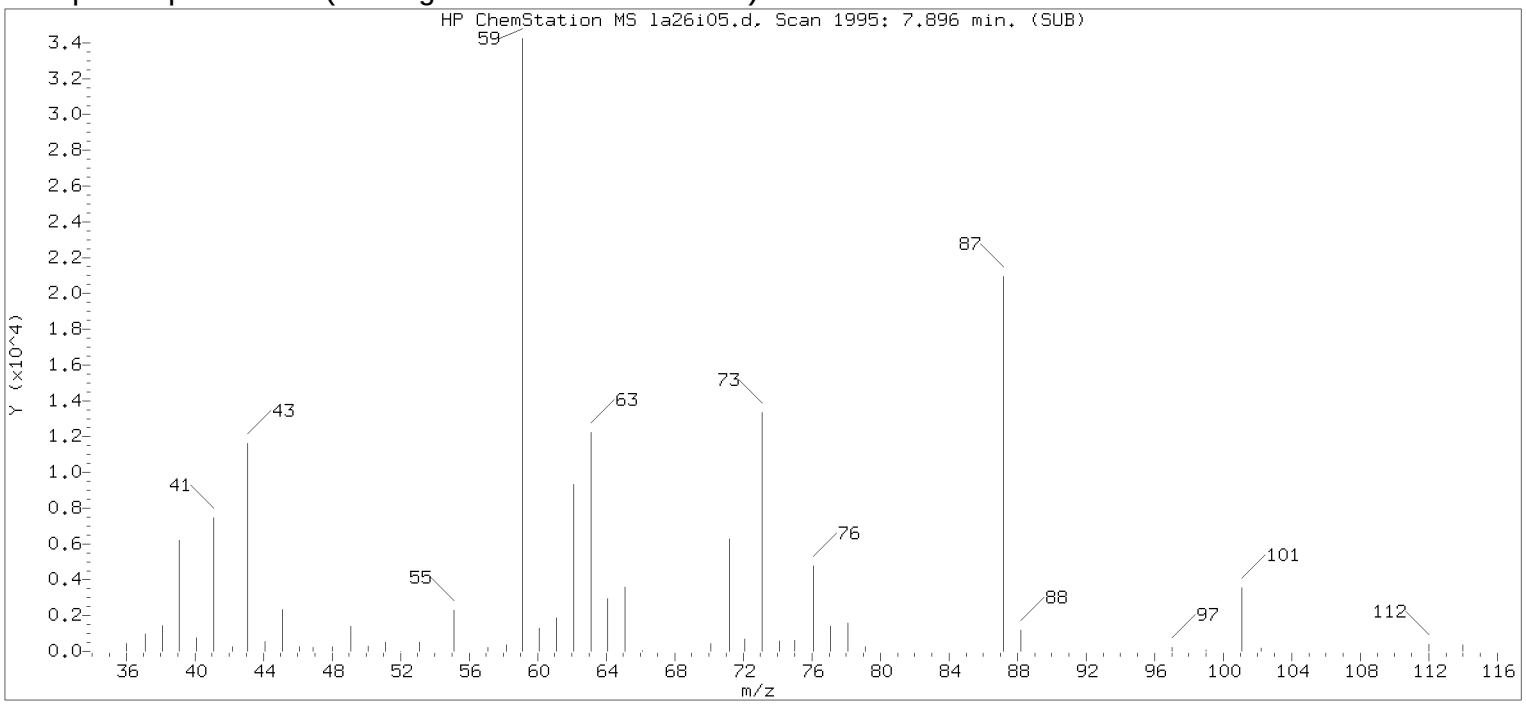
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 15525M
On-Column Amount (ng) : 233.0554
Integration start scan : 2006 Integration stop scan: 2110
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

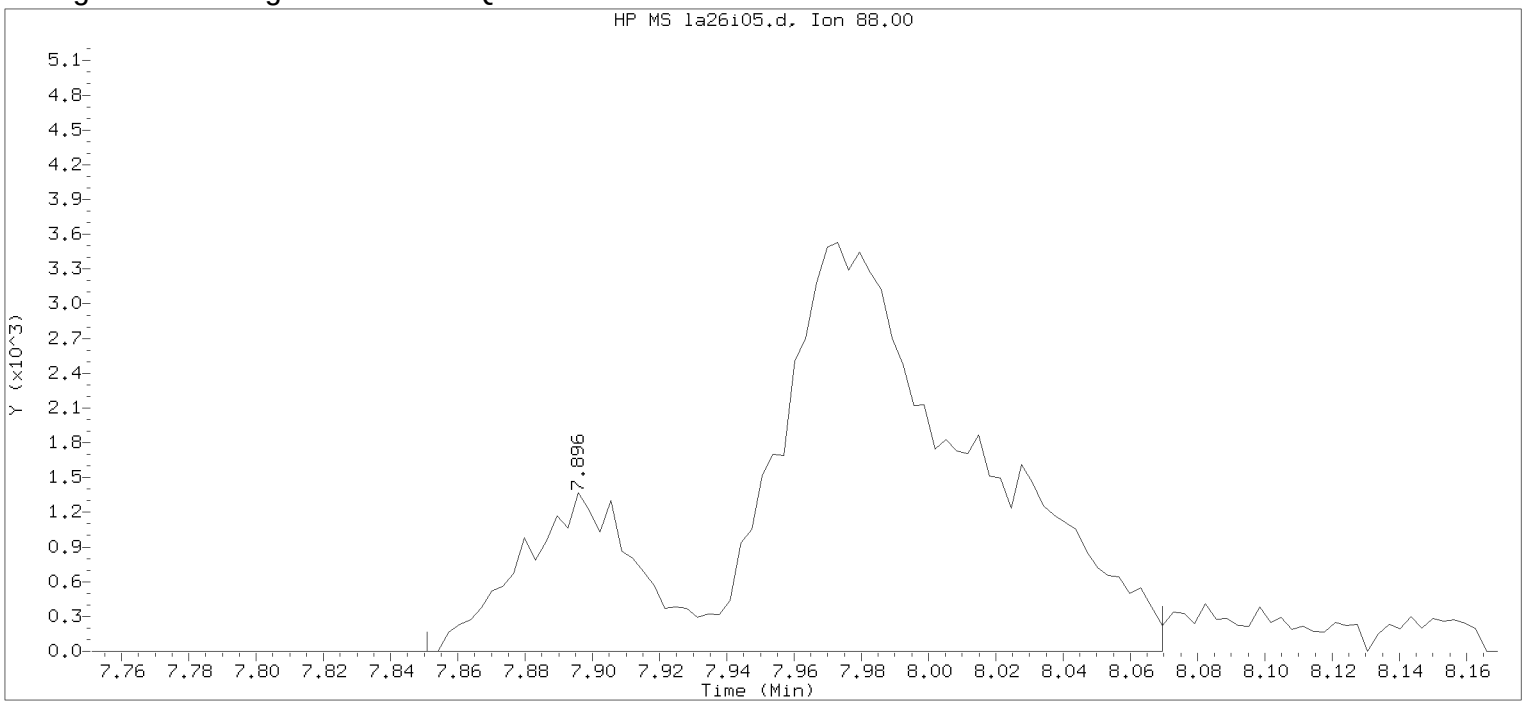
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

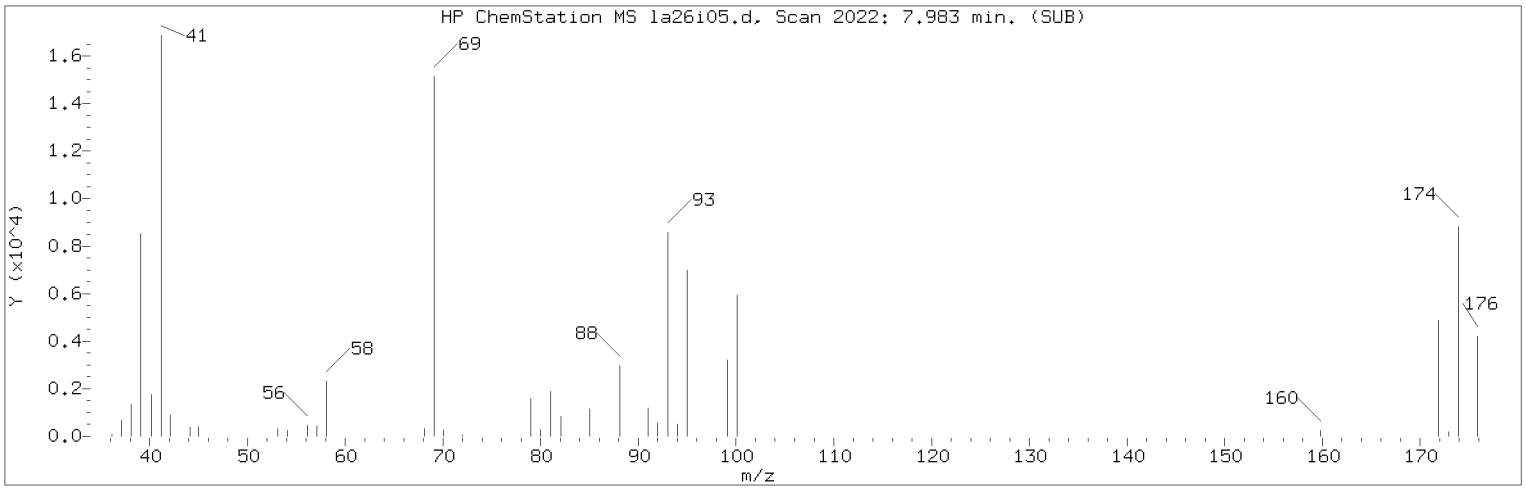
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

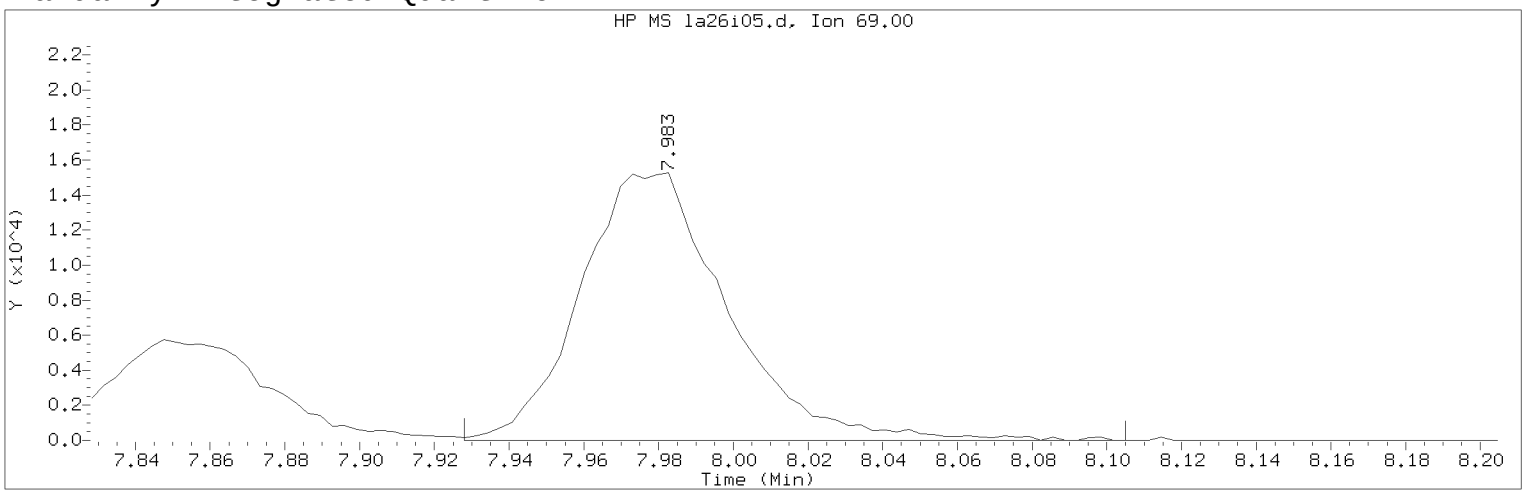
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 16999
On-column Amount (ng) : 234.9759
Integration start scan : 1980 Integration stop scan: 2048
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

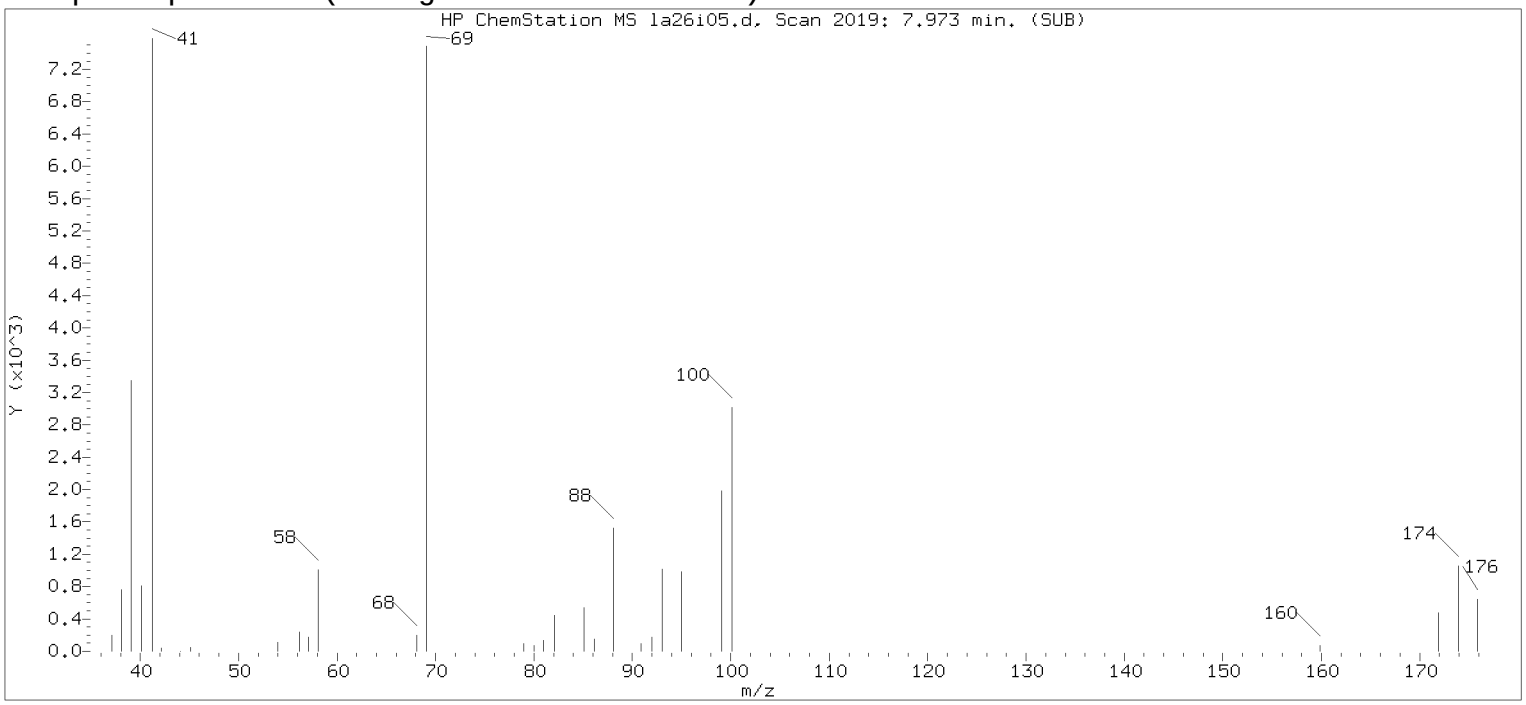
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 41640M
On-Column Amount (ng) : 9.2747
Integration start scan : 2004 Integration stop scan: 2059
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

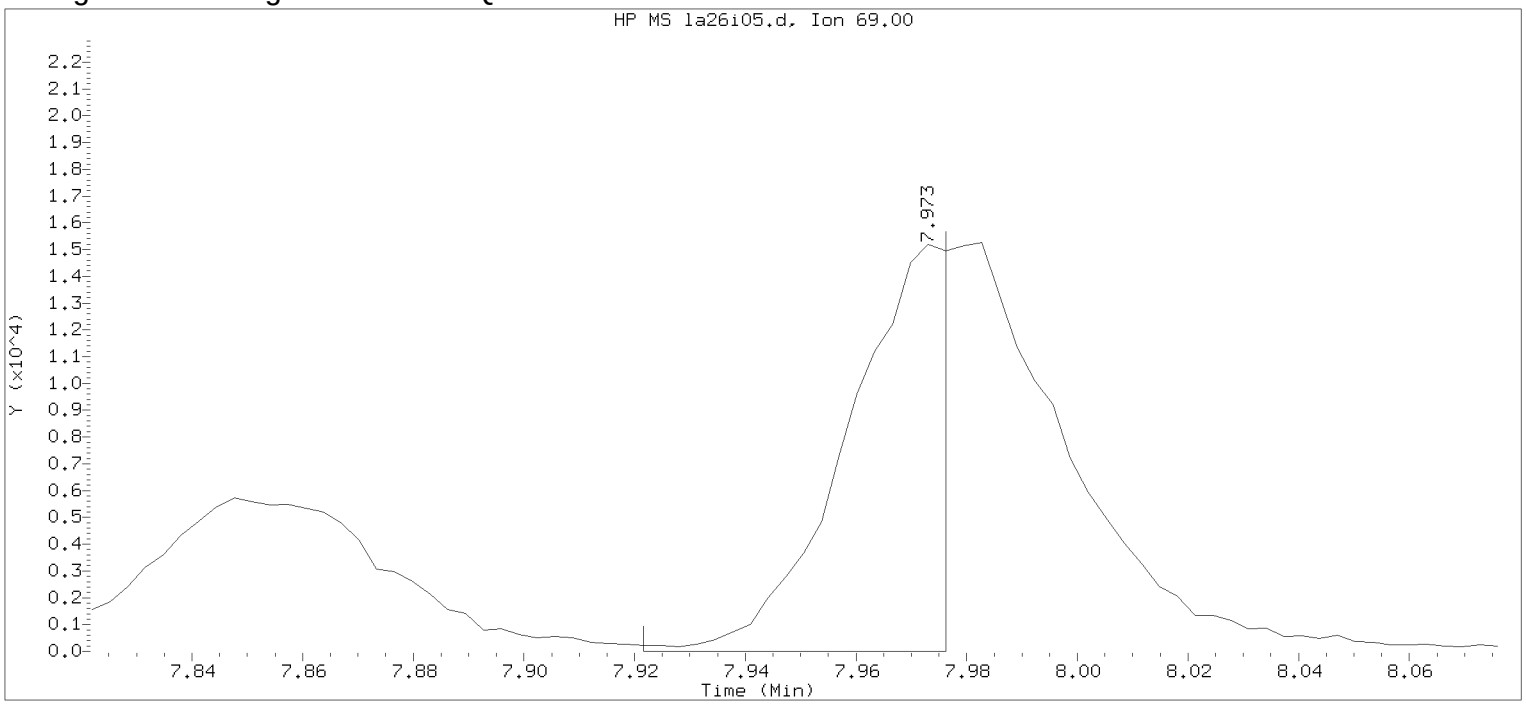
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area : 18069
On-column Amount (ng) : 4.2742
Integration start scan : 2002 Integration stop scan: 2019
Y at integration start : 0 Y at integration end: 0

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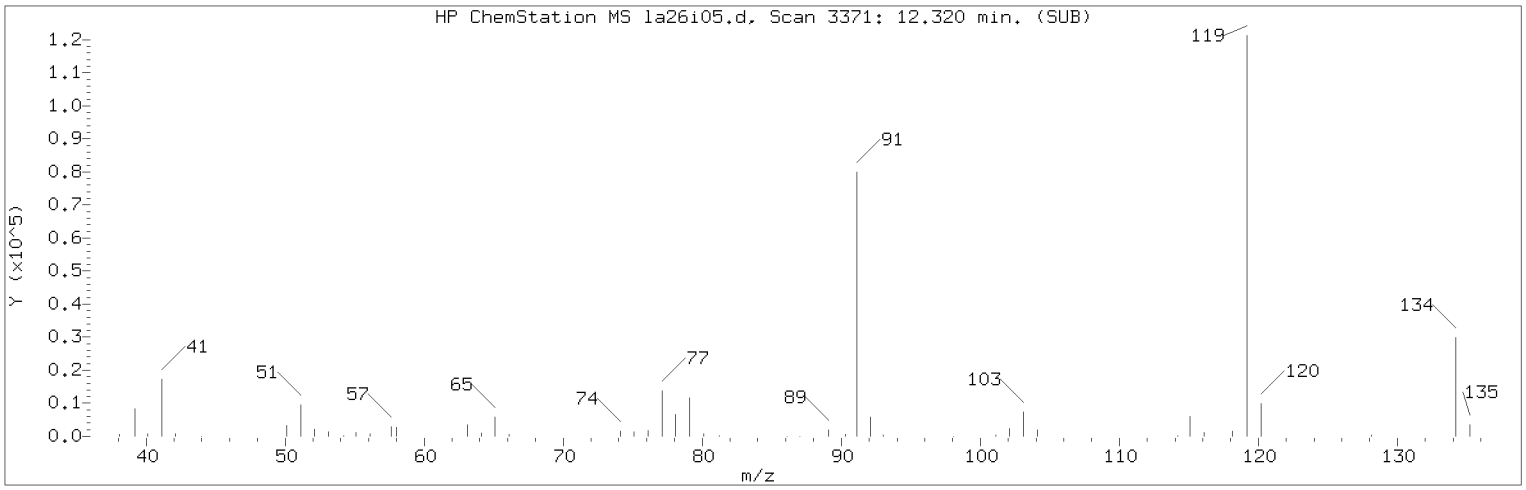
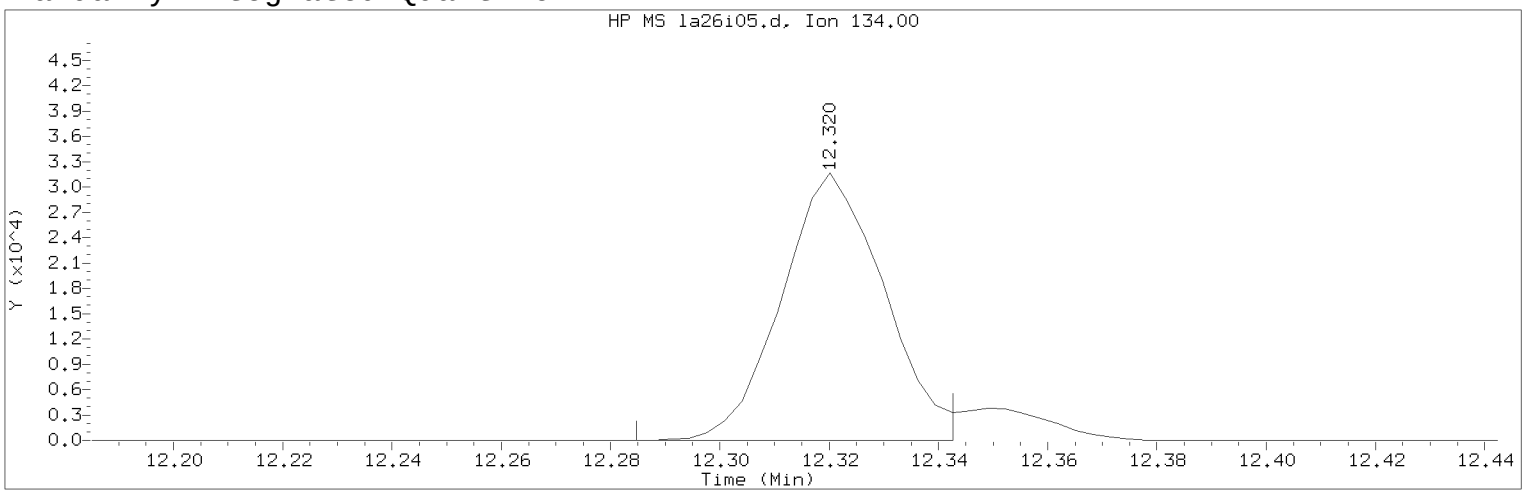
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

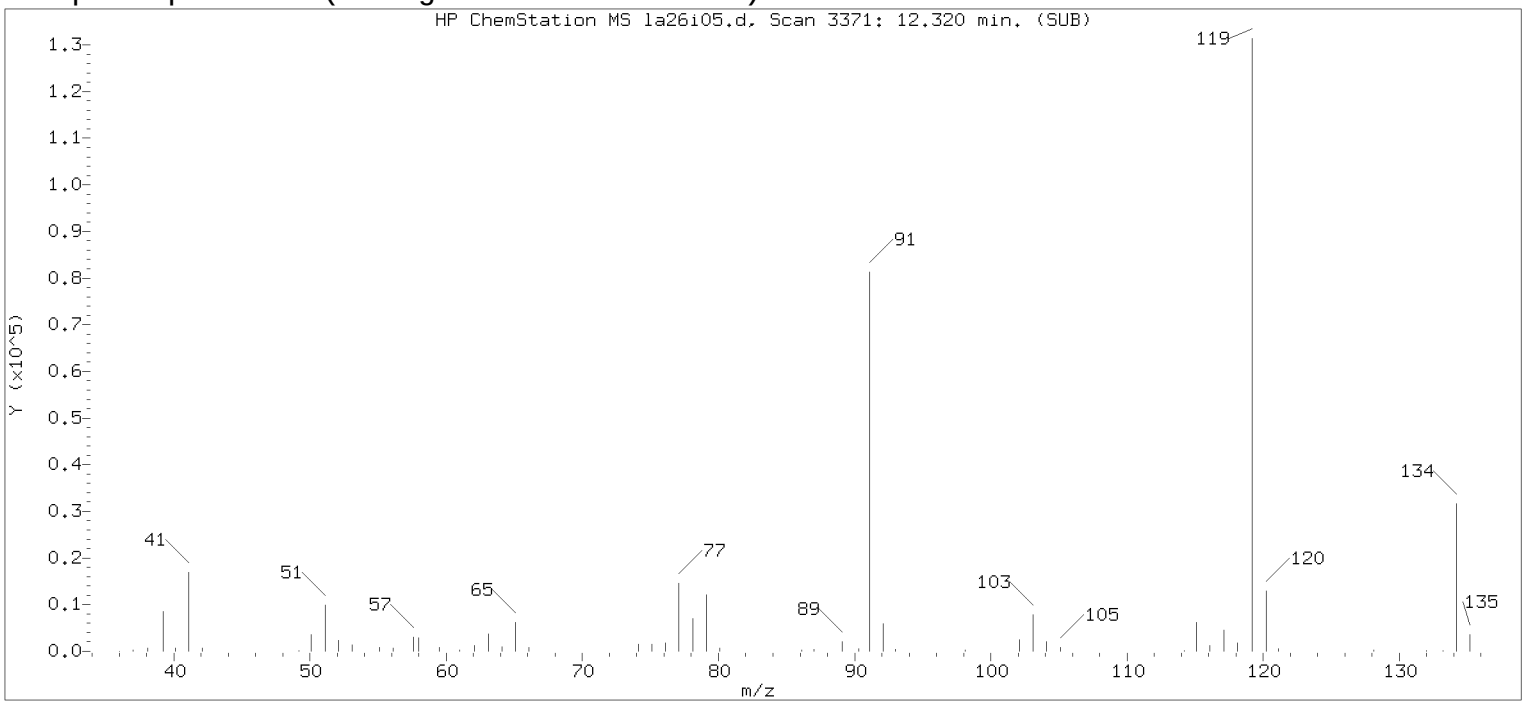
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 41143M
On-Column Amount (ng) : 9.8320
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

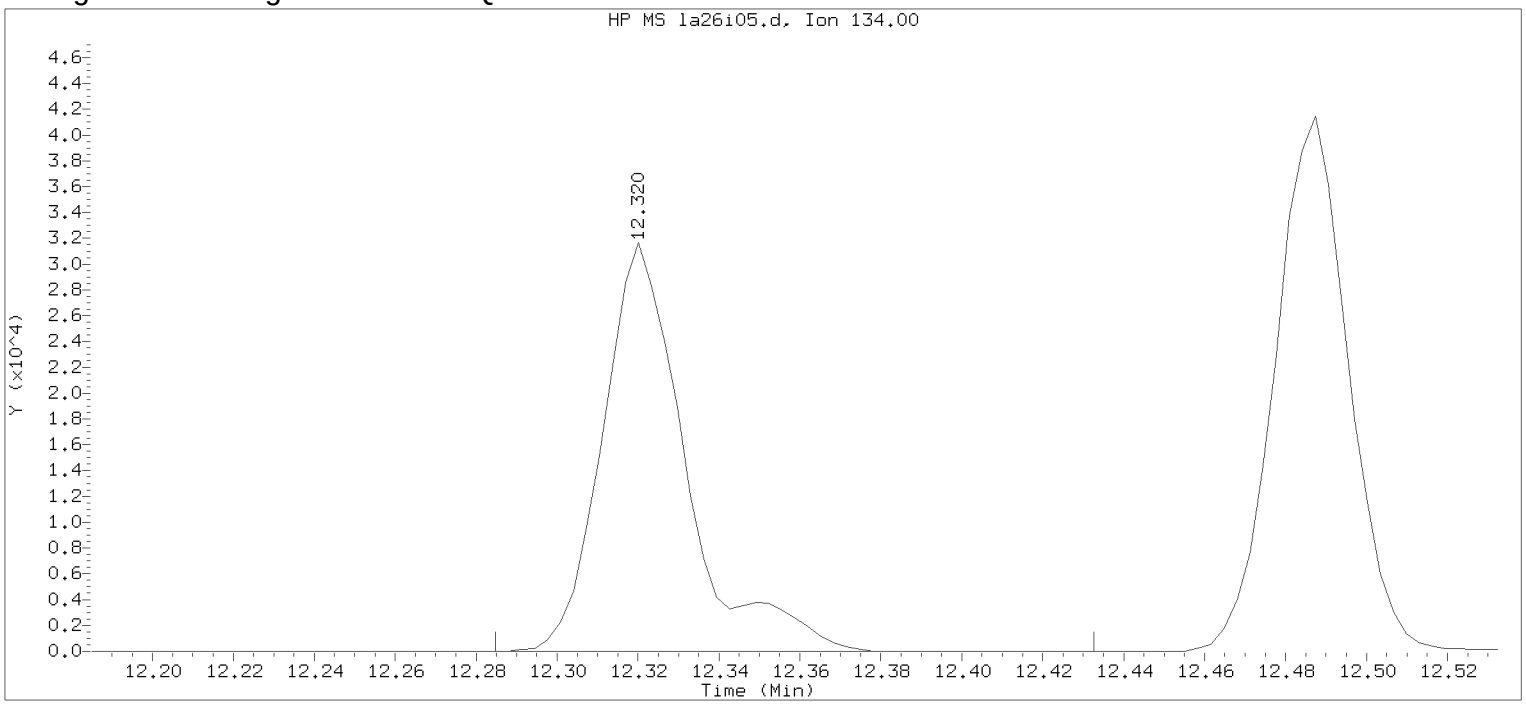
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 45210
On-column Amount (ng) : 9.8016
Integration start scan : 3359 Integration stop scan: 3405
Y at integration start : 0 Y at integration end: 0

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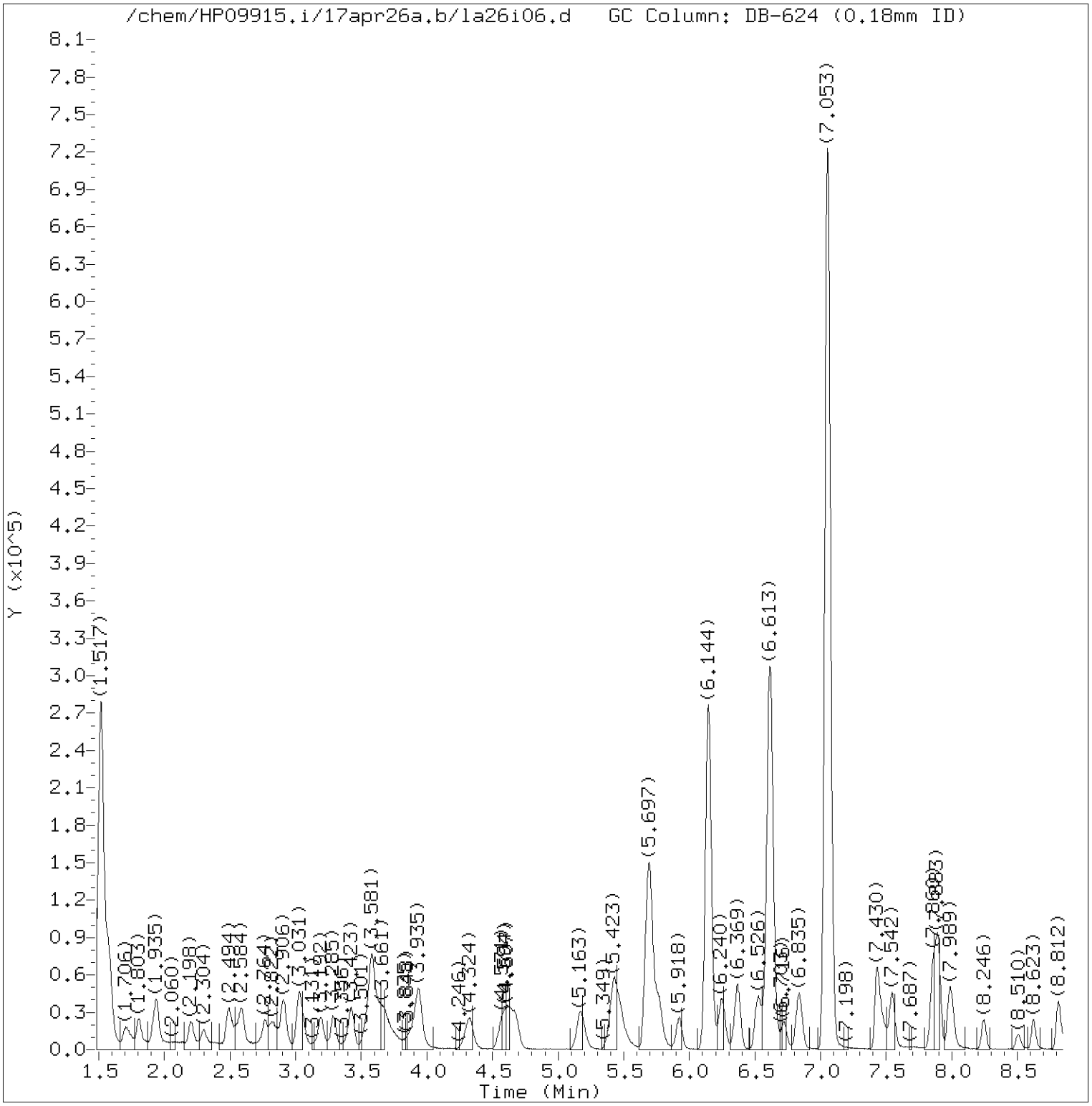
Target 3.5 esignature userKAS02648 Page 240 of 867




Total Ion Chromatogram (TIC)

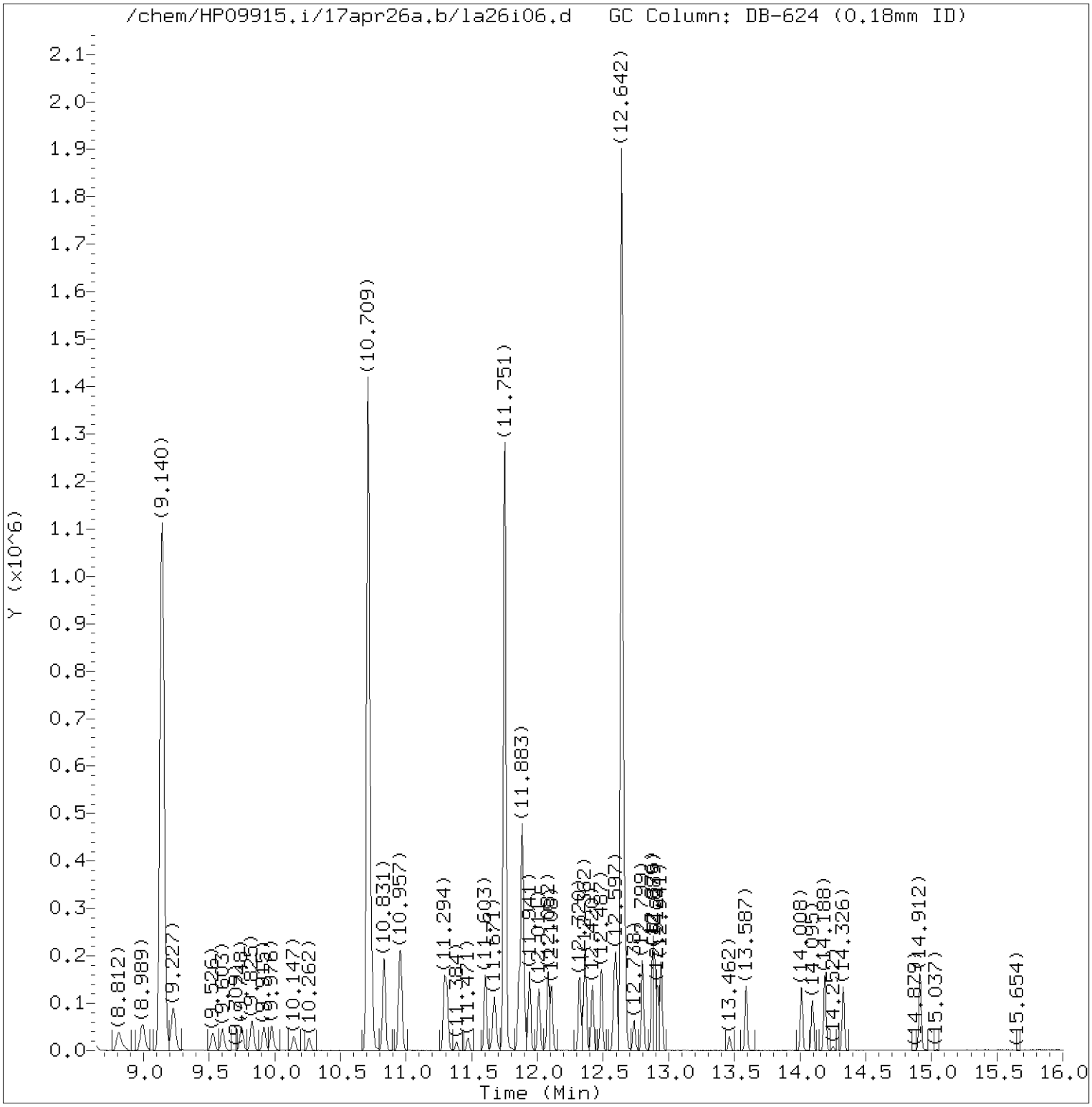
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 26037 | 4.176 |
| 4) Chloromethane | (2) | 1.803 | 50 | 25200 | 3.934 |
| 6) Vinyl Chloride | (2) | 1.915 | 62 | 24755 | 4.002 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 16995 | 4.504 |
| 8) Bromomethane | (2) | 2.205 | 94 | 16261M | 3.908 |
| 9) Chloroethane | (2) | 2.295 | 64 | 14059 | 4.033 |
| 10) Dichlorofluoromethane | (2) | 2.484 | 67 | 33722 | 3.966 |
| 12) Trichlorofluoromethane | (2) | 2.542 | 101 | 29360 | 4.099 |
| 11) n-Pentane | (2) | 2.591 | 43 | 26016 | 4.410 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 15912 | 3.990 |
| 15) Freon 123a | (2) | 2.816 | 67 | 20631 | 4.325 |
| 16) Acrolein | (1) | 2.906 | 56 | 57583 | 34.296 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 16036 | 4.230 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 63 | 8089 | 4.215 |
| 18) Acetone | (1) | 3.041 | 58 | 5325M | 7.307 |
| 19) Freon 113 | (2) | 3.044 | 101 | 16238 | 4.255 |
| 21) 2-Propanol | (1) | 3.189 | 45 | 40137M | 83.086 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 30085 | 4.091 |
| 23) Carbon Disulfide | (2) | 3.282 | 76 | 50383 | 4.084 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 21444 | 3.897 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 31272 | 4.118 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 205105M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 20934 | 4.180 |
| 30) t-Butyl alcohol | (1) | 3.687 | 59 | 60772M | 76.579 |
| 31) Acrylonitrile | (2) | 3.870 | 53 | 11085 | 3.836 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 55927 | 4.027 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 18531 | 4.166 |
| 34) n-Hexane | (2) | 4.324 | 57 | 28520 | 4.183 |
| 36) 1,1-Dichloroethane | (2) | 4.562 | 63 | 34363 | 4.111 |
| 38) di-Isopropyl ether | (2) | 4.619 | 45 | 64435 | 4.016 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 28657 | 4.064 |
| 40) Ethyl t-butyl ether | (2) | 5.176 | 59 | 54352 | 3.937 |
| 44) 2-Butanone | (2) | 5.381 | 43 | 28701 | 7.418 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 21315M | 3.819 |
| 42) cis-1,2-Dichloroethene | (2) | 5.423 | 96 | 20667 | 4.055 |
| 47) Propionitrile | (1) | 5.465 | 54 | 86867 | 74.999 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 109898 | 38.147 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 10436 | 3.885 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 6817 | 6.663 |
| 51) Chloroform | (2) | 5.925 | 83 | 32628 | 4.095 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 32845 | 4.511 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 253557 | 49.604 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 111 | 260923 | 49.814 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 39198 | 8.221 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 34447 | 4.155 |
| 54) Cyclohexane | (2) | 6.240 | 84 | 28669 | 4.230 |
| 54) Cyclohexane | (2) | 6.243 | 69 | 10119 | 4.211 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 20852 | 3.924 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 26512 | 4.091 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 53887 | 193.400 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 64045 | 50.386 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 303739 | 50.519 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 104 | 40296 | 49.981 |
| 60) Benzene | (2) | 6.629 | 78 | 78391 | 4.104 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 26098 | 4.039 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 2305M | 4.022 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 52770 | 3.851 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1046774 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 33581 | 4.399 |
| 69) n-Butanol | (1) | 7.433 | 56 | 79036 | 351.880 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 19901 | 4.031 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 36459 | 4.192 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 16232 | 4.135 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 20791 | 3.976 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 12532 | 178.720 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 16816M | 3.757 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 12893M | 3.921 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 22387 | 3.772 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 11184 | 6.646 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 14941 | 3.717 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 28555 | 3.692 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 55176 | 6.920 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1029529 | 50.086 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 677093 | 49.999 |
| 88) Toluene | (3) | 9.227 | 92 | 48414 | 4.053 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 23592 | 3.522 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.603 | 69 | 27111 | 3.594 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 17786 | 3.864 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 21245 | 4.021 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 30994 | 3.881 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 39380 | 6.830 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 52147 | 7.214 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 16936 | 3.552 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 19109 | 3.792 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 805037 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 28026 | 4.085 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 54921 | 3.985 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 17119 | 3.761 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 92312 | 4.006 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 71336 | 7.953 |
| 107) o-Xylene | (3) | 11.291 | 106 | 34913 | 3.914 |
| 109) Styrene | (3) | 11.310 | 104 | 55976 | 3.796 |
| 110) Bromoform | (3) | 11.471 | 173 | 11404 | 3.294 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 91623 | 4.019 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 48698 | 184.107 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 385379 | 50.441 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 338738 | 50.546 |
| 108) Xylene (Total) | (3) | | 106 | 106249 | 11.866 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 30161 | 3.917 |
| 115) Bromobenzene | (4) | 11.864 | 156 | 24538 | 3.958 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 83531 | 37.862 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 8734 | 4.013 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 111094 | 4.055 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 22713 | 3.983 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 77197 | 3.952 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 23232 | 3.915 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 16177M | 3.831 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 11868 | 3.559 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 78838 | 3.918 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 100568 | 4.036 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 47596 | 4.032 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 86819 | 3.946 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 433758 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 49098 | 4.023 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 83360 | 3.954 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 37399 | 3.098 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 51945 | 3.951 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 55669 | 4.033 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 45170 | 4.109 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 46959 | 4.047 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 44327 | 4.007 |
| 141) Diethylbenzene (total) | (4) | | 100 | 151941 | 11.991 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 5965 | 3.664 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 38380 | 4.080 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 36590 | 4.010 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 16967 | 4.281 |
| 148) Naphthalene | (4) | 14.188 | 128 | 107263 | 3.895 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 35386 | 4.019 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 66826 | 3.753 |



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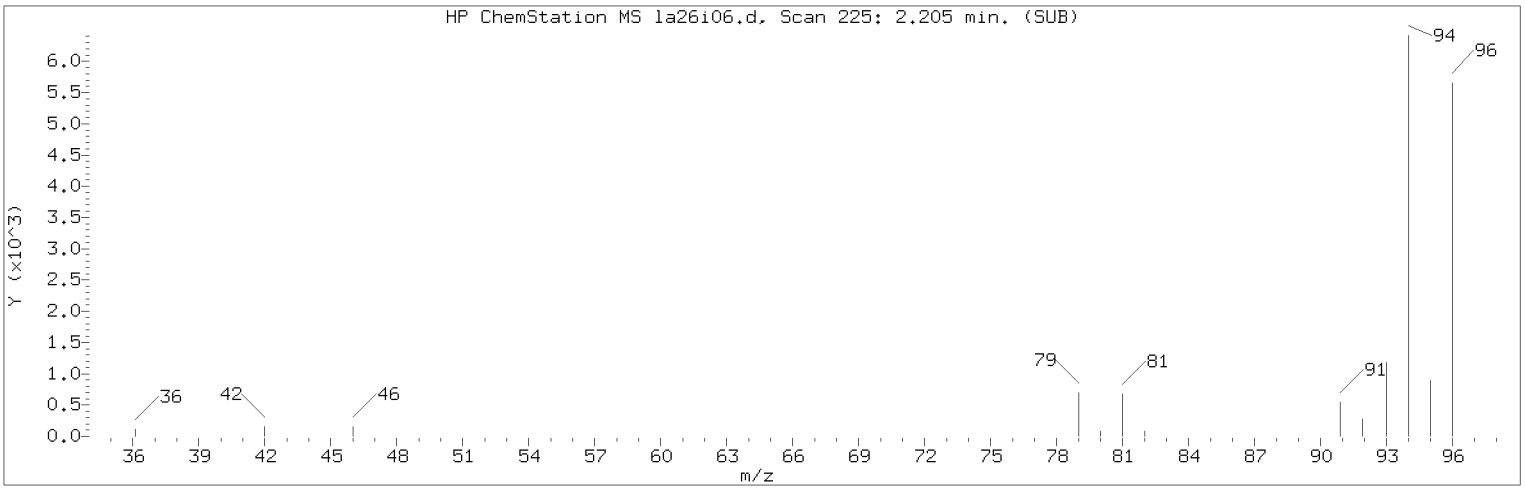
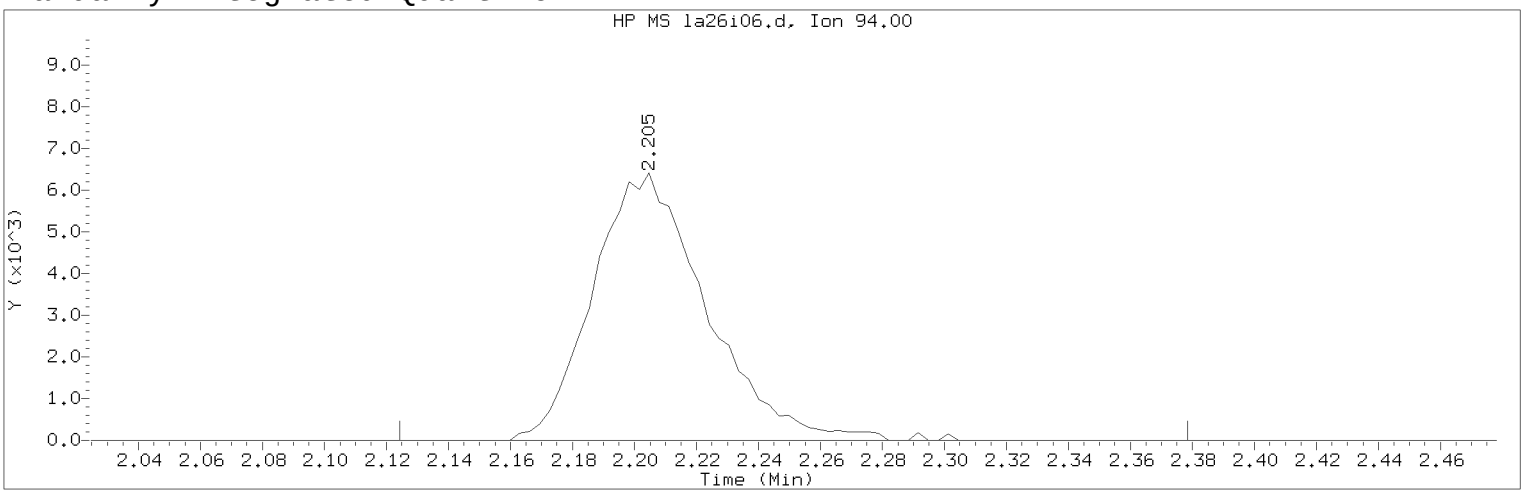
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

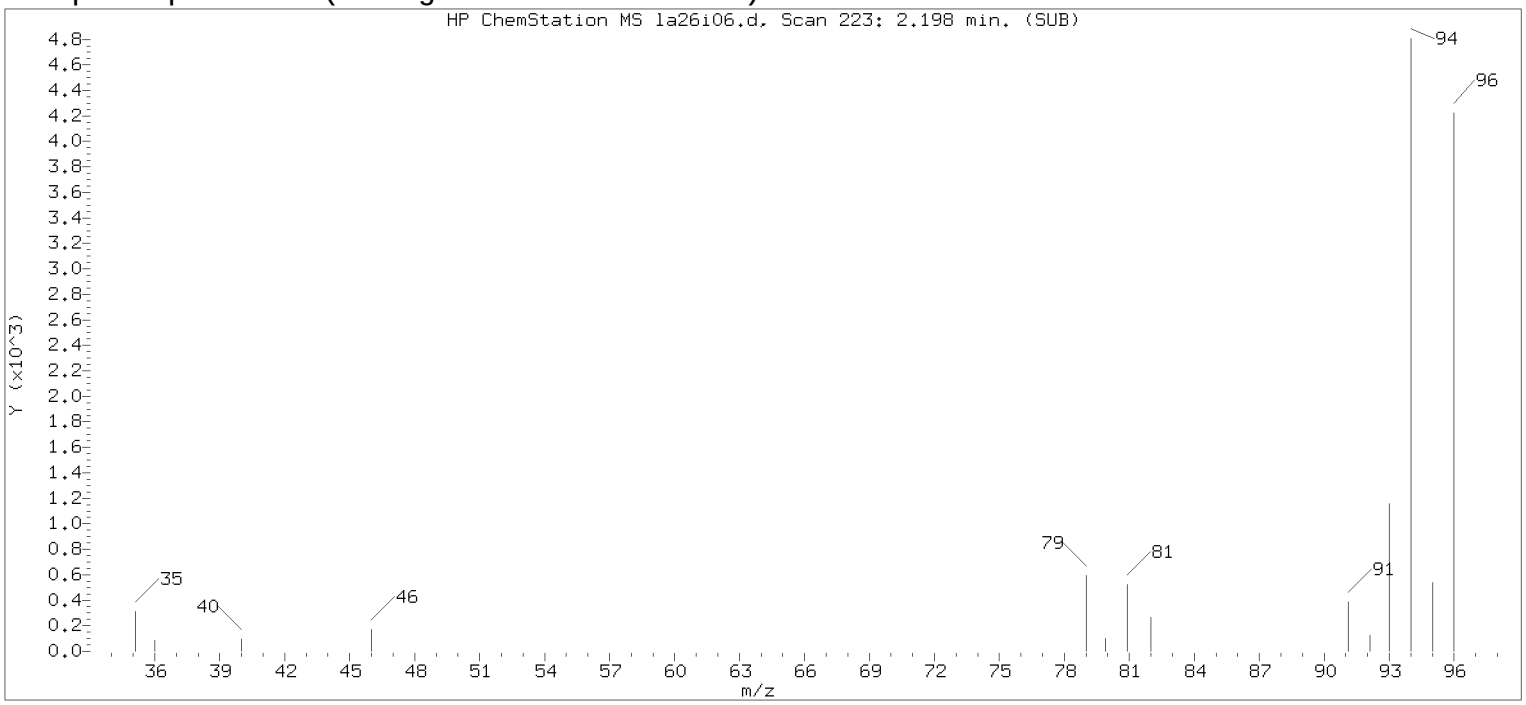
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 225
Retention Time (minutes): 2.205
Quant Ion : 94.00
Area (flag) : 16261M
On-Column Amount (ng) : 3.9084
Integration start scan : 199 Integration stop scan: 278
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

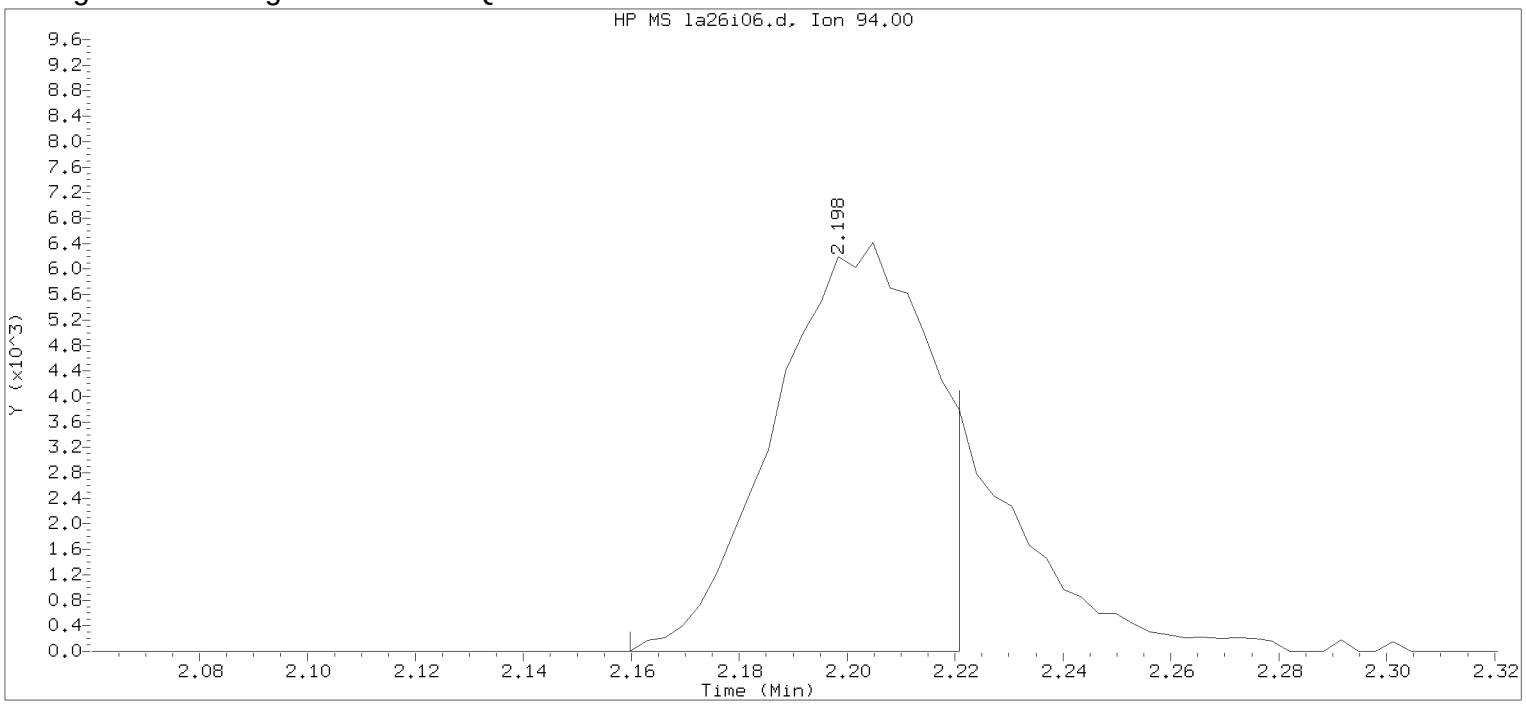
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area : 12778
On-column Amount (ng) : 3.1270
Integration start scan : 210 Integration stop scan: 229
Y at integration start : 0 Y at integration end: 0

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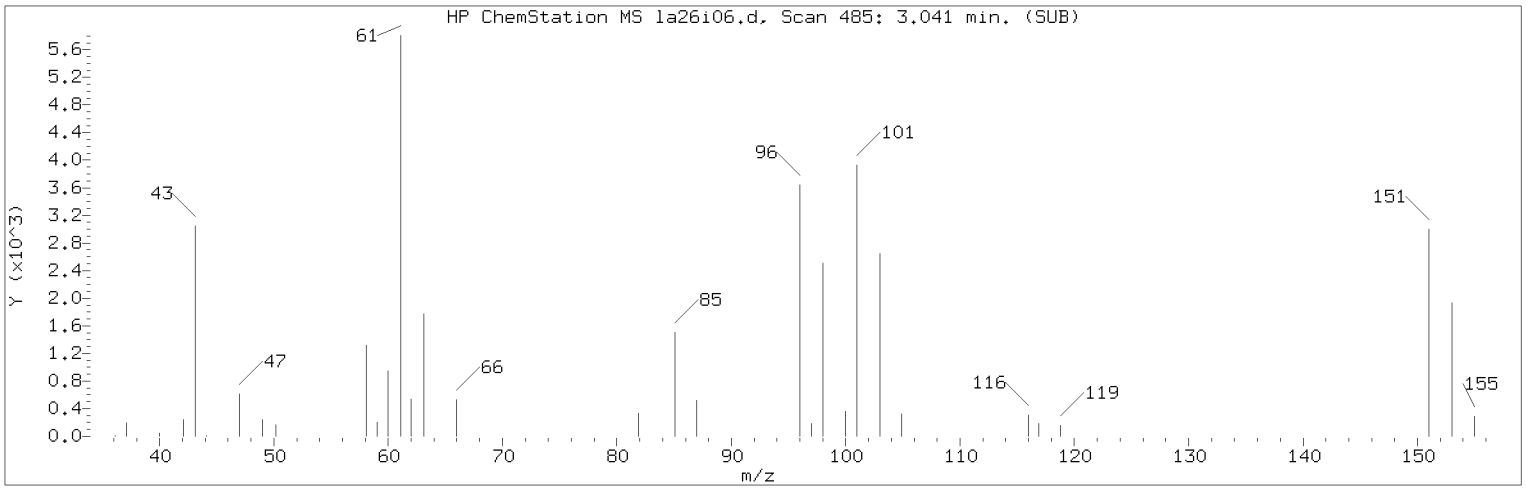
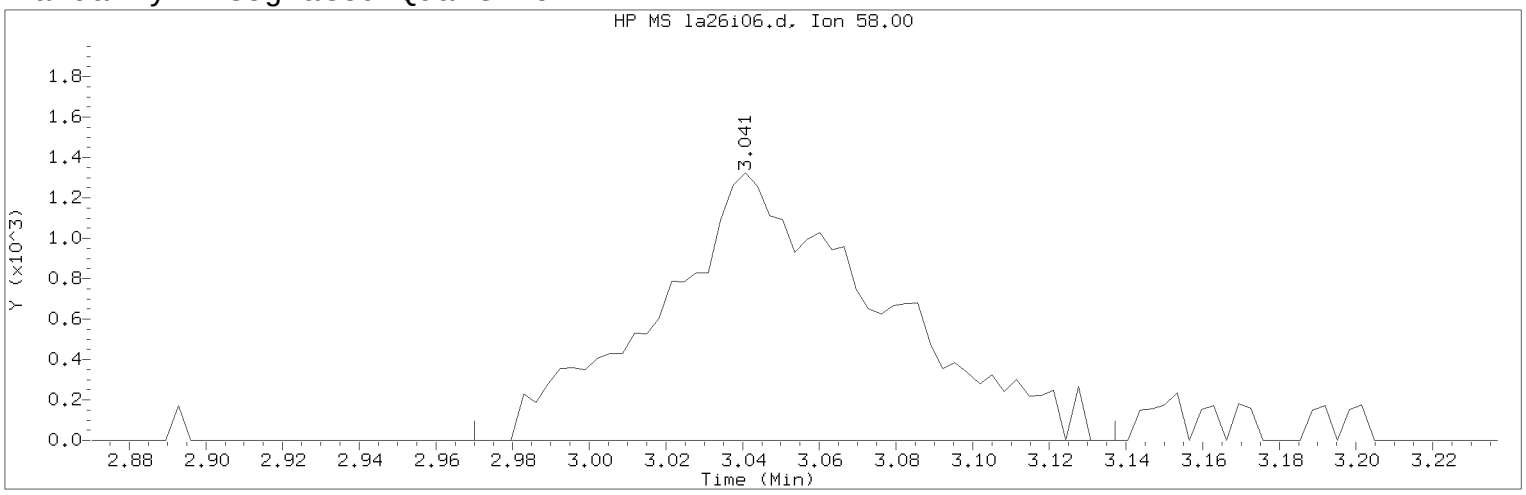
Target 3.5 esignature userKAS02648 Page 248

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

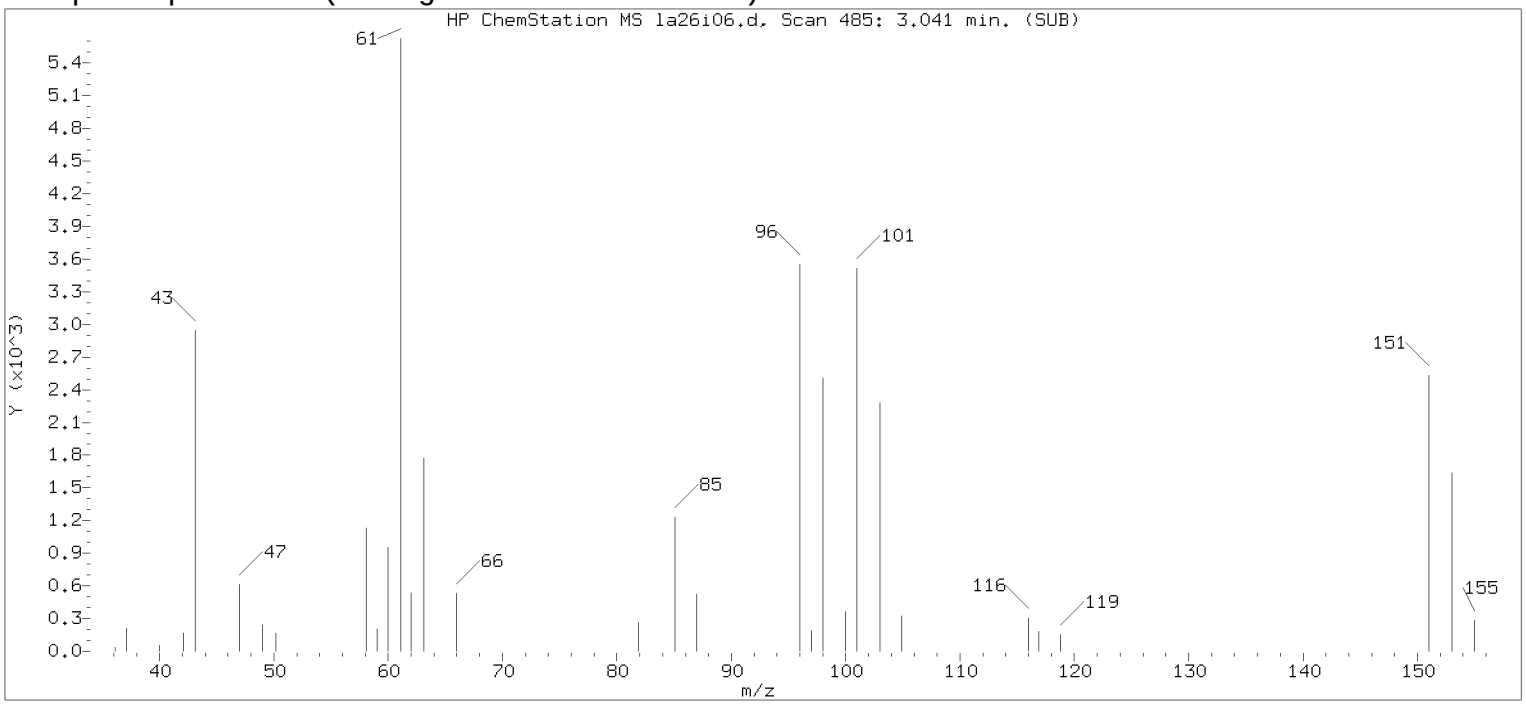
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area (flag) : 5325M
On-Column Amount (ng) : 7.3073
Integration start scan : 462 Integration stop scan: 514
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

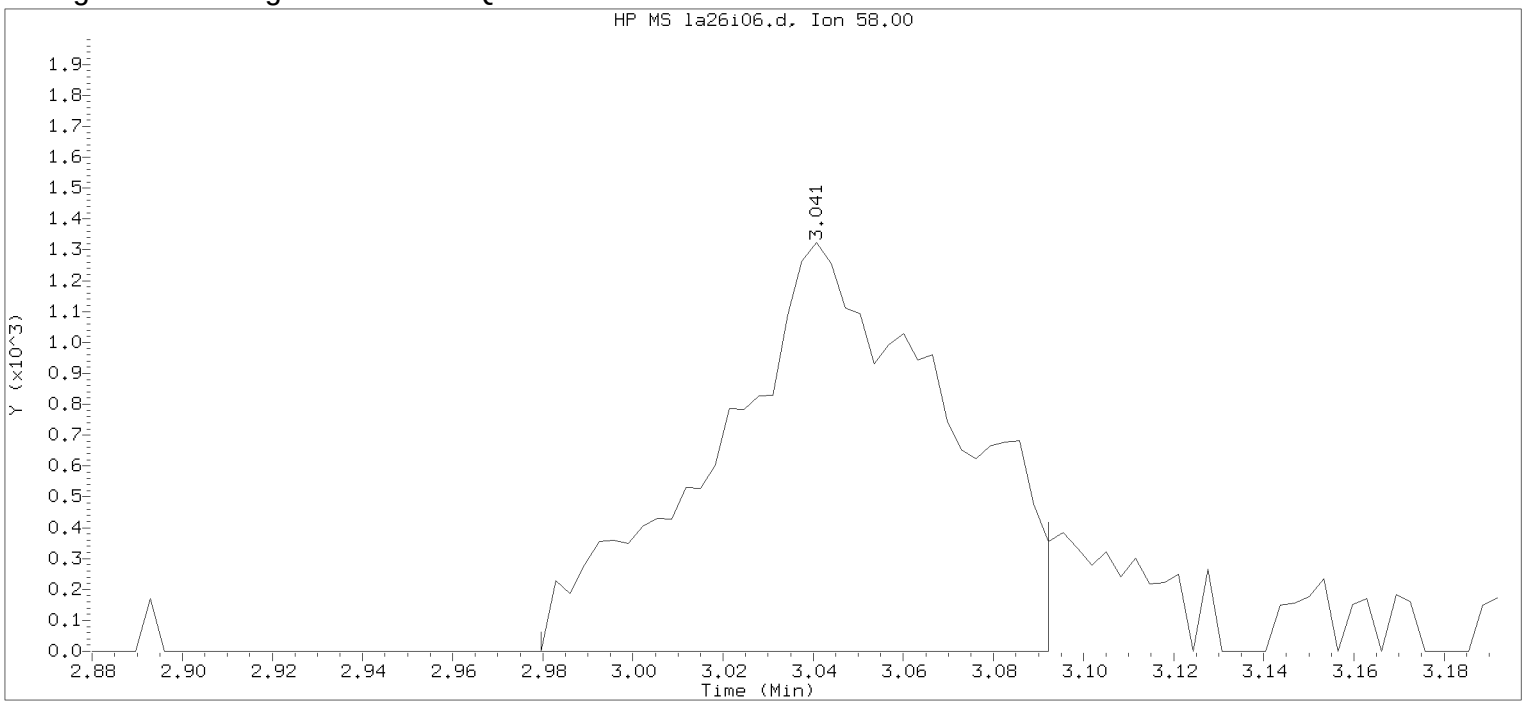
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area : 4747
On-column Amount (ng) : 6.6314
Integration start scan : 465 Integration stop scan: 500
Y at integration start : 0 Y at integration end: 0

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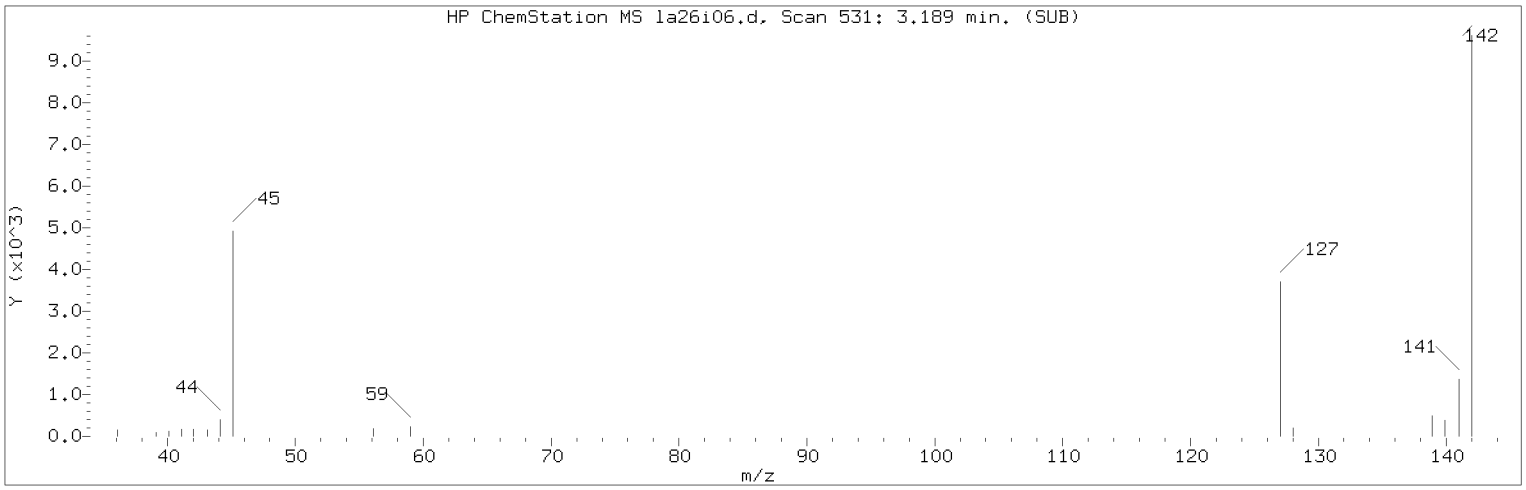
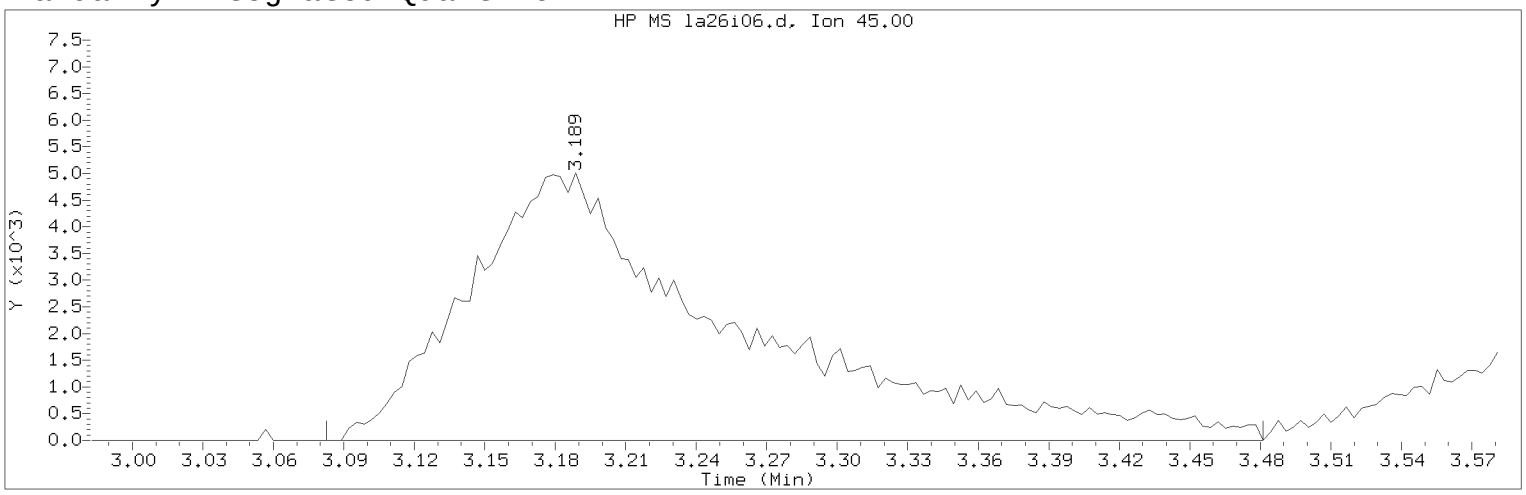
Target 3.5 esignature user KAS02648 ID 02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

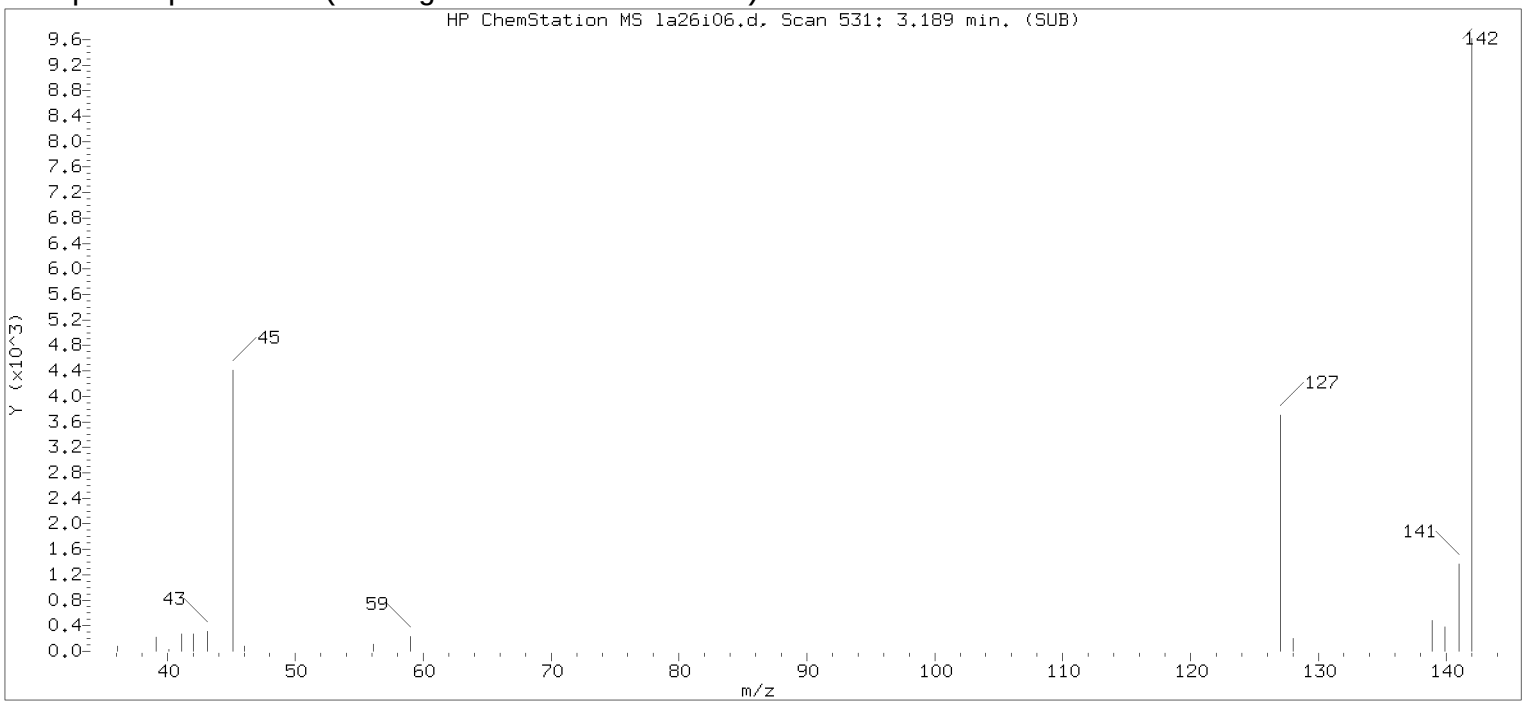
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area (flag) : 40137M
On-Column Amount (ng) : 83.0856
Integration start scan : 497 Integration stop scan: 621
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

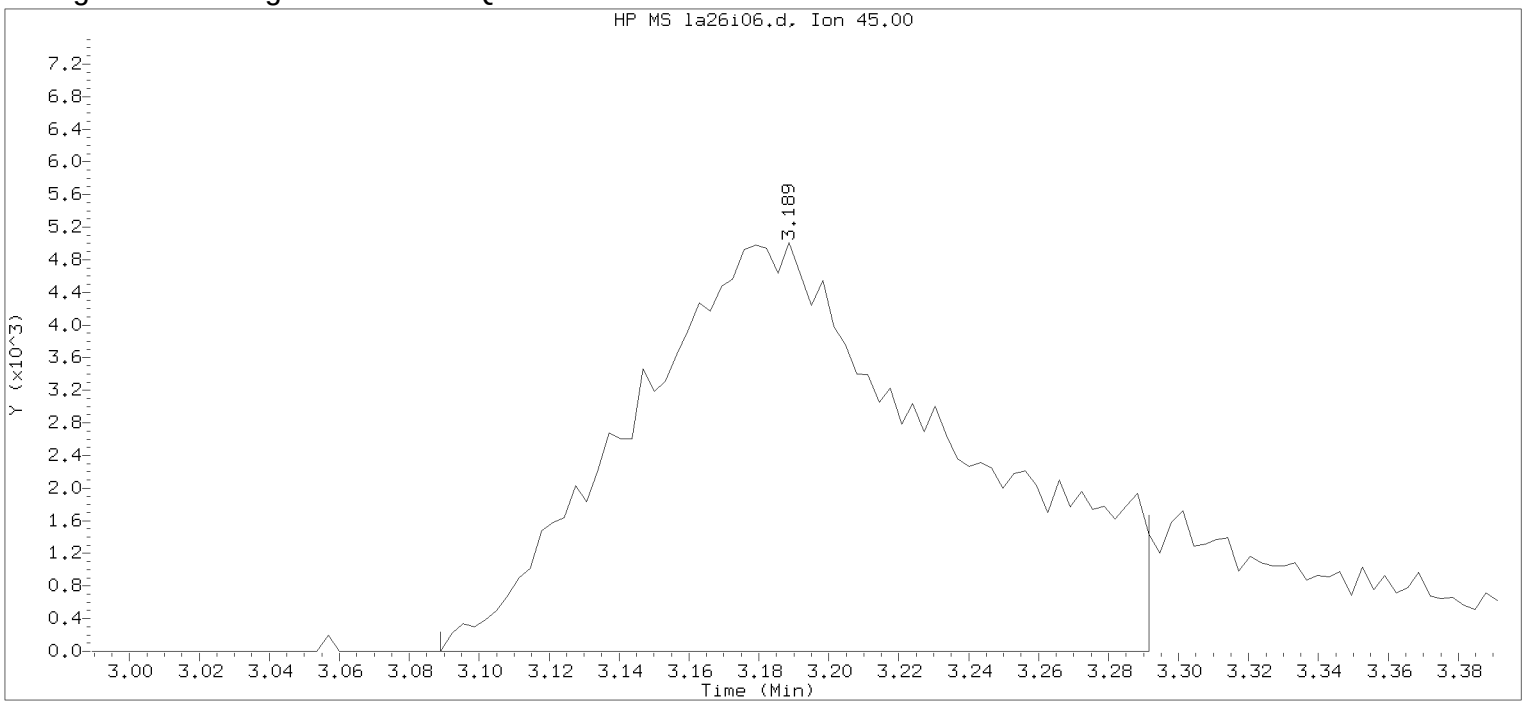
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area : 31951
On-column Amount (ng) : 64.3252
Integration start scan : 499 Integration stop scan: 562
Y at integration start : 0 Y at integration end: 0

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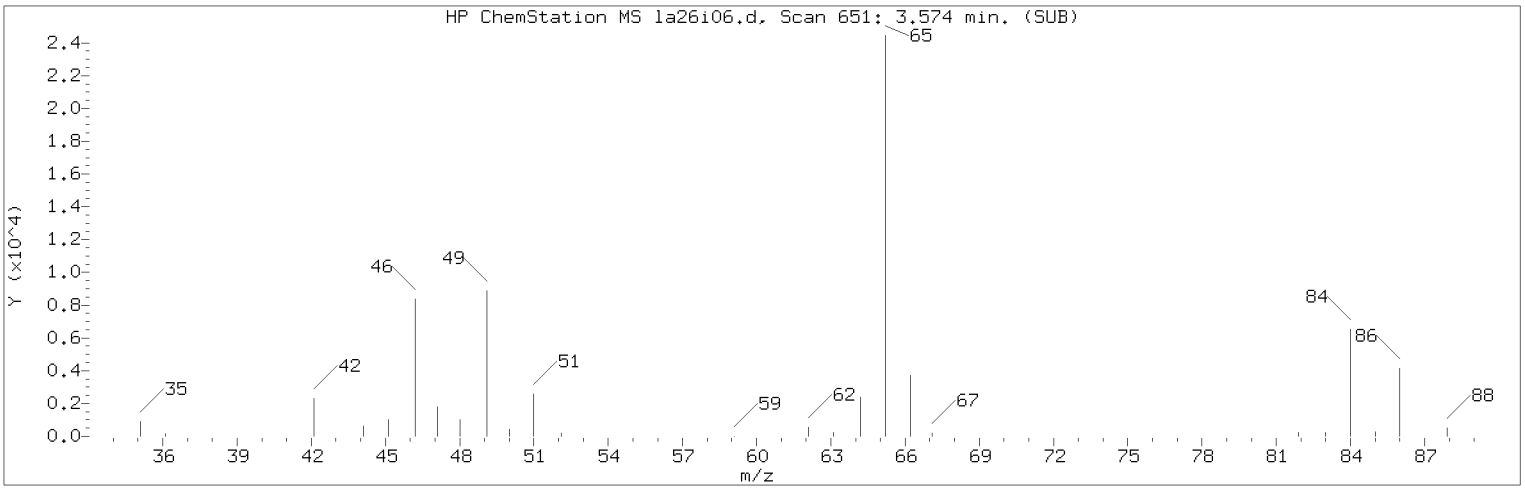
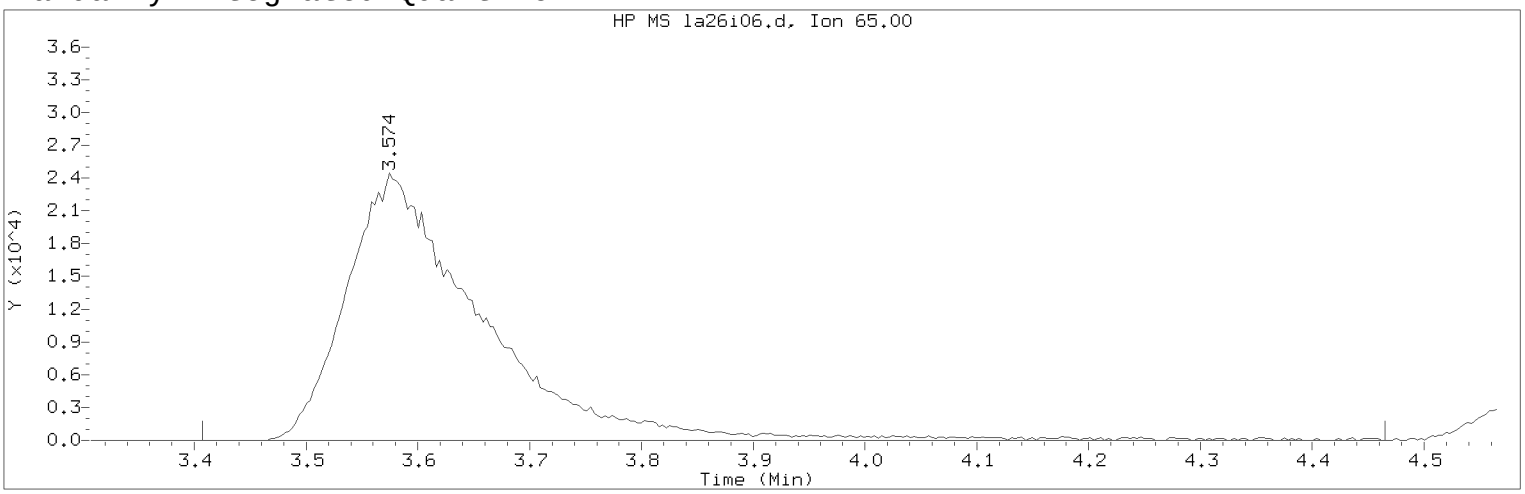
Target 3.5 esignature userKAS02648 R0086222

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

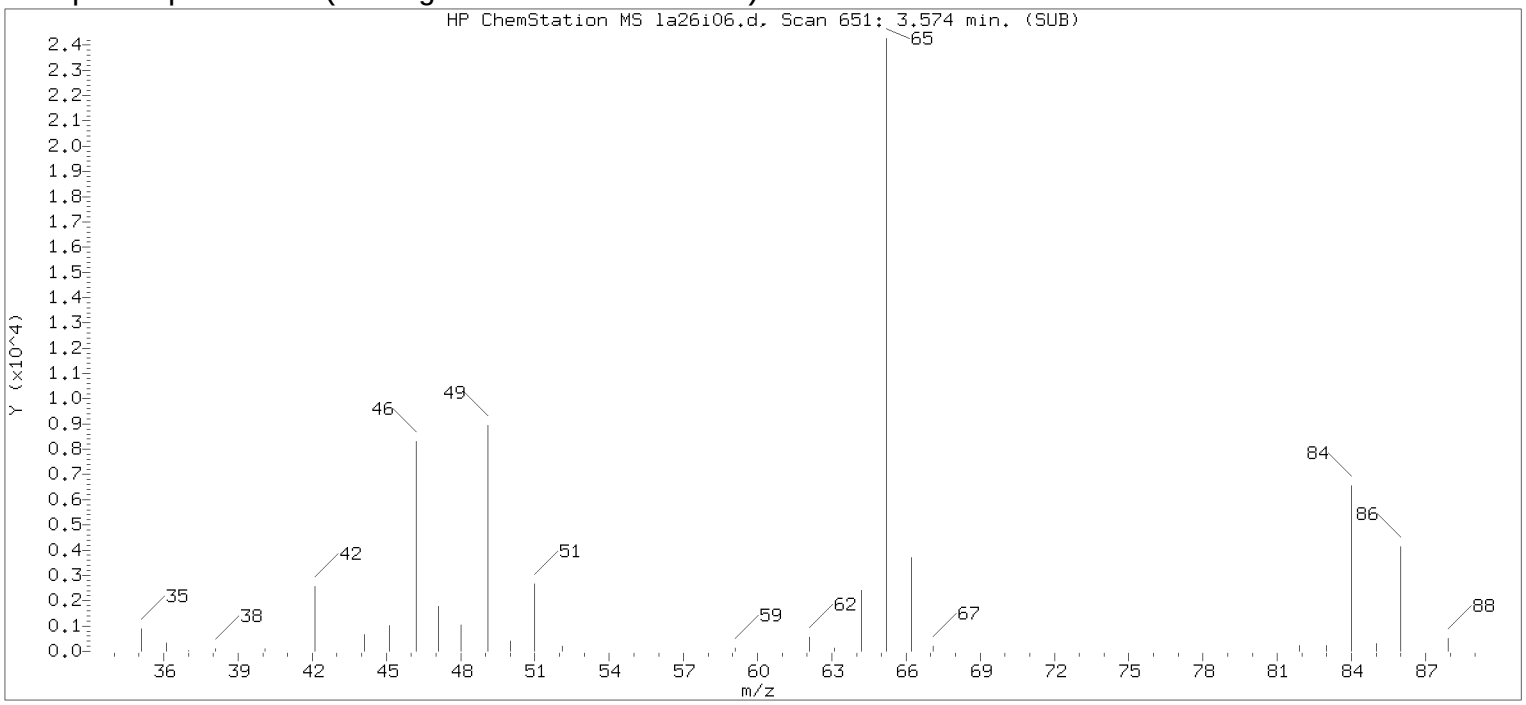
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 205105M
On-Column Amount (ng) : 250.0000
Integration start scan : 598 Integration stop scan: 927
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

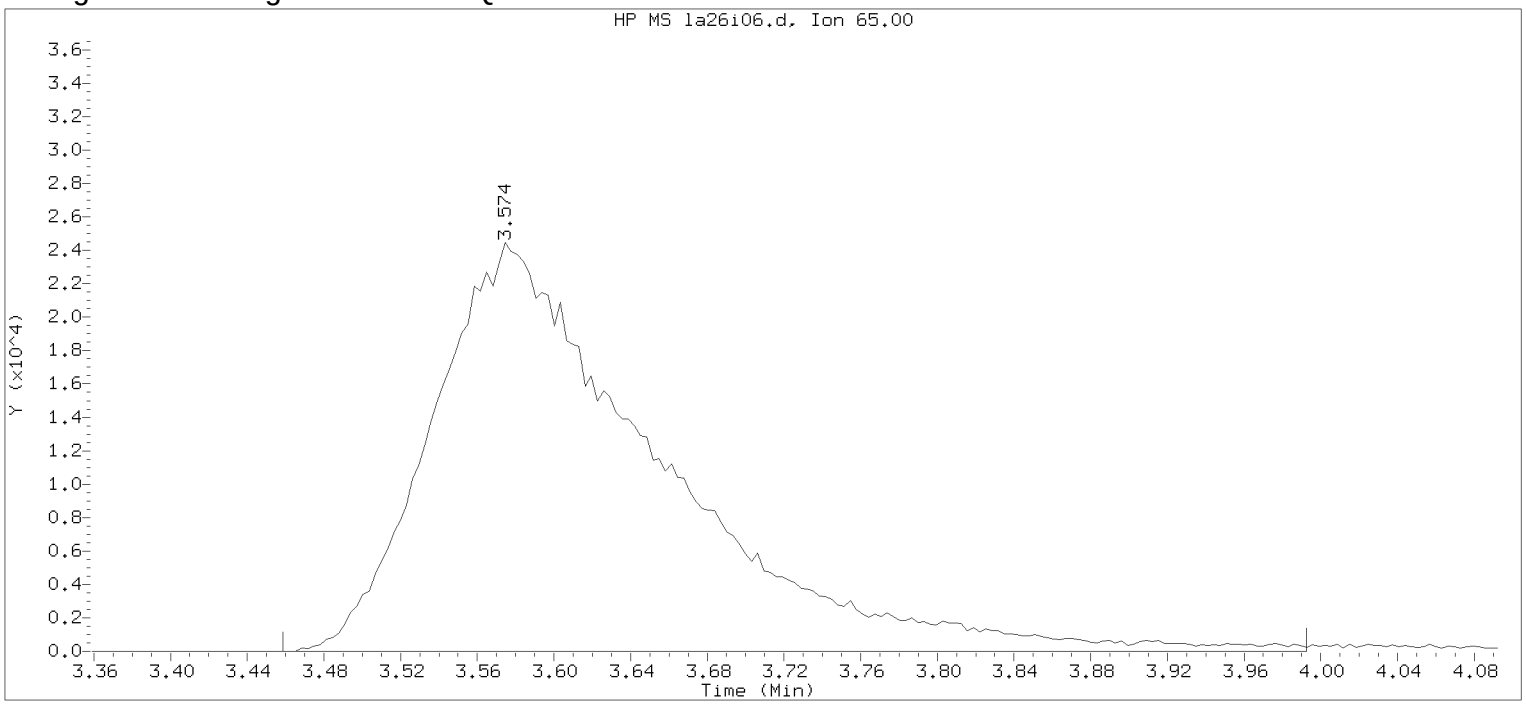
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area : 200349
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 780
Y at integration start : 0 Y at integration end: 0

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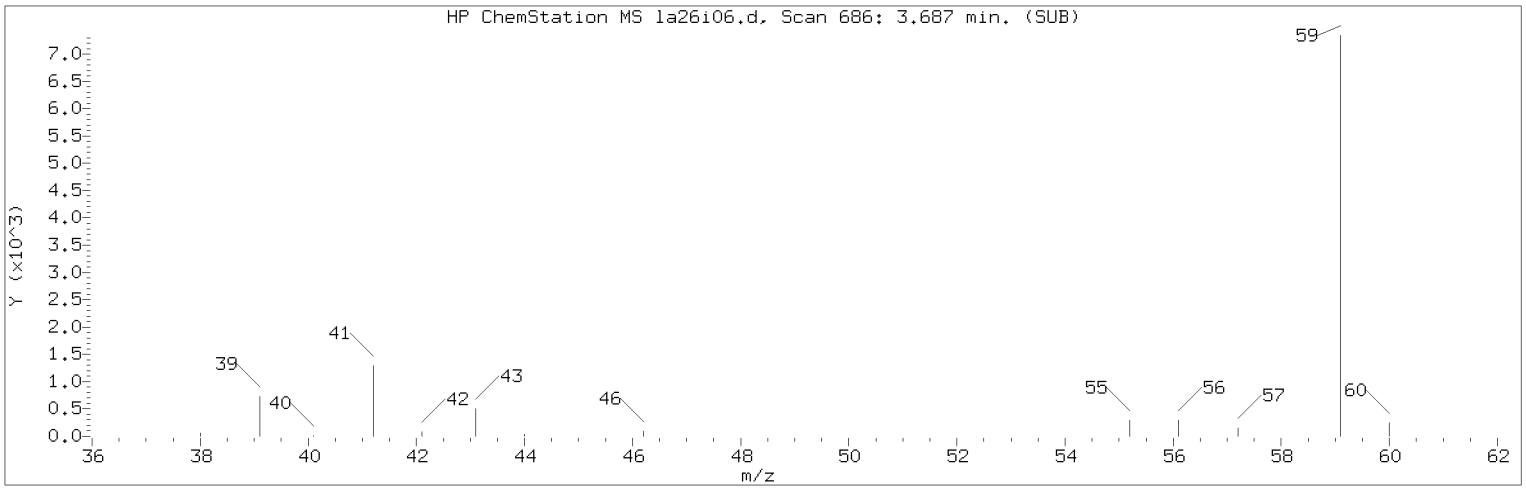
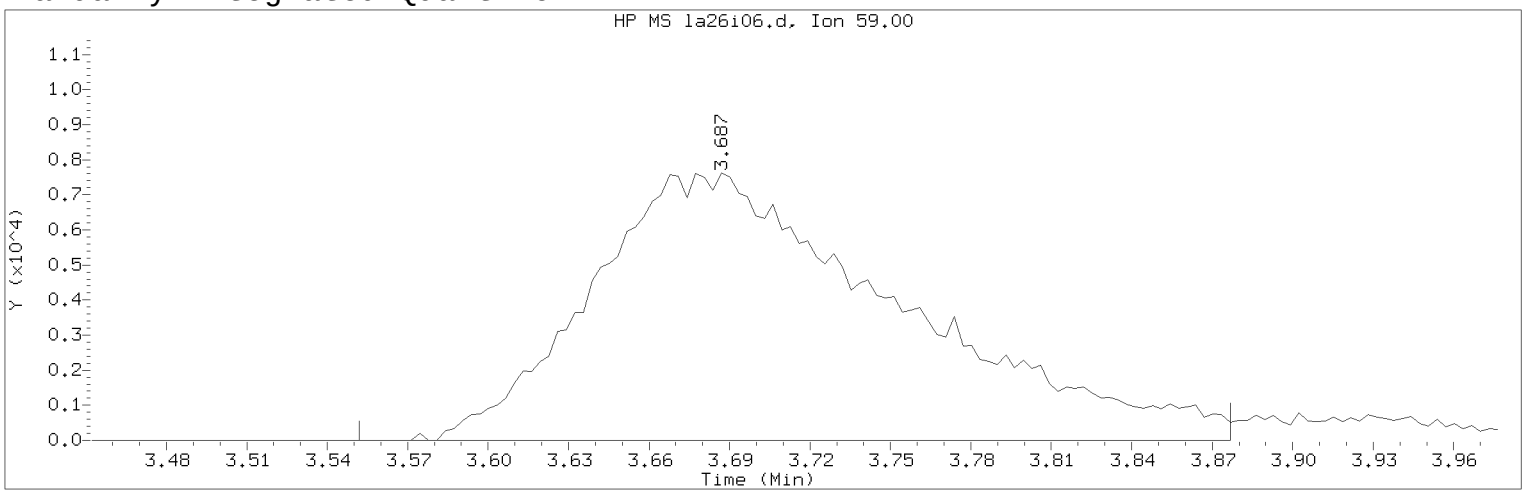
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

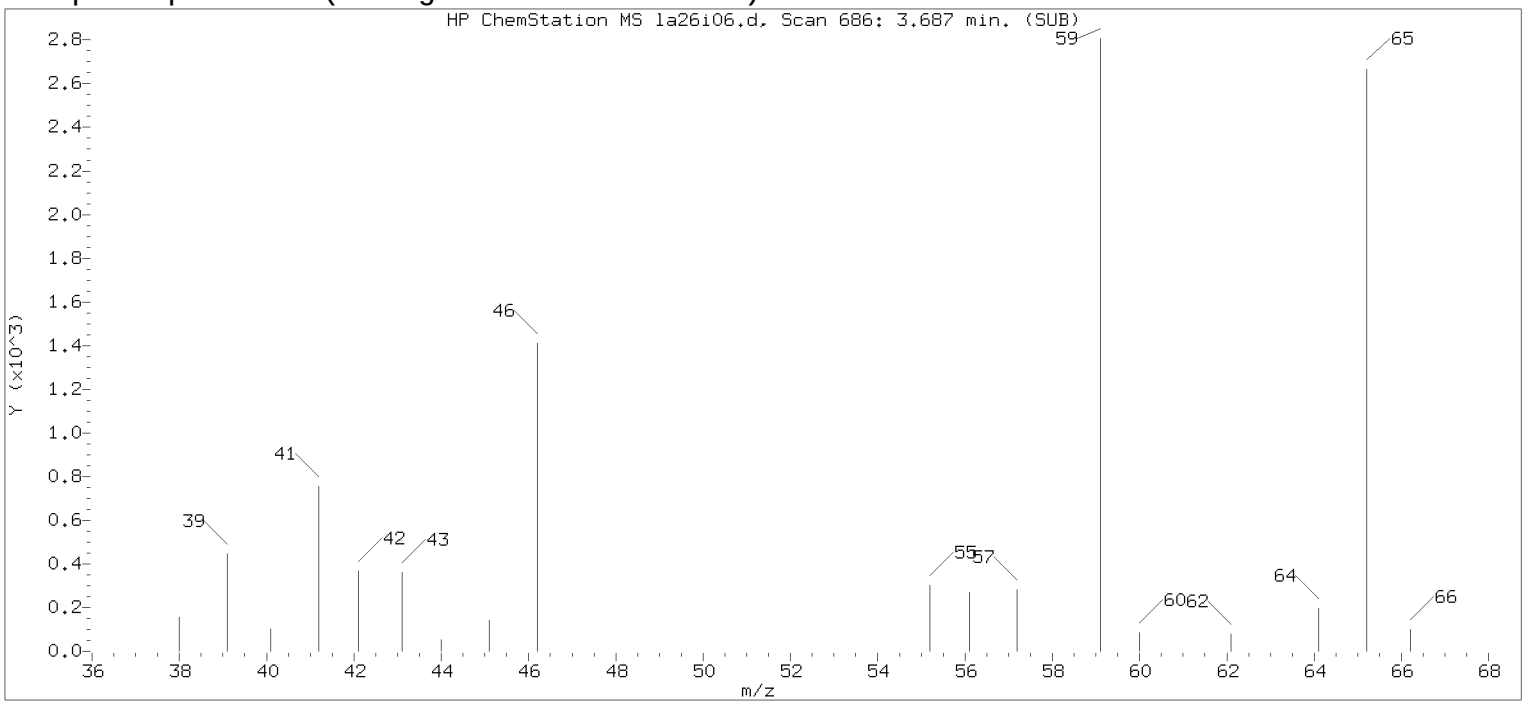
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area (flag) : 60772M
On-Column Amount (ng) : 76.5789
Integration start scan : 643 Integration stop scan: 744
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

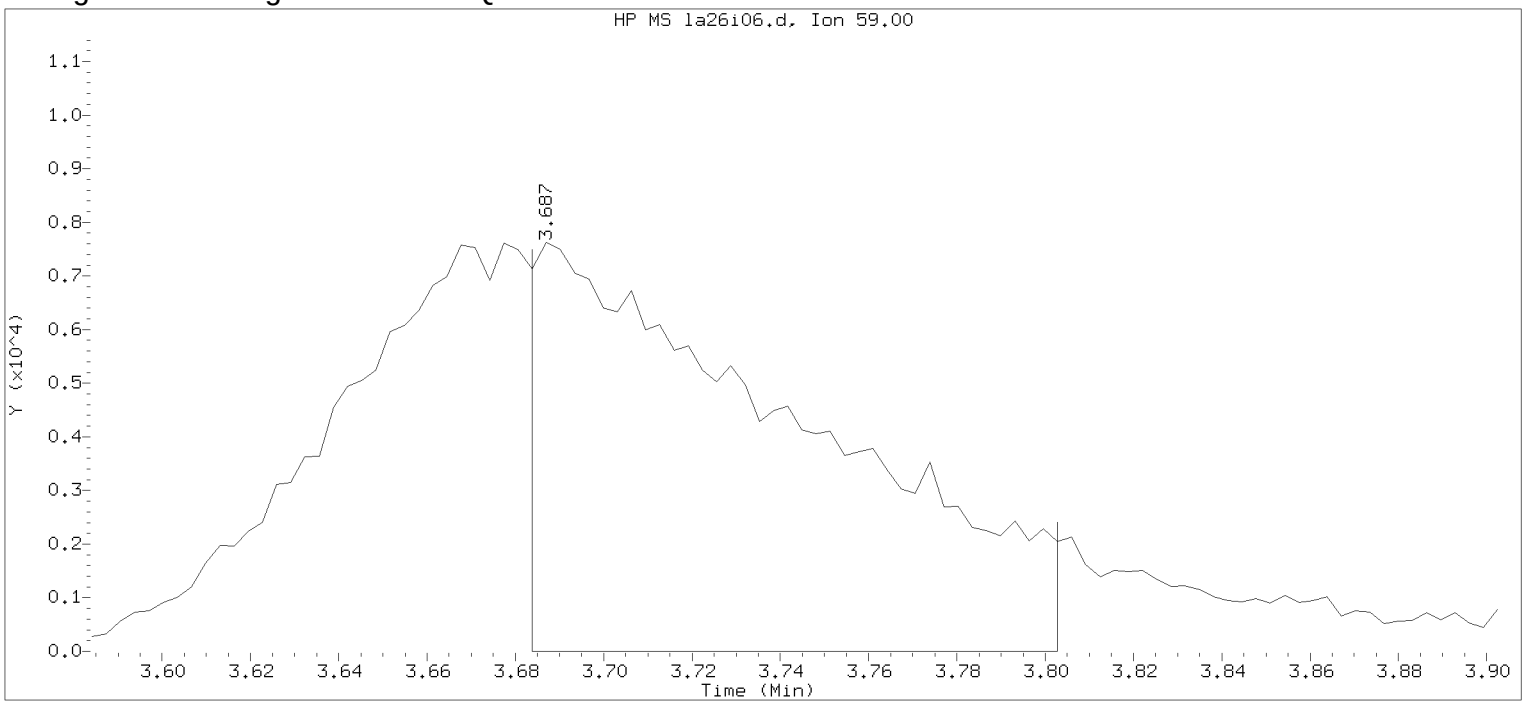
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

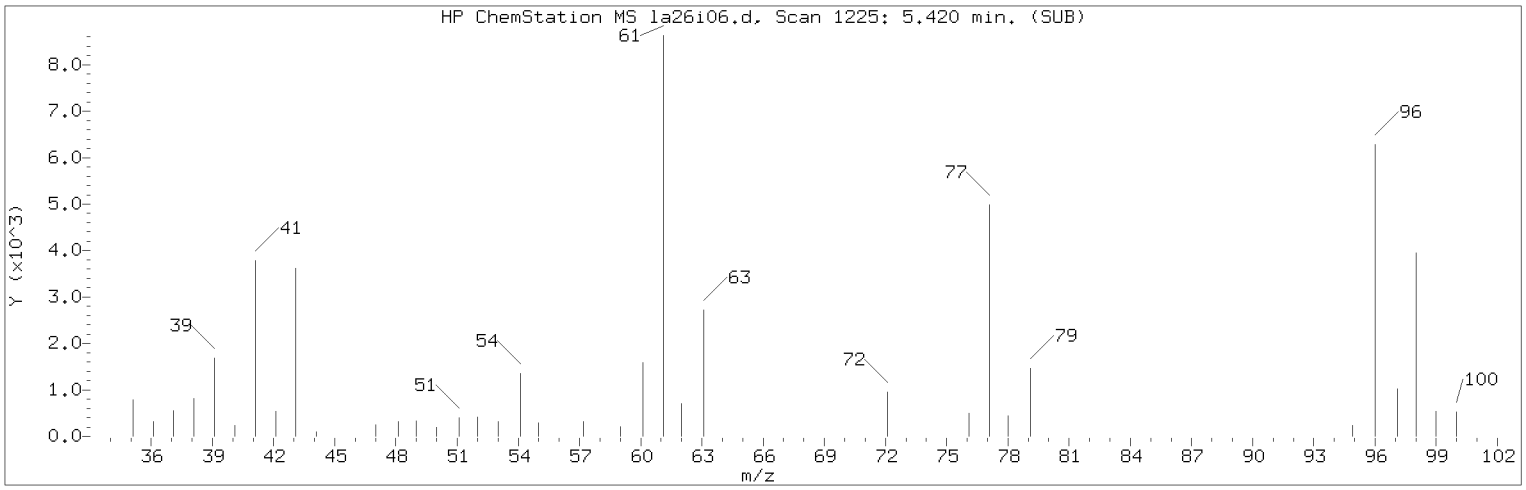
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

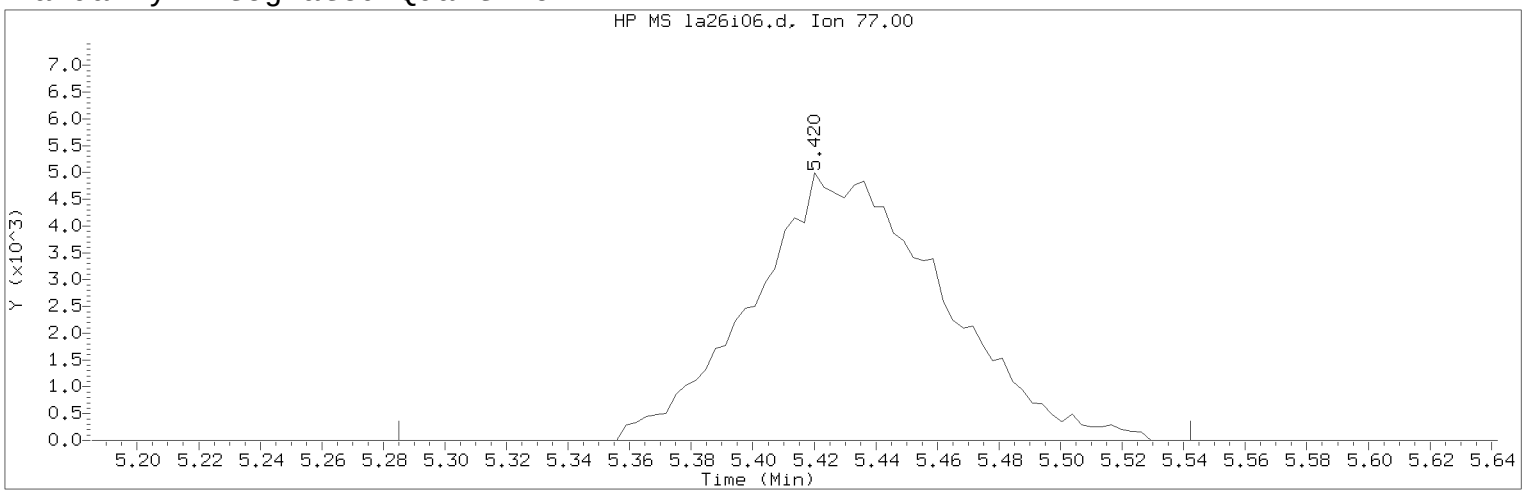
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area : 31960
On-column Amount (ng) : 48.0104
Integration start scan : 684 Integration stop scan: 721
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 446

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

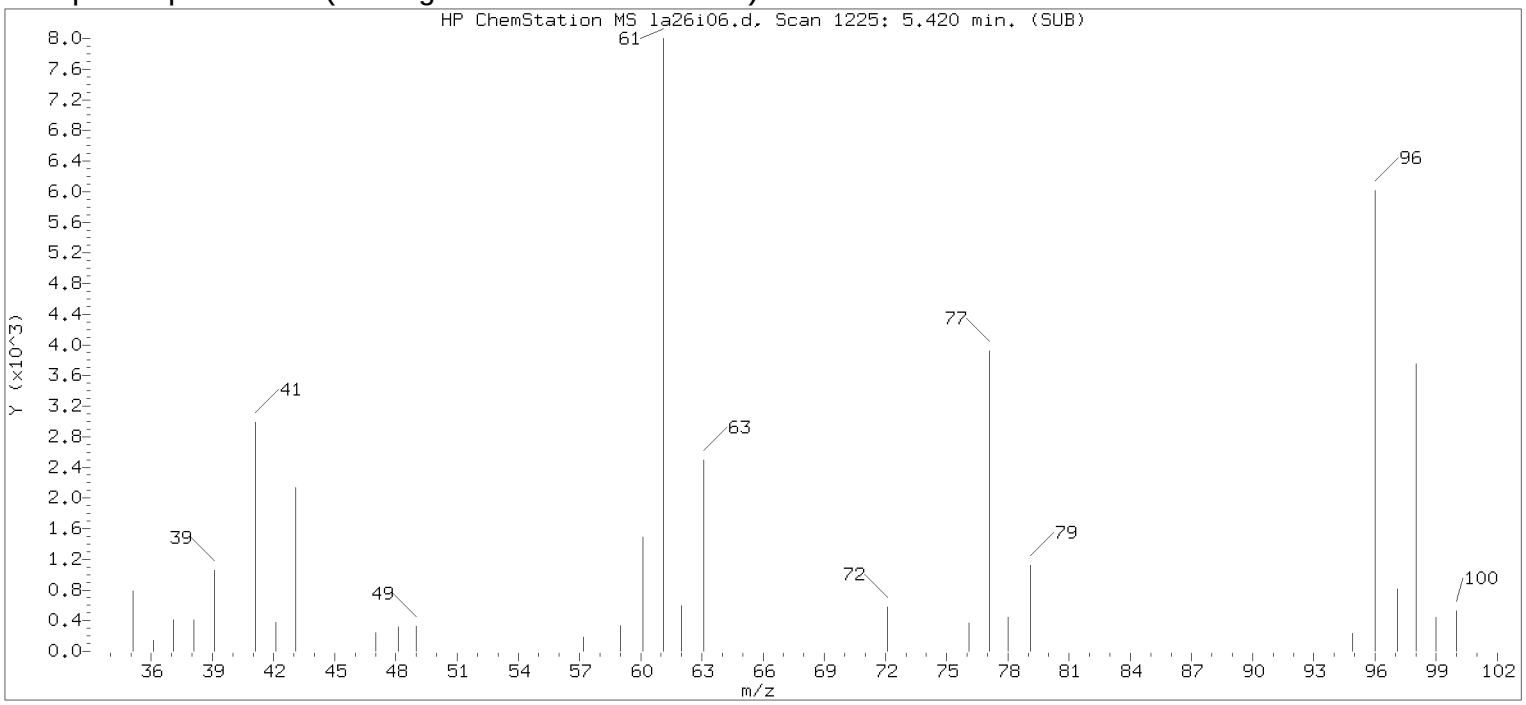
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1225
Retention Time (minutes): 5.420
Quant Ion : 77.00
Area (flag) : 21315M
On-Column Amount (ng) : 3.8194
Integration start scan : 1182 Integration stop scan: 1262
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

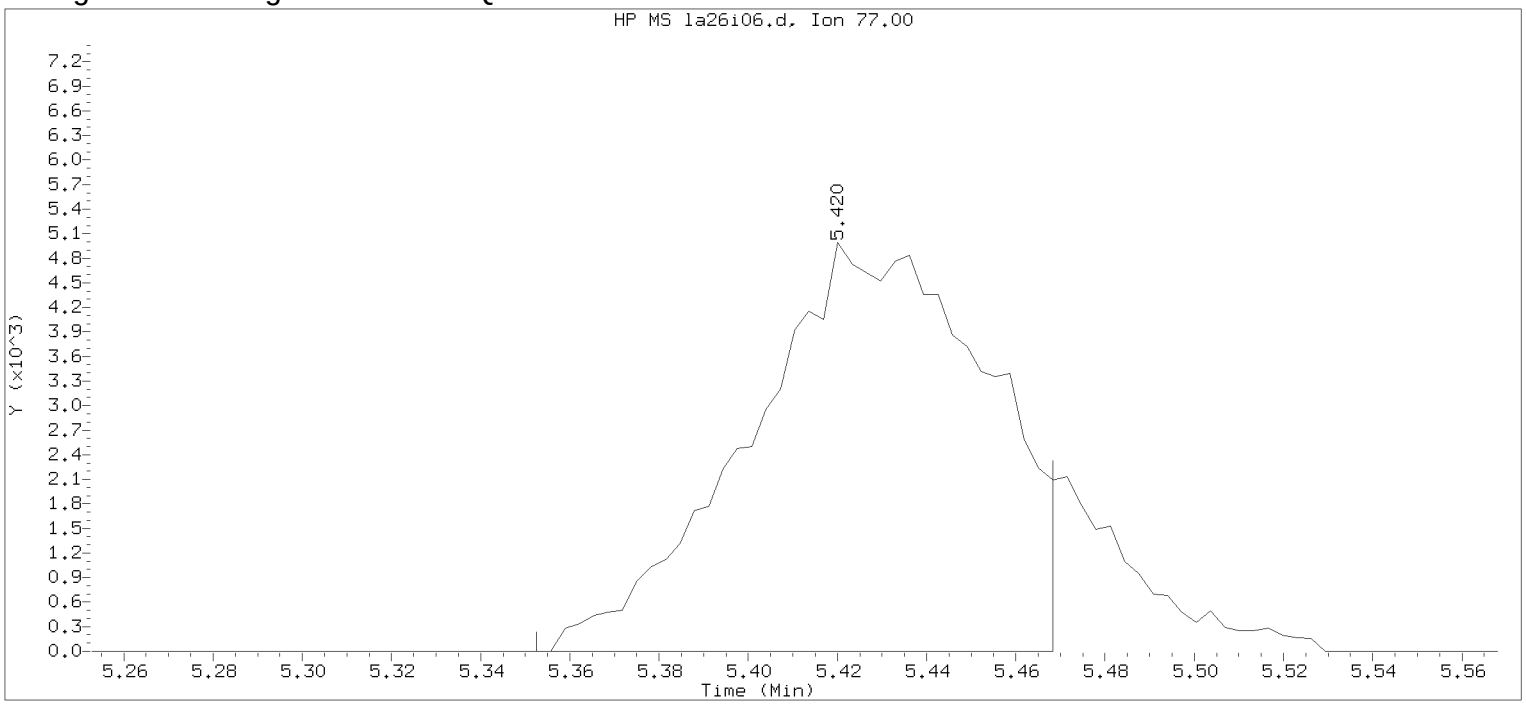
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

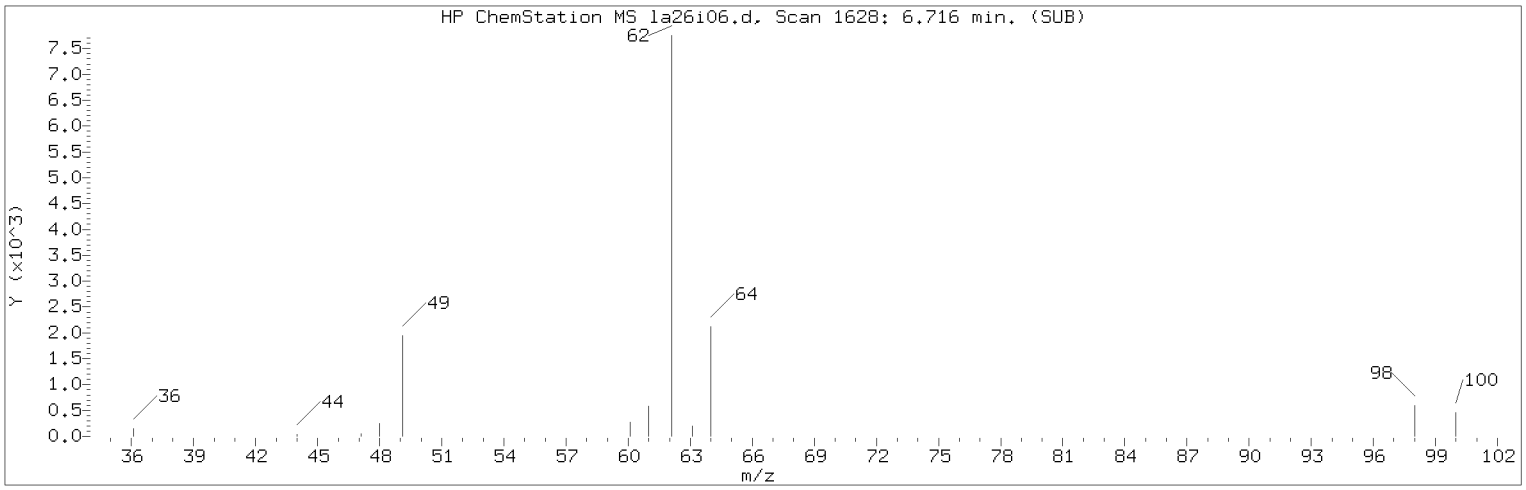
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

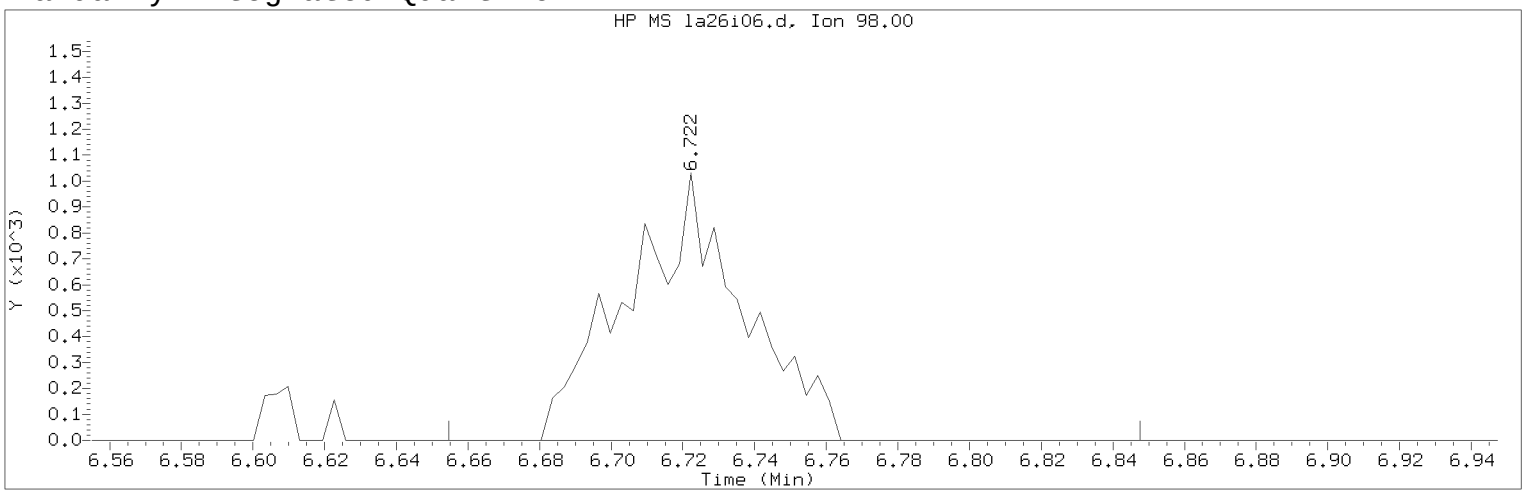
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1225
Retention Time (minutes): 5.420
Quant Ion : 77.00
Area : 18551
On-column Amount (ng) : 3.2757
Integration start scan : 1203 Integration stop scan: 1239
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

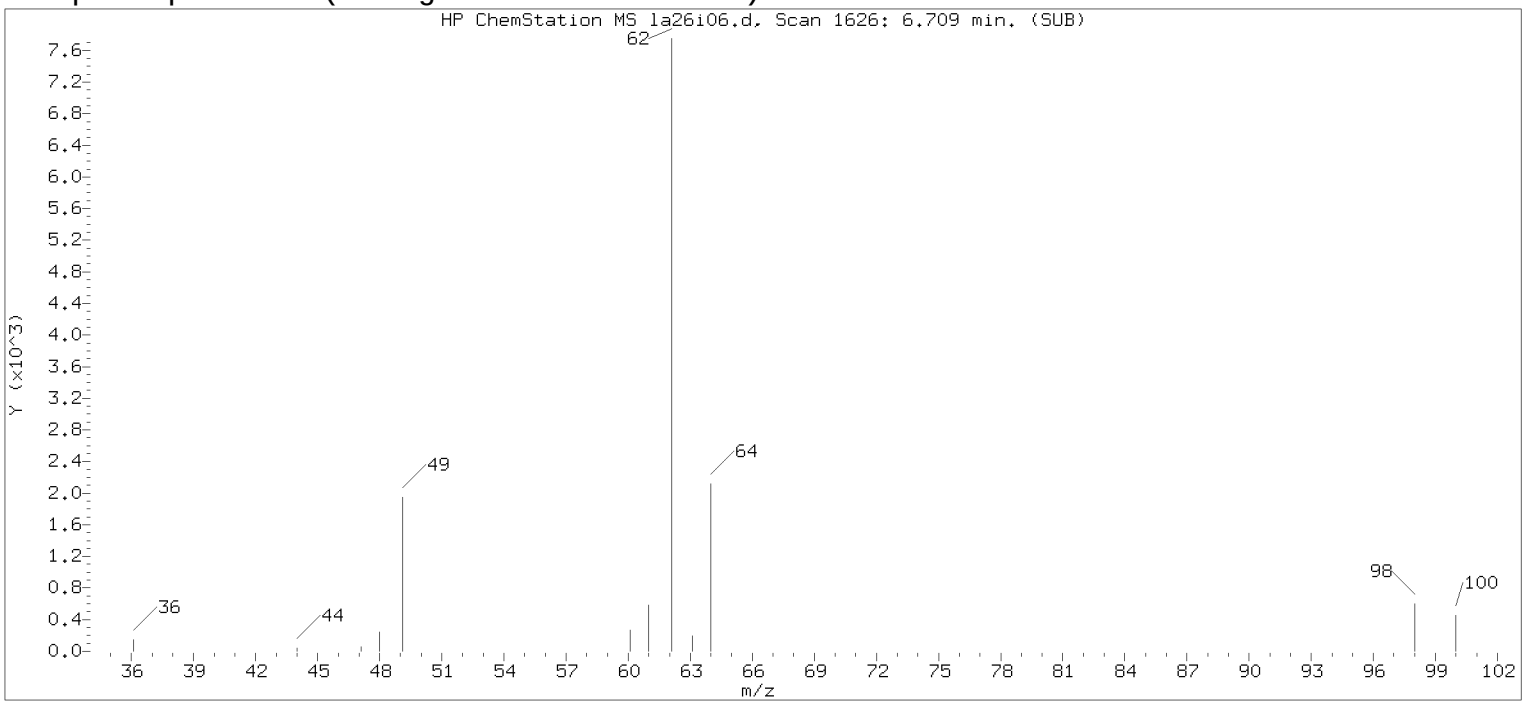
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1630
Retention Time (minutes): 6.722
Quant Ion : 98.00
Area (flag) : 2305M
On-Column Amount (ng) : 4.0222
Integration start scan : 1608 Integration stop scan: 1668
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

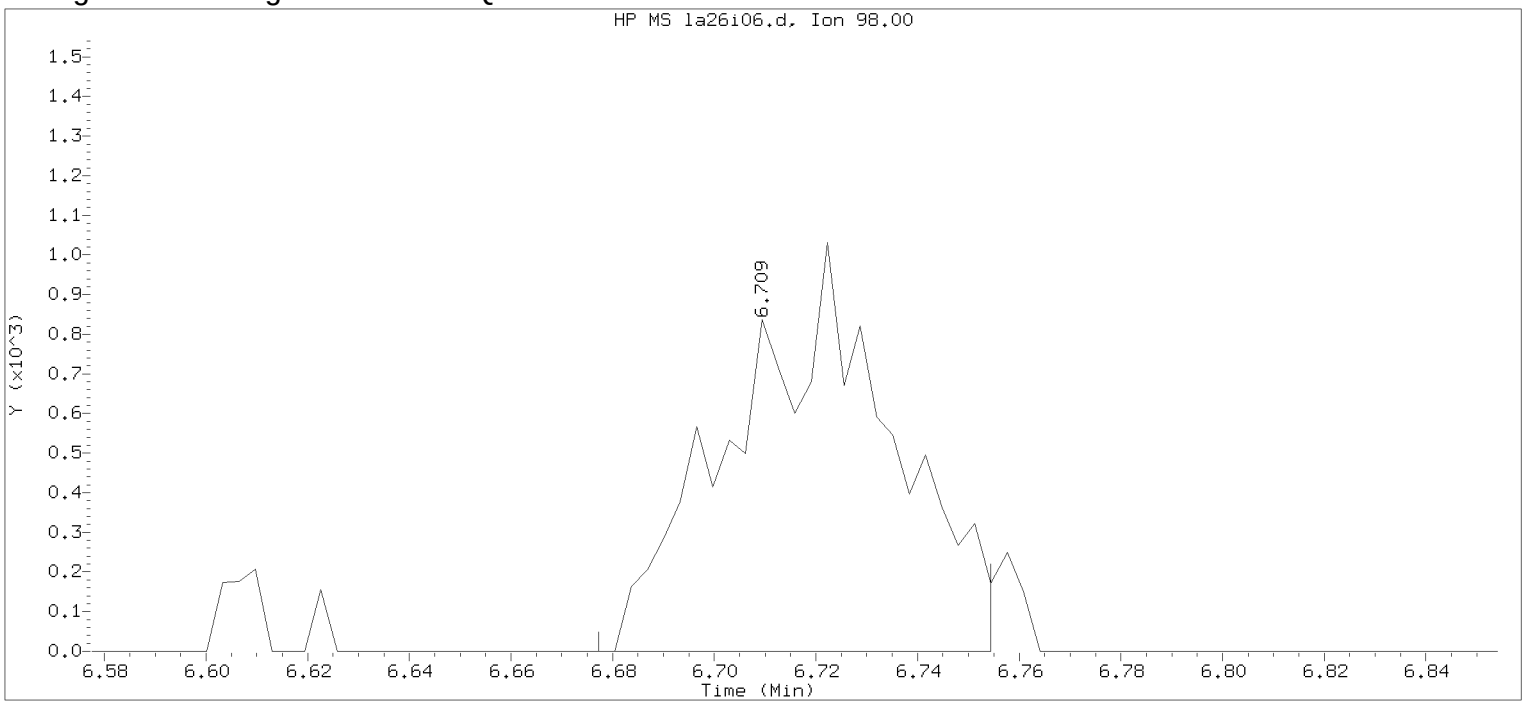
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1626
Retention Time (minutes): 6.709
Quant Ion : 98.00
Area : 2211
On-column Amount (ng) : 3.5785
Integration start scan : 1615 Integration stop scan: 1639
Y at integration start : 0 Y at integration end: 0

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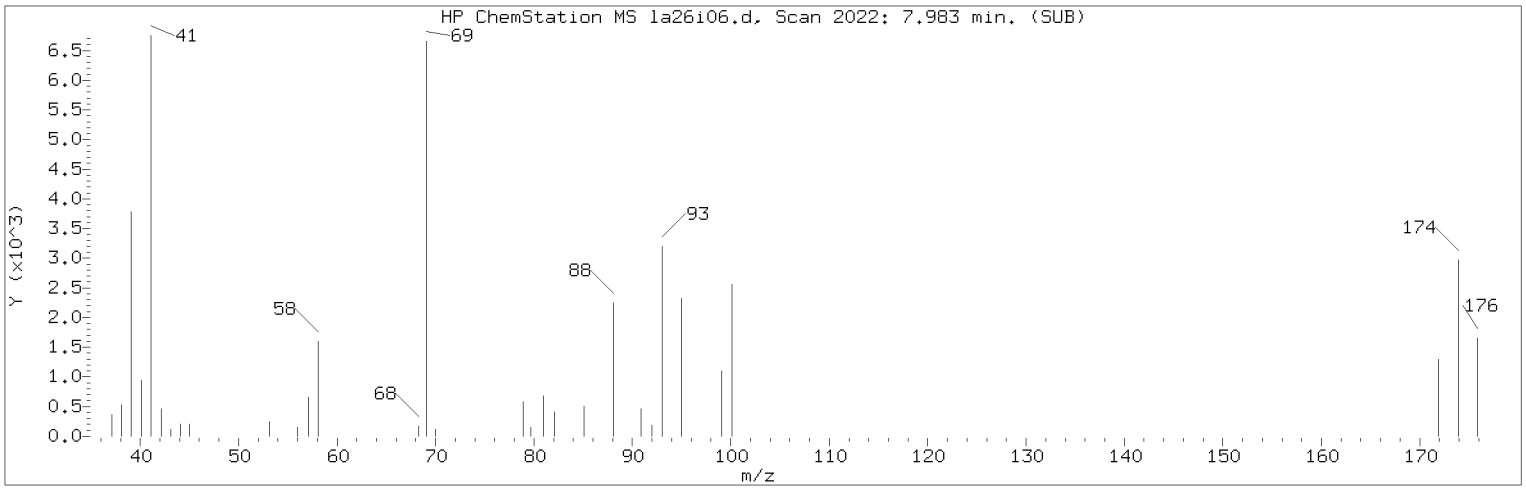
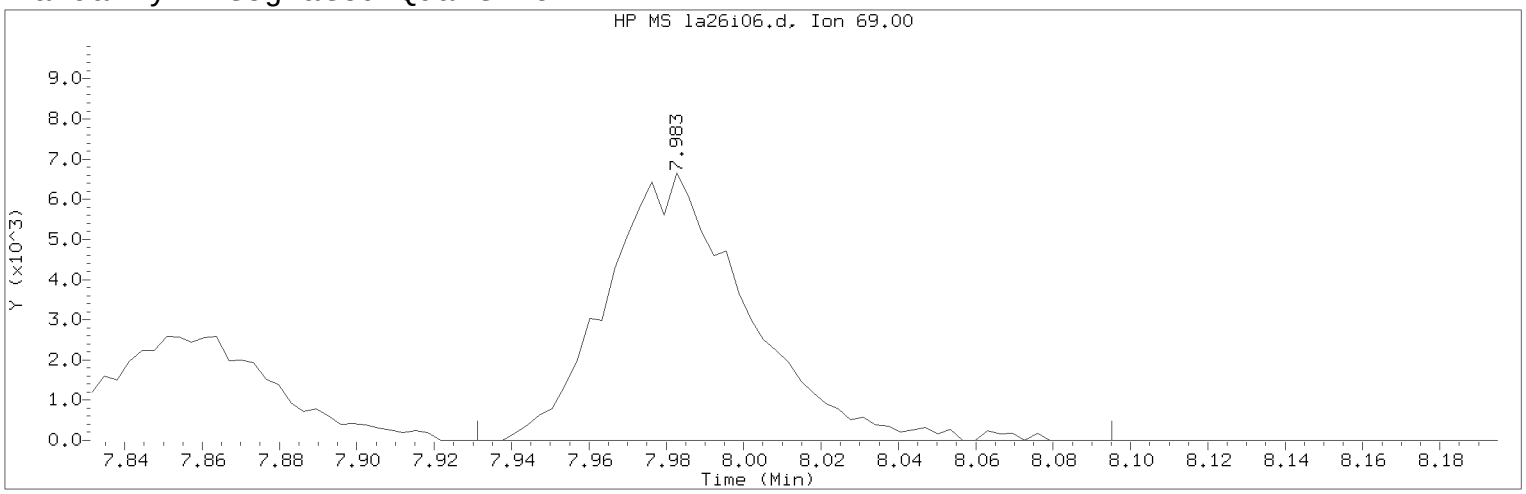
Target 3.5 esignature user KAS02648 Page 240

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

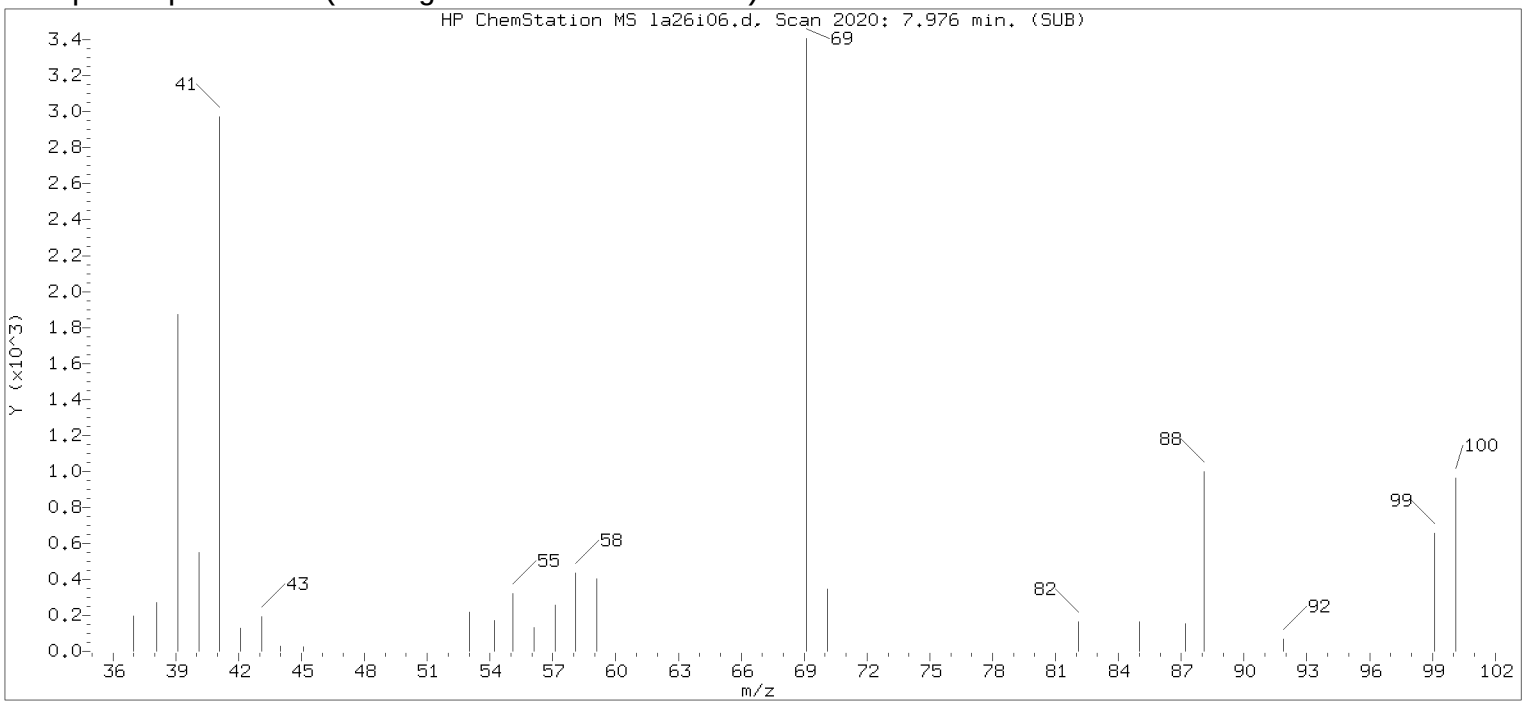
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 16816M
On-Column Amount (ng) : 3.7569
Integration start scan : 2005 Integration stop scan: 2056
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

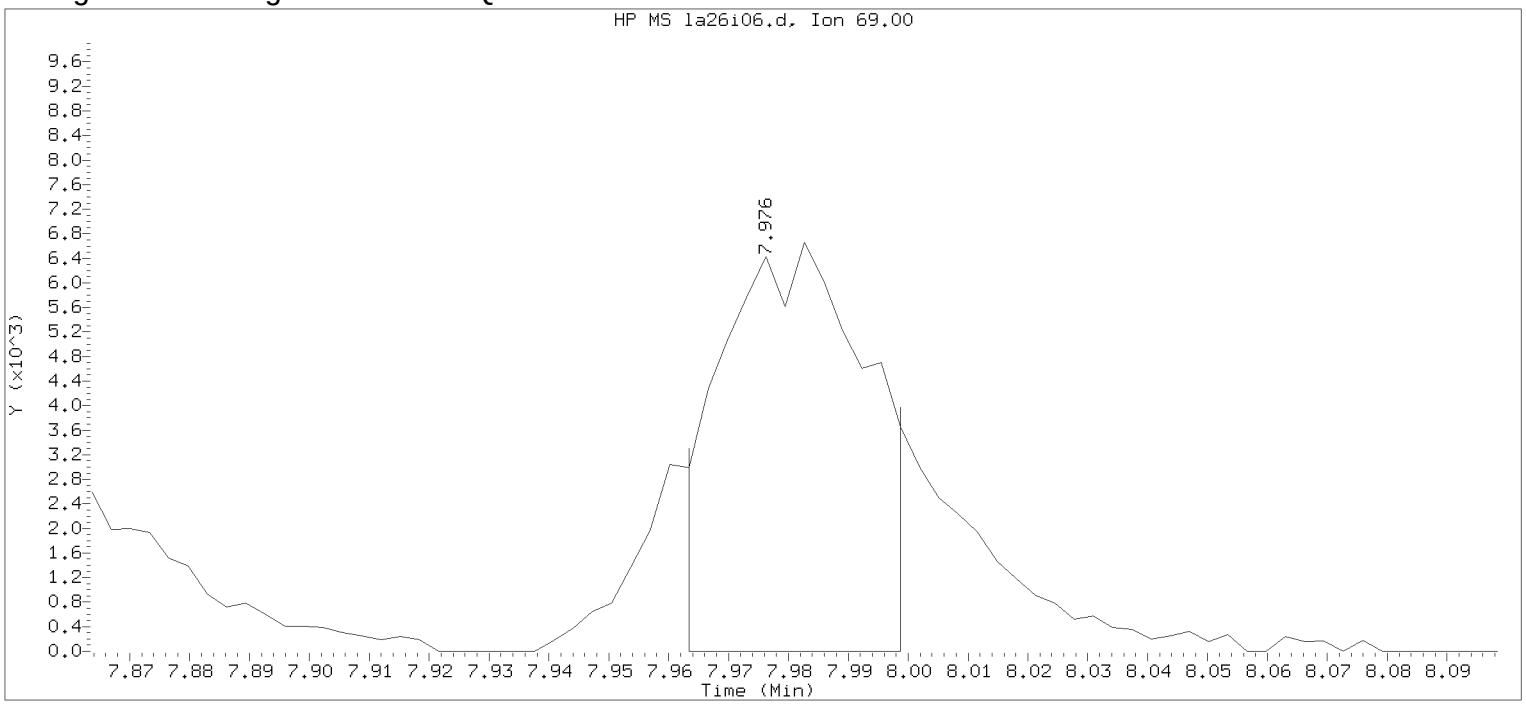
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 69.00
Area : 11128
On-column Amount (ng) : 2.7989
Integration start scan : 2015 Integration stop scan: 2026
Y at integration start : 0 Y at integration end: 0

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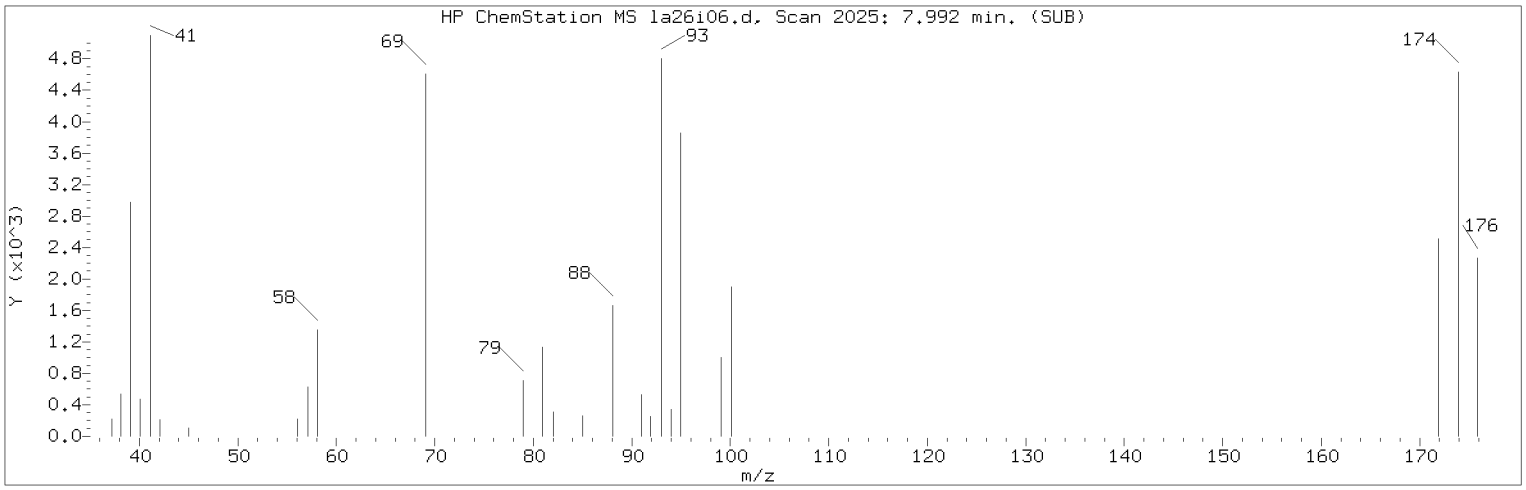
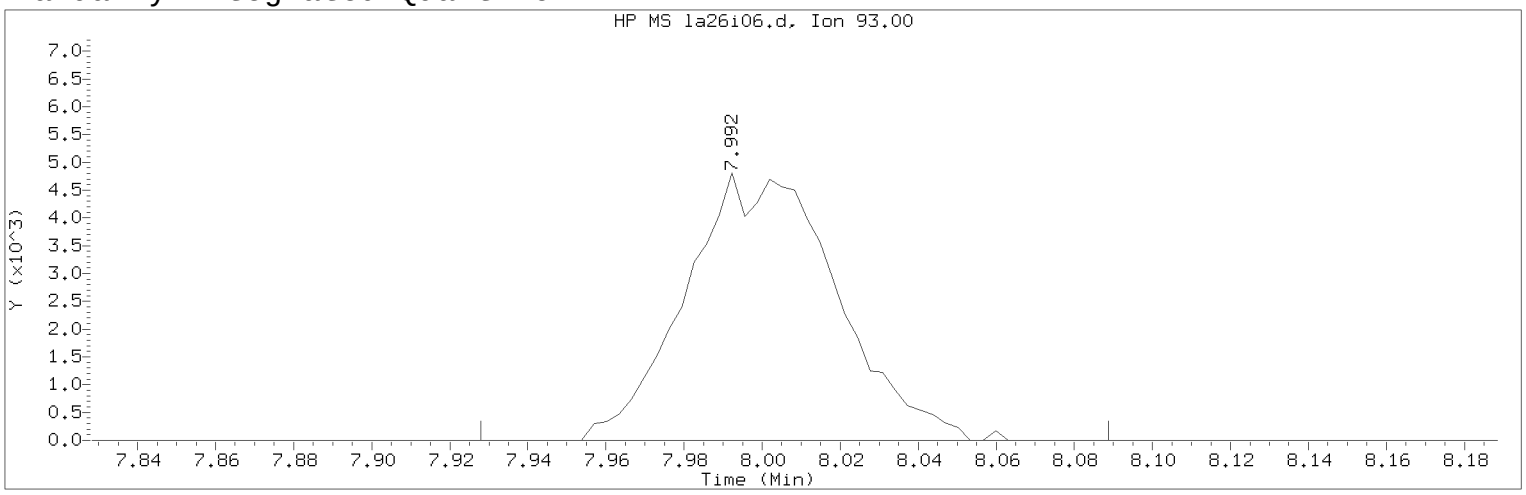
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

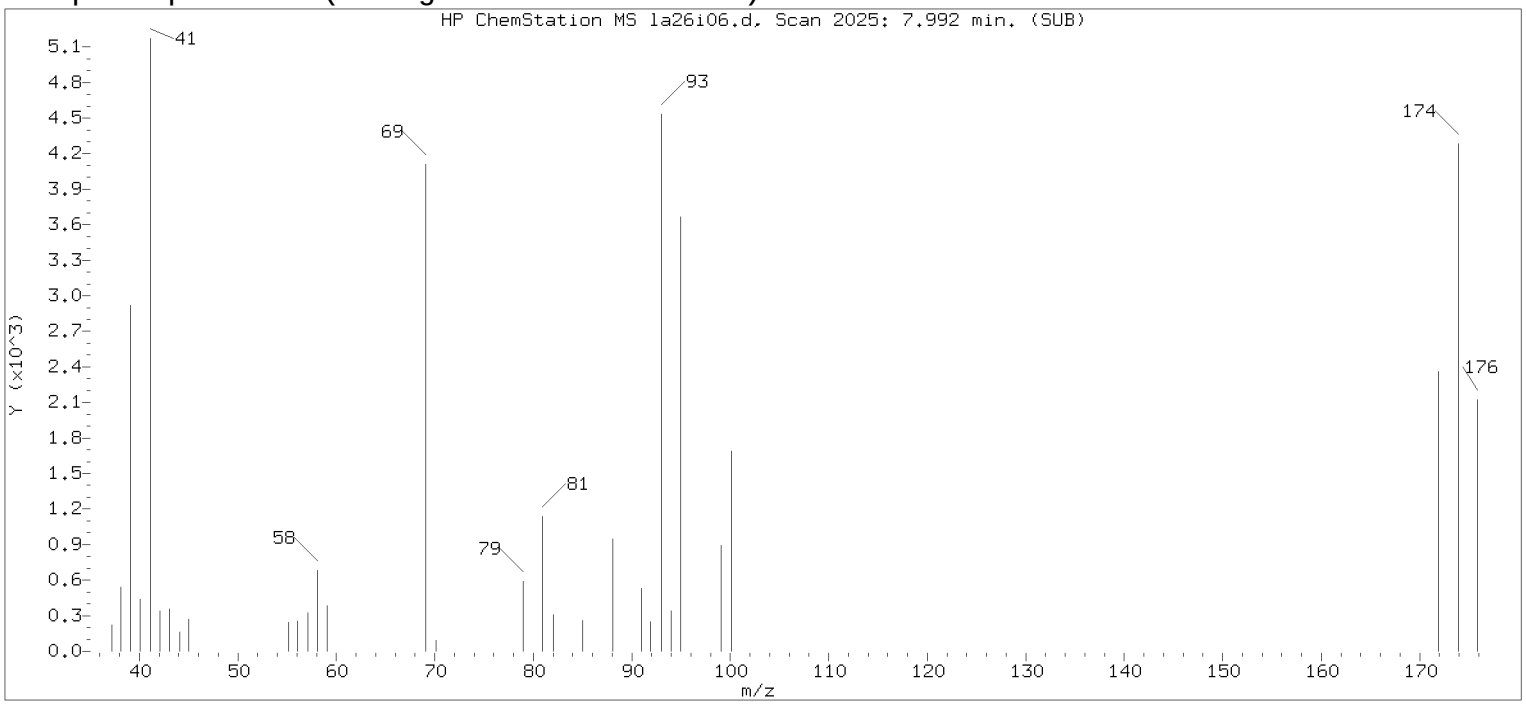
Compound Number : 74
Compound Name : Dibromomethane
Scan Number : 2025
Retention Time (minutes): 7.992
Quant Ion : 93.00
Area (flag) : 12893M
On-Column Amount (ng) : 3.9207
Integration start scan : 2004 Integration stop scan: 2054
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

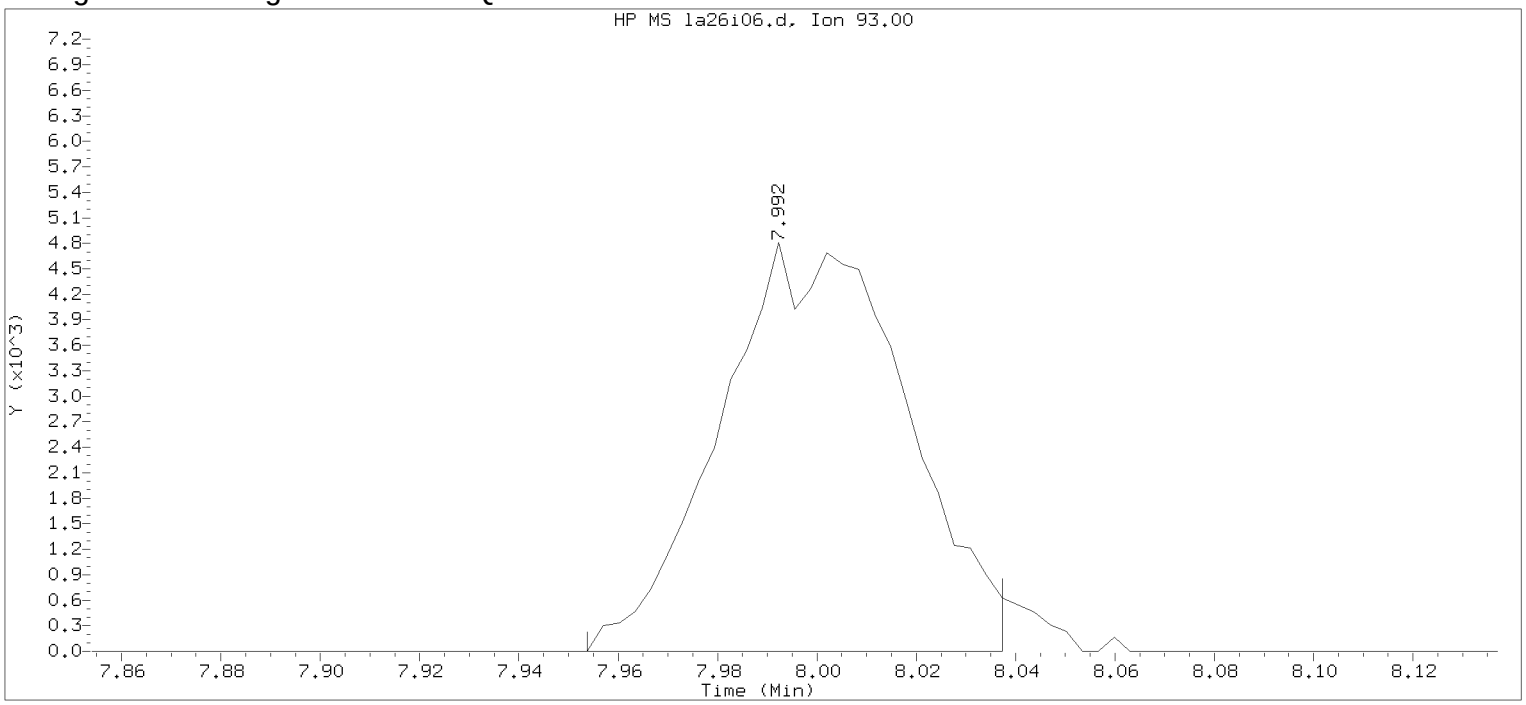
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 74
Compound Name : Dibromomethane
Scan Number : 2025
Retention Time (minutes): 7.992
Quant Ion : 93.00
Area : 12501
On-column Amount (ng) : 3.7797
Integration start scan : 2012 Integration stop scan: 2038
Y at integration start : 0 Y at integration end: 0

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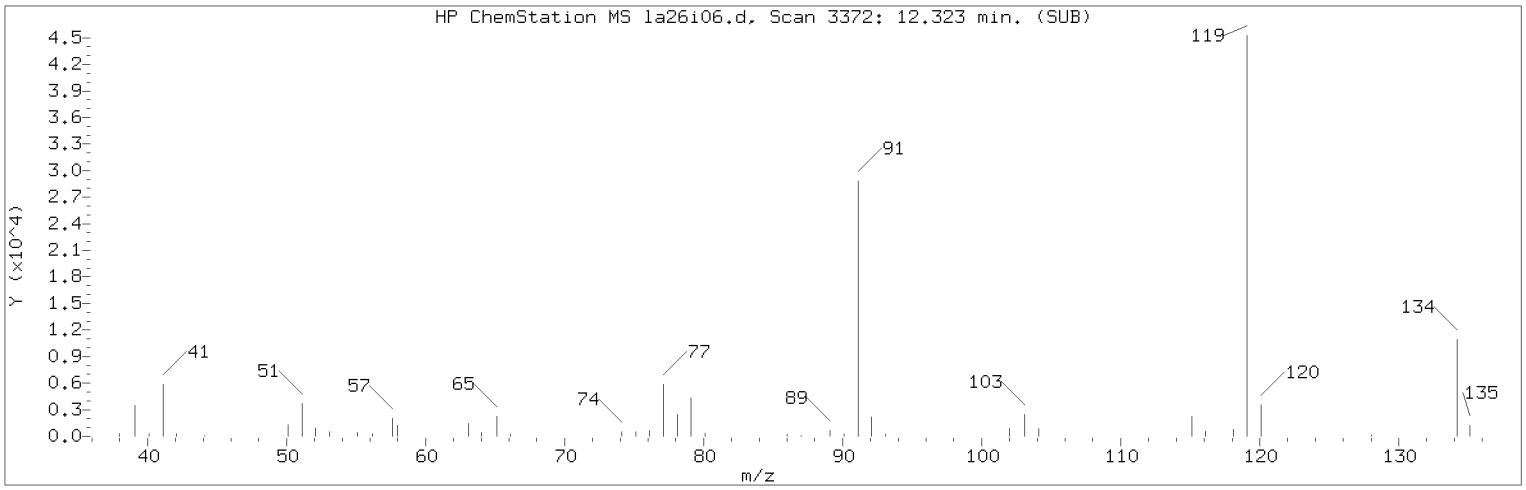
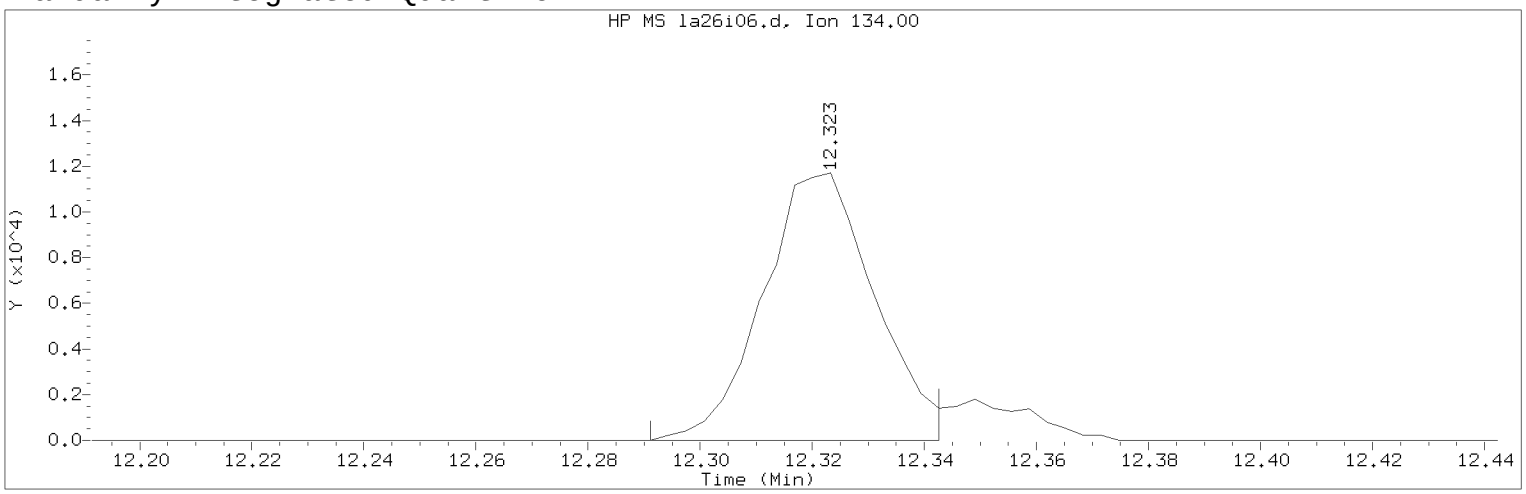
Target 3.5 esignature userKAS02648 Page 234 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

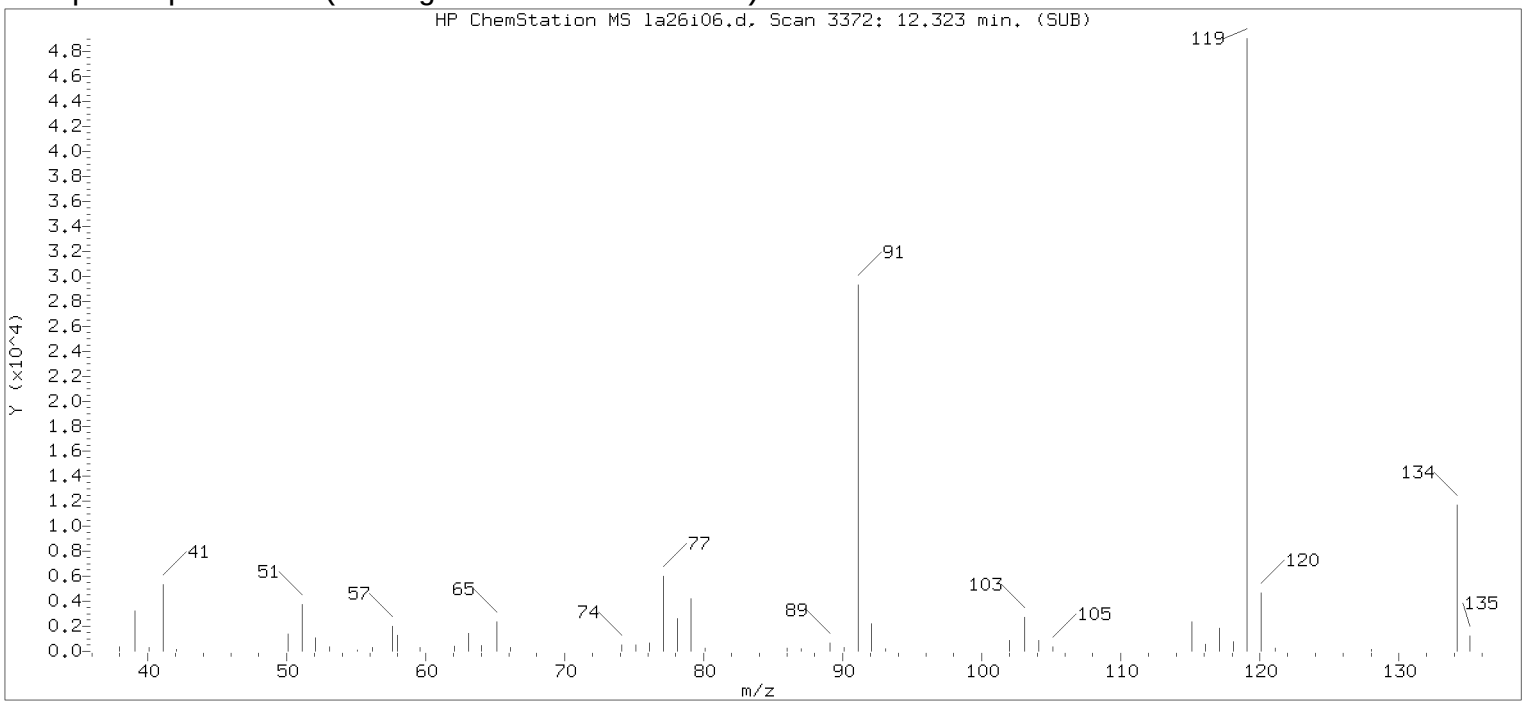
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area (flag) : 16177M
On-Column Amount (ng) : 3.8306
Integration start scan : 3361 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

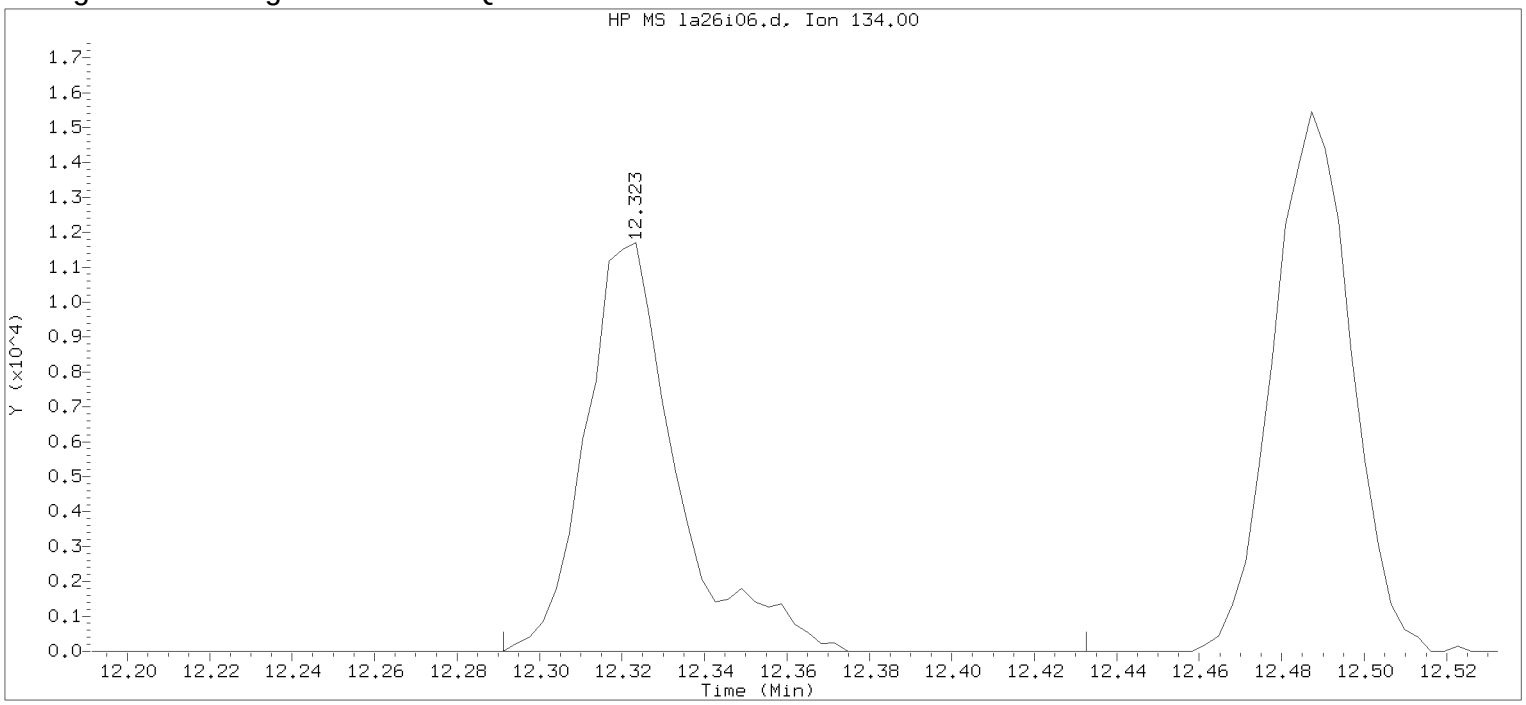
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area : 17933
On-column Amount (ng) : 4.0372
Integration start scan : 3361 Integration stop scan: 3405
Y at integration start : 0 Y at integration end: 0

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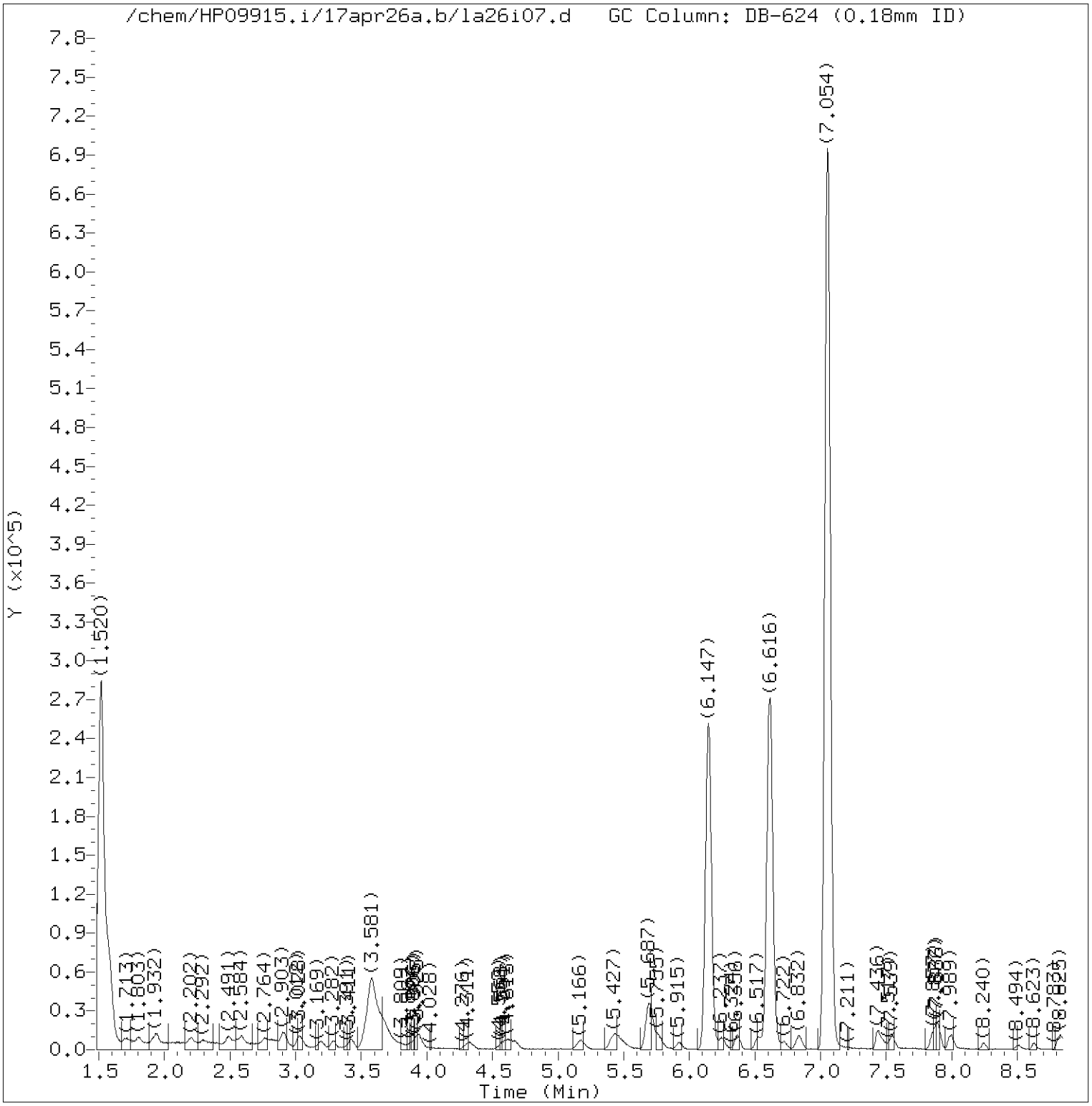
Target 3.5 esignature userKAS02648 Page 246 of 867




Total Ion Chromatogram (TIC)

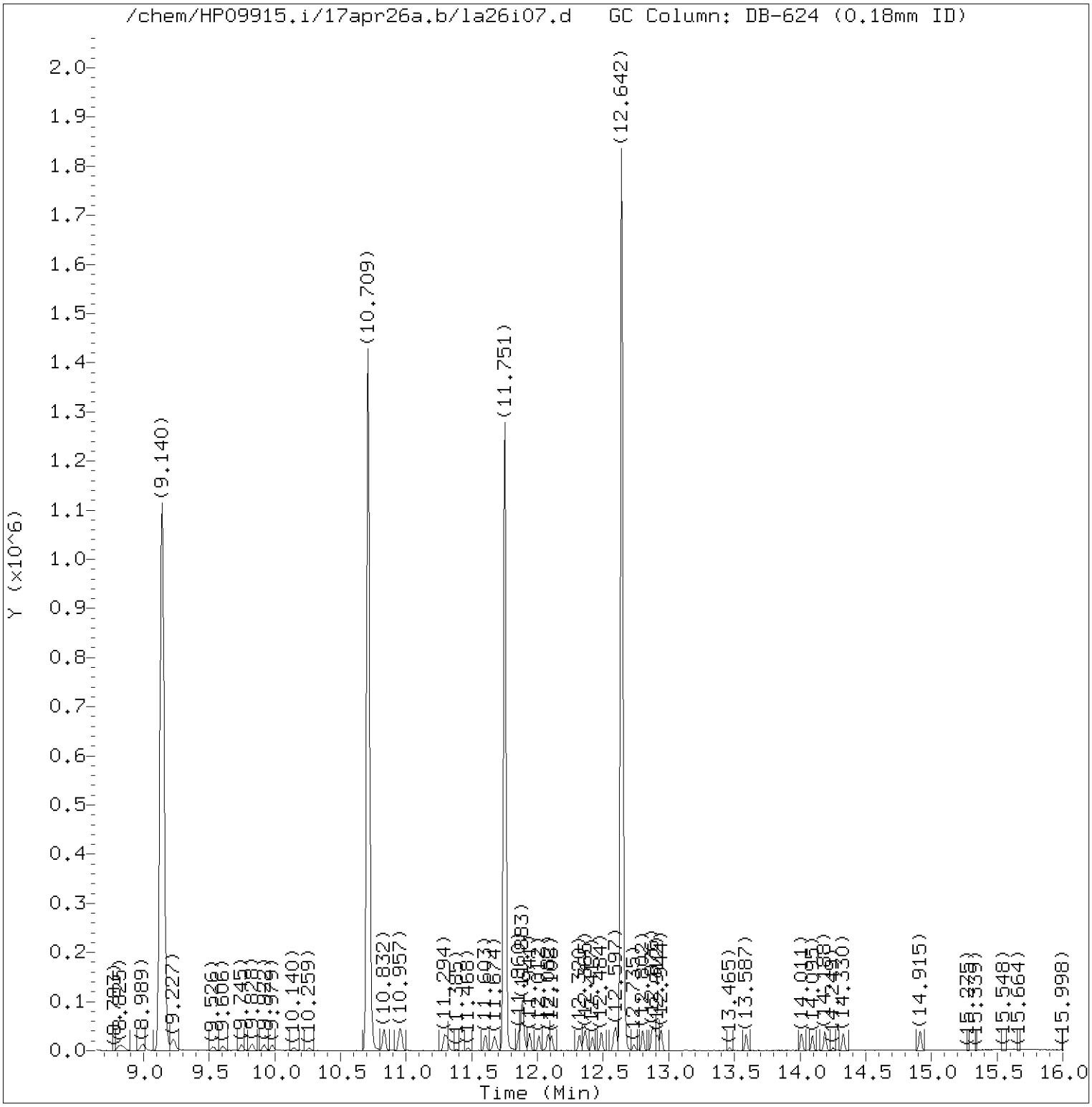
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 5134 | 0.831 |
| 4) Chloromethane | (2) | 1.806 | 50 | 5658 | 0.892 |
| 6) Vinyl Chloride | (2) | 1.922 | 62 | 5385 | 0.879 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 3879M | 1.038 |
| 8) Bromomethane | (2) | 2.205 | 94 | 3700 | 0.898 |
| 9) Chloroethane | (2) | 2.292 | 64 | 3136 | 0.908 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 7393 | 0.878 |
| 12) Trichlorofluoromethane | (2) | 2.549 | 101 | 5844 | 0.824 |
| 11) n-Pentane | (2) | 2.587 | 43 | 5763M | 0.986 |
| 14) Ethyl ether | (2) | 2.771 | 59 | 3562 | 0.902 |
| 15) Freon 123a | (2) | 2.816 | 67 | 4340M | 0.918 |
| 16) Acrolein | (1) | 2.903 | 56 | 13897 | 8.305 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 3591 | 0.956 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 63 | 1761 | 0.926 |
| 18) Acetone | (1) | 3.038 | 58 | 1287M | 1.772 |
| 19) Freon 113 | (2) | 3.060 | 101 | 3233 | 0.855 |
| 21) 2-Propanol | (1) | 3.192 | 45 | 10109M | 20.998 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 6674 | 0.916 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 11098M | 0.908 |
| 27) Methyl Acetate | (2) | 3.411 | 43 | 6031M | 1.106 |
| 25) Allyl Chloride | (2) | 3.433 | 41 | 7208M | 0.958 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 204400M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 6021 | 1.214 |
| 30) t-Butyl alcohol | (1) | 3.690 | 59 | 16799M | 21.241 |
| 31) Acrylonitrile | (2) | 3.874 | 53 | 2385 | 0.833 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 13229 | 0.961 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 3899 | 0.885 |
| 34) n-Hexane | (2) | 4.317 | 57 | 5817M | 0.861 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 7594 | 0.917 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 14916 | 0.939 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 6061 | 0.868 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 12596 | 0.921 |
| 44) 2-Butanone | (2) | 5.404 | 43 | 6995 | 1.825 |
| 42) cis-1,2-Dichloroethene | (2) | 5.427 | 96 | 4826 | 0.956 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 4353 | 0.787 |
| 47) Propionitrile | (1) | 5.481 | 54 | 21692 | 18.793 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 26519 | 9.292 |
| 49) Bromochloromethane | (2) | 5.771 | 128 | 2493 | 0.937 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 1704 | 1.671 |
| 51) Chloroform | (2) | 5.925 | 83 | 7414 | 0.939 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 6883 | 0.954 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 253408 | 50.043 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 257623 | 49.648 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 8725 | 1.841 |
| 54) Cyclohexane | (2) | 6.240 | 56 | 7197 | 0.876 |
| 54) Cyclohexane | (2) | 6.256 | 84 | 5572M | 0.830 |
| 54) Cyclohexane | (2) | 6.259 | 69 | 1999 | 0.840 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 4243 | 0.806 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 5734 | 0.893 |
| 58) Isobutyl Alcohol | (1) | 6.536 | 41 | 13006 | 46.839 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 63172 | 50.169 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 298618 | 50.137 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 104 | 39207 | 49.090 |
| 60) Benzene | (2) | 6.639 | 78 | 17777 | 0.939 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 5991 | 0.936 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 278 | 0.492 |
| 65) t-Amyl methyl ether | (2) | 6.832 | 73 | 12353 | 0.910 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1036977 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 7056M | 0.933 |
| 69) n-Butanol | (1) | 7.436 | 56 | 18978 | 84.784 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 4751 | 0.972 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 7103 | 0.824 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 3166 | 0.814 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 4619 | 0.892 |
| 75) 1,4-Dioxane | (1) | 7.983 | 88 | 3446 | 49.313 |
| 76) Methyl Methacrylate | (2) | 7.989 | 69 | 3670M | 0.828 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 3047 | 0.935 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 5145 | 0.875 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 2718 | 1.630 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.626 | 63 | 3128 | 0.786 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 6077 | 0.793 |
| 82) 4-Methyl-2-pentanone | (2) | 8.996 | 43 | 13249 | 1.677 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1011031 | 50.099 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 664751 | 49.998 |
| 88) Toluene | (3) | 9.230 | 92 | 10791 | 0.920 |
| 89) trans-1,3-Dichloropropene | (3) | 9.533 | 75 | 4836 | 0.735 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.606 | 69 | 5948 | 0.803 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 4212 | 0.932 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 4631 | 0.893 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 7455 | 0.951 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 8940 | 1.579 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 10913 | 1.528 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 3755 | 0.802 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 4374 | 0.884 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 790373 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.729 | 91 | 7171 | 1.065 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 12435 | 0.919 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 3810 | 0.853 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 20557 | 0.909 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 15787 | 1.793 |
| 107) o-Xylene | (3) | 11.294 | 106 | 7750 | 0.885 |
| 109) Styrene | (3) | 11.311 | 104 | 11905 | 0.822 |
| 110) Bromoform | (3) | 11.468 | 173 | 2449 | 0.721 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 19094 | 0.853 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 12225A | 46.377 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 377337 | 50.305 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 332561 | 50.545 |
| 108) Xylene (Total) | (3) | | 106 | 23537 | 2.677 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 6980 | 0.917 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 5604 | 0.915 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 18943 | 8.689 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 2008 | 0.934 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 24194 | 0.894 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 5054 | 0.897 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 15989 | 0.828 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 5379 | 0.917 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 3714 | 0.890 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 2616 | 0.794 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 16998 | 0.855 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 21349 | 0.867 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 11200 | 0.960 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 18731 | 0.861 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 428650 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 12025 | 0.997 |

A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 19417 | 0.932 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 7813 | 0.655 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 11399 | 0.877 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 12459 | 0.913 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 10343 | 0.952 |
| 138) 1,2-Dichlorobenzene | (4) | 12.918 | 146 | 11057 | 0.964 |
| 140) 1,2-Diethylbenzene | (4) | 12.944 | 119 | 9704 | 0.888 |
| 141) Diethylbenzene (total) | (4) | | 100 | 33562 | 2.678 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.465 | 75 | 1391 | 0.865 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 9757 | 1.050 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 10012 | 1.110 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 4846 | 1.237 |
| 148) Naphthalene | (4) | 14.188 | 128 | 26365 | 0.969 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 10045 | 1.155 |
| 150) 2-Methylnaphthalene | (4) | 14.915 | 142 | 17518 | 0.996 |



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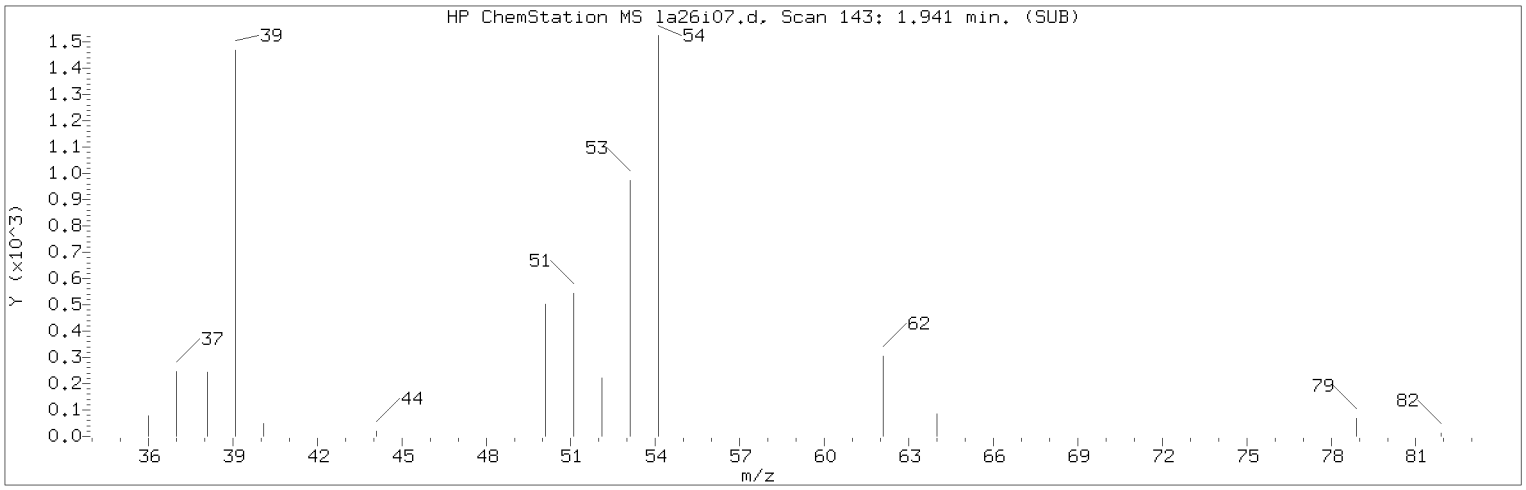
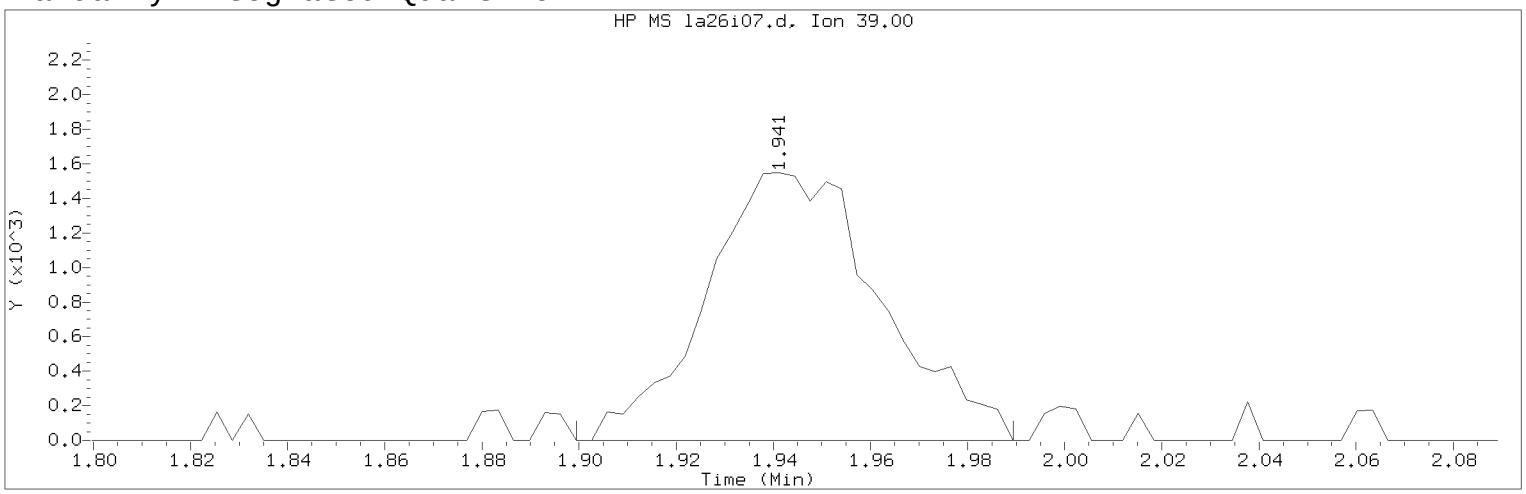
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

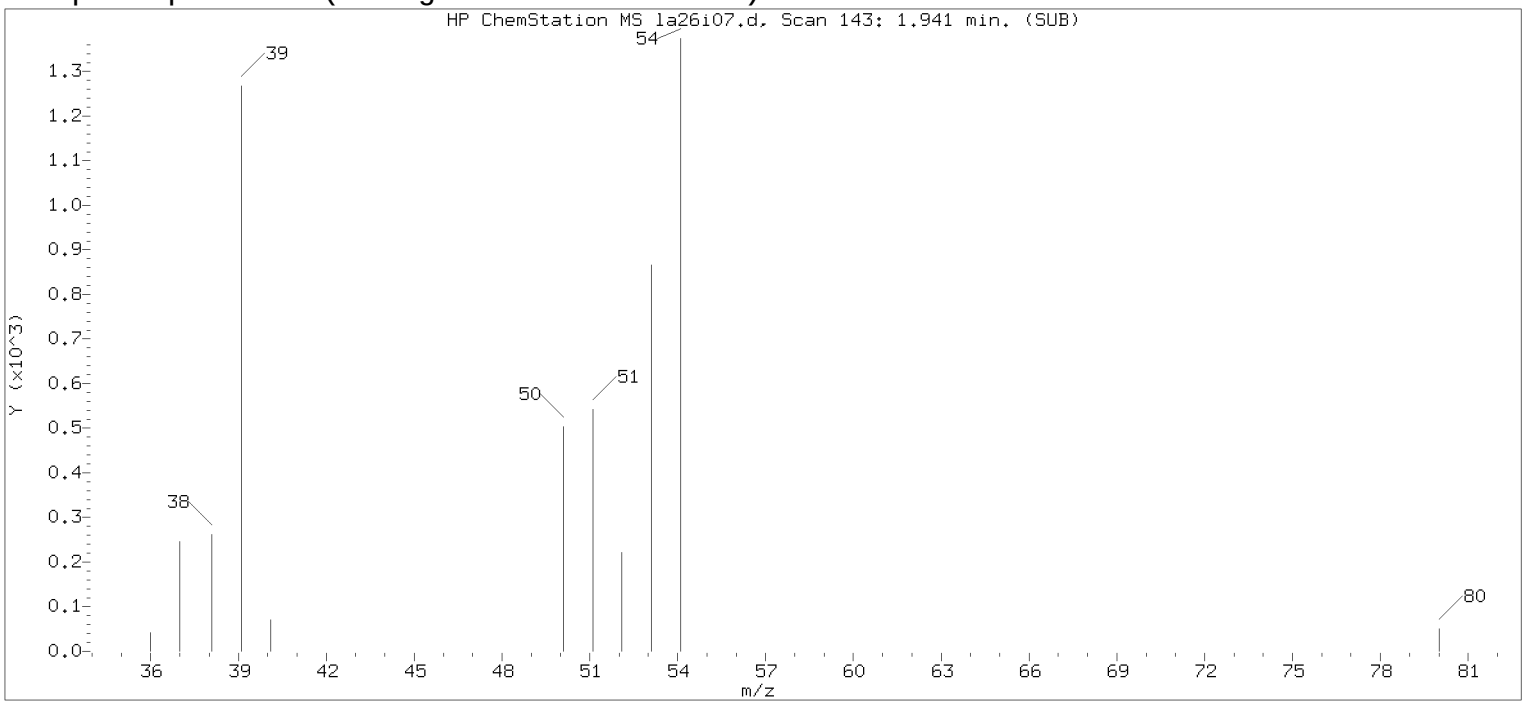
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 3879M
On-Column Amount (ng) : 1.0378
Integration start scan : 129 Integration stop scan: 157
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

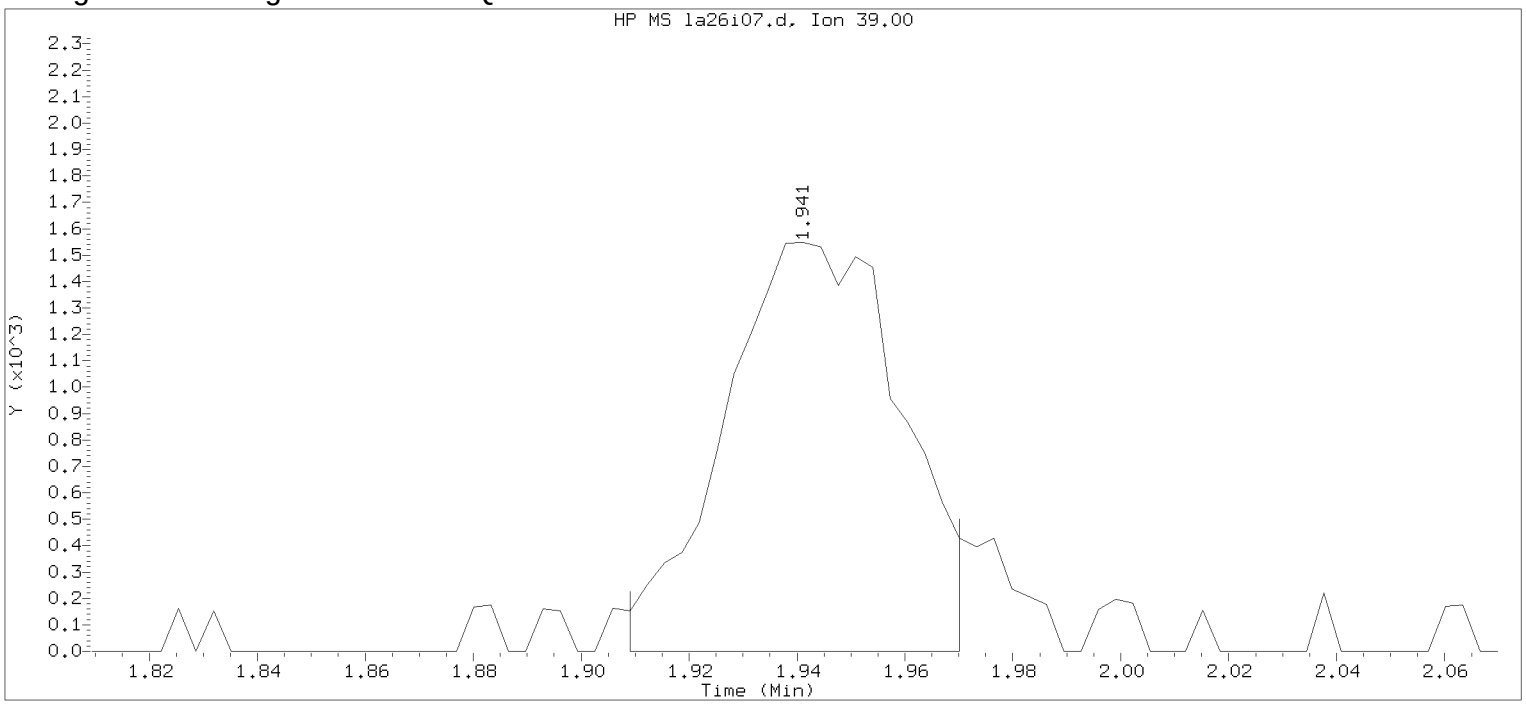
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 3513
On-column Amount (ng) : 0.9533
Integration start scan : 132 Integration stop scan: 151
Y at integration start : 0 Y at integration end: 0

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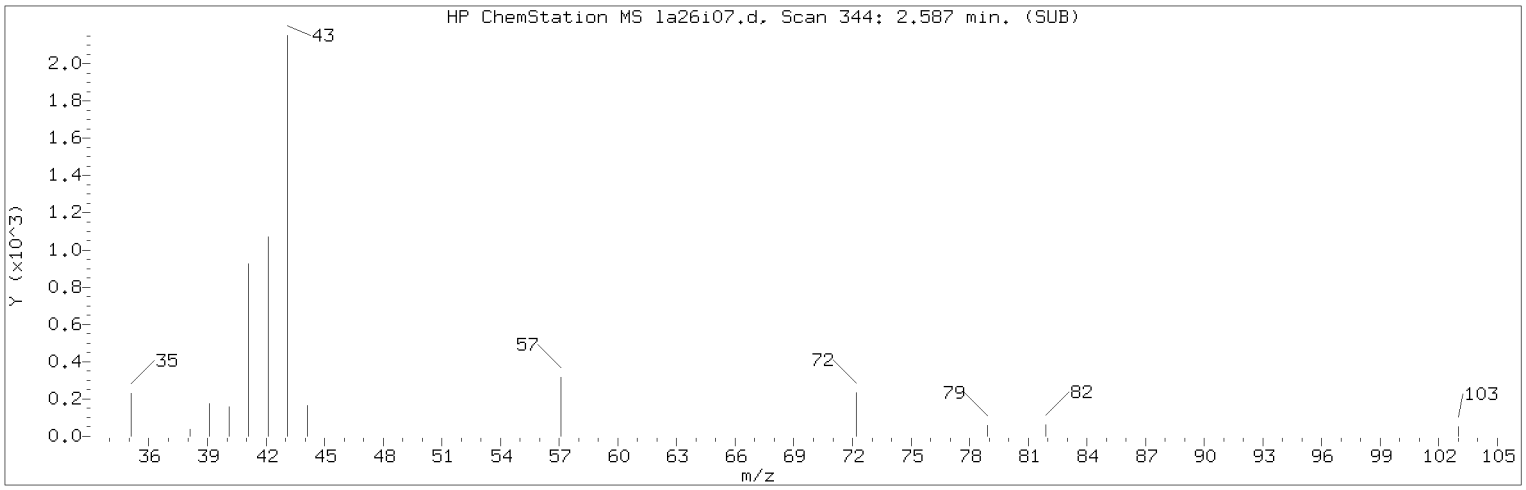
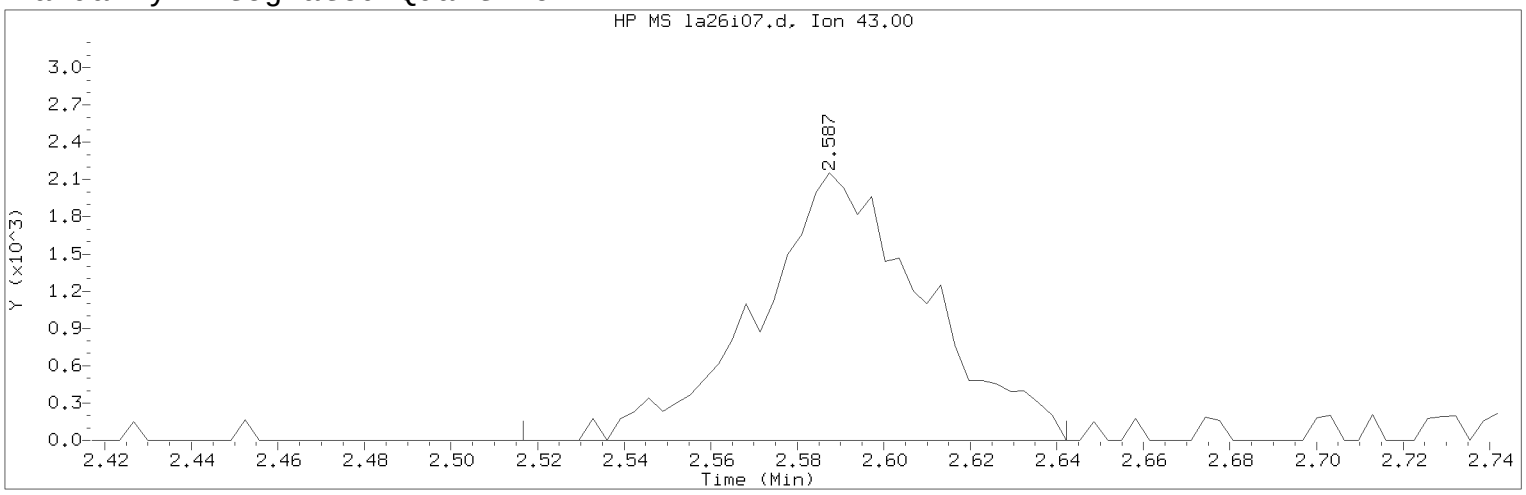
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

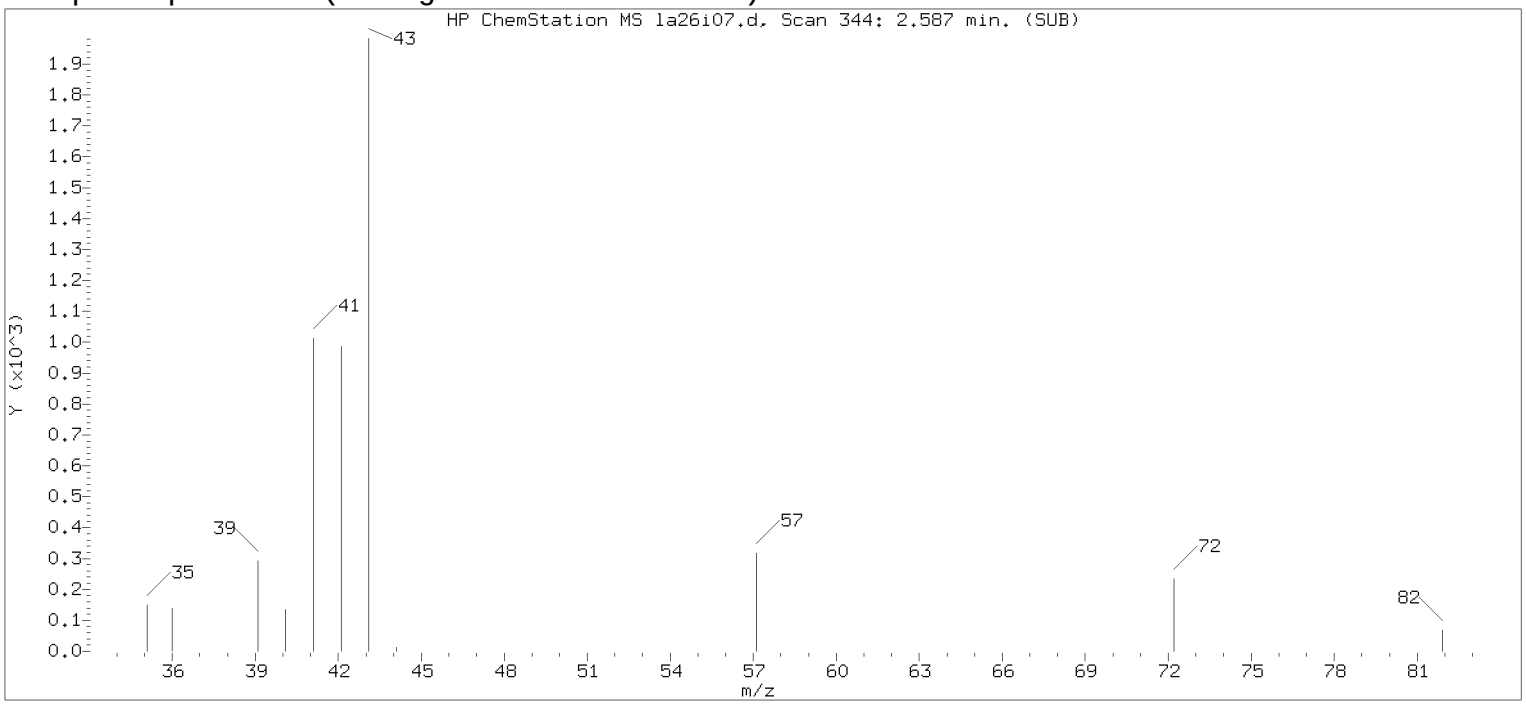
Compound Number : 11
Compound Name : n-Pentane
Scan Number : 344
Retention Time (minutes): 2.587
Quant Ion : 43.00
Area (flag) : 5763M
On-Column Amount (ng) : 0.9861
Integration start scan : 321 Integration stop scan: 360
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

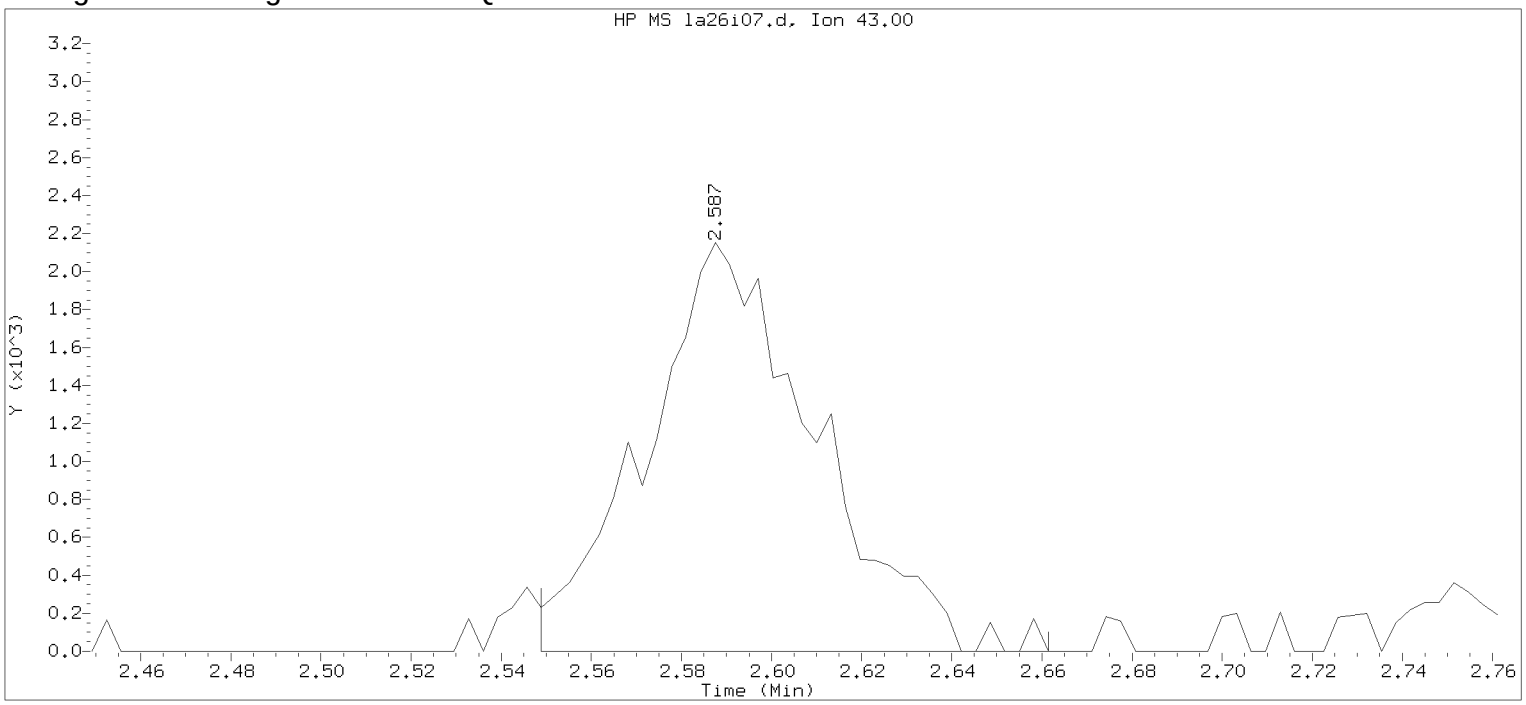
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 11
Compound Name : n-Pentane
Scan Number : 344
Retention Time (minutes): 2.587
Quant Ion : 43.00
Area : 5626
On-column Amount (ng) : 0.9660
Integration start scan : 331 Integration stop scan: 366
Y at integration start : 0 Y at integration end: 0

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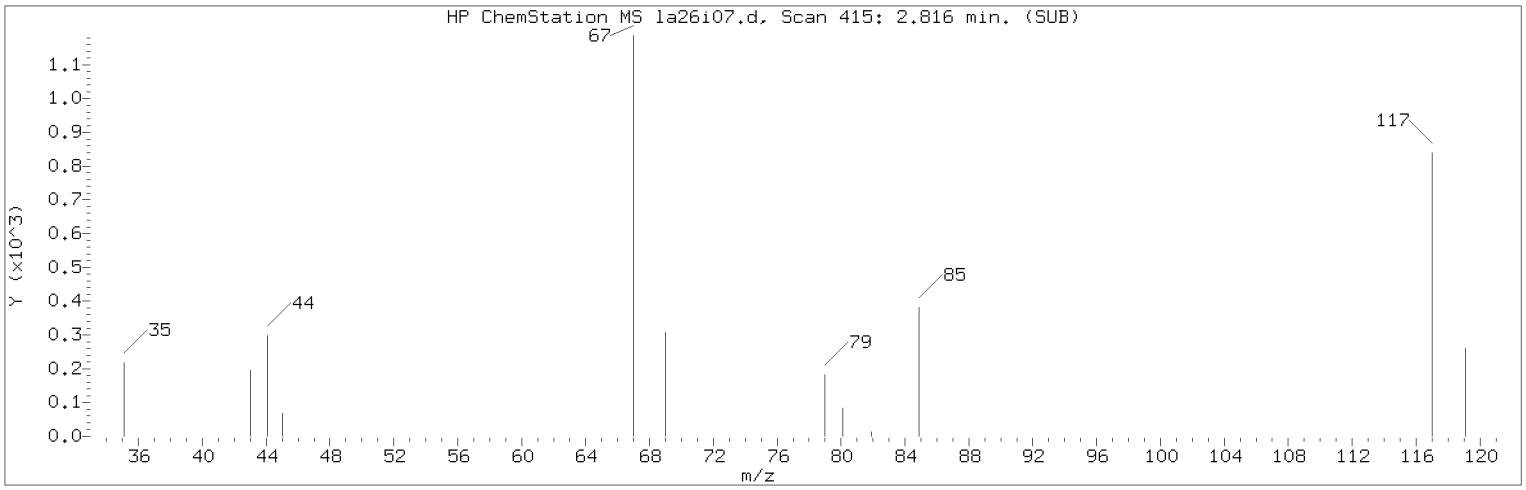
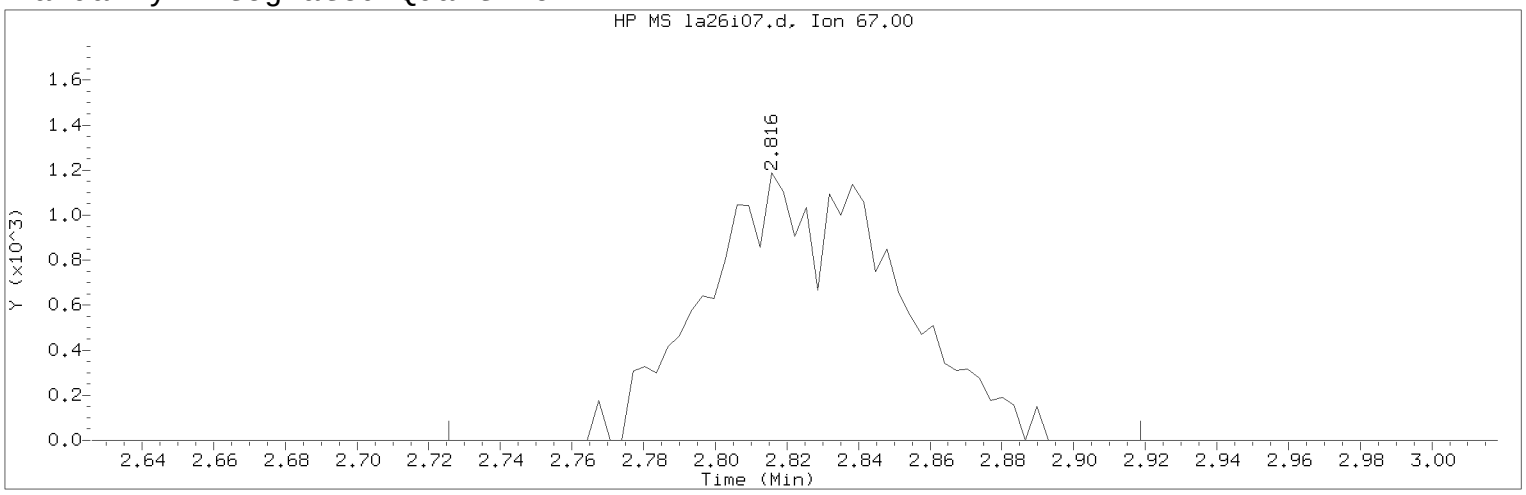
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

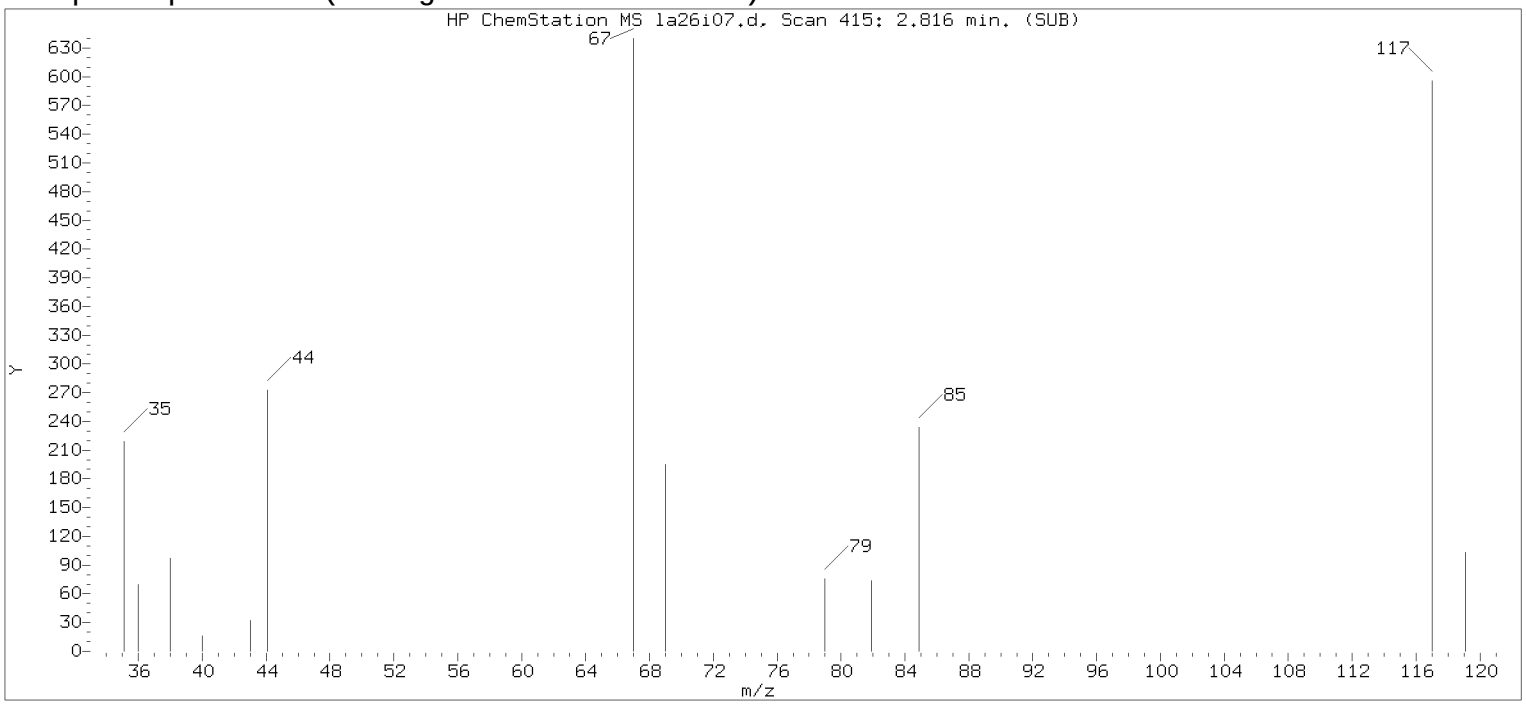
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 415
Retention Time (minutes): 2.816
Quant Ion : 67.00
Area (flag) : 4340M
On-Column Amount (ng) : 0.9183
Integration start scan : 386 Integration stop scan: 446
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

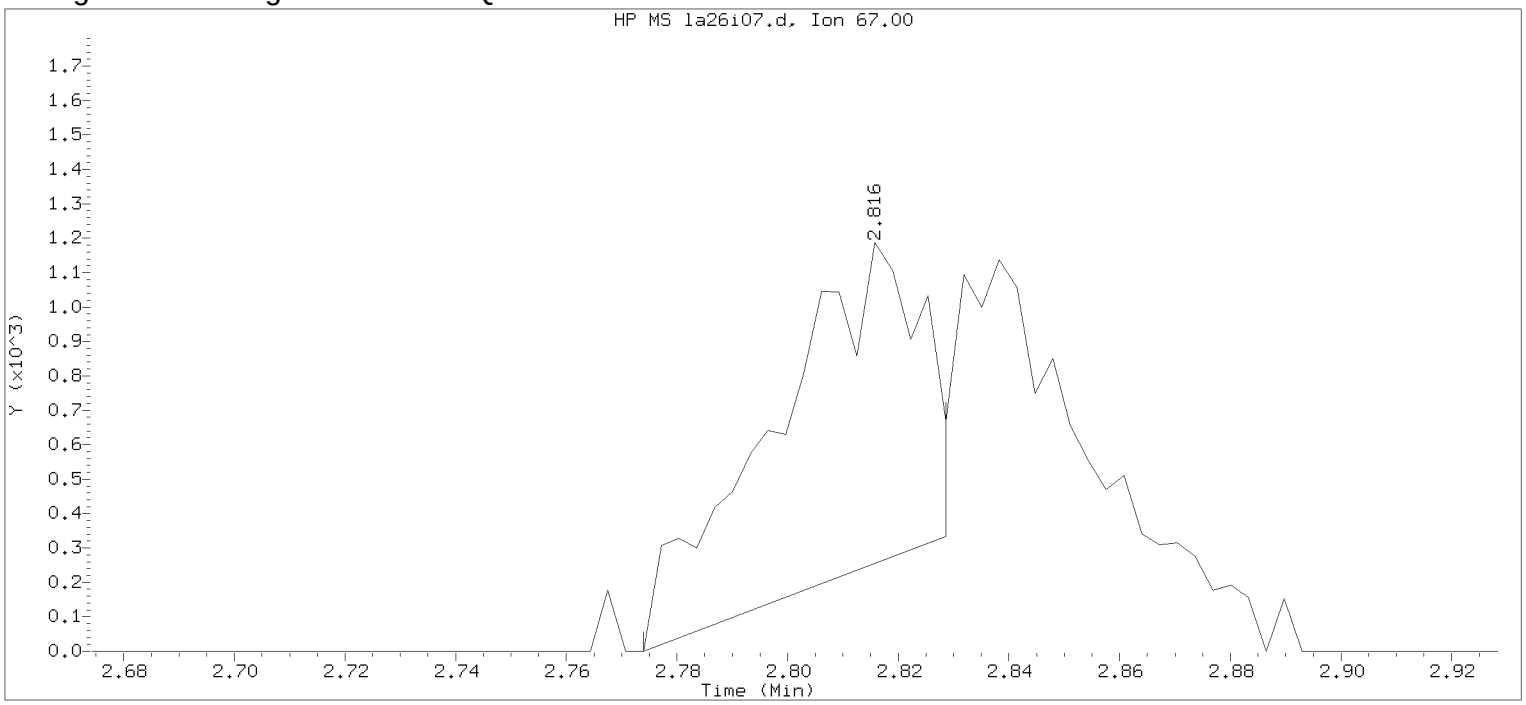
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 15
Compound Name : Freon 123a
Scan Number : 415
Retention Time (minutes): 2.816
Quant Ion : 67.00
Area : 1764
On-column Amount (ng) : 0.4048
Integration start scan : 401 Integration stop scan: 418
Y at integration start : 0 Y at integration end: 334

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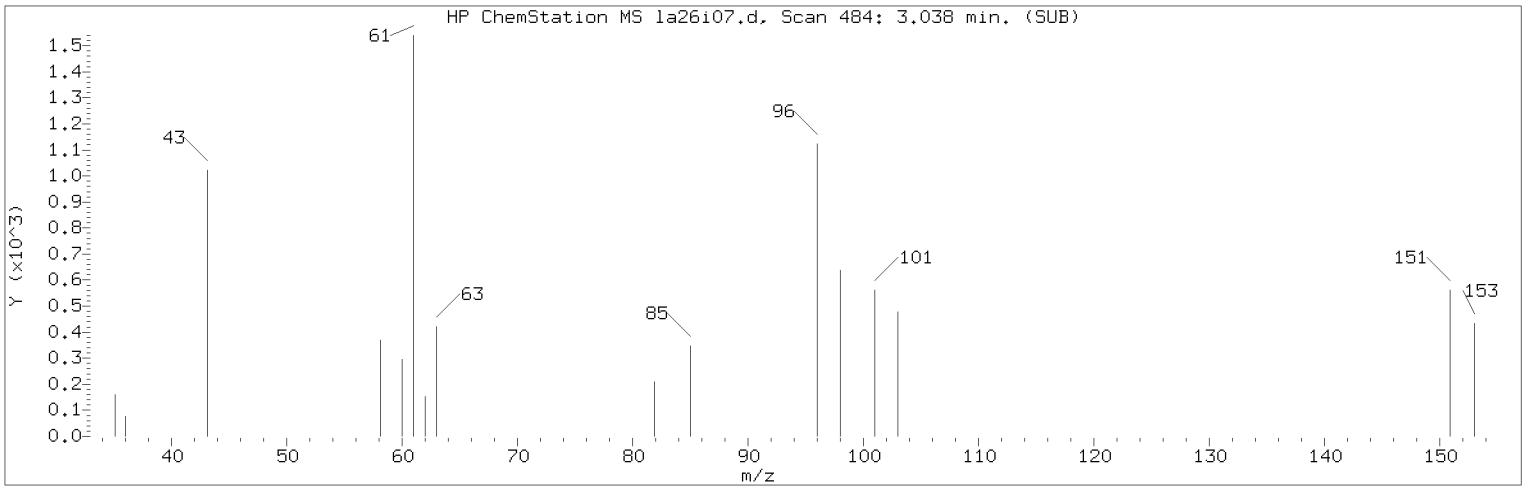
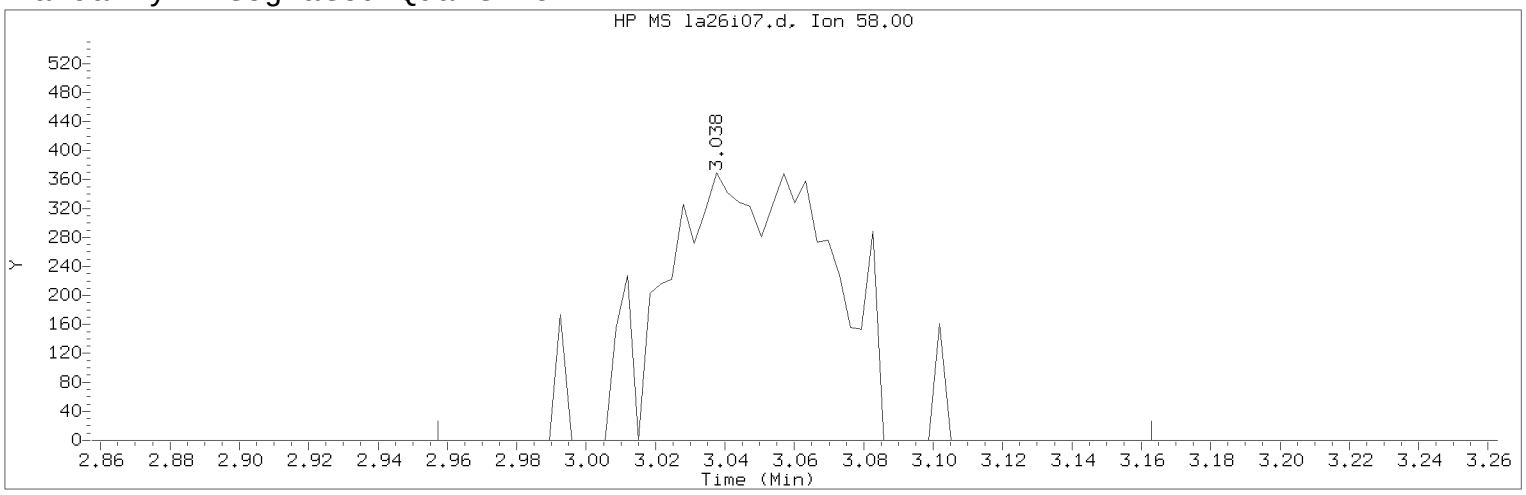
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

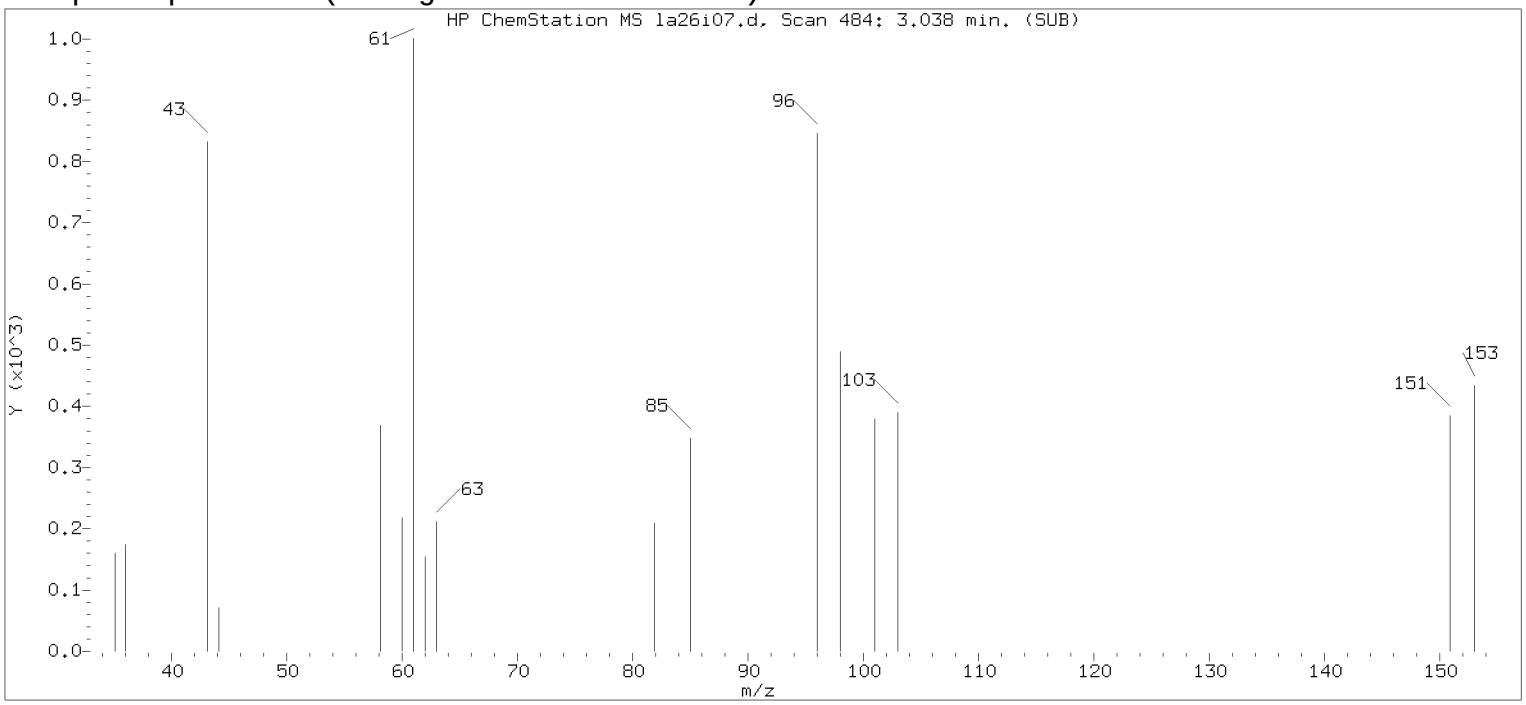
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area (flag) : 1287M
On-Column Amount (ng) : 1.7722
Integration start scan : 458 Integration stop scan: 522
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

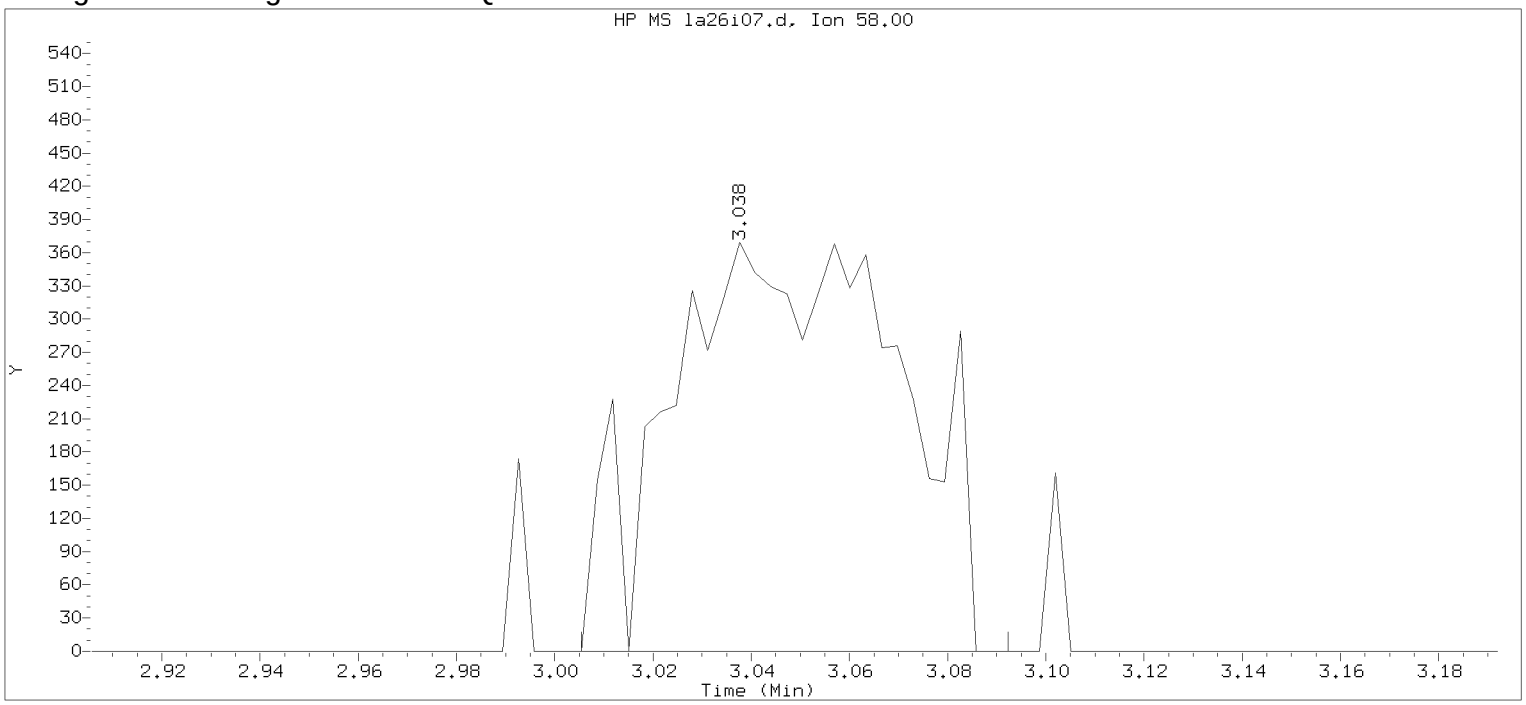
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area : 1222
On-column Amount (ng) : 1.7234
Integration start scan : 473 Integration stop scan: 500
Y at integration start : 0 Y at integration end: 0

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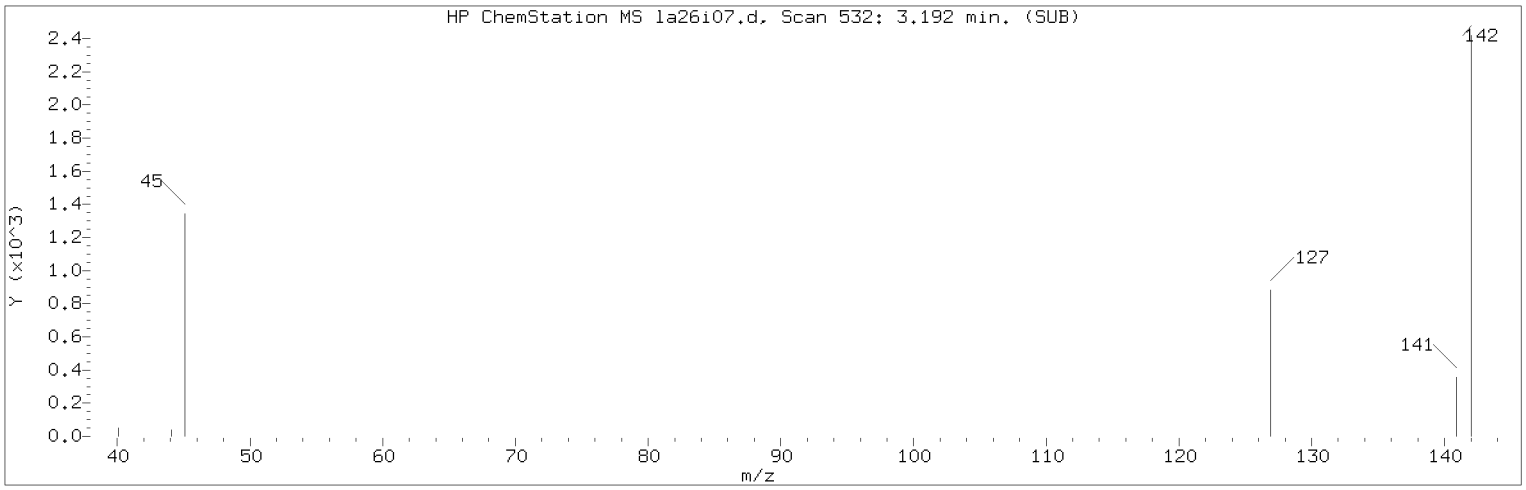
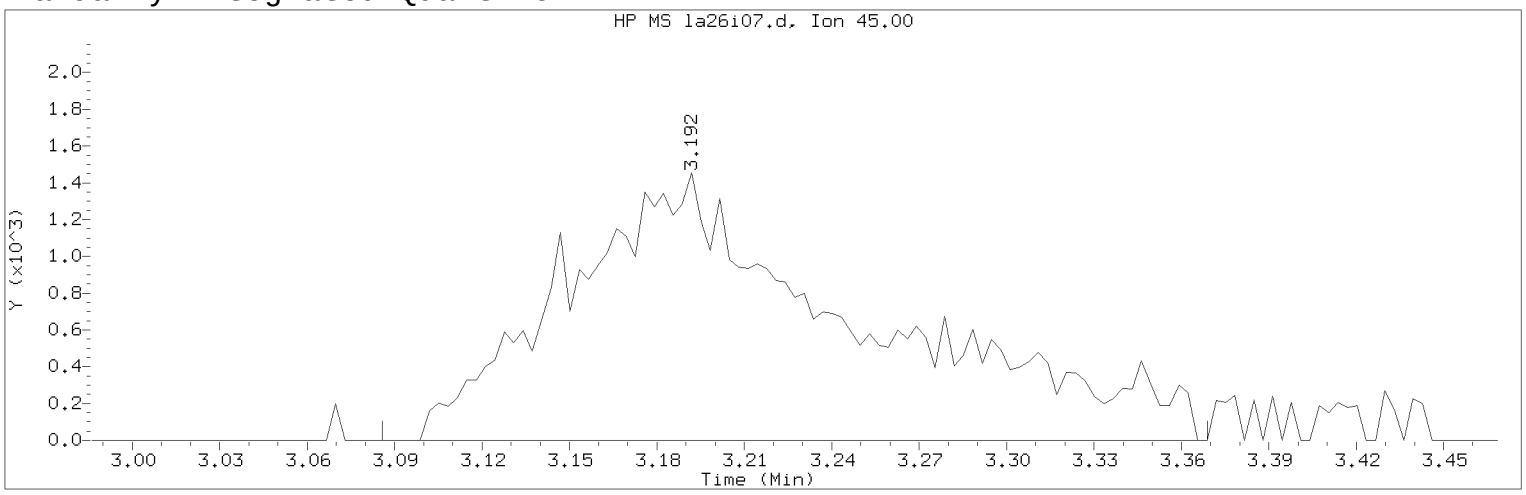
Target 3.5 esignature user KAS02648 Page 250 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

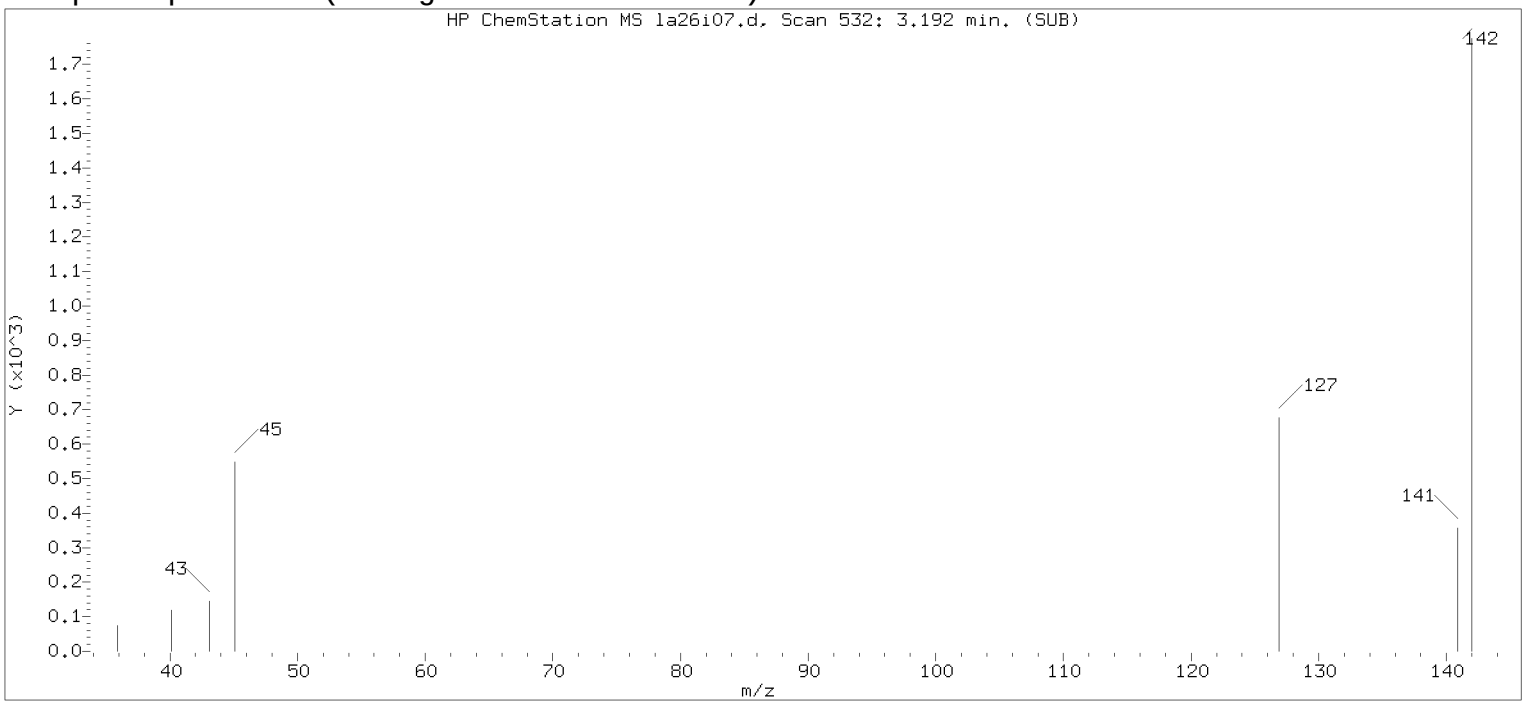
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 532
Retention Time (minutes): 3.192
Quant Ion : 45.00
Area (flag) : 10109M
On-Column Amount (ng) : 20.9983
Integration start scan : 498 Integration stop scan: 586
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

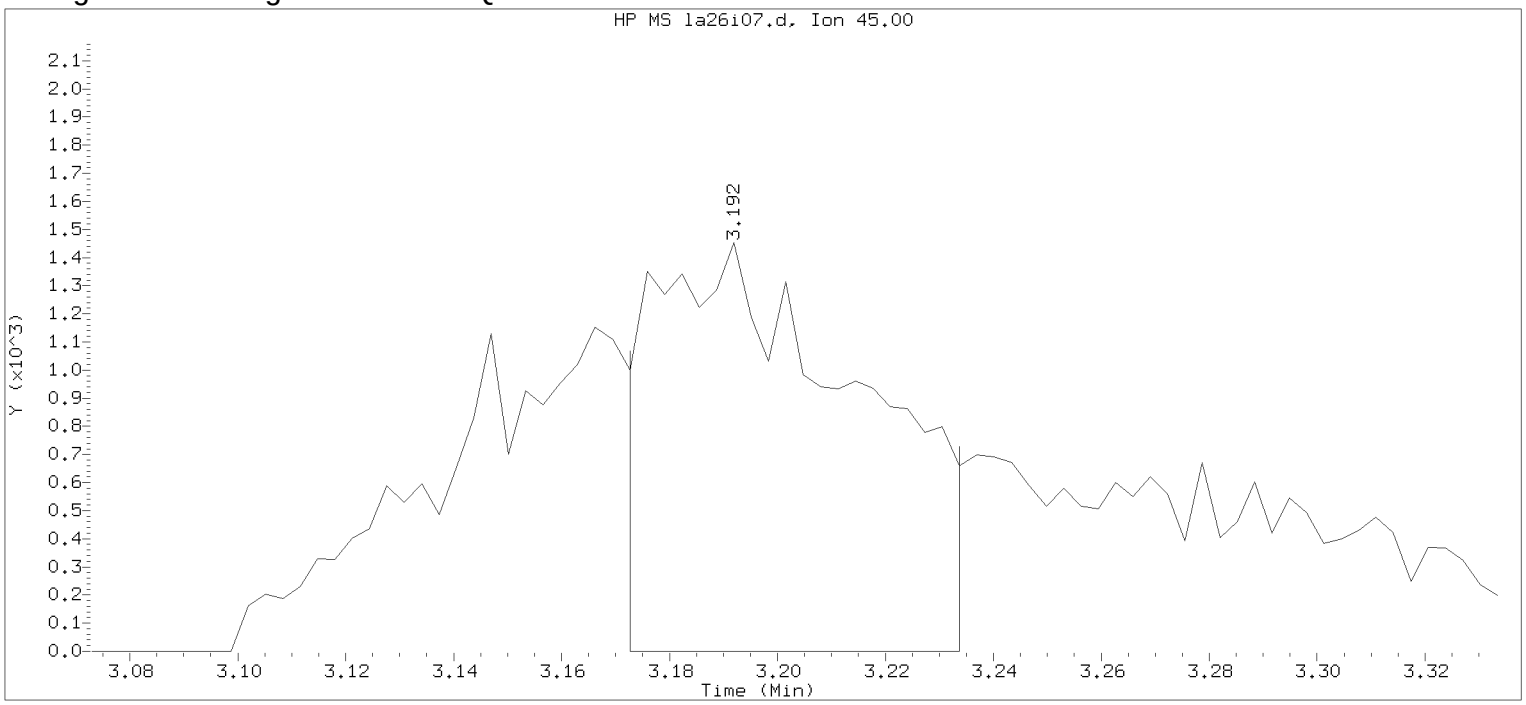
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

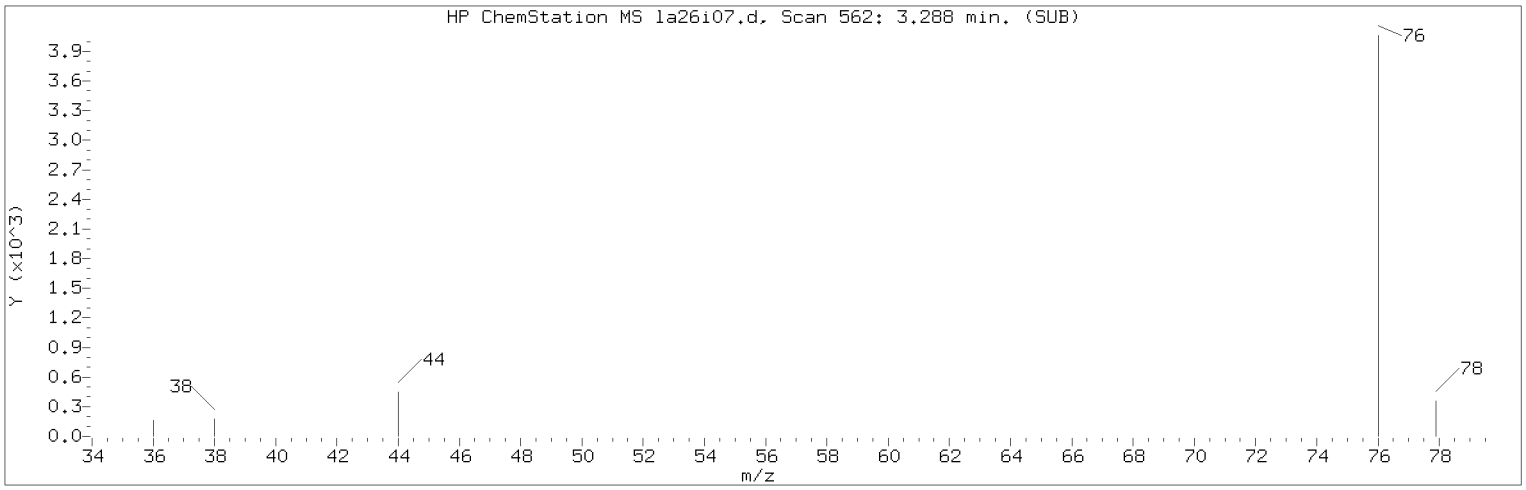
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

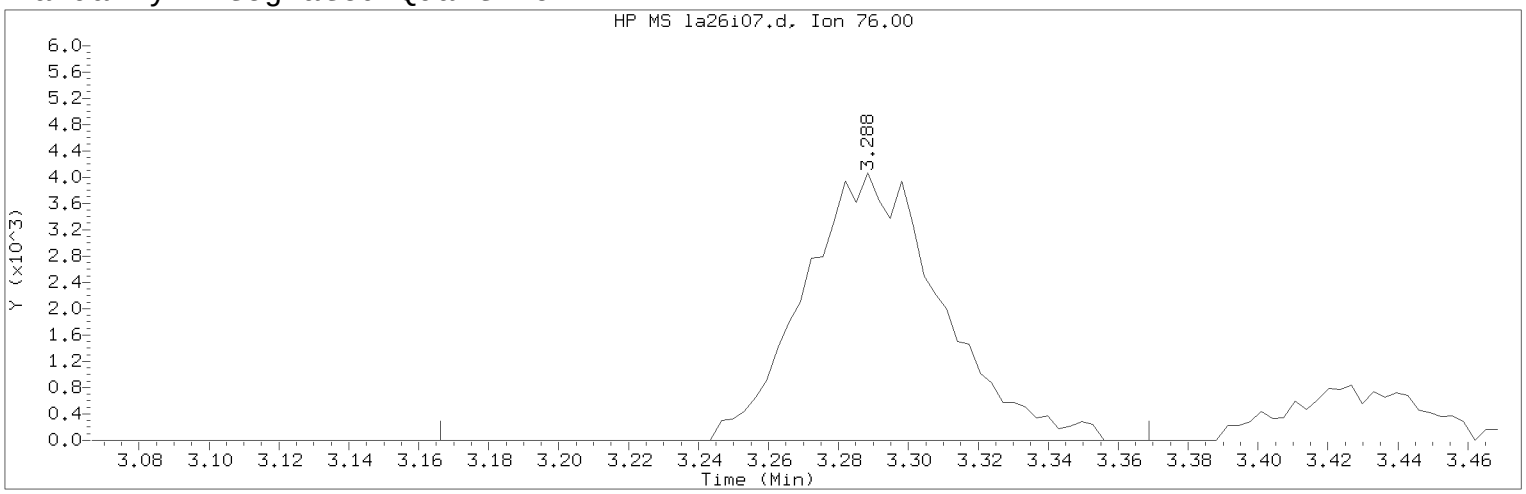
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 532
Retention Time (minutes): 3.192
Quant Ion : 45.00
Area : 3925
On-column Amount (ng) : 9.1397
Integration start scan : 525 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

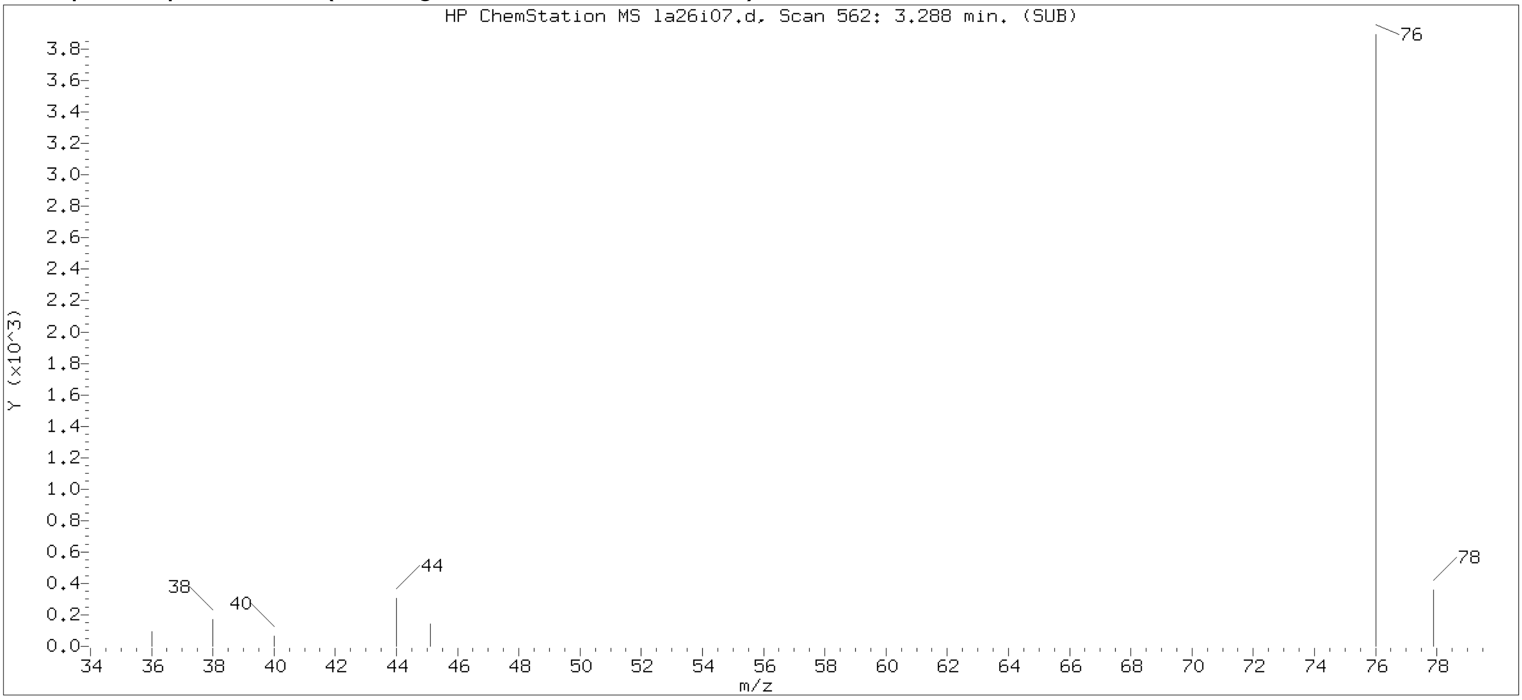
Compound Number : 23
Compound Name : Carbon Disulfide
Scan Number : 562
Retention Time (minutes): 3.288
Quant Ion : 76.00
Area (flag) : 11098M
On-Column Amount (ng) : 0.9080
Integration start scan : 523 Integration stop scan: 586
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

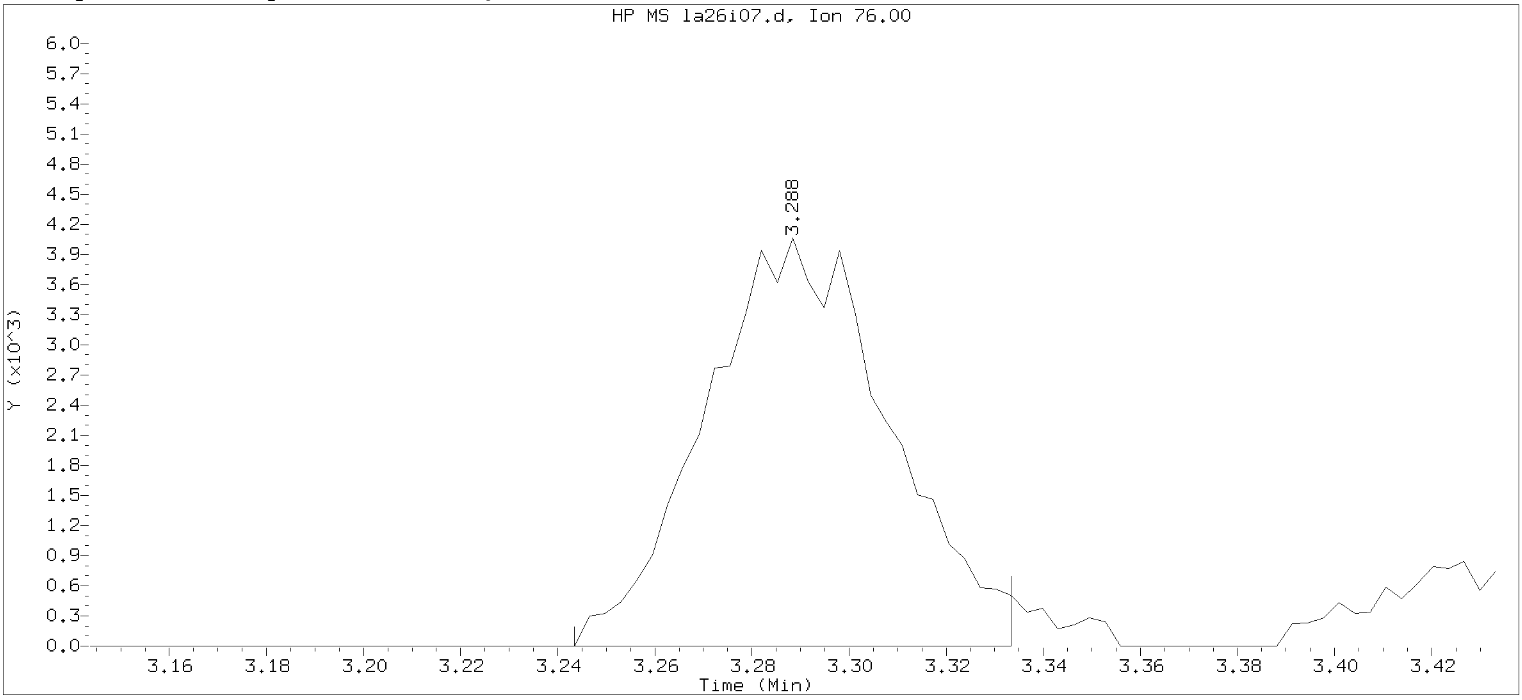
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

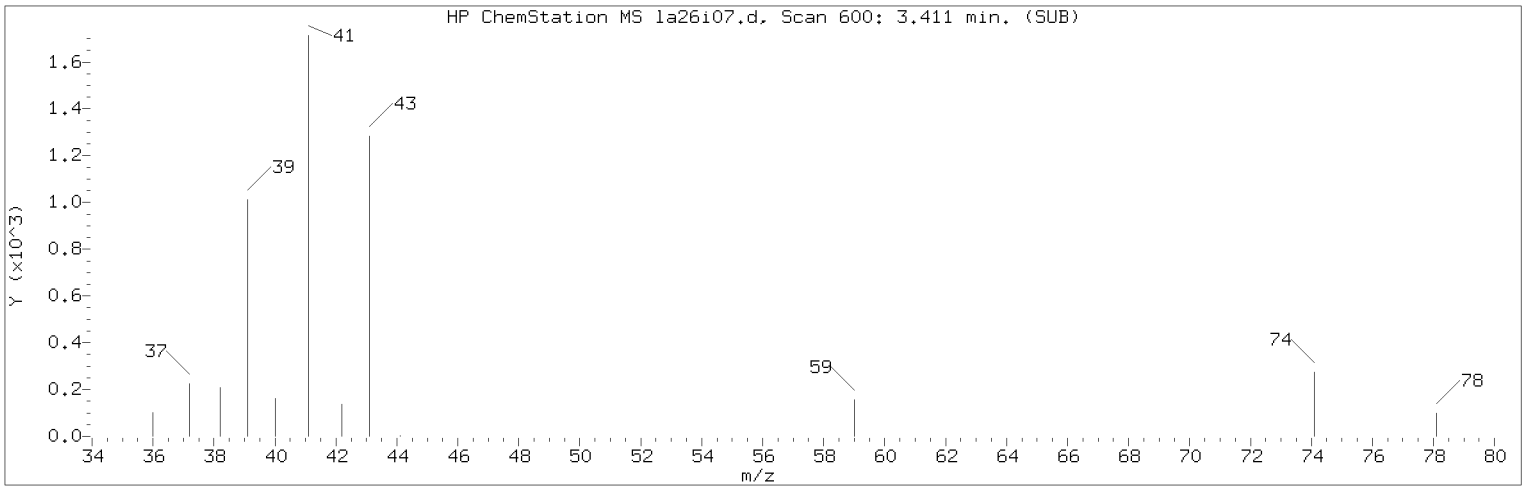
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

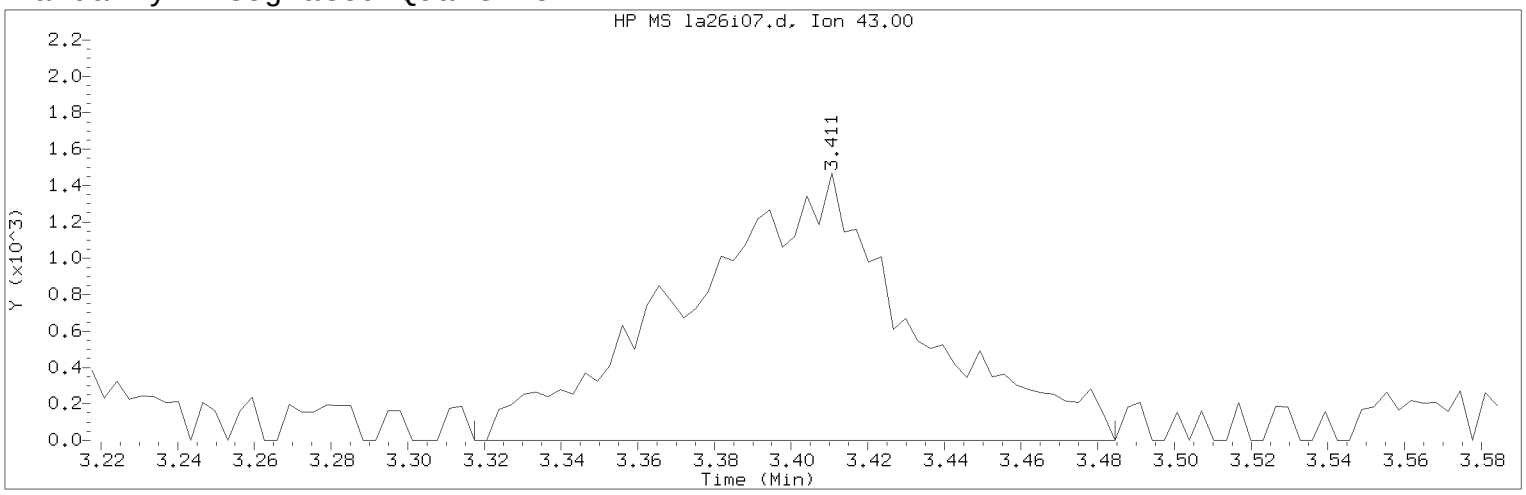
Compound Number : 23
Compound Name : Carbon Disulfide
Scan Number : 562
Retention Time (minutes): 3.288
Quant Ion : 76.00
Area : 10736
On-column Amount (ng) : 0.8822
Integration start scan : 547 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

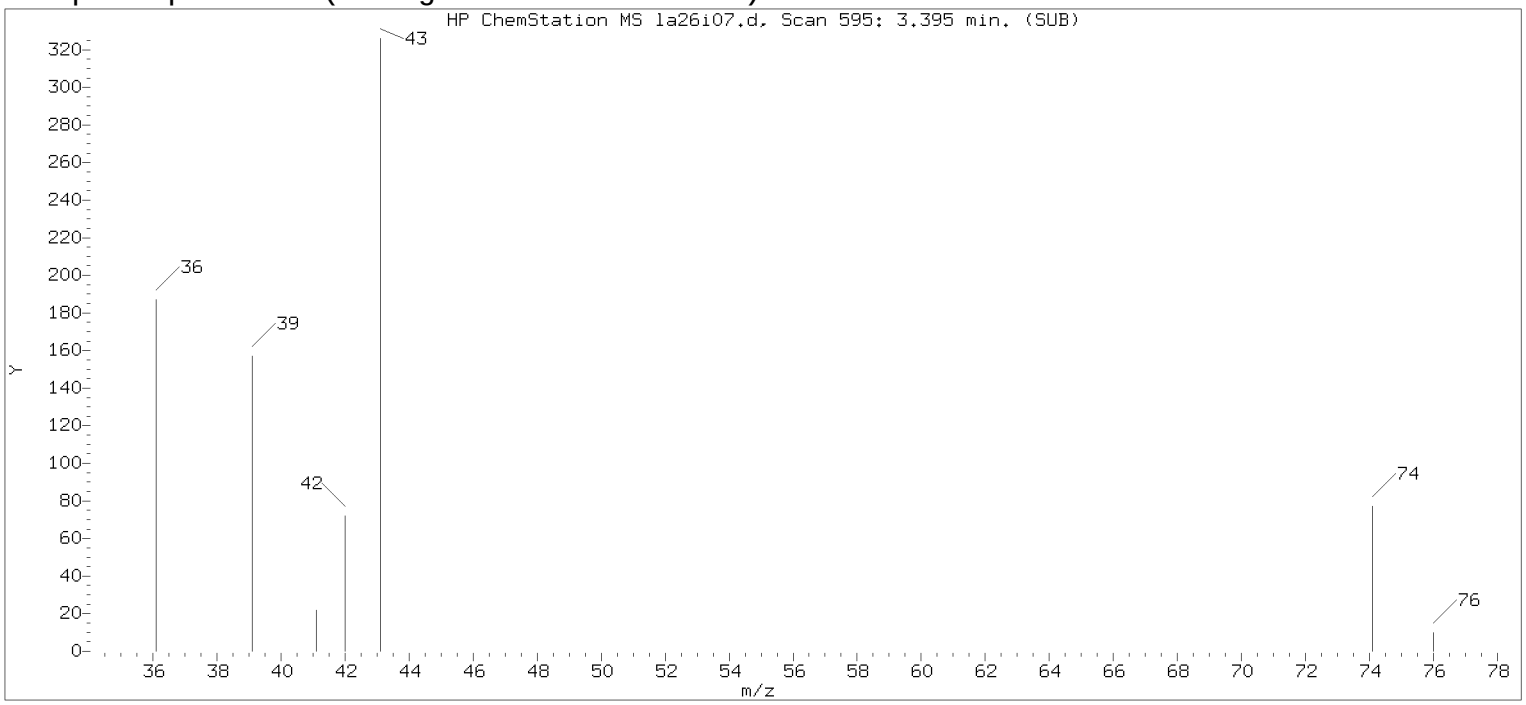
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 600
Retention Time (minutes): 3.411
Quant Ion : 43.00
Area (flag) : 6031M
On-Column Amount (ng) : 1.1064
Integration start scan : 570 Integration stop scan: 622
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

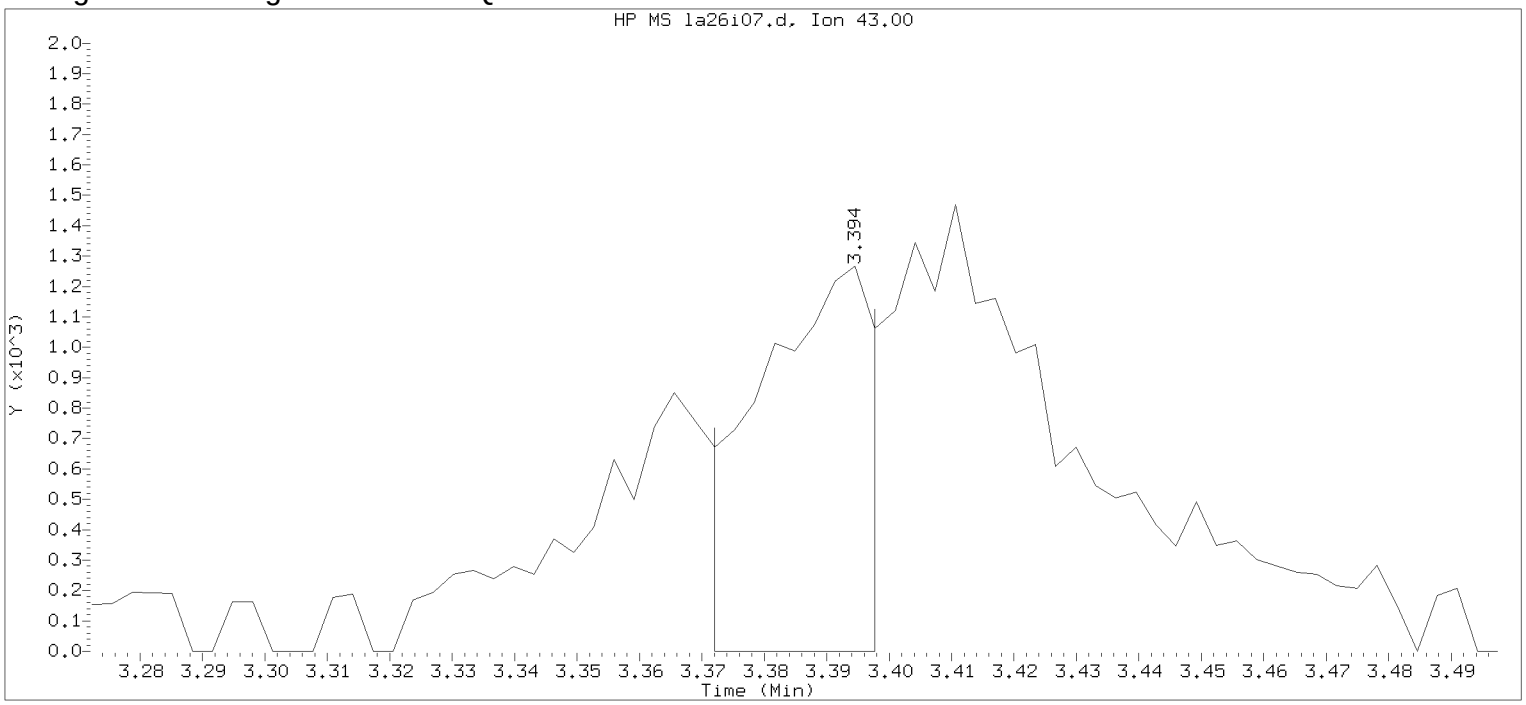
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 595
Retention Time (minutes): 3.394
Quant Ion : 43.00
Area : 1538
On-column Amount (ng) : 0.3199
Integration start scan : 587 Integration stop scan: 595
Y at integration start : 0 Y at integration end: 0

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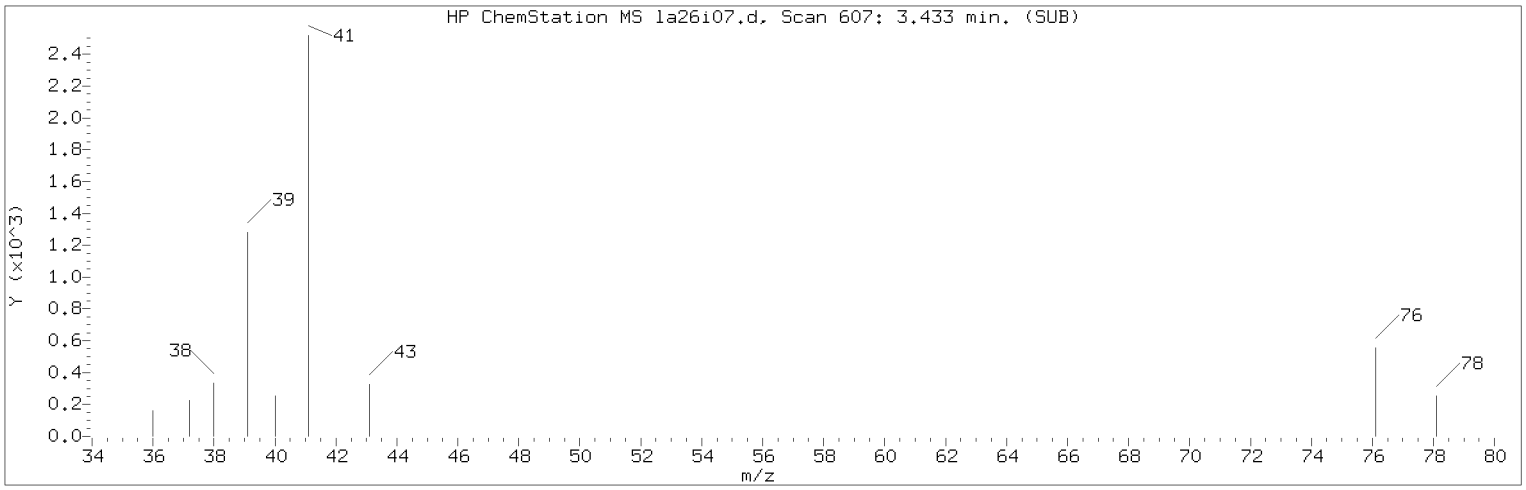
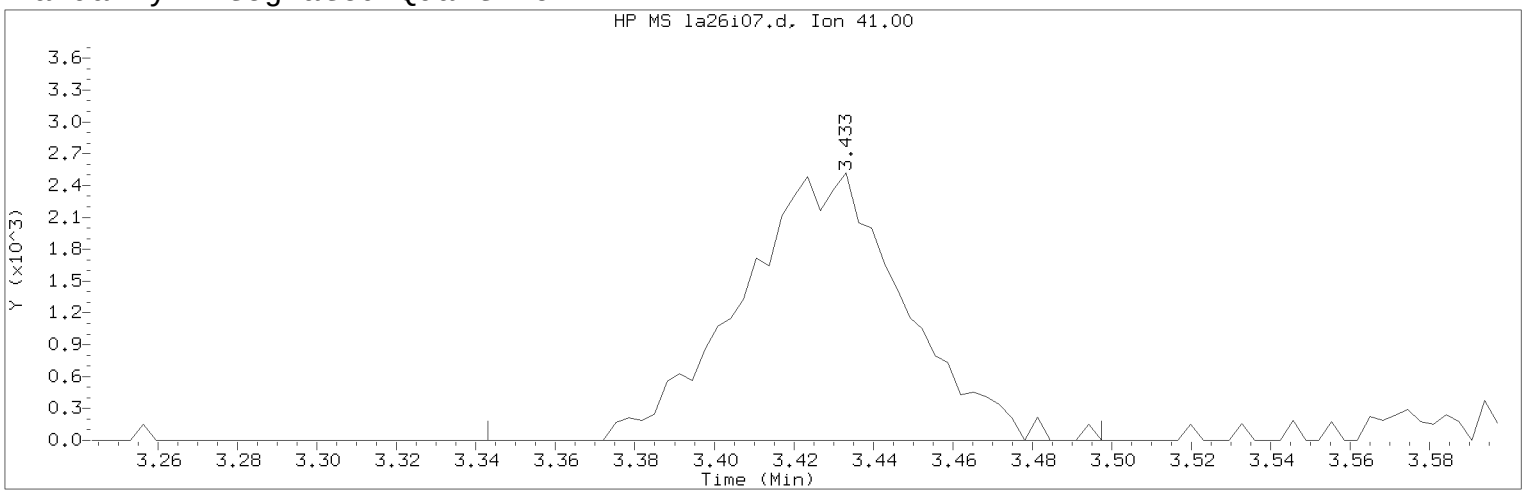
Target 3.5 esignature userKAS02648 Page 258 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

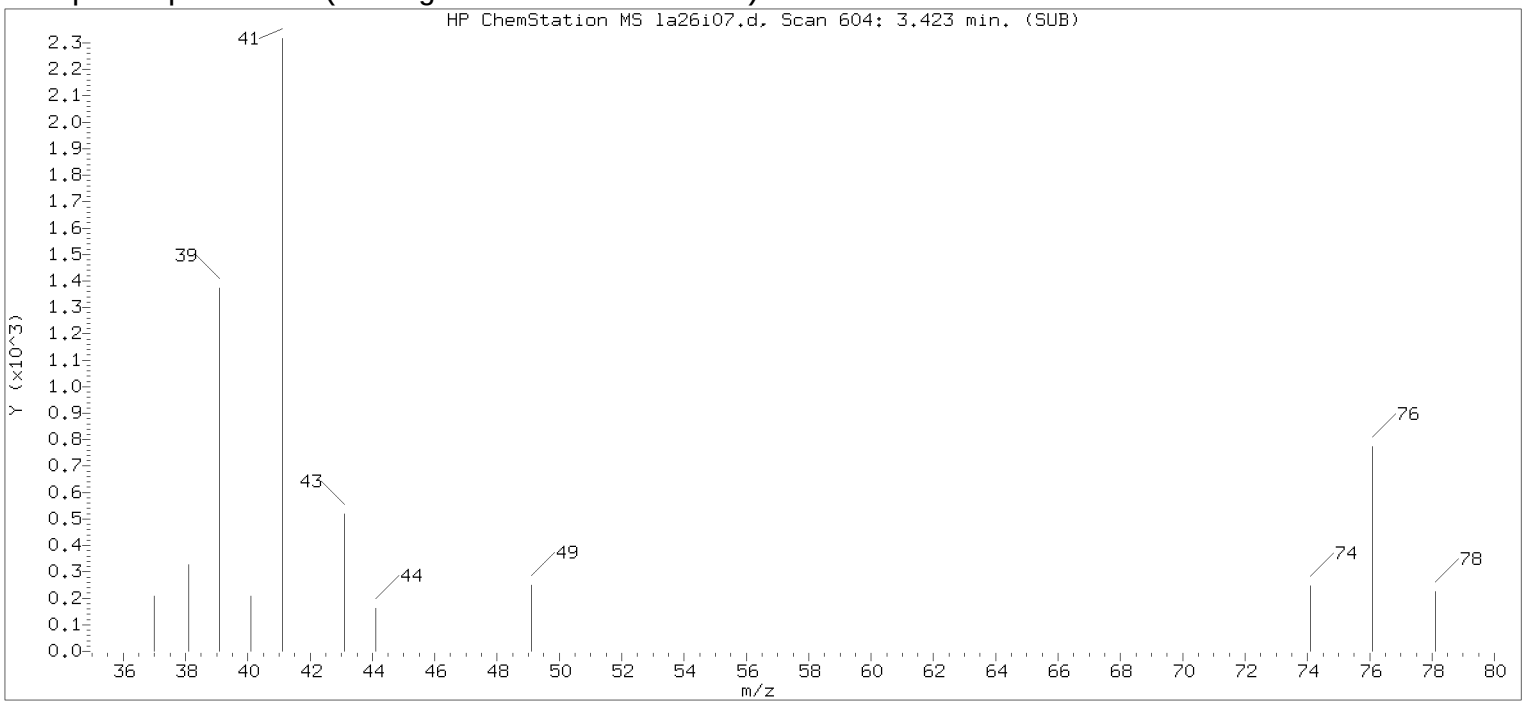
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 607
Retention Time (minutes): 3.433
Quant Ion : 41.00
Area (flag) : 7208M
On-Column Amount (ng) : 0.9581
Integration start scan : 578 Integration stop scan: 626
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

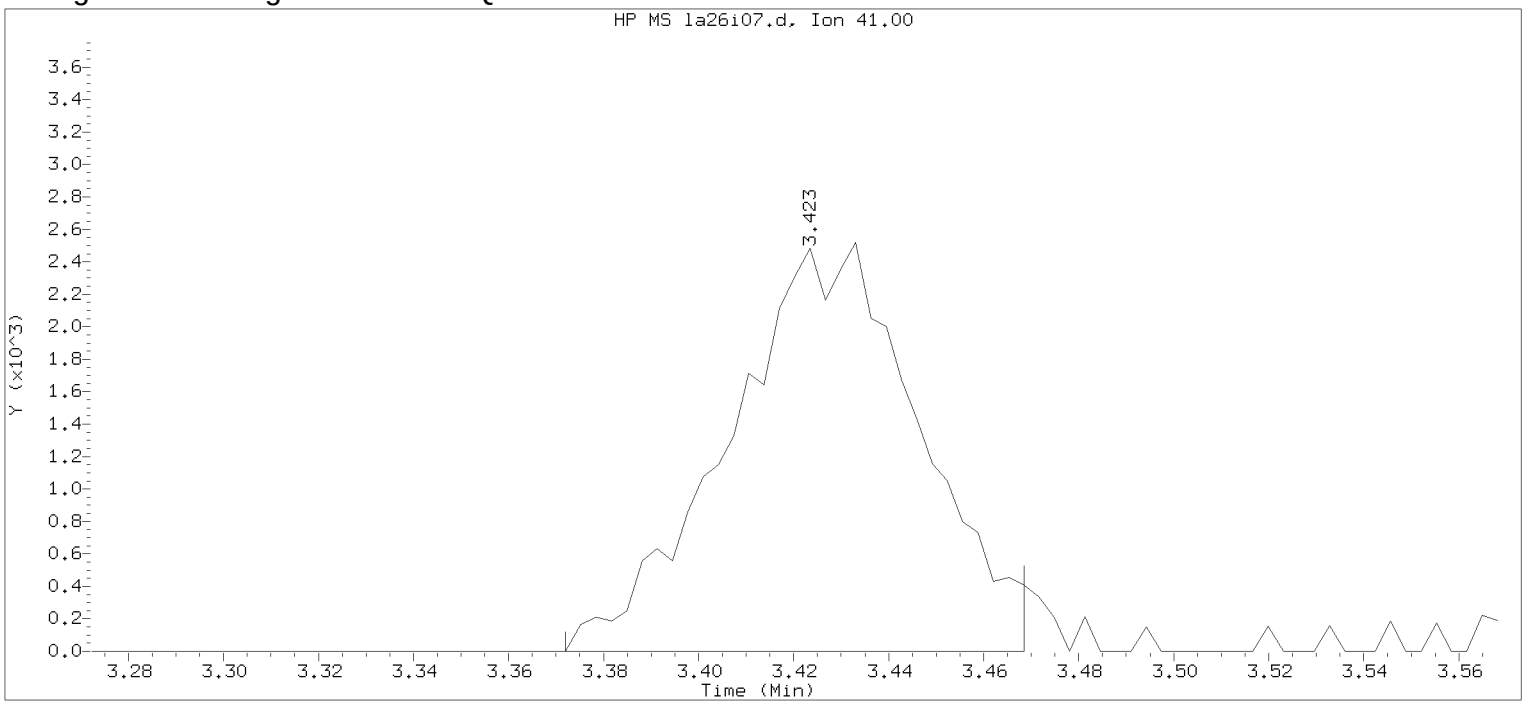
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 604
Retention Time (minutes): 3.423
Quant Ion : 41.00
Area : 6993
On-column Amount (ng) : 0.9334
Integration start scan : 587 Integration stop scan: 617
Y at integration start : 0 Y at integration end: 0

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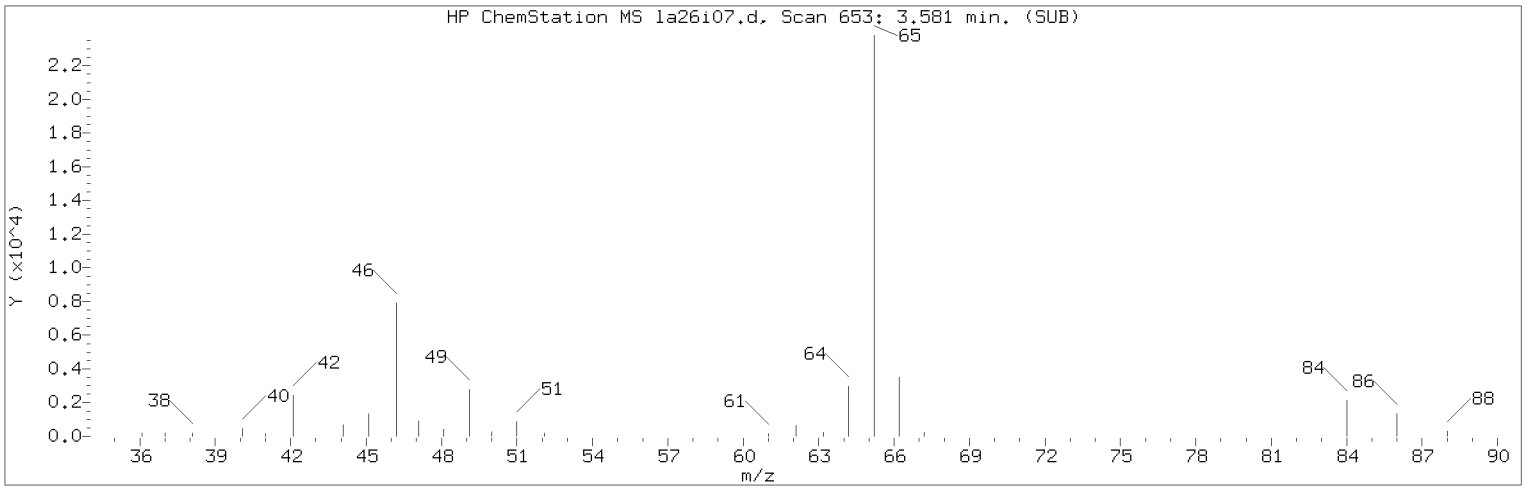
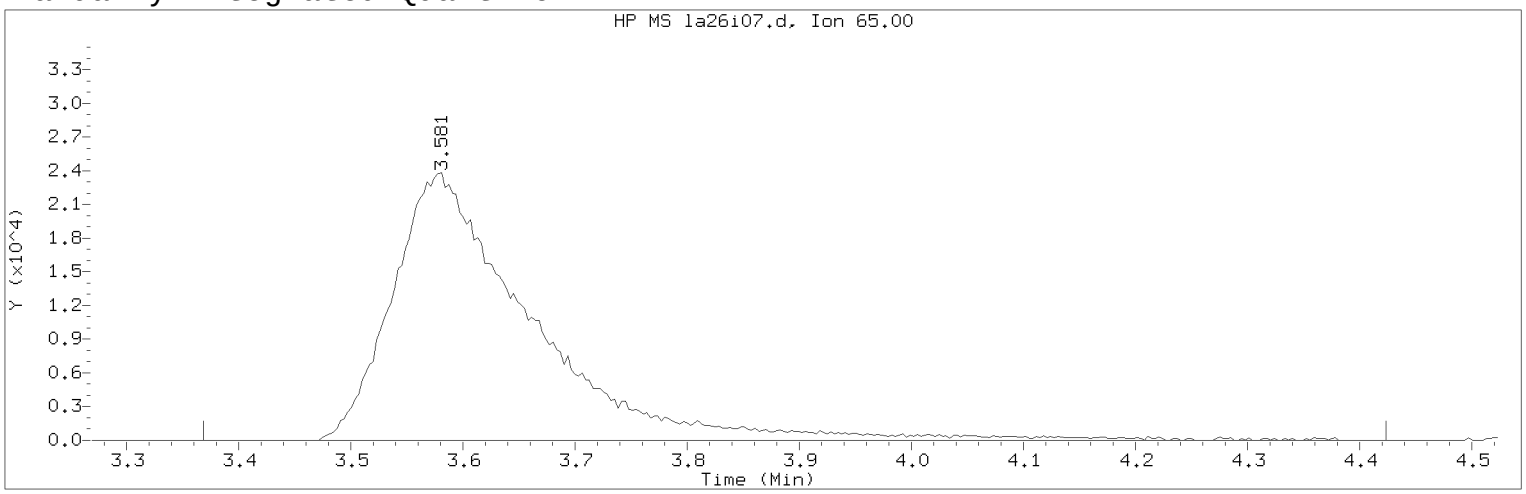
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

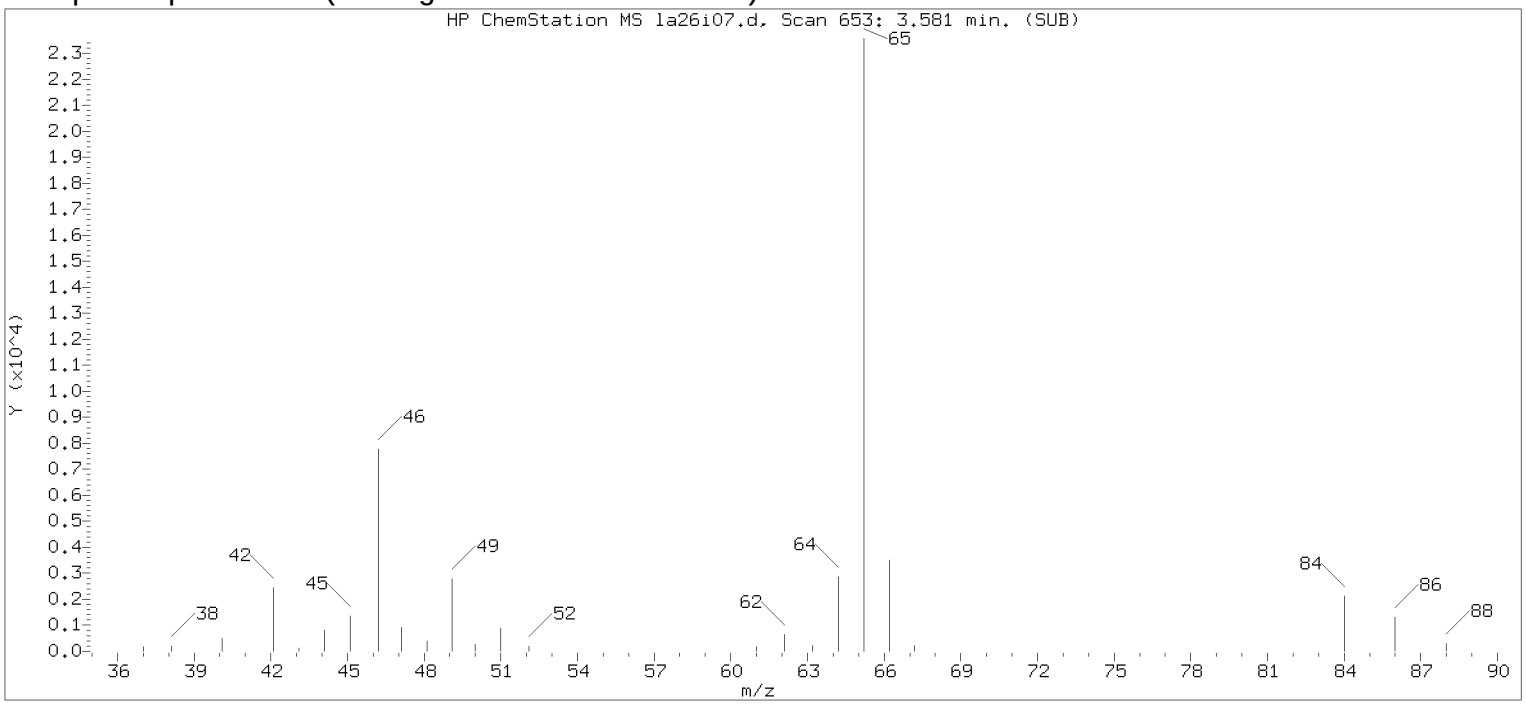
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 204400M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 914
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

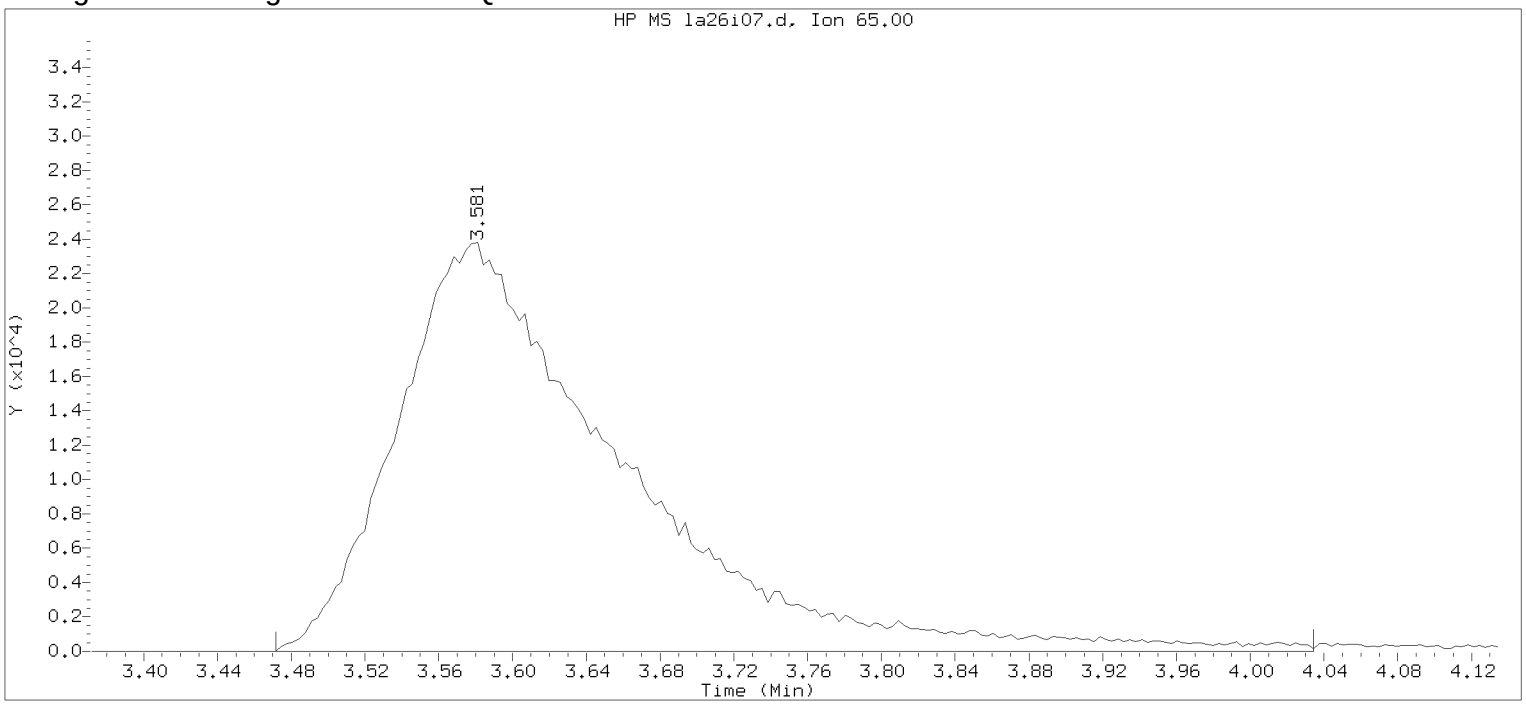
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

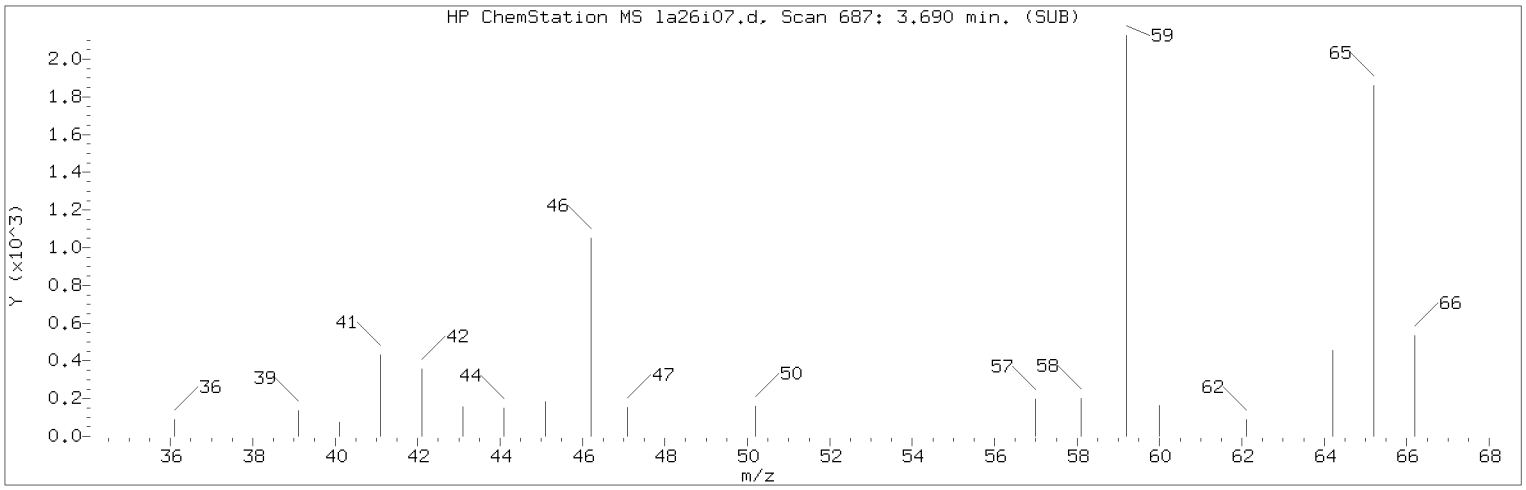
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

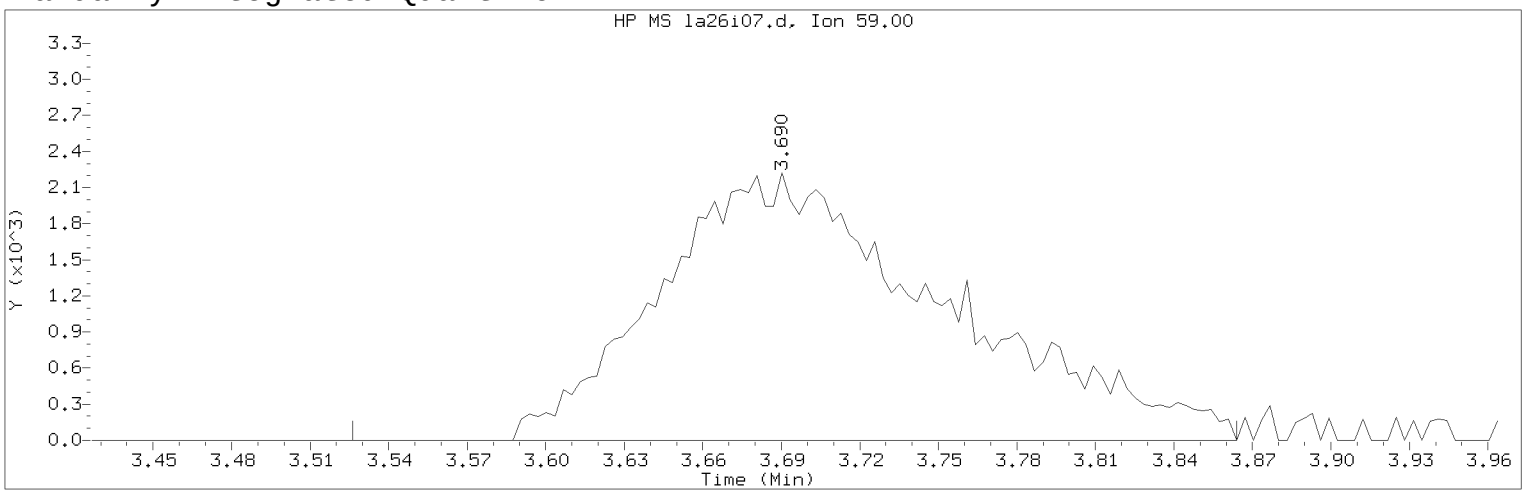
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 200515
On-column Amount (ng) : 250.0000
Integration start scan : 618 Integration stop scan: 793
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 240 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

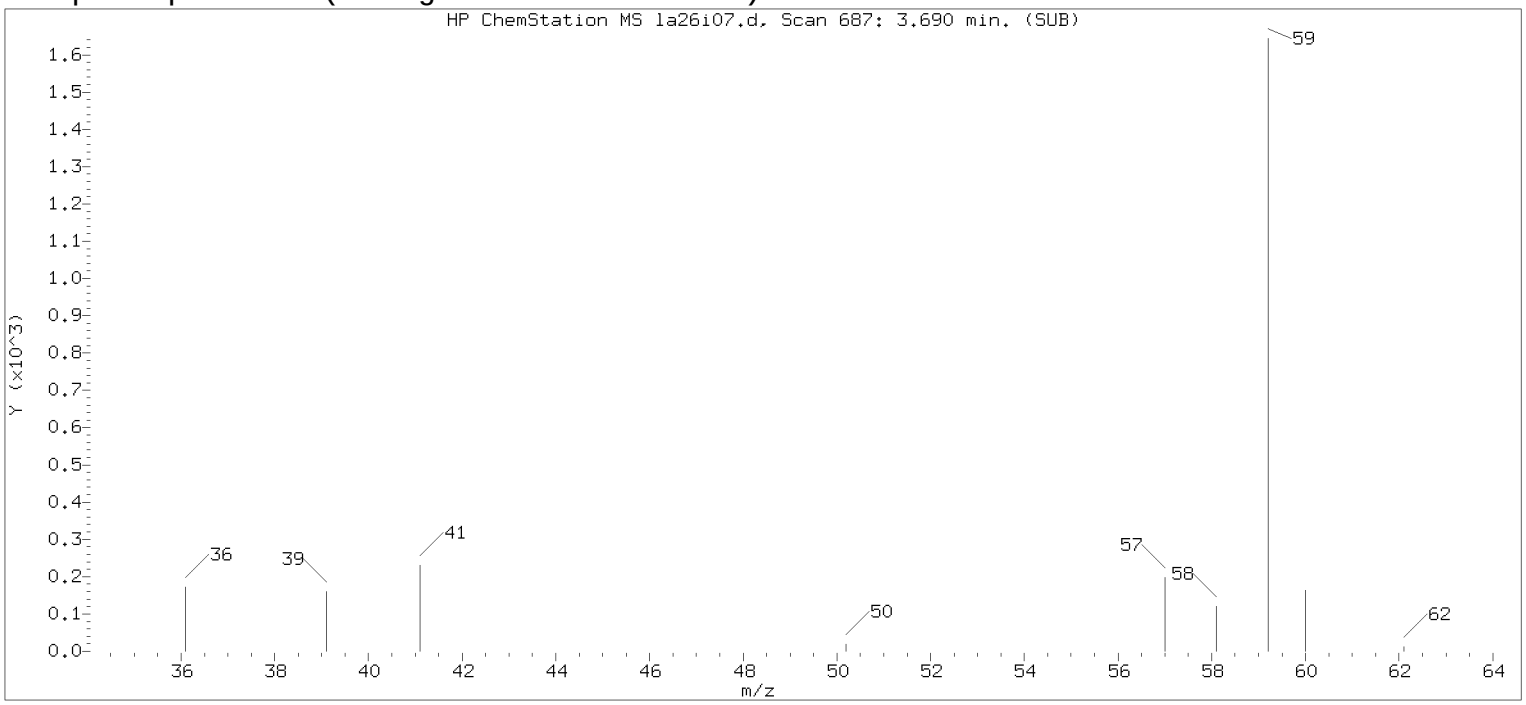
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 687
Retention Time (minutes): 3.690
Quant Ion : 59.00
Area (flag) : 16799M
On-Column Amount (ng) : 21.2415
Integration start scan : 635 Integration stop scan: 740
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

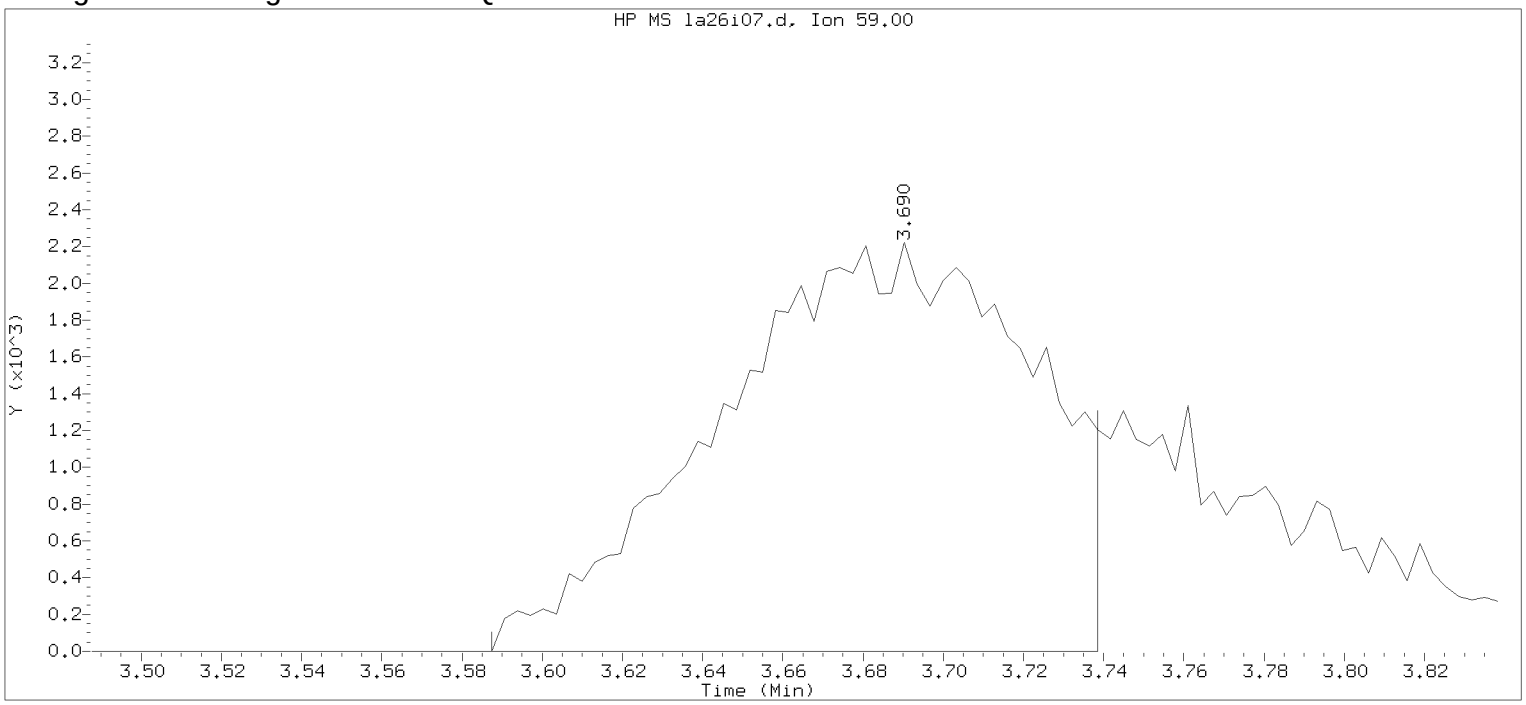
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

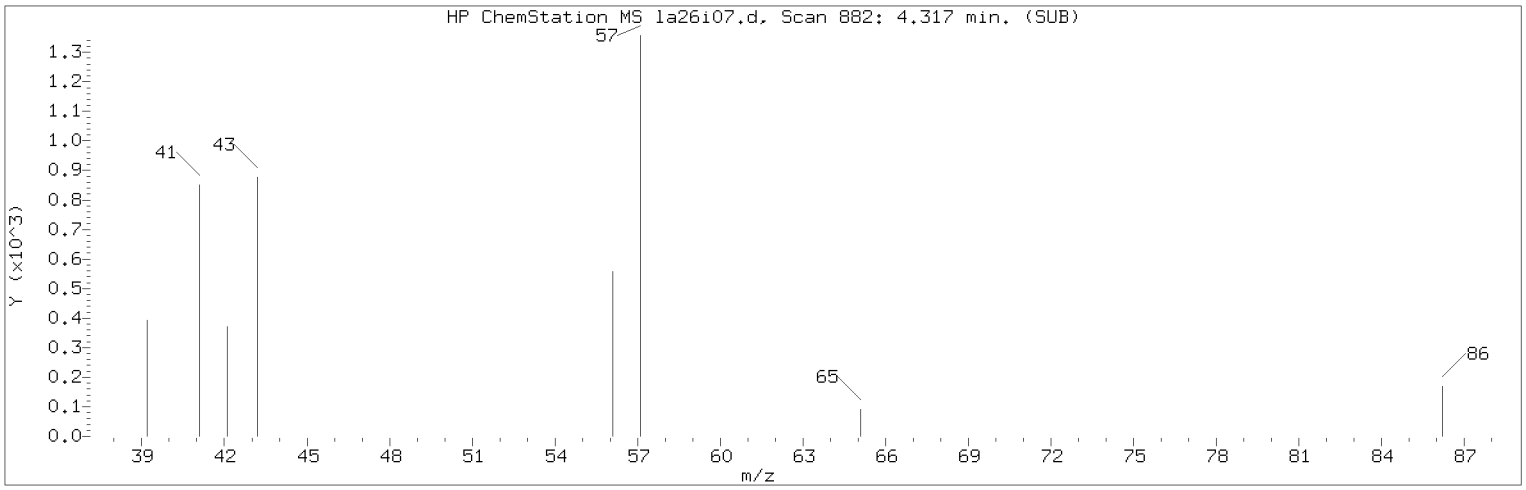
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

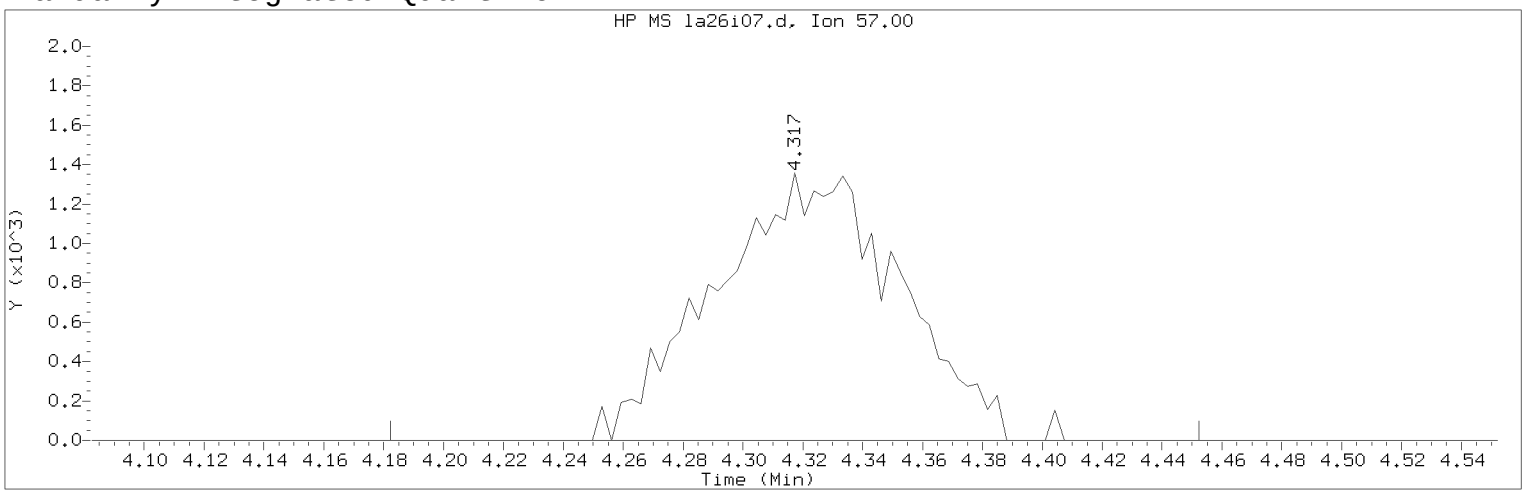
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 687
Retention Time (minutes): 3.690
Quant Ion : 59.00
Area : 12039
On-column Amount (ng) : 16.1792
Integration start scan : 654 Integration stop scan: 701
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

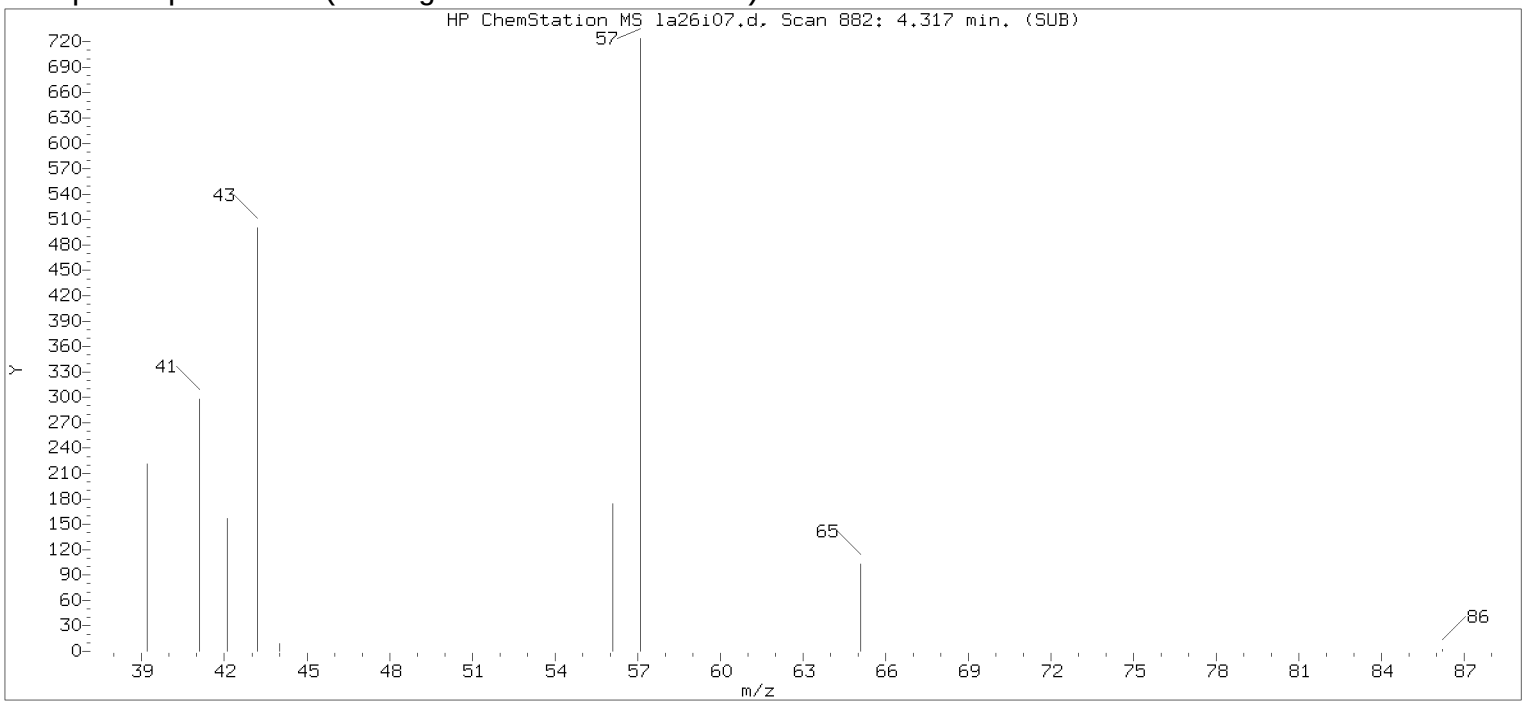
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area (flag) : 5817M
On-Column Amount (ng) : 0.8612
Integration start scan : 839 Integration stop scan: 923
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

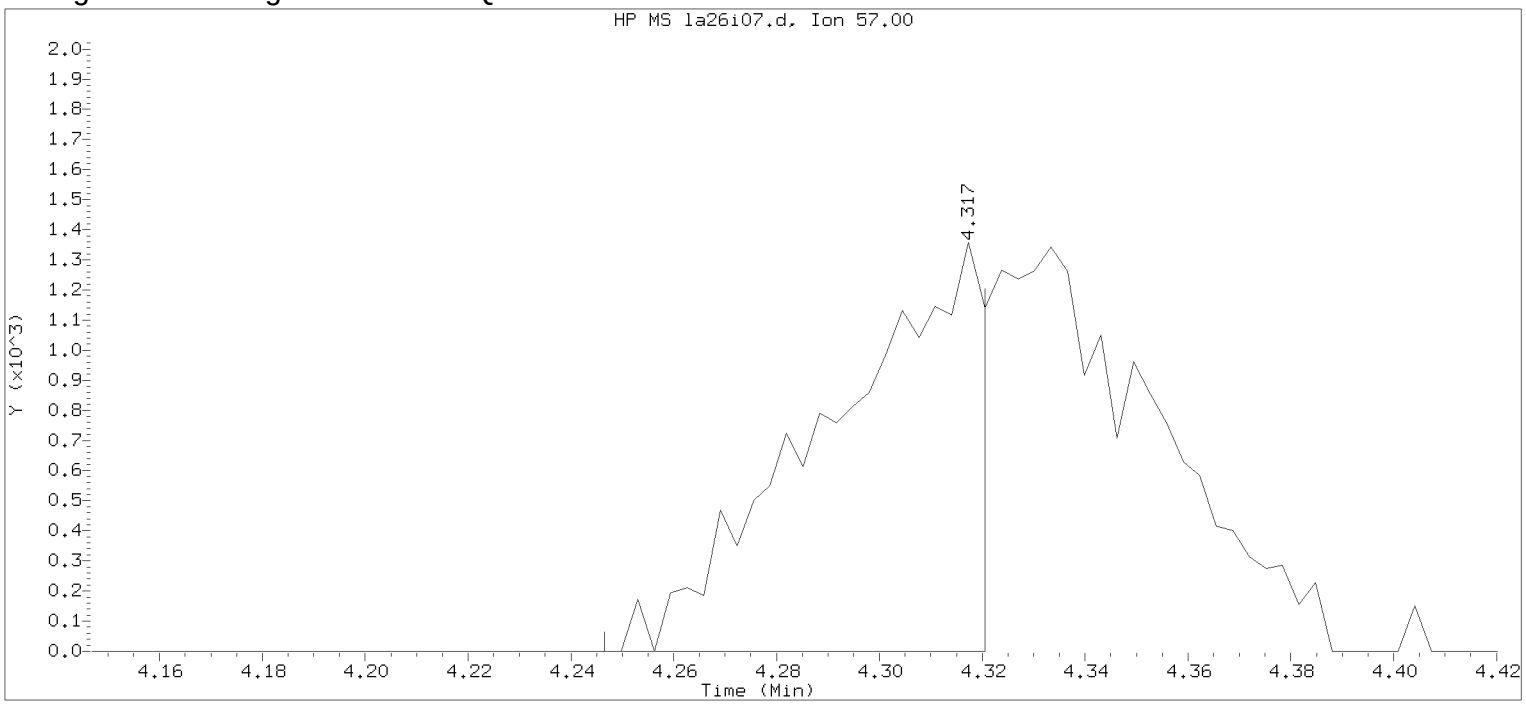
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

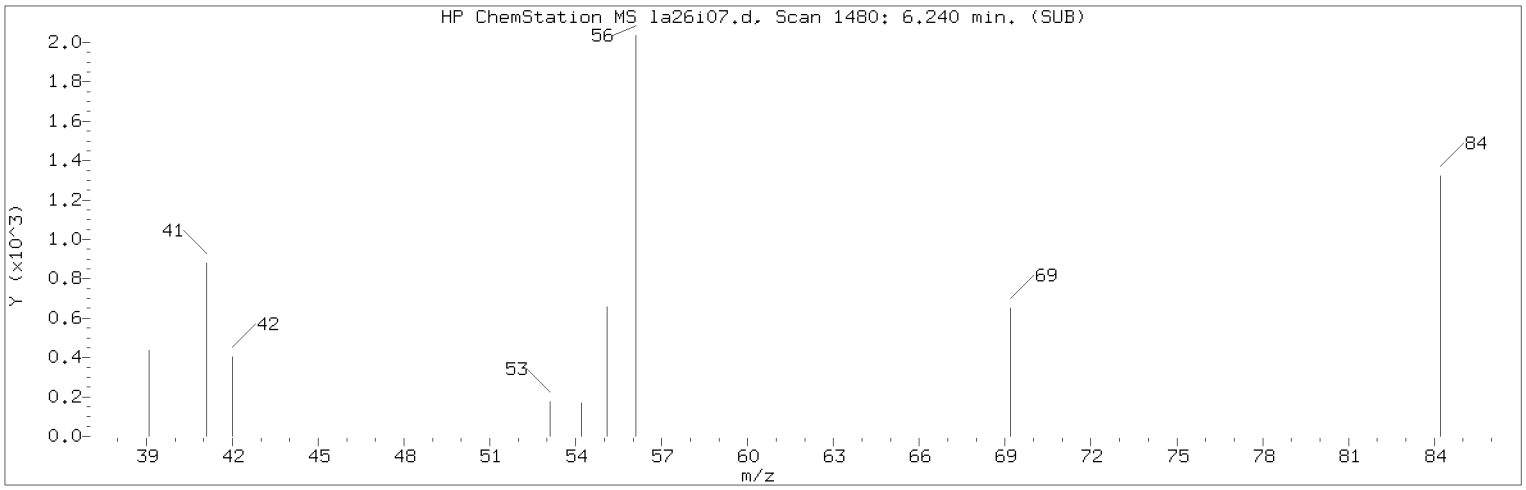
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

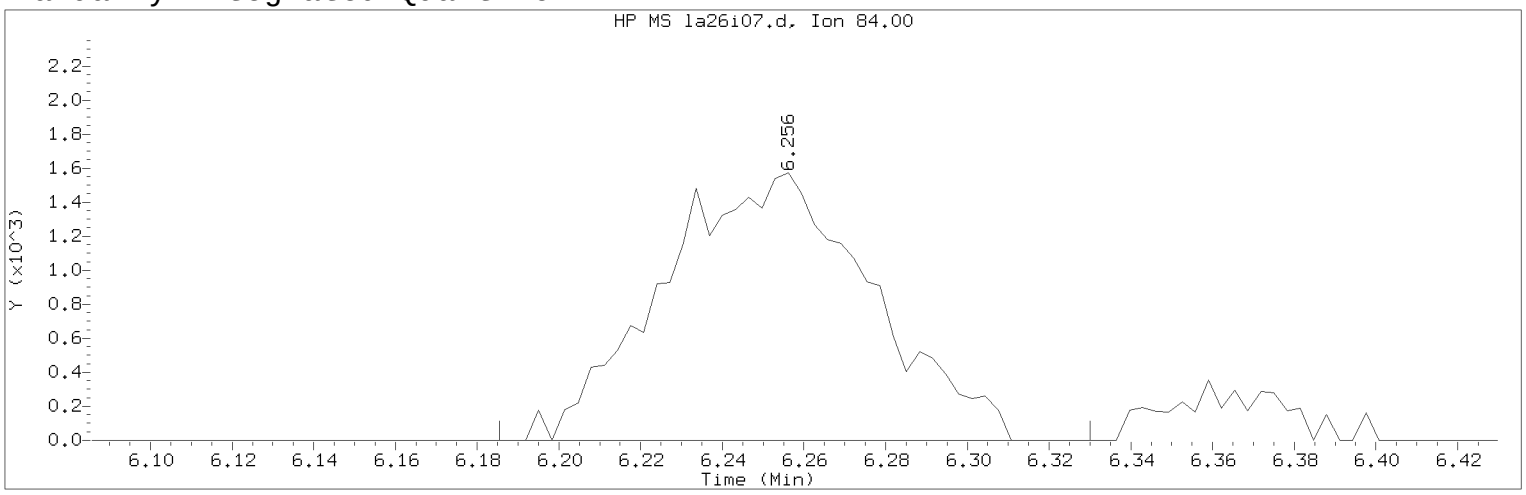
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area : 2803
On-column Amount (ng) : 0.4433
Integration start scan : 859 Integration stop scan: 882
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

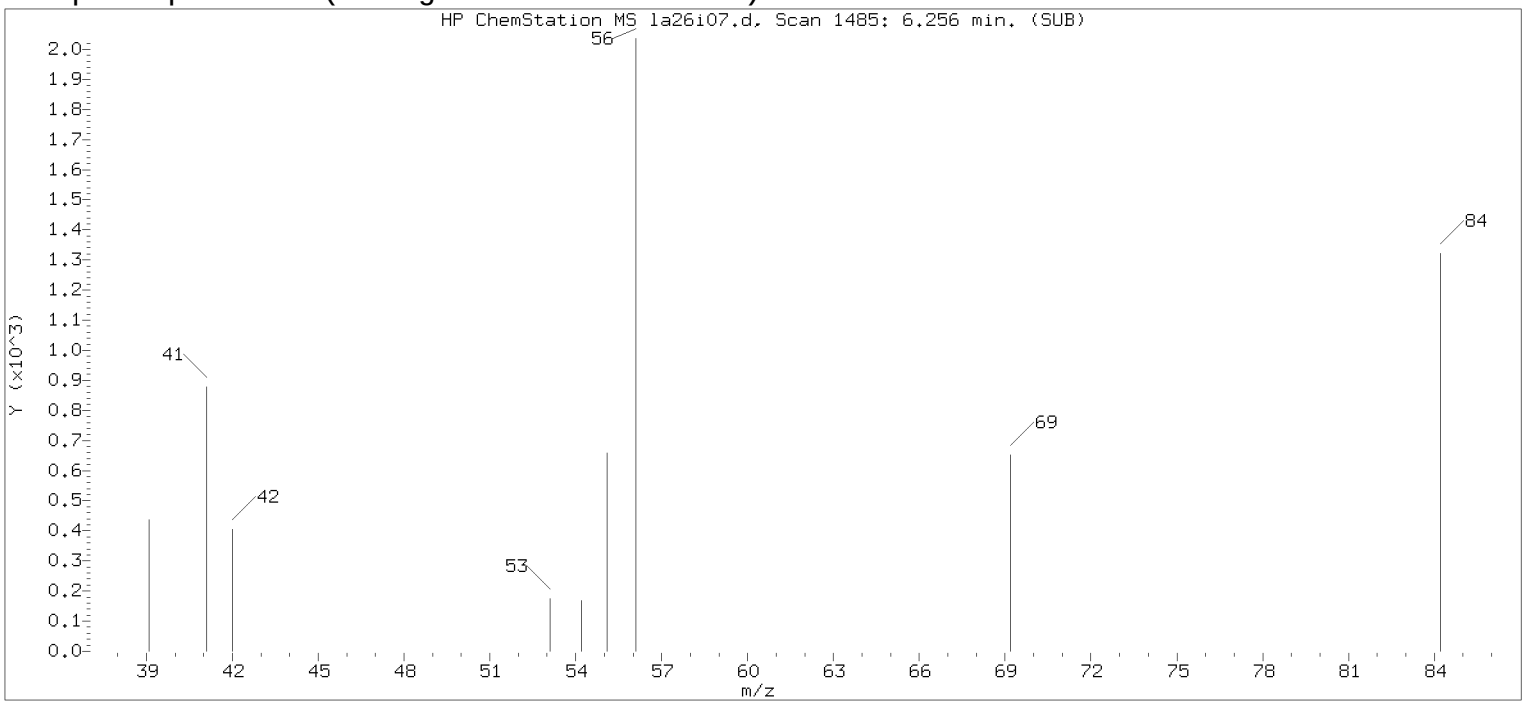
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 1485
Retention Time (minutes): 6.256
Quant Ion : 84.00
Area (flag) : 5572M
On-Column Amount (ng) : 0.8301
Integration start scan : 1462 Integration stop scan: 1507
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

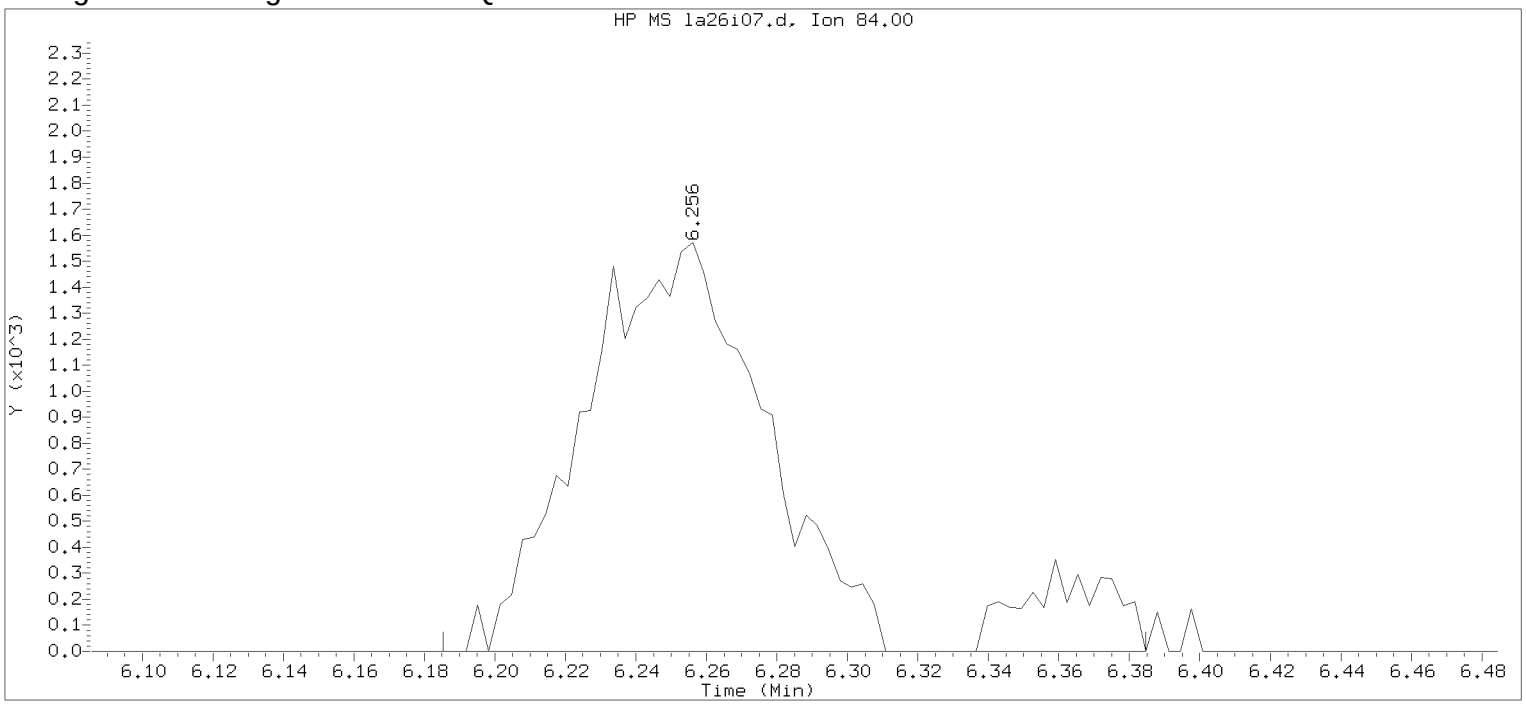
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 1485
Retention Time (minutes): 6.256
Quant Ion : 84.00
Area : 6158
On-column Amount (ng) : 0.9060
Integration start scan : 1462 Integration stop scan: 1524
Y at integration start : 0 Y at integration end: 0

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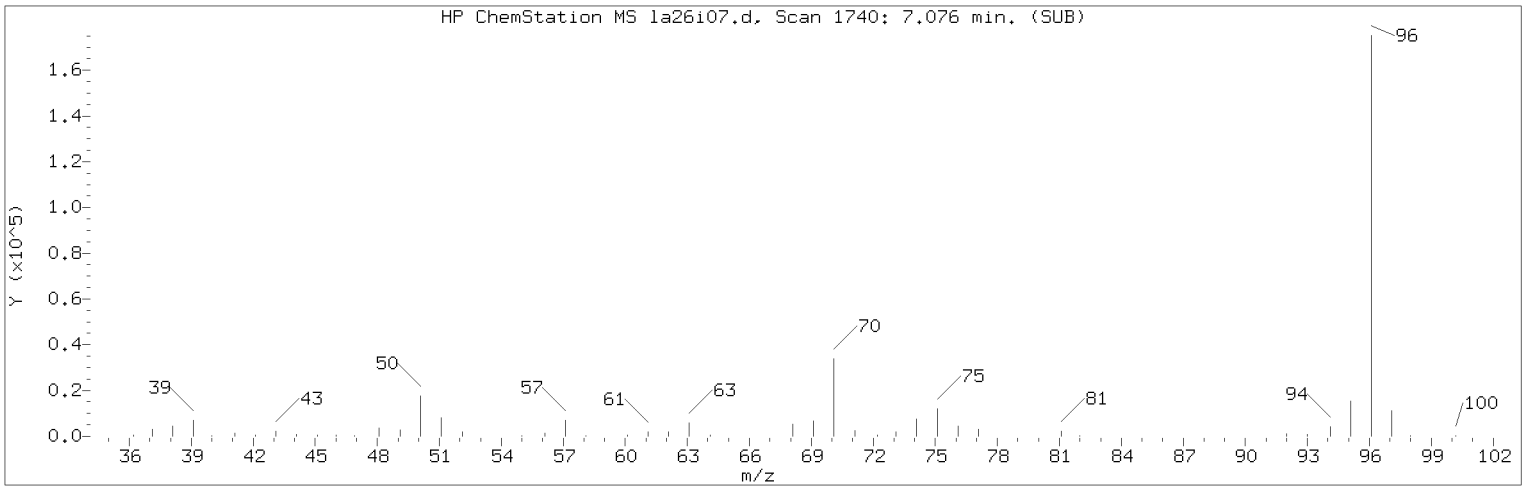
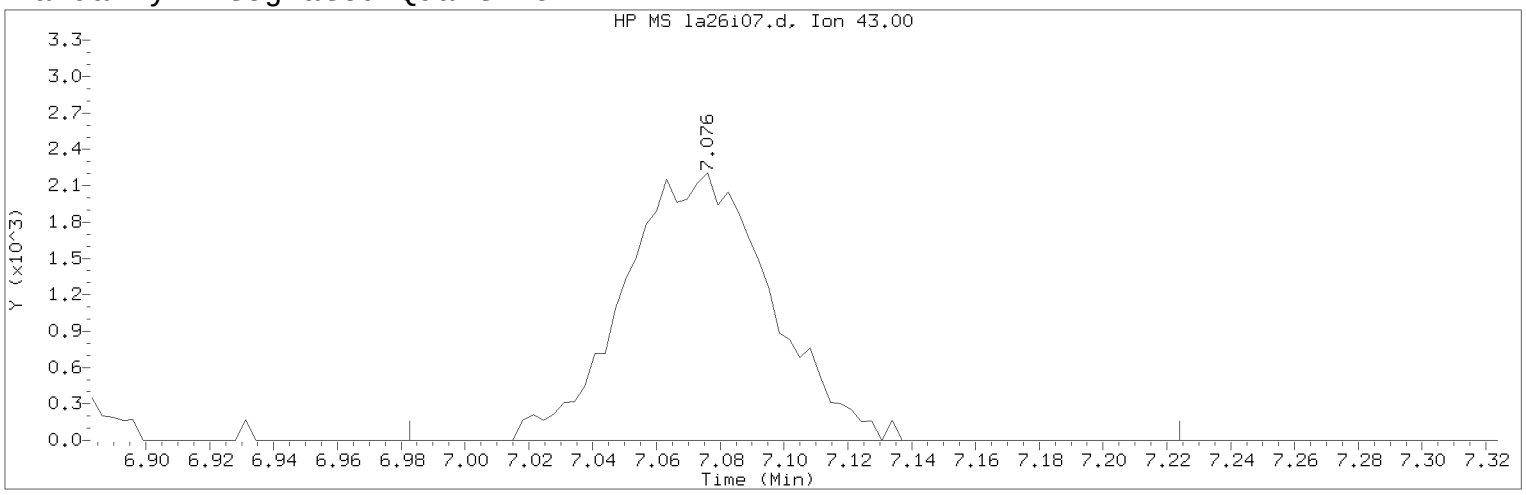
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

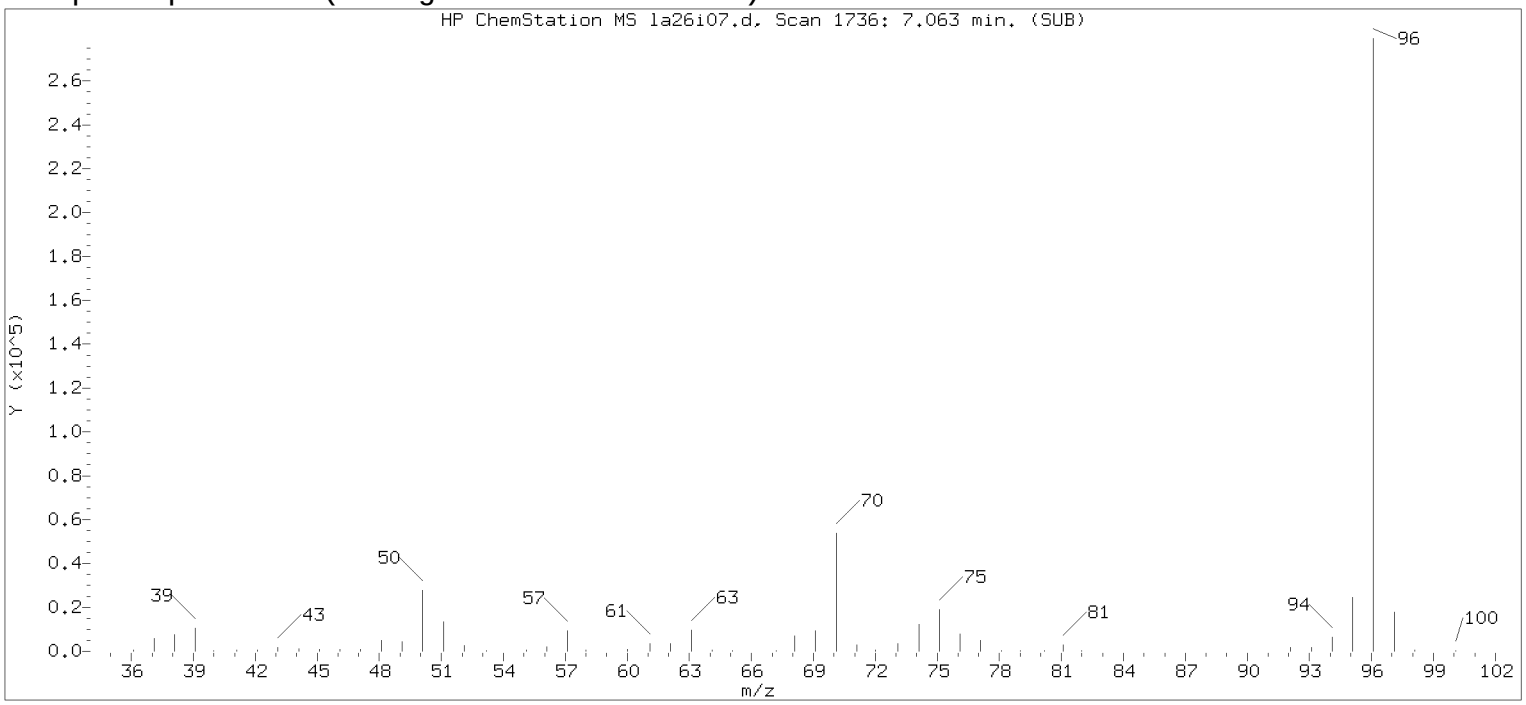
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1740
Retention Time (minutes): 7.076
Quant Ion : 43.00
Area (flag) : 7056M
On-Column Amount (ng) : 0.9330
Integration start scan : 1710 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

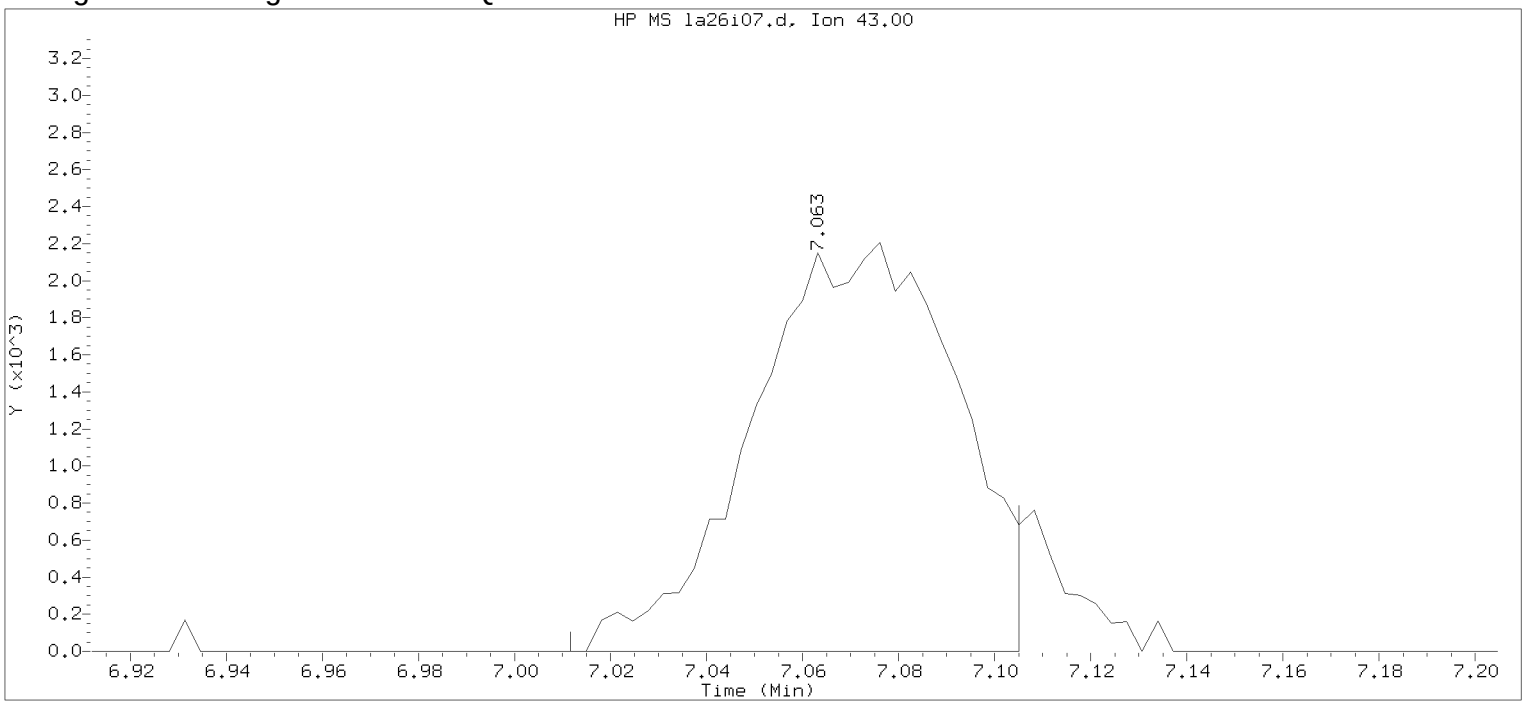
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1736
Retention Time (minutes): 7.063
Quant Ion : 43.00
Area : 6483
On-column Amount (ng) : 0.8667
Integration start scan : 1719 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

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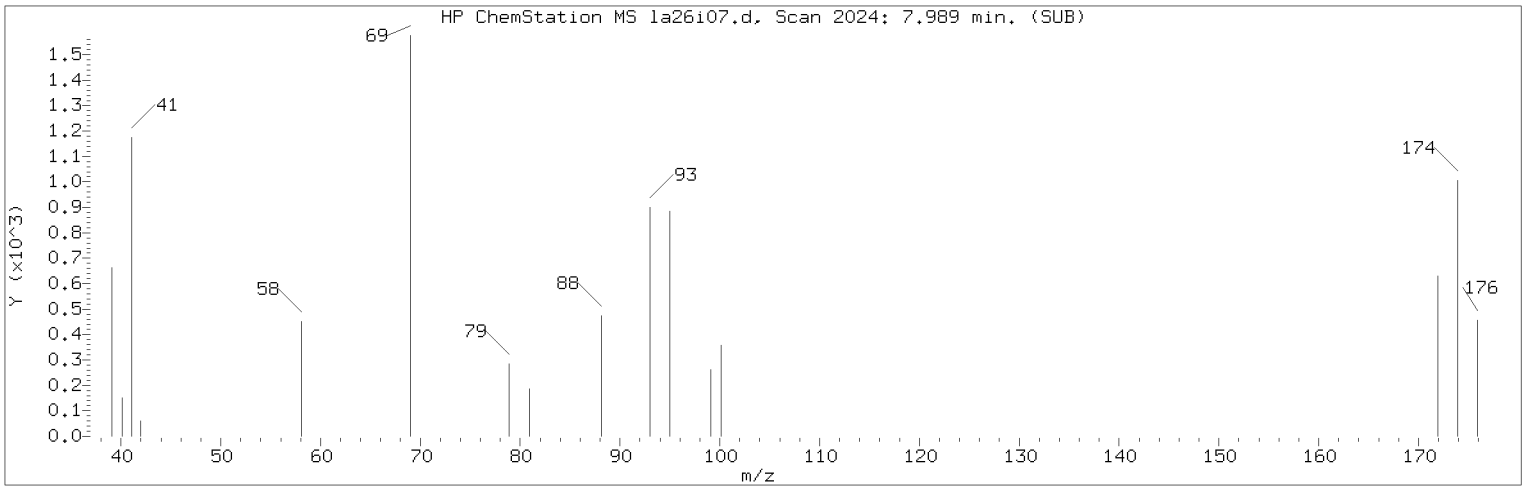
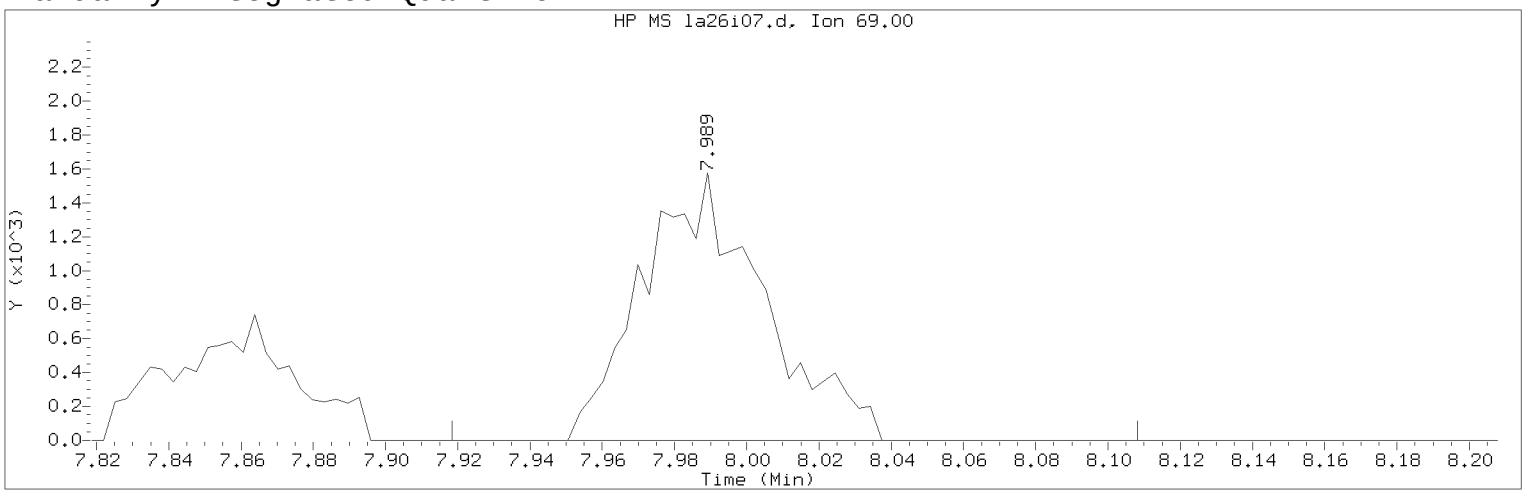
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

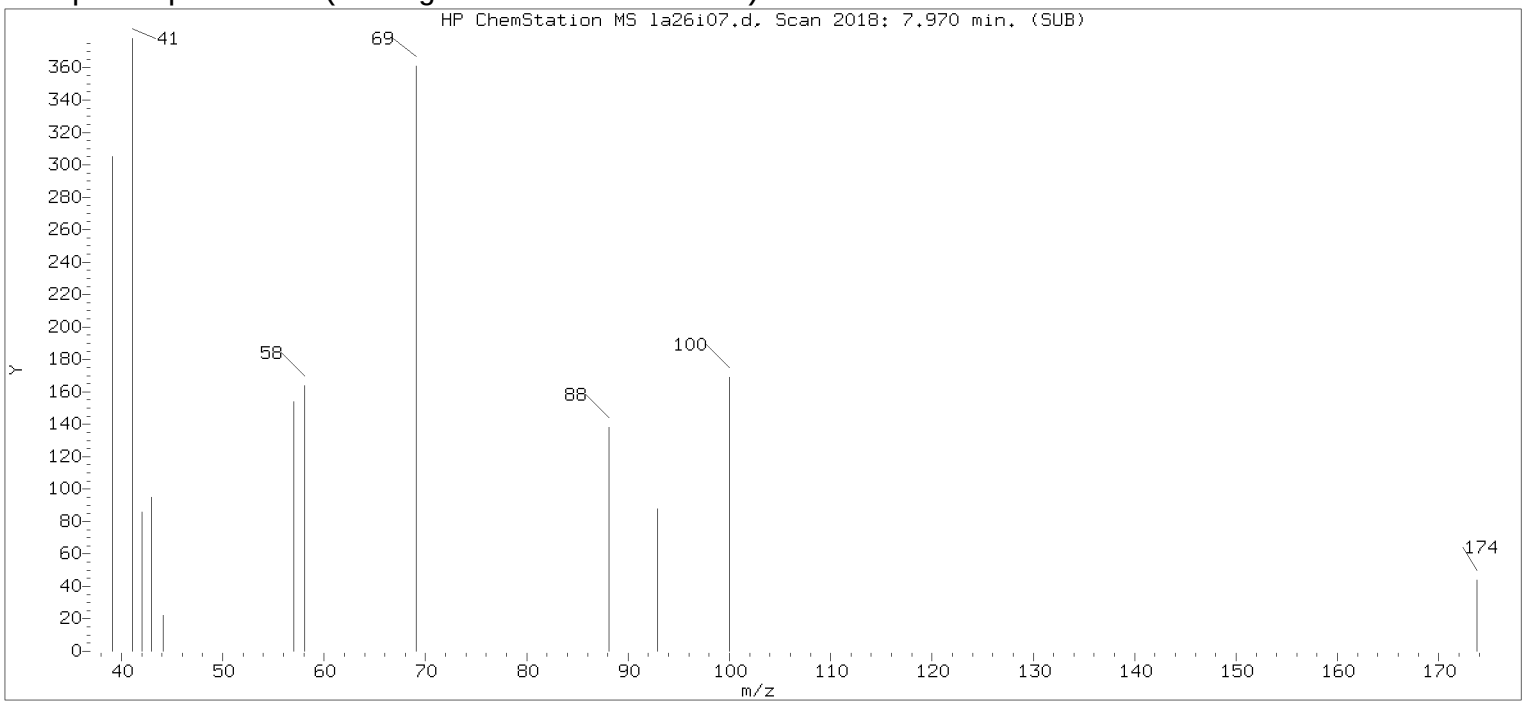
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2024
Retention Time (minutes): 7.989
Quant Ion : 69.00
Area (flag) : 3670M
On-Column Amount (ng) : 0.8277
Integration start scan : 2001 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

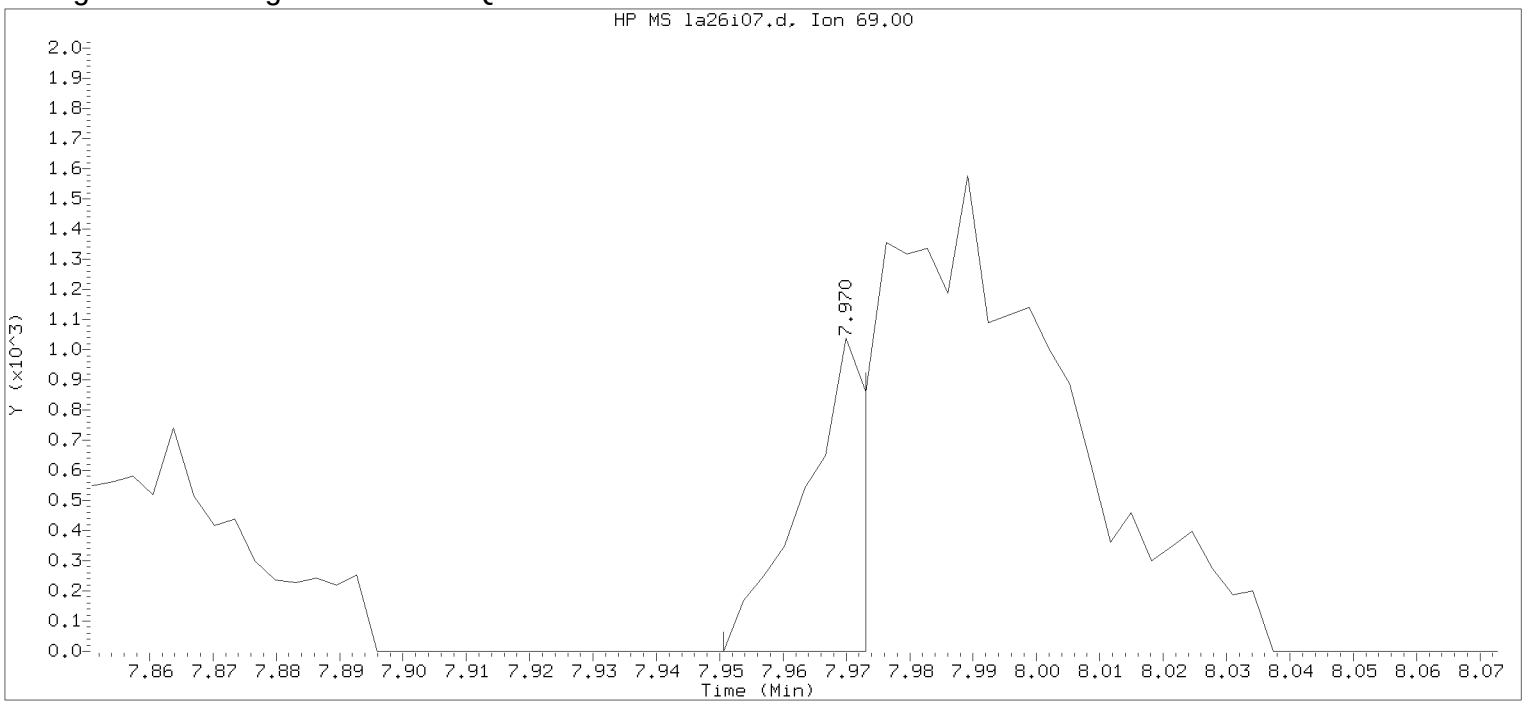
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2018
Retention Time (minutes): 7.970
Quant Ion : 69.00
Area : 661
On-column Amount (ng) : 0.1652
Integration start scan : 2011 Integration stop scan: 2018
Y at integration start : 0 Y at integration end: 0

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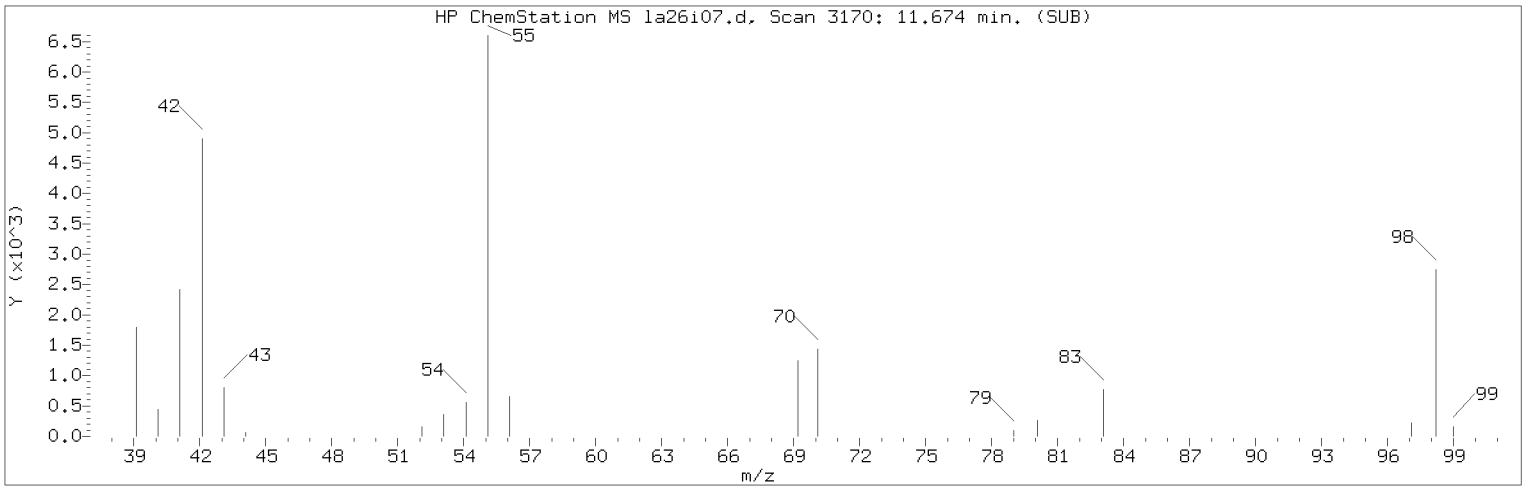
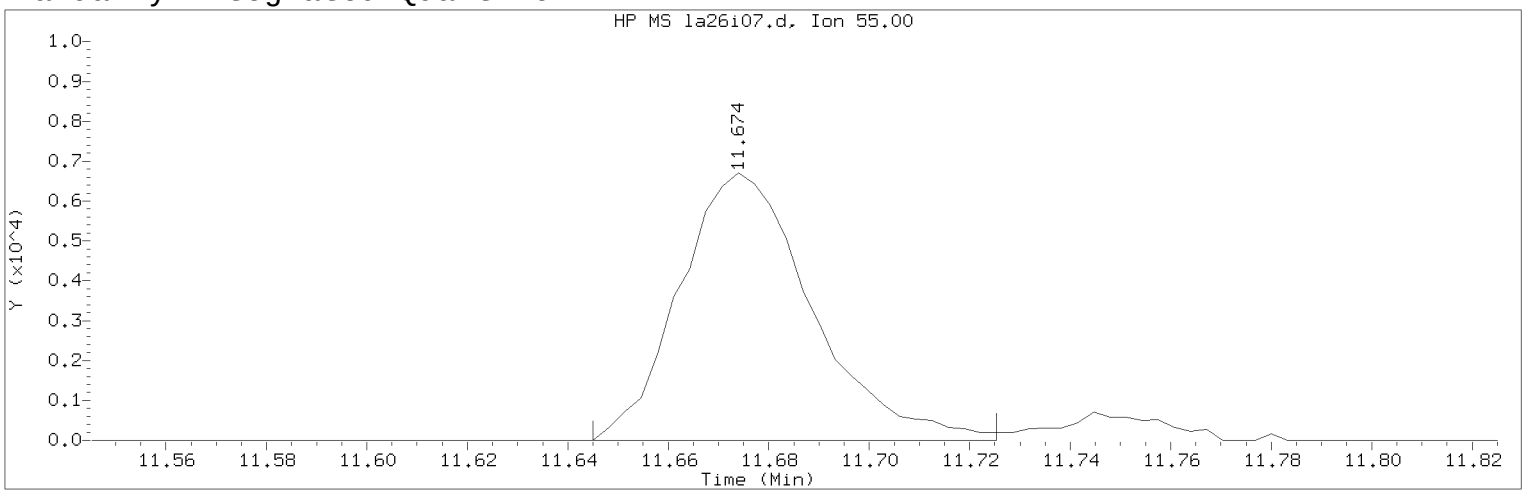
Target 3.5 esignature userKAS02648 Page 240

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

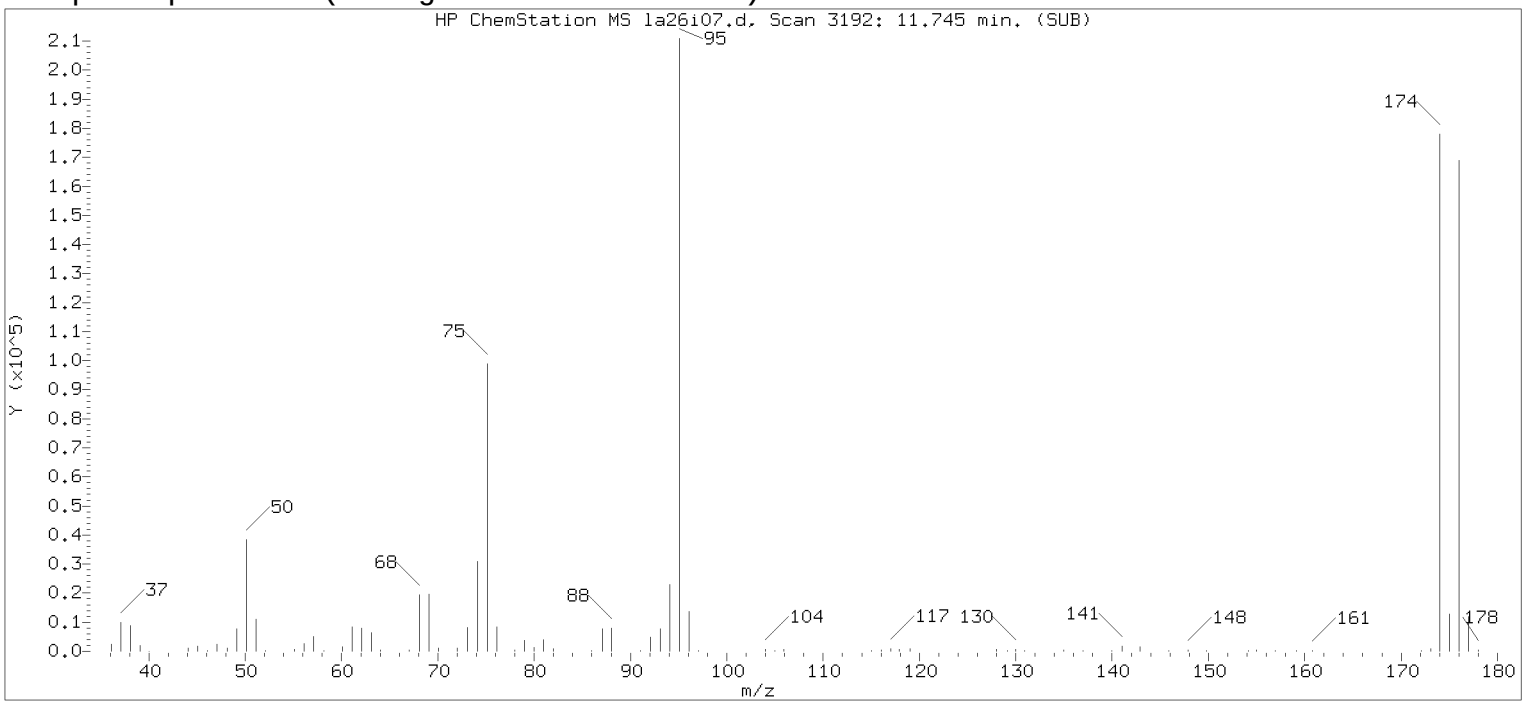
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3170
Retention Time (minutes): 11.674
Quant Ion : 55.00
Area (flag) : 12225A
On-Column Amount (ng) : 46.3770
Integration start scan : 3160 Integration stop scan: 3185
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

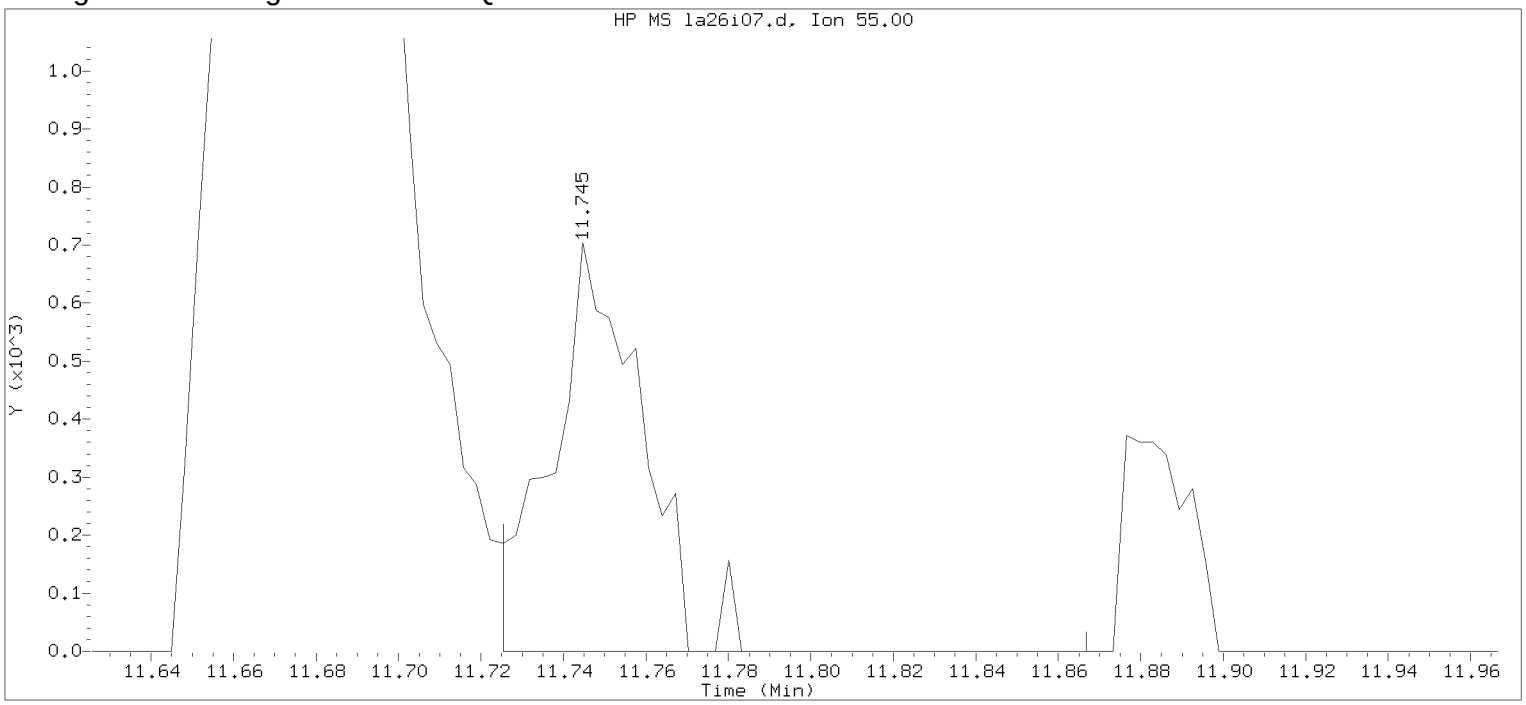
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3192
Retention Time (minutes): 11.745
Quant Ion : 55.00
Area : 1058
On-column Amount (ng) : 4.6543
Integration start scan : 3185 Integration stop scan: 3229
Y at integration start : 0 Y at integration end: 0

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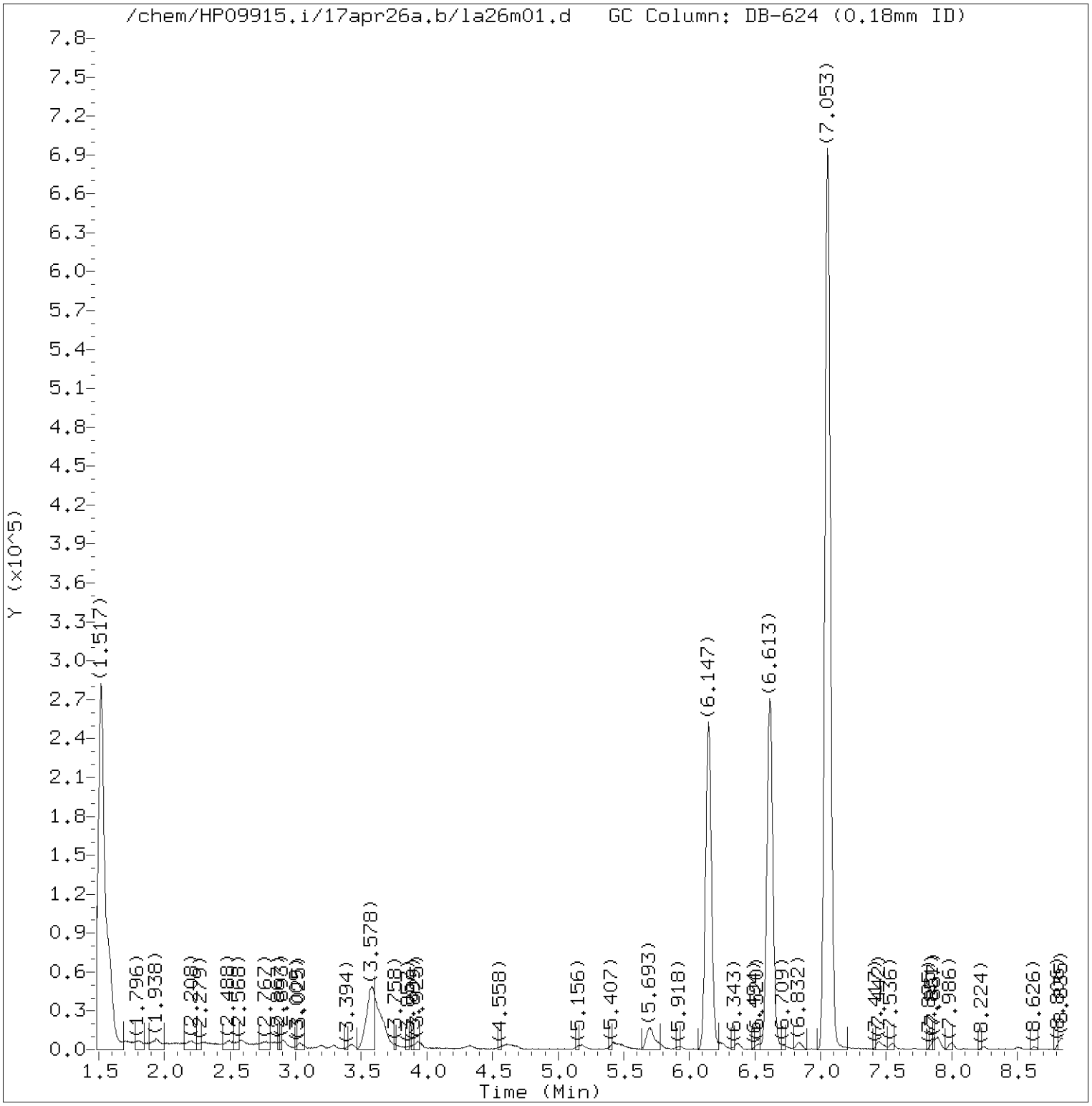
Target 3.5 esignature userKAS02648 Page 242 of 867




Total Ion Chromatogram (TIC)

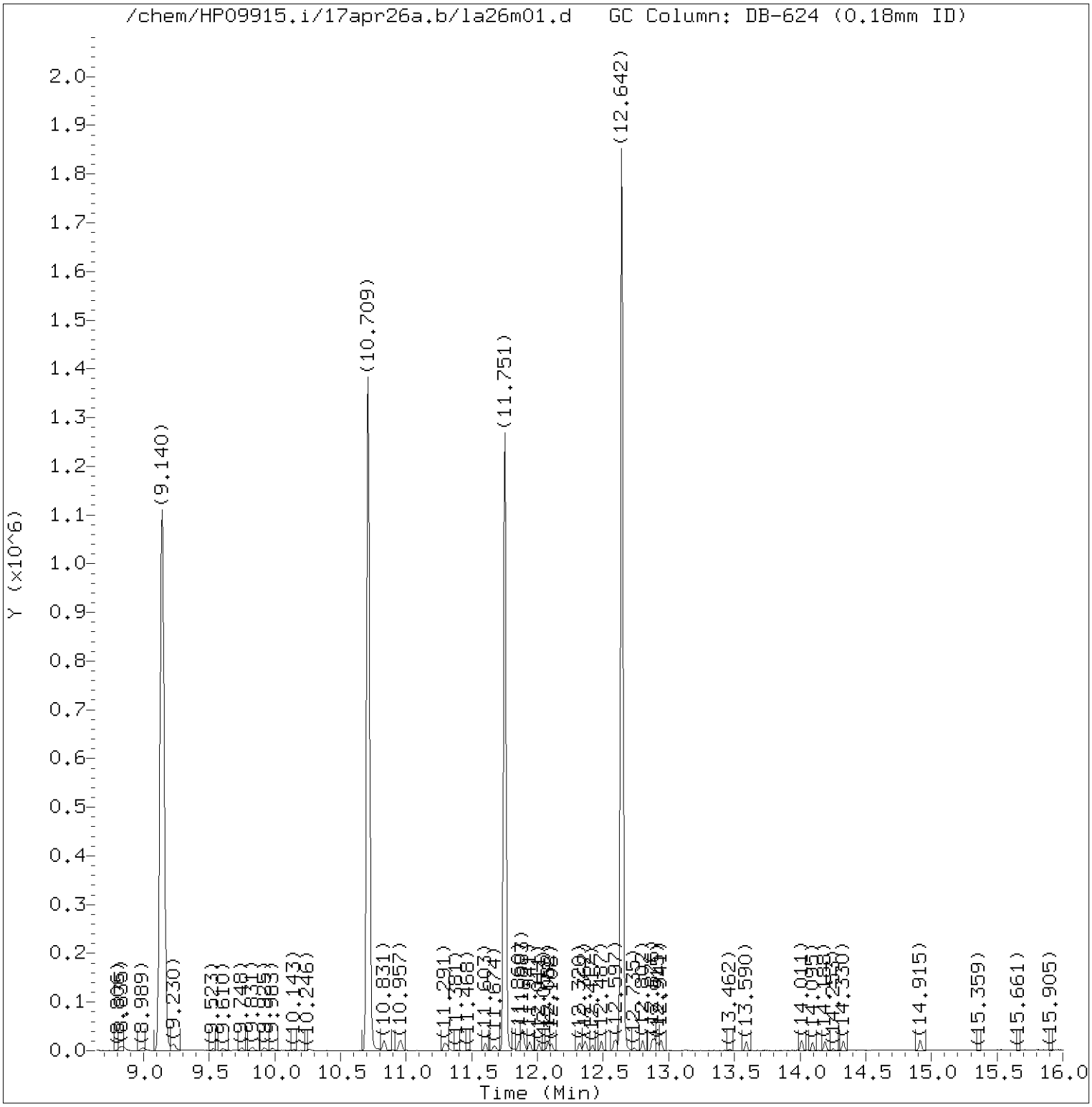
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.722 | 85 | 2339 | 0.380 |
| 4) Chloromethane | (2) | 1.809 | 50 | 2857 | 0.452 |
| 6) Vinyl Chloride | (2) | 1.912 | 62 | 2381 | 0.390 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 1925M | 0.517 |
| 8) Bromomethane | (2) | 2.208 | 94 | 1847M | 0.450 |
| 9) Chloroethane | (2) | 2.301 | 64 | 1571 | 0.456 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 3590 | 0.428 |
| 12) Trichlorofluoromethane | (2) | 2.520 | 101 | 2884 | 0.408 |
| 11) n-Pentane | (2) | 2.591 | 43 | 3057 | 0.525 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 1634 | 0.415 |
| 15) Freon 123a | (2) | 2.809 | 67 | 1902 | 0.404 |
| 16) Acrolein | (1) | 2.912 | 56 | 6871 | 4.797 |
| 18) Acetone | (1) | 3.009 | 58 | 319 | 0.513 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 1569 | 0.419 |
| 19) Freon 113 | (2) | 3.038 | 101 | 1321 | 0.351 |
| 21) 2-Propanol | (1) | 3.182 | 45 | 4366M | 10.594 |
| 22) Methyl Iodide | (2) | 3.189 | 142 | 3071 | 0.423 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 5057 | 0.415 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 2680M | 0.493 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 3325 | 0.443 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 174972 | 250.000 |
| 28) Methylene Chloride | (2) | 3.591 | 84 | 3930 | 0.795 |
| 30) t-Butyl alcohol | (1) | 3.693 | 59 | 7505M | 11.087 |
| 31) Acrylonitrile | (2) | 3.857 | 53 | 696 | 0.244 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 6241 | 0.455 |
| 32) trans-1,2-Dichloroethene | (2) | 3.941 | 96 | 1892 | 0.431 |
| 34) n-Hexane | (2) | 4.314 | 57 | 2680M | 0.398 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 3427 | 0.415 |
| 38) di-Isopropyl ether | (2) | 4.610 | 45 | 7417 | 0.468 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.690 | 53 | 2753 | 0.395 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 5835 | 0.428 |
| 44) 2-Butanone | (2) | 5.407 | 43 | 3021 | 0.791 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 2175 | 0.432 |
| 45) 2,2-Dichloropropane | (2) | 5.423 | 77 | 1812 | 0.329 |
| 47) Propionitrile | (1) | 5.484 | 54 | 9583 | 9.699 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 12206 | 4.290 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 1031 | 0.389 |
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 517M | 0.593 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.931 | 83 | 3387 | 0.430 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 3253M | 0.453 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 251275 | 49.779 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4067 | 0.863 |
| 54) Cyclohexane | (2) | 6.240 | 56 | 3352 | 0.409 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 2006 | 0.382 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2672 | 0.418 |
| 58) Isobutyl Alcohol | (1) | 6.539 | 41 | 5623M | 23.658 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 62764 | 50.002 |
| 60) Benzene | (2) | 6.629 | 78 | 8895 | 0.472 |
| 61) 1,2-Dichloroethane | (2) | 6.706 | 62 | 2708 | 0.424 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 5953 | 0.440 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1033706 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 3401M | 0.451 |
| 69) n-Butanol | (1) | 7.446 | 56 | 7231 | 37.738 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 1999 | 0.410 |
| 72) Methylcyclohexane | (2) | 7.851 | 83 | 3533 | 0.411 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 2149 | 0.416 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 845 | 14.126 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 1518M | 0.343 |
| 74) Dibromomethane | (2) | 7.996 | 93 | 1393 | 0.429 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 2298 | 0.392 |
| 79) 2-Nitropropane | (2) | 8.510 | 41 | 1240 | 0.746 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.632 | 63 | 1335 | 0.336 |
| 81) cis-1,3-Dichloropropene | (2) | 8.815 | 75 | 2761 | 0.361 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 5828 | 0.740 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1012343 | 50.270 |
| 88) Toluene | (3) | 9.230 | 92 | 5535 | 0.473 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 2362 | 0.360 |
| 91) Ethyl Methacrylate | (3) | 9.610 | 69 | 2755 | 0.373 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 2117 | 0.469 |
| 93) Tetrachloroethene | (3) | 9.831 | 166 | 2288 | 0.442 |
| 94) 1,3-Dichloropropane | (3) | 9.925 | 76 | 3487 | 0.446 |
| 96) 2-Hexanone | (3) | 9.983 | 43 | 3976 | 0.704 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 5123 | 0.721 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 1597 | 0.342 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 2039 | 0.413 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 788712 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 4267 | 0.635 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 6446 | 0.477 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 1648 | 0.370 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 9923 | 0.440 |
| 106) m+p-Xylene | (3) | 10.960 | 106 | 7187 | 0.818 |
| 107) o-Xylene | (3) | 11.291 | 106 | 3699 | 0.423 |
| 109) Styrene | (3) | 11.311 | 104 | 5315 | 0.368 |
| 110) Bromoform | (3) | 11.468 | 173 | 1137 | 0.335 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 9437 | 0.422 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 4553M | 20.180 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379187 | 50.658 |
| 108) Xylene (Total) | (3) | | 106 | 10886 | 1.241 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 3396 | 0.450 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 2630 | 0.432 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 8626 | 3.986 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 993 | 0.465 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 12373 | 0.460 |
| 120) 2-Chlorotoluene | (4) | 12.015 | 126 | 2680M | 0.479 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 8325 | 0.434 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 2713 | 0.466 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 1768 | 0.427 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1190 | 0.364 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 8421 | 0.427 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 11053 | 0.452 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 6155 | 0.532 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 10017 | 0.464 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 425430 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 6850 | 0.572 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 9695 | 0.469 |
| 135) Benzyl Chloride | (4) | 12.738 | 91 | 3470 | 0.277 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 5811 | 0.451 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 6562 | 0.485 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 5769 | 0.535 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 5976 | 0.525 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 4851 | 0.447 |
| 141) Diethylbenzene (total) | (4) | | 100 | 17224 | 1.382 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.468 | 75 | 594 | 0.372 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.593 | 180 | 5802 | 0.629 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 6179 | 0.690 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 2914 | 0.750 |
| 148) Naphthalene | (4) | 14.188 | 128 | 13901 | 0.515 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 6003 | 0.695 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 9582 | 0.549 |



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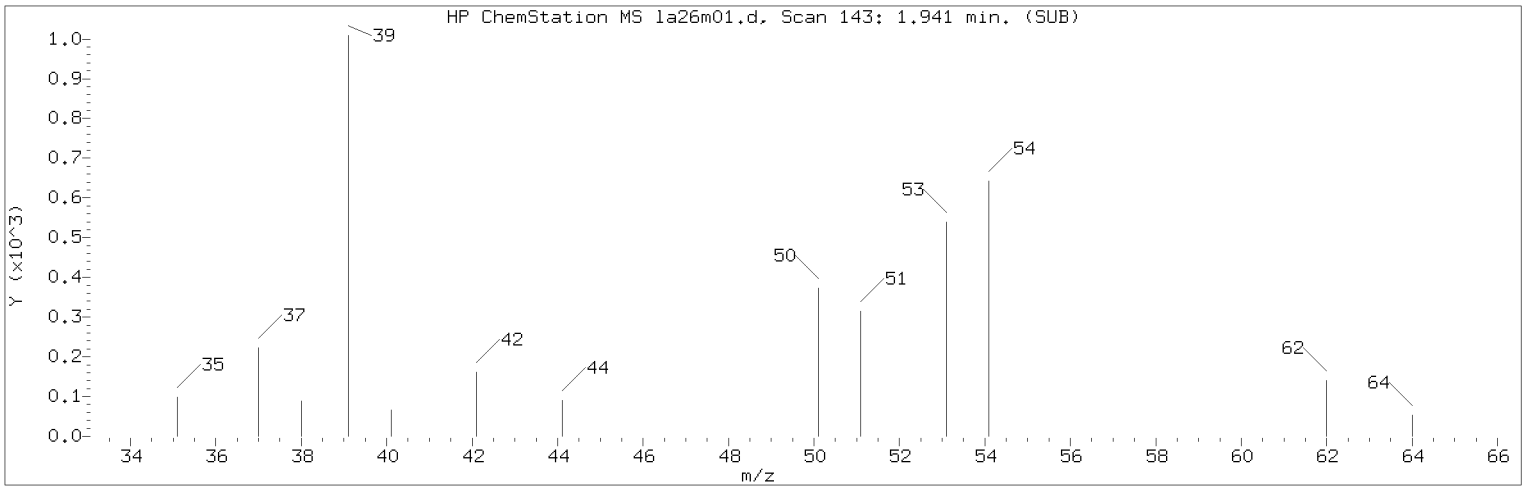
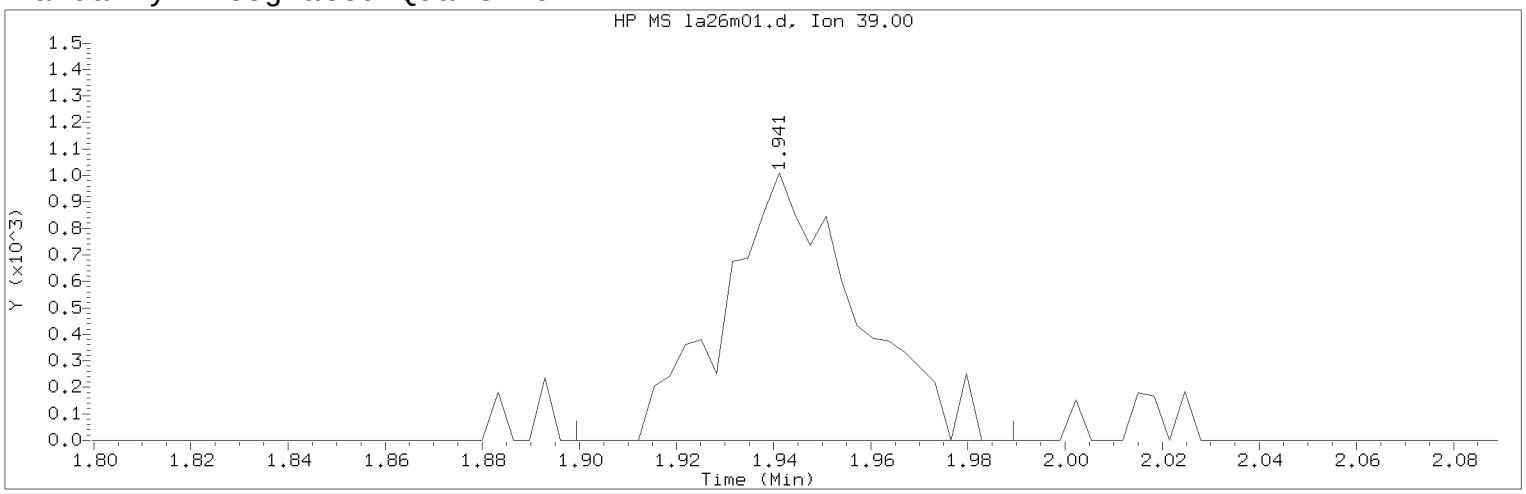
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

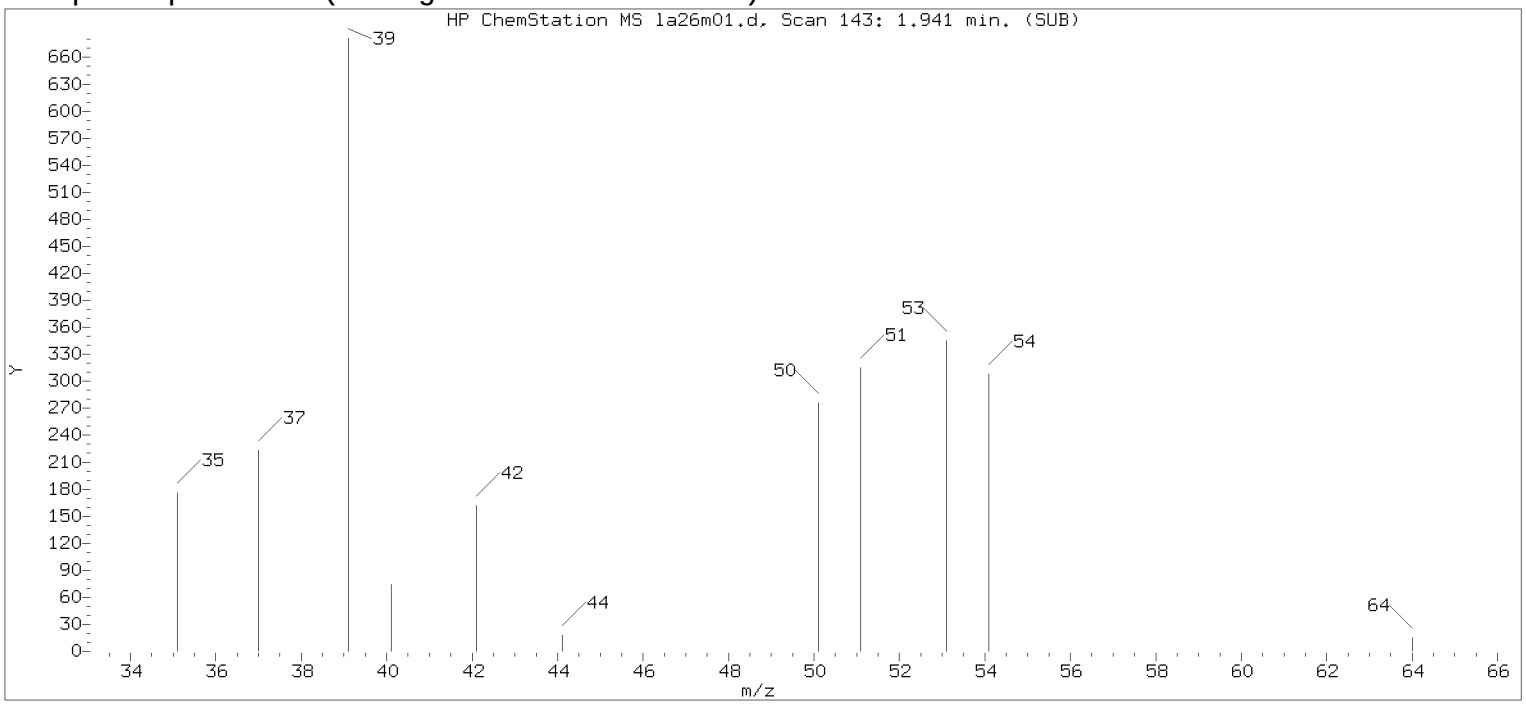
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 1925M
On-Column Amount (ng) : 0.5167
Integration start scan : 129  Integration stop scan: 157
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

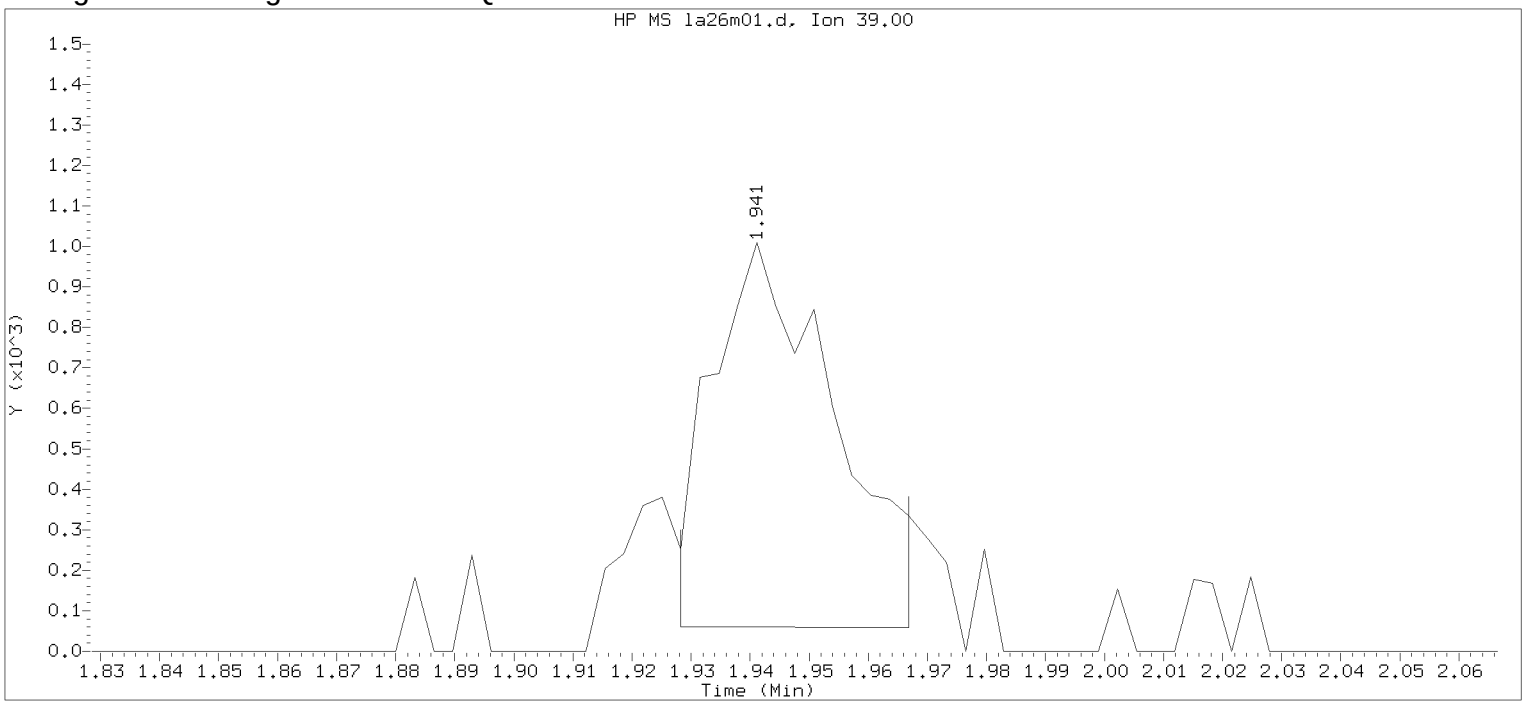
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 1358
On-column Amount (ng) : 0.3645
Integration start scan : 138 Integration stop scan: 150
Y at integration start : 61 Y at integration end: 58

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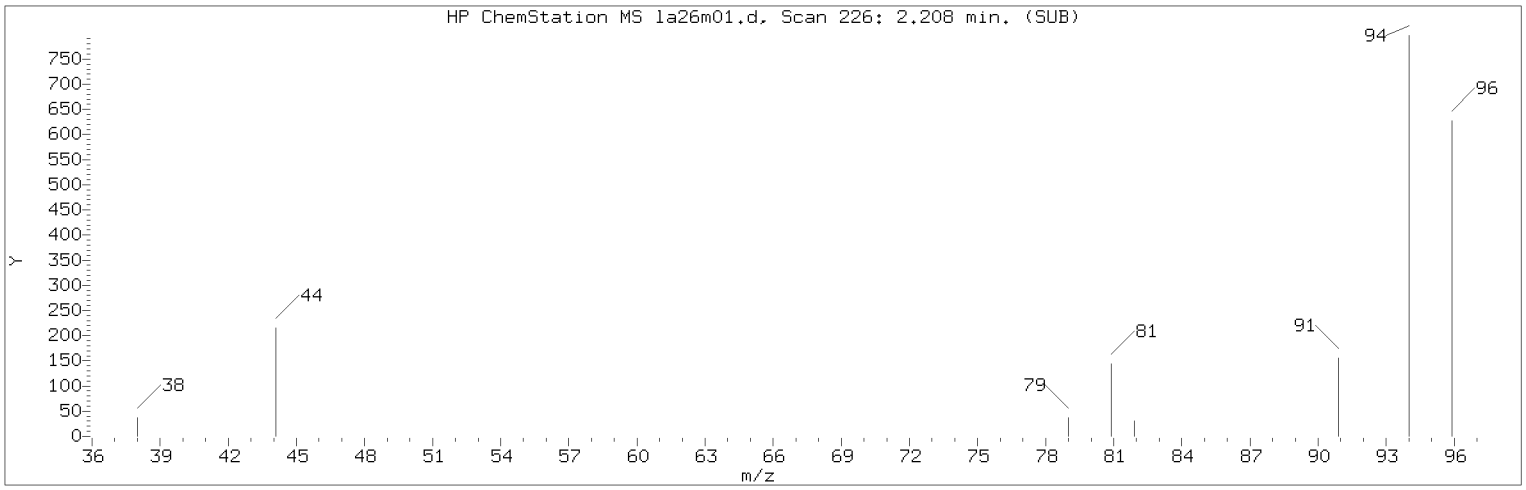
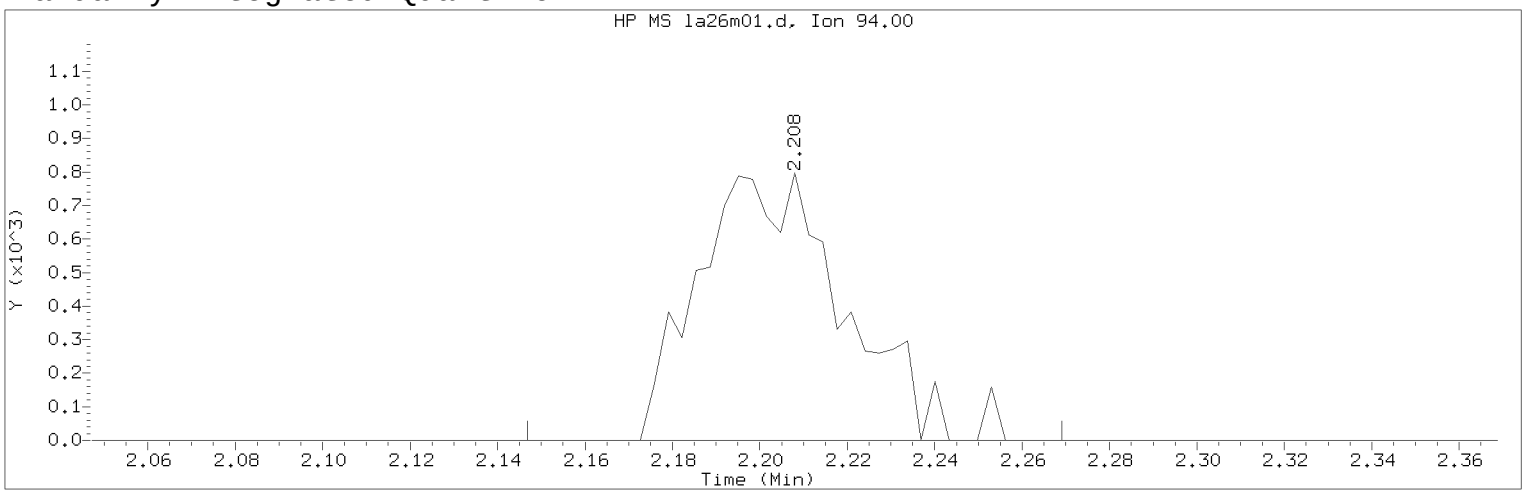
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

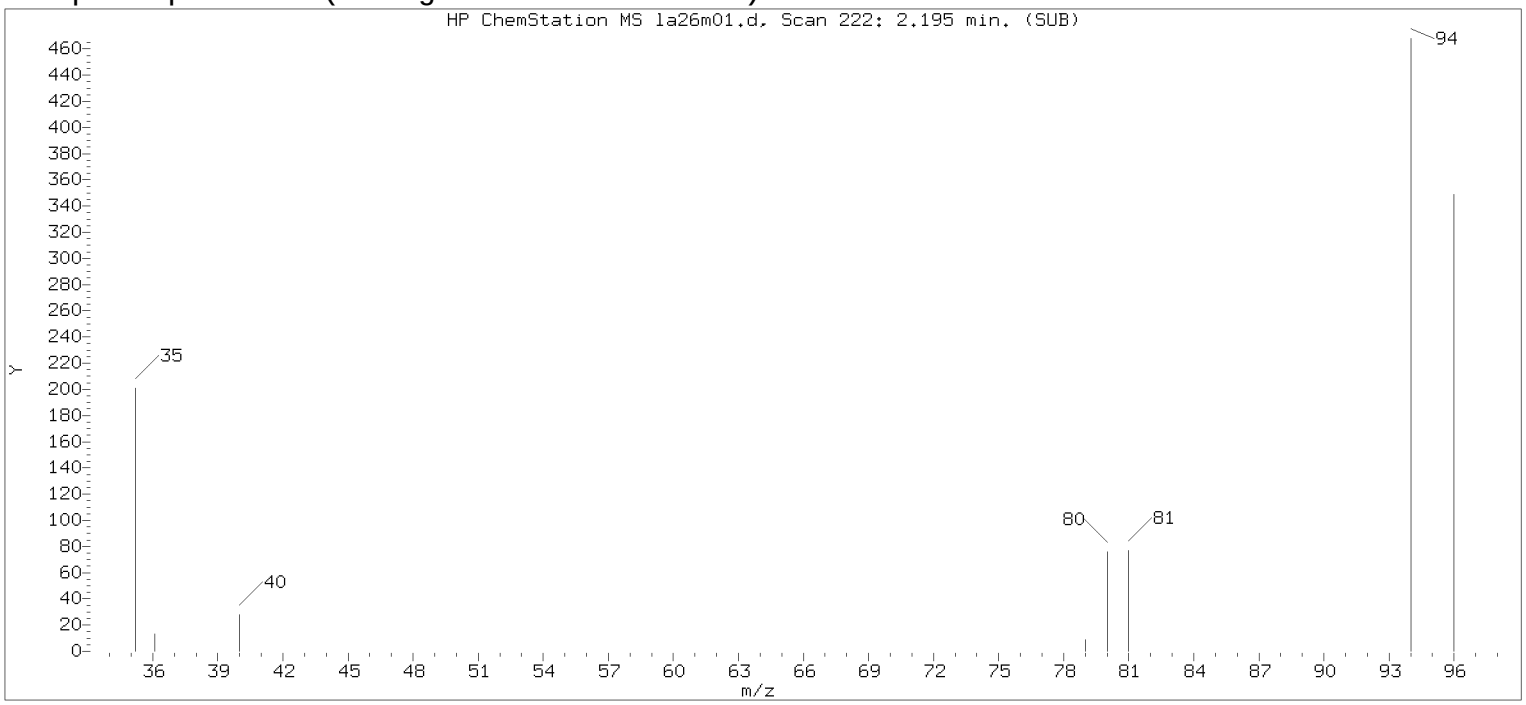
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 226
Retention Time (minutes): 2.208
Quant Ion : 94.00
Area (flag) : 1847M
On-Column Amount (ng) : 0.4496
Integration start scan : 206  Integration stop scan: 244
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

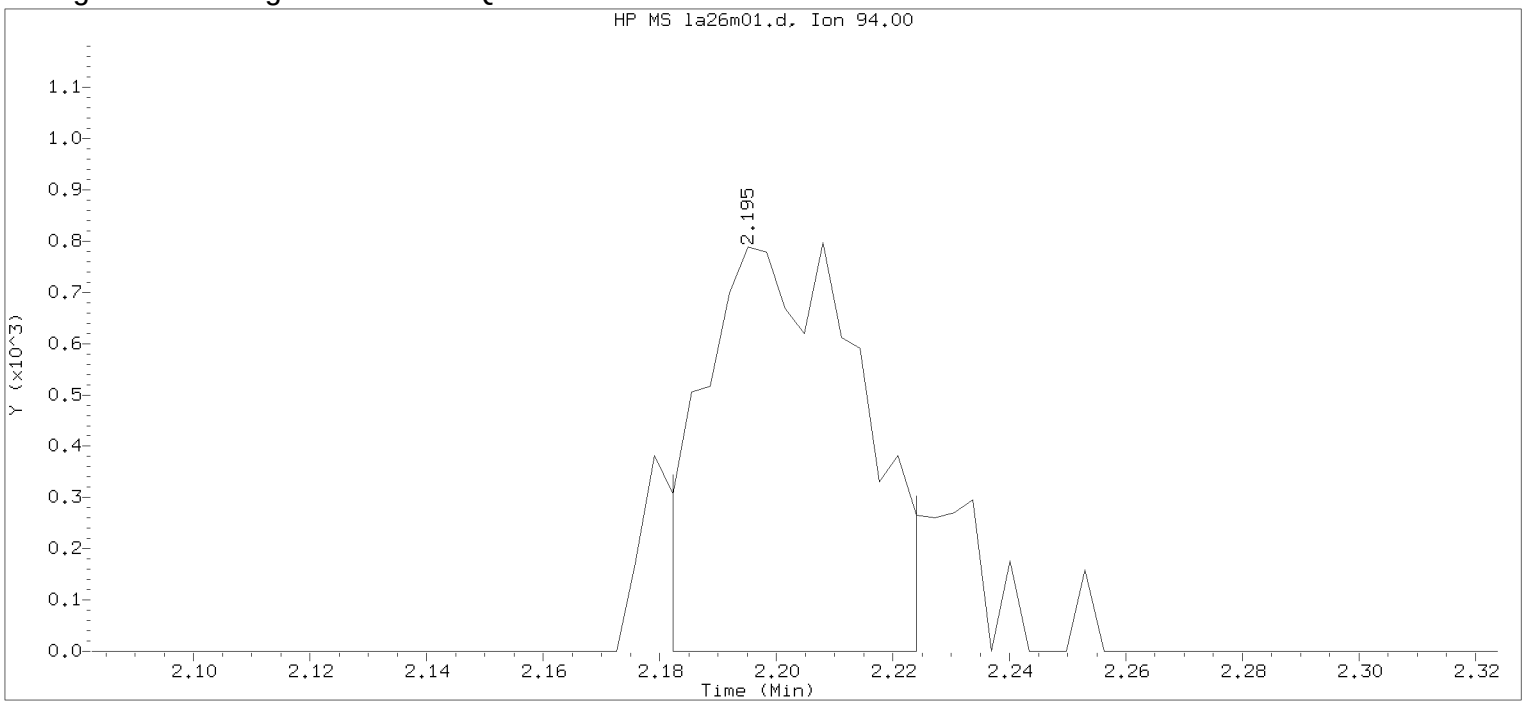
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 1461
On-column Amount (ng) : 0.3557
Integration start scan : 217 Integration stop scan: 230
Y at integration start : 0 Y at integration end: 0

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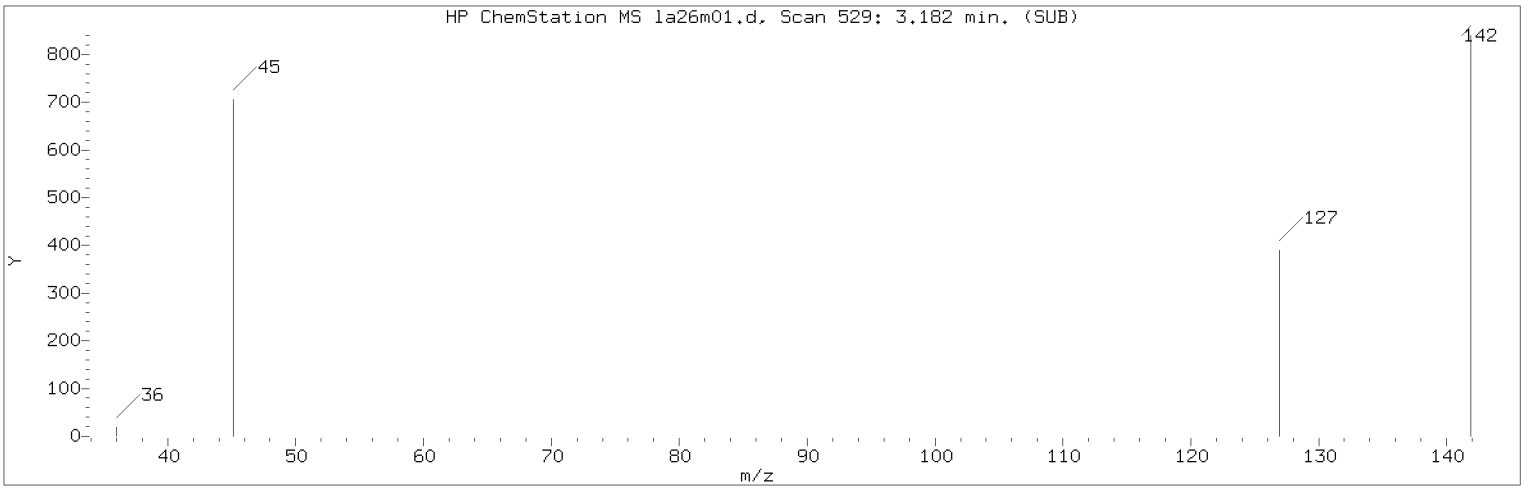
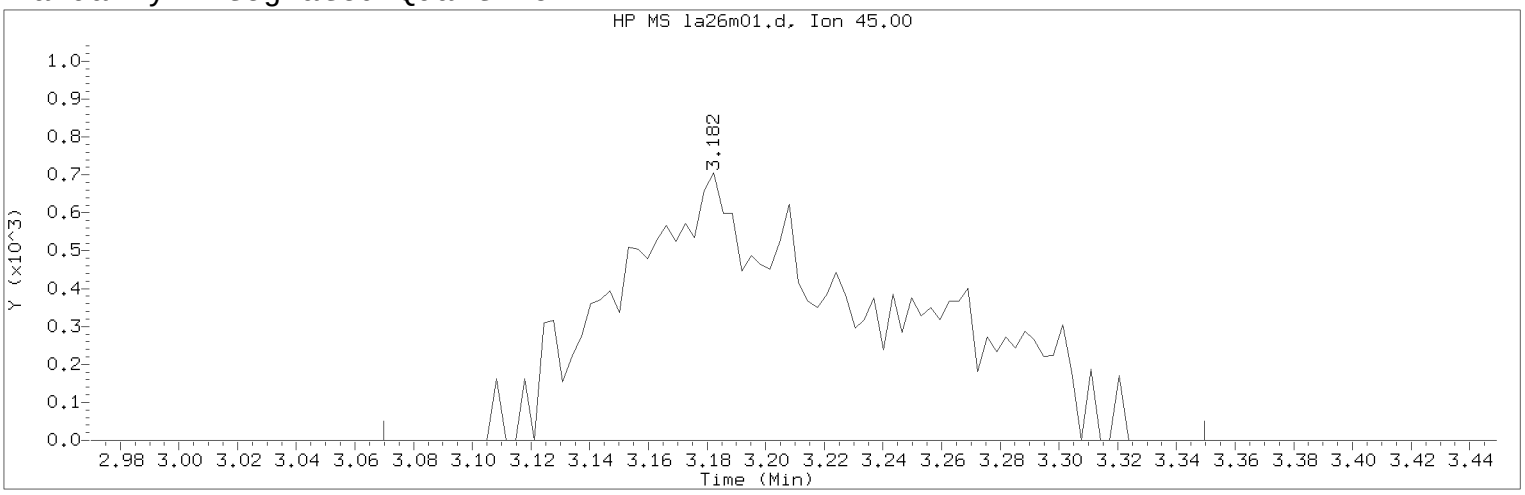
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

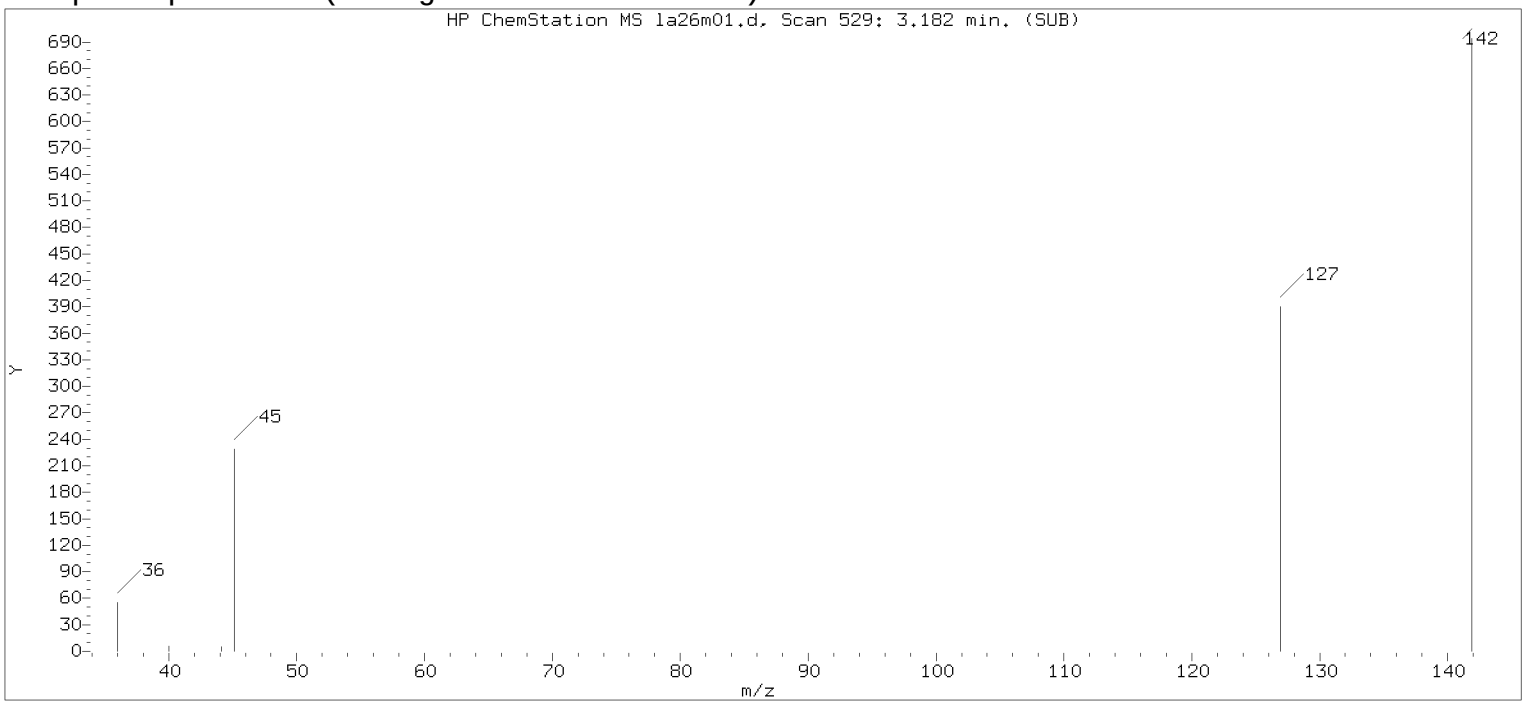
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area (flag) : 4366M
On-Column Amount (ng) : 10.5945
Integration start scan : 493 Integration stop scan: 580
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

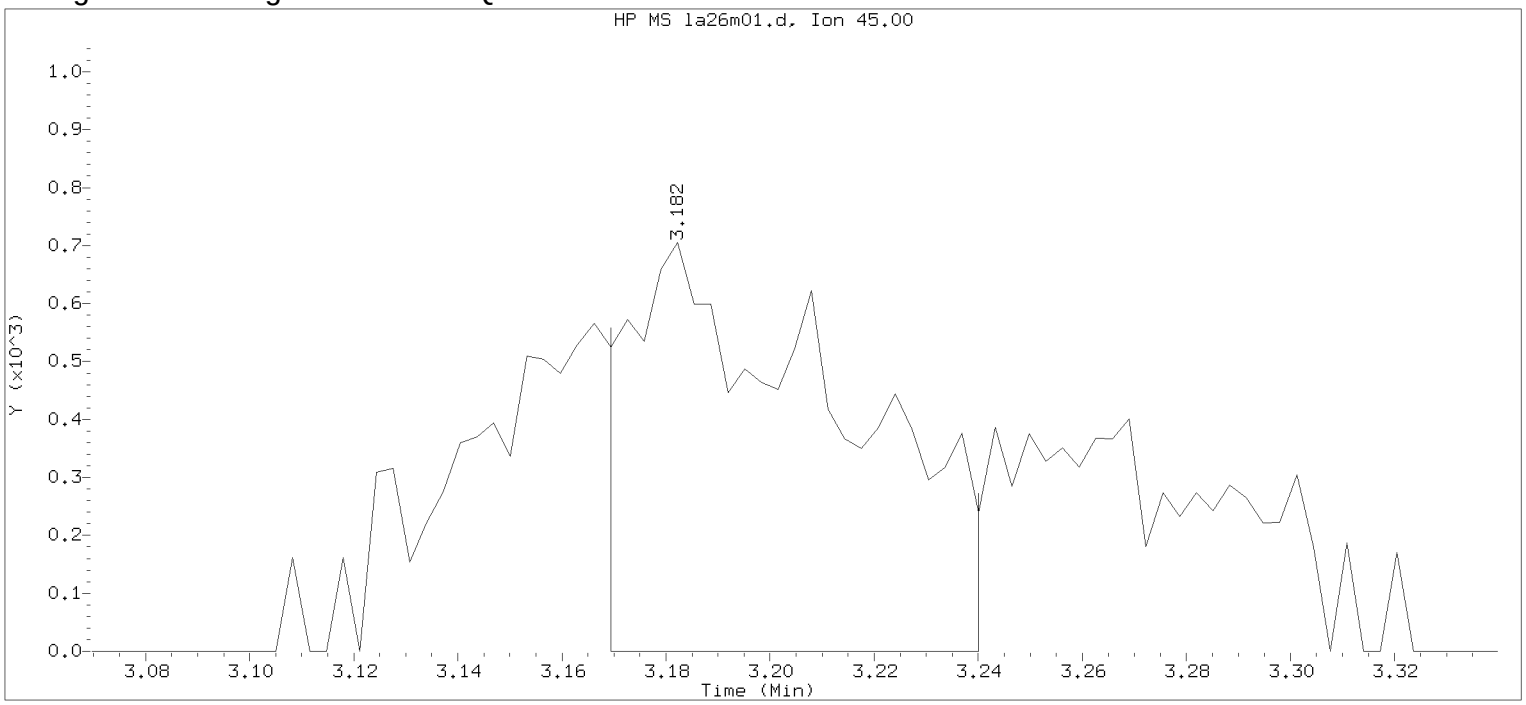
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area : 2003
On-column Amount (ng) : 4.8605
Integration start scan : 524 Integration stop scan: 546
Y at integration start : 0 Y at integration end: 0

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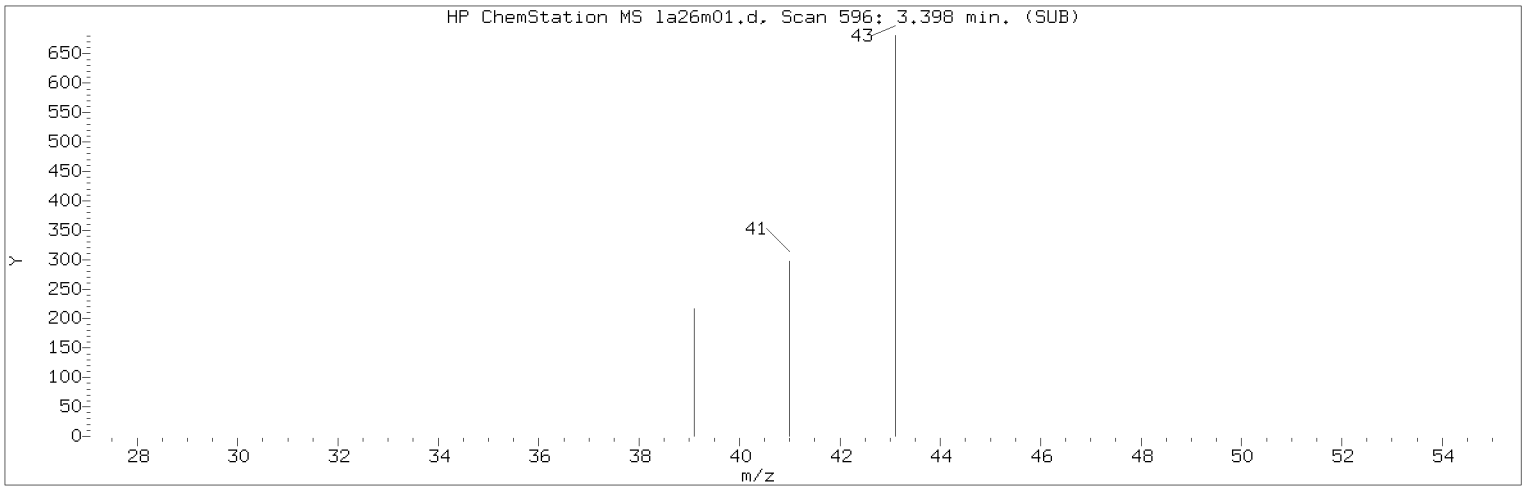
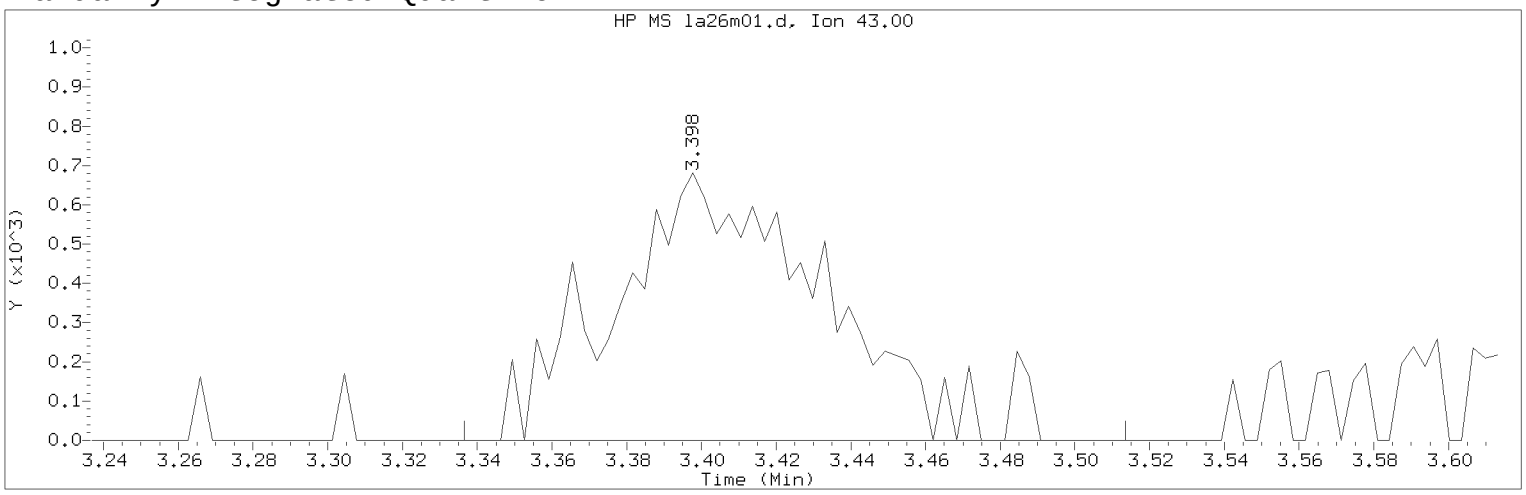
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

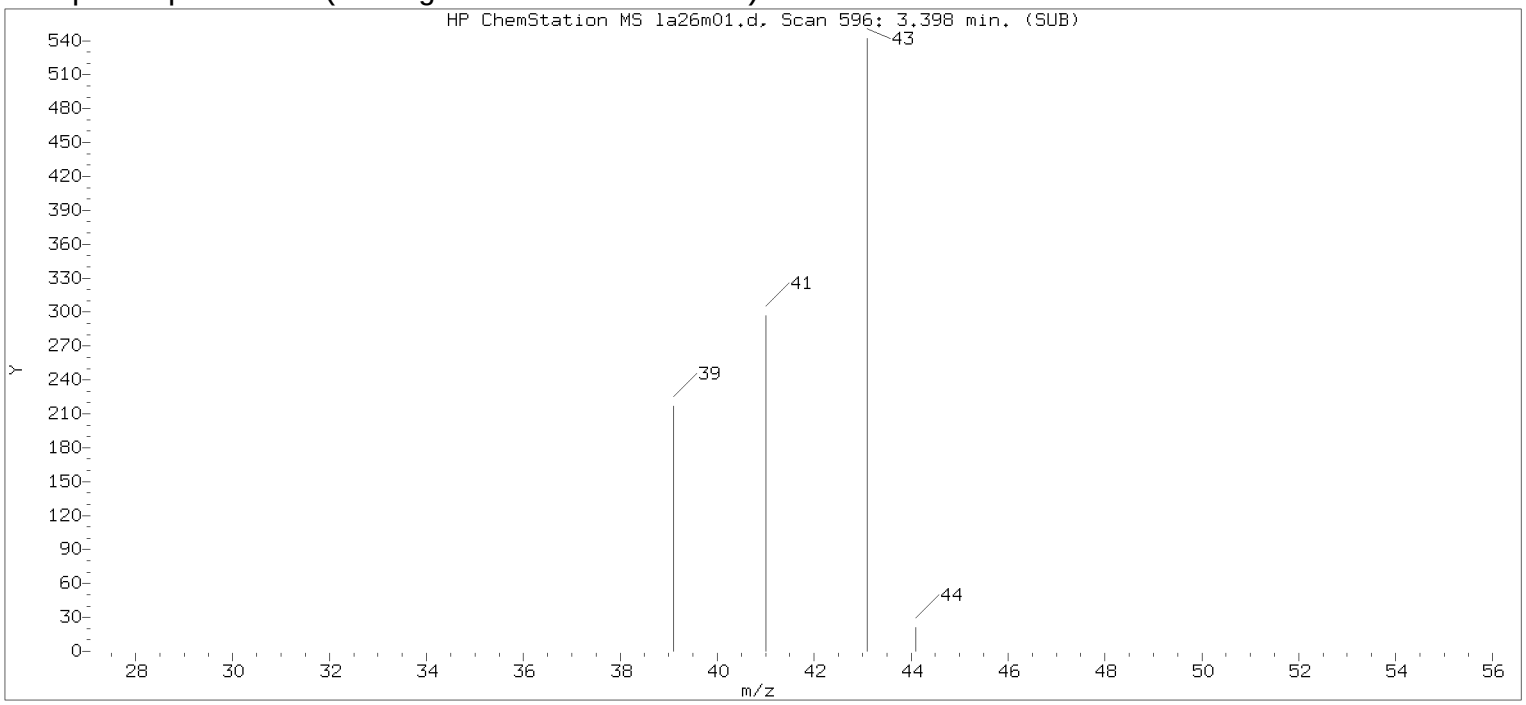
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 596
Retention Time (minutes): 3.398
Quant Ion : 43.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.4933
Integration start scan : 576  Integration stop scan: 631
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

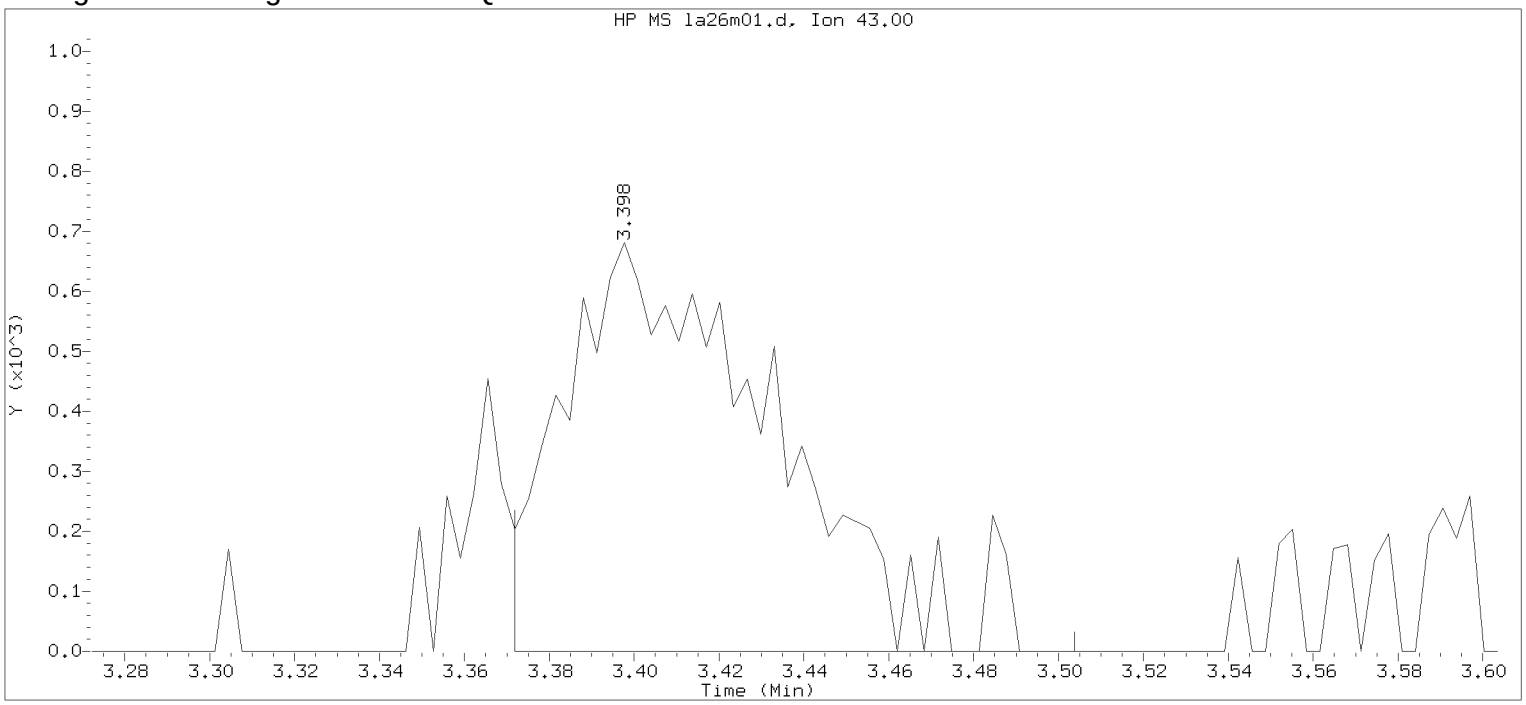
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 596
Retention Time (minutes): 3.398
Quant Ion : 43.00
Area : 2349
On-column Amount (ng) : 0.4323
Integration start scan : 587 Integration stop scan: 628
Y at integration start : 0 Y at integration end: 0

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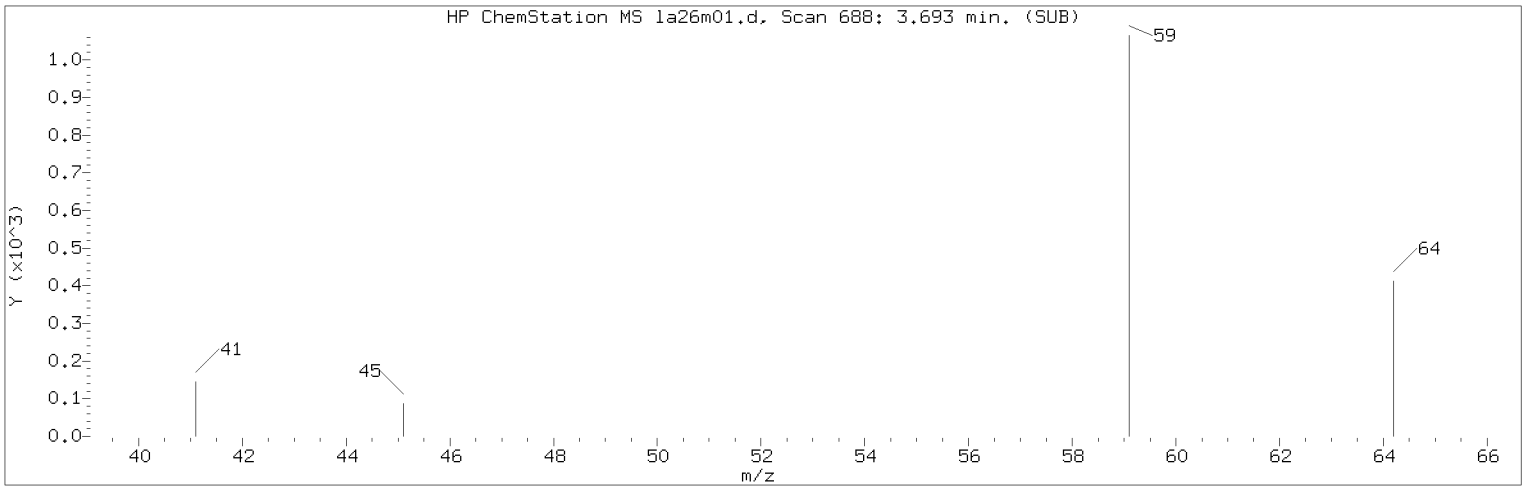
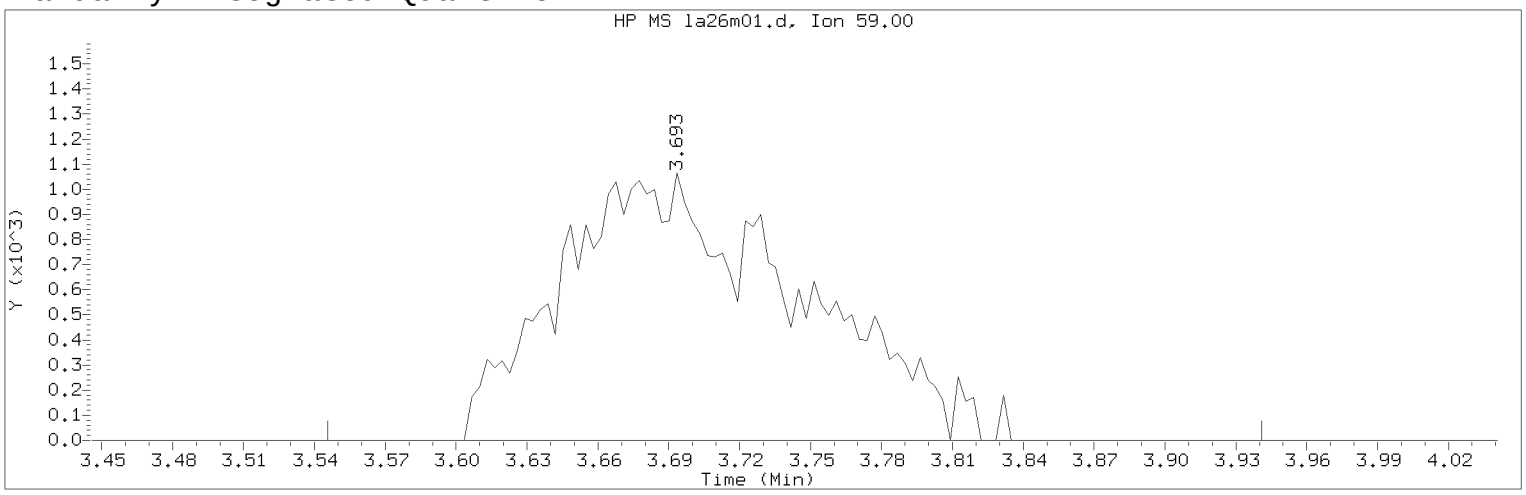
Target 3.5 esignature userKAS02648 Page 246

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

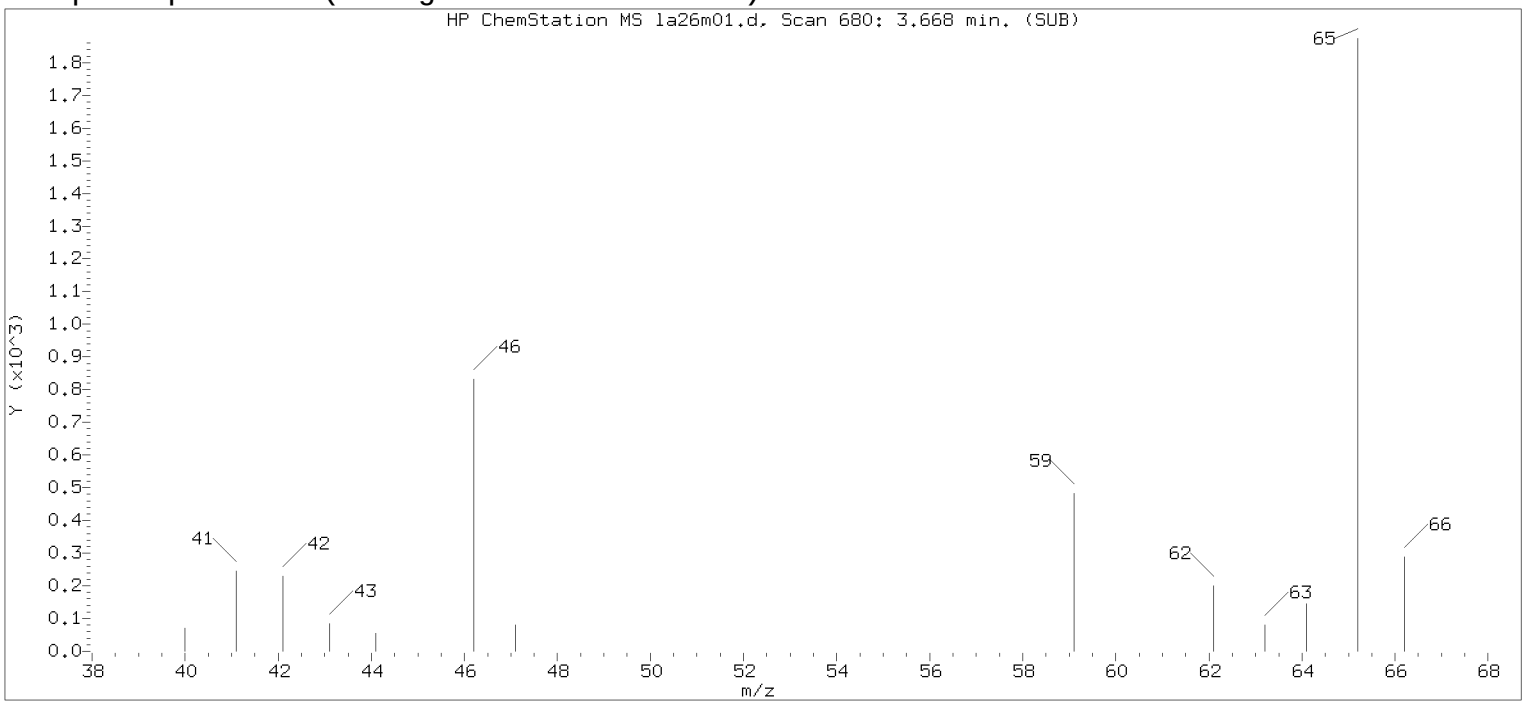
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 688
Retention Time (minutes): 3.693
Quant Ion : 59.00
Area (flag) : 7505M
On-Column Amount (ng) : 11.0871
Integration start scan : 641 Integration stop scan: 764
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

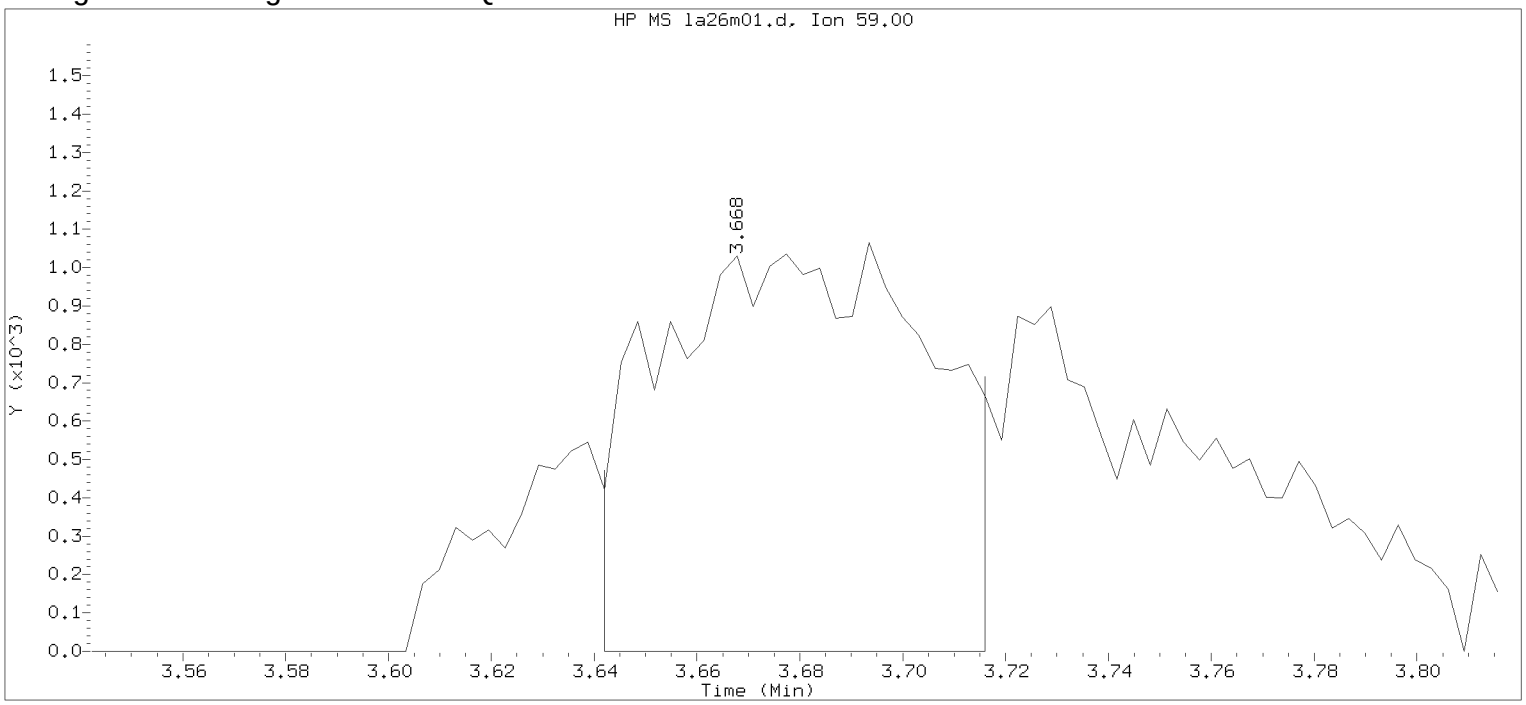
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 680
Retention Time (minutes): 3.668
Quant Ion : 59.00
Area : 3832
On-column Amount (ng) : 5.6607
Integration start scan : 671 Integration stop scan: 694
Y at integration start : 0 Y at integration end: 0

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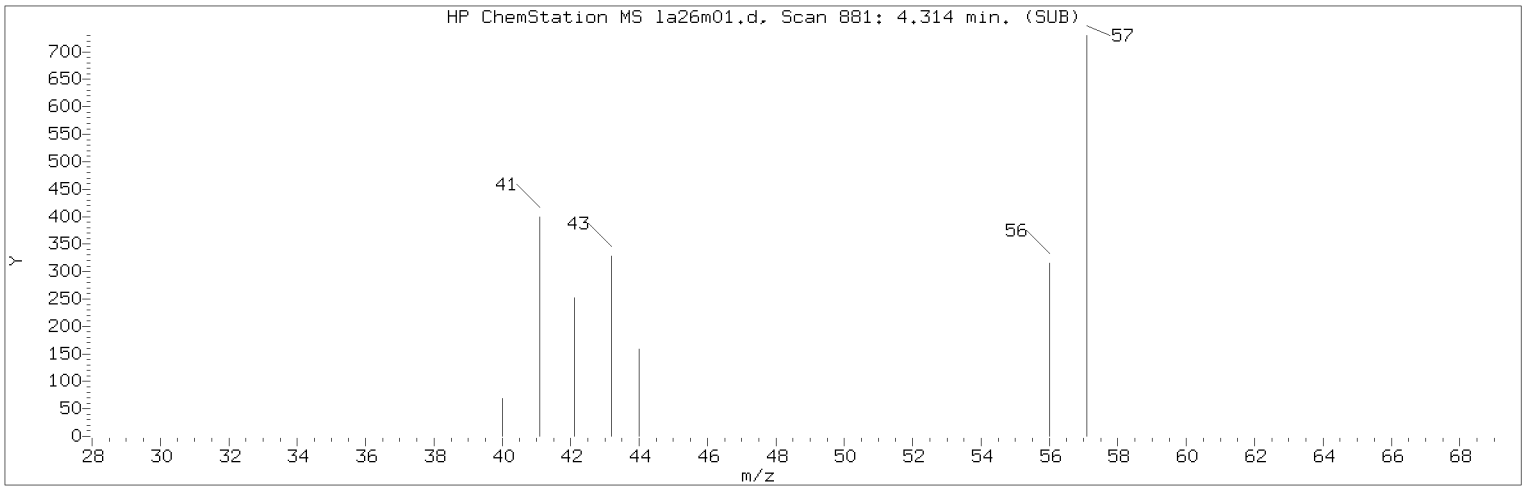
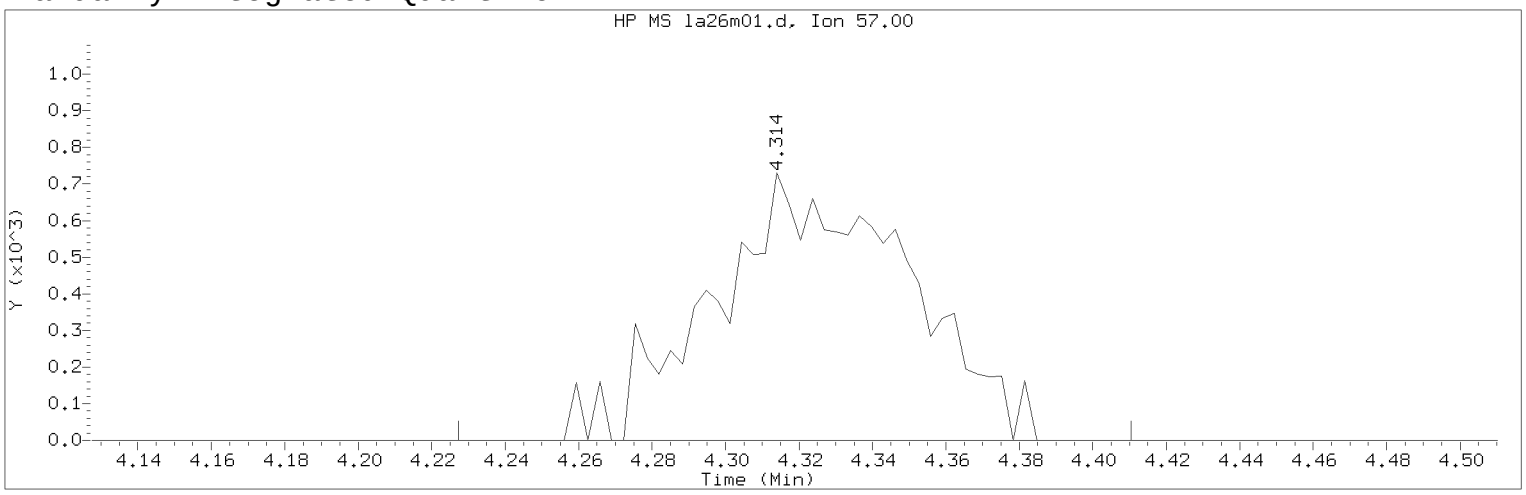
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

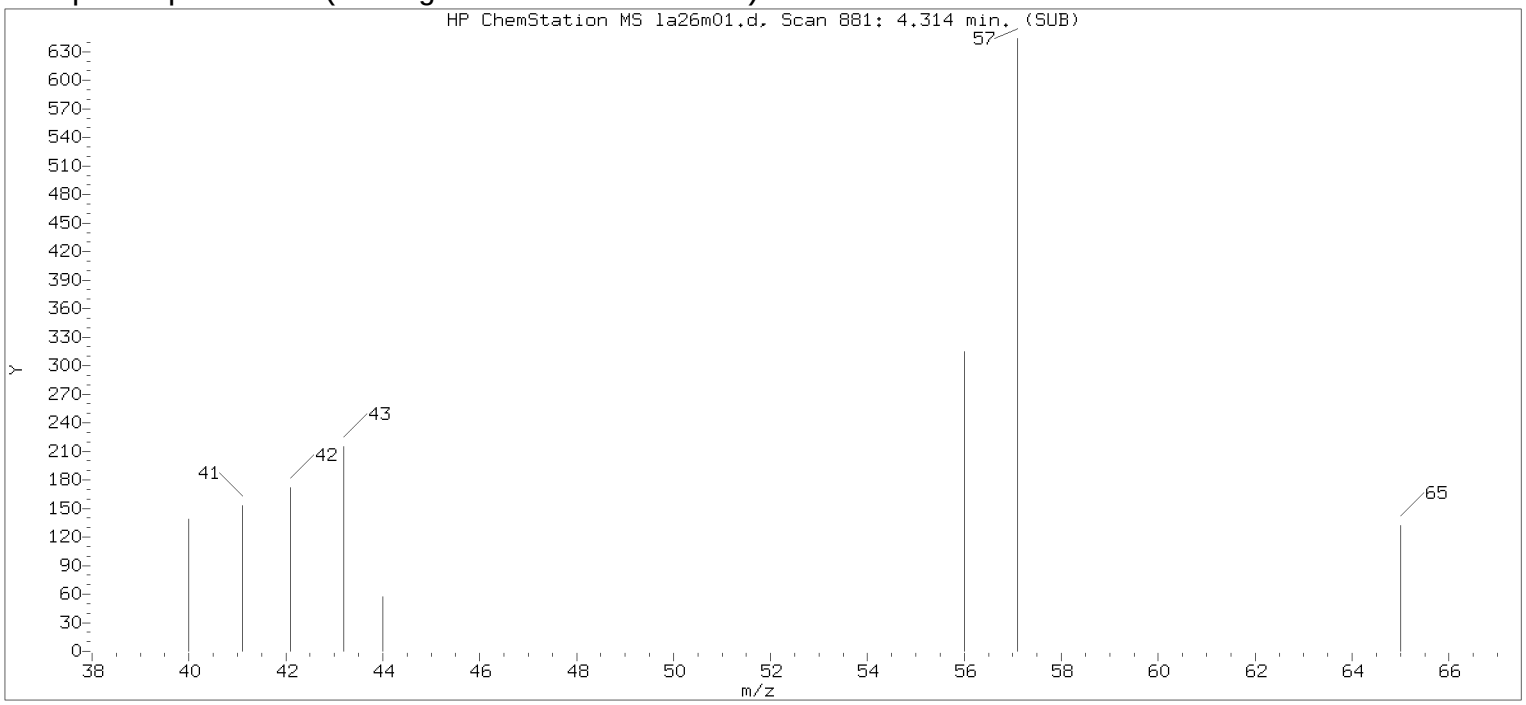
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 881
Retention Time (minutes): 4.314
Quant Ion : 57.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.3981
Integration start scan : 853 Integration stop scan: 910
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

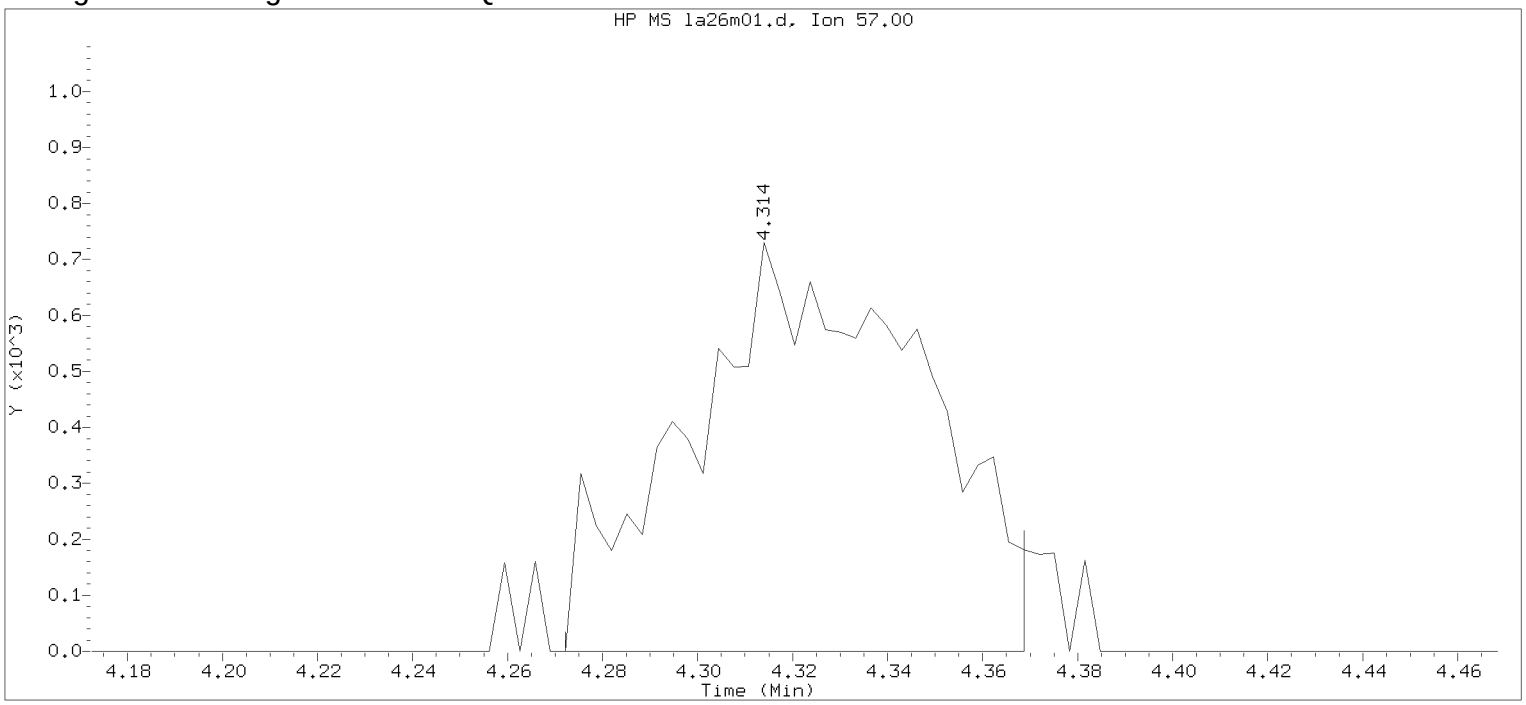
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

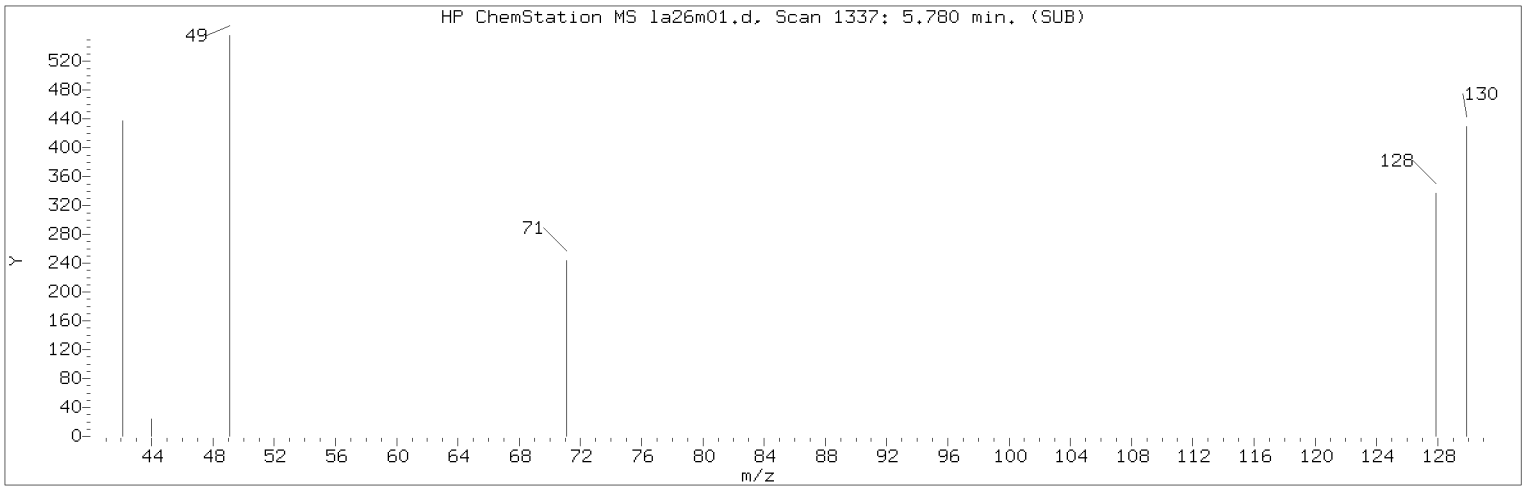
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

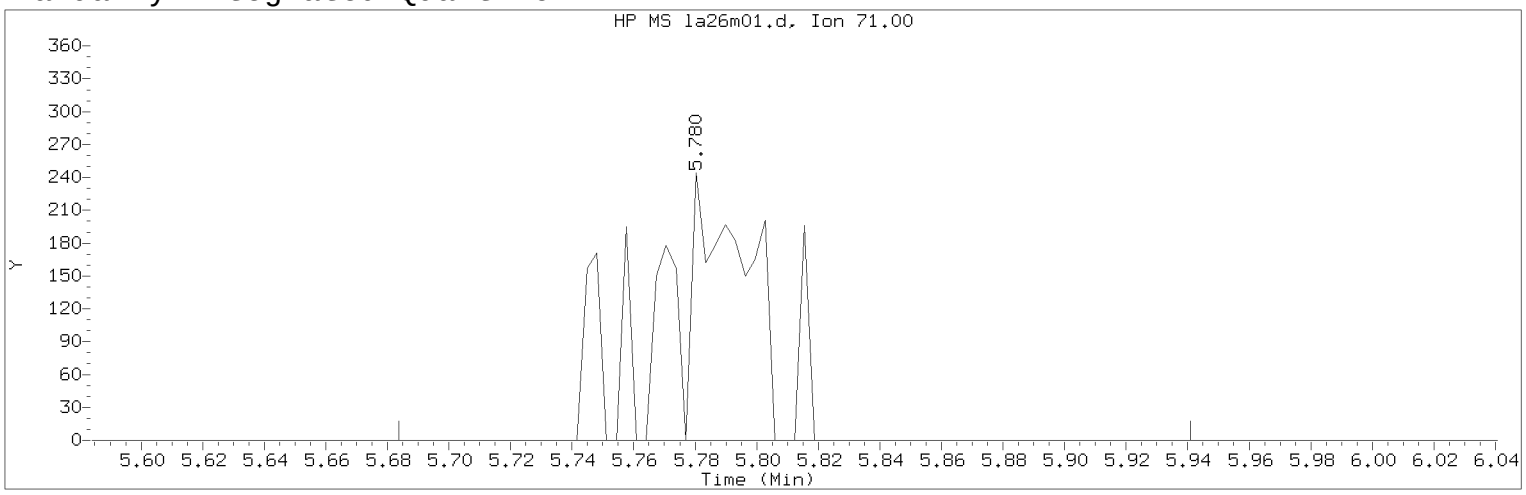
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 881
Retention Time (minutes): 4.314
Quant Ion : 57.00
Area : 2502
On-column Amount (ng) : 0.3717
Integration start scan : 867 Integration stop scan: 897
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS02648 Page 240 of 867

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

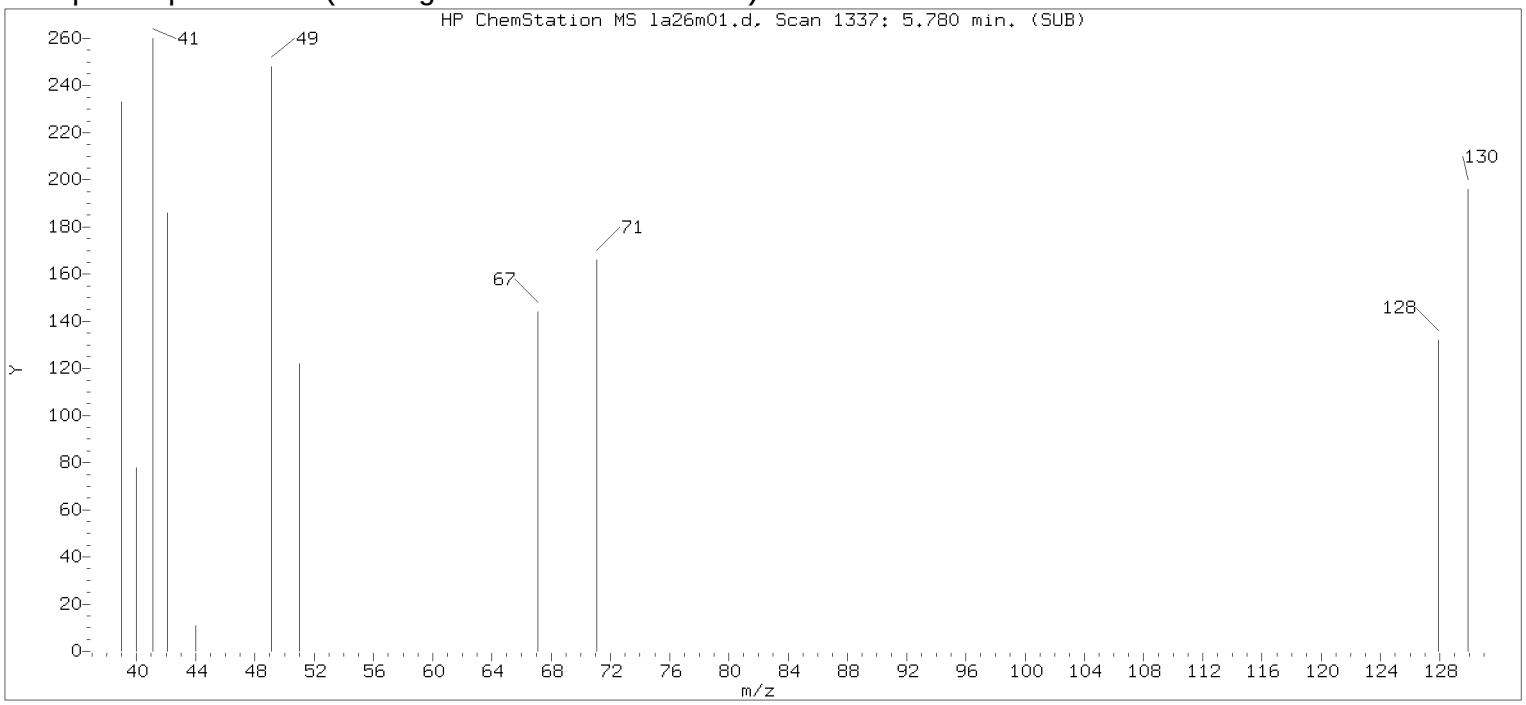
Compound Number : 50
Compound Name : Tetrahydrofuran
Scan Number : 1337
Retention Time (minutes): 5.780
Quant Ion : 71.00
Area (flag) : 517M
On-Column Amount (ng) : 0.5933
Integration start scan : 1306 Integration stop scan: 1386
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

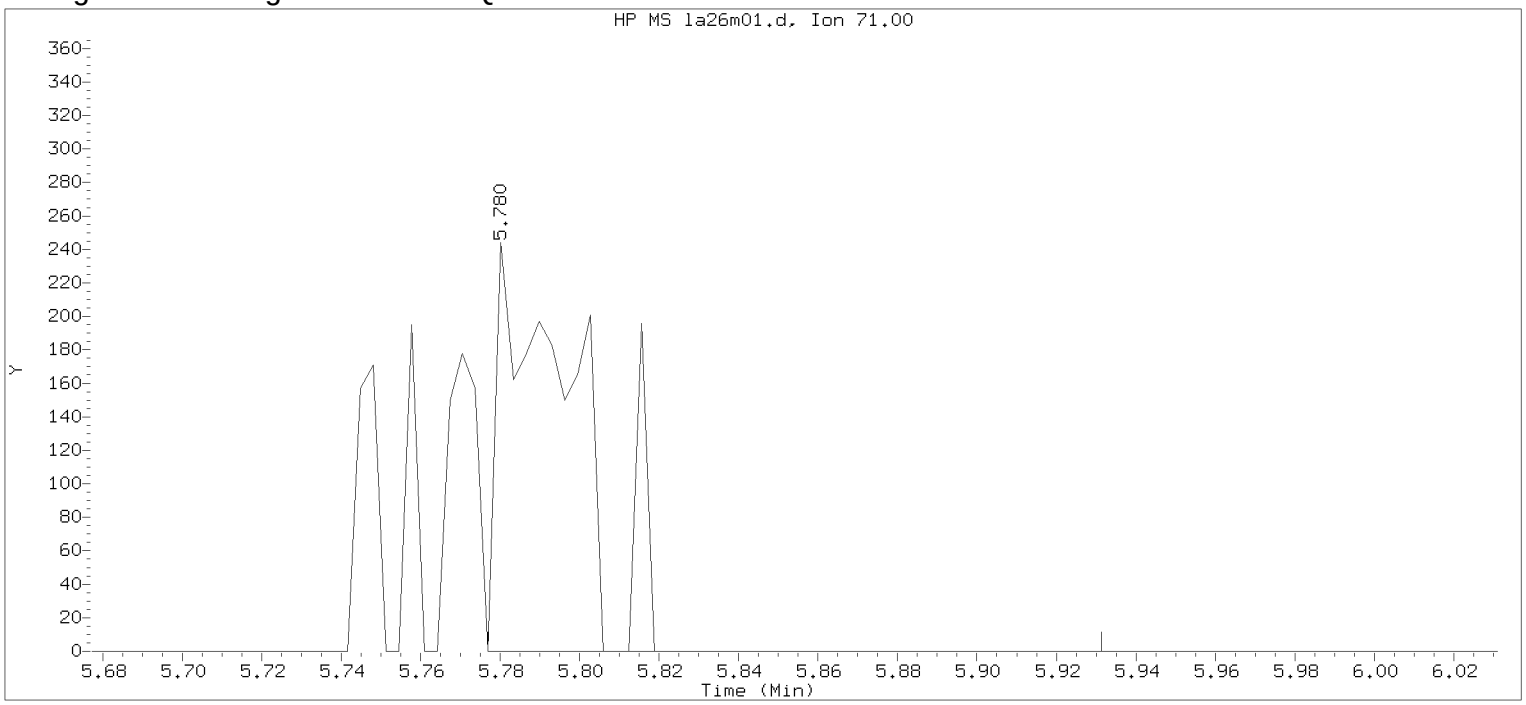
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

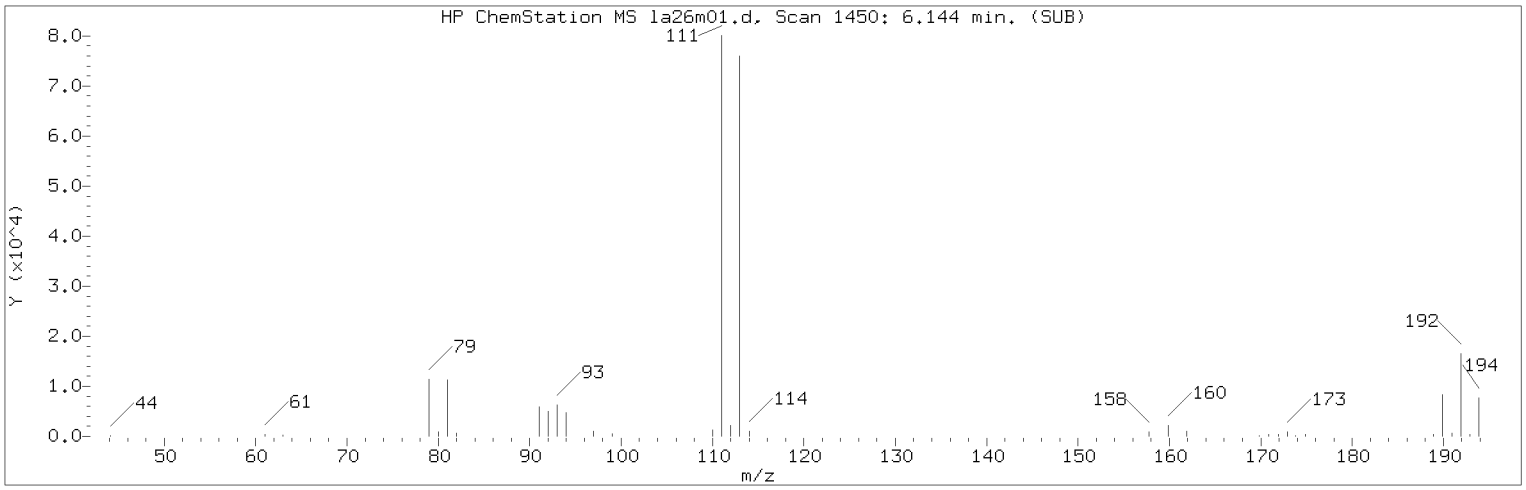
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

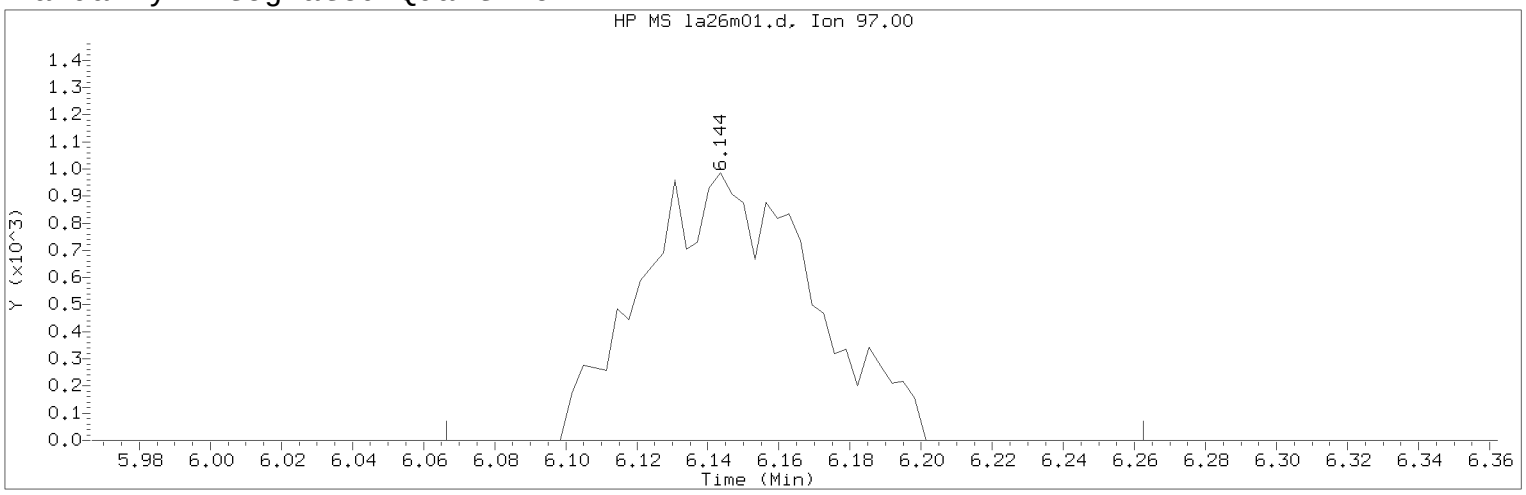
Compound Number : 50
Compound Name : Tetrahydrofuran
Scan Number : 1337
Retention Time (minutes): 5.780
Quant Ion : 71.00
Area : 323
On-column Amount (ng) : 0.3705
Integration start scan : 1335 Integration stop scan: 1383
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

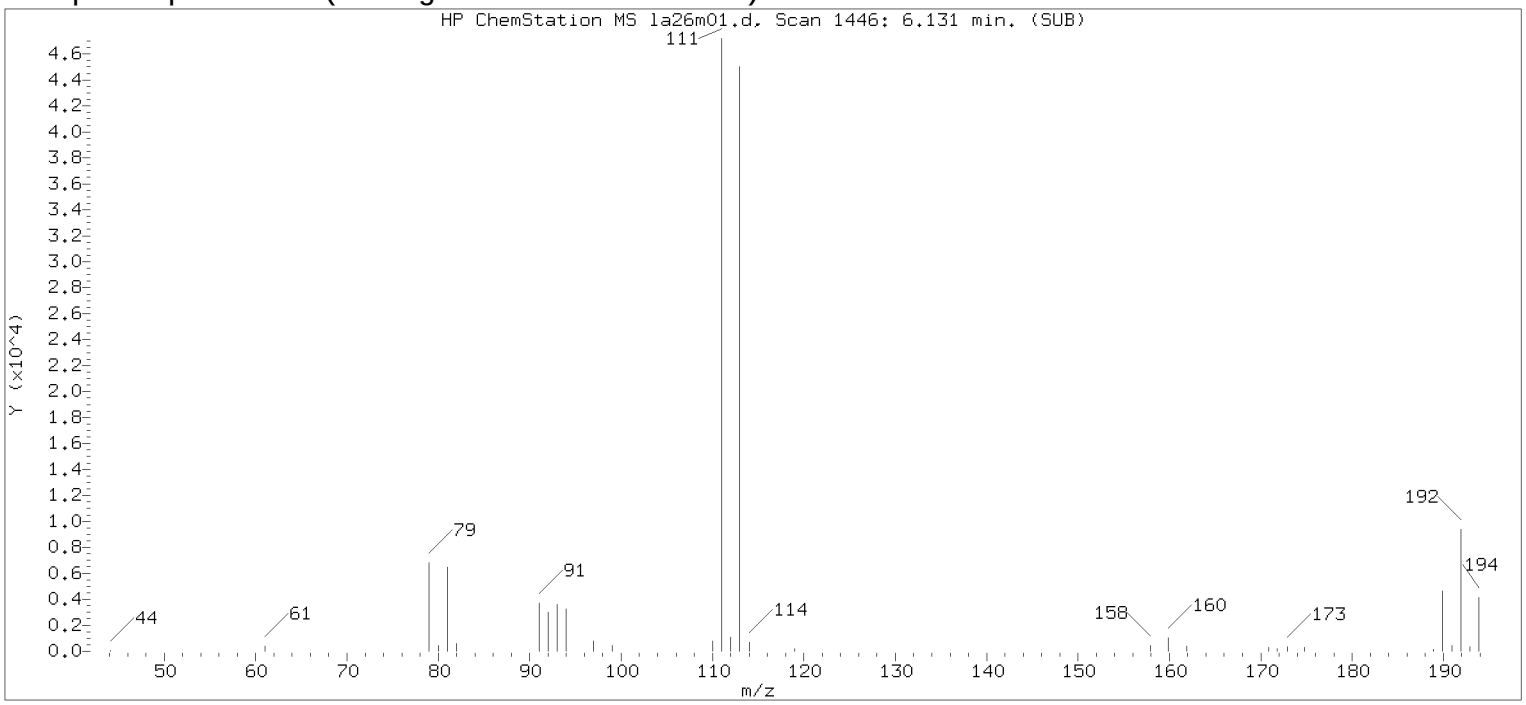
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1450
Retention Time (minutes): 6.144
Quant Ion : 97.00
Area (flag) : 3253M
On-Column Amount (ng) : 0.4525
Integration start scan : 1425 Integration stop scan: 1486
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

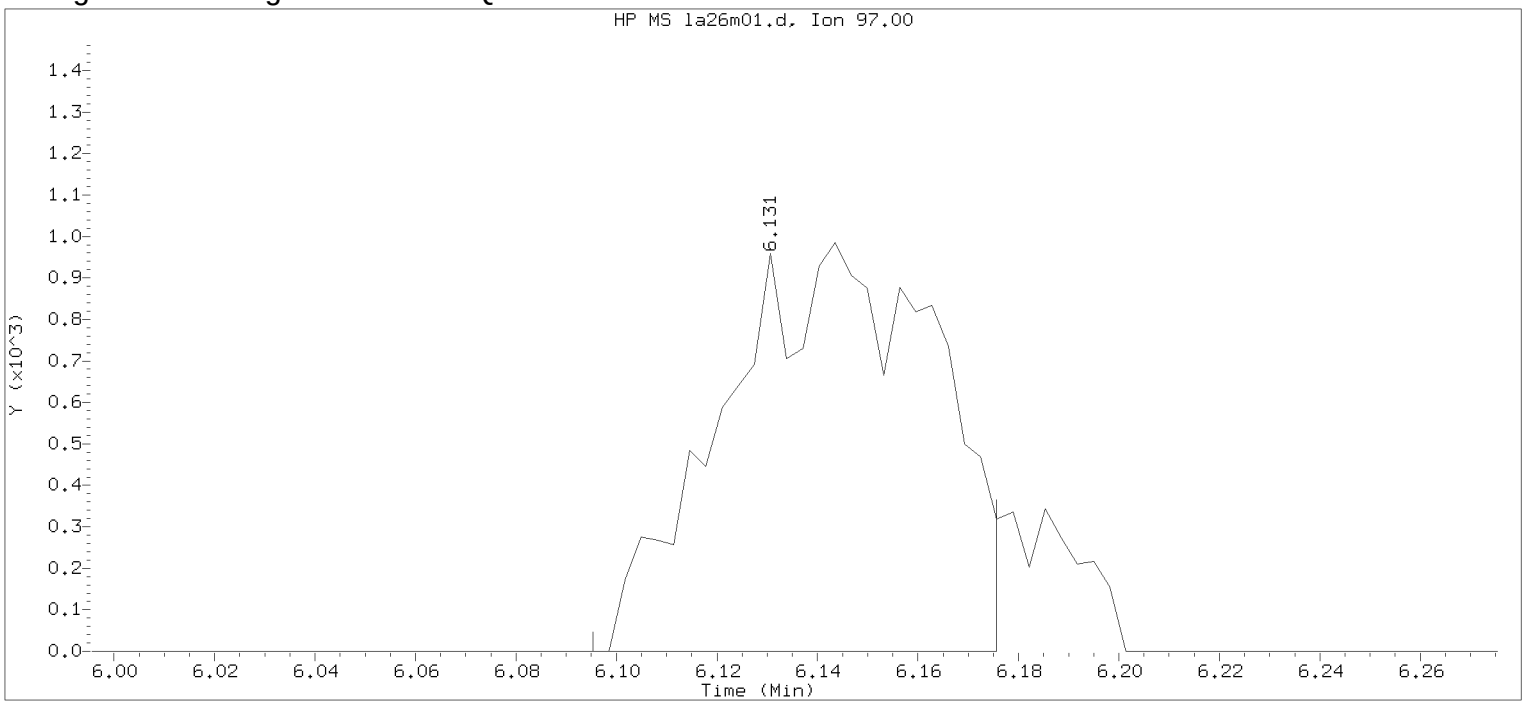
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1446
Retention Time (minutes): 6.131
Quant Ion : 97.00
Area : 2887
On-column Amount (ng) : 0.4017
Integration start scan : 1434 Integration stop scan: 1459
Y at integration start : 0 Y at integration end: 0

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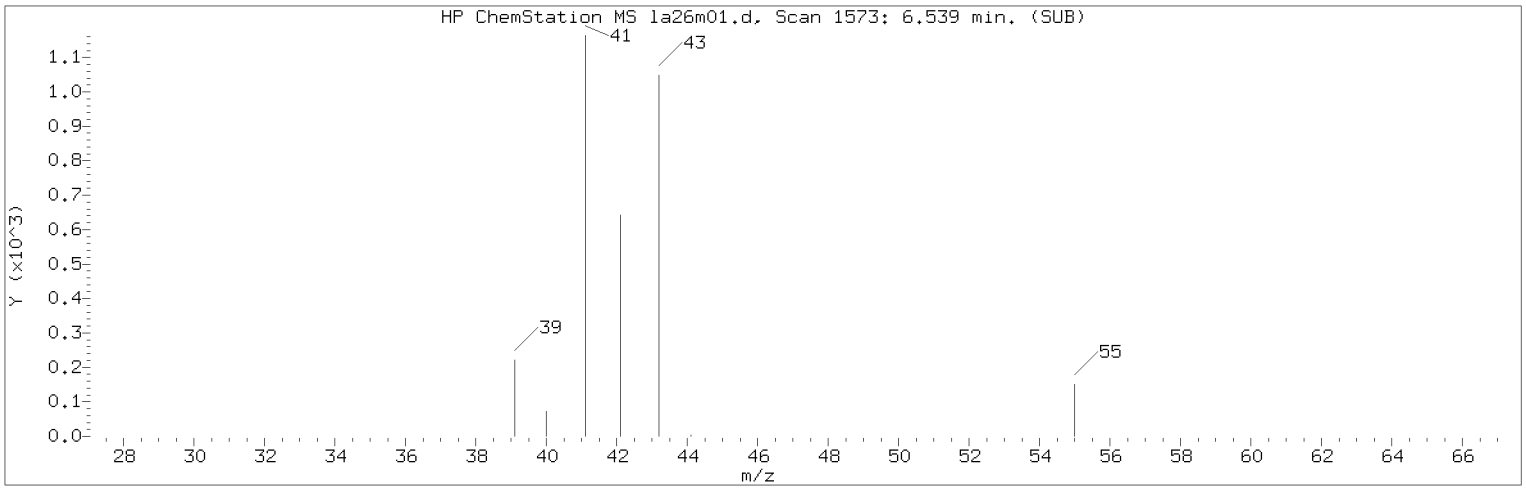
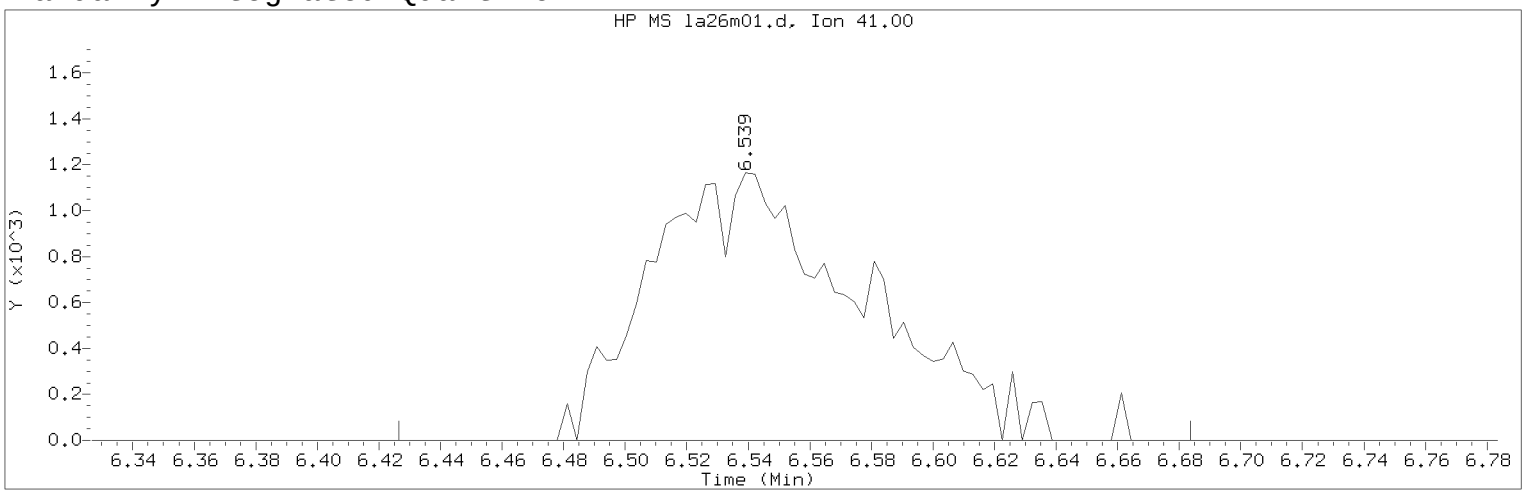
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

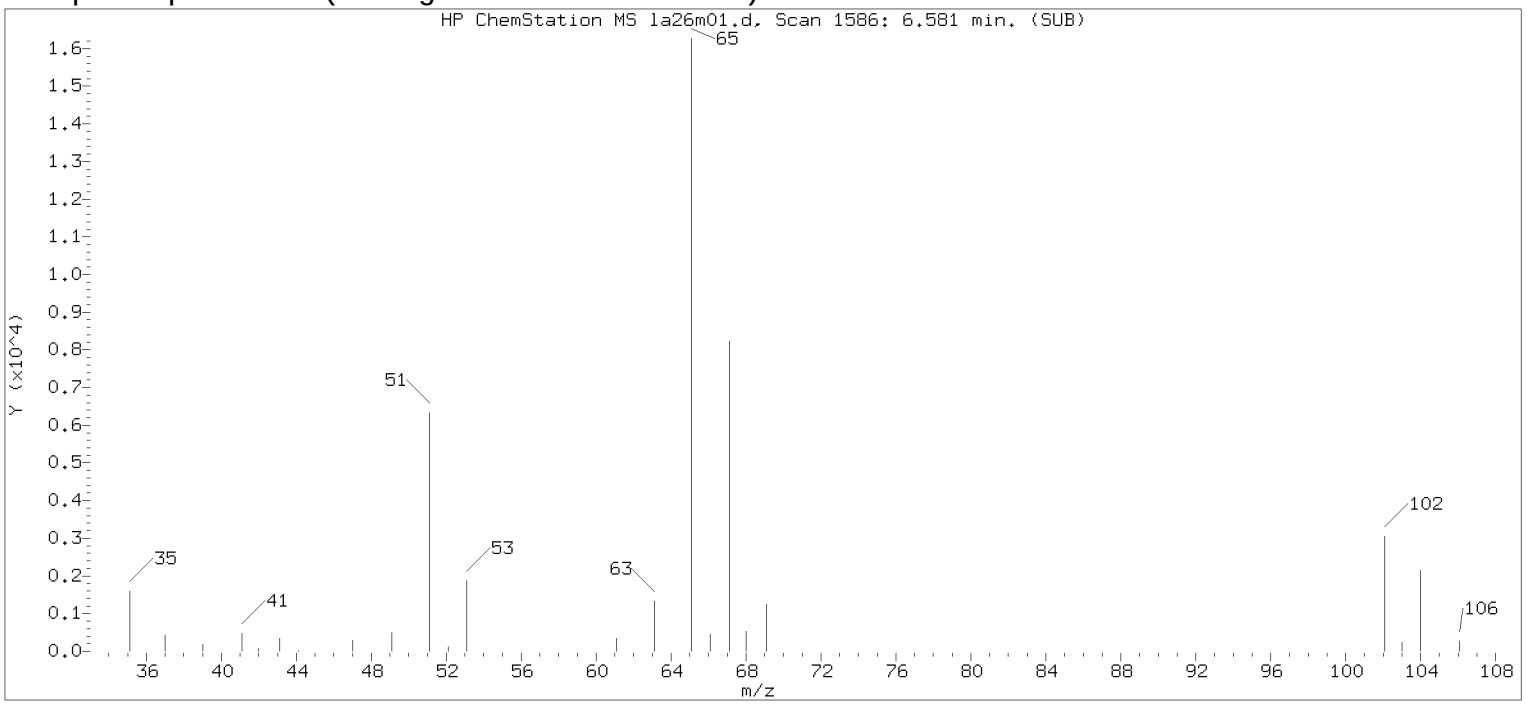
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 1573
Retention Time (minutes): 6.539
Quant Ion : 41.00
Area (flag) : 5623M
On-Column Amount (ng) : 23.6581
Integration start scan : 1537  Integration stop scan: 1617
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

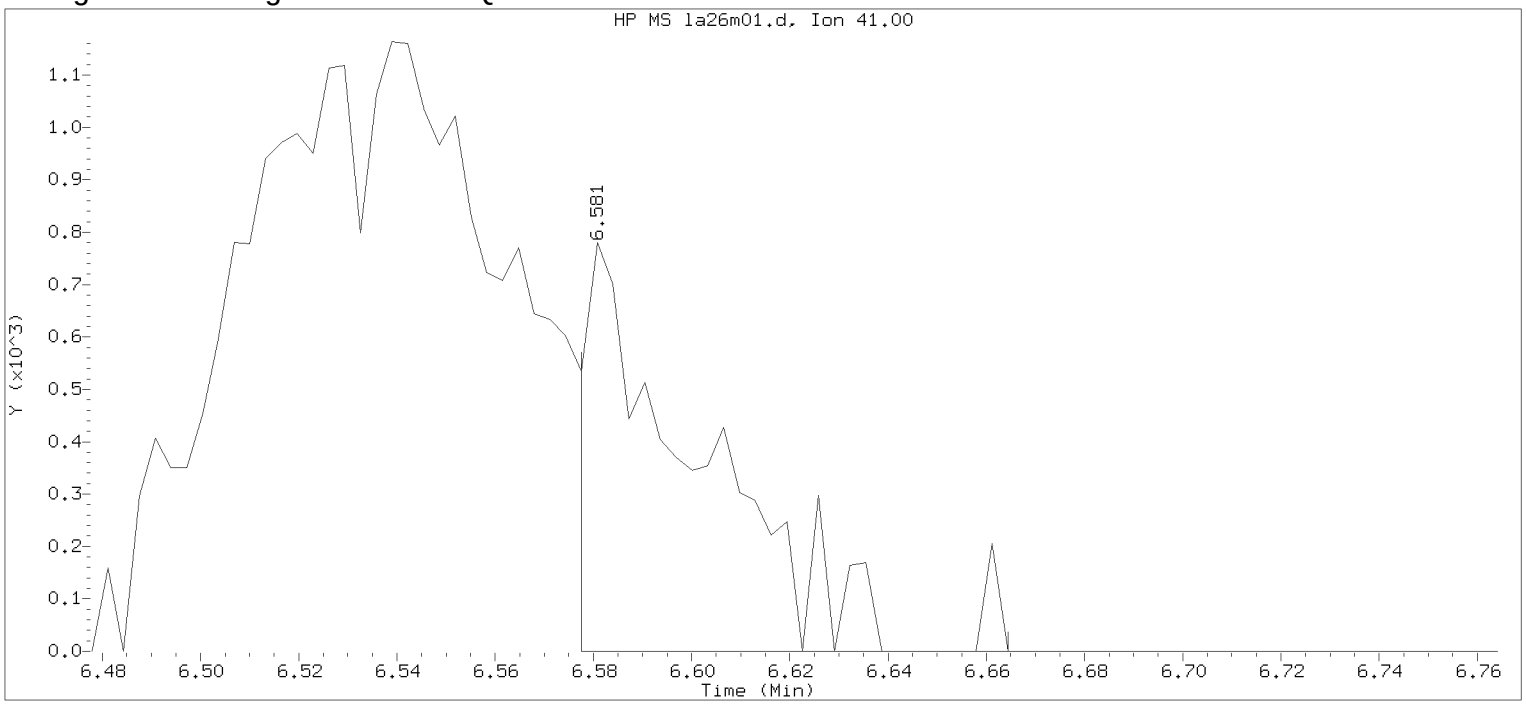
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

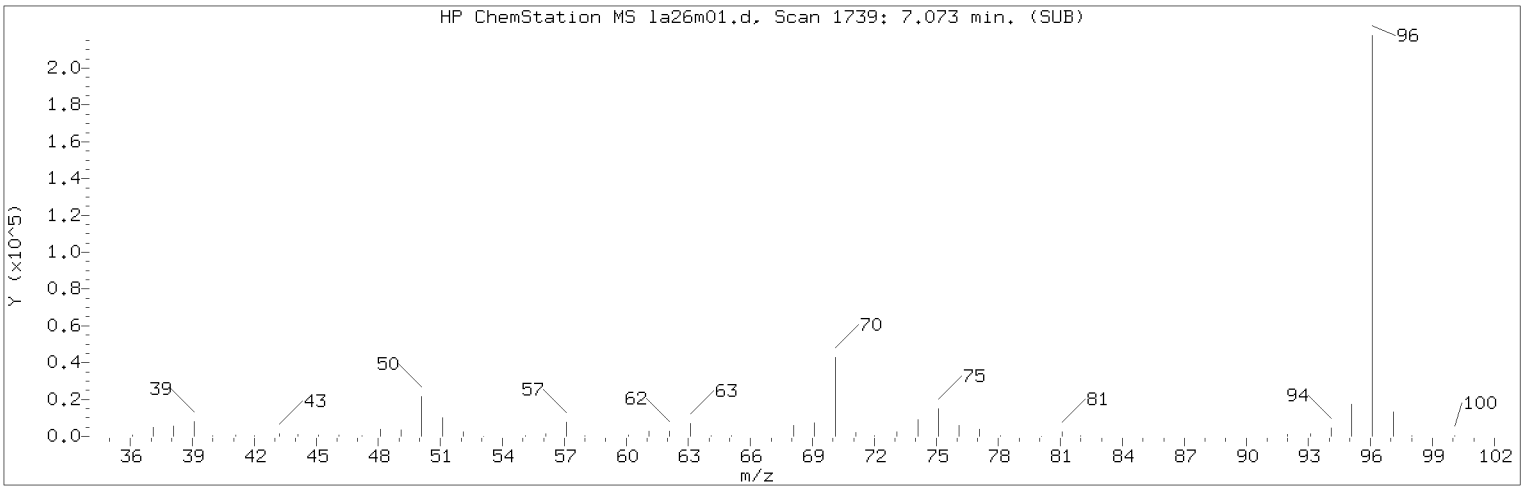
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

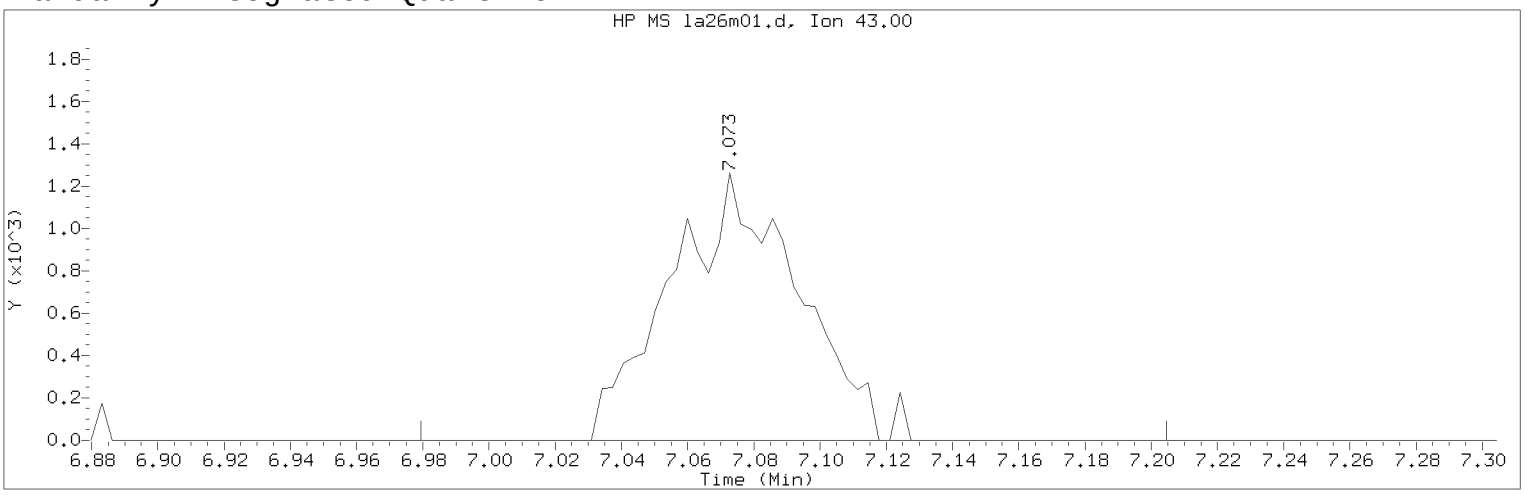
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 1586
Retention Time (minutes): 6.581
Quant Ion : 41.00
Area : 1254
On-column Amount (ng) : 5.2771
Integration start scan : 1584 Integration stop scan: 1611
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

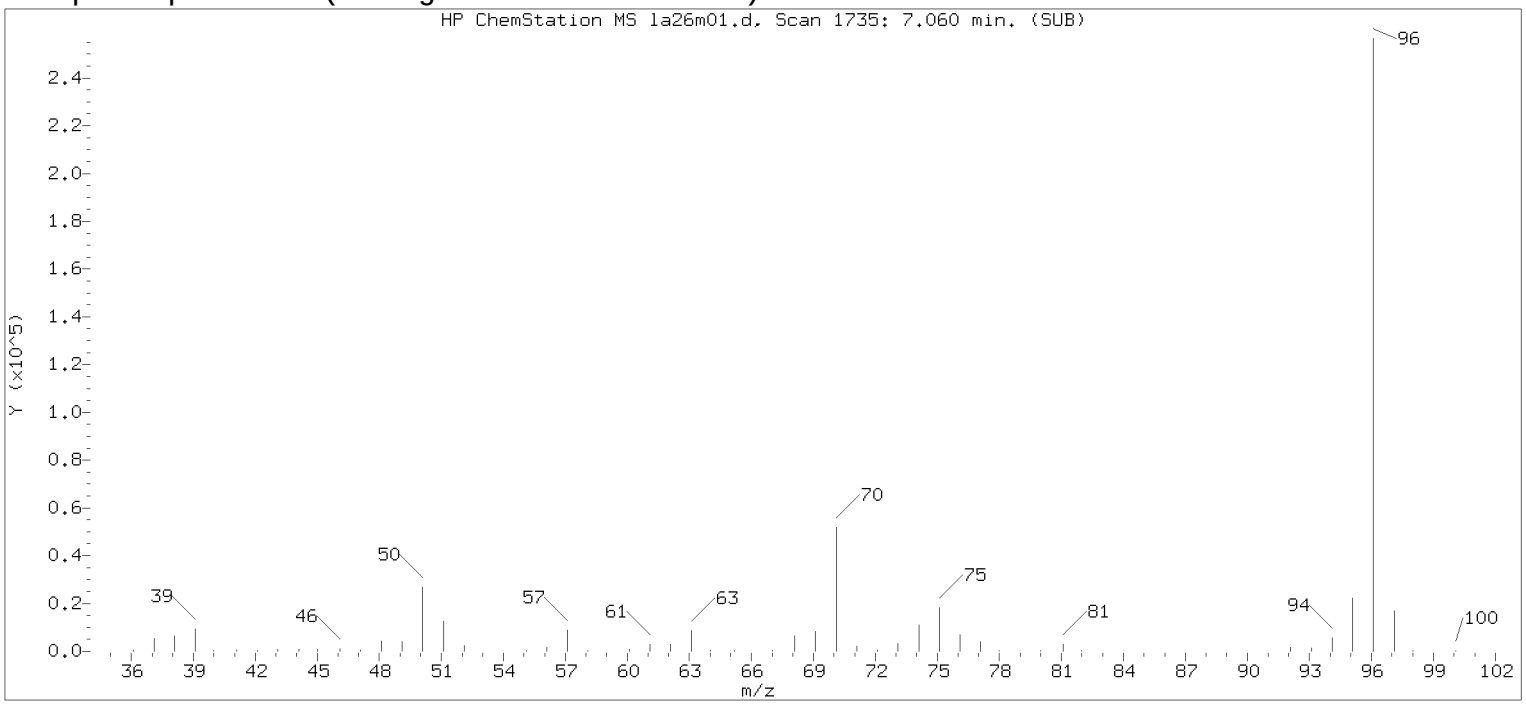
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1739
Retention Time (minutes): 7.073
Quant Ion : 43.00
Area (flag) : 3401M
On-Column Amount (ng) : 0.4512
Integration start scan : 1709 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

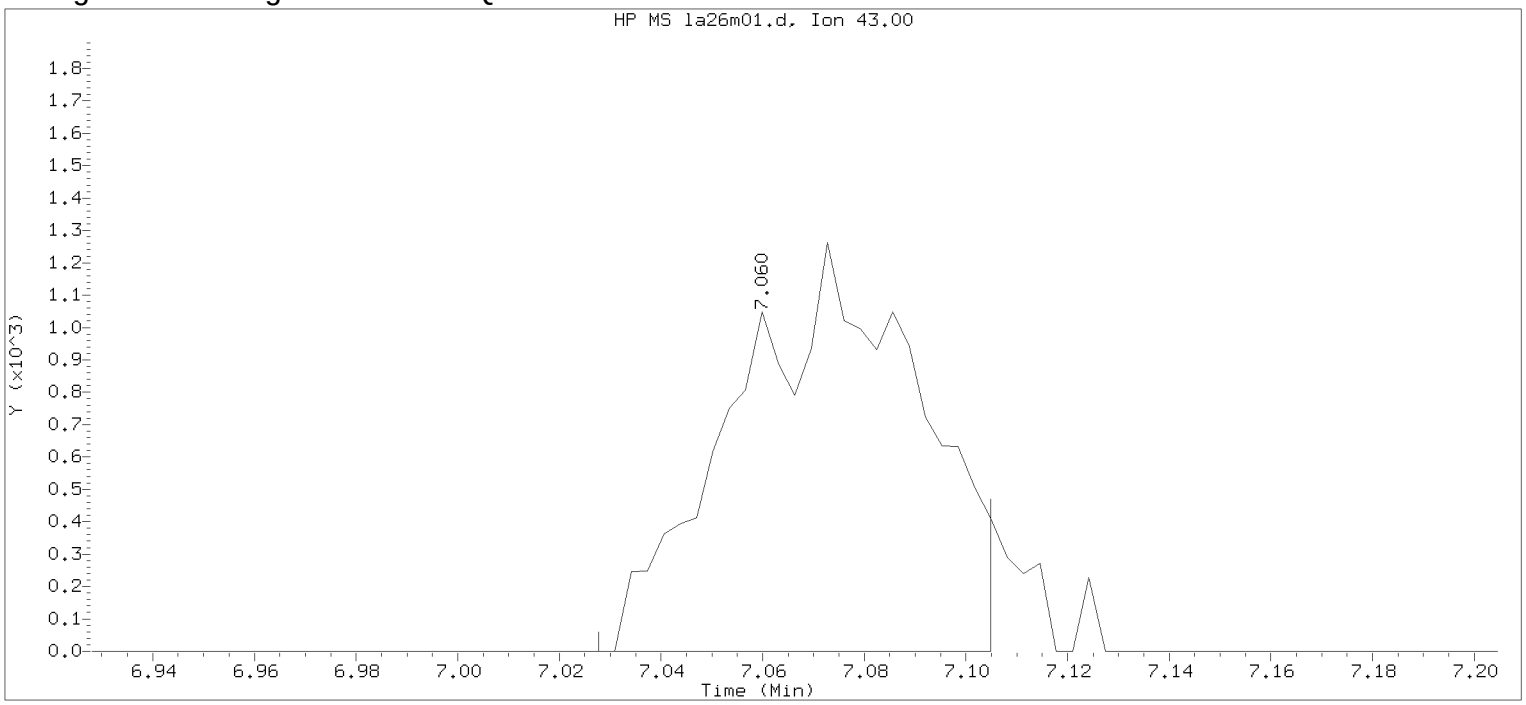
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

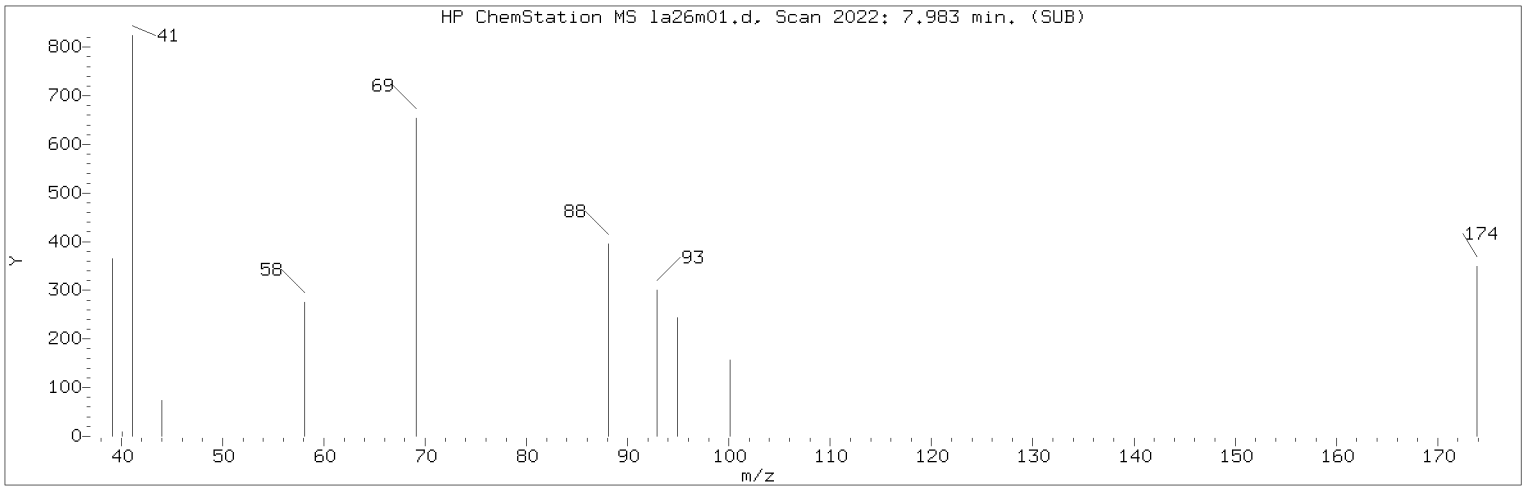
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

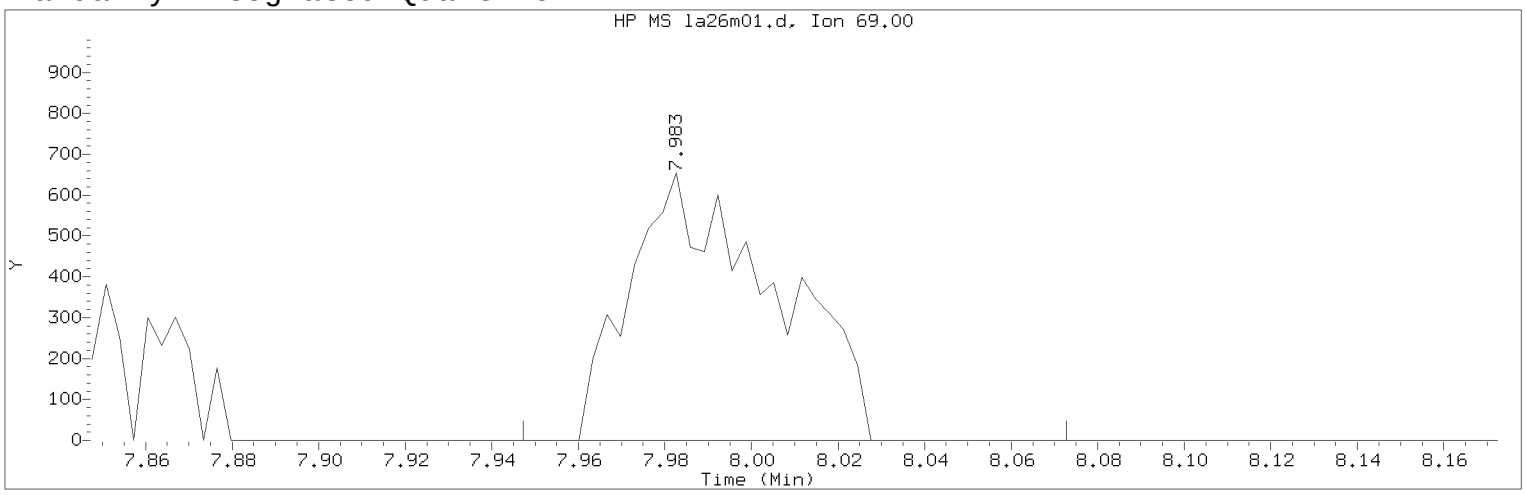
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1735
Retention Time (minutes): 7.060
Quant Ion : 43.00
Area : 3163
On-column Amount (ng) : 0.4196
Integration start scan : 1724 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

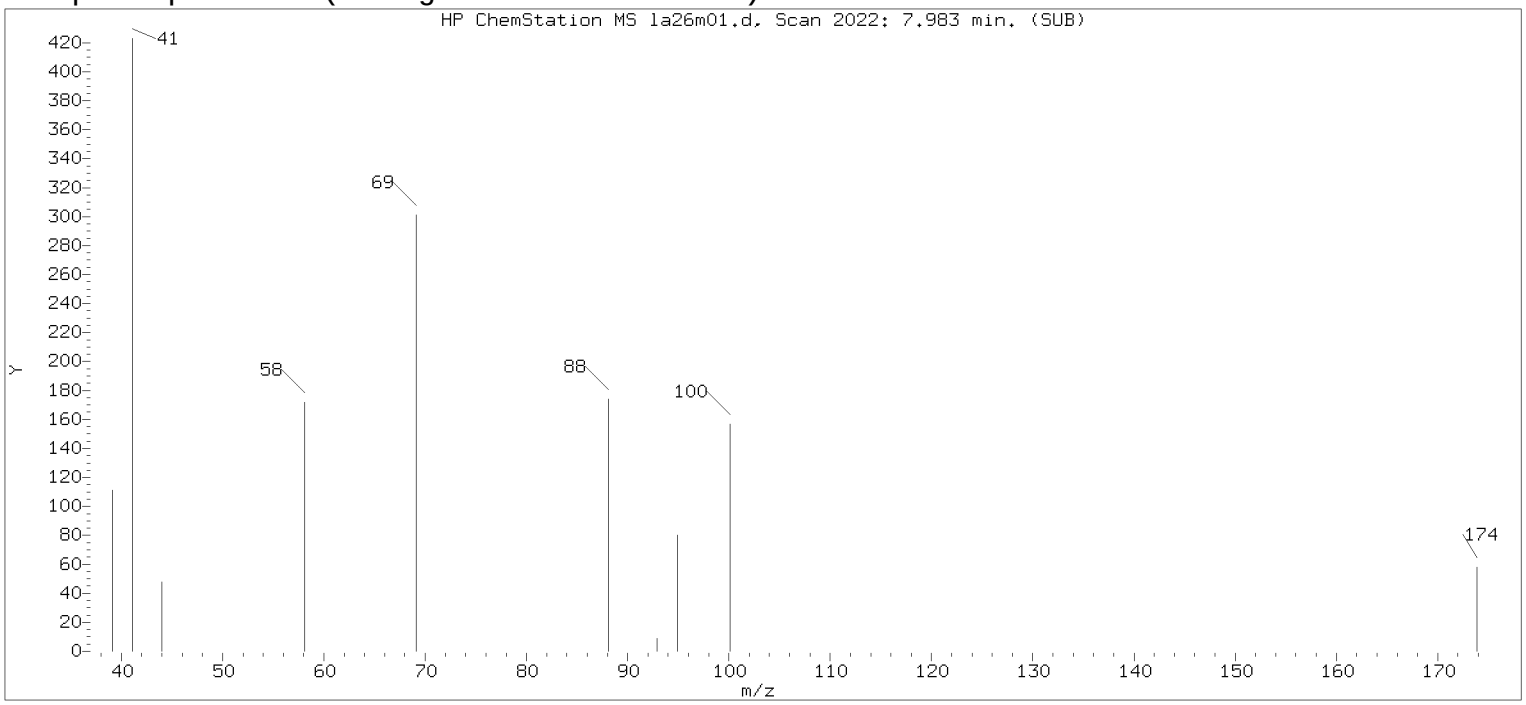
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 1518M
On-Column Amount (ng) : 0.3435
Integration start scan : 2010 Integration stop scan: 2049
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

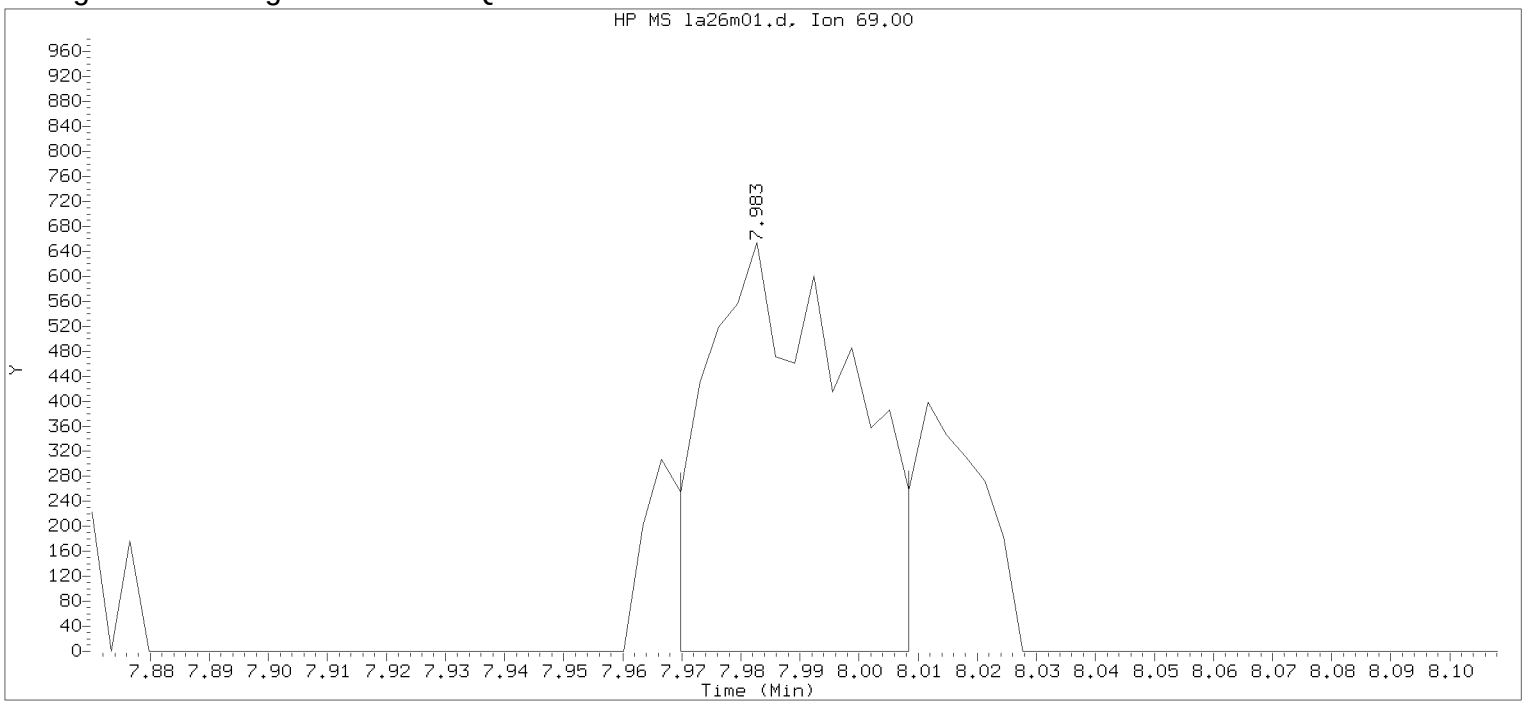
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

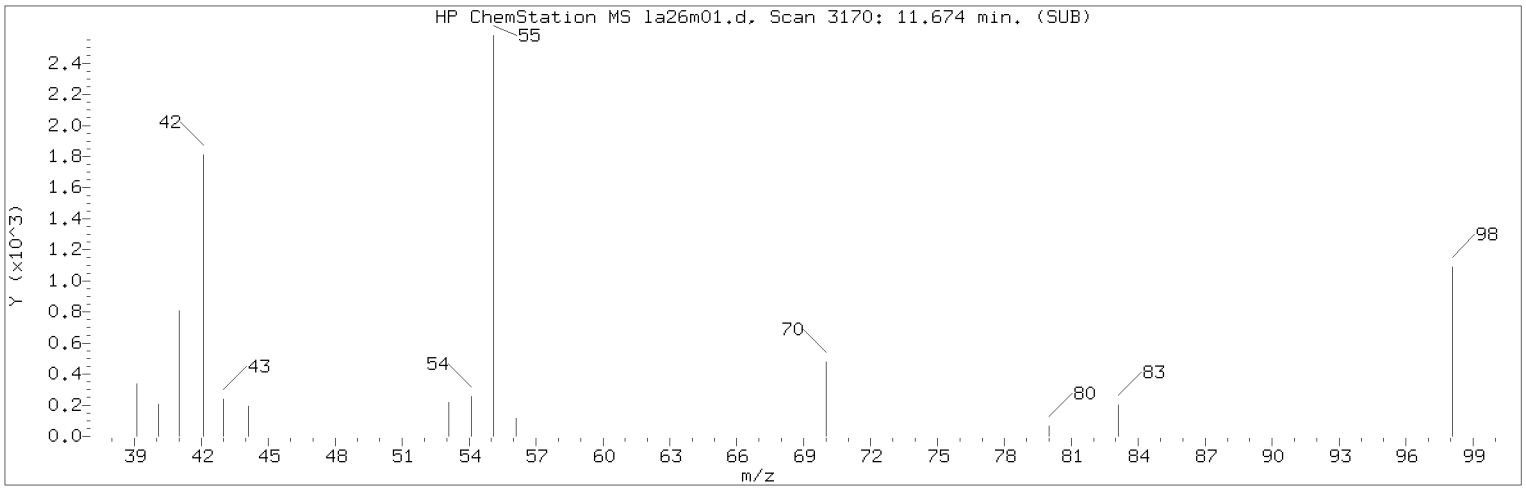
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

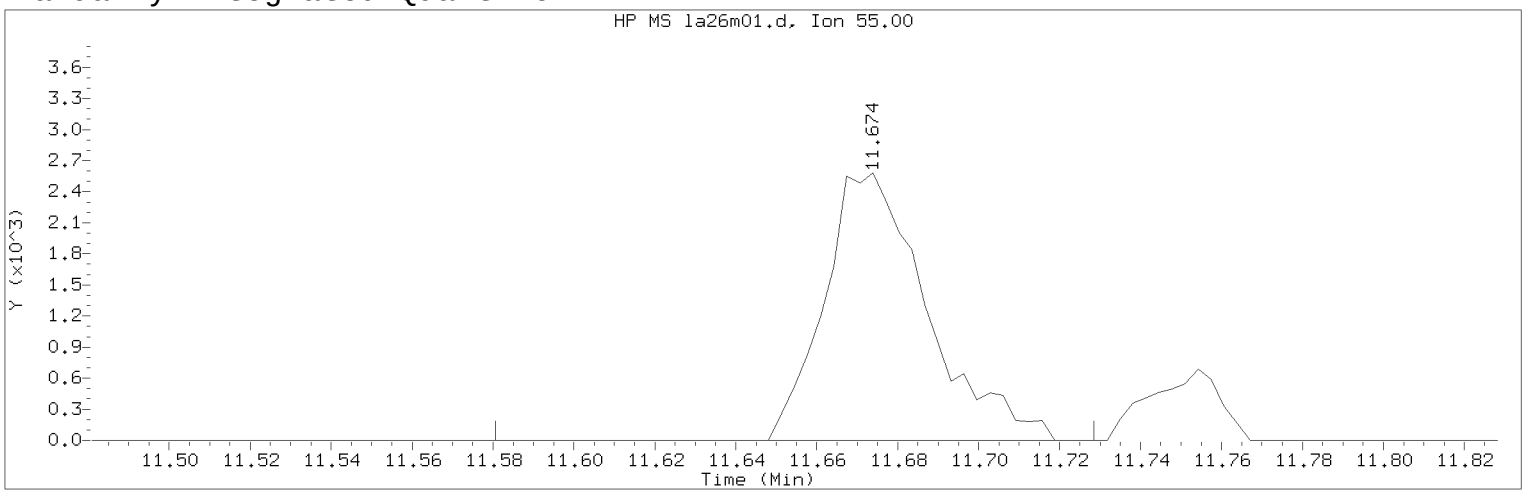
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area : 1079
On-column Amount (ng) : 0.2442
Integration start scan : 2017 Integration stop scan: 2029
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648 Page 640

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

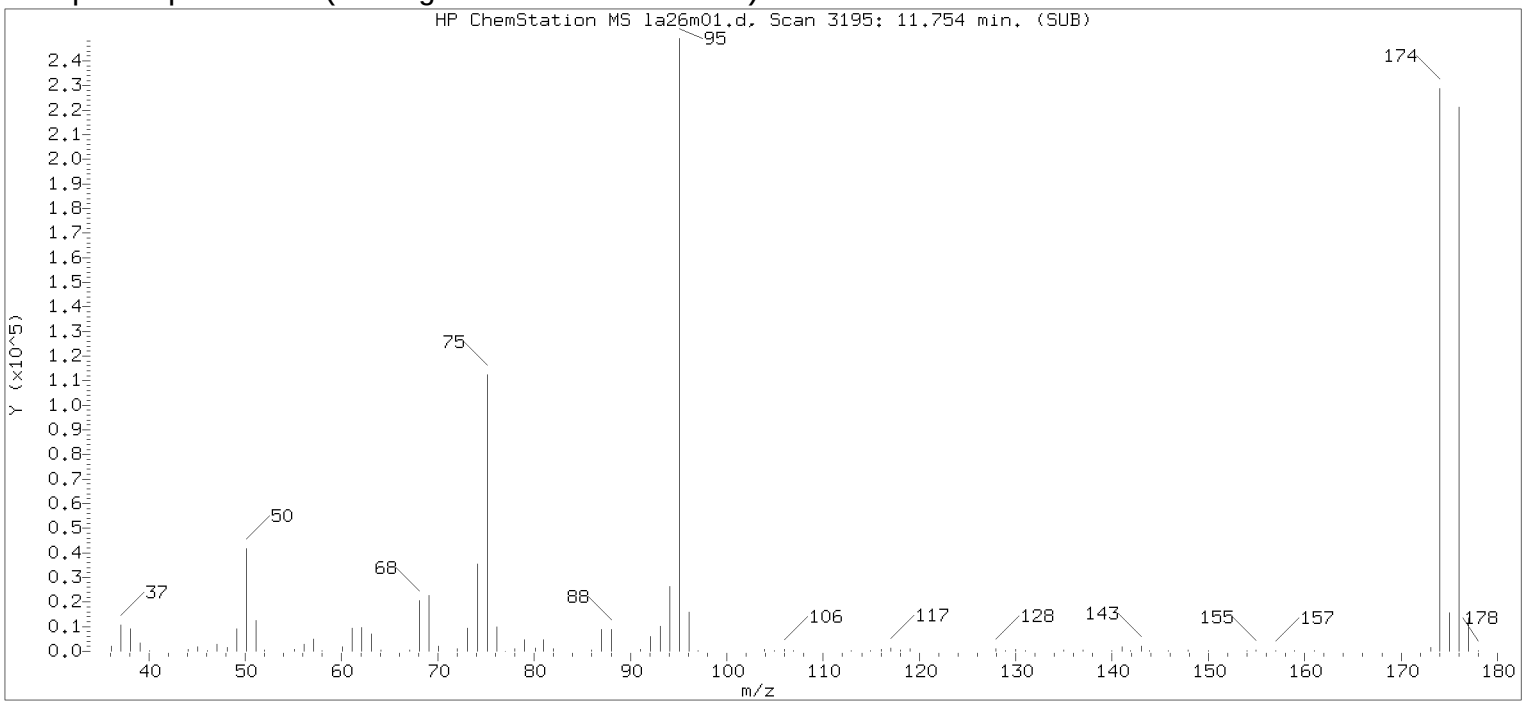
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3170
Retention Time (minutes): 11.674
Quant Ion : 55.00
Area (flag) : 4553M
On-Column Amount (ng) : 20.1799
Integration start scan : 3140 Integration stop scan: 3186
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

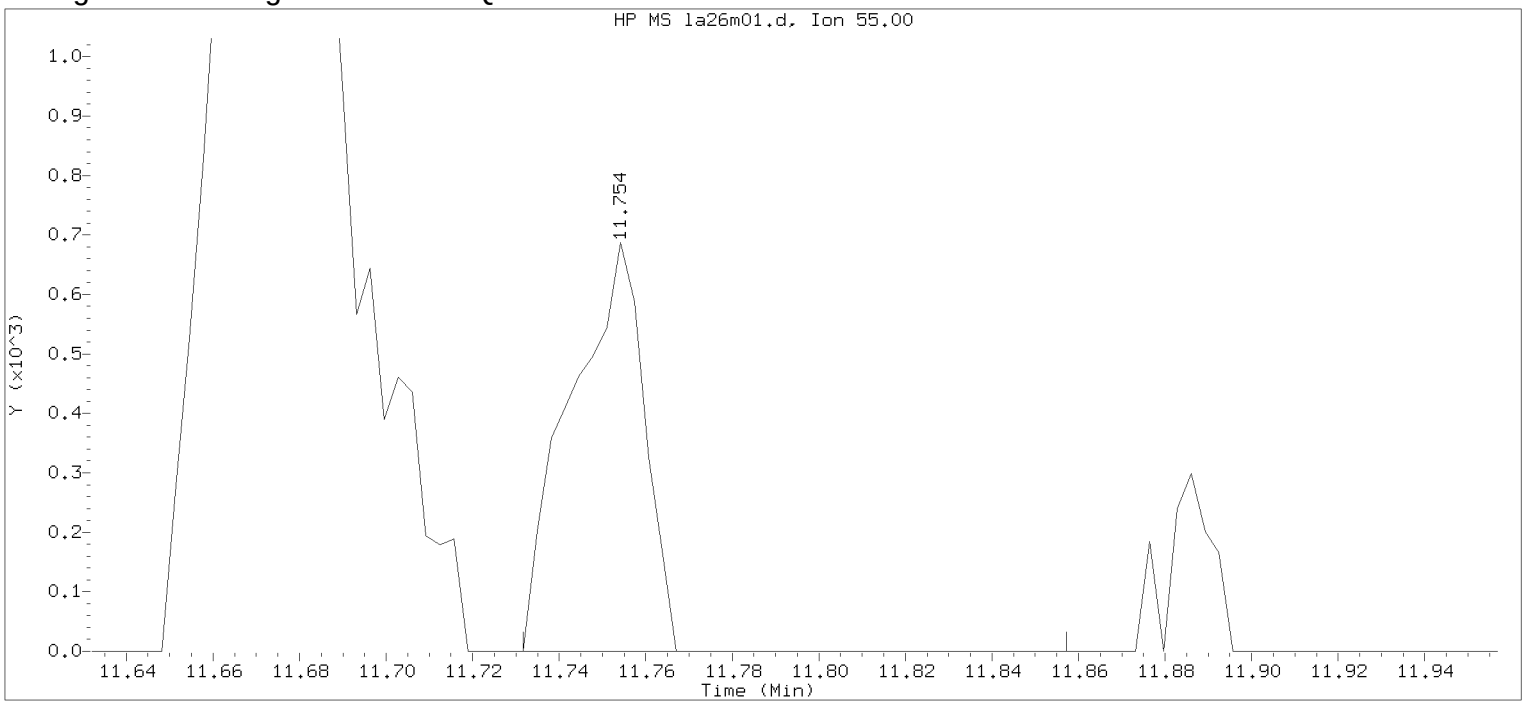
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

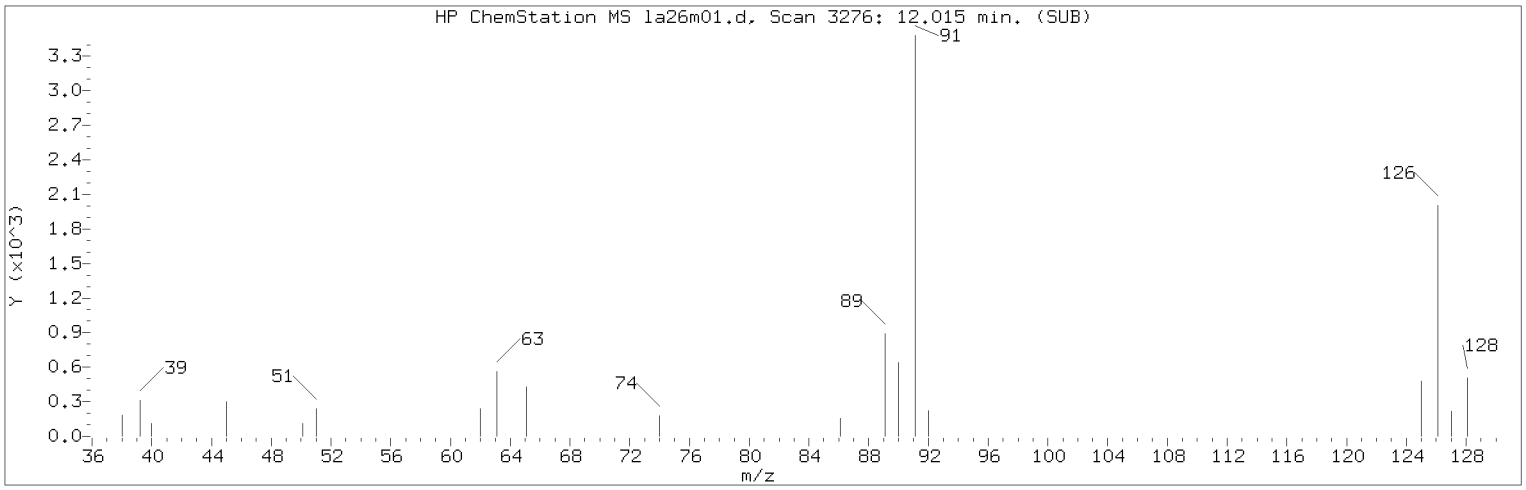
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

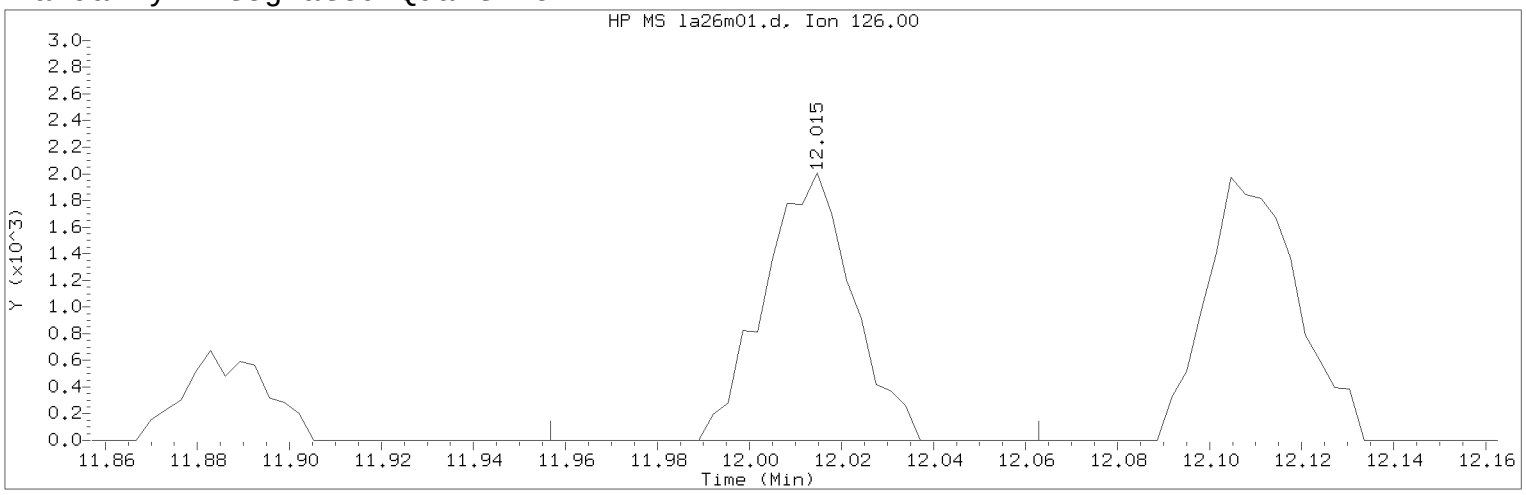
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3195
Retention Time (minutes): 11.754
Quant Ion : 55.00
Area : 817
On-column Amount (ng) : 3.6224
Integration start scan : 3187 Integration stop scan: 3226
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

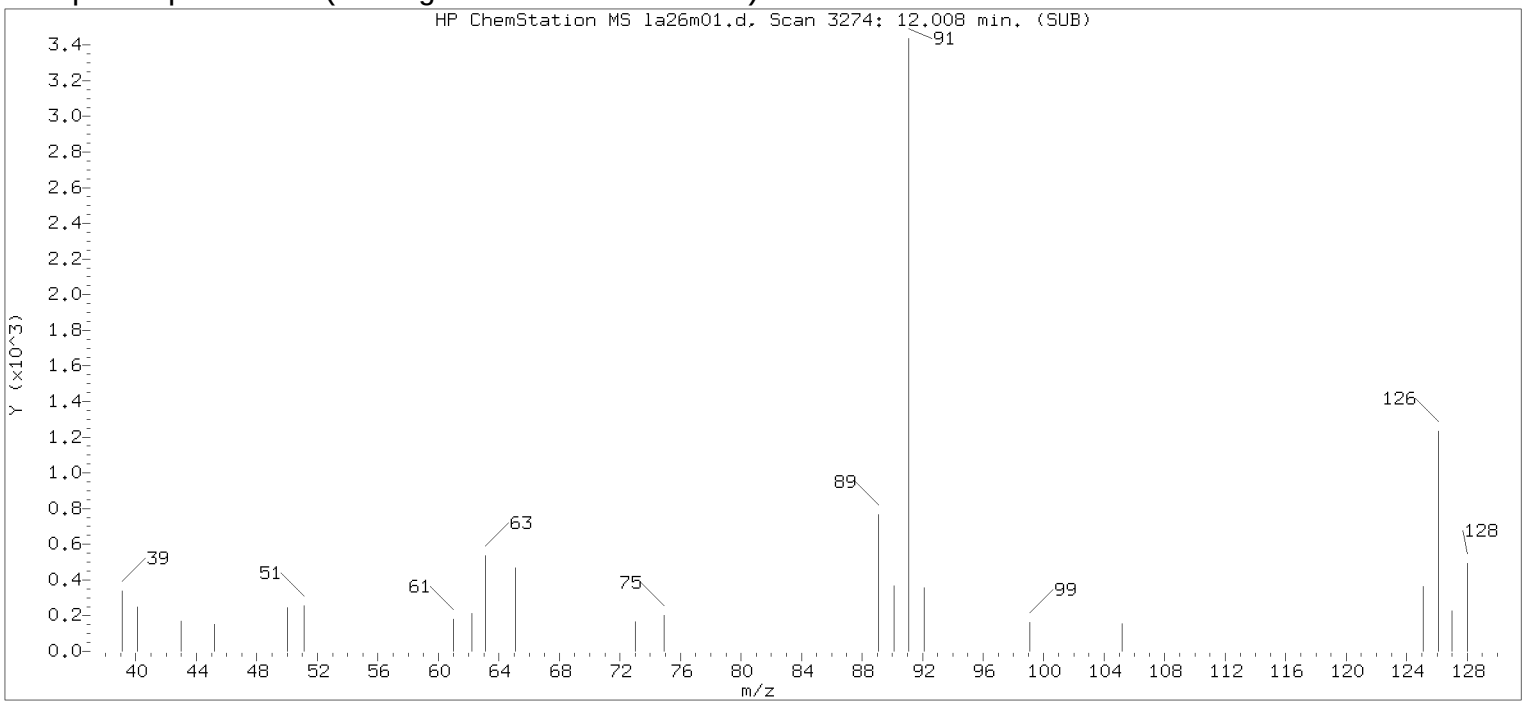
Compound Number : 120
Compound Name : 2-Chlorotoluene
Scan Number : 3276
Retention Time (minutes): 12.015
Quant Ion : 126.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.4793
Integration start scan : 3257 Integration stop scan: 3290
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

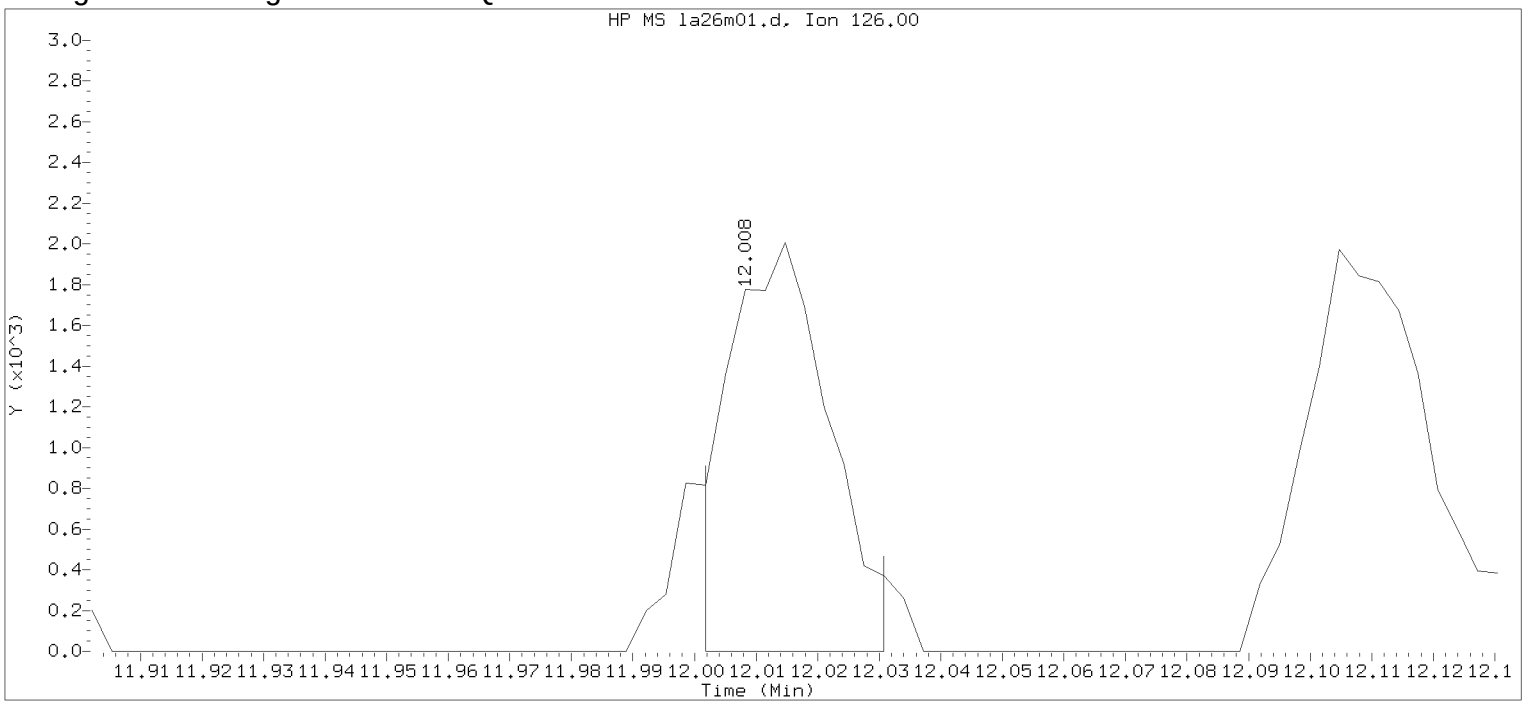
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 120
Compound Name : 2-Chlorotoluene
Scan Number : 3274
Retention Time (minutes): 12.008
Quant Ion : 126.00
Area : 2264
On-column Amount (ng) : 0.4049
Integration start scan : 3271 Integration stop scan: 3280
Y at integration start : 0 Y at integration end: 0

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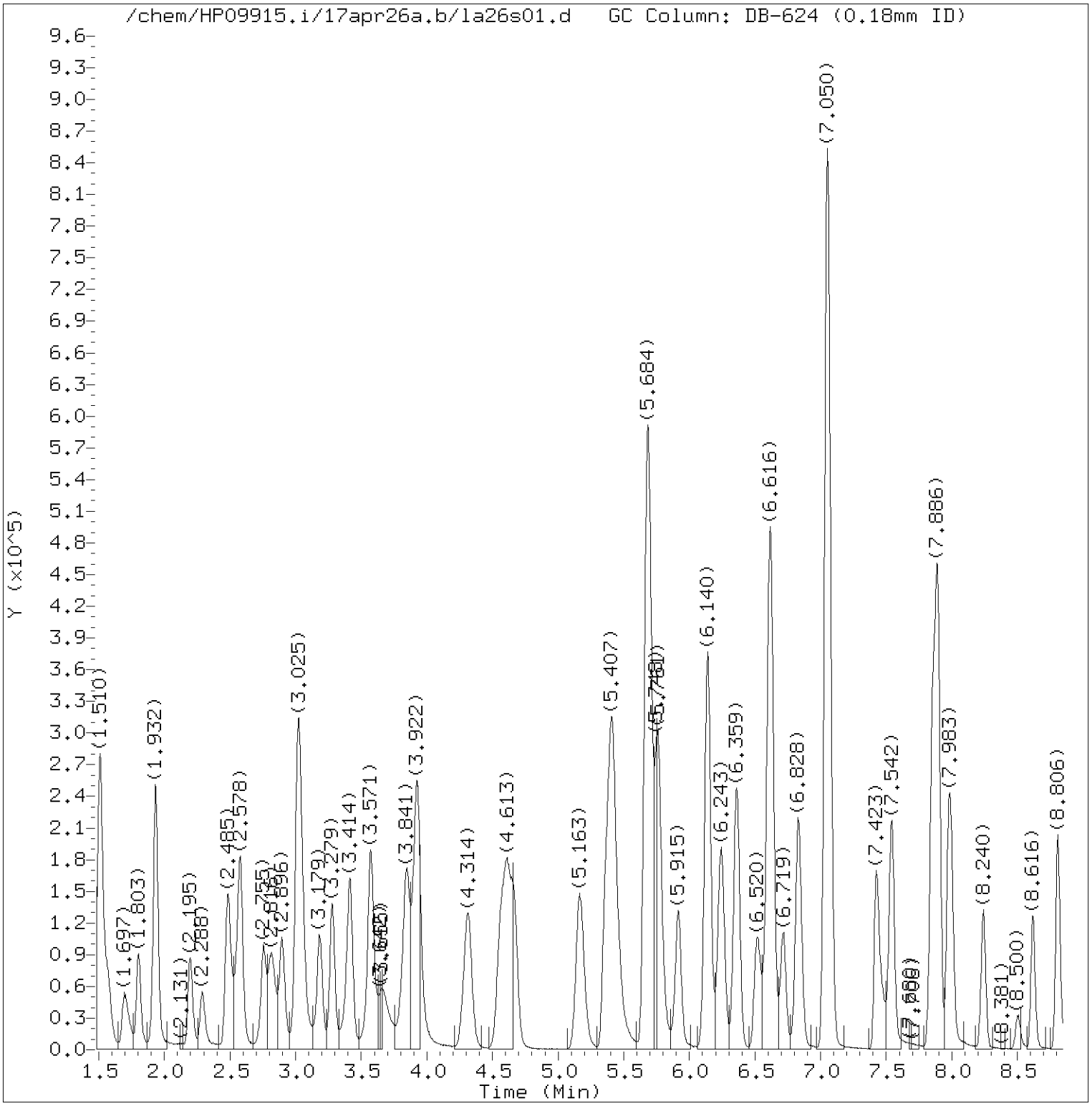
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

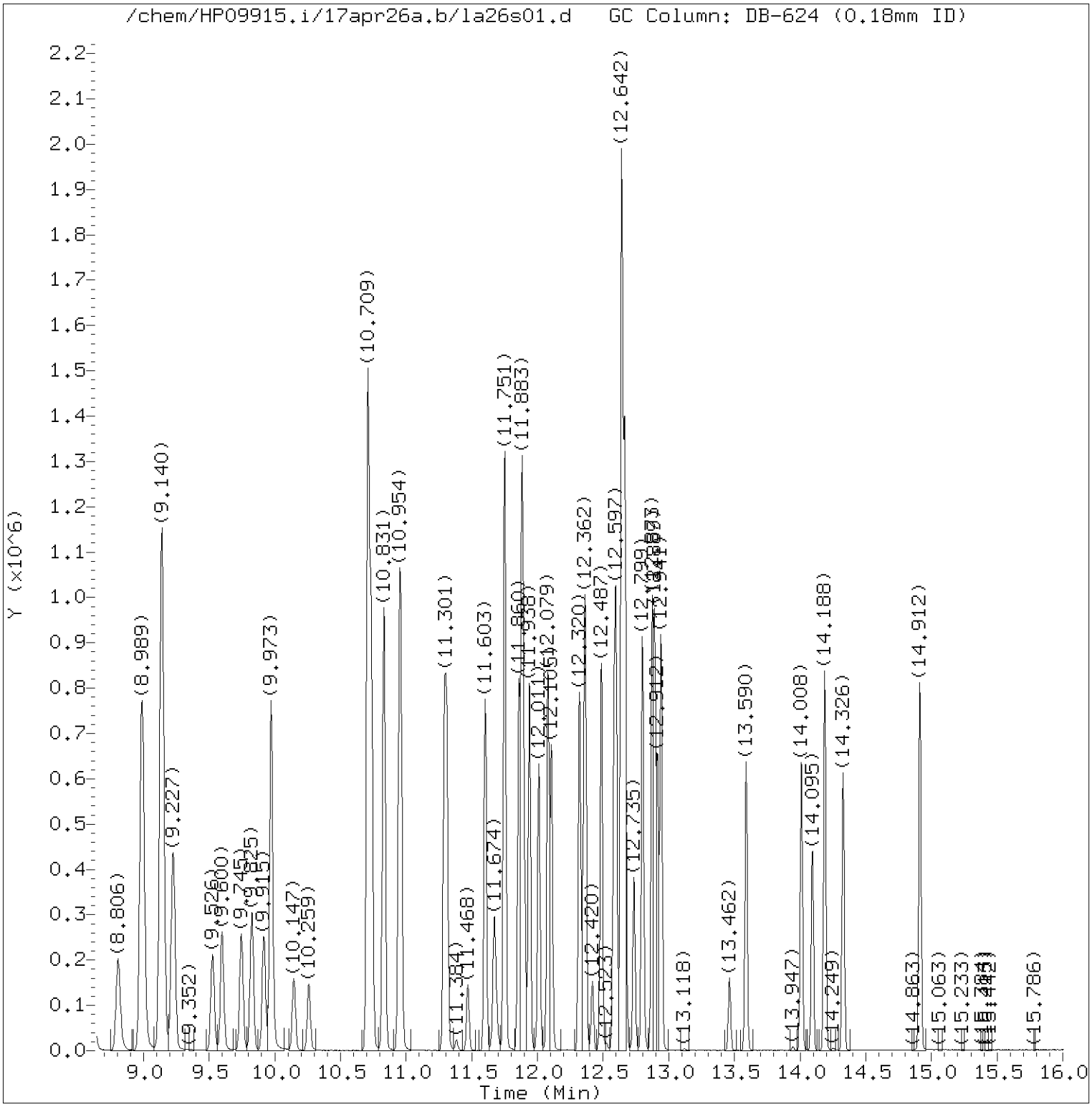
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.697 | 85 | 109499 | 17.491 |
| 4) Chloromethane | (2) | 1.803 | 50 | 118648 | 18.449 |
| 6) Vinyl Chloride | (2) | 1.919 | 62 | 116746 | 18.799 |
| 5) 1,3-Butadiene | (2) | 1.938 | 39 | 117706 | 31.074 |
| 8) Bromomethane | (2) | 2.195 | 94 | 78860 | 18.880 |
| 9) Chloroethane | (2) | 2.288 | 64 | 65535 | 18.726 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 168800 | 19.774 |
| 12) Trichlorofluoromethane | (2) | 2.546 | 101 | 141676 | 19.701 |
| 11) n-Pentane | (2) | 2.581 | 43 | 155972 | 26.336 |
| 14) Ethyl ether | (2) | 2.755 | 59 | 78549 | 19.620 |
| 15) Freon 123a | (2) | 2.816 | 67 | 99077 | 20.687 |
| 16) Acrolein | (1) | 2.899 | 56 | 152765 | 93.014 |
| 17) 1,1-Dichloroethene | (2) | 3.012 | 96 | 85092 | 22.356 |
| 18) Acetone | (1) | 3.031 | 58 | 98646M | 138.386 |
| 19) Freon 113 | (2) | 3.034 | 101 | 87279 | 22.782 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 62534M | 132.335 |
| 22) Methyl Iodide | (2) | 3.179 | 142 | 158156 | 21.423 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 276153 | 22.295 |
| 27) Methyl Acetate | (2) | 3.385 | 43 | 108608 | 19.660 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 150132 | 19.692 |
| 28) Methylene Chloride | (2) | 3.571 | 84 | 100067 | 19.902 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 200632M | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 144050 | 185.564 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 276003 | 95.141 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.912 | 73 | 275653 | 19.769 |
| 32) trans-1,2-Dichloroethene | (2) | 3.925 | 96 | 96639 | 21.640 |
| 34) n-Hexane | (2) | 4.314 | 57 | 148593 | 21.707 |
| 36) 1,1-Dichloroethane | (2) | 4.558 | 63 | 173220 | 20.642 |
| 38) di-Isopropyl ether | (2) | 4.607 | 45 | 326552 | 20.275 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.661 | 53 | 142863 | 20.183 |
| 40) Ethyl t-butyl ether | (2) | 5.163 | 59 | 267730 | 19.315 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 540273 | 139.091 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 104661 | 20.453 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 107714 | 19.225 |
| 47) Propionitrile | (1) | 5.459 | 54 | 160735 | 141.868 |
| 48) Methacrylonitrile | (2) | 5.684 | 67 | 427221 | 147.714 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 52961 | 19.637 |
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 93578 | 93.510 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.918 | 83 | 160721 | 20.094 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 254549 | 49.603 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 142170 | 19.451 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 201300 | 42.093 |
| 54) Cyclohexane | (2) | 6.243 | 56 | 166429 | 19.998 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 104390 | 19.566 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 125804 | 19.338 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 129876 | 476.515 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63935 | 50.103 |
| 60) Benzene | (2) | 6.629 | 78 | 387251 | 20.194 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 131704 | 20.301 |
| 65) t-Amyl methyl ether | (2) | 6.828 | 73 | 263343 | 19.143 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1050887 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 153007 | 19.964 |
| 69) n-Butanol | (1) | 7.423 | 56 | 206615 | 940.388 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 98914 | 19.959 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 175190 | 20.063 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 106099 | 20.211 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 87598 | 19.494 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 37891M | 552.412 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 66490 | 20.140 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 115395 | 19.368 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 27997 | 16.571 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 75861 | 18.799 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 151800 | 19.548 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 756555 | 94.518 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1039935 | 50.132 |
| 88) Toluene | (3) | 9.227 | 92 | 242182 | 20.090 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 134989 | 19.971 |
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 154350 | 20.273 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 94409 | 20.324 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 104916 | 19.678 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 161543 | 20.042 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 551770 | 94.825 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 286789 | 39.519 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 90734 | 18.858 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 104756 | 20.600 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 812425 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 130363 | 18.831 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 273397 | 19.655 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 87717 | 19.096 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 458197 | 19.705 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 357105 | 39.448 |
| 107) o-Xylene | (3) | 11.291 | 106 | 175615 | 19.507 |
| 109) Styrene | (3) | 11.311 | 104 | 302990 | 20.359 |
| 110) Bromoform | (3) | 11.471 | 173 | 63277 | 18.112 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 461508 | 20.058 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 135081 | 522.068 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 384984 | 49.931 |
| 108) Xylene (Total) | (3) | | 106 | 532720 | 58.955 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 156503 | 20.076 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 122720 | 19.548 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 216768 | 97.039 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 45126 | 20.478 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 543948 | 19.609 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 111198 | 19.261 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 386164 | 19.522 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 117549 | 19.563 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 84253M | 19.704 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 64493 | 19.104 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 398317 | 19.549 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 498192 | 19.744 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 227433 | 19.029 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 435084 | 19.529 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 439191 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 238412 | 19.291 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 427280 | 20.015 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 222904 | 17.243 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 260216 | 19.550 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 270880 | 19.379 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 213925 | 19.222 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 227861 | 19.395 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 220414 | 19.677 |
| 141) Diethylbenzene (total) | (4) | | 100 | 751510 | 58.606 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 31087 | 18.857 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 178208 | 18.709 |

M = Compound was manually integrated.
* = Compound is an internal standard.
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on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 172270 | 18.644 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 69967 | 17.436 |
| 148) Naphthalene | (4) | 14.188 | 128 | 548363 | 19.667 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 162660 | 18.248 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 326087 | 18.087 |



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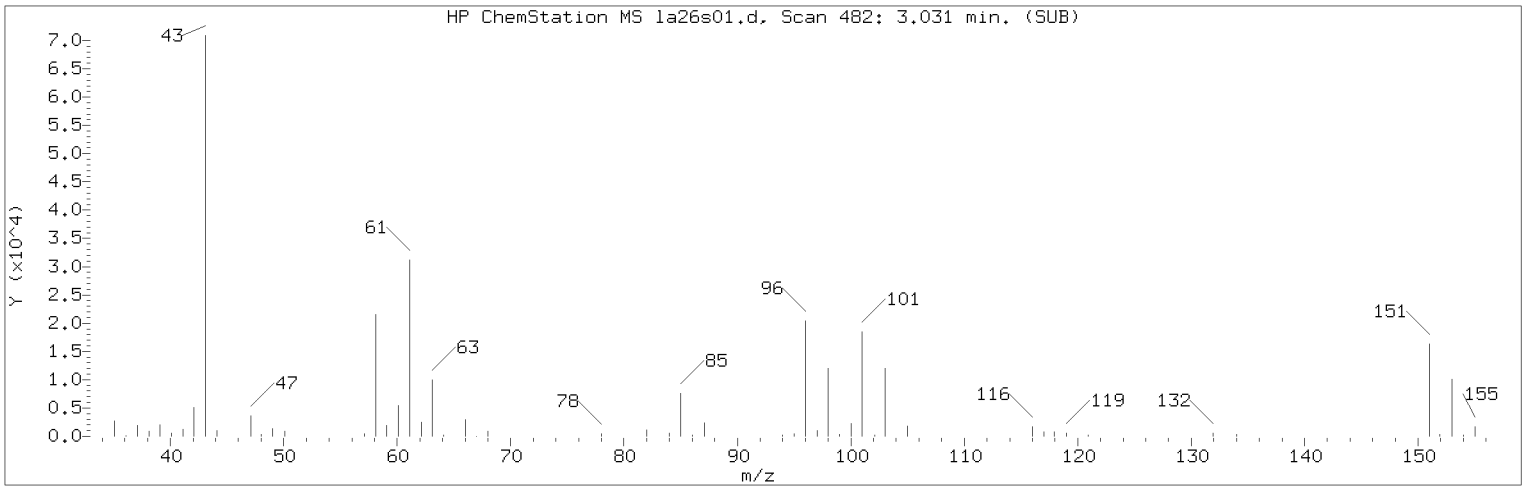
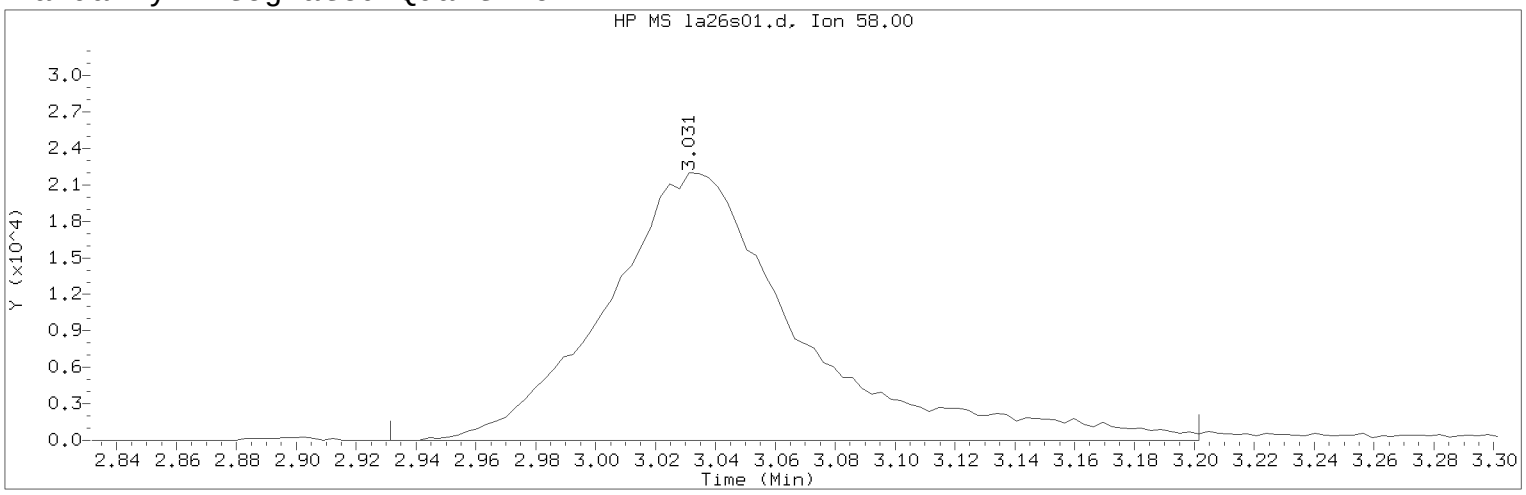
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

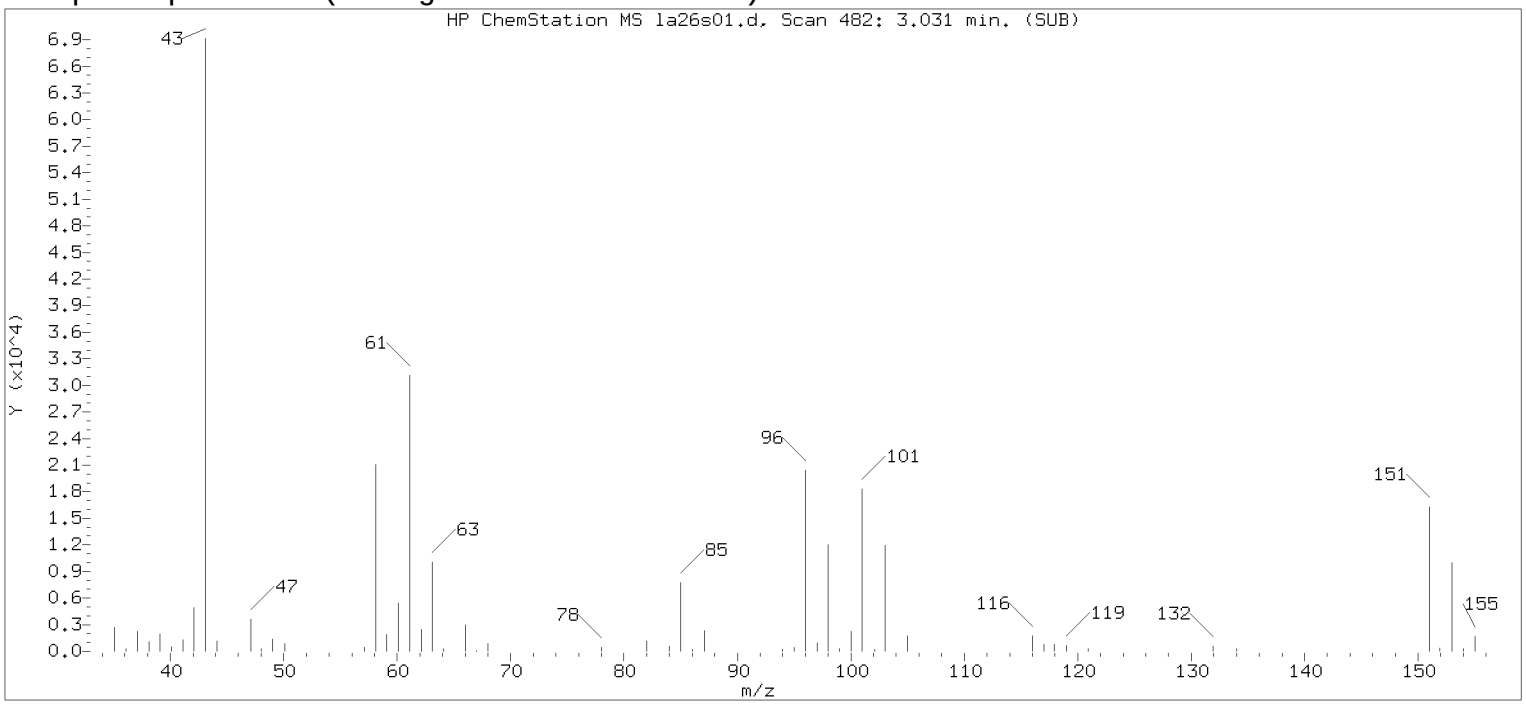
Compound Number : 18
Compound Name : Acetone
Scan Number : 482
Retention Time (minutes): 3.031
Quant Ion : 58.00
Area (flag) : 98646M
On-Column Amount (ng) : 138.3860
Integration start scan : 450 Integration stop scan: 534
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

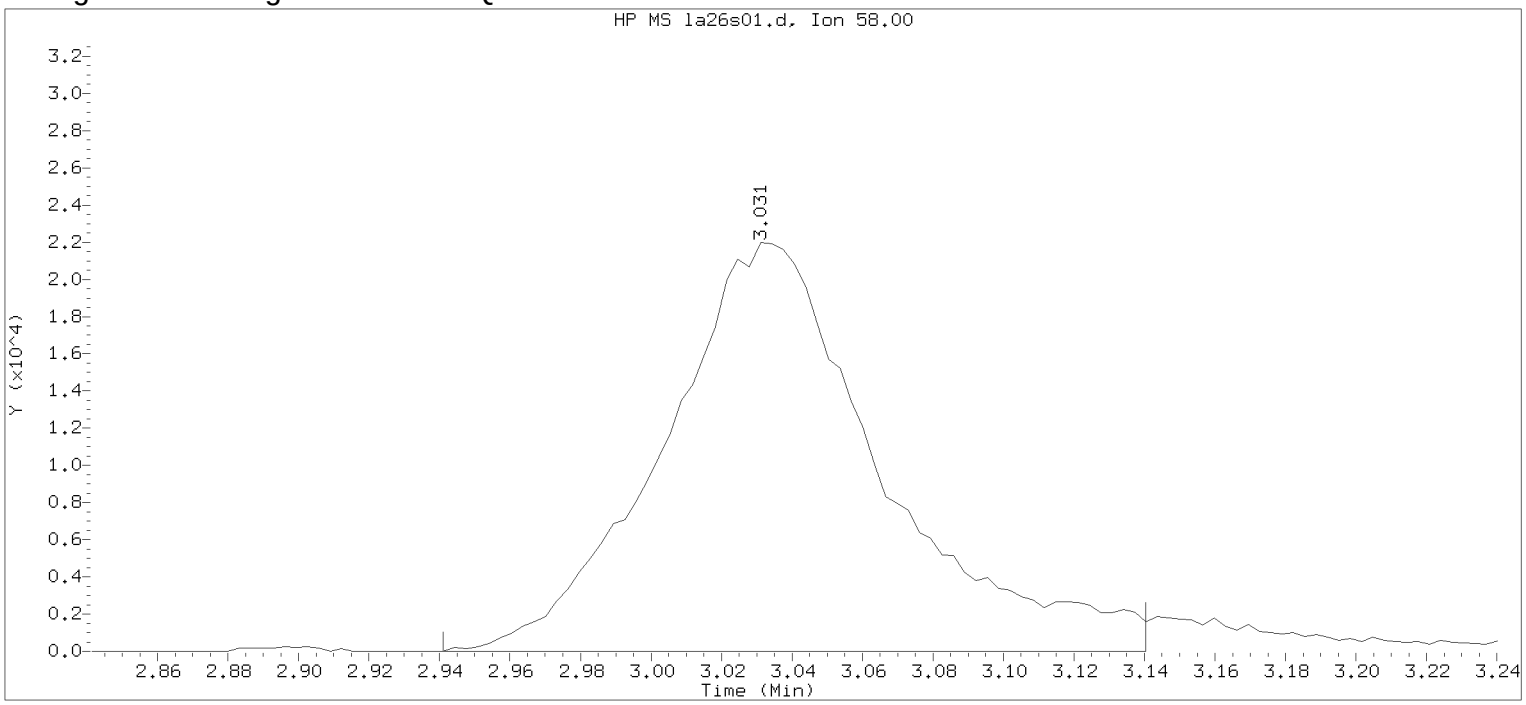
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

Compound Number : 18
Compound Name : Acetone
Scan Number : 482
Retention Time (minutes): 3.031
Quant Ion : 58.00
Area : 94153
On-column Amount (ng) : 140.9555
Integration start scan : 453 Integration stop scan: 515
Y at integration start : 0 Y at integration end: 0

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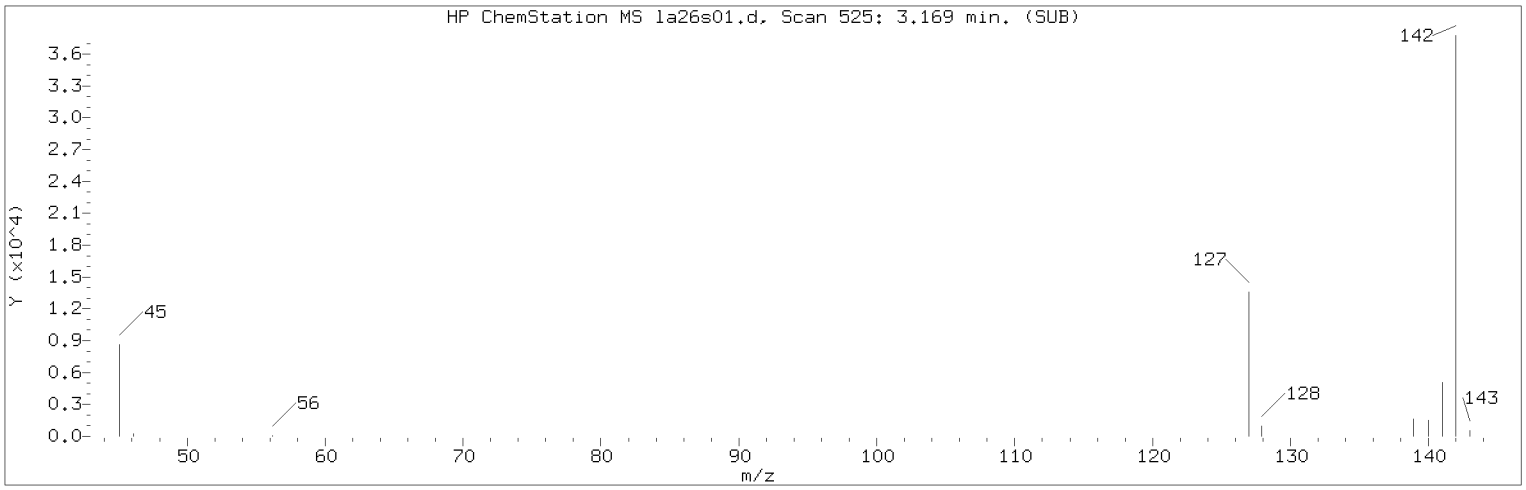
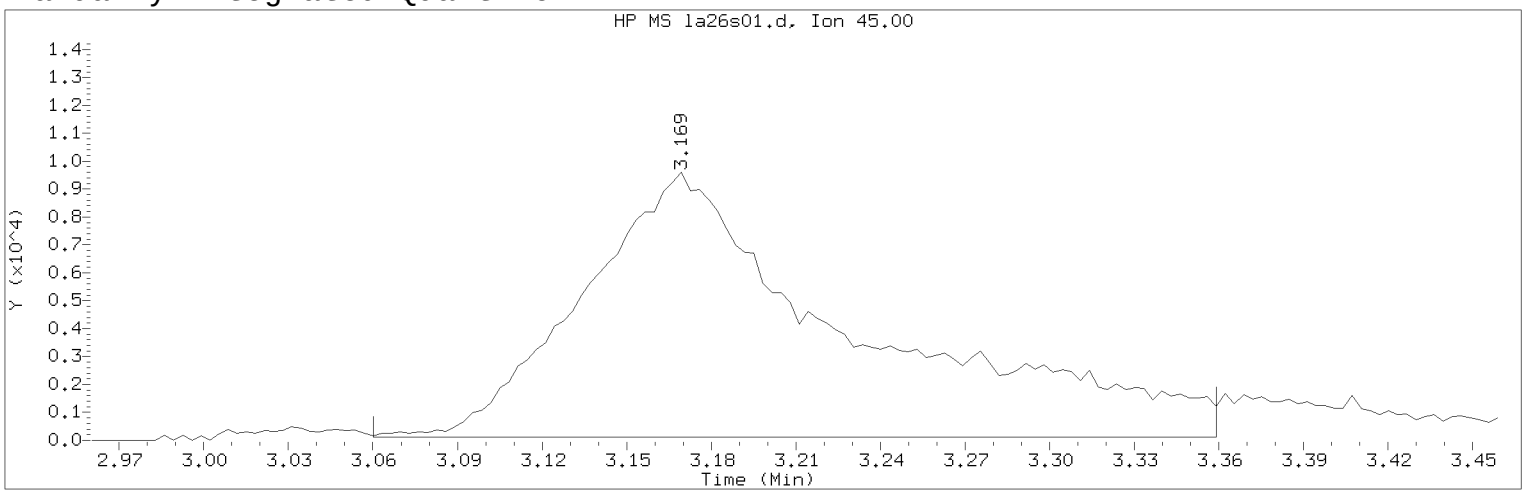
Target 3.5 esignature userKAS02648 Page 542

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

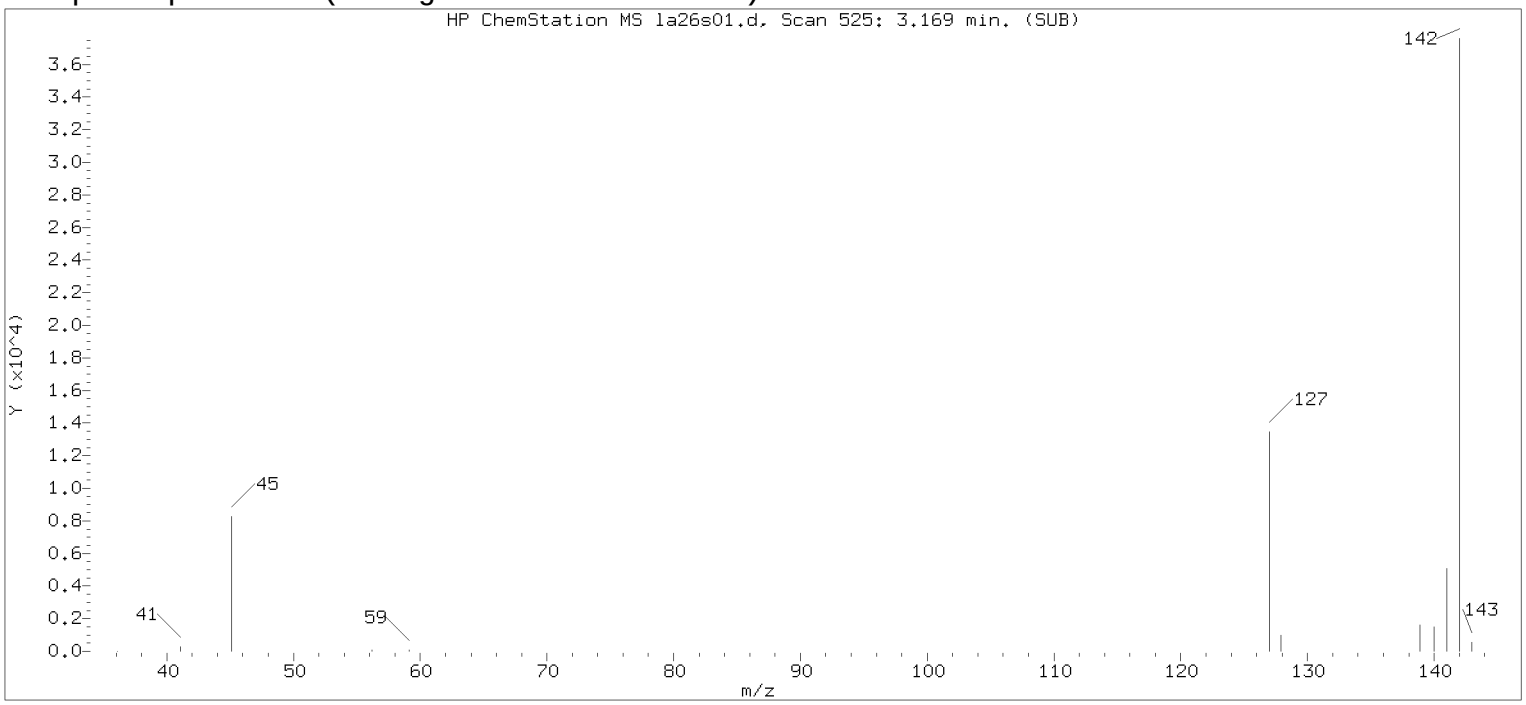
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area (flag) : 62534M
On-Column Amount (ng) : 132.3351
Integration start scan : 490 Integration stop scan: 583
Y at integration start : 121 Y at integration end: 121

Reason for manual integration: improper integration

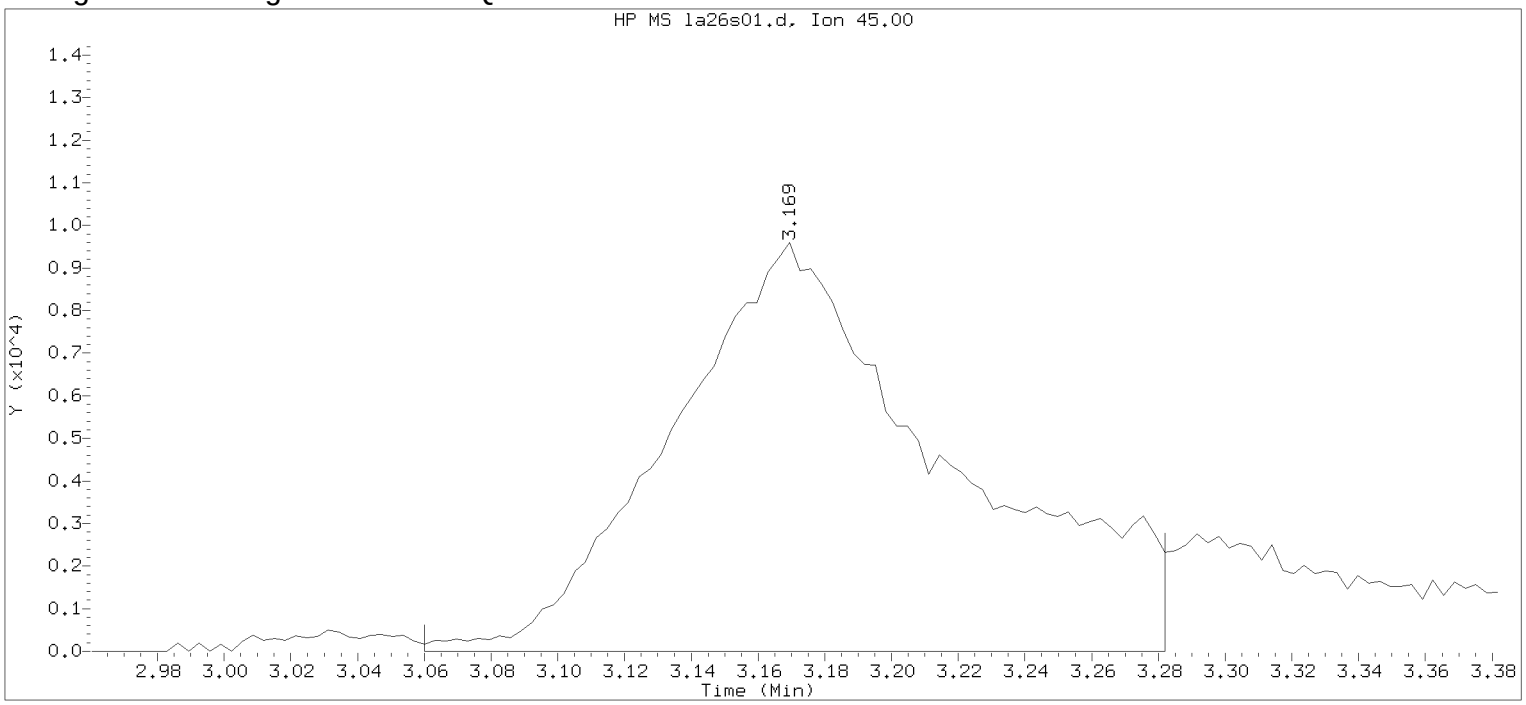
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

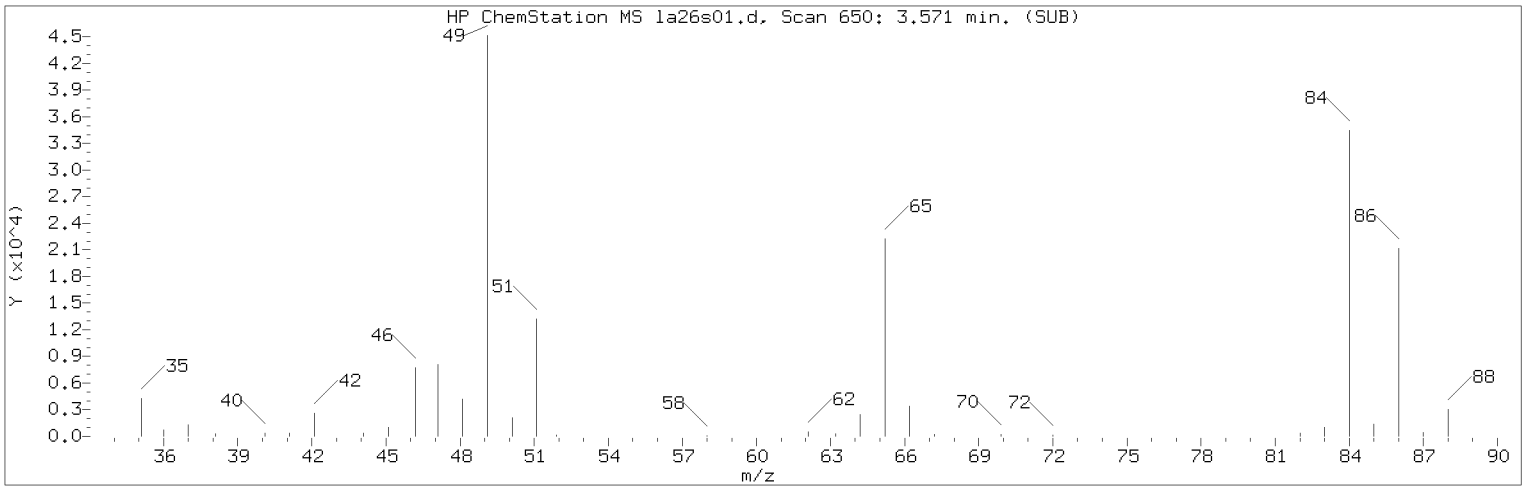
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

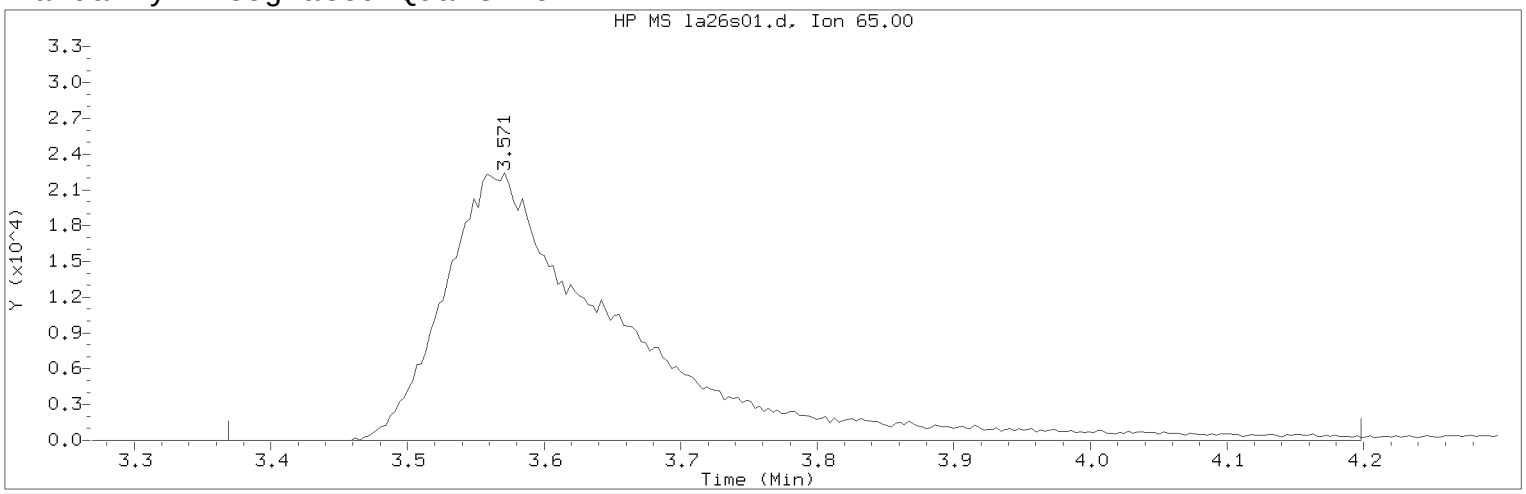
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area : 55120
On-column Amount (ng) : 124.4820
Integration start scan : 490 Integration stop scan: 559
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

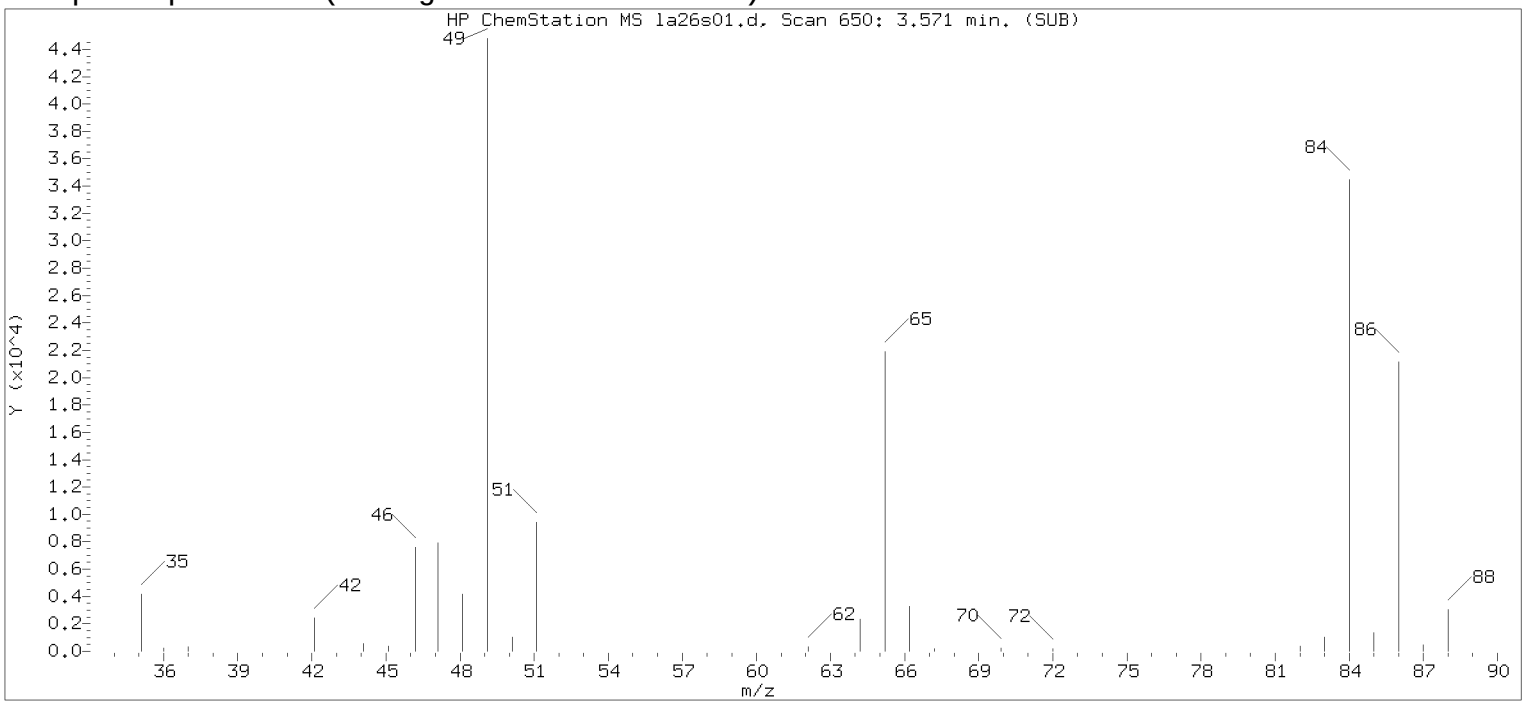
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area (flag) : 200632M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 844
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

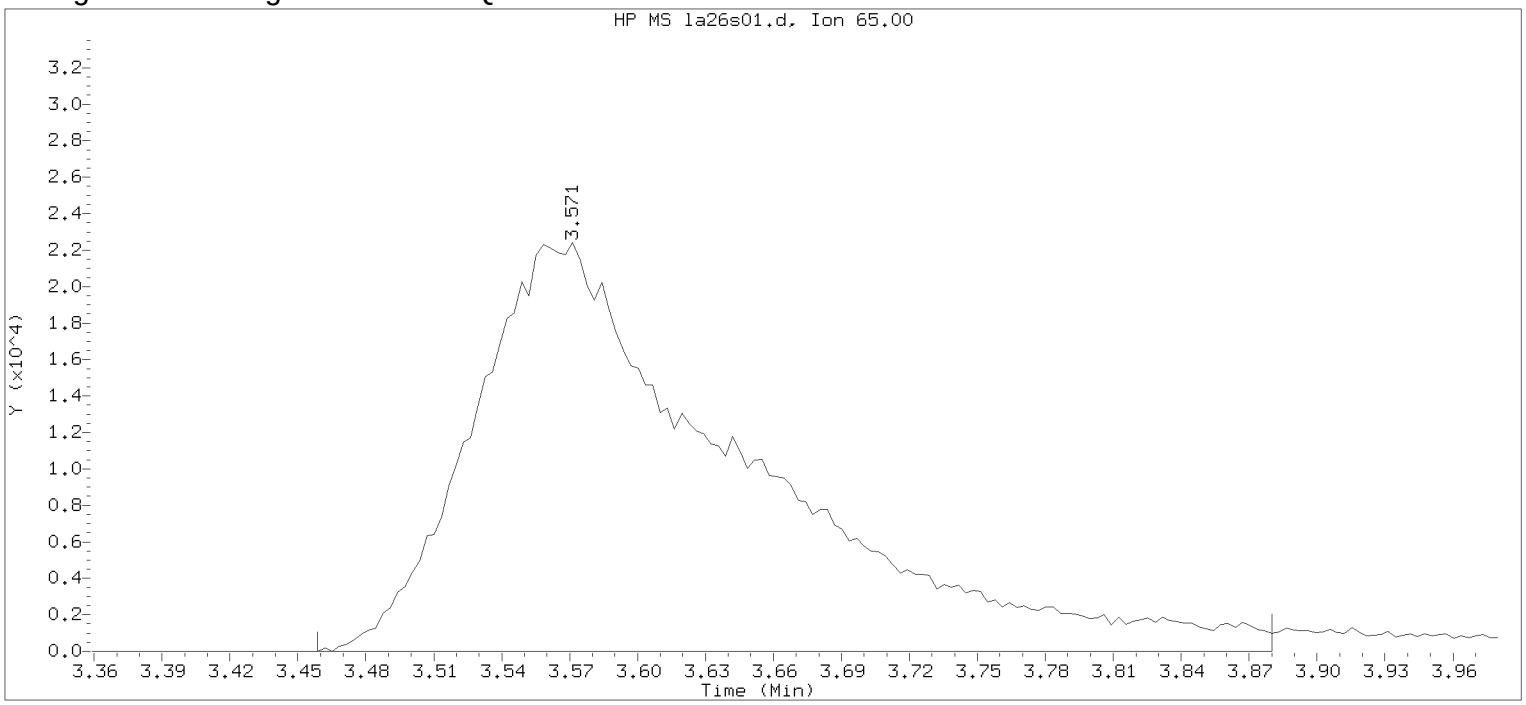
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

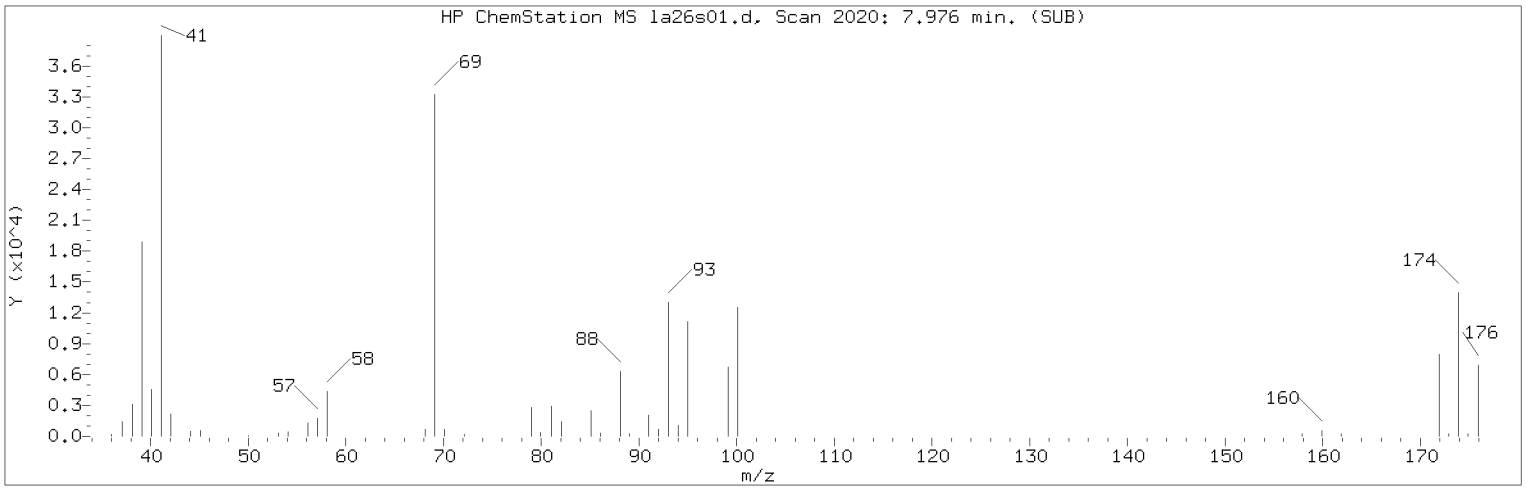
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

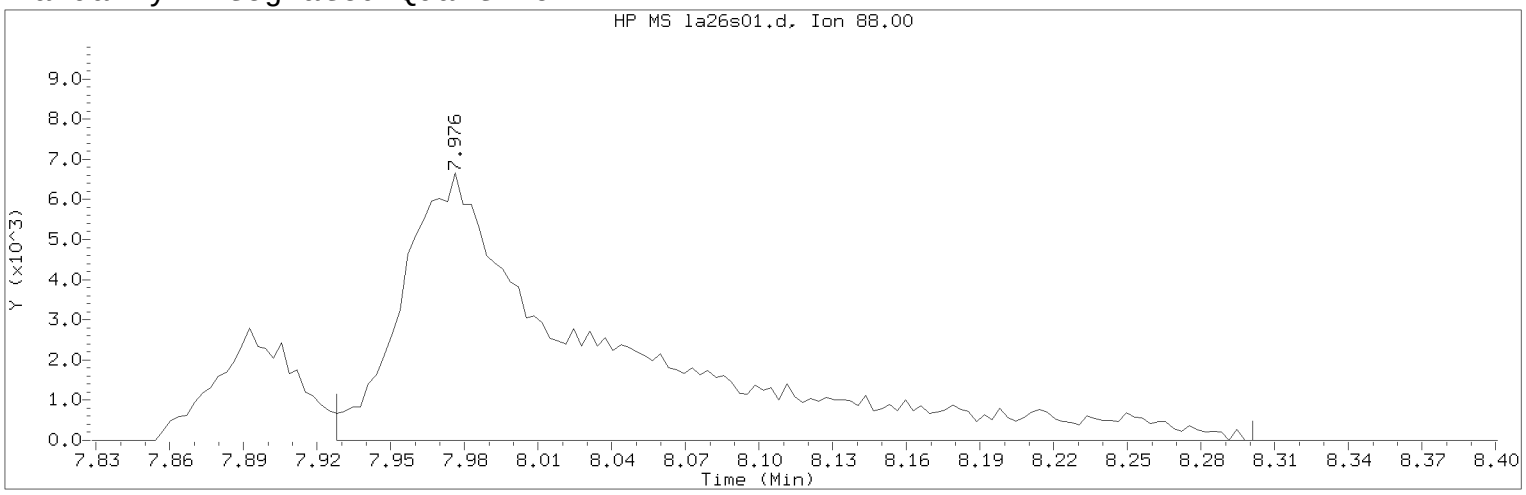
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area : 188003
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 745
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature user KAS02648 Page 648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

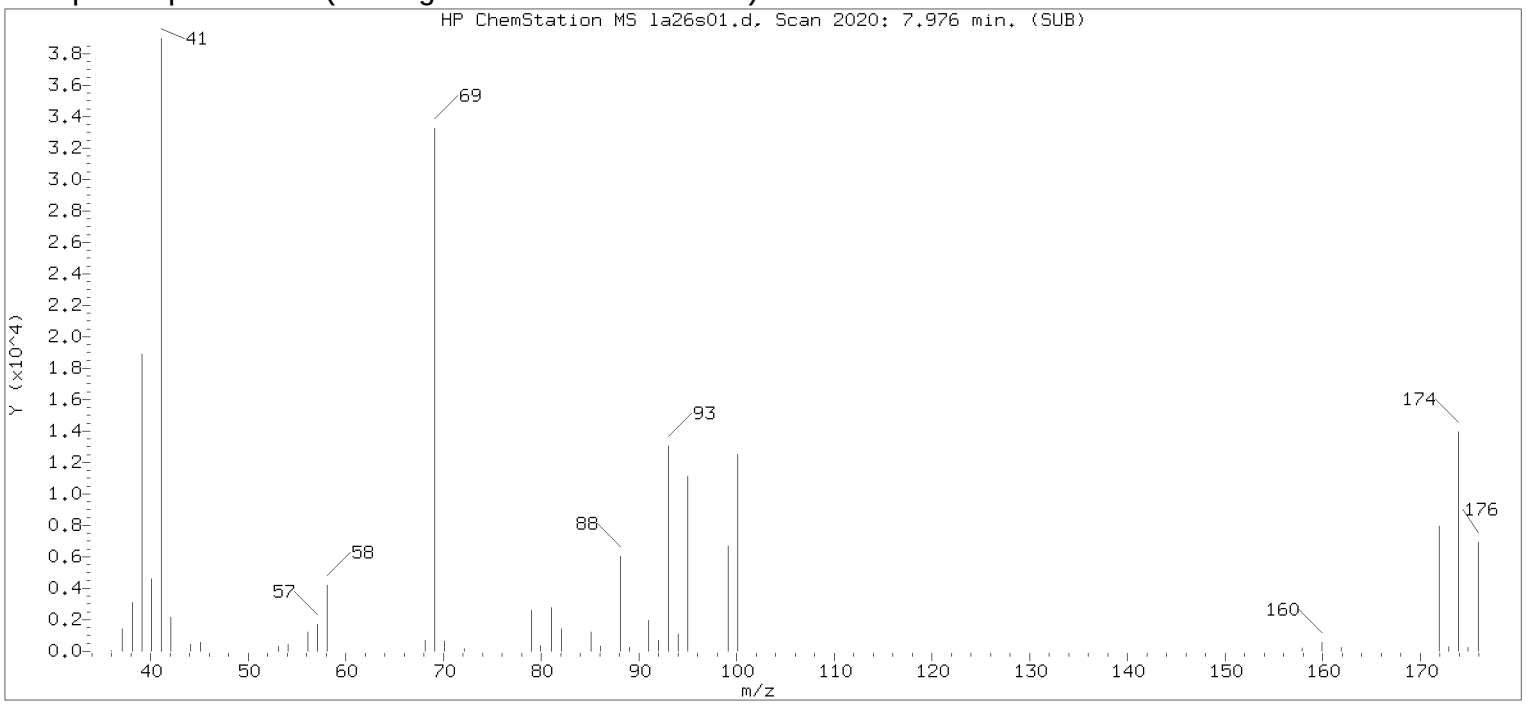
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 37891M
On-Column Amount (ng) : 552.4123
Integration start scan : 2004 Integration stop scan: 2120
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

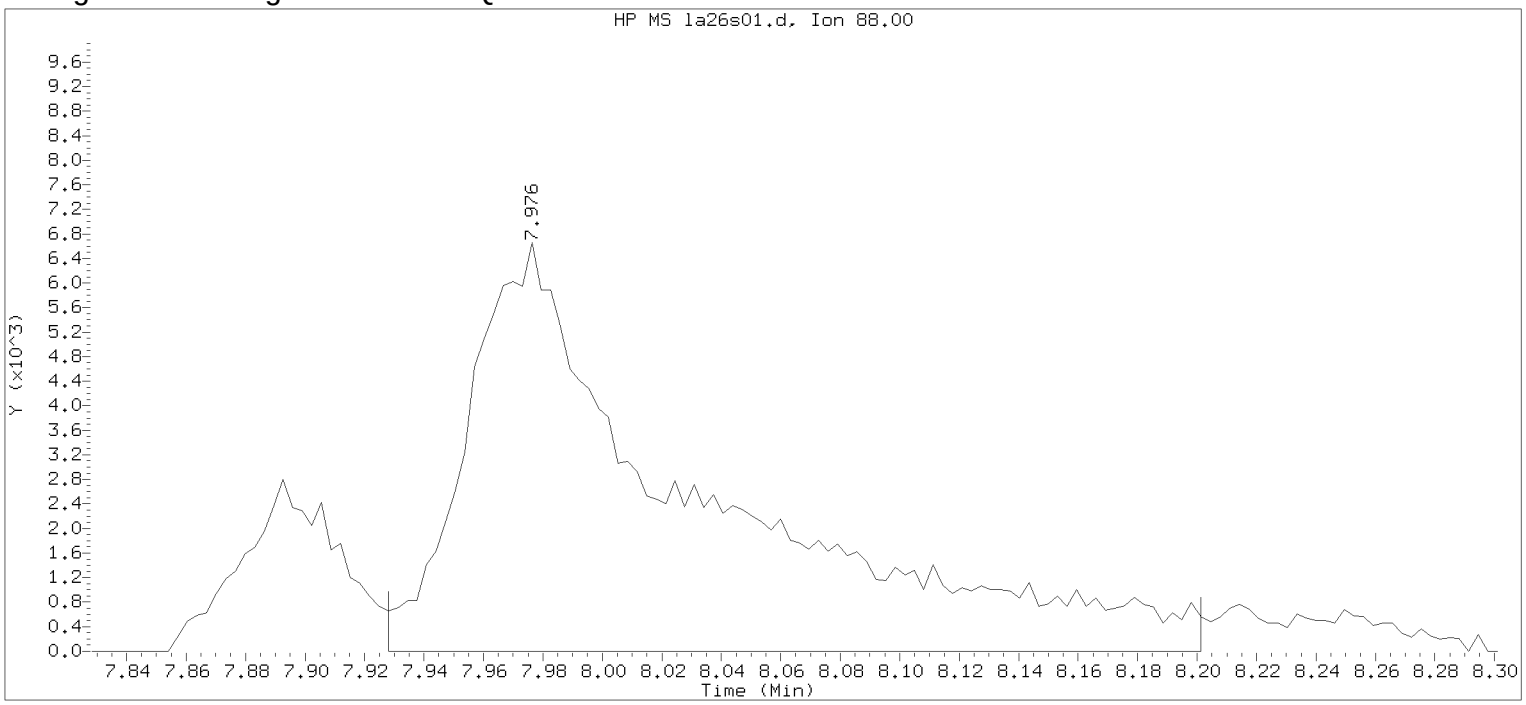
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

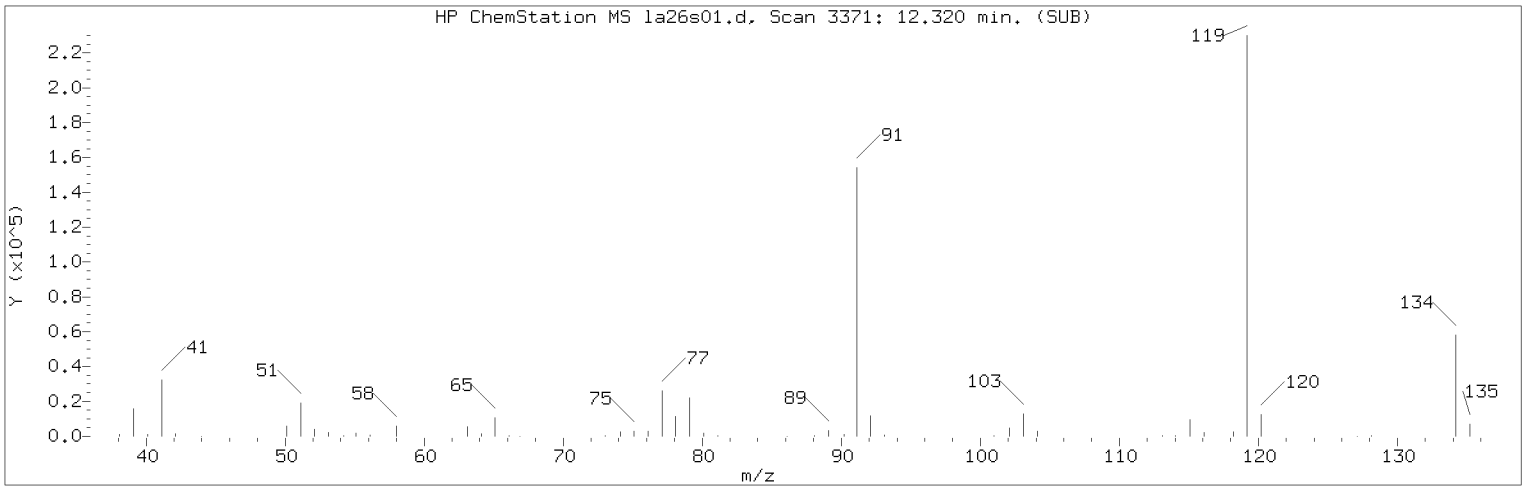
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

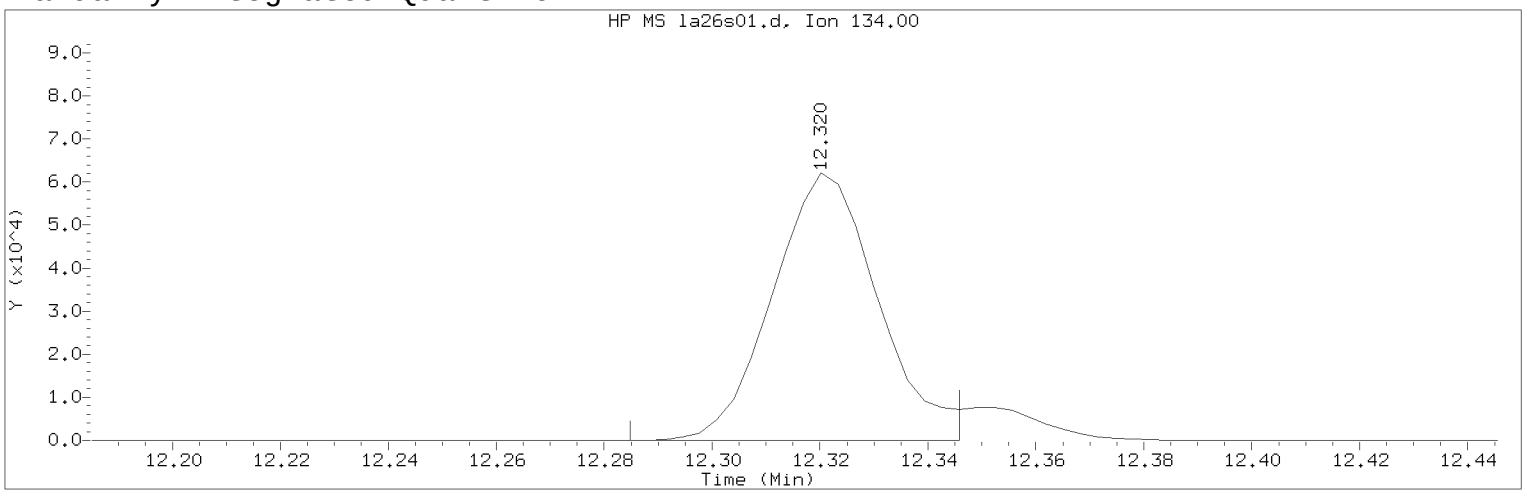
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area : 35295
On-column Amount (ng) : 549.1313
Integration start scan : 2004 Integration stop scan: 2089
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

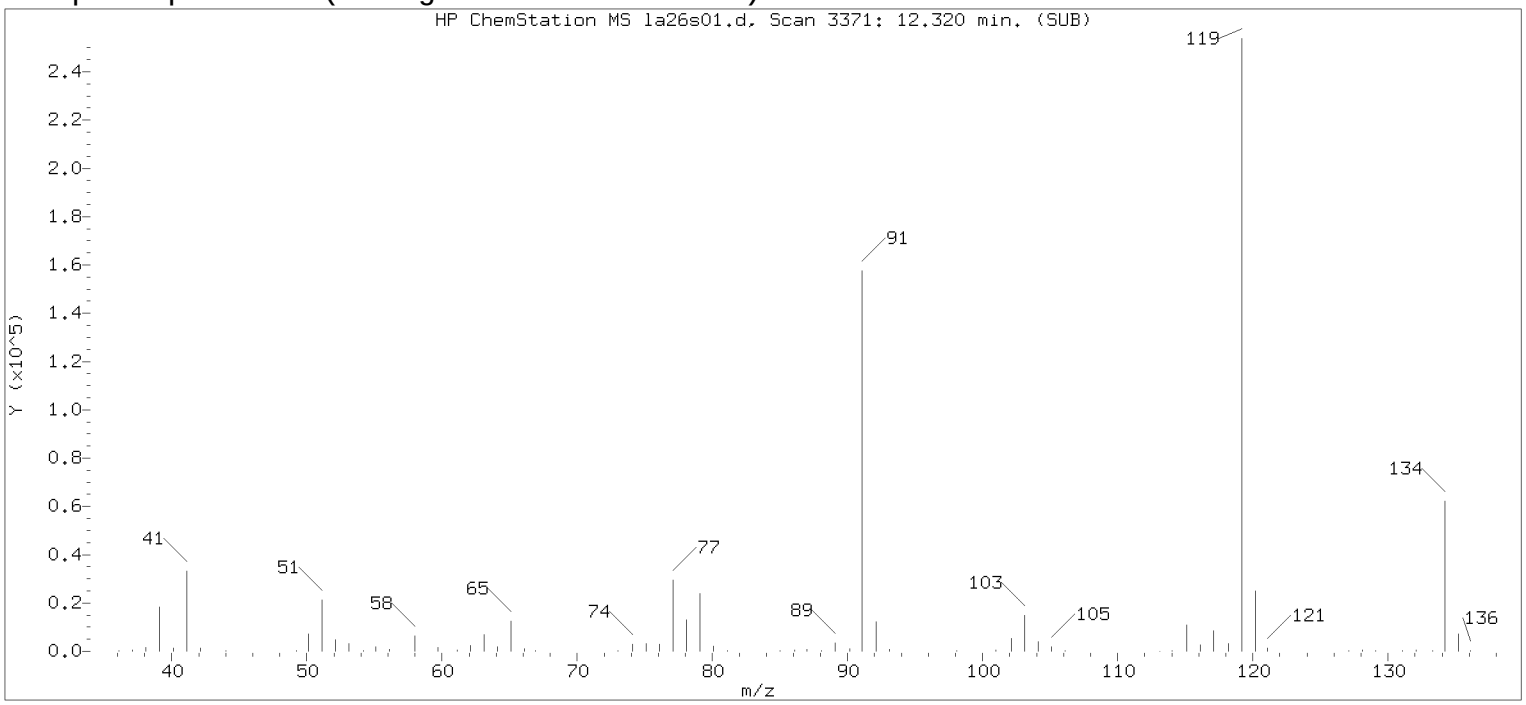
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 84253M
On-Column Amount (ng) : 19.7040
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

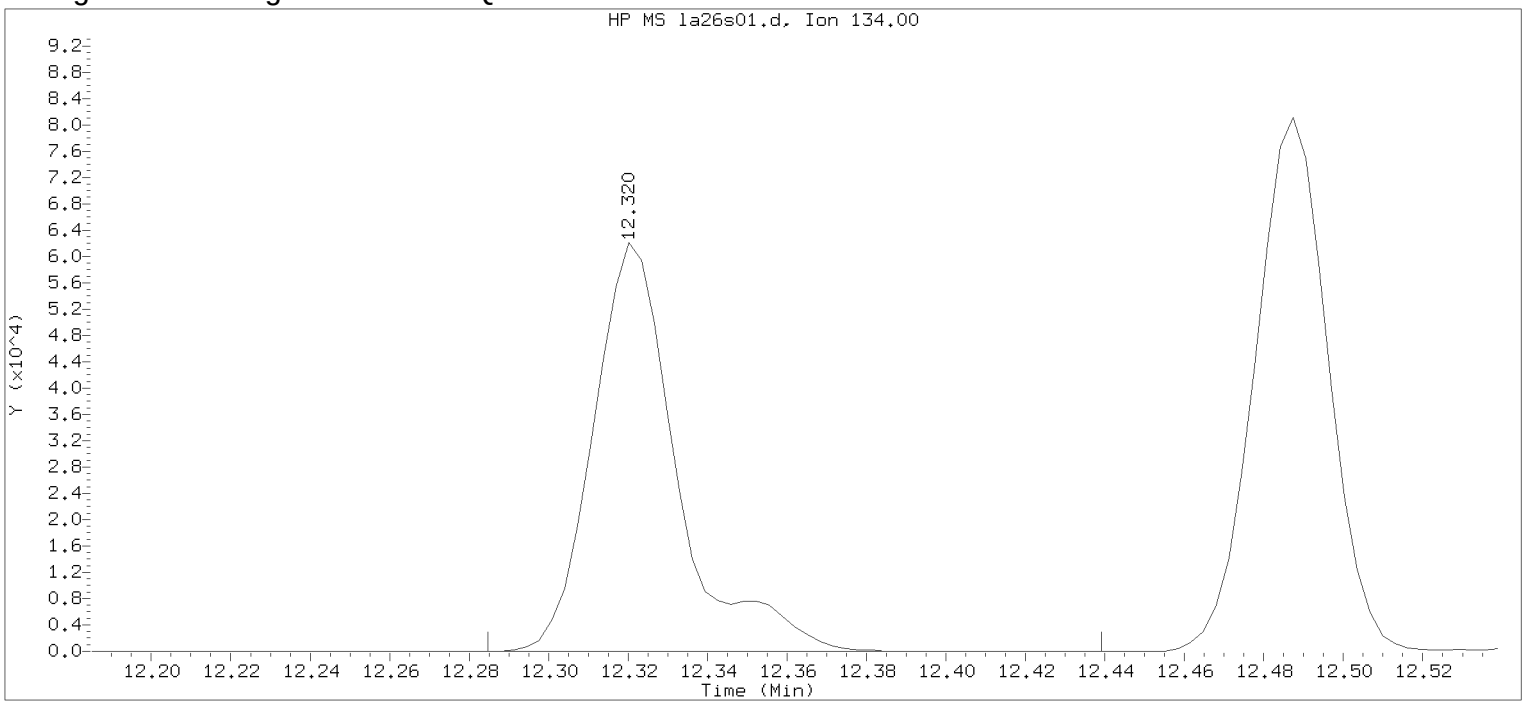
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



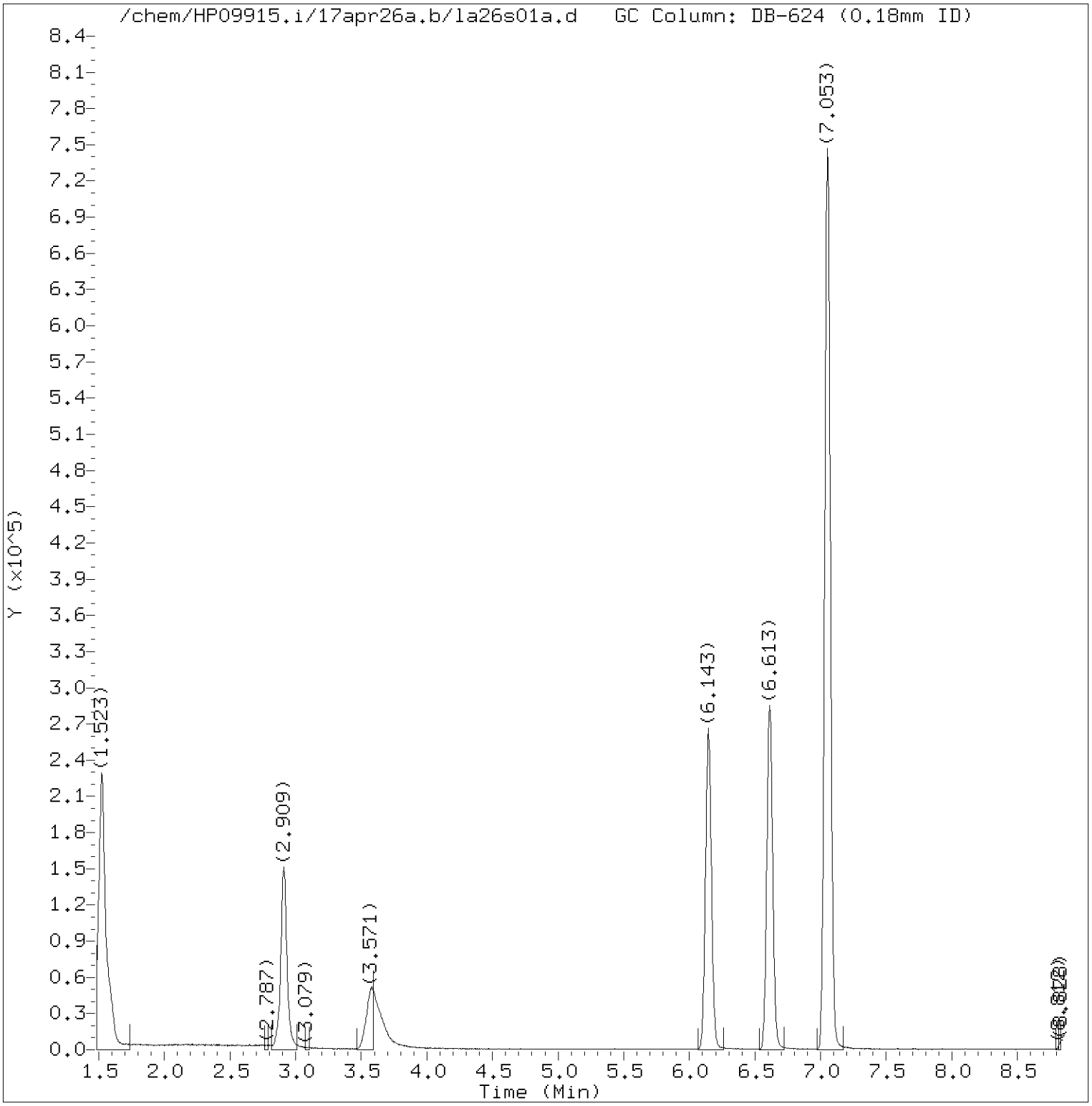

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 91347
On-column Amount (ng) : 21.3630
Integration start scan : 3359 Integration stop scan: 3407
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature user KAS02648 ID 02648




Total Ion Chromatogram (TIC)

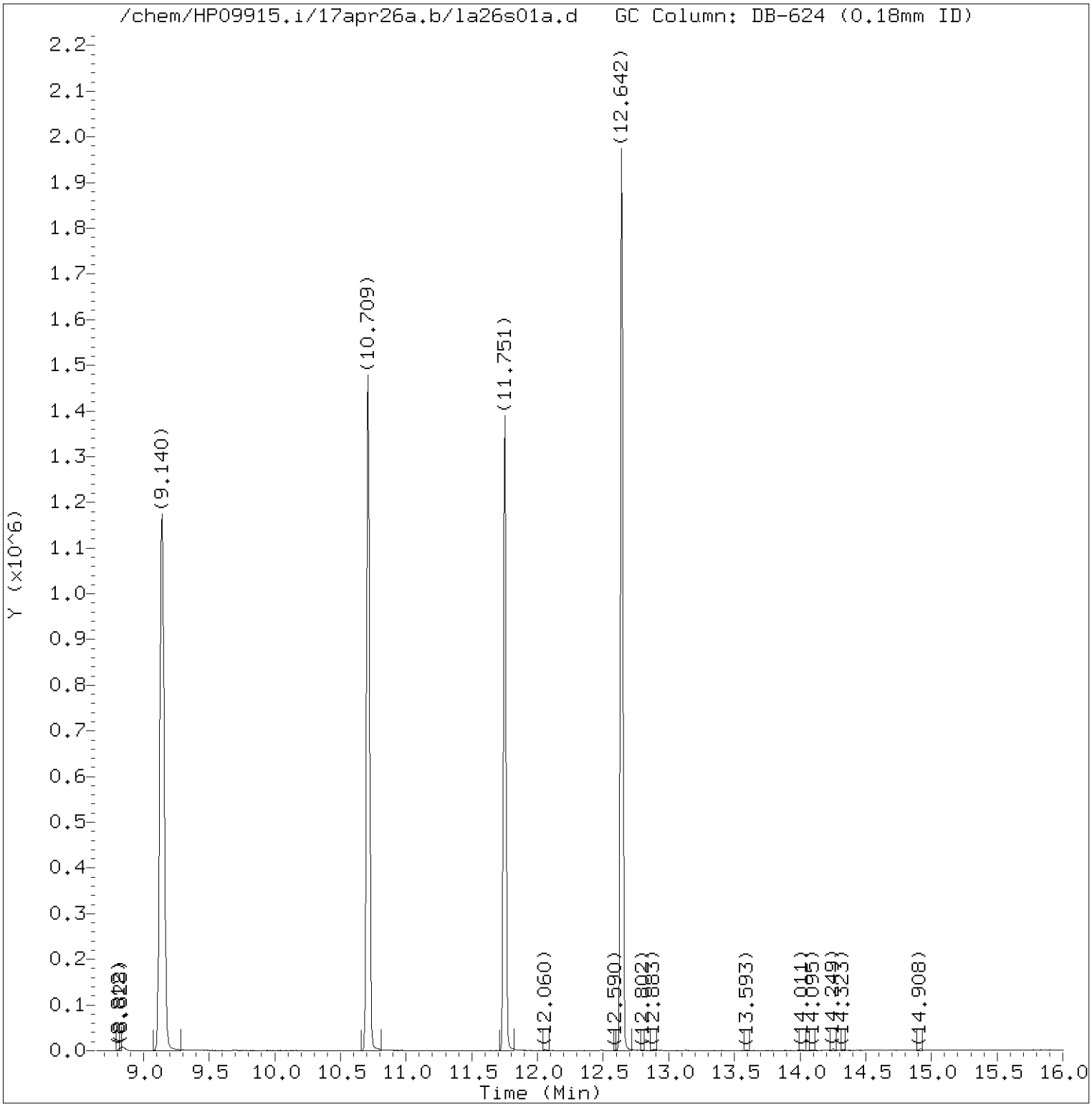
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 16) Acrolein | (1) | 2.909 | 56 | 230830 | 133.301 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 211536 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 268241 | 49.042 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 67821 | 49.864 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1120094 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1090751 | 50.311 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 849095 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 400969 | 49.759 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 459516 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17jul18a.b/l118t01.d



Date : 18-JUL-2017 07:26

Client ID: BFB FEB 20 2017

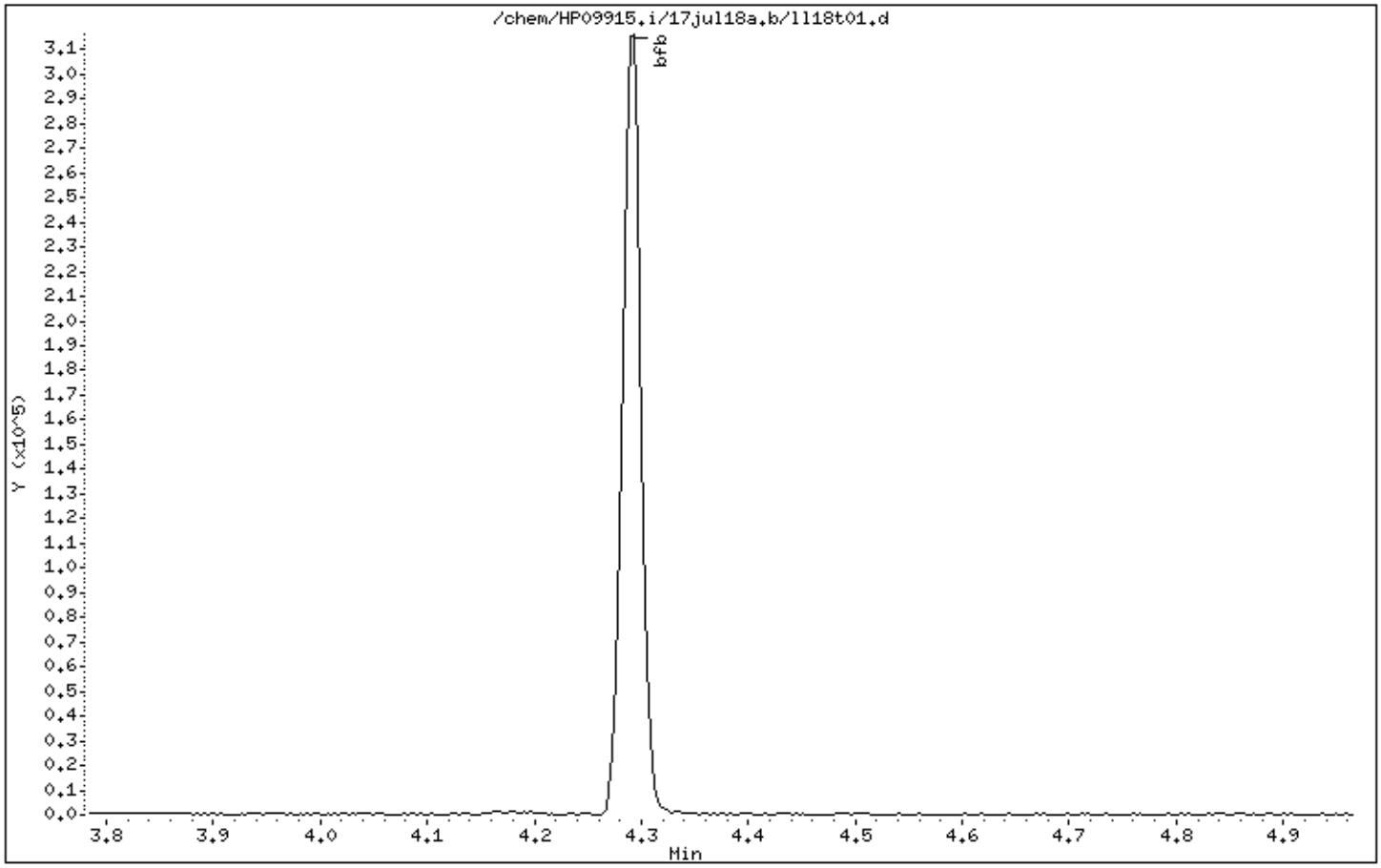
Instrument: HP09915.i

Sample Info: BFB FEB 20 2017;50NG BFB;1;3;;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Jennifer K. Howe on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052

Data File: /chem/HP09915.i/17jul18a.b/l118t01.d

Date : 18-JUL-2017 07:26

Client ID: BFB FEB 20 2017

Instrument: HP09915.i

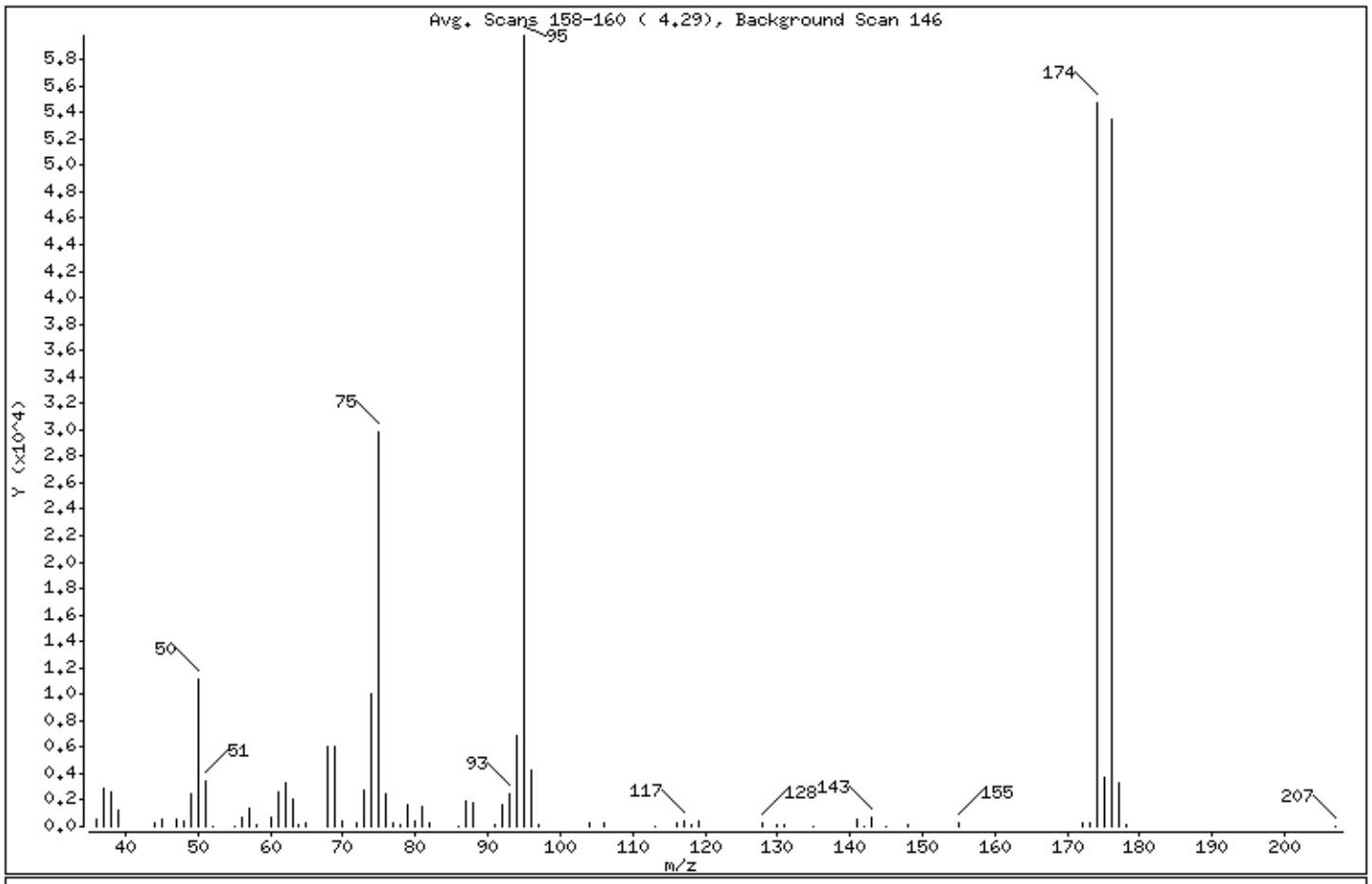
Sample Info: BFB FEB 20 2017;50NG BFB;1;3;;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.69 |
| 75 | 30.00 - 60.00% of mass 95 | 49.95 |
| 96 | 5.00 - 9.00% of mass 95 | 7.10 |
| 173 | Less than 2.00% of mass 174 | 0.56 ( 0.62) |
| 174 | 50.00 - 100.00% of mass 95 | 91.57 |
| 175 | 5.00 - 9.00% of mass 174 | 6.30 ( 6.88) |
| 176 | 95.00 - 101.00% of mass 174 | 89.33 ( 97.55) |
| 177 | 5.00 - 9.00% of mass 176 | 5.63 ( 6.30) |

Digitally signed by Jennifer K. Howe on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052

Data File: /chem/HP09915.i/17jul18a.b/l118t01.d

Date : 18-JUL-2017 07:26

Client ID: BFB FEB 20 2017 Instrument: HP09915.i

Sample Info: BFB FEB 20 2017;50NG BFB;1;3;;;;;;

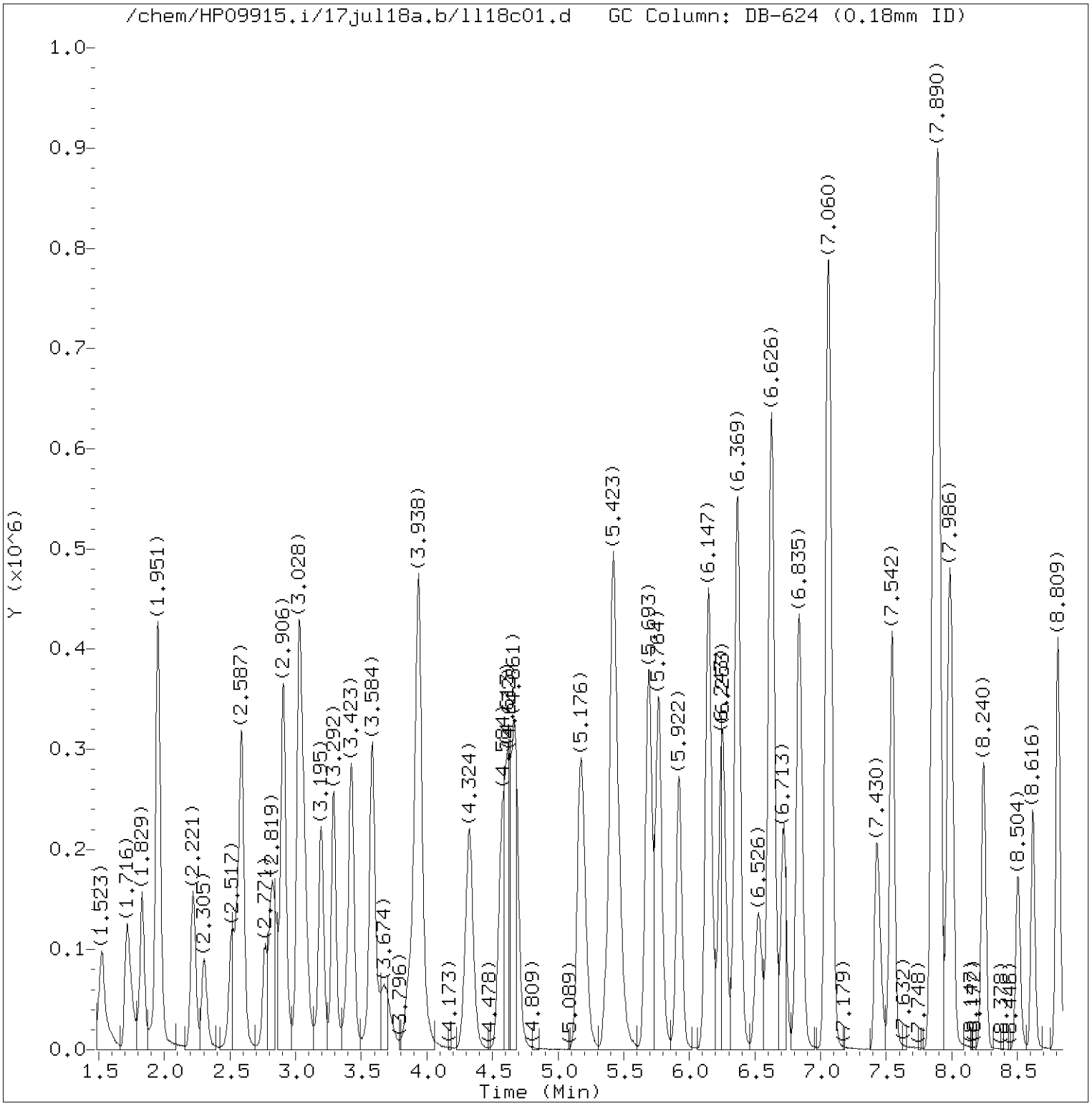
Operator: JKH09052

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: l118t01.d
Spectrum: Avg. Scans 158-160 ( 4.29), Background Scan 146
Location of Maximum: 95.00
Number of points: 71

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 615 | 62.00 | 3252 | 86.00 | 53 | 130.00 | 206 |
| 37.00 | 2919 | 63.00 | 2031 | 87.00 | 1942 | 131.00 | 117 |
| 38.00 | 2551 | 64.00 | 184 | 88.00 | 1762 | 135.00 | 50 |
| 39.00 | 1195 | 65.00 | 273 | 91.00 | 204 | 141.00 | 547 |
| 44.00 | 277 | 68.00 | 6101 | 92.00 | 1621 | 142.00 | 68 |
| 45.00 | 578 | 69.00 | 6010 | 93.00 | 2472 | 143.00 | 725 |
| 47.00 | 545 | 70.00 | 378 | 94.00 | 6828 | 145.00 | 55 |
| 48.00 | 391 | 72.00 | 330 | 95.00 | 59816 | 148.00 | 75 |
| 49.00 | 2494 | 73.00 | 2791 | 96.00 | 4250 | 155.00 | 231 |
| 50.00 | 11179 | 74.00 | 9976 | 97.00 | 73 | 172.00 | 297 |
| 51.00 | 3441 | 75.00 | 29880 | 104.00 | 265 | 173.00 | 337 |
| 52.00 | 58 | 76.00 | 2496 | 106.00 | 214 | 174.00 | 54776 |
| 55.00 | 68 | 77.00 | 298 | 113.00 | 50 | 175.00 | 3766 |
| 56.00 | 749 | 78.00 | 141 | 116.00 | 316 | 176.00 | 53432 |
| 57.00 | 1393 | 79.00 | 1583 | 117.00 | 394 | 177.00 | 3365 |
| 58.00 | 69 | 80.00 | 414 | 118.00 | 132 | 178.00 | 87 |
| 60.00 | 743 | 81.00 | 1463 | 119.00 | 345 | 207.00 | 53 |
| 61.00 | 2629 | 82.00 | 340 | 128.00 | 289 | | |

Digitally signed by Jennifer K. Howe on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

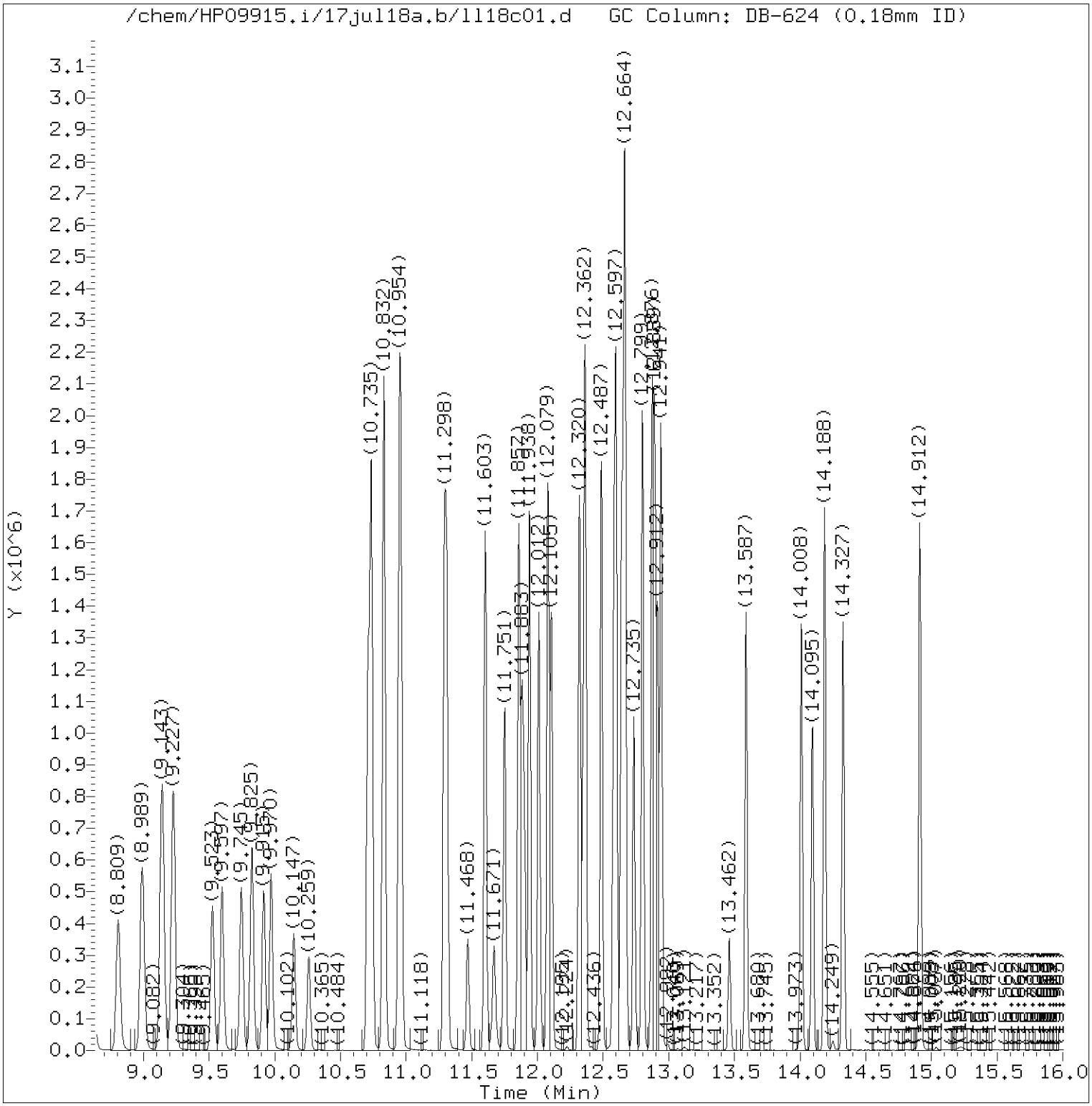
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716 | 85 | 274773 | 61.353 |
| 4) Chloromethane | (2) | 1.829 | 50 | 203934 | 44.325 |
| 6) Vinyl Chloride | (2) | 1.944 | 62 | 203222 | 45.741 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 207642 | 76.624 |
| 8) Bromomethane | (2) | 2.221 | 94 | 158919M | 53.182 |
| 9) Chloroethane | (2) | 2.301 | 64 | 118845 | 47.466 |
| 12) Trichlorofluoromethane | (2) | 2.562 | 101 | 324193 | 63.013 |
| 11) n-Pentane | (2) | 2.591 | 43 | 224271 | 52.931 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 72121 | 25.181 |
| 15) Freon 123a | (2) | 2.825 | 67 | 187091 | 54.604 |
| 16) Acrolein | (1) | 2.909 | 56 | 461409 | 367.719 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 146968 | 53.973 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 63 | 75525 | 54.788 |
| 18) Acetone | (1) | 3.038 | 58 | 43670 | 80.187 |
| 19) Freon 113 | (2) | 3.057 | 101 | 165299 | 60.310 |
| 21) 2-Propanol | (1) | 3.176 | 45 | 87343 | 241.931 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 310655 | 58.817 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 490961 | 55.406 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 162697 | 41.167 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 225134 | 41.277 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 172543 | 47.966 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 153283 | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.684 | 59 | 165007 | 278.221 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 86075 | 41.474 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.919 | 73 | 565224 | 56.662 |
| 32) trans-1,2-Dichloroethene | (2) | 3.941 | 96 | 170461 | 53.356 |
| 34) n-Hexane | (2) | 4.324 | 57 | 224341 | 45.809 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 300387 | 50.036 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 489717 | 42.501 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.674 | 53 | 284433 | 56.168 |
| 40) Ethyl t-butyl ether | (2) | 5.176 | 59 | 525032 | 52.946 |
| 44) 2-Butanone | (2) | 5.385 | 43 | 231958 | 83.472 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 192011 | 52.449 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 261314 | 65.194 |
| 47) Propionitrile | (1) | 5.468 | 54 | 180492 | 208.516 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 243755 | 117.805 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 104464 | 54.142 |
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 63780 | 83.421 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.922 | 83 | 331550 | 57.941 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 202397 | 55.130 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 111 | 205738 | 54.688 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 295516 | 56.516 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 362472 | 105.805 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 264168 | 44.370 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 241618 | 49.640 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 85751 | 49.689 |
| 56) Carbon Tetrachloride | (2) | 6.369 | 117 | 244604 | 64.083 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 242225 | 52.046 |
| 58) Isobutyl Alcohol | (1) | 6.533 | 41 | 127943 | 614.428 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 46534 | 50.972 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 271929 | 62.972 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 29781 | 51.431 |
| 60) Benzene | (2) | 6.636 | 78 | 677973 | 49.417 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 297604 | 64.120 |
| 61) 1,2-Dichloroethane | (2) | 6.710 | 98 | 14449 | 35.100 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 530821 | 53.936 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 751819 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 234507 | 42.769 |
| 69) n-Butanol | (1) | 7.427 | 56 | 198555 | 1182.860 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 190578 | 53.752 |
| 72) Methylcyclohexane | (2) | 7.861 | 83 | 300879 | 48.164 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 140852 | 49.964 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 168687 | 44.915 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 37212M | 710.101 |
| 76) Methyl Methacrylate | (2) | 7.976 | 69 | 156658 | 48.731 |
| 74) Dibromomethane | (2) | 7.996 | 93 | 131219 | 55.558 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 250223 | 58.705 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 142029 | 117.506 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 130153 | 45.083 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 286457 | 51.563 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 487997 | 85.218 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 752006 | 47.364 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 486285 | 46.489 |
| 88) Toluene | (3) | 9.227 | 92 | 441955 | 47.901 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 270649 | 52.314 |
| 91) Ethyl Methacrylate | (3) | 9.597 | 69 | 282044 | 48.400 |

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Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 177771 | 50.001 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 204452 | 50.100 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 293924 | 47.644 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 365706 | 82.114 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 557106 | 103.877 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 204700 | 55.586 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 205097 | 52.694 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 621821 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 250087 | 47.198 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 544638 | 51.156 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 199444 | 56.729 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 931919 | 52.362 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 725689 | 104.736 |
| 107) o-Xylene | (3) | 11.291 | 106 | 363104 | 52.696 |
| 109) Styrene | (3) | 11.311 | 104 | 611733 | 53.704 |
| 110) Bromoform | (3) | 11.468 | 173 | 147170 | 55.038 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 951710 | 54.043 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 120918 | 611.690 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 309211 | 52.397 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 272431 | 52.629 |
| 108) Xylene (Total) | (3) | | 106 | 1088793 | 157.432 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 287899M | 46.695 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 254362 | 51.229 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 172943 | 97.889 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 93720 | 53.773 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 1108533 | 50.527 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 225408 | 49.365 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 832718 | 53.227 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 234454 | 49.335 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 169143M | 50.015 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 150581 | 56.396 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 873135 | 54.181 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 1035844 | 51.906 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 480081 | 50.786 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 928418 | 52.690 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 347358 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 490474 | 50.179 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 907449 | 53.746 |

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Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 588917 | 57.599 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 557747 | 52.981 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 575564 | 52.064 |
| 139) n-Butylbenzene | (4) | 12.893 | 92 | 444179 | 50.462 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 478789 | 51.527 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 463683 | 52.339 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1596994 | 157.383 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 70765 | 54.273 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 365761 | 48.552 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 353182 | 48.329 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 165297 | 52.083 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1120870 | 50.828 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 346299 | 49.120 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 672696 | 47.176 |



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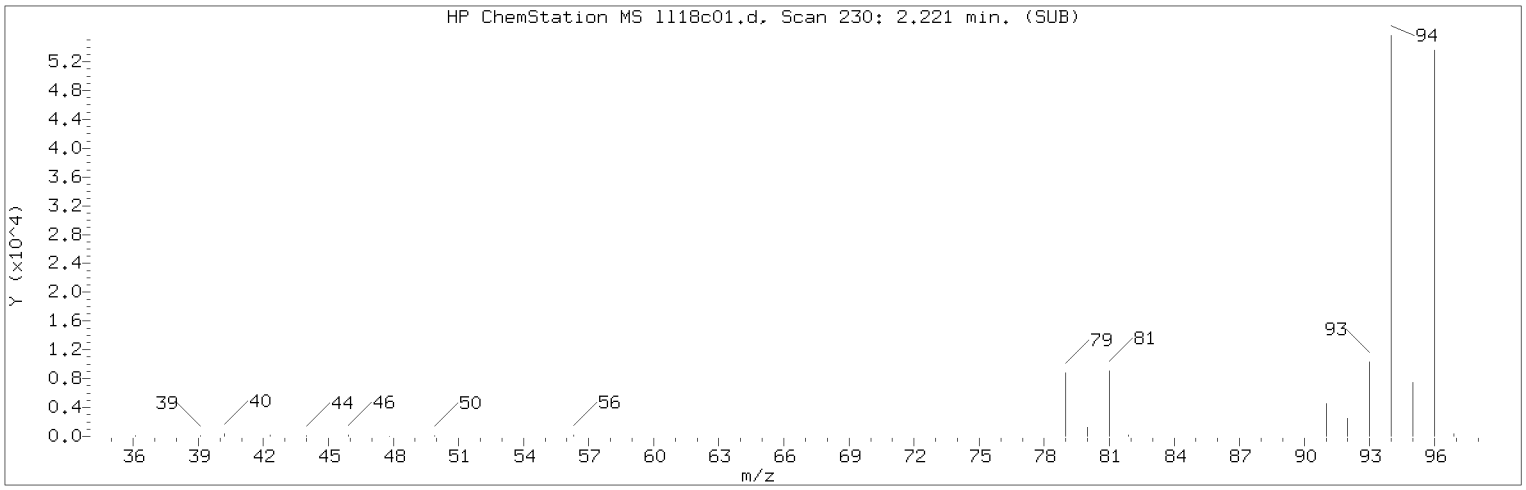
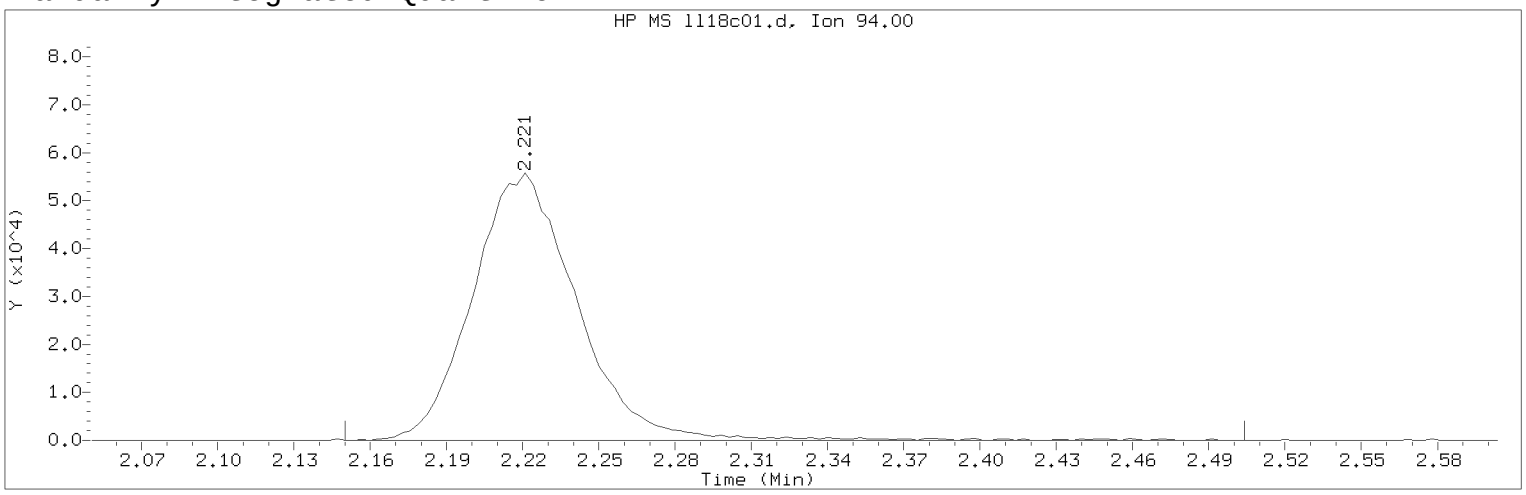
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d  Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01  Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050  Lab Sample ID: VSTD050

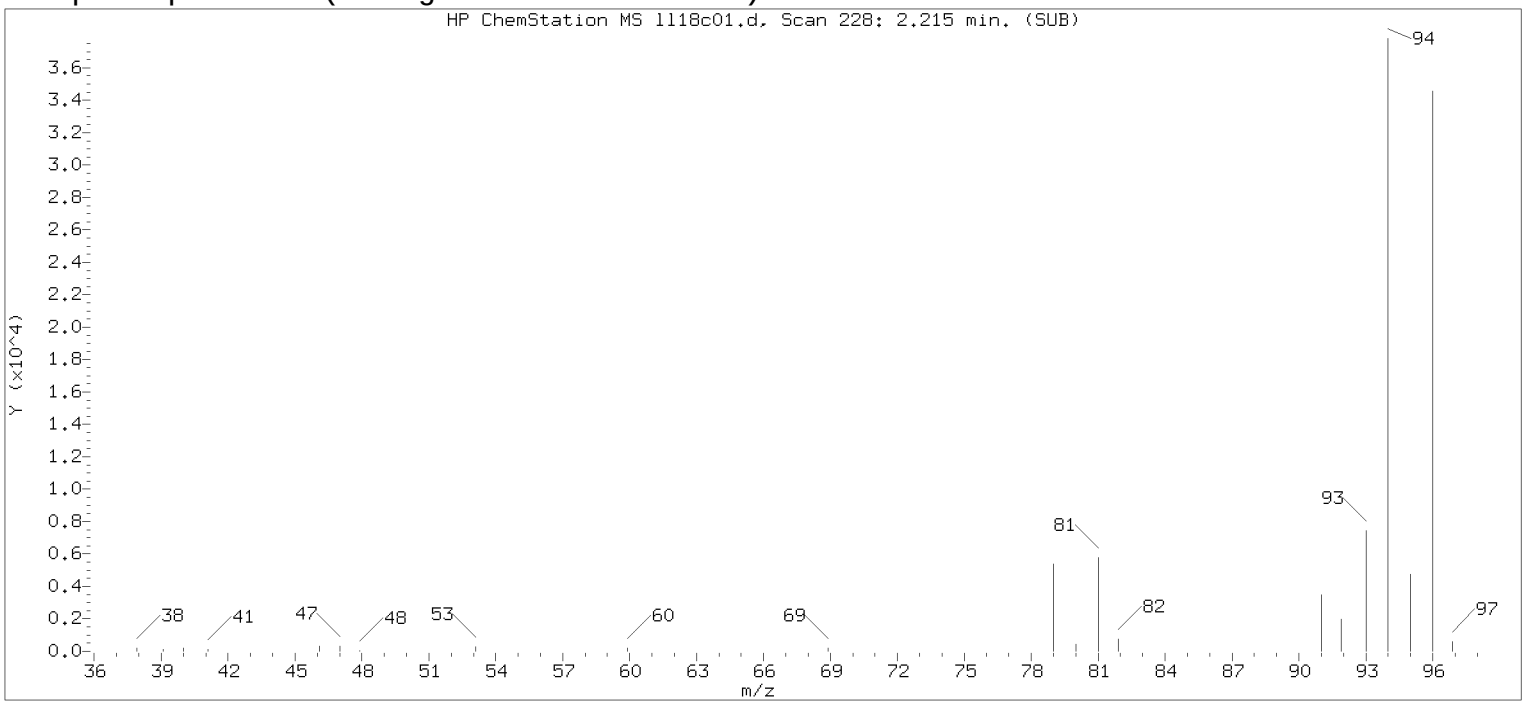
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 230
Retention Time (minutes): 2.221
Quant Ion : 94.00
Area (flag) : 158919M
On-Column Amount (ng) : 53.1821
Integration start scan : 207  Integration stop scan: 317
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

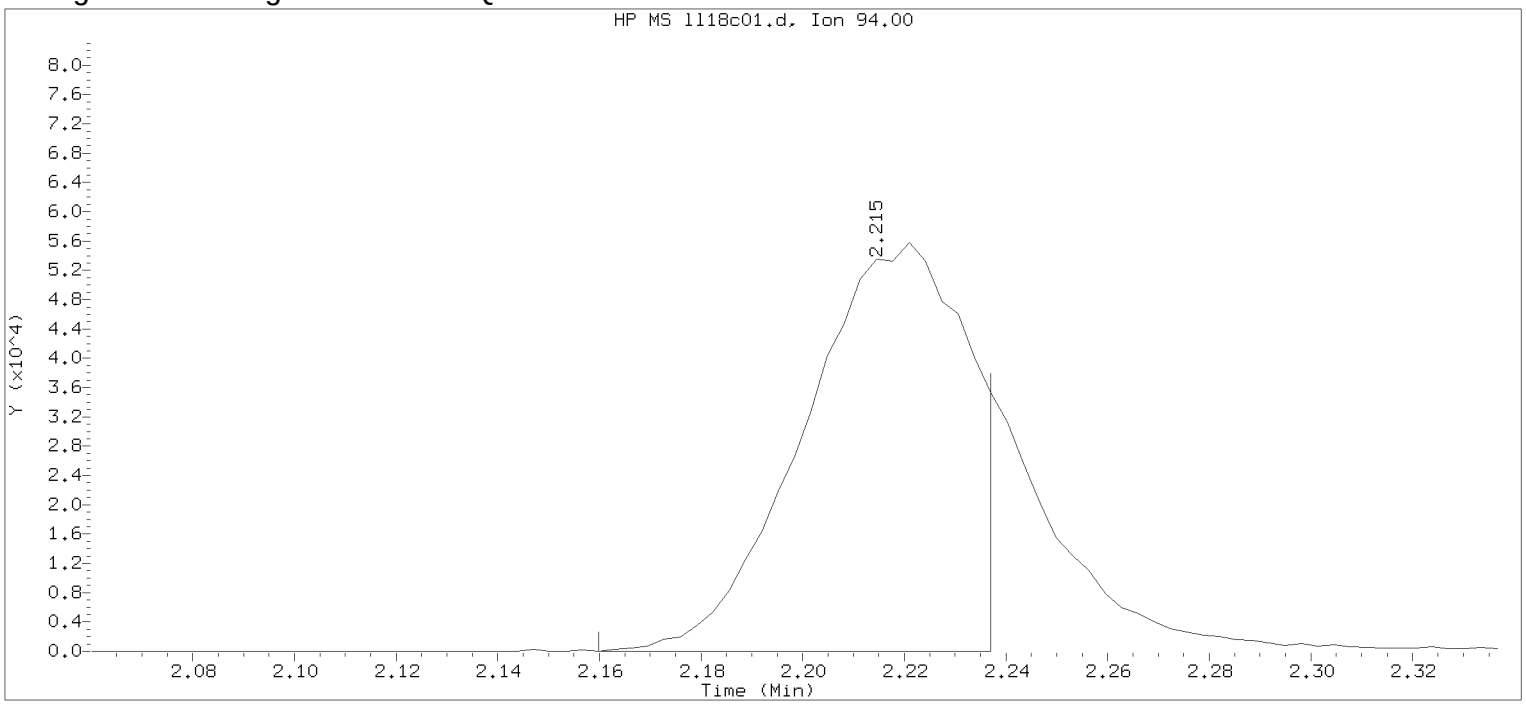
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:38.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:18 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 228
Retention Time (minutes): 2.215
Quant Ion : 94.00
Area : 122567
On-column Amount (ng) : 41.0170
Integration start scan : 210 Integration stop scan: 234
Y at integration start : 0 Y at integration end: 0

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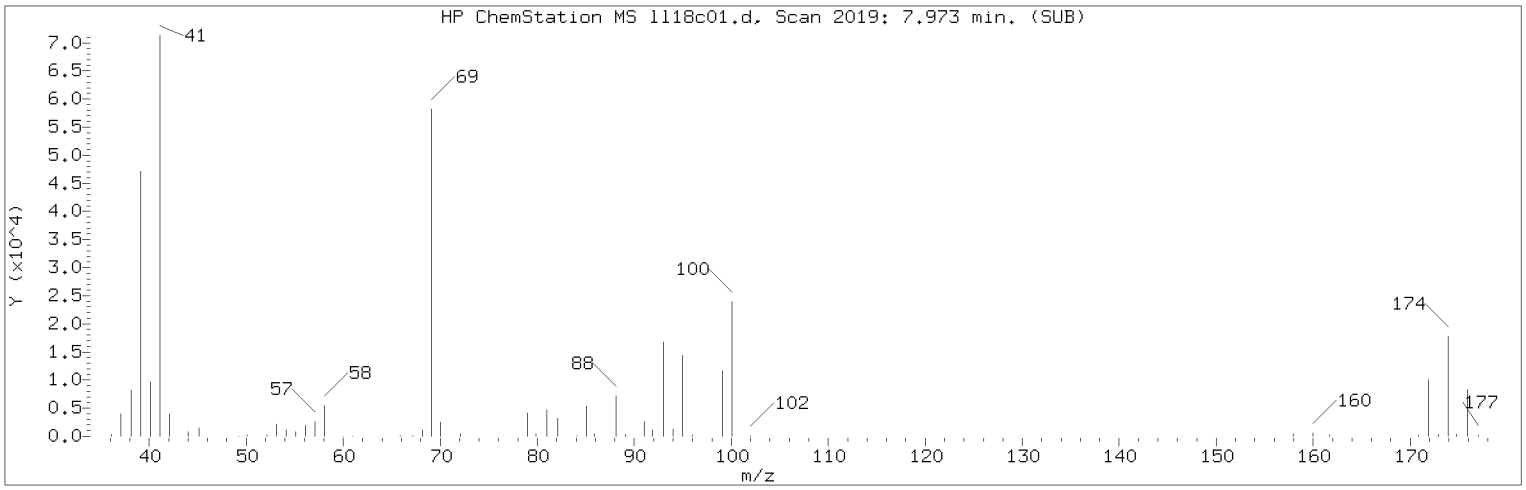
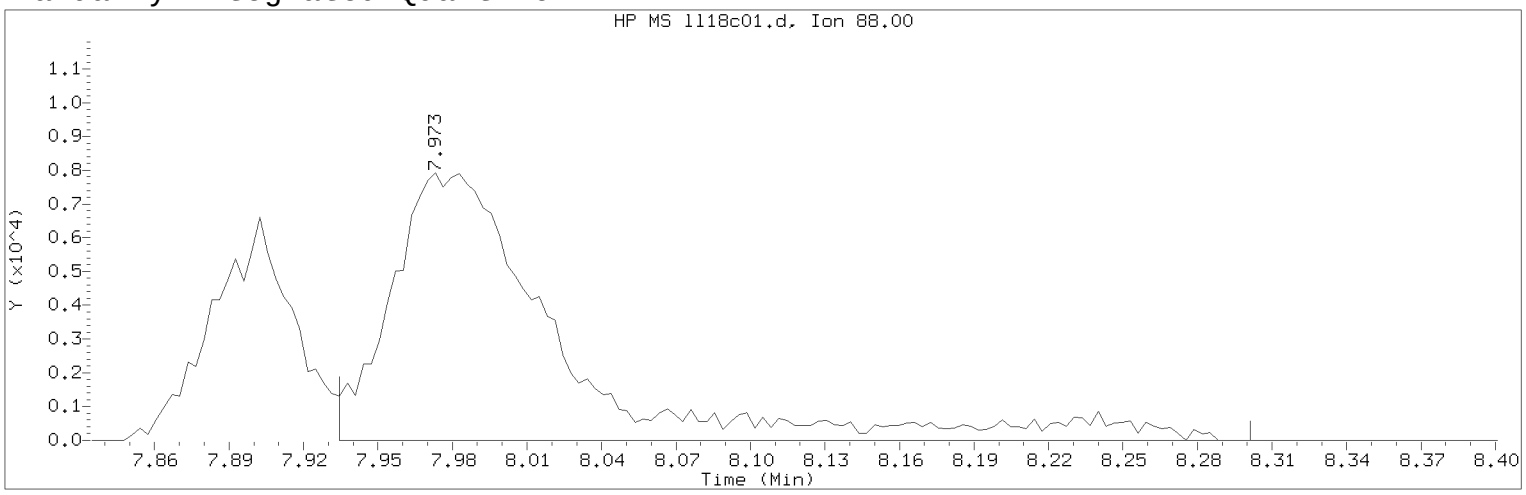
Target 3.5 esignature userKH186jkh09052

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050 Lab Sample ID: VSTD050

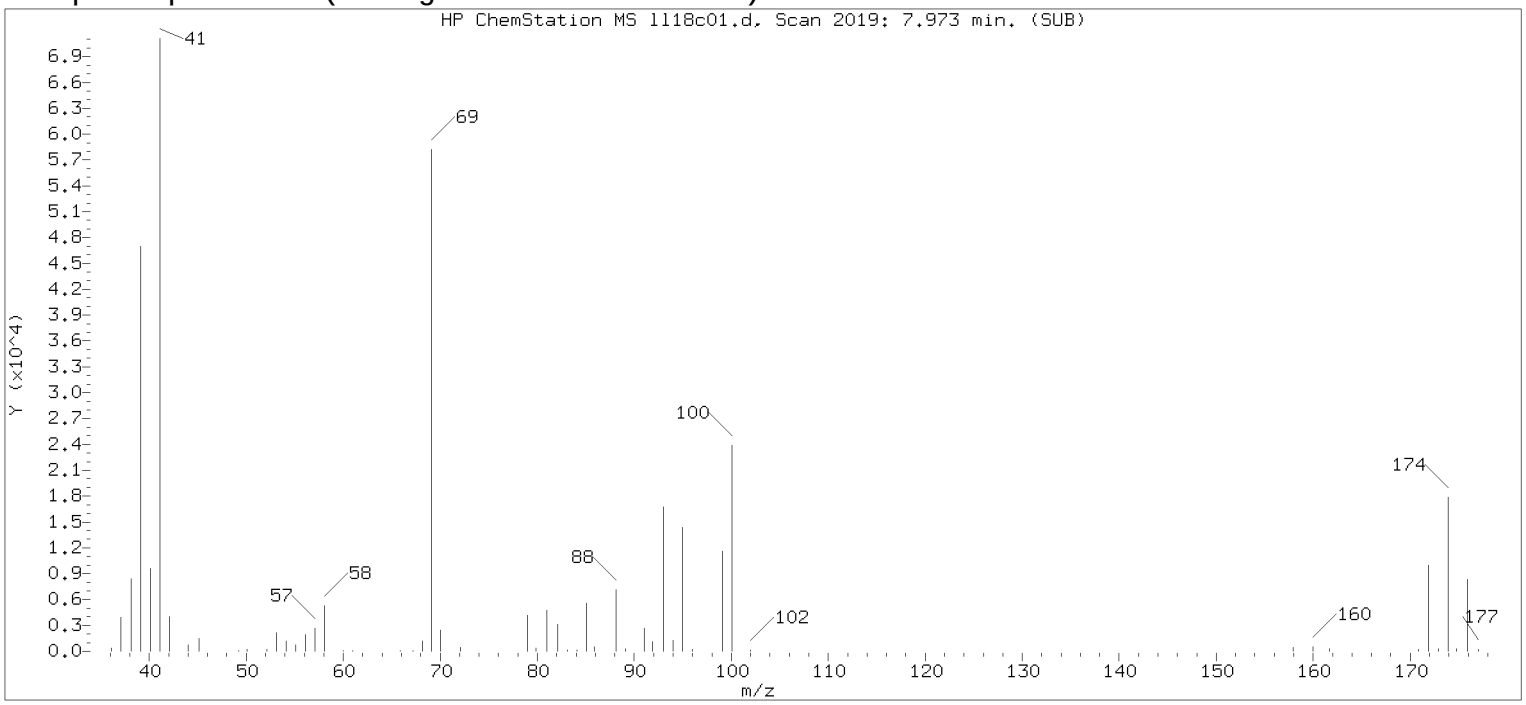
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 37212M
On-Column Amount (ng) : 710.1009
Integration start scan : 2006 Integration stop scan: 2120
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

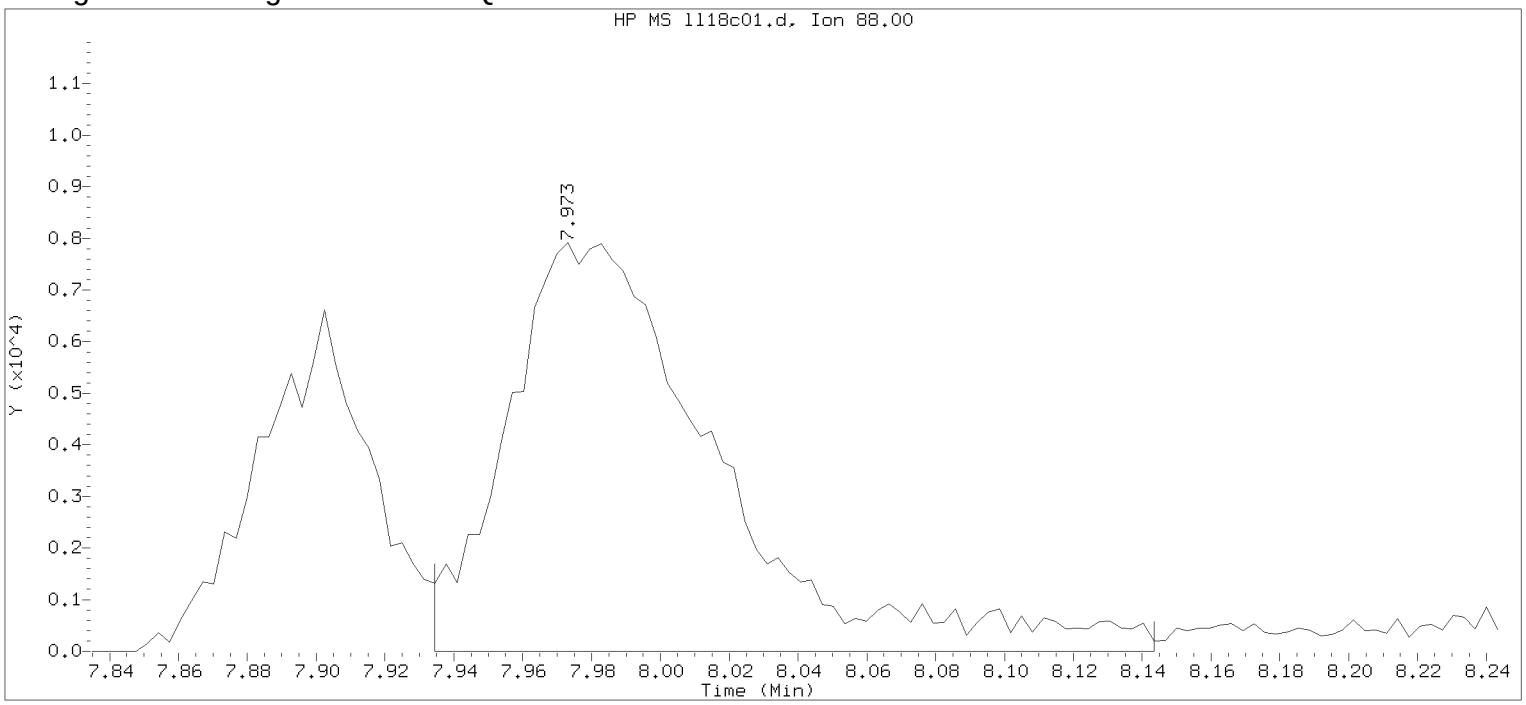
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:38.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

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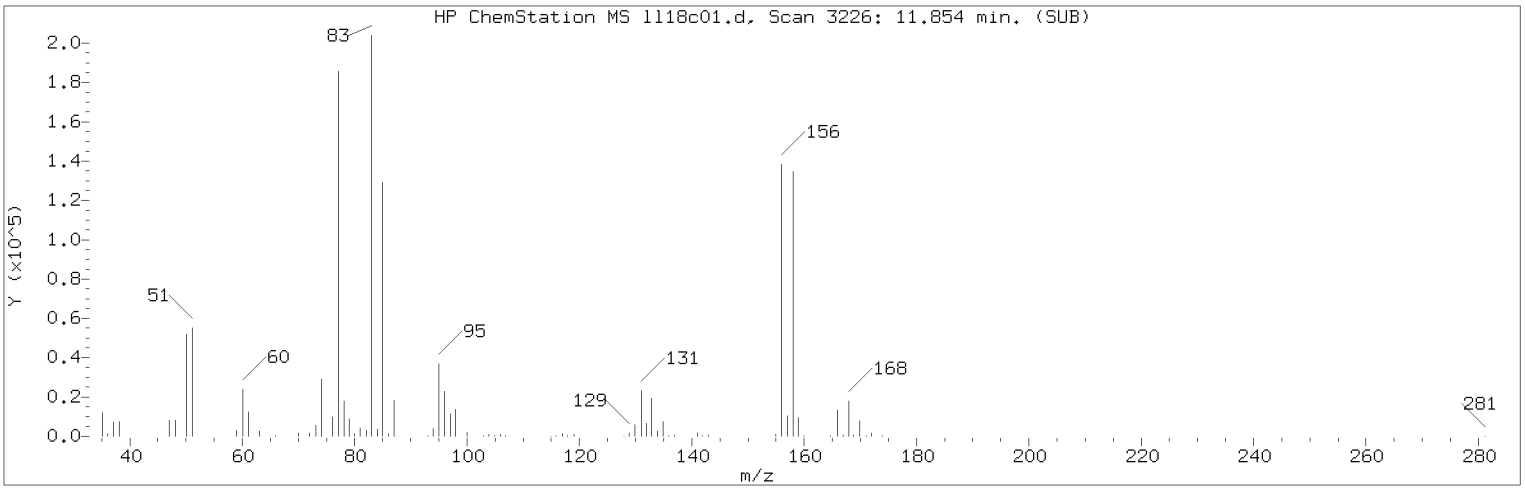
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:18 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

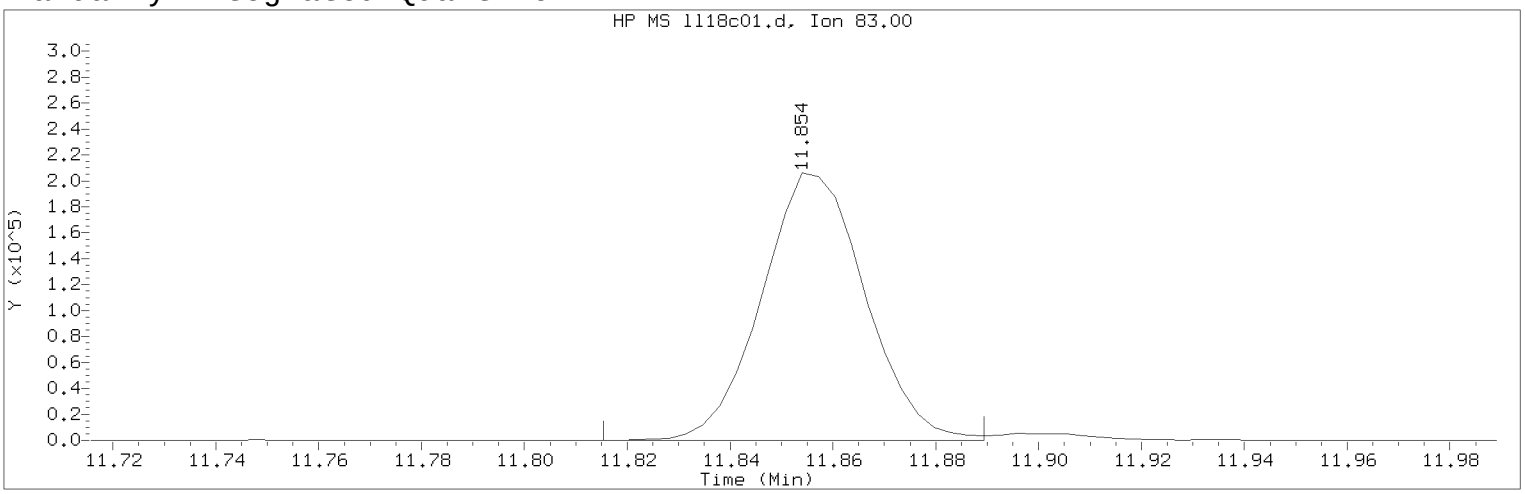
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area : 33486
On-column Amount (ng) : 639.0114
Integration start scan : 2006 Integration stop scan: 2071
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 07/18/2017 at 08:33.
Target 3.5 esignature userKH186jkh09052

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

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Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050 Lab Sample ID: VSTD050

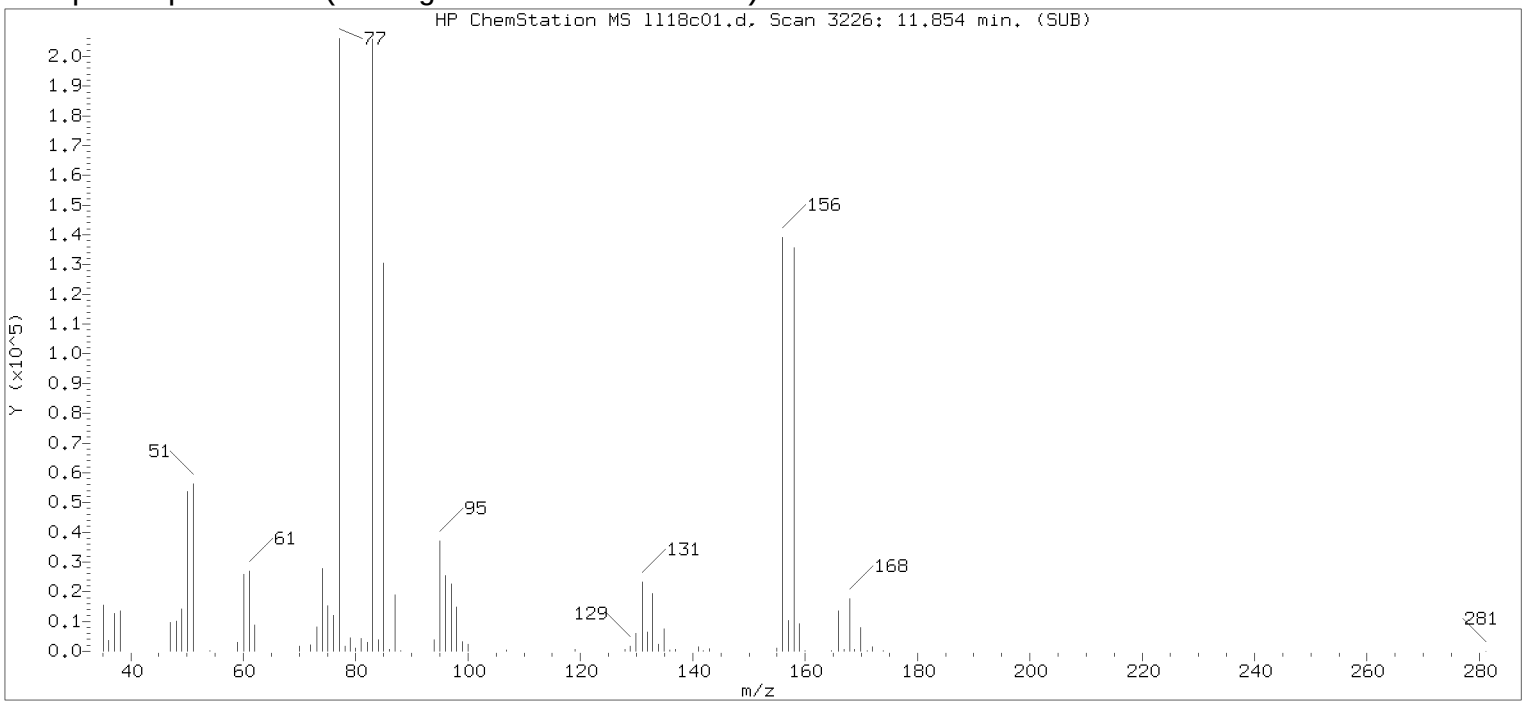
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3226
Retention Time (minutes): 11.854
Quant Ion : 83.00
Area (flag) : 287899M
On-Column Amount (ng) : 46.6950
Integration start scan : 3213 Integration stop scan: 3236
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

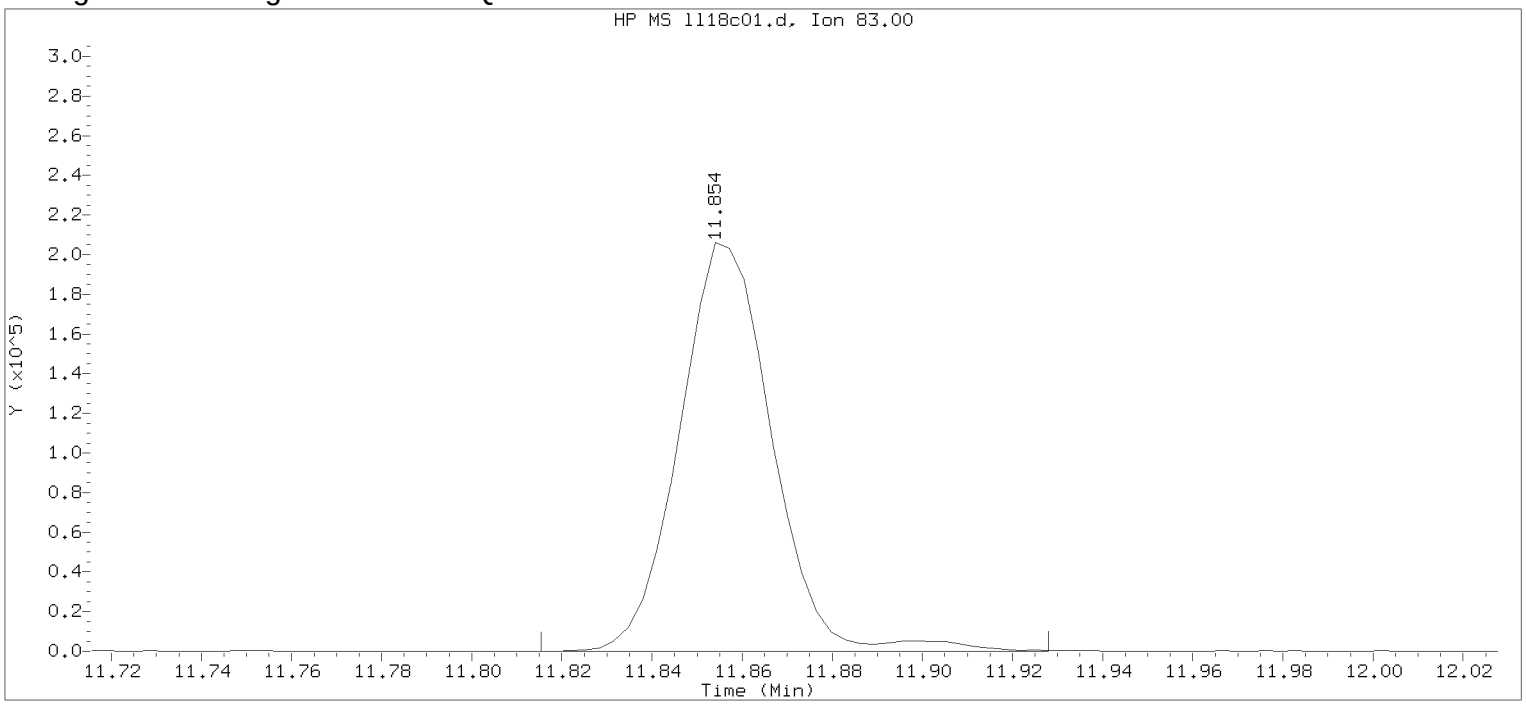
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:38.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

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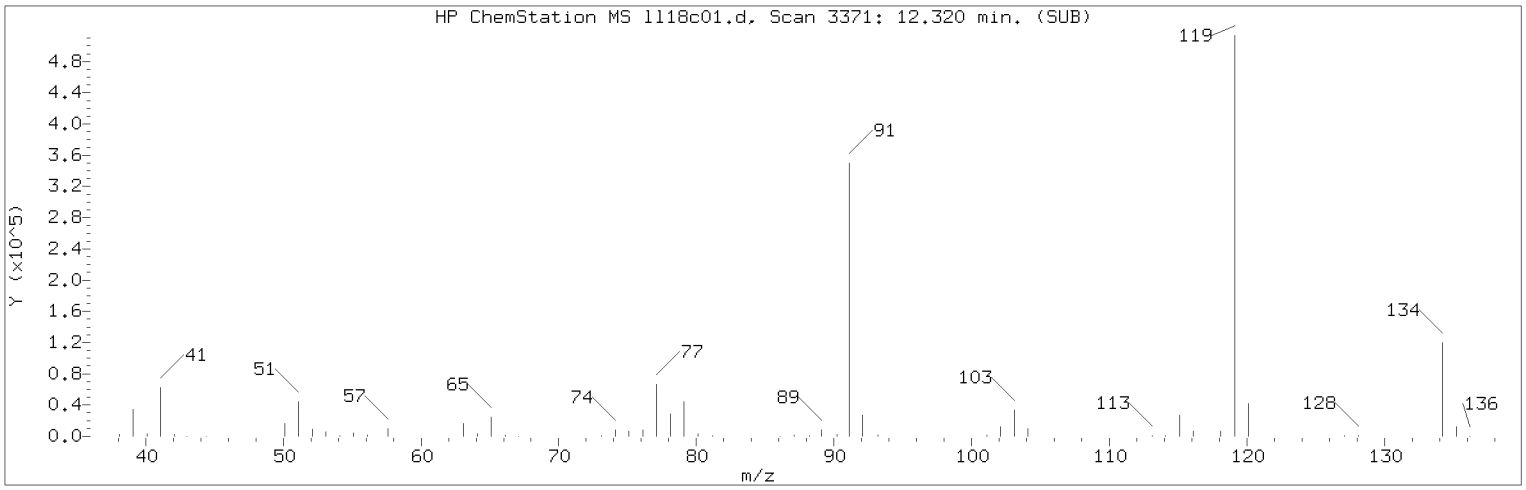
Sample Name: VSTD050 Lab Sample ID: VSTD050

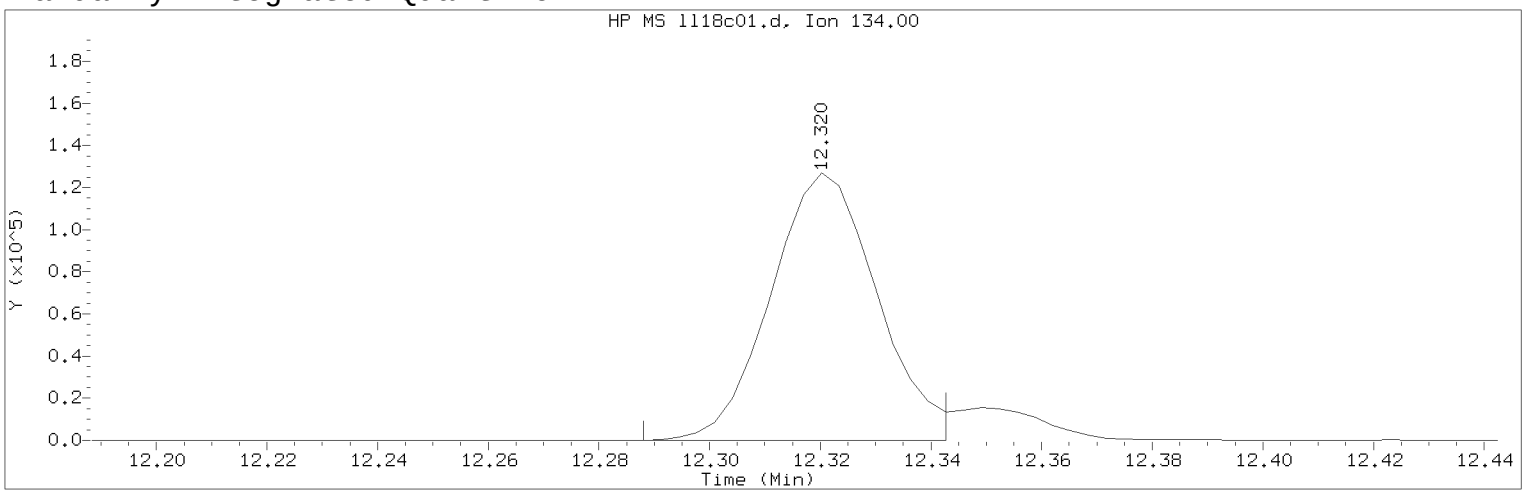
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3226
Retention Time (minutes): 11.854
Quant Ion : 83.00
Area : 294343
On-column Amount (ng) : 47.7400
Integration start scan : 3213 Integration stop scan: 3248
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 07/18/2017 at 08:33.
Target 3.5 esignature userKH186jkh09052

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d  Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01  Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:33 jkh09052

Sample Name: VSTD050  Lab Sample ID: VSTD050

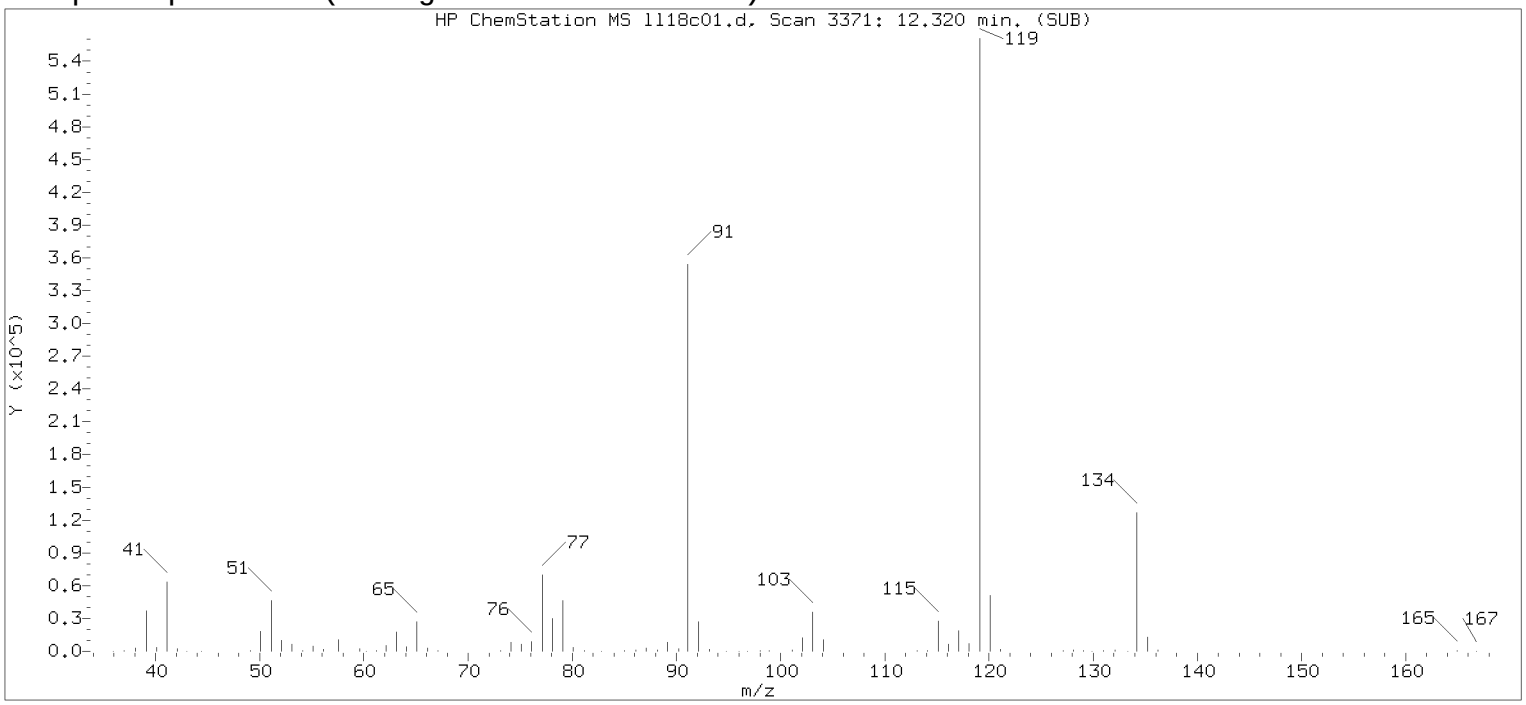
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 169143M
On-Column Amount (ng) : 50.0149
Integration start scan : 3360  Integration stop scan: 3377
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

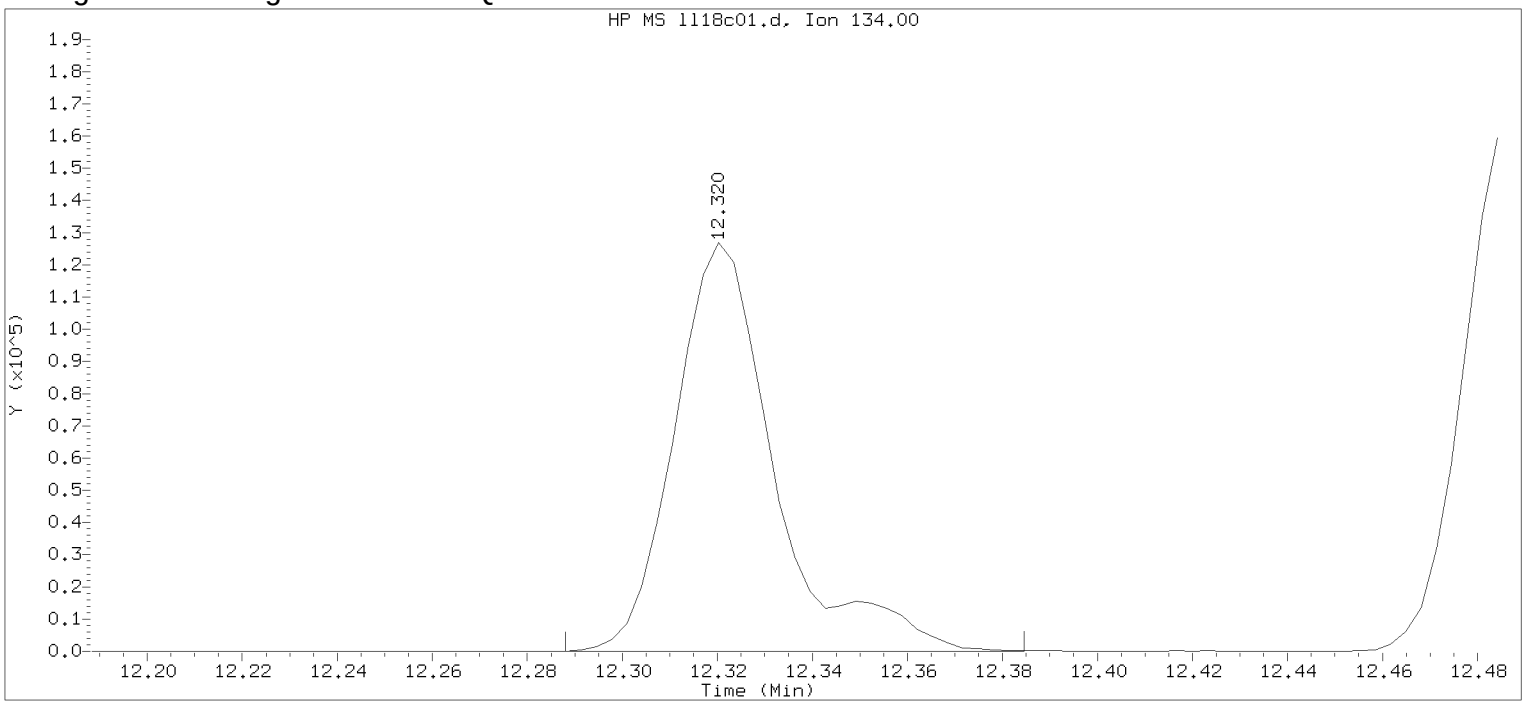
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:33.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:38.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul18a.b/ll18c01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:01 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 18-JUL-2017 08:18
Date, time and analyst ID of latest file update: 18-Jul-2017 08:18 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 185674
On-column Amount (ng) : 54.9028
Integration start scan : 3360 Integration stop scan: 3390
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 07/18/2017 at 08:33.
Target 3.5 esignature userKH36jkh09052

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18c02.d Injection date and time: **18-JUL-2017 15:32**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;LL18B01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 15:50 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **L17199**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.591(-0.006) | 656 | 65 | 130728 ( -15) | 250.00 | |
| 66) Fluorobenzene | 7.053( 0.000) | 1733 | 96 | 677229 ( -10) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 547969 ( -12) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 314938 ( -9) | 50.00 | |

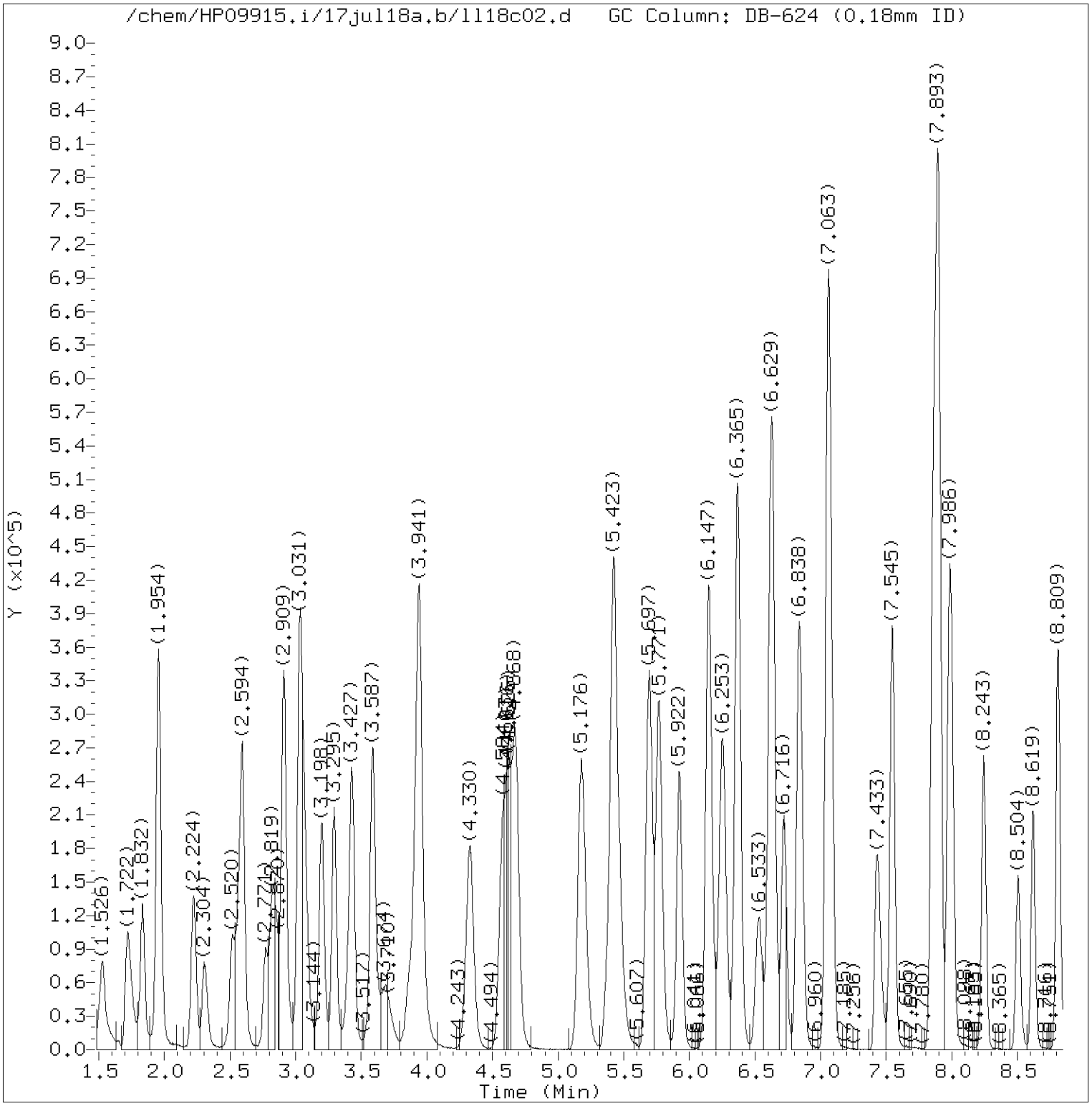
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 184404 | 55.761 | 112% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.616( 0.000) | 102 | 41771 | 50.795 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.143( 0.000) | 98 | 688995 | 49.244 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 280758 | 53.987 | 108% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 6) Vinyl Chloride | (2) | 1.948(-0.000) | 62 | 170924 | 42.709 | 42.71 | | | 0.5 | 1 |
| 32) trans-1,2-Dichloroethene | (2) | 3.947(-0.000) | 96 | 147900 | 51.393 | 51.39 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.423(-0.000) | 96 | 167212 | 50.706 | 50.71 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.632( 0.000) | 78 | 599796 | 48.534 | 48.53 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.545(-0.000) | 95 | 170987 | 53.539 | 53.54 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227( 0.000) | 92 | 398424 | 49.003 | 49.00 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831(-0.000) | 91 | 812484 | 51.804 | 51.80 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954(-0.000) | 106 | 632477 | 103.586 | 103.59 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291(-0.000) | 106 | 314533 | 51.799 | 51.80 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 947010 | 155.385 | 155.38 | | | 0.5 | 1 |

Total number of targets = 10

Digitally signed by Matthew S. Krause on 07/18/2017 at 15:53. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

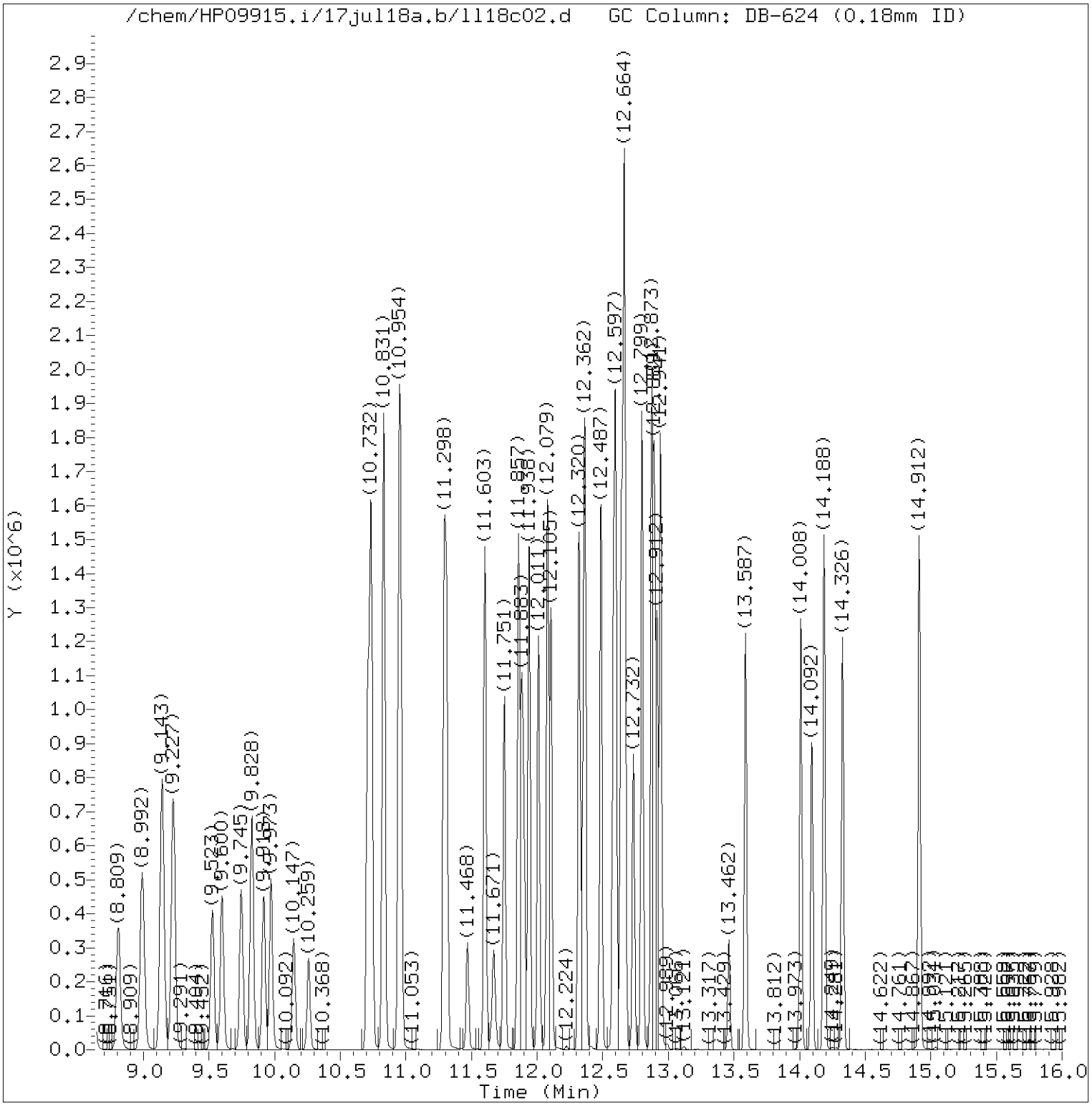
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c02.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 15:32 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:50 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:53.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c02.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 15:32 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:50 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:53.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18c02.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 15:32 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 15:50 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 6) Vinyl Chloride | (2) | 1.948 | 62 | 170924 | 42.709 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.591 | 65 | 130728 | 250.000 |
| 32) trans-1,2-Dichloroethene | (2) | 3.947 | 96 | 147900 | 51.393 |
| 42) cis-1,2-Dichloroethene | (2) | 5.423 | 96 | 167212 | 50.706 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 184404 | 55.761 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 41771 | 50.795 |
| 60) Benzene | (2) | 6.632 | 78 | 599796 | 48.534 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 677229 | 50.000 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 170987 | 53.539 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 688995 | 49.244 |
| 88) Toluene | (3) | 9.227 | 92 | 398424 | 49.003 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 547969 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 812484 | 51.804 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 632477 | 103.586 |
| 107) o-Xylene | (3) | 11.291 | 106 | 314533 | 51.799 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 280758 | 53.987 |
| 108) Xylene (Total) | (3) | | 106 | 947010 | 155.385 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 314938 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 07/18/2017 at 15:53.
Target 3.5 esignature user ID: msk07970

# Raw QC Data

# Volatiles by GC/MS

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

VBLKL63

Data file: /chem/HP09915.i/17jul18a.b/ll18b01.d Injection date and time: **18-JUL-2017 08:23**
Data file Sample Info. Line: VBLKL63;VBLKL63;1;3;;;DODWW;;; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 08:52 jkh09052

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **L17199**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.003) | 653 | 65 | 152545 ( 0) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.006) | 1731 | 96 | 712112 ( -5) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 565947 ( -9) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642(-0.003) | 3471 | 152 | 318271 ( -8) | 50.00 | |

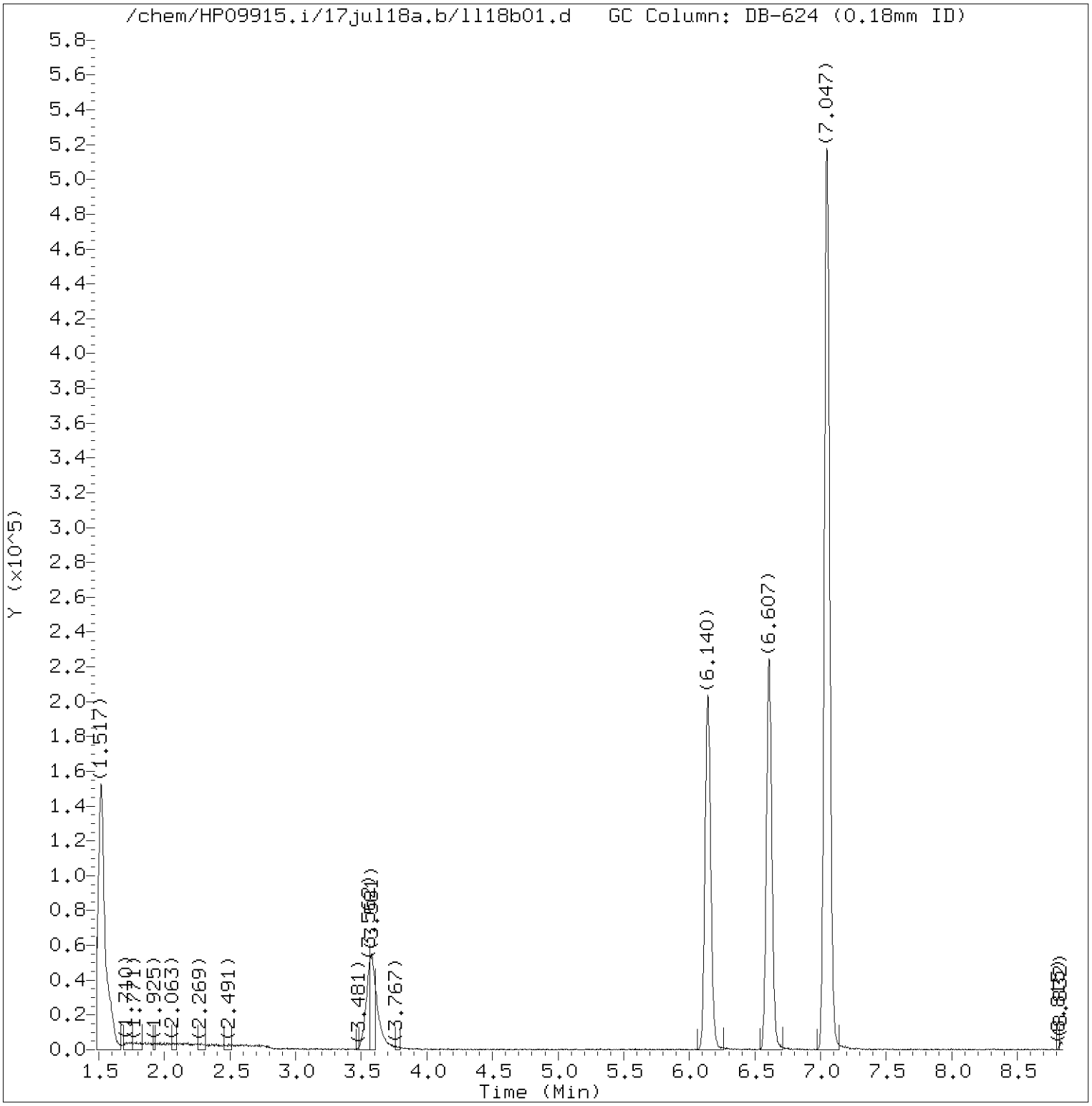
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 192523 | 55.365 | 111% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 44552 | 51.523 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 699972 | 48.440 | 97% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 271723 | 50.590 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 6) Vinyl Chloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 32) trans-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 10

Digitally signed by Jennifer K. Howe on 07/18/2017 at 08:52. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 17:59. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

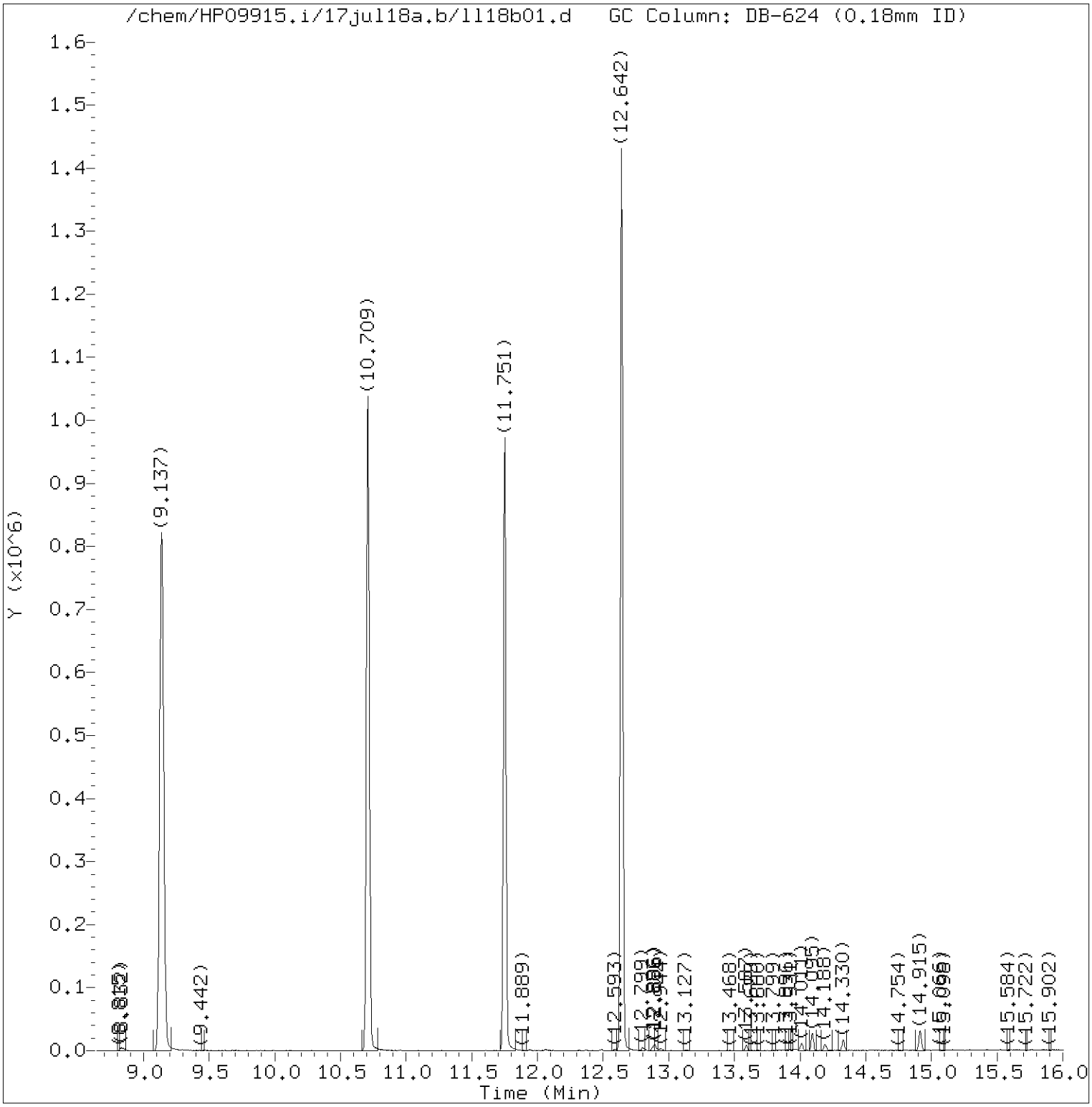
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18b01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:23 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 08:52 jkh09052

Sample Name: VBLKL63 Lab Sample ID: VBLKL63

Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:52.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18b01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:23 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 08:52 jkh09052

Sample Name: VBLKL63 Lab Sample ID: VBLKL63

Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:52.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18b01.d  Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:23  Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m  Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 08:52 jkh09052

Sample Name: VBLKL63  Lab Sample ID: VBLKL63

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 152545 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 192523 | 55.365 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 44552 | 51.523 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 712112 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 699972 | 48.440 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 565947 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 271723 | 50.590 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 318271 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 07/18/2017 at 08:52.
Target 3.5 esignature user ID: jkh09052

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul18a.b/ll18l01.d Injection date and time: **18-JUL-2017 08:45**
Data file Sample Info. Line: LCSL63;LCSL63;1;3;LCS;;DODWW;;ll18b01; Instrument ID: **HP09915.i** Batch: **L171991AA**
Date, time and analyst ID of latest file update: 18-Jul-2017 09:02 Automation

Blank Data file reference: **/chem/HP09915.i/17jul18a.b/ll18b01.d**

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: **L17199**
Calibration date and time (Last Method Edit): 18-JUL-2017 08:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul18a.b/ll18c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.016) | 649 | 65 | 149139 ( -3) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.007) | 1731 | 96 | 723967 ( -4) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 578171 ( -7) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642(-0.003) | 3471 | 152 | 326331 ( -6) | 50.00 | |

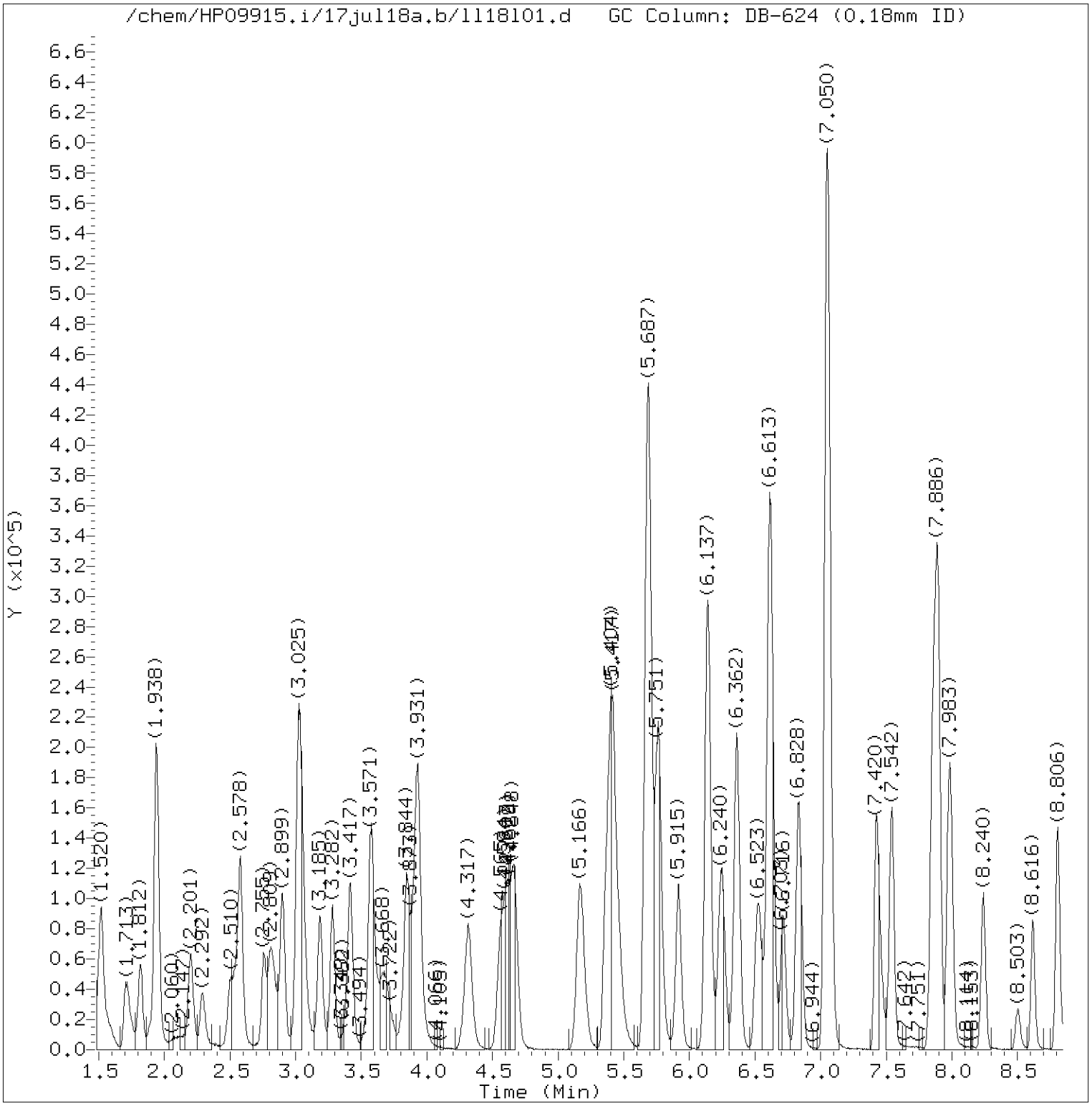
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.001) | 113 | 191565 | 54.187 | 108% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.606( 0.000) | 102 | 44353 | 50.453 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 722552 | 48.945 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 288672 | 52.609 | 105% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 6) Vinyl Chloride | (2) | 1.928( 0.002) | 62 | 75411 | 17.627 | 17.63 | | | 0.5 | 1 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931( 0.000) | 96 | 66171 | 21.509 | 21.51 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410( 0.000) | 96 | 75104 | 21.305 | 21.30 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.622( 0.000) | 78 | 259055 | 19.609 | 19.61 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.539(-0.000) | 95 | 71434 | 20.923 | 20.92 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227( 0.000) | 92 | 169783 | 19.791 | 19.79 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831( 0.000) | 91 | 340678 | 20.587 | 20.59 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 264928 | 41.123 | 41.12 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291(-0.000) | 106 | 127152 | 19.846 | 19.85 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 392080 | 60.969 | 60.97 | | | 0.5 | 1 |

Total number of targets = 10

Digitally signed by Matthew S. Krause on 07/18/2017 at 18:22. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 07/18/2017 at 18:41. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

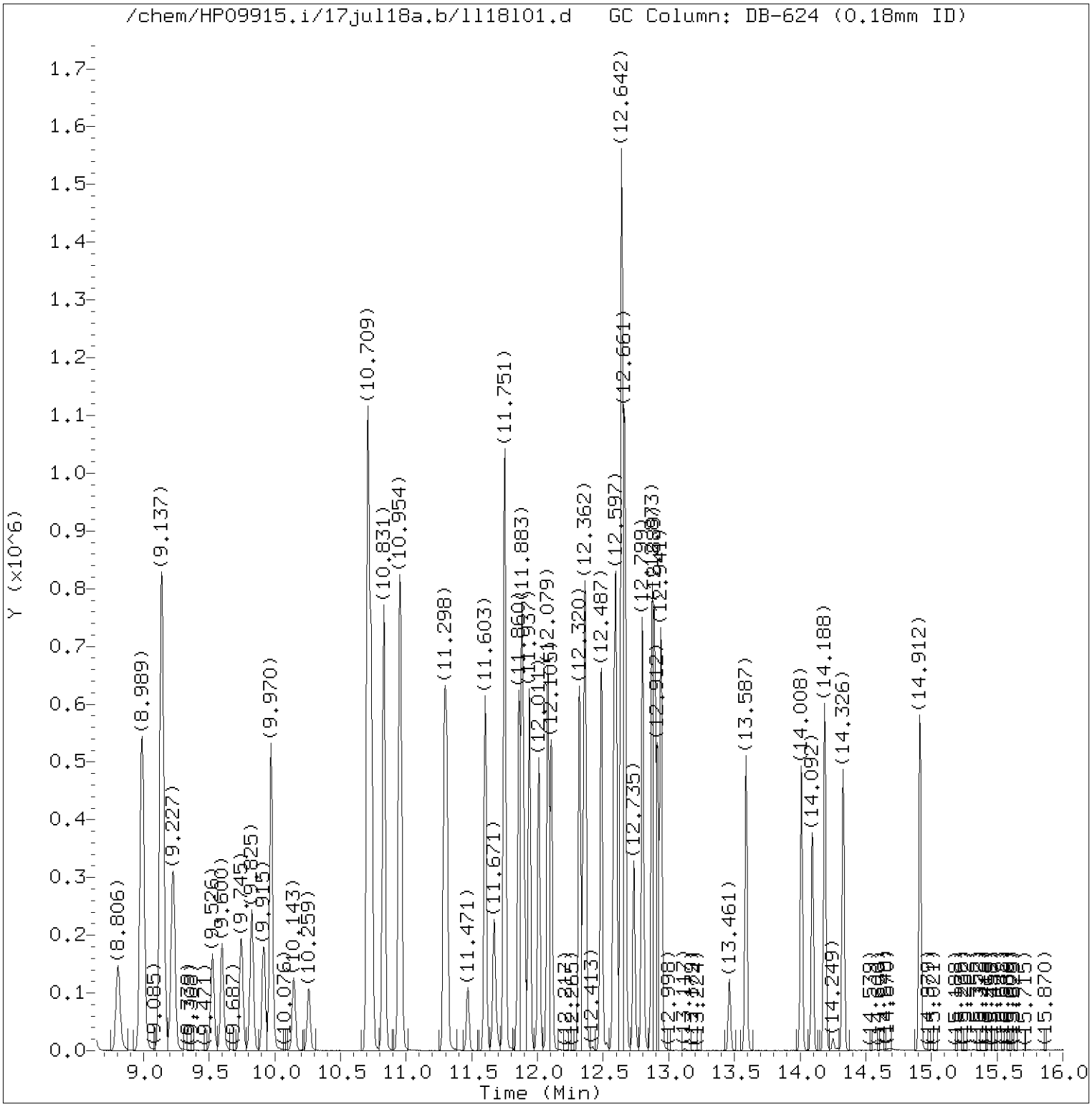
Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18l01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:45 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 09:02 Automation

Sample Name: LCSL63 Lab Sample ID: LCSL63

Digitally signed by Matthew S. Krause
on 07/18/2017 at 18:22.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18l01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:45 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 09:02 Automation

Sample Name: LCSL63 Lab Sample ID: LCSL63

Digitally signed by Matthew S. Krause
on 07/18/2017 at 18:22.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul18a.b/ll18l01.d Instrument ID: HP09915.i
Injection date and time: 18-JUL-2017 08:45 Analyst ID: jkh09052

Method used: /chem/HP09915.i/17jul18a.b/m8260c5.m Sublist used: L17199
Calibration date and time: 18-JUL-2017 08:52
Date, time and analyst ID of latest file update: 18-Jul-2017 09:02 Automation

Sample Name: LCSL63 Lab Sample ID: LCSL63

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 6) Vinyl Chloride | (2) | 1.928 | 62 | 75411 | 17.627 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 149139 | 250.000 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 66171 | 21.509 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 75104 | 21.305 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 191565 | 54.187 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 44353 | 50.453 |
| 60) Benzene | (2) | 6.623 | 78 | 259055 | 19.609 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 723967 | 50.000 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 71434 | 20.923 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 722552 | 48.945 |
| 88) Toluene | (3) | 9.227 | 92 | 169783 | 19.791 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 578171 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 340678 | 20.587 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 264928 | 41.123 |
| 107) o-Xylene | (3) | 11.291 | 106 | 127152 | 19.846 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 288672 | 52.609 |
| 108) Xylene (Total) | (3) | | 106 | 392080 | 60.969 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 326331 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 07/18/2017 at 18:22.
Target 3.5 esignature user ID: msk07970

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9100479 | GW009-173 | X | | 1 | |
| 9100481 | GW013-173 | X | | 1 | |
| 9100482 | GW051-173 | X | | 1 | |
| 9100483 | GW235-463-173 | X | | 1 | |
| 9100485 | GW235-492-173 | X | | 1 | |
| 9100487 | GW235-521-173 | X | | 1 | |
| 9100489 | GW235-521-573 | X | | 1 | Field Duplicate Sample |
| 9100491 | ER173-01 | X | | 1 | Equipment Blank |
| 9100492 | ER173-02 | X | | 1 | Equipment Blank |
| 9100493 | TB173-15 | X | | 1 | Trip Blank |
| 9100494 | TB173-16 | X | | 1 | Trip Blank |
| 9100495 | TB173-17 | X | | 1 | Trip Blank |
| 9100496 | TB173-18 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9100479, 9100481-9100483, 9100485, 9100487, 9100489, 9100491-9100496: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172010021A | PBLK21201 | 07/22/2017 01:18:00 |
| | | LCS21201 | 07/22/2017 01:34:00 |
| | | LCSD21201 | 07/22/2017 01:49:00 |
| | | 9100479 | 07/22/2017 08:20:00 |
| | | 9100481 | 07/22/2017 08:35:00 |
| EDB 8011 Water | 172010025A | PBLK25201 | 07/21/2017 17:46:00 |
| | | LCS25201 | 07/21/2017 18:01:00 |
| | | LCSD25201 | 07/21/2017 18:17:00 |
| | | 9100482 | 07/21/2017 18:48:00 |
| | | 9100483 | 07/21/2017 19:04:00 |
| | | 9100485 | 07/21/2017 19:19:00 |
| | | 9100487 | 07/21/2017 19:35:00 |
| | | 9100489 | 07/21/2017 19:51:00 |
| | | 9100491 | 07/21/2017 20:06:00 |
| | | 9100492 | 07/21/2017 20:53:00 |
| | | 9100493 | 07/21/2017 21:09:00 |
| | | 9100494 | 07/21/2017 21:24:00 |
| | | 9100495 | 07/21/2017 21:40:00 |
| | | 9100496 | 07/21/2017 21:55:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR186**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172010021A / PBLK21201<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/22/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

| 172010025A / PBLK25201<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/21/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR186**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172010021A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK21201 | 87 | 46 - 136 |
| LCS21201 | 95 | 46 - 136 |
| LCSD21201 | 86 | 46 - 136 |
| 9100479 | 100 | 46 - 136 |
| 9100481 | 87 | 46 - 136 |

| 172010025A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK25201 | 103 | 46 - 136 |
| LCS25201 | 106 | 46 - 136 |
| LCSD25201 | 112 | 46 - 136 |
| 9100482 | 99 | 46 - 136 |
| 9100483 | 82 | 46 - 136 |
| 9100485 | 118 | 46 - 136 |
| 9100487 | 106 | 46 - 136 |
| 9100489 | 119 | 46 - 136 |
| 9100491 | 107 | 46 - 136 |
| 9100492 | 106 | 46 - 136 |
| 9100493 | 116 | 46 - 136 |
| 9100494 | 103 | 46 - 136 |
| 9100495 | 106 | 46 - 136 |
| 9100496 | 107 | 46 - 136 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR186**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS21201<br>LCSD: LCSD21201 | Batch: **172010021A** (Sample number(s): 9100479, 9100481 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.154 | 0.139 | 120 | 108 | 60-140 | 10 | 20 |

| LCS: LCS25201<br>LCSD: LCSD25201 | Batch: **172010025A** (Sample number(s): 9100482-9100483, 9100485, 9100487, 9100489, 9100491-9100496 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.146 | 0.163 | 114 | 128 | 60-140 | 12 | 20 |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.07 | 3.06 | 3.07 | 3.07 | 3.07 | 3.07 | 3.04 | 3.10 |
| 1,1,2,2-TETRACHLOROETHANE | 4.52 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.48 | 4.54 |
| 1,2,3-Trichloropropane | 4.58 | 4.58 | 4.57 | 4.58 | 4.58 | 4.58 | 4.58 | 4.55 | 4.61 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.87 | 6.93 |

HWM 7243 7/24/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 2.23E+04 | 2.14E+04 | 1.79E+04 | 2.05E+04 | 2.10E+04 | | 2.06E+04 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 2.54E+04 | 2.41E+04 | 2.18E+04 | 2.29E+04 | 2.30E+04 | | 2.35E+04 | 6 |
| 1,2,3-Trichloropropane | 4.01E+03 | 4.33E+03 | 3.23E+03 | 3.30E+03 | 3.06E+03 | | 3.59E+03 | 15 |
| 1,2-DIBROMO-3-CHLOROPROPA | 4.18E+04 | 4.15E+04 | 4.01E+04 | 4.01E+04 | 3.97E+04 | | 4.06E+04 | 2 |

Average % RSD: 8

linear

File Name: V:\CP16\16edbs1720201.CAL
Version: 8

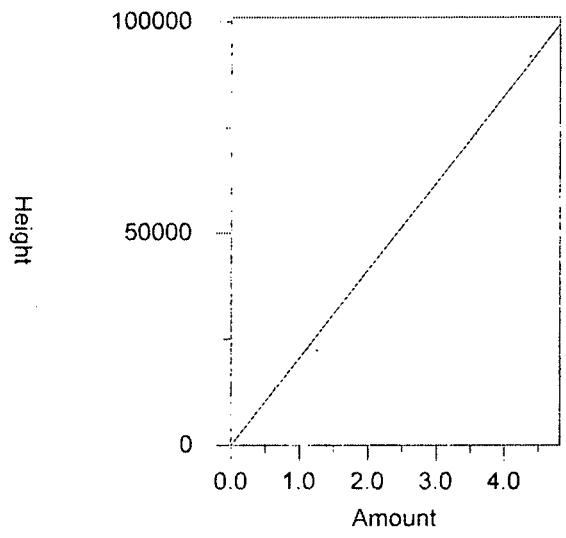
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.072 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

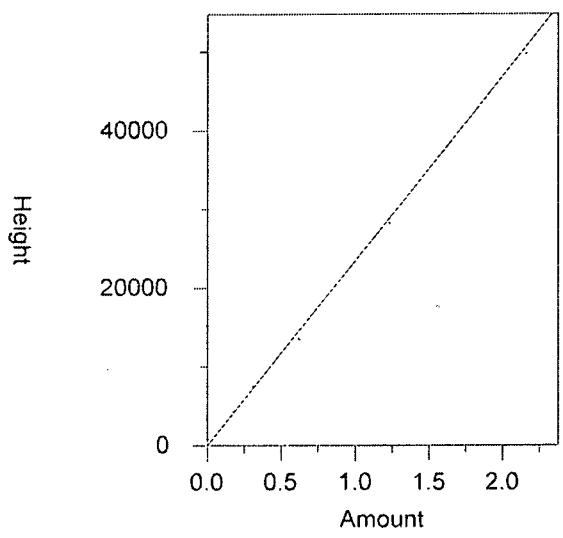
Single peak quantification by height

Y = 20615.34 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9970039
Average error: 5.382%
Average CF: 20615.34
RSD: 7.972%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 7802.336 | 22292.39 | 8.135 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0006.E |
| 2 | 0.63 | 13452.58 | 21353.3 | 3.580 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.E |
| 3 | 1.25 | 22388.71 | 17910.97 | -13.118 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.E |
| 4 | 2.5 | 51364.3 | 20545.72 | -0.338 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.E |
| 5 | 4.38 | 91867.52 | 20974.32 | 1.741 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.E |
| 6 | (6.25) | (92950.38) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.E |

2 1,1,2,2-PCA




Expected retention time: 4.513 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

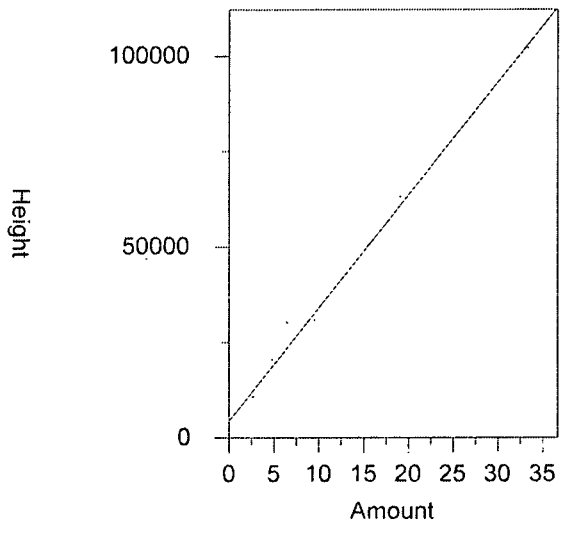
Single peak quantification by height

Y = 23460.12 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9982876
Average error: 4.390%
Average CF: 23460.12
RSD: 5.778%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 4321.91 | 25423 | 8.367 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 2 | 0.31 | 7462.229 | 24071.71 | 2.607 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 3 | 0.62 | 13531.2 | 21824.52 | -6.972 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 4 | 1.23 | 28210.36 | 22935.25 | -2.237 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 5 | 2.16 | 49779.61 | 23046.12 | -1.765 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 6 | (3.08) | (53019.96) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |

3 1,2,3-TCP




Expected retention time: 4.58 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

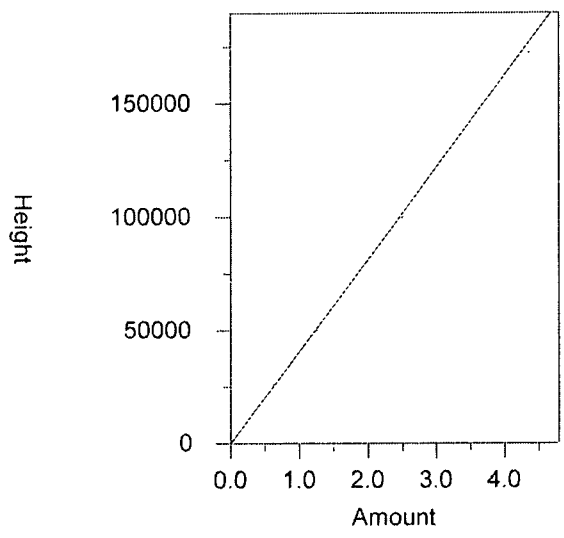
Single peak quantification by height

Y = 2956.05 X + 4430.097

Linear fit with equal weighting
Coefficient of determination: 0.9971222
Average error: 6.902%
Average CF: 3588.12
RSD: 15.344%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 10707.98 | 4010.479 | -13.104 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 2 | 4.76 | 20611.94 | 4330.239 | 11.411 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 3 | 9.53 | 30821.48 | 3234.153 | -5.459 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 4 | 19.05 | 62951.91 | 3304.562 | 3.637 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 5 | 33.34 | 102059.2 | 3061.164 | -0.899 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 6 | (47.63) | (104273.1) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.895 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 40636.84 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9988161 |
| Average error: | 1.953% |
| Average CF: | 40636.84 |
| RSD: | 2.286% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 14619.25 | 41769.29 | 2.787 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 0.62 | 25722.95 | 41488.63 | 2.096 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 1.24 | 49779.49 | 40144.75 | -1.211 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 2.49 | 99853.48 | 40101.8 | -1.317 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 4.35 | 172606.8 | 39679.72 | -2.355 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (6.22) | (183007.9) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.34 | 4.33 | 4.32 | 4.33 | 4.33 | 4.33 | 4.33 | 4.30 | 4.36 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.61 | 5.67 |
| 1,2,3-Trichloropropane | 5.77 | 5.76 | 5.76 | 5.77 | 5.77 | 5.77 | 5.77 | 5.74 | 5.80 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.92 | 7.98 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | %RSD |
| ETHYLENE DIBROMIDE | 6.54E+03 | 6.19E+03 | 5.36E+03 | 5.68E+03 | 5.69E+03 | | 5.89E+03 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 1.08E+04 | 9.08E+03 | 7.96E+03 | 8.67E+03 | 8.36E+03 | | 8.97E+03 | 12 |
| 1,2,3-Trichloropropane | 5.16E+03 | 2.81E+03 | 1.85E+03 | 1.46E+03 | 1.28E+03 | | 2.51E+03 | 63 |
| 1,2-DIBROMO-3-CHLOROPROPA | 1.62E+04 | 1.70E+04 | 1.47E+04 | 1.48E+04 | 1.45E+04 | | 1.54E+04 | 7 |

Average % RSD: 23

linear linear + mm 7/24/17

File Name: V:\CP16\16edbs1720201b.CAL
Version: 9

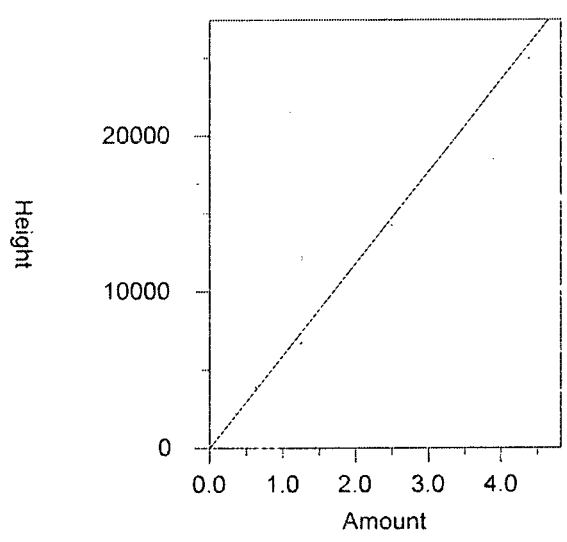
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 4.331 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

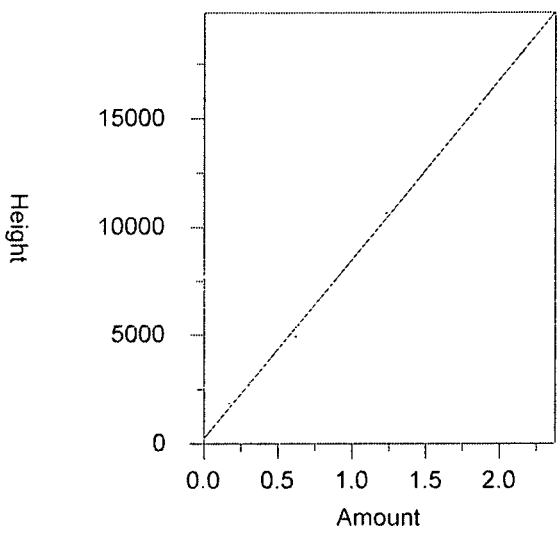
Single peak quantification by height

Y = 5892.757 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.995377
Average error: 6.423%
Average CF: 5892.757
RSD: 7.957%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 2290.409 | 6544.026 | 11.052 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0006 |
| 2 | 0.63 | 3898.299 | 6187.776 | 5.006 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0007 |
| 3 | 1.25 | 6702.179 | 5361.743 | -9.011 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0008 |
| 4 | 2.5 | 14203.42 | 5681.368 | -3.587 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0009 |
| 5 | 4.38 | 24917.26 | 5688.872 | -3.460 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0010 |
| 6 | (6.25) | (25336.41) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0011 |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.641 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

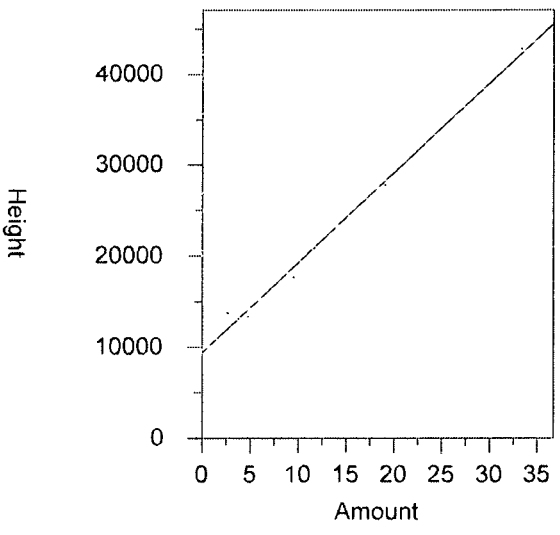
Single peak quantification by height

Y = 8267.026 X + 234.1029

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9984474 |
| Average error: | 4.569% |
| Average CF: | 8965.972 |
| RSD: | 12.109% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 1829.887 | 10764.04 | 11.613 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 0.31 | 2815.249 | 9081.448 | 0.657 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 0.62 | 4937.143 | 7963.134 | -7.883 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 1.23 | 10658.26 | 8665.252 | 2.458 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 2.16 | 18048.92 | 8355.981 | -0.232 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (3.08) | (18434.59) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.769 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

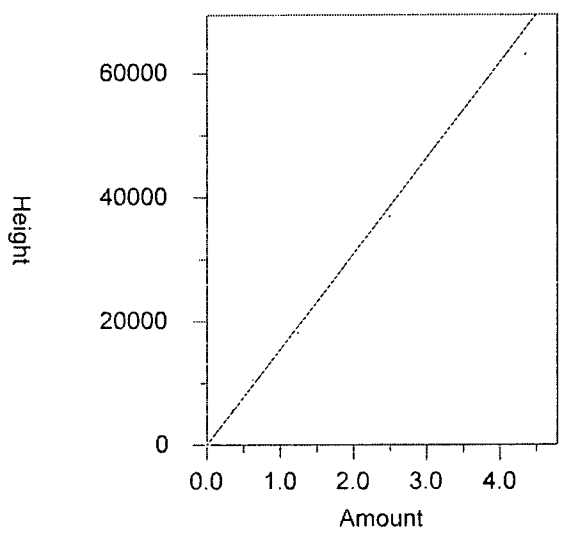
Single peak quantification by height

Y = 987.5696 X + 9390.728

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9914809 |
| Average error: | 5.673% |
| Average CF: | 2512.737 |
| RSD: | 63.371% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 13775.76 | 5159.46 | 14.535 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 4.76 | 13358.03 | 2806.309 | -5.205 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 9.53 | 17655.38 | 1852.611 | -6.100 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 19.05 | 27829.8 | 1460.882 | -1.327 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 33.34 | 42822.62 | 1284.422 | 1.197 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (47.63) | (43781.29) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.946 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 15449.69 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9905829 |
| Average error: | 5.905% |
| Average CF: | 15449.69 |
| RSD: | 7.042% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5659.925 | 16171.21 | 4.670 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 2 | 0.62 | 10545.45 | 17008.79 | 10.091 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 3 | 1.24 | 18270.78 | 14734.5 | -4.629 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 4 | 2.49 | 36898.79 | 14818.79 | -4.084 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 5 | 4.35 | 63140.97 | 14515.17 | -6.049 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 6 | (6.22) | (67644.8) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 17:14

Lab File ID: 16EDBS17202001.0013.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_3AA Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 1.33 | 1.25 | 6 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 0.62 | 0.62 | 1 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 10.32 | 9.53 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 1.31 | 1.24 | 5 |

Compounds 4 Average of %D: 5

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 17:14

Lab File ID: 16EDBS17202001B.0013.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_3AA Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 1.27 | 1.25 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 0.62 | 0.62 | 0 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 9.48 | 9.53 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 1.31 | 1.24 | 5 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKAA Sample ID: AA **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 21, 2017 17:30:25
Instrument : CP16--19853A
Result file : 16EDBS17202001.0014.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 21, 2017 17:30:25
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0014.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.08 | 3.10 | 465 | 0.001289 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25794 | 0.062828 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 7915 | 0.067370 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9419 | 0.063489 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 590 | -0.509210 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062828 | | | | 1.05 | |
| ☐ 1,2,3-TCP | A | 0.067370 | | | | 260.99 | ** |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: [signature]
Date: 7/24/17

%RPD = High - Low Amount divided by the Average times 100 unless RPD > 40
** %Difference > 40, lower amount found reported
* Recovery outside QC Limits



Printed on: 7/24/2017 11:10:54

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 20:22

Lab File ID: 16EDBS17202001.0025.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_5LS Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 4.43 | 4.38 | 1 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 2.08 | 2.16 | -4 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 32.14 | 33.34 | -4 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 4.38 | 4.35 | 1 |

Compounds 4 Average of %D: 3

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 20:22

Lab File ID: 16EDBS17202001B.0025.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_5LS Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 4.27 | 4.38 | -2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 2.17 | 2.16 | 1 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 34.04 | 33.34 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 4.32 | 4.35 | -1 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSC Sample ID: SC **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 21, 2017 20:37:50
Instrument : CP16--19853A
Result file : 16EDBS17202001.0026.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 21, 2017 20:37:50
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0026.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.10 | 3.10 | 383 | 0.001061 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25471 | 0.062041 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 9137 | 0.090989 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9566 | 0.064505 |
| **DBCP** | 7.92 | 7.93 | 7.98 | 949 | 0.003512 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062041 | | | | 3.89 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Date: Heather M. Miller Chemist

Verified by: Sample
Date: 07/24/17

JUL 24 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 23:29

Lab File ID: 16EDBS17202001.0037.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_4QK Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 2.84 | 2.50 | 14 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 1.27 | 1.23 | 3 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 19.89 | 19.05 | 4 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 2.69 | 2.49 | 8 |

Compounds 4 Average of %D: 7

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 23:29

Lab File ID: 16EDBS17202001B.0037.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_4QK Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 2.80 | 2.50 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 1.33 | 1.23 | 8 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 20.12 | 19.05 | 6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 2.77 | 2.49 | 11 |

Compounds 4 Average of %D: 9

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSD Sample ID: SD **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

Analysis Report (A)

Injected on : Jul 21, 2017 23:44:59
Instrument : CP16--19853A
Result file : 16EDBS17202001.0038.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

Analysis Report (B)

Injected on : Jul 21, 2017 23:44:59
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0038.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 360 | 0.000998 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 26524 | 0.064606 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 7094 | 0.051494 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10066 | 0.067956 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 937 | -0.489145 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064606 | | | | 5.05 | |
| ☐ 1,2,3-TCP | A | 0.051494 | | | | 247.06 | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: JUL 24 2017

Verified by: [signature]

Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/22/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 2:36

Lab File ID: 16EDBS17202001.0049.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_3PB Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 1.44 | 1.25 | 15 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 0.66 | 0.62 | 8 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 9.66 | 9.53 | 1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 1.65 | 1.24 | 32 |

Compounds 4 Average of %D: 14

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/22/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 2:36

Lab File ID: 16EDBS17202001B.0049.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_3PB Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 1.53 | 1.25 | 22 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 0.67 | 0.62 | 9 |
| 1,2,3-Trichloropropane | 5.76 | 5.74 | 5.80 | 10.38 | 9.53 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 1.76 | 1.24 | 42 |

Compounds 4 Average of %D: 21

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSE Sample ID: SE **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 22, 2017 02:52:14
Instrument : CP16--19853A
Result file : 16EDBS17202001.0050.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 22, 2017 02:52:14
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0050.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.04 | 3.08 | 3.10 | 311 | 0.000861 |
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 26464 | 0.064460 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 5344 | 0.017669 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 9592 | 0.064684 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064460 | | | | 0.35 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: SMM316
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:15:15

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/22/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 5:44

Lab File ID: 16EDBS17202001.0061.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_5LT Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 4.88 | 4.38 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 2.18 | 2.16 | 1 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 34.92 | 33.34 | 5 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 5.13 | 4.35 | 18 |

Compounds 4 Average of %D: 9

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/22/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 5:44

Lab File ID: 16EDBS17202001B.0061.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_5LT Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 4.89 | 4.38 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 2.31 | 2.16 | 7 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 35.73 | 33.34 | 7 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 5.52 | 4.35 | 27 |

Compounds 4 Average of %D: 13

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSF Sample ID: SF **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 22, 2017 05:59:41
Instrument : CP16--19853A
Result file : 16EDBS17202001.0062.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 22, 2017 05:59:41
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0062.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 27257 | 0.066392 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 4235 | -0.003781 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10423 | 0.070430 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.066392 | | | | 5.90 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: SMB
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:16:50

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/22/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 8:51

Lab File ID: 16EDBS17202001.0073.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_4QL Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 2.61 | 2.50 | 4 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 1.22 | 1.23 | -1 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 18.94 | 19.05 | -1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 2.79 | 2.49 | 12 |

Compounds 4 Average of %D: 5

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/22/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 8:51

Lab File ID: 16EDBS17202001B.0073.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_4QL Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 2.71 | 2.50 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 1.20 | 1.23 | -2 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 19.09 | 19.05 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 2.91 | 2.49 | 17 |

Compounds 4 Average of %D: 7

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSG Sample ID: SG **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 22, 2017 09:06:59
Instrument : CP16--19853A
Result file : 16EDBS17202001.0074.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 26587 | 0.064760 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 9963 | 0.106953 |

## Analysis Report (B)

Injected on : Jul 22, 2017 09:06:59
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0074.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9852 | 0.066482 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 922 | -0.489991 |
| **DBCP** | 7.92 | 7.93 | 7.98 | 654 | 0.002419 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064760 | | | | 2.62 | |
| ☐ 1,2,3-TCP | A | 0.106953 | | | | 311.69 | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: SM2316
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:18:12

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 16EDBS17202001
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0001 | CONDITIONER | | 7/21/17 14:07 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0002 | CONDITIONER | | 7/21/17 14:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0003 | CONDITIONER | | 7/21/17 14:38 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0004 | CONDITIONER | | 7/21/17 14:54 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0005 | EIBKX1724C | PIBLKAA | 7/21/17 15:09 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0006 | EDB_11724DS | EDB_1AA | 7/21/17 15:25 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0007 | EDB_21724DS | EDB_2AA | 7/21/17 15:40 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0008 | EDB_31724DS | EDB_3AA | 7/21/17 15:56 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0009 | EDB_41724DS | EDB_4AA | 7/21/17 16:12 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0010 | EDB_51724DS | EDB_5AA | 7/21/17 16:27 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0011 | EDB_61724DS | EDB_6AA | 7/21/17 16:43 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0012 | MDEDX1724DS | MDEDXAA | 7/21/17 16:59 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0013 | EDB_31724DS | EDB_3AA | 7/21/17 17:14 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0014 | EIBKX1724C | PIBLKAA | 7/21/17 17:30 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0015 | BLANKA 7/21/17 | PBLK25201 | 7/21/17 17:46 | 172010025A | 2.00 |
| Administra16EDBS17202001.0016 | LCSA 7/21/17 | LCS25201 | 7/21/17 18:01 | 172010025A | 2.00 |
| Administra16EDBS17202001.0017 | LCSDA 7/21/17 | LCSD25201 | 7/21/17 18:17 | 172010025A | 2.00 |
| Administra16EDBS17202001.0018 | 9095972 | 18417 | 7/21/17 18:32 | 172010025A | 2.00 |
| Administra16EDBS17202001.0019 | 9100482 | 18604 | 7/21/17 18:48 | 172010025A | 2.00 |
| Administra16EDBS17202001.0020 | 9100483 | 18605 | 7/21/17 19:04 | 172010025A | 2.00 |
| Administra16EDBS17202001.0021 | 9100485 | 18607 | 7/21/17 19:19 | 172010025A | 2.00 |
| Administra16EDBS17202001.0022 | 9100487 | 18609 | 7/21/17 19:35 | 172010025A | 2.00 |
| Administra16EDBS17202001.0023 | 9100489 | 18611 | 7/21/17 19:51 | 172010025A | 2.00 |
| Administra16EDBS17202001.0024 | 9100491 | 18613 | 7/21/17 20:06 | 172010025A | 2.00 |
| Administra16EDBS17202001.0025 | EDB_51724DS | EDB_5LS | 7/21/17 20:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0026 | EIBKX1724C | PIBLKSC | 7/21/17 20:37 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0027 | 9100492 | 18614 | 7/21/17 20:53 | 172010025A | 2.00 |
| Administra16EDBS17202001.0028 | 9100493 | 18615 | 7/21/17 21:09 | 172010025A | 2.00 |
| Administra16EDBS17202001.0029 | 9100494 | 18616 | 7/21/17 21:24 | 172010025A | 2.00 |
| Administra16EDBS17202001.0030 | 9100495 | 18617 | 7/21/17 21:40 | 172010025A | 2.00 |
| Administra16EDBS17202001.0031 | 9100496 | 18618 | 7/21/17 21:55 | 172010025A | 2.00 |
| Administra16EDBS17202001.0032 | 9107402 | 18701 | 7/21/17 22:11 | 172010025A | 2.00 |
| Administra16EDBS17202001.0033 | 9107403 | 18702 | 7/21/17 22:27 | 172010025A | 2.00 |
| Administra16EDBS17202001.0034 | 9107404 | 18703 | 7/21/17 22:42 | 172010025A | 2.00 |
| Administra16EDBS17202001.0035 | 9107405 | 18704 | 7/21/17 22:58 | 172010025A | 2.00 |
| Administra16EDBS17202001.0036 | 9107406 | 18705 | 7/21/17 23:13 | 172010025A | 2.00 |
| Administra16EDBS17202001.0037 | EDB_41724DS | EDB_4QK | 7/21/17 23:29 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0038 | EIBKX1724C | PIBLKSD | 7/21/17 23:44 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0039 | 9107407 | 18706 | 7/22/17 0:00 | 172010025A | 2.00 |
| Administra16EDBS17202001.0040 | 9109771 | 18801 | 7/22/17 0:16 | 172010025A | 2.00 |
| Administra16EDBS17202001.0041 | 9109772MS | 18801 | 7/22/17 0:31 | 172010025A | 2.00 |
| Administra16EDBS17202001.0042 | 9109773MSD | 18801 | 7/22/17 0:47 | 172010025A | 2.00 |
| Administra16EDBS17202001.0043 | 9109779 | 18803 | 7/22/17 1:03 | 172010025A | 2.00 |
| Administra16EDBS17202001.0044 | BLANKA 7/21/17 | PBLK21201 | 7/22/17 1:18 | 172010021A | 2.00 |
| Administra16EDBS17202001.0045 | LCSA 7/21/17 | LCS21201 | 7/22/17 1:34 | 172010021A | 2.00 |
| Administra16EDBS17202001.0046 | LCSDA 7/21/17 | LCSD21201 | 7/22/17 1:49 | 172010021A | 2.00 |
| Administra16EDBS17202001.0047 | 9098344 | 18501 | 7/22/17 2:05 | 172010021A | 2.00 |
| Administra16EDBS17202001.0048 | 9098345 | 18502 | 7/22/17 2:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0049 | EDB_31724DS | EDB_3PB | 7/22/17 2:36 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0050 | EIBKX1724C | PIBLKSE | 7/22/17 2:52 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0051 | 9098346 | 18503 | 7/22/17 3:07 | 172010021A | 2.00 |
| Administra16EDBS17202001.0052 | 9098347 | 18504 | 7/22/17 3:23 | 172010021A | 2.00 |
| Administra16EDBS17202001.0053 | 9098348 | 18505 | 7/22/17 3:39 | 172010021A | 2.00 |
| Administra16EDBS17202001.0054 | 9098349 | 18506 | 7/22/17 3:54 | 172010021A | 2.00 |
| Administra16EDBS17202001.0055 | 9098350MS | 18506 | 7/22/17 4:10 | 172010021A | 2.00 |
| Administra16EDBS17202001.0056 | 9098351MSD | 18506 | 7/22/17 4:25 | 172010021A | 2.00 |

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0057 | 9098352 | 18507 | 7/22/17 4:41 | 172010021A | 2.00 |
| Administra16EDBS17202001.0058 | 9098353 | 18508 | 7/22/17 4:57 | 172010021A | 2.00 |
| Administra16EDBS17202001.0059 | 9098354 | 18509 | 7/22/17 5:12 | 172010021A | 2.00 |
| Administra16EDBS17202001.0060 | 9098355 | 18510 | 7/22/17 5:28 | 172010021A | 2.00 |
| Administra16EDBS17202001.0061 | EDB_51724DS | EDB_5LT | 7/22/17 5:44 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0062 | EIBKX1724C | PIBLKSF | 7/22/17 5:59 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0063 | 9098356 | 18511 | 7/22/17 6:15 | 172010021A | 2.00 |
| Administra16EDBS17202001.0064 | 9098357 | 18512 | 7/22/17 6:30 | 172010021A | 2.00 |
| Administra16EDBS17202001.0065 | 9098358 | 18513 | 7/22/17 6:46 | 172010021A | 2.00 |
| Administra16EDBS17202001.0066 | 9098359 | 18514 | 7/22/17 7:02 | 172010021A | 2.00 |
| Administra16EDBS17202001.0067 | 9098360 | 18515 | 7/22/17 7:17 | 172010021A | 2.00 |
| Administra16EDBS17202001.0068 | 9098361 | 18516 | 7/22/17 7:33 | 172010021A | 2.00 |
| Administra16EDBS17202001.0069 | 9098362 | 18517 | 7/22/17 7:48 | 172010021A | 2.00 |
| Administra16EDBS17202001.0070 | 9098363 | 18518 | 7/22/17 8:04 | 172010021A | 2.00 |
| Administra16EDBS17202001.0071 | 9100479 | 18601 | 7/22/17 8:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0072 | 9100481 | 18603 | 7/22/17 8:35 | 172010021A | 2.00 |
| Administra16EDBS17202001.0073 | EDB_41724DS | EDB_4QL | 7/22/17 8:51 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0074 | EIBKX1724C | PIBLKSG | 7/22/17 9:06 | 1720199999 | 2.00 |

# Sample Data

# EDB/DBCP

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9100479** 18601 Sample ID: AA **Batchnumber: 172010021A**

Sample Amount: 36.55 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 08:20:05 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0071.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.067569

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 08:20:05 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0071.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.065696

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 666 | 0.001767 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10159 | 0.065696 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 28969 | 0.067569 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 39015 | 1.641441 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 9544 | 0.094661 | 1,2-Dibromo-3-chloropro | 7.92 | 7.94 | 7.98 | 1048 | 0.003713 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.91 | 6.93 | 3245 | 0.00437 | | | | | | |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.067569 | 0.0034 | 0.0067 | 0.0067 | | 2.81 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2585 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0192 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:48

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100479** 18601 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.55 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 08:20:05
Instrument : CP16--19853A
Result file : 16EDBS17202001.0071.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.067569

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 666 | 0.001767 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 28969 | 0.067569 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 9544 | 0.094661 |
| **DBCP** | 6.86 | 6.91 | 6.93 | 3245 | 0.004370 |

## Analysis Report (B)

Injected on : Jul 22, 2017 08:20:05
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0071.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.065696

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10159 | 0.065696 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 39015 | 1.641441 |
| **DBCP** | 7.92 | 7.94 | 7.98 | 1048 | 0.003713 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.067569 | | | | 2.81 | |
| ☐ 1,2,3-TCP | | | <0.2585 | <0.0958 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

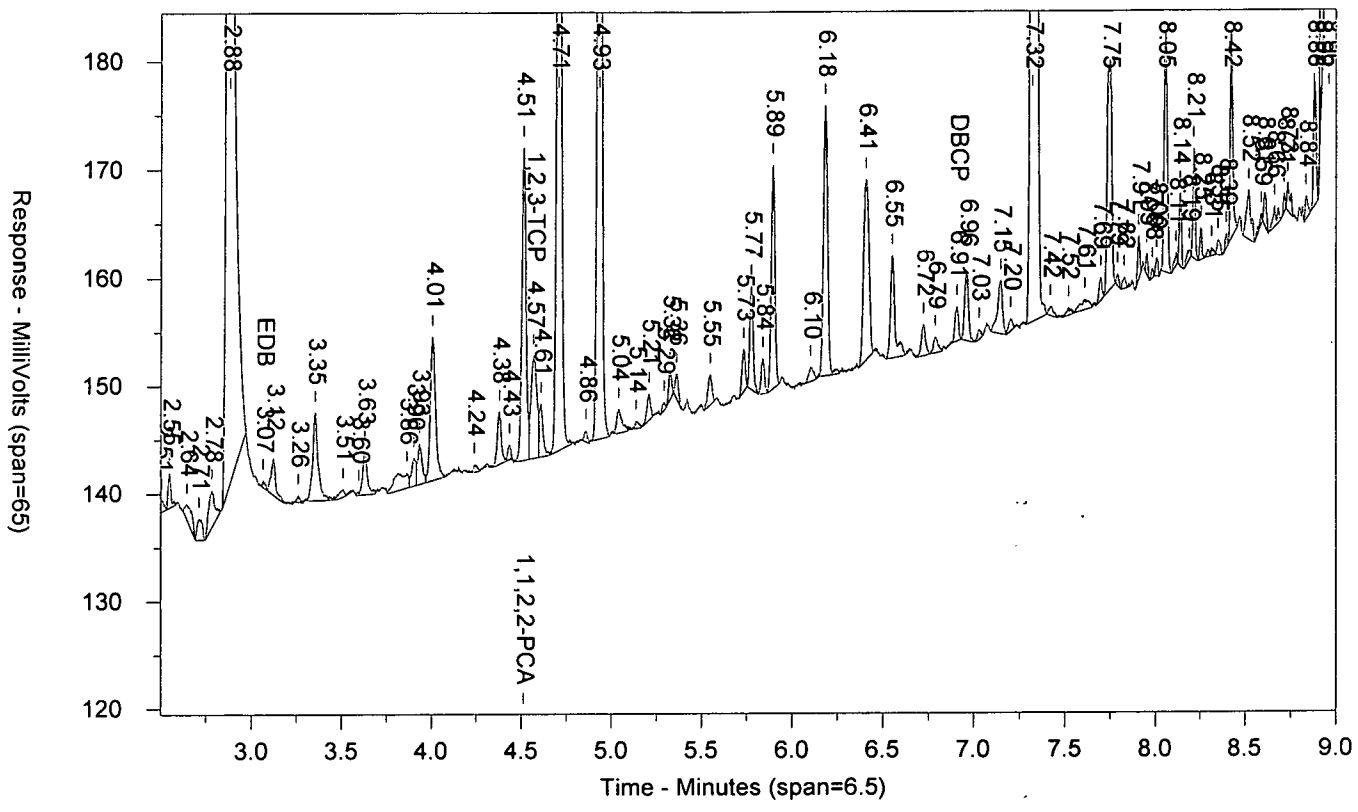
Verified by: Valerie L. Tomeyko
Valerie L. Tomeyko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100479 AA18601 T 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0071.RAW

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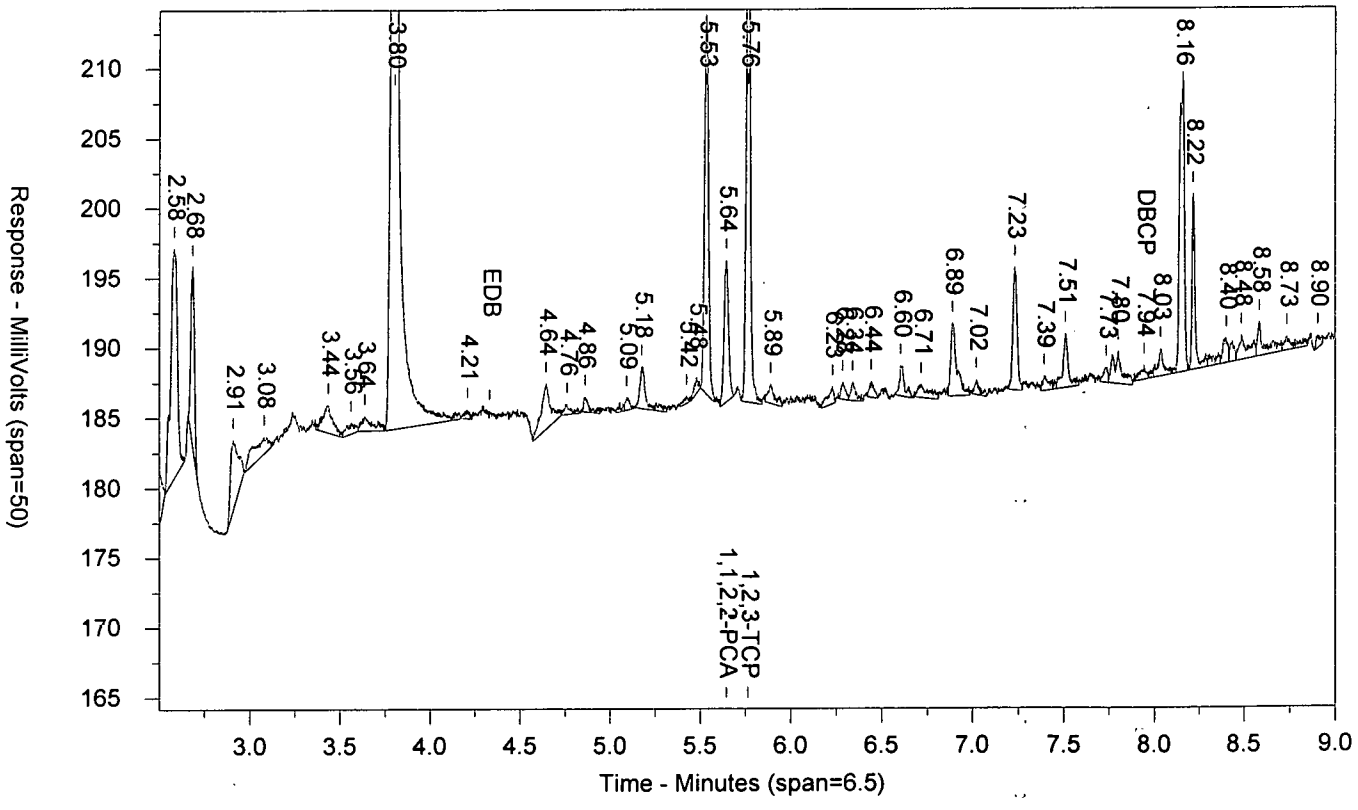

LANCASTER LABORATORIES

Sample Number: 9100479 AA18601 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 8:20:05 AM Sample Weight: 36.55
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.066 | 666 | .002 | EDB | | 0 | | EDB |
| 4.514 | 28969 | .068 | 1,1,2,2-PCA | 5.642 | 10159 | .066 | 1,1,2,2-PCA |
| 4.569 | 9544 | .095 | 1,2,3-TCP | 5.763 | 39015 | 1.641 | 1,2,3-TCP |
| 6.907 | 3245 | .004 | DBCP | 7.941 | 1048 | .004 | DBCP |

Files:
Area File: 16EDBS17202001.0071.RAW
Area File: 16EDBS17202001B.0071.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 8:29:07 AM
File Reported On: 7/24/2017 at 11:05:17 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9100481** 18603 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.13 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 08:35:44 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0072.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.059468

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 08:35:44 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0072.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 88% ( 46 - 136 ) Conc: 0.060178

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 25203 | 0.059468 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5309 | 0.016463 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.88 | 6.93 | 1410 | 0.001921 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9221 | 0.060178 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 14034 | 0.26027 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0097 | <0.0194 | <0.0291 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.059468 | 0.0034 | 0.0068 | 0.0068 | | 1.19 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2616 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0097 | <0.0194 | <0.0291 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:50

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100481** 18603 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 36.13 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 08:35:44
Instrument : CP16--19853A
Result file : 16EDBS17202001.0072.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.059468

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25203 | 0.059468 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 5309 | 0.016463 |
| **DBCP** | 6.86 | 6.88 | 6.93 | 1410 | 0.001921 |

## Analysis Report (B)

Injected on : Jul 22, 2017 08:35:44
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0072.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 88% (46-136) Conc.: 0.060178

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9221 | 0.060178 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 14034 | 0.260270 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0291 | <0.0097 | | | |
| ☐ 1,1,2,2-PCA | A | 0.059468 | | | | 1.19 | |
| ☐ 1,2,3-TCP | | | <0.2616 | <0.0969 | | | |
| ☐ DBCP | | | <0.0291 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100481 AA18603 T 172010021A 10398 SW-846 8011

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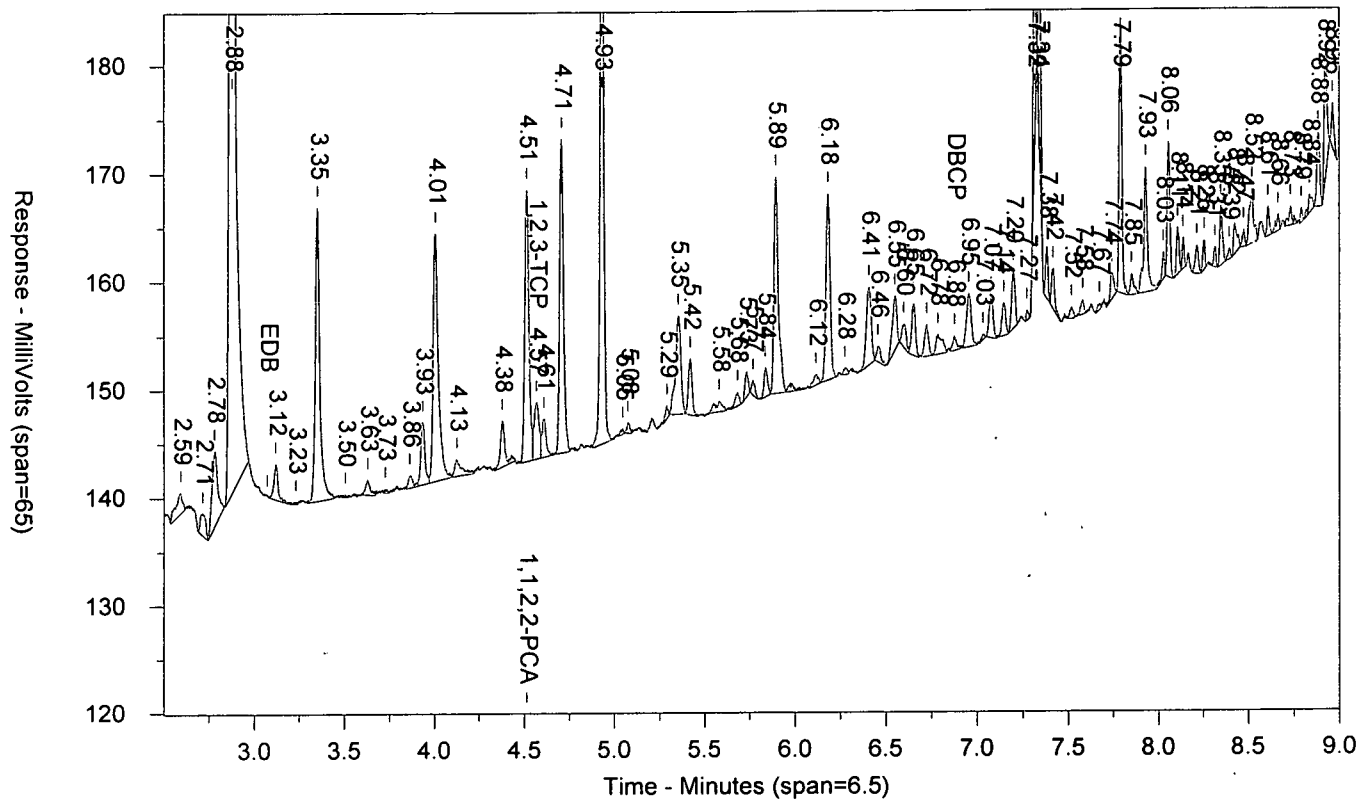


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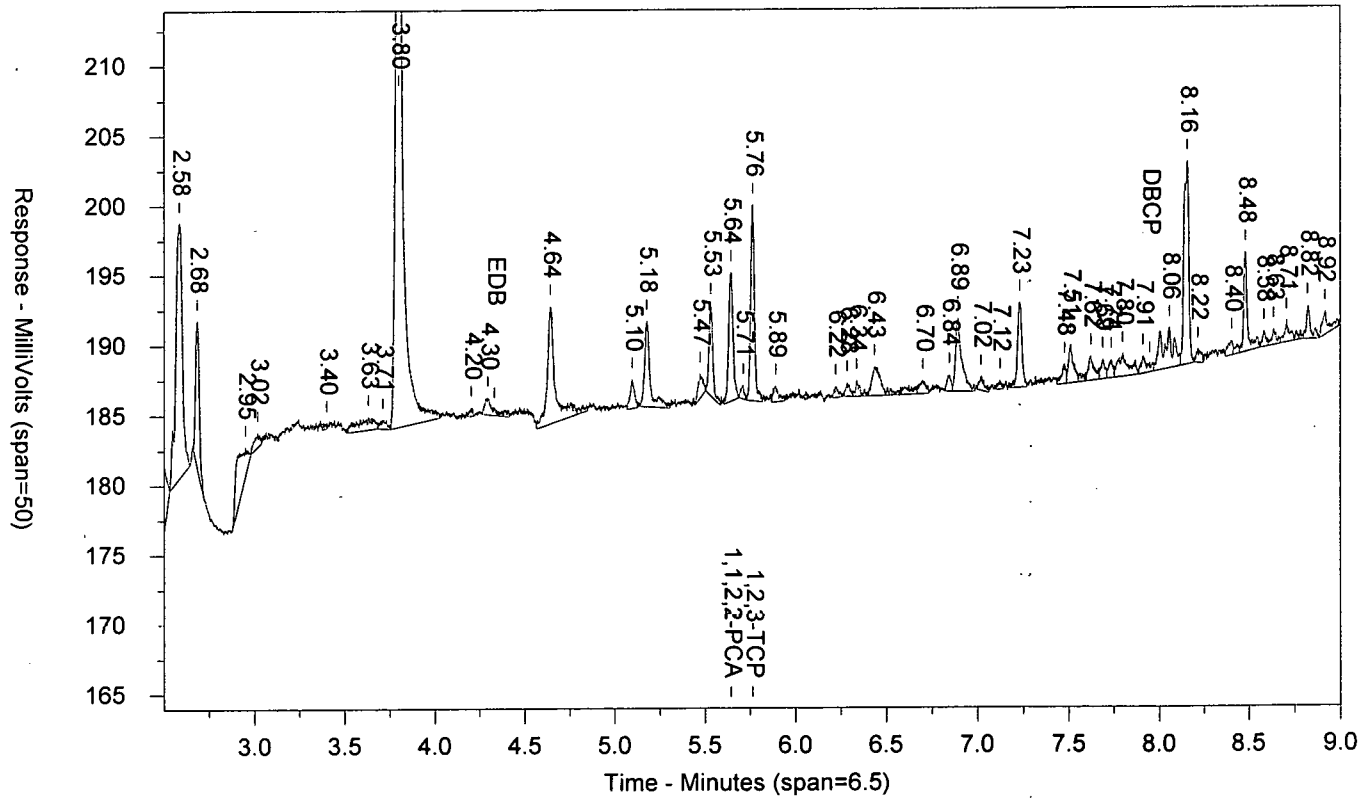

LANCASTER LABORATORIES

Sample Number: 9100481 AA18603 T 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 8:35:44 AM Sample Weight: 36.13
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 25203 | .059 | 1,1,2,2-PCA | 5.643 | 9221 | .06 | 1,1,2,2-PCA |
| 4.568 | 5309 | .016 | 1,2,3-TCP | 5.763 | 14034 | .26 | 1,2,3-TCP |
| 6.875 | 1410 | .002 | DBCP | | 0 | | DBCP |

Files:
Area File: 16EDBS17202001.0072.RAW
Area File: 16EDBS17202001B.0072.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 8:44:46 AM
File Reported On: 7/24/2017 at 11:05:27 AM

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# Data Summary

**Sample Name: 9100482** 18604 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.62 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:48:33 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0019.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.066549

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:48:33 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0019.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.066975

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 28586 | 0.066549 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 3230 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10372 | 0.066975 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 13628 | 0.234308 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.066549 | 0.0033 | 0.0067 | 0.0067 | | 0.64 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2581 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:07

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100482** 18604 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.62 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:48:33
Instrument : CP16--19853A
Result file : 16EDBS17202001.0019.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.066549

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 28586 | 0.066549 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 3230 | -0.022179 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:48:33
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0019.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.066975

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10372 | 0.066975 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 13628 | 0.234308 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.066549 | | | | 0.64 | |
| ☐ 1,2,3-TCP | | | <0.2581 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

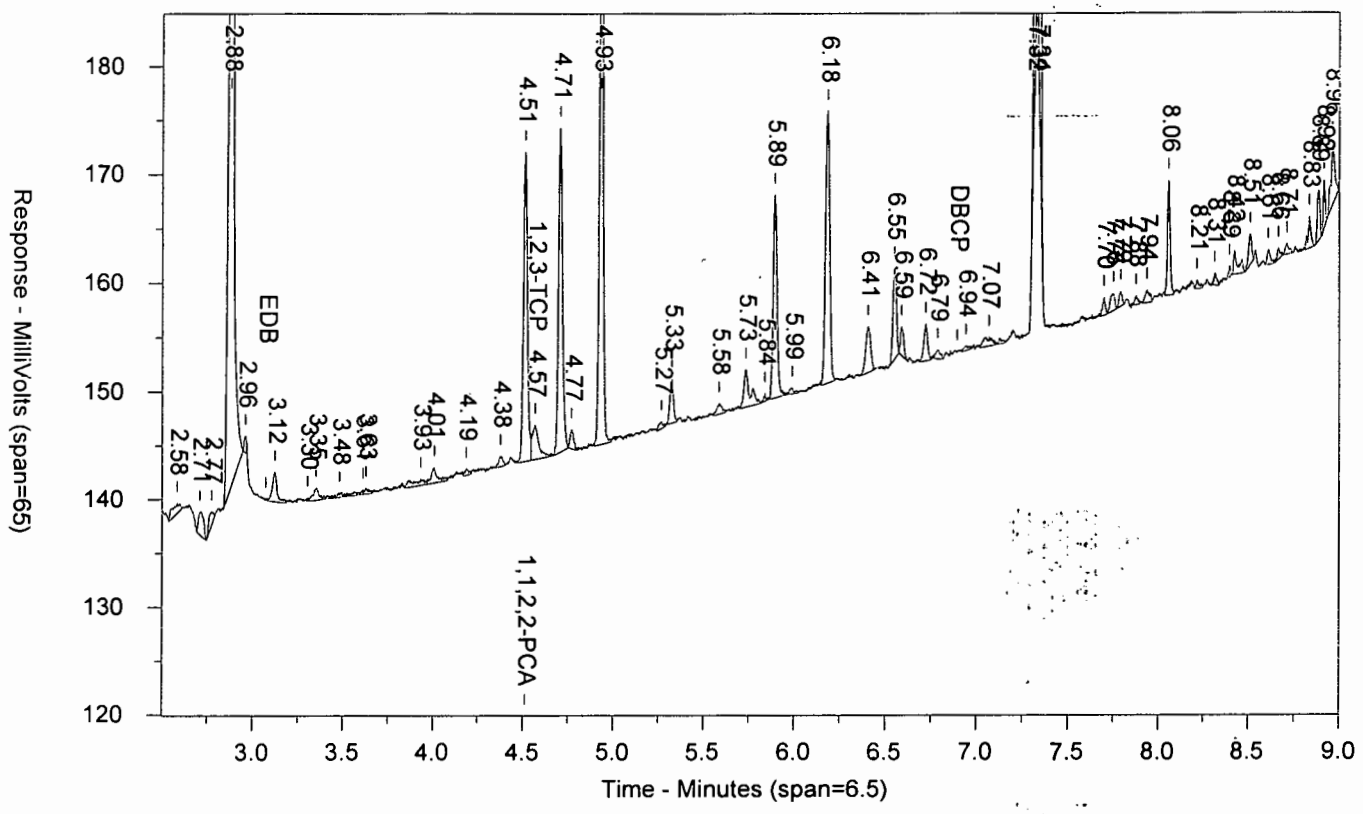
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:11:27

9100482 AA18604 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0019.RAW

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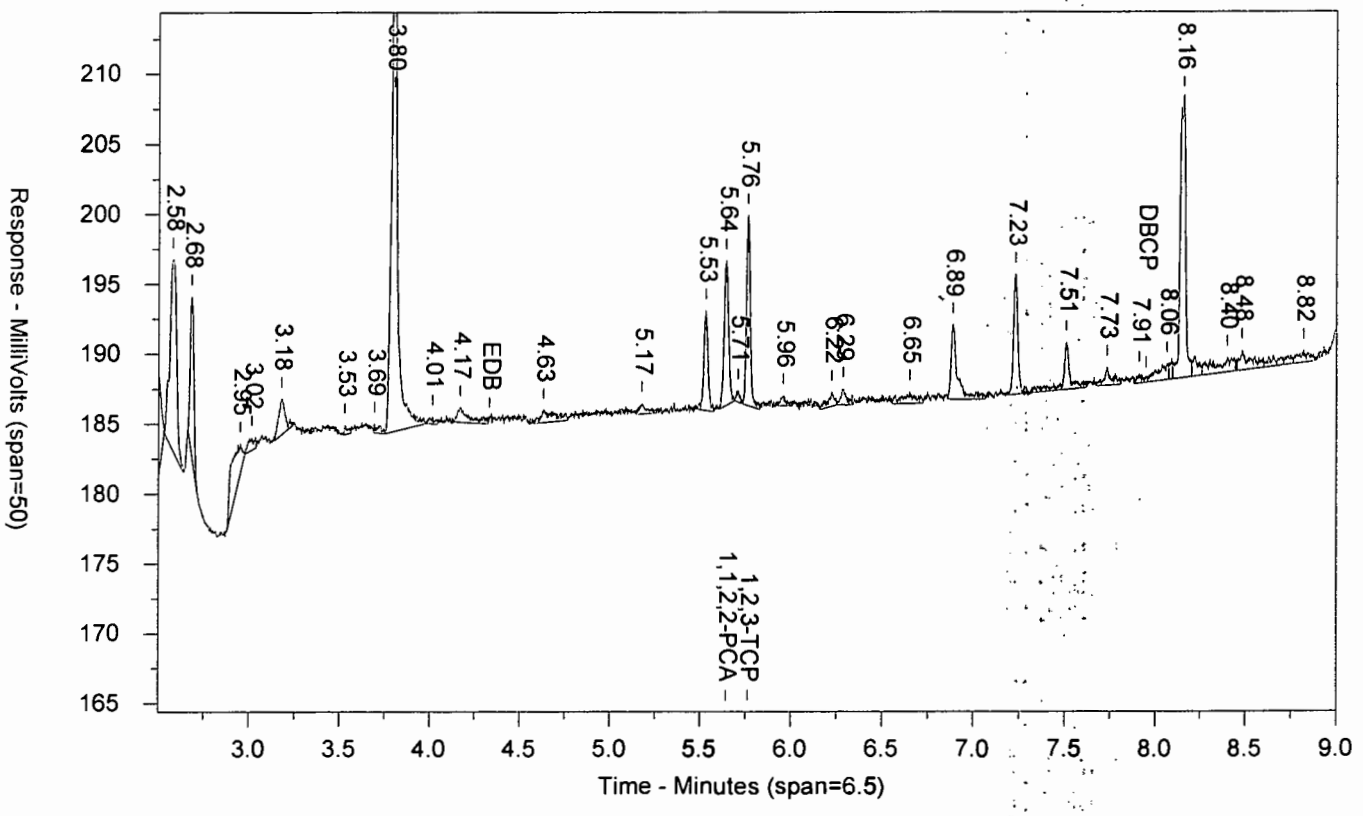

LANCASTER LABORATORIES

Sample Number: 9100482 AA18604 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:48:33 PM Sample Weight: 36.62
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 28586 | .067 | 1,1,2,2-PCA | 5.642 | 10372 | .067 | 1,1,2,2-PCA |
| 4.569 | 3230 | -.022 | 1,2,3-TCP | 5.762 | 13628 | .234 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0019.RAW
Area File: 16EDBS17202001B.0019.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:57:34 PM
File Reported On: 7/24/2017 at 10:54:58 AM

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# Data Summary

**Sample Name: 9100483** 18605 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.75 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 19:04:09 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0020.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 82% ( 46 - 136 ) Conc: 0.055287

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 19:04:09 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0020.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.058122

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 23833 | 0.055287 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4230 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9063 | 0.058122 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 12071 | 0.147715 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.055287 | 0.0033 | 0.0067 | 0.0067 | | 5.00 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2571 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:10

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100483** 18605 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.75 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 19:04:09
Instrument : CP16--19853A
Result file : 16EDBS17202001.0020.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 82% (46-136) Conc.: 0.055287

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 23833 | 0.055287 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4230 | -0.003679 |

## Analysis Report (B)

Injected on : Jul 21, 2017 19:04:09
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0020.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.058122

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9063 | 0.058122 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 12071 | 0.147715 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.055287 | | | | 5.00 | |
| ☐ 1,2,3-TCP | | | <0.2571 | <0.0952 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

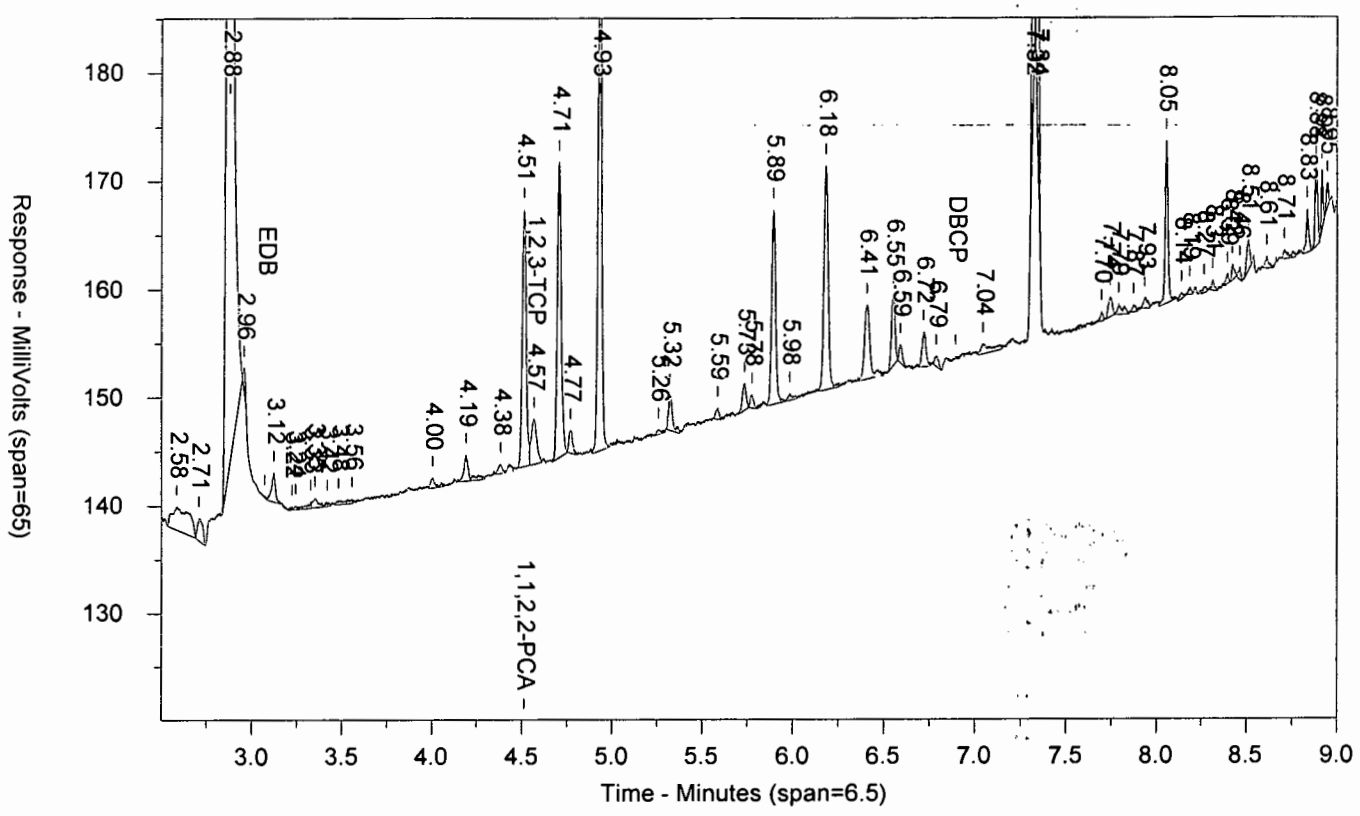
Verified by: Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100483 AA18605 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0020.RAW

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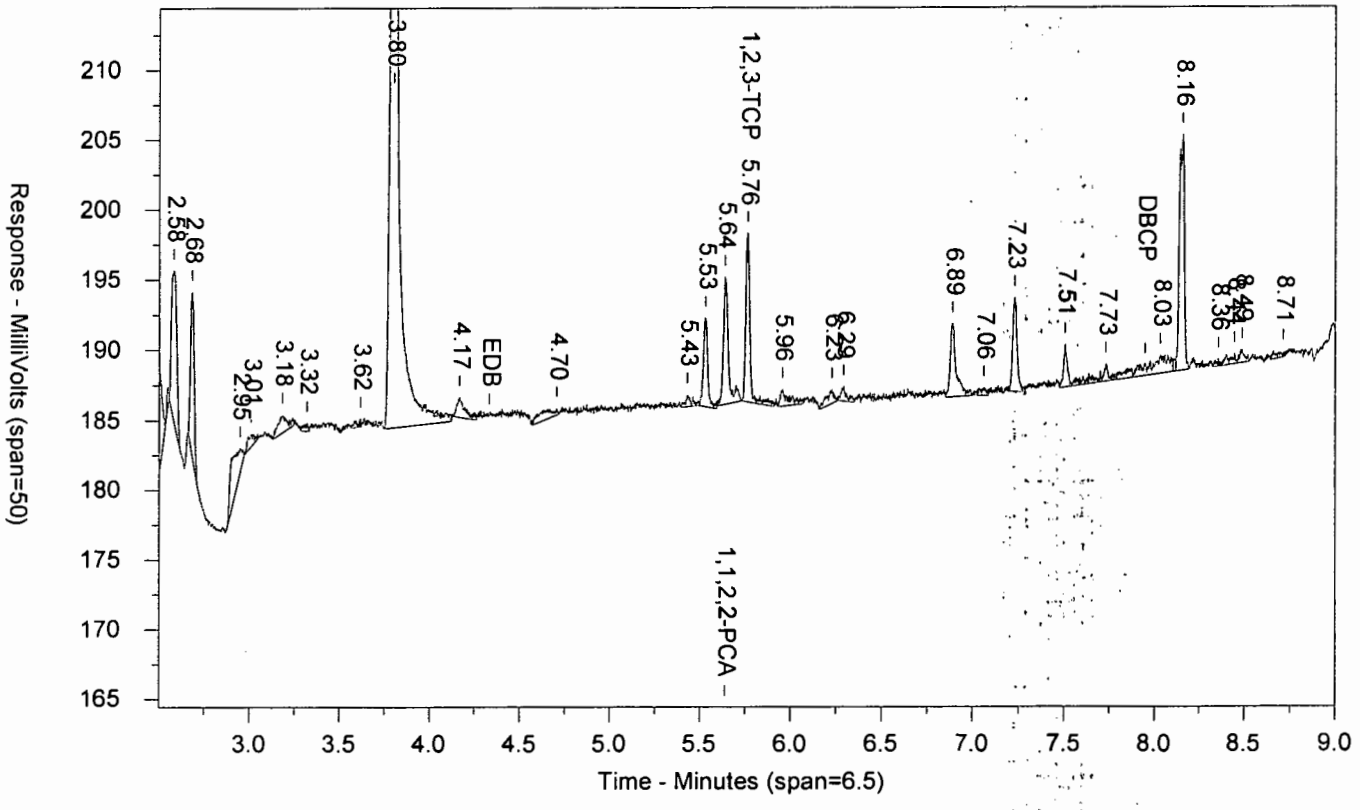

LANCASTER LABORATORIES

Sample Number: 9100483 AA18605 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 7:04:09 PM Sample Weight: 36.75
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 23833 | .055 | 1,1,2,2-PCA | 5.638 | 9063 | .058 | 1,1,2,2-PCA |
| 4.568 | 4230 | -.004 | 1,2,3-TCP | 5.763 | 12071 | .148 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0020.RAW
Area File: 16EDBS17202001B.0020.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 7:13:11 PM
File Reported On: 7/24/2017 at 10:55:10 AM

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# Data Summary

**Sample Name: 9100485** 18607 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.71 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 19:19:55 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0021.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 118% ( 46 - 136 ) Conc: 0.079203

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 19:19:55 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0021.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 123% ( 46 - 136 ) Conc: 0.082919

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 385 | 0.001016 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 34106 | 0.079203 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6142 | 0.031544 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 12816 | 0.082919 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 16911 | 0.414892 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.079203 | 0.0033 | 0.0067 | 0.0067 | | 4.58 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2574 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:12

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100485** 18607 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.71 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: **NM**
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 19:19:55
Instrument : CP16--19853A
Result file : 16EDBS17202001.0021.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 118% (46-136) Conc.: 0.079203

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 385 | 0.001016 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 34106 | 0.079203 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6142 | 0.031544 |

## Analysis Report (B)

Injected on : Jul 21, 2017 19:19:55
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0021.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 123% (46-136) Conc.: 0.082919

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 12816 | 0.082919 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 16911 | 0.414892 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.079203 | | | | 4.58 | |
| ☐ 1,2,3-TCP | | | <0.2574 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

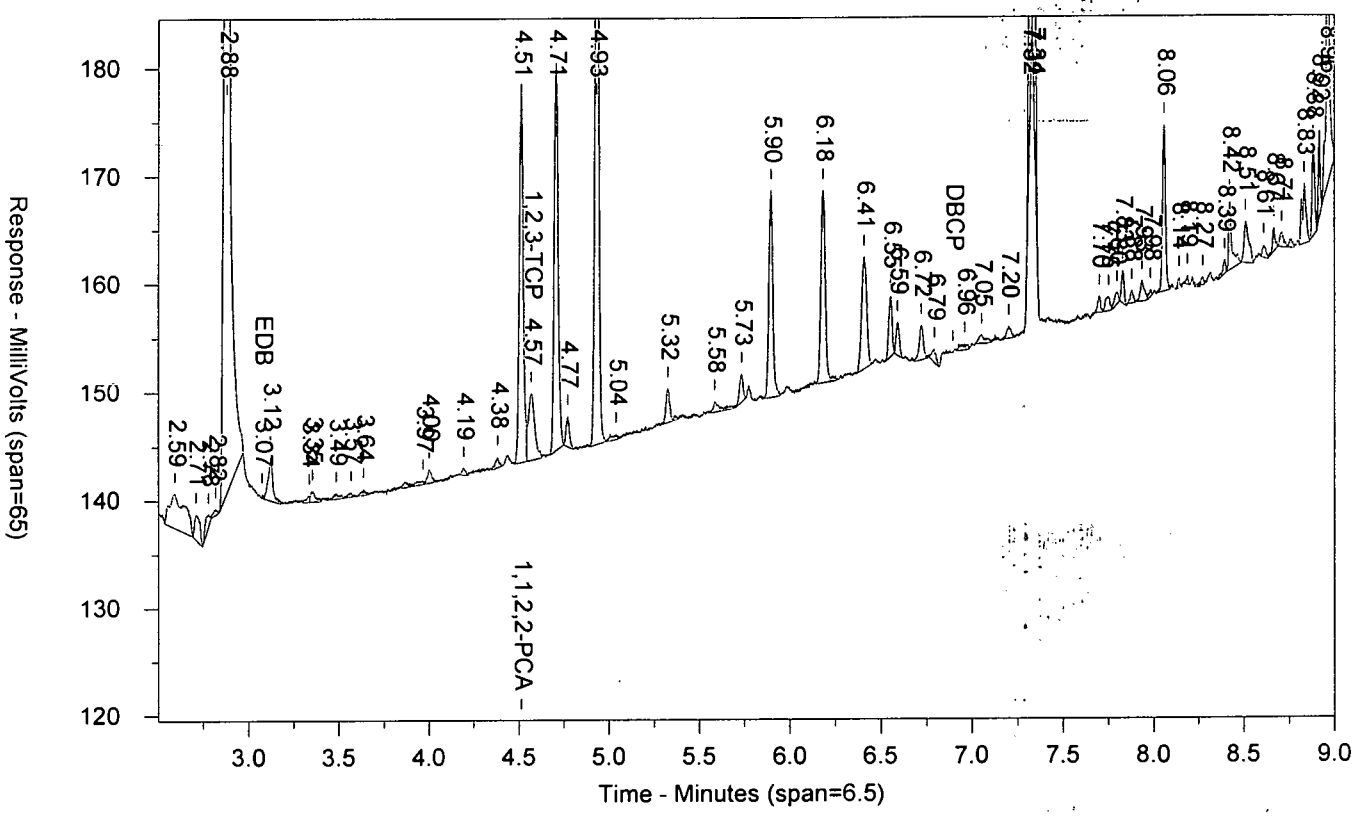
Verified by: Susan M Gosbert
Susan M. Gosbert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100485 AA18607 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0021.RAW

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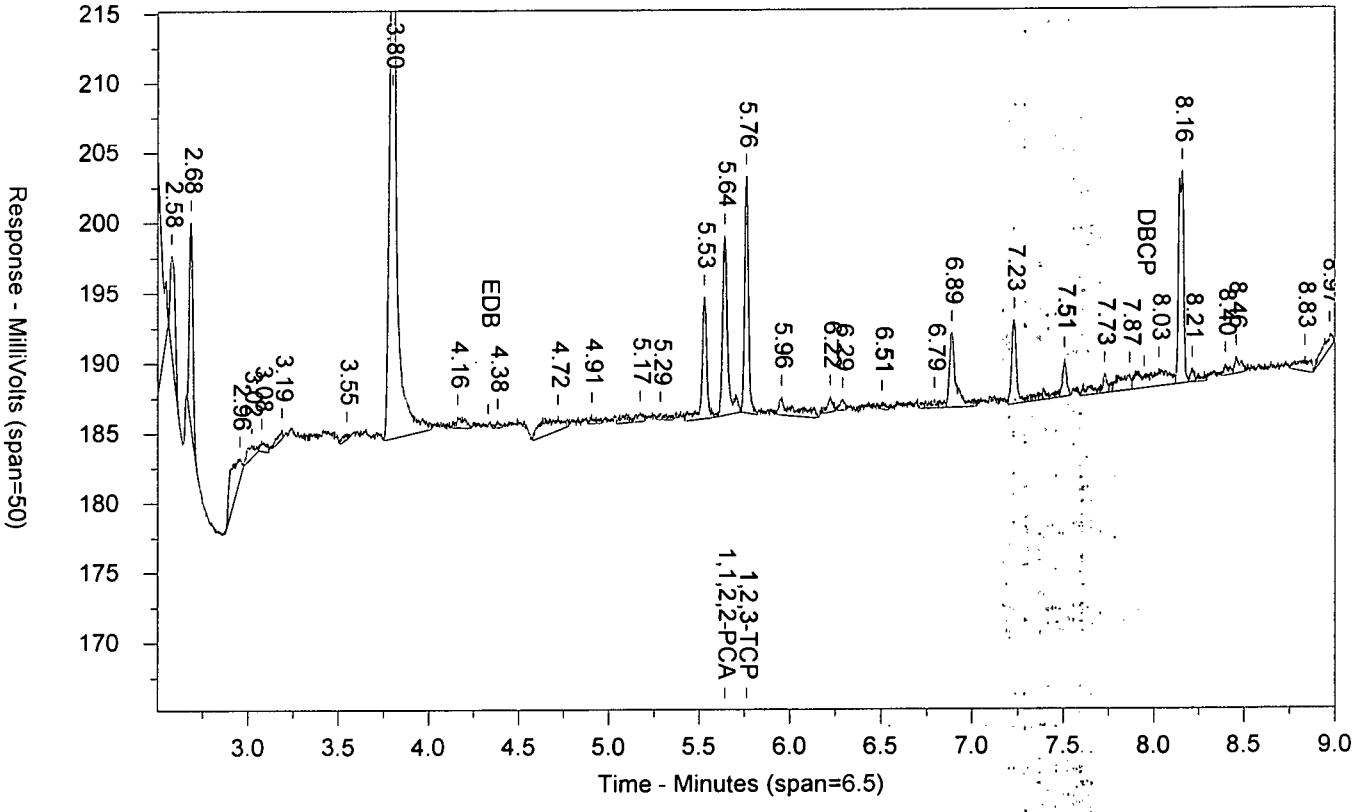

LANCASTER LABORATORIES

Sample Number: 9100485 AA18607 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 7:19:55 PM Sample Weight: 36.71
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.074 | 385 | .001 | EDB | | 0 | | EDB |
| 4.513 | 34106 | .079 | 1,1,2,2-PCA | 5.641 | 12816 | .083 | 1,1,2,2-PCA |
| 4.569 | 6142 | .032 | 1,2,3-TCP | 5.762 | 16911 | .415 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0021.RAW
Area File: 16EDBS17202001B.0021.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 7:28:56 PM
File Reported On: 7/24/2017 at 10:55:20 AM

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# Data Summary

**Sample Name: 9100487** 18609 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.74 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 19:35:28 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0022.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.071443

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 19:35:28 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0022.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.07404

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.06 | 3.10 | 289 | 0.000762 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30789 | 0.071443 |
| 1,2,3-Trichloropropane | 4.55 | 4.56 | 4.61 | 5150 | 0.013256 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11478 | 0.07404 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 15977 | 0.363073 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.071443 | 0.0033 | 0.0067 | 0.0067 | | 3.57 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2572 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:14

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100487** 18609 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.74 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 19:35:28
Instrument : CP16--19853A
Result file : 16EDBS17202001.0022.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.071443

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.04 | 3.06 | 3.10 | 289 | 0.000762 |
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 30789 | 0.071443 |
| 1,2,3-TCP | 4.55 | 4.56 | 4.61 | 5150 | 0.013256 |

## Analysis Report (B)

Injected on : Jul 21, 2017 19:35:28
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0022.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.07404

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 11478 | 0.074040 |
| 1,2,3-TCP | 5.74 | 5.76 | 5.80 | 15977 | 0.363073 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.071443 | | | | 3.57 | |
| ☐ 1,2,3-TCP | | | <0.2572 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

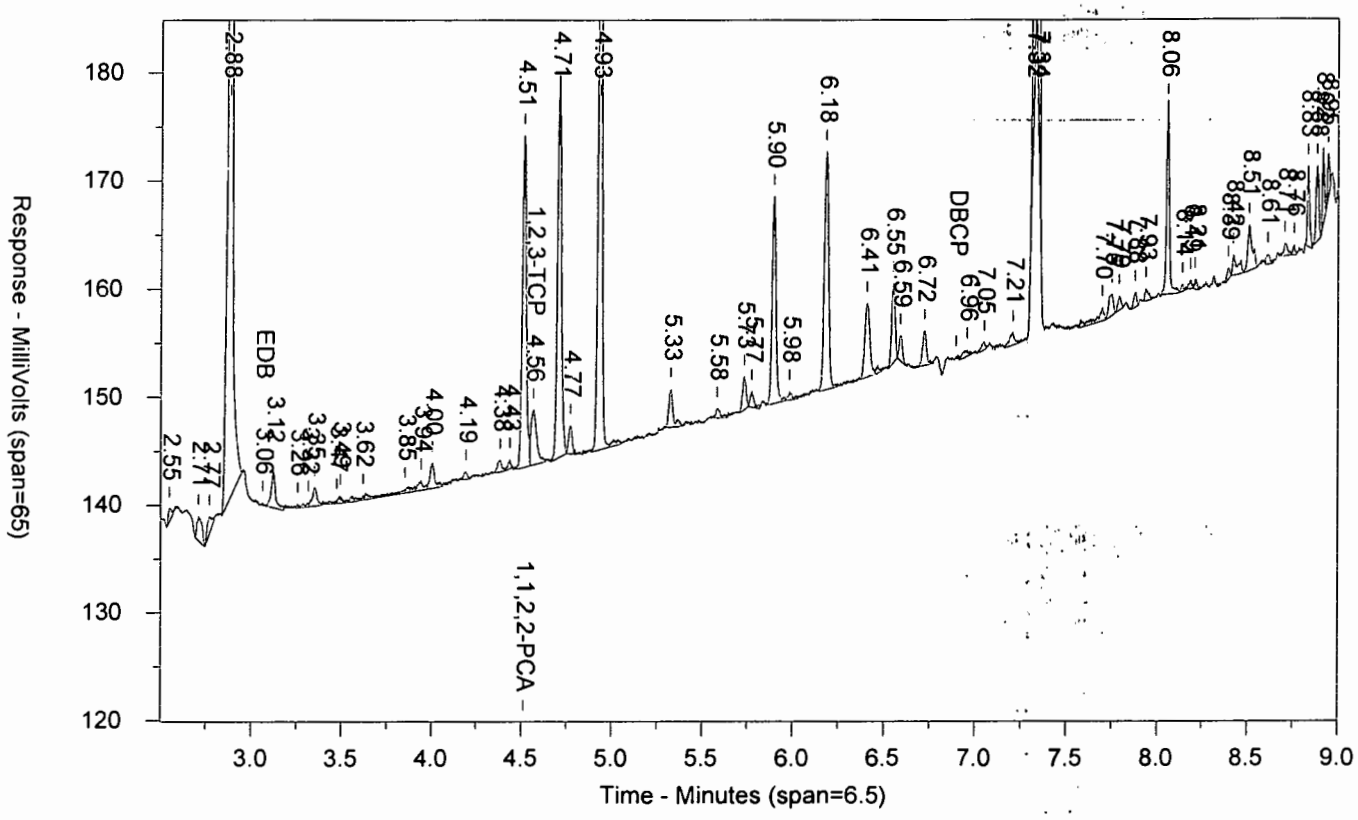
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100487 AA18609 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0022.RAW

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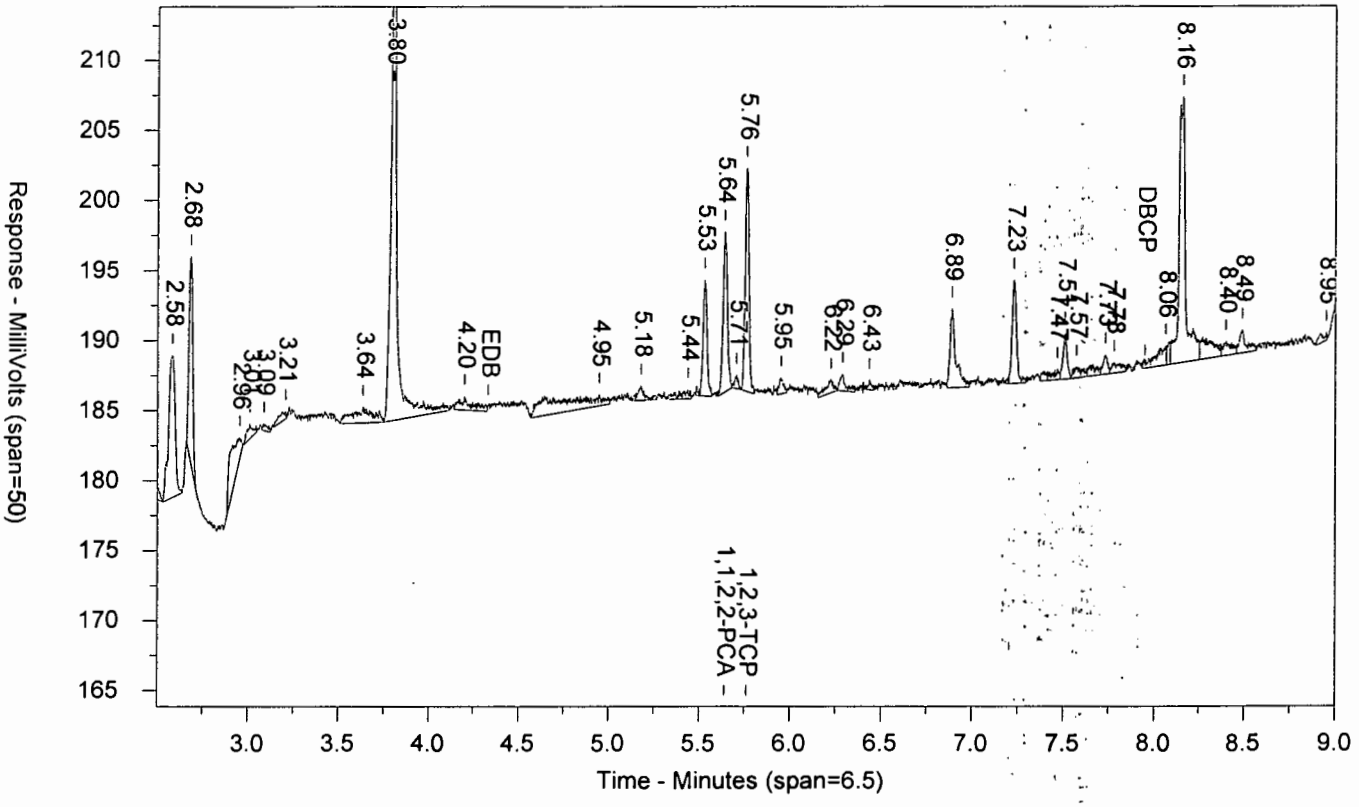

LANCASTER LABORATORIES

Sample Number: 9100487 AA18609 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 7:35:28 PM Sample Weight: 36.74
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.063 | 289 | .001 | EDB | | 0 | | EDB |
| 4.513 | 30789 | .071 | 1,1,2,2-PCA | 5.64 | 11478 | .074 | 1,1,2,2-PCA |
| 4.565 | 5150 | .013 | 1,2,3-TCP | 5.761 | 15977 | .363 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0022.RAW
Area File: 16EDBS17202001B.0022.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 7:44:31 PM
File Reported On: 7/24/2017 at 10:55:32 AM

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# Data Summary

**Sample Name: 9100489** 18611 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.84 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 19:51:05 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0023.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 119% ( 46 - 136 ) Conc: 0.079936

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 19:51:05 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0023.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 122% ( 46 - 136 ) Conc: 0.081477

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 34543 | 0.079936 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 12641 | 0.081477 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 4310 | 0 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 18495 | 0.500481 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.079936 | 0.0033 | 0.0067 | 0.0067 | | 1.91 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2565 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:17

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100489** 18611 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.84 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 19:51:05
Instrument : CP16--19853A
Result file : 16EDBS17202001.0023.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 119% (46-136) Conc.: 0.079936

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 34543 | 0.079936 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4310 | -0.002210 |

## Analysis Report (B)

Injected on : Jul 21, 2017 19:51:05
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0023.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 122% (46-136) Conc.: 0.081477

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 12641 | 0.081477 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 18495 | 0.500481 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.079936 | | | | 1.91 | |
| ☐ 1,2,3-TCP | | | <0.2565 | <0.095 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Heather Miller
Heather M. Miller
Chemist
Reviewed by: _____
Date: JUL 24 2017

Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

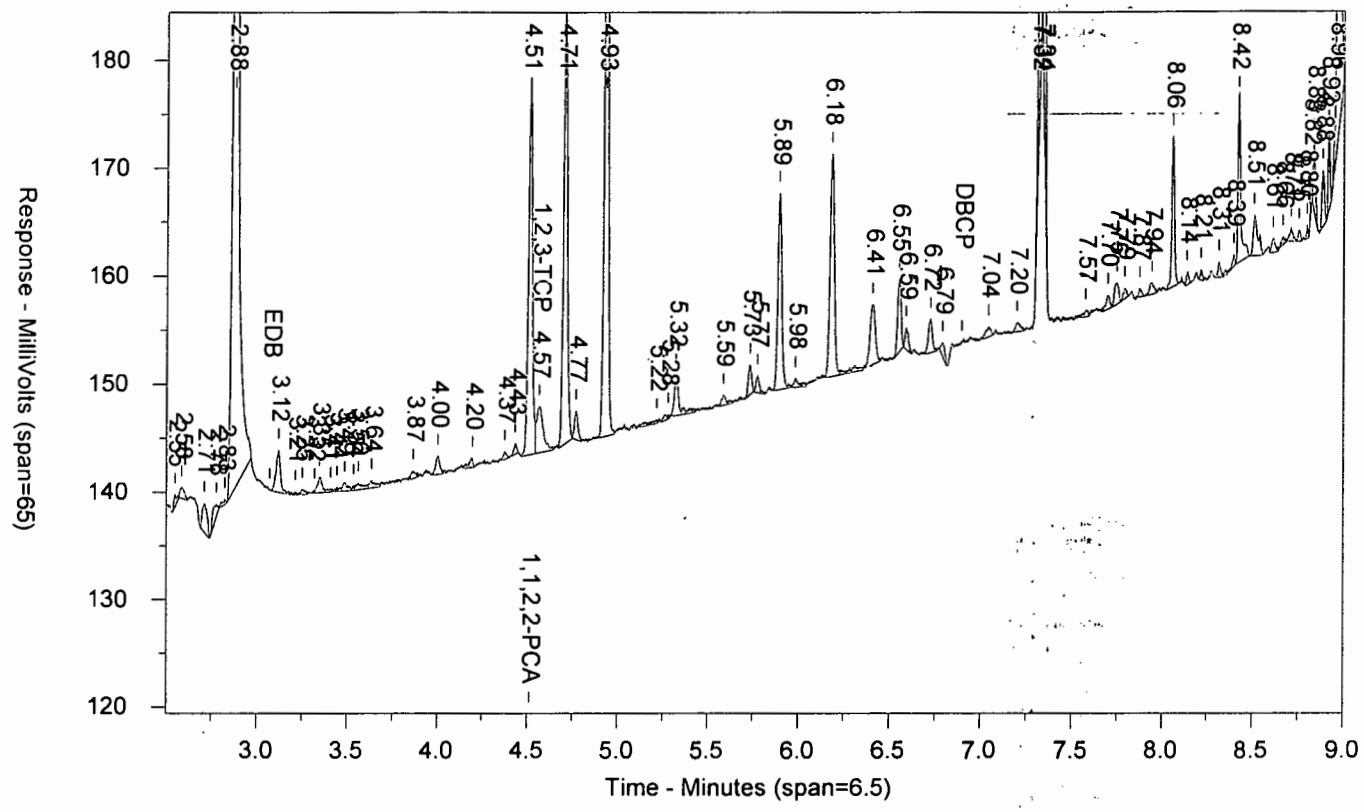
* Recovery outside QC Limits



Printed on: 7/24/2017 11:11:56

9100489 AA18611 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0023.RAW

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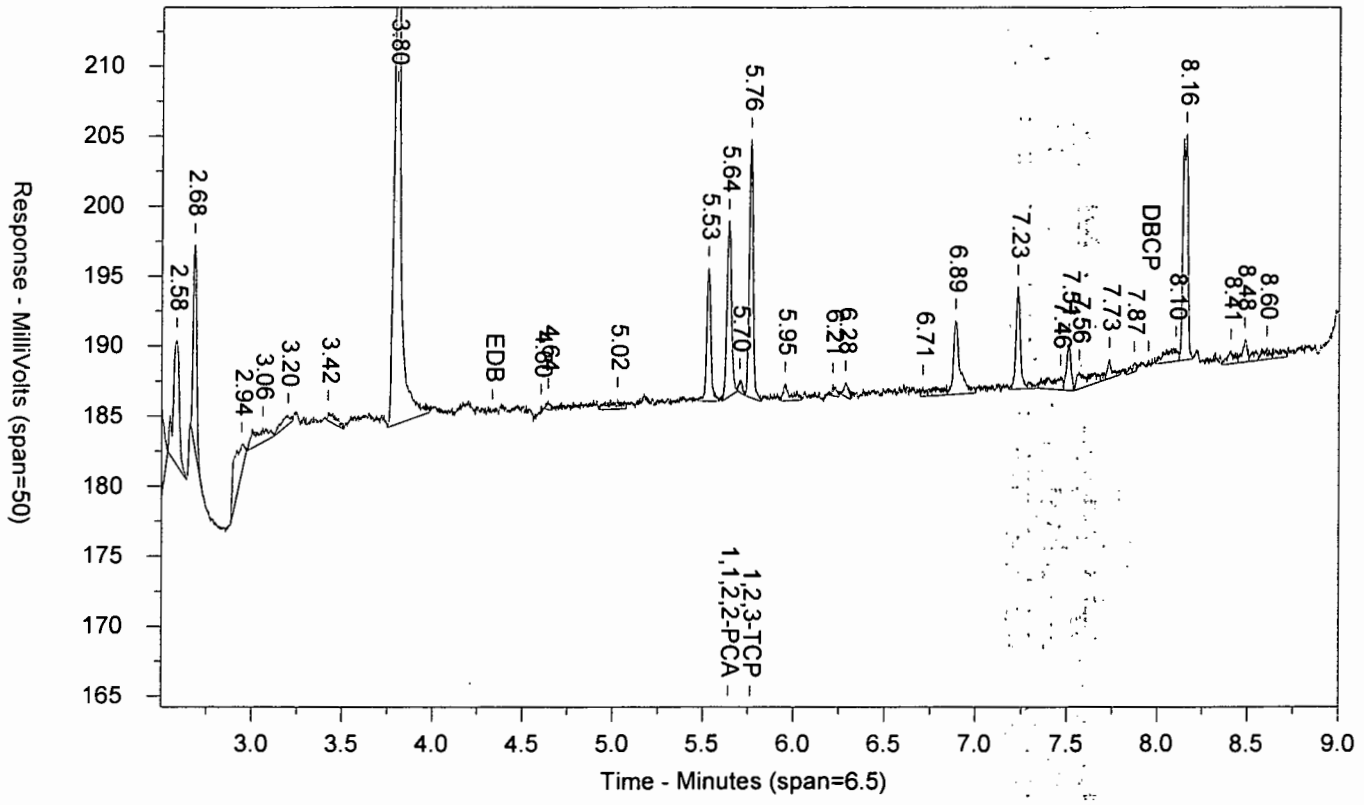

LANCASTER LABORATORIES

Sample Number: 9100489 AA18611 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 7:51:05 PM Sample Weight: 36.84
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 34543 | .08 | 1,1,2,2-PCA | 5.64 | 12641 | .081 | 1,1,2,2-PCA |
| 4.565 | 4310 | -.002 | 1,2,3-TCP | 5.761 | 18495 | .5 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0023.RAW
Area File: 16EDBS17202001B.0023.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:00:06 PM
File Reported On: 7/24/2017 at 10:55:44 AM

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# Data Summary

**Sample Name: 9100491** 18613 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.71 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 20:06:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0024.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.07172

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 20:06:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0024.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.074058

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30883 | 0.07172 |
| 1,2,3-Trichloropropane | 4.55 | 4.56 | 4.61 | 4078 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11472 | 0.074058 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 13610 | 0.232772 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.07172 | 0.0033 | 0.0067 | 0.0067 | | 3.21 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2574 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:19

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100491** 18613 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.71 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 20:06:40
Instrument : CP16--19853A
Result file : 16EDBS17202001.0024.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.07172

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 30883 | 0.071720 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 4078 | -0.006492 |

## Analysis Report (B)

Injected on : Jul 21, 2017 20:06:40
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0024.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.074058

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11472 | 0.074058 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 13610 | 0.232772 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.071720 | | | | 3.21 | |
| ☐ 1,2,3-TCP | | | <0.2574 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

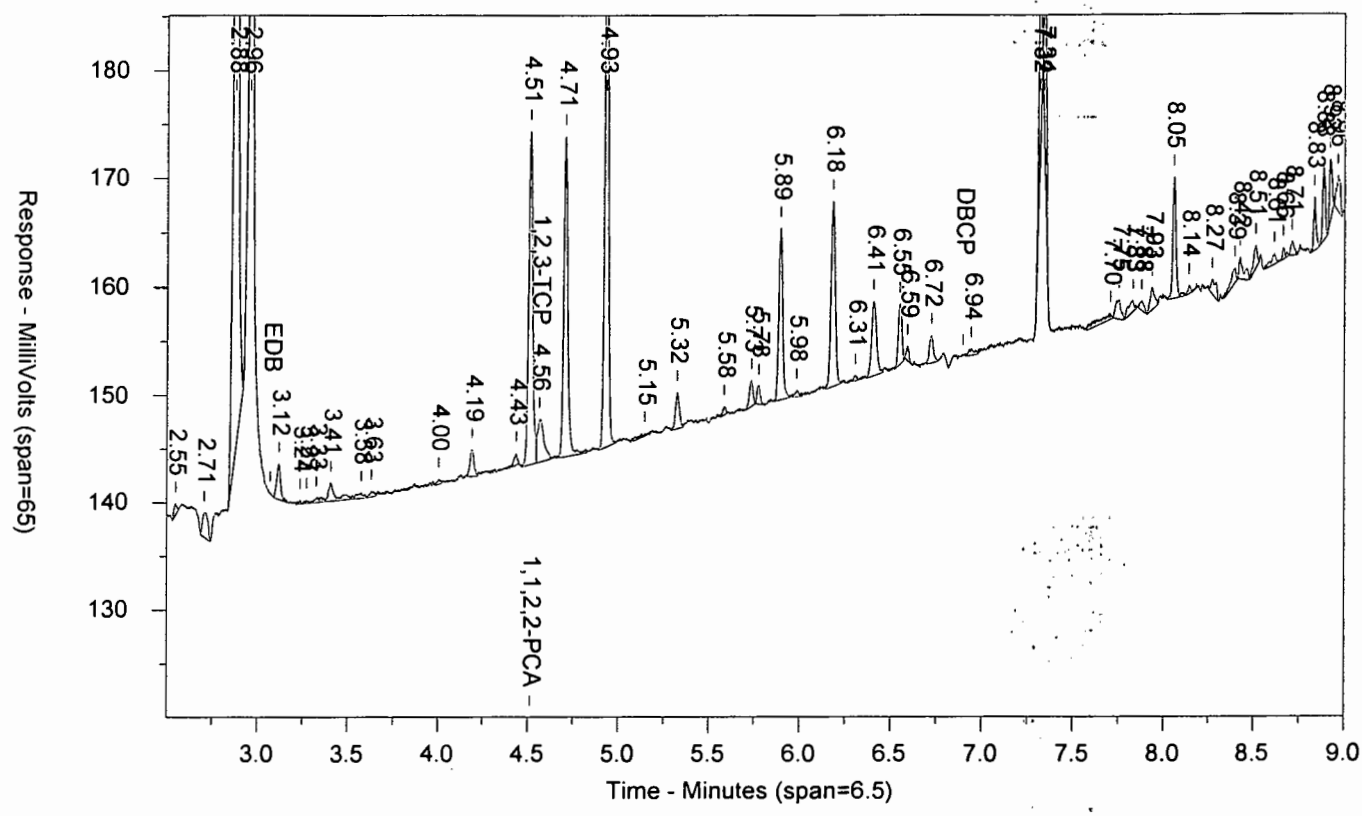
Verified by: Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100491 AA18613 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0024.RAW

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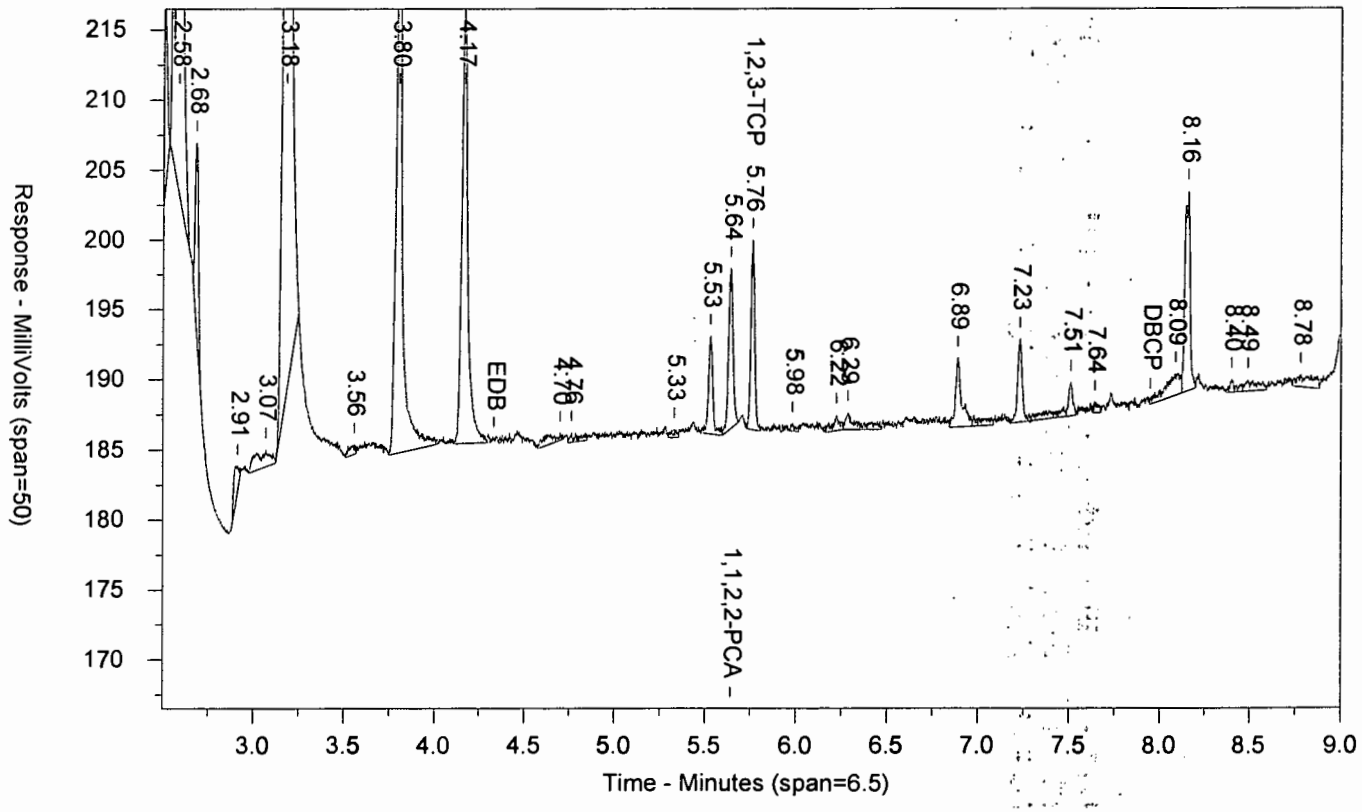

LANCASTER LABORATORIES

Sample Number: 9100491 AA18613 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 8:06:40 PM Sample Weight: 36.71
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.512 | 30883 | .072 | 1,1,2,2-PCA | 5.641 | 11472 | .074 | 1,1,2,2-PCA |
| 4.563 | 4078 | -.006 | 1,2,3-TCP | 5.762 | 13610 | .233 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0024.RAW
Area File: 16EDBS17202001B.0024.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:15:41 PM
File Reported On: 7/24/2017 at 10:55:56 AM

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# Data Summary

**Sample Name: 9100492** 18614 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 20:53:26 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0027.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.07149

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 20:53:26 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0027.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 111% ( 46 - 136 ) Conc: 0.074929

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30717 | 0.07149 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5356 | 0.017106 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11579 | 0.074929 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 15525 | 0.339171 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.07149 | 0.0033 | 0.0067 | 0.0067 | | 4.70 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.258 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:23

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100492** 18614 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 20:53:26
Instrument : CP16--19853A
Result file : 16EDBS17202001.0027.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.07149

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 30717 | 0.071490 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 5356 | 0.017106 |

## Analysis Report (B)

Injected on : Jul 21, 2017 20:53:26
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0027.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 111% (46-136) Conc.: 0.074929

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11579 | 0.074929 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 15525 | 0.339171 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.071490 | | | | 4.70 | |
| ☐ 1,2,3-TCP | | | <0.258 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

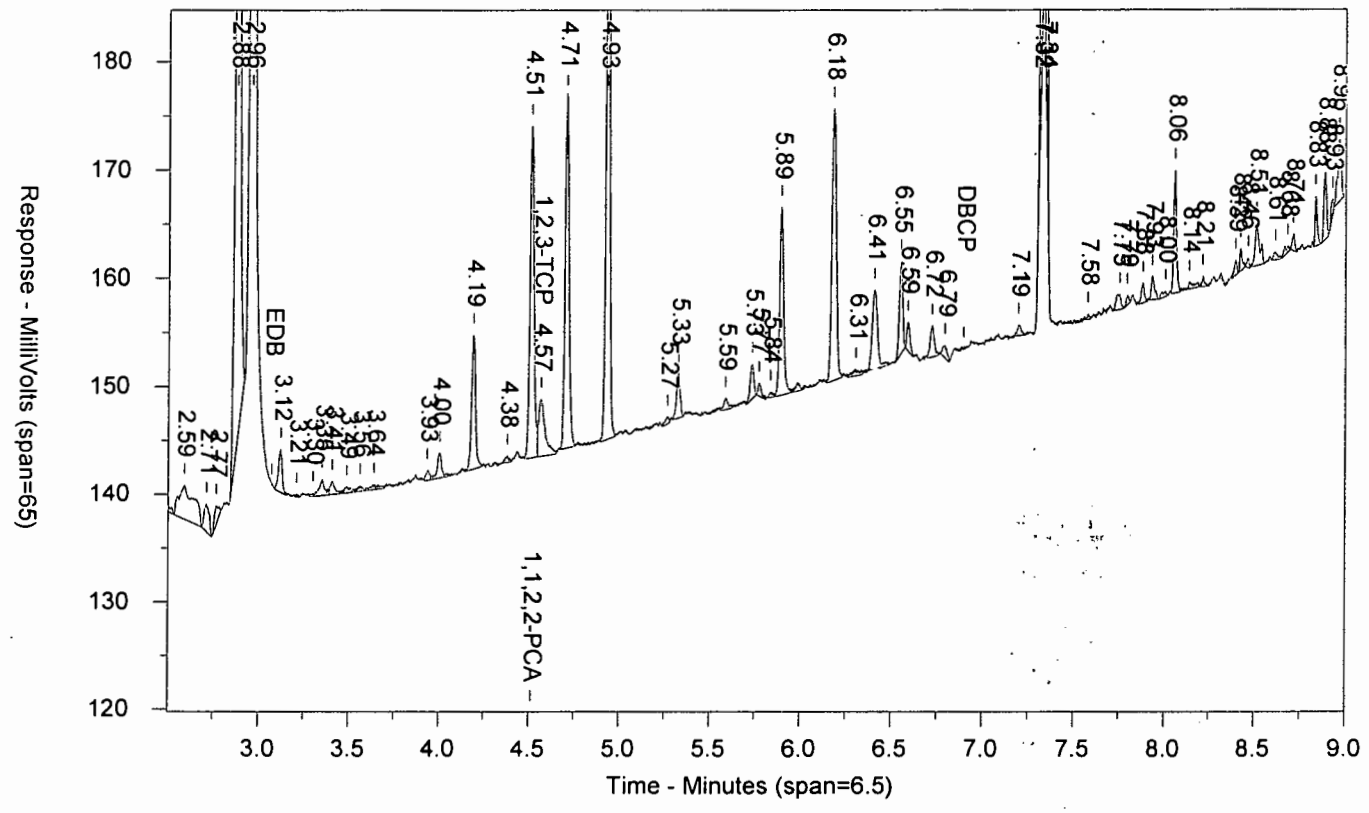
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100492 AA18614 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0027.RAW

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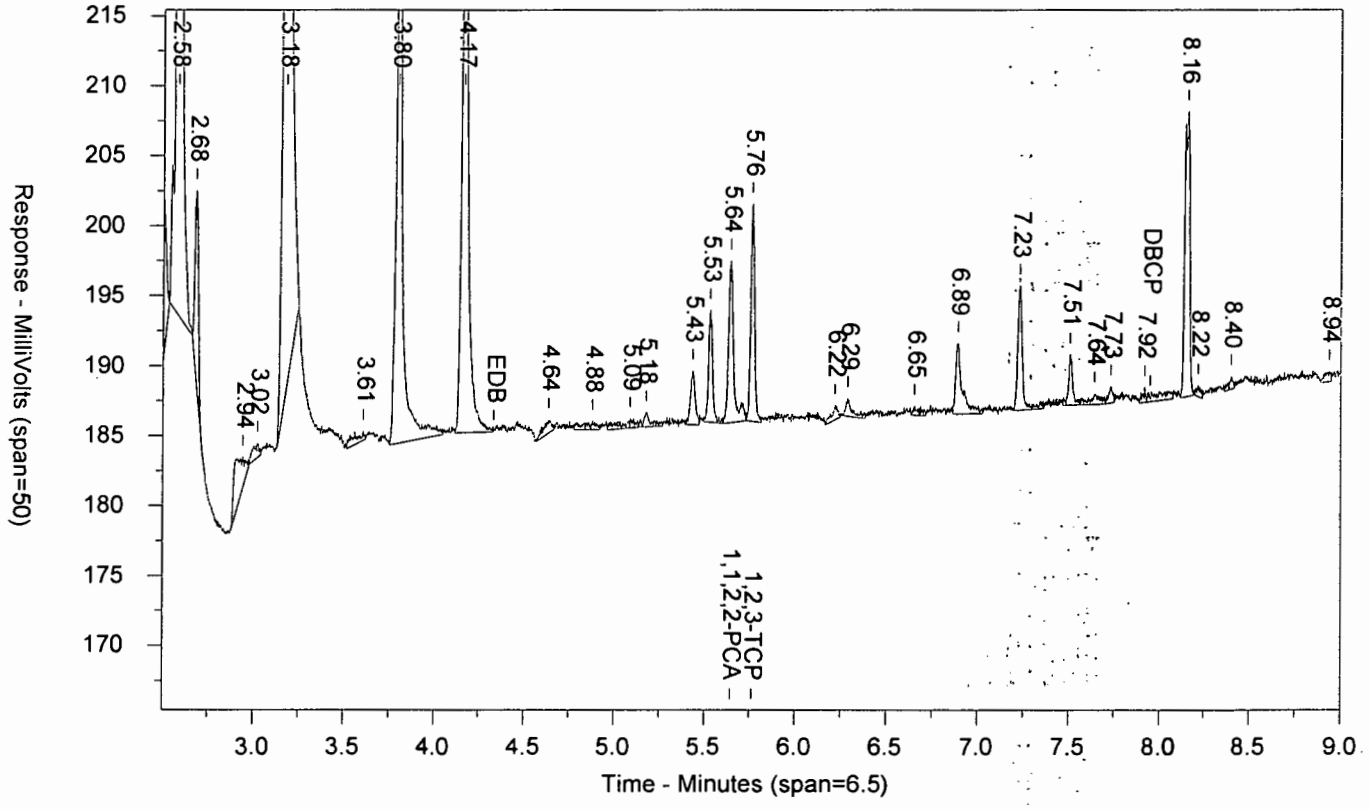

LANCASTER LABORATORIES

Sample Number: 9100492 AA18614 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 8:53:26 PM Sample Weight: 36.63
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 30717 | .071 | 1,1,2,2-PCA | 5.643 | 11579 | .075 | 1,1,2,2-PCA |
| 4.566 | 5356 | .017 | 1,2,3-TCP | 5.762 | 15525 | .339 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0027.RAW
Area File: 16EDBS17202001B.0027.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 9:02:29 PM
File Reported On: 7/24/2017 at 10:56:30 AM

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# Data Summary

**Sample Name: 9100493** 18615 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.82 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 21:09:01 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0028.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 116% ( 46 - 136 ) Conc: 0.077899

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 21:09:01 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0028.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 119% ( 46 - 136 ) Conc: 0.079843

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 33645 | 0.077899 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 12386 | 0.079843 |
| 1,2,3-Trichloropropane | 4.55 | 4.56 | 4.61 | 4666 | 0.004333 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 19145 | 0.536491 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.077899 | 0.0033 | 0.0067 | 0.0067 | | 2.46 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2567 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:25

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100493** 18615 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.82 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: **NM**
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 21:09:01
Instrument : CP16--19853A
Result file : 16EDBS17202001.0028.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 116% (46-136) Conc.: 0.077899

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 33645 | 0.077899 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 4666 | 0.004333 |

## Analysis Report (B)

Injected on : Jul 21, 2017 21:09:01
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0028.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 119% (46-136) Conc.: 0.079843

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 12386 | 0.079843 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 19145 | 0.536491 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.077899 | | | | 2.46 | |
| ☐ 1,2,3-TCP | | | <0.2567 | <0.0951 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

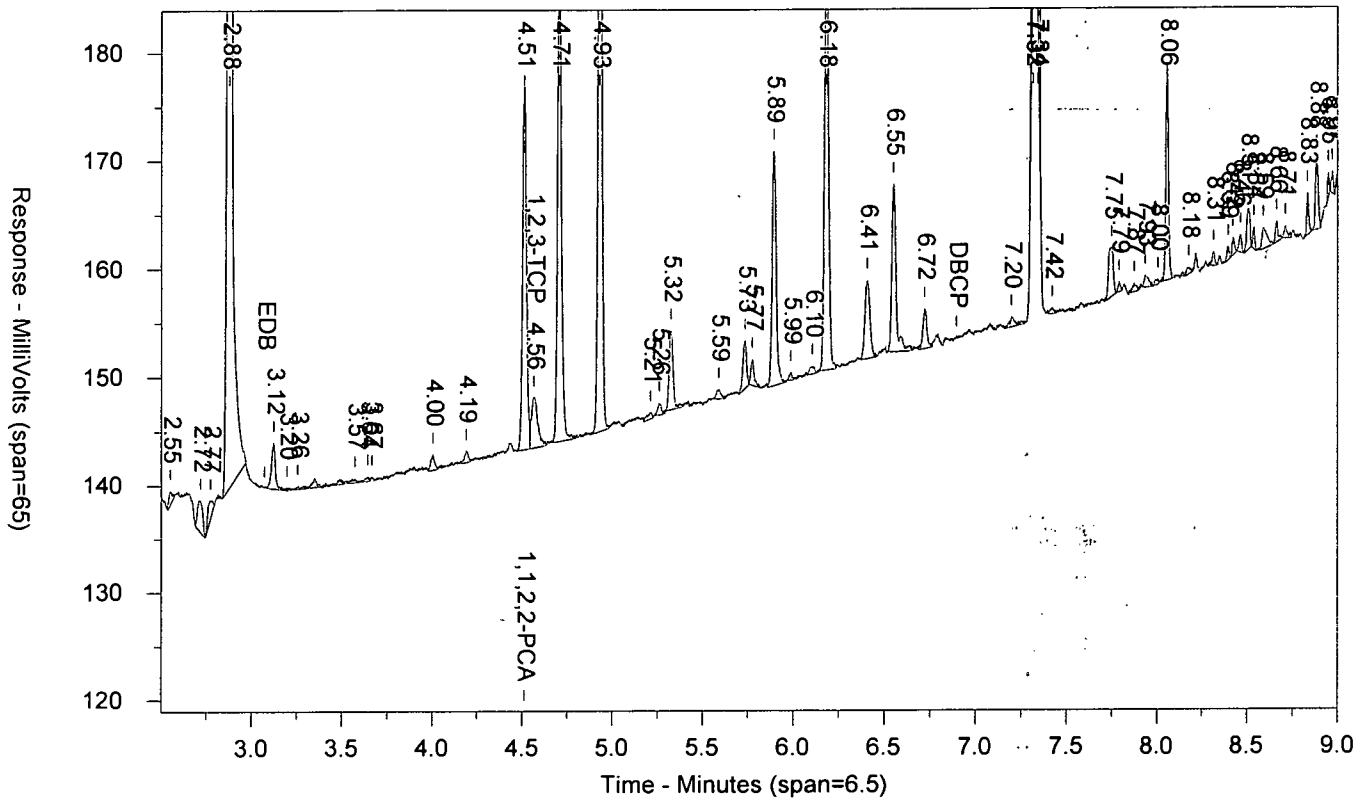
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

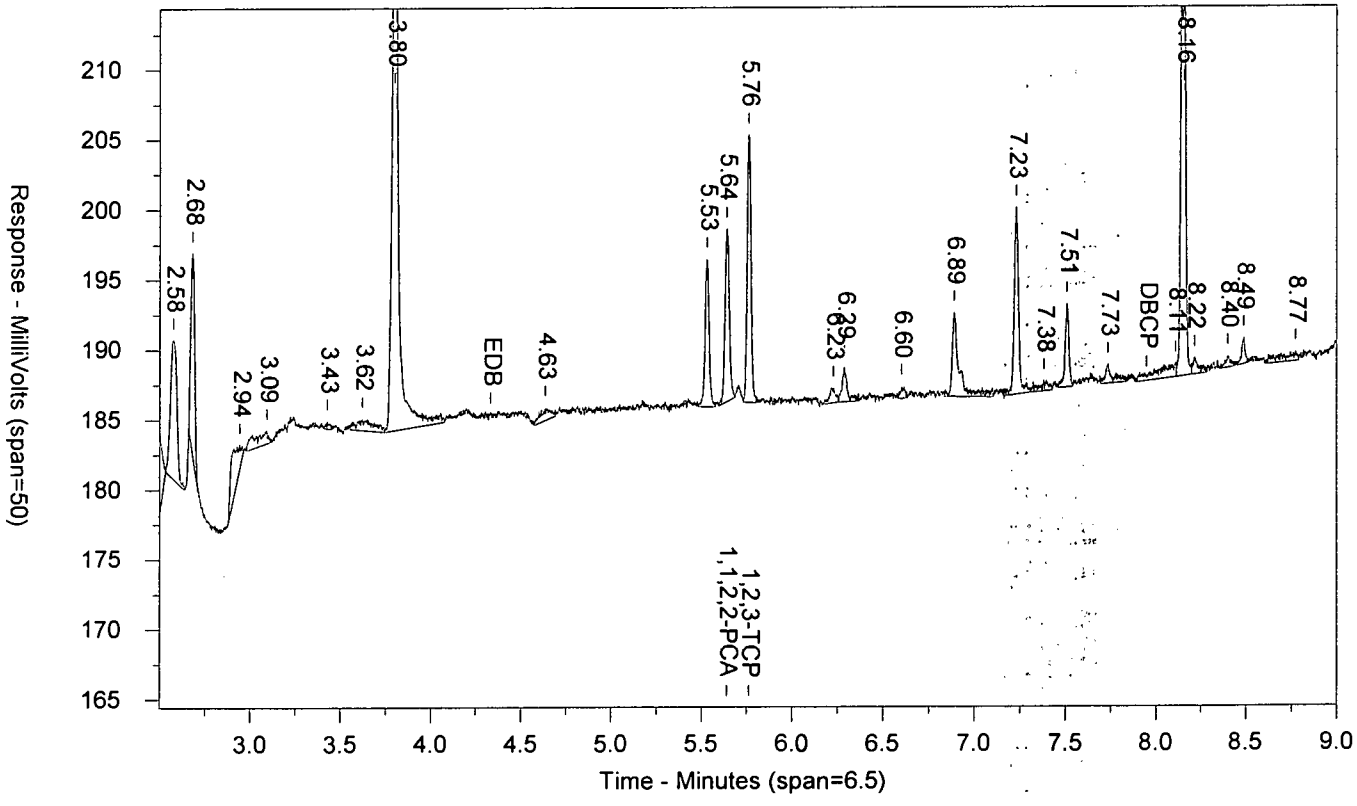
* Recovery outside QC Limits

9100493 AA18615 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0028.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0028.RAW



LANCASTER LABORATORIES

Sample Number: 9100493 AA18615 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 9:09:01 PM Sample Weight: 36.82
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 33645 | .078 | 1,1,2,2-PCA | 5.64 | 12386 | .08 | 1,1,2,2-PCA |
| 4.564 | 4666 | .004 | 1,2,3-TCP | 5.761 | 19145 | .536 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0028.RAW
Area File: 16EDBS17202001B.0028.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 9:18:03 PM
File Reported On: 7/24/2017 at 10:56:42 AM

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# Data Summary

**Sample Name: 9100494** 18616 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.81 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 21:24:39 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0029.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.068864

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 21:24:39 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0029.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.070742

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 296 | 0.000781 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10998 | 0.070742 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29734 | 0.068864 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 15935 | 0.360019 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5006 | 0.01059 | | | | | | |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☑ Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.068864 | 0.0033 | 0.0067 | 0.0067 | | 2.69 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.2567 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:27

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100494** 18616 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.81 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 21:24:39
Instrument : CP16--19853A
Result file : 16EDBS17202001.0029.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.068864

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 296 | 0.000781 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29734 | 0.068864 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 5006 | 0.010590 |

## Analysis Report (B)

Injected on : Jul 21, 2017 21:24:39
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0029.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.070742

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10998 | 0.070742 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 15935 | 0.360019 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.068864 | | | | 2.69 | |
| ☐ 1,2,3-TCP | | | <0.2567 | <0.0951 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

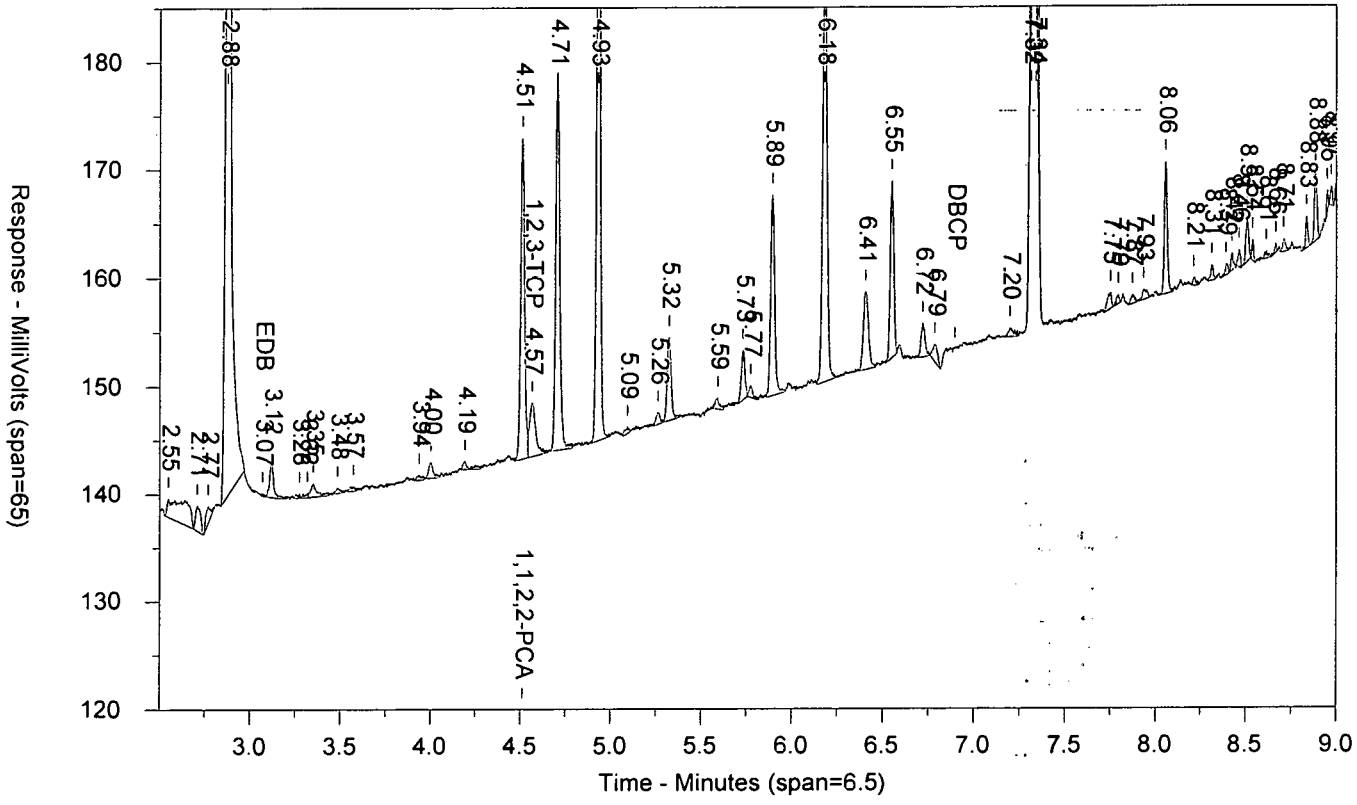
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100494 AA18616 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0029.RAW

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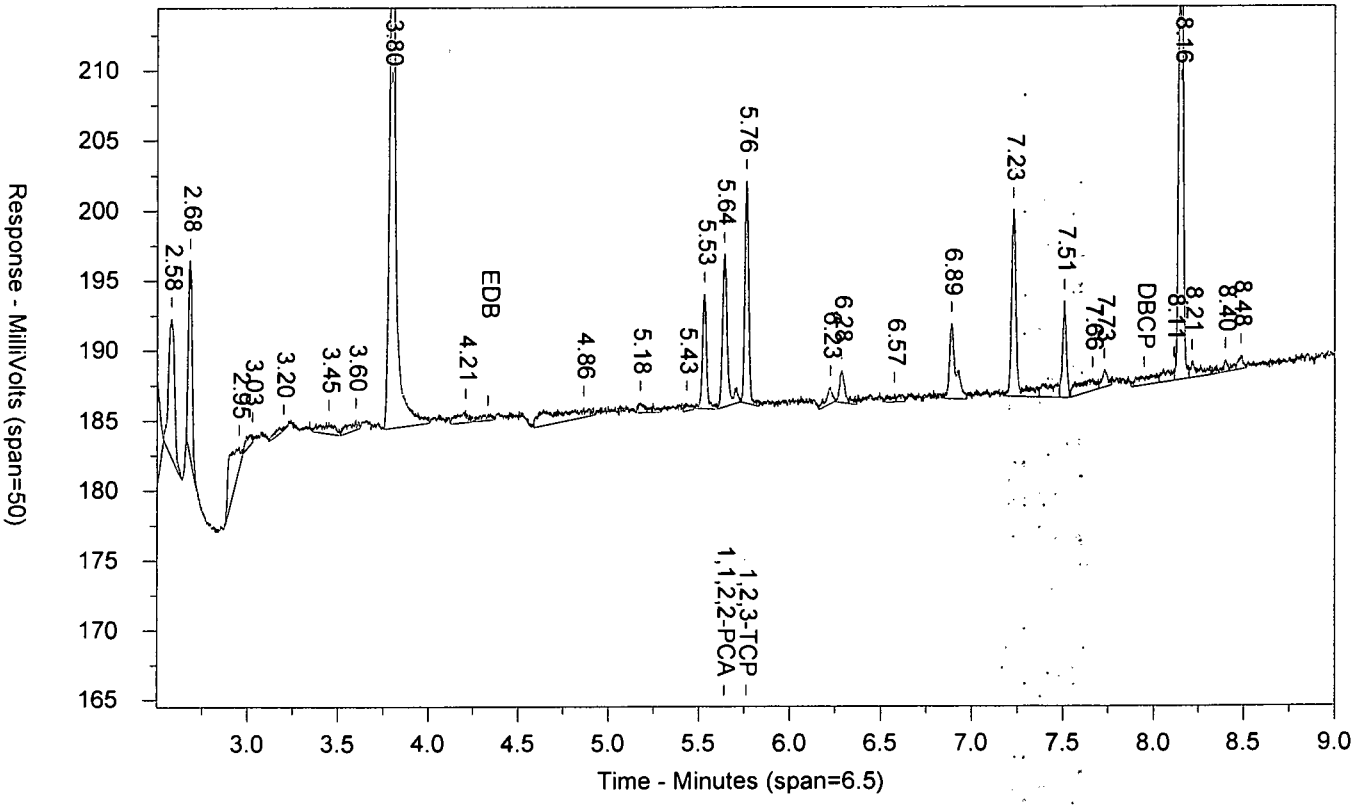

LANCASTER LABORATORIES

Sample Number: 9100494 AA18616 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 9:24:39 PM Sample Weight: 36.81
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.07 | 296 | .001 | EDB | | 0 | | EDB |
| 4.512 | 29734 | .069 | 1,1,2,2-PCA | 5.64 | 10998 | .071 | 1,1,2,2-PCA |
| 4.567 | 5006 | .011 | 1,2,3-TCP | 5.762 | 15935 | .36 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0029.RAW
Area File: 16EDBS17202001B.0029.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 9:33:40 PM
File Reported On: 7/24/2017 at 10:56:52 AM

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# Data Summary

**Sample Name: 9100495** 18617 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.76 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 21:40:15 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0030.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.071406

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 21:40:15 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0030.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 108% ( 46 - 136 ) Conc: 0.072679

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30790 | 0.071406 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11278 | 0.072679 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5877 | 0.026622 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 16804 | 0.408397 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☑ Ethylene dibromide | | | <0.0095 | <0.019 | <0.0286 | | | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.071406 | 0.0033 | 0.0067 | 0.0067 | | 1.77 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.2571 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:30

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100495** 18617 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.76 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 21:40:15
Instrument : CP16--19853A
Result file : 16EDBS17202001.0030.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.071406

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 30790 | 0.071406 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 5877 | 0.026622 |

## Analysis Report (B)

Injected on : Jul 21, 2017 21:40:15
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0030.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 108% (46-136) Conc.: 0.072679

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 11278 | 0.072679 |
| 1,2,3-TCP | 5.74 | 5.76 | 5.80 | 16804 | 0.408397 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.071406 | | | | 1.77 | |
| ☐ 1,2,3-TCP | | | <0.2571 | <0.0952 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: JUL 24 2017

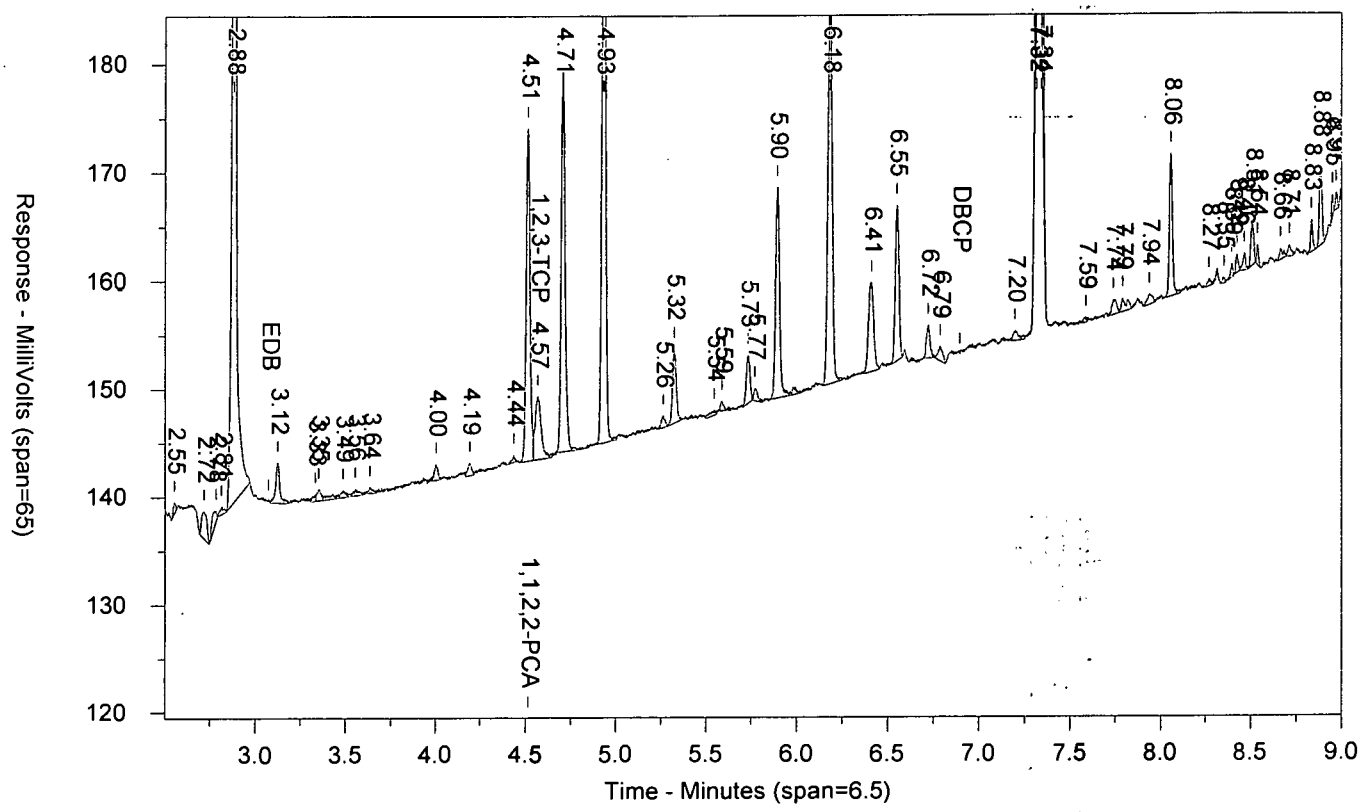
Verified by: Susan M Goshert Susan M. Goshert Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100495 AA18617 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0030.RAW

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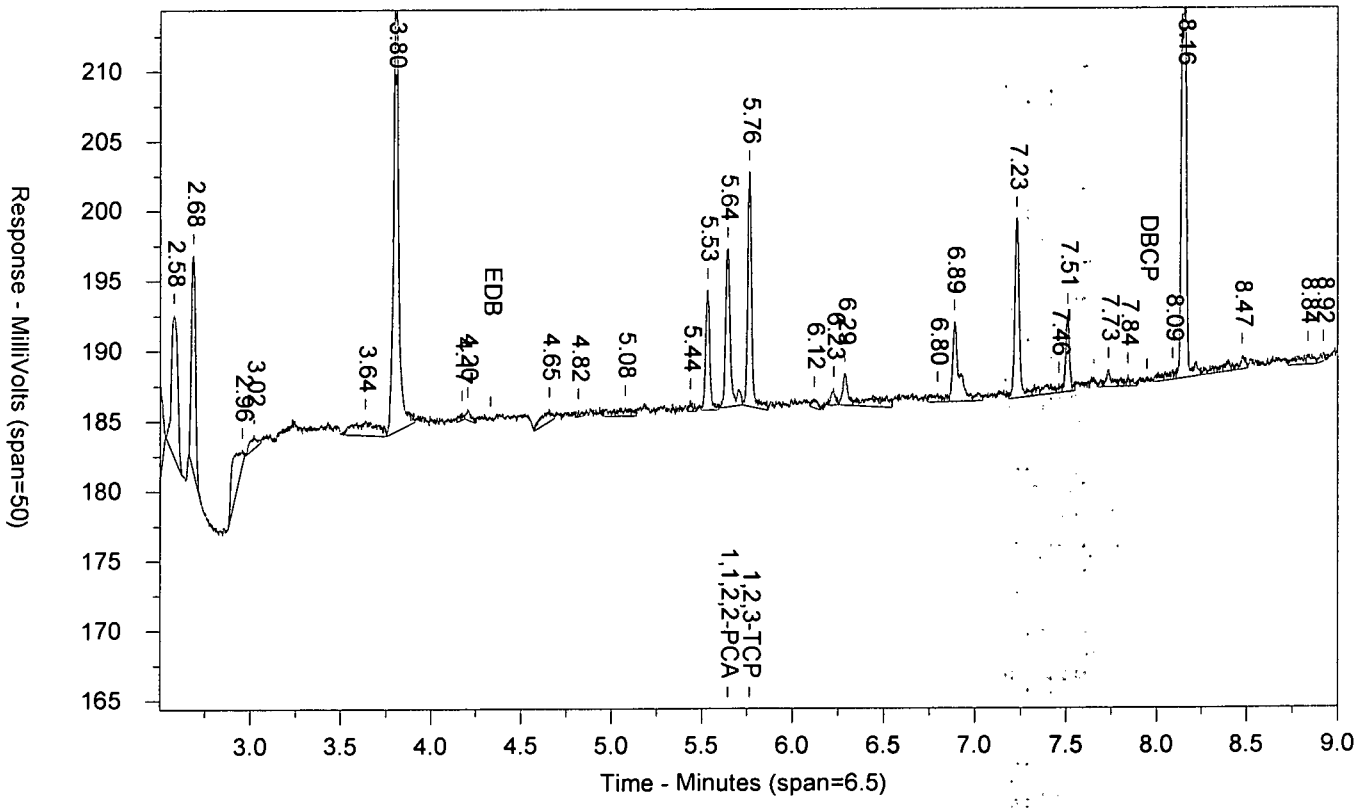

LANCASTER LABORATORIES

Sample Number: 9100495 AA18617 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 9:40:15 PM Sample Weight: 36.76
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 30790 | .071 | 1,1,2,2-PCA | 5.644 | 11278 | .073 | 1,1,2,2-PCA |
| 4.569 | 5877 | .027 | 1,2,3-TCP | 5.764 | 16804 | .408 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0030.RAW
Area File: 16EDBS17202001B.0030.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 9:49:16 PM
File Reported On: 7/24/2017 at 10:57:04 AM

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# Data Summary

**Sample Name: 9100496** 18618 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.83 mL Total Volume: 2 ml Analyst: 7848 SDG: KR186 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 21:55:50 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0031.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.071536

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 21:55:50 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0031.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.071932

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30905 | 0.071536 |
| 1,2,3-Trichloropropane | 4.55 | 4.56 | 4.61 | 4185 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11185 | 0.071932 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 20027 | 0.584876 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.071536 | 0.0033 | 0.0067 | 0.0067 | | 0.55 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2566 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:33

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9100496** 18618 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.83 mL Total Volume: 2 ml Analyst: Administr SDG: KR186 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 21:55:50
Instrument : CP16--19853A
Result file : 16EDBS17202001.0031.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.071536

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 30905 | 0.071536 |
| 1,2,3-TCP | 4.55 | 4.56 | 4.61 | 4185 | -0.004497 |

## Analysis Report (B)

Injected on : Jul 21, 2017 21:55:50
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0031.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.071932

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 11185 | 0.071932 |
| 1,2,3-TCP | 5.74 | 5.76 | 5.80 | 20027 | 0.584876 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.071536 | | | | 0.55 | |
| ☐ 1,2,3-TCP | | | <0.2566 | <0.095 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by:
Date:

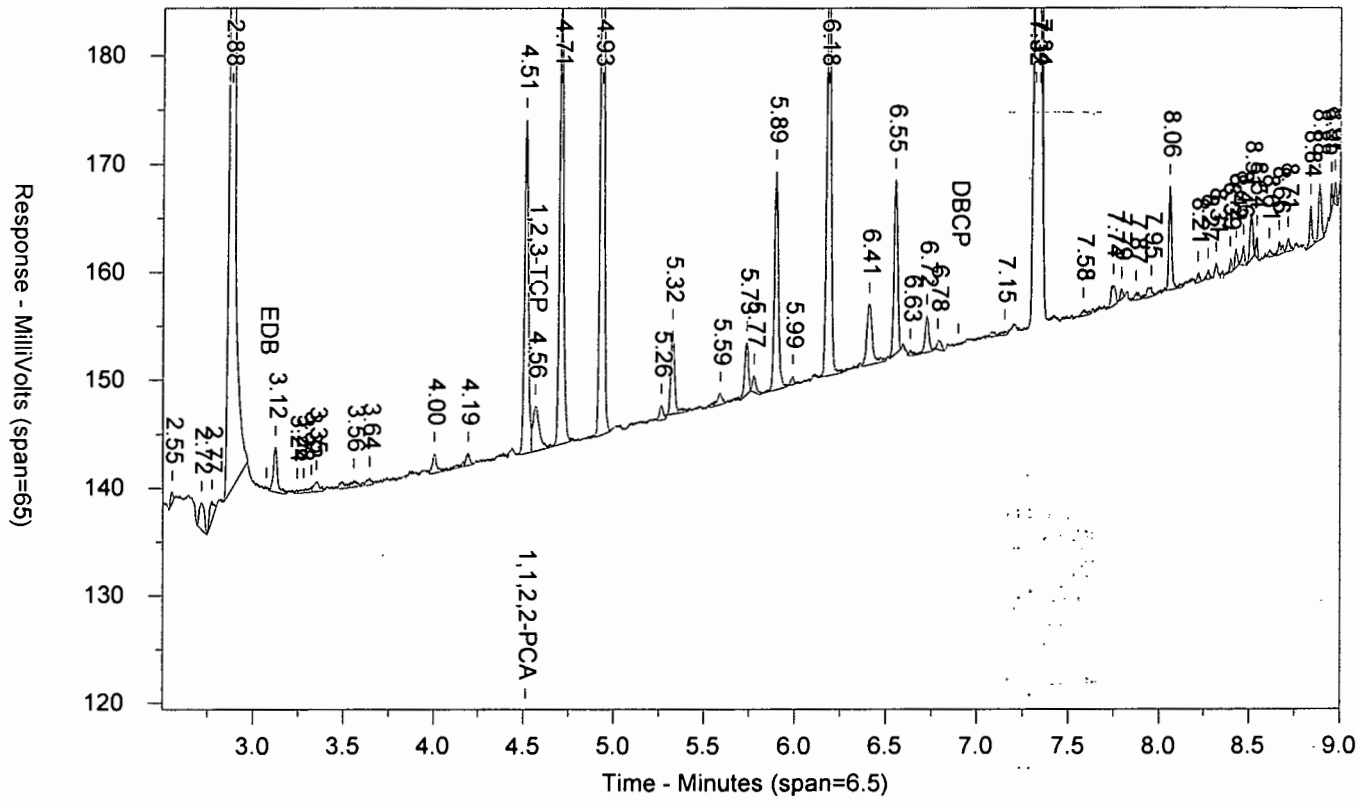
Susan M. Goshert
Manager
JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9100496 AA18618 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0031.RAW

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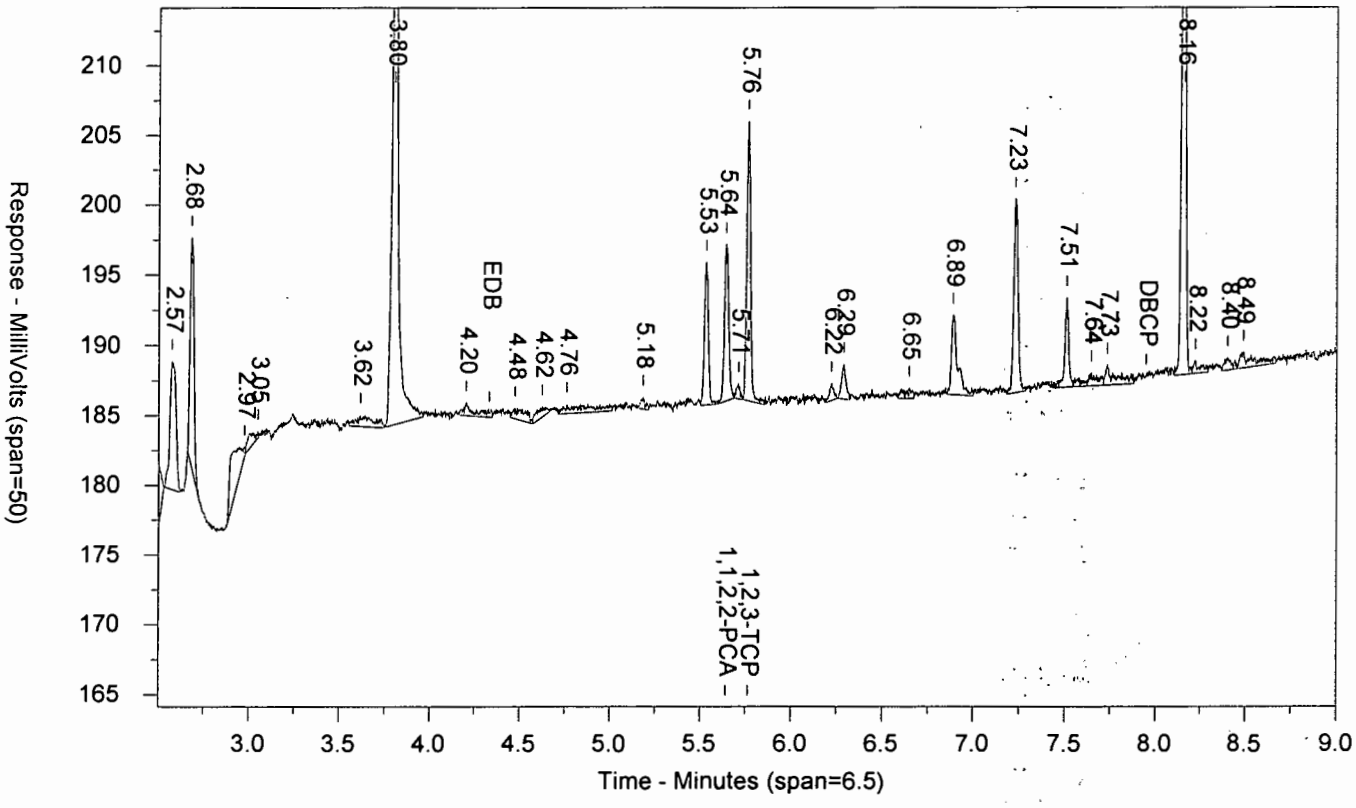


LANCASTER LABORATORIES

Sample Number: 9100496 AA18618 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 9:55:50 PM Sample Weight: 36.83
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 30905 | .072 | 1,1,2,2-PCA | 5.642 | 11185 | .072 | 1,1,2,2-PCA |
| 4.564 | 4185 | -.004 | 1,2,3-TCP | 5.763 | 20027 | .585 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0031.RAW
Area File: 16EDBS17202001B.0031.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 10:04:50 PM
File Reported On: 7/24/2017 at 10:57:16 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 4 CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 5 EIBKX1724C | 5 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 6 EDB_11724DS | 6 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 1 | 1720199999 | |
| 7 EDB_21724DS | 7 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 2 | 1720199999 | |
| 8 EDB_31724DS | 8 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 3 | 1720199999 | |
| 9 EDB_41724DS | 9 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 4 | 1720199999 | |
| 10 EDB_51724DS | 10 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 5 | 1720199999 | |
| 11 EDB_61724DS | 11 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 6 | 1720199999 | |
| 12 MDEDX1724DS | 12 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 13 EDB_31724DS | 13 | CCAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 14 EIBKX1724C | 14 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 15 BLANKA 7/21/17 | 15 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 16 LCSA 7/21/17 | 16 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 17 LCSDA 7/21/17 | 17 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 18 9095972 | 18 | T | AA | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010025A | 10398 |
| 19 9100482 | 19 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 20 9100483 | 20 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010025A | 10398 |
| 21 9100485 | 21 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 22 9100487 | 22 | T | AA | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010025A | 10398 |
| 23 9100489 | 23 | T | AA | 16EDBS.MET | 36.84 | 2 | 1 | 0 | 172010025A | 10398 |
| 24 9100491 | 24 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 25 EDB_51724DS | 25 | CCAL | LS | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 26 EIBKX1724C | 26 | PIBLK | SC | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 27 9100492 | 27 | T | AA | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010025A | 10398 |
| 28 9100493 | 28 | T | AA | 16EDBS.MET | 36.82 | 2 | 1 | 0 | 172010025A | 10398 |
| 29 9100494 | 29 | T | AA | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010025A | 10398 |
| 30 9100495 | 30 | T | AA | 16EDBS.MET | 36.76 | 2 | 1 | 0 | 172010025A | 10398 |
| 31 9100496 | 31 | T | AA | 16EDBS.MET | 36.83 | 2 | 1 | 0 | 172010025A | 10398 |
| 32 9107402 | 32 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 33 9107403 | 33 | T | AA | 16EDBS.MET | 36.65 | 2 | 1 | 0 | 172010025A | 10398 |
| 34 9107404 | 34 | T | AA | 16EDBS.MET | 37.04 | 2 | 1 | 0 | 172010025A | 10398 |
| 35 9107405 | 35 | T | AA | 16EDBS.MET | 37.01 | 2 | 1 | 0 | 172010025A | 10398 |
| 36 9107406 | 36 | T | AA | 16EDBS.MET | 36.48 | 2 | 1 | 0 | 172010025A | 10398 |
| 37 EDB_41724DS | 37 | CCAL | QK | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 38 EIBKX1724C | 38 | PIBLK | SD | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 39 9107407 | 39 | T | AA | 16EDBS.MET | 36.73 | 2 | 1 | 0 | 172010025A | 10398 |
| 40 9109771 | 40 | T | AA | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010025A | 10398 |
| 41 9109772MS | 41 | MS | AA | 16EDBS.MET | 37.02 | 2 | 1 | 0 | 172010025A | 10398 |
| 42 9109773MSD | 42 | MSD | AA | 16EDBS.MET | 36.96 | 2 | 1 | 0 | 172010025A | 10398 |
| 43 9109779 | 43 | T | AA | 16EDBS.MET | 36.35 | 2 | 1 | 0 | 172010025A | 10398 |
| 44 BLANKA 7/21/17 | 44 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 45 LCSA 7/21/17 | 45 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 46 LCSDA 7/21/17 | 46 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 47 9098344 | 47 | T | AA | 16EDBS.MET | 36.51 | 2 | 1 | 0 | 172010021A | 10398 |
| 48 9098345 | 48 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010021A | 10398 |
| 49 EDB_31724DS | 49 | CCAL | PB | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 50 EIBKX1724C | 50 | PIBLK | SE | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

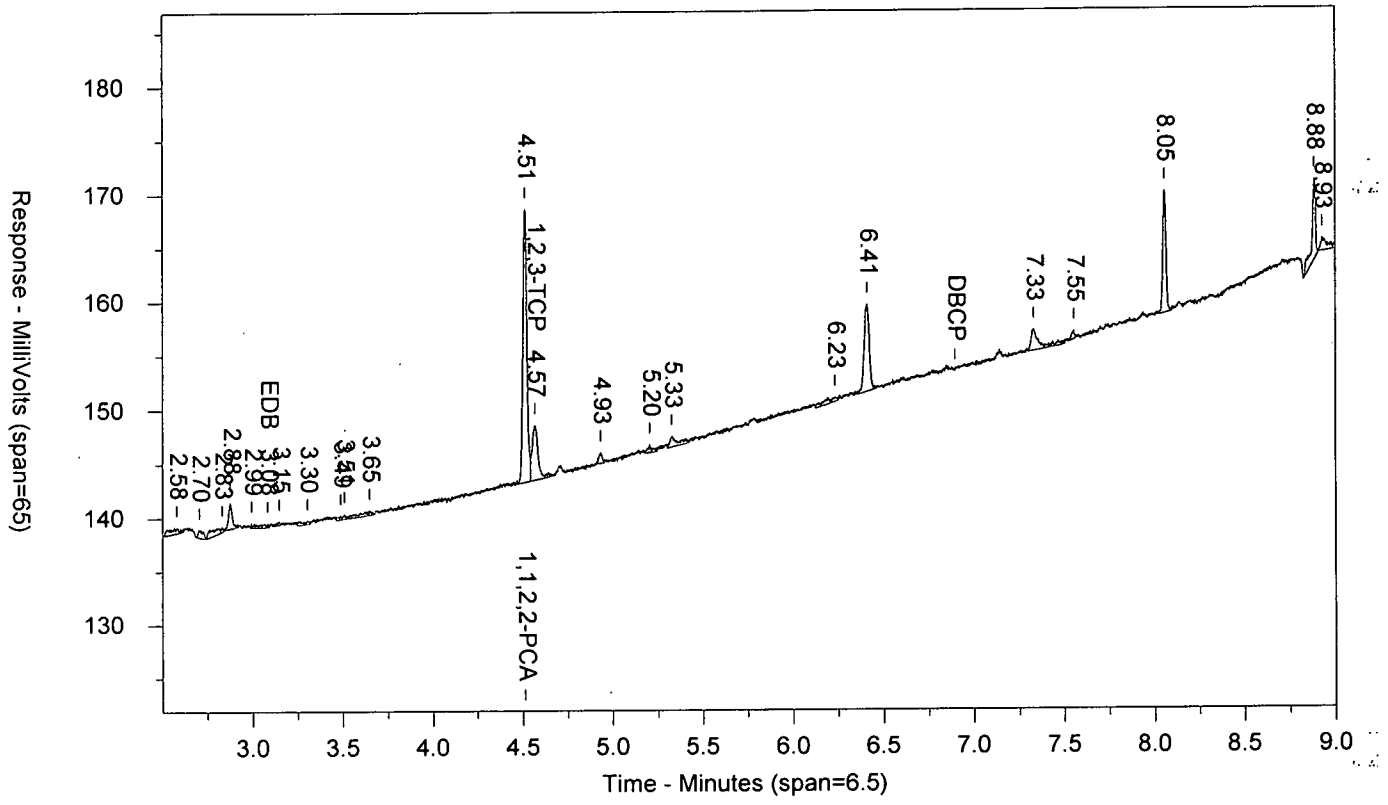
| Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 9098346 | 51 | T | AA | | 16EDBS.MET | 36.12 | 2 | 1 | 0 | 172010021A | 10398 |
| 52 9098347 | 52 | T | AA | | 16EDBS.MET | 36.56 | 2 | 1 | 0 | 172010021A | 10398 |
| 53 9098348 | 53 | T | AA | | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010021A | 10398 |
| 54 9098349 | 54 | T | AA | | 16EDBS.MET | 36.66 | 2 | 1 | 0 | 172010021A | 10398 |
| 55 9098350MS | 55 | MS | AA | | 16EDBS.MET | 36.45 | 2 | 1 | 0 | 172010021A | 10398 |
| 56 9098351MSD | 56 | MSD | AA | | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010021A | 10398 |
| 57 9098352 | 57 | T | AA | | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010021A | 10398 |
| 58 9098353 | 58 | T | AA | | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010021A | 10398 |
| 59 9098354 | 59 | T | AA | | 16EDBS.MET | 36.9 | 2 | 1 | 0 | 172010021A | 10398 |
| 60 9098355 | 60 | T | AA | | 16EDBS.MET | 36.42 | 2 | 1 | 0 | 172010021A | 10398 |
| 61 EDB_51724DS | 61 | CCAL | LT | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 62 EIBKX1724C | 62 | PIBLK | SF | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 63 9098356 | 63 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 64 9098357 | 64 | T | AA | | 16EDBS.MET | 36.77 | 2 | 1 | 0 | 172010021A | 10398 |
| 65 9098358 | 65 | T | AA | | 16EDBS.MET | 37.09 | 2 | 1 | 0 | 172010021A | 10398 |
| 66 9098359 | 66 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 67 9098360 | 67 | T | AA | | 16EDBS.MET | 36.6 | 2 | 1 | 0 | 172010021A | 10398 |
| 68 9098361 | 68 | T | AA | | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010021A | 10398 |
| 69 9098362 | 69 | T | AA | | 16EDBS.MET | 36.39 | 2 | 1 | 0 | 172010021A | 10398 |
| 70 9098363 | 70 | T | AA | | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010021A | 10398 |
| 71 9100479 | 71 | T | AA | | 16EDBS.MET | 36.55 | 2 | 1 | 0 | 172010021A | 10398 |
| 72 9100481 | 72 | T | AA | | 16EDBS.MET | 36.13 | 2 | 1 | 0 | 172010021A | 10398 |
| 73 EDB_41724DS | 73 | CCAL | QL | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 74 EIBKX1724C | 74 | PIBLK | SG | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

Set-up by: _____ Date: 7/21/17

7/21/2017

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0005.RAW

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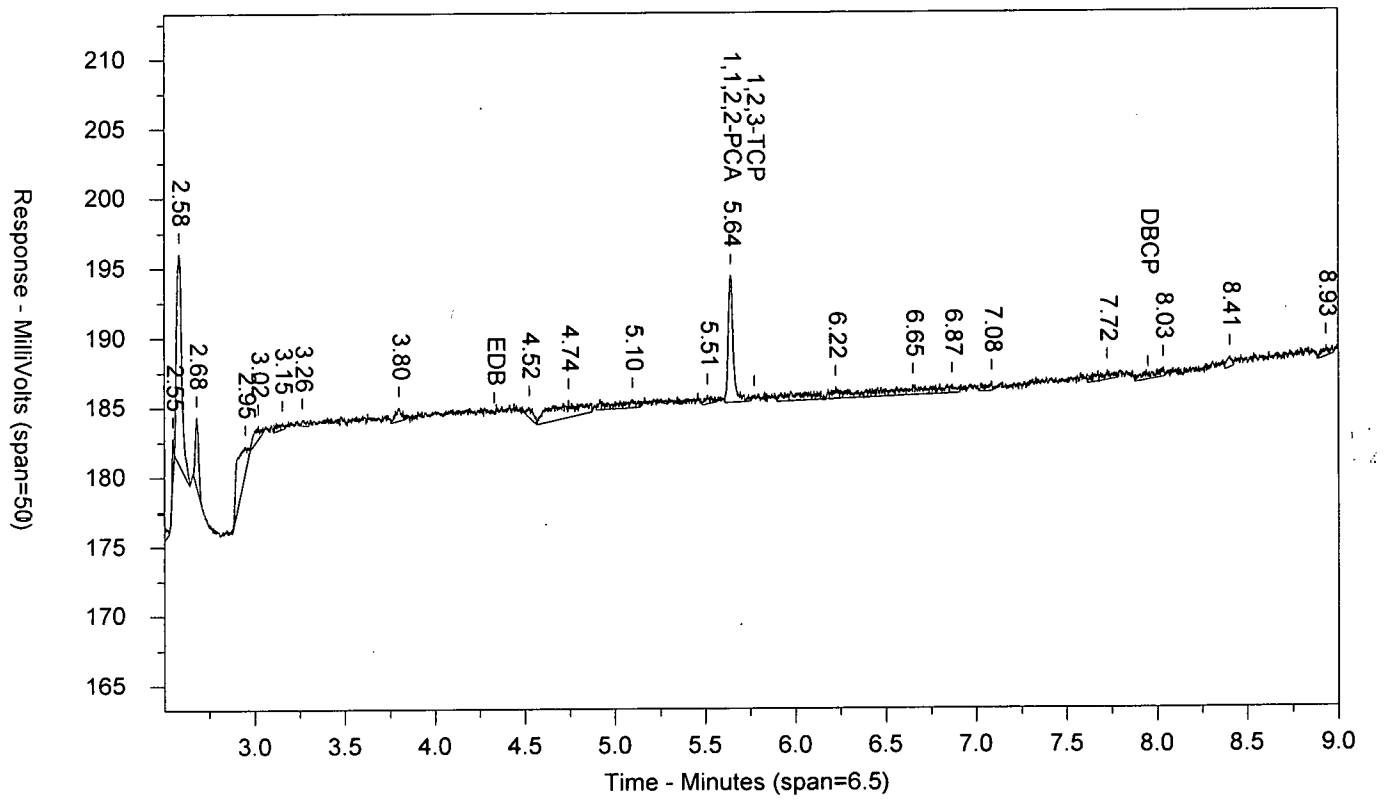


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 3:09:45 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

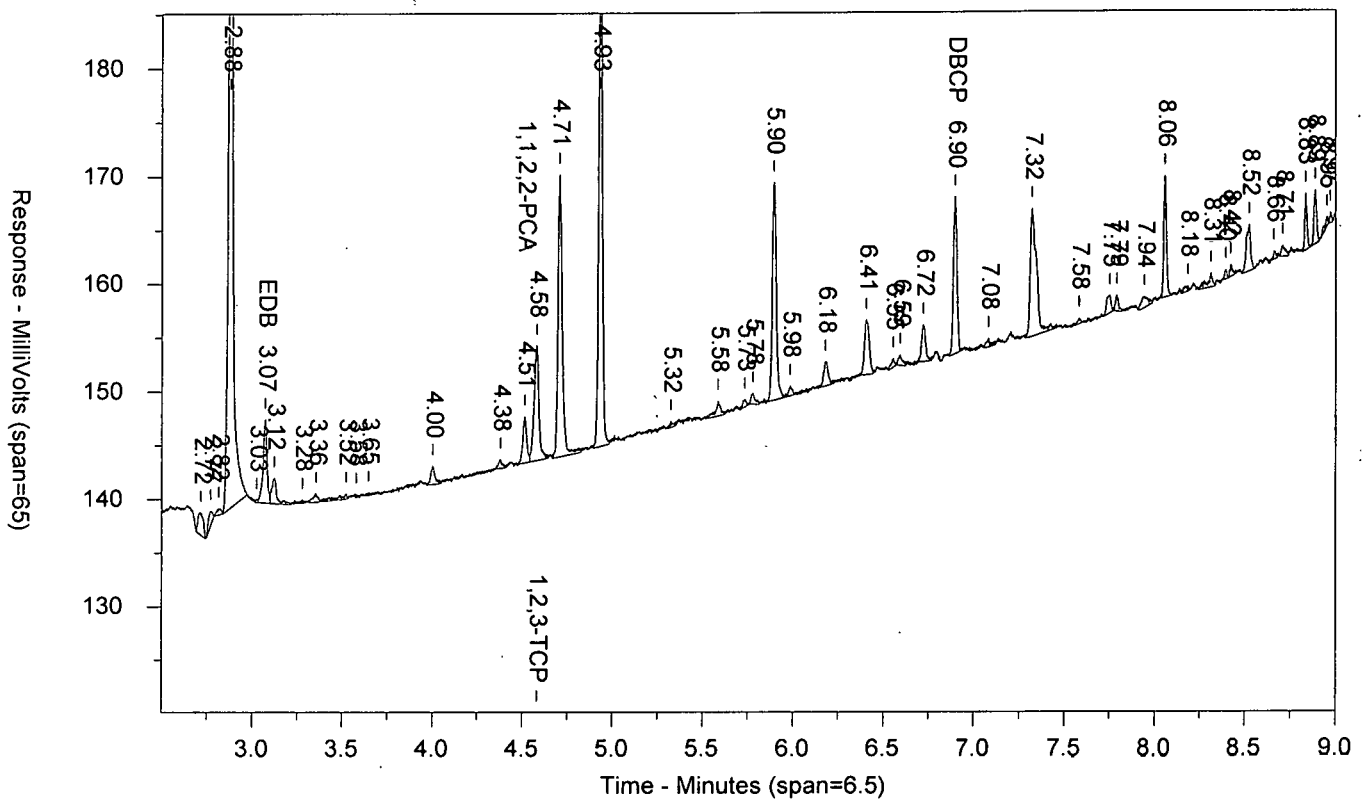
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.083 | 400 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25406 | .066 | 1,1,2,2-PCA | 5.641 | 9102 | .066 | 1,1,2,2-PCA |
| 4.567 | 5116 | .008 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0005.RAW
Area File: 16EDBS17202001B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:18:48 PM
File Reported On: 7/24/2017 at 10:43:10 AM

EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0006.RAW

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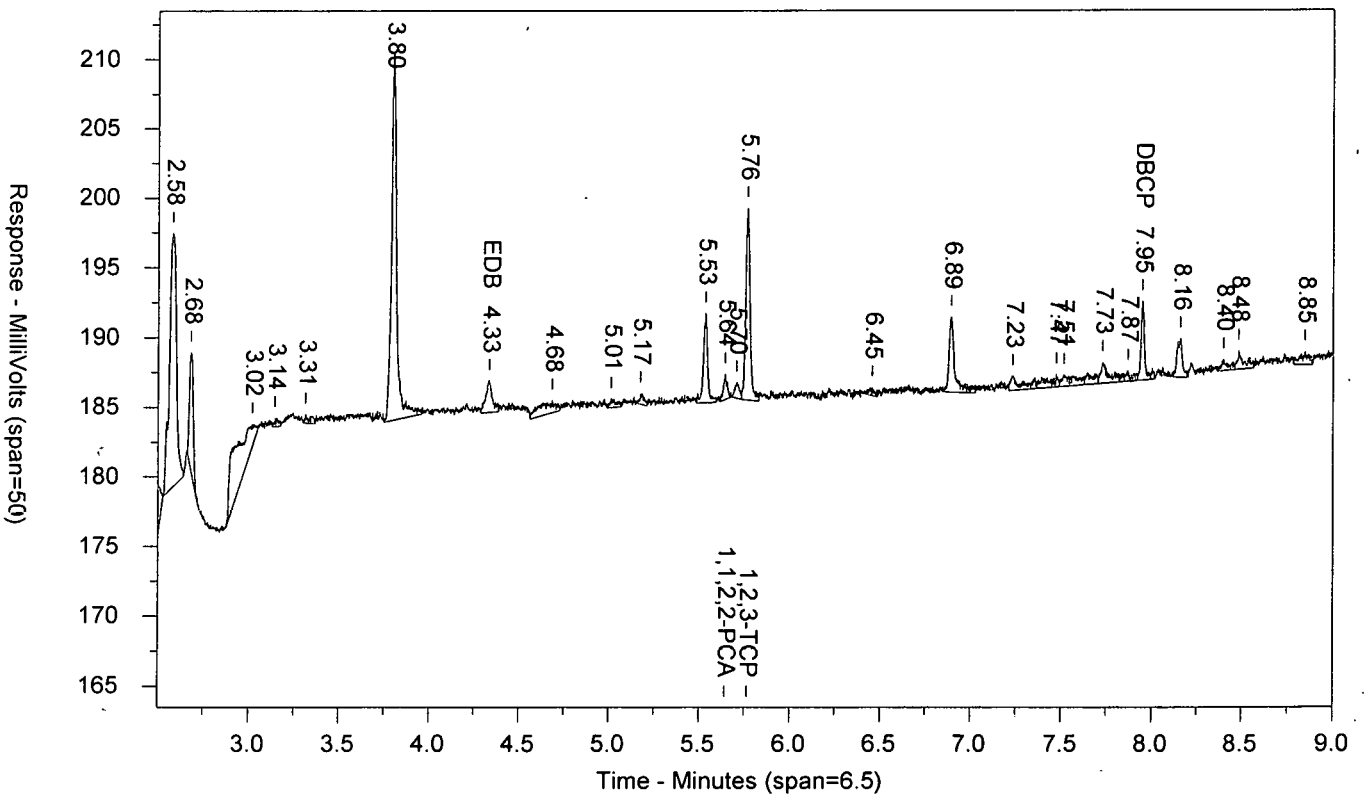


LANCASTER LABORATORIES

Sample Number: EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:25:23 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

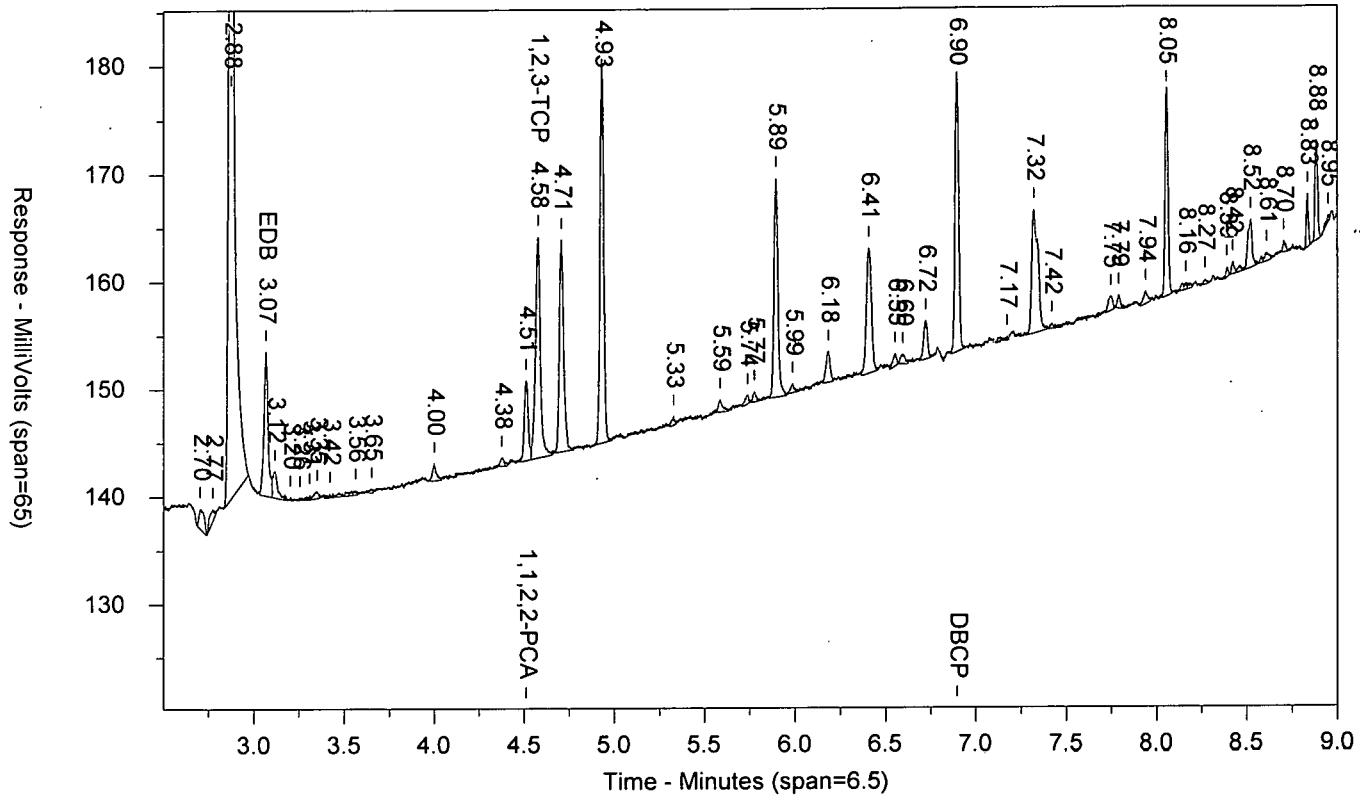
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 7802 | .405 | EDB | 4.335 | 2290 | .405 | EDB |
| 4.515 | 4322 | .196 | 1,1,2,2-PCA | 5.641 | 1830 | .199 | 1,1,2,2-PCA |
| 4.58 | 10708 | 2.318 | 1,2,3-TCP | 5.765 | 13776 | 3.87 | 1,2,3-TCP |
| 6.897 | 14619 | .372 | DBCP | 7.947 | 5660 | .377 | DBCP |

Files:
Area File: 16EDBS17202001.0006.RAW
Area File: 16EDBS17202001B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:34:24 PM
File Reported On: 7/24/2017 at 10:43:26 AM

EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.RAW

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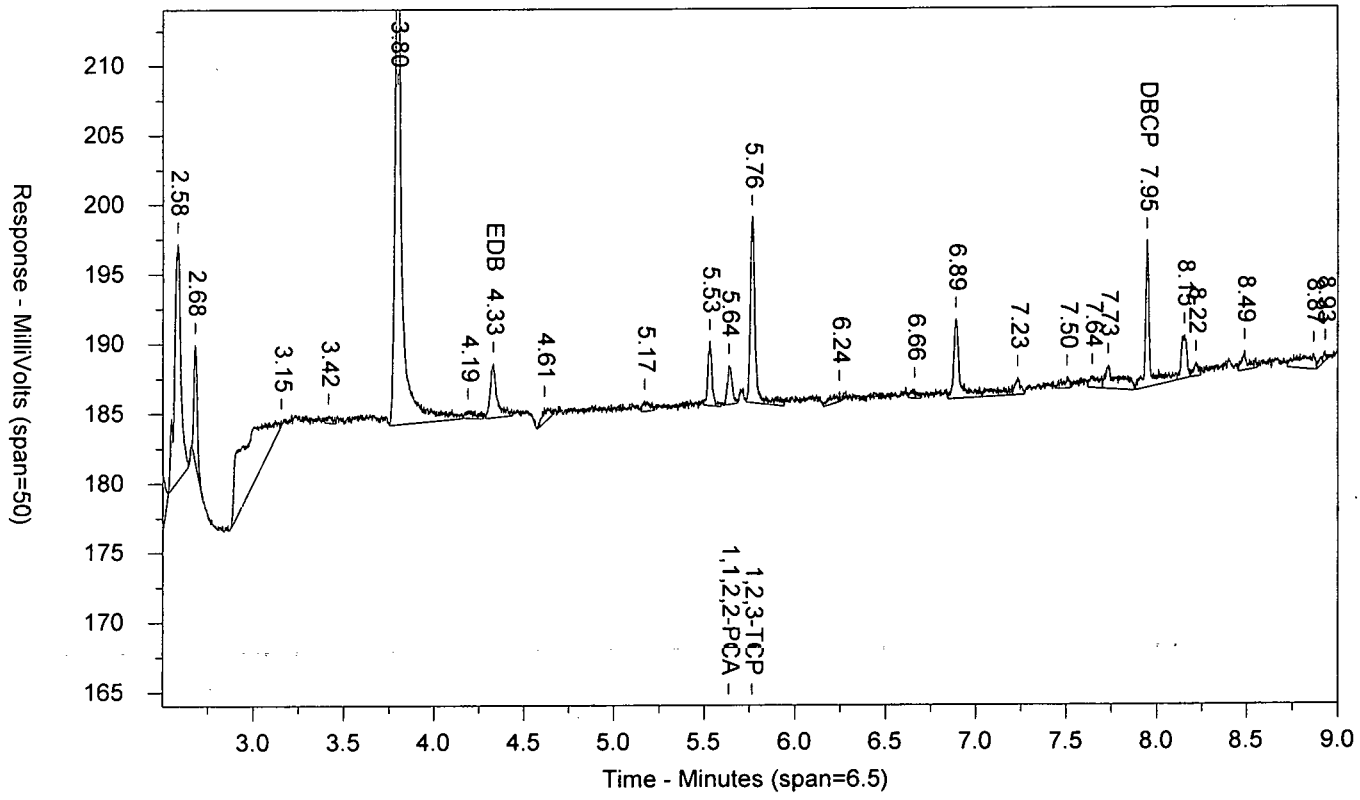


LANCASTER LABORATORIES

Sample Number: EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:40:59 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

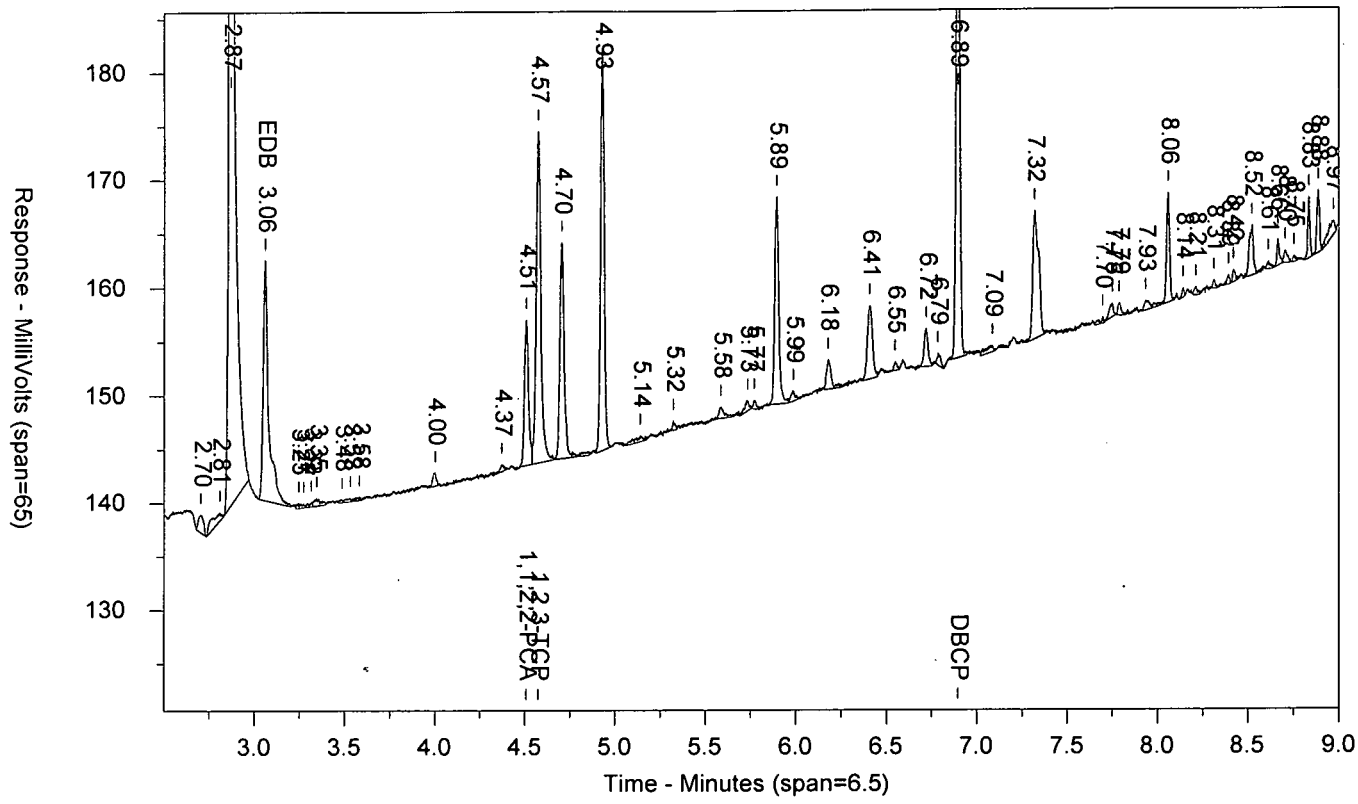
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.067 | 13453 | .69 | EDB | 4.33 | 3898 | .686 | EDB |
| 4.511 | 7462 | .337 | 1,1,2,2-PCA | 5.637 | 2815 | .325 | 1,1,2,2-PCA |
| 4.578 | 20612 | 6.251 | 1,2,3-TCP | 5.764 | 13358 | 2.692 | 1,2,3-TCP |
| 6.895 | 25723 | .653 | DBCP | 7.946 | 10545 | .701 | DBCP |

Files:
Area File: 16EDBS17202001.0007.RAW
Area File: 16EDBS17202001B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:50:00 PM
File Reported On: 7/24/2017 at 10:43:42 AM

EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.RAW

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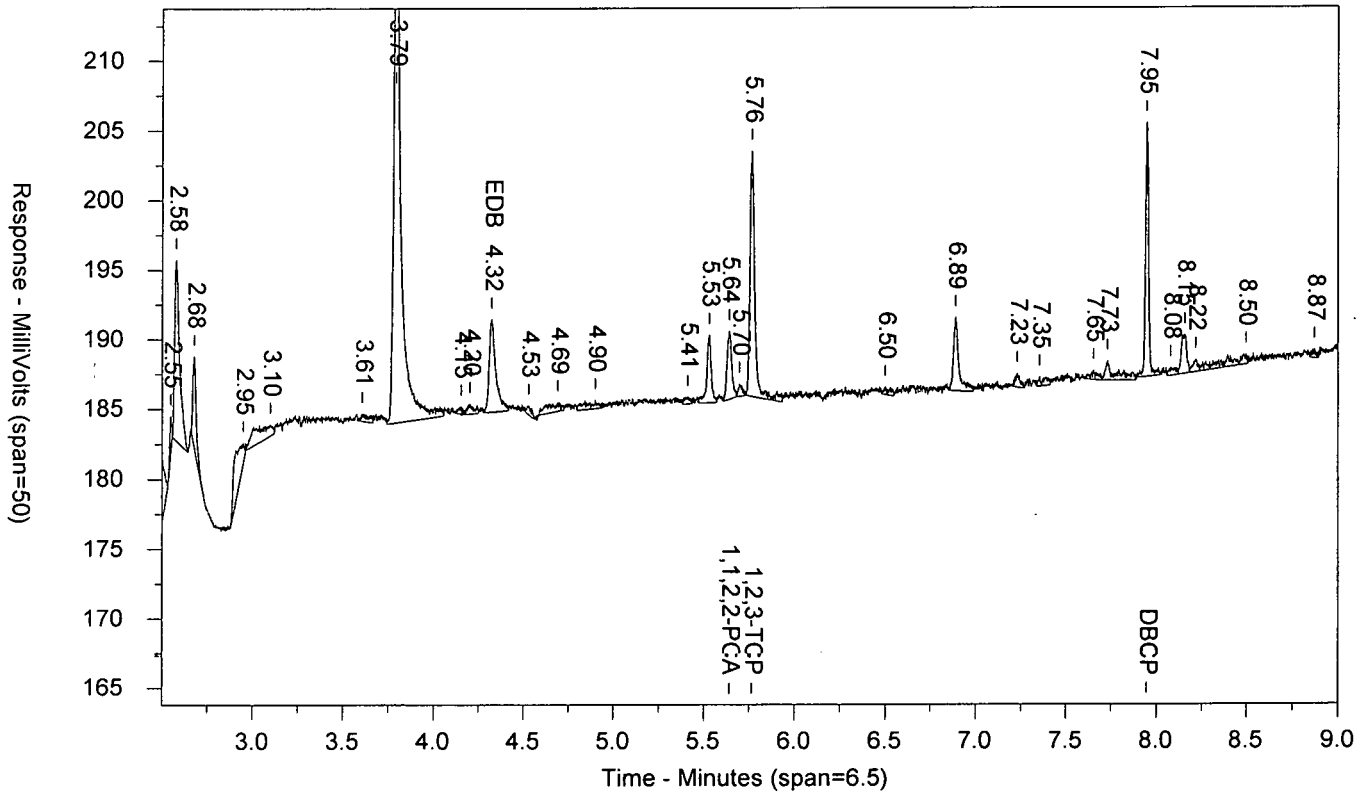


LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:56:33 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

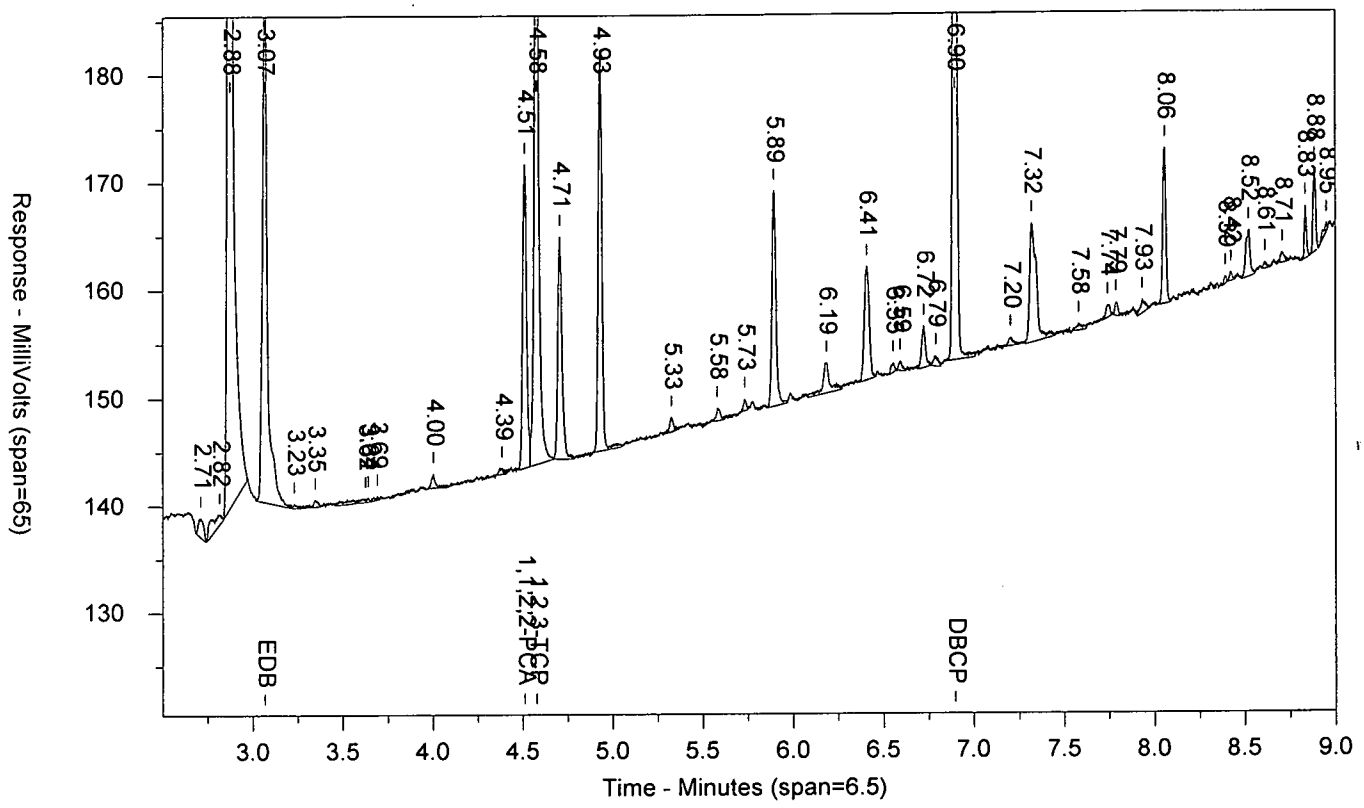
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.06 | 22389 | 1.134 | EDB | 4.324 | 6702 | 1.179 | EDB |
| 4.508 | 13531 | .604 | 1,1,2,2-PCA | 5.64 | 4937 | .598 | 1,1,2,2-PCA |
| 4.574 | 30821 | 9.822 | 1,2,3-TCP | 5.763 | 17655 | 8.34 | 1,2,3-TCP |
| 6.895 | 49779 | 1.263 | DBCP | 7.946 | 18271 | 1.205 | DBCP |

Files:
Area File: 16EDBS17202001.0008.RAW
Area File: 16EDBS17202001B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:05:35 PM
File Reported On: 7/24/2017 at 10:43:58 AM

EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.RAW

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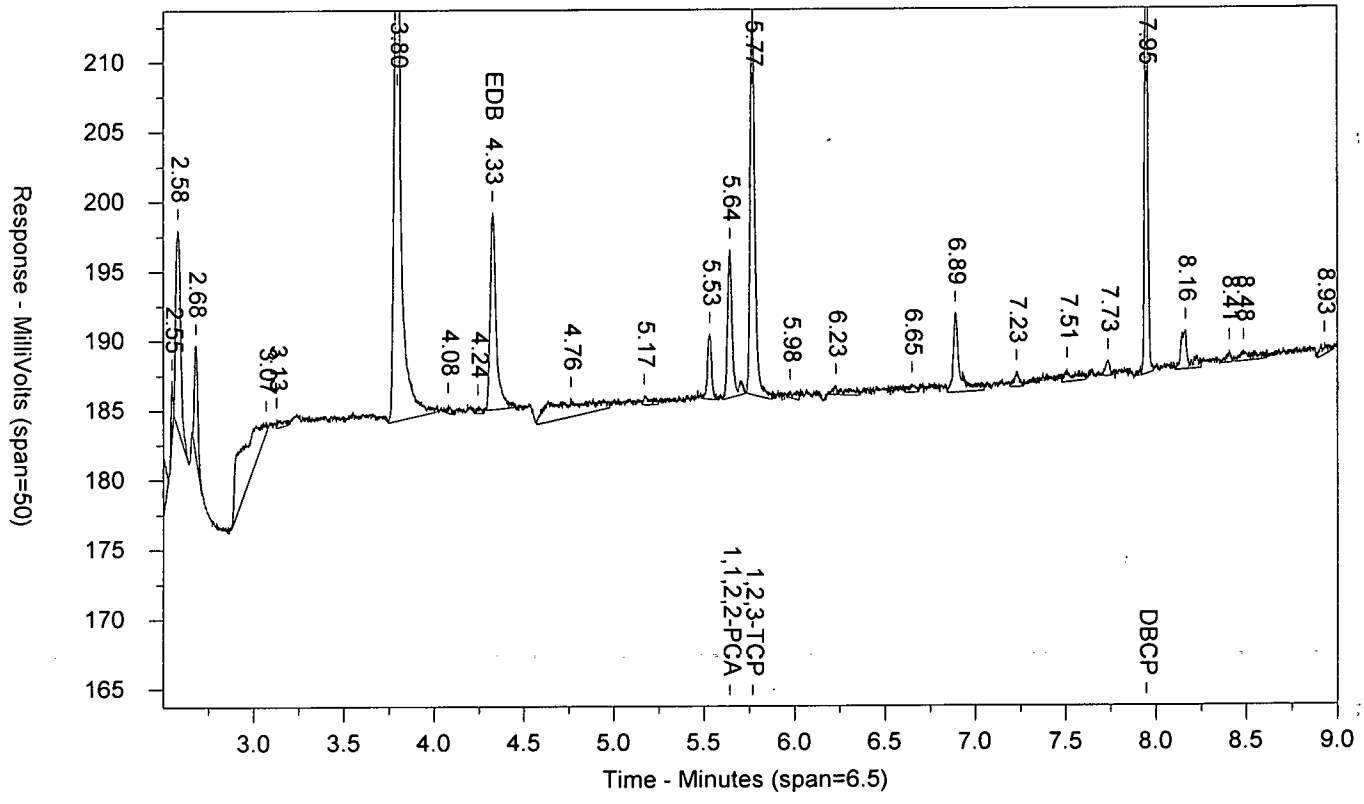


LANCASTER LABORATORIES

Sample Number: EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:12:13 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

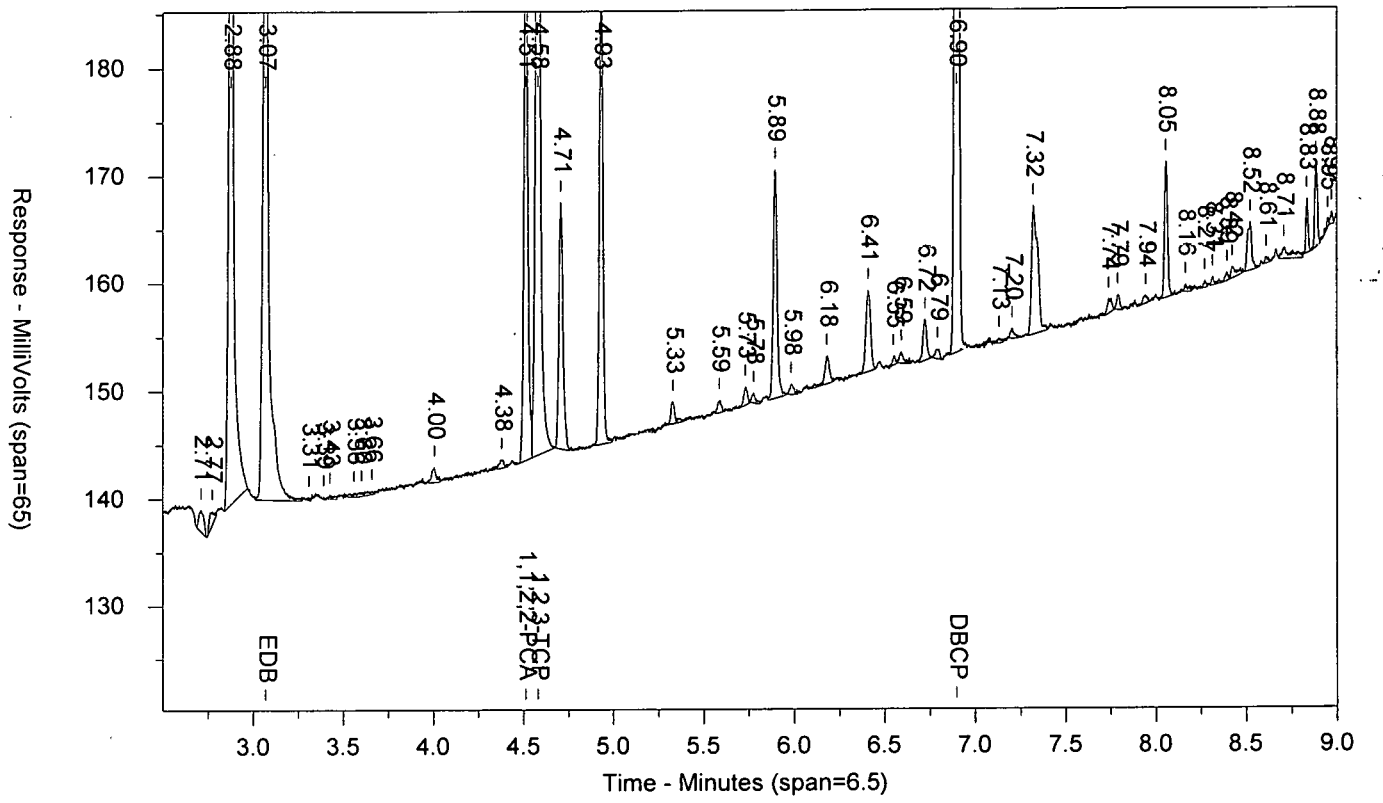
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 51364 | 2.628 | EDB | 4.327 | 14203 | 2.519 | EDB |
| 4.511 | 28210 | 1.267 | 1,1,2,2-PCA | 5.641 | 10658 | 1.354 | 1,1,2,2-PCA |
| 4.578 | 62952 | 22.383 | 1,2,3-TCP | 5.767 | 27830 | 20.965 | 1,2,3-TCP |
| 6.896 | 99853 | 2.548 | DBCP | 7.946 | 36899 | 2.475 | DBCP |

Files:
Area File: 16EDBS17202001.0009.RAW
Area File: 16EDBS17202001B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:21:14 PM
File Reported On: 7/24/2017 at 10:44:14 AM

EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.RAW

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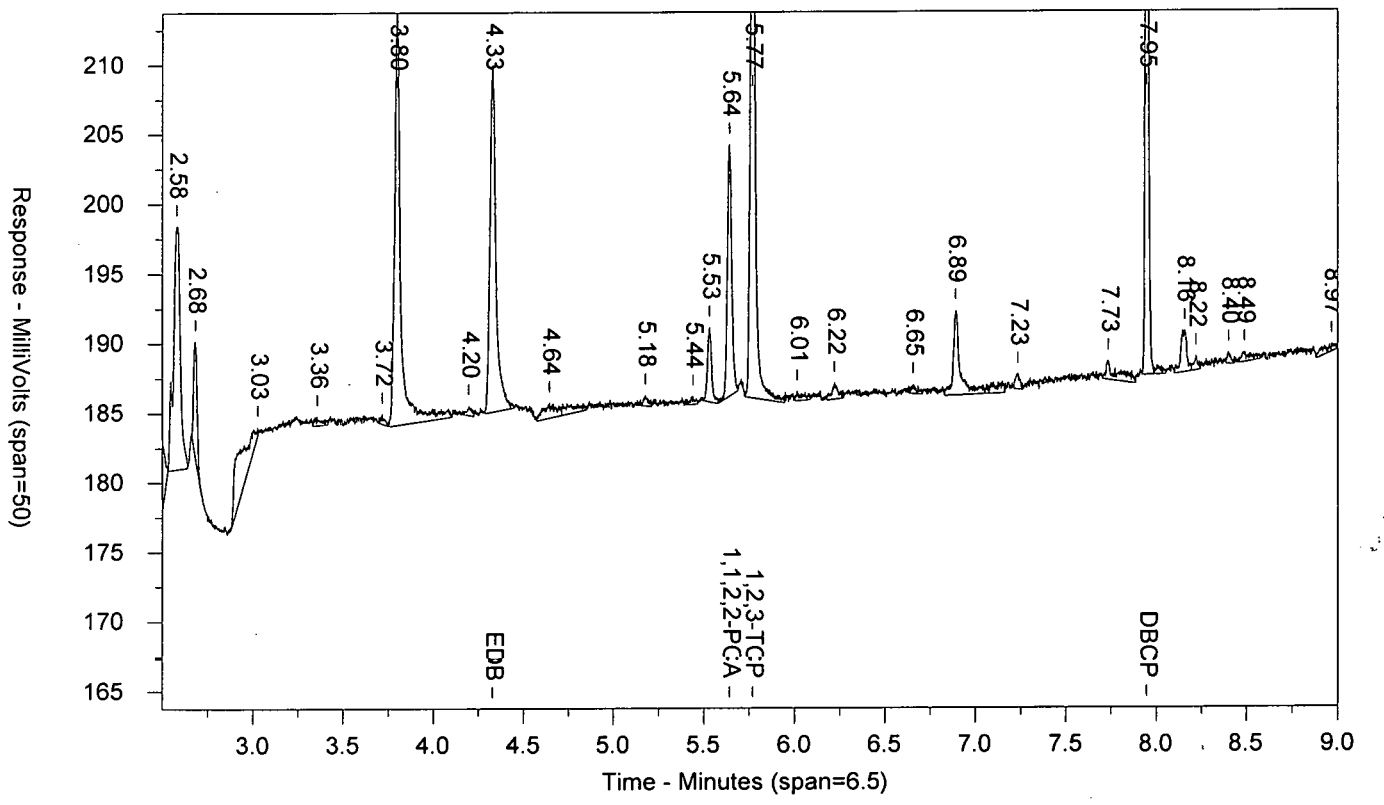


LANCASTER LABORATORIES

Sample Number: EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:27:52 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

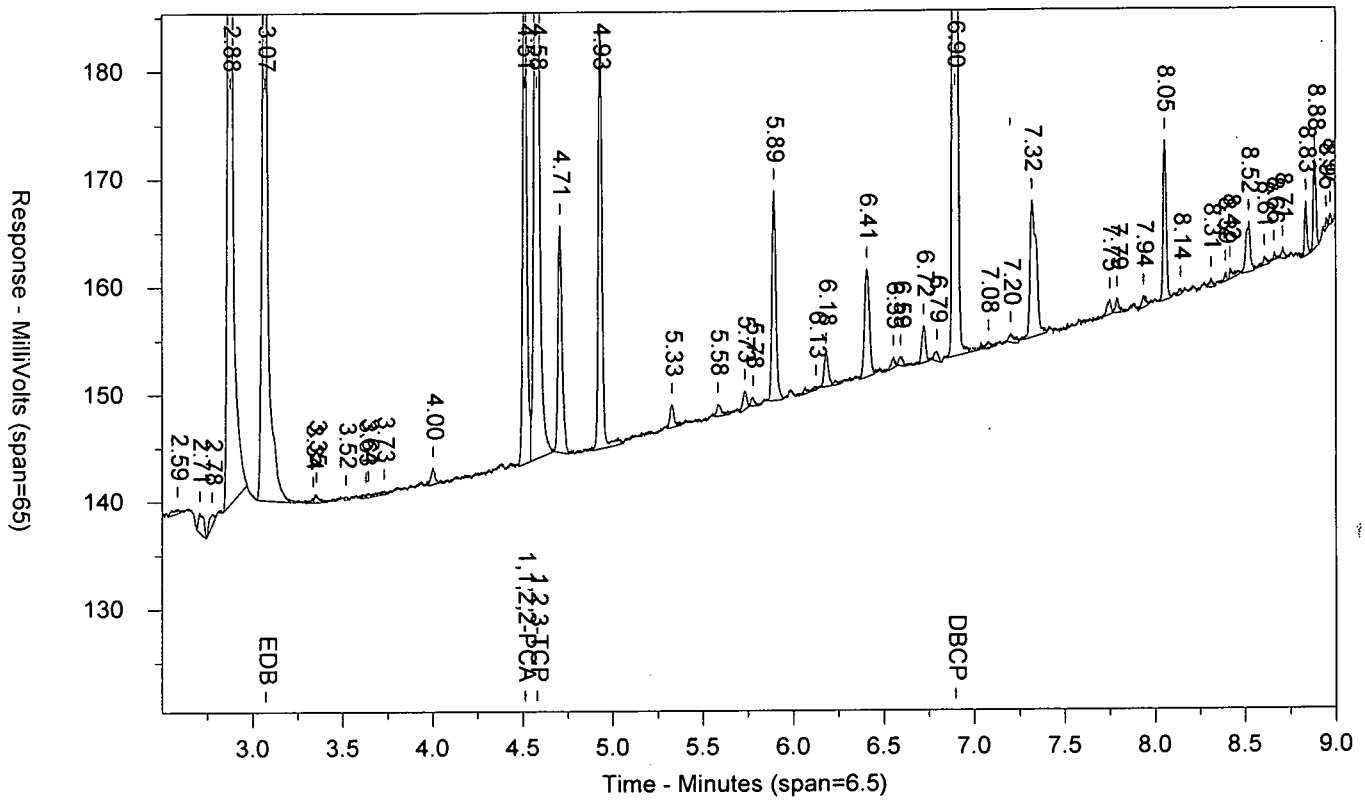
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 91868 | 4.604 | EDB | 4.329 | 24917 | 4.368 | EDB |
| 4.512 | 49780 | 2.2 | 1,1,2,2-PCA | 5.641 | 18049 | 2.296 | 1,1,2,2-PCA |
| 4.579 | 102059 | 37.347 | 1,2,3-TCP | 5.768 | 42823 | 38.187 | 1,2,3-TCP |
| 6.895 | 172607 | 4.369 | DBCP | 7.946 | 63141 | 4.208 | DBCP |

Files:
Area File: 16EDBS17202001.0010.RAW
Area File: 16EDBS17202001B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:36:53 PM
File Reported On: 7/24/2017 at 10:44:30 AM

EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.RAW

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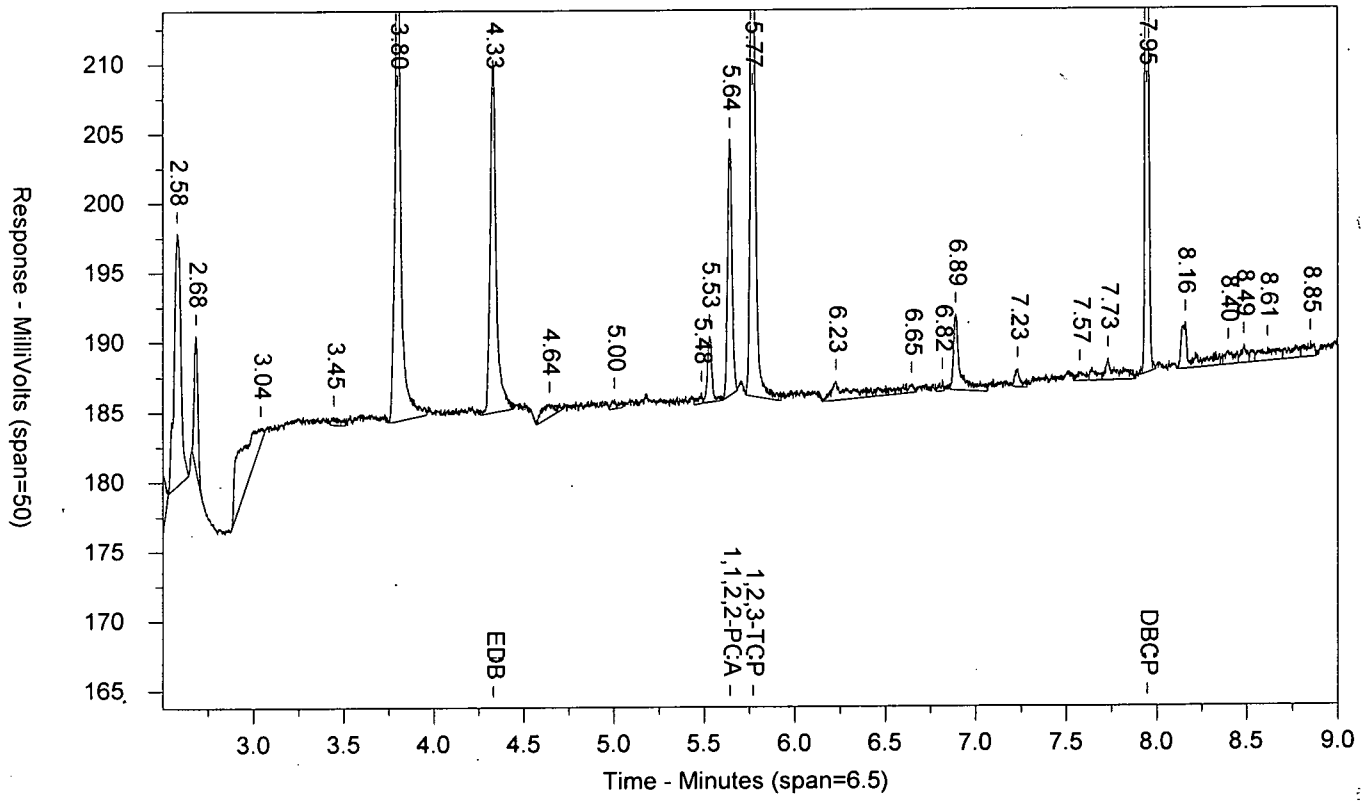


LANCASTER LABORATORIES

Sample Number: EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:43:27 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

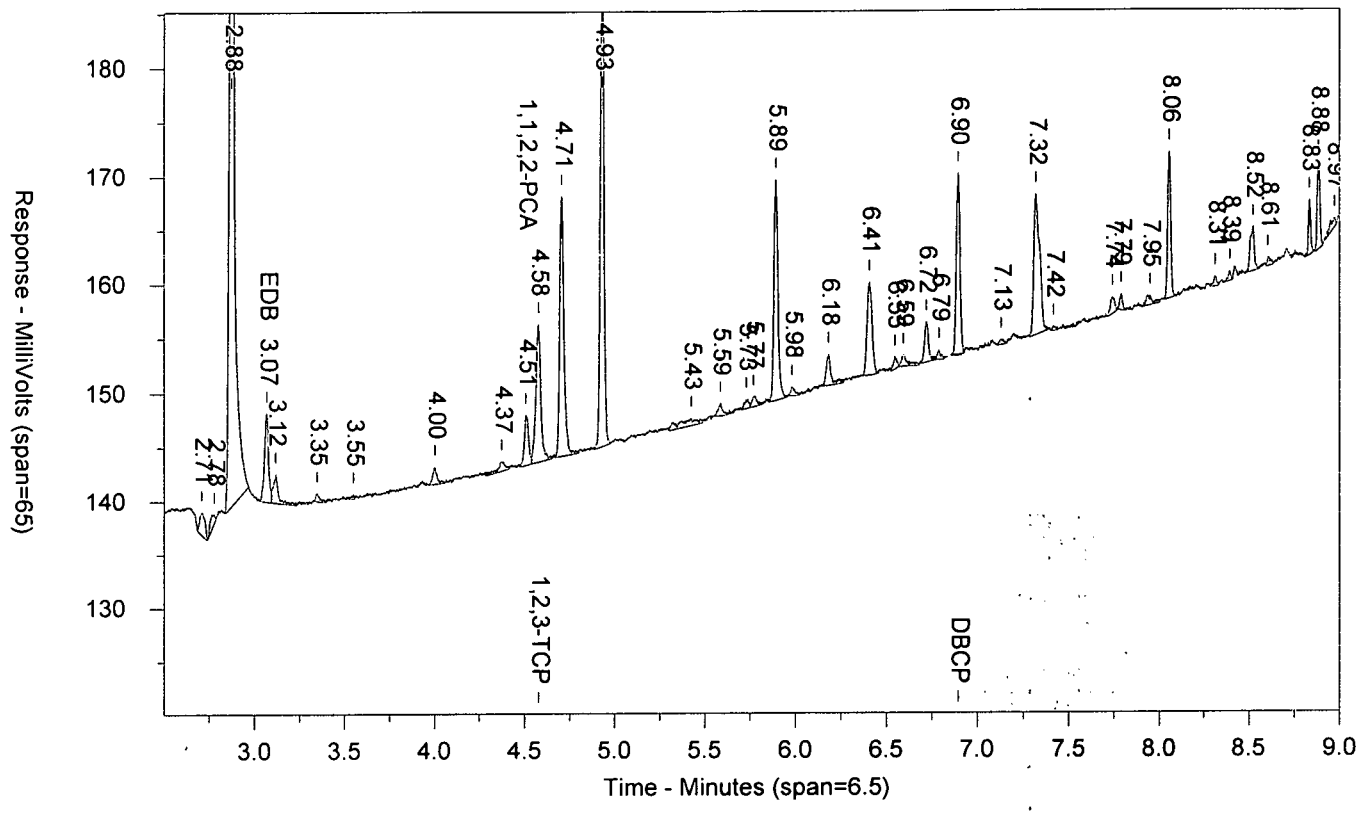
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 92950 | 4.561 | EDB | 4.331 | 25336 | 4.375 | EDB |
| 4.513 | 53020 | 2.296 | 1,1,2,2-PCA | 5.641 | 18435 | 2.295 | 1,1,2,2-PCA |
| 4.58 | 104273 | 36.659 | 1,2,3-TCP | 5.769 | 43781 | 37.288 | 1,2,3-TCP |
| 6.895 | 183008 | 4.592 | DBCP | 7.946 | 67645 | 4.471 | DBCP |

Files:
Area File: 16EDBS17202001.0011.RAW
Area File: 16EDBS17202001B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:52:27 PM
File Reported On: 7/24/2017 at 10:44:46 AM

MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0012.RAW

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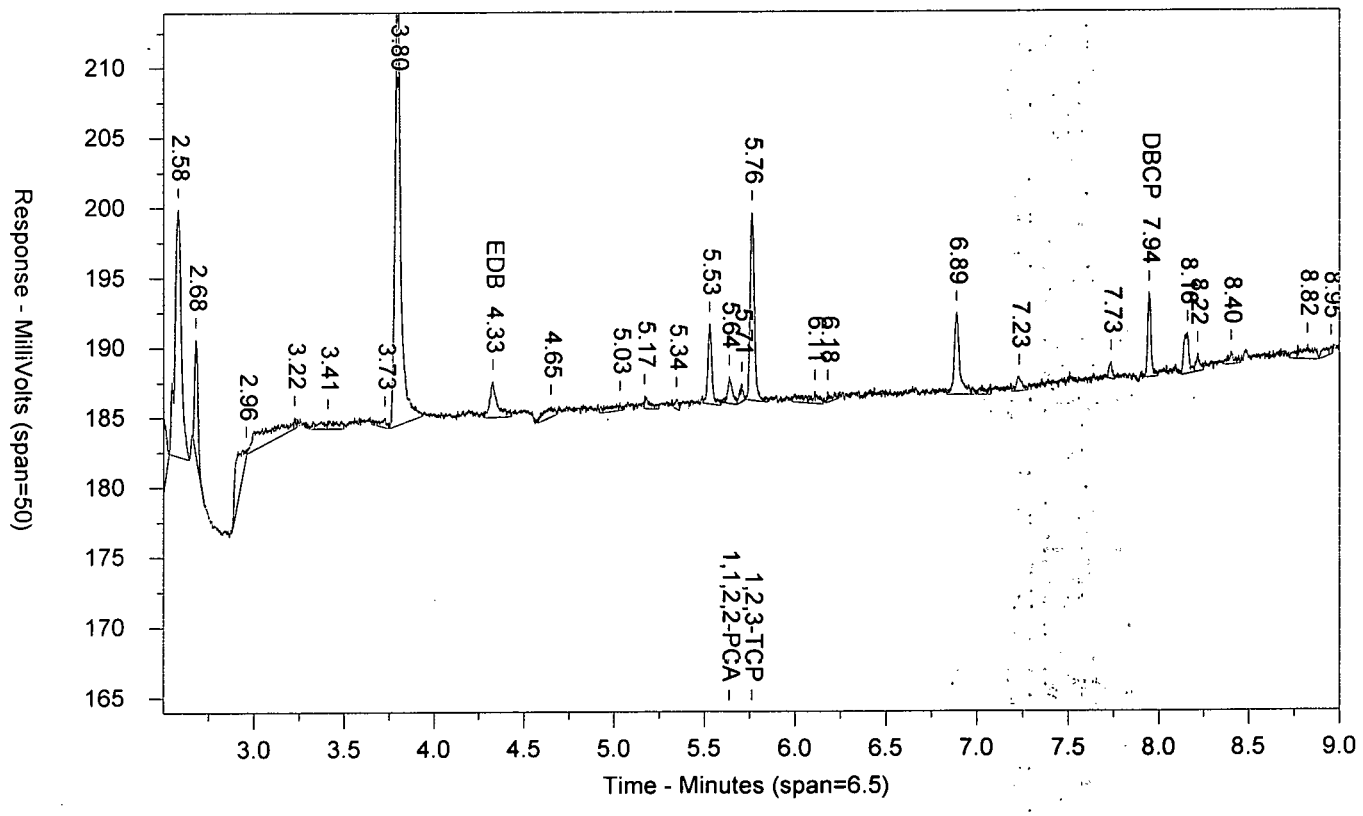


LANCASTER LABORATORIES

Sample Number: MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:59:04 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

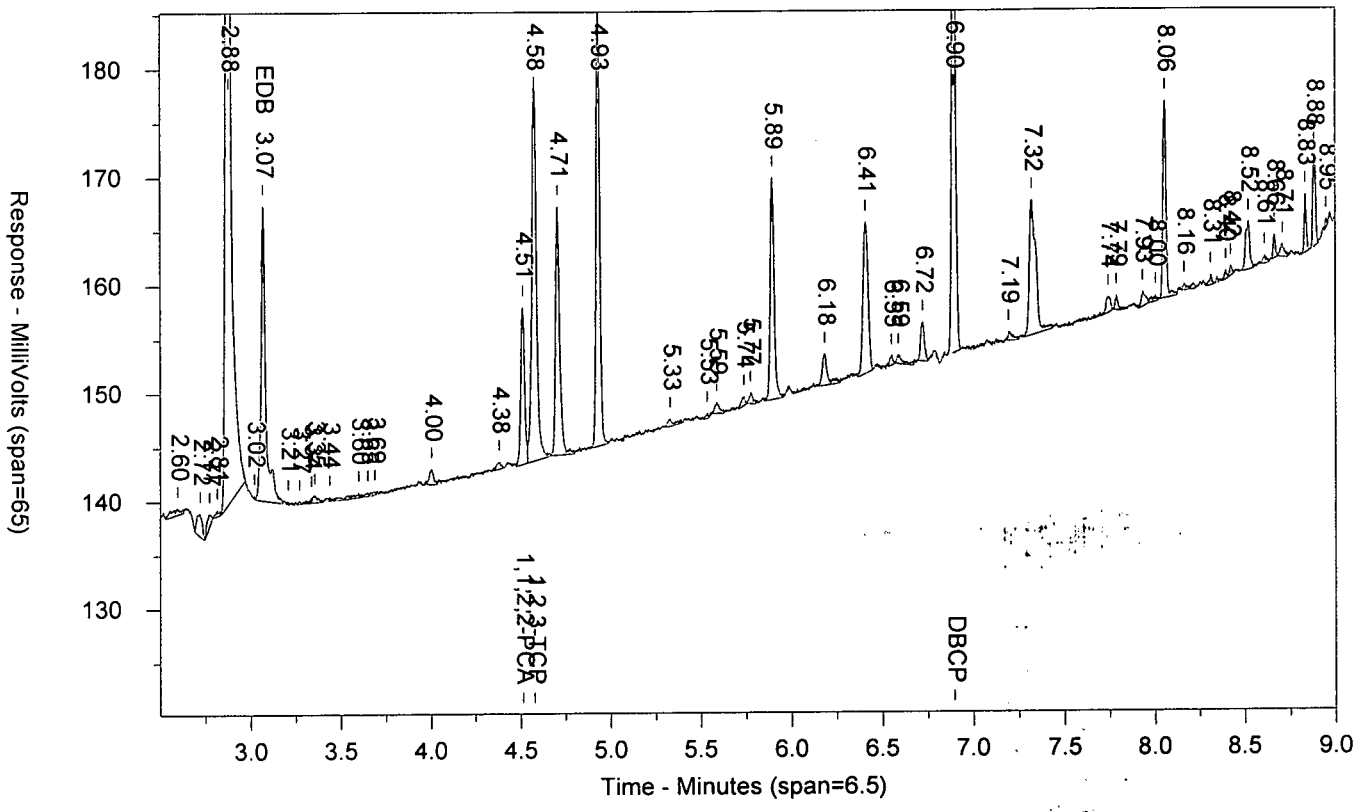
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 8227 | .399 | EDB | 4.328 | 2605 | .442 | EDB |
| 4.508 | 4705 | .201 | 1,1,2,2-PCA | 5.637 | 1947 | .207 | 1,1,2,2-PCA |
| 4.577 | 12707 | 2.8 | 1,2,3-TCP | 5.762 | 13463 | 4.124 | 1,2,3-TCP |
| 6.895 | 16774 | .413 | DBCP | 7.944 | 6091 | .394 | DBCP |

Files:
Area File: 16EDBS17202001.0012.RAW
Area File: 16EDBS17202001B.0012.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:08:05 PM
File Reported On: 7/24/2017 at 10:53:41 AM

EDB_31724DS AAEDB_3AA CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0013.RAW

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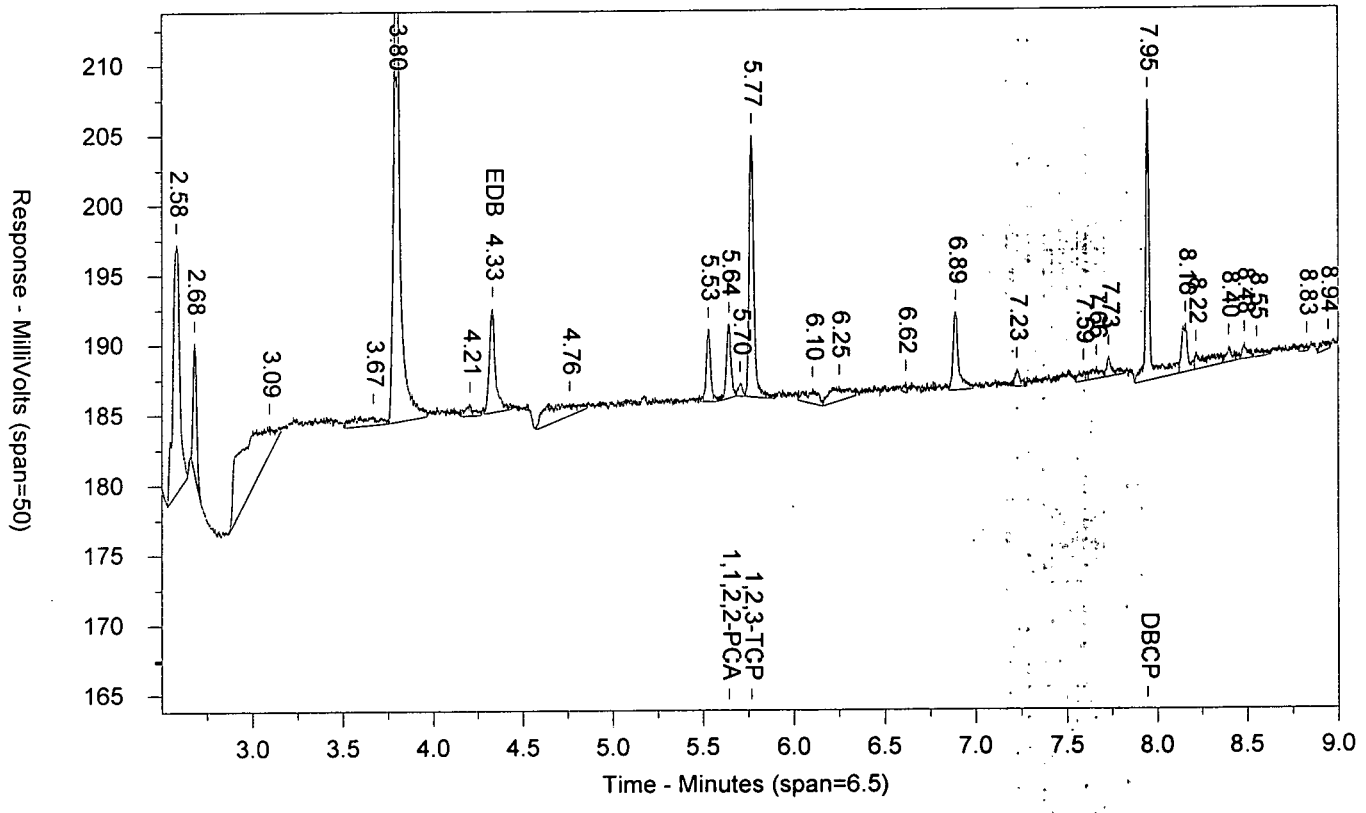


LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 5:14:46 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

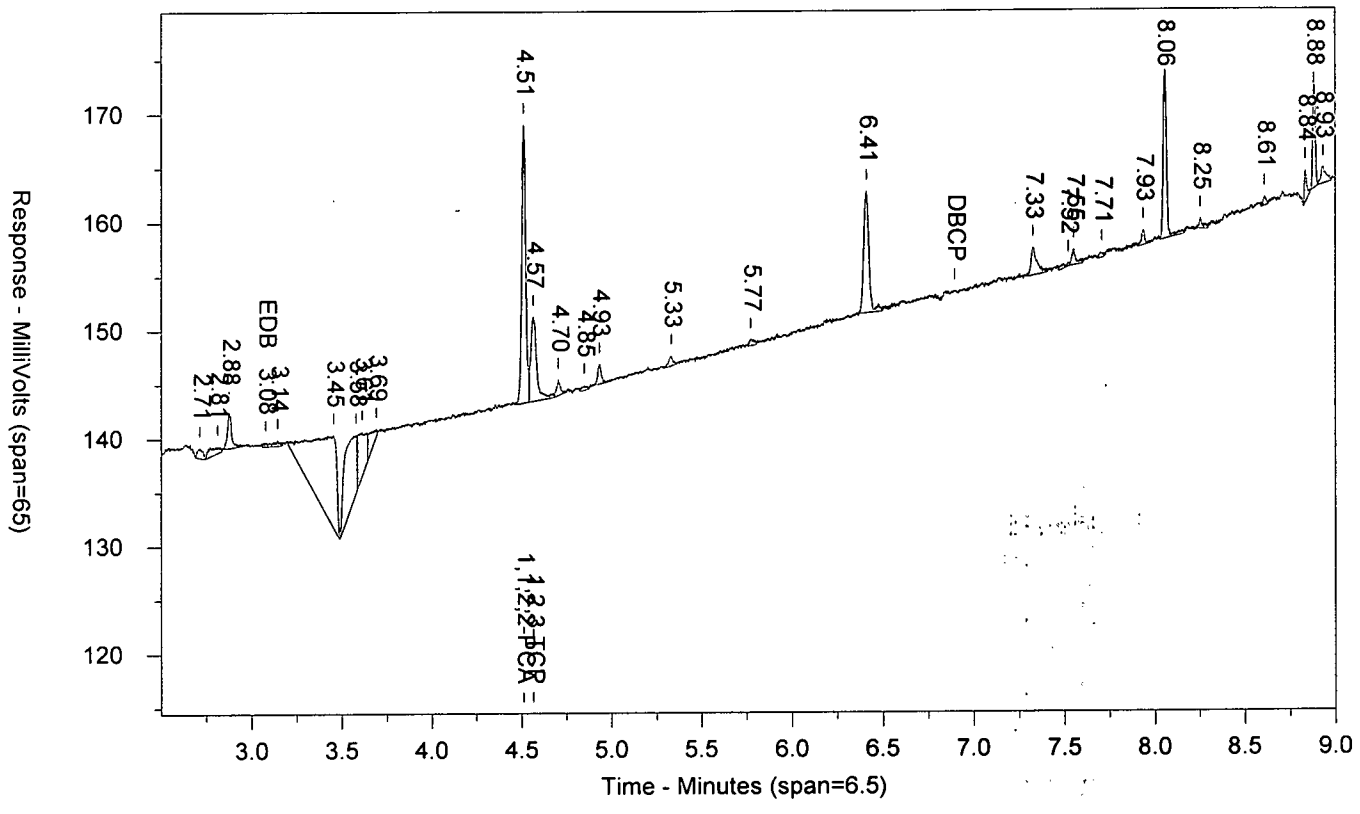
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 27334 | 1.326 | EDB | 4.332 | 7493 | 1.272 | EDB |
| 4.513 | 14601 | .622 | 1,1,2,2-PCA | 5.641 | 5326 | .616 | 1,1,2,2-PCA |
| 4.578 | 34941 | 10.322 | 1,2,3-TCP | 5.765 | 18757 | 9.484 | 1,2,3-TCP |
| 6.896 | 53176 | 1.309 | DBCP | 7.946 | 20164 | 1.305 | DBCP |

Files:
Area File: 16EDBS17202001.0013.RAW
Area File: 16EDBS17202001B.0013.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:23:47 PM
File Reported On: 7/24/2017 at 10:53:52 AM

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0014.RAW

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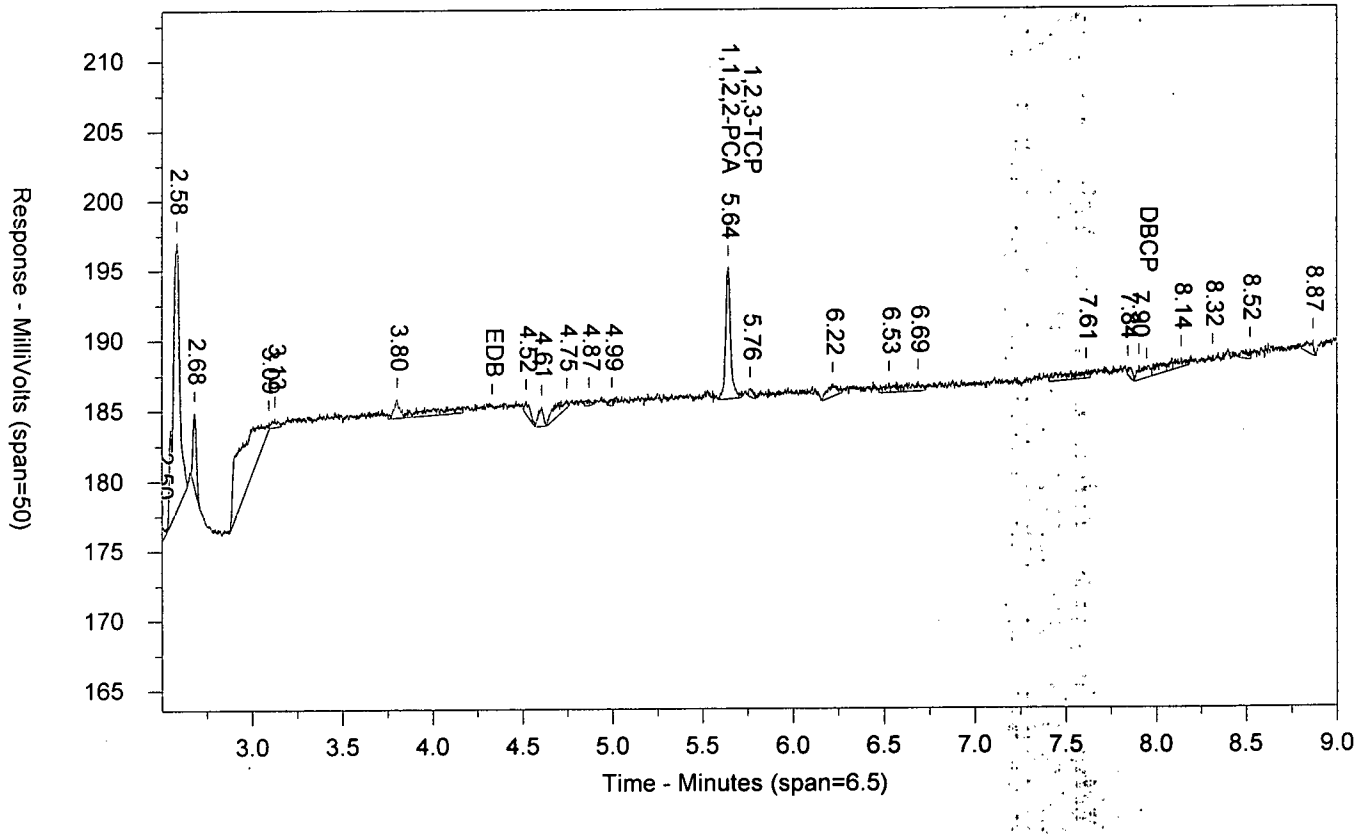


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 5:30:25 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

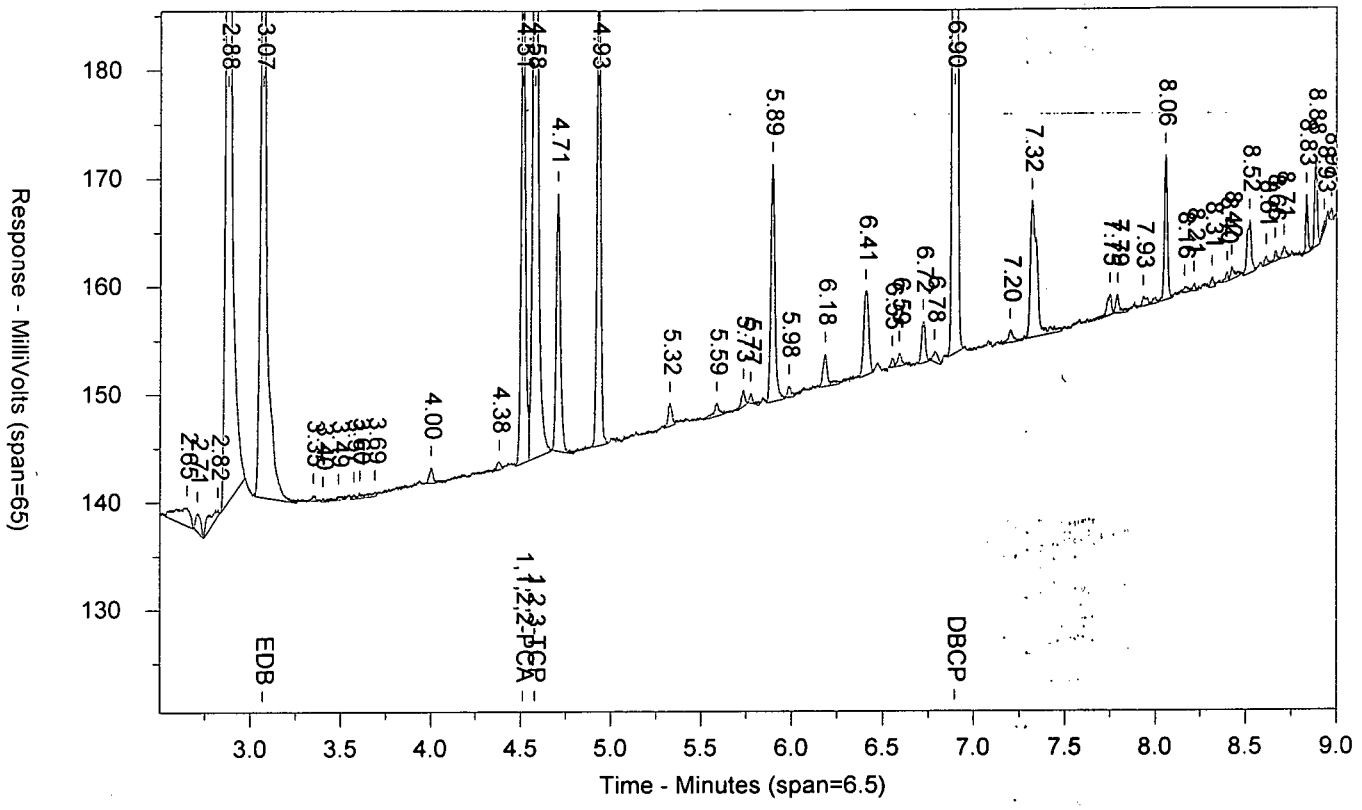
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.077 | 465 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25794 | .063 | 1,1,2,2-PCA | 5.642 | 9419 | .063 | 1,1,2,2-PCA |
| 4.565 | 7915 | .067 | 1,2,3-TCP | 5.764 | 590 | -.509 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0014.RAW
Area File: 16EDBS17202001B.0014.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:39:27 PM
File Reported On: 7/24/2017 at 10:54:01 AM

EDB_51724DS LSEDB_5LS CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0025.RAW

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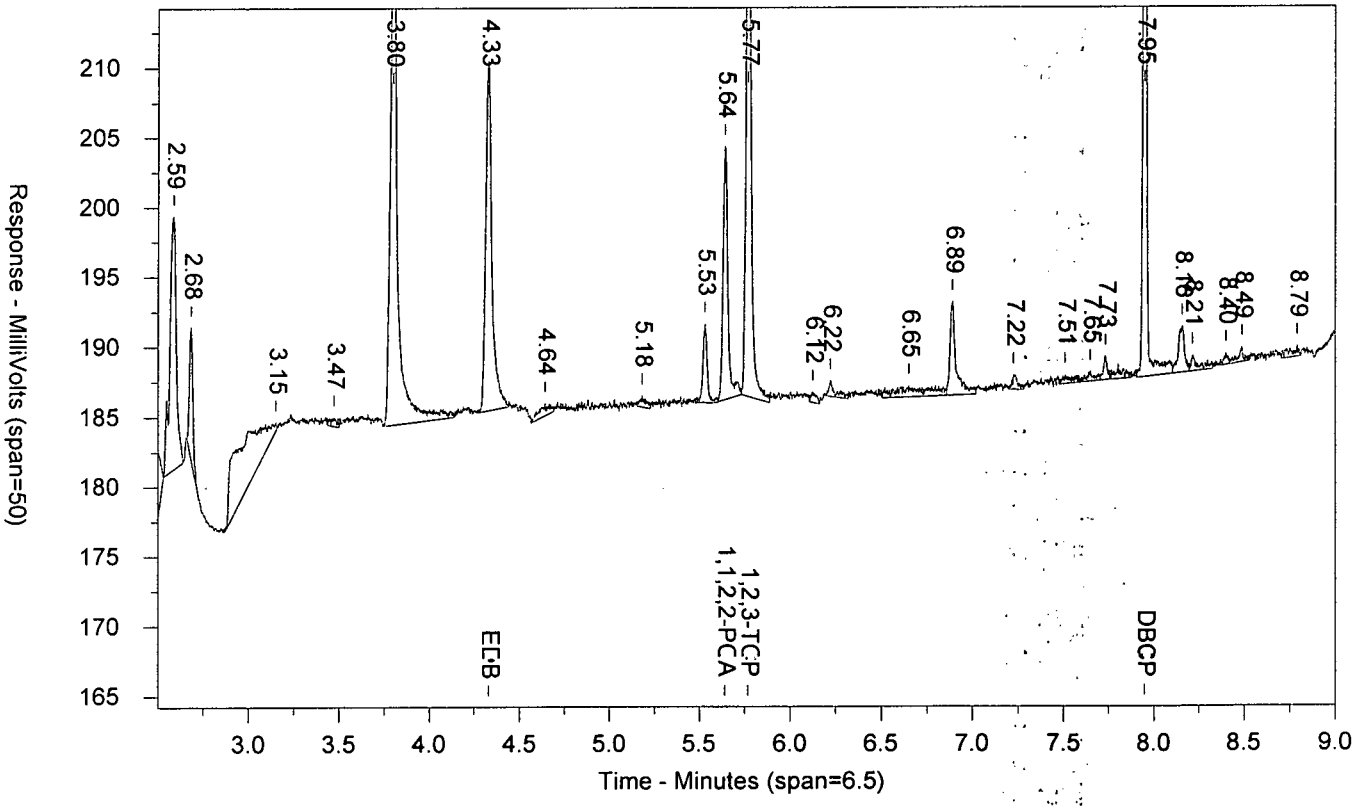


LANCASTER LABORATORIES

Sample Number: EDB_51724DS LSEDB_5LS CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 8:22:17 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

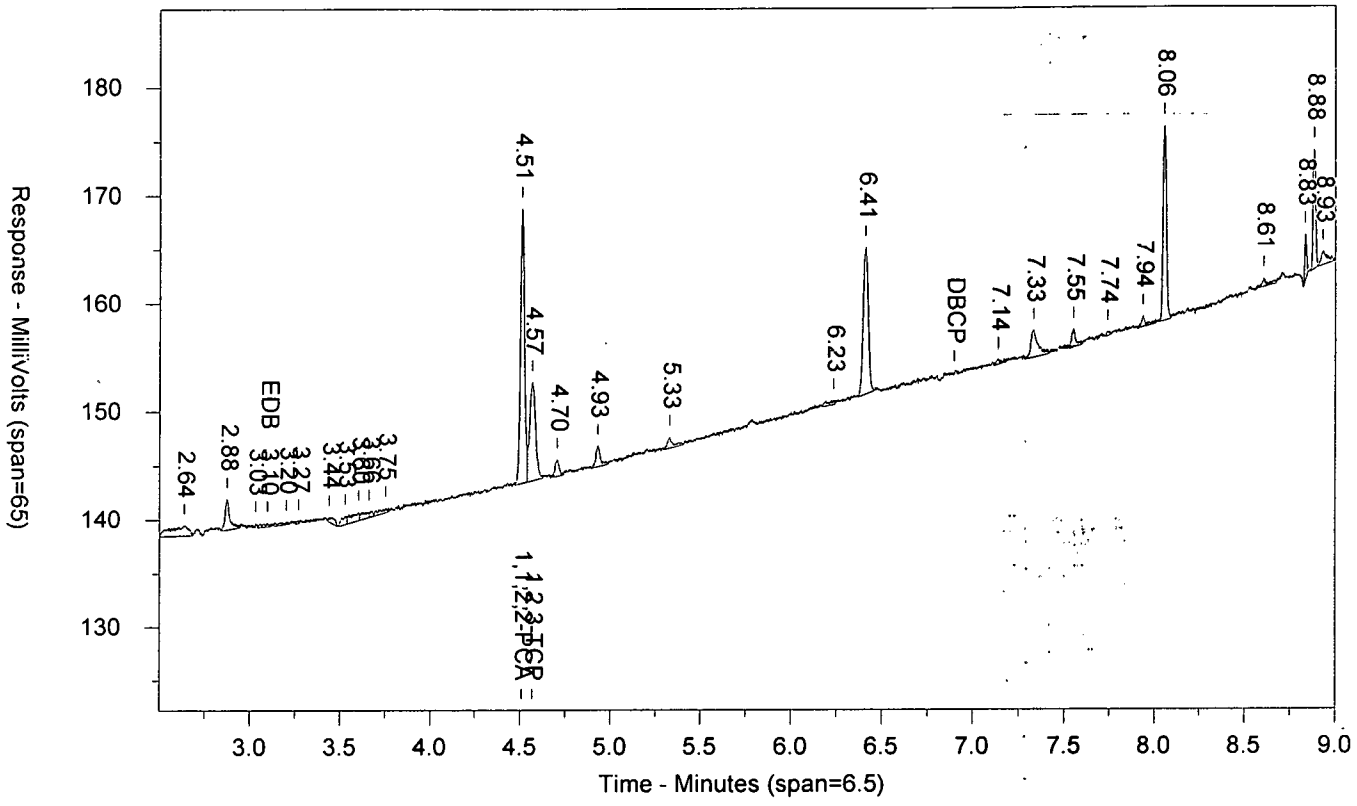
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 91403 | 4.434 | EDB | 4.329 | 25137 | 4.266 | EDB |
| 4.511 | 48710 | 2.076 | 1,1,2,2-PCA | 5.64 | 18183 | 2.171 | 1,1,2,2-PCA |
| 4.578 | 99451 | 32.145 | 1,2,3-TCP | 5.767 | 43011 | 34.043 | 1,2,3-TCP |
| 6.896 | 177937 | 4.379 | DBCP | 7.946 | 66694 | 4.317 | DBCP |

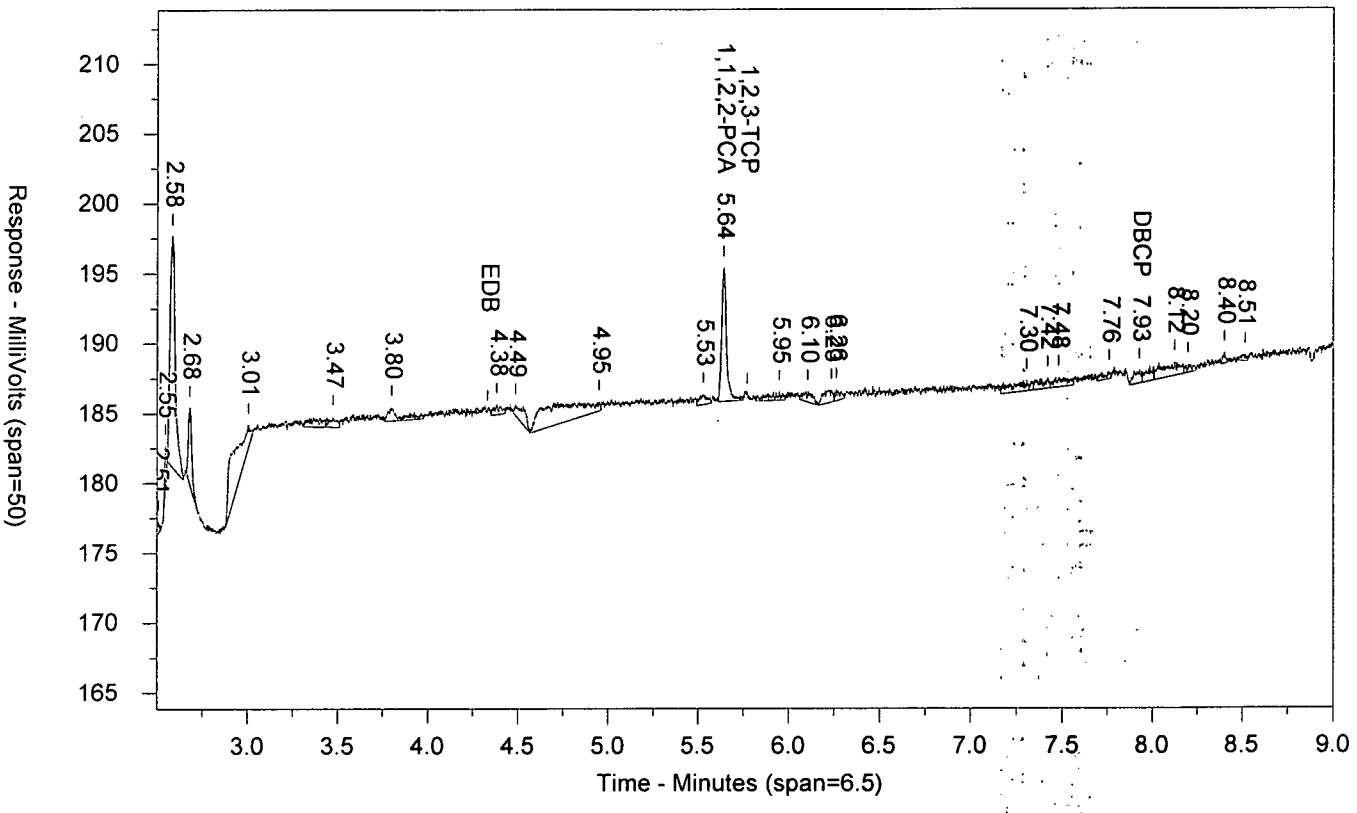
Files:
Area File: 16EDBS17202001.0025.RAW
Area File: 16EDBS17202001B.0025.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:31:18 PM
File Reported On: 7/24/2017 at 10:56:08 AM

EIBKX1724C SCPIBLKSC PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0026.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0026.RAW



LANCASTER LABORATORIES

Sample Number: EIBKX1724C SCPIBLKSC PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 8:37:50 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

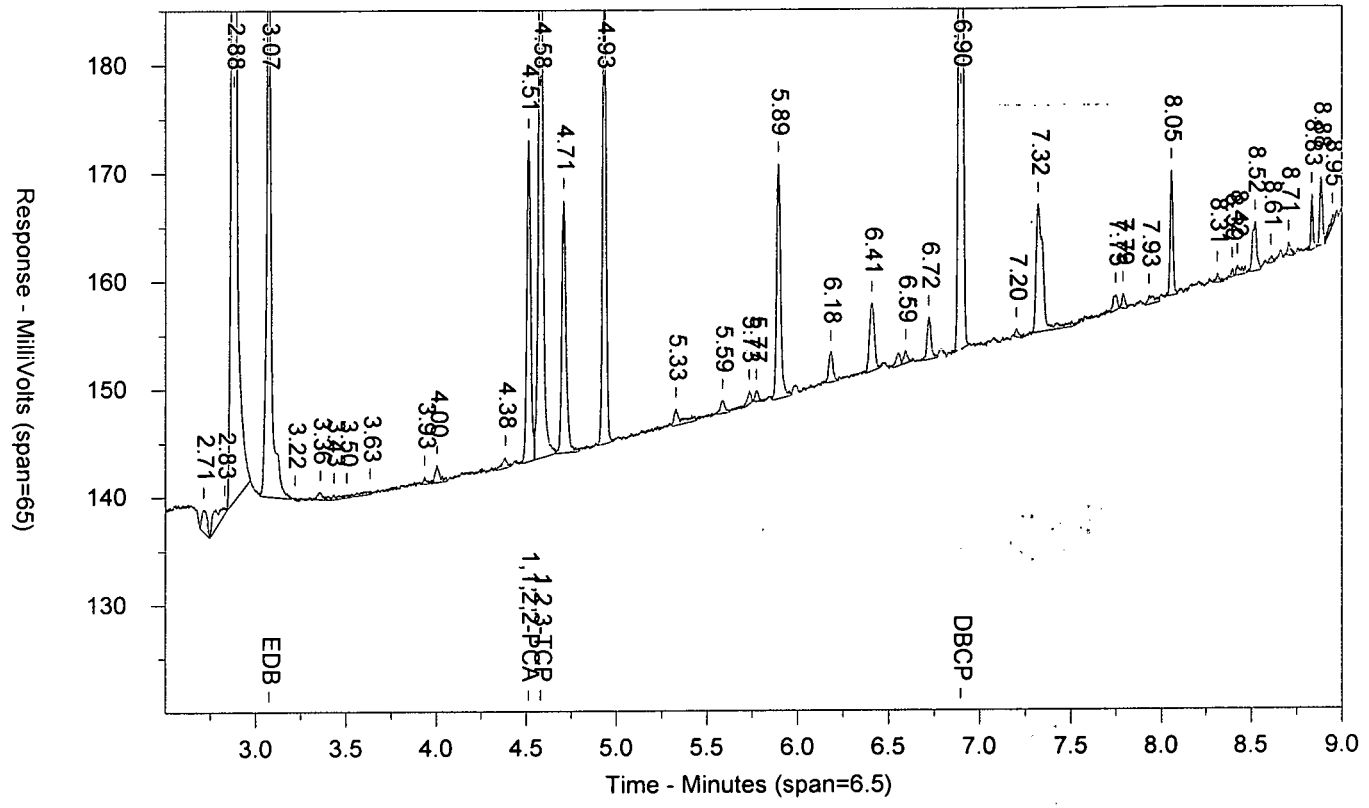
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.098 | 383 | .001 | EDB | | 0 | | EDB |
| 4.51 | 25471 | .062 | 1,1,2,2-PCA | 5.64 | 9566 | .065 | 1,1,2,2-PCA |
| 4.568 | 9137 | .091 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |
| | 0 | | DBCP | 7.927 | 949 | .004 | DBCP |

Files:
Area File: 16EDBS17202001.0026.RAW
Area File: 16EDBS17202001B.0026.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:46:51 PM
File Reported On: 7/24/2017 at 10:56:18 AM

EDB_41724DS QKEDB_4QK CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0037.RAW

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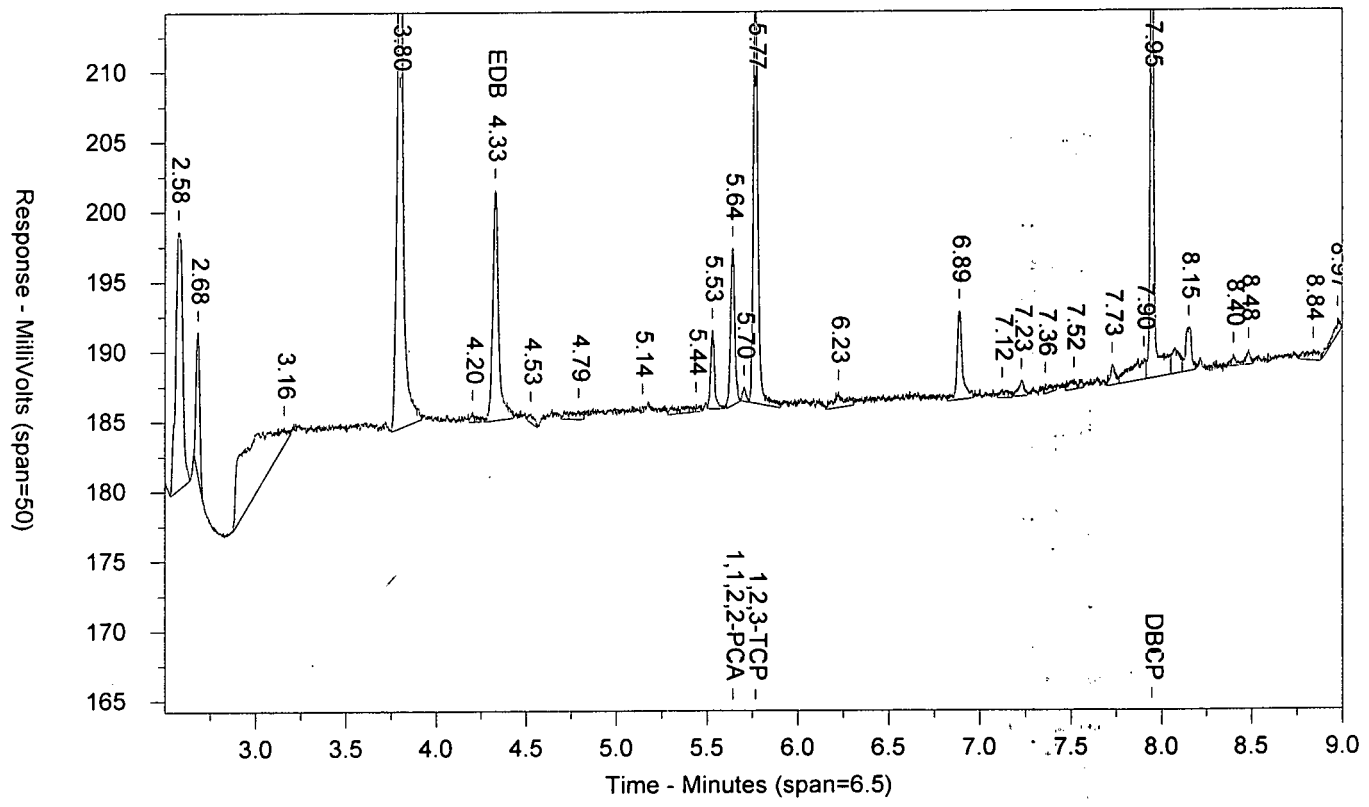


LANCASTER LABORATORIES

Sample Number: EDB_41724DS QKEDB_4QK CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 11:29:26 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

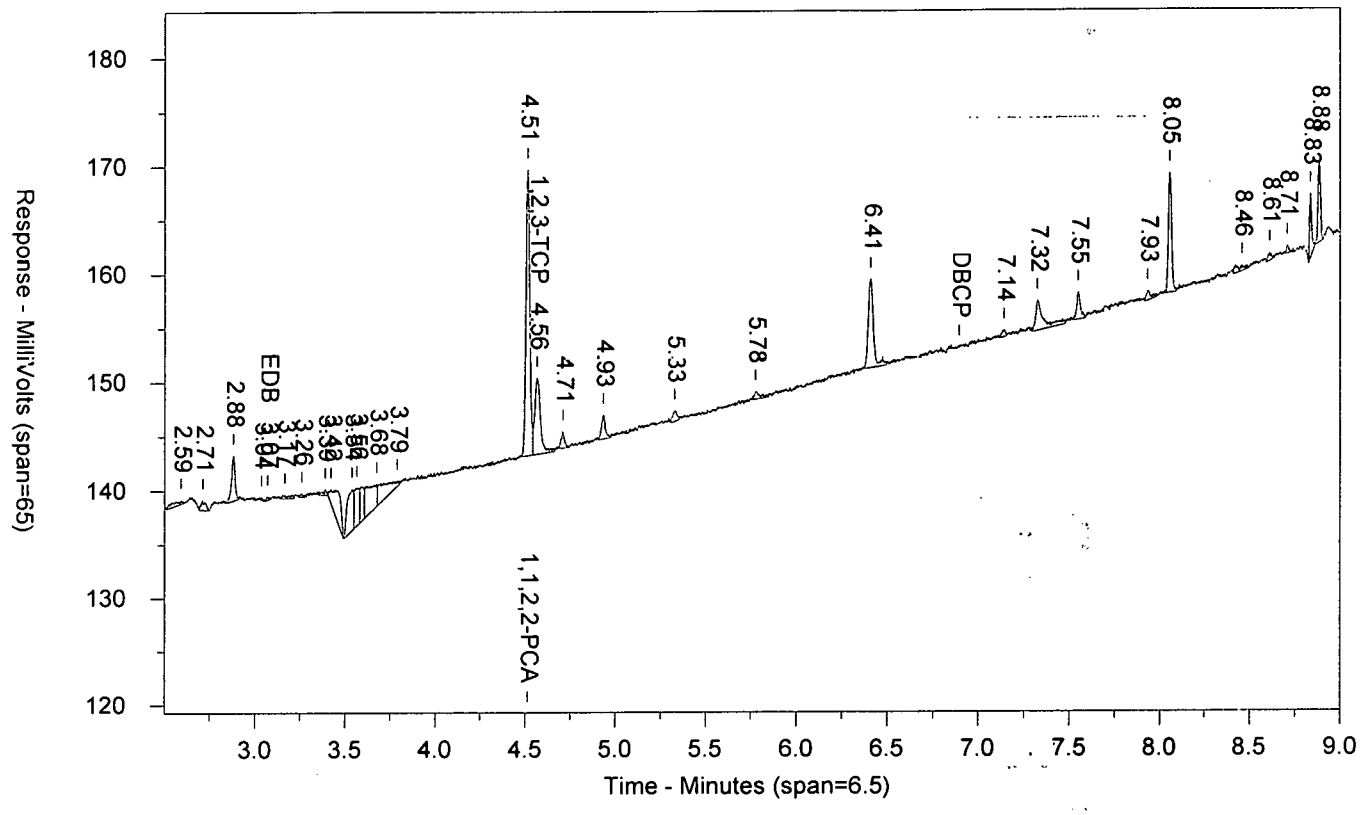
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.073 | 58501 | 2.838 | EDB | 4.33 | 16488 | 2.798 | EDB |
| 4.513 | 29839 | 1.272 | 1,1,2,2-PCA | 5.642 | 11232 | 1.33 | 1,1,2,2-PCA |
| 4.58 | 63220 | 19.888 | 1,2,3-TCP | 5.768 | 29261 | 20.121 | 1,2,3-TCP |
| 6.896 | 109308 | 2.69 | DBCP | 7.946 | 42789 | 2.77 | DBCP |

Files:
Area File: 16EDBS17202001.0037.RAW
Area File: 16EDBS17202001B.0037.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 11:38:27 PM
File Reported On: 7/24/2017 at 10:58:29 AM

EIBKX1724C SDPIBLKSD PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0038.RAW

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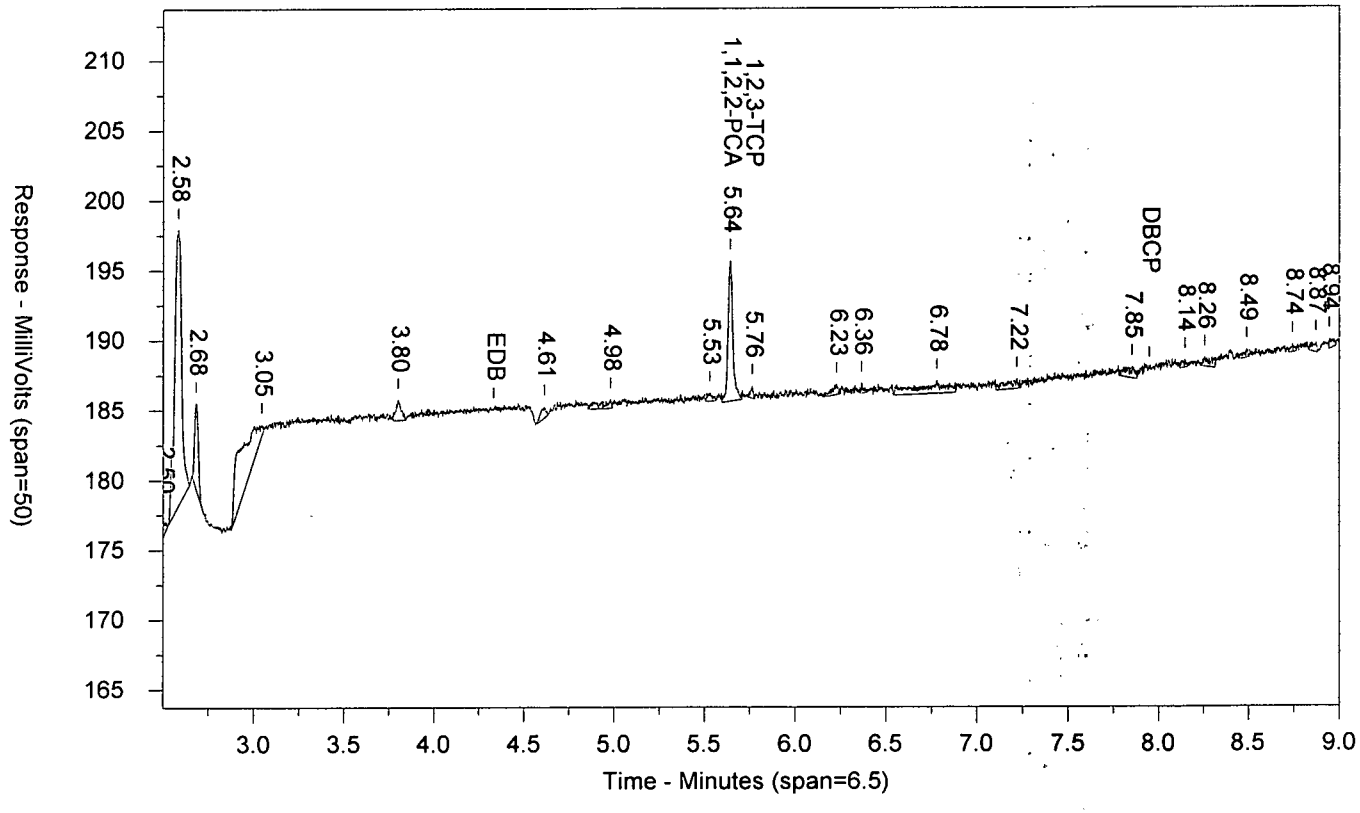


LANCASTER LABORATORIES

Sample Number: EIBKX1724C SDPIBLKSD PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 11:44:59 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

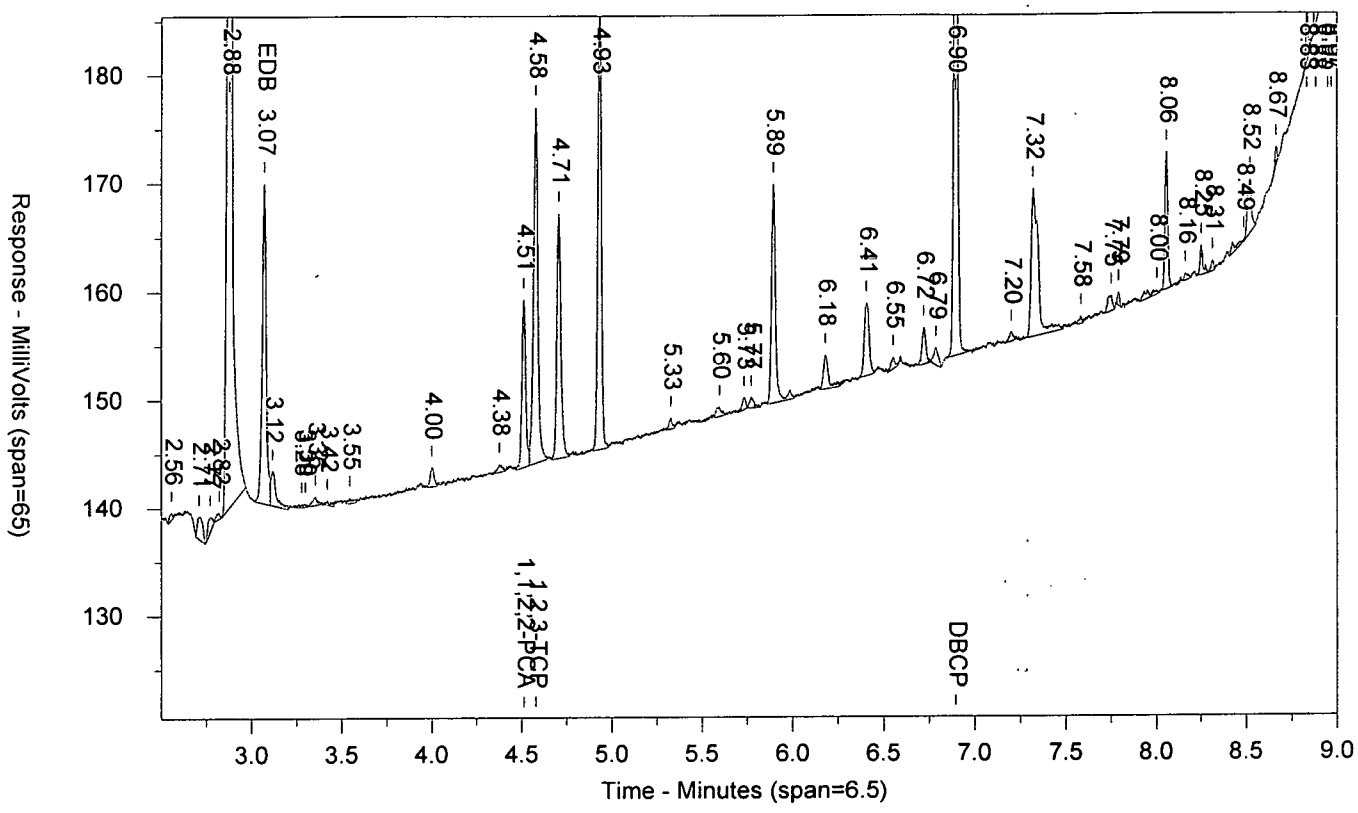
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 360 | .001 | EDB | | 0 | | EDB |
| 4.513 | 26524 | .065 | 1,1,2,2-PCA | 5.642 | 10066 | .068 | 1,1,2,2-PCA |
| 4.564 | 7094 | .051 | 1,2,3-TCP | 5.763 | 937 | -.489 | 1,2,3-TCP |

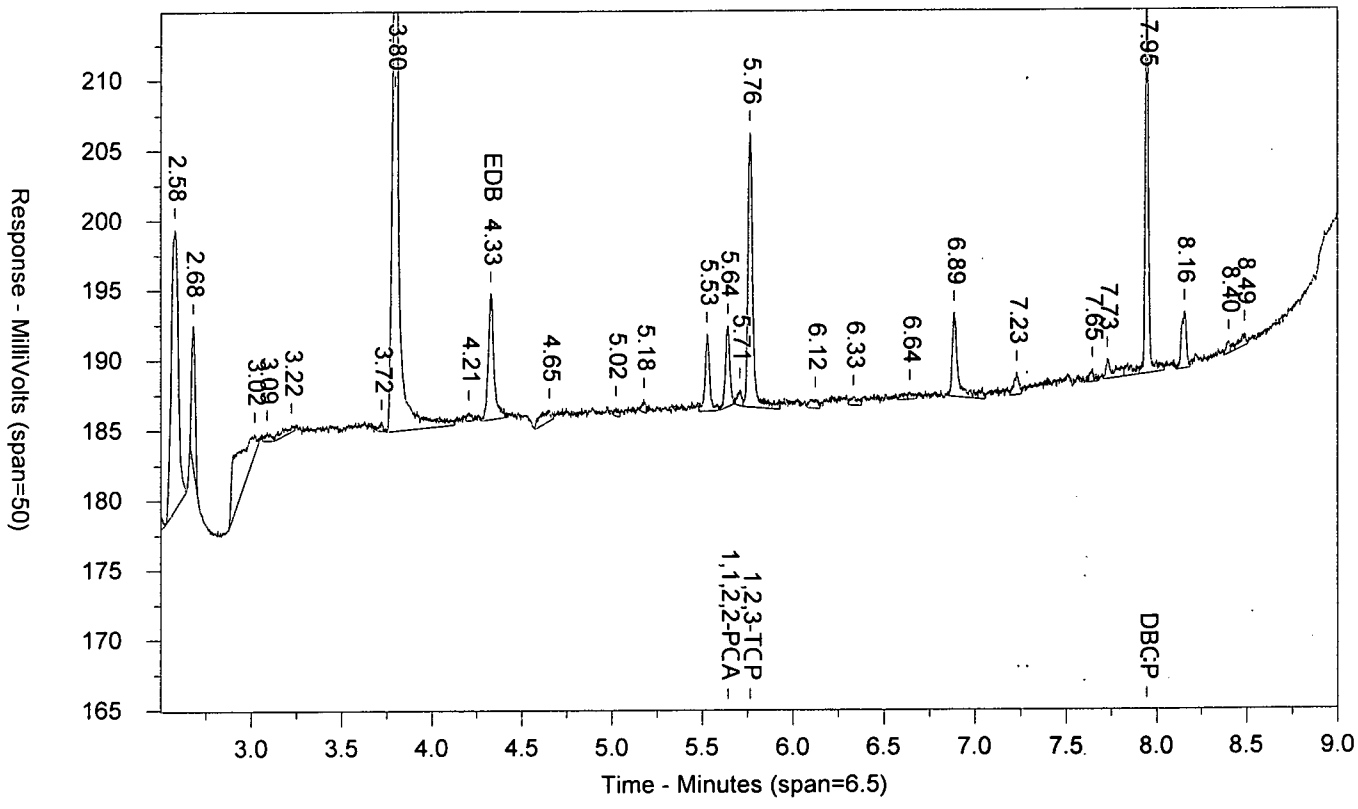
Files:
Area File: 16EDBS17202001.0038.RAW
Area File: 16EDBS17202001B.0038.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 11:54:02 PM
File Reported On: 7/24/2017 at 10:58:39 AM

EDB_31724DS PBEDB_3PB CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0049.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0049.RAW



LANCASTER LABORATORIES

Sample Number: EDB_31724DS PBEDB_3PB CCAL 1720199999 SW-846 8011
Injected On: 7/22/2017 2:36:41 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

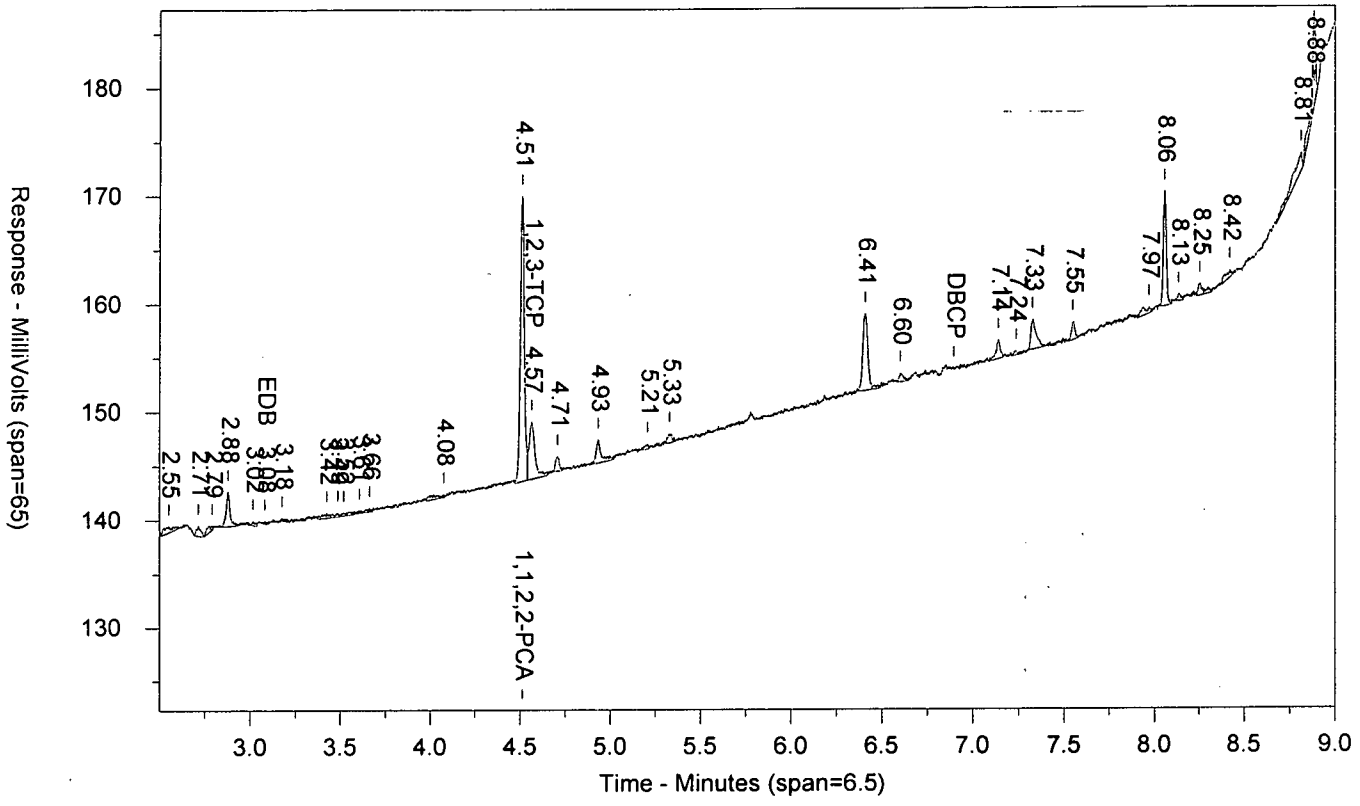
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 29622 | 1.437 | EDB | 4.328 | 9023 | 1.531 | EDB |
| 4.514 | 15581 | .664 | 1,1,2,2-PCA | 5.642 | 5796 | .673 | 1,1,2,2-PCA |
| 4.58 | 32980 | 9.658 | 1,2,3-TCP | 5.764 | 19646 | 10.384 | 1,2,3-TCP |
| 6.896 | 66898 | 1.646 | DBCP | 7.945 | 27247 | 1.764 | DBCP |

Files:
Area File: 16EDBS17202001.0049.RAW
Area File: 16EDBS17202001B.0049.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 2:45:42 AM
File Reported On: 7/24/2017 at 11:00:36 AM

EIBKX1724C SEPIBLKSE PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0050.RAW

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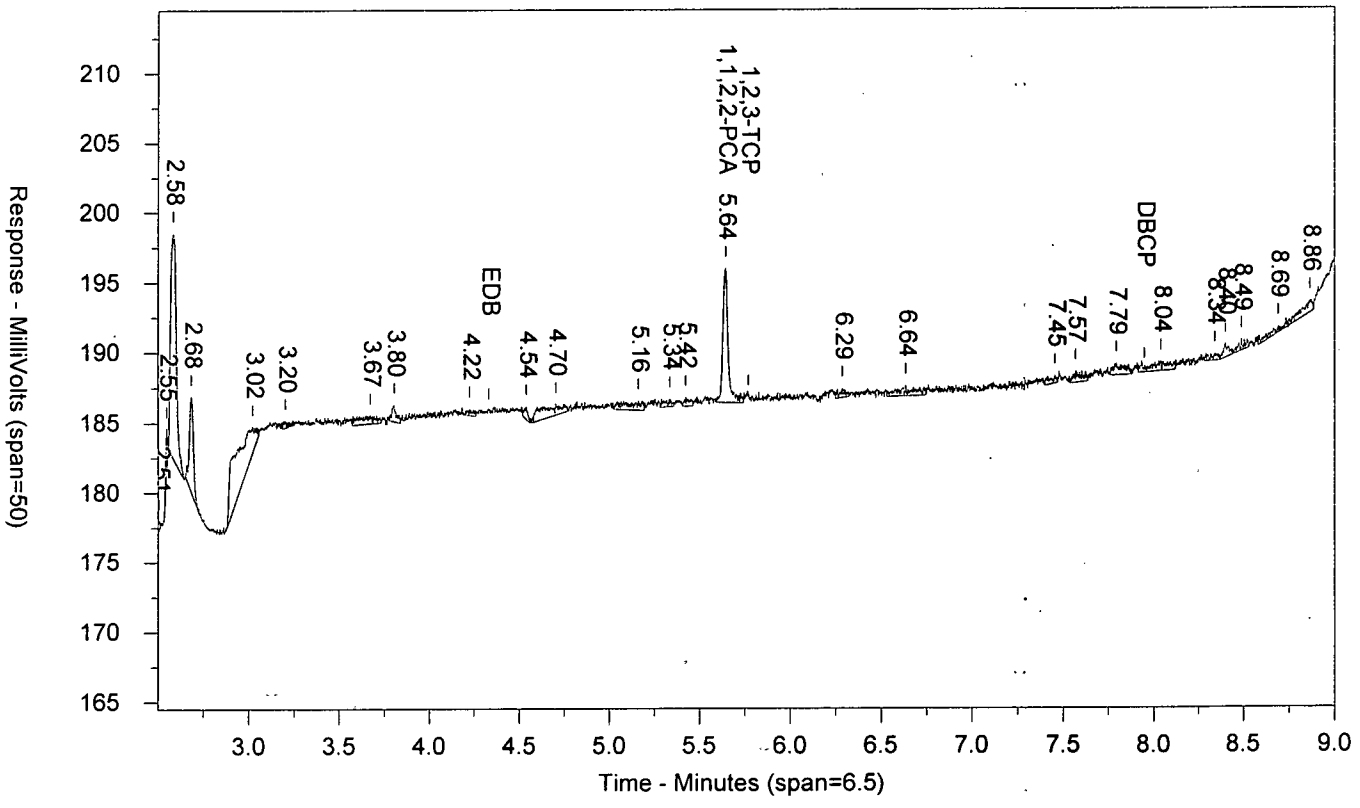


LANCASTER LABORATORIES

Sample Number: EIBKX1724C SEPIBLKSE PIBLK1720199999 SW-846 8011
Injected On: 7/22/2017 2:52:14 AM Sample Weight: .35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

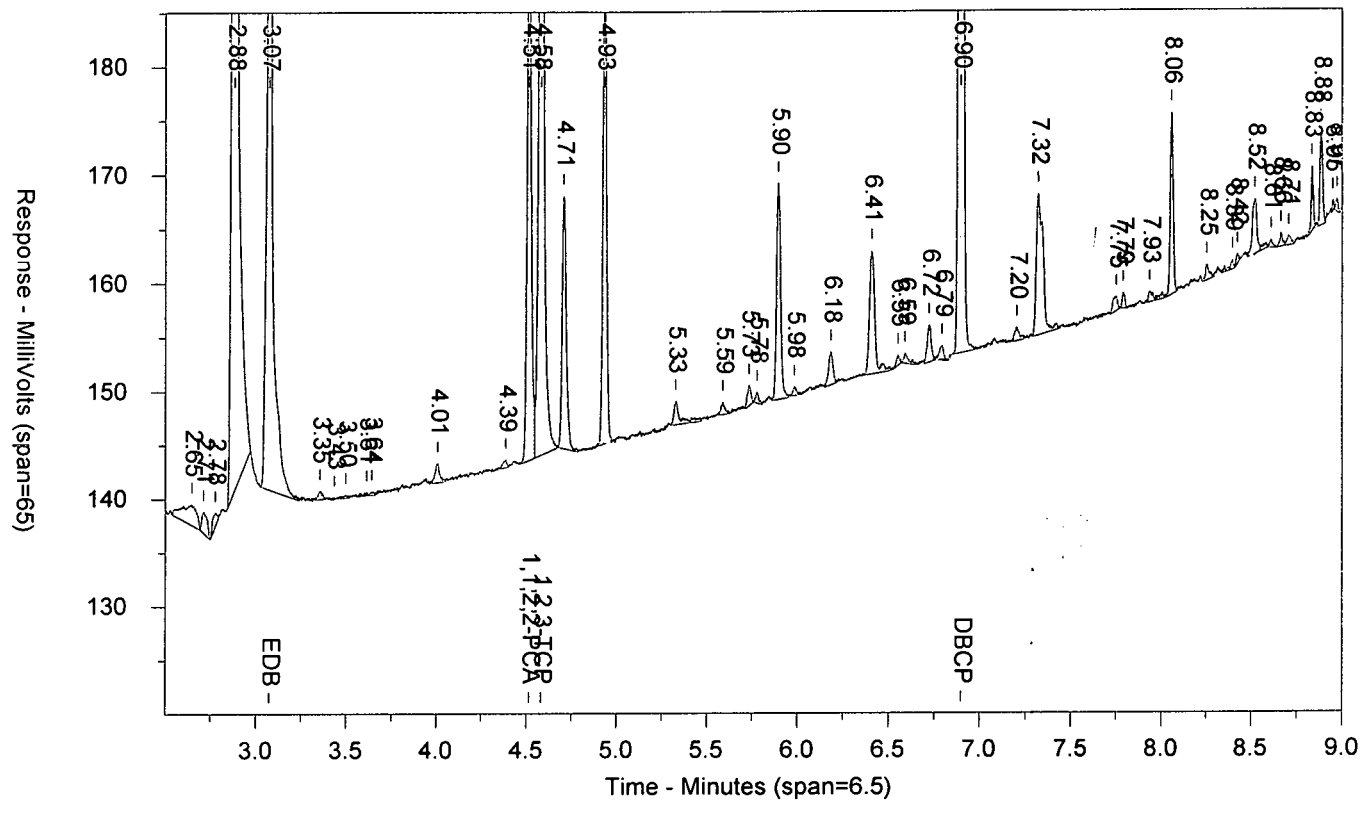
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.082 | 311 | .001 | EDB | | 0 | | EDB |
| 4.513 | 26464 | .064 | 1,1,2,2-PCA | 5.642 | 9592 | .065 | 1,1,2,2-PCA |
| 4.565 | 5344 | .018 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0050.RAW
Area File: 16EDBS17202001B.0050.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 3:01:15 AM
File Reported On: 7/24/2017 at 11:00:58 AM

EDB_51724DS LTEDB_5LT CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0061.RAW

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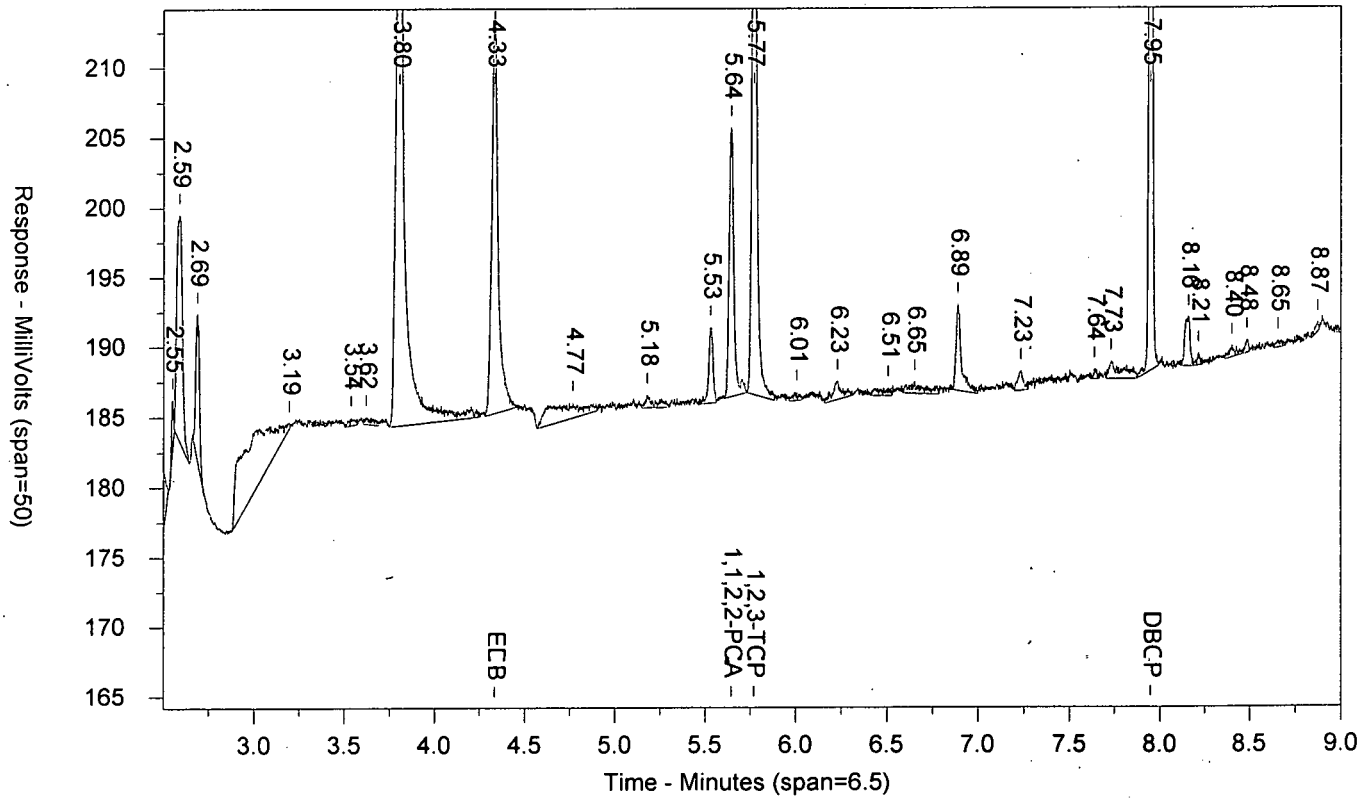


LANCASTER LABORATORIES

Sample Number: EDB_51724DS LTEDB_5LT CCAL 1720199999 SW-846 8011
Injected On: 7/22/2017 5:44:03 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

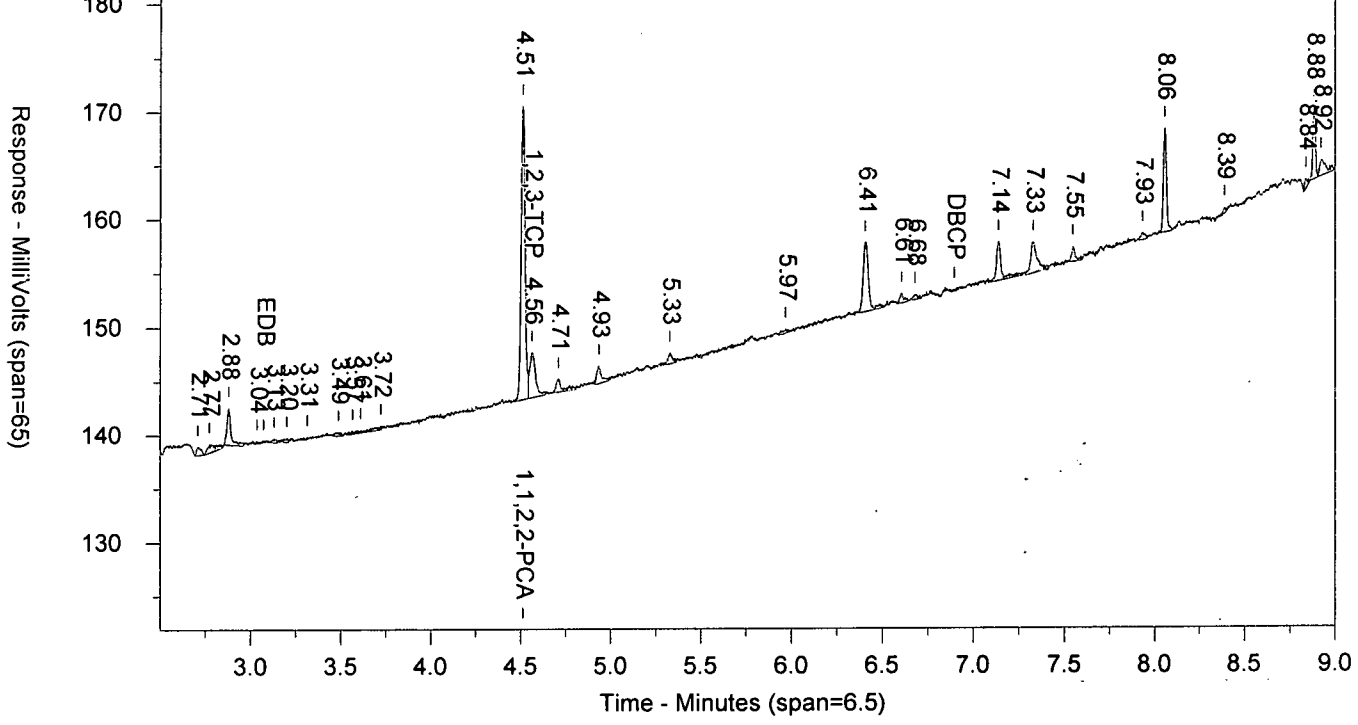
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.074 | 100582 | 4.879 | EDB | 4.334 | 28823 | 4.891 | EDB |
| 4.514 | 51239 | 2.184 | 1,1,2,2-PCA | 5.642 | 19291 | 2.305 | 1,1,2,2-PCA |
| 4.581 | 107670 | 34.925 | 1,2,3-TCP | 5.769 | 44672 | 35.725 | 1,2,3-TCP |
| 6.897 | 208456 | 5.13 | DBCP | 7.946 | 85264 | 5.519 | DBCP |

Files:
Area File: 16EDBS17202001.0061.RAW
Area File: 16EDBS17202001B.0061.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 5:53:05 AM
File Reported On: 7/24/2017 at 11:03:17 AM

EIBKX1724C SFPIBLKSF PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0062.RAW

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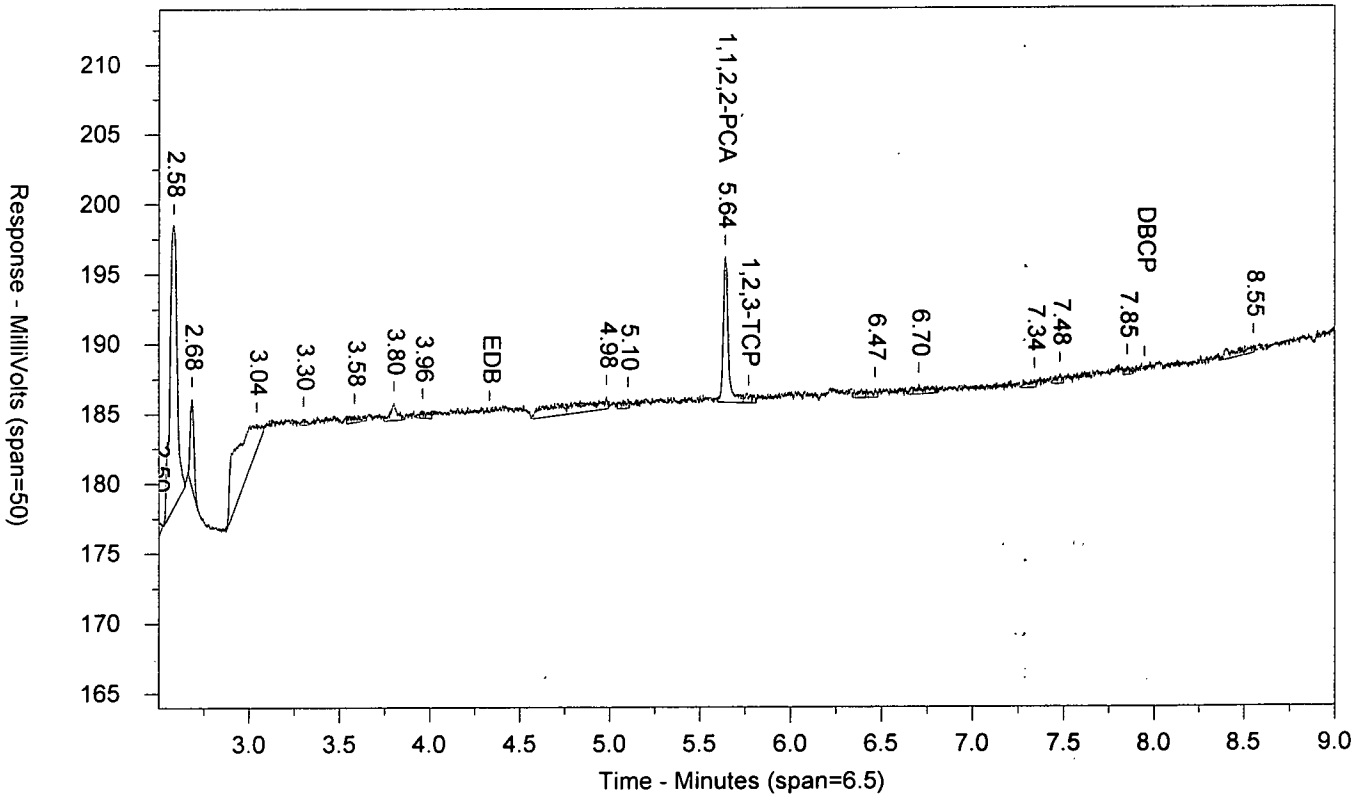


LANCASTER LABORATORIES

Sample Number: EIBKX1724C SFPIBLKSF PIBLK1720199999 SW-846 8011
Injected On: 7/22/2017 5:59:41 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

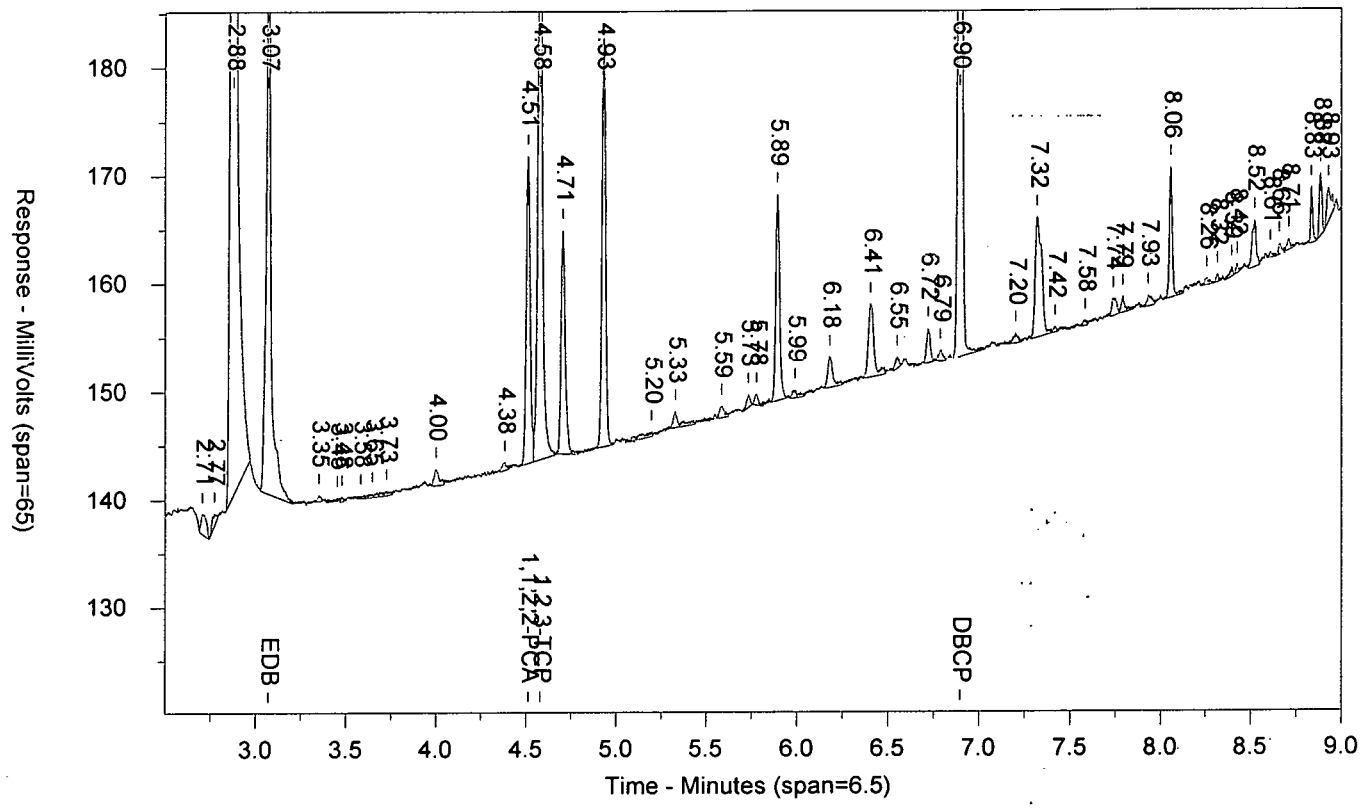
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 27257 | .066 | 1,1,2,2-PCA | 5.64 | 10423 | .07 | 1,1,2,2-PCA |
| 4.563 | 4235 | -.004 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

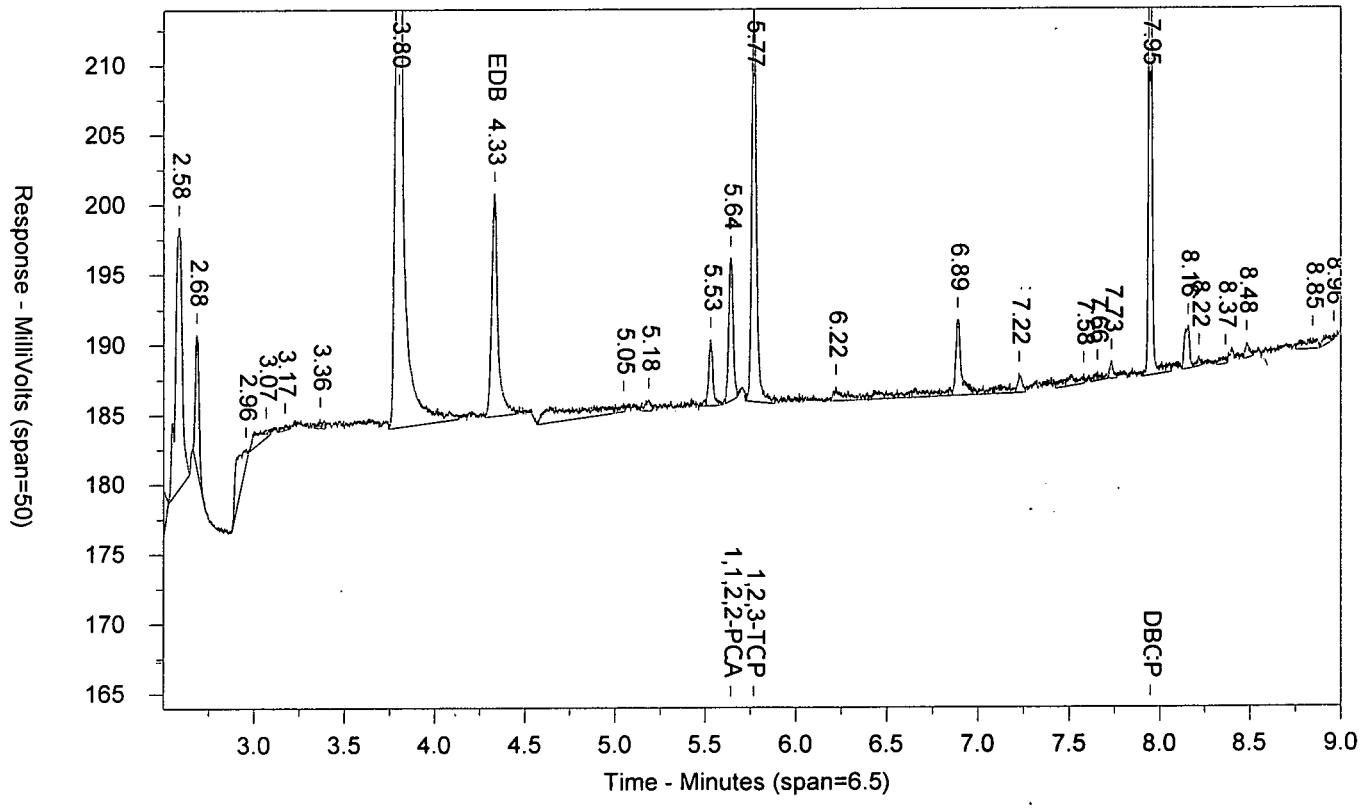
Files:
Area File: 16EDBS17202001.0062.RAW
Area File: 16EDBS17202001B.0062.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 6:08:43 AM
File Reported On: 7/24/2017 at 11:03:27 AM

EDB_41724DS QLEDB_4QL CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0073.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0073.RAW



LANCASTER LABORATORIES

Sample Number: EDB_41724DS QLEDB_4QL CCAL 1720199999 SW-846 8011
Injected On: 7/22/2017 8:51:24 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

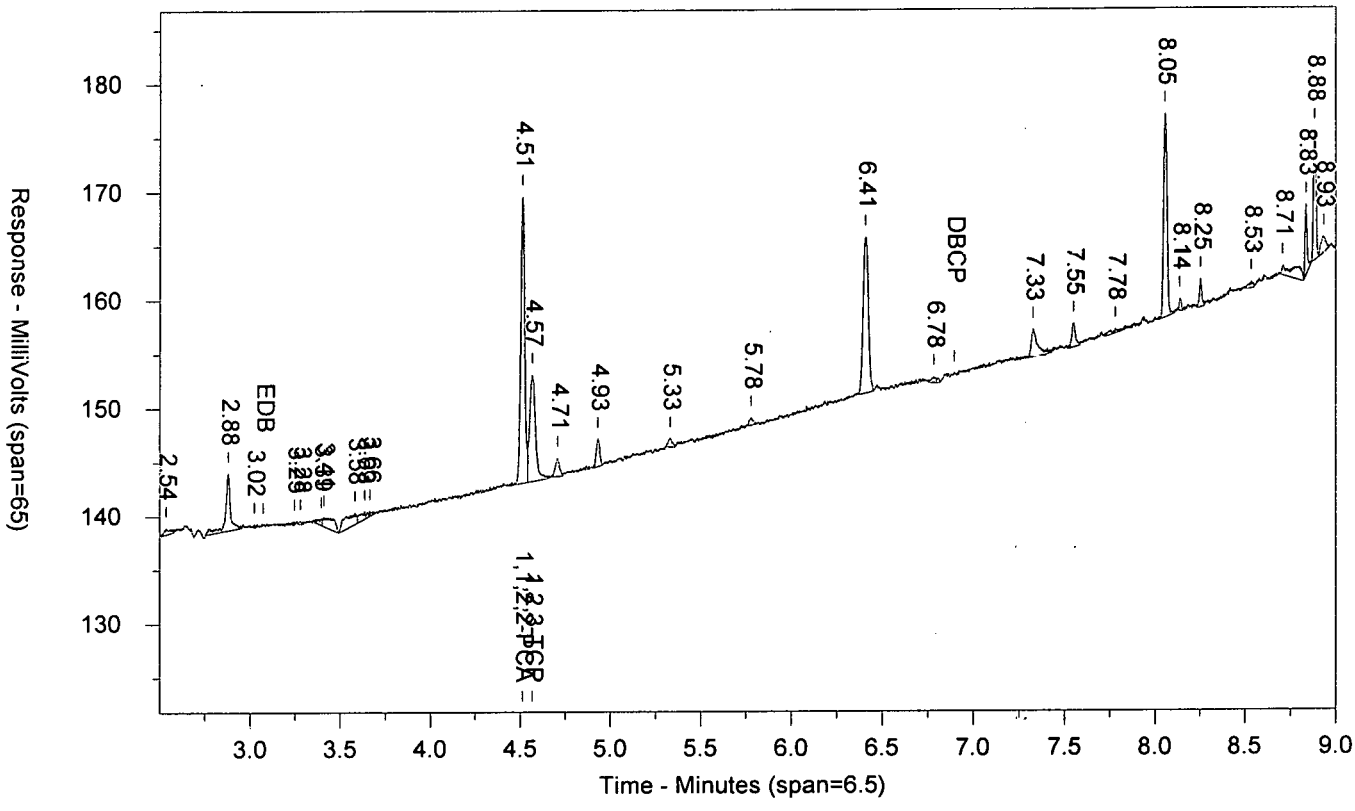
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 53806 | 2.61 | EDB | 4.333 | 15958 | 2.708 | EDB |
| 4.513 | 28539 | 1.216 | 1,1,2,2-PCA | 5.641 | 10192 | 1.205 | 1,1,2,2-PCA |
| 4.579 | 60431 | 18.944 | 1,2,3-TCP | 5.767 | 28240 | 19.086 | 1,2,3-TCP |
| 6.896 | 113437 | 2.791 | DBCP | 7.947 | 45036 | 2.915 | DBCP |

Files:
Area File: 16EDBS17202001.0073.RAW
Area File: 16EDBS17202001B.0073.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 9:00:24 AM
File Reported On: 7/24/2017 at 11:05:39 AM

EIBKX1724C SGPIBLKSG PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0074.RAW

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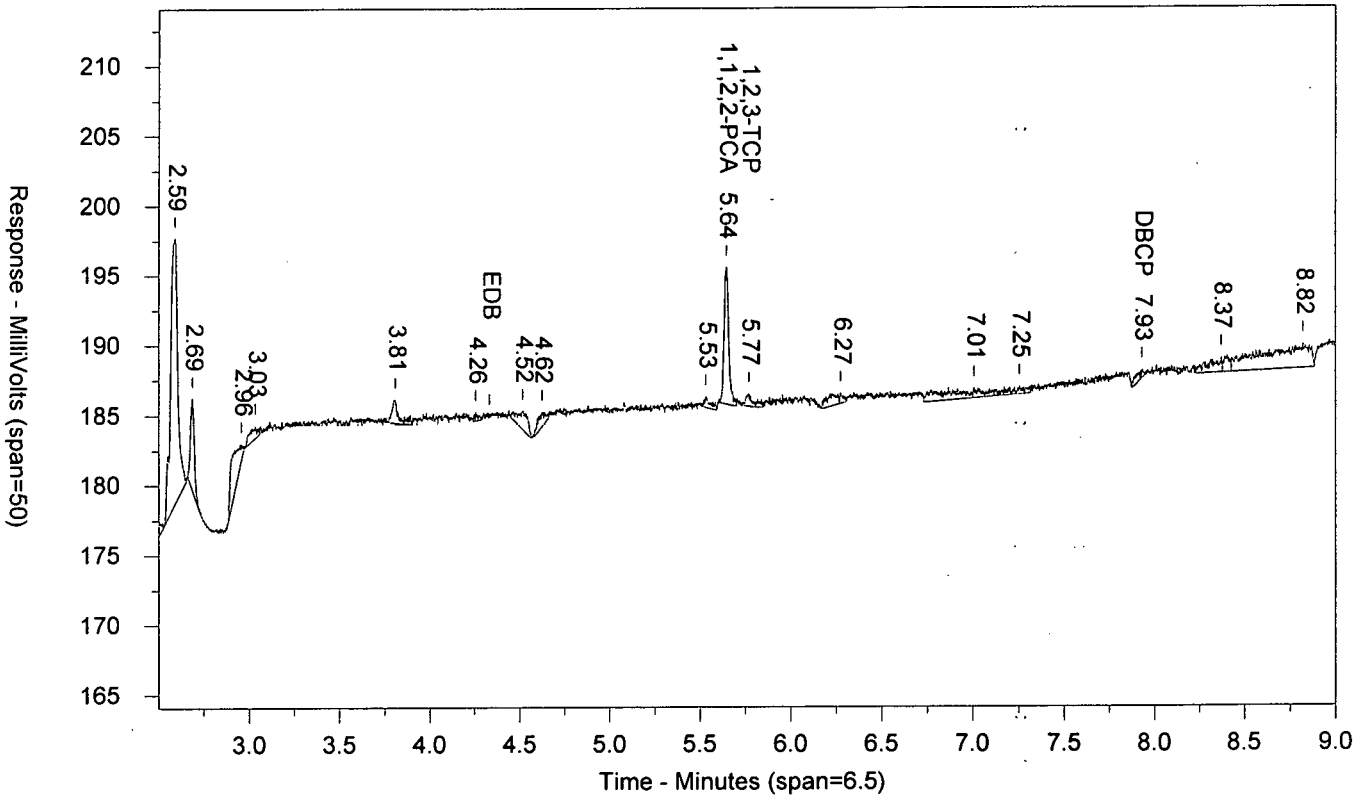

LANCASTER LABORATORIES

Sample Number: EIBKX1724C SGPIBLKSG PIBLK1720199999 SW-846 8011
Injected On: 7/22/2017 9:06:59 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 26587 | .065 | 1,1,2,2-PCA | 5.644 | 9852 | .066 | 1,1,2,2-PCA |
| 4.566 | 9963 | .107 | 1,2,3-TCP | 5.769 | 922 | -.49 | 1,2,3-TCP |
| | 0 | | DBCP | 7.93 | 654 | .002 | DBCP |

Files:
Area File: 16EDBS17202001.0074.RAW
Area File: 16EDBS17202001B.0074.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 9:16:01 AM
File Reported On: 7/24/2017 at 11:05:53 AM

# Raw QC Data

# EDB/DBCP

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# Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK21201 BLK Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:18:37 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0044.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.061355

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:18:37 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0044.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.063022

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 25189 | 0.061355 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5717 | 0.024876 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9352 | 0.063022 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 1916 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.061355 | 0.0035 | 0.007 | 0.007 | | 2.68 | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:06

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **BLANKA** 7/21/17 PBLK21201Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 01:18:37
Instrument : CP16--19853A
Result file : 16EDBS17202001.0044.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.061355

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 25189 | 0.061355 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 5717 | 0.024876 |

## Analysis Report (B)

Injected on : Jul 22, 2017 01:18:37
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0044.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.063022

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 9352 | 0.063022 |
| 1,2,3-TCP | 5.74 | 5.77 | 5.80 | 1916 | -0.432517 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.061355 | | | | 2.68 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Valorie L. Tomayko
Principal Specialist

Reviewed by: Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by:
Date: JUL 25 2017

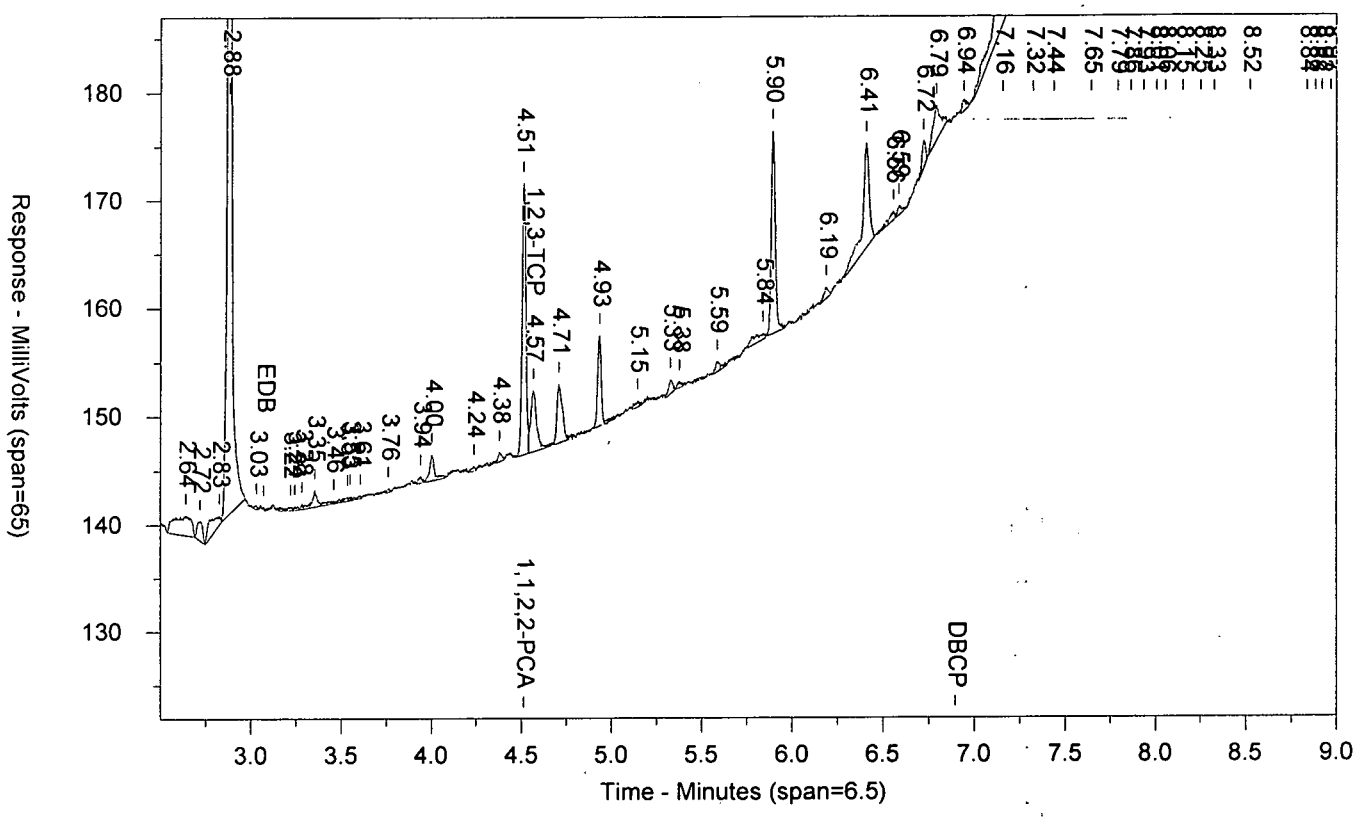
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:14:43

BLANKA 7/21/17 AAPBLK21201 BLK 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0044.RAW

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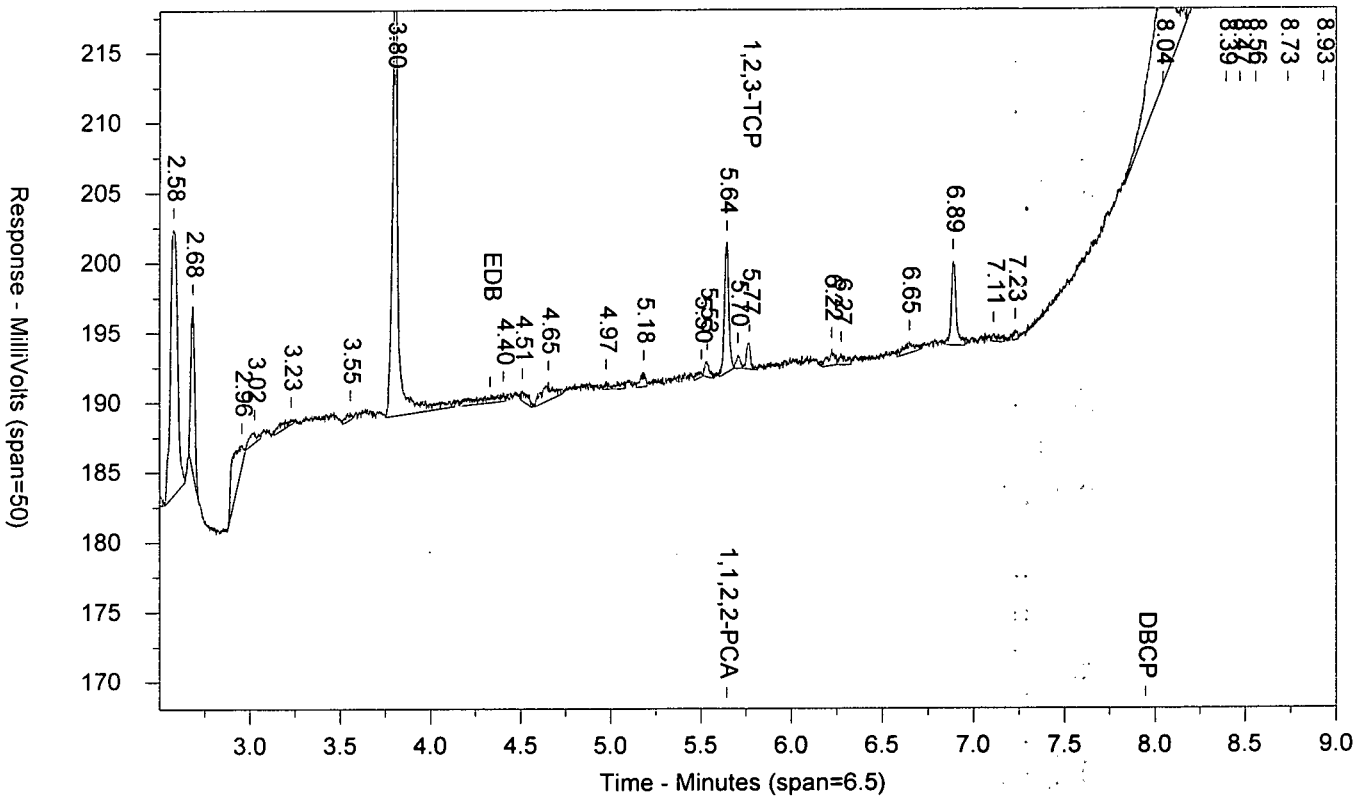

LANCASTER LABORATORIES

Sample Number: BLANKA 7/21/17 AAPBLK21201 BLK 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 1:18:37 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 25189 | .061 | 1,1,2,2-PCA | 5.643 | 9352 | .063 | 1,1,2,2-PCA |
| 4.566 | 5717 | .025 | 1,2,3-TCP | 5.767 | 1916 | -.433 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0044.RAW
Area File: 16EDBS17202001B.0044.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 1:27:39 AM
File Reported On: 7/24/2017 at 10:59:39 AM

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# Data Summary

**Sample Name: LCSA** 7/21/17 LCS21201 LCS Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:34:14 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0045.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.066712

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:34:14 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0045.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.069798

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 55385 | 0.153519 | Ethylene dibromide | 4.30 | 4.33 | 4.36 | 15977 | 0.154928 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 27389 | 0.066712 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10332 | 0.069798 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 69987 | 1.267275 | 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 24243 | 0.859359 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 125210 | 0.176069 | 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 51462 | 0.190338 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.153519 | 0.01 | 0.02 | 0.03 | | 0.91 | |
| 1,1,2,2-TETRACHLOROE | A | 0.066712 | 0.0035 | 0.007 | 0.007 | | 4.52 | |
| 1,2,3-Trichloropropane | A | 1.267275 | | | 0.27 | | 38.36 | |
| 1,2-Dibromo-3-chloroprop | A | 0.176069 | 0.01 | 0.02 | 0.03 | | 7.79 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valorie L. Tomayko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:08

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/21/17 LCS21201 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 01:34:14
Instrument : CP16--19853A
Result file : 16EDBS17202001.0045.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.066712

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 55385 | 0.153519 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 27389 | 0.066712 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 69987 | 1.267275 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 125210 | 0.176069 |

## Analysis Report (B)

Injected on : Jul 22, 2017 01:34:14
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0045.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.069798

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 15977 | 0.154928 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10332 | 0.069798 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 24243 | 0.859359 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 51462 | 0.190339 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.153519 | 0.03 | 0.01 | | 0.91 | |
| ☐ 1,1,2,2-PCA | A | 0.066712 | | | | 4.52 | |
| ☑ 1,2,3-TCP | A | 1.267275 | 0.27 | 0.1 | | 38.36 | |
| ☑ DBCP | A | 0.176069 | 0.03 | 0.01 | | 7.79 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

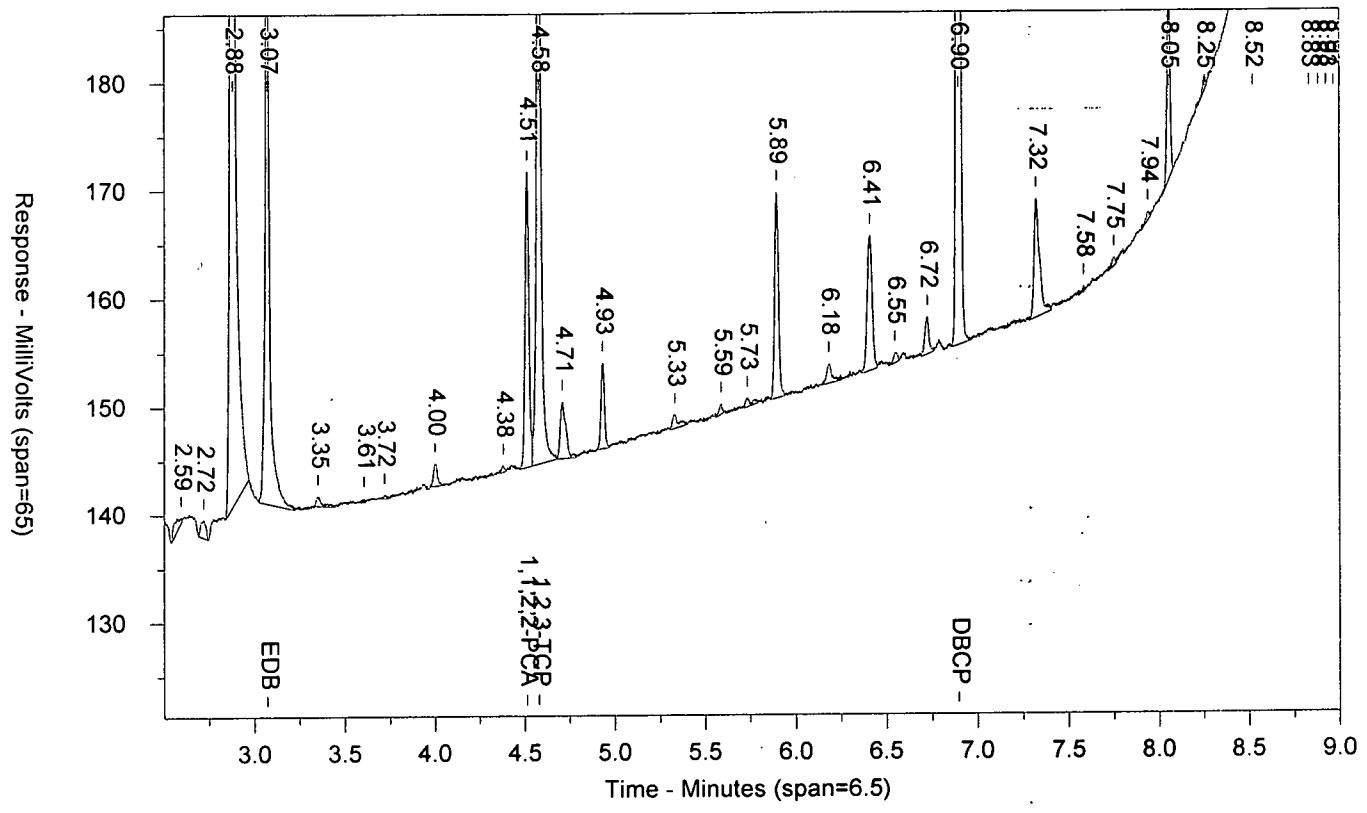
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

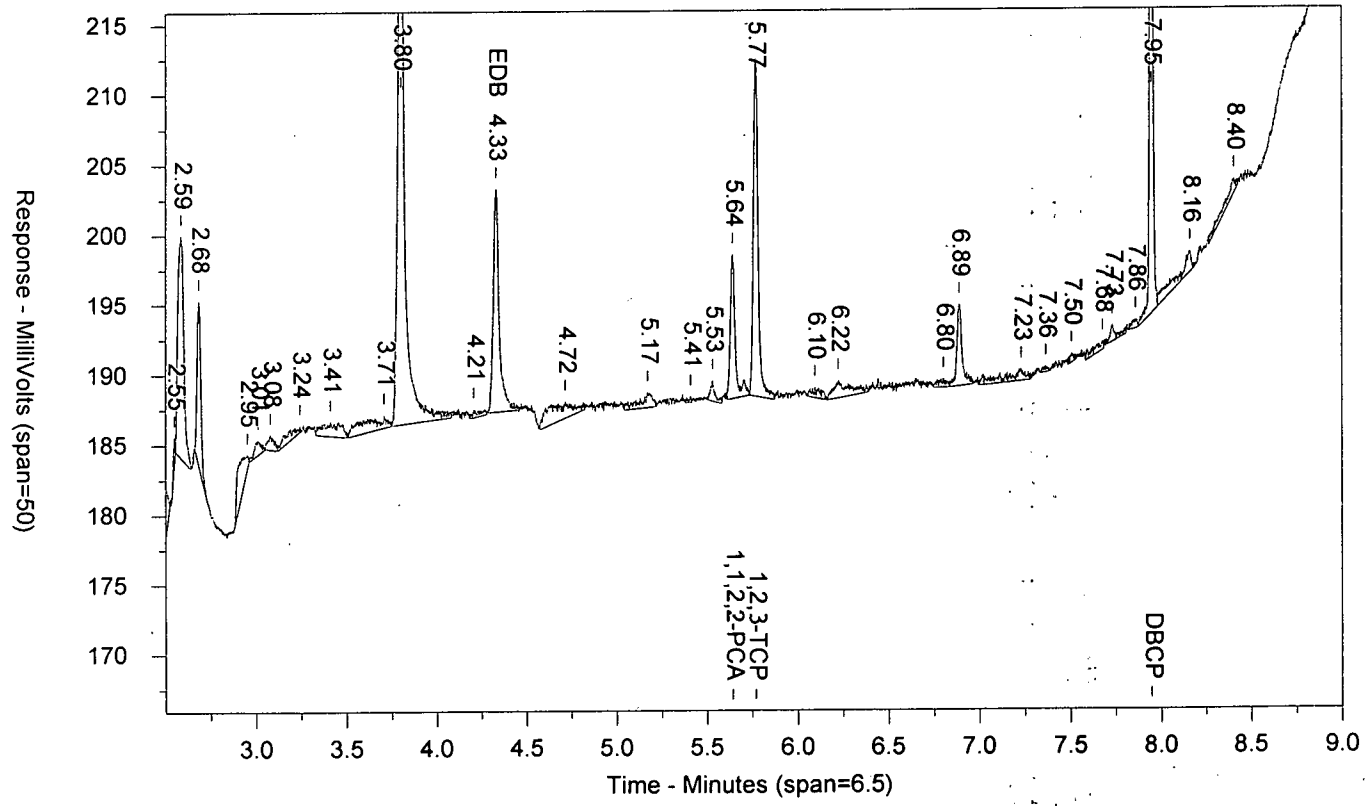
* Recovery outside QC Limits

LCSA 7/21/17 AALCS21201 LCS 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0045.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0045.RAW



LANCASTER LABORATORIES

Sample Number: LCSA 7/21/17 AALCS21201 LCS 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 1:34:14 AM Sample Weight: .35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 55385 | .154 | EDB | 4.331 | 15977 | .155 | EDB |
| 4.514 | 27389 | .067 | 1,1,2,2-PCA | 5.641 | 10332 | .07 | 1,1,2,2-PCA |
| 4.58 | 69987 | 1.267 | 1,2,3-TCP | 5.769 | 24243 | .859 | 1,2,3-TCP |
| 6.896 | 125210 | .176 | DBCP | 7.946 | 51462 | .19 | DBCP |

Files:
Area File: 16EDBS17202001.0045.RAW
Area File: 16EDBS17202001B.0045.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 1:43:15 AM
File Reported On: 7/24/2017 at 10:59:49 AM

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# Data Summary

**Sample Name: LCSDA** 7/21/17 LCSD21201 LCSD Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:49:50 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0046.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 86% ( 46 - 136 ) Conc: 0.060539

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 01:49:50 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0046.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 88% ( 46 - 136 ) Conc: 0.062044

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 50060 | 0.138759 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 24855 | 0.060539 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 65767 | 1.185697 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 126552 | 0.177955 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 15383 | 0.149175 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 9210 | 0.062044 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 24529 | 0.875958 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 53342 | 0.197294 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.138759 | 0.01 | 0.02 | 0.03 | | 7.23 | |
| 1,1,2,2-TETRACHLOROE | A | 0.060539 | 0.0035 | 0.007 | 0.007 | | 2.46 | |
| 1,2,3-Trichloropropane | A | 1.185697 | | | 0.27 | | 30.05 | |
| 1,2-Dibromo-3-chloroprop | A | 0.177955 | 0.01 | 0.02 | 0.03 | | 10.31 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomcyko
Principal Specialist

JUL 25 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:09:10

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/21/17 LCSD21201 Sample ID: AA **Batchnumber: 172010021A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 01:49:50
Instrument : CP16--19853A
Result file : 16EDBS17202001.0046.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 86% (46-136) Conc.: 0.060539

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 50060 | 0.138759 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 24855 | 0.060539 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 65767 | 1.185697 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 126552 | 0.177955 |

## Analysis Report (B)

Injected on : Jul 22, 2017 01:49:50
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0046.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 88% (46-136) Conc.: 0.062044

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 15383 | 0.149176 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9210 | 0.062044 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 24529 | 0.875958 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 53342 | 0.197294 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.138759 | 0.03 | 0.01 | | 7.24 | |
| ☐ 1,1,2,2-PCA | A | 0.060539 | | | | 2.45 | |
| ☑ 1,2,3-TCP | A | 1.185697 | 0.27 | 0.1 | | 30.05 | |
| ☑ DBCP | A | 0.177955 | 0.03 | 0.01 | | 10.31 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

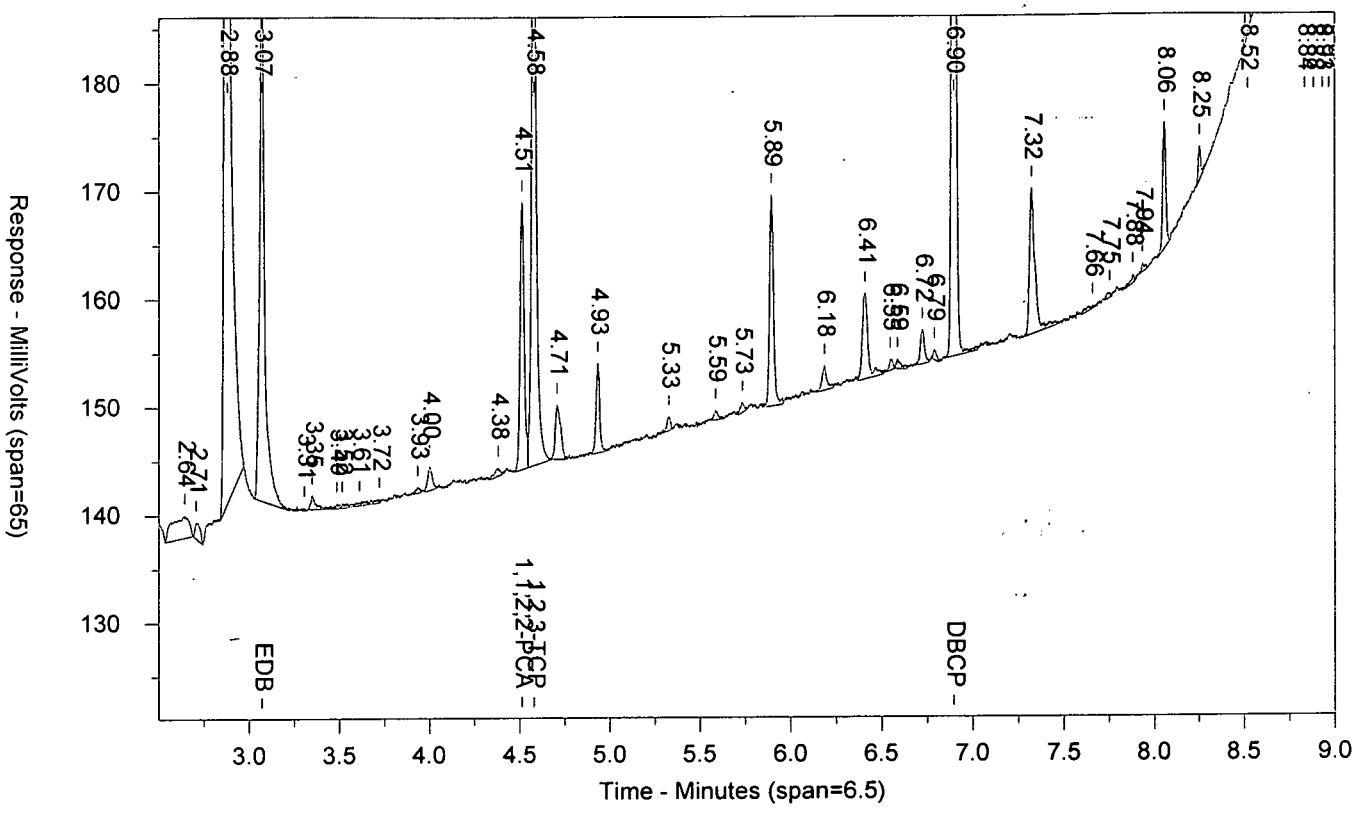
Verified by: Valorie L. Tomaydo
Valorie L. Tomaydo
Principal Specialist
Date: JUL 25 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSDA 7/21/17 AALCSD21201 LCSD 172010021A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0046.RAW

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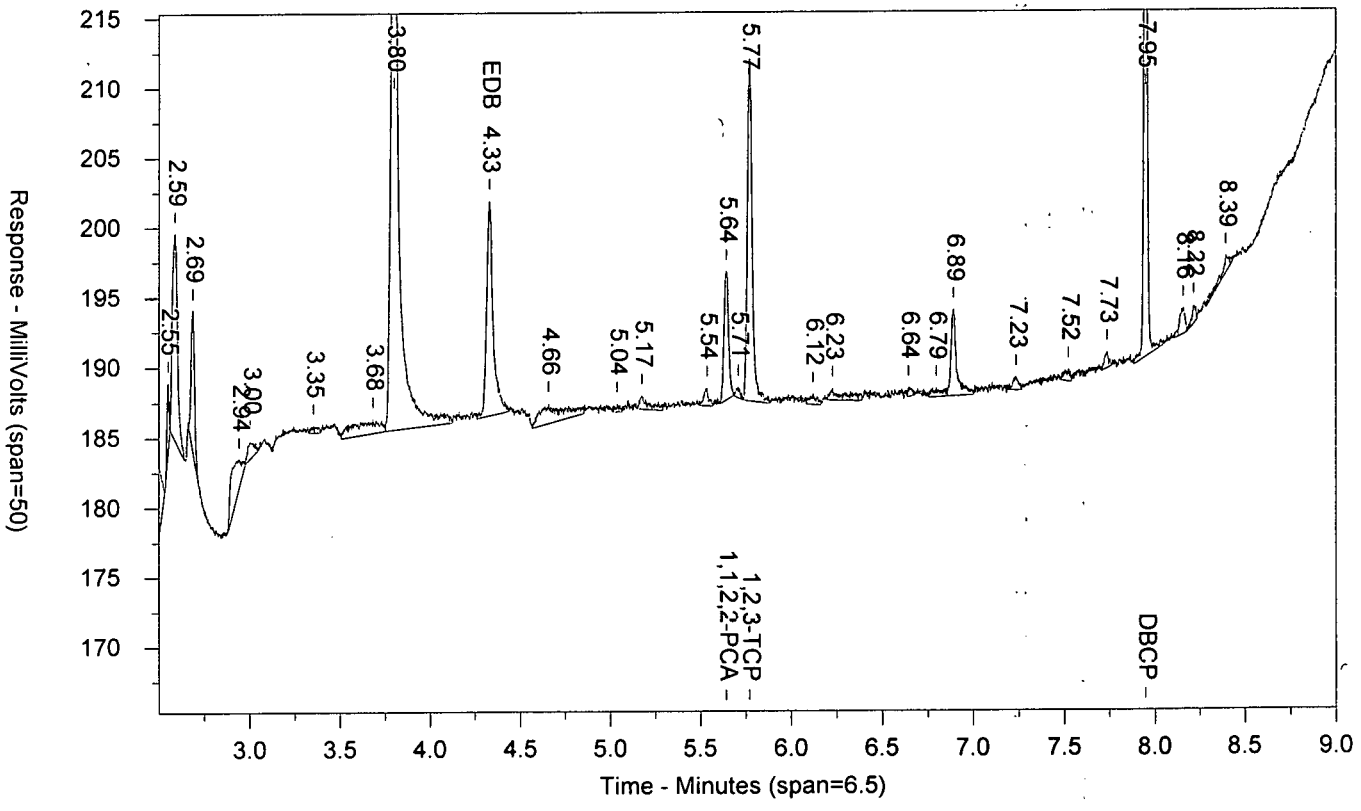

LANCASTER LABORATORIES

Sample Number: LCSDA 7/21/17 AALCSD21201 LCSD 172010021A 10398 SW-846 8011
Injected On: 7/22/2017 1:49:50 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 50060 | .139 | EDB | 4.33 | 15383 | .149 | EDB |
| 4.513 | 24855 | .061 | 1,1,2,2-PCA | 5.641 | 9210 | .062 | 1,1,2,2-PCA |
| 4.579 | 65767 | 1.186 | 1,2,3-TCP | 5.77 | 24529 | .876 | 1,2,3-TCP |
| 6.896 | 126552 | .178 | DBCP | 7.946 | 53342 | .197 | DBCP |

Files:
Area File: 16EDBS17202001.0046.RAW
Area File: 16EDBS17202001B.0046.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 1:58:51 AM
File Reported On: 7/24/2017 at 10:59:57 AM

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# Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK25201 BLK Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 17:46:04 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0015.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.072447

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 17:46:04 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0015.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.071731

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.09 | 3.10 | 404 | 0.00112 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29743 | 0.072447 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6141 | 0.033067 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10612 | 0.071731 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 12217 | 0.163532 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.072447 | 0.0035 | 0.007 | 0.007 | | 0.99 | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:53:57

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK25201Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 17:46:04
Instrument : CP16--19853A
Result file : 16EDBS17202001.0015.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.072447

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.09 | 3.10 | 404 | 0.001120 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29743 | 0.072447 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6141 | 0.033067 |

## Analysis Report (B)

Injected on : Jul 21, 2017 17:46:04
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0015.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.071731

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10612 | 0.071731 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 12217 | 0.163532 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.072447 | | | | 0.99 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 24 2017

Verified by: Susan M. Goshert Manager
Date: JUL 28 2017

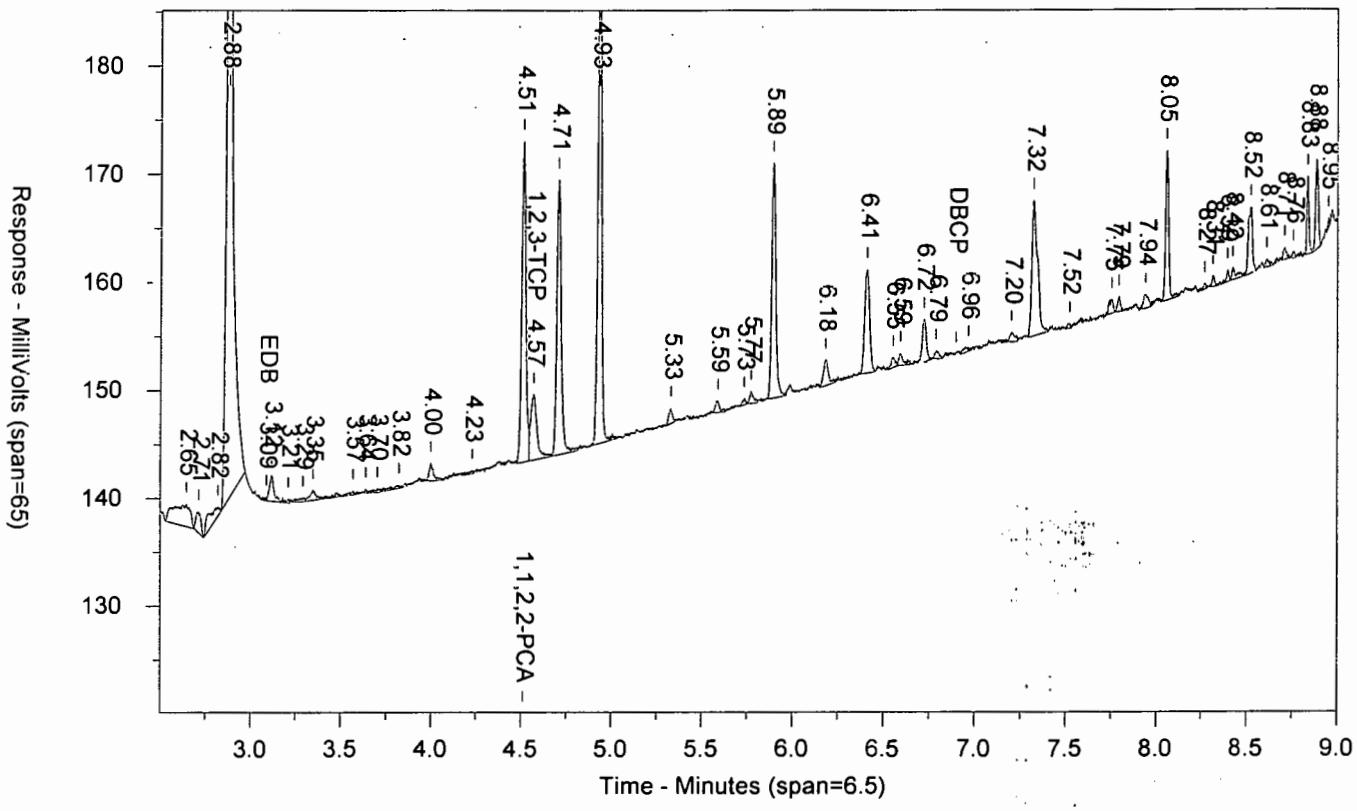
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:11:00

BLANKA 7/21/17 AAPBLK25201 BLK 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0015.RAW

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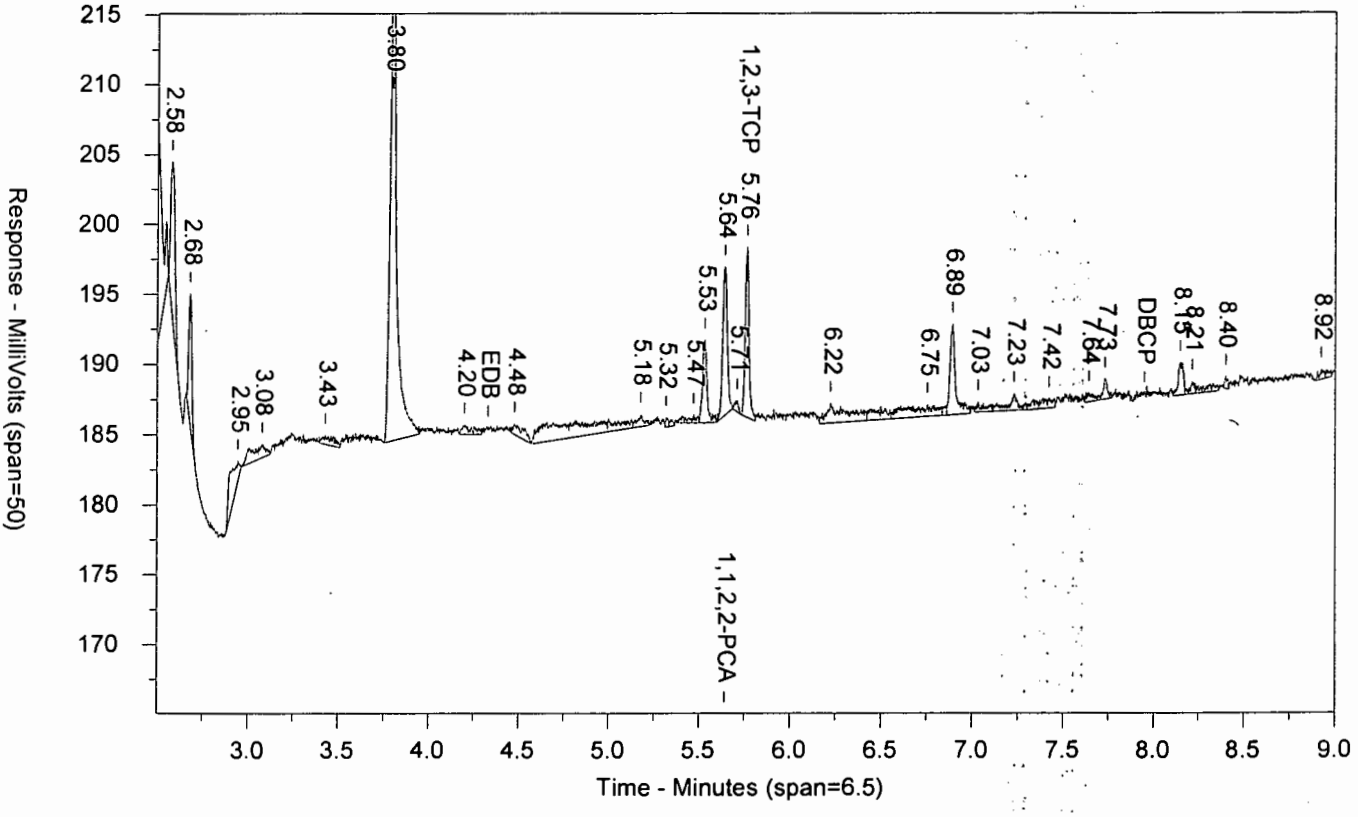

LANCASTER LABORATORIES

Sample Number: BLANKA 7/21/17 AAPBLK25201 BLK 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 5:46:04 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.089 | 404 | .001 | EDB | | 0 | | EDB |
| 4.512 | 29743 | .072 | 1,1,2,2-PCA | 5.641 | 10612 | .072 | 1,1,2,2-PCA |
| 4.568 | 6141 | .033 | 1,2,3-TCP | 5.763 | 12217 | .164 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0015.RAW
Area File: 16EDBS17202001B.0015.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:55:05 PM
File Reported On: 7/24/2017 at 10:54:09 AM

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# Data Summary

**Sample Name: LCSA** 7/21/17 LCS25201 LCS Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:01:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0016.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.074565

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:01:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0016.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.075029

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 52492 | 0.145502 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30613 | 0.074565 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 68897 | 1.246207 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 104866 | 0.14746 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 14869 | 0.144185 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11089 | 0.075029 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 31933 | 1.304341 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 39352 | 0.14555 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.145502 | 0.01 | 0.02 | 0.03 | | 0.91 | |
| 1,1,2,2-TETRACHLOROE | A | 0.074565 | 0.0035 | 0.007 | 0.007 | | 0.62 | |
| 1,2,3-Trichloropropane | A | 1.246207 | | | 0.27 | | 4.56 | |
| 1,2-Dibromo-3-chloropropa | A | 0.14746 | 0.01 | 0.02 | 0.03 | | 1.30 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:53:59

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/21/17 LCS25201 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:01:40
Instrument : CP16--19853A
Result file : 16EDBS17202001.0016.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.074565

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 52492 | 0.145502 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 30613 | 0.074565 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 68897 | 1.246207 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 104866 | 0.147461 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:01:40
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0016.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.075029

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 14869 | 0.144185 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11089 | 0.075029 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 31933 | 1.304341 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 39352 | 0.145550 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.145502 | 0.03 | 0.01 | | 0.91 | |
| ☐ 1,1,2,2-PCA | A | 0.074565 | | | | 0.62 | |
| ☑ 1,2,3-TCP | A | 1.246207 | 0.27 | 0.1 | | 4.56 | |
| ☑ DBCP | A | 0.147461 | 0.03 | 0.01 | | 1.30 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

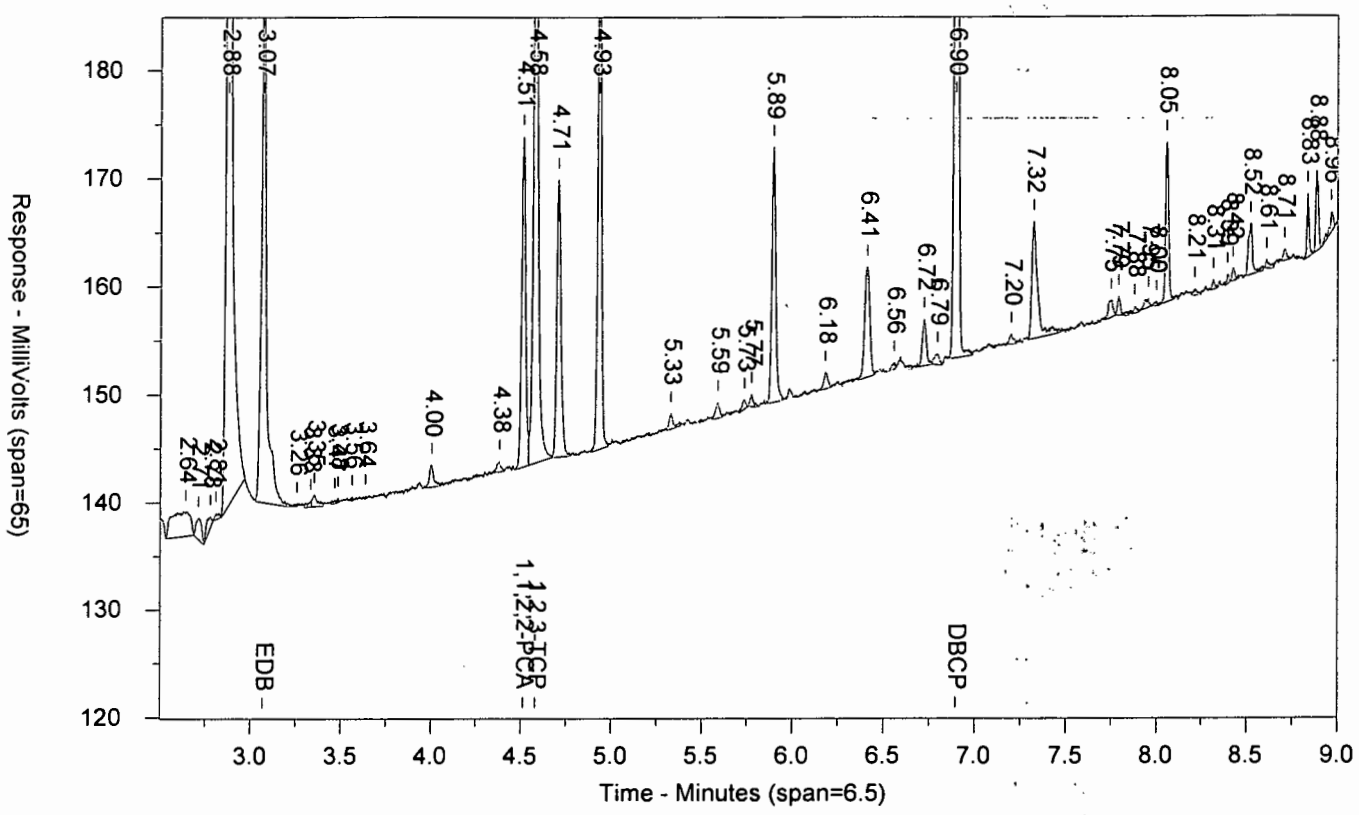
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSA 7/21/17 AALCS25201 LCS 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0016.RAW

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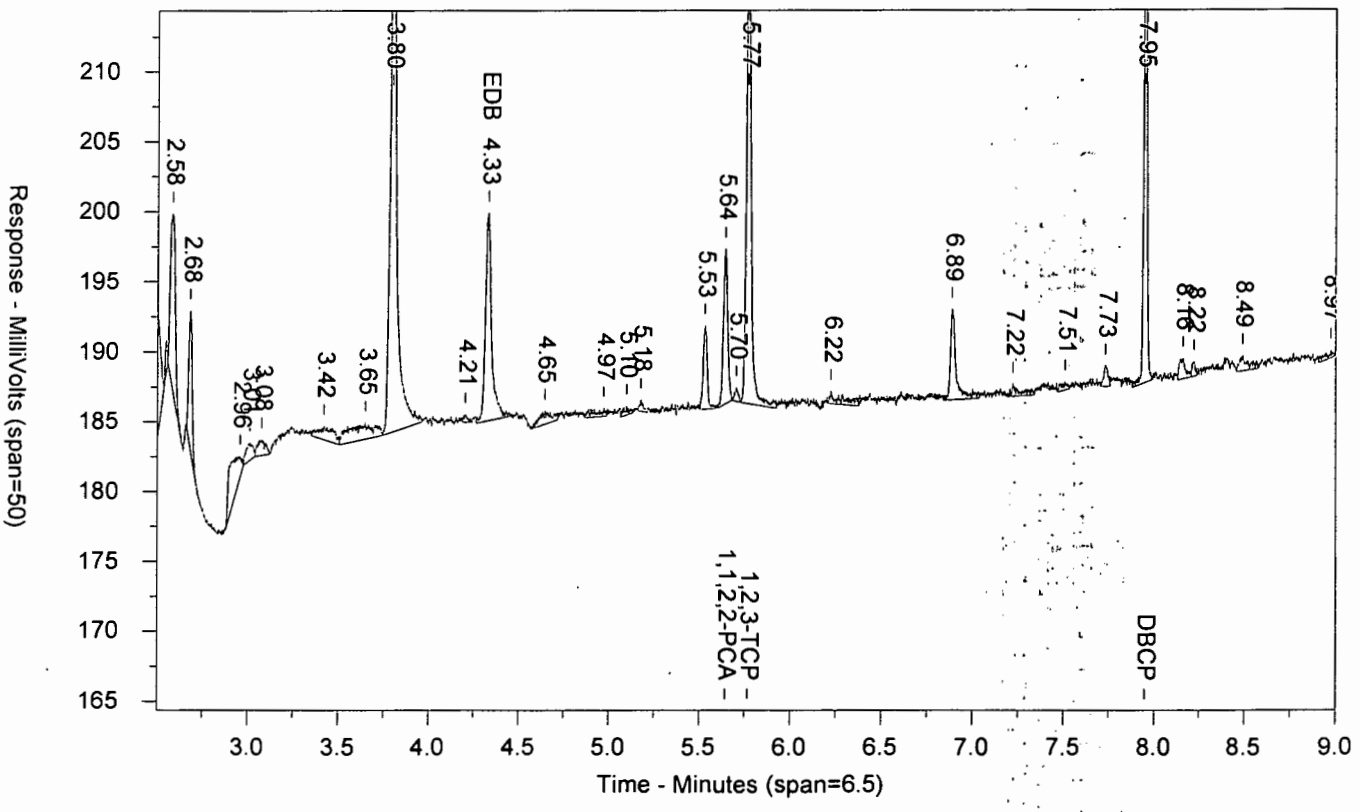

LANCASTER LABORATORIES

Sample Number: LCSA 7/21/17 AALCS25201 LCS 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:01:40 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 52492 | .146 | EDB | 4.331 | 14869 | .144 | EDB |
| 4.512 | 30613 | .075 | 1,1,2,2-PCA | 5.641 | 11089 | .075 | 1,1,2,2-PCA |
| 4.579 | 68897 | 1.246 | 1,2,3-TCP | 5.766 | 31933 | 1.304 | 1,2,3-TCP |
| 6.896 | 104866 | .147 | DBCP | 7.947 | 39352 | .146 | DBCP |

Files:
Area File: 16EDBS17202001.0016.RAW
Area File: 16EDBS17202001B.0016.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:10:41 PM
File Reported On: 7/24/2017 at 10:54:17 AM

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# Data Summary

**Sample Name: LCSDA** 7/21/17 LCSD25201 LCSD Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:17:18 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0017.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 112% ( 46 - 136 ) Conc: 0.079144

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:17:18 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0017.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 113% ( 46 - 136 ) Conc: 0.079835

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 58918 | 0.163313 | Ethylene dibromide | 4.30 | 4.33 | 4.36 | 16042 | 0.155566 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 32493 | 0.079144 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11784 | 0.079835 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 71820 | 1.302697 | 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 33931 | 1.419971 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 113994 | 0.160297 | 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 41886 | 0.154921 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | A | 0.163313 | 0.01 | 0.02 | 0.03 | | 4.86 | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.079144 | 0.0035 | 0.007 | 0.007 | | 0.87 | |
| ☐ 1,2,3-Trichloropropane | A | 1.302697 | | | 0.27 | | 8.61 | |
| ☐ 1,2-Dibromo-3-chloropropa | A | 0.160297 | 0.01 | 0.02 | 0.03 | | 3.41 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:02

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/21/17 LCSD25201Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:17:18
Instrument : CP16--19853A
Result file : 16EDBS17202001.0017.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 112% (46-136) Conc.: 0.079144

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 58918 | 0.163313 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 32493 | 0.079144 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 71820 | 1.302697 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 113994 | 0.160297 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:17:18
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0017.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 113% (46-136) Conc.: 0.079835

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 16042 | 0.155566 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11784 | 0.079835 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 33931 | 1.419971 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 41886 | 0.154921 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.163313 | 0.03 | 0.01 | | 4.86 | |
| ☐ 1,1,2,2-PCA | A | 0.079144 | | | | 0.87 | |
| ☑ 1,2,3-TCP | A | 1.302697 | 0.27 | 0.1 | | 8.61 | |
| ☑ DBCP | A | 0.160297 | 0.03 | 0.01 | | 3.41 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

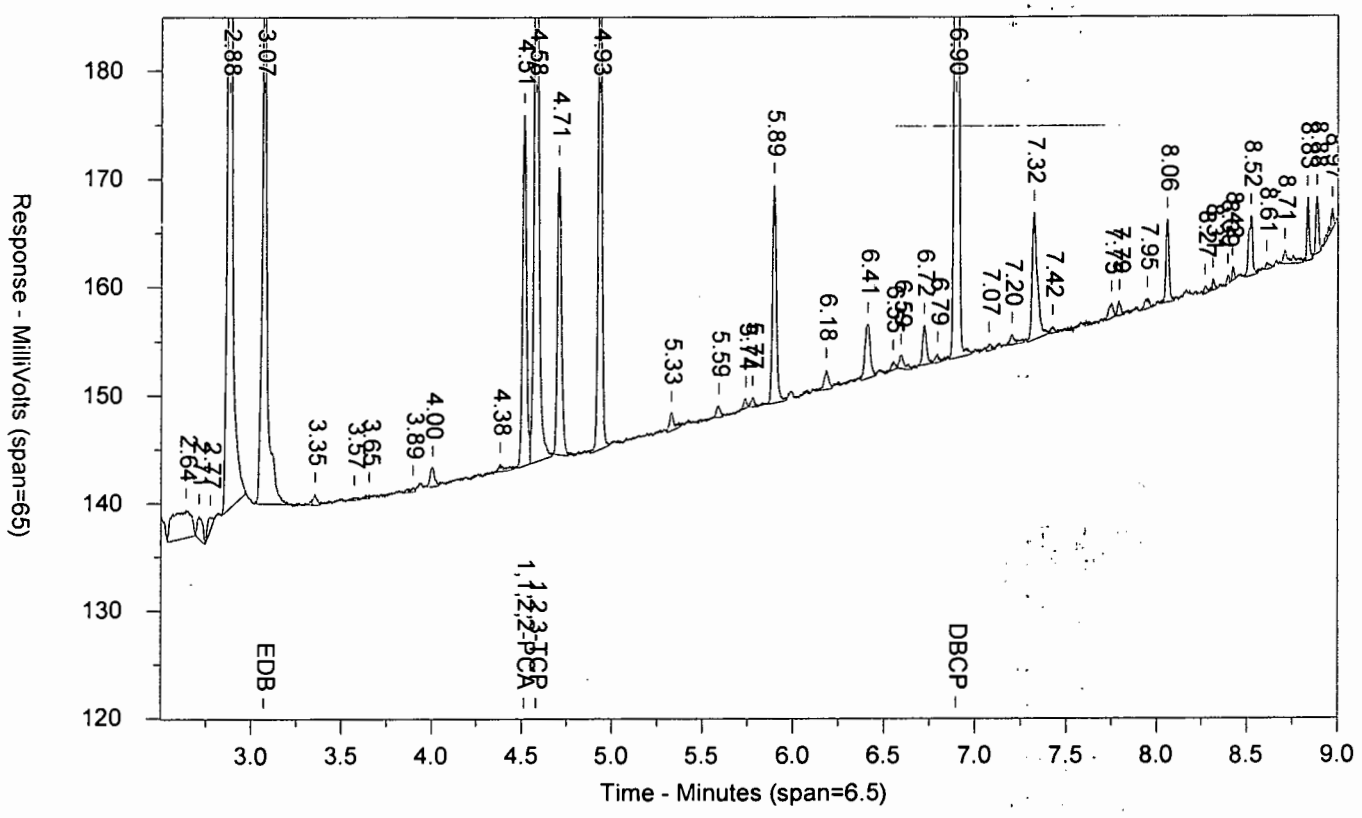
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

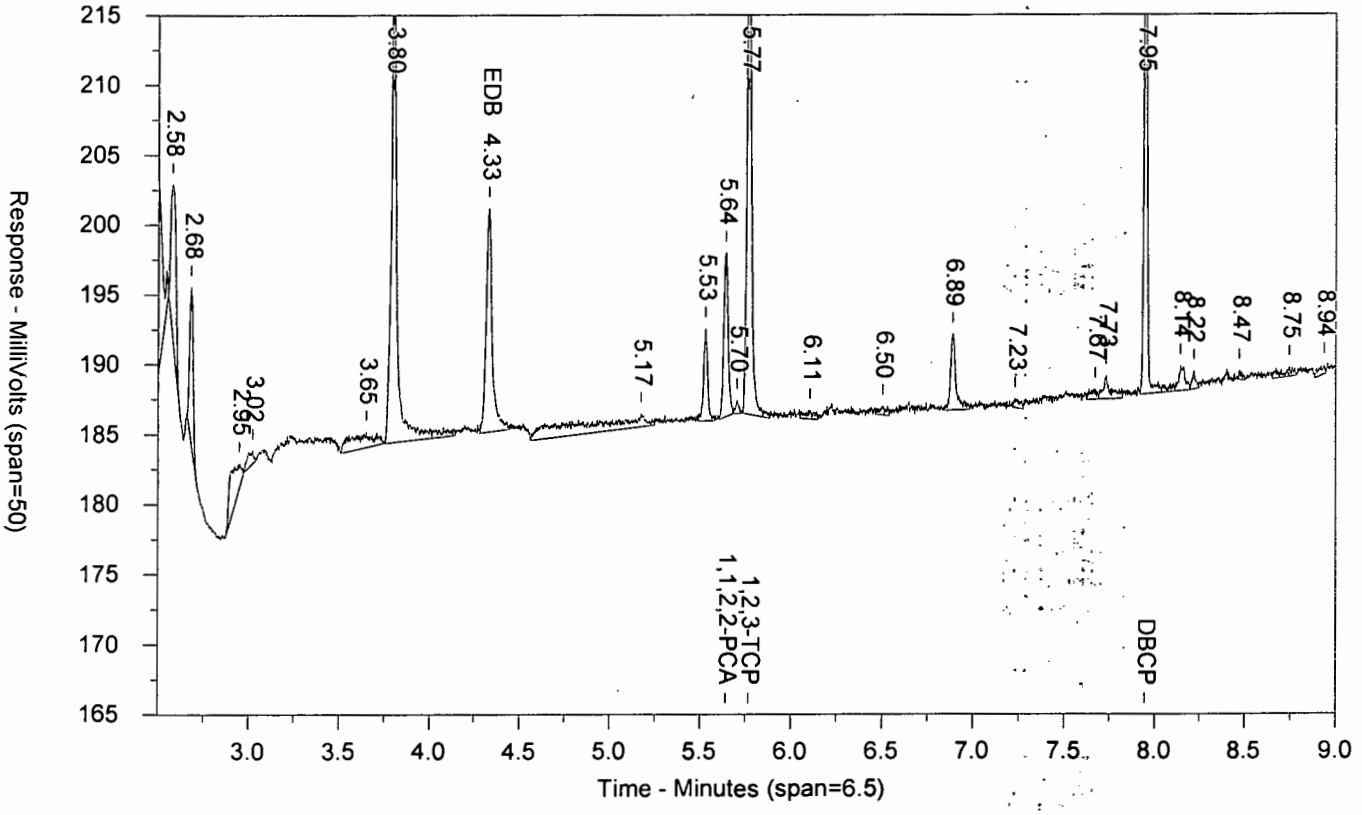
* Recovery outside QC Limits

LCSDA 7/21/17 AALCSD25201 LCSD 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0017.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0017.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 7/21/17 AALCSD25201 LCSD 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:17:18 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 58918 | .163 | EDB | 4.331 | 16042 | .156 | EDB |
| 4.513 | 32493 | .079 | 1,1,2,2-PCA | 5.642 | 11784 | .08 | 1,1,2,2-PCA |
| 4.579 | 71820 | 1.303 | 1,2,3-TCP | 5.766 | 33931 | 1.42 | 1,2,3-TCP |
| 6.896 | 113994 | .16 | DBCP | 7.946 | 41886 | .155 | DBCP |

Files:
Area File: 16EDBS17202001.0017.RAW
Area File: 16EDBS17202001B.0017.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:26:20 PM
File Reported On: 7/24/2017 at 10:54:29 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 1236 Samantha Metzgar Reviewed by: HMM7/21/17 Start Date: 07/21/2017 Start Time: 09:00

**172010021A** Tech 1: SM 12362 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9098350MS | 18506 | 36.45 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| 9098351MSD | 18506 | 36.81 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| BLANKA | PBLK21201 | 35 | SS1718724B | .1 | — | — | 2 | N | 2 | — | DIH2O |
| LCSA | LCS21201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | | DIH2O |
| LCSDA | LCSD21201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | | DIH2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391 |
| Vial Preservative Lot# | 2391F |
| | |

Spike Solutions: Witness: N/A

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9098344 | 18501 | 36.51 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 2 9098345 | 18502 | 36.75 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 3 9098346 | 18503 | 36.12 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 4 9098347 | 18504 | 36.56 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 5 9098348 | 18505 | 36.92 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 6 9098349BKG | 18506 | 36.66 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 7 9098352 | 18507 | 36.85 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 8 9098353 | 18508 | 36.63 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 9 9098354 | 18509 | 36.90 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 10 9098355 | 18510 | 36.42 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 11 9098356 | 18511 | 36.70 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 12 9098357 | 18512 | 36.77 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 13 9098358 | 18513 | 37.09 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 14 9098359 | 18514 | 36.70 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 15 9098360 | 18515 | 36.60 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 16 9098361 | 18516 | 36.74 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 17 9098362 | 18517 | 36.39 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 18 9098363 | 18518 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/24/2017 | N |
| 19 9100479 | 18601 | 36.55 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 20 9100481 | 18603 | 36.13 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR; SEDIMENT | 10398 | 17641 | 07/25/2017 | N |

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| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172010021A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

**Organic Extraction Batchlog** Assigned to: 1236 Samantha Metzgar Reviewed by: HMM7/26 Start Date: 07/21/2017 Start Time: 09:00

**· 172010025A**

Tech 1: SM 12362 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9109772MS | 18801 | 37.02 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| 9109773MSD | 18801 | 36.96 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| BLANKA | PBLK25201 | 35 | SS1718724B | .1 | — | | 2 | N | 2 | — | DIH2O |
| LCSA | LCS25201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | | DIH2O |
| LCSDA | LCSD25201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | | DIH2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391 |
| Vial Preservative Lot# | 2391F |
| | |

Spike Solutions: Witness: N/A

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9095972BKG | 18417 | 36.92 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/21/2017 | N |
| 2 9100482 | 18604 | 36.62 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 3 9100483 | 18605 | 36.75 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 4 9100485 | 18607 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 5 9100487 | 18609 | 36.74 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 6 9100489 | 18611 | 36.84 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 7 9100491 | 18613 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 8 9100492 | 18614 | 36.63 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 9 9100493 | 18615 | 36.82 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 10 9100494 | 18616 | 36.81 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 11 9100495 | 18617 | 36.76 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 12 9100496 | 18618 | 36.83 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 13 9107402 | 18701 | 36.62 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 14 9107403 | 18702 | 36.65 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 15 9107404 | 18703 | 37.04 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 16 9107405 | 18704 | 37.01 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 17 9107406 | 18705 | 36.48 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 18 9107407 | 18706 | 36.73 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 19 9109771BKG | 18801 | 36.85 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/31/2017 | N |
| 20 9109779 | 18803 | 36.35 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/31/2017 | N |

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| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172010025A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

# Metals in Liquid Data

# Case Narrative/Conformance Summary

# Metals in Liquid

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## ICP Metals

**Fraction: Metals in Liquid**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9100479 | GW009-173 | X | | 1 | |
| 9100480 | GW009-173 | X | | 1 | |
| 9100483 | GW235-463-173 | X | | 1 | |
| 9100484 | GW235-463-173 | X | | 1 | |
| 9100485 | GW235-492-173 | X | | 1 | |
| 9100486 | GW235-492-173 | X | | 1 | |
| 9100487 | GW235-521-173 | X | | 1 | |
| 9100488 | GW235-521-173 | X | | 1 | |
| 9100489 | GW235-521-573 | X | | 1 | Field Duplicate Sample |
| 9100490 | GW235-521-573 | X | | 1 | Field Duplicate Sample |
| 9100491 | ER173-01 | X | | 1 | Equipment Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**LCS/LCSD**

Batch#: 171951063502 (Sample number(s): 9100479-9100480, 9100483-9100491, UNSPK: 9100479, BKG: 9100479)
The recovery(ies) for the following analyte(s) in the LCS exceeded the acceptance window indicating a positive bias: Calcium

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## ICP Metals

**Fraction: Metals in Liquid**

Since the recovery is high and no analytes are detected above the quantitation limit, the data is reported.

(Sample number(s): 9100485: Analysis: 01750)
The LCS that was digested with this sample was out of specification for calcium with a recovery of 116%. The data was accepted after consultation with the client.

## SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

**Abbreviation Key**

| | |
|---|---|
| BKG – Background | AF - Cold Vapor Atomic Fluorescence |
| DUP – Duplicate | U - Below MDL |
| MS - Matrix Spike | B - Below LOQ |
| MSD - Matrix Spike Dup | N - Matrix Spike out of specifications |
| B – Blank | * - Duplicate out of specifications |
| Q - Laboratory Control Sample | E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution |
| Y - Laboratory Control Sample Duplicate | A - Post Digestion Spike |
| P - ICP Atomic Emission Spectrometer | L - Serial Dilution |
| MS - ICP Mass Spectrometry | R - Internal Standard Relative Intensity OOS |
| CV - Cold Vapor | NR - Not Required |

# Sample Data

# Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100479, 9100479BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7440-70-2 | Calcium | 265000 | | | P |
| 7439-92-1 | Lead | 0.11 | U | | MS |
| 7439-95-4 | Magnesium | 37900 | | | P |
| 7440-09-7 | Potassium | 5540 | | | P |
| 7440-23-5 | Sodium | 65700 | | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100480 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1090 | | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100483 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7440-70-2 | Calcium | 58200 | | | P |
| 7439-92-1 | Lead | 0.12 | B | | MS |
| 7439-95-4 | Magnesium | 8360 | | | P |
| 7440-09-7 | Potassium | 3680 | | | P |
| 7440-23-5 | Sodium | 26900 | | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100484 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100485, 9100485BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 1.0 | B | | MS |
| 7440-70-2 | Calcium | 62100 | | | P |
| 7439-92-1 | Lead | 0.19 | B | | MS |
| 7439-95-4 | Magnesium | 8950 | | | P |
| 7440-09-7 | Potassium | 3450 | | | P |
| 7440-23-5 | Sodium | 27400 | | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100486 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100487 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.81 | B | | MS |
| 7440-70-2 | Calcium | 51400 | | | P |
| 7439-92-1 | Lead | 0.30 | B | | MS |
| 7439-95-4 | Magnesium | 6960 | | | P |
| 7440-09-7 | Potassium | 2920 | | | P |
| 7440-23-5 | Sodium | 23700 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100488 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100489 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 1.0 | B | | MS |
| 7440-70-2 | Calcium | 50300 | | | P |
| 7439-92-1 | Lead | 0.20 | B | | MS |
| 7439-95-4 | Magnesium | 7090 | | | P |
| 7440-09-7 | Potassium | 3000 | | | P |
| 7440-23-5 | Sodium | 24300 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100490 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9100491 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/13/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7440-70-2 | Calcium | 832 | | | P |
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-92-1 | Lead | 0.58 | B | | MS |
| 7439-95-4 | Magnesium | 37.4 | U | | P |
| 7439-96-5 | Manganese | 5.1 | B | | P |
| 7440-09-7 | Potassium | 377 | B | | P |
| 7440-23-5 | Sodium | 1290 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

# Quality Control and Calibration Summary Forms

# Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR186
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Calcium | 171951063502 | 9100479BKG |
| Iron | | 9100479MS |
| Magnesium | | 9100479MSD |
| Manganese | | 9100479DUP |
| Potassium | | 9100480 |
| Sodium | | 9100483 |
| | | 9100484 |
| | | 9100485 |
| | | 9100486 |
| | | 9100487 |
| | | 9100488 |
| | | 9100489 |
| | | 9100490 |
| | | 9100491 |
| | | P19563BB |
| | | P19563BQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR186
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Calcium | 172131063502 | 9100479BKG |
| | | 9100483 |
| | | 9100487 |
| | | 9100489 |
| | | 9100491 |
| | | P21363BB |
| | | P21363BQ |
| | | P21363BY |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR186
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Arsenic | 171951063903 | 9100479 |
| Lead | | 9100483 |
| | | 9100485BKG |
| | | 9100485MS |
| | | 9100485MSD |
| | | 9100485DUP |
| | | 9100487 |
| | | 9100489 |
| | | 9100491 |
| | | P19563CB |
| | | P19563CQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: P
Run Name: 1719901T71
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | 30000.0 | 30076.32 | 100.3 | 25000.0 | 24961.90 | 99.8 | 25000.0 | 25737.66 | 103.0 |
| Iron | | 30000.0 | 29507.48 | 98.4 | 25000.0 | 25167.58 | 100.7 | 25000.0 | 25219.79 | 100.9 |
| Magnesium | | 30000.0 | 29772.75 | 99.2 | 25000.0 | 24852.59 | 99.4 | 25000.0 | 25171.09 | 100.7 |
| Manganese | | 600.0 | 593.93 | 99.0 | 500.0 | 508.19 | 101.6 | 500.0 | 513.01 | 102.6 |
| Potassium | | 30000.0 | 29751.89 | 99.2 | 25000.0 | 24531.12 | 98.1 | 25000.0 | 25183.45 | 100.7 |
| Sodium | | 30000.0 | 29316.26 | 97.7 | 25000.0 | 24842.34 | 99.4 | 25000.0 | 25711.34 | 102.8 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: P
Run Name: 1719901T71
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | | | 25000.0 | 25415.64 | 101.7 | | | |
| Iron | | | | | 25000.0 | 25201.14 | 100.8 | | | |
| Magnesium | | | | | 25000.0 | 25124.93 | 100.5 | | | |
| Manganese | | | | | 500.0 | 511.39 | 102.3 | | | |
| Potassium | | | | | 25000.0 | 25237.51 | 101.0 | | | |
| Sodium | | | | | 25000.0 | 25572.74 | 102.3 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: P
Run Name: 1719911T73
Calibration Date(s): 7/18/2017 - 07/19/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | | | | | | | | |
| Iron | | 30000.0 | 28975.89 | 96.6 | 25000.0 | 24657.37 | 98.6 | 25000.0 | 23844.15 | 95.4 |
| Magnesium | | | | | | | | | | |
| Manganese | | 600.0 | 582.11 | 97.0 | 500.0 | 492.49 | 98.5 | 500.0 | 474.74 | 94.9 |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: P
Run Name: 1719911T73
Calibration Date(s): 7/18/2017 - 07/19/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | | | | | | | | |
| Iron | | | | | | | | | | |
| Magnesium | | | | | | | | | | |
| Manganese | | | | | 500.0 | 478.17 | 95.6 | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: P
Run Name: 1721403T73
Calibration Date(s): 08/02/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | 30000.0 | 29752.86 | 99.2 | 25000.0 | 24406.09 | 97.6 | 25000.0 | 24381.12 | 97.5 |
| Iron | | | | | | | | | | |
| Magnesium | | | | | | | | | | |
| Manganese | | | | | | | | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: P
Run Name: 1721404T73
Calibration Date(s): 08/02/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | 30000.0 | 29935.56 | 99.8 | 25000.0 | 24349.35 | 97.4 | 25000.0 | 24210.47 | 96.8 |
| Iron | | | | | | | | | | |
| Magnesium | | | | | | | | | | |
| Manganese | | | | | | | | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 500.0 | 495.30 | 99.1 | 250.0 | 240.40 | 96.2 | 250.0 | 245.40 | 98.2 |
| Lead | 208 | 50.0 | 49.92 | 99.8 | 25.0 | 24.70 | 98.8 | 25.0 | 24.78 | 99.1 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | | | 250.0 | 249.80 | 99.9 | 250.0 | 245.00 | 98.0 |
| Lead | 208 | | | | 25.0 | 25.77 | 103.1 | 25.0 | 24.72 | 98.9 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR186

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | | | 250.0 | 260.30 | 104.1 | | | |
| Lead | 208 | | | | 25.0 | 26.07 | 104.3 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR186

Method: P
Run Name: 1719901T71
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | 400.0 | 503.16 | 125.8 | | |
| Iron | | 400.0 | 488.55 | 122.1 | | |
| Magnesium | | 200.0 | 226.46 | 113.2 | | |
| Manganese | | 10.0 | 12.89 | 128.9 | | |
| Potassium | | 1000.0 | 1184.38 | 118.4 | | |
| Sodium | | 2000.0 | 2345.27 | 117.3 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR186

Method: P
Run Name: 1719911T73
Calibration Date(s): 7/18/2017 - 07/19/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | | | | | |
| Iron | | 400.0 | 429.35 | 107.3 | | |
| Magnesium | | | | | | |
| Manganese | | 10.0 | 11.34 | 113.4 | | |
| Potassium | | | | | | |
| Sodium | | | | | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR186

Method: P
Run Name: 1721403T73
Calibration Date(s): 08/02/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | 400.0 | 448.29 | 112.1 | | |
| Iron | | | | | | |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Potassium | | | | | | |
| Sodium | | | | | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR186

Method: P
Run Name: 1721404T73
Calibration Date(s): 08/02/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | 400.0 | 464.38 | 116.1 | | |
| Iron | | | | | | |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Potassium | | | | | | |
| Sodium | | | | | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR186

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Arsenic | 75 | 4.0 | 4.07 | 101.8 | | |
| Lead | 208 | 2.0 | 2.02 | 101.0 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR186

Method: P
Run Name: 1719901T71
Calibration Date(s): 07/18/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | 33.4 | U | 68.7 | B | 33.4 | U | 33.4 | U | | 60.000 | U | 171951063502 |
| Iron | | 41.1 | U | 41.1 | U | 41.1 | U | 41.1 | U | | 80.500 | U | 171951063502 |
| Magnesium | | 16.7 | U | 60.5 | B | 16.7 | U | 16.7 | U | | 37.400 | U | 171951063502 |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | 0.83 | U | | 1.600 | U | 171951063502 |
| Potassium | | 127 | U | 127 | U | 127 | U | 127 | U | | 179.000 | U | 171951063502 |
| Sodium | | 167 | U | 167 | U | 167 | U | 167 | U | | 321.000 | U | 171951063502 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

eurofins | Lancaster Laboratories Environmental

QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR186

Method: P
Run Name: 1719911T73
Calibration Date(s): 07/18/2017 - 07/19/2017

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | | | | | | | | | | | | |
| Iron | | 41.1 | U | 41.1 | U | 41.1 | U | | | | | | |
| Magnesium | | | | | | | | | | | | | |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | 0.83 | U | | | | |
| Potassium | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below IDL/MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR186

Method: P
Run Name: 1721403T73
Calibration Date(s): 08/02/2017

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | 33.4 | U | 33.4 | U | 33.4 | U | | | | | | |
| Iron | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | | | |
| Potassium | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence | U= Below IDL/MDL<br>B= Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR186

Method: P
Run Name: 1721404T73
Calibration Date(s): 08/02/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | 33.4 | U | 33.4 | U | 33.4 | U | | | | 60.000 | U | 172131063502 |
| Iron | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | | | |
| Potassium | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR186

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Arsenic | 75 | 0.40 | U | 0.40 | U | 0.40 | U | 0.40 | B | 75 | 0.720 | U | 171951063903A |
| Lead | 208 | 0.038 | U | 0.038 | U | 0.038 | U | 0.038 | U | 208 | 0.110 | U | 171951063903A |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR186

Method: MS
Run Name: 1719906E03
Calibration Date(s): 07/18/2017

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Arsenic | 75 | | | 0.40 | U | 0.40 | U | | | | | | |
| Lead | 208 | | | 0.038 | U | 0.038 | U | | | | | | |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence | U= Below IDL/MDL<br>B= Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR186

Instrument ID: 16315
Run Name: 1719901T71
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 466461 | 93.3 | 469822.5 | 94.0 | | | | |
| Calcium | 500000 | 500000 | 476363 | 95.3 | 480484.4 | 96.1 | | | | |
| Iron | 200000 | 200000 | 188513 | 94.3 | 190652.6 | 95.3 | | | | |
| Magnesium | 500000 | 500000 | 509964 | 102.0 | 518778.1 | 103.8 | | | | |
| Manganese | 0 | 500 | 1 | | 483.9 | 96.8 | | | | |
| Potassium | 0 | 0 | 4 | | 26.7 | | | | | |
| Sodium | 0 | 0 | 155 | | 138.5 | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR186

Instrument ID: 18255
Run Name: 1719911T73
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 484284 | 96.9 | 485213.8 | 97.0 | | | | |
| Calcium | 500000 | 500000 | 478440 | 95.7 | 479433.0 | 95.9 | | | | |
| Iron | 200000 | 200000 | 190209 | 95.1 | 190891.2 | 95.4 | | | | |
| Magnesium | 500000 | 500000 | 476714 | 95.3 | 479645.4 | 95.9 | | | | |
| Manganese | 0 | 500 | 4 | | 476.7 | 95.3 | | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR186

Instrument ID: 18255
Run Name: 1721403T73
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 490397 | 98.1 | 485141.0 | 97.0 | | | | |
| Calcium | 500000 | 500000 | 484862 | 97.0 | 484055.3 | 96.8 | | | | |
| Iron | 200000 | 200000 | 198016 | 99.0 | 196426.9 | 98.2 | | | | |
| Magnesium | 500000 | 500000 | 487215 | 97.4 | 484457.2 | 96.9 | | | | |
| Manganese | | | | | | | | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR186

Instrument ID: 18255
Run Name: 1721404T73
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 494317 | 98.9 | 494737.4 | 98.9 | | | | |
| Calcium | 500000 | 500000 | 487432 | 97.5 | 484546.8 | 96.9 | | | | |
| Iron | 200000 | 200000 | 198415 | 99.2 | 198925.8 | 99.5 | | | | |
| Magnesium | 500000 | 500000 | 488525 | 97.7 | 490277.7 | 98.1 | | | | |
| Manganese | | | | | | | | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR186

Instrument ID: 11332
Run Name: 1719906E03
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 111500 | 111.5 | 106000.0 | 106.0 |
| Arsenic | 75 | 0 | 100 | 1 | | 98.5 | 98.5 |
| Calcium | 44 | 300000 | 300000 | 314900 | 105.0 | 298000.0 | 99.3 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Iron | 57 | 250000 | 250000 | 273800 | 109.5 | 256300.0 | 102.5 |
| Lead | 208 | 0 | 0 | 0 | | 0.3 | |
| Magnesium | 24 | 100000 | 100000 | 110900 | 110.9 | 104300.0 | 104.3 |
| Molybdenum | 98 | 2000 | 2000 | 2148 | 107.4 | 2208.0 | 110.4 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 119100 | 119.1 | 113800.0 | 113.8 |
| Sodium | 23 | 250000 | 250000 | 265600 | 106.2 | 253800.0 | 101.5 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Titanium | 47 | 2000 | 2000 | 2372 | 118.6 | 2194.0 | 109.7 |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9100479BKG Matrix Spike Lab Sample ID: 9100479MS Matrix Spike Duplicate Lab Sample ID: 9100479MSD
Batch Number(s): 171951063502

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Calcium | | 266259.1200 | | 268390.3800 | | 270822.9900 | | 4000.0000 | 4000.0000 | UG/L | 53 | | 114 | | 1 | | | 20 | P |
| Iron | | 80.5000 | U | 910.6400 | | 904.8200 | | 1000.0000 | 1000.0000 | UG/L | 91 | | 90 | | 1 | | 87 - 115 | 20 | P |
| Magnesium | | 37941.4800 | | 39696.0900 | | 39958.0900 | | 2000.0000 | 2000.0000 | UG/L | 88 | | 101 | | 1 | | | 20 | P |
| Manganese | | 1028.8000 | | 1524.6300 | | 1524.4500 | | 500.0000 | 500.0000 | UG/L | 99 | | 99 | | 0 | | 90 - 114 | 20 | P |
| Potassium | | 5540.6300 | | 15855.2000 | | 16008.2300 | | 10000.0000 | 10000.0000 | UG/L | 103 | | 105 | | 1 | | 86 - 114 | 20 | P |
| Sodium | | 65702.2300 | | 74875.0000 | | 75527.7800 | | 10000.0000 | 10000.0000 | UG/L | 92 | | 98 | | 1 | | | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9100485BKG Matrix Spike Lab Sample ID: 9100485MS Matrix Spike Duplicate Lab Sample ID: 9100485MSD
Batch Number(s): 171951063903

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Arsenic | 75 | 1.0200 | B | 10.9200 | | 9.9590 | | 10.0000 | 10.0000 | UG/L | 99 | | 89 | | 9 | | 84 - 116 | 20 | MS |
| Lead | 208 | 0.1891 | B | 14.9500 | | 14.9900 | | 15.0000 | 15.0000 | UG/L | 98 | | 99 | | 0 | | 88 - 115 | 20 | MS |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9100479BKG Duplicate Lab Sample ID: 9100479DUP
Batch Number(s): 171951063502
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | 266259.1200 | | 272737.3000 | | 2 | | P |
| Iron | | | 80.5000 | U | 80.5000 | U | | | P |
| Magnesium | | | 37941.4800 | | 38782.6200 | | 2 | | P |
| Manganese | | | 1028.8000 | | 1058.6800 | | 3 | | P |
| Potassium | | | 5540.6300 | | 5659.7000 | | 2 | | P |
| Sodium | | | 65702.2300 | | 67161.1300 | | 2 | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9100485BKG Duplicate Lab Sample ID: 9100485DUP
Batch Number(s): 171951063903
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | 1.0200 | B | 0.8411 | B | 19 | | MS |
| Lead | 208 | | 0.1891 | B | 0.2010 | B | 6 | | MS |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR186
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 171951063903 | UG/L | 10.000 | 9.413 | | 84 - 116 | 94 | MS | Yes |
| Calcium | | 171951063502 | UG/L | 4000.000 | 4637.400 | | 87 - 113 | 116 | P | No |
| Iron | | 171951063502 | UG/L | 1000.000 | 967.550 | | 87 - 115 | 97 | P | Yes |
| Lead | 208 | 171951063903 | UG/L | 15.000 | 14.400 | | 88 - 115 | 96 | MS | Yes |
| Magnesium | | 171951063502 | UG/L | 2000.000 | 2118.300 | | 85 - 113 | 106 | P | Yes |
| Manganese | | 171951063502 | UG/L | 500.000 | 514.590 | | 90 - 114 | 103 | P | Yes |
| Potassium | | 171951063502 | UG/L | 10000.000 | 10051.730 | | 86 - 114 | 101 | P | Yes |
| Sodium | | 171951063502 | UG/L | 10000.000 | 10125.040 | | 87 - 115 | 101 | P | Yes |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR186
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | 172131063502 | UG/L | 4000.000 | 4033.310 | | 87 - 113 | 101 | P | Yes |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 7(LCS/LCSD)
LABORATORY CONTROL SAMPLE/SAMPLE DUPLICATE
SDG No.: KR186
Matrix: WATER

| Analyte | Mass | Lab Sample ID LCS | Lab Sample ID LCSD | Batch Number | Units | True | LCS Found | LCS C | LCS %R | LCSD Found | LCSD C | LCSD %R | Control Limits (%) | RPD | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | P21363BQ | P21363BY | 172131063502 | UG/L | 4000.000 | 4033.310 | | 101 | 4108.150 | | 103 | 87 - 113 | 2 | P | Yes |

RPD Control Limit: 20

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9100479BKG Serial Dilution Lab Sample ID: 9100479L
Batch Number(s): 171951063502, 172131063502
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Calcium | | 264635.5100 | | 259776.6000 | | 2 | | P |
| Iron | | 80.5000 | U | 402.5000 | U | | | P |
| Magnesium | | 37941.4800 | | 37788.2500 | | 0 | | P |
| Manganese | | 1028.8000 | | 1066.7000 | | 4 | | P |
| Potassium | | 5540.6300 | | 5601.9500 | | 1 | | P |
| Sodium | | 65702.2300 | | 64115.5500 | | 2 | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR186
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9100485BKG Serial Dilution Lab Sample ID: 9100485L
Batch Number(s): 171951063903
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 1.0200 | B | 3.6150 | U | 100 | | MS |
| Lead | 208 | 0.1891 | B | 0.5550 | U | 100 | | MS |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Calcium | 317.93 | | 33.4 |
| Iron | 261.19 | | 33.4 |
| Magnesium | 285.21 | | 16.7 |
| Manganese | 257.61 | | 0.83 |
| Potassium | 766.49 | | 127 |
| Sodium | 589.59 | | 167 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Instrument ID: 18255
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Calcium | 317.93 | | 33.4 |
| Iron | 261.19 | | 41.1 |
| Magnesium | | | |
| Manganese | 257.61 | | 0.83 |
| Potassium | | | |
| Sodium | | | |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS (QUARTERLY)
SDG No.: KR186

Method: MS
Instrument ID: 11332
Date: 07/2017

| Analyte | MASS (amu) | Background | IDL (UG/L) |
|---|---|---|---|
| Arsenic | 75 | | 0.40 |
| Lead | 208 | | 0.038 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR186
Matrix: WATER

Method: P
Date: 06/2017

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Calcium | 317.93 | | 400 | 60.0 |
| Iron | 261.19 | | 400 | 80.5 |
| Magnesium | 285.21 | | 200 | 37.4 |
| Manganese | 257.61 | | 10.0 | 1.6 |
| Potassium | 766.49 | | 1000 | 179 |
| Sodium | 589.59 | | 2000 | 321 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR186
Matrix: WATER

Method: MS
Date: 06/2017

| Analyte | Mass | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Arsenic | 75 | | 4.0 | 0.72 |
| Lead | 208 | | 2.0 | 0.11 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 11
ICP INTERELEMENT CORRECTION FACTORS (BIANNUALLY)
SDG No.: KR186

Instrument ID: 16315
Date: 05/2017

| Analyte | Wavelength (nm) | Interelement Correction Factor for: AL | CA | FE | MG | -- |
|---|---|---|---|---|---|---|
| Magnesium | 285.21 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | |
| Manganese | 257.61 | 0.0000000 | 0.0000000 | 0.0000180 | 0.0000000 | |
| Potassium | 766.49 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | |

Comments:
_____
_____
_____
_____

QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR186

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Calcium | 317.93 | 10.00 | 600000.0 |
| Iron | 261.19 | 10.00 | 300000.0 |
| Magnesium | 285.21 | 10.00 | 600000.0 |
| Manganese | 257.61 | 10.00 | 20000.0 |
| Potassium | 766.49 | 10.00 | 500000.0 |
| Sodium | 589.59 | 10.00 | 500000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR186

Method: P
Instrument ID: 18255
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Calcium | 317.93 | 10.00 | 600000.0 |
| Iron | 261.19 | 10.00 | 300000.0 |
| Magnesium | | | |
| Manganese | 257.61 | 10.00 | 20000.0 |
| Potassium | | | |
| Sodium | | | |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Batch Number: 171951063502

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9100480 | 07/17/2017 | 50.00 | 50 |
| 9100483 | 07/17/2017 | 50.00 | 50 |
| 9100484 | 07/17/2017 | 50.00 | 50 |
| 9100485 | 07/17/2017 | 50.00 | 50 |
| 9100486 | 07/17/2017 | 50.00 | 50 |
| 9100487 | 07/17/2017 | 50.00 | 50 |
| 9100488 | 07/17/2017 | 50.00 | 50 |
| 9100489 | 07/17/2017 | 50.00 | 50 |
| 9100490 | 07/17/2017 | 50.00 | 50 |
| 9100491 | 07/17/2017 | 50.00 | 50 |
| 9100479BKG | 07/17/2017 | 50.00 | 50 |
| 9100479DUP | 07/17/2017 | 50.00 | 50 |
| 9100479MSD | 07/17/2017 | 50.00 | 50 |
| 9100479MS | 07/17/2017 | 50.00 | 50 |
| P19563BB | 07/17/2017 | 50.00 | 50 |
| P19563BQ | 07/17/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: P
Batch Number: 172131063502

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9100483 | 08/01/2017 | 50.00 | 50 |
| 9100487 | 08/01/2017 | 50.00 | 50 |
| 9100489 | 08/01/2017 | 50.00 | 50 |
| 9100491 | 08/01/2017 | 50.00 | 50 |
| 9100479BKG | 08/01/2017 | 25.00 | 25 |
| P21363BB | 08/01/2017 | 50.00 | 50 |
| P21363BQ | 08/01/2017 | 1.00 | 1 |
| P21363BY | 08/01/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
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MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: MS
Batch Number: 171951063903

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9100479 | 07/17/2017 | 50.00 | 50 |
| 9100483 | 07/17/2017 | 50.00 | 50 |
| 9100487 | 07/17/2017 | 50.00 | 50 |
| 9100489 | 07/17/2017 | 50.00 | 50 |
| 9100491 | 07/17/2017 | 50.00 | 50 |
| 9100485BKG | 07/17/2017 | 50.00 | 50 |
| 9100485DUP | 07/17/2017 | 50.00 | 50 |
| 9100485MSD | 07/17/2017 | 50.00 | 50 |
| 9100485MS | 07/17/2017 | 50.00 | 50 |
| P19563CB | 07/17/2017 | 50.00 | 50 |
| P19563CQ | 07/17/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR186

Method: P
Instrument ID: 16315
Run Name: 1719901T71

Run Start Date: 07/18/2017
Run End Date: 07/18/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 01:58 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 02:02 | | X | X | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 02:05 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 02:08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 02:11 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 02:14 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 02:17 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 02:20 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 02:24 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 02:27 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 02:30 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| P19563BB | 1.00 | 02:33 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| P19563BQ | 1.00 | 02:36 | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479BKG | 1.00 | 02:39 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479A | 1.00 | 02:42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479DUP | 1.00 | 02:45 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479MS | 1.00 | 02:49 | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479MSD | 1.00 | 02:52 | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479L | 5.00 | 02:55 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 02:58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100480 | 1.00 | 03:01 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 03:04 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 03:07 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100483 | 1.00 | 03:10 | | | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100484 | 1.00 | 03:14 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100485 | 1.00 | 03:17 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100486 | 1.00 | 03:20 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100487 | 1.00 | 03:23 | | | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100488 | 1.00 | 03:26 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100489 | 1.00 | 03:29 | | | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100490 | 1.00 | 03:32 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100491 | 1.00 | 03:35 | | | X | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 03:38 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 03:41 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR186

Method: P
Instrument ID: 18255
Run Name: 1719911T73

Run Start Date: 07/18/2017
Run End Date: 07/19/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 23:40 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 23:43 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 23:46 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 23:50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 23:53 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 23:56 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 23:59 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 00:02 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 00:05 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 00:08 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 00:11 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| P19563BB | 1.00 | 00:14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19563BB | 1.00 | 00:17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19563BQ | 1.00 | 00:21 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19563BQ | 1.00 | 00:24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 00:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479A | 1.00 | 00:30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 00:33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479MS | 1.00 | 00:36 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479MSD | 1.00 | 00:39 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 00:42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 00:45 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 00:48 | | | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 00:51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 00:54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 00:57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 01:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 01:04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100491 | 1.00 | 01:07 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 01:10 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 01:13 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR186

Method: P
Instrument ID: 18255
Run Name: 1721403T73

Run Start Date: 08/02/2017
Run End Date: 08/02/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 09:13 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 09:16 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 09:19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 09:22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 09:25 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 09:28 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 09:31 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 09:34 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 09:37 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 09:41 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 09:44 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P21363BB | 1.00 | 09:47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P21363BQ | 1.00 | 09:50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P21363BY | 1.00 | 09:53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479BKG | 1.00 | 09:56 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479A | 1.00 | 09:59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100479L | 5.00 | 10:02 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100483 | 1.00 | 10:05 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100487 | 1.00 | 10:08 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100489 | 1.00 | 10:11 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:17 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:20 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR186

Method: P
Instrument ID: 18255
Run Name: 1721404T73

Run Start Date: 08/02/2017
Run End Date: 08/02/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 11:00 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:03 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 11:12 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 11:15 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 11:18 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 11:21 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 11:24 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:28 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:31 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P21363BB | 1.00 | 11:34 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P21363BB | 1.00 | 11:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P21363BQ | 1.00 | 11:40 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P21363BY | 1.00 | 11:43 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100491 | 1.00 | 11:46 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:49 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:52 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
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LEGEND:
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A = Post Digest Spike
L = Serial Dilution
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Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR186

Method: MS
Instrument ID: 11332
Run Name: 1719906E03

Run Start Date: 07/18/2017
Run End Date: 07/18/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 09:56 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 09:58 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 10:00 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 10:02 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 10:04 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 10:06 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 10:08 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 10:09 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 10:11 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:14 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:16 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 10:30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:31 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:33 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 10.00 | 10:40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:42 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:43 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19563CB | 1.00 | 10:45 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P19563CQ | 1.00 | 10:47 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100485BKG | 1.00 | 10:48 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100485A | 1.00 | 10:50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100485DUP | 1.00 | 10:52 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100485MS | 1.00 | 10:53 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100485MSD | 1.00 | 10:55 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100485L | 5.00 | 10:57 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:59 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:00 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR186

Method: MS
Instrument ID: 11332
Run Name: 1719906E03

Run Start Date: 07/18/2017
Run End Date: 07/18/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| 9100479 | 1.00 | 11:02 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100483 | 1.00 | 11:04 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100487 | 1.00 | 11:05 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100489 | 1.00 | 11:07 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9100491 | 1.00 | 11:09 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:11 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:12 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 15
ICP-MS TUNE
SDG No.: KR186
Matrix: WATER

Instrument ID: 11332
Date: 07/17/2017

| Analyte | Mass | Avg. Measured Mass (amu) | Avg. Peak Width at 5% Peak Height (amu) | %RSD |
|---|---|---|---|---|
| Lithium | 6.000 | 5.90 | 0.70 | 2.9 |
| Magnesium | 24.000 | 23.90 | 0.65 | 4.9 |
| Rhodium | 103.000 | 103.00 | 0.65 | 1.7 |
| Indium | 115.000 | 115.00 | 0.65 | 1.3 |
| Cerium | 140.000 | 140.00 | 0.65 | 1.8 |
| Lead | 208.000 | 207.95 | 0.60 | 2.2 |
| Uranium | 238.000 | 237.95 | 0.55 | 2.2 |

Comments:

_____
_____
_____
_____

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR186

Instrument ID: 11332
Run Name: 1719906E03

Start Date: 07/18/2017
End Date: 07/18/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| BI-1-209 | PB | IN-1-115 | AS |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element BI-1-209 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S0 | 09:56 | 100 | | 100 | | | | | | | | | | | |
| S | 09:58 | 96 | | 96 | | | | | | | | | | | |
| CCS | 10:00 | 101 | | 101 | | | | | | | | | | | |
| CCS | 10:02 | 97 | | 99 | | | | | | | | | | | |
| ICV | 10:04 | 98 | | 99 | | | | | | | | | | | |
| ICB | 10:06 | 98 | | 100 | | | | | | | | | | | |
| LLC | 10:08 | 97 | | 100 | | | | | | | | | | | |
| ICSA | 10:09 | 90 | | 85 | | | | | | | | | | | |
| ICSAB | 10:11 | 92 | | 88 | | | | | | | | | | | |
| ZZZZZZ | 10:13 | | | | | | | | | | | | | | |
| CCV | 10:14 | 105 | | 106 | | | | | | | | | | | |
| CCB | 10:16 | 102 | | 106 | | | | | | | | | | | |
| ZZZZZZ | 10:18 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:19 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:21 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:23 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:24 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:26 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:28 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:30 | | | | | | | | | | | | | | |
| CCV | 10:31 | 98 | | 102 | | | | | | | | | | | |
| CCB | 10:33 | 93 | | 97 | | | | | | | | | | | |
| ZZZZZZ | 10:35 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:36 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:38 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:40 | | | | | | | | | | | | | | |
| CCV | 10:42 | 96 | | 99 | | | | | | | | | | | |
| CCB | 10:43 | 94 | | 99 | | | | | | | | | | | |
| P19563CB | 10:45 | 97 | | 101 | | | | | | | | | | | |
| P19563CQ | 10:47 | 101 | | 101 | | | | | | | | | | | |
| 9100485BKG | 10:48 | 96 | | 96 | | | | | | | | | | | |
| 9100485A | 10:50 | 95 | | 97 | | | | | | | | | | | |
| 9100485DUP | 10:52 | 95 | | 100 | | | | | | | | | | | |

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike

FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR186

Instrument ID: 11332
Run Name: 1719906E03

Start Date: 07/18/2017
End Date: 07/18/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| BI-1-209 | PB | IN-1-115 | AS |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element BI-1-209 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9100485MS | 10:53 | 95 | | 96 | | | | | | | | | | | |
| 9100485MSD | 10:55 | 101 | | 102 | | | | | | | | | | | |
| 9100485L | 10:57 | 104 | | 106 | | | | | | | | | | | |
| CCV | 10:59 | 98 | | 101 | | | | | | | | | | | |
| CCB | 11:00 | 97 | | 102 | | | | | | | | | | | |
| 9100479 | 11:02 | 95 | | 94 | | | | | | | | | | | |
| 9100483 | 11:04 | 97 | | 100 | | | | | | | | | | | |
| 9100487 | 11:05 | 96 | | 97 | | | | | | | | | | | |
| 9100489 | 11:07 | 97 | | 101 | | | | | | | | | | | |
| 9100491 | 11:09 | 98 | | 101 | | | | | | | | | | | |
| CCV | 11:11 | 91 | | 96 | | | | | | | | | | | |
| CCB | 11:12 | 100 | | 105 | | | | | | | | | | | |

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BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

# Raw Data

# Metals in Liquid

# ICP Data

# Metals in Liquid

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# ICP-AES Run Data Report

| Reviewed By | Reviewed Date |
|---|---|
| Nina C Haller | 08/02/2017 11:58AM |
| Scott R Yanos | 07/18/2017 4:50AM |

| Verified By: | Verified Date |
|---|---|
| Nina C Haller | 08/02/2017 12:33PM |
| Parker D Lindstrom | 07/19/2017 2:15PM |

Data File Name 1719901T71.TXT
Run Name: 1719901T71

Method Reference Name(s):

Analyst Employee: 12404

Instrument Parameters:

Individual Integration Time: 10.00 sec Total Integration Time: 30.00 sec Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 1 Date/Time: 07/18/2017 01:58

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -16.33085 | 31.080 | -0.00667 | -0.00364 | -0.00671 |
| AL | 0.000 | 26.36667 | 16.497 | 0.14502 | 0.20153 | 0.18699 |
| AS | 0.000 | -0.30667 | 346.502 | -0.00319 | 0.00966 | -0.01882 |
| B | 0.000 | -1.84854 | 137.900 | 0.00001 | -0.00002 | -0.00003 |
| BA | 0.000 | 184.57284 | 12.258 | 0.00125 | 0.00146 | 0.00115 |
| BE | 0.000 | -130.56129 | 1.921 | -0.04455 | -0.04527 | -0.04628 |
| CA | 0.000 | 42.93333 | 8.529 | 0.00632 | 0.00534 | 0.00570 |
| CD | 0.000 | -3.21000 | 21.930 | -0.04606 | -0.04975 | -0.03204 |
| CO | 0.000 | -0.80333 | 62.284 | -0.00319 | -0.01297 | -0.01588 |
| CR | 0.000 | -0.04994 | 3910.032 | 0.00001 | -0.00001 | 0.00000 |
| CU | 0.000 | -17.04245 | 20.394 | -0.00727 | -0.00555 | -0.00495 |
| FE | 0.000 | 1.65000 | 97.529 | 0.00033 | -0.00003 | 0.00036 |
| K | 0.000 | 39.33333 | 16.459 | 0.29609 | 0.21512 | 0.28368 |
| LI | 0.000 | 3.51667 | 404.886 | 0.00213 | -0.00158 | 0.00085 |
| MG | 0.000 | 18.16667 | 1.631 | 0.00248 | 0.00247 | 0.00240 |
| MN | 0.000 | -5.82807 | 56.893 | -0.00193 | -0.00092 | -0.00322 |
| MO | 0.000 | -1.14867 | 69.101 | -0.00312 | -0.02055 | -0.02213 |
| NA | 0.000 | -39.73333 | 5.566 | -0.00517 | -0.00570 | -0.00520 |
| NI | 0.000 | 8.09333 | 8.543 | 0.10274 | 0.10175 | 0.11813 |
| P | 0.000 | 0.41667 | 72.828 | 0.00015 | 0.00002 | 0.00017 |
| PB | 0.000 | -2.42778 | 61.346 | -0.05376 | -0.02801 | -0.01491 |
| S | 0.000 | 8.17333 | 4.228 | 0.00227 | 0.00209 | 0.00215 |
| SB | 0.000 | 1.30000 | 7.235 | 0.00035 | 0.00032 | 0.00037 |
| SE | 0.000 | 0.51111 | 93.965 | 0.00111 | 0.01367 | 0.00556 |
| SI | 0.000 | 1.23333 | 130.511 | 0.00041 | 0.00010 | -0.00001 |
| SN | 0.000 | 0.34333 | 206.473 | -0.00292 | 0.00146 | 0.01522 |
| SR | 0.000 | -24.27935 | 26.541 | -0.00013 | -0.00022 | -0.00016 |
| TI | 0.000 | 18.16489 | 42.505 | 0.00621 | 0.00367 | 0.00903 |
| TL | 0.000 | -0.96333 | 45.608 | -0.00863 | -0.01032 | -0.01949 |
| V | 0.000 | -7.73896 | 69.314 | -0.00481 | -0.00130 | -0.00195 |
| Y1 | 0.000 | 3763.79500 | 0.447 | 3766.63500 | 3779.01000 | 3745.74000 |
| Y2A | 0.000 | 143899.68569 | 0.413 | 143751.09802 | 143393.60906 | 144554.35000 |
| Y2R | 0.000 | 7416.70833 | 0.704 | 7447.00000 | 7356.40000 | 7446.72500 |
| ZN | 0.000 | 1.37667 | 56.315 | 0.02841 | 0.00781 | 0.01869 |
| ZR | 0.000 | 3.66667 | 10.366 | 0.00045 | 0.00055 | 0.00048 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 2 Date/Time: 07/18/2017 02:02

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 3345.41313 | 0.935 | 22.91249 | 22.52178 | 22.86361 |
| CA | 50.000 | 30785.00539 | 0.651 | 4.21291 | 4.15973 | 4.19693 |
| FE | 50.000 | 5712.95167 | 1.243 | 0.78241 | 0.76643 | 0.78384 |
| K | 50.000 | 15516.72804 | 0.869 | 105.90122 | 104.56135 | 106.31670 |
| MG | 50.000 | 40197.23342 | 1.011 | 5.49485 | 5.40774 | 5.51033 |
| NA | 50.000 | 54650.89001 | 0.640 | 7.46841 | 7.38316 | 7.46250 |
| S | 50.000 | 2492.78000 | 1.520 | 0.68902 | 0.67500 | 0.69541 |
| SI | 50.000 | 4571.69940 | 0.902 | 0.62568 | 0.61574 | 0.62523 |
| Y1 | 50.000 | 3631.29667 | 0.054 | 3629.91500 | 3633.55000 | 3630.42500 |
| Y2R | 50.000 | 7347.72199 | 0.722 | 7324.56009 | 7408.37997 | 7310.22591 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 3 Date/Time: 07/18/2017 02:05

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 8042.03436 | 0.297 | 2.91546 | 2.91134 | 2.89886 |
| AS | 1.000 | 102.58667 | 2.181 | 1.43053 | 1.37799 | 1.37766 |
| B | 1.000 | 5178.84474 | 0.474 | 0.03765 | 0.03745 | 0.03729 |
| BA | 1.000 | 497077.50777 | 1.190 | 3.62398 | 3.61654 | 3.54644 |
| BE | 1.000 | 319947.36842 | 0.519 | 116.18509 | 115.92394 | 115.03861 |
| CD | 1.000 | 5079.89000 | 0.852 | 69.75297 | 68.89244 | 68.62604 |
| CO | 1.000 | 2231.60333 | 1.074 | 30.67980 | 30.34785 | 30.02801 |
| CU | 1.000 | 8028.93789 | 1.348 | 2.94092 | 2.86290 | 2.90775 |
| LI | 1.000 | 5136.68873 | 0.940 | 0.69261 | 0.70180 | 0.68918 |
| MN | 1.000 | 33213.07791 | 0.405 | 12.06686 | 11.99624 | 11.97346 |
| NI | 1.000 | 1448.30667 | 0.120 | 19.72425 | 19.68396 | 19.68293 |
| P | 1.000 | 27.51333 | 9.836 | 0.00785 | 0.00664 | 0.00796 |
| PB | 1.000 | 469.20000 | 0.485 | 6.37972 | 6.35081 | 6.41263 |
| SE | 1.000 | 82.02778 | 2.011 | 1.14137 | 1.09971 | 1.10611 |
| SR | 1.000 | 523226.87243 | 0.808 | 3.81472 | 3.78598 | 3.75361 |
| TL | 1.000 | 111.15000 | 0.648 | 1.51565 | 1.50048 | 1.51882 |
| Y1 | 1.000 | 3676.48833 | 1.102 | 3630.12500 | 3694.15000 | 3705.19000 |
| Y2A | 1.000 | 138249.40812 | 0.547 | 137470.10978 | 138297.90000 | 138980.21457 |
| Y2R | 1.000 | 7396.02522 | 0.283 | 7393.12787 | 7376.72466 | 7418.22313 |
| ZN | 1.000 | 3216.53000 | 0.174 | 43.72935 | 43.67717 | 43.82677 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 4 Date/Time: 07/18/2017 02:08

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 7040.56756 | 0.854 | 0.04836 | 0.04918 | 0.04893 |
| MO | 1.000 | 822.69333 | 0.151 | 10.77391 | 10.79034 | 10.75772 |
| SB | 1.000 | 180.70667 | 0.574 | 0.04704 | 0.04757 | 0.04738 |
| SN | 1.000 | 308.07333 | 0.605 | 4.00960 | 4.05836 | 4.03550 |
| TI | 1.000 | 31044.68943 | 0.426 | 10.72494 | 10.75393 | 10.81469 |
| V | 1.000 | 9472.38181 | 0.803 | 3.29027 | 3.25573 | 3.30756 |
| Y1 | 1.000 | 3817.95000 | 0.341 | 3807.98500 | 3832.70500 | 3813.16000 |
| Y2A | 1.000 | 144199.57960 | 0.291 | 144031.61149 | 144676.88585 | 143890.24147 |
| Y2R | 1.000 | 7547.59167 | 0.611 | 7512.75000 | 7530.10000 | 7599.92500 |
| ZR | 1.000 | 1227.51667 | 1.065 | 0.16342 | 0.16386 | 0.16066 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 5 Date/Time: 07/18/2017 02:11

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.59942 | 4 849.22 | 0.243 | 0.60043 | 0.60009 | 0.59775 |
| ____ AL | 29.96974 | 2 012.18 | 0.670 | 29.90727 | 30.19436 | 29.80758 |
| ____ AS | 0.60553 | 61.31 | 1.072 | 0.61216 | 0.59918 | 0.60525 |
| ____ B | 0.57849 | 3 240.61 | 0.224 | 0.57700 | 0.57938 | 0.57909 |
| ____ BA | 0.60298 | 302 081.50 | 0.074 | 0.60316 | 0.60248 | 0.60331 |
| ____ BE | 0.57204 | 184 352.47 | 0.232 | 0.57078 | 0.57192 | 0.57343 |
| ____ CA | 30.07632 | 18 563.19 | 0.470 | 30.11611 | 30.19367 | 29.91919 |
| ____ CD | 0.60014 | 3 023.40 | 0.643 | 0.60416 | 0.59646 | 0.59981 |
| ____ CO | 0.59005 | 1 303.78 | 0.550 | 0.59331 | 0.58682 | 0.59001 |
| ____ CR | 0.57140 | 3 886.13 | 0.313 | 0.56995 | 0.57340 | 0.57085 |
| ____ CU | 0.58026 | 4 685.59 | 0.399 | 0.57813 | 0.57991 | 0.58273 |
| ____ FE | 29.50748 | 3 377.14 | 0.650 | 29.70541 | 29.49458 | 29.32246 |
| ____ K | 29.75189 | 9 253.16 | 0.759 | 29.95942 | 29.78492 | 29.51134 |
| ____ LI | 0.59792 | 3 055.93 | 0.667 | 0.60240 | 0.59475 | 0.59661 |
| ____ MG | 29.77275 | 24 204.90 | 0.580 | 29.87875 | 29.86608 | 29.57341 |
| ____ MN | 0.59393 | 19 893.15 | 0.184 | 0.59273 | 0.59416 | 0.59488 |
| ____ MO | 0.59637 | 466.71 | 0.268 | 0.59723 | 0.59736 | 0.59452 |
| ____ NA | 29.31626 | 32 040.82 | 0.367 | 29.37511 | 29.38169 | 29.19197 |
| ____ NI | 0.59365 | 852.70 | 0.620 | 0.59489 | 0.59655 | 0.58952 |
| ____ P | 0.61648 | 16.93 | 12.466 | 0.66850 | 0.65274 | 0.52821 |
| ____ PB | 0.60137 | 281.88 | 0.756 | 0.60476 | 0.60315 | 0.59620 |
| ____ S | 30.52369 | 1 527.14 | 1.233 | 30.70678 | 30.77359 | 30.09069 |
| ____ SB | 0.59508 | 102.87 | 1.217 | 0.59228 | 0.60330 | 0.58965 |
| ____ SE | 0.59804 | 48.49 | 0.944 | 0.59665 | 0.59322 | 0.60425 |
| ____ SI | 30.43449 | 2 785.42 | 0.534 | 30.51432 | 30.54156 | 30.24760 |
| ____ SN | 0.58096 | 170.62 | 0.389 | 0.58313 | 0.57862 | 0.58112 |
| ____ SR | 0.59407 | 313 182.80 | 0.117 | 0.59376 | 0.59487 | 0.59359 |
| ____ TI | 0.59692 | 17 946.23 | 0.079 | 0.59663 | 0.59746 | 0.59666 |
| ____ TL | 0.60991 | 63.60 | 0.080 | 0.60959 | 0.61047 | 0.60968 |
| ____ V | 0.60635 | 5 545.80 | 0.096 | 0.60602 | 0.60702 | 0.60602 |
| ____ Y1 | 3636.78167 | 3 636.78 | 0.639 | 3610.66500 | 3655.23500 | 3644.44500 |
| ____ Y2A | 139296.08832 | 139 296.09 | 0.195 | 139530.03295 | 139360.69862 | 138997.53339 |
| ____ Y2R | 7351.08126 | 7 351.08 | 0.610 | 7324.68019 | 7325.71372 | 7402.84987 |
| ____ ZN | 0.59793 | 1 911.25 | 0.057 | 0.59775 | 0.59832 | 0.59771 |
| ____ ZR | 0.61057 | 731.42 | 0.559 | 0.60672 | 0.61321 | 0.61178 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 6 Date/Time: 07/18/2017 02:14

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00032 | -11.40 | 350.290 | -0.00086 | 0.00044 | 0.00138 |
| ____ AL | 0.03335 | 28.70 | 92.430 | 0.04030 | 0.06011 | -0.00036 |
| ____ AS | 0.00193 | -0.28 | 298.861 | 0.00146 | 0.00791 | -0.00358 |
| ____ B | 0.00231 | 8.76 | 15.321 | 0.00270 | 0.00222 | 0.00201 |
| ____ BA | 0.00017 | 267.78 | 14.187 | 0.00014 | 0.00016 | 0.00019 |
| ____ BE | 0.00019 | -79.74 | 15.427 | 0.00023 | 0.00017 | 0.00018 |
| ____ CA | 0.00545 | 46.50 | 82.547 | 0.00027 | 0.00837 | 0.00771 |
| ____ CD | -0.00010 | -3.68 | 316.745 | 0.00028 | -0.00029 | -0.00030 |
| ____ CO | 0.00039 | 0.11 | 156.773 | -0.00011 | 0.00107 | 0.00020 |
| ____ CR | 0.00016 | 1.10 | 426.634 | 0.00058 | -0.00064 | 0.00055 |
| ____ CU | 0.00074 | -6.69 | 128.566 | 0.00033 | 0.00006 | 0.00183 |
| ____ FE | 0.00463 | 2.18 | 192.303 | 0.00337 | -0.00358 | 0.01408 |
| ____ K | -0.01100 | 36.18 | 713.541 | -0.08675 | -0.01612 | 0.06990 |
| ____ LI | 0.00237 | 15.70 | 56.562 | 0.00223 | 0.00111 | 0.00378 |
| ____ MG | -0.00527 | 13.80 | 72.880 | -0.00187 | -0.00943 | -0.00450 |
| ____ MN | 0.00028 | 8.18 | 53.026 | 0.00035 | 0.00037 | 0.00011 |
| ____ MO | 0.00146 | -0.45 | 45.744 | 0.00070 | 0.00194 | 0.00174 |
| ____ NA | 0.05277 | 15.63 | 3.904 | 0.05202 | 0.05510 | 0.05119 |
| ____ NI | -0.00017 | 7.86 | 437.535 | -0.00087 | 0.00060 | -0.00023 |
| ____ P | 0.02012 | 0.98 | 125.083 | -0.00816 | 0.02848 | 0.04004 |
| ____ PB | 0.00403 | -2.17 | 103.030 | 0.00545 | -0.00065 | 0.00727 |
| ____ S | 0.00941 | 8.67 | 45.678 | 0.01374 | 0.00935 | 0.00514 |
| ____ SB | 0.00273 | 1.78 | 30.935 | 0.00181 | 0.00292 | 0.00347 |
| ____ SE | -0.01512 | -0.75 | 72.614 | -0.02778 | -0.00811 | -0.00948 |
| ____ SI | 0.01277 | 2.43 | 89.079 | -0.00014 | 0.01711 | 0.02133 |
| ____ SN | -0.00044 | 0.22 | 712.953 | -0.00342 | -0.00068 | 0.00279 |
| ____ SR | 0.00022 | 83.04 | 15.895 | 0.00020 | 0.00026 | 0.00021 |
| ____ TI | 0.00028 | 26.79 | 79.331 | 0.00042 | 0.00041 | 0.00002 |
| ____ TL | -0.00306 | -0.59 | 185.346 | -0.00961 | 0.00041 | 0.00002 |
| ____ V | 0.00063 | -4.63 | 90.079 | 0.00111 | 0.00001 | 0.00077 |
| ____ Y1 | 3769.32500 | 3 769.33 | 0.596 | 3746.40500 | 3770.25500 | 3791.31500 |
| ____ Y2A | 142871.93362 | 142 871.93 | 0.571 | 143751.17055 | 142723.38356 | 142141.24675 |
| ____ Y2R | 7441.97500 | 7 441.98 | 1.718 | 7298.37500 | 7543.37500 | 7484.17500 |
| ____ ZN | 0.00040 | 2.68 | 78.018 | 0.00025 | 0.00076 | 0.00019 |
| ____ ZR | 0.00165 | 5.67 | 159.233 | 0.00084 | -0.00048 | 0.00457 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 7 Date/Time: 07/18/2017 02:17

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01093 | 80.75 | 5.814 | 0.01155 | 0.01097 | 0.01028 |
| ____ AL | 0.39836 | 54.00 | 8.027 | 0.41715 | 0.36144 | 0.41649 |
| ____ AS | 0.04701 | 4.57 | 8.181 | 0.04455 | 0.04505 | 0.05144 |
| ____ B | 0.10603 | 580.02 | 1.946 | 0.10365 | 0.10730 | 0.10713 |
| ____ BA | 0.01175 | 6 350.12 | 0.945 | 0.01174 | 0.01187 | 0.01165 |
| ____ BE | 0.01134 | 3 684.44 | 2.115 | 0.01107 | 0.01152 | 0.01144 |
| ____ CA | 0.50316 | 363.32 | 0.809 | 0.49962 | 0.50224 | 0.50761 |
| ____ CD | 0.01154 | 58.22 | 2.211 | 0.01154 | 0.01128 | 0.01179 |
| ____ CO | 0.01201 | 27.29 | 5.574 | 0.01230 | 0.01124 | 0.01247 |
| ____ CR | 0.03289 | 234.21 | 2.579 | 0.03191 | 0.03340 | 0.03335 |
| ____ CU | 0.02315 | 183.16 | 4.410 | 0.02268 | 0.02433 | 0.02246 |
| ____ FE | 0.48855 | 59.30 | 0.800 | 0.48446 | 0.48895 | 0.49224 |
| ____ K | 1.18438 | 417.87 | 4.983 | 1.14632 | 1.25236 | 1.15446 |
| ____ LI | 0.04969 | 264.57 | 2.514 | 0.04848 | 0.04962 | 0.05097 |
| ____ MG | 0.22646 | 210.85 | 3.495 | 0.23560 | 0.22200 | 0.22178 |
| ____ MN | 0.01289 | 450.90 | 1.319 | 0.01270 | 0.01303 | 0.01294 |
| ____ MO | 0.02413 | 18.34 | 2.139 | 0.02400 | 0.02470 | 0.02369 |
| ____ NA | 2.34527 | 2 599.08 | 0.525 | 2.34165 | 2.33519 | 2.35898 |
| ____ NI | 0.02297 | 42.83 | 2.380 | 0.02237 | 0.02344 | 0.02311 |
| ____ P | 0.24591 | 7.39 | 11.461 | 0.21351 | 0.26468 | 0.25955 |
| ____ PB | 0.03873 | 14.99 | 6.505 | 0.03592 | 0.04078 | 0.03951 |
| ____ S | 1.13543 | 68.01 | 0.361 | 1.13749 | 1.13071 | 1.13810 |
| ____ SB | 0.04478 | 9.36 | 12.275 | 0.03986 | 0.04375 | 0.05071 |
| ____ SE | 0.03548 | 3.54 | 37.482 | 0.04424 | 0.04202 | 0.02018 |
| ____ SI | 0.14505 | 14.94 | 8.568 | 0.13924 | 0.13658 | 0.15931 |
| ____ SN | 0.04322 | 13.73 | 2.900 | 0.04266 | 0.04466 | 0.04235 |
| ____ SR | 0.01184 | 6 502.31 | 0.600 | 0.01181 | 0.01193 | 0.01179 |
| ____ TI | 0.02363 | 760.77 | 1.596 | 0.02319 | 0.02384 | 0.02384 |
| ____ TL | 0.06980 | 7.80 | 2.362 | 0.06834 | 0.07158 | 0.06946 |
| ____ V | 0.01136 | 96.55 | 7.468 | 0.01106 | 0.01071 | 0.01232 |
| ____ Y1 | 3840.13833 | 3 840.14 | 0.098 | 3838.92000 | 3844.37000 | 3837.12500 |
| ____ Y2A | 145903.98537 | 145 903.99 | 0.559 | 146407.77911 | 144963.16341 | 146341.01359 |
| ____ Y2R | 7569.00833 | 7 569.01 | 0.935 | 7598.65000 | 7620.17500 | 7488.20000 |
| ____ ZN | 0.05253 | 177.32 | 0.544 | 0.05239 | 0.05285 | 0.05234 |
| ____ ZR | 0.11481 | 144.65 | 1.576 | 0.11666 | 0.11305 | 0.11472 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 8 Date/Time: 07/18/2017 02:20

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00114 | -89.48 | 91.529 | 0.00204 | 0.00137 | 0.00000 |
| ____ AL | 466.46126 | 31 954.27 | 2.001 | 472.06221 | 471.63692 | 455.68466 |
| ____ AS | -0.00358 | -0.54 | 270.794 | 0.00670 | -0.01257 | -0.00487 |
| ____ B | 0.04294 | 1 491.08 | 11.963 | 0.04256 | 0.03800 | 0.04826 |
| ____ BA | 0.00051 | 391.97 | 10.927 | 0.00049 | 0.00046 | 0.00057 |
| ____ BE | -0.00037 | -232.79 | 12.648 | -0.00038 | -0.00031 | -0.00040 |
| ____ CA | 476.36310 | 277 994.53 | 2.137 | 482.44657 | 482.02915 | 464.61359 |
| ____ CD | 0.00193 | 56.25 | 11.168 | 0.00169 | 0.00199 | 0.00211 |
| ____ CO | 0.00073 | 0.77 | 193.589 | 0.00105 | 0.00196 | -0.00082 |
| ____ CR | -0.00051 | -3.16 | 130.416 | -0.00037 | -0.00123 | 0.00007 |
| ____ CU | -0.00542 | 1.37 | 9.265 | -0.00524 | -0.00504 | -0.00599 |
| ____ FE | 188.51259 | 20 773.41 | 1.629 | 190.07720 | 190.48628 | 184.97428 |
| ____ K | 0.00393 | 38.83 | 1339.226 | 0.03564 | 0.03304 | -0.05689 |
| ____ LI | -0.00157 | 24.15 | 90.955 | -0.00307 | -0.00140 | -0.00023 |
| ____ MG | 509.96444 | 303 270.80 | 2.058 | 517.92158 | 513.89980 | 498.07194 |
| ____ MN | 0.00066 | 122.62 | 33.174 | 0.00082 | 0.00041 | 0.00074 |
| ____ MO | -0.00198 | -2.82 | 121.564 | 0.00062 | -0.00414 | -0.00242 |
| ____ NA | 0.15484 | 123.46 | 4.275 | 0.14733 | 0.15733 | 0.15985 |
| ____ NI | 0.00048 | 7.64 | 542.041 | -0.00233 | 0.00285 | 0.00093 |
| ____ P | 0.04490 | 1.44 | 23.371 | 0.04237 | 0.05643 | 0.03590 |
| ____ PB | 0.02591 | 54.47 | 17.083 | 0.03078 | 0.02211 | 0.02485 |
| ____ S | 0.23227 | 17.46 | 2.424 | 0.22599 | 0.23397 | 0.23686 |
| ____ SB | -0.00697 | 0.07 | 127.645 | -0.01672 | 0.00073 | -0.00493 |
| ____ SE | 0.00841 | -0.31 | 242.308 | 0.00081 | -0.00708 | 0.03150 |
| ____ SI | -0.00465 | 0.77 | 201.343 | 0.00210 | -0.01533 | -0.00072 |
| ____ SN | -0.00042 | 0.19 | 1367.714 | -0.00544 | 0.00582 | -0.00163 |
| ____ SR | 0.01699 | 8 068.39 | 0.550 | 0.01694 | 0.01693 | 0.01709 |
| ____ TI | -0.00380 | -87.15 | 5.048 | -0.00361 | -0.00381 | -0.00399 |
| ____ TL | -0.00859 | -1.40 | 51.694 | -0.00480 | -0.01348 | -0.00750 |
| ____ V | 0.00077 | -2.48 | 42.441 | 0.00087 | 0.00103 | 0.00040 |
| ____ Y1 | 3263.26667 | 3 263.27 | 0.546 | 3259.57500 | 3282.62500 | 3247.60000 |
| ____ Y2A | 126004.67120 | 126 004.67 | 0.186 | 126202.16697 | 126066.55844 | 125745.28819 |
| ____ Y2R | 7136.11073 | 7 136.11 | 1.596 | 7068.79613 | 7071.93184 | 7267.60423 |
| ____ ZN | 0.00737 | 69.79 | 5.235 | 0.00708 | 0.00722 | 0.00781 |
| ____ ZR | 0.00604 | 10.52 | 101.936 | 0.00013 | 0.01242 | 0.00558 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 9 Date/Time: 07/18/2017 02:24

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21546 | 1 462.74 | 0.736 | 0.21439 | 0.21469 | 0.21728 |
| ____ AL | 469.82247 | 31 454.74 | 1.523 | 466.21724 | 478.06430 | 465.18586 |
| ____ AS | 0.10819 | 9.59 | 12.779 | 0.11743 | 0.09230 | 0.11485 |
| ____ B | 0.03646 | 1 454.88 | 8.930 | 0.03974 | 0.03323 | 0.03641 |
| ____ BA | 0.50236 | 224 543.34 | 0.708 | 0.50109 | 0.49960 | 0.50637 |
| ____ BE | 0.48500 | 139 419.54 | 0.648 | 0.48376 | 0.48267 | 0.48857 |
| ____ CA | 480.48444 | 273 851.07 | 1.565 | 477.76106 | 488.98414 | 474.70812 |
| ____ CD | 0.92639 | 4 187.20 | 1.166 | 0.93601 | 0.92846 | 0.91470 |
| ____ CO | 0.45653 | 895.26 | 0.997 | 0.46102 | 0.45664 | 0.45192 |
| ____ CR | 0.46519 | 2 822.58 | 0.925 | 0.46832 | 0.46698 | 0.46028 |
| ____ CU | 0.49299 | 3 604.57 | 0.431 | 0.49487 | 0.49341 | 0.49069 |
| ____ FE | 190.65259 | 20 520.38 | 1.383 | 189.22759 | 193.69455 | 189.03564 |
| ____ K | 0.02667 | 44.64 | 188.357 | -0.01533 | 0.08231 | 0.01302 |
| ____ LI | 0.00081 | 35.17 | 409.853 | 0.00336 | 0.00197 | -0.00292 |
| ____ MG | 518.77807 | 299 481.65 | 3.338 | 521.35617 | 534.66260 | 500.31544 |
| ____ MN | 0.48388 | 14 548.92 | 0.725 | 0.48265 | 0.48115 | 0.48784 |
| ____ MO | -0.00330 | -3.71 | 58.485 | -0.00321 | -0.00141 | -0.00527 |
| ____ NA | 0.13850 | 103.43 | 12.742 | 0.14460 | 0.15228 | 0.11861 |
| ____ NI | 0.89341 | 1 138.52 | 1.238 | 0.90061 | 0.89894 | 0.88067 |
| ____ P | 0.06429 | 1.89 | 10.638 | 0.06659 | 0.06969 | 0.05660 |
| ____ PB | 0.52853 | 263.39 | 0.319 | 0.53039 | 0.52809 | 0.52711 |
| ____ S | 0.24820 | 18.01 | 8.116 | 0.22588 | 0.26504 | 0.25367 |
| ____ SB | 0.59602 | 91.52 | 1.772 | 0.60801 | 0.59196 | 0.58809 |
| ____ SE | 0.54697 | 38.31 | 5.137 | 0.51502 | 0.55810 | 0.56781 |
| ____ SI | -0.01591 | -0.22 | 32.899 | -0.01202 | -0.02186 | -0.01384 |
| ____ SN | -0.00411 | -0.78 | 96.034 | -0.00180 | -0.00866 | -0.00186 |
| ____ SR | 0.01700 | 7 963.97 | 0.955 | 0.01695 | 0.01687 | 0.01718 |
| ____ TI | -0.00419 | -84.09 | 12.718 | -0.00469 | -0.00424 | -0.00363 |
| ____ TL | 0.10509 | 7.34 | 2.615 | 0.10361 | 0.10341 | 0.10827 |
| ____ V | 0.50997 | 4 222.83 | 1.705 | 0.51855 | 0.51021 | 0.50116 |
| ____ Y1 | 3232.19500 | 3 232.20 | 1.633 | 3173.08500 | 3248.88500 | 3274.61500 |
| ____ Y2A | 124270.22516 | 124 270.23 | 0.457 | 124696.59636 | 124488.47961 | 123625.59952 |
| ____ Y2R | 6970.54825 | 6 970.55 | 1.554 | 6997.90545 | 6851.13932 | 7062.60000 |
| ____ ZN | 0.99699 | 2 864.96 | 1.255 | 1.00371 | 1.00470 | 0.98256 |
| ____ ZR | 0.00991 | 14.68 | 49.209 | 0.01484 | 0.00509 | 0.00979 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 10 Date/Time: 07/18/2017 02:27

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50134 | 4 081.07 | 0.501 | 0.50164 | 0.49868 | 0.50368 |
| ____ AL | 24.87107 | 1 705.72 | 0.441 | 24.82930 | 24.78849 | 24.99541 |
| ____ AS | 0.50225 | 51.46 | 0.973 | 0.49748 | 0.50725 | 0.50200 |
| ____ B | 0.48893 | 2 759.01 | 0.119 | 0.48915 | 0.48827 | 0.48938 |
| ____ BA | 0.50258 | 253 546.37 | 0.416 | 0.50485 | 0.50074 | 0.50213 |
| ____ BE | 0.47928 | 155 499.95 | 0.319 | 0.48094 | 0.47895 | 0.47794 |
| ____ CA | 24.96190 | 15 719.04 | 0.155 | 24.92701 | 24.95512 | 25.00357 |
| ____ CD | 0.50376 | 2 571.78 | 1.225 | 0.50276 | 0.51036 | 0.49815 |
| ____ CO | 0.50350 | 1 127.47 | 1.337 | 0.50214 | 0.51080 | 0.49754 |
| ____ CR | 0.48042 | 3 289.90 | 0.462 | 0.48042 | 0.48264 | 0.47820 |
| ____ CU | 0.49227 | 4 000.52 | 0.223 | 0.49142 | 0.49187 | 0.49350 |
| ____ FE | 25.16758 | 2 937.56 | 0.255 | 25.21991 | 25.18699 | 25.09585 |
| ____ K | 24.53112 | 7 785.53 | 0.562 | 24.54871 | 24.65924 | 24.38541 |
| ____ LI | 0.49536 | 2 581.74 | 0.102 | 0.49515 | 0.49593 | 0.49498 |
| ____ MG | 24.85259 | 20 654.39 | 0.164 | 24.89476 | 24.84962 | 24.81340 |
| ____ MN | 0.50819 | 17 138.66 | 0.463 | 0.50994 | 0.50551 | 0.50911 |
| ____ MO | 0.50101 | 397.13 | 0.868 | 0.50128 | 0.50521 | 0.49653 |
| ____ NA | 24.84234 | 27 674.62 | 0.138 | 24.81467 | 24.83155 | 24.88081 |
| ____ NI | 0.50075 | 730.26 | 0.517 | 0.49847 | 0.50356 | 0.50020 |
| ____ P | 0.53094 | 14.85 | 7.116 | 0.56704 | 0.49168 | 0.53408 |
| ____ PB | 0.50933 | 241.28 | 0.312 | 0.51110 | 0.50888 | 0.50802 |
| ____ S | 25.32144 | 1 285.44 | 0.468 | 25.43779 | 25.32572 | 25.20082 |
| ____ SB | 0.50521 | 88.71 | 0.806 | 0.50776 | 0.50051 | 0.50736 |
| ____ SE | 0.50967 | 41.97 | 2.104 | 0.52132 | 0.50022 | 0.50745 |
| ____ SI | 24.92787 | 2 326.25 | 0.288 | 24.87349 | 24.90104 | 25.00908 |
| ____ SN | 0.48387 | 144.10 | 0.304 | 0.48557 | 0.48306 | 0.48298 |
| ____ SR | 0.50886 | 270 104.00 | 0.283 | 0.51034 | 0.50876 | 0.50747 |
| ____ TI | 0.50696 | 15 349.00 | 0.411 | 0.50750 | 0.50466 | 0.50872 |
| ____ TL | 0.52651 | 55.71 | 2.044 | 0.52962 | 0.53537 | 0.51453 |
| ____ V | 0.50567 | 4 654.67 | 0.102 | 0.50622 | 0.50520 | 0.50559 |
| ____ Y1 | 3686.19667 | 3 686.20 | 1.094 | 3694.85000 | 3642.23000 | 3721.51000 |
| ____ Y2A | 140257.25898 | 140 257.26 | 0.077 | 140336.70000 | 140300.70943 | 140134.36751 |
| ____ Y2R | 7494.49261 | 7 494.49 | 0.248 | 7483.38497 | 7515.98924 | 7484.10361 |
| ____ ZN | 0.50560 | 1 638.28 | 0.532 | 0.50282 | 0.50819 | 0.50578 |
| ____ ZR | 0.50471 | 617.04 | 0.746 | 0.50298 | 0.50212 | 0.50903 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 11 Date/Time: 07/18/2017 02:30

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00003 | -14.01 | 1866.818 | 0.00064 | -0.00022 | -0.00033 |
| ____ AL | 0.04632 | 30.15 | 99.964 | 0.00253 | 0.09478 | 0.04164 |
| ____ AS | 0.00917 | 0.48 | 72.950 | 0.01599 | 0.00262 | 0.00891 |
| ____ B | 0.00111 | 2.61 | 11.292 | 0.00121 | 0.00116 | 0.00097 |
| ____ BA | 0.00015 | 261.62 | 8.511 | 0.00015 | 0.00016 | 0.00013 |
| ____ BE | 0.00018 | -84.62 | 8.738 | 0.00020 | 0.00018 | 0.00017 |
| ____ CA | 0.06872 | 87.63 | 10.445 | 0.07406 | 0.07153 | 0.06056 |
| ____ CD | 0.00022 | -1.95 | 213.418 | 0.00016 | 0.00073 | -0.00022 |
| ____ CO | 0.00048 | 0.31 | 73.832 | 0.00071 | 0.00007 | 0.00066 |
| ____ CR | 0.00022 | 1.50 | 236.560 | -0.00034 | 0.00032 | 0.00069 |
| ____ CU | -0.00023 | -14.87 | 307.358 | -0.00020 | 0.00046 | -0.00095 |
| ____ FE | 0.03494 | 5.82 | 36.013 | 0.02159 | 0.04658 | 0.03665 |
| ____ K | 0.04004 | 52.93 | 150.706 | 0.10657 | -0.01117 | 0.02473 |
| ____ LI | 0.00138 | 10.77 | 204.687 | 0.00225 | 0.00367 | -0.00178 |
| ____ MG | 0.06047 | 70.03 | 11.925 | 0.06879 | 0.05650 | 0.05612 |
| ____ MN | 0.00018 | 4.99 | 178.055 | -0.00011 | 0.00013 | 0.00053 |
| ____ MO | 0.00105 | -0.78 | 113.512 | 0.00012 | 0.00238 | 0.00064 |
| ____ NA | 0.03891 | 0.35 | 40.575 | 0.02069 | 0.04861 | 0.04743 |
| ____ NI | -0.00066 | 7.11 | 103.756 | -0.00042 | -0.00142 | -0.00013 |
| ____ P | 0.01460 | 0.82 | 56.064 | 0.00515 | 0.01945 | 0.01919 |
| ____ PB | 0.00553 | -1.42 | 40.239 | 0.00304 | 0.00731 | 0.00625 |
| ____ S | 0.00022 | 8.17 | 4040.162 | 0.01062 | -0.00402 | -0.00593 |
| ____ SB | 0.00515 | 2.20 | 85.832 | 0.00038 | 0.00597 | 0.00910 |
| ____ SE | -0.01664 | -0.87 | 37.069 | -0.02279 | -0.01666 | -0.01046 |
| ____ SI | 0.01369 | 2.56 | 137.236 | -0.00747 | 0.02841 | 0.02014 |
| ____ SN | -0.00022 | 0.28 | 455.870 | -0.00050 | -0.00104 | 0.00089 |
| ____ SR | 0.00018 | 61.19 | 17.407 | 0.00020 | 0.00020 | 0.00015 |
| ____ TI | 0.00019 | 24.20 | 131.340 | -0.00010 | 0.00034 | 0.00034 |
| ____ TL | -0.00354 | -0.64 | 132.304 | -0.00430 | -0.00778 | 0.00148 |
| ____ V | 0.00023 | -8.47 | 280.307 | -0.00043 | 0.00086 | 0.00026 |
| ____ Y1 | 3757.46167 | 3 757.46 | 1.500 | 3694.44500 | 3774.90000 | 3803.04000 |
| ____ Y2A | 144411.73978 | 144 411.74 | 0.467 | 145177.25594 | 144155.61888 | 143902.34453 |
| ____ Y2R | 7587.30000 | 7 587.30 | 0.701 | 7528.67500 | 7600.65000 | 7632.57500 |
| ____ ZN | 0.00016 | 1.90 | 196.115 | 0.00053 | 0.00002 | -0.00006 |
| ____ ZR | -0.00149 | 1.92 | 280.450 | -0.00002 | -0.00621 | 0.00176 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 12 Date/Time: 07/18/2017 02:33

Sample Number: **PBW** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00018 | -12.86 | 652.326 | 0.00151 | -0.00039 | -0.00059 |
| ____ AL | -0.01727 | 25.68 | 166.342 | -0.00853 | 0.00607 | -0.04936 |
| ____ AS | 0.00095 | -0.39 | 593.420 | 0.00365 | -0.00550 | 0.00469 |
| ____ B | 0.00161 | 5.11 | 8.660 | 0.00166 | 0.00172 | 0.00146 |
| ____ BA | 0.00001 | 194.56 | 146.882 | -0.00001 | 0.00002 | 0.00003 |
| ____ BE | 0.00006 | -126.02 | 39.516 | 0.00006 | 0.00008 | 0.00004 |
| ____ CA | 0.02503 | 59.58 | 24.138 | 0.02124 | 0.02185 | 0.03200 |
| ____ CD | -0.00030 | -4.67 | 111.034 | -0.00002 | -0.00066 | -0.00020 |
| ____ CO | 0.00039 | 0.11 | 101.273 | 0.00028 | 0.00083 | 0.00006 |
| ____ CR | 0.00011 | 0.70 | 234.346 | 0.00038 | 0.00001 | -0.00008 |
| ____ CU | -0.00096 | -21.23 | 83.306 | -0.00162 | -0.00120 | -0.00007 |
| ____ FE | 0.00157 | 1.85 | 639.977 | 0.00726 | 0.00744 | -0.01000 |
| ____ K | -0.04541 | 25.62 | 47.813 | -0.06510 | -0.04900 | -0.02213 |
| ____ LI | 0.00010 | 4.08 | 2445.683 | -0.00168 | 0.00302 | -0.00102 |
| ____ MG | 0.01977 | 35.25 | 6.306 | 0.01915 | 0.02121 | 0.01896 |
| ____ MN | 0.00025 | 7.59 | 37.081 | 0.00026 | 0.00016 | 0.00034 |
| ____ MO | 0.00107 | -0.76 | 134.179 | -0.00043 | 0.00244 | 0.00122 |
| ____ NA | 0.02195 | -18.78 | 21.094 | 0.02199 | 0.01730 | 0.02656 |
| ____ NI | 0.00004 | 8.17 | 3211.573 | -0.00144 | 0.00119 | 0.00038 |
| ____ P | 0.00549 | 0.57 | 124.681 | 0.00742 | 0.01117 | -0.00211 |
| ____ PB | 0.00296 | -2.69 | 121.596 | 0.00328 | -0.00079 | 0.00639 |
| ____ S | -0.00358 | 7.99 | 225.691 | -0.01031 | -0.00584 | 0.00539 |
| ____ SB | 0.00340 | 1.90 | 129.052 | 0.00032 | 0.00146 | 0.00843 |
| ____ SE | -0.00925 | -0.26 | 70.398 | -0.01274 | -0.01328 | -0.00174 |
| ____ SI | 0.01001 | 2.19 | 79.474 | 0.01915 | 0.00620 | 0.00467 |
| ____ SN | 0.00064 | 0.54 | 302.163 | -0.00150 | 0.00119 | 0.00221 |
| ____ SR | 0.00007 | -0.77 | 30.073 | 0.00006 | 0.00009 | 0.00006 |
| ____ TI | 0.00015 | 23.20 | 89.594 | 0.00025 | 0.00022 | 0.00000 |
| ____ TL | -0.00745 | -1.08 | 17.263 | -0.00798 | -0.00598 | -0.00838 |
| ____ V | -0.00009 | -11.67 | 1351.015 | -0.00137 | 0.00004 | 0.00106 |
| ____ Y1 | 3765.41167 | 3 765.41 | 0.519 | 3742.83000 | 3776.83500 | 3776.57000 |
| ____ Y2A | 145825.43705 | 145 825.44 | 0.098 | 145852.38593 | 145953.08438 | 145670.84083 |
| ____ Y2R | 7551.52500 | 7 551.53 | 1.024 | 7470.95000 | 7558.47500 | 7625.15000 |
| ____ ZN | 0.00039 | 2.65 | 60.618 | 0.00014 | 0.00061 | 0.00042 |
| ____ ZR | -0.00081 | 2.77 | 452.296 | -0.00499 | 0.00189 | 0.00067 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 13 Date/Time: 07/18/2017 02:36

Sample Number: **LCSW** Class: **** Batch: 171951063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04966 | 424.14 | 1.286 | 0.04899 | 0.04972 | 0.05026 |
| ____ AL | 2.01885 | 165.57 | 1.367 | 2.04741 | 2.01682 | 1.99231 |
| ____ AS | 0.16145 | 16.68 | 4.426 | 0.15970 | 0.16932 | 0.15535 |
| ____ B | 1.80684 | 9 777.65 | 0.291 | 1.81195 | 1.80144 | 1.80712 |
| ____ BA | 2.00077 | 1 037 878.11 | 0.407 | 2.00004 | 1.99303 | 2.00925 |
| ____ BE | 0.04823 | 15 968.32 | 0.330 | 0.04838 | 0.04807 | 0.04824 |
| ____ CA | 4.63740 | 2 961.74 | 0.707 | 4.65048 | 4.66162 | 4.60011 |
| ____ CD | 0.05034 | 261.12 | 0.872 | 0.04984 | 0.05067 | 0.05051 |
| ____ CO | 0.51347 | 1 185.70 | 0.034 | 0.51361 | 0.51328 | 0.51353 |
| ____ CR | 0.19367 | 1 364.36 | 0.180 | 0.19397 | 0.19328 | 0.19375 |
| ____ CU | 0.25068 | 2 079.54 | 0.475 | 0.25201 | 0.25031 | 0.24972 |
| ____ FE | 1.02649 | 121.68 | 1.358 | 1.02777 | 1.01194 | 1.03974 |
| ____ K | 10.05173 | 3 216.88 | 0.888 | 10.13841 | 10.05671 | 9.96008 |
| ____ LI | 1.01359 | 5 281.74 | 0.076 | 1.01305 | 1.01325 | 1.01447 |
| ____ MG | 2.11830 | 1 799.55 | 0.430 | 2.12566 | 2.12114 | 2.10811 |
| ____ MN | 0.51459 | 17 838.70 | 0.188 | 0.51570 | 0.51396 | 0.51411 |
| ____ MO | 2.00580 | 1 640.81 | 0.340 | 2.01104 | 1.99809 | 2.00828 |
| ____ NA | 10.12504 | 11 265.09 | 0.973 | 10.13990 | 10.21532 | 10.01991 |
| ____ NI | 0.51665 | 775.80 | 0.560 | 0.51899 | 0.51341 | 0.51754 |
| ____ P | 0.91765 | 26.08 | 12.217 | 0.90929 | 1.03370 | 0.80995 |
| ____ PB | 0.15522 | 71.89 | 2.211 | 0.15605 | 0.15817 | 0.15145 |
| ____ S | 1.28098 | 74.72 | 0.538 | 1.27302 | 1.28485 | 1.28506 |
| ____ SB | 0.51100 | 91.00 | 1.241 | 0.50430 | 0.51179 | 0.51691 |
| ____ SE | 0.14776 | 12.93 | 3.762 | 0.14848 | 0.15292 | 0.14188 |
| ____ SI | 1.12522 | 108.48 | 1.998 | 1.14153 | 1.09957 | 1.13455 |
| ____ SN | 3.81281 | 1 165.79 | 0.156 | 3.81705 | 3.80603 | 3.81535 |
| ____ SR | 1.00793 | 550 451.23 | 0.298 | 1.01031 | 1.00455 | 1.00893 |
| ____ TI | 0.99469 | 30 903.53 | 0.279 | 0.99789 | 0.99308 | 0.99309 |
| ____ TL | 0.16764 | 16.26 | 2.090 | 0.16455 | 0.17145 | 0.16693 |
| ____ V | 0.49867 | 4 497.51 | 0.377 | 0.49955 | 0.49651 | 0.49995 |
| ____ Y1 | 3792.41333 | 3 792.41 | 1.077 | 3837.86500 | 3758.83500 | 3780.54000 |
| ____ Y2A | 144295.01770 | 144 295.02 | 0.340 | 143966.35286 | 144858.15532 | 144060.54493 |
| ____ Y2R | 7502.41799 | 7 502.42 | 0.899 | 7502.72446 | 7434.79345 | 7569.73605 |
| ____ ZN | 0.49718 | 1 651.05 | 0.319 | 0.49887 | 0.49572 | 0.49694 |
| ____ ZR | 1.01582 | 1 239.43 | 0.676 | 1.01063 | 1.02360 | 1.01322 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 14 Date/Time: 07/18/2017 02:39

Sample Number: **9100479** Class: U*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00052 | -9.25 | 288.865 | -0.00101 | 0.00058 | 0.00198 |
| ____ AL | 0.02110 | 27.62 | 68.611 | 0.00949 | 0.01648 | 0.03731 |
| ____ AS | -0.00465 | -0.92 | 69.442 | -0.00760 | -0.00120 | -0.00513 |
| ____ B | 0.09630 | 485.20 | 0.752 | 0.09632 | 0.09701 | 0.09556 |
| ____ BA | 0.07071 | 34 569.75 | 0.063 | 0.07074 | 0.07066 | 0.07073 |
| ____ BE | -0.00020 | -197.39 | 17.547 | -0.00024 | -0.00018 | -0.00018 |
| ____ CA | 266.25912 | 162 328.70 | 1.174 | 269.32349 | 266.37878 | 263.07511 |
| ____ CD | -0.00037 | -4.75 | 55.007 | -0.00015 | -0.00042 | -0.00055 |
| ____ CO | 0.00159 | 2.19 | 30.405 | 0.00214 | 0.00140 | 0.00123 |
| ____ CR | 0.00057 | 3.73 | 170.893 | -0.00039 | 0.00055 | 0.00156 |
| ____ CU | 0.00592 | 65.94 | 17.770 | 0.00472 | 0.00664 | 0.00641 |
| ____ FE | 0.01979 | 3.89 | 68.394 | 0.03069 | 0.02404 | 0.00464 |
| ____ K | 5.54063 | 1 759.26 | 0.322 | 5.54161 | 5.52232 | 5.55795 |
| ____ LI | 0.03719 | 209.98 | 8.113 | 0.04057 | 0.03621 | 0.03478 |
| ____ MG | 37.94148 | 30 784.71 | 1.285 | 38.38475 | 38.02070 | 37.41900 |
| ____ MN | 1.02880 | 33 448.64 | 0.247 | 1.03043 | 1.02588 | 1.03010 |
| ____ MO | 0.00427 | 1.72 | 13.426 | 0.00390 | 0.00398 | 0.00493 |
| ____ NA | 65.70223 | 72 030.50 | 1.215 | 66.48436 | 65.73339 | 64.88895 |
| ____ NI | 0.00691 | 16.57 | 3.320 | 0.00670 | 0.00715 | 0.00686 |
| ____ P | 0.00635 | 0.56 | 389.419 | 0.03326 | 0.00122 | -0.01542 |
| ____ PB | 0.00199 | -2.38 | 204.044 | 0.00443 | -0.00270 | 0.00425 |
| ____ S | 138.69668 | 6 706.98 | 2.084 | 139.43173 | 141.14912 | 135.50919 |
| ____ SB | -0.00033 | 1.17 | 2554.192 | 0.00629 | -0.00968 | 0.00241 |
| ____ SE | 0.01515 | 1.66 | 87.380 | 0.02087 | 0.02457 | 0.00001 |
| ____ SI | 18.21077 | 1 670.79 | 0.126 | 18.18823 | 18.21015 | 18.23394 |
| ____ SN | 0.00151 | 0.75 | 161.005 | -0.00121 | 0.00226 | 0.00347 |
| ____ SR | 1.37075 | 702 107.07 | 0.256 | 1.36671 | 1.37269 | 1.37286 |
| ____ TI | -0.00009 | 14.36 | 190.084 | -0.00023 | 0.00011 | -0.00016 |
| ____ TL | 0.00022 | -0.21 | 2903.535 | -0.00552 | 0.00697 | -0.00079 |
| ____ V | 0.00114 | -0.20 | 57.964 | 0.00143 | 0.00159 | 0.00038 |
| ____ Y1 | 3529.59973 | 3 529.60 | 0.737 | 3536.91631 | 3500.70965 | 3551.17324 |
| ____ Y2A | 135330.53389 | 135 330.53 | 0.293 | 135113.27734 | 135788.61728 | 135089.70706 |
| ____ Y2R | 7369.06643 | 7 369.07 | 1.256 | 7282.22422 | 7358.52443 | 7466.45065 |
| ____ ZN | 0.12267 | 377.68 | 0.099 | 0.12259 | 0.12281 | 0.12261 |
| ____ ZR | 0.00000 | 3.61 | 0936.529 | 0.00427 | -0.00117 | -0.00309 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 15 Date/Time: 07/18/2017 02:42

Sample Number: **9100479** Class: UP** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01816 | 148.63 | 3.721 | 0.01763 | 0.01892 | 0.01793 |
| ____ AL | 0.91025 | 86.90 | 5.600 | 0.93690 | 0.94238 | 0.85147 |
| ____ AS | 0.48153 | 47.35 | 1.150 | 0.47825 | 0.48793 | 0.47842 |
| ____ B | 0.27797 | 1 412.87 | 0.789 | 0.27681 | 0.27659 | 0.28050 |
| ____ BA | 0.11627 | 56 838.43 | 0.266 | 0.11592 | 0.11646 | 0.11644 |
| ____ BE | 0.01879 | 5 761.65 | 0.187 | 0.01879 | 0.01875 | 0.01882 |
| ____ CA | 262.93219 | 160 688.82 | 1.845 | 267.99667 | 262.47356 | 258.32636 |
| ____ CD | 0.04589 | 221.89 | 0.473 | 0.04579 | 0.04614 | 0.04574 |
| ____ CO | 0.09305 | 199.23 | 0.792 | 0.09264 | 0.09262 | 0.09390 |
| ____ CR | 0.18463 | 1 222.22 | 1.369 | 0.18574 | 0.18174 | 0.18642 |
| ____ CU | 0.47464 | 3 761.12 | 1.240 | 0.47342 | 0.46946 | 0.48104 |
| ____ FE | 0.47813 | 56.67 | 0.561 | 0.47757 | 0.47577 | 0.48104 |
| ____ K | 7.44787 | 2 356.80 | 0.352 | 7.47813 | 7.43284 | 7.43265 |
| ____ LI | 0.99495 | 5 120.66 | 0.490 | 0.99222 | 0.99205 | 1.00058 |
| ____ MG | 38.35703 | 31 185.43 | 1.729 | 39.05033 | 38.29221 | 37.72854 |
| ____ MN | 1.05973 | 34 519.43 | 0.453 | 1.05428 | 1.06332 | 1.06158 |
| ____ MO | 0.19246 | 145.61 | 0.812 | 0.19296 | 0.19371 | 0.19071 |
| ____ NA | 66.45985 | 73 025.34 | 1.814 | 67.67928 | 66.43171 | 65.26856 |
| ____ NI | 0.14045 | 201.91 | 0.475 | 0.14031 | 0.14118 | 0.13987 |
| ____ P | 0.96500 | 25.60 | 6.582 | 0.98199 | 0.89471 | 1.01829 |
| ____ PB | 0.46148 | 207.16 | 0.522 | 0.46388 | 0.46149 | 0.45907 |
| ____ S | 136.97573 | 6 646.30 | 0.732 | 136.42560 | 136.36923 | 138.13236 |
| ____ SB | 0.38803 | 65.16 | 0.763 | 0.38811 | 0.39095 | 0.38503 |
| ____ SE | 0.78436 | 62.08 | 0.748 | 0.79017 | 0.77844 | 0.78447 |
| ____ SI | 18.85921 | 1 734.48 | 0.187 | 18.86840 | 18.82018 | 18.88905 |
| ____ SN | 0.54639 | 156.27 | 0.638 | 0.54959 | 0.54691 | 0.54267 |
| ____ SR | 1.36615 | 701 067.28 | 0.291 | 1.36311 | 1.36469 | 1.37064 |
| ____ TI | 0.09821 | 2 883.25 | 1.125 | 0.09768 | 0.09747 | 0.09948 |
| ____ TL | 0.91570 | 97.32 | 0.902 | 0.91891 | 0.92186 | 0.90631 |
| ____ V | 0.09939 | 863.15 | 1.054 | 0.09935 | 0.09836 | 0.10046 |
| ____ Y1 | 3541.20676 | 3 541.21 | 0.570 | 3557.28854 | 3518.54129 | 3547.79044 |
| ____ Y2A | 135586.15833 | 135 586.16 | 0.163 | 135836.55000 | 135416.10000 | 135505.82500 |
| ____ Y2R | 7386.29009 | 7 386.29 | 1.580 | 7267.30769 | 7391.03905 | 7500.52353 |
| ____ ZN | 0.23259 | 719.90 | 0.297 | 0.23222 | 0.23338 | 0.23215 |
| ____ ZR | 0.94863 | 1 139.85 | 0.478 | 0.94666 | 0.94541 | 0.95381 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 16 Date/Time: 07/18/2017 02:45

Sample Number: **9100479** Class: D*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00060 | -17.67 | 90.039 | -0.00001 | -0.00106 | -0.00073 |
| ____ AL | -0.03742 | 23.61 | 122.033 | 0.01064 | -0.04266 | -0.08023 |
| ____ AS | 0.00170 | -0.29 | 367.733 | -0.00493 | 0.00745 | 0.00256 |
| ____ B | 0.09368 | 464.47 | 1.396 | 0.09504 | 0.09244 | 0.09356 |
| ____ BA | 0.07246 | 34 870.34 | 0.904 | 0.07175 | 0.07258 | 0.07305 |
| ____ BE | -0.00023 | -203.40 | 5.122 | -0.00023 | -0.00021 | -0.00023 |
| ____ CA | 272.73730 | 165 292.24 | 1.096 | 270.87329 | 276.18548 | 271.15312 |
| ____ CD | -0.00016 | -3.66 | 183.074 | -0.00005 | 0.00006 | -0.00048 |
| ____ CO | 0.00189 | 2.81 | 59.977 | 0.00072 | 0.00197 | 0.00299 |
| ____ CR | 0.00067 | 4.31 | 78.262 | 0.00127 | 0.00044 | 0.00030 |
| ____ CU | 0.00616 | 67.49 | 18.478 | 0.00698 | 0.00486 | 0.00663 |
| ____ FE | -0.00182 | 1.41 | 861.972 | -0.01812 | -0.00051 | 0.01317 |
| ____ K | 5.65970 | 1 786.09 | 1.168 | 5.58672 | 5.67684 | 5.71553 |
| ____ LI | 0.03831 | 215.09 | 9.347 | 0.03667 | 0.03584 | 0.04242 |
| ____ MG | 38.78262 | 31 277.66 | 1.318 | 38.49639 | 39.37264 | 38.47882 |
| ____ MN | 1.05868 | 33 885.73 | 0.786 | 1.05483 | 1.05297 | 1.06823 |
| ____ MO | 0.00304 | 0.78 | 26.740 | 0.00213 | 0.00331 | 0.00368 |
| ____ NA | 67.16113 | 73 220.81 | 1.024 | 66.67103 | 67.94712 | 66.86525 |
| ____ NI | 0.00660 | 16.03 | 4.450 | 0.00664 | 0.00629 | 0.00688 |
| ____ P | 0.02489 | 1.03 | 32.149 | 0.03391 | 0.02214 | 0.01863 |
| ____ PB | -0.00086 | -3.65 | 286.312 | -0.00120 | 0.00176 | -0.00315 |
| ____ S | 142.42601 | 6 840.84 | 0.855 | 141.62903 | 141.82094 | 143.82805 |
| ____ SB | -0.00658 | 0.14 | 64.141 | -0.00262 | -0.01102 | -0.00610 |
| ____ SE | 0.01575 | 1.70 | 51.945 | 0.00649 | 0.01878 | 0.02198 |
| ____ SI | 18.56743 | 1 693.90 | 0.579 | 18.44870 | 18.59565 | 18.65794 |
| ____ SN | 0.00227 | 0.96 | 63.054 | 0.00391 | 0.00163 | 0.00127 |
| ____ SR | 1.41565 | 713 861.86 | 0.402 | 1.40943 | 1.42061 | 1.41692 |
| ____ TI | -0.00061 | -0.62 | 42.240 | -0.00042 | -0.00090 | -0.00050 |
| ____ TL | -0.00044 | -0.27 | 1198.017 | -0.00221 | 0.00547 | -0.00458 |
| ____ V | 0.00128 | 1.22 | 49.584 | 0.00074 | 0.00197 | 0.00112 |
| ____ Y1 | 3505.58594 | 3 505.59 | 0.226 | 3514.64389 | 3499.90005 | 3502.21389 |
| ____ Y2A | 133232.85706 | 133 232.86 | 0.535 | 133800.41409 | 133464.60708 | 132433.55000 |
| ____ Y2R | 7327.73258 | 7 327.73 | 0.898 | 7371.90248 | 7252.07293 | 7359.22233 |
| ____ ZN | 0.12515 | 382.65 | 0.441 | 0.12545 | 0.12549 | 0.12451 |
| ____ ZR | 0.00456 | 9.02 | 58.822 | 0.00439 | 0.00731 | 0.00196 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 17 Date/Time: 07/18/2017 02:49

Sample Number: **9100479** Class: R*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05168 | 412.20 | 2.591 | 0.05322 | 0.05082 | 0.05100 |
| ____ AL | 1.97526 | 161.04 | 0.406 | 1.96859 | 1.98417 | 1.97303 |
| ____ AS | 0.16392 | 15.59 | 1.983 | 0.16128 | 0.16291 | 0.16755 |
| ____ B | 2.00065 | 10 107.63 | 0.441 | 2.00321 | 1.99083 | 2.00791 |
| ____ BA | 2.03370 | 984 955.56 | 0.585 | 2.02145 | 2.03444 | 2.04521 |
| ____ BE | 0.04887 | 15 106.76 | 0.416 | 0.04872 | 0.04877 | 0.04910 |
| ____ CA | 268.39038 | 164 780.70 | 1.200 | 267.53958 | 265.68183 | 271.94974 |
| ____ CD | 0.04926 | 235.17 | 0.094 | 0.04923 | 0.04924 | 0.04931 |
| ____ CO | 0.48795 | 1 037.07 | 0.393 | 0.48869 | 0.48938 | 0.48577 |
| ____ CR | 0.19592 | 1 288.66 | 1.332 | 0.19689 | 0.19791 | 0.19297 |
| ____ CU | 0.25665 | 2 018.88 | 0.474 | 0.25535 | 0.25775 | 0.25686 |
| ____ FE | 1.01740 | 119.30 | 2.123 | 0.99850 | 1.01276 | 1.04095 |
| ____ K | 15.85520 | 4 996.90 | 0.396 | 15.83639 | 15.80399 | 15.92522 |
| ____ LI | 1.06131 | 5 487.05 | 0.357 | 1.05872 | 1.05956 | 1.06566 |
| ____ MG | 39.69609 | 32 409.41 | 1.138 | 39.60206 | 39.29882 | 40.18738 |
| ____ MN | 1.52463 | 49 346.91 | 0.334 | 1.52671 | 1.51883 | 1.52836 |
| ____ MO | 2.10806 | 1 587.51 | 0.259 | 2.11065 | 2.11174 | 2.10177 |
| ____ NA | 74.87500 | 82 681.49 | 1.098 | 74.63066 | 74.20246 | 75.79188 |
| ____ NI | 0.49161 | 679.32 | 0.343 | 0.49338 | 0.49143 | 0.49002 |
| ____ P | 1.01475 | 26.52 | 3.120 | 1.01969 | 1.04364 | 0.98091 |
| ____ PB | 0.14340 | 61.42 | 1.133 | 0.14370 | 0.14165 | 0.14486 |
| ____ S | 141.30882 | 6 758.68 | 1.035 | 141.18293 | 139.91317 | 142.83035 |
| ____ SB | 0.54010 | 88.47 | 0.565 | 0.54160 | 0.53659 | 0.54211 |
| ____ SE | 0.17312 | 13.87 | 2.977 | 0.17697 | 0.16726 | 0.17513 |
| ____ SI | 19.17661 | 1 774.10 | 0.686 | 19.07369 | 19.13138 | 19.32477 |
| ____ SN | 3.95484 | 1 113.12 | 0.097 | 3.95672 | 3.95737 | 3.95043 |
| ____ SR | 2.32702 | 1 186 557.35 | 0.129 | 2.32897 | 2.32854 | 2.32355 |
| ____ TI | 1.03485 | 30 017.41 | 0.567 | 1.03715 | 1.02818 | 1.03922 |
| ____ TL | 0.16006 | 14.06 | 3.489 | 0.15609 | 0.15765 | 0.16645 |
| ____ V | 0.51721 | 4 351.71 | 0.620 | 0.51781 | 0.52007 | 0.51374 |
| ____ Y1 | 3491.06964 | 3 491.07 | 1.060 | 3498.53690 | 3523.78219 | 3450.88982 |
| ____ Y2A | 134719.86487 | 134 719.86 | 0.063 | 134797.82348 | 134629.54636 | 134732.22477 |
| ____ Y2R | 7421.72373 | 7 421.72 | 1.028 | 7450.33493 | 7479.57500 | 7335.26127 |
| ____ ZN | 0.62441 | 1 905.29 | 0.120 | 0.62492 | 0.62355 | 0.62475 |
| ____ ZR | 1.03255 | 1 246.17 | 1.114 | 1.02777 | 1.02420 | 1.04567 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 18 Date/Time: 07/18/2017 02:52

Sample Number: **9100479** Class: M*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05088 | 408.24 | 2.804 | 0.04988 | 0.05024 | 0.05251 |
| ____ AL | 2.01806 | 163.30 | 1.593 | 2.03369 | 2.03940 | 1.98109 |
| ____ AS | 0.16603 | 16.07 | 1.868 | 0.16902 | 0.16624 | 0.16283 |
| ____ B | 2.01005 | 10 218.52 | 0.672 | 2.02259 | 1.99575 | 2.01180 |
| ____ BA | 2.02904 | 988 850.68 | 0.696 | 2.04520 | 2.02276 | 2.01915 |
| ____ BE | 0.04886 | 15 200.37 | 0.428 | 0.04902 | 0.04863 | 0.04894 |
| ____ CA | 270.82299 | 165 721.58 | 0.769 | 272.89526 | 268.73213 | 270.84158 |
| ____ CD | 0.04848 | 235.27 | 0.523 | 0.04824 | 0.04875 | 0.04845 |
| ____ CO | 0.48315 | 1 044.01 | 0.087 | 0.48299 | 0.48363 | 0.48284 |
| ____ CR | 0.19421 | 1 285.41 | 0.539 | 0.19429 | 0.19312 | 0.19521 |
| ____ CU | 0.25739 | 2 037.81 | 0.804 | 0.25932 | 0.25520 | 0.25764 |
| ____ FE | 1.00731 | 117.76 | 1.032 | 1.00252 | 1.01924 | 1.00017 |
| ____ K | 16.00823 | 5 028.50 | 0.117 | 16.00099 | 15.99415 | 16.02954 |
| ____ LI | 1.07137 | 5 521.14 | 0.462 | 1.07455 | 1.07390 | 1.06566 |
| ____ MG | 39.95809 | 32 514.65 | 0.699 | 40.25966 | 39.70871 | 39.90589 |
| ____ MN | 1.52445 | 49 649.24 | 0.896 | 1.53731 | 1.51012 | 1.52593 |
| ____ MO | 2.05998 | 1 577.25 | 0.106 | 2.05755 | 2.06179 | 2.06060 |
| ____ NA | 75.52778 | 83 136.09 | 0.750 | 76.12507 | 74.99910 | 75.45918 |
| ____ NI | 0.49016 | 688.68 | 0.164 | 0.49050 | 0.48924 | 0.49073 |
| ____ P | 1.04109 | 27.64 | 6.734 | 0.96672 | 1.10598 | 1.05055 |
| ____ PB | 0.14532 | 63.35 | 0.683 | 0.14646 | 0.14479 | 0.14471 |
| ____ S | 140.97692 | 6 856.06 | 1.654 | 138.96714 | 143.53432 | 140.42931 |
| ____ SB | 0.52781 | 87.93 | 2.309 | 0.51682 | 0.54092 | 0.52569 |
| ____ SE | 0.16789 | 13.69 | 5.164 | 0.15866 | 0.16917 | 0.17586 |
| ____ SI | 19.45254 | 1 793.72 | 0.529 | 19.54640 | 19.34255 | 19.46867 |
| ____ SN | 3.88124 | 1 110.73 | 0.154 | 3.88794 | 3.87645 | 3.87934 |
| ____ SR | 2.32667 | 1 193 774.56 | 1.163 | 2.35333 | 2.29924 | 2.32745 |
| ____ TI | 1.01283 | 29 562.48 | 0.844 | 1.02166 | 1.00460 | 1.01223 |
| ____ TL | 0.15772 | 14.05 | 3.517 | 0.15673 | 0.15273 | 0.16369 |
| ____ V | 0.51683 | 4 382.25 | 0.592 | 0.51555 | 0.51461 | 0.52032 |
| ____ Y1 | 3549.62604 | 3 549.63 | 0.533 | 3558.39248 | 3527.91197 | 3562.57368 |
| ____ Y2A | 135566.49130 | 135 566.49 | 0.657 | 134667.58816 | 136447.82110 | 135584.06462 |
| ____ Y2R | 7397.62311 | 7 397.62 | 0.493 | 7362.37500 | 7435.21934 | 7395.27500 |
| ____ ZN | 0.62238 | 1 931.01 | 0.395 | 0.62347 | 0.61957 | 0.62410 |
| ____ ZR | 1.02146 | 1 228.92 | 0.094 | 1.02086 | 1.02095 | 1.02256 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 19 Date/Time: 07/18/2017 02:55

Sample Number: **9100479** Class: UL** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00029 | -16.23 | 135.524 | 0.00015 | -0.00042 | -0.00061 |
| ____ AL | -0.04376 | 23.66 | 86.613 | -0.02235 | -0.02141 | -0.08752 |
| ____ AS | 0.00454 | -0.01 | 45.576 | 0.00325 | 0.00344 | 0.00692 |
| ____ B | 0.02405 | 123.34 | 2.771 | 0.02480 | 0.02384 | 0.02352 |
| ____ BA | 0.01462 | 7 576.16 | 0.632 | 0.01471 | 0.01462 | 0.01453 |
| ____ BE | -0.00004 | -152.93 | 91.978 | 0.00000 | -0.00004 | -0.00006 |
| ____ CA | 51.87611 | 32 501.16 | 0.446 | 51.80589 | 52.13444 | 51.68798 |
| ____ CD | -0.00029 | -4.56 | 70.792 | -0.00040 | -0.00042 | -0.00005 |
| ____ CO | 0.00039 | 0.02 | 34.961 | 0.00028 | 0.00035 | 0.00054 |
| ____ CR | 0.00093 | 6.33 | 28.510 | 0.00112 | 0.00104 | 0.00063 |
| ____ CU | 0.00043 | -2.73 | 174.734 | 0.00114 | -0.00036 | 0.00051 |
| ____ FE | 0.00437 | 2.16 | 225.290 | -0.00566 | 0.00476 | 0.01402 |
| ____ K | 1.12039 | 392.58 | 2.169 | 1.12446 | 1.14240 | 1.09431 |
| ____ LI | 0.01171 | 67.51 | 7.038 | 0.01265 | 0.01138 | 0.01110 |
| ____ MG | 7.55765 | 6 335.00 | 0.307 | 7.53125 | 7.57458 | 7.56714 |
| ____ MN | 0.21334 | 7 212.00 | 1.190 | 0.21064 | 0.21371 | 0.21568 |
| ____ MO | 0.00345 | 1.14 | 22.431 | 0.00287 | 0.00314 | 0.00432 |
| ____ NA | 12.82311 | 14 232.21 | 0.558 | 12.81957 | 12.89633 | 12.75344 |
| ____ NI | 0.00172 | 10.31 | 30.440 | 0.00167 | 0.00227 | 0.00123 |
| ____ P | 0.02001 | 0.95 | 58.754 | 0.01058 | 0.01626 | 0.03318 |
| ____ PB | 0.00190 | -3.03 | 264.687 | -0.00389 | 0.00510 | 0.00449 |
| ____ S | 26.90698 | 1 366.99 | 1.491 | 26.53607 | 27.33299 | 26.85188 |
| ____ SB | 0.00248 | 1.70 | 114.771 | -0.00077 | 0.00455 | 0.00367 |
| ____ SE | 0.00674 | 1.05 | 158.658 | -0.00490 | 0.00899 | 0.01612 |
| ____ SI | 3.49302 | 326.19 | 1.073 | 3.48082 | 3.53508 | 3.46315 |
| ____ SN | 0.00247 | 1.07 | 13.076 | 0.00211 | 0.00257 | 0.00274 |
| ____ SR | 0.27812 | 148 110.37 | 0.330 | 0.27722 | 0.27809 | 0.27905 |
| ____ TI | 0.00167 | 68.20 | 3.627 | 0.00161 | 0.00167 | 0.00173 |
| ____ TL | 0.00071 | -0.15 | 347.441 | -0.00210 | 0.00250 | 0.00172 |
| ____ V | 0.00004 | -10.33 | 1185.747 | 0.00052 | -0.00051 | 0.00011 |
| ____ Y1 | 3690.45000 | 3 690.45 | 0.333 | 3704.60000 | 3682.66000 | 3684.09000 |
| ____ Y2A | 140732.67845 | 140 732.68 | 0.241 | 141115.35000 | 140467.10658 | 140615.57877 |
| ____ Y2R | 7477.81399 | 7 477.81 | 0.572 | 7505.02400 | 7428.51796 | 7499.90002 |
| ____ ZN | 0.02362 | 77.14 | 0.238 | 0.02357 | 0.02368 | 0.02361 |
| ____ ZR | 0.00089 | 4.78 | 208.811 | 0.00221 | 0.00171 | -0.00124 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 20 Date/Time: 07/18/2017 02:58

Sample Number: **9095972** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00071 | -19.89 | 12.669 | -0.00065 | -0.00067 | -0.00081 |
| ____ AL | 0.22097 | 41.67 | 29.830 | 0.14486 | 0.25953 | 0.25853 |
| ____ AS | 0.00556 | 0.10 | 81.833 | 0.00092 | 0.00575 | 0.01002 |
| ____ B | 0.04920 | 260.12 | 1.393 | 0.04979 | 0.04936 | 0.04844 |
| ____ BA | 0.15496 | 78 534.53 | 0.618 | 0.15606 | 0.15437 | 0.15443 |
| ____ BE | -0.00001 | -143.54 | 419.124 | 0.00001 | 0.00001 | -0.00004 |
| ____ CA | 48.62942 | 30 641.51 | 0.639 | 48.98392 | 48.49923 | 48.40509 |
| ____ CD | -0.00027 | -4.28 | 33.489 | -0.00037 | -0.00020 | -0.00024 |
| ____ CO | 0.00073 | 0.50 | 135.469 | 0.00156 | 0.00101 | -0.00037 |
| ____ CR | 0.00298 | 20.39 | 11.554 | 0.00283 | 0.00337 | 0.00273 |
| ____ CU | 0.00203 | 9.80 | 29.926 | 0.00245 | 0.00232 | 0.00134 |
| ____ FE | 0.55933 | 67.20 | 1.277 | 0.55904 | 0.56662 | 0.55235 |
| ____ K | 2.86510 | 947.45 | 0.604 | 2.85079 | 2.88432 | 2.86021 |
| ____ LI | 0.01961 | 108.88 | 12.575 | 0.01937 | 0.01727 | 0.02218 |
| ____ MG | 6.83407 | 5 763.79 | 0.538 | 6.80807 | 6.81803 | 6.87611 |
| ____ MN | 0.04634 | 1 565.11 | 0.958 | 0.04684 | 0.04603 | 0.04613 |
| ____ MO | 0.00650 | 3.57 | 19.838 | 0.00550 | 0.00795 | 0.00603 |
| ____ NA | 27.19783 | 30 399.84 | 0.765 | 27.43744 | 27.09447 | 27.06157 |
| ____ NI | 0.00071 | 8.45 | 140.910 | -0.00033 | 0.00080 | 0.00166 |
| ____ P | 0.03992 | 1.50 | 34.035 | 0.03640 | 0.05493 | 0.02844 |
| ____ PB | 0.00013 | -3.44 | 772.579 | -0.00021 | 0.00125 | -0.00065 |
| ____ S | 19.48618 | 992.32 | 0.526 | 19.53485 | 19.55527 | 19.36841 |
| ____ SB | 0.00353 | 1.88 | 228.937 | -0.00158 | -0.00068 | 0.01286 |
| ____ SE | 0.00788 | 1.14 | 132.449 | 0.01125 | -0.00382 | 0.01620 |
| ____ SI | 15.49984 | 1 451.16 | 0.432 | 15.42662 | 15.51472 | 15.55817 |
| ____ SN | -0.00071 | 0.13 | 278.533 | 0.00122 | -0.00060 | -0.00276 |
| ____ SR | 0.33102 | 176 227.14 | 0.589 | 0.33327 | 0.32975 | 0.33006 |
| ____ TI | 0.01492 | 469.41 | 1.444 | 0.01474 | 0.01516 | 0.01487 |
| ____ TL | -0.00193 | -0.47 | 303.335 | -0.00834 | 0.00316 | -0.00061 |
| ____ V | 0.00342 | 20.97 | 9.486 | 0.00305 | 0.00365 | 0.00355 |
| ____ Y1 | 3690.78833 | 3 690.79 | 0.299 | 3690.65500 | 3701.88000 | 3679.83000 |
| ____ Y2A | 140685.17836 | 140 685.18 | 0.812 | 139370.73183 | 141245.63024 | 141439.17299 |
| ____ Y2R | 7518.72975 | 7 518.73 | 0.604 | 7466.82299 | 7551.30000 | 7538.06625 |
| ____ ZN | 0.00841 | 28.49 | 2.308 | 0.00832 | 0.00828 | 0.00863 |
| ____ ZR | 0.00288 | 7.22 | 59.510 | 0.00466 | 0.00275 | 0.00124 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 21 Date/Time: 07/18/2017 03:01

Sample Number: **9100480** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00050 | -9.36 | 197.107 | 0.00138 | -0.00055 | 0.00066 |
| ____ AL | -0.07047 | 21.54 | 37.713 | -0.09249 | -0.04095 | -0.07796 |
| ____ AS | 0.00410 | -0.05 | 43.735 | 0.00617 | 0.00306 | 0.00307 |
| ____ B | 0.10171 | 504.26 | 0.580 | 0.10219 | 0.10188 | 0.10105 |
| ____ BA | 0.07606 | 36 579.29 | 0.301 | 0.07629 | 0.07583 | 0.07606 |
| ____ BE | -0.00026 | -212.37 | 7.309 | -0.00026 | -0.00024 | -0.00027 |
| ____ CA | 283.62888 | 172 585.22 | 0.377 | 284.71905 | 283.58368 | 282.58392 |
| ____ CD | -0.00020 | -3.84 | 67.456 | -0.00021 | -0.00006 | -0.00033 |
| ____ CO | 0.00221 | 3.40 | 25.029 | 0.00285 | 0.00185 | 0.00193 |
| ____ CR | 0.00066 | 4.24 | 21.444 | 0.00050 | 0.00070 | 0.00077 |
| ____ CU | 0.00427 | 54.08 | 9.739 | 0.00386 | 0.00425 | 0.00469 |
| ____ FE | -0.01007 | 0.48 | 168.452 | -0.02734 | 0.00656 | -0.00943 |
| ____ K | 6.03968 | 1 912.17 | 1.021 | 6.00856 | 5.99977 | 6.11072 |
| ____ LI | 0.04339 | 242.64 | 4.802 | 0.04546 | 0.04129 | 0.04344 |
| ____ MG | 40.06681 | 32 440.97 | 0.549 | 40.31427 | 39.99283 | 39.89334 |
| ____ MN | 1.09310 | 34 973.50 | 0.281 | 1.09648 | 1.09233 | 1.09050 |
| ____ MO | 0.00253 | 0.37 | 53.480 | 0.00406 | 0.00200 | 0.00151 |
| ____ NA | 69.98717 | 76 656.22 | 0.437 | 70.24086 | 70.07306 | 69.64758 |
| ____ NI | 0.00733 | 16.77 | 14.376 | 0.00682 | 0.00855 | 0.00664 |
| ____ P | 0.02668 | 1.07 | 49.103 | 0.01201 | 0.03720 | 0.03082 |
| ____ PB | 0.00351 | -1.63 | 14.330 | 0.00300 | 0.00400 | 0.00353 |
| ____ S | 149.23077 | 7 069.04 | 1.416 | 149.90448 | 150.92426 | 146.86356 |
| ____ SB | 0.00423 | 1.87 | 157.428 | 0.01152 | -0.00151 | 0.00267 |
| ____ SE | 0.01675 | 1.75 | 74.110 | 0.02254 | 0.02521 | 0.00250 |
| ____ SI | 19.57896 | 1 794.30 | 0.541 | 19.55477 | 19.48725 | 19.69485 |
| ____ SN | 0.00117 | 0.65 | 167.813 | -0.00037 | 0.00050 | 0.00338 |
| ____ SR | 1.48194 | 746 971.93 | 0.346 | 1.48476 | 1.47603 | 1.48503 |
| ____ TI | -0.00040 | 5.34 | 62.043 | -0.00046 | -0.00061 | -0.00013 |
| ____ TL | 0.00193 | -0.02 | 584.655 | -0.00267 | -0.00632 | 0.01477 |
| ____ V | 0.00187 | 6.52 | 21.682 | 0.00228 | 0.00148 | 0.00184 |
| ____ Y1 | 3457.65737 | 3 457.66 | 1.229 | 3408.99910 | 3476.50675 | 3487.46627 |
| ____ Y2A | 133176.67570 | 133 176.68 | 0.485 | 132437.86170 | 133634.07319 | 133458.09220 |
| ____ Y2R | 7361.22223 | 7 361.22 | 0.524 | 7316.75484 | 7385.03686 | 7381.87500 |
| ____ ZN | 0.14967 | 451.11 | 0.145 | 0.14964 | 0.14947 | 0.14990 |
| ____ ZR | -0.00396 | -1.08 | 11.453 | -0.00448 | -0.00367 | -0.00372 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 22 Date/Time: 07/18/2017 03:04

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50280 | 4 050.33 | 0.290 | 0.50115 | 0.50390 | 0.50337 |
| ____ AL | 25.38740 | 1 715.42 | 0.788 | 25.22567 | 25.61115 | 25.32538 |
| ____ AS | 0.51506 | 52.51 | 2.293 | 0.50517 | 0.52814 | 0.51187 |
| ____ B | 0.49883 | 2 781.84 | 0.173 | 0.49855 | 0.49815 | 0.49980 |
| ____ BA | 0.51552 | 257 330.94 | 0.248 | 0.51659 | 0.51410 | 0.51586 |
| ____ BE | 0.49225 | 158 029.46 | 0.247 | 0.49266 | 0.49089 | 0.49321 |
| ____ CA | 25.73766 | 15 969.79 | 1.000 | 25.72202 | 26.00240 | 25.48856 |
| ____ CD | 0.50711 | 2 575.91 | 1.125 | 0.50074 | 0.51174 | 0.50886 |
| ____ CO | 0.50250 | 1 119.60 | 1.199 | 0.49555 | 0.50627 | 0.50568 |
| ____ CR | 0.49228 | 3 335.57 | 0.659 | 0.49205 | 0.48916 | 0.49564 |
| ____ CU | 0.50579 | 4 067.60 | 0.110 | 0.50638 | 0.50527 | 0.50572 |
| ____ FE | 25.21979 | 2 900.83 | 0.884 | 25.14202 | 25.47120 | 25.04614 |
| ____ K | 25.18345 | 7 875.26 | 1.058 | 24.96576 | 25.48051 | 25.10406 |
| ____ LI | 0.52140 | 2 677.83 | 0.417 | 0.52044 | 0.52389 | 0.51987 |
| ____ MG | 25.17109 | 20 611.16 | 1.029 | 25.14305 | 25.44291 | 24.92733 |
| ____ MN | 0.51301 | 17 118.76 | 0.291 | 0.51348 | 0.51134 | 0.51421 |
| ____ MO | 0.49973 | 394.15 | 0.378 | 0.49760 | 0.50037 | 0.50121 |
| ____ NA | 25.71134 | 28 227.68 | 0.915 | 25.60419 | 25.98115 | 25.54869 |
| ____ NI | 0.50146 | 727.67 | 0.240 | 0.50017 | 0.50168 | 0.50254 |
| ____ P | 0.43300 | 12.12 | 4.548 | 0.44663 | 0.44196 | 0.41042 |
| ____ PB | 0.51226 | 241.54 | 0.647 | 0.51025 | 0.51045 | 0.51609 |
| ____ S | 24.65780 | 1 245.74 | 0.695 | 24.69486 | 24.80754 | 24.47102 |
| ____ SB | 0.51194 | 89.44 | 0.811 | 0.51604 | 0.51204 | 0.50774 |
| ____ SE | 0.51451 | 42.13 | 2.939 | 0.50043 | 0.53050 | 0.51262 |
| ____ SI | 25.38173 | 2 334.10 | 1.290 | 25.17021 | 25.75897 | 25.21602 |
| ____ SN | 0.48711 | 144.33 | 0.616 | 0.48413 | 0.49013 | 0.48705 |
| ____ SR | 0.52075 | 273 505.70 | 0.230 | 0.52075 | 0.52195 | 0.51955 |
| ____ TI | 0.50932 | 15 257.67 | 0.321 | 0.50988 | 0.50748 | 0.51060 |
| ____ TL | 0.52966 | 55.71 | 1.338 | 0.52191 | 0.53581 | 0.53125 |
| ____ V | 0.51730 | 4 713.54 | 0.352 | 0.51597 | 0.51656 | 0.51937 |
| ____ Y1 | 3667.92833 | 3 667.93 | 1.987 | 3742.09000 | 3596.37000 | 3665.32500 |
| ____ Y2A | 138779.25030 | 138 779.25 | 0.231 | 138956.12286 | 138972.12804 | 138409.50000 |
| ____ Y2R | 7385.82759 | 7 385.83 | 0.737 | 7392.56446 | 7328.30245 | 7436.61586 |
| ____ ZN | 0.50674 | 1 633.87 | 0.160 | 0.50749 | 0.50684 | 0.50588 |
| ____ ZR | 0.52588 | 633.44 | 1.463 | 0.51699 | 0.53007 | 0.53057 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 23 Date/Time: 07/18/2017 03:07

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00048 | -17.96 | 279.843 | -0.00084 | 0.00101 | -0.00161 |
| ____ AL | -0.02862 | 24.58 | 179.916 | -0.05927 | -0.05740 | 0.03083 |
| ____ AS | 0.00841 | 0.41 | 65.779 | 0.00224 | 0.01006 | 0.01294 |
| ____ B | 0.00343 | 14.59 | 26.428 | 0.00284 | 0.00448 | 0.00299 |
| ____ BA | 0.00021 | 290.78 | 18.705 | 0.00025 | 0.00022 | 0.00017 |
| ____ BE | 0.00007 | -118.52 | 10.553 | 0.00007 | 0.00008 | 0.00007 |
| ____ CA | 0.03232 | 63.25 | 29.528 | 0.04315 | 0.02870 | 0.02512 |
| ____ CD | 0.00003 | -2.97 | 591.817 | 0.00017 | -0.00020 | 0.00014 |
| ____ CO | 0.00027 | -0.17 | 107.084 | 0.00023 | 0.00057 | 0.00000 |
| ____ CR | -0.00034 | -2.40 | 180.703 | 0.00035 | -0.00056 | -0.00081 |
| ____ CU | -0.00016 | -14.10 | 412.245 | 0.00056 | -0.00028 | -0.00076 |
| ____ FE | -0.01195 | 0.27 | 114.450 | -0.00083 | -0.02723 | -0.00779 |
| ____ K | -0.00115 | 39.08 | 2690.145 | -0.03656 | 0.02027 | 0.01285 |
| ____ LI | 0.00386 | 23.38 | 100.137 | 0.00008 | 0.00781 | 0.00369 |
| ____ MG | -0.01292 | 7.45 | 10.029 | -0.01272 | -0.01430 | -0.01173 |
| ____ MN | 0.00031 | 9.39 | 41.553 | 0.00046 | 0.00027 | 0.00021 |
| ____ MO | 0.00234 | 0.26 | 13.919 | 0.00200 | 0.00265 | 0.00237 |
| ____ NA | 0.09452 | 61.90 | 6.020 | 0.09974 | 0.08845 | 0.09537 |
| ____ NI | -0.00059 | 7.29 | 83.937 | -0.00025 | -0.00115 | -0.00035 |
| ____ P | 0.01106 | 0.73 | 80.986 | 0.00826 | 0.02107 | 0.00384 |
| ____ PB | 0.00137 | -3.48 | 153.269 | 0.00006 | 0.00025 | 0.00380 |
| ____ S | 0.02130 | 9.35 | 10.260 | 0.01996 | 0.02012 | 0.02383 |
| ____ SB | 0.00188 | 1.64 | 81.594 | 0.00355 | 0.00053 | 0.00157 |
| ____ SE | -0.01124 | -0.43 | 104.959 | -0.00254 | -0.00651 | -0.02467 |
| ____ SI | 0.00613 | 1.80 | 132.729 | 0.01464 | 0.00533 | -0.00158 |
| ____ SN | -0.00103 | 0.03 | 175.619 | -0.00199 | 0.00105 | -0.00215 |
| ____ SR | 0.00035 | 150.48 | 4.185 | 0.00037 | 0.00034 | 0.00034 |
| ____ TI | 0.00031 | 27.53 | 63.715 | 0.00008 | 0.00043 | 0.00043 |
| ____ TL | -0.00519 | -0.84 | 82.179 | -0.00907 | -0.00588 | -0.00062 |
| ____ V | 0.00072 | -3.85 | 100.712 | 0.00089 | 0.00135 | -0.00008 |
| ____ Y1 | 3794.45333 | 3 794.45 | 0.320 | 3783.46500 | 3792.40000 | 3807.49500 |
| ____ Y2A | 142282.24237 | 142 282.24 | 0.316 | 142171.79078 | 142776.84095 | 141898.09538 |
| ____ Y2R | 7443.17500 | 7 443.18 | 0.708 | 7435.92500 | 7394.47500 | 7499.12500 |
| ____ ZN | 0.00023 | 2.12 | 187.472 | 0.00024 | 0.00064 | -0.00021 |
| ____ ZR | 0.00034 | 4.08 | 526.153 | 0.00060 | 0.00200 | -0.00157 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 24 Date/Time: 07/18/2017 03:10

Sample Number: **9100483** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00072 | -19.69 | 34.216 | -0.00060 | -0.00100 | -0.00055 |
| ____ AL | -0.03068 | 24.43 | 120.659 | -0.02255 | 0.00160 | -0.07109 |
| ____ AS | 0.00173 | -0.30 | 544.954 | 0.00353 | -0.00846 | 0.01010 |
| ____ B | 0.04697 | 243.50 | 3.169 | 0.04574 | 0.04862 | 0.04653 |
| ____ BA | 0.14455 | 72 849.94 | 0.361 | 0.14439 | 0.14513 | 0.14412 |
| ____ BE | -0.00003 | -149.91 | 96.468 | -0.00006 | -0.00002 | -0.00001 |
| ____ CA | 57.17787 | 35 634.84 | 1.051 | 57.79544 | 57.14358 | 56.59458 |
| ____ CD | -0.00036 | -4.89 | 31.757 | -0.00024 | -0.00039 | -0.00046 |
| ____ CO | 0.00051 | -0.12 | 33.346 | 0.00035 | 0.00048 | 0.00069 |
| ____ CR | 0.00138 | 9.35 | 13.395 | 0.00130 | 0.00124 | 0.00159 |
| ____ CU | 0.00036 | -2.65 | 35.954 | 0.00025 | 0.00050 | 0.00034 |
| ____ FE | 0.10823 | 14.20 | 12.007 | 0.09327 | 0.11466 | 0.11676 |
| ____ K | 3.68087 | 1 193.46 | 0.903 | 3.71132 | 3.68585 | 3.64544 |
| ____ LI | 0.02304 | 126.12 | 18.782 | 0.02008 | 0.02103 | 0.02800 |
| ____ MG | 8.36003 | 6 969.16 | 0.255 | 8.36053 | 8.33849 | 8.38107 |
| ____ MN | 0.09822 | 3 299.40 | 1.152 | 0.09788 | 0.09948 | 0.09730 |
| ____ MO | 0.00737 | 4.28 | 4.005 | 0.00771 | 0.00717 | 0.00723 |
| ____ NA | 26.91948 | 29 780.12 | 1.037 | 27.22939 | 26.84141 | 26.68765 |
| ____ NI | 0.00043 | 7.99 | 301.659 | 0.00190 | -0.00058 | -0.00003 |
| ____ P | -0.00220 | 0.35 | 649.691 | -0.01320 | -0.00738 | 0.01397 |
| ____ PB | 0.00542 | -0.89 | 93.791 | 0.00377 | 0.00136 | 0.01112 |
| ____ S | 20.25844 | 1 033.53 | 1.130 | 19.99427 | 20.38068 | 20.40036 |
| ____ SB | 0.00670 | 2.43 | 64.647 | 0.01009 | 0.00182 | 0.00819 |
| ____ SE | -0.00776 | -0.13 | 217.694 | -0.00386 | 0.00684 | -0.02625 |
| ____ SI | 17.68507 | 1 638.59 | 0.344 | 17.73981 | 17.61944 | 17.69595 |
| ____ SN | 0.00056 | 0.51 | 198.612 | 0.00004 | 0.00183 | -0.00020 |
| ____ SR | 0.39879 | 211 083.81 | 0.348 | 0.39839 | 0.40033 | 0.39764 |
| ____ TI | 0.00246 | 91.65 | 8.583 | 0.00227 | 0.00242 | 0.00269 |
| ____ TL | -0.00322 | -0.62 | 169.335 | -0.00053 | 0.00037 | -0.00949 |
| ____ V | 0.00514 | 36.78 | 2.382 | 0.00527 | 0.00503 | 0.00513 |
| ____ Y1 | 3698.64667 | 3 698.65 | 0.394 | 3688.02500 | 3715.26000 | 3692.65500 |
| ____ Y2A | 139868.90647 | 139 868.91 | 0.093 | 139769.35000 | 139820.45455 | 140016.91485 |
| ____ Y2R | 7441.79572 | 7 441.80 | 0.644 | 7401.31974 | 7429.31637 | 7494.75105 |
| ____ ZN | 0.00914 | 30.76 | 1.808 | 0.00906 | 0.00903 | 0.00933 |
| ____ ZR | -0.00114 | 2.32 | 367.002 | 0.00045 | -0.00587 | 0.00201 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 25 Date/Time: 07/18/2017 03:14

Sample Number: **9100484** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00023 | -15.57 | 527.130 | -0.00065 | 0.00113 | -0.00117 |
| ____ AL | -0.04051 | 24.00 | 147.077 | 0.02827 | -0.07619 | -0.07360 |
| ____ AS | 0.00474 | 0.02 | 155.028 | 0.00111 | 0.01321 | -0.00009 |
| ____ B | 0.04752 | 244.96 | 1.102 | 0.04811 | 0.04712 | 0.04733 |
| ____ BA | 0.13545 | 68 123.56 | 0.386 | 0.13568 | 0.13485 | 0.13581 |
| ____ BE | -0.00003 | -150.20 | 35.232 | -0.00003 | -0.00004 | -0.00002 |
| ____ CA | 57.14517 | 35 955.11 | 0.797 | 57.41261 | 57.40372 | 56.61916 |
| ____ CD | -0.00019 | -4.01 | 124.838 | 0.00004 | -0.00043 | -0.00018 |
| ____ CO | 0.00011 | -1.00 | 395.704 | 0.00039 | -0.00039 | 0.00032 |
| ____ CR | 0.00134 | 9.08 | 54.640 | 0.00084 | 0.00218 | 0.00100 |
| ____ CU | -0.00166 | -19.06 | 74.279 | -0.00114 | -0.00078 | -0.00307 |
| ____ FE | -0.00988 | 0.52 | 126.224 | -0.01892 | -0.01507 | 0.00435 |
| ____ K | 3.76645 | 1 232.02 | 1.804 | 3.69108 | 3.82298 | 3.78527 |
| ____ LI | 0.02351 | 129.63 | 14.850 | 0.02215 | 0.02748 | 0.02091 |
| ____ MG | 8.34323 | 7 021.51 | 0.749 | 8.31485 | 8.41484 | 8.30000 |
| ____ MN | 0.00059 | 18.36 | 18.431 | 0.00061 | 0.00068 | 0.00047 |
| ____ MO | 0.00860 | 5.22 | 4.990 | 0.00901 | 0.00815 | 0.00864 |
| ____ NA | 27.57957 | 30 802.90 | 0.884 | 27.73126 | 27.70925 | 27.29822 |
| ____ NI | -0.00069 | 6.32 | 41.276 | -0.00087 | -0.00036 | -0.00085 |
| ____ P | 0.03909 | 1.47 | 12.556 | 0.03434 | 0.04415 | 0.03879 |
| ____ PB | 0.00039 | -3.27 | 809.162 | 0.00163 | 0.00270 | -0.00317 |
| ____ S | 20.59366 | 1 043.40 | 0.623 | 20.65465 | 20.44615 | 20.68017 |
| ____ SB | -0.00049 | 1.19 | 1107.569 | 0.00521 | -0.00116 | -0.00552 |
| ____ SE | 0.00683 | 1.06 | 59.649 | 0.00614 | 0.01120 | 0.00314 |
| ____ SI | 17.51361 | 1 638.18 | 0.945 | 17.42431 | 17.70465 | 17.41188 |
| ____ SN | 0.00011 | 0.37 | 313.324 | 0.00035 | 0.00028 | -0.00029 |
| ____ SR | 0.40544 | 214 130.79 | 0.258 | 0.40619 | 0.40425 | 0.40588 |
| ____ TI | 0.00119 | 53.43 | 13.477 | 0.00109 | 0.00111 | 0.00138 |
| ____ TL | -0.00204 | -0.47 | 186.589 | 0.00232 | -0.00475 | -0.00370 |
| ____ V | 0.00294 | 15.96 | 21.031 | 0.00308 | 0.00347 | 0.00226 |
| ____ Y1 | 3673.76333 | 3 673.76 | 0.507 | 3679.59000 | 3688.77500 | 3652.92500 |
| ____ Y2A | 139559.57889 | 139 559.58 | 0.231 | 139426.59086 | 139926.55283 | 139325.59298 |
| ____ Y2R | 7512.99166 | 7 512.99 | 0.921 | 7485.28238 | 7461.95110 | 7591.74152 |
| ____ ZN | 0.00534 | 18.38 | 3.480 | 0.00523 | 0.00556 | 0.00524 |
| ____ ZR | 0.00018 | 3.89 | 2946.221 | 0.00349 | 0.00281 | -0.00577 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 26 Date/Time: 07/18/2017 03:17

Sample Number: **9100485** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00034 | -16.65 | 369.548 | -0.00057 | -0.00149 | 0.00102 |
| ____ AL | 0.01202 | 27.69 | 162.530 | -0.01009 | 0.01922 | 0.02693 |
| ____ AS | 0.01076 | 0.63 | 69.181 | 0.01922 | 0.00790 | 0.00517 |
| ____ B | 0.04679 | 243.98 | 2.057 | 0.04782 | 0.04592 | 0.04661 |
| ____ BA | 0.13493 | 68 235.67 | 0.410 | 0.13458 | 0.13464 | 0.13557 |
| ____ BE | -0.00007 | -165.24 | 41.639 | -0.00007 | -0.00005 | -0.00011 |
| ____ CA | 62.11419 | 39 255.00 | 1.412 | 63.12415 | 61.67507 | 61.54337 |
| ____ CD | -0.00027 | -4.38 | 120.625 | 0.00006 | -0.00028 | -0.00059 |
| ____ CO | 0.00051 | -0.05 | 82.987 | 0.00037 | 0.00099 | 0.00017 |
| ____ CR | 0.00132 | 8.96 | 33.032 | 0.00099 | 0.00115 | 0.00181 |
| ____ CU | 0.00075 | 1.08 | 24.392 | 0.00057 | 0.00093 | 0.00074 |
| ____ FE | 0.19055 | 24.08 | 9.532 | 0.20407 | 0.16991 | 0.19767 |
| ____ K | 3.45074 | 1 137.60 | 0.533 | 3.43143 | 3.45272 | 3.46808 |
| ____ LI | 0.02053 | 114.98 | 6.106 | 0.02172 | 0.02065 | 0.01922 |
| ____ MG | 8.95112 | 7 566.03 | 0.417 | 8.98343 | 8.91032 | 8.95961 |
| ____ MN | 0.10945 | 3 688.57 | 0.590 | 0.10966 | 0.10872 | 0.10995 |
| ____ MO | 0.00838 | 5.05 | 5.877 | 0.00842 | 0.00786 | 0.00885 |
| ____ NA | 27.41332 | 30 764.02 | 1.448 | 27.86213 | 27.26894 | 27.10890 |
| ____ NI | 0.00052 | 8.14 | 72.267 | 0.00028 | 0.00033 | 0.00095 |
| ____ P | 0.02410 | 1.06 | 75.323 | 0.04166 | 0.02522 | 0.00541 |
| ____ PB | 0.00253 | -2.31 | 160.590 | -0.00216 | 0.00475 | 0.00498 |
| ____ S | 22.72567 | 1 150.44 | 0.800 | 22.85760 | 22.51815 | 22.80126 |
| ____ SB | 0.00080 | 1.41 | 586.490 | -0.00087 | -0.00282 | 0.00608 |
| ____ SE | 0.00689 | 1.06 | 163.153 | -0.00423 | 0.01826 | 0.00666 |
| ____ SI | 15.56713 | 1 463.32 | 0.748 | 15.66229 | 15.43730 | 15.60179 |
| ____ SN | -0.00116 | 0.00 | 260.177 | -0.00452 | 0.00136 | -0.00034 |
| ____ SR | 0.42527 | 225 834.65 | 0.246 | 0.42495 | 0.42442 | 0.42644 |
| ____ TI | 0.00215 | 82.51 | 6.833 | 0.00227 | 0.00199 | 0.00218 |
| ____ TL | -0.00095 | -0.36 | 220.579 | -0.00084 | -0.00309 | 0.00109 |
| ____ V | 0.00508 | 36.18 | 6.451 | 0.00534 | 0.00471 | 0.00519 |
| ____ Y1 | 3673.23667 | 3 673.24 | 1.059 | 3635.12000 | 3671.71500 | 3712.87500 |
| ____ Y2A | 140323.65631 | 140 323.66 | 0.257 | 140525.40853 | 140538.72500 | 139906.83539 |
| ____ Y2R | 7549.38209 | 7 549.38 | 0.971 | 7465.33193 | 7582.65968 | 7600.15466 |
| ____ ZN | 0.03463 | 111.95 | 0.513 | 0.03446 | 0.03482 | 0.03461 |
| ____ ZR | 0.00396 | 8.60 | 77.976 | 0.00141 | 0.00308 | 0.00739 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 27 Date/Time: 07/18/2017 03:20

Sample Number: **9100486** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00031 | -16.29 | 114.866 | -0.00024 | -0.00069 | 0.00000 |
| ____ AL | -0.05233 | 23.20 | 153.990 | -0.03478 | 0.01803 | -0.14025 |
| ____ AS | 0.00169 | -0.30 | 554.038 | -0.00459 | -0.00280 | 0.01246 |
| ____ B | 0.04729 | 244.52 | 3.079 | 0.04615 | 0.04679 | 0.04893 |
| ____ BA | 0.12931 | 65 258.35 | 0.189 | 0.12957 | 0.12908 | 0.12928 |
| ____ BE | -0.00006 | -158.98 | 12.685 | -0.00006 | -0.00005 | -0.00007 |
| ____ CA | 61.94055 | 38 923.77 | 0.365 | 61.81413 | 62.20145 | 61.80606 |
| ____ CD | -0.00057 | -5.96 | 17.210 | -0.00068 | -0.00049 | -0.00054 |
| ____ CO | 0.00025 | -0.62 | 84.791 | 0.00048 | 0.00021 | 0.00006 |
| ____ CR | 0.00070 | 4.76 | 25.460 | 0.00086 | 0.00074 | 0.00051 |
| ____ CU | -0.00118 | -14.63 | 47.145 | -0.00179 | -0.00071 | -0.00104 |
| ____ FE | -0.01689 | -0.32 | 37.088 | -0.02397 | -0.01464 | -0.01206 |
| ____ K | 3.39748 | 1 114.18 | 0.227 | 3.40217 | 3.40172 | 3.38856 |
| ____ LI | 0.02017 | 112.50 | 20.664 | 0.01990 | 0.02447 | 0.01614 |
| ____ MG | 8.94150 | 7 514.46 | 0.404 | 8.90817 | 8.93640 | 8.97992 |
| ____ MN | 0.00157 | 51.37 | 10.227 | 0.00175 | 0.00144 | 0.00151 |
| ____ MO | 0.00793 | 4.69 | 11.206 | 0.00718 | 0.00770 | 0.00891 |
| ____ NA | 27.33733 | 30 504.60 | 0.427 | 27.23961 | 27.46642 | 27.30598 |
| ____ NI | -0.00034 | 6.91 | 339.957 | 0.00096 | -0.00077 | -0.00121 |
| ____ P | 0.02702 | 1.14 | 23.901 | 0.03167 | 0.02974 | 0.01965 |
| ____ PB | 0.00257 | -2.31 | 75.365 | 0.00050 | 0.00288 | 0.00433 |
| ____ S | 22.51049 | 1 140.25 | 1.881 | 22.02147 | 22.75747 | 22.75255 |
| ____ SB | -0.00240 | 0.86 | 309.714 | 0.00442 | -0.01034 | -0.00128 |
| ____ SE | -0.00373 | 0.19 | 87.735 | -0.00387 | -0.00694 | -0.00039 |
| ____ SI | 15.41834 | 1 441.03 | 0.473 | 15.39318 | 15.36128 | 15.50056 |
| ____ SN | 0.00068 | 0.54 | 492.902 | -0.00154 | -0.00093 | 0.00450 |
| ____ SR | 0.42065 | 222 894.42 | 0.224 | 0.42159 | 0.41970 | 0.42066 |
| ____ TI | 0.00155 | 64.46 | 8.414 | 0.00140 | 0.00162 | 0.00163 |
| ____ TL | -0.00443 | -0.74 | 12.190 | -0.00399 | -0.00426 | -0.00503 |
| ____ V | 0.00374 | 23.64 | 14.314 | 0.00431 | 0.00325 | 0.00367 |
| ____ Y1 | 3675.37833 | 3 675.38 | 0.305 | 3686.80000 | 3664.39500 | 3674.94000 |
| ____ Y2A | 140016.26989 | 140 016.27 | 0.226 | 139759.32500 | 139920.15968 | 140369.32500 |
| ____ Y2R | 7505.90074 | 7 505.90 | 0.475 | 7544.45221 | 7499.10000 | 7474.15000 |
| ____ ZN | 0.01034 | 34.36 | 0.816 | 0.01024 | 0.01038 | 0.01039 |
| ____ ZR | -0.00033 | 3.30 | 960.673 | -0.00395 | 0.00193 | 0.00103 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 28 Date/Time: 07/18/2017 03:23

Sample Number: **9100487** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00062 | -19.25 | 180.431 | -0.00186 | -0.00033 | 0.00032 |
| ____ AL | 0.09026 | 32.74 | 64.815 | 0.04296 | 0.15567 | 0.07213 |
| ____ AS | 0.00246 | -0.22 | 91.505 | 0.00029 | 0.00478 | 0.00230 |
| ____ B | 0.04587 | 244.36 | 2.183 | 0.04703 | 0.04531 | 0.04527 |
| ____ BA | 0.15005 | 76 363.40 | 0.559 | 0.15101 | 0.14945 | 0.14969 |
| ____ BE | -0.00002 | -149.41 | 16.761 | -0.00003 | -0.00002 | -0.00003 |
| ____ CA | 49.99342 | 31 397.54 | 0.861 | 50.39674 | 50.04367 | 49.53984 |
| ____ CD | -0.00018 | -3.80 | 154.480 | -0.00044 | 0.00011 | -0.00020 |
| ____ CO | 0.00078 | 0.58 | 86.138 | 0.00113 | 0.00001 | 0.00120 |
| ____ CR | 0.00167 | 11.46 | 29.571 | 0.00137 | 0.00140 | 0.00224 |
| ____ CU | 0.00018 | -5.16 | 588.622 | 0.00079 | 0.00075 | -0.00101 |
| ____ FE | 0.66394 | 79.20 | 1.438 | 0.67488 | 0.65731 | 0.65963 |
| ____ K | 2.92110 | 962.13 | 0.349 | 2.92689 | 2.90933 | 2.92710 |
| ____ LI | 0.01702 | 95.13 | 9.446 | 0.01886 | 0.01589 | 0.01631 |
| ____ MG | 6.95677 | 5 848.05 | 0.069 | 6.95148 | 6.95796 | 6.96086 |
| ____ MN | 0.03429 | 1 162.86 | 1.580 | 0.03390 | 0.03407 | 0.03491 |
| ____ MO | 0.00792 | 4.75 | 13.187 | 0.00748 | 0.00911 | 0.00716 |
| ____ NA | 23.72946 | 26 433.75 | 0.776 | 23.90894 | 23.73852 | 23.54091 |
| ____ NI | 0.00069 | 8.52 | 76.769 | 0.00105 | 0.00008 | 0.00095 |
| ____ P | 0.07100 | 2.37 | 11.314 | 0.06777 | 0.06509 | 0.08015 |
| ____ PB | 0.00108 | -3.04 | 65.853 | 0.00185 | 0.00045 | 0.00093 |
| ____ S | 19.75392 | 1 016.47 | 0.356 | 19.71872 | 19.70806 | 19.83496 |
| ____ SB | 0.00065 | 1.40 | 1155.974 | 0.00774 | 0.00147 | -0.00725 |
| ____ SE | -0.01102 | -0.41 | 64.267 | -0.01168 | -0.01775 | -0.00363 |
| ____ SI | 15.41977 | 1 439.10 | 0.231 | 15.42833 | 15.38067 | 15.45030 |
| ____ SN | 0.00082 | 0.59 | 310.085 | 0.00049 | 0.00349 | -0.00154 |
| ____ SR | 0.34115 | 182 355.56 | 0.413 | 0.34275 | 0.34011 | 0.34058 |
| ____ TI | 0.00601 | 200.55 | 3.720 | 0.00583 | 0.00595 | 0.00626 |
| ____ TL | -0.00191 | -0.47 | 282.665 | -0.00629 | 0.00413 | -0.00359 |
| ____ V | 0.00329 | 19.59 | 17.018 | 0.00264 | 0.00366 | 0.00355 |
| ____ Y1 | 3729.80667 | 3 729.81 | 0.153 | 3733.63500 | 3723.24500 | 3732.54000 |
| ____ Y2A | 141254.72283 | 141 254.72 | 0.393 | 140616.82126 | 141517.98184 | 141629.36540 |
| ____ Y2R | 7495.04134 | 7 495.04 | 0.817 | 7438.18599 | 7487.12500 | 7559.81304 |
| ____ ZN | 0.01619 | 54.04 | 1.334 | 0.01623 | 0.01595 | 0.01638 |
| ____ ZR | 0.00322 | 7.61 | 50.405 | 0.00299 | 0.00494 | 0.00172 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 29 Date/Time: 07/18/2017 03:26

Sample Number: **9100488** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00003 | -14.19 | 796.471 | 0.00000 | 0.00023 | -0.00033 |
| ____ AL | 0.02328 | 28.18 | 269.878 | -0.01773 | 0.09563 | -0.00805 |
| ____ AS | 0.00111 | -0.37 | 743.744 | 0.00546 | -0.00838 | 0.00624 |
| ____ B | 0.04431 | 230.92 | 0.677 | 0.04466 | 0.04411 | 0.04417 |
| ____ BA | 0.14337 | 72 952.59 | 0.106 | 0.14339 | 0.14352 | 0.14321 |
| ____ BE | -0.00006 | -159.71 | 0.689 | -0.00006 | -0.00006 | -0.00005 |
| ____ CA | 49.82073 | 31 168.39 | 1.580 | 49.80674 | 49.04044 | 50.61500 |
| ____ CD | 0.00000 | -3.07 | 1178.472 | -0.00016 | -0.00002 | 0.00020 |
| ____ CO | -0.00025 | -1.74 | 199.380 | 0.00032 | -0.00055 | -0.00051 |
| ____ CR | 0.00059 | 4.04 | 43.183 | 0.00040 | 0.00050 | 0.00088 |
| ____ CU | -0.00105 | -15.17 | 13.266 | -0.00091 | -0.00106 | -0.00119 |
| ____ FE | -0.00702 | 0.85 | 158.870 | -0.01550 | 0.00561 | -0.01116 |
| ____ K | 2.92732 | 960.21 | 4.920 | 2.79234 | 2.91069 | 3.07893 |
| ____ LI | 0.02037 | 112.12 | 7.919 | 0.01862 | 0.02068 | 0.02180 |
| ____ MG | 6.91832 | 5 792.73 | 2.468 | 6.83739 | 6.80310 | 7.11447 |
| ____ MN | 0.00081 | 26.20 | 8.392 | 0.00088 | 0.00075 | 0.00079 |
| ____ MO | 0.00721 | 4.17 | 14.520 | 0.00793 | 0.00601 | 0.00768 |
| ____ NA | 23.81604 | 26 428.34 | 1.367 | 23.73836 | 23.53629 | 24.17346 |
| ____ NI | -0.00083 | 6.29 | 46.224 | -0.00056 | -0.00067 | -0.00127 |
| ____ P | 0.05330 | 1.88 | 12.833 | 0.05342 | 0.06007 | 0.04639 |
| ____ PB | 0.00310 | -2.09 | 41.329 | 0.00235 | 0.00458 | 0.00238 |
| ____ S | 19.78222 | 1 016.09 | 0.494 | 19.83835 | 19.83895 | 19.66937 |
| ____ SB | 0.00531 | 2.20 | 12.305 | 0.00605 | 0.00507 | 0.00481 |
| ____ SE | 0.00431 | 0.86 | 130.693 | -0.00147 | 0.00977 | 0.00463 |
| ____ SI | 15.00319 | 1 394.71 | 2.515 | 14.73854 | 14.83586 | 15.43518 |
| ____ SN | 0.00023 | 0.41 | 490.758 | 0.00043 | 0.00122 | -0.00097 |
| ____ SR | 0.33800 | 180 622.43 | 0.078 | 0.33779 | 0.33830 | 0.33792 |
| ____ TI | 0.00150 | 63.22 | 10.707 | 0.00163 | 0.00153 | 0.00132 |
| ____ TL | -0.00458 | -0.77 | 102.106 | -0.00953 | -0.00023 | -0.00399 |
| ____ V | 0.00316 | 18.42 | 20.118 | 0.00242 | 0.00355 | 0.00349 |
| ____ Y1 | 3723.09667 | 3 723.10 | 0.388 | 3723.87000 | 3737.13000 | 3708.29000 |
| ____ Y2A | 141211.89937 | 141 211.90 | 0.081 | 141343.25753 | 141133.56301 | 141158.87757 |
| ____ Y2R | 7467.08287 | 7 467.08 | 1.798 | 7455.15897 | 7606.92861 | 7339.16101 |
| ____ ZN | 0.01102 | 36.99 | 0.687 | 0.01110 | 0.01100 | 0.01095 |
| ____ ZR | -0.00030 | 3.35 | 1082.158 | 0.00307 | -0.00062 | -0.00334 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 30 Date/Time: 07/18/2017 03:29

Sample Number: **9100489** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00050 | -9.83 | 13.891 | 0.00057 | 0.00044 | 0.00048 |
| ____ AL | -0.01274 | 25.75 | 371.094 | -0.00498 | 0.03019 | -0.06344 |
| ____ AS | -0.00298 | -0.79 | 93.003 | -0.00221 | -0.00606 | -0.00068 |
| ____ B | 0.04595 | 240.08 | 2.803 | 0.04453 | 0.04703 | 0.04629 |
| ____ BA | 0.15206 | 76 586.69 | 0.873 | 0.15240 | 0.15318 | 0.15059 |
| ____ BE | -0.00003 | -151.34 | 65.266 | -0.00003 | -0.00002 | -0.00006 |
| ____ CA | 50.99063 | 31 926.35 | 0.583 | 50.96574 | 50.70660 | 51.29956 |
| ____ CD | -0.00011 | -3.51 | 18.364 | -0.00013 | -0.00011 | -0.00009 |
| ____ CO | -0.00014 | -1.50 | 184.489 | -0.00012 | -0.00040 | 0.00011 |
| ____ CR | 0.00125 | 8.48 | 16.230 | 0.00109 | 0.00118 | 0.00148 |
| ____ CU | 0.00111 | 2.66 | 31.880 | 0.00149 | 0.00079 | 0.00104 |
| ____ FE | 0.37245 | 45.02 | 3.523 | 0.36530 | 0.36446 | 0.38760 |
| ____ K | 3.00270 | 984.93 | 0.339 | 2.99243 | 3.00289 | 3.01279 |
| ____ LI | 0.01876 | 104.00 | 14.954 | 0.01899 | 0.02144 | 0.01584 |
| ____ MG | 7.09075 | 5 942.00 | 0.480 | 7.05189 | 7.10490 | 7.11545 |
| ____ MN | 0.02211 | 741.71 | 0.716 | 0.02195 | 0.02227 | 0.02212 |
| ____ MO | 0.00809 | 4.86 | 9.173 | 0.00728 | 0.00873 | 0.00827 |
| ____ NA | 24.29229 | 26 981.44 | 0.549 | 24.27719 | 24.16705 | 24.43265 |
| ____ NI | -0.00033 | 6.97 | 324.958 | 0.00018 | -0.00155 | 0.00039 |
| ____ P | 0.03418 | 1.34 | 4.871 | 0.03560 | 0.03461 | 0.03235 |
| ____ PB | 0.00133 | -2.91 | 63.314 | 0.00162 | 0.00199 | 0.00038 |
| ____ S | 20.13585 | 1 027.95 | 1.178 | 20.38468 | 20.11078 | 19.91209 |
| ____ SB | 0.00345 | 1.87 | 150.651 | 0.00936 | -0.00037 | 0.00135 |
| ____ SE | -0.01414 | -0.66 | 108.701 | -0.03168 | -0.00304 | -0.00769 |
| ____ SI | 15.44471 | 1 437.08 | 0.579 | 15.35144 | 15.45286 | 15.52985 |
| ____ SN | -0.00009 | 0.31 | 1722.508 | 0.00140 | 0.00006 | -0.00174 |
| ____ SR | 0.34908 | 184 675.78 | 0.847 | 0.34954 | 0.35178 | 0.34592 |
| ____ TI | 0.00300 | 107.94 | 3.139 | 0.00310 | 0.00292 | 0.00298 |
| ____ TL | 0.00708 | 0.54 | 77.750 | 0.00149 | 0.00725 | 0.01250 |
| ____ V | 0.00346 | 20.98 | 19.724 | 0.00270 | 0.00365 | 0.00403 |
| ____ Y1 | 3701.17000 | 3 701.17 | 0.757 | 3668.97500 | 3714.44500 | 3720.09000 |
| ____ Y2A | 139804.80381 | 139 804.80 | 0.724 | 139560.86348 | 138936.39127 | 140917.15667 |
| ____ Y2R | 7472.57270 | 7 472.57 | 0.346 | 7482.36380 | 7492.14072 | 7443.21357 |
| ____ ZN | 0.01593 | 52.68 | 1.343 | 0.01568 | 0.01602 | 0.01608 |
| ____ ZR | 0.00310 | 7.45 | 35.367 | 0.00283 | 0.00217 | 0.00431 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 31 Date/Time: 07/18/2017 03:32

Sample Number: **9100490** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00027 | -11.77 | 237.995 | -0.00045 | 0.00051 | 0.00074 |
| ____ AL | -0.04304 | 23.85 | 100.624 | -0.09065 | -0.00601 | -0.03244 |
| ____ AS | 0.00007 | -0.48 | 7560.599 | 0.00147 | 0.00431 | -0.00558 |
| ____ B | 0.04460 | 234.58 | 1.830 | 0.04466 | 0.04539 | 0.04376 |
| ____ BA | 0.14196 | 72 881.32 | 0.152 | 0.14220 | 0.14178 | 0.14190 |
| ____ BE | -0.00004 | -155.31 | 27.395 | -0.00005 | -0.00003 | -0.00003 |
| ____ CA | 49.58010 | 31 231.42 | 1.099 | 49.77062 | 50.00418 | 48.96551 |
| ____ CD | -0.00035 | -4.91 | 40.235 | -0.00046 | -0.00039 | -0.00019 |
| ____ CO | 0.00105 | 1.19 | 37.004 | 0.00149 | 0.00086 | 0.00079 |
| ____ CR | 0.00107 | 7.42 | 59.241 | 0.00155 | 0.00035 | 0.00132 |
| ____ CU | -0.00037 | -9.66 | 260.690 | 0.00027 | -0.00147 | 0.00010 |
| ____ FE | 0.00037 | 1.71 | 2319.678 | 0.00589 | -0.00948 | 0.00470 |
| ____ K | 2.89276 | 955.86 | 3.400 | 2.84747 | 3.00558 | 2.82523 |
| ____ LI | 0.01915 | 106.63 | 17.691 | 0.02131 | 0.01524 | 0.02089 |
| ____ MG | 6.84051 | 5 767.95 | 0.694 | 6.86874 | 6.86713 | 6.78567 |
| ____ MN | 0.00046 | 14.53 | 15.817 | 0.00050 | 0.00038 | 0.00051 |
| ____ MO | 0.00765 | 4.56 | 6.950 | 0.00816 | 0.00710 | 0.00768 |
| ____ NA | 23.65842 | 26 432.82 | 0.985 | 23.75123 | 23.83070 | 23.39333 |
| ____ NI | 0.00013 | 7.75 | 260.646 | 0.00043 | 0.00021 | -0.00025 |
| ____ P | 0.14548 | 4.43 | 7.534 | 0.15038 | 0.15314 | 0.13293 |
| ____ PB | 0.00222 | -2.54 | 93.527 | 0.00420 | 0.00006 | 0.00238 |
| ____ S | 19.22869 | 993.08 | 0.165 | 19.25275 | 19.19268 | 19.24064 |
| ____ SB | 0.00133 | 1.52 | 181.116 | -0.00145 | 0.00266 | 0.00278 |
| ____ SE | -0.00640 | -0.02 | 106.760 | 0.00148 | -0.01076 | -0.00992 |
| ____ SI | 14.77695 | 1 383.25 | 0.428 | 14.82693 | 14.79797 | 14.70595 |
| ____ SN | -0.00016 | 0.29 | 1126.813 | -0.00223 | 0.00100 | 0.00075 |
| ____ SR | 0.33492 | 180 578.62 | 0.003 | 0.33492 | 0.33491 | 0.33493 |
| ____ TI | 0.00105 | 50.14 | 10.784 | 0.00097 | 0.00100 | 0.00118 |
| ____ TL | -0.00350 | -0.65 | 125.738 | 0.00016 | -0.00228 | -0.00839 |
| ____ V | 0.00281 | 15.20 | 27.842 | 0.00224 | 0.00370 | 0.00249 |
| ____ Y1 | 3742.69333 | 3 742.69 | 0.626 | 3762.81000 | 3716.98500 | 3748.28500 |
| ____ Y2A | 142477.52677 | 142 477.53 | 0.188 | 142490.60564 | 142203.28383 | 142738.69083 |
| ____ Y2R | 7517.59905 | 7 517.60 | 1.210 | 7486.33007 | 7446.35729 | 7620.10978 |
| ____ ZN | 0.00665 | 23.00 | 2.238 | 0.00652 | 0.00662 | 0.00681 |
| ____ ZR | 0.00193 | 6.05 | 218.561 | -0.00182 | 0.00650 | 0.00111 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 32 Date/Time: 07/18/2017 03:35

Sample Number: **9100491** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00012 | -15.45 | 286.238 | -0.00042 | -0.00020 | 0.00026 |
| ____ AL | 0.01767 | 28.15 | 291.166 | -0.01784 | 0.07666 | -0.00582 |
| ____ AS | 0.00224 | -0.26 | 251.179 | -0.00028 | 0.00867 | -0.00169 |
| ____ B | 0.00418 | 19.31 | 11.140 | 0.00465 | 0.00417 | 0.00372 |
| ____ BA | 0.00698 | 3 853.11 | 1.204 | 0.00703 | 0.00688 | 0.00701 |
| ____ BE | -0.00001 | -148.47 | 347.696 | -0.00002 | -0.00001 | 0.00001 |
| ____ CA | 0.82719 | 569.57 | 2.104 | 0.82066 | 0.81399 | 0.84691 |
| ____ CD | 0.00001 | -3.13 | 698.244 | 0.00010 | 0.00002 | -0.00008 |
| ____ CO | 0.00038 | 0.09 | 58.970 | 0.00012 | 0.00050 | 0.00052 |
| ____ CR | 0.00031 | 2.15 | 254.012 | 0.00069 | -0.00059 | 0.00083 |
| ____ CU | 0.00614 | 39.23 | 15.517 | 0.00571 | 0.00548 | 0.00724 |
| ____ FE | 0.01785 | 3.78 | 67.404 | 0.02416 | 0.00398 | 0.02541 |
| ____ K | 0.37659 | 160.40 | 16.814 | 0.39124 | 0.43129 | 0.30722 |
| ____ LI | 0.00199 | 14.00 | 144.218 | 0.00263 | -0.00115 | 0.00447 |
| ____ MG | 0.01020 | 27.22 | 26.763 | 0.00710 | 0.01124 | 0.01225 |
| ____ MN | 0.00570 | 198.86 | 1.797 | 0.00566 | 0.00562 | 0.00581 |
| ____ MO | 0.00108 | -0.78 | 96.238 | 0.00212 | 0.00005 | 0.00106 |
| ____ NA | 1.28687 | 1 407.77 | 0.152 | 1.28626 | 1.28906 | 1.28528 |
| ____ NI | 0.00230 | 11.79 | 29.525 | 0.00155 | 0.00249 | 0.00287 |
| ____ P | 0.02028 | 1.01 | 150.668 | 0.02378 | -0.01188 | 0.04892 |
| ____ PB | 0.00147 | -3.49 | 261.144 | 0.00590 | -0.00109 | -0.00039 |
| ____ S | 0.09348 | 13.34 | 12.834 | 0.10593 | 0.09254 | 0.08199 |
| ____ SB | 0.00408 | 2.07 | 43.289 | 0.00456 | 0.00212 | 0.00556 |
| ____ SE | -0.00636 | -0.02 | 152.692 | -0.01096 | 0.00480 | -0.01293 |
| ____ SI | 0.07039 | 7.90 | 29.251 | 0.09110 | 0.07014 | 0.04993 |
| ____ SN | 0.00019 | 0.41 | 1303.675 | 0.00293 | -0.00075 | -0.00162 |
| ____ SR | 0.00311 | 1 683.30 | 0.847 | 0.00313 | 0.00308 | 0.00312 |
| ____ TI | 0.00069 | 40.08 | 26.076 | 0.00083 | 0.00049 | 0.00075 |
| ____ TL | -0.00333 | -0.63 | 24.960 | -0.00281 | -0.00289 | -0.00429 |
| ____ V | 0.00037 | -7.17 | 244.017 | -0.00045 | 0.00021 | 0.00135 |
| ____ Y1 | 3864.24833 | 3 864.25 | 0.288 | 3877.03000 | 3856.83500 | 3858.88000 |
| ____ Y2A | 146201.20577 | 146 201.21 | 0.244 | 145854.65407 | 146567.67086 | 146181.29238 |
| ____ Y2R | 7575.70000 | 7 575.70 | 0.526 | 7609.17500 | 7586.27500 | 7531.65000 |
| ____ ZN | 0.02785 | 95.00 | 0.865 | 0.02786 | 0.02761 | 0.02809 |
| ____ ZR | -0.00119 | 2.30 | 243.196 | 0.00003 | 0.00089 | -0.00448 |

LANCASTER LABORATORIES

Run Name: 1719901T71 Instrument ID: 16315

Tube: 33 Date/Time: 07/18/2017 03:38

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50449 | 4 029.26 | 0.354 | 0.50435 | 0.50278 | 0.50634 |
| ____ AL | 25.16231 | 1 689.44 | 1.336 | 25.15952 | 24.82757 | 25.49984 |
| ____ AS | 0.51442 | 52.57 | 0.577 | 0.51773 | 0.51355 | 0.51198 |
| ____ B | 0.49694 | 2 748.27 | 0.521 | 0.49539 | 0.49550 | 0.49993 |
| ____ BA | 0.51792 | 256 327.89 | 0.475 | 0.51706 | 0.51600 | 0.52069 |
| ____ BE | 0.49574 | 157 795.64 | 0.500 | 0.49460 | 0.49403 | 0.49858 |
| ____ CA | 25.41564 | 15 669.90 | 0.880 | 25.45428 | 25.17514 | 25.61748 |
| ____ CD | 0.50847 | 2 588.48 | 0.800 | 0.50668 | 0.51313 | 0.50561 |
| ____ CO | 0.50310 | 1 123.40 | 0.748 | 0.50188 | 0.50732 | 0.50010 |
| ____ CR | 0.49382 | 3 317.55 | 0.796 | 0.49302 | 0.49036 | 0.49809 |
| ____ CU | 0.50916 | 4 059.91 | 0.740 | 0.50640 | 0.50763 | 0.51345 |
| ____ FE | 25.20114 | 2 880.16 | 0.712 | 25.17527 | 25.03614 | 25.39202 |
| ____ K | 25.23751 | 7 841.31 | 1.279 | 25.27619 | 24.89717 | 25.53918 |
| ____ LI | 0.51664 | 2 636.30 | 1.097 | 0.51780 | 0.51048 | 0.52164 |
| ____ MG | 25.12493 | 20 442.40 | 0.800 | 25.10575 | 24.93417 | 25.33487 |
| ____ MN | 0.51139 | 16 919.63 | 0.266 | 0.51079 | 0.51043 | 0.51294 |
| ____ MO | 0.50255 | 397.23 | 0.322 | 0.50157 | 0.50442 | 0.50167 |
| ____ NA | 25.57274 | 27 895.22 | 1.015 | 25.57371 | 25.31268 | 25.83183 |
| ____ NI | 0.50373 | 732.46 | 0.274 | 0.50215 | 0.50469 | 0.50435 |
| ____ P | 0.49089 | 13.71 | 6.689 | 0.45783 | 0.49136 | 0.52349 |
| ____ PB | 0.51071 | 241.28 | 0.440 | 0.50954 | 0.51330 | 0.50929 |
| ____ S | 24.94655 | 1 262.90 | 0.669 | 24.76370 | 24.98500 | 25.09094 |
| ____ SB | 0.51235 | 89.69 | 1.469 | 0.50686 | 0.52093 | 0.50925 |
| ____ SE | 0.51226 | 42.04 | 3.984 | 0.49585 | 0.53511 | 0.50580 |
| ____ SI | 25.36332 | 2 317.49 | 0.947 | 25.38052 | 25.11493 | 25.59452 |
| ____ SN | 0.49178 | 146.03 | 0.638 | 0.48976 | 0.49018 | 0.49539 |
| ____ SR | 0.52354 | 272 628.75 | 1.071 | 0.52660 | 0.51706 | 0.52694 |
| ____ TI | 0.50920 | 15 124.49 | 0.229 | 0.50832 | 0.50875 | 0.51052 |
| ____ TL | 0.52902 | 55.74 | 0.425 | 0.52834 | 0.53153 | 0.52719 |
| ____ V | 0.52173 | 4 713.75 | 0.664 | 0.52223 | 0.51804 | 0.52492 |
| ____ Y1 | 3675.60333 | 3 675.60 | 0.858 | 3693.64000 | 3639.19000 | 3693.98000 |
| ____ Y2A | 137599.53012 | 137 599.53 | 0.311 | 137942.32500 | 137737.31053 | 137118.95484 |
| ____ Y2R | 7338.67103 | 7 338.67 | 1.067 | 7345.57650 | 7413.28874 | 7257.14784 |
| ____ ZN | 0.50894 | 1 644.37 | 0.399 | 0.50688 | 0.50901 | 0.51094 |
| ____ ZR | 0.51637 | 618.07 | 0.302 | 0.51676 | 0.51465 | 0.51769 |

LANCASTER LABORATORIES

Run Name: 1719901T71

Instrument ID: 16315

Tube: 34

Date/Time: 07/18/2017 03:41

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00013 | -13.12 | 749.512 | -0.00080 | 0.00111 | 0.00008 |
| ____ AL | -0.03448 | 24.25 | 99.081 | -0.02339 | -0.07281 | -0.00724 |
| ____ AS | 0.00521 | 0.06 | 95.381 | 0.00694 | -0.00039 | 0.00909 |
| ____ B | 0.00171 | 5.63 | 28.964 | 0.00217 | 0.00118 | 0.00178 |
| ____ BA | 0.00015 | 262.39 | 40.076 | 0.00021 | 0.00009 | 0.00015 |
| ____ BE | 0.00012 | -105.79 | 17.183 | 0.00014 | 0.00012 | 0.00010 |
| ____ CA | 0.00748 | 47.97 | 290.521 | -0.00065 | -0.00901 | 0.03209 |
| ____ CD | 0.00002 | -3.01 | 58.101 | 0.00003 | 0.00001 | 0.00003 |
| ____ CO | -0.00003 | -0.85 | 1227.318 | -0.00001 | -0.00035 | 0.00028 |
| ____ CR | 0.00026 | 1.80 | 231.868 | 0.00096 | 0.00000 | -0.00017 |
| ____ CU | -0.00041 | -16.41 | 240.916 | 0.00010 | -0.00156 | 0.00022 |
| ____ FE | 0.00879 | 2.70 | 403.278 | 0.00014 | -0.02153 | 0.04775 |
| ____ K | 0.00623 | 41.62 | 1200.947 | 0.01093 | -0.07085 | 0.07862 |
| ____ LI | 0.00261 | 17.02 | 2.803 | 0.00270 | 0.00259 | 0.00256 |
| ____ MG | -0.00633 | 13.05 | 167.823 | -0.01241 | -0.01251 | 0.00593 |
| ____ MN | 0.00020 | 5.65 | 33.472 | 0.00018 | 0.00027 | 0.00014 |
| ____ MO | 0.00146 | -0.45 | 33.075 | 0.00178 | 0.00169 | 0.00090 |
| ____ NA | 0.06896 | 33.87 | 40.417 | 0.05624 | 0.04971 | 0.10091 |
| ____ NI | -0.00052 | 7.34 | 64.102 | -0.00064 | -0.00078 | -0.00014 |
| ____ P | 0.00713 | 0.62 | 35.484 | 0.00528 | 0.00609 | 0.01001 |
| ____ PB | 0.00425 | -2.08 | 71.839 | 0.00231 | 0.00267 | 0.00778 |
| ____ S | 0.00677 | 8.55 | 43.202 | 0.00365 | 0.00944 | 0.00722 |
| ____ SB | 0.00455 | 2.10 | 65.323 | 0.00139 | 0.00497 | 0.00728 |
| ____ SE | -0.01207 | -0.50 | 49.358 | -0.01836 | -0.00651 | -0.01134 |
| ____ SI | 0.01794 | 2.91 | 40.462 | 0.01627 | 0.01166 | 0.02588 |
| ____ SN | 0.00050 | 0.50 | 29.377 | 0.00062 | 0.00034 | 0.00052 |
| ____ SR | 0.00023 | 87.27 | 21.649 | 0.00028 | 0.00023 | 0.00018 |
| ____ TI | 0.00031 | 27.87 | 35.038 | 0.00019 | 0.00038 | 0.00037 |
| ____ TL | -0.00144 | -0.40 | 573.054 | 0.00556 | -0.01057 | 0.00068 |
| ____ V | 0.00034 | -7.48 | 31.037 | 0.00022 | 0.00043 | 0.00036 |
| ____ Y1 | 3774.74500 | 3 774.75 | 0.945 | 3803.74000 | 3785.59000 | 3734.90500 |
| ____ Y2A | 144248.02101 | 144 248.02 | 0.185 | 144320.72270 | 144470.83083 | 143952.50950 |
| ____ Y2R | 7464.15833 | 7 464.16 | 1.217 | 7378.65000 | 7454.27500 | 7559.55000 |
| ____ ZN | 0.00006 | 1.57 | 180.239 | 0.00015 | 0.00008 | -0.00006 |
| ____ ZR | 0.00046 | 4.22 | 595.417 | 0.00334 | 0.00005 | -0.00203 |

eurofins | Lancaster Laboratories Environmental

# ICP-AES Run Data Report

| Reviewed By | Reviewed Date |
|---|---|
| Jonathan J Allen | 07/19/2017 1:58AM |
| Tara L Snyder | 07/19/2017 2:02PM |

Data File Name 1719911T73.TXT
Run Name: 1719911T73

Method Reference Name(s):

| Verified By: | Verified Date |
|---|---|
| Parker D Lindstrom | 07/19/2017 2:15PM |

Analyst Employee: 12403

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 1 Date/Time: 07/18/2017 23:40

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -9.63287 | 154.356 | -0.00419 | -0.00498 | 0.00188 |
| AL | 0.000 | 9.55804 | 29.407 | 0.02717 | 0.04614 | 0.04949 |
| AS | 0.000 | -2.00876 | 20.972 | -0.01568 | -0.02276 | -0.02355 |
| B | 0.000 | -6.30508 | 73.091 | -0.00004 | -0.00001 | -0.00005 |
| BA | 0.000 | 194.58539 | 15.111 | 0.00115 | 0.00089 | 0.00091 |
| BE | 0.000 | -261.85989 | 1.469 | -0.06709 | -0.06515 | -0.06609 |
| CA | 0.000 | 43.29201 | 19.327 | 0.00448 | 0.00360 | 0.00306 |
| CD | 0.000 | -4.74688 | 25.364 | -0.04301 | -0.06304 | -0.04041 |
| CO | 0.000 | -3.11764 | 57.149 | -0.01176 | -0.04736 | -0.03702 |
| CR | 0.000 | 19.55370 | 13.924 | 0.00010 | 0.00011 | 0.00009 |
| CU | 0.000 | -18.25573 | 74.363 | -0.00081 | -0.00746 | -0.00554 |
| FE | 0.000 | 5.33958 | 32.405 | 0.00040 | 0.00035 | 0.00063 |
| K | 0.000 | 41.48765 | 41.514 | 0.21846 | 0.22189 | 0.09250 |
| LI | 0.000 | -6.74745 | 357.747 | -0.00218 | 0.00178 | -0.00135 |
| MG | 0.000 | -4.78590 | 56.658 | -0.00062 | -0.00044 | -0.00016 |
| MN | 0.000 | 7.70496 | 60.840 | 0.00331 | 0.00129 | 0.00123 |
| MO | 0.000 | -1.60240 | 31.821 | -0.02022 | -0.01876 | -0.01049 |
| NA | 0.000 | -28.61781 | 32.666 | -0.00155 | -0.00308 | -0.00272 |
| NI | 0.000 | 2.20843 | 41.242 | 0.01867 | 0.03342 | 0.01604 |
| P | 0.000 | 0.62981 | 104.085 | 0.00012 | 0.00000 | 0.00027 |
| PB | 0.000 | -0.76061 | 84.796 | -0.01135 | -0.01196 | -0.00017 |
| S | 0.000 | -0.26664 | 288.670 | 0.00000 | 0.00007 | -0.00023 |
| SB | 0.000 | 2.51861 | 26.971 | 0.00042 | 0.00045 | 0.00068 |
| SE | 0.000 | 0.27781 | 213.970 | 0.00980 | -0.00188 | 0.00069 |
| SI | 0.000 | 1.13240 | 123.408 | 0.00000 | 0.00006 | 0.00023 |
| SN | 0.000 | -0.34624 | 175.344 | 0.00206 | -0.01025 | -0.00247 |
| SR | 0.000 | -107.92889 | 1.694 | -0.00054 | -0.00055 | -0.00055 |
| TI | 0.000 | 45.56080 | 27.805 | 0.01513 | 0.00905 | 0.01034 |
| TL | 0.000 | -0.05012 | 774.690 | -0.00340 | 0.00410 | -0.00226 |
| V | 0.000 | -14.93500 | 19.639 | -0.00453 | -0.00374 | -0.00305 |
| Y1 | 0.000 | 4859.76495 | 0.257 | 4846.91531 | 4871.86876 | 4860.51080 |
| Y2A | 0.000 | 198057.98163 | 0.243 | 197685.12000 | 198601.43455 | 197887.39035 |
| Y2R | 0.000 | 11672.24690 | 0.380 | 11648.84462 | 11723.37390 | 11644.52219 |
| ZN | 0.000 | 8.17513 | 7.600 | 0.07973 | 0.09144 | 0.08113 |
| ZR | 0.000 | -15.67997 | 40.953 | -0.00107 | -0.00197 | -0.00098 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 2 Date/Time: 07/18/2017 23:43

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 6083.65616 | 1.651 | 26.69756 | 27.52505 | 27.41520 |
| CA | 50.000 | 45641.03169 | 1.810 | 3.99787 | 4.12796 | 4.12367 |
| FE | 50.000 | 9433.21281 | 1.578 | 0.82882 | 0.84882 | 0.85405 |
| K | 50.000 | 20742.71056 | 1.385 | 91.30485 | 93.38785 | 93.65030 |
| MG | 50.000 | 75760.05187 | 1.816 | 6.63610 | 6.85912 | 6.83786 |
| NA | 50.000 | 71469.93216 | 1.545 | 6.28033 | 6.43957 | 6.46123 |
| S | 50.000 | 3209.64240 | 0.581 | 0.69734 | 0.68935 | 0.69422 |
| SI | 50.000 | 7370.69038 | 1.857 | 0.64527 | 0.66673 | 0.66622 |
| Y1 | 50.000 | 4627.35977 | 0.659 | 4592.33577 | 4641.58337 | 4648.16018 |
| Y2R | 50.000 | 11179.68296 | 1.358 | 11353.55219 | 11073.78670 | 11111.71000 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 3 Date/Time: 07/18/2017 23:46

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 12227.28235 | 0.488 | 3.29295 | 3.26218 | 3.28530 |
| AS | 1.000 | 122.73402 | 0.855 | 1.31013 | 1.30986 | 1.32948 |
| B | 1.000 | 7250.10138 | 0.282 | 0.03886 | 0.03881 | 0.03902 |
| BA | 1.000 | 598390.55448 | 1.073 | 3.21221 | 3.17537 | 3.24420 |
| BE | 1.000 | 440206.47831 | 0.497 | 118.73783 | 117.59133 | 117.94420 |
| CD | 1.000 | 7514.64924 | 0.881 | 80.04071 | 80.37166 | 81.40190 |
| CO | 1.000 | 3927.14115 | 0.698 | 41.93948 | 41.96849 | 42.46270 |
| CU | 1.000 | 12259.28659 | 0.525 | 3.29718 | 3.26886 | 3.30017 |
| LI | 1.000 | 8646.84438 | 1.963 | 0.74686 | 0.77347 | 0.77216 |
| MN | 1.000 | 57684.80246 | 0.571 | 15.51845 | 15.37307 | 15.53297 |
| NI | 1.000 | 2412.56976 | 0.561 | 25.73135 | 25.88003 | 26.02146 |
| P | 1.000 | 111.83210 | 0.378 | 0.02409 | 0.02397 | 0.02391 |
| PB | 1.000 | 627.35572 | 0.517 | 6.71429 | 6.70419 | 6.76888 |
| SE | 1.000 | 99.91336 | 1.071 | 1.05922 | 1.07410 | 1.08180 |
| SR | 1.000 | 623500.56000 | 0.759 | 3.31631 | 3.35530 | 3.36398 |
| TL | 1.000 | 112.46164 | 0.318 | 1.20509 | 1.21051 | 1.20312 |
| Y1 | 1.000 | 4661.60827 | 0.707 | 4682.41204 | 4678.78349 | 4623.62928 |
| Y2A | 1.000 | 186385.93958 | 0.462 | 186063.55915 | 187361.76059 | 185732.49900 |
| Y2R | 1.000 | 11317.72452 | 1.595 | 11523.74502 | 11187.18613 | 11242.24241 |
| ZN | 1.000 | 3723.06225 | 0.836 | 39.71844 | 39.76666 | 40.31933 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 4 Date/Time: 07/18/2017 23:50

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 8930.66635 | 0.847 | 0.04521 | 0.04570 | 0.04494 |
| MO | 1.000 | 1071.52303 | 0.782 | 11.16965 | 11.01180 | 11.02918 |
| SB | 1.000 | 242.86208 | 0.659 | 0.05052 | 0.04986 | 0.05016 |
| SN | 1.000 | 345.58170 | 0.811 | 3.60363 | 3.55575 | 3.55152 |
| TI | 1.000 | 48324.29065 | 0.153 | 12.26922 | 12.25391 | 12.23184 |
| V | 1.000 | 16553.95562 | 0.077 | 4.19339 | 4.19969 | 4.19771 |
| Y1 | 1.000 | 4839.76593 | 0.469 | 4819.86725 | 4864.51403 | 4834.91651 |
| Y2A | 1.000 | 197214.90811 | 0.243 | 197410.95836 | 197564.99601 | 196668.76997 |
| Y2R | 1.000 | 11650.34868 | 0.213 | 11628.31505 | 11645.58442 | 11677.14657 |
| ZR | 1.000 | 2348.56407 | 0.307 | 0.20199 | 0.20088 | 0.20190 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 5 Date/Time: 07/18/2017 23:53

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.58750 | 7 276.29 | 0.378 | 0.58671 | 0.59001 | 0.58578 |
| ____ AL | 29.74287 | 3 717.36 | 0.215 | 29.77732 | 29.78233 | 29.66897 |
| ____ AS | 0.59449 | 72.17 | 1.957 | 0.59507 | 0.58258 | 0.60583 |
| ____ B | 0.56607 | 4 351.11 | 0.424 | 0.56738 | 0.56753 | 0.56330 |
| ____ BA | 0.59401 | 361 059.74 | 0.270 | 0.59558 | 0.59237 | 0.59407 |
| ____ BE | 0.56839 | 253 992.41 | 0.315 | 0.56883 | 0.56991 | 0.56641 |
| ____ CA | 29.58978 | 27 793.70 | 0.112 | 29.58697 | 29.62409 | 29.55828 |
| ____ CD | 0.58864 | 4 460.31 | 0.821 | 0.58313 | 0.59063 | 0.59217 |
| ____ CO | 0.57694 | 2 281.98 | 0.936 | 0.57074 | 0.57945 | 0.58063 |
| ____ CR | 0.58478 | 5 018.74 | 0.439 | 0.58769 | 0.58286 | 0.58378 |
| ____ CU | 0.58525 | 7 257.77 | 0.315 | 0.58505 | 0.58718 | 0.58351 |
| ____ FE | 28.97589 | 5 639.99 | 0.109 | 28.96300 | 29.01181 | 28.95284 |
| ____ K | 29.52455 | 12 600.18 | 0.341 | 29.55125 | 29.60914 | 29.41327 |
| ____ LI | 0.59163 | 5 193.68 | 0.552 | 0.59311 | 0.59389 | 0.58789 |
| ____ MG | 29.42639 | 46 242.91 | 0.047 | 29.43474 | 29.43392 | 29.41051 |
| ____ MN | 0.58211 | 34 095.01 | 0.290 | 0.58243 | 0.58362 | 0.58029 |
| ____ MO | 0.59731 | 620.47 | 0.735 | 0.59281 | 0.59754 | 0.60159 |
| ____ NA | 28.91107 | 42 444.89 | 0.152 | 28.90323 | 28.95831 | 28.87169 |
| ____ NI | 0.58663 | 1 423.57 | 0.586 | 0.58285 | 0.58749 | 0.58956 |
| ____ P | 0.58525 | 66.09 | 1.699 | 0.58000 | 0.57904 | 0.59672 |
| ____ PB | 0.58399 | 371.66 | 0.990 | 0.57774 | 0.58508 | 0.58914 |
| ____ S | 30.52250 | 1 985.53 | 0.762 | 30.25396 | 30.64778 | 30.66575 |
| ____ SB | 0.60911 | 145.02 | 2.198 | 0.59850 | 0.60467 | 0.62415 |
| ____ SE | 0.58061 | 57.90 | 2.770 | 0.56271 | 0.58526 | 0.59385 |
| ____ SI | 30.00092 | 4 547.99 | 0.137 | 30.04735 | 29.96878 | 29.98664 |
| ____ SN | 0.58879 | 196.99 | 1.653 | 0.57757 | 0.59505 | 0.59374 |
| ____ SR | 0.58027 | 367 275.44 | 0.586 | 0.58320 | 0.58106 | 0.57654 |
| ____ TI | 0.60464 | 28 208.10 | 0.172 | 0.60515 | 0.60533 | 0.60344 |
| ____ TL | 0.58630 | 66.53 | 1.594 | 0.57582 | 0.58931 | 0.59377 |
| ____ V | 0.61181 | 9 711.90 | 0.309 | 0.61169 | 0.61376 | 0.60998 |
| ____ Y1 | 4689.22884 | 4 689.23 | 0.783 | 4730.89691 | 4675.12244 | 4661.66717 |
| ____ Y2A | 189231.12257 | 189 231.12 | 0.387 | 189247.12747 | 188491.86163 | 189954.37862 |
| ____ Y2R | 11484.18485 | 11 484.18 | 0.257 | 11455.82650 | 11482.02157 | 11514.70647 |
| ____ ZN | 0.58442 | 2 203.05 | 0.979 | 0.57811 | 0.58589 | 0.58926 |
| ____ ZR | 0.60780 | 1 404.99 | 0.679 | 0.61215 | 0.60731 | 0.60394 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 6 Date/Time: 07/18/2017 23:56

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00094 | -21.52 | 10.406 | 0.00083 | 0.00102 | 0.00096 |
| ____ AL | 0.02464 | 12.48 | 16.553 | 0.02934 | 0.02196 | 0.02263 |
| ____ AS | 0.00290 | -1.52 | 129.586 | 0.00291 | -0.00086 | 0.00666 |
| ____ B | 0.00160 | 7.33 | 63.623 | 0.00140 | 0.00270 | 0.00069 |
| ____ BA | 0.00015 | 281.96 | 32.265 | 0.00016 | 0.00019 | 0.00010 |
| ____ BE | 0.00006 | -207.64 | 20.346 | 0.00006 | 0.00008 | 0.00006 |
| ____ CA | 0.01213 | 54.07 | 28.437 | 0.01504 | 0.01302 | 0.00832 |
| ____ CD | -0.00025 | -5.06 | 68.179 | -0.00016 | -0.00014 | -0.00044 |
| ____ CO | 0.00070 | -2.12 | 31.971 | 0.00050 | 0.00094 | 0.00065 |
| ____ CR | 0.00026 | 21.47 | 183.603 | -0.00029 | 0.00050 | 0.00058 |
| ____ CU | -0.00013 | -14.14 | 669.456 | 0.00006 | -0.00105 | 0.00061 |
| ____ FE | 0.00239 | 5.71 | 907.884 | -0.01979 | 0.00346 | 0.02349 |
| ____ K | 0.05022 | 62.12 | 76.786 | 0.03428 | 0.02218 | 0.09419 |
| ____ LI | 0.00028 | -16.01 | 768.183 | 0.00085 | 0.00212 | -0.00212 |
| ____ MG | 0.00848 | 8.81 | 17.221 | 0.00753 | 0.01016 | 0.00774 |
| ____ MN | 0.00005 | 10.41 | 119.872 | 0.00009 | 0.00007 | -0.00002 |
| ____ MO | -0.00030 | 0.58 | 333.546 | 0.00044 | 0.00009 | -0.00142 |
| ____ NA | 0.01504 | -6.03 | 15.827 | 0.01725 | 0.01535 | 0.01252 |
| ____ NI | 0.00011 | 2.44 | 45.644 | 0.00005 | 0.00015 | 0.00014 |
| ____ P | 0.00284 | 0.94 | 84.193 | 0.00010 | 0.00451 | 0.00392 |
| ____ PB | -0.00484 | -2.50 | 15.248 | -0.00400 | -0.00520 | -0.00534 |
| ____ S | 0.00295 | 0.00 | 305.278 | 0.00815 | 0.00816 | -0.00745 |
| ____ SB | -0.00406 | 1.49 | 141.178 | -0.01033 | -0.00277 | 0.00092 |
| ____ SE | 0.00744 | -0.03 | 132.527 | 0.00058 | 0.00300 | 0.01874 |
| ____ SI | 0.01390 | 3.23 | 49.209 | 0.00832 | 0.02153 | 0.01185 |
| ____ SN | -0.00091 | -0.65 | 201.711 | -0.00024 | -0.00297 | 0.00049 |
| ____ SR | 0.00010 | -29.29 | 20.325 | 0.00011 | 0.00012 | 0.00008 |
| ____ TI | 0.00038 | 62.96 | 32.083 | 0.00027 | 0.00036 | 0.00051 |
| ____ TL | 0.00463 | 0.51 | 114.590 | 0.01075 | 0.00145 | 0.00169 |
| ____ V | 0.00091 | -12.09 | 70.865 | 0.00029 | 0.00157 | 0.00087 |
| ____ Y1 | 4757.57606 | 4 757.58 | 0.273 | 4766.21203 | 4763.88361 | 4742.63252 |
| ____ Y2A | 193985.94676 | 193 985.95 | 0.372 | 193809.18612 | 193368.72010 | 194779.93408 |
| ____ Y2R | 11498.94405 | 11 498.94 | 1.031 | 11545.98606 | 11586.78172 | 11364.06437 |
| ____ ZN | -0.00055 | 5.95 | 24.210 | -0.00067 | -0.00056 | -0.00041 |
| ____ ZR | -0.00255 | -11.28 | 116.577 | -0.00463 | -0.00387 | 0.00085 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 7 Date/Time: 07/18/2017 23:59

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01254 | 132.95 | 5.518 | 0.01203 | 0.01227 | 0.01333 |
| ____ AL | 0.44889 | 65.46 | 4.730 | 0.46278 | 0.42445 | 0.45944 |
| ____ AS | 0.04482 | 3.81 | 4.618 | 0.04248 | 0.04642 | 0.04554 |
| ____ B | 0.10000 | 771.98 | 2.073 | 0.09927 | 0.10234 | 0.09839 |
| ____ BA | 0.01095 | 7 200.05 | 2.008 | 0.01081 | 0.01120 | 0.01083 |
| ____ BE | 0.01047 | 4 678.36 | 1.446 | 0.01042 | 0.01064 | 0.01035 |
| ____ CA | 0.45082 | 467.26 | 2.779 | 0.43831 | 0.45079 | 0.46337 |
| ____ CD | 0.01120 | 83.05 | 0.870 | 0.01121 | 0.01110 | 0.01129 |
| ____ CO | 0.01193 | 43.17 | 3.234 | 0.01187 | 0.01157 | 0.01234 |
| ____ CR | 0.03228 | 309.66 | 2.548 | 0.03185 | 0.03323 | 0.03177 |
| ____ CU | 0.02054 | 254.03 | 3.529 | 0.02007 | 0.02018 | 0.02138 |
| ____ FE | 0.42935 | 89.43 | 2.939 | 0.43233 | 0.41551 | 0.44021 |
| ____ K | 1.17465 | 542.11 | 2.788 | 1.16715 | 1.21050 | 1.14631 |
| ____ LI | 0.04321 | 362.48 | 2.985 | 0.04295 | 0.04206 | 0.04460 |
| ____ MG | 0.22961 | 361.99 | 1.484 | 0.22712 | 0.22821 | 0.23349 |
| ____ MN | 0.01134 | 705.60 | 2.352 | 0.01118 | 0.01165 | 0.01120 |
| ____ MO | 0.02188 | 23.95 | 2.271 | 0.02245 | 0.02162 | 0.02155 |
| ____ NA | 2.19406 | 3 204.29 | 1.035 | 2.16801 | 2.20447 | 2.20971 |
| ____ NI | 0.02333 | 59.66 | 0.891 | 0.02309 | 0.02347 | 0.02343 |
| ____ P | 0.21301 | 24.83 | 1.370 | 0.21634 | 0.21086 | 0.21185 |
| ____ PB | 0.03246 | 21.40 | 12.223 | 0.02997 | 0.03704 | 0.03039 |
| ____ S | 1.13042 | 74.51 | 0.807 | 1.12425 | 1.14090 | 1.12611 |
| ____ SB | 0.04371 | 12.85 | 3.483 | 0.04201 | 0.04495 | 0.04417 |
| ____ SE | 0.04931 | 4.28 | 2.770 | 0.04919 | 0.05073 | 0.04801 |
| ____ SI | 0.12003 | 19.49 | 9.552 | 0.11016 | 0.11733 | 0.13260 |
| ____ SN | 0.04480 | 14.91 | 7.712 | 0.04690 | 0.04668 | 0.04081 |
| ____ SR | 0.01065 | 6 985.25 | 1.351 | 0.01055 | 0.01081 | 0.01058 |
| ____ TI | 0.02195 | 1 117.46 | 2.294 | 0.02163 | 0.02253 | 0.02169 |
| ____ TL | 0.06560 | 7.82 | 5.882 | 0.06939 | 0.06572 | 0.06168 |
| ____ V | 0.01219 | 172.58 | 3.504 | 0.01200 | 0.01267 | 0.01188 |
| ____ Y1 | 4763.41881 | 4 763.42 | 0.329 | 4777.45304 | 4746.48991 | 4766.31347 |
| ____ Y2A | 198863.21479 | 198 863.21 | 1.205 | 200813.11426 | 196188.48533 | 199588.04478 |
| ____ Y2R | 11517.46164 | 11 517.46 | 0.887 | 11573.88045 | 11579.03290 | 11399.47159 |
| ____ ZN | 0.04637 | 183.60 | 1.057 | 0.04582 | 0.04675 | 0.04656 |
| ____ ZR | 0.10556 | 240.29 | 2.402 | 0.10554 | 0.10303 | 0.10810 |

LANCASTER LABORATORIES

Run Name: 1719911T73

Instrument ID: 18255

Tube: 8

Date/Time: 07/19/2017 00:02

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00190 | -183.41 | 17.039 | -0.00227 | -0.00173 | -0.00169 |
| ____ AL | 484.28394 | 59 190.30 | 0.282 | 484.29122 | 485.64559 | 482.91499 |
| ____ AS | 0.00233 | -5.81 | 532.463 | 0.01356 | 0.00446 | -0.01102 |
| ____ B | -0.00593 | 1 058.16 | 17.847 | -0.00589 | -0.00489 | -0.00700 |
| ____ BA | 0.00029 | 321.06 | 12.647 | 0.00026 | 0.00033 | 0.00027 |
| ____ BE | -0.00025 | -307.46 | 11.992 | -0.00022 | -0.00024 | -0.00028 |
| ____ CA | 478.43985 | 418 591.04 | 0.220 | 479.49835 | 478.42577 | 477.39543 |
| ____ CD | 0.00144 | 77.20 | 21.765 | 0.00124 | 0.00127 | 0.00180 |
| ____ CO | 0.00148 | 0.88 | 29.671 | 0.00115 | 0.00197 | 0.00131 |
| ____ CR | 0.00177 | 30.48 | 12.806 | 0.00201 | 0.00156 | 0.00175 |
| ____ CU | 0.00323 | 140.81 | 12.047 | 0.00367 | 0.00304 | 0.00297 |
| ____ FE | 190.20899 | 34 206.08 | 0.425 | 191.14053 | 189.69893 | 189.78750 |
| ____ K | 0.10787 | 82.56 | 20.445 | 0.12346 | 0.08264 | 0.11751 |
| ____ LI | -0.00246 | 19.69 | 20.357 | -0.00296 | -0.00196 | -0.00245 |
| ____ MG | 476.71429 | 567 275.29 | 0.534 | 476.68807 | 479.27359 | 474.18121 |
| ____ MN | 0.00386 | 210.20 | 1.784 | 0.00389 | 0.00378 | 0.00391 |
| ____ MO | -0.00445 | -3.34 | 23.226 | -0.00486 | -0.00523 | -0.00328 |
| ____ NA | 0.03837 | 26.89 | 23.662 | 0.04885 | 0.03340 | 0.03286 |
| ____ NI | 0.00370 | 9.93 | 43.900 | 0.00288 | 0.00557 | 0.00265 |
| ____ P | 0.00849 | 1.39 | 82.743 | 0.00972 | 0.00093 | 0.01481 |
| ____ PB | -0.00628 | 52.57 | 5.964 | -0.00587 | -0.00659 | -0.00639 |
| ____ S | 0.06965 | 3.88 | 24.430 | 0.07581 | 0.05042 | 0.08274 |
| ____ SB | 0.00163 | 6.65 | 676.032 | 0.01245 | -0.00952 | 0.00194 |
| ____ SE | 0.00372 | -2.13 | 506.663 | -0.00049 | 0.02434 | -0.01268 |
| ____ SI | 0.00665 | 2.00 | 126.530 | -0.00255 | 0.00853 | 0.01396 |
| ____ SN | 0.00560 | 1.38 | 42.042 | 0.00423 | 0.00425 | 0.00832 |
| ____ SR | 0.01653 | 9 335.06 | 0.495 | 0.01648 | 0.01662 | 0.01648 |
| ____ TI | -0.00262 | -70.40 | 8.229 | -0.00269 | -0.00279 | -0.00238 |
| ____ TL | -0.01486 | -0.62 | 51.272 | -0.01876 | -0.00608 | -0.01973 |
| ____ V | 0.00189 | 4.87 | 29.372 | 0.00126 | 0.00211 | 0.00231 |
| ____ Y1 | 4194.74553 | 4 194.75 | 0.952 | 4148.95510 | 4212.90871 | 4222.37276 |
| ____ Y2A | 170368.15141 | 170 368.15 | 0.666 | 170491.62679 | 169176.15477 | 171436.67267 |
| ____ Y2R | 10937.35742 | 10 937.36 | 0.115 | 10947.86342 | 10923.39578 | 10940.81307 |
| ____ ZN | 0.00874 | 100.86 | 9.284 | 0.00967 | 0.00837 | 0.00818 |
| ____ ZR | -0.01810 | -45.05 | 5.130 | -0.01750 | -0.01762 | -0.01917 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 9 Date/Time: 07/19/2017 00:05

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.20520 | 2 135.89 | 0.941 | 0.20322 | 0.20531 | 0.20708 |
| ____ AL | 485.21384 | 58 810.85 | 1.696 | 477.57418 | 493.92530 | 484.14202 |
| ____ AS | 0.09854 | 5.02 | 14.663 | 0.11208 | 0.08333 | 0.10022 |
| ____ B | -0.00924 | 1 039.30 | 17.344 | -0.00850 | -0.01108 | -0.00814 |
| ____ BA | 0.50157 | 274 209.30 | 0.745 | 0.49939 | 0.50589 | 0.49944 |
| ____ BE | 0.48161 | 193 571.62 | 0.805 | 0.47717 | 0.48335 | 0.48431 |
| ____ CA | 479.43297 | 415 938.05 | 1.507 | 472.70419 | 487.06479 | 478.52994 |
| ____ CD | 0.91974 | 6 303.03 | 0.817 | 0.91675 | 0.92830 | 0.91418 |
| ____ CO | 0.46538 | 1 645.72 | 0.847 | 0.46550 | 0.46926 | 0.46138 |
| ____ CR | 0.48809 | 3 771.04 | 0.973 | 0.48336 | 0.49286 | 0.48806 |
| ____ CU | 0.52375 | 5 974.81 | 0.926 | 0.51942 | 0.52899 | 0.52284 |
| ____ FE | 190.89124 | 34 036.27 | 2.031 | 187.48739 | 195.11224 | 190.07410 |
| ____ K | 0.03502 | 52.59 | 36.731 | 0.02538 | 0.03006 | 0.04963 |
| ____ LI | -0.00196 | 23.75 | 69.679 | -0.00264 | -0.00039 | -0.00286 |
| ____ MG | 479.64538 | 565 038.33 | 1.534 | 471.80538 | 486.39598 | 480.73477 |
| ____ MN | 0.47669 | 25 117.50 | 0.846 | 0.47210 | 0.47824 | 0.47971 |
| ____ MO | -0.00409 | -3.01 | 34.126 | -0.00525 | -0.00447 | -0.00254 |
| ____ NA | 0.04438 | 34.89 | 22.002 | 0.03398 | 0.05335 | 0.04582 |
| ____ NI | 0.90626 | 1 971.77 | 0.624 | 0.90677 | 0.91164 | 0.90036 |
| ____ P | 0.01604 | 2.15 | 65.052 | 0.02156 | 0.02256 | 0.00401 |
| ____ PB | 0.49659 | 337.02 | 1.884 | 0.49651 | 0.48727 | 0.50598 |
| ____ S | 0.05576 | 3.08 | 9.733 | 0.04962 | 0.05771 | 0.05993 |
| ____ SB | 0.61195 | 135.53 | 2.868 | 0.61806 | 0.62563 | 0.59216 |
| ____ SE | 0.51037 | 43.87 | 0.434 | 0.51195 | 0.50784 | 0.51131 |
| ____ SI | 0.00585 | 1.88 | 136.250 | 0.01502 | 0.00196 | 0.00057 |
| ____ SN | 0.00476 | 1.13 | 22.437 | 0.00562 | 0.00356 | 0.00511 |
| ____ SR | 0.01643 | 9 274.49 | 0.533 | 0.01633 | 0.01648 | 0.01649 |
| ____ TI | -0.00368 | -65.30 | 1.726 | -0.00360 | -0.00371 | -0.00371 |
| ____ TL | 0.10004 | 9.17 | 1.363 | 0.10123 | 0.10034 | 0.09855 |
| ____ V | 0.51684 | 7 516.20 | 1.101 | 0.51167 | 0.52293 | 0.51591 |
| ____ Y1 | 4203.57779 | 4 203.58 | 0.279 | 4204.48641 | 4191.42086 | 4214.82610 |
| ____ Y2A | 170233.07079 | 170 233.07 | 0.666 | 171529.74078 | 169432.33300 | 169737.13858 |
| ____ Y2R | 10847.36983 | 10 847.37 | 1.246 | 10989.68650 | 10720.85663 | 10831.56636 |
| ____ ZN | 0.98413 | 3 365.96 | 0.664 | 0.98541 | 0.98993 | 0.97705 |
| ____ ZR | -0.01678 | -41.78 | 13.538 | -0.01731 | -0.01873 | -0.01428 |

LANCASTER LABORATORIES

Run Name: 1719911T73

Instrument ID: 18255

Tube: 10

Date/Time: 07/19/2017 00:08

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.48551 | 6 020.34 | 1.725 | 0.49518 | 0.48053 | 0.48082 |
| ____ AL | 25.11526 | 3 132.62 | 0.298 | 25.11262 | 25.19133 | 25.04184 |
| ____ AS | 0.49920 | 59.96 | 1.486 | 0.49116 | 0.50066 | 0.50578 |
| ____ B | 0.47500 | 3 660.31 | 2.470 | 0.48853 | 0.46787 | 0.46858 |
| ____ BA | 0.50011 | 304 688.07 | 1.332 | 0.50733 | 0.49420 | 0.49880 |
| ____ BE | 0.47954 | 214 717.06 | 1.884 | 0.48997 | 0.47432 | 0.47432 |
| ____ CA | 24.83319 | 23 286.05 | 0.385 | 24.78430 | 24.77201 | 24.94327 |
| ____ CD | 0.50015 | 3 768.38 | 0.928 | 0.49510 | 0.50112 | 0.50423 |
| ____ CO | 0.49684 | 1 953.56 | 0.794 | 0.49257 | 0.49759 | 0.50035 |
| ____ CR | 0.49700 | 4 277.44 | 1.931 | 0.50805 | 0.49222 | 0.49073 |
| ____ CU | 0.49628 | 6 166.06 | 1.849 | 0.50681 | 0.48995 | 0.49209 |
| ____ FE | 24.65737 | 4 793.29 | 0.339 | 24.63634 | 24.58632 | 24.74943 |
| ____ K | 24.81809 | 10 574.59 | 0.707 | 24.79327 | 24.65647 | 25.00453 |
| ____ LI | 0.50332 | 4 405.95 | 0.355 | 0.50538 | 0.50222 | 0.50236 |
| ____ MG | 24.84398 | 39 036.15 | 0.560 | 24.81783 | 24.71978 | 24.99433 |
| ____ MN | 0.49249 | 28 909.55 | 1.943 | 0.50354 | 0.48670 | 0.48724 |
| ____ MO | 0.50824 | 525.15 | 1.002 | 0.50252 | 0.50994 | 0.51226 |
| ____ NA | 24.82832 | 36 366.22 | 0.330 | 24.83008 | 24.74563 | 24.90924 |
| ____ NI | 0.49680 | 1 199.26 | 1.033 | 0.49091 | 0.49919 | 0.50029 |
| ____ P | 0.49517 | 55.70 | 1.420 | 0.48761 | 0.50151 | 0.49639 |
| ____ PB | 0.49302 | 312.12 | 0.812 | 0.48856 | 0.49416 | 0.49632 |
| ____ S | 25.40679 | 1 643.56 | 1.081 | 25.10314 | 25.47941 | 25.63783 |
| ____ SB | 0.50685 | 120.40 | 1.016 | 0.50184 | 0.51212 | 0.50657 |
| ____ SE | 0.50463 | 49.95 | 1.354 | 0.49716 | 0.50616 | 0.51057 |
| ____ SI | 24.68487 | 3 734.09 | 0.700 | 24.56815 | 24.60303 | 24.88343 |
| ____ SN | 0.50017 | 166.38 | 0.824 | 0.49597 | 0.50033 | 0.50421 |
| ____ SR | 0.49655 | 314 977.56 | 1.192 | 0.50337 | 0.49353 | 0.49276 |
| ____ TI | 0.51107 | 23 898.43 | 1.791 | 0.52164 | 0.50569 | 0.50588 |
| ____ TL | 0.49890 | 56.26 | 0.396 | 0.49698 | 0.50093 | 0.49879 |
| ____ V | 0.51397 | 8 170.17 | 2.038 | 0.52606 | 0.50825 | 0.50761 |
| ____ Y1 | 4663.33413 | 4 663.33 | 0.782 | 4705.37946 | 4640.60316 | 4644.01978 |
| ____ Y2A | 189671.40585 | 189 671.41 | 1.283 | 186862.38505 | 191123.71000 | 191028.12251 |
| ____ Y2R | 11458.81740 | 11 458.82 | 0.324 | 11461.30929 | 11494.63215 | 11420.51077 |
| ____ ZN | 0.49840 | 1 869.48 | 0.876 | 0.49346 | 0.50001 | 0.50174 |
| ____ ZR | 0.50936 | 1 173.98 | 0.967 | 0.50556 | 0.50760 | 0.51492 |

LANCASTER LABORATORIES

Run Name: 1719911T73

Instrument ID: 18255

Tube: 11

Date/Time: 07/19/2017 00:11

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00129 | -17.06 | 43.279 | 0.00178 | 0.00068 | 0.00139 |
| ____ AL | 0.10321 | 21.96 | 21.344 | 0.09986 | 0.08304 | 0.12672 |
| ____ AS | 0.00119 | -1.72 | 334.961 | -0.00316 | 0.00468 | 0.00206 |
| ____ B | 0.00097 | 2.79 | 37.087 | 0.00064 | 0.00091 | 0.00135 |
| ____ BA | 0.00012 | 265.95 | 19.535 | 0.00011 | 0.00010 | 0.00015 |
| ____ BE | 0.00003 | -222.30 | 16.169 | 0.00004 | 0.00003 | 0.00003 |
| ____ CA | 0.08065 | 116.82 | 11.448 | 0.06999 | 0.08597 | 0.08599 |
| ____ CD | -0.00014 | -4.17 | 157.561 | 0.00011 | -0.00022 | -0.00030 |
| ____ CO | 0.00058 | -2.56 | 45.134 | 0.00043 | 0.00088 | 0.00043 |
| ____ CR | -0.00016 | 17.63 | 443.089 | 0.00019 | 0.00032 | -0.00100 |
| ____ CU | 0.00000 | -12.42 | 7339.485 | 0.00023 | -0.00034 | 0.00012 |
| ____ FE | 0.03041 | 11.06 | 11.054 | 0.02793 | 0.02905 | 0.03423 |
| ____ K | 0.03329 | 54.14 | 237.533 | -0.04893 | 0.10881 | 0.04000 |
| ____ LI | 0.00065 | -12.75 | 326.775 | 0.00116 | -0.00168 | 0.00246 |
| ____ MG | 0.07831 | 118.48 | 8.446 | 0.07112 | 0.08414 | 0.07966 |
| ____ MN | 0.00002 | 8.53 | 322.936 | 0.00005 | -0.00004 | 0.00005 |
| ____ MO | -0.00152 | -0.70 | 34.544 | -0.00210 | -0.00109 | -0.00137 |
| ____ NA | 0.01662 | -3.64 | 29.887 | 0.02210 | 0.01533 | 0.01242 |
| ____ NI | 0.00054 | 3.44 | 44.845 | 0.00041 | 0.00039 | 0.00081 |
| ____ P | 0.00172 | 0.81 | 294.535 | 0.00319 | 0.00588 | -0.00391 |
| ____ PB | -0.00257 | -1.02 | 94.886 | -0.00437 | 0.00021 | -0.00355 |
| ____ S | 0.01134 | 0.54 | 82.357 | 0.02152 | 0.00317 | 0.00933 |
| ____ SB | 0.00129 | 2.74 | 468.407 | -0.00455 | 0.00094 | 0.00748 |
| ____ SE | 0.00013 | -0.77 | 0724.653 | 0.01523 | -0.01085 | -0.00400 |
| ____ SI | -0.00208 | 0.79 | 415.174 | 0.00675 | -0.00247 | -0.01053 |
| ____ SN | -0.00004 | -0.35 | 8489.911 | 0.00037 | -0.00364 | 0.00315 |
| ____ SR | 0.00006 | -53.99 | 37.268 | 0.00009 | 0.00004 | 0.00006 |
| ____ TI | 0.00027 | 57.55 | 67.808 | 0.00006 | 0.00032 | 0.00041 |
| ____ TL | 0.00150 | 0.13 | 16.476 | 0.00177 | 0.00128 | 0.00144 |
| ____ V | 0.00114 | -7.90 | 3.584 | 0.00118 | 0.00111 | 0.00112 |
| ____ Y1 | 4709.58591 | 4 709.59 | 0.732 | 4713.74363 | 4741.77165 | 4673.24246 |
| ____ Y2A | 193693.75271 | 193 693.75 | 1.290 | 192248.23459 | 192254.60447 | 196578.41906 |
| ____ Y2R | 11341.33321 | 11 341.33 | 0.806 | 11443.10379 | 11314.51516 | 11266.38069 |
| ____ ZN | -0.00085 | 4.77 | 38.558 | -0.00059 | -0.00122 | -0.00075 |
| ____ ZR | -0.00296 | -12.04 | 41.703 | -0.00416 | -0.00301 | -0.00170 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 12 Date/Time: 07/19/2017 00:14

Sample Number: **PBW** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00153 | -14.46 | 59.049 | 0.00238 | 0.00162 | 0.00058 |
| ____ AL | 0.07646 | 19.28 | 35.768 | 0.04653 | 0.10015 | 0.08269 |
| ____ AS | 0.00252 | -1.61 | 175.186 | 0.00347 | 0.00639 | -0.00229 |
| ____ B | 0.00064 | 0.16 | 63.062 | 0.00092 | 0.00081 | 0.00018 |
| ____ BA | 0.00010 | 261.62 | 67.127 | 0.00003 | 0.00016 | 0.00012 |
| ____ BE | 0.00005 | -218.33 | 36.805 | 0.00006 | 0.00007 | 0.00003 |
| ____ CA | 0.05632 | 97.37 | 22.283 | 0.04318 | 0.06818 | 0.05759 |
| ____ CD | -0.00032 | -5.77 | 14.393 | -0.00035 | -0.00027 | -0.00035 |
| ____ CO | 0.00057 | -2.67 | 97.475 | 0.00104 | -0.00004 | 0.00071 |
| ____ CR | 0.00029 | 22.30 | 178.040 | -0.00017 | 0.00020 | 0.00084 |
| ____ CU | -0.00038 | -17.89 | 185.868 | -0.00038 | -0.00109 | 0.00033 |
| ____ FE | 0.01092 | 7.53 | 81.944 | 0.00185 | 0.01975 | 0.01117 |
| ____ K | 0.06801 | 71.11 | 41.679 | 0.10025 | 0.05680 | 0.04699 |
| ____ LI | -0.00029 | -21.47 | 499.639 | -0.00161 | -0.00048 | 0.00123 |
| ____ MG | 0.05338 | 81.86 | 22.016 | 0.04129 | 0.06477 | 0.05407 |
| ____ MN | 0.00019 | 19.64 | 23.140 | 0.00019 | 0.00024 | 0.00015 |
| ____ MO | -0.00151 | -0.71 | 71.792 | -0.00027 | -0.00227 | -0.00201 |
| ____ NA | 0.02889 | 14.54 | 13.912 | 0.03188 | 0.03047 | 0.02432 |
| ____ NI | 0.00088 | 4.43 | 24.288 | 0.00110 | 0.00067 | 0.00087 |
| ____ P | 0.00112 | 0.76 | 357.289 | -0.00210 | -0.00013 | 0.00557 |
| ____ PB | -0.00285 | -1.26 | 122.662 | -0.00569 | 0.00106 | -0.00392 |
| ____ S | 0.00761 | 0.31 | 111.506 | 0.00037 | 0.01694 | 0.00551 |
| ____ SB | -0.00576 | 1.10 | 6.061 | -0.00536 | -0.00601 | -0.00591 |
| ____ SE | 0.00311 | -0.48 | 240.614 | 0.00628 | -0.00544 | 0.00849 |
| ____ SI | 0.01372 | 3.25 | 55.744 | 0.00489 | 0.01788 | 0.01838 |
| ____ SN | 0.00192 | 0.32 | 50.158 | 0.00202 | 0.00282 | 0.00091 |
| ____ SR | 0.00007 | -49.37 | 20.039 | 0.00009 | 0.00007 | 0.00006 |
| ____ TI | 0.00018 | 55.18 | 51.627 | 0.00016 | 0.00028 | 0.00010 |
| ____ TL | 0.00056 | 0.01 | 554.484 | -0.00259 | 0.00368 | 0.00061 |
| ____ V | 0.00144 | -2.99 | 12.954 | 0.00159 | 0.00150 | 0.00123 |
| ____ Y1 | 4868.76797 | 4 868.77 | 1.063 | 4893.14234 | 4809.31696 | 4903.84462 |
| ____ Y2A | 199790.02448 | 199 790.02 | 0.706 | 201412.12847 | 199102.74123 | 198855.20376 |
| ____ Y2R | 11715.87116 | 11 715.87 | 1.360 | 11706.99203 | 11561.15323 | 11879.46821 |
| ____ ZN | -0.00063 | 5.79 | 41.312 | -0.00073 | -0.00082 | -0.00033 |
| ____ ZR | -0.00453 | -16.13 | 21.220 | -0.00411 | -0.00563 | -0.00385 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 13 Date/Time: 07/19/2017 00:17

Sample Number: **PBW** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00197 | -8.63 | 24.496 | 0.00160 | 0.00180 | 0.00252 |
| ____ AL | 0.01832 | 11.94 | 93.509 | 0.03315 | 0.02223 | -0.00043 |
| ____ AS | 0.00620 | -1.12 | 73.781 | 0.00379 | 0.00333 | 0.01147 |
| ____ B | 0.00058 | -0.33 | 36.147 | 0.00049 | 0.00081 | 0.00042 |
| ____ BA | 0.00005 | 227.52 | 69.091 | 0.00009 | 0.00003 | 0.00003 |
| ____ BE | -0.00002 | -250.81 | 19.447 | -0.00001 | -0.00002 | -0.00001 |
| ____ CA | 0.02690 | 69.25 | 29.109 | 0.01832 | 0.02871 | 0.03367 |
| ____ CD | -0.00033 | -5.80 | 53.130 | -0.00014 | -0.00048 | -0.00036 |
| ____ CO | 0.00082 | -1.65 | 20.095 | 0.00091 | 0.00063 | 0.00092 |
| ____ CR | -0.00078 | 12.69 | 70.009 | -0.00081 | -0.00022 | -0.00131 |
| ____ CU | -0.00002 | -13.18 | 5813.428 | -0.00059 | -0.00084 | 0.00137 |
| ____ FE | 0.00777 | 6.93 | 113.394 | 0.01299 | 0.01273 | -0.00240 |
| ____ K | 0.05898 | 67.16 | 73.944 | 0.01634 | 0.05709 | 0.10351 |
| ____ LI | -0.00036 | -22.19 | 376.614 | 0.00096 | -0.00172 | -0.00031 |
| ____ MG | 0.02549 | 36.63 | 7.698 | 0.02415 | 0.02458 | 0.02774 |
| ____ MN | 0.00012 | 15.16 | 74.080 | 0.00003 | 0.00012 | 0.00021 |
| ____ MO | -0.00124 | -0.42 | 45.484 | -0.00189 | -0.00093 | -0.00090 |
| ____ NA | 0.01543 | -5.63 | 44.462 | 0.01528 | 0.00864 | 0.02236 |
| ____ NI | 0.00088 | 4.42 | 73.316 | 0.00081 | 0.00027 | 0.00156 |
| ____ P | 0.00142 | 0.79 | 619.043 | 0.00644 | 0.00651 | -0.00870 |
| ____ PB | -0.00146 | -0.35 | 97.910 | -0.00245 | 0.00018 | -0.00210 |
| ____ S | 0.00966 | 0.45 | 61.952 | 0.01654 | 0.00571 | 0.00671 |
| ____ SB | -0.00163 | 2.11 | 334.851 | -0.00199 | 0.00399 | -0.00689 |
| ____ SE | 0.00661 | -0.12 | 176.671 | -0.00347 | 0.01941 | 0.00390 |
| ____ SI | 0.01004 | 2.69 | 63.881 | 0.01732 | 0.00761 | 0.00520 |
| ____ SN | 0.00142 | 0.14 | 126.291 | -0.00040 | 0.00318 | 0.00148 |
| ____ SR | 0.00002 | -85.37 | 34.495 | 0.00001 | 0.00003 | 0.00002 |
| ____ TI | 0.00003 | 47.75 | 862.795 | -0.00013 | -0.00007 | 0.00028 |
| ____ TL | 0.00345 | 0.37 | 165.850 | 0.00415 | -0.00259 | 0.00878 |
| ____ V | 0.00086 | -12.91 | 49.890 | 0.00121 | 0.00100 | 0.00038 |
| ____ Y1 | 4857.00706 | 4 857.01 | 0.992 | 4900.59452 | 4805.26789 | 4865.15878 |
| ____ Y2A | 199657.03846 | 199 657.04 | 0.320 | 199501.12932 | 200359.46970 | 199110.51635 |
| ____ Y2R | 11726.12842 | 11 726.13 | 0.895 | 11810.38845 | 11759.40742 | 11608.58939 |
| ____ ZN | -0.00054 | 6.11 | 48.026 | -0.00059 | -0.00026 | -0.00077 |
| ____ ZR | -0.00362 | -13.99 | 19.380 | -0.00307 | -0.00441 | -0.00337 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 14 Date/Time: 07/19/2017 00:21

Sample Number: **LCSW** Class: **** Batch: 171951063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04839 | 626.06 | 1.588 | 0.04822 | 0.04923 | 0.04773 |
| ____ AL | 2.01652 | 267.97 | 1.108 | 2.00638 | 2.04214 | 2.00103 |
| ____ AS | 0.14238 | 17.27 | 1.493 | 0.14160 | 0.14076 | 0.14479 |
| ____ B | 1.81126 | 13 875.35 | 1.613 | 1.79333 | 1.84497 | 1.79549 |
| ____ BA | 1.92006 | 1 213 185.15 | 0.830 | 1.90923 | 1.93835 | 1.91261 |
| ____ BE | 0.04688 | 21 617.25 | 1.575 | 0.04640 | 0.04773 | 0.04651 |
| ____ CA | 4.54222 | 4 376.46 | 0.411 | 4.52072 | 4.55177 | 4.55418 |
| ____ CD | 0.04882 | 376.38 | 0.228 | 0.04887 | 0.04889 | 0.04869 |
| ____ CO | 0.49476 | 2 013.26 | 0.107 | 0.49424 | 0.49529 | 0.49476 |
| ____ CR | 0.19540 | 1 756.88 | 1.660 | 0.19283 | 0.19904 | 0.19432 |
| ____ CU | 0.24587 | 3 111.26 | 1.962 | 0.24248 | 0.25139 | 0.24374 |
| ____ FE | 0.96755 | 197.47 | 1.601 | 0.95094 | 0.97011 | 0.98160 |
| ____ K | 9.91917 | 4 328.51 | 0.775 | 9.86087 | 9.89032 | 10.00633 |
| ____ LI | 0.98744 | 8 804.49 | 0.311 | 0.98437 | 0.98743 | 0.99052 |
| ____ MG | 2.09664 | 3 385.10 | 0.190 | 2.09426 | 2.09444 | 2.10123 |
| ____ MN | 0.49031 | 29 866.51 | 1.574 | 0.48526 | 0.49919 | 0.48647 |
| ____ MO | 1.99920 | 2 130.96 | 0.282 | 2.00227 | 2.00264 | 1.99270 |
| ____ NA | 9.92376 | 14 783.85 | 0.376 | 9.88884 | 9.91943 | 9.96302 |
| ____ NI | 0.49787 | 1 246.04 | 0.336 | 0.49861 | 0.49904 | 0.49595 |
| ____ P | 0.94562 | 109.29 | 0.206 | 0.94659 | 0.94338 | 0.94690 |
| ____ PB | 0.14502 | 91.58 | 0.971 | 0.14664 | 0.14420 | 0.14421 |
| ____ S | 1.31033 | 87.77 | 1.325 | 1.32363 | 1.31668 | 1.29069 |
| ____ SB | 0.45102 | 101.66 | 0.885 | 0.44894 | 0.44849 | 0.45562 |
| ____ SE | 0.14674 | 14.46 | 6.030 | 0.15065 | 0.13661 | 0.15296 |
| ____ SI | 1.01223 | 169.77 | 1.537 | 1.01135 | 0.99713 | 1.02820 |
| ____ SN | 3.87329 | 1 333.06 | 0.219 | 3.88155 | 3.87368 | 3.86463 |
| ____ SR | 0.96915 | 638 013.72 | 1.089 | 0.96112 | 0.98111 | 0.96522 |
| ____ TI | 0.98672 | 47 593.84 | 1.499 | 0.97759 | 1.00378 | 0.97877 |
| ____ TL | 0.16722 | 17.39 | 4.783 | 0.16346 | 0.17641 | 0.16180 |
| ____ V | 0.50750 | 7 886.07 | 1.404 | 0.50338 | 0.51573 | 0.50340 |
| ____ Y1 | 4816.31129 | 4 816.31 | 0.230 | 4827.04984 | 4816.99431 | 4804.88973 |
| ____ Y2A | 196814.45184 | 196 814.45 | 1.161 | 198572.90960 | 194231.62368 | 197638.82224 |
| ____ Y2R | 11668.21322 | 11 668.21 | 0.303 | 11699.95005 | 11674.61569 | 11630.07391 |
| ____ ZN | 0.48475 | 1 868.49 | 0.291 | 0.48388 | 0.48638 | 0.48399 |
| ____ ZR | 1.01530 | 2 388.21 | 0.271 | 1.01212 | 1.01682 | 1.01694 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 15 Date/Time: 07/19/2017 00:24

Sample Number: **LCSW** Class: **** Batch: 171951063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04852 | 624.16 | 1.048 | 0.04870 | 0.04891 | 0.04794 |
| ____ AL | 2.02546 | 270.69 | 0.892 | 2.03921 | 2.00501 | 2.03215 |
| ____ AS | 0.14033 | 17.10 | 7.113 | 0.14015 | 0.13044 | 0.15040 |
| ____ B | 1.82268 | 13 895.38 | 0.218 | 1.81822 | 1.82581 | 1.82401 |
| ____ BA | 1.94852 | 1 225 145.64 | 0.479 | 1.95314 | 1.93778 | 1.95463 |
| ____ BE | 0.04713 | 21 628.40 | 0.180 | 0.04713 | 0.04722 | 0.04705 |
| ____ CA | 4.51242 | 4 374.08 | 0.303 | 4.50648 | 4.50272 | 4.52805 |
| ____ CD | 0.04868 | 377.53 | 0.365 | 0.04871 | 0.04849 | 0.04884 |
| ____ CO | 0.49280 | 2 017.11 | 0.463 | 0.49216 | 0.49090 | 0.49533 |
| ____ CR | 0.19643 | 1 757.49 | 0.317 | 0.19618 | 0.19713 | 0.19597 |
| ____ CU | 0.24863 | 3 132.02 | 0.400 | 0.24781 | 0.24834 | 0.24973 |
| ____ FE | 0.96901 | 198.95 | 0.632 | 0.96219 | 0.97404 | 0.97080 |
| ____ K | 9.85701 | 4 327.44 | 0.509 | 9.86309 | 9.80405 | 9.90388 |
| ____ LI | 0.97826 | 8 774.65 | 0.308 | 0.97690 | 0.98171 | 0.97616 |
| ____ MG | 2.06964 | 3 361.47 | 0.130 | 2.06784 | 2.07272 | 2.06834 |
| ____ MN | 0.49353 | 29 917.65 | 0.173 | 0.49283 | 0.49448 | 0.49328 |
| ____ MO | 1.99218 | 2 135.95 | 0.418 | 1.99482 | 1.98286 | 1.99886 |
| ____ NA | 9.82365 | 14 721.97 | 0.372 | 9.81620 | 9.86339 | 9.79136 |
| ____ NI | 0.49604 | 1 248.75 | 0.597 | 0.49438 | 0.49428 | 0.49946 |
| ____ P | 0.94386 | 109.73 | 1.314 | 0.95029 | 0.92955 | 0.95172 |
| ____ PB | 0.14294 | 90.77 | 1.704 | 0.14013 | 0.14452 | 0.14416 |
| ____ S | 1.29523 | 87.27 | 0.569 | 1.29220 | 1.28986 | 1.30363 |
| ____ SB | 0.44853 | 101.68 | 1.930 | 0.44420 | 0.44290 | 0.45850 |
| ____ SE | 0.13675 | 13.50 | 5.069 | 0.13281 | 0.14476 | 0.13270 |
| ____ SI | 0.99890 | 168.69 | 0.199 | 0.99666 | 1.00047 | 0.99958 |
| ____ SN | 3.85997 | 1 336.28 | 0.292 | 3.86068 | 3.84837 | 3.87086 |
| ____ SR | 0.97376 | 637 934.54 | 1.207 | 0.97109 | 0.96357 | 0.98662 |
| ____ TI | 0.99293 | 47 661.45 | 0.238 | 0.99207 | 0.99559 | 0.99112 |
| ____ TL | 0.17336 | 18.26 | 1.615 | 0.17601 | 0.17043 | 0.17365 |
| ____ V | 0.50933 | 7 880.90 | 0.147 | 0.50934 | 0.50857 | 0.51007 |
| ____ Y1 | 4844.67101 | 4 844.67 | 0.496 | 4849.08028 | 4866.18838 | 4818.74438 |
| ____ Y2A | 195840.51294 | 195 840.51 | 0.192 | 196235.66154 | 195488.10238 | 195797.77490 |
| ____ Y2R | 11737.95391 | 11 737.95 | 0.441 | 11682.58741 | 11745.99721 | 11785.27711 |
| ____ ZN | 0.48332 | 1 873.97 | 0.175 | 0.48278 | 0.48288 | 0.48429 |
| ____ ZR | 1.00149 | 2 369.78 | 0.390 | 0.99720 | 1.00242 | 1.00485 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 16 Date/Time: 07/19/2017 00:27

Sample Number: **9100479** Class: U*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00034 | -25.45 | 80.015 | 0.00016 | 0.00066 | 0.00021 |
| ____ AL | 0.01671 | 11.35 | 120.240 | 0.03145 | -0.00618 | 0.02486 |
| ____ AS | 0.00328 | -1.48 | 207.947 | 0.00501 | -0.00424 | 0.00907 |
| ____ B | 0.09004 | 658.19 | 1.238 | 0.08906 | 0.09125 | 0.08982 |
| ____ BA | 0.06782 | 41 351.04 | 1.003 | 0.06705 | 0.06809 | 0.06833 |
| ____ BE | -0.00011 | -279.82 | 6.850 | -0.00010 | -0.00011 | -0.00012 |
| ____ CA | 263.36298 | 241 653.65 | 1.230 | 267.10332 | 261.39762 | 261.58799 |
| ____ CD | -0.00043 | -6.52 | 51.404 | -0.00033 | -0.00068 | -0.00028 |
| ____ CO | 0.00194 | 2.88 | 17.873 | 0.00194 | 0.00229 | 0.00159 |
| ____ CR | -0.00001 | 18.65 | 7315.841 | 0.00080 | -0.00002 | -0.00079 |
| ____ CU | 0.00855 | 164.76 | 12.897 | 0.00978 | 0.00765 | 0.00822 |
| ____ FE | 0.00634 | 6.43 | 162.225 | -0.00283 | 0.01746 | 0.00439 |
| ____ K | 5.50781 | 2 357.20 | 0.757 | 5.50708 | 5.54989 | 5.46648 |
| ____ LI | 0.04038 | 332.72 | 1.829 | 0.04058 | 0.03956 | 0.04099 |
| ____ MG | 37.20197 | 57 602.28 | 1.157 | 37.69845 | 36.93299 | 36.97446 |
| ____ MN | 0.96368 | 56 403.25 | 0.947 | 0.95355 | 0.96624 | 0.97124 |
| ____ MO | 0.00143 | 2.43 | 69.759 | 0.00046 | 0.00245 | 0.00138 |
| ____ NA | 64.39151 | 93 511.74 | 0.823 | 64.99744 | 64.01241 | 64.16469 |
| ____ NI | 0.00690 | 17.97 | 2.797 | 0.00688 | 0.00672 | 0.00710 |
| ____ P | 0.00706 | 1.44 | 98.541 | 0.00266 | 0.01507 | 0.00344 |
| ____ PB | -0.00166 | -0.49 | 143.653 | 0.00023 | -0.00087 | -0.00434 |
| ____ S | 138.98612 | 9 218.99 | 0.879 | 140.16243 | 137.72282 | 139.07311 |
| ____ SB | -0.00190 | 2.04 | 301.087 | -0.00811 | -0.00072 | 0.00313 |
| ____ SE | 0.01598 | 0.85 | 31.318 | 0.01590 | 0.01101 | 0.02102 |
| ____ SI | 17.34173 | 2 597.79 | 1.255 | 17.58014 | 17.15343 | 17.29164 |
| ____ SN | 0.00291 | 0.67 | 68.673 | 0.00130 | 0.00515 | 0.00229 |
| ____ SR | 1.31693 | 833 142.96 | 0.608 | 1.30818 | 1.31870 | 1.32390 |
| ____ TI | 0.00032 | 58.36 | 30.871 | 0.00021 | 0.00033 | 0.00041 |
| ____ TL | 0.00471 | 0.51 | 149.116 | 0.00401 | 0.01205 | -0.00194 |
| ____ V | 0.00258 | 14.67 | 27.115 | 0.00204 | 0.00232 | 0.00337 |
| ____ Y1 | 4781.95784 | 4 781.96 | 3.276 | 4601.37267 | 4881.70598 | 4862.79488 |
| ____ Y2A | 189115.99618 | 189 116.00 | 0.621 | 190384.93711 | 188069.19545 | 188893.85597 |
| ____ Y2R | 11356.39481 | 11 356.39 | 1.067 | 11222.25220 | 11388.85223 | 11458.08000 |
| ____ ZN | 0.11457 | 441.73 | 0.959 | 0.11563 | 0.11343 | 0.11464 |
| ____ ZR | -0.00416 | -14.78 | 36.093 | -0.00588 | -0.00314 | -0.00345 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 17 Date/Time: 07/19/2017 00:30

Sample Number: **9100479** Class: UP** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01787 | 235.66 | 7.056 | 0.01735 | 0.01696 | 0.01931 |
| ____ AL | 0.90185 | 132.43 | 4.956 | 0.85198 | 0.91526 | 0.93830 |
| ____ AS | 0.47053 | 59.25 | 0.036 | 0.47042 | 0.47045 | 0.47073 |
| ____ B | 0.26143 | 2 049.30 | 0.392 | 0.26054 | 0.26121 | 0.26255 |
| ____ BA | 0.11070 | 71 975.69 | 0.766 | 0.11021 | 0.11021 | 0.11168 |
| ____ BE | 0.01702 | 7 871.59 | 0.462 | 0.01694 | 0.01702 | 0.01710 |
| ____ CA | 252.50680 | 254 736.64 | 0.438 | 251.41105 | 253.62425 | 252.48511 |
| ____ CD | 0.04253 | 330.21 | 1.139 | 0.04257 | 0.04203 | 0.04300 |
| ____ CO | 0.08738 | 353.85 | 1.331 | 0.08705 | 0.08642 | 0.08868 |
| ____ CR | 0.17470 | 1 611.10 | 0.082 | 0.17455 | 0.17471 | 0.17484 |
| ____ CU | 0.46464 | 6 209.40 | 1.066 | 0.45905 | 0.46640 | 0.46847 |
| ____ FE | 0.43451 | 98.00 | 2.900 | 0.42299 | 0.44797 | 0.43257 |
| ____ K | 7.14161 | 3 345.37 | 1.061 | 7.06306 | 7.21420 | 7.14757 |
| ____ LI | 0.94684 | 9 027.92 | 0.740 | 0.93885 | 0.95192 | 0.94974 |
| ____ MG | 36.33599 | 61 849.74 | 0.470 | 36.17702 | 36.51657 | 36.31439 |
| ____ MN | 0.97437 | 60 789.02 | 0.667 | 0.97093 | 0.97031 | 0.98186 |
| ____ MO | 0.18244 | 196.99 | 1.074 | 0.18076 | 0.18196 | 0.18460 |
| ____ NA | 63.55012 | 101 412.66 | 0.371 | 63.45693 | 63.81828 | 63.37514 |
| ____ NI | 0.13432 | 338.70 | 1.365 | 0.13288 | 0.13369 | 0.13638 |
| ____ P | 0.93481 | 108.99 | 0.998 | 0.93237 | 0.92695 | 0.94512 |
| ____ PB | 0.42858 | 280.39 | 1.203 | 0.42709 | 0.42434 | 0.43432 |
| ____ S | 136.91985 | 9 228.38 | 1.116 | 136.23717 | 135.85186 | 138.67052 |
| ____ SB | 0.36651 | 90.81 | 0.198 | 0.36621 | 0.36734 | 0.36599 |
| ____ SE | 0.70933 | 73.63 | 2.243 | 0.72130 | 0.69128 | 0.71541 |
| ____ SI | 17.55603 | 2 891.33 | 0.939 | 17.39538 | 17.72470 | 17.54802 |
| ____ SN | 0.52756 | 182.85 | 1.833 | 0.52447 | 0.51981 | 0.53840 |
| ____ SR | 1.28183 | 864 405.17 | 0.957 | 1.26791 | 1.28651 | 1.29105 |
| ____ TI | 0.09268 | 4 624.68 | 0.411 | 0.09227 | 0.09272 | 0.09303 |
| ____ TL | 0.81253 | 99.71 | 0.709 | 0.80721 | 0.81175 | 0.81865 |
| ____ V | 0.09561 | 1 563.02 | 1.443 | 0.09435 | 0.09541 | 0.09708 |
| ____ Y1 | 4858.50648 | 4 858.51 | 0.835 | 4895.53857 | 4864.85554 | 4815.12534 |
| ____ Y2A | 201577.44974 | 201 577.45 | 0.385 | 200681.65734 | 202048.92259 | 202001.76929 |
| ____ Y2R | 12478.42836 | 12 478.43 | 0.647 | 12408.22671 | 12460.31524 | 12566.74312 |
| ____ ZN | 0.21736 | 849.19 | 1.323 | 0.21627 | 0.21518 | 0.22062 |
| ____ ZR | 0.92120 | 2 316.85 | 1.796 | 0.90515 | 0.93820 | 0.92024 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 18 Date/Time: 07/19/2017 00:33

Sample Number: **9100479** Class: D*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00048 | -24.87 | 109.011 | 0.00109 | 0.00019 | 0.00017 |
| ____ AL | 0.00643 | 11.08 | 276.987 | 0.02690 | -0.00551 | -0.00210 |
| ____ AS | 0.00589 | -1.13 | 122.857 | 0.00541 | 0.01335 | -0.00109 |
| ____ B | 0.08673 | 667.15 | 1.242 | 0.08548 | 0.08738 | 0.08732 |
| ____ BA | 0.06750 | 43 320.13 | 0.225 | 0.06733 | 0.06752 | 0.06763 |
| ____ BE | -0.00012 | -296.65 | 27.508 | -0.00014 | -0.00008 | -0.00012 |
| ____ CA | 260.66925 | 262 527.93 | 1.109 | 257.89410 | 260.44960 | 263.66406 |
| ____ CD | -0.00037 | -5.93 | 50.184 | -0.00041 | -0.00017 | -0.00053 |
| ____ CO | 0.00130 | 0.29 | 11.428 | 0.00125 | 0.00147 | 0.00118 |
| ____ CR | 0.00000 | 19.70 | 3793.078 | -0.00009 | 0.00049 | -0.00040 |
| ____ CU | 0.00920 | 181.01 | 6.064 | 0.00950 | 0.00855 | 0.00953 |
| ____ FE | 0.00645 | 7.07 | 14.803 | 0.00678 | 0.00538 | 0.00720 |
| ____ K | 5.50241 | 2 584.33 | 1.218 | 5.47987 | 5.44956 | 5.57780 |
| ____ LI | 0.03773 | 339.92 | 2.286 | 0.03792 | 0.03679 | 0.03849 |
| ____ MG | 36.69155 | 62 363.75 | 1.046 | 36.31250 | 36.68215 | 37.08001 |
| ____ MN | 0.95416 | 58 783.50 | 0.412 | 0.95178 | 0.95200 | 0.95870 |
| ____ MO | 0.00019 | 1.09 | 411.557 | 0.00017 | 0.00097 | -0.00058 |
| ____ NA | 64.06995 | 102 111.28 | 0.979 | 63.51294 | 63.94751 | 64.74941 |
| ____ NI | 0.00684 | 17.59 | 6.501 | 0.00729 | 0.00682 | 0.00640 |
| ____ P | 0.01441 | 2.24 | 10.511 | 0.01274 | 0.01569 | 0.01480 |
| ____ PB | -0.00178 | -0.54 | 146.849 | -0.00268 | -0.00384 | 0.00117 |
| ____ S | 139.35826 | 9 130.07 | 1.716 | 137.69160 | 138.28455 | 142.09861 |
| ____ SB | -0.00163 | 2.04 | 423.556 | 0.00498 | -0.00878 | -0.00108 |
| ____ SE | 0.01114 | 0.34 | 128.698 | 0.02616 | 0.00964 | -0.00239 |
| ____ SI | 17.26606 | 2 838.49 | 1.484 | 17.06898 | 17.17355 | 17.55565 |
| ____ SN | 0.00462 | 1.22 | 52.367 | 0.00362 | 0.00737 | 0.00285 |
| ____ SR | 1.30970 | 872 073.38 | 1.203 | 1.30872 | 1.29445 | 1.32592 |
| ____ TI | -0.00011 | 40.63 | 41.243 | -0.00006 | -0.00014 | -0.00013 |
| ____ TL | 0.00751 | 0.84 | 145.948 | 0.01250 | -0.00506 | 0.01507 |
| ____ V | 0.00218 | 9.14 | 11.004 | 0.00191 | 0.00233 | 0.00231 |
| ____ Y1 | 4722.22284 | 4 722.22 | 0.833 | 4678.00040 | 4753.24980 | 4735.41833 |
| ____ Y2A | 199062.30135 | 199 062.30 | 1.271 | 199580.44085 | 201292.76880 | 196313.69439 |
| ____ Y2R | 12462.95078 | 12 462.95 | 0.769 | 12563.78000 | 12452.12660 | 12372.94575 |
| ____ ZN | 0.11570 | 440.53 | 1.523 | 0.11534 | 0.11414 | 0.11761 |
| ____ ZR | -0.00095 | -8.16 | 49.817 | -0.00124 | -0.00120 | -0.00040 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 19 Date/Time: 07/19/2017 00:36

Sample Number: **9100479** Class: R*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04836 | 635.32 | 0.814 | 0.04878 | 0.04828 | 0.04800 |
| ____ AL | 1.95084 | 280.20 | 0.299 | 1.95691 | 1.94527 | 1.95035 |
| ____ AS | 0.14110 | 17.54 | 1.968 | 0.14277 | 0.13789 | 0.14263 |
| ____ B | 1.93607 | 15 001.76 | 0.047 | 1.93629 | 1.93685 | 1.93509 |
| ____ BA | 1.94848 | 1 245 239.43 | 0.443 | 1.95834 | 1.94486 | 1.94225 |
| ____ BE | 0.04557 | 21 247.36 | 0.087 | 0.04560 | 0.04558 | 0.04552 |
| ____ CA | 257.74393 | 262 286.79 | 0.287 | 258.55814 | 257.11177 | 257.56188 |
| ____ CD | 0.04512 | 356.47 | 1.076 | 0.04542 | 0.04538 | 0.04456 |
| ____ CO | 0.45346 | 1 892.31 | 0.474 | 0.45593 | 0.45245 | 0.45200 |
| ____ CR | 0.18625 | 1 694.87 | 0.337 | 0.18571 | 0.18694 | 0.18612 |
| ____ CU | 0.25253 | 3 305.77 | 0.788 | 0.25406 | 0.25325 | 0.25028 |
| ____ FE | 0.91064 | 200.89 | 0.543 | 0.90538 | 0.91133 | 0.91520 |
| ____ K | 14.92968 | 7 007.38 | 0.544 | 15.02215 | 14.87025 | 14.89664 |
| ____ LI | 1.00805 | 9 699.08 | 0.517 | 1.00962 | 1.00224 | 1.01230 |
| ____ MG | 37.57143 | 64 489.74 | 0.253 | 37.67843 | 37.49693 | 37.53894 |
| ____ MN | 1.40359 | 86 468.14 | 0.248 | 1.40516 | 1.40601 | 1.39961 |
| ____ MO | 2.00234 | 2 188.40 | 0.414 | 2.01178 | 1.99899 | 1.99626 |
| ____ NA | 71.61277 | 115 308.92 | 0.197 | 71.69951 | 71.45021 | 71.68860 |
| ____ NI | 0.45781 | 1 174.08 | 0.474 | 0.46010 | 0.45754 | 0.45578 |
| ____ P | 0.98500 | 116.71 | 0.453 | 0.98025 | 0.98566 | 0.98909 |
| ____ PB | 0.13334 | 86.12 | 2.976 | 0.13787 | 0.13048 | 0.13167 |
| ____ S | 138.53835 | 9 491.91 | 0.508 | 139.34639 | 138.21296 | 138.05568 |
| ____ SB | 0.45580 | 105.68 | 0.819 | 0.45986 | 0.45252 | 0.45503 |
| ____ SE | 0.14811 | 14.97 | 1.906 | 0.14530 | 0.15095 | 0.14808 |
| ____ SI | 17.67169 | 2 948.91 | 0.516 | 17.74901 | 17.57125 | 17.69480 |
| ____ SN | 3.78013 | 1 333.97 | 0.411 | 3.79804 | 3.77006 | 3.77230 |
| ____ SR | 2.18072 | 1 452 203.64 | 1.115 | 2.18903 | 2.19979 | 2.15333 |
| ____ TI | 0.99379 | 48 486.25 | 0.108 | 0.99322 | 0.99503 | 0.99312 |
| ____ TL | 0.15610 | 16.69 | 3.990 | 0.16317 | 0.15143 | 0.15369 |
| ____ V | 0.50395 | 7 915.24 | 0.322 | 0.50582 | 0.50294 | 0.50309 |
| ____ Y1 | 4938.46693 | 4 938.47 | 0.583 | 4912.40380 | 4969.35065 | 4933.64635 |
| ____ Y2A | 199056.64144 | 199 056.64 | 0.216 | 199178.91638 | 198579.07419 | 199411.93375 |
| ____ Y2R | 12590.44104 | 12 590.44 | 0.298 | 12564.26000 | 12633.41313 | 12573.65000 |
| ____ ZN | 0.57642 | 2 273.24 | 0.492 | 0.57965 | 0.57430 | 0.57532 |
| ____ ZR | 1.00052 | 2 539.40 | 0.348 | 0.99736 | 1.00426 | 0.99993 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 20 Date/Time: 07/19/2017 00:39

Sample Number: **9100479** Class: M*** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04714 | 631.98 | 2.479 | 0.04668 | 0.04847 | 0.04627 |
| ____ AL | 1.89928 | 269.78 | 2.269 | 1.92429 | 1.92403 | 1.84952 |
| ____ AS | 0.14710 | 17.97 | 8.578 | 0.15578 | 0.15289 | 0.13263 |
| ____ B | 1.90754 | 15 114.89 | 1.488 | 1.91138 | 1.93381 | 1.87743 |
| ____ BA | 1.91480 | 1 251 357.13 | 1.859 | 1.91078 | 1.95222 | 1.88138 |
| ____ BE | 0.04474 | 21 328.14 | 1.414 | 0.04487 | 0.04529 | 0.04405 |
| ____ CA | 253.06033 | 254 475.71 | 2.325 | 259.48922 | 251.74594 | 247.94583 |
| ____ CD | 0.04449 | 345.01 | 0.432 | 0.04428 | 0.04451 | 0.04466 |
| ____ CO | 0.44535 | 1 824.46 | 0.402 | 0.44471 | 0.44398 | 0.44737 |
| ____ CR | 0.18216 | 1 695.51 | 1.918 | 0.18193 | 0.18576 | 0.17879 |
| ____ CU | 0.24917 | 3 336.41 | 1.494 | 0.24983 | 0.25251 | 0.24515 |
| ____ FE | 0.90482 | 197.29 | 1.949 | 0.92389 | 0.88909 | 0.90148 |
| ____ K | 14.64928 | 6 793.84 | 2.393 | 14.97940 | 14.68719 | 14.28124 |
| ____ LI | 0.98412 | 9 353.95 | 2.453 | 1.01085 | 0.97758 | 0.96392 |
| ____ MG | 36.98654 | 62 736.50 | 2.421 | 37.97434 | 36.75716 | 36.22810 |
| ____ MN | 1.38197 | 87 062.64 | 1.375 | 1.38588 | 1.39872 | 1.36133 |
| ____ MO | 1.93095 | 2 072.01 | 0.616 | 1.92673 | 1.92174 | 1.94439 |
| ____ NA | 70.48758 | 112 131.18 | 2.271 | 72.23804 | 70.12724 | 69.09746 |
| ____ NI | 0.45073 | 1 134.85 | 0.628 | 0.44929 | 0.44892 | 0.45400 |
| ____ P | 0.96094 | 111.80 | 1.203 | 0.95054 | 0.95889 | 0.97338 |
| ____ PB | 0.13344 | 84.73 | 1.665 | 0.13191 | 0.13242 | 0.13598 |
| ____ S | 136.06189 | 9 152.65 | 0.612 | 135.49286 | 135.67448 | 137.01833 |
| ____ SB | 0.44068 | 100.39 | 0.695 | 0.43871 | 0.43911 | 0.44420 |
| ____ SE | 0.14191 | 14.05 | 7.038 | 0.14526 | 0.14979 | 0.13068 |
| ____ SI | 17.43832 | 2 875.33 | 1.498 | 17.71072 | 17.41417 | 17.19009 |
| ____ SN | 3.65284 | 1 265.58 | 0.616 | 3.64455 | 3.63568 | 3.67829 |
| ____ SR | 2.17240 | 1 479 414.79 | 1.389 | 2.16249 | 2.20629 | 2.14842 |
| ____ TI | 0.96124 | 47 960.13 | 1.507 | 0.96337 | 0.97454 | 0.94580 |
| ____ TL | 0.15812 | 16.69 | 4.080 | 0.15185 | 0.15779 | 0.16474 |
| ____ V | 0.49456 | 7 954.34 | 1.208 | 0.49472 | 0.50045 | 0.48851 |
| ____ Y1 | 4848.62457 | 4 848.62 | 0.399 | 4846.39680 | 4868.97292 | 4830.50399 |
| ____ Y2A | 203575.86260 | 203 575.86 | 0.881 | 203366.54000 | 201895.25095 | 205465.79684 |
| ____ Y2R | 12446.93501 | 12 446.94 | 4.257 | 11874.81548 | 12545.10956 | 12920.88000 |
| ____ ZN | 0.56739 | 2 197.03 | 0.851 | 0.56557 | 0.56374 | 0.57286 |
| ____ ZR | 0.96037 | 2 408.59 | 1.301 | 0.97257 | 0.96092 | 0.94760 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 21 Date/Time: 07/19/2017 00:42

Sample Number: **9100479** Class: UL** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00101 | -21.39 | 51.229 | 0.00156 | 0.00054 | 0.00092 |
| ____ AL | 0.02317 | 13.51 | 228.391 | -0.03790 | 0.05178 | 0.05563 |
| ____ AS | 0.00375 | -1.49 | 50.778 | 0.00214 | 0.00585 | 0.00326 |
| ____ B | 0.02237 | 175.53 | 4.696 | 0.02216 | 0.02143 | 0.02350 |
| ____ BA | 0.01368 | 9 312.56 | 1.749 | 0.01358 | 0.01351 | 0.01395 |
| ____ BE | -0.00006 | -281.91 | 34.788 | -0.00005 | -0.00008 | -0.00005 |
| ____ CA | 49.71520 | 51 295.71 | 0.210 | 49.61807 | 49.82519 | 49.70233 |
| ____ CD | -0.00031 | -5.89 | 29.892 | -0.00037 | -0.00021 | -0.00036 |
| ____ CO | 0.00079 | -1.83 | 27.253 | 0.00097 | 0.00086 | 0.00055 |
| ____ CR | -0.00009 | 19.64 | 421.961 | -0.00048 | -0.00003 | 0.00025 |
| ____ CU | 0.00184 | 26.24 | 62.776 | 0.00059 | 0.00287 | 0.00206 |
| ____ FE | 0.00096 | 5.98 | 1003.658 | 0.00189 | 0.01015 | -0.00914 |
| ____ K | 1.05770 | 539.97 | 4.698 | 1.05554 | 1.00913 | 1.10843 |
| ____ LI | 0.00851 | 61.90 | 13.517 | 0.00945 | 0.00723 | 0.00886 |
| ____ MG | 7.12868 | 12 446.71 | 0.237 | 7.10928 | 7.14030 | 7.13645 |
| ____ MN | 0.19023 | 12 224.63 | 0.812 | 0.18961 | 0.18909 | 0.19199 |
| ____ MO | 0.00047 | 1.46 | 102.568 | 0.00091 | -0.00004 | 0.00052 |
| ____ NA | 12.12251 | 19 562.04 | 0.048 | 12.11586 | 12.12624 | 12.12543 |
| ____ NI | 0.00208 | 7.43 | 34.287 | 0.00282 | 0.00139 | 0.00202 |
| ____ P | 0.00249 | 0.95 | 203.475 | -0.00108 | 0.00026 | 0.00828 |
| ____ PB | -0.00056 | 0.25 | 432.703 | 0.00112 | -0.00330 | 0.00053 |
| ____ S | 26.57837 | 1 853.21 | 0.613 | 26.72921 | 26.40537 | 26.60051 |
| ____ SB | -0.00165 | 2.18 | 241.024 | -0.00099 | 0.00196 | -0.00590 |
| ____ SE | 0.00140 | -0.68 | 411.069 | -0.00479 | 0.00238 | 0.00662 |
| ____ SI | 3.25286 | 543.16 | 0.833 | 3.22322 | 3.25900 | 3.27634 |
| ____ SN | 0.00182 | 0.30 | 60.417 | 0.00088 | 0.00303 | 0.00155 |
| ____ SR | 0.25665 | 178 094.85 | 0.766 | 0.25673 | 0.25465 | 0.25858 |
| ____ TI | 0.00147 | 122.77 | 6.426 | 0.00148 | 0.00137 | 0.00156 |
| ____ TL | -0.00058 | -0.13 | 601.202 | -0.00096 | 0.00309 | -0.00388 |
| ____ V | 0.00150 | -2.75 | 2.672 | 0.00154 | 0.00148 | 0.00146 |
| ____ Y1 | 5026.52885 | 5 026.53 | 0.682 | 5006.08939 | 5066.10584 | 5007.39130 |
| ____ Y2A | 207539.77937 | 207 539.78 | 1.747 | 210078.46446 | 209152.60896 | 203388.26469 |
| ____ Y2R | 12634.53395 | 12 634.53 | 0.537 | 12638.55602 | 12564.76684 | 12700.27900 |
| ____ ZN | 0.02195 | 95.85 | 1.016 | 0.02214 | 0.02202 | 0.02171 |
| ____ ZR | -0.00207 | -11.14 | 67.964 | -0.00250 | -0.00050 | -0.00320 |

LANCASTER LABORATORIES

Run Name: 1719911T73

Instrument ID: 18255

Tube: 22

Date/Time: 07/19/2017 00:45

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.47575 | 6 327.61 | 1.299 | 0.48162 | 0.47632 | 0.46930 |
| ____ AL | 24.45321 | 3 323.68 | 1.493 | 24.32009 | 24.86625 | 24.17328 |
| ____ AS | 0.48737 | 62.48 | 1.586 | 0.49558 | 0.48024 | 0.48628 |
| ____ B | 0.46403 | 3 834.23 | 1.113 | 0.46958 | 0.46315 | 0.45937 |
| ____ BA | 0.48653 | 317 965.41 | 0.640 | 0.48998 | 0.48568 | 0.48393 |
| ____ BE | 0.46158 | 221 700.83 | 1.046 | 0.46663 | 0.46111 | 0.45701 |
| ____ CA | 24.31305 | 24 844.41 | 1.563 | 24.14411 | 24.74817 | 24.04687 |
| ____ CD | 0.48305 | 3 886.64 | 0.209 | 0.48257 | 0.48237 | 0.48421 |
| ____ CO | 0.48218 | 2 024.51 | 0.107 | 0.48241 | 0.48159 | 0.48254 |
| ____ CR | 0.47331 | 4 370.74 | 1.141 | 0.47954 | 0.47031 | 0.47007 |
| ____ CU | 0.48469 | 6 459.83 | 1.034 | 0.48977 | 0.48455 | 0.47975 |
| ____ FE | 23.84415 | 5 051.79 | 1.605 | 23.60530 | 24.28549 | 23.64167 |
| ____ K | 24.06966 | 11 176.67 | 1.718 | 23.84182 | 24.54690 | 23.82027 |
| ____ LI | 0.49300 | 4 702.14 | 1.358 | 0.49173 | 0.50023 | 0.48702 |
| ____ MG | 24.20082 | 41 448.10 | 1.504 | 24.01993 | 24.61990 | 23.96262 |
| ____ MN | 0.47474 | 29 894.74 | 1.017 | 0.48002 | 0.47366 | 0.47055 |
| ____ MO | 0.49470 | 545.91 | 0.453 | 0.49383 | 0.49303 | 0.49725 |
| ____ NA | 24.09656 | 38 458.99 | 1.460 | 23.93407 | 24.50013 | 23.85549 |
| ____ NI | 0.47999 | 1 237.48 | 0.281 | 0.48053 | 0.47846 | 0.48098 |
| ____ P | 0.47619 | 57.23 | 1.842 | 0.46949 | 0.47296 | 0.48612 |
| ____ PB | 0.47592 | 321.80 | 0.641 | 0.47239 | 0.47778 | 0.47758 |
| ____ S | 24.92010 | 1 721.59 | 0.016 | 24.91950 | 24.91643 | 24.92438 |
| ____ SB | 0.49007 | 124.41 | 1.322 | 0.49257 | 0.48271 | 0.49492 |
| ____ SE | 0.48302 | 51.02 | 1.866 | 0.49287 | 0.48101 | 0.47517 |
| ____ SI | 23.98298 | 3 953.33 | 1.560 | 23.70577 | 24.40854 | 23.83464 |
| ____ SN | 0.48410 | 171.96 | 0.462 | 0.48431 | 0.48622 | 0.48176 |
| ____ SR | 0.48020 | 326 747.46 | 0.352 | 0.48082 | 0.48150 | 0.47830 |
| ____ TI | 0.49289 | 24 728.30 | 1.079 | 0.49854 | 0.49215 | 0.48799 |
| ____ TL | 0.48745 | 58.72 | 1.230 | 0.49428 | 0.48306 | 0.48500 |
| ____ V | 0.49634 | 8 461.44 | 1.009 | 0.50069 | 0.49745 | 0.49087 |
| ____ Y1 | 4979.85775 | 4 979.86 | 0.165 | 4988.95378 | 4977.59481 | 4973.02467 |
| ____ Y2A | 203440.96502 | 203 440.97 | 0.624 | 202129.41939 | 203529.69872 | 204663.77694 |
| ____ Y2R | 12488.10852 | 12 488.11 | 1.371 | 12582.58786 | 12290.40384 | 12591.33387 |
| ____ ZN | 0.48270 | 1 933.81 | 0.268 | 0.48169 | 0.48227 | 0.48416 |
| ____ ZR | 0.49691 | 1 247.85 | 1.735 | 0.49444 | 0.50650 | 0.48980 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 23 Date/Time: 07/19/2017 00:48

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00162 | -13.95 | 55.241 | 0.00250 | 0.00162 | 0.00072 |
| ____ AL | 0.02018 | 13.14 | 111.405 | 0.03622 | 0.02984 | -0.00552 |
| ____ AS | 0.00173 | -1.78 | 391.402 | -0.00019 | -0.00388 | 0.00927 |
| ____ B | 0.00331 | 21.97 | 19.747 | 0.00266 | 0.00330 | 0.00397 |
| ____ BA | 0.00017 | 318.03 | 19.446 | 0.00017 | 0.00020 | 0.00013 |
| ____ BE | 0.00003 | -239.85 | 51.723 | 0.00003 | 0.00002 | 0.00005 |
| ____ CA | 0.03141 | 79.57 | 18.649 | 0.03748 | 0.02579 | 0.03097 |
| ____ CD | -0.00028 | -5.71 | 48.402 | -0.00036 | -0.00013 | -0.00036 |
| ____ CO | 0.00047 | -3.22 | 57.760 | 0.00078 | 0.00027 | 0.00037 |
| ____ CR | -0.00024 | 18.52 | 332.729 | 0.00066 | -0.00082 | -0.00056 |
| ____ CU | 0.00026 | -10.00 | 181.933 | 0.00007 | 0.00080 | -0.00009 |
| ____ FE | 0.00254 | 6.34 | 235.884 | 0.00854 | -0.00343 | 0.00250 |
| ____ K | 0.08789 | 86.21 | 69.710 | 0.12061 | 0.12585 | 0.01721 |
| ____ LI | -0.00036 | -23.88 | 697.413 | -0.00324 | 0.00157 | 0.00057 |
| ____ MG | 0.00872 | 10.16 | 19.311 | 0.00681 | 0.01001 | 0.00932 |
| ____ MN | 0.00012 | 16.25 | 17.926 | 0.00014 | 0.00013 | 0.00010 |
| ____ MO | -0.00068 | 0.19 | 68.509 | -0.00023 | -0.00116 | -0.00066 |
| ____ NA | 0.05611 | 60.00 | 6.797 | 0.05172 | 0.05865 | 0.05794 |
| ____ NI | 0.00016 | 2.71 | 538.728 | -0.00057 | -0.00003 | 0.00107 |
| ____ P | -0.00189 | 0.43 | 60.896 | -0.00263 | -0.00056 | -0.00247 |
| ____ PB | -0.00117 | -0.17 | 225.681 | 0.00085 | -0.00020 | -0.00416 |
| ____ S | 0.03309 | 2.12 | 57.110 | 0.05426 | 0.01793 | 0.02708 |
| ____ SB | -0.00224 | 2.05 | 60.476 | -0.00070 | -0.00279 | -0.00324 |
| ____ SE | 0.00573 | -0.22 | 148.878 | 0.00481 | 0.01469 | -0.00230 |
| ____ SI | 0.01273 | 3.35 | 79.384 | 0.02412 | 0.00483 | 0.00925 |
| ____ SN | 0.00312 | 0.77 | 43.247 | 0.00460 | 0.00281 | 0.00196 |
| ____ SR | 0.00023 | 60.50 | 6.396 | 0.00025 | 0.00023 | 0.00022 |
| ____ TI | 0.00006 | 51.99 | 247.231 | 0.00004 | 0.00022 | -0.00008 |
| ____ TL | -0.00218 | -0.34 | 227.298 | -0.00281 | -0.00679 | 0.00306 |
| ____ V | 0.00075 | -15.83 | 88.120 | 0.00046 | 0.00028 | 0.00151 |
| ____ Y1 | 5075.91970 | 5 075.92 | 0.248 | 5068.69136 | 5068.63391 | 5090.43383 |
| ____ Y2A | 210201.99488 | 210 201.99 | 0.720 | 211511.34319 | 208545.24000 | 210549.40144 |
| ____ Y2R | 12682.55700 | 12 682.56 | 1.293 | 12493.70259 | 12765.86365 | 12788.10476 |
| ____ ZN | -0.00075 | 5.55 | 3.250 | -0.00077 | -0.00072 | -0.00074 |
| ____ ZR | -0.00261 | -12.54 | 28.984 | -0.00348 | -0.00219 | -0.00216 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 24 Date/Time: 07/19/2017 00:51

Sample Number: **9095972** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00132 | -17.87 | 71.737 | 0.00023 | 0.00198 | 0.00175 |
| ____ AL | 0.26279 | 46.64 | 6.297 | 0.25674 | 0.28151 | 0.25012 |
| ____ AS | 0.00820 | -0.91 | 71.301 | 0.00651 | 0.01471 | 0.00339 |
| ____ B | 0.04354 | 346.59 | 2.458 | 0.04269 | 0.04474 | 0.04320 |
| ____ BA | 0.14589 | 96 336.53 | 0.668 | 0.14583 | 0.14690 | 0.14495 |
| ____ BE | -0.00001 | -256.34 | 133.136 | -0.00001 | -0.00003 | 0.00000 |
| ____ CA | 46.57245 | 48 387.03 | 1.005 | 47.02270 | 46.08828 | 46.60637 |
| ____ CD | -0.00019 | -4.66 | 64.983 | -0.00027 | -0.00005 | -0.00025 |
| ____ CO | 0.00028 | -3.86 | 78.312 | 0.00053 | 0.00022 | 0.00010 |
| ____ CR | 0.00222 | 40.82 | 20.919 | 0.00168 | 0.00244 | 0.00253 |
| ____ CU | 0.00130 | 17.46 | 24.056 | 0.00096 | 0.00137 | 0.00158 |
| ____ FE | 0.52307 | 119.05 | 3.643 | 0.54415 | 0.50708 | 0.51798 |
| ____ K | 2.75524 | 1 343.41 | 1.234 | 2.76281 | 2.78480 | 2.71810 |
| ____ LI | 0.01710 | 146.12 | 7.224 | 0.01835 | 0.01588 | 0.01707 |
| ____ MG | 6.41907 | 11 286.45 | 0.849 | 6.47248 | 6.36360 | 6.42112 |
| ____ MN | 0.04229 | 2 694.44 | 1.335 | 0.04251 | 0.04271 | 0.04164 |
| ____ MO | 0.00354 | 4.86 | 10.445 | 0.00322 | 0.00394 | 0.00344 |
| ____ NA | 25.90575 | 42 121.70 | 0.712 | 26.10436 | 25.74020 | 25.87269 |
| ____ NI | 0.00150 | 5.10 | 51.168 | 0.00232 | 0.00079 | 0.00141 |
| ____ P | 0.02671 | 3.84 | 9.138 | 0.02706 | 0.02895 | 0.02411 |
| ____ PB | -0.00450 | -2.37 | 58.891 | -0.00379 | -0.00743 | -0.00227 |
| ____ S | 19.20539 | 1 335.02 | 0.395 | 19.12856 | 19.28009 | 19.20753 |
| ____ SB | -0.00163 | 2.19 | 173.530 | -0.00058 | 0.00052 | -0.00485 |
| ____ SE | 0.00548 | -0.24 | 95.291 | 0.00114 | 0.01128 | 0.00402 |
| ____ SI | 14.30819 | 2 401.18 | 0.221 | 14.32737 | 14.32545 | 14.27176 |
| ____ SN | 0.00184 | 0.31 | 143.429 | 0.00445 | -0.00083 | 0.00191 |
| ____ SR | 0.30694 | 210 729.95 | 0.804 | 0.30717 | 0.30929 | 0.30437 |
| ____ TI | 0.01410 | 756.00 | 1.038 | 0.01416 | 0.01420 | 0.01393 |
| ____ TL | 0.00294 | 0.32 | 190.663 | -0.00348 | 0.00681 | 0.00548 |
| ____ V | 0.00441 | 47.60 | 10.768 | 0.00421 | 0.00406 | 0.00495 |
| ____ Y1 | 5011.34545 | 5 011.35 | 0.810 | 5048.73664 | 4968.19181 | 5017.10789 |
| ____ Y2A | 205309.37618 | 205 309.38 | 0.653 | 205412.93930 | 203919.06375 | 206596.12550 |
| ____ Y2R | 12720.12593 | 12 720.13 | 0.568 | 12670.89329 | 12803.12811 | 12686.35639 |
| ____ ZN | 0.00755 | 38.64 | 3.239 | 0.00772 | 0.00767 | 0.00727 |
| ____ ZR | -0.00153 | -9.84 | 189.360 | -0.00257 | -0.00378 | 0.00175 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 25 Date/Time: 07/19/2017 00:54

Sample Number: **9100483** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00065 | -26.67 | 63.842 | 0.00017 | 0.00083 | 0.00093 |
| ____ AL | 0.02993 | 14.41 | 25.159 | 0.03857 | 0.02478 | 0.02643 |
| ____ AS | 0.00554 | -1.31 | 43.263 | 0.00595 | 0.00296 | 0.00770 |
| ____ B | 0.04193 | 332.98 | 0.897 | 0.04233 | 0.04190 | 0.04158 |
| ____ BA | 0.13571 | 90 223.58 | 1.357 | 0.13783 | 0.13450 | 0.13480 |
| ____ BE | -0.00007 | -284.34 | 8.870 | -0.00007 | -0.00007 | -0.00006 |
| ____ CA | 54.25065 | 55 819.59 | 0.602 | 53.89184 | 54.53118 | 54.32894 |
| ____ CD | -0.00037 | -6.55 | 58.337 | -0.00052 | -0.00012 | -0.00047 |
| ____ CO | 0.00039 | -3.61 | 216.105 | -0.00052 | 0.00115 | 0.00055 |
| ____ CR | 0.00121 | 31.75 | 3.147 | 0.00118 | 0.00125 | 0.00121 |
| ____ CU | 0.00090 | 14.64 | 43.638 | 0.00118 | 0.00108 | 0.00045 |
| ____ FE | 0.09706 | 26.59 | 6.871 | 0.08980 | 0.09847 | 0.10292 |
| ____ K | 3.49927 | 1 678.33 | 0.904 | 3.48218 | 3.47986 | 3.53577 |
| ____ LI | 0.01947 | 167.49 | 7.816 | 0.01808 | 0.01923 | 0.02110 |
| ____ MG | 7.85885 | 13 683.24 | 0.651 | 7.80088 | 7.89778 | 7.87790 |
| ____ MN | 0.08804 | 5 639.10 | 1.376 | 0.08941 | 0.08709 | 0.08763 |
| ____ MO | 0.00481 | 6.57 | 8.736 | 0.00444 | 0.00527 | 0.00472 |
| ____ NA | 25.48099 | 41 049.62 | 0.619 | 25.30662 | 25.52243 | 25.61392 |
| ____ NI | 0.00147 | 5.05 | 17.217 | 0.00149 | 0.00120 | 0.00171 |
| ____ P | 0.00844 | 1.73 | 35.265 | 0.00911 | 0.01102 | 0.00518 |
| ____ PB | -0.00197 | -0.75 | 110.289 | -0.00095 | -0.00446 | -0.00050 |
| ____ S | 19.80371 | 1 439.31 | 1.578 | 20.15303 | 19.55038 | 19.70772 |
| ____ SB | -0.00471 | 1.47 | 56.010 | -0.00597 | -0.00168 | -0.00648 |
| ____ SE | 0.01531 | 0.87 | 30.841 | 0.01296 | 0.02074 | 0.01222 |
| ____ SI | 16.39770 | 2 726.27 | 0.749 | 16.26260 | 16.42796 | 16.50253 |
| ____ SN | 0.00259 | 0.59 | 93.136 | 0.00514 | 0.00226 | 0.00036 |
| ____ SR | 0.36408 | 251 649.57 | 1.184 | 0.36881 | 0.36306 | 0.36037 |
| ____ TI | 0.00230 | 163.98 | 4.978 | 0.00224 | 0.00243 | 0.00222 |
| ____ TL | 0.00099 | 0.07 | 120.688 | 0.00214 | 0.00106 | -0.00024 |
| ____ V | 0.00497 | 57.27 | 7.928 | 0.00496 | 0.00458 | 0.00536 |
| ____ Y1 | 5240.53121 | 5 240.53 | 1.965 | 5123.88373 | 5318.89677 | 5278.81314 |
| ____ Y2A | 206691.55055 | 206 691.55 | 0.948 | 204439.21000 | 207621.26000 | 208014.18164 |
| ____ Y2R | 12603.05670 | 12 603.06 | 0.334 | 12651.59553 | 12580.61388 | 12576.96069 |
| ____ ZN | 0.00769 | 40.78 | 6.188 | 0.00814 | 0.00774 | 0.00720 |
| ____ ZR | -0.00350 | -14.74 | 45.094 | -0.00179 | -0.00383 | -0.00490 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 26 Date/Time: 07/19/2017 00:57

Sample Number: **9100485** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00140 | -16.61 | 56.513 | 0.00190 | 0.00183 | 0.00049 |
| ____ AL | 0.03087 | 14.43 | 75.186 | 0.05739 | 0.01422 | 0.02101 |
| ____ AS | 0.00709 | -1.03 | 38.038 | 0.00564 | 0.01021 | 0.00543 |
| ____ B | 0.04182 | 339.66 | 2.125 | 0.04102 | 0.04167 | 0.04278 |
| ____ BA | 0.12492 | 84 806.69 | 2.439 | 0.12194 | 0.12478 | 0.12802 |
| ____ BE | -0.00005 | -283.79 | 40.929 | -0.00007 | -0.00007 | -0.00003 |
| ____ CA | 59.67745 | 60 806.76 | 0.358 | 59.57575 | 59.92301 | 59.53358 |
| ____ CD | -0.00028 | -5.44 | 24.308 | -0.00032 | -0.00031 | -0.00020 |
| ____ CO | 0.00025 | -4.07 | 191.318 | 0.00079 | -0.00009 | 0.00005 |
| ____ CR | 0.00090 | 29.32 | 74.920 | 0.00055 | 0.00048 | 0.00168 |
| ____ CU | 0.00195 | 31.13 | 37.058 | 0.00141 | 0.00276 | 0.00167 |
| ____ FE | 0.18123 | 44.23 | 1.289 | 0.18337 | 0.17874 | 0.18158 |
| ____ K | 3.27686 | 1 559.64 | 0.747 | 3.24859 | 3.29138 | 3.29060 |
| ____ LI | 0.02022 | 173.11 | 0.528 | 0.02019 | 0.02013 | 0.02033 |
| ____ MG | 8.50317 | 14 662.28 | 0.219 | 8.49423 | 8.52459 | 8.49068 |
| ____ MN | 0.09672 | 6 323.71 | 2.548 | 0.09433 | 0.09657 | 0.09926 |
| ____ MO | 0.00579 | 7.28 | 17.306 | 0.00479 | 0.00579 | 0.00679 |
| ____ NA | 26.10535 | 41 661.10 | 0.297 | 26.01766 | 26.13408 | 26.16431 |
| ____ NI | 0.00110 | 3.98 | 57.833 | 0.00136 | 0.00037 | 0.00156 |
| ____ P | 0.00782 | 1.57 | 48.705 | 0.00423 | 0.01181 | 0.00742 |
| ____ PB | -0.00060 | 0.21 | 162.315 | -0.00085 | -0.00141 | 0.00047 |
| ____ S | 22.35007 | 1 537.90 | 0.565 | 22.23462 | 22.33056 | 22.48502 |
| ____ SB | 0.00023 | 2.62 | 2209.525 | 0.00168 | -0.00538 | 0.00438 |
| ____ SE | 0.02083 | 1.40 | 42.494 | 0.01064 | 0.02660 | 0.02525 |
| ____ SI | 14.47776 | 2 384.50 | 0.758 | 14.37963 | 14.59626 | 14.45739 |
| ____ SN | 0.00201 | 0.36 | 130.081 | 0.00307 | 0.00391 | -0.00097 |
| ____ SR | 0.38659 | 272 927.22 | 0.951 | 0.38339 | 0.39060 | 0.38577 |
| ____ TI | 0.00198 | 151.15 | 7.100 | 0.00184 | 0.00198 | 0.00212 |
| ____ TL | -0.00193 | -0.29 | 361.181 | 0.00612 | -0.00577 | -0.00615 |
| ____ V | 0.00517 | 61.73 | 3.844 | 0.00496 | 0.00536 | 0.00518 |
| ____ Y1 | 4960.58461 | 4 960.58 | 0.795 | 4987.70623 | 4978.68066 | 4915.36695 |
| ____ Y2A | 211092.73568 | 211 092.74 | 2.592 | 214831.47705 | 213632.95000 | 204813.78000 |
| ____ Y2R | 12484.79258 | 12 484.79 | 1.419 | 12680.13794 | 12334.59772 | 12439.64207 |
| ____ ZN | 0.03212 | 134.55 | 0.683 | 0.03208 | 0.03193 | 0.03236 |
| ____ ZR | -0.00373 | -15.17 | 19.657 | -0.00329 | -0.00332 | -0.00457 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 27 Date/Time: 07/19/2017 01:01

Sample Number: **9100487** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00051 | -28.23 | 125.259 | 0.00102 | -0.00021 | 0.00072 |
| ____ AL | 0.11907 | 26.35 | 21.331 | 0.14806 | 0.10842 | 0.10073 |
| ____ AS | 0.00180 | -1.73 | 234.020 | 0.00405 | 0.00441 | -0.00306 |
| ____ B | 0.04112 | 320.80 | 2.617 | 0.04182 | 0.04167 | 0.03988 |
| ____ BA | 0.14254 | 92 061.03 | 1.044 | 0.14118 | 0.14413 | 0.14232 |
| ____ BE | -0.00005 | -266.77 | 34.217 | -0.00004 | -0.00003 | -0.00006 |
| ____ CA | 47.97728 | 48 956.47 | 1.029 | 48.54695 | 47.71109 | 47.67381 |
| ____ CD | -0.00031 | -5.42 | 36.310 | -0.00018 | -0.00035 | -0.00038 |
| ____ CO | 0.00027 | -3.94 | 116.034 | 0.00010 | 0.00008 | 0.00063 |
| ____ CR | 0.00187 | 36.80 | 48.751 | 0.00291 | 0.00127 | 0.00141 |
| ____ CU | 0.00031 | 4.57 | 174.156 | 0.00090 | -0.00016 | 0.00019 |
| ____ FE | 0.62940 | 139.55 | 0.177 | 0.63049 | 0.62827 | 0.62943 |
| ____ K | 2.85010 | 1 363.33 | 1.203 | 2.84836 | 2.81671 | 2.88524 |
| ____ LI | 0.01619 | 134.88 | 9.240 | 0.01473 | 0.01772 | 0.01611 |
| ____ MG | 6.60466 | 11 405.54 | 0.938 | 6.67578 | 6.56216 | 6.57603 |
| ____ MN | 0.03160 | 1 971.52 | 1.143 | 0.03139 | 0.03202 | 0.03140 |
| ____ MO | 0.00538 | 6.78 | 9.720 | 0.00478 | 0.00571 | 0.00564 |
| ____ NA | 22.62179 | 36 124.39 | 0.940 | 22.86477 | 22.53103 | 22.46957 |
| ____ NI | 0.00079 | 3.18 | 51.695 | 0.00037 | 0.00081 | 0.00119 |
| ____ P | 0.03789 | 5.09 | 10.869 | 0.03314 | 0.04054 | 0.03998 |
| ____ PB | 0.00022 | 0.76 | 823.982 | -0.00097 | -0.00071 | 0.00234 |
| ____ S | 19.34965 | 1 321.71 | 1.008 | 19.26601 | 19.57254 | 19.21042 |
| ____ SB | -0.00233 | 1.98 | 64.618 | -0.00156 | -0.00136 | -0.00406 |
| ____ SE | 0.00092 | -0.72 | 72.592 | 0.00057 | 0.00050 | 0.00169 |
| ____ SI | 14.30948 | 2 358.66 | 0.764 | 14.42980 | 14.28216 | 14.21646 |
| ____ SN | 0.00201 | 0.36 | 173.629 | 0.00397 | 0.00406 | -0.00202 |
| ____ SR | 0.31962 | 214 616.07 | 0.969 | 0.31640 | 0.32258 | 0.31987 |
| ____ TI | 0.00541 | 312.44 | 2.474 | 0.00526 | 0.00550 | 0.00548 |
| ____ TL | 0.00219 | 0.23 | 235.939 | 0.00742 | -0.00289 | 0.00202 |
| ____ V | 0.00326 | 26.13 | 5.384 | 0.00317 | 0.00347 | 0.00315 |
| ____ Y1 | 4924.24580 | 4 924.25 | 0.985 | 4973.99280 | 4921.66667 | 4877.07792 |
| ____ Y2A | 200804.78822 | 200 804.79 | 1.016 | 202472.58579 | 198531.12378 | 201410.65508 |
| ____ Y2R | 12493.77296 | 12 493.77 | 0.373 | 12478.39186 | 12546.10701 | 12456.82000 |
| ____ ZN | 0.01485 | 66.44 | 2.717 | 0.01529 | 0.01476 | 0.01450 |
| ____ ZR | -0.00195 | -10.68 | 158.934 | -0.00491 | 0.00127 | -0.00220 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 28 Date/Time: 07/19/2017 01:04

Sample Number: **9100489** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00167 | -12.62 | 31.568 | 0.00141 | 0.00132 | 0.00227 |
| ____ AL | 0.07565 | 18.97 | 34.973 | 0.10448 | 0.05249 | 0.06997 |
| ____ AS | 0.00291 | -1.55 | 163.561 | 0.00631 | -0.00252 | 0.00493 |
| ____ B | 0.04162 | 314.68 | 0.180 | 0.04170 | 0.04160 | 0.04155 |
| ____ BA | 0.13933 | 87 710.65 | 0.205 | 0.13947 | 0.13900 | 0.13953 |
| ____ BE | -0.00007 | -270.43 | 11.791 | -0.00006 | -0.00006 | -0.00008 |
| ____ CA | 48.45971 | 45 787.72 | 1.178 | 47.94688 | 48.35756 | 49.07470 |
| ____ CD | -0.00048 | -6.81 | 40.174 | -0.00068 | -0.00029 | -0.00047 |
| ____ CO | 0.00054 | -2.79 | 22.196 | 0.00043 | 0.00052 | 0.00066 |
| ____ CR | 0.00123 | 30.16 | 47.620 | 0.00129 | 0.00061 | 0.00177 |
| ____ CU | 0.00113 | 15.23 | 62.813 | 0.00186 | 0.00044 | 0.00109 |
| ____ FE | 0.36474 | 77.11 | 4.171 | 0.34936 | 0.36509 | 0.37978 |
| ____ K | 2.81307 | 1 246.62 | 1.467 | 2.82304 | 2.76774 | 2.84845 |
| ____ LI | 0.01359 | 101.92 | 21.684 | 0.01696 | 0.01232 | 0.01149 |
| ____ MG | 6.74320 | 10 782.46 | 1.155 | 6.66705 | 6.73988 | 6.82266 |
| ____ MN | 0.01986 | 1 210.09 | 0.290 | 0.01988 | 0.01979 | 0.01989 |
| ____ MO | 0.00430 | 5.50 | 13.418 | 0.00405 | 0.00389 | 0.00496 |
| ____ NA | 22.87590 | 33 827.29 | 0.945 | 22.68493 | 22.83210 | 23.11065 |
| ____ NI | 0.00170 | 5.40 | 28.003 | 0.00207 | 0.00116 | 0.00188 |
| ____ P | 0.02447 | 3.44 | 35.651 | 0.02880 | 0.01443 | 0.03019 |
| ____ PB | -0.00112 | -0.12 | 103.915 | -0.00178 | 0.00022 | -0.00180 |
| ____ S | 19.30976 | 1 292.69 | 1.031 | 19.37952 | 19.08510 | 19.46464 |
| ____ SB | -0.00024 | 2.44 | 1348.560 | -0.00382 | 0.00266 | 0.00043 |
| ____ SE | 0.00748 | -0.02 | 95.364 | 0.01568 | 0.00404 | 0.00272 |
| ____ SI | 14.28539 | 2 180.45 | 0.776 | 14.17473 | 14.28494 | 14.39650 |
| ____ SN | 0.00115 | 0.05 | 144.932 | -0.00031 | 0.00079 | 0.00298 |
| ____ SR | 0.31642 | 207 085.59 | 0.276 | 0.31656 | 0.31549 | 0.31722 |
| ____ TI | 0.00268 | 173.65 | 6.989 | 0.00246 | 0.00274 | 0.00282 |
| ____ TL | 0.00015 | -0.03 | 1700.643 | -0.00276 | 0.00107 | 0.00215 |
| ____ V | 0.00346 | 29.05 | 12.489 | 0.00384 | 0.00299 | 0.00354 |
| ____ Y1 | 4826.31048 | 4 826.31 | 0.647 | 4835.37146 | 4851.99980 | 4791.56019 |
| ____ Y2A | 195703.21097 | 195 703.21 | 0.082 | 195536.36635 | 195715.50967 | 195857.75690 |
| ____ Y2R | 11569.77847 | 11 569.78 | 0.787 | 11647.49201 | 11592.31076 | 11469.53265 |
| ____ ZN | 0.01446 | 63.53 | 1.540 | 0.01431 | 0.01471 | 0.01435 |
| ____ ZR | -0.00501 | -17.02 | 60.461 | -0.00297 | -0.00356 | -0.00848 |

LANCASTER LABORATORIES

Run Name: 1719911T73 Instrument ID: 18255

Tube: 29 Date/Time: 07/19/2017 01:07

Sample Number: **9100491** Class: **** Batch: 171951063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00137 | -16.52 | 28.702 | 0.00105 | 0.00181 | 0.00126 |
| ____ AL | 0.00991 | 10.91 | 28.216 | 0.01314 | 0.00824 | 0.00836 |
| ____ AS | -0.00135 | -2.13 | 299.298 | 0.00269 | -0.00537 | -0.00136 |
| ____ B | 0.00448 | 30.28 | 9.975 | 0.00461 | 0.00398 | 0.00484 |
| ____ BA | 0.00635 | 4 298.64 | 1.072 | 0.00640 | 0.00627 | 0.00637 |
| ____ BE | -0.00005 | -268.20 | 71.491 | -0.00007 | -0.00001 | -0.00006 |
| ____ CA | 0.79484 | 809.41 | 1.243 | 0.78411 | 0.79684 | 0.80357 |
| ____ CD | -0.00039 | -6.40 | 41.508 | -0.00051 | -0.00021 | -0.00047 |
| ____ CO | 0.00063 | -2.46 | 62.420 | 0.00066 | 0.00101 | 0.00022 |
| ____ CR | 0.00010 | 20.75 | 547.865 | 0.00016 | 0.00059 | -0.00046 |
| ____ CU | 0.00514 | 55.39 | 14.886 | 0.00471 | 0.00603 | 0.00469 |
| ____ FE | 0.01734 | 8.87 | 84.983 | 0.01061 | 0.00717 | 0.03423 |
| ____ K | 0.40746 | 219.67 | 8.847 | 0.42308 | 0.43307 | 0.36624 |
| ____ LI | -0.00002 | -19.26 | 140.243 | -0.00005 | 0.00001 | -0.00001 |
| ____ MG | 0.03245 | 48.20 | 1.370 | 0.03209 | 0.03295 | 0.03232 |
| ____ MN | 0.00512 | 326.90 | 0.400 | 0.00514 | 0.00513 | 0.00510 |
| ____ MO | -0.00091 | -0.06 | 87.477 | -0.00067 | -0.00025 | -0.00179 |
| ____ NA | 1.17686 | 1 744.72 | 0.241 | 1.17468 | 1.18007 | 1.17585 |
| ____ NI | 0.00365 | 11.52 | 13.983 | 0.00332 | 0.00339 | 0.00424 |
| ____ P | 0.01506 | 2.41 | 25.839 | 0.01073 | 0.01618 | 0.01827 |
| ____ PB | -0.00144 | -0.33 | 201.396 | -0.00430 | 0.00148 | -0.00149 |
| ____ S | 0.13290 | 8.87 | 21.864 | 0.16633 | 0.11863 | 0.11374 |
| ____ SB | -0.00292 | 1.83 | 158.749 | -0.00330 | 0.00189 | -0.00736 |
| ____ SE | 0.00273 | -0.53 | 297.154 | 0.00817 | 0.00660 | -0.00659 |
| ____ SI | 0.08211 | 13.90 | 9.288 | 0.07423 | 0.08265 | 0.08945 |
| ____ SN | 0.00131 | 0.11 | 47.162 | 0.00074 | 0.00122 | 0.00196 |
| ____ SR | 0.00269 | 1 708.18 | 0.967 | 0.00269 | 0.00266 | 0.00271 |
| ____ TI | 0.00062 | 77.25 | 8.048 | 0.00057 | 0.00067 | 0.00063 |
| ____ TL | 0.00102 | 0.07 | 524.519 | -0.00427 | 0.00643 | 0.00090 |
| ____ V | 0.00123 | -6.81 | 13.752 | 0.00141 | 0.00107 | 0.00122 |
| ____ Y1 | 4923.94433 | 4 923.94 | 0.318 | 4916.62008 | 4941.93323 | 4913.27969 |
| ____ Y2A | 201269.59182 | 201 269.59 | 0.980 | 199015.72283 | 202680.62749 | 202112.42515 |
| ____ Y2R | 11780.92223 | 11 780.92 | 0.164 | 11800.76816 | 11779.74078 | 11762.25774 |
| ____ ZN | 0.02573 | 108.68 | 2.400 | 0.02502 | 0.02610 | 0.02608 |
| ____ ZR | -0.00237 | -11.09 | 72.110 | -0.00062 | -0.00246 | -0.00404 |

LANCASTER LABORATORIES

Run Name: 1719911T73

Instrument ID: 18255

Tube: 30

Date/Time: 07/19/2017 01:10

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.47652 | 5 870.14 | 0.543 | 0.47695 | 0.47887 | 0.47375 |
| ____ AL | 24.55743 | 3 003.46 | 1.114 | 24.46935 | 24.86416 | 24.33879 |
| ____ AS | 0.48432 | 57.92 | 0.386 | 0.48458 | 0.48234 | 0.48605 |
| ____ B | 0.46231 | 3 539.90 | 0.462 | 0.45987 | 0.46384 | 0.46322 |
| ____ BA | 0.47932 | 290 141.75 | 0.204 | 0.48026 | 0.47831 | 0.47939 |
| ____ BE | 0.46390 | 206 373.89 | 0.363 | 0.46209 | 0.46542 | 0.46420 |
| ____ CA | 24.40600 | 22 441.21 | 1.029 | 24.37896 | 24.66949 | 24.16955 |
| ____ CD | 0.48459 | 3 638.50 | 0.973 | 0.48296 | 0.48090 | 0.48990 |
| ____ CO | 0.48250 | 1 890.46 | 1.162 | 0.48060 | 0.47809 | 0.48881 |
| ____ CR | 0.47733 | 4 082.45 | 0.698 | 0.47369 | 0.48024 | 0.47806 |
| ____ CU | 0.48300 | 5 962.39 | 0.491 | 0.48058 | 0.48532 | 0.48310 |
| ____ FE | 24.03786 | 4 582.52 | 1.140 | 23.95340 | 24.34423 | 23.81595 |
| ____ K | 24.24980 | 10 132.35 | 0.981 | 24.12994 | 24.52367 | 24.09578 |
| ____ LI | 0.49150 | 4 218.26 | 0.974 | 0.49259 | 0.49564 | 0.48625 |
| ____ MG | 24.49600 | 37 746.31 | 1.067 | 24.47597 | 24.76673 | 24.24529 |
| ____ MN | 0.47817 | 27 888.48 | 0.511 | 0.47547 | 0.48023 | 0.47880 |
| ____ MO | 0.49256 | 507.22 | 1.247 | 0.48876 | 0.48928 | 0.49964 |
| ____ NA | 24.25298 | 34 831.49 | 0.989 | 24.18777 | 24.51880 | 24.05236 |
| ____ NI | 0.48163 | 1 158.68 | 0.954 | 0.47868 | 0.47927 | 0.48692 |
| ____ P | 0.47381 | 53.14 | 0.925 | 0.47506 | 0.46893 | 0.47743 |
| ____ PB | 0.48008 | 302.92 | 1.203 | 0.48463 | 0.47358 | 0.48203 |
| ____ S | 24.61009 | 1 586.52 | 1.218 | 24.45794 | 24.41679 | 24.95554 |
| ____ SB | 0.49322 | 116.83 | 0.830 | 0.48867 | 0.49436 | 0.49661 |
| ____ SE | 0.48104 | 47.42 | 2.259 | 0.49158 | 0.48168 | 0.46987 |
| ____ SI | 24.17599 | 3 585.94 | 1.018 | 24.14471 | 24.43634 | 23.94691 |
| ____ SN | 0.48532 | 160.87 | 1.191 | 0.48544 | 0.47948 | 0.49104 |
| ____ SR | 0.47608 | 300 028.46 | 0.455 | 0.47395 | 0.47601 | 0.47828 |
| ____ TI | 0.49191 | 22 858.42 | 0.587 | 0.48889 | 0.49465 | 0.49219 |
| ____ TL | 0.49114 | 55.22 | 2.560 | 0.47829 | 0.49171 | 0.50341 |
| ____ V | 0.49962 | 7 890.71 | 0.457 | 0.49754 | 0.50206 | 0.49924 |
| ____ Y1 | 4647.22506 | 4 647.23 | 0.697 | 4676.90426 | 4652.10479 | 4612.66613 |
| ____ Y2A | 188423.41259 | 188 423.41 | 0.319 | 189110.69572 | 188002.83886 | 188156.70319 |
| ____ Y2R | 11236.32435 | 11 236.32 | 0.822 | 11271.18374 | 11131.66401 | 11306.12530 |
| ____ ZN | 0.48394 | 1 809.21 | 1.063 | 0.48347 | 0.47904 | 0.48930 |
| ____ ZR | 0.49268 | 1 113.27 | 1.112 | 0.49012 | 0.49897 | 0.48895 |

LANCASTER LABORATORIES

Run Name: 1719911T73

Instrument ID: 18255

Tube: 31

Date/Time: 07/19/2017 01:13

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00092 | -20.80 | 30.393 | 0.00112 | 0.00060 | 0.00103 |
| ____ AL | 0.00515 | 9.80 | 460.603 | 0.01895 | -0.02224 | 0.01873 |
| ____ AS | 0.00112 | -1.75 | 267.444 | 0.00385 | 0.00157 | -0.00207 |
| ____ B | 0.00234 | 12.22 | 11.316 | 0.00203 | 0.00252 | 0.00247 |
| ____ BA | 0.00011 | 243.27 | 27.310 | 0.00008 | 0.00014 | 0.00010 |
| ____ BE | -0.00001 | -227.19 | 348.612 | 0.00000 | 0.00001 | -0.00004 |
| ____ CA | 0.01017 | 50.85 | 20.947 | 0.00779 | 0.01190 | 0.01082 |
| ____ CD | -0.00018 | -4.60 | 72.606 | -0.00006 | -0.00033 | -0.00017 |
| ____ CO | 0.00072 | -2.04 | 46.364 | 0.00101 | 0.00036 | 0.00079 |
| ____ CR | 0.00035 | 20.85 | 183.481 | -0.00010 | 0.00006 | 0.00109 |
| ____ CU | -0.00081 | -21.73 | 24.062 | -0.00098 | -0.00084 | -0.00060 |
| ____ FE | -0.00289 | 4.58 | 394.256 | -0.00187 | -0.01477 | 0.00797 |
| ____ K | 0.06082 | 64.99 | 68.253 | 0.04573 | 0.10776 | 0.02896 |
| ____ LI | 0.00145 | -5.62 | 302.216 | 0.00325 | 0.00464 | -0.00354 |
| ____ MG | 0.00527 | 3.58 | 26.543 | 0.00368 | 0.00580 | 0.00633 |
| ____ MN | 0.00003 | 8.91 | 225.549 | -0.00005 | 0.00008 | 0.00007 |
| ____ MO | -0.00145 | -0.63 | 74.291 | -0.00028 | -0.00240 | -0.00167 |
| ____ NA | 0.03110 | 17.20 | 25.715 | 0.03897 | 0.03134 | 0.02299 |
| ____ NI | 0.00044 | 3.23 | 185.066 | 0.00003 | -0.00009 | 0.00136 |
| ____ P | -0.00178 | 0.42 | 64.840 | -0.00236 | -0.00045 | -0.00253 |
| ____ PB | -0.00056 | 0.24 | 628.342 | 0.00344 | -0.00214 | -0.00297 |
| ____ S | 0.02311 | 1.33 | 8.500 | 0.02087 | 0.02453 | 0.02394 |
| ____ SB | 0.00006 | 2.48 | 4852.636 | 0.00331 | -0.00058 | -0.00254 |
| ____ SE | 0.00525 | -0.26 | 307.982 | 0.02082 | -0.01146 | 0.00640 |
| ____ SI | 0.01926 | 3.93 | 9.309 | 0.02044 | 0.01719 | 0.02013 |
| ____ SN | -0.00041 | -0.48 | 433.443 | 0.00029 | 0.00091 | -0.00242 |
| ____ SR | 0.00007 | -46.49 | 20.392 | 0.00009 | 0.00007 | 0.00006 |
| ____ TI | 0.00032 | 56.56 | 69.577 | 0.00022 | 0.00016 | 0.00058 |
| ____ TL | 0.00375 | 0.40 | 143.082 | -0.00070 | 0.00224 | 0.00972 |
| ____ V | 0.00102 | -9.38 | 20.380 | 0.00125 | 0.00092 | 0.00087 |
| ____ Y1 | 4765.77655 | 4 765.78 | 0.462 | 4759.38249 | 4790.28389 | 4747.66327 |
| ____ Y2A | 184105.61586 | 184 105.62 | 7.370 | 190355.20646 | 193424.19097 | 168537.45016 |
| ____ Y2R | 11202.53595 | 11 202.54 | 1.267 | 11366.39721 | 11121.42857 | 11119.78209 |
| ____ ZN | -0.00087 | 4.74 | 40.410 | -0.00095 | -0.00049 | -0.00118 |
| ____ ZR | -0.00396 | -14.11 | 48.882 | -0.00206 | -0.00592 | -0.00389 |

eurofins | Lancaster Laboratories Environmental

# ICP-AES Run Data Report

| Reviewed By | Reviewed Date |
|---|---|
| Deborah A Krady | 08/02/2017 1:53PM |
| Eric L Eby | 08/02/2017 10:42AM |

Data File Name 1721403T73.TXT
Run Name: 1721403T73

Method Reference Name(s):

| Verified By: | Verified Date |
|---|---|
| Deborah A Krady | 08/02/2017 1:52PM |

Analyst Employee: 420

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 1 Date/Time: 08/02/2017 09:13

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -2.73695 | 277.496 | 0.00131 | -0.00262 | -0.00081 |
| AL | 0.000 | 12.37445 | 10.312 | 0.06970 | 0.06486 | 0.05669 |
| AS | 0.000 | -2.25775 | 30.654 | -0.01545 | -0.02870 | -0.02748 |
| B | 0.000 | -4.75889 | 108.175 | -0.00005 | 0.00001 | -0.00004 |
| BA | 0.000 | 142.04702 | 11.437 | 0.00082 | 0.00076 | 0.00065 |
| BE | 0.000 | -263.49091 | 3.623 | -0.07130 | -0.06952 | -0.06636 |
| CA | 0.000 | 61.78570 | 81.004 | 0.01232 | 0.00355 | 0.00323 |
| CD | 0.000 | -5.24485 | 34.464 | -0.03616 | -0.07438 | -0.05580 |
| CO | 0.000 | -7.20337 | 26.287 | -0.06118 | -0.09885 | -0.06832 |
| CR | 0.000 | -12.07530 | 37.072 | -0.00008 | -0.00007 | -0.00004 |
| CU | 0.000 | -16.38381 | 79.265 | -0.00596 | -0.00654 | -0.00038 |
| FE | 0.000 | 5.90125 | 59.877 | 0.00100 | 0.00028 | 0.00055 |
| K | 0.000 | 42.09456 | 46.297 | 0.30823 | 0.23372 | 0.10930 |
| LI | 0.000 | -2.23485 | 781.305 | -0.00022 | 0.00153 | -0.00198 |
| MG | 0.000 | 40.10544 | 194.247 | 0.01342 | -0.00038 | -0.00063 |
| MN | 0.000 | 3.90840 | 47.157 | 0.00129 | 0.00047 | 0.00132 |
| MO | 0.000 | -0.00038 | 5597.258 | -0.00746 | -0.00728 | 0.01485 |
| NA | 0.000 | 0.46942 | 2449.346 | 0.00139 | -0.00086 | -0.00039 |
| NI | 0.000 | 8.39937 | 1.100 | 0.08799 | 0.08841 | 0.08985 |
| P | 0.000 | 0.82949 | 56.144 | 0.00029 | 0.00013 | 0.00011 |
| PB | 0.000 | -1.75449 | 147.918 | -0.03662 | 0.01301 | -0.03200 |
| S | 0.000 | 0.15651 | 41.512 | 0.00002 | 0.00003 | 0.00005 |
| SB | 0.000 | 2.98054 | 27.248 | 0.00055 | 0.00051 | 0.00083 |
| SE | 0.000 | 0.83804 | 80.172 | 0.00736 | 0.00264 | 0.01662 |
| SI | 0.000 | 0.92178 | 235.637 | 0.00030 | -0.00015 | 0.00013 |
| SN | 0.000 | -0.54298 | 45.610 | -0.00873 | -0.00454 | -0.00393 |
| SR | 0.000 | -3.03868 | 352.385 | -0.00004 | -0.00006 | 0.00005 |
| TI | 0.000 | 64.25044 | 2.807 | 0.01707 | 0.01630 | 0.01715 |
| TL | 0.000 | -0.47653 | 168.476 | -0.01083 | -0.00886 | 0.00467 |
| V | 0.000 | -22.04759 | 9.230 | -0.00553 | -0.00639 | -0.00541 |
| Y1 | 0.000 | 4732.14918 | 0.519 | 4755.63844 | 4734.13445 | 4706.67466 |
| Y2A | 0.000 | 190783.44358 | 0.667 | 189404.53228 | 191913.27751 | 191032.52093 |
| Y2R | 0.000 | 9708.28973 | 0.537 | 9693.51057 | 9665.09763 | 9766.26097 |
| ZN | 0.000 | 6.75712 | 19.952 | 0.06444 | 0.06203 | 0.08784 |
| ZR | 0.000 | -22.33681 | 14.587 | -0.00209 | -0.00212 | -0.00269 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 2 Date/Time: 08/02/2017 09:16

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 4995.56921 | 0.673 | 25.32158 | 24.98317 | 25.15091 |
| CA | 50.000 | 37710.65260 | 0.853 | 3.82567 | 3.76208 | 3.80446 |
| FE | 50.000 | 8240.81115 | 0.514 | 0.83419 | 0.82566 | 0.82959 |
| K | 50.000 | 20632.88996 | 0.964 | 104.73466 | 102.78185 | 104.14105 |
| MG | 50.000 | 61821.26201 | 0.814 | 6.26785 | 6.16927 | 6.23877 |
| NA | 50.000 | 68108.18573 | 0.928 | 6.91064 | 6.78756 | 6.87710 |
| S | 50.000 | 2929.68057 | 1.432 | 0.64824 | 0.63184 | 0.63307 |
| SI | 50.000 | 4891.34397 | 0.465 | 0.49209 | 0.49050 | 0.49502 |
| Y1 | 50.000 | 4594.06694 | 0.471 | 4589.98301 | 4617.45625 | 4574.76157 |
| Y2R | 50.000 | 9931.19498 | 1.081 | 9879.48475 | 10054.59397 | 9859.50620 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 3 Date/Time: 08/02/2017 09:19

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 3136.95291 | 2.022 | 0.84554 | 0.83346 | 0.81236 |
| AS | 1.000 | 74.23167 | 1.433 | 0.78289 | 0.79969 | 0.80466 |
| B | 1.000 | 6820.58917 | 0.745 | 0.03625 | 0.03580 | 0.03629 |
| BA | 1.000 | 437889.12899 | 0.931 | 2.30048 | 2.34240 | 2.31247 |
| BE | 1.000 | 431423.31156 | 0.617 | 113.53717 | 114.15867 | 114.94340 |
| CD | 1.000 | 6961.14085 | 0.684 | 74.15550 | 74.53867 | 75.16695 |
| CO | 1.000 | 3606.99152 | 0.933 | 38.39900 | 38.52207 | 39.07599 |
| CU | 1.000 | 11839.70060 | 1.416 | 3.16916 | 3.08447 | 3.14980 |
| LI | 1.000 | 8428.46901 | 2.607 | 0.83059 | 0.83039 | 0.86856 |
| MN | 1.000 | 55003.55310 | 0.770 | 14.64979 | 14.43535 | 14.59968 |
| NI | 1.000 | 1698.74913 | 0.963 | 18.08050 | 18.14001 | 18.40954 |
| P | 1.000 | 101.85858 | 0.850 | 0.02182 | 0.02166 | 0.02203 |
| PB | 1.000 | 588.96615 | 0.717 | 6.26117 | 6.34121 | 6.33790 |
| SE | 1.000 | 88.48284 | 2.395 | 0.93534 | 0.93553 | 0.97479 |
| SR | 1.000 | 663703.96773 | 1.011 | 3.53743 | 3.53161 | 3.47320 |
| TL | 1.000 | 76.74964 | 0.576 | 0.81784 | 0.82303 | 0.82729 |
| Y1 | 1.000 | 4664.48514 | 0.540 | 4686.92031 | 4669.29828 | 4637.23683 |
| Y2A | 1.000 | 188868.02457 | 0.322 | 188547.14671 | 189569.24496 | 188487.68203 |
| Y2R | 1.000 | 9999.12354 | 1.789 | 10110.64021 | 10093.92458 | 9792.80583 |
| ZN | 1.000 | 3390.24876 | 0.850 | 36.11913 | 36.21269 | 36.69469 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 4 Date/Time: 08/02/2017 09:22

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 8388.60356 | 0.431 | 0.04267 | 0.04302 | 0.04275 |
| MO | 1.000 | 959.50127 | 0.563 | 9.83967 | 9.90314 | 9.95072 |
| SB | 1.000 | 221.94422 | 0.609 | 0.04552 | 0.04577 | 0.04608 |
| SN | 1.000 | 311.22336 | 1.252 | 3.18327 | 3.19171 | 3.25672 |
| TI | 1.000 | 46804.98776 | 0.133 | 11.92977 | 11.96143 | 11.94360 |
| V | 1.000 | 16009.30385 | 0.098 | 4.08892 | 4.08688 | 4.08122 |
| Y1 | 1.000 | 4847.16278 | 0.788 | 4883.00770 | 4851.46085 | 4807.01979 |
| Y2A | 1.000 | 195919.86363 | 0.278 | 196327.71012 | 196130.26657 | 195301.61419 |
| Y2R | 1.000 | 10143.88239 | 0.127 | 10152.97500 | 10149.58117 | 10129.09100 |
| ZR | 1.000 | 1992.79330 | 1.057 | 0.19407 | 0.19745 | 0.19785 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 5 Date/Time: 08/02/2017 09:25

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.60421 | 1 864.87 | 1.298 | 0.61094 | 0.60608 | 0.59560 |
| ____ AL | 30.23955 | 3 017.30 | 0.734 | 30.43946 | 30.00052 | 30.27868 |
| ____ AS | 0.58859 | 42.29 | 1.171 | 0.59573 | 0.58198 | 0.58807 |
| ____ B | 0.56629 | 4 032.67 | 0.634 | 0.56936 | 0.56718 | 0.56234 |
| ____ BA | 0.58878 | 257 446.12 | 0.689 | 0.59291 | 0.58864 | 0.58480 |
| ____ BE | 0.56933 | 245 277.22 | 0.693 | 0.57297 | 0.56988 | 0.56513 |
| ____ CA | 29.75286 | 22 446.74 | 0.748 | 29.98620 | 29.54261 | 29.72975 |
| ____ CD | 0.57867 | 4 049.32 | 1.248 | 0.57539 | 0.58694 | 0.57366 |
| ____ CO | 0.56408 | 2 046.55 | 1.054 | 0.56066 | 0.57095 | 0.56064 |
| ____ CR | 0.57598 | 4 643.73 | 0.483 | 0.57903 | 0.57530 | 0.57359 |
| ____ CU | 0.57823 | 6 818.58 | 0.481 | 0.57881 | 0.58068 | 0.57521 |
| ____ FE | 30.19304 | 4 987.65 | 0.742 | 30.44930 | 30.09664 | 30.03320 |
| ____ K | 30.11560 | 12 422.63 | 0.765 | 30.38154 | 29.97976 | 29.98549 |
| ____ LI | 0.58224 | 4 869.96 | 0.825 | 0.58760 | 0.57835 | 0.58077 |
| ____ MG | 30.21911 | 37 637.79 | 0.739 | 30.46770 | 30.03551 | 30.15412 |
| ____ MN | 0.58011 | 31 843.41 | 0.612 | 0.58343 | 0.58053 | 0.57636 |
| ____ MO | 0.58516 | 541.89 | 1.229 | 0.58153 | 0.59344 | 0.58052 |
| ____ NA | 29.74584 | 40 447.52 | 0.714 | 29.98928 | 29.64987 | 29.59837 |
| ____ NI | 0.57256 | 978.31 | 1.076 | 0.56870 | 0.57966 | 0.56931 |
| ____ P | 0.57959 | 59.55 | 0.598 | 0.58062 | 0.58242 | 0.57573 |
| ____ PB | 0.56885 | 337.79 | 0.858 | 0.56496 | 0.57433 | 0.56727 |
| ____ S | 30.44508 | 1 816.66 | 1.458 | 30.07499 | 30.93735 | 30.32290 |
| ____ SB | 0.57790 | 125.70 | 0.955 | 0.57462 | 0.58427 | 0.57480 |
| ____ SE | 0.58832 | 51.42 | 2.962 | 0.57239 | 0.58564 | 0.60693 |
| ____ SI | 30.40310 | 2 971.63 | 0.826 | 30.69304 | 30.26537 | 30.25089 |
| ____ SN | 0.57188 | 171.64 | 1.548 | 0.56349 | 0.58114 | 0.57100 |
| ____ SR | 0.57205 | 378 934.75 | 0.789 | 0.57725 | 0.56969 | 0.56920 |
| ____ TI | 0.58853 | 26 684.38 | 0.672 | 0.59186 | 0.58957 | 0.58416 |
| ____ TL | 0.57890 | 44.70 | 1.625 | 0.56874 | 0.58732 | 0.58064 |
| ____ V | 0.59667 | 9 187.14 | 0.662 | 0.60015 | 0.59746 | 0.59238 |
| ____ Y1 | 4678.18916 | 4 678.19 | 0.505 | 4689.48305 | 4651.04785 | 4694.03660 |
| ____ Y2A | 188508.69176 | 188 508.69 | 0.539 | 187593.73752 | 188331.14254 | 189601.19522 |
| ____ Y2R | 9913.41810 | 9 913.42 | 0.760 | 9828.41770 | 9971.91740 | 9939.91919 |
| ____ ZN | 0.57330 | 1 962.63 | 1.126 | 0.56946 | 0.58076 | 0.56970 |
| ____ ZR | 0.59330 | 1 149.49 | 0.746 | 0.59037 | 0.59113 | 0.59839 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 6 Date/Time: 08/02/2017 09:28

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00095 | -7.44 | 54.271 | 0.00122 | 0.00127 | 0.00035 |
| ____ AL | -0.05165 | 7.79 | 26.347 | -0.05406 | -0.06389 | -0.03699 |
| ____ AS | 0.01132 | -1.59 | 72.522 | 0.01436 | 0.01759 | 0.00203 |
| ____ B | 0.00198 | 9.01 | 20.969 | 0.00244 | 0.00188 | 0.00163 |
| ____ BA | -0.00006 | 119.35 | 60.709 | -0.00002 | -0.00008 | -0.00007 |
| ____ BE | -0.00094 | -255.96 | 1.161 | -0.00093 | -0.00095 | -0.00095 |
| ____ CA | -0.03129 | 41.02 | 11.768 | -0.03553 | -0.02937 | -0.02896 |
| ____ CD | 0.00079 | 0.54 | 156.368 | 0.00222 | 0.00018 | -0.00002 |
| ____ CO | -0.00212 | -4.15 | 63.808 | -0.00066 | -0.00333 | -0.00238 |
| ____ CR | 0.00012 | -11.38 | 484.107 | -0.00053 | 0.00030 | 0.00059 |
| ____ CU | -0.00291 | -23.43 | 31.437 | -0.00189 | -0.00316 | -0.00367 |
| ____ FE | -0.01607 | 3.48 | 56.596 | -0.02523 | -0.00704 | -0.01594 |
| ____ K | 0.05897 | 69.75 | 43.788 | 0.02919 | 0.07249 | 0.07522 |
| ____ LI | 0.00020 | -12.87 | 923.791 | -0.00030 | 0.00220 | -0.00131 |
| ____ MG | 0.00020 | -2.63 | 887.850 | 0.00121 | -0.00186 | 0.00125 |
| ____ MN | 0.00032 | 8.86 | 23.490 | 0.00038 | 0.00034 | 0.00024 |
| ____ MO | 0.00040 | 0.40 | 453.519 | 0.00249 | -0.00074 | -0.00054 |
| ____ NA | 0.01326 | 19.17 | 104.578 | 0.01151 | 0.00035 | 0.02793 |
| ____ NI | -0.00030 | 8.02 | 376.669 | 0.00098 | -0.00075 | -0.00112 |
| ____ P | -0.00593 | 0.23 | 136.253 | 0.00330 | -0.00934 | -0.01175 |
| ____ PB | 0.00288 | 0.72 | 169.005 | 0.00805 | -0.00163 | 0.00223 |
| ____ S | 0.03988 | 2.63 | 142.084 | 0.10526 | 0.00530 | 0.00907 |
| ____ SB | 0.00311 | 3.71 | 57.948 | 0.00149 | 0.00278 | 0.00505 |
| ____ SE | 0.02232 | 0.36 | 18.556 | 0.01900 | 0.02100 | 0.02696 |
| ____ SI | 0.01759 | 2.75 | 72.639 | 0.02755 | 0.02204 | 0.00318 |
| ____ SN | -0.00013 | -0.37 | 3680.372 | 0.00554 | -0.00242 | -0.00353 |
| ____ SR | 0.00004 | 23.16 | 75.675 | 0.00006 | 0.00004 | 0.00001 |
| ____ TI | -0.00037 | 48.77 | 37.489 | -0.00042 | -0.00049 | -0.00022 |
| ____ TL | -0.00081 | -0.17 | 737.715 | -0.00651 | 0.00540 | -0.00132 |
| ____ V | 0.00008 | -16.57 | 627.586 | -0.00050 | 0.00048 | 0.00026 |
| ____ Y1 | 4800.12660 | 4 800.13 | 1.201 | 4866.55276 | 4763.43519 | 4770.39184 |
| ____ Y2A | 195900.53695 | 195 900.54 | 0.548 | 194718.35727 | 196166.81619 | 196816.43740 |
| ____ Y2R | 10274.82500 | 10 274.83 | 0.307 | 10248.07500 | 10309.57500 | 10266.82500 |
| ____ ZN | 0.00024 | 7.69 | 398.680 | 0.00134 | -0.00039 | -0.00023 |
| ____ ZR | -0.00365 | -22.68 | 92.882 | -0.00659 | 0.00006 | -0.00442 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 7 Date/Time: 08/02/2017 09:31

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01387 | 34.88 | 13.764 | 0.01317 | 0.01603 | 0.01241 |
| ____ AL | 0.43417 | 56.75 | 12.796 | 0.48704 | 0.37627 | 0.43919 |
| ____ AS | 0.04992 | 1.46 | 5.444 | 0.05176 | 0.04680 | 0.05121 |
| ____ B | 0.11247 | 786.80 | 0.273 | 0.11245 | 0.11279 | 0.11218 |
| ____ BA | 0.01187 | 5 497.85 | 0.946 | 0.01183 | 0.01200 | 0.01179 |
| ____ BE | 0.01077 | 4 939.70 | 1.074 | 0.01068 | 0.01090 | 0.01073 |
| ____ CA | 0.44829 | 408.27 | 0.313 | 0.44669 | 0.44929 | 0.44890 |
| ____ CD | 0.01218 | 82.82 | 0.399 | 0.01213 | 0.01223 | 0.01217 |
| ____ CO | 0.00900 | 37.46 | 6.323 | 0.00844 | 0.00897 | 0.00958 |
| ____ CR | 0.03534 | 281.79 | 1.924 | 0.03460 | 0.03593 | 0.03550 |
| ____ CU | 0.02153 | 271.83 | 3.717 | 0.02217 | 0.02063 | 0.02179 |
| ____ FE | 0.46209 | 84.21 | 1.919 | 0.46857 | 0.46573 | 0.45199 |
| ____ K | 1.26412 | 573.02 | 3.208 | 1.22637 | 1.25900 | 1.30700 |
| ____ LI | 0.04713 | 387.66 | 5.661 | 0.04445 | 0.04979 | 0.04714 |
| ____ MG | 0.23992 | 305.71 | 1.033 | 0.23973 | 0.23755 | 0.24249 |
| ____ MN | 0.01281 | 714.95 | 0.923 | 0.01278 | 0.01294 | 0.01271 |
| ____ MO | 0.02279 | 21.80 | 1.894 | 0.02229 | 0.02302 | 0.02306 |
| ____ NA | 2.37166 | 3 284.84 | 1.448 | 2.33511 | 2.37663 | 2.40324 |
| ____ NI | 0.02302 | 48.91 | 3.333 | 0.02219 | 0.02370 | 0.02316 |
| ____ P | 0.23023 | 24.94 | 2.489 | 0.22412 | 0.23548 | 0.23109 |
| ____ PB | 0.03471 | 20.16 | 16.780 | 0.03254 | 0.04130 | 0.03027 |
| ____ S | 1.14571 | 70.76 | 1.636 | 1.16716 | 1.13251 | 1.13744 |
| ____ SB | 0.04756 | 13.46 | 4.784 | 0.05010 | 0.04569 | 0.04690 |
| ____ SE | 0.05843 | 3.73 | 9.524 | 0.05732 | 0.05350 | 0.06446 |
| ____ SI | 0.12414 | 13.40 | 8.312 | 0.11936 | 0.11708 | 0.13598 |
| ____ SN | 0.04902 | 14.88 | 4.910 | 0.05178 | 0.04741 | 0.04785 |
| ____ SR | 0.01173 | 7 997.34 | 1.259 | 0.01161 | 0.01190 | 0.01168 |
| ____ TI | 0.02374 | 1 168.12 | 1.048 | 0.02372 | 0.02400 | 0.02350 |
| ____ TL | 0.06560 | 5.35 | 13.781 | 0.06047 | 0.07604 | 0.06030 |
| ____ V | 0.01228 | 174.13 | 0.775 | 0.01217 | 0.01231 | 0.01236 |
| ____ Y1 | 4831.68955 | 4 831.69 | 0.495 | 4810.50110 | 4826.93131 | 4857.63624 |
| ____ Y2A | 194074.84167 | 194 074.84 | 0.910 | 195449.94508 | 192082.78509 | 194691.79485 |
| ____ Y2R | 10096.42875 | 10 096.43 | 0.603 | 10143.80000 | 10117.75000 | 10027.73624 |
| ____ ZN | 0.04770 | 173.65 | 1.335 | 0.04831 | 0.04777 | 0.04704 |
| ____ ZR | 0.11052 | 205.84 | 2.214 | 0.10791 | 0.11087 | 0.11277 |

LANCASTER LABORATORIES

Run Name: 1721403T73

Instrument ID: 18255

Tube: 8

Date/Time: 08/02/2017 09:34

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00328 | -165.82 | 107.949 | 0.00432 | 0.00619 | -0.00067 |
| ____ AL | 490.39705 | 48 930.32 | 0.632 | 487.03370 | 493.13244 | 491.02502 |
| ____ AS | -0.00784 | -6.92 | 9.411 | -0.00867 | -0.00727 | -0.00757 |
| ____ B | -0.00624 | 1 043.23 | 26.546 | -0.00728 | -0.00710 | -0.00433 |
| ____ BA | 0.00100 | 539.64 | 138.715 | 0.00261 | 0.00026 | 0.00014 |
| ____ BE | -0.00041 | -6.53 | 337.197 | 0.00118 | -0.00119 | -0.00121 |
| ____ CA | 484.86208 | 348 136.46 | 0.258 | 483.75517 | 484.60974 | 486.22135 |
| ____ CD | 0.00052 | 67.25 | 81.271 | 0.00076 | 0.00078 | 0.00003 |
| ____ CO | -0.00241 | -4.65 | 24.391 | -0.00253 | -0.00292 | -0.00177 |
| ____ CR | 0.00226 | 5.99 | 78.361 | 0.00430 | 0.00114 | 0.00134 |
| ____ CU | 0.00188 | 145.32 | 87.208 | 0.00376 | 0.00094 | 0.00092 |
| ____ FE | 198.01557 | 30 880.53 | 0.655 | 196.68323 | 199.27333 | 198.09014 |
| ____ K | 0.01412 | 47.65 | 379.330 | 0.02201 | -0.04296 | 0.06332 |
| ____ LI | -0.00320 | 18.97 | 49.715 | -0.00446 | -0.00373 | -0.00141 |
| ____ MG | 487.21533 | 467 538.21 | 0.484 | 484.55897 | 488.01976 | 489.06727 |
| ____ MN | 0.00507 | 249.55 | 31.704 | 0.00692 | 0.00399 | 0.00430 |
| ____ MO | -0.00360 | -3.01 | 94.480 | -0.00659 | 0.00010 | -0.00432 |
| ____ NA | 0.06011 | 80.11 | 14.822 | 0.05725 | 0.07010 | 0.05298 |
| ____ NI | 0.00253 | 11.42 | 29.109 | 0.00334 | 0.00234 | 0.00191 |
| ____ P | 0.01266 | 1.91 | 29.198 | 0.01607 | 0.01318 | 0.00873 |
| ____ PB | -0.00092 | 43.80 | 283.087 | -0.00110 | 0.00178 | -0.00345 |
| ____ S | 0.04924 | 2.81 | 29.335 | 0.04963 | 0.03461 | 0.06349 |
| ____ SB | 0.01395 | 9.37 | 33.826 | 0.01255 | 0.01921 | 0.01009 |
| ____ SE | 0.01605 | -1.82 | 53.873 | 0.01308 | 0.02579 | 0.00928 |
| ____ SI | 0.01079 | 1.93 | 95.019 | -0.00027 | 0.01998 | 0.01265 |
| ____ SN | 0.00378 | 0.72 | 116.795 | 0.00883 | 0.00074 | 0.00176 |
| ____ SR | 0.01747 | 10 681.84 | 6.765 | 0.01883 | 0.01666 | 0.01692 |
| ____ TI | -0.00183 | -15.84 | 89.814 | 0.00007 | -0.00278 | -0.00279 |
| ____ TL | -0.02305 | -1.06 | 76.830 | -0.02069 | -0.04182 | -0.00664 |
| ____ V | 0.00183 | 11.95 | 88.447 | 0.00369 | 0.00088 | 0.00090 |
| ____ Y1 | 4245.90865 | 4 245.91 | 1.031 | 4197.80994 | 4256.56034 | 4283.35566 |
| ____ Y2A | 173913.99449 | 173 913.99 | 2.070 | 177730.90382 | 173432.45264 | 170578.62702 |
| ____ Y2R | 9662.38599 | 9 662.39 | 0.569 | 9721.24026 | 9612.37047 | 9653.54723 |
| ____ ZN | 0.00703 | 89.68 | 2.615 | 0.00704 | 0.00720 | 0.00683 |
| ____ ZR | -0.01855 | -49.82 | 8.258 | -0.01683 | -0.01978 | -0.01903 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 9 Date/Time: 08/02/2017 09:37

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21448 | 441.28 | 2.079 | 0.20934 | 0.21688 | 0.21723 |
| ____ AL | 485.14096 | 48 628.15 | 1.245 | 491.92454 | 483.14823 | 480.35011 |
| ____ AS | 0.10261 | 0.86 | 8.225 | 0.10122 | 0.11166 | 0.09495 |
| ____ B | -0.00048 | 1 055.65 | 585.382 | -0.00284 | -0.00118 | 0.00259 |
| ____ BA | 0.52734 | 209 657.70 | 1.114 | 0.52497 | 0.52303 | 0.53404 |
| ____ BE | 0.49833 | 195 270.54 | 0.740 | 0.49842 | 0.49459 | 0.50197 |
| ____ CA | 484.05526 | 349 324.28 | 0.323 | 482.31808 | 484.49582 | 485.35187 |
| ____ CD | 0.92757 | 5 998.33 | 0.698 | 0.92144 | 0.92694 | 0.93433 |
| ____ CO | 0.46552 | 1 543.86 | 0.550 | 0.46347 | 0.46471 | 0.46839 |
| ____ CR | 0.49558 | 3 632.25 | 0.661 | 0.49608 | 0.49209 | 0.49858 |
| ____ CU | 0.54335 | 5 956.33 | 0.973 | 0.54432 | 0.53764 | 0.54808 |
| ____ FE | 196.42687 | 30 792.96 | 1.343 | 199.41071 | 195.46443 | 194.40547 |
| ____ K | 0.01523 | 48.27 | 85.352 | 0.01922 | 0.02576 | 0.00070 |
| ____ LI | -0.00269 | 22.81 | 43.905 | -0.00287 | -0.00377 | -0.00143 |
| ____ MG | 484.45718 | 467 936.24 | 1.113 | 490.57673 | 482.40381 | 480.39100 |
| ____ MN | 0.49257 | 24 588.58 | 0.647 | 0.49220 | 0.48958 | 0.49592 |
| ____ MO | -0.00035 | -0.30 | 423.597 | -0.00198 | 0.00000 | 0.00093 |
| ____ NA | 0.05921 | 79.35 | 2.288 | 0.05808 | 0.06071 | 0.05884 |
| ____ NI | 0.91970 | 1 435.48 | 0.552 | 0.92035 | 0.91433 | 0.92442 |
| ____ P | 0.01064 | 1.74 | 107.396 | 0.01505 | 0.01919 | -0.00234 |
| ____ PB | 0.51766 | 324.69 | 1.389 | 0.51640 | 0.51119 | 0.52540 |
| ____ S | 0.04543 | 2.63 | 23.521 | 0.04707 | 0.05521 | 0.03402 |
| ____ SB | 0.62977 | 129.88 | 2.165 | 0.62897 | 0.61655 | 0.64378 |
| ____ SE | 0.55133 | 42.50 | 2.616 | 0.56442 | 0.53586 | 0.55371 |
| ____ SI | 0.02007 | 2.84 | 41.215 | 0.01053 | 0.02435 | 0.02532 |
| ____ SN | 0.00436 | 0.90 | 36.701 | 0.00374 | 0.00316 | 0.00618 |
| ____ SR | 0.01706 | 10 273.25 | 0.784 | 0.01709 | 0.01691 | 0.01717 |
| ____ TI | -0.00411 | -60.33 | 10.345 | -0.00391 | -0.00383 | -0.00460 |
| ____ TL | 0.08668 | 5.34 | 18.825 | 0.06886 | 0.10089 | 0.09029 |
| ____ V | 0.52641 | 7 508.37 | 0.907 | 0.52612 | 0.52178 | 0.53132 |
| ____ Y1 | 4283.86090 | 4 283.86 | 0.605 | 4302.77700 | 4294.50115 | 4254.30454 |
| ____ Y2A | 171440.69198 | 171 440.69 | 0.531 | 171393.08521 | 172373.72678 | 170555.26395 |
| ____ Y2R | 9710.84450 | 9 710.84 | 1.244 | 9578.91590 | 9737.44258 | 9816.17500 |
| ____ ZN | 0.99537 | 3 158.34 | 0.544 | 0.99109 | 0.99355 | 1.00145 |
| ____ ZR | -0.01883 | -50.64 | 8.742 | -0.01727 | -0.01866 | -0.02055 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 10 Date/Time: 08/02/2017 09:41

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.51531 | 1 572.36 | 0.319 | 0.51720 | 0.51459 | 0.51416 |
| ____ AL | 24.51995 | 2 417.34 | 0.763 | 24.68371 | 24.31612 | 24.56004 |
| ____ AS | 0.50884 | 36.15 | 2.260 | 0.51815 | 0.51239 | 0.49599 |
| ____ B | 0.48888 | 3 432.79 | 0.387 | 0.48964 | 0.49026 | 0.48672 |
| ____ BA | 0.50293 | 217 462.28 | 0.667 | 0.49907 | 0.50511 | 0.50460 |
| ____ BE | 0.49168 | 209 472.89 | 0.718 | 0.49285 | 0.49448 | 0.48772 |
| ____ CA | 24.40609 | 18 197.37 | 0.620 | 24.57780 | 24.29205 | 24.34842 |
| ____ CD | 0.50479 | 3 520.03 | 0.771 | 0.50620 | 0.50039 | 0.50778 |
| ____ CO | 0.49862 | 1 803.74 | 0.781 | 0.49956 | 0.49434 | 0.50195 |
| ____ CR | 0.49726 | 3 962.49 | 0.734 | 0.49921 | 0.49952 | 0.49305 |
| ____ CU | 0.50563 | 5 896.83 | 0.779 | 0.50673 | 0.50891 | 0.50126 |
| ____ FE | 24.54288 | 4 008.61 | 0.677 | 24.65618 | 24.35228 | 24.62018 |
| ____ K | 24.27442 | 9 895.71 | 0.737 | 24.39243 | 24.06850 | 24.36233 |
| ____ LI | 0.50919 | 4 203.11 | 0.983 | 0.51448 | 0.50855 | 0.50453 |
| ____ MG | 24.41654 | 30 107.94 | 0.748 | 24.62126 | 24.26996 | 24.35838 |
| ____ MN | 0.50699 | 27 516.53 | 0.791 | 0.50858 | 0.50997 | 0.50243 |
| ____ MO | 0.50819 | 469.15 | 0.602 | 0.51005 | 0.50466 | 0.50988 |
| ____ NA | 24.34001 | 32 681.04 | 0.847 | 24.49272 | 24.10539 | 24.42191 |
| ____ NI | 0.50162 | 855.52 | 0.336 | 0.50174 | 0.49988 | 0.50324 |
| ____ P | 0.50313 | 51.64 | 2.543 | 0.51439 | 0.48922 | 0.50578 |
| ____ PB | 0.49911 | 295.13 | 0.848 | 0.49914 | 0.49487 | 0.50333 |
| ____ S | 24.93317 | 1 483.17 | 0.519 | 24.97632 | 24.78771 | 25.03548 |
| ____ SB | 0.49363 | 107.42 | 1.492 | 0.49196 | 0.48724 | 0.50168 |
| ____ SE | 0.51671 | 44.82 | 1.910 | 0.52581 | 0.51808 | 0.50622 |
| ____ SI | 25.43352 | 2 454.94 | 0.477 | 25.57357 | 25.36061 | 25.36637 |
| ____ SN | 0.49632 | 148.45 | 0.888 | 0.49781 | 0.49136 | 0.49978 |
| ____ SR | 0.50295 | 329 424.05 | 0.536 | 0.50129 | 0.50606 | 0.50150 |
| ____ TI | 0.51178 | 22 950.03 | 0.857 | 0.51360 | 0.51497 | 0.50678 |
| ____ TL | 0.49339 | 37.88 | 0.328 | 0.49203 | 0.49296 | 0.49518 |
| ____ V | 0.51685 | 7 866.24 | 0.641 | 0.51749 | 0.51980 | 0.51326 |
| ____ Y1 | 4663.47286 | 4 663.47 | 0.366 | 4644.18707 | 4676.63337 | 4669.59816 |
| ____ Y2A | 186395.12835 | 186 395.13 | 0.739 | 186846.97500 | 184849.24273 | 187489.16733 |
| ____ Y2R | 9788.99061 | 9 788.99 | 1.060 | 9672.45602 | 9871.52639 | 9822.98942 |
| ____ ZN | 0.50157 | 1 711.89 | 0.580 | 0.50242 | 0.49833 | 0.50395 |
| ____ ZR | 0.50385 | 961.69 | 0.634 | 0.50719 | 0.50353 | 0.50083 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 11 Date/Time: 08/02/2017 09:44

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00342 | 0.57 | 96.504 | 0.00582 | -0.00034 | 0.00478 |
| ____ AL | -0.04161 | 8.60 | 52.655 | -0.02173 | -0.06510 | -0.03800 |
| ____ AS | 0.00176 | -2.34 | 961.324 | 0.01041 | -0.01776 | 0.01265 |
| ____ B | 0.00180 | 7.78 | 20.502 | 0.00176 | 0.00146 | 0.00219 |
| ____ BA | -0.00003 | 129.34 | 74.873 | -0.00002 | -0.00002 | -0.00006 |
| ____ BE | -0.00095 | -257.78 | 0.745 | -0.00095 | -0.00095 | -0.00096 |
| ____ CA | -0.02327 | 46.15 | 16.551 | -0.02378 | -0.01918 | -0.02683 |
| ____ CD | -0.00010 | -5.91 | 210.583 | 0.00010 | -0.00033 | -0.00008 |
| ____ CO | -0.00271 | -6.38 | 15.021 | -0.00279 | -0.00308 | -0.00227 |
| ____ CR | 0.00050 | -8.17 | 196.863 | 0.00156 | -0.00035 | 0.00027 |
| ____ CU | -0.00203 | -12.41 | 50.543 | -0.00087 | -0.00238 | -0.00283 |
| ____ FE | 0.00108 | 6.28 | 1152.062 | -0.01332 | 0.00827 | 0.00830 |
| ____ K | 0.01147 | 48.26 | 525.313 | 0.07111 | 0.01267 | -0.04937 |
| ____ LI | 0.00288 | 10.21 | 17.861 | 0.00231 | 0.00304 | 0.00330 |
| ____ MG | 0.01540 | 16.85 | 19.913 | 0.01300 | 0.01435 | 0.01885 |
| ____ MN | 0.00024 | 3.93 | 52.034 | 0.00030 | 0.00009 | 0.00031 |
| ____ MO | -0.00110 | -1.04 | 109.634 | -0.00219 | -0.00128 | 0.00019 |
| ____ NA | 0.02244 | 31.31 | 44.364 | 0.02485 | 0.01150 | 0.03096 |
| ____ NI | -0.00089 | 6.96 | 53.004 | -0.00037 | -0.00100 | -0.00129 |
| ____ P | -0.00790 | 0.02 | 23.357 | -0.00579 | -0.00924 | -0.00866 |
| ____ PB | 0.00027 | -0.88 | 1269.031 | 0.00181 | 0.00265 | -0.00365 |
| ____ S | -0.00234 | 0.02 | 488.984 | 0.01067 | -0.01079 | -0.00689 |
| ____ SB | -0.00237 | 2.51 | 211.655 | -0.00214 | 0.00252 | -0.00748 |
| ____ SE | 0.01715 | -0.12 | 4.037 | 0.01794 | 0.01685 | 0.01666 |
| ____ SI | 0.00651 | 1.59 | 190.801 | -0.00130 | 0.02084 | 0.00000 |
| ____ SN | -0.00232 | -1.06 | 54.010 | -0.00368 | -0.00121 | -0.00208 |
| ____ SR | 0.00002 | 7.49 | 157.447 | -0.00001 | 0.00001 | 0.00004 |
| ____ TI | -0.00032 | 51.68 | 32.220 | -0.00043 | -0.00028 | -0.00024 |
| ____ TL | -0.00158 | -0.23 | 493.636 | -0.00273 | 0.00673 | -0.00874 |
| ____ V | 0.00015 | -14.92 | 246.651 | -0.00026 | 0.00028 | 0.00043 |
| ____ Y1 | 4788.95828 | 4 788.96 | 1.118 | 4848.53915 | 4773.54562 | 4744.79008 |
| ____ Y2A | 194172.28332 | 194 172.28 | 0.469 | 194732.26064 | 194662.03150 | 193122.55781 |
| ____ Y2R | 10027.84260 | 10 027.84 | 0.642 | 9966.70817 | 10094.97207 | 10021.84757 |
| ____ ZN | -0.00072 | 4.34 | 44.438 | -0.00102 | -0.00039 | -0.00074 |
| ____ ZR | -0.00625 | -27.32 | 23.358 | -0.00476 | -0.00632 | -0.00768 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 12 Date/Time: 08/02/2017 09:47

Sample Number: **PBW** Class: **** Batch: 172131063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00171 | -5.14 | 97.367 | 0.00223 | 0.00306 | -0.00015 |
| ____ AL | 0.45067 | 61.05 | 199.842 | -0.09571 | 1.49016 | -0.04245 |
| ____ AS | -0.00916 | -3.26 | 43.357 | -0.00738 | -0.01370 | -0.00639 |
| ____ B | 0.00098 | 3.44 | 25.029 | 0.00095 | 0.00074 | 0.00123 |
| ____ BA | 0.00003 | 161.09 | 158.088 | 0.00006 | -0.00003 | 0.00008 |
| ____ BE | -0.00096 | -263.75 | 1.463 | -0.00098 | -0.00096 | -0.00095 |
| ____ CA | 0.50971 | 475.92 | 176.729 | -0.02105 | 1.54980 | 0.00039 |
| ____ CD | 0.00007 | -4.71 | 276.342 | 0.00004 | 0.00026 | -0.00010 |
| ____ CO | -0.00277 | -6.68 | 3.480 | -0.00284 | -0.00280 | -0.00266 |
| ____ CR | 0.00004 | -12.07 | 1308.572 | 0.00017 | 0.00044 | -0.00050 |
| ____ CU | -0.00204 | -12.59 | 19.188 | -0.00166 | -0.00244 | -0.00201 |
| ____ FE | 0.23442 | 47.76 | 167.598 | -0.00268 | 0.68793 | 0.01802 |
| ____ K | 0.06784 | 74.38 | 102.909 | 0.09000 | 0.12389 | -0.01036 |
| ____ LI | 0.00217 | 4.35 | 19.419 | 0.00178 | 0.00212 | 0.00262 |
| ____ MG | 0.55271 | 740.70 | 164.130 | 0.01146 | 1.60000 | 0.04665 |
| ____ MN | 0.00027 | 5.73 | 24.446 | 0.00032 | 0.00019 | 0.00029 |
| ____ MO | -0.00029 | -0.28 | 374.712 | 0.00098 | -0.00101 | -0.00085 |
| ____ NA | 0.03717 | 54.09 | 115.798 | 0.02053 | 0.08605 | 0.00493 |
| ____ NI | -0.00141 | 6.16 | 40.980 | -0.00095 | -0.00206 | -0.00123 |
| ____ P | -0.00306 | 0.53 | 80.972 | -0.00139 | -0.00188 | -0.00590 |
| ____ PB | 0.00125 | -0.26 | 232.219 | -0.00048 | 0.00460 | -0.00037 |
| ____ S | -0.00061 | 0.12 | 725.359 | 0.00140 | 0.00243 | -0.00564 |
| ____ SB | -0.00377 | 2.24 | 130.735 | -0.00695 | -0.00624 | 0.00190 |
| ____ SE | 0.01104 | -0.71 | 100.387 | -0.00176 | 0.01746 | 0.01741 |
| ____ SI | 0.04715 | 5.84 | 87.603 | 0.01902 | 0.09456 | 0.02785 |
| ____ SN | 0.00065 | -0.14 | 424.102 | 0.00336 | 0.00078 | -0.00218 |
| ____ SR | 0.00003 | 18.01 | 46.652 | 0.00004 | 0.00004 | 0.00001 |
| ____ TI | -0.00011 | 61.32 | 24.878 | -0.00011 | -0.00008 | -0.00014 |
| ____ TL | 0.00297 | 0.15 | 360.345 | -0.00551 | 0.01498 | -0.00057 |
| ____ V | 0.00032 | -12.49 | 34.699 | 0.00044 | 0.00030 | 0.00022 |
| ____ Y1 | 4873.86226 | 4 873.86 | 0.702 | 4902.16778 | 4835.80735 | 4883.61164 |
| ____ Y2A | 195698.28223 | 195 698.28 | 0.659 | 195506.20886 | 197073.23712 | 194515.40072 |
| ____ Y2R | 10345.50540 | 10 345.51 | 2.056 | 10284.43114 | 10582.05307 | 10170.03199 |
| ____ ZN | -0.00042 | 5.55 | 38.845 | -0.00049 | -0.00052 | -0.00023 |
| ____ ZR | -0.00242 | -20.33 | 8.394 | -0.00220 | -0.00247 | -0.00260 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 13 Date/Time: 08/02/2017 09:50

Sample Number: **LCSW** Class: **** Batch: 172131063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.07921 | 254.53 | 0.151 | 0.07926 | 0.07907 | 0.07929 |
| ____ AL | 2.00866 | 219.80 | 0.890 | 2.01118 | 2.02515 | 1.98965 |
| ____ AS | 0.15807 | 10.51 | 9.314 | 0.16480 | 0.14118 | 0.16822 |
| ____ B | 1.88952 | 13 311.45 | 0.286 | 1.88610 | 1.88670 | 1.89574 |
| ____ BA | 2.05218 | 927 370.22 | 0.678 | 2.05167 | 2.03852 | 2.06635 |
| ____ BE | 0.04817 | 21 659.64 | 0.350 | 0.04809 | 0.04805 | 0.04836 |
| ____ CA | 4.03895 | 3 179.92 | 0.600 | 4.01475 | 4.03888 | 4.06323 |
| ____ CD | 0.05074 | 358.75 | 0.484 | 0.05090 | 0.05046 | 0.05087 |
| ____ CO | 0.50924 | 1 898.71 | 0.126 | 0.50905 | 0.50996 | 0.50872 |
| ____ CR | 0.20080 | 1 665.96 | 0.300 | 0.20026 | 0.20068 | 0.20145 |
| ____ CU | 0.25558 | 3 072.67 | 0.286 | 0.25613 | 0.25475 | 0.25586 |
| ____ FE | 1.01601 | 178.74 | 0.522 | 1.02076 | 1.01700 | 1.01029 |
| ____ K | 10.12738 | 4 307.14 | 0.225 | 10.10127 | 10.13770 | 10.14316 |
| ____ LI | 1.01612 | 8 697.66 | 0.512 | 1.01563 | 1.01117 | 1.02155 |
| ____ MG | 2.07130 | 2 673.17 | 0.870 | 2.06292 | 2.05900 | 2.09199 |
| ____ MN | 0.51502 | 29 231.95 | 0.233 | 0.51479 | 0.51396 | 0.51633 |
| ____ MO | 2.05787 | 1 954.27 | 0.160 | 2.05430 | 2.06081 | 2.05849 |
| ____ NA | 10.06728 | 14 017.97 | 0.547 | 10.11191 | 10.00570 | 10.08423 |
| ____ NI | 0.51823 | 912.35 | 0.399 | 0.51603 | 0.51850 | 0.52015 |
| ____ P | 0.99655 | 104.40 | 0.741 | 1.00277 | 0.99849 | 0.98838 |
| ____ PB | 0.15281 | 88.79 | 1.116 | 0.15085 | 0.15401 | 0.15355 |
| ____ S | 0.99715 | 61.56 | 2.044 | 0.98959 | 0.98163 | 1.02024 |
| ____ SB | 0.46991 | 96.77 | 0.805 | 0.46563 | 0.47280 | 0.47129 |
| ____ SE | 0.16691 | 13.75 | 8.866 | 0.16945 | 0.18028 | 0.15101 |
| ____ SI | 1.00927 | 110.48 | 1.487 | 0.99310 | 1.01193 | 1.02277 |
| ____ SN | 3.96664 | 1 222.90 | 0.333 | 3.95284 | 3.97918 | 3.96789 |
| ____ SR | 1.00409 | 687 771.22 | 0.125 | 1.00272 | 1.00434 | 1.00520 |
| ____ TI | 1.01351 | 47 215.54 | 0.207 | 1.01230 | 1.01229 | 1.01593 |
| ____ TL | 0.17824 | 12.60 | 1.651 | 0.18163 | 0.17667 | 0.17642 |
| ____ V | 0.52025 | 7 797.67 | 0.158 | 0.51945 | 0.52022 | 0.52109 |
| ____ Y1 | 4797.30266 | 4 797.30 | 0.244 | 4793.18404 | 4788.18899 | 4810.53495 |
| ____ Y2A | 194922.66482 | 194 922.66 | 0.432 | 195413.16603 | 195404.51910 | 193950.30932 |
| ____ Y2R | 10151.14117 | 10 151.14 | 0.571 | 10105.45319 | 10216.40188 | 10131.56843 |
| ____ ZN | 0.49852 | 1 741.50 | 0.416 | 0.49623 | 0.50027 | 0.49905 |
| ____ ZR | 1.02492 | 2 044.26 | 0.710 | 1.02497 | 1.01761 | 1.03217 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 14 Date/Time: 08/02/2017 09:53

Sample Number: **LCSWD** Class: **** Batch: 172131063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.07912 | 251.69 | 1.118 | 0.07938 | 0.07984 | 0.07813 |
| ____ AL | 2.04597 | 222.43 | 4.341 | 2.01557 | 1.97636 | 2.14598 |
| ____ AS | 0.16834 | 11.30 | 0.678 | 0.16715 | 0.16843 | 0.16943 |
| ____ B | 1.92722 | 13 434.36 | 0.820 | 1.90960 | 1.94014 | 1.93193 |
| ____ BA | 2.03573 | 910 288.35 | 0.773 | 2.03204 | 2.02217 | 2.05299 |
| ____ BE | 0.04901 | 21 802.57 | 0.746 | 0.04864 | 0.04937 | 0.04901 |
| ____ CA | 4.10985 | 3 218.10 | 0.915 | 4.09848 | 4.07924 | 4.15182 |
| ____ CD | 0.05128 | 361.98 | 0.438 | 0.05137 | 0.05144 | 0.05103 |
| ____ CO | 0.51242 | 1 907.25 | 0.268 | 0.51209 | 0.51393 | 0.51124 |
| ____ CR | 0.20150 | 1 654.28 | 0.284 | 0.20087 | 0.20166 | 0.20198 |
| ____ CU | 0.25976 | 3 090.03 | 0.168 | 0.25958 | 0.26026 | 0.25944 |
| ____ FE | 1.03936 | 181.77 | 0.806 | 1.04367 | 1.02971 | 1.04469 |
| ____ K | 10.33943 | 4 373.97 | 0.925 | 10.33484 | 10.24615 | 10.43729 |
| ____ LI | 1.02458 | 8 725.61 | 0.869 | 1.02320 | 1.01643 | 1.03409 |
| ____ MG | 2.10630 | 2 704.55 | 0.743 | 2.10496 | 2.09135 | 2.12259 |
| ____ MN | 0.52225 | 29 330.31 | 0.676 | 0.51831 | 0.52511 | 0.52333 |
| ____ MO | 2.07439 | 1 966.47 | 0.195 | 2.07259 | 2.07901 | 2.07156 |
| ____ NA | 10.12302 | 14 024.19 | 0.699 | 10.14288 | 10.04442 | 10.18174 |
| ____ NI | 0.52005 | 913.91 | 0.428 | 0.52032 | 0.52213 | 0.51770 |
| ____ P | 1.00101 | 104.68 | 1.346 | 0.98550 | 1.00974 | 1.00780 |
| ____ PB | 0.15207 | 88.17 | 0.232 | 0.15247 | 0.15193 | 0.15181 |
| ____ S | 1.00006 | 61.63 | 0.470 | 1.00074 | 1.00439 | 0.99506 |
| ____ SB | 0.46671 | 95.83 | 0.562 | 0.46891 | 0.46381 | 0.46742 |
| ____ SE | 0.17239 | 14.24 | 3.374 | 0.16715 | 0.17865 | 0.17138 |
| ____ SI | 1.02023 | 111.08 | 1.259 | 1.01258 | 1.01304 | 1.03506 |
| ____ SN | 3.99413 | 1 229.19 | 0.335 | 3.99530 | 4.00689 | 3.98020 |
| ____ SR | 1.01459 | 687 661.62 | 0.458 | 1.00984 | 1.01914 | 1.01480 |
| ____ TI | 1.03271 | 47 602.31 | 0.813 | 1.02371 | 1.04032 | 1.03410 |
| ____ TL | 0.17211 | 12.06 | 4.085 | 0.16400 | 0.17644 | 0.17588 |
| ____ V | 0.52934 | 7 856.79 | 0.651 | 0.52543 | 0.53195 | 0.53064 |
| ____ Y1 | 4788.84656 | 4 788.85 | 0.642 | 4775.56976 | 4766.97033 | 4823.99960 |
| ____ Y2A | 192875.35050 | 192 875.35 | 0.536 | 194065.37886 | 192371.51047 | 192189.16217 |
| ____ Y2R | 10099.93815 | 10 099.94 | 0.886 | 10088.05173 | 10194.73316 | 10017.02956 |
| ____ ZN | 0.50272 | 1 752.95 | 0.370 | 0.50249 | 0.50468 | 0.50099 |
| ____ ZR | 1.04152 | 2 067.08 | 0.841 | 1.04198 | 1.03254 | 1.05005 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 15 Date/Time: 08/02/2017 09:56

Sample Number: **9100479** Class: U*** Batch: 172131063502

Initial Vol: 25.00 Final Vol: 25.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00067 | -7.15 | 422.727 | -0.00110 | -0.00082 | 0.00392 |
| ____ AL | -0.04931 | 7.72 | 72.728 | -0.03141 | -0.09060 | -0.02592 |
| ____ AS | -0.00846 | -2.94 | 64.193 | -0.00341 | -0.01420 | -0.00776 |
| ____ B | 0.09520 | 626.57 | 1.890 | 0.09511 | 0.09344 | 0.09704 |
| ____ BA | 0.06958 | 29 722.09 | 1.553 | 0.06842 | 0.06976 | 0.07056 |
| ____ BE | -0.00106 | -288.54 | 1.731 | -0.00105 | -0.00105 | -0.00108 |
| ____ CA | 264.63551 | 196 208.32 | 0.852 | 267.20293 | 262.97557 | 263.72804 |
| ____ CD | 0.00019 | -3.58 | 132.577 | 0.00039 | -0.00009 | 0.00027 |
| ____ CO | -0.00166 | -2.33 | 28.654 | -0.00220 | -0.00130 | -0.00149 |
| ____ CR | 0.00054 | -7.31 | 151.291 | 0.00127 | 0.00070 | -0.00034 |
| ____ CU | 0.01357 | 232.82 | 1.146 | 0.01346 | 0.01375 | 0.01351 |
| ____ FE | -0.00287 | 5.51 | 385.371 | 0.00046 | 0.00614 | -0.01520 |
| ____ K | 5.50240 | 2 295.91 | 0.277 | 5.48561 | 5.51527 | 5.50633 |
| ____ LI | 0.03961 | 316.44 | 4.340 | 0.03886 | 0.03840 | 0.04158 |
| ____ MG | 37.37194 | 46 209.38 | 0.931 | 37.76188 | 37.09370 | 37.26024 |
| ____ MN | 0.99888 | 53 368.23 | 1.488 | 0.98219 | 1.00376 | 1.01069 |
| ____ MO | 0.00115 | 1.02 | 114.207 | 0.00226 | 0.00147 | -0.00030 |
| ____ NA | 64.77829 | 87 728.24 | 1.095 | 65.58255 | 64.51085 | 64.24148 |
| ____ NI | 0.00584 | 16.60 | 6.899 | 0.00628 | 0.00550 | 0.00572 |
| ____ P | 0.00508 | 1.28 | 105.205 | 0.00572 | -0.00055 | 0.01009 |
| ____ PB | 0.00192 | 0.10 | 16.392 | 0.00177 | 0.00228 | 0.00170 |
| ____ S | 138.52483 | 7 917.40 | 0.275 | 138.38139 | 138.23636 | 138.95675 |
| ____ SB | 0.00285 | 3.41 | 223.681 | 0.00925 | 0.00281 | -0.00351 |
| ____ SE | 0.03519 | 1.45 | 11.376 | 0.03982 | 0.03291 | 0.03285 |
| ____ SI | 17.54178 | 1 706.73 | 0.837 | 17.71039 | 17.47205 | 17.44291 |
| ____ SN | 0.00067 | -0.13 | 447.042 | -0.00219 | 0.00374 | 0.00045 |
| ____ SR | 1.35625 | 874 316.42 | 1.831 | 1.32812 | 1.36551 | 1.37512 |
| ____ TI | 0.00011 | 66.72 | 205.932 | -0.00006 | 0.00036 | 0.00003 |
| ____ TL | -0.00153 | -0.22 | 563.321 | 0.00830 | -0.00517 | -0.00771 |
| ____ V | 0.00186 | 11.34 | 10.048 | 0.00171 | 0.00180 | 0.00206 |
| ____ Y1 | 4481.36106 | 4 481.36 | 0.236 | 4481.47896 | 4470.73882 | 4491.86539 |
| ____ Y2A | 183486.63456 | 183 486.63 | 1.717 | 186805.87500 | 183117.45368 | 180536.57500 |
| ____ Y2R | 9874.15991 | 9 874.16 | 1.454 | 9725.11470 | 9885.78402 | 10011.58099 |
| ____ ZN | 0.11981 | 393.30 | 0.710 | 0.11891 | 0.11991 | 0.12060 |
| ____ ZR | -0.00432 | -23.12 | 12.933 | -0.00436 | -0.00374 | -0.00486 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 16 Date/Time: 08/02/2017 09:59

Sample Number: **9100479** Class: UP** Batch: 172131063502

Initial Vol: 25.00 Final Vol: 25.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04178 | 126.15 | 9.934 | 0.03834 | 0.04639 | 0.04062 |
| ____ AL | 0.97159 | 108.53 | 2.294 | 0.94766 | 0.99175 | 0.97537 |
| ____ AS | 0.52769 | 37.22 | 1.564 | 0.52883 | 0.53531 | 0.51892 |
| ____ B | 0.28801 | 1 911.94 | 0.554 | 0.28960 | 0.28641 | 0.28802 |
| ____ BA | 0.11732 | 50 244.81 | 0.613 | 0.11771 | 0.11777 | 0.11649 |
| ____ BE | 0.01859 | 7 970.07 | 0.310 | 0.01865 | 0.01854 | 0.01857 |
| ____ CA | 261.29308 | 193 345.96 | 0.448 | 259.95181 | 262.09893 | 261.82850 |
| ____ CD | 0.04836 | 324.59 | 0.902 | 0.04840 | 0.04878 | 0.04791 |
| ____ CO | 0.09414 | 335.84 | 1.657 | 0.09321 | 0.09594 | 0.09327 |
| ____ CR | 0.19822 | 1 551.06 | 0.199 | 0.19861 | 0.19823 | 0.19782 |
| ____ CU | 0.51768 | 6 021.48 | 0.328 | 0.51957 | 0.51626 | 0.51723 |
| ____ FE | 0.49266 | 87.21 | 1.899 | 0.48457 | 0.49050 | 0.50290 |
| ____ K | 7.49551 | 3 105.04 | 0.691 | 7.44620 | 7.49092 | 7.54942 |
| ____ LI | 1.03841 | 8 627.07 | 0.531 | 1.03213 | 1.04248 | 1.04061 |
| ____ MG | 37.66820 | 46 469.73 | 0.360 | 37.51266 | 37.76067 | 37.73127 |
| ____ MN | 1.02679 | 54 979.10 | 0.438 | 1.02677 | 1.03129 | 1.02230 |
| ____ MO | 0.20387 | 184.03 | 0.926 | 0.20297 | 0.20604 | 0.20261 |
| ____ NA | 65.70795 | 88 799.55 | 0.493 | 65.33356 | 65.89147 | 65.89883 |
| ____ NI | 0.14868 | 253.19 | 0.372 | 0.14910 | 0.14889 | 0.14806 |
| ____ P | 1.04654 | 104.16 | 1.793 | 1.04932 | 1.06376 | 1.02654 |
| ____ PB | 0.47859 | 274.78 | 2.345 | 0.48431 | 0.48579 | 0.46565 |
| ____ S | 135.88026 | 7 900.84 | 2.035 | 136.05414 | 138.55428 | 133.03236 |
| ____ SB | 0.39996 | 85.06 | 2.218 | 0.40237 | 0.40738 | 0.39014 |
| ____ SE | 0.78205 | 67.27 | 3.575 | 0.77315 | 0.81337 | 0.75962 |
| ____ SI | 18.39652 | 1 786.95 | 0.622 | 18.29900 | 18.52253 | 18.36803 |
| ____ SN | 0.58716 | 171.76 | 1.761 | 0.58180 | 0.59908 | 0.58060 |
| ____ SR | 1.33924 | 865 252.96 | 0.327 | 1.33440 | 1.34292 | 1.34039 |
| ____ TI | 0.10324 | 4 600.43 | 0.188 | 0.10342 | 0.10326 | 0.10303 |
| ____ TL | 0.90537 | 71.12 | 2.179 | 0.90648 | 0.92451 | 0.88511 |
| ____ V | 0.10641 | 1 554.77 | 0.351 | 0.10625 | 0.10615 | 0.10684 |
| ____ Y1 | 4560.29116 | 4 560.29 | 2.058 | 4548.51889 | 4472.89652 | 4659.45805 |
| ____ Y2A | 183857.61987 | 183 857.62 | 0.911 | 185495.62675 | 182146.61635 | 183930.61652 |
| ____ Y2R | 9852.39133 | 9 852.39 | 0.434 | 9876.12478 | 9878.07254 | 9802.97667 |
| ____ ZN | 0.23402 | 780.14 | 1.345 | 0.23334 | 0.23745 | 0.23127 |
| ____ ZR | 1.01302 | 1 960.94 | 0.749 | 1.00504 | 1.02014 | 1.01389 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 17 Date/Time: 08/02/2017 10:02

Sample Number: **9100479** Class: UL** Batch: 172131063502

Initial Vol: 25.00 Final Vol: 25.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00083 | -7.43 | 234.004 | -0.00016 | 0.00306 | -0.00042 |
| ____ AL | -0.07554 | 5.15 | 69.507 | -0.10965 | -0.10190 | -0.01508 |
| ____ AS | 0.00657 | -1.94 | 62.185 | 0.00628 | 0.00264 | 0.01080 |
| ____ B | 0.01999 | 132.54 | 0.700 | 0.01995 | 0.02014 | 0.01987 |
| ____ BA | 0.01340 | 6 047.91 | 0.968 | 0.01352 | 0.01326 | 0.01342 |
| ____ BE | -0.00101 | -276.03 | 0.574 | -0.00101 | -0.00100 | -0.00101 |
| ____ CA | 51.95532 | 38 991.22 | 0.443 | 51.97184 | 51.71733 | 52.17680 |
| ____ CD | -0.00010 | -5.83 | 131.745 | -0.00024 | 0.00002 | -0.00008 |
| ____ CO | -0.00272 | -6.32 | 15.560 | -0.00314 | -0.00272 | -0.00229 |
| ____ CR | 0.00018 | -10.54 | 293.601 | -0.00012 | 0.00080 | -0.00014 |
| ____ CU | 0.00042 | 30.12 | 304.169 | 0.00112 | -0.00105 | 0.00118 |
| ____ FE | -0.00942 | 4.45 | 160.950 | -0.01873 | -0.01759 | 0.00807 |
| ____ K | 1.07604 | 483.86 | 2.280 | 1.10019 | 1.07677 | 1.05114 |
| ____ LI | 0.00767 | 50.00 | 28.844 | 0.00856 | 0.00515 | 0.00930 |
| ____ MG | 7.52148 | 9 434.73 | 0.689 | 7.51266 | 7.47463 | 7.57714 |
| ____ MN | 0.20137 | 11 145.13 | 0.864 | 0.20222 | 0.19937 | 0.20251 |
| ____ MO | -0.00020 | -0.19 | 246.611 | -0.00070 | -0.00018 | 0.00029 |
| ____ NA | 12.68151 | 17 191.80 | 0.227 | 12.65615 | 12.67561 | 12.71276 |
| ____ NI | 0.00052 | 9.13 | 139.960 | 0.00042 | -0.00015 | 0.00129 |
| ____ P | 0.00484 | 1.32 | 134.437 | 0.00046 | 0.00174 | 0.01233 |
| ____ PB | -0.00105 | -1.67 | 164.807 | 0.00078 | -0.00267 | -0.00126 |
| ____ S | 26.53385 | 1 602.74 | 0.277 | 26.50128 | 26.48233 | 26.61796 |
| ____ SB | -0.00001 | 2.99 | 4522.758 | 0.00042 | 0.00007 | -0.00053 |
| ____ SE | 0.02538 | 0.63 | 26.564 | 0.03297 | 0.02010 | 0.02305 |
| ____ SI | 3.38914 | 330.82 | 0.214 | 3.38326 | 3.38689 | 3.39726 |
| ____ SN | -0.00153 | -0.80 | 189.143 | -0.00465 | -0.00096 | 0.00104 |
| ____ SR | 0.26747 | 178 743.25 | 0.584 | 0.26807 | 0.26570 | 0.26864 |
| ____ TI | 0.00118 | 117.86 | 8.982 | 0.00124 | 0.00106 | 0.00125 |
| ____ TL | 0.00086 | -0.03 | 498.448 | 0.00215 | 0.00436 | -0.00393 |
| ____ V | 0.00045 | -10.08 | 52.727 | 0.00060 | 0.00057 | 0.00018 |
| ____ Y1 | 4735.77148 | 4 735.77 | 0.586 | 4756.02840 | 4747.14529 | 4704.14076 |
| ____ Y2A | 190175.68653 | 190 175.69 | 0.618 | 189449.73097 | 191532.11216 | 189545.21648 |
| ____ Y2R | 9882.88835 | 9 882.89 | 0.404 | 9845.28566 | 9878.61849 | 9924.76091 |
| ____ ZN | 0.02254 | 83.67 | 1.159 | 0.02277 | 0.02259 | 0.02226 |
| ____ ZR | -0.00522 | -24.91 | 37.373 | -0.00346 | -0.00732 | -0.00489 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 18 Date/Time: 08/02/2017 10:05

Sample Number: **9100483** Class: **** Batch: 172131063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00071 | -8.28 | 320.921 | -0.00045 | -0.00076 | 0.00335 |
| ____ AL | 0.20706 | 33.62 | 21.618 | 0.15621 | 0.22443 | 0.24053 |
| ____ AS | 0.01019 | -1.63 | 77.353 | 0.00935 | 0.00276 | 0.01846 |
| ____ B | 0.04479 | 304.23 | 1.987 | 0.04562 | 0.04385 | 0.04492 |
| ____ BA | 0.14381 | 63 184.54 | 0.097 | 0.14366 | 0.14384 | 0.14394 |
| ____ BE | -0.00100 | -269.21 | 3.422 | -0.00103 | -0.00099 | -0.00097 |
| ____ CA | 58.19112 | 44 400.51 | 0.282 | 58.00845 | 58.23850 | 58.32641 |
| ____ CD | -0.00012 | -5.71 | 148.032 | -0.00023 | 0.00009 | -0.00024 |
| ____ CO | -0.00304 | -7.23 | 11.271 | -0.00265 | -0.00319 | -0.00328 |
| ____ CR | 0.00260 | 9.12 | 15.065 | 0.00287 | 0.00215 | 0.00278 |
| ____ CU | -0.00124 | 11.49 | 75.751 | -0.00229 | -0.00048 | -0.00095 |
| ____ FE | 0.46208 | 83.84 | 2.969 | 0.47579 | 0.44835 | 0.46210 |
| ____ K | 3.74541 | 1 604.76 | 3.579 | 3.59344 | 3.79587 | 3.84691 |
| ____ LI | 0.02354 | 185.75 | 2.079 | 0.02310 | 0.02407 | 0.02346 |
| ____ MG | 8.56862 | 10 927.52 | 1.209 | 8.45578 | 8.59074 | 8.65936 |
| ____ MN | 0.09861 | 5 424.14 | 0.800 | 0.09952 | 0.09825 | 0.09807 |
| ____ MO | 0.00533 | 4.89 | 5.455 | 0.00500 | 0.00554 | 0.00546 |
| ____ NA | 27.05162 | 37 301.76 | 0.405 | 26.96951 | 27.00940 | 27.17594 |
| ____ NI | 0.00193 | 10.58 | 51.144 | 0.00150 | 0.00306 | 0.00123 |
| ____ P | 0.00381 | 1.19 | 177.776 | 0.00066 | -0.00082 | 0.01158 |
| ____ PB | 0.00281 | 0.64 | 143.645 | 0.00214 | -0.00085 | 0.00714 |
| ____ S | 20.74973 | 1 226.68 | 0.360 | 20.66343 | 20.79301 | 20.79274 |
| ____ SB | -0.00123 | 2.66 | 484.686 | 0.00480 | -0.00708 | -0.00140 |
| ____ SE | 0.02162 | 0.28 | 84.759 | 0.02145 | 0.04003 | 0.00338 |
| ____ SI | 18.17544 | 1 800.39 | 1.530 | 17.85779 | 18.29353 | 18.37499 |
| ____ SN | 0.00276 | 0.49 | 13.326 | 0.00314 | 0.00271 | 0.00241 |
| ____ SR | 0.39277 | 261 065.18 | 0.504 | 0.39478 | 0.39082 | 0.39270 |
| ____ TI | 0.01360 | 677.82 | 8.392 | 0.01491 | 0.01306 | 0.01283 |
| ____ TL | -0.00709 | -0.66 | 40.795 | -0.00378 | -0.00915 | -0.00832 |
| ____ V | 0.00500 | 60.12 | 10.985 | 0.00543 | 0.00517 | 0.00438 |
| ____ Y1 | 4634.80568 | 4 634.81 | 0.340 | 4646.04540 | 4641.59984 | 4616.77181 |
| ____ Y2A | 189144.33739 | 189 144.34 | 0.911 | 191123.25558 | 188339.86716 | 187969.88942 |
| ____ Y2R | 10052.77286 | 10 052.77 | 0.639 | 10110.53472 | 10064.11853 | 9983.66534 |
| ____ ZN | 0.01000 | 40.18 | 2.544 | 0.01027 | 0.00995 | 0.00977 |
| ____ ZR | -0.00240 | -19.71 | 41.890 | -0.00196 | -0.00169 | -0.00355 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 19 Date/Time: 08/02/2017 10:08

Sample Number: **9100487** Class: **** Batch: 172131063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00012 | -12.08 | 4238.494 | -0.00543 | 0.00390 | 0.00187 |
| ____ AL | 0.87208 | 97.41 | 1.914 | 0.85336 | 0.88540 | 0.87748 |
| ____ AS | 0.01528 | -1.30 | 40.671 | 0.01968 | 0.00817 | 0.01800 |
| ____ B | 0.04451 | 312.71 | 2.241 | 0.04409 | 0.04379 | 0.04565 |
| ____ BA | 0.15364 | 67 025.24 | 0.910 | 0.15309 | 0.15260 | 0.15523 |
| ____ BE | -0.00100 | -268.56 | 0.901 | -0.00100 | -0.00099 | -0.00101 |
| ____ CA | 51.44907 | 38 064.06 | 0.968 | 50.87393 | 51.74126 | 51.73203 |
| ____ CD | -0.00006 | -4.49 | 308.863 | 0.00012 | -0.00025 | -0.00005 |
| ____ CO | -0.00273 | -5.95 | 2.134 | -0.00273 | -0.00267 | -0.00279 |
| ____ CR | 0.00553 | 32.69 | 18.013 | 0.00543 | 0.00658 | 0.00459 |
| ____ CU | 0.00021 | 26.09 | 133.946 | 0.00006 | 0.00052 | 0.00004 |
| ____ FE | 2.58226 | 426.74 | 1.046 | 2.56085 | 2.57330 | 2.61261 |
| ____ K | 3.13918 | 1 310.52 | 1.109 | 3.10470 | 3.13850 | 3.17433 |
| ____ LI | 0.01572 | 116.27 | 5.376 | 0.01521 | 0.01525 | 0.01669 |
| ____ MG | 7.31858 | 9 050.51 | 0.871 | 7.24998 | 7.32984 | 7.37593 |
| ____ MN | 0.05086 | 2 773.68 | 0.773 | 0.05107 | 0.05040 | 0.05110 |
| ____ MO | 0.00733 | 6.78 | 11.285 | 0.00638 | 0.00792 | 0.00768 |
| ____ NA | 24.12259 | 32 237.17 | 0.741 | 23.91619 | 24.22941 | 24.22218 |
| ____ NI | 0.00195 | 10.72 | 55.997 | 0.00257 | 0.00069 | 0.00259 |
| ____ P | 0.05081 | 5.96 | 13.599 | 0.04283 | 0.05488 | 0.05472 |
| ____ PB | 0.00289 | 0.76 | 14.544 | 0.00241 | 0.00303 | 0.00321 |
| ____ S | 19.93065 | 1 188.05 | 0.652 | 19.84272 | 19.86940 | 20.07983 |
| ____ SB | 0.00418 | 3.89 | 76.272 | 0.00549 | 0.00055 | 0.00651 |
| ____ SE | 0.02494 | 0.58 | 38.498 | 0.02714 | 0.03325 | 0.01443 |
| ____ SI | 17.74198 | 1 703.36 | 1.050 | 17.56950 | 17.71690 | 17.93953 |
| ____ SN | 0.00107 | -0.01 | 108.342 | 0.00143 | -0.00023 | 0.00201 |
| ____ SR | 0.33863 | 223 523.64 | 0.555 | 0.33789 | 0.33724 | 0.34077 |
| ____ TI | 0.04418 | 2 042.86 | 4.311 | 0.04381 | 0.04249 | 0.04624 |
| ____ TL | 0.00029 | -0.06 | 1056.121 | 0.00070 | -0.00299 | 0.00317 |
| ____ V | 0.00527 | 63.65 | 15.660 | 0.00607 | 0.00442 | 0.00531 |
| ____ Y1 | 4673.39120 | 4 673.39 | 0.546 | 4696.43636 | 4677.74023 | 4645.99700 |
| ____ Y2A | 187843.39020 | 187 843.39 | 0.596 | 188779.67500 | 188146.10000 | 186604.39560 |
| ____ Y2R | 9742.91562 | 9 742.92 | 0.668 | 9817.83719 | 9710.57097 | 9700.33871 |
| ____ ZN | 0.01893 | 71.33 | 0.701 | 0.01882 | 0.01908 | 0.01890 |
| ____ ZR | -0.00445 | -23.04 | 40.551 | -0.00271 | -0.00631 | -0.00432 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 20 Date/Time: 08/02/2017 10:11

Sample Number: **9100489** Class: **** Batch: 172131063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00124 | -7.81 | 145.840 | 0.00297 | -0.00063 | 0.00138 |
| ____ AL | 0.52143 | 65.34 | 3.426 | 0.53136 | 0.50080 | 0.53212 |
| ____ AS | 0.01400 | -1.38 | 51.310 | 0.00571 | 0.01804 | 0.01825 |
| ____ B | 0.04282 | 298.75 | 2.177 | 0.04388 | 0.04245 | 0.04213 |
| ____ BA | 0.15086 | 66 411.36 | 0.631 | 0.14977 | 0.15128 | 0.15154 |
| ____ BE | -0.00098 | -263.04 | 3.847 | -0.00094 | -0.00099 | -0.00101 |
| ____ CA | 50.31128 | 38 464.49 | 1.934 | 50.69585 | 49.20482 | 51.03317 |
| ____ CD | 0.00048 | -1.03 | 86.342 | 0.00095 | 0.00034 | 0.00016 |
| ____ CO | -0.00241 | -4.83 | 25.239 | -0.00171 | -0.00278 | -0.00274 |
| ____ CR | 0.00395 | 20.10 | 5.993 | 0.00411 | 0.00406 | 0.00368 |
| ____ CU | 0.00028 | 27.20 | 415.055 | -0.00015 | -0.00060 | 0.00158 |
| ____ FE | 1.69954 | 292.34 | 2.892 | 1.68129 | 1.66214 | 1.75520 |
| ____ K | 2.97623 | 1 286.01 | 2.734 | 3.02311 | 2.88226 | 3.02331 |
| ____ LI | 0.01679 | 128.98 | 3.848 | 0.01659 | 0.01627 | 0.01751 |
| ____ MG | 7.07772 | 9 044.98 | 1.773 | 7.09163 | 6.94582 | 7.19570 |
| ____ MN | 0.03324 | 1 826.04 | 1.135 | 0.03281 | 0.03349 | 0.03343 |
| ____ MO | 0.00668 | 6.14 | 13.725 | 0.00773 | 0.00615 | 0.00614 |
| ____ NA | 23.58401 | 32 565.96 | 1.947 | 23.71763 | 23.07295 | 23.96146 |
| ____ NI | 0.00134 | 9.72 | 160.357 | 0.00378 | -0.00031 | 0.00057 |
| ____ P | 0.02932 | 3.76 | 16.387 | 0.03450 | 0.02845 | 0.02501 |
| ____ PB | 0.00118 | -0.27 | 227.377 | 0.00327 | -0.00184 | 0.00211 |
| ____ S | 19.95542 | 1 179.81 | 0.450 | 19.85695 | 19.97619 | 20.03311 |
| ____ SB | 0.00402 | 3.79 | 88.007 | 0.00027 | 0.00448 | 0.00731 |
| ____ SE | 0.02160 | 0.27 | 55.694 | 0.01594 | 0.03541 | 0.01344 |
| ____ SI | 16.52109 | 1 638.99 | 1.952 | 16.59626 | 16.16765 | 16.79937 |
| ____ SN | 0.00608 | 1.49 | 67.811 | 0.01081 | 0.00331 | 0.00411 |
| ____ SR | 0.33623 | 223 936.75 | 0.762 | 0.33360 | 0.33638 | 0.33872 |
| ____ TI | 0.03003 | 1 421.61 | 3.619 | 0.02878 | 0.03052 | 0.03078 |
| ____ TL | 0.01068 | 0.76 | 75.168 | 0.00300 | 0.01004 | 0.01902 |
| ____ V | 0.00341 | 34.95 | 11.847 | 0.00326 | 0.00311 | 0.00387 |
| ____ Y1 | 4635.29664 | 4 635.30 | 1.613 | 4721.43414 | 4587.28327 | 4597.17252 |
| ____ Y2A | 189534.32440 | 189 534.32 | 0.455 | 190351.03834 | 189619.37950 | 188632.55536 |
| ____ Y2R | 10068.93555 | 10 068.94 | 1.702 | 10009.67113 | 10262.03169 | 9935.10383 |
| ____ ZN | 0.01790 | 67.02 | 4.163 | 0.01876 | 0.01746 | 0.01747 |
| ____ ZR | -0.00368 | -22.29 | 39.830 | -0.00531 | -0.00326 | -0.00247 |

LANCASTER LABORATORIES

Run Name: 1721403T73 Instrument ID: 18255

Tube: 21 Date/Time: 08/02/2017 10:14

Sample Number: **9100491** Class: **** Batch: 172131063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00218 | -3.42 | 84.956 | 0.00118 | 0.00105 | 0.00433 |
| ____ AL | 0.01279 | 13.90 | 302.736 | 0.04466 | 0.02399 | -0.03029 |
| ____ AS | -0.00132 | -2.55 | 264.135 | -0.00206 | 0.00248 | -0.00439 |
| ____ B | 0.00409 | 24.04 | 12.686 | 0.00372 | 0.00468 | 0.00386 |
| ____ BA | 0.00709 | 3 278.98 | 1.636 | 0.00721 | 0.00698 | 0.00707 |
| ____ BE | -0.00099 | -268.60 | 1.339 | -0.00099 | -0.00100 | -0.00098 |
| ____ CA | 0.79883 | 664.33 | 2.506 | 0.78799 | 0.82193 | 0.78657 |
| ____ CD | 0.00008 | -4.54 | 171.450 | 0.00017 | -0.00008 | 0.00014 |
| ____ CO | -0.00299 | -7.29 | 14.766 | -0.00344 | -0.00256 | -0.00298 |
| ____ CR | 0.00367 | 17.97 | 5.193 | 0.00376 | 0.00345 | 0.00380 |
| ____ CU | 0.00373 | 56.71 | 23.274 | 0.00371 | 0.00287 | 0.00461 |
| ____ FE | 0.10346 | 23.17 | 3.980 | 0.09883 | 0.10670 | 0.10486 |
| ____ K | 0.44315 | 225.02 | 2.800 | 0.44370 | 0.45528 | 0.43048 |
| ____ LI | 0.00035 | -11.07 | 63.405 | 0.00050 | 0.00046 | 0.00010 |
| ____ MG | 0.05516 | 66.80 | 3.933 | 0.05279 | 0.05564 | 0.05705 |
| ____ MN | 0.00658 | 357.13 | 0.548 | 0.00661 | 0.00660 | 0.00654 |
| ____ MO | -0.00131 | -1.22 | 18.427 | -0.00145 | -0.00145 | -0.00103 |
| ____ NA | 1.23721 | 1 681.24 | 2.008 | 1.20861 | 1.24951 | 1.25351 |
| ____ NI | 0.00299 | 13.52 | 27.378 | 0.00227 | 0.00282 | 0.00388 |
| ____ P | 0.01456 | 2.32 | 14.191 | 0.01690 | 0.01376 | 0.01301 |
| ____ PB | -0.00052 | -1.34 | 252.368 | 0.00072 | -0.00188 | -0.00039 |
| ____ S | 0.09785 | 6.06 | 19.664 | 0.07961 | 0.09597 | 0.11795 |
| ____ SB | 0.00098 | 3.20 | 326.809 | 0.00290 | 0.00278 | -0.00273 |
| ____ SE | 0.01968 | 0.11 | 31.796 | 0.02321 | 0.02337 | 0.01245 |
| ____ SI | 0.28812 | 29.03 | 11.641 | 0.25333 | 0.32025 | 0.29078 |
| ____ SN | 0.00022 | -0.27 | 497.399 | 0.00100 | -0.00102 | 0.00067 |
| ____ SR | 0.00295 | 1 978.33 | 0.526 | 0.00294 | 0.00294 | 0.00297 |
| ____ TI | 0.00378 | 237.05 | 26.669 | 0.00326 | 0.00494 | 0.00313 |
| ____ TL | -0.00337 | -0.37 | 136.966 | -0.00652 | 0.00193 | -0.00552 |
| ____ V | 0.00030 | -12.08 | 40.453 | 0.00042 | 0.00018 | 0.00031 |
| ____ Y1 | 4733.94545 | 4 733.95 | 0.416 | 4722.59533 | 4756.69433 | 4722.54669 |
| ____ Y2A | 191013.66981 | 191 013.67 | 0.318 | 191649.40179 | 190952.24551 | 190439.36213 |
| ____ Y2R | 9904.74036 | 9 904.74 | 0.581 | 9971.12500 | 9869.09508 | 9874.00100 |
| ____ ZN | 0.02795 | 102.17 | 0.770 | 0.02814 | 0.02799 | 0.02771 |
| ____ ZR | -0.00321 | -21.02 | 36.799 | -0.00333 | -0.00433 | -0.00197 |

LANCASTER LABORATORIES

Run Name: 1721403T73

Instrument ID: 18255

Tube: 22

Date/Time: 08/02/2017 10:17

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50974 | 1 563.58 | 0.964 | 0.51202 | 0.51310 | 0.50410 |
| ____ AL | 24.50810 | 2 418.29 | 0.603 | 24.34175 | 24.62469 | 24.55785 |
| ____ AS | 0.51204 | 36.16 | 2.774 | 0.52154 | 0.49571 | 0.51886 |
| ____ B | 0.48988 | 3 457.09 | 1.150 | 0.49230 | 0.49391 | 0.48345 |
| ____ BA | 0.50587 | 219 910.50 | 1.614 | 0.50529 | 0.51431 | 0.49801 |
| ____ BE | 0.49137 | 210 473.71 | 1.168 | 0.49464 | 0.49473 | 0.48475 |
| ____ CA | 24.38112 | 18 194.83 | 0.416 | 24.27651 | 24.47902 | 24.38783 |
| ____ CD | 0.50377 | 3 488.82 | 1.981 | 0.51493 | 0.49570 | 0.50067 |
| ____ CO | 0.49692 | 1 785.32 | 1.964 | 0.50737 | 0.48805 | 0.49534 |
| ____ CR | 0.49762 | 3 986.69 | 1.459 | 0.50247 | 0.50110 | 0.48927 |
| ____ CU | 0.50436 | 5 914.03 | 1.007 | 0.50601 | 0.50841 | 0.49866 |
| ____ FE | 24.36183 | 3 982.74 | 0.472 | 24.33602 | 24.26183 | 24.48765 |
| ____ K | 24.11012 | 9 837.67 | 0.517 | 24.02023 | 24.05786 | 24.25229 |
| ____ LI | 0.50785 | 4 195.75 | 0.206 | 0.50706 | 0.50744 | 0.50903 |
| ____ MG | 24.42822 | 30 148.78 | 0.543 | 24.28176 | 24.54042 | 24.46248 |
| ____ MN | 0.50628 | 27 626.37 | 1.304 | 0.50929 | 0.51085 | 0.49871 |
| ____ MO | 0.50782 | 465.60 | 1.764 | 0.51815 | 0.50211 | 0.50321 |
| ____ NA | 24.20897 | 32 534.11 | 0.428 | 24.14363 | 24.15494 | 24.32834 |
| ____ NI | 0.49636 | 840.85 | 1.489 | 0.50446 | 0.48999 | 0.49462 |
| ____ P | 0.50890 | 51.87 | 2.379 | 0.52272 | 0.50017 | 0.50380 |
| ____ PB | 0.49434 | 290.30 | 2.630 | 0.50935 | 0.48667 | 0.48699 |
| ____ S | 25.00434 | 1 477.24 | 1.871 | 25.54117 | 24.68275 | 24.78910 |
| ____ SB | 0.49073 | 106.06 | 3.118 | 0.50711 | 0.47681 | 0.48828 |
| ____ SE | 0.51752 | 44.59 | 1.263 | 0.52178 | 0.51000 | 0.52080 |
| ____ SI | 25.33467 | 2 447.55 | 0.548 | 25.24375 | 25.26566 | 25.49459 |
| ____ SN | 0.49682 | 147.59 | 1.462 | 0.50518 | 0.49330 | 0.49199 |
| ____ SR | 0.50690 | 333 826.69 | 0.565 | 0.50878 | 0.50832 | 0.50361 |
| ____ TI | 0.50887 | 22 942.99 | 1.073 | 0.51110 | 0.51286 | 0.50265 |
| ____ TL | 0.50357 | 38.45 | 0.608 | 0.50631 | 0.50026 | 0.50414 |
| ____ V | 0.51541 | 7 886.47 | 1.209 | 0.51918 | 0.51884 | 0.50822 |
| ____ Y1 | 4632.00648 | 4 632.01 | 0.777 | 4590.47467 | 4654.44256 | 4651.10223 |
| ____ Y2A | 187415.20694 | 187 415.21 | 1.121 | 186146.88745 | 186258.30838 | 189840.42500 |
| ____ Y2R | 9797.31036 | 9 797.31 | 0.542 | 9857.40704 | 9756.61046 | 9777.91359 |
| ____ ZN | 0.49887 | 1 691.02 | 1.895 | 0.50958 | 0.49169 | 0.49533 |
| ____ ZR | 0.50010 | 955.27 | 0.684 | 0.49986 | 0.50364 | 0.49681 |

LANCASTER LABORATORIES

Run Name: 1721403T73

Instrument ID: 18255

Tube: 23

Date/Time: 08/02/2017 10:20

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00029 | -11.16 | 507.331 | -0.00142 | 0.00140 | -0.00086 |
| ____ AL | -0.04198 | 8.32 | 83.468 | -0.06738 | -0.00200 | -0.05657 |
| ____ AS | 0.00434 | -2.08 | 336.623 | -0.01235 | 0.01060 | 0.01476 |
| ____ B | 0.00195 | 8.49 | 57.289 | 0.00126 | 0.00324 | 0.00136 |
| ____ BA | -0.00001 | 134.92 | 208.088 | -0.00004 | -0.00001 | 0.00001 |
| ____ BE | -0.00097 | -260.05 | 1.816 | -0.00097 | -0.00096 | -0.00099 |
| ____ CA | 0.01105 | 69.94 | 681.439 | -0.03241 | 0.09795 | -0.03241 |
| ____ CD | 0.00004 | -4.80 | 438.930 | 0.00023 | -0.00009 | -0.00002 |
| ____ CO | -0.00294 | -7.04 | 7.453 | -0.00318 | -0.00276 | -0.00287 |
| ____ CR | 0.00053 | -7.75 | 55.852 | 0.00019 | 0.00065 | 0.00074 |
| ____ CU | -0.00286 | -21.98 | 6.713 | -0.00284 | -0.00305 | -0.00267 |
| ____ FE | -0.01578 | 3.33 | 180.157 | -0.01512 | 0.01231 | -0.04454 |
| ____ K | 0.03263 | 55.66 | 50.212 | 0.05096 | 0.01942 | 0.02751 |
| ____ LI | 0.00090 | -6.44 | 210.049 | -0.00024 | -0.00014 | 0.00307 |
| ____ MG | 0.01359 | 13.88 | 199.626 | -0.00336 | 0.04489 | -0.00075 |
| ____ MN | 0.00024 | 4.36 | 8.711 | 0.00025 | 0.00026 | 0.00022 |
| ____ MO | -0.00070 | -0.65 | 92.077 | -0.00067 | -0.00007 | -0.00136 |
| ____ NA | 0.04198 | 56.40 | 67.493 | 0.02604 | 0.07469 | 0.02521 |
| ____ NI | -0.00146 | 5.82 | 42.000 | -0.00217 | -0.00106 | -0.00116 |
| ____ P | -0.00539 | 0.27 | 43.580 | -0.00372 | -0.00808 | -0.00437 |
| ____ PB | -0.00243 | -2.46 | 96.787 | -0.00512 | -0.00140 | -0.00077 |
| ____ S | 0.00751 | 0.60 | 81.577 | 0.01354 | 0.00130 | 0.00768 |
| ____ SB | -0.00151 | 2.62 | 352.266 | 0.00462 | -0.00472 | -0.00442 |
| ____ SE | 0.02029 | 0.17 | 63.983 | 0.01182 | 0.01382 | 0.03524 |
| ____ SI | 0.00963 | 1.83 | 208.314 | 0.00297 | 0.03218 | -0.00626 |
| ____ SN | -0.00029 | -0.42 | 526.567 | -0.00143 | -0.00091 | 0.00146 |
| ____ SR | 0.00004 | 25.56 | 41.304 | 0.00003 | 0.00006 | 0.00004 |
| ____ TI | -0.00004 | 61.94 | 46.551 | -0.00006 | -0.00002 | -0.00004 |
| ____ TL | 0.00249 | 0.10 | 292.728 | 0.01057 | 0.00045 | -0.00356 |
| ____ V | 0.00081 | -4.17 | 26.343 | 0.00060 | 0.00103 | 0.00081 |
| ____ Y1 | 4673.13064 | 4 673.13 | 1.159 | 4664.84952 | 4623.60551 | 4730.93691 |
| ____ Y2A | 189677.72401 | 189 677.72 | 0.718 | 190669.75863 | 188125.24920 | 190238.16420 |
| ____ Y2R | 9765.39167 | 9 765.39 | 1.272 | 9868.47500 | 9627.44511 | 9800.25490 |
| ____ ZN | -0.00083 | 3.83 | 42.266 | -0.00050 | -0.00120 | -0.00079 |
| ____ ZR | -0.00615 | -26.38 | 15.885 | -0.00585 | -0.00723 | -0.00535 |

eurofins | Lancaster Laboratories Environmental

# ICP-AES Run Data Report

Reviewed By
Eric L Eby

Reviewed Date
08/02/2017 1:21PM

Data File Name 1721404T73.TXT
Run Name: 1721404T73

Method Reference Name(s):

Verified By:
Deborah A Krady

Verified Date
08/02/2017 1:45PM

Analyst Employee: 420

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 1 Date/Time: 08/02/2017 11:00

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -5.11193 | 234.948 | 0.00112 | -0.00489 | -0.00025 |
| AL | 0.000 | 5.54475 | 57.285 | 0.03853 | 0.03731 | 0.00966 |
| AS | 0.000 | -1.89264 | 40.519 | -0.01122 | -0.02237 | -0.02725 |
| B | 0.000 | -5.19000 | 94.422 | 0.00000 | -0.00005 | -0.00003 |
| BA | 0.000 | 127.94809 | 3.978 | 0.00067 | 0.00064 | 0.00069 |
| BE | 0.000 | -263.95160 | 0.541 | -0.06888 | -0.06902 | -0.06832 |
| CA | 0.000 | 36.82822 | 4.211 | 0.00378 | 0.00363 | 0.00395 |
| CD | 0.000 | -4.38529 | 35.248 | -0.06192 | -0.02916 | -0.05030 |
| CO | 0.000 | -7.40134 | 20.364 | -0.09785 | -0.07274 | -0.06764 |
| CR | 0.000 | -11.67218 | 23.843 | -0.00008 | -0.00005 | -0.00005 |
| CU | 0.000 | -14.23719 | 60.770 | -0.00137 | -0.00588 | -0.00390 |
| FE | 0.000 | 3.68268 | 37.195 | 0.00040 | 0.00023 | 0.00050 |
| K | 0.000 | 51.41207 | 35.159 | 0.36246 | 0.25252 | 0.17776 |
| LI | 0.000 | -0.30271 | 7581.724 | -0.00201 | -0.00016 | 0.00209 |
| MG | 0.000 | -3.31613 | 53.156 | -0.00047 | -0.00013 | -0.00042 |
| MN | 0.000 | 4.95677 | 76.809 | 0.00027 | 0.00226 | 0.00136 |
| MO | 0.000 | -0.32323 | 378.080 | -0.01683 | 0.00997 | -0.00377 |
| NA | 0.000 | -10.75701 | 17.848 | -0.00096 | -0.00133 | -0.00103 |
| NI | 0.000 | 7.79077 | 14.469 | 0.07196 | 0.08260 | 0.09608 |
| P | 0.000 | 1.06295 | 26.819 | 0.00018 | 0.00021 | 0.00030 |
| PB | 0.000 | -1.10541 | 144.058 | -0.00198 | -0.03128 | -0.00197 |
| S | 0.000 | -0.00672 | 7931.133 | -0.00020 | 0.00014 | 0.00006 |
| SB | 0.000 | 1.78951 | 31.708 | 0.00030 | 0.00052 | 0.00033 |
| SE | 0.000 | 0.50535 | 200.040 | 0.01456 | -0.00672 | 0.00862 |
| SI | 0.000 | 1.73696 | 199.035 | 0.00041 | 0.00035 | -0.00023 |
| SN | 0.000 | 0.35320 | 134.634 | -0.00194 | 0.00774 | 0.00549 |
| SR | 0.000 | -3.98449 | 102.647 | -0.00003 | -0.00003 | 0.00000 |
| TI | 0.000 | 53.31020 | 9.545 | 0.01237 | 0.01483 | 0.01446 |
| TL | 0.000 | -0.36972 | 260.161 | -0.00636 | 0.00742 | -0.01314 |
| V | 0.000 | -14.83269 | 8.298 | -0.00403 | -0.00406 | -0.00349 |
| Y1 | 0.000 | 4662.82126 | 0.974 | 4634.32257 | 4715.19048 | 4638.95073 |
| Y2A | 0.000 | 191998.58065 | 0.947 | 194044.40954 | 191388.33400 | 190562.99841 |
| Y2R | 0.000 | 9720.68998 | 0.347 | 9759.65000 | 9702.30000 | 9700.11995 |
| ZN | 0.000 | 4.64197 | 11.910 | 0.04455 | 0.05620 | 0.04847 |
| ZR | 0.000 | -20.31394 | 27.762 | -0.00266 | -0.00150 | -0.00211 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 2 Date/Time: 08/02/2017 11:03

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 4869.22939 | 1.254 | 24.78355 | 24.93887 | 25.38800 |
| CA | 50.000 | 37083.95313 | 1.356 | 3.77450 | 3.79413 | 3.87225 |
| FE | 50.000 | 8017.43746 | 1.256 | 0.81761 | 0.81946 | 0.83639 |
| K | 50.000 | 20272.43871 | 1.342 | 103.51758 | 103.34605 | 105.84948 |
| MG | 50.000 | 60852.51273 | 1.403 | 6.19585 | 6.21959 | 6.35839 |
| NA | 50.000 | 66713.61480 | 1.252 | 6.80567 | 6.81656 | 6.95957 |
| S | 50.000 | 2922.90579 | 0.797 | 0.65006 | 0.64563 | 0.63981 |
| SI | 50.000 | 4702.52138 | 1.227 | 0.47868 | 0.48191 | 0.49018 |
| Y1 | 50.000 | 4530.58631 | 0.642 | 4517.02949 | 4510.75185 | 4563.97760 |
| Y2R | 50.000 | 9725.09155 | 1.169 | 9821.15039 | 9754.53911 | 9599.58517 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 3 Date/Time: 08/02/2017 11:06

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 2905.50935 | 2.405 | 0.77911 | 0.79630 | 0.75892 |
| AS | 1.000 | 73.26036 | 2.452 | 0.81845 | 0.77933 | 0.79754 |
| B | 1.000 | 6862.44834 | 0.852 | 0.03707 | 0.03676 | 0.03644 |
| BA | 1.000 | 432079.66992 | 1.062 | 2.32578 | 2.28595 | 2.33081 |
| BE | 1.000 | 433337.90021 | 0.746 | 115.91171 | 115.25425 | 116.97048 |
| CD | 1.000 | 6940.45057 | 0.789 | 76.22555 | 75.03278 | 75.65157 |
| CO | 1.000 | 3566.65699 | 1.037 | 39.31728 | 38.53605 | 38.75442 |
| CU | 1.000 | 11822.55114 | 0.378 | 3.17768 | 3.16672 | 3.15380 |
| LI | 1.000 | 8336.03589 | 1.458 | 0.85077 | 0.83331 | 0.82727 |
| MN | 1.000 | 55123.11863 | 0.736 | 14.86408 | 14.77417 | 14.64774 |
| NI | 1.000 | 1657.47061 | 0.904 | 18.24567 | 17.93134 | 18.01180 |
| P | 1.000 | 102.37262 | 1.400 | 0.02265 | 0.02203 | 0.02227 |
| PB | 1.000 | 586.58789 | 0.608 | 6.43709 | 6.37432 | 6.36594 |
| SE | 1.000 | 88.47639 | 1.510 | 0.97000 | 0.97483 | 0.94754 |
| SR | 1.000 | 652939.62754 | 2.437 | 3.55095 | 3.54183 | 3.39897 |
| TL | 1.000 | 74.97666 | 0.555 | 0.82217 | 0.81346 | 0.81561 |
| Y1 | 1.000 | 4588.17156 | 0.758 | 4572.05118 | 4628.06439 | 4564.39912 |
| Y2A | 1.000 | 186708.43671 | 0.255 | 186333.25000 | 186547.24665 | 187244.81348 |
| Y2R | 1.000 | 9959.42471 | 1.559 | 9782.47402 | 10073.14759 | 10022.65251 |
| ZN | 1.000 | 3338.26151 | 0.966 | 36.77272 | 36.09459 | 36.27299 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 4 Date/Time: 08/02/2017 11:09

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 8275.55432 | 0.166 | 0.04324 | 0.04310 | 0.04317 |
| MO | 1.000 | 945.47749 | 0.236 | 10.03869 | 10.08542 | 10.05511 |
| SB | 1.000 | 220.94001 | 1.282 | 0.04639 | 0.04759 | 0.04707 |
| SN | 1.000 | 304.49519 | 0.329 | 3.23498 | 3.23240 | 3.25201 |
| TI | 1.000 | 46508.76973 | 0.474 | 12.07772 | 12.12144 | 12.19161 |
| V | 1.000 | 15904.98159 | 0.443 | 4.12989 | 4.14833 | 4.16661 |
| Y1 | 1.000 | 4699.31447 | 0.220 | 4707.31011 | 4703.00170 | 4687.63161 |
| Y2A | 1.000 | 191708.05127 | 0.403 | 192466.01118 | 191735.26179 | 190922.88085 |
| Y2R | 1.000 | 9972.23041 | 0.864 | 9884.96503 | 10057.32500 | 9974.40120 |
| ZR | 1.000 | 1939.01603 | 0.573 | 0.19315 | 0.19503 | 0.19513 |

LANCASTER LABORATORIES

Run Name: 1721404T73

Instrument ID: 18255

Tube: 5

Date/Time: 08/02/2017 11:12

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.61156 | 1 758.14 | 0.201 | 0.61112 | 0.61061 | 0.61294 |
| ____ AL | 30.48080 | 2 984.77 | 0.780 | 30.71874 | 30.24325 | 30.48041 |
| ____ AS | 0.58979 | 42.24 | 3.344 | 0.58232 | 0.61215 | 0.57488 |
| ____ B | 0.56200 | 4 051.30 | 0.771 | 0.55740 | 0.56258 | 0.56601 |
| ____ BA | 0.57847 | 251 004.14 | 0.495 | 0.57604 | 0.57774 | 0.58162 |
| ____ BE | 0.56438 | 245 616.67 | 0.882 | 0.55985 | 0.56359 | 0.56971 |
| ____ CA | 29.93556 | 22 370.86 | 0.919 | 30.18962 | 29.64343 | 29.97364 |
| ____ CD | 0.57417 | 4 041.34 | 1.022 | 0.57773 | 0.57738 | 0.56740 |
| ____ CO | 0.56047 | 2 028.73 | 0.606 | 0.56225 | 0.56261 | 0.55655 |
| ____ CR | 0.56997 | 4 606.15 | 0.776 | 0.56548 | 0.57010 | 0.57432 |
| ____ CU | 0.57757 | 6 838.63 | 1.079 | 0.57202 | 0.57637 | 0.58431 |
| ____ FE | 30.27626 | 4 902.85 | 0.626 | 30.30803 | 30.07273 | 30.44803 |
| ____ K | 30.37683 | 12 410.43 | 0.477 | 30.42073 | 30.21490 | 30.49484 |
| ____ LI | 0.59249 | 4 854.74 | 1.225 | 0.59333 | 0.58484 | 0.59928 |
| ____ MG | 30.40823 | 37 565.87 | 0.977 | 30.66916 | 30.08482 | 30.47071 |
| ____ MN | 0.57613 | 31 873.36 | 0.901 | 0.57104 | 0.57593 | 0.58141 |
| ____ MO | 0.57746 | 539.22 | 0.881 | 0.58304 | 0.57626 | 0.57308 |
| ____ NA | 30.02461 | 40 296.62 | 0.626 | 30.09486 | 29.81169 | 30.16728 |
| ____ NI | 0.57171 | 961.40 | 0.718 | 0.57558 | 0.57215 | 0.56740 |
| ____ P | 0.58417 | 60.95 | 2.327 | 0.57468 | 0.59975 | 0.57809 |
| ____ PB | 0.56920 | 339.45 | 0.827 | 0.56978 | 0.57360 | 0.56423 |
| ____ S | 30.24455 | 1 811.82 | 0.840 | 30.37856 | 30.40360 | 29.95148 |
| ____ SB | 0.57470 | 126.88 | 1.112 | 0.57153 | 0.58206 | 0.57051 |
| ____ SE | 0.57354 | 50.51 | 4.773 | 0.57881 | 0.59789 | 0.54391 |
| ____ SI | 30.63863 | 2 901.79 | 0.742 | 30.70500 | 30.38550 | 30.82540 |
| ____ SN | 0.56600 | 170.00 | 0.928 | 0.56805 | 0.56992 | 0.56004 |
| ____ SR | 0.58756 | 385 093.20 | 1.205 | 0.58016 | 0.58827 | 0.59427 |
| ____ TI | 0.58666 | 26 852.91 | 1.111 | 0.58049 | 0.58601 | 0.59348 |
| ____ TL | 0.58823 | 44.82 | 0.905 | 0.59391 | 0.58336 | 0.58744 |
| ____ V | 0.59364 | 9 225.15 | 0.943 | 0.58904 | 0.59201 | 0.59988 |
| ____ Y1 | 4642.36087 | 4 642.36 | 0.027 | 4642.70573 | 4643.39566 | 4640.98122 |
| ____ Y2A | 187416.76706 | 187 416.77 | 0.814 | 188271.25749 | 188324.10359 | 185654.94012 |
| ____ Y2R | 9782.66416 | 9 782.66 | 0.780 | 9709.39617 | 9861.63208 | 9776.96421 |
| ____ ZN | 0.57020 | 1 938.47 | 0.907 | 0.57260 | 0.57374 | 0.56427 |
| ____ ZR | 0.59851 | 1 131.63 | 1.360 | 0.60128 | 0.58935 | 0.60490 |

LANCASTER LABORATORIES

Run Name: 1721404T73

Instrument ID: 18255

Tube: 6

Date/Time: 08/02/2017 11:15

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00108 | -7.96 | 351.035 | 0.00487 | 0.00111 | -0.00273 |
| ____ AL | 0.01884 | 7.42 | 34.416 | 0.02501 | 0.01209 | 0.01941 |
| ____ AS | 0.01094 | -1.47 | 141.561 | 0.01057 | 0.02661 | -0.00436 |
| ____ B | 0.00191 | 8.26 | 6.975 | 0.00191 | 0.00177 | 0.00204 |
| ____ BA | 0.00003 | 139.42 | 188.381 | -0.00003 | 0.00005 | 0.00007 |
| ____ BE | -0.00094 | -250.06 | 1.345 | -0.00093 | -0.00094 | -0.00096 |
| ____ CA | -0.00028 | 36.89 | 3381.994 | 0.00520 | -0.01139 | 0.00534 |
| ____ CD | 0.00045 | -2.67 | 41.977 | 0.00059 | 0.00023 | 0.00052 |
| ____ CO | -0.00270 | -5.90 | 12.627 | -0.00237 | -0.00269 | -0.00305 |
| ____ CR | 0.00010 | -10.81 | 398.701 | -0.00010 | 0.00055 | -0.00015 |
| ____ CU | -0.00264 | -21.45 | 39.757 | -0.00148 | -0.00352 | -0.00292 |
| ____ FE | 0.00750 | 4.93 | 143.340 | 0.01958 | 0.00396 | -0.00104 |
| ____ K | 0.08388 | 85.90 | 13.658 | 0.07114 | 0.08715 | 0.09335 |
| ____ LI | 0.00046 | -11.30 | 608.508 | -0.00004 | 0.00344 | -0.00204 |
| ____ MG | 0.00134 | -1.62 | 390.493 | -0.00358 | 0.00076 | 0.00685 |
| ____ MN | 0.00029 | 6.05 | 3.222 | 0.00029 | 0.00028 | 0.00029 |
| ____ MO | 0.00019 | -0.16 | 264.999 | -0.00025 | 0.00072 | 0.00008 |
| ____ NA | 0.00707 | -1.34 | 27.931 | 0.00859 | 0.00779 | 0.00484 |
| ____ NI | -0.00070 | 6.66 | 89.663 | -0.00019 | -0.00139 | -0.00051 |
| ____ P | -0.00876 | 0.16 | 80.159 | -0.00353 | -0.01674 | -0.00600 |
| ____ PB | -0.00068 | -1.93 | 254.860 | -0.00233 | 0.00114 | -0.00085 |
| ____ S | 0.00189 | 0.10 | 539.447 | 0.00673 | -0.00982 | 0.00876 |
| ____ SB | 0.00453 | 2.79 | 43.608 | 0.00504 | 0.00235 | 0.00620 |
| ____ SE | 0.01743 | -0.08 | 73.350 | 0.02904 | 0.01954 | 0.00372 |
| ____ SI | 0.01280 | 2.96 | 122.075 | 0.03066 | 0.00164 | 0.00610 |
| ____ SN | 0.00203 | 0.03 | 123.502 | 0.00438 | -0.00060 | 0.00230 |
| ____ SR | 0.00004 | 20.52 | 41.214 | 0.00003 | 0.00002 | 0.00005 |
| ____ TI | 0.00003 | 54.85 | 563.074 | -0.00011 | -0.00002 | 0.00023 |
| ____ TL | 0.00168 | 0.04 | 156.519 | -0.00005 | 0.00472 | 0.00039 |
| ____ V | 0.00054 | -16.18 | 23.209 | 0.00058 | 0.00040 | 0.00064 |
| ____ Y1 | 4688.86797 | 4 688.87 | 1.597 | 4732.42076 | 4731.77882 | 4602.40432 |
| ____ Y2A | 191224.26471 | 191 224.26 | 0.270 | 190915.94355 | 190936.25150 | 191820.59908 |
| ____ Y2R | 9790.47495 | 9 790.47 | 0.266 | 9795.32500 | 9762.32535 | 9813.77449 |
| ____ ZN | -0.00050 | 2.93 | 59.101 | -0.00082 | -0.00045 | -0.00024 |
| ____ ZR | -0.00375 | -23.98 | 34.557 | -0.00474 | -0.00228 | -0.00421 |

LANCASTER LABORATORIES

Run Name: 1721404T73

Instrument ID: 18255

Tube: 7

Date/Time: 08/02/2017 11:18

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01537 | 35.64 | 9.824 | 0.01426 | 0.01709 | 0.01475 |
| ____ AL | 0.48374 | 53.23 | 5.258 | 0.45887 | 0.48263 | 0.50971 |
| ____ AS | 0.05317 | 1.80 | 10.658 | 0.05829 | 0.05413 | 0.04708 |
| ____ B | 0.10525 | 746.84 | 1.087 | 0.10572 | 0.10394 | 0.10608 |
| ____ BA | 0.01109 | 5 106.32 | 0.562 | 0.01113 | 0.01101 | 0.01111 |
| ____ BE | 0.00994 | 4 635.04 | 0.774 | 0.01000 | 0.00985 | 0.00997 |
| ____ CA | 0.46438 | 387.11 | 1.798 | 0.47318 | 0.46337 | 0.45657 |
| ____ CD | 0.01162 | 77.83 | 0.205 | 0.01164 | 0.01163 | 0.01159 |
| ____ CO | 0.00830 | 34.78 | 4.920 | 0.00860 | 0.00784 | 0.00847 |
| ____ CR | 0.03359 | 269.25 | 2.631 | 0.03431 | 0.03260 | 0.03385 |
| ____ CU | 0.02008 | 254.52 | 4.722 | 0.01925 | 0.02111 | 0.01987 |
| ____ FE | 0.45130 | 77.76 | 0.513 | 0.45241 | 0.45286 | 0.44864 |
| ____ K | 1.14595 | 522.10 | 2.600 | 1.17842 | 1.13953 | 1.11988 |
| ____ LI | 0.04681 | 372.21 | 4.358 | 0.04800 | 0.04446 | 0.04798 |
| ____ MG | 0.23426 | 292.50 | 0.978 | 0.23331 | 0.23687 | 0.23259 |
| ____ MN | 0.01198 | 674.17 | 1.227 | 0.01197 | 0.01183 | 0.01212 |
| ____ MO | 0.02254 | 21.21 | 9.147 | 0.02491 | 0.02149 | 0.02121 |
| ____ NA | 2.28459 | 3 081.06 | 0.880 | 2.30351 | 2.28679 | 2.26348 |
| ____ NI | 0.02251 | 46.41 | 5.865 | 0.02162 | 0.02402 | 0.02188 |
| ____ P | 0.21489 | 23.63 | 1.017 | 0.21610 | 0.21621 | 0.21237 |
| ____ PB | 0.03378 | 19.03 | 9.991 | 0.03335 | 0.03734 | 0.03063 |
| ____ S | 1.10558 | 67.76 | 1.230 | 1.10827 | 1.11763 | 1.09084 |
| ____ SB | 0.05333 | 13.70 | 7.725 | 0.05806 | 0.05053 | 0.05140 |
| ____ SE | 0.06578 | 4.42 | 23.464 | 0.06967 | 0.04877 | 0.07890 |
| ____ SI | 0.13192 | 14.43 | 0.431 | 0.13246 | 0.13197 | 0.13132 |
| ____ SN | 0.04519 | 13.34 | 1.777 | 0.04439 | 0.04600 | 0.04517 |
| ____ SR | 0.01120 | 7 574.10 | 0.647 | 0.01125 | 0.01111 | 0.01123 |
| ____ TI | 0.02236 | 1 106.73 | 0.942 | 0.02242 | 0.02213 | 0.02254 |
| ____ TL | 0.07033 | 5.62 | 12.614 | 0.07127 | 0.06103 | 0.07870 |
| ____ V | 0.01180 | 161.29 | 4.470 | 0.01156 | 0.01144 | 0.01241 |
| ____ Y1 | 4750.89789 | 4 750.90 | 0.939 | 4719.58034 | 4731.16154 | 4801.95180 |
| ____ Y2A | 193563.61186 | 193 563.61 | 0.658 | 192680.57220 | 195024.64613 | 192985.61726 |
| ____ Y2R | 9862.42763 | 9 862.43 | 0.737 | 9789.60495 | 9862.68694 | 9934.99101 |
| ____ ZN | 0.04594 | 162.87 | 1.333 | 0.04591 | 0.04656 | 0.04534 |
| ____ ZR | 0.11085 | 197.52 | 2.253 | 0.11374 | 0.10934 | 0.10949 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 8 Date/Time: 08/02/2017 11:21

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00319 | -170.70 | 59.366 | -0.00253 | -0.00172 | -0.00533 |
| ____ AL | 494.31664 | 48 214.30 | 1.380 | 489.22889 | 491.65581 | 502.06520 |
| ____ AS | -0.00953 | -6.83 | 197.489 | -0.00502 | -0.03019 | 0.00663 |
| ____ B | -0.00370 | 1 054.81 | 86.442 | -0.00038 | -0.00395 | -0.00677 |
| ____ BA | 0.00025 | 210.68 | 9.173 | 0.00027 | 0.00026 | 0.00023 |
| ____ BE | -0.00116 | -306.58 | 1.324 | -0.00116 | -0.00117 | -0.00114 |
| ____ CA | 487.43191 | 344 796.02 | 1.932 | 476.62455 | 491.80699 | 493.86418 |
| ____ CD | 0.00168 | 73.81 | 33.334 | 0.00207 | 0.00192 | 0.00104 |
| ____ CO | -0.00295 | -6.08 | 23.735 | -0.00350 | -0.00216 | -0.00319 |
| ____ CR | 0.00202 | 4.54 | 55.228 | 0.00142 | 0.00331 | 0.00133 |
| ____ CU | 0.00147 | 137.93 | 10.900 | 0.00129 | 0.00158 | 0.00155 |
| ____ FE | 198.41504 | 30 149.65 | 1.709 | 196.27210 | 196.64930 | 202.32371 |
| ____ K | 0.00495 | 51.98 | 200.135 | -0.00526 | 0.00560 | 0.01451 |
| ____ LI | -0.00216 | 25.81 | 42.507 | -0.00125 | -0.00214 | -0.00308 |
| ____ MG | 488.52540 | 461 651.74 | 2.678 | 477.22830 | 485.49015 | 502.85774 |
| ____ MN | 0.00424 | 203.40 | 1.807 | 0.00424 | 0.00431 | 0.00415 |
| ____ MO | -0.00180 | -1.80 | 95.997 | -0.00006 | -0.00182 | -0.00351 |
| ____ NA | 0.07192 | 82.87 | 15.248 | 0.06150 | 0.07090 | 0.08336 |
| ____ NI | 0.00185 | 9.75 | 35.684 | 0.00258 | 0.00129 | 0.00168 |
| ____ P | 0.00767 | 1.66 | 58.567 | 0.00251 | 0.00977 | 0.01072 |
| ____ PB | 0.00828 | 48.46 | 66.931 | 0.01377 | 0.00838 | 0.00269 |
| ____ S | 0.05679 | 3.05 | 23.199 | 0.07089 | 0.04480 | 0.05468 |
| ____ SB | 0.02023 | 9.63 | 35.301 | 0.02763 | 0.01338 | 0.01967 |
| ____ SE | 0.02228 | -1.33 | 118.990 | -0.00366 | 0.02118 | 0.04932 |
| ____ SI | 0.00159 | 1.85 | 1169.252 | 0.00770 | 0.01628 | -0.01923 |
| ____ SN | 0.00689 | 1.34 | 48.940 | 0.00300 | 0.00873 | 0.00895 |
| ____ SR | 0.01715 | 10 184.69 | 0.545 | 0.01714 | 0.01706 | 0.01725 |
| ____ TI | -0.00282 | -69.47 | 1.717 | -0.00276 | -0.00284 | -0.00285 |
| ____ TL | -0.01175 | -0.22 | 124.486 | -0.01824 | -0.02201 | 0.00500 |
| ____ V | 0.00191 | 5.90 | 28.126 | 0.00210 | 0.00233 | 0.00131 |
| ____ Y1 | 4171.64490 | 4 171.64 | 0.570 | 4196.88631 | 4168.36316 | 4149.68522 |
| ____ Y2A | 169834.76301 | 169 834.76 | 0.338 | 169561.00478 | 170494.75629 | 169448.52794 |
| ____ Y2R | 9475.89510 | 9 475.90 | 1.761 | 9629.65916 | 9499.52576 | 9298.50040 |
| ____ ZN | 0.00842 | 90.73 | 4.040 | 0.00881 | 0.00818 | 0.00826 |
| ____ ZR | -0.01723 | -48.21 | 18.132 | -0.01384 | -0.01786 | -0.01999 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 9 Date/Time: 08/02/2017 11:24

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21999 | 422.47 | 0.650 | 0.22160 | 0.21946 | 0.21889 |
| ____ AL | 494.73736 | 48 206.97 | 0.241 | 493.66745 | 494.52559 | 496.01905 |
| ____ AS | 0.07915 | -0.73 | 35.990 | 0.08908 | 0.10134 | 0.04703 |
| ____ B | -0.00441 | 1 056.54 | 19.543 | -0.00350 | -0.00451 | -0.00521 |
| ____ BA | 0.51634 | 203 631.51 | 0.830 | 0.51604 | 0.52077 | 0.51222 |
| ____ BE | 0.48855 | 193 302.36 | 0.140 | 0.48780 | 0.48871 | 0.48914 |
| ____ CA | 484.54678 | 342 468.69 | 0.585 | 487.46355 | 481.80204 | 484.37476 |
| ____ CD | 0.93632 | 5 964.14 | 1.055 | 0.92814 | 0.94729 | 0.93353 |
| ____ CO | 0.46692 | 1 512.81 | 0.747 | 0.46449 | 0.47092 | 0.46537 |
| ____ CR | 0.49280 | 3 619.02 | 0.285 | 0.49259 | 0.49430 | 0.49151 |
| ____ CU | 0.53612 | 5 900.52 | 0.273 | 0.53448 | 0.53659 | 0.53730 |
| ____ FE | 198.92580 | 30 194.36 | 0.347 | 198.57181 | 198.48325 | 199.72236 |
| ____ K | -0.00002 | 49.98 | 1636.520 | -0.03403 | 0.00987 | 0.02409 |
| ____ LI | -0.00272 | 21.40 | 60.412 | -0.00397 | -0.00086 | -0.00334 |
| ____ MG | 490.27771 | 462 435.30 | 1.146 | 486.70656 | 487.37167 | 496.75489 |
| ____ MN | 0.48456 | 24 368.70 | 0.232 | 0.48328 | 0.48502 | 0.48539 |
| ____ MO | -0.00038 | -0.61 | 214.389 | -0.00034 | 0.00041 | -0.00121 |
| ____ NA | 0.06677 | 76.30 | 21.201 | 0.05979 | 0.08307 | 0.05747 |
| ____ NI | 0.92759 | 1 395.42 | 0.692 | 0.92463 | 0.93496 | 0.92319 |
| ____ P | 0.00378 | 1.30 | 418.559 | 0.01647 | -0.01393 | 0.00878 |
| ____ PB | 0.51691 | 319.76 | 1.204 | 0.51602 | 0.52353 | 0.51117 |
| ____ S | 0.03561 | 1.90 | 53.224 | 0.01373 | 0.04703 | 0.04608 |
| ____ SB | 0.63074 | 129.47 | 0.109 | 0.62994 | 0.63112 | 0.63114 |
| ____ SE | 0.53738 | 40.80 | 3.537 | 0.54964 | 0.54702 | 0.51548 |
| ____ SI | 0.01258 | 2.83 | 84.827 | 0.01446 | 0.00109 | 0.02219 |
| ____ SN | 0.00160 | -0.09 | 179.076 | -0.00113 | 0.00134 | 0.00459 |
| ____ SR | 0.01719 | 10 236.23 | 0.104 | 0.01721 | 0.01717 | 0.01718 |
| ____ TI | -0.00355 | -47.51 | 5.824 | -0.00345 | -0.00342 | -0.00379 |
| ____ TL | 0.10292 | 6.32 | 13.435 | 0.10072 | 0.11771 | 0.09032 |
| ____ V | 0.51673 | 7 433.41 | 0.721 | 0.51251 | 0.51958 | 0.51811 |
| ____ Y1 | 4162.73642 | 4 162.74 | 0.242 | 4169.84812 | 4151.20088 | 4167.16027 |
| ____ Y2A | 170369.66101 | 170 369.66 | 0.427 | 171101.52664 | 170361.40272 | 169646.05368 |
| ____ Y2R | 9464.83140 | 9 464.83 | 0.607 | 9494.55871 | 9501.32051 | 9398.61499 |
| ____ ZN | 1.00041 | 3 088.33 | 0.789 | 0.99371 | 1.00911 | 0.99841 |
| ____ ZR | -0.01690 | -47.58 | 17.631 | -0.01785 | -0.01356 | -0.01928 |

LANCASTER LABORATORIES

Run Name: 1721404T73

Instrument ID: 18255

Tube: 10

Date/Time: 08/02/2017 11:28

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.54505 | 1 574.95 | 0.460 | 0.54792 | 0.54387 | 0.54334 |
| ____ AL | 24.48197 | 2 430.59 | 0.415 | 24.52146 | 24.36646 | 24.55799 |
| ____ AS | 0.51268 | 36.33 | 2.483 | 0.50051 | 0.51161 | 0.52591 |
| ____ B | 0.48145 | 3 477.53 | 0.385 | 0.48040 | 0.48036 | 0.48359 |
| ____ BA | 0.50311 | 219 348.50 | 0.787 | 0.50442 | 0.50624 | 0.49866 |
| ____ BE | 0.48329 | 211 324.83 | 0.514 | 0.48197 | 0.48173 | 0.48615 |
| ____ CA | 24.34935 | 18 458.39 | 0.797 | 24.46015 | 24.12520 | 24.46271 |
| ____ CD | 0.50389 | 3 532.34 | 0.589 | 0.50717 | 0.50139 | 0.50311 |
| ____ CO | 0.50028 | 1 804.55 | 0.528 | 0.50328 | 0.49832 | 0.49925 |
| ____ CR | 0.49353 | 4 005.49 | 0.120 | 0.49348 | 0.49296 | 0.49415 |
| ____ CU | 0.50104 | 5 961.46 | 0.442 | 0.49976 | 0.49977 | 0.50360 |
| ____ FE | 24.53037 | 4 031.88 | 0.665 | 24.62724 | 24.34206 | 24.62181 |
| ____ K | 24.14509 | 10 011.01 | 0.725 | 24.12678 | 23.97988 | 24.32863 |
| ____ LI | 0.50990 | 4 233.07 | 0.447 | 0.51109 | 0.50727 | 0.51135 |
| ____ MG | 24.31570 | 30 537.40 | 0.677 | 24.40451 | 24.12575 | 24.41683 |
| ____ MN | 0.49848 | 27 704.63 | 0.421 | 0.49777 | 0.49683 | 0.50084 |
| ____ MO | 0.50519 | 469.98 | 0.456 | 0.50772 | 0.50463 | 0.50321 |
| ____ NA | 24.26916 | 33 018.11 | 0.582 | 24.33622 | 24.10689 | 24.36437 |
| ____ NI | 0.50573 | 848.30 | 0.886 | 0.51088 | 0.50357 | 0.50273 |
| ____ P | 0.50613 | 52.76 | 1.248 | 0.51317 | 0.50427 | 0.50096 |
| ____ PB | 0.49800 | 295.49 | 2.072 | 0.50973 | 0.49033 | 0.49393 |
| ____ S | 25.24448 | 1 506.80 | 0.830 | 25.46451 | 25.04717 | 25.22176 |
| ____ SB | 0.48835 | 107.63 | 1.725 | 0.49544 | 0.47904 | 0.49057 |
| ____ SE | 0.50201 | 43.85 | 1.867 | 0.51273 | 0.49539 | 0.49790 |
| ____ SI | 25.85431 | 2 482.60 | 0.874 | 26.08334 | 25.63176 | 25.84785 |
| ____ SN | 0.49767 | 148.87 | 1.270 | 0.50453 | 0.49207 | 0.49641 |
| ____ SR | 0.50985 | 335 725.51 | 0.158 | 0.51063 | 0.50902 | 0.50990 |
| ____ TI | 0.50053 | 23 031.02 | 0.474 | 0.49847 | 0.50000 | 0.50312 |
| ____ TL | 0.50439 | 38.19 | 0.947 | 0.49889 | 0.50745 | 0.50683 |
| ____ V | 0.50877 | 7 936.43 | 0.543 | 0.50766 | 0.50675 | 0.51192 |
| ____ Y1 | 4625.59790 | 4 625.60 | 0.409 | 4606.32967 | 4626.35619 | 4644.10784 |
| ____ Y2A | 188285.91357 | 188 285.91 | 0.870 | 188865.26558 | 189556.19769 | 186436.27745 |
| ____ Y2R | 9917.44820 | 9 917.45 | 1.454 | 9774.64014 | 10062.98740 | 9914.71706 |
| ____ ZN | 0.50447 | 1 708.47 | 0.800 | 0.50902 | 0.50306 | 0.50132 |
| ____ ZR | 0.51131 | 977.67 | 0.602 | 0.50820 | 0.51136 | 0.51435 |

LANCASTER LABORATORIES

Run Name: 1721404T73

Instrument ID: 18255

Tube: 11

Date/Time: 08/02/2017 11:31

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00023 | -10.59 | 1512.819 | 0.00289 | -0.00364 | 0.00143 |
| ____ AL | 0.03990 | 9.59 | 92.537 | 0.08099 | 0.02918 | 0.00952 |
| ____ AS | 0.00173 | -2.19 | 399.904 | 0.00934 | -0.00001 | -0.00415 |
| ____ B | 0.00159 | 6.09 | 25.505 | 0.00112 | 0.00183 | 0.00182 |
| ____ BA | 0.00007 | 159.11 | 13.673 | 0.00008 | 0.00007 | 0.00006 |
| ____ BE | -0.00093 | -243.87 | 1.308 | -0.00093 | -0.00091 | -0.00094 |
| ____ CA | 0.02565 | 57.02 | 20.359 | 0.02443 | 0.03138 | 0.02115 |
| ____ CD | 0.00035 | -3.36 | 70.686 | 0.00008 | 0.00057 | 0.00041 |
| ____ CO | -0.00309 | -7.35 | 1.404 | -0.00306 | -0.00314 | -0.00308 |
| ____ CR | 0.00050 | -7.51 | 123.834 | 0.00024 | 0.00120 | 0.00005 |
| ____ CU | -0.00236 | -18.15 | 25.324 | -0.00304 | -0.00192 | -0.00212 |
| ____ FE | 0.01580 | 6.36 | 90.788 | 0.03196 | 0.01087 | 0.00457 |
| ____ K | 0.05072 | 73.38 | 26.778 | 0.03504 | 0.05873 | 0.05839 |
| ____ LI | 0.00075 | -9.06 | 453.088 | 0.00463 | -0.00158 | -0.00081 |
| ____ MG | 0.02875 | 33.17 | 12.146 | 0.03261 | 0.02582 | 0.02781 |
| ____ MN | 0.00027 | 4.95 | 23.844 | 0.00028 | 0.00020 | 0.00032 |
| ____ MO | -0.00093 | -1.21 | 114.112 | -0.00059 | -0.00211 | -0.00008 |
| ____ NA | 0.02431 | 22.15 | 41.739 | 0.02039 | 0.01670 | 0.03582 |
| ____ NI | -0.00075 | 6.59 | 77.973 | -0.00029 | -0.00055 | -0.00141 |
| ____ P | -0.00741 | 0.30 | 40.884 | -0.00476 | -0.01071 | -0.00677 |
| ____ PB | 0.00051 | -1.22 | 27.601 | 0.00043 | 0.00068 | 0.00044 |
| ____ S | 0.01017 | 0.61 | 106.479 | 0.00922 | 0.02143 | -0.00015 |
| ____ SB | 0.00494 | 2.90 | 42.517 | 0.00712 | 0.00293 | 0.00478 |
| ____ SE | 0.01348 | -0.46 | 34.225 | 0.01306 | 0.01828 | 0.00908 |
| ____ SI | 0.00056 | 1.82 | 1806.384 | 0.01192 | -0.00732 | -0.00293 |
| ____ SN | 0.00182 | -0.04 | 32.528 | 0.00177 | 0.00125 | 0.00243 |
| ____ SR | 0.00003 | 12.74 | 20.647 | 0.00002 | 0.00003 | 0.00002 |
| ____ TI | 0.00009 | 57.39 | 159.977 | -0.00001 | 0.00024 | 0.00003 |
| ____ TL | -0.00376 | -0.40 | 160.623 | 0.00003 | -0.01071 | -0.00059 |
| ____ V | 0.00092 | -9.77 | 57.508 | 0.00117 | 0.00127 | 0.00031 |
| ____ Y1 | 4702.09177 | 4 702.09 | 0.077 | 4705.57197 | 4702.31507 | 4698.38826 |
| ____ Y2A | 192035.18046 | 192 035.18 | 0.640 | 192363.38197 | 193066.37036 | 190675.78905 |
| ____ Y2R | 9921.07348 | 9 921.07 | 0.567 | 9865.84331 | 9919.10000 | 9978.27713 |
| ____ ZN | -0.00023 | 3.89 | 136.972 | -0.00046 | 0.00013 | -0.00034 |
| ____ ZR | -0.00508 | -26.90 | 21.913 | -0.00392 | -0.00614 | -0.00517 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 12 Date/Time: 08/02/2017 11:34

Sample Number: **PBW** Class: **** Batch: 172131063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00166 | -6.42 | 103.766 | 0.00045 | 0.00089 | 0.00362 |
| ____ AL | 0.02378 | 8.26 | 23.296 | 0.01847 | 0.02952 | 0.02335 |
| ____ AS | 0.00060 | -2.33 | 2789.763 | -0.01415 | -0.00305 | 0.01902 |
| ____ B | 0.00144 | 5.08 | 49.775 | 0.00062 | 0.00176 | 0.00194 |
| ____ BA | 0.00006 | 159.85 | 20.585 | 0.00008 | 0.00005 | 0.00006 |
| ____ BE | -0.00095 | -261.32 | 2.097 | -0.00093 | -0.00096 | -0.00096 |
| ____ CA | 0.02329 | 57.00 | 34.494 | 0.03050 | 0.01463 | 0.02475 |
| ____ CD | 0.00024 | -4.24 | 30.950 | 0.00026 | 0.00031 | 0.00016 |
| ____ CO | -0.00265 | -5.86 | 7.928 | -0.00285 | -0.00243 | -0.00267 |
| ____ CR | -0.00023 | -13.95 | 406.594 | 0.00036 | -0.00130 | 0.00025 |
| ____ CU | -0.00160 | -9.15 | 53.012 | -0.00143 | -0.00251 | -0.00084 |
| ____ FE | -0.00382 | 3.23 | 46.055 | -0.00574 | -0.00344 | -0.00228 |
| ____ K | -0.01341 | 48.40 | 344.426 | -0.04495 | 0.03962 | -0.03491 |
| ____ LI | -0.00077 | -22.31 | 238.617 | -0.00246 | 0.00119 | -0.00105 |
| ____ MG | 0.02068 | 23.67 | 2.044 | 0.02072 | 0.02109 | 0.02024 |
| ____ MN | 0.00036 | 10.72 | 17.529 | 0.00038 | 0.00042 | 0.00029 |
| ____ MO | -0.00022 | -0.55 | 196.590 | -0.00031 | 0.00025 | -0.00059 |
| ____ NA | 0.02808 | 28.12 | 18.190 | 0.02249 | 0.02924 | 0.03250 |
| ____ NI | -0.00028 | 7.52 | 405.733 | 0.00104 | -0.00105 | -0.00084 |
| ____ P | -0.00418 | 0.65 | 171.089 | -0.01202 | -0.00251 | 0.00199 |
| ____ PB | -0.00070 | -1.99 | 311.638 | -0.00269 | 0.00164 | -0.00106 |
| ____ S | 0.00577 | 0.35 | 65.426 | 0.01001 | 0.00453 | 0.00277 |
| ____ SB | 0.00432 | 2.81 | 84.334 | 0.00207 | 0.00853 | 0.00237 |
| ____ SE | 0.01480 | -0.34 | 19.882 | 0.01511 | 0.01758 | 0.01172 |
| ____ SI | -0.00212 | 1.61 | 135.120 | -0.00538 | -0.00100 | 0.00001 |
| ____ SN | 0.00088 | -0.33 | 166.116 | 0.00091 | -0.00060 | 0.00232 |
| ____ SR | 0.00005 | 27.98 | 56.845 | 0.00003 | 0.00003 | 0.00008 |
| ____ TI | -0.00006 | 52.30 | 60.512 | -0.00010 | -0.00004 | -0.00004 |
| ____ TL | 0.00405 | 0.24 | 242.916 | 0.01540 | -0.00100 | -0.00224 |
| ____ V | 0.00096 | -9.53 | 24.505 | 0.00083 | 0.00123 | 0.00082 |
| ____ Y1 | 4792.49002 | 4 792.49 | 0.253 | 4799.86824 | 4799.12722 | 4778.47461 |
| ____ Y2A | 197219.90888 | 197 219.91 | 0.567 | 196469.05546 | 198505.89293 | 196684.77827 |
| ____ Y2R | 10238.86977 | 10 238.87 | 0.057 | 10232.15000 | 10242.53992 | 10241.91939 |
| ____ ZN | 0.00007 | 4.99 | 532.597 | 0.00021 | -0.00035 | 0.00036 |
| ____ ZR | -0.00361 | -24.81 | 33.988 | -0.00264 | -0.00499 | -0.00320 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 13 Date/Time: 08/02/2017 11:37

Sample Number: **PBW** Class: **** Batch: 172131063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00311 | -1.92 | 93.747 | 0.00183 | 0.00106 | 0.00645 |
| ____ AL | 0.02834 | 8.72 | 155.166 | 0.03862 | -0.01986 | 0.06628 |
| ____ AS | 0.00466 | -2.03 | 83.810 | 0.00899 | 0.00140 | 0.00360 |
| ____ B | 0.00090 | 1.14 | 39.956 | 0.00049 | 0.00104 | 0.00117 |
| ____ BA | 0.00010 | 175.90 | 73.072 | 0.00008 | 0.00017 | 0.00004 |
| ____ BE | -0.00095 | -261.27 | 4.240 | -0.00099 | -0.00092 | -0.00093 |
| ____ CA | 0.00540 | 42.95 | 8.716 | 0.00486 | 0.00558 | 0.00574 |
| ____ CD | 0.00017 | -4.78 | 17.639 | 0.00020 | 0.00018 | 0.00014 |
| ____ CO | -0.00281 | -6.52 | 4.100 | -0.00287 | -0.00288 | -0.00268 |
| ____ CR | 0.00054 | -7.44 | 198.393 | -0.00021 | 0.00175 | 0.00007 |
| ____ CU | -0.00230 | -18.10 | 21.828 | -0.00178 | -0.00234 | -0.00278 |
| ____ FE | -0.00917 | 2.31 | 23.486 | -0.01114 | -0.00948 | -0.00687 |
| ____ K | 0.03135 | 67.33 | 82.448 | 0.00191 | 0.04184 | 0.05030 |
| ____ LI | 0.00217 | 2.87 | 139.458 | 0.00087 | 0.00563 | 0.00001 |
| ____ MG | 0.00604 | 4.45 | 23.903 | 0.00449 | 0.00628 | 0.00734 |
| ____ MN | 0.00024 | 3.63 | 52.192 | 0.00038 | 0.00013 | 0.00022 |
| ____ MO | -0.00073 | -1.05 | 132.933 | -0.00095 | 0.00033 | -0.00157 |
| ____ NA | 0.01530 | 10.16 | 43.563 | 0.01356 | 0.00968 | 0.02266 |
| ____ NI | -0.00064 | 6.98 | 16.820 | -0.00068 | -0.00052 | -0.00072 |
| ____ P | -0.00883 | 0.16 | 51.939 | -0.01332 | -0.00416 | -0.00900 |
| ____ PB | 0.00203 | -0.30 | 149.483 | -0.00048 | 0.00540 | 0.00117 |
| ____ S | 0.00508 | 0.31 | 143.386 | 0.00802 | 0.01042 | -0.00321 |
| ____ SB | 0.00814 | 3.71 | 54.950 | 0.00811 | 0.00369 | 0.01263 |
| ____ SE | 0.02588 | 0.71 | 10.411 | 0.02337 | 0.02553 | 0.02872 |
| ____ SI | 0.00735 | 2.55 | 12.960 | 0.00631 | 0.00819 | 0.00755 |
| ____ SN | 0.00023 | -0.54 | 273.161 | 0.00015 | -0.00035 | 0.00088 |
| ____ SR | 0.00003 | 16.41 | 41.602 | 0.00003 | 0.00004 | 0.00002 |
| ____ TI | -0.00008 | 52.17 | 136.229 | -0.00019 | -0.00009 | 0.00003 |
| ____ TL | 0.00489 | 0.32 | 272.018 | -0.00400 | 0.02016 | -0.00150 |
| ____ V | 0.00085 | -11.24 | 34.165 | 0.00055 | 0.00089 | 0.00112 |
| ____ Y1 | 4847.17881 | 4 847.18 | 1.256 | 4832.47155 | 4914.07837 | 4794.98650 |
| ____ Y2A | 198878.41111 | 198 878.41 | 1.285 | 195986.95783 | 199810.53130 | 200837.74422 |
| ____ Y2R | 10225.79904 | 10 225.80 | 0.616 | 10295.84163 | 10173.80548 | 10207.75000 |
| ____ ZN | 0.00024 | 5.62 | 54.248 | 0.00023 | 0.00011 | 0.00036 |
| ____ ZR | -0.00489 | -27.33 | 30.847 | -0.00386 | -0.00418 | -0.00662 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 14 Date/Time: 08/02/2017 11:40

Sample Number: **LCSW** Class: **** Batch: 172131063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.08415 | 250.05 | 5.120 | 0.08561 | 0.07930 | 0.08753 |
| ____ AL | 2.08329 | 220.53 | 1.017 | 2.06530 | 2.10664 | 2.07792 |
| ____ AS | 0.14927 | 9.85 | 3.750 | 0.14700 | 0.14515 | 0.15564 |
| ____ B | 1.87340 | 13 326.72 | 0.550 | 1.87061 | 1.86479 | 1.88481 |
| ____ BA | 2.01220 | 900 514.68 | 1.252 | 2.03917 | 2.00815 | 1.98929 |
| ____ BE | 0.04759 | 21 574.24 | 0.537 | 0.04769 | 0.04729 | 0.04777 |
| ____ CA | 4.03331 | 3 179.84 | 0.213 | 4.04303 | 4.03024 | 4.02667 |
| ____ CD | 0.05049 | 357.75 | 0.877 | 0.05092 | 0.05050 | 0.05004 |
| ____ CO | 0.50779 | 1 885.78 | 0.853 | 0.51159 | 0.50871 | 0.50308 |
| ____ CR | 0.20066 | 1 665.71 | 0.835 | 0.20216 | 0.19885 | 0.20098 |
| ____ CU | 0.25738 | 3 100.62 | 1.120 | 0.26009 | 0.25435 | 0.25772 |
| ____ FE | 1.02049 | 176.95 | 0.727 | 1.02698 | 1.02208 | 1.01240 |
| ____ K | 9.99157 | 4 292.22 | 0.293 | 10.02015 | 9.99294 | 9.96161 |
| ____ LI | 1.00872 | 8 612.68 | 0.675 | 1.00616 | 1.00357 | 1.01644 |
| ____ MG | 2.04581 | 2 666.19 | 0.300 | 2.04889 | 2.03873 | 2.04980 |
| ____ MN | 0.51133 | 29 188.90 | 0.594 | 0.51267 | 0.50785 | 0.51346 |
| ____ MO | 2.02382 | 1 935.63 | 0.929 | 2.04205 | 2.02490 | 2.00451 |
| ____ NA | 9.93716 | 13 897.21 | 0.777 | 9.92094 | 9.86938 | 10.02117 |
| ____ NI | 0.51681 | 893.93 | 0.810 | 0.52115 | 0.51648 | 0.51280 |
| ____ P | 0.97839 | 103.78 | 1.247 | 0.98692 | 0.98383 | 0.96442 |
| ____ PB | 0.15202 | 88.24 | 0.412 | 0.15228 | 0.15131 | 0.15248 |
| ____ S | 1.00040 | 61.73 | 1.353 | 0.99985 | 1.01421 | 0.98715 |
| ____ SB | 0.46310 | 96.32 | 1.267 | 0.46978 | 0.46076 | 0.45877 |
| ____ SE | 0.15964 | 13.18 | 3.087 | 0.15522 | 0.15874 | 0.16495 |
| ____ SI | 0.99303 | 108.11 | 2.096 | 0.97073 | 1.01192 | 0.99645 |
| ____ SN | 3.91735 | 1 208.16 | 0.850 | 3.95165 | 3.91520 | 3.88519 |
| ____ SR | 1.01574 | 686 961.07 | 0.935 | 1.02555 | 1.00659 | 1.01508 |
| ____ TI | 1.00538 | 47 190.14 | 0.621 | 1.00710 | 0.99845 | 1.01058 |
| ____ TL | 0.16570 | 11.39 | 2.291 | 0.16627 | 0.16165 | 0.16917 |
| ____ V | 0.51842 | 7 831.79 | 0.761 | 0.52182 | 0.51410 | 0.51935 |
| ____ Y1 | 4753.01318 | 4 753.01 | 0.601 | 4741.93981 | 4731.64084 | 4785.45891 |
| ____ Y2A | 193382.56975 | 193 382.57 | 0.274 | 193985.51738 | 193168.67891 | 192993.51297 |
| ____ Y2R | 10199.36876 | 10 199.37 | 0.779 | 10213.52295 | 10270.83333 | 10113.75000 |
| ____ ZN | 0.49708 | 1 721.17 | 1.082 | 0.50225 | 0.49748 | 0.49152 |
| ____ ZR | 1.01939 | 2 021.89 | 0.233 | 1.01778 | 1.01827 | 1.02211 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 15 Date/Time: 08/02/2017 11:43

Sample Number: **LCSWD** Class: **** Batch: 172131063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.08624 | 258.50 | 4.612 | 0.08292 | 0.09065 | 0.08513 |
| ____ AL | 2.12717 | 222.14 | 1.662 | 2.10979 | 2.16785 | 2.10388 |
| ____ AS | 0.15343 | 10.26 | 2.167 | 0.15101 | 0.15722 | 0.15206 |
| ____ B | 1.87052 | 13 407.57 | 0.408 | 1.87758 | 1.86241 | 1.87157 |
| ____ BA | 2.01844 | 910 116.94 | 1.419 | 2.05137 | 2.00455 | 1.99940 |
| ____ BE | 0.04753 | 21 714.00 | 0.483 | 0.04778 | 0.04732 | 0.04750 |
| ____ CA | 4.10815 | 3 196.75 | 1.129 | 4.05547 | 4.14285 | 4.12614 |
| ____ CD | 0.05063 | 361.74 | 1.469 | 0.05028 | 0.05012 | 0.05148 |
| ____ CO | 0.50757 | 1 900.53 | 0.809 | 0.50467 | 0.50576 | 0.51227 |
| ____ CR | 0.20045 | 1 676.61 | 0.538 | 0.19980 | 0.19985 | 0.20169 |
| ____ CU | 0.25617 | 3 108.99 | 0.468 | 0.25738 | 0.25498 | 0.25616 |
| ____ FE | 1.03450 | 177.03 | 1.866 | 1.01348 | 1.03857 | 1.05144 |
| ____ K | 10.21015 | 4 328.91 | 1.146 | 10.08827 | 10.32148 | 10.22071 |
| ____ LI | 1.02866 | 8 671.47 | 0.607 | 1.02158 | 1.03337 | 1.03102 |
| ____ MG | 2.08576 | 2 683.59 | 1.118 | 2.05894 | 2.09709 | 2.10123 |
| ____ MN | 0.50869 | 29 258.68 | 0.520 | 0.51162 | 0.50648 | 0.50796 |
| ____ MO | 2.03144 | 1 959.05 | 0.685 | 2.02122 | 2.02582 | 2.04729 |
| ____ NA | 10.08521 | 13 925.21 | 0.501 | 10.04957 | 10.14308 | 10.06299 |
| ____ NI | 0.51897 | 905.07 | 0.817 | 0.51503 | 0.51841 | 0.52346 |
| ____ P | 0.97262 | 104.03 | 1.076 | 0.96513 | 0.96815 | 0.98457 |
| ____ PB | 0.14952 | 87.43 | 1.776 | 0.15095 | 0.15115 | 0.14645 |
| ____ S | 1.00559 | 62.56 | 1.250 | 1.00246 | 1.01942 | 0.99488 |
| ____ SB | 0.46045 | 96.50 | 0.641 | 0.45902 | 0.45849 | 0.46384 |
| ____ SE | 0.17058 | 14.32 | 6.517 | 0.18151 | 0.17096 | 0.15928 |
| ____ SI | 1.01507 | 108.90 | 2.183 | 0.99557 | 1.01048 | 1.03916 |
| ____ SN | 3.92549 | 1 220.74 | 0.599 | 3.89842 | 3.94065 | 3.93740 |
| ____ SR | 1.01486 | 691 578.55 | 0.310 | 1.01660 | 1.01123 | 1.01674 |
| ____ TI | 1.00000 | 47 295.42 | 0.500 | 1.00538 | 0.99549 | 0.99914 |
| ____ TL | 0.17227 | 12.02 | 2.450 | 0.16770 | 0.17309 | 0.17602 |
| ____ V | 0.51409 | 7 817.37 | 0.285 | 0.51459 | 0.51244 | 0.51524 |
| ____ Y1 | 4792.45559 | 4 792.46 | 0.610 | 4809.84302 | 4808.83912 | 4758.68463 |
| ____ Y2A | 194856.23295 | 194 856.23 | 0.640 | 193433.52125 | 195760.00299 | 195375.17462 |
| ____ Y2R | 10069.47367 | 10 069.47 | 0.473 | 10124.37512 | 10039.12480 | 10044.92109 |
| ____ ZN | 0.49862 | 1 740.83 | 0.785 | 0.49504 | 0.49802 | 0.50280 |
| ____ ZR | 1.04029 | 2 037.40 | 0.931 | 1.02963 | 1.04854 | 1.04271 |

LANCASTER LABORATORIES

Run Name: 1721404T73 Instrument ID: 18255

Tube: 16 Date/Time: 08/02/2017 11:46

Sample Number: **9100491** Class: **** Batch: 172131063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00188 | -5.87 | 41.831 | 0.00227 | 0.00098 | 0.00239 |
| ____ AL | 0.11046 | 17.10 | 26.457 | 0.14017 | 0.10945 | 0.08175 |
| ____ AS | 0.00886 | -1.70 | 99.865 | -0.00107 | 0.01591 | 0.01175 |
| ____ B | 0.00945 | 64.56 | 5.705 | 0.00883 | 0.00982 | 0.00969 |
| ____ BA | 0.00710 | 3 406.45 | 0.232 | 0.00708 | 0.00712 | 0.00710 |
| ____ BE | -0.00098 | -276.00 | 1.831 | -0.00100 | -0.00096 | -0.00097 |
| ____ CA | 0.83166 | 689.17 | 3.272 | 0.85330 | 0.80111 | 0.84055 |
| ____ CD | 0.00023 | -4.37 | 75.579 | 0.00030 | 0.00035 | 0.00003 |
| ____ CO | -0.00264 | -5.89 | 9.694 | -0.00281 | -0.00277 | -0.00235 |
| ____ CR | 0.00412 | 23.39 | 14.430 | 0.00450 | 0.00343 | 0.00442 |
| ____ CU | 0.00357 | 56.05 | 10.194 | 0.00315 | 0.00377 | 0.00379 |
| ____ FE | 0.10878 | 22.43 | 7.726 | 0.10022 | 0.11702 | 0.10909 |
| ____ K | 0.36510 | 209.71 | 11.721 | 0.34189 | 0.33893 | 0.41448 |
| ____ LI | -0.00125 | -26.25 | 89.546 | -0.00244 | -0.00022 | -0.00109 |
| ____ MG | 0.05704 | 71.30 | 6.600 | 0.06127 | 0.05408 | 0.05576 |
| ____ MN | 0.00639 | 365.49 | 1.158 | 0.00639 | 0.00646 | 0.00631 |
| ____ MO | 0.00129 | 0.93 | 205.272 | -0.00050 | 0.00004 | 0.00432 |
| ____ NA | 1.23233 | 1 720.46 | 2.644 | 1.26724 | 1.20272 | 1.22704 |
| ____ NI | 0.00309 | 13.54 | 32.875 | 0.00387 | 0.00194 | 0.00346 |
| ____ P | 0.01455 | 2.68 | 2.119 | 0.01449 | 0.01427 | 0.01488 |
| ____ PB | 0.00262 | 0.06 | 42.115 | 0.00192 | 0.00204 | 0.00389 |
| ____ S | 0.09886 | 6.20 | 10.582 | 0.10318 | 0.10648 | 0.08693 |
| ____ SB | 0.00103 | 2.10 | 84.136 | 0.00189 | 0.00015 | 0.00105 |
| ____ SE | 0.02060 | 0.21 | 20.445 | 0.01584 | 0.02386 | 0.02210 |
| ____ SI | 0.26679 | 28.26 | 6.180 | 0.26807 | 0.28260 | 0.24969 |
| ____ SN | 0.00175 | -0.06 | 9.592 | 0.00162 | 0.00194 | 0.00168 |
| ____ SR | 0.00297 | 2 064.32 | 0.922 | 0.00298 | 0.00299 | 0.00294 |
| ____ TI | 0.00342 | 221.32 | 6.373 | 0.00354 | 0.00317 | 0.00356 |
| ____ TL | 0.00465 | 0.29 | 76.920 | 0.00761 | 0.00067 | 0.00567 |
| ____ V | 0.00108 | -8.21 | 63.883 | 0.00098 | 0.00181 | 0.00044 |
| ____ Y1 | 4872.57239 | 4 872.57 | 0.602 | 4844.32821 | 4870.53325 | 4902.85571 |
| ____ Y2A | 199382.12778 | 199 382.13 | 0.438 | 199253.67060 | 198579.35043 | 200313.36233 |
| ____ Y2R | 10243.94334 | 10 243.94 | 2.083 | 10017.01819 | 10440.63437 | 10274.17747 |
| ____ ZN | 0.02839 | 104.77 | 0.621 | 0.02846 | 0.02852 | 0.02819 |
| ____ ZR | -0.00337 | -24.35 | 24.936 | -0.00326 | -0.00426 | -0.00259 |

LANCASTER LABORATORIES

Run Name: 1721404T73

Instrument ID: 18255

Tube: 17

Date/Time: 08/02/2017 11:49

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.53416 | 1 551.92 | 0.178 | 0.53525 | 0.53354 | 0.53369 |
| ____ AL | 24.46246 | 2 441.47 | 0.702 | 24.57266 | 24.55013 | 24.26460 |
| ____ AS | 0.50953 | 36.17 | 2.014 | 0.52134 | 0.50442 | 0.50282 |
| ____ B | 0.48257 | 3 505.20 | 0.663 | 0.48504 | 0.47895 | 0.48373 |
| ____ BA | 0.50190 | 220 073.05 | 1.036 | 0.50745 | 0.49716 | 0.50108 |
| ____ BE | 0.48025 | 211 218.87 | 0.546 | 0.48292 | 0.47768 | 0.48015 |
| ____ CA | 24.21047 | 18 450.82 | 0.814 | 24.31479 | 24.33351 | 23.98313 |
| ____ CD | 0.50003 | 3 513.11 | 0.608 | 0.50320 | 0.49713 | 0.49977 |
| ____ CO | 0.49706 | 1 796.97 | 0.543 | 0.49980 | 0.49441 | 0.49698 |
| ____ CR | 0.48782 | 3 981.96 | 0.554 | 0.49081 | 0.48556 | 0.48709 |
| ____ CU | 0.49935 | 5 975.94 | 0.660 | 0.50314 | 0.49776 | 0.49716 |
| ____ FE | 24.47603 | 4 044.18 | 1.212 | 24.74091 | 24.53165 | 24.15554 |
| ____ K | 23.98083 | 9 995.37 | 1.211 | 24.25766 | 24.00650 | 23.67833 |
| ____ LI | 0.50813 | 4 240.60 | 0.525 | 0.50951 | 0.50981 | 0.50505 |
| ____ MG | 24.23930 | 30 603.45 | 0.890 | 24.40035 | 24.32333 | 23.99421 |
| ____ MN | 0.49641 | 27 749.83 | 0.542 | 0.49911 | 0.49373 | 0.49639 |
| ____ MO | 0.50422 | 470.12 | 0.572 | 0.50754 | 0.50271 | 0.50240 |
| ____ NA | 24.15888 | 33 040.71 | 1.238 | 24.43412 | 24.20210 | 23.84043 |
| ____ NI | 0.50249 | 844.82 | 0.779 | 0.50676 | 0.50163 | 0.49908 |
| ____ P | 0.49953 | 52.20 | 3.241 | 0.51816 | 0.48883 | 0.49160 |
| ____ PB | 0.49618 | 295.07 | 0.284 | 0.49569 | 0.49508 | 0.49777 |
| ____ S | 24.91873 | 1 490.67 | 0.567 | 25.04440 | 24.76565 | 24.94613 |
| ____ SB | 0.49159 | 108.59 | 0.492 | 0.49428 | 0.49088 | 0.48961 |
| ____ SE | 0.50190 | 43.94 | 2.199 | 0.49219 | 0.49961 | 0.51391 |
| ____ SI | 25.60342 | 2 471.69 | 0.461 | 25.64055 | 25.69853 | 25.47117 |
| ____ SN | 0.49239 | 147.61 | 0.037 | 0.49218 | 0.49253 | 0.49246 |
| ____ SR | 0.50606 | 335 150.64 | 0.881 | 0.51018 | 0.50133 | 0.50666 |
| ____ TI | 0.49898 | 23 091.06 | 0.464 | 0.50132 | 0.49670 | 0.49892 |
| ____ TL | 0.51734 | 39.32 | 1.453 | 0.50885 | 0.52315 | 0.52003 |
| ____ V | 0.50607 | 7 939.53 | 0.434 | 0.50839 | 0.50403 | 0.50579 |
| ____ Y1 | 4635.83767 | 4 635.84 | 0.062 | 4636.98403 | 4637.96481 | 4632.56418 |
| ____ Y2A | 189380.00125 | 189 380.00 | 0.756 | 188525.37425 | 191032.55779 | 188582.07171 |
| ____ Y2R | 9969.96907 | 9 969.97 | 1.092 | 9887.07103 | 9929.62981 | 10093.20636 |
| ____ ZN | 0.50094 | 1 700.42 | 0.591 | 0.50405 | 0.49814 | 0.50064 |
| ____ ZR | 0.50937 | 979.04 | 0.309 | 0.50802 | 0.51110 | 0.50900 |

LANCASTER LABORATORIES

Run Name: 1721404T73

Instrument ID: 18255

Tube: 18

Date/Time: 08/02/2017 11:52

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00175 | -6.06 | 112.634 | 0.00401 | 0.00032 | 0.00093 |
| ____ AL | 0.00268 | 5.94 | 1160.135 | 0.02263 | -0.03314 | 0.01855 |
| ____ AS | -0.00331 | -2.59 | 45.037 | -0.00502 | -0.00233 | -0.00258 |
| ____ B | 0.00334 | 18.55 | 26.397 | 0.00320 | 0.00253 | 0.00428 |
| ____ BA | 0.00007 | 162.83 | 41.775 | 0.00005 | 0.00006 | 0.00011 |
| ____ BE | -0.00095 | -258.23 | 1.257 | -0.00096 | -0.00094 | -0.00096 |
| ____ CA | -0.00063 | 37.17 | 1183.386 | 0.00748 | -0.00224 | -0.00713 |
| ____ CD | 0.00017 | -4.70 | 105.403 | -0.00001 | 0.00018 | 0.00034 |
| ____ CO | -0.00277 | -6.19 | 9.052 | -0.00300 | -0.00250 | -0.00280 |
| ____ CR | -0.00023 | -13.80 | 298.839 | 0.00025 | -0.00104 | 0.00009 |
| ____ CU | -0.00237 | -18.55 | 38.412 | -0.00320 | -0.00252 | -0.00140 |
| ____ FE | -0.00339 | 3.20 | 322.540 | -0.00573 | 0.00852 | -0.01295 |
| ____ K | 0.03724 | 67.99 | 40.749 | 0.01988 | 0.04800 | 0.04383 |
| ____ LI | 0.00113 | -5.75 | 74.965 | 0.00063 | 0.00065 | 0.00211 |
| ____ MG | -0.00102 | -4.65 | 107.063 | -0.00227 | -0.00028 | -0.00050 |
| ____ MN | 0.00037 | 10.76 | 8.655 | 0.00033 | 0.00037 | 0.00040 |
| ____ MO | 0.00019 | -0.15 | 116.057 | 0.00007 | 0.00006 | 0.00045 |
| ____ NA | -0.00128 | -12.71 | 405.600 | -0.00334 | -0.00515 | 0.00464 |
| ____ NI | -0.00048 | 7.08 | 169.633 | -0.00042 | 0.00030 | -0.00132 |
| ____ P | -0.00563 | 0.49 | 63.770 | -0.00812 | -0.00726 | -0.00152 |
| ____ PB | -0.00078 | -2.01 | 199.435 | -0.00030 | 0.00048 | -0.00253 |
| ____ S | -0.00185 | -0.12 | 559.612 | -0.01376 | 0.00477 | 0.00345 |
| ____ SB | 0.00615 | 3.18 | 129.763 | 0.01484 | 0.00446 | -0.00085 |
| ____ SE | 0.02636 | 0.73 | 21.462 | 0.03192 | 0.02654 | 0.02061 |
| ____ SI | 0.00380 | 2.14 | 45.295 | 0.00240 | 0.00572 | 0.00328 |
| ____ SN | 0.00056 | -0.42 | 470.209 | 0.00347 | -0.00159 | -0.00021 |
| ____ SR | 0.00004 | 24.97 | 32.774 | 0.00003 | 0.00004 | 0.00006 |
| ____ TI | -0.00004 | 52.55 | 81.009 | -0.00003 | -0.00008 | -0.00002 |
| ____ TL | 0.00353 | 0.19 | 193.331 | 0.00323 | 0.01051 | -0.00314 |
| ____ V | 0.00095 | -9.77 | 45.239 | 0.00130 | 0.00047 | 0.00108 |
| ____ Y1 | 4722.11869 | 4 722.12 | 0.075 | 4722.36011 | 4718.44018 | 4725.55578 |
| ____ Y2A | 194479.02269 | 194 479.02 | 0.811 | 192779.25745 | 195895.89992 | 194761.91071 |
| ____ Y2R | 9946.58558 | 9 946.59 | 1.081 | 9874.27500 | 9895.37500 | 10070.10674 |
| ____ ZN | -0.00032 | 3.58 | 121.058 | 0.00012 | -0.00060 | -0.00049 |
| ____ ZR | -0.00312 | -23.15 | 62.599 | -0.00479 | -0.00097 | -0.00361 |

# ICP-MS Data

# Metals in Liquid

eurofins | Lancaster Laboratories Environmental

# ICP-MS Run Data Report

Method Reference Name(s):

Date File Name: 17G18G00.E03

Run Name: 1719906E03

Analyst: 1242

Reviewed By: Choon Y Tian

Reviewed Date: 07/18/2017 11:33

Verified By: Parker D Lindstrom

Verified Date: 07/18/2017 21:16

Instrument Parameters:

Rinse Time (sec): 25.00

| INTERNAL STD. | ELEMENT | MASS |
|---|---|---|
| **SC-1** | | 45 |
| | NA | 23 |
| | MG | 24 |
| | AL | 27 |
| | K | 39 |
| | CA | 44 |
| | TI | 47 |
| | V | 51 |
| | CR | 52 |
| | MN | 55 |
| | FE | 57 |
| **IN-1** | | 115 |
| | CO | 59 |
| | NI | 60 |
| | CU | 63 |
| | ZN | 66 |
| | AS | 75 |
| | SR | 88 |
| | MO | 98 |
| | AG | 107 |
| | CD | 111 |
| | SN | 120 |
| | SB | 121 |
| | BA | 137 |
| **BI-1** | | 209 |
| | TL | 203 |
| | PB | 208 |
| | U | 238 |

Run Name: 1719906E03 Date/Time: 07/18/2017 9:56:00
Tube Number: 1
Sample Number: **S0**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| *NA* | 23 | 0.00000 | 7232.25000 | 403011000 | 2.80038 | 3.07037 | -5.87100 |
| *MG* | 24 | 0.00000 | 96.67100 | 556775000 | -0.44591 | -0.07352 | 0.51944 |
| *AL* | 27 | 0.00000 | 16.66730 | -1350130000 | 0.13570 | 0.16702 | -0.30272 |
| *K* | 39 | -0.00002 | 38584.60000 | -80403100 | -16.20552 | 11.14489 | 5.06345 |
| *CA* | 44 | -0.00001 | 423.36200 | -263218000 | 13.59383 | 7.24235 | -20.83605 |
| *SC-1* | 45 | 46058.60000 | 0.00000 | 1.976 | 46614.10000 | 45008.50000 | 46553.20000 |
| *TI* | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *V* | 51 | 0.00000 | 26.66770 | 3462980000 | 0.03070 | -0.03823 | 0.00754 |
| *CR* | 52 | 0.00000 | 70.00260 | -18106200000 | 0.05402 | -0.01587 | -0.03816 |
| *MN* | 55 | 0.00000 | 10.00040 | 82081300000 | -0.03274 | 0.06548 | -0.03274 |
| *FE* | 57 | 0.00000 | 33.33460 | -563539000 | -0.33455 | 0.66565 | -0.33111 |
| *CO* | 59 | 0.00000 | 66.66950 | -8978320000 | -0.00673 | -0.05849 | 0.06522 |
| *NI* | 60 | 0.00000 | 30.00160 | 1331990000 | -0.07611 | 0.00016 | 0.07594 |
| *CU* | 63 | 0.00000 | 40.00150 | -2065580000 | 0.01418 | -0.01405 | -0.00013 |
| *ZN* | 66 | 0.00000 | 26.66770 | 14334200000 | 0.25591 | -0.18237 | -0.07354 |
| *GE-1* | 72 | 100760.00000 | 0.00000 | 0.656 | 100975.00000 | 101287.00000 | 100018.00000 |
| *AS* | 75 | 0.00000 | 41.33370 | 941493000 | 0.28623 | 0.05191 | -0.33814 |
| *SR* | 88 | 0.00000 | 6.66692 | -6361140000 | -0.01739 | 0.03478 | -0.01739 |
| *MO* | 98 | 0.00000 | 16.66730 | 448441000 | 0.00650 | 0.00646 | -0.01296 |
| *AG* | 107 | 0.00000 | 13.33380 | 4875000000 | 0.01448 | -0.01156 | -0.00292 |
| *CD* | 111 | 0.00000 | 10.00010 | 3114570000 | -0.04110 | 0.00009 | 0.04101 |
| *IN-1* | 115 | 50964.50000 | 0.00000 | 0.193 | 50885.00000 | 50934.00000 | 51074.50000 |
| *SN* | 120 | 0.00000 | 13.33390 | 4555980000 | -0.00745 | 0.01498 | -0.00753 |
| *SB* | 121 | 0.00000 | 10.00040 | -5665570 | 0.00006 | 0.00002 | -0.00008 |
| *BA* | 137 | 0.00000 | 3.33347 | 1435410000 | -0.02457 | -0.02457 | 0.04915 |
| *TB-1* | 159 | 162806.00000 | 0.00000 | 1.565 | 162066.00000 | 160709.00000 | 165642.00000 |
| *TL* | 203 | 0.00000 | 13.33390 | -677808000 | -0.00404 | -0.00369 | 0.00772 |
| *PB* | 208 | 0.00000 | 126.67300 | 583105000 | -0.01028 | 0.00924 | 0.00104 |
| *BI-1* | 209 | 111367.00000 | 0.00000 | 1.519 | 112975.00000 | 109602.00000 | 111522.00000 |
| *U* | 238 | 0.00000 | 6.66695 | 12798200000 | -0.00219 | 0.00437 | -0.00219 |

Run Name: 1719906E03 Date/Time: 07/18/2017 9:58:00
Tube Number: 2
Sample Number: **S1**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45644.00000 | 0.00000 | 3.676 | 47045.80000 | 46102.10000 | 43784.20000 |
| AL | 27 | 10000.00000 | 223010.00000 | 1.924 | 10027.12827 | 9795.45741 | 10177.40385 |
| CA | 44 | 10000.00000 | 23011.10000 | 4.151 | 9609.40758 | 9954.60487 | 10435.96260 |
| CR | 52 | 1000.00000 | 530594.00000 | 1.675 | 1016.19580 | 982.73686 | 1001.06824 |
| FE | 57 | 10000.00000 | 111822.00000 | 3.123 | 9697.04146 | 9982.06145 | 10320.84550 |
| K | 39 | 10000.00000 | 453581.00000 | 3.305 | 9876.18742 | 9749.26455 | 10374.53829 |
| MG | 24 | 10000.00000 | 610237.00000 | 1.494 | 9902.78980 | 9925.10420 | 10172.01048 |
| MN | 55 | 1000.00000 | 309619.00000 | 2.415 | 993.49683 | 979.76586 | 1026.73557 |
| NA | 23 | 10000.00000 | 1330310.00000 | 1.728 | 9804.11301 | 10064.62825 | 10131.13668 |
| TI | 47 | 1000.00000 | 13313.90000 | 3.403 | 968.86774 | 1036.32364 | 994.80336 |
| V | 51 | 1000.00000 | 421051.00000 | 1.103 | 994.98933 | 992.37001 | 1012.64134 |
| **IN-1** | 115 | 48860.90000 | 0.00000 | 4.339 | 50108.70000 | 50060.50000 | 46413.60000 |
| AG | 107 | 100.00000 | 110520.00000 | 3.509 | 99.45723 | 96.79369 | 103.74907 |
| AS | 75 | 1000.00000 | 49331.90000 | 4.233 | 987.53923 | 965.29561 | 1047.15736 |
| BA | 137 | 1000.00000 | 129637.00000 | 3.679 | 979.59231 | 977.93319 | 1042.47717 |
| CD | 111 | 100.00000 | 13959.10000 | 3.804 | 98.23103 | 97.40169 | 104.36603 |
| CO | 59 | 1000.00000 | 927048.00000 | 2.941 | 988.01890 | 978.47201 | 1033.50896 |
| CU | 63 | 1000.00000 | 681010.00000 | 2.200 | 998.94078 | 978.54561 | 1022.50396 |
| MO | 98 | 100.00000 | 49521.10000 | 5.007 | 102.34034 | 94.25052 | 103.40797 |
| NI | 60 | 1000.00000 | 251324.00000 | 2.048 | 988.19595 | 988.14992 | 1023.65395 |
| SB | 121 | 100.00000 | 26873.00000 | 2.973 | 100.26339 | 96.90382 | 102.83292 |
| SN | 120 | 100.00000 | 42733.90000 | 2.084 | 102.04323 | 97.87632 | 100.08054 |
| SR | 88 | 100.00000 | 36784.10000 | 1.058 | 101.22041 | 99.34789 | 99.43122 |
| ZN | 66 | 1000.00000 | 87650.80000 | 2.486 | 1012.75837 | 971.34835 | 1015.89573 |
| **BI-1** | 209 | 107111.00000 | 0.00000 | 2.245 | 109431.00000 | 107272.00000 | 104629.00000 |
| PB | 208 | 100.00000 | 265438.00000 | 0.846 | 100.13927 | 100.76907 | 99.09263 |
| TL | 203 | 100.00000 | 82713.70000 | 0.677 | 100.61464 | 99.27410 | 100.11155 |
| U | 238 | 100.00000 | 297924.00000 | 0.882 | 99.20159 | 99.85239 | 100.94652 |
| *GE-1* | 72 | 95970.50000 | 0.00000 | 2.041 | 98193.30000 | 95222.30000 | 94495.90000 |
| *TB-1* | 159 | 160367.00000 | 0.00000 | 2.668 | 165287.00000 | 157508.00000 | 158307.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:00:00
Tube Number: 3
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45767.90000 | 0.00000 | 3.483 | 47497.30000 | 45450.00000 | 44356.40000 |
| AL | 27 | 1.63600 | 53.33580 | 54.914 | 2.27362 | 0.60844 | 2.02583 |
| CA | 44 | -33.87000 | 343.35200 | -43.578 | -45.36059 | -39.04344 | -17.22809 |
| CR | 52 | 0.57280 | 373.35400 | 10.965 | 0.50350 | 0.58886 | 0.62600 |
| FE | 57 | 0.93340 | 43.33520 | 245.447 | -1.24239 | 3.32365 | 0.71896 |
| K | 39 | -0.21680 | 38347.20000 | -5184.500 | 12.65244 | -8.09280 | -5.21067 |
| MG | 24 | 1.32700 | 176.67500 | 32.773 | 0.95029 | 1.22829 | 1.80307 |
| MN | 55 | 0.11800 | 46.66870 | 19.644 | 0.09136 | 0.12937 | 0.13337 |
| NA | 23 | 2.10600 | 7472.41000 | 99.478 | 3.55792 | -0.29521 | 3.05593 |
| TI | 47 | 1.24200 | 16.66730 | 32.786 | 1.44345 | 1.50847 | 0.77283 |
| V | 51 | 0.13380 | 83.33720 | 39.170 | 0.18871 | 0.12847 | 0.08430 |
| **IN-1** | 115 | 51352.90000 | 0.00000 | 0.488 | 51627.10000 | 51136.40000 | 51295.30000 |
| AG | 107 | 0.02284 | 40.00160 | 65.149 | 0.03122 | 0.03163 | 0.00566 |
| AS | 75 | 0.76400 | 81.33420 | 50.170 | 1.11438 | 0.82300 | 0.35472 |
| BA | 137 | 0.24460 | 36.66840 | 46.239 | 0.12129 | 0.34359 | 0.26905 |
| CD | 111 | -0.02769 | 6.00006 | -98.917 | -0.02794 | -0.00018 | -0.05496 |
| CO | 59 | 0.12260 | 186.67700 | 34.486 | 0.15561 | 0.13716 | 0.07491 |
| CU | 63 | 0.23690 | 210.00900 | 23.136 | 0.29098 | 0.23822 | 0.18138 |
| MO | 98 | 0.03180 | 33.33490 | 92.987 | 0.02504 | 0.06416 | 0.00619 |
| NI | 60 | 0.17600 | 76.67010 | 33.597 | 0.11155 | 0.22772 | 0.18878 |
| SB | 121 | 0.04686 | 23.33420 | 42.680 | 0.06996 | 0.03543 | 0.03521 |
| SN | 120 | 0.04430 | 33.33460 | 57.923 | 0.05869 | 0.05954 | 0.01467 |
| SR | 88 | 0.04291 | 23.33420 | 69.261 | 0.05982 | 0.00859 | 0.06032 |
| ZN | 66 | 0.10570 | 36.66810 | 155.251 | 0.24804 | -0.07380 | 0.14286 |
| **BI-1** | 209 | 112427.00000 | 0.00000 | 0.777 | 113066.00000 | 112784.00000 | 111431.00000 |
| PB | 208 | 0.01736 | 176.67500 | 111.694 | 0.03968 | 0.00768 | 0.00471 |
| TL | 203 | 0.00376 | 16.66740 | 471.653 | 0.00741 | -0.01550 | 0.01937 |
| U | 238 | 0.02859 | 96.67130 | 100.210 | 0.05823 | 0.02650 | 0.00104 |
| *GE-1* | 72 | 100656.00000 | 0.00000 | 2.264 | 103213.00000 | 99915.90000 | 98839.30000 |
| *TB-1* | 159 | 162438.00000 | 0.00000 | 0.702 | 163719.00000 | 162067.00000 | 161528.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:02:00
Tube Number: 4
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45587.10000 | 0.00000 | 3.734 | 45670.70000 | 47246.10000 | 43844.60000 |
| AL | 27 | 0.94420 | 36.66830 | 173.268 | 1.05002 | -0.74230 | 2.52484 |
| CA | 44 | -24.43000 | 363.35600 | -75.031 | -8.81297 | -44.61196 | -19.86617 |
| CR | 52 | 0.59750 | 386.68700 | 16.072 | 0.52886 | 0.70721 | 0.55633 |
| FE | 57 | 2.15900 | 56.66880 | 101.621 | 3.29322 | -0.36967 | 3.55368 |
| K | 39 | -2.09500 | 38109.90000 | -343.723 | -10.09306 | 3.87244 | -0.06398 |
| MG | 24 | -0.25940 | 80.00370 | -44.449 | -0.25895 | -0.14435 | -0.37496 |
| MN | 55 | 0.04398 | 23.33420 | 119.804 | 0.03179 | -0.00155 | 0.10170 |
| NA | 23 | -0.91520 | 7038.81000 | -289.226 | 1.93784 | -3.29253 | -1.39142 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.03163 | 40.00200 | 194.499 | 0.08008 | 0.05240 | -0.03759 |
| **IN-1** | 115 | 49364.90000 | 0.00000 | 0.634 | 49248.20000 | 49127.20000 | 49719.30000 |
| AG | 107 | 0.00337 | 16.66730 | 155.427 | 0.00638 | 0.00642 | -0.00268 |
| AS | 75 | 0.18610 | 49.33380 | 123.160 | 0.44306 | 0.00276 | 0.11264 |
| BA | 137 | 0.05194 | 10.00040 | 147.208 | 0.12834 | 0.05207 | -0.02457 |
| CD | 111 | -0.00725 | 8.66674 | -293.023 | -0.02598 | -0.01163 | 0.01584 |
| CO | 59 | 0.00942 | 73.33610 | 67.346 | 0.01672 | 0.00621 | 0.00532 |
| CU | 63 | 0.10370 | 110.00500 | 42.661 | 0.14758 | 0.10428 | 0.05910 |
| MO | 98 | -0.01227 | 10.00040 | -163.570 | -0.03226 | 0.00788 | -0.01243 |
| NI | 60 | 0.03027 | 36.66810 | 200.628 | 0.08300 | 0.04393 | -0.03613 |
| SB | 121 | 0.03830 | 20.00110 | 255.640 | 0.00124 | 0.14933 | -0.03567 |
| SN | 120 | 0.04727 | 33.33490 | 56.357 | 0.01652 | 0.06320 | 0.06209 |
| SR | 88 | 0.00961 | 10.00040 | 280.720 | 0.03657 | 0.00966 | -0.01739 |
| ZN | 66 | 0.34830 | 56.66910 | 19.790 | 0.38731 | 0.38897 | 0.26875 |
| **BI-1** | 209 | 110664.00000 | 0.00000 | 0.784 | 111664.00000 | 110210.00000 | 110117.00000 |
| PB | 208 | -0.01077 | 96.67070 | -49.740 | -0.00625 | -0.00939 | -0.01669 |
| TL | 203 | -0.01163 | 3.33347 | -57.584 | -0.00390 | -0.01550 | -0.01550 |
| U | 238 | 0.00652 | 26.66780 | 126.074 | -0.00219 | 0.00760 | 0.01414 |
| *GE-1* | 72 | 98540.10000 | 0.00000 | 1.998 | 100501.00000 | 96562.80000 | 98556.20000 |
| *TB-1* | 159 | 157831.00000 | 0.00000 | 0.449 | 157314.00000 | 158638.00000 | 157539.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:04:00
Tube Number: 5
Sample Number: **ICV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 47048.90000 | 0.00000 | 2.988 | 47256.10000 | 48340.30000 | 45550.30000 |
| AL | 27 | 4964.00000 | 114107.00000 | 2.585 | 5038.36098 | 4815.99996 | 5038.07344 |
| CA | 44 | 4926.00000 | 11902.50000 | 5.104 | 4852.54083 | 4718.62430 | 5205.38567 |
| CR | 52 | 496.10000 | 271278.00000 | 1.520 | 495.59566 | 488.88089 | 503.93113 |
| FE | 57 | 4938.00000 | 56959.50000 | 2.163 | 5019.42248 | 4816.91631 | 4977.15555 |
| K | 39 | 4955.00000 | 251614.00000 | 2.674 | 5016.19929 | 4803.04608 | 5046.04434 |
| MG | 24 | 4995.00000 | 314259.00000 | 2.182 | 5033.00816 | 4872.56663 | 5080.63554 |
| MN | 55 | 496.30000 | 158441.00000 | 1.578 | 499.90638 | 487.33399 | 501.71953 |
| NA | 23 | 4533.00000 | 625561.00000 | 2.261 | 4556.80136 | 4420.41923 | 4621.14865 |
| TI | 47 | 510.90000 | 7005.49000 | 5.447 | 518.08266 | 480.20740 | 534.47176 |
| V | 51 | 497.70000 | 215942.00000 | 3.355 | 497.28494 | 481.24462 | 514.64409 |
| **IN-1** | 115 | 50144.50000 | 0.00000 | 0.946 | 50521.40000 | 50300.50000 | 49611.60000 |
| AG | 107 | 51.23000 | 58172.30000 | 1.236 | 51.61115 | 51.58116 | 50.49950 |
| AS | 75 | 495.30000 | 25123.80000 | 0.448 | 492.70381 | 496.68787 | 496.39562 |
| BA | 137 | 496.50000 | 66123.80000 | 1.601 | 487.47594 | 499.62171 | 502.43877 |
| CD | 111 | 50.87000 | 7300.15000 | 1.087 | 50.86284 | 51.42068 | 50.31497 |
| CO | 59 | 490.40000 | 466950.00000 | 0.109 | 490.94628 | 489.90294 | 490.21204 |
| CU | 63 | 497.00000 | 347609.00000 | 0.514 | 496.35908 | 499.87784 | 494.90497 |
| MO | 98 | 50.54000 | 25710.40000 | 2.095 | 49.38359 | 50.76006 | 51.46556 |
| NI | 60 | 498.90000 | 128797.00000 | 2.327 | 506.07214 | 505.17750 | 485.53584 |
| SB | 121 | 54.95000 | 15169.80000 | 2.249 | 53.56718 | 55.93741 | 55.35690 |
| SN | 120 | 49.89000 | 21886.60000 | 4.049 | 48.16341 | 52.11149 | 49.39392 |
| SR | 88 | 49.17000 | 18560.90000 | 1.752 | 49.72959 | 48.17528 | 49.59601 |
| ZN | 66 | 487.90000 | 43919.00000 | 1.379 | 486.22040 | 482.23677 | 495.35912 |
| **BI-1** | 209 | 110385.00000 | 0.00000 | 1.437 | 112210.00000 | 109603.00000 | 109343.00000 |
| PB | 208 | 49.92000 | 136599.00000 | 1.169 | 49.26083 | 50.14041 | 50.36461 |
| TL | 203 | 50.01000 | 42630.60000 | 2.126 | 49.04919 | 51.15239 | 49.83557 |
| U | 238 | 49.79000 | 152874.00000 | 1.854 | 49.29408 | 50.85136 | 49.21469 |
| *GE-1* | 72 | 99081.10000 | 0.00000 | 1.725 | 100795.00000 | 99071.30000 | 97376.70000 |
| *TB-1* | 159 | 160988.00000 | 0.00000 | 0.915 | 162316.00000 | 161245.00000 | 159403.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:06:00
Tube Number: 6
Sample Number: **ICB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45831.40000 | 0.00000 | 3.906 | 47898.50000 | 44797.90000 | 44797.80000 |
| AL | 27 | 0.56900 | 30.00110 | 194.728 | 1.82109 | 0.17130 | -0.28550 |
| CA | 44 | 12.49000 | 450.02600 | 200.480 | 16.67808 | 35.18172 | -14.38019 |
| CR | 52 | 0.52330 | 346.68600 | 22.072 | 0.39040 | 0.58013 | 0.59934 |
| FE | 57 | -0.89420 | 23.33420 | -112.279 | -0.40496 | -2.04965 | -0.22808 |
| K | 39 | -93.43000 | 34476.30000 | -24.414 | -119.09005 | -75.43838 | -85.77157 |
| MG | 24 | -0.42910 | 70.00330 | -99.720 | -0.31986 | -0.06651 | -0.90119 |
| MN | 55 | 0.10770 | 43.33520 | 128.134 | 0.05955 | 0.26331 | 0.00015 |
| NA | 23 | -4.92000 | 6548.57000 | -37.846 | -4.41778 | -3.36140 | -6.98156 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.19810 | 110.00500 | 5.022 | 0.18660 | 0.20383 | 0.20384 |
| **IN-1** | 115 | 50030.60000 | 0.00000 | 4.719 | 52339.60000 | 50131.10000 | 47621.10000 |
| AG | 107 | 0.01809 | 33.33460 | 105.694 | 0.02220 | -0.00275 | 0.03482 |
| AS | 75 | 0.23800 | 52.66720 | 23.050 | 0.29378 | 0.18411 | 0.23616 |
| BA | 137 | 0.04948 | 10.00040 | 151.839 | 0.04737 | 0.12564 | -0.02457 |
| CD | 111 | -0.02143 | 6.66673 | -110.033 | -0.02849 | -0.04068 | 0.00487 |
| CO | 59 | 0.07169 | 133.33900 | 34.342 | 0.05192 | 0.09926 | 0.06388 |
| CU | 63 | 0.13370 | 133.33900 | 26.515 | 0.16294 | 0.14399 | 0.09430 |
| MO | 98 | -0.01942 | 6.66692 | -57.312 | -0.01342 | -0.01259 | -0.03226 |
| NI | 60 | -0.04900 | 16.66750 | -164.041 | -0.11430 | 0.04076 | -0.07349 |
| SB | 121 | -0.02357 | 3.33347 | -88.799 | -0.03567 | 0.00059 | -0.03567 |
| SN | 120 | 0.07630 | 46.66850 | 72.071 | 0.12304 | 0.01570 | 0.09016 |
| SR | 88 | 0.00883 | 10.00040 | 287.865 | 0.03338 | -0.01739 | 0.01051 |
| ZN | 66 | -0.14660 | 13.33380 | -85.812 | -0.07881 | -0.06943 | -0.29181 |
| **BI-1** | 209 | 111413.00000 | 0.00000 | 2.028 | 113207.00000 | 112157.00000 | 108876.00000 |
| PB | 208 | -0.00377 | 116.67200 | -95.860 | 0.00034 | -0.00642 | -0.00523 |
| TL | 203 | 0.00768 | 20.00110 | 297.930 | 0.03026 | -0.01550 | 0.00829 |
| U | 238 | 0.00857 | 33.33470 | 21.051 | 0.00734 | 0.01063 | 0.00772 |
| *GE-1* | 72 | 98103.80000 | 0.00000 | 1.457 | 99736.10000 | 97075.10000 | 97500.30000 |
| *TB-1* | 159 | 161444.00000 | 0.00000 | 2.119 | 164965.00000 | 161233.00000 | 158133.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:08:00
Tube Number: 7
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45747.90000 | 0.00000 | 2.174 | 45420.10000 | 44958.70000 | 46865.00000 |
| AL | 27 | 206.70000 | 4634.34000 | 4.142 | 206.09431 | 215.50264 | 198.40696 |
| CA | 44 | 335.70000 | 1180.12000 | 13.366 | 361.03772 | 362.16729 | 283.88887 |
| CR | 52 | 4.60500 | 2513.68000 | 11.533 | 4.81449 | 4.99926 | 4.00092 |
| FE | 57 | 198.20000 | 2253.62000 | 7.422 | 213.55133 | 196.71237 | 184.23750 |
| K | 39 | 342.20000 | 52569.70000 | 7.309 | 361.04403 | 351.62963 | 313.78873 |
| MG | 24 | 208.70000 | 12863.30000 | 3.639 | 217.36141 | 203.12611 | 205.65852 |
| MN | 55 | 4.98600 | 1556.83000 | 5.788 | 5.15846 | 5.14625 | 4.65258 |
| NA | 23 | 370.80000 | 56378.70000 | 1.975 | 378.84753 | 369.26655 | 364.46072 |
| TI | 47 | 28.84000 | 383.35600 | 36.338 | 39.24699 | 28.97441 | 18.28687 |
| V | 51 | 1.00500 | 450.02700 | 8.461 | 1.03544 | 1.07081 | 0.90908 |
| **IN-1** | 115 | 49531.30000 | 0.00000 | 0.749 | 49171.80000 | 49509.40000 | 49912.50000 |
| AG | 107 | 1.09200 | 1236.78000 | 14.423 | 1.27323 | 0.98782 | 1.01516 |
| AS | 75 | 4.07400 | 244.00400 | 10.572 | 4.43184 | 3.59621 | 4.19544 |
| BA | 137 | 4.41000 | 583.37300 | 17.571 | 3.88083 | 5.29924 | 4.04917 |
| CD | 111 | 1.04200 | 157.33600 | 12.217 | 0.92759 | 1.01975 | 1.17920 |
| CO | 59 | 1.04100 | 1043.42000 | 9.483 | 1.14155 | 1.03755 | 0.94420 |
| CU | 63 | 4.28000 | 2993.79000 | 9.411 | 4.62591 | 4.37661 | 3.83781 |
| MO | 98 | 0.81670 | 426.69100 | 20.889 | 0.62959 | 0.96373 | 0.85688 |
| NI | 60 | 3.57400 | 940.07000 | 4.813 | 3.75881 | 3.41844 | 3.54560 |
| SB | 121 | 1.88400 | 523.36500 | 17.192 | 1.51690 | 2.13048 | 2.00372 |
| SN | 120 | 4.09400 | 1786.89000 | 12.638 | 3.78500 | 3.80521 | 4.69110 |
| SR | 88 | 2.03900 | 766.72600 | 8.244 | 1.87433 | 2.21034 | 2.03262 |
| ZN | 66 | 30.96000 | 2777.09000 | 0.946 | 31.22621 | 31.01095 | 30.64681 |
| **BI-1** | 209 | 111749.00000 | 0.00000 | 1.545 | 109904.00000 | 113328.00000 | 112015.00000 |
| PB | 208 | 2.01700 | 5710.77000 | 1.650 | 1.99679 | 1.99920 | 2.05561 |
| TL | 203 | 1.00500 | 880.07400 | 6.884 | 1.08058 | 0.94459 | 0.99054 |
| U | 238 | 0.91870 | 2863.80000 | 7.789 | 0.91054 | 0.99402 | 0.85160 |
| *GE-1* | 72 | 98389.00000 | 0.00000 | 1.376 | 98516.60000 | 99674.90000 | 96975.50000 |
| *TB-1* | 159 | 159404.00000 | 0.00000 | 0.385 | 158767.00000 | 159992.00000 | 159452.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:09:00
Tube Number: 8
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 40821.80000 | 0.00000 | 1.834 | 40213.70000 | 40593.80000 | 41657.90000 |
| AL | 27 | 111500.00000 | 2224540.00000 | 3.038 | 114045.89800 | 112913.49855 | 107695.96545 |
| CA | 44 | 314900.00000 | 637070.00000 | 2.588 | 319777.43236 | 319439.57405 | 305493.42385 |
| CR | 52 | 1.80800 | 920.07000 | 4.636 | 1.83805 | 1.71363 | 1.87312 |
| FE | 57 | 273800.00000 | 2739440.00000 | 1.871 | 275560.74418 | 277896.30872 | 268087.71757 |
| K | 39 | 119100.00000 | 4460040.00000 | 1.864 | 121425.67641 | 118827.09413 | 117009.14033 |
| MG | 24 | 110900.00000 | 6054470.00000 | 2.044 | 111609.37800 | 112788.40041 | 108407.65396 |
| MN | 55 | 84.98000 | 23538.90000 | 4.735 | 88.98566 | 85.02207 | 80.93725 |
| NA | 23 | 265600.00000 | 31442100.00000 | 2.858 | 268109.78811 | 271683.80187 | 257116.06368 |
| TI | 47 | 2372.00000 | 28237.90000 | 1.530 | 2385.10761 | 2399.15258 | 2330.43877 |
| V | 51 | 0.09658 | 60.00250 | 52.526 | 0.09941 | 0.04449 | 0.14584 |
| **IN-1** | 115 | 45838.10000 | 0.00000 | 3.100 | 44501.10000 | 45683.20000 | 47330.10000 |
| AG | 107 | 0.34040 | 366.68700 | 24.780 | 0.30610 | 0.27854 | 0.43646 |
| AS | 75 | 0.60590 | 65.33400 | 20.878 | 0.57603 | 0.49699 | 0.74460 |
| BA | 137 | 1.15000 | 143.34000 | 27.757 | 0.82155 | 1.45903 | 1.16874 |
| CD | 111 | 0.38010 | 58.66730 | 12.573 | 0.43460 | 0.36030 | 0.34538 |
| CO | 59 | 0.92130 | 860.05900 | 11.484 | 0.98452 | 0.98033 | 0.79915 |
| CU | 63 | 0.97410 | 660.04100 | 21.148 | 0.99121 | 0.76003 | 1.17105 |
| MO | 98 | 2148.00000 | 997752.00000 | 2.914 | 2203.10629 | 2160.46166 | 2079.85109 |
| NI | 60 | 1.23100 | 316.68300 | 10.975 | 1.32677 | 1.28948 | 1.07641 |
| SB | 121 | 1.12100 | 290.01500 | 33.060 | 1.35309 | 1.31716 | 0.69401 |
| SN | 120 | 0.09580 | 50.00200 | 107.724 | 0.20139 | -0.00489 | 0.09090 |
| SR | 88 | 10.61000 | 3664.01000 | 4.991 | 11.21151 | 10.42643 | 10.20339 |
| ZN | 66 | 2.75000 | 250.01200 | 19.509 | 2.46392 | 3.36875 | 2.41699 |
| **BI-1** | 209 | 94820.70000 | 0.00000 | 3.024 | 91832.80000 | 95079.30000 | 97550.10000 |
| PB | 208 | 0.24080 | 673.37000 | 8.725 | 0.23537 | 0.26398 | 0.22302 |
| TL | 203 | 0.11070 | 93.33750 | 59.006 | 0.04091 | 0.12072 | 0.17039 |
| U | 238 | 0.06736 | 183.34300 | 4.253 | 0.06828 | 0.06965 | 0.06415 |
| *GE-1* | 72 | 90086.80000 | 0.00000 | 3.153 | 86816.30000 | 91927.70000 | 91516.20000 |
| *TB-1* | 159 | 138864.00000 | 0.00000 | 2.238 | 136022.00000 | 138387.00000 | 142182.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:11:00
Tube Number: 9
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 43630.30000 | 0.00000 | 0.970 | 43583.50000 | 43232.50000 | 44075.00000 |
| AL | 27 | 106000.00000 | 2259660.00000 | 1.896 | 106119.61719 | 107935.89413 | 103921.31073 |
| CA | 44 | 298000.00000 | 644520.00000 | 1.366 | 302667.69424 | 295378.78840 | 295885.62944 |
| CR | 52 | 211.00000 | 107029.00000 | 1.694 | 212.46206 | 213.54522 | 206.88386 |
| FE | 57 | 256300.00000 | 2740650.00000 | 0.317 | 256617.42399 | 256880.44798 | 255359.02616 |
| K | 39 | 113800.00000 | 4558870.00000 | 2.285 | 116200.70861 | 114259.38650 | 111052.60517 |
| MG | 24 | 104300.00000 | 6085180.00000 | 0.745 | 104350.59380 | 105054.93926 | 103503.18096 |
| MN | 55 | 288.20000 | 85340.60000 | 0.900 | 290.98151 | 287.75146 | 285.84804 |
| NA | 23 | 253800.00000 | 32110500.00000 | 1.684 | 258104.06006 | 253605.04498 | 249556.71070 |
| TI | 47 | 2194.00000 | 27927.40000 | 1.633 | 2188.08764 | 2161.33979 | 2232.29875 |
| V | 51 | 219.60000 | 88443.60000 | 1.222 | 217.51989 | 222.66864 | 218.78292 |
| **IN-1** | 115 | 46954.80000 | 0.00000 | 1.619 | 47831.50000 | 46557.10000 | 46475.80000 |
| AG | 107 | 47.37000 | 50368.50000 | 2.128 | 47.70549 | 46.23854 | 48.17040 |
| AS | 75 | 98.50000 | 4708.89000 | 2.497 | 97.49581 | 96.69744 | 101.30075 |
| BA | 137 | 1.26300 | 160.00700 | 39.398 | 0.76263 | 1.26942 | 1.75779 |
| CD | 111 | 92.75000 | 12454.20000 | 2.178 | 90.78491 | 92.65483 | 94.82108 |
| CO | 59 | 200.50000 | 178795.00000 | 0.613 | 199.51167 | 200.06761 | 201.86365 |
| CU | 63 | 194.20000 | 127172.00000 | 0.848 | 192.72312 | 193.84896 | 195.96722 |
| MO | 98 | 2208.00000 | 1051320.00000 | 3.083 | 2153.56407 | 2187.32918 | 2284.64496 |
| NI | 60 | 196.00000 | 47377.20000 | 3.090 | 191.70876 | 193.35707 | 202.92702 |
| SB | 121 | 1.13600 | 303.34800 | 20.643 | 1.37040 | 0.90133 | 1.13764 |
| SN | 120 | 0.15630 | 76.67000 | 30.307 | 0.20919 | 0.14204 | 0.11773 |
| SR | 88 | 10.43000 | 3694.02000 | 2.363 | 10.70771 | 10.23033 | 10.36259 |
| ZN | 66 | 85.96000 | 7265.63000 | 3.400 | 85.85395 | 88.93010 | 83.08680 |
| **BI-1** | 209 | 98292.00000 | 0.00000 | 2.226 | 100806.00000 | 96814.40000 | 97255.70000 |
| PB | 208 | 0.25120 | 723.37300 | 14.136 | 0.24237 | 0.22089 | 0.29026 |
| TL | 203 | 0.09032 | 80.00330 | 40.633 | 0.06159 | 0.13166 | 0.07772 |
| U | 238 | 0.09649 | 270.01600 | 43.942 | 0.09767 | 0.05351 | 0.13828 |
| *GE-1* | 72 | 92381.00000 | 0.00000 | 0.482 | 92723.90000 | 91877.60000 | 92541.50000 |
| *TB-1* | 159 | 143507.00000 | 0.00000 | 0.622 | 144111.00000 | 142483.00000 | 143928.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:13:00
Tube Number: 10
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45985.30000 | 0.00000 | 2.046 | 44948.40000 | 46222.90000 | 46784.50000 |
| AL | 27 | 18.03000 | 420.02300 | 32.751 | 24.75359 | 15.63865 | 13.69220 |
| CA | 44 | 47.32000 | 530.03400 | 48.753 | 65.88329 | 54.57770 | 21.49504 |
| CR | 52 | 0.53850 | 356.68600 | 22.470 | 0.67347 | 0.50237 | 0.43959 |
| FE | 57 | 46.81000 | 560.03400 | 13.800 | 54.22804 | 43.82402 | 42.39061 |
| K | 39 | -57.12000 | 36117.50000 | -59.559 | -18.01043 | -73.61245 | -79.76684 |
| MG | 24 | 17.29000 | 1156.76000 | 22.233 | 21.55906 | 16.22893 | 14.09695 |
| MN | 55 | 0.08528 | 36.66860 | 46.623 | 0.13118 | 0.06290 | 0.06175 |
| NA | 23 | 71.10000 | 16677.90000 | 22.743 | 87.77808 | 70.04408 | 55.48942 |
| TI | 47 | 0.74270 | 10.00060 | 98.680 | 0.76265 | 0.00000 | 1.46549 |
| V | 51 | 0.01579 | 33.33460 | 372.134 | -0.03820 | 0.07838 | 0.00719 |
| **IN-1** | 115 | 51251.90000 | 0.00000 | 2.072 | 50150.40000 | 51336.00000 | 52269.30000 |
| AG | 107 | -0.00593 | 6.66693 | -164.570 | -0.01156 | -0.01156 | 0.00534 |
| AS | 75 | 0.16530 | 50.00050 | 133.817 | 0.42064 | 0.04522 | 0.03006 |
| BA | 137 | 0.00045 | 3.33347 | 9573.760 | 0.05051 | -0.02457 | -0.02457 |
| CD | 111 | 0.01816 | 12.66680 | 161.454 | 0.02907 | 0.04045 | -0.01505 |
| CO | 59 | 0.02073 | 86.67070 | 205.885 | 0.04669 | 0.04402 | -0.02853 |
| CU | 63 | 0.09310 | 106.67200 | 11.504 | 0.10101 | 0.09737 | 0.08091 |
| MO | 98 | 0.39880 | 223.34300 | 24.060 | 0.49869 | 0.39037 | 0.30735 |
| NI | 60 | 0.01322 | 33.33490 | 687.670 | 0.11820 | -0.03859 | -0.03994 |
| SB | 121 | -0.02358 | 3.33347 | -88.719 | 0.00058 | -0.03567 | -0.03567 |
| SN | 120 | 0.04416 | 33.33490 | 55.865 | 0.01569 | 0.05919 | 0.05760 |
| SR | 88 | 0.03412 | 20.00080 | 72.948 | 0.00910 | 0.03438 | 0.05887 |
| ZN | 66 | 0.35920 | 60.00280 | 59.104 | 0.15279 | 0.57685 | 0.34805 |
| **BI-1** | 209 | 116472.00000 | 0.00000 | 0.932 | 117397.00000 | 116741.00000 | 115278.00000 |
| PB | 208 | 0.00599 | 150.00700 | 117.734 | -0.00131 | 0.01278 | 0.00652 |
| TL | 203 | -0.00808 | 6.66694 | -79.567 | -0.00447 | -0.01550 | -0.00427 |
| U | 238 | 0.00502 | 23.33430 | 93.704 | 0.00088 | 0.01013 | 0.00405 |
| *GE-1* | 72 | 101698.00000 | 0.00000 | 1.501 | 100391.00000 | 101327.00000 | 103375.00000 |
| *TB-1* | 159 | 164339.00000 | 0.00000 | 0.590 | 165451.00000 | 163893.00000 | 163674.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:14:00
Tube Number: 11
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 47998.90000 | 0.00000 | 0.290 | 47838.30000 | 48079.70000 | 48078.80000 |
| AL | 27 | 2486.00000 | 58316.10000 | 2.992 | 2568.22158 | 2424.07894 | 2464.34065 |
| CA | 44 | 2420.00000 | 6195.07000 | 5.298 | 2519.69972 | 2275.08394 | 2464.12766 |
| CR | 52 | 254.10000 | 141824.00000 | 2.981 | 261.40556 | 246.28562 | 254.66395 |
| FE | 57 | 2477.00000 | 29173.60000 | 1.525 | 2515.07612 | 2476.05949 | 2439.53972 |
| K | 39 | 2427.00000 | 146294.00000 | 2.248 | 2474.98087 | 2438.49738 | 2367.66167 |
| MG | 24 | 2492.00000 | 160067.00000 | 2.339 | 2554.19395 | 2438.42712 | 2484.49723 |
| MN | 55 | 251.40000 | 81918.10000 | 0.568 | 252.01148 | 249.82352 | 252.50867 |
| NA | 23 | 2305.00000 | 328295.00000 | 1.810 | 2352.07908 | 2274.06945 | 2287.36060 |
| TI | 47 | 243.10000 | 3403.93000 | 6.150 | 235.78560 | 260.27515 | 233.17880 |
| V | 51 | 254.60000 | 112796.00000 | 2.388 | 260.70925 | 248.54789 | 254.69330 |
| **IN-1** | 115 | 53707.50000 | 0.00000 | 0.736 | 54017.80000 | 53262.50000 | 53842.20000 |
| AG | 107 | 24.92000 | 30314.20000 | 1.594 | 25.10090 | 25.19917 | 24.46739 |
| AS | 75 | 240.40000 | 13085.40000 | 2.344 | 246.65506 | 235.72452 | 238.81031 |
| BA | 137 | 246.10000 | 35113.90000 | 0.683 | 247.42706 | 246.75618 | 244.24044 |
| CD | 111 | 24.82000 | 3819.94000 | 3.058 | 25.66328 | 24.58245 | 24.20007 |
| CO | 59 | 242.60000 | 247483.00000 | 0.403 | 242.88140 | 243.43144 | 241.53162 |
| CU | 63 | 247.00000 | 185043.00000 | 1.445 | 250.16428 | 247.74141 | 243.14090 |
| MO | 98 | 24.57000 | 13397.60000 | 2.267 | 23.96958 | 25.06980 | 24.67150 |
| NI | 60 | 247.00000 | 68294.10000 | 2.838 | 252.05879 | 249.91706 | 238.98913 |
| SB | 121 | 24.70000 | 7309.11000 | 2.866 | 24.46806 | 25.49855 | 24.14278 |
| SN | 120 | 24.36000 | 11455.70000 | 1.545 | 24.79697 | 24.11748 | 24.17654 |
| SR | 88 | 24.77000 | 10017.60000 | 1.927 | 25.30524 | 24.59081 | 24.39992 |
| ZN | 66 | 244.70000 | 23612.30000 | 2.028 | 241.59980 | 242.20024 | 250.47805 |
| **BI-1** | 209 | 117933.00000 | 0.00000 | 2.403 | 120982.00000 | 115378.00000 | 117437.00000 |
| PB | 208 | 24.70000 | 72281.80000 | 1.207 | 24.64380 | 25.02542 | 24.43781 |
| TL | 203 | 24.83000 | 22628.80000 | 3.464 | 25.56552 | 25.04176 | 23.88456 |
| U | 238 | 24.36000 | 79903.00000 | 1.157 | 24.18894 | 24.68316 | 24.20083 |
| *GE-1* | 72 | 106283.00000 | 0.00000 | 1.253 | 107437.00000 | 104825.00000 | 106589.00000 |
| *TB-1* | 159 | 172284.00000 | 0.00000 | 2.585 | 177314.00000 | 168846.00000 | 170691.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:16:00
Tube Number: 12
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 46728.00000 | 0.00000 | 2.118 | 45761.00000 | 47738.70000 | 46684.20000 |
| AL | 27 | 2.62200 | 76.67000 | 70.633 | 4.17681 | 3.11569 | 0.57273 |
| CA | 44 | -46.84000 | 320.01600 | -81.255 | -13.57518 | -88.35303 | -38.59366 |
| CR | 52 | 0.51010 | 346.68800 | 31.719 | 0.65919 | 0.33808 | 0.53299 |
| FE | 57 | 3.44500 | 73.33640 | 15.216 | 3.28094 | 3.02231 | 4.03143 |
| K | 39 | -111.00000 | 34409.40000 | -34.712 | -69.16706 | -119.17151 | -144.95126 |
| MG | 24 | 1.19800 | 173.34200 | 49.165 | 0.88243 | 1.87751 | 0.83397 |
| MN | 55 | 0.00954 | 13.33380 | 200.860 | 0.03166 | -0.00187 | -0.00118 |
| NA | 23 | 6.31300 | 8189.49000 | 67.638 | 11.10190 | 2.90340 | 4.93254 |
| TI | 47 | 0.24480 | 3.33346 | 173.162 | 0.00000 | 0.00000 | 0.73429 |
| V | 51 | 0.06898 | 56.66930 | 107.147 | 0.10349 | 0.11933 | -0.01588 |
| **IN-1** | 115 | 52166.20000 | 0.00000 | 1.127 | 51777.70000 | 52842.60000 | 51878.30000 |
| AG | 107 | -0.00304 | 10.00040 | -280.843 | 0.00550 | -0.01156 | -0.00305 |
| AS | 75 | 0.05623 | 45.33380 | 221.946 | -0.07675 | 0.17092 | 0.07452 |
| BA | 137 | 0.04756 | 10.00040 | 152.607 | -0.02457 | 0.04668 | 0.12058 |
| CD | 111 | -0.02835 | 6.00005 | -1.590 | -0.02806 | -0.02887 | -0.02814 |
| CO | 59 | 0.08256 | 150.00700 | 10.575 | 0.08375 | 0.09064 | 0.07330 |
| CU | 63 | 0.10390 | 116.67200 | 25.756 | 0.09607 | 0.13371 | 0.08195 |
| MO | 98 | 0.03728 | 36.66840 | 107.216 | 0.08201 | 0.00506 | 0.02477 |
| NI | 60 | 0.06045 | 46.66840 | 200.165 | 0.14842 | -0.07752 | 0.11045 |
| SB | 121 | -0.02398 | 3.33347 | -84.362 | -0.03567 | -0.03567 | -0.00063 |
| SN | 120 | 0.07279 | 46.66850 | 77.002 | 0.12470 | 0.01336 | 0.08031 |
| SR | 88 | -0.00901 | 3.33346 | -161.154 | -0.01739 | 0.00775 | -0.01739 |
| ZN | 66 | -0.14970 | 13.33380 | -39.886 | -0.18416 | -0.08084 | -0.18436 |
| **BI-1** | 209 | 117626.00000 | 0.00000 | 2.135 | 118668.00000 | 119449.00000 | 114761.00000 |
| PB | 208 | -0.00138 | 130.00700 | -69.653 | -0.00179 | -0.00208 | -0.00028 |
| TL | 203 | 0.02095 | 33.33500 | 166.969 | 0.06090 | 0.00618 | -0.00422 |
| U | 238 | 0.00586 | 26.66780 | 129.339 | 0.00690 | 0.01286 | -0.00219 |
| *GE-1* | 72 | 103882.00000 | 0.00000 | 0.934 | 103243.00000 | 104998.00000 | 103404.00000 |
| *TB-1* | 159 | 169424.00000 | 0.00000 | 1.888 | 171096.00000 | 171438.00000 | 165737.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:18:00
Tube Number: 13 Batch: 171931063903A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 48708.60000 | 0.00000 | 3.632 | 49203.30000 | 50177.30000 | 46745.10000 |
| AL | 27 | 1.51300 | 53.33560 | 47.925 | 0.92131 | 1.29685 | 2.32215 |
| CA | 44 | -14.77000 | 410.02400 | -285.240 | -5.09750 | -60.89634 | 21.67046 |
| CR | 52 | 0.47760 | 343.35100 | 14.070 | 0.46403 | 0.41819 | 0.55052 |
| FE | 57 | 1.80400 | 56.66910 | 74.279 | 2.84423 | 0.29213 | 2.27670 |
| K | 39 | -142.50000 | 34450.00000 | -29.109 | -176.35236 | -155.00830 | -96.25757 |
| MG | 24 | 1.55100 | 203.34300 | 8.904 | 1.47090 | 1.71000 | 1.47078 |
| MN | 55 | 0.35080 | 126.67300 | 48.489 | 0.53629 | 0.20220 | 0.31402 |
| NA | 23 | -0.04761 | 7642.50000 | -2358.750 | -0.54872 | -0.83314 | 1.23867 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.01160 | 33.33490 | 435.172 | 0.06986 | -0.01911 | -0.01594 |
| **IN-1** | 115 | 54157.70000 | 0.00000 | 1.607 | 54689.80000 | 53153.50000 | 54629.80000 |
| AG | 107 | 0.00475 | 20.00080 | 5.568 | 0.00459 | 0.00506 | 0.00461 |
| AS | 75 | 0.03698 | 46.00050 | 413.467 | 0.21042 | -0.02105 | -0.07844 |
| BA | 137 | 0.02199 | 6.66693 | 183.447 | 0.04427 | 0.04626 | -0.02457 |
| CD | 111 | -0.04299 | 4.00003 | -59.595 | -0.04301 | -0.06860 | -0.01737 |
| CO | 59 | -0.02340 | 46.66870 | -25.705 | -0.03031 | -0.01929 | -0.02063 |
| CU | 63 | 0.04529 | 76.66980 | 18.998 | 0.03550 | 0.05165 | 0.04873 |
| MO | 98 | -0.01422 | 10.00040 | -126.793 | 0.00380 | -0.03226 | -0.01421 |
| NI | 60 | -0.05472 | 16.66730 | -74.415 | -0.00770 | -0.07774 | -0.07873 |
| SB | 121 | 0.00898 | 13.33390 | 210.556 | 0.03081 | -0.00147 | -0.00239 |
| SN | 120 | 0.03305 | 30.00140 | 108.623 | 0.05373 | -0.00841 | 0.05382 |
| SR | 88 | 0.00715 | 10.00040 | 5.568 | 0.00690 | 0.00761 | 0.00693 |
| ZN | 66 | 0.32580 | 60.00230 | 31.338 | 0.42165 | 0.33740 | 0.21836 |
| **BI-1** | 209 | 120040.00000 | 0.00000 | 1.512 | 122072.00000 | 119468.00000 | 118581.00000 |
| PB | 208 | -0.01914 | 80.00330 | -15.517 | -0.01625 | -0.01898 | -0.02219 |
| TL | 203 | -0.01186 | 3.33347 | -53.170 | -0.01550 | -0.01550 | -0.00458 |
| U | 238 | 0.00179 | 13.33390 | 92.570 | 0.00370 | 0.00082 | 0.00084 |
| *GE-1* | 72 | 104527.00000 | 0.00000 | 0.870 | 105249.00000 | 104826.00000 | 103506.00000 |
| *TB-1* | 159 | 170857.00000 | 0.00000 | 1.388 | 173207.00000 | 170902.00000 | 168463.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:19:00
Tube Number: 14 Batch: 171931063903A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 49853.00000 | 0.00000 | 3.615 | 48651.20000 | 48982.80000 | 51924.80000 |
| AL | 27 | 1910.00000 | 46503.10000 | 5.190 | 2022.73511 | 1869.02876 | 1837.43077 |
| CA | 44 | 3880.00000 | 10037.60000 | 3.941 | 4056.18566 | 3780.01527 | 3804.31069 |
| CR | 52 | 48.43000 | 28081.20000 | 7.791 | 50.98680 | 50.20036 | 44.09383 |
| FE | 57 | 964.70000 | 11805.80000 | 6.414 | 1008.91360 | 991.22696 | 893.99939 |
| K | 39 | 9669.00000 | 480195.00000 | 4.889 | 10062.18432 | 9800.02916 | 9144.50317 |
| MG | 24 | 1903.00000 | 126787.00000 | 6.374 | 2011.50082 | 1925.84322 | 1772.02090 |
| MN | 55 | 50.43000 | 17065.10000 | 3.337 | 52.37073 | 49.39550 | 49.52128 |
| NA | 23 | 9315.00000 | 1353140.00000 | 4.102 | 9665.79133 | 9370.34146 | 8907.68547 |
| TI | 47 | 231.50000 | 3363.93000 | 5.054 | 243.82796 | 230.27709 | 220.53130 |
| V | 51 | 46.55000 | 21418.40000 | 5.540 | 49.41628 | 45.82333 | 44.41558 |
| **IN-1** | 115 | 54133.70000 | 0.00000 | 1.545 | 54250.80000 | 54905.40000 | 53244.80000 |
| AG | 107 | 48.09000 | 58939.10000 | 2.373 | 48.51995 | 46.80210 | 48.96135 |
| AS | 75 | 10.23000 | 603.35200 | 1.965 | 10.11049 | 10.12463 | 10.46545 |
| BA | 137 | 48.12000 | 6922.21000 | 5.694 | 51.28142 | 46.55228 | 46.51929 |
| CD | 111 | 4.64400 | 728.69300 | 6.960 | 4.54935 | 4.37958 | 5.00461 |
| CO | 59 | 232.90000 | 239413.00000 | 1.767 | 237.18212 | 228.98488 | 232.42338 |
| CU | 63 | 47.78000 | 36111.40000 | 3.579 | 49.73218 | 47.02977 | 46.56708 |
| MO | 98 | 47.24000 | 25940.60000 | 3.633 | 47.80779 | 45.31183 | 48.60073 |
| NI | 60 | 48.46000 | 13527.60000 | 4.785 | 50.38410 | 45.88468 | 49.10978 |
| SB | 121 | 5.84500 | 1750.20000 | 9.641 | 6.19666 | 5.19532 | 6.14373 |
| SN | 120 | 48.16000 | 22808.10000 | 3.762 | 50.00365 | 46.38130 | 48.10845 |
| SR | 88 | 37.02000 | 15082.80000 | 5.081 | 37.79888 | 34.87642 | 38.38835 |
| ZN | 66 | 477.80000 | 46434.20000 | 0.490 | 477.20317 | 480.38208 | 475.82022 |
| **BI-1** | 209 | 120268.00000 | 0.00000 | 1.080 | 121456.00000 | 120468.00000 | 118882.00000 |
| PB | 208 | 13.91000 | 41583.80000 | 1.532 | 13.98586 | 13.67474 | 14.08238 |
| TL | 203 | 1.76200 | 1650.19000 | 3.451 | 1.70158 | 1.82319 | 1.76058 |
| U | 238 | 0.00383 | 20.00110 | 137.654 | 0.00077 | 0.00080 | 0.00991 |
| *GE-1* | 72 | 104238.00000 | 0.00000 | 0.162 | 104150.00000 | 104433.00000 | 104130.00000 |
| *TB-1* | 159 | 174820.00000 | 0.00000 | 0.205 | 174421.00000 | 175119.00000 | 174920.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:21:00
Tube Number: 15 Batch: 171931063903A
Sample Number: **9095972** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 49491.40000 | 0.00000 | 4.661 | 52144.60000 | 47959.40000 | 48370.20000 |
| AL | 27 | 230.60000 | 5584.74000 | 6.032 | 214.75442 | 240.81629 | 236.22690 |
| CA | 44 | 45300.00000 | 111478.00000 | 1.880 | 44321.83972 | 45833.45240 | 45757.24876 |
| CR | 52 | 2.45300 | 1483.48000 | 14.122 | 2.31180 | 2.84793 | 2.19994 |
| FE | 57 | 422.30000 | 5157.92000 | 4.449 | 423.57371 | 440.36810 | 402.85167 |
| K | 39 | 2564.00000 | 156869.00000 | 4.653 | 2432.74956 | 2665.41381 | 2594.75485 |
| MG | 24 | 6346.00000 | 419532.00000 | 4.634 | 6042.24634 | 6629.28955 | 6366.79558 |
| MN | 55 | 41.42000 | 13901.30000 | 5.147 | 39.04222 | 43.16000 | 42.06114 |
| NA | 23 | 24560.00000 | 3527990.00000 | 4.874 | 23300.96928 | 25683.12531 | 24705.41797 |
| TI | 47 | 11.71000 | 170.00800 | 23.621 | 13.80545 | 8.57724 | 12.75677 |
| V | 51 | 3.23700 | 1503.48000 | 7.130 | 2.97263 | 3.39574 | 3.34394 |
| **IN-1** | 115 | 53621.00000 | 0.00000 | 4.577 | 55783.00000 | 54126.70000 | 50953.40000 |
| AG | 107 | -0.00076 | 13.33380 | -1591.210 | 0.01219 | -0.01156 | -0.00289 |
| AS | 75 | 0.77350 | 85.33430 | 10.212 | 0.68753 | 0.84290 | 0.78998 |
| BA | 137 | 144.10000 | 20467.70000 | 8.897 | 134.40508 | 139.21569 | 158.62267 |
| CD | 111 | -0.02481 | 6.66672 | -38.988 | -0.03097 | -0.02982 | -0.01367 |
| CO | 59 | 0.12660 | 200.00900 | 55.624 | 0.11056 | 0.20362 | 0.06554 |
| CU | 63 | 1.34000 | 1043.42000 | 3.113 | 1.29364 | 1.37470 | 1.35121 |
| MO | 98 | 4.83600 | 2647.07000 | 6.226 | 4.61788 | 5.17933 | 4.71013 |
| NI | 60 | 0.74300 | 236.67900 | 12.771 | 0.82629 | 0.63968 | 0.76290 |
| SB | 121 | 0.03223 | 20.00080 | 9.780 | 0.02950 | 0.03150 | 0.03568 |
| SN | 120 | 0.26310 | 136.67400 | 22.543 | 0.19561 | 0.28704 | 0.30678 |
| SR | 88 | 295.40000 | 119141.00000 | 2.626 | 286.56843 | 298.63497 | 301.05084 |
| ZN | 66 | 8.07600 | 806.72800 | 14.847 | 7.80245 | 9.38904 | 7.03809 |
| **BI-1** | 209 | 115490.00000 | 0.00000 | 1.189 | 117055.00000 | 114488.00000 | 114926.00000 |
| PB | 208 | 0.20910 | 730.04100 | 9.718 | 0.22648 | 0.18674 | 0.21396 |
| TL | 203 | -0.00045 | 13.33390 | -2911.360 | -0.01550 | 0.00712 | 0.00704 |
| U | 238 | 1.71800 | 5528.21000 | 5.083 | 1.73345 | 1.79752 | 1.62480 |
| *GE-1* | 72 | 103046.00000 | 0.00000 | 0.576 | 103728.00000 | 102760.00000 | 102649.00000 |
| *TB-1* | 159 | 174777.00000 | 0.00000 | 2.316 | 178005.00000 | 176088.00000 | 170236.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:23:00
Tube Number: 16 Batch: 171931063903A
Sample Number: **9095972** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 49076.80000 | 0.00000 | 3.162 | 48521.60000 | 50829.90000 | 47878.90000 |
| AL | 27 | 399.30000 | 9583.83000 | 7.503 | 430.02586 | 370.17604 | 397.74134 |
| CA | 44 | 43900.00000 | 107110.00000 | 3.995 | 45218.71687 | 41909.15847 | 44571.52622 |
| CR | 52 | 6.06600 | 3527.29000 | 10.331 | 6.53832 | 5.35492 | 6.30424 |
| FE | 57 | 602.90000 | 7285.63000 | 2.276 | 592.55137 | 597.62992 | 618.44701 |
| K | 39 | 2797.00000 | 165975.00000 | 5.824 | 2948.96453 | 2624.90144 | 2815.98744 |
| MG | 24 | 6352.00000 | 416725.00000 | 3.445 | 6573.42096 | 6135.93793 | 6345.86401 |
| MN | 55 | 44.10000 | 14698.80000 | 4.685 | 46.30768 | 43.76755 | 42.21579 |
| NA | 23 | 24170.00000 | 3444630.00000 | 3.867 | 24909.67085 | 23117.86328 | 24475.62479 |
| TI | 47 | 37.93000 | 543.36400 | 13.401 | 43.09652 | 37.76719 | 32.93518 |
| V | 51 | 4.27500 | 1960.22000 | 10.692 | 4.67378 | 3.77626 | 4.37509 |
| **IN-1** | 115 | 53848.50000 | 0.00000 | 1.841 | 53256.30000 | 54992.70000 | 53296.40000 |
| AG | 107 | 0.92670 | 1143.44000 | 10.541 | 1.03366 | 0.90425 | 0.84221 |
| AS | 75 | 4.43400 | 284.67200 | 5.974 | 4.43932 | 4.16576 | 4.69546 |
| BA | 137 | 137.00000 | 19592.90000 | 4.360 | 143.68798 | 132.15436 | 135.22886 |
| CD | 111 | 0.72400 | 122.00200 | 12.786 | 0.81177 | 0.73307 | 0.62728 |
| CO | 59 | 1.07500 | 1170.11000 | 13.284 | 0.91026 | 1.14753 | 1.16649 |
| CU | 63 | 4.93500 | 3744.03000 | 8.869 | 5.20962 | 4.43029 | 5.16539 |
| MO | 98 | 5.76300 | 3163.85000 | 2.867 | 5.94977 | 5.63527 | 5.70467 |
| NI | 60 | 3.81700 | 1090.09000 | 6.869 | 3.79024 | 4.09102 | 3.56854 |
| SB | 121 | 1.91200 | 576.70100 | 9.179 | 2.11460 | 1.81531 | 1.80602 |
| SN | 120 | 4.03200 | 1913.55000 | 4.412 | 3.85752 | 4.21325 | 4.02633 |
| SR | 88 | 283.00000 | 114691.00000 | 2.382 | 290.46971 | 277.30355 | 281.37814 |
| ZN | 66 | 37.07000 | 3607.32000 | 4.953 | 38.85896 | 35.18997 | 37.15605 |
| **BI-1** | 209 | 117848.00000 | 0.00000 | 3.481 | 121680.00000 | 118345.00000 | 113520.00000 |
| PB | 208 | 2.02800 | 6054.19000 | 1.674 | 2.06459 | 1.99781 | 2.02065 |
| TL | 203 | 0.94810 | 876.73700 | 9.083 | 1.00644 | 0.84916 | 0.98861 |
| U | 238 | 11.33000 | 37133.30000 | 2.259 | 11.42667 | 11.03566 | 11.51754 |
| *GE-1* | 72 | 103118.00000 | 0.00000 | 3.455 | 106419.00000 | 103595.00000 | 99341.00000 |
| *TB-1* | 159 | 173617.00000 | 0.00000 | 1.858 | 177333.00000 | 171542.00000 | 171977.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:24:00
Tube Number: 17 Batch: 171931063903A
Sample Number: **9095975** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 49096.70000 | 0.00000 | 1.943 | 48571.20000 | 48521.10000 | 50197.90000 |
| AL | 27 | 222.10000 | 5341.29000 | 9.743 | 223.44312 | 243.08200 | 199.86622 |
| CA | 44 | 43530.00000 | 106294.00000 | 2.998 | 44900.99516 | 43370.97939 | 42304.84183 |
| CR | 52 | 2.54000 | 1523.49000 | 3.536 | 2.52694 | 2.63610 | 2.45798 |
| FE | 57 | 422.90000 | 5121.23000 | 7.236 | 454.11062 | 421.77959 | 392.95194 |
| K | 39 | 2422.00000 | 149396.00000 | 3.062 | 2495.51435 | 2424.23961 | 2347.24448 |
| MG | 24 | 6155.00000 | 404126.00000 | 1.742 | 6211.17376 | 6223.02920 | 6031.68489 |
| MN | 55 | 41.04000 | 13684.40000 | 2.761 | 42.34231 | 40.25874 | 40.52821 |
| NA | 23 | 24000.00000 | 3424590.00000 | 1.173 | 24102.13883 | 24221.32133 | 23685.35275 |
| TI | 47 | 8.16200 | 116.67200 | 33.472 | 6.35188 | 11.30409 | 6.82901 |
| V | 51 | 3.09100 | 1426.80000 | 8.253 | 3.30751 | 3.15462 | 2.80961 |
| **IN-1** | 115 | 53218.90000 | 0.00000 | 0.849 | 52710.10000 | 53373.30000 | 53573.30000 |
| AG | 107 | -0.00882 | 3.33346 | -54.010 | -0.01156 | -0.01156 | -0.00332 |
| AS | 75 | 0.72220 | 82.00110 | 37.012 | 0.66175 | 1.01455 | 0.49029 |
| BA | 137 | 138.90000 | 19632.90000 | 2.903 | 142.59995 | 139.48600 | 134.60148 |
| CD | 111 | -0.00732 | 9.33340 | -370.730 | -0.02877 | 0.02317 | -0.01635 |
| CO | 59 | 0.06320 | 133.33900 | 25.554 | 0.08105 | 0.04958 | 0.05897 |
| CU | 63 | 1.26900 | 983.41800 | 4.052 | 1.31794 | 1.27397 | 1.21544 |
| MO | 98 | 4.71800 | 2563.69000 | 6.399 | 4.64563 | 4.45813 | 5.04896 |
| NI | 60 | 0.48320 | 163.34300 | 47.289 | 0.73368 | 0.28621 | 0.42980 |
| SB | 121 | 0.05522 | 26.66770 | 127.490 | 0.03330 | -0.00161 | 0.13398 |
| SN | 120 | 0.35030 | 176.67400 | 29.974 | 0.46915 | 0.27008 | 0.31166 |
| SR | 88 | 284.50000 | 113944.00000 | 2.199 | 291.06486 | 278.61015 | 283.82760 |
| ZN | 66 | 8.37000 | 826.72900 | 7.772 | 9.12051 | 7.95899 | 8.03226 |
| **BI-1** | 209 | 116330.00000 | 0.00000 | 2.667 | 114438.00000 | 119911.00000 | 114640.00000 |
| PB | 208 | 0.23310 | 803.37900 | 9.614 | 0.25741 | 0.21326 | 0.22870 |
| TL | 203 | -0.00796 | 6.66694 | -81.981 | -0.00419 | -0.01550 | -0.00421 |
| U | 238 | 1.65900 | 5368.15000 | 6.721 | 1.71659 | 1.53016 | 1.72924 |
| *GE-1* | 72 | 103999.00000 | 0.00000 | 0.715 | 103143.00000 | 104373.00000 | 104481.00000 |
| *TB-1* | 159 | 174313.00000 | 0.00000 | 0.734 | 174725.00000 | 172878.00000 | 175336.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:26:00
Tube Number: 18 Batch: 171931063903A
Sample Number: **9095973** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45881.40000 | 0.00000 | 1.183 | 46032.40000 | 45279.00000 | 46332.60000 |
| AL | 27 | 2141.00000 | 48001.40000 | 3.078 | 2122.23939 | 2213.79321 | 2085.87575 |
| CA | 44 | 51520.00000 | 117513.00000 | 2.787 | 51952.55394 | 52689.47416 | 49917.52349 |
| CR | 52 | 51.89000 | 27733.70000 | 1.985 | 51.87110 | 52.92658 | 50.86580 |
| FE | 57 | 1293.00000 | 14578.70000 | 0.913 | 1302.49014 | 1280.02301 | 1297.55415 |
| K | 39 | 13010.00000 | 581919.00000 | 1.265 | 12964.80850 | 13191.71725 | 12871.78731 |
| MG | 24 | 8715.00000 | 534728.00000 | 2.304 | 8855.76271 | 8804.07513 | 8485.01084 |
| MN | 55 | 95.47000 | 29738.30000 | 1.061 | 94.86115 | 94.90699 | 96.63757 |
| NA | 23 | 35720.00000 | 4758740.00000 | 3.038 | 35618.29298 | 36854.10554 | 34690.44206 |
| TI | 47 | 260.30000 | 3483.94000 | 1.491 | 261.42421 | 255.92786 | 263.42512 |
| V | 51 | 52.26000 | 22146.30000 | 4.342 | 54.42485 | 52.45375 | 49.90018 |
| **IN-1** | 115 | 49271.80000 | 0.00000 | 1.845 | 48226.60000 | 49876.30000 | 49712.50000 |
| AG | 107 | 49.24000 | 54914.20000 | 2.861 | 50.80918 | 48.08748 | 48.81795 |
| AS | 75 | 10.84000 | 578.68500 | 12.611 | 12.21288 | 9.47959 | 10.82800 |
| BA | 137 | 202.70000 | 26512.60000 | 4.162 | 212.41470 | 198.05125 | 197.56480 |
| CD | 111 | 4.90900 | 701.35800 | 9.287 | 4.63282 | 4.65972 | 5.43549 |
| CO | 59 | 242.90000 | 227210.00000 | 3.496 | 252.61403 | 239.15096 | 236.91247 |
| CU | 63 | 51.63000 | 35499.70000 | 2.555 | 53.14884 | 50.92650 | 50.80541 |
| MO | 98 | 55.46000 | 27711.00000 | 4.241 | 58.16926 | 54.24287 | 53.96406 |
| NI | 60 | 50.43000 | 12810.10000 | 4.099 | 52.65791 | 48.57284 | 50.06385 |
| SB | 121 | 6.64000 | 1810.21000 | 6.904 | 6.40977 | 6.34238 | 7.16791 |
| SN | 120 | 51.14000 | 22040.10000 | 2.968 | 52.23882 | 51.77347 | 49.40840 |
| SR | 88 | 355.50000 | 131818.00000 | 2.120 | 364.16823 | 352.31696 | 350.17424 |
| ZN | 66 | 494.40000 | 43725.10000 | 1.485 | 502.64149 | 488.46740 | 492.22389 |
| **BI-1** | 209 | 108763.00000 | 0.00000 | 2.392 | 109664.00000 | 105829.00000 | 110794.00000 |
| PB | 208 | 15.44000 | 41690.30000 | 3.203 | 15.63850 | 15.79782 | 14.87281 |
| TL | 203 | 2.06900 | 1750.20000 | 1.713 | 2.02796 | 2.08978 | 2.08896 |
| U | 238 | 1.86600 | 5648.28000 | 7.615 | 1.92261 | 1.97194 | 1.70495 |
| *GE-1* | 72 | 97247.50000 | 0.00000 | 0.631 | 96542.90000 | 97659.60000 | 97540.10000 |
| *TB-1* | 159 | 161850.00000 | 0.00000 | 1.731 | 163100.00000 | 158641.00000 | 163808.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:28:00
Tube Number: 19 Batch: 171931063903A
Sample Number: **9095974** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 46510.70000 | 0.00000 | 1.000 | 46152.30000 | 47036.40000 | 46343.50000 |
| AL | 27 | 2153.00000 | 48941.70000 | 2.294 | 2209.30637 | 2117.96195 | 2131.02373 |
| CA | 44 | 49300.00000 | 114018.00000 | 1.693 | 49628.69411 | 48349.94934 | 49918.80506 |
| CR | 52 | 50.79000 | 27523.10000 | 2.717 | 52.35254 | 50.28458 | 49.73648 |
| FE | 57 | 1332.00000 | 15222.80000 | 0.718 | 1340.70963 | 1334.55418 | 1321.93399 |
| K | 39 | 12530.00000 | 569543.00000 | 2.225 | 12846.71705 | 12325.57863 | 12414.35634 |
| MG | 24 | 8425.00000 | 524020.00000 | 1.996 | 8609.82690 | 8281.25208 | 8383.40441 |
| MN | 55 | 81.04000 | 25589.30000 | 3.550 | 84.11981 | 80.59109 | 78.42017 |
| NA | 23 | 34870.00000 | 4709740.00000 | 0.852 | 35137.30537 | 34548.79108 | 34915.32376 |
| TI | 47 | 254.20000 | 3450.60000 | 9.158 | 262.97100 | 271.87909 | 227.85349 |
| V | 51 | 53.20000 | 22860.80000 | 3.284 | 53.67154 | 54.66926 | 51.27109 |
| **IN-1** | 115 | 50744.60000 | 0.00000 | 2.323 | 49383.40000 | 51460.30000 | 51390.20000 |
| AG | 107 | 47.24000 | 54254.70000 | 3.110 | 48.92707 | 46.23697 | 46.55819 |
| AS | 75 | 9.36000 | 520.68200 | 2.842 | 9.66240 | 9.16305 | 9.25371 |
| BA | 137 | 189.50000 | 25533.90000 | 4.604 | 197.73335 | 180.36844 | 190.52811 |
| CD | 111 | 4.56600 | 672.02300 | 3.254 | 4.67858 | 4.62297 | 4.39788 |
| CO | 59 | 232.40000 | 223901.00000 | 1.651 | 236.04210 | 232.64004 | 228.38578 |
| CU | 63 | 49.52000 | 35061.90000 | 3.259 | 51.33401 | 48.96618 | 48.25007 |
| MO | 98 | 53.49000 | 27530.70000 | 3.249 | 55.10451 | 51.65047 | 53.72090 |
| NI | 60 | 47.13000 | 12336.30000 | 2.852 | 47.56194 | 48.20780 | 45.62454 |
| SB | 121 | 6.19900 | 1736.87000 | 14.301 | 7.21595 | 5.79282 | 5.58849 |
| SN | 120 | 48.54000 | 21542.60000 | 4.363 | 50.15567 | 49.33303 | 46.14509 |
| SR | 88 | 336.70000 | 128595.00000 | 0.948 | 339.92644 | 336.77755 | 333.54215 |
| ZN | 66 | 468.00000 | 42611.20000 | 3.628 | 487.34328 | 455.49560 | 461.23029 |
| **BI-1** | 209 | 109166.00000 | 0.00000 | 1.297 | 107544.00000 | 109793.00000 | 110160.00000 |
| PB | 208 | 15.20000 | 41209.90000 | 1.915 | 15.32756 | 15.39924 | 14.86297 |
| TL | 203 | 2.06200 | 1750.21000 | 3.801 | 2.11644 | 2.09636 | 1.97175 |
| U | 238 | 1.79600 | 5461.49000 | 1.290 | 1.79667 | 1.77291 | 1.81922 |
| *GE-1* | 72 | 96373.50000 | 0.00000 | 0.594 | 97003.50000 | 95886.00000 | 96231.10000 |
| *TB-1* | 159 | 166257.00000 | 0.00000 | 0.778 | 164812.00000 | 166655.00000 | 167305.00000 |

Run Name: 1719906E03
Tube Number: 20
Sample Number: **9095972**

Date/Time: 07/18/2017 10:30:00
Batch: 171931063903A
Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 46731.50000 | 0.00000 | 2.213 | 45791.40000 | 47839.30000 | 46563.70000 |
| AL | 27 | 47.01000 | 1090.10000 | 2.744 | 48.41843 | 45.88621 | 46.72369 |
| CA | 44 | 9183.00000 | 21685.40000 | 1.853 | 9369.95289 | 9036.97005 | 9141.98068 |
| CR | 52 | 0.74280 | 473.36100 | 16.559 | 0.84658 | 0.60689 | 0.77494 |
| FE | 57 | 100.30000 | 1183.44000 | 11.286 | 107.53300 | 106.21440 | 87.29641 |
| K | 39 | 355.00000 | 54236.10000 | 12.848 | 406.27254 | 318.85244 | 339.98226 |
| MG | 24 | 1301.00000 | 81330.00000 | 3.801 | 1356.71271 | 1263.48637 | 1281.48463 |
| MN | 55 | 8.51400 | 2707.06000 | 11.216 | 8.78559 | 7.45295 | 9.30401 |
| NA | 23 | 4868.00000 | 666687.00000 | 3.283 | 5041.50999 | 4727.16377 | 4834.47831 |
| TI | 47 | 1.22600 | 16.66730 | 92.741 | 2.24582 | 1.43313 | 0.00000 |
| V | 51 | 0.84620 | 390.02200 | 31.789 | 1.07388 | 0.54943 | 0.91536 |
| **IN-1** | 115 | 51385.70000 | 0.00000 | 2.431 | 51988.80000 | 49949.40000 | 52218.90000 |
| AG | 107 | 0.01108 | 26.66820 | 290.433 | 0.04792 | -0.01156 | -0.00310 |
| AS | 75 | 0.25770 | 55.33380 | 157.936 | 0.68207 | -0.12944 | 0.22047 |
| BA | 137 | 28.16000 | 3844.08000 | 8.899 | 29.89189 | 29.30374 | 25.28816 |
| CD | 111 | -0.03668 | 4.66670 | -23.877 | -0.04168 | -0.02657 | -0.04180 |
| CO | 59 | 0.02926 | 96.67060 | 239.815 | 0.02234 | -0.03720 | 0.10263 |
| CU | 63 | 0.26550 | 230.01200 | 37.604 | 0.15063 | 0.33136 | 0.31451 |
| MO | 98 | 1.07900 | 580.03700 | 14.736 | 1.08696 | 0.91546 | 1.23311 |
| NI | 60 | 0.16430 | 73.33660 | 127.267 | -0.07692 | 0.27476 | 0.29506 |
| SB | 121 | 0.04591 | 23.33480 | 307.776 | 0.20908 | -0.03567 | -0.03567 |
| SN | 120 | 0.11830 | 66.66960 | 20.457 | 0.14607 | 0.10746 | 0.10149 |
| SR | 88 | 59.10000 | 22851.10000 | 3.687 | 59.64061 | 60.95700 | 56.70136 |
| ZN | 66 | 2.13000 | 223.34400 | 10.784 | 2.38868 | 2.05175 | 1.94988 |
| **BI-1** | 209 | 115247.00000 | 0.00000 | 1.544 | 115833.00000 | 116660.00000 | 113248.00000 |
| PB | 208 | 0.03218 | 223.34400 | 22.558 | 0.02718 | 0.04050 | 0.02885 |
| TL | 203 | -0.00037 | 13.33390 | -4790.700 | -0.01550 | -0.00440 | 0.01881 |
| U | 238 | 0.35400 | 1140.11000 | 17.811 | 0.37026 | 0.28441 | 0.40734 |
| *GE-1* | 72 | 100721.00000 | 0.00000 | 2.335 | 101893.00000 | 98013.10000 | 102257.00000 |
| *TB-1* | 159 | 167502.00000 | 0.00000 | 1.236 | 169810.00000 | 165805.00000 | 166892.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:31:00
Tube Number: 21
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45914.90000 | 0.00000 | 1.402 | 45610.60000 | 45480.00000 | 46654.20000 |
| AL | 27 | 2478.00000 | 55598.30000 | 3.198 | 2553.11079 | 2485.02184 | 2395.13429 |
| CA | 44 | 2289.00000 | 5624.78000 | 7.182 | 2395.01131 | 2371.33825 | 2099.21994 |
| CR | 52 | 248.40000 | 132580.00000 | 3.039 | 253.69598 | 251.72890 | 239.74839 |
| FE | 57 | 2480.00000 | 27944.10000 | 0.889 | 2505.35905 | 2471.20605 | 2464.16131 |
| K | 39 | 2299.00000 | 134554.00000 | 4.255 | 2316.36390 | 2386.94079 | 2193.59558 |
| MG | 24 | 2449.00000 | 150438.00000 | 2.172 | 2504.62018 | 2443.79293 | 2398.61329 |
| MN | 55 | 250.60000 | 78065.80000 | 3.767 | 257.98743 | 253.80724 | 239.95121 |
| NA | 23 | 2232.00000 | 304307.00000 | 3.933 | 2314.99794 | 2240.96607 | 2140.10903 |
| TI | 47 | 258.60000 | 3463.94000 | 2.259 | 254.82025 | 255.55048 | 265.28440 |
| V | 51 | 245.80000 | 104138.00000 | 2.197 | 247.39196 | 250.24498 | 239.79838 |
| **IN-1** | 115 | 49963.30000 | 0.00000 | 0.348 | 50145.90000 | 49799.40000 | 49944.60000 |
| AG | 107 | 25.85000 | 29248.00000 | 0.558 | 25.92696 | 25.68068 | 25.93404 |
| AS | 75 | 245.40000 | 12426.70000 | 1.324 | 245.72186 | 248.55251 | 242.07280 |
| BA | 137 | 245.70000 | 32613.90000 | 0.446 | 245.15335 | 247.01427 | 245.08160 |
| CD | 111 | 25.30000 | 3623.21000 | 1.742 | 25.70971 | 24.83490 | 25.36511 |
| CO | 59 | 244.00000 | 231529.00000 | 1.062 | 243.51620 | 246.77833 | 241.66142 |
| CU | 63 | 245.20000 | 170902.00000 | 1.119 | 248.39691 | 243.66001 | 243.63349 |
| MO | 98 | 24.98000 | 12673.50000 | 2.377 | 25.60650 | 24.91240 | 24.42484 |
| NI | 60 | 244.60000 | 62929.80000 | 1.381 | 244.88795 | 247.88697 | 241.14545 |
| SB | 121 | 24.85000 | 6842.12000 | 5.030 | 26.17872 | 23.69496 | 24.68218 |
| SN | 120 | 24.77000 | 10835.00000 | 1.784 | 24.70481 | 25.24506 | 24.36896 |
| SR | 88 | 23.69000 | 8913.46000 | 9.472 | 22.43426 | 22.35023 | 26.27883 |
| ZN | 66 | 247.00000 | 22163.10000 | 0.219 | 247.47189 | 246.39537 | 247.01407 |
| **BI-1** | 209 | 113490.00000 | 0.00000 | 1.443 | 111601.00000 | 114529.00000 | 114338.00000 |
| PB | 208 | 24.78000 | 69745.80000 | 3.794 | 25.85599 | 24.14417 | 24.32640 |
| TL | 203 | 24.84000 | 21773.90000 | 3.576 | 25.78534 | 24.71804 | 24.02169 |
| U | 238 | 24.34000 | 76835.80000 | 2.192 | 24.88626 | 23.82002 | 24.31586 |
| *GE-1* | 72 | 97523.00000 | 0.00000 | 1.512 | 98930.30000 | 95989.10000 | 97649.50000 |
| *TB-1* | 159 | 164451.00000 | 0.00000 | 0.472 | 163697.00000 | 164407.00000 | 165248.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:33:00
Tube Number: 22
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 42651.20000 | 0.00000 | 1.867 | 43564.30000 | 42290.30000 | 42099.00000 |
| AL | 27 | 0.22770 | 20.00070 | 368.906 | -0.74230 | 0.70936 | 0.71596 |
| CA | 44 | -38.99000 | 310.01600 | -30.957 | -28.06697 | -51.95790 | -36.96795 |
| CR | 52 | 0.44710 | 286.68100 | 13.751 | 0.50149 | 0.45949 | 0.38041 |
| FE | 57 | -0.39560 | 26.66770 | -705.763 | -2.02386 | 2.82830 | -1.99126 |
| K | 39 | -142.80000 | 30179.20000 | -27.136 | -168.52079 | -98.24994 | -161.70882 |
| MG | 24 | -0.74980 | 46.66870 | -49.440 | -0.88229 | -0.33108 | -1.03603 |
| MN | 55 | -0.03273 | 0.00000 | 0.000 | -0.03274 | -0.03274 | -0.03274 |
| NA | 23 | -3.49000 | 6268.40000 | -39.341 | -4.21949 | -4.34579 | -1.90654 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.21680 | 110.00500 | 29.788 | 0.26113 | 0.14273 | 0.24664 |
| **IN-1** | 115 | 47200.10000 | 0.00000 | 3.201 | 48365.40000 | 45493.40000 | 47741.40000 |
| AG | 107 | -0.00852 | 3.33346 | -61.897 | -0.00243 | -0.01156 | -0.01156 |
| AS | 75 | 0.17850 | 46.66710 | 140.168 | -0.10737 | 0.28478 | 0.35797 |
| BA | 137 | 0.10620 | 16.66760 | 113.183 | 0.13113 | -0.02457 | 0.21203 |
| CD | 111 | -0.00987 | 8.00006 | -283.977 | 0.01821 | -0.03784 | -0.00997 |
| CO | 59 | 0.00497 | 66.66970 | 643.979 | 0.04006 | -0.02252 | -0.00264 |
| CU | 63 | 0.05095 | 70.00370 | 86.752 | 0.03268 | 0.10135 | 0.01882 |
| MO | 98 | -0.01135 | 10.00040 | -5.986 | -0.01187 | -0.01059 | -0.01161 |
| NI | 60 | -0.04613 | 16.66730 | -47.778 | -0.03394 | -0.07158 | -0.03289 |
| SB | 121 | 0.00287 | 10.00040 | 43.609 | 0.00192 | 0.00429 | 0.00241 |
| SN | 120 | 0.03423 | 26.66800 | 142.127 | 0.08831 | 0.02035 | -0.00597 |
| SR | 88 | 0.00104 | 6.66692 | 1531.160 | 0.01008 | -0.01739 | 0.01044 |
| ZN | 66 | 0.02431 | 26.66790 | 307.075 | -0.06131 | 0.07577 | 0.05847 |
| **BI-1** | 209 | 107783.00000 | 0.00000 | 3.685 | 110484.00000 | 103222.00000 | 109642.00000 |
| PB | 208 | -0.00494 | 110.00500 | -103.159 | -0.00217 | -0.01082 | -0.00183 |
| TL | 203 | -0.00372 | 10.00040 | -317.473 | -0.00378 | -0.01550 | 0.00812 |
| U | 238 | 0.00224 | 13.33390 | 80.859 | 0.00432 | 0.00130 | 0.00109 |
| *GE-1* | 72 | 92937.50000 | 0.00000 | 3.229 | 94742.20000 | 89473.50000 | 94596.90000 |
| *TB-1* | 159 | 154821.00000 | 0.00000 | 3.144 | 159022.00000 | 149486.00000 | 155955.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:35:00
Tube Number: 23 Batch: 171931063903A
Sample Number: **9095966** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 46292.80000 | 0.00000 | 1.596 | 46714.60000 | 45439.50000 | 46724.40000 |
| AL | 27 | 600.30000 | 13594.10000 | 2.499 | 583.92342 | 613.40326 | 603.53052 |
| CA | 44 | 45080.00000 | 103807.00000 | 1.262 | 44515.27087 | 45653.26549 | 45071.35343 |
| CR | 52 | 3.03600 | 1703.52000 | 3.046 | 3.12992 | 3.03208 | 2.94509 |
| FE | 57 | 933.40000 | 10624.80000 | 0.386 | 937.21742 | 933.05399 | 930.03464 |
| K | 39 | 2712.00000 | 153051.00000 | 4.122 | 2656.74546 | 2840.47159 | 2638.17987 |
| MG | 24 | 6529.00000 | 404242.00000 | 0.974 | 6481.01352 | 6601.37342 | 6505.42177 |
| MN | 55 | 33.23000 | 10451.30000 | 2.650 | 32.34419 | 33.25306 | 34.10501 |
| NA | 23 | 21440.00000 | 2885180.00000 | 2.924 | 21062.51356 | 22168.40518 | 21103.40012 |
| TI | 47 | 22.05000 | 296.68300 | 35.038 | 16.87795 | 30.93126 | 18.34168 |
| V | 51 | 5.45300 | 2356.98000 | 6.378 | 5.48358 | 5.09050 | 5.78402 |
| **IN-1** | 115 | 51101.50000 | 0.00000 | 0.656 | 51402.50000 | 51162.10000 | 50739.90000 |
| AG | 107 | -0.00294 | 10.00040 | -293.374 | -0.00297 | 0.00570 | -0.01156 |
| AS | 75 | 0.87650 | 86.66770 | 25.294 | 0.85311 | 0.66737 | 1.10890 |
| BA | 137 | 92.88000 | 12610.20000 | 1.769 | 94.66422 | 91.42658 | 92.55856 |
| CD | 111 | -0.03671 | 4.66671 | -42.686 | -0.02776 | -0.02757 | -0.05481 |
| CO | 59 | 0.17860 | 240.01200 | 17.956 | 0.17708 | 0.14735 | 0.21143 |
| CU | 63 | 1.54000 | 1136.76000 | 10.747 | 1.35287 | 1.59778 | 1.66809 |
| MO | 98 | 4.91000 | 2560.37000 | 4.271 | 4.72625 | 4.86430 | 5.13833 |
| NI | 60 | 0.77300 | 233.34600 | 45.614 | 0.52840 | 1.17714 | 0.61339 |
| SB | 121 | 0.13000 | 46.66850 | 68.492 | 0.14114 | 0.21303 | 0.03598 |
| SN | 120 | 0.64130 | 300.01600 | 15.703 | 0.61535 | 0.75253 | 0.55616 |
| SR | 88 | 285.20000 | 109707.00000 | 0.847 | 287.69796 | 285.12822 | 282.87096 |
| ZN | 66 | 22.65000 | 2103.59000 | 2.589 | 22.37441 | 22.26280 | 23.32974 |
| **BI-1** | 209 | 112581.00000 | 0.00000 | 0.868 | 112440.00000 | 113621.00000 | 111682.00000 |
| PB | 208 | 0.34380 | 1086.74000 | 11.367 | 0.31308 | 0.33067 | 0.38782 |
| TL | 203 | -0.00022 | 13.33390 | -5900.980 | 0.00754 | 0.00730 | -0.01550 |
| U | 238 | 1.48100 | 4644.45000 | 2.076 | 1.45285 | 1.51369 | 1.47560 |
| *GE-1* | 72 | 97615.50000 | 0.00000 | 1.982 | 98073.00000 | 99281.10000 | 95492.30000 |
| *TB-1* | 159 | 164968.00000 | 0.00000 | 1.080 | 164921.00000 | 166771.00000 | 163211.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:36:00
Tube Number: 24 Batch: 171931063903A
Sample Number: **9095968** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 46313.10000 | 0.00000 | 3.731 | 48200.10000 | 44807.50000 | 45931.70000 |
| AL | 27 | 330.50000 | 7499.10000 | 4.581 | 328.81253 | 316.29583 | 346.42592 |
| CA | 44 | 46020.00000 | 105944.00000 | 3.296 | 44290.01987 | 47108.38393 | 46671.94986 |
| CR | 52 | 2.63200 | 1486.82000 | 7.101 | 2.52958 | 2.51969 | 2.84825 |
| FE | 57 | 525.20000 | 5998.29000 | 3.698 | 531.30849 | 503.43629 | 540.81078 |
| K | 39 | 2784.00000 | 156135.00000 | 3.360 | 2699.27283 | 2884.54349 | 2769.23571 |
| MG | 24 | 6699.00000 | 414700.00000 | 2.544 | 6535.51331 | 6875.55547 | 6685.05970 |
| MN | 55 | 19.12000 | 6018.31000 | 1.347 | 19.17117 | 19.34190 | 18.83574 |
| NA | 23 | 22230.00000 | 2990180.00000 | 4.157 | 21212.21804 | 23012.49790 | 22475.70877 |
| TI | 47 | 14.00000 | 190.00900 | 17.471 | 16.35778 | 11.47572 | 14.18016 |
| V | 51 | 4.82900 | 2086.92000 | 8.192 | 4.41302 | 4.87279 | 5.20049 |
| **IN-1** | 115 | 50550.80000 | 0.00000 | 3.258 | 52398.00000 | 50018.50000 | 49236.00000 |
| AG | 107 | -0.00558 | 6.66693 | -185.563 | -0.01156 | -0.01156 | 0.00638 |
| AS | 75 | 0.82760 | 83.33430 | 21.544 | 0.93501 | 0.62182 | 0.92599 |
| BA | 137 | 93.13000 | 12493.50000 | 5.439 | 88.26355 | 92.76397 | 98.37346 |
| CD | 111 | -0.02266 | 6.66672 | -67.167 | -0.01518 | -0.01264 | -0.04018 |
| CO | 59 | 0.03855 | 103.33700 | 108.197 | 0.04173 | 0.07858 | -0.00465 |
| CU | 63 | 1.19500 | 880.06300 | 12.435 | 1.03866 | 1.33450 | 1.21094 |
| MO | 98 | 4.49100 | 2316.97000 | 5.609 | 4.25936 | 4.75932 | 4.45484 |
| NI | 60 | 0.74520 | 223.34600 | 6.189 | 0.70163 | 0.74045 | 0.79350 |
| SB | 121 | 0.04841 | 23.33420 | 44.846 | 0.03371 | 0.07335 | 0.03817 |
| SN | 120 | 0.28540 | 140.00700 | 32.260 | 0.34116 | 0.33594 | 0.17914 |
| SR | 88 | 292.20000 | 111142.00000 | 1.713 | 288.32285 | 290.45755 | 297.85640 |
| ZN | 66 | 16.12000 | 1483.48000 | 17.363 | 13.00650 | 18.43163 | 16.91763 |
| **BI-1** | 209 | 113144.00000 | 0.00000 | 1.254 | 114075.00000 | 111511.00000 | 113845.00000 |
| PB | 208 | 0.24550 | 816.71500 | 7.967 | 0.22298 | 0.25813 | 0.25545 |
| TL | 203 | 0.01490 | 26.66780 | 158.389 | 0.00720 | -0.00389 | 0.04138 |
| U | 238 | 1.44900 | 4567.78000 | 3.124 | 1.47615 | 1.47464 | 1.39700 |
| *GE-1* | 72 | 98916.00000 | 0.00000 | 0.696 | 99564.30000 | 98194.10000 | 98989.50000 |
| *TB-1* | 159 | 166456.00000 | 0.00000 | 3.004 | 171226.00000 | 161253.00000 | 166890.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:38:00
Tube Number: 25 Batch: 171931063903A
Sample Number: **9095970** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 47574.30000 | 0.00000 | 1.914 | 48611.50000 | 47206.30000 | 46904.90000 |
| AL | 27 | 11.06000 | 273.34600 | 36.438 | 6.83510 | 14.86379 | 11.47372 |
| CA | 44 | 42430.00000 | 100422.00000 | 1.395 | 41850.45421 | 42395.96492 | 43032.64082 |
| CR | 52 | 1.13300 | 696.71500 | 26.646 | 0.82529 | 1.14543 | 1.42881 |
| FE | 57 | 46.75000 | 580.03700 | 5.474 | 49.07983 | 47.17126 | 44.01344 |
| K | 39 | 2839.00000 | 162846.00000 | 1.737 | 2818.89303 | 2803.33819 | 2895.46531 |
| MG | 24 | 5817.00000 | 370104.00000 | 1.858 | 5711.62497 | 5812.85937 | 5927.65827 |
| MN | 55 | 19.02000 | 6148.38000 | 3.271 | 18.61450 | 18.70095 | 19.73286 |
| NA | 23 | 27200.00000 | 3760080.00000 | 1.273 | 26806.37612 | 27381.96734 | 27427.69436 |
| TI | 47 | 0.47710 | 6.66692 | 86.628 | 0.70518 | 0.72617 | 0.00000 |
| V | 51 | 2.02000 | 913.40300 | 9.203 | 1.89990 | 2.23383 | 1.92507 |
| **IN-1** | 115 | 51626.30000 | 0.00000 | 0.421 | 51826.90000 | 51656.70000 | 51395.30000 |
| AG | 107 | -0.00301 | 10.00040 | -1.200 | -0.00304 | -0.00301 | -0.00297 |
| AS | 75 | 0.78220 | 82.66770 | 8.352 | 0.72492 | 0.76829 | 0.85334 |
| BA | 137 | 78.85000 | 10815.10000 | 1.004 | 79.70858 | 78.14909 | 78.69174 |
| CD | 111 | -0.04143 | 4.00004 | -57.060 | -0.05510 | -0.05506 | -0.01414 |
| CO | 59 | 0.02295 | 90.00440 | 88.061 | 0.02263 | 0.04332 | 0.00290 |
| CU | 63 | 0.38350 | 316.68300 | 14.360 | 0.44186 | 0.33243 | 0.37627 |
| MO | 98 | 11.61000 | 6095.05000 | 6.553 | 12.30151 | 10.79494 | 11.73300 |
| NI | 60 | 0.04881 | 43.33500 | 44.356 | 0.03568 | 0.07380 | 0.03694 |
| SB | 121 | 0.08177 | 33.33490 | 89.935 | 0.10462 | -0.00048 | 0.14117 |
| SN | 120 | 0.08071 | 50.00200 | 98.389 | 0.16869 | 0.01436 | 0.05909 |
| SR | 88 | 271.30000 | 105411.00000 | 0.273 | 272.08191 | 270.61453 | 271.15592 |
| ZN | 66 | 2.37200 | 246.67800 | 18.487 | 1.96681 | 2.83754 | 2.31118 |
| **BI-1** | 209 | 115644.00000 | 0.00000 | 0.894 | 116822.00000 | 114884.00000 | 115226.00000 |
| PB | 208 | -0.00283 | 123.33900 | -793.494 | -0.02874 | 0.01021 | 0.01004 |
| TL | 203 | 0.01063 | 23.33430 | 161.712 | 0.00667 | -0.00423 | 0.02946 |
| U | 238 | 3.08900 | 9944.65000 | 2.515 | 3.02408 | 3.06888 | 3.17535 |
| *GE-1* | 72 | 99340.10000 | 0.00000 | 0.722 | 99221.60000 | 98689.60000 | 100109.00000 |
| *TB-1* | 159 | 169145.00000 | 0.00000 | 1.467 | 171658.00000 | 169078.00000 | 166698.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:40:00
Tube Number: 26 Batch: 171931063903A
Sample Number: **9095970** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 10.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45533.40000 | 0.00000 | 1.951 | 46402.70000 | 44627.10000 | 45570.50000 |
| AL | 27 | 1.50800 | 50.00210 | 78.913 | 0.58074 | 1.09190 | 2.85016 |
| CA | 44 | 4736.00000 | 11098.50000 | 4.818 | 4483.73637 | 4796.24597 | 4928.07844 |
| CR | 52 | 0.48610 | 326.68400 | 12.399 | 0.55555 | 0.44788 | 0.45478 |
| FE | 57 | 5.97400 | 100.00500 | 36.726 | 8.47054 | 4.35379 | 5.09765 |
| K | 39 | 173.10000 | 45342.60000 | 15.095 | 196.60223 | 144.97445 | 177.81389 |
| MG | 24 | 669.20000 | 40840.60000 | 1.026 | 671.05771 | 674.95814 | 661.60581 |
| MN | 55 | 2.42900 | 760.05000 | 14.767 | 2.50783 | 2.74099 | 2.03682 |
| NA | 23 | 2948.00000 | 396419.00000 | 0.579 | 2929.43183 | 2962.67132 | 2952.75601 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.36520 | 180.00800 | 21.202 | 0.45157 | 0.30200 | 0.34203 |
| **IN-1** | 115 | 51563.00000 | 0.00000 | 2.213 | 50723.40000 | 51104.00000 | 52861.50000 |
| AG | 107 | -0.01156 | 0.00000 | 0.000 | -0.01156 | -0.01156 | -0.01156 |
| AS | 75 | 0.09648 | 46.66720 | 269.797 | 0.25066 | 0.24281 | -0.20403 |
| BA | 137 | 8.90600 | 1220.11000 | 17.179 | 10.44282 | 8.89105 | 7.38349 |
| CD | 111 | -0.02752 | 6.00005 | -258.539 | -0.06860 | 0.05464 | -0.06860 |
| CO | 59 | -0.05529 | 13.33380 | -10.005 | -0.05845 | -0.05853 | -0.04891 |
| CU | 63 | 0.09216 | 106.67100 | 32.259 | 0.07095 | 0.12614 | 0.07938 |
| MO | 98 | 1.18000 | 633.37300 | 17.271 | 1.07599 | 1.41511 | 1.04981 |
| NI | 60 | 0.01167 | 33.33490 | 508.398 | 0.07726 | -0.03825 | -0.00401 |
| SB | 121 | -0.01234 | 6.66693 | -163.695 | -0.03567 | -0.00010 | -0.00128 |
| SN | 120 | 0.05864 | 40.00160 | 64.802 | 0.08282 | 0.01483 | 0.07826 |
| SR | 88 | 28.20000 | 10948.50000 | 0.984 | 28.49702 | 28.15414 | 27.94747 |
| ZN | 66 | 1.08300 | 126.67300 | 51.893 | 1.02691 | 1.67156 | 0.55178 |
| **BI-1** | 209 | 116469.00000 | 0.00000 | 0.995 | 115985.00000 | 117792.00000 | 115630.00000 |
| PB | 208 | -0.01139 | 100.00400 | -78.402 | -0.00773 | -0.00489 | -0.02158 |
| TL | 203 | -0.01183 | 3.33347 | -53.669 | -0.01550 | -0.00451 | -0.01550 |
| U | 238 | 0.36630 | 1193.45000 | 5.558 | 0.36668 | 0.34576 | 0.38647 |
| *GE-1* | 72 | 99597.40000 | 0.00000 | 0.884 | 100401.00000 | 98655.90000 | 99735.80000 |
| *TB-1* | 159 | 162794.00000 | 0.00000 | 0.839 | 162631.00000 | 161517.00000 | 164234.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:42:00
Tube Number: 27
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 43674.40000 | 0.00000 | 3.260 | 42059.50000 | 44747.80000 | 44215.80000 |
| AL | 27 | 2523.00000 | 53807.30000 | 4.388 | 2643.17099 | 2425.56617 | 2499.36848 |
| CA | 44 | 2434.00000 | 5658.10000 | 9.018 | 2675.29813 | 2246.19963 | 2380.49158 |
| CR | 52 | 261.00000 | 132371.00000 | 5.766 | 278.02140 | 249.47960 | 255.45053 |
| FE | 57 | 2607.00000 | 27917.50000 | 3.122 | 2696.74706 | 2538.20463 | 2585.41667 |
| K | 39 | 2446.00000 | 133742.00000 | 7.024 | 2644.52899 | 2336.89997 | 2358.03166 |
| MG | 24 | 2557.00000 | 149286.00000 | 4.889 | 2701.28346 | 2476.38586 | 2494.20907 |
| MN | 55 | 263.80000 | 78101.70000 | 5.023 | 278.95763 | 254.67937 | 257.64006 |
| NA | 23 | 2348.00000 | 303862.00000 | 5.247 | 2486.77507 | 2252.32711 | 2304.07667 |
| TI | 47 | 255.20000 | 3250.56000 | 7.880 | 261.65748 | 271.22717 | 232.61517 |
| V | 51 | 258.30000 | 104020.00000 | 4.963 | 273.11896 | 251.82170 | 250.10914 |
| **IN-1** | 115 | 49029.10000 | 0.00000 | 4.716 | 46368.50000 | 50545.60000 | 50173.20000 |
| AG | 107 | 26.23000 | 29081.00000 | 4.971 | 27.73461 | 25.42427 | 25.53329 |
| AS | 75 | 249.80000 | 12383.30000 | 6.277 | 267.85696 | 240.55609 | 240.84780 |
| BA | 137 | 252.30000 | 32787.70000 | 6.667 | 271.47741 | 240.07927 | 245.32237 |
| CD | 111 | 25.37000 | 3557.19000 | 6.973 | 27.34182 | 24.84119 | 23.92390 |
| CO | 59 | 246.70000 | 229195.00000 | 6.907 | 266.22656 | 235.07580 | 238.67903 |
| CU | 63 | 251.50000 | 171587.00000 | 6.966 | 271.58328 | 239.57116 | 243.23353 |
| MO | 98 | 25.01000 | 12433.20000 | 4.846 | 26.28979 | 24.85669 | 23.88021 |
| NI | 60 | 251.40000 | 63288.60000 | 8.099 | 274.61953 | 236.77247 | 242.69226 |
| SB | 121 | 26.07000 | 7042.25000 | 2.768 | 25.96105 | 26.83488 | 25.40316 |
| SN | 120 | 25.12000 | 10775.10000 | 3.116 | 25.53514 | 24.21506 | 25.60407 |
| SR | 88 | 25.05000 | 9237.07000 | 4.970 | 26.44284 | 24.67747 | 24.03860 |
| ZN | 66 | 247.40000 | 21752.30000 | 6.475 | 260.67051 | 229.60428 | 251.89860 |
| **BI-1** | 209 | 109719.00000 | 0.00000 | 5.701 | 102532.00000 | 113933.00000 | 112693.00000 |
| PB | 208 | 25.77000 | 69996.50000 | 6.294 | 27.61008 | 25.15544 | 24.54566 |
| TL | 203 | 26.19000 | 22141.30000 | 6.987 | 28.21965 | 24.66508 | 25.68520 |
| U | 238 | 25.59000 | 77873.70000 | 7.991 | 27.88231 | 23.95464 | 24.93098 |
| *GE-1* | 72 | 94299.80000 | 0.00000 | 4.699 | 89192.50000 | 97116.00000 | 96590.90000 |
| *TB-1* | 159 | 157736.00000 | 0.00000 | 4.654 | 149555.00000 | 163748.00000 | 159905.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:43:00
Tube Number: 28
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44700.90000 | 0.00000 | 1.457 | 44827.40000 | 45279.90000 | 43995.40000 |
| AL | 27 | -0.13370 | 13.33380 | -191.324 | -0.28580 | 0.16157 | -0.27717 |
| CA | 44 | -42.65000 | 316.68300 | -30.363 | -28.00368 | -47.40715 | -52.55061 |
| CR | 52 | 0.49860 | 326.68200 | 10.588 | 0.54126 | 0.43954 | 0.51485 |
| FE | 57 | -0.23010 | 30.00140 | -1045.200 | 2.50074 | -1.15825 | -2.03304 |
| K | 39 | -173.00000 | 30399.50000 | -14.278 | -190.93026 | -183.39134 | -144.87128 |
| MG | 24 | -0.34310 | 73.33630 | -72.340 | -0.06748 | -0.41282 | -0.54905 |
| MN | 55 | 0.04436 | 23.33420 | 45.649 | 0.03300 | 0.03235 | 0.06774 |
| NA | 23 | -6.48800 | 6181.69000 | -21.393 | -5.08824 | -7.86466 | -6.51293 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.20320 | 110.00500 | 61.663 | 0.25202 | 0.29675 | 0.06087 |
| **IN-1** | 115 | 48109.60000 | 0.00000 | 1.191 | 48324.20000 | 47460.10000 | 48544.60000 |
| AG | 107 | 0.00061 | 13.33380 | 2289.040 | 0.01586 | -0.01156 | -0.00246 |
| AS | 75 | 0.40230 | 58.66730 | 66.642 | 0.30299 | 0.19797 | 0.70588 |
| BA | 137 | 0.05417 | 10.00040 | 146.465 | -0.02457 | 0.13410 | 0.05299 |
| CD | 111 | -0.00550 | 8.66674 | -167.236 | -0.01068 | 0.00512 | -0.01094 |
| CO | 59 | 0.03334 | 93.33710 | 18.026 | 0.04016 | 0.03104 | 0.02881 |
| CU | 63 | 0.07293 | 86.67050 | 82.230 | 0.13663 | 0.06459 | 0.01757 |
| MO | 98 | -0.01856 | 6.66692 | -63.955 | -0.03226 | -0.01149 | -0.01195 |
| NI | 60 | 0.08744 | 50.00240 | 44.339 | 0.12699 | 0.04949 | 0.08586 |
| SB | 121 | 0.01489 | 13.33390 | 151.511 | 0.00195 | 0.04093 | 0.00178 |
| SN | 120 | 0.10500 | 56.66920 | 27.838 | 0.08842 | 0.13877 | 0.08788 |
| SR | 88 | 0.08393 | 36.66860 | 19.492 | 0.06510 | 0.09460 | 0.09210 |
| ZN | 66 | -0.10020 | 16.66780 | -238.523 | -0.17646 | -0.29181 | 0.16751 |
| **BI-1** | 209 | 110243.00000 | 0.00000 | 0.667 | 109746.00000 | 109895.00000 | 111088.00000 |
| PB | 208 | -0.00091 | 123.34100 | -1888.250 | -0.02027 | 0.00542 | 0.01213 |
| TL | 203 | 0.00004 | 13.33390 | 63320.000 | -0.01550 | -0.01550 | 0.03114 |
| U | 238 | 0.00757 | 30.00130 | 85.244 | 0.00109 | 0.00763 | 0.01399 |
| *GE-1* | 72 | 95456.60000 | 0.00000 | 1.514 | 96985.20000 | 94113.50000 | 95271.20000 |
| *TB-1* | 159 | 158225.00000 | 0.00000 | 1.637 | 160321.00000 | 155330.00000 | 159024.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:45:00
Tube Number: 29 Batch: 171951063903A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44740.80000 | 0.00000 | 0.621 | 44446.50000 | 44998.50000 | 44777.30000 |
| AL | 27 | 2.45700 | 70.00390 | 31.502 | 2.02022 | 3.35063 | 1.99988 |
| CA | 44 | 17.60000 | 450.02700 | 242.500 | 64.17832 | -19.62842 | 8.23671 |
| CR | 52 | 0.49800 | 326.68200 | 29.237 | 0.50830 | 0.34749 | 0.63810 |
| FE | 57 | 0.99340 | 43.33500 | 55.456 | 1.62949 | 0.66646 | 0.68437 |
| K | 39 | -155.90000 | 31134.60000 | -17.056 | -149.27034 | -133.27706 | -185.19958 |
| MG | 24 | 1.99600 | 213.34300 | 28.908 | 1.45972 | 1.92116 | 2.60647 |
| MN | 55 | 0.90120 | 283.34800 | 24.023 | 1.06136 | 0.65495 | 0.98745 |
| NA | 23 | 12.62000 | 8666.53000 | 5.450 | 13.03312 | 11.82495 | 12.99871 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.17190 | 96.67110 | 45.218 | 0.20594 | 0.22673 | 0.08292 |
| **IN-1** | 115 | 49272.30000 | 0.00000 | 1.527 | 50119.80000 | 48682.70000 | 49014.30000 |
| AG | 107 | -0.00260 | 10.00040 | -5.237 | -0.00275 | -0.00249 | -0.00255 |
| AS | 75 | 0.16190 | 48.00050 | 71.402 | 0.10532 | 0.29485 | 0.08542 |
| BA | 137 | 0.07672 | 13.33390 | 114.364 | 0.12568 | -0.02457 | 0.12907 |
| CD | 111 | -0.01654 | 7.33339 | -48.573 | -0.01275 | -0.01111 | -0.02577 |
| CO | 59 | -0.04363 | 23.33420 | -62.434 | -0.06883 | -0.01474 | -0.04734 |
| CU | 63 | 0.15770 | 146.67400 | 52.473 | 0.11542 | 0.25306 | 0.10465 |
| MO | 98 | -0.01224 | 10.00040 | -2.480 | -0.01259 | -0.01201 | -0.01214 |
| NI | 60 | 0.05603 | 43.33520 | 102.356 | 0.11834 | 0.00546 | 0.04429 |
| SB | 121 | -0.03566 | 0.00000 | 0.000 | -0.03567 | -0.03567 | -0.03567 |
| SN | 120 | 0.47220 | 216.67600 | 37.781 | 0.51777 | 0.27549 | 0.62346 |
| SR | 88 | 0.13520 | 56.66960 | 29.416 | 0.16820 | 0.14638 | 0.09105 |
| ZN | 66 | 4.46500 | 420.02400 | 13.064 | 3.93452 | 5.08975 | 4.37102 |
| **BI-1** | 209 | 112440.00000 | 0.00000 | 1.137 | 113855.00000 | 112095.00000 | 111369.00000 |
| PB | 208 | 0.00661 | 146.67400 | 119.773 | 0.01072 | 0.01161 | -0.00252 |
| TL | 203 | 0.01141 | 23.33430 | 60.535 | 0.00725 | 0.00761 | 0.01939 |
| U | 238 | 0.00206 | 13.33390 | 178.745 | 0.00413 | 0.00423 | -0.00219 |
| *GE-1* | 72 | 99426.40000 | 0.00000 | 0.303 | 99765.70000 | 99322.00000 | 99191.40000 |
| *TB-1* | 159 | 159327.00000 | 0.00000 | 0.781 | 159738.00000 | 160313.00000 | 157930.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:47:00
Tube Number: 30 Batch: 171951063903A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45858.10000 | 0.00000 | 0.719 | 46012.30000 | 46082.30000 | 45479.80000 |
| AL | 27 | 1925.00000 | 43158.20000 | 0.452 | 1927.71253 | 1915.41362 | 1932.22237 |
| CA | 44 | 3858.00000 | 9186.94000 | 4.686 | 3649.75768 | 3955.11051 | 3970.01884 |
| CR | 52 | 48.54000 | 25940.10000 | 2.612 | 49.96377 | 47.53074 | 48.12468 |
| FE | 57 | 978.00000 | 11025.10000 | 2.179 | 962.22593 | 969.60459 | 1002.26972 |
| K | 39 | 9656.00000 | 441653.00000 | 0.789 | 9711.56586 | 9569.44747 | 9688.10217 |
| MG | 24 | 1923.00000 | 118033.00000 | 1.845 | 1941.54470 | 1945.45748 | 1882.16332 |
| MN | 55 | 48.31000 | 15042.70000 | 2.327 | 47.13534 | 48.40859 | 49.37594 |
| NA | 23 | 9492.00000 | 1269480.00000 | 1.228 | 9487.28108 | 9610.25425 | 9377.21321 |
| TI | 47 | 246.50000 | 3297.23000 | 1.654 | 251.10265 | 244.77336 | 243.48549 |
| V | 51 | 48.65000 | 20613.60000 | 3.435 | 50.48377 | 48.26387 | 47.20918 |
| **IN-1** | 115 | 51272.50000 | 0.00000 | 1.804 | 52253.80000 | 51147.50000 | 50416.20000 |
| AG | 107 | 48.16000 | 55905.70000 | 0.561 | 48.09074 | 47.92499 | 48.45288 |
| AS | 75 | 9.41300 | 529.34800 | 5.773 | 10.03489 | 9.03043 | 9.17305 |
| BA | 137 | 49.33000 | 6718.73000 | 3.714 | 48.26687 | 48.28030 | 51.44724 |
| CD | 111 | 4.71800 | 701.35900 | 3.389 | 4.59191 | 4.89795 | 4.66462 |
| CO | 59 | 229.20000 | 223207.00000 | 0.752 | 227.32129 | 229.66545 | 230.68190 |
| CU | 63 | 47.77000 | 34192.90000 | 1.264 | 47.23117 | 48.42251 | 47.65695 |
| MO | 98 | 47.15000 | 24534.60000 | 1.586 | 47.99119 | 46.88572 | 46.56655 |
| NI | 60 | 46.82000 | 12383.10000 | 2.640 | 45.72505 | 48.16139 | 46.58565 |
| SB | 121 | 5.91800 | 1680.18000 | 7.822 | 6.29574 | 5.40189 | 6.05774 |
| SN | 120 | 47.19000 | 21158.40000 | 4.314 | 45.62249 | 46.45386 | 49.49078 |
| SR | 88 | 37.31000 | 14405.30000 | 4.229 | 38.22570 | 35.49018 | 38.22093 |
| ZN | 66 | 464.50000 | 42761.40000 | 1.760 | 473.82960 | 458.60343 | 461.04754 |
| **BI-1** | 209 | 112265.00000 | 0.00000 | 1.102 | 113630.00000 | 111219.00000 | 111946.00000 |
| PB | 208 | 14.40000 | 40177.90000 | 1.379 | 14.52142 | 14.51395 | 14.17375 |
| TL | 203 | 1.98000 | 1730.20000 | 4.806 | 2.03646 | 2.03434 | 1.87058 |
| U | 238 | 0.00103 | 10.00040 | 542.634 | -0.00219 | -0.00219 | 0.00745 |
| *GE-1* | 72 | 97240.00000 | 0.00000 | 0.937 | 98214.30000 | 96409.90000 | 97095.80000 |
| *TB-1* | 159 | 162450.00000 | 0.00000 | 1.823 | 163857.00000 | 164446.00000 | 159046.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:48:00
Tube Number: 31 Batch: 171951063903A
Sample Number: **9100485** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 43892.00000 | 0.00000 | 5.370 | 45419.90000 | 45078.60000 | 41177.50000 |
| AL | 27 | 35.27000 | 770.05800 | 9.240 | 33.04985 | 33.75964 | 39.01679 |
| CA | 44 | 63630.00000 | 138475.00000 | 6.093 | 60463.47768 | 62470.08399 | 67953.57318 |
| CR | 52 | 1.67000 | 916.73500 | 13.042 | 1.42296 | 1.83559 | 1.75018 |
| FE | 57 | 214.40000 | 2333.63000 | 5.965 | 212.65580 | 202.51683 | 227.93039 |
| K | 39 | 3358.00000 | 170760.00000 | 5.155 | 3232.54756 | 3286.98517 | 3555.81318 |
| MG | 24 | 9443.00000 | 553228.00000 | 5.565 | 9115.86330 | 9163.90799 | 10049.21316 |
| MN | 55 | 107.40000 | 31943.50000 | 6.854 | 107.03519 | 100.27601 | 114.98111 |
| NA | 23 | 27270.00000 | 3470570.00000 | 5.728 | 26024.36038 | 26759.13177 | 29020.51490 |
| TI | 47 | 1.11000 | 13.33410 | 173.243 | 0.00000 | 0.00000 | 3.33002 |
| V | 51 | 4.53900 | 1860.21000 | 5.135 | 4.42438 | 4.38622 | 4.80769 |
| **IN-1** | 115 | 48685.00000 | 0.00000 | 4.593 | 49497.10000 | 50401.50000 | 46156.40000 |
| AG | 107 | 0.02191 | 36.66840 | 64.674 | 0.03306 | 0.00596 | 0.02672 |
| AS | 75 | 1.02000 | 89.33440 | 22.069 | 0.99688 | 0.80743 | 1.25590 |
| BA | 137 | 135.40000 | 17476.30000 | 6.390 | 132.50794 | 128.55803 | 145.12266 |
| CD | 111 | -0.02525 | 6.00005 | -112.713 | 0.00209 | -0.05472 | -0.02312 |
| CO | 59 | 0.15430 | 203.34400 | 67.077 | 0.10142 | 0.08791 | 0.27349 |
| CU | 63 | 1.49900 | 1056.76000 | 8.946 | 1.65345 | 1.40932 | 1.43533 |
| MO | 98 | 6.59900 | 3263.89000 | 10.088 | 6.30446 | 6.13205 | 7.36148 |
| NI | 60 | 0.62640 | 186.67600 | 42.034 | 0.43535 | 0.92674 | 0.51724 |
| SB | 121 | 0.02599 | 16.66730 | 74.259 | 0.03778 | 0.03646 | 0.00372 |
| SN | 120 | 0.35280 | 163.34000 | 9.067 | 0.36290 | 0.37854 | 0.31699 |
| SR | 88 | 418.00000 | 152860.00000 | 6.321 | 409.16492 | 397.10359 | 447.69047 |
| ZN | 66 | 33.96000 | 2990.46000 | 2.503 | 34.62343 | 33.00093 | 34.25162 |
| **BI-1** | 209 | 106495.00000 | 0.00000 | 5.649 | 109734.00000 | 110199.00000 | 99553.30000 |
| PB | 208 | 0.18910 | 616.70200 | 22.618 | 0.19315 | 0.14451 | 0.22977 |
| TL | 203 | 0.02975 | 36.66820 | 70.050 | 0.03171 | 0.00800 | 0.04955 |
| U | 238 | 1.67800 | 4971.25000 | 4.495 | 1.59688 | 1.69131 | 1.74595 |
| *GE-1* | 72 | 93921.30000 | 0.00000 | 6.377 | 98557.00000 | 96047.70000 | 87159.30000 |
| *TB-1* | 159 | 160223.00000 | 0.00000 | 5.918 | 165633.00000 | 165761.00000 | 149274.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:50:00
Tube Number: 32 Batch: 171951063903A
Sample Number: **9100485** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45573.80000 | 0.00000 | 1.597 | 45119.20000 | 46413.10000 | 45189.10000 |
| AL | 27 | 231.20000 | 5161.20000 | 6.977 | 242.40843 | 212.69528 | 238.41057 |
| CA | 44 | 61210.00000 | 138603.00000 | 2.023 | 62277.26358 | 59854.48137 | 61503.96371 |
| CR | 52 | 5.62000 | 3047.14000 | 5.617 | 5.76305 | 5.83988 | 5.25876 |
| FE | 57 | 373.10000 | 4200.85000 | 3.728 | 387.75672 | 371.59704 | 360.06367 |
| K | 39 | 3559.00000 | 185848.00000 | 1.874 | 3611.26891 | 3483.80810 | 3581.58619 |
| MG | 24 | 9097.00000 | 554349.00000 | 2.012 | 9243.63703 | 8891.65943 | 9154.63548 |
| MN | 55 | 104.50000 | 32337.90000 | 2.079 | 106.14392 | 102.07213 | 105.42437 |
| NA | 23 | 26320.00000 | 3485350.00000 | 0.979 | 26429.89716 | 26027.03606 | 26506.52653 |
| TI | 47 | 31.61000 | 420.02400 | 7.374 | 31.15084 | 29.54379 | 34.13696 |
| V | 51 | 5.59100 | 2376.98000 | 7.036 | 5.27121 | 5.47288 | 6.03062 |
| **IN-1** | 115 | 48501.80000 | 0.00000 | 2.087 | 49629.80000 | 48201.60000 | 47673.90000 |
| AG | 107 | 1.01500 | 1130.10000 | 19.202 | 1.16345 | 1.08827 | 0.79463 |
| AS | 75 | 4.96500 | 282.00600 | 20.927 | 4.14414 | 4.61938 | 6.13319 |
| BA | 137 | 140.60000 | 18113.90000 | 3.939 | 135.57279 | 146.55189 | 139.79092 |
| CD | 111 | 0.80780 | 121.33500 | 13.989 | 0.69280 | 0.91861 | 0.81211 |
| CO | 59 | 1.18600 | 1156.77000 | 4.762 | 1.24712 | 1.17685 | 1.13539 |
| CU | 63 | 5.42200 | 3704.00000 | 3.921 | 5.21867 | 5.64276 | 5.40494 |
| MO | 98 | 7.57100 | 3740.72000 | 3.749 | 7.83791 | 7.27287 | 7.60216 |
| NI | 60 | 4.42800 | 1133.43000 | 2.956 | 4.38882 | 4.32059 | 4.57357 |
| SB | 121 | 2.12800 | 576.70600 | 15.221 | 1.86883 | 2.49094 | 2.02327 |
| SN | 120 | 4.23200 | 1806.87000 | 2.175 | 4.16471 | 4.19402 | 4.33673 |
| SR | 88 | 414.00000 | 151081.00000 | 2.911 | 402.67340 | 412.76634 | 426.67237 |
| ZN | 66 | 60.36000 | 5277.94000 | 0.667 | 60.82051 | 60.08524 | 60.16943 |
| **BI-1** | 209 | 108053.00000 | 0.00000 | 2.772 | 111501.00000 | 106557.00000 | 106100.00000 |
| PB | 208 | 2.18300 | 5964.16000 | 7.604 | 2.11964 | 2.37171 | 2.05861 |
| TL | 203 | 1.00900 | 853.40000 | 8.166 | 0.91385 | 1.05422 | 1.05883 |
| U | 238 | 11.85000 | 35605.00000 | 2.710 | 11.49967 | 12.13140 | 11.91536 |
| *GE-1* | 72 | 94821.30000 | 0.00000 | 2.608 | 97498.10000 | 94344.60000 | 92621.20000 |
| *TB-1* | 159 | 162548.00000 | 0.00000 | 2.033 | 165866.00000 | 159258.00000 | 162520.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:52:00
Tube Number: 33 Batch: 171951063903A
Sample Number: **9100485** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 45771.00000 | 0.00000 | 1.713 | 46664.60000 | 45449.50000 | 45199.00000 |
| AL | 27 | 26.54000 | 610.03700 | 9.412 | 25.13155 | 29.42550 | 25.06492 |
| CA | 44 | 57360.00000 | 130506.00000 | 0.830 | 57891.60228 | 57210.95457 | 56974.87962 |
| CR | 52 | 1.54300 | 890.06700 | 3.465 | 1.52904 | 1.49768 | 1.60189 |
| FE | 57 | 190.20000 | 2166.93000 | 4.283 | 188.53869 | 199.04640 | 183.00895 |
| K | 39 | 3027.00000 | 164473.00000 | 1.919 | 2970.84035 | 3022.31205 | 3086.75299 |
| MG | 24 | 8509.00000 | 520873.00000 | 0.840 | 8439.39163 | 8506.41392 | 8582.22255 |
| MN | 55 | 98.55000 | 30624.00000 | 2.813 | 98.22964 | 101.47335 | 95.95818 |
| NA | 23 | 24790.00000 | 3297730.00000 | 1.447 | 24913.08011 | 25070.10273 | 24385.13428 |
| TI | 47 | 0.50280 | 6.66692 | 173.210 | 0.00000 | 1.50848 | 0.00000 |
| V | 51 | 4.28600 | 1836.88000 | 13.460 | 4.35122 | 4.82698 | 3.67884 |
| **IN-1** | 115 | 48416.30000 | 0.00000 | 1.814 | 49428.00000 | 47849.50000 | 47971.50000 |
| AG | 107 | -0.00552 | 6.66693 | -95.014 | -0.00263 | -0.01156 | -0.00236 |
| AS | 75 | 0.84110 | 80.66760 | 52.990 | 1.31989 | 0.43812 | 0.76519 |
| BA | 137 | 130.50000 | 16782.00000 | 5.700 | 125.21594 | 139.04175 | 127.37102 |
| CD | 111 | -0.02522 | 6.00007 | -58.208 | -0.02613 | -0.01010 | -0.03943 |
| CO | 59 | 0.18930 | 236.67700 | 31.638 | 0.12297 | 0.23936 | 0.20564 |
| CU | 63 | 1.34700 | 946.73900 | 11.039 | 1.20603 | 1.50246 | 1.33403 |
| MO | 98 | 6.71200 | 3310.57000 | 3.443 | 6.61271 | 6.97618 | 6.54713 |
| NI | 60 | 0.66340 | 193.34300 | 31.339 | 0.51475 | 0.90103 | 0.57436 |
| SB | 121 | 0.03950 | 20.00080 | 192.380 | 0.03788 | 0.11628 | -0.03567 |
| SN | 120 | 0.19840 | 96.67150 | 30.257 | 0.20147 | 0.25691 | 0.13697 |
| SR | 88 | 389.10000 | 141760.00000 | 1.006 | 384.60732 | 391.88344 | 390.73996 |
| ZN | 66 | 31.70000 | 2780.41000 | 5.568 | 33.65675 | 30.23290 | 31.20101 |
| **BI-1** | 209 | 111131.00000 | 0.00000 | 3.355 | 114862.00000 | 111128.00000 | 107404.00000 |
| PB | 208 | 0.20100 | 680.03600 | 1.598 | 0.20356 | 0.19741 | 0.20209 |
| TL | 203 | 0.01146 | 23.33430 | 147.469 | 0.02960 | -0.00385 | 0.00862 |
| U | 238 | 1.50500 | 4661.13000 | 3.365 | 1.55994 | 1.46032 | 1.49428 |
| *GE-1* | 72 | 97048.30000 | 0.00000 | 0.588 | 97226.90000 | 97508.50000 | 96409.40000 |
| *TB-1* | 159 | 164824.00000 | 0.00000 | 2.015 | 168604.00000 | 163488.00000 | 162379.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:53:00
Tube Number: 34 Batch: 171951063903A
Sample Number: **9100485** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 43844.70000 | 0.00000 | 0.333 | 43995.40000 | 43704.20000 | 43834.70000 |
| AL | 27 | 2077.00000 | 44519.30000 | 2.233 | 2024.04046 | 2097.65993 | 2109.68891 |
| CA | 44 | 65900.00000 | 143553.00000 | 2.668 | 64763.26595 | 65009.90148 | 67924.79565 |
| CR | 52 | 51.27000 | 26193.90000 | 0.767 | 51.63385 | 50.85399 | 51.33132 |
| FE | 57 | 1215.00000 | 13093.80000 | 3.660 | 1195.84076 | 1184.18663 | 1266.38487 |
| K | 39 | 13590.00000 | 579171.00000 | 0.725 | 13690.57941 | 13572.68931 | 13495.04559 |
| MG | 24 | 11150.00000 | 653781.00000 | 0.552 | 11151.82131 | 11086.57921 | 11209.51425 |
| MN | 55 | 156.90000 | 46701.60000 | 2.076 | 154.61216 | 160.65237 | 155.51525 |
| NA | 23 | 35870.00000 | 4567030.00000 | 1.129 | 35601.03201 | 35665.24941 | 36332.14924 |
| TI | 47 | 264.60000 | 3383.93000 | 0.907 | 267.29200 | 263.57952 | 262.79716 |
| V | 51 | 55.44000 | 22453.40000 | 2.374 | 56.28123 | 53.92373 | 56.11591 |
| **IN-1** | 115 | 48323.80000 | 0.00000 | 1.866 | 47350.70000 | 49130.60000 | 48490.20000 |
| AG | 107 | 48.42000 | 52968.80000 | 2.102 | 49.41624 | 47.38218 | 48.46459 |
| AS | 75 | 10.92000 | 572.01700 | 9.377 | 11.74269 | 11.24789 | 9.77351 |
| BA | 137 | 181.50000 | 23289.40000 | 1.769 | 185.10969 | 180.24575 | 179.04932 |
| CD | 111 | 4.66400 | 653.35500 | 4.498 | 4.86759 | 4.67451 | 4.44852 |
| CO | 59 | 233.00000 | 213789.00000 | 2.370 | 238.58030 | 227.53873 | 232.86896 |
| CU | 63 | 49.22000 | 33203.60000 | 0.891 | 49.72805 | 48.94954 | 48.98878 |
| MO | 98 | 55.79000 | 27350.20000 | 2.223 | 56.51135 | 54.36233 | 56.50777 |
| NI | 60 | 48.03000 | 11966.00000 | 5.182 | 49.52735 | 45.15490 | 49.40273 |
| SB | 121 | 6.35500 | 1700.19000 | 7.891 | 6.18341 | 6.92023 | 5.96237 |
| SN | 120 | 49.76000 | 21031.60000 | 2.864 | 51.36662 | 48.64145 | 49.28424 |
| SR | 88 | 442.60000 | 160948.00000 | 2.454 | 445.74835 | 430.52953 | 451.55820 |
| ZN | 66 | 495.40000 | 42955.50000 | 3.837 | 516.89832 | 480.74789 | 488.59983 |
| **BI-1** | 209 | 106735.00000 | 0.00000 | 1.716 | 108131.00000 | 107413.00000 | 104660.00000 |
| PB | 208 | 14.95000 | 39644.00000 | 0.404 | 14.89234 | 14.94705 | 15.01295 |
| TL | 203 | 2.03900 | 1690.19000 | 14.282 | 1.90119 | 1.84164 | 2.37322 |
| U | 238 | 1.62100 | 4821.20000 | 3.897 | 1.68713 | 1.56112 | 1.61599 |
| *GE-1* | 72 | 94123.80000 | 0.00000 | 1.417 | 95333.80000 | 92692.90000 | 94344.50000 |
| *TB-1* | 159 | 158687.00000 | 0.00000 | 0.487 | 159549.00000 | 158056.00000 | 158456.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:55:00
Tube Number: 35 Batch: 171951063903A
Sample Number: **9100485** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 47313.70000 | 0.00000 | 1.889 | 46413.40000 | 47326.70000 | 48200.80000 |
| AL | 27 | 2513.00000 | 58091.60000 | 3.238 | 2570.92612 | 2547.34511 | 2419.68495 |
| CA | 44 | 59060.00000 | 138836.00000 | 3.175 | 61226.54844 | 57941.44474 | 58017.11246 |
| CR | 52 | 50.59000 | 27874.10000 | 5.173 | 53.50664 | 49.83044 | 48.44101 |
| FE | 57 | 1943.00000 | 22563.90000 | 4.534 | 1949.38201 | 2028.32049 | 1852.42895 |
| K | 39 | 12780.00000 | 590172.00000 | 3.099 | 13237.63336 | 12519.48348 | 12589.37375 |
| MG | 24 | 10320.00000 | 652755.00000 | 2.490 | 10598.31466 | 10265.35970 | 10092.73336 |
| MN | 55 | 151.10000 | 48501.60000 | 3.710 | 157.19838 | 149.88342 | 146.18223 |
| NA | 23 | 33070.00000 | 4542660.00000 | 2.575 | 33955.32630 | 32983.00459 | 32258.33154 |
| TI | 47 | 244.10000 | 3367.23000 | 5.444 | 254.10469 | 249.19814 | 229.03067 |
| V | 51 | 52.31000 | 22857.40000 | 2.279 | 52.92463 | 53.07190 | 50.93704 |
| **IN-1** | 115 | 51293.00000 | 0.00000 | 1.618 | 50507.40000 | 52161.50000 | 51210.20000 |
| AG | 107 | 47.12000 | 54696.10000 | 5.028 | 49.41017 | 44.67879 | 47.26748 |
| AS | 75 | 9.95900 | 557.35000 | 4.525 | 10.13523 | 9.44670 | 10.29445 |
| BA | 137 | 171.60000 | 23382.70000 | 3.956 | 168.60909 | 166.87787 | 179.40621 |
| CD | 111 | 4.72400 | 702.69200 | 3.851 | 4.55909 | 4.69408 | 4.91920 |
| CO | 59 | 224.00000 | 218166.00000 | 1.742 | 228.46758 | 221.46982 | 221.97238 |
| CU | 63 | 47.91000 | 34303.10000 | 2.553 | 49.26507 | 47.57634 | 46.88916 |
| MO | 98 | 54.00000 | 28102.20000 | 1.118 | 54.66141 | 53.47604 | 53.87171 |
| NI | 60 | 46.72000 | 12363.00000 | 3.251 | 47.80982 | 47.37194 | 44.98769 |
| SB | 121 | 5.74300 | 1630.17000 | 4.583 | 6.04663 | 5.57502 | 5.60826 |
| SN | 120 | 47.37000 | 21252.00000 | 4.055 | 49.47043 | 46.93355 | 45.70282 |
| SR | 88 | 411.90000 | 159002.00000 | 1.023 | 416.74897 | 409.02495 | 409.97330 |
| ZN | 66 | 490.70000 | 45176.60000 | 4.402 | 512.70569 | 490.00396 | 469.51379 |
| **BI-1** | 209 | 113472.00000 | 0.00000 | 1.781 | 115791.00000 | 112540.00000 | 112086.00000 |
| PB | 208 | 14.99000 | 42264.50000 | 1.227 | 14.97617 | 14.81717 | 15.18413 |
| TL | 203 | 2.02900 | 1790.22000 | 6.491 | 1.88629 | 2.05633 | 2.14563 |
| U | 238 | 1.52600 | 4817.88000 | 9.043 | 1.37037 | 1.57299 | 1.63394 |
| *GE-1* | 72 | 97878.30000 | 0.00000 | 2.622 | 99221.40000 | 94919.50000 | 99494.10000 |
| *TB-1* | 159 | 167495.00000 | 0.00000 | 0.641 | 166278.00000 | 167894.00000 | 168311.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:57:00
Tube Number: 36 Batch: 171951063903A
Sample Number: **9100485** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 47112.40000 | 0.00000 | 1.864 | 47136.30000 | 47978.50000 | 46222.40000 |
| AL | 27 | 7.80500 | 196.68000 | 9.500 | 7.07229 | 7.78868 | 8.55506 |
| CA | 44 | 11800.00000 | 27970.80000 | 1.223 | 11851.55282 | 11636.13356 | 11910.25284 |
| CR | 52 | 0.73850 | 476.70200 | 20.081 | 0.65441 | 0.90968 | 0.65131 |
| FE | 57 | 40.91000 | 506.70100 | 3.312 | 42.05213 | 41.26208 | 39.41112 |
| K | 39 | 407.00000 | 56920.60000 | 9.349 | 442.36834 | 366.72560 | 411.79962 |
| MG | 24 | 1748.00000 | 110224.00000 | 2.814 | 1795.03774 | 1697.00836 | 1753.06374 |
| MN | 55 | 20.38000 | 6525.23000 | 4.338 | 21.19968 | 19.44417 | 20.50315 |
| NA | 23 | 4957.00000 | 684549.00000 | 1.456 | 4983.70485 | 4875.65670 | 5012.50490 |
| TI | 47 | 0.48480 | 6.66692 | 173.226 | 1.45450 | 0.00000 | 0.00000 |
| V | 51 | 0.93390 | 433.35900 | 7.575 | 0.97248 | 0.97690 | 0.85223 |
| **IN-1** | 115 | 53123.00000 | 0.00000 | 1.781 | 54127.70000 | 52991.80000 | 52249.60000 |
| AG | 107 | 0.01895 | 36.66810 | 51.108 | 0.01292 | 0.03012 | 0.01380 |
| AS | 75 | 0.11570 | 49.33390 | 74.676 | 0.18437 | 0.01870 | 0.14408 |
| BA | 137 | 24.30000 | 3430.61000 | 3.527 | 24.18662 | 23.49744 | 25.20137 |
| CD | 111 | -0.03782 | 4.66670 | -80.698 | -0.05567 | -0.00258 | -0.05521 |
| CO | 59 | -0.00989 | 60.00230 | -506.268 | 0.04793 | -0.03902 | -0.03859 |
| CU | 63 | 0.31740 | 276.68000 | 16.689 | 0.27494 | 0.37677 | 0.30057 |
| MO | 98 | 1.16300 | 643.37600 | 24.678 | 0.98807 | 1.49382 | 1.00587 |
| NI | 60 | 0.00787 | 33.33460 | 293.325 | -0.00659 | -0.00428 | 0.03447 |
| SB | 121 | 0.07780 | 33.33490 | 64.280 | 0.13224 | 0.06724 | 0.03391 |
| SN | 120 | 0.07076 | 46.66880 | 78.010 | 0.07573 | 0.01324 | 0.12330 |
| SR | 88 | 76.39000 | 30550.60000 | 0.628 | 76.89036 | 76.35141 | 75.93327 |
| ZN | 66 | 7.55100 | 746.71900 | 11.657 | 7.12307 | 6.96644 | 8.56325 |
| **BI-1** | 209 | 118000.00000 | 0.00000 | 1.346 | 119063.00000 | 116175.00000 | 118761.00000 |
| PB | 208 | 0.03964 | 250.01200 | 33.047 | 0.03198 | 0.05477 | 0.03217 |
| TL | 203 | 0.00652 | 20.00080 | 292.459 | 0.01713 | 0.01794 | -0.01550 |
| U | 238 | 0.32100 | 1060.10000 | 7.832 | 0.31789 | 0.34751 | 0.29751 |
| *GE-1* | 72 | 100657.00000 | 0.00000 | 1.705 | 102014.00000 | 98727.50000 | 101228.00000 |
| *TB-1* | 159 | 166824.00000 | 0.00000 | 0.560 | 167902.00000 | 166330.00000 | 166241.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 10:59:00
Tube Number: 37
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45055.60000 | 0.00000 | 3.296 | 45450.40000 | 46302.90000 | 43413.40000 |
| AL | 27 | 2488.00000 | 54784.40000 | 1.996 | 2505.59531 | 2432.37703 | 2527.10043 |
| CA | 44 | 2433.00000 | 5834.86000 | 8.767 | 2457.43306 | 2208.11766 | 2632.58835 |
| CR | 52 | 251.30000 | 131580.00000 | 2.996 | 252.88682 | 243.10701 | 257.91097 |
| FE | 57 | 2455.00000 | 27122.40000 | 3.158 | 2462.95193 | 2373.37918 | 2527.77452 |
| K | 39 | 2276.00000 | 131097.00000 | 1.787 | 2287.30029 | 2230.88023 | 2309.84937 |
| MG | 24 | 2470.00000 | 148844.00000 | 2.943 | 2483.12992 | 2392.16149 | 2535.82487 |
| MN | 55 | 250.00000 | 76428.80000 | 3.422 | 255.99105 | 240.23744 | 253.90023 |
| NA | 23 | 2248.00000 | 300566.00000 | 2.803 | 2262.69604 | 2178.31039 | 2301.57699 |
| TI | 47 | 253.60000 | 3327.22000 | 9.334 | 260.24510 | 227.31075 | 273.24012 |
| V | 51 | 249.00000 | 103466.00000 | 3.561 | 248.84364 | 240.25119 | 257.98105 |
| **IN-1** | 115 | 49706.50000 | 0.00000 | 3.050 | 51456.50000 | 48786.10000 | 48876.80000 |
| AG | 107 | 25.91000 | 29154.60000 | 2.853 | 25.43834 | 26.75887 | 25.52279 |
| AS | 75 | 245.00000 | 12340.00000 | 1.611 | 242.17893 | 249.54701 | 243.40451 |
| BA | 137 | 247.10000 | 32624.00000 | 1.647 | 244.56115 | 251.83200 | 245.03172 |
| CD | 111 | 25.35000 | 3611.21000 | 0.767 | 25.31165 | 25.18003 | 25.56276 |
| CO | 59 | 243.00000 | 229346.00000 | 1.221 | 239.99567 | 245.92921 | 243.02568 |
| CU | 63 | 246.40000 | 170712.00000 | 2.990 | 237.95619 | 251.63837 | 249.53979 |
| MO | 98 | 23.88000 | 12046.20000 | 2.746 | 23.14988 | 24.41900 | 24.07038 |
| NI | 60 | 248.00000 | 63463.10000 | 0.786 | 247.90976 | 246.07751 | 249.97289 |
| SB | 121 | 25.56000 | 7002.21000 | 4.308 | 26.11152 | 26.27569 | 24.29202 |
| SN | 120 | 24.18000 | 10521.50000 | 4.413 | 24.25285 | 25.20669 | 23.07555 |
| SR | 88 | 24.86000 | 9307.06000 | 2.098 | 24.85988 | 24.34118 | 25.38416 |
| ZN | 66 | 244.80000 | 21845.80000 | 4.477 | 236.92913 | 240.18181 | 257.33321 |
| **BI-1** | 209 | 112659.00000 | 0.00000 | 2.750 | 115974.00000 | 112168.00000 | 109836.00000 |
| PB | 208 | 24.72000 | 69107.90000 | 0.850 | 24.54799 | 24.66782 | 24.95698 |
| TL | 203 | 24.65000 | 21443.40000 | 3.163 | 23.86163 | 24.67192 | 25.42060 |
| U | 238 | 24.13000 | 75602.00000 | 1.842 | 23.68269 | 24.13483 | 24.57170 |
| *GE-1* | 72 | 97868.00000 | 0.00000 | 1.409 | 98898.80000 | 98404.00000 | 96301.40000 |
| *TB-1* | 159 | 163823.00000 | 0.00000 | 2.788 | 167185.00000 | 165661.00000 | 158622.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:00:00
Tube Number: 38
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45152.70000 | 0.00000 | 2.200 | 45379.80000 | 46012.70000 | 44065.50000 |
| AL | 27 | 0.61090 | 30.00140 | 194.795 | 1.96340 | 0.14718 | -0.27791 |
| CA | 44 | 2.16800 | 420.02300 | 696.033 | 19.00824 | -10.12786 | -2.37483 |
| CR | 52 | 0.47350 | 316.68200 | 8.817 | 0.47620 | 0.43046 | 0.51382 |
| FE | 57 | -0.25270 | 30.00110 | -346.854 | -1.16222 | 0.58651 | -0.18267 |
| K | 39 | -237.00000 | 28071.00000 | -10.490 | -225.03675 | -265.67884 | -220.53698 |
| MG | 24 | -0.35820 | 73.33660 | -91.206 | -0.08576 | -0.26869 | -0.72038 |
| MN | 55 | 0.03302 | 20.00080 | 103.452 | 0.03220 | -0.00071 | 0.06758 |
| NA | 23 | -9.31100 | 5871.51000 | -20.331 | -9.41189 | -11.15218 | -7.37110 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.26560 | 136.67300 | 25.568 | 0.34373 | 0.22037 | 0.23286 |
| **IN-1** | 115 | 49542.20000 | 0.00000 | 1.704 | 50321.80000 | 48645.70000 | 49659.10000 |
| AG | 107 | 0.02142 | 36.66840 | 135.387 | -0.01156 | 0.04292 | 0.03291 |
| AS | 75 | 0.08948 | 44.66710 | 144.278 | -0.01638 | 0.05144 | 0.23338 |
| BA | 137 | 0.15450 | 23.33430 | 103.819 | -0.02457 | 0.28504 | 0.20289 |
| CD | 111 | -0.00746 | 8.66674 | -97.706 | 0.00093 | -0.01106 | -0.01224 |
| CO | 59 | -0.00872 | 56.66910 | -179.420 | -0.00604 | -0.02553 | 0.00541 |
| CU | 63 | 0.06871 | 86.67070 | 61.258 | 0.11472 | 0.03216 | 0.05924 |
| MO | 98 | -0.01911 | 6.66692 | -59.602 | -0.01267 | -0.03226 | -0.01241 |
| NI | 60 | 0.02887 | 36.66810 | 200.104 | 0.07879 | -0.03440 | 0.04223 |
| SB | 121 | 0.01333 | 13.33440 | 318.455 | 0.03658 | 0.03907 | -0.03567 |
| SN | 120 | 0.05454 | 36.66810 | 87.477 | 0.03826 | 0.01710 | 0.10826 |
| SR | 88 | 0.01817 | 13.33380 | 225.151 | 0.00901 | -0.01739 | 0.06288 |
| ZN | 66 | -0.06772 | 20.00080 | -327.230 | 0.15127 | -0.06264 | -0.29181 |
| **BI-1** | 209 | 113799.00000 | 0.00000 | 0.666 | 113498.00000 | 113238.00000 | 114661.00000 |
| PB | 208 | 0.00836 | 153.34000 | 60.863 | 0.00378 | 0.00746 | 0.01384 |
| TL | 203 | 0.00353 | 16.66740 | 673.759 | 0.03014 | -0.00407 | -0.01550 |
| U | 238 | 0.00836 | 33.33470 | 44.294 | 0.01048 | 0.01051 | 0.00408 |
| *GE-1* | 72 | 98120.20000 | 0.00000 | 1.784 | 97438.00000 | 100109.00000 | 96813.70000 |
| *TB-1* | 159 | 163604.00000 | 0.00000 | 1.045 | 162450.00000 | 165568.00000 | 162793.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:02:00
Tube Number: 39 Batch: 171951063903A
Sample Number: **9100479** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 44928.20000 | 0.00000 | 1.997 | 45299.50000 | 45580.30000 | 43904.90000 |
| AL | 27 | 5.79200 | 143.34000 | 6.851 | 5.58224 | 5.54315 | 6.24917 |
| CA | 44 | 264100.00000 | 588264.00000 | 1.179 | 263174.99325 | 261607.89803 | 267611.19751 |
| CR | 52 | 0.62210 | 393.36000 | 24.803 | 0.80022 | 0.53018 | 0.53579 |
| FE | 57 | 43.45000 | 510.03000 | 16.730 | 42.97609 | 36.42674 | 50.94088 |
| K | 39 | 5419.00000 | 259301.00000 | 2.198 | 5417.40311 | 5301.35908 | 5539.46877 |
| MG | 24 | 39530.00000 | 2374880.00000 | 1.262 | 39184.96721 | 39312.04974 | 40105.38950 |
| MN | 55 | 1027.00000 | 313031.00000 | 1.120 | 1023.08641 | 1017.56253 | 1039.66329 |
| NA | 23 | 62820.00000 | 8189990.00000 | 1.912 | 62533.30169 | 61794.18553 | 64142.75786 |
| TI | 47 | 0.75210 | 10.00040 | 173.248 | 0.00000 | 2.25622 | 0.00000 |
| V | 51 | 1.86200 | 796.73000 | 13.303 | 1.97156 | 1.57855 | 2.03622 |
| **IN-1** | 115 | 48604.30000 | 0.00000 | 0.020 | 48614.10000 | 48604.10000 | 48594.70000 |
| AG | 107 | 0.00055 | 13.33380 | 1897.960 | 0.00661 | 0.00661 | -0.01156 |
| AS | 75 | 0.69040 | 73.33410 | 18.018 | 0.66299 | 0.82626 | 0.58208 |
| BA | 137 | 67.21000 | 8680.04000 | 2.982 | 69.16562 | 67.31890 | 65.16146 |
| CD | 111 | 0.06578 | 18.66680 | 45.591 | 0.03216 | 0.07537 | 0.08980 |
| CO | 59 | 1.46600 | 1416.81000 | 7.892 | 1.49133 | 1.56751 | 1.34022 |
| CU | 63 | 8.56200 | 5841.53000 | 2.182 | 8.38345 | 8.54760 | 8.75610 |
| MO | 98 | 0.54940 | 286.68100 | 22.570 | 0.41403 | 0.65761 | 0.57657 |
| NI | 60 | 6.27000 | 1596.83000 | 3.681 | 6.40181 | 6.00334 | 6.40449 |
| SB | 121 | 0.08899 | 33.33490 | 48.511 | 0.11389 | 0.11393 | 0.03914 |
| SN | 120 | 0.18190 | 90.00430 | 34.222 | 0.15829 | 0.25246 | 0.13483 |
| SR | 88 | 1383.00000 | 505721.00000 | 0.711 | 1380.60622 | 1393.17326 | 1373.77743 |
| ZN | 66 | 108.40000 | 9480.51000 | 4.098 | 103.62841 | 109.27350 | 112.39225 |
| **BI-1** | 209 | 104223.00000 | 0.00000 | 0.344 | 104590.00000 | 103874.00000 | 104204.00000 |
| PB | 208 | 0.06637 | 290.01400 | 31.460 | 0.05049 | 0.09003 | 0.05860 |
| TL | 203 | 0.03428 | 40.00190 | 130.805 | -0.01550 | 0.04684 | 0.07151 |
| U | 238 | 1.01800 | 2957.16000 | 3.346 | 1.00161 | 1.05700 | 0.99497 |
| *GE-1* | 72 | 94372.60000 | 0.00000 | 1.513 | 94475.90000 | 95746.30000 | 92895.40000 |
| *TB-1* | 159 | 165512.00000 | 0.00000 | 1.036 | 167417.00000 | 165024.00000 | 164093.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:04:00
Tube Number: 40 Batch: 171951063903A
Sample Number: **9100483** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 45737.60000 | 0.00000 | 2.547 | 46323.30000 | 46493.40000 | 44396.00000 |
| AL | 27 | 40.10000 | 910.07800 | 18.362 | 36.36666 | 35.35068 | 48.58175 |
| CA | 44 | 54180.00000 | 123151.00000 | 1.688 | 53652.09602 | 53643.96999 | 55231.85675 |
| CR | 52 | 1.72100 | 983.41100 | 8.420 | 1.80135 | 1.55365 | 1.80770 |
| FE | 57 | 127.70000 | 1466.81000 | 10.838 | 137.97513 | 133.07094 | 111.92489 |
| K | 39 | 3300.00000 | 175712.00000 | 1.564 | 3257.19914 | 3284.55007 | 3357.08733 |
| MG | 24 | 7928.00000 | 484894.00000 | 1.435 | 8000.03659 | 7796.35851 | 7986.23993 |
| MN | 55 | 87.68000 | 27216.10000 | 2.199 | 87.06072 | 86.13897 | 89.84289 |
| NA | 23 | 24780.00000 | 3292400.00000 | 1.960 | 24281.06447 | 24794.66788 | 25252.13127 |
| TI | 47 | 0.51480 | 6.66692 | 173.193 | 0.00000 | 0.00000 | 1.54428 |
| V | 51 | 4.09500 | 1753.52000 | 7.768 | 3.72843 | 4.29749 | 4.25926 |
| **IN-1** | 115 | 49202.50000 | 0.00000 | 2.410 | 50199.80000 | 47890.90000 | 49516.80000 |
| AG | 107 | 0.00049 | 13.33380 | 1125.200 | -0.00276 | 0.00688 | -0.00264 |
| AS | 75 | 0.67980 | 74.00080 | 57.414 | 1.09002 | 0.31300 | 0.63626 |
| BA | 137 | 141.90000 | 18544.50000 | 0.882 | 142.74550 | 142.46412 | 140.44982 |
| CD | 111 | -0.03062 | 5.33337 | -27.655 | -0.02678 | -0.02477 | -0.04034 |
| CO | 59 | 0.15250 | 206.67600 | 10.898 | 0.16198 | 0.16211 | 0.13326 |
| CU | 63 | 0.56450 | 426.69000 | 12.650 | 0.61515 | 0.48280 | 0.59544 |
| MO | 98 | 5.24600 | 2633.73000 | 1.042 | 5.23325 | 5.19883 | 5.30594 |
| NI | 60 | 0.37610 | 123.33900 | 55.570 | 0.23410 | 0.61610 | 0.27815 |
| SB | 121 | 0.00171 | 10.00040 | 2224.370 | 0.00054 | 0.04024 | -0.03567 |
| SN | 120 | 0.28860 | 136.67300 | 19.373 | 0.26626 | 0.35219 | 0.24725 |
| SR | 88 | 371.80000 | 137650.00000 | 4.008 | 376.04434 | 384.16444 | 355.27748 |
| ZN | 66 | 8.95700 | 816.72600 | 8.585 | 8.59169 | 8.43787 | 9.83999 |
| **BI-1** | 209 | 111110.00000 | 0.00000 | 1.875 | 109522.00000 | 113469.00000 | 110339.00000 |
| PB | 208 | 0.12130 | 460.02400 | 12.391 | 0.11988 | 0.10699 | 0.13695 |
| TL | 203 | -0.00007 | 13.33390 | -19713.900 | -0.01550 | 0.00733 | 0.00797 |
| U | 238 | 1.71700 | 5311.42000 | 4.899 | 1.81343 | 1.65834 | 1.67940 |
| *GE-1* | 72 | 95607.80000 | 0.00000 | 0.783 | 96109.30000 | 95967.20000 | 94747.00000 |
| *TB-1* | 159 | 165447.00000 | 0.00000 | 1.640 | 162513.00000 | 167864.00000 | 165963.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:05:00
Tube Number: 41 Batch: 171951063903A
Sample Number: **9100487** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44837.80000 | 0.00000 | 3.229 | 46423.00000 | 43583.60000 | 44506.70000 |
| AL | 27 | 221.90000 | 4867.75000 | 10.604 | 201.62459 | 247.68888 | 216.31853 |
| CA | 44 | 45390.00000 | 101160.00000 | 3.479 | 43683.01216 | 46802.17272 | 45672.06235 |
| CR | 52 | 4.46600 | 2393.65000 | 3.556 | 4.35538 | 4.64772 | 4.39387 |
| FE | 57 | 921.50000 | 10157.80000 | 2.701 | 903.54762 | 911.08084 | 949.92146 |
| K | 39 | 2543.00000 | 141336.00000 | 3.418 | 2444.80835 | 2609.07229 | 2576.19252 |
| MG | 24 | 6533.00000 | 391508.00000 | 3.649 | 6280.31001 | 6753.87339 | 6565.58828 |
| MN | 55 | 33.38000 | 10157.70000 | 4.386 | 31.91211 | 34.83916 | 33.38753 |
| NA | 23 | 21440.00000 | 2793590.00000 | 2.396 | 20855.90460 | 21814.87513 | 21655.26015 |
| TI | 47 | 11.10000 | 146.67300 | 48.901 | 16.98389 | 6.29224 | 10.01290 |
| V | 51 | 3.44900 | 1450.13000 | 8.452 | 3.15988 | 3.74290 | 3.44476 |
| **IN-1** | 115 | 49095.60000 | 0.00000 | 1.487 | 48975.40000 | 49878.20000 | 48433.20000 |
| AG | 107 | 0.00357 | 16.66730 | 389.636 | 0.00648 | -0.01156 | 0.01580 |
| AS | 75 | 0.81040 | 80.00080 | 17.880 | 0.97563 | 0.70523 | 0.75023 |
| BA | 137 | 135.50000 | 17669.90000 | 3.715 | 140.77187 | 130.73969 | 135.02894 |
| CD | 111 | 0.00271 | 10.00010 | 919.099 | 0.03142 | -0.01248 | -0.01081 |
| CO | 59 | 0.14650 | 200.01100 | 58.840 | 0.18926 | 0.04732 | 0.20303 |
| CU | 63 | 1.42800 | 1016.75000 | 11.548 | 1.56914 | 1.46783 | 1.24675 |
| MO | 98 | 6.14900 | 3077.17000 | 4.910 | 5.80804 | 6.25600 | 6.38255 |
| NI | 60 | 1.02000 | 286.68000 | 5.375 | 0.95705 | 1.05453 | 1.04927 |
| SB | 121 | 0.08793 | 33.33460 | 26.146 | 0.07568 | 0.07366 | 0.11445 |
| SN | 120 | 0.38180 | 176.67600 | 5.013 | 0.39044 | 0.35990 | 0.39515 |
| SR | 88 | 308.10000 | 113836.00000 | 1.802 | 303.95596 | 305.95576 | 314.41504 |
| ZN | 66 | 14.86000 | 1333.46000 | 17.308 | 12.91131 | 13.90171 | 17.77865 |
| **BI-1** | 209 | 107495.00000 | 0.00000 | 2.469 | 110462.00000 | 105347.00000 | 106675.00000 |
| PB | 208 | 0.29640 | 910.05100 | 14.663 | 0.26102 | 0.34492 | 0.28328 |
| TL | 203 | -0.00750 | 6.66694 | -92.583 | -0.00378 | -0.00321 | -0.01550 |
| U | 238 | 1.71900 | 5141.34000 | 8.144 | 1.58634 | 1.70443 | 1.86526 |
| *GE-1* | 72 | 95357.10000 | 0.00000 | 0.594 | 95606.10000 | 94708.90000 | 95756.30000 |
| *TB-1* | 159 | 160573.00000 | 0.00000 | 0.086 | 160658.00000 | 160413.00000 | 160649.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:07:00
Tube Number: 42 Batch: 171951063903A
Sample Number: **9100489** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44998.40000 | 0.00000 | 2.449 | 44687.50000 | 46222.60000 | 44085.10000 |
| AL | 27 | 42.81000 | 956.74300 | 5.833 | 43.67894 | 39.99017 | 44.74982 |
| CA | 44 | 47680.00000 | 106696.00000 | 1.225 | 48267.89423 | 47099.30072 | 47670.47118 |
| CR | 52 | 1.92700 | 1076.76000 | 11.546 | 2.12240 | 1.97312 | 1.68471 |
| FE | 57 | 364.30000 | 4047.46000 | 5.295 | 361.39765 | 346.64715 | 384.89148 |
| K | 39 | 2696.00000 | 148138.00000 | 2.060 | 2736.99232 | 2632.73751 | 2718.13764 |
| MG | 24 | 6714.00000 | 404004.00000 | 1.780 | 6729.43953 | 6588.11582 | 6825.72390 |
| MN | 55 | 21.12000 | 6461.82000 | 3.031 | 21.60413 | 21.36404 | 20.39512 |
| NA | 23 | 22210.00000 | 2904080.00000 | 1.531 | 22172.57747 | 21884.49664 | 22562.18279 |
| TI | 47 | 0.77410 | 10.00040 | 100.452 | 0.76710 | 0.00000 | 1.55517 |
| V | 51 | 2.67300 | 1136.76000 | 8.208 | 2.77564 | 2.82210 | 2.42100 |
| **IN-1** | 115 | 49199.70000 | 0.00000 | 1.775 | 49657.00000 | 49749.30000 | 48192.80000 |
| AG | 107 | 0.00335 | 16.66730 | 551.313 | 0.02402 | -0.01156 | -0.00240 |
| AS | 75 | 1.03300 | 91.33450 | 19.545 | 0.91133 | 1.26638 | 0.92234 |
| BA | 137 | 143.80000 | 18791.50000 | 3.082 | 144.45853 | 139.11218 | 147.90837 |
| CD | 111 | -0.00656 | 8.66675 | -522.627 | -0.02633 | -0.02640 | 0.03304 |
| CO | 59 | 0.02730 | 90.00440 | 73.187 | 0.02662 | 0.04762 | 0.00767 |
| CU | 63 | 1.53600 | 1093.42000 | 8.418 | 1.51796 | 1.67360 | 1.41695 |
| MO | 98 | 5.57000 | 2793.74000 | 5.242 | 5.60858 | 5.26113 | 5.84141 |
| NI | 60 | 0.60950 | 183.34200 | 8.495 | 0.66839 | 0.58881 | 0.57120 |
| SB | 121 | 0.03824 | 20.00080 | 3.465 | 0.03754 | 0.03741 | 0.03977 |
| SN | 120 | 0.26610 | 126.67200 | 52.048 | 0.15434 | 0.22297 | 0.42099 |
| SR | 88 | 310.20000 | 114829.00000 | 2.502 | 302.07676 | 310.89907 | 317.54681 |
| ZN | 66 | 16.07000 | 1443.47000 | 7.293 | 15.20001 | 15.61943 | 17.40604 |
| **BI-1** | 209 | 112816.00000 | 0.00000 | 1.074 | 113155.00000 | 113823.00000 | 111471.00000 |
| PB | 208 | 0.20220 | 693.37200 | 6.256 | 0.18948 | 0.20229 | 0.21478 |
| TL | 203 | -0.00408 | 10.00040 | -280.706 | 0.00739 | -0.00412 | -0.01550 |
| U | 238 | 1.75400 | 5511.54000 | 4.132 | 1.68204 | 1.82699 | 1.75265 |
| *GE-1* | 72 | 96870.70000 | 0.00000 | 2.036 | 95442.90000 | 99120.90000 | 96048.30000 |
| *TB-1* | 159 | 162921.00000 | 0.00000 | 1.914 | 163464.00000 | 165731.00000 | 159567.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:09:00
Tube Number: 43 Batch: 171951063903A
Sample Number: **9100491** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 44697.40000 | 0.00000 | 1.734 | 45440.50000 | 43894.30000 | 44757.60000 |
| AL | 27 | 19.98000 | 453.36000 | 22.097 | 19.97391 | 15.57515 | 24.40513 |
| CA | 44 | 761.20000 | 2096.91000 | 5.666 | 791.72041 | 780.15498 | 711.90353 |
| CR | 52 | 0.97320 | 573.37000 | 25.021 | 0.81626 | 0.84962 | 1.25367 |
| FE | 57 | 22.92000 | 283.34800 | 6.283 | 21.28323 | 23.99650 | 23.47636 |
| K | 39 | 162.50000 | 44058.50000 | 15.348 | 160.10585 | 188.61963 | 138.92714 |
| MG | 24 | 29.74000 | 1870.21000 | 9.502 | 26.74027 | 30.12315 | 32.35259 |
| MN | 55 | 5.35900 | 1636.83000 | 9.300 | 5.51296 | 4.80176 | 5.76212 |
| NA | 23 | 1071.00000 | 145852.00000 | 1.898 | 1054.31651 | 1093.82746 | 1065.78246 |
| TI | 47 | 1.03600 | 13.33380 | 115.347 | 0.00000 | 2.34288 | 0.76590 |
| V | 51 | 0.60810 | 276.68000 | 9.890 | 0.67714 | 0.57971 | 0.56733 |
| **IN-1** | 115 | 50187.50000 | 0.00000 | 1.094 | 50431.60000 | 50572.20000 | 49558.80000 |
| AG | 107 | 0.09995 | 126.67200 | 5.667 | 0.09355 | 0.10199 | 0.10431 |
| AS | 75 | 0.13150 | 47.33380 | 128.821 | -0.01810 | 0.09719 | 0.31539 |
| BA | 137 | 5.94500 | 796.72400 | 18.335 | 6.54584 | 6.60207 | 4.68608 |
| CD | 111 | -0.00793 | 8.66674 | -452.264 | -0.01310 | -0.04093 | 0.03024 |
| CO | 59 | 0.07124 | 133.34000 | 43.711 | 0.08782 | 0.03531 | 0.09058 |
| CU | 63 | 5.81700 | 4110.80000 | 5.860 | 5.46192 | 6.14164 | 5.84856 |
| MO | 98 | 0.05982 | 46.66900 | 116.984 | -0.01271 | 0.06524 | 0.12693 |
| NI | 60 | 2.56700 | 693.37800 | 16.475 | 2.85284 | 2.76774 | 2.08159 |
| SB | 121 | 0.00080 | 10.00040 | 4585.000 | 0.00038 | -0.03567 | 0.03769 |
| SN | 120 | 0.18290 | 93.33910 | 15.150 | 0.19688 | 0.15100 | 0.20086 |
| SR | 88 | 2.87900 | 1093.42000 | 8.458 | 2.67023 | 2.82045 | 3.14662 |
| ZN | 66 | 25.99000 | 2366.98000 | 1.753 | 26.23782 | 26.27417 | 25.46741 |
| **BI-1** | 209 | 112985.00000 | 0.00000 | 1.792 | 115145.00000 | 112681.00000 | 111129.00000 |
| PB | 208 | 0.57740 | 1743.46000 | 8.509 | 0.55712 | 0.54164 | 0.63342 |
| TL | 203 | -0.01161 | 3.33347 | -57.959 | -0.01550 | -0.01550 | -0.00385 |
| U | 238 | 0.01473 | 53.33590 | 30.788 | 0.01967 | 0.01377 | 0.01075 |
| *GE-1* | 72 | 97122.80000 | 0.00000 | 1.524 | 98605.80000 | 97116.70000 | 95645.90000 |
| *TB-1* | 159 | 161332.00000 | 0.00000 | 0.312 | 161893.00000 | 160920.00000 | 161183.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:11:00
Tube Number: 44
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 41975.80000 | 0.00000 | 9.384 | 43101.80000 | 37595.90000 | 45229.60000 |
| AL | 27 | 2630.00000 | 53639.80000 | 9.361 | 2545.36571 | 2906.80094 | 2436.52068 |
| CA | 44 | 2681.00000 | 5944.91000 | 5.476 | 2573.33518 | 2848.44676 | 2622.09767 |
| CR | 52 | 268.20000 | 130094.00000 | 9.922 | 263.47758 | 296.84872 | 244.26768 |
| FE | 57 | 2680.00000 | 27363.20000 | 14.269 | 2704.50075 | 3048.82984 | 2285.17910 |
| K | 39 | 2522.00000 | 130753.00000 | 13.438 | 2439.92946 | 2894.23578 | 2231.38092 |
| MG | 24 | 2688.00000 | 149913.00000 | 11.440 | 2656.67302 | 3010.28672 | 2397.62715 |
| MN | 55 | 268.20000 | 75958.80000 | 9.504 | 265.81635 | 294.77428 | 243.96350 |
| NA | 23 | 2442.00000 | 301842.00000 | 10.643 | 2388.29373 | 2724.20854 | 2212.79094 |
| TI | 47 | 262.60000 | 3197.18000 | 9.235 | 261.69393 | 287.25056 | 238.76862 |
| V | 51 | 265.50000 | 102160.00000 | 10.539 | 259.72333 | 295.87474 | 240.80893 |
| **IN-1** | 115 | 46271.30000 | 0.00000 | 8.913 | 48286.70000 | 41526.80000 | 49000.50000 |
| AG | 107 | 27.34000 | 28456.20000 | 11.576 | 25.23855 | 30.98034 | 25.80126 |
| AS | 75 | 260.30000 | 12131.80000 | 10.154 | 251.47805 | 290.06349 | 239.47027 |
| BA | 137 | 266.30000 | 32510.10000 | 11.078 | 254.82745 | 299.76955 | 244.18026 |
| CD | 111 | 27.08000 | 3571.86000 | 8.796 | 25.81803 | 29.82974 | 25.59809 |
| CO | 59 | 258.60000 | 225957.00000 | 9.544 | 251.64621 | 285.95179 | 238.05801 |
| CU | 63 | 263.80000 | 169170.00000 | 10.754 | 252.85885 | 296.00839 | 242.53624 |
| MO | 98 | 26.78000 | 12510.00000 | 9.511 | 25.48921 | 29.71542 | 25.13796 |
| NI | 60 | 261.00000 | 61774.90000 | 10.935 | 244.33581 | 293.95562 | 244.72112 |
| SB | 121 | 27.85000 | 7072.30000 | 7.181 | 28.05460 | 29.73666 | 25.75210 |
| SN | 120 | 26.39000 | 10601.60000 | 13.839 | 25.25405 | 30.47291 | 23.43838 |
| SR | 88 | 26.70000 | 9247.04000 | 10.614 | 25.03361 | 29.97611 | 25.10299 |
| ZN | 66 | 262.20000 | 21695.60000 | 7.803 | 258.97747 | 284.10488 | 243.57623 |
| **BI-1** | 209 | 106587.00000 | 0.00000 | 6.857 | 111219.00000 | 98160.60000 | 110381.00000 |
| PB | 208 | 26.07000 | 68713.90000 | 7.955 | 25.34815 | 28.41335 | 24.45971 |
| TL | 203 | 26.23000 | 21520.20000 | 7.659 | 24.90575 | 28.53851 | 25.23611 |
| U | 238 | 25.86000 | 76346.40000 | 9.849 | 24.94909 | 28.73638 | 23.89284 |
| *GE-1* | 72 | 91679.50000 | 0.00000 | 8.603 | 96551.30000 | 82580.30000 | 95906.90000 |
| *TB-1* | 159 | 154992.00000 | 0.00000 | 7.471 | 163515.00000 | 141808.00000 | 159654.00000 |

Run Name: 1719906E03 Date/Time: 07/18/2017 11:12:00
Tube Number: 45
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 44971.60000 | 0.00000 | 2.513 | 46263.10000 | 44165.20000 | 44486.40000 |
| AL | 27 | 0.17180 | 20.00070 | 710.128 | -0.29997 | -0.74230 | 1.55770 |
| CA | 44 | -11.93000 | 386.69000 | -57.368 | -19.80243 | -7.35626 | -8.64458 |
| CR | 52 | 0.43740 | 296.68200 | 6.909 | 0.40882 | 0.43444 | 0.46905 |
| FE | 57 | -0.87900 | 23.33450 | -251.991 | 1.44933 | -2.96044 | -1.12611 |
| K | 39 | -199.40000 | 29511.00000 | -9.589 | -199.04102 | -180.49957 | -218.73802 |
| MG | 24 | -0.79230 | 46.66910 | -53.692 | -0.76067 | -0.38363 | -1.23274 |
| MN | 55 | 0.04293 | 23.33420 | 111.158 | 0.09467 | 0.00063 | 0.03351 |
| NA | 23 | -8.89700 | 5901.57000 | -32.843 | -10.56424 | -5.52382 | -10.60615 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.13060 | 80.00380 | 3.665 | 0.12512 | 0.13402 | 0.13260 |
| **IN-1** | 115 | 50740.60000 | 0.00000 | 2.856 | 51165.20000 | 49127.10000 | 51929.40000 |
| AG | 107 | 0.01157 | 26.66770 | 38.591 | 0.01434 | 0.00642 | 0.01396 |
| AS | 75 | 0.13160 | 48.00040 | 69.688 | 0.12545 | 0.04306 | 0.22618 |
| BA | 137 | 0.04902 | 10.00040 | 260.098 | 0.19620 | -0.02457 | -0.02457 |
| CD | 111 | -0.01309 | 8.00007 | -285.256 | -0.05493 | 0.01686 | -0.00122 |
| CO | 59 | 0.00077 | 66.66940 | 3084.020 | -0.01736 | 0.02765 | -0.00798 |
| CU | 63 | 0.04711 | 73.33660 | 29.123 | 0.05584 | 0.03130 | 0.05419 |
| MO | 98 | -0.01924 | 6.66692 | -58.680 | -0.03226 | -0.01219 | -0.01327 |
| NI | 60 | 0.01224 | 33.33510 | 693.464 | -0.03834 | -0.03519 | 0.11024 |
| SB | 121 | 0.02369 | 16.66760 | 81.764 | 0.03539 | 0.00133 | 0.03434 |
| SN | 120 | 0.05242 | 36.66810 | 45.975 | 0.03713 | 0.03992 | 0.08020 |
| SR | 88 | 0.04331 | 23.33420 | 90.718 | 0.08649 | 0.00966 | 0.03378 |
| ZN | 66 | -0.07251 | 20.00080 | -147.152 | -0.18287 | -0.06488 | 0.03021 |
| **BI-1** | 209 | 116804.00000 | 0.00000 | 2.591 | 113985.00000 | 116426.00000 | 120001.00000 |
| PB | 208 | -0.01472 | 90.00400 | -86.821 | 0.00003 | -0.02175 | -0.02247 |
| TL | 203 | -0.00441 | 10.00040 | -6.489 | -0.00414 | -0.00438 | -0.00471 |
| U | 238 | 0.00400 | 20.00080 | 78.336 | 0.00412 | 0.00708 | 0.00081 |
| *GE-1* | 72 | 97122.50000 | 0.00000 | 1.984 | 95101.20000 | 97327.00000 | 98939.20000 |
| *TB-1* | 159 | 164373.00000 | 0.00000 | 0.595 | 164599.00000 | 163303.00000 | 165218.00000 |

# Instrument Tuning Report (ICPMS #11332)

| | |
|---|---|
| File Name: | default.tun |
| File Path: | C:\elandata\Tuning |
| Sample Date/Time: | 7/17/2017 11:18:00PM |
| Number of Replicates: | 6 |
| Method File: | c:\elandata\Method\dailytune.mth |

**Measured Mass must be within +/- 0.1 amu of the Exact Mass.**

**Measured Peak Width must be > or = to 0.640 AND < or = to 0.660.**

| Analyte | EXACT MASS | MEAS. MASS | Mass DAC | RES. DAC | MEAS. PK. WIDTH |
|---|---|---|---|---|---|
| Ce | 140.000 | 140.000 | 0 | 0 | 0.650 |
| In | 115.000 | 115.000 | 0 | 0 | 0.650 |
| Li | 6.000 | 5.900 | 0 | 0 | 0.700 |
| Mg | 24.000 | 23.900 | 0 | 0 | 0.650 |
| Pb | 208.000 | 207.950 | 0 | 0 | 0.600 |
| Rh | 103.000 | 103.000 | 0 | 0 | 0.650 |
| U | 238.000 | 237.950 | 0 | 0 | 0.550 |

**Summary: Verify that the RSD is less than 5 for the following masses.**

| Mass | Meas. Intens. Mean | Meas. Intens. RSD |
|---|---|---|
| 140.000 | 19995.000 | 1.780 |
| 115.000 | 20219.000 | 1.320 |
| 6.000 | 4513.000 | 2.940 |
| 24.000 | 5440.000 | 4.890 |
| 208.000 | 9360.000 | 2.180 |
| 103.000 | 16706.000 | 1.730 |
| 238.000 | 17943.000 | 2.170 |

# Extraction/Distillation/Digestion Logs

# Metals in Liquid

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 195 10635 02

**Start Time:** 7/17/17 15:20 **End Time:** 7/17/17 19:30 **Hot Block:** 13

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17-182B | 5.00 |
| 1:1 HNO3 | P17-182A | 2.00 |
| ICP Spike 1A | 1710327#15 | 1.00 |
| ICP Spike 1B | 1710340#15 | 1.00 |
| LCS A1 | 1710327#15 | 1.00 |
| LCS B1 | 1710340#15 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9095972 | 07/21/17 10:00 | WW | N8 | | | | 008a | 1703076 | |
| 4) | **9100479U** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 5) | 9100480 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 6) | 9100483 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 7) | 9100484 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 8) | 9100485 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 9) | 9100486 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 10) | 9100487 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 11) | 9100488 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 12) | 9100489FD | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 13) | 9100490FD | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 14) | 9100491EB | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 15) | **9100479D** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 16) | **9100479R** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 17) | **9100479M** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/17/2017

v 1.1.0

# Batch# 17 195 1063 502

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/14/17 15:52 | 1364 |
| 2) | Sample Vol | | 7/17/17 13:20 | 12425 |
| 3) | Final Vol | CLEAR | 7/17/17 13:20 | 12425 |
| 4) | Trial | | 7/17/17 13:20 | 12425 |
| 5) | Trial | | 7/17/17 13:20 | 12425 |
| 6) | Trial | | 7/17/17 13:30 | 12425 |
| 7) | Sample Vol | | 7/17/17 13:39 | 12425 |
| 8) | Final Vol | CLEAR | 7/17/17 13:39 | 12425 |
| 9) | Trial | | 7/17/17 13:39 | 12425 |
| 10) | Upload Prep | US19PCC06698 | 7/17/17 19:55 | 1364 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

Analysis: 0635 SW846 Water

Batch# 17 195 1063 502

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9095972 | 07/21/17 | N8 | 18417 | KR184-17BKG | 50.0000 | 50.0000 | 1 |
| **9100479U** | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |
| 9100480 | 07/25/17 | N8 | 18602 | KR186-02 | 50.0000 | 50.0000 | 1 |
| 9100483 | 07/25/17 | N8 | 18605 | KR186-05 | 50.0000 | 50.0000 | 1 |
| 9100484 | 07/25/17 | N8 | 18606 | KR186-06 | 50.0000 | 50.0000 | 1 |
| 9100485 | 07/25/17 | N8 | 18607 | KR186-07 | 50.0000 | 50.0000 | 1 |
| 9100486 | 07/25/17 | N8 | 18608 | KR186-08 | 50.0000 | 50.0000 | 1 |
| 9100487 | 07/25/17 | N8 | 18609 | KR186-09 | 50.0000 | 50.0000 | 1 |
| 9100488 | 07/25/17 | N8 | 18610 | KR186-10 | 50.0000 | 50.0000 | 1 |
| 9100489FD | 07/25/17 | N8 | 18611 | KR186-11FD | 50.0000 | 50.0000 | 1 |
| 9100490FD | 07/25/17 | N8 | 18612 | KR186-12FD | 50.0000 | 50.0000 | 1 |
| 9100491EB | 07/25/17 | N8 | 18613 | KR186-13EB | 50.0000 | 50.0000 | 1 |
| **9100479D** | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |
| **9100479R** | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |
| **9100479M** | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 213 10635 02

**Start Time:** 8/1/17 22:00 **End Time:** 8/2/17 2:00 **Hot Block:** 12

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17-182B | 5.00 |
| 1:1 HNO3 | P17-204C | 2.00 |
| LCS A1 | 1714623#5 | 1.00 |
| LCS B1 | 1714629#5 | 1.00 |
| LCSD A1 | 1714623#5 | 1.00 |
| LCSD B1 | 1714629#5 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | LCSWD | . | | | | | | | 1703076 | |
| 4) | 9100479 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | LCS high Ca - rush asap client calling Limited sample 25/25 |
| 5) | 9100483 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | LCS high Ca - rush asap client calling Limited sample |
| 6) | 9100487 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | LCS high Ca - rush asap client calling Limited sample |
| 7) | 9100489FD | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | LCS high Ca - rush asap client calling Limited sample |
| 8) | 9100491EB | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | LCS high Ca - rush asap client calling Limited sample |

Prep Employee:

8/2/2017

v 1.1.0

# Batch# 17 213 1063 502

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 8/1/17 14:12 | 862 |
| 2) | Sample Vol | | 8/2/17 2:23 | 862 |
| 3) | Final Vol | CLEAR | 8/2/17 2:23 | 862 |
| 4) | Trial | | 8/2/17 2:23 | 862 |
| 5) | Upload Prep | US19PCC0669 | 8/2/17 2:23 | 862 |

| | | | | | Original Entry | | | | Data Changed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Analysis | D | Operation | Measurement | Date/Time | Data | Units | Analyst | Date/Time | Analyst | Reason |
| 9100479 | 10635 | 1 | Sample Vol | Initial Volume | 8/2/17 2:21 | 50 | (mL) | 862 | 8/2/17 2:23 | 862 | Limited sample 25/25 |
| 9100479 | 10635 | 1 | Final Vol | Final Volume | 8/2/17 2:21 | 50 | (mL) | 862 | 8/2/17 2:23 | 862 | Limited sample 25/25 |

## Analysis: 0635 SW846 Water

## Batch# 17 213 1063 502

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| LCSWD | | | | | 1.0000 | 1.0000 | 1 |
| 9100479 | 07/25/17 | N8 | 18601 | KR186-01 | 25.0000 | 25.0000 | 2 |
| 9100483 | 07/25/17 | N8 | 18605 | KR186-05 | 50.0000 | 50.0000 | 2 |
| 9100487 | 07/25/17 | N8 | 18609 | KR186-09 | 50.0000 | 50.0000 | 2 |
| 9100489FD | 07/25/17 | N8 | 18611 | KR186-11FD | 50.0000 | 50.0000 | 2 |
| 9100491EB | 07/25/17 | N8 | 18613 | KR186-13EB | 50.0000 | 50.0000 | 2 |

# LLENS Worksheet for 0639 ICP/MS SW846 Water

Batch# 17 195 10639 03

**Start Time:** 7/17/17 15:10 **End Time:** 7/17/17 19:30 **Hot Block:** 12

**Pipette ID:** JU06758
**Reflux Cap Lot#:** 16101387079KE

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| HNO3 | 152495 | 3.00 |
| ICP/MS Spike | 1715001#4 | 0.50 |
| LCS | 1715001#4 | 0.50 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9100479 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 4) | 9100483 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 5) | **9100485U** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 6) | 9100487 | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 7) | 9100489FD | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 8) | 9100491EB | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 9) | **9100485D** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 10) | **9100485R** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 11) | **9100485M** | 07/25/17 09:40 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/17/2017

v 1.1.0

# Batch# 17 195 1063 903

## LLENS Batch Chronology and Change Log - ICP/MS SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/14/17 0:00 | 1364 |
| 2) | Sample Vol | | 7/17/17 14:27 | 12425 |
| 3) | Final Vol | CLEAR | 7/17/17 14:27 | 12425 |
| 4) | Trial | | 7/17/17 14:27 | 12425 |
| 5) | Sample Vol | | 7/17/17 14:34 | 12425 |
| 6) | Final Vol | CLEAR | 7/17/17 14:34 | 12425 |
| 7) | Trial | | 7/17/17 14:34 | 12425 |
| 8) | Upload Prep | US19PCC06698 | 7/17/17 20:03 | 1364 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

## Analysis: 0639 ICP/MS SW846 Water

## Batch# 17 195 1063 903

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9100479 | 07/25/17 | N8 | 18601 | KR186-01 | 50.0000 | 50.0000 | 1 |
| 9100483 | 07/25/17 | N8 | 18605 | KR186-05 | 50.0000 | 50.0000 | 1 |
| **9100485U** | 07/25/17 | N8 | 18607 | KR186-07 | 50.0000 | 50.0000 | 1 |
| 9100487 | 07/25/17 | N8 | 18609 | KR186-09 | 50.0000 | 50.0000 | 1 |
| 9100489FD | 07/25/17 | N8 | 18611 | KR186-11FD | 50.0000 | 50.0000 | 1 |
| 9100491EB | 07/25/17 | N8 | 18613 | KR186-13EB | 50.0000 | 50.0000 | 1 |
| **9100485D** | 07/25/17 | N8 | 18607 | KR186-07 | 50.0000 | 50.0000 | 1 |
| **9100485R** | 07/25/17 | N8 | 18607 | KR186-07 | 50.0000 | 50.0000 | 1 |
| **9100485M** | 07/25/17 | N8 | 18607 | KR186-07 | 50.0000 | 50.0000 | 1 |

# Instrumental Wet Chemistry Data

# Case Narrative/Conformance Summary

# Instrumental Wet Chemistry

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | Comments |
|---|---|---|---|---|
| 9100479 | GW009-173 | X | | |
| 9100483 | GW235-463-173 | X | | |
| 9100485 | GW235-492-173 | X | | |
| 9100487 | GW235-521-173 | X | | |
| 9100489 | GW235-521-573 | X | | Field Duplicate Sample |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Method defined actions are taken for any failed matrix QC.

Batch#: 17194249115B (Sample number(s): 9100487, 9100489, UNSPK: 9100487, BKG: 9100487)
The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Chloride, Sulfate

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

### SAMPLE ANALYSIS:

| Samples | Bromide | Chloride | Sulfate | Total Nitrite/Nitrate Nitrogen |
|---|---|---|---|---|
| 9100479 | UNSPK/ DF5 | UNSPK/ DF500 | UNSPK/ DF50 | UNSPK,MS,D/ DF10 |
| 9100483 | DF5 | DF50 | DF5 | DF1 |
| 9100485 | DF5 | DF50 | DF5 | DF1 |
| 9100487 | UNSPK,MS,D/ DF5 | UNSPK,MS,D/ DF20 | UNSPK,MS,D/ DF5 | UNSPK/ DF1 |
| 9100489 | DF5 | DF20 | DF5 | DF1 |

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# Quality Control and Calibration Summary Forms

# Instrumental Wet Chemistry

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

**Fraction: Instrumental Wet Chemistry**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | 17200118101A | P20018AB | 07/19/2017 17:21:00 |
| | | P20018AQ | 07/19/2017 17:22:00 |
| Total Nitrite/Nitrate Nitrogen | 17200118101B | 9100479 UNSPK/BKG | 07/19/2017 17:50:00 |
| | | 9100479 DUP | 07/19/2017 17:52:00 |
| | | 9100479 MS | 07/19/2017 17:54:00 |
| | | 9100483 | 07/19/2017 17:55:00 |
| | | 9100485 | 07/19/2017 17:57:00 |
| | | 9100487 | 07/19/2017 17:59:00 |
| | | 9100489 | 07/19/2017 18:05:00 |

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

**Fraction: Instrumental Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Bromide | Chloride | Sulfate |
|---|---|---|---|---|---|
| 17194249115A | 9100479 | 07/14/2017 01:42:00 | X | | |
| | 9100479 | 07/14/2017 02:30:00 | | | X |
| | 9100479 | 07/14/2017 02:46:00 | | X | |
| | 9100483 | 07/14/2017 03:03:00 | X | | X |
| | 9100483 | 07/14/2017 03:19:00 | | X | |
| | 9100485 | 07/14/2017 03:35:00 | X | | X |
| | 9100485 | 07/14/2017 03:51:00 | | X | |
| | P19449OB | 07/13/2017 20:02:00 | X | X | X |
| | P19449OQ | 07/13/2017 19:46:00 | X | X | X |
| 17194249115B | 9100487 BKG | 07/14/2017 04:40:00 | X | | X |
| | 9100487 DUP | 07/14/2017 04:56:00 | X | | X |
| | 9100487 MS | 07/14/2017 05:45:00 | X | | X |
| | 9100487 BKG | 07/14/2017 06:01:00 | | X | |
| | 9100487 DUP | 07/14/2017 06:17:00 | | X | |
| | 9100487 MS | 07/14/2017 06:33:00 | | X | |
| | 9100489 | 07/14/2017 06:49:00 | X | | X |
| | 9100489 | 07/14/2017 07:06:00 | | X | |

**Quality Control Summary**
**Method Blank**
**Instrumental Water Quality**
**SDG: KR186**
**Matrix: LIQUID**

**Fraction: Instrumental Wet Chemistry**

| 17194249115A / P19449OB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Bromide | IC | 07/13/17 | N.D. | mg/l | 0.25 | 0.50 | 0.50 |
| Chloride | IC | 07/13/17 | N.D. | mg/l | 0.20 | 0.40 | 0.40 |
| Sulfate | IC | 07/13/17 | N.D. | mg/l | 0.30 | 1.0 | 1.0 |

| 17200118101A / P20018AB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 07/19/17 | N.D. | mg/l | 0.040 | 0.10 | 0.10 |

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| UNSPK: 9100487<br>MS: 9100487 | Batch: **17194249115B** (Sample number(s): 9100487, 9100489 ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Bromide | IC | 25 | N.D. | 22.44 | NA | 90 | NA | 90-110 | NA | NA |
| Chloride | IC | 40 | 36.57 | 81.26 | NA | 112 * | NA | 90-110 | NA | NA |
| Sulfate | IC | 25 | 61.22 | 93.76 | NA | 130 * | NA | 90-110 | NA | NA |

| UNSPK: 9100479<br>MS: 9100479 | Batch: **17200118101B** (Sample number(s): 9100479, 9100483, 9100485, 9100487, 9100489 ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 10 | 12.89 | 23.1 | NA | 102 | NA | 90-110 | NA | NA |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| BKG: 9100487<br>DUP: 9100487<br>**Parameter** | Batch: **17194249115B** (Sample number(s): 9100487, 9100489 )<br>**ME** | **Unspiked Conc mg/l** | **DUP Conc mg/l** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|
| Bromide | IC | N.D. | N.D. | 0 (1) | 15 |
| Chloride | IC | 36.57 | 36.23 | 1 (1) | 15 |
| Sulfate | IC | 61.22 | 61.8 | 1 | 15 |

| BKG: 9100479<br>DUP: 9100479<br>**Parameter** | Batch: **17200118101B** (Sample number(s): 9100479, 9100483, 9100485, 9100487, 9100489 )<br>**ME** | **Unspiked Conc mg/l** | **DUP Conc mg/l** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 12.89 | 12.87 | 0 | 10 |

Comments:
(1) The sample and/or duplicate result is less than five times the LOQ.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR186**
**Matrix: LIQUID**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| LCS: P19449OQ | Batch: **17194249115A** (Sample number(s): 9100479, 9100483, 9100485 )<br>Batch: **17194249115B** (Sample number(s): 9100487, 9100489 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Bromide | IC | 7.50 | 7.48 | NA | 100 | NA | 90-110 | NA | NA |
| Chloride | IC | 3.00 | 2.90 | NA | 97 | NA | 90-110 | NA | NA |
| Sulfate | IC | 7.50 | 7.17 | NA | 96 | NA | 90-110 | NA | NA |

| LCS: P20018AQ | Batch: **17200118101B** (Sample number(s): 9100479, 9100483, 9100485, 9100487, 9100489 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 2.50 | 2.52 | NA | 101 | NA | 90-110 | NA | NA |

Instrument ID: 07411
Calibration Date: 07/19/2017

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | AUTO CAL6 | AUTO CAL7 | CC |
|---|---|---|---|---|---|---|---|---|
| Nitrate/Nitrite Nitrogen | 688342.1000 | 532462.9000 | 181219.5000 | 93225.7000 | 37885.7000 | 18728.5000 | 1127.2000 | 0.9996 |

Acceptance Range:
ICV/CCV: +/- 10%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17200118101B
Run Start Dates: 07/19/2017
Run Names: 1720002C05

| | Nitrate/Nitrite Nitrogen | | |
|---|---|---|---|
| Sample | True | Result | %Rec |
| ICV | 2.5 | 2.51320 | 101 |
| ICB | 0 | ND | NA |
| CCV2 | 2.5 | 2.51580 | 101 |
| CCB 1 | 0 | ND | NA |
| CCV2 | 2.5 | 2.47200 | 99 |
| CCB 2 | 0 | ND | NA |
| CCV2 | 2.5 | 2.43740 | 97 |
| CCB 3 | 0 | ND | NA |

* = Out of Specifications

Instrument ID: 12115
Calibration Date: 07/07/2017

Acceptance Range:
ICV/CCV: 90%-110%
ICB/CCB: < MDL

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | $R^2$ | CC |
|---|---|---|---|---|---|---|---|
| Bromide | 0.315489 | 1.356408 | 3.617506 | 7.695615 | 12.009107 | 0.9997 | 0.9999 |
| Chloride | 1.045200 | 2.310405 | 5.678044 | 12.269198 | 19.157873 | 0.9992 | 0.9996 |
| Sulfate | 0.663420 | 1.359771 | 3.529348 | 7.415997 | 11.392968 | 0.9997 | 0.9999 |

Concentration units: mg/L

Batch Numbers: 17194249115A, 17194249115B
Run Start Dates: 07/13/2017
Run Names: 1719401D15

| | Chloride | | | Sulfate | | | Bromide | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample | True | Result | %Rec | True | Result | %Rec | True | Result | %Rec |
| ICV | 3 | 2.7491 | 92 | 7.5 | 7.0390 | 94 | 7.5 | 7.1737 | 96 |
| ICB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| Low Chk | 1.5 | 1.3432 | 90 | 3.75 | 3.4676 | 92 | 3.75 | 3.5494 | 95 |
| High Chk | 4.5 | 4.0676 | 90 | 11.25 | 10.4596 | 93 | 11.25 | 10.7631 | 96 |
| CCV2 | 3 | 2.9072 | 97 | 7.5 | 7.2347 | 96 | 7.5 | 7.5401 | 101 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.7583 | 92 | 7.5 | 6.8741 | 92 | 7.5 | 7.1387 | 95 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.7456 | 92 | 7.5 | 6.8163 | 91 | 7.5 | 7.0532 | 94 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.7509 | 92 | 7.5 | 6.8482 | 91 | 7.5 | 7.1184 | 95 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.7529 | 92 | 7.5 | 6.8231 | 91 | 7.5 | 7.1033 | 95 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |

* = Out of Specifications

# Raw Data

# Instrumental Wet Chemistry

**Fraction: Instrumental Wet Chemistry**

| 01505: Bromide<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bromide | .25 | .5 | 0.50 | mg/l |

| 00224: Chloride<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Chloride | .2 | .4 | 0.40 | mg/l |

| 00228: Sulfate<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Sulfate | .3 | 1 | 1.0 | mg/l |

| 07882: Total Nitrite/Nitrate Nitrogen<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | .04 | .1 | 0.10 | mg/l |

# Instrumental Water Quality Report

Analyte: Nitrate/Nitrite Nit
Run Start Date/Time: 7/19/2017 4:46:13PM
Instrument Name: 07411

## Calibration Information

Curve Information Location:
Book # 254061
Page # 49

| Sample Names | Volts | Detected Result | True Result |
|---|---|---|---|
| S1 | 688342.1000 | ~~4.00000~~ 3.9539 | 4 |
| S2 | 532462.9000 | 3.00000 3.0528 | 3 |
| S3 | 181219.5000 | 1.00000 1.0222 | 1 |
| S4 | 93225.7000 | 0.50000 0.5135 | 0.5 |
| S5 | 37885.7000 | 0.20000 0.1936 | 0.2 |
| S6 | 18728.5000 | 0.10000 0.0829 | 0.1 |
| S7 | 1127.2000 | ~~0.00000~~ -0.0189 | - |

Number of Calibrants: 7 ③BW9932 7/19/17
Correlation Coefficient: 0.99959
Y-Intercept: -0.02542
Slope: 0.00001

## QC Information

| QC Names | Units | True Values | QC Ranges |
|---|---|---|---|
| ICV | mg/L | 2.5 | 2.2375 - 2.76 |
| ICB/CCB | mg/L | 0 | 0 - 0.04 |
| CCV2 | mg/L | 2.5 | 2.2375 - 2.76 |
| PB Waters | mg/L | 0 | 0 - 0.1 |
| LCS Waters | mg/L | 2.5 | 2.25 - 2.75 |

Analyst: BW 9932 Date: to 7/19/17 ③BW9932 7/19/17
Verifier: [signature] Date: 7/20/17

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| SYNC | 1 | | | 7/19/2017 4:46:13PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 693231.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| Carryov | 2 | | | 7/19/2017 4:48:03PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 2614.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 3 | | | 7/19/2017 4:49:53PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 602.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S1 | 4 | | | 7/19/2017 4:51:43PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 4.00000 | 3.9539 | 688342.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S2 | 5 | | | 7/19/2017 4:53:33PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.00000 | 3.0528 | 532462.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S3 | 6 | | | 7/19/2017 4:55:23PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.00000 | 1.0222 | 181219.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S4 | 7 | | | 7/19/2017 4:57:13PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.50000 | 0.5135 | 93225.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S5 | 8 | | | 7/19/2017 4:59:03PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.20000 | 0.1936 | 37885.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S6 | 9 | | | 7/19/2017 5:00:53PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.10000 | 0.0829 | 18728.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S7 | 10 | | | 7/19/2017 5:02:43PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | -0.0189 | 1127.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 11 | | | 7/19/2017 5:04:33PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01970 | | 994.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 12 | | | 7/19/2017 5:06:23PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02060 | | 832.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 13 | | | 7/19/2017 5:08:13PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.15400 | | 376993.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 14 | | | 7/19/2017 5:10:03PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01630 | | 1577.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 15 | | | 7/19/2017 5:11:53PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.00540 | | 351284.10 | 1.0000 | 1.0 | 1 | 93 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 16 | | | 7/19/2017 5:13:43PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01950 | | 1020.00 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 17 | | | 7/19/2017 5:15:33PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02320 | | 386.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICV | 18 | | | 7/19/2017 5:17:23PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.51320 | | 439134.20 | 1.0000 | 1.0 | 1 | 101 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICB | 19 | | | 7/19/2017 5:19:13PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01810 | | 1271.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 20 | B | 17200118101A | 7/19/2017 5:21:03PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02490 | -0.025 | 89.80 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 21 | Q | 17200118101A | 7/19/2017 5:22:53PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.52150 | 2.522 | 440568.00 | 1.0000 | 1.0 | 1 | 101 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091214 | 22 | U | 17200118101A | 7/19/2017 5:24:43PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.38410 | 2.768 | 243814.90 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091214 | 23 | D | 17200118101A | 7/19/2017 5:26:33PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 1.36980 | 2.740 | 241342.00 | 1.0000 | 1.0 | 2 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9091214 | 24 | R | 17200118101A | 7/19/2017 5:28:23PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.47205 | 4.944 | 432010.80 | 1.0000 | 1.0 | 2 | 109 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098667 | 25 | | 17200118101A | 7/19/2017 5:30:13PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.87425 | 3.749 | 328604.10 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098668 | 26 | | 17200118101A | 7/19/2017 5:32:03PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.08285 | 4.166 | 364688.70 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098671 | 27 | | 17200118101A | 7/19/2017 5:33:53PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.79980 | 0.800 | 142748.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098674 | 28 | | 17200118101A | 7/19/2017 5:35:43PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.57395 | 3.148 | 276661.00 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098681 | 29 | | 17200118101A | 7/19/2017 5:37:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.63910 | 0.639 | 114951.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 30 | | | 7/19/2017 5:39:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.51580 | | 439573.90 | 1.0000 | 1.0 | 1 | 101 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 1 | 31 | | | 7/19/2017 5:41:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01740 | | 1395.00 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098767 | 32 | | 17200118101A | 7/19/2017 5:43:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.54510 | 2.545 | 444649.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098827 | 33 | | 17200118101A | 7/19/2017 5:44:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.55085 | 3.102 | 272665.10 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098833 | 34 | | 17200118101A | 7/19/2017 5:46:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.61005 | 3.220 | 282899.30 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9098835 | 35 | | 17200118101A | 7/19/2017 5:48:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.41815 | 14.182 | 249706.80 | 1.0000 | 1.0 | 10 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100479 | 36 | U | 17200118101B | 7/19/2017 5:50:24PM | KR186 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.28910 | ~~1.289~~ 12.891 (3) | 227389.50 | 1.0000 | 1.0 | ~~1~~ 10 (3) | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100479 | 37 | D | 17200118101B | 7/19/2017 5:52:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 1.28700 | ~~1.287~~ 12.87 (3) | 227023.10 | 1.0000 | 1.0 | ~~1~~ 10 (3) | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100479 | 38 | R | 17200118101B | 7/19/2017 5:54:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.30970 | ~~2.310~~ 23.10 (3) | 403931.40 | 1.0000 | 1.0 | ~~1~~ 10 (3) | 102 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100483 | 39 | | 17200118101B | 7/19/2017 5:55:54PM | KR186 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.91280 | 1.913 | 335269.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100485 | 40 | | 17200118101B | 7/19/2017 5:57:44PM | KR186 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.98680 | 1.987 | 348065.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

(3) KR186 7/20/17

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100487 | 41 | | 17200118101B | 7/19/2017 5:59:34PM | KR186 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.83280 | 0.833 | 148447.90 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 42 | | | 7/19/2017 6:01:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.47200 | | 432005.20 | 1.0000 | 1.0 | 1 | 99 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 2 | 43 | | | 7/19/2017 6:03:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01590 | | 1648.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100489 | 44 | | 17200118101B | 7/19/2017 6:05:04PM | KR186 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.81230 | 0.812 | 144908.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100589 | 45 | | 17200118101B | 7/19/2017 6:06:54PM | EKI35 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.27560 | 0.276 | 52069.80 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100591 | 46 | | 17200118101B | 7/19/2017 6:08:44PM | EKI35 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01810 | -0.018 | 1260.90 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9100592 | 47 | | 17200118101B | 7/19/2017 6:10:34PM | EKI35 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01530 | -0.015 | 1758.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9101119 | 48 | | 17200118101B | 7/19/2017 6:12:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.85225 | 3.704 | 324796.00 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9101122 | 49 | | 17200118101B | 7/19/2017 6:14:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.57080 | 0.571 | 103131.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 50 | B | 17200118102A | 7/19/2017 6:16:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02430 | -0.024 | 192.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 51 | Q | 17200118102A | 7/19/2017 6:17:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.44860 | 2.449 | 427957.80 | 1.0000 | 1.0 | 1 | 98 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9101168 | 52 | U | 17200118102A | 7/19/2017 6:19:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.99620 | 1.996 | 349700.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9101168 | 53 | D | 17200118102A | 7/19/2017 6:21:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 1.98590 | 1.986 | 347910.60 | 1.0000 | 1.0 | 1 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 54 | | | 7/19/2017 6:23:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.43740 | | 426015.50 | 1.0000 | 1.0 | 1 | 97 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 3 | 55 | | | 7/19/2017 6:25:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01460 | | 1866.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9101168 | 56 | R | 17200118102A | 7/19/2017 6:27:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.90230 | 2.902 | 506432.60 | 1.0000 | 1.0 | 1 | 91 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9101177 | 57 | | 17200118102A | 7/19/2017 6:28:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.30695 | 2.614 | 230475.20 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9101187 | 58 | | 17200118102A | 7/19/2017 6:30:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.85695 | 3.714 | 325610.00 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9102552 | 59 | | 17200118102A | 7/19/2017 6:32:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.26730 | 1.267 | 223612.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9102553 | 60 | | 17200118102A | 7/19/2017 6:34:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.33120 | 1.331 | 234667.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9102554 | 61 | | 17200118102A | 7/19/2017 6:36:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.21580 | 0.216 | 41718.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9102555 | 62 | | 17200118102A | 7/19/2017 6:38:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.29370 | 0.294 | 55195.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9102766 | 63 | | 17200118102A | 7/19/2017 6:39:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.36250 | 0.363 | 67101.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9104054 | 64 | | 17200118102A | 7/19/2017 6:41:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.08472 | 5.424 | 192030.70 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9104055 | 65 | | 17200118102A | 7/19/2017 6:43:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.65384 | 8.269 | 290477.90 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 66 | | | 7/19/2017 6:45:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.39500 | | 418685.80 | 1.0000 | 1.0 | 1 | 96 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 4 | 67 | | | 7/19/2017 6:47:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01630 | | 1570.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9104480 | 68 | | 17200118102B | 7/19/2017 6:49:04PM | EKI49 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00110 | 0.001 | 4593.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9104481 | 69 | | 17200118102B | 7/19/2017 6:50:54PM | EKI49 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01150 | -0.011 | 2414.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9104482 | 70 | U | 17200118102B | 7/19/2017 6:52:44PM | EKI49 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01700 | -0.017 | 1461.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9104482 | 71 | D | 17200118102B | 7/19/2017 6:54:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| -0.01860 | -0.019 | 1181.50 | 1.0000 | 1.0 | 1 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9104482 | 72 | R | 17200118102B | 7/19/2017 6:56:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.07860 | 1.079 | 190968.00 | 1.0000 | 1.0 | 1 | 108 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9107350 | 73 | | 17200118102B | 7/19/2017 6:58:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.40390 | 1.404 | 247235.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9107351 | 74 | | 17200118102B | 7/19/2017 7:00:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.55380 | 1.554 | 273163.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9107372 | 75 | | 17200118102B | 7/19/2017 7:01:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.40611 | 24.061 | 420602.80 | 1.0000 | 1.0 | 10 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9107373 | 76 | | 17200118102B | 7/19/2017 7:03:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.73310 | 0.733 | 131202.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9102540 | 77 | | 17200118102B | 7/19/2017 7:05:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.51990 | 0.520 | 94329.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 78 | | | 7/19/2017 7:07:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.42760 | | 424325.80 | 1.0000 | 1.0 | 1 | 97 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 5 | 79 | | | 7/19/2017 7:09:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02080 | | 791.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9104099 | 80 | | 17200118102B | 7/19/2017 7:11:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.04620 | 1.046 | 185361.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 81 | | | 7/19/2017 7:12:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.39380 | | 418466.20 | 1.0000 | 1.0 | 1 | 96 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 6 | 82 | | | 7/19/2017 7:14:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01860 | | 1171.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 83 | | | 7/19/2017 7:16:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02250 | | 507.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 84 | | | 7/19/2017 7:18:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02450 | | 160.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDN2 | 85 | | | 7/19/2017 7:20:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.10930 | 2.109 | 369264.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 86 | | | 7/19/2017 7:22:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01980 | | 969.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDN3 | 87 | | | 7/19/2017 7:23:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.79470 | 1.795 | 314849.00 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 88 | | | 7/19/2017 7:25:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02190 | | 603.00 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 89 | | | 7/19/2017 7:27:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02510 | | 61.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 90 | | | 7/19/2017 7:29:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02630 | | -155.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 91 | | | 7/19/2017 7:31:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02400 | | 247.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 92 | | | 7/19/2017 7:33:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.35730 | | 412165.70 | 1.0000 | 1.0 | 1 | 94 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 7 | 93 | | | 7/19/2017 7:34:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 5.58220 | | 970007.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 94 | | | 7/19/2017 7:36:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09350 | | 20562.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 95 | | | 7/19/2017 7:38:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09440 | | 20728.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 96 | | | 7/19/2017 7:40:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09470 | | 20783.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 97 | | | 7/19/2017 7:42:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09650 | | 21084.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 98 | | | 7/19/2017 7:44:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09720 | | 21203.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 99 | | | 7/19/2017 7:45:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09600 | | 21010.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 100 | | | 7/19/2017 7:47:44PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09640 | | 21073.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 101 | | | 7/19/2017 7:49:34PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02170 | | 644.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 102 | | | 7/19/2017 7:51:24PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02420 | | 216.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 103 | | | 7/19/2017 7:53:14PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.09620 | | 366996.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 104 | | | 7/19/2017 7:55:04PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01790 | | 1295.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 105 | | | 7/19/2017 7:56:54PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 1.96590 | | 344451.80 | 1.0000 | 1.0 | 1 | 94 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 106 | | | 7/19/2017 7:58:45PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01540 | | 1724.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 107 | | | 7/19/2017 8:00:35PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01880 | | 1152.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 108 | | | 7/19/2017 8:02:25PM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01740 | | 1387.00 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

# FlowView - Result

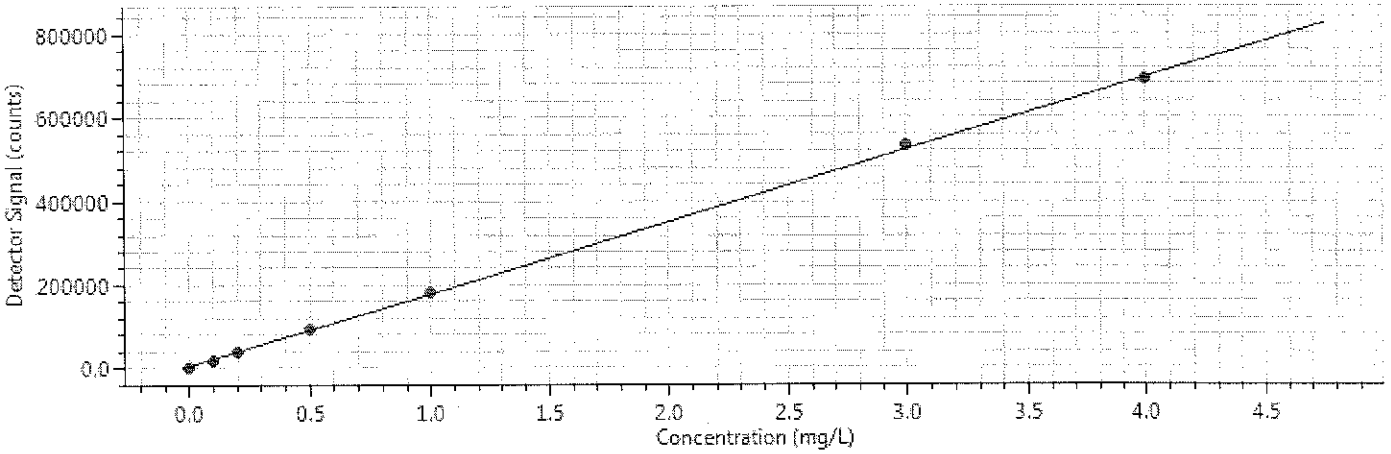
InstrumentID: A452837411
Operator ID: 9932
File Version: 110
Created On: 7/19/2017 4:45:59 PM
Last Modified On: 07/19/2017 20:10:39

Calibration Results - Channel2

## Calibration Summary

| | | | |
|---|---|---|---|
| Curve Fit = | Linear | | |
| R2 = | 0.99958818 | a = | n/a |
| RF = | 5.781046E-006 | b = | n/a |
| Offset = | -0.02541646 | c = | n/a |
| HLCAVG = | 0.00000000 | LHCAVG = | 0.00000000 |

## Calibration Details




| Name | Type | Std Conc(mg/L) | Avg Height | Calc Avg Conc (mg/L) | %RSD | Flags |
|---|---|---|---|---|---|---|
| S1 | STD1 | 4.0000 | 688342.1 | 3.9539 | 0.0 | |
| S2 | STD2 | 3.0000 | 532462.9 | 3.0528 | 0.0 | |
| S3 | STD3 | 1.0000 | 181219.5 | 1.0222 | 0.0 | |
| S4 | STD4 | 0.5000 | 93225.7 | 0.5135 | 0.0 | |
| S5 | STD5 | 0.2000 | 37885.7 | 0.1936 | 0.0 | |
| S6 | STD6 | 0.1000 | 18728.5 | 0.0829 | 0.0 | |
| S7 | STD7 | 0.0000 | 1127.2 | -0.0189 | 0.0 | |

# FlowView - Result

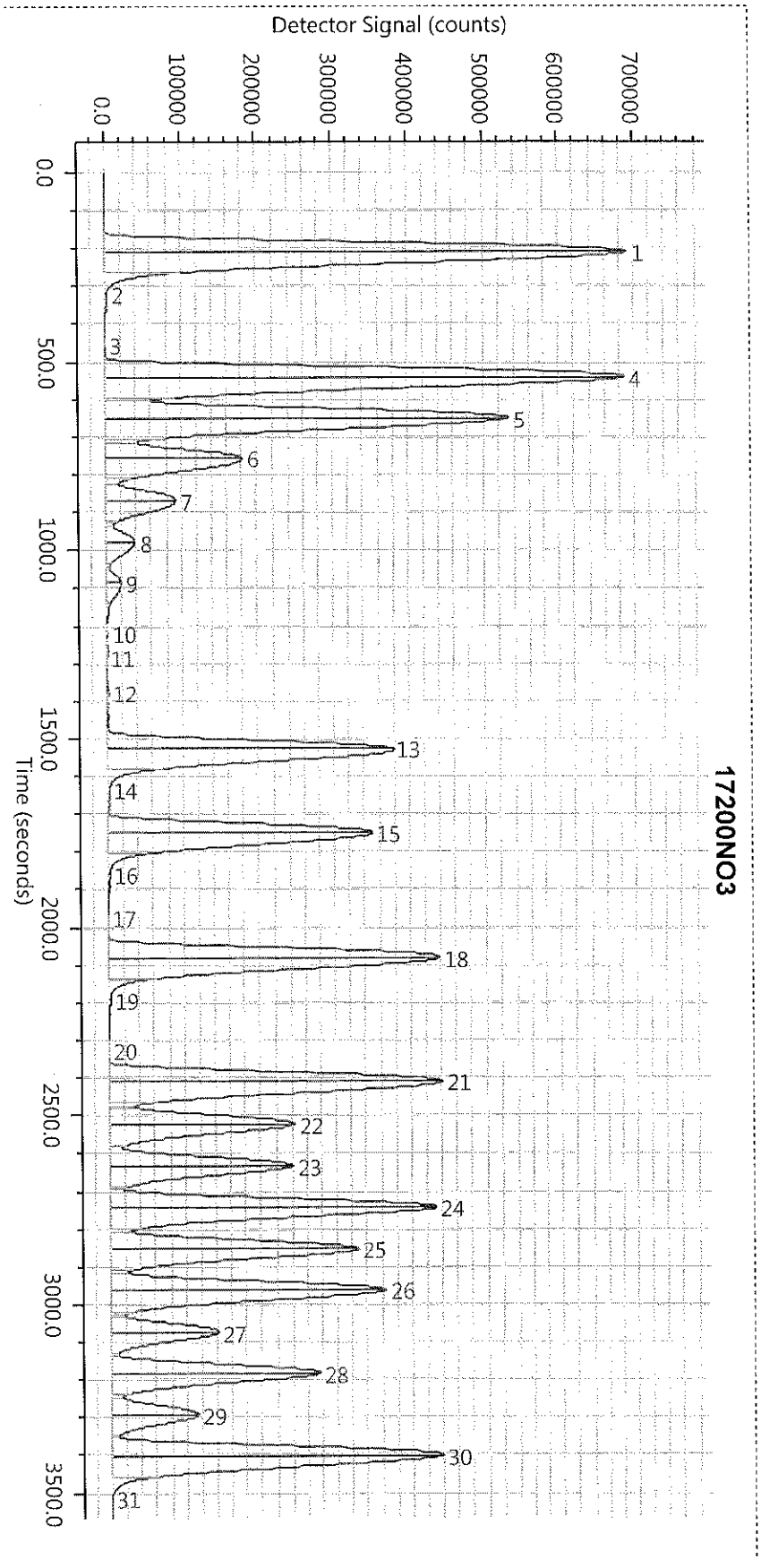
InstrumentID: A452837411
Operator ID: 9932
Methodology: EPA 353.2
File Version: 110
Created On: 7/19/2017 4:45:59 PM
Last Modified On: 07/19/2017 20:10:39

Channel Results: Ch 2: Nitrate

| Date/Time | Peak # | Cup # | Sample Name | Peak Height | Calc (mg/L) | M-Dil | Comment |
|---|---|---|---|---|---|---|---|
| 7/19/2017 4:46:13 PM | 1 | 107 | SYNC | 693231.2 | 0.0000 | 1 | |
| 7/19/2017 4:48:03 PM | 2 | 900 | Carryover | 2614.2 | 0.0000 | 1 | |
| 7/19/2017 4:49:53 PM | 3 | 900 | W | 602.9 | 0.0000 | 1 | |
| 7/19/2017 4:51:43 PM | 4 | 107 | S1 | 688342.1 | 4.0000 | 1 | |
| 7/19/2017 4:53:33 PM | 5 | 106 | S2 | 532462.9 | 3.0000 | 1 | |
| 7/19/2017 4:55:23 PM | 6 | 105 | S3 | 181219.5 | 1.0000 | 1 | |
| 7/19/2017 4:57:13 PM | 7 | 104 | S4 | 93225.7 | 0.5000 | 1 | |
| 7/19/2017 4:59:03 PM | 8 | 103 | S5 | 37885.7 | 0.2000 | 1 | |
| 7/19/2017 5:00:53 PM | 9 | 102 | S6 | 18728.5 | 0.1000 | 1 | |
| 7/19/2017 5:02:43 PM | 10 | 101 | S7 | 1127.2 | 0.0000 | 1 | |
| 7/19/2017 5:04:33 PM | 11 | 900 | RINSE | 994.5 | -0.0197 | 1 | |
| 7/19/2017 5:06:23 PM | 12 | 900 | W | 832.7 | -0.0206 | 1 | |
| 7/19/2017 5:08:13 PM | 13 | 111 | REDNO2 | 376993.7 | 2.1540 | 1 | |
| 7/19/2017 5:10:03 PM | 14 | 900 | RINSE | 1577.5 | -0.0163 | 1 | |
| 7/19/2017 5:11:53 PM | 15 | 112 | REDNO3 | 351284.1 | 2.0054 | 1 | |
| 7/19/2017 5:13:43 PM | 16 | 900 | RINSE | 1020.0 | -0.0195 | 1 | |
| 7/19/2017 5:15:33 PM | 17 | 900 | W | 386.6 | -0.0232 | 1 | |
| 7/19/2017 5:17:23 PM | 18 | 901 | ICV | 439134.2 | 2.5132 | 1 | |
| 7/19/2017 5:19:13 PM | 19 | 900 | ICB | 1271.7 | -0.0181 | 1 | |
| 7/19/2017 5:21:03 PM | 20 | 131 | PBW | 89.8 | -0.0249 | 1 | |
| 7/19/2017 5:22:53 PM | 21 | 132 | LCSW | 440568.0 | 2.5215 | 1 | |
| 7/19/2017 5:24:43 PM | 22 | 133 | 9091214;U | 243814.9 | 2.7682 | 2 | 157A |
| 7/19/2017 5:26:33 PM | 23 | 133 | 9091214;D | 241342.0 | 2.7396 | 2 | |
| 7/19/2017 5:28:23 PM | 24 | 134 | 9091214;R | 432010.8 | 4.9441 | 2 | |
| 7/19/2017 5:30:13 PM | 25 | 135 | 9098667 | 328604.1 | 3.7485 | 2 | |
| 7/19/2017 5:32:03 PM | 26 | 136 | 9098668 | 364688.7 | 4.1657 | 2 | |
| 7/19/2017 5:33:53 PM | 27 | 137 | 9098671 | 142748.6 | 0.7998 | 1 | |
| 7/19/2017 5:35:43 PM | 28 | 138 | 9098674 | 276661.0 | 3.1479 | 2 | |
| 7/19/2017 5:37:34 PM | 29 | 139 | 9098681 | 114951.3 | 0.6391 | 1 | 047A |
| 7/19/2017 5:39:24 PM | 30 | 901 | CCV2 | 439573.9 | 2.5158 | 1 | |
| 7/19/2017 5:41:14 PM | 31 | 900 | CCB | 1395.0 | -0.0174 | 1 | |
| 7/19/2017 5:43:04 PM | 32 | 140 | 9098767 | 444649.5 | 2.5451 | 1 | |
| 7/19/2017 5:44:54 PM | 33 | 141 | 9098827 | 272665.1 | 3.1017 | 2 | |
| 7/19/2017 5:46:44 PM | 34 | 142 | 9098833 | 282899.3 | 3.2201 | 2 | |
| 7/19/2017 5:48:34 PM | 35 | 143 | 9098835 | 249706.8 | 14.1815 | 10 | |
| 7/19/2017 5:50:24 PM | 36 | 144 | 9100479;U | 227389.5 | 1.2891 | 1 | 157A |
| 7/19/2017 5:52:14 PM | 37 | 144 | 9100479;D | 227023.1 | 1.2870 | 1 | |
| 7/19/2017 5:54:04 PM | 38 | 145 | 9100479;R | 403931.4 | 2.3097 | 1 | |
| 7/19/2017 5:55:54 PM | 39 | 146 | 9100483 | 335269.0 | 1.9128 | 1 | |
| 7/19/2017 5:57:44 PM | 40 | 147 | 9100485 | 348065.5 | 1.9868 | 1 | |
| 7/19/2017 5:59:34 PM | 41 | 148 | 9100487 | 148447.9 | 0.8328 | 1 | |
| 7/19/2017 6:01:24 PM | 42 | 901 | CCV2 | 432005.2 | 2.4720 | 1 | |
| 7/19/2017 6:03:14 PM | 43 | 900 | CCB | 1648.7 | -0.0159 | 1 | |
| 7/19/2017 6:05:04 PM | 44 | 149 | 9100489 | 144908.0 | 0.8123 | 1 | |
| 7/19/2017 6:06:54 PM | 45 | 150 | 9100589 | 52069.8 | 0.2756 | 1 | |
| 7/19/2017 6:08:44 PM | 46 | 151 | 9100591 | 1260.9 | -0.0181 | 1 | |
| 7/19/2017 6:10:34 PM | 47 | 152 | 9100592 | 1758.0 | -0.0153 | 1 | |
| 7/19/2017 6:12:24 PM | 48 | 153 | 9101119 | 324796.0 | 3.7045 | 2 | 146A |

| Date/Time | Peak # | Cup # | Sample Name | Peak Height | Calc (mg/L) | M-Dil | Comment |
|---|---|---|---|---|---|---|---|
| 7/19/2017 6:14:14 PM | 49 | 154 | 9101122 | 103131.7 | 0.5708 | 1 | 146A |
| 7/19/2017 6:16:04 PM | 50 | 131 | PBW | 192.9 | -0.0243 | 1 | |
| 7/19/2017 6:17:54 PM | 51 | 132 | LCSW | 427957.8 | 2.4486 | 1 | |
| 7/19/2017 6:19:44 PM | 52 | 155 | 9101168;U | 349700.6 | 1.9962 | 1 | |
| 7/19/2017 6:21:34 PM | 53 | 155 | 9101168;D | 347910.6 | 1.9859 | 1 | |
| 7/19/2017 6:23:24 PM | 54 | 901 | CCV2 | 426015.5 | 2.4374 | 1 | |
| 7/19/2017 6:25:14 PM | 55 | 900 | CCB | 1866.9 | -0.0146 | 1 | |
| 7/19/2017 6:27:04 PM | 56 | 156 | 9101168;R | 506432.6 | 2.9023 | 1 | |
| 7/19/2017 6:28:54 PM | 57 | 157 | 9101177 | 230475.2 | 2.6139 | 2 | |
| 7/19/2017 6:30:44 PM | 58 | 158 | 9101187 | 325610.0 | 3.7139 | 2 | |
| 7/19/2017 6:32:34 PM | 59 | 159 | 9102552 | 223612.7 | 1.2673 | 1 | 157A |
| 7/19/2017 6:34:24 PM | 60 | 160 | 9102553 | 234667.0 | 1.3312 | 1 | |
| 7/19/2017 6:36:14 PM | 61 | 161 | 9102554 | 41718.6 | 0.2158 | 1 | |
| 7/19/2017 6:38:04 PM | 62 | 162 | 9102555 | 55195.7 | 0.2937 | 1 | |
| 7/19/2017 6:39:54 PM | 63 | 163 | 9102766 | 67101.1 | 0.3625 | 1 | |
| 7/19/2017 6:41:44 PM | 64 | 164 | 9104054 | 192030.7 | 5.4236 | 5 | 158A |
| 7/19/2017 6:43:34 PM | 65 | 165 | 9104055 | 290477.9 | 8.2692 | 5 | |
| 7/19/2017 6:45:24 PM | 66 | 901 | CCV2 | 418685.8 | 2.3950 | 1 | |
| 7/19/2017 6:47:14 PM | 67 | 900 | CCB | 1570.1 | -0.0163 | 1 | |
| 7/19/2017 6:49:04 PM | 68 | 166 | 9104480 | 4593.7 | 0.0011 | 1 | 157A |
| 7/19/2017 6:50:54 PM | 69 | 167 | 9104481 | 2414.4 | -0.0115 | 1 | |
| 7/19/2017 6:52:44 PM | 70 | 168 | 9104482;U | 1461.3 | -0.0170 | 1 | |
| 7/19/2017 6:54:34 PM | 71 | 168 | 9104482;D | 1181.5 | -0.0186 | 1 | |
| 7/19/2017 6:56:24 PM | 72 | 169 | 9104482;R | 190968.0 | 1.0786 | 1 | |
| 7/19/2017 6:58:14 PM | 73 | 170 | 9107350 | 247235.3 | 1.4039 | 1 | |
| 7/19/2017 7:00:04 PM | 74 | 171 | 9107351 | 273163.7 | 1.5538 | 1 | |
| 7/19/2017 7:01:54 PM | 75 | 172 | 9107372 | 420602.8 | 24.0611 | 10 | |
| 7/19/2017 7:03:44 PM | 76 | 173 | 9107373 | 131202.0 | 0.7331 | 1 | 001A |
| 7/19/2017 7:05:34 PM | 77 | 174 | 9102540 | 94329.6 | 0.5199 | 1 | 157A |
| 7/19/2017 7:07:24 PM | 78 | 901 | CCV2 | 424325.8 | 2.4276 | 1 | |
| 7/19/2017 7:09:14 PM | 79 | 900 | CCB | 791.8 | -0.0208 | 1 | |
| 7/19/2017 7:11:04 PM | 80 | 175 | 9104099 | 185361.4 | 1.0462 | 1 | 158A |
| 7/19/2017 7:12:54 PM | 81 | 901 | CCV2 | 418466.2 | 2.3938 | 1 | |
| 7/19/2017 7:14:44 PM | 82 | 900 | CCB | 1171.3 | -0.0186 | 1 | |
| 7/19/2017 7:16:34 PM | 83 | 900 | RINSE | 507.7 | -0.0225 | 1 | |
| 7/19/2017 7:18:24 PM | 84 | 900 | RINSE | 160.4 | -0.0245 | 1 | |
| 7/19/2017 7:20:14 PM | 85 | 111 | REDNO2 | 369264.7 | 2.1093 | 1 | |
| 7/19/2017 7:22:04 PM | 86 | 900 | RINSE | 969.4 | -0.0198 | 1 | |
| 7/19/2017 7:23:54 PM | 87 | 112 | REDNO3 | 314849.0 | 1.7947 | 1 | |
| 7/19/2017 7:25:44 PM | 88 | 900 | RINSE | 603.0 | -0.0219 | 1 | |
| 7/19/2017 7:27:34 PM | 89 | 900 | RINSE | 61.2 | -0.0251 | 1 | |
| 7/19/2017 7:29:24 PM | 90 | 900 | RINSE | -155.7 | -0.0263 | 1 | |
| 7/19/2017 7:31:14 PM | 91 | 900 | RINSE | 247.4 | -0.0240 | 1 | |
| 7/19/2017 7:33:04 PM | 92 | 901 | CCV2 | 412165.7 | 2.3573 | 1 | |
| 7/19/2017 7:34:54 PM | 93 | 900 | CCB | 970007.3 | 5.5822 | 1 | |
| 7/19/2017 7:36:44 PM | 94 | 900 | RINSE | 20562.6 | 0.0935 | 1 | |
| 7/19/2017 7:38:34 PM | 95 | 900 | RINSE | 20728.2 | 0.0944 | 1 | |
| 7/19/2017 7:40:24 PM | 96 | 900 | RINSE | 20783.1 | 0.0947 | 1 | |
| 7/19/2017 7:42:14 PM | 97 | 900 | RINSE | 21084.3 | 0.0965 | 1 | |
| 7/19/2017 7:44:04 PM | 98 | 900 | RINSE | 21203.5 | 0.0972 | 1 | |
| 7/19/2017 7:45:54 PM | 99 | 900 | RINSE | 21010.1 | 0.0960 | 1 | |
| 7/19/2017 7:47:44 PM | 100 | 900 | RINSE | 21073.8 | 0.0964 | 1 | |
| 7/19/2017 7:49:34 PM | 101 | 900 | RINSE | 644.7 | -0.0217 | 1 | |
| 7/19/2017 7:51:24 PM | 102 | 900 | RINSE | 216.3 | -0.0242 | 1 | |
| 7/19/2017 7:53:14 PM | 103 | 111 | REDNO2 | 366996.1 | 2.0962 | 1 | |
| 7/19/2017 7:55:04 PM | 104 | 900 | RINSE | 1295.9 | -0.0179 | 1 | |
| 7/19/2017 7:56:54 PM | 105 | 112 | REDNO3 | 344451.8 | 1.9659 | 1 | |
| 7/19/2017 7:58:45 PM | 106 | 900 | RINSE | 1724.2 | -0.0154 | 1 | |

| Date/Time | Peak # | Cup # | Sample Name | Peak Height | Calc (mg/L) | M-Dil | Comment |
|---|---|---|---|---|---|---|---|
| 7/19/2017 8:00:35 PM | 107 | 900 | RINSE | 1152.6 | -0.0188 | 1 | |
| 7/19/2017 8:02:25 PM | 108 | 900 | RINSE | 1387.0 | -0.0174 | 1 | |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200000
300000
400000
500000
600000
700000
Time (seconds)
0.0
500.0
1000.0
1500.0
2000.0
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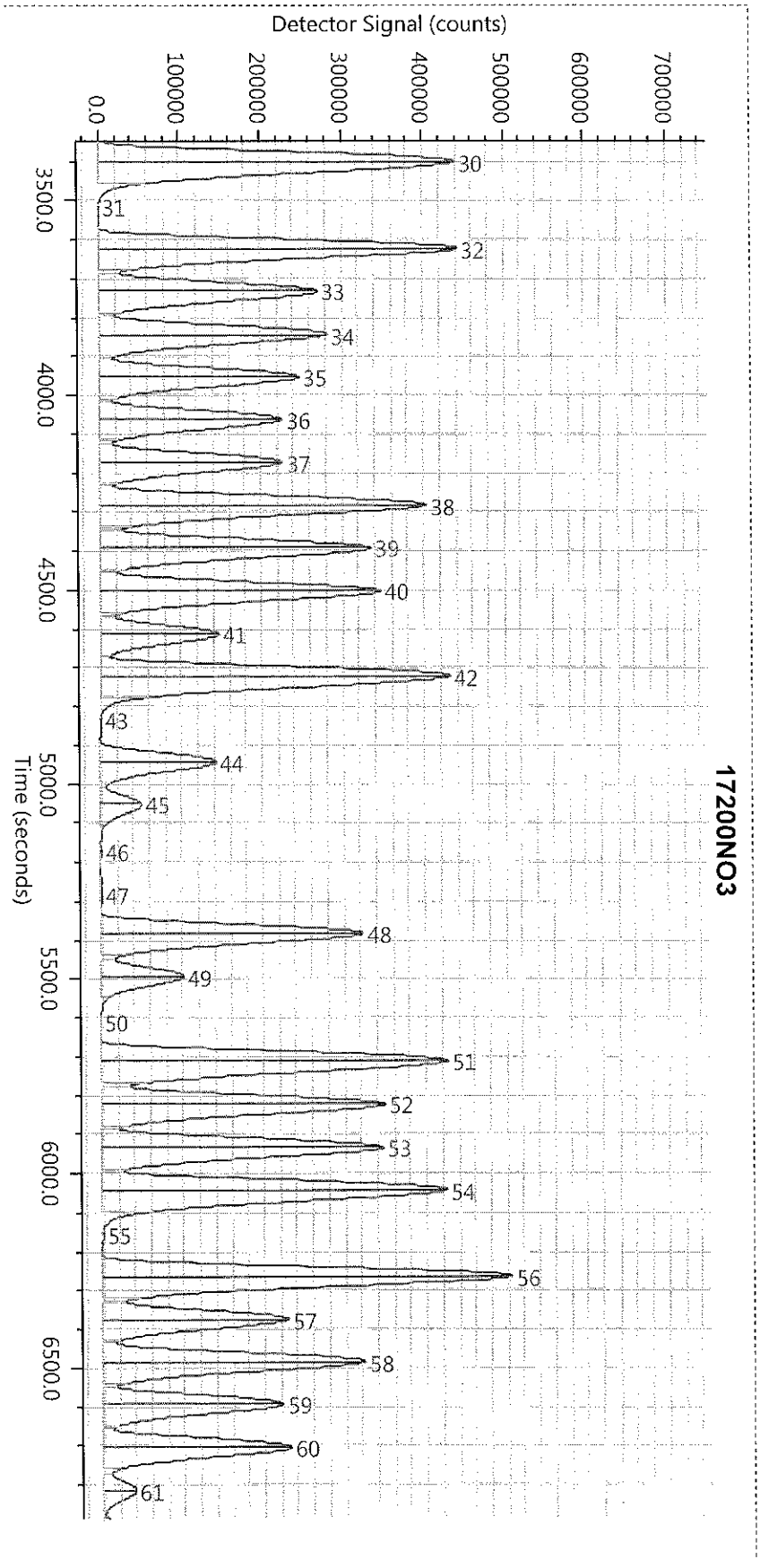
Detector Signal (counts)
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200000
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Time (seconds)
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4000.0
4500.0
5000.0
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6000.0
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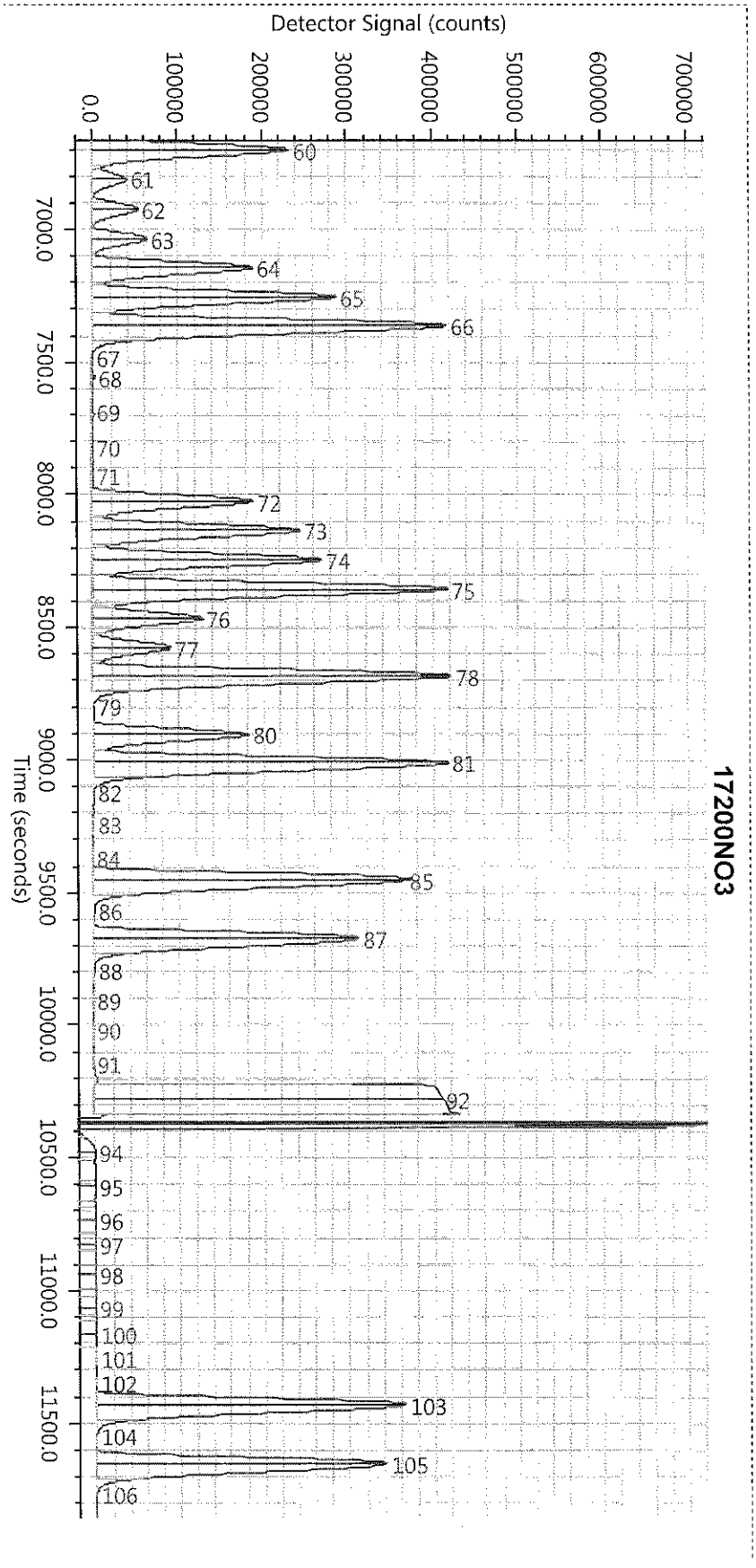
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200000
300000
400000
500000
600000
700000
Time (seconds)
7000.0
7500.0
8000.0
8500.0
9000.0
9500.0
10000.0
10500.0
11000.0
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eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-2000 Analyst CW7987

Instrument ID 12115 Run Start Date 7-7-17

IDAT Run Number 171880 1015 Run Name 171881SC (ICAL)

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405 | 34

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: ———

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | < 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1718815C

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TEST | | 93 | Check Standard | | 07/07/2017 10:03:35 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 2 | CAL 0 | | 1 | Calibration Standard | 01 | 07/07/2017 10:19:48 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 3 | CAL 1 | | 2 | Calibration Standard | 02 | 07/07/2017 10:36:00 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 4 | CAL 2 | | 3 | Calibration Standard | 03 | 07/07/2017 10:52:12 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 5 | CAL 3 | | 4 | Calibration Standard | 04 | 07/07/2017 11:08:24 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 6 | CAL 4 | | 5 | Calibration Standard | 05 | 07/07/2017 11:24:36 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 7 | CAL 5 | | 6 | Calibration Standard | 06 | 07/07/2017 11:40:49 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 8 | ICV | | 7 | Check Standard | | 07/07/2017 11:57:02 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 9 | ICB | | 8 | Check Standard | | 07/07/2017 12:13:14 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 10 | QRS | | 2 | Check Standard | | 07/07/2017 12:29:27 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 11 | CRDL | | 2 | Check Standard | | 07/07/2017 12:45:39 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

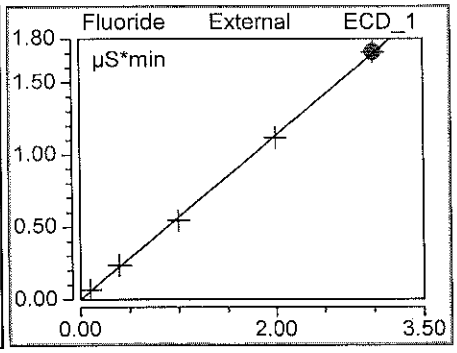
# Calibration Batch Report

| | | | |
|---|---|---|---|
| *Sequence:* | **1718815C** | *Injection Volu A* | **75.00** |
| *Instrument Method:* | **AnionsAS** | *Channel:* | **ECD_1** |
| *Instrument Number:* | **12115** | *Run Time (min):* | **15** |
| *Inj. Date / Time:* | **07-Jul-2017 / 11:40** | *Column Type-Serial #:* | AG14-170304242, AS14-160520235 |

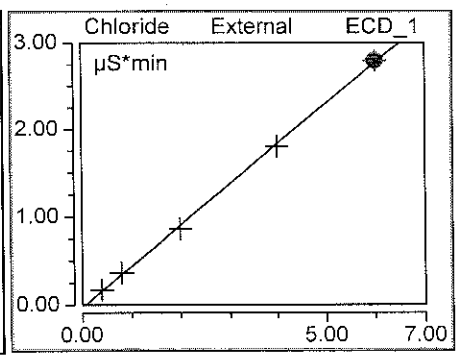
**Calibration Summary**

| Peak Name | Eval.Type | Cal.Type | Points | Offset (C0) | Slope (C1) | Curve (C2) | R-Squared % | r= |
|---|---|---|---|---|---|---|---|---|
| Fluoride | Area | Lin, WithOffset | 5.000 | -0.002 | 0.566 | 0.000 | 99.9510479 | 0.999755 |
| Chloride | Area | Lin, WithOffset | 5.000 | -0.034 | 0.467 | 0.000 | 99.9224708 | 0.999612 |
| Nitrite | Area | Lin, WithOffset | 5.000 | -0.035 | 0.967 | 0.000 | 99.9780968 | 0.999895 |
| Bromide | Area | Lin, WithOffset | 5.000 | -0.039 | 0.194 | 0.000 | 99.9723145 | 0.999861 |
| Nitrate | Area | Lin, WithOffset | 5.000 | -0.039 | 1.052 | 0.000 | 99.9716811 | 0.999858 |
| Phosphate | Area | Lin, WithOffset | 4.000 | -0.516 | 0.342 | 0.000 | 99.5751782 | 0.997873 |
| Sulfate | Area | Lin, WithOffset | 5.000 | -0.067 | 0.329 | 0.000 | 99.9740265 | 0.999870 |
| | | **AVERAGE:** | | -0.1045 | 0.5595 | 0.0000 | 99.9064 | |

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Fluoride | Fluoride | Fluoride | Fluoride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 3.160 | 0.0664 | 0.241 | 0.120 |
| CAL 2 | 3.157 | 0.2324 | 0.991 | 0.413 |
| CAL 3 | 3.157 | 0.5437 | 2.699 | 0.963 |
| CAL 4 | 3.160 | 1.1204 | 5.811 | 1.981 |
| CAL 5 | 3.163 | 1.7099 | 9.004 | 3.022 |
| **Average** | 3.159 | | | |
| **Rel. Std. Dev.** | 0.088 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Chloride | Chloride | Chloride | Chloride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 4.560 | 0.1689 | 1.045 | 0.434 |
| CAL 2 | 4.560 | 0.3618 | 2.310 | 0.848 |
| CAL 3 | 4.567 | 0.8631 | 5.678 | 1.922 |
| CAL 4 | 4.577 | 1.8037 | 12.269 | 3.937 |
| CAL 5 | 4.583 | 2.7940 | 19.158 | 6.059 |
| **Average** | 4.569 | | | |
| **Rel. Std. Dev.** | 0.227 % | | | |




Clinton M. Wilson
Chemist
JUL 10 2017

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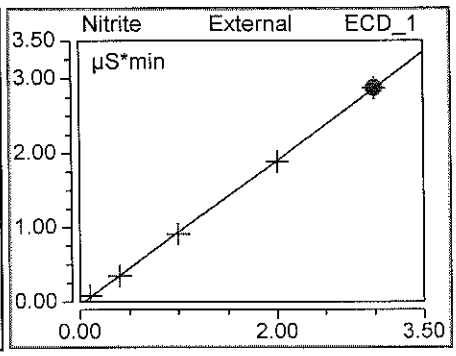
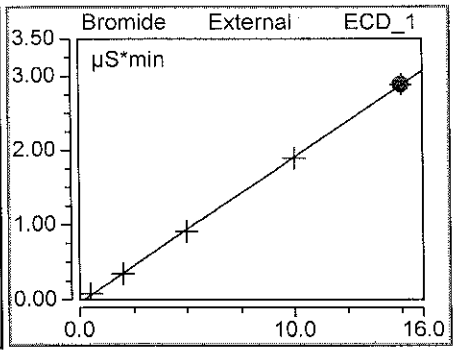
Chemist
JUL 11 2017

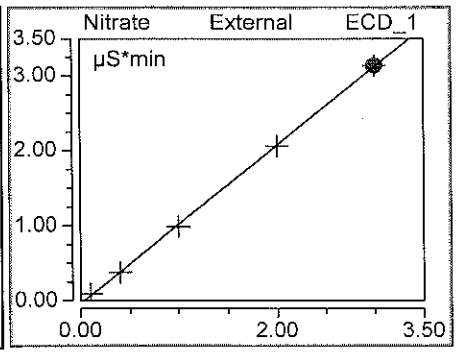
| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrite | Nitrite | Nitrite | Nitrite |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 5.540 | 0.0828 | 0.411 | 0.122 |
| CAL 2 | 5.537 | 0.3477 | 1.723 | 0.396 |
| CAL 3 | 5.533 | 0.9094 | 4.545 | 0.977 |
| CAL 4 | 5.537 | 1.8899 | 9.537 | 1.992 |
| CAL 5 | 5.537 | 2.8769 | 14.561 | 3.013 |
| **Average** | 5.537 | | | |
| **Rel. Std. Dev.** | 0.043 % | | | |



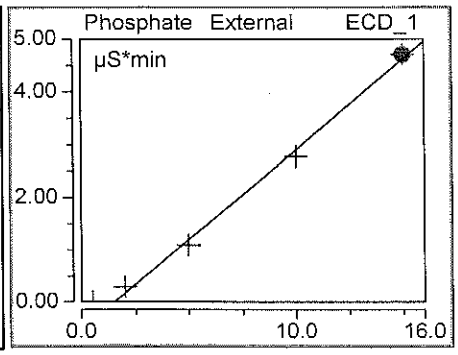

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Bromide | Bromide | Bromide | Bromide |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 7.173 | 0.0814 | 0.315 | 0.619 |
| CAL 2 | 7.157 | 0.3470 | 1.356 | 1.988 |
| CAL 3 | 7.137 | 0.9051 | 3.618 | 4.864 |
| CAL 4 | 7.123 | 1.8939 | 7.696 | 9.959 |
| CAL 5 | 7.103 | 2.8859 | 12.009 | 15.070 |
| **Average** | 7.139 | | | |
| **Rel. Std. Dev.** | 0.384 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrate | Nitrate | Nitrate | Nitrate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 8.500 | 0.0908 | 0.277 | 0.123 |
| CAL 2 | 8.447 | 0.3815 | 1.178 | 0.399 |
| CAL 3 | 8.393 | 0.9841 | 3.097 | 0.972 |
| CAL 4 | 8.353 | 2.0564 | 6.480 | 1.991 |
| CAL 5 | 8.310 | 3.1337 | 9.987 | 3.015 |
| **Average** | 8.401 | | | |
| **Rel. Std. Dev.** | 0.893 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Phosphate | Phosphate | Phosphate | Phosphate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | n.a. | n.a. | n.a. | n.a. |
| CAL 2 | 10.643 | 0.2904 | 0.449 | 2.362 |
| CAL 3 | 10.537 | 1.0903 | 2.090 | 4.703 |
| CAL 4 | 10.467 | 2.7815 | 6.025 | 9.654 |
| CAL 5 | 10.430 | 4.7040 | 10.736 | 15.282 |
| **Average** | 10.519 | | | |
| **Rel. Std. Dev.** | 0.892 % | | | |

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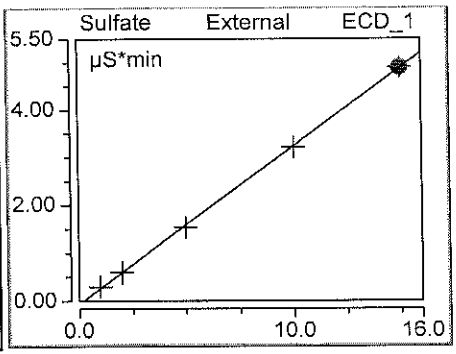
JUL 11 2017

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Sulfate | Sulfate | Sulfate | Sulfate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 12.680 | 0.2951 | 0.663 | 1.101 |
| CAL 2 | 12.677 | 0.5953 | 1.360 | 2.014 |
| CAL 3 | 12.670 | 1.5338 | 3.529 | 4.867 |
| CAL 4 | 12.650 | 3.2047 | 7.416 | 9.948 |
| CAL 5 | 12.643 | 4.8893 | 11.393 | 15.070 |
| **Average** | 12.664 | | | |
| **Rel. Std. Dev.** | 0.129 % | | | |

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JUL 10 2017

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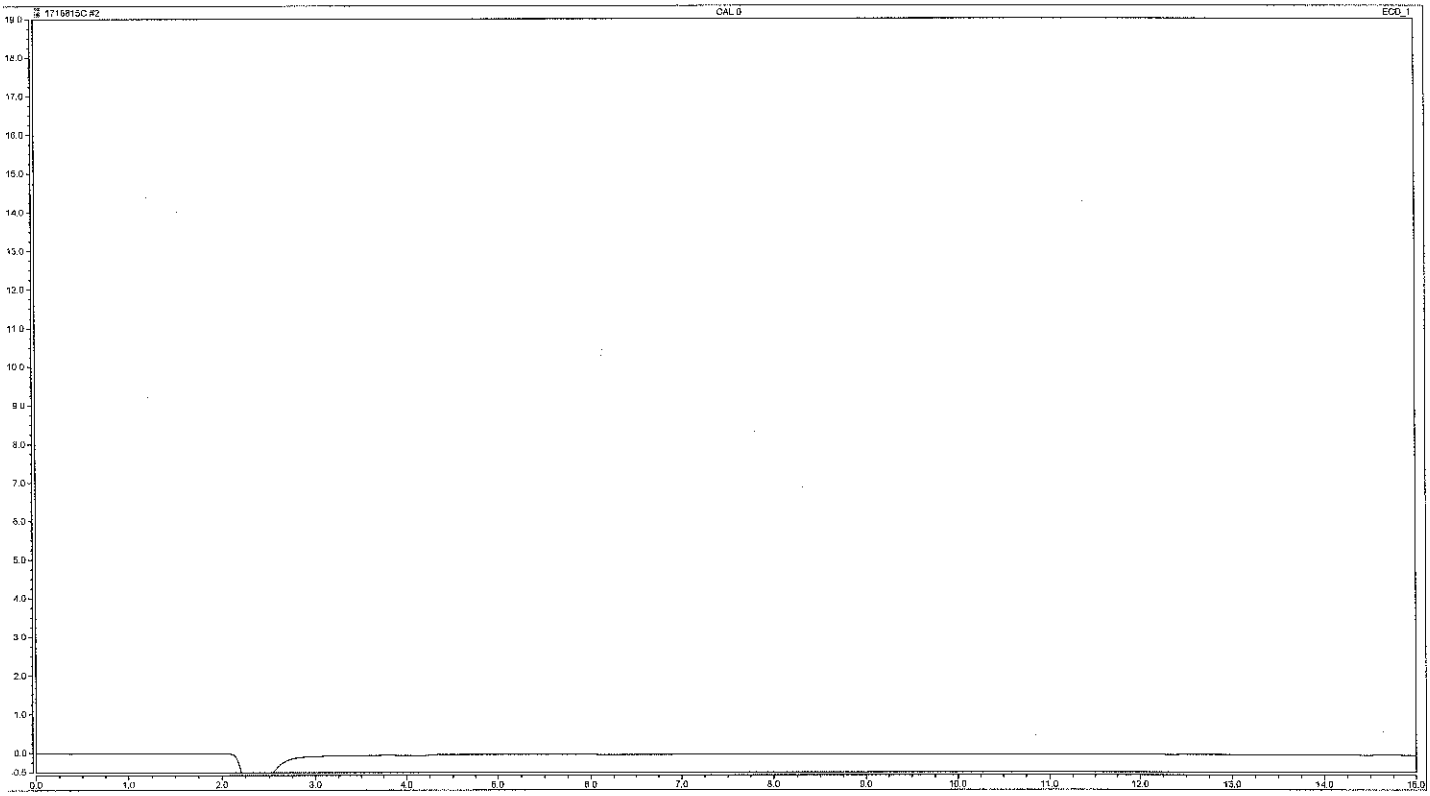
JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 0** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:19** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **002** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:**

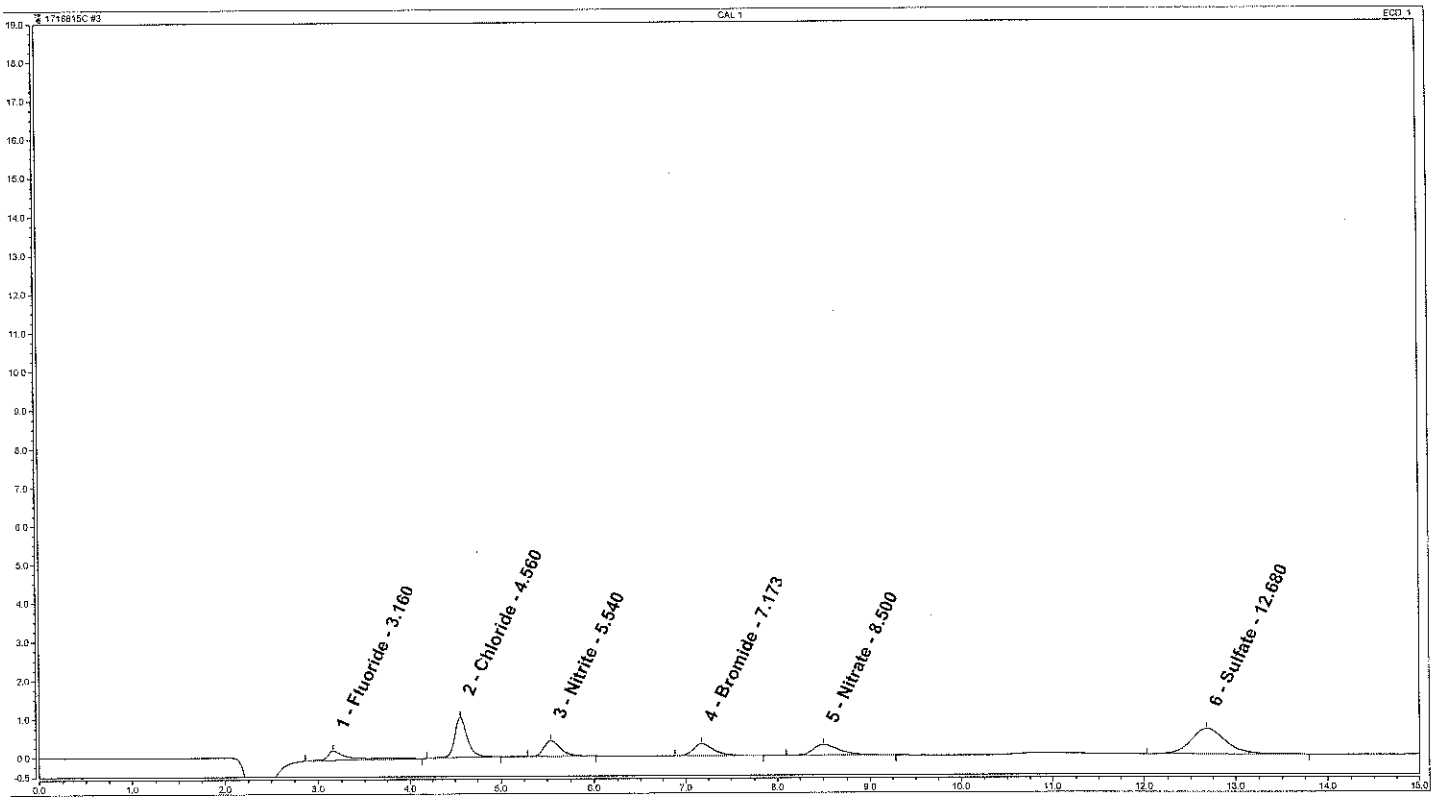
**Date:** Sandra J. Miller, Chemist — JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 1** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:36** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **003** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.066 | 0.241 | 0.1201 |
| 2 | 4.56 | Chloride | M | 0.169 | 1.045 | 0.4342 |
| 3 | 5.54 | Nitrite | M | 0.083 | 0.411 | 0.1220 |
| 4 | 7.17 | Bromide | M | 0.081 | 0.315 | 0.6192 |
| 5 | 8.50 | Nitrate | M | 0.091 | 0.277 | 0.1231 |
| 6 | 12.68 | Sulfate | M | 0.295 | 0.663 | 1.1008 |
| | | TOTAL: | | 0.79 | 2.95 | 2.52 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

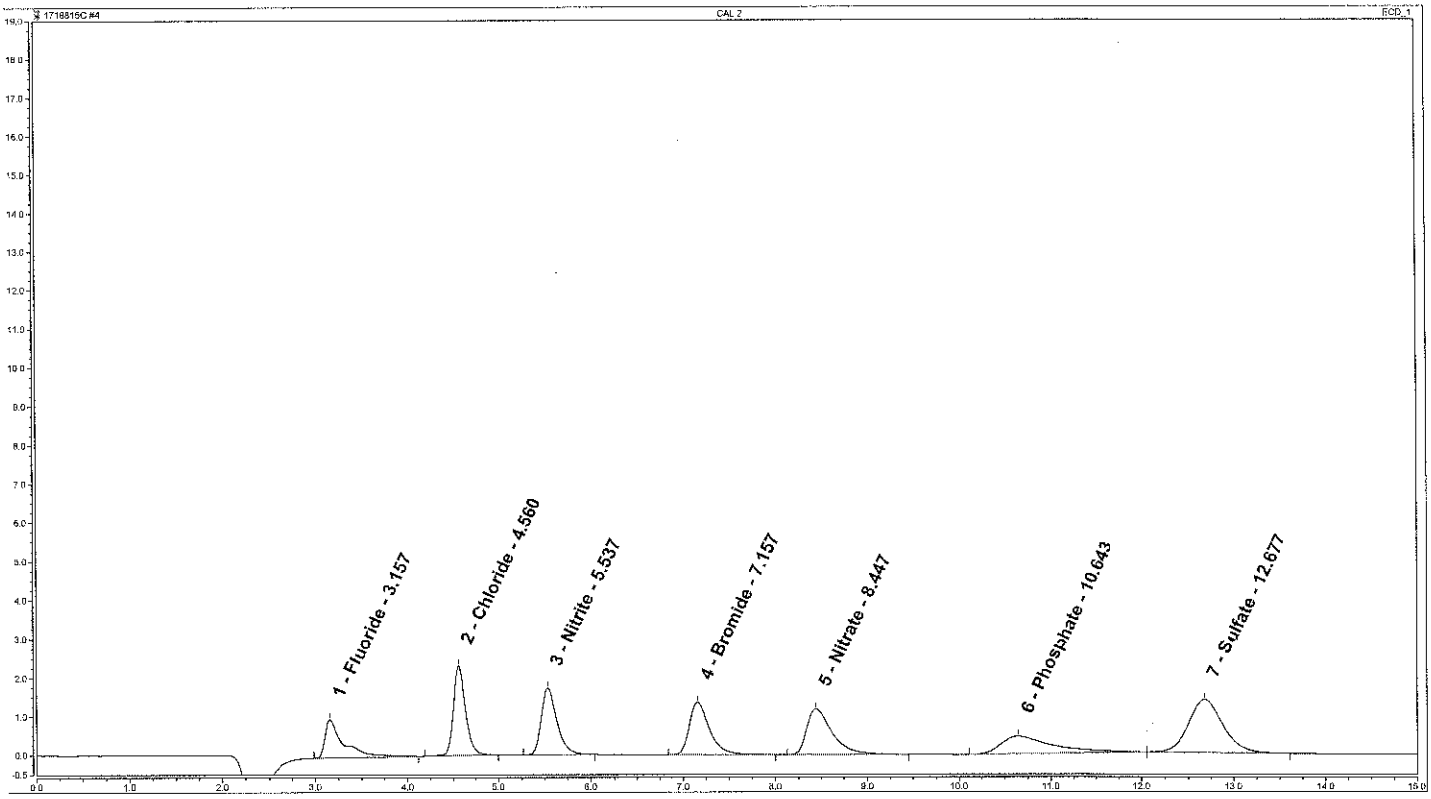
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:52** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **004** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.232 | 0.991 | 0.4132 |
| 2 | 4.56 | Chloride | M | 0.362 | 2.310 | 0.8476 |
| 3 | 5.54 | Nitrite | M | 0.348 | 1.723 | 0.3961 |
| 4 | 7.16 | Bromide | M | 0.347 | 1.356 | 1.9877 |
| 5 | 8.45 | Nitrate | M | 0.382 | 1.178 | 0.3993 |
| 6 | 10.64 | Phosphate | M | 0.290 | 0.449 | 2.3616 |
| 7 | 12.68 | Sulfate | M | 0.595 | 1.360 | 2.0137 |
| | | TOTAL: | | 2.56 | 9.37 | 8.42 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 10 2017

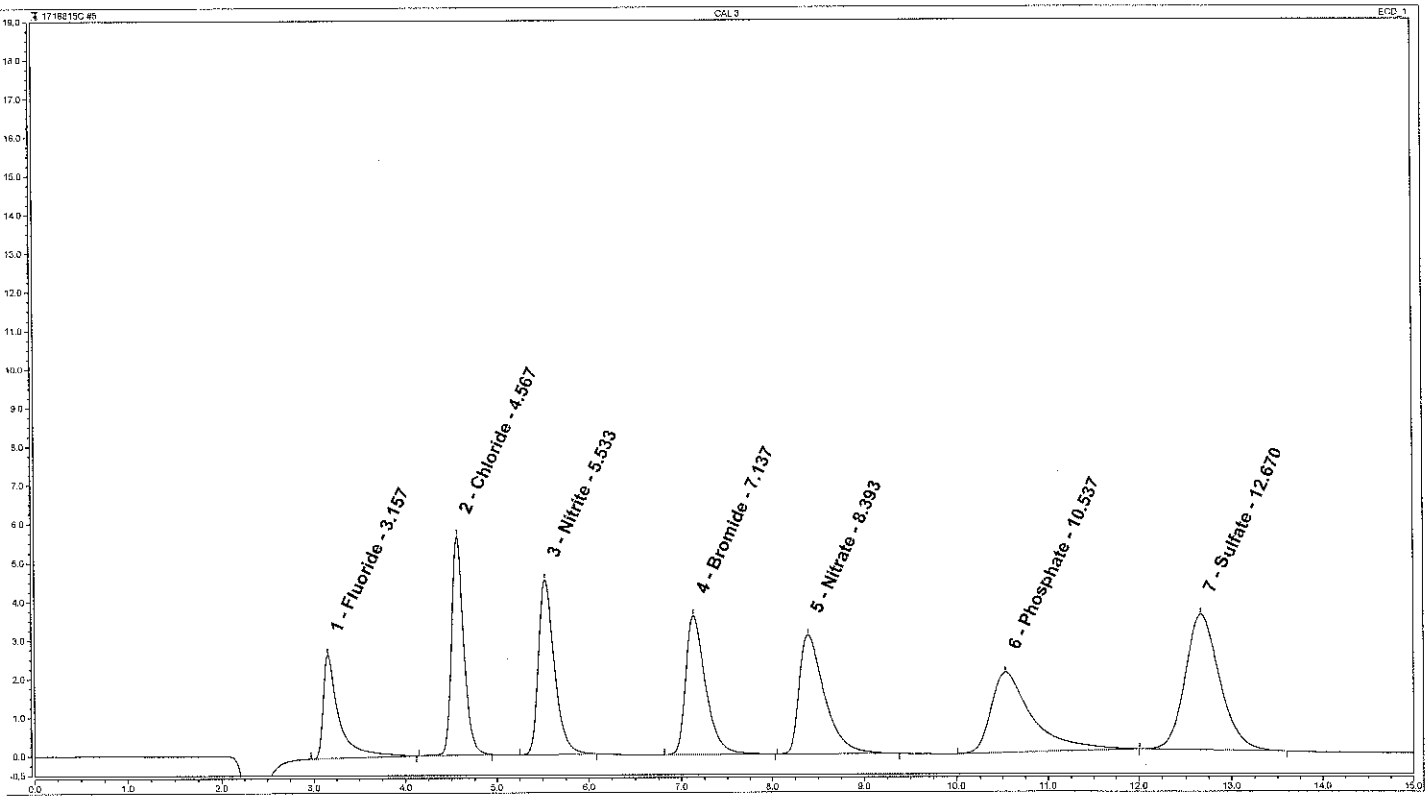
**Verifier:** Sandra J. Miller, Chemist — **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 3** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:08** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **005** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.544 | 2.699 | 0.9630 |
| 2 | 4.57 | Chloride | M | 0.863 | 5.678 | 1.9217 |
| 3 | 5.53 | Nitrite | M | 0.909 | 4.545 | 0.9773 |
| 4 | 7.14 | Bromide | M | 0.905 | 3.618 | 4.8636 |
| 5 | 8.39 | Nitrate | M | 0.984 | 3.097 | 0.9719 |
| 6 | 10.54 | Phosphate | M | 1.090 | 2.090 | 4.7031 |
| 7 | 12.67 | Sulfate | M | 1.534 | 3.529 | 4.8672 |
| | | TOTAL: | | 6.83 | 25.26 | 19.27 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist

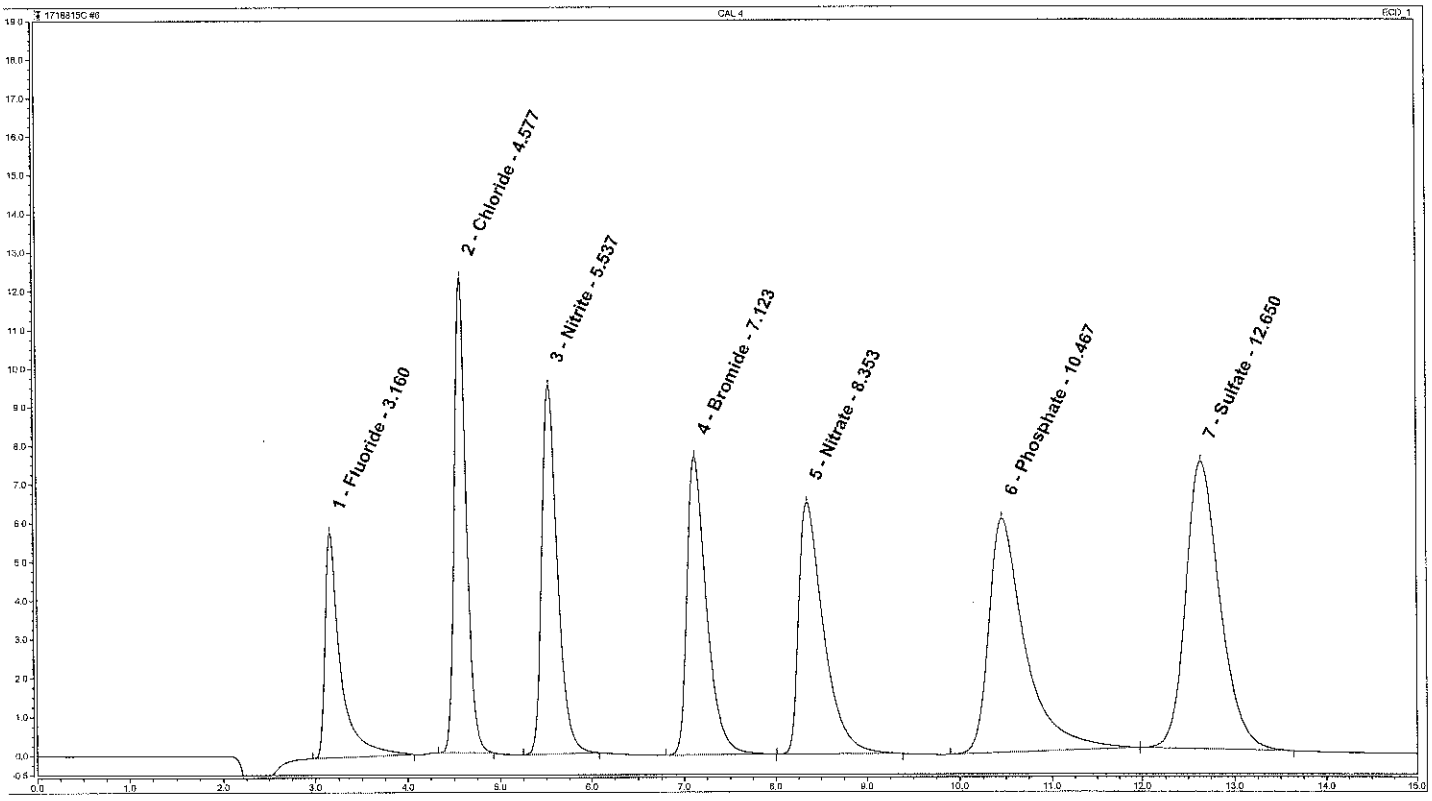
**Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 4** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:24** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **006** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 1.120 | 5.811 | 1.9813 |
| 2 | 4.58 | Chloride | M | 1.804 | 12.269 | 3.9372 |
| 3 | 5.54 | Nitrite | M | 1.890 | 9.537 | 1.9917 |
| 4 | 7.12 | Bromide | M | 1.894 | 7.696 | 9.9590 |
| 5 | 8.35 | Nitrate | M | 2.056 | 6.480 | 1.9909 |
| 6 | 10.47 | Phosphate | M | 2.781 | 6.025 | 9.6537 |
| 7 | 12.65 | Sulfate | M | 3.205 | 7.416 | 9.9480 |
| | | TOTAL: | | 14.75 | 55.23 | 39.46 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

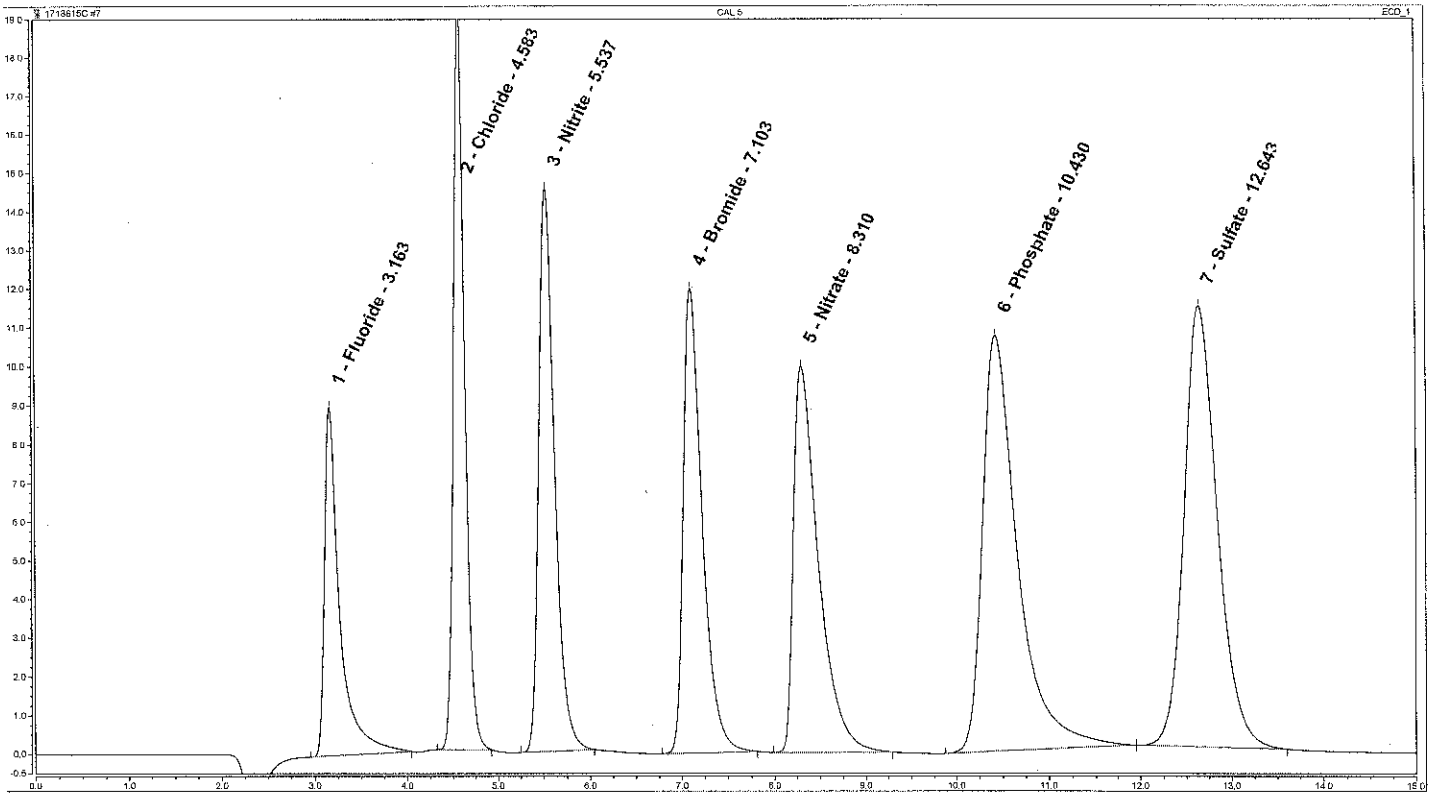
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 5** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:40** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **007** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 1.710 | 9.004 | 3.0224 |
| 2 | 4.58 | Chloride | M | 2.794 | 19.158 | 6.0593 |
| 3 | 5.54 | Nitrite | M | 2.877 | 14.561 | 3.0129 |
| 4 | 7.10 | Bromide | M | 2.886 | 12.009 | 15.0705 |
| 5 | 8.31 | Nitrate | M | 3.134 | 9.987 | 3.0147 |
| 6 | 10.43 | Phosphate | M | 4.704 | 10.736 | 15.2816 |
| 7 | 12.64 | Sulfate | M | 4.889 | 11.393 | 15.0704 |
| | | TOTAL: | | 22.99 | 86.85 | 60.53 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

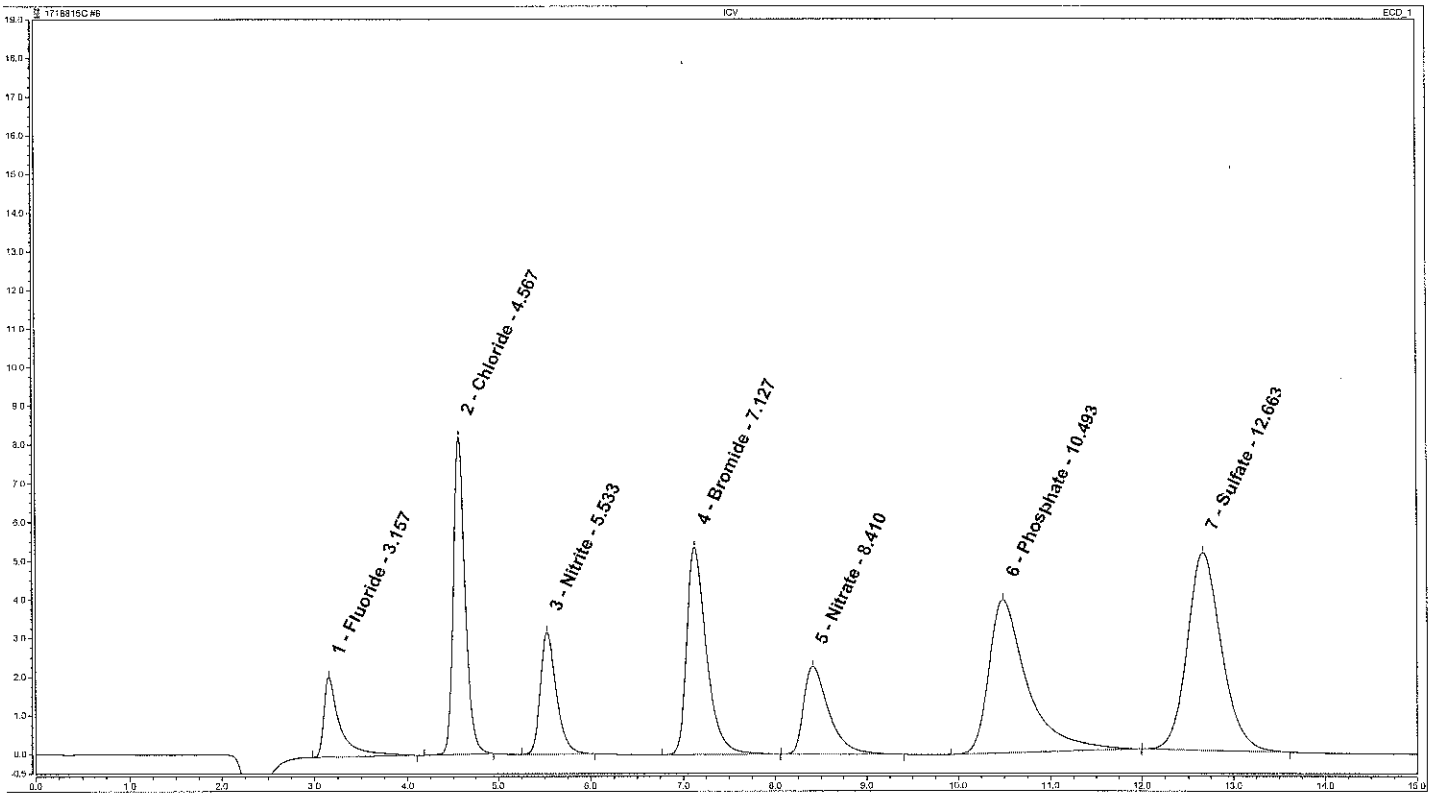
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:57** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **008** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.418 | 2.068 | 0.7411 |
| 2 | 4.57 | Chloride | M | 1.249 | 8.207 | 2.7491 |
| 3 | 5.53 | Nitrite | M | 0.640 | 3.158 | 0.6988 |
| 4 | 7.13 | Bromide | M | 1.353 | 5.379 | 7.1737 |
| 5 | 8.41 | Nitrate | M | 0.736 | 2.285 | 0.7359 |
| 6 | 10.49 | Phosphate | M | 1.922 | 3.980 | 7.1372 |
| 7 | 12.66 | Sulfate | M | 2.248 | 5.134 | 7.0390 |
| | | TOTAL: | | 8.57 | 30.21 | 26.27 |

Cl, $NO_2$ SGW
OS SW




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

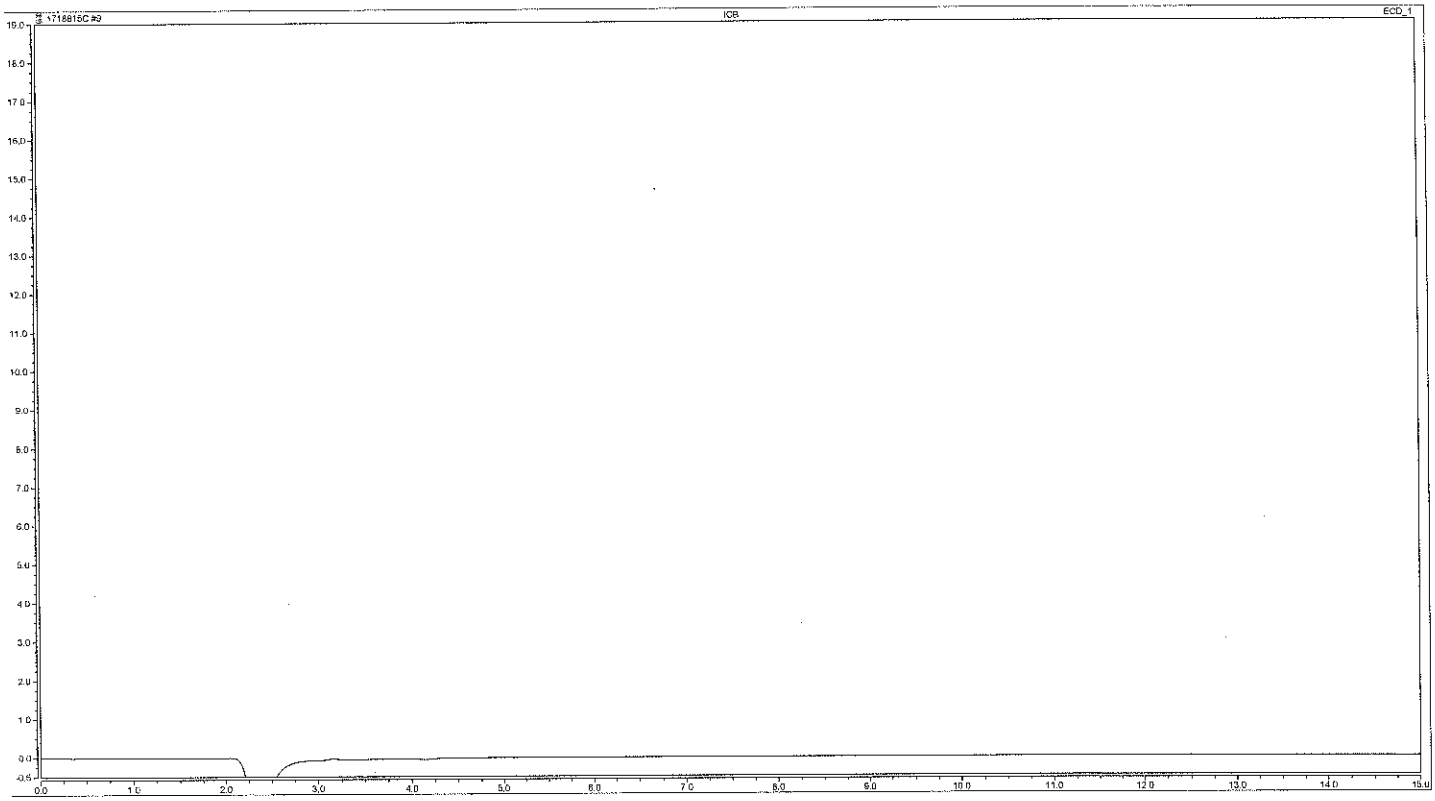
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 12:13** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **009** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist — Date: JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist — Date: JUL 11 2017

eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-2000 Analyst ZWE 24432

Instrument ID 12115 Run Start Date 7-13-17

IDAT Run Number 1719401D15 Run Name 1719415

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405/40

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: —

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | P, $SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | < 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1719415

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LOW | | 89 | Check Standard | | 07/13/2017 10:18:30 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 2 | HIGH | | 90 | Check Standard | | 07/13/2017 10:34:42 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 3 | CCV2 | | 91 | Check Standard | | 07/13/2017 10:50:54 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 4 | CCB | | 92 | Check Standard | | 07/13/2017 11:07:06 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 5 | CCV2 | | 91 | Check Standard | | 07/13/2017 19:14:16 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 6 | CCB | | 92 | Check Standard | | 07/13/2017 19:30:27 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 7 | LCSW | 17194249115A-24932 | 93 | Unknown | | 07/13/2017 19:46:40 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 8 | PBW | 17194249115A-24932 | 94 | Unknown | | 07/13/2017 20:02:53 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 9 | 9100384-U | 17194249115A-24932 | 1 | Unknown | | 07/13/2017 20:34:08 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 10 | 9100384-D | 17194249115A-24932 | 1 | Unknown | | 07/13/2017 20:50:21 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 11 | 9100384-R | 17194249115A-24932 | 2 | Unknown | | 07/13/2017 21:06:32 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 12 | 9100384-U | 17194249115A-24932 | 3 | Unknown | | 07/13/2017 21:22:45 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 13 | 9100384-D | 17194249115A-24932 | 3 | Unknown | | 07/13/2017 21:38:57 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 14 | 9100384-R | 17194249115A-24932 | 4 | Unknown | | 07/13/2017 21:55:10 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 15 | 9100386 | 17194249115A-24932 | 5 | Unknown | | 07/13/2017 22:11:23 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 16 | 9100386 | 17194249115A-24932 | 6 | Unknown | | 07/13/2017 22:27:35 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 17 | CCV2 | | 91 | Check Standard | | 07/13/2017 22:43:47 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 18 | CCB | | 92 | Check Standard | | 07/13/2017 22:59:59 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 19 | 9100388 | 17194249115A-24932 | 7 | Unknown | | 07/13/2017 23:16:12 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 20 | 9100388 | 17194249115A-24932 | 8 | Unknown | | 07/13/2017 23:32:24 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 21 | 9100390 | 17194249115A-24932 | 9 | Unknown | | 07/13/2017 23:48:36 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 22 | 9100390 | 17194249115A-24932 | 10 | Unknown | | 07/14/2017 00:04:48 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 23 | 9100392 | 17194249115A-24932 | 11 | Unknown | | 07/14/2017 00:21:00 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 24 | 9100392 | 17194249115A-24932 | 12 | Unknown | | 07/14/2017 00:37:13 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 25 | 9100394 | 17194249115A-24932 | 13 | Unknown | | 07/14/2017 00:53:25 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 26 | 9100394 | 17194249115A-24932 | 14 | Unknown | | 07/14/2017 01:09:38 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 27 | 9099777 | 17194249115A-24932 | 15 | Unknown | | 07/14/2017 01:25:50 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 28 | 9100479 | 17194249115A-24932 | 16 | Unknown | | 07/14/2017 01:42:02 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 29 | CCV2 | | 91 | Check Standard | | 07/14/2017 01:58:14 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 30 | CCB | | 92 | Check Standard | | 07/14/2017 02:14:26 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 31 | 9100479 | 17194249115A-24932 | 17 | Unknown | | 07/14/2017 02:30:38 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 32 | 9100479 | 17194249115A-24932 | 18 | Unknown | | 07/14/2017 02:46:51 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 33 | 9100483 | 17194249115A-24932 | 19 | Unknown | | 07/14/2017 03:03:02 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 34 | 9100483 | 17194249115A-24932 | 20 | Unknown | | 07/14/2017 03:19:14 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 35 | 9100485 | 17194249115A-24932 | 21 | Unknown | | 07/14/2017 03:35:26 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 36 | 9100485 | 17194249115A-24932 | 22 | Unknown | | 07/14/2017 03:51:38 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 37 | 8966707 | 17130249217B-24932 | 23 | Unknown | | 07/14/2017 04:07:50 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 38 | 8966707 | 17130249217B-24932 | 24 | Unknown | | 07/14/2017 04:24:03 | 75.00 | AnionsAS | Anions | 1.00 | 2000 | Finished |
| 39 | 9100487-U | 17194249115B-24932 | 25 | Unknown | | 07/14/2017 04:40:15 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 40 | 9100487-D | 17194249115B-24932 | 25 | Unknown | | 07/14/2017 04:56:27 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 41 | CCV2 | | 91 | Check Standard | | 07/14/2017 05:12:39 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

# Sequence Overview: 1719415

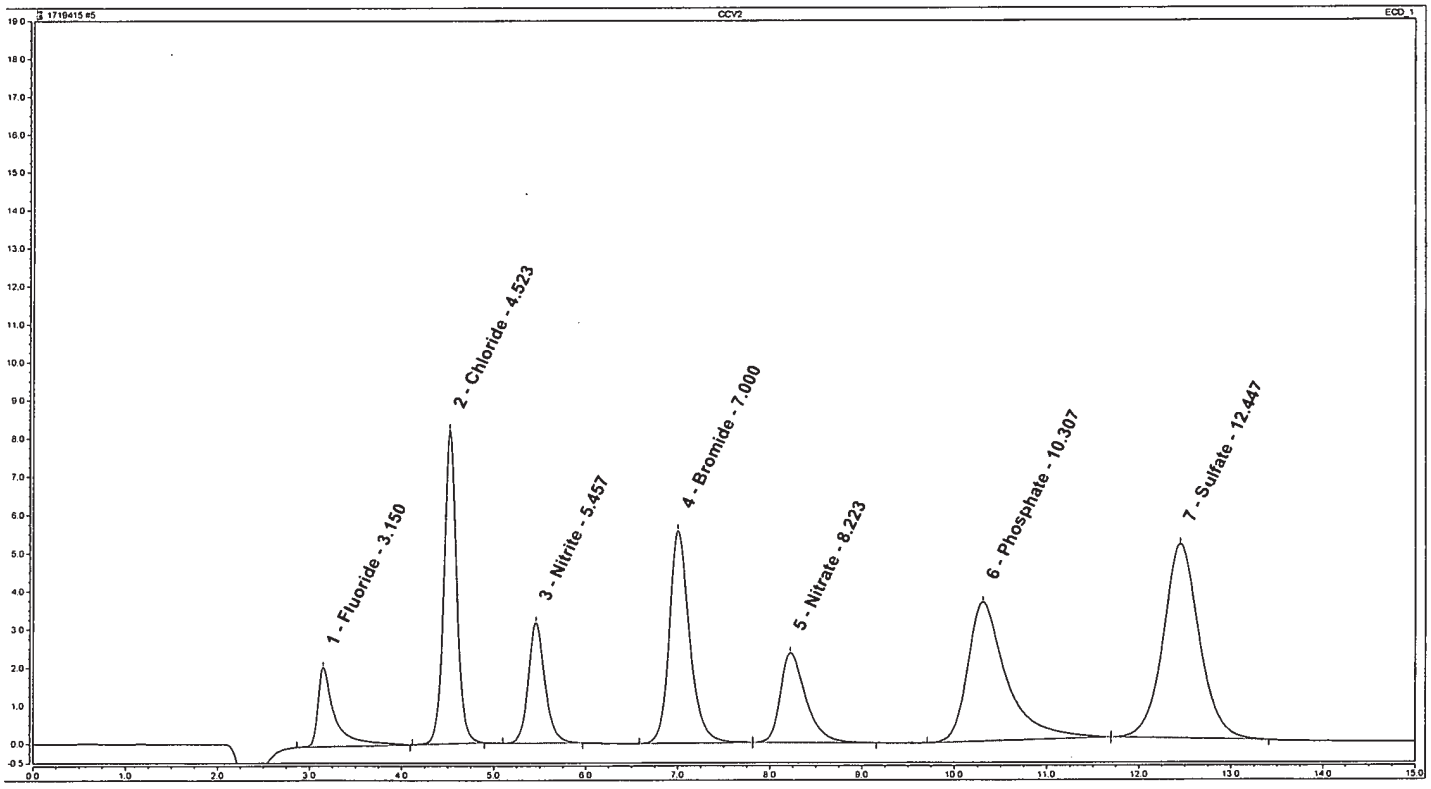
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | CCB | | 92 | Check Standard | | 07/14/2017 05:28:50 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 43 | 9100487-R | 17194249115B-24932 | 26 | Unknown | | 07/14/2017 05:45:02 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 44 | 9100487-U | 17194249115B-24932 | 27 | Unknown | | 07/14/2017 06:01:14 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 45 | 9100487-D | 17194249115B-24932 | 27 | Unknown | | 07/14/2017 06:17:27 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 46 | 9100487-R | 17194249115B-24932 | 28 | Unknown | | 07/14/2017 06:33:39 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 47 | 9100489 | 17194249115B-24932 | 29 | Unknown | | 07/14/2017 06:49:51 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 48 | 9100489 | 17194249115B-24932 | 30 | Unknown | | 07/14/2017 07:06:03 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 49 | 9100409 | 17194249115B-24932 | 31 | Unknown | | 07/14/2017 07:22:15 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 50 | 9100925 | 17194249115B-24932 | 32 | Unknown | | 07/14/2017 07:38:27 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 51 | 9100925 | 17194249115B-24932 | 33 | Unknown | | 07/14/2017 07:54:38 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 52 | 9100926 | 17194249115B-24932 | 34 | Unknown | | 07/14/2017 08:10:50 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 53 | CCV2 | | 91 | Check Standard | | 07/14/2017 08:27:02 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 54 | CCB | | 92 | Check Standard | | 07/14/2017 08:43:14 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 55 | 9100927 | 17194249115B-24932 | 35 | Unknown | | 07/14/2017 08:59:27 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 56 | 9101126 | 17194249115B-24932 | 36 | Unknown | | 07/14/2017 09:15:39 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 57 | 9101127 | 17194249115B-24932 | 37 | Unknown | | 07/14/2017 09:31:50 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 58 | 9101128 | 17194249115B-24932 | 38 | Unknown | | 07/14/2017 09:48:02 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 59 | 9101129 | 17194249115B-24932 | 39 | Unknown | | 07/14/2017 10:04:14 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 60 | CCV2 | | 91 | Check Standard | | 07/14/2017 10:20:26 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 61 | CCB | | 92 | Check Standard | | 07/14/2017 10:36:38 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/13/2017 / 19:14** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **005** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.449 | 2.089 | 0.7954 |
| 2 | 4.52 | Chloride | M | 1.323 | 8.225 | 2.9072 |
| 3 | 5.46 | Nitrite | M | 0.662 | 3.164 | 0.7209 |
| 4 | 7.00 | Bromide | M | 1.424 | 5.577 | 7.5401 |
| 5 | 8.22 | Nitrate | M | 0.757 | 2.368 | 0.7562 |
| 6 | 10.31 | Phosphate | M | 1.783 | 3.658 | 6.7302 |
| 7 | 12.45 | Sulfate | M | 2.312 | 5.088 | 7.2347 |
| | | TOTAL: | | 8.71 | 30.17 | 26.68 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

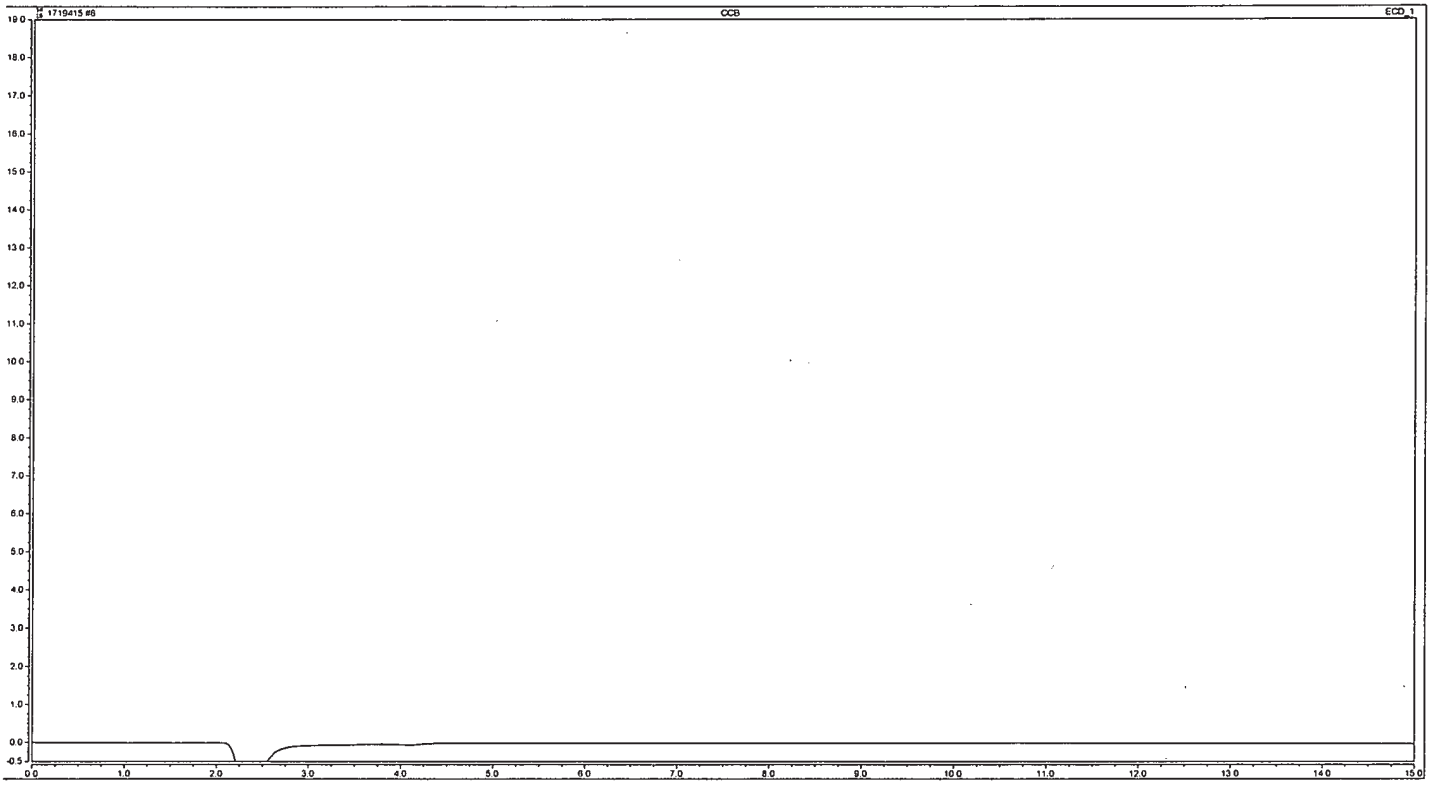
**Date:** Sandra J. Miller
Chemist
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/13/2017 / 19:30** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **006** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 24182

**Date:** 7/16/17

**Verifier:**

**Date:**

Sandra J. Miller
Chemist

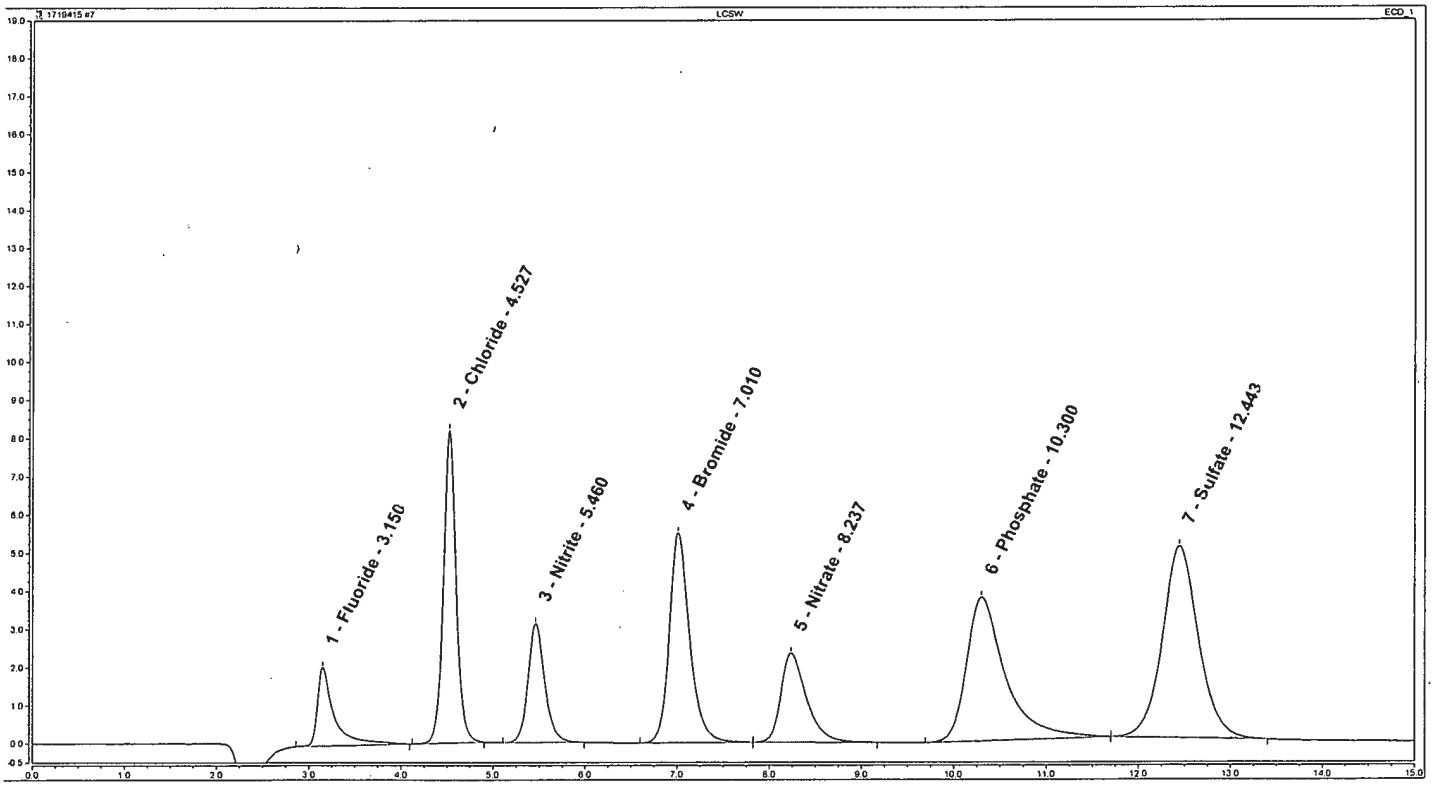
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **LCSW** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/13/2017 / 19:46** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **007** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.449 | 2.081 | 0.7962 |
| 2 | 4.53 | Chloride | M | 1.322 | 8.204 | 2.9041 |
| 3 | 5.46 | Nitrite | M | 0.656 | 3.135 | 0.7151 |
| 4 | 7.01 | Bromide | M | 1.412 | 5.519 | 7.4755 |
| 5 | 8.24 | Nitrate | M | 0.756 | 2.350 | 0.7552 |
| 6 | 10.30 | Phosphate | M | 1.840 | 3.787 | 6.8991 |
| 7 | 12.44 | Sulfate | M | 2.290 | 5.040 | 7.1654 |
| | | TOTAL: | | 8.72 | 30.12 | 26.71 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:** Sandra J. Miller

Sandra J. Miller
Chemist

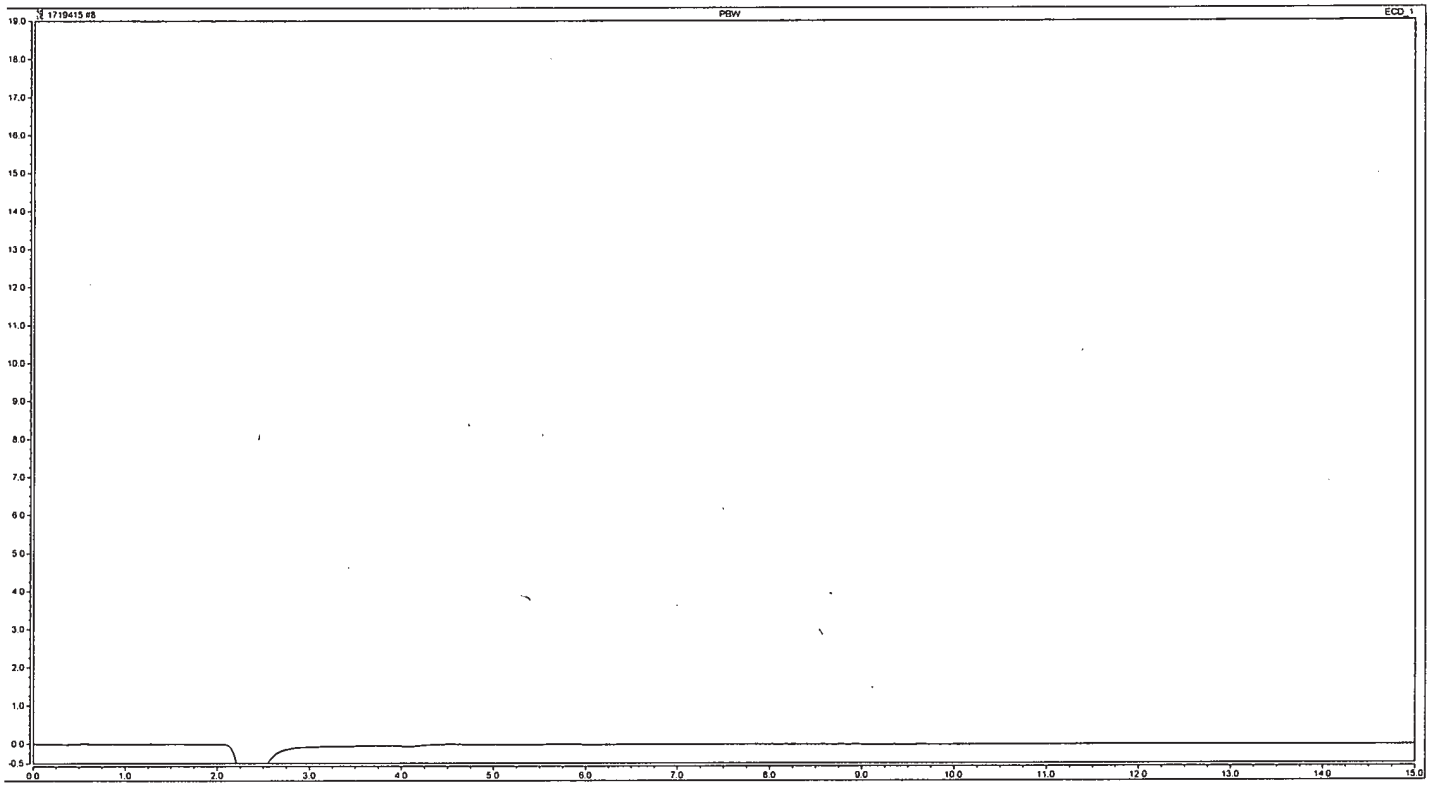
**Date:** JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **PBW** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/13/2017 / 20:02** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **008** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 24937

**Date:** 7/6/17

**Verifier:**

**Date:**

Sandra J. Miller
Chemist

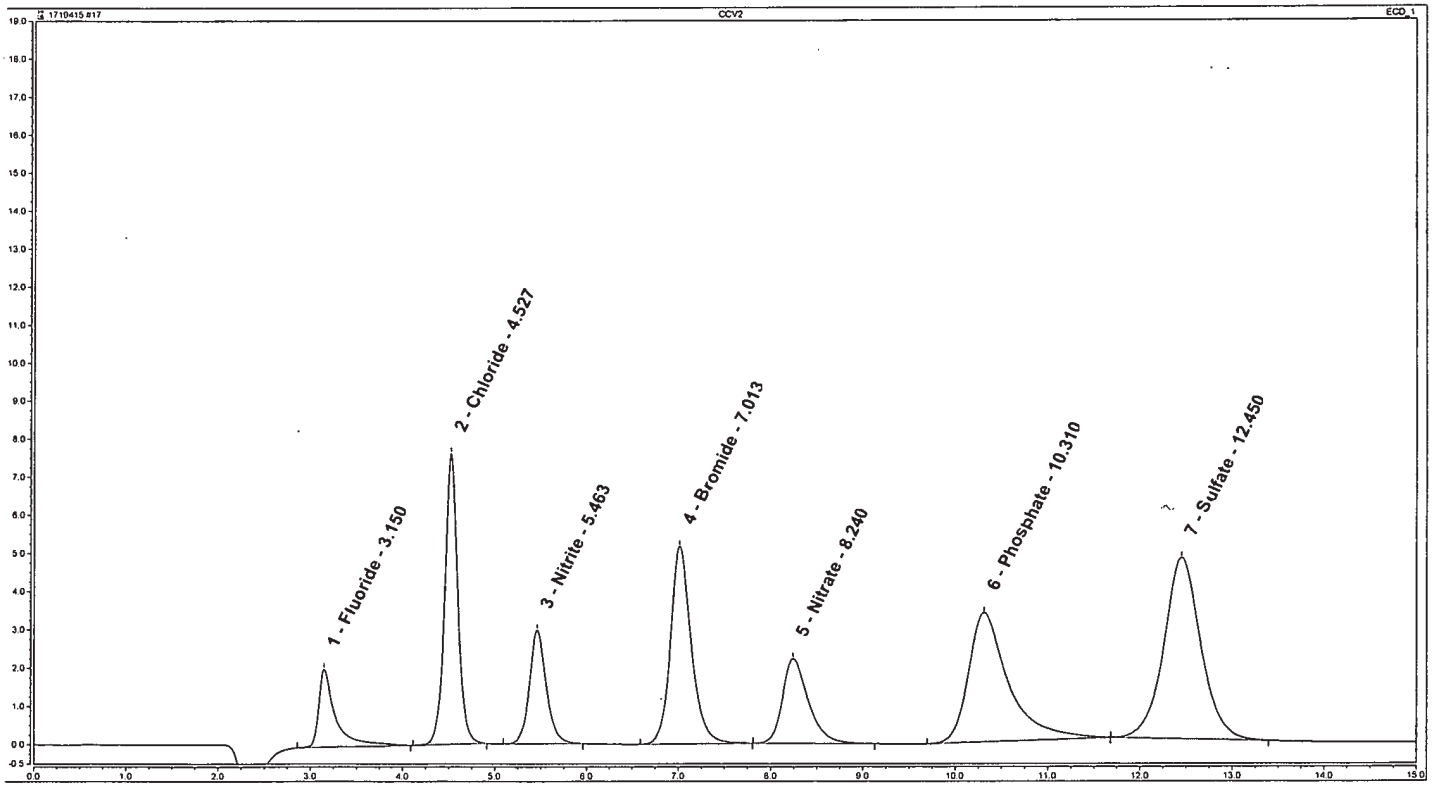
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/13/2017 / 22:43** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **017** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.437 | 2.040 | 0.7747 |
| 2 | 4.53 | Chloride | M | 1.253 | 7.624 | 2.7583 |
| 3 | 5.46 | Nitrite | M | 0.630 | 2.961 | 0.6877 |
| 4 | 7.01 | Bromide | M | 1.347 | 5.175 | 7.1387 |
| 5 | 8.24 | Nitrate | M | 0.717 | 2.208 | 0.7178 |
| 6 | 10.31 | Phosphate | M | 1.692 | 3.372 | 6.4645 |
| 7 | 12.45 | Sulfate | M | 2.194 | 4.747 | 6.8741 |
| | | TOTAL: | | 8.27 | 28.13 | 25.42 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:** Sandra J. Miller Chemist

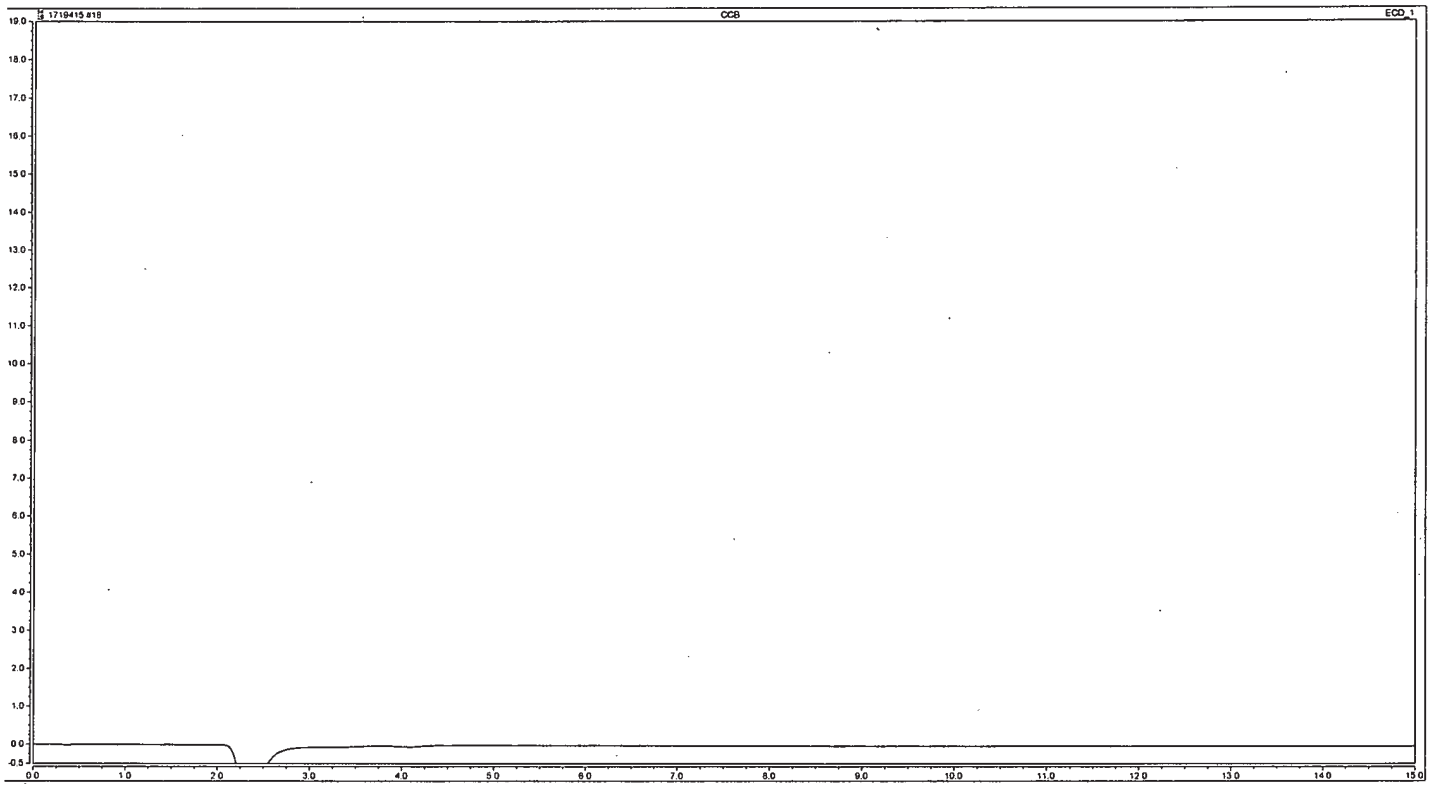
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/13/2017 / 22:59** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **018** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 7/16/17

**Verifier:**

**Date:** 7/16/17

**Date:** Sandra J. Miller
Chemist
JUL 17 2017

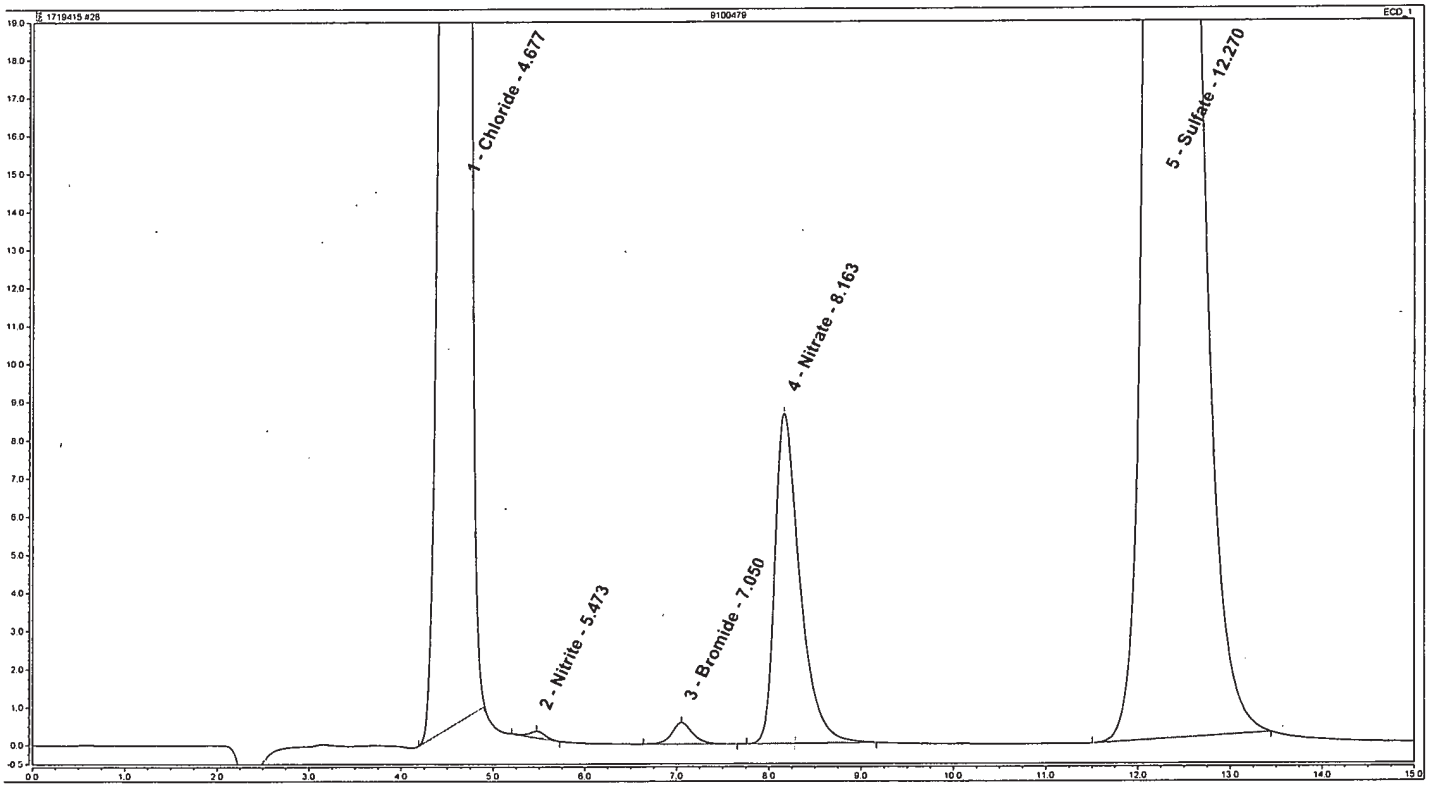
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100479** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 01:42** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **028** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.68 | Chloride | M | 39.398 | 197.281 | 422.4818 |
| 2 | 5.47 | Nitrite | M | 0.035 | 0.177 | 0.3651 |
| 3 | 7.05 | Bromide | M | 0.145 | 0.562 | 4.7409 |
| 4 | 8.16 | Nitrate | M | 2.744 | 8.662 | 13.2234 |
| 5 | 12.27 | Sulfate | M | 37.838 | 81.352 | 576.2886 |
| | | TOTAL: | | 80.16 | 288.03 | 1017.10 |

Br




**Analyst:** ZWE 24932

**Date:** 7/16/17

**Verifier:**

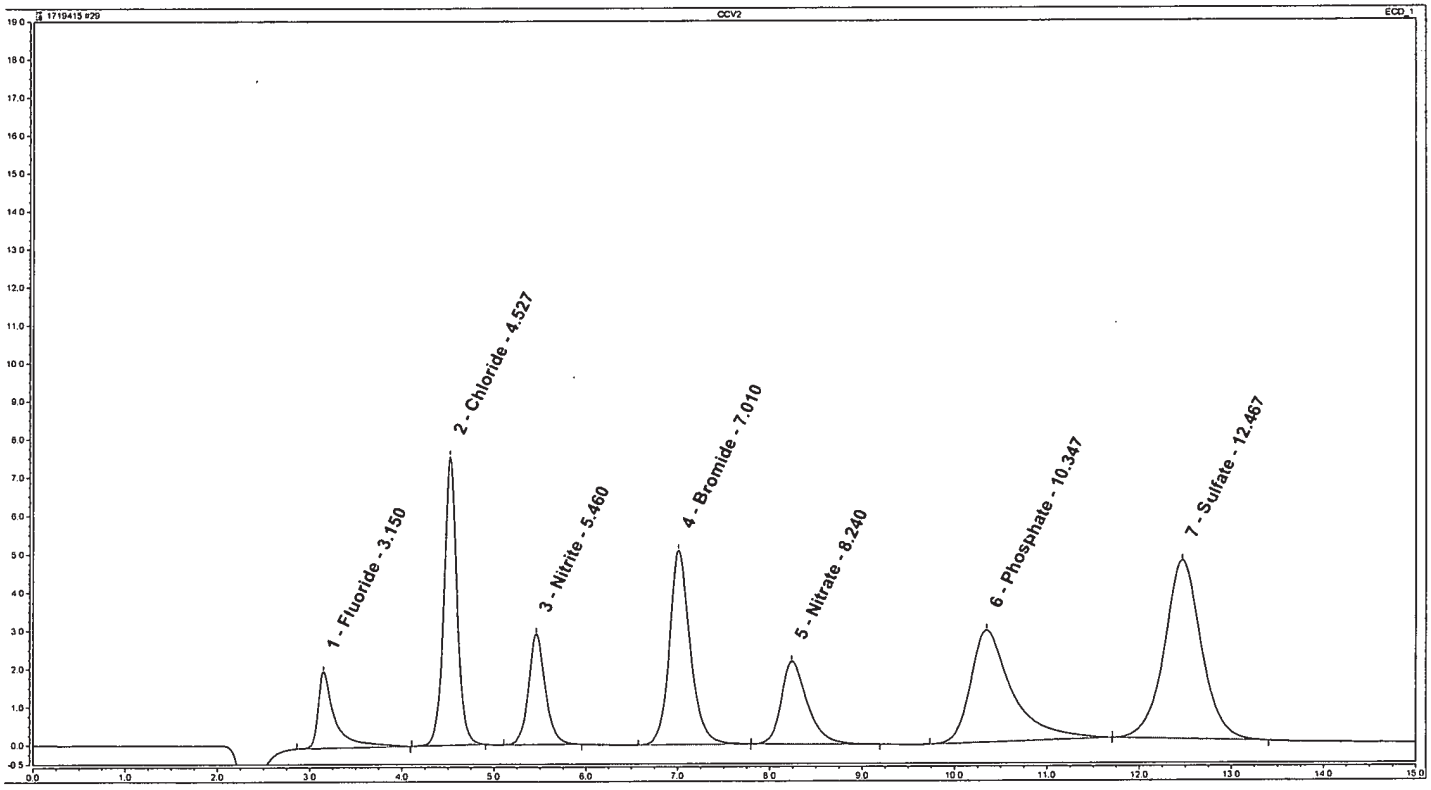
**Date:** Sandra J. Miller
Chemist
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 01:58** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **029** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.433 | 2.016 | 0.7675 |
| 2 | 4.53 | Chloride | M | 1.248 | 7.558 | 2.7456 |
| 3 | 5.46 | Nitrite | M | 0.620 | 2.914 | 0.6782 |
| 4 | 7.01 | Bromide | M | 1.330 | 5.094 | 7.0532 |
| 5 | 8.24 | Nitrate | M | 0.713 | 2.177 | 0.7139 |
| 6 | 10.35 | Phosphate | M | 1.532 | 2.952 | 5.9975 |
| 7 | 12.47 | Sulfate | M | 2.175 | 4.685 | 6.8163 |
| | | TOTAL: | | 8.05 | 27.40 | 24.77 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:** Sandra J. Miller
Chemist

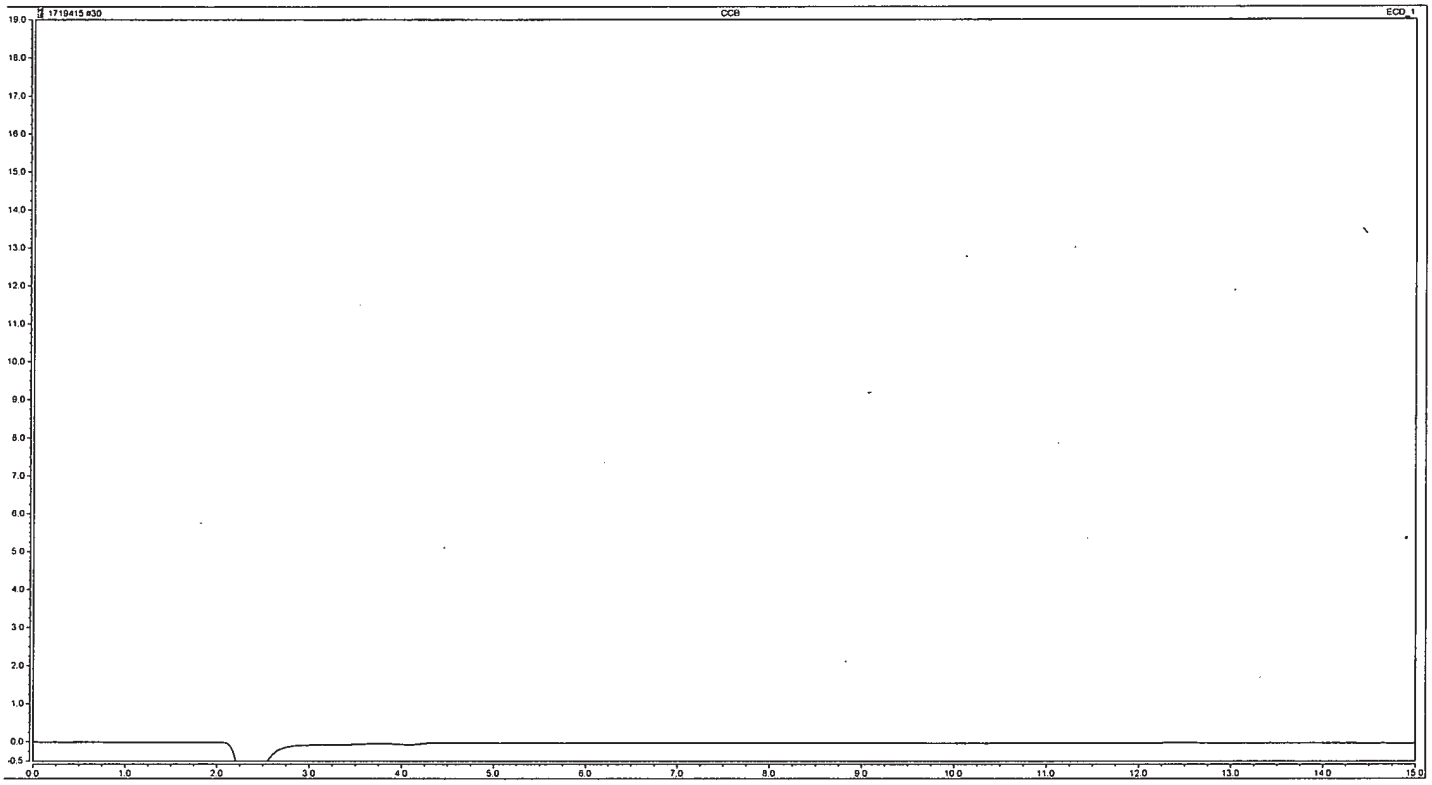
**Date:** JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 02:14** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **030** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:** Sandra J. Miller
Chemist
JUL 17 2017

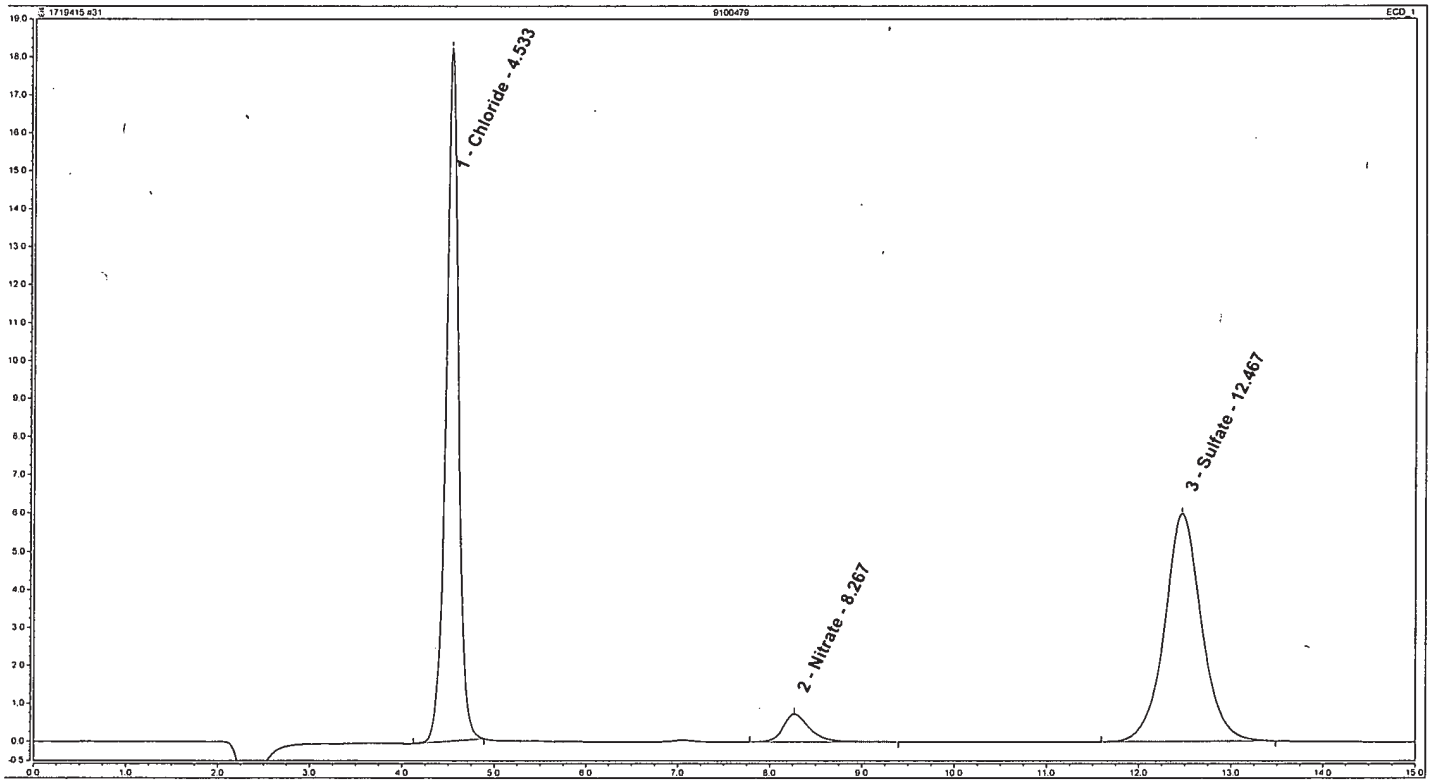
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100479** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 02:30** | *Dilution Factor:* | **50** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **031** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

SO4

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.53 | Chloride | M | 2.886 | 18.238 | 312.8331 |
| 2 | 8.27 | Nitrate | M | 0.249 | 0.740 | 13.6741 |
| 3 | 12.47 | Sulfate | M | 2.779 | 5.972 | 432.7357 |
| | | TOTAL: | | 5.91 | 24.95 | 759.24 |




**Analyst:** JWE 24932

**Verifier:**

**Date:** 7-16-17

**Date:**

Sandra J. Miller
Chemist

JUL 17 2017

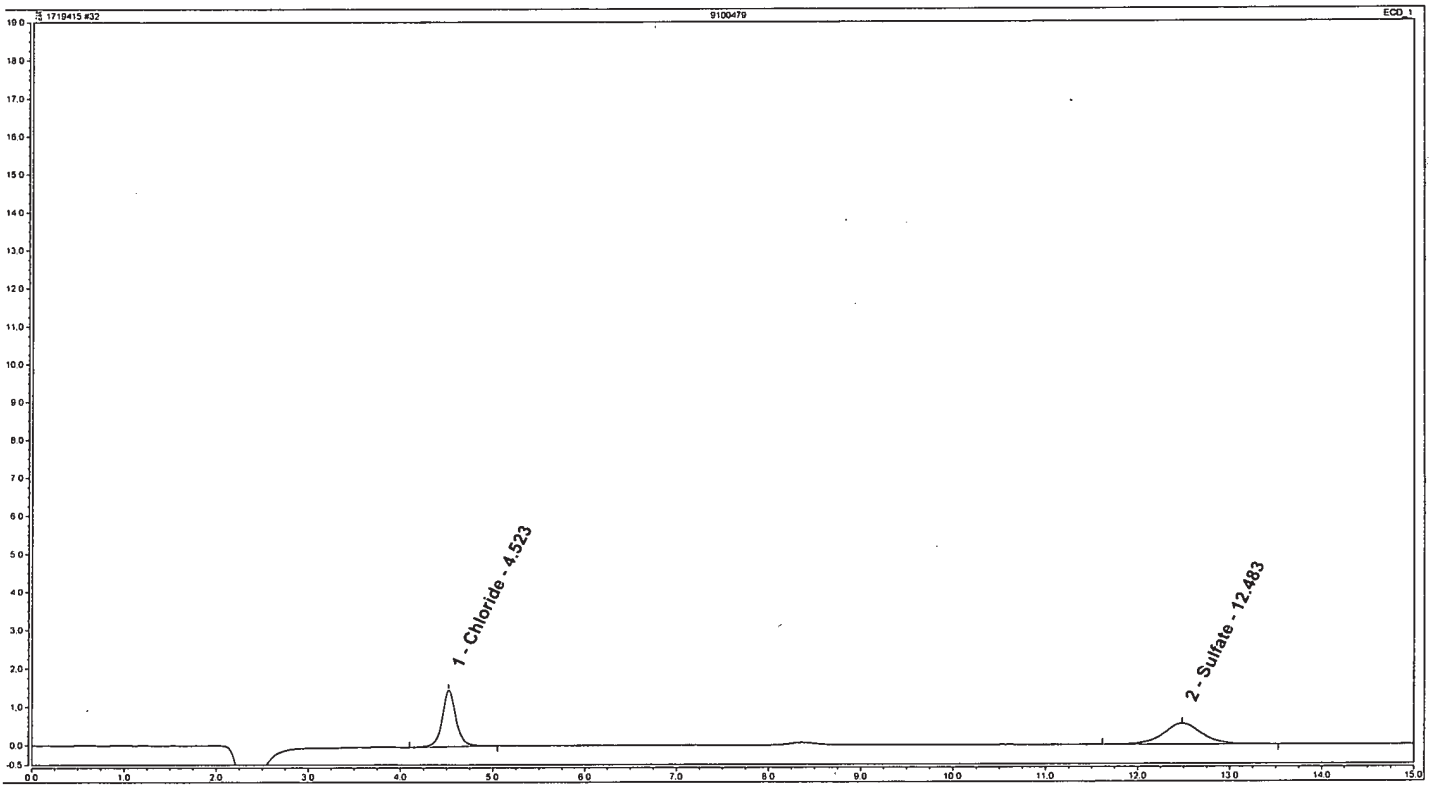
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100479** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 02:46** | *Dilution Factor:* | **500** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **032** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.52 | Chloride | M | 0.261 | 1.481 | 315.3827 |
| 2 | 12.48 | Sulfate | M | 0.261 | 0.544 | 498.6023 |
| | | TOTAL: | | 0.52 | 2.02 | 813.99 |

Cl




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:**

Sandra J. Miller
Chemist

JUL 17 2017

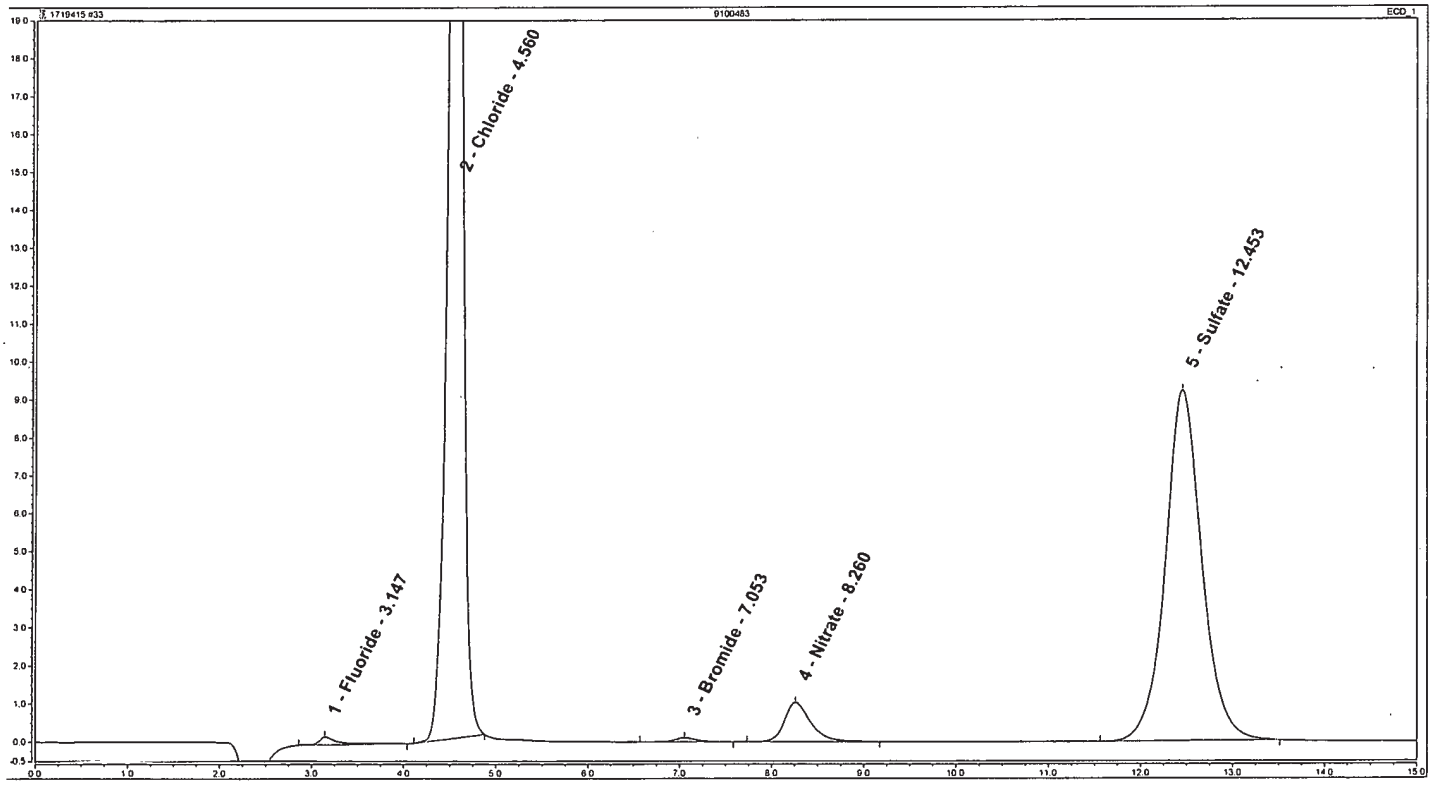
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100483** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 03:03** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **033** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

SO4, Br

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.057 | 0.210 | 0.5168 |
| 2 | 4.56 | Chloride | M | 6.592 | 42.518 | 70.9922 |
| 3 | 7.05 | Bromide | M | 0.028 | 0.103 | 1.7155 |
| 4 | 8.26 | Nitrate | M | 0.342 | 1.035 | 1.8069 |
| 5 | 12.45 | Sulfate | M | 4.240 | 9.215 | 65.4769 |
| | | TOTAL: | | 11.26 | 53.08 | 140.51 |




**Analyst:** ZWE 24932

**Date:** 7/17

**Verifier:**

Sandra J. Miller
Chemist

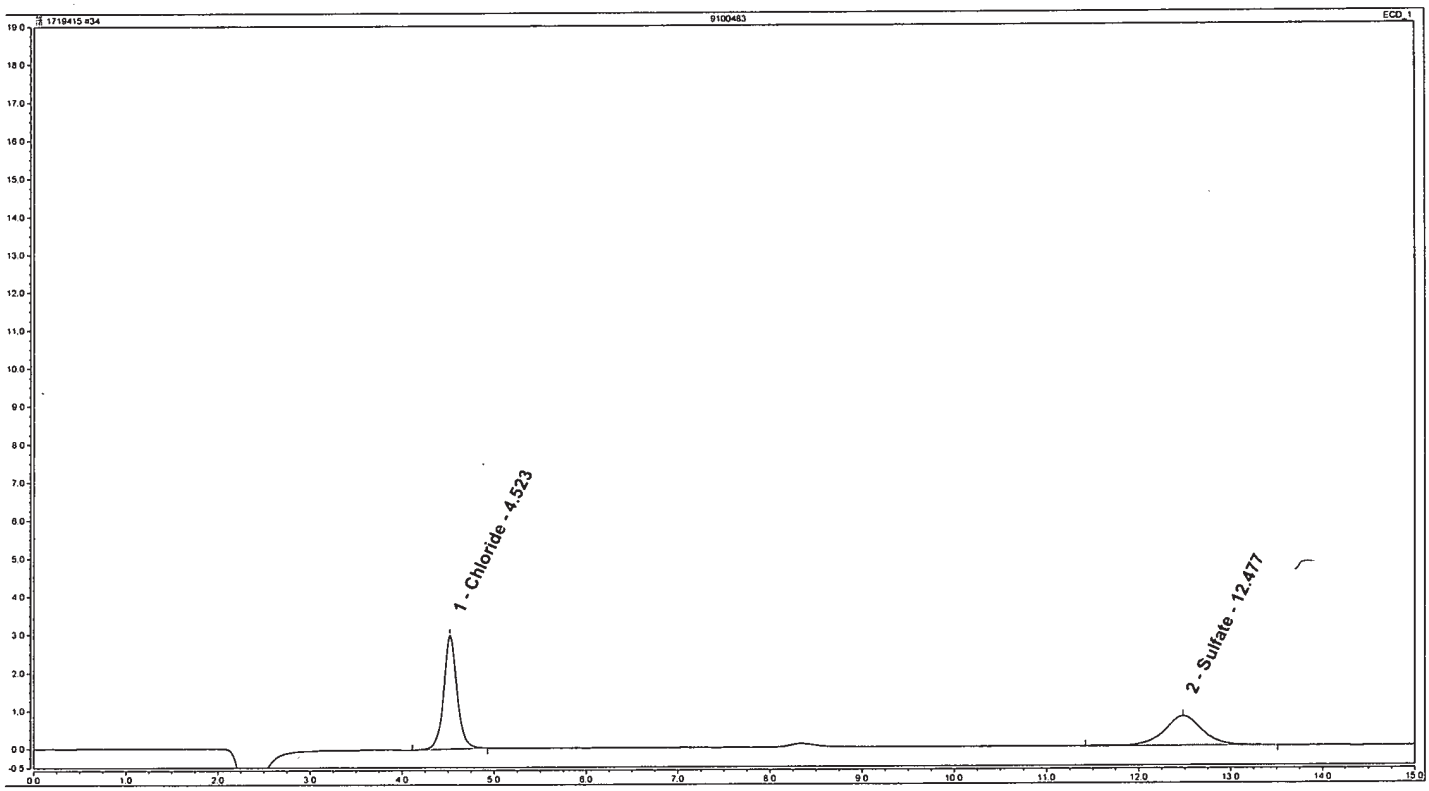
**Date:** JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100483** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 03:19** | *Dilution Factor:* | **50** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **034** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.52 | Chloride | M | 0.510 | 3.009 | 58.2599 |
| 2 | 12.48 | Sulfate | M | 0.369 | 0.770 | 66.2480 |
| | | TOTAL: | | 0.88 | 3.78 | 124.51 |




Analyst: ZWE 24932

Verifier:

Date: 7-18-17

Date:

Sandra J. Miller
Chemist

JUL 17 2017

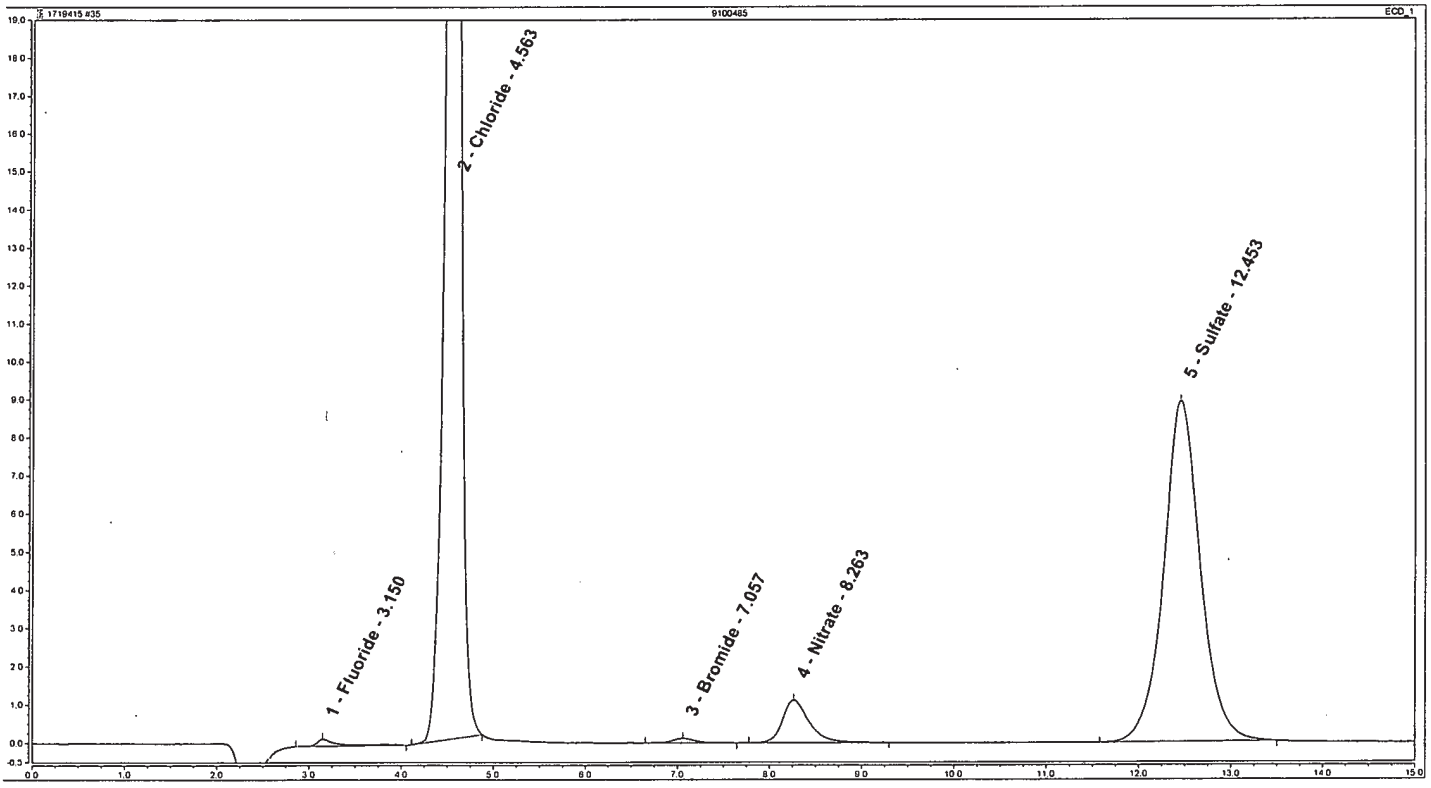
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100485** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 03:35** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **035** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

SO4, Br

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.054 | 0.184 | 0.4869 |
| 2 | 4.56 | Chloride | M | 7.625 | 48.895 | 82.0602 |
| 3 | 7.06 | Bromide | M | 0.031 | 0.117 | 1.8008 |
| 4 | 8.26 | Nitrate | M | 0.372 | 1.119 | 1.9493 |
| 5 | 12.45 | Sulfate | M | 4.123 | 8.935 | 63.7038 |
| | | TOTAL: | | 12.20 | 59.25 | 150.00 |




**Analyst:** ZWC 24932

**Date:** 7-16-17

**Verifier:**

**Date:** Sandra J. Miller
Chemist
JUL 17 2017

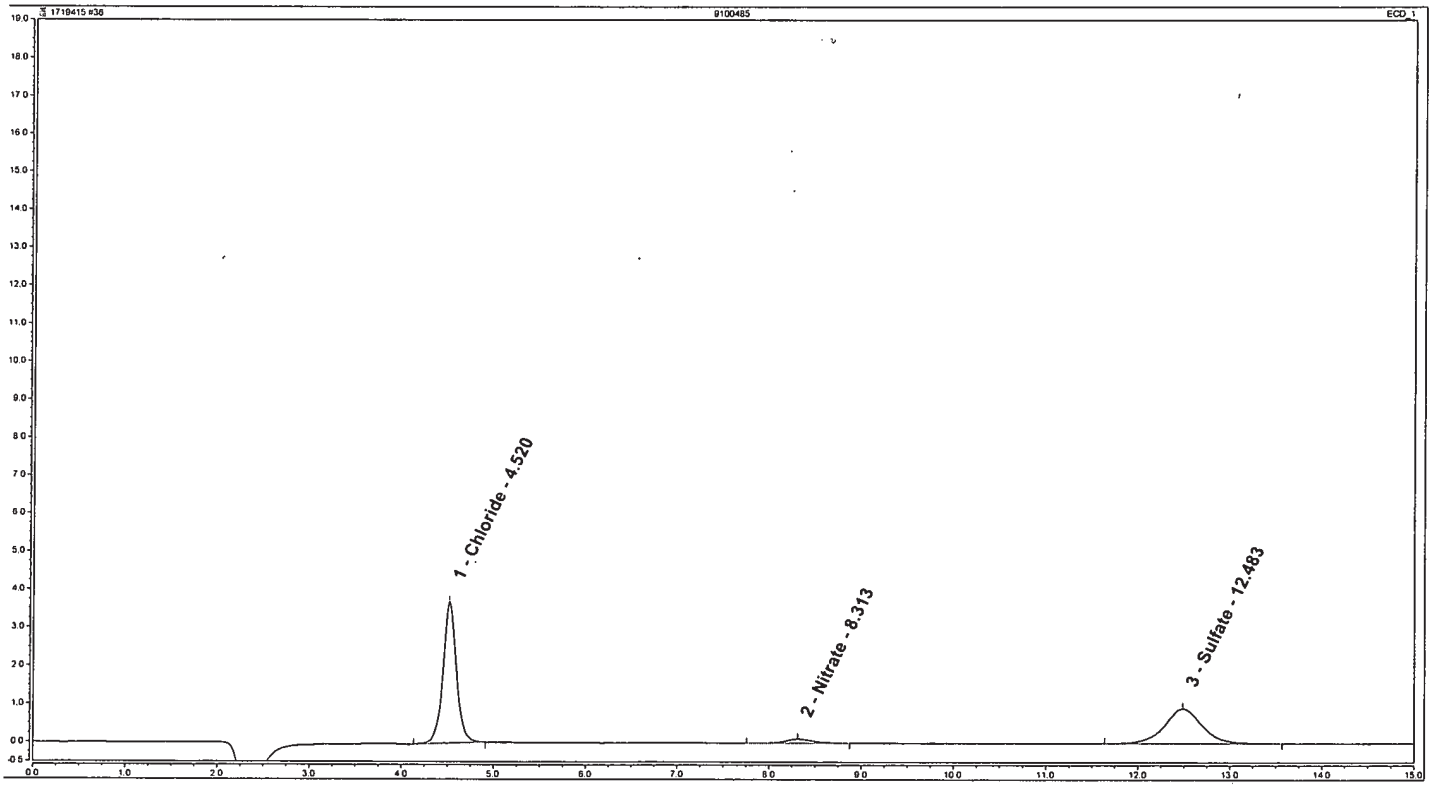
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100485** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 03:51** | *Dilution Factor:* | **50** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **036** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

Cl

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.52 | Chloride | M | 0.622 | 3.702 | 70.2193 |
| 2 | 8.31 | Nitrate | M | 0.036 | 0.106 | 3.5489 |
| 3 | 12.48 | Sulfate | M | 0.431 | 0.903 | 75.6385 |
| | | TOTAL: | | 1.09 | 4.71 | 149.41 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:** Sandra J. Miller

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Chemist

JUL 17 2017

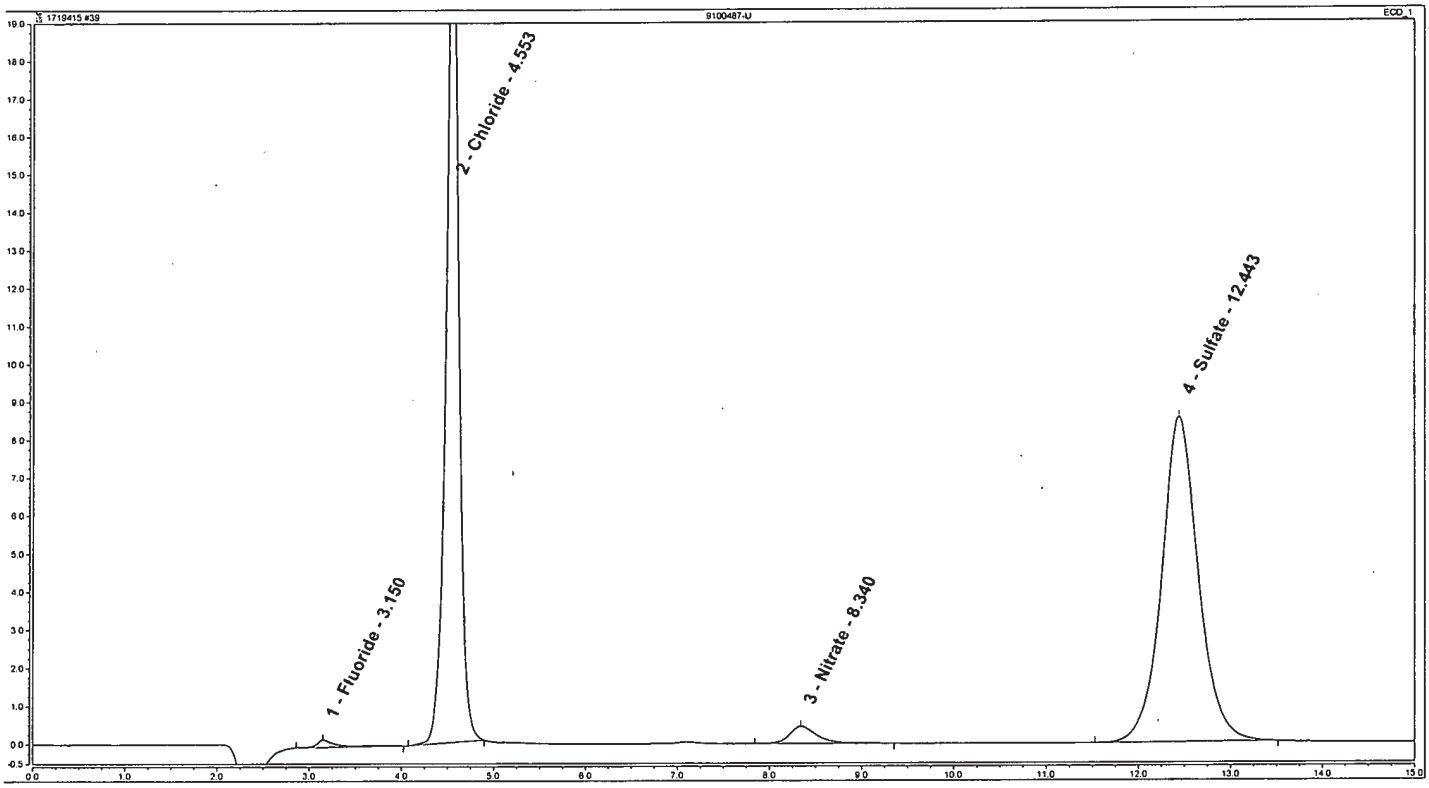
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100487-U** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 04:40** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **039** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

$SO_4$, Br, $NO_3$

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.052 | 0.193 | 0.4713 |
| 2 | 4.55 | Chloride | M | 3.585 | 22.822 | 38.7698 |
| 3 | 8.34 | Nitrate | M | 0.154 | 0.453 | 0.9157 |
| 4 | 12.44 | Sulfate | M | 3.960 | 8.558 | 61.2204 |
| | | TOTAL: | | 7.75 | 32.03 | 101.38 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:** Sandra J. Miller

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JUL 17 2017

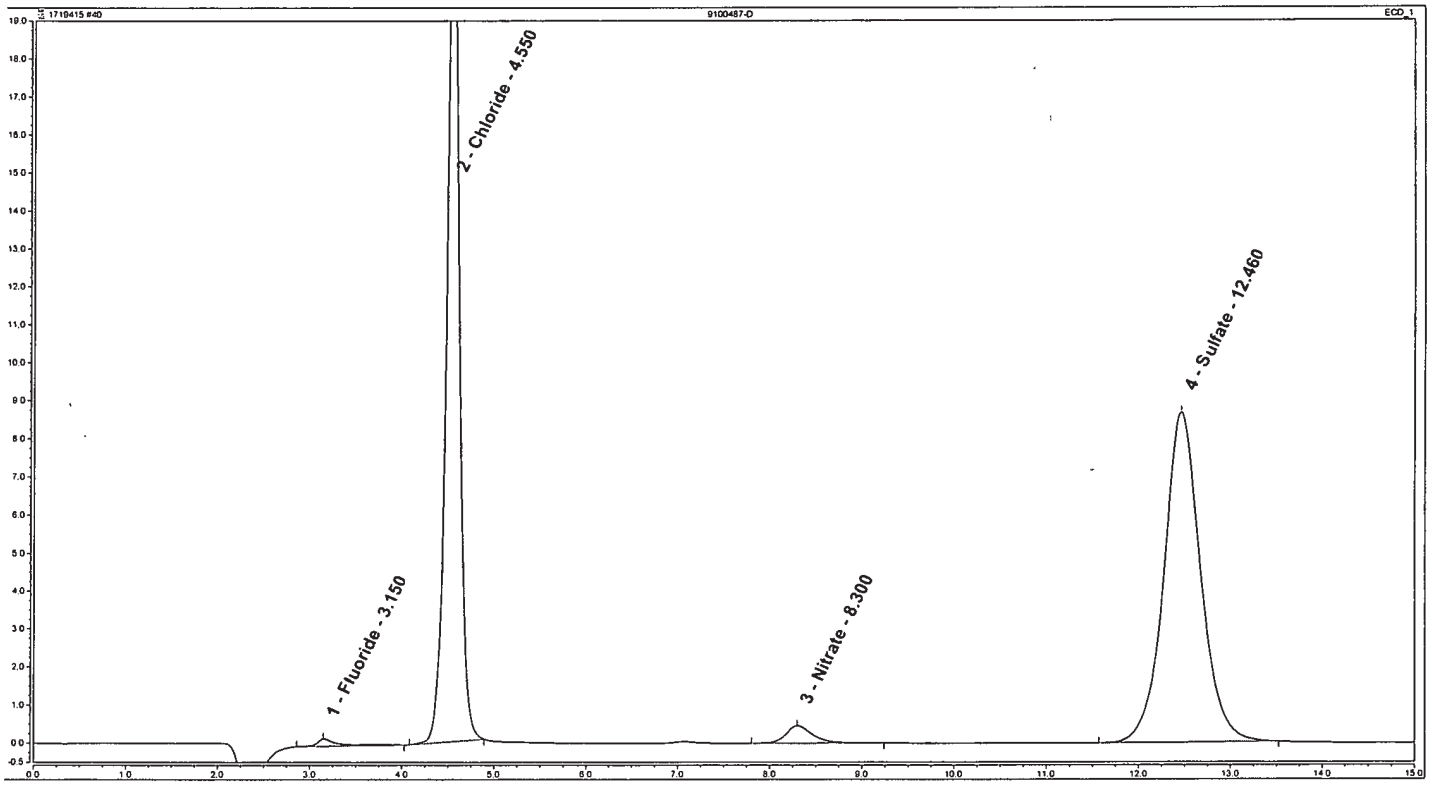
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100487-D** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 04:56** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **040** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

$SO_4$, Br, $NO_3$

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.054 | 0.197 | 0.4870 |
| 2 | 4.55 | Chloride | M | 3.619 | 23.163 | 39.1372 |
| 3 | 8.30 | Nitrate | M | 0.153 | 0.459 | 0.9129 |
| 4 | 12.46 | Sulfate | M | 3.998 | 8.670 | 61.8049 |
| | | TOTAL: | | 7.82 | 32.49 | 102.34 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

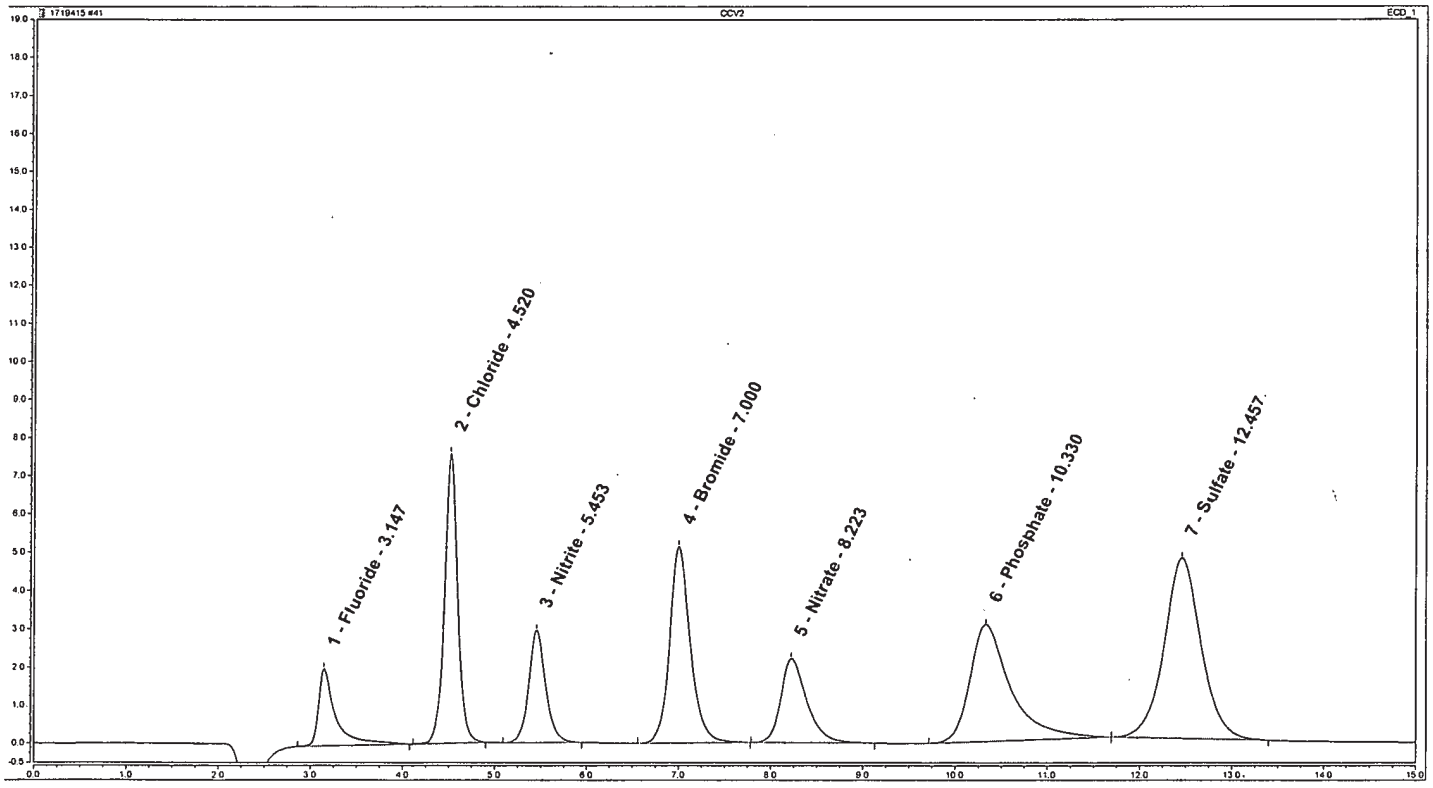
**Date:** Sandra J. Miller
Chemist
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 05:12** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **041** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.434 | 2.025 | 0.7697 |
| 2 | 4.52 | Chloride | M | 1.250 | 7.600 | 2.7509 |
| 3 | 5.45 | Nitrite | M | 0.628 | 2.948 | 0.6858 |
| 4 | 7.00 | Bromide | M | 1.343 | 5.147 | 7.1184 |
| 5 | 8.22 | Nitrate | M | 0.719 | 2.204 | 0.7203 |
| 6 | 10.33 | Phosphate | M | 1.565 | 3.051 | 6.0913 |
| 7 | 12.46 | Sulfate | M | 2.185 | 4.718 | 6.8482 |
| | | TOTAL: | | 8.12 | 27.69 | 24.98 |




**Analyst:** ZWE ZW932

**Date:** 7/16/17

**Verifier:**

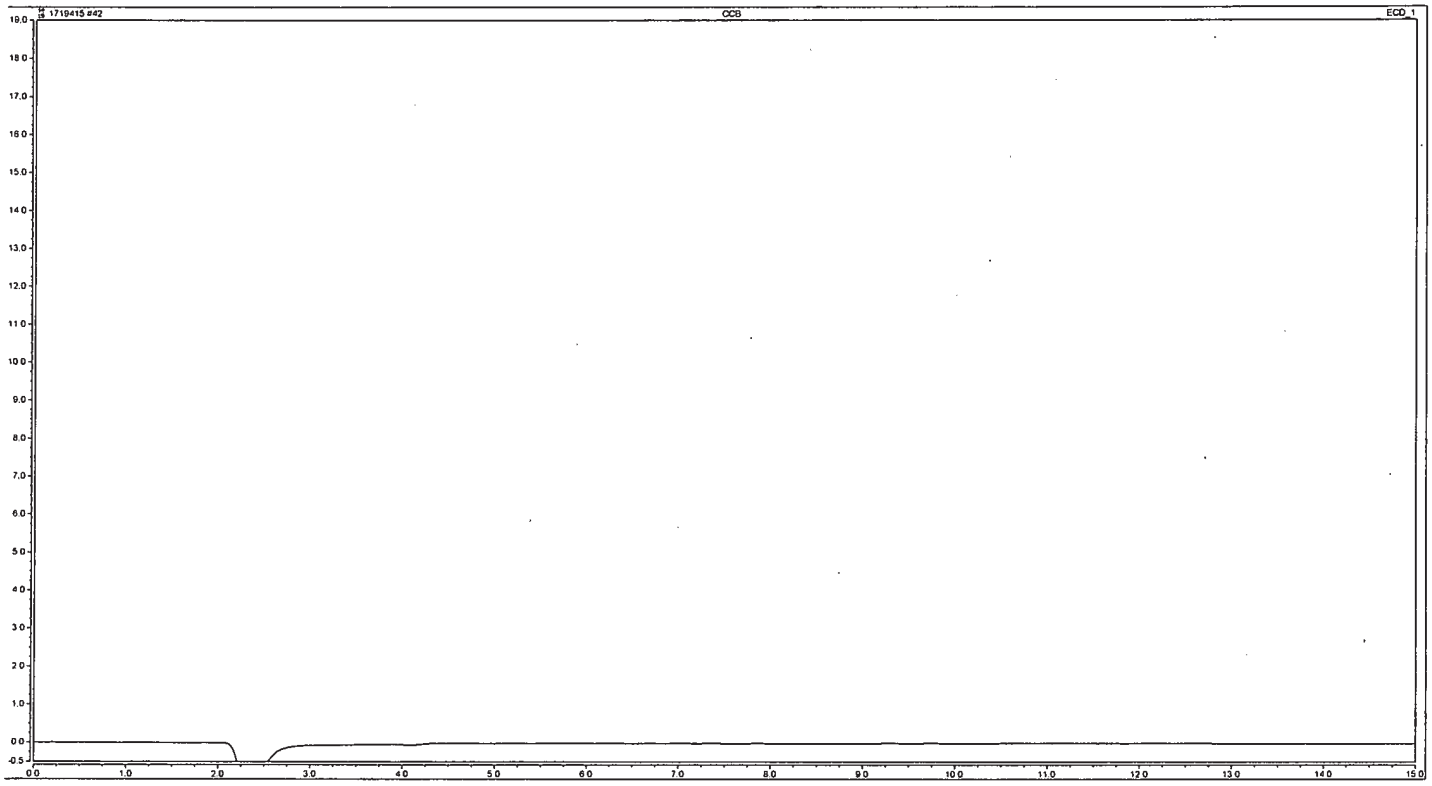
**Date:** Sandra J. Miller
Chemist
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 05:28** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **042** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

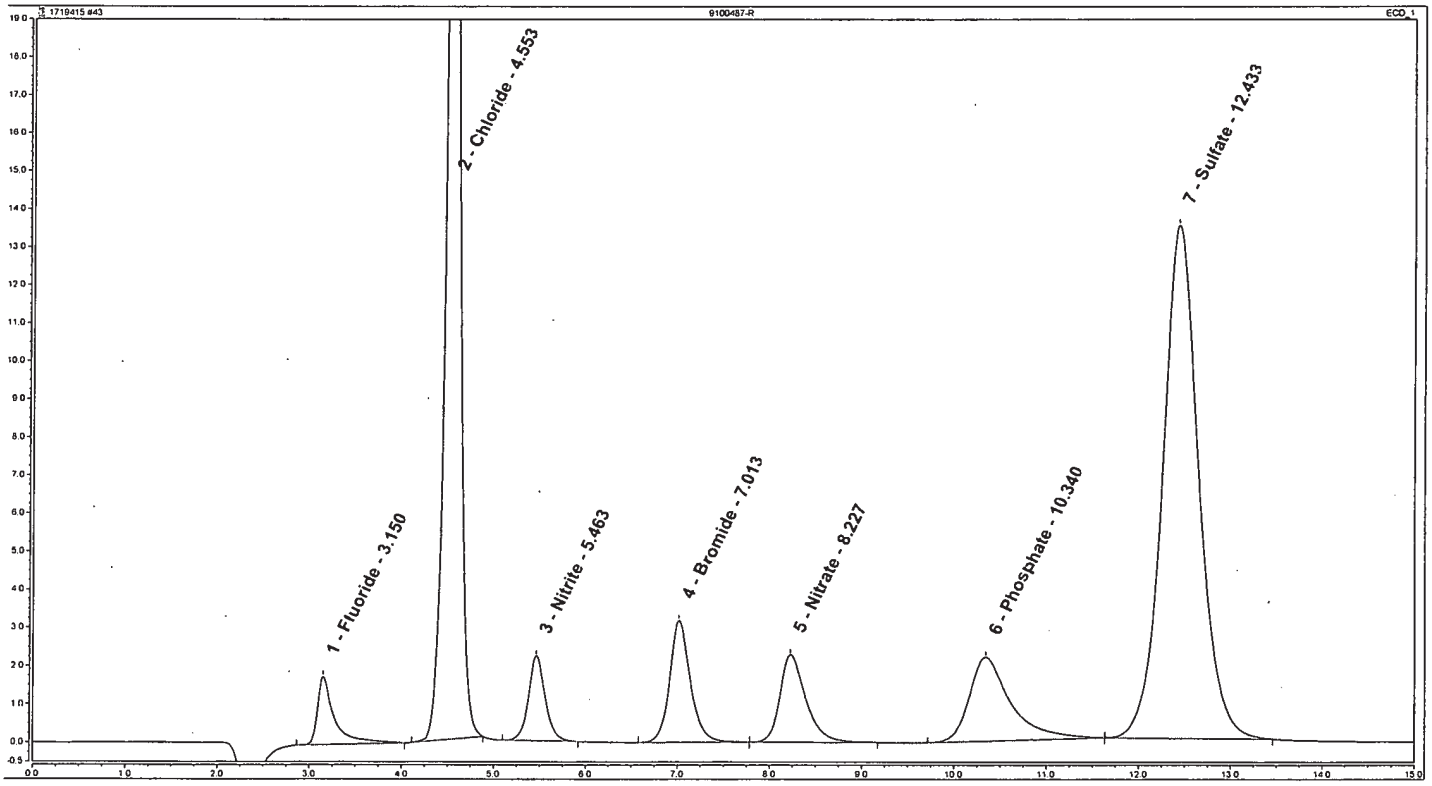
**Date:** Sandra J. Miller
Chemist
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100487-R** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 05:45** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **043** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.381 | 1.775 | 3.3754 |
| 2 | 4.55 | Chloride | M | 5.318 | 34.061 | 57.3417 |
| 3 | 5.46 | Nitrite | M | 0.465 | 2.219 | 2.5873 |
| 4 | 7.01 | Bromide | M | 0.832 | 3.181 | 22.4437 |
| 5 | 8.23 | Nitrate | M | 0.744 | 2.287 | 3.7180 |
| 6 | 10.34 | Phosphate | M | 1.136 | 2.184 | 24.1878 |
| 7 | 12.43 | Sulfate | M | 6.100 | 13.446 | 93.7579 |
| | | TOTAL: | | 14.98 | 59.15 | 207.41 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:** Sandra J. Miller
Chemist

JUL 17 2017

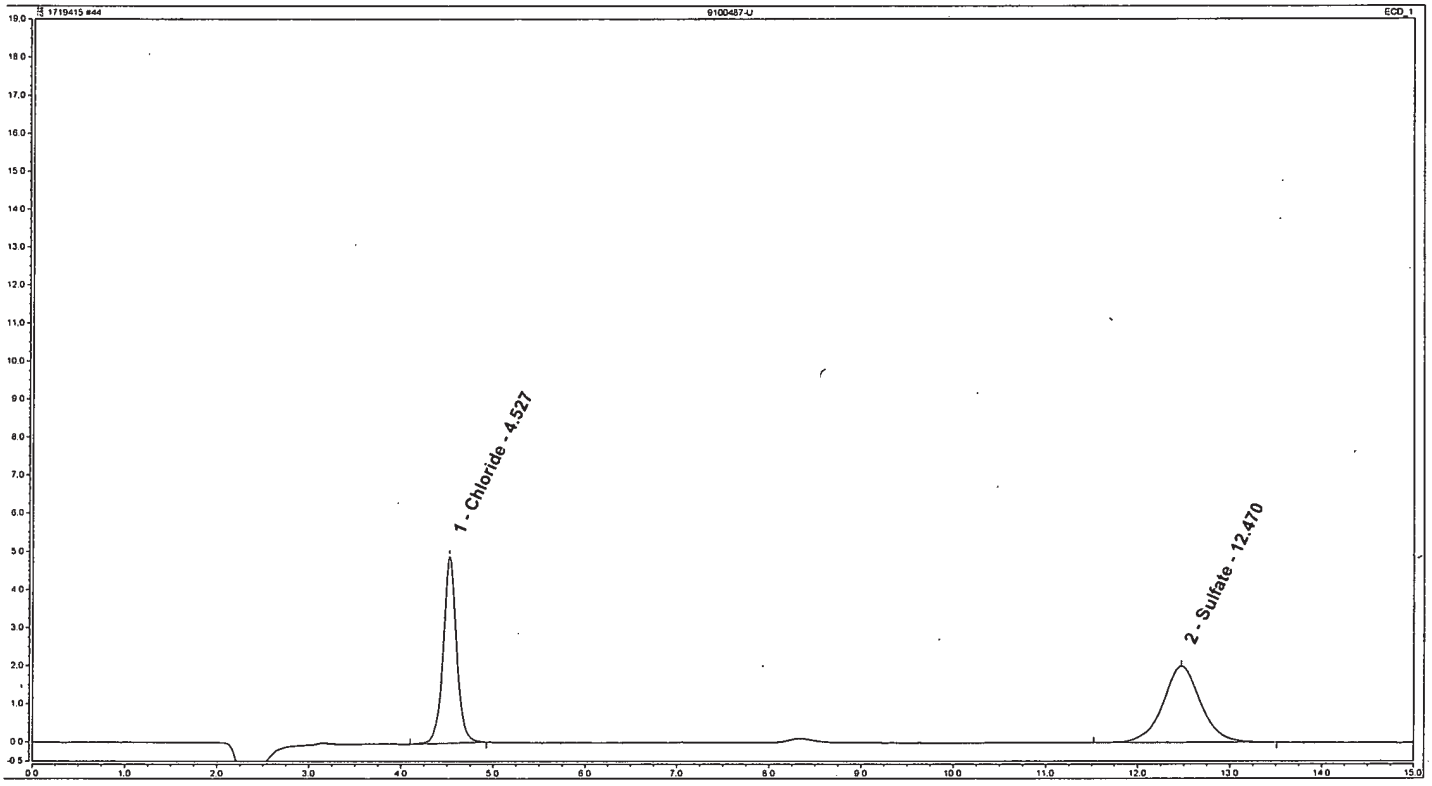
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100487-U** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 06:01** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **044** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.53 | Chloride | M | 0.820 | 4.906 | 36.5699 |
| 2 | 12.47 | Sulfate | M | 0.950 | 2.000 | 61.8547 |
| | | TOTAL: | | 1.77 | 6.91 | 98.42 |

CI




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:** Sandra J. Miller
Chemist
JUL 17 2017

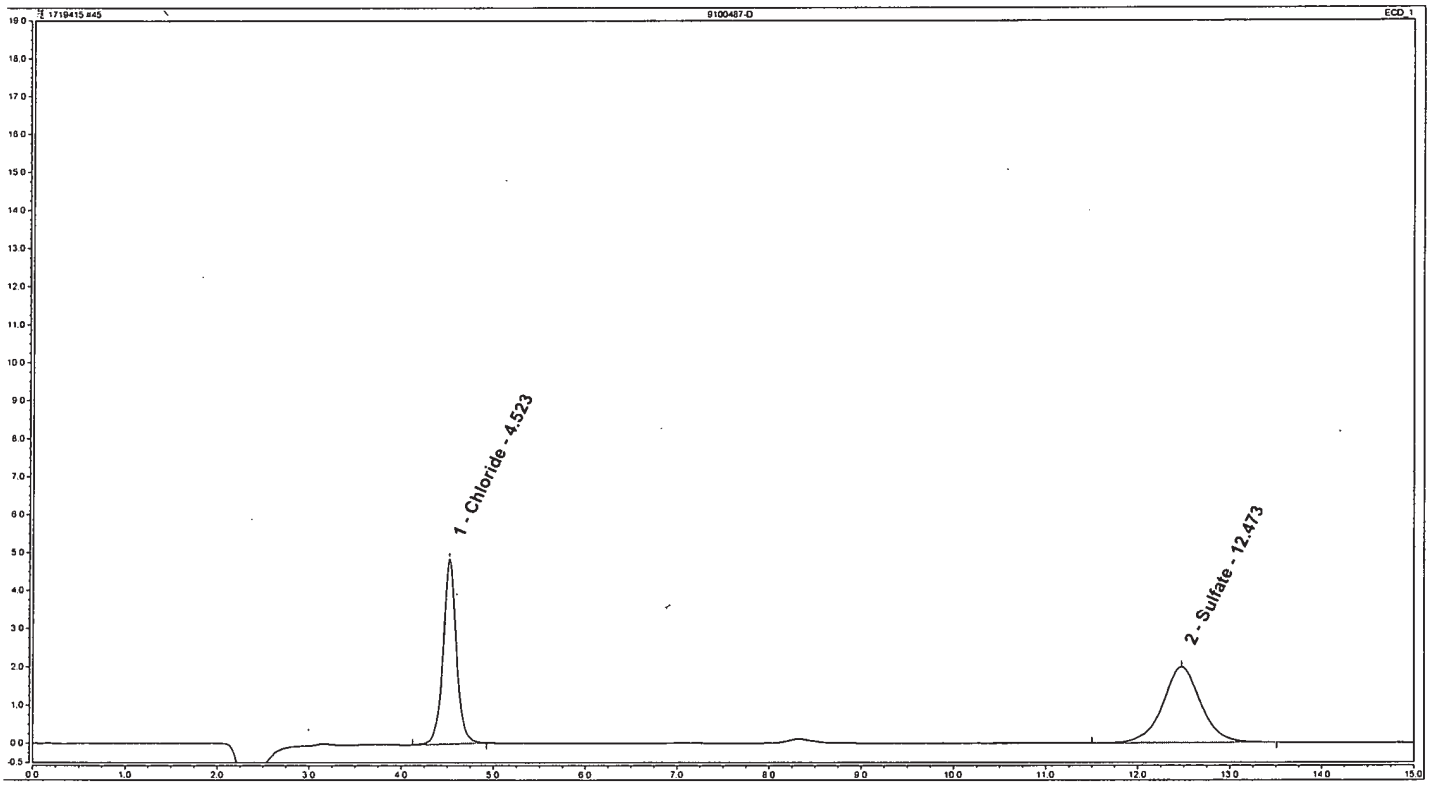
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100487-D** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 06:17** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **045** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

Cl

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.52 | Chloride | M | 0.812 | 4.868 | 36.2302 |
| 2 | 12.47 | Sulfate | M | 0.944 | 1.979 | 61.4743 |
| | | TOTAL: | | 1.76 | 6.85 | 97.70 |




Analyst: ZWE 24932

Verifier:

Date: 7-16-17

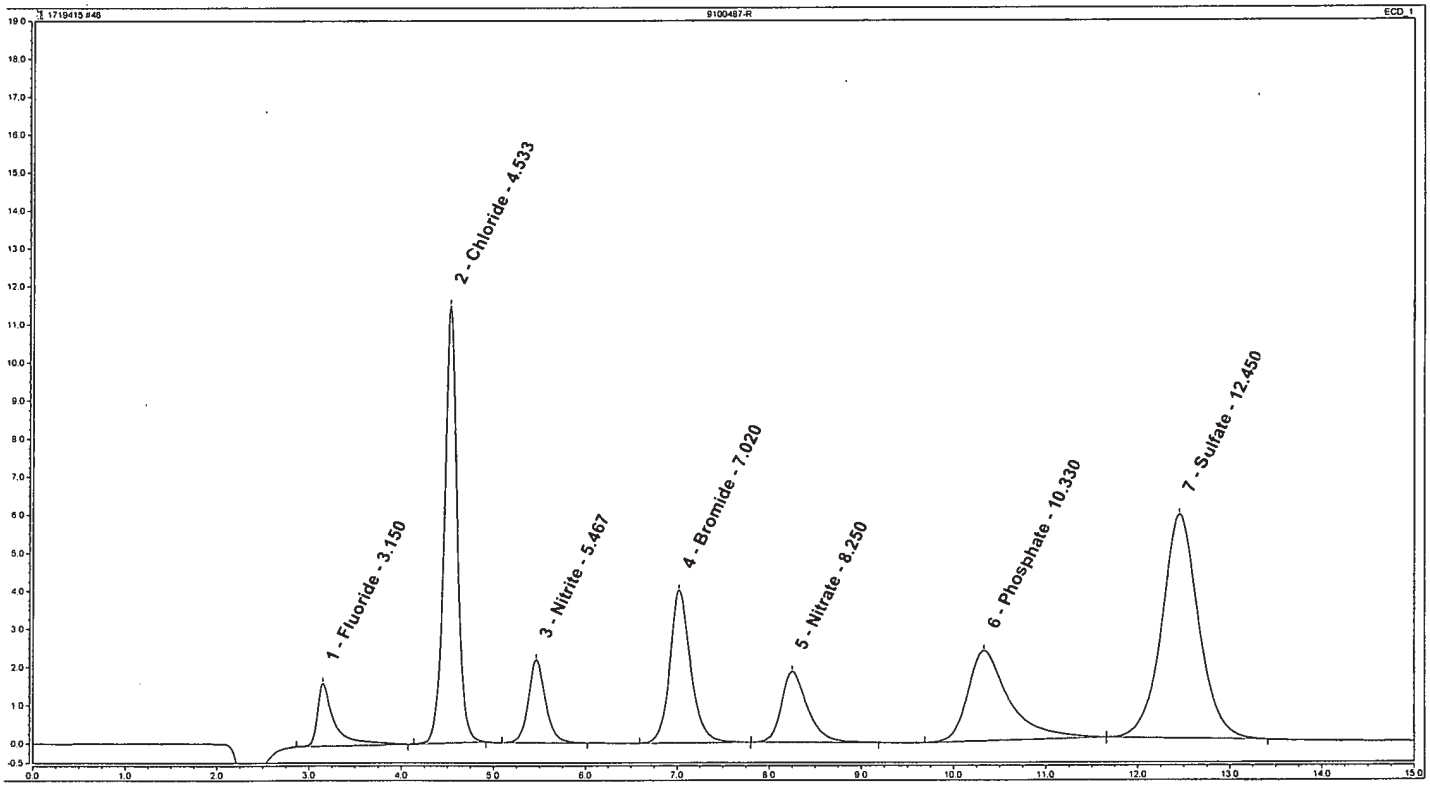
Date: Sandra J. Miller
Chemist
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100487-R** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 06:33** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **046** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.356 | 1.645 | 12.6210 |
| 2 | 4.53 | Chloride | M | 1.862 | 11.484 | 81.2593 |
| 3 | 5.47 | Nitrite | M | 0.463 | 2.173 | 10.3107 |
| 4 | 7.02 | Bromide | M | 1.054 | 4.023 | 112.5999 |
| 5 | 8.25 | Nitrate | M | 0.606 | 1.854 | 12.2590 |
| 6 | 10.33 | Phosphate | M | 1.222 | 2.371 | 101.7597 |
| 7 | 12.45 | Sulfate | M | 2.726 | 5.896 | 169.8762 |
| | | TOTAL: | | 8.29 | 29.45 | 500.69 |




Analyst: ZWE 24432

Date: 7-16-17

Verifier: Sandra J. Miller

Sandra J. Miller
Chemist

Date: JUL 17 2017

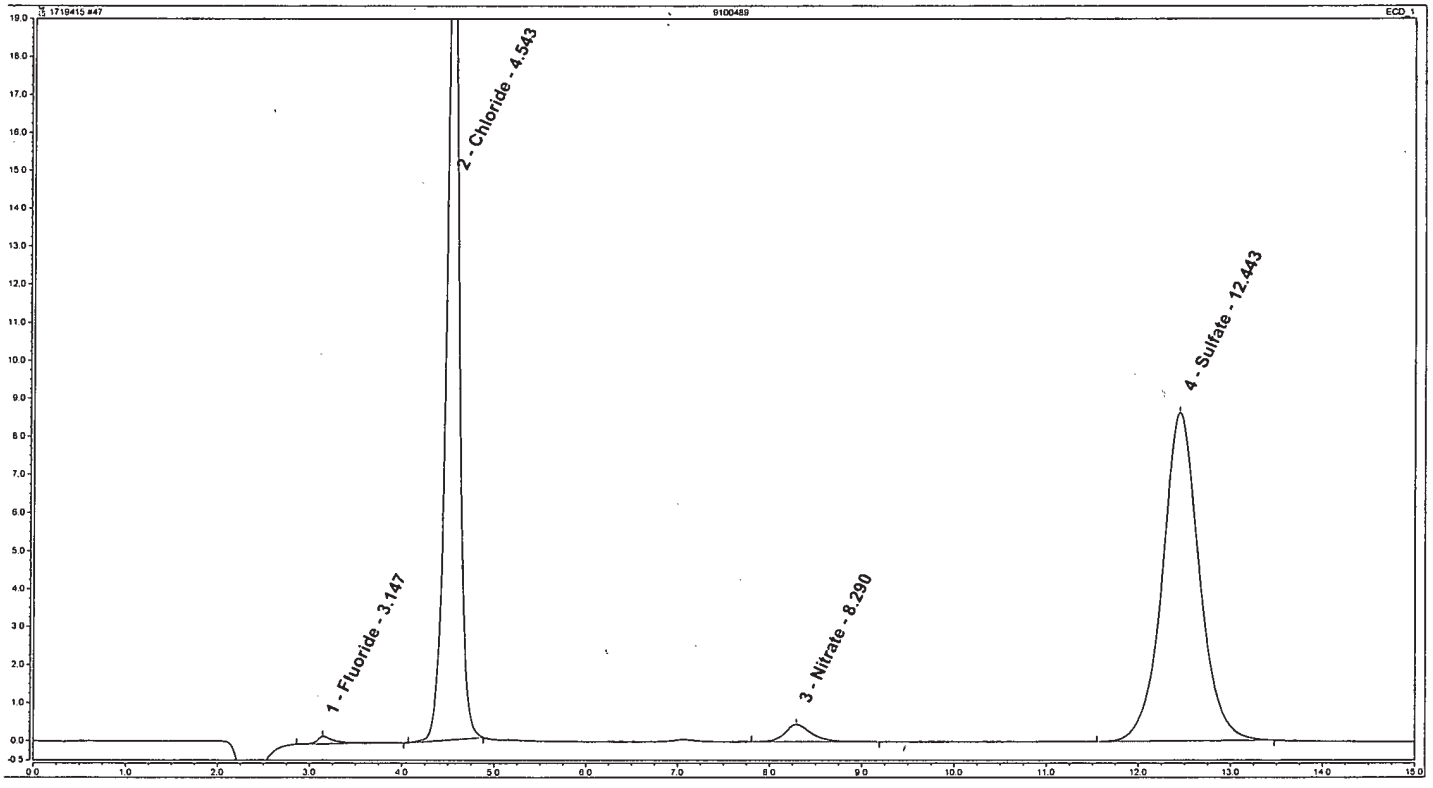
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100489** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 06:49** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **047** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.053 | 0.201 | 0.4847 |
| 2 | 4.54 | Chloride | M | 3.579 | 22.886 | 38.7067 |
| 3 | 8.29 | Nitrate | M | 0.152 | 0.453 | 0.9070 |
| 4 | 12.44 | Sulfate | M | 3.981 | 8.625 | 61.5393 |
| | | TOTAL: | | 7.77 | 32.16 | 101.64 |

$SO_4$, Br




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:** Sandra J. Miller

Sandra J. Miller
Chemist

JUL 17 2017

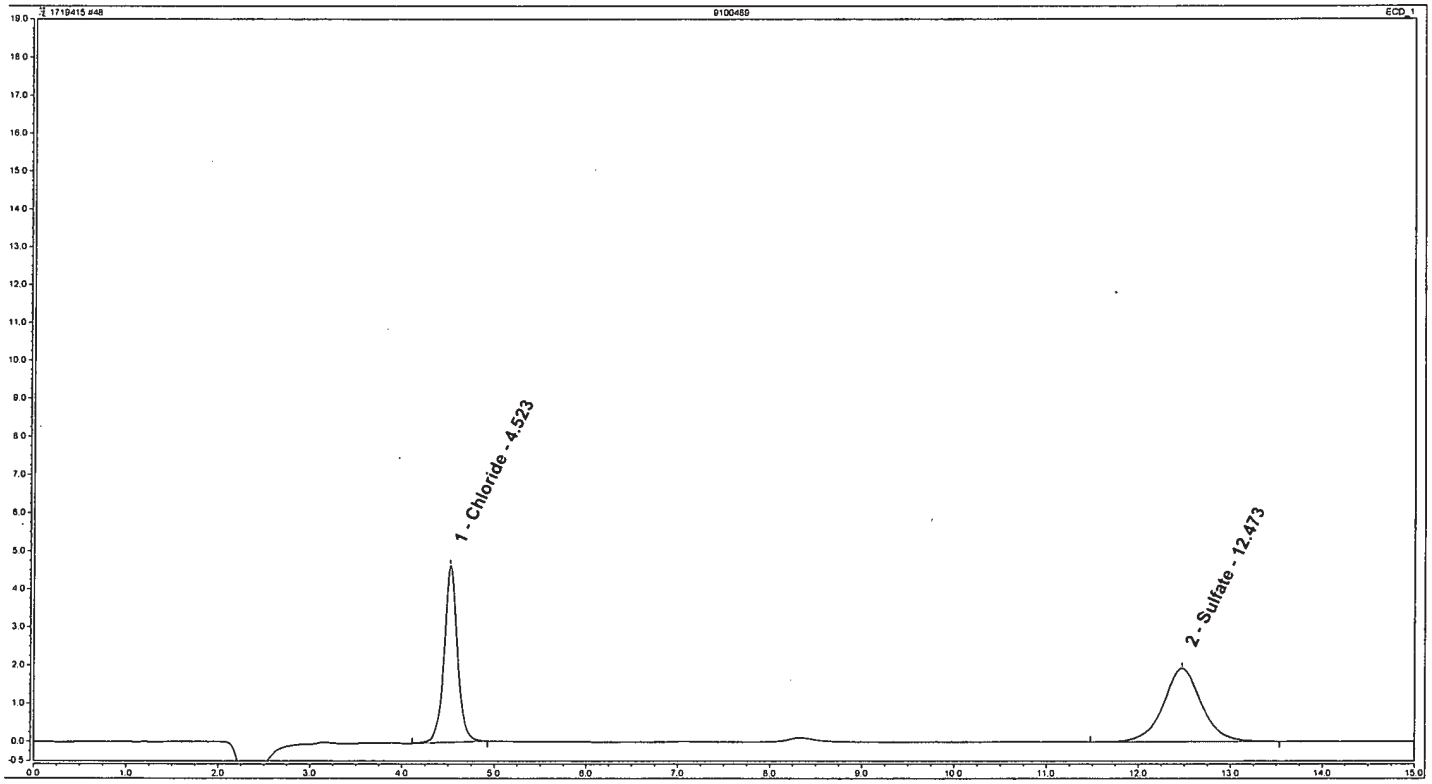
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9100489** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17194249115B-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 07:06** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **048** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

Cl

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.52 | Chloride | M | 0.777 | 4.656 | 34.7459 |
| 2 | 12.47 | Sulfate | M | 0.916 | 1.921 | 59.7492 |
| | | TOTAL: | | 1.69 | 6.58 | 94.50 |




**Analyst:** ZWE 24932

**Date:** 7-16-17

**Verifier:**

**Date:**

Sandra J. Miller
Chemist

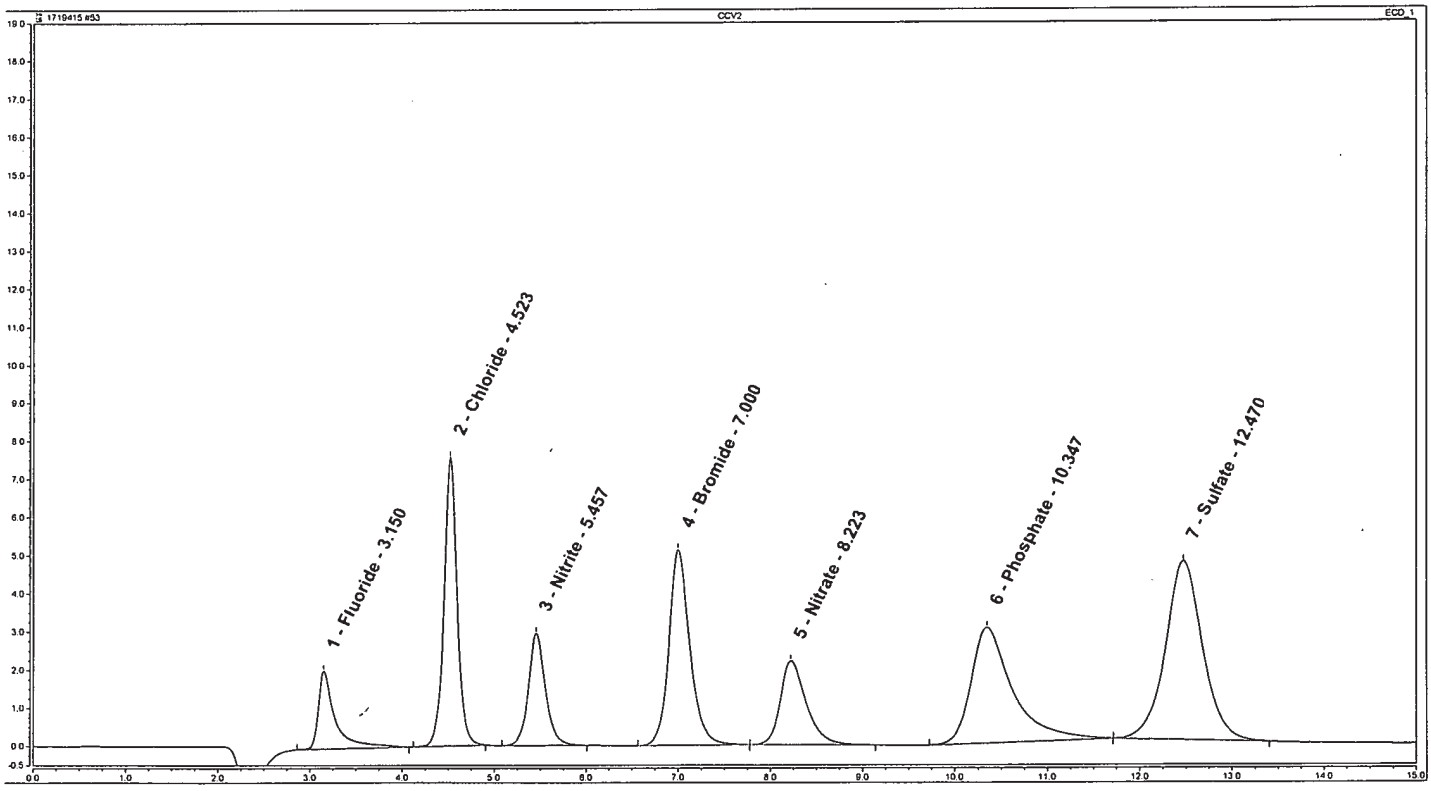
JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 08:27** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **053** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.436 | 2.046 | 0.7734 |
| 2 | 4.52 | Chloride | M | 1.251 | 7.583 | 2.7529 |
| 3 | 5.46 | Nitrite | M | 0.628 | 2.937 | 0.6859 |
| 4 | 7.00 | Bromide | M | 1.340 | 5.137 | 7.1033 |
| 5 | 8.22 | Nitrate | M | 0.715 | 2.196 | 0.7164 |
| 6 | 10.35 | Phosphate | M | 1.564 | 3.019 | 6.0908 |
| 7 | 12.47 | Sulfate | M | 2.177 | 4.687 | 6.8231 |
| | | TOTAL: | | 8.11 | 27.61 | 24.95 |




Analyst: ZWE 24932

Date: 7-16-17

Verifier:

Sandra J. Miller
Chemist

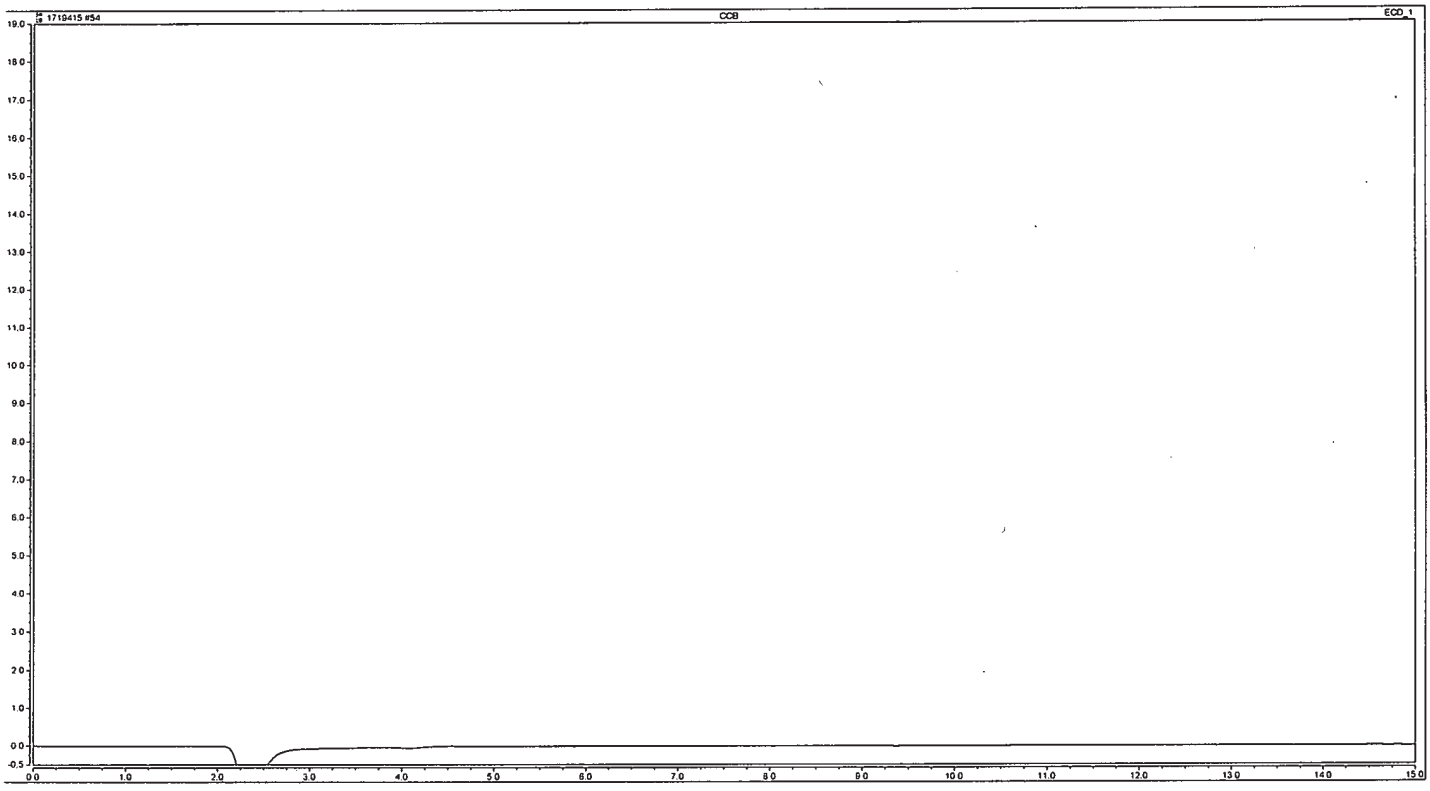
Date: JUL 17 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/14/2017 / 08:43** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **054** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1719415** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** ZWE 24932

**Date:** 7/6/17

**Verifier:**

**Date:**

Sandra J. Miller
Chemist

JUL 17 2017

# Wet Chemistry Data

# Case Narrative/Conformance Summary

# Wet Chemistry

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## Water Quality

**Fraction: Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9100479 | GW009-173 | X | | 1 | |
| 9100483 | GW235-463-173 | X | | 1 | |
| 9100485 | GW235-492-173 | X | | 1 | |
| 9100487 | GW235-521-173 | X | | 1 | |
| 9100489 | GW235-521-573 | X | | 1 | Field Duplicate Sample |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

## Water Quality

**Fraction: Wet Chemistry**

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# QC Summary

# Wet Chemistry

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# Quality Control Reference List
## Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR186**

**Fraction: Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Bicarbonate Alkalinity | Carbonate Alkalinity | Total Alkalinity to pH 4.5 |
|---|---|---|---|---|---|
| 17195002202A | 9100479 | 07/14/2017 13:05:00 | X | X | X |
| | 9100483 | 07/14/2017 12:52:00 | X | X | X |
| | 9100485 | 07/14/2017 12:59:00 | X | X | X |
| | 9100487 | 07/14/2017 13:49:00 | X | X | X |
| | 9100489 | 07/14/2017 12:46:00 | X | X | X |
| | P002202B | 07/14/2017 11:26:00 | | | X |
| | P002202Q | 07/14/2017 11:33:00 | | | X |

**Quality Control Summary**
**Method Blank**
**Water Quality**
**SDG: KR186**
**Matrix: LIQUID**

**Fraction: Wet Chemistry**

| 17195002202A / P002202B Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | TI | 07/14/17 | N.D. | mg/l as CaCO3 | 1.7 | 5.0 | 5.0 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR186**
**Matrix: LIQUID**

## Water Quality
**Fraction: Wet Chemistry**

| LCS: P002202Q | Batch: **17195002202A** (Sample number(s): 9100479, 9100483, 9100485, 9100487, 9100489 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l as CaCO3** | **LCS Conc mg/l as CaCO3** | **LCSD Conc mg/l as CaCO3** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Alkalinity to pH 4.5 | TI | 188 | 189.16 | NA | 101 | NA | 77-114 | NA | NA |

# Raw Data

# Wet Chemistry

**Fraction: Wet Chemistry**

| 12149: Bicarbonate Alkalinity<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bicarbonate Alkalinity | 1.7 | 5.0 | 5.0 | mg/l as CaCO3 |

| 12148: Carbonate Alkalinity<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Carbonate Alkalinity | 1.7 | 5.0 | 5.0 | mg/l as CaCO3 |

| 12150: Total Alkalinity to pH 4.5<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | 1.7 | 5 | 5.0 | mg/l as CaCO3 |

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# Water Quality Run Report

**Run Name: 20170714-22** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Analysis Name | Units |
|---|---|
| Bicarbonate | mg/l as CaCO3 |
| Carbonate | mg/l as CaCO3 |
| Phenolphthalein Alkalinity | mg/l as CaCO3 |
| Temperature of pH | Degrees C |
| Total Alkalinity | mg/l as CaCO3 |
| pH | Std. Units |

| Analysis Name | QC Check | True Value | Acceptance Range |
|---|---|---|---|
| pH | CCVPH2 | 7.00 | 6.27 - 7.73 |
| pH | CCVPH8 | 8.00 | 7.20 - 8.80 |

| Analysis Name | QC Check | Acceptance Range |
|---|---|---|
| Total Alkalinity | CCB | < 5.00 |
| Total Alkalinity | PBW | < 5.00 |

| Analysis Name | LCS | True Value | Acceptance Range | Lot Information |
|---|---|---|---|---|
| Total Alkalinity | LCSAK | 188.00 | 144.76 - 214.32 | 258197P15 |
| pH | LCSPH | 7.00 | 6.62 - 7.38 | G053-09 |

# Water Quality Run Report

**Run Name: 20170714-22** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **Tap** | **107434** | | | 1.00 | 07/14/2017 | 9:27 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 257.70 | 257.70 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.95 | 7.95 | | | | |
| Total Alkalinity | 257.70 | 257.70 | | | | |
| Temperature of pH | 23.31 | 23.31 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **107435** | CCV | | 1.00 | 07/14/2017 | 9:31 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.98 | 6.98 | | |
| Temperature of pH | 23.01 | 23.01 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **107436** | CCB | | 1.00 | 07/14/2017 | 9:38 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.44 | 0.44 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.89 | 5.89 | | |
| Total Alkalinity | 0.44 | 0.44 | | |
| Temperature of pH | 22.69 | 22.69 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **107437** | B | 17195002201A | 1.00 | 07/14/2017 | 9:44 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.06 | 0.06 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.55 | 5.55 | | | | |
| Total Alkalinity | 0.06 | 0.06 | Y | Y | | |
| Temperature of pH | 22.57 | 22.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **107438** | Q | 17195002201A | 1.00 | 07/14/2017 | 9:51 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 183.23 | 183.23 | | | | |
| Hydroxide | 0.15 | 0.15 | | | | |
| Phenolphthalein Alkali | 91.77 | 91.77 | | | | |
| pH | 10.56 | 10.56 | | | | |
| Total Alkalinity | 183.39 | 183.39 | Y | Y | | |
| Temperature of pH | 22.08 | 22.08 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **107439** | Q | 17195002201A | 1.00 | 07/14/2017 | 9:54 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.97 | 6.97 | | | | |
| Temperature of pH | 22.90 | 22.90 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9100092** | **107440** | U | 17195002201A | 1.00 | 085A | 07/14/2017 | 10:02 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 88.59 | 88.59 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| pH | 7.96 | 7.96 | | | |
| Total Alkalinity | 88.59 | 88.59 | Y | Y | |
| Temperature of pH | 22.51 | 22.51 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100092 | 107441 | R | 17195002201A | 1.00 | 085A | 07/14/2017 | 10:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 66.55 | 66.55 | | | | |
| Carbonate | 193.53 | 193.53 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 96.76 | 96.76 | | | | |
| pH | 9.84 | 9.84 | | | | |
| Total Alkalinity | 260.08 | 260.08 | Y | Y | | |
| Temperature of pH | 22.49 | 22.49 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100092 | 107442 | D | 17195002201A | 1.00 | 085A | 07/14/2017 | 10:15 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 88.81 | 88.81 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.92 | 7.92 | | | | |
| Total Alkalinity | 88.81 | 88.81 | Y | Y | | |
| Temperature of pH | 22.57 | 22.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100062 | 107443 | | 17195002201A | 1.00 | 085A | 07/14/2017 | 10:21 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 87.83 | 87.83 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.92 | 7.92 | | | | |
| Total Alkalinity | 87.83 | 87.83 | Y | Y | | |
| Temperature of pH | 22.26 | 22.26 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100108 | 107444 | | 17195002201A | 1.00 | 085A | 07/14/2017 | 10:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 102.97 | 102.97 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.95 | 7.95 | | | | |
| Total Alkalinity | 102.97 | 102.97 | Y | Y | | |
| Temperature of pH | 22.22 | 22.22 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100060 | 107445 | | 17195002201A | 1.00 | 085A | 07/14/2017 | 10:34 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 89.87 | 89.87 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.88 | 7.88 | | | | |
| Total Alkalinity | 89.87 | 89.87 | Y | Y | | |
| Temperature of pH | 22.37 | 22.37 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100110 | 107446 | | 17195002201A | 1.00 | 085A | 07/14/2017 | 10:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 91.72 | 91.72 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | | | |
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.94 | 7.94 | | | |
| Total Alkalinity | 91.72 | 91.72 | Y | Y | |
| Temperature of pH | 22.45 | 22.45 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107447 | CCV | | 1.00 | 07/14/2017 | 10:44 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.97 | 6.97 | | |
| Temperature of pH | 22.55 | 22.55 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 107448 | CCB | | 1.00 | 07/14/2017 | 10:51 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.38 | 0.38 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.89 | 5.89 | | |
| Total Alkalinity | 0.38 | 0.38 | | |
| Temperature of pH | 22.61 | 22.61 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100232 | 107449 | | 17195002201A | 1.00 | 070A | 07/14/2017 | 10:57 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 4.02 | 4.02 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.82 | 5.82 | | | | |
| Total Alkalinity | 4.02 | 4.02 | Y | Y | | |
| Temperature of pH | 22.83 | 22.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100946 | 107450 | | 17195002201A | 1.00 | 070A | 07/14/2017 | 11:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 270.10 | 270.10 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.77 | 7.77 | | | | |
| Total Alkalinity | 270.10 | 270.10 | Y | Y | | |
| Temperature of pH | 22.99 | 22.99 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9099609 | 107451 | | 17195002201A | 1.00 | 070A | 07/14/2017 | 11:11 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 148.55 | 148.55 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.55 | 7.55 | | | | |
| Total Alkalinity | 148.55 | 148.55 | Y | Y | | |
| Temperature of pH | 22.87 | 22.87 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9099610 | 107452 | | 17195002201A | 1.00 | 070A | 07/14/2017 | 11:19 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 227.09 | 227.09 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.58 | 7.58 | | | |
| Total Alkalinity | 227.09 | 227.09 | Y | Y | |
| Temperature of pH | 22.86 | 22.86 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **107453** | B | 17195002202A | 1.00 | 07/14/2017 | 11:26 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | -0.07 | -0.07 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.63 | 5.63 | | | | |
| Total Alkalinity | -0.07 | -0.07 | Y | Y | | |
| Temperature of pH | 22.61 | 22.61 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **107454** | Q | 17195002202A | 1.00 | 07/14/2017 | 11:33 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 8.24 | 8.24 | | | | |
| Carbonate | 180.92 | 180.92 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 90.46 | 90.46 | | | | |
| pH | 10.54 | 10.54 | | Y | | |
| Total Alkalinity | 189.16 | 189.16 | Y | Y | | |
| Temperature of pH | 22.31 | 22.31 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **107455** | Q | 17195002202A | 1.00 | 07/14/2017 | 11:37 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.99 | 6.99 | Y | Y | | |
| Temperature of pH | 22.63 | 22.63 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9100152** | **107456** | U | 17195002202A | 1.00 | 070A | 07/14/2017 | 11:45 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 402.38 | 402.38 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.22 | 7.22 | Y | Y | | |
| Total Alkalinity | 402.38 | 402.38 | Y | Y | | |
| Temperature of pH | 22.52 | 22.52 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9100152** | **107457** | R | 17195002202A | 1.00 | 070A | 07/14/2017 | 11:54 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 560.76 | 560.76 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.95 | 7.95 | Y | | | |
| Total Alkalinity | 560.76 | 560.76 | Y | Y | | |
| Temperature of pH | 22.58 | 22.58 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9100152** | **107458** | D | 17195002202A | 1.00 | 070A | 07/14/2017 | 12:02 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 406.86 | 406.86 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.24 | 7.24 | Y | Y | | |

| | | | | | |
|---|---|---|---|---|---|
| Total Alkalinity | 406.86 | 406.86 | Y | Y | |
| Temperature of pH | 22.93 | 22.93 | Y | Y | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **107459** | CCV | | 1.00 | 07/14/2017 | 12:07 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.98 | 6.98 | | |
| Temperature of pH | 22.93 | 22.93 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **107460** | CCB | | 1.00 | 07/14/2017 | 12:15 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.69 | 0.69 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.99 | 5.99 | | |
| Total Alkalinity | 0.69 | 0.69 | | |
| Temperature of pH | 22.96 | 22.96 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9100592** | **107461** | U | 17195002202B | 1.00 | 070A | 07/14/2017 | 12:22 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 553.40 | 553.40 | Y | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.02 | 7.02 | Y | Y | | |
| Total Alkalinity | 553.40 | 553.40 | Y | Y | | |
| Temperature of pH | 22.96 | 22.96 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9100592** | **107462** | D | 17195002202B | 1.00 | 070A | 07/14/2017 | 12:31 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 556.45 | 556.45 | Y | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.01 | 7.01 | Y | Y | | |
| Total Alkalinity | 556.45 | 556.45 | Y | Y | | |
| Temperature of pH | 22.81 | 22.81 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9100143** | **107463** | | 17195002202A | 1.00 | 070A | 07/14/2017 | 12:38 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 234.21 | 234.21 | Y | Y | | |
| Carbonate | 8.06 | 8.06 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 4.03 | 4.03 | | | | |
| pH | 8.43 | 8.43 | | | | |
| Total Alkalinity | 242.27 | 242.27 | Y | Y | | |
| Temperature of pH | 22.89 | 22.89 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9100489** | **107464** | | 17195002202A | 1.00 | 070A | 07/14/2017 | 12:46 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 94.30 | 94.30 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.87 | 7.87 | | | | |
| Total Alkalinity | 94.30 | 94.30 | Y | Y | | |
| Temperature of pH | 22.74 | 22.74 | | | | |

# Water Quality Run Report

**Run Name: 20170714-22** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100483 | 107465 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 12:52 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 84.95 | 84.95 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.76 | 7.76 | | | | |
| Total Alkalinity | 84.95 | 84.95 | Y | Y | | |
| Temperature of pH | 22.74 | 22.74 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100485 | 107466 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 12:59 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 83.62 | 83.62 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.81 | 7.81 | | | | |
| Total Alkalinity | 83.62 | 83.62 | Y | Y | | |
| Temperature of pH | 22.78 | 22.78 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100479 | 107467 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 13:05 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 119.21 | 119.21 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.33 | 7.33 | | | | |
| Total Alkalinity | 119.21 | 119.21 | Y | Y | | |
| Temperature of pH | 22.83 | 22.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100589 | 107468 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 13:13 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 235.86 | 235.86 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.80 | 6.80 | Y | Y | | |
| Total Alkalinity | 235.86 | 235.86 | Y | Y | | |
| Temperature of pH | 23.11 | 23.11 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9098768 | 107469 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 13:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 123.51 | 123.51 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.16 | 8.16 | | | | |
| Total Alkalinity | 123.51 | 123.51 | Y | Y | | |
| Temperature of pH | 23.09 | 23.09 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100150 | 107470 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 13:27 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 284.56 | 284.56 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| pH | 7.96 | 7.96 | | | |
| Total Alkalinity | 284.56 | 284.56 | Y | Y | |
| Temperature of pH | 23.25 | 23.25 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **107471** | CCV | | 1.00 | 07/14/2017 | 13:31 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.98 | 6.98 | | |
| Temperature of pH | 23.31 | 23.31 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **107472** | CCB | | 1.00 | 07/14/2017 | 13:39 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.43 | 0.43 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.92 | 5.92 | | |
| Total Alkalinity | 0.43 | 0.43 | | |
| Temperature of pH | 23.09 | 23.09 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9100591** | **107473** | | 17195002202A | 1.00 | 070A | 07/14/2017 | 13:43 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | -0.87 | -0.87 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 4.30 | 4.30 | Y | Y | | |
| Total Alkalinity | -0.87 | -0.87 | Y | Y | | |
| Temperature of pH | 22.80 | 22.80 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9100487** | **107474** | | 17195002202A | 1.00 | 070A | 07/14/2017 | 13:49 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 92.94 | 92.94 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.90 | 7.90 | | | | |
| Total Alkalinity | 92.94 | 92.94 | Y | Y | | |
| Temperature of pH | 22.72 | 22.72 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9096340** | **107475** | | 17195002202A | 1.00 | 070A | 07/14/2017 | 13:55 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 187.73 | 187.73 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.32 | 7.32 | | | | |
| Total Alkalinity | 187.73 | 187.73 | Y | Y | | |
| Temperature of pH | 22.87 | 22.87 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9100145** | **107476** | | 17195002202A | 1.00 | 070A | 07/14/2017 | 14:05 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | | | |
| Carbonate | 77.83 | 77.83 | Y | | | |
| Hydroxide | 196.57 | 196.57 | | | | |
| Phenolphthalein Alkali | 235.49 | 235.49 | | | | |
| pH | 11.29 | 11.29 | | | | |
| Total Alkalinity | 274.41 | 274.41 | Y | | | |

| | | | |
|---|---|---|---|
| Temperature of pH | 22.78 | 22.78 | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100149 | 107477 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 14:13 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.07 | 1.07 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.61 | 6.61 | | | | |
| Total Alkalinity | 1.07 | 1.07 | Y | Y | | |
| Temperature of pH | 23.09 | 23.09 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100151 | 107478 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 14:19 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 307.32 | 307.32 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.84 | 7.84 | | | | |
| Total Alkalinity | 307.32 | 307.32 | Y | Y | | |
| Temperature of pH | 23.04 | 23.04 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9098769 | 107479 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 14:26 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 139.75 | 139.75 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.57 | 7.57 | | | | |
| Total Alkalinity | 139.75 | 139.75 | Y | Y | | |
| Temperature of pH | 23.04 | 23.04 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100153 | 107480 | | 17195002202A | 1.00 | 070A | 07/14/2017 | 14:33 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 402.06 | 402.06 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.23 | 7.23 | | | | |
| Total Alkalinity | 402.06 | 402.06 | Y | Y | | |
| Temperature of pH | 23.30 | 23.30 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9099853 | 107481 | | 17195002202A | 1.00 | 005A | 07/14/2017 | 14:41 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 279.76 | 279.76 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.16 | 8.16 | Y | Y | | |
| Total Alkalinity | 279.76 | 279.76 | Y | Y | | |
| Temperature of pH | 23.14 | 23.14 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100962 | 107482 | | 17195002202A | 1.00 | 005A | 07/14/2017 | 14:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 182.38 | 182.38 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.82 | 7.82 | | | |
| Total Alkalinity | 182.38 | 182.38 | Y | Y | |
| Temperature of pH | 23.14 | 23.14 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **107483** | CCV | | 1.00 | 07/14/2017 | 14:52 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.98 | 6.98 | | |
| Temperature of pH | 23.09 | 23.09 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **107484** | CCB | | 1.00 | 07/14/2017 | 14:59 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.45 | 0.45 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 5.97 | 5.97 | | |
| Total Alkalinity | 0.45 | 0.45 | | |
| Temperature of pH | 22.95 | 22.95 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **107485** | B | 17195002203A | 1.00 | 07/14/2017 | 15:05 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.14 | 0.14 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.57 | 5.57 | | | | |
| Total Alkalinity | 0.14 | 0.14 | Y | Y | | |
| Temperature of pH | 22.95 | 22.95 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **107486** | Q | 17195002203A | 1.00 | 07/14/2017 | 15:12 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 11.42 | 11.42 | | | | |
| Carbonate | 172.12 | 172.12 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 86.06 | 86.06 | | | | |
| pH | 10.41 | 10.41 | | Y | | |
| Total Alkalinity | 183.54 | 183.54 | Y | Y | | |
| Temperature of pH | 23.11 | 23.11 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **107487** | Q | 17195002203A | 1.00 | 07/14/2017 | 15:15 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.98 | 6.98 | Y | Y | | |
| Temperature of pH | 23.15 | 23.15 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9101146** | **107488** | U | 17195002203A | 1.00 | 023A | 07/14/2017 | 15:22 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 96.81 | 96.81 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.31 | 7.31 | Y | Y | | |
| Total Alkalinity | 96.81 | 96.81 | Y | Y | | |
| Temperature of pH | 23.06 | 23.06 | Y | Y | | |

# Water Quality Run Report

**Run Name: 20170714-22** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101146 | 107489 | R | 17195002203A | 1.00 | 023A | 07/14/2017 | 15:29 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 126.76 | 126.76 | | | | |
| Carbonate | 137.37 | 137.37 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 68.68 | 68.68 | Y | | | |
| pH | 9.40 | 9.40 | Y | | | |
| Total Alkalinity | 264.13 | 264.13 | Y | Y | | |
| Temperature of pH | 23.28 | 23.28 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101146 | 107490 | D | 17195002203A | 1.00 | 023A | 07/14/2017 | 15:36 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 96.68 | 96.68 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.37 | 7.37 | Y | Y | | |
| Total Alkalinity | 96.68 | 96.68 | Y | Y | | |
| Temperature of pH | 23.43 | 23.43 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101195 | 107491 | | 17195002203A | 1.00 | 005A | 07/14/2017 | 15:44 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 92.18 | 92.18 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.80 | 7.80 | | | | |
| Total Alkalinity | 92.18 | 92.18 | Y | Y | | |
| Temperature of pH | 23.39 | 23.39 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101179 | 107492 | | 17195002203A | 1.00 | 070A | 07/14/2017 | 15:50 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 170.45 | 170.45 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.07 | 8.07 | | | | |
| Total Alkalinity | 170.45 | 170.45 | Y | Y | | |
| Temperature of pH | 23.41 | 23.41 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9099852 | 107493 | | 17195002203A | 1.00 | 005A | 07/14/2017 | 15:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 292.74 | 292.74 | | | | |
| Carbonate | 139.81 | 139.81 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 69.90 | 69.90 | | | | |
| pH | 8.91 | 8.91 | Y | Y | | |
| Total Alkalinity | 432.54 | 432.54 | Y | Y | | |
| Temperature of pH | 23.28 | 23.28 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100148 | 107494 | | 17195002203A | 1.00 | 070A | 07/14/2017 | 16:05 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 90.81 | 90.81 | | | | |
| Hydroxide | 174.55 | 174.55 | | | | |
| Phenolphthalein Alkali | 219.95 | 219.95 | | | | |

| | | | | |
|---|---|---|---|---|
| pH | 11.23 | 11.23 | | |
| Total Alkalinity | 265.36 | 265.36 | Y | |
| Temperature of pH | 23.17 | 23.17 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107495 | CCV | | 1.00 | 07/14/2017 | 16:11 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.95 | 6.95 | | |
| Temperature of pH | 23.36 | 23.36 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 107496 | CCB | | 1.00 | 07/14/2017 | 16:18 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.30 | 0.30 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.07 | 6.07 | | |
| Total Alkalinity | 0.30 | 0.30 | | |
| Temperature of pH | 23.19 | 23.19 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9100146 | 107497 | | 17195002203A | 1.00 | 070A | 07/14/2017 | 16:26 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 80.41 | 80.41 | | | | |
| Hydroxide | 180.55 | 180.55 | | | | |
| Phenolphthalein Alkali | 220.75 | 220.75 | | | | |
| pH | 11.22 | 11.22 | | | | |
| Total Alkalinity | 260.96 | 260.96 | Y | | | |
| Temperature of pH | 23.15 | 23.15 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9101180 | 107498 | | 17195002203A | 1.00 | 070A | 07/14/2017 | 16:34 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 139.41 | 139.41 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.63 | 7.63 | | | | |
| Total Alkalinity | 139.41 | 139.41 | Y | Y | | |
| Temperature of pH | 23.46 | 23.46 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107499 | CCV | | 1.00 | 07/14/2017 | 16:37 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.96 | 6.96 | | |
| Temperature of pH | 23.36 | 23.36 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 107500 | CCB | | 1.00 | 07/14/2017 | 16:45 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.73 | 0.73 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.19 | 6.19 | | |
| Total Alkalinity | 0.73 | 0.73 | | |
| Temperature of pH | 23.30 | 23.30 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107501 | CCV | | 1.00 | 07/14/2017 | 16:49 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|

| | | |
|---|---|---|
| pH | 6.94 | 6.94 |
| Temperature of pH | 23.64 | 23.64 |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| LCSPH | 107502 | Q | 17195002204A | 1.00 | 07/14/2017 | 16:53 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.95 | 6.95 | Y | Y | | |
| Temperature of pH | 23.44 | 23.44 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9099823 | 107503 | U | 17195002204A | 1.00 | 070A | 07/14/2017 | 16:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.11 | 7.11 | Y | Y | | |
| Temperature of pH | 23.35 | 23.35 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9099823 | 107504 | D | 17195002204A | 1.00 | 070A | 07/14/2017 | 17:03 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.08 | 7.08 | Y | Y | | |
| Temperature of pH | 23.30 | 23.30 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9099504 | 107505 | U | 17195002204B | 1.00 | 005A | 07/14/2017 | 17:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.25 | 7.25 | Y | Y | | |
| Temperature of pH | 23.46 | 23.46 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9099504 | 107506 | D | 17195002204B | 1.00 | 005A | 07/14/2017 | 17:13 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.24 | 7.24 | Y | Y | | |
| Temperature of pH | 23.46 | 23.46 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9100886 | 107507 | | 17195002204A | 1.00 | 005A | 07/14/2017 | 17:16 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 8.43 | 8.43 | Y | Y | | |
| Temperature of pH | 23.33 | 23.33 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9096860 | 107508 | | 17195002204A | 1.00 | 005A | 07/14/2017 | 17:21 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.99 | 6.99 | Y | Y | | |
| Temperature of pH | 23.35 | 23.35 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9098844 | 107509 | | 17195002204A | 1.00 | 005A | 07/14/2017 | 17:25 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.25 | 6.25 | Y | Y | | |
| Temperature of pH | 23.52 | 23.52 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101165 | 107510 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 17:29 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 4.97 | 4.97 | Y | Y | | |
| Temperature of pH | 23.67 | 23.67 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101167 | 107511 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 17:33 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.05 | 6.05 | Y | Y | | |
| Temperature of pH | 23.67 | 23.67 | Y | Y | | |

# Water Quality Run Report

**Run Name: 20170714-22** **Instrument: 19153**

Analyst : 24931 - Ian D. Toomey Verifier : 1124 - Michele L. Graham

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107512 | CCV | | 1.00 | 07/14/2017 | 17:37 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.97 | 6.97 | | |
| Temperature of pH | 23.54 | 23.54 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101166 | 107513 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 17:42 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.92 | 7.92 | Y | Y | | |
| Temperature of pH | 23.49 | 23.49 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101004 | 107514 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 17:46 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.56 | 6.56 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101005 | 107515 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 17:50 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.25 | 7.25 | Y | Y | | |
| Temperature of pH | 23.67 | 23.67 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101006 | 107516 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 17:55 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 7.22 | 7.22 | Y | Y | | |
| Temperature of pH | 23.56 | 23.56 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9099825 | 107517 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 17:59 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 8.18 | 8.18 | Y | Y | | |
| Temperature of pH | 23.47 | 23.47 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101164 | 107518 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 18:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 8.07 | 8.07 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9101163 | 107519 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 18:09 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.65 | 6.65 | Y | Y | | |
| Temperature of pH | 23.72 | 23.72 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9098685 | 107520 | | 17195002204A | 1.00 | 070A | 07/14/2017 | 18:14 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 8.10 | 8.10 | Y | Y | | |
| Temperature of pH | 23.72 | 23.72 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107521 | CCV | | 1.00 | 07/14/2017 | 18:18 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.98 | 6.98 | | |
| Temperature of pH | 23.72 | 23.72 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| CCB | 107522 | CCB | | 1.00 | 07/14/2017 | 18:24 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.75 | 1.75 | | |

| | | |
|---|---|---|
| Carbonate | 0.00 | 0.00 |
| Hydroxide | 0.00 | 0.00 |
| Phenolphthalein Alkali | 0.00 | 0.00 |
| pH | 6.09 | 6.09 |
| Total Alkalinity | 1.75 | 1.75 |
| Temperature of pH | 23.73 | 23.73 |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9098882 | 107523 | | 17195002203A | 1.00 | 070A | 07/14/2017 | 18:27 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 3.44 | 3.44 | | | | |
| Total Alkalinity | 0.00 | 0.00 | Y | Y | | |
| Temperature of pH | 23.86 | 23.86 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9098903 | 107524 | | 17195002203A | 1.00 | 070A | 07/14/2017 | 18:34 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 136.11 | 136.11 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.63 | 7.63 | | | | |
| Total Alkalinity | 136.11 | 136.11 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9097527 | 107525 | | 17195002203A | 1.00 | 005A | 07/14/2017 | 18:42 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 159.23 | 159.23 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.52 | 7.52 | | | | |
| Total Alkalinity | 159.23 | 159.23 | Y | Y | | |
| Temperature of pH | 23.72 | 23.72 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 107526 | CCV | | 1.00 | 07/14/2017 | 18:46 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.97 | 6.97 | | |
| Temperature of pH | 23.86 | 23.86 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 107527 | CCB | | 1.00 | 07/14/2017 | 18:53 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 0.31 | 0.31 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.02 | 6.02 | | |
| Total Alkalinity | 0.31 | 0.31 | | |
| Temperature of pH | 23.76 | 23.76 | | |

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2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 07/17/17

# SDG# KR187

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1826676 | 9107402-9107407 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **08/08/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR187
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9107402 | GW216-173 | 07/17/2017 08:00 | 07/18/2017 09:40 |
| 9107403 | GW217-173 | 07/17/2017 08:20 | 07/18/2017 09:40 |
| 9107404 | GW218-173 | 07/17/2017 08:45 | 07/18/2017 09:40 |
| 9107405 | GW223-173 | 07/17/2017 09:50 | 07/18/2017 09:40 |
| 9107406 | GW224-173 | 07/17/2017 10:12 | 07/18/2017 09:40 |
| 9107407 | GW157-173 | 07/17/2017 12:05 | 07/18/2017 09:40 |

# Sample pH Log

**SDG: KR187**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9107407 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 6:01:37AM | 12046 |
| 9107407 | 038B | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/28/2017 4:23:05PM | 10002 |

| Check Code Key |
|---|
| **PK** = Original container checked - pH is within the correct range. (No preservative was added) |
| **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) |
| **PV** = Volatile container checked |
| **PC** = pH checked (unpreserved container) |
| **SPK** = Subsampled from an original container. Original container checked - pH is within correct range |
| **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. |
| **SPC** = Subsampled from an original container. pH checked (unpreserved container). |
| **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. |
| **UP** = Unable to preserve due to matrix of the sample. |
| **NA** = Not applicable |

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**01163 GC/MS VOA Water Prep**

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

---

**11997 VOCs- 5ml Water by 8260C**

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

---

**10635 ICP-WW, 3005A (tot rec) - U4**

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

---

**01754 Iron**
**07058 Manganese**

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

---

**10398 8011 Master Master**

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07786 EDB Extraction (8011)**

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

# Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: July 31, 2017

**Project: Kirtland AFB**

Submittal Date: 07/18/2017
Group Number: 1826676
SDG: KR187
PO Number: 14800
State of Sample Origin: NM

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| GW216-173 Water | 9107402 |
| GW217-173 Water | 9107403 |
| GW218-173 Water | 9107404 |
| GW223-173 Water | 9107405 |
| GW224-173 Water | 9107406 |
| GW157-173 Water | 9107407 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

Respectfully Submitted,

(717) 556-7364

Project Name: Kirtland AFB
LL Group #: 1826676

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Trip blank vials were not received by the laboratory for this sample group.

**Analysis Specific Comments:**

SW-846 8260C, GC/MS Volatiles

Sample #s: 9107407

The response for a target analyte(s) in the initial calibration verification standard is outside the QC acceptance limits. The client was contacted and the data reported.

SW-846 8011, Volatiles by Extraction

Sample #s: 9107407

Volatile compounds have been detected above the LOQ in the sample. Since a field reagent blank (trip blank) was not submitted with this sample any potential contribution of volatiles from the sampling/transport process cannot be assessed.

Batch #: 172010025A (Sample number(s): 9107402-9107407 UNSPK: P95972, P109771)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Ethylene dibromide

**Sample Description: GW216-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9107402**
**LL Group # 1826676**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/17/2017 08:00 by CM

Submitted: 07/18/2017 09:40
Reported: 07/31/2017 15:06

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18701 SDG#: KR187-01

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 22:11 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW217-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9107403**
**LL Group # 1826676**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/17/2017 08:20 by EO

Submitted: 07/18/2017 09:40
Reported: 07/31/2017 15:06

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18702 SDG#: KR187-02

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 22:27 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW218-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9107404**
**LL Group # 1826676**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/17/2017 08:45 by EO

Submitted: 07/18/2017 09:40
Reported: 07/31/2017 15:06

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18703 SDG#: KR187-03

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0094 | 0.019 | 0.028 | 1 |

**Sample Comments**

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 22:42 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW223-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9107405**
**LL Group # 1826676**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/17/2017 09:50 by EO

Submitted: 07/18/2017 09:40
Reported: 07/31/2017 15:06

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18704 SDG#: KR187-04

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0095 | 0.019 | 0.028 | 1 |

**Sample Comments**

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 22:58 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW224-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9107406**
**LL Group # 1826676**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/17/2017 10:12 by EO

Submitted: 07/18/2017 09:40
Reported: 07/31/2017 15:06

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18705 SDG#: KR187-05

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 U | 0.0096 | 0.019 | 0.029 | 1 |

**Sample Comments**

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

**Laboratory Sample Analysis Record**

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/21/2017 23:13 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW157-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9107407**
**LL Group # 1826676**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/17/2017 12:05 by SB

Submitted: 07/18/2017 09:40
Reported: 07/31/2017 15:06

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18706 SDG#: KR187-06

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Acetone | 67-64-1 | 20 | U | 6 | 20 | 20 | 1 |
| 11997 | Acrolein | 107-02-8 | 100 | U | 40 | 100 | 100 | 1 |
| 11997 | Acrylonitrile | 107-13-1 | 10 | U | 4 | 10 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Bromobenzene | 108-86-1 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | Bromochloromethane | 74-97-5 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 1 | UZ | 0.5 | 1 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 8 | U | 3 | 8 | 10 | 1 |
| 11997 | n-Butylbenzene | 104-51-8 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | sec-Butylbenzene | 135-98-8 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | tert-Butylbenzene | 98-06-6 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 2 | UZ | 1 | 2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 2-Chlorotoluene | 95-49-8 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 4-Chlorotoluene | 106-43-4 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,2-Dibromo-3-chloropropane | 96-12-8 | 4 | U | 2 | 4 | 5 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromomethane | 74-95-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichlorobenzene | 95-50-1 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,3-Dichlorobenzene | 541-73-1 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,4-Dichlorobenzene | 106-46-7 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | Dichlorodifluoromethane | 75-71-8 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 4 | Z | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | trans-1,2-Dichloroethene | 156-60-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,3-Dichloropropane | 142-28-9 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 2,2-Dichloropropane | 594-20-7 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloropropene | 563-58-6 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Hexachlorobutadiene | 87-68-3 | 4 | U | 2 | 4 | 5 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 8 | U | 3 | 8 | 10 | 1 |
| 11997 | Isopropylbenzene | 98-82-8 | 2 | J | 1 | 2 | 5 | 1 |
| 11997 | p-Isopropyltoluene | 99-87-6 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 0.6 | J | 0.5 | 1 | 1 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 8 | U | 3 | 8 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | n-Propylbenzene | 103-65-1 | 2 | U | 1 | 2 | 5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW157-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9107407
**LL Group #** 1826676
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/17/2017 12:05 by SB

Submitted: 07/18/2017 09:40
Reported: 07/31/2017 15:06

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18706 SDG#: KR187-06

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Styrene | 100-42-5 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,1,2-Tetrachloroethane | 630-20-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2,3-Trichlorobenzene | 87-61-6 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,2,4-Trichlorobenzene | 120-82-1 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichlorofluoromethane | 75-69-4 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2,3-Trichloropropane | 96-18-4 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,2,4-Trimethylbenzene | 95-63-6 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,3,5-Trimethylbenzene | 108-67-8 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | Vinyl Acetate | 108-05-4 | 4 | U | 2 | 4 | 10 | 1 |
| 11997 | Vinyl Chloride | 75-01-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | m+p-Xylene | 179601-23-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | o-Xylene | 95-47-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| | The response for a target analyte(s) in the initial calibration verification standard is outside the QC acceptance limits. The client was contacted and the data reported. | | | | | | | |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.058 | | 0.0095 | 0.019 | 0.029 | 1 |
| | Volatile compounds have been detected above the LOQ in the sample. Since a field reagent blank (trip blank) was not submitted with this sample any potential contribution of volatiles from the sampling/transport process cannot be assessed. | | | | | | | |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.256 | J | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 1.24 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description: GW157-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9107407**
**LL Group # 1826676**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/17/2017 12:05 by SB

Submitted: 07/18/2017 09:40
Reported: 07/31/2017 15:06

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18706 SDG#: KR187-06

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | L172091AA | 07/28/2017 11:26 | Kevin A Sposito | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172091AA | 07/28/2017 11:26 | Kevin A Sposito | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/22/2017 00:00 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:26 | Patrick J Engle | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:26 | Patrick J Engle | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063501 | 07/20/2017 05:35 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/31/2017 15:06

Group Number: 1826676

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Batch number: L172091AA | Sample number(s): 9107407 | | | | |
| Acetone | 20 | U | 6 | 20 | 20 |
| Acrolein | 100 | U | 40 | 100 | 100 |
| Acrylonitrile | 10 | U | 4 | 10 | 20 |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Bromobenzene | 2 | U | 1 | 2 | 5 |
| Bromochloromethane | 2 | U | 1 | 2 | 5 |
| Bromodichloromethane | 1 | U | 0.5 | 1 | 1 |
| Bromoform | 1 | U | 0.5 | 1 | 4 |
| Bromomethane | 1 | U | 0.5 | 1 | 1 |
| 2-Butanone | 8 | U | 3 | 8 | 10 |
| n-Butylbenzene | 2 | U | 1 | 2 | 5 |
| sec-Butylbenzene | 2 | U | 1 | 2 | 5 |
| tert-Butylbenzene | 2 | U | 1 | 2 | 5 |
| Carbon Disulfide | 2 | U | 1 | 2 | 5 |
| Carbon Tetrachloride | 1 | U | 0.5 | 1 | 1 |
| Chlorobenzene | 1 | U | 0.5 | 1 | 1 |
| Chloroethane | 1 | U | 0.5 | 1 | 1 |
| Chloroform | 1 | U | 0.5 | 1 | 1 |
| Chloromethane | 1 | U | 0.5 | 1 | 1 |
| 2-Chlorotoluene | 2 | U | 1 | 2 | 5 |
| 4-Chlorotoluene | 2 | U | 1 | 2 | 5 |
| 1,2-Dibromo-3-chloropropane | 4 | U | 2 | 4 | 5 |
| Dibromochloromethane | 1 | U | 0.5 | 1 | 1 |
| 1,2-Dibromoethane | 1 | U | 0.5 | 1 | 1 |
| Dibromomethane | 1 | U | 0.5 | 1 | 1 |
| 1,2-Dichlorobenzene | 2 | U | 1 | 2 | 5 |
| 1,3-Dichlorobenzene | 2 | U | 1 | 2 | 5 |
| 1,4-Dichlorobenzene | 2 | U | 1 | 2 | 5 |
| Dichlorodifluoromethane | 1 | U | 0.5 | 1 | 1 |
| 1,1-Dichloroethane | 1 | U | 0.5 | 1 | 1 |
| 1,2-Dichloroethane | 1 | U | 0.5 | 1 | 1 |
| 1,1-Dichloroethene | 1 | U | 0.5 | 1 | 1 |
| cis-1,2-Dichloroethene | 1 | U | 0.5 | 1 | 1 |
| trans-1,2-Dichloroethene | 1 | U | 0.5 | 1 | 1 |
| 1,2-Dichloropropane | 1 | U | 0.5 | 1 | 1 |
| 1,3-Dichloropropane | 1 | U | 0.5 | 1 | 1 |
| 2,2-Dichloropropane | 1 | U | 0.5 | 1 | 1 |
| 1,1-Dichloropropene | 2 | U | 1 | 2 | 5 |
| cis-1,3-Dichloropropene | 1 | U | 0.5 | 1 | 1 |
| trans-1,3-Dichloropropene | 1 | U | 0.5 | 1 | 1 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/31/2017 15:06

Group Number: 1826676

## Method Blank (continued)

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Ethylbenzene | 1 | U | 0.5 | 1 | 1 |
| Hexachlorobutadiene | 4 | U | 2 | 4 | 5 |
| 2-Hexanone | 8 | U | 3 | 8 | 10 |
| Isopropylbenzene | 2 | U | 1 | 2 | 5 |
| p-Isopropyltoluene | 2 | U | 1 | 2 | 5 |
| Methyl Tertiary Butyl Ether | 1 | U | 0.5 | 1 | 1 |
| 4-Methyl-2-pentanone | 8 | U | 3 | 8 | 10 |
| Methylene Chloride | 4 | U | 2 | 4 | 4 |
| Naphthalene | 2 | U | 1 | 2 | 5 |
| n-Propylbenzene | 2 | U | 1 | 2 | 5 |
| Styrene | 2 | U | 1 | 2 | 5 |
| 1,1,1,2-Tetrachloroethane | 1 | U | 0.5 | 1 | 1 |
| 1,1,2,2-Tetrachloroethane | 1 | U | 0.5 | 1 | 1 |
| Tetrachloroethene | 1 | U | 0.5 | 1 | 1 |
| Toluene | 1 | U | 0.5 | 1 | 1 |
| 1,2,3-Trichlorobenzene | 2 | U | 1 | 2 | 5 |
| 1,2,4-Trichlorobenzene | 2 | U | 1 | 2 | 5 |
| 1,1,1-Trichloroethane | 1 | U | 0.5 | 1 | 1 |
| 1,1,2-Trichloroethane | 1 | U | 0.5 | 1 | 1 |
| Trichloroethene | 1 | U | 0.5 | 1 | 1 |
| Trichlorofluoromethane | 1 | U | 0.5 | 1 | 1 |
| 1,2,3-Trichloropropane | 2 | U | 1 | 2 | 5 |
| 1,2,4-Trimethylbenzene | 2 | U | 1 | 2 | 5 |
| 1,3,5-Trimethylbenzene | 2 | U | 1 | 2 | 5 |
| Vinyl Acetate | 4 | U | 2 | 4 | 10 |
| Vinyl Chloride | 1 | U | 0.5 | 1 | 1 |
| m+p-Xylene | 1 | U | 0.5 | 1 | 1 |
| o-Xylene | 1 | U | 0.5 | 1 | 1 |
| Xylene (Total) | 1 | U | 0.5 | 1 | 1 |
| Batch number: 172010025A | Sample number(s): 9107402-9107407 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| | mg/l | | mg/l | mg/l | mg/l |
| Batch number: 172001063501 | Sample number(s): 9107407 | | | | |
| Iron | 0.200 | U | 0.0805 | 0.200 | 0.400 |
| Manganese | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L172091AA | Sample number(s): 9107407 | | | | | | | | |
| Acetone | 150 | 146.85 | 150 | 154.12 | 98 | 103 | 39-160 | 5 | 20 |
| Acrolein | 150 | 98.38 | 150 | 108.09 | 66 | 72 | 39-155 | 9 | 20 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/31/2017 15:06

Group Number: 1826676

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Acrylonitrile | 100 | 93.45 | 100 | 91.85 | 93 | 92 | 63-135 | 2 | 20 |
| Benzene | 20 | 20.47 | 20 | 20.25 | 102 | 101 | 79-120 | 1 | 20 |
| Bromobenzene | 20 | 20.12 | 20 | 19.76 | 101 | 99 | 80-120 | 2 | 20 |
| Bromochloromethane | 20 | 21.8 | 20 | 20.88 | 109 | 104 | 78-123 | 4 | 20 |
| Bromodichloromethane | 20 | 21.23 | 20 | 20.95 | 106 | 105 | 79-125 | 1 | 20 |
| Bromoform | 20 | 21.04 | 20 | 20.49 | 105 | 102 | 66-130 | 3 | 20 |
| Bromomethane | 20 | 19.24 | 20 | 18.7 | 96 | 93 | 53-141 | 3 | 20 |
| 2-Butanone | 150 | 143.14 | 150 | 142.99 | 95 | 95 | 56-143 | 0 | 20 |
| n-Butylbenzene | 20 | 19.62 | 20 | 19.31 | 98 | 97 | 75-128 | 2 | 20 |
| sec-Butylbenzene | 20 | 20.19 | 20 | 19.79 | 101 | 99 | 77-126 | 2 | 20 |
| tert-Butylbenzene | 20 | 18.73 | 20 | 18.77 | 94 | 94 | 78-124 | 0 | 20 |
| Carbon Disulfide | 20 | 21.99 | 20 | 21.75 | 110 | 109 | 64-133 | 1 | 20 |
| Carbon Tetrachloride | 20 | 23.7 | 20 | 23.09 | 118 | 115 | 72-136 | 3 | 20 |
| Chlorobenzene | 20 | 20.45 | 20 | 20.25 | 102 | 101 | 82-118 | 1 | 20 |
| Chloroethane | 20 | 17.65 | 20 | 17.88 | 88 | 89 | 60-138 | 1 | 20 |
| Chloroform | 20 | 22 | 20 | 22.16 | 110 | 111 | 79-124 | 1 | 20 |
| Chloromethane | 20 | 16.51 | 20 | 16.4 | 83 | 82 | 50-139 | 1 | 20 |
| 2-Chlorotoluene | 20 | 19.67 | 20 | 19.33 | 98 | 97 | 79-122 | 2 | 20 |
| 4-Chlorotoluene | 20 | 19.64 | 20 | 19.84 | 98 | 99 | 78-122 | 1 | 20 |
| 1,2-Dibromo-3-chloropropane | 20 | 19.8 | 20 | 19.11 | 99 | 96 | 62-128 | 4 | 20 |
| Dibromochloromethane | 20 | 20.89 | 20 | 20.64 | 104 | 103 | 74-126 | 1 | 20 |
| 1,2-Dibromoethane | 20 | 20.46 | 20 | 19.97 | 102 | 100 | 77-121 | 2 | 20 |
| Dibromomethane | 20 | 21.61 | 20 | 21.48 | 108 | 107 | 79-123 | 1 | 20 |
| 1,2-Dichlorobenzene | 20 | 20.31 | 20 | 19.76 | 102 | 99 | 80-119 | 3 | 20 |
| 1,3-Dichlorobenzene | 20 | 19.72 | 20 | 19.67 | 99 | 98 | 80-119 | 0 | 20 |
| 1,4-Dichlorobenzene | 20 | 19.93 | 20 | 19.87 | 100 | 99 | 79-118 | 0 | 20 |
| Dichlorodifluoromethane | 20 | 17.06 | 20 | 17.12 | 85 | 86 | 32-152 | 0 | 20 |
| 1,1-Dichloroethane | 20 | 20.76 | 20 | 20.6 | 104 | 103 | 77-125 | 1 | 20 |
| 1,2-Dichloroethane | 20 | 23.83 | 20 | 23.23 | 119 | 116 | 73-128 | 3 | 20 |
| 1,1-Dichloroethene | 20 | 22.11 | 20 | 21.89 | 111 | 109 | 71-131 | 1 | 20 |
| cis-1,2-Dichloroethene | 20 | 21.05 | 20 | 21.32 | 105 | 107 | 78-123 | 1 | 20 |
| trans-1,2-Dichloroethene | 20 | 21.8 | 20 | 21.76 | 109 | 109 | 75-124 | 0 | 20 |
| 1,2-Dichloropropane | 20 | 19.47 | 20 | 19.42 | 97 | 97 | 78-122 | 0 | 20 |
| 1,3-Dichloropropane | 20 | 19.43 | 20 | 19.67 | 97 | 98 | 80-119 | 1 | 20 |
| 2,2-Dichloropropane | 20 | 24.13 | 20 | 24.3 | 121 | 121 | 60-139 | 1 | 20 |
| 1,1-Dichloropropene | 20 | 20.3 | 20 | 20 | 101 | 100 | 79-125 | 1 | 20 |
| cis-1,3-Dichloropropene | 20 | 20.35 | 20 | 20 | 102 | 100 | 75-124 | 2 | 20 |
| trans-1,3-Dichloropropene | 20 | 20.67 | 20 | 20.39 | 103 | 102 | 73-127 | 1 | 20 |
| Ethylbenzene | 20 | 20.61 | 20 | 20.42 | 103 | 102 | 79-121 | 1 | 20 |
| Hexachlorobutadiene | 20 | 20.67 | 20 | 20.5 | 103 | 103 | 66-134 | 1 | 20 |
| 2-Hexanone | 100 | 93.46 | 100 | 91.64 | 93 | 92 | 57-139 | 2 | 20 |
| Isopropylbenzene | 20 | 20.95 | 20 | 20.94 | 105 | 105 | 72-131 | 0 | 20 |
| p-Isopropyltoluene | 20 | 20.3 | 20 | 19.77 | 102 | 99 | 77-127 | 3 | 20 |
| Methyl Tertiary Butyl Ether | 20 | 21.96 | 20 | 21.48 | 110 | 107 | 71-124 | 2 | 20 |
| 4-Methyl-2-pentanone | 100 | 95.57 | 100 | 93.92 | 96 | 94 | 67-130 | 2 | 20 |
| Methylene Chloride | 20 | 20.16 | 20 | 20.1 | 101 | 100 | 74-124 | 0 | 20 |
| Naphthalene | 20 | 18.7 | 20 | 18.52 | 94 | 93 | 61-128 | 1 | 20 |
| n-Propylbenzene | 20 | 19.93 | 20 | 19.65 | 100 | 98 | 76-126 | 1 | 20 |

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/31/2017 15:06

Group Number: 1826676

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Styrene | 20 | 21.27 | 20 | 20.96 | 106 | 105 | 78-123 | 1 | 20 |
| 1,1,1,2-Tetrachloroethane | 20 | 21.08 | 20 | 21.47 | 105 | 107 | 78-124 | 2 | 20 |
| 1,1,2,2-Tetrachloroethane | 20 | 19.02 | 20 | 18.33 | 95 | 92 | 71-121 | 4 | 20 |
| Tetrachloroethene | 20 | 21.09 | 20 | 21.03 | 105 | 105 | 74-129 | 0 | 20 |
| Toluene | 20 | 20.34 | 20 | 20.19 | 102 | 101 | 80-121 | 1 | 20 |
| 1,2,3-Trichlorobenzene | 20 | 19.84 | 20 | 19.91 | 99 | 100 | 69-129 | 0 | 20 |
| 1,2,4-Trichlorobenzene | 20 | 18.94 | 20 | 18.69 | 95 | 93 | 69-130 | 1 | 20 |
| 1,1,1-Trichloroethane | 20 | 20.88 | 20 | 20.66 | 104 | 103 | 74-131 | 1 | 20 |
| 1,1,2-Trichloroethane | 20 | 20.96 | 20 | 20.51 | 105 | 103 | 80-119 | 2 | 20 |
| Trichloroethene | 20 | 20.81 | 20 | 20.67 | 104 | 103 | 79-123 | 1 | 20 |
| Trichlorofluoromethane | 20 | 21.57 | 20 | 20.69 | 108 | 103 | 65-141 | 4 | 20 |
| 1,2,3-Trichloropropane | 20 | 20.83 | 20 | 20.43 | 104 | 102 | 73-122 | 2 | 20 |
| 1,2,4-Trimethylbenzene | 20 | 20.38 | 20 | 20.16 | 102 | 101 | 76-124 | 1 | 20 |
| 1,3,5-Trimethylbenzene | 20 | 20.38 | 20 | 20.37 | 102 | 102 | 75-124 | 0 | 20 |
| Vinyl Acetate | 100 | 104.73 | 100 | 103.96 | 105 | 104 | 54-146 | 1 | 20 |
| Vinyl Chloride | 20 | 16.89 | 20 | 16.6 | 84 | 83 | 58-137 | 2 | 20 |
| m+p-Xylene | 40 | 41.76 | 40 | 41 | 104 | 102 | 80-121 | 2 | 20 |
| o-Xylene | 20 | 19.76 | 20 | 20.04 | 99 | 100 | 78-122 | 1 | 20 |
| Xylene (Total) | 60 | 61.52 | 60 | 61.03 | 103 | 102 | 79-121 | 1 | 20 |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172010025A | Sample number(s): 9107402-9107407 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.146 | 0.128 | 0.163 | 114 | 128 | 60-140 | 12 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172001063501 | Sample number(s): 9107407 | | | | | | | | |
| Iron | 1.00 | 1.04 | | | 104 | | 87-115 | | |
| Manganese | 0.500 | 0.521 | | | 104 | | 90-114 | | |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172010025A | Sample number(s): 9107402-9107407 UNSPK: P109771 | | | | | | | | | |
| Ethylene dibromide | 1.29 | 0.121 | 1.17 | 0.122 | 1.20 | -101 (2) | -74 (2) | 60-140 | 3 | 20 |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172001063501 | Sample number(s): 9107407 UNSPK: P109771 | | | | | | | | | |
| Iron | 0.437 | 1.00 | 1.47 | 1.00 | 1.44 | 104 | 100 | 87-115 | 2 | 20 |
| Manganese | 0.259 | 0.500 | 0.761 | 0.500 | 0.749 | 101 | 98 | 90-114 | 2 | 20 |

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# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/31/2017 15:06

Group Number: 1826676

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc mg/l | MS Spike Added mg/l | MS Conc mg/l | MSD Spike Added mg/l | MSD Conc mg/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc mg/l | DUP Conc mg/l | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| Batch number: 172001063501 | Sample number(s): 9107407 BKG: P109771 | | | |
| Iron | 0.437 | 0.411 | 6 (1) | 20 |
| Manganese | 0.259 | 0.261 | 1 | 20 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: L172091AA

| | Dibromofluoromethane %Rec | LOD (ug/l) | 1,2-Dichloroethane-d4 %Rec | LOD (ug/l) | Toluene-d8 %Rec | LOD (ug/l) | 4-Bromofluorobenzene %Rec | LOD (ug/l) |
|---|---|---|---|---|---|---|---|---|
| 9107407 | 106 | 1 | 102 | 1 | 95 | 1 | 107 | 1 |
| Blank | 107 | 1 | 100 | 1 | 98 | 1 | 99 | 1 |
| LCS | 106 | 1 | 103 | 1 | 100 | 1 | 104 | 1 |
| LCSD | 105 | 1 | 100 | 1 | 100 | 1 | 104 | 1 |
| Limits: | 80-119 | | 81-118 | | 89-112 | | 85-114 | |

Analysis Name: EDB 8011 Water
Batch number: 172010025A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9107402 | 107 | 0.0067 |
| 9107403 | 110 | 0.0067 |
| 9107404 | 101 | 0.0066 |
| 9107405 | 120 | 0.0066 |
| 9107406 | 119 | 0.0067 |
| 9107407 | 106 | 0.0067 |
| Blank | 103 | 0.0070 |

*- Outside of specification
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(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Group Number: 1826676
Reported: 07/31/2017 15:06

## Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EDB 8011 Water
Batch number: 172010025A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| LCS | 106 | 0.0070 |
| LCSD | 112 | 0.0070 |
| MS | 91 | 0.13 (3) |
| MSD | 125 | 0.13 (3) |
| Limits: | 46-136 | |

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(3) The surrogate spike amount was less than the LOD.
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31675 | 1826676 | 9107402-07

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-216-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017; QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW216-173 | 7-17-17 | 0805 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 19

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732466

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-17-17 | 1430 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | 7.18.17 | 940 |

31675 | 1826676 | 9107402-07

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-217-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017<br>QUARTER: 3 (Jul-Sep) |

PROJECT SITE AND PHASE: ST106/SS110
LAB PO NUMBER: 14800
LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW217-173 | 7/17/17 | 0820 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 19

SAMPLER(S): Elon O'Malia

COURIER AND SHIPPING NUMBER: FedEx 871150732466

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Elon O'Malia Elon O'Malia | 7/17/17 | 1130 | Carlos Montoya | 7-17-17 | 1130 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7/17/17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | 7-18-17 | 940 |

31675 | 1826676 | 9107402-07

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-218-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | GW218-173 | 7/17/17 | 0845 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 20

SAMPLER(S): Elan O'Malia

COURIER AND SHIPPING NUMBER: FedEx 811156732477

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Elan O'Malia | 7/17/17 | 1130 | Printed Name and Signature: Carlos Montoya | 7/17/17 | 1130 |
| Printed Name and Signature: Carlos Montoya | 7/17/17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | 7.18.17 | 940 |

31675 | 1826676 | 9107402-07

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-223-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | (Total, Carbonate, and Bicarbonate) Alkalinity (SM2320B) | |
| 1 | GW223-173 | 7/17/17 | 0950 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 20

SAMPLER(S): Elon O'Malia

COURIER AND SHIPPING NUMBER: FedEx 811156732477

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Elon O'Malia | 7/17/17 | 1130 | Carlos Montoya | 7/17/17 | 1130 |
| Carlos Montoya | 7/17/17 | 1400 | | | |
| | | | Tracy Lutterloh | 7.18.17 | 940 |

31675 | 1826676 | 9107402-07

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-224-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW224-173 | 7/17/17 | 1012 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-21

SAMPLER(S): Elon O'Malia

COURIER AND SHIPPING NUMBER: FedEx 811156732444

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Elon O'Malia | 7/17/17 | 1130 | Printed Name and Signature: Carlos Montoya | 7-17-17 | 1130 |
| Printed Name and Signature: Carlos Montoya | 7.17.17 | 1400 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Timothy Cubberly | 7.18.17 | 940 |

31675 | 1826676 | 9107402-07

225 Schilling Circle Suite
400 Hunt Valley MD
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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-157-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Natalie Luciano NatalieLuciano@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Ammonia (SM4500NH3) | Sulfide (SM4500S2CF) | Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | | |
| 1 | GW173-157-157-173-CM | 7-17-17 | 1205 | 6 | 3 | — | | 2 | — | 1* | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

TB173-21

SAMPLER(S): S. Bosby

COURIER AND SHIPPING NUMBER: 811156732444

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Bosby | 7-17-17 | 1330 | Carlos Montoya | 7-17-17 | 1330 |
| Carlos Montoya | 7-17-17 | 1400 | | | |
| | | | | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-19

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-19 | 7/17/17 | 1200 | 2 | — | | | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106216 & KAFB-106217

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732466

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-17-17 | 1405 CM | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | TB173-20 | 7-17-17 | 1200 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106218 & KAFB-106223

SAMPLER(S): Carlos Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732477

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7.17.17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | 2017<br>QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-21 | 7-17-17 | 1200 | 4 | 2 | — | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106157 + KAFB-106224

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732444

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-17-17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | J | | |

1826676

## Kay Hower

**From:** Moss, Pamela <pmoss@eaest.com>
**Sent:** Wednesday, July 19, 2017 10:16 AM
**To:** Kay Hower
**Cc:** Graves, Dustin
**Subject:** RE: Kirtland revised COCs for samples collected 7-17-17
**Attachments:** rev COCs_7-17-17.pdf

Here you go thx.

**From:** Kay Hower [mailto:KayHower@eurofinsus.com]
**Sent:** Wednesday, July 19, 2017 7:36 AM
**To:** Moss, Pamela <pmoss@eaest.com>
**Cc:** Graves, Dustin <dgraves@eaest.com>
**Subject:** RE: Kirtland revised COCs for samples collected 7-17-17

Hi Pam, there wasn't an attachment to the email.

---

**From:** Moss, Pamela [mailto:pmoss@eaest.com]
**Sent:** Tuesday, July 18, 2017 6:23 PM
**To:** Kay Hower
**Cc:** Graves, Dustin
**Subject:** Kirtland revised COCs for samples collected 7-17-17

HI Kay, plz see attached revised COCs for the 3 trip blanks that were omitted from the shipments. Thx.

Here you go.

*Pam*

**PLZ NOTE NEW ADDRESS BELOW**

Pamela J. Moss
Senior Scientist
**EA Engineering, Science, and Technology, Inc., PBC**
7995 E. Prentice Ave, Suite 206E
Greenwood Village, CO 80111
303-590-9143 (office)
303-810-6903 (cell)
**pmoss@eaest.com**

1826676

* Cancel analysis - Sample not included with Shipment.
Pmoss 7/18/17

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-19

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 |

YEAR: 2017
QUARTER: 3

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8250C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | TB173- 19 | 7/17/17 | 1200 | 2 | — | — | — | 2 | — | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106216 & KAFB-106217

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732466

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-17-17 | 1800 CM |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

1826676

~~A~~ Cancel analysis - Simple not included with shipment.
Pmoss 7/18/17

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-20

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| YEAR: 2017 | QUARTER: 3 | | |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-20 | 7-17-17 | 1200 | 2 | | | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106218 & KAFB-106223

SAMPLER(S): Carlos Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156732477

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7.17.17 | 1400 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

18260676

CANCELED analysis - Sample not included with shipment.
Pmoss 7/18/17

225 Schilling Circle Suite 400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-21

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond, tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST105/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | TB173-21 | 7-17-17 | 1200 | 4 | 2 | — | | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106157 + KAFB-106224

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156752444

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| Carlos Montoya | 7-17-17 | 1420 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

eurofins | Lancaster Laboratories Environmental

# Sample Administration Receipt Documentation Log

Doc Log ID: 189069

Group Number(s): 1826676

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/18/2017 9:40 |
| Number of Packages: | 3 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 0 |
| Paperwork Enclosed: | Yes | Air Quality Samples Present: | No |
| Samples Intact: | Yes | | |
| Missing Samples: | Yes | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Timothy Cubberley (6520) at 12:19 on 07/18/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT131 | 3.4 | DT | Wet | Y | Loose | N |
| 2 | DT131 | 0.3 | DT | Wet | Y | Loose | N |
| 3 | DT131 | 0.7 | DT | Wet | Y | Loose | N |

## Missing Sample Details

| Sample ID on COC | Comments |
|---|---|
| TB173-19 | |
| TB173-20 | |



2425 New Holland Pike
Lancaster, PA 17601-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | non-detect |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| E | Concentration exceeds the calibration range |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# Volatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Volatiles by GC/MS

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR187**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9107407 | GW157-173 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

Trip blank vials were not received by the laboratory.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9107407: Analysis: 11997)
The response for a target analyte(s) in the initial and/or continuing calibration verification criteria marginally exceeds the DoD acceptance criteria. Due to the marginal nature of the outlier(s), the data is reported.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

(Sample number(s): 9107407: Analysis: 11997)
The response for a target analyte(s) in the initial calibration verification standard is outside the QC acceptance limits. The client was contacted and the data reported.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR187**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Volatiles by GC/MS

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# Quality Control Reference List
## GC/MS Volatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR187**

**Fraction: Volatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| VOCs- 5ml Water by 8260C | L172091AA | VBLKL86 | 07/28/2017 11:04:00 |
| | | LCSL86 | 07/28/2017 09:35:00 |
| | | LCDL86 | 07/28/2017 09:57:00 |
| | | LCSL87 | 07/28/2017 10:19:00 |
| | | LCDL87 | 07/28/2017 10:41:00 |
| | | 9107407 | 07/28/2017 11:26:00 |

**Fraction: Volatiles by GC/MS**

| L172091AA / VBLKL86<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Chloromethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Vinyl Chloride | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Bromomethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Chloroethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Trichlorofluoromethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Acrolein | 07/28/17 | N.D. | ug/l | 40 | 100 | 100 |
| 1,1-Dichloroethene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Acetone | 07/28/17 | N.D. | ug/l | 6 | 20 | 20 |
| Carbon Disulfide | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| Methylene Chloride | 07/28/17 | N.D. | ug/l | 2 | 4 | 4 |
| Acrylonitrile | 07/28/17 | N.D. | ug/l | 4 | 10 | 20 |
| trans-1,2-Dichloroethene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Methyl Tertiary Butyl Ether | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,1-Dichloroethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Vinyl Acetate | 07/28/17 | N.D. | ug/l | 2 | 4 | 10 |
| 2-Butanone | 07/28/17 | N.D. | ug/l | 3 | 8 | 10 |
| cis-1,2-Dichloroethene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 2,2-Dichloropropane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Bromochloromethane | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| Chloroform | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,1,1-Trichloroethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Carbon Tetrachloride | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,1-Dichloropropene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| Benzene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,2-Dichloroethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Trichloroethene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Dibromomethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,2-Dichloropropane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Bromodichloromethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| cis-1,3-Dichloropropene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 4-Methyl-2-pentanone | 07/28/17 | N.D. | ug/l | 3 | 8 | 10 |
| trans-1,3-Dichloropropene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Toluene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,3-Dichloropropane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Tetrachloroethene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,1,2-Trichloroethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Dibromochloromethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 2-Hexanone | 07/28/17 | N.D. | ug/l | 3 | 8 | 10 |
| 1,2-Dibromoethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Chlorobenzene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Ethylbenzene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,1,1,2-Tetrachloroethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| m+p-Xylene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| o-Xylene | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |

**Quality Control Summary**
**Method Blank**
**GC/MS Volatiles**
**SDG: KR187**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172091AA / VBLKL86<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Xylene (Total) | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Bromoform | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 4 |
| Styrene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| Isopropylbenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| Bromobenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 1,1,2,2-Tetrachloroethane | 07/28/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,2,3-Trichloropropane | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| n-Propylbenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 2-Chlorotoluene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 1,3,5-Trimethylbenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 4-Chlorotoluene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| tert-Butylbenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 1,2,4-Trimethylbenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| sec-Butylbenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 1,3-Dichlorobenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| p-Isopropyltoluene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 1,4-Dichlorobenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| n-Butylbenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 1,2-Dichlorobenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 1,2-Dibromo-3-chloropropane | 07/28/17 | N.D. | ug/l | 2 | 4 | 5 |
| 1,2,4-Trichlorobenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| Hexachlorobutadiene | 07/28/17 | N.D. | ug/l | 2 | 4 | 5 |
| Naphthalene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |
| 1,2,3-Trichlorobenzene | 07/28/17 | N.D. | ug/l | 1 | 2 | 5 |

**Quality Control Summary**
**Surrogates**
**GC/MS Volatiles**
**SDG: KR187**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172091AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKL86 | 100 | 81 - 118 | 99 | 85 - 114 | 107 | 80 - 119 | 98 | 89 - 112 |
| LCSL86 | 103 | 81 - 118 | 104 | 85 - 114 | 106 | 80 - 119 | 100 | 89 - 112 |
| LCDL86 | 100 | 81 - 118 | 104 | 85 - 114 | 105 | 80 - 119 | 100 | 89 - 112 |
| 9107407 | 102 | 81 - 118 | 107 | 85 - 114 | 106 | 80 - 119 | 95 | 89 - 112 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR187**
**Matrix: LIQUID**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSL86<br>LCSD: LCDL86<br><br>**Analyte** | Batch: **L172091AA** (Sample number(s): 9107407 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Dichlorodifluoromethane | 20 | 17.06 | 17.12 | 85 | 86 | 32-152 | 0 | 20 |
| Chloromethane | 20 | 16.51 | 16.4 | 83 | 82 | 50-139 | 1 | 20 |
| Vinyl Chloride | 20 | 16.89 | 16.6 | 84 | 83 | 58-137 | 2 | 20 |
| Bromomethane | 20 | 19.24 | 18.7 | 96 | 93 | 53-141 | 3 | 20 |
| Chloroethane | 20 | 17.65 | 17.88 | 88 | 89 | 60-138 | 1 | 20 |
| Trichlorofluoromethane | 20 | 21.57 | 20.69 | 108 | 103 | 65-141 | 4 | 20 |
| 1,1-Dichloroethene | 20 | 22.11 | 21.89 | 111 | 109 | 71-131 | 1 | 20 |
| Acrolein | 150 | 98.38 | 108.09 | 66 | 72 | 39-155 | 9 | 20 |
| Acetone | 150 | 146.85 | 154.12 | 98 | 103 | 39-160 | 5 | 20 |
| Carbon Disulfide | 20 | 21.99 | 21.75 | 110 | 109 | 64-133 | 1 | 20 |
| Methylene Chloride | 20 | 20.16 | 20.1 | 101 | 100 | 74-124 | 0 | 20 |
| Acrylonitrile | 100 | 93.45 | 91.85 | 93 | 92 | 63-135 | 2 | 20 |
| Methyl Tertiary Butyl Ether | 20 | 21.96 | 21.48 | 110 | 107 | 71-124 | 2 | 20 |
| trans-1,2-Dichloroethene | 20 | 21.8 | 21.76 | 109 | 109 | 75-124 | 0 | 20 |
| 1,1-Dichloroethane | 20 | 20.76 | 20.6 | 104 | 103 | 77-125 | 1 | 20 |
| 2-Butanone | 150 | 143.14 | 142.99 | 95 | 95 | 56-143 | 0 | 20 |
| cis-1,2-Dichloroethene | 20 | 21.05 | 21.32 | 105 | 107 | 78-123 | 1 | 20 |
| 2,2-Dichloropropane | 20 | 24.13 | 24.3 | 121 | 121 | 60-139 | 1 | 20 |
| Bromochloromethane | 20 | 21.8 | 20.88 | 109 | 104 | 78-123 | 4 | 20 |
| 1,1,1-Trichloroethane | 20 | 20.88 | 20.66 | 104 | 103 | 74-131 | 1 | 20 |
| Chloroform | 20 | 22 | 22.16 | 110 | 111 | 79-124 | 1 | 20 |
| 1,1-Dichloropropene | 20 | 20.3 | 20 | 101 | 100 | 79-125 | 1 | 20 |
| Carbon Tetrachloride | 20 | 23.7 | 23.09 | 118 | 115 | 72-136 | 3 | 20 |
| 1,2-Dichloroethane | 20 | 23.83 | 23.23 | 119 | 116 | 73-128 | 3 | 20 |
| Benzene | 20 | 20.47 | 20.25 | 102 | 101 | 79-120 | 1 | 20 |
| Trichloroethene | 20 | 20.81 | 20.67 | 104 | 103 | 79-123 | 1 | 20 |
| 1,2-Dichloropropane | 20 | 19.47 | 19.42 | 97 | 97 | 78-122 | 0 | 20 |
| Dibromomethane | 20 | 21.61 | 21.48 | 108 | 107 | 79-123 | 1 | 20 |
| Bromodichloromethane | 20 | 21.23 | 20.95 | 106 | 105 | 79-125 | 1 | 20 |
| cis-1,3-Dichloropropene | 20 | 20.35 | 20 | 102 | 100 | 75-124 | 2 | 20 |
| 4-Methyl-2-pentanone | 100 | 95.57 | 93.92 | 96 | 94 | 67-130 | 2 | 20 |
| Toluene | 20 | 20.34 | 20.19 | 102 | 101 | 80-121 | 1 | 20 |
| trans-1,3-Dichloropropene | 20 | 20.67 | 20.39 | 103 | 102 | 73-127 | 1 | 20 |
| 1,1,2-Trichloroethane | 20 | 20.96 | 20.51 | 105 | 103 | 80-119 | 2 | 20 |
| 1,3-Dichloropropane | 20 | 19.43 | 19.67 | 97 | 98 | 80-119 | 1 | 20 |
| Tetrachloroethene | 20 | 21.09 | 21.03 | 105 | 105 | 74-129 | 0 | 20 |
| 2-Hexanone | 100 | 93.46 | 91.64 | 93 | 92 | 57-139 | 2 | 20 |
| Dibromochloromethane | 20 | 20.89 | 20.64 | 104 | 103 | 74-126 | 1 | 20 |
| 1,2-Dibromoethane | 20 | 20.46 | 19.97 | 102 | 100 | 77-121 | 2 | 20 |
| 1,1,1,2-Tetrachloroethane | 20 | 21.08 | 21.47 | 105 | 107 | 78-124 | 2 | 20 |
| Chlorobenzene | 20 | 20.45 | 20.25 | 102 | 101 | 82-118 | 1 | 20 |
| Ethylbenzene | 20 | 20.61 | 20.42 | 103 | 102 | 79-121 | 1 | 20 |

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSL86<br>LCSD: LCDL86<br><br>**Analyte** | Batch: **L172091AA** (Sample number(s): 9107407 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| m+p-Xylene | 40 | 41.76 | 41 | 104 | 102 | 80-121 | 2 | 20 |
| o-Xylene | 20 | 19.76 | 20.04 | 99 | 100 | 78-122 | 1 | 20 |
| Xylene (Total) | 60 | 61.52 | 61.03 | 103 | 102 | 79-121 | 1 | 20 |
| Bromoform | 20 | 21.04 | 20.49 | 105 | 102 | 66-130 | 3 | 20 |
| Styrene | 20 | 21.27 | 20.96 | 106 | 105 | 78-123 | 1 | 20 |
| Isopropylbenzene | 20 | 20.95 | 20.94 | 105 | 105 | 72-131 | 0 | 20 |
| 1,1,2,2-Tetrachloroethane | 20 | 19.02 | 18.33 | 95 | 92 | 71-121 | 4 | 20 |
| Bromobenzene | 20 | 20.12 | 19.76 | 101 | 99 | 80-120 | 2 | 20 |
| 1,2,3-Trichloropropane | 20 | 20.83 | 20.43 | 104 | 102 | 73-122 | 2 | 20 |
| n-Propylbenzene | 20 | 19.93 | 19.65 | 100 | 98 | 76-126 | 1 | 20 |
| 2-Chlorotoluene | 20 | 19.67 | 19.33 | 98 | 97 | 79-122 | 2 | 20 |
| 1,3,5-Trimethylbenzene | 20 | 20.38 | 20.37 | 102 | 102 | 75-124 | 0 | 20 |
| 4-Chlorotoluene | 20 | 19.64 | 19.84 | 98 | 99 | 78-122 | 1 | 20 |
| tert-Butylbenzene | 20 | 18.73 | 18.77 | 94 | 94 | 78-124 | 0 | 20 |
| 1,2,4-Trimethylbenzene | 20 | 20.38 | 20.16 | 102 | 101 | 76-124 | 1 | 20 |
| sec-Butylbenzene | 20 | 20.19 | 19.79 | 101 | 99 | 77-126 | 2 | 20 |
| 1,3-Dichlorobenzene | 20 | 19.72 | 19.67 | 99 | 98 | 80-119 | 0 | 20 |
| p-Isopropyltoluene | 20 | 20.3 | 19.77 | 102 | 99 | 77-127 | 3 | 20 |
| 1,4-Dichlorobenzene | 20 | 19.93 | 19.87 | 100 | 99 | 79-118 | 0 | 20 |
| n-Butylbenzene | 20 | 19.62 | 19.31 | 98 | 97 | 75-128 | 2 | 20 |
| 1,2-Dichlorobenzene | 20 | 20.31 | 19.76 | 102 | 99 | 80-119 | 3 | 20 |
| 1,2-Dibromo-3-chloropropane | 20 | 19.8 | 19.11 | 99 | 96 | 62-128 | 4 | 20 |
| 1,2,4-Trichlorobenzene | 20 | 18.94 | 18.69 | 95 | 93 | 69-130 | 1 | 20 |
| Hexachlorobutadiene | 20 | 20.67 | 20.5 | 103 | 103 | 66-134 | 1 | 20 |
| Naphthalene | 20 | 18.7 | 18.52 | 94 | 93 | 61-128 | 1 | 20 |
| 1,2,3-Trichlorobenzene | 20 | 19.84 | 19.91 | 99 | 100 | 69-129 | 0 | 20 |

| LCS: LCSL87<br>LCSD: LCDL87<br><br>**Analyte** | Batch: **L172091AA** (Sample number(s): 9107407 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| Vinyl Acetate | 100 | 104.73 | 103.96 | 105 | 104 | 54-146 | 1 | 20 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR187___

Lab File ID: la26t01.d  BFB Injection Date: 04/26/17

Instrument ID: HP09915  BFB Injection Time: 12:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.10 |
| 75 | 30.0 - 60.0% of mass 95 | 44.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.79 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.54)1 |
| 174 | Greater than 50.0% of mass 95 | 90.09 |
| 175 | 5.0 - 9.0% of mass 174 | 6.12 ( 6.79)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 86.74 (96.29)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.56 ( 6.41)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | la26i01.d | 04/26/17 | 13:20 |
| 02 | VSTD100 | la26i02.d | 04/26/17 | 13:42 |
| 03 | VSTD50 | la26i03.d | 04/26/17 | 14:04 |
| 04 | VSTD20 | la26i04.d | 04/26/17 | 14:26 |
| 05 | VSTD10 | la26i05.d | 04/26/17 | 14:48 |
| 06 | VSTD4 | la26i06.d | 04/26/17 | 15:10 |
| 07 | VSTD1 | la26i07.d | 04/26/17 | 15:32 |
| 08 | MDL0.5 - MDL0.5 | la26m01.d | 04/26/17 | 15:54 |
| 09 | VBLKL48 | la26b31.d | 04/26/17 | 17:03 |
| 10 | LCSL46 | la26s01.d | 04/26/17 | 17:25 |
| 11 | LCSL48 | la26s31.d | 04/26/17 | 17:25 |
| 12 | ACRICV | la26s01a.d | 04/26/17 | 18:34 |
| 13 | 8944378 | la26s32.d | 04/26/17 | 19:15 |
| 14 | 8944379 | la26s33.d | 04/26/17 | 19:37 |
| 15 | 8947184 | la26s34.d | 04/26/17 | 19:59 |
| 16 | 8944352 | la26s35.d | 04/26/17 | 20:21 |
| 17 | 8944353MS | la26s36.d | 04/26/17 | 20:43 |
| 18 | 8944354MSD | la26s37.d | 04/26/17 | 21:05 |
| 19 | 8944360 | la26s38.d | 04/26/17 | 21:27 |
| 20 | 8944366 | la26s39.d | 04/26/17 | 21:49 |
| 21 | 8944368 | la26s40.d | 04/26/17 | 22:11 |
| 22 | 8944370 | la26s41.d | 04/26/17 | 22:33 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR187___

Lab File ID: la26t01.d  BFB Injection Date: 04/26/17

Instrument ID: HP09915  BFB Injection Time: 12:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.10 |
| 75 | 30.0 - 60.0% of mass 95 | 44.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.79 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.54)1 |
| 174 | Greater than 50.0% of mass 95 | 90.09 |
| 175 | 5.0 - 9.0% of mass 174 | 6.12 ( 6.79)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 86.74 (96.29)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.56 ( 6.41)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 8947174 | la26s42.d | 04/26/17 | 22:55 |
| 24 | 8947180 | la26s43.d | 04/26/17 | 23:17 |
| 25 | SECC050 | la26ec1.d | 04/26/17 | 23:38 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR187___

Lab File ID: la28t01.d  BFB Injection Date: 04/28/17

Instrument ID: HP09915  BFB Injection Time: 09:43

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.00 |
| 75 | 30.0 - 60.0% of mass 95 | 44.88 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.83 |
| 173 | Less than 2.0% of mass 174 | 0.52 ( 0.58)1 |
| 174 | Greater than 50.0% of mass 95 | 89.61 |
| 175 | 5.0 - 9.0% of mass 174 | 6.44 ( 7.19)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 87.32 (97.45)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.84 ( 6.69)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | la28i01.d | 04/28/17 | 10:29 |
| 02 | VSTD100 | la28i02.d | 04/28/17 | 10:51 |
| 03 | VSTD50 | la28i03.d | 04/28/17 | 11:13 |
| 04 | VSTD20 | la28i04.d | 04/28/17 | 11:35 |
| 05 | VSTD10 | la28i05.d | 04/28/17 | 11:56 |
| 06 | VSTD4 | la28i06.d | 04/28/17 | 12:18 |
| 07 | MDL001 - MDL001 | la28m01.d | 04/28/17 | 12:40 |
| 08 | VSTD50 | la28c01.d | 04/28/17 | 13:08 |
| 09 | LCSL55 | la28s01.d | 04/28/17 | 13:30 |
| 10 | LCSL56 | la28s02.d | 04/28/17 | 13:52 |
| 11 | VBLKL55 | la28b01.d | 04/28/17 | 14:14 |
| 12 | MDL0.5 - MDL0.5 | la28m05.d | 04/28/17 | 14:36 |
| 13 | 8947141 | la28s03.d | 04/28/17 | 14:57 |
| 14 | 8947132 | la28s04.d | 04/28/17 | 15:19 |
| 15 | 8947133MS | la28s05.d | 04/28/17 | 15:41 |
| 16 | 8947134MSD | la28s06.d | 04/28/17 | 16:03 |
| 17 | 8947133MS1 | la28s07.d | 04/28/17 | 16:25 |
| 18 | 8947134MSD1 | la28s08.d | 04/28/17 | 16:47 |
| 19 | 8947135 | la28s09.d | 04/28/17 | 17:09 |
| 20 | 8947136 | la28s10.d | 04/28/17 | 17:31 |
| 21 | 8947137 | la28s11.d | 04/28/17 | 17:53 |
| 22 | 8947138 | la28s12.d | 04/28/17 | 18:15 |

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR187___

Lab File ID: la28t01.d BFB Injection Date: 04/28/17

Instrument ID: HP09915 BFB Injection Time: 09:43

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.00 |
| 75 | 30.0 - 60.0% of mass 95 | 44.88 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.83 |
| 173 | Less than 2.0% of mass 174 | 0.52 ( 0.58)1 |
| 174 | Greater than 50.0% of mass 95 | 89.61 |
| 175 | 5.0 - 9.0% of mass 174 | 6.44 ( 7.19)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 87.32 (97.45)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.84 ( 6.69)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 8947139 | la28s13.d | 04/28/17 | 18:37 |
| 24 | 8947140 | la28s14.d | 04/28/17 | 18:59 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR187___

Lab File ID: ll28t01.d  BFB Injection Date: 07/28/17

Instrument ID: HP09915  BFB Injection Time: 08:15

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.24 |
| 75 | 30.0 - 60.0% of mass 95 | 49.67 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.78 |
| 173 | Less than 2.0% of mass 174 | 0.73 ( 0.80)1 |
| 174 | Greater than 50.0% of mass 95 | 91.25 |
| 175 | 5.0 - 9.0% of mass 174 | 6.90 ( 7.57)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 88.34 (96.81)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.08 ( 6.88)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | ll28c01.d | 07/28/17 | 08:51 |
| 02 | VSTD50 | ll28c02.d | 07/28/17 | 09:13 |
| 03 | LCSL86 | ll28s01.d | 07/28/17 | 09:35 |
| 04 | LCDL86 | ll28s02.d | 07/28/17 | 09:57 |
| 05 | LCSL89 | ll28s31.d | 07/28/17 | 09:57 |
| 06 | LCSL87 | ll28s03.d | 07/28/17 | 10:19 |
| 07 | LCDL87 | ll28s04.d | 07/28/17 | 10:41 |
| 08 | LCSL90 | ll28s32.d | 07/28/17 | 10:41 |
| 09 | VBLKL86 | ll28b01.d | 07/28/17 | 11:04 |
| 10 | VBLKL89 | ll28b31.d | 07/28/17 | 11:04 |
| 11 | 9107407 | ll28s05.d | 07/28/17 | 11:26 |
| 12 | 9121069 | ll28s06.d | 07/28/17 | 11:48 |
| 13 | 9121055 | ll28s07.d | 07/28/17 | 12:10 |
| 14 | SMLODVL | ll28d01.d | 07/28/17 | 12:31 |
| 15 | 9121058 | ll28s08.d | 07/28/17 | 12:53 |
| 16 | 9121059 | ll28s09.d | 07/28/17 | 13:15 |
| 17 | 9121060 | ll28s10.d | 07/28/17 | 13:37 |
| 18 | 9121061 | ll28s11.d | 07/28/17 | 13:59 |
| 19 | 9121062 | ll28s12.d | 07/28/17 | 14:21 |
| 20 | 9121063 | ll28s13.d | 07/28/17 | 14:43 |
| 21 | SECC050 | ll28ec1.d | 07/28/17 | 15:04 |
| 22 | SECCB50 | ll28ec2.d | 07/28/17 | 15:26 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR187___

Lab File ID: l128t01.d  BFB Injection Date: 07/28/17

Instrument ID: HP09915  BFB Injection Time: 08:15

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.24 |
| 75 | 30.0 - 60.0% of mass 95 | 49.67 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.78 |
| 173 | Less than 2.0% of mass 174 | 0.73 ( 0.80)1 |
| 174 | Greater than 50.0% of mass 95 | 91.25 |
| 175 | 5.0 - 9.0% of mass 174 | 6.90 ( 7.57)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 88.34 (96.81)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.08 ( 6.88)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 9109590 | l128s33.d | 07/28/17 | 15:48 |
| 24 | 9109585 | l128s34.d | 07/28/17 | 16:10 |
| 25 | 9109586MS | l128s35.d | 07/28/17 | 16:32 |
| 26 | 9109587MSD | l128s36.d | 07/28/17 | 16:54 |
| 27 | 9109586MS1 | l128s37.d | 07/28/17 | 17:16 |
| 28 | 9109587MSD1 | l128s38.d | 07/28/17 | 17:38 |
| 29 | 9109581 | l128s39.d | 07/28/17 | 18:00 |
| 30 | 9109582 | l128s40.d | 07/28/17 | 18:22 |
| 31 | 9109583 | l128s41.d | 07/28/17 | 18:43 |
| 32 | 9109584 | l128s42.d | 07/28/17 | 19:05 |
| 33 | 9109588 | l128s43.d | 07/28/17 | 19:27 |
| 34 | 9109589 | l128s44.d | 07/28/17 | 19:49 |

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 04/26/17  04/26/17

Heated Purge: (Y/N) Y  Calibration Times: 13:20  15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d  RRF 4 = la26i06.d  RRF 10= la26i05.d
RRF 20= la26i04.d  RRF 50= la26i03.d  RRF100= la26i02.d  RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | #0.2475 | 0.3109 | 0.2816 | 0.2855 | 0.3296 | 0.3182 | 0.3116 | 0.2979 | 9 | AVG | # |
| Chloromethane | #0.2728 | 0.3009 | 0.2971 | 0.3105 | 0.3299 | 0.3276 | 0.3031 | 0.3060 | 6 | AVG | # |
| 1,3-Butadiene | 0.1870 | 0.2029 | 0.1572 | 0.1857 | 0.1788 | 0.1756 | 0.1743 | 0.1802 | 8 | AVG | |
| Vinyl Chloride | #0.2596 | 0.2956 | 0.2812 | 0.2907 | 0.3269 | 0.3169 | 0.2974 | 0.2955 | 8 | AVG | # |
| Bromomethane | #0.1784 | 0.1942 | 0.1974 | 0.1985 | 0.2158 | 0.2102 | 0.1966 | 0.1987 | 6 | AVG | # |
| Chloroethane | #0.1512 | 0.1679 | 0.1637 | 0.1665 | 0.1796 | 0.1749 | 0.1619 | 0.1665 | 6 | AVG | # |
| Dichlorofluoromethane | 0.3565 | 0.4027 | 0.3929 | 0.4138 | 0.4398 | 0.4365 | 0.4009 | 0.4062 | 7 | AVG | |
| n-Pentane | 0.2779 | 0.3107 | 0.2558 | 0.2941 | 0.2818 | 0.2797 | 0.2725 | 0.2818 | 6 | AVG | |
| Trichlorofluoromethane | #0.2818 | 0.3506 | 0.3242 | 0.3264 | 0.3829 | 0.3708 | 0.3584 | 0.3422 | 10 | AVG | # |
| Ethyl ether | 0.1717 | 0.1900 | 0.1802 | 0.1983 | 0.2030 | 0.1997 | 0.1904 | 0.1905 | 6 | AVG | |
| Freon 123a | 0.2093 | 0.2464 | 0.2048 | 0.2441 | 0.2326 | 0.2304 | 0.2276 | 0.2279 | 7 | AVG | |
| Acrolein | 1.6997 | 1.7547 | 2.0438 | 2.0158 | 2.1800 | 2.3475 | 2.2840 | 2.0465 | 12 | AVG | |
| 1,1-Dichloroethene | #0.1731 | 0.1915 | 0.1632 | 0.1881 | 0.1862 | 0.1822 | 0.1833 | 0.1811 | 5 | AVG | # |
| 1,1-Dichloroethene(2) | #0.0849 | 0.0966 | 0.0823 | 0.0976 | 0.0939 | 0.0935 | 0.0931 | 0.0917 | 6 | AVG | #<- |
| Acetone | #0.7871 | 0.8113 | 0.9514 | 0.8091 | 0.9410 | 0.9228 | 0.9949 | 0.8882 | 9 | AVG | # |
| Freon 113 | #0.1559 | 0.1939 | 0.1621 | 0.1954 | 0.1881 | 0.1902 | 0.1903 | 0.1823 | 9 | AVG | # |
| 2-Propanol | 0.6182 | 0.6115 | 0.5764 | 0.6050 | 0.5447 | 0.5811 | 0.5848 | 0.5888 | 4 | AVG | |
| Methyl Iodide | 0.3218 | 0.3593 | 0.3218 | 0.3715 | 0.3659 | 0.3574 | 0.3612 | 0.3513 | 6 | AVG | |
| Carbon Disulfide | #0.5351 | 0.6016 | 0.5236 | 0.6223 | 0.6181 | 0.6105 | 0.6139 | 0.5893 | 7 | AVG | # |
| Allyl Chloride | 0.3475 | 0.3734 | 0.3447 | 0.3759 | 0.3727 | 0.3634 | 0.3616 | 0.3627 | 3 | AVG | |
| Methyl Acetate | #0.2908 | 0.2561 | 0.2535 | 0.2717 | 0.2645 | 0.2509 | 0.2524 | 0.2628 | 5 | AVG | # |
| Methylene Chloride | #0.2903 | 0.2500 | 0.2150 | 0.2388 | 0.2329 | 0.2250 | 0.2226 | 0.2392 | 11 | AVG | # |
| t-Butyl alcohol | 1.0273 | 0.9259 | 0.9637 | 0.9834 | 0.9700 | 0.9707 | 0.9301 | 0.9673 | 4 | AVG | |
| Acrylonitrile | 0.1150 | 0.1324 | 0.1390 | 0.1386 | 0.1542 | 0.1476 | 0.1394 | 0.1380 | 9 | AVG | |
| trans-1,2-Dichloroethene | #0.1880 | 0.2213 | 0.1984 | 0.2258 | 0.2203 | 0.2168 | 0.2167 | 0.2125 | 7 | AVG | # |
| Methyl Tertiary Butyl Ether | #0.6379 | 0.6679 | 0.6247 | 0.7026 | 0.6961 | 0.6730 | 0.6419 | 0.6634 | 4 | AVG | # |
| n-Hexane | 0.2805 | 0.3406 | 0.3182 | 0.3412 | 0.3308 | 0.3375 | 0.3312 | 0.3257 | 7 | AVG | |
| 1,1-Dichloroethane | #0.3662 | 0.4103 | 0.3686 | 0.4216 | 0.4181 | 0.4088 | 0.4012 | 0.3993 | 6 | AVG | # |
| di-Isopropyl ether | 0.7192 | 0.7694 | 0.7224 | 0.8149 | 0.8086 | 0.7840 | 0.7457 | 0.7663 | 5 | AVG | |
| 2-Chloro-1,3-butadiene | 0.2922 | 0.3422 | 0.3064 | 0.3592 | 0.3555 | 0.3527 | 0.3492 | 0.3368 | 8 | AVG | |
| Ethyl t-butyl ether | 0.6073 | 0.6490 | 0.6229 | 0.7065 | 0.7083 | 0.6819 | 0.6404 | 0.6595 | 6 | AVG | |
| cis-1,2-Dichloroethene | #0.2327 | 0.2468 | 0.2228 | 0.2546 | 0.2536 | 0.2482 | 0.2457 | 0.2435 | 5 | AVG | # |
| 2-Butanone | #0.1686 | 0.1714 | 0.1875 | 0.1858 | 0.2021 | 0.1923 | 0.1859 | 0.1848 | 6 | AVG | # |
| 2,2-Dichloropropane | 0.2099 | 0.2545 | 0.2401 | 0.2836 | 0.2893 | 0.2940 | 0.2945 | 0.2666 | 12 | AVG | |
| Propionitrile | 1.3266 | 1.3235 | 1.3715 | 1.3990 | 1.4565 | 1.5001 | 1.5052 | 1.4118 | 5 | AVG | |
| Methacrylonitrile | 0.1279 | 0.1312 | 0.1333 | 0.1469 | 0.1449 | 0.1412 | 0.1379 | 0.1376 | 5 | AVG | |
| Bromochloromethane | 0.1202 | 0.1246 | 0.1239 | 0.1349 | 0.1321 | 0.1301 | 0.1324 | 0.1283 | 4 | AVG | |
| Tetrahydrofuran | 1.0421 | 1.0386 | 1.2419 | 1.1297 | 1.3657 | 1.4221 | 1.4886 | 1.2470 | 15 | AVG | |
| Chloroform | #0.3575 | 0.3896 | 0.3506 | 0.4000 | 0.3966 | 0.3873 | 0.3822 | 0.3805 | 5 | AVG | # |
| 1,1,1-Trichloroethane | #0.3319 | 0.3922 | 0.3194 | 0.3655 | 0.3422 | 0.3419 | 0.3412 | 0.3478 | 7 | AVG | # |
| Cyclohexane | #0.3470 | 0.4113 | 0.3645 | 0.4180 | 0.4101 | 0.4134 | 0.4075 | 0.3959 | 7 | AVG | # |
| Cyclohexane(2) | #0.2687 | 0.3423 | 0.2971 | 0.3432 | 0.3342 | 0.3422 | 0.3382 | 0.3237 | 9 | AVG | # |
| Cyclohexane(3) | #0.0964 | 0.1208 | 0.1042 | 0.1221 | 0.1184 | 0.1210 | 0.1205 | 0.1148 | 9 | AVG | # |
| 1,1-Dichloropropene | 0.2765 | 0.3166 | 0.2837 | 0.3287 | 0.3218 | 0.3200 | 0.3194 | 0.3095 | 7 | AVG | |
| Carbon Tetrachloride | #0.2046 | 0.2490 | 0.2225 | 0.2690 | 0.2712 | 0.2774 | 0.2834 | 0.2539 | 12 | AVG | # |
| Isobutyl Alcohol | 0.3182 | 0.3284 | 0.3287 | 0.3597 | 0.3519 | 0.3476 | 0.3429 | 0.3396 | 4 | AVG | |
| Benzene | #0.8572 | 0.9361 | 0.8525 | 0.9667 | 0.9477 | 0.9252 | 0.9015 | 0.9124 | 5 | AVG | # |
| 1,2-Dichloroethane | #0.2889 | 0.3116 | 0.2915 | 0.3214 | 0.3232 | 0.3161 | 0.3080 | 0.3087 | 4 | AVG | # |
| 1,2-Dichloroethane(2) | #0.0134 | 0.0275 | 0.0279 | 0.0320 | 0.0308 | 0.0302 | 0.0298 | 0.0274 | 23 | AVG | #<- |
| t-Amyl methyl ether | 0.5956 | 0.6302 | 0.6087 | 0.7002 | 0.7074 | 0.6895 | 0.6501 | 0.6545 | 7 | AVG | |
| n-Heptane | 0.3402 | 0.4010 | 0.3501 | 0.3663 | 0.3616 | 0.3739 | 0.3594 | 0.3647 | 5 | AVG | |
| n-Butanol | 0.2321 | 0.2408 | 0.2553 | 0.2948 | 0.2885 | 0.3038 | 0.3010 | 0.2738 | 11 | AVG | |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 04/26/17  04/26/17

Heated Purge: (Y/N) Y  Calibration Times: 13:20  15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d  RRF 4 = la26i06.d  RRF 10= la26i05.d
RRF 20= la26i04.d  RRF 50= la26i03.d  RRF100= la26i02.d  RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | #0.2291 | 0.2376 | 0.2171 | 0.2444 | 0.2420 | 0.2413 | 0.2390 | 0.2358 | 4 | AVG # |
| Methylcyclohexane | #0.3425 | 0.4354 | 0.3756 | 0.4391 | 0.4392 | 0.4349 | 0.4416 | 0.4155 | 10 | AVG # |
| Methylcyclohexane(2) | #0.1527 | 0.1938 | 0.1685 | 0.1974 | 0.1996 | 0.1987 | 0.2016 | 0.1875 | 10 | AVG # |
| 1,2-Dichloropropane | #0.2227 | 0.2483 | 0.2358 | 0.2634 | 0.2654 | 0.2596 | 0.2533 | 0.2498 | 6 | AVG # |
| Dibromomethane | 0.1469 | 0.1540 | 0.1453 | 0.1634 | 0.1659 | 0.1621 | 0.1620 | 0.1571 | 5 | AVG |
| 1,4-Dioxane | 0.0843 | 0.0764 | 0.0797 | 0.1053 | 0.0898 | 0.0835 | 0.0793 | 0.0855 | 11 | AVG |
| Methyl Methacrylate | 0.1770 | 0.2008 | 0.1983 | 0.2262 | 0.2326 | 0.2311 | 0.2307 | 0.2138 | 10 | AVG |
| Bromodichloromethane | #0.2481 | 0.2673 | 0.2555 | 0.2955 | 0.3066 | 0.3052 | 0.3061 | 0.2835 | 9 | AVG # |
| 2-Nitropropane | 0.0655 | 0.0668 | 0.0740 | 0.0780 | 0.0927 | 0.0915 | 0.0942 | 0.0804 | 15 | AVG |
| 2-Chloroethyl Vinyl Ether | 0.1508 | 0.1784 | 0.1836 | 0.2048 | 0.2093 | 0.2102 | 0.2070 | 0.1920 | 12 | AVG |
| cis-1,3-Dichloropropene | #0.2930 | 0.3410 | 0.3372 | 0.3925 | 0.4071 | 0.4071 | 0.4084 | 0.3695 | 12 | AVG # |
| 4-Methyl-2-pentanone | #0.3194 | 0.3294 | 0.3796 | 0.3953 | 0.4247 | 0.4132 | 0.4041 | 0.3808 | 11 | AVG # |
| Toluene | #0.6827 | 0.7517 | 0.7064 | 0.7999 | 0.7677 | 0.7520 | 0.7330 | 0.7419 | 5 | AVG # |
| trans-1,3-Dichloropropene | #0.3059 | 0.3663 | 0.3795 | 0.4472 | 0.4726 | 0.4689 | 0.4716 | 0.4160 | 16 | AVG # |
| Ethyl Methacrylate | 0.3763 | 0.4210 | 0.4425 | 0.5116 | 0.5217 | 0.5113 | 0.4957 | 0.4686 | 12 | AVG |
| 1,1,2-Trichloroethane | #0.2665 | 0.2762 | 0.2728 | 0.3034 | 0.3049 | 0.2920 | 0.2854 | 0.2859 | 5 | AVG # |
| Tetrachloroethene | #0.2930 | 0.3299 | 0.3192 | 0.3548 | 0.3312 | 0.3339 | 0.3351 | 0.3281 | 6 | AVG # |
| 1,3-Dichloropropane | 0.4716 | 0.4813 | 0.4656 | 0.5287 | 0.5239 | 0.5079 | 0.4934 | 0.4961 | 5 | AVG |
| 2-Hexanone | #0.2828 | 0.3057 | 0.3608 | 0.3898 | 0.3977 | 0.3931 | 0.3768 | 0.3581 | 13 | AVG # |
| Dibromochloromethane | #0.2375 | 0.2630 | 0.2641 | 0.3102 | 0.3298 | 0.3308 | 0.3374 | 0.2961 | 14 | AVG # |
| 1,2-Dibromoethane | #0.2767 | 0.2967 | 0.2975 | 0.3352 | 0.3339 | 0.3278 | 0.3230 | 0.3130 | 7 | AVG # |
| 1-Chlorohexane | 0.4536 | 0.4352 | 0.4043 | 0.4273 | 0.4181 | 0.4234 | 0.4205 | 0.4261 | 4 | AVG |
| Chlorobenzene | #0.7867 | 0.8528 | 0.8140 | 0.9180 | 0.8874 | 0.8733 | 0.8605 | 0.8561 | 5 | AVG # |
| 1,1,1,2-Tetrachloroethane | 0.2410 | 0.2658 | 0.2572 | 0.3009 | 0.3047 | 0.3045 | 0.3048 | 0.2827 | 10 | AVG |
| Ethylbenzene | #1.3005 | 1.4333 | 1.3909 | 1.5359 | 1.4779 | 1.4625 | 1.4167 | 1.4311 | 5 | AVG # |
| m+p-Xylene | #0.4994 | 0.5538 | 0.5367 | 0.5978 | 0.5772 | 0.5732 | 0.5619 | 0.5571 | 6 | AVG # |
| o-Xylene | #0.4903 | 0.5421 | 0.5360 | 0.5924 | 0.5812 | 0.5730 | 0.5635 | 0.5541 | 6 | AVG # |
| Styrene | #0.7531 | 0.8692 | 0.8880 | 1.0054 | 0.9833 | 0.9681 | 0.9446 | 0.9159 | 10 | AVG # |
| Bromoform | #0.1549 | 0.1771 | 0.1880 | 0.2267 | 0.2449 | 0.2513 | 0.2622 | 0.2150 | 19 | AVG # |
| Isopropylbenzene | #1.2079 | 1.4227 | 1.4232 | 1.5063 | 1.4687 | 1.4666 | 1.4168 | 1.4160 | 7 | AVG # |
| Cyclohexanone | 0.2990 | 0.2968 | 0.3246 | 0.3566 | 0.3401 | 0.3292 | 0.3106 | 0.3224 | 7 | AVG |
| Bromobenzene | 0.6537 | 0.7071 | 0.6780 | 0.7611 | 0.7396 | 0.7364 | 0.7270 | 0.7147 | 5 | AVG |
| 1,1,2,2-Tetrachloroethane | #0.8142 | 0.8692 | 0.8499 | 0.9481 | 0.9471 | 0.9256 | 0.8583 | 0.8875 | 6 | AVG # |
| 1,2,3-Trichloropropane | 0.2342 | 0.2517 | 0.2412 | 0.2638 | 0.2643 | 0.2577 | 0.2432 | 0.2509 | 5 | AVG |
| trans-1,4-Dichloro-2-butene | 0.2210 | 0.2407 | 0.2456 | 0.2735 | 0.2756 | 0.2705 | 0.2534 | 0.2543 | 8 | AVG |
| n-Propylbenzene | 2.8221 | 3.2015 | 3.2581 | 3.3397 | 3.2365 | 3.2414 | 3.0068 | 3.1580 | 6 | AVG |
| 2-Chlorotoluene | 0.5895 | 0.6545 | 0.6517 | 0.6887 | 0.6778 | 0.6784 | 0.6601 | 0.6573 | 5 | AVG |
| 4-Chlorotoluene | 0.6274 | 0.6695 | 0.6724 | 0.7240 | 0.7029 | 0.7028 | 0.6895 | 0.6841 | 5 | AVG |
| 1,3,5-Trimethylbenzene | 1.8650 | 2.2247 | 2.2970 | 2.3886 | 2.3617 | 2.3625 | 2.2642 | 2.2520 | 8 | AVG |
| tert-Butylbenzene | 0.4332 | 0.4662 | 0.4786 | 0.4996 | 0.5085 | 0.5149 | 0.5065 | 0.4868 | 6 | AVG |
| Pentachloroethane | 0.3051 | 0.3420 | 0.3506 | 0.4009 | 0.4186 | 0.4307 | 0.4424 | 0.3843 | 14 | AVG |
| 1,2,4-Trimethylbenzene | 1.9827 | 2.2719 | 2.3523 | 2.4469 | 2.4266 | 2.4253 | 2.3321 | 2.3197 | 7 | AVG |
| sec-Butylbenzene | 2.4903 | 2.8982 | 2.9677 | 2.9884 | 2.9562 | 2.9854 | 2.8220 | 2.8726 | 6 | AVG |
| 1,3-Dichlorobenzene | #1.3064 | 1.3716 | 1.3473 | 1.4172 | 1.3858 | 1.3710 | 1.3255 | 1.3607 | 3 | AVG # |
| p-Isopropyltoluene | 2.1849 | 2.5019 | 2.5974 | 2.6342 | 2.6235 | 2.6717 | 2.5408 | 2.5364 | 7 | AVG |
| 1,4-Dichlorobenzene | #1.4027 | 1.4149 | 1.3899 | 1.4733 | 1.4246 | 1.4029 | 1.3406 | 1.4070 | 3 | AVG # |
| 1,2,3-Trimethylbenzene | 2.2649 | 2.4023 | 2.4235 | 2.6015 | 2.4902 | 2.4528 | 2.3775 | 2.4304 | 4 | AVG |
| Benzyl Chloride |  | 1.0778 | 1.2005 | 1.5200 | 1.6375 | 1.7029 | 1.6917 | 1.4717 | 18 | AVG |
| 1,3-Diethylbenzene | 1.3296 | 1.4969 | 1.5112 | 1.6363 | 1.5648 | 1.5488 | 1.5197 | 1.5153 | 6 | AVG |
| 1,4-Diethylbenzene | 1.4533 | 1.6043 | 1.5938 | 1.6958 | 1.6245 | 1.6050 | 1.5624 | 1.5913 | 5 | AVG |
| 1,2-Dichlorobenzene | #1.2897 | 1.3533 | 1.3092 | 1.4015 | 1.3684 | 1.3483 | 1.2923 | 1.3375 | 3 | AVG # |
| n-Butylbenzene | 1.2065 | 1.3017 | 1.3115 | 1.2971 | 1.2671 | 1.2809 | 1.2043 | 1.2670 | 4 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 04/26/17 04/26/17

Heated Purge: (Y/N) Y Calibration Times: 13:20 15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d RRF 4 = la26i06.d RRF 10= la26i05.d
RRF 20= la26i04.d RRF 50= la26i03.d RRF100= la26i02.d RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diethylbenzene | 1.1319 | 1.2774 | 1.2787 | 1.3659 | 1.3106 | 1.2945 | 1.2676 | 1.2752 | 6 | AVG |
| 1,2-Dibromo-3-chloropropane# | 0.1623 | 0.1719 | 0.1751 | 0.2007 | 0.2065 | 0.2045 | 0.1928 | 0.1877 | 9 | AVG # |
| 1,3,5-Trichlorobenzene | | 1.1060 | 1.0957 | 1.0943 | 1.0851 | 1.0959 | 1.0293 | 1.0844 | 3 | AVG |
| 1,2,4-Trichlorobenzene # | | 1.0544 | 1.0590 | 1.0780 | 1.0666 | 1.0670 | 0.9865 | 1.0519 | 3 | AVG # |
| Hexachlorobutadiene | | 0.4890 | 0.4549 | 0.4629 | 0.4481 | 0.4651 | 0.4211 | 0.4568 | 5 | AVG |
| Naphthalene | 3.0754 | 3.0911 | 3.1332 | 3.3963 | 3.3573 | 3.2808 | 2.8858 | 3.1742 | 6 | AVG |
| 1,2,3-Trichlorobenzene | | 1.0198 | 1.0312 | 1.0550 | 1.0298 | 1.0226 | 0.9306 | 1.0148 | 4 | AVG |
| 2-Methylnaphthalene | | 1.9258 | 2.0069 | 2.2473 | 2.1829 | 2.1335 | 1.8189 | 2.0525 | 8 | AVG |
| Dibromofluoromethane | 0.2444 | 0.2422 | 0.2443 | 0.2417 | 0.2460 | 0.2463 | 0.2442 | 0.2441 | 1 | AVG |
| Dibromofluoromethane(2) | 0.2484 | 0.2493 | 0.2512 | 0.2479 | 0.2518 | 0.2517 | 0.2511 | 0.2502 | 1 | AVG |
| 1,2-Dichloroethane-d4 | 0.0609 | 0.0612 | 0.0603 | 0.0600 | 0.0609 | 0.0616 | 0.0602 | 0.0607 | 1 | AVG |
| 1,2-Dichloroethane-d4(2) | 0.2880 | 0.2902 | 0.2913 | 0.2865 | 0.2857 | 0.2879 | 0.2807 | 0.2872 | 1 | AVG |
| 1,2-Dichloroethane-d4(3) | 0.0378 | 0.0385 | 0.0394 | 0.0383 | 0.0385 | 0.0387 | 0.0385 | 0.0385 | 1 | AVG |
| Toluene-d8 | 1.2792 | 1.2789 | 1.2799 | 1.2875 | 1.2795 | 1.2720 | 1.2596 | 1.2766 | 1 | AVG |
| Toluene-d8(2) | 0.8411 | 0.8411 | 0.8400 | 0.8460 | 0.8426 | 0.8383 | 0.8385 | 0.8411 | 0 | AVG |
| 4-Bromofluorobenzene | 0.4774 | 0.4787 | 0.4758 | 0.4766 | 0.4724 | 0.4722 | 0.4686 | 0.4745 | 1 | AVG |
| 4-Bromofluorobenzene(2) | 0.4208 | 0.4208 | 0.4169 | 0.4148 | 0.4132 | 0.4117 | 0.4155 | 0.4162 | 1 | AVG |

Average %RSD 7

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

| | |
|---|---|
| /chem/HP09915.i/17apr26a.b/la26i01.d | VSTD300 |
| /chem/HP09915.i/17apr26a.b/la26i02.d | VSTD100 |
| /chem/HP09915.i/17apr26a.b/la26i03.d | VSTD050 |
| /chem/HP09915.i/17apr26a.b/la26i04.d | VSTD020 |
| /chem/HP09915.i/17apr26a.b/la26i05.d | VSTD010 |
| /chem/HP09915.i/17apr26a.b/la26i06.d | VSTD004 |
| /chem/HP09915.i/17apr26a.b/la26i07.d | VSTD001 |

Area Summary

File ID:

| Internal Standard Name | la26i01.d | la26i02.d | la26i03.d | la26i04.d | la26i05.d | la26i06.d | la26i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 169188 | 183612 | 194134 | 210810 | 194850 | 205105 | 204400 | 194586 | 7 | Yes |
| Fluorobenzene | 1047200 | 1062919 | 1036296 | 1038230 | 1049965 | 1046774 | 1036977 | 1045480 | 1 | Yes |
| Chlorobenzene-d5 | 832450 | 834937 | 803001 | 793538 | 806654 | 805037 | 790373 | 809427 | 2 | Yes |
| 1,4-Dichlorobenzene-d4 | 451513 | 443338 | 430663 | 425437 | 429808 | 433758 | 428650 | 434738 | 2 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | la26i01.d | la26i02.d | la26i03.d | la26i04.d | la26i05.d | la26i06.d | la26i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 3.578 | 3.584 | 3.565 | 3.578 | 3.565 | 3.574 | 3.581 | 3.575 |
| Fluorobenzene | 7.057 | 7.057 | 7.053 | 7.053 | 7.050 | 7.053 | 7.050 | 7.053 |
| Chlorobenzene-d5 | 10.712 | 10.713 | 10.712 | 10.709 | 10.709 | 10.709 | 10.709 | 10.711 |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 04/26/2017 at 16:04.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.2979 | 0.2605 | 17.49 | 20 | -13 | # |
| # | Chloromethane | 0.3060 | 0.2823 | 18.45 | 20 | -8 | # |
| \| | 1,3-Butadiene | 0.1802 | 0.2800 | 31.07 | 20 | 55 | \|<- |
| # | Vinyl Chloride | 0.2955 | 0.2777 | 18.80 | 20 | -6 | # |
| # | Bromomethane | 0.1987 | 0.1876 | 18.88 | 20 | -6 | # |
| # | Chloroethane | 0.1665 | 0.1559 | 18.73 | 20 | -6 | # |
| \| | Dichlorofluoromethane | 0.4062 | 0.4016 | 19.77 | 20 | -1 | \| |
| \| | n-Pentane | 0.2818 | 0.3710 | 26.34 | 20 | 32 | \|<- |
| # | Trichlorofluoromethane | 0.3422 | 0.3370 | 19.70 | 20 | -1 | # |
| \| | Ethyl ether | 0.1905 | 0.1869 | 19.62 | 20 | -2 | \| |
| \| | Freon 123a | 0.2279 | 0.2357 | 20.69 | 20 | 3 | \| |
| \| | Acrolein | 2.0465 | 1.2690 | 93.01 | 150 | -38 | \|<- |
| # | 1,1-Dichloroethene | 0.1811 | 0.2024 | 22.36 | 20 | 12 | # |
| # | Acetone | 0.8882 | 0.8195 | 138.39 | 150 | -8 | # |
| # | Freon 113 | 0.1823 | 0.2076 | 22.78 | 20 | 14 | # |
| \| | 2-Propanol | 0.5888 | 0.5195 | 132.34 | 150 | -12 | \| |
| \| | Methyl Iodide | 0.3513 | 0.3762 | 21.42 | 20 | 7 | \| |
| # | Carbon Disulfide | 0.5893 | 0.6570 | 22.30 | 20 | 11 | # |
| \| | Allyl Chloride | 0.3627 | 0.3572 | 19.69 | 20 | -2 | \| |
| # | Methyl Acetate | 0.2628 | 0.2584 | 19.66 | 20 | -2 | # |
| # | Methylene Chloride | 0.2392 | 0.2381 | 19.90 | 20 | 0 | # |
| \| | t-Butyl alcohol | 0.9673 | 0.8975 | 185.56 | 200 | -7 | \| |
| \| | Acrylonitrile | 0.1380 | 0.1313 | 95.14 | 100 | -5 | \| |
| # | trans-1,2-Dichloroethene | 0.2125 | 0.2299 | 21.64 | 20 | 8 | # |
| # | Methyl Tertiary Butyl Ether | 0.6634 | 0.6558 | 19.77 | 20 | -1 | # |
| \| | n-Hexane | 0.3257 | 0.3535 | 21.71 | 20 | 9 | \| |
| # | 1,1-Dichloroethane | 0.3993 | 0.4121 | 20.64 | 20 | 3 | # |
| \| | di-Isopropyl ether | 0.7663 | 0.7768 | 20.28 | 20 | 1 | \| |
| \| | 2-Chloro-1,3-butadiene | 0.3368 | 0.3399 | 20.18 | 20 | 1 | \| |
| \| | Ethyl t-butyl ether | 0.6595 | 0.6369 | 19.32 | 20 | -3 | \| |
| # | cis-1,2-Dichloroethene | 0.2435 | 0.2490 | 20.45 | 20 | 2 | # |
| # | 2-Butanone | 0.1848 | 0.1714 | 139.09 | 150 | -7 | # |
| \| | 2,2-Dichloropropane | 0.2666 | 0.2562 | 19.23 | 20 | -4 | \| |
| \| | Propionitrile | 1.4118 | 1.3352 | 141.87 | 150 | -5 | \| |
| \| | Methacrylonitrile | 0.1376 | 0.1355 | 147.71 | 150 | -2 | \| |
| \| | Bromochloromethane | 0.1283 | 0.1260 | 19.64 | 20 | -2 | \| |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.2470 | 1.1660 | 93.51 | 100 | -6 | |
| # | Chloroform | 0.3805 | 0.3823 | 20.09 | 20 | 0 | # |
| # | 1,1,1-Trichloroethane | 0.3478 | 0.3382 | 19.45 | 20 | -3 | # |
| # | Cyclohexane | 0.3959 | 0.3959 | 20.00 | 20 | 0 | # |
| | 1,1-Dichloropropene | 0.3095 | 0.2993 | 19.34 | 20 | -3 | |
| # | Carbon Tetrachloride | 0.2539 | 0.2483 | 19.57 | 20 | -2 | # |
| | Isobutyl Alcohol | 0.3396 | 0.3237 | 476.51 | 500 | -5 | |
| # | Benzene | 0.9124 | 0.9212 | 20.19 | 20 | 1 | # |
| # | 1,2-Dichloroethane | 0.3087 | 0.3133 | 20.30 | 20 | 2 | # |
| | t-Amyl methyl ether | 0.6545 | 0.6265 | 19.14 | 20 | -4 | |
| | n-Heptane | 0.3647 | 0.3640 | 19.96 | 20 | 0 | |
| | n-Butanol | 0.2738 | 0.2575 | 940.39 | 1000 | -6 | |
| # | Trichloroethene | 0.2358 | 0.2353 | 19.96 | 20 | 0 | # |
| # | Methylcyclohexane | 0.4155 | 0.4168 | 20.06 | 20 | 0 | # |
| # | 1,2-Dichloropropane | 0.2498 | 0.2524 | 20.21 | 20 | 1 | # |
| | Dibromomethane | 0.1571 | 0.1582 | 20.14 | 20 | 1 | |
| | 1,4-Dioxane | 0.0855 | 0.0944 | 552.41 | 500 | 10 | |
| | Methyl Methacrylate | 0.2138 | 0.2084 | 19.49 | 20 | -3 | |
| # | Bromodichloromethane | 0.2835 | 0.2745 | 19.37 | 20 | -3 | # |
| | 2-Nitropropane | 0.0804 | 0.0666 | 16.57 | 20 | -17 | |
| | 2-Chloroethyl Vinyl Ether | 0.1920 | 0.1805 | 18.80 | 20 | -6 | |
| # | cis-1,3-Dichloropropene | 0.3695 | 0.3611 | 19.55 | 20 | -2 | # |
| # | 4-Methyl-2-pentanone | 0.3808 | 0.3600 | 94.52 | 100 | -5 | # |
| # | Toluene | 0.7419 | 0.7452 | 20.09 | 20 | 0 | # |
| # | trans-1,3-Dichloropropene | 0.4160 | 0.4154 | 19.97 | 20 | 0 | # |
| | Ethyl Methacrylate | 0.4686 | 0.4750 | 20.27 | 20 | 1 | |
| # | 1,1,2-Trichloroethane | 0.2859 | 0.2905 | 20.32 | 20 | 2 | # |
| # | Tetrachloroethene | 0.3281 | 0.3228 | 19.68 | 20 | -2 | # |
| | 1,3-Dichloropropane | 0.4961 | 0.4971 | 20.04 | 20 | 0 | |
| # | 2-Hexanone | 0.3581 | 0.3396 | 94.83 | 100 | -5 | # |
| # | Dibromochloromethane | 0.2961 | 0.2792 | 18.86 | 20 | -6 | # |
| # | 1,2-Dibromoethane | 0.3130 | 0.3224 | 20.60 | 20 | 3 | # |
| | 1-Chlorohexane | 0.4261 | 0.4012 | 18.83 | 20 | -6 | |
| # | Chlorobenzene | 0.8561 | 0.8413 | 19.65 | 20 | -2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2827 | 0.2699 | 19.10 | 20 | -5 | |
| # | Ethylbenzene | 1.4311 | 1.4100 | 19.70 | 20 | -1 | # |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | m+p-Xylene | 0.5571 | 0.5494 | 39.45 | 40 | -1 | # |
| # | o-Xylene | 0.5541 | 0.5404 | 19.51 | 20 | -2 | # |
| # | Styrene | 0.9159 | 0.9324 | 20.36 | 20 | 2 | # |
| # | Bromoform | 0.2150 | 0.1947 | 18.11 | 20 | -9 | # |
| # | Isopropylbenzene | 1.4160 | 1.4202 | 20.06 | 20 | 0 | # |
| | Cyclohexanone | 0.3224 | 0.3366 | 522.07 | 500 | 4 | |
| | Bromobenzene | 0.7147 | 0.6986 | 19.55 | 20 | -2 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8875 | 0.8909 | 20.08 | 20 | 0 | # |
| | 1,2,3-Trichloropropane | 0.2509 | 0.2569 | 20.48 | 20 | 2 | |
| | trans-1,4-Dichloro-2-butene | 0.2543 | 0.2468 | 97.04 | 100 | -3 | |
| | n-Propylbenzene | 3.1580 | 3.0963 | 19.61 | 20 | -2 | |
| | 2-Chlorotoluene | 0.6573 | 0.6330 | 19.26 | 20 | -4 | |
| | 4-Chlorotoluene | 0.6841 | 0.6691 | 19.56 | 20 | -2 | |
| | 1,3,5-Trimethylbenzene | 2.2520 | 2.1982 | 19.52 | 20 | -2 | |
| | tert-Butylbenzene | 0.4868 | 0.4796 | 19.70 | 20 | -1 | |
| | Pentachloroethane | 0.3843 | 0.3671 | 19.10 | 20 | -4 | |
| | 1,2,4-Trimethylbenzene | 2.3197 | 2.2673 | 19.55 | 20 | -2 | |
| | sec-Butylbenzene | 2.8726 | 2.8359 | 19.74 | 20 | -1 | |
| # | 1,3-Dichlorobenzene | 1.3607 | 1.2946 | 19.03 | 20 | -5 | # |
| | p-Isopropyltoluene | 2.5364 | 2.4766 | 19.53 | 20 | -2 | |
| # | 1,4-Dichlorobenzene | 1.4070 | 1.3571 | 19.29 | 20 | -4 | # |
| | 1,2,3-Trimethylbenzene | 2.4304 | 2.4322 | 20.02 | 20 | 0 | |
| | Benzyl Chloride | 1.4717 | 1.2688 | 17.24 | 20 | -14 | |
| | 1,3-Diethylbenzene | 1.5153 | 1.4812 | 19.55 | 20 | -2 | |
| | 1,4-Diethylbenzene | 1.5913 | 1.5419 | 19.38 | 20 | -3 | |
| # | 1,2-Dichlorobenzene | 1.3375 | 1.2970 | 19.39 | 20 | -3 | # |
| | n-Butylbenzene | 1.2670 | 1.2177 | 19.22 | 20 | -4 | |
| | 1,2-Diethylbenzene | 1.2752 | 1.2547 | 19.68 | 20 | -2 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1877 | 0.1770 | 18.86 | 20 | -6 | # |
| | 1,3,5-Trichlorobenzene | 1.0844 | 1.0144 | 18.71 | 20 | -6 | |
| # | 1,2,4-Trichlorobenzene | 1.0519 | 0.9806 | 18.64 | 20 | -7 | # |
| | Hexachlorobutadiene | 0.4568 | 0.3983 | 17.44 | 20 | -13 | |
| | Naphthalene | 3.1742 | 3.1214 | 19.67 | 20 | -2 | |
| | 1,2,3-Trichlorobenzene | 1.0148 | 0.9259 | 18.25 | 20 | -9 | |
| | 2-Methylnaphthalene | 2.0525 | 1.8562 | 18.09 | 20 | -10 | |

Average %Drift 5

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 18:34

Lab File ID: la26s01a.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Acrolein | 2.0465 | 1.8187 | 133.30 | 150 | -11 |

Average %Drift 11

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 04/28/17 04/28/17

Heated Purge: (Y/N) Y Calibration Times: 10:29 12:18

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF = RRF 4 = la28i06.d RRF 10= la28i05.d
RRF 20= la28i04.d RRF 50= la28i03.d RRF100= la28i02.d RRF300= la28i01.d

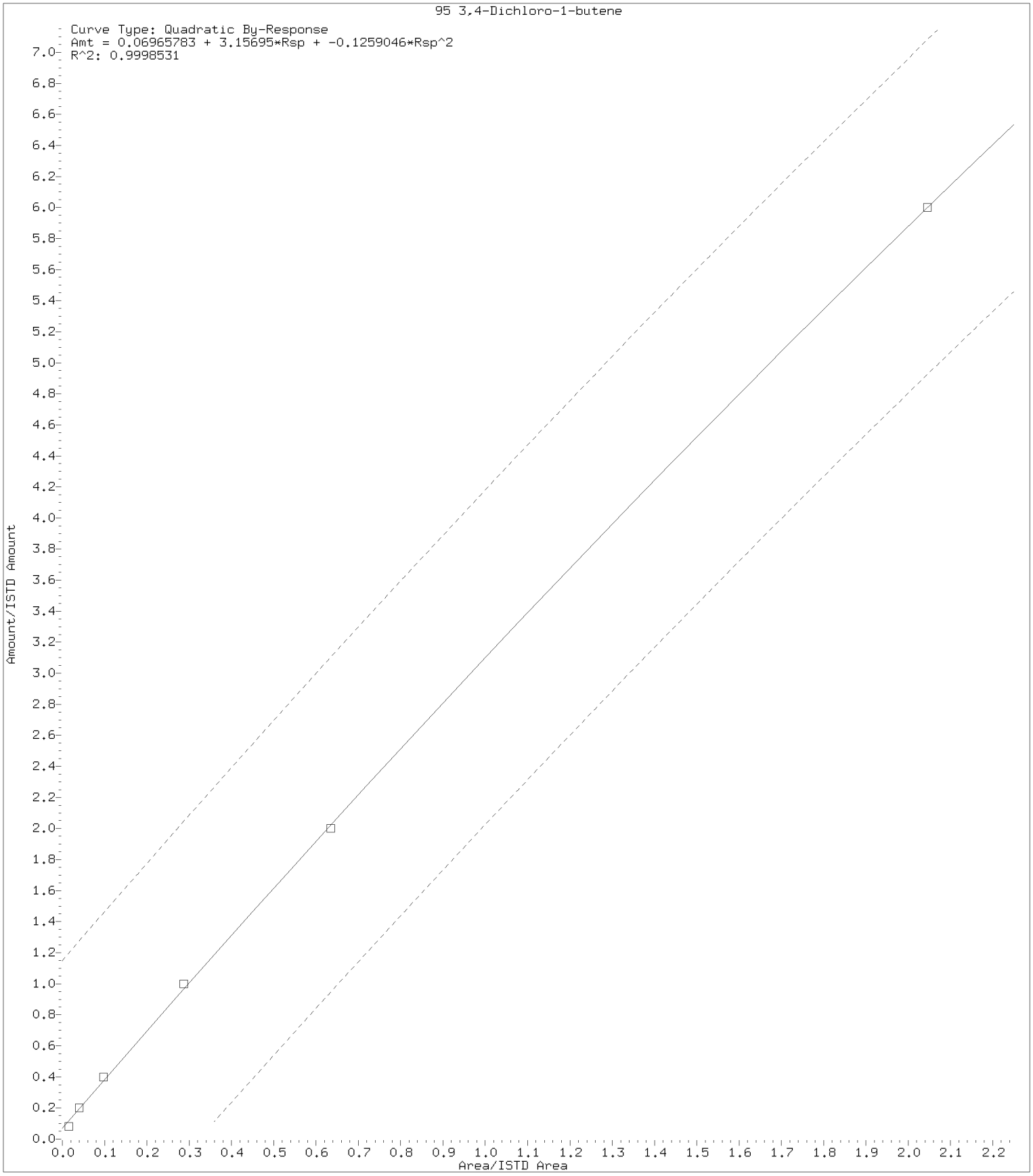
| COMPOUND | RRF | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,4-Trichlorobutene | | 0.3760 | 0.3825 | 0.4600 | 0.5202 | 0.5696 | 0.5888 | 0.4828 | 19 | AVG |
| 3,4-Dichloro-1-butene | | 0.1972 | 0.2012 | 0.2435 | 0.2875 | 0.3174 | 0.3408 | 0.2646 | 23 | 2NDDEG |
| Acetonitrile | | 1.3858 | 1.4228 | 1.3765 | 1.4157 | 1.4567 | 1.3277 | 1.3975 | 3 | AVG |
| Butyl acetate | | 0.5271 | 0.5857 | 0.6058 | 0.6598 | 0.6849 | 0.6635 | 0.6211 | 10 | AVG |
| Chlorotrifluoroethene | | 0.1292 | 0.1244 | 0.1281 | 0.1362 | 0.1359 | 0.1308 | 0.1308 | 4 | AVG |
| Ethanol | | 0.1011 | 0.1024 | 0.0861 | 0.1023 | 0.1011 | 0.0888 | 0.0970 | 8 | AVG |
| Ethyl Acetate | | 0.2975 | 0.3046 | 0.3065 | 0.3297 | 0.3450 | 0.3385 | 0.3203 | 6 | AVG |
| Freon 133a | | 0.2720 | 0.2552 | 0.2607 | 0.2802 | 0.2777 | 0.2615 | 0.2679 | 4 | AVG |
| Isopropyl acetate | | 0.5092 | 0.5170 | 0.5358 | 0.5698 | 0.5989 | 0.5919 | 0.5538 | 7 | AVG |
| Vinyl Acetate | | 0.5120 | 0.5333 | 0.5564 | 0.6011 | 0.6333 | 0.6234 | 0.5766 | 9 | AVG |
| cis-1,4-Dichloro-2-butene | | 0.0493 | 0.0600 | 0.0716 | 0.1007 | 0.1227 | 0.1404 | 0.0908 | 40 | AVG |
| n-Propyl acetate | | 0.1020 | 0.1138 | 0.1199 | 0.1285 | 0.1376 | 0.1349 | 0.1228 | 11 | AVG |
| Chlorodifluoromethane | | 0.1910 | 0.1546 | 0.1811 | 0.1783 | 0.1867 | 0.1851 | 0.1795 | 7 | AVG |

Average %RSD 12

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%



FORM VI VOA




Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:50.
Target 3.5 esignature user ID: bwk03231

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

| | |
|---|---|
| /chem/HP09915.i/17apr28i.b/la28i01.d | VSTD300 |
| /chem/HP09915.i/17apr28i.b/la28i02.d | VSTD100 |
| /chem/HP09915.i/17apr28i.b/la28i03.d | VSTD050 |
| /chem/HP09915.i/17apr28i.b/la28i04.d | VSTD020 |
| /chem/HP09915.i/17apr28i.b/la28i05.d | VSTD010 |
| /chem/HP09915.i/17apr28i.b/la28i06.d | VSTD004 |

Area Summary

File ID:

| Internal Standard Name | la28i01.d | la28i02.d | la28i03.d | la28i04.d | la28i05.d | la28i06.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 210776 | 195590 | 196285 | 189878 | 192551 | 187419 | 195416 | 4 | Yes |
| 1,4-Dichlorobenzene-d4 | 450717 | 436632 | 441907 | 440668 | 442117 | 422718 | 439126 | 2 | Yes |
| Fluorobenzene | 1071854 | 1040457 | 1052013 | 1040527 | 1039868 | 995396 | 1040019 | 2 | Yes |
| Chlorobenzene-d5 | 826376 | 810715 | 813406 | 811836 | 806258 | 770281 | 806479 | 2 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | la28i01.d | la28i02.d | la28i03.d | la28i04.d | la28i05.d | la28i06.d | Avg. RT |
|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 3.587 | 3.568 | 3.581 | 3.575 | 3.574 | 3.581 | 3.578 |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 |
| Fluorobenzene | 7.053 | 7.047 | 7.050 | 7.050 | 7.050 | 7.050 | 7.050 |
| Chlorobenzene-d5 | 10.712 | 10.709 | 10.709 | 10.709 | 10.709 | 10.709 | 10.710 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 04/28/2017 at 13:04.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/28/17 Time: 13:52

Lab File ID: la28s02.d Init. Calib. Date(s): 04/28/17 04/28/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|
| 2,3,4-Trichlorobutene | 0.4828 | 0.4453 | 18.45 | 20 | -8 | |
| 3,4-Dichloro-1-butene | 0.2646 | 0.2292 | 17.90 | 20 | -10 | |
| Acetonitrile | 1.3975 | 1.3799 | 148.10 | 150 | -1 | |
| Butyl acetate | 0.6211 | 0.6361 | 20.48 | 20 | 2 | |
| Chlorotrifluoroethene | 0.1308 | 0.0875 | 13.38 | 20 | -33 | <- |
| Ethyl Acetate | 0.3203 | 0.3281 | 20.49 | 20 | 2 | |
| Freon 133a | 0.2679 | 0.2441 | 18.22 | 20 | -9 | |
| Isopropyl acetate | 0.5538 | 0.5592 | 20.20 | 20 | 1 | |
| Vinyl Acetate | 0.5766 | 0.5816 | 100.86 | 100 | 1 | |
| n-Propyl acetate | 0.1228 | 0.1273 | 20.74 | 20 | 4 | |
| Chlorodifluoromethane | 0.1795 | 0.1870 | 20.84 | 20 | 4 | |
| | | | Average %Drift | | 7 | |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

page 1 of 1 FORM VII VOA

# Lancaster Laboratories

## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09915.i/17apr26a.b/la26i07.d
/chem/HP09915.i/17apr26a.b/la26i06.d
/chem/HP09915.i/17apr26a.b/la26i05.d
/chem/HP09915.i/17apr26a.b/la26i04.d
/chem/HP09915.i/17apr26a.b/la26i03.d
/chem/HP09915.i/17apr26a.b/la26i02.d
/chem/HP09915.i/17apr26a.b/la26i01.d

File /chem/HP09915.i/17apr26a.b/la26i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP09915.i/17jul28a.b/ll28c01.d

RT Summary

| Internal Standard Name | File ID: ll28c01.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 3.581 | 3.565 | Yes |
| Fluorobenzene | 7.053 | 7.053 | Yes |
| Chlorobenzene-d5 | 10.709 | 10.712 | Yes |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: ll28c01.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 155508 | 194134 | 97067 | 388268 | Yes |
| Fluorobenzene | 738595 | 1036296 | 518148 | 2072592 | Yes |
| Chlorobenzene-d5 | 585019 | 803001 | 401500 | 1606002 | Yes |
| 1,4-Dichlorobenzene-d4 | 336292 | 430663 | 215332 | 861326 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 07/28/2017 at 09:19

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/28/17 Time: 08:51

Lab File ID: l128c01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Dichlorodifluoromethane | 0.2979 | 0.3796 | 63.73 | 50 | 27 | #<- |
| # Chloromethane | 0.3060 | 0.3260 | 53.26 | 50 | 7 | # |
| 1,3-Butadiene | 0.1802 | 0.3020 | 83.78 | 50 | 68 | <- |
| # Vinyl Chloride | 0.2955 | 0.3088 | 52.26 | 50 | 5 | # |
| # Bromomethane | 0.1987 | 0.2174 | 54.69 | 50 | 9 | # |
| # Chloroethane | 0.1665 | 0.1719 | 51.63 | 50 | 3 | # |
| Dichlorofluoromethane | 0.4062 | 0.4219 | 51.94 | 50 | 4 | |
| n-Pentane | 0.2818 | 0.3559 | 63.15 | 50 | 26 | <- |
| # Trichlorofluoromethane | 0.3422 | 0.4302 | 62.86 | 50 | 26 | #<- |
| Ethyl ether | 0.1905 | 0.0628 | 16.50 | 50 | -67 | <- |
| Freon 123a | 0.2279 | 0.2573 | 56.46 | 50 | 13 | |
| Acrolein | 2.0465 | 1.7041 | 416.35 | 500 | -17 | |
| # 1,1-Dichloroethene | 0.1811 | 0.1985 | 54.79 | 50 | 10 | # |
| # 1,1-Dichloroethene(2) | 0.0917 | 0.1046 | 57.05 | 50 | 14 | # |
| # Acetone | 0.8882 | 0.8184 | 92.13 | 100 | -8 | # |
| # Freon 113 | 0.1823 | 0.2316 | 63.54 | 50 | 27 | #<- |
| 2-Propanol | 0.5888 | 0.5681 | 241.19 | 250 | -4 | |
| Methyl Iodide | 0.3513 | 0.4229 | 60.20 | 50 | 20 | |
| # Carbon Disulfide | 0.5893 | 0.7214 | 61.21 | 50 | 22 | #<- |
| Allyl Chloride | 0.3627 | 0.3445 | 47.49 | 50 | -5 | |
| # Methyl Acetate | 0.2628 | 0.2555 | 48.60 | 50 | -3 | # |
| # Methylene Chloride | 0.2392 | 0.2413 | 50.43 | 50 | 1 | # |
| t-Butyl alcohol | 0.9673 | 1.0734 | 277.42 | 250 | 11 | |
| Acrylonitrile | 0.1380 | 0.1437 | 52.04 | 50 | 4 | |
| # trans-1,2-Dichloroethene | 0.2125 | 0.2359 | 55.50 | 50 | 11 | # |
| # Methyl Tertiary Butyl Ether | 0.6634 | 0.7684 | 57.92 | 50 | 16 | # |
| n-Hexane | 0.3257 | 0.3604 | 55.33 | 50 | 11 | |
| # 1,1-Dichloroethane | 0.3993 | 0.4363 | 54.64 | 50 | 9 | # |
| di-Isopropyl ether | 0.7663 | 0.7765 | 50.67 | 50 | 1 | |
| 2-Chloro-1,3-butadiene | 0.3368 | 0.4083 | 60.62 | 50 | 21 | <- |
| Ethyl t-butyl ether | 0.6595 | 0.7308 | 55.40 | 50 | 11 | |
| # cis-1,2-Dichloroethene | 0.2435 | 0.2651 | 54.45 | 50 | 9 | # |
| # 2-Butanone | 0.1848 | 0.1928 | 104.32 | 100 | 4 | # |
| 2,2-Dichloropropane | 0.2666 | 0.3488 | 65.43 | 50 | 31 | <- |
| Propionitrile | 1.4118 | 1.3262 | 234.84 | 250 | -6 | |
| Methacrylonitrile | 0.1376 | 0.1460 | 132.61 | 125 | 6 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/28/17 Time: 08:51

Lab File ID: l128c01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| Bromochloromethane | 0.1283 | 0.1392 | 54.25 | 50 | 8 | |
| Tetrahydrofuran | 1.2470 | 1.1762 | 94.33 | 100 | -6 | |
| # Chloroform | 0.3805 | 0.4447 | 58.42 | 50 | 17 | # |
| # 1,1,1-Trichloroethane | 0.3478 | 0.3884 | 55.84 | 50 | 12 | # |
| # Cyclohexane | 0.3959 | 0.4265 | 53.86 | 50 | 8 | # |
| # Cyclohexane(2) | 0.3237 | 0.3644 | 56.28 | 50 | 13 | # |
| # Cyclohexane(3) | 0.1148 | 0.1288 | 56.13 | 50 | 12 | # |
| 1,1-Dichloropropene | 0.3095 | 0.3409 | 55.07 | 50 | 10 | |
| # Carbon Tetrachloride | 0.2539 | 0.3331 | 65.60 | 50 | 31 | #<- |
| Isobutyl Alcohol | 0.3396 | 0.3753 | 690.69 | 625 | 11 | |
| # Benzene | 0.9124 | 0.9692 | 53.11 | 50 | 6 | # |
| # 1,2-Dichloroethane | 0.3087 | 0.3885 | 62.93 | 50 | 26 | #<- |
| # 1,2-Dichloroethane(2) | 0.0274 | 0.0312 | 57.02 | 50 | 14 | #<- |
| t-Amyl methyl ether | 0.6545 | 0.7225 | 55.19 | 50 | 10 | |
| n-Heptane | 0.3647 | 0.3853 | 52.83 | 50 | 6 | |
| n-Butanol | 0.2738 | 0.2921 | 1333.56 | 1250 | 7 | |
| # Trichloroethene | 0.2358 | 0.2638 | 55.93 | 50 | 12 | # |
| # Methylcyclohexane | 0.4155 | 0.4280 | 51.51 | 50 | 3 | # |
| # Methylcyclohexane(2) | 0.1875 | 0.1981 | 52.83 | 50 | 6 | # |
| # 1,2-Dichloropropane | 0.2498 | 0.2562 | 51.29 | 50 | 3 | # |
| Dibromomethane | 0.1571 | 0.1789 | 56.94 | 50 | 14 | |
| 1,4-Dioxane | 0.0855 | 0.0963 | 703.92 | 625 | 13 | |
| Methyl Methacrylate | 0.2138 | 0.2331 | 54.51 | 50 | 9 | |
| # Bromodichloromethane | 0.2835 | 0.3368 | 59.40 | 50 | 19 | # |
| 2-Nitropropane | 0.0804 | 0.1088 | 135.37 | 100 | 35 | <- |
| 2-Chloroethyl Vinyl Ether | 0.1920 | 0.1979 | 51.54 | 50 | 3 | |
| # cis-1,3-Dichloropropene | 0.3695 | 0.4127 | 55.85 | 50 | 12 | # |
| # 4-Methyl-2-pentanone | 0.3808 | 0.4029 | 105.80 | 100 | 6 | # |
| # Toluene | 0.7419 | 0.7933 | 53.46 | 50 | 7 | # |
| # trans-1,3-Dichloropropene | 0.4160 | 0.4902 | 58.92 | 50 | 18 | # |
| Ethyl Methacrylate | 0.4686 | 0.5132 | 54.76 | 50 | 10 | |
| # 1,1,2-Trichloroethane | 0.2859 | 0.3092 | 54.08 | 50 | 8 | # |
| # Tetrachloroethene | 0.3281 | 0.3780 | 57.59 | 50 | 15 | # |
| 1,3-Dichloropropane | 0.4961 | 0.5176 | 52.17 | 50 | 4 | |
| # 2-Hexanone | 0.3581 | 0.3722 | 103.92 | 100 | 4 | # |
| # Dibromochloromethane | 0.2961 | 0.3490 | 58.94 | 50 | 18 | # |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/28/17 Time: 08:51

Lab File ID: ll28c01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | 1,2-Dibromoethane | 0.3130 | 0.3402 | 54.35 | 50 | 9 | # |
| | 1-Chlorohexane | 0.4261 | 0.4372 | 51.31 | 50 | 3 | |
| # | Chlorobenzene | 0.8561 | 0.9196 | 53.71 | 50 | 7 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2827 | 0.3334 | 58.98 | 50 | 18 | |
| # | Ethylbenzene | 1.4311 | 1.5611 | 54.54 | 50 | 9 | # |
| # | m+p-Xylene | 0.5571 | 0.6095 | 109.39 | 100 | 9 | # |
| # | o-Xylene | 0.5541 | 0.6088 | 54.94 | 50 | 10 | # |
| # | Styrene | 0.9159 | 1.0279 | 56.11 | 50 | 12 | # |
| # | Bromoform | 0.2150 | 0.2699 | 62.77 | 50 | 26 | #<- |
| # | Isopropylbenzene | 1.4160 | 1.5923 | 56.22 | 50 | 12 | # |
| | Cyclohexanone | 0.3224 | 0.3281 | 636.11 | 625 | 2 | |
| | Bromobenzene | 0.7147 | 0.7487 | 52.38 | 50 | 5 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8875 | 0.8806 | 49.61 | 50 | -1 | # |
| | 1,2,3-Trichloropropane | 0.2509 | 0.2671 | 53.24 | 50 | 6 | |
| | trans-1,4-Dichloro-2-butene | 0.2543 | 0.2110 | 103.69 | 125 | -17 | |
| | n-Propylbenzene | 3.1580 | 3.2902 | 52.09 | 50 | 4 | |
| | 2-Chlorotoluene | 0.6573 | 0.6771 | 51.51 | 50 | 3 | |
| | 4-Chlorotoluene | 0.6841 | 0.7021 | 51.32 | 50 | 3 | |
| | 1,3,5-Trimethylbenzene | 2.2520 | 2.4618 | 54.66 | 50 | 9 | |
| | tert-Butylbenzene | 0.4868 | 0.5071 | 52.09 | 50 | 4 | |
| | Pentachloroethane | 0.3843 | 0.4477 | 58.25 | 50 | 16 | |
| | 1,2,4-Trimethylbenzene | 2.3197 | 2.5078 | 54.05 | 50 | 8 | |
| | sec-Butylbenzene | 2.8726 | 3.0478 | 53.05 | 50 | 6 | |
| # | 1,3-Dichlorobenzene | 1.3607 | 1.4153 | 52.01 | 50 | 4 | # |
| | p-Isopropyltoluene | 2.5364 | 2.7183 | 53.59 | 50 | 7 | |
| # | 1,4-Dichlorobenzene | 1.4070 | 1.4648 | 52.05 | 50 | 4 | # |
| | 1,2,3-Trimethylbenzene | 2.4304 | 2.5712 | 52.90 | 50 | 6 | |
| | Benzyl Chloride | 1.4717 | 1.7111 | 58.13 | 50 | 16 | |
| | 1,3-Diethylbenzene | 1.5153 | 1.5958 | 52.65 | 50 | 5 | |
| | 1,4-Diethylbenzene | 1.5913 | 1.6566 | 52.05 | 50 | 4 | |
| # | 1,2-Dichlorobenzene | 1.3375 | 1.4000 | 52.33 | 50 | 5 | # |
| | n-Butylbenzene | 1.2670 | 1.3150 | 51.89 | 50 | 4 | |
| | 1,2-Diethylbenzene | 1.2752 | 1.3382 | 52.47 | 50 | 5 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1877 | 0.2093 | 55.76 | 50 | 12 | # |
| | 1,3,5-Trichlorobenzene | 1.0844 | 1.1329 | 52.23 | 50 | 4 | |
| # | 1,2,4-Trichlorobenzene | 1.0519 | 1.0655 | 50.64 | 50 | 1 | # |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/28/17 Time: 08:51

Lab File ID: ll28c01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Hexachlorobutadiene | 0.4568 | 0.4986 | 54.57 | 50 | 9 |
| Naphthalene | 3.1742 | 3.1752 | 50.01 | 50 | 0 |
| 1,2,3-Trichlorobenzene | 1.0148 | 1.0393 | 51.21 | 50 | 2 |
| 2-Methylnaphthalene | 2.0525 | 1.8911 | 46.07 | 50 | -8 |
| Dibromofluoromethane | 0.2441 | 0.2601 | 53.27 | 50 | 7 |
| Dibromofluoromethane(2) | 0.2502 | 0.2648 | 52.92 | 50 | 6 |
| 1,2-Dichloroethane-d4 | 0.0607 | 0.0617 | 50.81 | 50 | 2 |
| 1,2-Dichloroethane-d4(2) | 0.2872 | 0.3332 | 58.01 | 50 | 16 |
| 1,2-Dichloroethane-d4(3) | 0.0385 | 0.0389 | 50.48 | 50 | 1 |
| Toluene-d8 | 1.2766 | 1.2700 | 49.74 | 50 | -1 |
| Toluene-d8(2) | 0.8411 | 0.8261 | 49.11 | 50 | -2 |
| 4-Bromofluorobenzene | 0.4745 | 0.4947 | 52.13 | 50 | 4 |
| 4-Bromofluorobenzene(2) | 0.4162 | 0.4539 | 54.52 | 50 | 9 |

Average %Drift 11

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem/HP09915.i/17jul28a.b/l128ec1.d
Report Date: 07/28/2017 15:31

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i  Injection Date and Time: 28-JUL-2017 15:04
Client ID: SECC050  Initial Calibration Date(s): 13-FEB-2017 28-APR-2017
Lab Sample ID: SECC050  Initial Calibration Time(s): 13:59 12:18
Sublist used: L172091-SM.sub Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.29785 | 0.37158 | 0.01 | 24.8 | 50.0 |
| Chloromethane | 0.30599 | 0.31490 | 0.01 | 2.9 | 50.0 |
| Vinyl Chloride | 0.29547 | 0.30317 | 0.01 | 2.6 | 50.0 |
| Bromomethane | 0.19873 | 0.21401 | 0.01 | 7.7 | 50.0 |
| Chloroethane | 0.16651 | 0.17043 | 0.01 | 2.4 | 50.0 |
| Trichlorofluoromethane | 0.34216 | 0.42950 | 0.01 | 25.5 | 50.0 |
| Acrolein | 2.04652 | 1.77082 | 0.01 | -13.5 | 50.0 |
| 1,1-Dichloroethene | 0.18109 | 0.19789 | 0.01 | 9.3 | 50.0 |
| Acetone | 0.88823 | 0.89508 | 0.01 | 0.8 | 50.0 |
| Carbon Disulfide | 0.58931 | 0.70908 | 0.01 | 20.3 | 50.0 |
| Methylene Chloride | 0.23923 | 0.24242 | 0.01 | 1.3 | 50.0 |
| Acrylonitrile | 0.13803 | 0.14503 | 0.01 | 5.1 | 50.0 |
| trans-1,2-Dichloroethene | 0.21247 | 0.23522 | 0.01 | 10.7 | 50.0 |
| Methyl Tertiary Butyl Ether | 0.66341 | 0.77196 | 0.01 | 16.4 | 50.0 |
| 1,1-Dichloroethane | 0.39926 | 0.42955 | 0.01 | 7.6 | 50.0 |
| cis-1,2-Dichloroethene | 0.24347 | 0.26379 | 0.01 | 8.3 | 50.0 |
| 2-Butanone | 0.18481 | 0.19618 | 0.01 | 6.2 | 50.0 |
| 2,2-Dichloropropane | 0.26657 | 0.33943 | 0.01 | 27.3 | 50.0 |
| Bromochloromethane | 0.12832 | 0.14229 | 0.01 | 10.9 | 50.0 |
| Chloroform | 0.38056 | 0.44047 | 0.01 | 15.7 | 50.0 |
| 1,1,1-Trichloroethane | 0.34775 | 0.38947 | 0.01 | 12.0 | 50.0 |
| 1,1-Dichloropropene | 0.30952 | 0.34342 | 0.01 | 11.0 | 50.0 |
| Carbon Tetrachloride | 0.25385 | 0.32869 | 0.01 | 29.5 | 50.0 |
| Benzene | 0.91241 | 0.97210 | 0.01 | 6.5 | 50.0 |
| 1,2-Dichloroethane | 0.30868 | 0.38943 | 0.01 | 26.2 | 50.0 |
| Trichloroethene | 0.23579 | 0.25976 | 0.01 | 10.2 | 50.0 |
| 1,2-Dichloropropane | 0.24977 | 0.25654 | 0.01 | 2.7 | 50.0 |
| Dibromomethane | 0.15708 | 0.18180 | 0.01 | 15.7 | 50.0 |
| Bromodichloromethane | 0.28347 | 0.33853 | 0.01 | 19.4 | 50.0 |
| cis-1,3-Dichloropropene | 0.36947 | 0.41526 | 0.01 | 12.4 | 50.0 |
| 4-Methyl-2-pentanone | 0.38084 | 0.41271 | 0.01 | 8.4 | 50.0 |
| Toluene | 0.74189 | 0.77765 | 0.01 | 4.8 | 50.0 |
| trans-1,3-Dichloropropene | 0.41600 | 0.48532 | 0.01 | 16.7 | 50.0 |
| 1,1,2-Trichloroethane | 0.28588 | 0.30803 | 0.01 | 7.7 | 50.0 |
| Tetrachloroethene | 0.32814 | 0.36792 | 0.01 | 12.1 | 50.0 |
| 1,3-Dichloropropane | 0.49605 | 0.52266 | 0.01 | 5.4 | 50.0 |
| 2-Hexanone | 0.35811 | 0.37676 | 0.01 | 5.2 | 50.0 |
| Dibromochloromethane | 0.29611 | 0.34205 | 0.01 | 15.5 | 50.0 |
| 1,2-Dibromoethane | 0.31297 | 0.34679 | 0.01 | 10.8 | 50.0 |
| Chlorobenzene | 0.85607 | 0.91584 | 0.01 | 7.0 | 50.0 |
| 1,1,1,2-Tetrachloroethane | 0.28270 | 0.33414 | 0.01 | 18.2 | 50.0 |
| Ethylbenzene | 1.43108 | 1.54718 | 0.01 | 8.1 | 50.0 |
| m+p-Xylene | 0.55713 | 0.60065 | 0.01 | 7.8 | 50.0 |
| o-Xylene | 0.55407 | 0.60571 | 0.01 | 9.3 | 50.0 |
| Xylene (Total) | 0.55611 | 0.60234 | 0.01 | 8.3 | 50.0 |
| Styrene | 0.91593 | 1.02349 | 0.01 | 11.7 | 50.0 |
| Bromoform | 0.21501 | 0.26278 | 0.01 | 22.2 | 50.0 |
| Isopropylbenzene | 1.41603 | 1.57077 | 0.01 | 10.9 | 50.0 |

Data File: /chem/HP09915.i/17jul28a.b/l128ec1.d
Report Date: 07/28/2017 15:31

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i  Injection Date and Time: 28-JUL-2017 15:04
Client ID: SECC050  Initial Calibration Date(s): 13-FEB-2017 28-APR-2017
Lab Sample ID: SECC050  Initial Calibration Time(s): 13:59 12:18
Sublist used: L172091-SM.sub Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Bromobenzene | 0.71470 | 0.76255 | 0.01 | 6.7 | 50.0 |
| 1,1,2,2-Tetrachloroethane | 0.88749 | 0.89302 | 0.01 | 0.6 | 50.0 |
| 1,2,3-Trichloropropane | 0.25088 | 0.27648 | 0.01 | 10.2 | 50.0 |
| n-Propylbenzene | 3.15803 | 3.28515 | 0.01 | 4.0 | 50.0 |
| 2-Chlorotoluene | 0.65727 | 0.67569 | 0.01 | 2.8 | 50.0 |
| 4-Chlorotoluene | 0.68407 | 0.70633 | 0.01 | 3.3 | 50.0 |
| 1,3,5-Trimethylbenzene | 2.25196 | 2.45409 | 0.01 | 9.0 | 50.0 |
| tert-Butylbenzene | 0.48680 | 0.54989 | 0.01 | 13.0 | 50.0 |
| 1,2,4-Trimethylbenzene | 2.31969 | 2.51549 | 0.01 | 8.4 | 50.0 |
| sec-Butylbenzene | 2.87259 | 3.02322 | 0.01 | 5.2 | 50.0 |
| 1,3-Dichlorobenzene | 1.36070 | 1.42024 | 0.01 | 4.4 | 50.0 |
| p-Isopropyltoluene | 2.53635 | 2.71493 | 0.01 | 7.0 | 50.0 |
| 1,4-Dichlorobenzene | 1.40698 | 1.46235 | 0.01 | 3.9 | 50.0 |
| 1,2-Dichlorobenzene | 1.33751 | 1.40755 | 0.01 | 5.2 | 50.0 |
| n-Butylbenzene | 1.26703 | 1.28484 | 0.01 | 1.4 | 50.0 |
| 1,2-Dibromo-3-chloropropane | 0.18768 | 0.20749 | 0.01 | 10.6 | 50.0 |
| 1,2,4-Trichlorobenzene | 1.05192 | 1.06870 | 0.01 | 1.6 | 50.0 |
| Hexachlorobutadiene | 0.45684 | 0.49672 | 0.01 | 8.7 | 50.0 |
| Naphthalene | 3.17425 | 3.20702 | 0.01 | 1.0 | 50.0 |
| 1,2,3-Trichlorobenzene | 1.01482 | 1.04235 | 0.01 | 2.7 | 50.0 |
| **Surrogate Standards** | **ICAL Avg. RRF** | **SECC RRF** | **Min. RRF** | **% Diff.** | **Max. %Diff.** |
| Dibromofluoromethane | 0.24416 | 0.25959 | 0.01 | 6.3 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06071 | 0.06148 | 0.01 | 1.3 | 20.5 |
| Toluene-d8 | 1.27666 | 1.27150 | 0.01 | -0.4 | 20.5 |
| 4-Bromofluorobenzene | 0.47452 | 0.49156 | 0.01 | 3.6 | 20.5 |

# Lancaster Laboratories
## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09915.i/17apr28i.b/la28i06.d
/chem/HP09915.i/17apr28i.b/la28i05.d
/chem/HP09915.i/17apr28i.b/la28i04.d
/chem/HP09915.i/17apr28i.b/la28i03.d
/chem/HP09915.i/17apr28i.b/la28i02.d
/chem/HP09915.i/17apr28i.b/la28i01.d

File /chem/HP09915.i/17apr28i.b/la28i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP09915.i/17jul28a.b/ll28c02.d

RT Summary

| Internal Standard Name | File ID: ll28c02.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 3.581 | 3.581 | Yes |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | Yes |
| Fluorobenzene | 7.050 | 7.050 | Yes |
| Chlorobenzene-d5 | 10.709 | 10.709 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: ll28c02.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 145469 | 196285 | 98142 | 392570 | Yes |
| 1,4-Dichlorobenzene-d4 | 303774 | 441907 | 220954 | 883814 | Yes |
| Fluorobenzene | 707142 | 1052013 | 526006 | 2104026 | Yes |
| Chlorobenzene-d5 | 561654 | 813406 | 406703 | 1626812 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 07/28/2017 at 10:02

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/28/17 Time: 09:13

Lab File ID: l128c02.d Init. Calib. Date(s): 04/28/17 04/28/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Vinyl Acetate | 0.5766 | 0.5416 | 46.97 | 50 | -6 |
| n-Propyl acetate | 0.1228 | 0.1162 | 47.31 | 50 | -5 |
| Butyl acetate | 0.6211 | 0.5994 | 48.25 | 50 | -3 |
| Ethyl Acetate | 0.3203 | 0.3134 | 48.93 | 50 | -2 |
| Isopropyl acetate | 0.5538 | 0.5523 | 49.86 | 50 | 0 |
| Chlorotrifluoroethene | 0.1308 | 0.1443 | 55.16 | 50 | 10 |
| Freon 133a | 0.2679 | 0.3062 | 57.15 | 50 | 14 |
| Acetonitrile | 1.3975 | 1.1910 | 213.05 | 250 | -15 |
| Ethanol | 0.0970 | 0.0982 | 1265.55 | 1250 | 1 |

Average %Drift 6

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

page 1 of 1

Data File: /chem/HP09915.i/17jul28a.b/l128ec2.d
Report Date: 07/28/2017 16:19

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i  Injection Date and Time: 28-JUL-2017 15:26
Client ID: SECC050  Initial Calibration Date(s): 13-FEB-2017  28-APR-2017
Lab Sample ID: SECCB50  Initial Calibration Time(s): 13:59  12:18
Sublist used: L172091SM.sub Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Vinyl Acetate | 0.57659 | 0.51978 | 0.01 | -9.9 | 50.0 |

| Surrogate Standards | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Dibromofluoromethane | 0.24416 | 0.25691 | 0.01 | 5.2 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06071 | 0.06134 | 0.01 | 1.0 | 20.5 |
| Toluene-d8 | 1.27666 | 1.23408 | 0.01 | -3.3 | 20.5 |
| 4-Bromofluorobenzene | 0.47452 | 0.46477 | 0.01 | -2.1 | 20.5 |

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR187___

Lab File ID (Standard): ll28c01.d Date Analyzed: 07/28/17

Instrument ID: HP09915 Time Analyzed: 08:51

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 155508 | 3.581 | 738595 | 7.053 | 585019 | 10.709 | 336292 | 12.642 |
| UPPER LIMIT | 311016 | 4.081 | 1477190 | 7.553 | 1170038 | 11.209 | 672584 | 13.142 |
| LOWER LIMIT | 77754 | 3.081 | 369298 | 6.553 | 292510 | 10.209 | 168146 | 12.142 |
| LAB SAMPLE ID | | | | | | | | |
| 01 LCSL86 | 152011 | 3.574 | 722816 | 7.047 | 571973 | 10.709 | 328916 | 12.638 |
| 02 LCDL86 | 153080 | 3.568 | 740638 | 7.047 | 583089 | 10.709 | 334847 | 12.642 |
| 03 LCSL89 | 153080 | 3.568 | 740638 | 7.047 | 583089 | 10.709 | 334847 | 12.642 |
| 04 LCSL87 | 151640 | 3.574 | 719183 | 7.047 | 578666 | 10.709 | 313130 | 12.638 |
| 05 LCDL87 | 143930 | 3.571 | 706868 | 7.047 | 560323 | 10.709 | 311140 | 12.642 |
| 06 LCSL90 | 143930 | 3.571 | 706915 | 7.047 | 560323 | 10.709 | 311140 | 12.642 |
| 07 VBLKL86 | 143231 | 3.558 | 696837 | 7.044 | 558175 | 10.709 | 303429 | 12.642 |
| 08 VBLKL89 | 142688 | 3.558 | 696838 | 7.044 | 558175 | 10.709 | 303271 | 12.642 |
| 09 9107407 | 120399 | 3.581 | 704826 | 7.054 | 599174 | 10.709 | 341862 | 12.642 |
| 10 9121069 | 150097 | 3.581 | 719051 | 7.054 | 573351 | 10.709 | 320753 | 12.642 |
| 11 9121055 | 149298 | 3.575 | 708045 | 7.047 | 560763 | 10.709 | 312040 | 12.642 |
| 12 SMLODVL | 143653 | 3.590 | 713771 | 7.053 | 567236 | 10.709 | 310323 | 12.642 |
| 13 9121058 | 135589 | 3.581 | 696366 | 7.057 | 564868 | 10.709 | 323482 | 12.642 |
| 14 9121059 | 145589 | 3.587 | 694610 | 7.053 | 547098 | 10.712 | 314503 | 12.642 |
| 15 9121060 | 141951 | 3.587 | 699451 | 7.054 | 574727 | 10.712 | 334889 | 12.642 |
| 16 9121061 | 150808 | 3.578 | 712635 | 7.050 | 562453 | 10.709 | 312591 | 12.638 |
| 17 9121062 | 144404 | 3.578 | 693031 | 7.050 | 552291 | 10.709 | 306030 | 12.642 |
| 18 9121063 | 136935 | 3.581 | 680560 | 7.053 | 550223 | 10.709 | 304970 | 12.642 |
| 19 SECC050 | 150157 | 3.571 | 726354 | 7.047 | 578600 | 10.709 | 327376 | 12.642 |
| 20 SECCB50 | 154196 | 3.574 | 732325 | 7.047 | 584430 | 10.709 | 321170 | 12.642 |
| 21 9109590 | 140192 | 3.568 | 696008 | 7.050 | 547425 | 10.709 | 303251 | 12.642 |
| 22 9109585 | 142364 | 3.571 | 684381 | 7.050 | 542493 | 10.709 | 304384 | 12.642 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR187___

Lab File ID (Standard): ll28c01.d Date Analyzed: 07/28/17

Instrument ID: HP09915 Time Analyzed: 08:51

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 155508 | 3.581 | 738595 | 7.053 | 585019 | 10.709 | 336292 | 12.642 |
| UPPER LIMIT | 311016 | 4.081 | 1477190 | 7.553 | 1170038 | 11.209 | 672584 | 13.142 |
| LOWER LIMIT | 77754 | 3.081 | 369298 | 6.553 | 292510 | 10.209 | 168146 | 12.142 |
| LAB SAMPLE ID | | | | | | | | |
| 23 9109586MS | 146446 | 3.581 | 717793 | 7.050 | 564931 | 10.709 | 323185 | 12.642 |
| 24 9109587MSD | 152393 | 3.578 | 724040 | 7.050 | 572436 | 10.709 | 321230 | 12.642 |
| 25 9109586MS1 | 150953 | 3.584 | 723828 | 7.050 | 569714 | 10.709 | 312522 | 12.638 |
| 26 9109587MSD1 | 141832 | 3.578 | 699380 | 7.053 | 556466 | 10.709 | 297336 | 12.642 |
| 27 9109581 | 127672 | 3.578 | 677249 | 7.050 | 535801 | 10.709 | 299470 | 12.642 |
| 28 9109582 | 136558 | 3.574 | 680100 | 7.047 | 546834 | 10.709 | 303146 | 12.642 |
| 29 9109583 | 140982 | 3.562 | 668575 | 7.047 | 534547 | 10.709 | 297701 | 12.638 |
| 30 9109584 | 132792 | 3.574 | 649720 | 7.047 | 518356 | 10.709 | 288138 | 12.642 |
| 31 9109588 | 129088 | 3.578 | 645282 | 7.050 | 517582 | 10.709 | 281126 | 12.638 |
| 32 9109589 | 122934 | 3.587 | 645821 | 7.053 | 514133 | 10.709 | 287546 | 12.642 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

# Sample Data

# Volatiles by GC/MS

**Fraction: Volatiles by GC/MS**

| 11997: VOCs- 5ml Water by 8260C Analyte Name | Default DL | Default LOD | Default LOQ | Units |
|---|---|---|---|---|
| Dichlorodifluoromethane | .5 | 1 | 1 | ug/l |
| Chloromethane | .5 | 1 | 1 | ug/l |
| Vinyl Chloride | .5 | 1 | 1 | ug/l |
| Bromomethane | .5 | 1 | 1 | ug/l |
| Chloroethane | .5 | 1 | 1 | ug/l |
| Trichlorofluoromethane | .5 | 1 | 1 | ug/l |
| Acrolein | 40 | 100 | 100 | ug/l |
| 1,1-Dichloroethene | .5 | 1 | 1 | ug/l |
| Acetone | 6 | 20 | 20 | ug/l |
| Carbon Disulfide | 1 | 2 | 5 | ug/l |
| Methylene Chloride | 2 | 4 | 4 | ug/l |
| Acrylonitrile | 4 | 10 | 20 | ug/l |
| trans-1,2-Dichloroethene | .5 | 1 | 1 | ug/l |
| Methyl Tertiary Butyl Ether | .5 | 1 | 1 | ug/l |
| 1,1-Dichloroethane | .5 | 1 | 1 | ug/l |
| Vinyl Acetate | 2 | 4 | 10 | ug/l |
| 2-Butanone | 3 | 8 | 10 | ug/l |
| cis-1,2-Dichloroethene | .5 | 1 | 1 | ug/l |
| 2,2-Dichloropropane | .5 | 1 | 1 | ug/l |
| Bromochloromethane | 1 | 2 | 5 | ug/l |
| Chloroform | .5 | 1 | 1 | ug/l |
| 1,1,1-Trichloroethane | .5 | 1 | 1 | ug/l |
| 1,1-Dichloropropene | 1 | 2 | 5 | ug/l |
| Carbon Tetrachloride | .5 | 1 | 1 | ug/l |
| Benzene | .5 | 1 | 1 | ug/l |
| 1,2-Dichloroethane | .5 | 1 | 1 | ug/l |
| Trichloroethene | .5 | 1 | 1 | ug/l |
| 1,2-Dichloropropane | .5 | 1 | 1 | ug/l |
| Dibromomethane | .5 | 1 | 1 | ug/l |
| Bromodichloromethane | .5 | 1 | 1 | ug/l |
| cis-1,3-Dichloropropene | .5 | 1 | 1 | ug/l |
| 4-Methyl-2-pentanone | 3 | 8 | 10 | ug/l |
| Toluene | .5 | 1 | 1 | ug/l |
| trans-1,3-Dichloropropene | .5 | 1 | 1 | ug/l |
| 1,1,2-Trichloroethane | .5 | 1 | 1 | ug/l |
| Tetrachloroethene | .5 | 1 | 1 | ug/l |
| 1,3-Dichloropropane | .5 | 1 | 1 | ug/l |
| 2-Hexanone | 3 | 8 | 10 | ug/l |
| Dibromochloromethane | .5 | 1 | 1 | ug/l |
| 1,2-Dibromoethane | .5 | 1 | 1 | ug/l |
| Chlorobenzene | .5 | 1 | 1 | ug/l |
| 1,1,1,2-Tetrachloroethane | .5 | 1 | 1 | ug/l |
| Ethylbenzene | .5 | 1 | 1 | ug/l |
| m+p-Xylene | .5 | 1 | 1 | ug/l |
| o-Xylene | .5 | 1 | 1 | ug/l |
| Xylene (Total) | .5 | 1 | 1 | ug/l |
| Styrene | 1 | 2 | 5 | ug/l |

**Fraction: Volatiles by GC/MS**

| 11997: VOCs- 5ml Water by 8260C<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bromoform | .5 | 1 | 4 | ug/l |
| Isopropylbenzene | 1 | 2 | 5 | ug/l |
| Bromobenzene | 1 | 2 | 5 | ug/l |
| 1,1,2,2-Tetrachloroethane | .5 | 1 | 1 | ug/l |
| 1,2,3-Trichloropropane | 1 | 2 | 5 | ug/l |
| n-Propylbenzene | 1 | 2 | 5 | ug/l |
| 2-Chlorotoluene | 1 | 2 | 5 | ug/l |
| 1,3,5-Trimethylbenzene | 1 | 2 | 5 | ug/l |
| 4-Chlorotoluene | 1 | 2 | 5 | ug/l |
| tert-Butylbenzene | 1 | 2 | 5 | ug/l |
| 1,2,4-Trimethylbenzene | 1 | 2 | 5 | ug/l |
| sec-Butylbenzene | 1 | 2 | 5 | ug/l |
| 1,3-Dichlorobenzene | 1 | 2 | 5 | ug/l |
| p-Isopropyltoluene | 1 | 2 | 5 | ug/l |
| 1,4-Dichlorobenzene | 1 | 2 | 5 | ug/l |
| n-Butylbenzene | 1 | 2 | 5 | ug/l |
| 1,2-Dichlorobenzene | 1 | 2 | 5 | ug/l |
| 1,2-Dibromo-3-chloropropane | 2 | 4 | 5 | ug/l |
| 1,2,4-Trichlorobenzene | 1 | 2 | 5 | ug/l |
| Hexachlorobutadiene | 2 | 4 | 5 | ug/l |
| Naphthalene | 1 | 2 | 5 | ug/l |
| 1,2,3-Trichlorobenzene | 1 | 2 | 5 | ug/l |

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28s05.d Injection date and time: **28-JUL-2017 11:26**
Data file Sample Info. Line: 18706;9107407;1;0;;KR187;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **18281**
Calibration date and time (Last Method Edit): 28-JUL-2017 11:36
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

# Analysis Comments:9367

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.000) | 653 | 65 | 120399 ( -23) | 250.00 | |
| 66) Fluorobenzene | 7.053( 0.000) | 1733 | 96 | 704826 ( -5) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 599174 ( 2) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 341862 ( 2) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.001) | 113 | 181974 | 52.872 | 106% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 43593 | 50.935 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 730159 | 47.727 | 95% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 305135 | 53.660 | 107% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 4) Chloromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 8) Bromomethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 9) Chloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 16) Acrolein | (1) | | | Not Detected | | | | | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 18) Acetone | (1) | | | Not Detected | | | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | | | Not Detected | | | | | 1 | 5 |
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 31) Acrylonitrile | (2) | | | Not Detected | | | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922( 0.000) | 73 | 5181 | 0.554 | 0.55 | | J | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 37) Vinyl Acetate | (2) | | | Not Detected | | | | | 2 | 10 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | | | Not Detected | | | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | | | Not Detected | | | | | 1 | 5 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | | | Not Detected | | | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.719( 0.000) | 62 | 16992M | 3.905 | 3.91 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |

**M = Compound was manually integrated.**

Digitally signed by Kevin A. Sposito on 07/28/2017 at 12:00. Target 3.5 esignature user ID: kas02648

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28s05.d Injection date and time: **28-JUL-2017 11:26**
Data file Sample Info. Line: 18706;9107407;1;0;;KR187;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **18281**
Calibration date and time (Last Method Edit): 28-JUL-2017 11:36
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

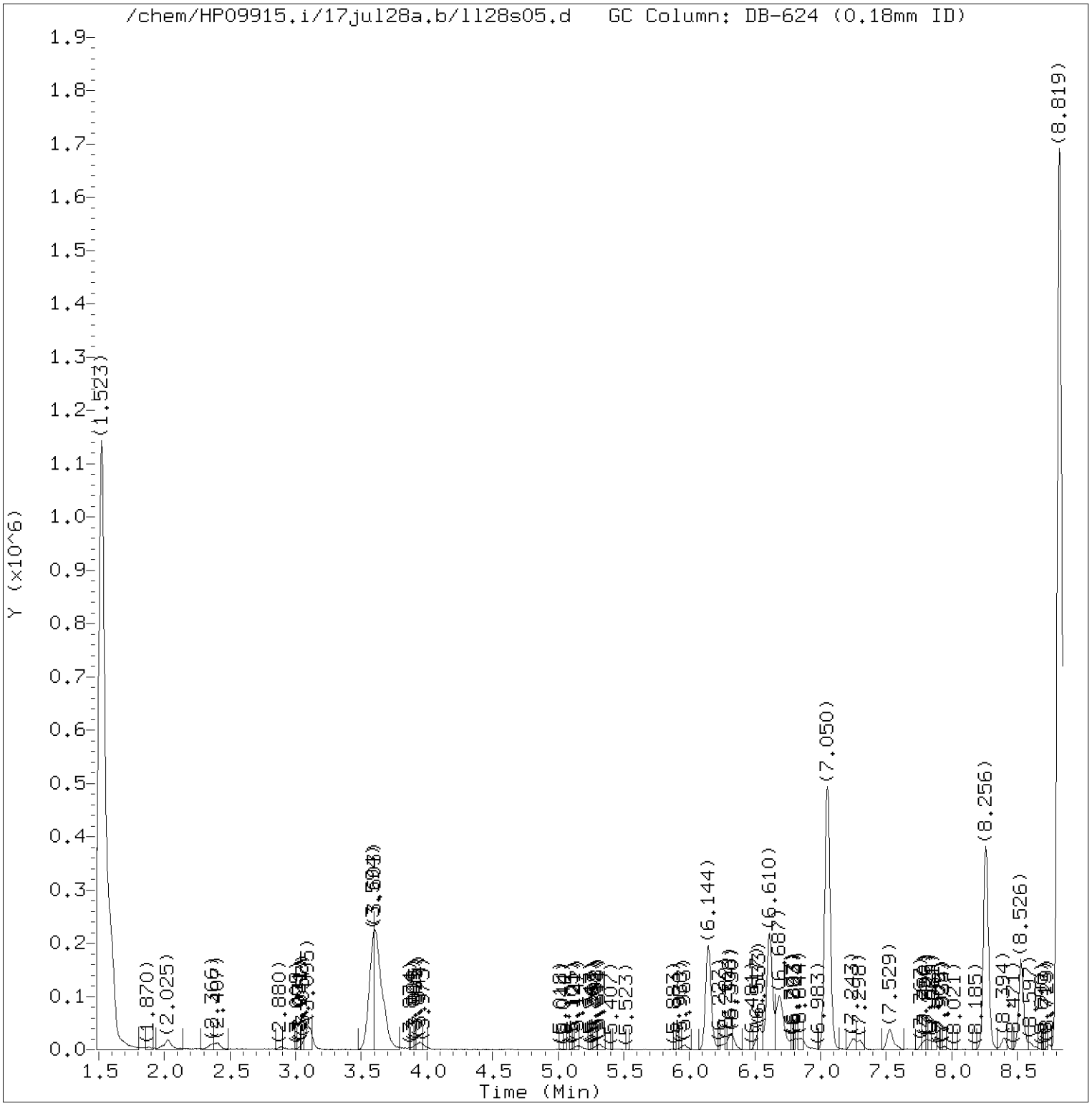
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 81) cis-1,3-Dichloropropene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | | | Not Detected | | | | | 3 | 10 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | | | Not Detected | | | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 109) Styrene | (3) | | | Not Detected | | | | | 1 | 5 |
| 110) Bromoform | (3) | | | Not Detected | | | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 11.603( 0.000) | 105 | 33574 | 1.979 | 1.98 | | J | 1 | 5 |
| 115) Bromobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | | | Not Detected | | | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | | | Not Detected | | | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | | | Not Detected | | | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | | | Not Detected | | | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | | | Not Detected | | | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | | | Not Detected | | | | | 2 | 5 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |

Total number of targets = 69

Digitally signed by Kevin A. Sposito on 07/28/2017 at 12:00. Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

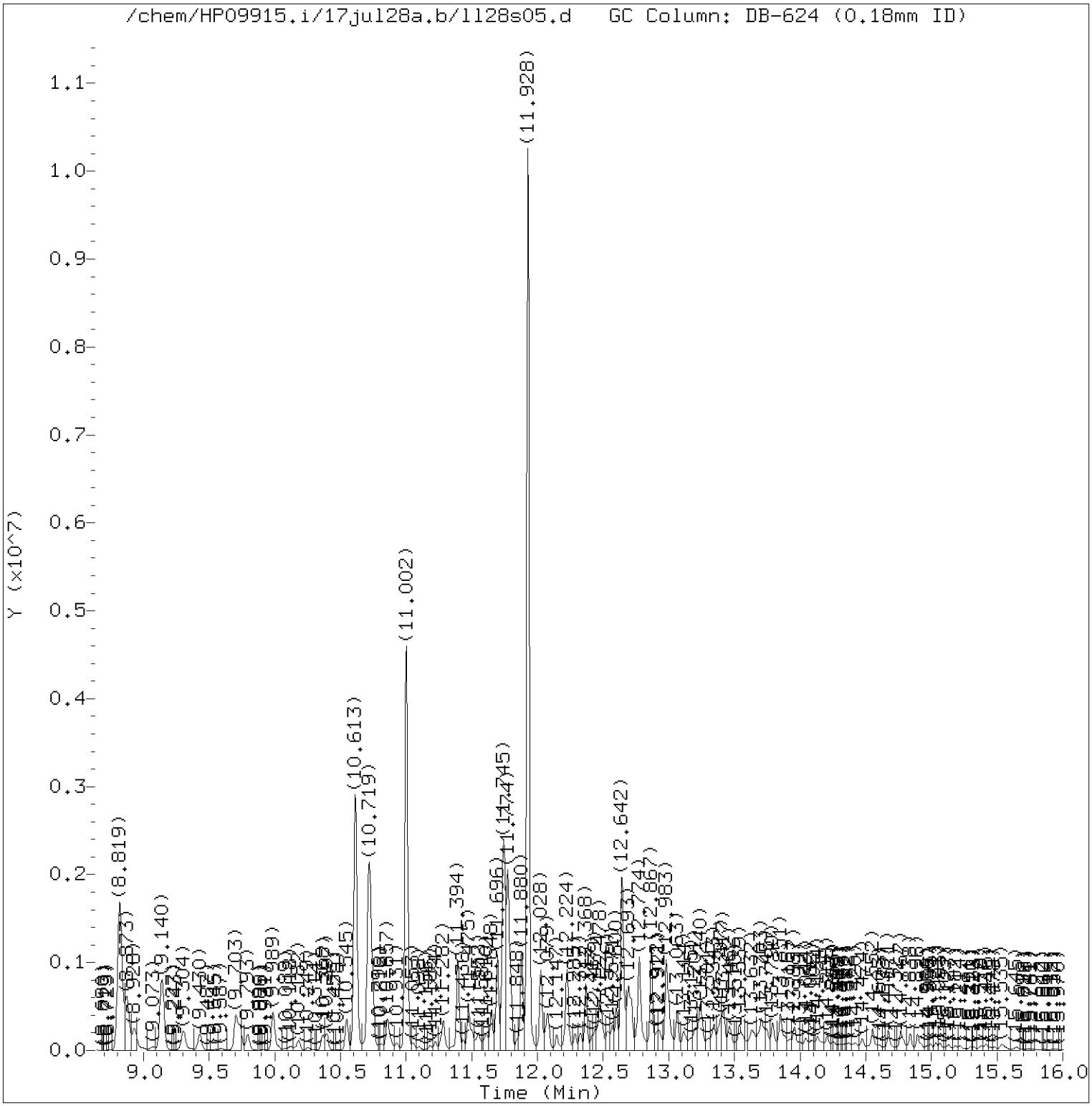
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s05.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 18281
Calibration date and time: 28-JUL-2017 11:36
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Sample Name: 18706 Lab Sample ID: 9107407

Digitally signed by Kevin A. Sposito
on 07/28/2017 at 12:00.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s05.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 18281
Calibration date and time: 28-JUL-2017 11:36
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Sample Name: 18706 Lab Sample ID: 9107407

Digitally signed by Kevin A. Sposito
on 07/28/2017 at 12:00.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s05.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 18281
Calibration date and time: 28-JUL-2017 11:36
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Sample Name: 18706 Lab Sample ID: 9107407

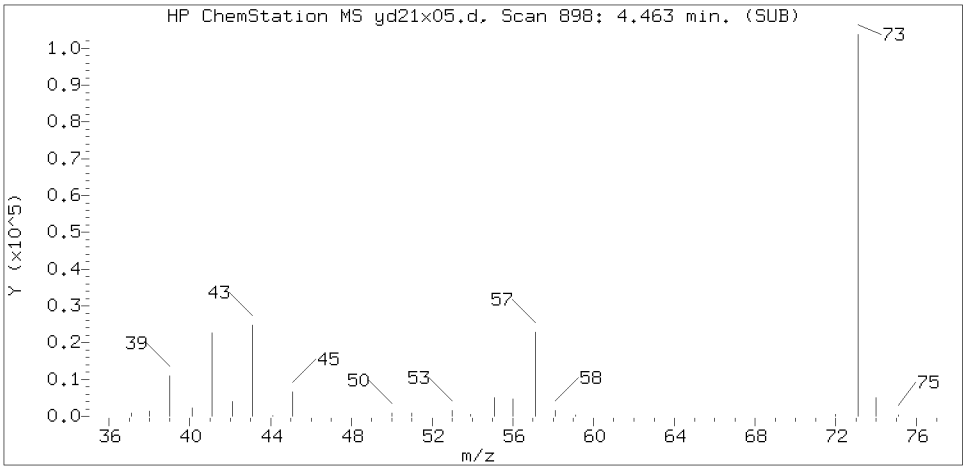
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 120399 | 250.000 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 5181 | 0.554 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 181974 | 52.872 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 43593 | 50.935 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 16992M | 3.905 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 704826 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 730159 | 47.727 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 599174 | 50.000 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 33574 | 1.979 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 305135 | 53.660 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 341862 | 50.000 |

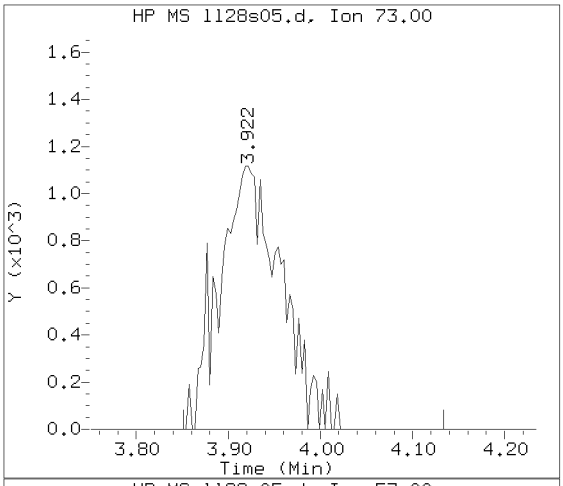
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



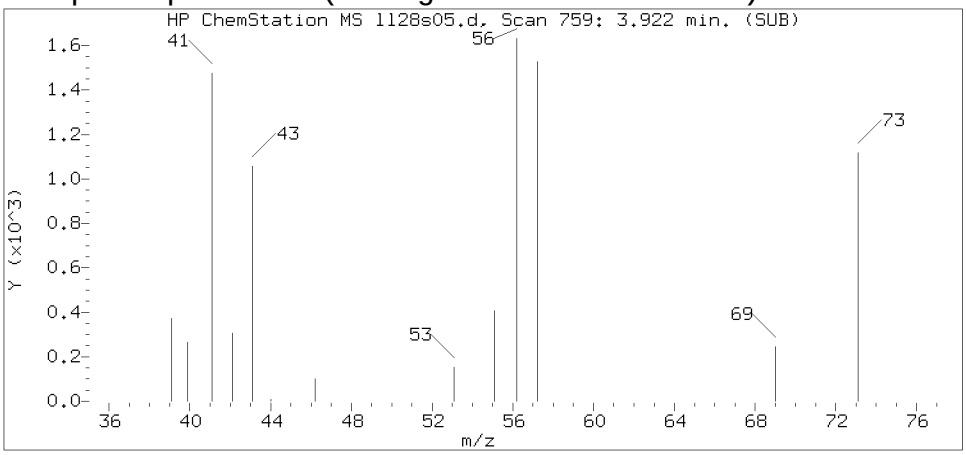
Digitally signed by Kevin A. Sposito
on 07/28/2017 at 12:00.
Target 3.5 esignature user ID: kas02648

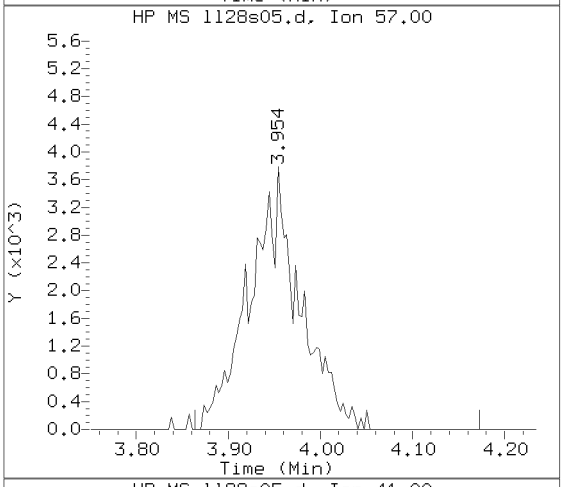
Reference Standard Spectrum for Methyl Tertiary Butyl Ether



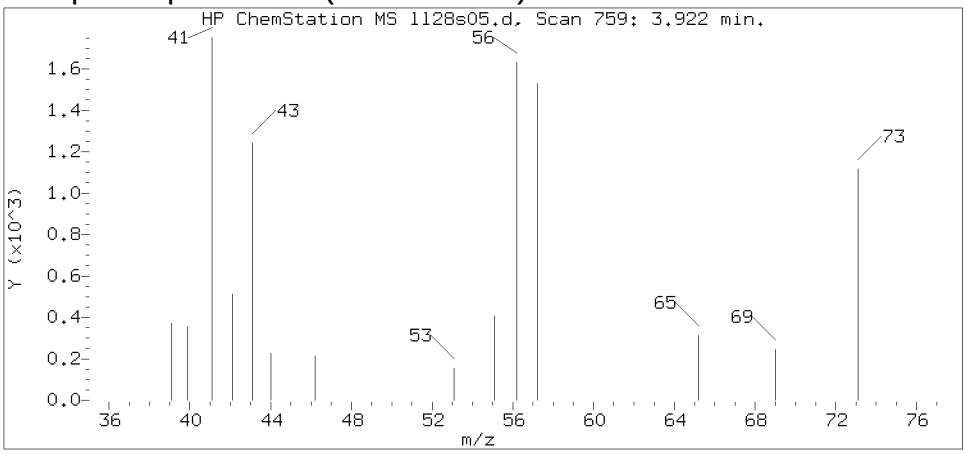



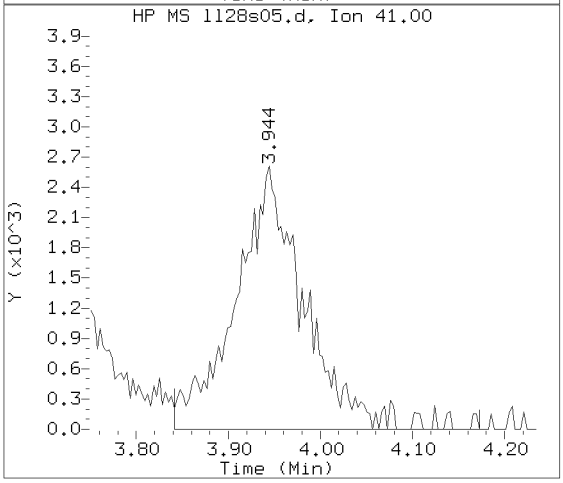

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09915.i/17jul28a.b/ll28s05.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:26 Analyst ID: KAS02648

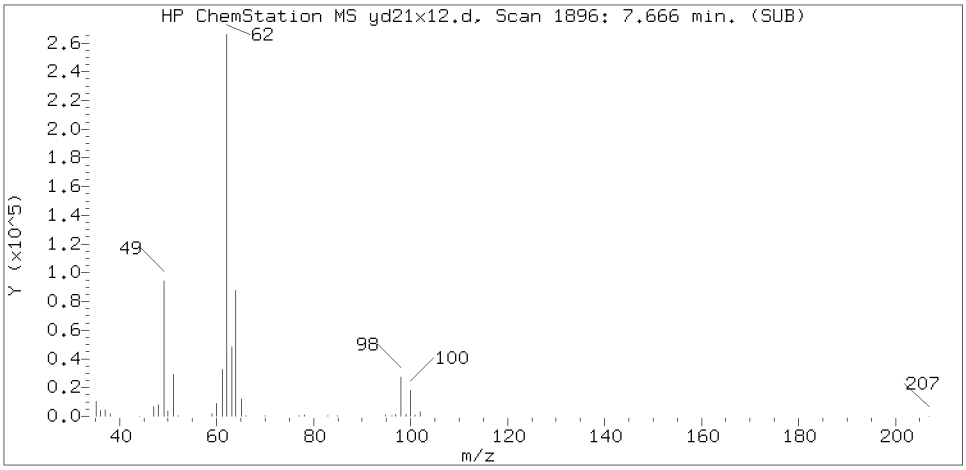
Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 18281
Calibration date and time: 28-JUL-2017 11:36
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Sample Name: 18706 Lab Sample ID: 9107407

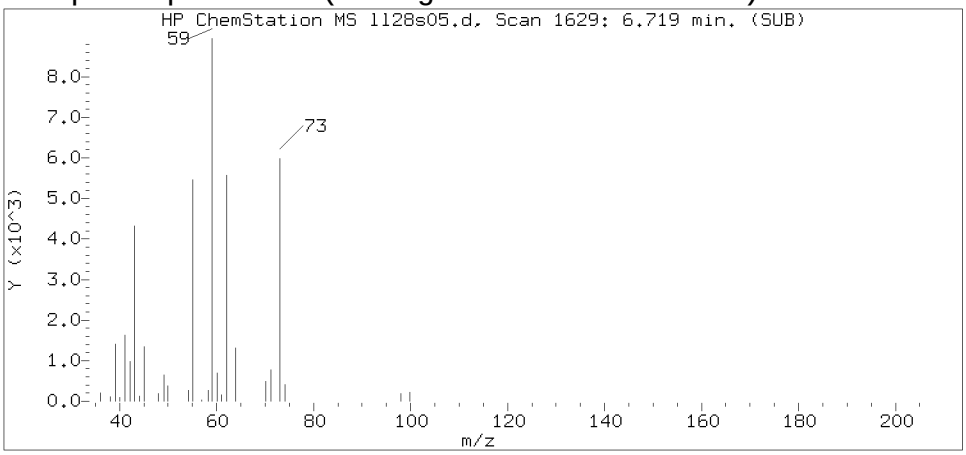
Compound Number : 33
Compound Name : Methyl Tertiary Butyl Ether
Scan Number : 759
Retention Time (minutes): 3.922
Relative Retention Time : 0.00046
Quant Ion : 73.00
Area (flag) : 5181
On-Column Amount (ng) : 0.5540

Digitally signed by Kevin A. Sposito on 07/28/2017 at 12:00.
Target 3.5 esignature user ID: kas02648

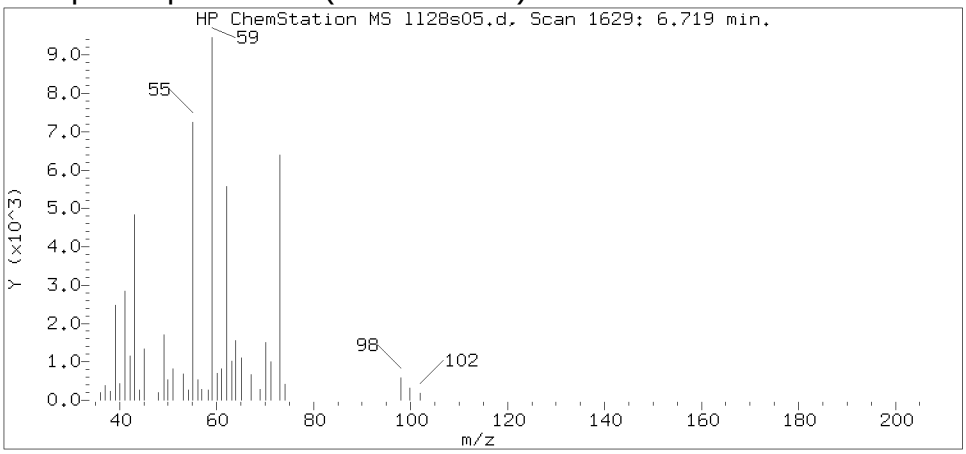
Reference Standard Spectrum for 1,2-Dichloroethane

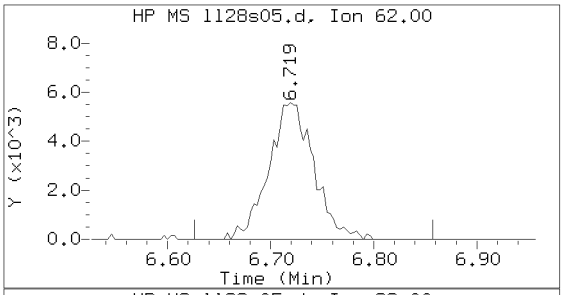


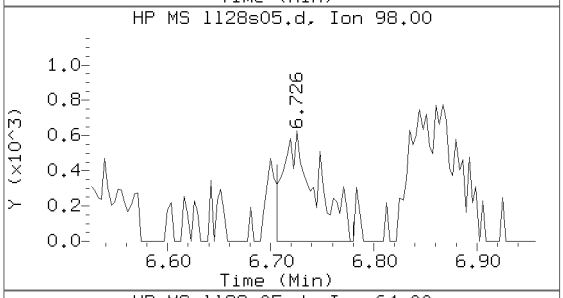

Sample Spectrum (Background Subtracted)

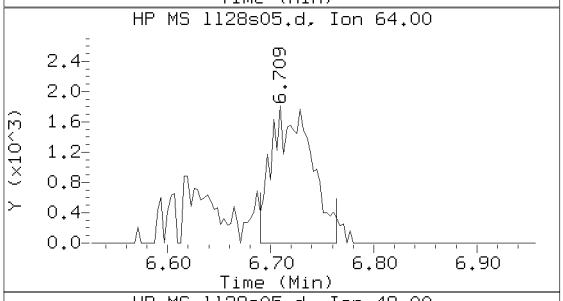


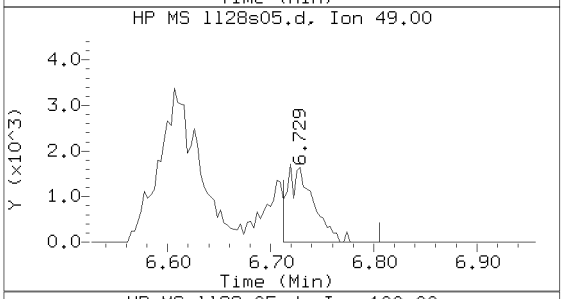

Sample Spectrum (Unaltered)

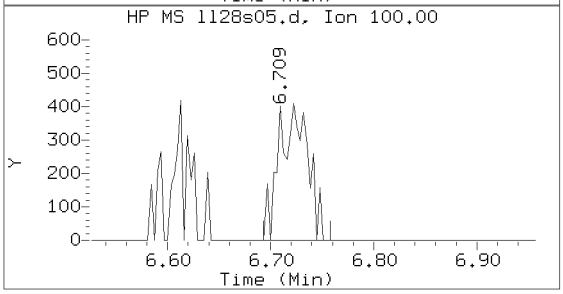



Data File: /chem/HP09915.i/17jul28a.b/ll28s05.d  Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:26  Analyst ID: KAS02648

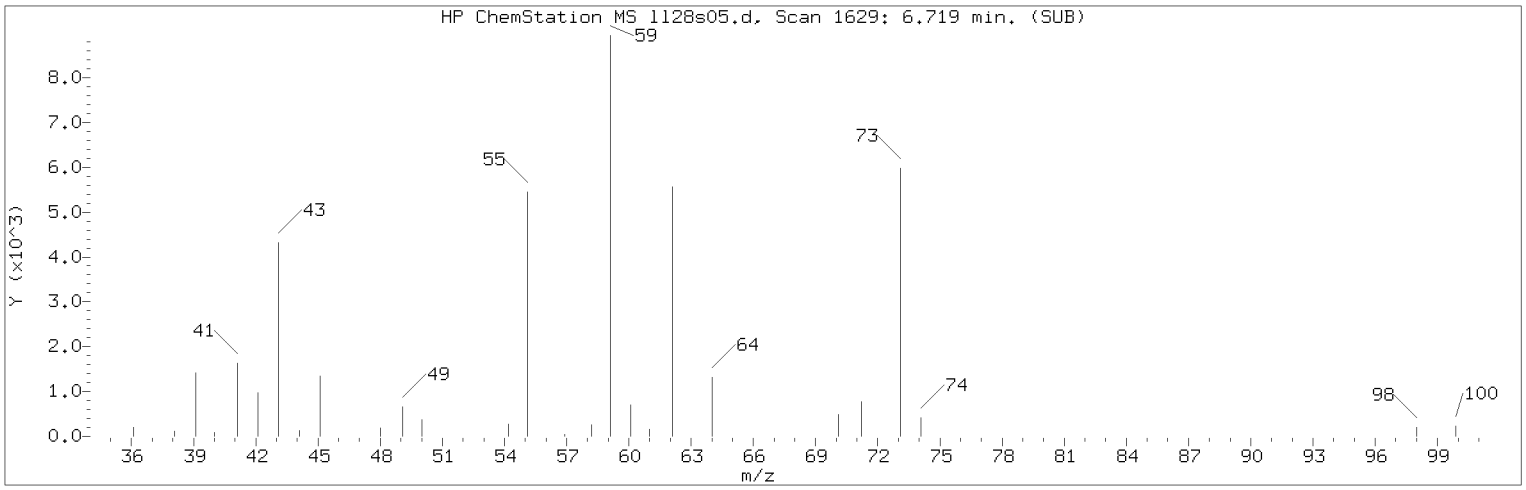
Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m  Sublist used: 18281
Calibration date and time: 28-JUL-2017 11:36
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Sample Name: 18706  Lab Sample ID: 9107407

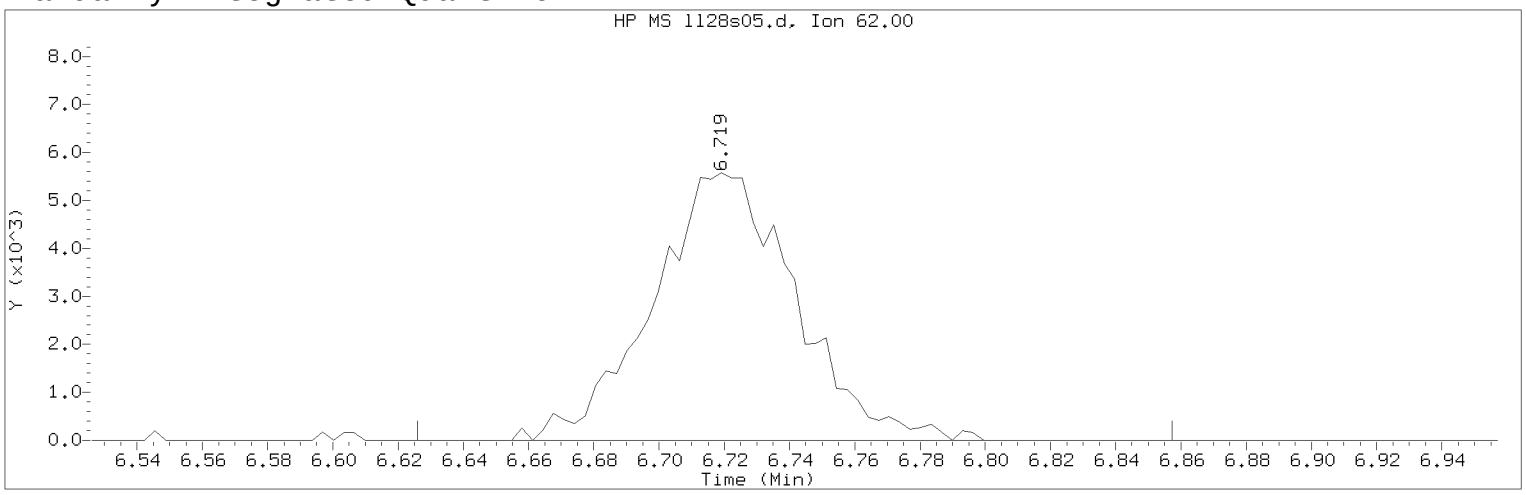
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1629
Retention Time (minutes): 6.719
Relative Retention Time : 0.00000
Quant Ion : 62.00
Area (flag) : 16992M
On-Column Amount (ng) : 3.9052

Digitally signed by Kevin A. Sposito on 07/28/2017 at 12:00.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s05.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 18281
Calibration date and time: 28-JUL-2017 11:36
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Sample Name: 18706 Lab Sample ID: 9107407

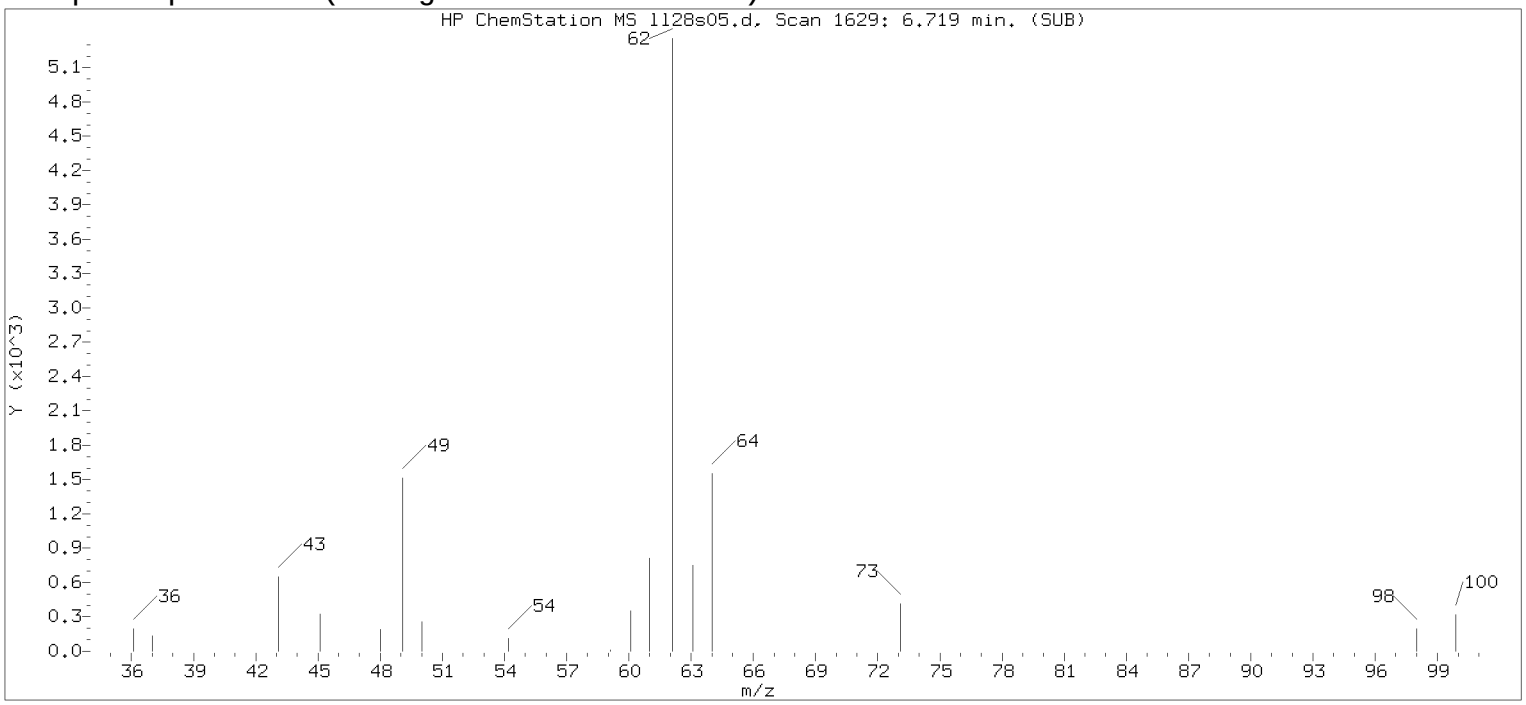
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1629
Retention Time (minutes): 6.719
Quant Ion : 62.00
Area (flag) : 16992M
On-Column Amount (ng) : 3.9052
Integration start scan : 1599 Integration stop scan: 1671
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

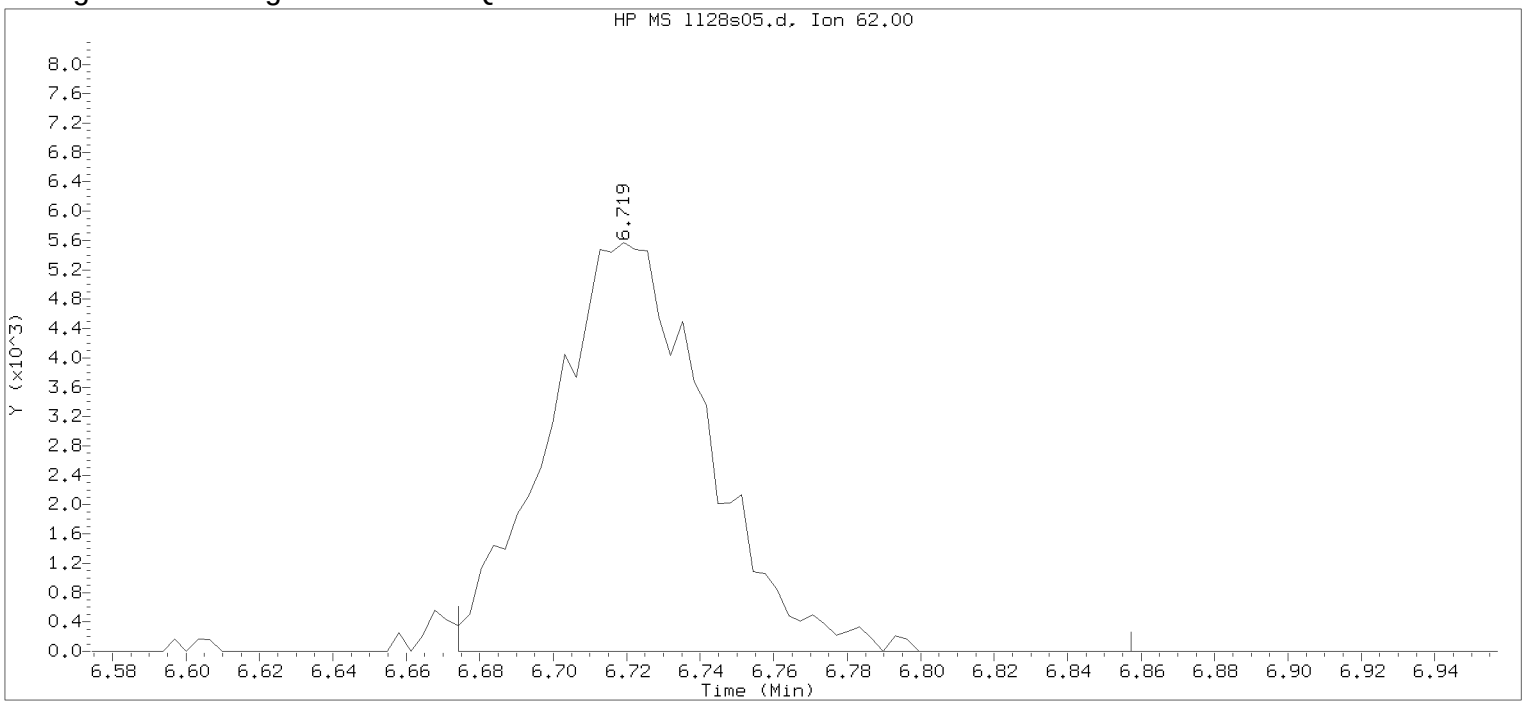
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 07/28/2017 at 12:00.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s05.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:26 Analyst ID: KAS02648

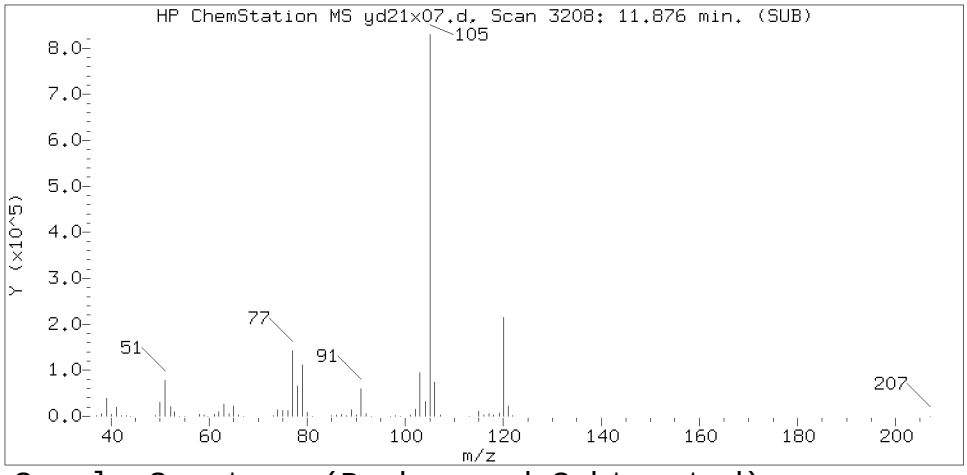
Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 18281
Calibration date and time: 28-JUL-2017 11:36
Date, time and analyst ID of latest file update: 28-Jul-2017 11:44 Automation

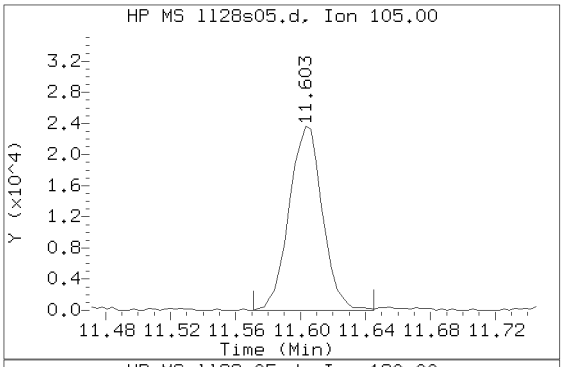
Sample Name: 18706 Lab Sample ID: 9107407

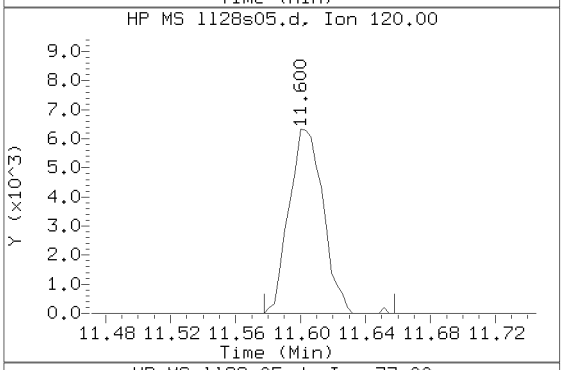
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1629
Retention Time (minutes): 6.719
Quant Ion : 62.00
Area : 16677
On-column Amount (ng) : 3.8328
Integration start scan : 1614 Integration stop scan: 1671
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 07/28/2017 at 12:00.
Target 3.5 esignature user KAS02648

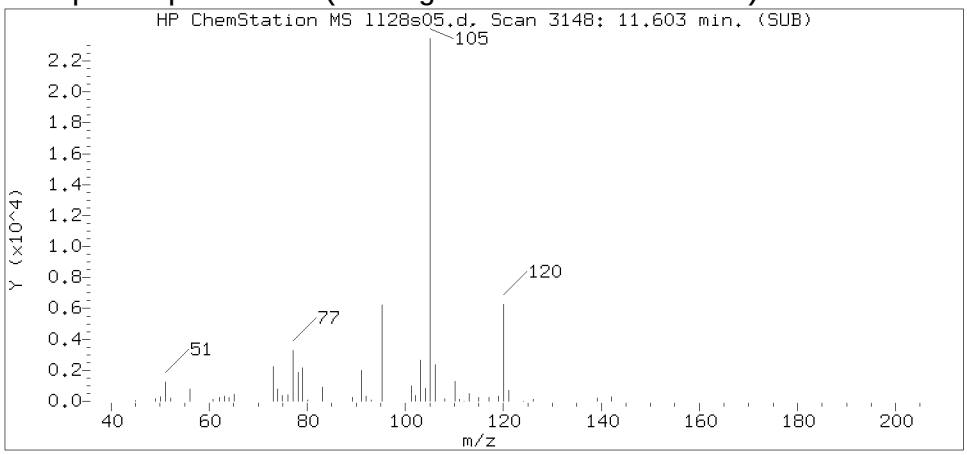
Reference Standard Spectrum for Isopropylbenzene

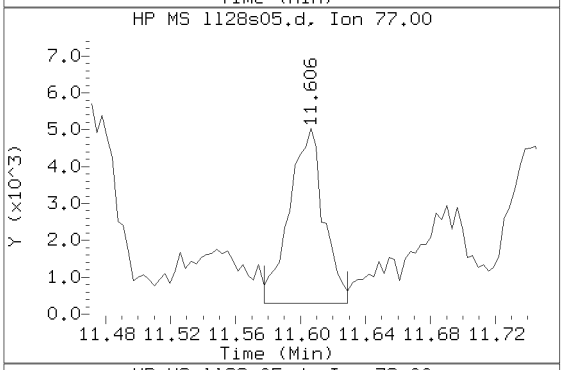


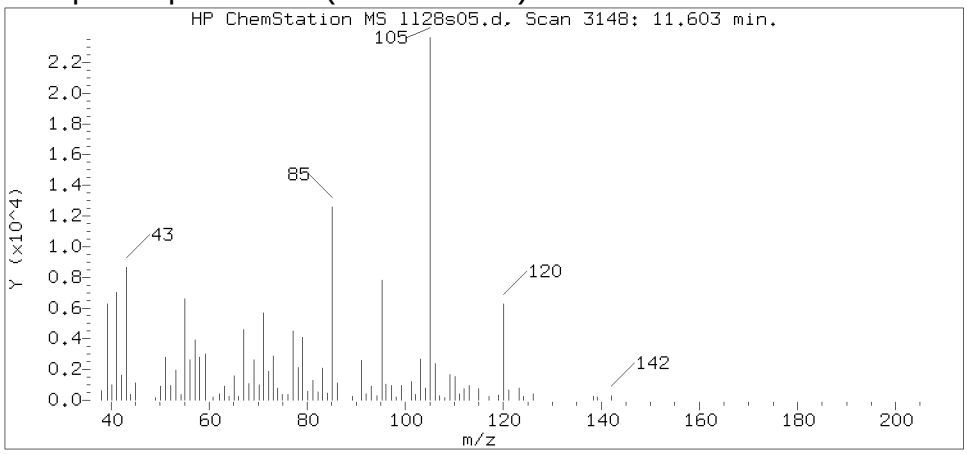



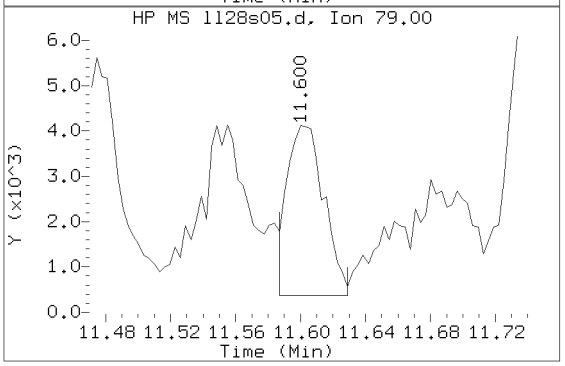

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem/HP09915.i/17jul28a.b/ll28s05.d  Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:26  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m  Sublist used: 18281
Calibration date and time: 28-JUL-2017 11:36
Date, time and analyst ID of latest file update: 28-Jul-2017 11:57 kas02648

Sample Name: 18706  Lab Sample ID: 9107407

Compound Number : 111
Compound Name : Isopropylbenzene
Scan Number : 3148
Retention Time (minutes): 11.603
Relative Retention Time : 0.00000
Quant Ion : 105.00
Area (flag) : 33574
On-Column Amount (ng) : 1.9785

Digitally signed by Kevin A. Sposito on 07/28/2017 at 12:00.
Target 3.5 esignature user ID: kas02648

# Standards Data

# Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17APR26A\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| KAS02648 | LA26T01.D | 50NG BFB | 04/26/2017 | 12:45 | | |
| KAS02648 | LA26X01.D | BLK | 04/26/2017 | 12:58 | | |
| KAS02648 | LA26I01.D | VSTD300 | 04/26/2017 | 13:20 | | |
| KAS02648 | LA26I02.D | VSTD100 | 04/26/2017 | 13:42 | | |
| KAS02648 | LA26I03.D | VSTD050 | 04/26/2017 | 14:04 | | |
| KAS02648 | LA26I04.D | VSTD020 | 04/26/2017 | 14:26 | | |
| KAS02648 | LA26I05.D | VSTD010 | 04/26/2017 | 14:48 | | |
| KAS02648 | LA26I06.D | VSTD004 | 04/26/2017 | 15:10 | | |
| KAS02648 | LA26I07.D | VSTD001 | 04/26/2017 | 15:32 | | |
| KAS02648 | LA26M01.D | MDL0.5 | 04/26/2017 | 15:54 | | |
| KAS02648 | LA26C01.D | VSTD050 | 04/26/2017 | 16:41 | L171161AA | |
| KAS02648 | LA26B01.D | VBLKL46 | 04/26/2017 | 17:03 | L171161AA | |
| KAS02648 | LA26S01.D | LCSL46 | 04/26/2017 | 17:25 | L171161AA | |
| KAS02648 | LA26S02.D | LCSL47 | 04/26/2017 | 17:47 | L171161AA | |
| KAS02648 | LA26M02.D | MDL001 | 04/26/2017 | 18:09 | L171161AA | |
| KAS02648 | LA26S01A.D | LCSL46 | 04/26/2017 | 18:34 | L171161AA | |
| KAS02648 | LA26S32.D | 8944378 | 04/26/2017 | 19:15 | L171162AA | |
| KAS02648 | LA26S33.D | 8944379 | 04/26/2017 | 19:37 | L171162AA | |
| KAS02648 | LA26S34.D | 8947184 | 04/26/2017 | 19:59 | L171162AA | |
| KAS02648 | LA26S35.D | 8944352 | 04/26/2017 | 20:21 | L171162AA | |
| KAS02648 | LA26S36.D | 8944353MS | 04/26/2017 | 20:43 | L171162AA | |
| KAS02648 | LA26S37.D | 8944354MSD | 04/26/2017 | 21:05 | L171162AA | |
| KAS02648 | LA26S38.D | 8944360 | 04/26/2017 | 21:27 | L171162AA | |
| KAS02648 | LA26S39.D | 8944366 | 04/26/2017 | 21:49 | L171162AA | |
| KAS02648 | LA26S40.D | 8944368 | 04/26/2017 | 22:11 | L171162AA | |
| KAS02648 | LA26S41.D | 8944370 | 04/26/2017 | 22:33 | L171162AA | |
| KAS02648 | LA26S42.D | 8947174 | 04/26/2017 | 22:55 | L171162AA | |
| KAS02648 | LA26S43.D | 8947180 | 04/26/2017 | 23:17 | L171162AA | |
| KAS02648 | LA26EC1.D | SECC050 | 04/26/2017 | 23:38 | L171162AA | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17APR28I\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| BWK03231 | LA28T01.D | 50NG BFB | 04/28/2017 | 09:43 | | |
| BWK03231 | LA28X01.D | BLK | 04/28/2017 | 10:07 | | |
| BWK03231 | LA28I01.D | VSTD300 | 04/28/2017 | 10:29 | | |
| BWK03231 | LA28I02.D | VSTD100 | 04/28/2017 | 10:51 | | |
| BWK03231 | LA28I03.D | VSTD050 | 04/28/2017 | 11:13 | | |
| BWK03231 | LA28I04.D | VSTD020 | 04/28/2017 | 11:35 | | |
| BWK03231 | LA28I05.D | VSTD010 | 04/28/2017 | 11:56 | | |
| BWK03231 | LA28I06.D | VSTD004 | 04/28/2017 | 12:18 | | |
| BWK03231 | LA28M01.D | MDL001 | 04/28/2017 | 12:40 | | |
| BWK03231 | LA28C01.D | VSTD050 | 04/28/2017 | 13:08 | L171181AA | |
| BWK03231 | LA28S01.D | LCSL55 | 04/28/2017 | 13:30 | L171181AA | |
| BWK03231 | LA28S02.D | LCSL56 | 04/28/2017 | 13:52 | L171181AA | |
| BWK03231 | LA28B01.D | VBLKL55 | 04/28/2017 | 14:14 | L171181AA | |
| BWK03231 | LA28M05.D | MDL0.5 | 04/28/2017 | 14:36 | L171181AA | |
| BWK03231 | LA28S03.D | 8947141 | 04/28/2017 | 14:57 | L171181AA | |
| BWK03231 | LA28S04.D | 8947132 | 04/28/2017 | 15:19 | L171181AA | |
| BWK03231 | LA28S05.D | 8947133MS | 04/28/2017 | 15:41 | L171181AA | |
| BWK03231 | LA28S06.D | 8947134MSD | 04/28/2017 | 16:03 | L171181AA | |
| BWK03231 | LA28S07.D | 8947133MS | 04/28/2017 | 16:25 | L171181AA | |
| BWK03231 | LA28S08.D | 8947134MSD | 04/28/2017 | 16:47 | L171181AA | |
| BWK03231 | LA28S09.D | 8947135 | 04/28/2017 | 17:09 | L171181AA | |
| BWK03231 | LA28S10.D | 8947136 | 04/28/2017 | 17:31 | L171181AA | |
| BWK03231 | LA28S11.D | 8947137 | 04/28/2017 | 17:53 | L171181AA | |
| BWK03231 | LA28S12.D | 8947138 | 04/28/2017 | 18:15 | L171181AA | |
| BWK03231 | LA28S13.D | 8947139 | 04/28/2017 | 18:37 | L171181AA | |
| BWK03231 | LA28S14.D | 8947140 | 04/28/2017 | 18:59 | L171181AA | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17jul28a\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| KAS02648 | LL28T01.D | 50NGBFB | 07/28/2017 | 08:15 | L172091AA | |
| KAS02648 | LL28X01.D | BLANK | 07/28/2017 | 08:30 | | |
| KAS02648 | LL28C01.D | VSTD050 | 07/28/2017 | 08:51 | L172091AA | |
| KAS02648 | LL28C02.D | VSTD050 | 07/28/2017 | 09:13 | L172091AA | |
| KAS02648 | LL28S01.D | LCSL86 | 07/28/2017 | 09:35 | L172091AA | |
| KAS02648 | LL28S02.D | LCDL86 | 07/28/2017 | 09:57 | L172091AA | |
| KAS02648 | LL28S03.D | LCSL87 | 07/28/2017 | 10:19 | L172091AA | |
| KAS02648 | LL28S04.D | LCDL87 | 07/28/2017 | 10:41 | L172091AA | |
| KAS02648 | LL28B01.D | VBLKL86 | 07/28/2017 | 11:04 | L172091AA | |
| KAS02648 | LL28S05.D | 9107407 | 07/28/2017 | 11:26 | L172091AA | |
| KAS02648 | LL28S06.D | 9121069 | 07/28/2017 | 11:48 | L172091AA | |
| KAS02648 | LL28S07.D | 9121055 | 07/28/2017 | 12:10 | L172091AA | |
| KAS02648 | LL28D01.D | SMLODVL | 07/28/2017 | 12:31 | L172091AA | |
| KAS02648 | LL28S08.D | 9121058 | 07/28/2017 | 12:53 | L172091AA | |
| KAS02648 | LL28S09.D | 9121059 | 07/28/2017 | 13:15 | L172091AA | |
| KAS02648 | LL28S10.D | 9121060 | 07/28/2017 | 13:37 | L172091AA | |
| KAS02648 | LL28S11.D | 9121061 | 07/28/2017 | 13:59 | L172091AA | |
| KAS02648 | LL28S12.D | 9121062 | 07/28/2017 | 14:21 | L172091AA | |
| KAS02648 | LL28S13.D | 9121063 | 07/28/2017 | 14:43 | L172091AA | |
| KAS02648 | LL28EC1.D | SECC050 | 07/28/2017 | 15:04 | L172091AA | |
| KAS02648 | LL28EC2.D | SECCB50 | 07/28/2017 | 15:26 | L172091AA | |
| KAS02648 | LL28S33.D | 9109590 | 07/28/2017 | 15:48 | L172092AA | |
| KAS02648 | LL28S34.D | 9109585 | 07/28/2017 | 16:10 | L172092AA | |
| KAS02648 | LL28S35.D | 9109586MS | 07/28/2017 | 16:32 | L172092AA | |
| KAS02648 | LL28S36.D | 9109587MSD | 07/28/2017 | 16:54 | L172092AA | |
| KAS02648 | LL28S37.D | 9109586MS | 07/28/2017 | 17:16 | L172092AA | |
| KAS02648 | LL28S38.D | 9109587MSD | 07/28/2017 | 17:38 | L172092AA | |
| KAS02648 | LL28S39.D | 9109581 | 07/28/2017 | 18:00 | L172092AA | |
| KAS02648 | LL28S40.D | 9109582 | 07/28/2017 | 18:22 | L172092AA | |
| KAS02648 | LL28S41.D | 9109583 | 07/28/2017 | 18:43 | L172092AA | |
| KAS02648 | LL28S42.D | 9109584 | 07/28/2017 | 19:05 | L172092AA | |
| KAS02648 | LL28S43.D | 9109588 | 07/28/2017 | 19:27 | L172092AA | |
| KAS02648 | LL28S44.D | 9109589 | 07/28/2017 | 19:49 | L172092AA | |

Data File: /chem/HP09915.i/17apr26a.b/la26t01.d



Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017

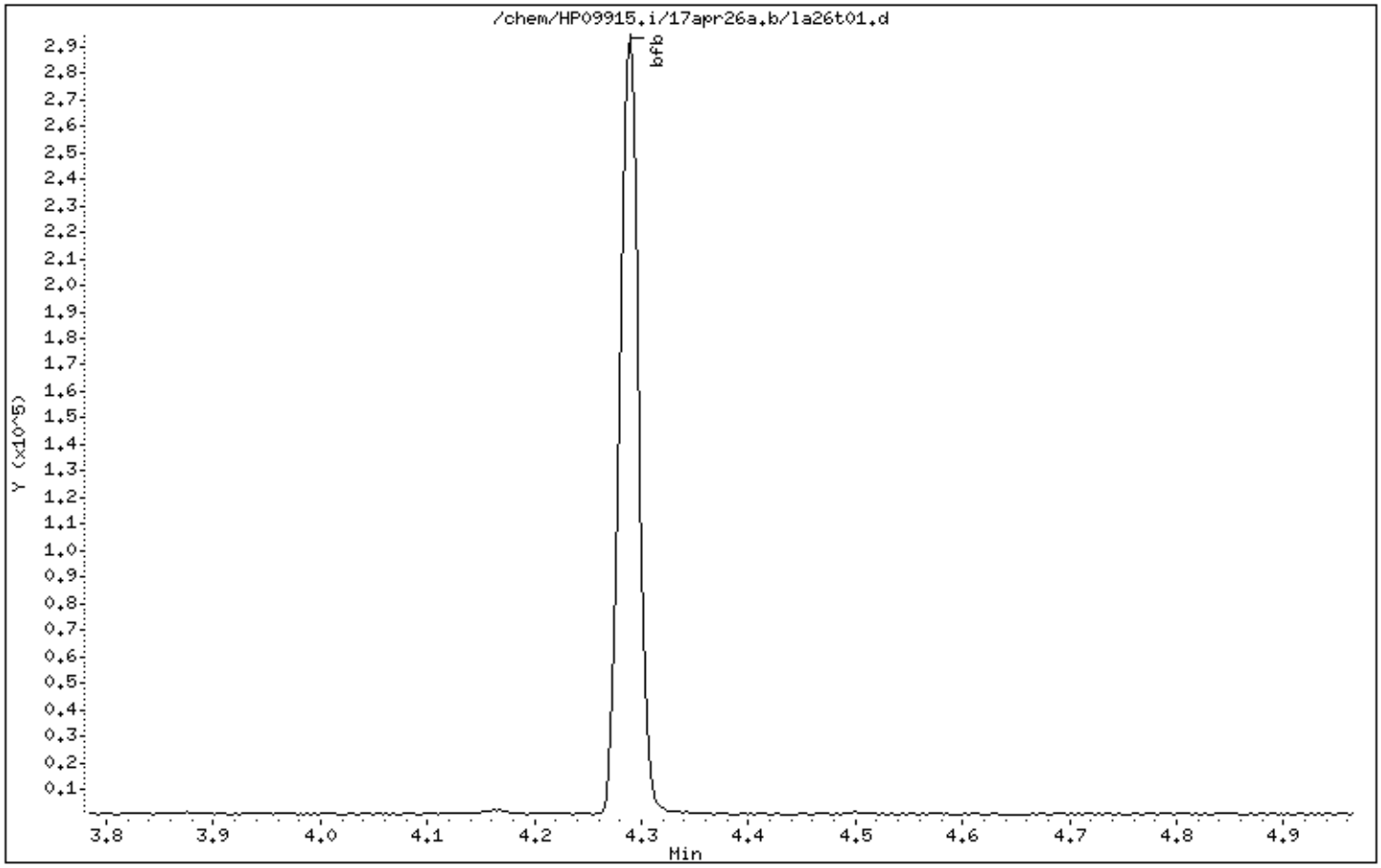
Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17apr26a.b/la26t01.d

Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017

Instrument: HP09915.i

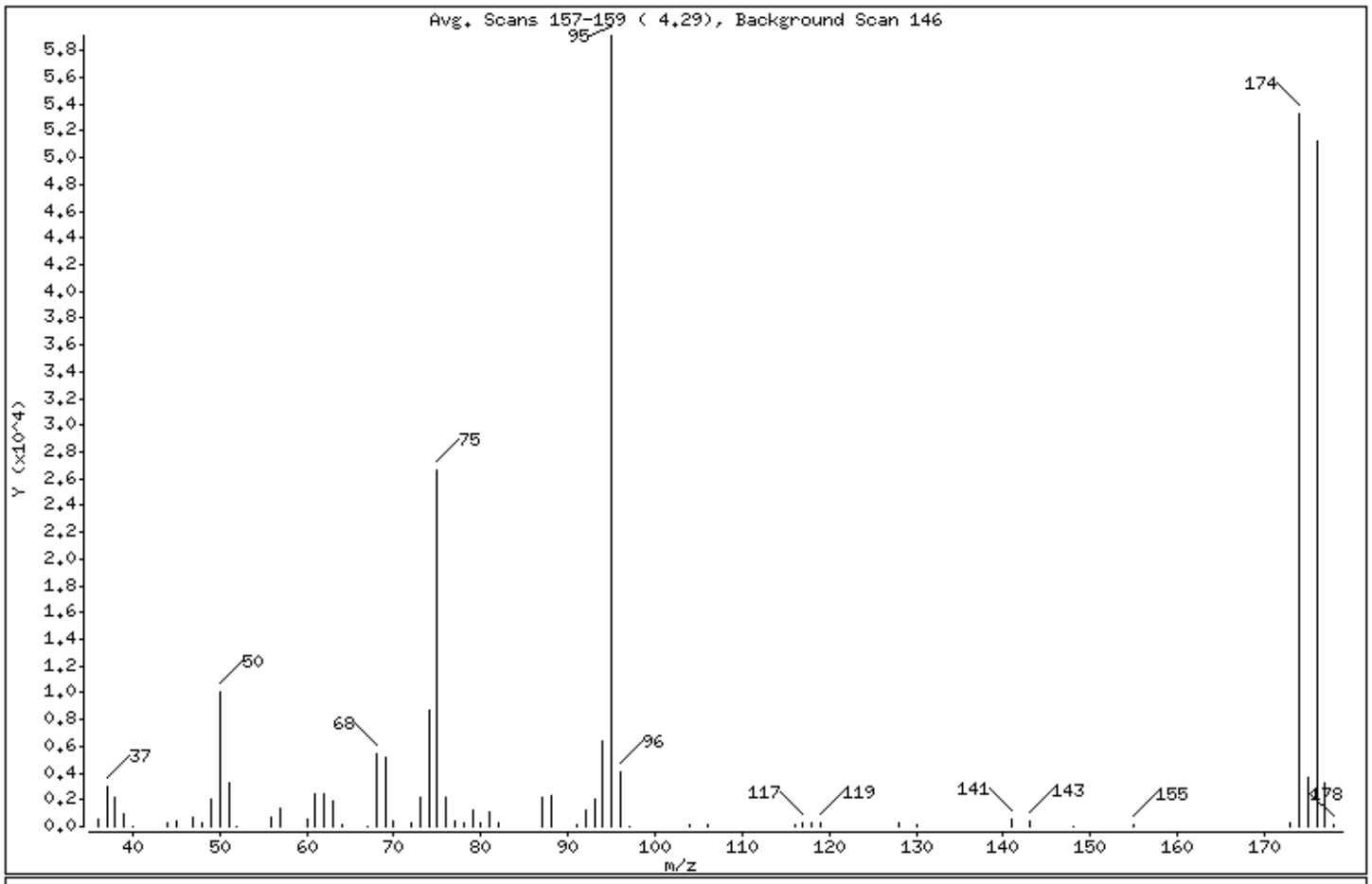
Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.10 |
| 75 | 30.00 - 60.00% of mass 95 | 44.97 |
| 96 | 5.00 - 9.00% of mass 95 | 6.79 |
| 173 | Less than 2.00% of mass 174 | 0.49 ( 0.54) |
| 174 | 50.00 - 100.00% of mass 95 | 90.09 |
| 175 | 5.00 - 9.00% of mass 174 | 6.12 ( 6.79) |
| 176 | 95.00 - 101.00% of mass 174 | 86.74 ( 96.29) |
| 177 | 5.00 - 9.00% of mass 176 | 5.56 ( 6.41) |

Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648

Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017 Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

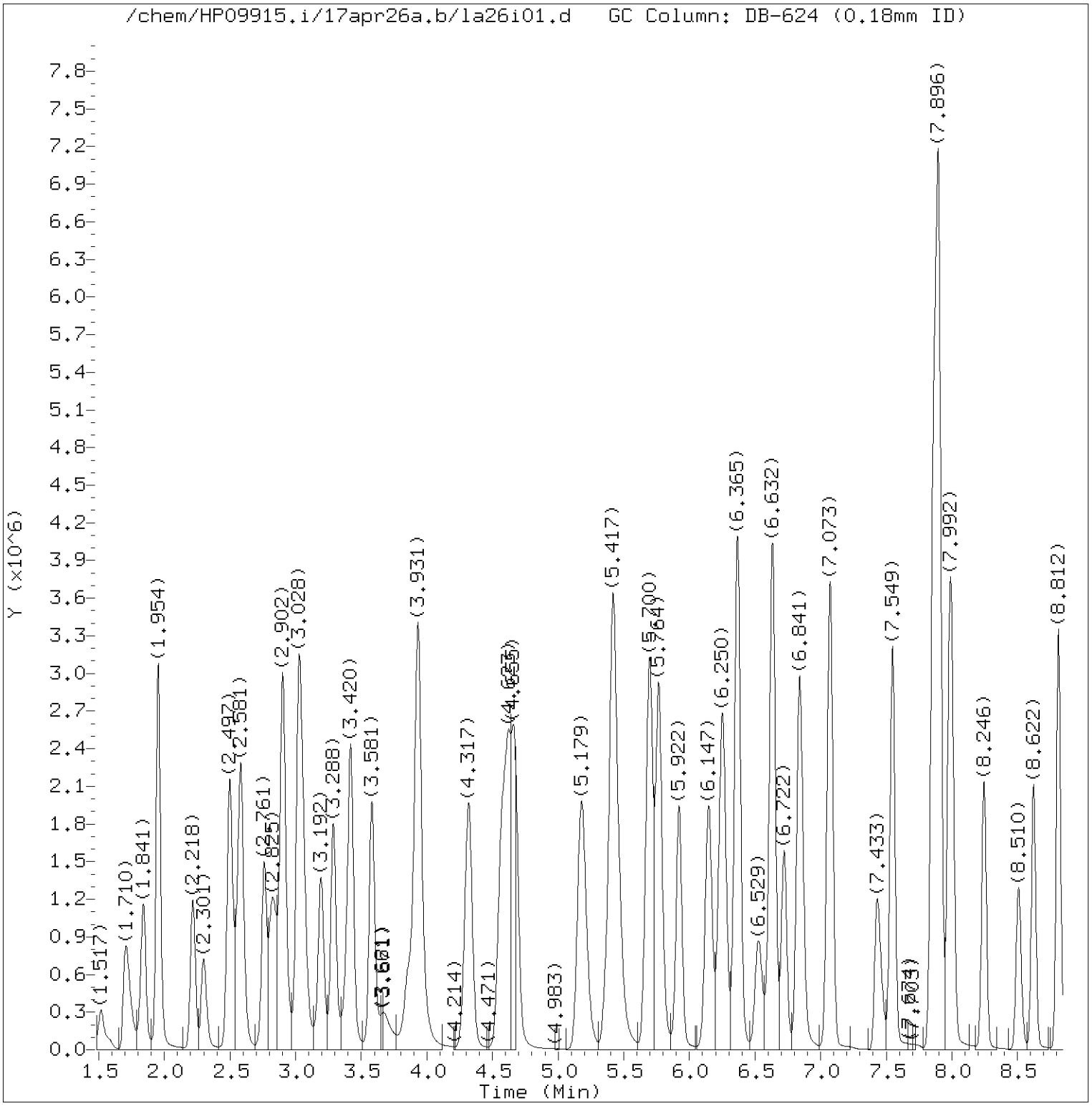
Operator: KAS02648

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: la26t01.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 146
Location of Maximum: 95.00
Number of points: 62

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 581 | 61.00 | 2433 | 80.00 | 261 | 118.00 | 213 |
| 37.00 | 2955 | 62.00 | 2451 | 81.00 | 1135 | 119.00 | 269 |
| 38.00 | 2227 | 63.00 | 1939 | 82.00 | 248 | 128.00 | 225 |
| 39.00 | 905 | 64.00 | 156 | 87.00 | 2238 | 130.00 | 116 |
| 40.00 | 18 | 67.00 | 61 | 88.00 | 2301 | 141.00 | 493 |
| 44.00 | 266 | 68.00 | 5493 | 91.00 | 177 | 143.00 | 436 |
| 45.00 | 425 | 69.00 | 5219 | 92.00 | 1262 | 148.00 | 51 |
| 47.00 | 688 | 70.00 | 432 | 93.00 | 2027 | 155.00 | 68 |
| 48.00 | 283 | 72.00 | 236 | 94.00 | 6417 | 173.00 | 287 |
| 49.00 | 2054 | 73.00 | 2174 | 95.00 | 59120 | 174.00 | 53256 |
| 50.00 | 10110 | 74.00 | 8666 | 96.00 | 4015 | 175.00 | 3618 |
| 51.00 | 3256 | 75.00 | 26584 | 97.00 | 51 | 176.00 | 51280 |
| 52.00 | 55 | 76.00 | 2212 | 104.00 | 202 | 177.00 | 3288 |
| 56.00 | 714 | 77.00 | 371 | 106.00 | 68 | 178.00 | 74 |
| 57.00 | 1411 | 78.00 | 215 | 116.00 | 182 | | |
| 60.00 | 513 | 79.00 | 1182 | 117.00 | 318 | | |

Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

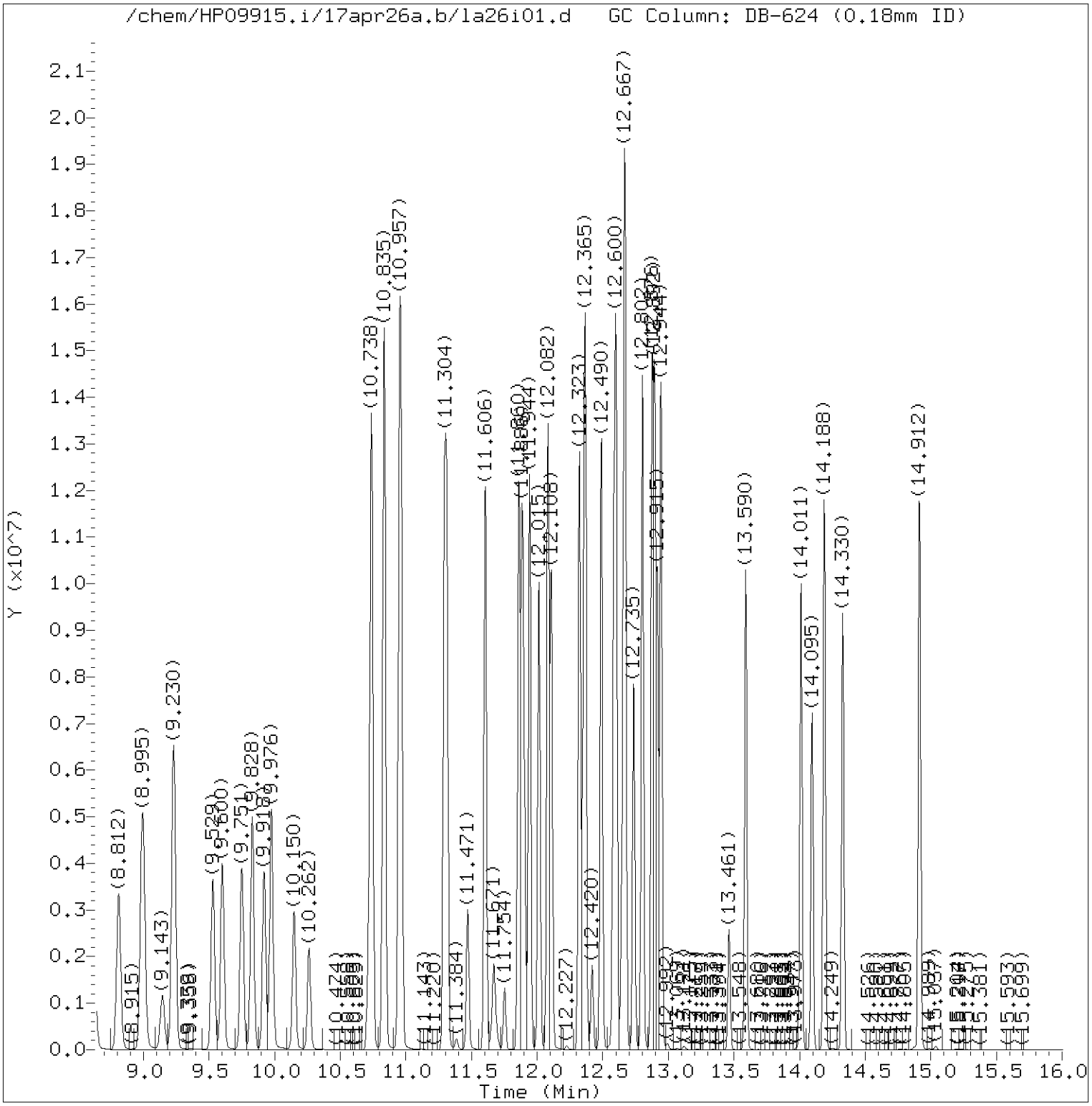
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 1958047 | 313.882 |
| 4) Chloromethane | (2) | 1.841 | 50 | 1904237 | 297.140 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 1095441 | 290.215 |
| 6) Vinyl Chloride | (2) | 1.954 | 62 | 1868685 | 301.966 |
| 8) Bromomethane | (2) | 2.218 | 94 | 1235545 | 296.846 |
| 9) Chloroethane | (2) | 2.301 | 64 | 1017254 | 291.687 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 2518637 | 296.081 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 2251585 | 314.196 |
| 11) n-Pentane | (2) | 2.587 | 43 | 1712208 | 290.122 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 1196266 | 299.857 |
| 15) Freon 123a | (2) | 2.822 | 67 | 1429955 | 299.625 |
| 16) Acrolein | (1) | 2.902 | 56 | 4637155 | 3348.162 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 1151917 | 303.712 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 63 | 584950 | 304.648 |
| 18) Acetone | (1) | 3.037 | 58 | 403999 | 672.085 |
| 19) Freon 113 | (2) | 3.054 | 101 | 1196009 | 313.286 |
| 21) 2-Propanol | (1) | 3.173 | 45 | 593623 | 1489.698 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 2269414 | 308.478 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 3857476 | 312.534 |
| 27) Methyl Acetate | (2) | 3.391 | 43 | 1585782 | 288.068 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 2271974 | 299.058 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 169188M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 1398327 | 279.081 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 944135 | 1442.270 |
| 31) Acrylonitrile | (2) | 3.851 | 53 | 875676 | 302.918 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 4032886 | 290.250 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 1361677 | 305.995 |
| 34) n-Hexane | (2) | 4.317 | 57 | 2081106 | 305.081 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 2520546 | 301.428 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 4685474 | 291.938 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 2194166 | 311.075 |
| 40) Ethyl t-butyl ether | (2) | 5.182 | 59 | 4023920 | 291.328 |
| 44) 2-Butanone | (2) | 5.385 | 43 | 2335957 | 603.500 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 1543601 | 302.715 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 1850165 | 331.391 |
| 47) Propionitrile | (1) | 5.468 | 54 | 1527979 | 1599.274 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 2165702 | 751.439 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 831794 | 309.503 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 604452 | 716.270 |
| 51) Chloroform | (2) | 5.922 | 83 | 2401549 | 301.309 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 255745 | 50.012 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 111 | 262971 | 50.184 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 2144080 | 294.382 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 2905278 | 608.709 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 2560169 | 308.719 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 2125161 | 309.600 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 756981 | 314.913 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 1780485 | 334.890 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2006976 | 309.593 |
| 58) Isobutyl Alcohol | (1) | 6.529 | 41 | 870124 | 3785.822 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 63036 | 49.572 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 293986 | 48.877 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 104 | 40289 | 49.952 |
| 60) Benzene | (2) | 6.635 | 78 | 5664323 | 296.413 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 1935203 | 299.340 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 98 | 187547 | 329.010 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 4084653 | 297.970 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1047200 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 2258430 | 295.708 |
| 69) n-Butanol | (1) | 7.433 | 56 | 1528004M | 8247.101 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 1501811 | 304.105 |
| 72) Methylcyclohexane | (2) | 7.860 | 83 | 2774376 | 318.844 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 1266884 | 322.636 |
| 73) 1,2-Dichloropropane | (2) | 7.893 | 63 | 1591407 | 304.211 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 201278M | 3479.803 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 1449583 | 323.724 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 1017942 | 309.424 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 1923473 | 323.978 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 1184003 | 703.267 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.622 | 63 | 1300550 | 323.419 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 2566038 | 331.609 |
| 82) 4-Methyl-2-pentanone | (2) | 8.995 | 43 | 5077972 | 636.634 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1048562 | 49.332 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 698016 | 49.847 |
| 88) Toluene | (3) | 9.230 | 92 | 3661123 | 296.405 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 2355530 | 340.103 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 2475882 | 317.369 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 1425551 | 299.507 |
| 93) Tetrachloroethene | (3) | 9.831 | 166 | 1673578 | 306.339 |
| 94) 1,3-Dichloropropane | (3) | 9.921 | 76 | 2464344 | 298.391 |
| 96) 2-Hexanone | (3) | 9.976 | 43 | 3763816 | 631.277 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 4921568 | 671.712 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 1685181 | 341.825 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 1613118 | 309.581 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 832450 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 2100198 | 296.072 |
| 102) Chlorobenzene | (3) | 10.741 | 112 | 4297711 | 301.535 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 1522321 | 323.444 |
| 104) Ethylbenzene | (3) | 10.838 | 91 | 7075752 | 296.976 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 5612991 | 605.130 |
| 107) o-Xylene | (3) | 11.294 | 106 | 2814653 | 305.123 |
| 109) Styrene | (3) | 11.314 | 104 | 4717754 | 309.374 |
| 110) Bromoform | (3) | 11.471 | 173 | 1309455 | 365.799 |
| 111) Isopropylbenzene | (3) | 11.606 | 105 | 7076637 | 300.169 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 788204 | 3612.463 |
| 114)$4-Bromofluorobenzene | (3) | 11.754 | 95 | 390072 | 49.374 |
| 114)$4-Bromofluorobenzene | (3) | 11.754 | 174 | 345842 | 49.906 |
| 108) Xylene (Total) | (3) | | 106 | 8427644 | 910.253 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.860 | 83 | 2325327 | 290.148 |
| 115) Bromobenzene | (4) | 11.863 | 156 | 1969582 | 305.174 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 1716308 | 747.363 |
| 117) 1,2,3-Trichloropropane | (4) | 11.905 | 110 | 658906 | 290.845 |
| 119) n-Propylbenzene | (4) | 11.944 | 91 | 8145618 | 285.633 |
| 120) 2-Chlorotoluene | (4) | 12.015 | 126 | 1788274 | 301.293 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 6133887 | 301.630 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 1867872 | 302.377 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 1372178M | 312.149 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1198514 | 345.326 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 6317724 | 301.599 |
| 127) sec-Butylbenzene | (4) | 12.490 | 105 | 7645015 | 294.717 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 3590968 | 292.247 |
| 130) p-Isopropyltoluene | (4) | 12.603 | 119 | 6883297 | 300.529 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 451513 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 3631810 | 285.849 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 6440778 | 293.471 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 4582840 | 364.666 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 4116951 | 300.860 |
| 137) 1,4-Diethylbenzene | (4) | 12.876 | 119 | 4232692 | 294.554 |
| 139) n-Butylbenzene | (4) | 12.896 | 92 | 3262571 | 285.151 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 3500895 | 289.855 |
| 140) 1,2-Diethylbenzene | (4) | 12.944 | 119 | 3434155 | 298.215 |
| 141) Diethylbenzene (total) | (4) | | 100 | 11783798 | 893.629 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.461 | 75 | 522343 | 308.197 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 2788456 | 284.760 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 2672501 | 281.341 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 1140885 | 276.553 |
| 148) Naphthalene | (4) | 14.188 | 128 | 7817799 | 272.736 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 2521047 | 275.101 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 4927545 | 265.852 |



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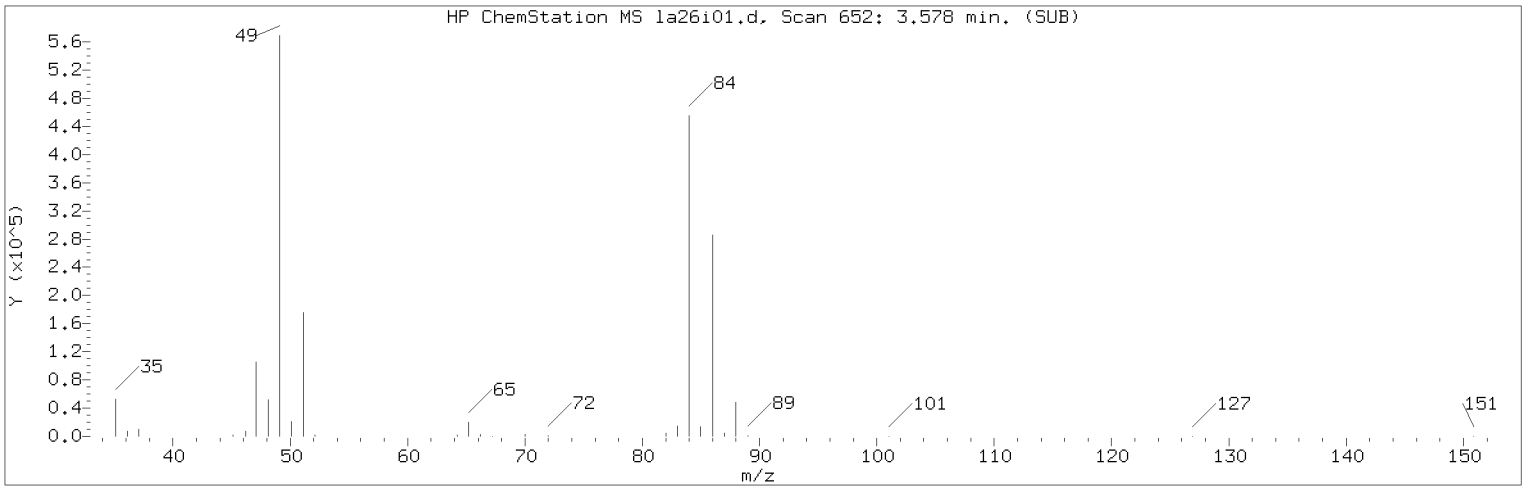
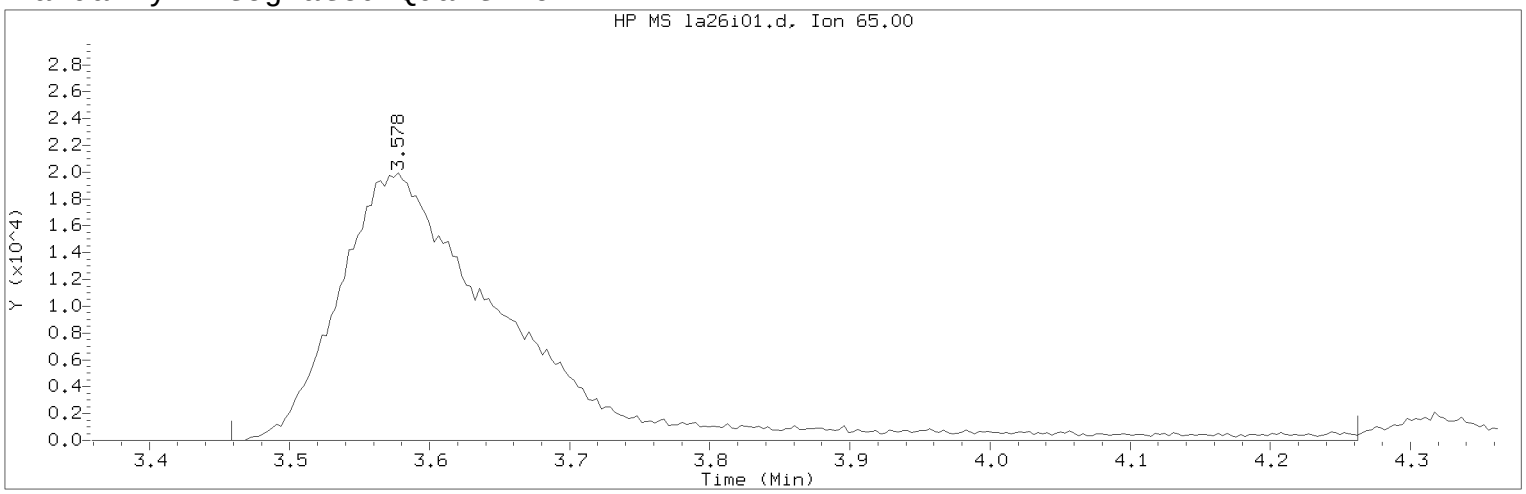
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

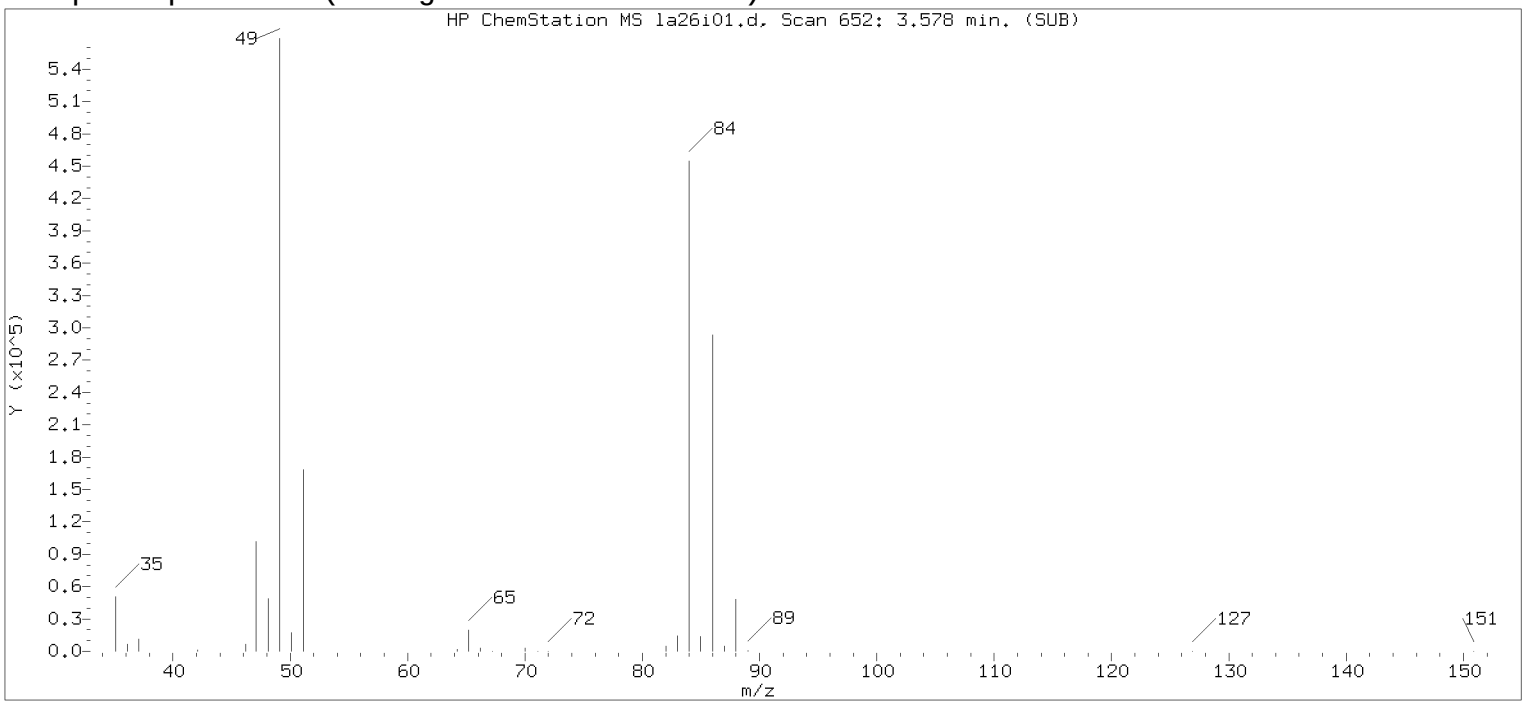
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area (flag) : 169188M
On-Column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 864
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

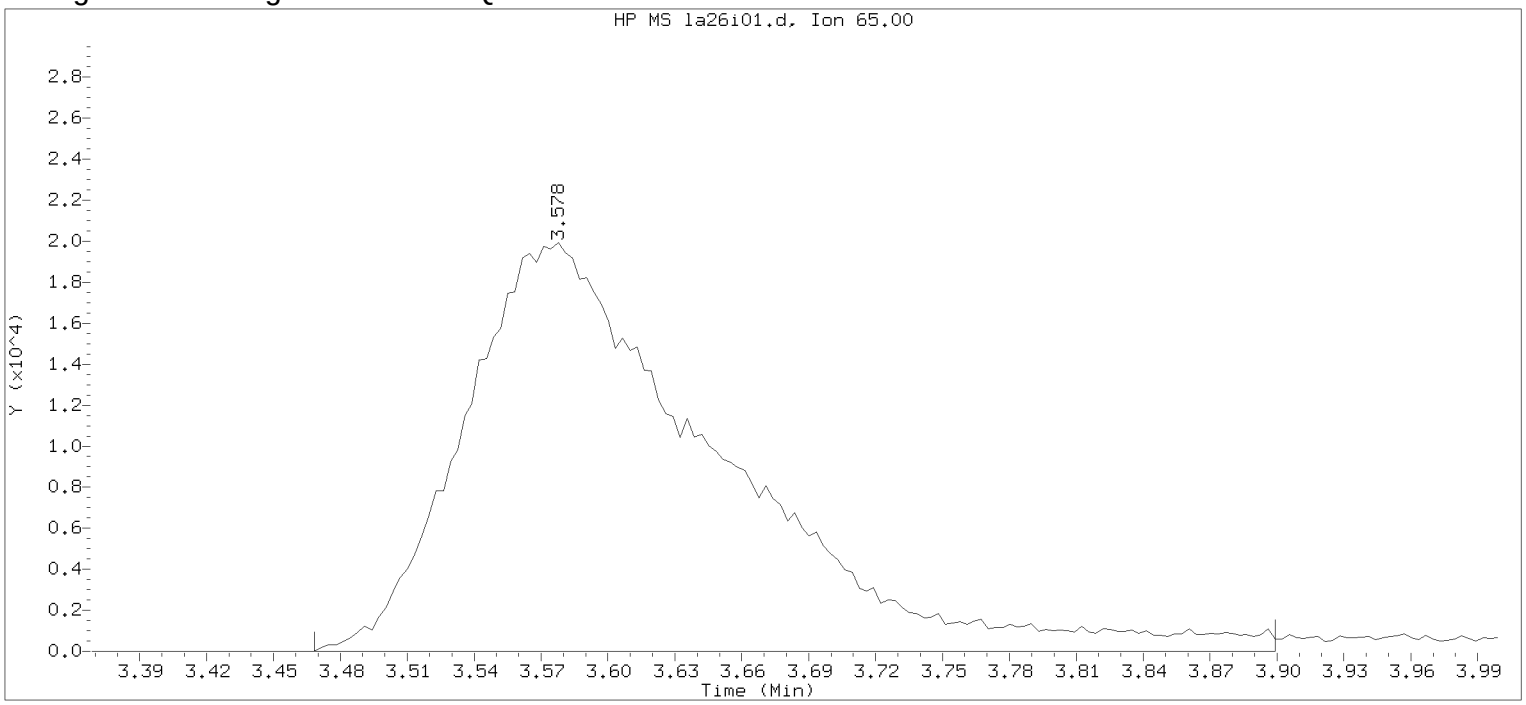
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 158080
On-column Amount (ng) : 250.0000
Integration start scan : 617 Integration stop scan: 751
Y at integration start : 0 Y at integration end: 0

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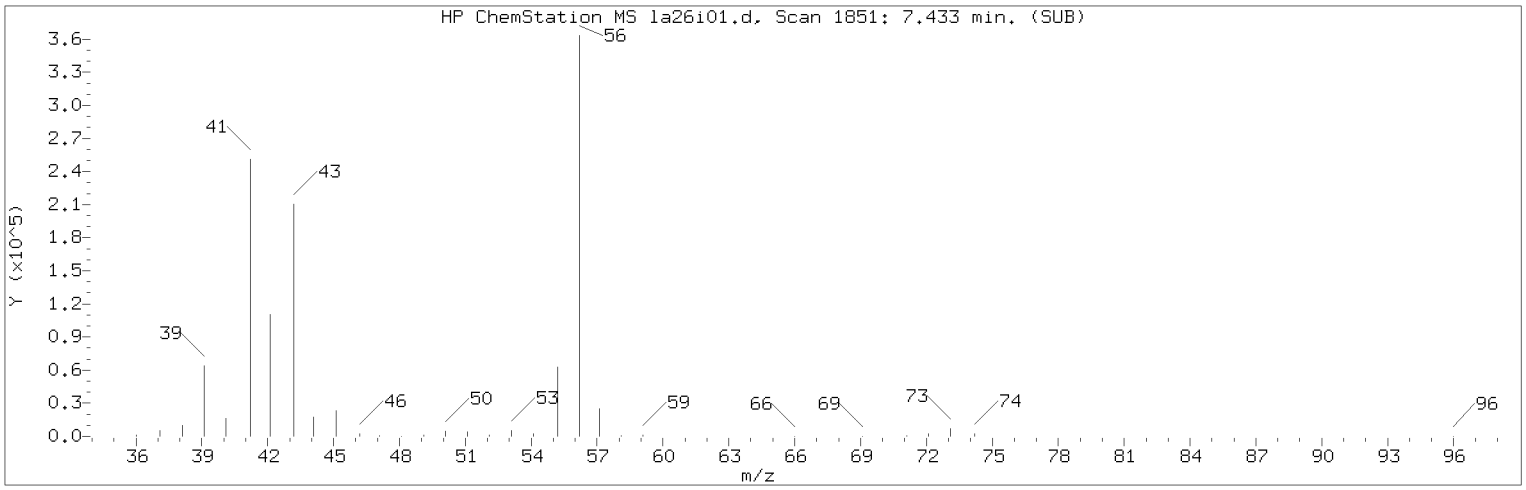
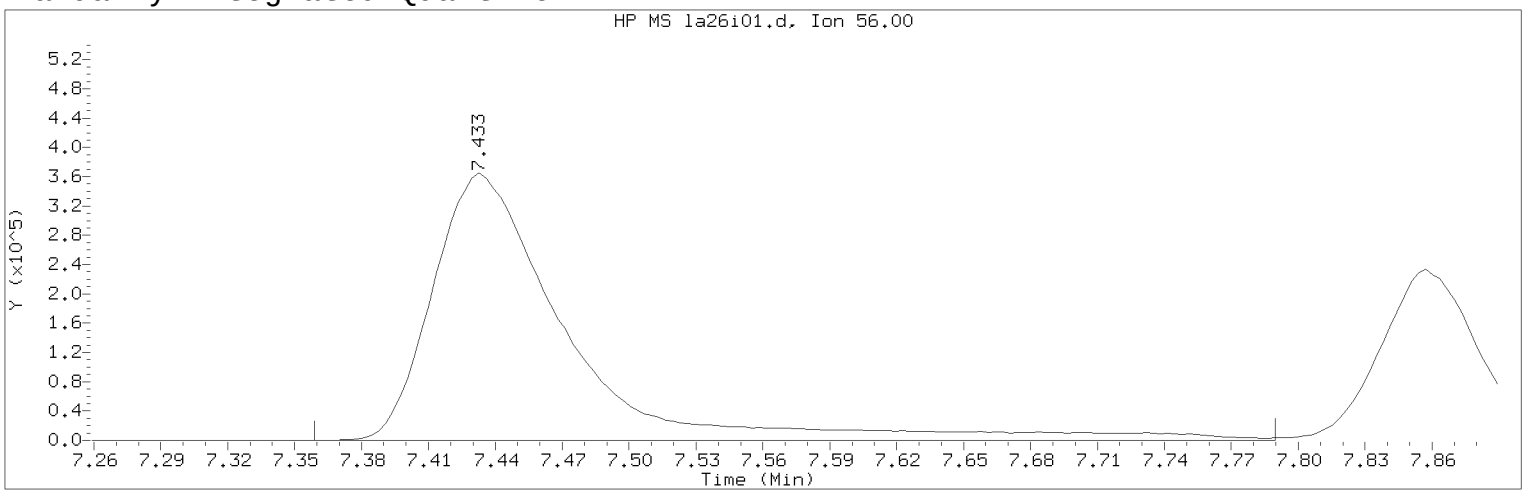
Target 3.5 esignature userKAS02648 Page 148 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

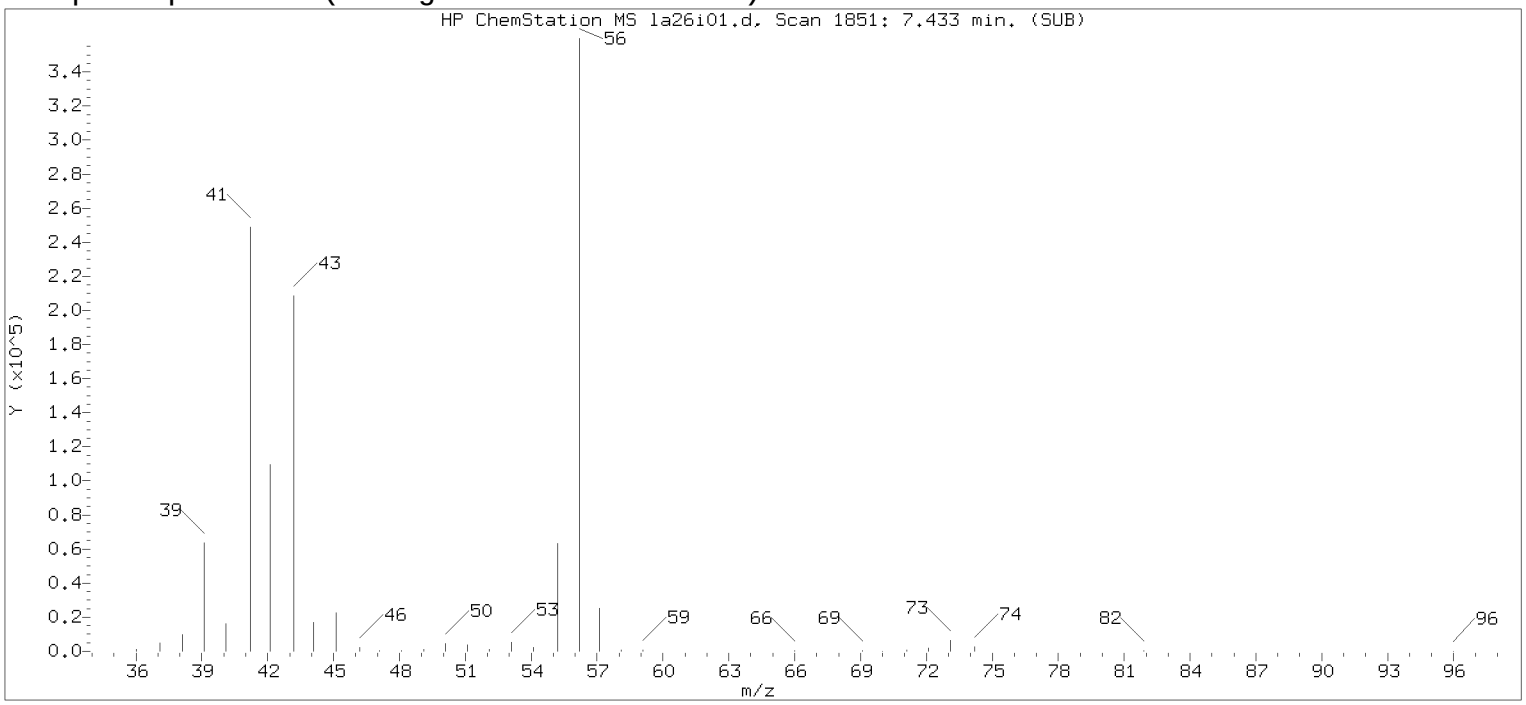
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1851
Retention Time (minutes): 7.433
Quant Ion : 56.00
Area (flag) : 1528004M
On-Column Amount (ng) : 8247.1010
Integration start scan : 1827 Integration stop scan: 1961
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

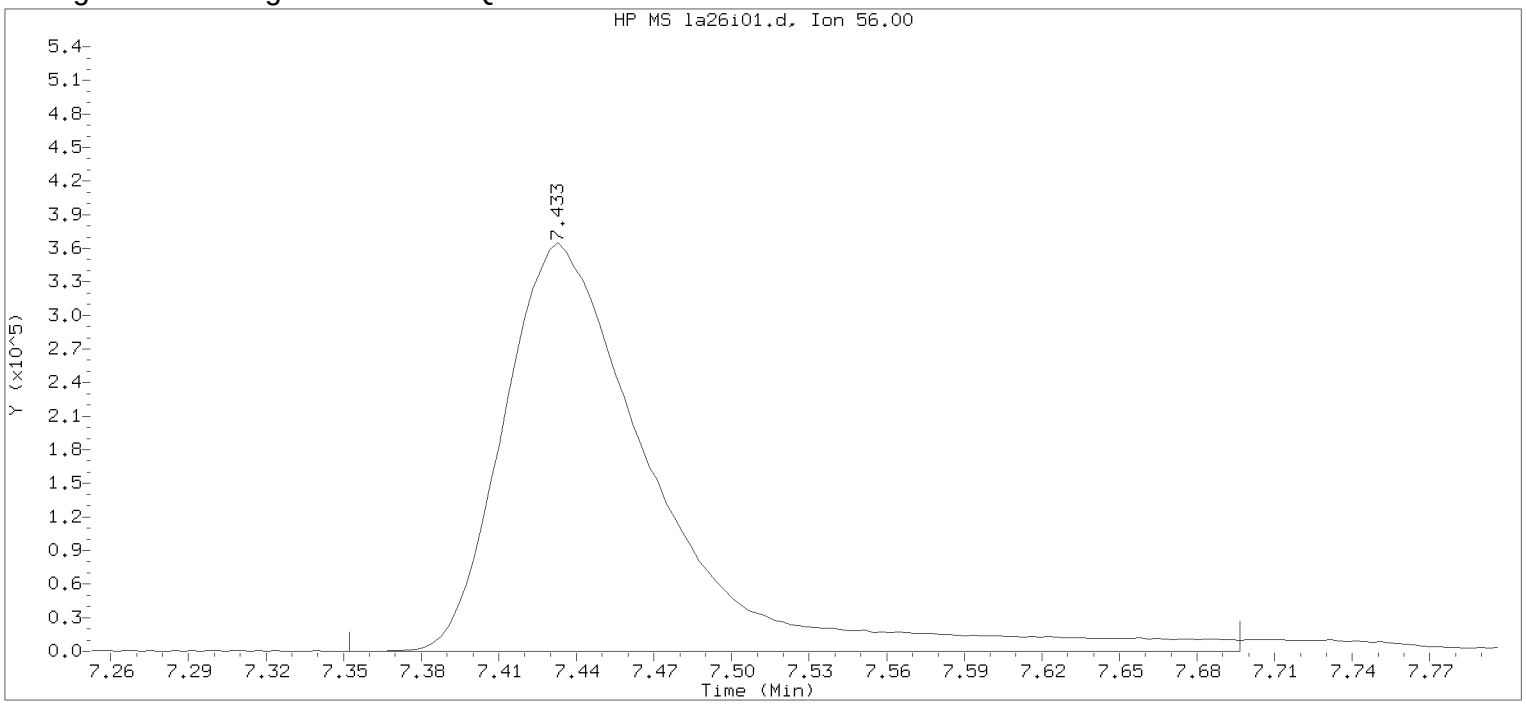
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

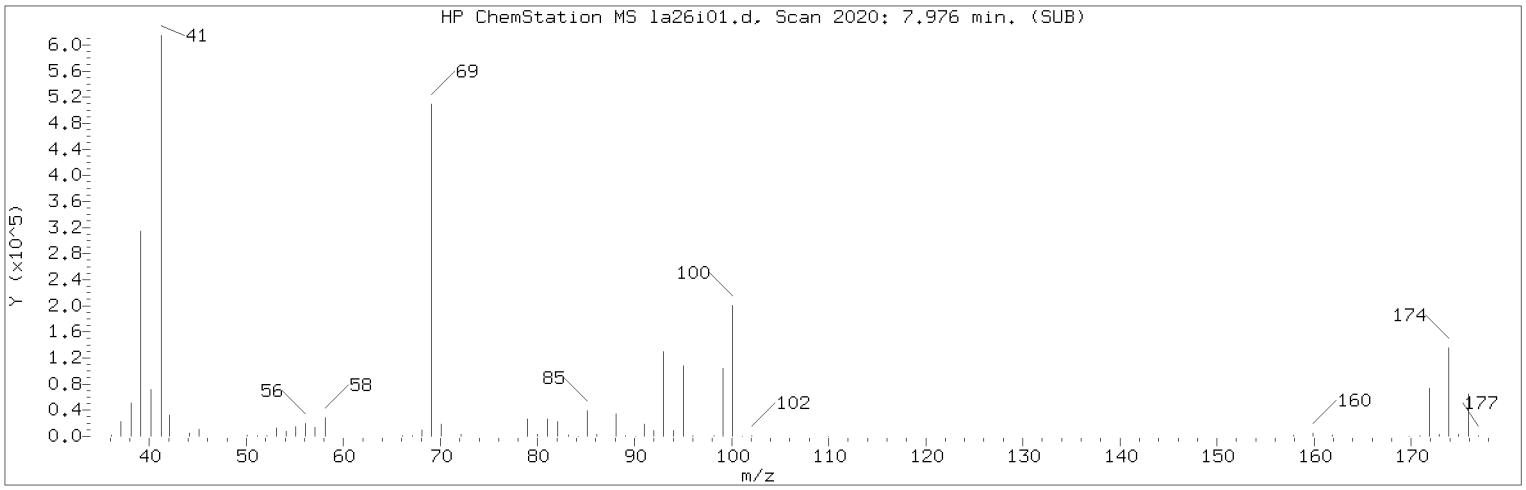
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

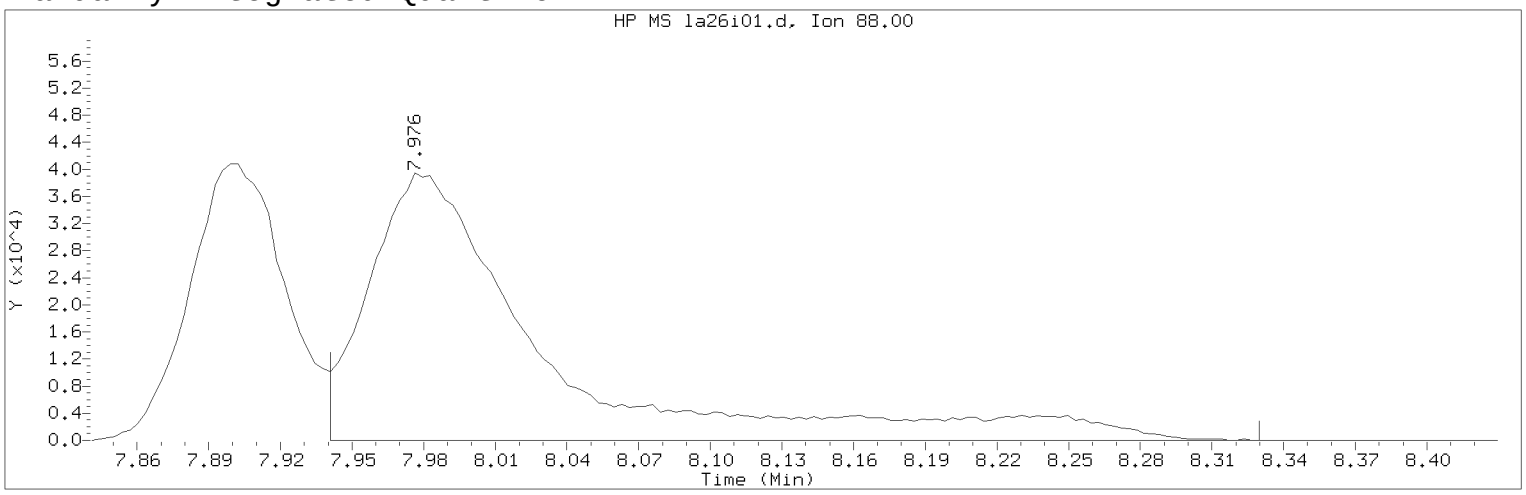
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1851
Retention Time (minutes): 7.433
Quant Ion : 56.00
Area : 1485088
On-column Amount (ng) : 7806.8912
Integration start scan : 1825 Integration stop scan: 1932
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

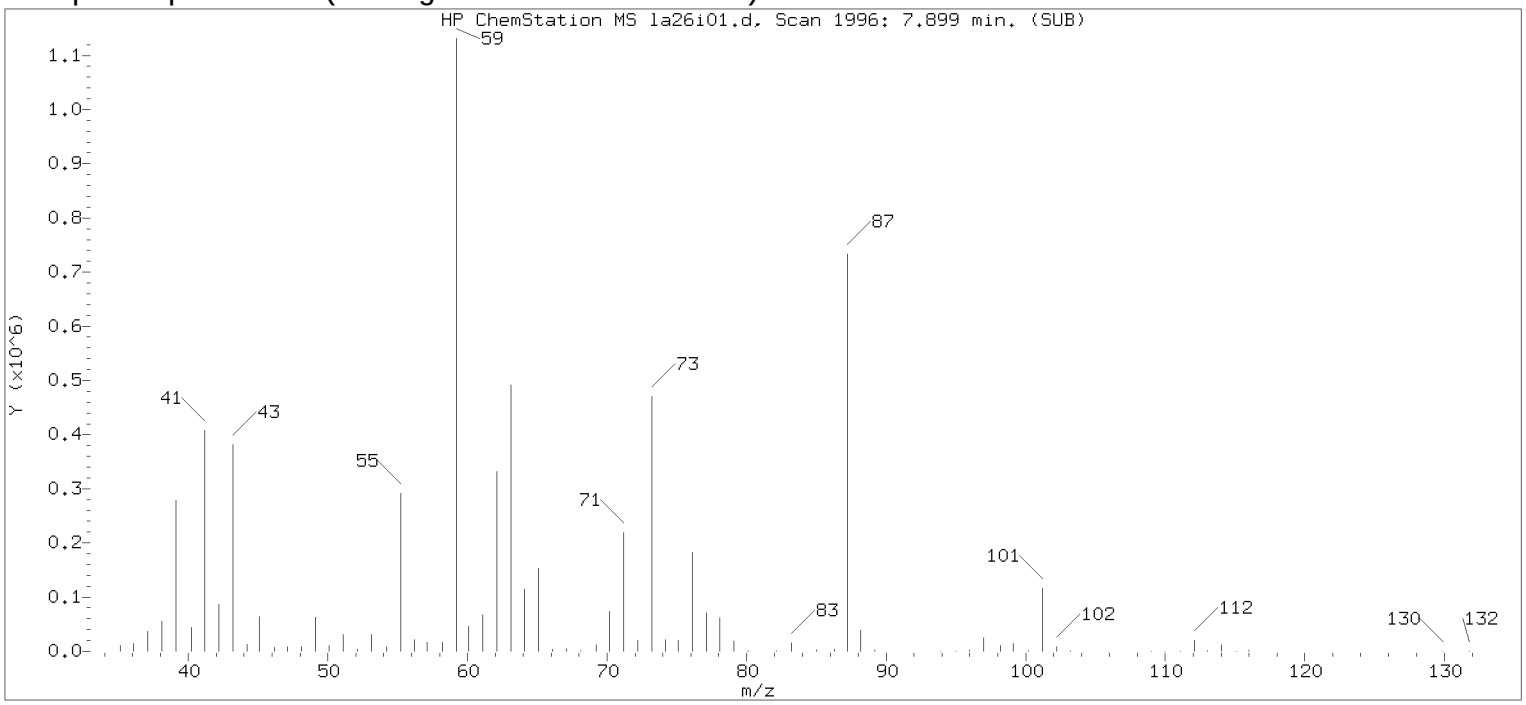
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 201278M
On-Column Amount (ng) : 3479.8034
Integration start scan : 2008 Integration stop scan: 2129
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

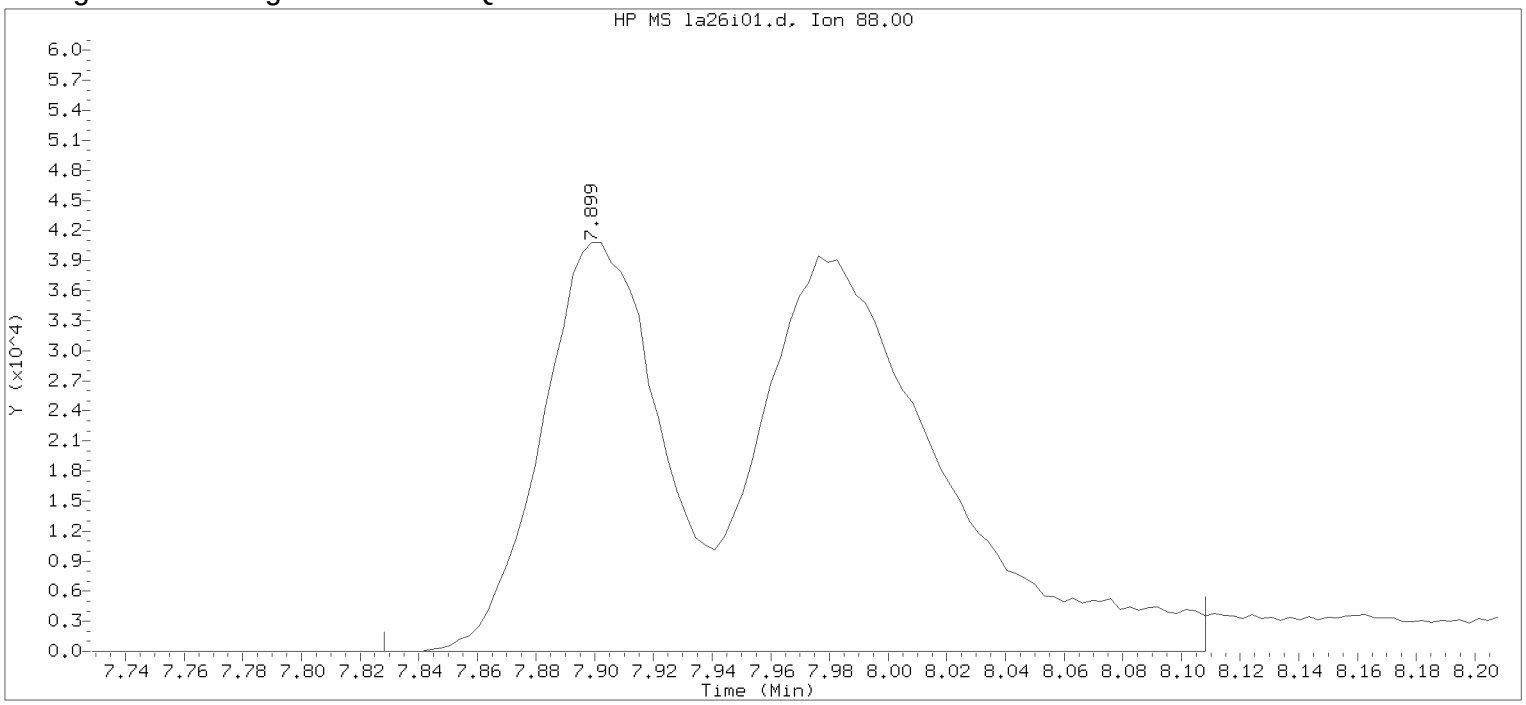
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1996
Retention Time (minutes): 7.899
Quant Ion : 88.00
Area : 279960
On-column Amount (ng) : 4259.9914
Integration start scan : 1973 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

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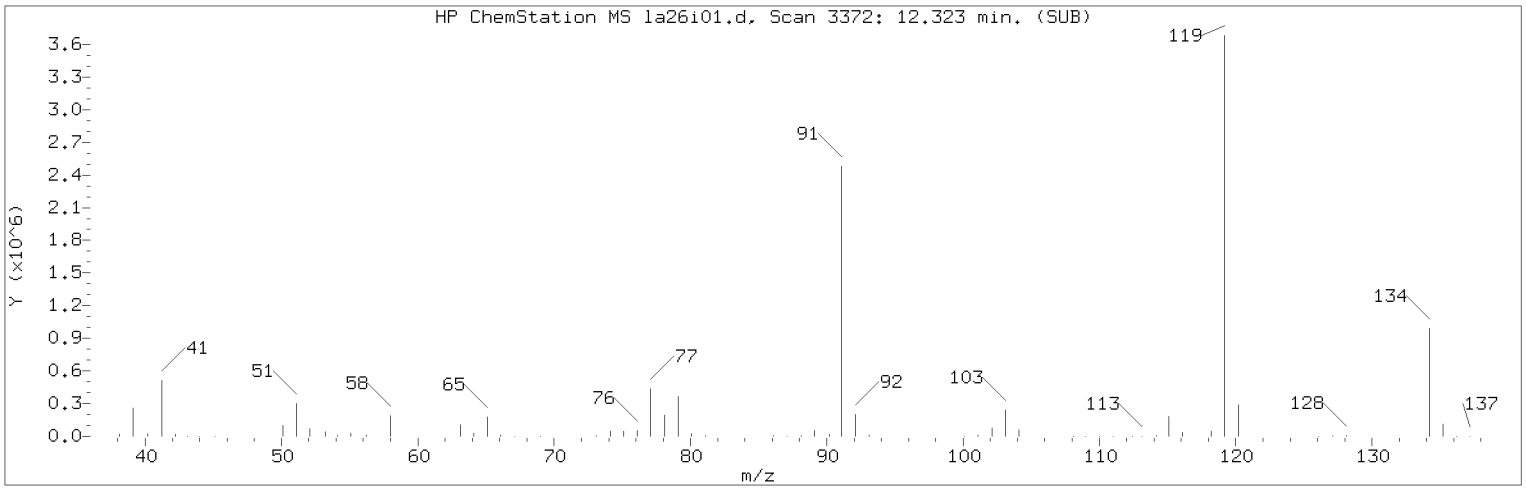
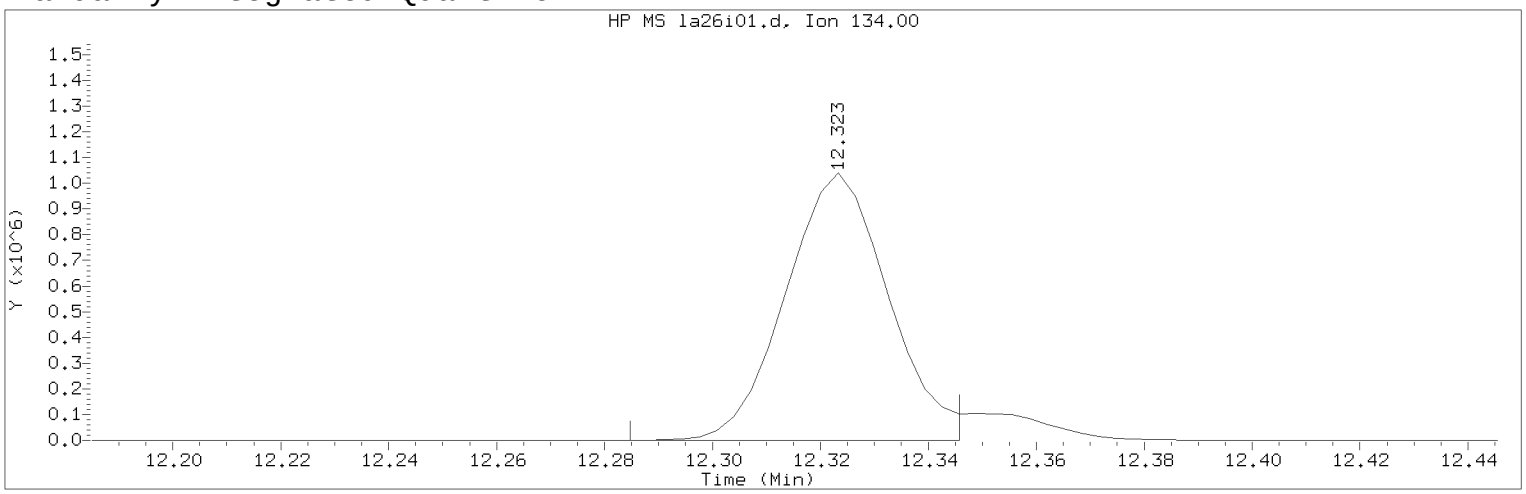
Target 3.5 esignature userKAS02648 Page 144

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

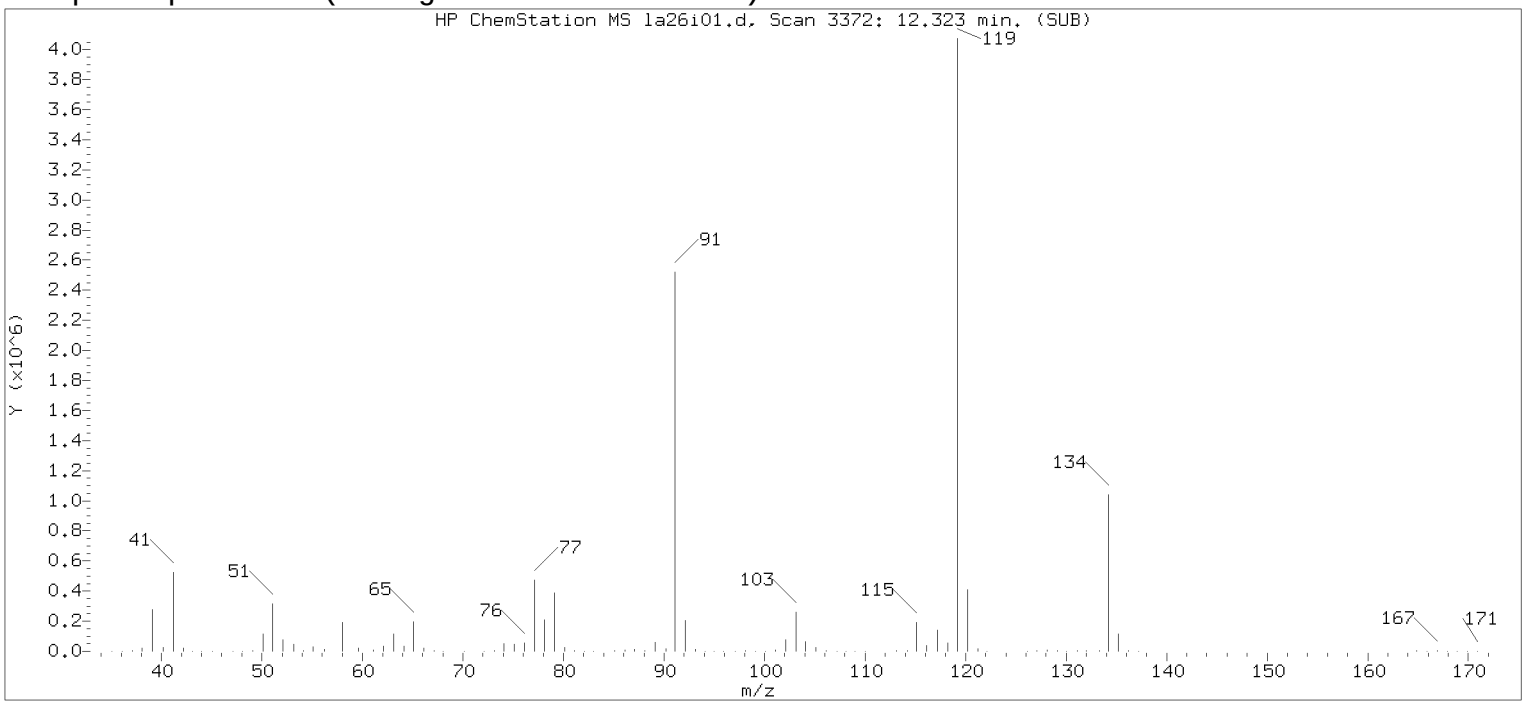
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area (flag) : 1372178M
On-Column Amount (ng) : 312.1487
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

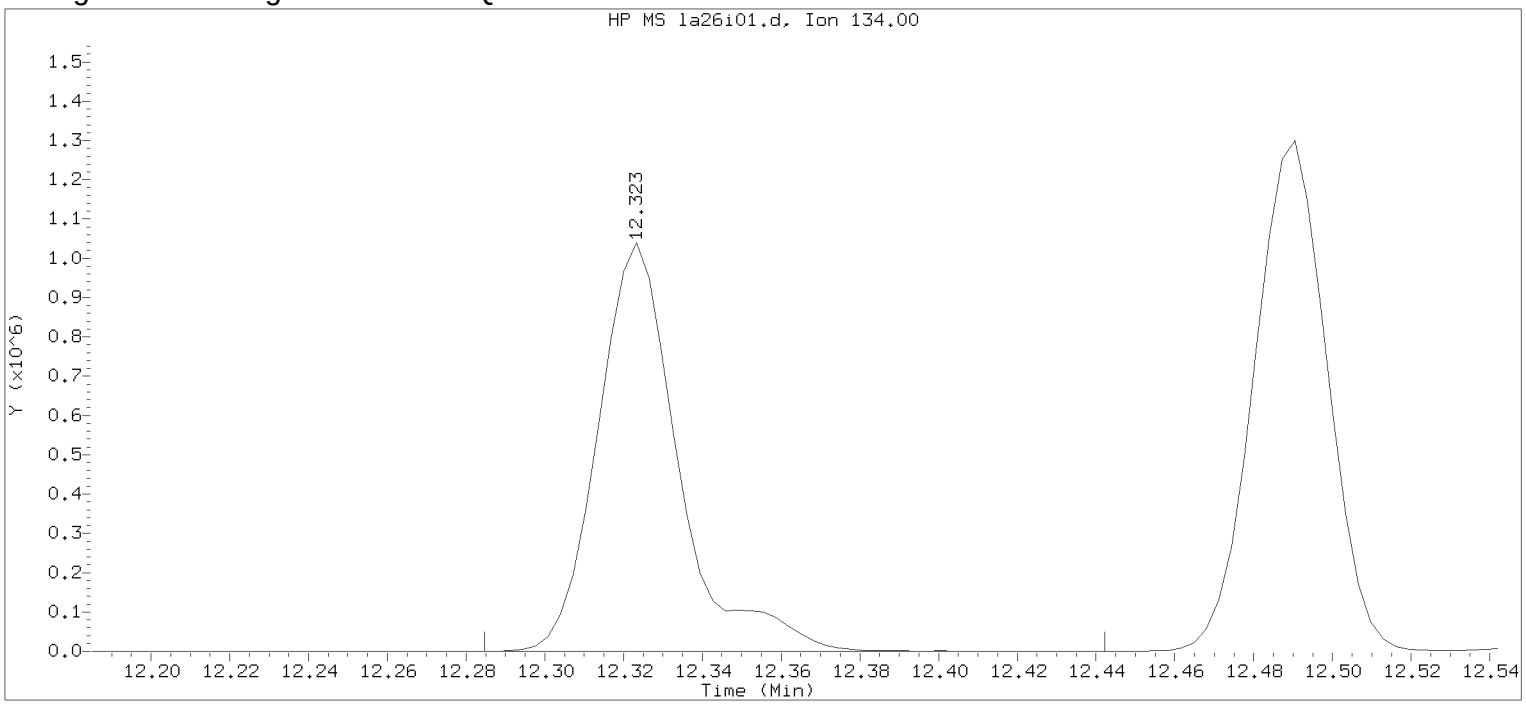
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area : 1481292
On-column Amount (ng) : 310.8715
Integration start scan : 3359 Integration stop scan: 3408
Y at integration start : 0 Y at integration end: 0

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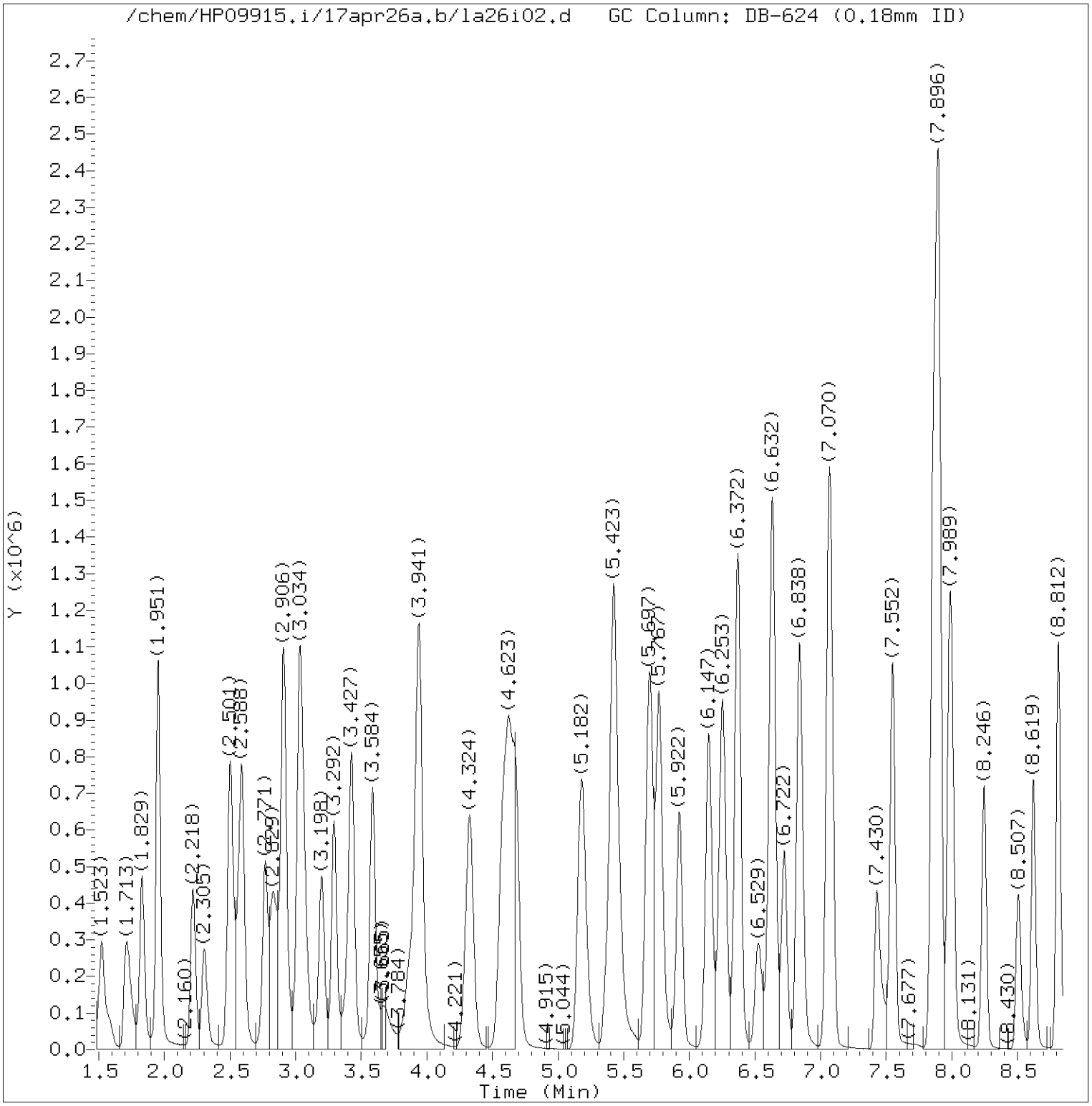
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

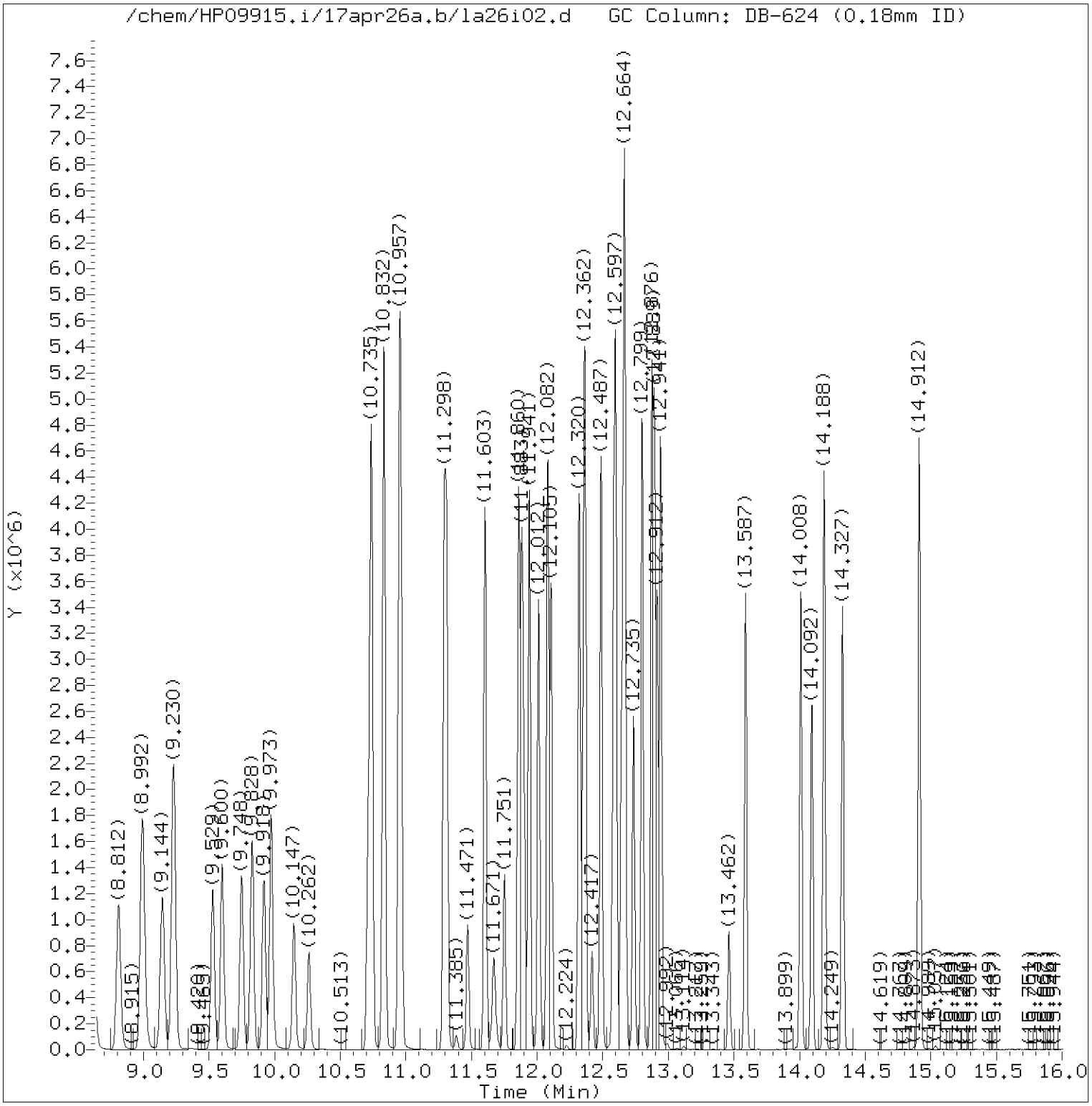
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 676369 | 106.821 |
| 4) Chloromethane | (2) | 1.832 | 50 | 696329 | 107.049 |
| 6) Vinyl Chloride | (2) | 1.948 | 62 | 673578 | 107.236 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 373286 | 97.432 |
| 8) Bromomethane | (2) | 2.221 | 94 | 446773M | 105.752 |
| 9) Chloroethane | (2) | 2.305 | 64 | 371704 | 105.006 |
| 10) Dichlorofluoromethane | (2) | 2.498 | 67 | 927938 | 107.471 |
| 12) Trichlorofluoromethane | (2) | 2.568 | 101 | 788292 | 108.375 |
| 11) n-Pentane | (2) | 2.591 | 43 | 594640 | 99.268 |
| 14) Ethyl ether | (2) | 2.771 | 59 | 424582 | 104.852 |
| 15) Freon 123a | (2) | 2.829 | 67 | 489753 | 101.103 |
| 16) Acrolein | (1) | 2.906 | 56 | 1724138 | 1147.084 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 387264 | 100.595 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 198662 | 101.935 |
| 18) Acetone | (1) | 3.047 | 58 | 135546M | 207.778 |
| 19) Freon 113 | (2) | 3.057 | 101 | 404388 | 104.360 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 213396M | 493.449 |
| 22) Methyl Iodide | (2) | 3.198 | 142 | 759847 | 101.758 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 1297816 | 103.594 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 533323 | 95.449 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 772442 | 100.172 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 183612M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 478418 | 94.072 |
| 30) t-Butyl alcohol | (1) | 3.674 | 59 | 356471M | 501.770 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 313741 | 106.926 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 1430590 | 101.438 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 460884 | 102.038 |
| 34) n-Hexane | (2) | 4.324 | 57 | 717390 | 103.611 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 868994 | 102.385 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 1666588 | 102.304 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.681 | 53 | 749751 | 104.723 |
| 40) Ethyl t-butyl ether | (2) | 5.179 | 59 | 1449530 | 103.393 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 817585 | 208.101 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 527726 | 101.961 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 625083 | 110.306 |
| 47) Propionitrile | (1) | 5.465 | 54 | 550872 | 531.282 |
| 48) Methacrylonitrile | (2) | 5.700 | 67 | 750559 | 256.572 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 276608 | 101.401 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 208895 | 228.093 |
| 51) Chloroform | (2) | 5.922 | 83 | 823317 | 101.769 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 261749 | 50.429 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 267507 | 50.295 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 726792 | 98.313 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 988610 | 203.999 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 878754 | 104.398 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 727430 | 104.407 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 257243 | 105.433 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 680358 | 103.399 |
| 56) Carbon Tetrachloride | (2) | 6.372 | 117 | 589658 | 109.268 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 319107 | 1279.334 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 65444 | 50.705 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 306047 | 50.130 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 41083 | 50.183 |
| 60) Benzene | (2) | 6.639 | 78 | 1966914 | 101.406 |
| 61) 1,2-Dichloroethane | (2) | 6.726 | 62 | 672041 | 102.415 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 64097 | 110.781 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 1465784 | 105.346 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1062919 | 50.000 |
| 67) n-Heptane | (2) | 7.079 | 43 | 794949 | 102.548 |
| 69) n-Butanol | (1) | 7.430 | 56 | 557797M | 2774.096 |
| 71) Trichloroethene | (2) | 7.552 | 95 | 513037 | 102.350 |
| 72) Methylcyclohexane | (2) | 7.861 | 83 | 924633 | 104.692 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 422409 | 105.983 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 551772 | 103.916 |
| 75) 1,4-Dioxane | (1) | 7.980 | 88 | 76692M | 1221.735 |
| 76) Methyl Methacrylate | (2) | 7.980 | 69 | 491230 | 108.080 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 344598 | 103.199 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 648848 | 107.672 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 389115 | 227.706 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 446824 | 109.472 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 865511 | 110.196 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 1756835 | 217.000 |
| 83)$Toluene-d8 | (3) | 9.144 | 98 | 1062057 | 49.818 |
| 83)$Toluene-d8 | (3) | 9.144 | 100 | 699948 | 49.836 |
| 88) Toluene | (3) | 9.230 | 92 | 1255687 | 101.358 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 782955 | 112.710 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 853753 | 109.112 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 487635 | 102.147 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 557539 | 101.750 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 848064 | 102.380 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 1313009 | 219.565 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1648466 | 222.906 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 552445 | 111.725 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 547365 | 104.734 |
| 100)*Chlorobenzene-d5 | (3) | 10.713 | 117 | 834937 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 707076 | 99.382 |
| 102) Chlorobenzene | (3) | 10.742 | 112 | 1458292 | 102.011 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 508422 | 107.701 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 2442108 | 102.192 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 1914407 | 205.775 |
| 107) o-Xylene | (3) | 11.291 | 106 | 956788 | 103.412 |
| 109) Styrene | (3) | 11.311 | 104 | 1616649 | 105.698 |
| 110) Bromoform | (3) | 11.471 | 173 | 419593 | 116.865 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 2449038 | 103.571 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 302205 | 1276.247 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 394235 | 49.753 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 343734 | 49.454 |
| 108) Xylene (Total) | (3) | | 106 | 2871195 | 309.187 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 820749 | 104.299 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 652939 | 103.034 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 599531 | 265.878 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 228521 | 102.730 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 2874087 | 102.641 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 601559 | 103.221 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 2094753 | 104.908 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 623137 | 102.736 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 456579M | 105.780 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 381883 | 112.060 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 2150464 | 104.553 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 2647066 | 103.927 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 1215672 | 100.760 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 2368950 | 105.337 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 443338 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 1243887 | 99.708 |

M = Compound was manually integrated.
* = Compound is an internal standard.
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Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.668 | 105 | 2174826 | 100.922 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 1509958 | 122.366 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 1373318 | 102.211 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 1423124 | 100.862 |
| 139) n-Butylbenzene | (4) | 12.893 | 92 | 1135761 | 101.097 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 1195487 | 100.805 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 1147775 | 101.508 |
| 141) Diethylbenzene (total) | (4) | | 100 | 3944217 | 304.580 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 181306 | 108.948 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 971739 | 101.065 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 946069 | 101.432 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 412377 | 101.804 |
| 148) Naphthalene | (4) | 14.188 | 128 | 2908962 | 103.355 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 906692 | 100.764 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 1891682 | 103.943 |



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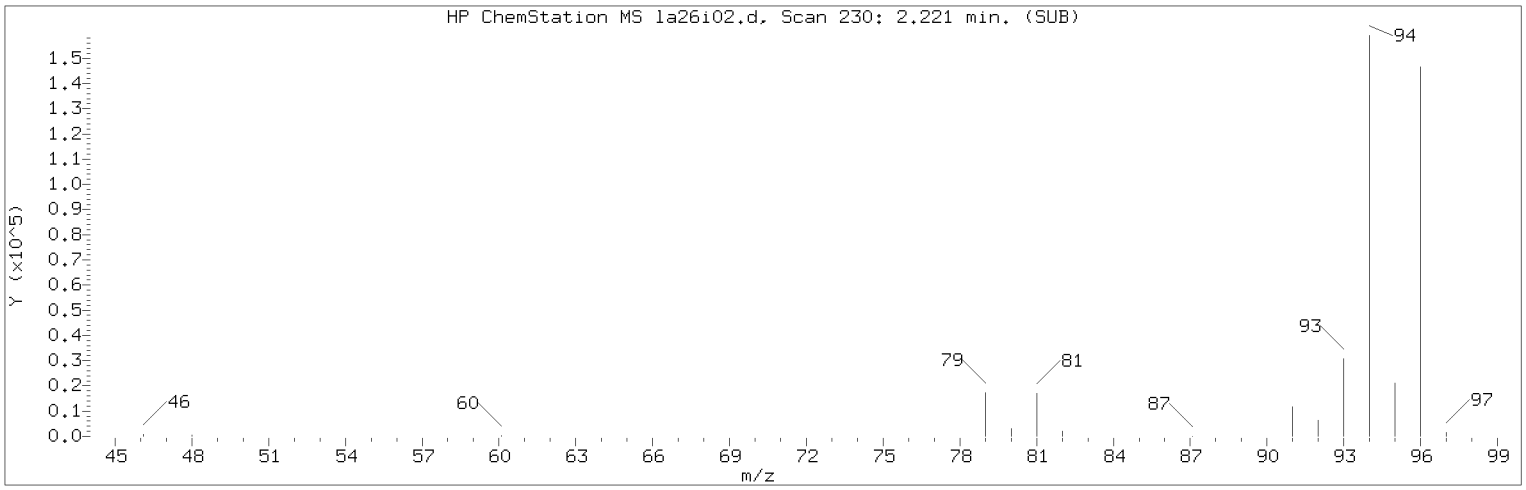
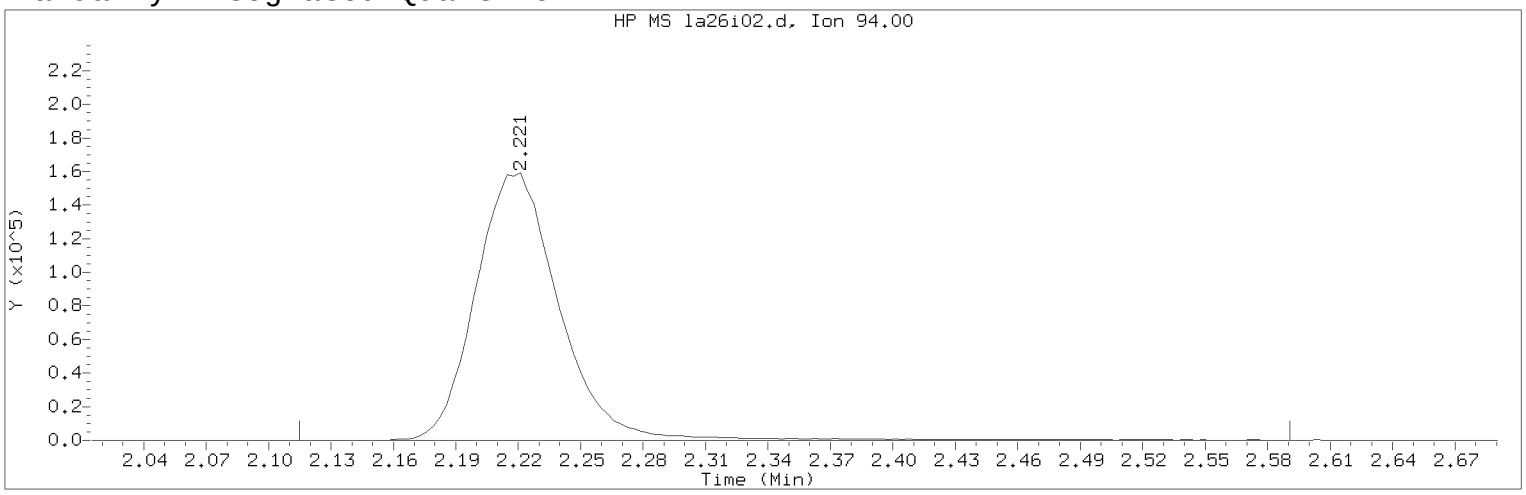
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

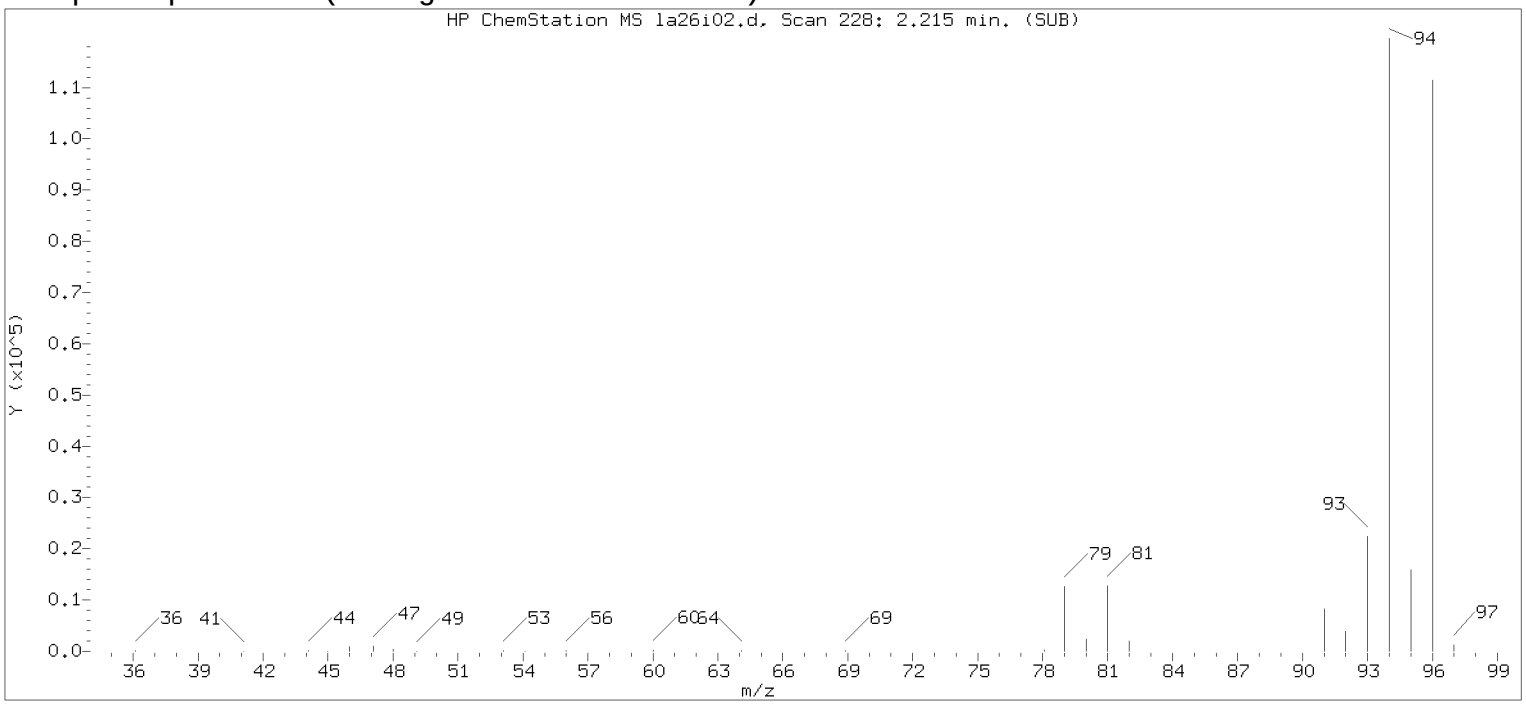
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 230
Retention Time (minutes): 2.221
Quant Ion : 94.00
Area (flag) : 446773M
On-Column Amount (ng) : 105.7521
Integration start scan : 196 Integration stop scan: 344
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

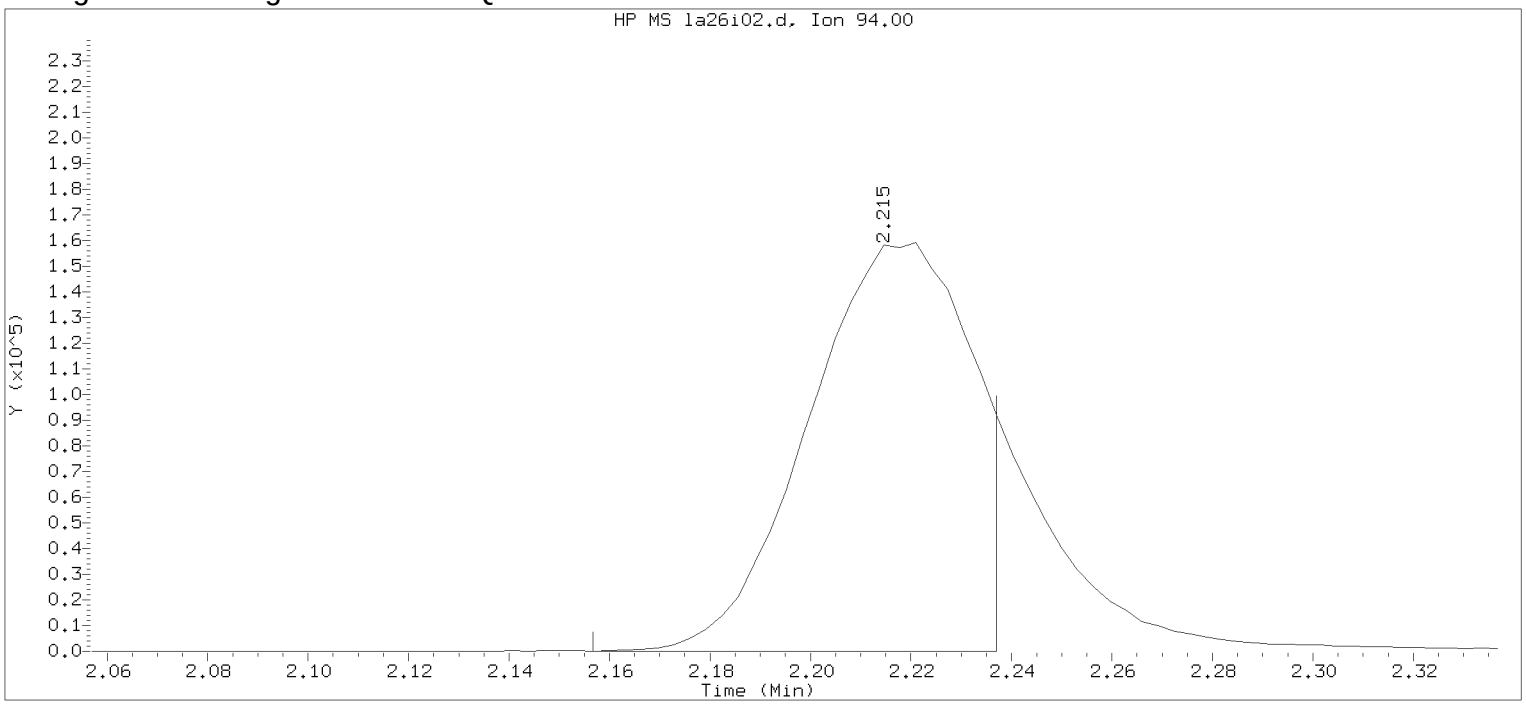
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

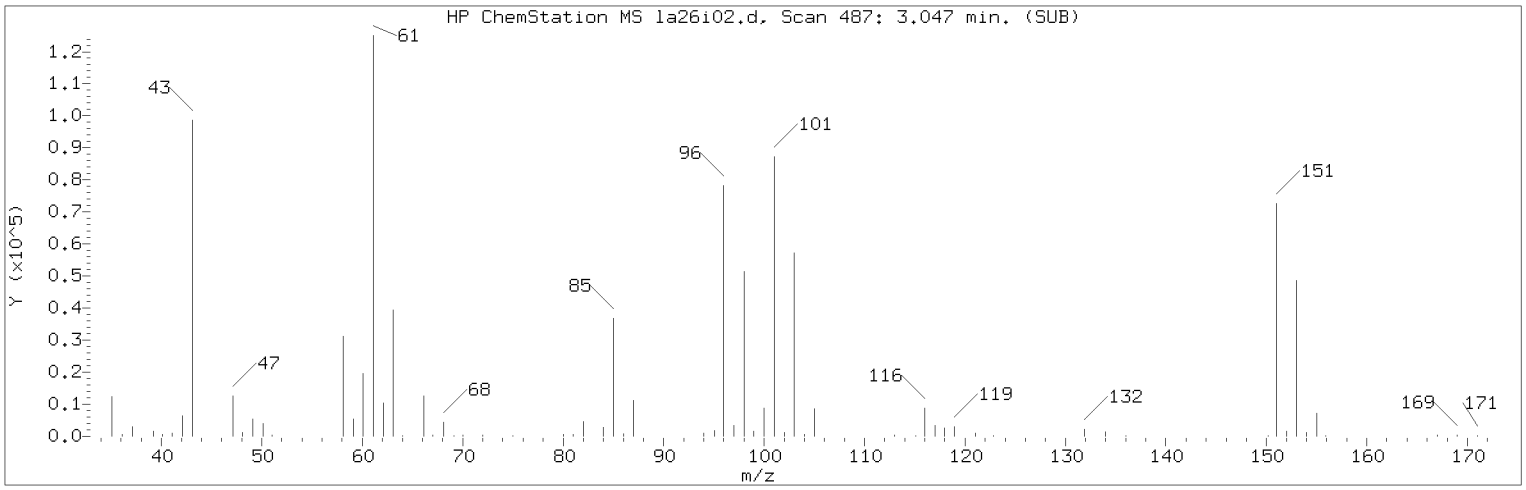
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

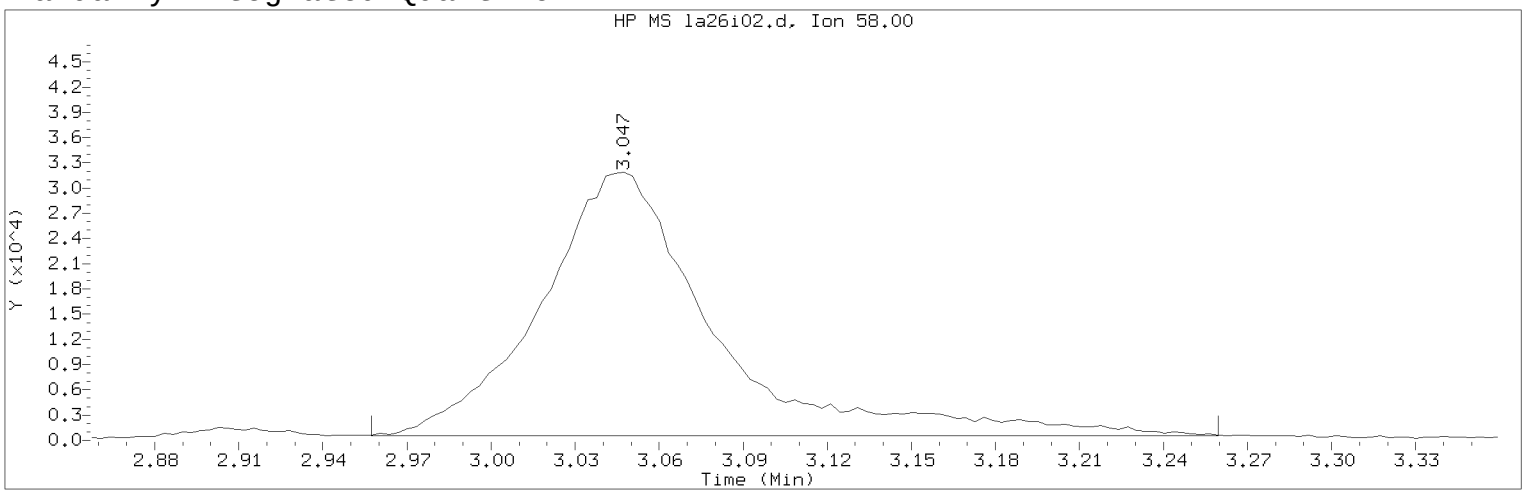
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 228
Retention Time (minutes): 2.215
Quant Ion : 94.00
Area : 353561
On-column Amount (ng) : 86.2140
Integration start scan : 209 Integration stop scan: 234
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 124 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

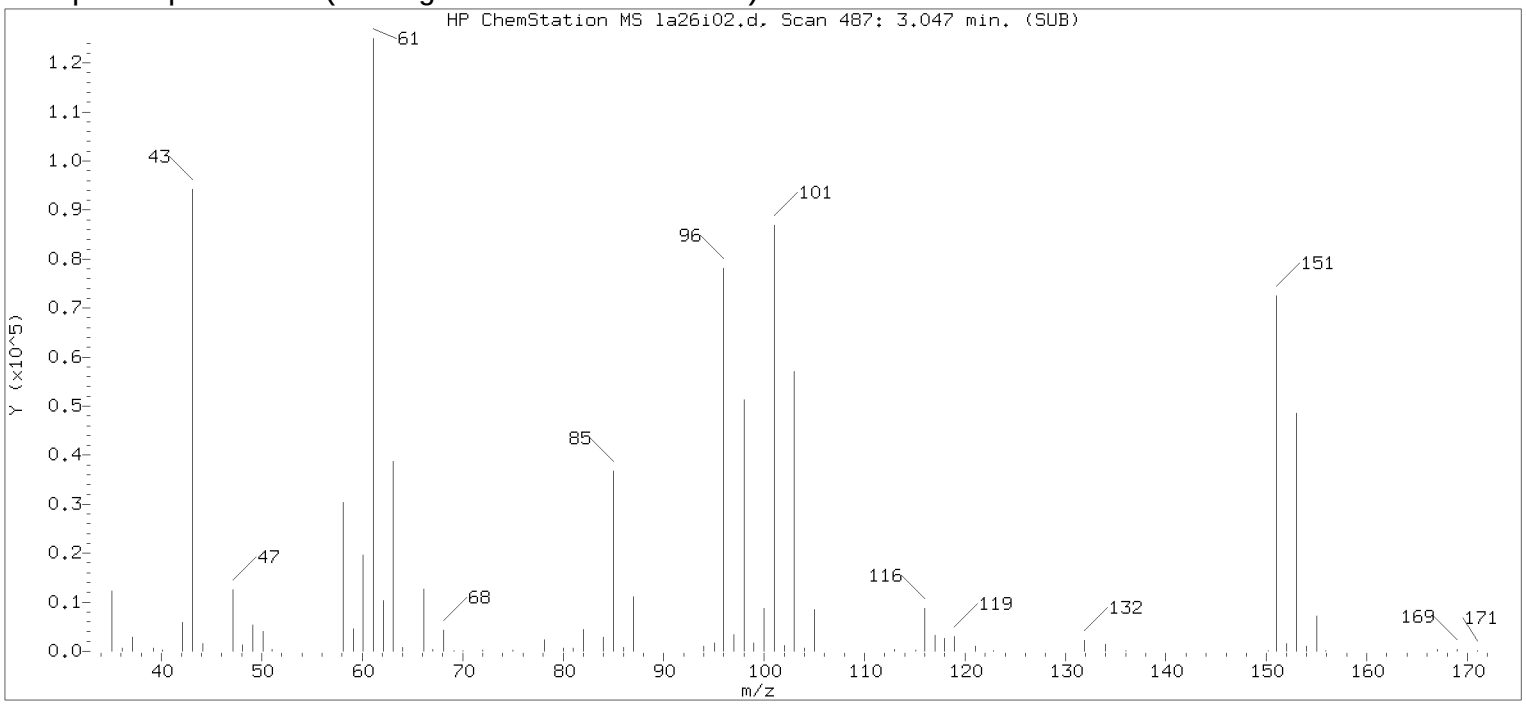
Compound Number : 18
Compound Name : Acetone
Scan Number : 487
Retention Time (minutes): 3.047
Quant Ion : 58.00
Area (flag) : 135546M
On-Column Amount (ng) : 207.7778
Integration start scan : 458 Integration stop scan: 552
Y at integration start : 496 Y at integration end: 496

Reason for manual integration: improper integration

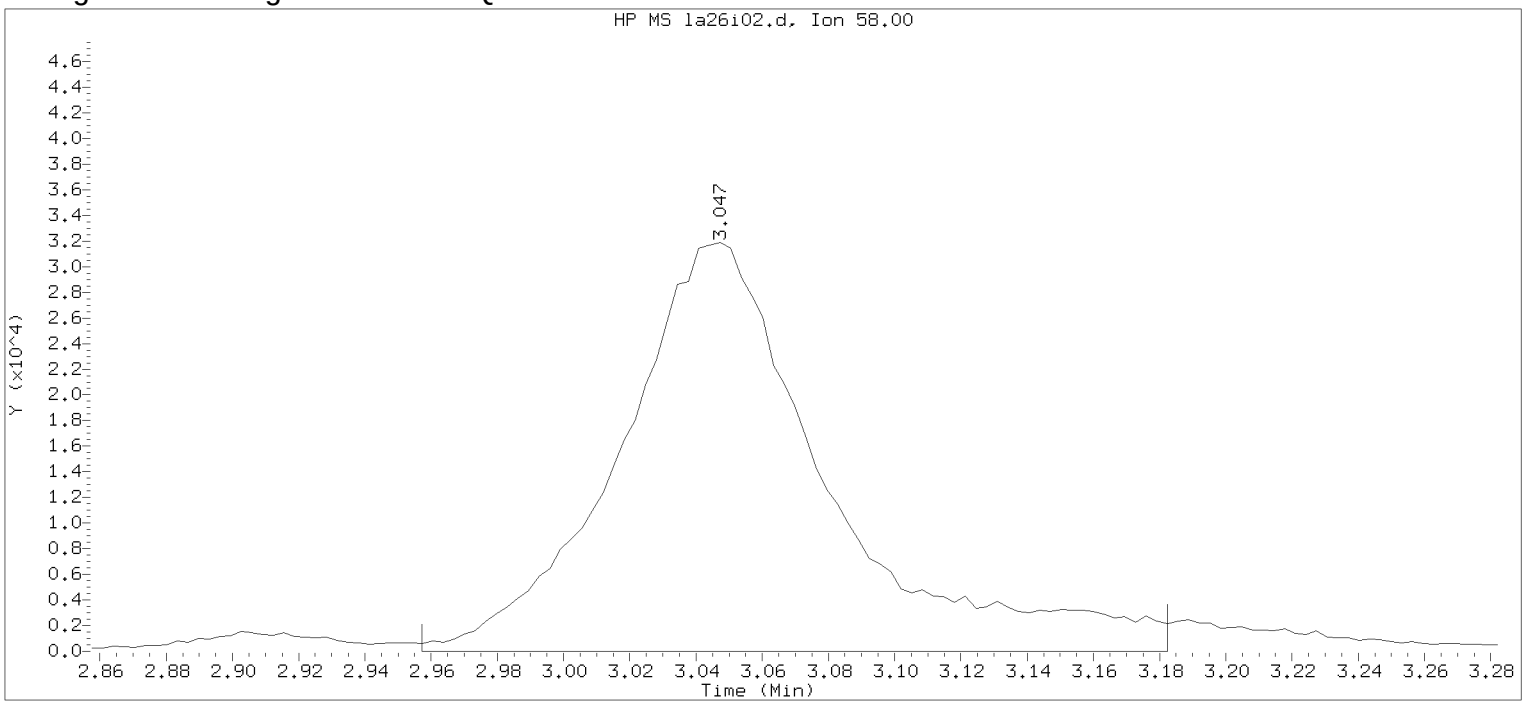
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

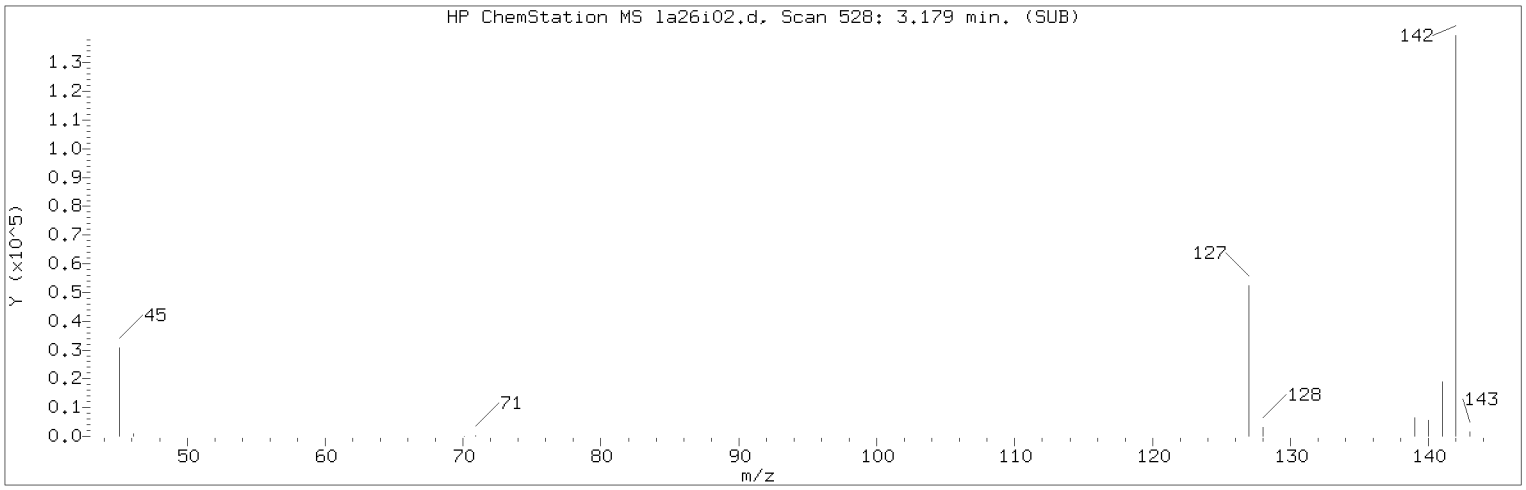
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

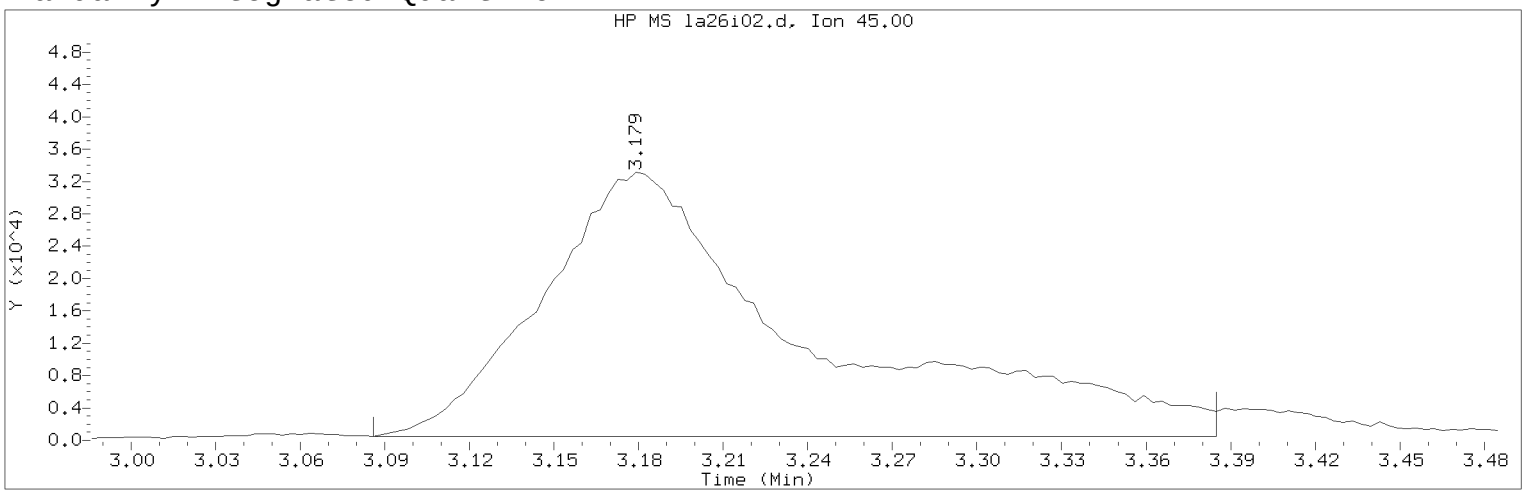
Compound Number : 18
Compound Name : Acetone
Scan Number : 487
Retention Time (minutes): 3.047
Quant Ion : 58.00
Area : 137735
On-column Amount (ng) : 199.5156
Integration start scan : 458 Integration stop scan: 528
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

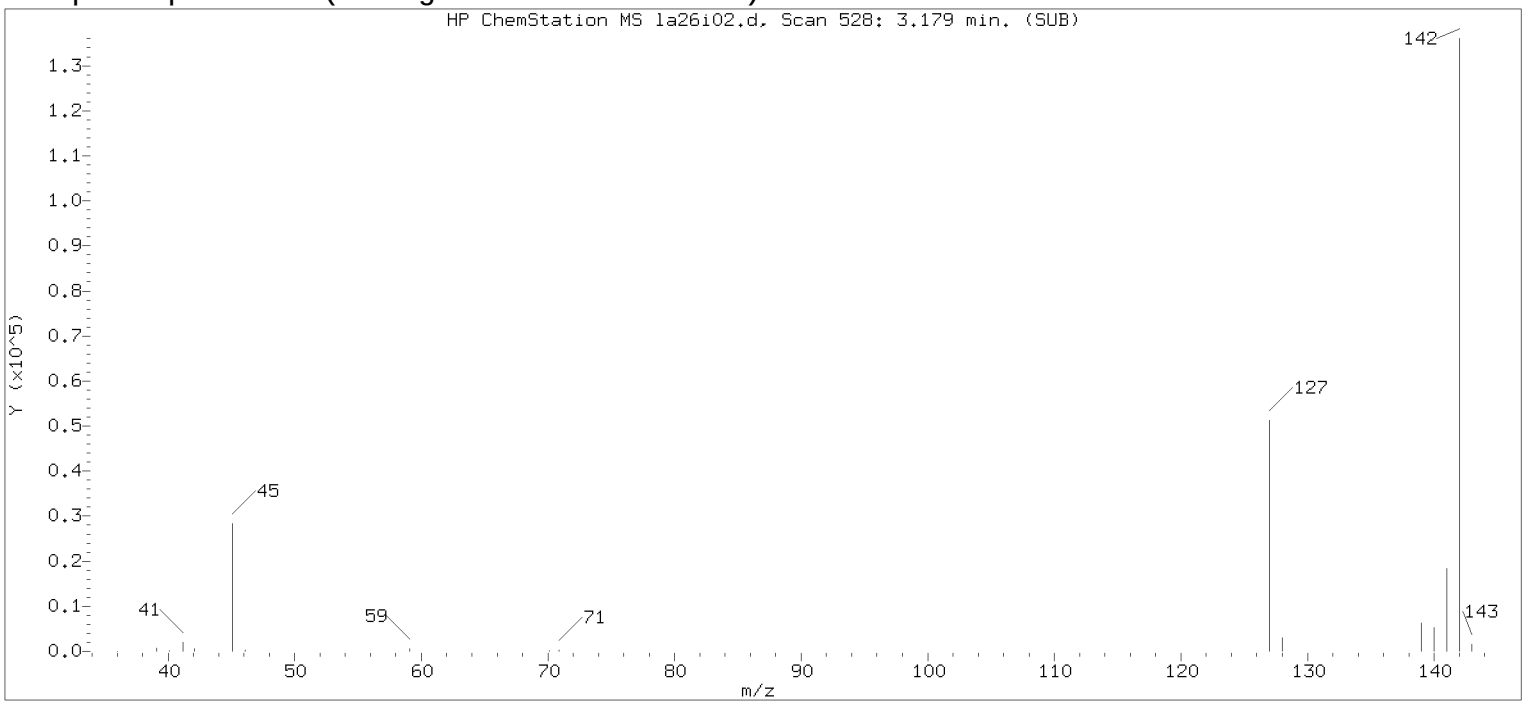
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 528
Retention Time (minutes): 3.179
Quant Ion : 45.00
Area (flag) : 213396M
On-Column Amount (ng) : 493.4490
Integration start scan : 498 Integration stop scan: 591
Y at integration start : 488 Y at integration end: 488

Reason for manual integration: improper integration

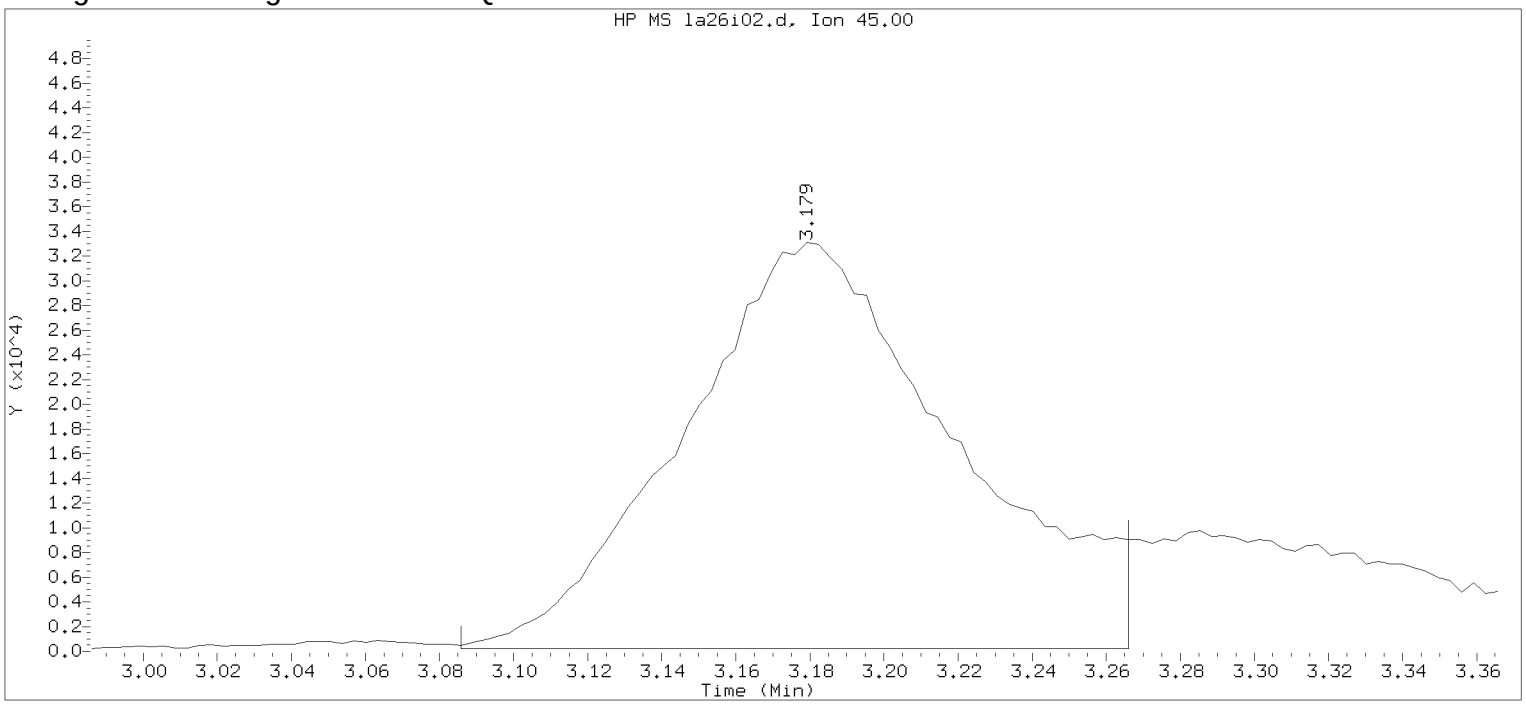
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

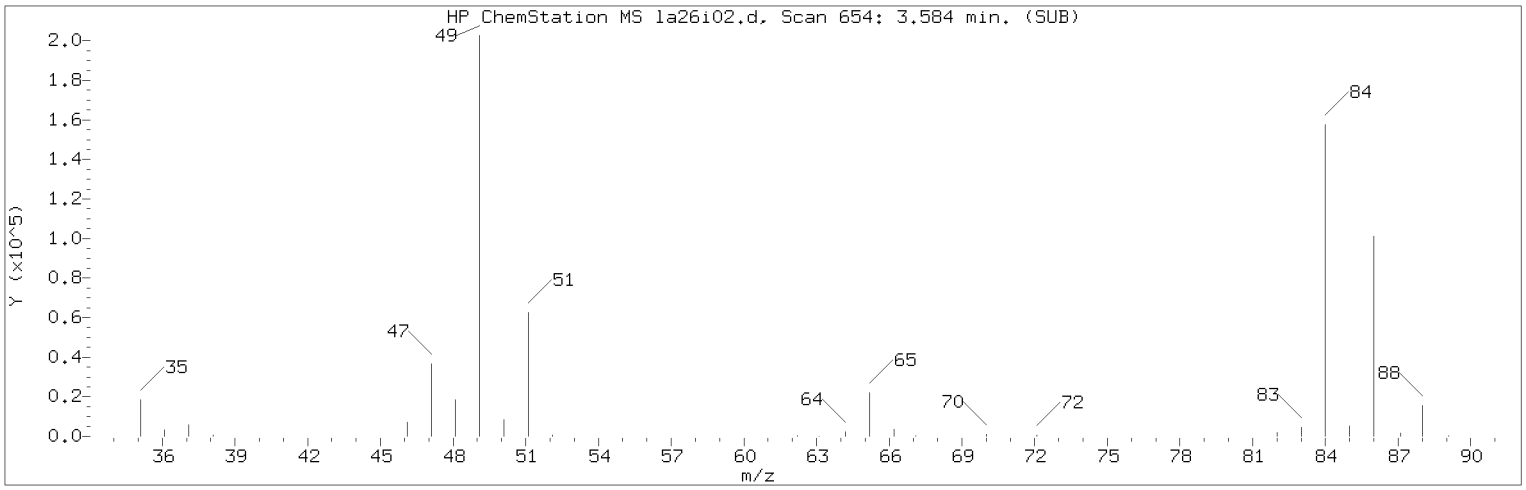
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

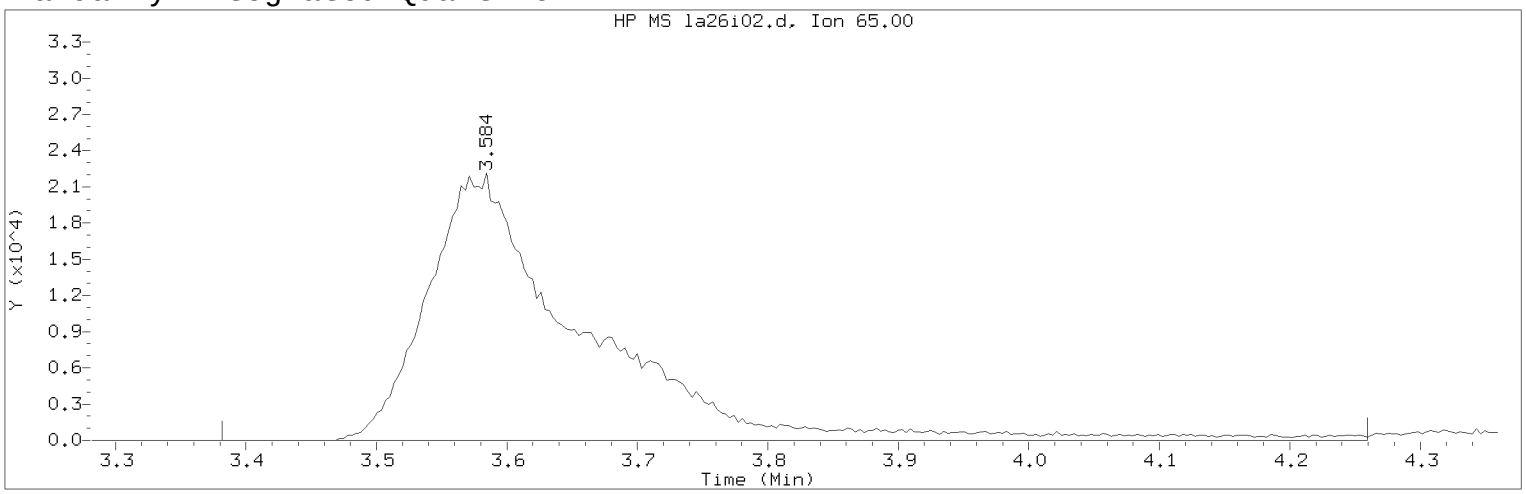
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 528
Retention Time (minutes): 3.179
Quant Ion : 45.00
Area : 167823
On-column Amount (ng) : 440.7134
Integration start scan : 498 Integration stop scan: 554
Y at integration start : 223 Y at integration end: 223

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

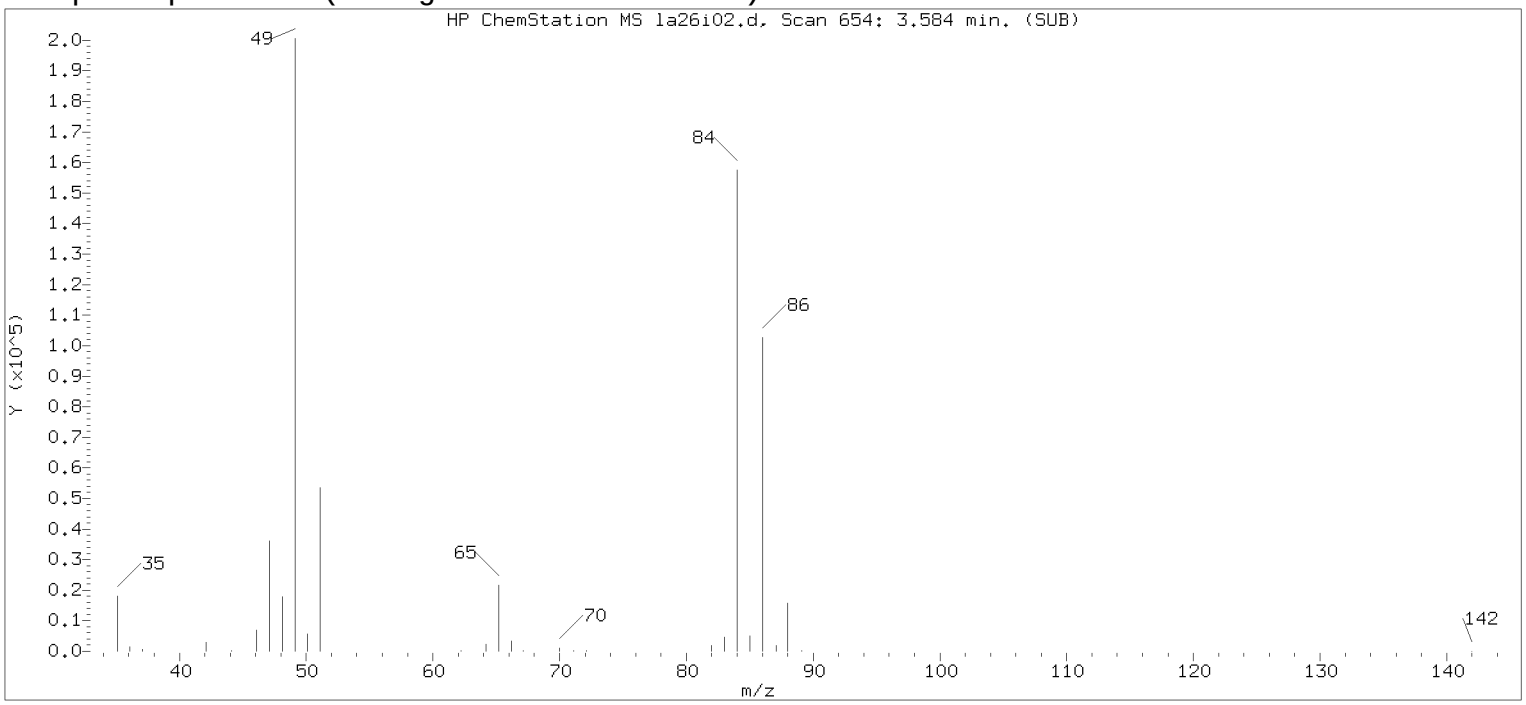
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 654
Retention Time (minutes): 3.584
Quant Ion : 65.00
Area (flag) : 183612M
On-Column Amount (ng) : 250.0000
Integration start scan : 590 Integration stop scan: 863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

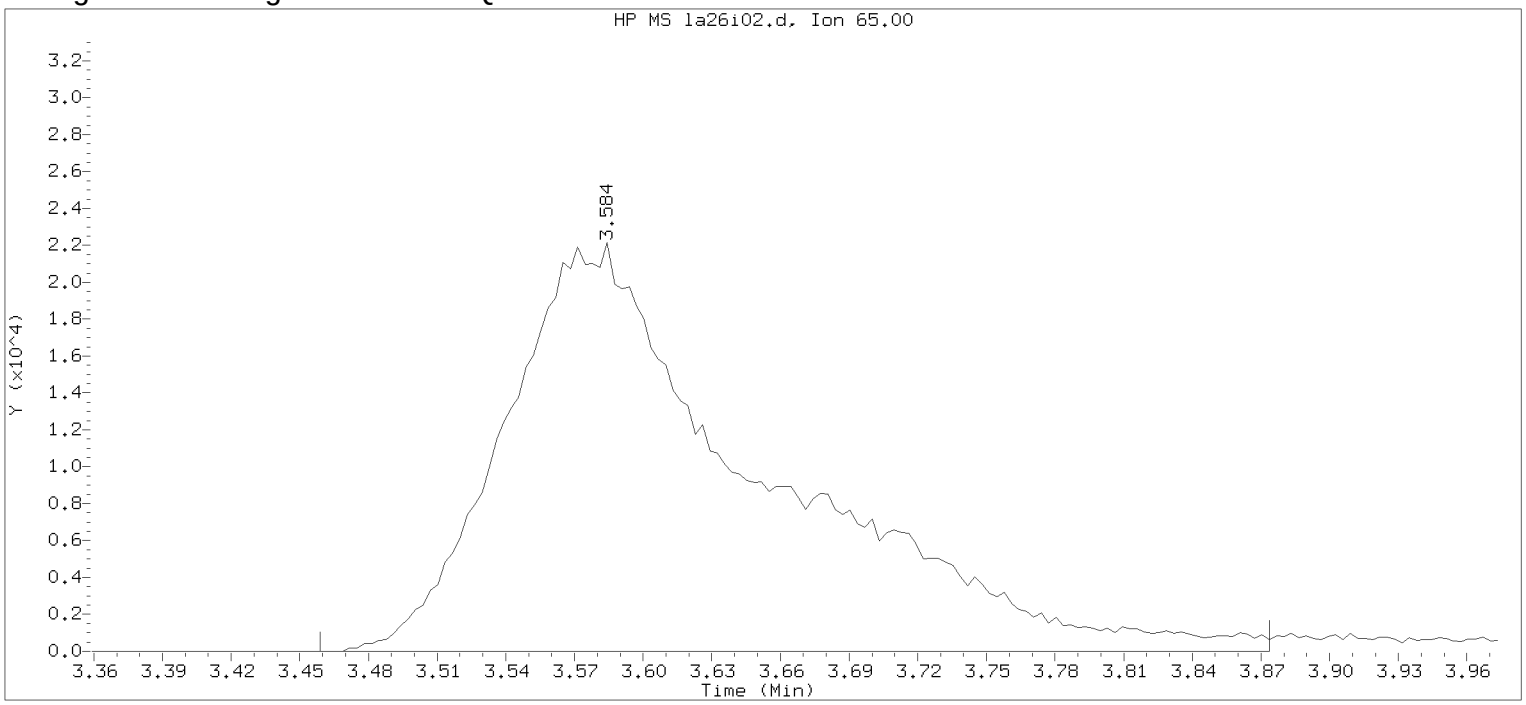
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

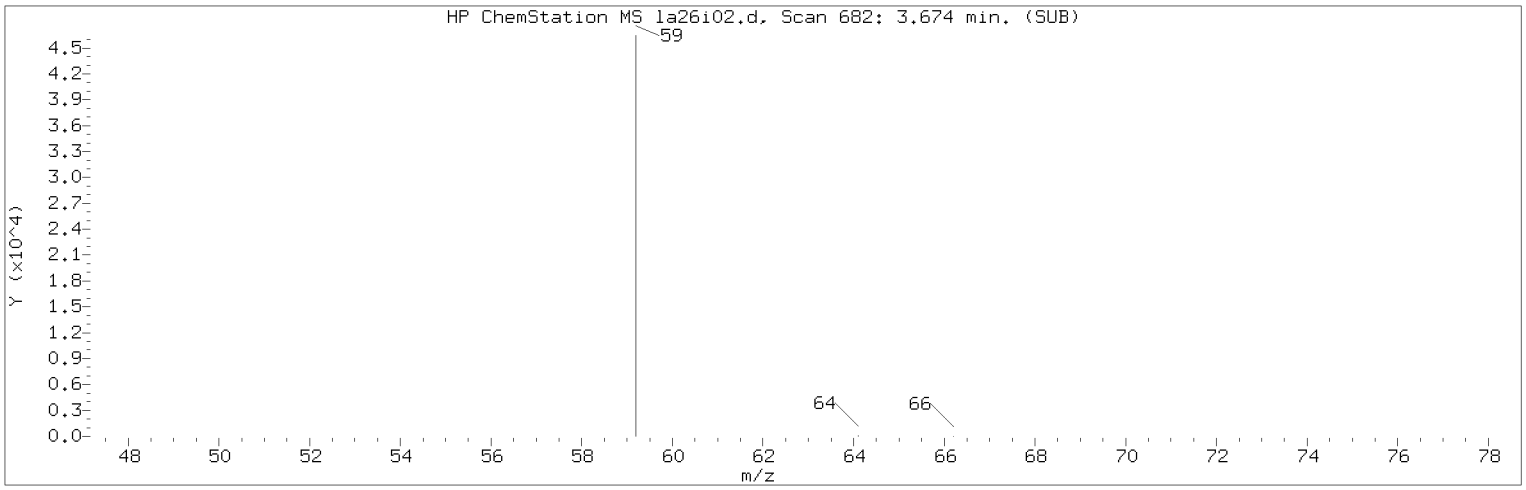
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

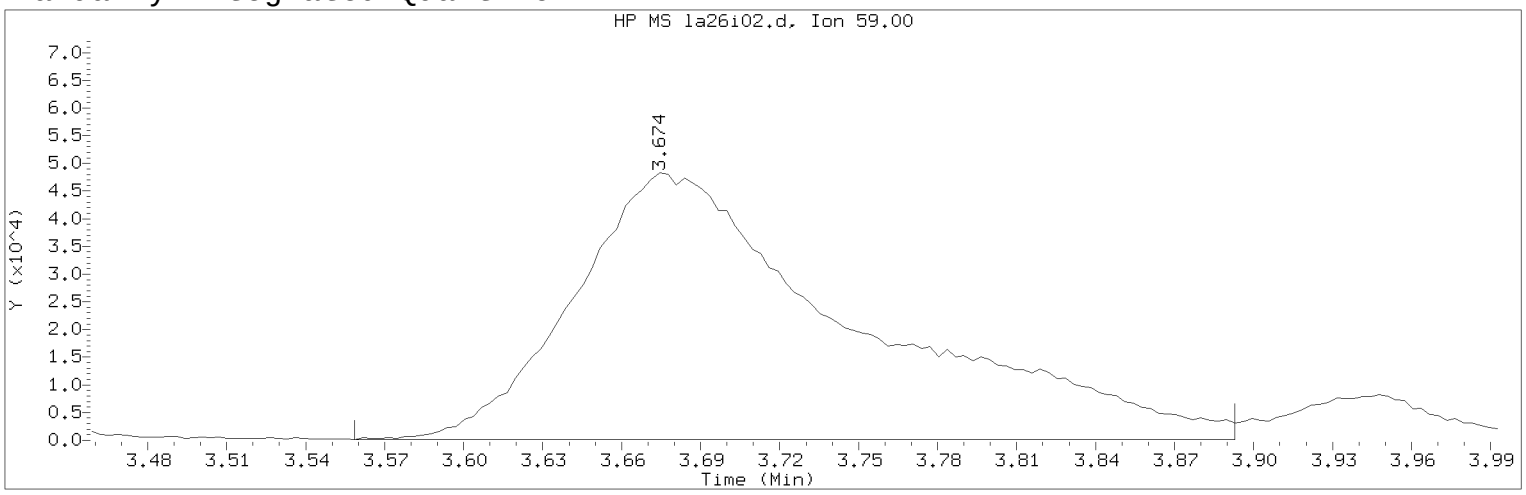
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 654
Retention Time (minutes): 3.584
Quant Ion : 65.00
Area : 172293
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 743
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 130 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

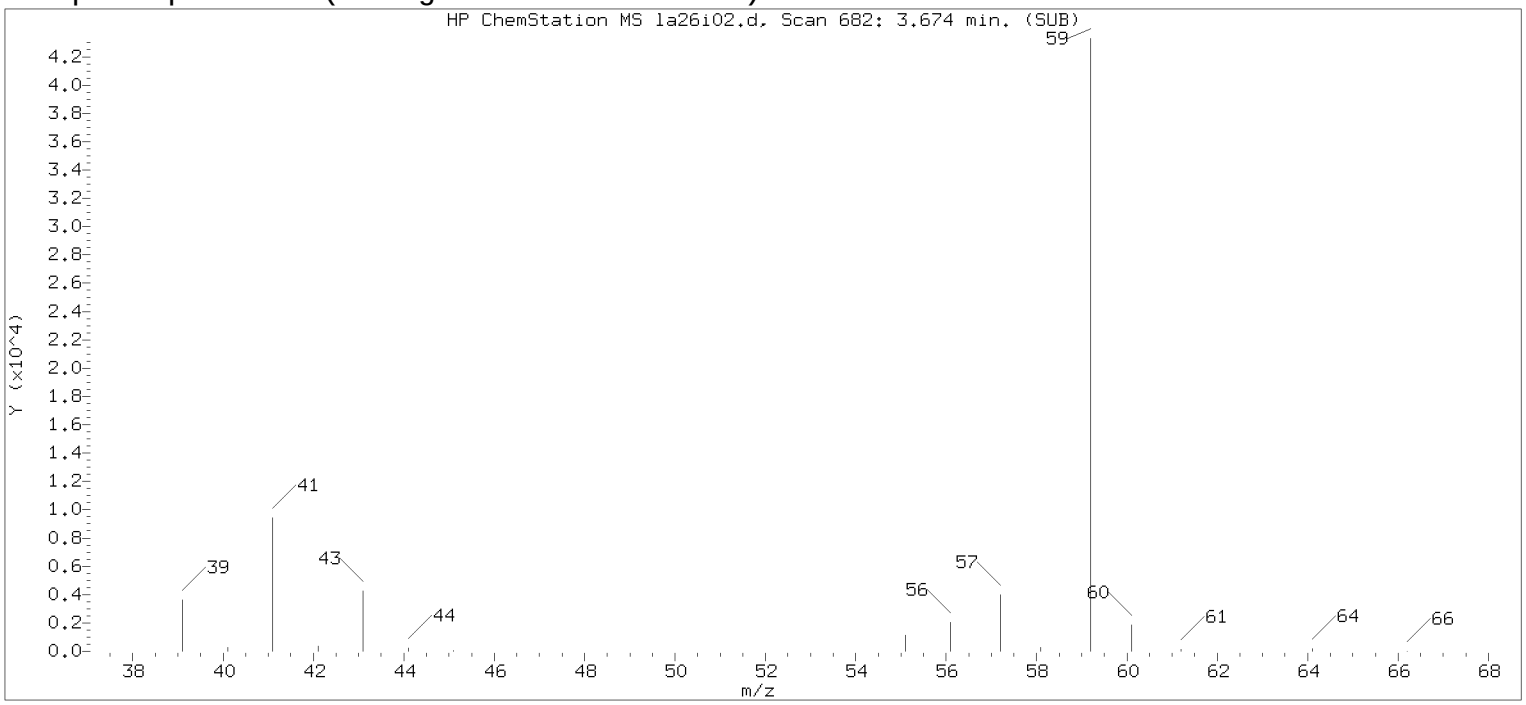
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 682
Retention Time (minutes): 3.674
Quant Ion : 59.00
Area (flag) : 356471M
On-Column Amount (ng) : 501.7705
Integration start scan : 645 Integration stop scan: 749
Y at integration start : 168 Y at integration end: 168

Reason for manual integration: improper integration

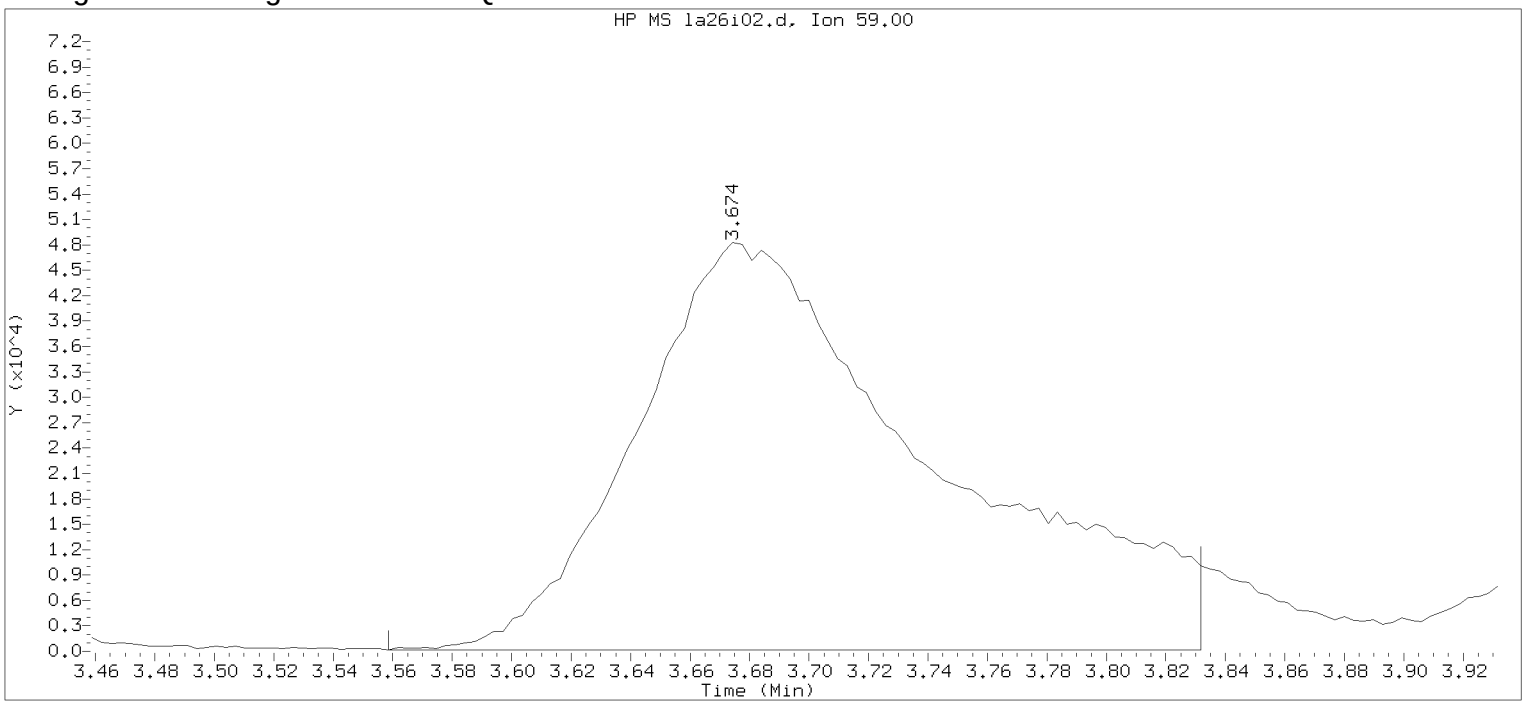
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

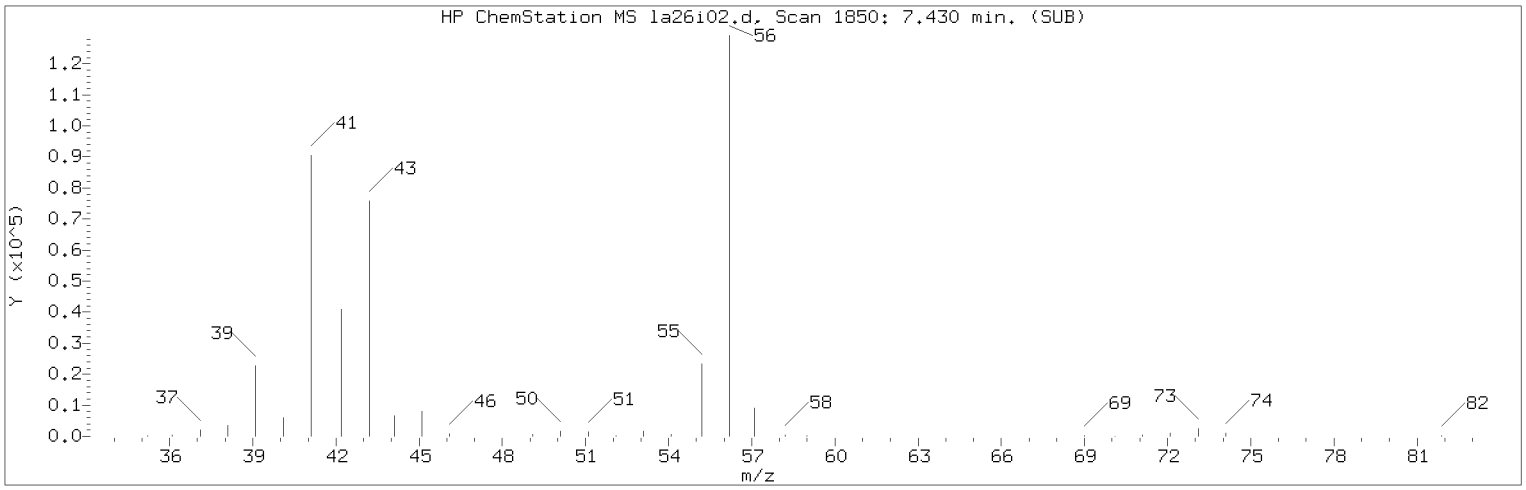
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

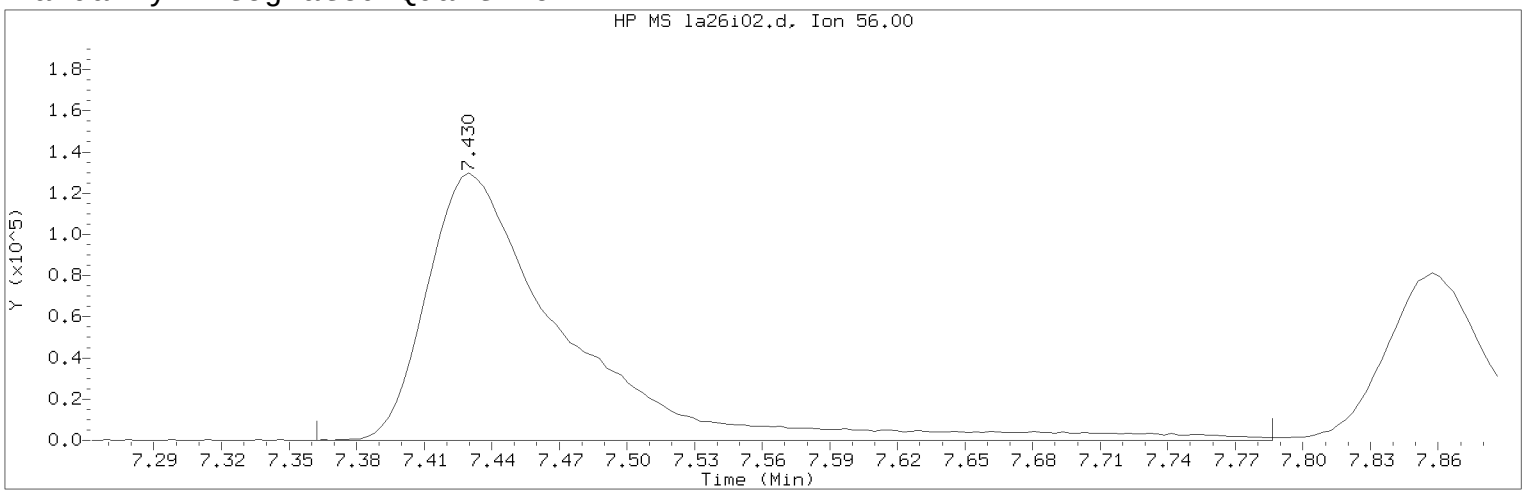
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 682
Retention Time (minutes): 3.674
Quant Ion : 59.00
Area : 335006
On-column Amount (ng) : 496.4294
Integration start scan : 645 Integration stop scan: 730
Y at integration start : 169 Y at integration end: 169

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 132 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

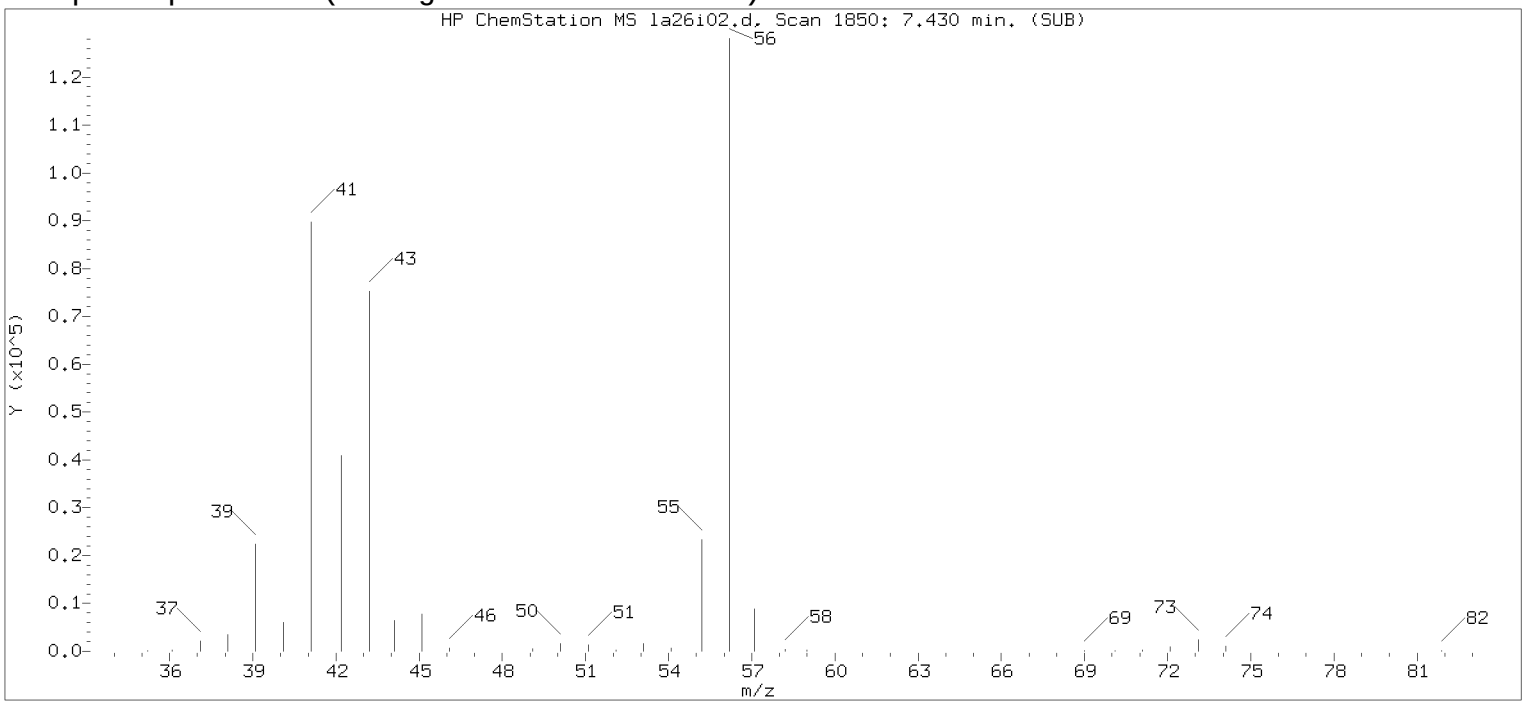
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1850
Retention Time (minutes): 7.430
Quant Ion : 56.00
Area (flag) : 557797M
On-Column Amount (ng) : 2774.0960
Integration start scan : 1828 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

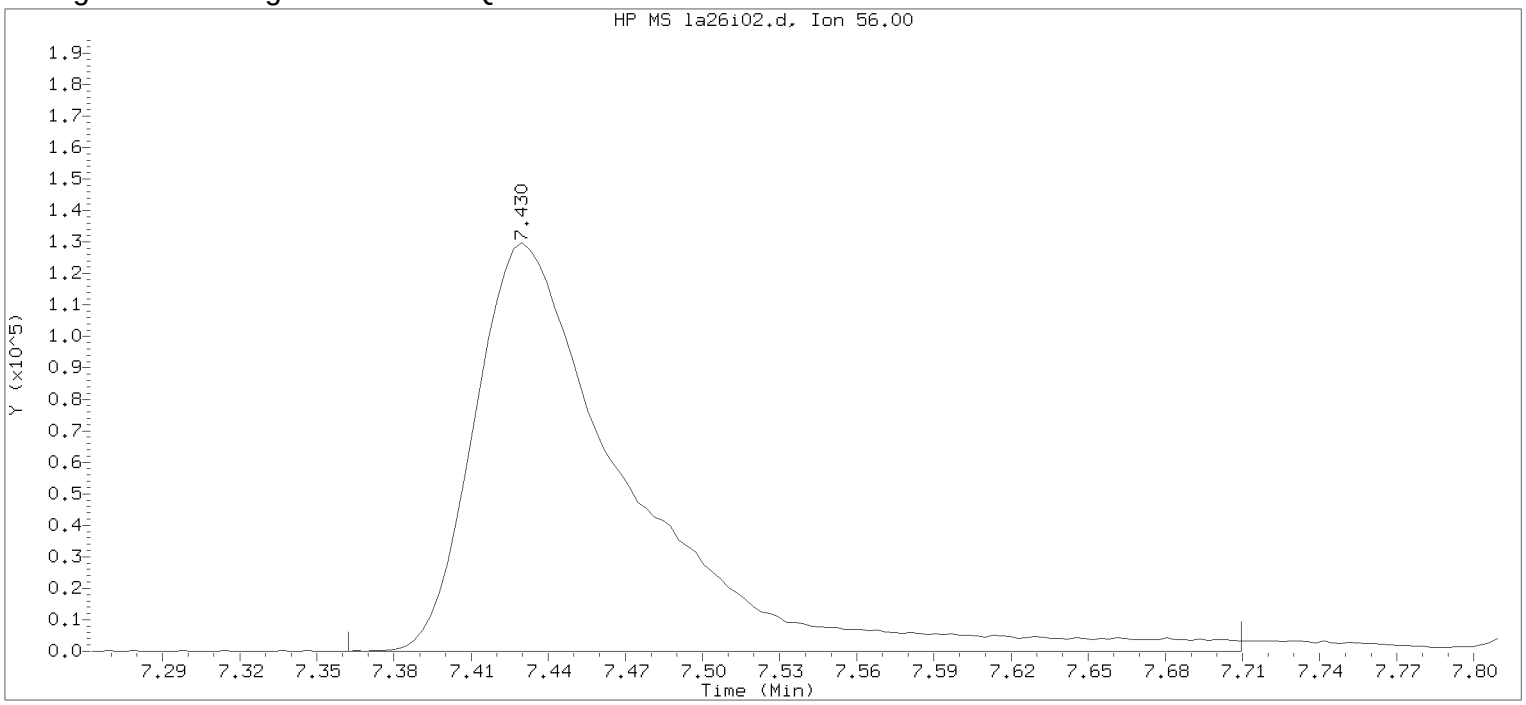
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

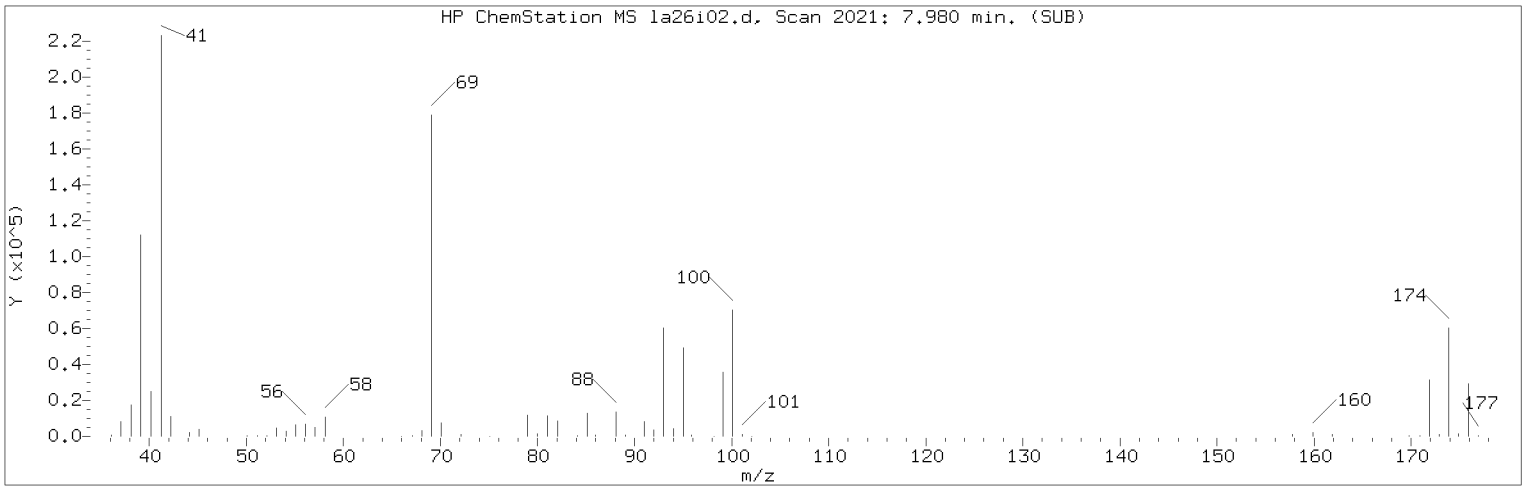
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

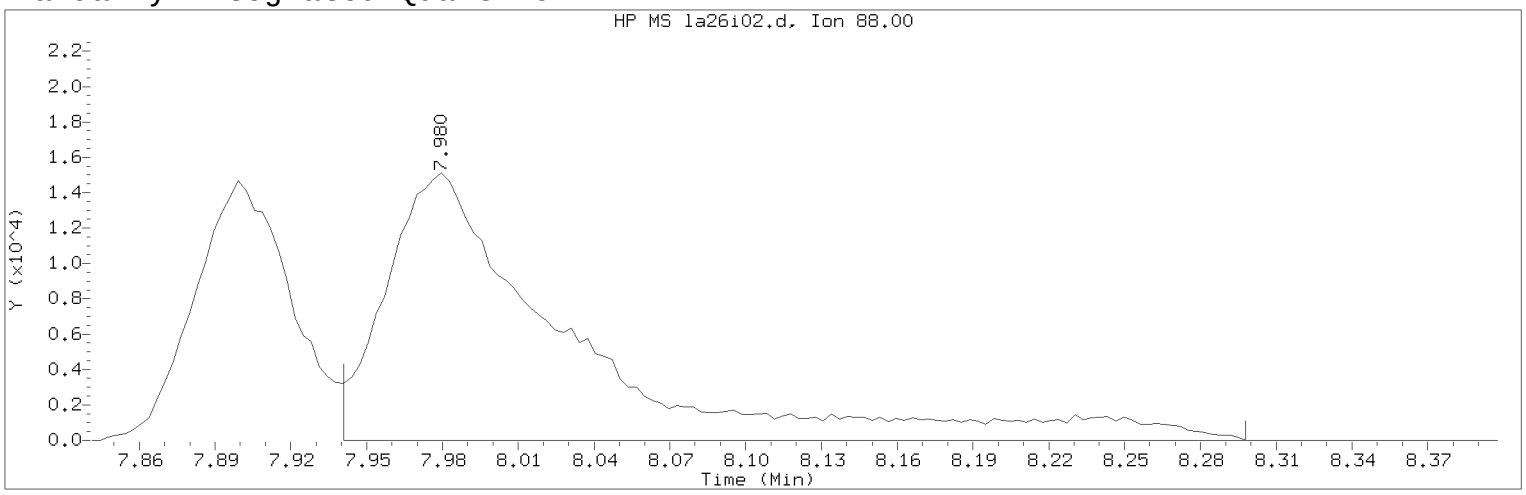
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1850
Retention Time (minutes): 7.430
Quant Ion : 56.00
Area : 545706
On-column Amount (ng) : 2586.5087
Integration start scan : 1828 Integration stop scan: 1936
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

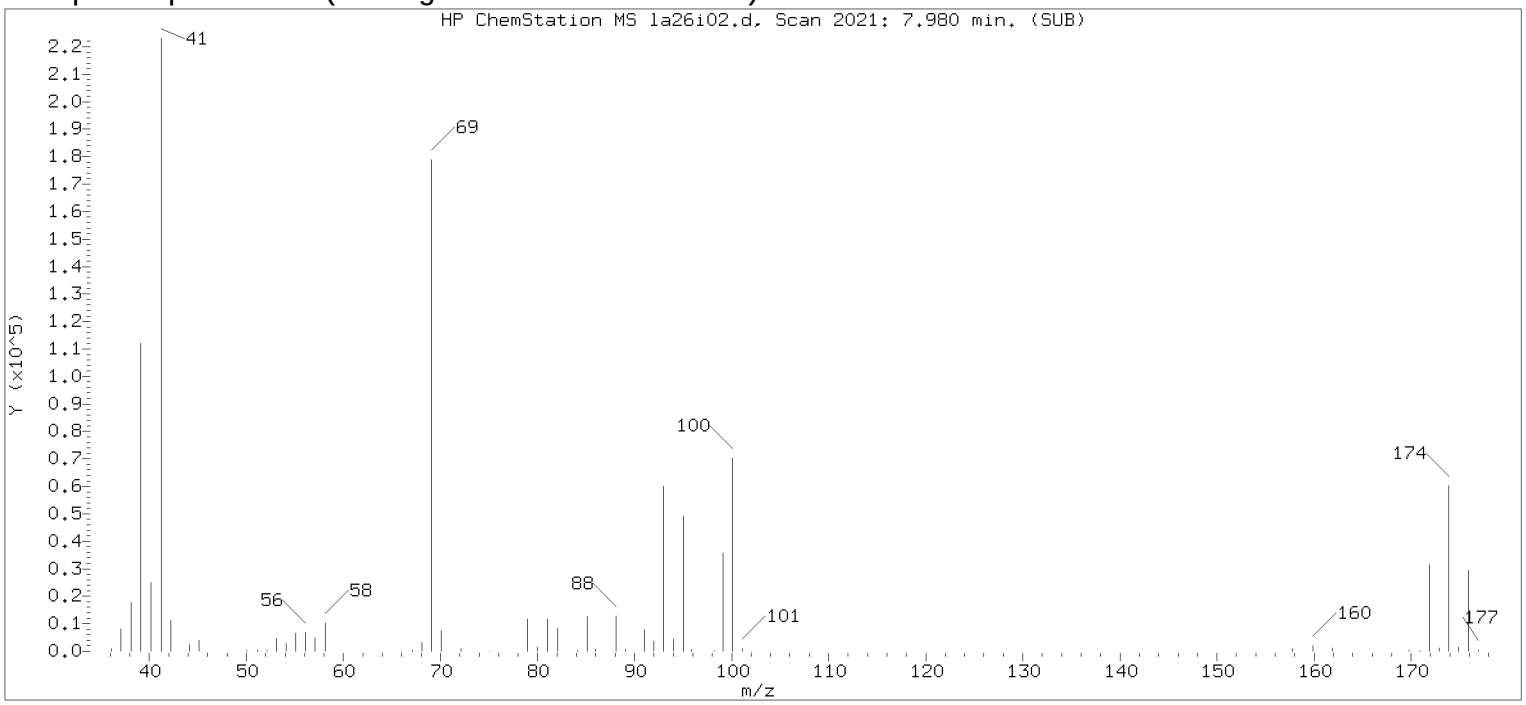
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 88.00
Area (flag) : 76692M
On-Column Amount (ng) : 1221.7348
Integration start scan : 2008 Integration stop scan: 2119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

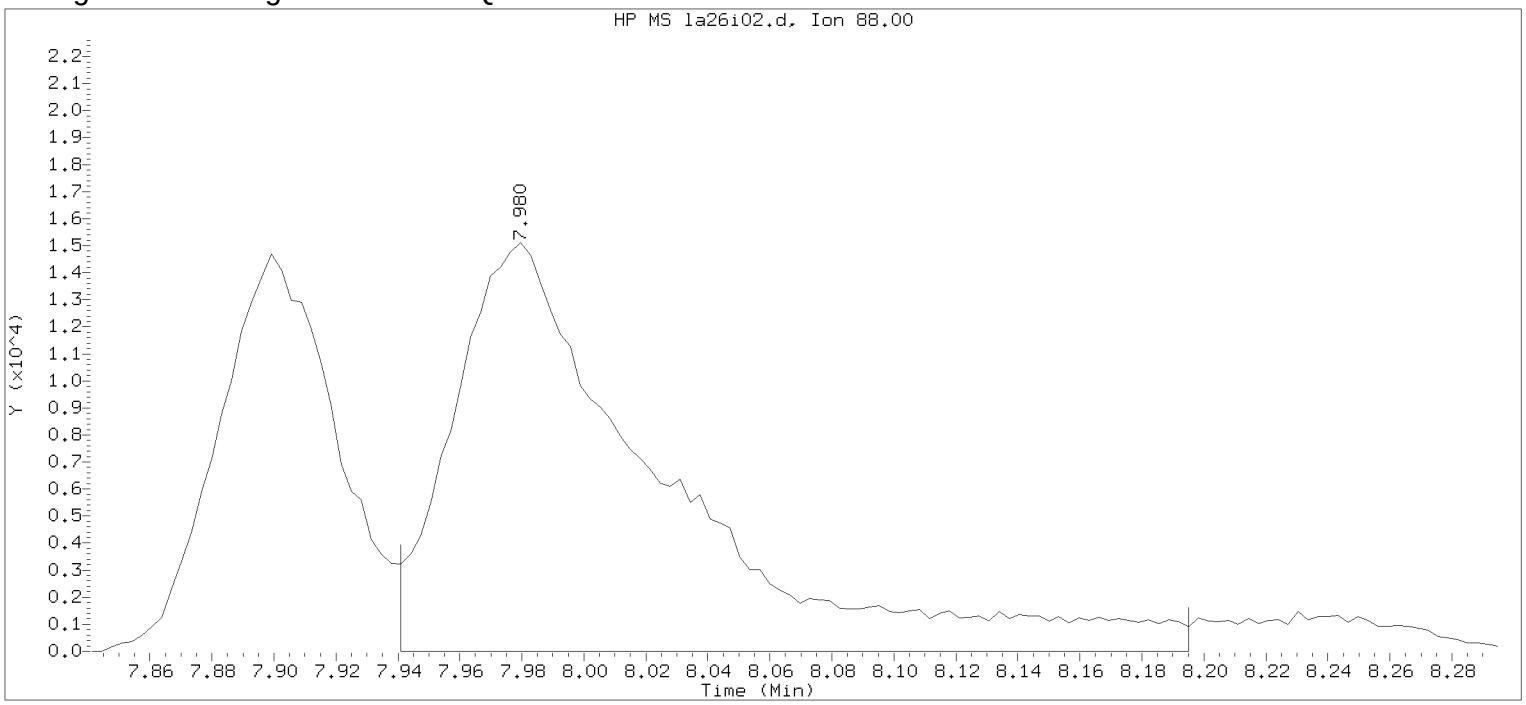
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

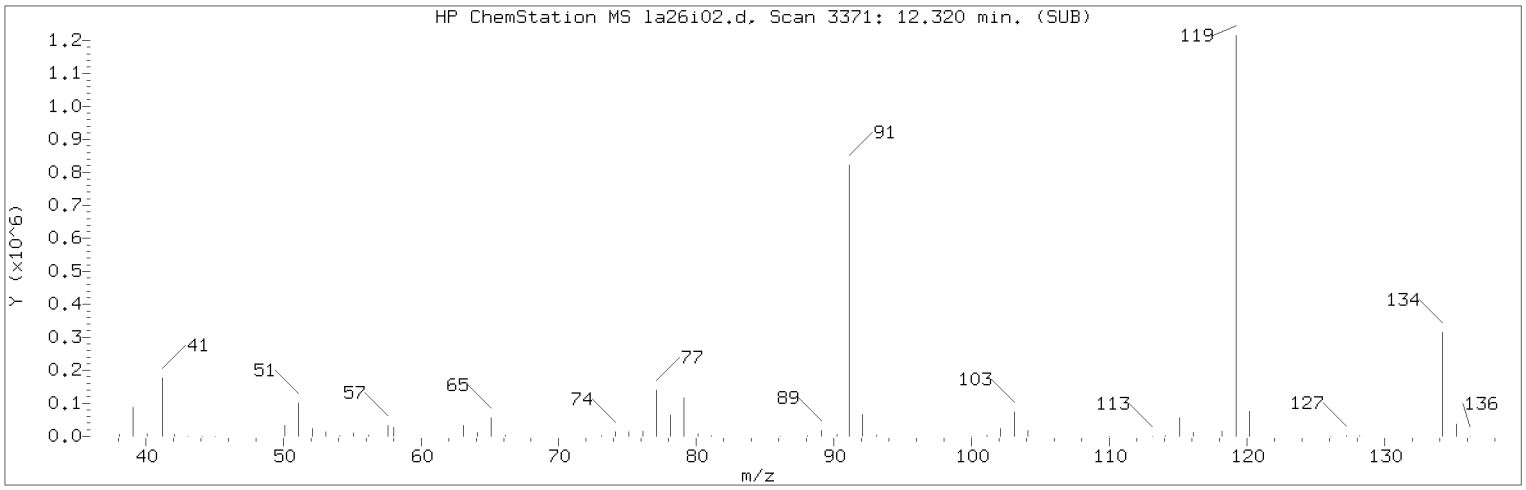
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

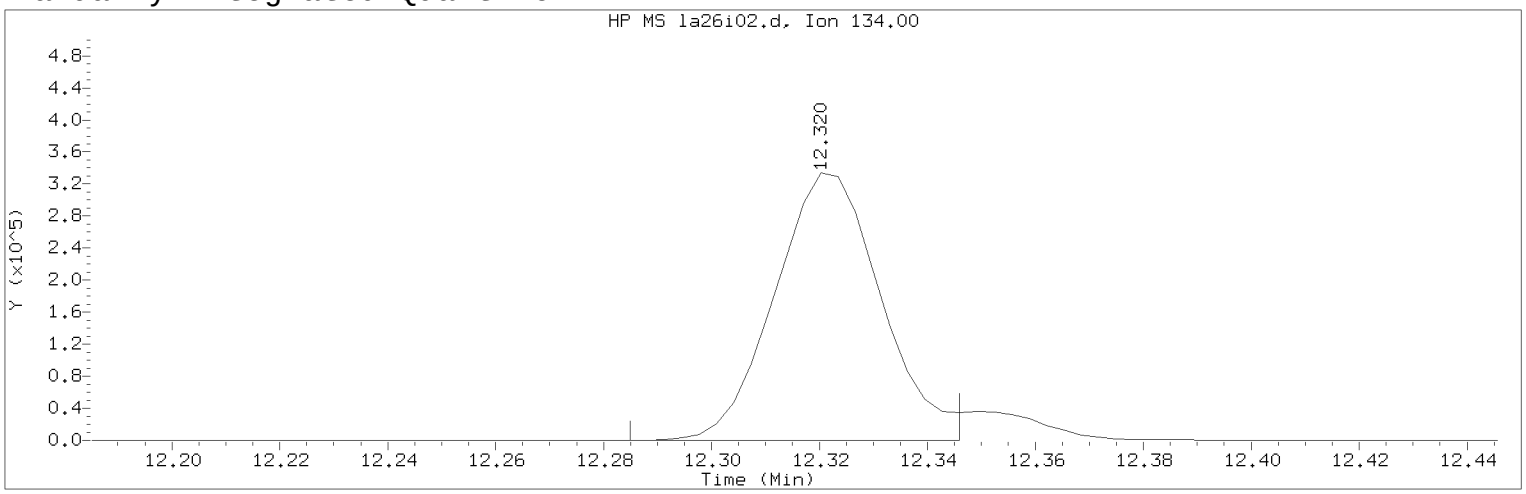
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 88.00
Area : 70705
On-column Amount (ng) : 1061.5410
Integration start scan : 2008 Integration stop scan: 2087
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 RD187 Page 136

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

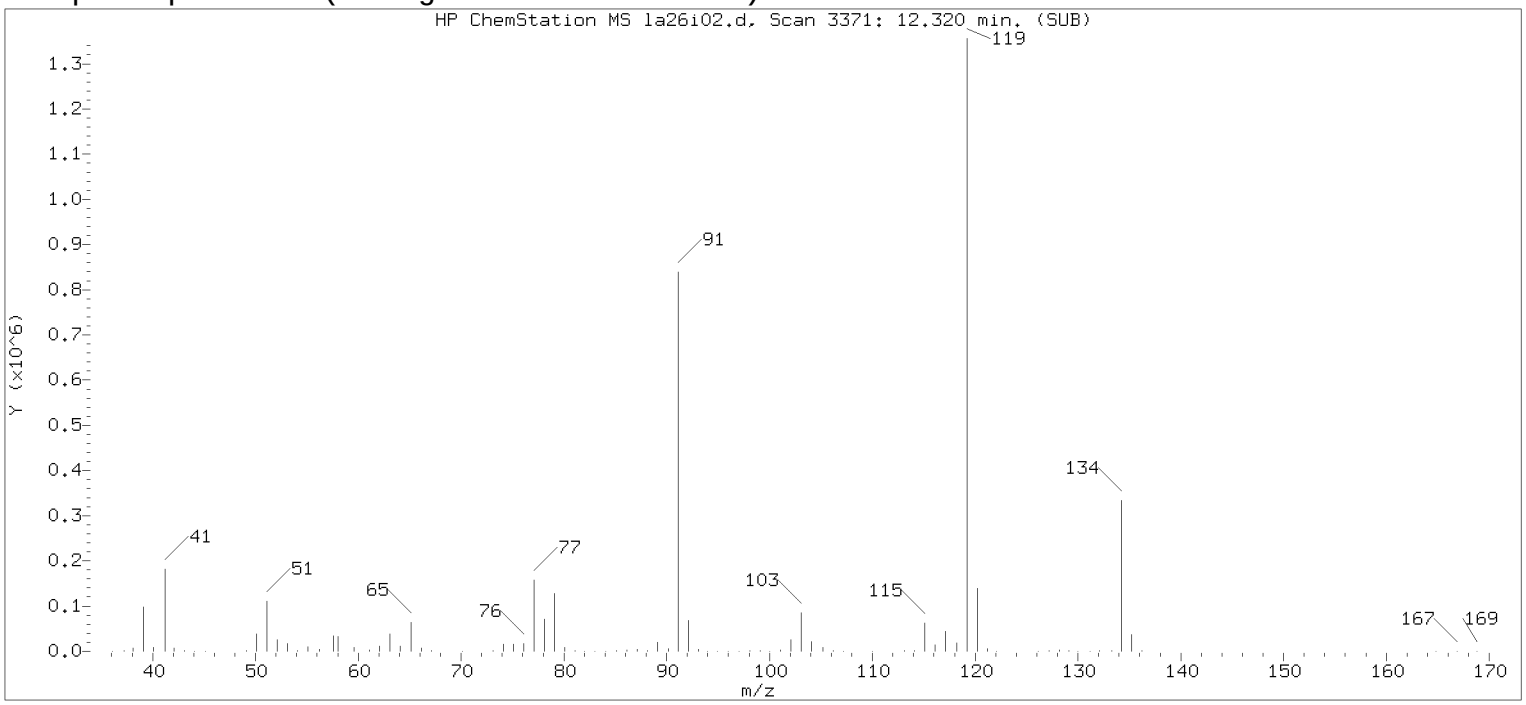
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 456579M
On-Column Amount (ng) : 105.7797
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

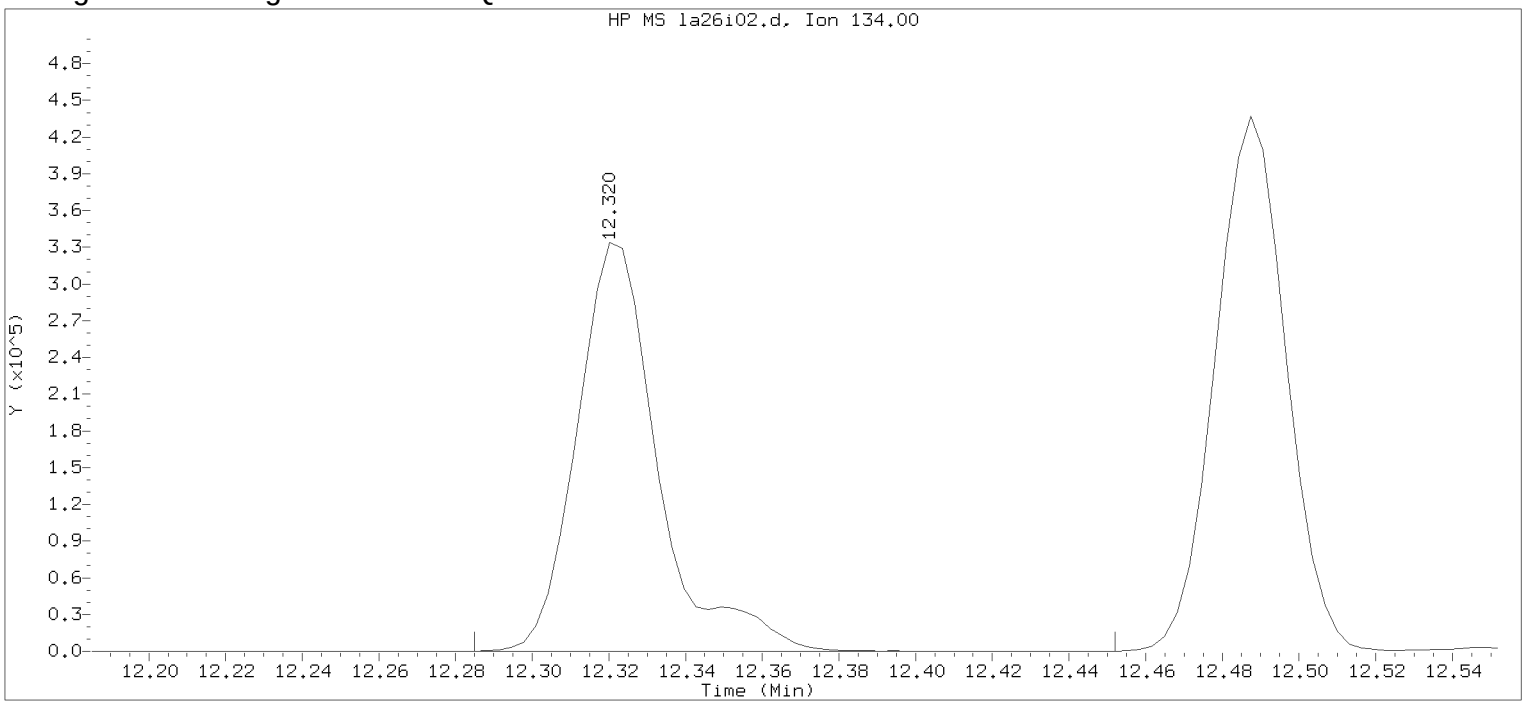
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



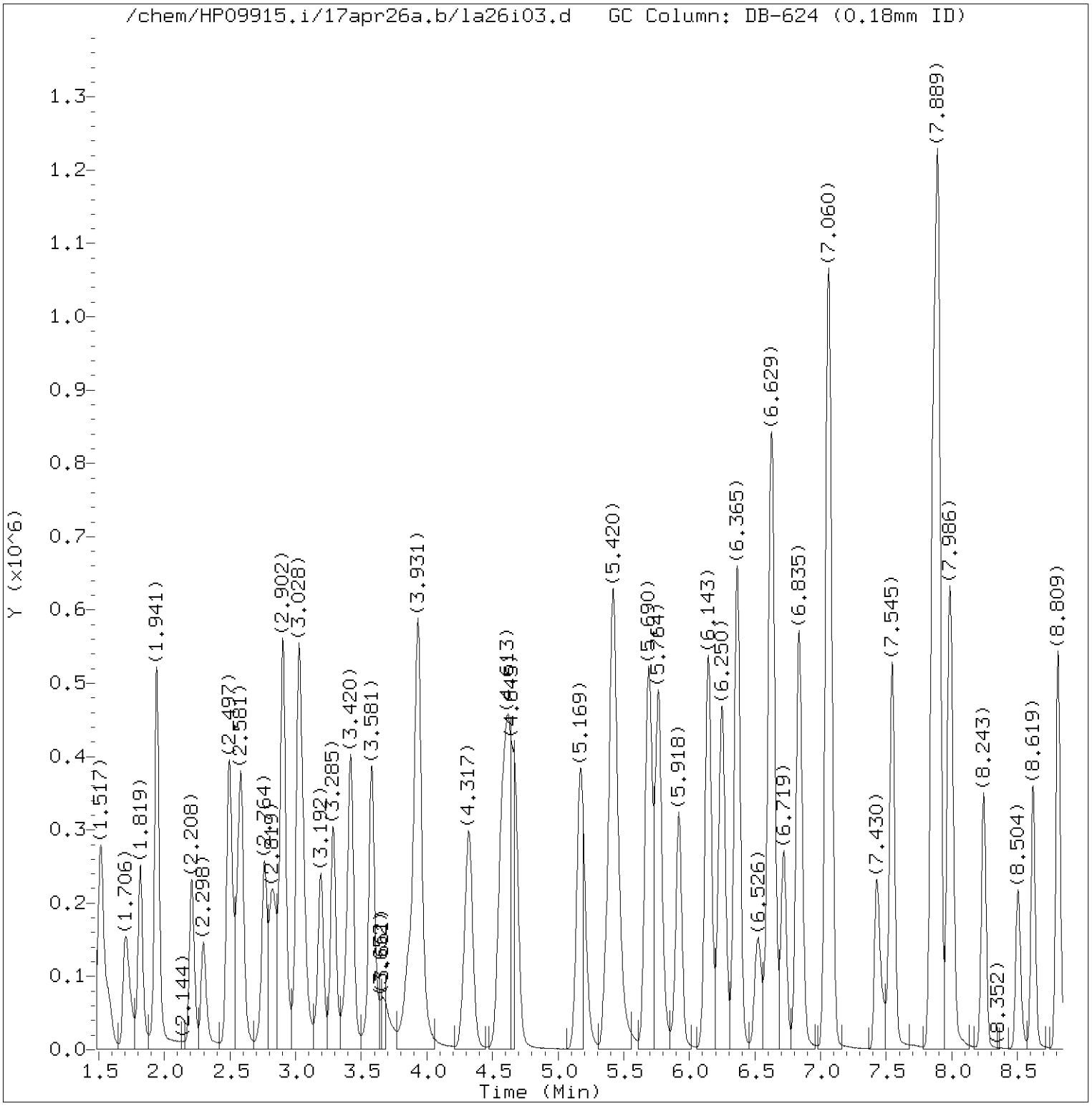

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 491130
On-column Amount (ng) : 103.2605
Integration start scan : 3359 Integration stop scan: 3411
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

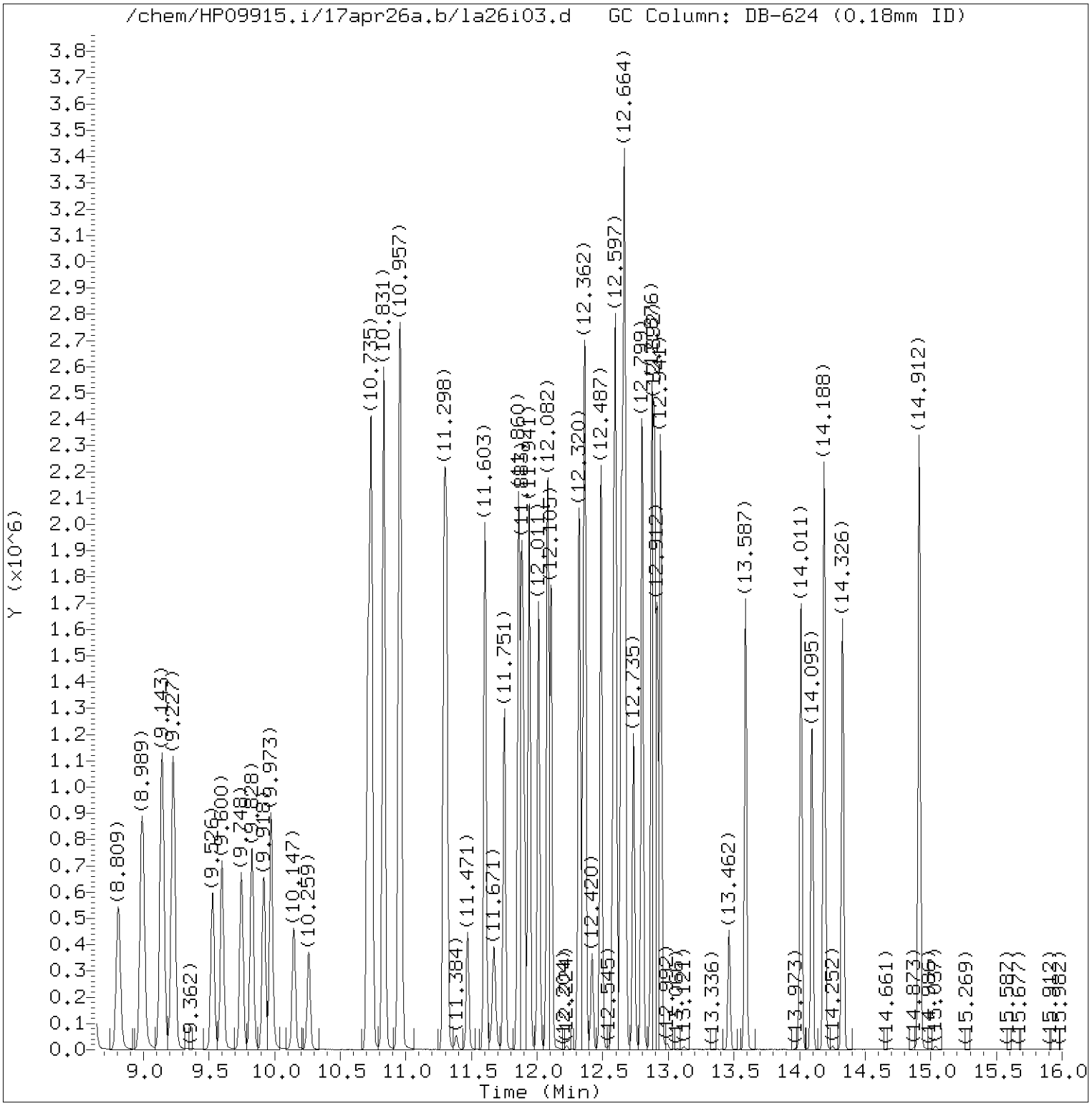
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 341531 | 55.325 |
| 4) Chloromethane | (2) | 1.819 | 50 | 341915 | 53.914 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 338740 | 55.314 |
| 5) 1,3-Butadiene | (2) | 1.948 | 39 | 185287 | 49.605 |
| 8) Bromomethane | (2) | 2.211 | 94 | 223606 | 54.288 |
| 9) Chloroethane | (2) | 2.301 | 64 | 186081 | 53.918 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 455798 | 54.146 |
| 12) Trichlorofluoromethane | (2) | 2.562 | 101 | 396809 | 55.955 |
| 11) n-Pentane | (2) | 2.584 | 43 | 292021 | 50.002 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 210376 | 53.288 |
| 15) Freon 123a | (2) | 2.819 | 67 | 241023 | 51.034 |
| 16) Acrolein | (1) | 2.902 | 56 | 846420 | 532.609 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 192923 | 51.401 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 97269 | 51.192 |
| 18) Acetone | (1) | 3.041 | 58 | 73070M | 105.938 |
| 19) Freon 113 | (2) | 3.047 | 101 | 194876 | 51.583 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 105752 | 231.283 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 379144 | 52.079 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 640566 | 52.445 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 274054 | 50.308 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 386191 | 51.369 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 194134M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 241364 | 48.679 |
| 30) t-Butyl alcohol | (1) | 3.677 | 59 | 188301 | 250.688 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 159848 | 55.877 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 721326 | 52.461 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 228348 | 51.854 |
| 34) n-Hexane | (2) | 4.320 | 57 | 342791 | 50.780 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 433276 | 52.360 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 837918 | 52.757 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 368443 | 52.785 |
| 40) Ethyl t-butyl ether | (2) | 5.172 | 59 | 734026 | 53.702 |
| 44) 2-Butanone | (2) | 5.378 | 43 | 418947 | 109.375 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 262755 | 52.071 |
| 45) 2,2-Dichloropropane | (2) | 5.433 | 77 | 299786 | 54.261 |
| 47) Propionitrile | (1) | 5.462 | 54 | 282765 | 257.928 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 375487 | 131.654 |
| 49) Bromochloromethane | (2) | 5.758 | 128 | 136891 | 51.472 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 106051 | 109.521 |
| 51) Chloroform | (2) | 5.918 | 83 | 411040 | 52.113 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 254980 | 50.387 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 111 | 260921 | 50.317 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 354588 | 49.197 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 491103 | 103.925 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 424936 | 51.780 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 346297 | 50.980 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 122692 | 51.578 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 281006 | 53.410 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 333440 | 51.977 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 170793 | 647.615 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 63118 | 50.159 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 296089 | 49.745 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 39897 | 49.986 |
| 60) Benzene | (2) | 6.629 | 78 | 982091 | 51.933 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 334956 | 52.357 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 31873 | 56.503 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 733093 | 54.041 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1036296 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 374695 | 49.577 |
| 69) n-Butanol | (1) | 7.430 | 56 | 280068 | 1317.372 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 250765 | 51.312 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 455106 | 52.853 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 206857 | 53.234 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 275068 | 53.135 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 43582M | 656.649 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 241048 | 54.398 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 171942 | 52.815 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 317704 | 54.075 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 192161 | 115.340 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 216850 | 54.493 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 421854 | 55.090 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 880332 | 111.530 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1027431 | 50.111 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 676600 | 50.089 |
| 88) Toluene | (3) | 9.227 | 92 | 616434 | 51.737 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 379484 | 56.801 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 418944 | 55.671 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 244835 | 53.326 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 265915 | 50.459 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 420710 | 52.809 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 638735 | 111.059 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 801338 | 111.891 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 264807 | 55.684 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 268109 | 53.341 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 803001 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 335726 | 49.064 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 712548 | 51.827 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 244656 | 53.888 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1186726 | 51.635 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 926946 | 103.598 |
| 107) o-Xylene | (3) | 11.291 | 106 | 466673 | 52.445 |
| 109) Styrene | (3) | 11.310 | 104 | 789557 | 53.675 |
| 110) Bromoform | (3) | 11.471 | 173 | 196645 | 56.948 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 1179385 | 51.860 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 165040 | 659.207 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379333 | 49.776 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 331825 | 49.640 |
| 108) Xylene (Total) | (3) | | 106 | 1393619 | 156.043 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 407876 | 53.358 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 318530 | 51.744 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 296713 | 135.458 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 113804 | 52.666 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 1393854 | 51.243 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 291915 | 51.564 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 1017107 | 52.437 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 302722 | 51.378 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 219011M | 52.234 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 180272 | 54.456 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 1045061 | 52.305 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 1273140 | 51.456 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 596808 | 50.922 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1129862 | 51.719 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 430663 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 613522 | 50.626 |

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

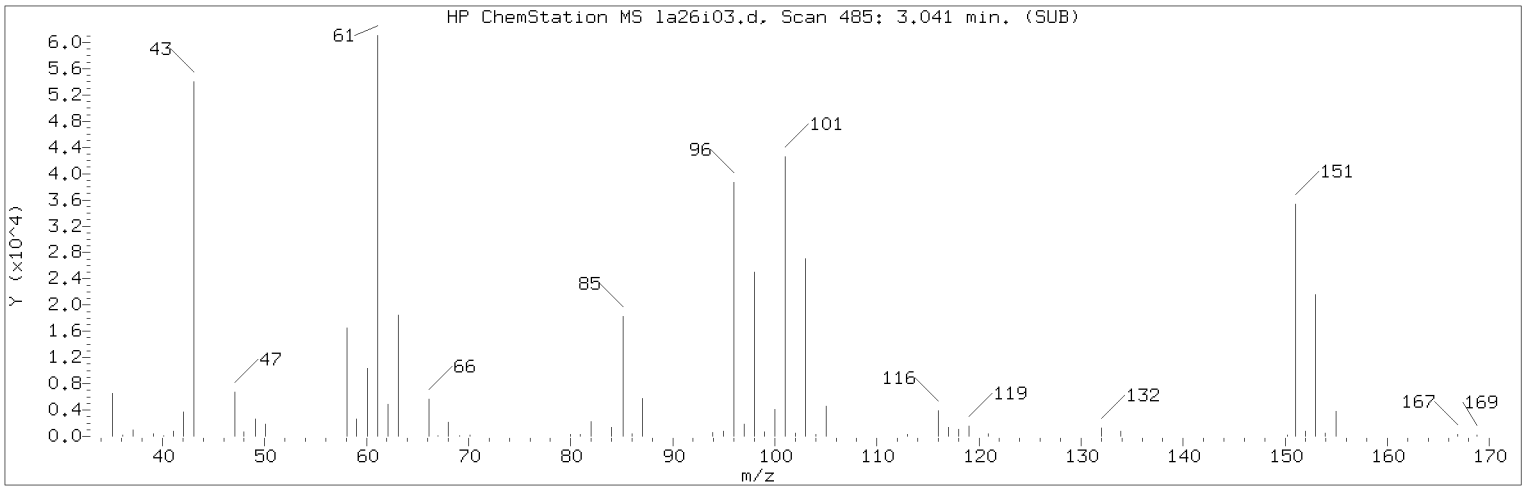
Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 1072423 | 51.230 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 705215 | 58.832 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 673907 | 51.632 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 699626 | 51.044 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 545695 | 50.003 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 589322 | 51.155 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 564439 | 51.388 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1937972 | 154.064 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 88925 | 55.008 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 467325 | 50.034 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 459337 | 50.697 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 192963 | 49.039 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1445873 | 52.884 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 443490 | 50.737 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 940076 | 53.175 |

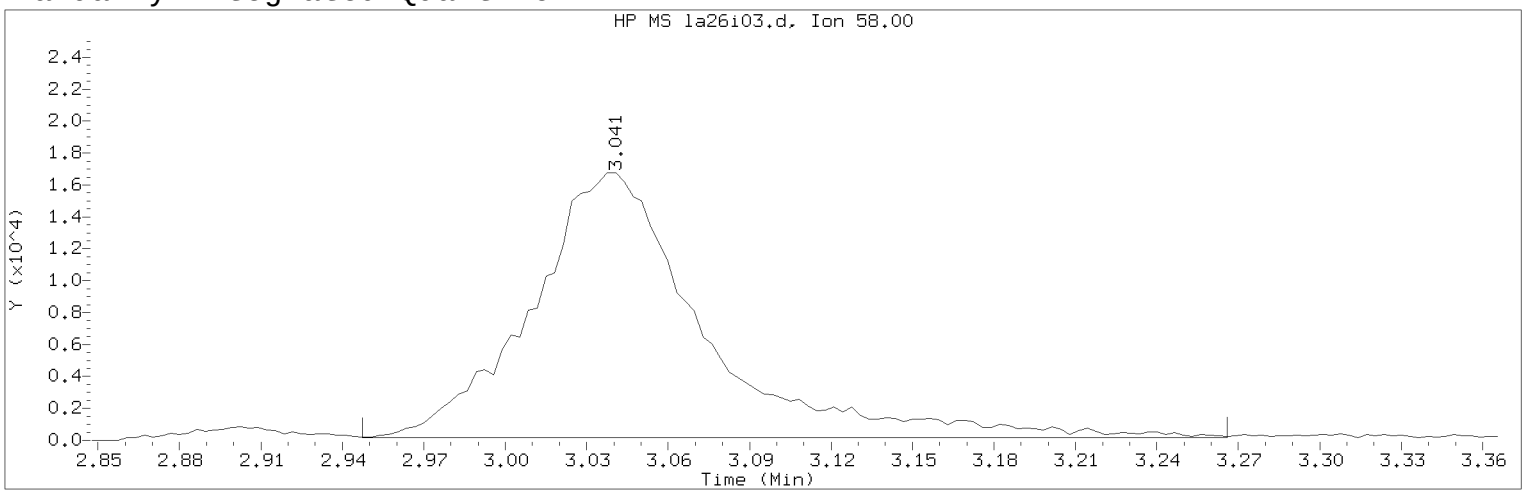


Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

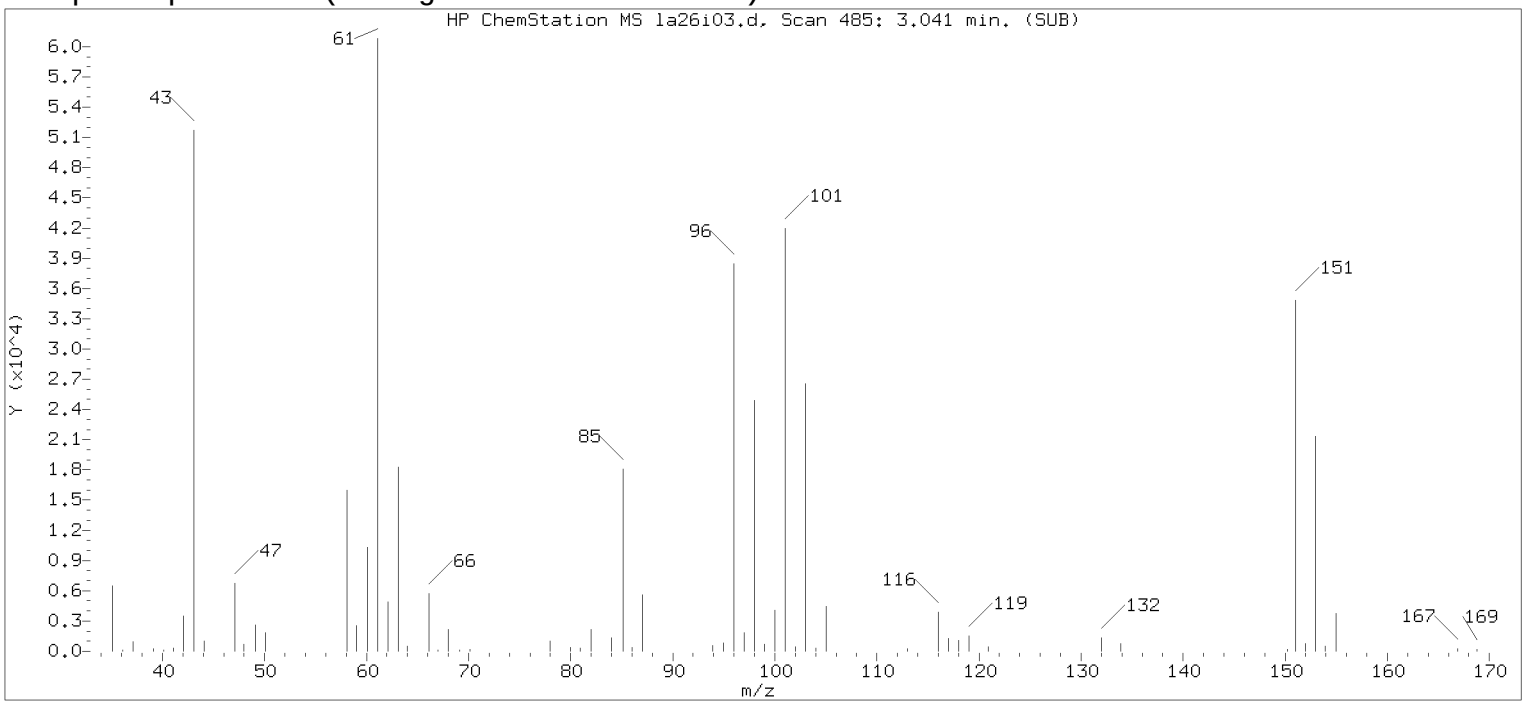
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area (flag) : 73070M
On-Column Amount (ng) : 105.9378
Integration start scan : 455 Integration stop scan: 554
Y at integration start : 159 Y at integration end: 159

Reason for manual integration: improper integration

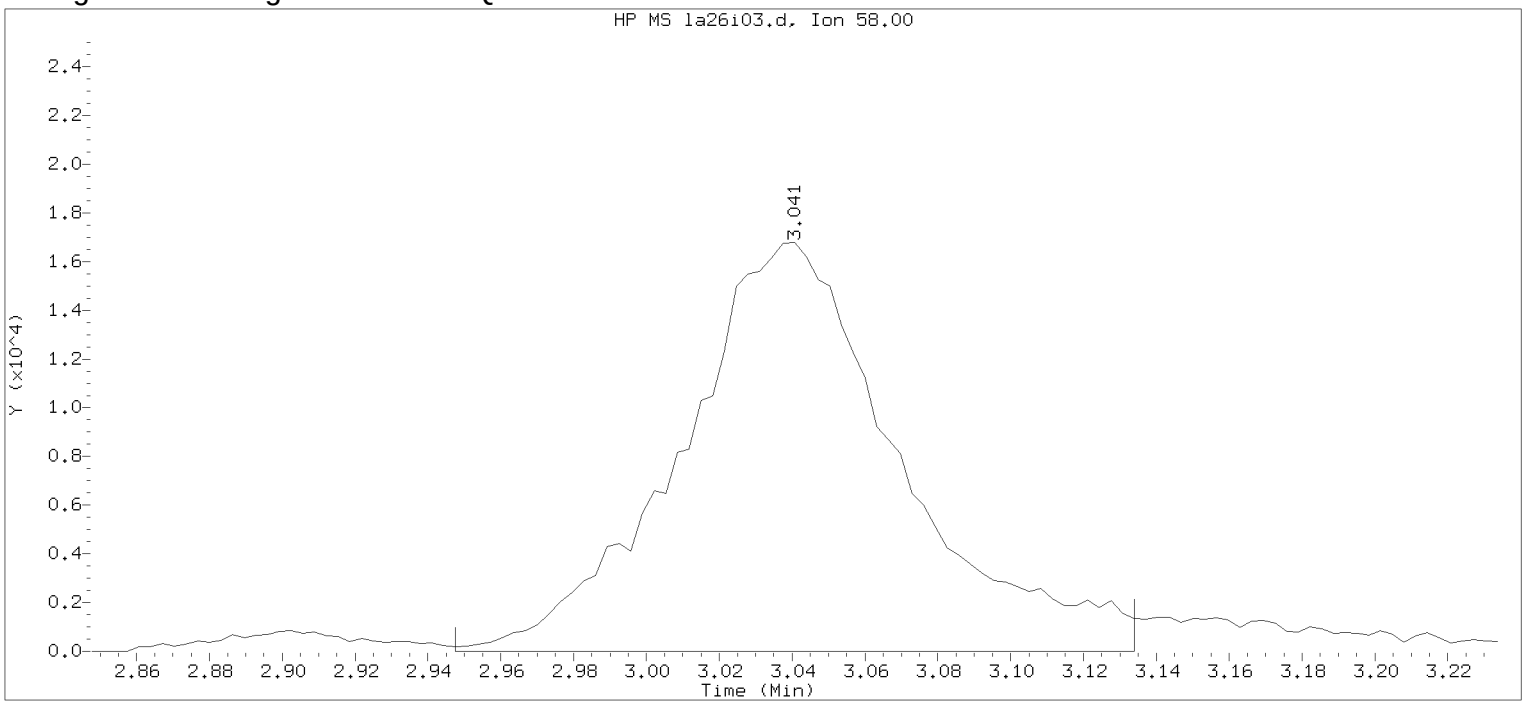
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

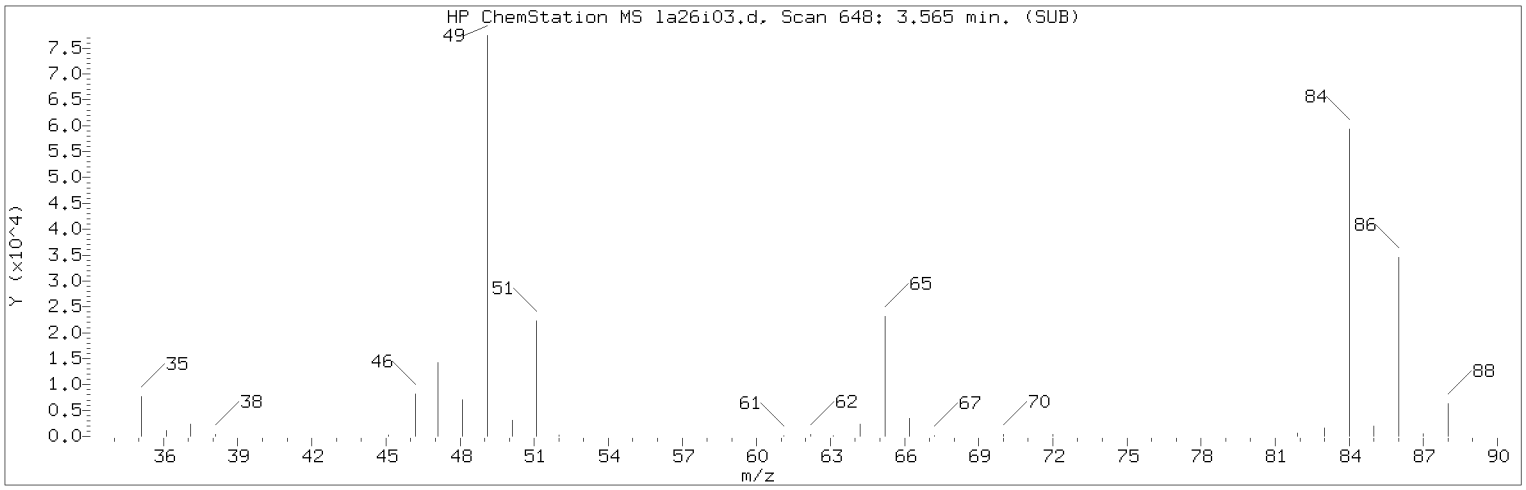
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

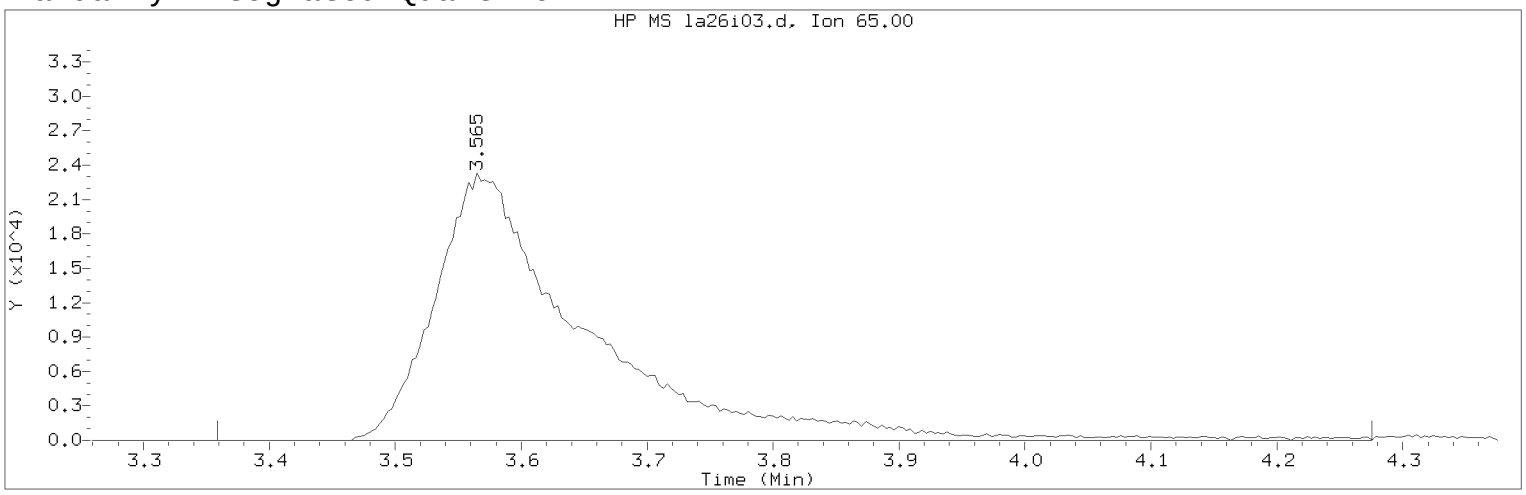
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area : 69964
On-column Amount (ng) : 100.7133
Integration start scan : 455 Integration stop scan: 513
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

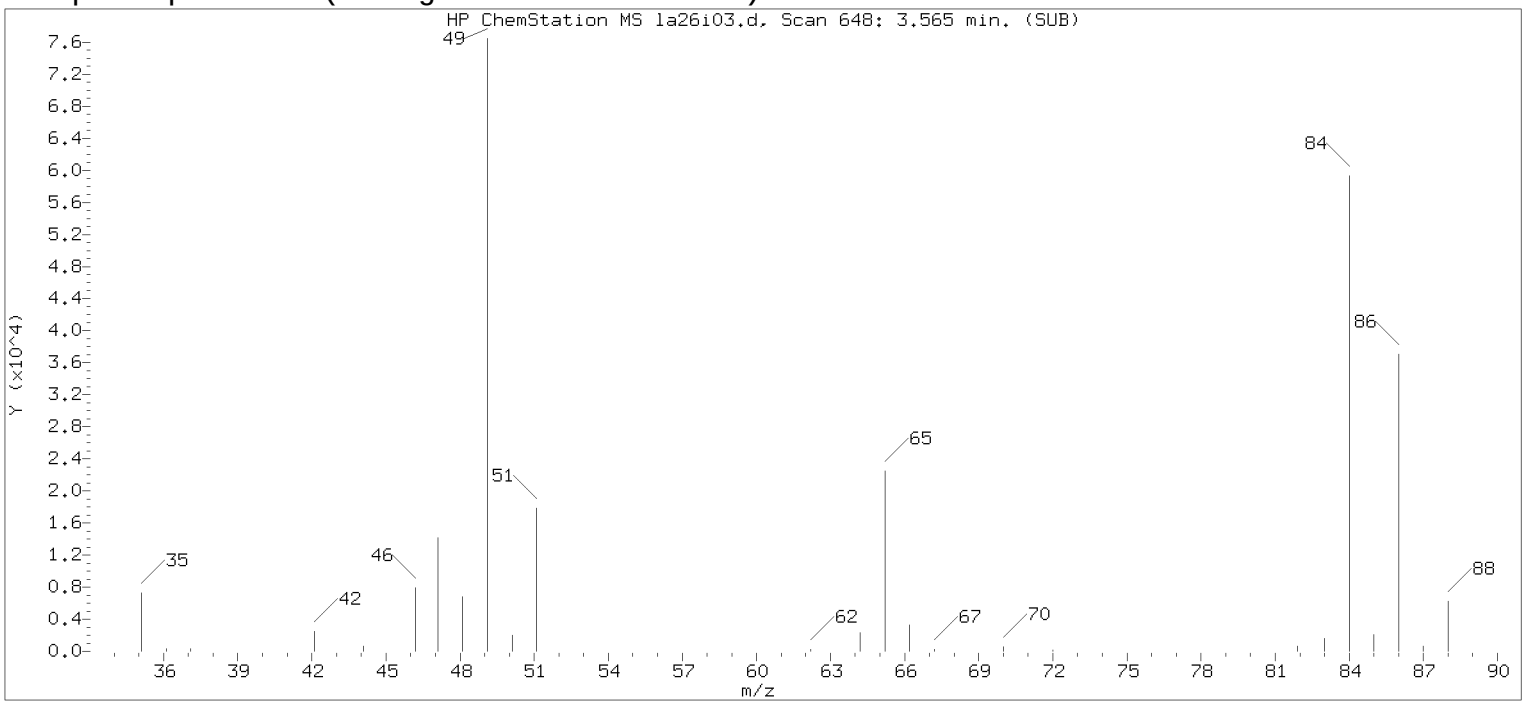
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area (flag) : 194134M
On-Column Amount (ng) : 250.0000
Integration start scan : 583 Integration stop scan: 868
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

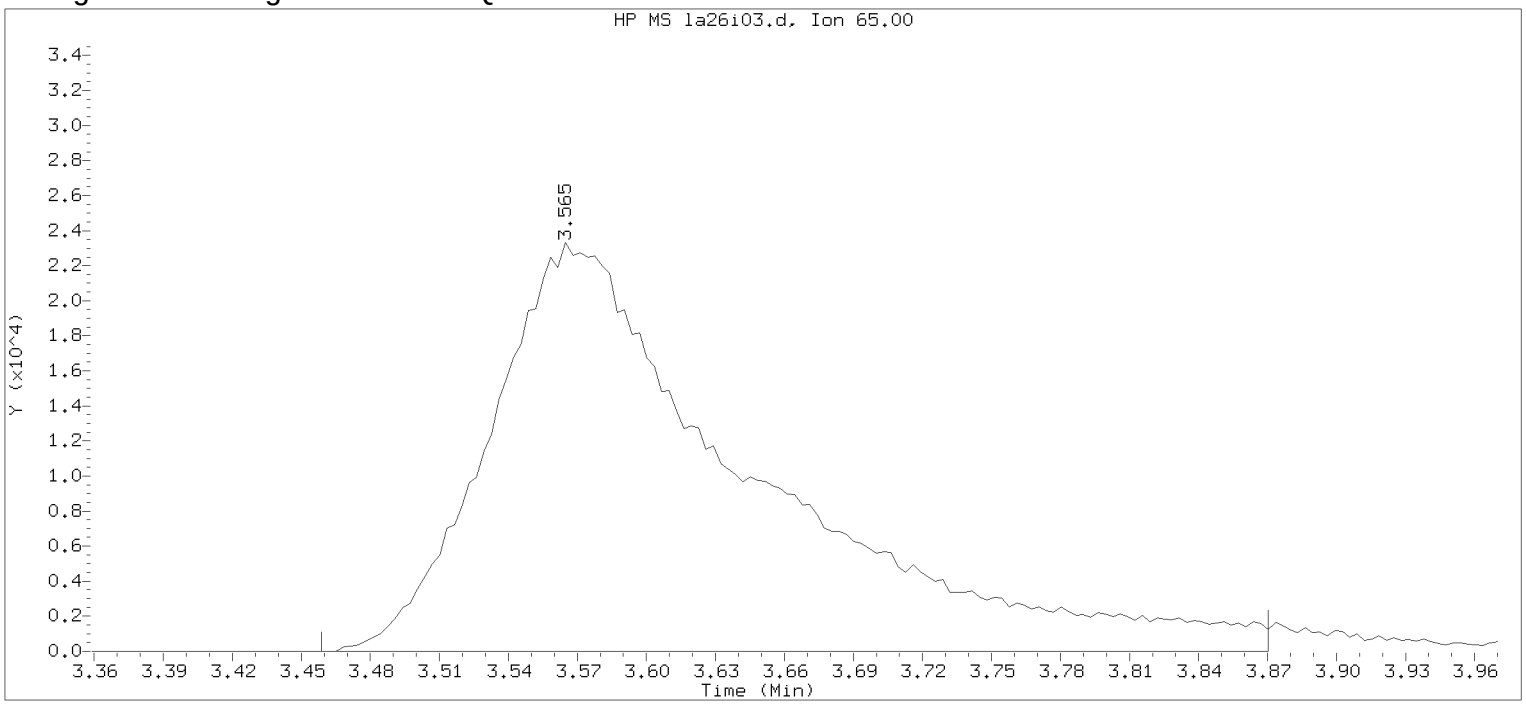
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area : 184407
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 742
Y at integration start : 0 Y at integration end: 0

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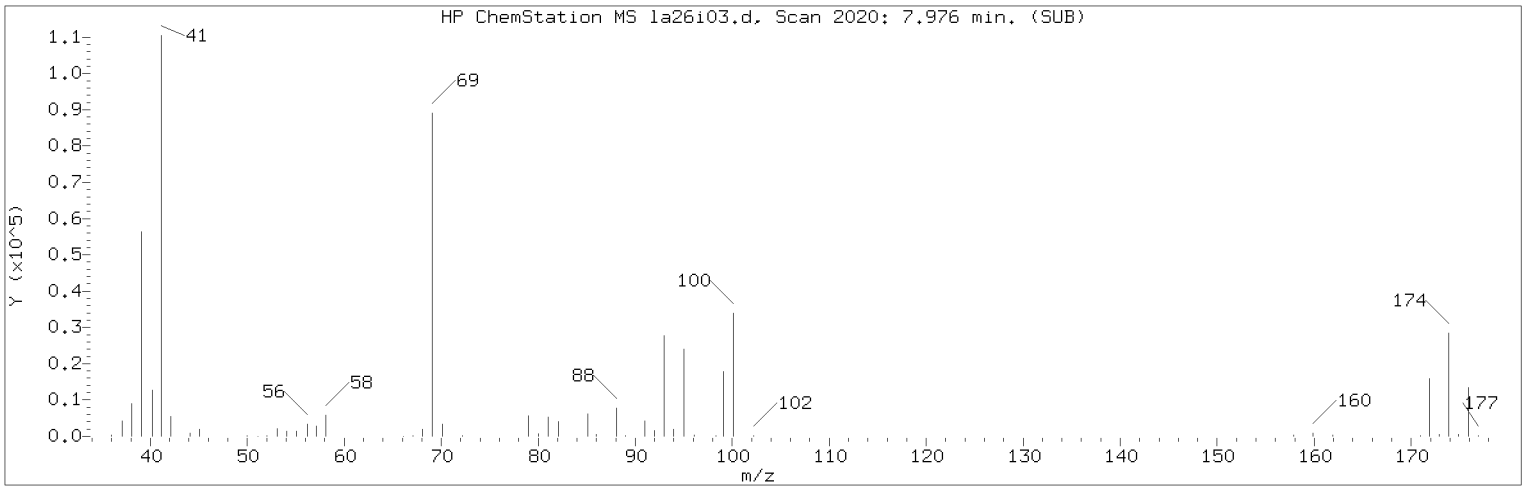
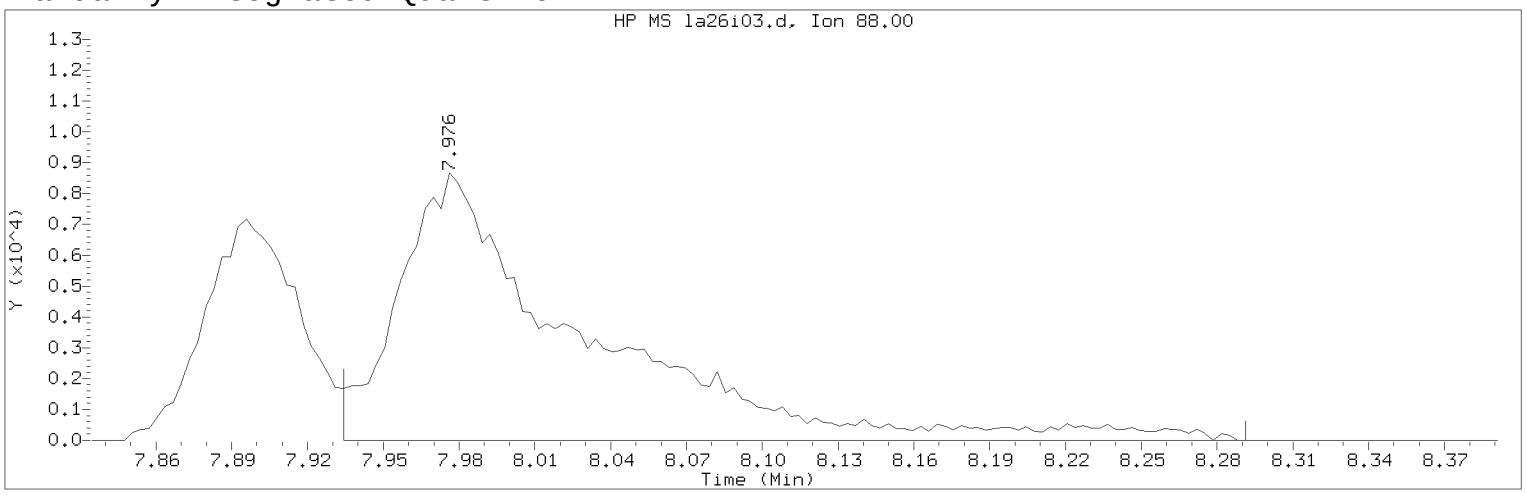
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

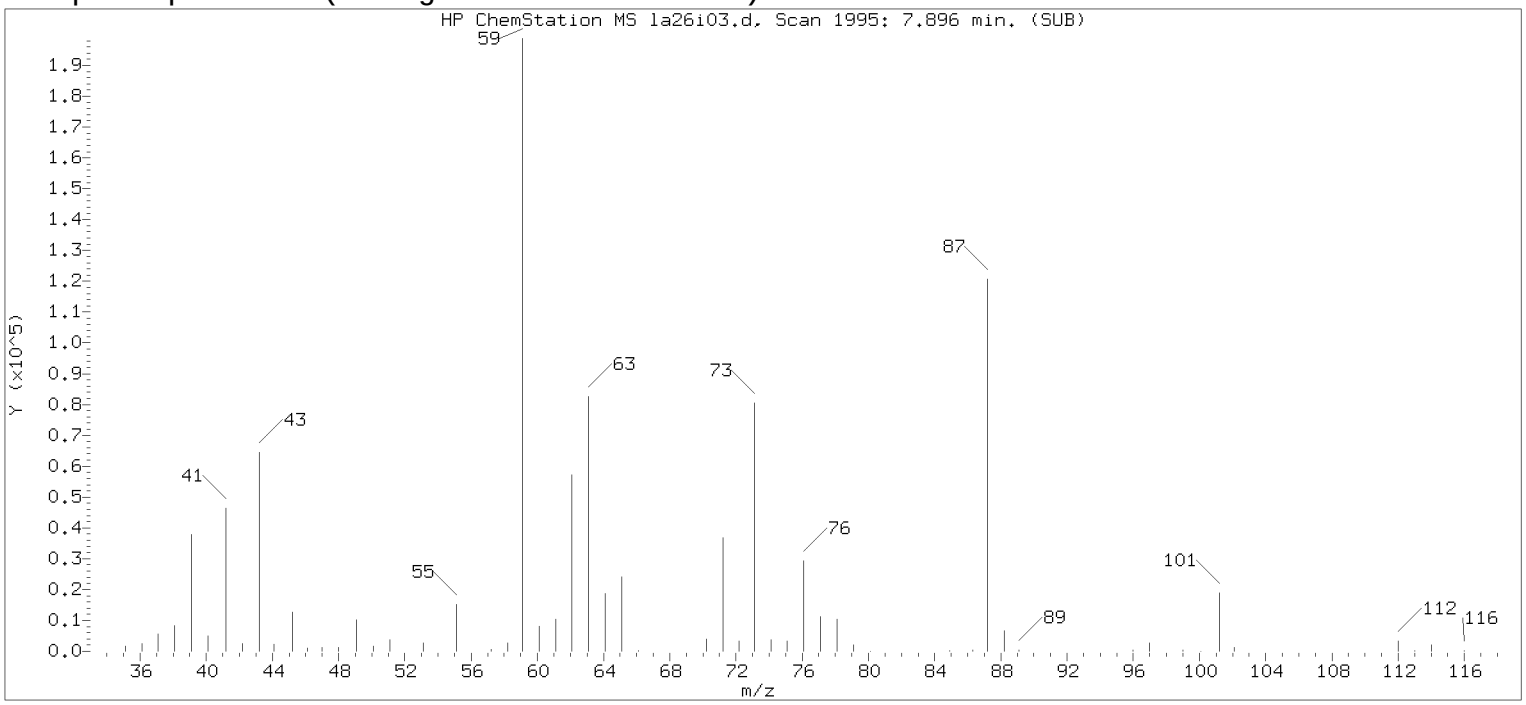
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 43582M
On-Column Amount (ng) : 656.6493
Integration start scan : 2006 Integration stop scan: 2117
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

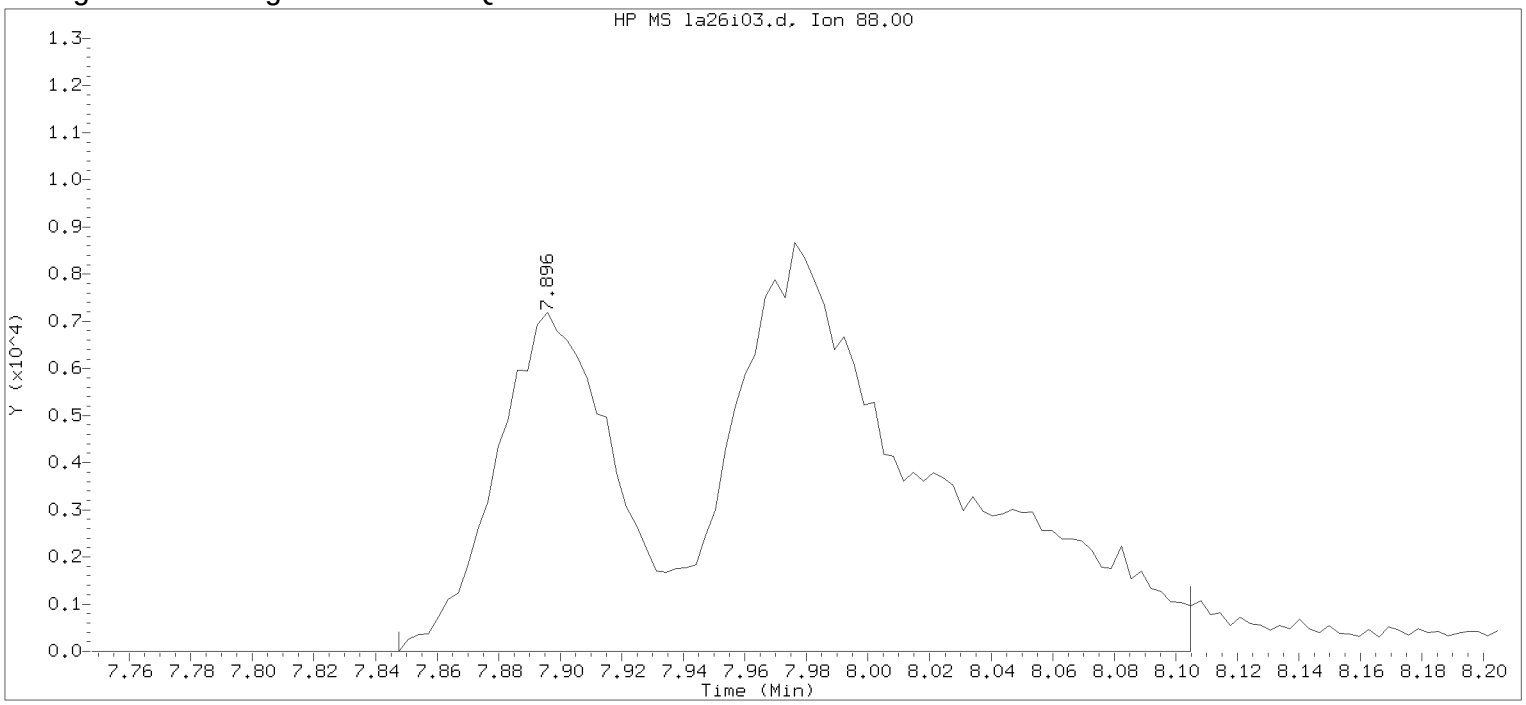
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 57387
On-column Amount (ng) : 846.7526
Integration start scan : 1979 Integration stop scan: 2059
Y at integration start : 0 Y at integration end: 0

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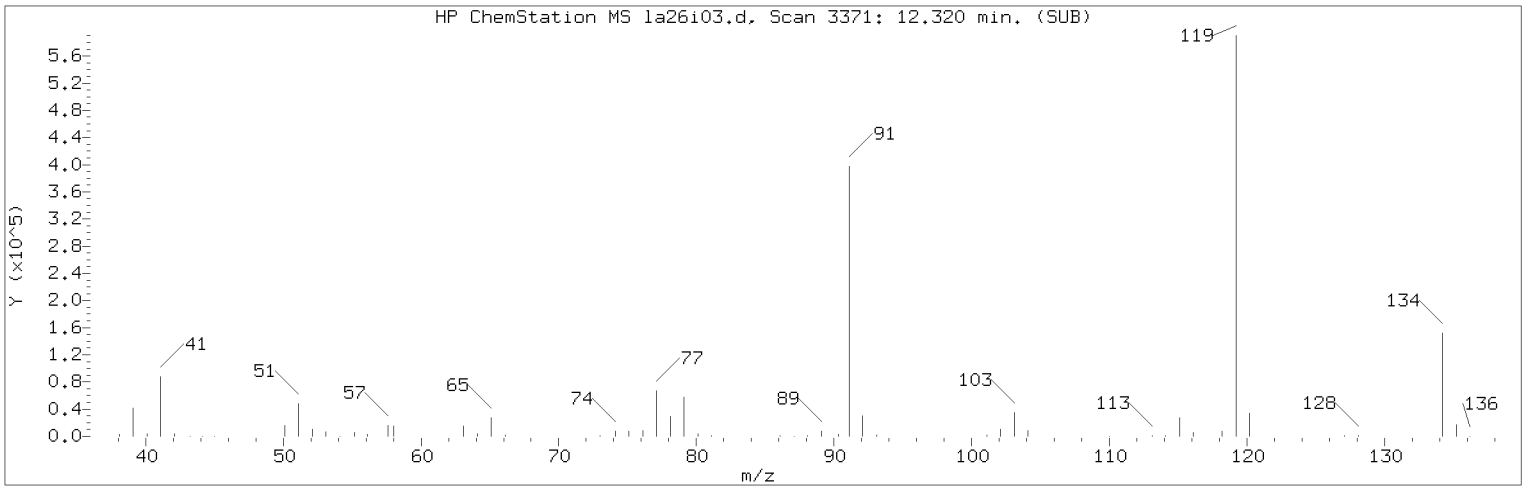
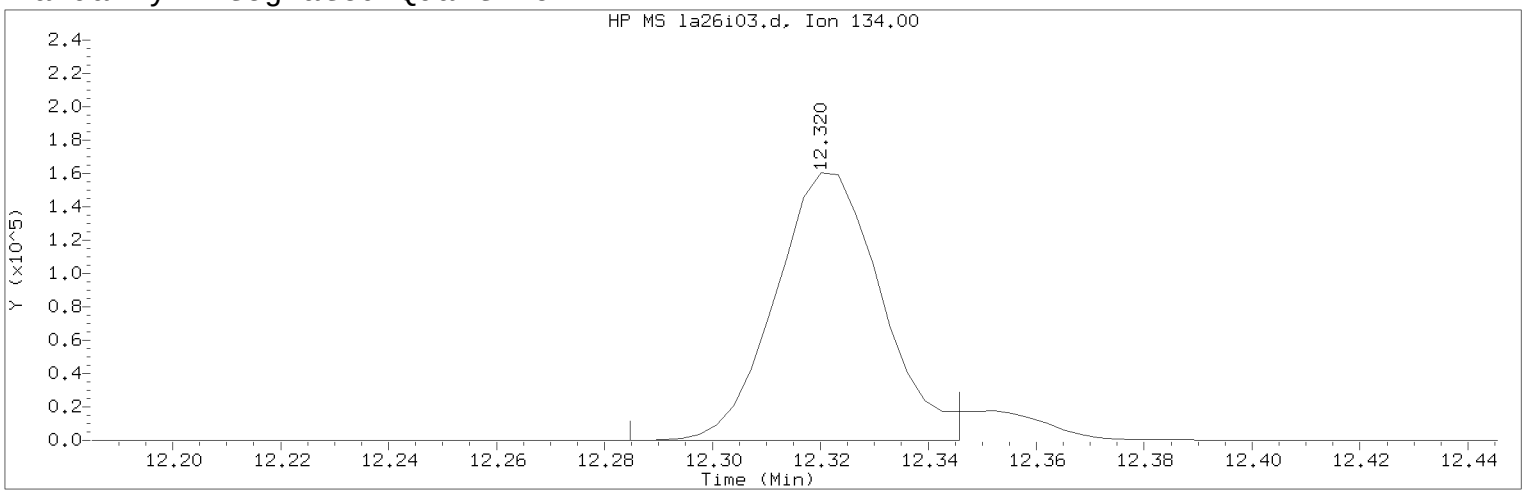
Target 3.5 esignature userKAS02648 RD87

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

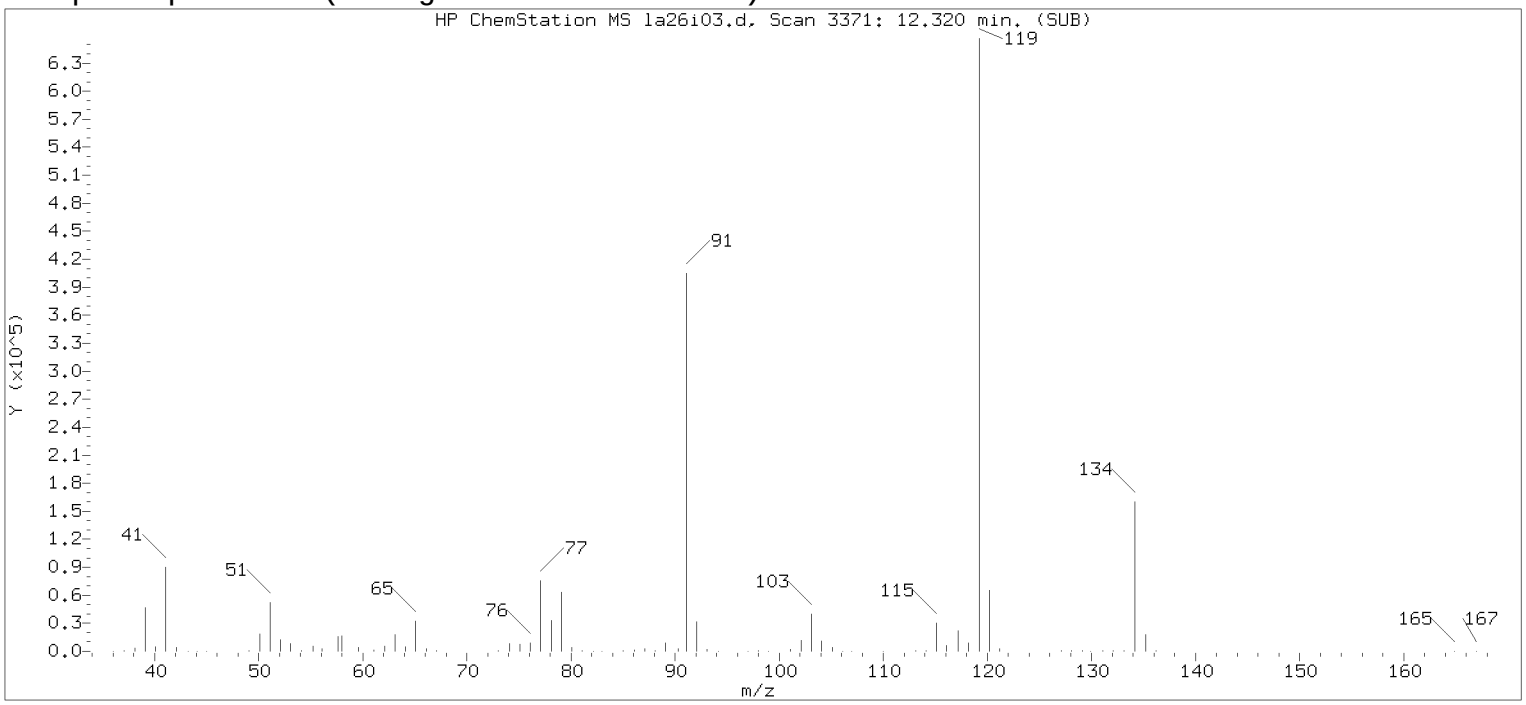
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 219011M
On-Column Amount (ng) : 52.2336
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

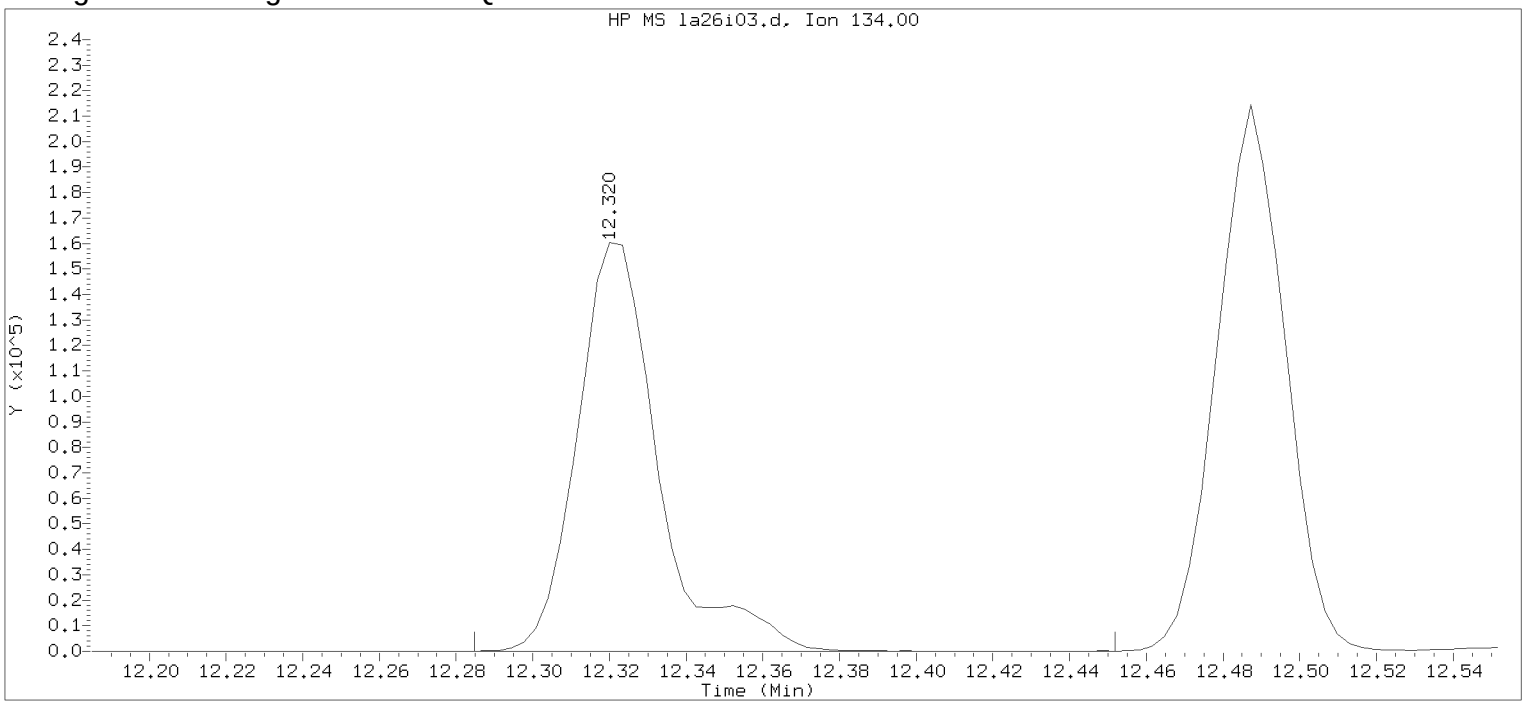
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 236254
On-column Amount (ng) : 52.1386
Integration start scan : 3359 Integration stop scan: 3411
Y at integration start : 0 Y at integration end: 0

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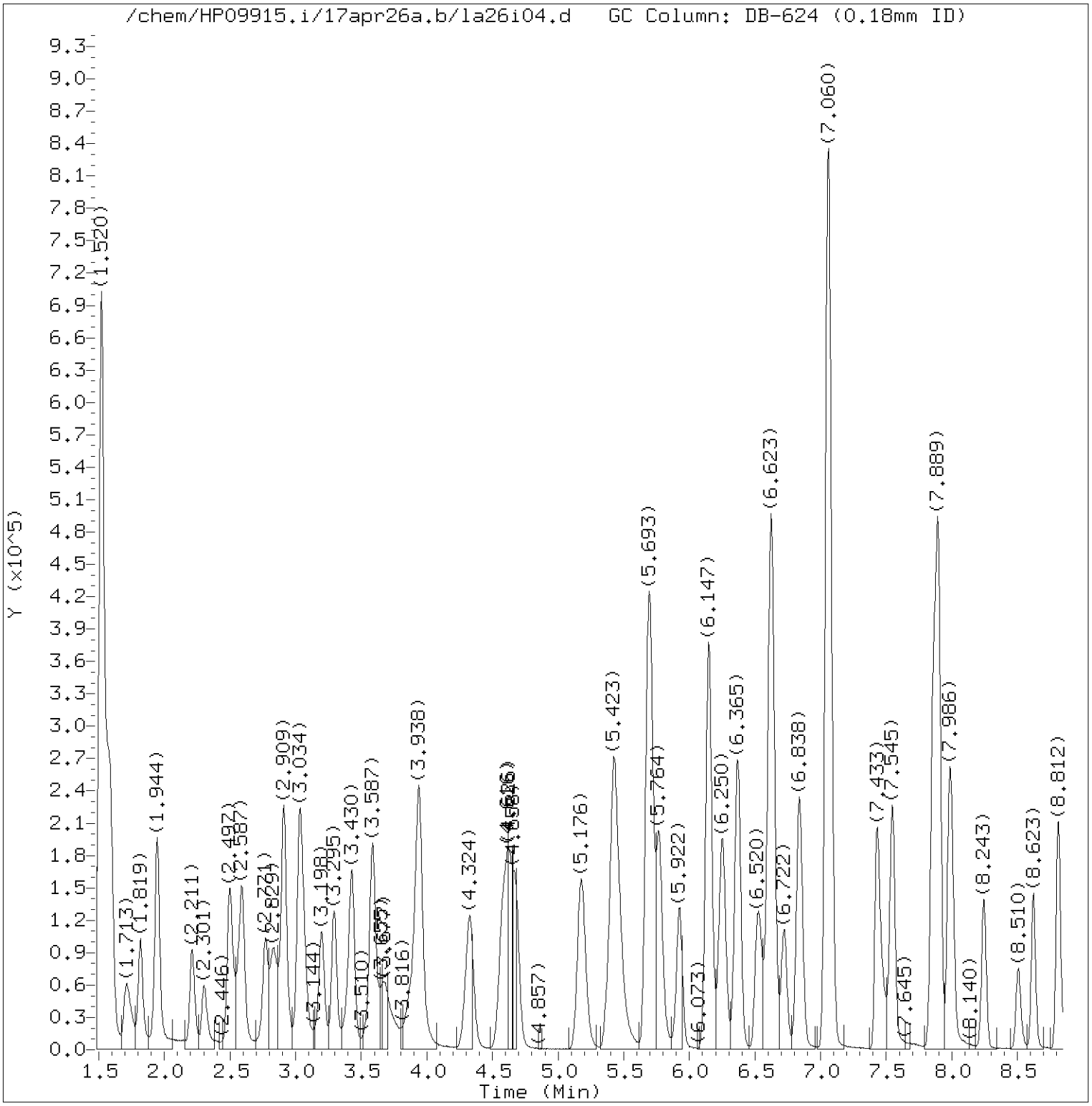
Target 3.5 esignature userKAS02648 Page 152 of 594




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

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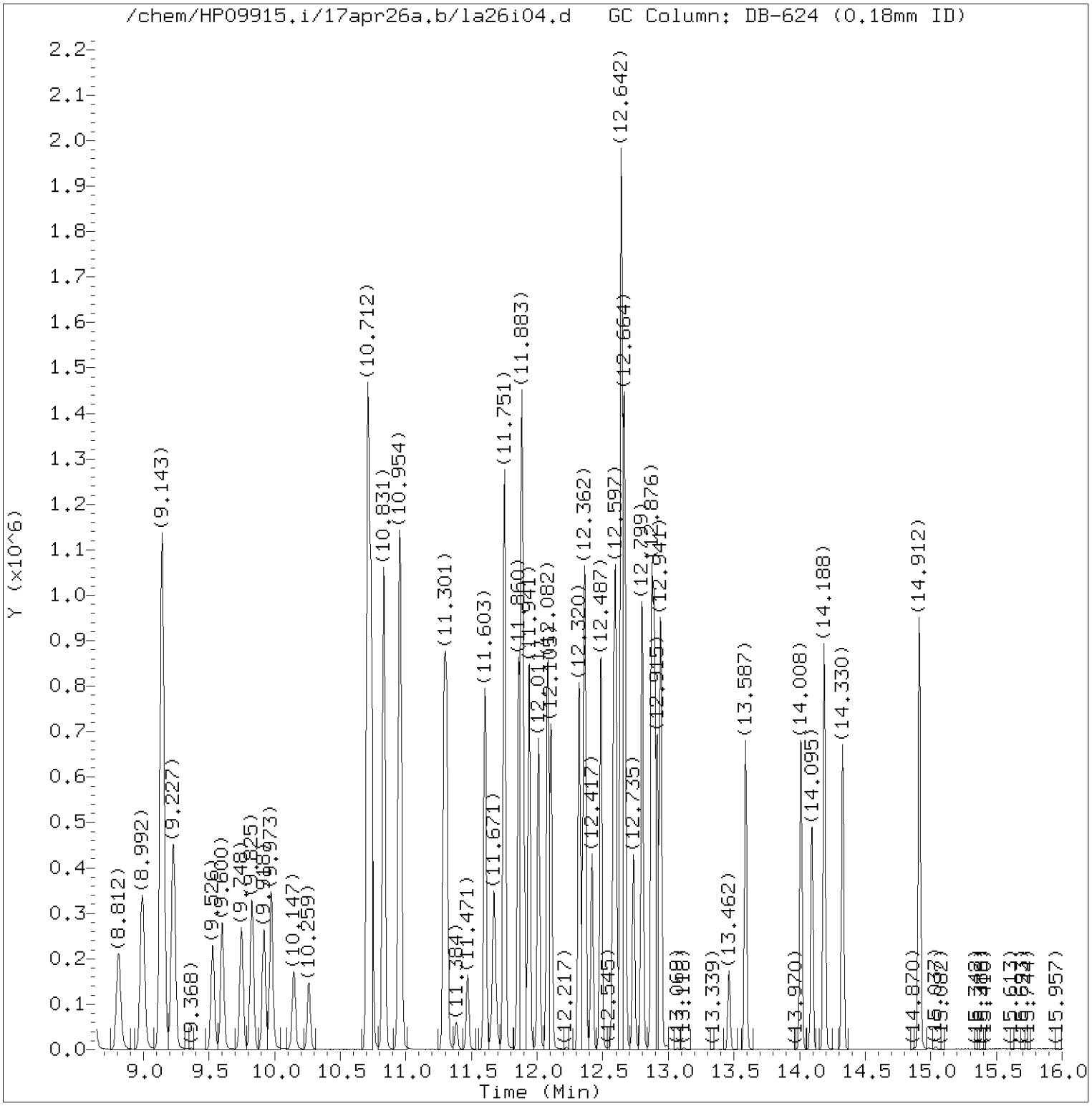
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 118583 | 19.173 |
| 4) Chloromethane | (2) | 1.819 | 50 | 128941 | 20.294 |
| 6) Vinyl Chloride | (2) | 1.935 | 62 | 120731 | 19.678 |
| 5) 1,3-Butadiene | (2) | 1.951 | 39 | 77112 | 20.606 |
| 8) Bromomethane | (2) | 2.208 | 94 | 82440 | 19.978 |
| 9) Chloroethane | (2) | 2.304 | 64 | 69158 | 20.002 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 171864 | 20.378 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 135555 | 19.079 |
| 11) n-Pentane | (2) | 2.594 | 43 | 122151 | 20.876 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 82347 | 20.820 |
| 15) Freon 123a | (2) | 2.829 | 67 | 101357 | 21.421 |
| 16) Acrolein | (1) | 2.909 | 56 | 339968 | 197.002 |
| 17) 1,1-Dichloroethene | (2) | 3.031 | 96 | 78125 | 20.776 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 40512 | 21.281 |
| 18) Acetone | (1) | 3.047 | 58 | 27291 | 36.437 |
| 19) Freon 113 | (2) | 3.060 | 101 | 81156 | 21.442 |
| 21) 2-Propanol | (1) | 3.185 | 45 | 102028M | 205.487 |
| 22) Methyl Iodide | (2) | 3.202 | 142 | 154277 | 21.152 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 258440 | 21.120 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 112854 | 20.678 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 156101 | 20.725 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 210810M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 99182 | 19.966 |
| 30) t-Butyl alcohol | (1) | 3.684 | 59 | 165846 | 203.327 |
| 31) Acrylonitrile | (2) | 3.864 | 53 | 57543 | 20.078 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.928 | 73 | 291785 | 21.181 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 93758 | 21.251 |
| 34) n-Hexane | (2) | 4.324 | 57 | 141702 | 20.952 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 175099 | 21.121 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 338404 | 21.267 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 149170 | 21.331 |
| 40) Ethyl t-butyl ether | (2) | 5.173 | 59 | 293404 | 21.426 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 154336 | 40.218 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 105715 | 20.911 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 117791 | 21.280 |
| 47) Propionitrile | (1) | 5.472 | 54 | 235941 | 198.193 |
| 48) Methacrylonitrile | (2) | 5.697 | 67 | 304947 | 106.722 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 56020 | 21.025 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 38105 | 36.239 |
| 51) Chloroform | (2) | 5.928 | 83 | 166128 | 21.023 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 250917 | 49.492 |
| 52)$Dibromofluoromethane | (2) | 6.150 | 111 | 257391 | 49.544 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 151774 | 21.019 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 199473 | 42.162 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 173572 | 21.111 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 142535 | 20.944 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 50722 | 21.283 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 111699 | 21.191 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 136486 | 21.236 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 151646 | 529.527 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 62253 | 49.379 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 297412 | 49.874 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.619 | 104 | 39719 | 49.671 |
| 60) Benzene | (2) | 6.632 | 78 | 401463 | 21.190 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 62 | 133462 | 20.822 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 13310 | 23.551 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 290768 | 21.394 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1038230 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 152105 | 20.088 |
| 69) n-Butanol | (1) | 7.433 | 56 | 248560 | 1076.679 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 101480 | 20.726 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 182363 | 21.139 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 81992 | 21.061 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 109388 | 21.091 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 44394M | 615.972 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 93921 | 21.156 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 67846 | 20.801 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 122710 | 20.847 |
| 79) 2-Nitropropane | (2) | 8.510 | 41 | 64758 | 38.797 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 85040 | 21.330 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 163005 | 21.247 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 328366 | 41.523 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1021680 | 50.425 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 671346 | 50.293 |
| 88) Toluene | (3) | 9.230 | 92 | 253889 | 21.563 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 141943 | 21.499 |

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020  Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 162375 | 21.835 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 96297 | 21.224 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 112611 | 21.624 |
| 94) 1,3-Dichloropropane | (3) | 9.922 | 76 | 167817 | 21.316 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 247487 | 43.545 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 304948 | 42.746 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 98456 | 20.950 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 106400 | 21.421 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 793538 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 135630 | 20.058 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 291376 | 21.446 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 95498 | 21.285 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 487509 | 21.465 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 379488 | 42.918 |
| 107) o-Xylene | (3) | 11.291 | 106 | 188046 | 21.385 |
| 109) Styrene | (3) | 11.311 | 104 | 319117 | 21.953 |
| 110) Bromoform | (3) | 11.471 | 173 | 71969 | 21.091 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 478133 | 21.275 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 150358 | 553.057 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 378161 | 50.214 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 329178 | 49.831 |
| 108) Xylene (Total) | (3) | | 106 | 567534 | 64.303 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 161347 | 21.366 |
| 115) Bromobenzene | (4) | 11.864 | 156 | 129515 | 21.297 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 232678 | 107.529 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 44888 | 21.028 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 568331 | 21.150 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 117207 | 20.958 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 406477 | 21.213 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 123204 | 21.167 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 85014M | 20.525 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 68219 | 20.861 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 416404 | 21.097 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 508544 | 20.806 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 241164 | 20.830 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 448274 | 20.772 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 425437 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 250724 | 20.943 |

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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

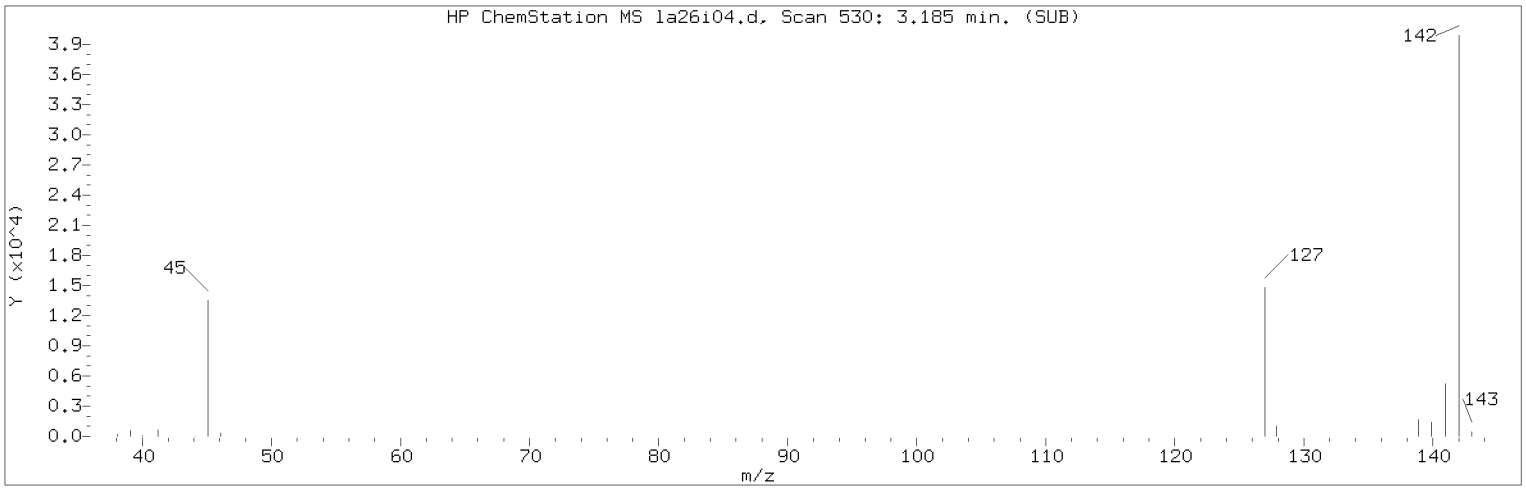
Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 442708 | 21.408 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 258669 | 21.844 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 278453 | 21.596 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 288580 | 21.313 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 220740 | 20.475 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 238492 | 20.956 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 232437 | 21.421 |
| 141) Diethylbenzene (total) | (4) | | 100 | 799470 | 64.331 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 34158 | 21.389 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 186215 | 20.182 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 183451 | 20.496 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 78778 | 20.266 |
| 148) Naphthalene | (4) | 14.188 | 128 | 577965 | 21.399 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 179538 | 20.792 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 382427 | 21.897 |

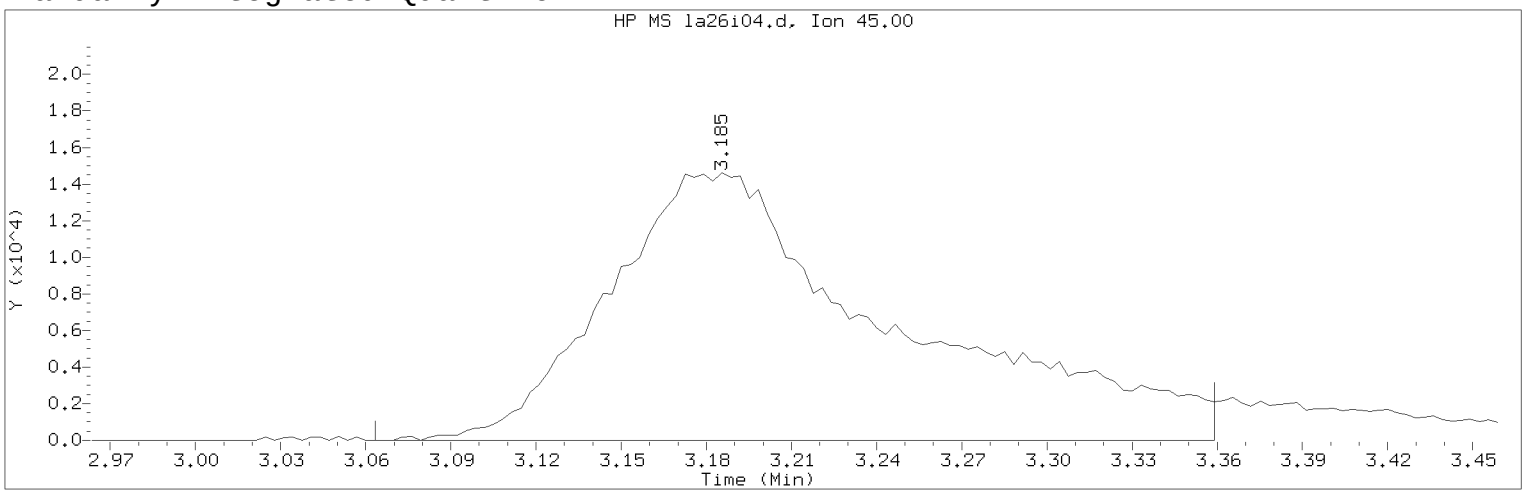


Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

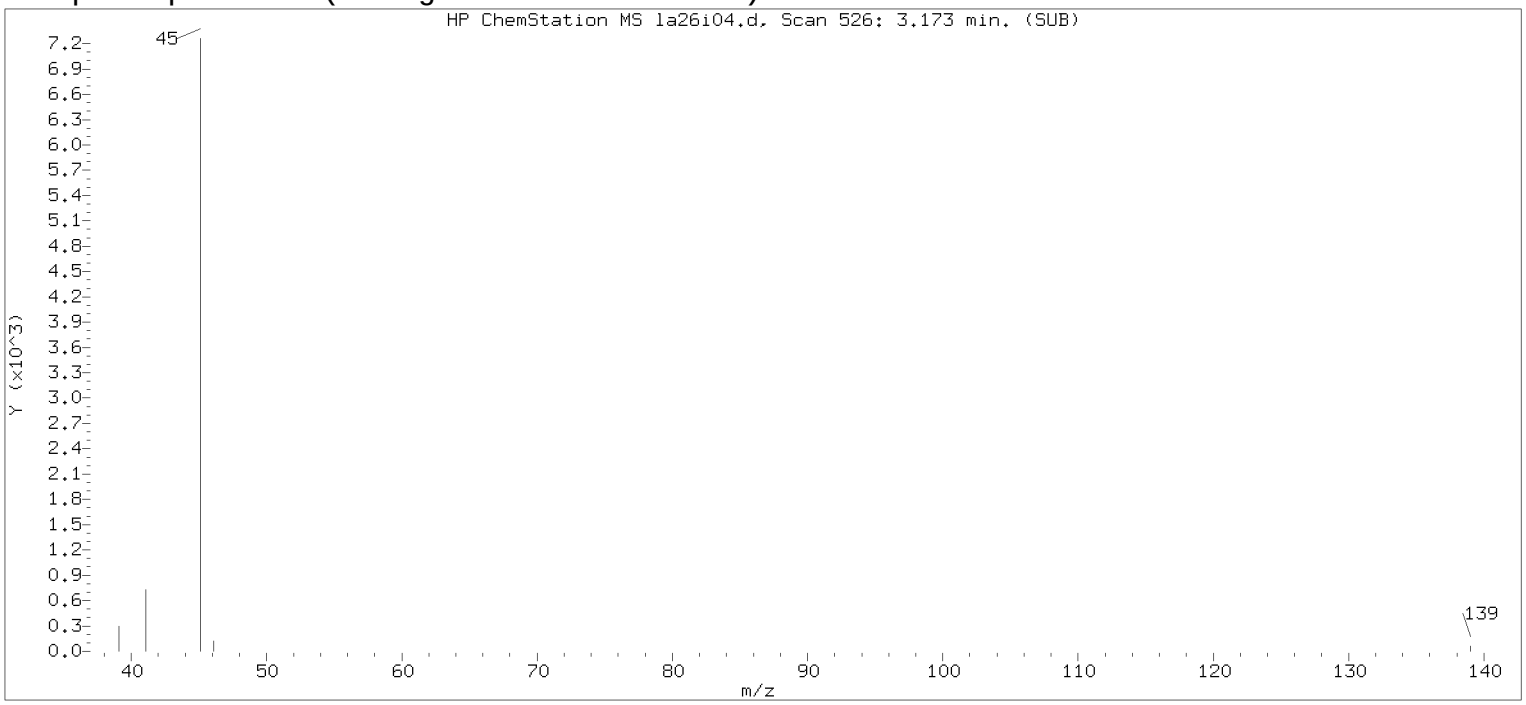
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 530
Retention Time (minutes): 3.185
Quant Ion : 45.00
Area (flag) : 102028M
On-Column Amount (ng) : 205.4874
Integration start scan : 491 Integration stop scan: 583
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

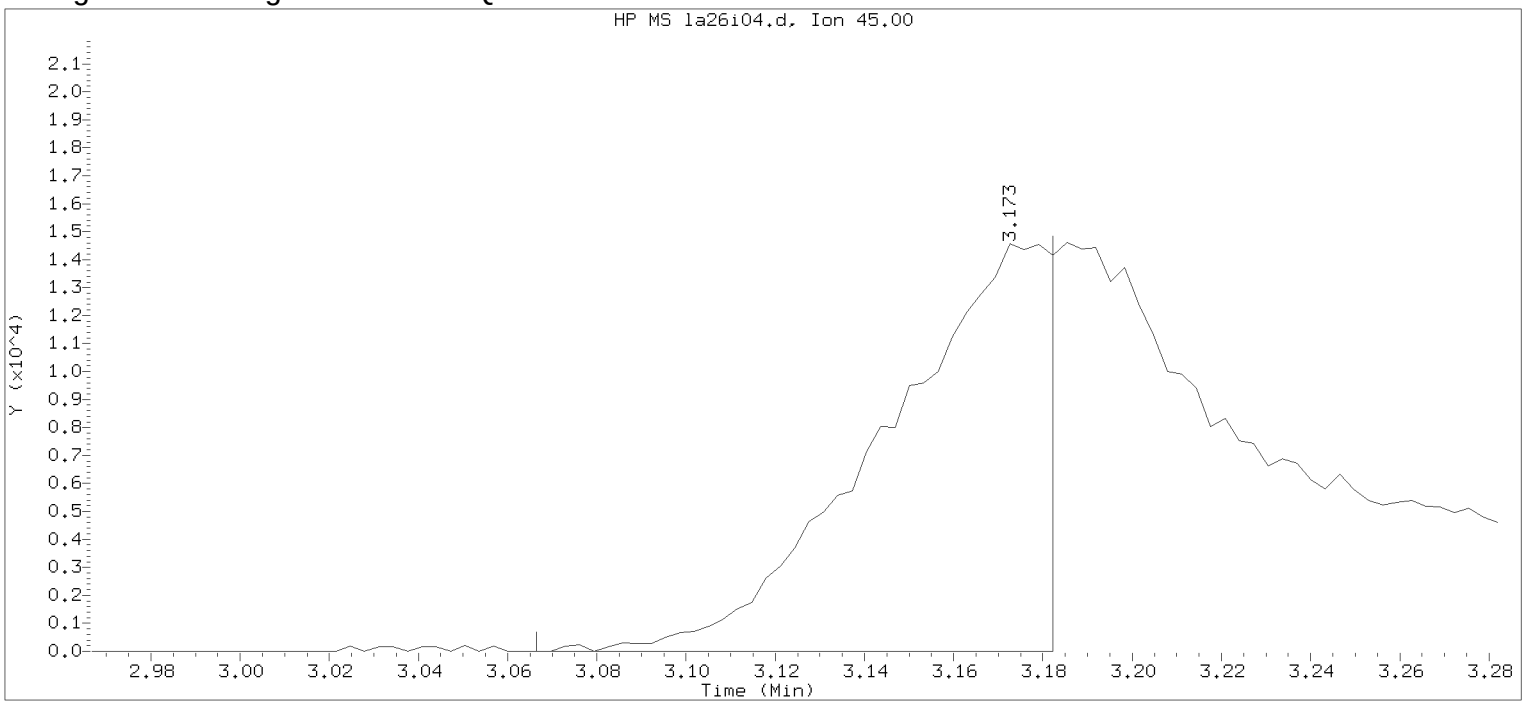
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

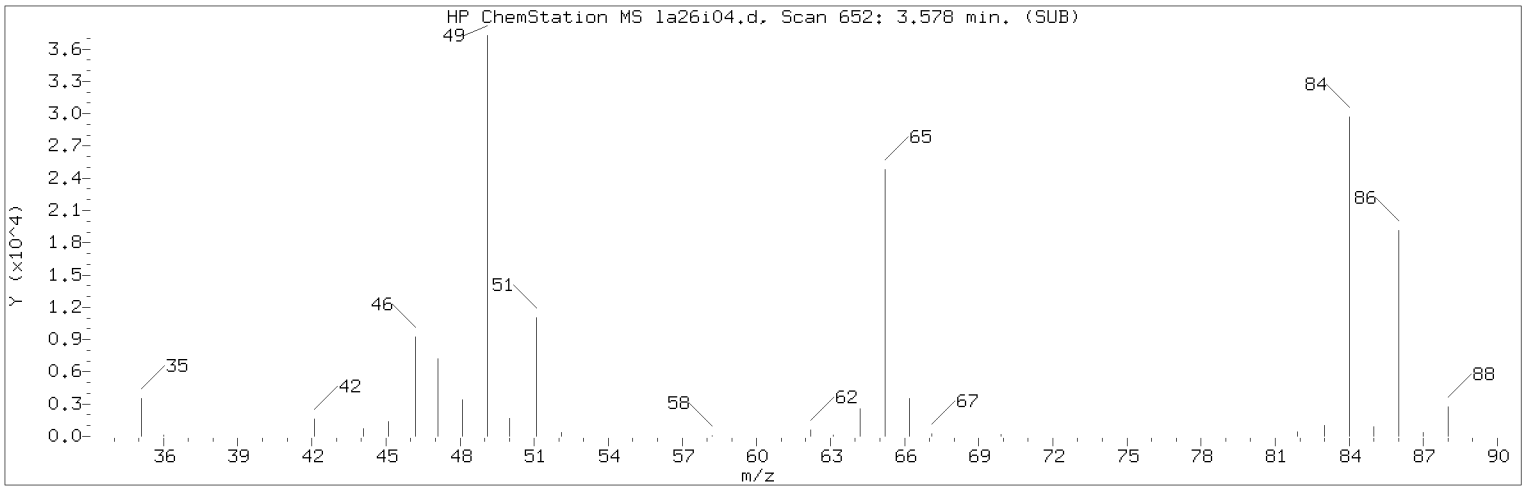
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

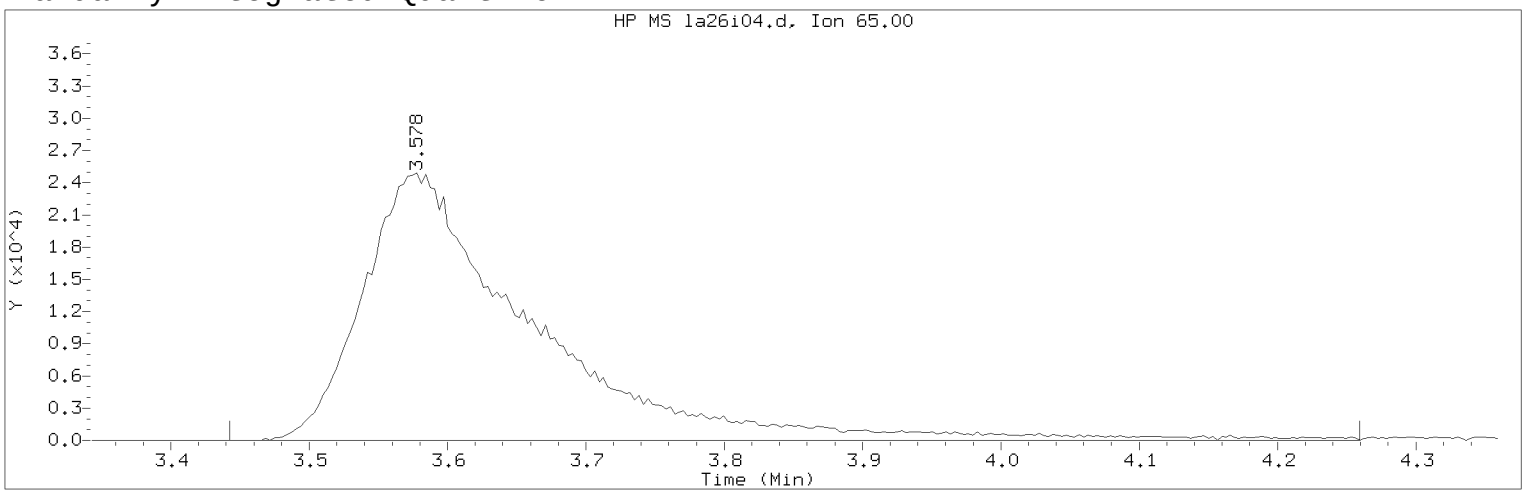
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 526
Retention Time (minutes): 3.173
Quant Ion : 45.00
Area : 36897
On-column Amount (ng) : 95.5026
Integration start scan : 492 Integration stop scan: 528
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

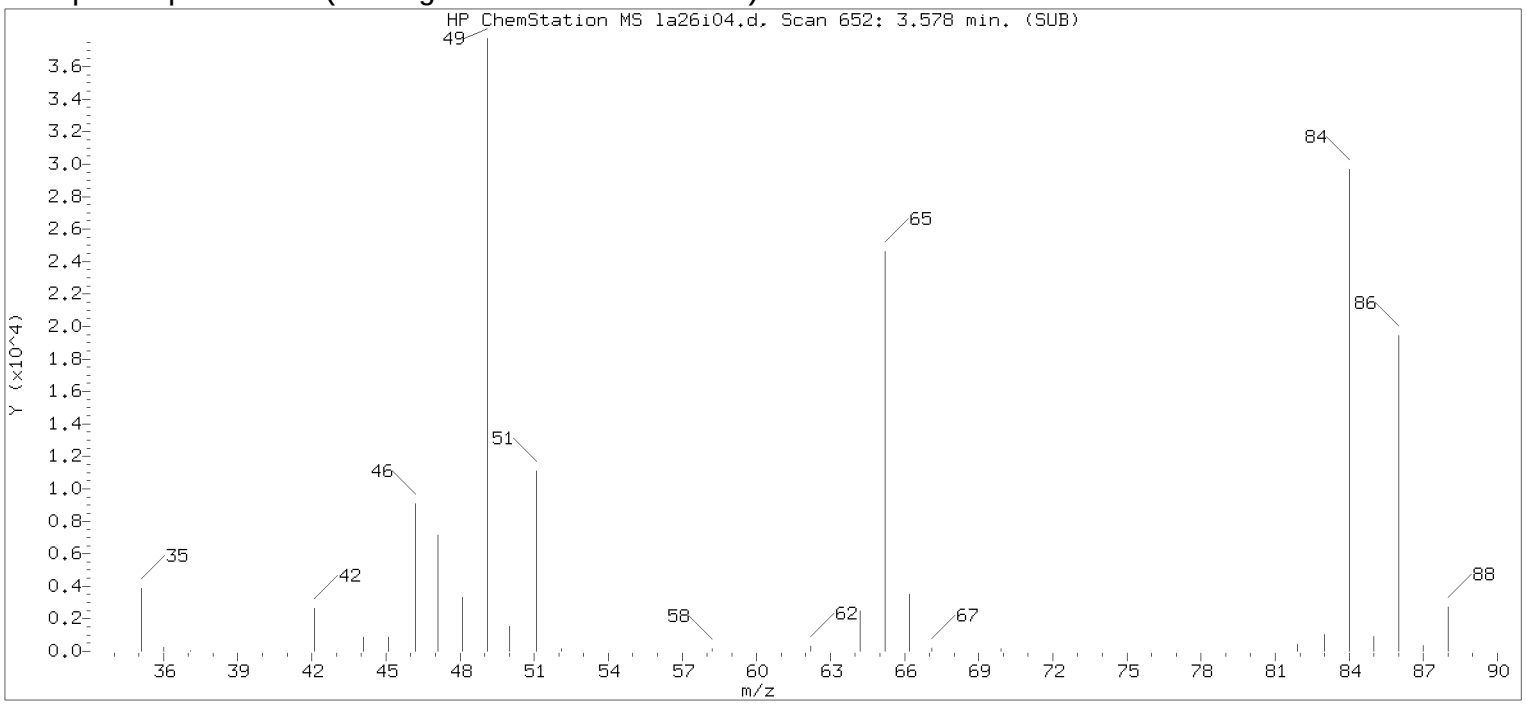
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area (flag) : 210810M
On-Column Amount (ng) : 250.0000
Integration start scan : 609 Integration stop scan: 863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

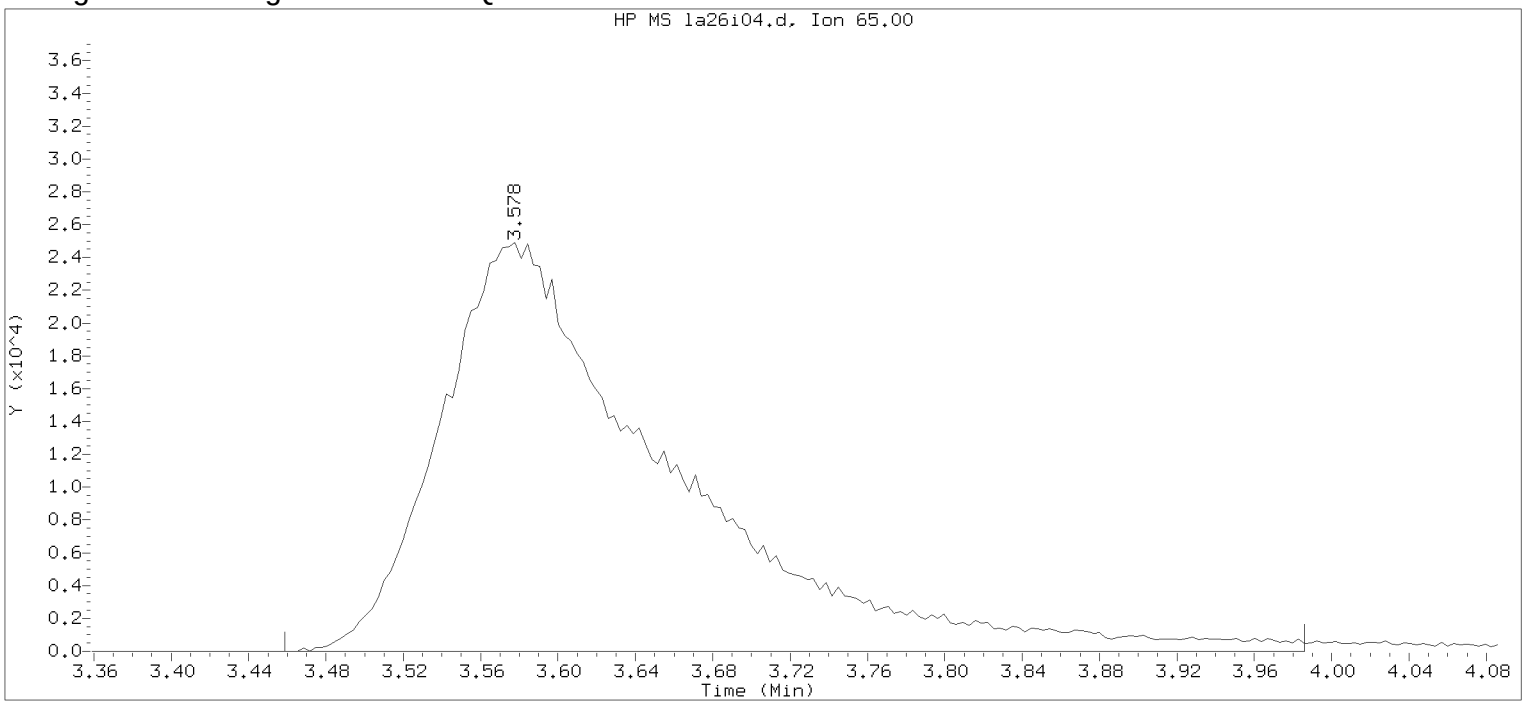
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 205251
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 778
Y at integration start : 0 Y at integration end: 0

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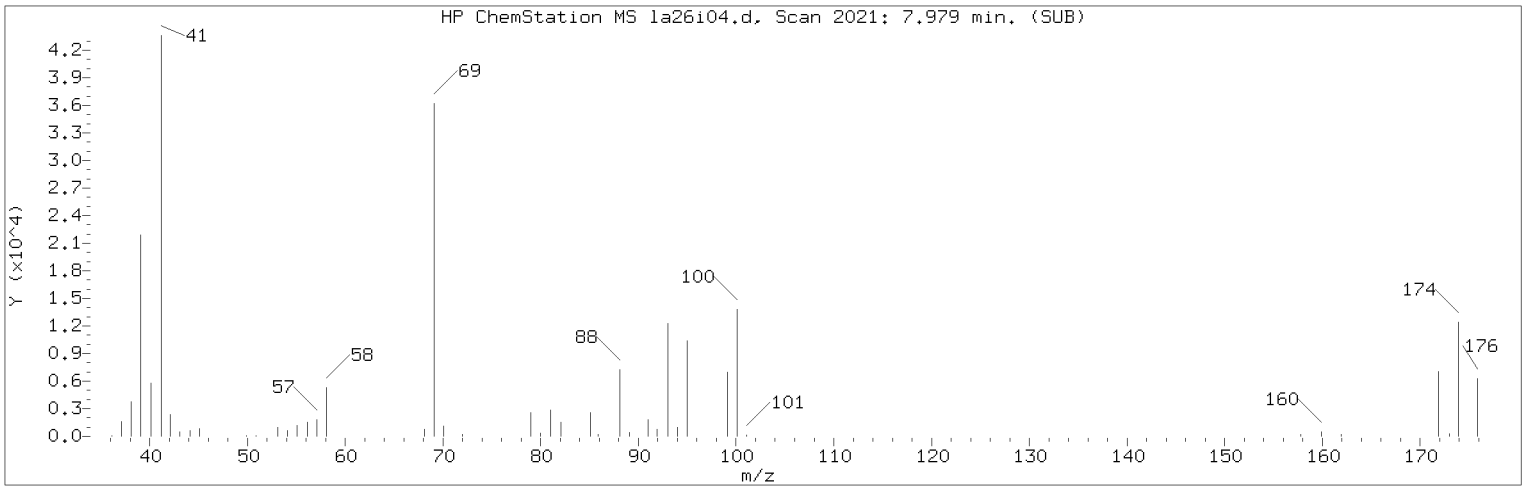
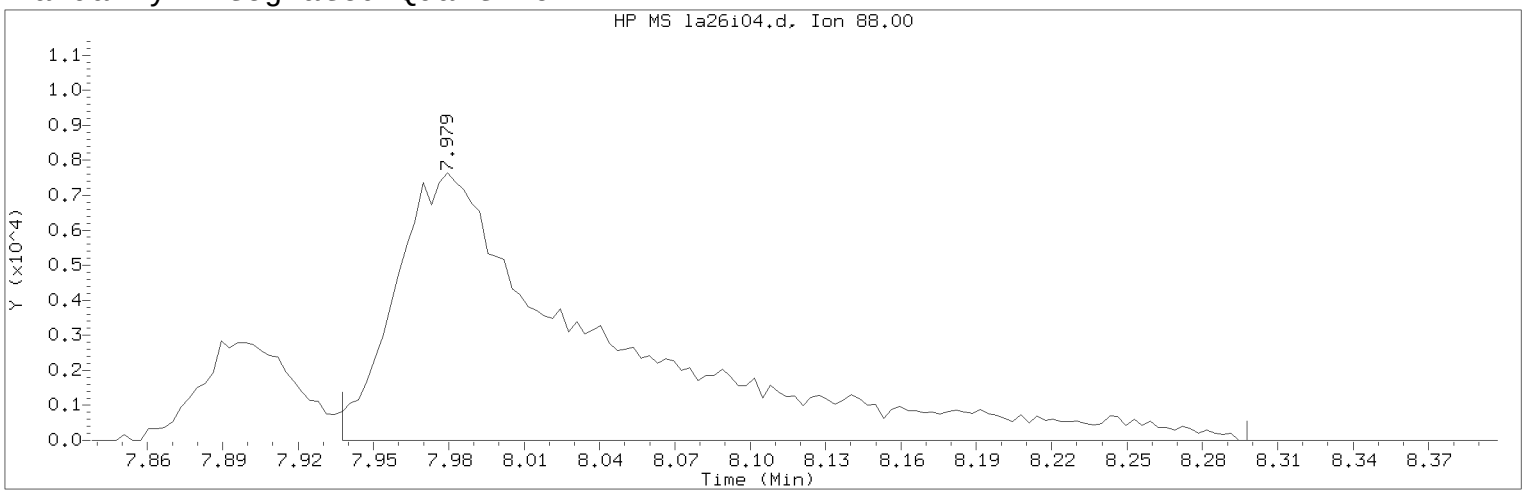
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

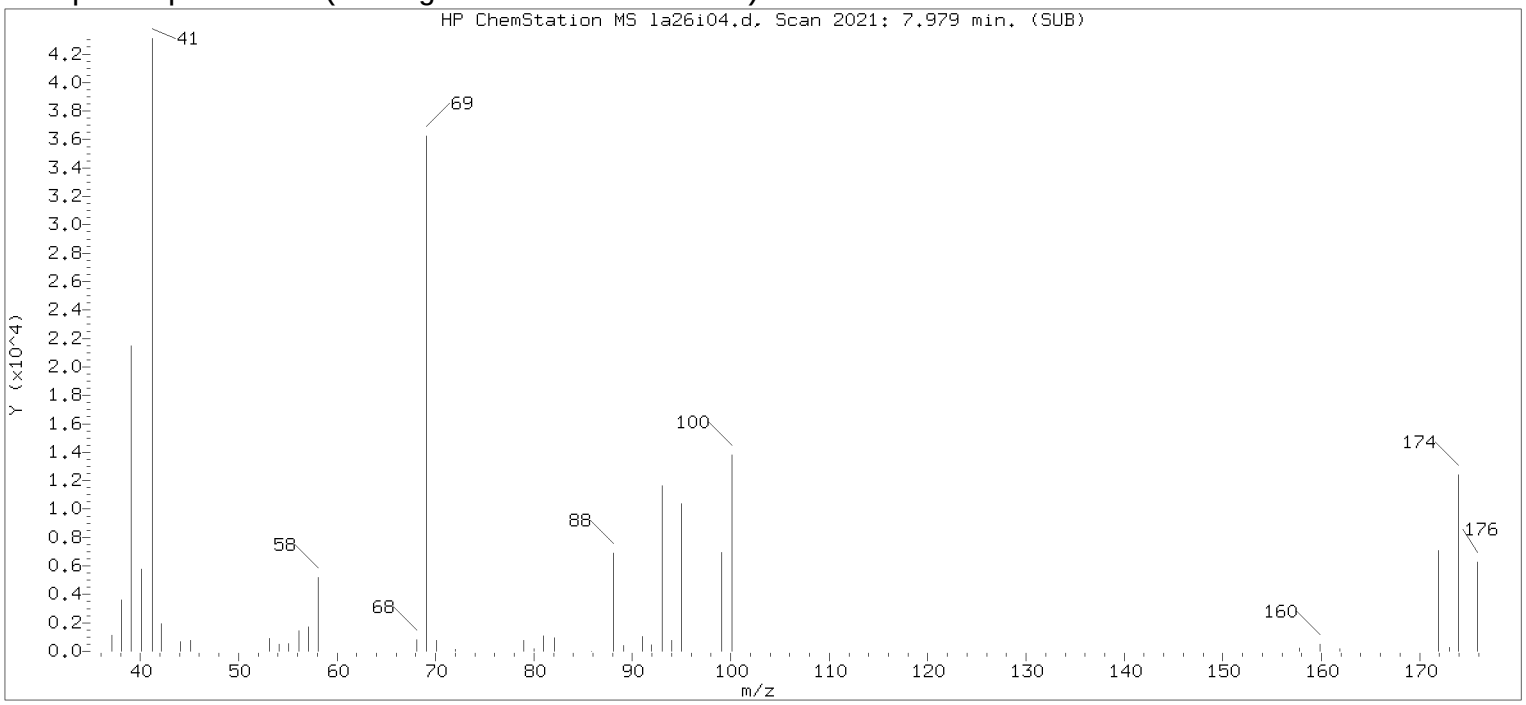
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area (flag) : 44394M
On-Column Amount (ng) : 615.9721
Integration start scan : 2007 Integration stop scan: 2119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

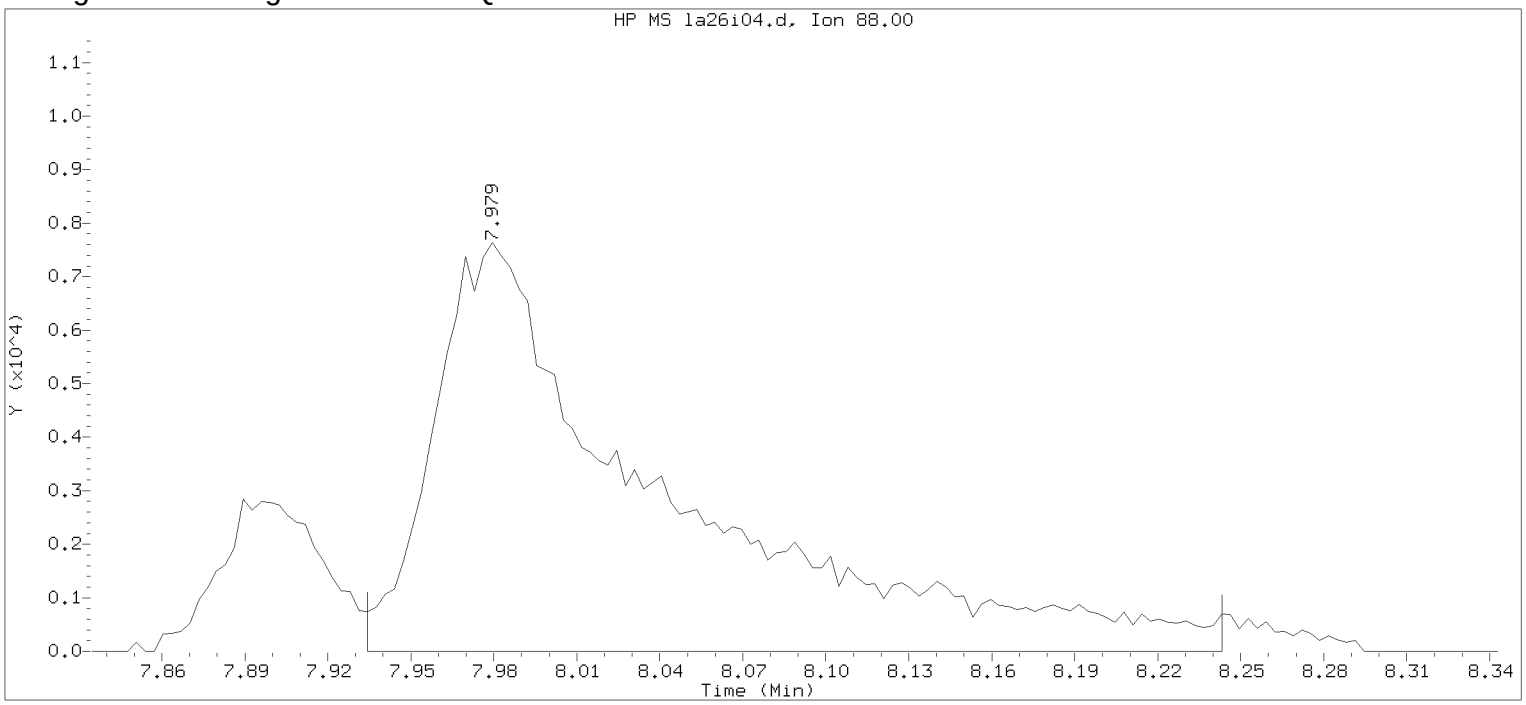
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area : 43334
On-column Amount (ng) : 533.8251
Integration start scan : 2006 Integration stop scan: 2102
Y at integration start : 0 Y at integration end: 0

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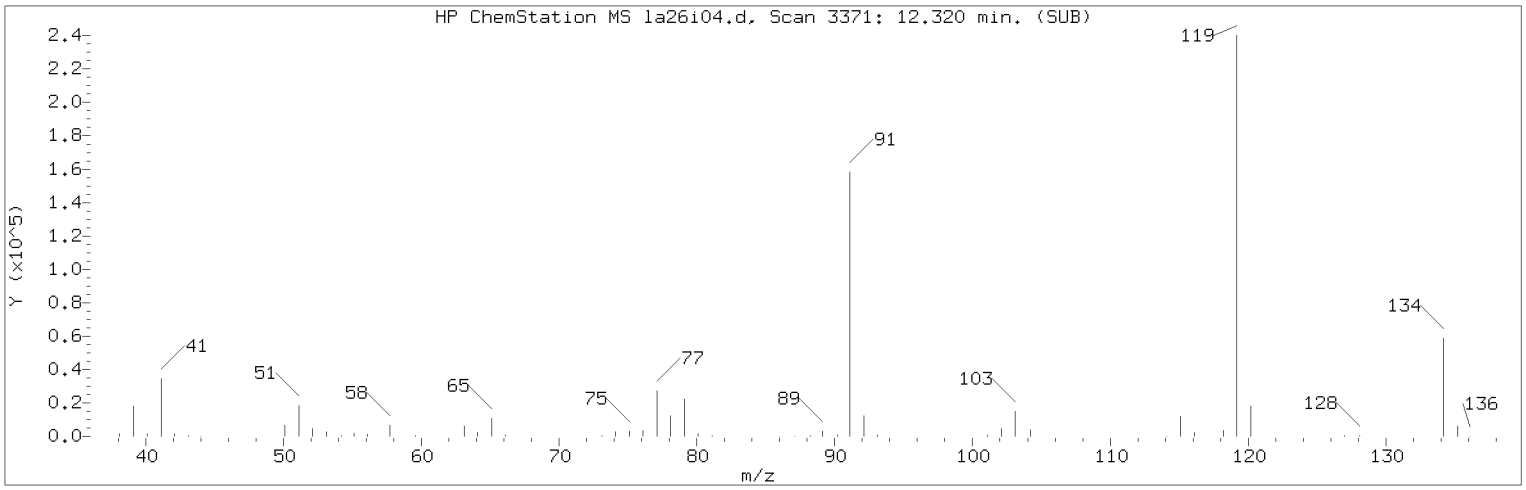
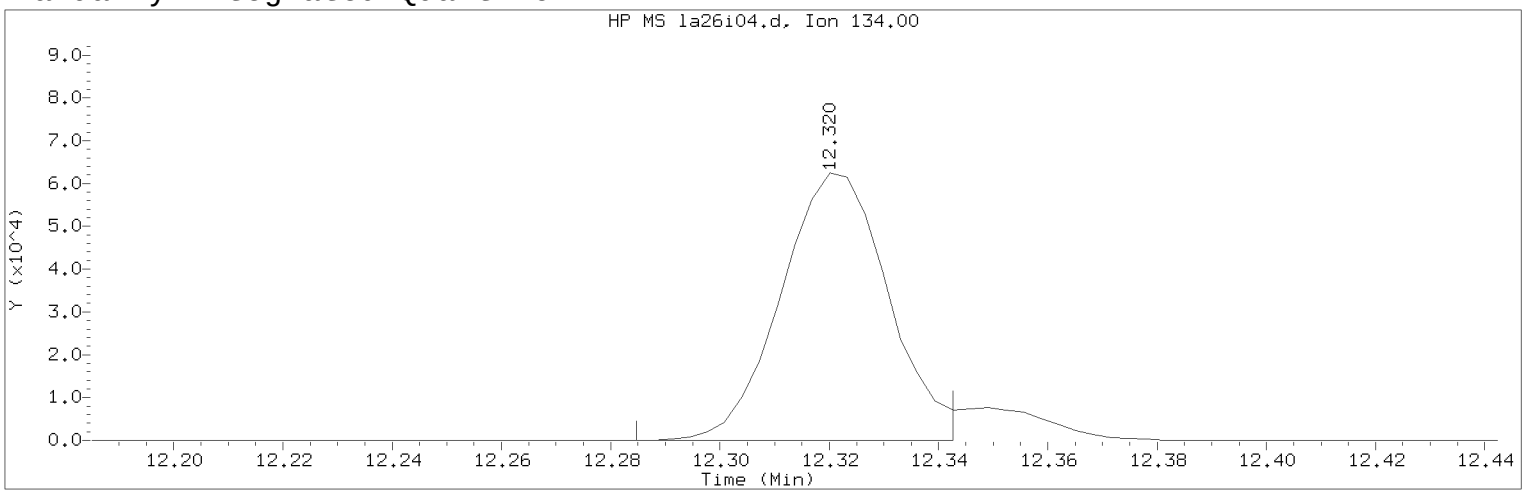
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

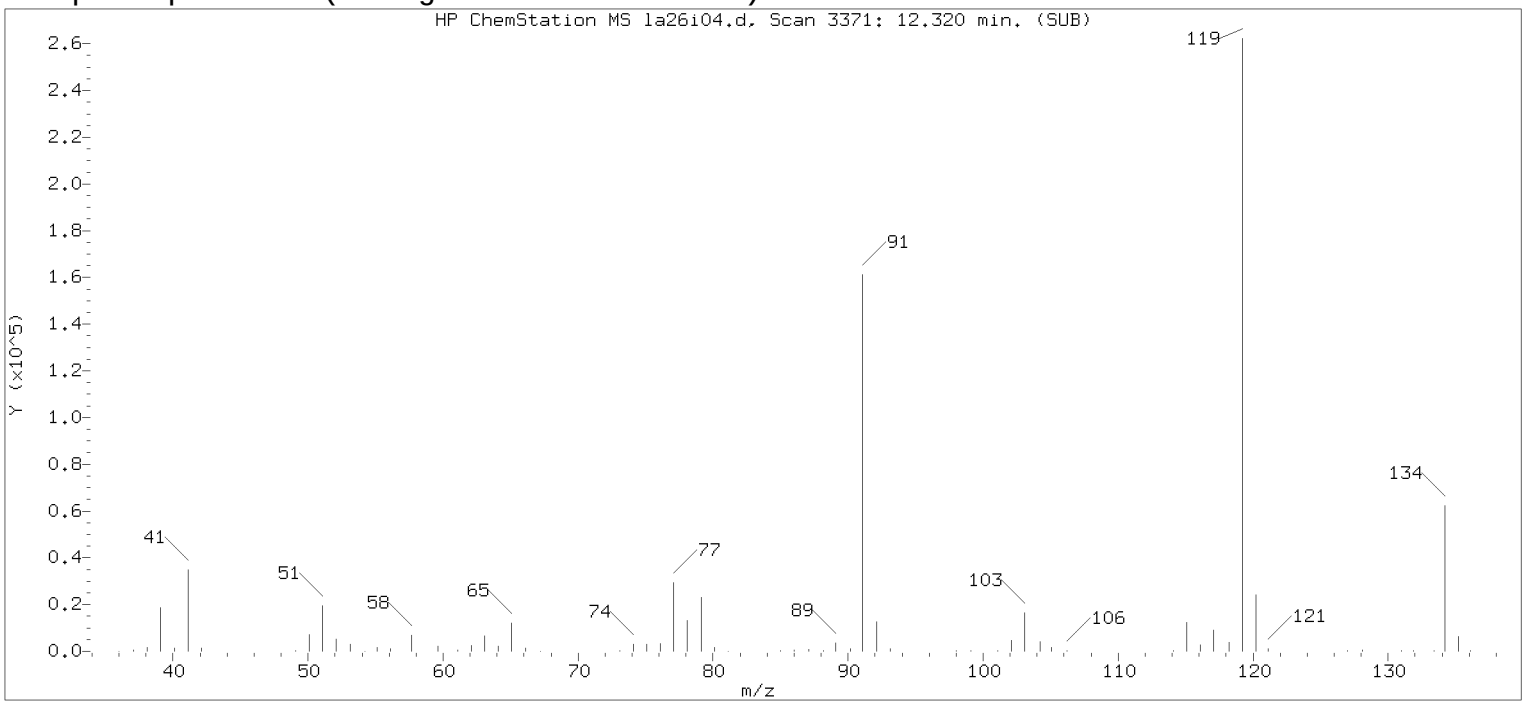
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 85014M
On-Column Amount (ng) : 20.5247
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

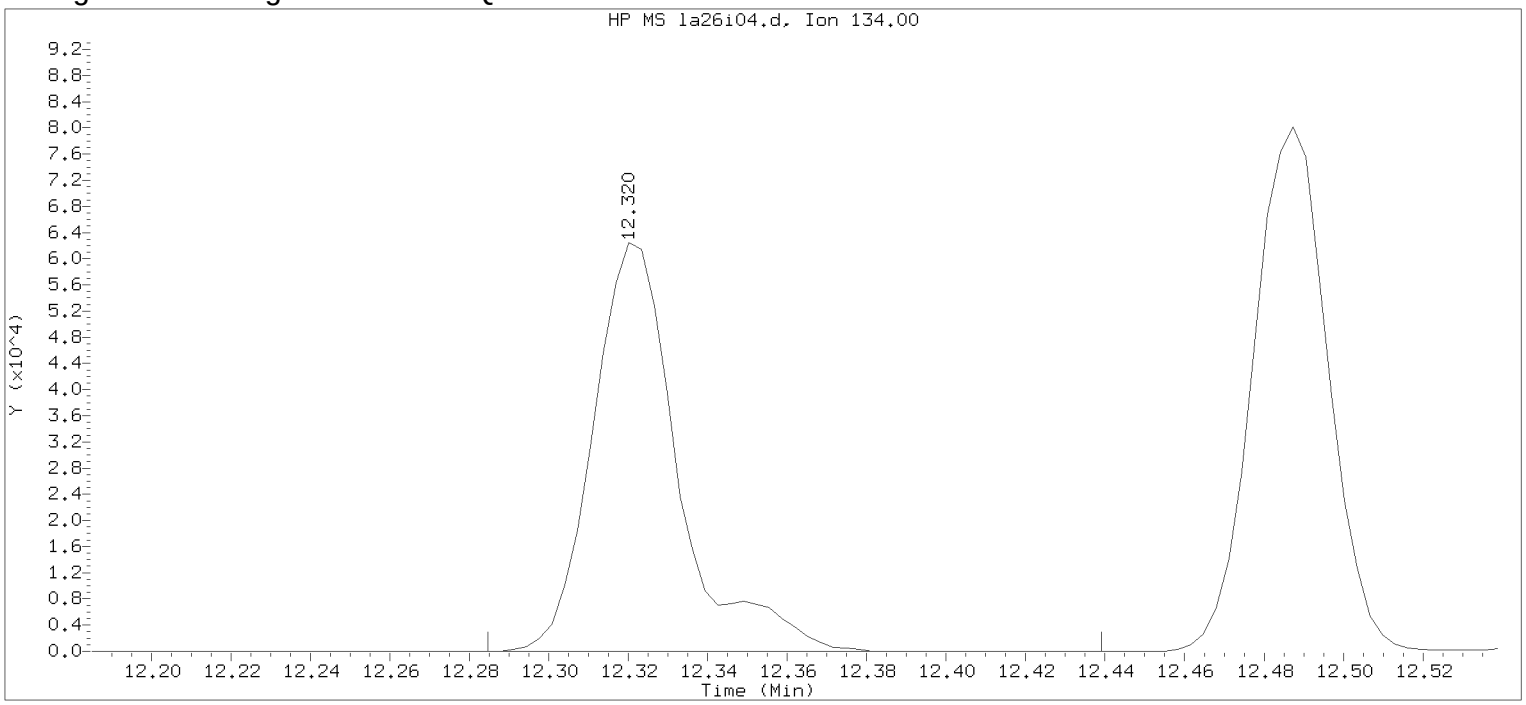
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



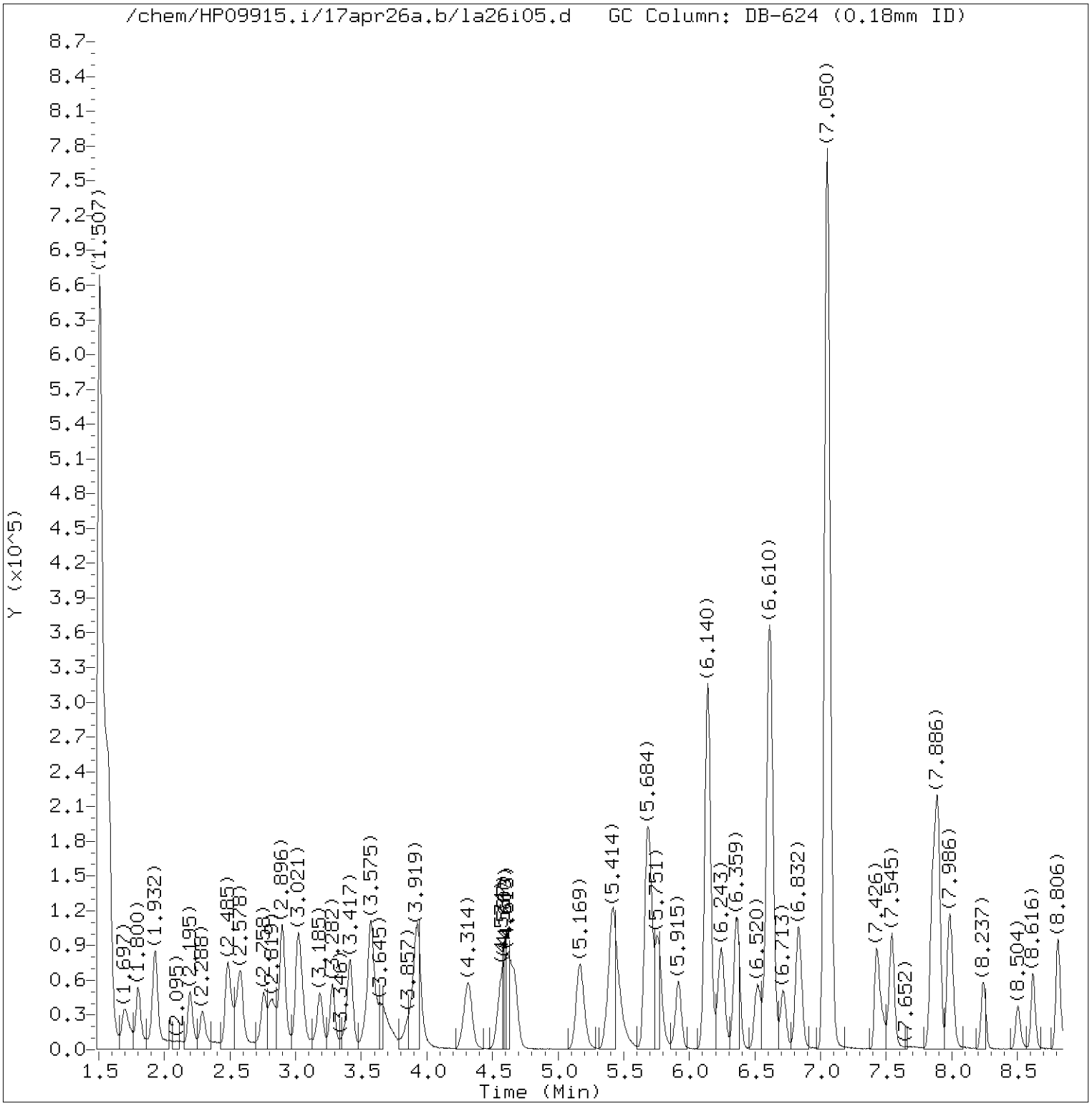

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 93218
On-column Amount (ng) : 20.3163
Integration start scan : 3359 Integration stop scan: 3407
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 146 of 594




Total Ion Chromatogram (TIC)

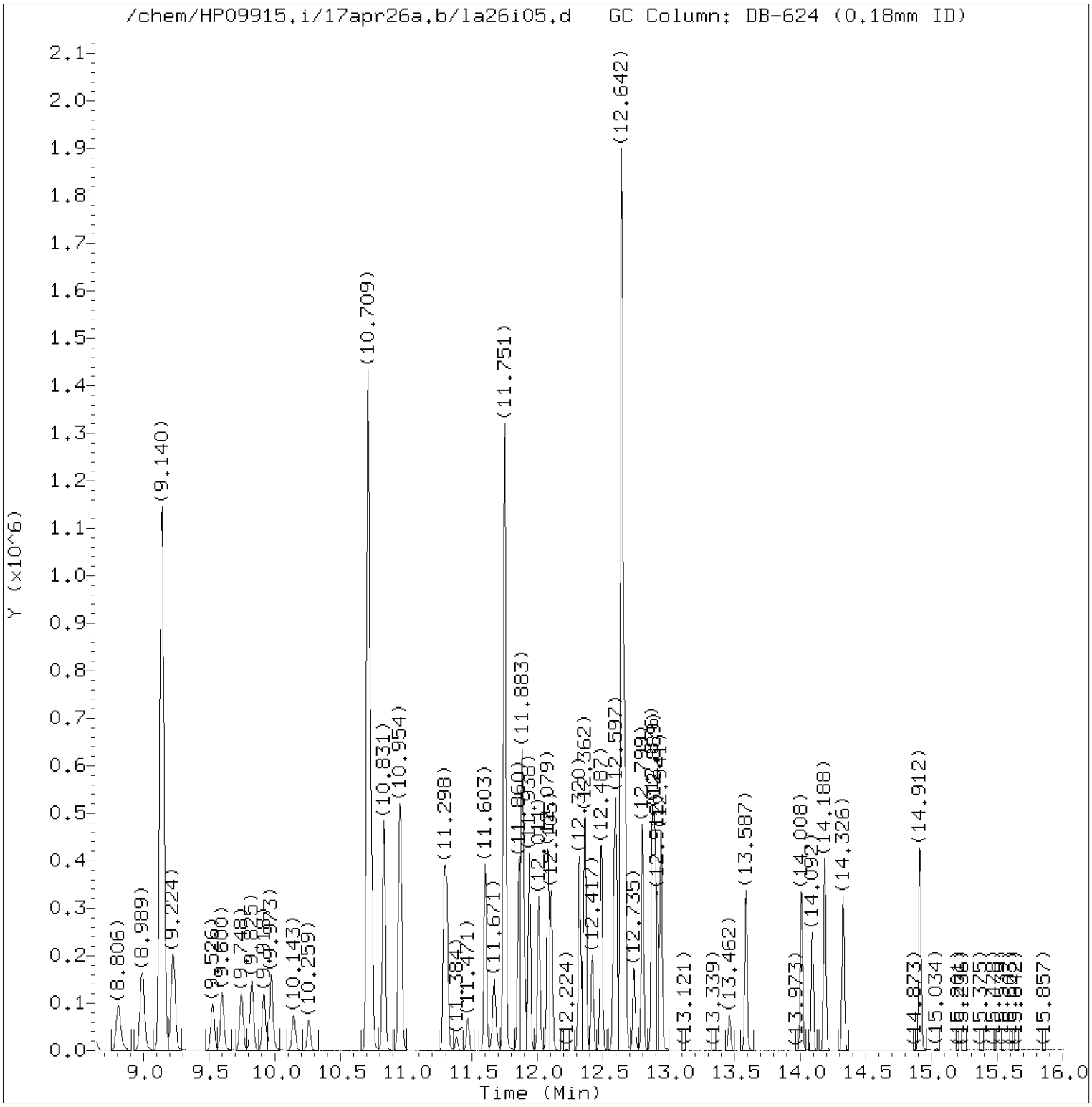
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.694 | 85 | 59129 | 9.454 |
| 4) Chloromethane | (2) | 1.800 | 50 | 62392 | 9.710 |
| 6) Vinyl Chloride | (2) | 1.915 | 62 | 59051 | 9.517 |
| 5) 1,3-Butadiene | (2) | 1.935 | 39 | 33003 | 8.720 |
| 8) Bromomethane | (2) | 2.195 | 94 | 41463M | 9.935 |
| 9) Chloroethane | (2) | 2.288 | 64 | 34369 | 9.829 |
| 10) Dichlorofluoromethane | (2) | 2.485 | 67 | 82511 | 9.674 |
| 12) Trichlorofluoromethane | (2) | 2.536 | 101 | 68090 | 9.477 |
| 11) n-Pentane | (2) | 2.584 | 43 | 53715 | 9.078 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 37841 | 9.460 |
| 15) Freon 123a | (2) | 2.812 | 67 | 43016 | 8.990 |
| 16) Acrolein | (1) | 2.896 | 56 | 159296 | 99.869 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 96 | 34274 | 9.013 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 17277 | 8.974 |
| 18) Acetone | (1) | 3.038 | 58 | 14831M | 21.423 |
| 19) Freon 113 | (2) | 3.044 | 101 | 34042 | 8.894 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 44925M | 97.891 |
| 22) Methyl Iodide | (2) | 3.185 | 142 | 67573 | 9.161 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 109946 | 8.884 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 53241 | 9.646 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 72375 | 9.502 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 194850M | 250.000 |
| 28) Methylene Chloride | (2) | 3.575 | 84 | 45146 | 8.987 |
| 30) t-Butyl alcohol | (1) | 3.665 | 59 | 75108M | 99.625 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 29199 | 10.074 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.909 | 73 | 131184 | 9.417 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 41659 | 9.337 |
| 34) n-Hexane | (2) | 4.314 | 57 | 66816 | 9.769 |
| 36) 1,1-Dichloroethane | (2) | 4.555 | 63 | 77409 | 9.233 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 151698 | 9.427 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.668 | 53 | 64336 | 9.097 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 130812 | 9.446 |
| 44) 2-Butanone | (2) | 5.382 | 43 | 78761 | 20.295 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 46779 | 9.150 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 50428 | 9.009 |
| 47) Propionitrile | (1) | 5.459 | 54 | 106892 | 97.145 |
| 48) Methacrylonitrile | (2) | 5.681 | 67 | 139926 | 48.423 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 26022 | 9.657 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 19359 | 19.919 |
| 51) Chloroform | (2) | 5.915 | 83 | 73627 | 9.213 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 256526 | 50.033 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 111 | 263734 | 50.197 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 67074 | 9.185 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 88438 | 18.487 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 76539 | 9.205 |
| 54) Cyclohexane | (2) | 6.246 | 84 | 62394 | 9.066 |
| 54) Cyclohexane | (2) | 6.243 | 69 | 21874 | 9.076 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 46720 | 8.764 |
| 55) 1,1-Dichloropropene | (2) | 6.359 | 75 | 59578 | 9.166 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 64054 | 241.988 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63277 | 49.631 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 65 | 305872 | 50.719 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 41354 | 51.137 |
| 60) Benzene | (2) | 6.632 | 78 | 179018 | 9.343 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 61212 | 9.443 |
| 61) 1,2-Dichloroethane | (2) | 6.709 | 98 | 5860 | 10.253 |
| 65) t-Amyl methyl ether | (2) | 6.828 | 73 | 127821 | 9.300 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1049965 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 73529 | 9.602 |
| 69) n-Butanol | (1) | 7.426 | 56 | 99502 | 466.313 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 45597 | 9.209 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 78864 | 9.040 |
| 72) Methylcyclohexane | (2) | 7.851 | 98 | 35389 | 8.989 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 49507 | 9.439 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 15525M | 233.055 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 41640M | 9.275 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 30502 | 9.247 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 53652 | 9.013 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 31065 | 18.403 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 38546 | 9.560 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 70800 | 9.125 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 159436 | 19.936 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1032472 | 50.129 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 677627 | 49.938 |
| 88) Toluene | (3) | 9.224 | 92 | 113958 | 9.521 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 61223 | 9.122 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 71393 | 9.444 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 44018 | 9.544 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 51504 | 9.729 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 75121 | 9.387 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 116413 | 20.149 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 132023 | 18.248 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 42605 | 8.918 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 48002 | 9.507 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 806654 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 65231 | 9.490 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 131328 | 9.509 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 41501 | 9.100 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 224396 | 9.719 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 173163 | 19.266 |
| 107) o-Xylene | (3) | 11.291 | 106 | 86473 | 9.674 |
| 109) Styrene | (3) | 11.311 | 104 | 143254 | 9.695 |
| 110) Bromoform | (3) | 11.471 | 173 | 30332 | 8.744 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 229604 | 10.051 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 63246 | 251.691 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 383820 | 50.137 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 336286 | 50.079 |
| 108) Xylene (Total) | (3) | | 106 | 259636 | 28.939 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 73056 | 9.576 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 58282 | 9.486 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 105547 | 48.281 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 20738 | 9.616 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 280075 | 10.317 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 56022 | 9.915 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 197456 | 10.200 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 57797 | 9.829 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 41143M | 9.832 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 30142 | 9.123 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 202204 | 10.140 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 255110 | 10.331 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 115818 | 9.902 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 223274 | 10.241 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 429808 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 119475 | 9.878 |

M = Compound was manually integrated.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 208329 | 9.972 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 103198 | 8.626 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 129904 | 9.973 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 137007 | 10.016 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 112742 | 10.351 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 112538 | 9.788 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 109919 | 10.027 |
| 141) Diethylbenzene (total) | (4) | | 100 | 376830 | 30.016 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 15055 | 9.331 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 94185 | 10.104 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 91035 | 10.067 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 39102 | 9.957 |
| 148) Naphthalene | (4) | 14.188 | 128 | 269332 | 9.871 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 88643 | 10.161 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 172519 | 9.778 |



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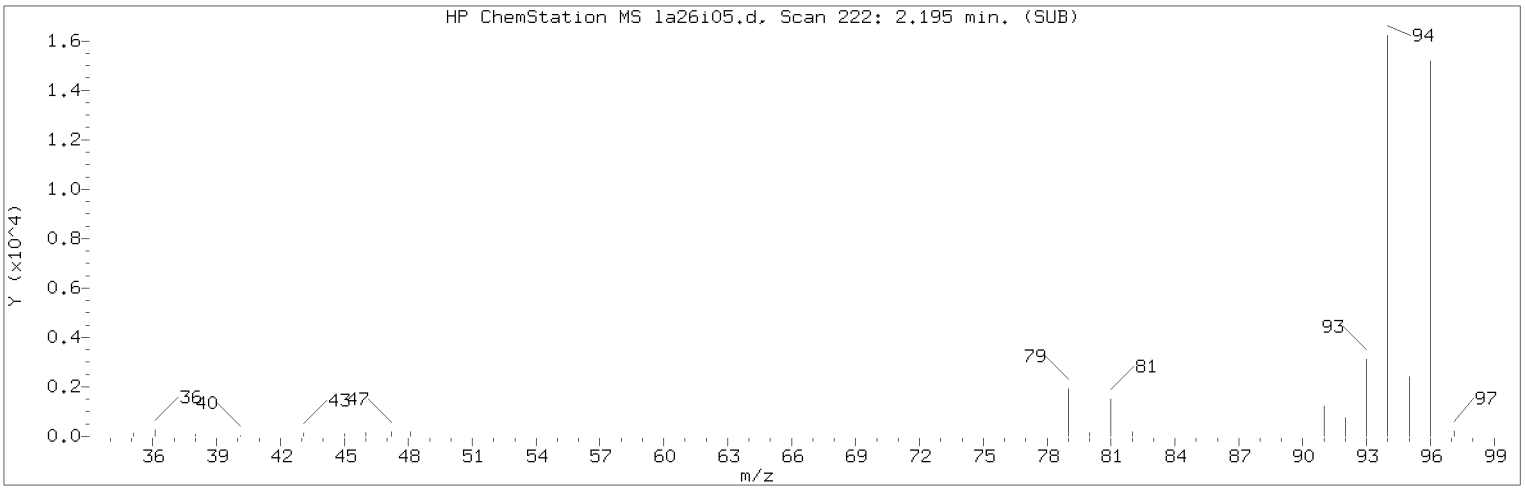
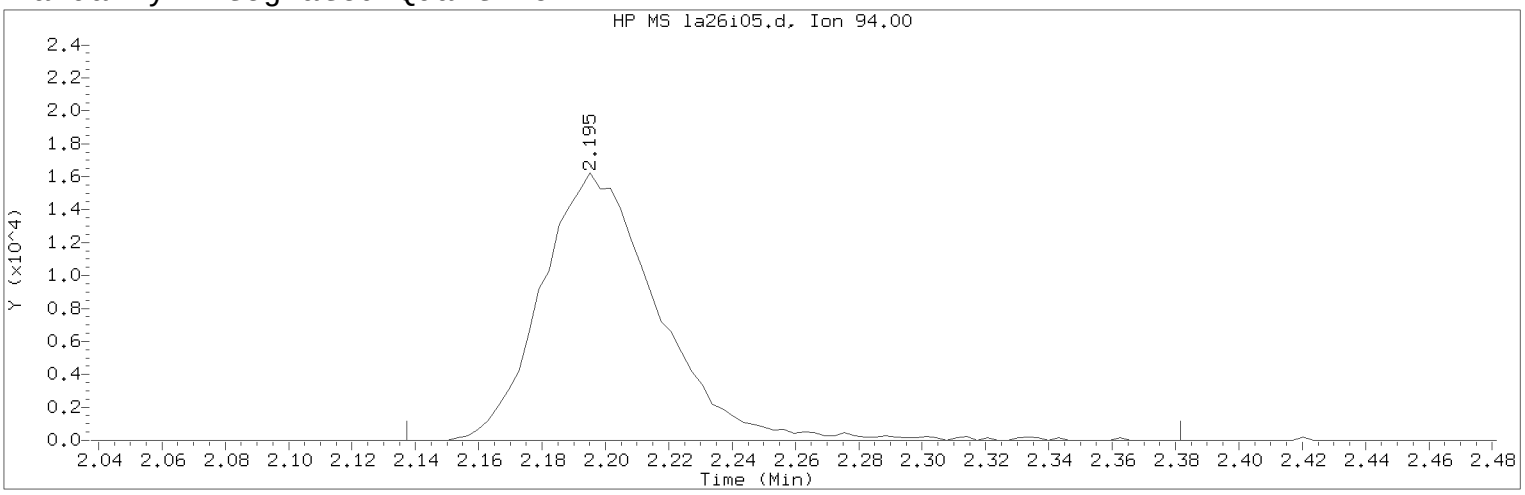
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

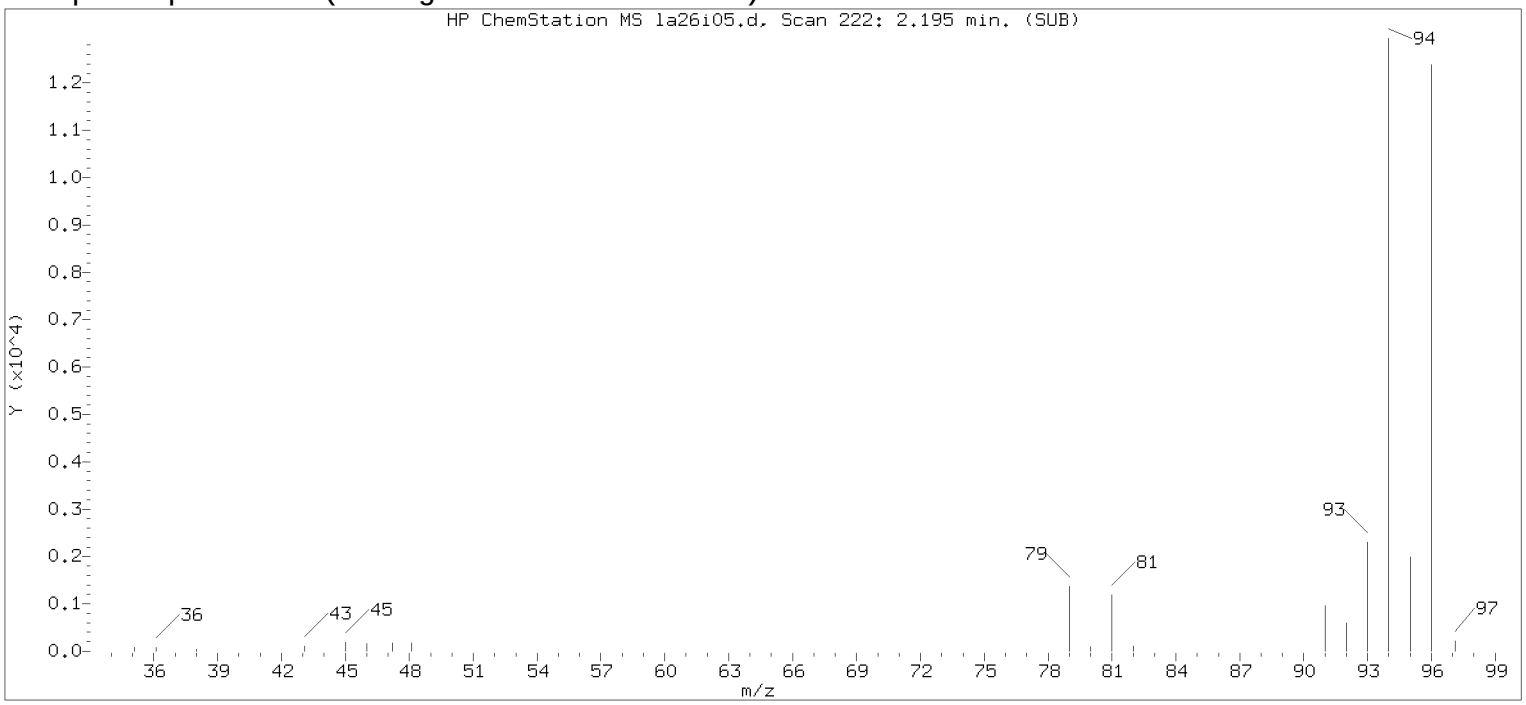
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area (flag) : 41463M
On-Column Amount (ng) : 9.9355
Integration start scan : 203 Integration stop scan: 279
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

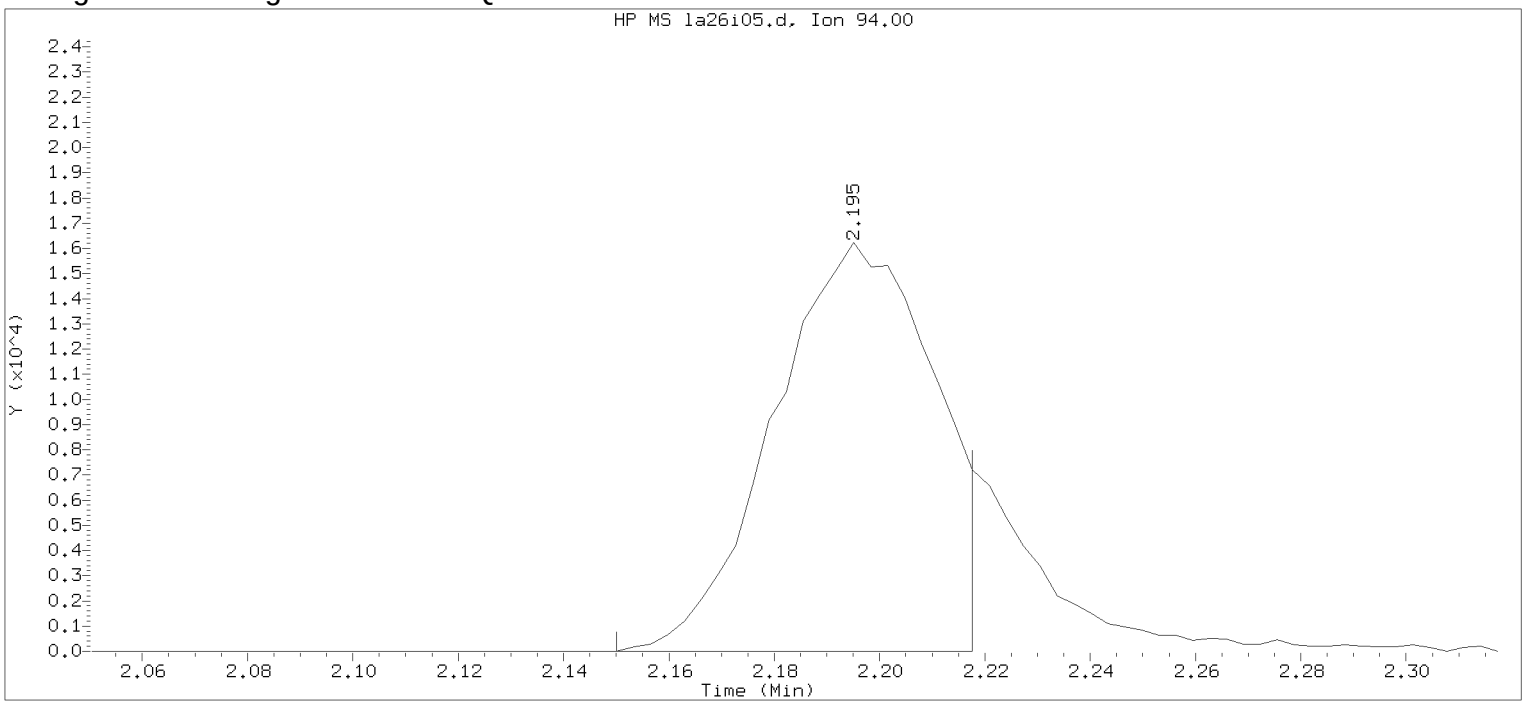
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 34035
On-column Amount (ng) : 8.6274
Integration start scan : 207 Integration stop scan: 228
Y at integration start : 0 Y at integration end: 0

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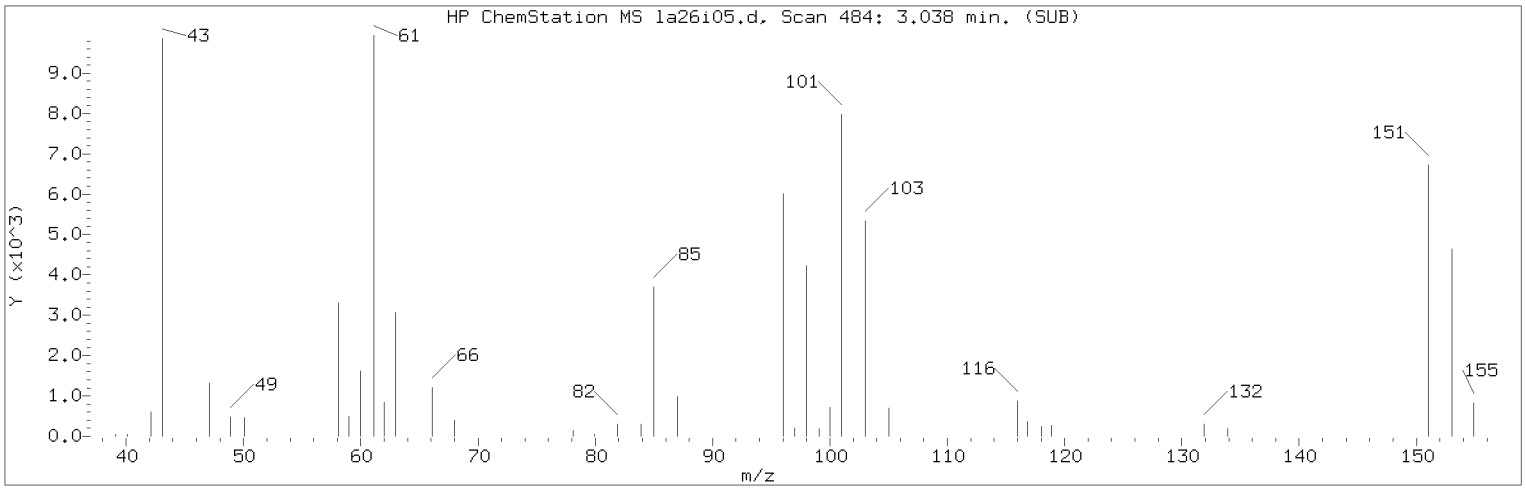
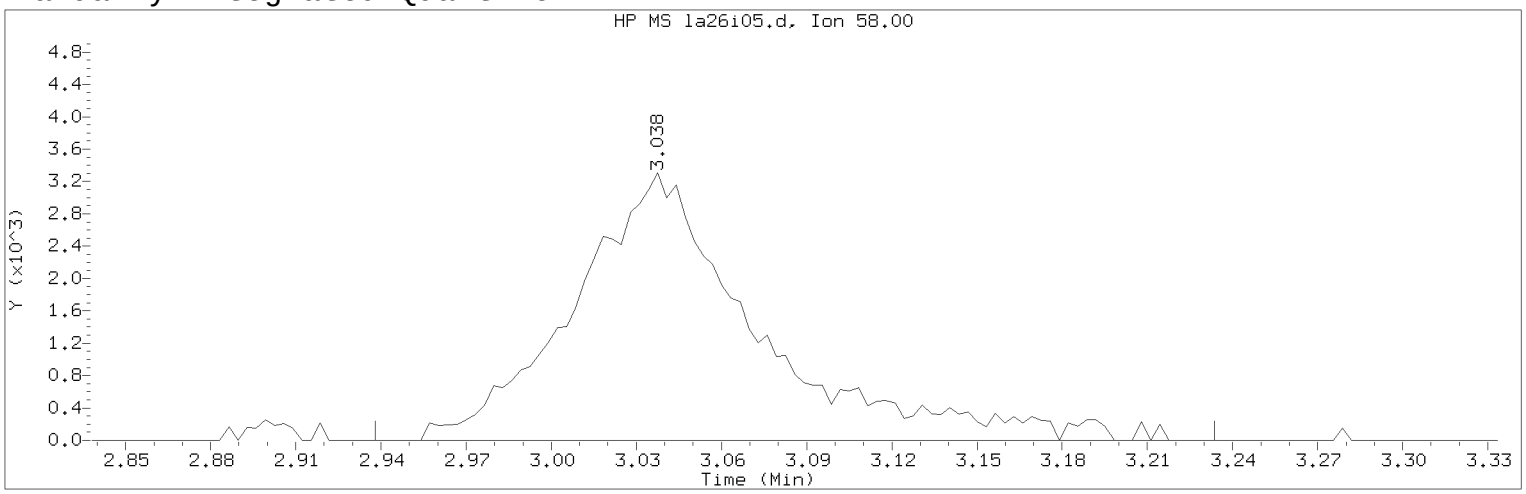
Target 3.5 esignature userKAS02648 Page 174

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

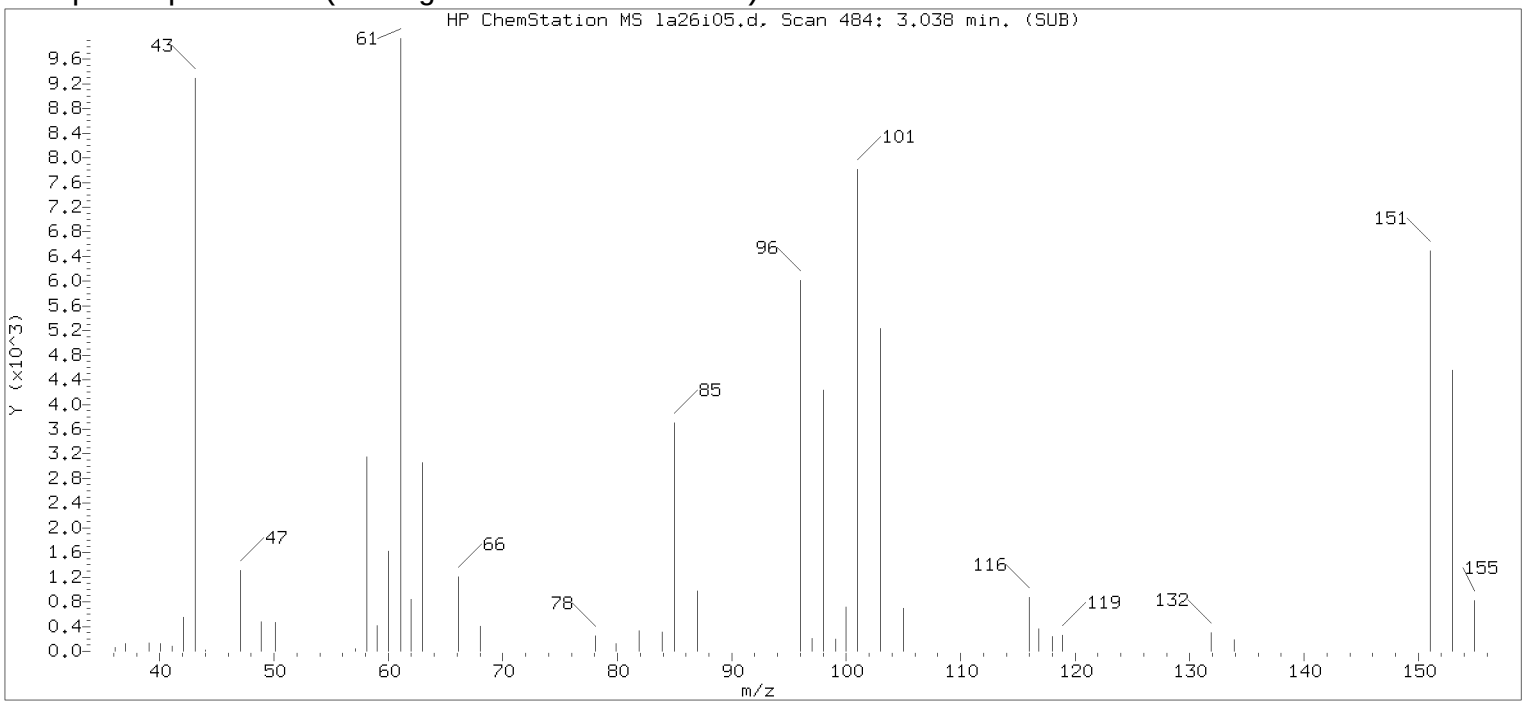
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area (flag) : 14831M
On-Column Amount (ng) : 21.4232
Integration start scan : 452 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

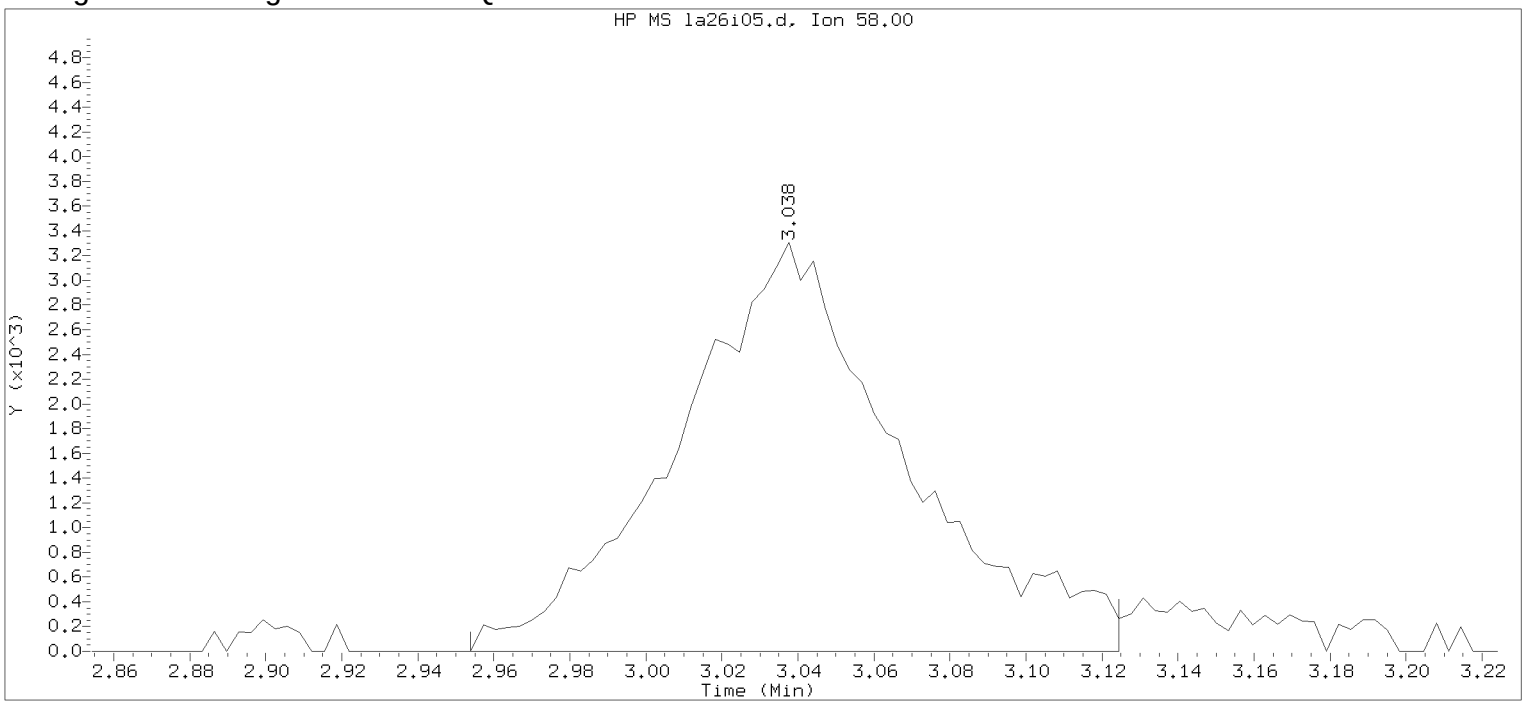
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area : 13613
On-column Amount (ng) : 19.2845
Integration start scan : 457 Integration stop scan: 510
Y at integration start : 0 Y at integration end: 0

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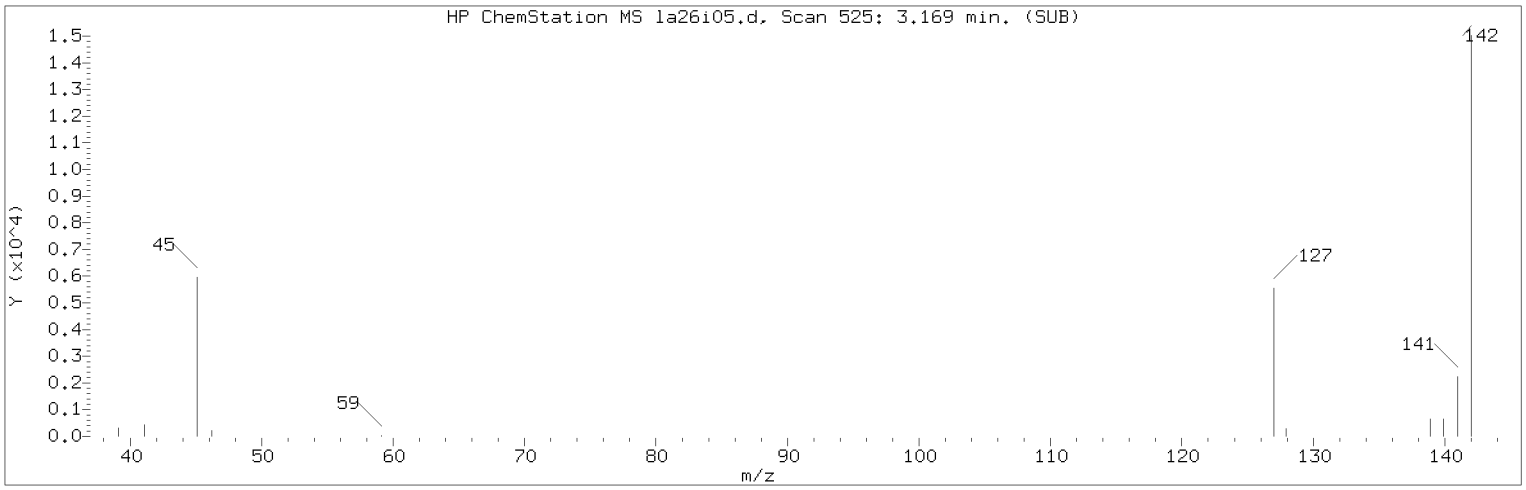
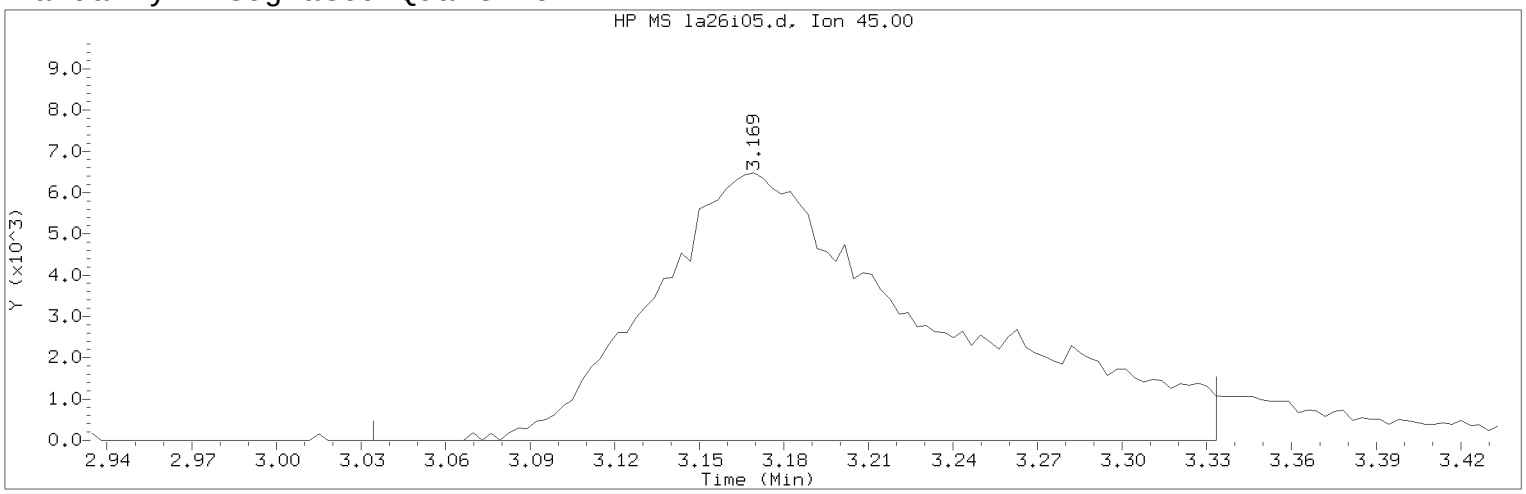
Target 3.5 esignature userKAS02648 Page 146

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

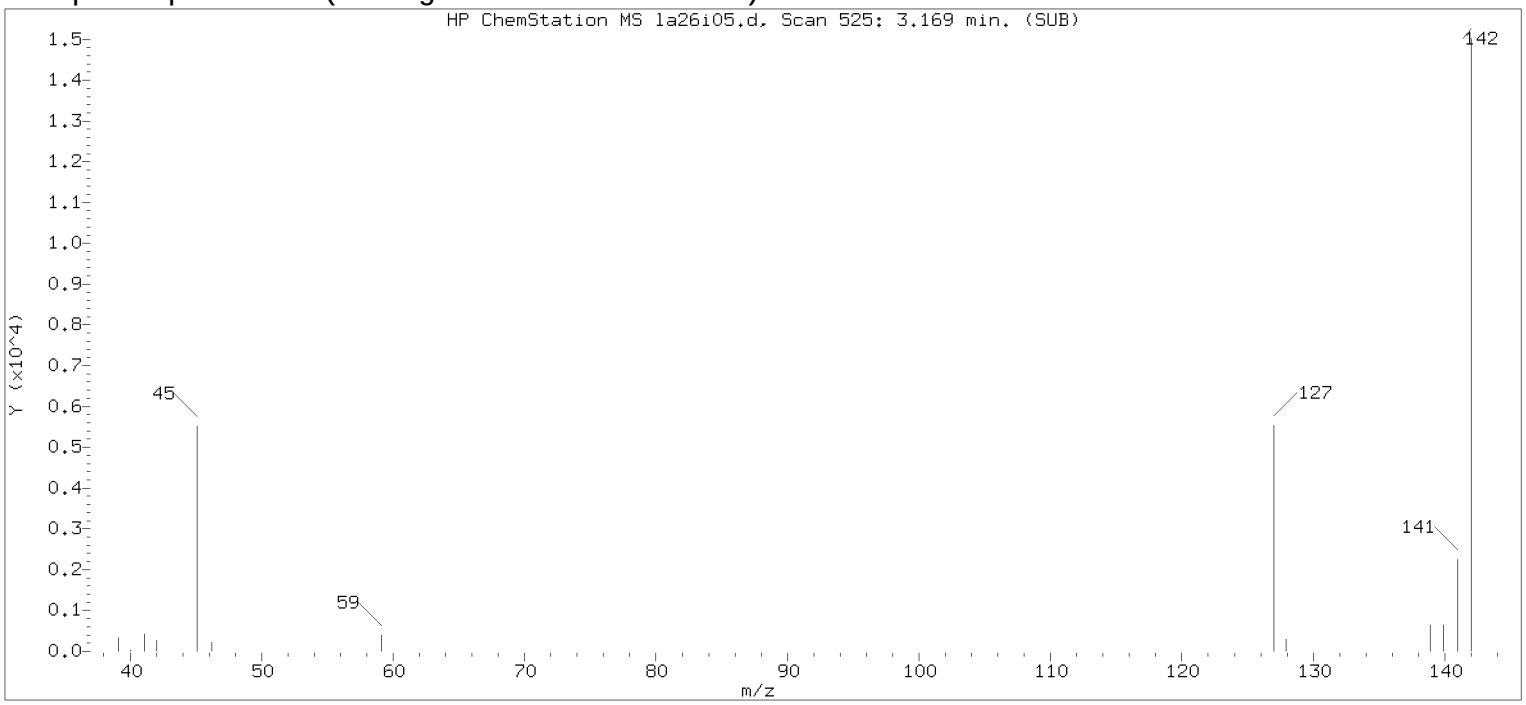
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area (flag) : 44925M
On-Column Amount (ng) : 97.8914
Integration start scan : 482 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

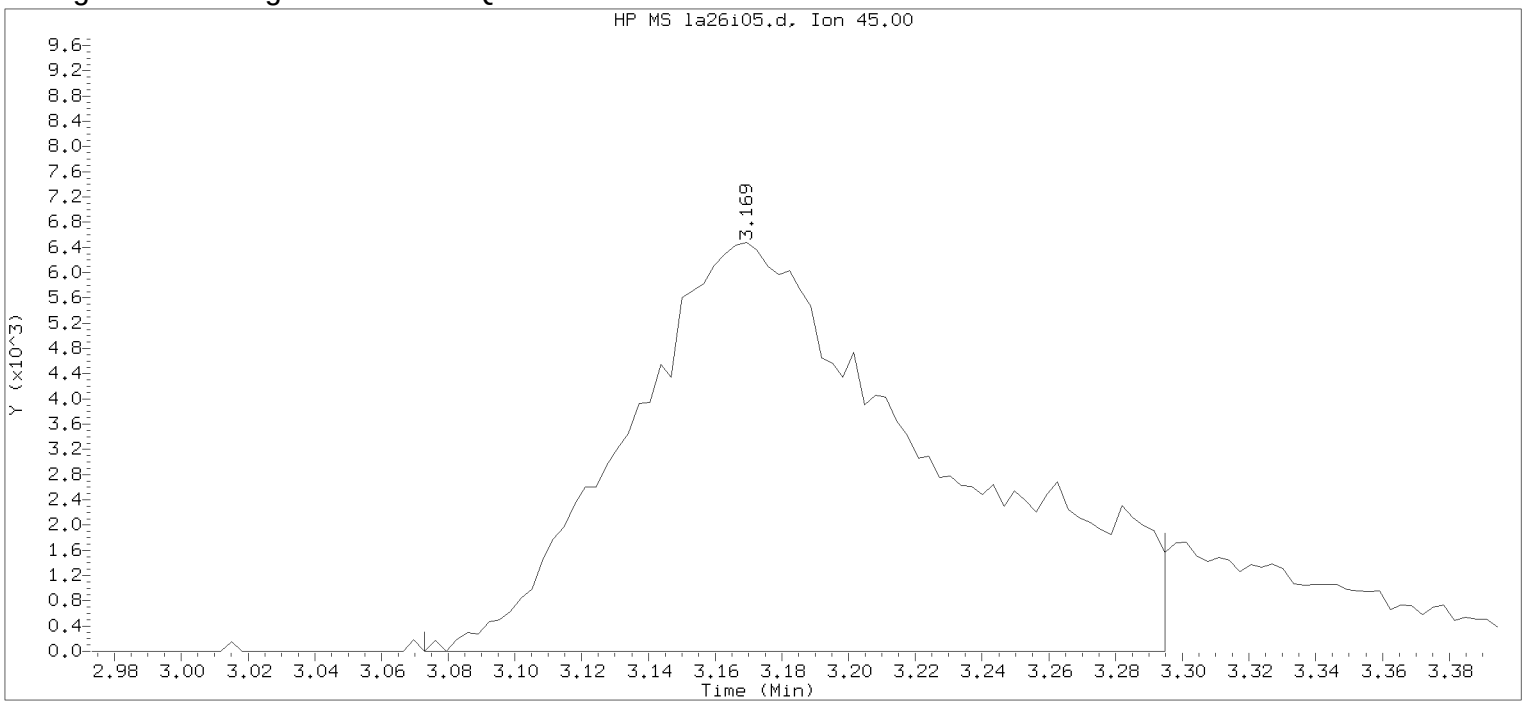
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area : 41457
On-column Amount (ng) : 114.3657
Integration start scan : 494 Integration stop scan: 563
Y at integration start : 0 Y at integration end: 0

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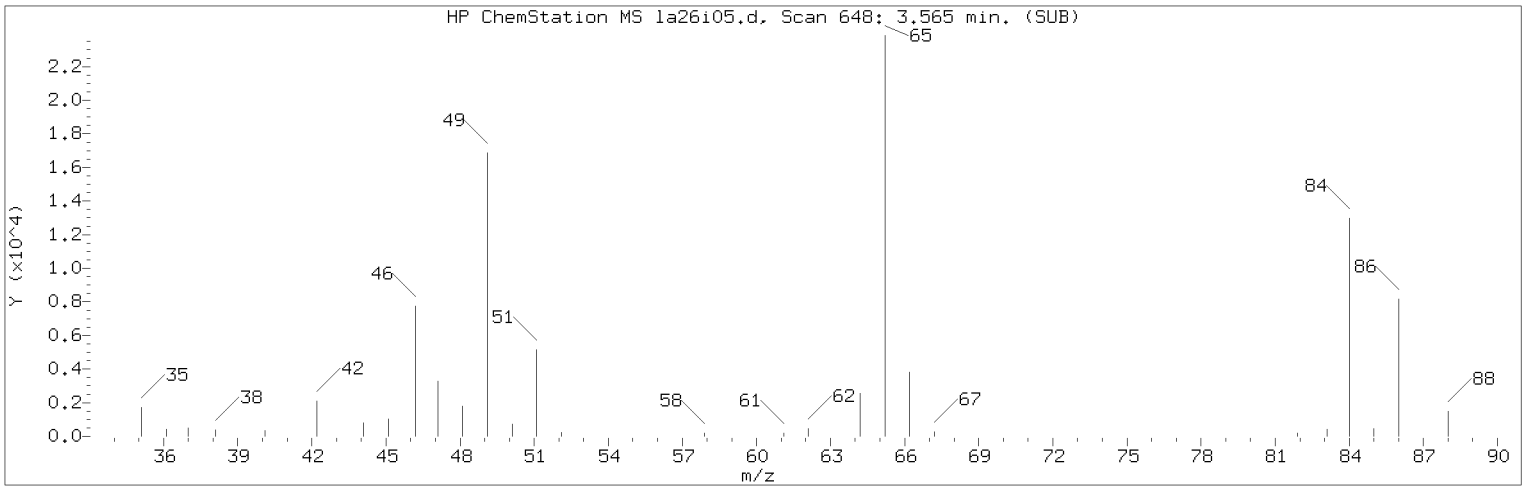
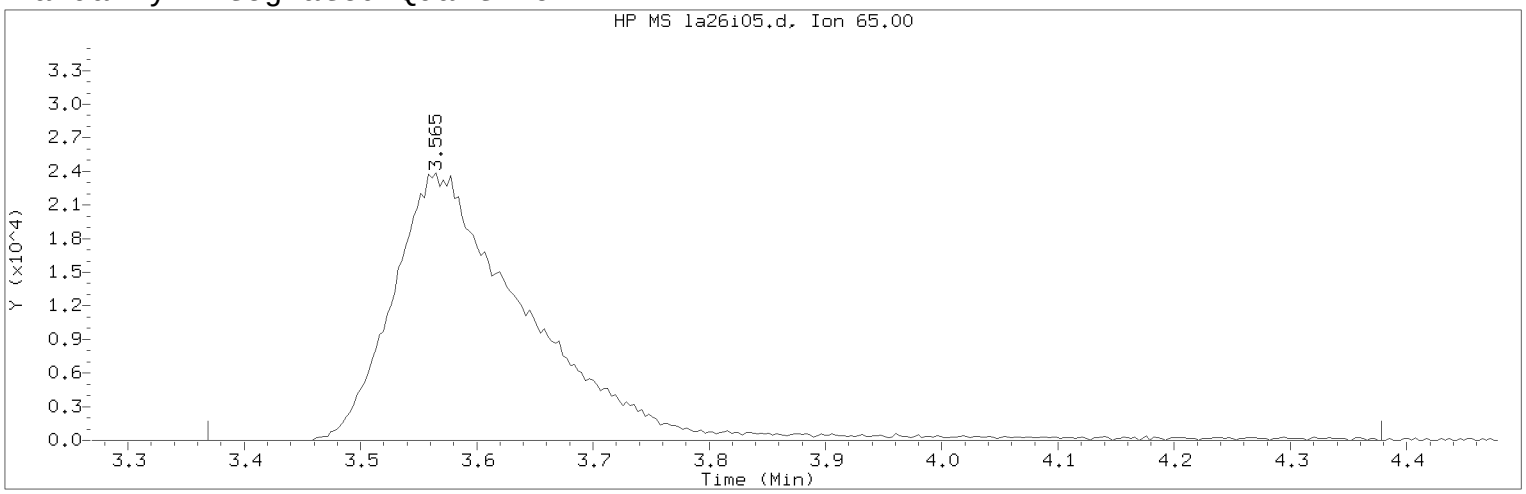
Target 3.5 esignature userKAS02648 Page 148

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

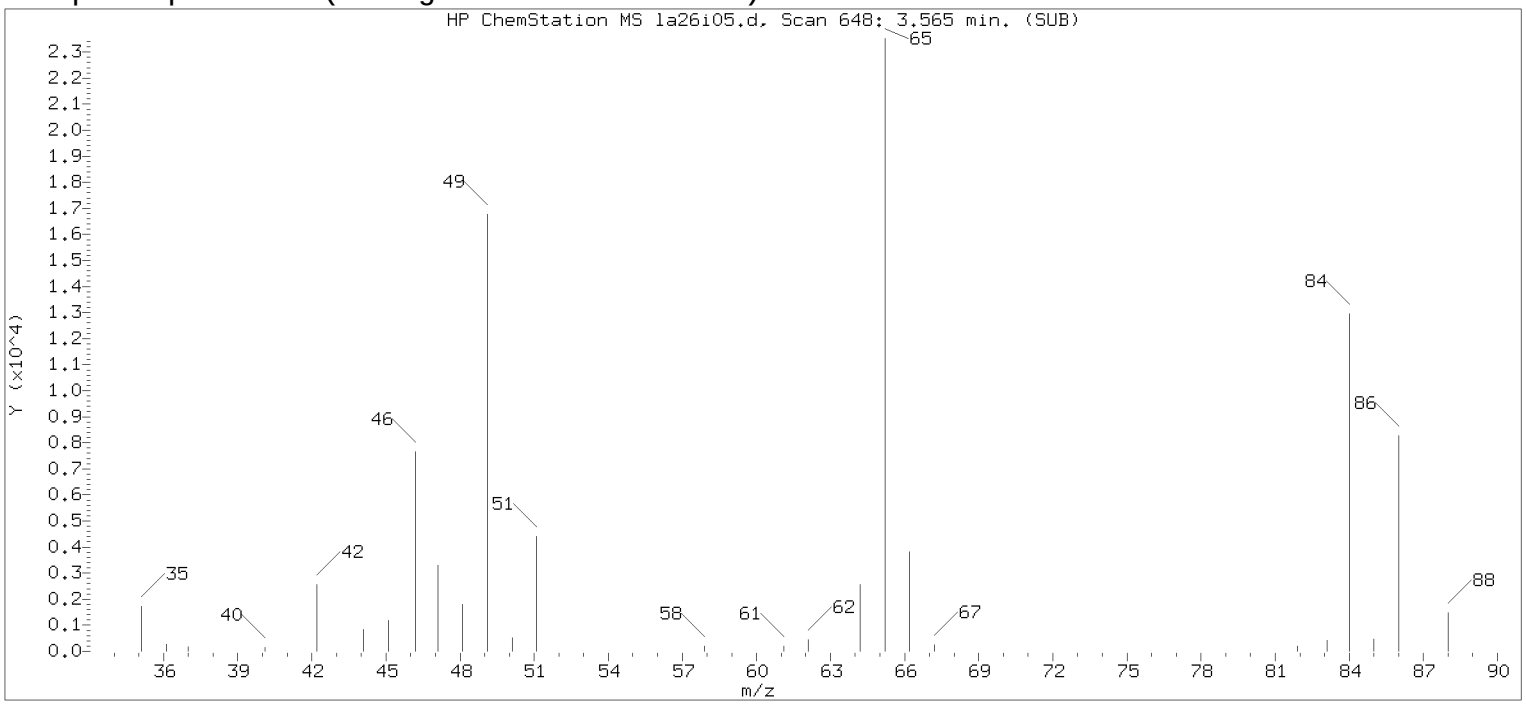
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area (flag) : 194850M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 900
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

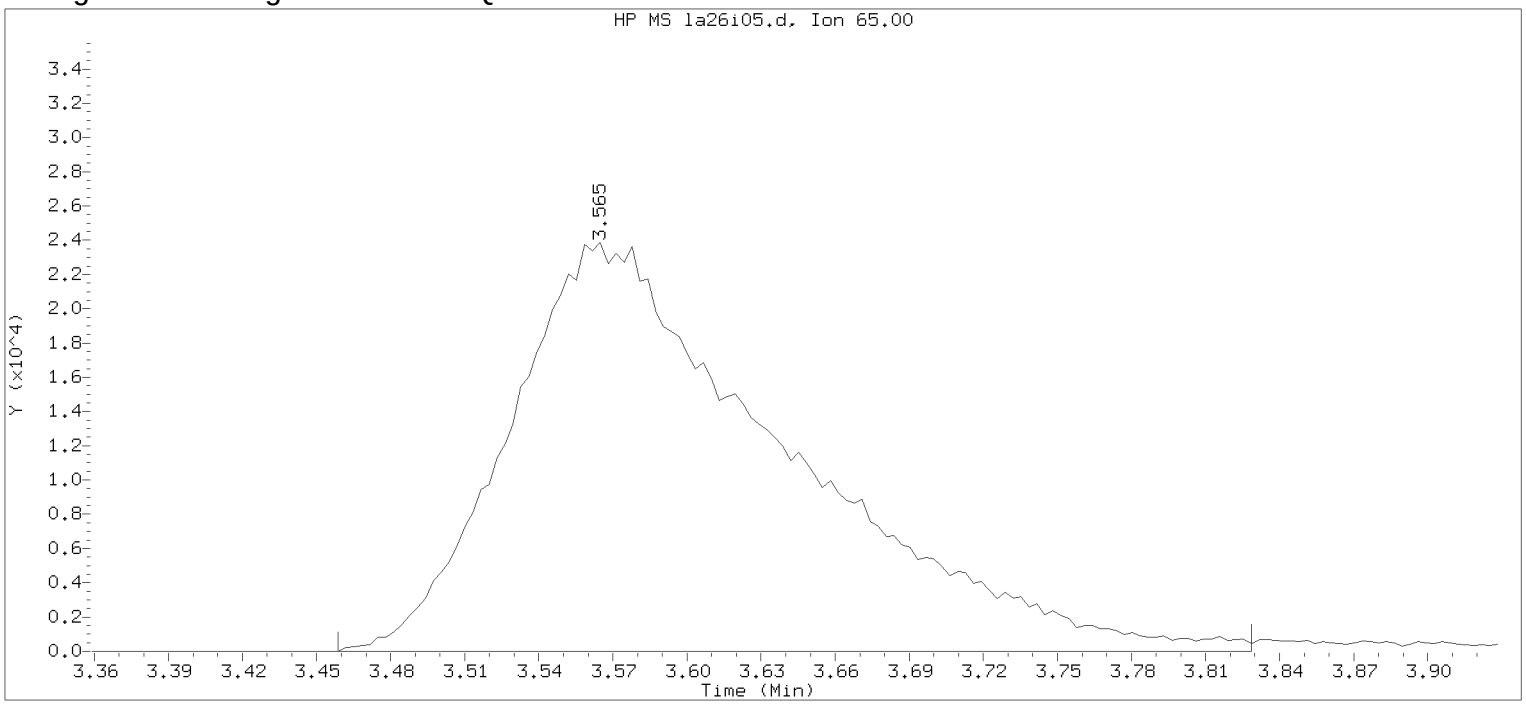
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area : 185663
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 729
Y at integration start : 0 Y at integration end: 0

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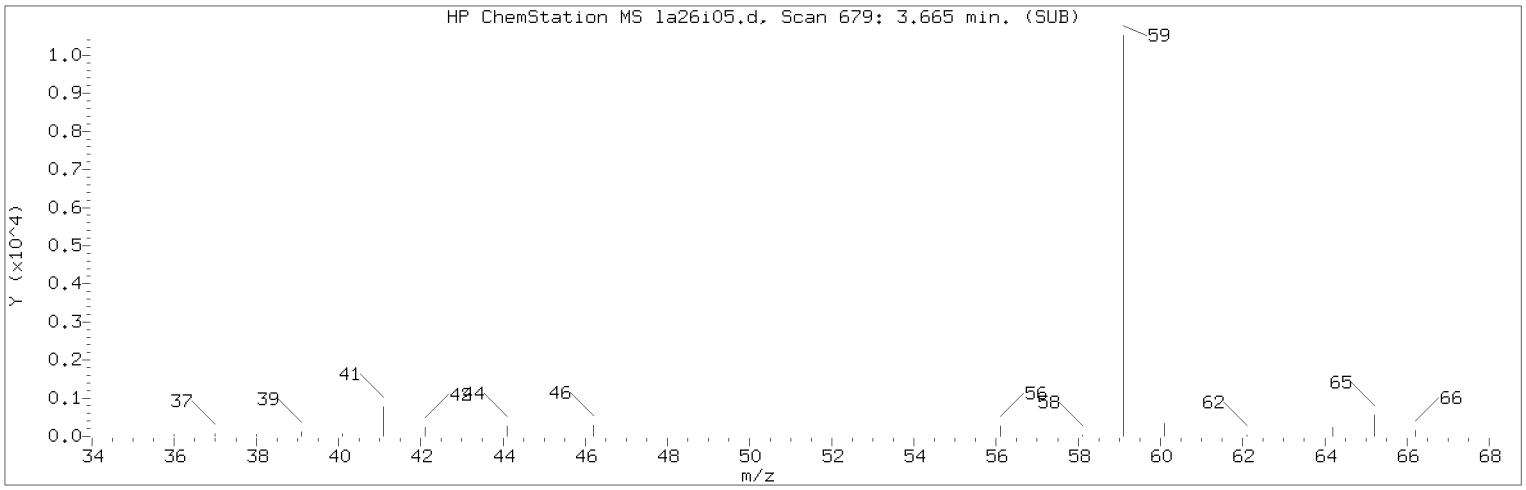
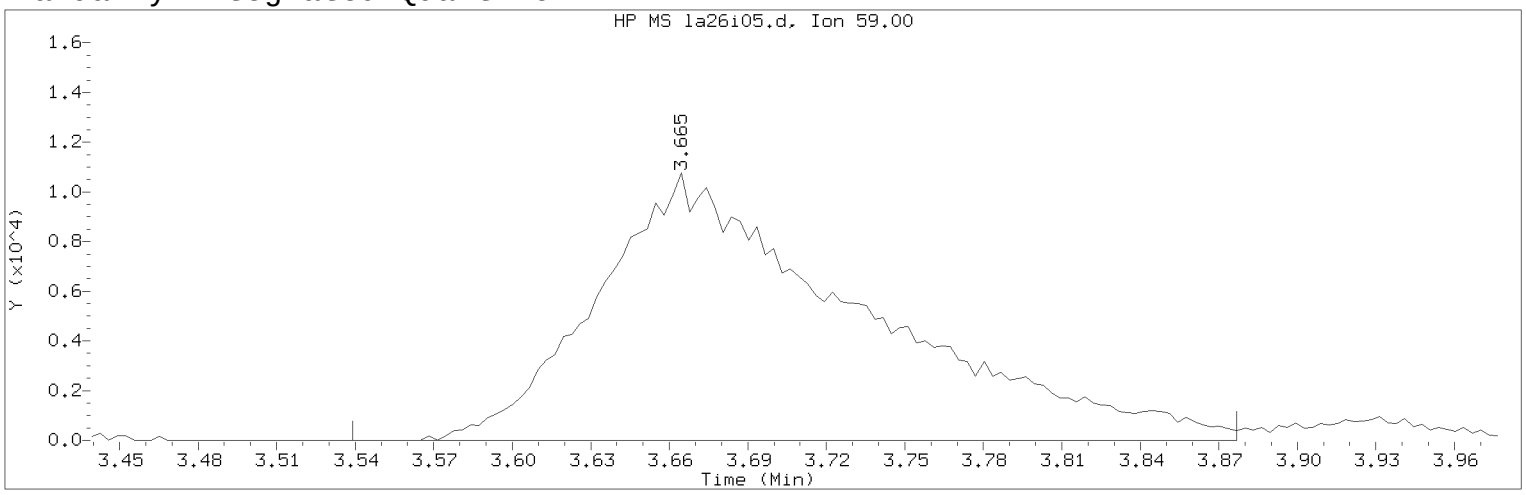
Target 3.5 esignature userKAS02648 Page 180 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

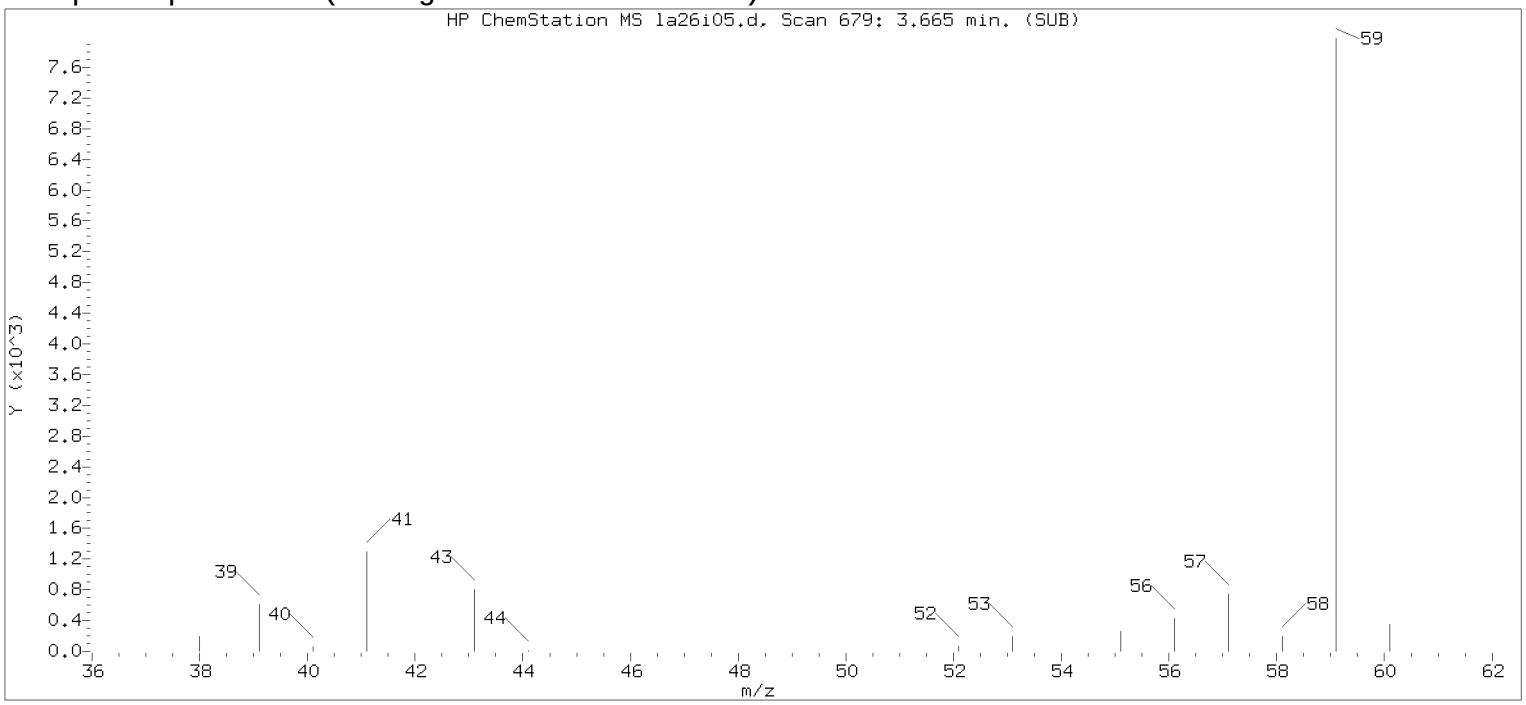
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 679
Retention Time (minutes): 3.665
Quant Ion : 59.00
Area (flag) : 75108M
On-Column Amount (ng) : 99.6249
Integration start scan : 639 Integration stop scan: 744
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

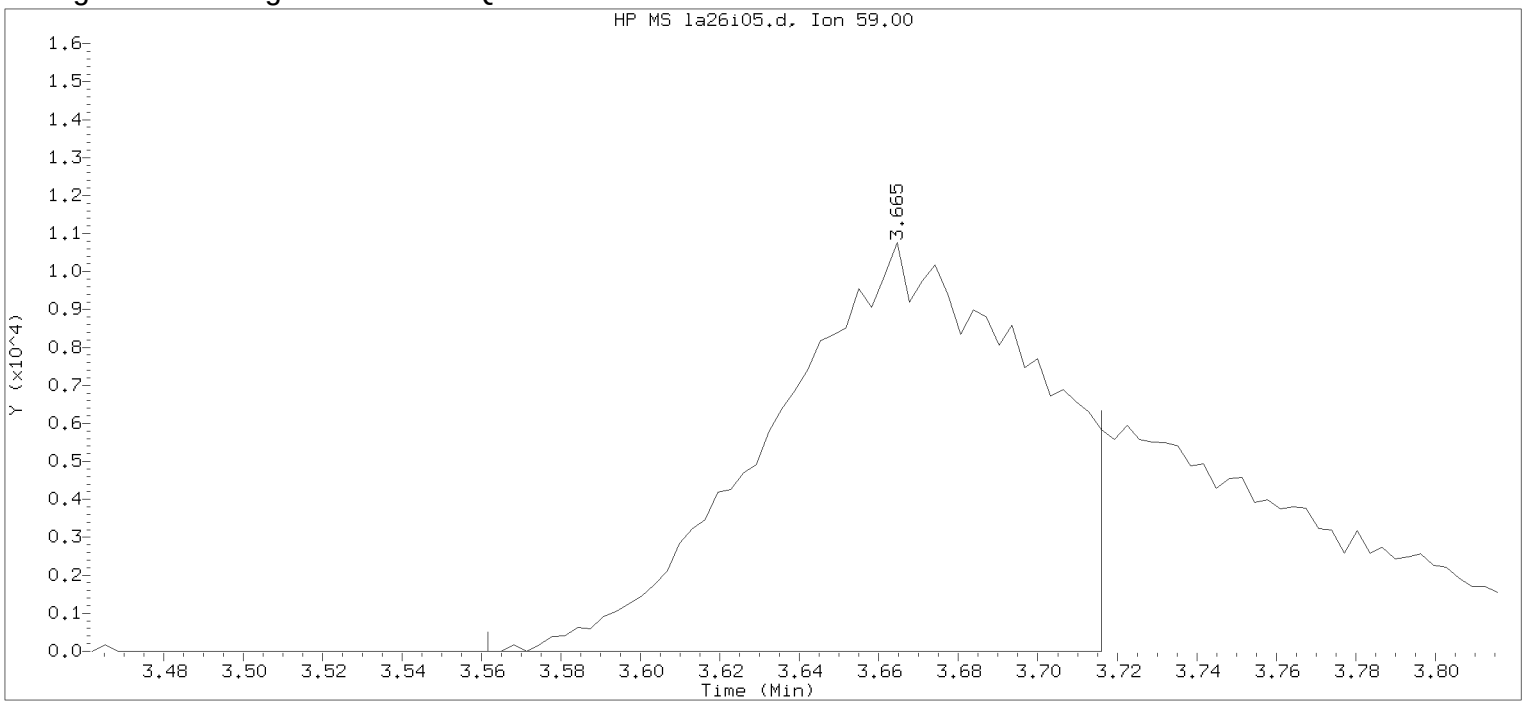
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

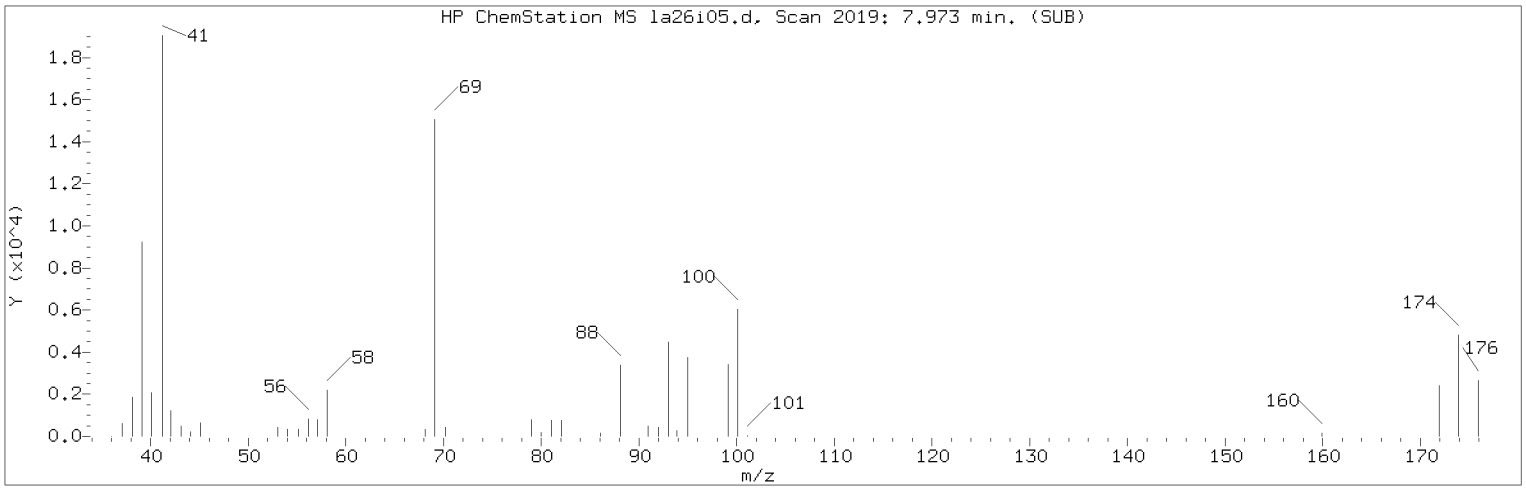
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

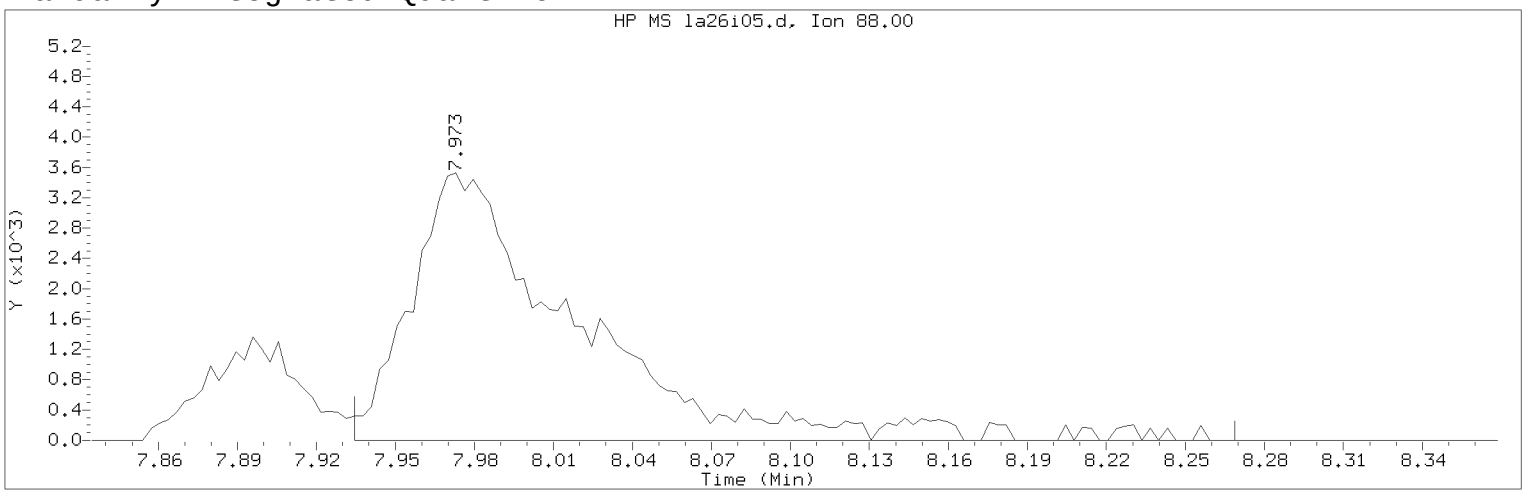
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 679
Retention Time (minutes): 3.665
Quant Ion : 59.00
Area : 49216
On-column Amount (ng) : 71.8732
Integration start scan : 646 Integration stop scan: 694
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

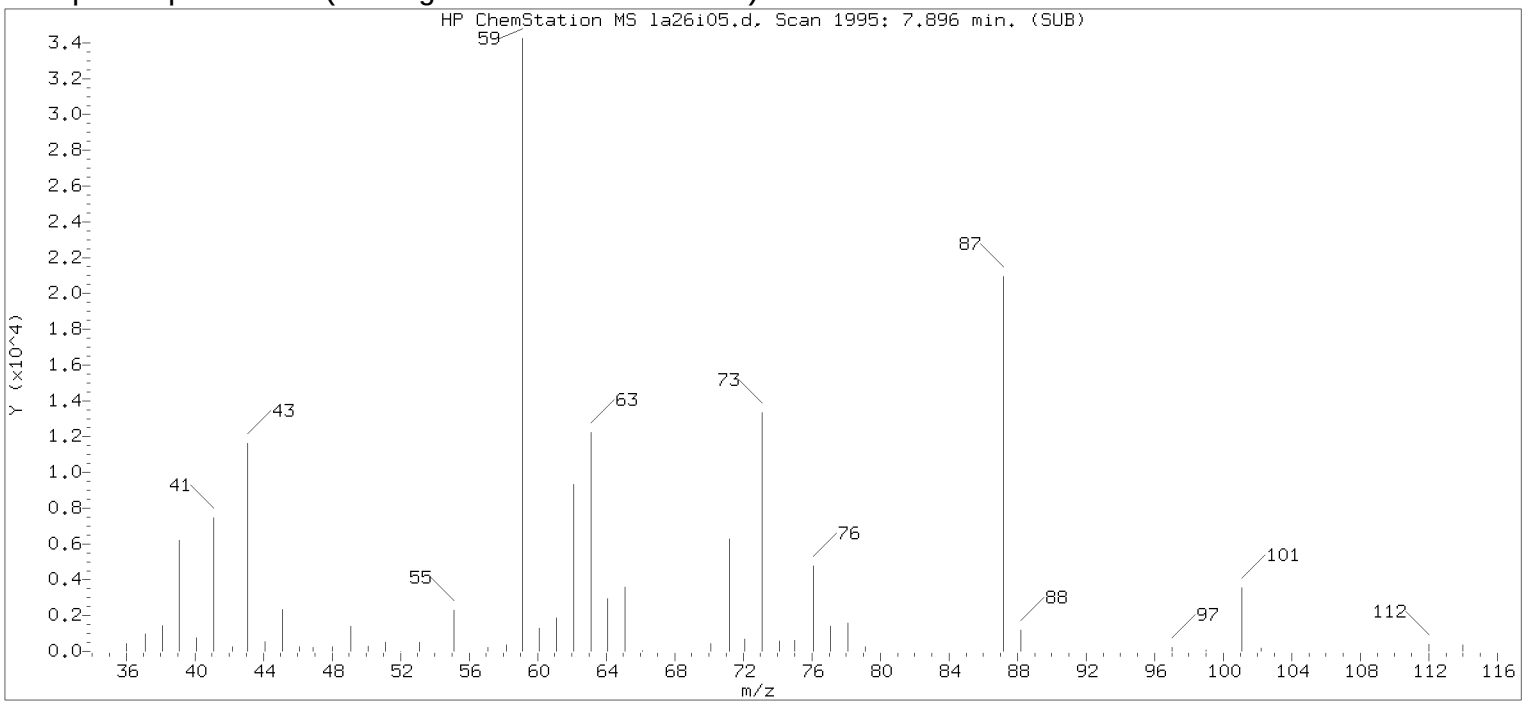
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 15525M
On-Column Amount (ng) : 233.0554
Integration start scan : 2006 Integration stop scan: 2110
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

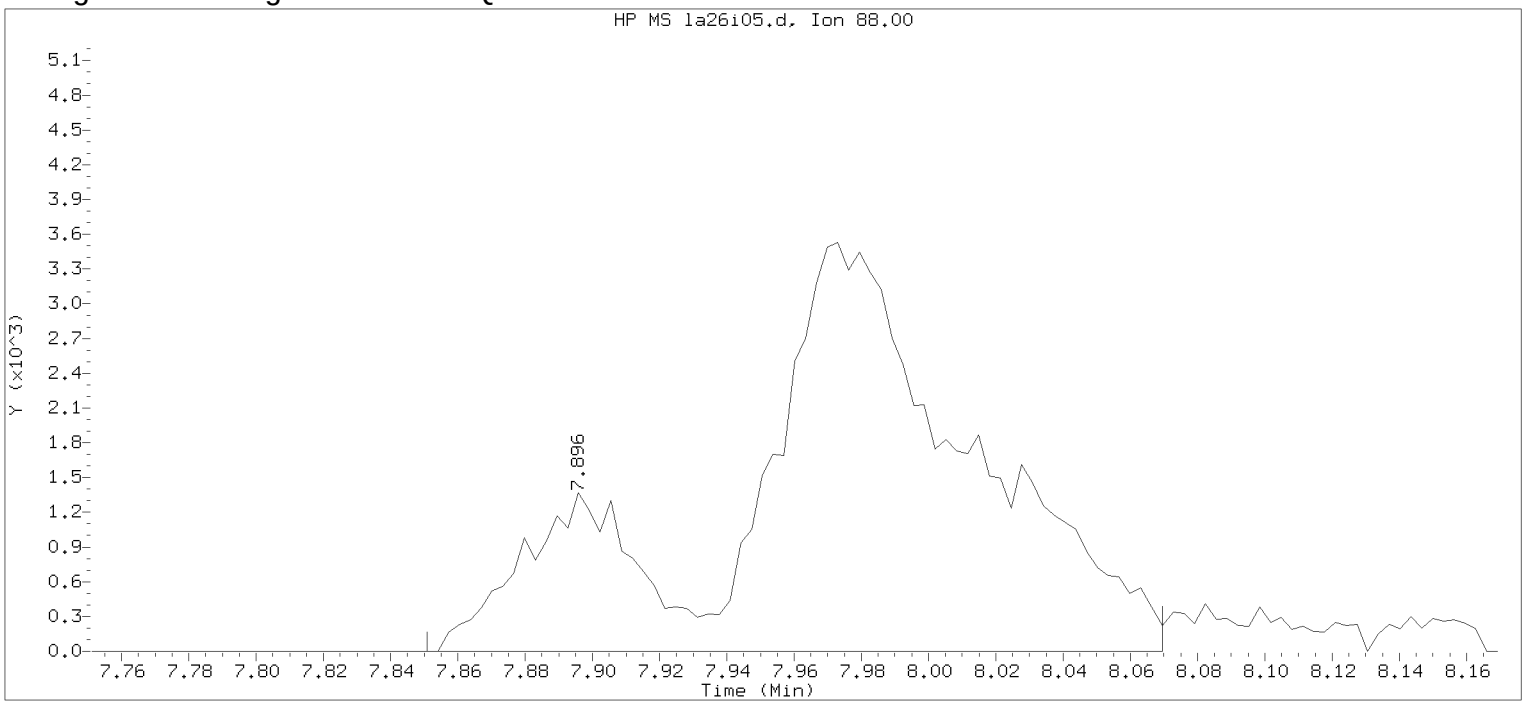
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 16999
On-column Amount (ng) : 234.9759
Integration start scan : 1980 Integration stop scan: 2048
Y at integration start : 0 Y at integration end: 0

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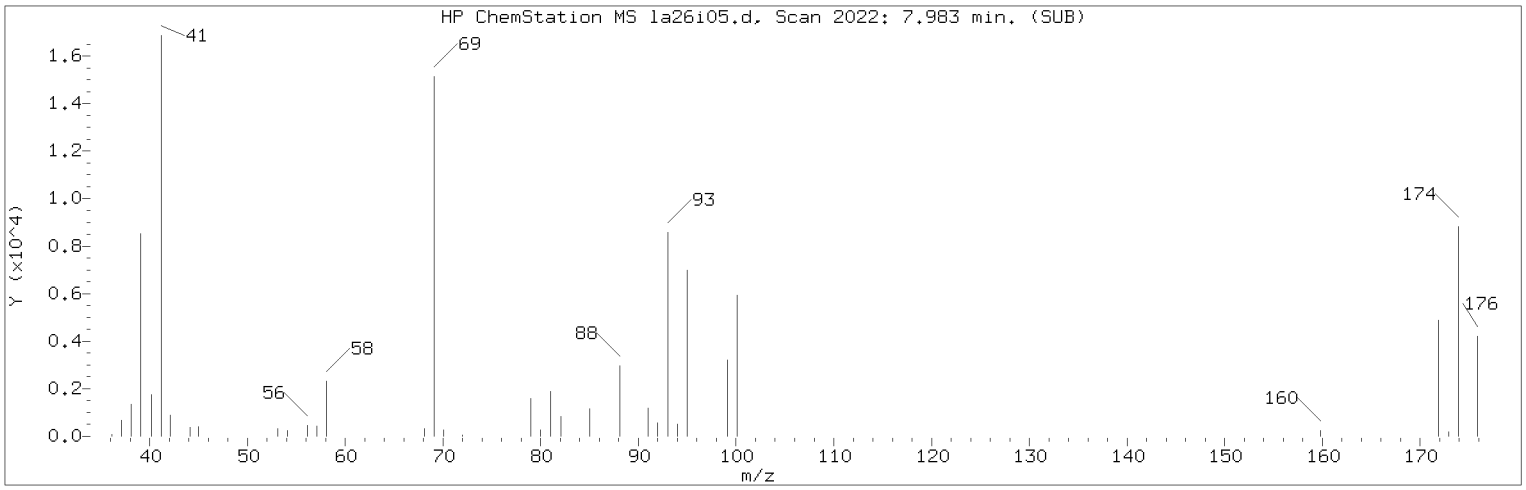
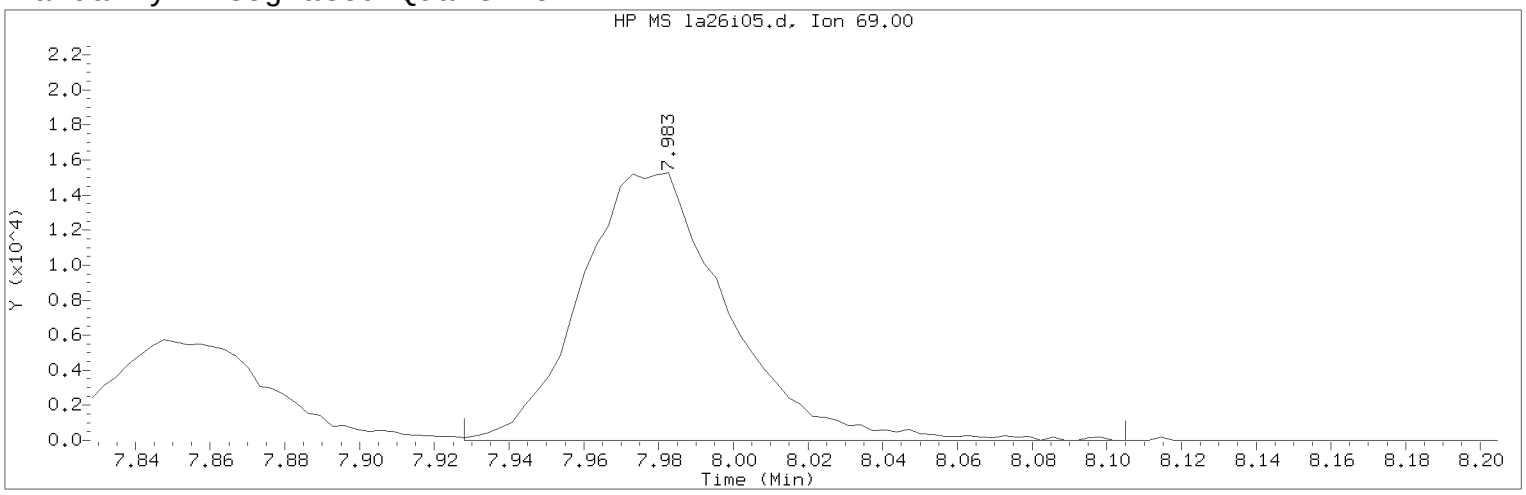
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

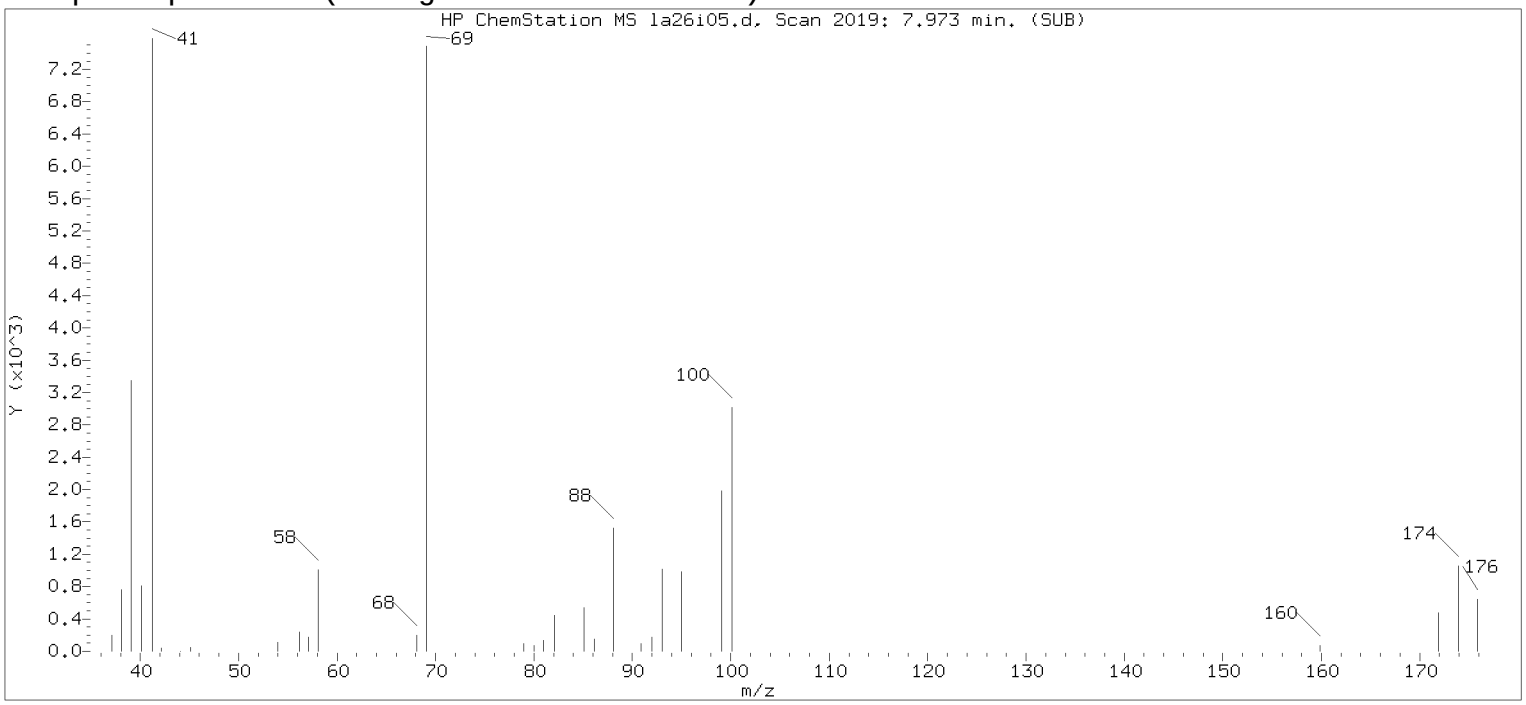
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 41640M
On-Column Amount (ng) : 9.2747
Integration start scan : 2004 Integration stop scan: 2059
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

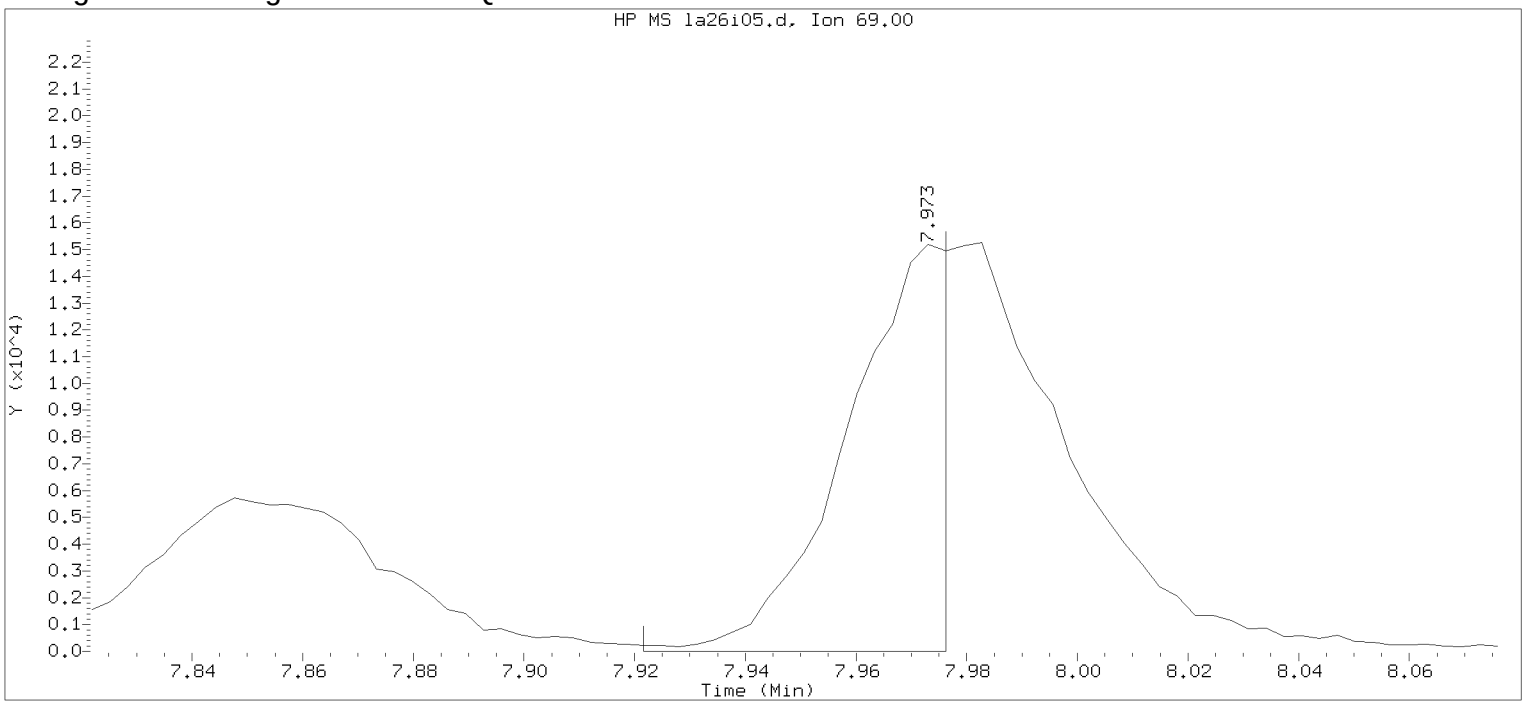
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area : 18069
On-column Amount (ng) : 4.2742
Integration start scan : 2002 Integration stop scan: 2019
Y at integration start : 0 Y at integration end: 0

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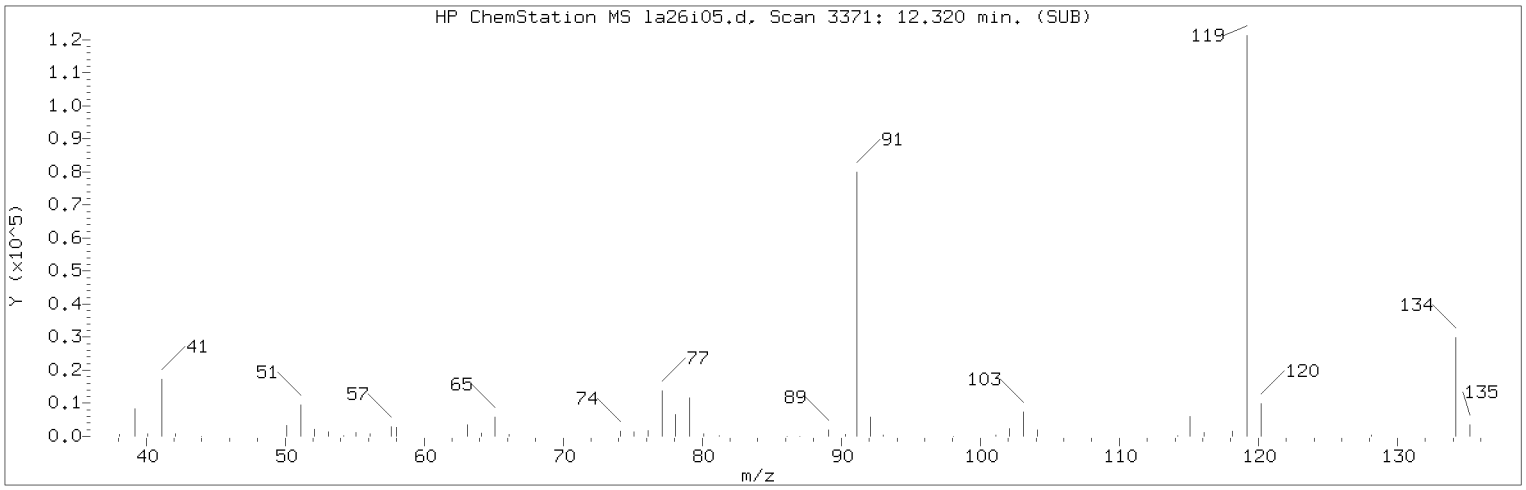
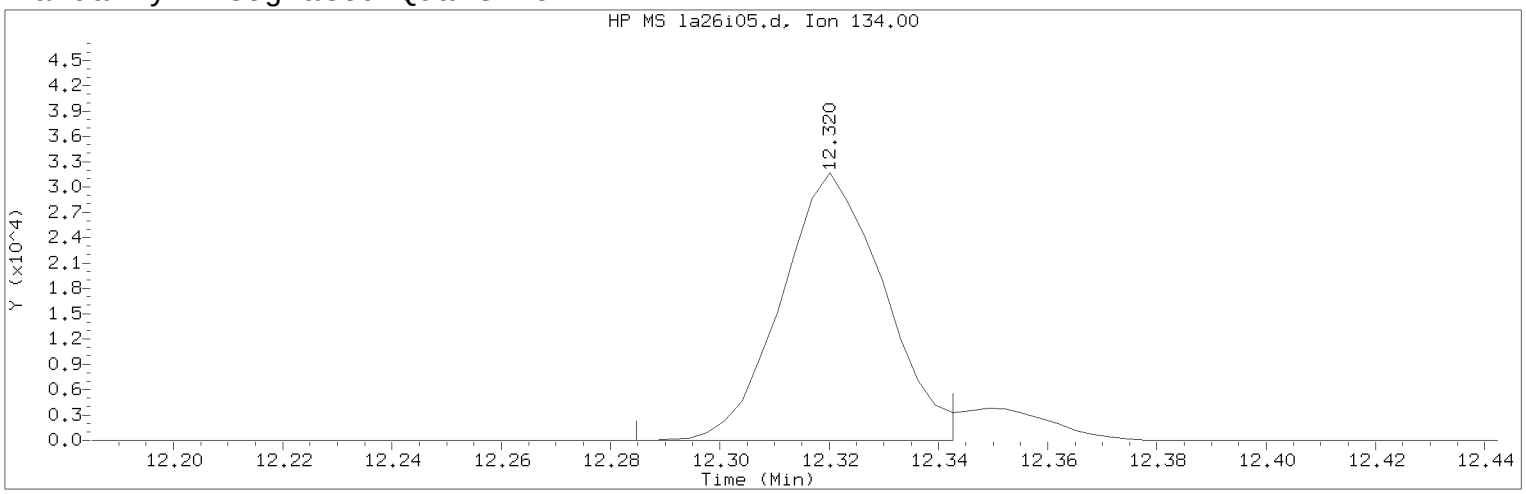
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

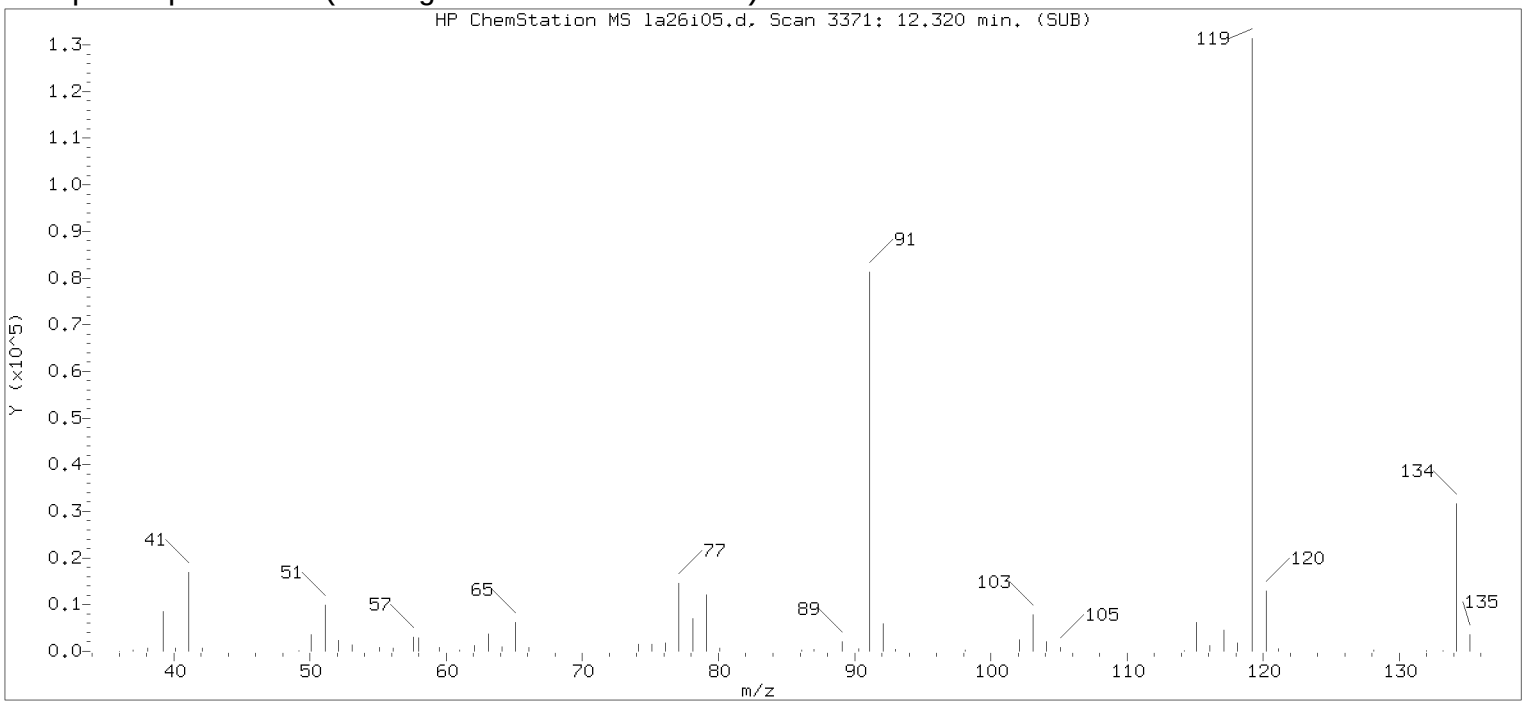
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 41143M
On-Column Amount (ng) : 9.8320
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

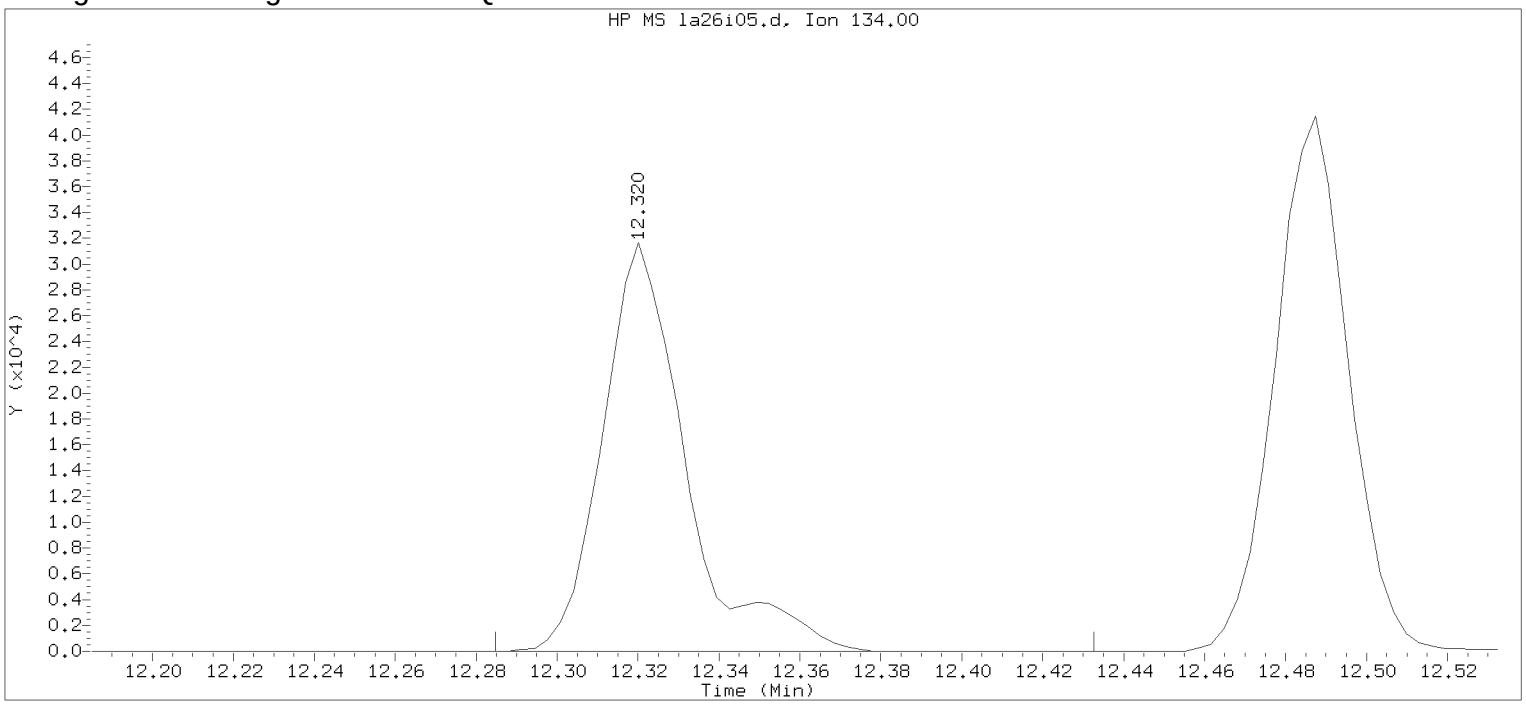
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



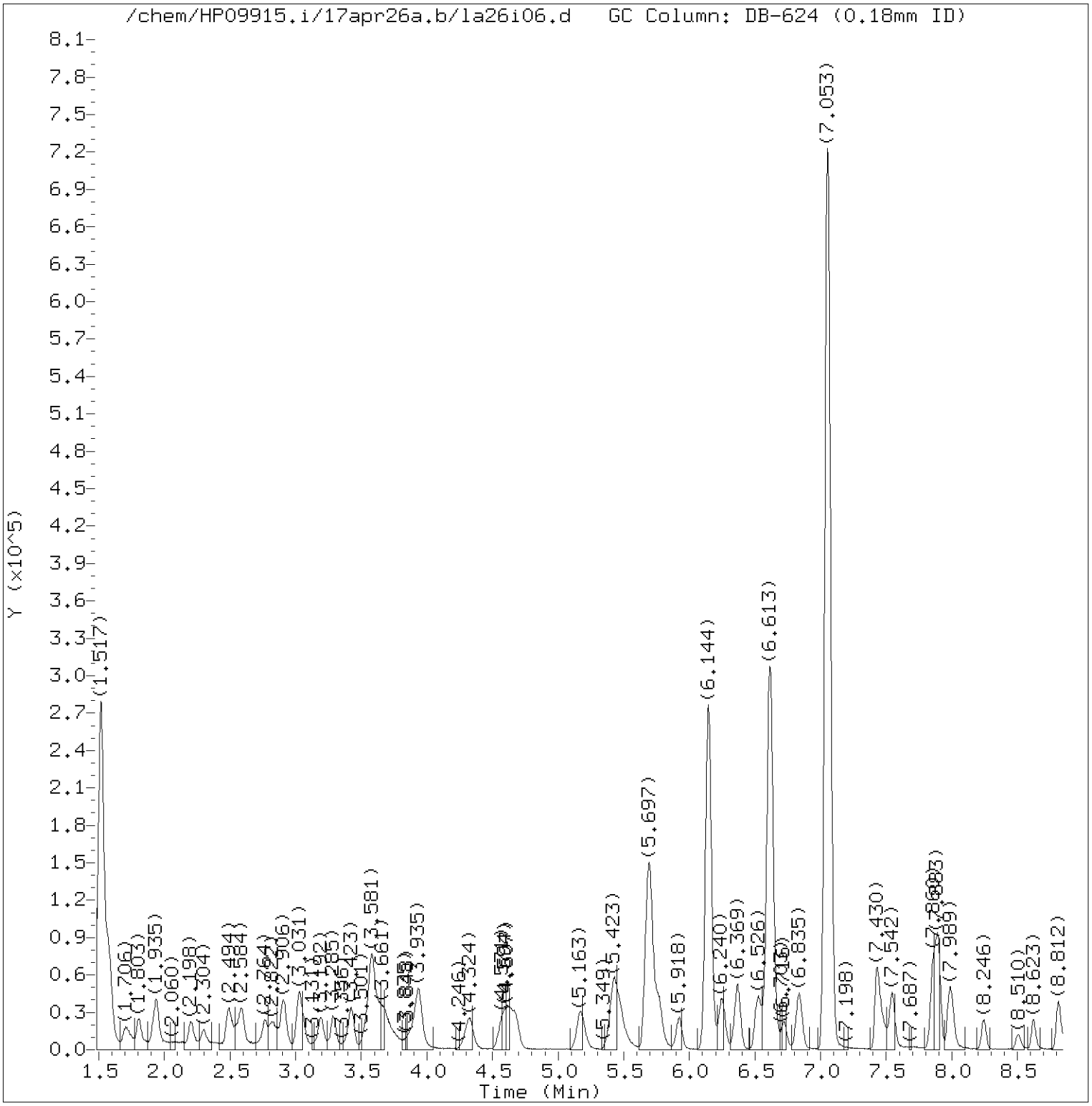

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 45210
On-column Amount (ng) : 9.8016
Integration start scan : 3359 Integration stop scan: 3405
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

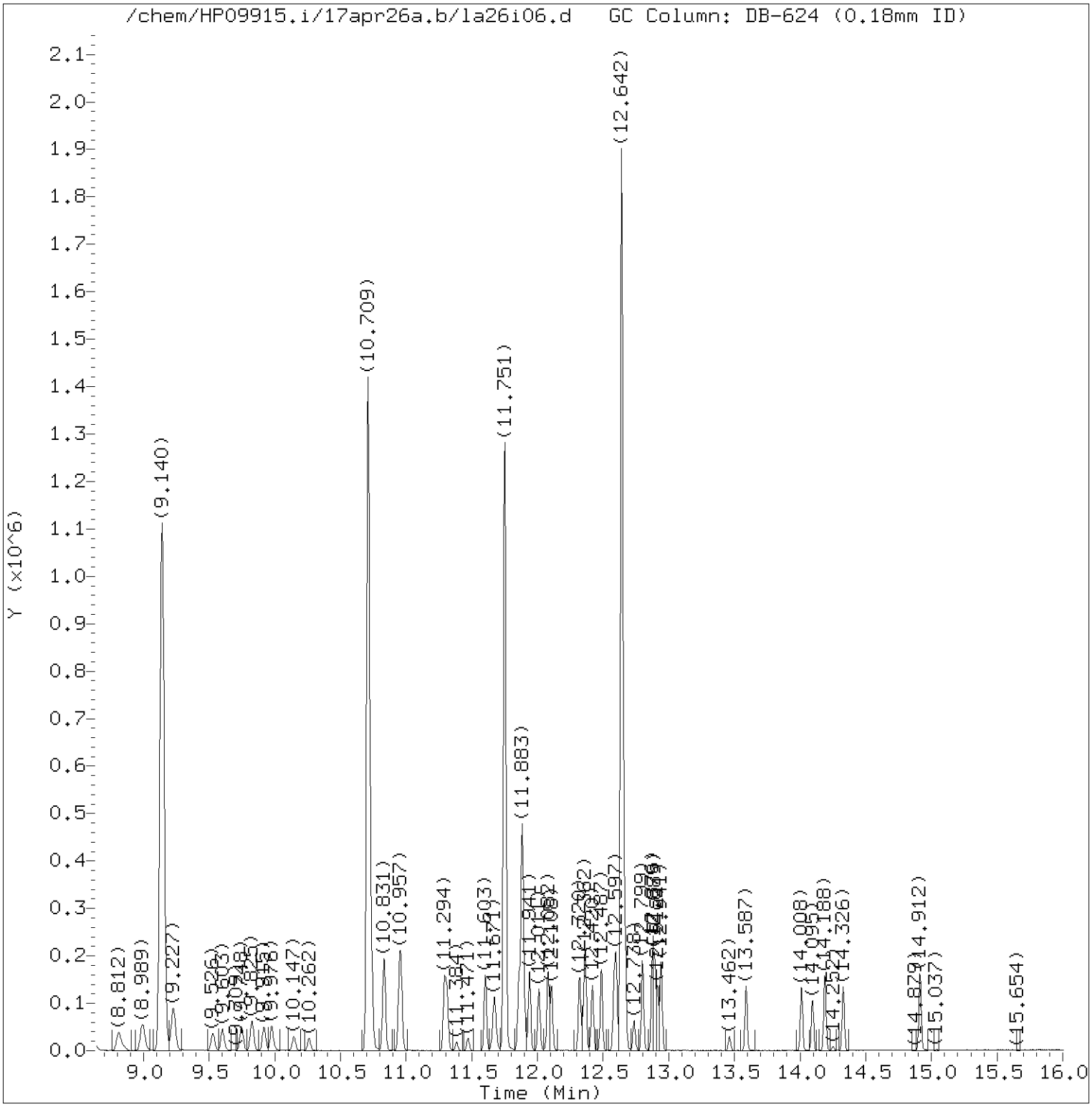
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 26037 | 4.176 |
| 4) Chloromethane | (2) | 1.803 | 50 | 25200 | 3.934 |
| 6) Vinyl Chloride | (2) | 1.915 | 62 | 24755 | 4.002 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 16995 | 4.504 |
| 8) Bromomethane | (2) | 2.205 | 94 | 16261M | 3.908 |
| 9) Chloroethane | (2) | 2.295 | 64 | 14059 | 4.033 |
| 10) Dichlorofluoromethane | (2) | 2.484 | 67 | 33722 | 3.966 |
| 12) Trichlorofluoromethane | (2) | 2.542 | 101 | 29360 | 4.099 |
| 11) n-Pentane | (2) | 2.591 | 43 | 26016 | 4.410 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 15912 | 3.990 |
| 15) Freon 123a | (2) | 2.816 | 67 | 20631 | 4.325 |
| 16) Acrolein | (1) | 2.906 | 56 | 57583 | 34.296 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 16036 | 4.230 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 63 | 8089 | 4.215 |
| 18) Acetone | (1) | 3.041 | 58 | 5325M | 7.307 |
| 19) Freon 113 | (2) | 3.044 | 101 | 16238 | 4.255 |
| 21) 2-Propanol | (1) | 3.189 | 45 | 40137M | 83.086 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 30085 | 4.091 |
| 23) Carbon Disulfide | (2) | 3.282 | 76 | 50383 | 4.084 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 21444 | 3.897 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 31272 | 4.118 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 205105M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 20934 | 4.180 |
| 30) t-Butyl alcohol | (1) | 3.687 | 59 | 60772M | 76.579 |
| 31) Acrylonitrile | (2) | 3.870 | 53 | 11085 | 3.836 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 55927 | 4.027 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 18531 | 4.166 |
| 34) n-Hexane | (2) | 4.324 | 57 | 28520 | 4.183 |
| 36) 1,1-Dichloroethane | (2) | 4.562 | 63 | 34363 | 4.111 |
| 38) di-Isopropyl ether | (2) | 4.619 | 45 | 64435 | 4.016 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 28657 | 4.064 |
| 40) Ethyl t-butyl ether | (2) | 5.176 | 59 | 54352 | 3.937 |
| 44) 2-Butanone | (2) | 5.381 | 43 | 28701 | 7.418 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 21315M | 3.819 |
| 42) cis-1,2-Dichloroethene | (2) | 5.423 | 96 | 20667 | 4.055 |
| 47) Propionitrile | (1) | 5.465 | 54 | 86867 | 74.999 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 109898 | 38.147 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 10436 | 3.885 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 6817 | 6.663 |
| 51) Chloroform | (2) | 5.925 | 83 | 32628 | 4.095 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 32845 | 4.511 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 253557 | 49.604 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 111 | 260923 | 49.814 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 39198 | 8.221 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 34447 | 4.155 |
| 54) Cyclohexane | (2) | 6.240 | 84 | 28669 | 4.230 |
| 54) Cyclohexane | (2) | 6.243 | 69 | 10119 | 4.211 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 20852 | 3.924 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 26512 | 4.091 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 53887 | 193.400 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 64045 | 50.386 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 303739 | 50.519 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 104 | 40296 | 49.981 |
| 60) Benzene | (2) | 6.629 | 78 | 78391 | 4.104 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 26098 | 4.039 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 2305M | 4.022 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 52770 | 3.851 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1046774 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 33581 | 4.399 |
| 69) n-Butanol | (1) | 7.433 | 56 | 79036 | 351.880 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 19901 | 4.031 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 36459 | 4.192 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 16232 | 4.135 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 20791 | 3.976 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 12532 | 178.720 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 16816M | 3.757 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 12893M | 3.921 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 22387 | 3.772 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 11184 | 6.646 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 14941 | 3.717 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 28555 | 3.692 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 55176 | 6.920 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1029529 | 50.086 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 677093 | 49.999 |
| 88) Toluene | (3) | 9.227 | 92 | 48414 | 4.053 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 23592 | 3.522 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.603 | 69 | 27111 | 3.594 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 17786 | 3.864 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 21245 | 4.021 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 30994 | 3.881 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 39380 | 6.830 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 52147 | 7.214 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 16936 | 3.552 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 19109 | 3.792 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 805037 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 28026 | 4.085 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 54921 | 3.985 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 17119 | 3.761 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 92312 | 4.006 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 71336 | 7.953 |
| 107) o-Xylene | (3) | 11.291 | 106 | 34913 | 3.914 |
| 109) Styrene | (3) | 11.310 | 104 | 55976 | 3.796 |
| 110) Bromoform | (3) | 11.471 | 173 | 11404 | 3.294 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 91623 | 4.019 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 48698 | 184.107 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 385379 | 50.441 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 338738 | 50.546 |
| 108) Xylene (Total) | (3) | | 106 | 106249 | 11.866 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 30161 | 3.917 |
| 115) Bromobenzene | (4) | 11.864 | 156 | 24538 | 3.958 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 83531 | 37.862 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 8734 | 4.013 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 111094 | 4.055 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 22713 | 3.983 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 77197 | 3.952 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 23232 | 3.915 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 16177M | 3.831 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 11868 | 3.559 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 78838 | 3.918 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 100568 | 4.036 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 47596 | 4.032 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 86819 | 3.946 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 433758 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 49098 | 4.023 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 83360 | 3.954 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 37399 | 3.098 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 51945 | 3.951 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 55669 | 4.033 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 45170 | 4.109 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 46959 | 4.047 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 44327 | 4.007 |
| 141) Diethylbenzene (total) | (4) | | 100 | 151941 | 11.991 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 5965 | 3.664 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 38380 | 4.080 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 36590 | 4.010 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 16967 | 4.281 |
| 148) Naphthalene | (4) | 14.188 | 128 | 107263 | 3.895 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 35386 | 4.019 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 66826 | 3.753 |



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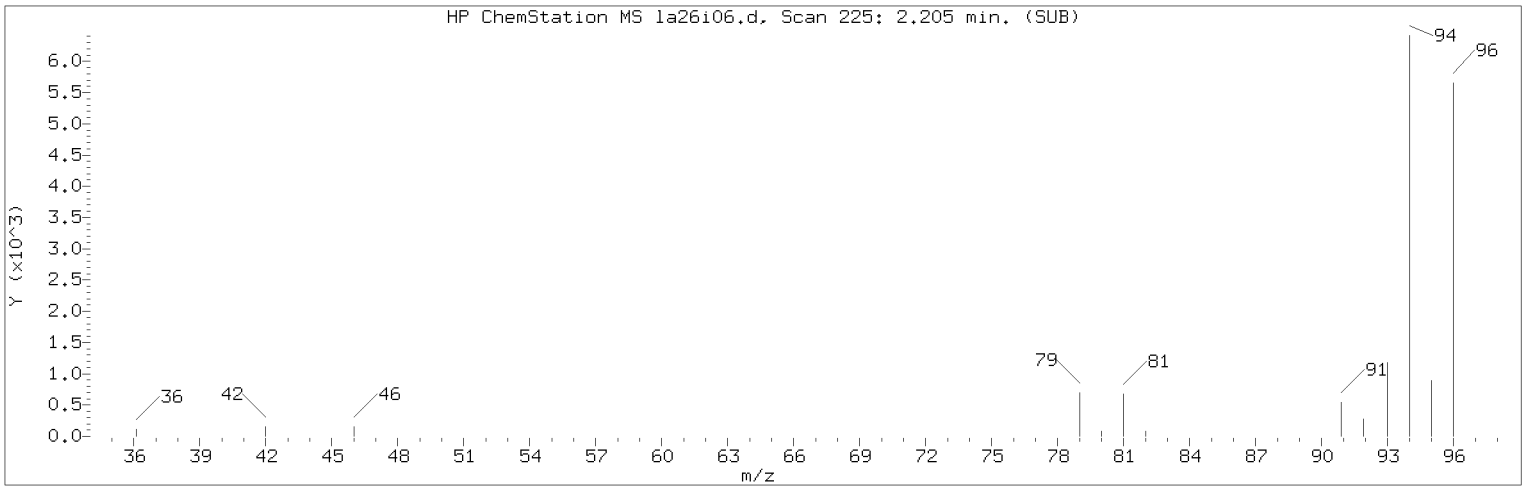
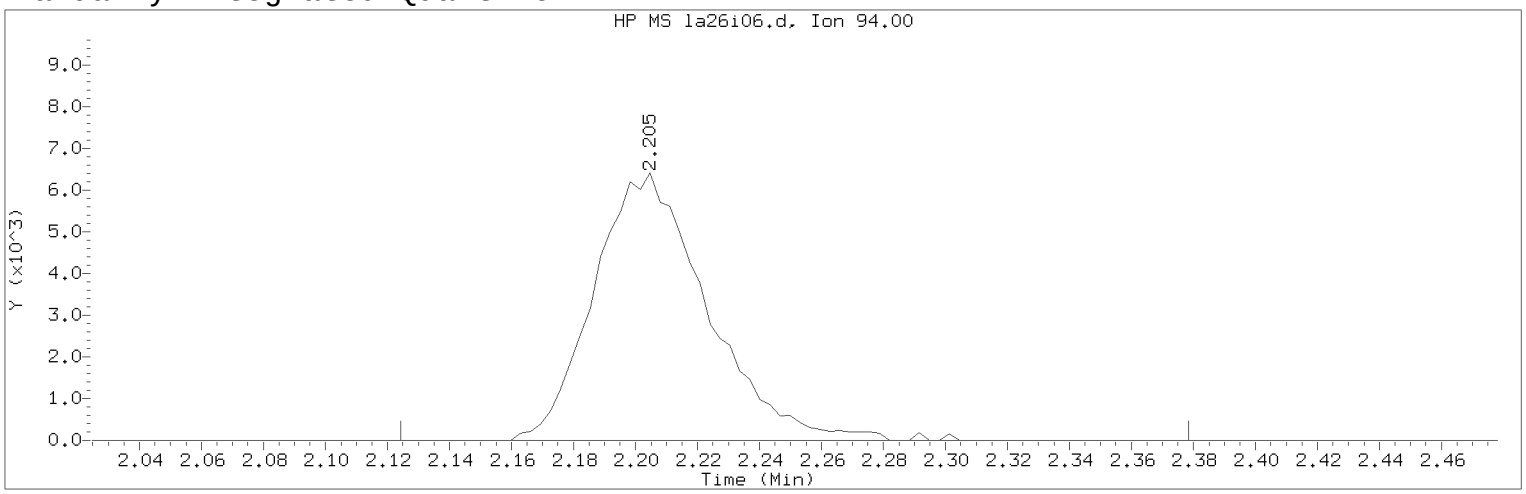
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

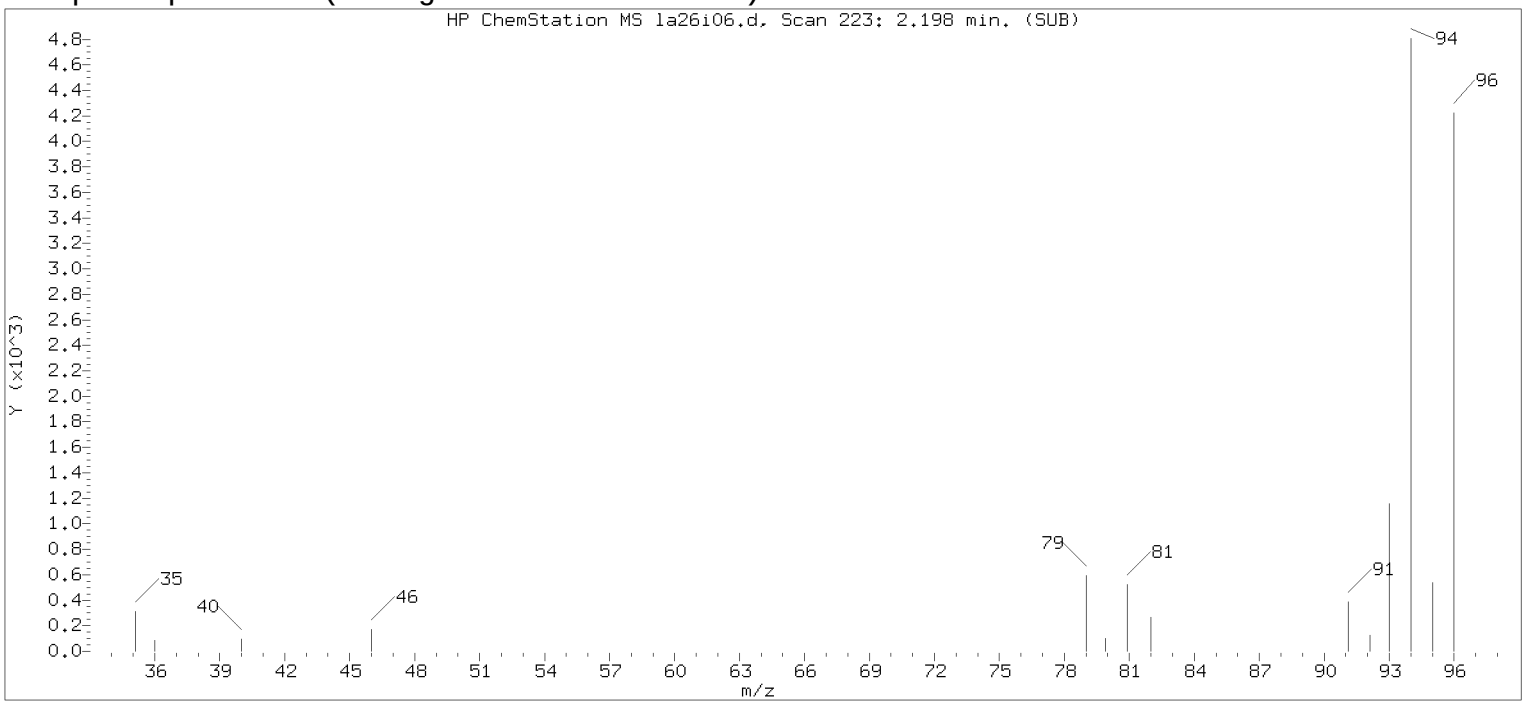
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 225
Retention Time (minutes): 2.205
Quant Ion : 94.00
Area (flag) : 16261M
On-Column Amount (ng) : 3.9084
Integration start scan : 199 Integration stop scan: 278
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

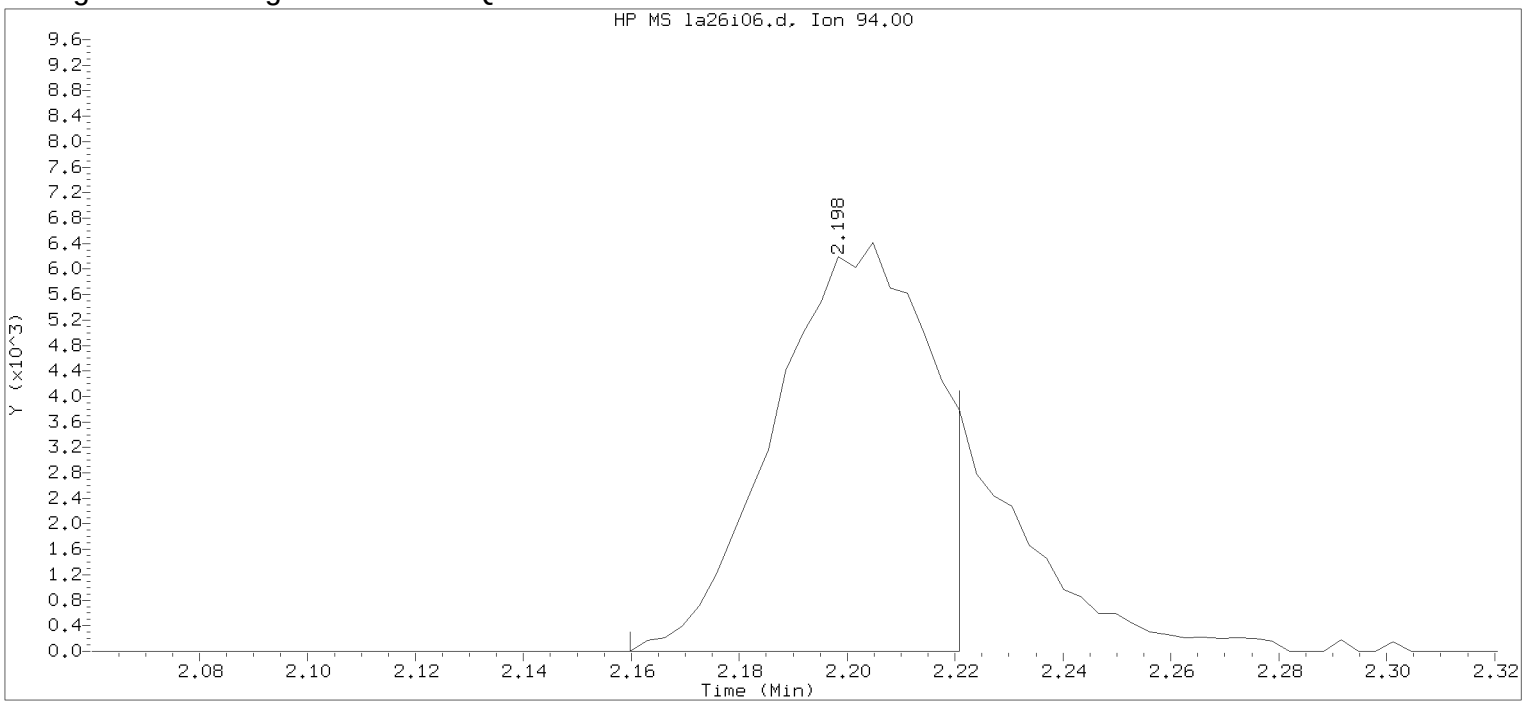
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area : 12778
On-column Amount (ng) : 3.1270
Integration start scan : 210 Integration stop scan: 229
Y at integration start : 0 Y at integration end: 0

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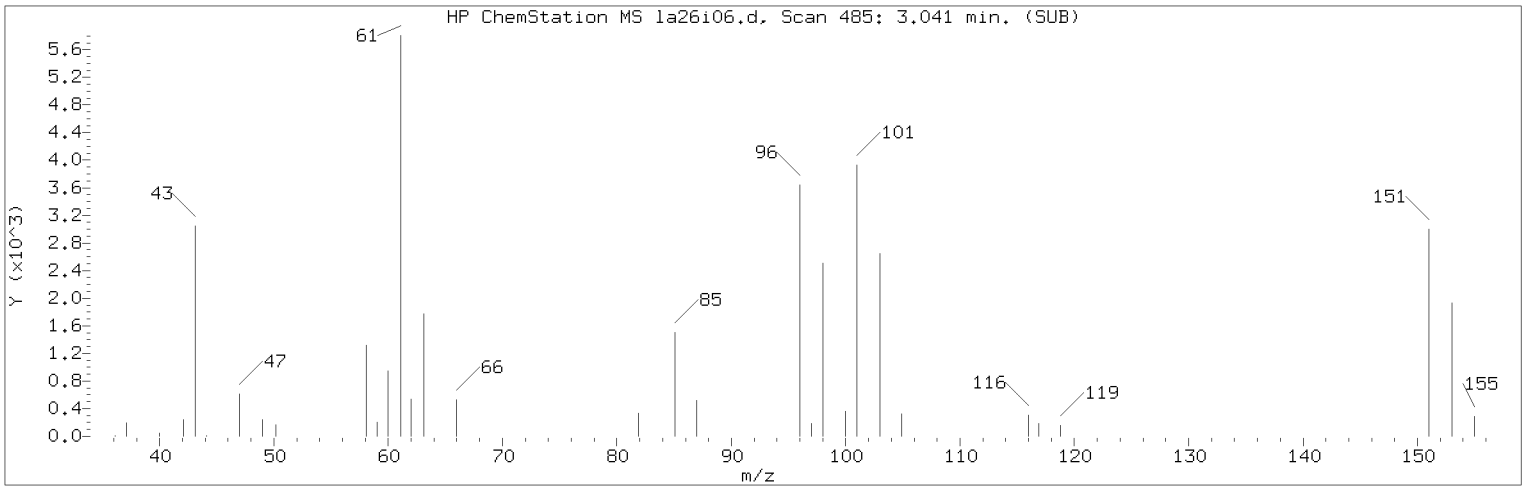
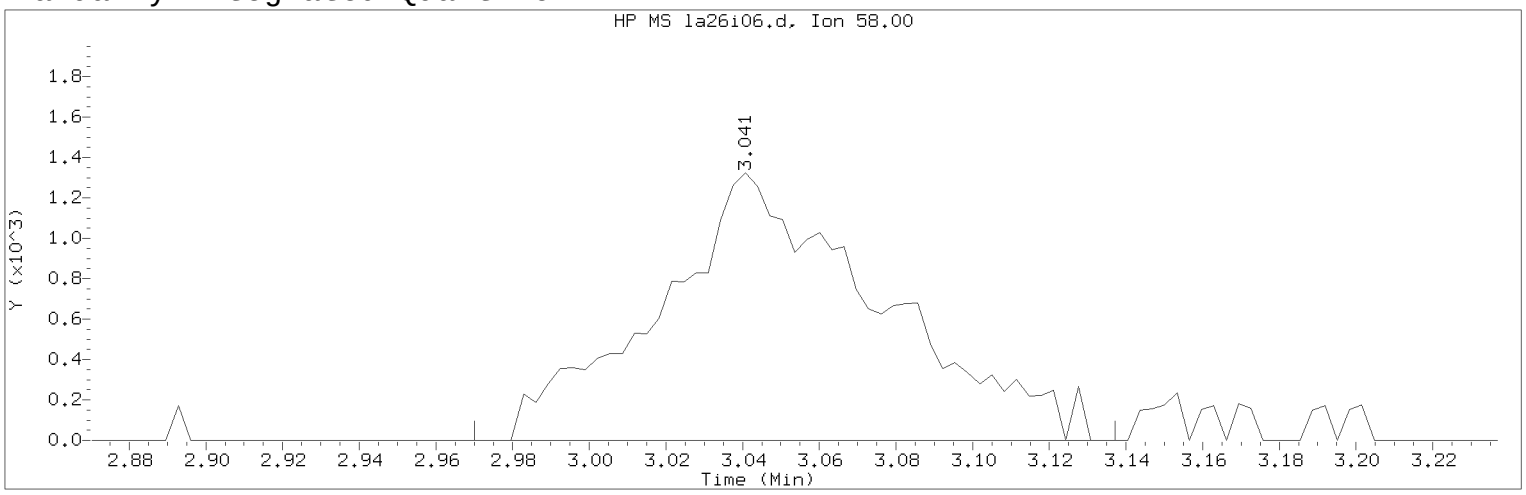
Target 3.5 esignature userKAS02648 Page 146

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

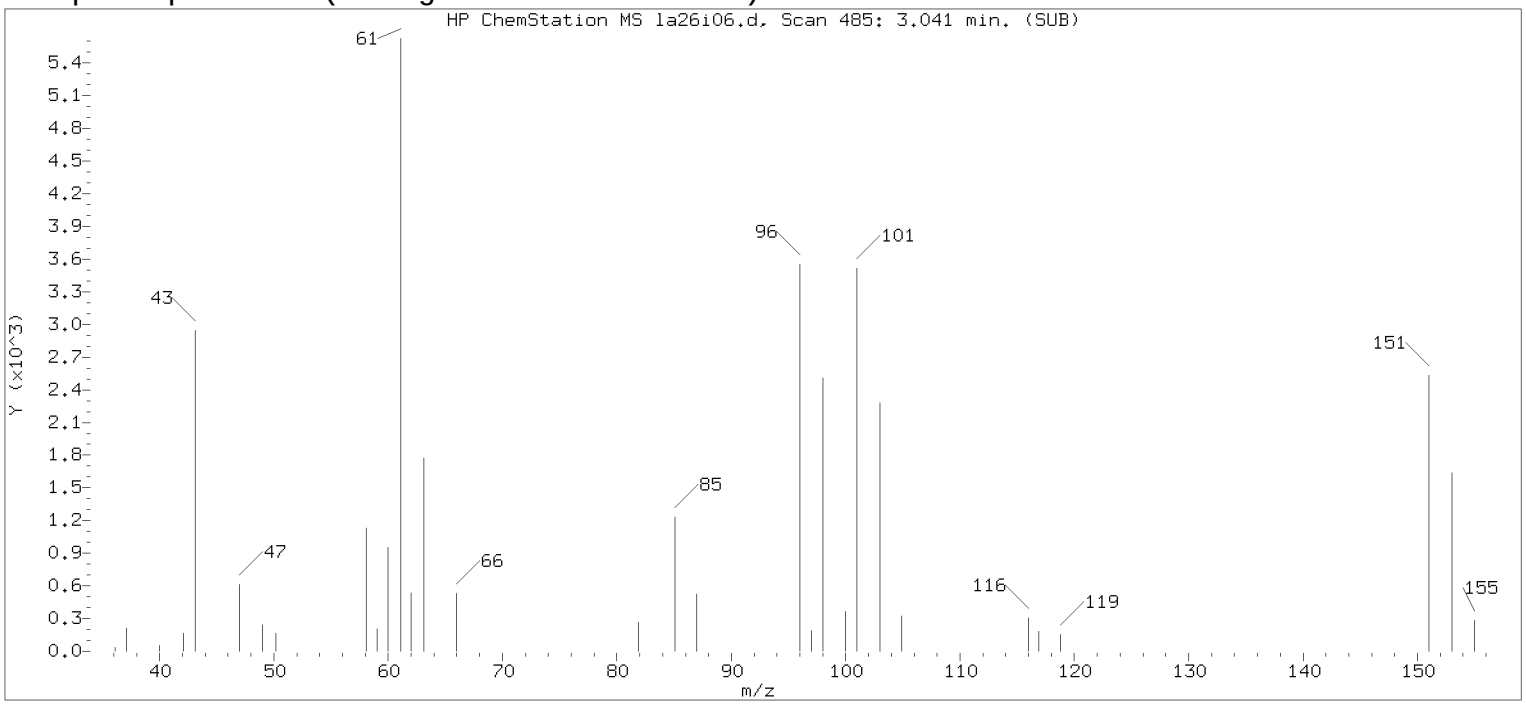
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area (flag) : 5325M
On-Column Amount (ng) : 7.3073
Integration start scan : 462 Integration stop scan: 514
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

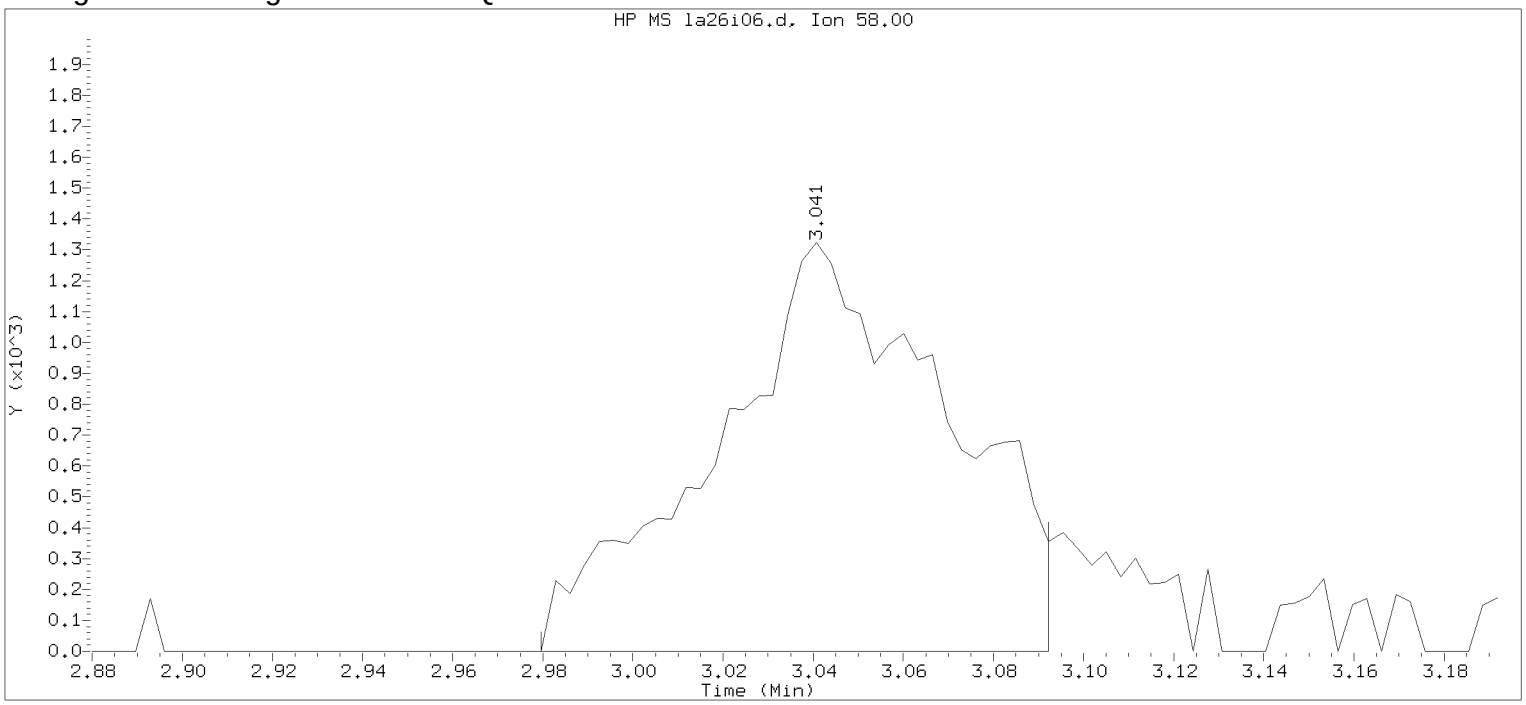
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area : 4747
On-column Amount (ng) : 6.6314
Integration start scan : 465 Integration stop scan: 500
Y at integration start : 0 Y at integration end: 0

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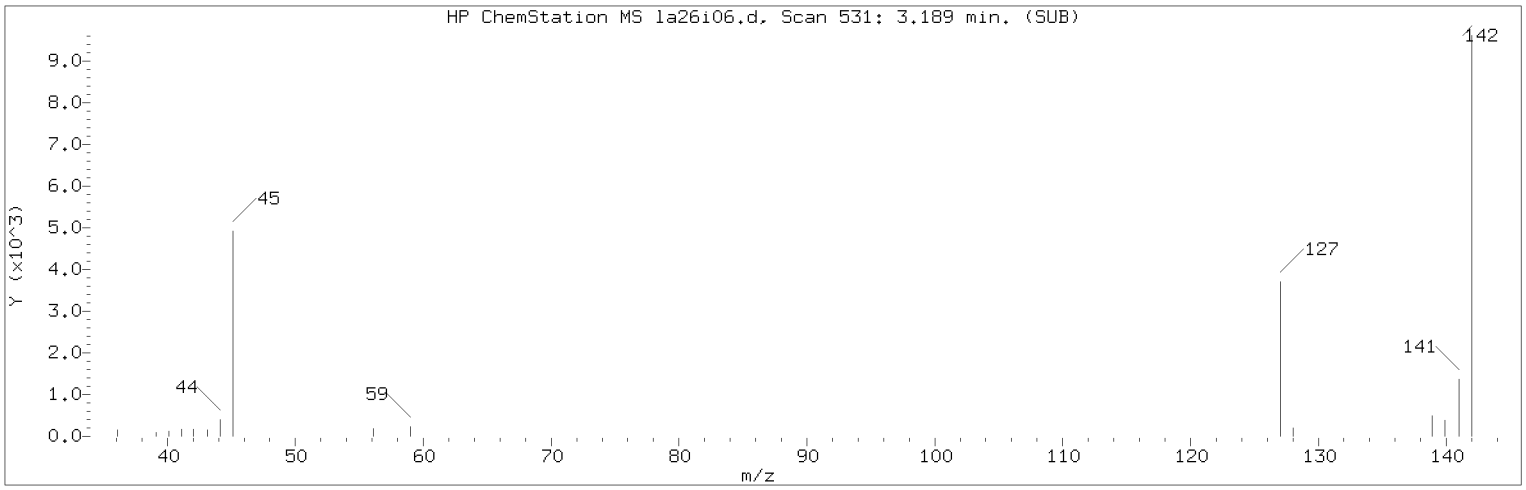
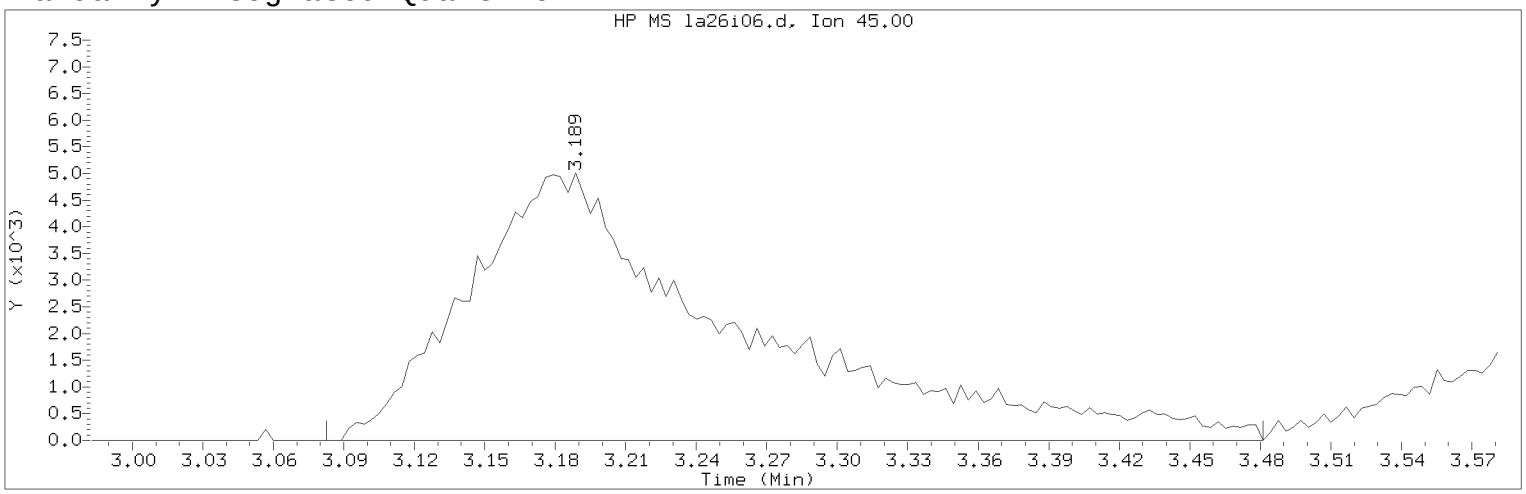
Target 3.5 esignature userKAS02648 RD187

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

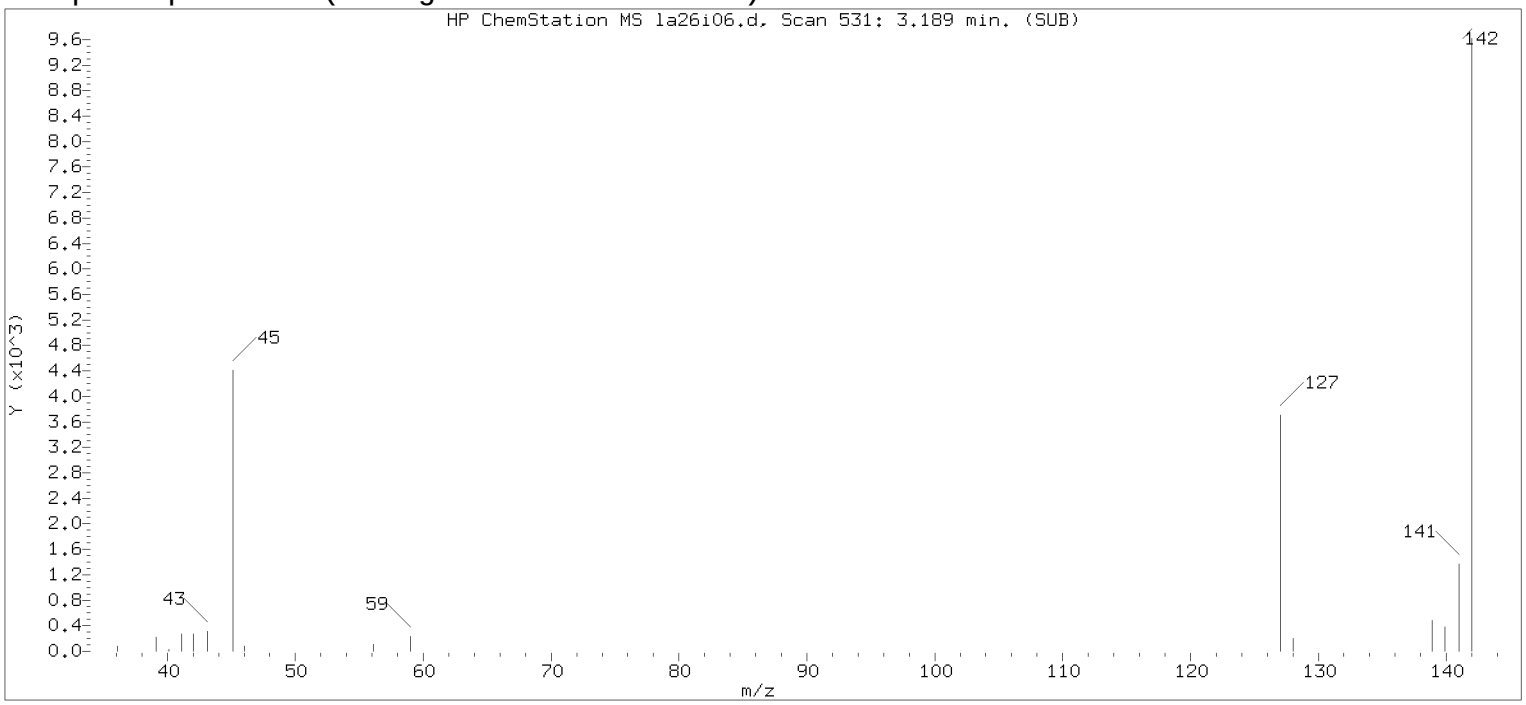
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area (flag) : 40137M
On-Column Amount (ng) : 83.0856
Integration start scan : 497 Integration stop scan: 621
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

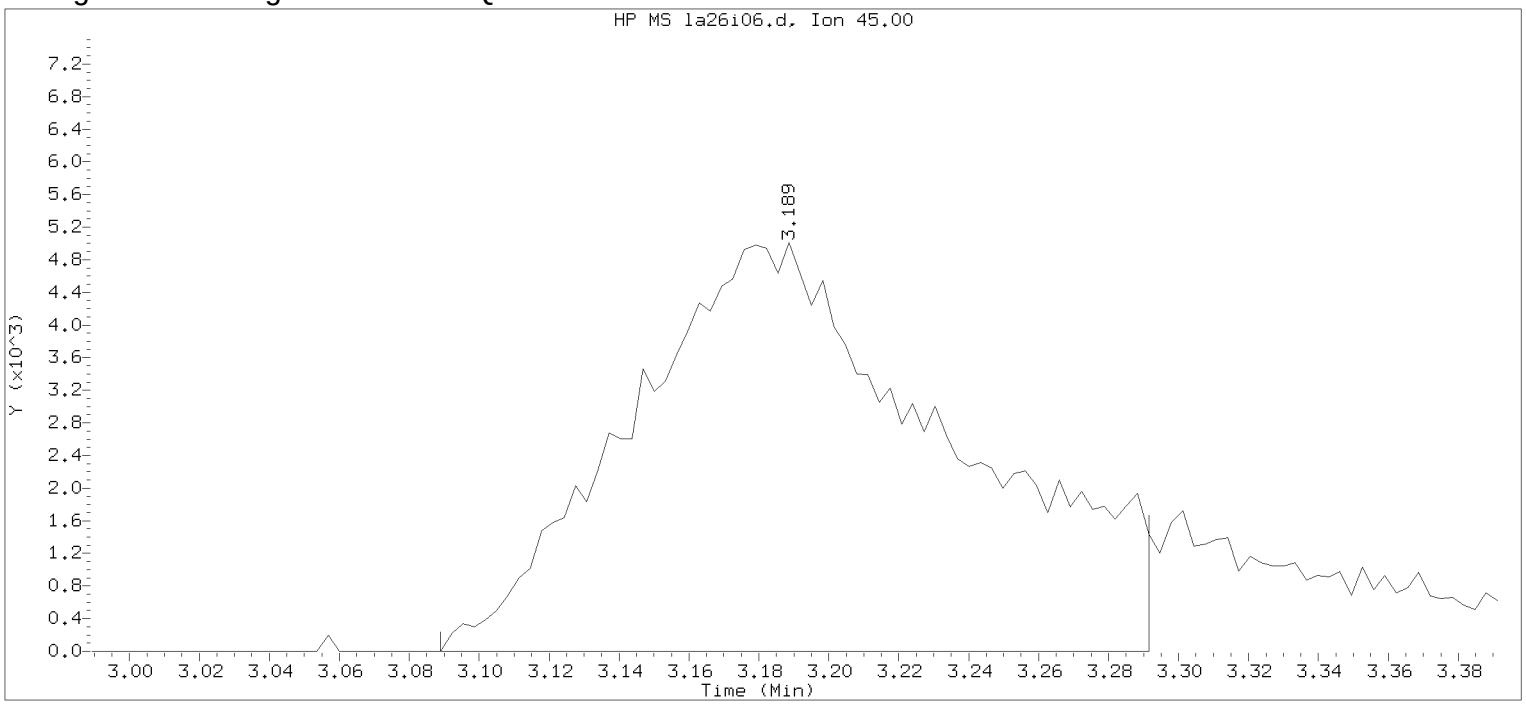
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area : 31951
On-column Amount (ng) : 64.3252
Integration start scan : 499 Integration stop scan: 562
Y at integration start : 0 Y at integration end: 0

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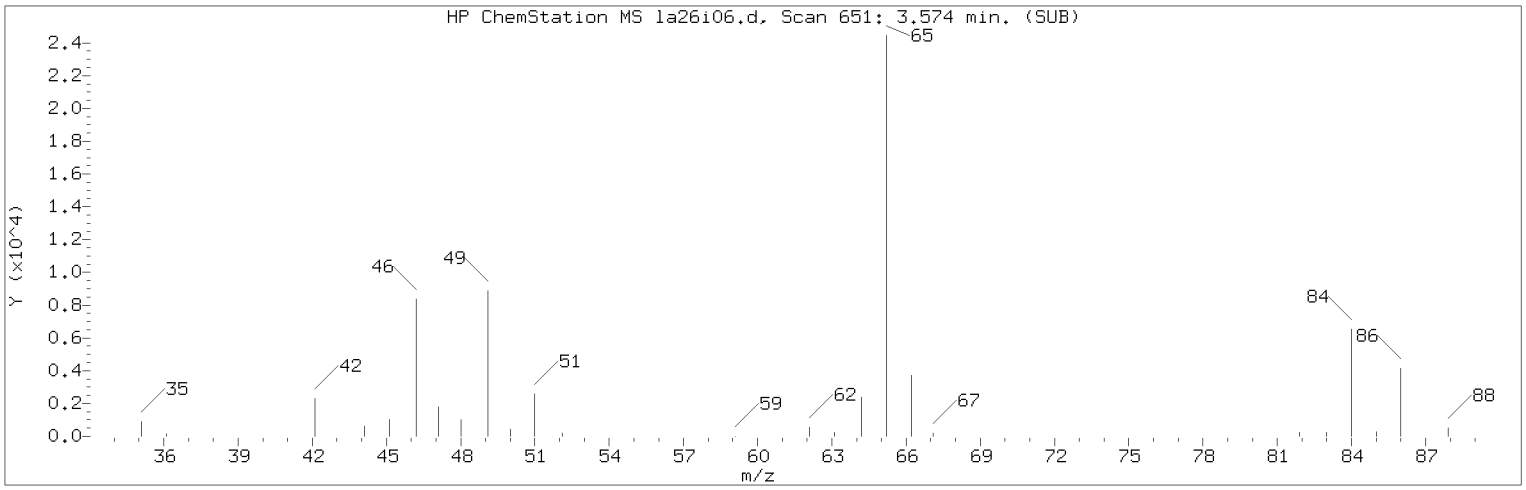
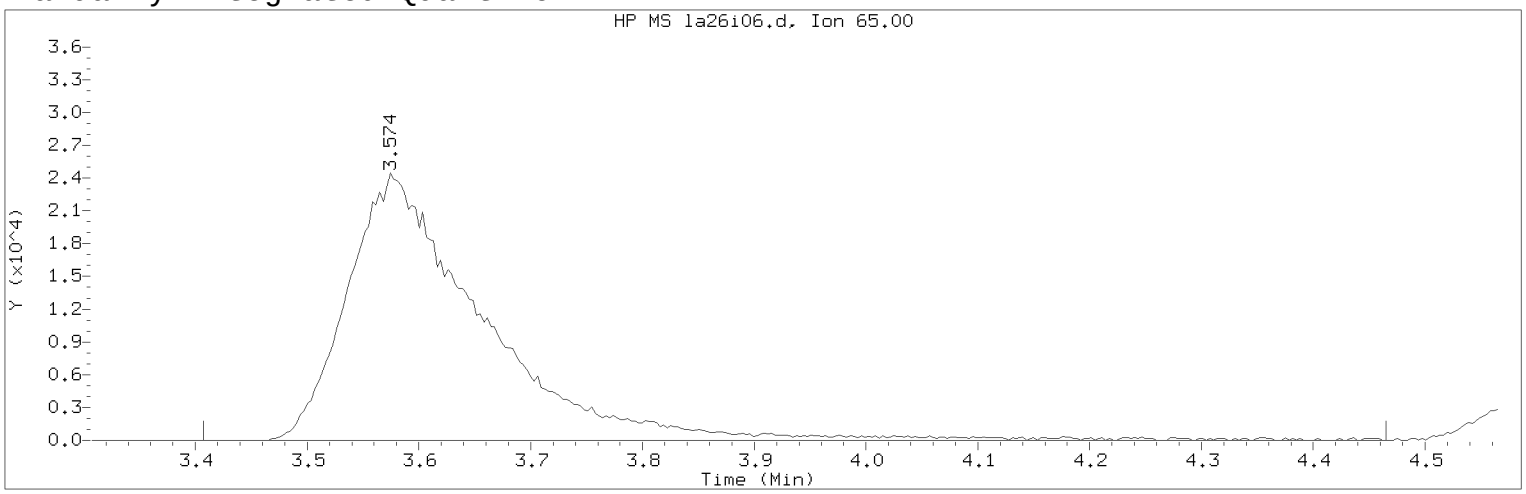
Target 3.5 esignature userKAS02648 R0187

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

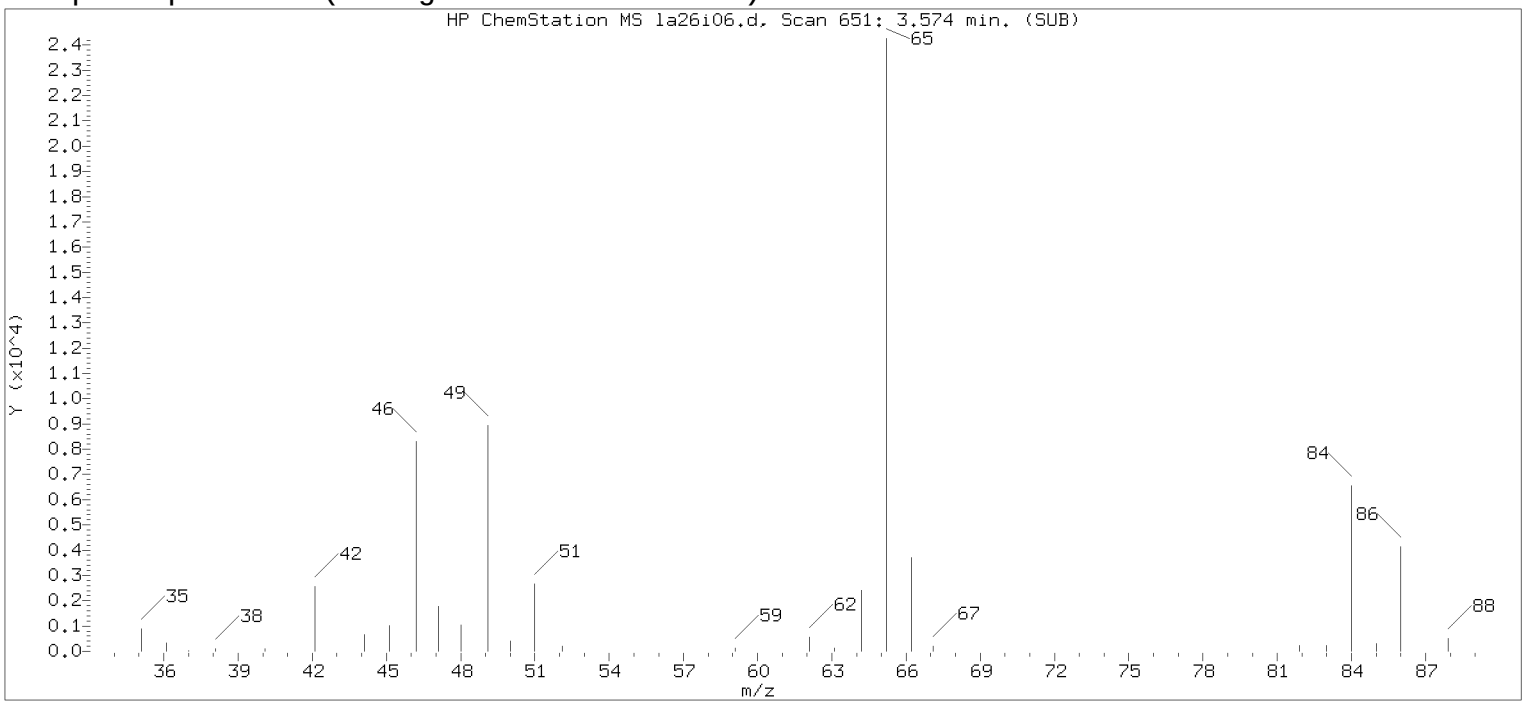
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 205105M
On-Column Amount (ng) : 250.0000
Integration start scan : 598 Integration stop scan: 927
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

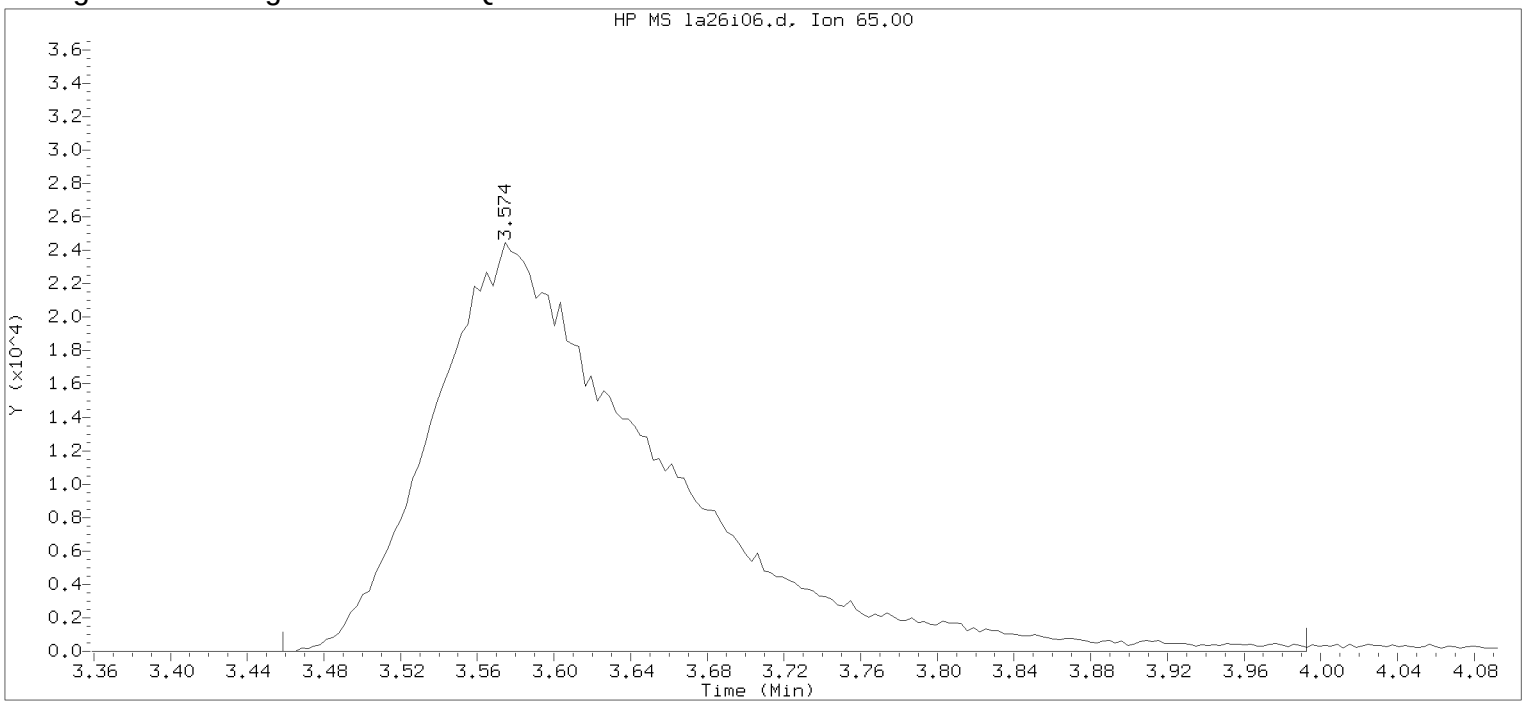
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area : 200349
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 780
Y at integration start : 0 Y at integration end: 0

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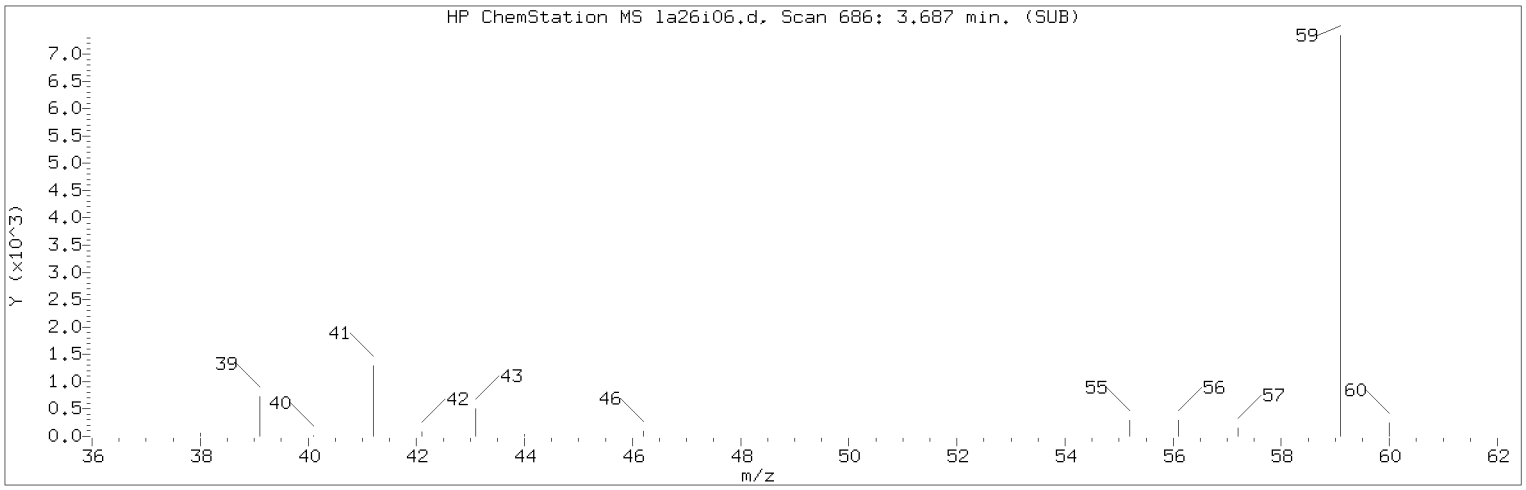
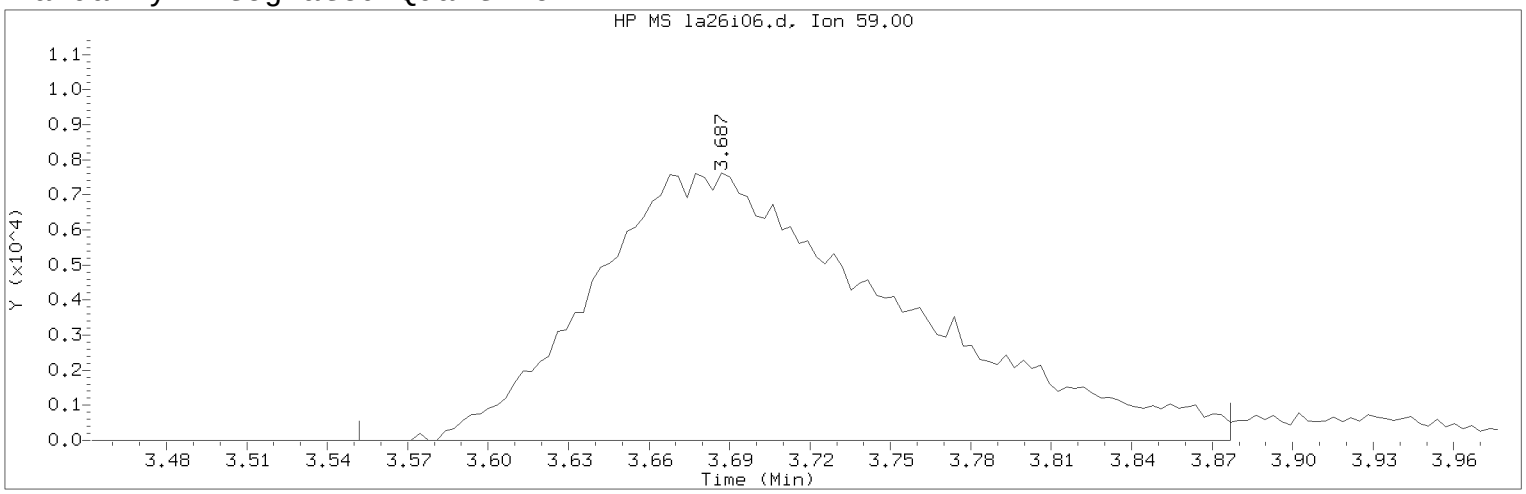
Target 3.5 esignature userKAS02648 RD187

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

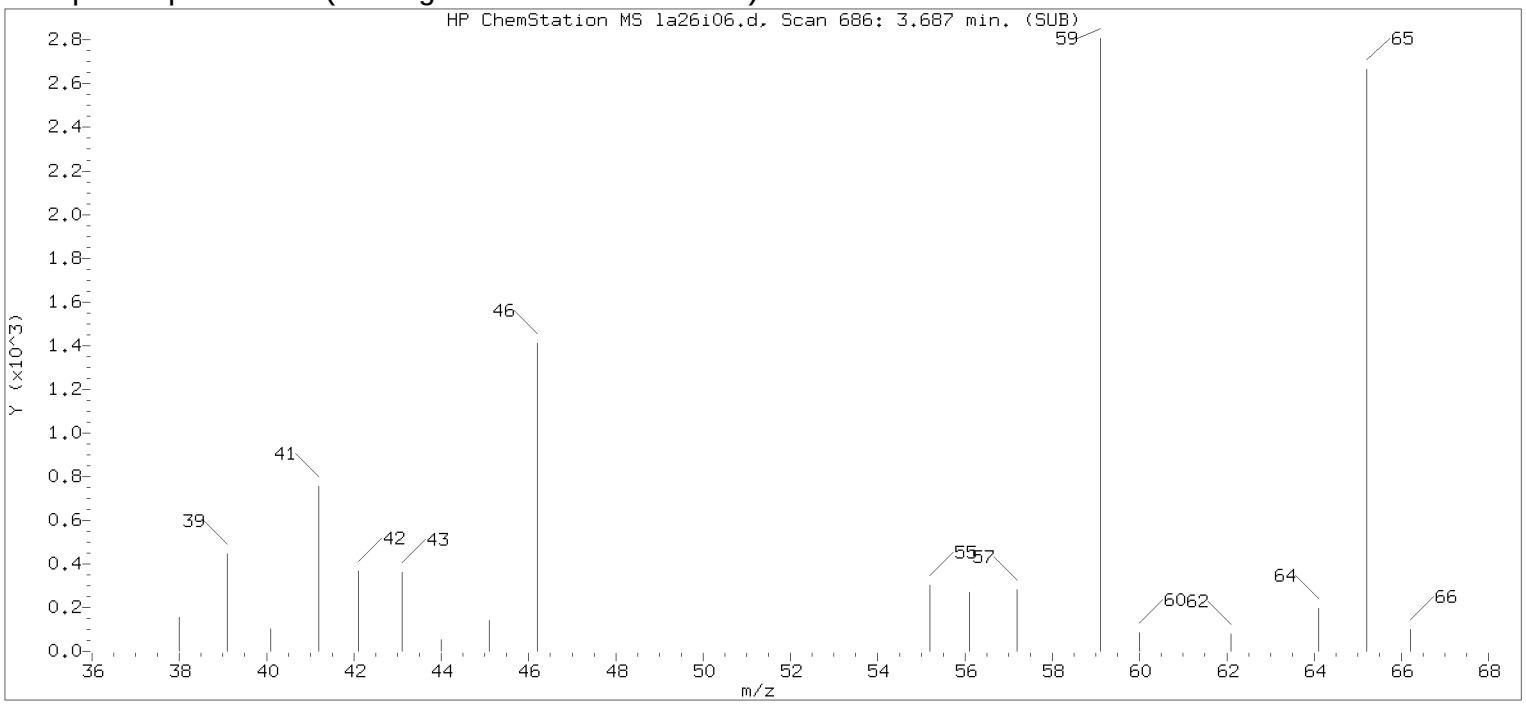
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area (flag) : 60772M
On-Column Amount (ng) : 76.5789
Integration start scan : 643 Integration stop scan: 744
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

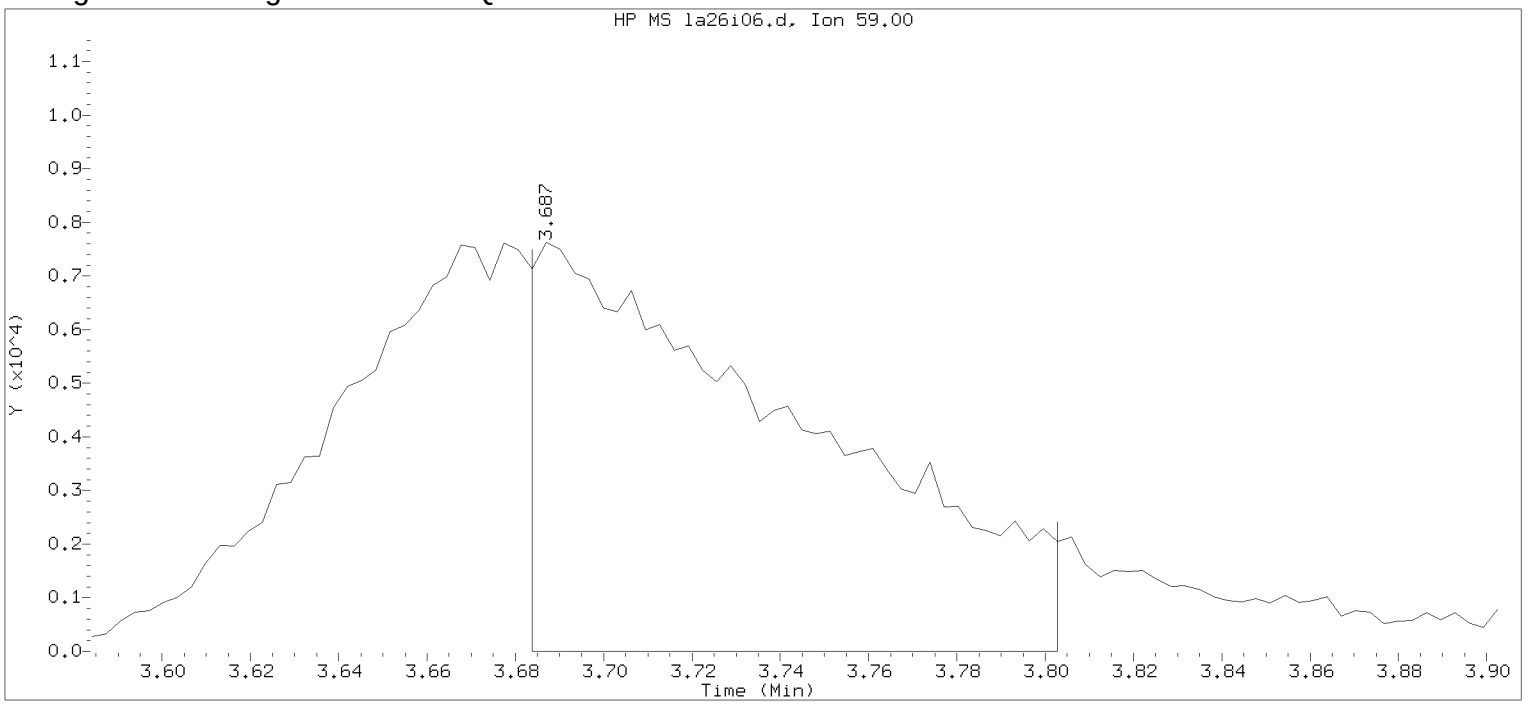
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

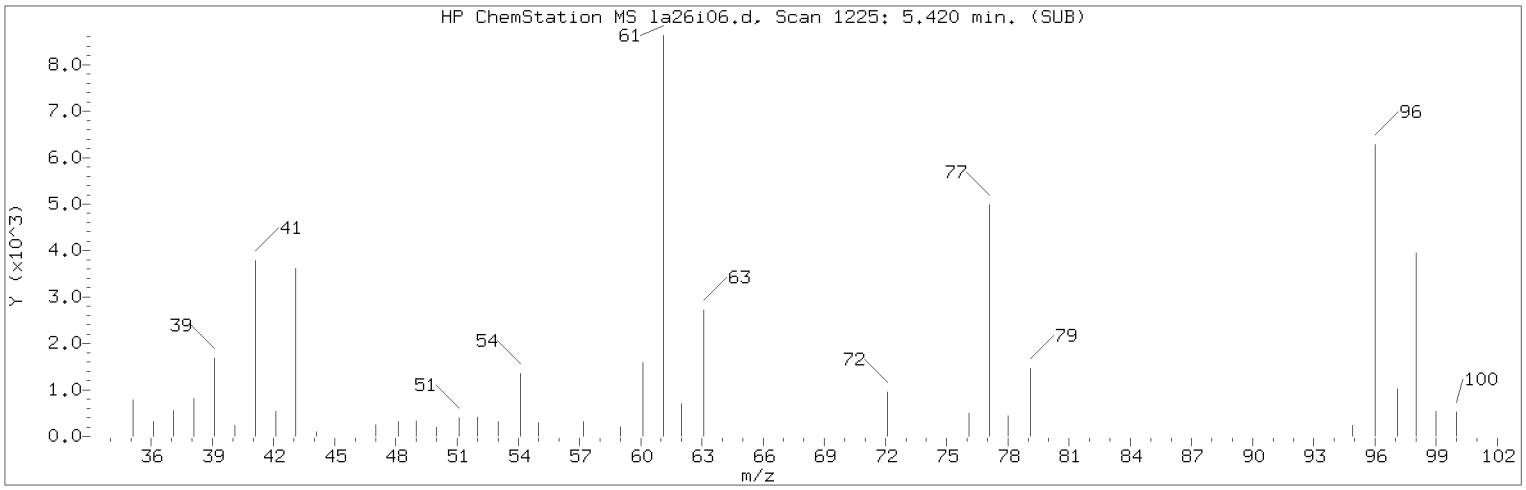
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

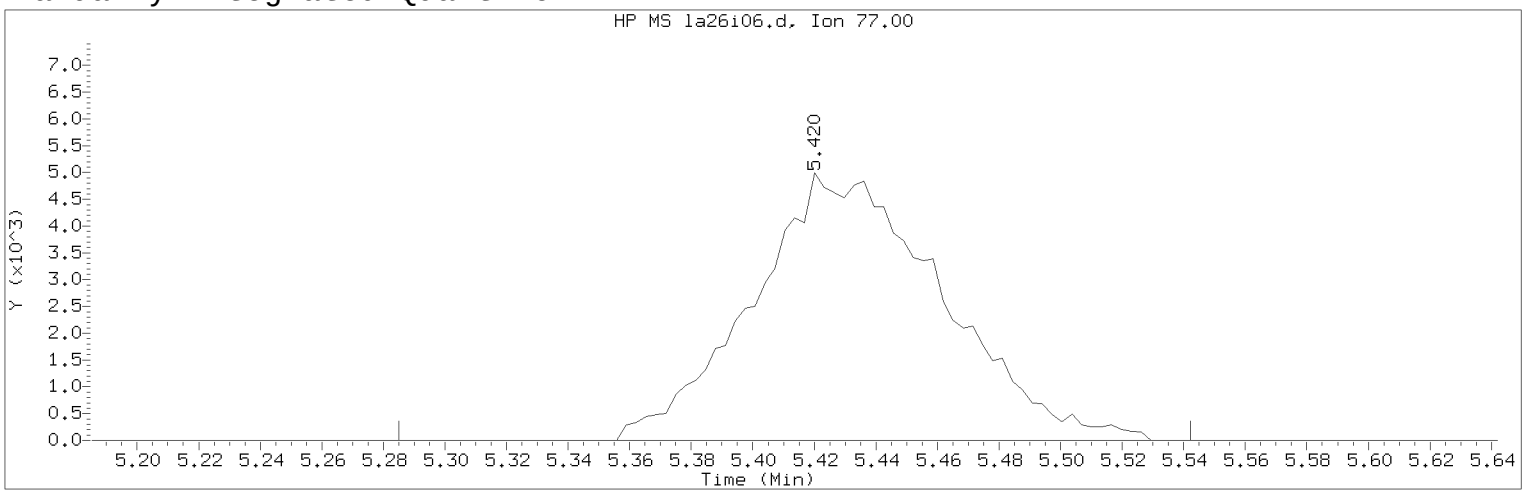
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area : 31960
On-column Amount (ng) : 48.0104
Integration start scan : 684 Integration stop scan: 721
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

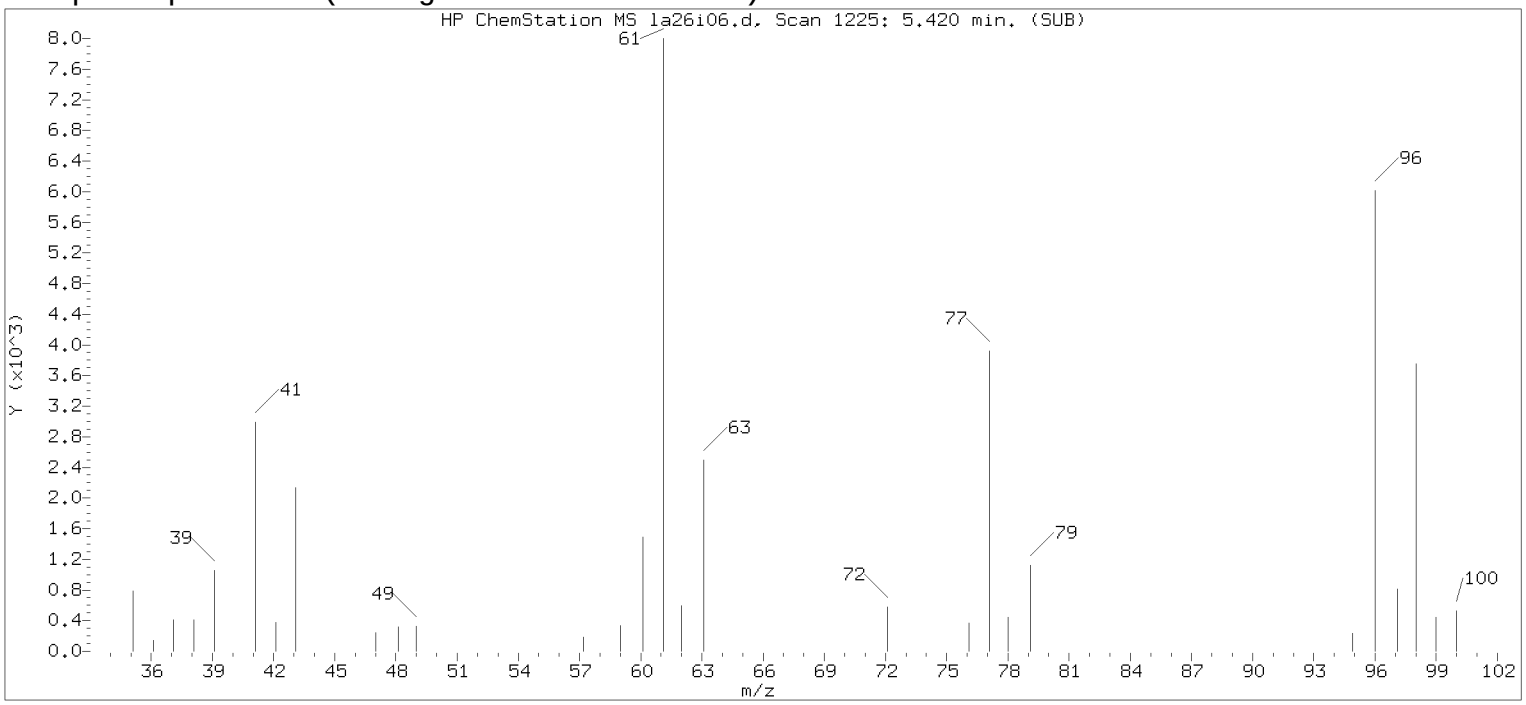
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1225
Retention Time (minutes): 5.420
Quant Ion : 77.00
Area (flag) : 21315M
On-Column Amount (ng) : 3.8194
Integration start scan : 1182 Integration stop scan: 1262
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

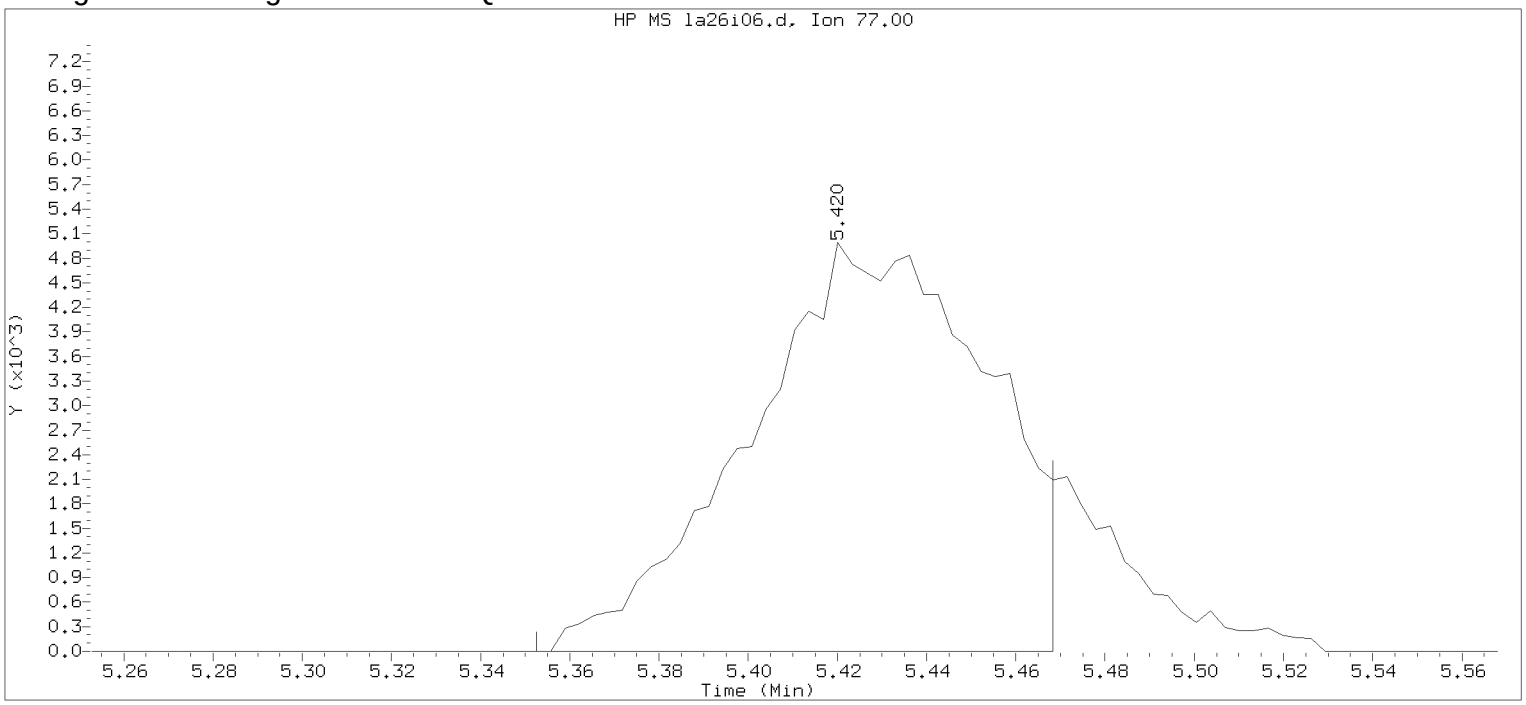
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

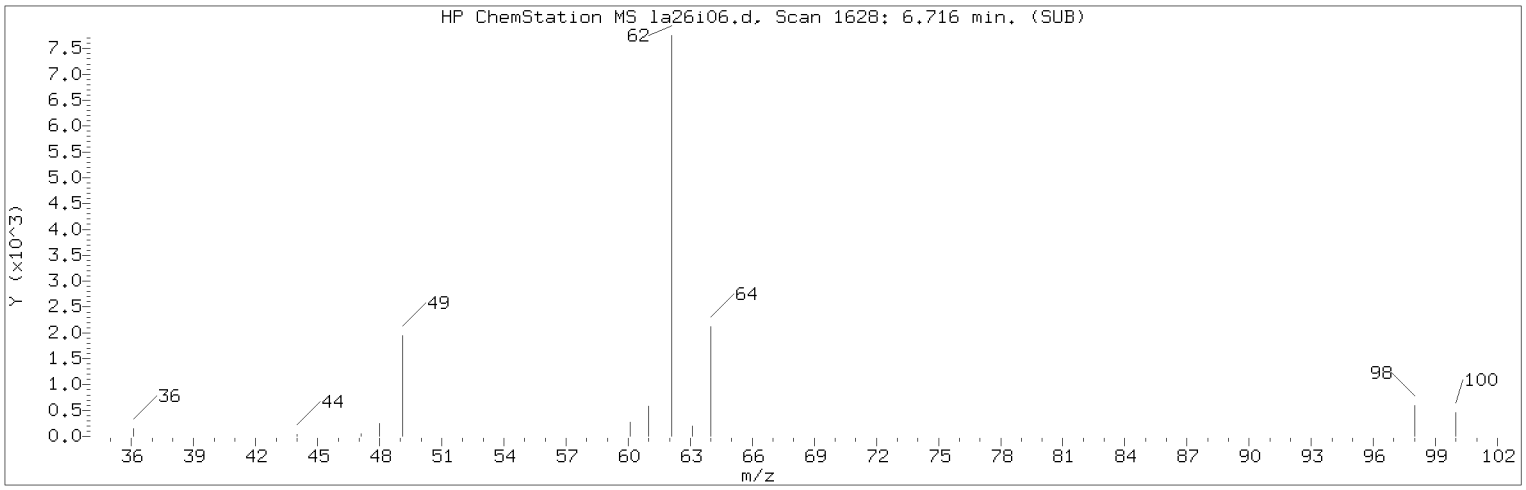
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

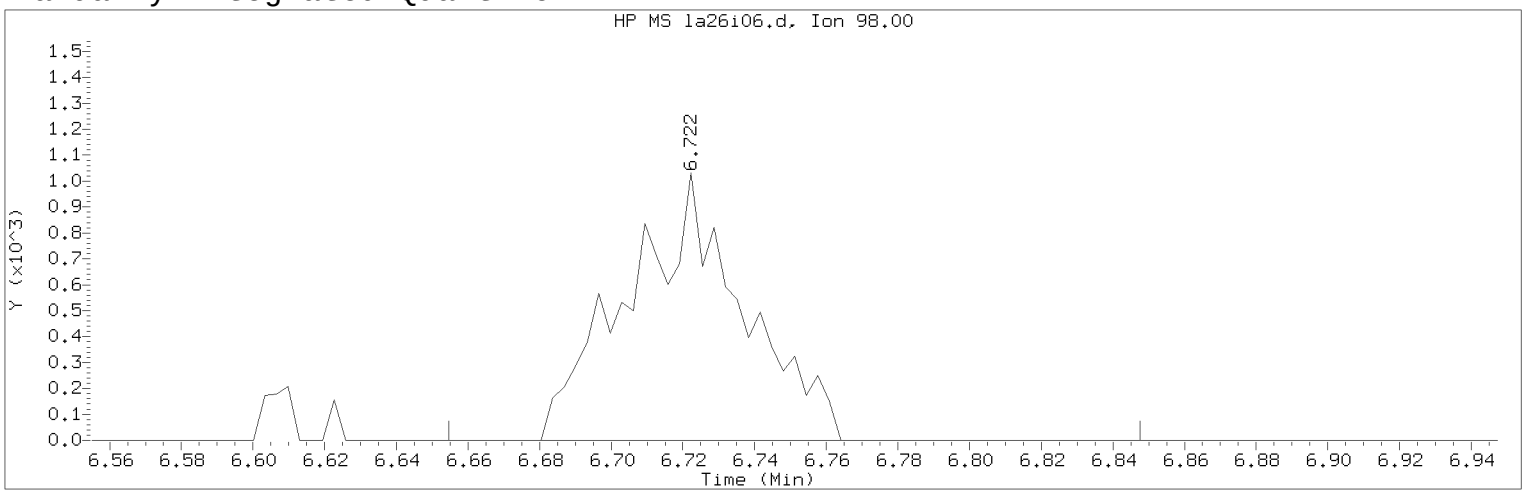
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1225
Retention Time (minutes): 5.420
Quant Ion : 77.00
Area : 18551
On-column Amount (ng) : 3.2757
Integration start scan : 1203 Integration stop scan: 1239
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

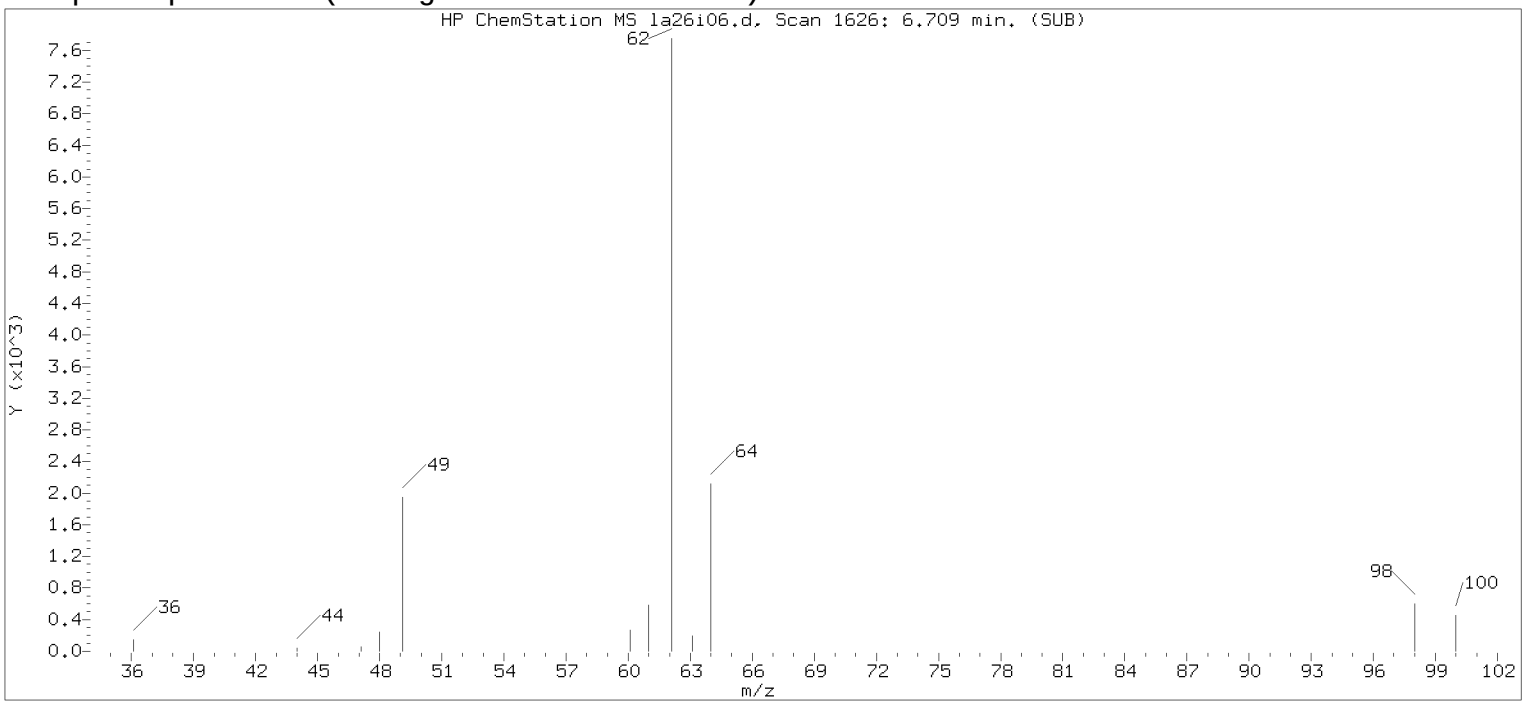
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1630
Retention Time (minutes): 6.722
Quant Ion : 98.00
Area (flag) : 2305M
On-Column Amount (ng) : 4.0222
Integration start scan : 1608 Integration stop scan: 1668
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

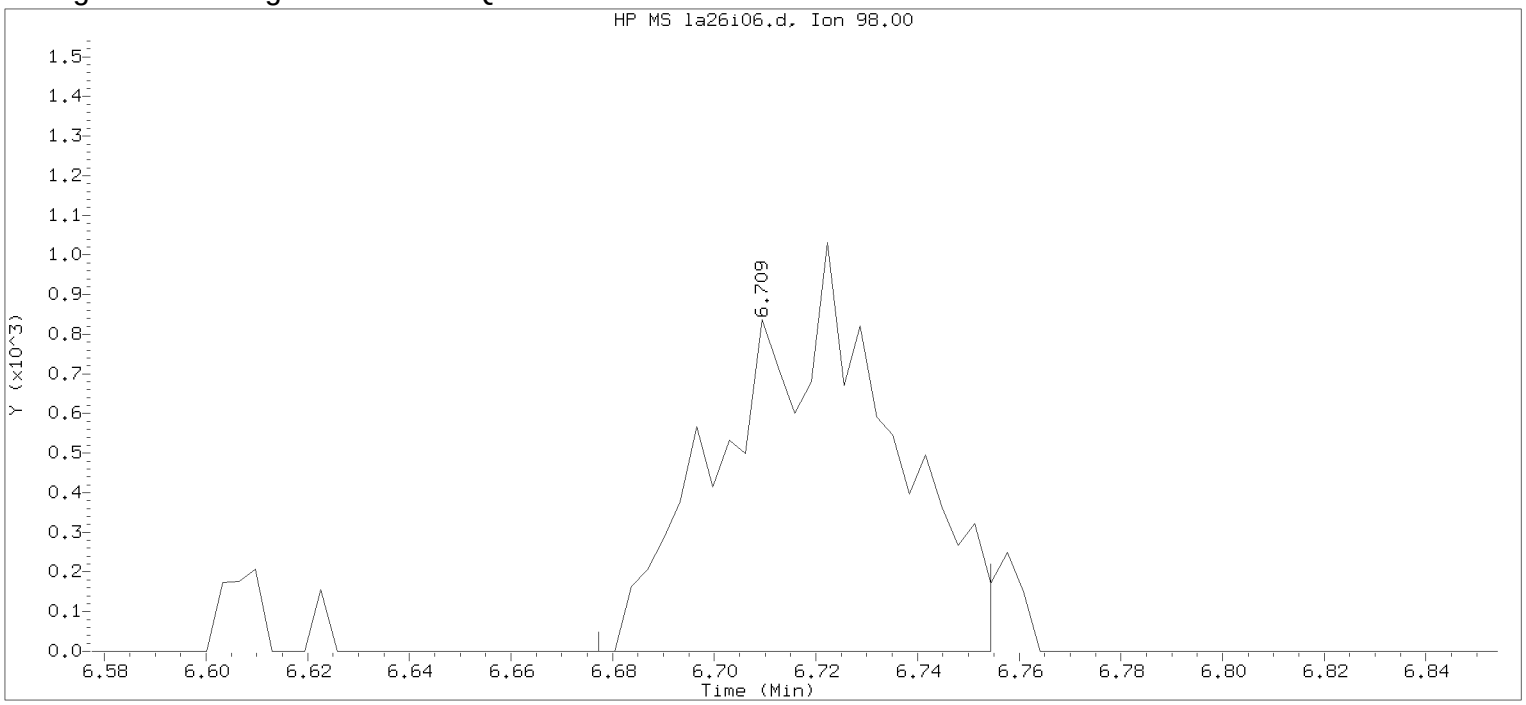
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

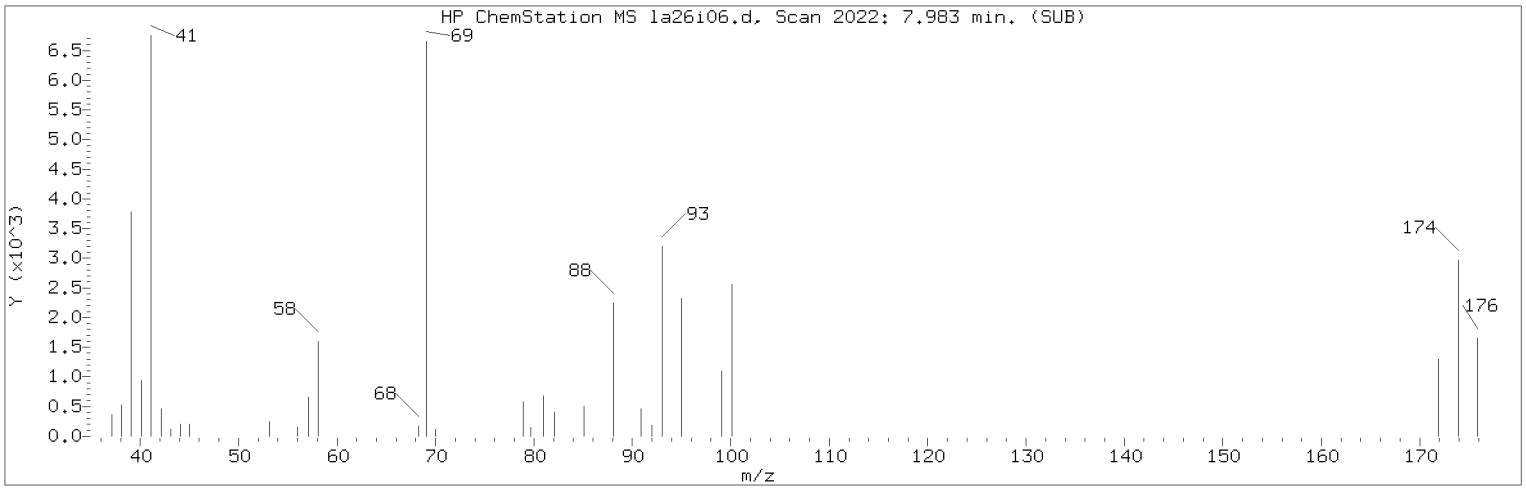
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

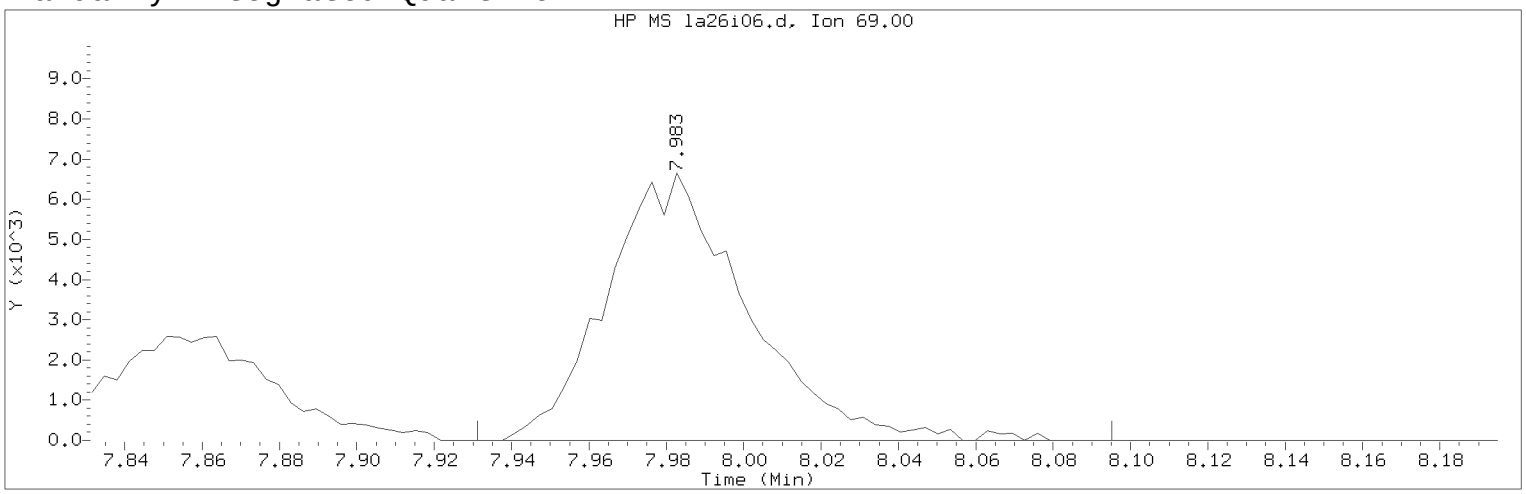
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1626
Retention Time (minutes): 6.709
Quant Ion : 98.00
Area : 2211
On-column Amount (ng) : 3.5785
Integration start scan : 1615 Integration stop scan: 1639
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

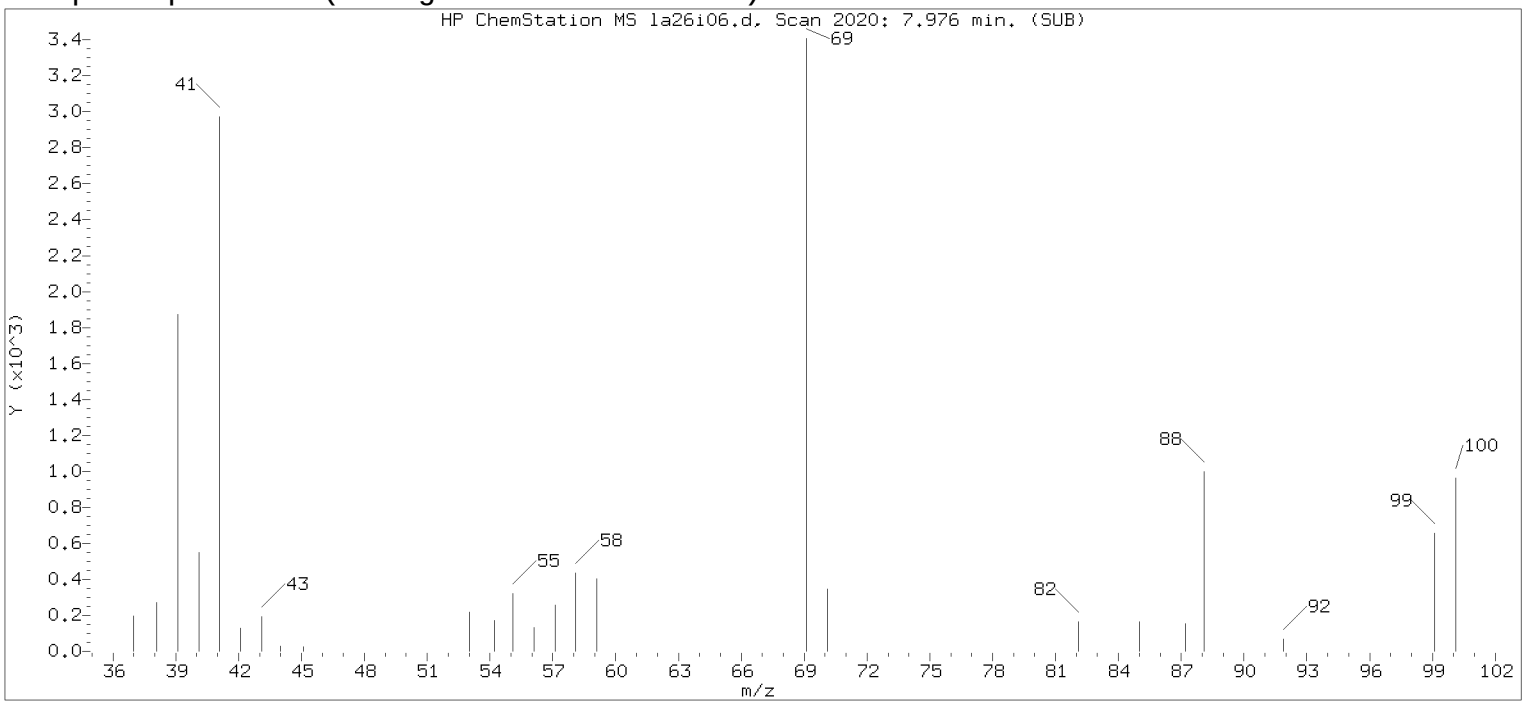
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 16816M
On-Column Amount (ng) : 3.7569
Integration start scan : 2005 Integration stop scan: 2056
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

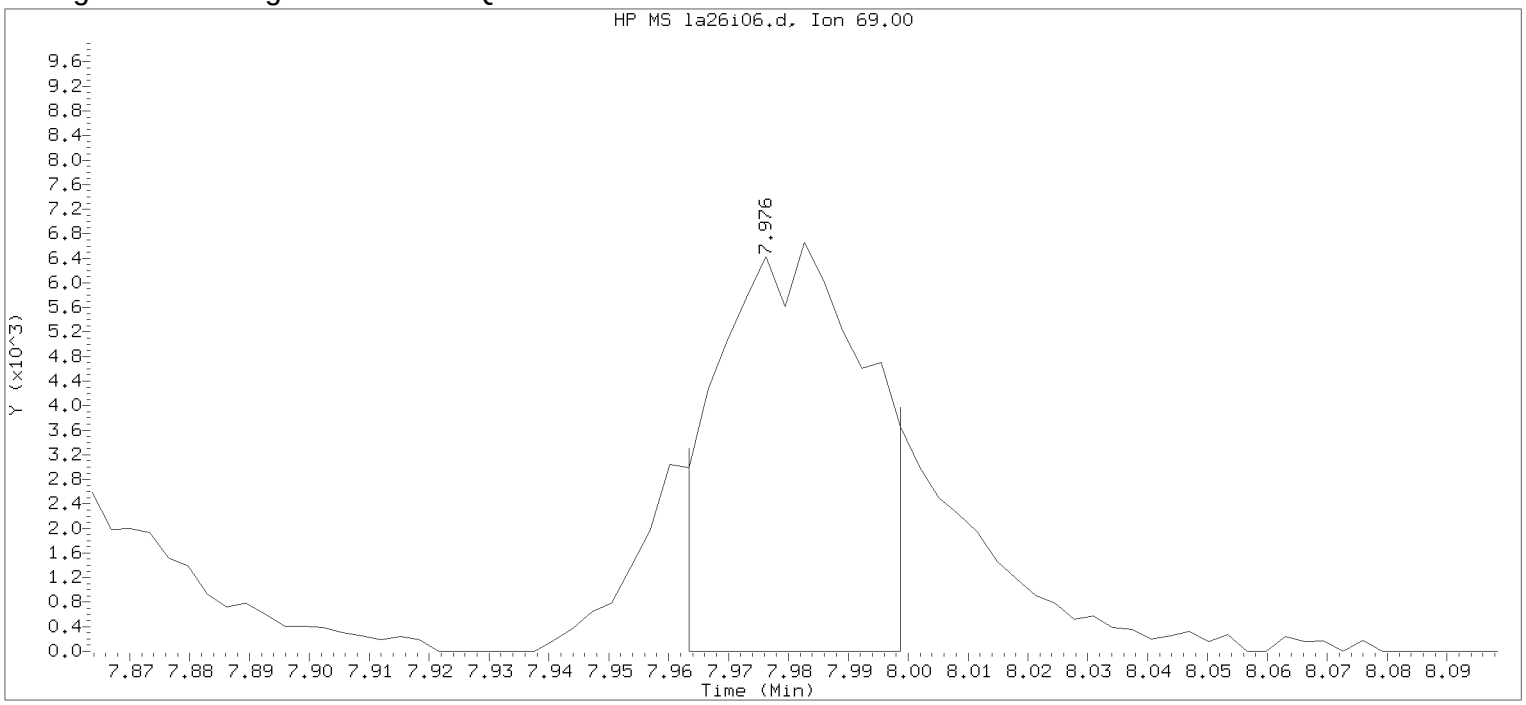
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

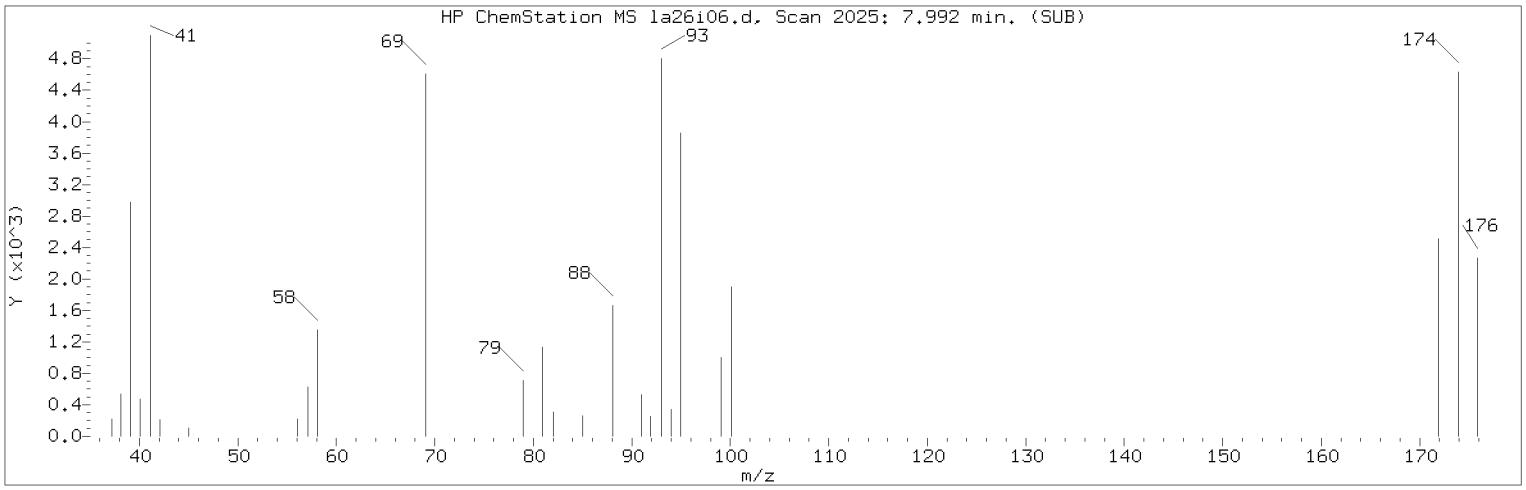
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

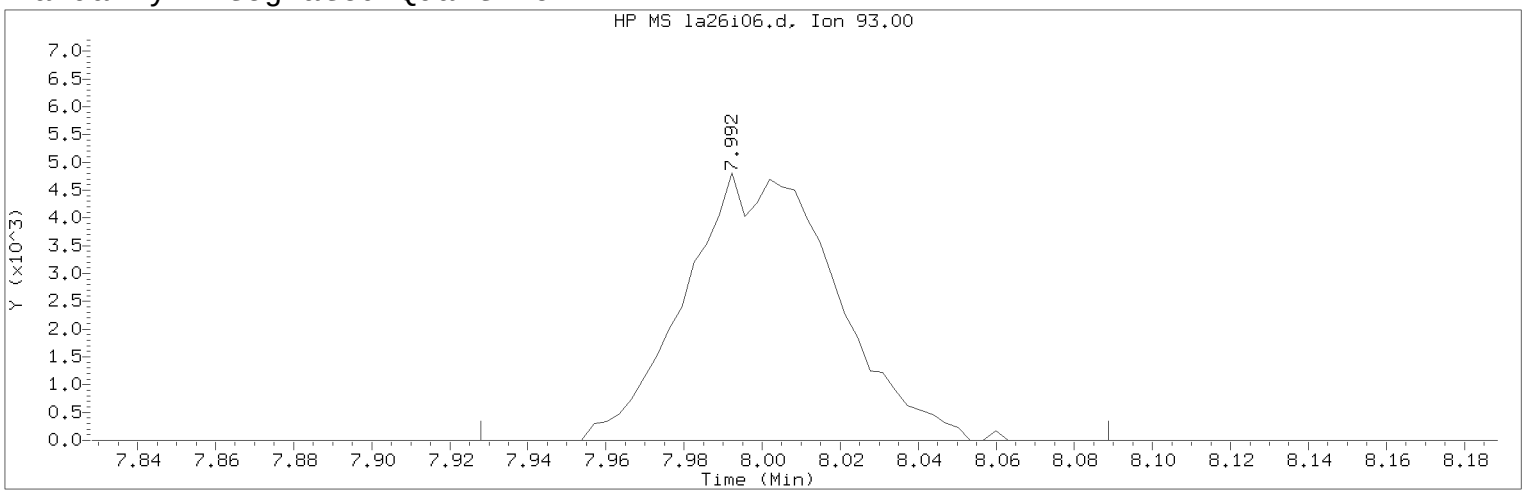
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 69.00
Area : 11128
On-column Amount (ng) : 2.7989
Integration start scan : 2015 Integration stop scan: 2026
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

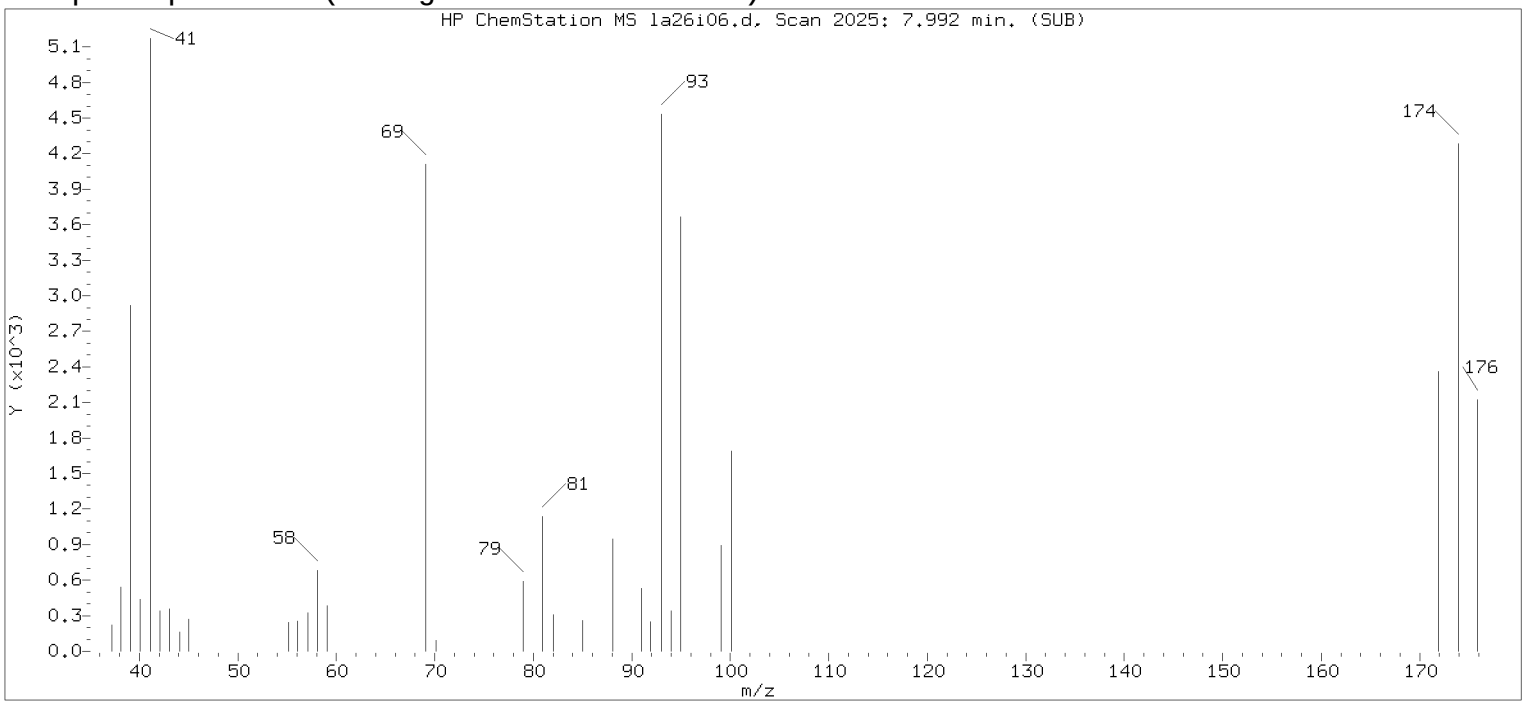
Compound Number : 74
Compound Name : Dibromomethane
Scan Number : 2025
Retention Time (minutes): 7.992
Quant Ion : 93.00
Area (flag) : 12893M
On-Column Amount (ng) : 3.9207
Integration start scan : 2004 Integration stop scan: 2054
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

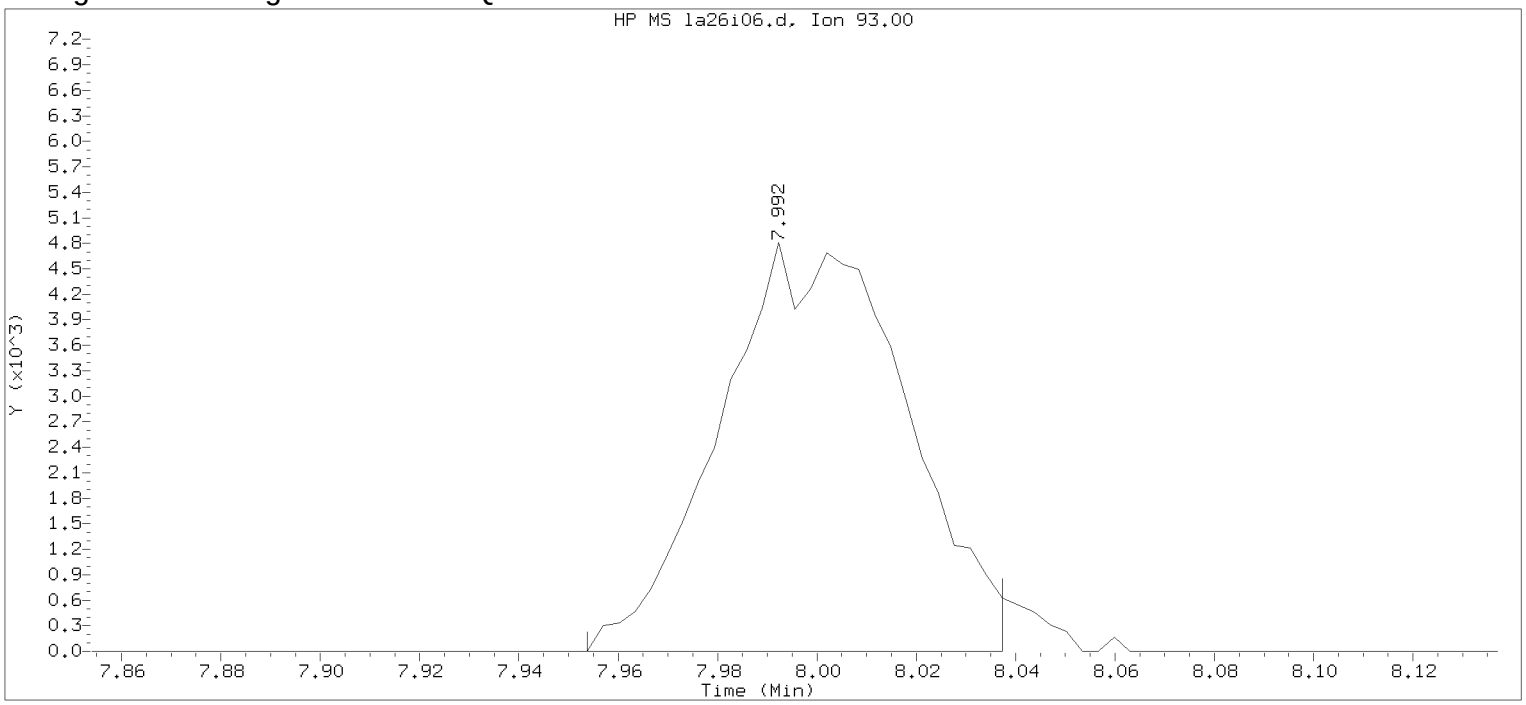
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

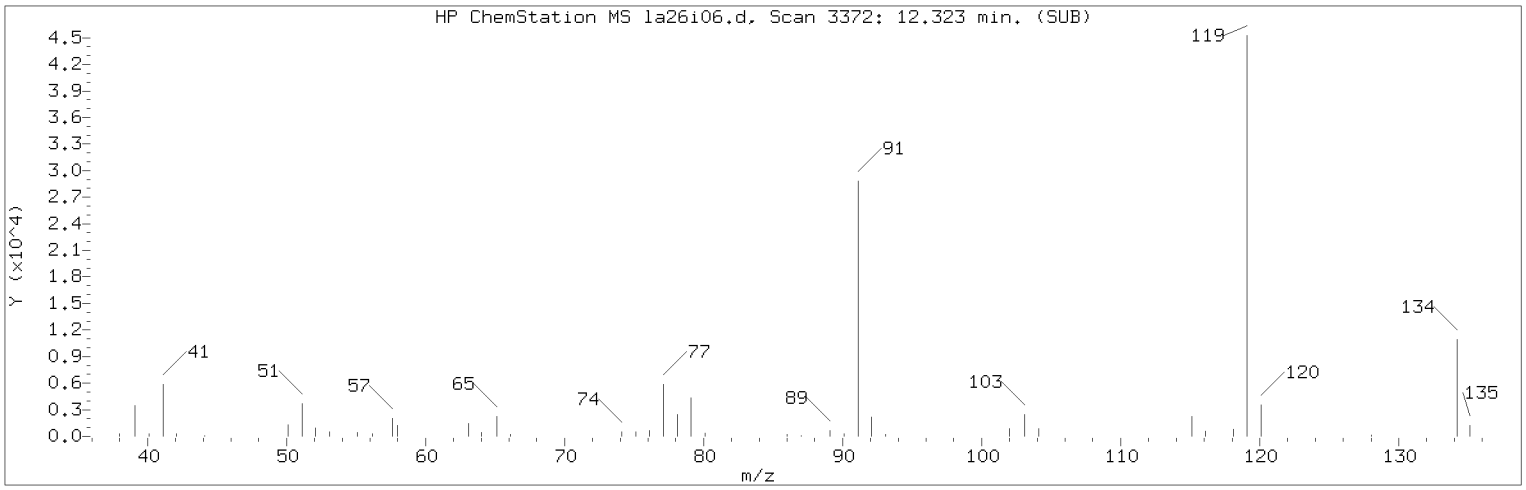
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

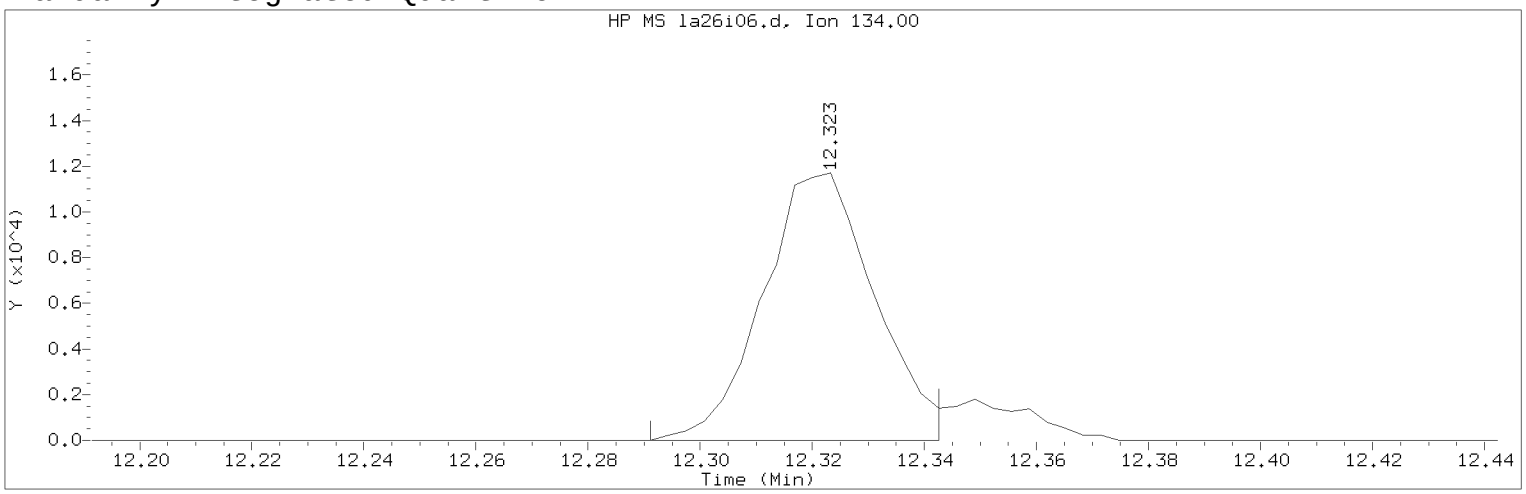
Compound Number : 74
Compound Name : Dibromomethane
Scan Number : 2025
Retention Time (minutes): 7.992
Quant Ion : 93.00
Area : 12501
On-column Amount (ng) : 3.7797
Integration start scan : 2012 Integration stop scan: 2038
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

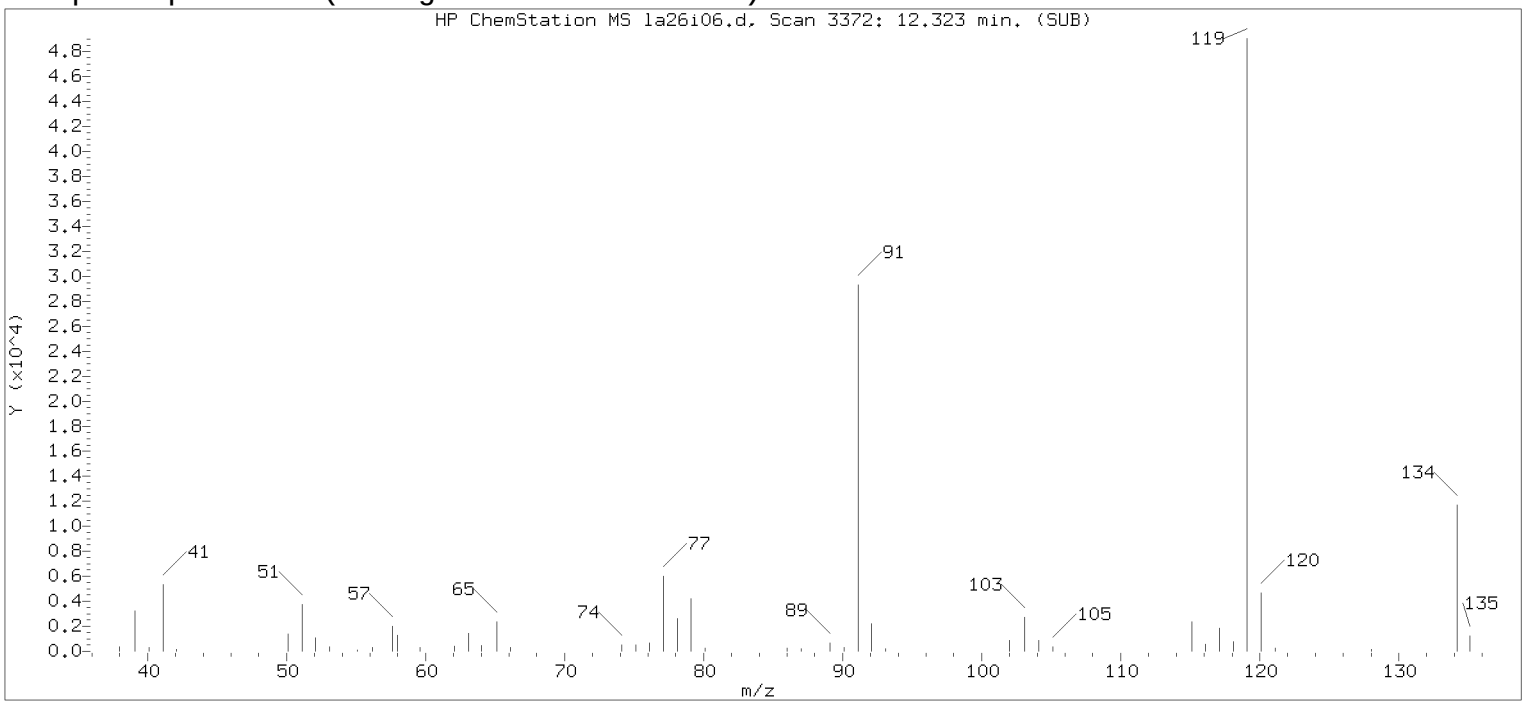
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area (flag) : 16177M
On-Column Amount (ng) : 3.8306
Integration start scan : 3361 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

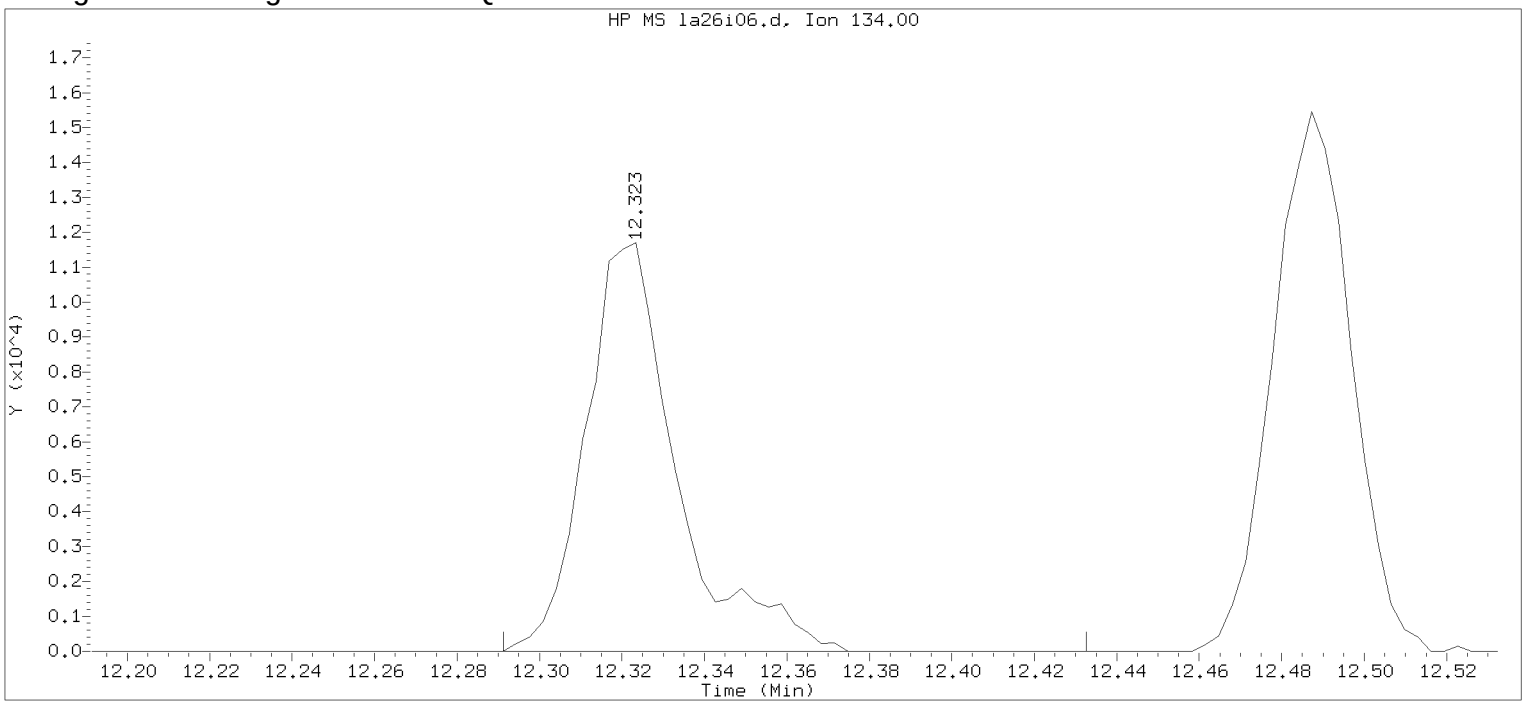
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



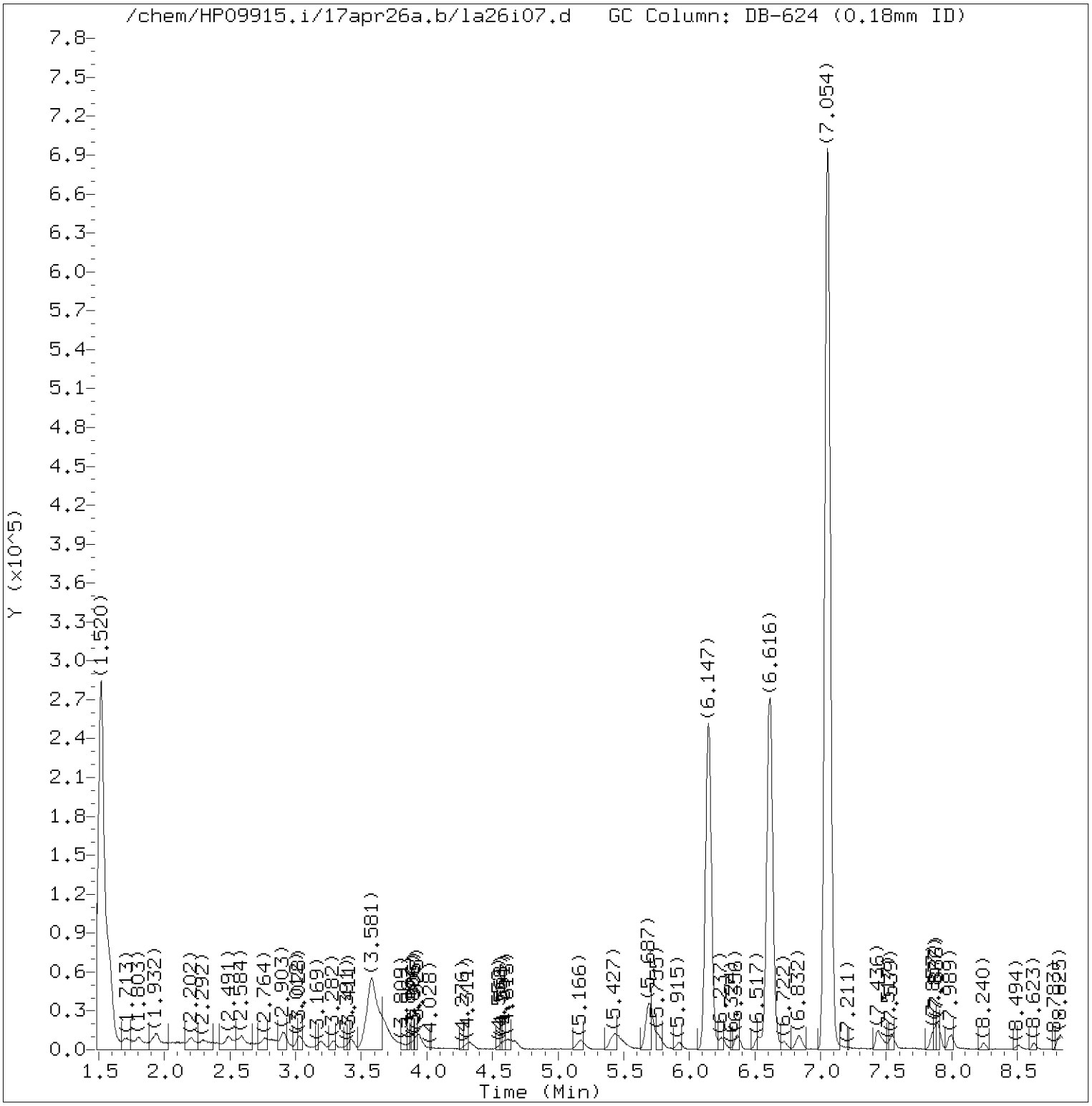

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area : 17933
On-column Amount (ng) : 4.0372
Integration start scan : 3361 Integration stop scan: 3405
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

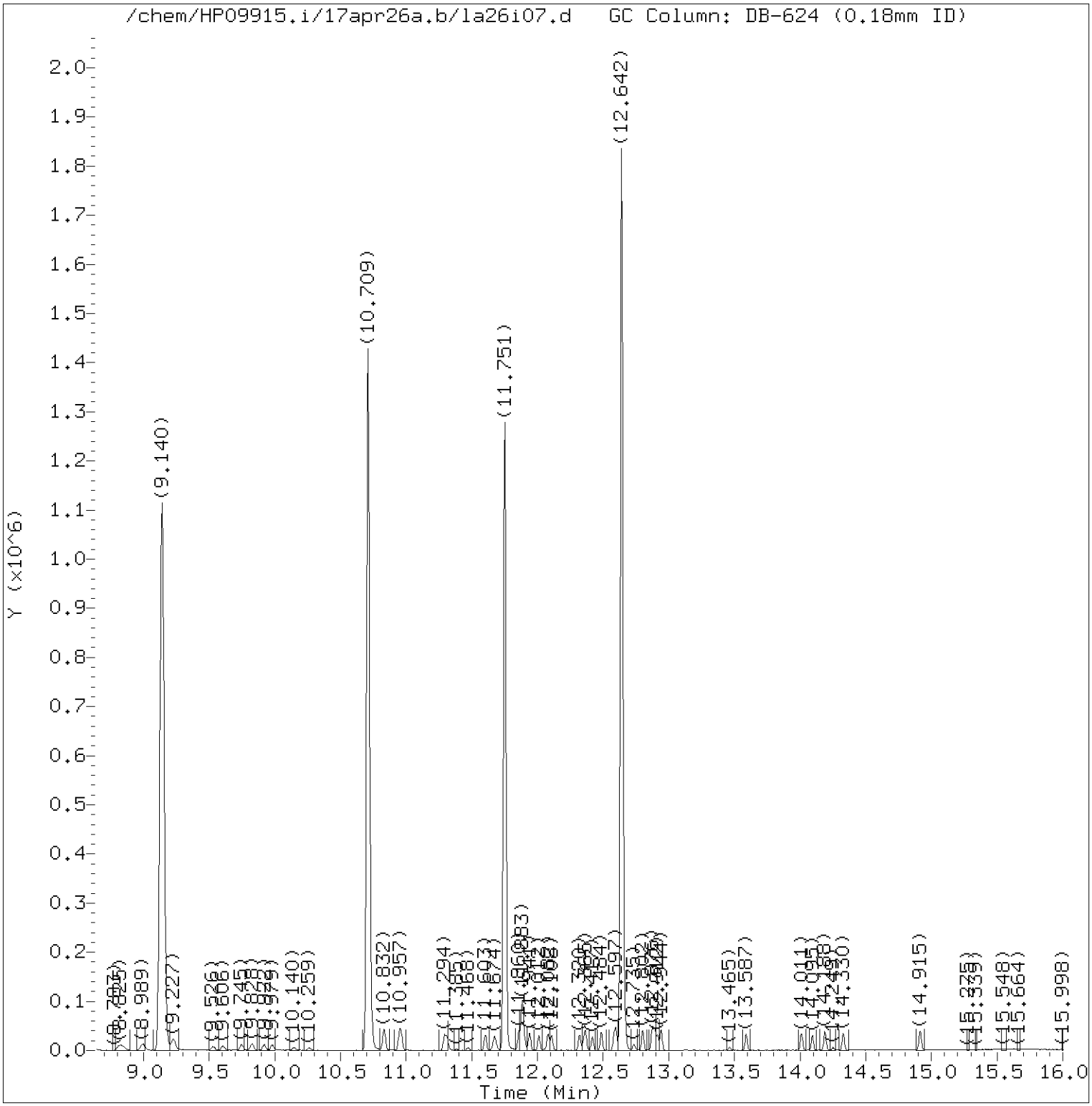
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 5134 | 0.831 |
| 4) Chloromethane | (2) | 1.806 | 50 | 5658 | 0.892 |
| 6) Vinyl Chloride | (2) | 1.922 | 62 | 5385 | 0.879 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 3879M | 1.038 |
| 8) Bromomethane | (2) | 2.205 | 94 | 3700 | 0.898 |
| 9) Chloroethane | (2) | 2.292 | 64 | 3136 | 0.908 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 7393 | 0.878 |
| 12) Trichlorofluoromethane | (2) | 2.549 | 101 | 5844 | 0.824 |
| 11) n-Pentane | (2) | 2.587 | 43 | 5763M | 0.986 |
| 14) Ethyl ether | (2) | 2.771 | 59 | 3562 | 0.902 |
| 15) Freon 123a | (2) | 2.816 | 67 | 4340M | 0.918 |
| 16) Acrolein | (1) | 2.903 | 56 | 13897 | 8.305 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 3591 | 0.956 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 63 | 1761 | 0.926 |
| 18) Acetone | (1) | 3.038 | 58 | 1287M | 1.772 |
| 19) Freon 113 | (2) | 3.060 | 101 | 3233 | 0.855 |
| 21) 2-Propanol | (1) | 3.192 | 45 | 10109M | 20.998 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 6674 | 0.916 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 11098M | 0.908 |
| 27) Methyl Acetate | (2) | 3.411 | 43 | 6031M | 1.106 |
| 25) Allyl Chloride | (2) | 3.433 | 41 | 7208M | 0.958 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 204400M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 6021 | 1.214 |
| 30) t-Butyl alcohol | (1) | 3.690 | 59 | 16799M | 21.241 |
| 31) Acrylonitrile | (2) | 3.874 | 53 | 2385 | 0.833 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 13229 | 0.961 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 3899 | 0.885 |
| 34) n-Hexane | (2) | 4.317 | 57 | 5817M | 0.861 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 7594 | 0.917 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 14916 | 0.939 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 6061 | 0.868 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 12596 | 0.921 |
| 44) 2-Butanone | (2) | 5.404 | 43 | 6995 | 1.825 |
| 42) cis-1,2-Dichloroethene | (2) | 5.427 | 96 | 4826 | 0.956 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 4353 | 0.787 |
| 47) Propionitrile | (1) | 5.481 | 54 | 21692 | 18.793 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 26519 | 9.292 |
| 49) Bromochloromethane | (2) | 5.771 | 128 | 2493 | 0.937 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 1704 | 1.671 |
| 51) Chloroform | (2) | 5.925 | 83 | 7414 | 0.939 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 6883 | 0.954 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 253408 | 50.043 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 257623 | 49.648 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 8725 | 1.841 |
| 54) Cyclohexane | (2) | 6.240 | 56 | 7197 | 0.876 |
| 54) Cyclohexane | (2) | 6.256 | 84 | 5572M | 0.830 |
| 54) Cyclohexane | (2) | 6.259 | 69 | 1999 | 0.840 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 4243 | 0.806 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 5734 | 0.893 |
| 58) Isobutyl Alcohol | (1) | 6.536 | 41 | 13006 | 46.839 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 63172 | 50.169 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 298618 | 50.137 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 104 | 39207 | 49.090 |
| 60) Benzene | (2) | 6.639 | 78 | 17777 | 0.939 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 5991 | 0.936 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 278 | 0.492 |
| 65) t-Amyl methyl ether | (2) | 6.832 | 73 | 12353 | 0.910 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1036977 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 7056M | 0.933 |
| 69) n-Butanol | (1) | 7.436 | 56 | 18978 | 84.784 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 4751 | 0.972 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 7103 | 0.824 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 3166 | 0.814 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 4619 | 0.892 |
| 75) 1,4-Dioxane | (1) | 7.983 | 88 | 3446 | 49.313 |
| 76) Methyl Methacrylate | (2) | 7.989 | 69 | 3670M | 0.828 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 3047 | 0.935 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 5145 | 0.875 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 2718 | 1.630 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.626 | 63 | 3128 | 0.786 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 6077 | 0.793 |
| 82) 4-Methyl-2-pentanone | (2) | 8.996 | 43 | 13249 | 1.677 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1011031 | 50.099 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 664751 | 49.998 |
| 88) Toluene | (3) | 9.230 | 92 | 10791 | 0.920 |
| 89) trans-1,3-Dichloropropene | (3) | 9.533 | 75 | 4836 | 0.735 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.606 | 69 | 5948 | 0.803 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 4212 | 0.932 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 4631 | 0.893 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 7455 | 0.951 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 8940 | 1.579 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 10913 | 1.528 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 3755 | 0.802 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 4374 | 0.884 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 790373 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.729 | 91 | 7171 | 1.065 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 12435 | 0.919 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 3810 | 0.853 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 20557 | 0.909 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 15787 | 1.793 |
| 107) o-Xylene | (3) | 11.294 | 106 | 7750 | 0.885 |
| 109) Styrene | (3) | 11.311 | 104 | 11905 | 0.822 |
| 110) Bromoform | (3) | 11.468 | 173 | 2449 | 0.721 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 19094 | 0.853 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 12225A | 46.377 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 377337 | 50.305 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 332561 | 50.545 |
| 108) Xylene (Total) | (3) | | 106 | 23537 | 2.677 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 6980 | 0.917 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 5604 | 0.915 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 18943 | 8.689 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 2008 | 0.934 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 24194 | 0.894 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 5054 | 0.897 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 15989 | 0.828 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 5379 | 0.917 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 3714 | 0.890 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 2616 | 0.794 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 16998 | 0.855 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 21349 | 0.867 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 11200 | 0.960 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 18731 | 0.861 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 428650 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 12025 | 0.997 |

A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 19417 | 0.932 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 7813 | 0.655 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 11399 | 0.877 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 12459 | 0.913 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 10343 | 0.952 |
| 138) 1,2-Dichlorobenzene | (4) | 12.918 | 146 | 11057 | 0.964 |
| 140) 1,2-Diethylbenzene | (4) | 12.944 | 119 | 9704 | 0.888 |
| 141) Diethylbenzene (total) | (4) | | 100 | 33562 | 2.678 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.465 | 75 | 1391 | 0.865 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 9757 | 1.050 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 10012 | 1.110 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 4846 | 1.237 |
| 148) Naphthalene | (4) | 14.188 | 128 | 26365 | 0.969 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 10045 | 1.155 |
| 150) 2-Methylnaphthalene | (4) | 14.915 | 142 | 17518 | 0.996 |



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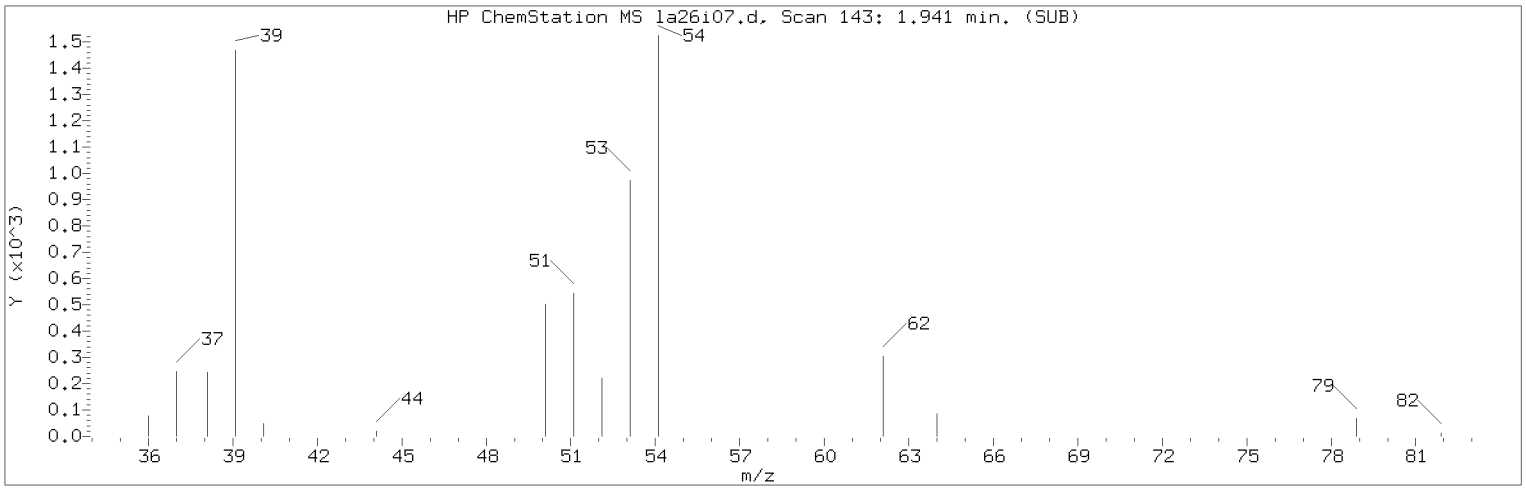
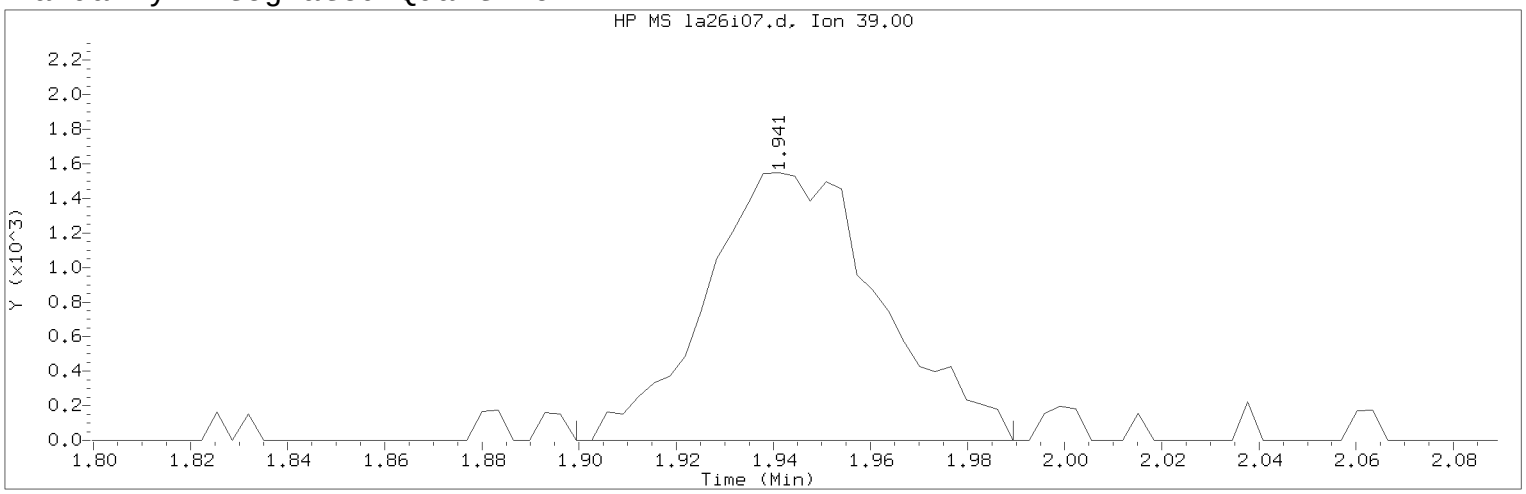
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

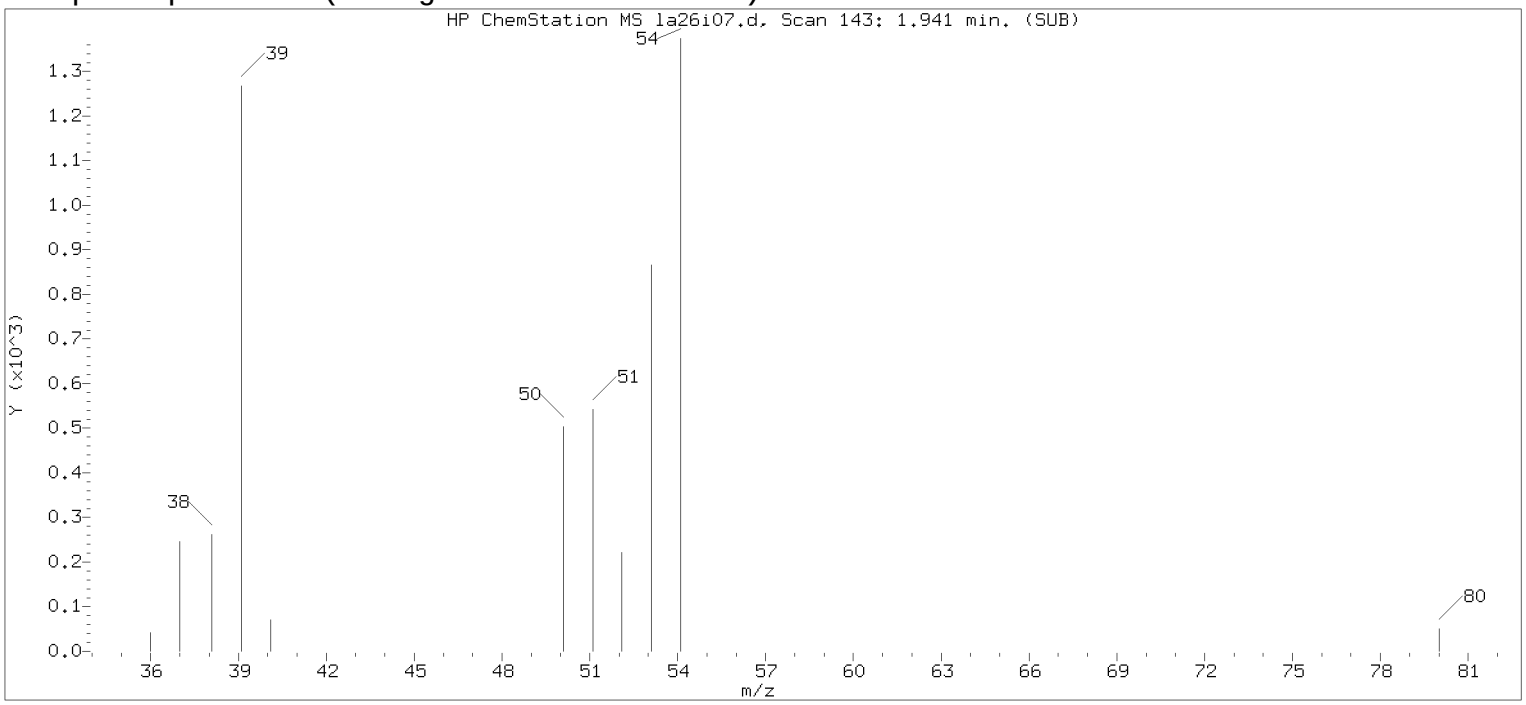
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 3879M
On-Column Amount (ng) : 1.0378
Integration start scan : 129 Integration stop scan: 157
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

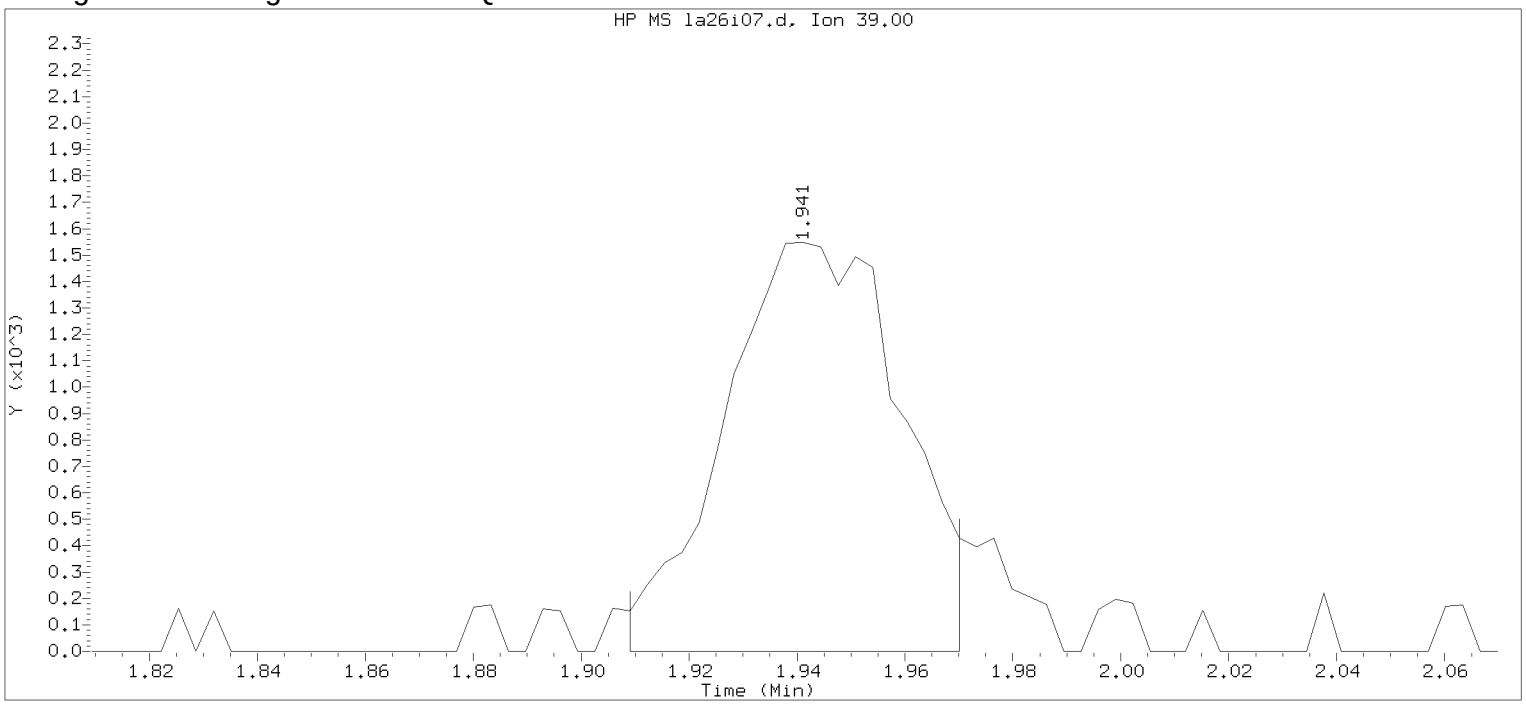
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

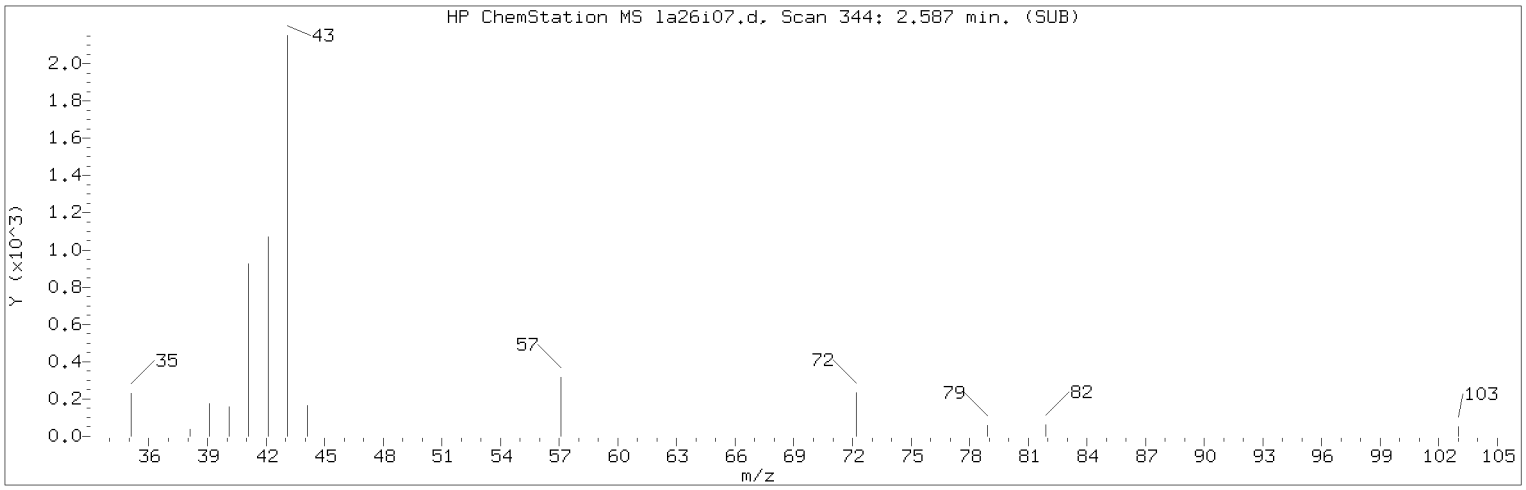
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

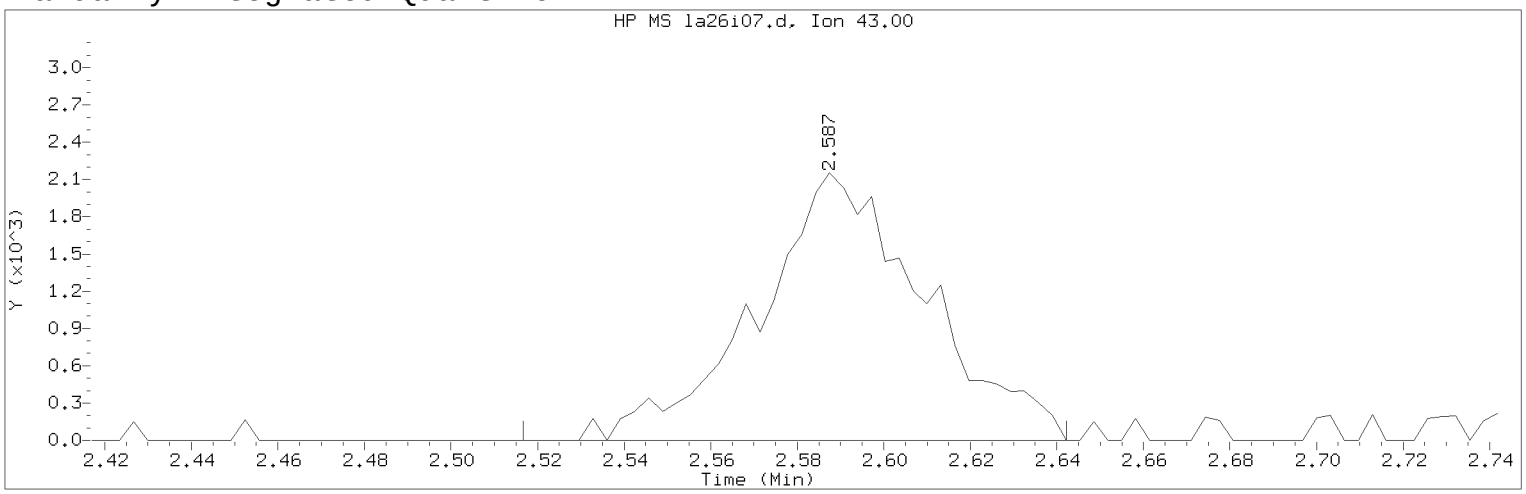
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 3513
On-column Amount (ng) : 0.9533
Integration start scan : 132 Integration stop scan: 151
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 R0187

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

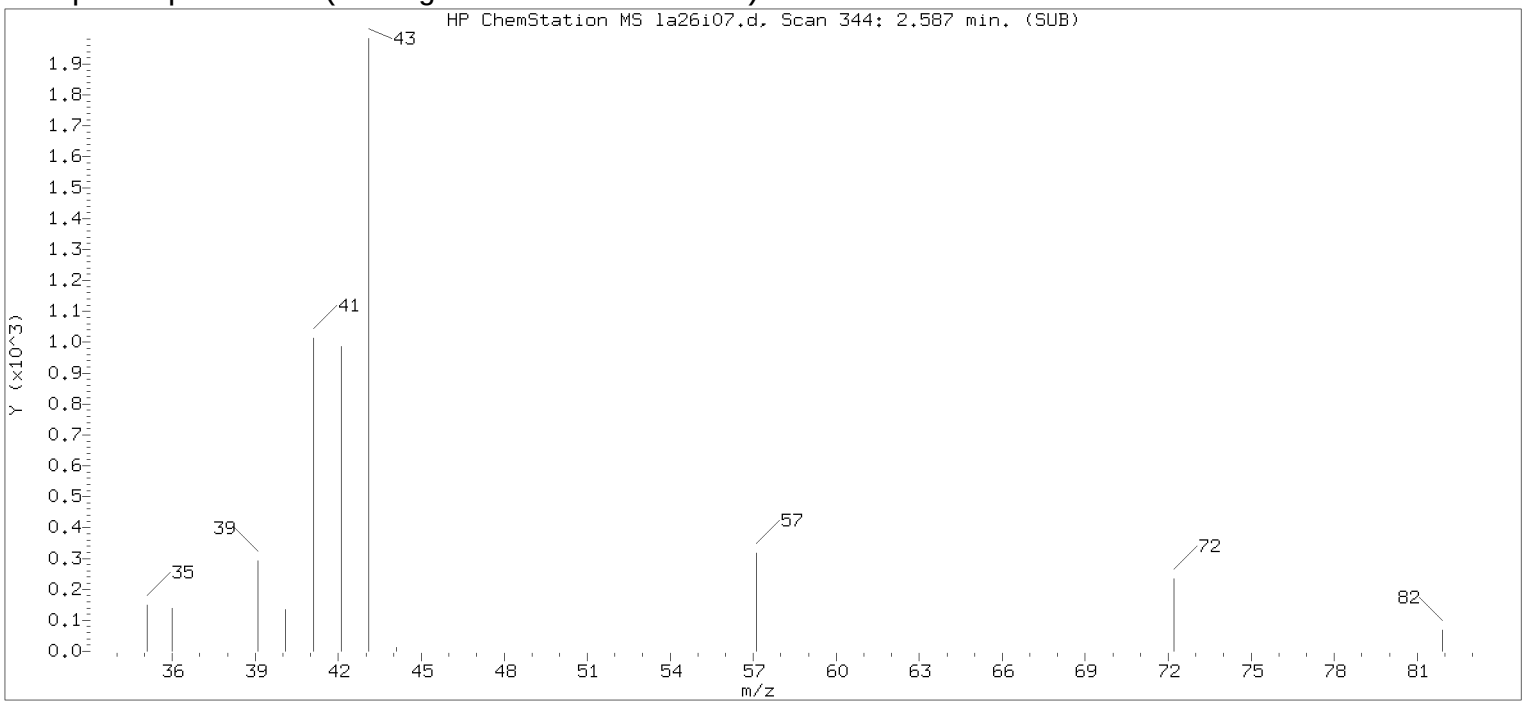
Compound Number : 11
Compound Name : n-Pentane
Scan Number : 344
Retention Time (minutes): 2.587
Quant Ion : 43.00
Area (flag) : 5763M
On-Column Amount (ng) : 0.9861
Integration start scan : 321 Integration stop scan: 360
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

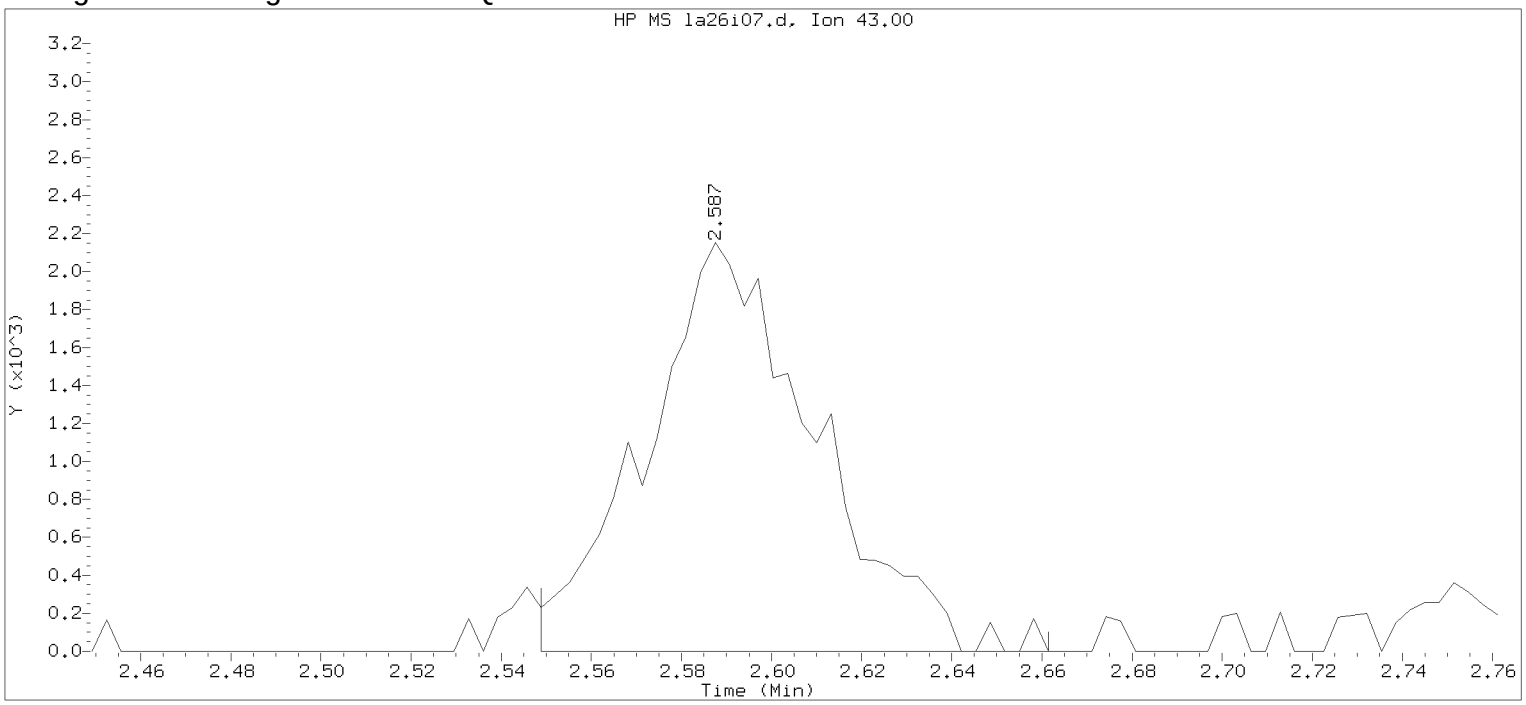
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 11
Compound Name : n-Pentane
Scan Number : 344
Retention Time (minutes): 2.587
Quant Ion : 43.00
Area : 5626
On-column Amount (ng) : 0.9660
Integration start scan : 331 Integration stop scan: 366
Y at integration start : 0 Y at integration end: 0

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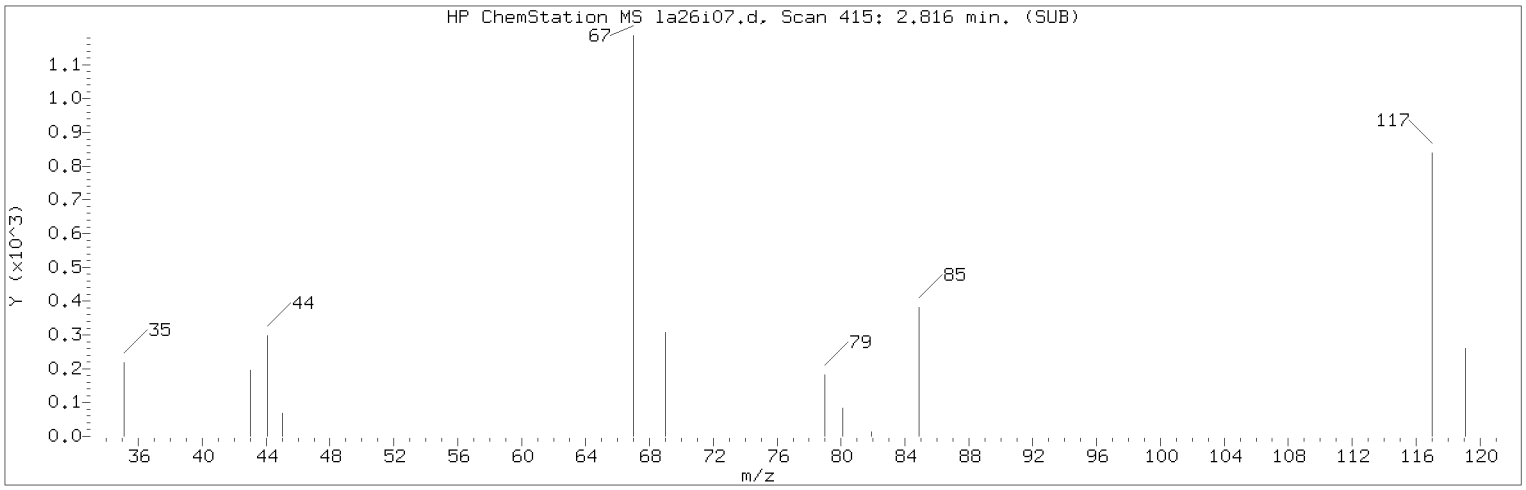
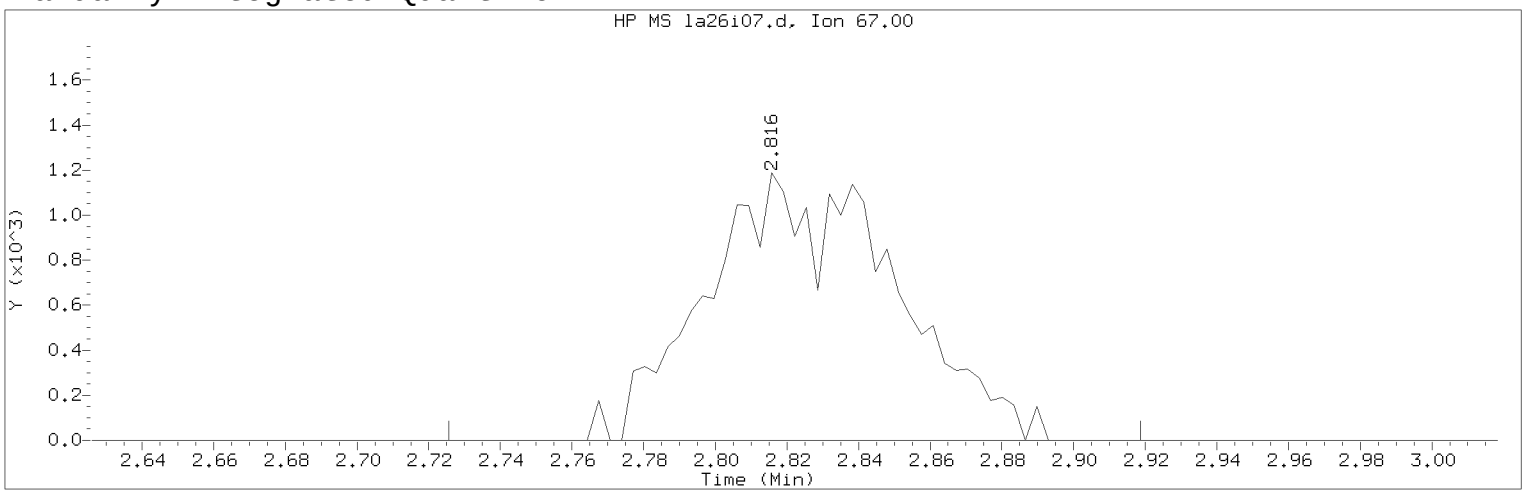
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

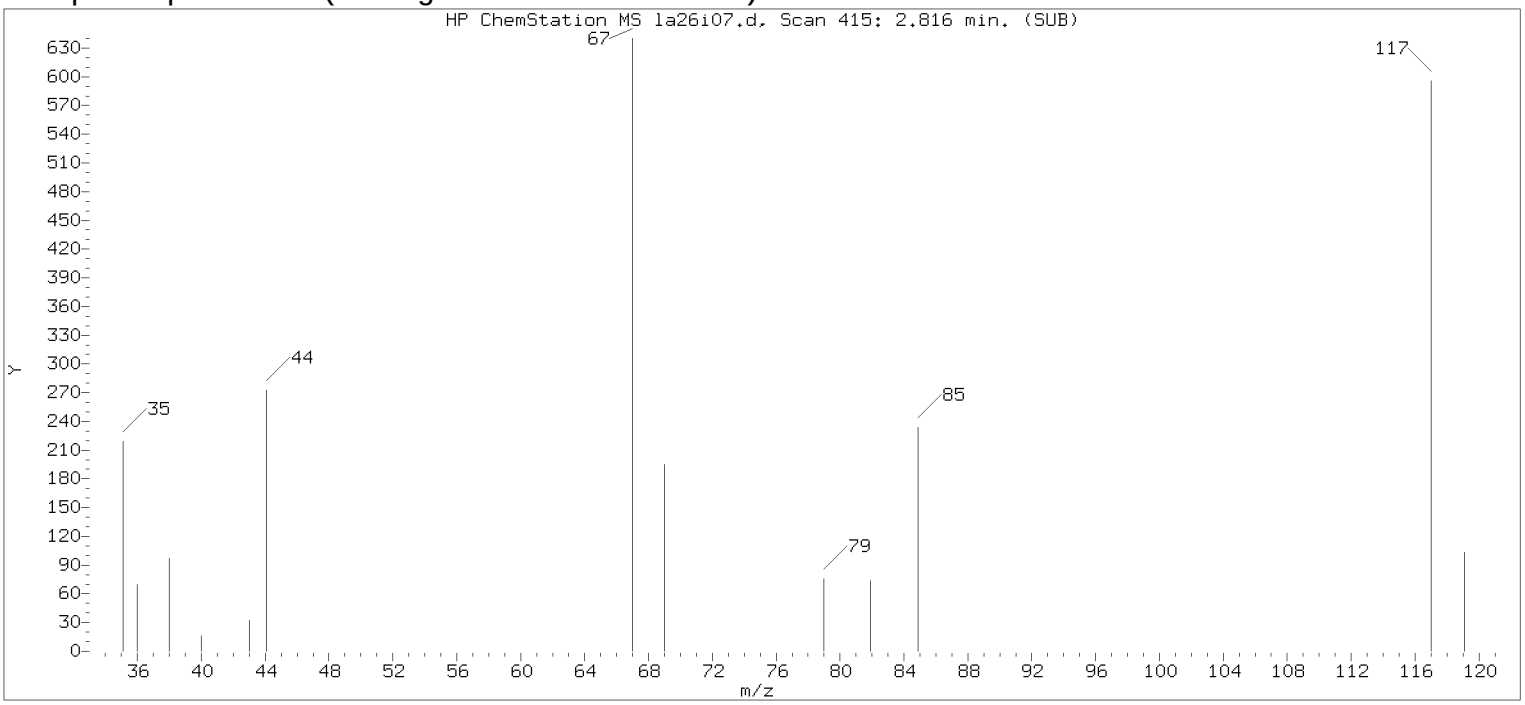
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 415
Retention Time (minutes): 2.816
Quant Ion : 67.00
Area (flag) : 4340M
On-Column Amount (ng) : 0.9183
Integration start scan : 386 Integration stop scan: 446
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

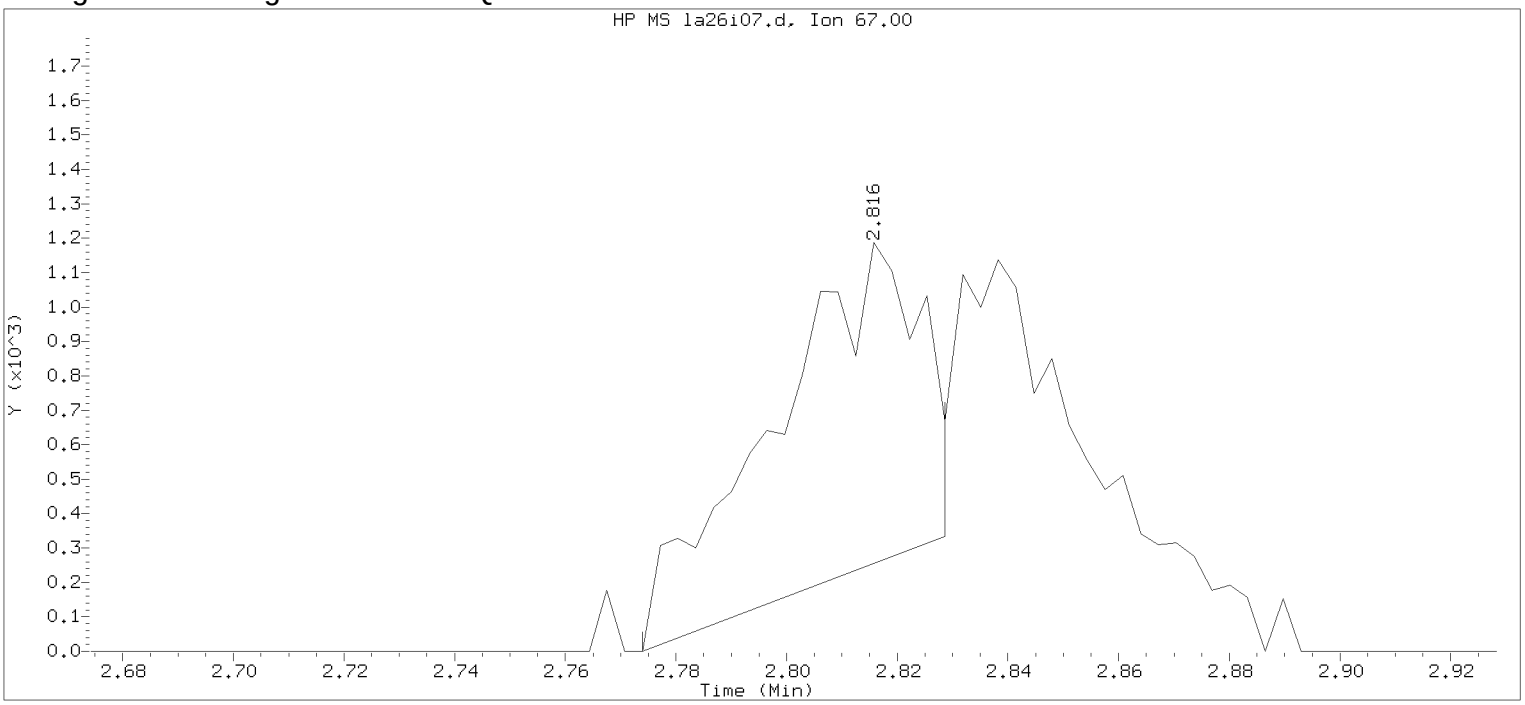
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 15
Compound Name : Freon 123a
Scan Number : 415
Retention Time (minutes): 2.816
Quant Ion : 67.00
Area : 1764
On-column Amount (ng) : 0.4048
Integration start scan : 401 Integration stop scan: 418
Y at integration start : 0 Y at integration end: 334

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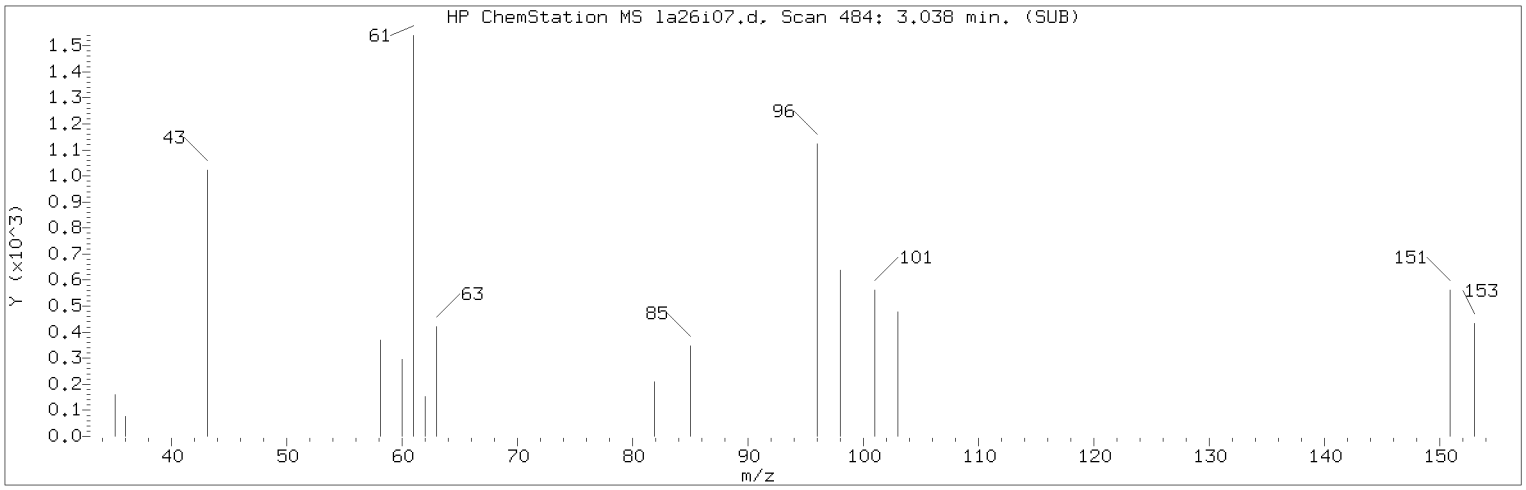
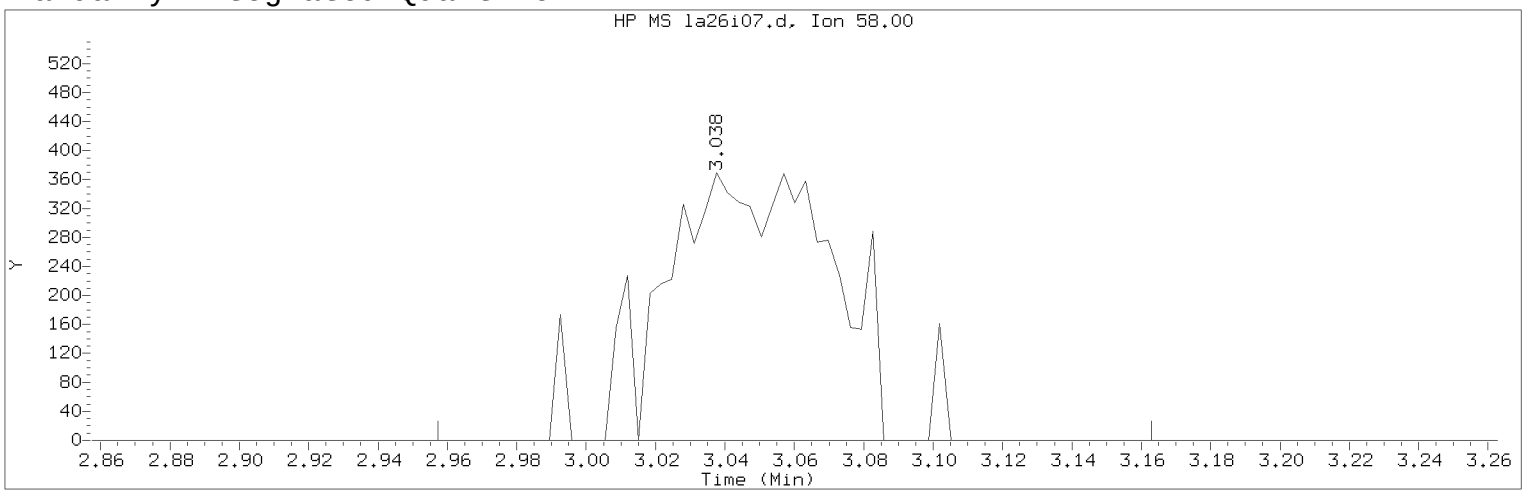
Target 3.5 esignature userKAS02648 Page 446 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

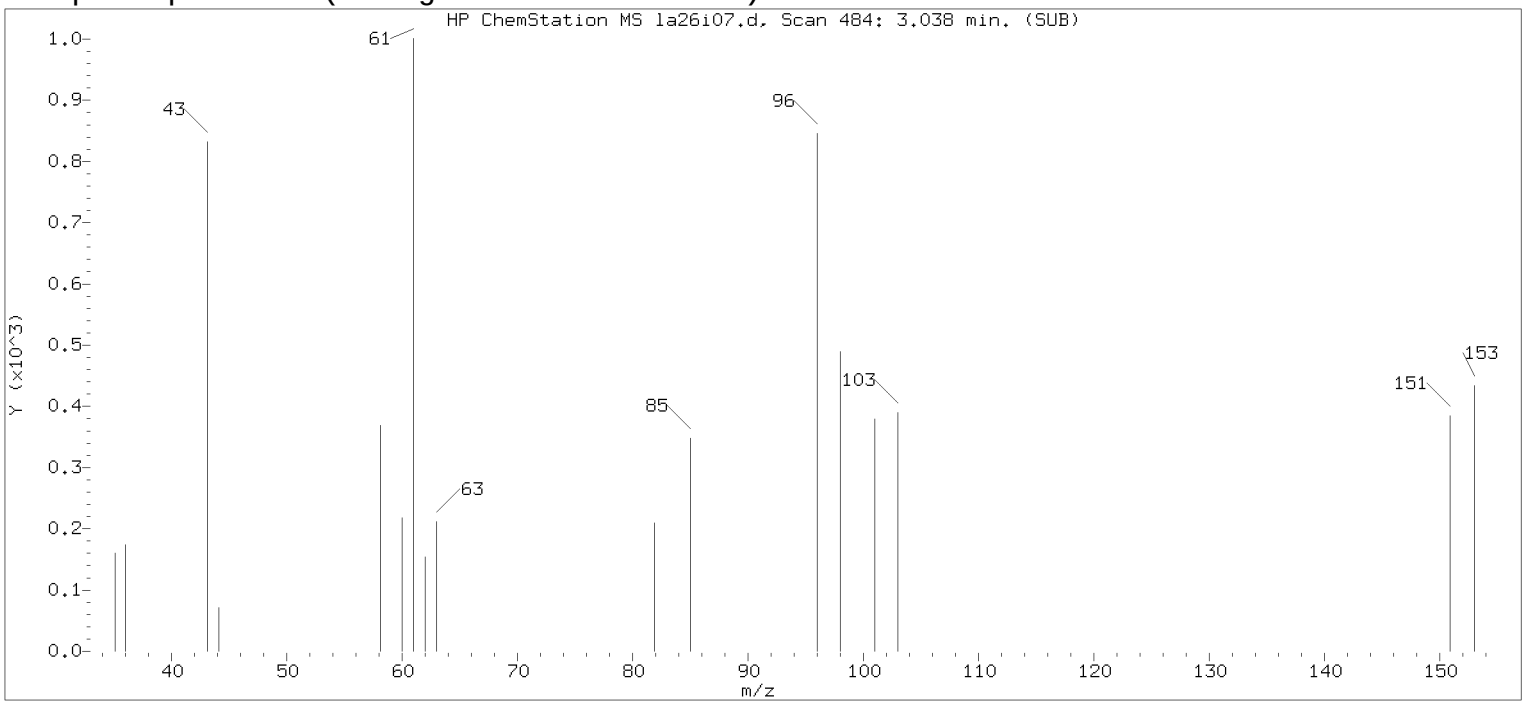
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area (flag) : 1287M
On-Column Amount (ng) : 1.7722
Integration start scan : 458 Integration stop scan: 522
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

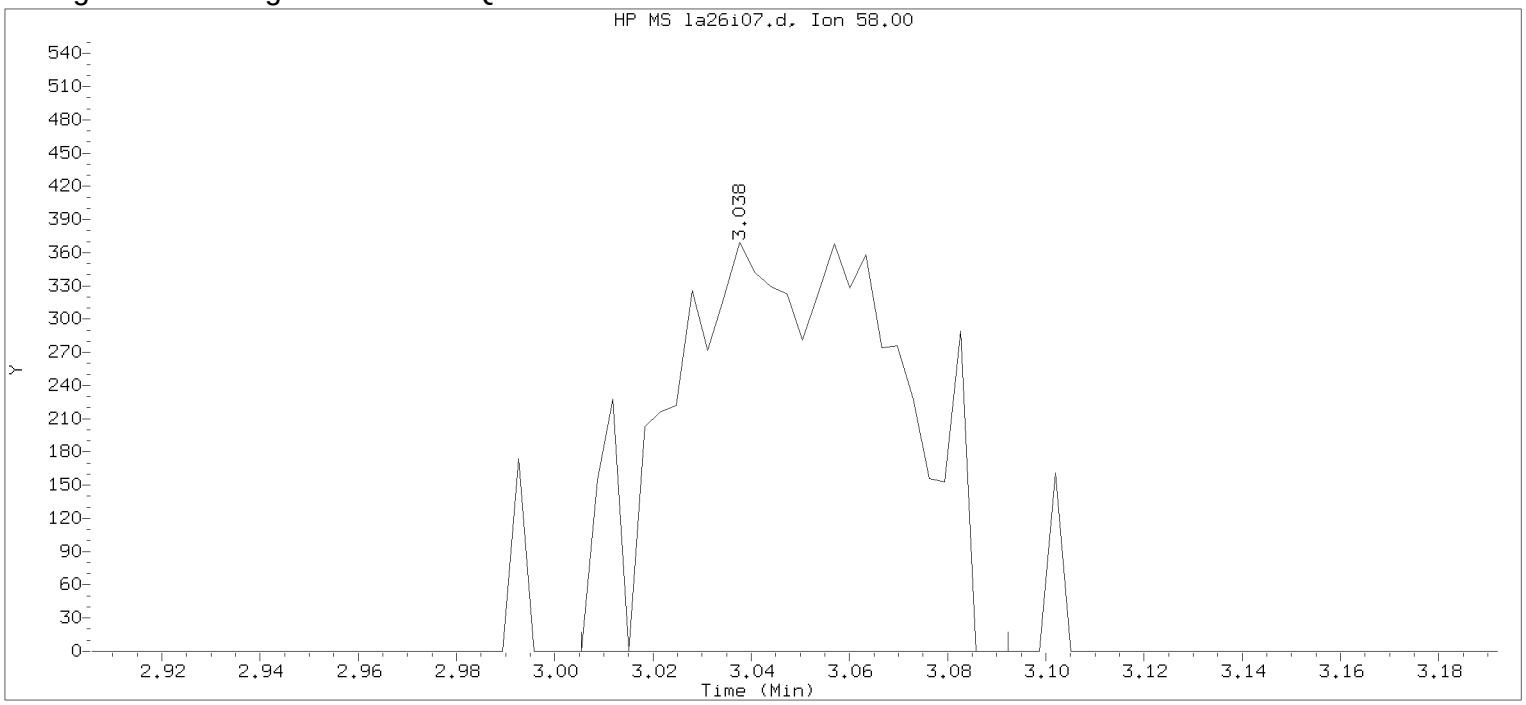
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

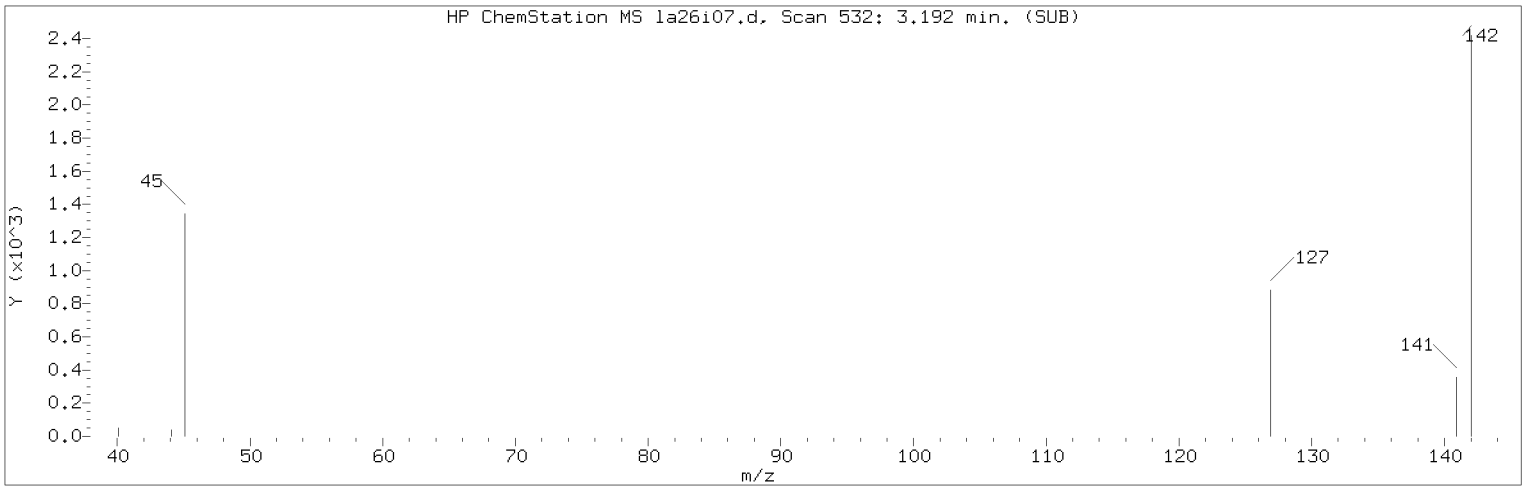
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

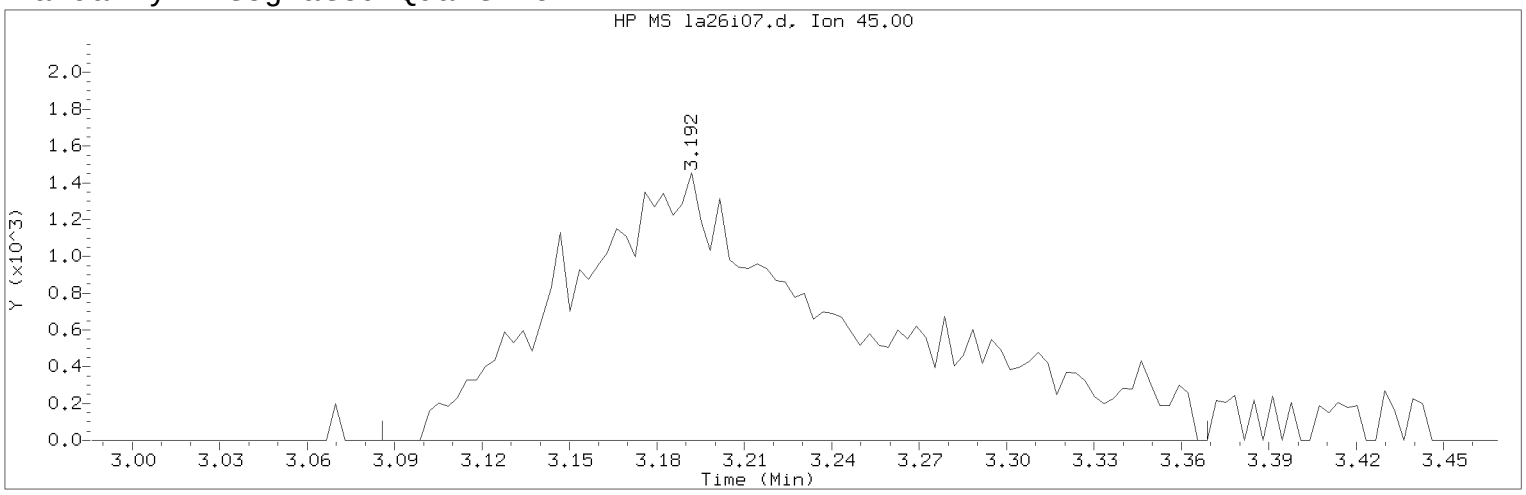
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area : 1222
On-column Amount (ng) : 1.7234
Integration start scan : 473 Integration stop scan: 500
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

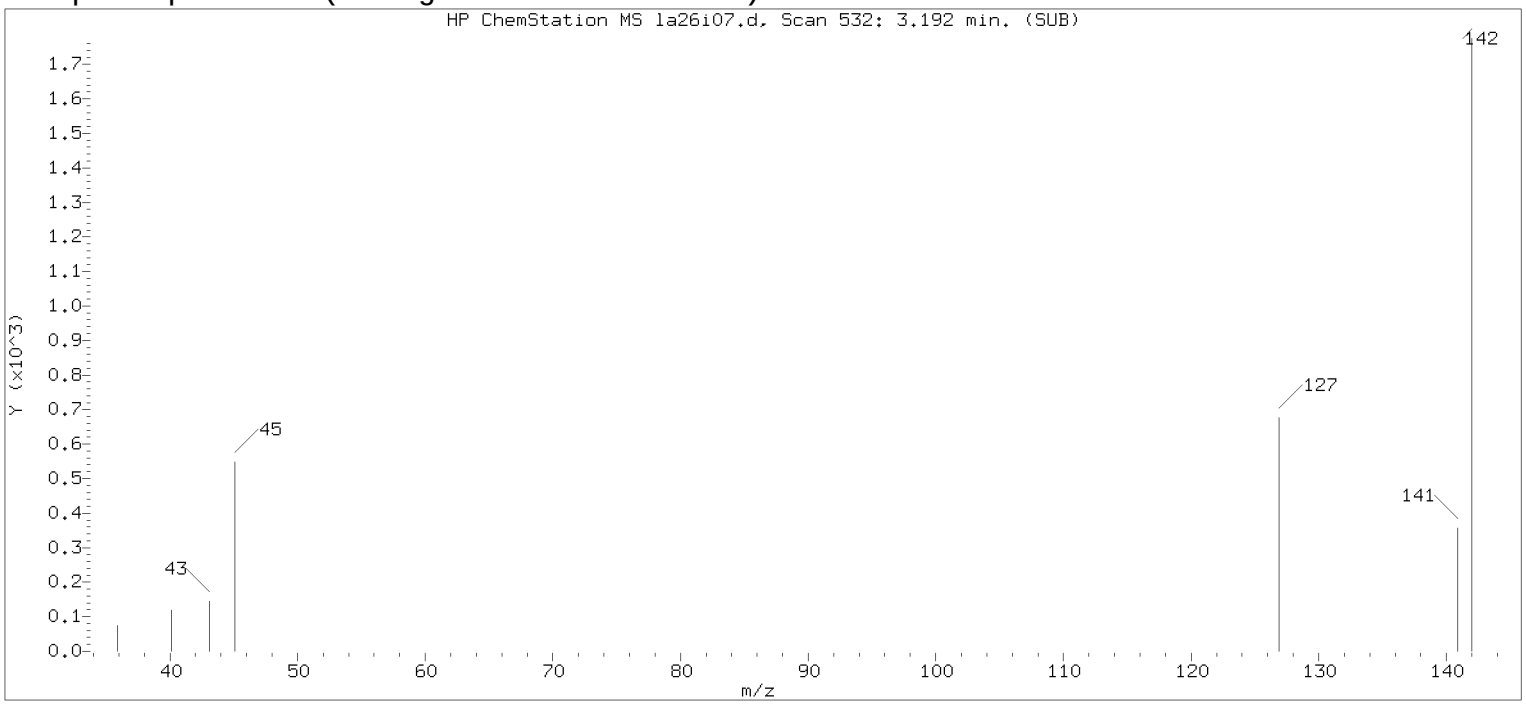
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 532
Retention Time (minutes): 3.192
Quant Ion : 45.00
Area (flag) : 10109M
On-Column Amount (ng) : 20.9983
Integration start scan : 498 Integration stop scan: 586
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

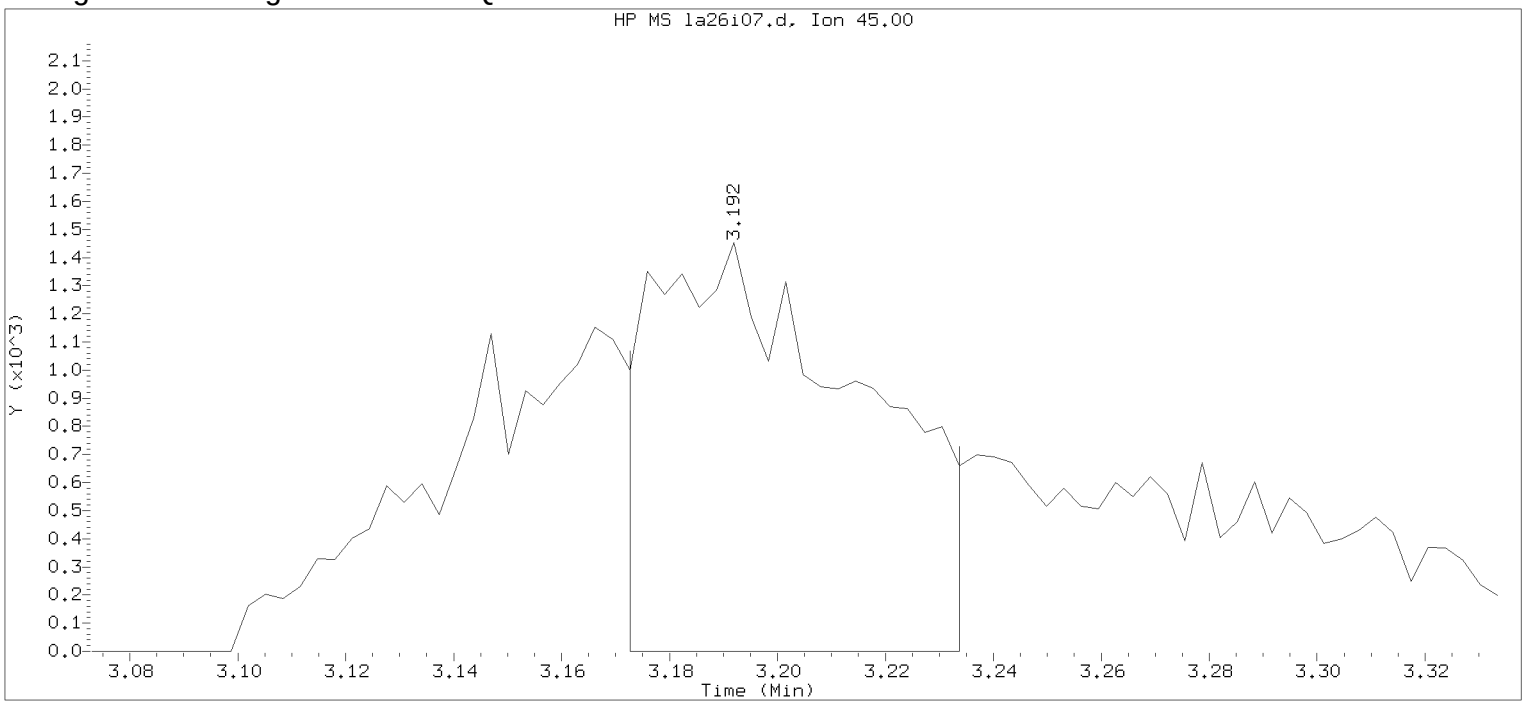
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

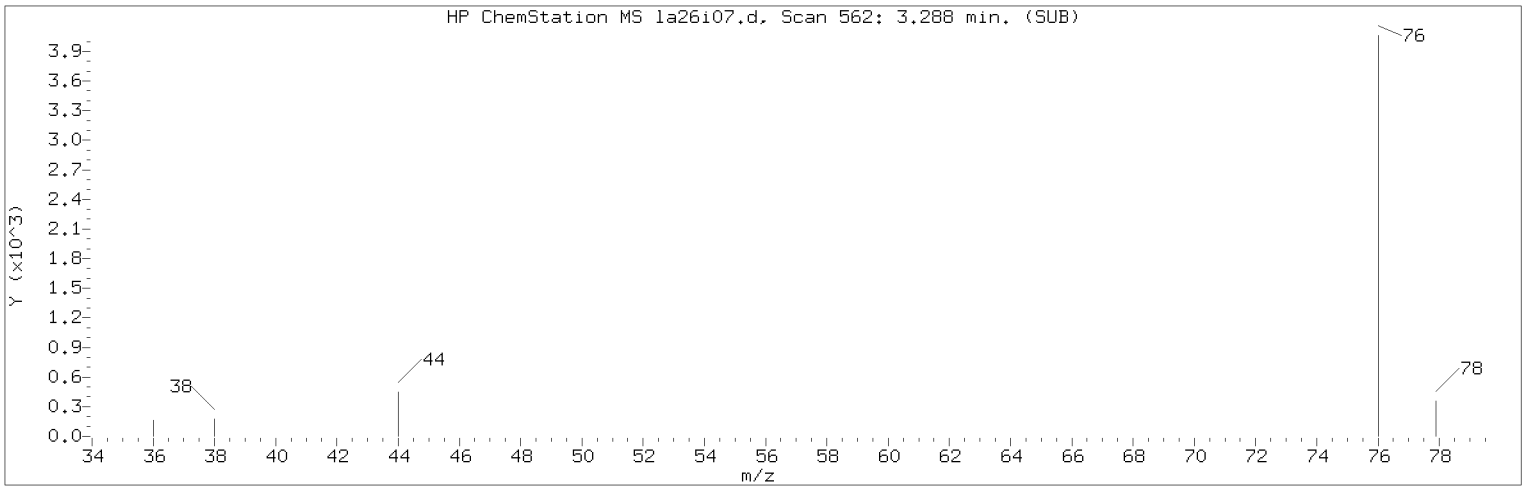
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

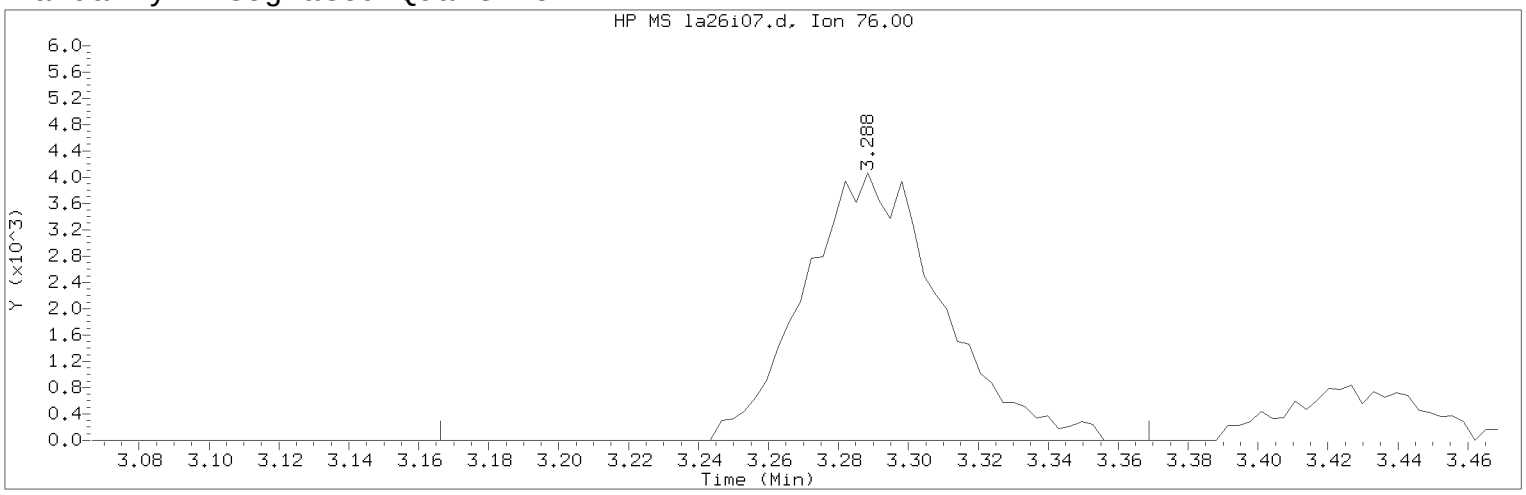
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 532
Retention Time (minutes): 3.192
Quant Ion : 45.00
Area : 3925
On-column Amount (ng) : 9.1397
Integration start scan : 525 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 RD187

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

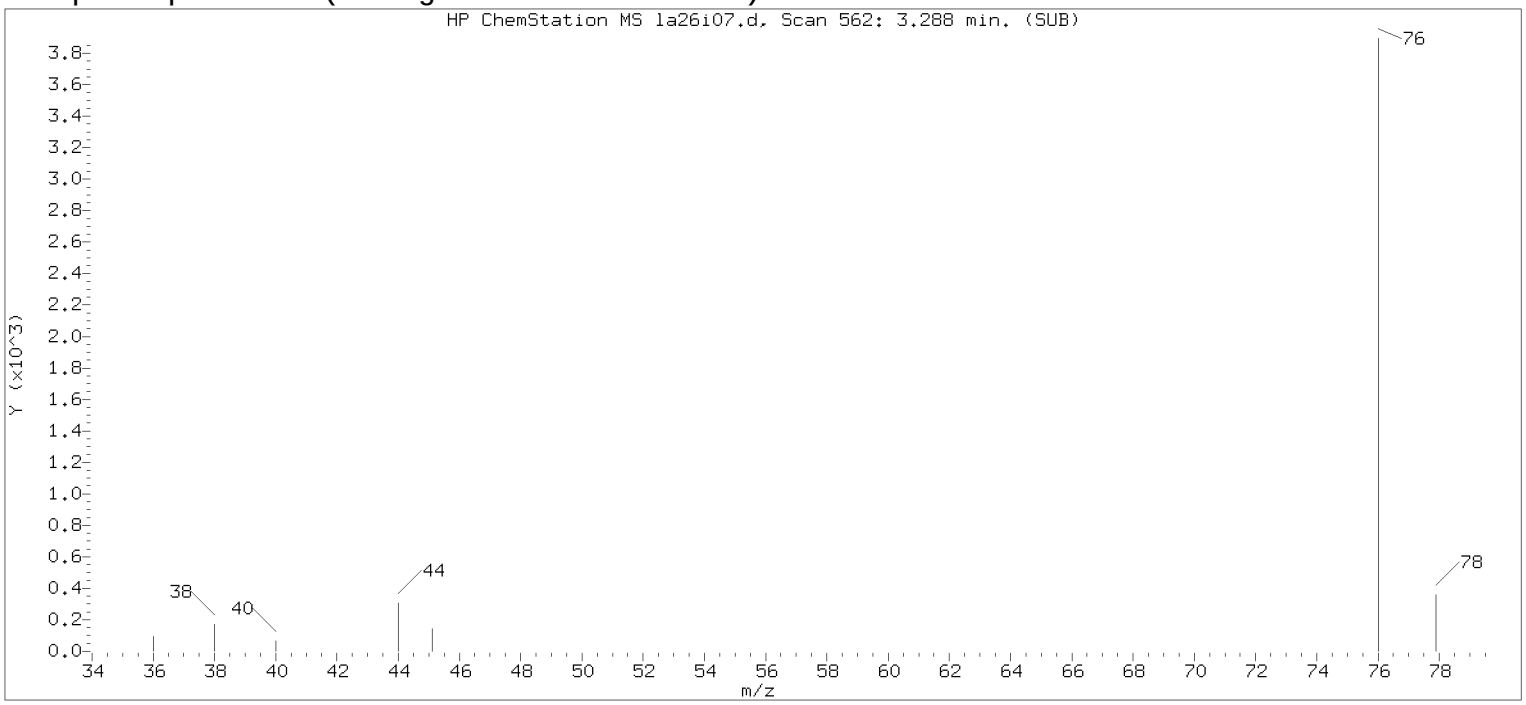
Compound Number : 23
Compound Name : Carbon Disulfide
Scan Number : 562
Retention Time (minutes): 3.288
Quant Ion : 76.00
Area (flag) : 11098M
On-Column Amount (ng) : 0.9080
Integration start scan : 523 Integration stop scan: 586
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

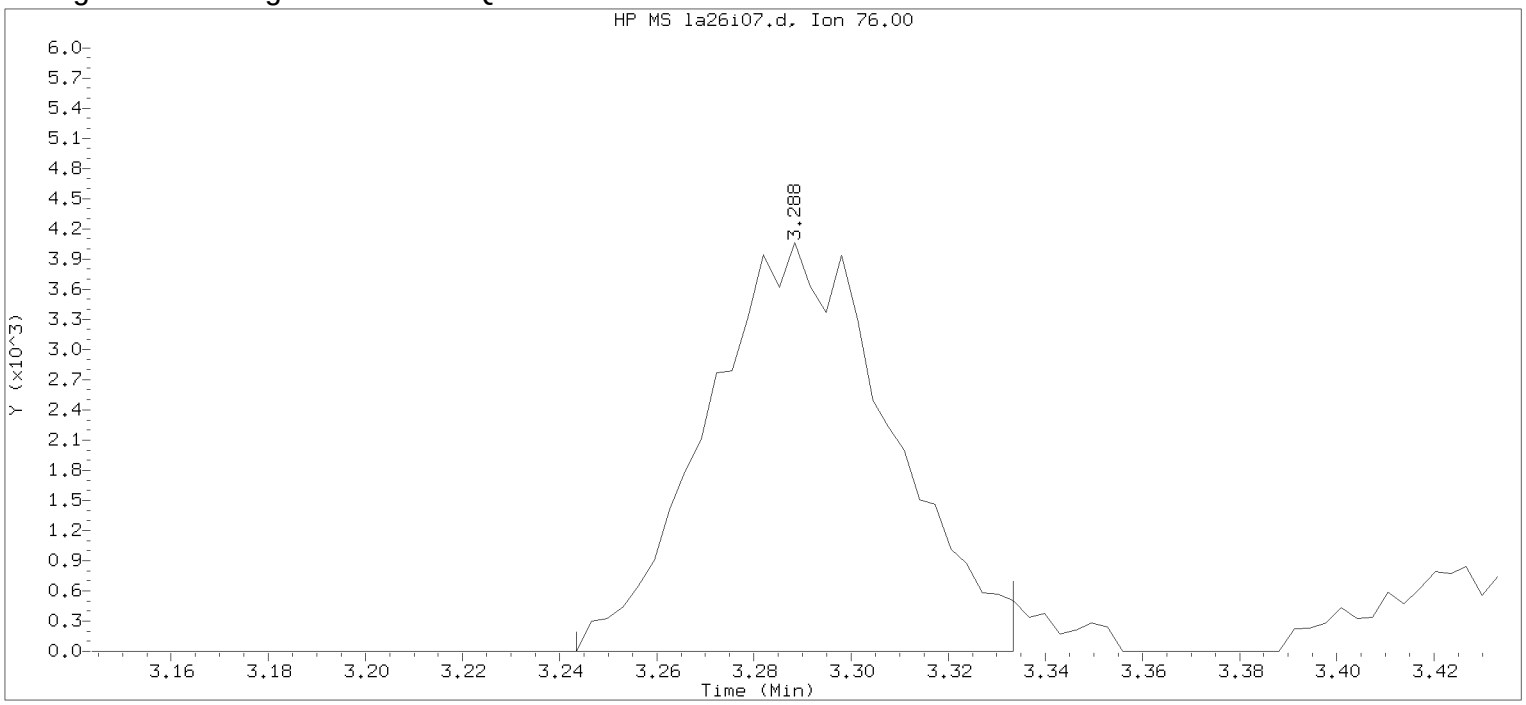
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

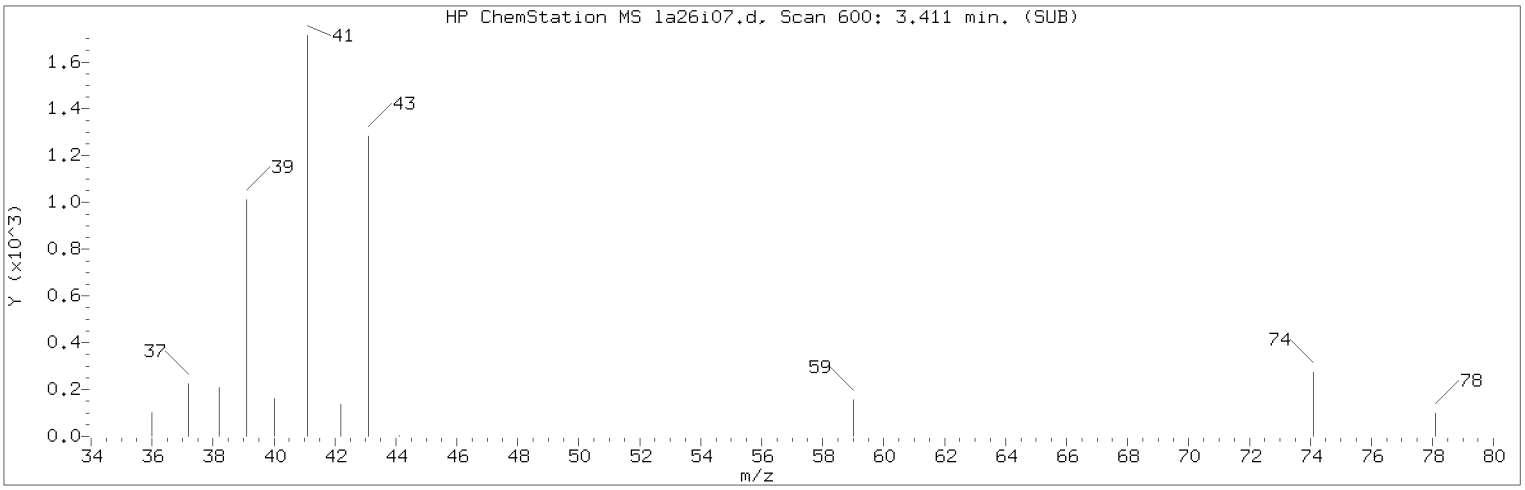
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

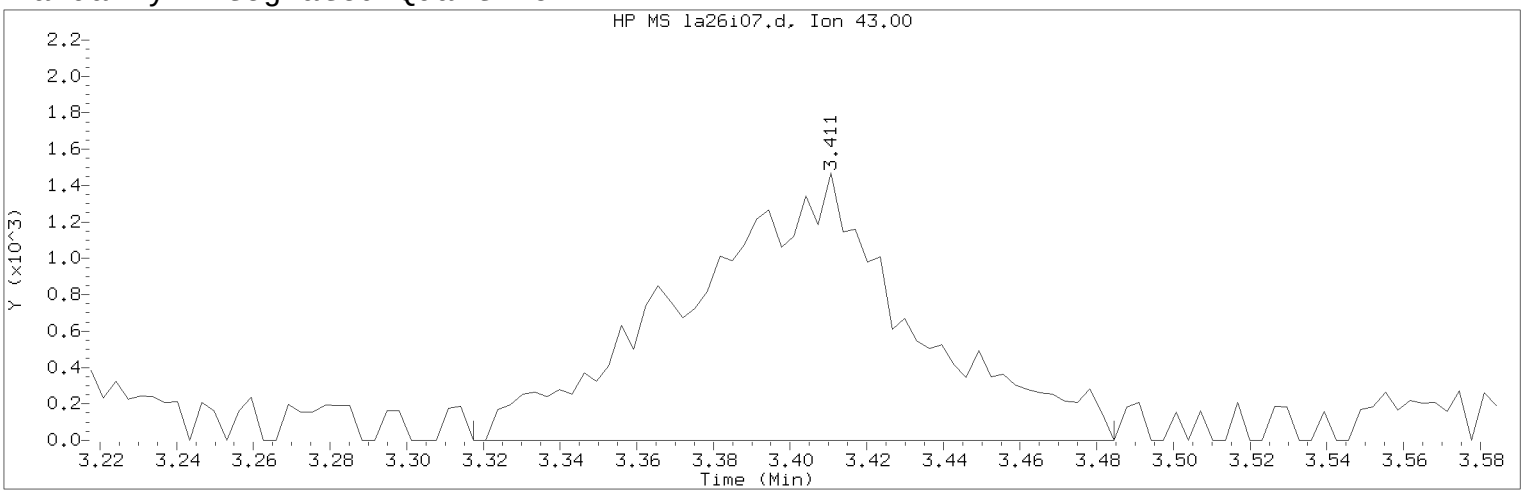
Compound Number : 23
Compound Name : Carbon Disulfide
Scan Number : 562
Retention Time (minutes): 3.288
Quant Ion : 76.00
Area : 10736
On-column Amount (ng) : 0.8822
Integration start scan : 547 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

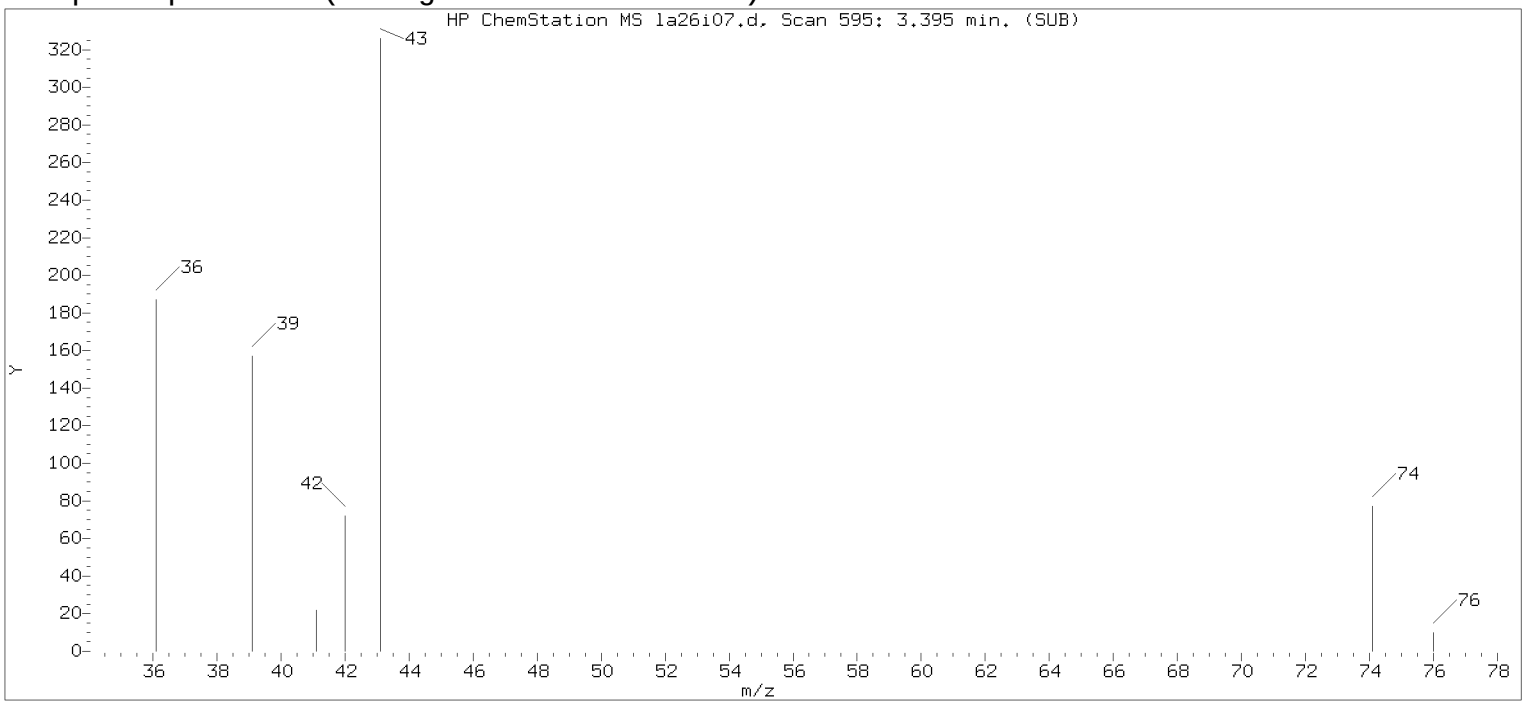
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 600
Retention Time (minutes): 3.411
Quant Ion : 43.00
Area (flag) : 6031M
On-Column Amount (ng) : 1.1064
Integration start scan : 570 Integration stop scan: 622
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

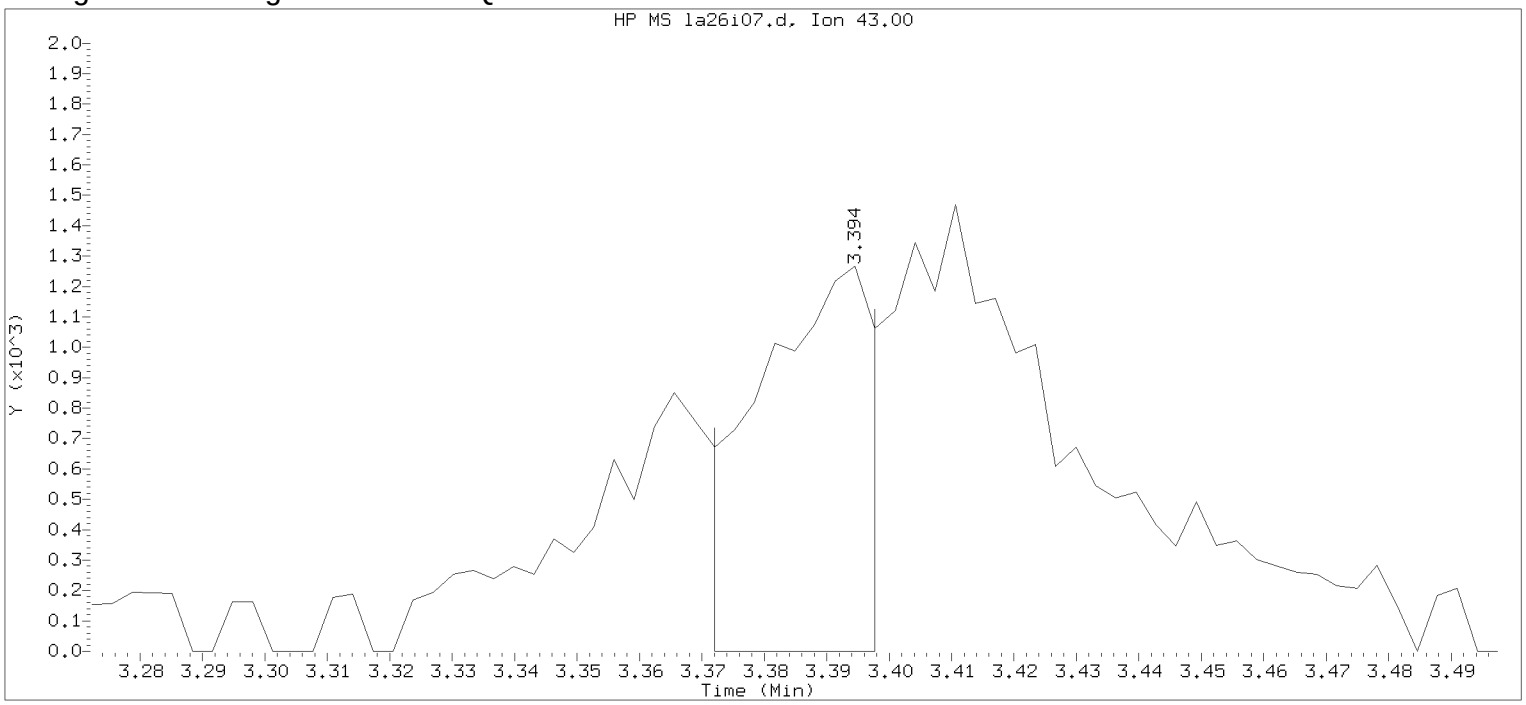
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 595
Retention Time (minutes): 3.394
Quant Ion : 43.00
Area : 1538
On-column Amount (ng) : 0.3199
Integration start scan : 587 Integration stop scan: 595
Y at integration start : 0 Y at integration end: 0

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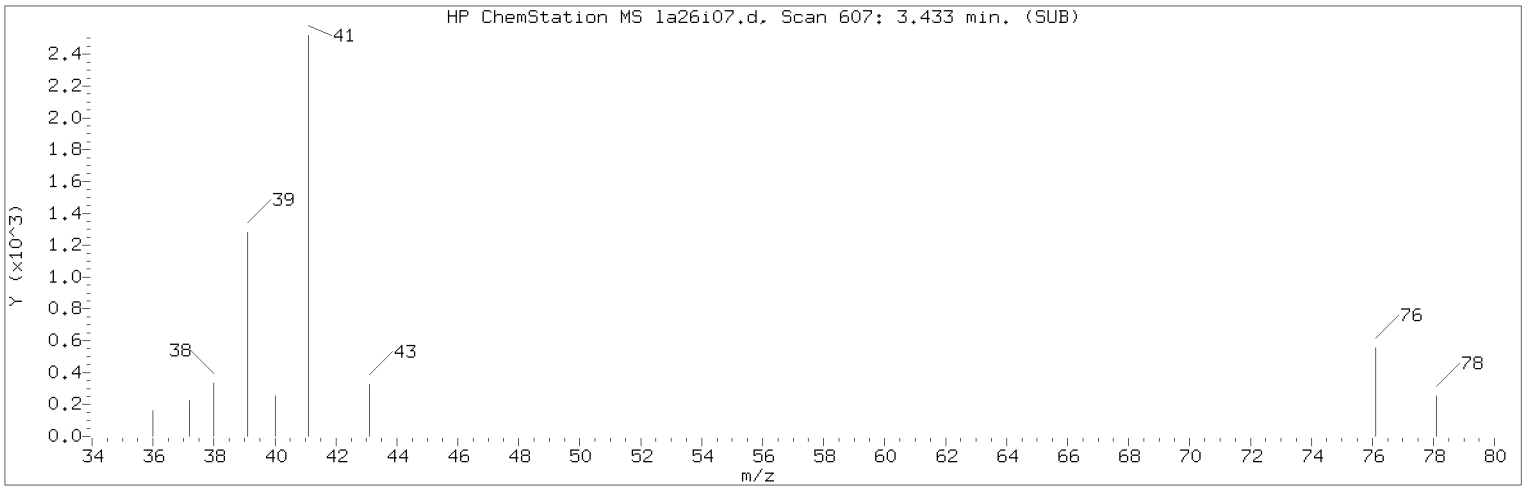
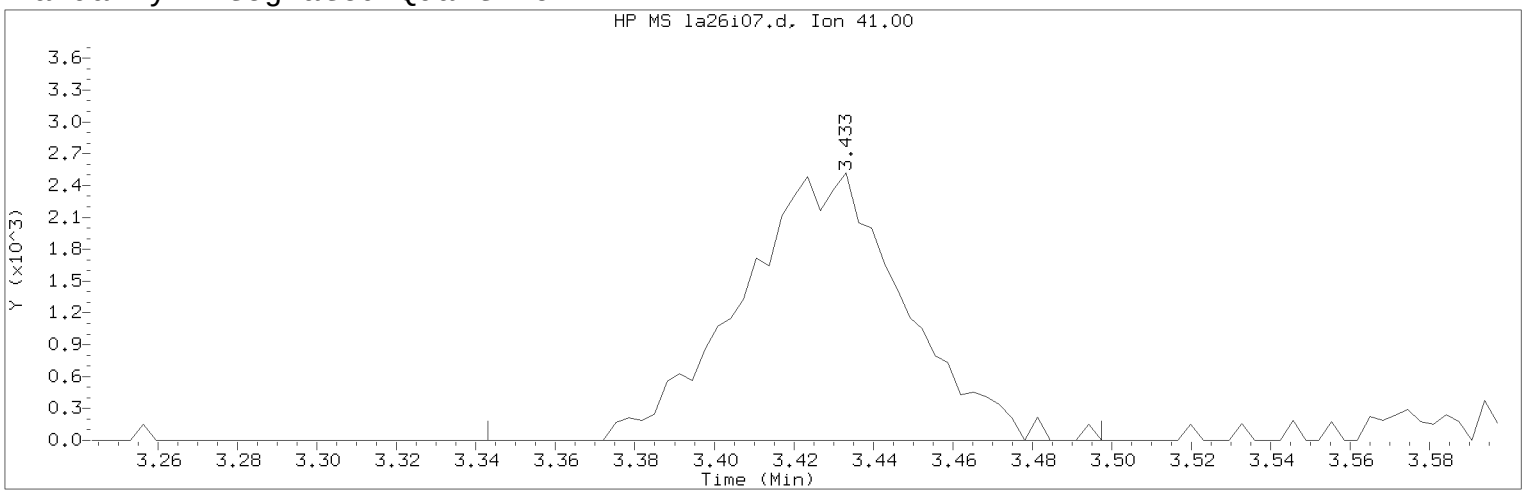
Target 3.5 esignature userKAS02648 Page 234 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

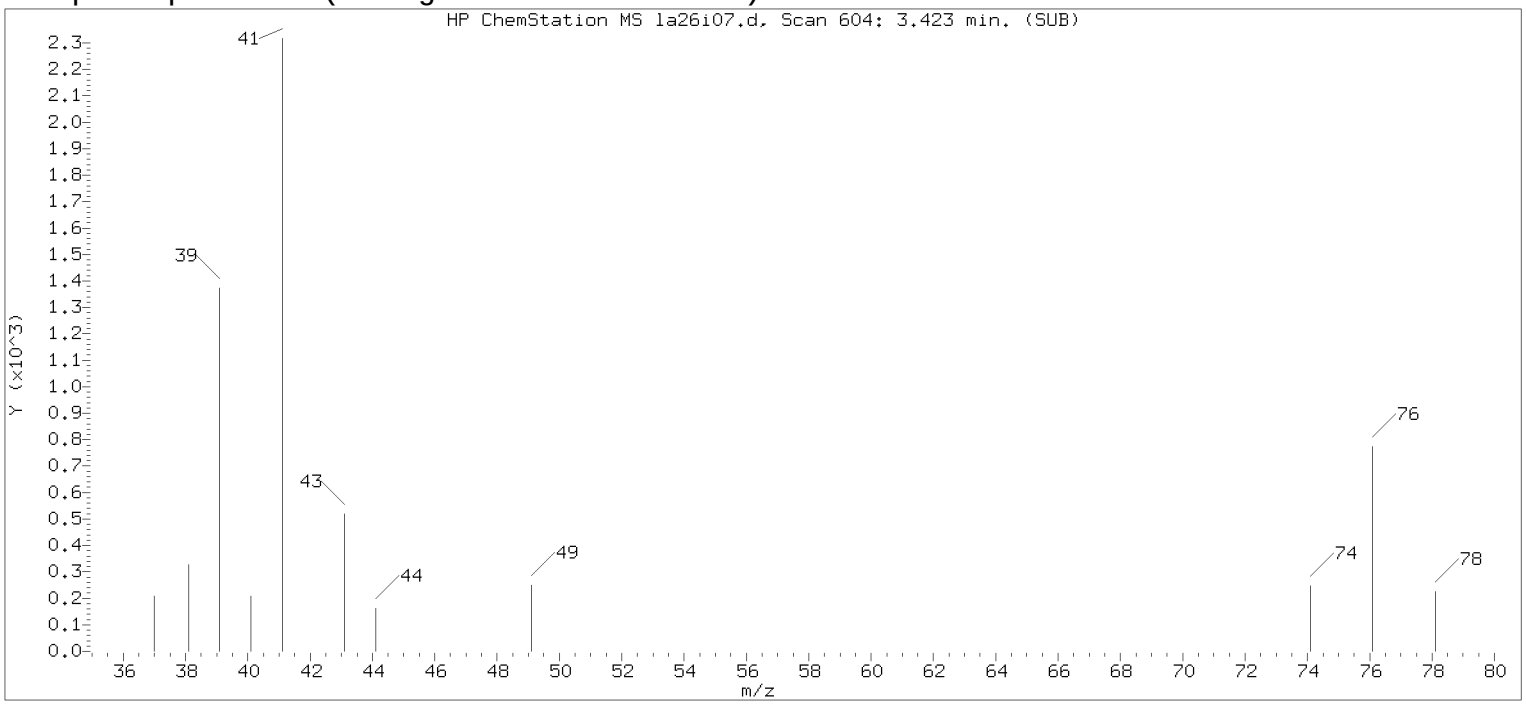
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 607
Retention Time (minutes): 3.433
Quant Ion : 41.00
Area (flag) : 7208M
On-Column Amount (ng) : 0.9581
Integration start scan : 578 Integration stop scan: 626
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

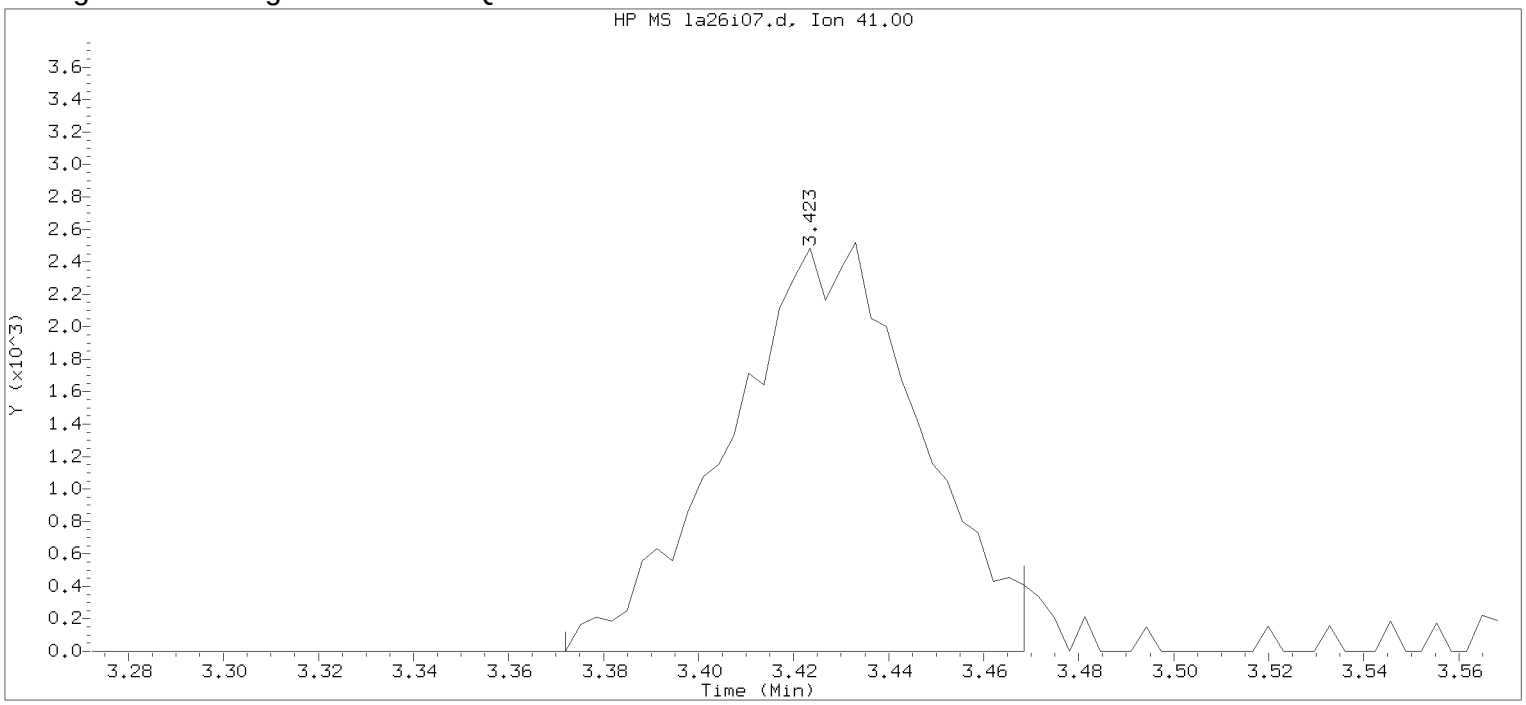
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 604
Retention Time (minutes): 3.423
Quant Ion : 41.00
Area : 6993
On-column Amount (ng) : 0.9334
Integration start scan : 587 Integration stop scan: 617
Y at integration start : 0 Y at integration end: 0

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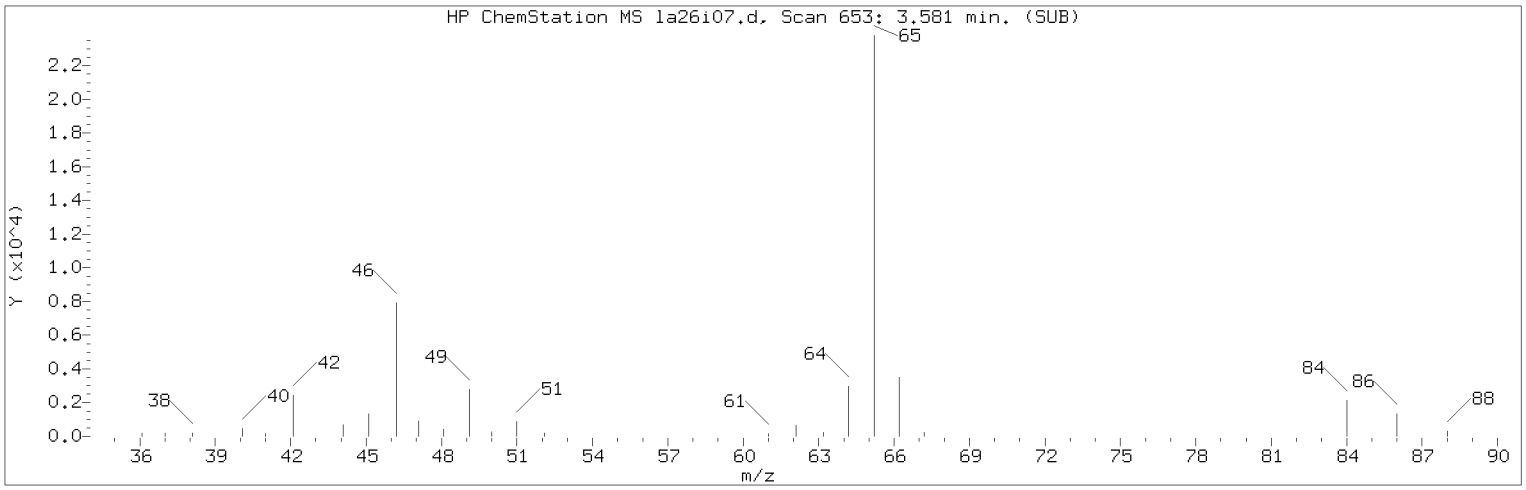
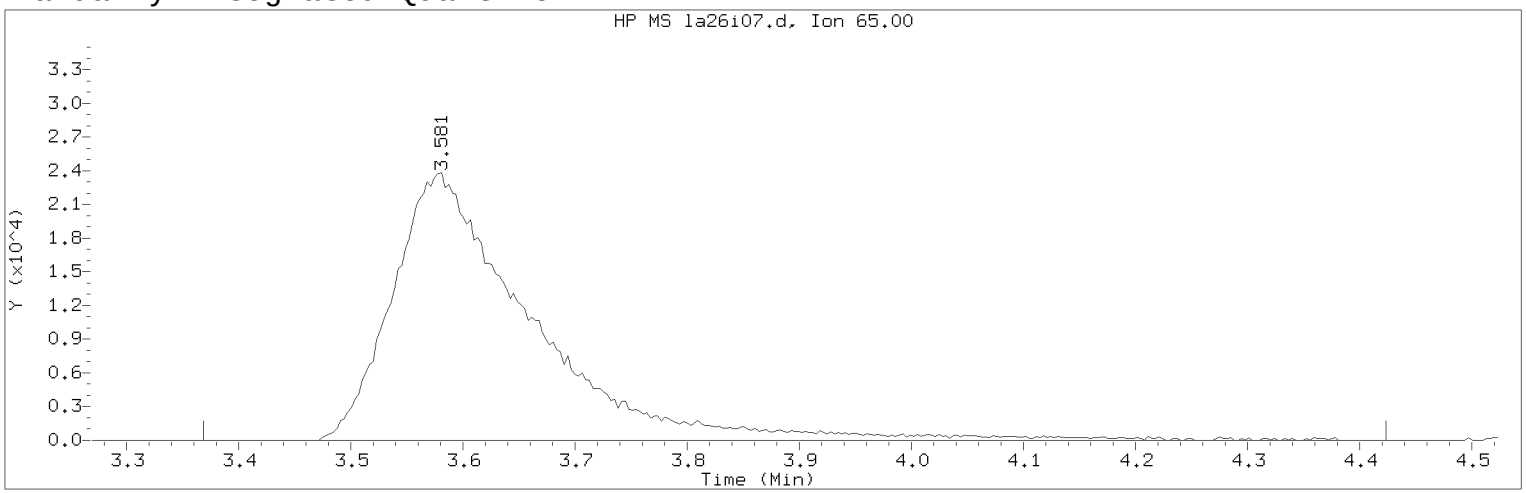
Target 3.5 esignature userKAS02648 Page 236

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

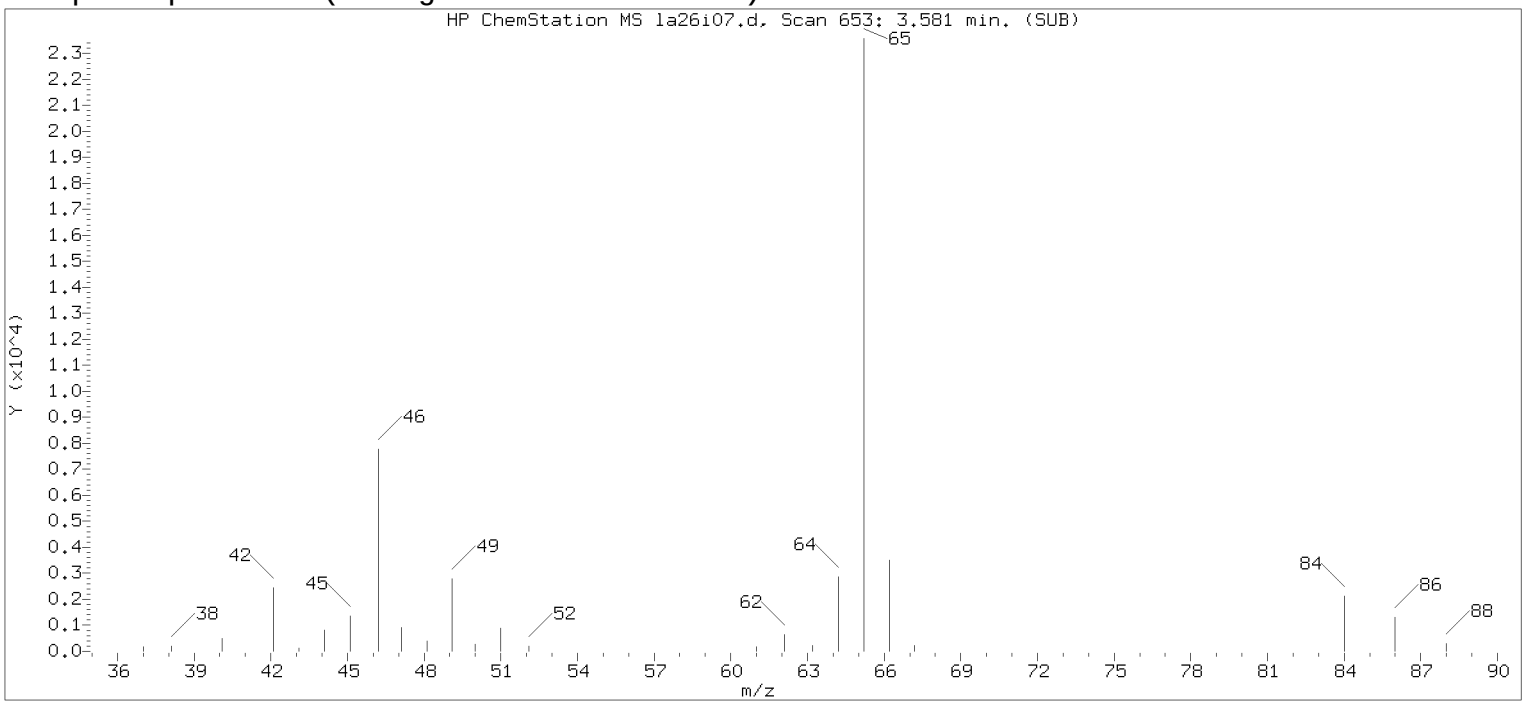
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 204400M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 914
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

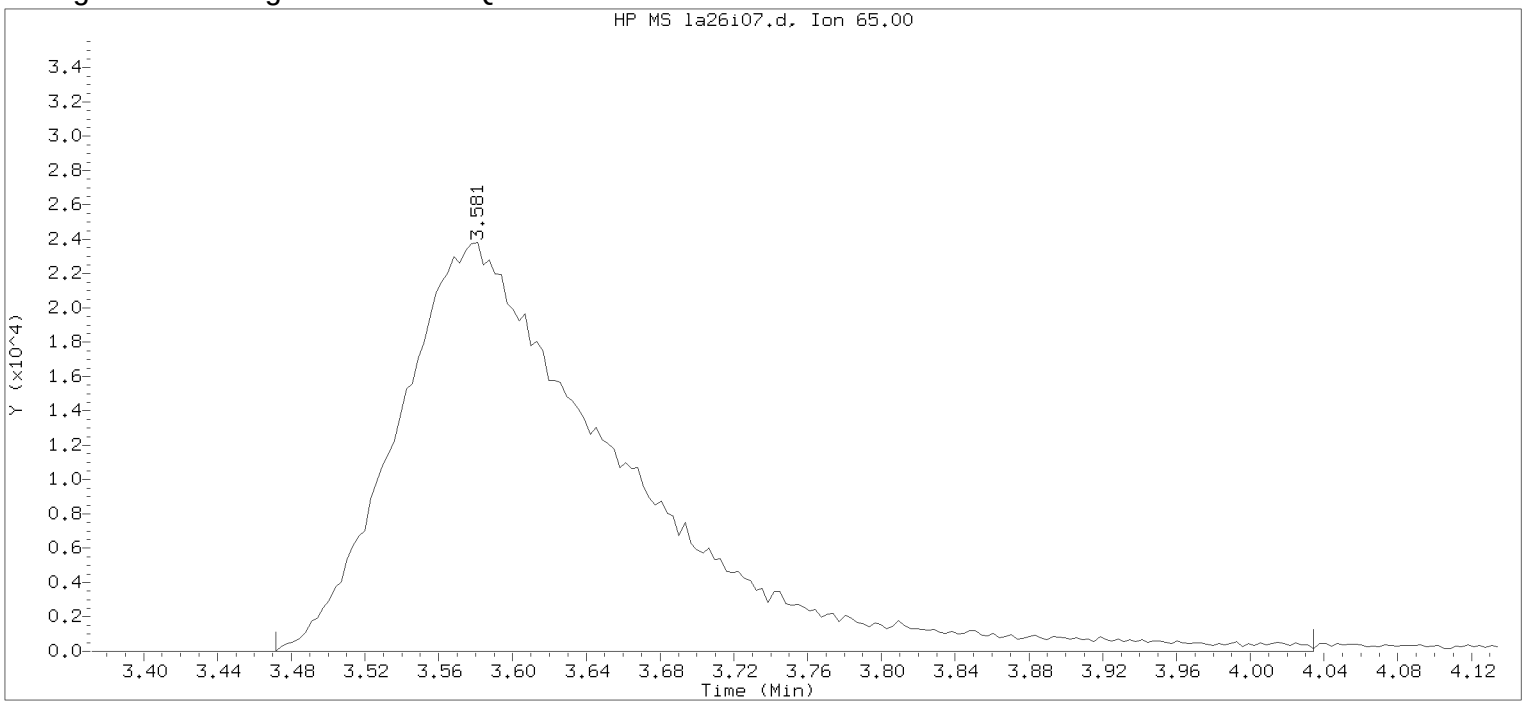
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

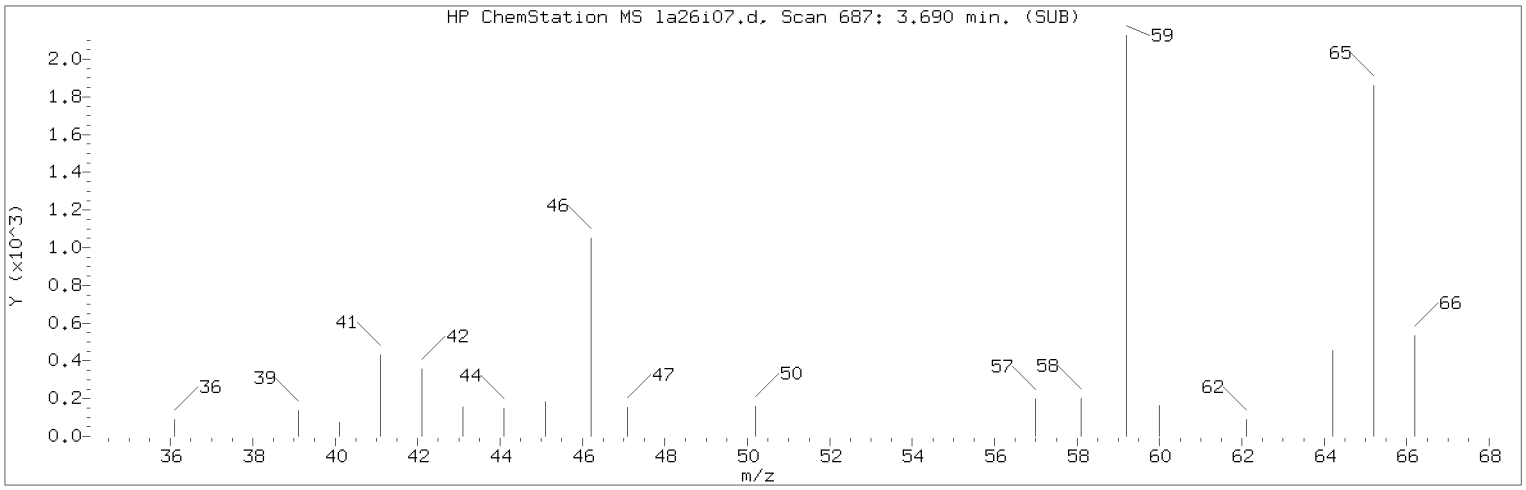
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

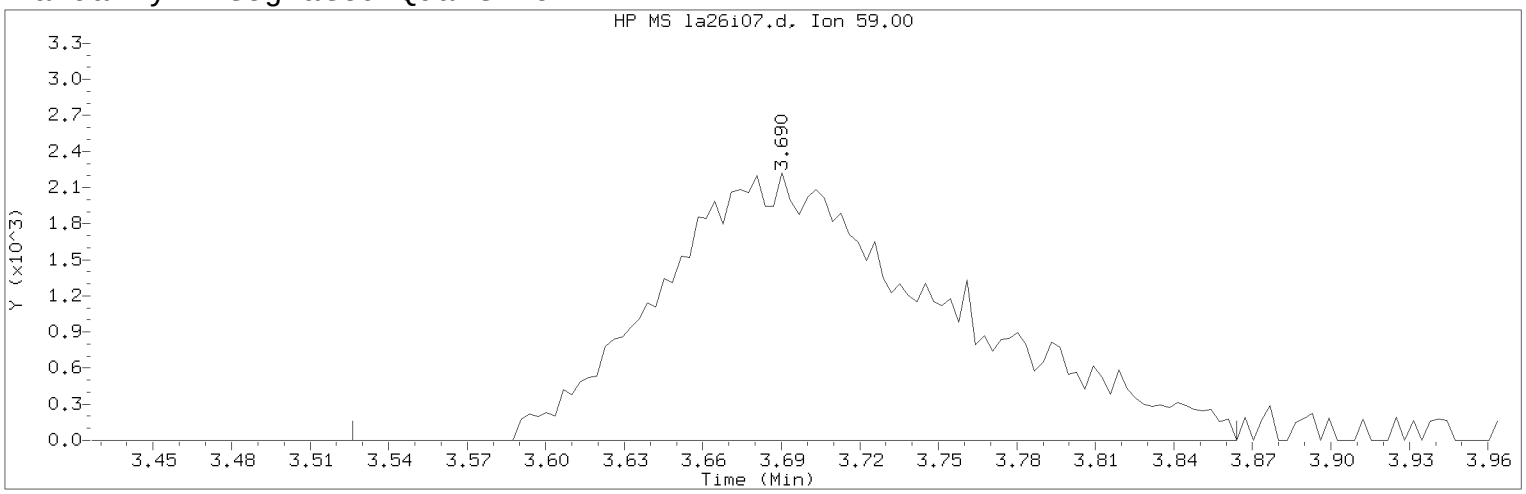
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 200515
On-column Amount (ng) : 250.0000
Integration start scan : 618 Integration stop scan: 793
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

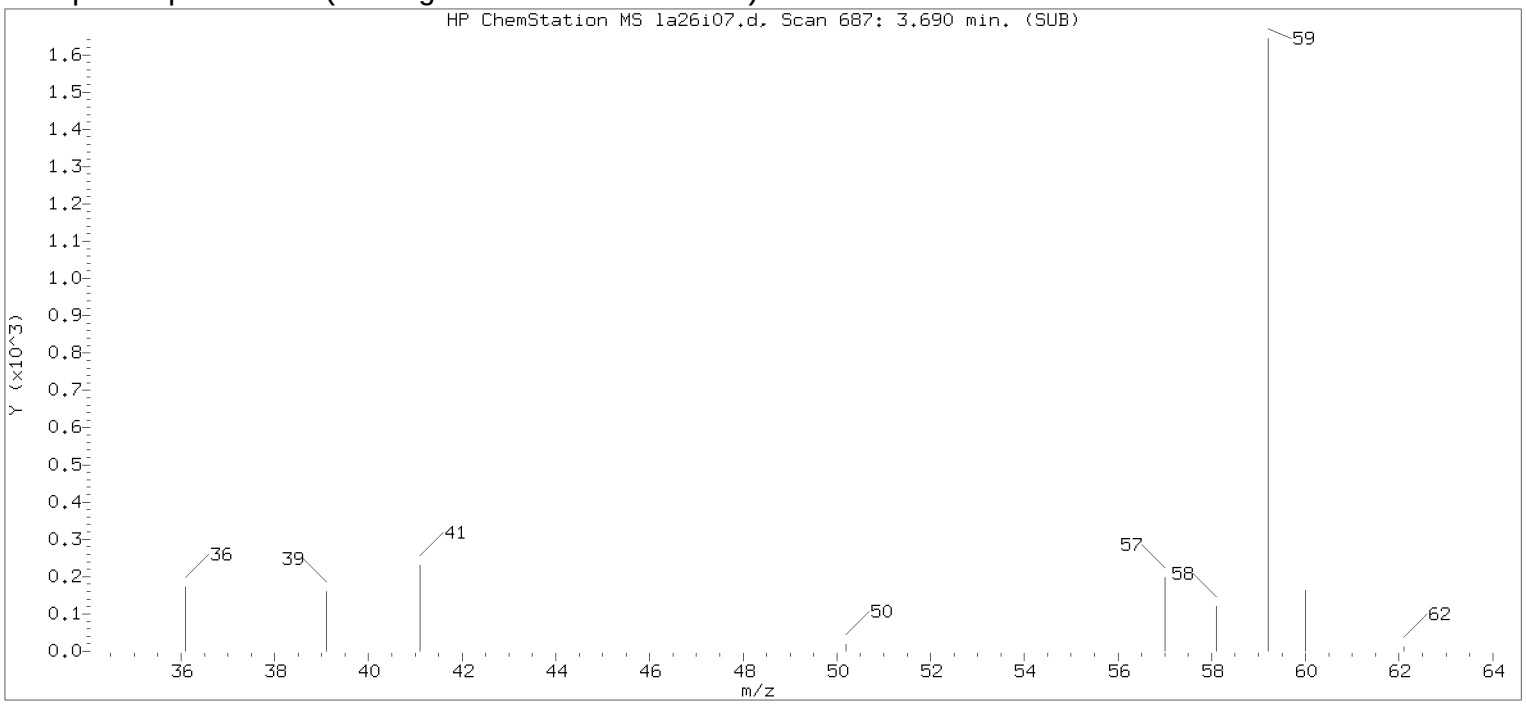
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 687
Retention Time (minutes): 3.690
Quant Ion : 59.00
Area (flag) : 16799M
On-Column Amount (ng) : 21.2415
Integration start scan : 635 Integration stop scan: 740
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

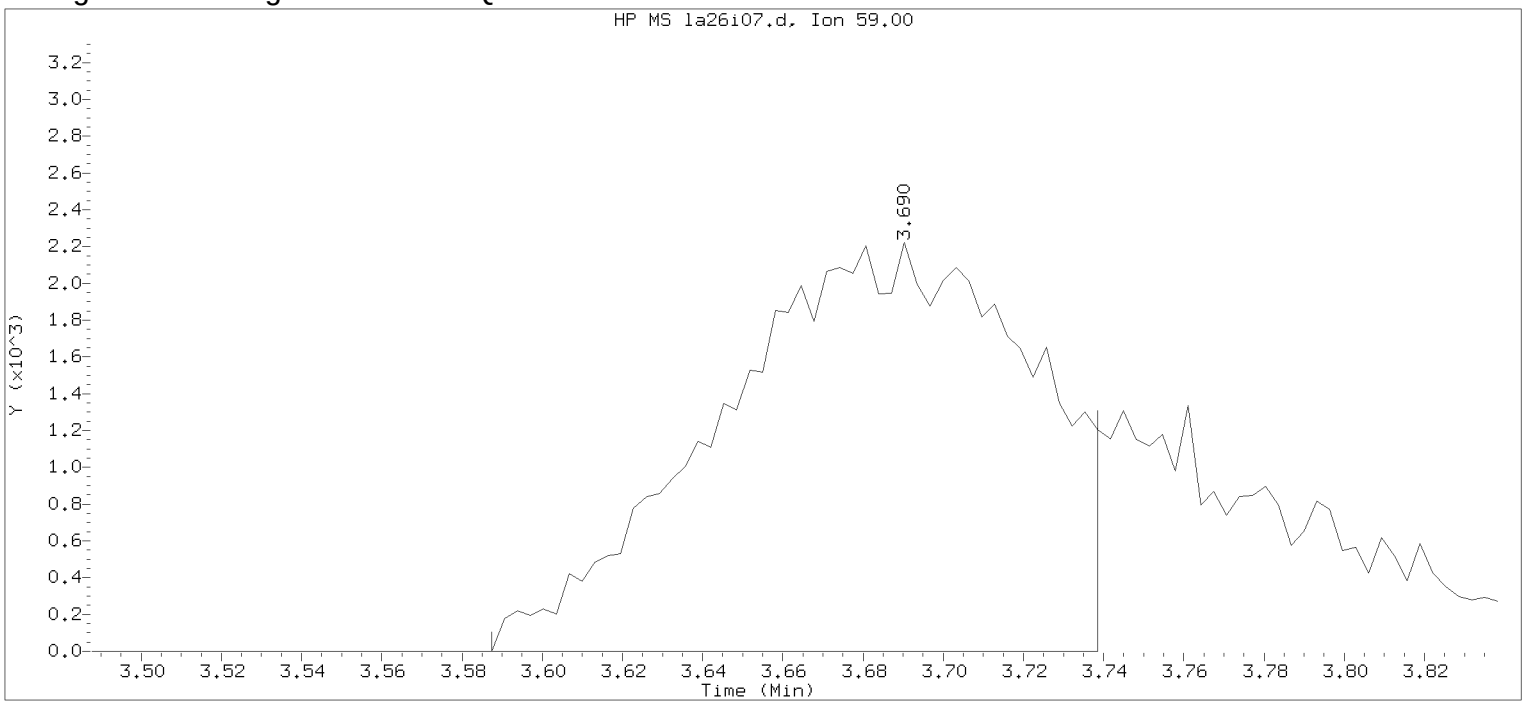
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

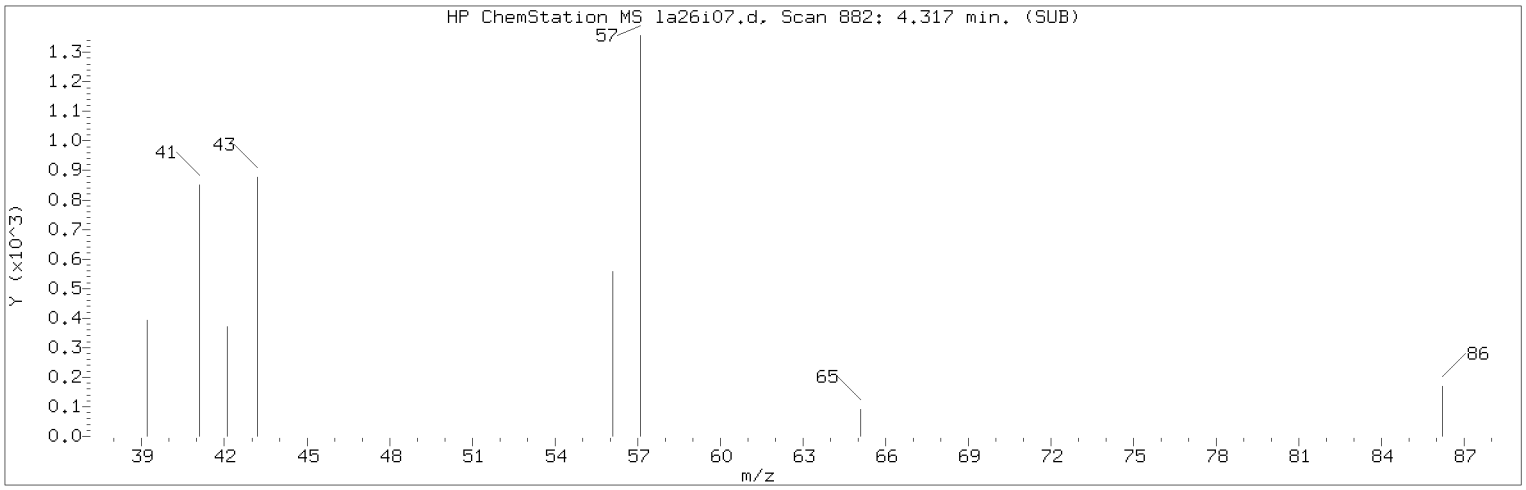
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

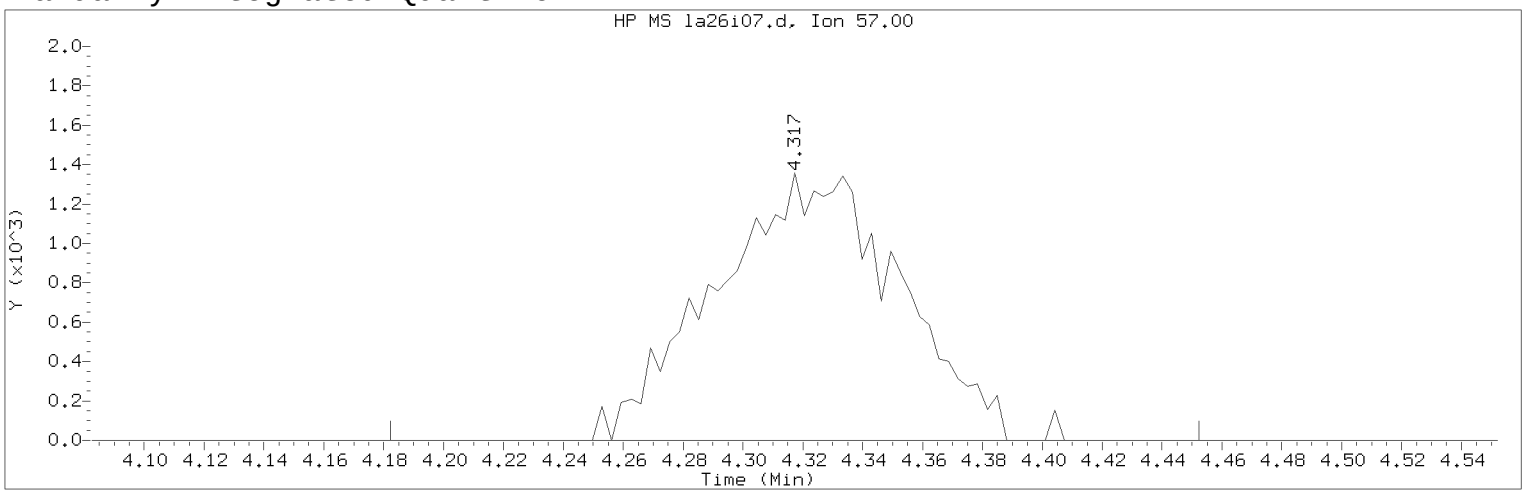
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 687
Retention Time (minutes): 3.690
Quant Ion : 59.00
Area : 12039
On-column Amount (ng) : 16.1792
Integration start scan : 654 Integration stop scan: 701
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

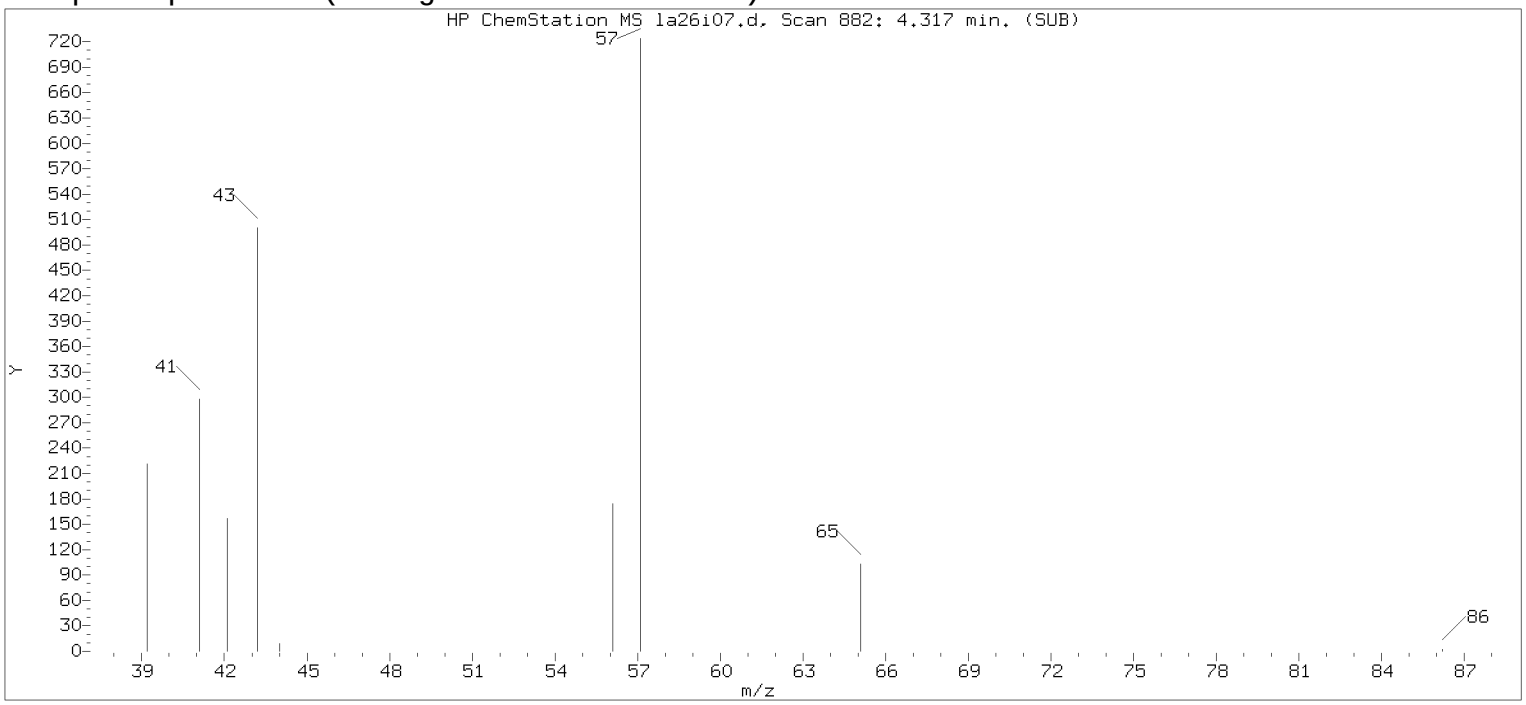
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area (flag) : 5817M
On-Column Amount (ng) : 0.8612
Integration start scan : 839 Integration stop scan: 923
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

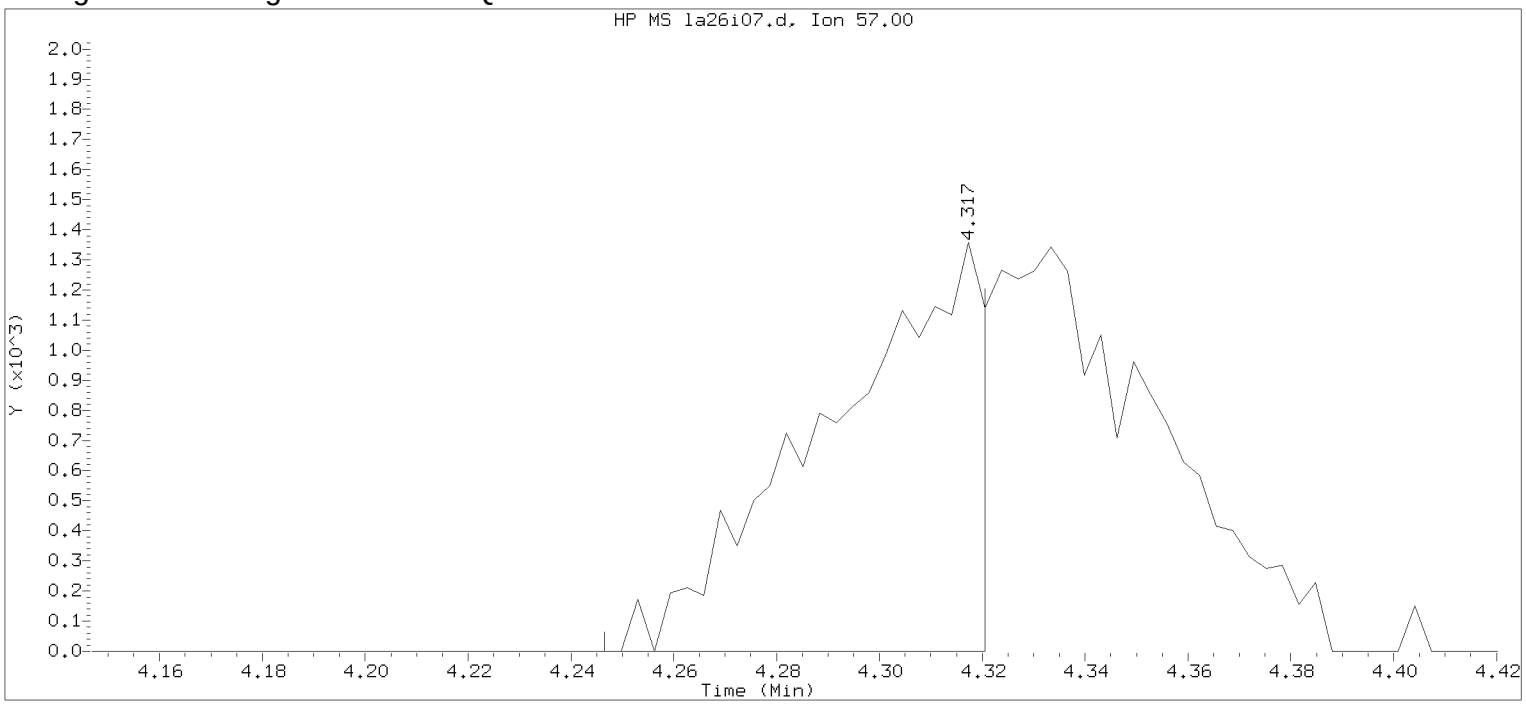
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

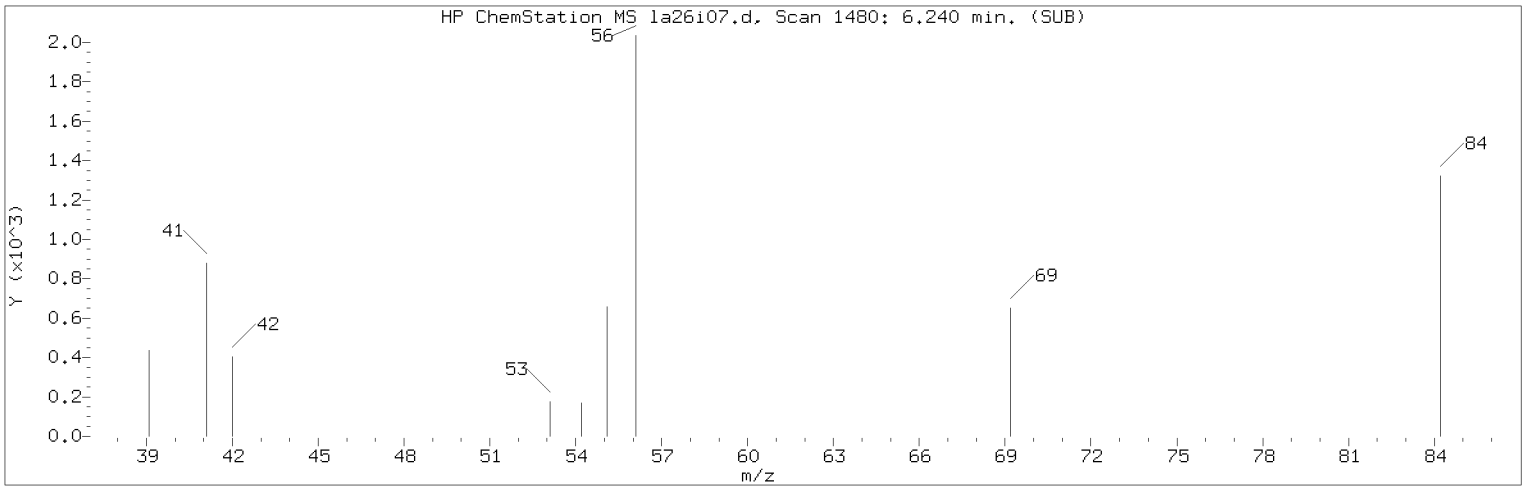
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

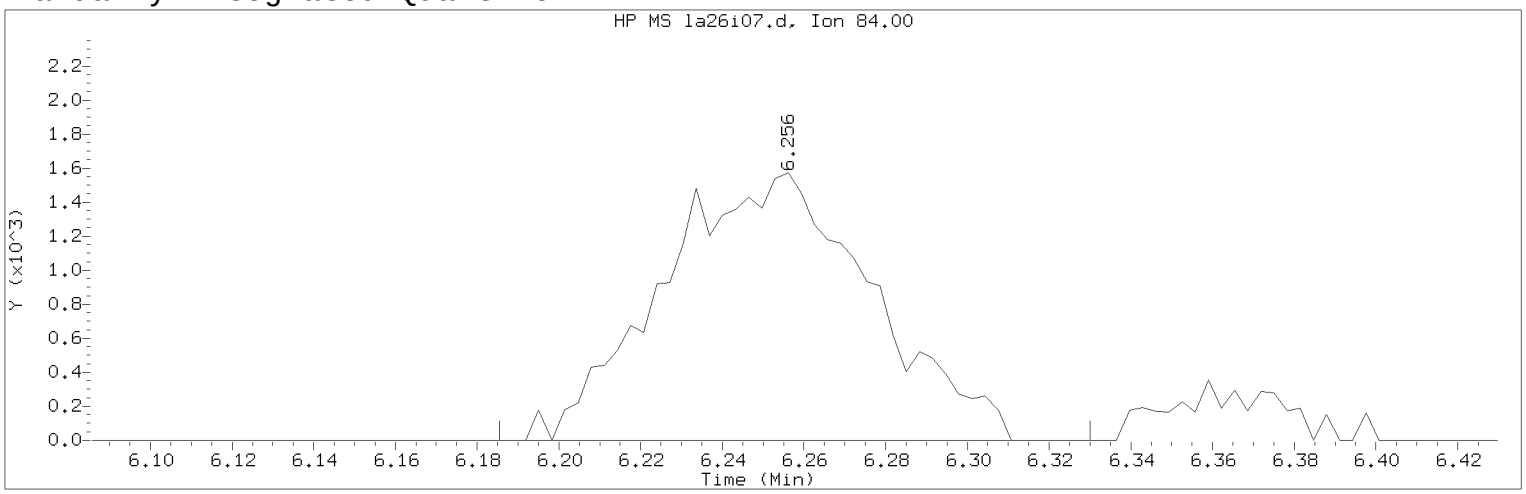
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area : 2803
On-column Amount (ng) : 0.4433
Integration start scan : 859 Integration stop scan: 882
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

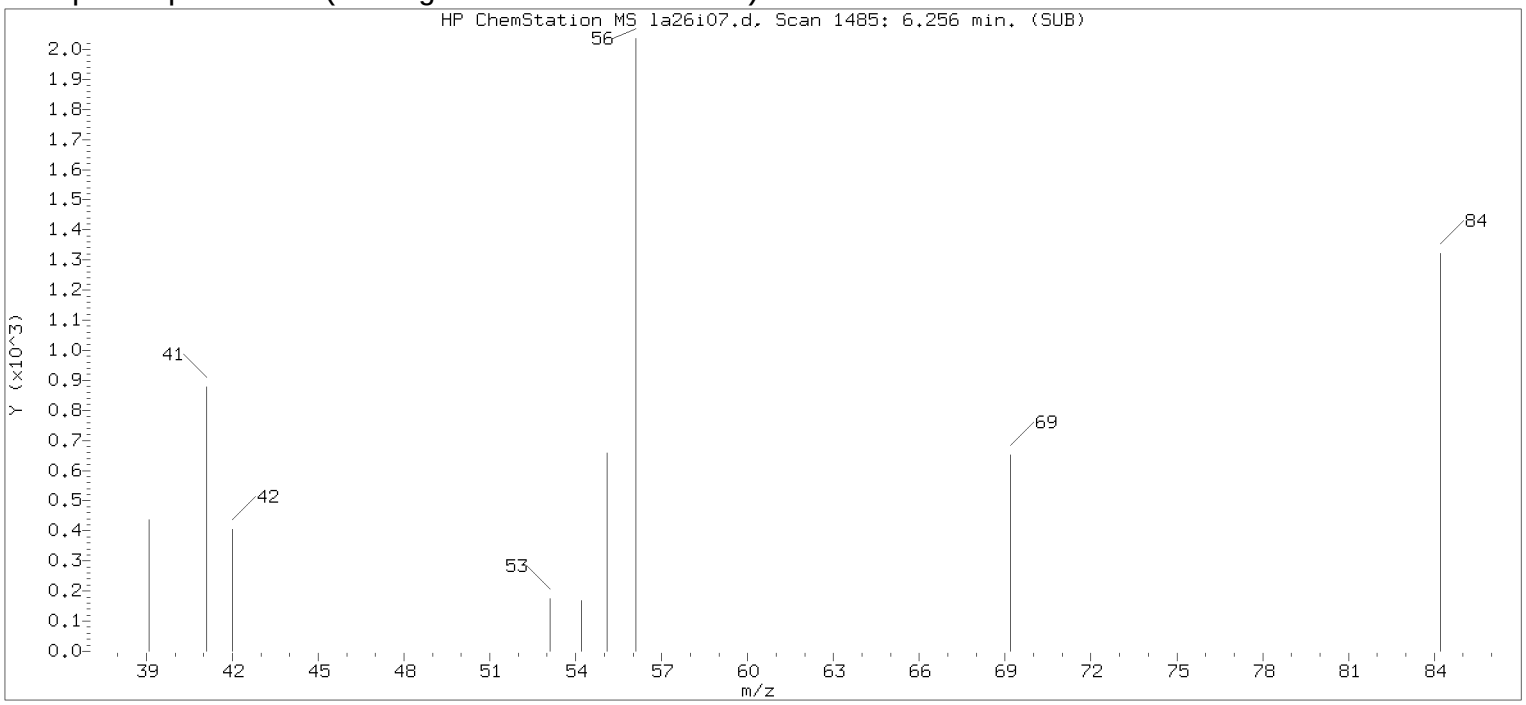
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 1485
Retention Time (minutes): 6.256
Quant Ion : 84.00
Area (flag) : 5572M
On-Column Amount (ng) : 0.8301
Integration start scan : 1462 Integration stop scan: 1507
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

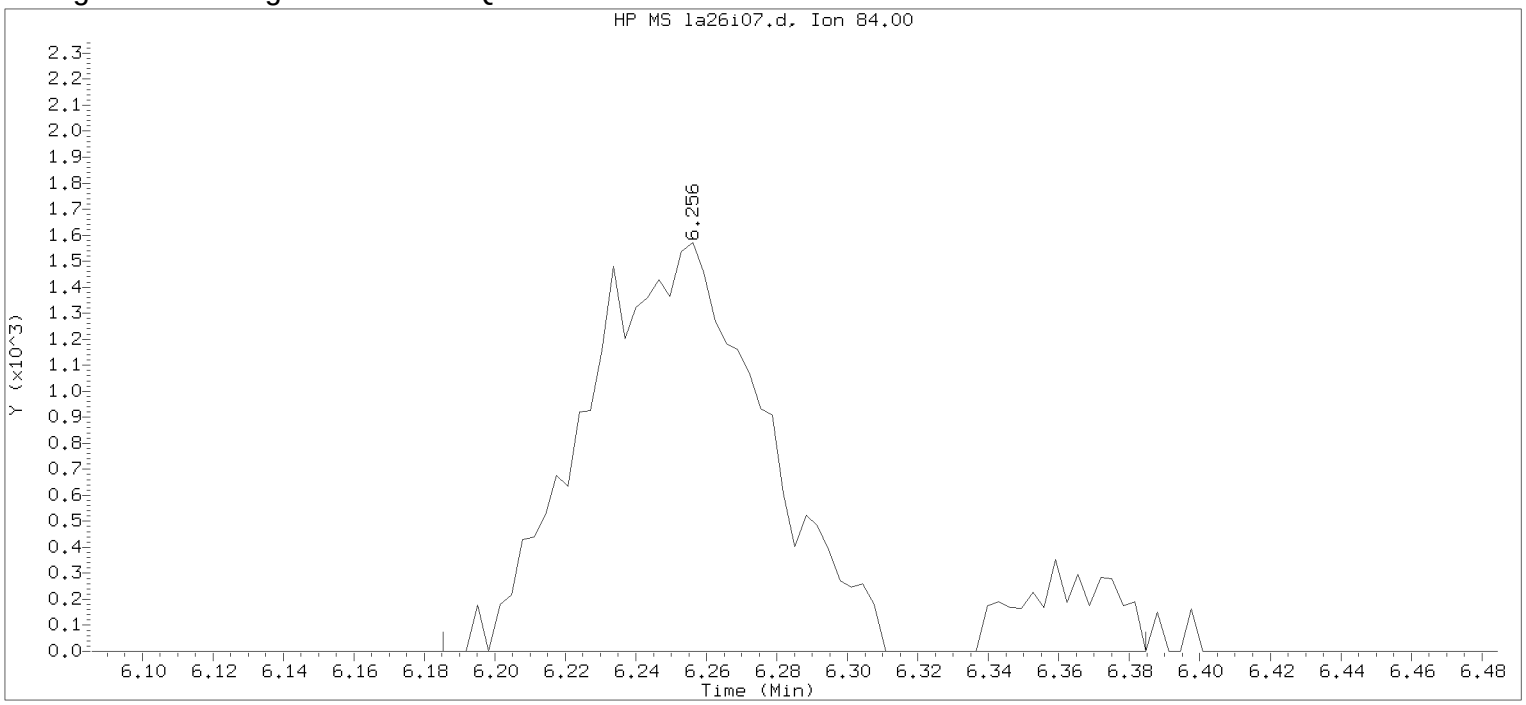
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

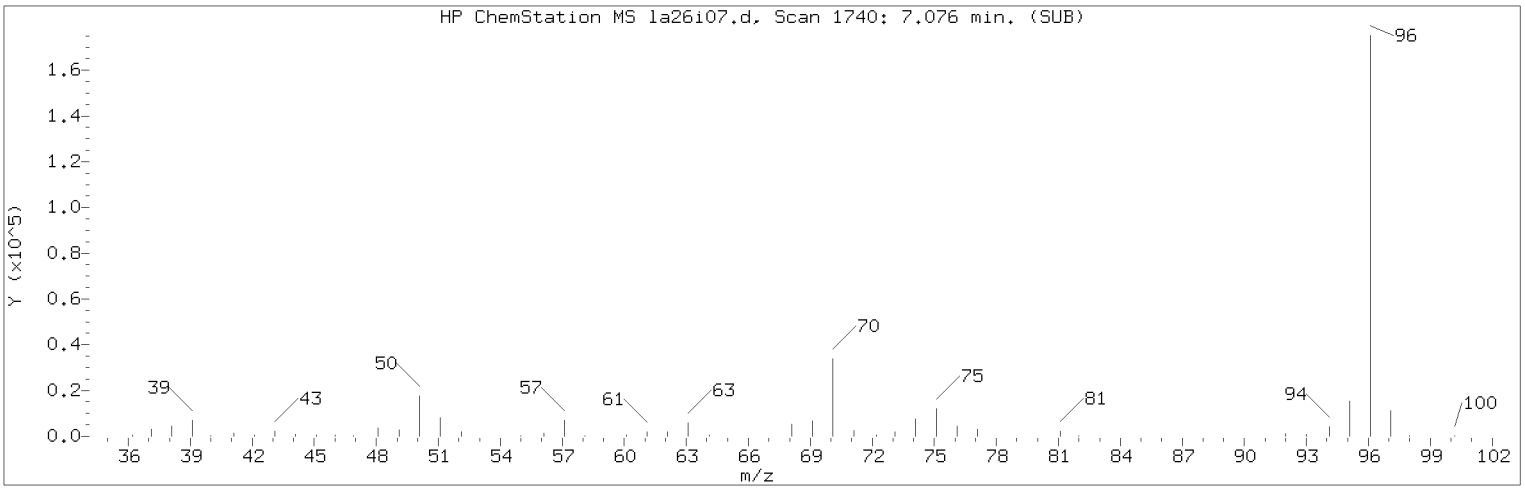
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

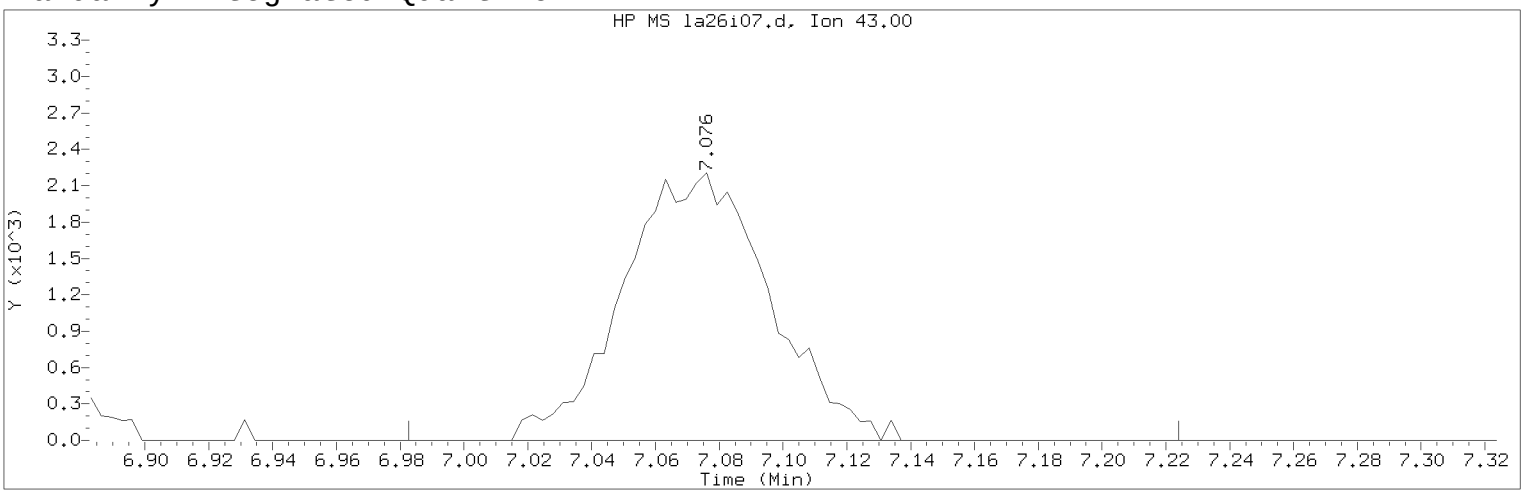
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 1485
Retention Time (minutes): 6.256
Quant Ion : 84.00
Area : 6158
On-column Amount (ng) : 0.9060
Integration start scan : 1462 Integration stop scan: 1524
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

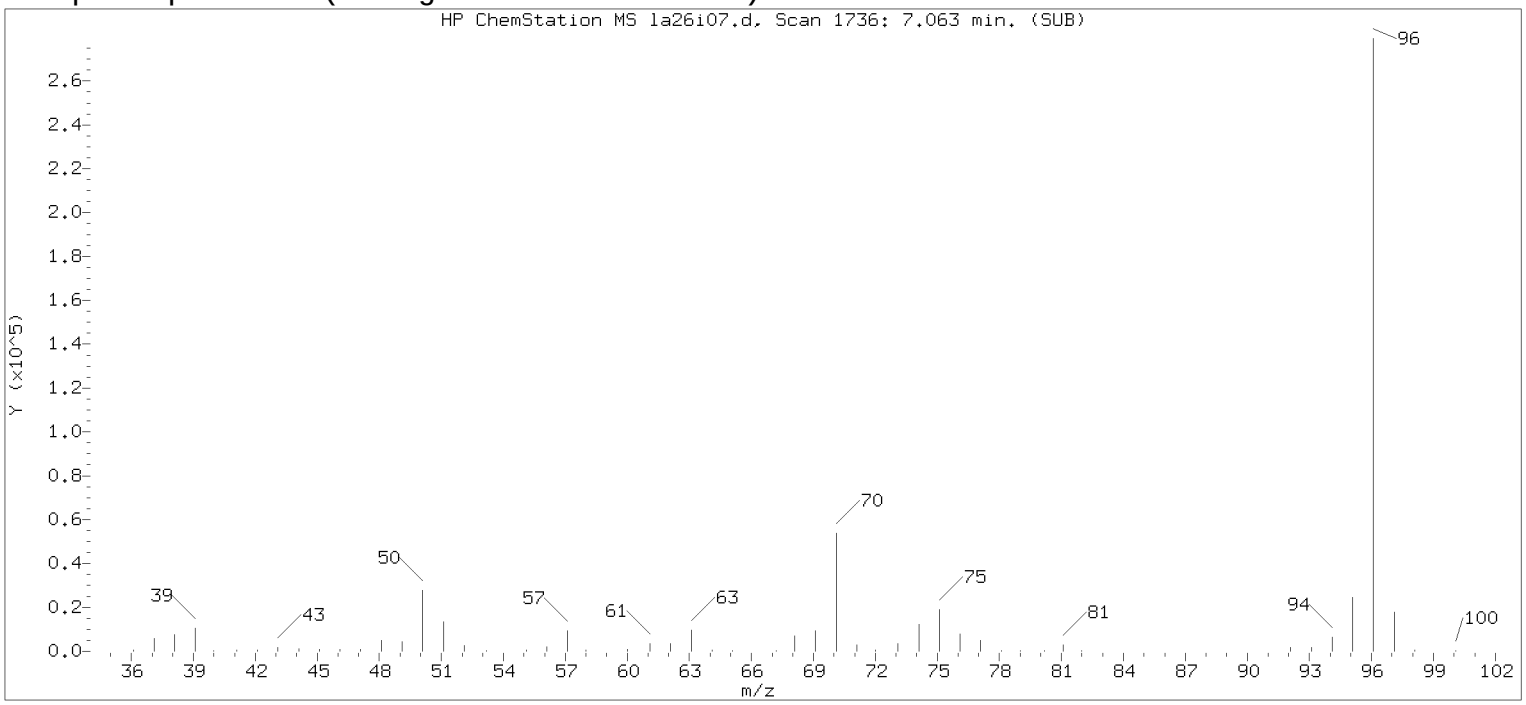
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1740
Retention Time (minutes): 7.076
Quant Ion : 43.00
Area (flag) : 7056M
On-Column Amount (ng) : 0.9330
Integration start scan : 1710 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

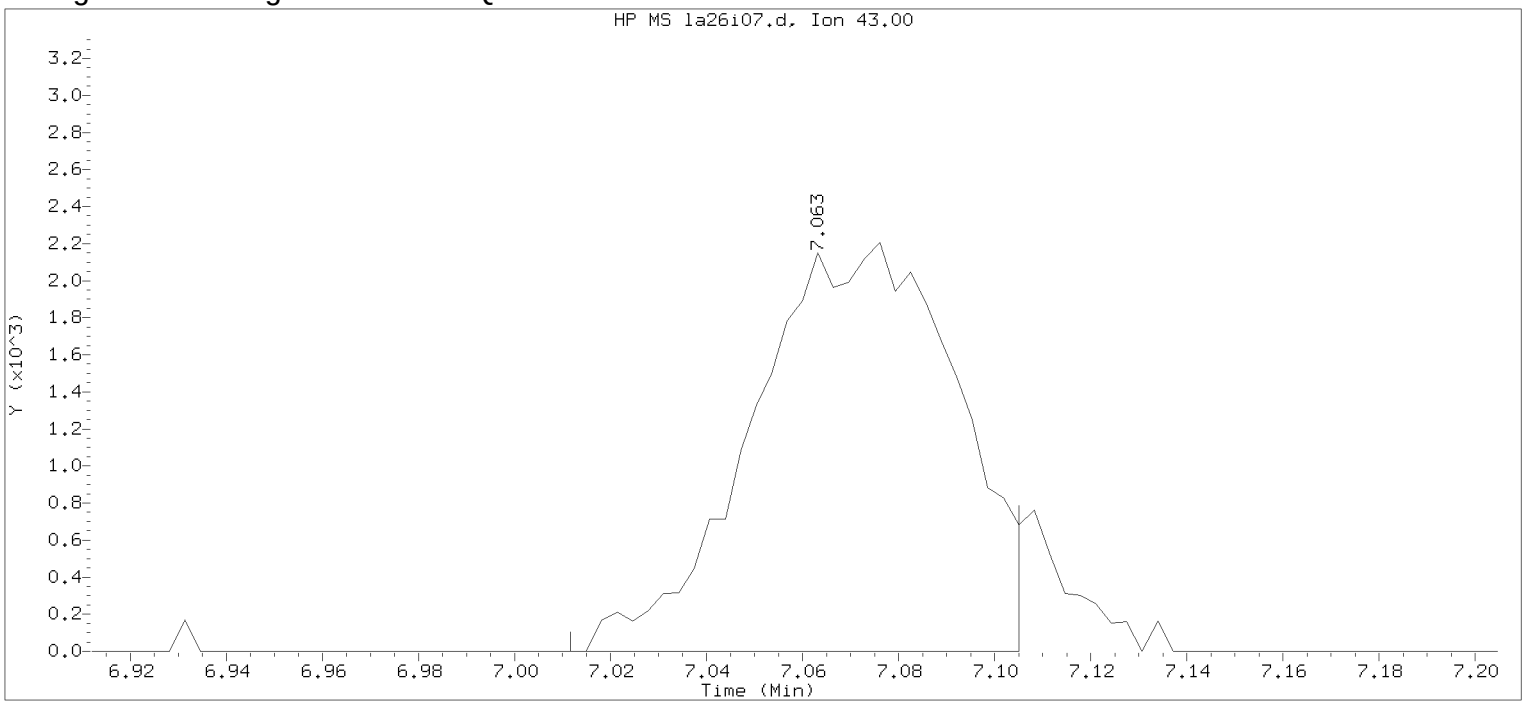
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1736
Retention Time (minutes): 7.063
Quant Ion : 43.00
Area : 6483
On-column Amount (ng) : 0.8667
Integration start scan : 1719 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

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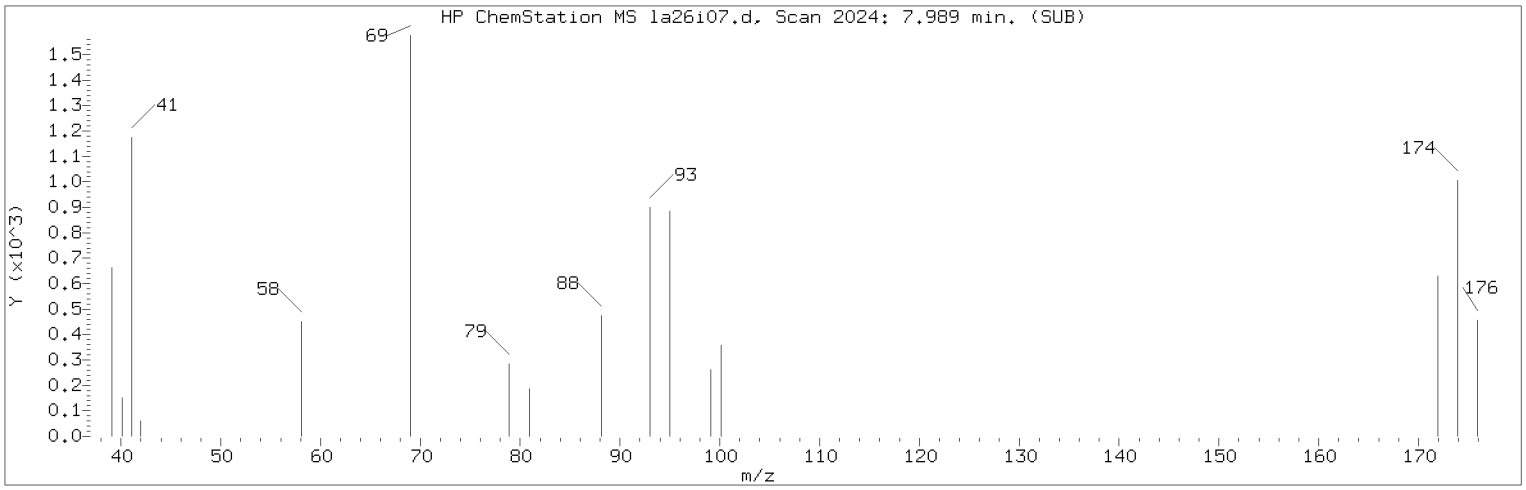
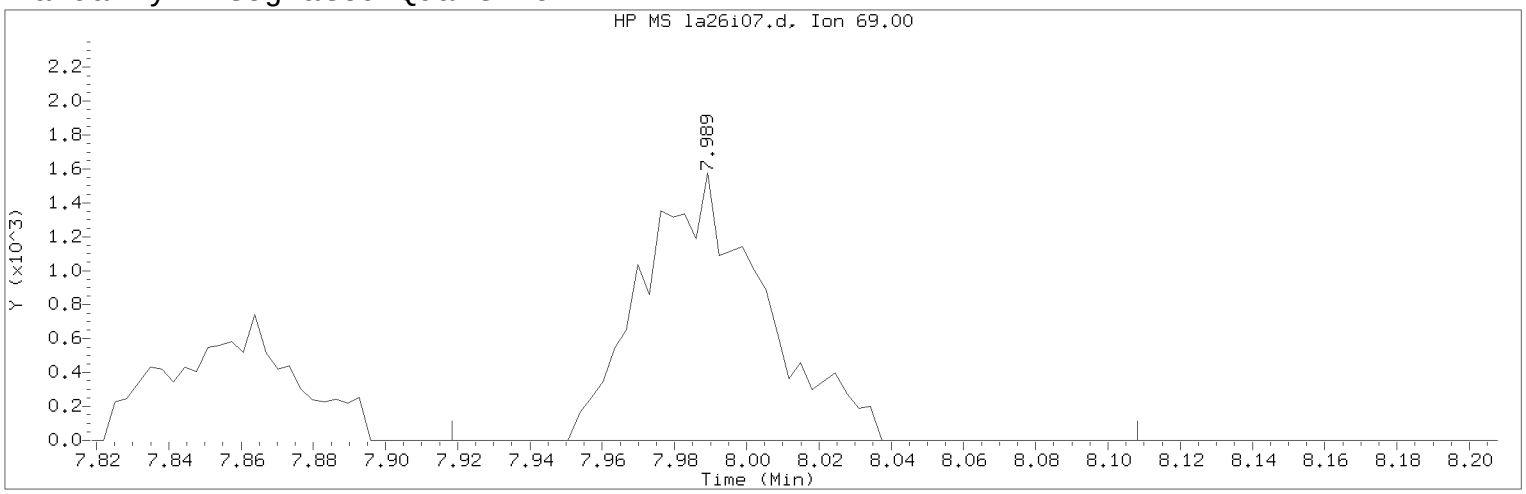
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

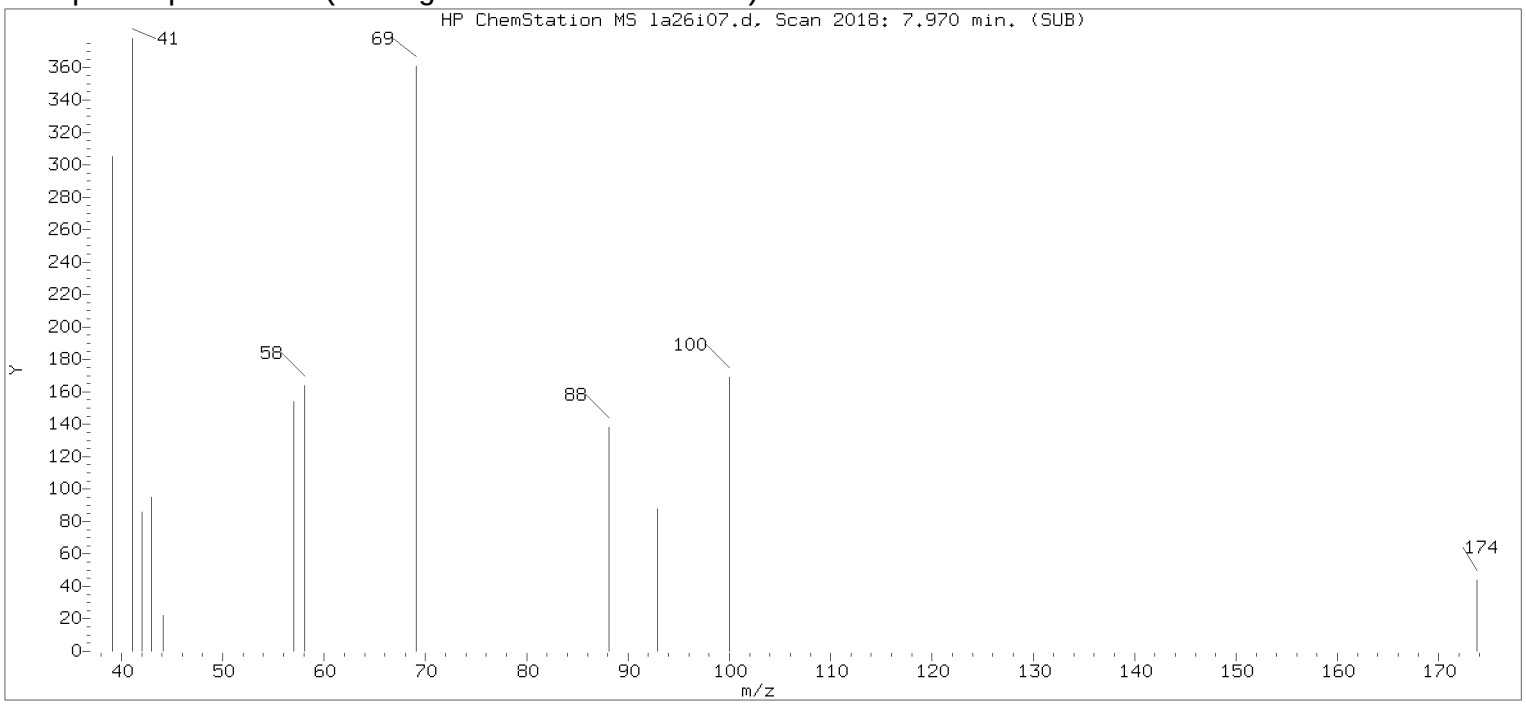
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2024
Retention Time (minutes): 7.989
Quant Ion : 69.00
Area (flag) : 3670M
On-Column Amount (ng) : 0.8277
Integration start scan : 2001 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

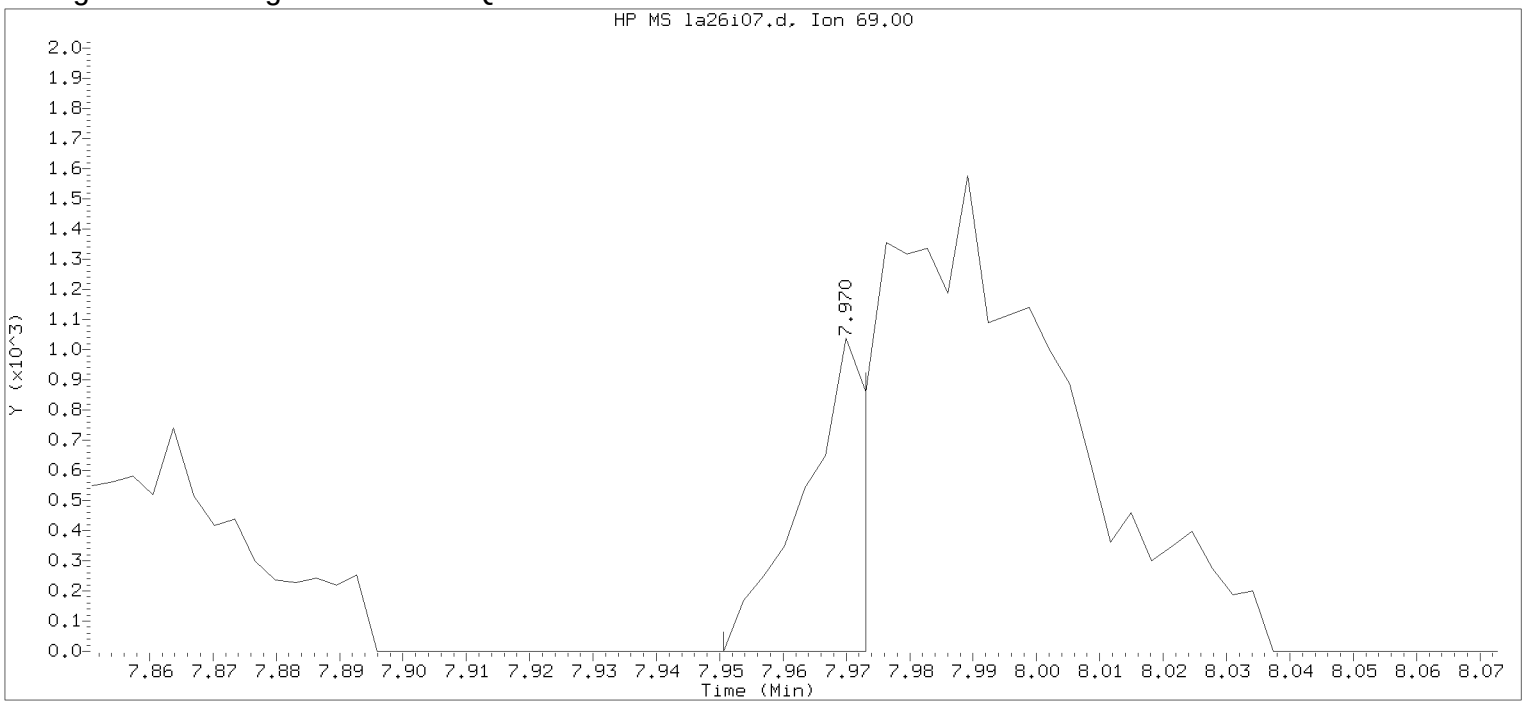
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2018
Retention Time (minutes): 7.970
Quant Ion : 69.00
Area : 661
On-column Amount (ng) : 0.1652
Integration start scan : 2011 Integration stop scan: 2018
Y at integration start : 0 Y at integration end: 0

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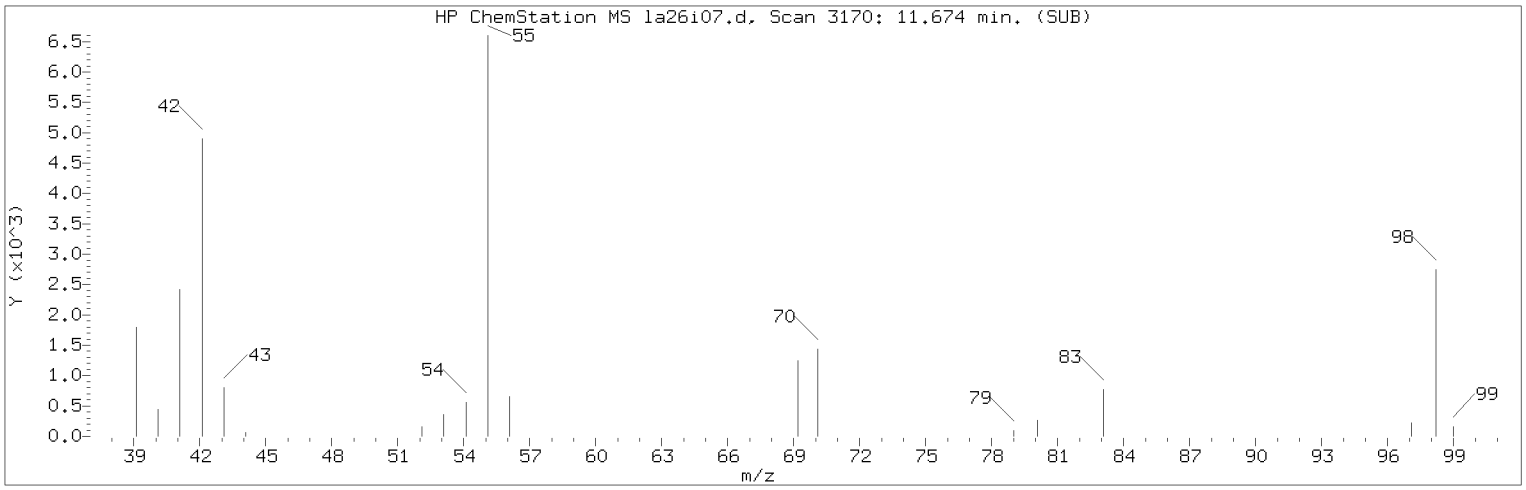
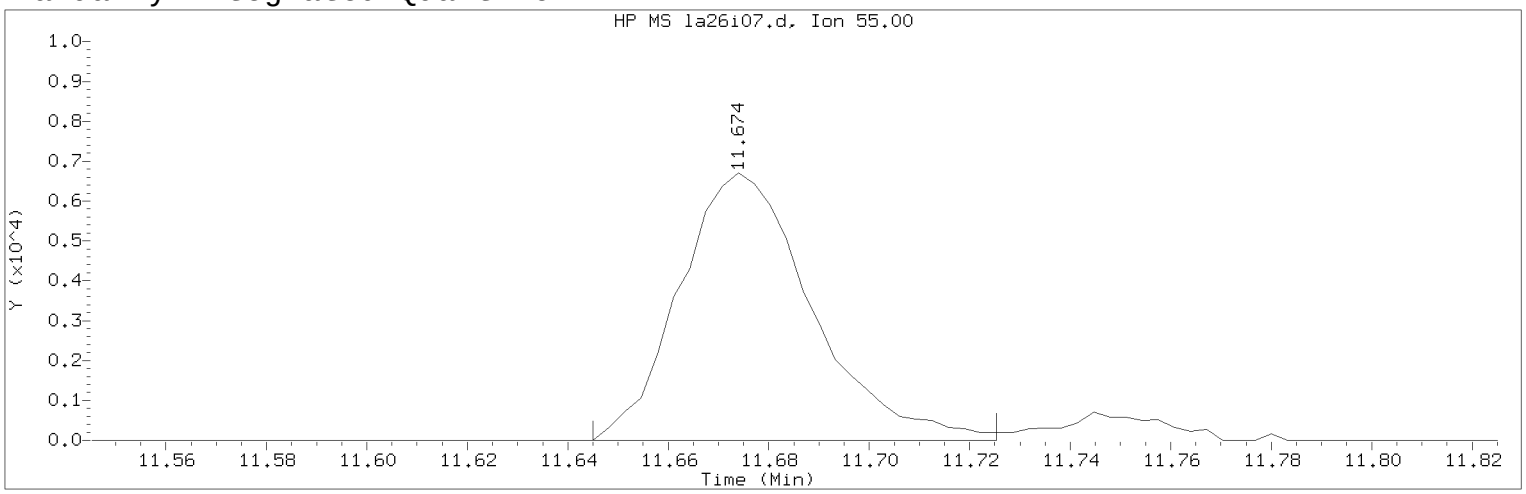
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

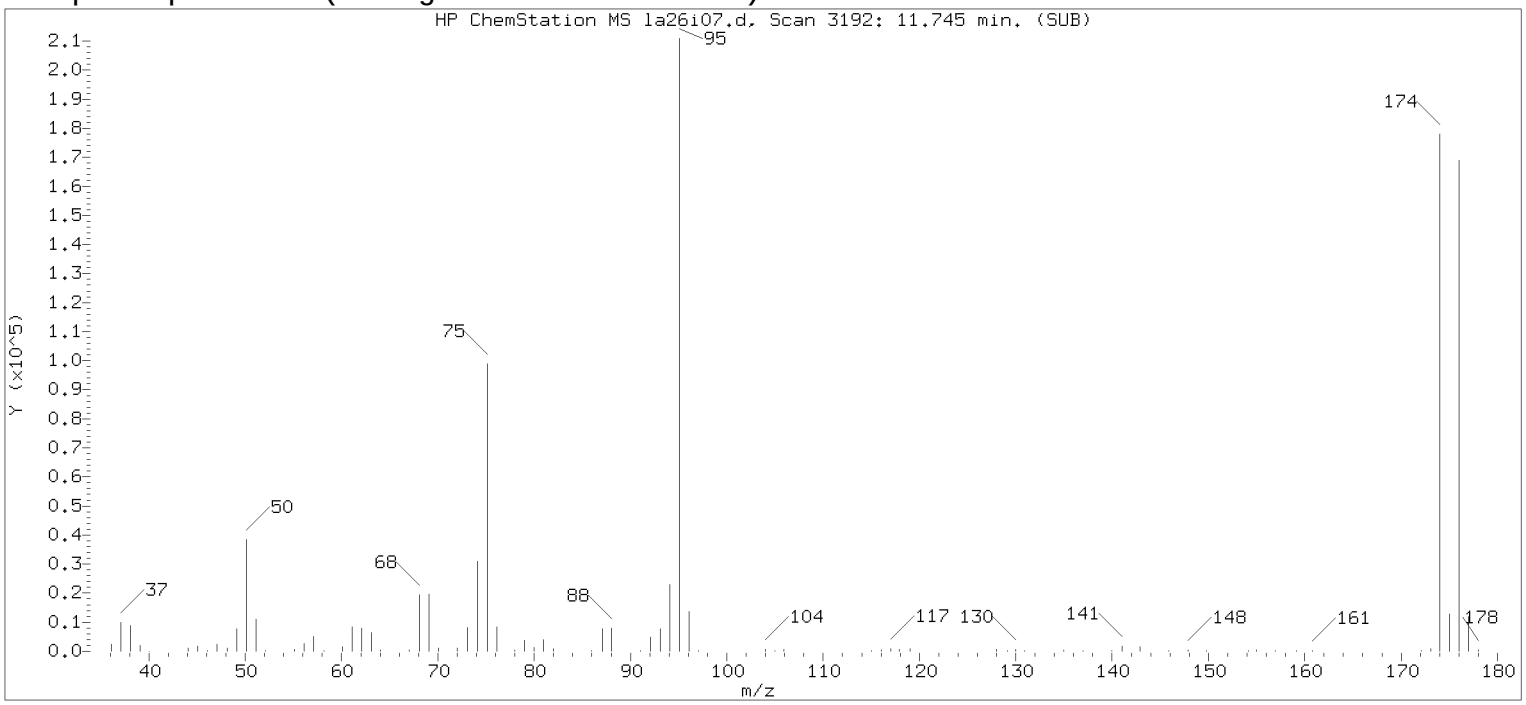
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3170
Retention Time (minutes): 11.674
Quant Ion : 55.00
Area (flag) : 12225A
On-Column Amount (ng) : 46.3770
Integration start scan : 3160 Integration stop scan: 3185
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

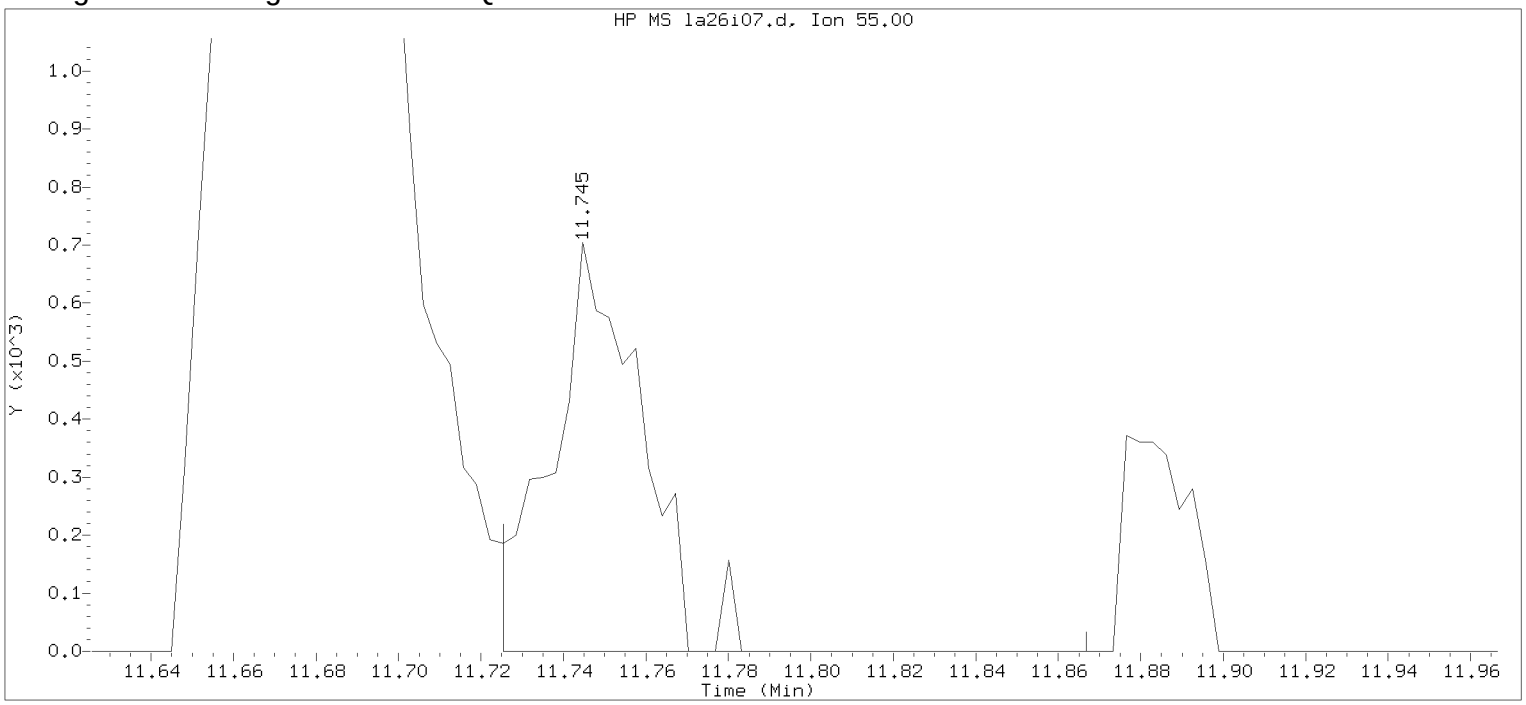
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



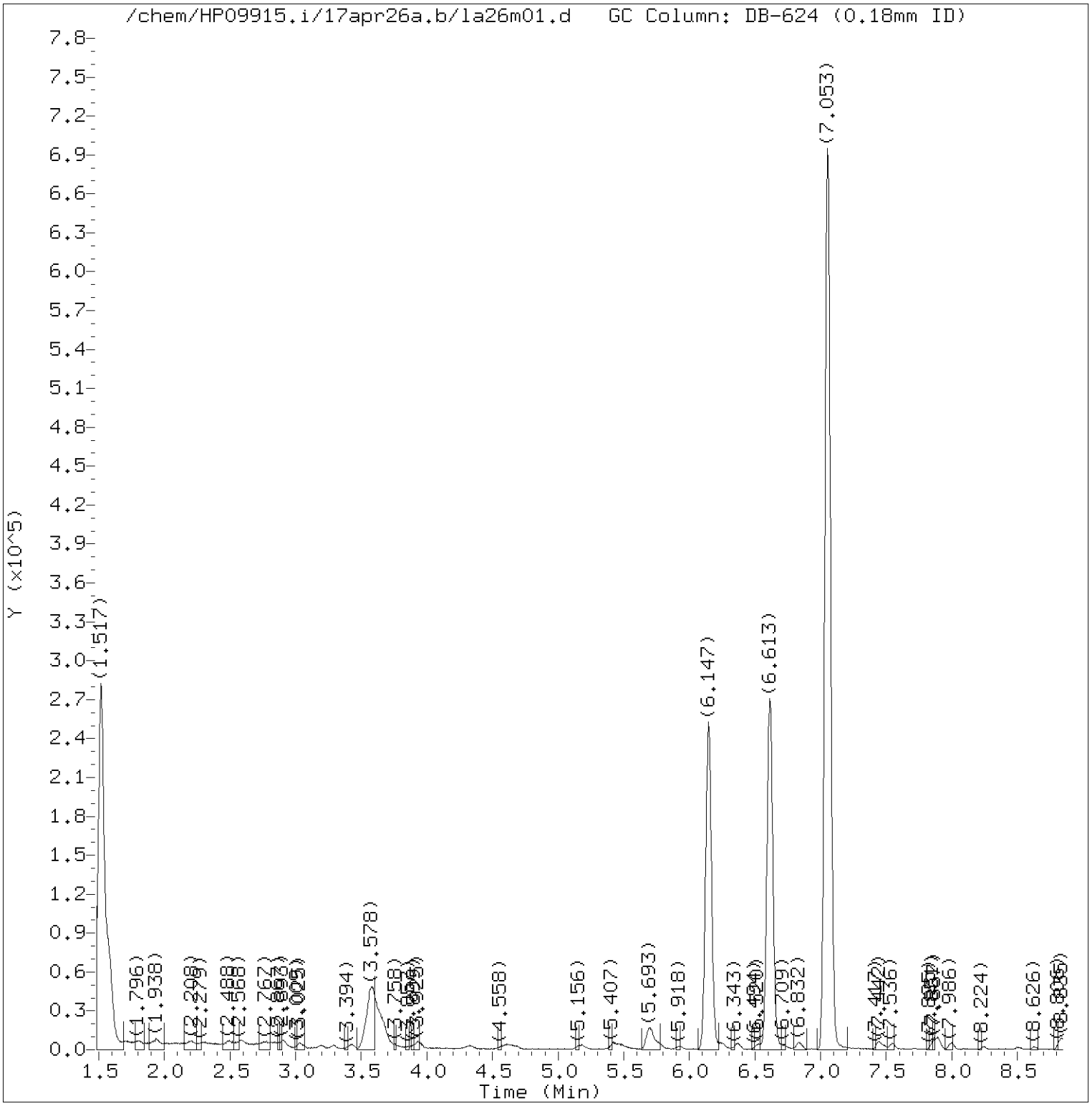

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3192
Retention Time (minutes): 11.745
Quant Ion : 55.00
Area : 1058
On-column Amount (ng) : 4.6543
Integration start scan : 3185 Integration stop scan: 3229
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

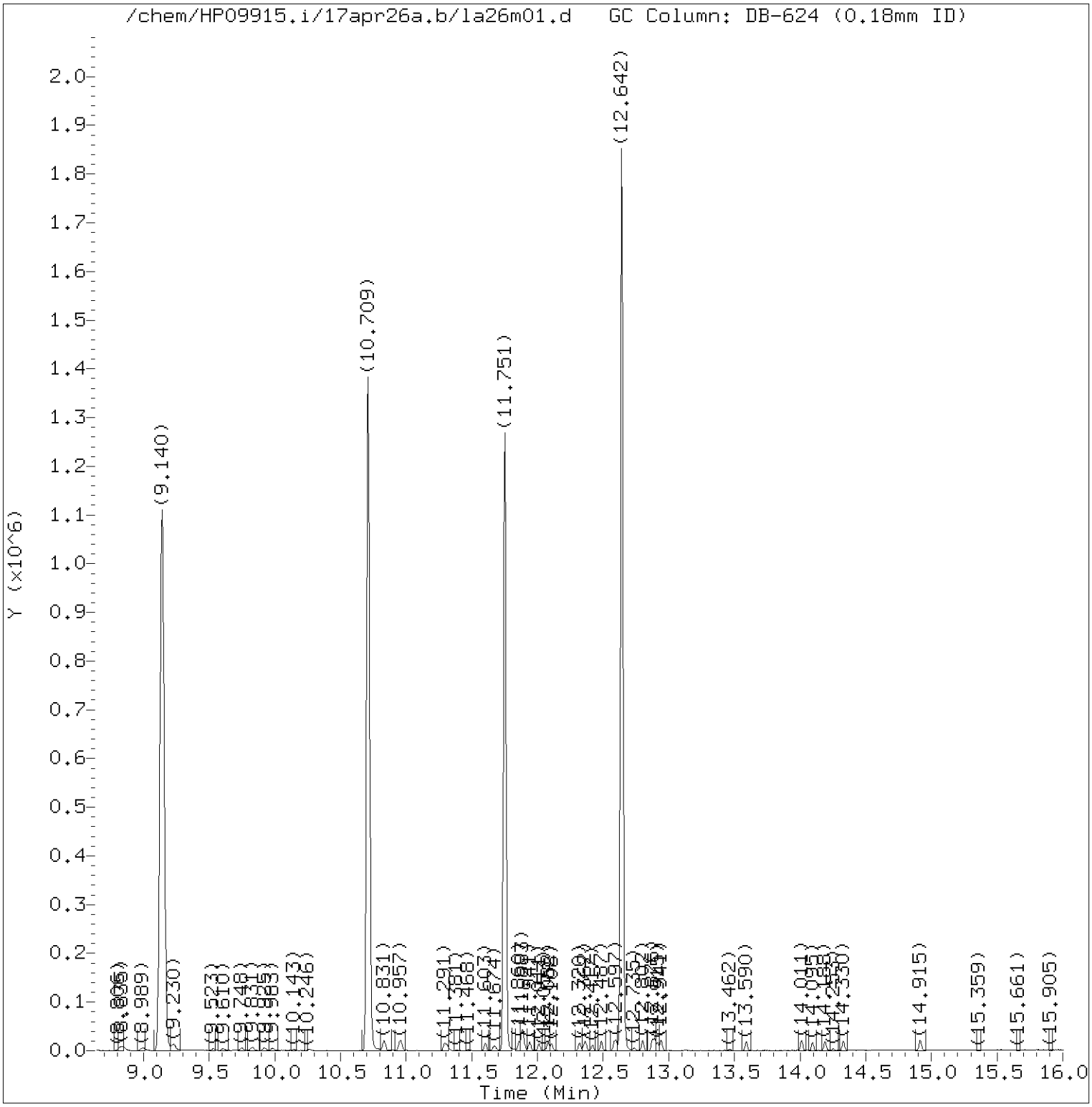
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.722 | 85 | 2339 | 0.380 |
| 4) Chloromethane | (2) | 1.809 | 50 | 2857 | 0.452 |
| 6) Vinyl Chloride | (2) | 1.912 | 62 | 2381 | 0.390 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 1925M | 0.517 |
| 8) Bromomethane | (2) | 2.208 | 94 | 1847M | 0.450 |
| 9) Chloroethane | (2) | 2.301 | 64 | 1571 | 0.456 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 3590 | 0.428 |
| 12) Trichlorofluoromethane | (2) | 2.520 | 101 | 2884 | 0.408 |
| 11) n-Pentane | (2) | 2.591 | 43 | 3057 | 0.525 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 1634 | 0.415 |
| 15) Freon 123a | (2) | 2.809 | 67 | 1902 | 0.404 |
| 16) Acrolein | (1) | 2.912 | 56 | 6871 | 4.797 |
| 18) Acetone | (1) | 3.009 | 58 | 319 | 0.513 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 1569 | 0.419 |
| 19) Freon 113 | (2) | 3.038 | 101 | 1321 | 0.351 |
| 21) 2-Propanol | (1) | 3.182 | 45 | 4366M | 10.594 |
| 22) Methyl Iodide | (2) | 3.189 | 142 | 3071 | 0.423 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 5057 | 0.415 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 2680M | 0.493 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 3325 | 0.443 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 174972 | 250.000 |
| 28) Methylene Chloride | (2) | 3.591 | 84 | 3930 | 0.795 |
| 30) t-Butyl alcohol | (1) | 3.693 | 59 | 7505M | 11.087 |
| 31) Acrylonitrile | (2) | 3.857 | 53 | 696 | 0.244 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 6241 | 0.455 |
| 32) trans-1,2-Dichloroethene | (2) | 3.941 | 96 | 1892 | 0.431 |
| 34) n-Hexane | (2) | 4.314 | 57 | 2680M | 0.398 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 3427 | 0.415 |
| 38) di-Isopropyl ether | (2) | 4.610 | 45 | 7417 | 0.468 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.690 | 53 | 2753 | 0.395 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 5835 | 0.428 |
| 44) 2-Butanone | (2) | 5.407 | 43 | 3021 | 0.791 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 2175 | 0.432 |
| 45) 2,2-Dichloropropane | (2) | 5.423 | 77 | 1812 | 0.329 |
| 47) Propionitrile | (1) | 5.484 | 54 | 9583 | 9.699 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 12206 | 4.290 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 1031 | 0.389 |
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 517M | 0.593 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.931 | 83 | 3387 | 0.430 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 3253M | 0.453 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 251275 | 49.779 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4067 | 0.863 |
| 54) Cyclohexane | (2) | 6.240 | 56 | 3352 | 0.409 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 2006 | 0.382 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2672 | 0.418 |
| 58) Isobutyl Alcohol | (1) | 6.539 | 41 | 5623M | 23.658 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 62764 | 50.002 |
| 60) Benzene | (2) | 6.629 | 78 | 8895 | 0.472 |
| 61) 1,2-Dichloroethane | (2) | 6.706 | 62 | 2708 | 0.424 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 5953 | 0.440 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1033706 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 3401M | 0.451 |
| 69) n-Butanol | (1) | 7.446 | 56 | 7231 | 37.738 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 1999 | 0.410 |
| 72) Methylcyclohexane | (2) | 7.851 | 83 | 3533 | 0.411 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 2149 | 0.416 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 845 | 14.126 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 1518M | 0.343 |
| 74) Dibromomethane | (2) | 7.996 | 93 | 1393 | 0.429 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 2298 | 0.392 |
| 79) 2-Nitropropane | (2) | 8.510 | 41 | 1240 | 0.746 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.632 | 63 | 1335 | 0.336 |
| 81) cis-1,3-Dichloropropene | (2) | 8.815 | 75 | 2761 | 0.361 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 5828 | 0.740 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1012343 | 50.270 |
| 88) Toluene | (3) | 9.230 | 92 | 5535 | 0.473 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 2362 | 0.360 |
| 91) Ethyl Methacrylate | (3) | 9.610 | 69 | 2755 | 0.373 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 2117 | 0.469 |
| 93) Tetrachloroethene | (3) | 9.831 | 166 | 2288 | 0.442 |
| 94) 1,3-Dichloropropane | (3) | 9.925 | 76 | 3487 | 0.446 |
| 96) 2-Hexanone | (3) | 9.983 | 43 | 3976 | 0.704 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 5123 | 0.721 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 1597 | 0.342 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 2039 | 0.413 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 788712 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 4267 | 0.635 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 6446 | 0.477 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 1648 | 0.370 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 9923 | 0.440 |
| 106) m+p-Xylene | (3) | 10.960 | 106 | 7187 | 0.818 |
| 107) o-Xylene | (3) | 11.291 | 106 | 3699 | 0.423 |
| 109) Styrene | (3) | 11.311 | 104 | 5315 | 0.368 |
| 110) Bromoform | (3) | 11.468 | 173 | 1137 | 0.335 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 9437 | 0.422 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 4553M | 20.180 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379187 | 50.658 |
| 108) Xylene (Total) | (3) | | 106 | 10886 | 1.241 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 3396 | 0.450 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 2630 | 0.432 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 8626 | 3.986 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 993 | 0.465 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 12373 | 0.460 |
| 120) 2-Chlorotoluene | (4) | 12.015 | 126 | 2680M | 0.479 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 8325 | 0.434 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 2713 | 0.466 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 1768 | 0.427 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1190 | 0.364 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 8421 | 0.427 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 11053 | 0.452 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 6155 | 0.532 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 10017 | 0.464 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 425430 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 6850 | 0.572 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 9695 | 0.469 |
| 135) Benzyl Chloride | (4) | 12.738 | 91 | 3470 | 0.277 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 5811 | 0.451 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 6562 | 0.485 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 5769 | 0.535 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 5976 | 0.525 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 4851 | 0.447 |
| 141) Diethylbenzene (total) | (4) | | 100 | 17224 | 1.382 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.468 | 75 | 594 | 0.372 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.593 | 180 | 5802 | 0.629 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 6179 | 0.690 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 2914 | 0.750 |
| 148) Naphthalene | (4) | 14.188 | 128 | 13901 | 0.515 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 6003 | 0.695 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 9582 | 0.549 |



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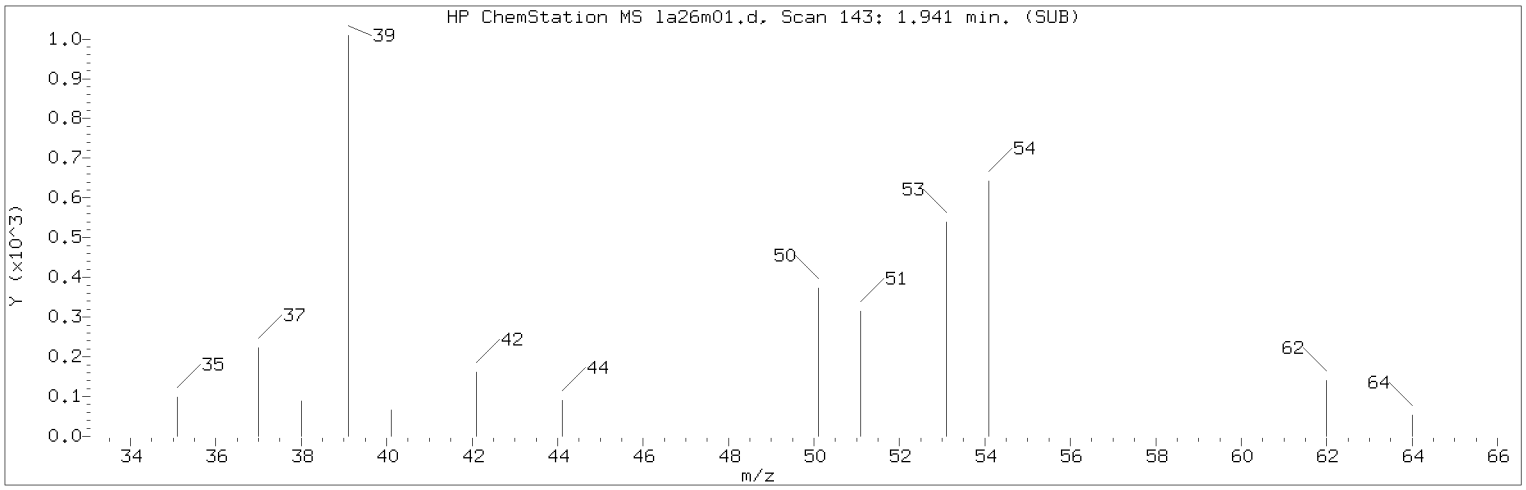
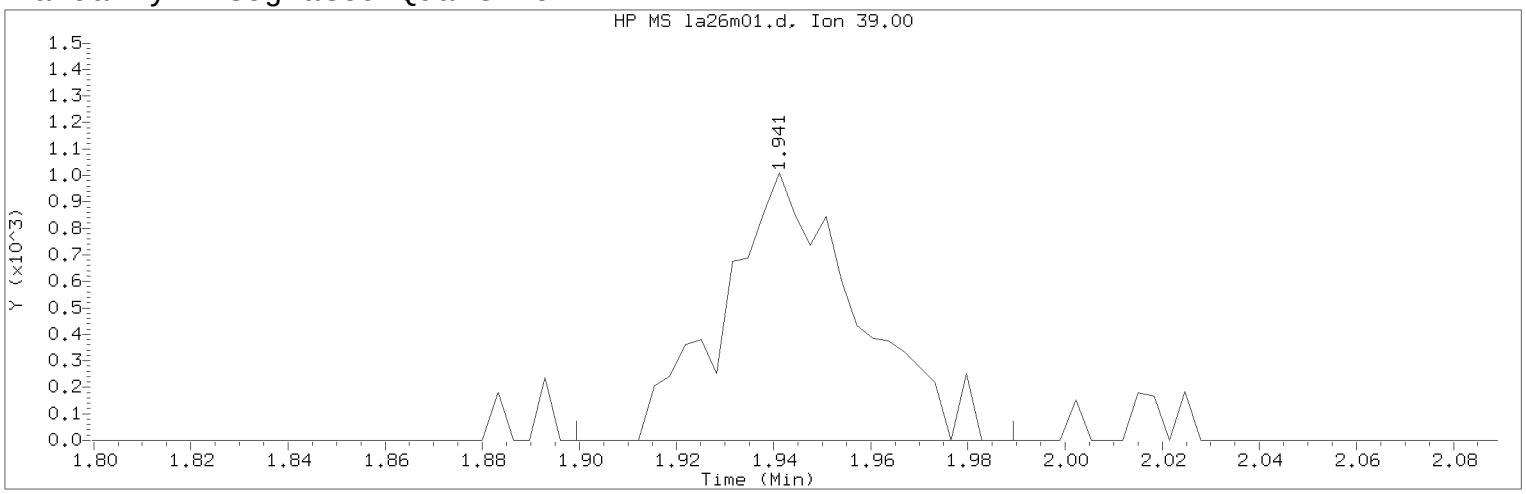
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

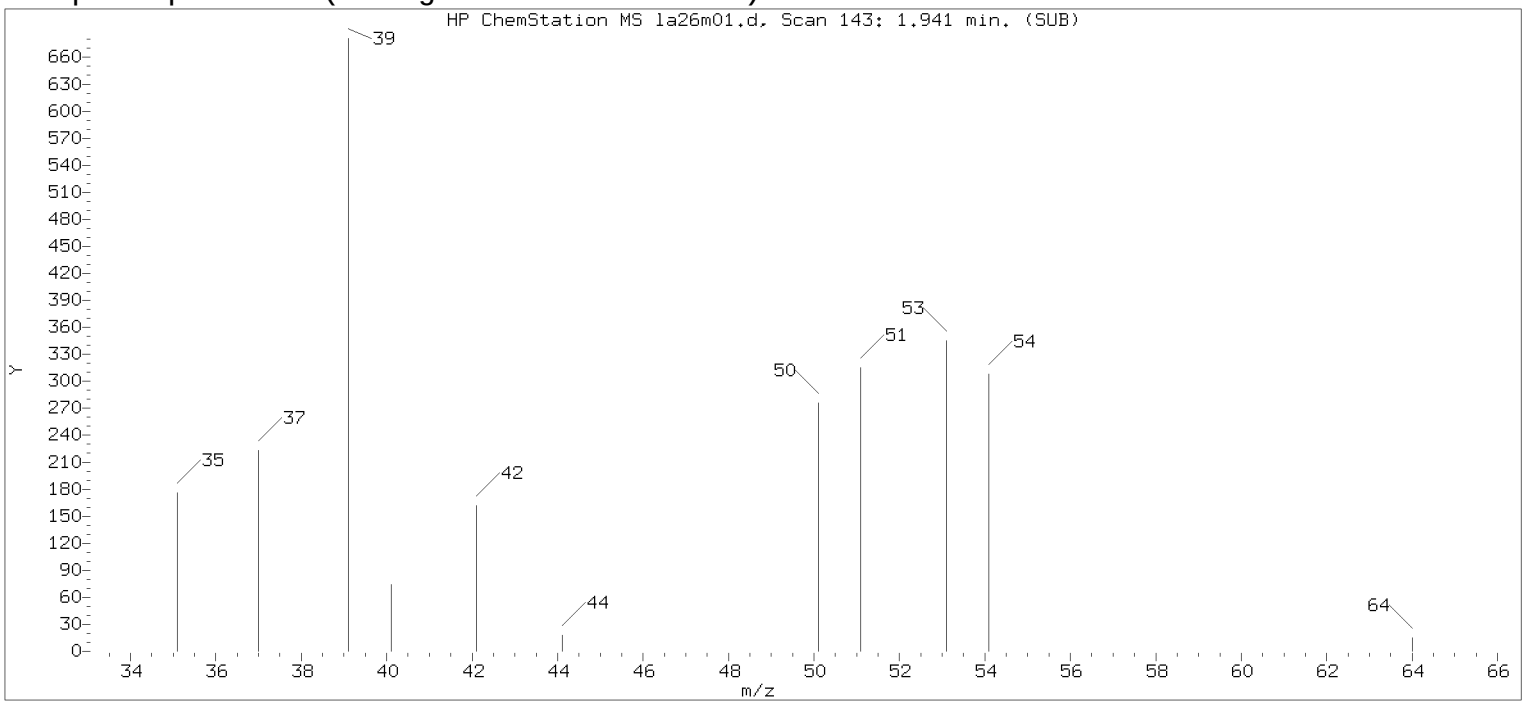
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 1925M
On-Column Amount (ng) : 0.5167
Integration start scan : 129 Integration stop scan: 157
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

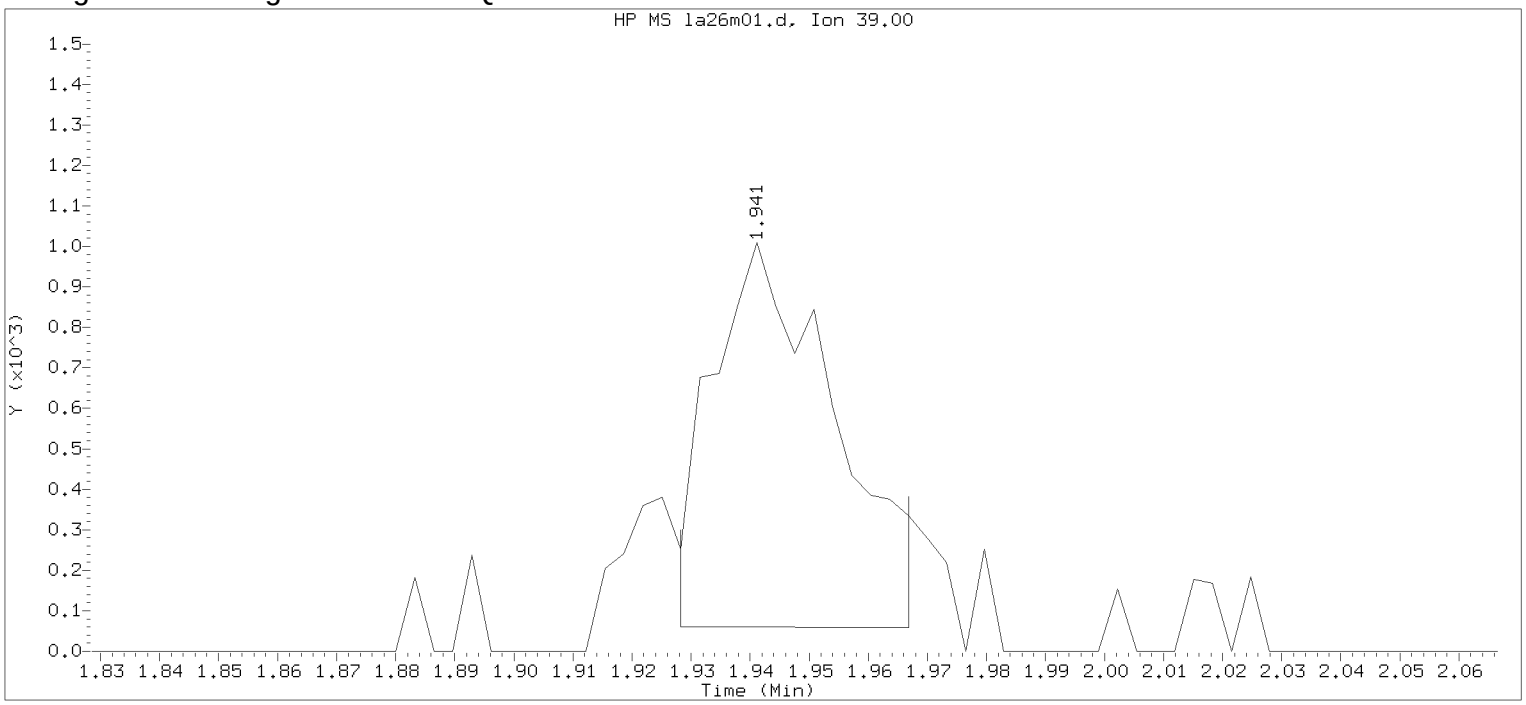
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 1358
On-column Amount (ng) : 0.3645
Integration start scan : 138 Integration stop scan: 150
Y at integration start : 61 Y at integration end: 58

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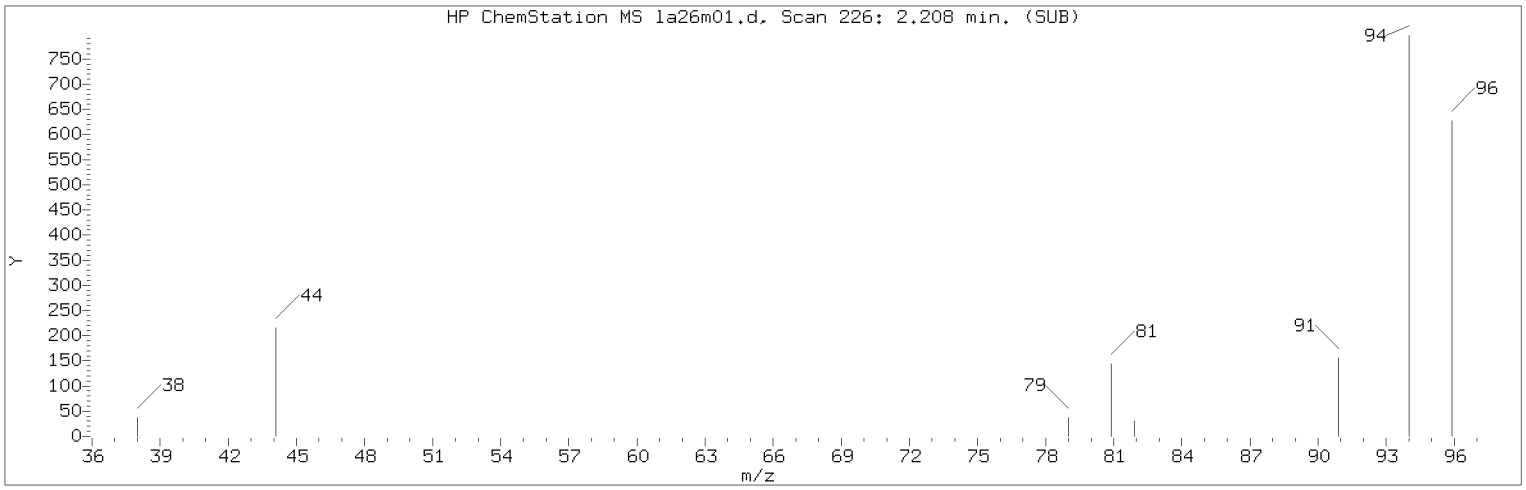
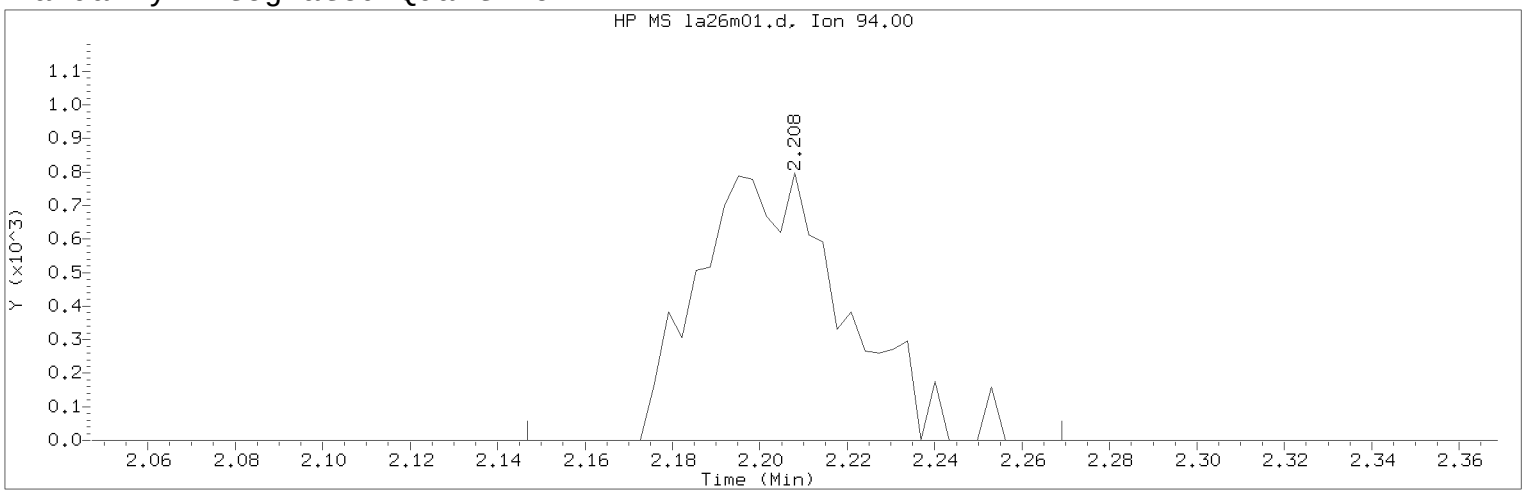
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

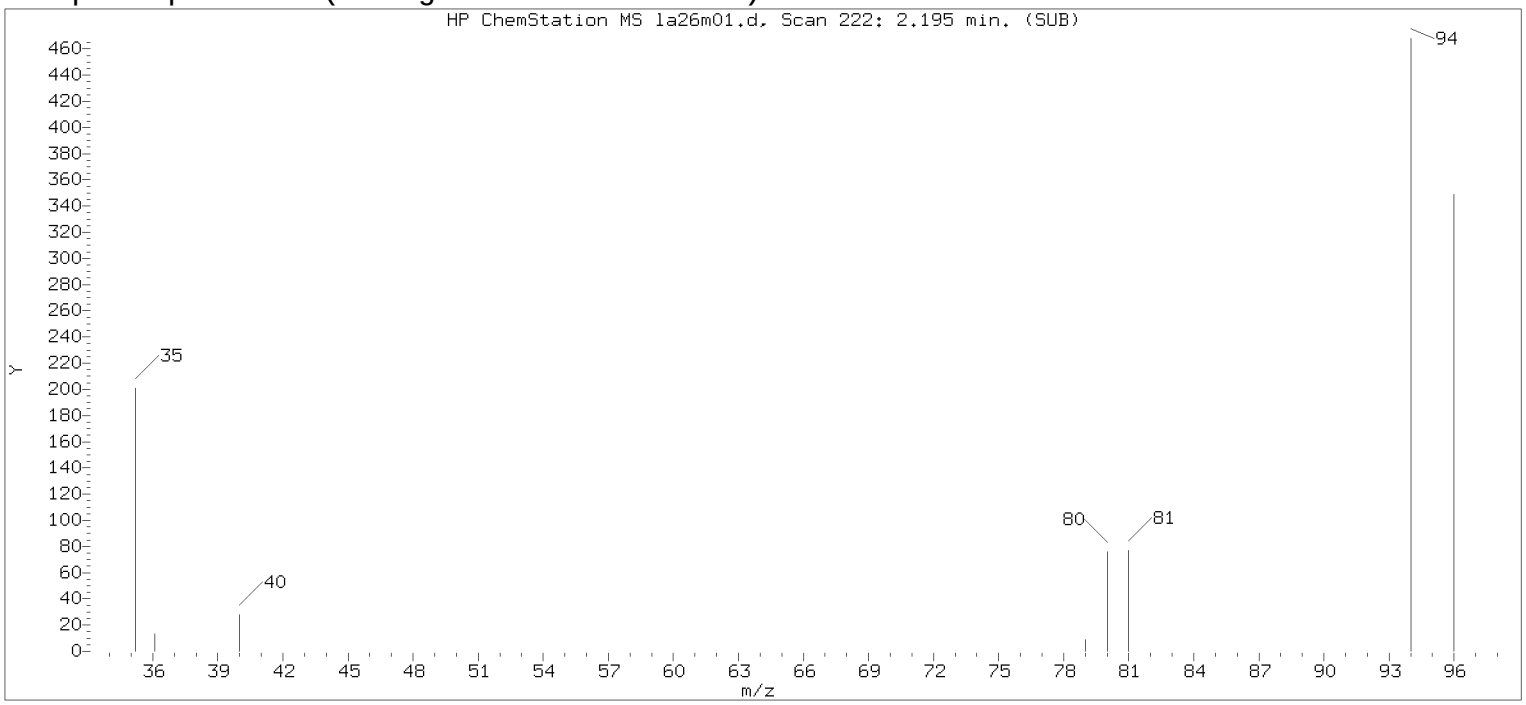
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 226
Retention Time (minutes): 2.208
Quant Ion : 94.00
Area (flag) : 1847M
On-Column Amount (ng) : 0.4496
Integration start scan : 206  Integration stop scan: 244
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

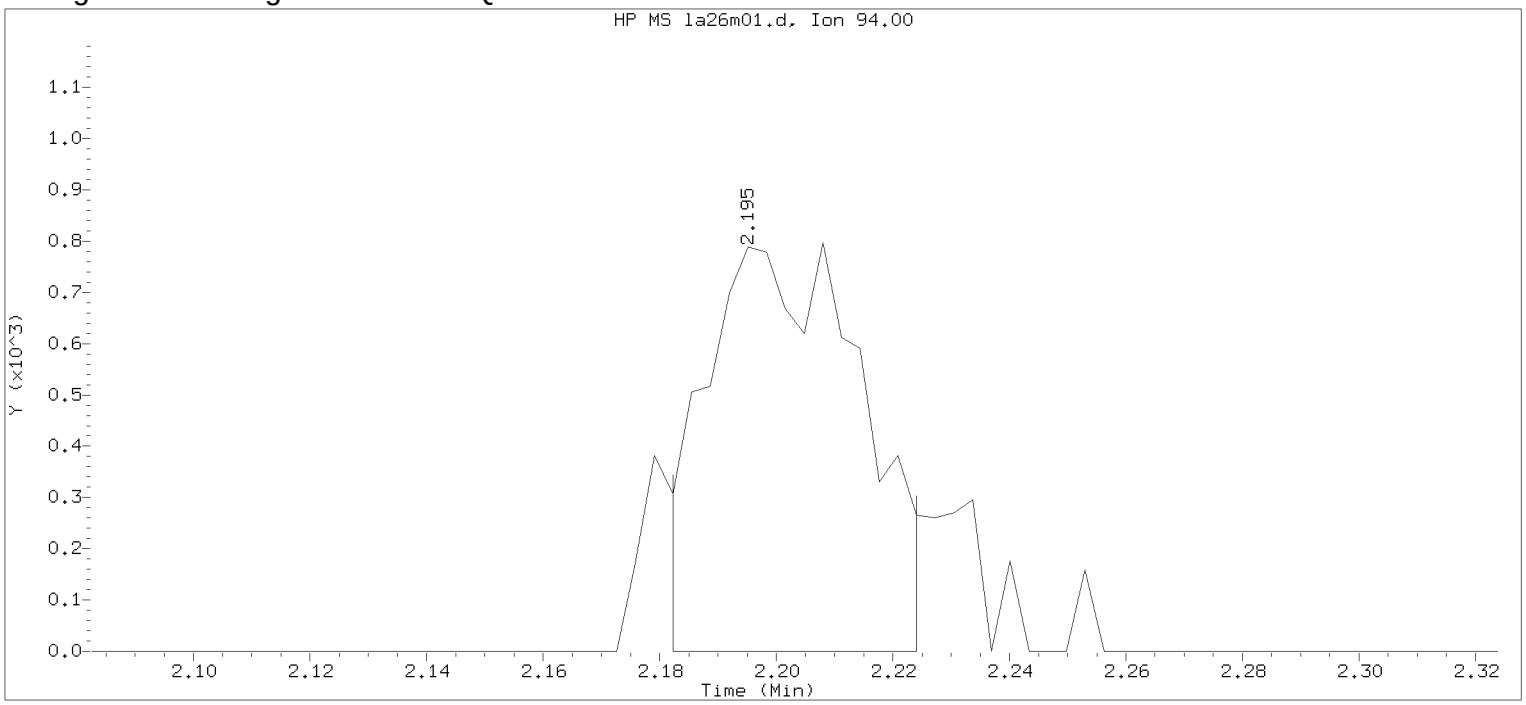
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 1461
On-column Amount (ng) : 0.3557
Integration start scan : 217 Integration stop scan: 230
Y at integration start : 0 Y at integration end: 0

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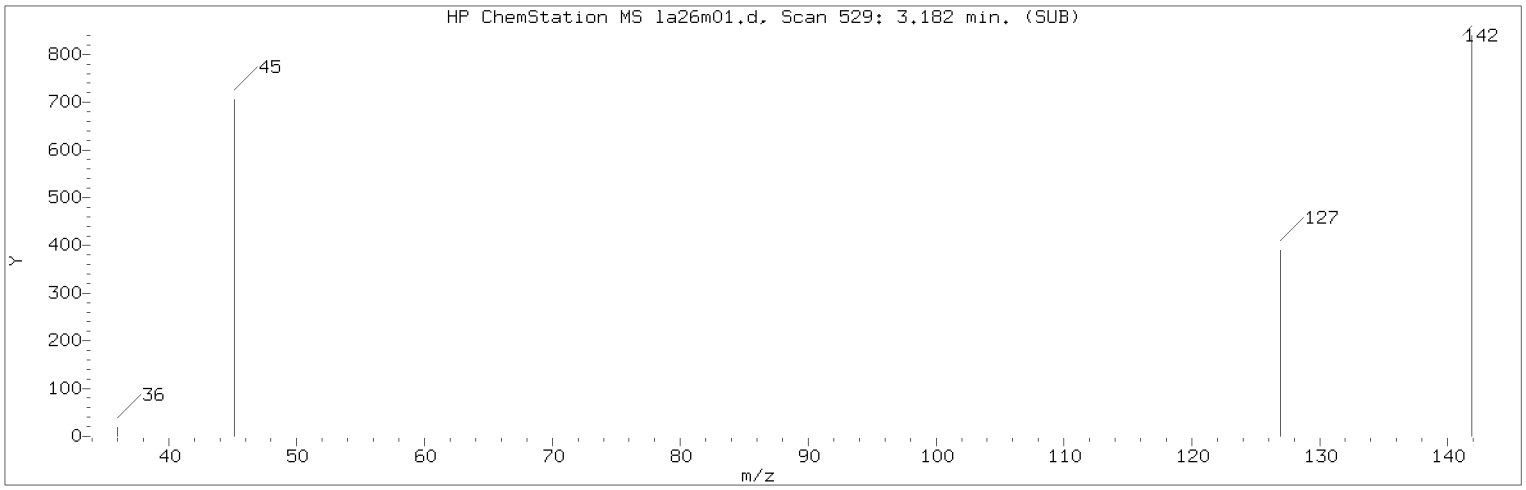
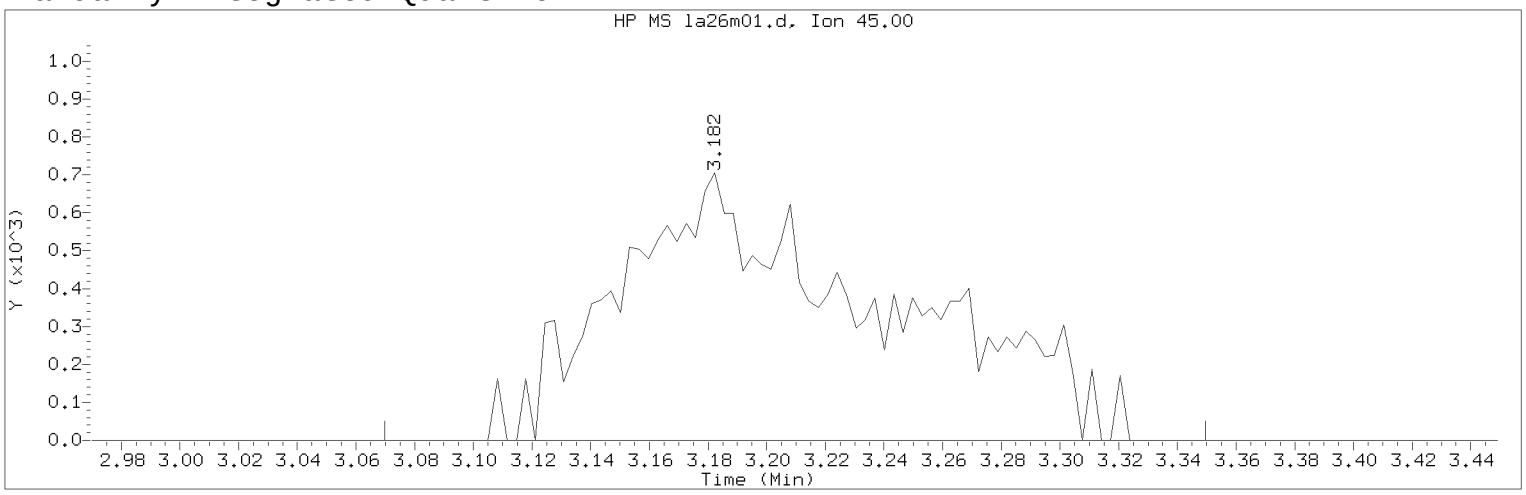
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

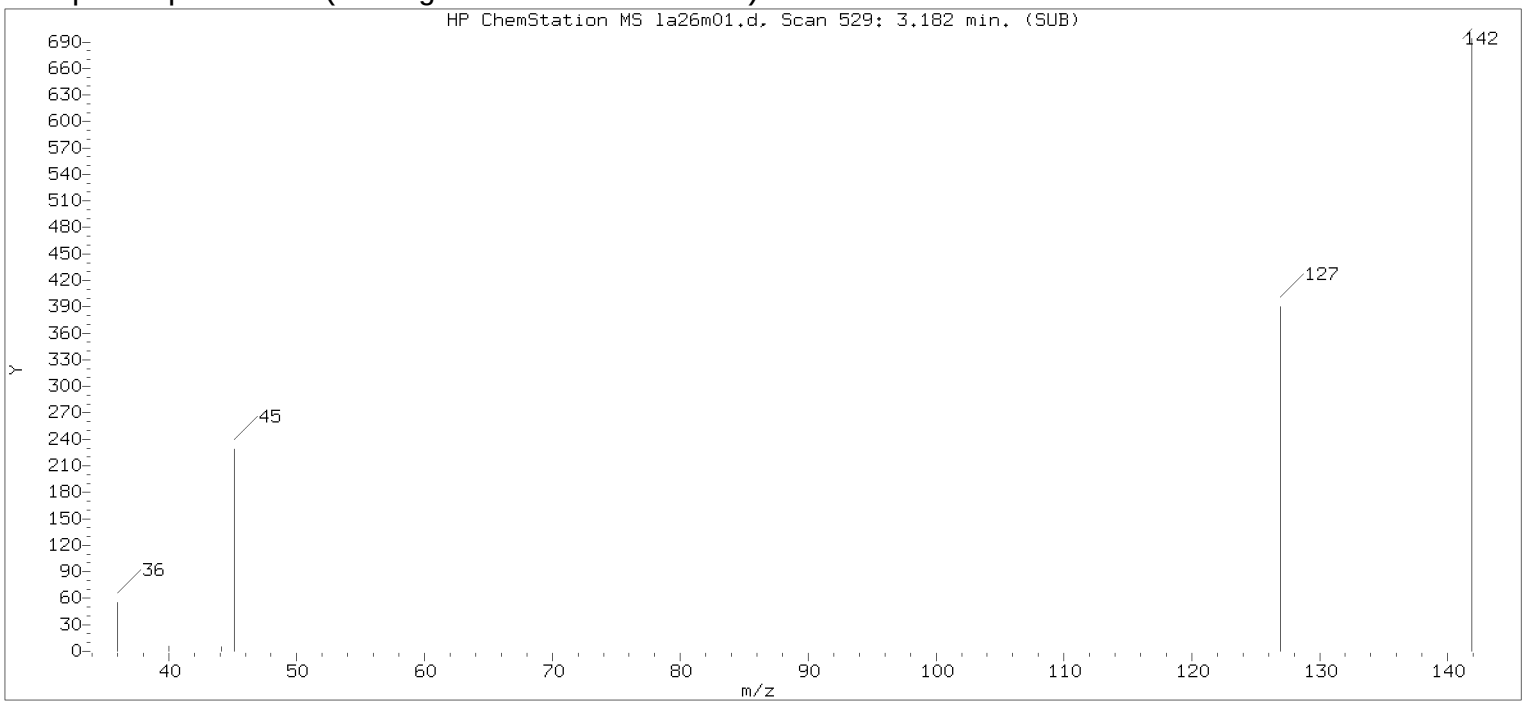
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area (flag) : 4366M
On-Column Amount (ng) : 10.5945
Integration start scan : 493 Integration stop scan: 580
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

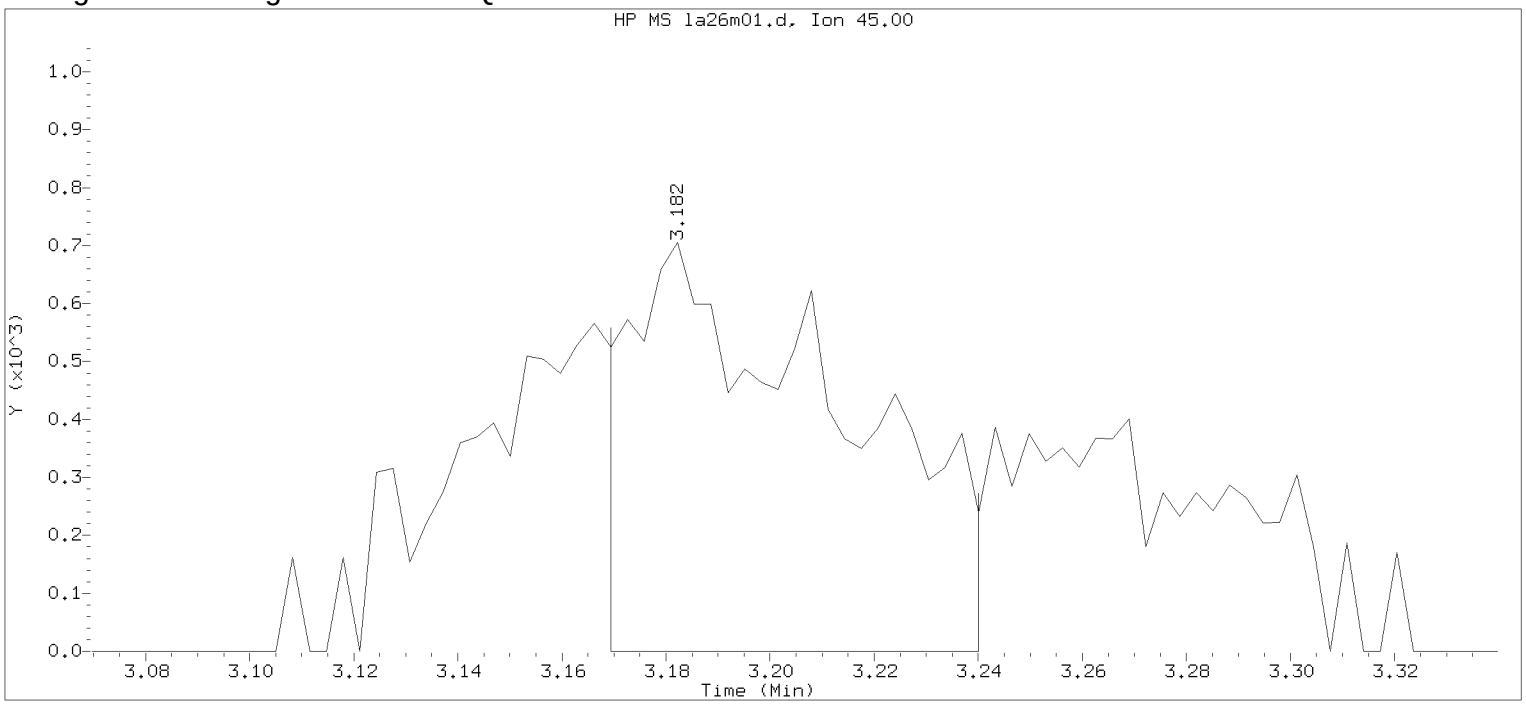
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area : 2003
On-column Amount (ng) : 4.8605
Integration start scan : 524 Integration stop scan: 546
Y at integration start : 0 Y at integration end: 0

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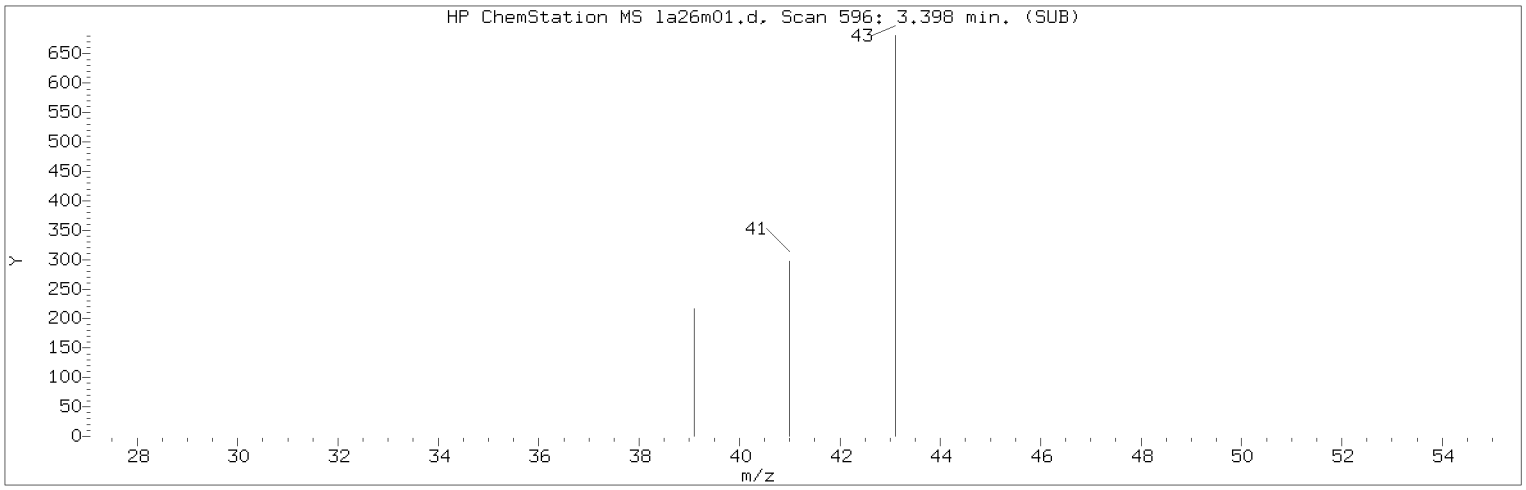
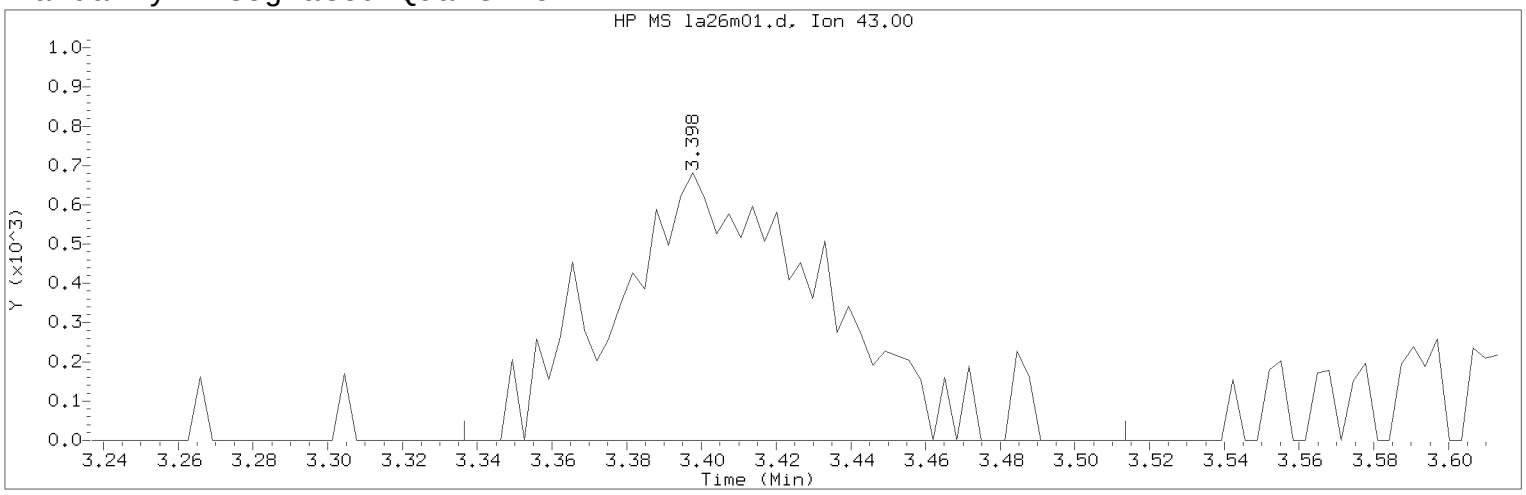
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

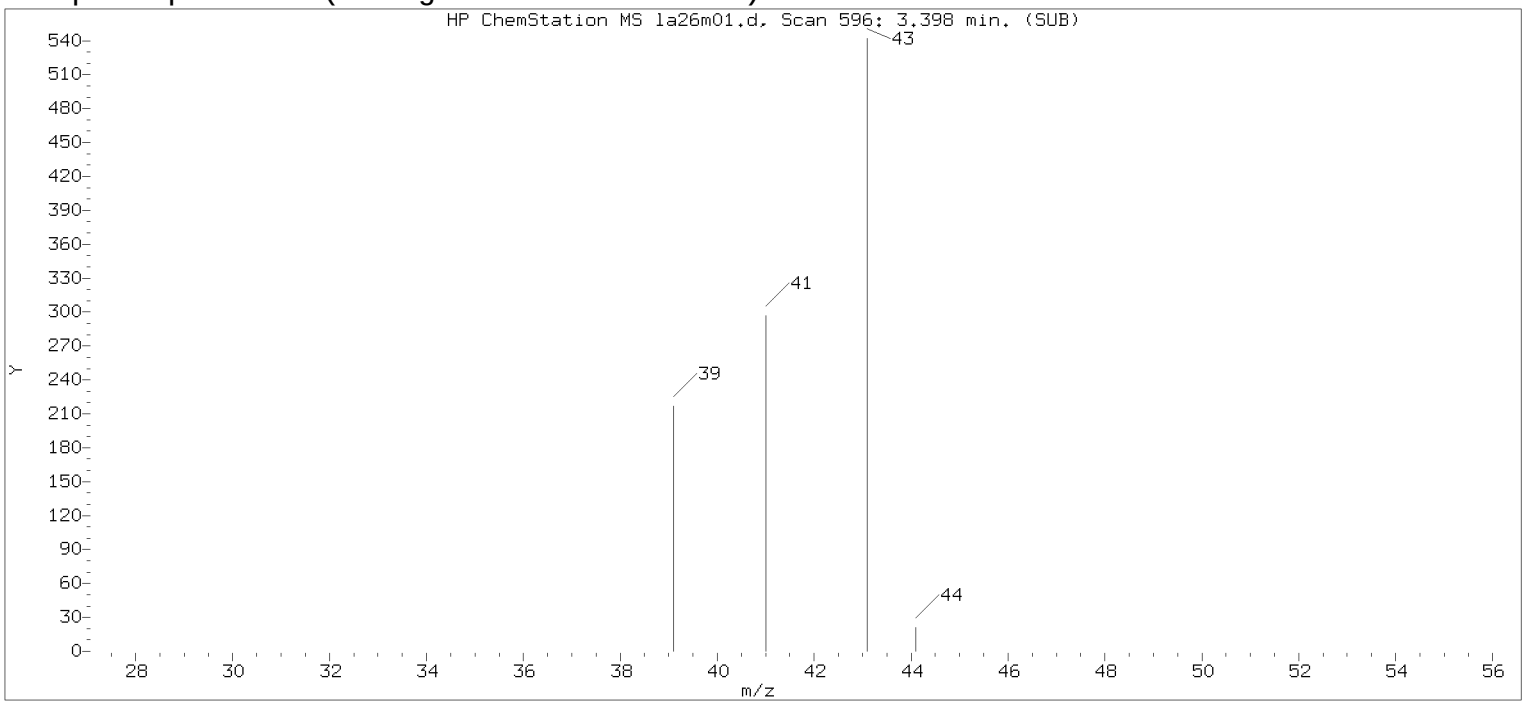
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 596
Retention Time (minutes): 3.398
Quant Ion : 43.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.4933
Integration start scan : 576  Integration stop scan: 631
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

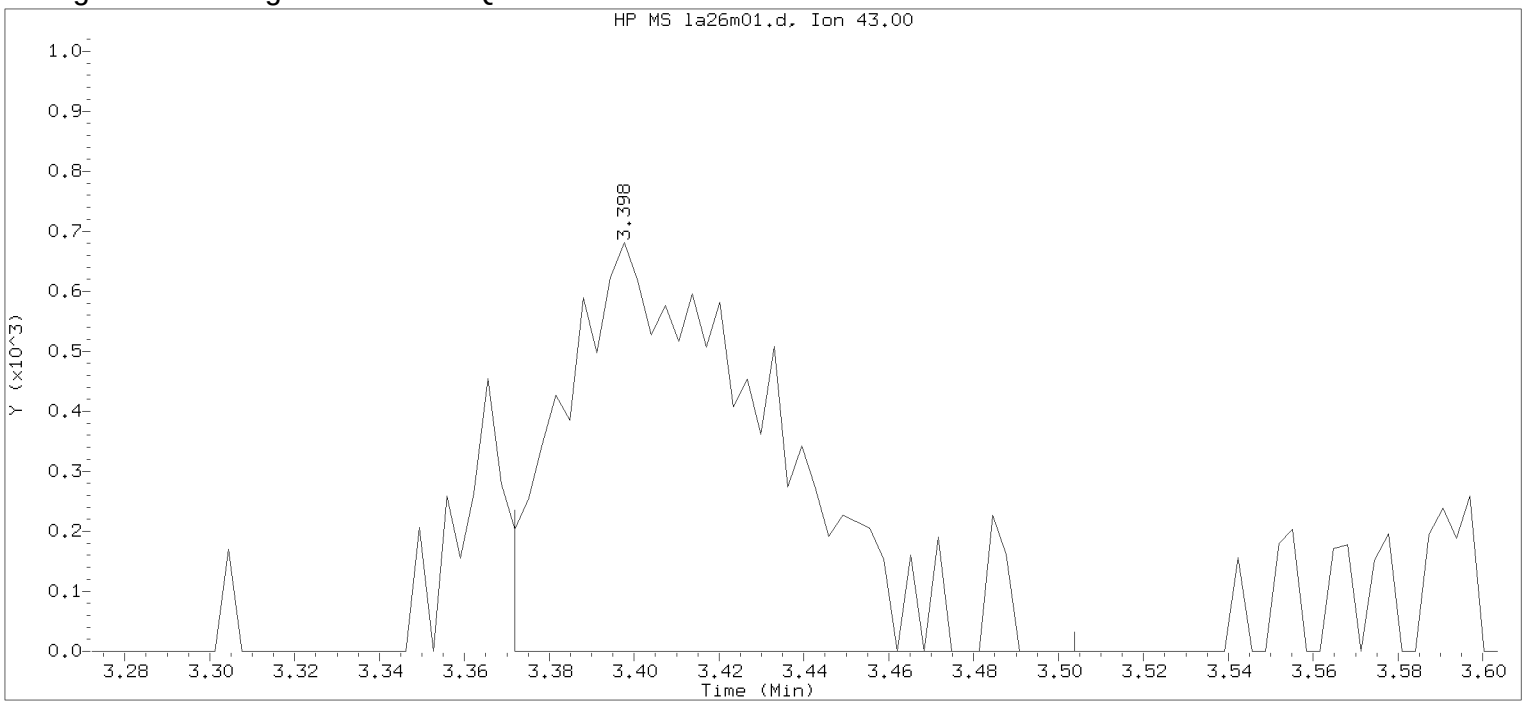
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 596
Retention Time (minutes): 3.398
Quant Ion : 43.00
Area : 2349
On-column Amount (ng) : 0.4323
Integration start scan : 587 Integration stop scan: 628
Y at integration start : 0 Y at integration end: 0

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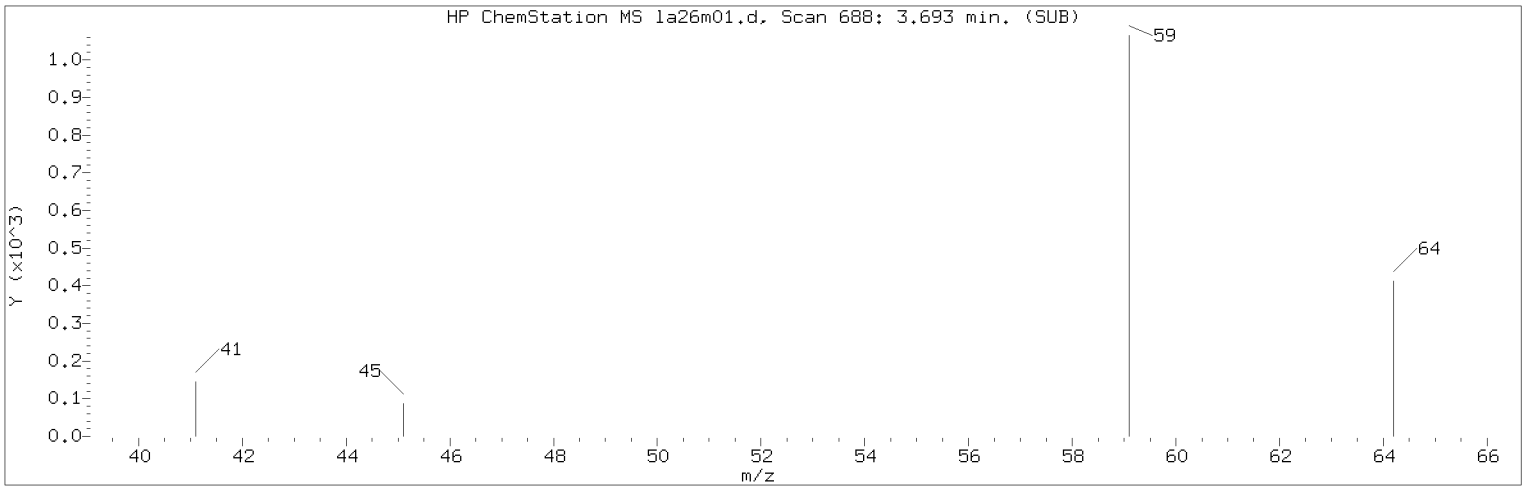
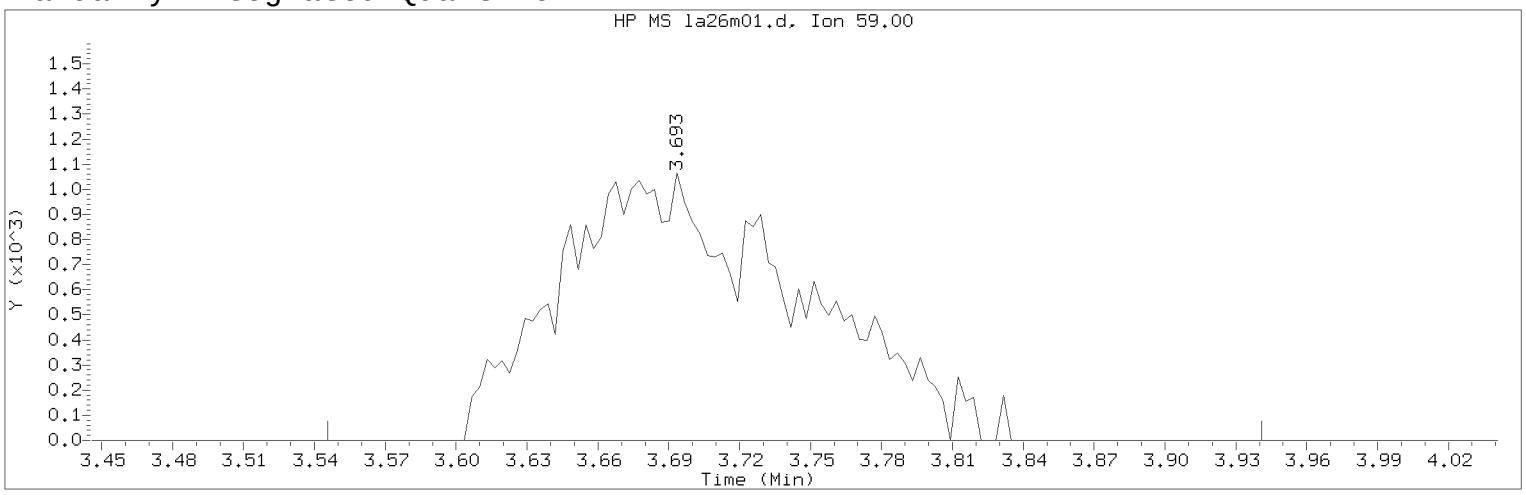
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

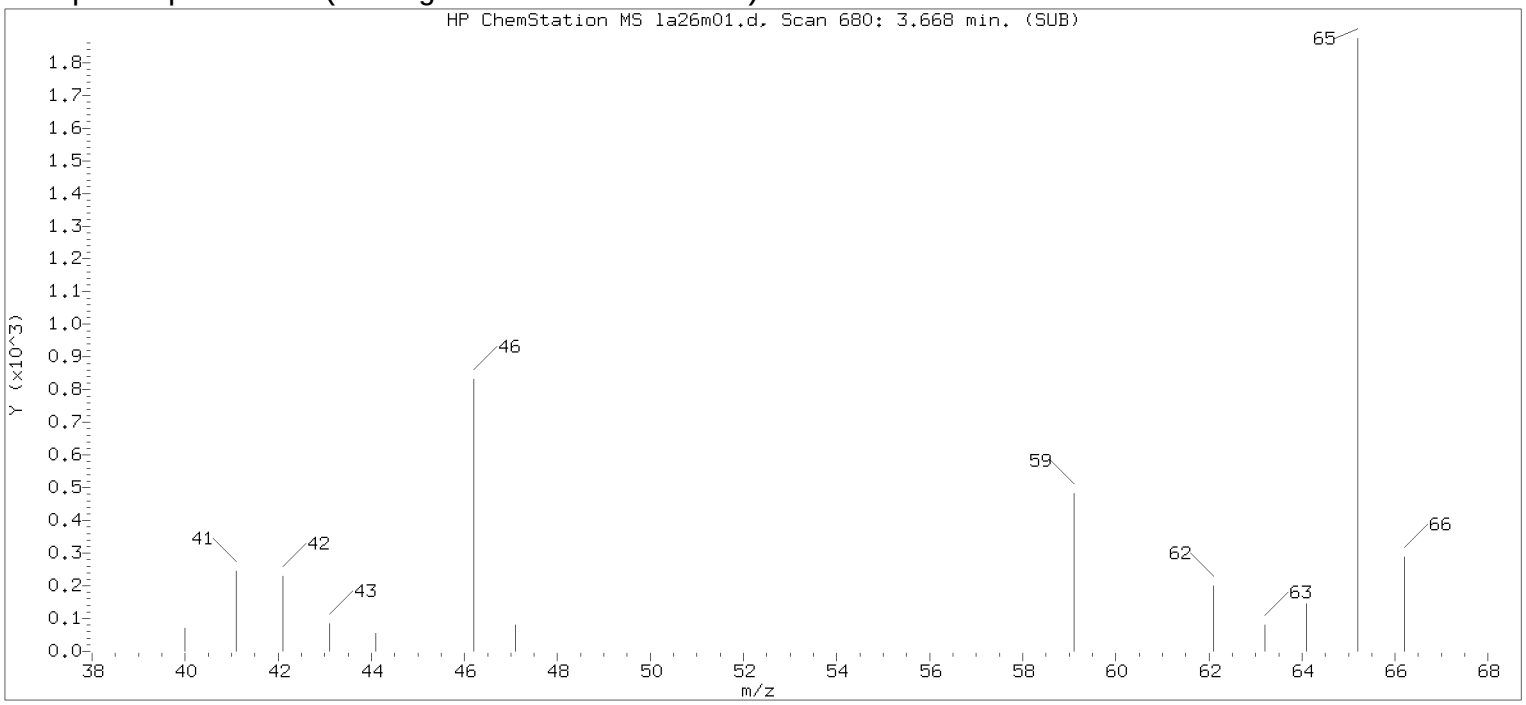
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 688
Retention Time (minutes): 3.693
Quant Ion : 59.00
Area (flag) : 7505M
On-Column Amount (ng) : 11.0871
Integration start scan : 641 Integration stop scan: 764
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

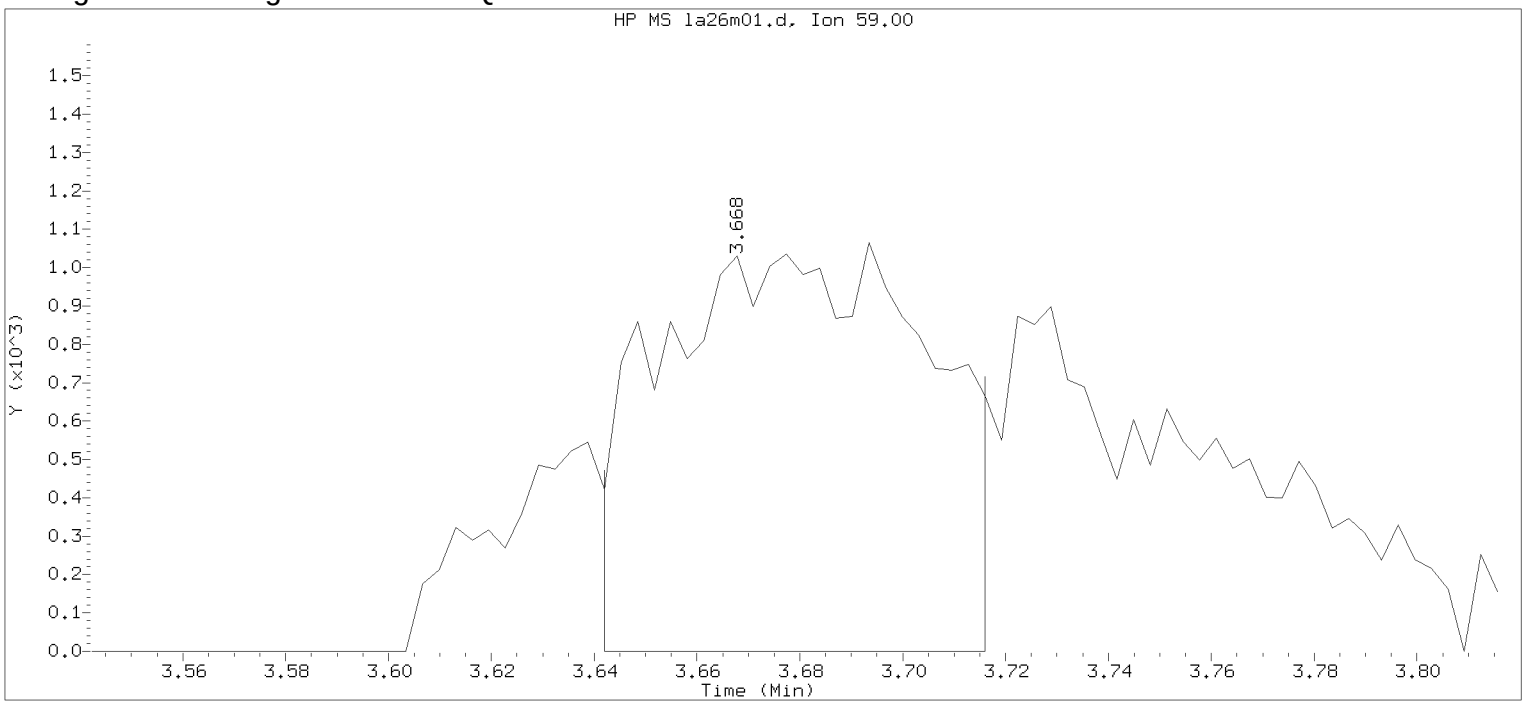
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

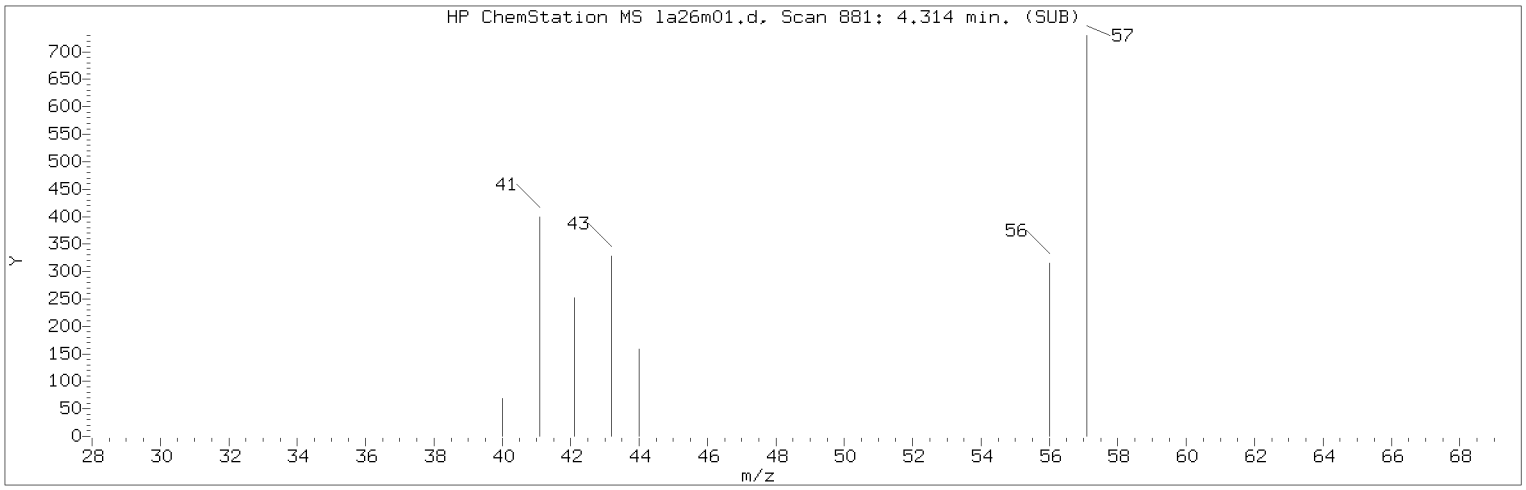
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

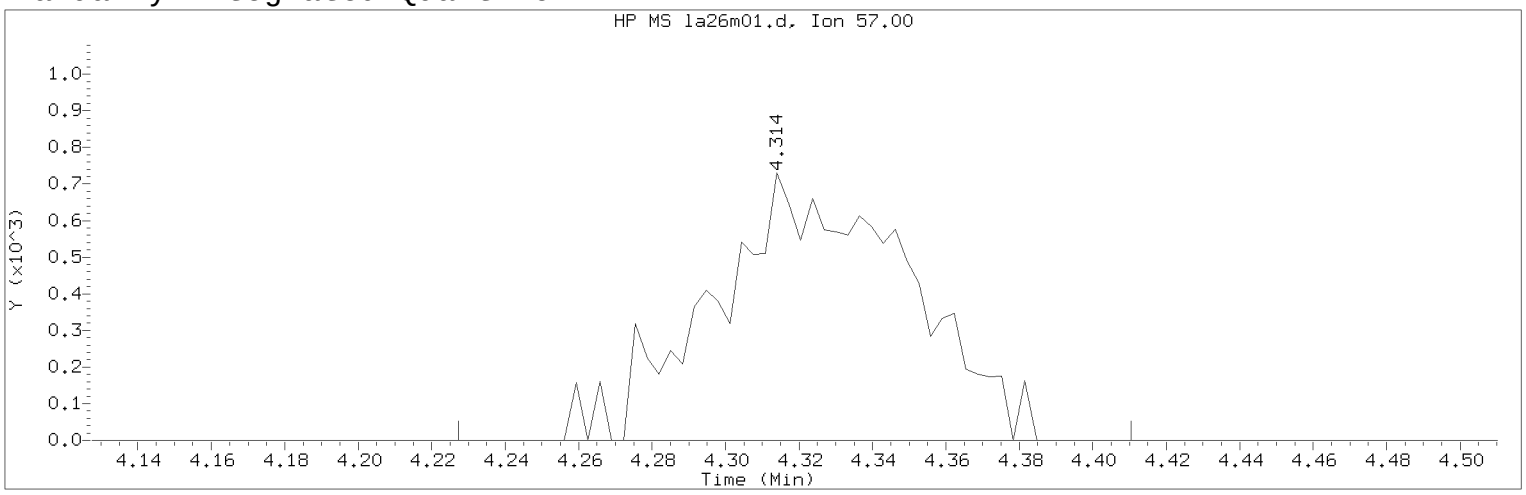
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 680
Retention Time (minutes): 3.668
Quant Ion : 59.00
Area : 3832
On-column Amount (ng) : 5.6607
Integration start scan : 671 Integration stop scan: 694
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

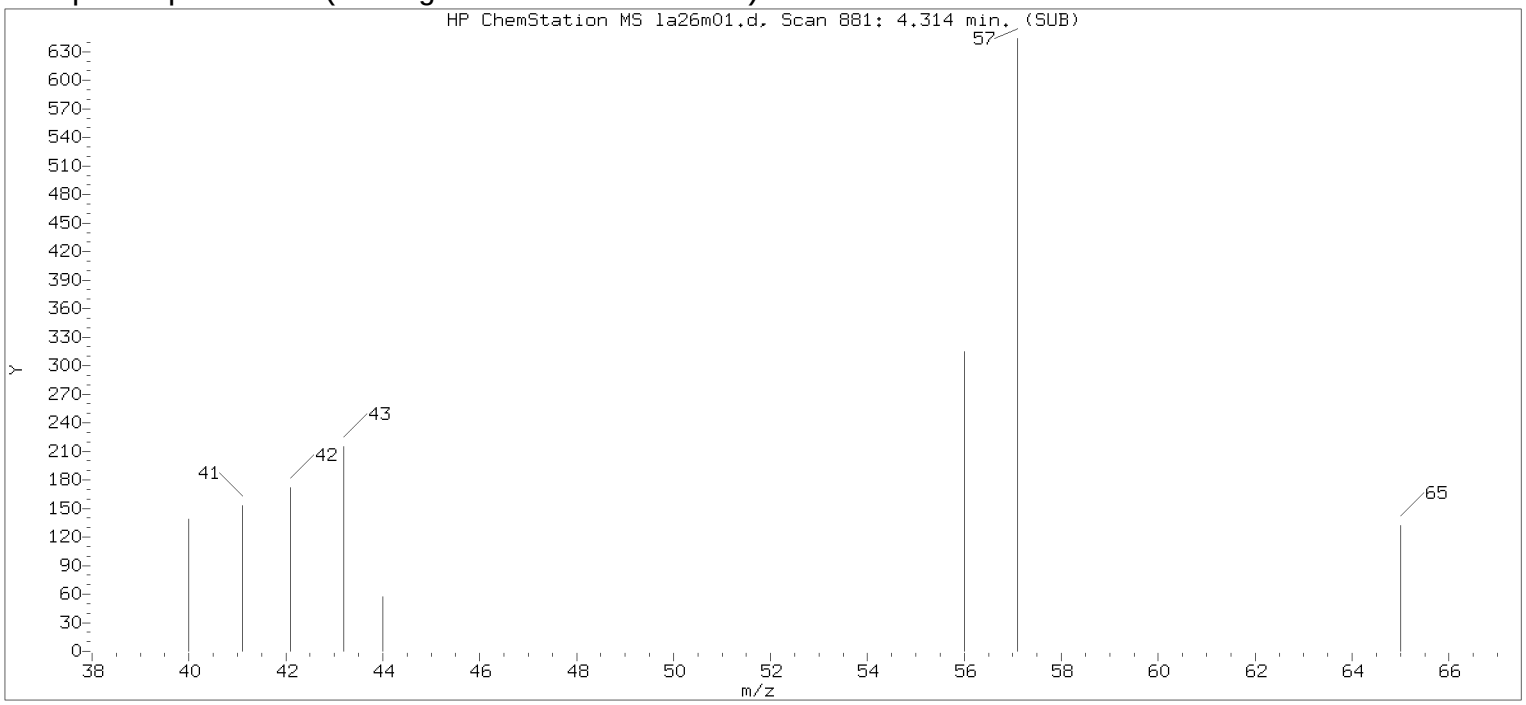
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 881
Retention Time (minutes): 4.314
Quant Ion : 57.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.3981
Integration start scan : 853 Integration stop scan: 910
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

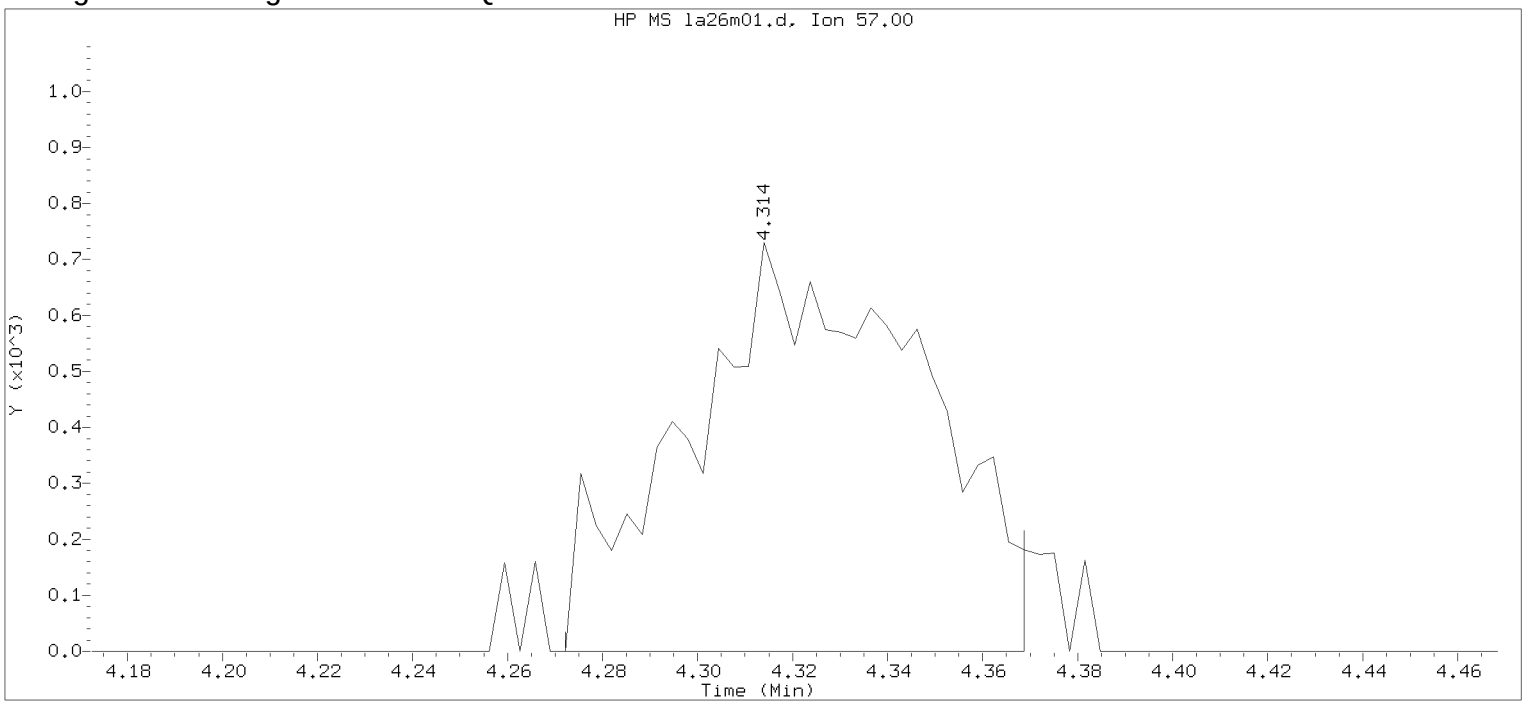
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

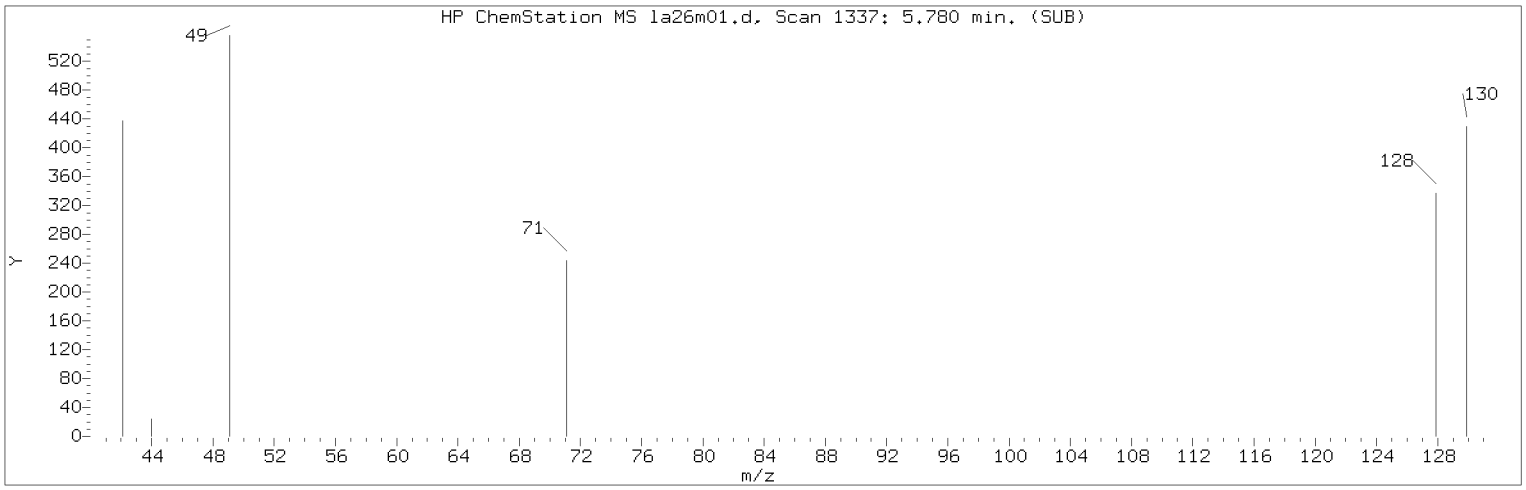
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

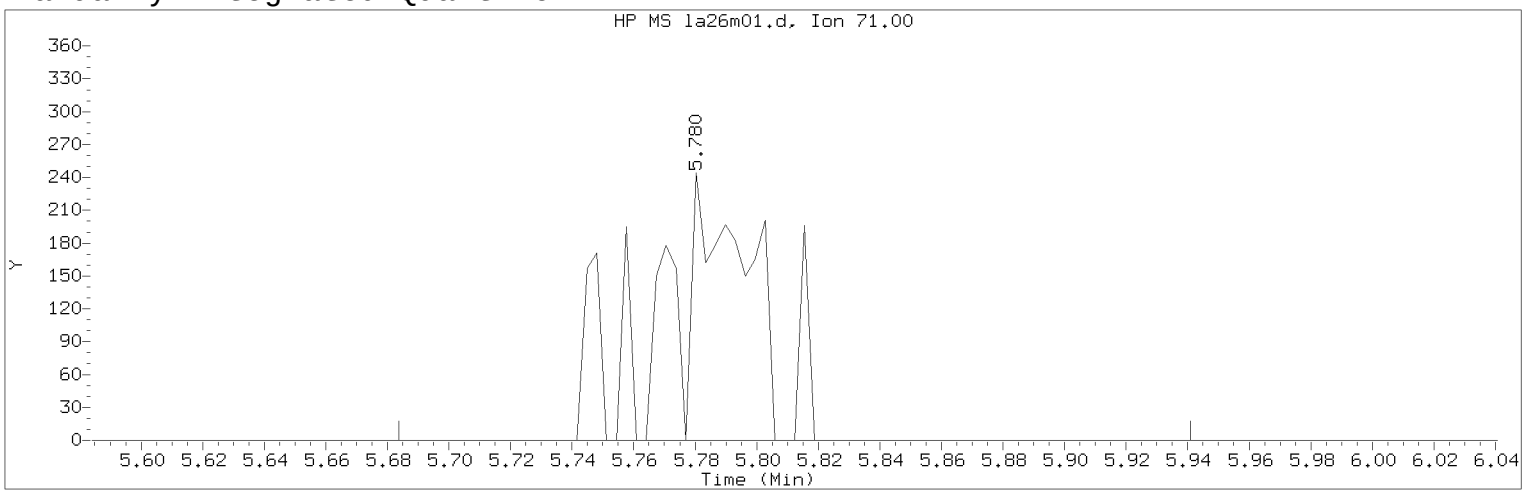
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 881
Retention Time (minutes): 4.314
Quant Ion : 57.00
Area : 2502
On-column Amount (ng) : 0.3717
Integration start scan : 867 Integration stop scan: 897
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

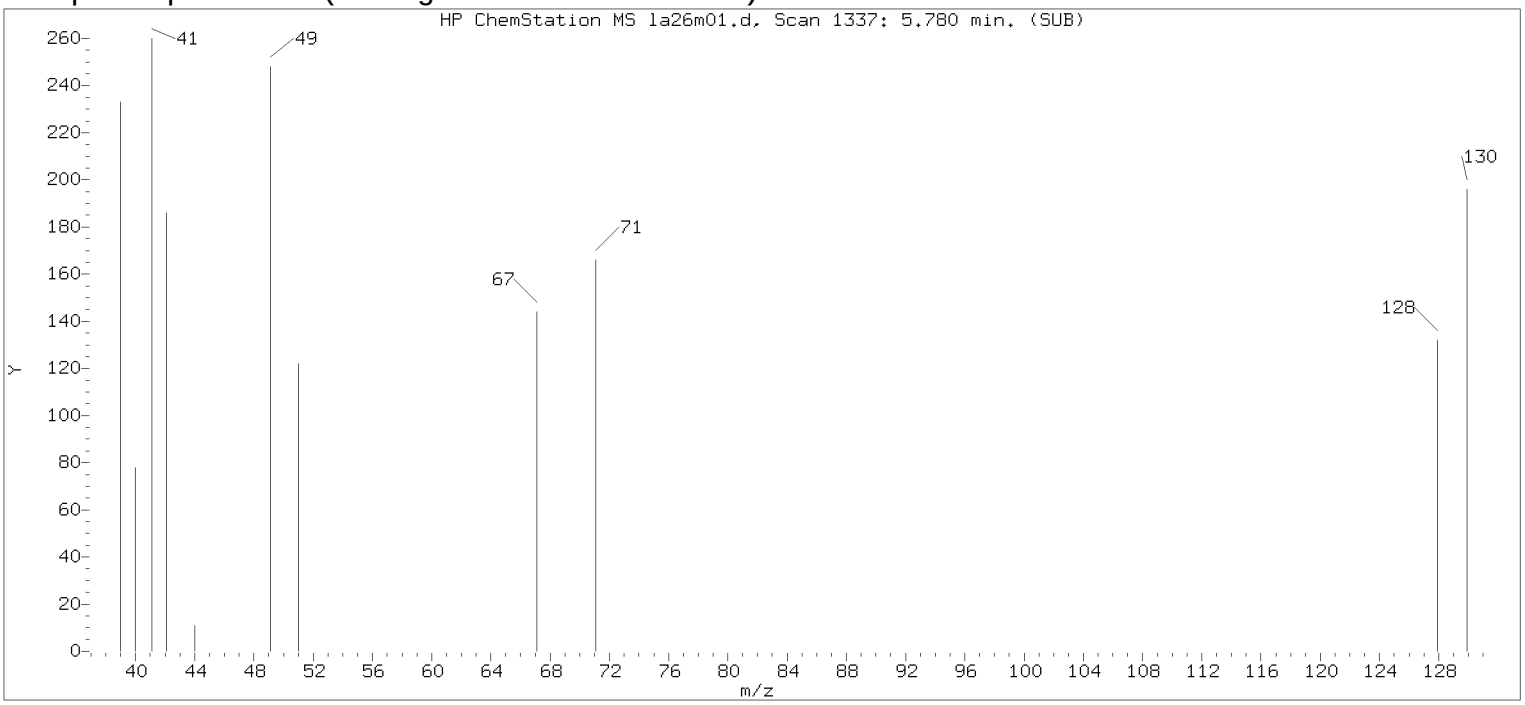
Compound Number : 50
Compound Name : Tetrahydrofuran
Scan Number : 1337
Retention Time (minutes): 5.780
Quant Ion : 71.00
Area (flag) : 517M
On-Column Amount (ng) : 0.5933
Integration start scan : 1306 Integration stop scan: 1386
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

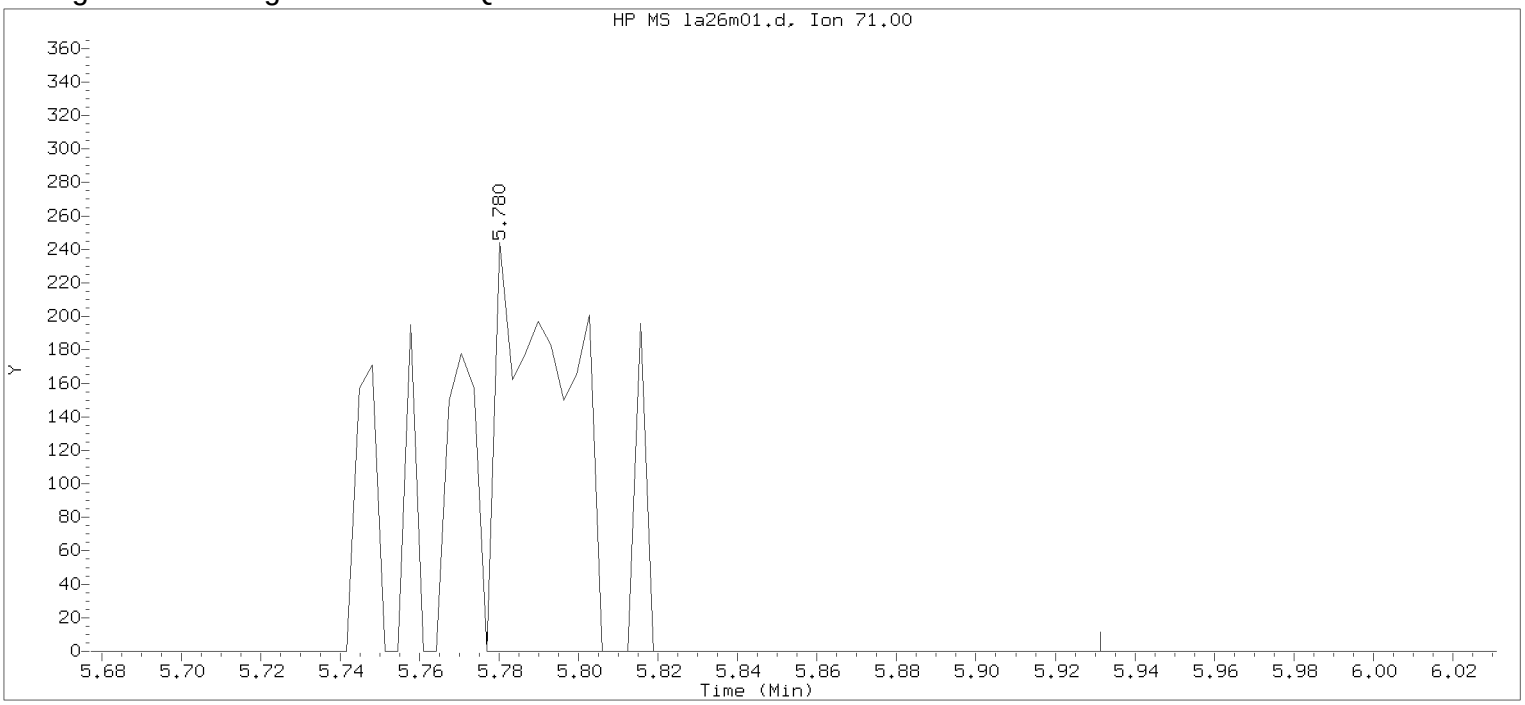
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 50
Compound Name : Tetrahydrofuran
Scan Number : 1337
Retention Time (minutes): 5.780
Quant Ion : 71.00
Area : 323
On-column Amount (ng) : 0.3705
Integration start scan : 1335 Integration stop scan: 1383
Y at integration start : 0 Y at integration end: 0

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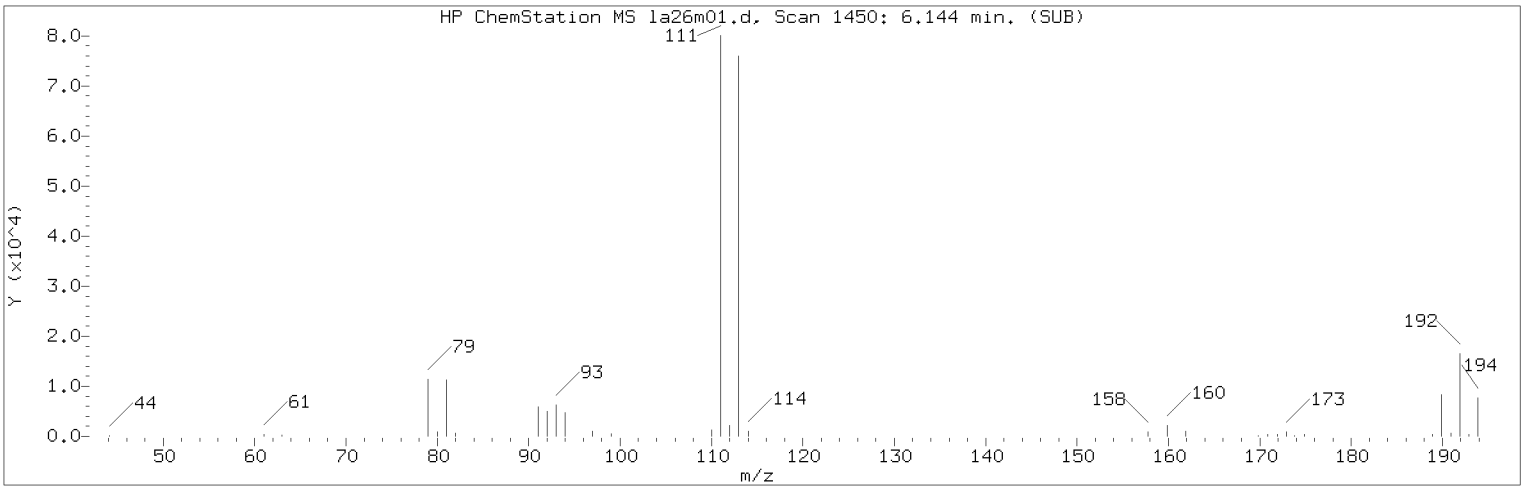
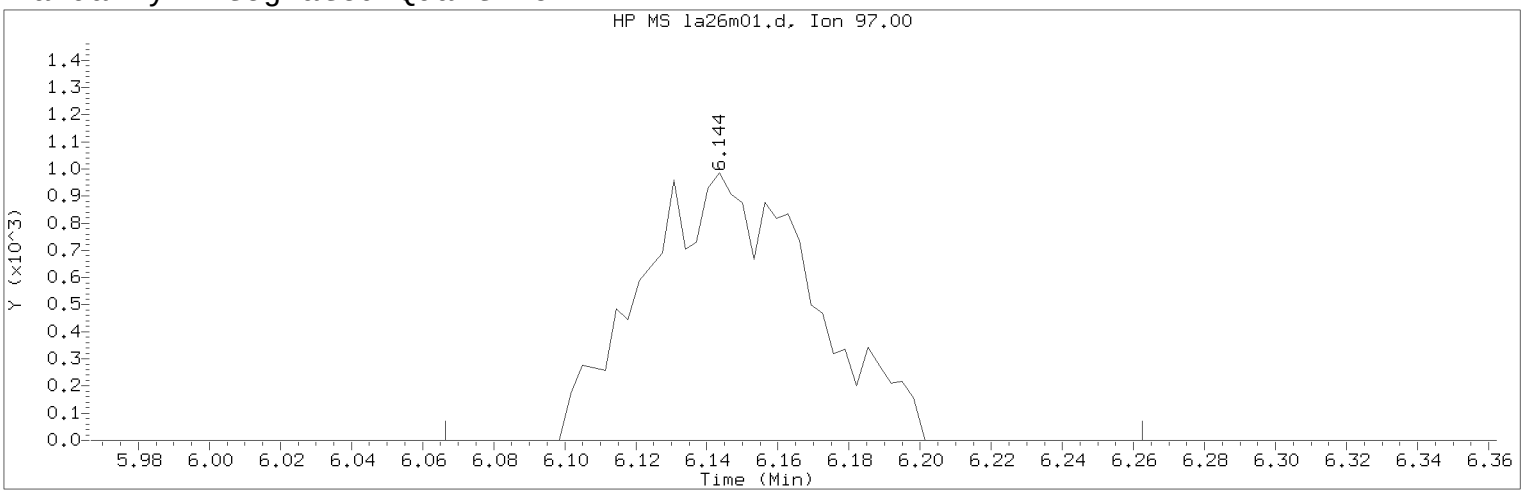
Target 3.5 esignature userKAS02648 Page 240 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

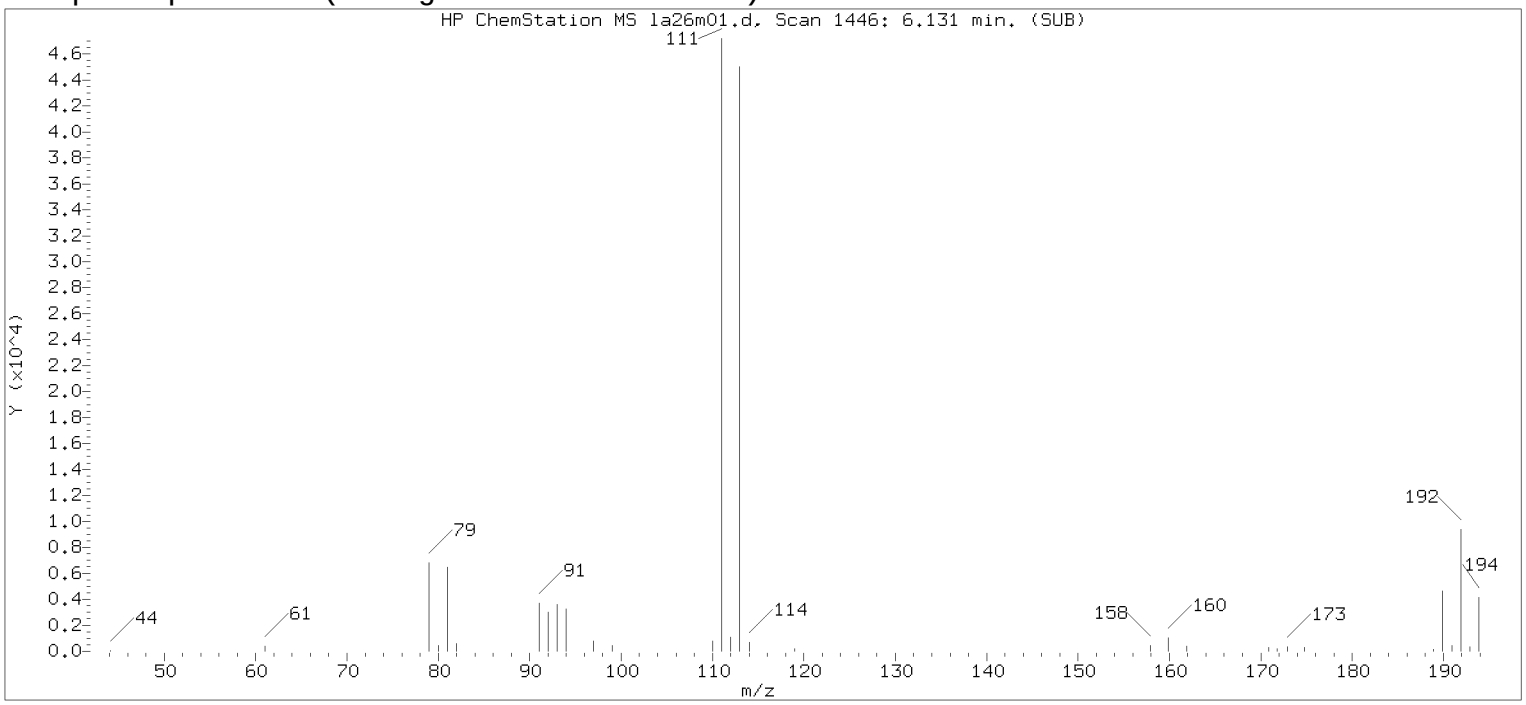
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1450
Retention Time (minutes): 6.144
Quant Ion : 97.00
Area (flag) : 3253M
On-Column Amount (ng) : 0.4525
Integration start scan : 1425 Integration stop scan: 1486
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

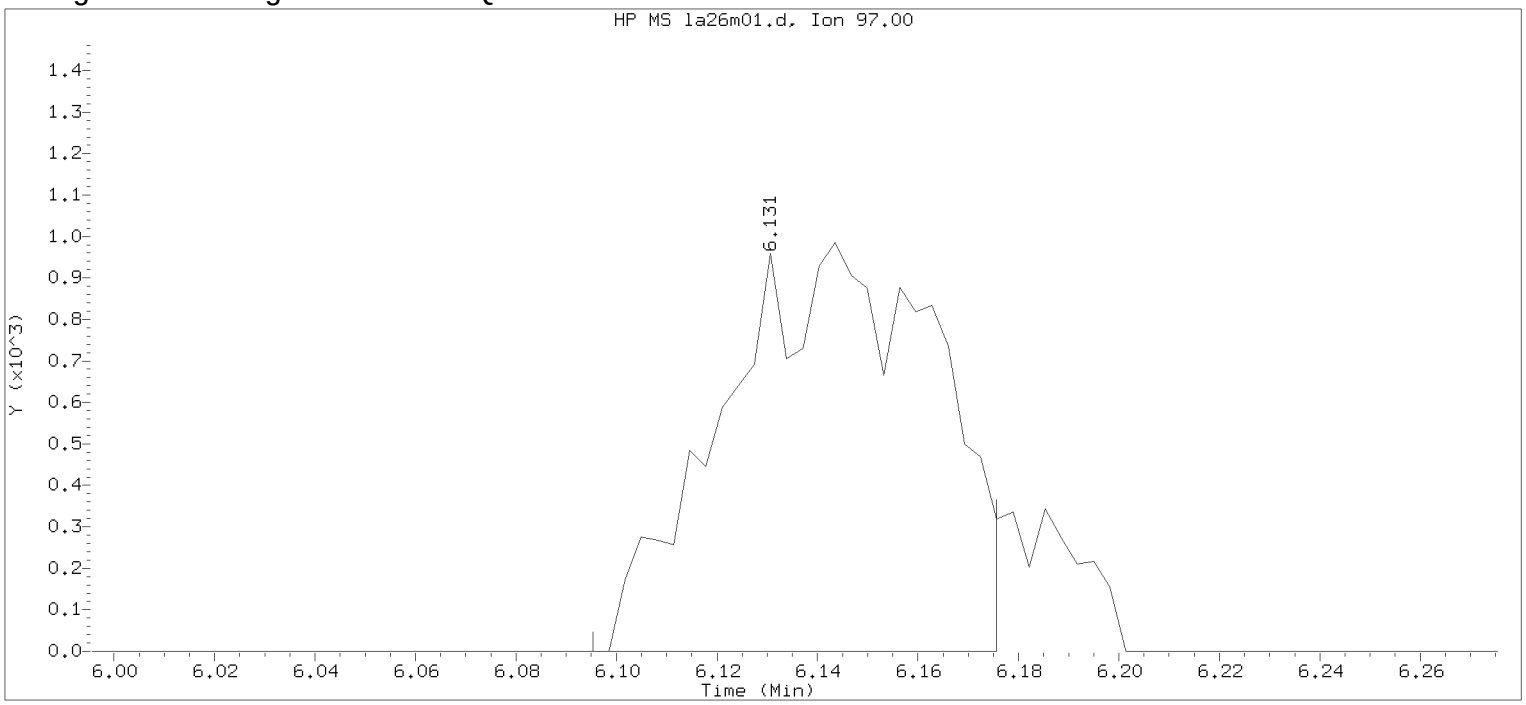
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1446
Retention Time (minutes): 6.131
Quant Ion : 97.00
Area : 2887
On-column Amount (ng) : 0.4017
Integration start scan : 1434 Integration stop scan: 1459
Y at integration start : 0 Y at integration end: 0

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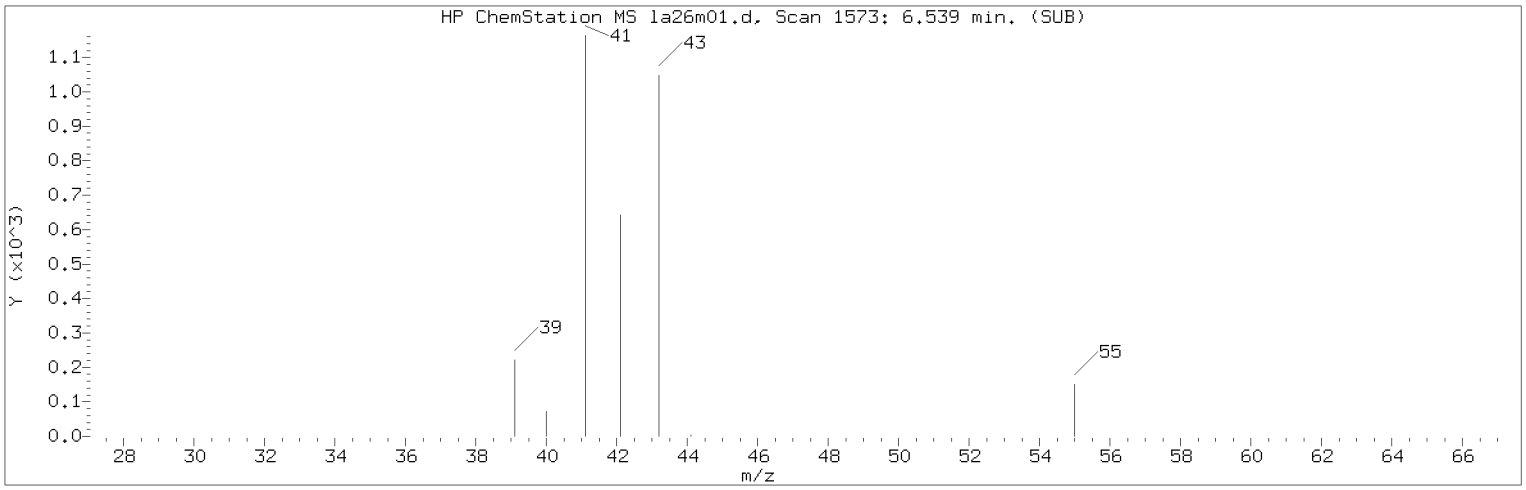
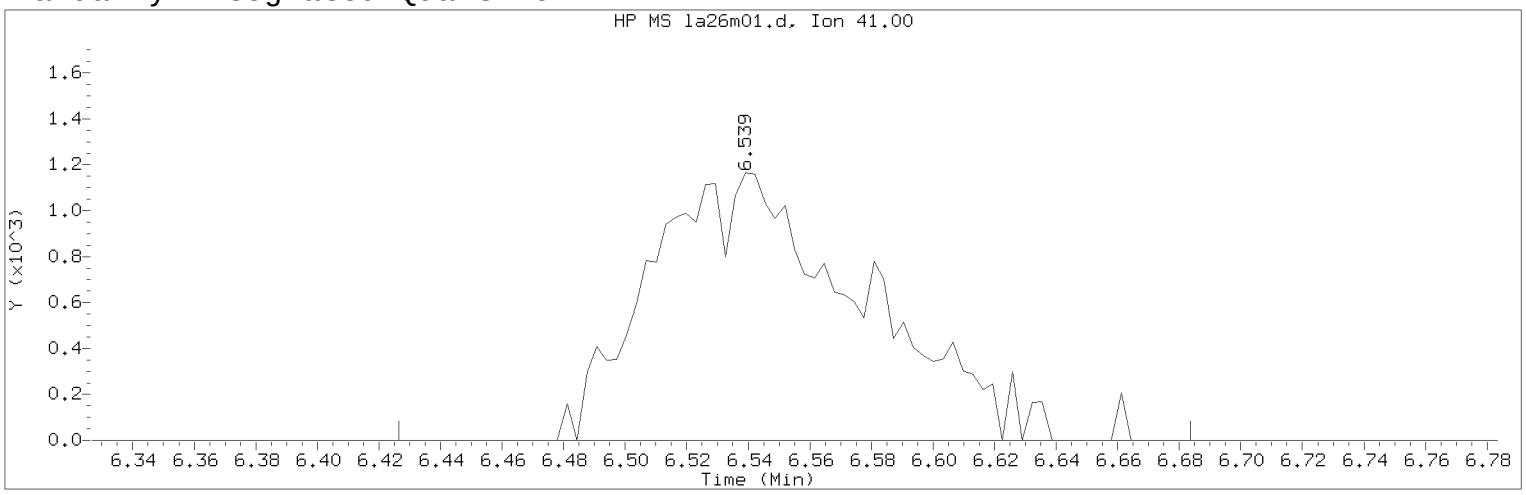
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

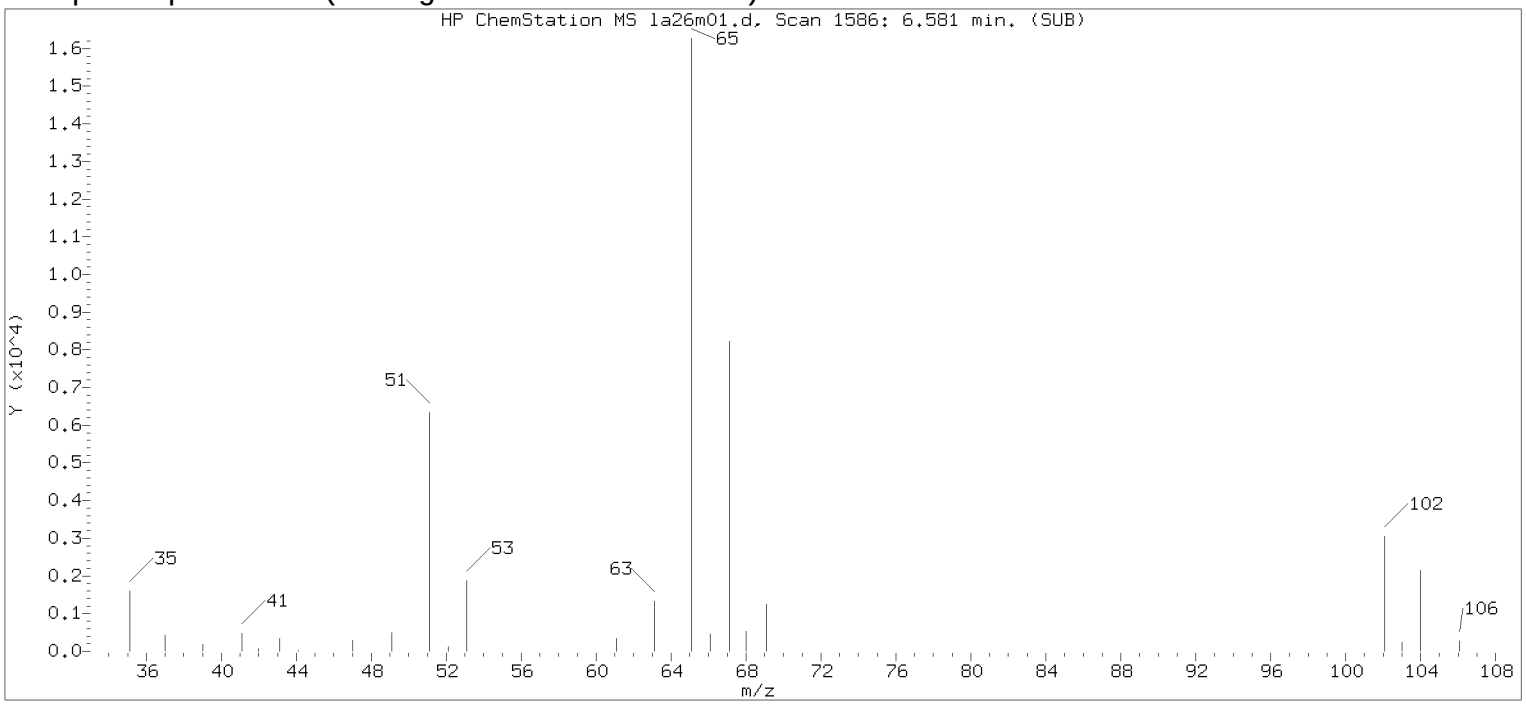
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 1573
Retention Time (minutes): 6.539
Quant Ion : 41.00
Area (flag) : 5623M
On-Column Amount (ng) : 23.6581
Integration start scan : 1537  Integration stop scan: 1617
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

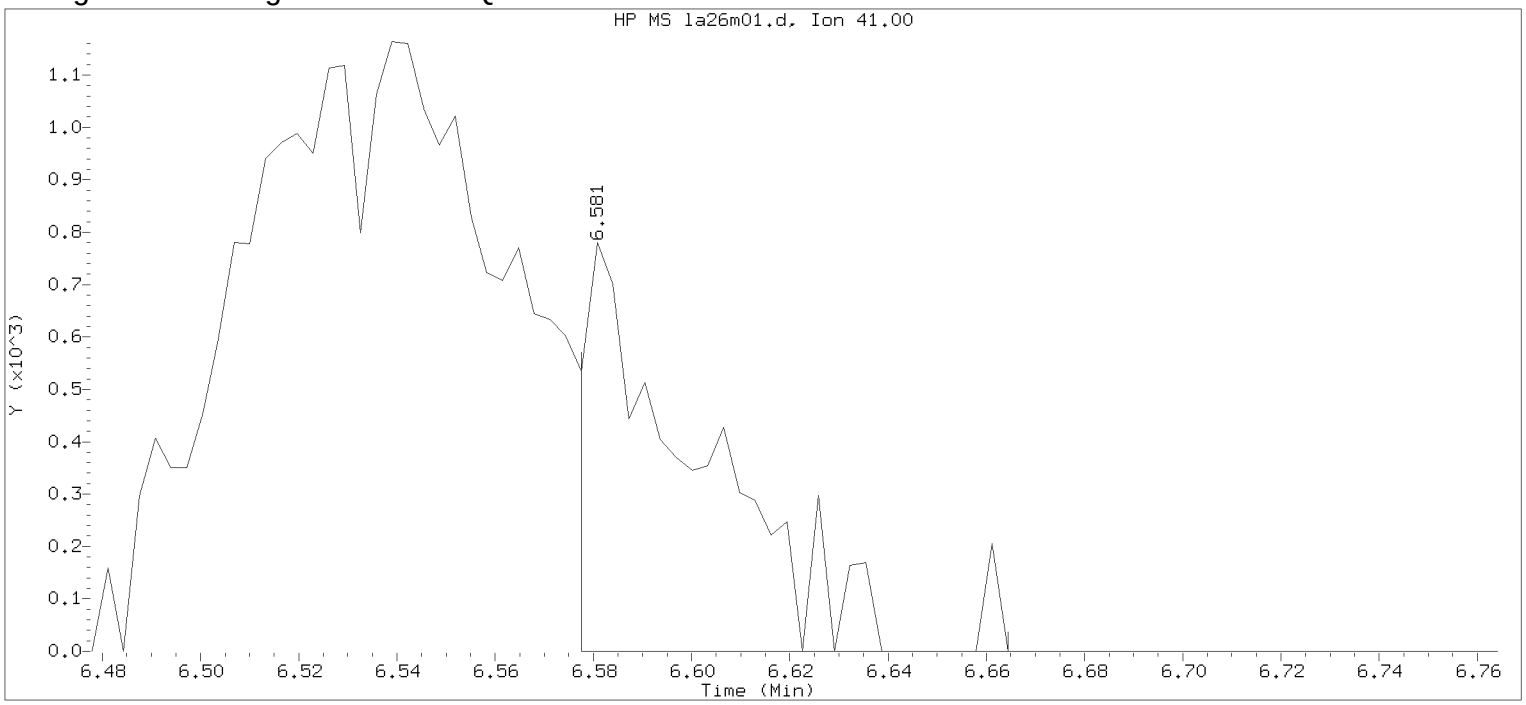
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 1586
Retention Time (minutes): 6.581
Quant Ion : 41.00
Area : 1254
On-column Amount (ng) : 5.2771
Integration start scan : 1584 Integration stop scan: 1611
Y at integration start : 0 Y at integration end: 0

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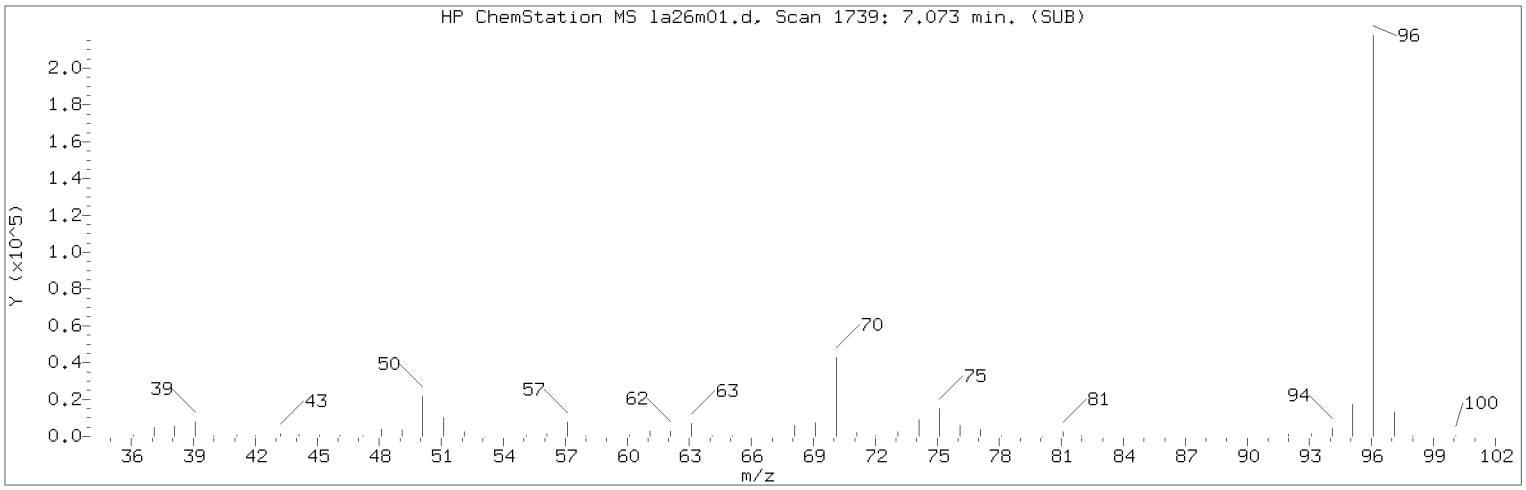
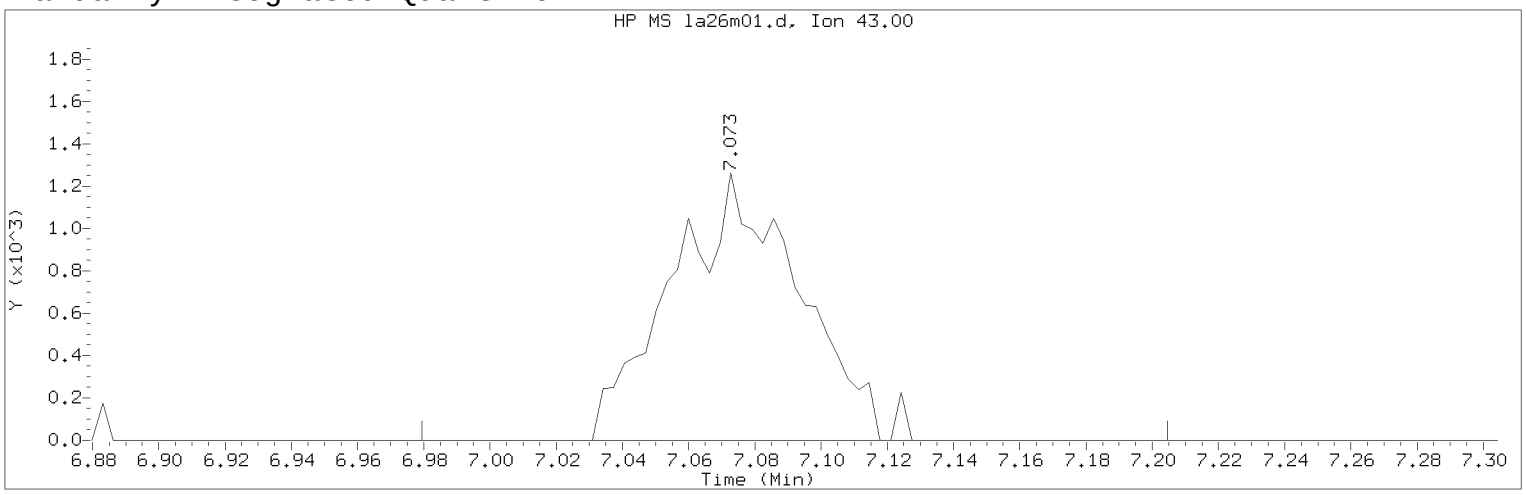
Target 3.5 esignature userKAS02648 Page 244 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

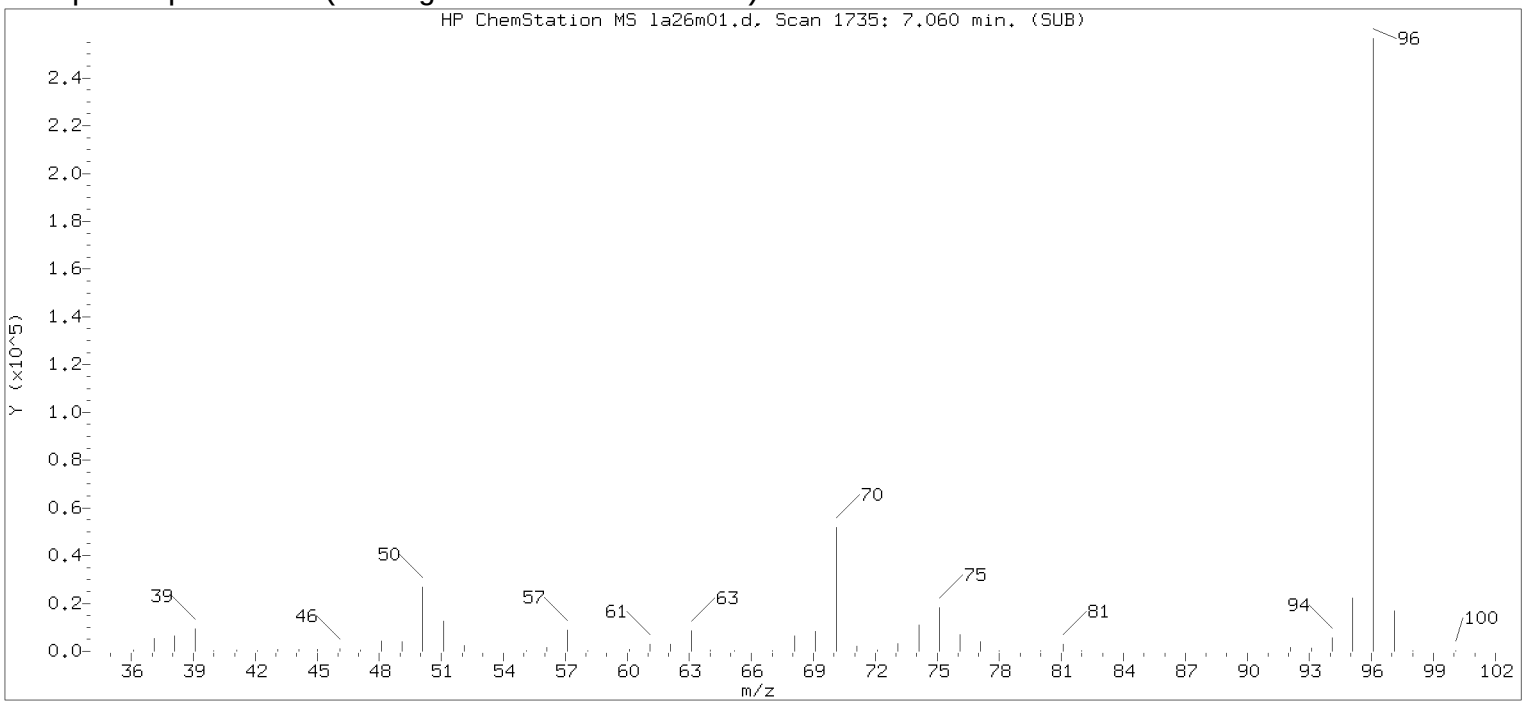
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1739
Retention Time (minutes): 7.073
Quant Ion : 43.00
Area (flag) : 3401M
On-Column Amount (ng) : 0.4512
Integration start scan : 1709 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

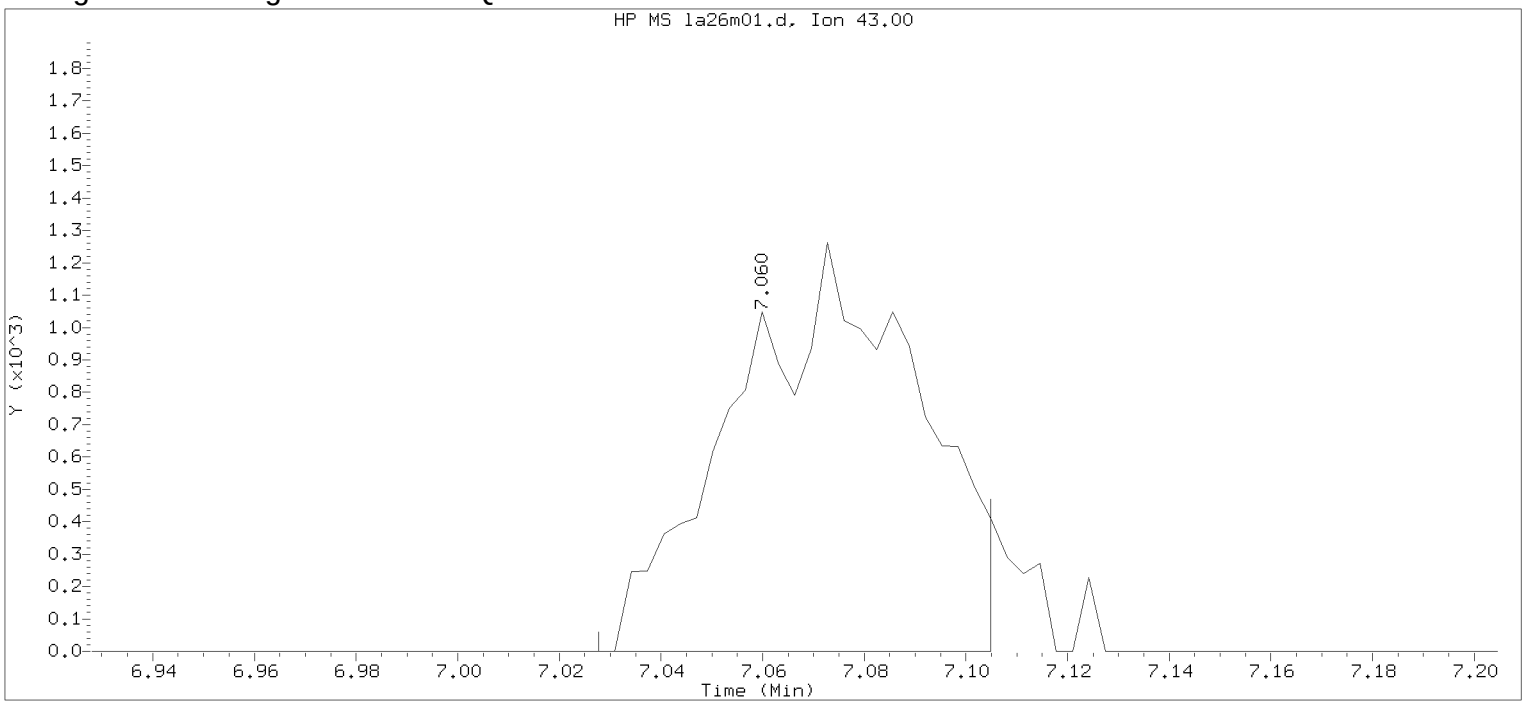
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

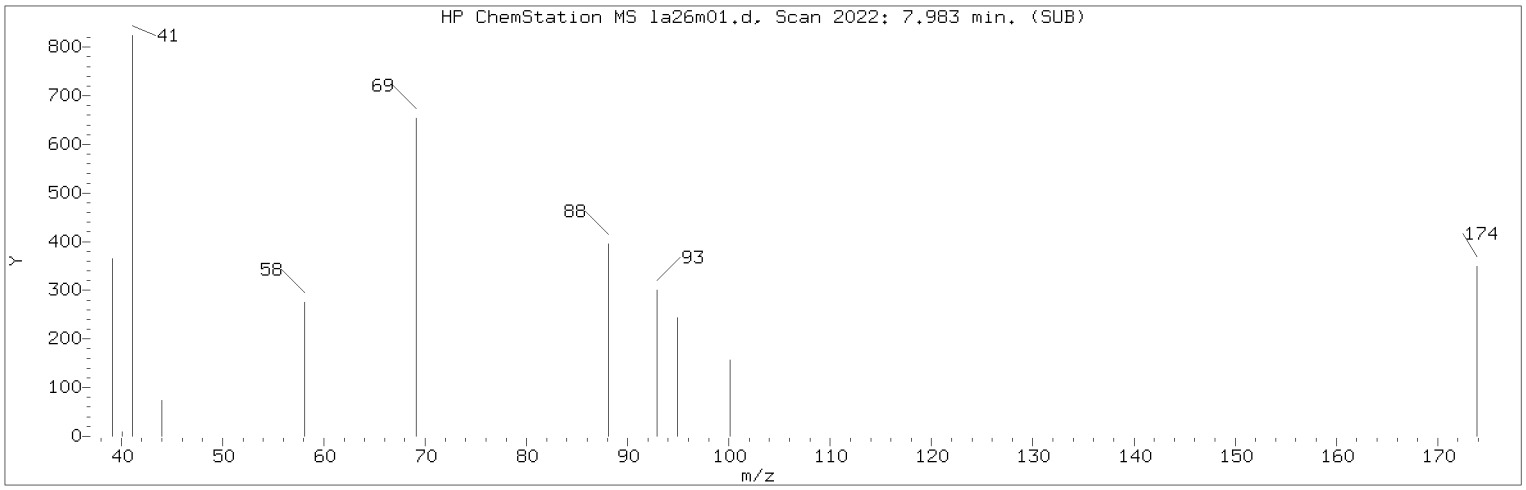
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

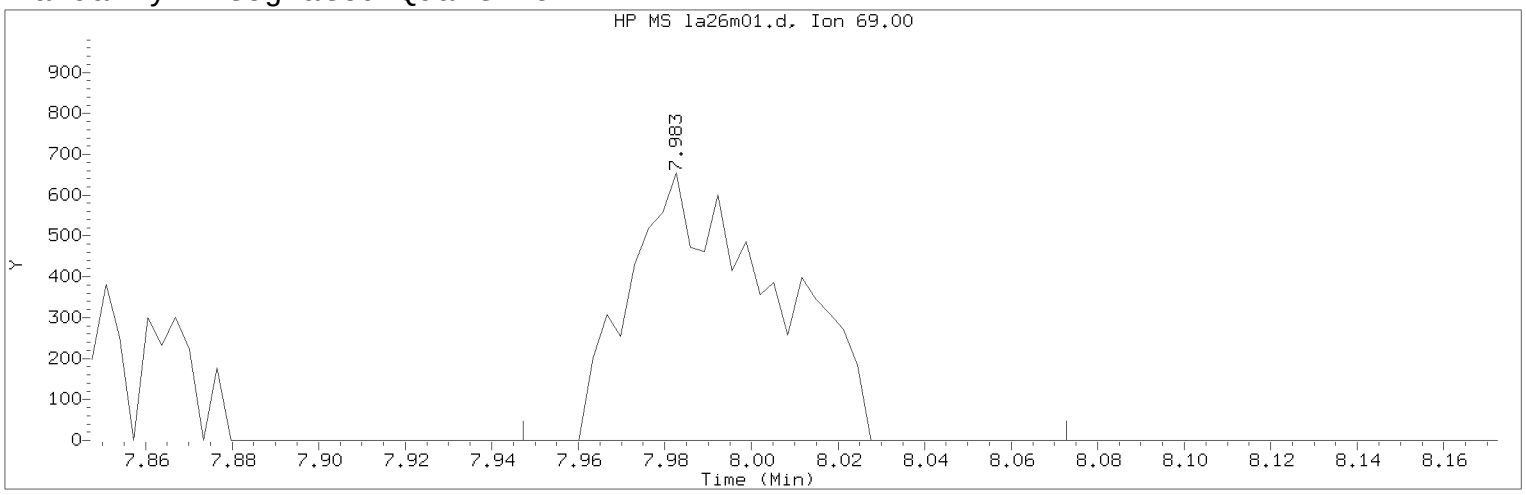
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1735
Retention Time (minutes): 7.060
Quant Ion : 43.00
Area : 3163
On-column Amount (ng) : 0.4196
Integration start scan : 1724 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

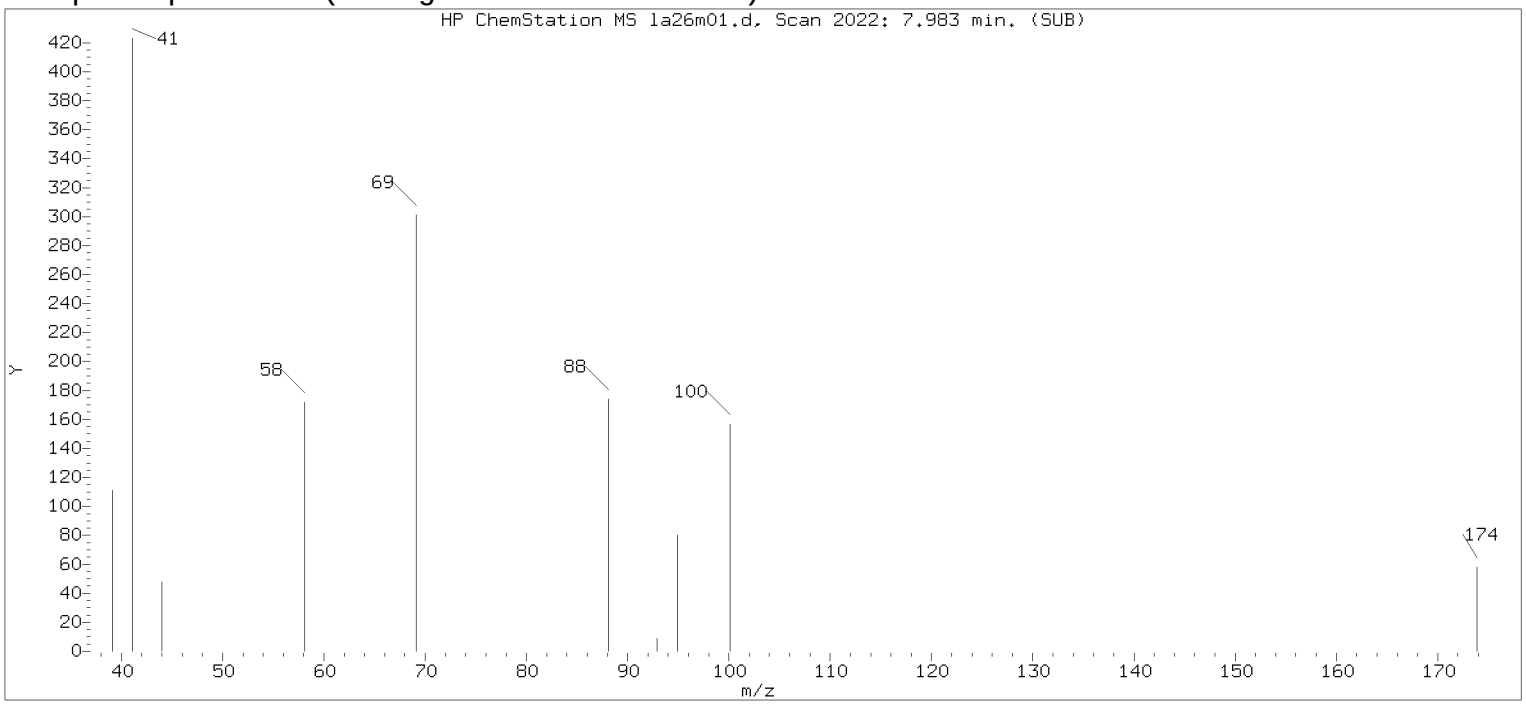
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 1518M
On-Column Amount (ng) : 0.3435
Integration start scan : 2010 Integration stop scan: 2049
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

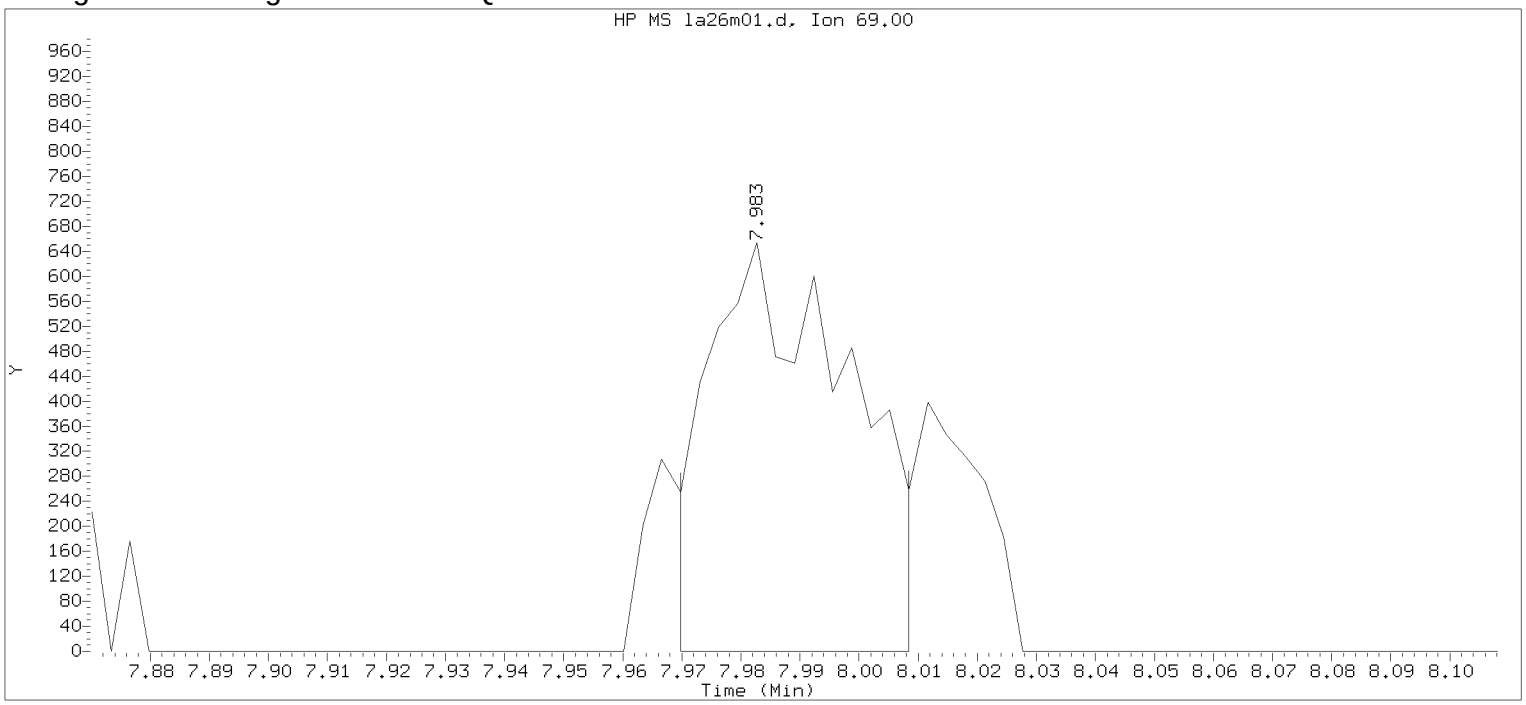
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

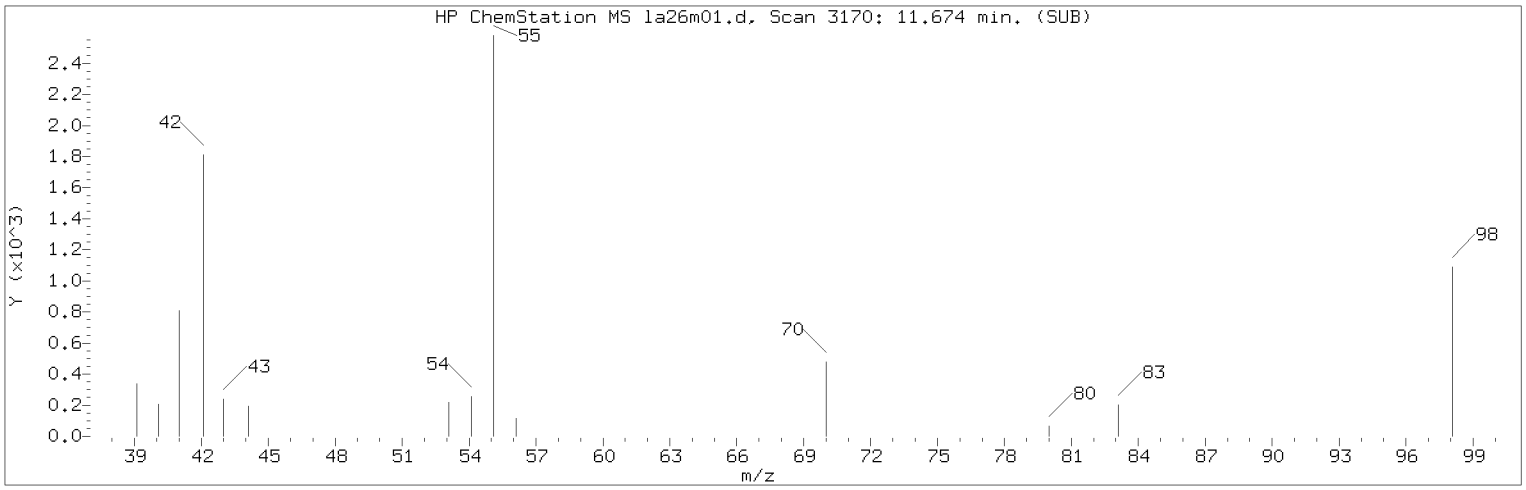
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

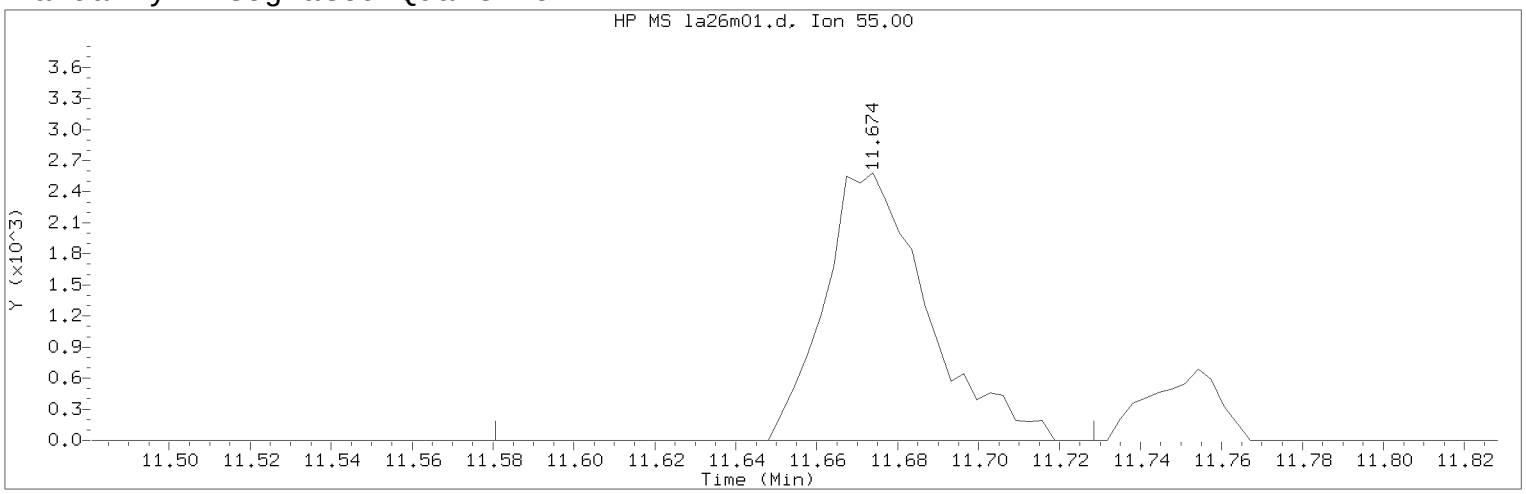
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area : 1079
On-column Amount (ng) : 0.2442
Integration start scan : 2017 Integration stop scan: 2029
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

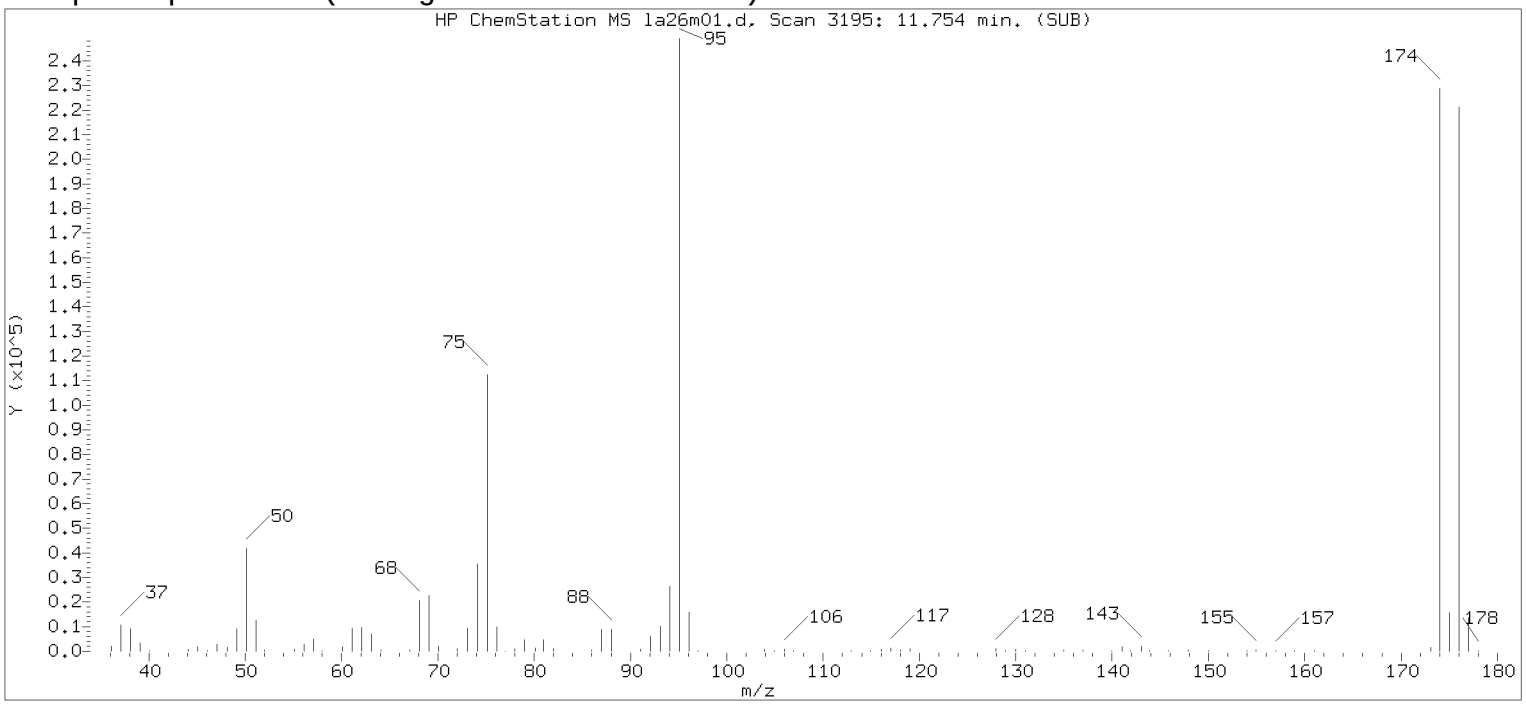
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3170
Retention Time (minutes): 11.674
Quant Ion : 55.00
Area (flag) : 4553M
On-Column Amount (ng) : 20.1799
Integration start scan : 3140  Integration stop scan: 3186
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

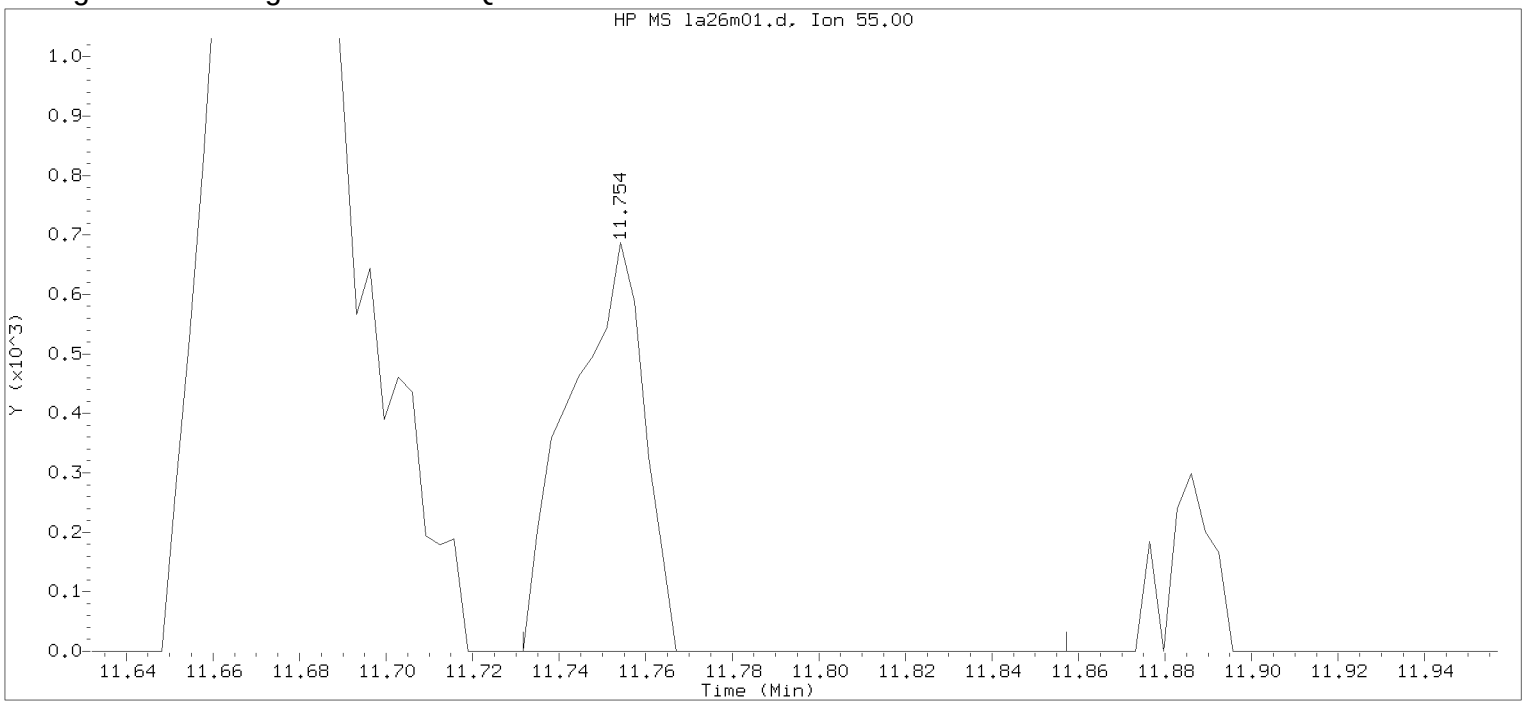
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3195
Retention Time (minutes): 11.754
Quant Ion : 55.00
Area : 817
On-column Amount (ng) : 3.6224
Integration start scan : 3187 Integration stop scan: 3226
Y at integration start : 0 Y at integration end: 0

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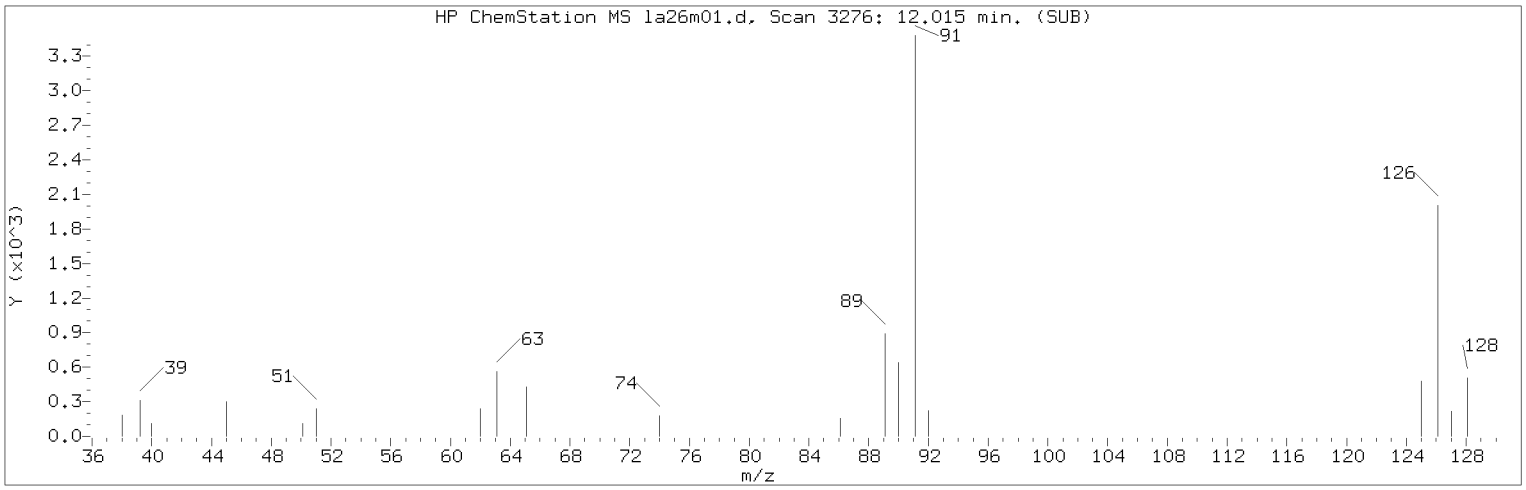
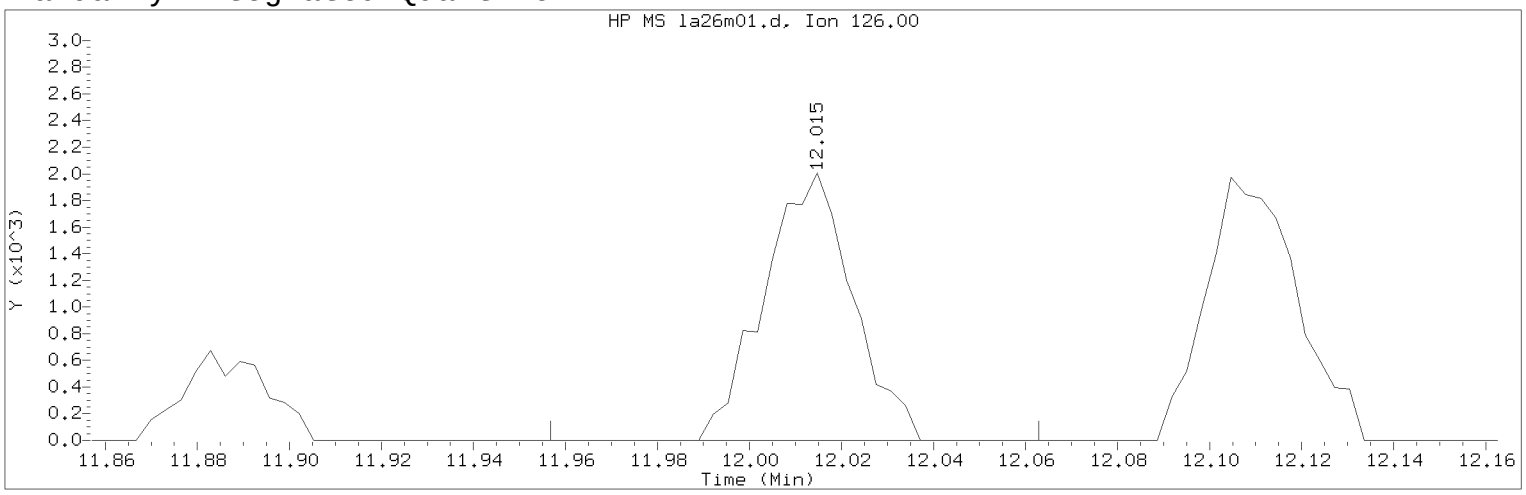
Target 3.5 esignature userKAS02648 Page 240 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

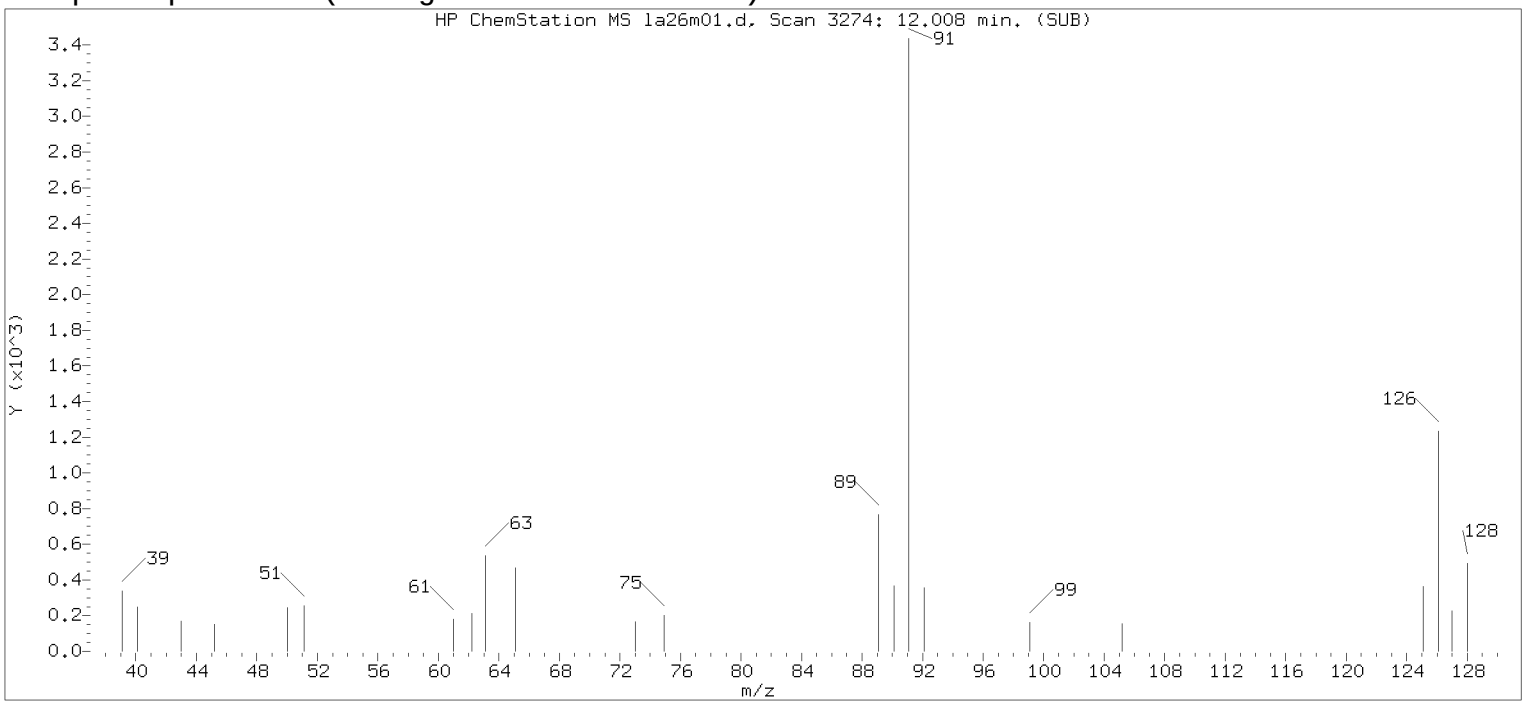
Compound Number : 120
Compound Name : 2-Chlorotoluene
Scan Number : 3276
Retention Time (minutes): 12.015
Quant Ion : 126.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.4793
Integration start scan : 3257  Integration stop scan: 3290
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

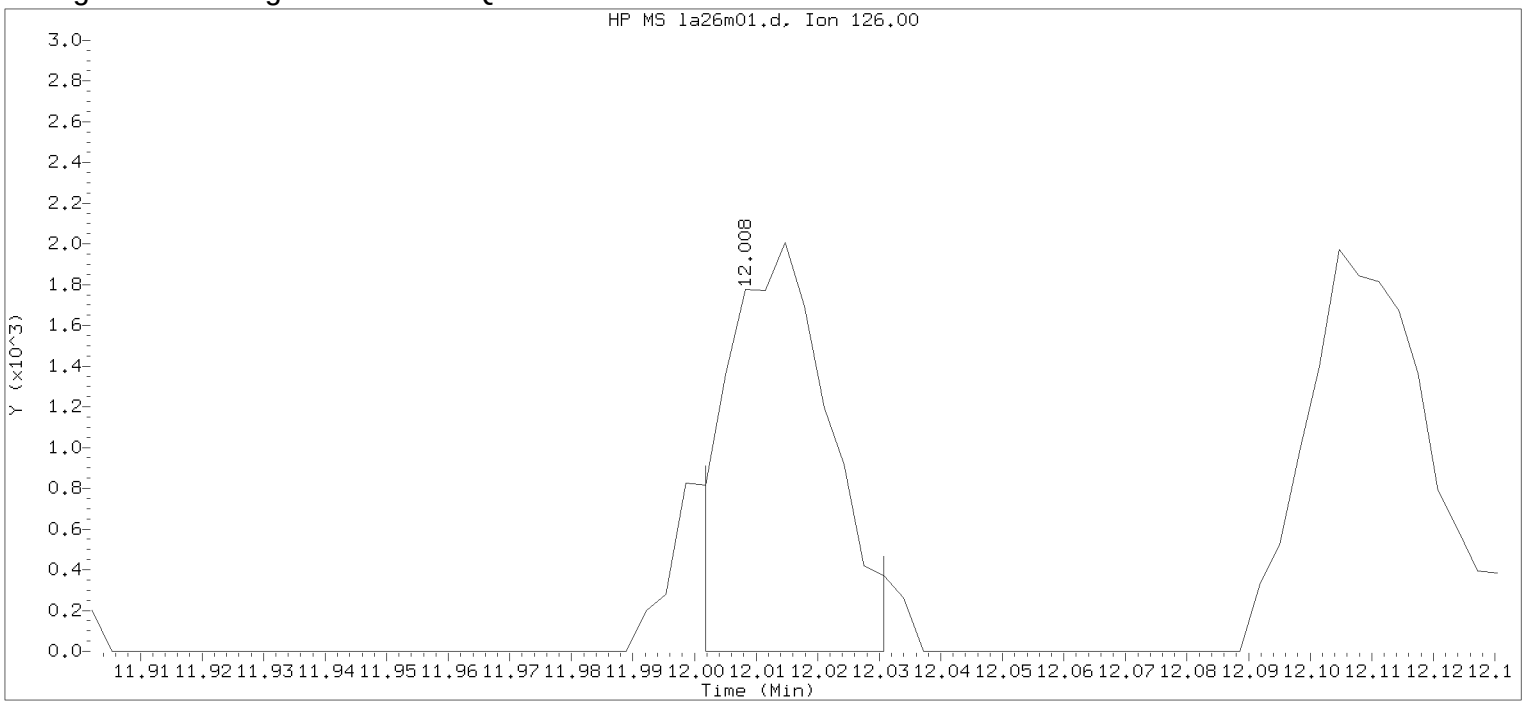
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 120
Compound Name : 2-Chlorotoluene
Scan Number : 3274
Retention Time (minutes): 12.008
Quant Ion : 126.00
Area : 2264
On-column Amount (ng) : 0.4049
Integration start scan : 3271 Integration stop scan: 3280
Y at integration start : 0 Y at integration end: 0

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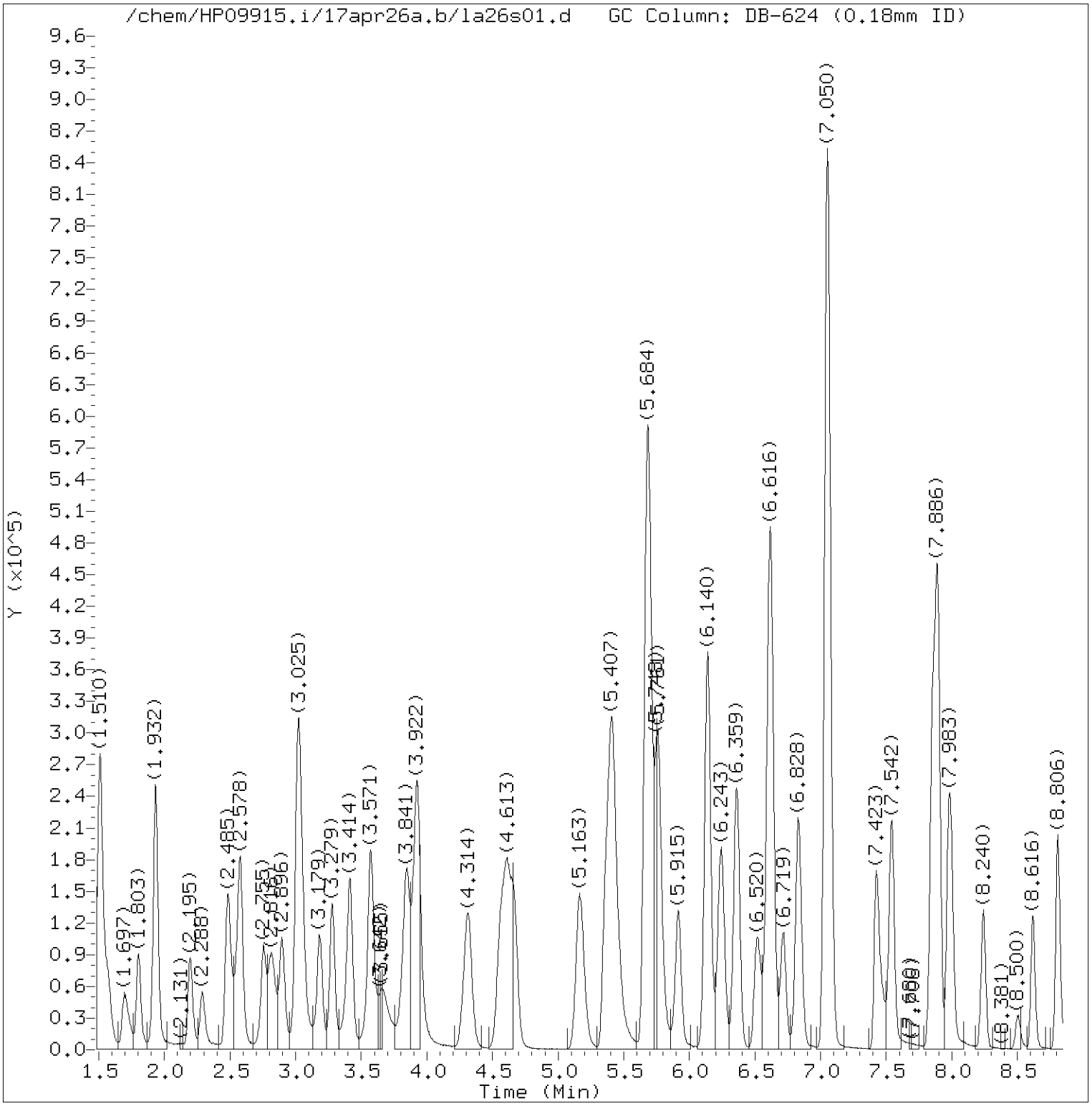
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

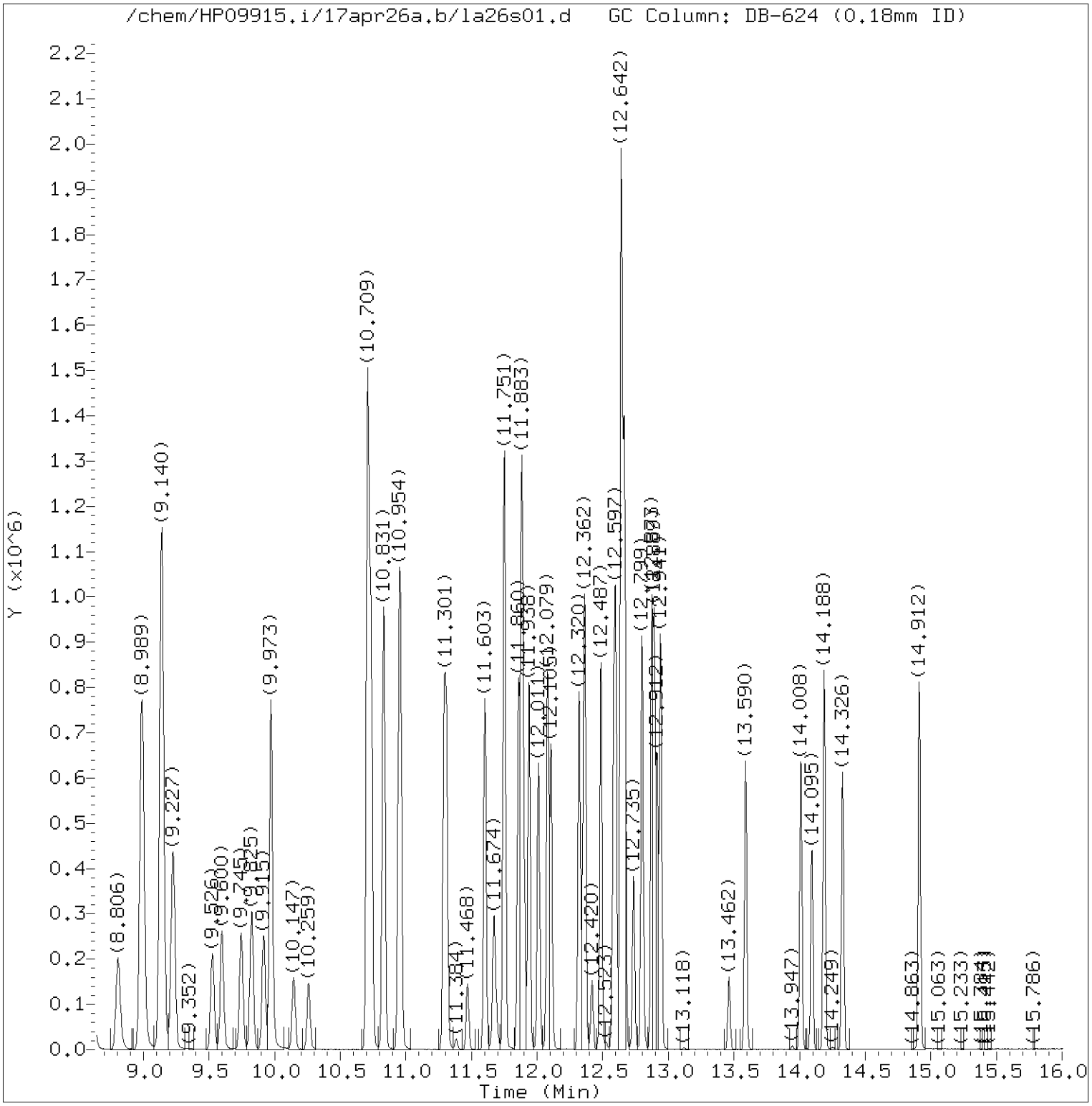
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.697 | 85 | 109499 | 17.491 |
| 4) Chloromethane | (2) | 1.803 | 50 | 118648 | 18.449 |
| 6) Vinyl Chloride | (2) | 1.919 | 62 | 116746 | 18.799 |
| 5) 1,3-Butadiene | (2) | 1.938 | 39 | 117706 | 31.074 |
| 8) Bromomethane | (2) | 2.195 | 94 | 78860 | 18.880 |
| 9) Chloroethane | (2) | 2.288 | 64 | 65535 | 18.726 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 168800 | 19.774 |
| 12) Trichlorofluoromethane | (2) | 2.546 | 101 | 141676 | 19.701 |
| 11) n-Pentane | (2) | 2.581 | 43 | 155972 | 26.336 |
| 14) Ethyl ether | (2) | 2.755 | 59 | 78549 | 19.620 |
| 15) Freon 123a | (2) | 2.816 | 67 | 99077 | 20.687 |
| 16) Acrolein | (1) | 2.899 | 56 | 152765 | 93.014 |
| 17) 1,1-Dichloroethene | (2) | 3.012 | 96 | 85092 | 22.356 |
| 18) Acetone | (1) | 3.031 | 58 | 98646M | 138.386 |
| 19) Freon 113 | (2) | 3.034 | 101 | 87279 | 22.782 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 62534M | 132.335 |
| 22) Methyl Iodide | (2) | 3.179 | 142 | 158156 | 21.423 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 276153 | 22.295 |
| 27) Methyl Acetate | (2) | 3.385 | 43 | 108608 | 19.660 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 150132 | 19.692 |
| 28) Methylene Chloride | (2) | 3.571 | 84 | 100067 | 19.902 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 200632M | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 144050 | 185.564 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 276003 | 95.141 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.912 | 73 | 275653 | 19.769 |
| 32) trans-1,2-Dichloroethene | (2) | 3.925 | 96 | 96639 | 21.640 |
| 34) n-Hexane | (2) | 4.314 | 57 | 148593 | 21.707 |
| 36) 1,1-Dichloroethane | (2) | 4.558 | 63 | 173220 | 20.642 |
| 38) di-Isopropyl ether | (2) | 4.607 | 45 | 326552 | 20.275 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.661 | 53 | 142863 | 20.183 |
| 40) Ethyl t-butyl ether | (2) | 5.163 | 59 | 267730 | 19.315 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 540273 | 139.091 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 104661 | 20.453 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 107714 | 19.225 |
| 47) Propionitrile | (1) | 5.459 | 54 | 160735 | 141.868 |
| 48) Methacrylonitrile | (2) | 5.684 | 67 | 427221 | 147.714 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 52961 | 19.637 |
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 93578 | 93.510 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.918 | 83 | 160721 | 20.094 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 254549 | 49.603 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 142170 | 19.451 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 201300 | 42.093 |
| 54) Cyclohexane | (2) | 6.243 | 56 | 166429 | 19.998 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 104390 | 19.566 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 125804 | 19.338 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 129876 | 476.515 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63935 | 50.103 |
| 60) Benzene | (2) | 6.629 | 78 | 387251 | 20.194 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 131704 | 20.301 |
| 65) t-Amyl methyl ether | (2) | 6.828 | 73 | 263343 | 19.143 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1050887 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 153007 | 19.964 |
| 69) n-Butanol | (1) | 7.423 | 56 | 206615 | 940.388 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 98914 | 19.959 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 175190 | 20.063 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 106099 | 20.211 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 87598 | 19.494 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 37891M | 552.412 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 66490 | 20.140 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 115395 | 19.368 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 27997 | 16.571 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 75861 | 18.799 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 151800 | 19.548 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 756555 | 94.518 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1039935 | 50.132 |
| 88) Toluene | (3) | 9.227 | 92 | 242182 | 20.090 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 134989 | 19.971 |
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 154350 | 20.273 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 94409 | 20.324 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 104916 | 19.678 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 161543 | 20.042 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 551770 | 94.825 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 286789 | 39.519 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 90734 | 18.858 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 104756 | 20.600 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 812425 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 130363 | 18.831 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 273397 | 19.655 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 87717 | 19.096 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 458197 | 19.705 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 357105 | 39.448 |
| 107) o-Xylene | (3) | 11.291 | 106 | 175615 | 19.507 |
| 109) Styrene | (3) | 11.311 | 104 | 302990 | 20.359 |
| 110) Bromoform | (3) | 11.471 | 173 | 63277 | 18.112 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 461508 | 20.058 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 135081 | 522.068 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 384984 | 49.931 |
| 108) Xylene (Total) | (3) | | 106 | 532720 | 58.955 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 156503 | 20.076 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 122720 | 19.548 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 216768 | 97.039 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 45126 | 20.478 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 543948 | 19.609 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 111198 | 19.261 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 386164 | 19.522 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 117549 | 19.563 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 84253M | 19.704 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 64493 | 19.104 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 398317 | 19.549 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 498192 | 19.744 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 227433 | 19.029 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 435084 | 19.529 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 439191 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 238412 | 19.291 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 427280 | 20.015 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 222904 | 17.243 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 260216 | 19.550 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 270880 | 19.379 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 213925 | 19.222 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 227861 | 19.395 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 220414 | 19.677 |
| 141) Diethylbenzene (total) | (4) | | 100 | 751510 | 58.606 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 31087 | 18.857 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 178208 | 18.709 |

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on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

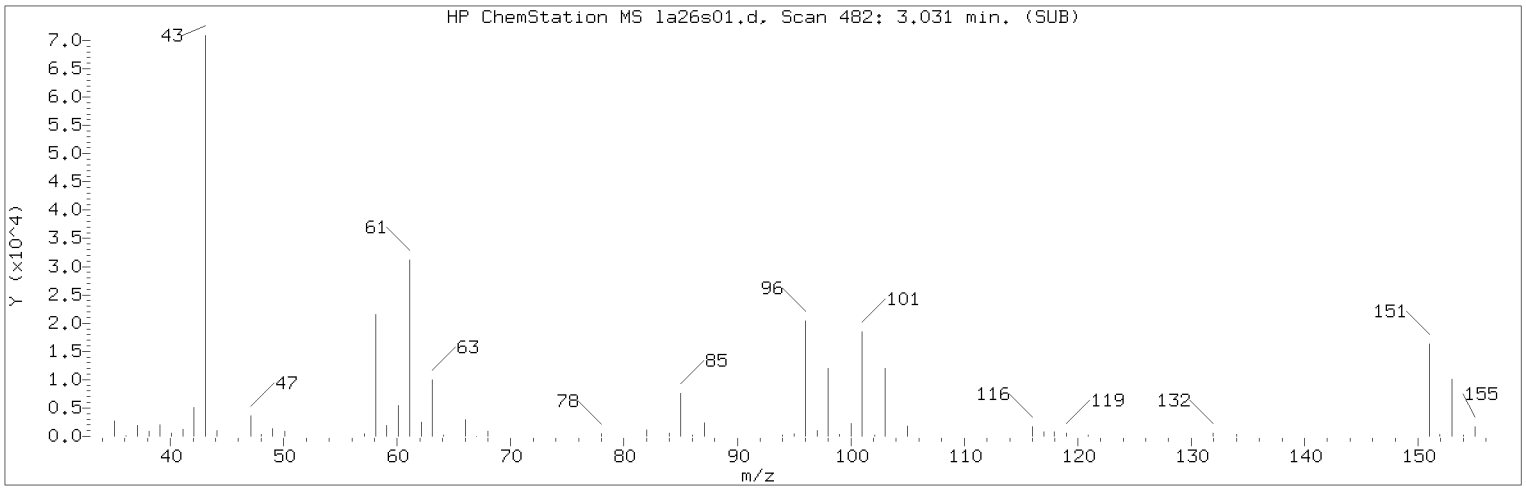
Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 172270 | 18.644 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 69967 | 17.436 |
| 148) Naphthalene | (4) | 14.188 | 128 | 548363 | 19.667 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 162660 | 18.248 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 326087 | 18.087 |

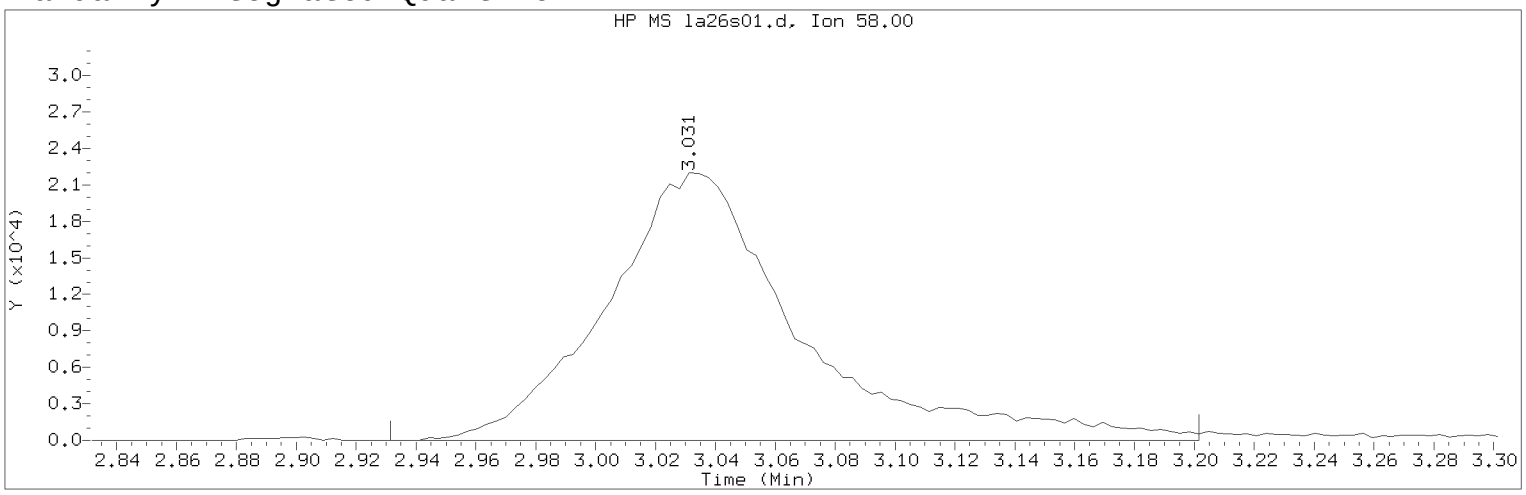


Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

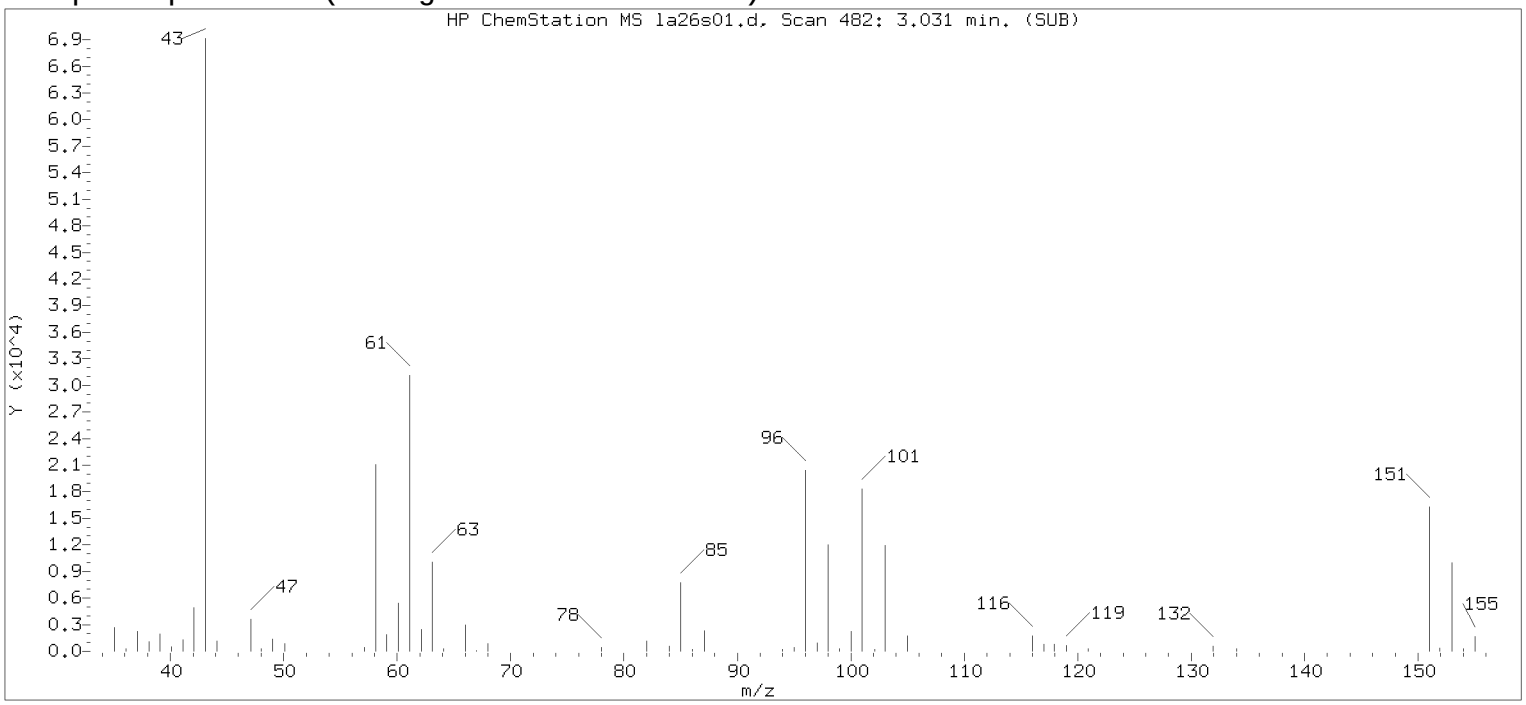
Compound Number : 18
Compound Name : Acetone
Scan Number : 482
Retention Time (minutes): 3.031
Quant Ion : 58.00
Area (flag) : 98646M
On-Column Amount (ng) : 138.3860
Integration start scan : 450 Integration stop scan: 534
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

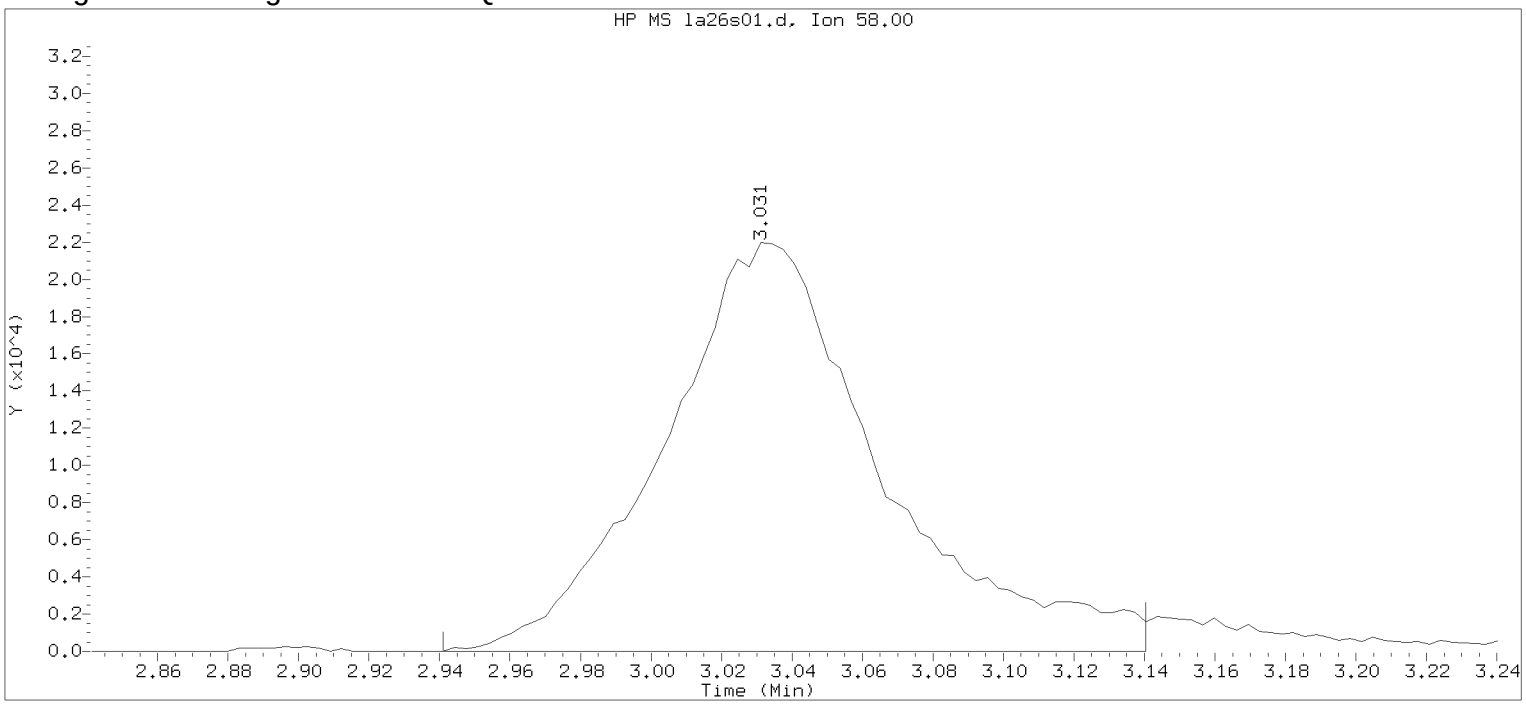
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

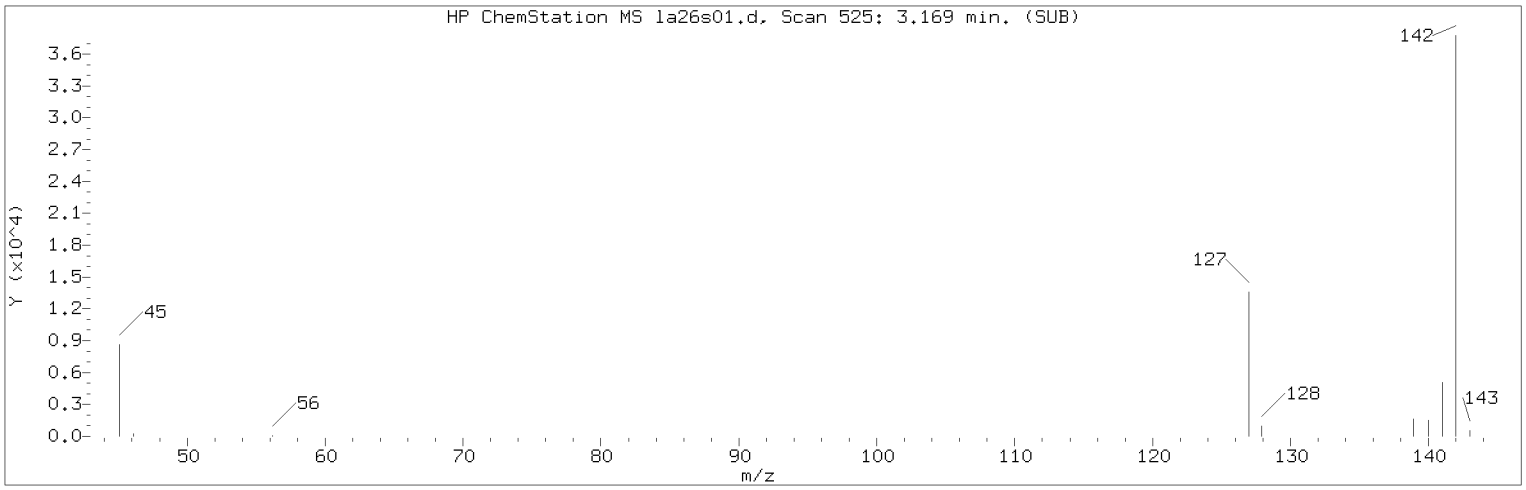
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

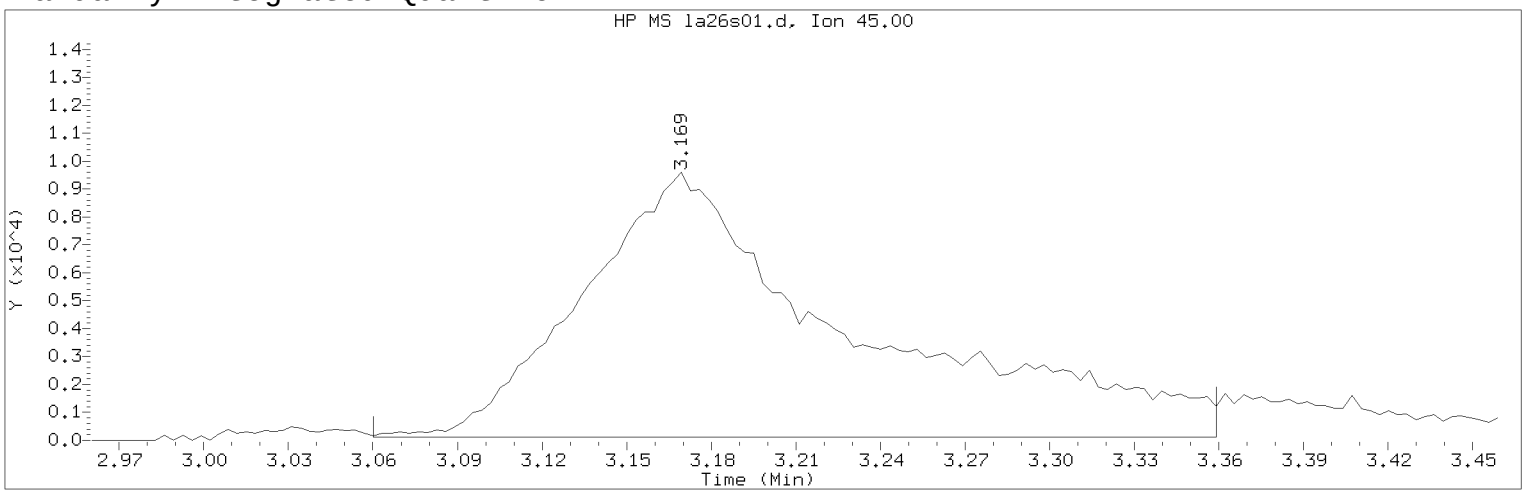
Compound Number : 18
Compound Name : Acetone
Scan Number : 482
Retention Time (minutes): 3.031
Quant Ion : 58.00
Area : 94153
On-column Amount (ng) : 140.9555
Integration start scan : 453 Integration stop scan: 515
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648 RD187 Page 240 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

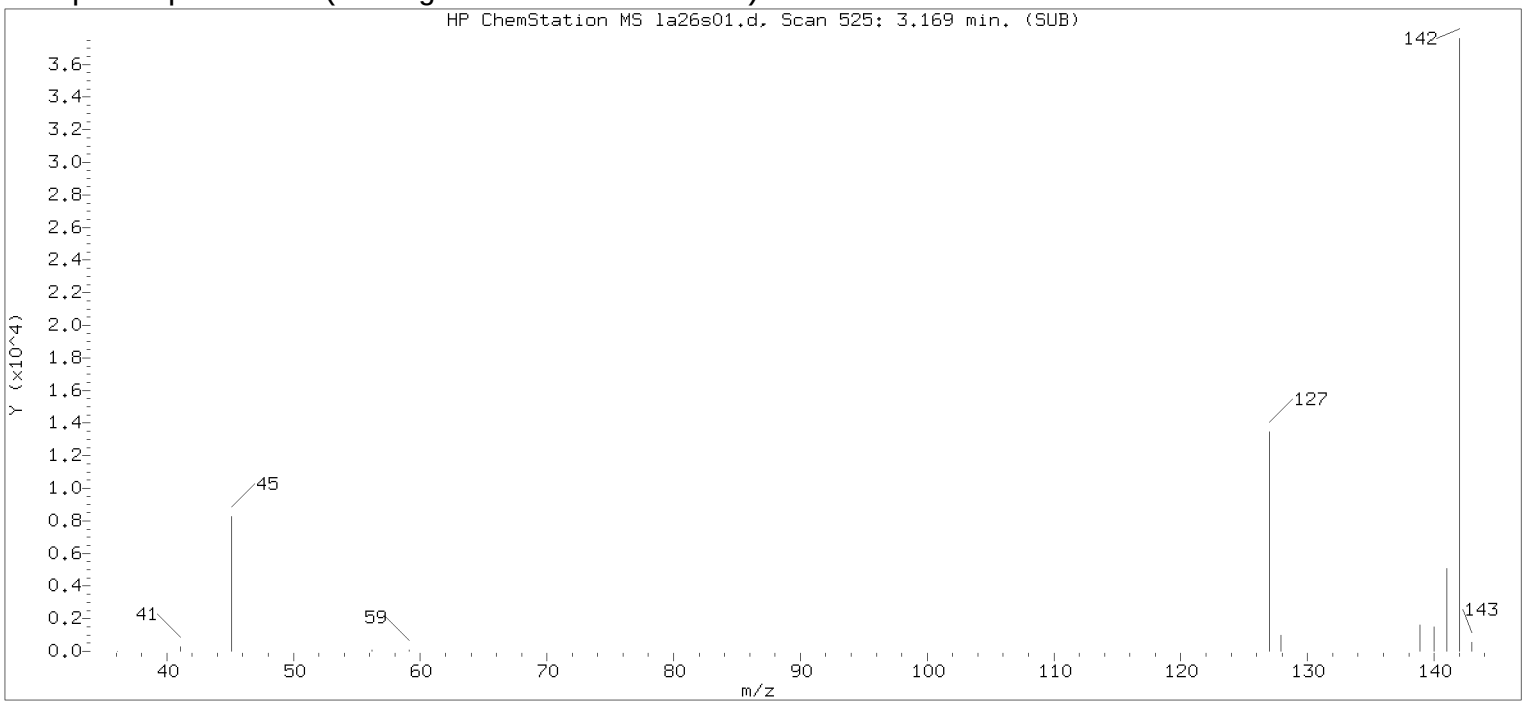
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area (flag) : 62534M
On-Column Amount (ng) : 132.3351
Integration start scan : 490 Integration stop scan: 583
Y at integration start : 121 Y at integration end: 121

Reason for manual integration: improper integration

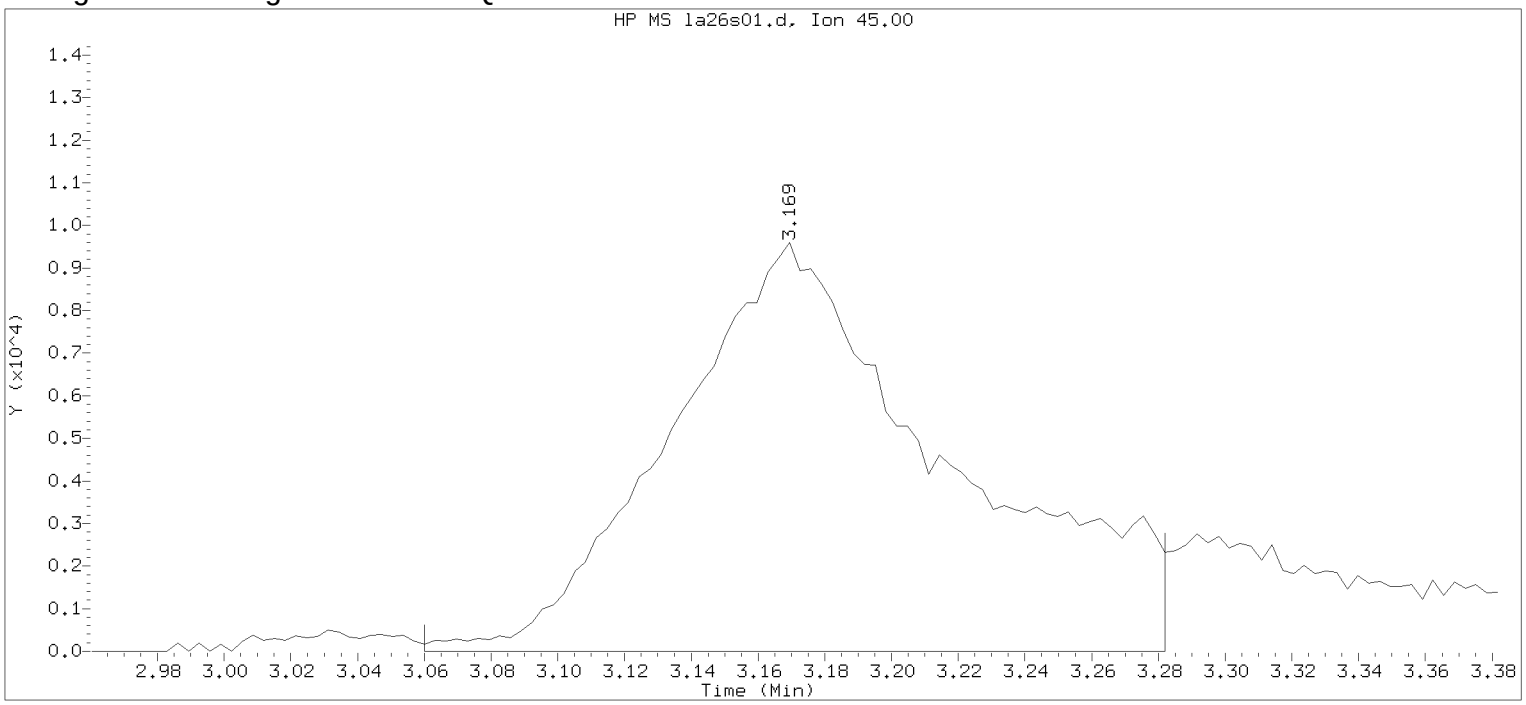
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

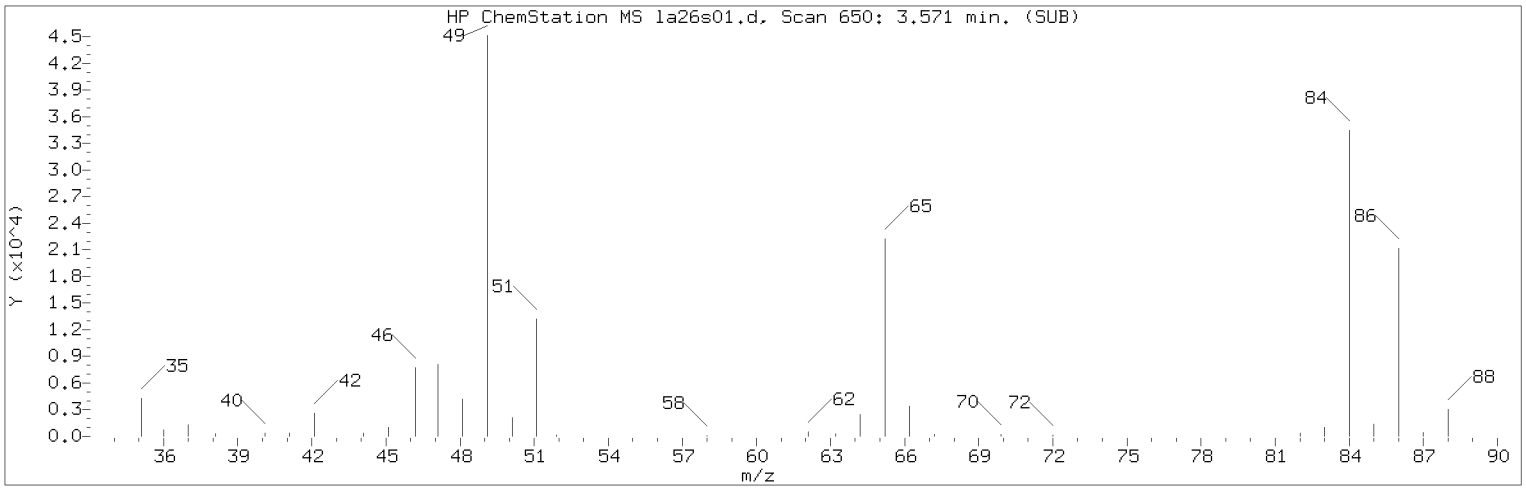
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

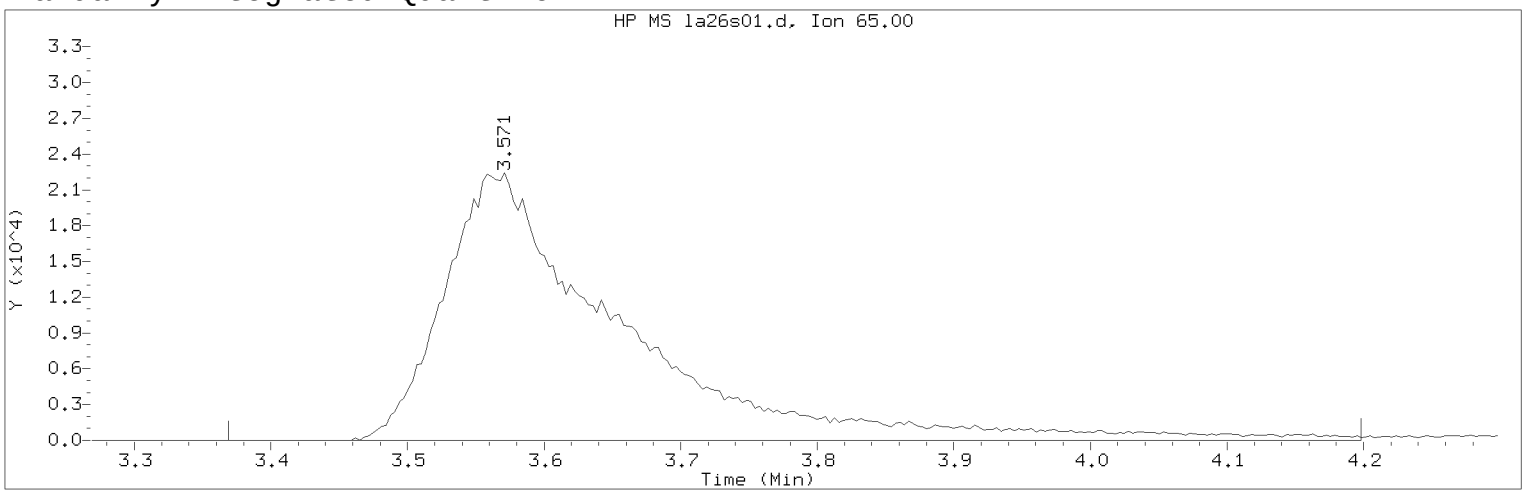
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area : 55120
On-column Amount (ng) : 124.4820
Integration start scan : 490 Integration stop scan: 559
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

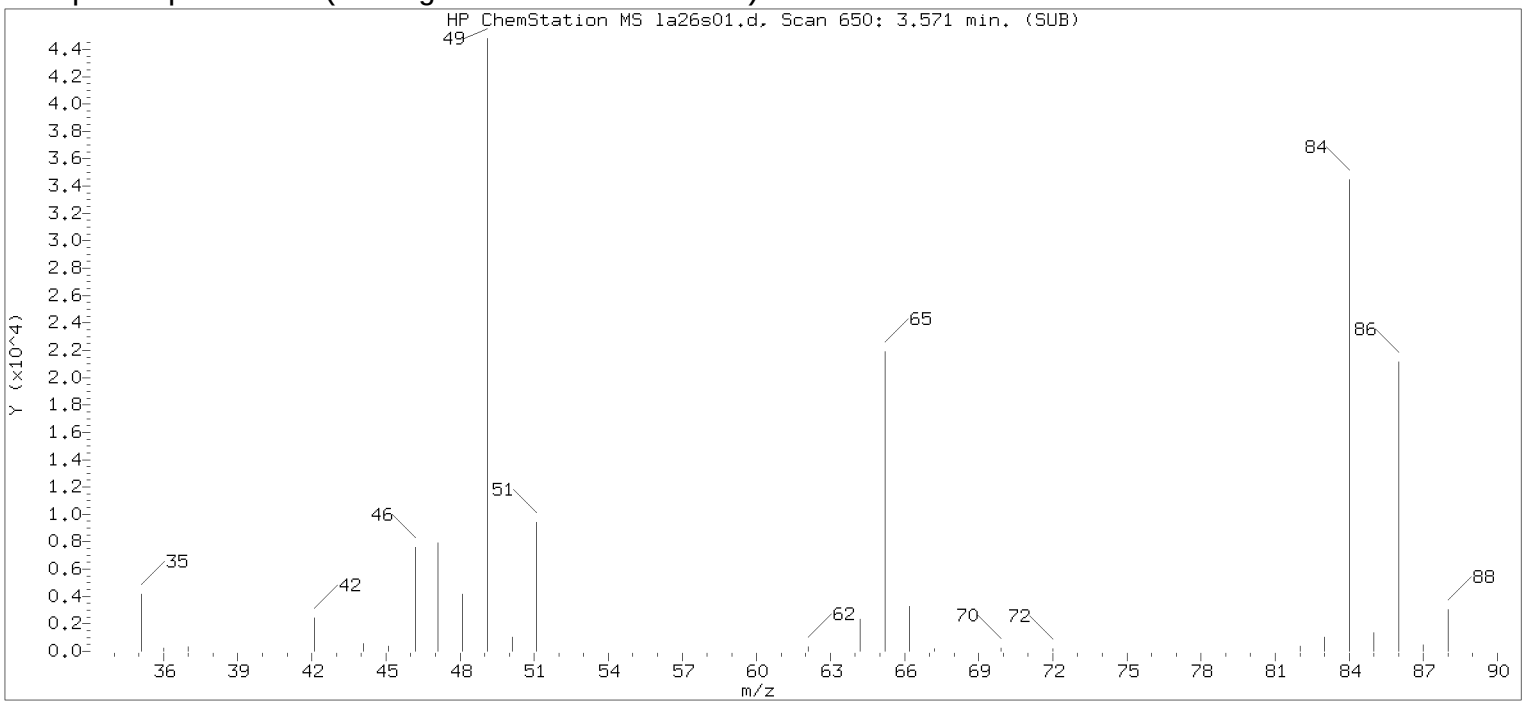
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area (flag) : 200632M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 844
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

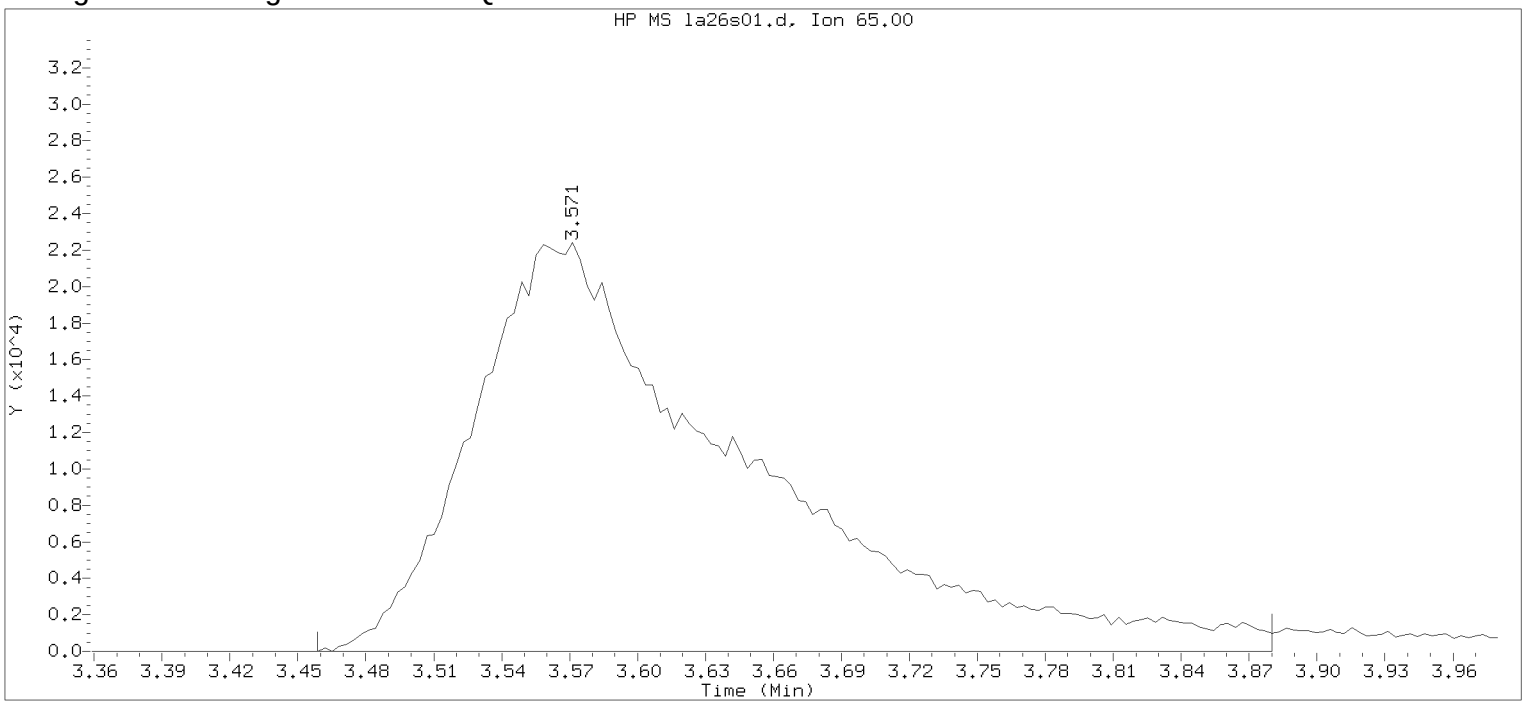
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

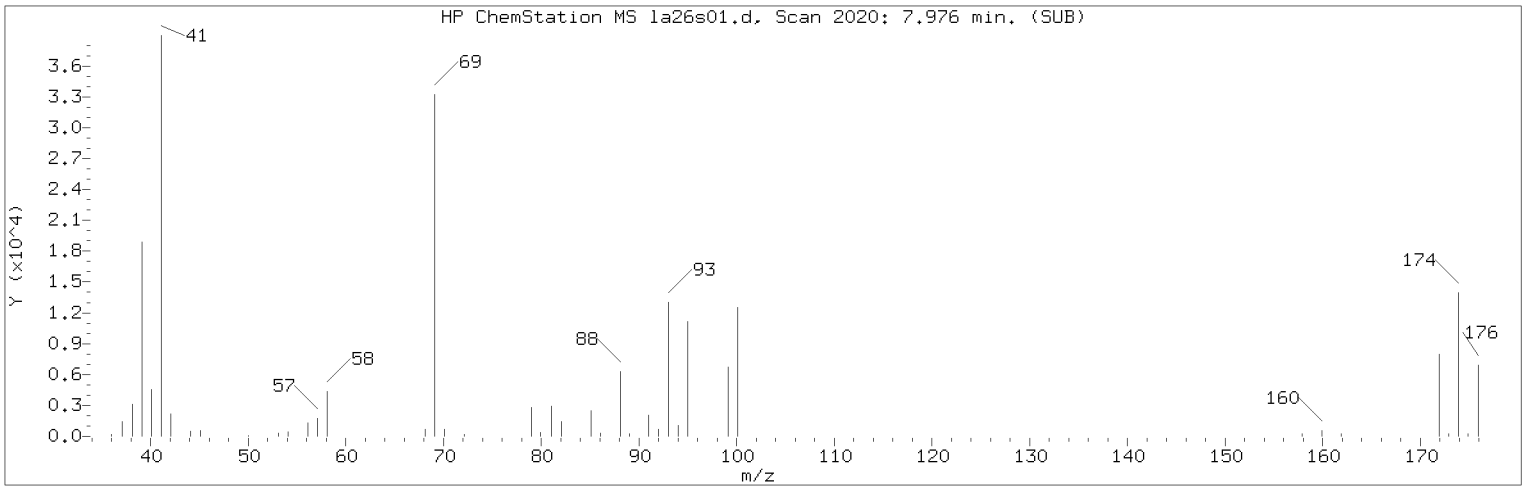
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

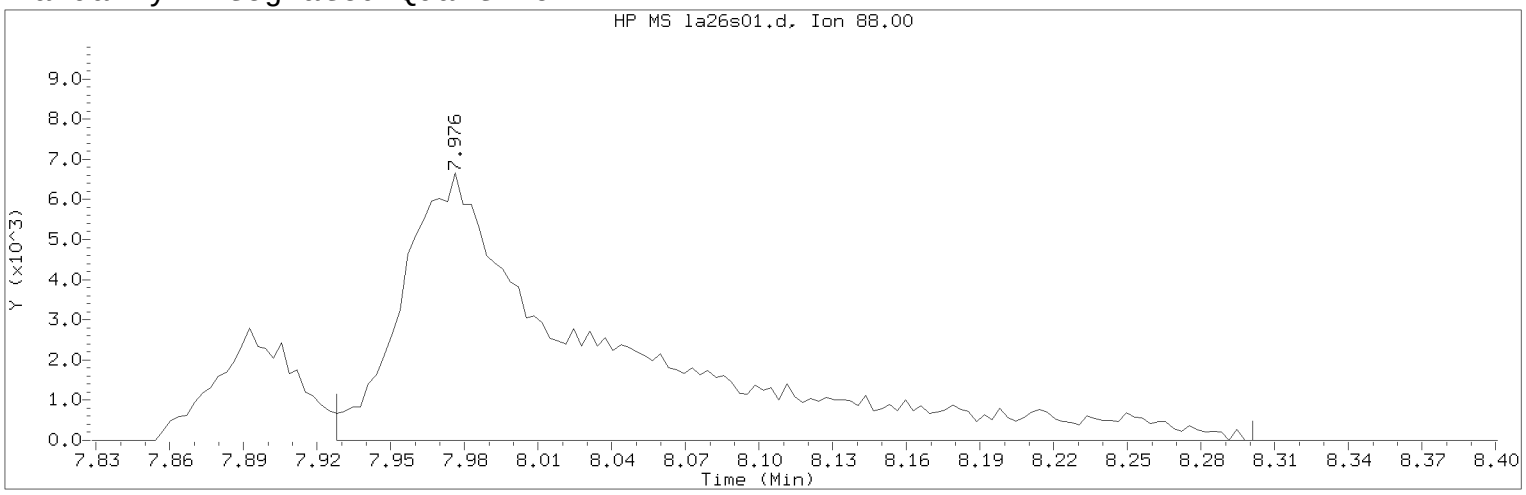
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area : 188003
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 745
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

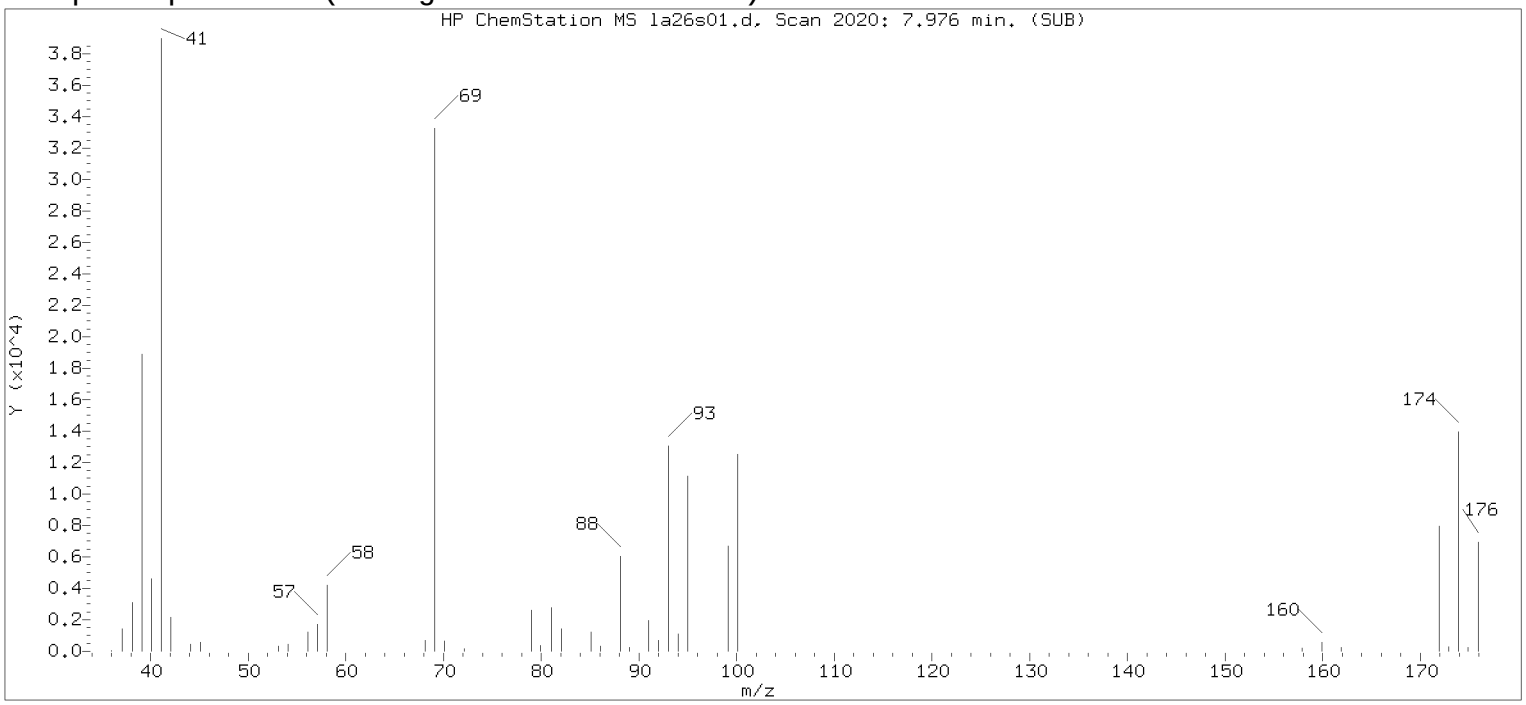
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 37891M
On-Column Amount (ng) : 552.4123
Integration start scan : 2004 Integration stop scan: 2120
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

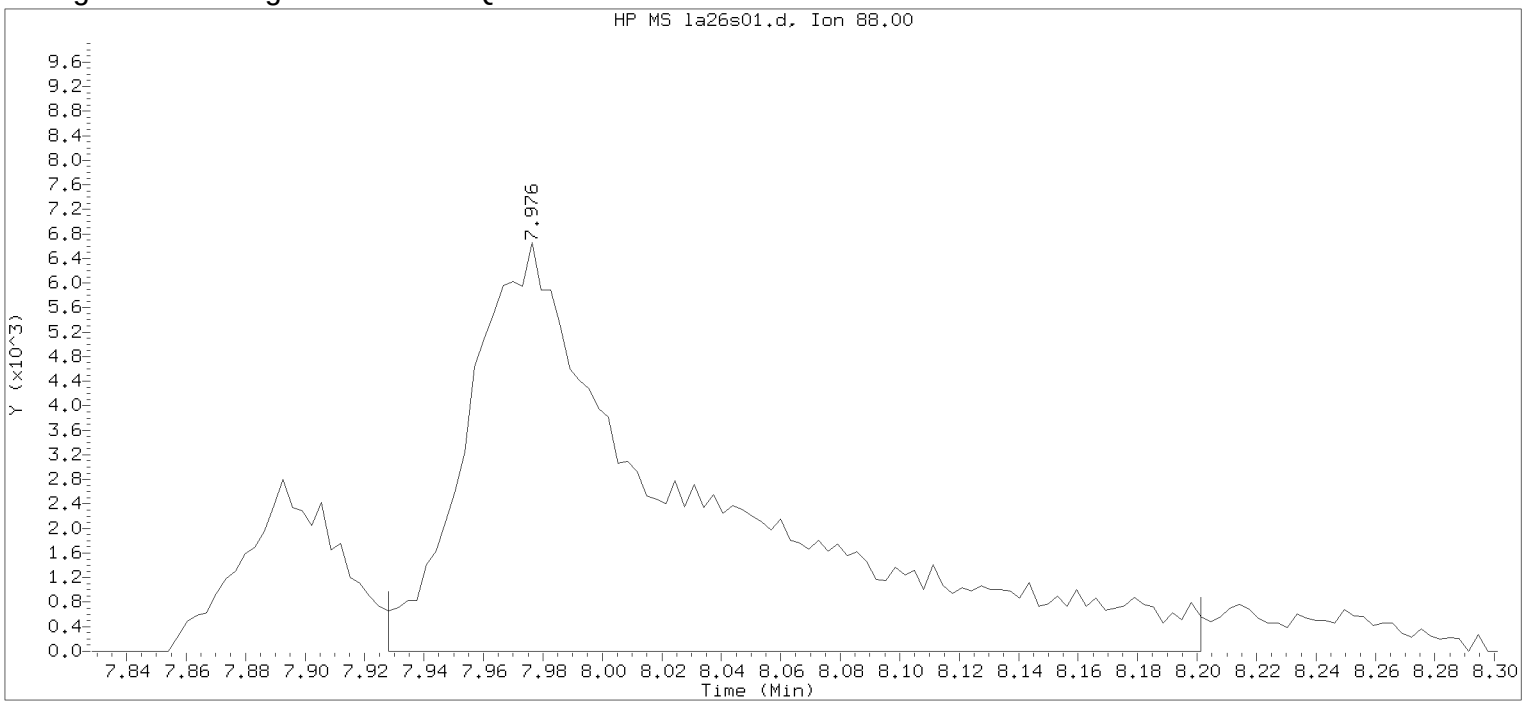
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

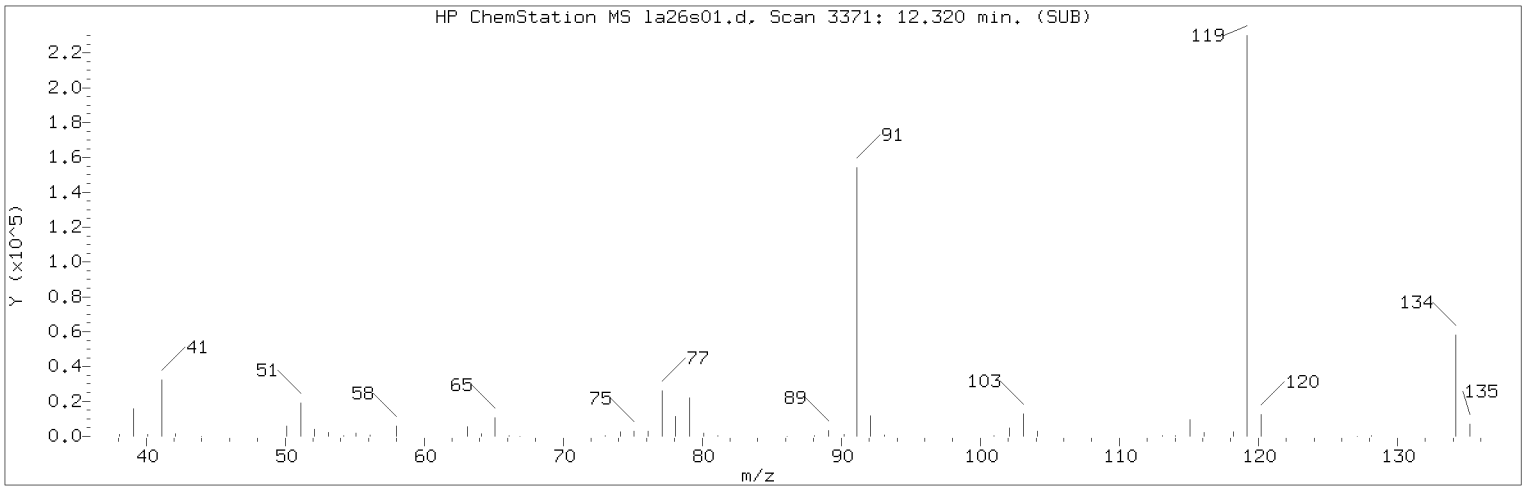
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

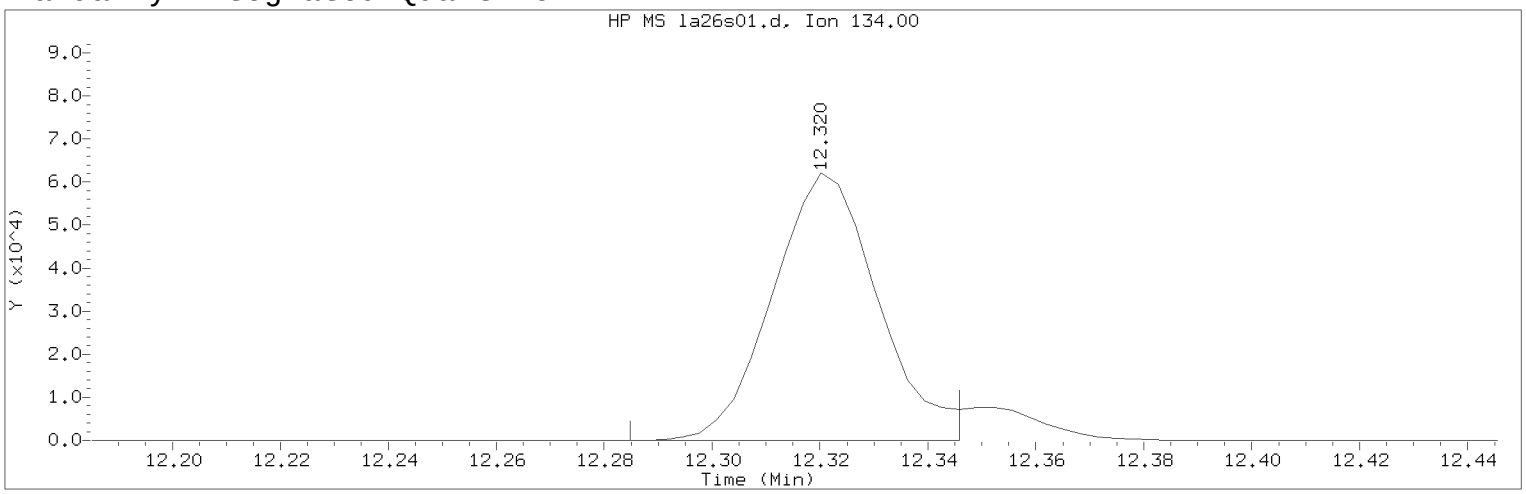
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area : 35295
On-column Amount (ng) : 549.1313
Integration start scan : 2004 Integration stop scan: 2089
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

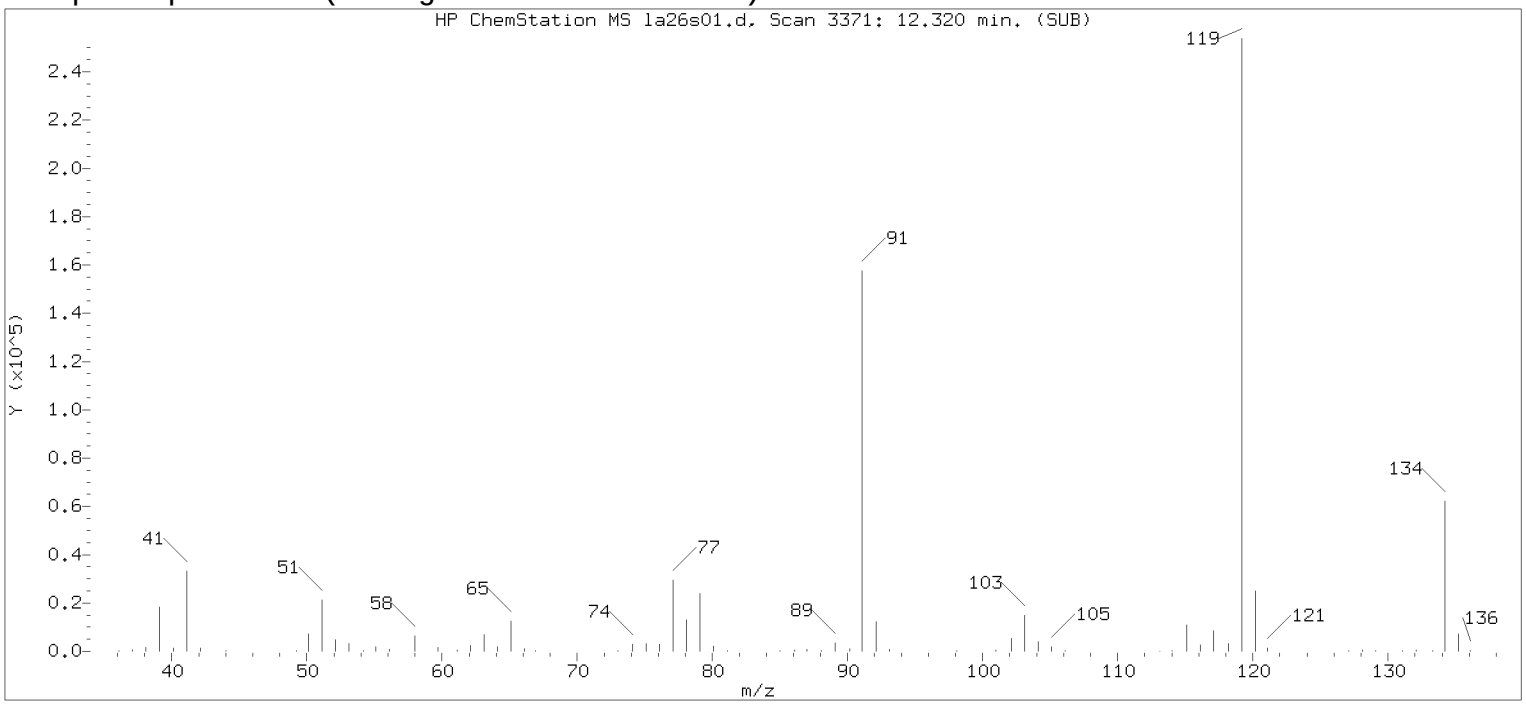
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 84253M
On-Column Amount (ng) : 19.7040
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

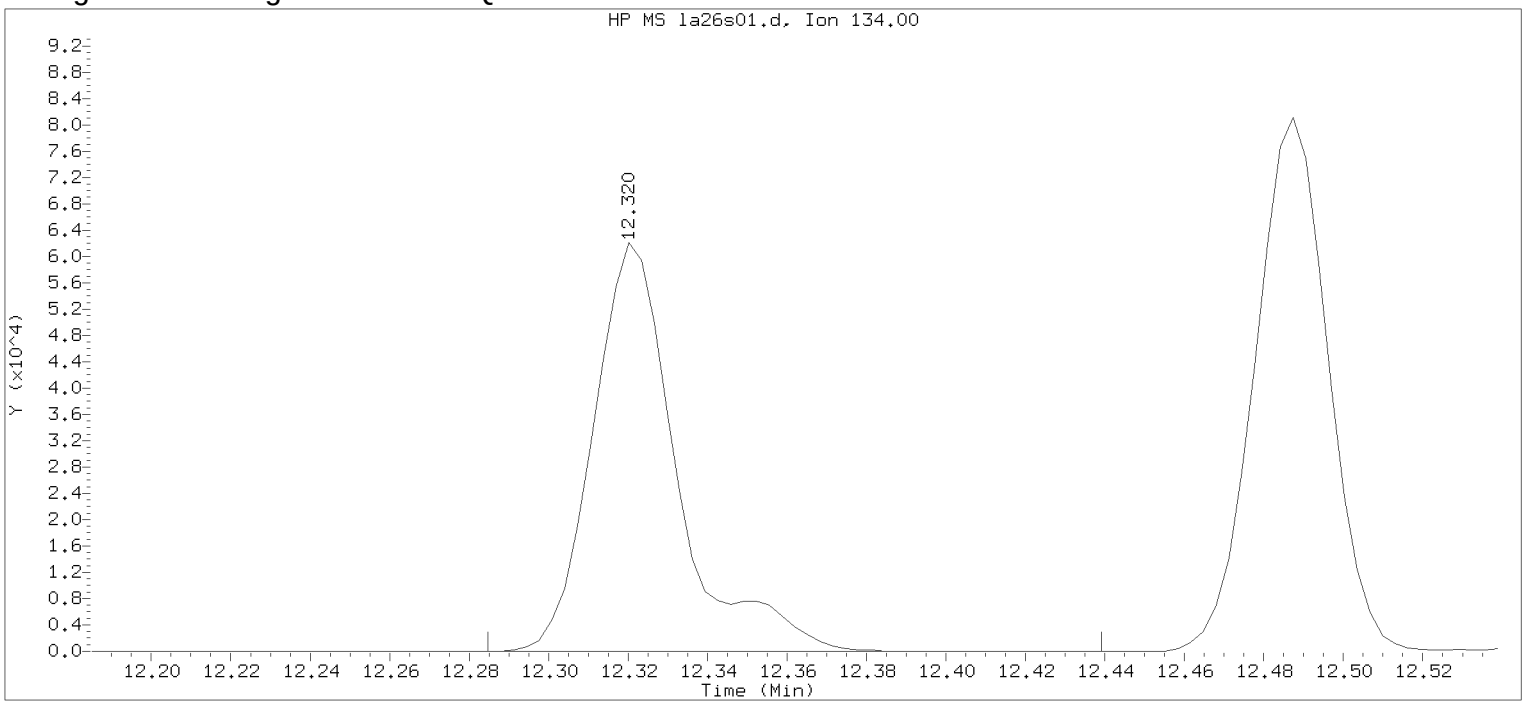
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



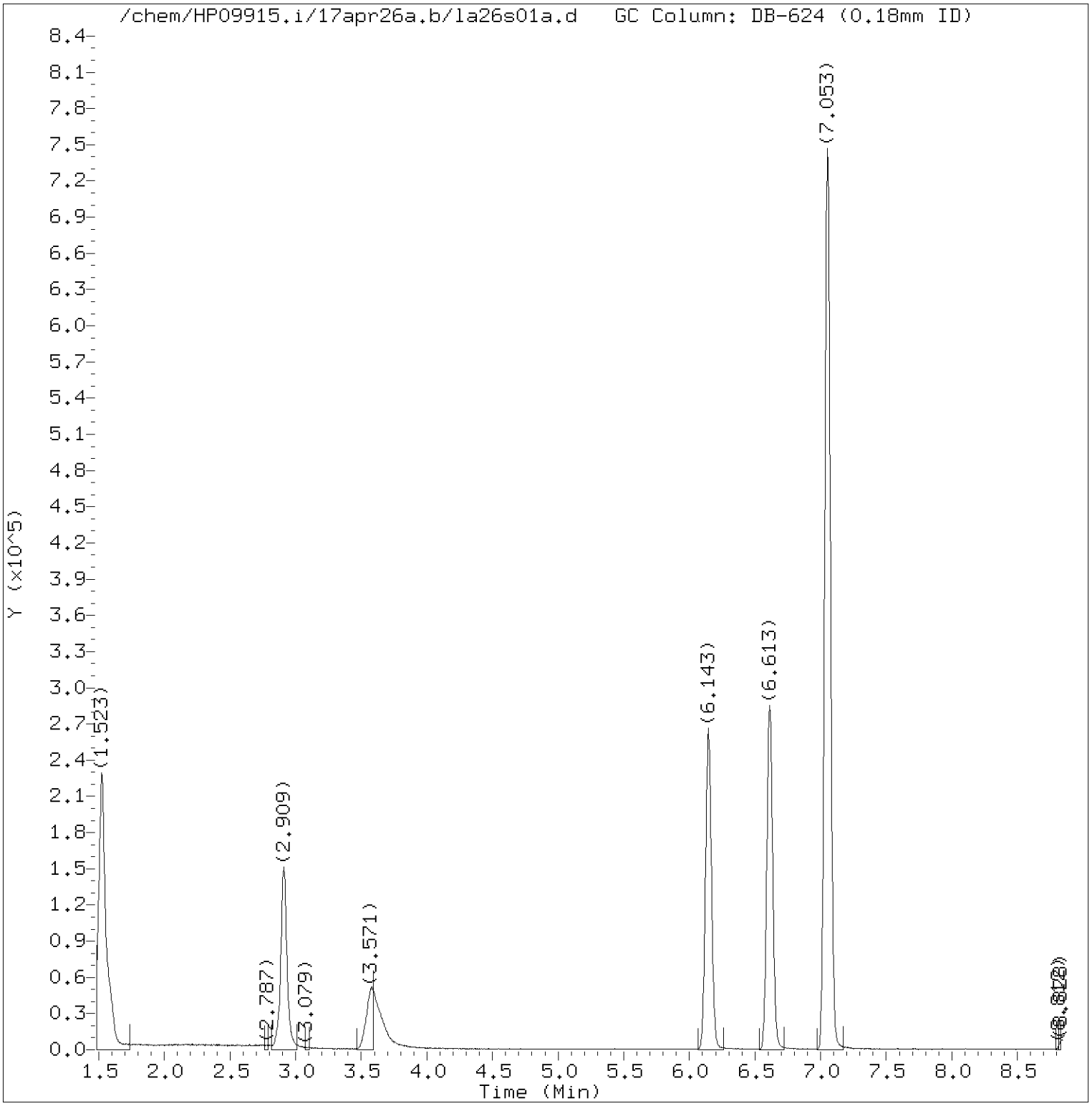

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 91347
On-column Amount (ng) : 21.3630
Integration start scan : 3359 Integration stop scan: 3407
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

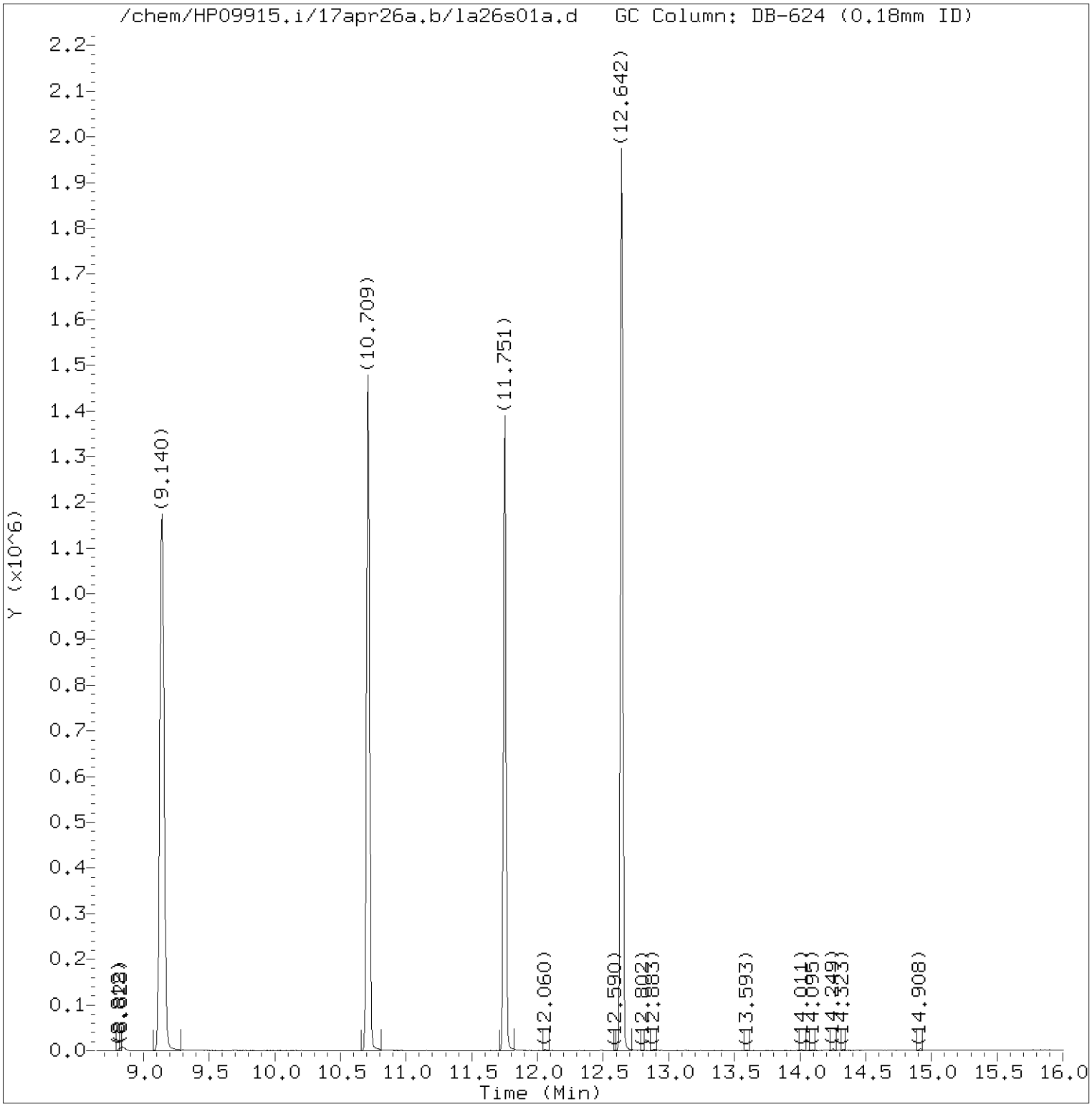
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 16) Acrolein | (1) | 2.909 | 56 | 230830 | 133.301 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 211536 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 268241 | 49.042 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 67821 | 49.864 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1120094 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1090751 | 50.311 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 849095 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 400969 | 49.759 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 459516 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17jul28a.b/l128t01.d



Date : 28-JUL-2017 08:15

Client ID: feb20-17

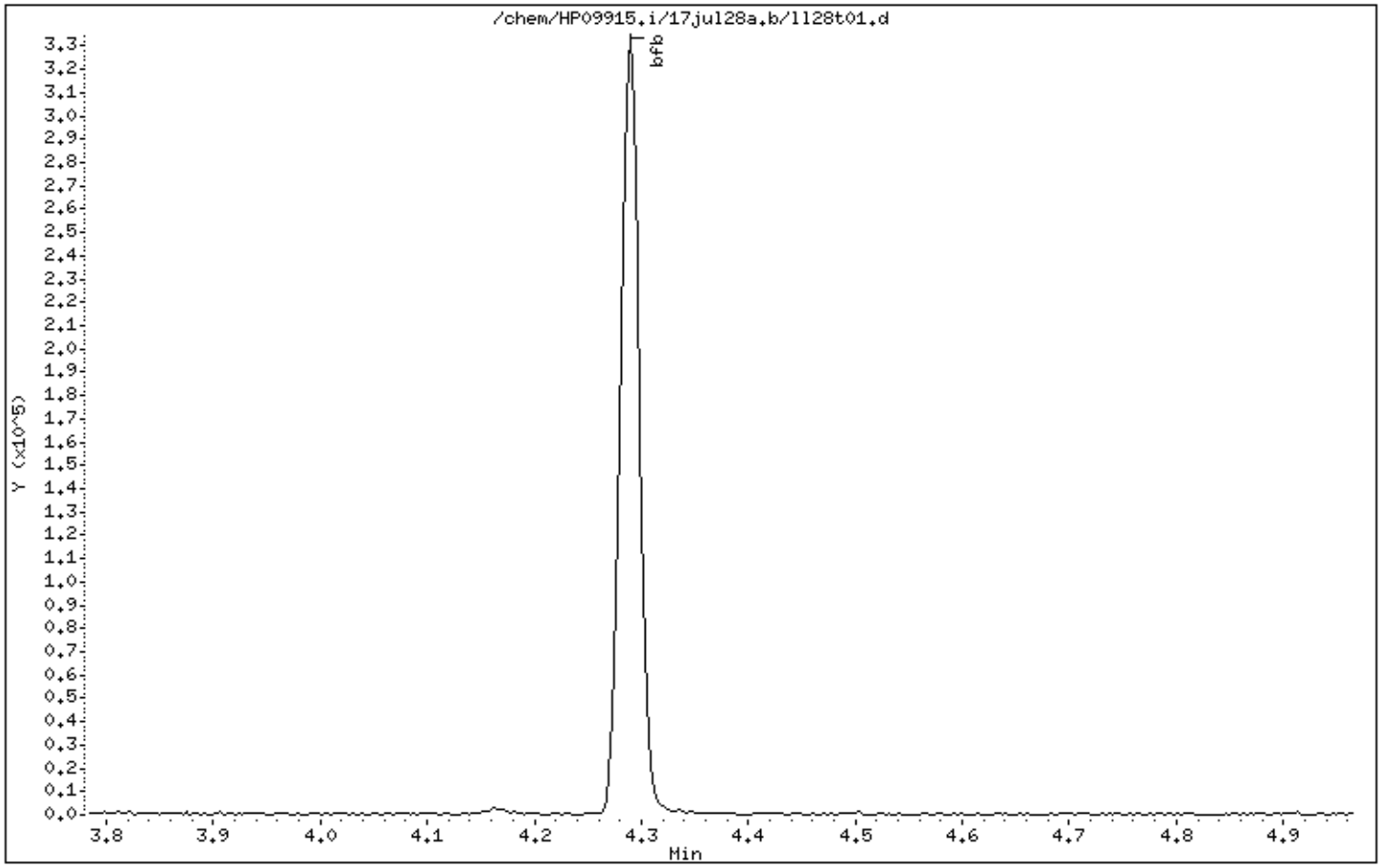
Instrument: HP09915.i

Sample Info: feb20-17;50NGBFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin A. Sposito on 07/28/2017 at 08:26.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17jul28a.b/l128t01.d

Date : 28-JUL-2017 08:15

Client ID: feb20-17

Instrument: HP09915.i

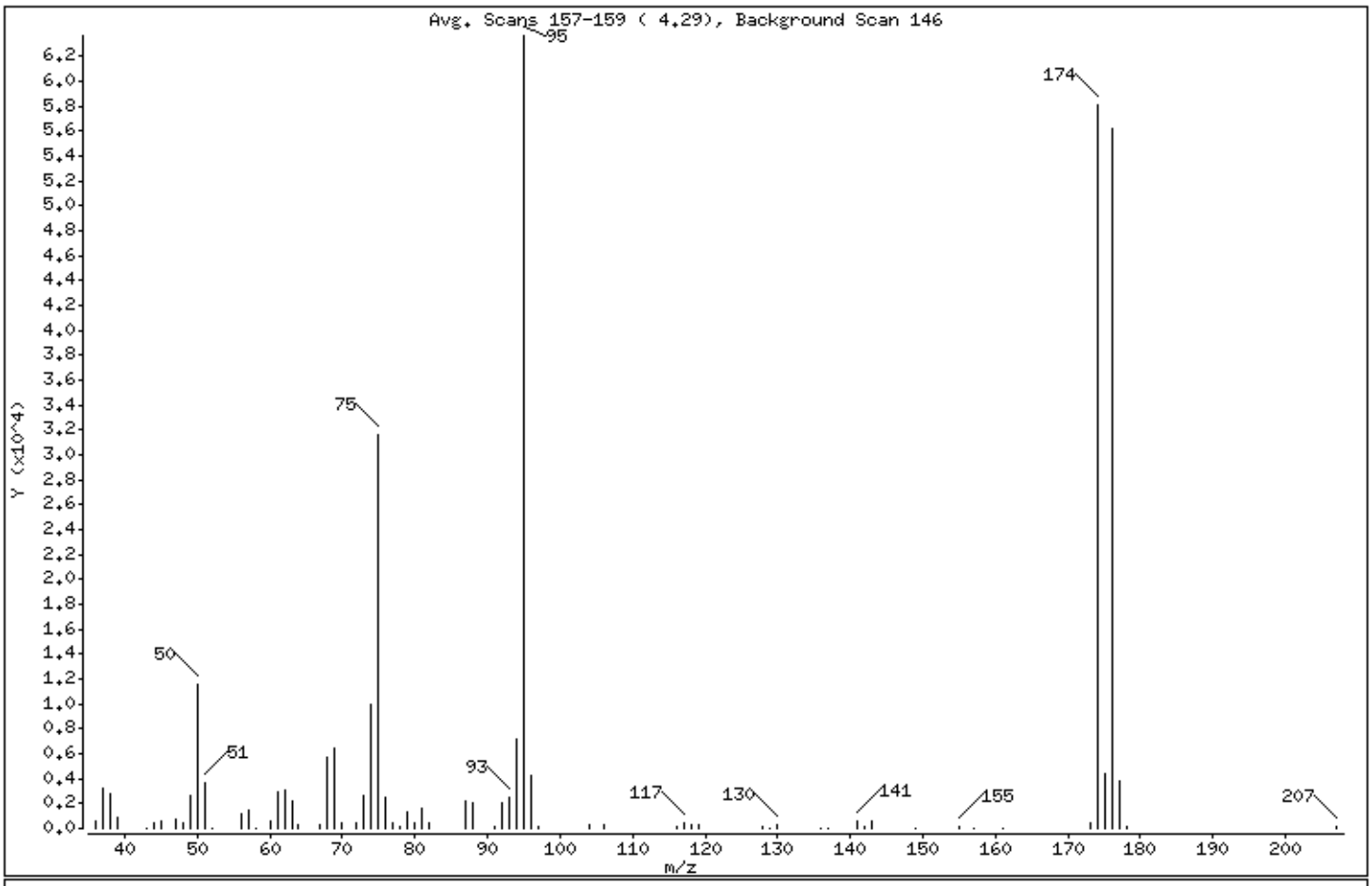
Sample Info: feb20-17;50NGBFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.24 |
| 75 | 30.00 - 60.00% of mass 95 | 49.67 |
| 96 | 5.00 - 9.00% of mass 95 | 6.78 |
| 173 | Less than 2.00% of mass 174 | 0.73 ( 0.80) |
| 174 | 50.00 - 100.00% of mass 95 | 91.25 |
| 175 | 5.00 - 9.00% of mass 174 | 6.90 ( 7.57) |
| 176 | 95.00 - 101.00% of mass 174 | 88.34 ( 96.81) |
| 177 | 5.00 - 9.00% of mass 176 | 6.08 ( 6.88) |

Digitally signed by Kevin A. Sposito on 07/28/2017 at 08:26.
Target 3.5 esignature user ID: kas02648

Date : 28-JUL-2017 08:15

Client ID: feb20-17 Instrument: HP09915.i

Sample Info: feb20-17;50NGBFB;1;3;;;;;;

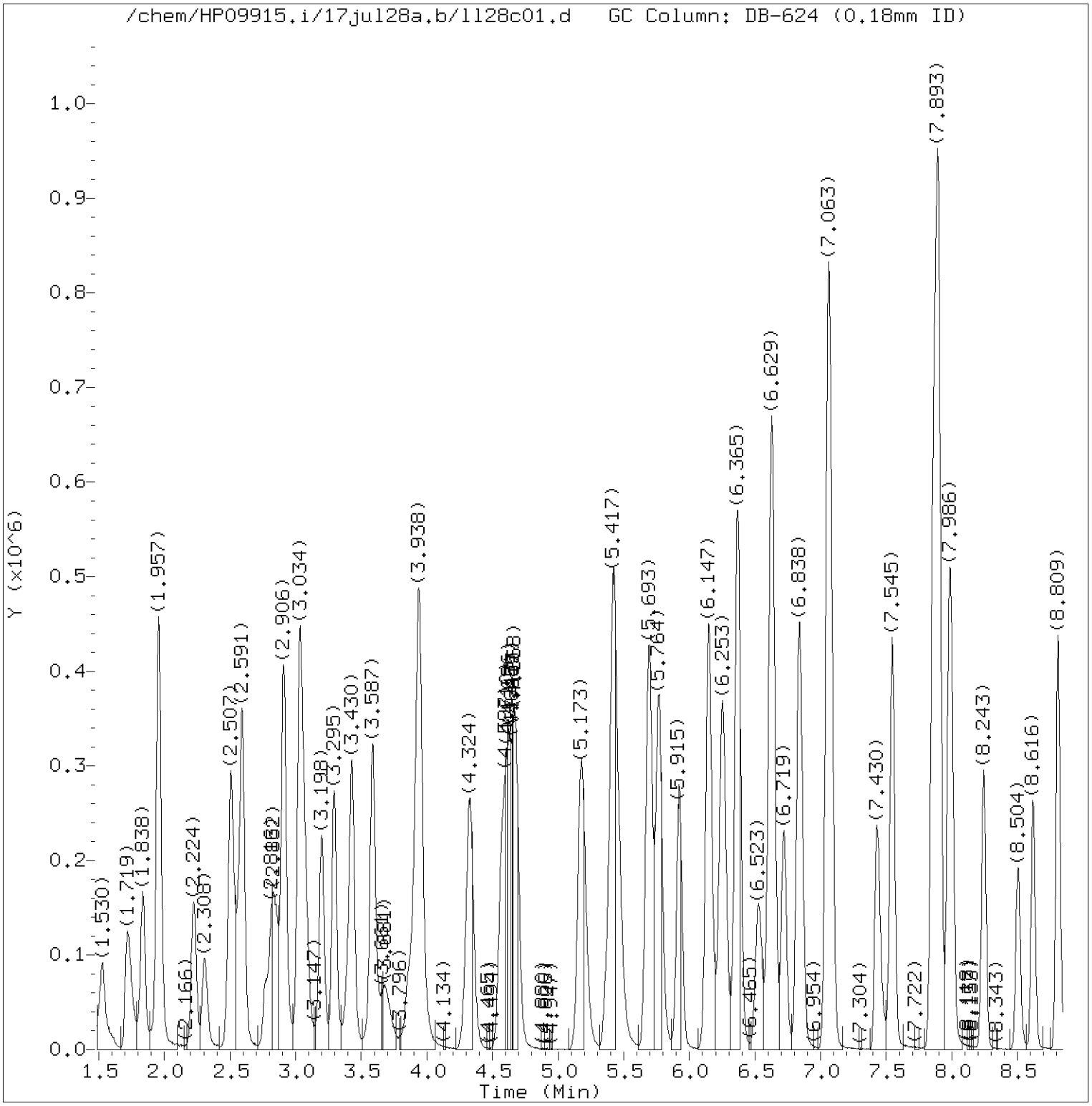
Operator: KAS02648

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: l128t01.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 146
Location of Maximum: 95.00
Number of points: 70

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 574 | 62.00 | 3044 | 87.00 | 2125 | 136.00 | 51 |
| 37.00 | 3167 | 63.00 | 2134 | 88.00 | 2070 | 137.00 | 61 |
| 38.00 | 2822 | 64.00 | 296 | 91.00 | 218 | 141.00 | 646 |
| 39.00 | 951 | 67.00 | 234 | 92.00 | 2052 | 142.00 | 108 |
| 43.00 | 57 | 68.00 | 5765 | 93.00 | 2427 | 143.00 | 525 |
| 44.00 | 486 | 69.00 | 6412 | 94.00 | 7155 | 149.00 | 51 |
| 45.00 | 579 | 70.00 | 416 | 95.00 | 63680 | 155.00 | 128 |
| 47.00 | 666 | 72.00 | 461 | 96.00 | 4318 | 157.00 | 60 |
| 48.00 | 504 | 73.00 | 2693 | 97.00 | 74 | 161.00 | 58 |
| 49.00 | 2590 | 74.00 | 10018 | 104.00 | 258 | 173.00 | 467 |
| 50.00 | 11618 | 75.00 | 31624 | 106.00 | 287 | 174.00 | 58104 |
| 51.00 | 3637 | 76.00 | 2554 | 116.00 | 211 | 175.00 | 4396 |
| 52.00 | 56 | 77.00 | 453 | 117.00 | 498 | 176.00 | 56256 |
| 56.00 | 1135 | 78.00 | 101 | 118.00 | 224 | 177.00 | 3873 |
| 57.00 | 1420 | 79.00 | 1275 | 119.00 | 305 | 178.00 | 112 |
| 58.00 | 67 | 80.00 | 437 | 128.00 | 122 | 207.00 | 123 |
| 60.00 | 604 | 81.00 | 1622 | 129.00 | 68 | | |
| 61.00 | 2870 | 82.00 | 375 | 130.00 | 243 | | |

Digitally signed by Kevin A. Sposito on 07/28/2017 at 08:26.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

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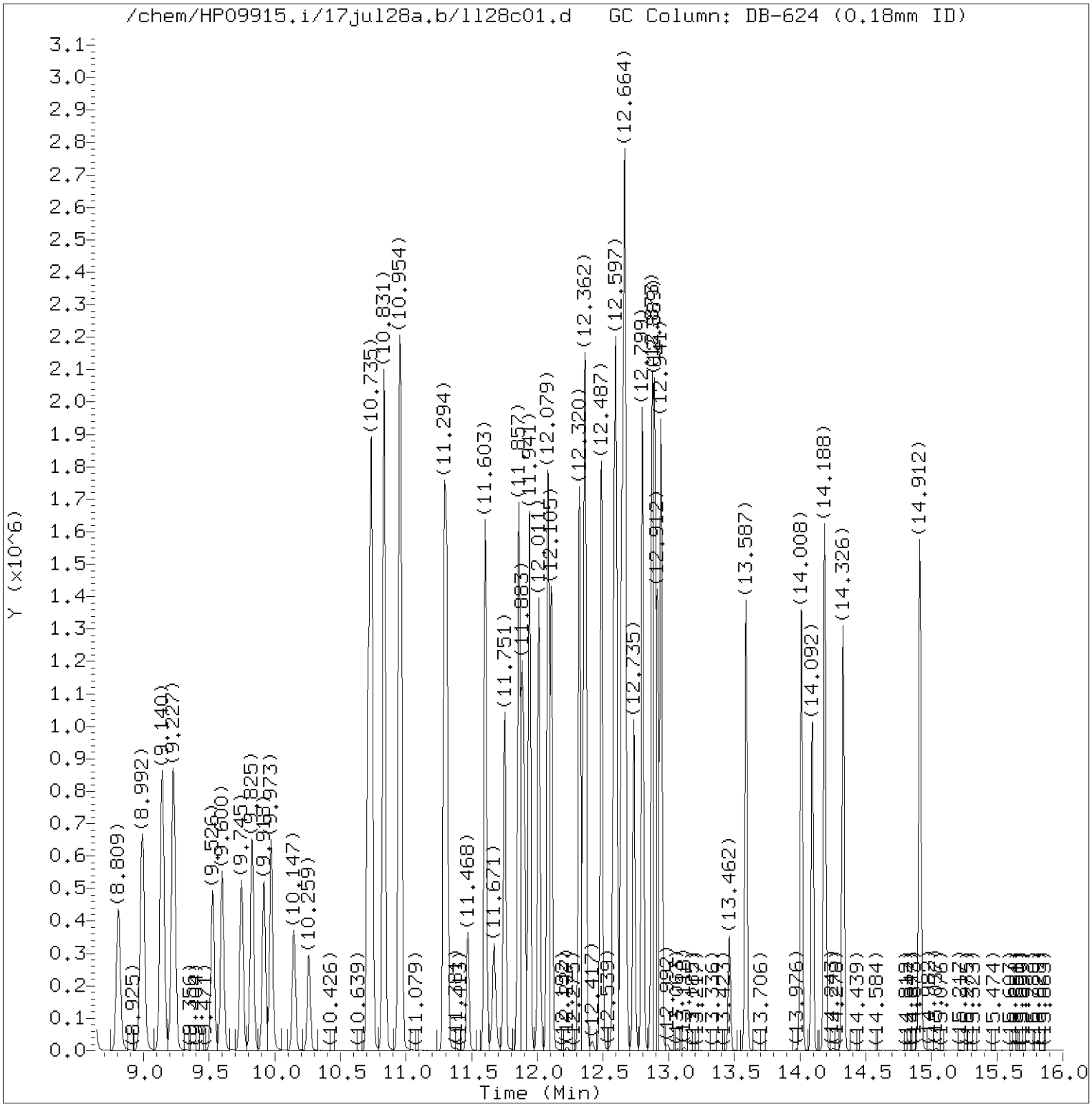
on 07/28/2017 at 09:19.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

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on 07/28/2017 at 09:19.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716 | 85 | 280399 | 63.730 |
| 4) Chloromethane | (2) | 1.838 | 50 | 240755 | 53.265 |
| 6) Vinyl Chloride | (2) | 1.954 | 62 | 228111 | 52.263 |
| 5) 1,3-Butadiene | (2) | 1.957 | 39 | 223043 | 83.780 |
| 8) Bromomethane | (2) | 2.224 | 94 | 160560M | 54.693 |
| 9) Chloroethane | (2) | 2.304 | 64 | 126999 | 51.631 |
| 10) Dichlorofluoromethane | (2) | 2.504 | 67 | 311614 | 51.938 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 317723 | 62.861 |
| 11) n-Pentane | (2) | 2.594 | 43 | 262847 | 63.147 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 46420 | 16.497 |
| 15) Freon 123a | (2) | 2.829 | 67 | 190064 | 56.465 |
| 16) Acrolein | (1) | 2.909 | 56 | 530011 | 416.347 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 146579 | 54.794 |
| 17) 1,1-Dichloroethene | (2) | 3.031 | 63 | 77265 | 57.054 |
| 18) Acetone | (1) | 3.050 | 58 | 50905 | 92.134 |
| 19) Freon 113 | (2) | 3.066 | 101 | 171084 | 63.539 |
| 21) 2-Propanol | (1) | 3.185 | 45 | 88340 | 241.191 |
| 22) Methyl Iodide | (2) | 3.198 | 142 | 312368 | 60.201 |
| 23) Carbon Disulfide | (2) | 3.295 | 76 | 532850 | 61.210 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 188699 | 48.601 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 254467 | 47.491 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 155508M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 178215 | 50.430 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 166919 | 277.418 |
| 31) Acrylonitrile | (2) | 3.857 | 53 | 106106 | 52.041 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 567570 | 57.916 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 174208 | 55.505 |
| 34) n-Hexane | (2) | 4.324 | 57 | 266208 | 55.331 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 322272 | 54.643 |
| 38) di-Isopropyl ether | (2) | 4.626 | 45 | 573522 | 50.665 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.681 | 53 | 301552 | 60.615 |
| 40) Ethyl t-butyl ether | (2) | 5.179 | 59 | 539746 | 55.405 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 284807 | 104.325 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 195838 | 54.453 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 257629 | 65.426 |
| 47) Propionitrile | (1) | 5.472 | 54 | 206229 | 234.840 |
| 48) Methacrylonitrile | (2) | 5.697 | 67 | 269559 | 132.609 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 102828 | 54.248 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 73164 | 94.325 |
| 51) Chloroform | (2) | 5.922 | 83 | 328427 | 58.423 |
| 52)$Dibromofluoromethane | (2) | 6.150 | 113 | 192141 | 53.273 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 195585 | 52.920 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 286843 | 55.839 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 370046 | 109.957 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 315032 | 53.861 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 269124 | 56.282 |
| 54) Cyclohexane | (2) | 6.256 | 69 | 95163 | 56.130 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 245993 | 65.601 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 251800 | 55.072 |
| 58) Isobutyl Alcohol | (1) | 6.529 | 41 | 145910 | 690.685 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 45572 | 50.812 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 246101 | 58.012 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 28715 | 50.478 |
| 60) Benzene | (2) | 6.632 | 78 | 715816 | 53.110 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 286946 | 62.930 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 98 | 23060 | 57.020 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 533648 | 55.195 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 738595 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 284585 | 52.831 |
| 69) n-Butanol | (1) | 7.426 | 56 | 227101 | 1333.558 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 194819 | 55.932 |
| 72) Methylcyclohexane | (2) | 7.861 | 83 | 316102 | 51.507 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 146302 | 52.826 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 189251 | 51.293 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 37424 | 703.922 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 172161 | 54.512 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 132109 | 56.936 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 248730 | 59.399 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 160745 | 135.372 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 146180 | 51.541 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 304831 | 55.853 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 595187 | 105.798 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 742950 | 49.738 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 483280 | 49.109 |
| 88) Toluene | (3) | 9.227 | 92 | 464094 | 53.464 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 286759 | 58.915 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/28/2017 at 09:19.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 300232 | 54.762 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 180905 | 54.083 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 221110 | 57.591 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 302813 | 52.173 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 435449 | 103.924 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 591590 | 114.768 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 204196 | 58.938 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 199034 | 54.353 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 585019 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 255781 | 51.309 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 537978 | 53.710 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 195073 | 58.976 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 913294 | 54.544 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 713089 | 109.392 |
| 107) o-Xylene | (3) | 11.291 | 106 | 356163 | 54.940 |
| 109) Styrene | (3) | 11.311 | 104 | 601365 | 56.114 |
| 110) Bromoform | (3) | 11.471 | 173 | 157922 | 62.774 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 931541 | 56.225 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 127571 | 636.111 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 289413 | 52.127 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 265515 | 54.520 |
| 108) Xylene (Total) | (3) | | 106 | 1069252 | 164.332 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 296130 | 49.610 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 251791 | 52.380 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 177356 | 103.690 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 89832 | 53.238 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 1106477 | 52.093 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 227706 | 51.509 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 827884 | 54.659 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 236119 | 51.320 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 170537M | 52.087 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 150569 | 58.247 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 843340 | 54.054 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 1024946 | 53.049 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 475962 | 52.007 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 914130 | 53.586 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 336292 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 492588 | 52.054 |

M = Compound was manually integrated.
* = Compound is an internal standard.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 864685 | 52.898 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 575423 | 58.131 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 536641 | 52.653 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 557085 | 52.050 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 442218 | 51.892 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 470797 | 52.335 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 450010 | 52.467 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1543736 | 157.171 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 70382 | 55.756 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 380971 | 52.235 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 358317 | 50.645 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 167686 | 54.574 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1067795 | 50.015 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 349506 | 51.206 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 635968 | 46.068 |



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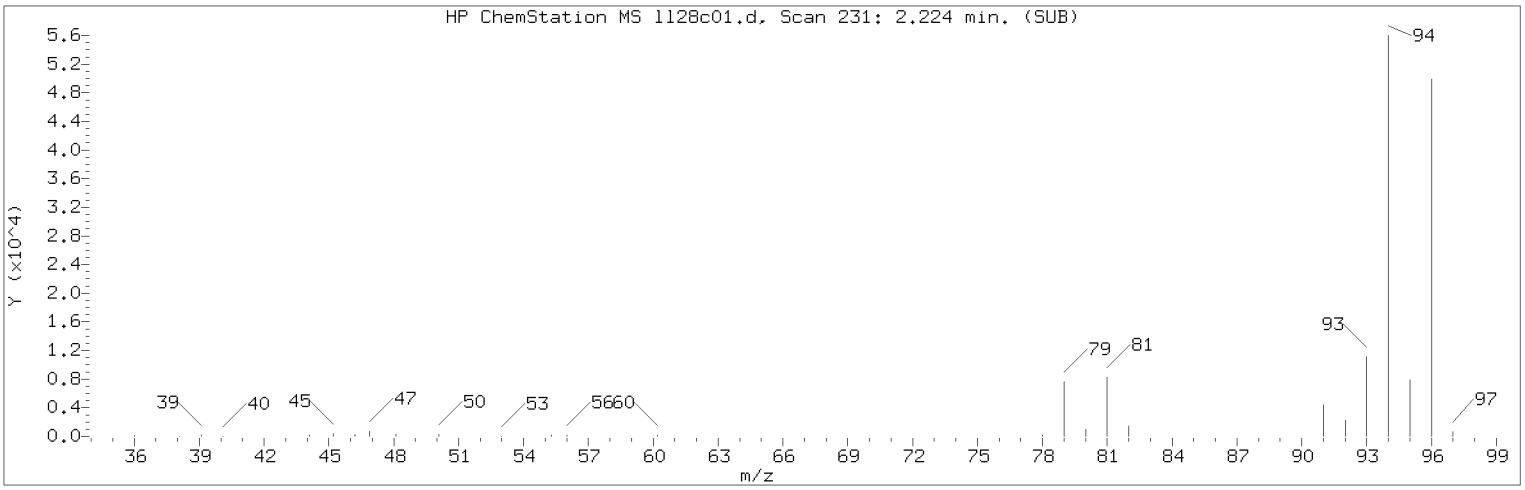
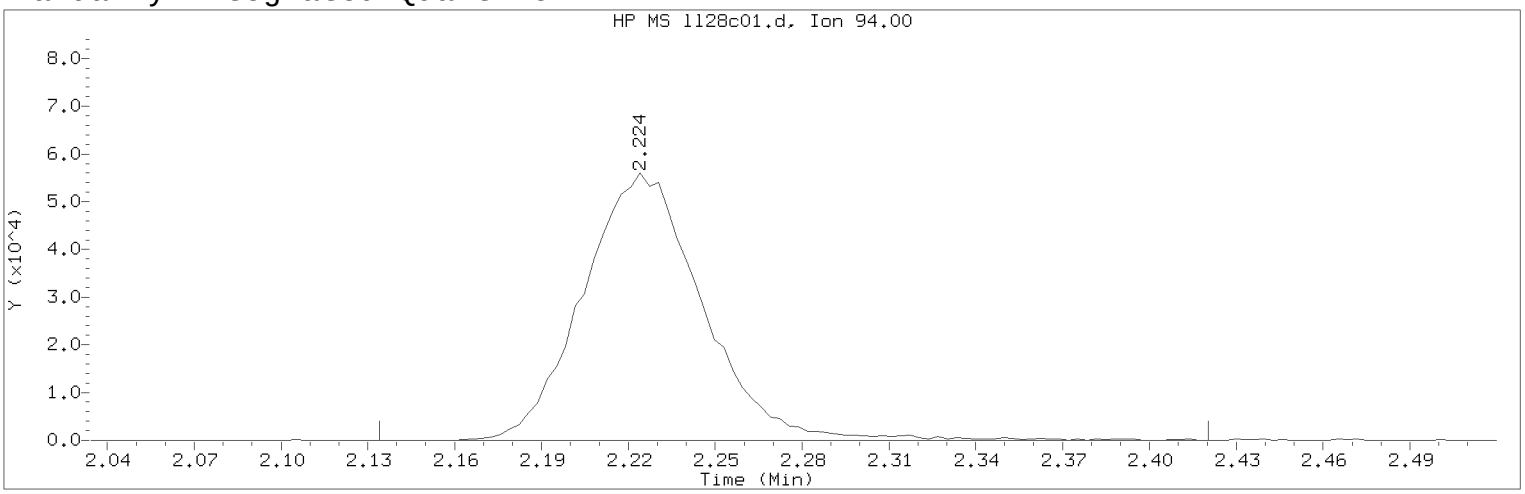
on 07/28/2017 at 09:19.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d  Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050  Lab Sample ID: VSTD050

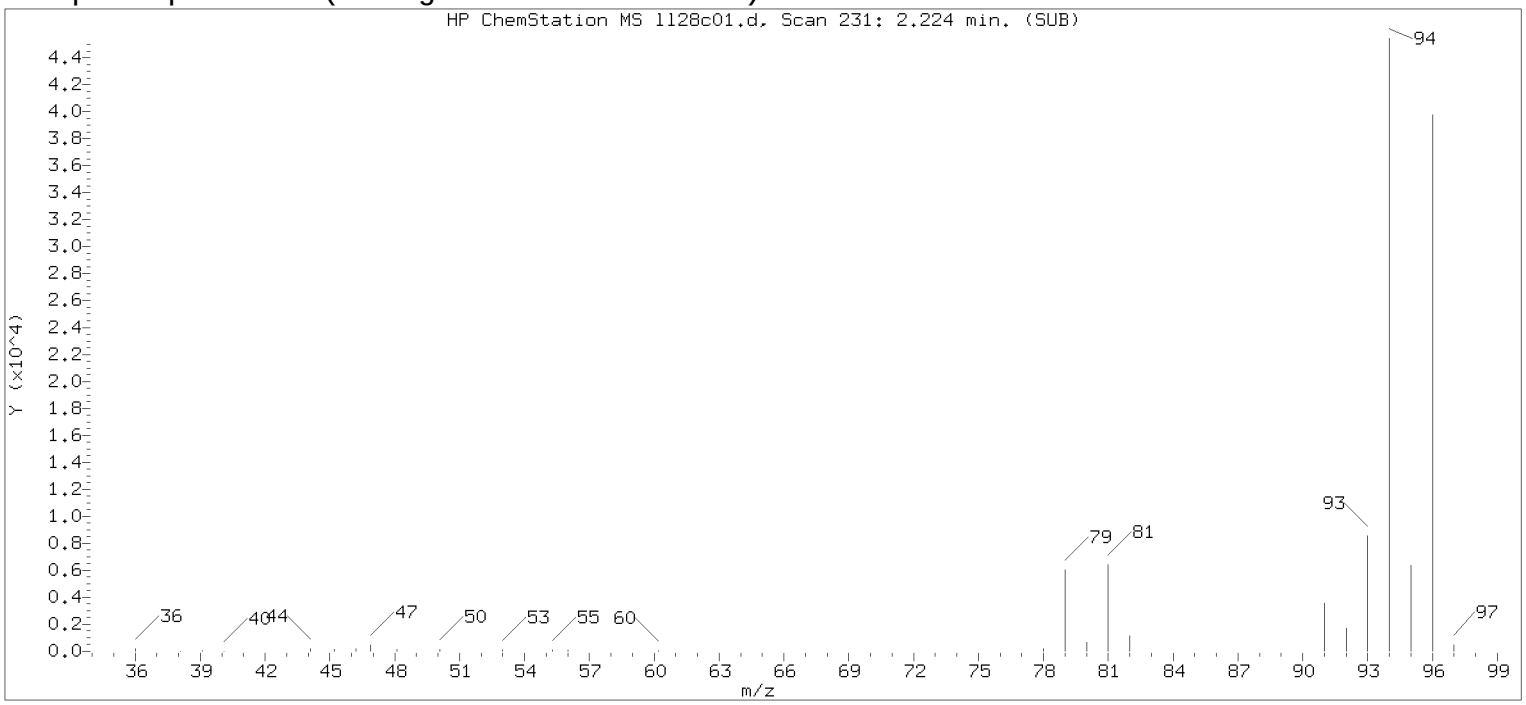
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 231
Retention Time (minutes): 2.224
Quant Ion : 94.00
Area (flag) : 160560M
On-Column Amount (ng) : 54.6932
Integration start scan : 202  Integration stop scan: 291
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

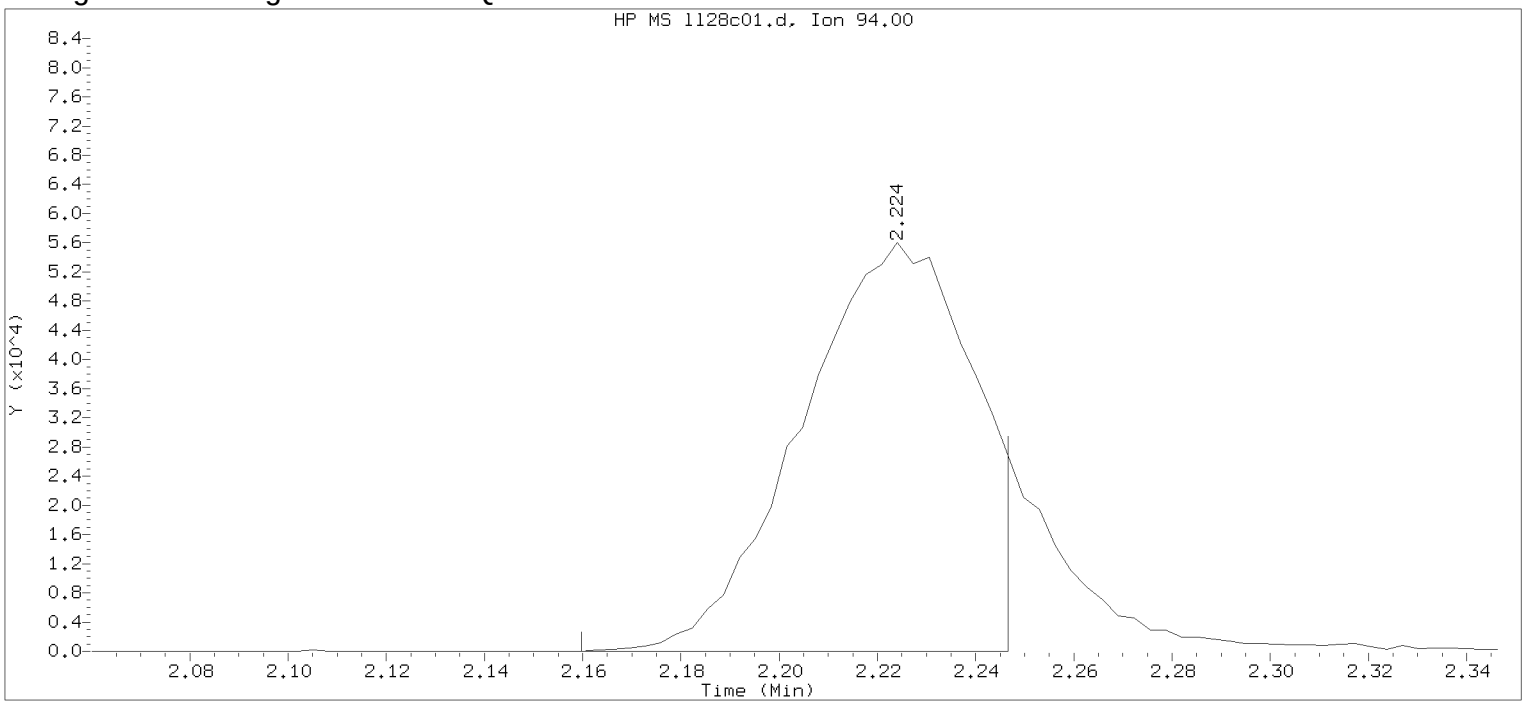
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 07/28/2017 at 09:19.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Joshua E. Berrios on 07/28/2017 at 17:14.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

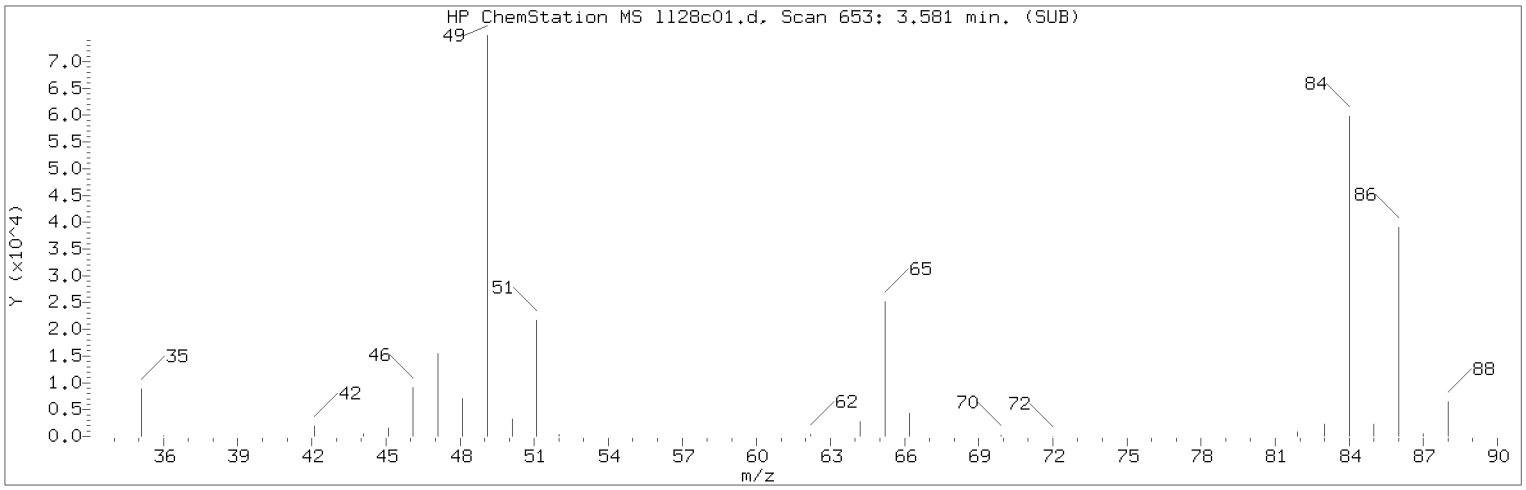
Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:09 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

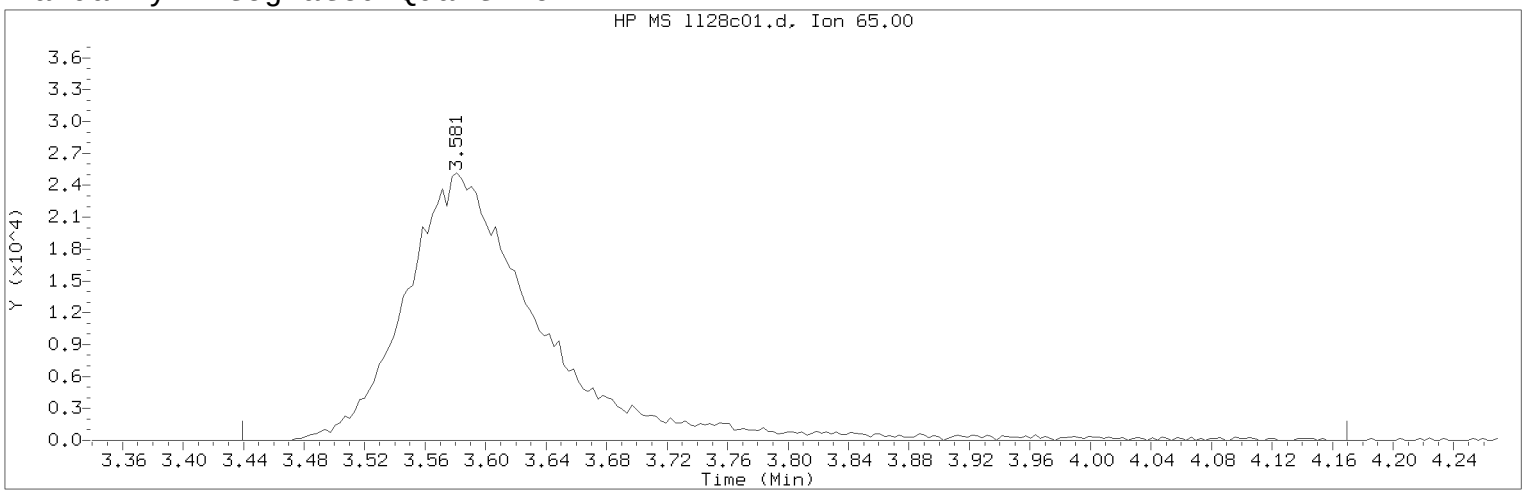
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 231
Retention Time (minutes): 2.224
Quant Ion : 94.00
Area : 134882
On-column Amount (ng) : 45.9464
Integration start scan : 210 Integration stop scan: 237
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 07/28/2017 at 09:19.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d  Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050  Lab Sample ID: VSTD050

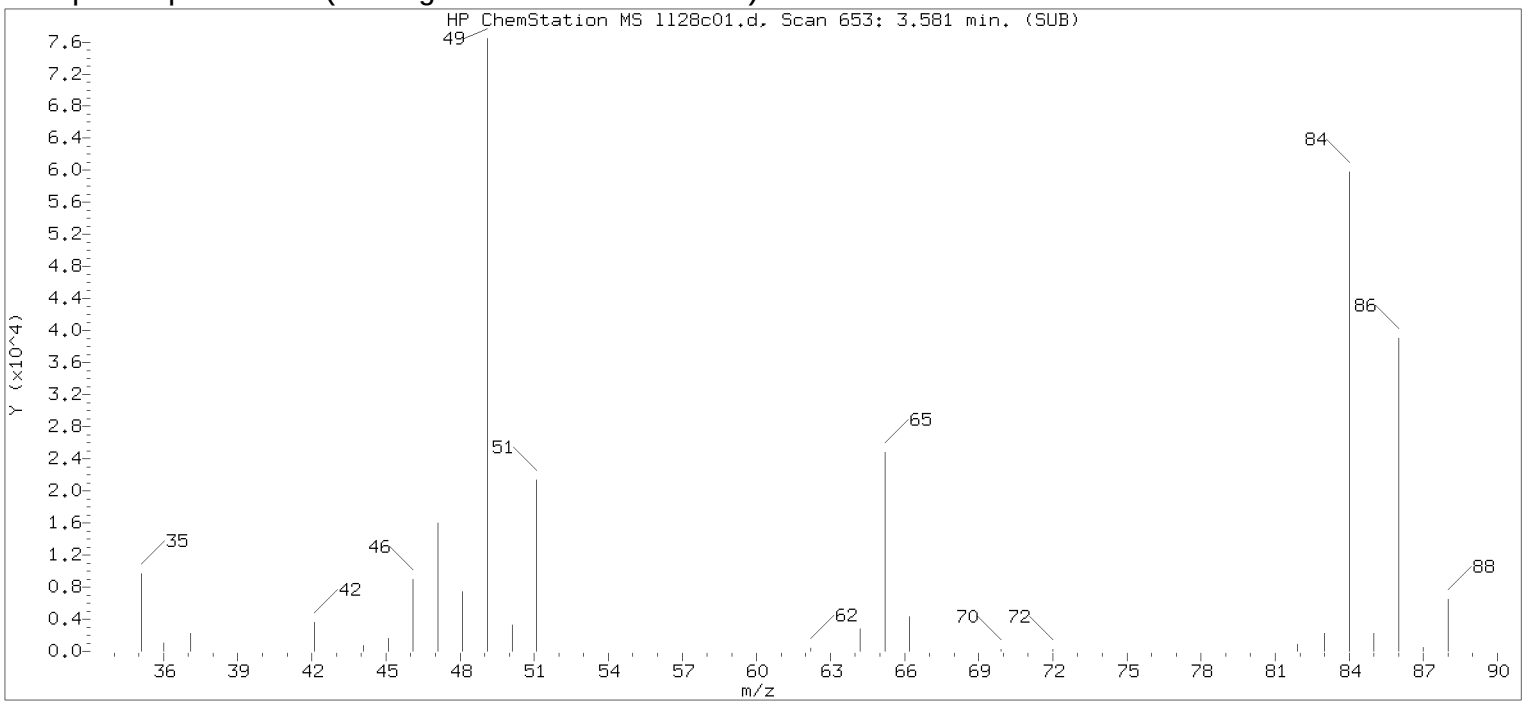
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 155508M
On-Column Amount (ng) : 250.0000
Integration start scan : 608  Integration stop scan: 835
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

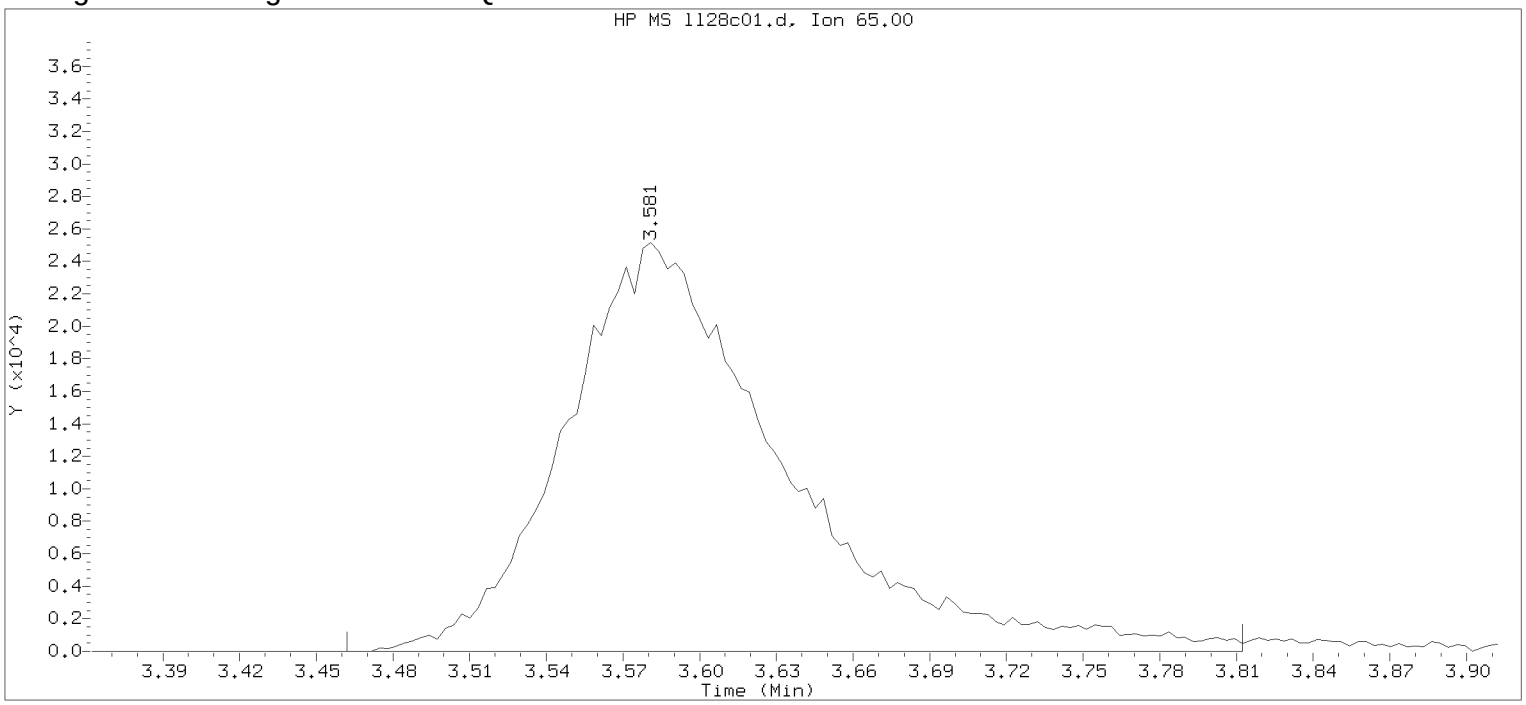
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 07/28/2017 at 09:19.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Joshua E. Berrios on 07/28/2017 at 17:14.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

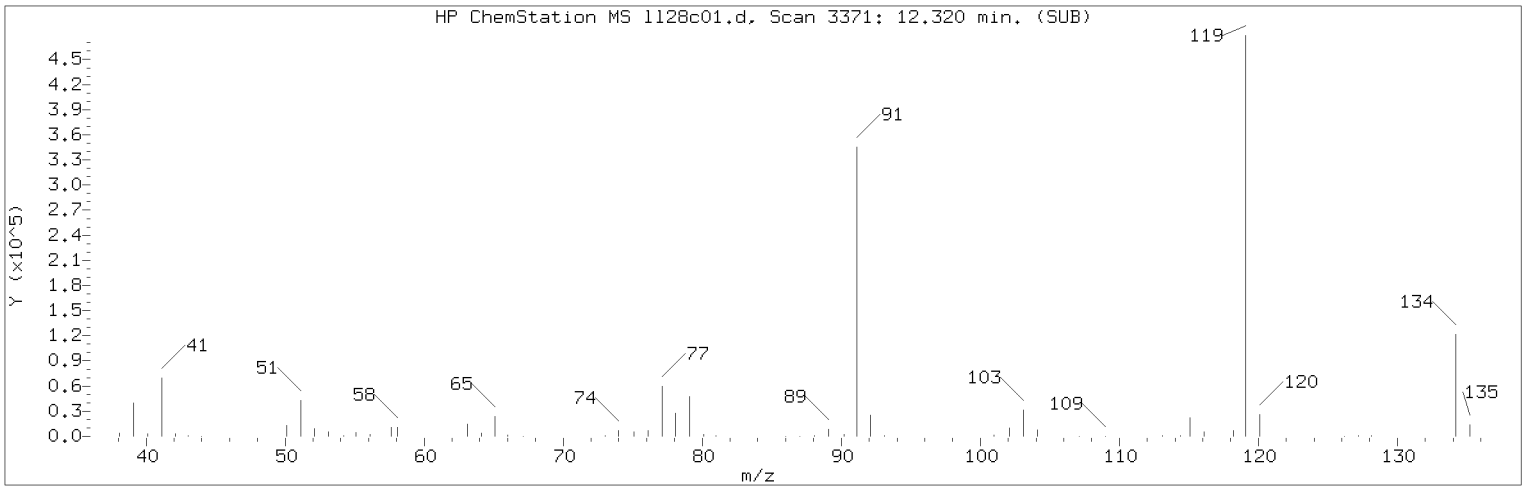
Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:09 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

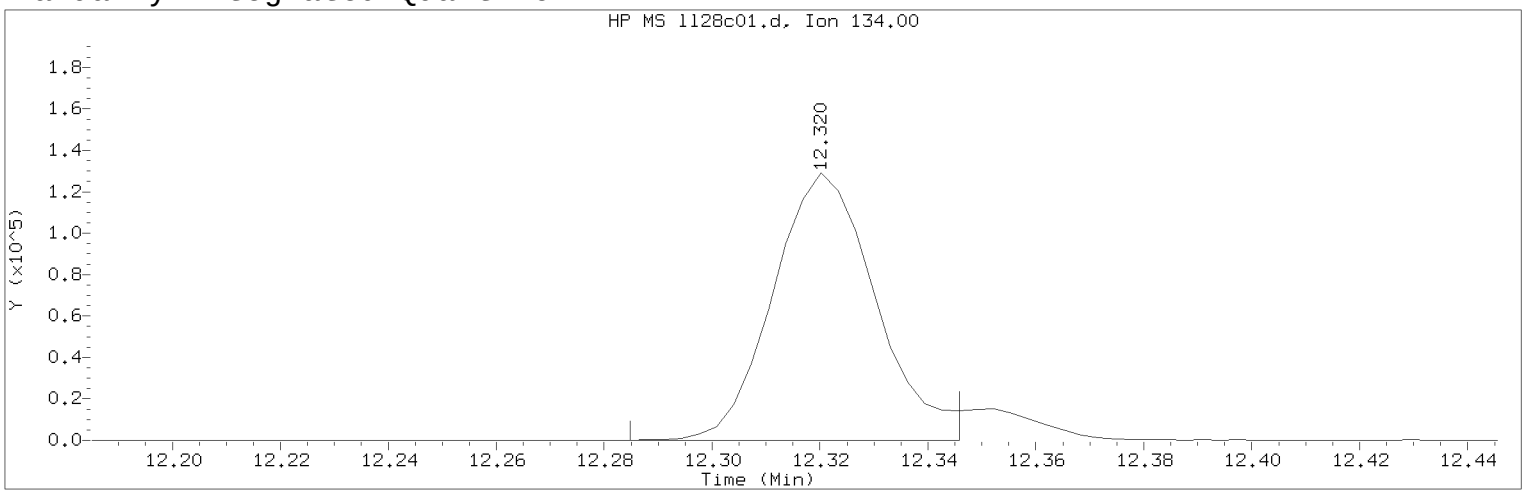
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 149740
On-column Amount (ng) : 250.0000
Integration start scan : 615 Integration stop scan: 724
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 07/28/2017 at 09:19.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:18 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

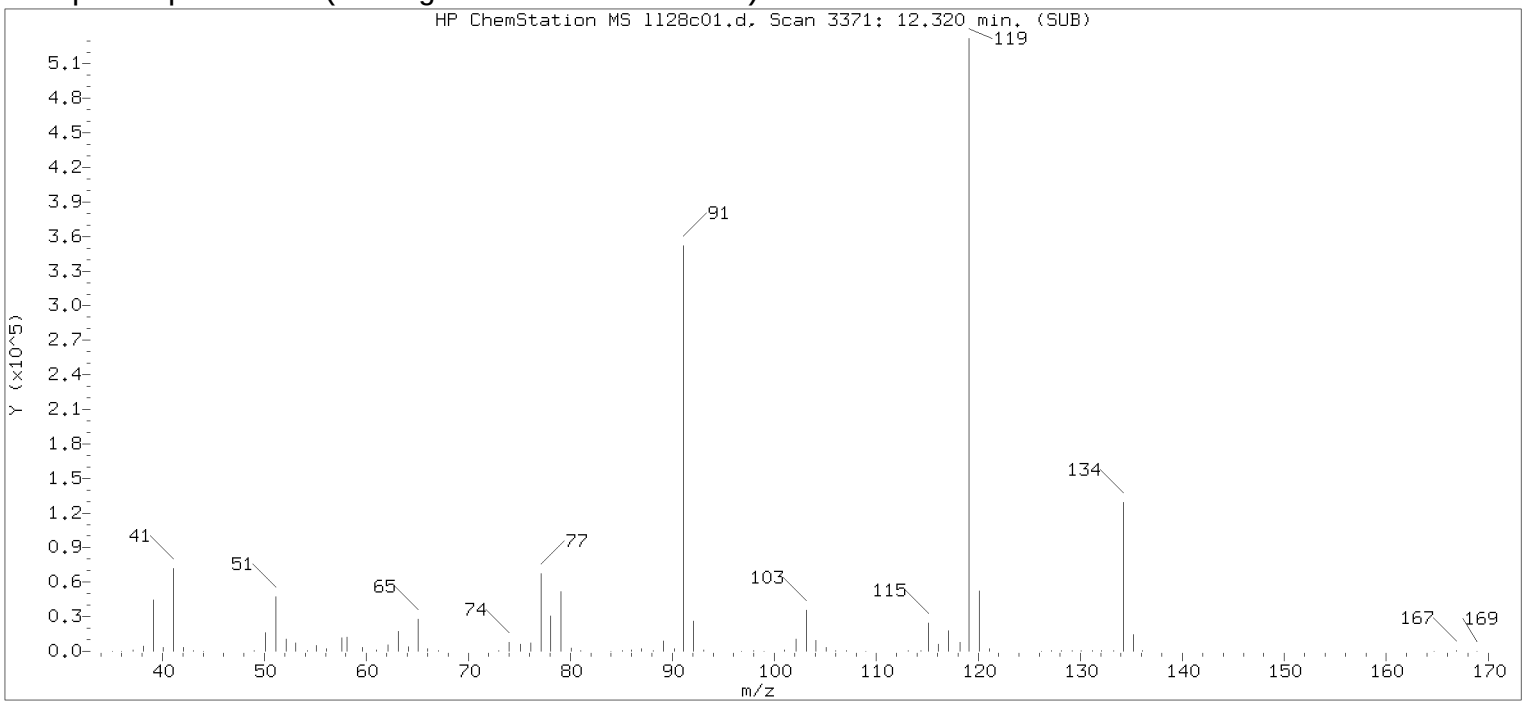
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 170537M
On-Column Amount (ng) : 52.0865
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

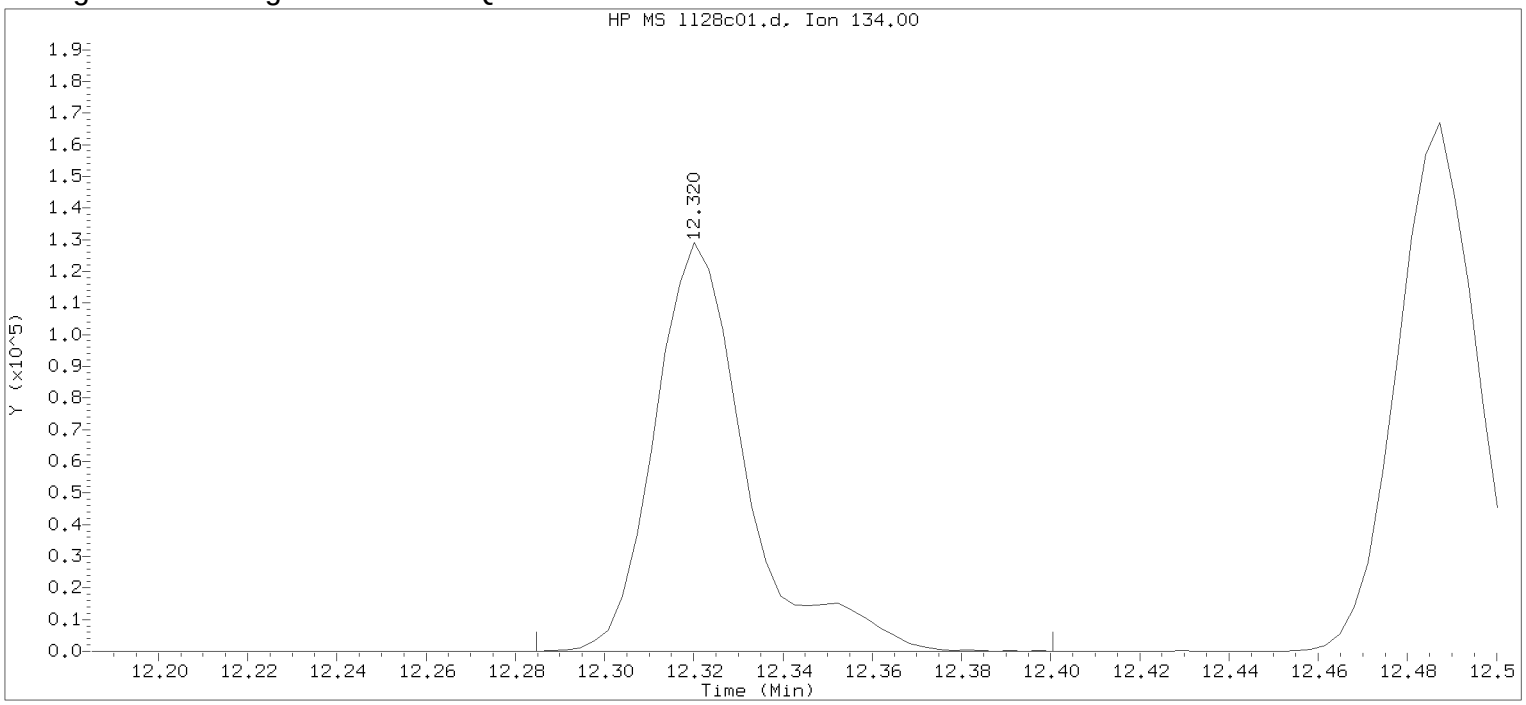
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 07/28/2017 at 09:19.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Joshua E. Berrios on 07/28/2017 at 17:14.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28c01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 08:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 28-JUL-2017 09:09
Date, time and analyst ID of latest file update: 28-Jul-2017 09:09 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 184266
On-column Amount (ng) : 56.2796
Integration start scan : 3359 Integration stop scan: 3395
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 07/28/2017 at 09:19.
Target 3.5 esignature userKAS02648

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28ec1.d Injection date and time: **28-JUL-2017 15:04**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 15:22 Automation

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091-SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 12:01
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.010) | 650 | 65 | 150157 ( -3) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.006) | 1731 | 96 | 726354 ( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 578600 ( -1) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 327376 ( -3) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.001) | 113 | 188556 | 53.161 | 106% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 44654 | 50.629 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 735690 | 49.798 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 284417 | 51.796 | 104% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713( 0.000) | 85 | 269896 | 62.376 | 62.38 | | | 0.5 | 1 |
| 4) Chloromethane | (2) | 1.819( 0.002) | 50 | 228730 | 51.457 | 51.46 | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | 1.938( 0.002) | 62 | 220209 | 51.303 | 51.30 | | | 0.5 | 1 |
| 8) Bromomethane | (2) | 2.211( 0.001) | 94 | 155449 | 53.845 | 53.84 | | | 0.5 | 1 |
| 9) Chloroethane | (2) | 2.292( 0.001) | 64 | 123792 | 51.176 | 51.18 | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | 2.552( 0.001) | 101 | 311972 | 62.764 | 62.76 | | | 0.5 | 1 |
| 16) Acrolein | (1) | 2.896( 0.001) | 56 | 531802 | 432.641 | 432.64 | | | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | 3.012( 0.001) | 96 | 143735 | 54.637 | 54.64 | | | 0.5 | 1 |
| 18) Acetone | (1) | 3.031( 0.003) | 58 | 53761 | 100.771 | 100.77 | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | 3.279( 0.001) | 76 | 515040 | 60.161 | 60.16 | | | 1 | 5 |
| 28) Methylene Chloride | (2) | 3.574( 0.000) | 84 | 176083 | 50.667 | 50.67 | | | 2 | 4 |
| 31) Acrylonitrile | (2) | 3.845( 0.001) | 53 | 105345 | 52.539 | 52.54 | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | 3.928( 0.001) | 96 | 170855 | 55.354 | 55.35 | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.912( 0.001) | 73 | 560717 | 58.181 | 58.18 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.555( 0.001) | 63 | 312006 | 53.794 | 53.79 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.404( 0.001) | 96 | 191607 | 54.174 | 54.17 | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | 5.375( 0.001) | 43 | 284997 | 106.153 | 106.15 | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | 5.420( 0.001) | 77 | 246548 | 63.667 | 63.67 | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | 5.758( 0.000) | 128 | 103356 | 55.446 | 55.45 | | | 1 | 5 |
| 51) Chloroform | (2) | 5.918(-0.000) | 83 | 319938 | 57.872 | 57.87 | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | 6.137( 0.001) | 97 | 282892 | 55.998 | 56.00 | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | 6.362(-0.000) | 75 | 249448 | 55.477 | 55.48 | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | 6.356( 0.000) | 117 | 238745 | 64.741 | 64.74 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.623( 0.000) | 78 | 706089 | 53.271 | 53.27 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.713( 0.000) | 62 | 282862 | 63.080 | 63.08 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.539(-0.000) | 95 | 188680 | 55.083 | 55.08 | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | 7.883(-0.000) | 63 | 186341 | 51.355 | 51.36 | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | 7.992(-0.000) | 93 | 132052 | 57.871 | 57.87 | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | 8.237(-0.000) | 83 | 245893 | 59.711 | 59.71 | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806(-0.000) | 75 | 301629 | 56.198 | 56.20 | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | 8.986(-0.000) | 43 | 599540 | 108.367 | 108.37 | | | 3 | 10 |

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# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28ec1.d Injection date and time: **28-JUL-2017 15:04**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 15:22 Automation

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091-SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 12:01
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

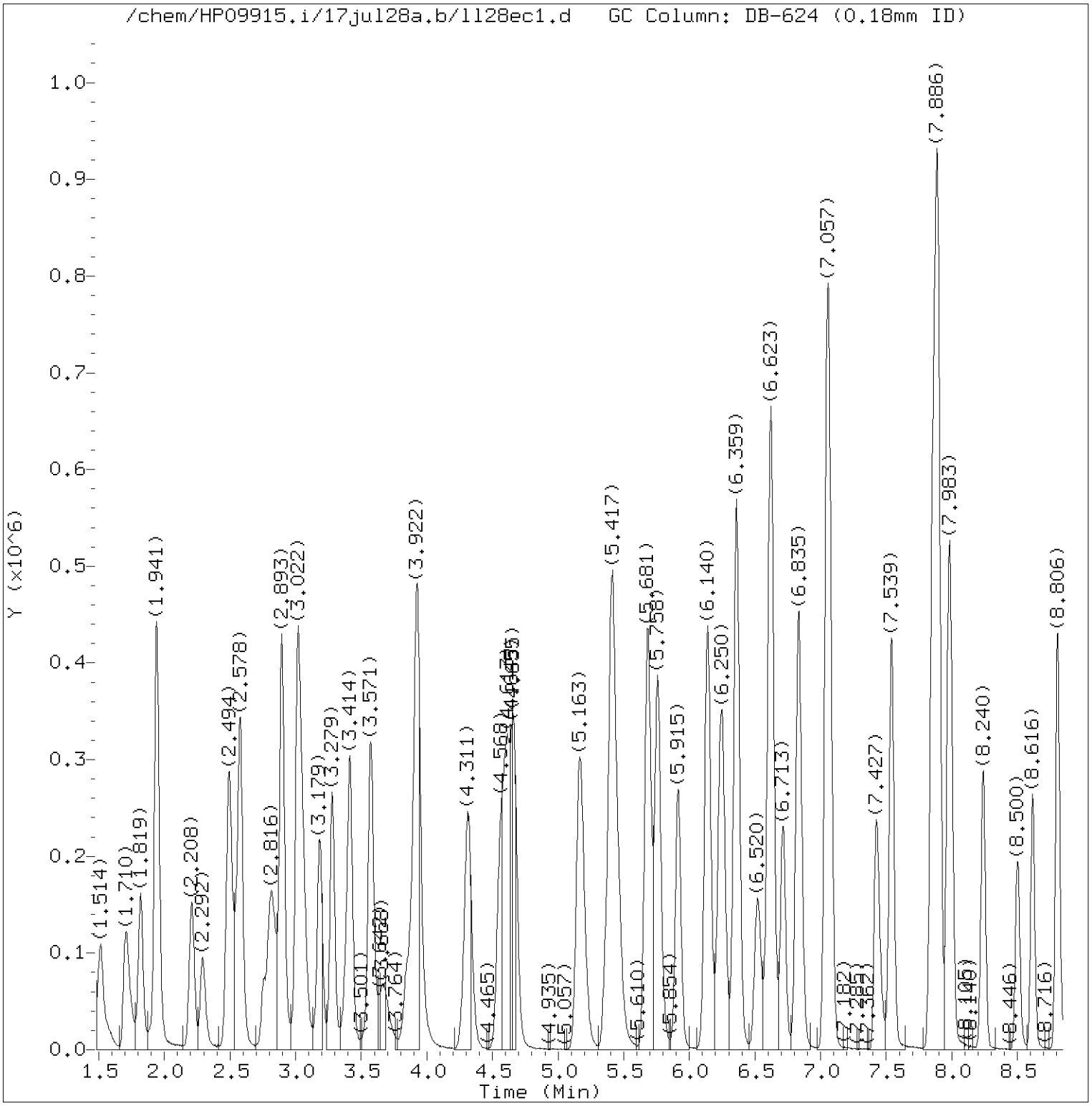
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 88) Toluene | (3) | 9.224( 0.000) | 92 | 449951 | 52.410 | 52.41 | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526(-0.000) | 75 | 280804 | 58.332 | 58.33 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745( 0.000) | 97 | 178227 | 53.874 | 53.87 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.828(-0.000) | 166 | 212876 | 56.061 | 56.06 | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | 9.915( 0.000) | 76 | 302410 | 52.682 | 52.68 | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | 9.970( 0.000) | 43 | 435983 | 105.206 | 105.21 | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | 10.147(-0.000) | 129 | 197913 | 57.758 | 57.76 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.259( 0.000) | 107 | 200651 | 55.403 | 55.40 | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | 10.738( 0.000) | 112 | 529905 | 53.491 | 53.49 | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828( 0.000) | 131 | 193331 | 59.098 | 59.10 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.832( 0.000) | 91 | 895199 | 54.056 | 54.06 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 695075 | 107.812 | 107.81 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291( 0.000) | 106 | 350465 | 54.661 | 54.66 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 1045540 | 162.472 | 162.47 | | | 0.5 | 1 |
| 109) Styrene | (3) | 11.307( 0.000) | 104 | 592194 | 55.872 | 55.87 | | | 1 | 5 |
| 110) Bromoform | (3) | 11.468( 0.000) | 173 | 152042 | 61.108 | 61.11 | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 11.603( 0.000) | 105 | 908850 | 55.464 | 55.46 | | | 1 | 5 |
| 115) Bromobenzene | (4) | 11.860(-0.000) | 156 | 249642 | 53.348 | 53.35 | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857(-0.000) | 83 | 292353 | 50.311 | 50.31 | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899( 0.000) | 110 | 90514 | 55.104 | 55.10 | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | 11.941(-0.000) | 91 | 1075478 | 52.013 | 52.01 | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | 12.012(-0.000) | 126 | 221206 | 51.402 | 51.40 | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | 12.105( 0.000) | 126 | 231235 | 51.627 | 51.63 | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079(-0.000) | 105 | 803411 | 54.488 | 54.49 | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | 12.320(-0.000) | 134 | 180020 | 56.480 | 56.48 | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365(-0.000) | 105 | 823510 | 54.220 | 54.22 | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | 12.487(-0.000) | 105 | 989731 | 52.622 | 52.62 | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581(-0.000) | 146 | 464953 | 52.188 | 52.19 | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | 12.600(-0.000) | 119 | 888803 | 53.520 | 53.52 | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658(-0.000) | 146 | 478738 | 51.968 | 51.97 | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915(-0.000) | 146 | 460798 | 52.618 | 52.62 | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | 12.892( 0.000) | 92 | 420626 | 50.703 | 50.70 | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462(-0.000) | 75 | 67927 | 55.277 | 55.28 | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008( 0.000) | 180 | 349867 | 50.797 | 50.80 | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | 14.095(-0.000) | 225 | 162615 | 54.365 | 54.37 | | | 2 | 5 |
| 148) Naphthalene | (4) | 14.188( 0.000) | 128 | 1049902 | 50.516 | 50.52 | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330(-0.000) | 180 | 341239 | 51.356 | 51.36 | | | 1 | 5 |

Total number of targets = 68

Digitally signed by Kevin Kelly on 07/28/2017 at 15:32. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 07/28/2017 at 17:22. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

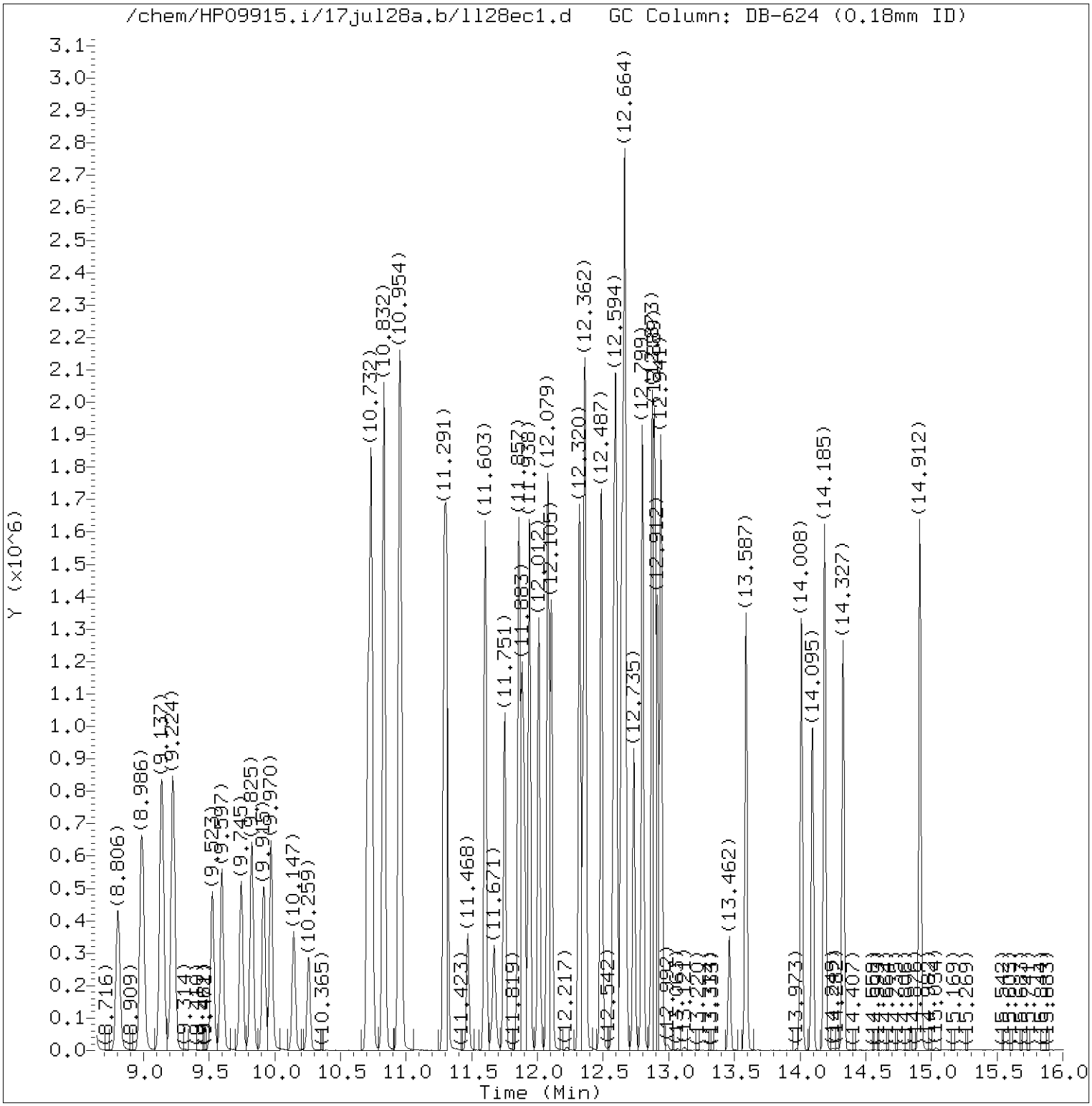
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28ec1.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 15:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 12:01
Date, time and analyst ID of latest file update: 28-Jul-2017 15:22 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Kevin Kelly
on 07/28/2017 at 15:32.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28ec1.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 15:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 12:01
Date, time and analyst ID of latest file update: 28-Jul-2017 15:22 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Kevin Kelly
on 07/28/2017 at 15:32.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28ec1.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 15:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 12:01
Date, time and analyst ID of latest file update: 28-Jul-2017 15:22 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 269896 | 62.376 |
| 4) Chloromethane | (2) | 1.819 | 50 | 228730 | 51.457 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 220209 | 51.303 |
| 8) Bromomethane | (2) | 2.211 | 94 | 155449 | 53.845 |
| 9) Chloroethane | (2) | 2.292 | 64 | 123792 | 51.176 |
| 12) Trichlorofluoromethane | (2) | 2.552 | 101 | 311972 | 62.764 |
| 16) Acrolein | (1) | 2.896 | 56 | 531802 | 432.641 |
| 17) 1,1-Dichloroethene | (2) | 3.012 | 96 | 143735 | 54.637 |
| 18) Acetone | (1) | 3.031 | 58 | 53761 | 100.771 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 515040 | 60.161 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 150157 | 250.000 |
| 28) Methylene Chloride | (2) | 3.575 | 84 | 176083 | 50.667 |
| 31) Acrylonitrile | (2) | 3.845 | 53 | 105345 | 52.539 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.912 | 73 | 560717 | 58.181 |
| 32) trans-1,2-Dichloroethene | (2) | 3.928 | 96 | 170855 | 55.354 |
| 36) 1,1-Dichloroethane | (2) | 4.555 | 63 | 312006 | 53.794 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 284997 | 106.153 |
| 42) cis-1,2-Dichloroethene | (2) | 5.404 | 96 | 191607 | 54.174 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 246548 | 63.667 |
| 49) Bromochloromethane | (2) | 5.758 | 128 | 103356 | 55.446 |
| 51) Chloroform | (2) | 5.919 | 83 | 319938 | 57.872 |
| 53) 1,1,1-Trichloroethane | (2) | 6.137 | 97 | 282892 | 55.998 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 188556 | 53.161 |
| 56) Carbon Tetrachloride | (2) | 6.356 | 117 | 238745 | 64.741 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 249448 | 55.477 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 44654 | 50.629 |
| 60) Benzene | (2) | 6.623 | 78 | 706089 | 53.271 |
| 61) 1,2-Dichloroethane | (2) | 6.713 | 62 | 282862 | 63.080 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 726354 | 50.000 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 188680 | 55.083 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 186341 | 51.355 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 132052 | 57.871 |
| 78) Bromodichloromethane | (2) | 8.237 | 83 | 245893 | 59.711 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 301629 | 56.198 |
| 82) 4-Methyl-2-pentanone | (2) | 8.986 | 43 | 599540 | 108.367 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 735690 | 49.798 |
| 88) Toluene | (3) | 9.224 | 92 | 449951 | 52.410 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 280804 | 58.332 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/28/2017 at 15:32.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28ec1.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 15:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 12:01
Date, time and analyst ID of latest file update: 28-Jul-2017 15:22 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 178227 | 53.874 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 212876 | 56.061 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 302410 | 52.682 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 435983 | 105.206 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 197913 | 57.758 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 200651 | 55.403 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 578600 | 50.000 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 529905 | 53.491 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 193331 | 59.098 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 895199 | 54.056 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 695075 | 107.812 |
| 107) o-Xylene | (3) | 11.291 | 106 | 350465 | 54.661 |
| 109) Styrene | (3) | 11.307 | 104 | 592194 | 55.872 |
| 110) Bromoform | (3) | 11.468 | 173 | 152042 | 61.108 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 908850 | 55.464 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 284417 | 51.796 |
| 108) Xylene (Total) | (3) | | 106 | 1045540 | 162.472 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 292353 | 50.311 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 249642 | 53.348 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 90514 | 55.104 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 1075478 | 52.013 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 221206 | 51.402 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 803411 | 54.488 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 231235 | 51.627 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 180020 | 56.480 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 823510 | 54.220 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 989731 | 52.622 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 464953 | 52.188 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 888803 | 53.520 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 327376 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 478738 | 51.968 |
| 139) n-Butylbenzene | (4) | 12.893 | 92 | 420626 | 50.703 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 460798 | 52.618 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 67927 | 55.277 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 349867 | 50.797 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 162615 | 54.365 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1049902 | 50.516 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 341239 | 51.356 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/28/2017 at 15:32.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28ec1.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 15:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 12:01
Date, time and analyst ID of latest file update: 28-Jul-2017 15:22 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/28/2017 at 15:32.
Target 3.5 esignature user ID: kk10002

Data File: /chem/HP09915.i/17apr28i.b/la28t01.d



Date : 28-APR-2017 09:43

Client ID: BFB FEB 20, 2017

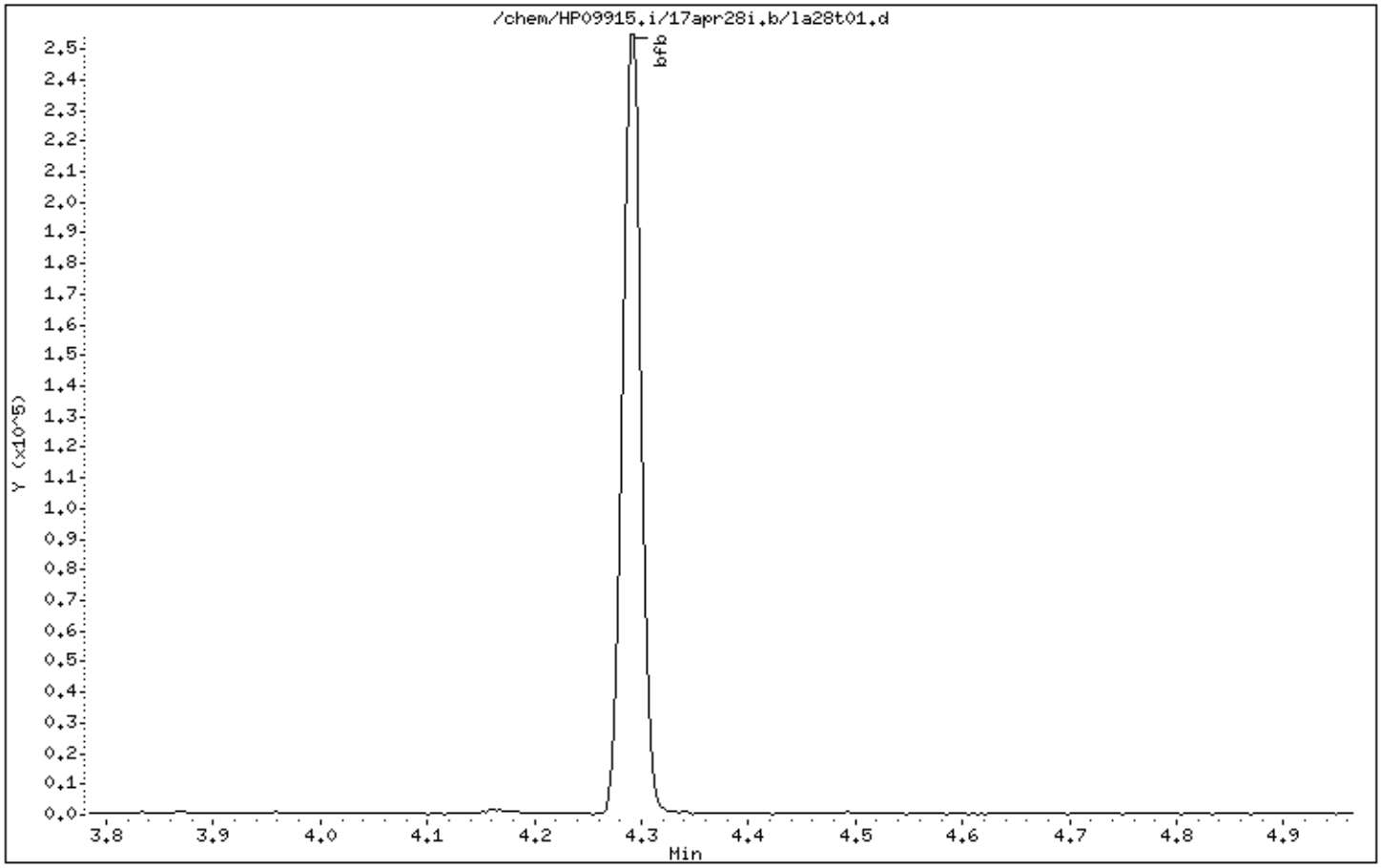
Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: BWK03231

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Brett W. Kenyon on 04/28/2017 at 12:58.
Target 3.5 esignature user ID: bwk03231

Data File: /chem/HP09915.i/17apr28i.b/la28t01.d

Date : 28-APR-2017 09:43

Client ID: BFB FEB 20, 2017

Instrument: HP09915.i

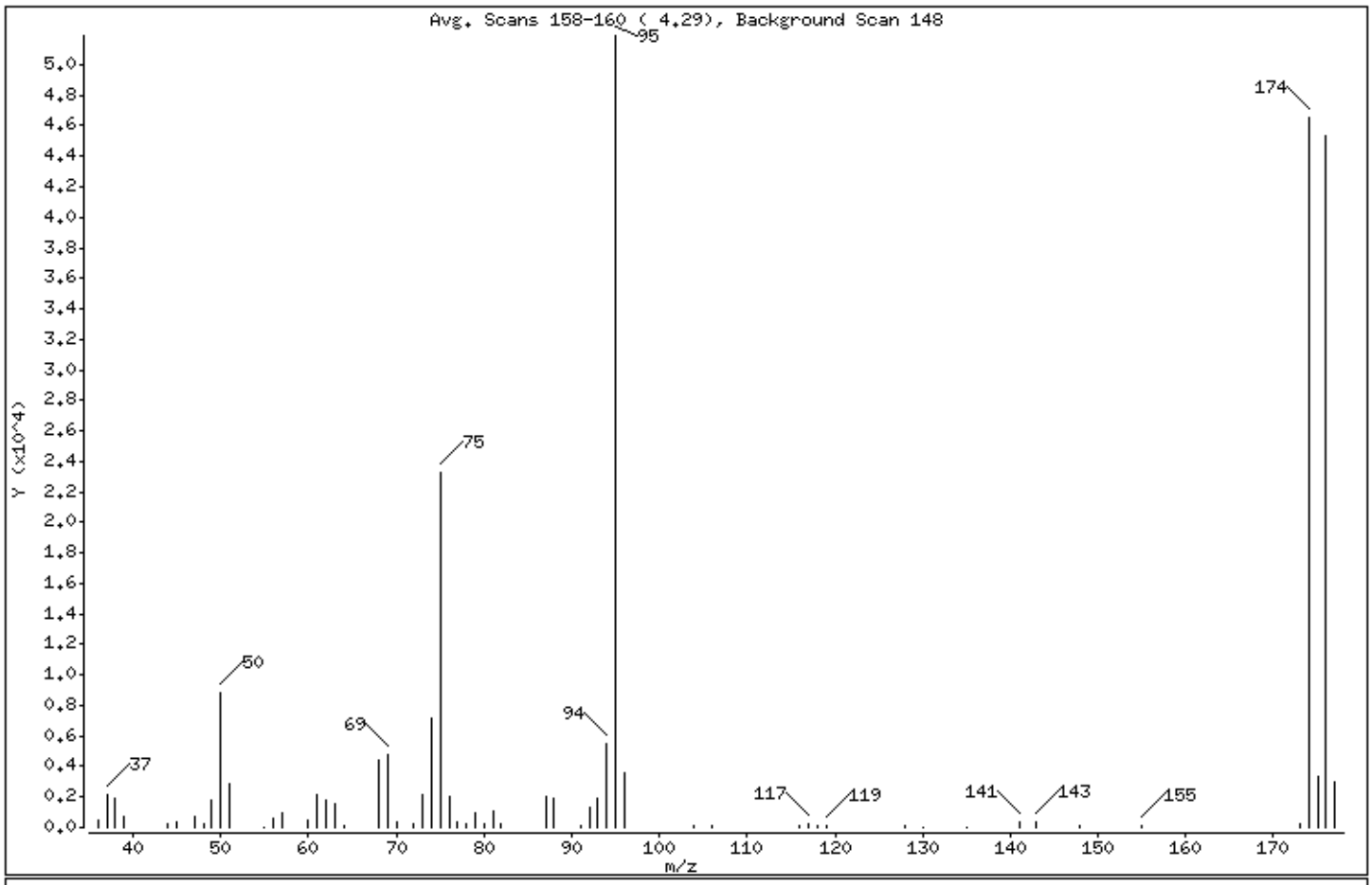
Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: BWK03231

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.00 |
| 75 | 30.00 - 60.00% of mass 95 | 44.88 |
| 96 | 5.00 - 9.00% of mass 95 | 6.83 |
| 173 | Less than 2.00% of mass 174 | 0.52 ( 0.58) |
| 174 | 50.00 - 100.00% of mass 95 | 89.61 |
| 175 | 5.00 - 9.00% of mass 174 | 6.44 ( 7.19) |
| 176 | 95.00 - 101.00% of mass 174 | 87.32 ( 97.45) |
| 177 | 5.00 - 9.00% of mass 176 | 5.84 ( 6.69) |

Digitally signed by Brett W. Kenyon on 04/28/2017 at 12:58.
Target 3.5 esignature user ID: bwk03231

Data File: /chem/HP09915.i/17apr28i.b/la28t01.d

Date : 28-APR-2017 09:43

Client ID: BFB FEB 20, 2017 Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

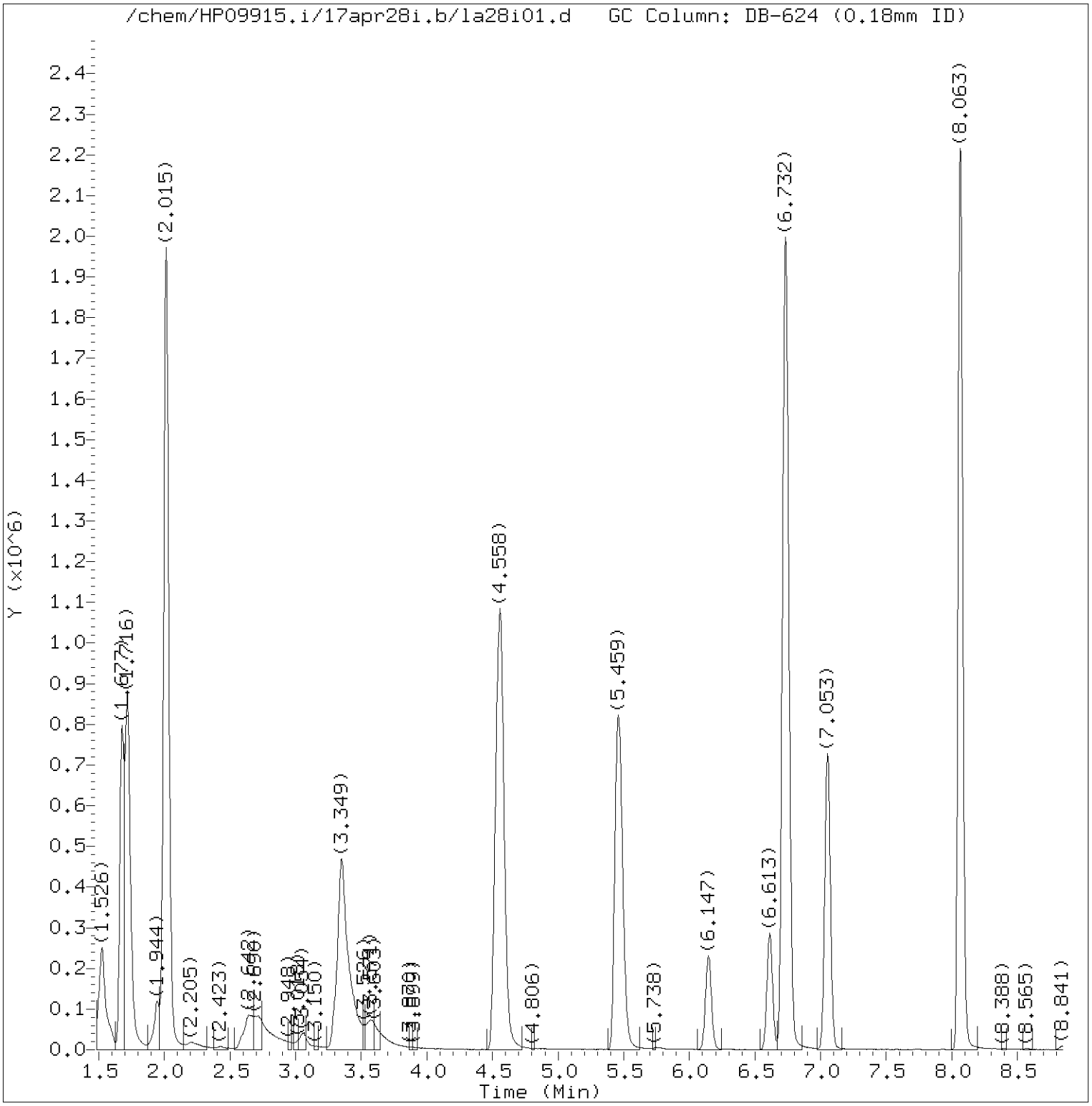
Operator: BWK03231

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: la28t01.d
Spectrum: Avg. Scans 158-160 ( 4.29), Background Scan 148
Location of Maximum: 95.00
Number of points: 59

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 438 | 61.00 | 2202 | 80.00 | 251 | 118.00 | 74 |
| 37.00 | 2162 | 62.00 | 1818 | 81.00 | 1058 | 119.00 | 136 |
| 38.00 | 1928 | 63.00 | 1507 | 82.00 | 199 | 128.00 | 110 |
| 39.00 | 767 | 64.00 | 125 | 87.00 | 2016 | 130.00 | 51 |
| 44.00 | 235 | 68.00 | 4458 | 88.00 | 1866 | 135.00 | 57 |
| 45.00 | 391 | 69.00 | 4735 | 91.00 | 123 | 141.00 | 389 |
| 47.00 | 721 | 70.00 | 322 | 92.00 | 1321 | 143.00 | 364 |
| 48.00 | 268 | 72.00 | 249 | 93.00 | 1870 | 148.00 | 133 |
| 49.00 | 1781 | 73.00 | 2102 | 94.00 | 5431 | 155.00 | 63 |
| 50.00 | 8825 | 74.00 | 7217 | 95.00 | 51904 | 173.00 | 272 |
| 51.00 | 2882 | 75.00 | 23288 | 96.00 | 3544 | 174.00 | 46504 |
| 55.00 | 55 | 76.00 | 2070 | 104.00 | 76 | 175.00 | 3345 |
| 56.00 | 571 | 77.00 | 299 | 106.00 | 129 | 176.00 | 45320 |
| 57.00 | 1000 | 78.00 | 183 | 116.00 | 123 | 177.00 | 3031 |
| 60.00 | 419 | 79.00 | 911 | 117.00 | 255 | | |

Digitally signed by Brett W. Kenyon on 04/28/2017 at 12:58.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

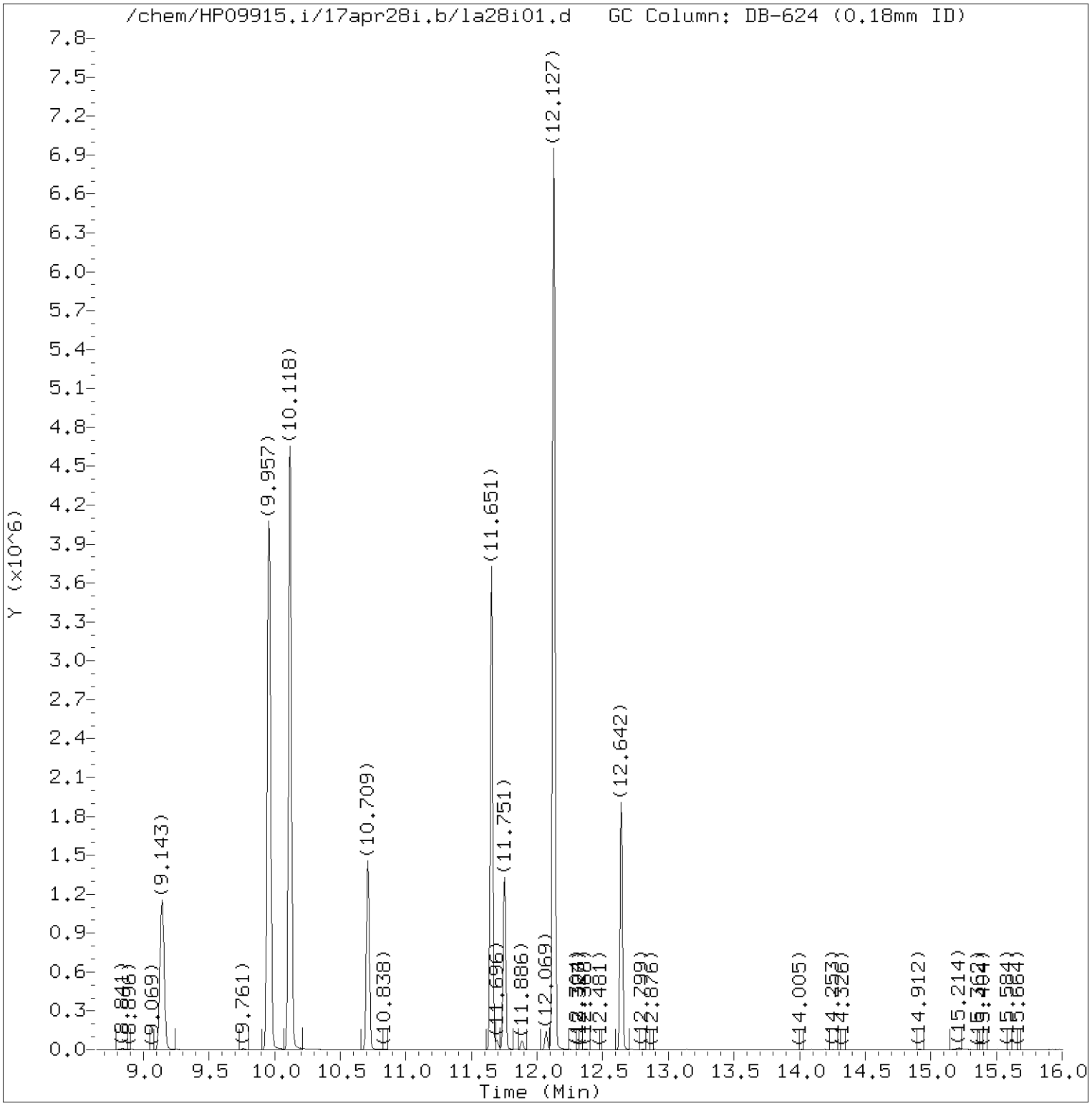
Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:09 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:09 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i01.d  Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29  Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m  Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:09 bwk03231

Sample Name: VSTD300  Lab Sample ID: VSTD300

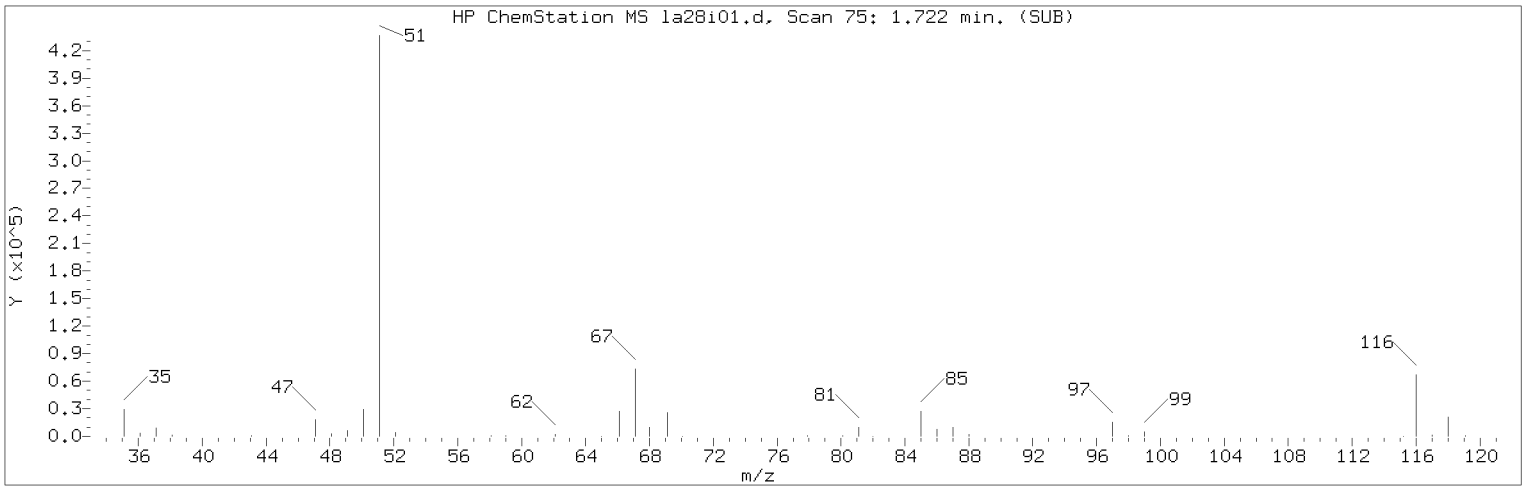
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.674 | 116 | 840908 | 299.985 |
| 2) Chlorodifluoromethane | (2) | 1.722 | 51 | 1190097M | 309.363 |
| 7) Freon 133a | (2) | 2.015 | 118 | 1681930 | 292.877 |
| 13) Ethanol | (1) | 2.642 | 45 | 561734M | 6871.383 |
| 24) Acetonitrile | (1) | 3.349 | 41 | 1679054M | 1425.029 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.587 | 65 | 210776 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.558 | 43 | 4008952 | 324.340 |
| 46) Ethyl Acetate | (2) | 5.459 | 43 | 2177196M | 317.084 |
| 62) Isopropyl acetate | (2) | 6.732 | 43 | 3806638 | 320.653 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1071854 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.063 | 61 | 867605 | 329.612 |
| 95) 3,4-Dichloro-1-butene | (3) | 9.957 | 75 | 1689763 | 299.926 |
| 98) Butyl acetate | (3) | 10.118 | 43 | 3289646 | 320.448 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 826376 | 50.000 |
| 113) cis-1,4-Dichloro-2-butene | (3) | 11.655 | 88 | 695941 | 463.922 |
| 123) 2,3,4-Trichlorobutene | (4) | 12.127 | 109 | 1592213 | 365.820 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 450717 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.

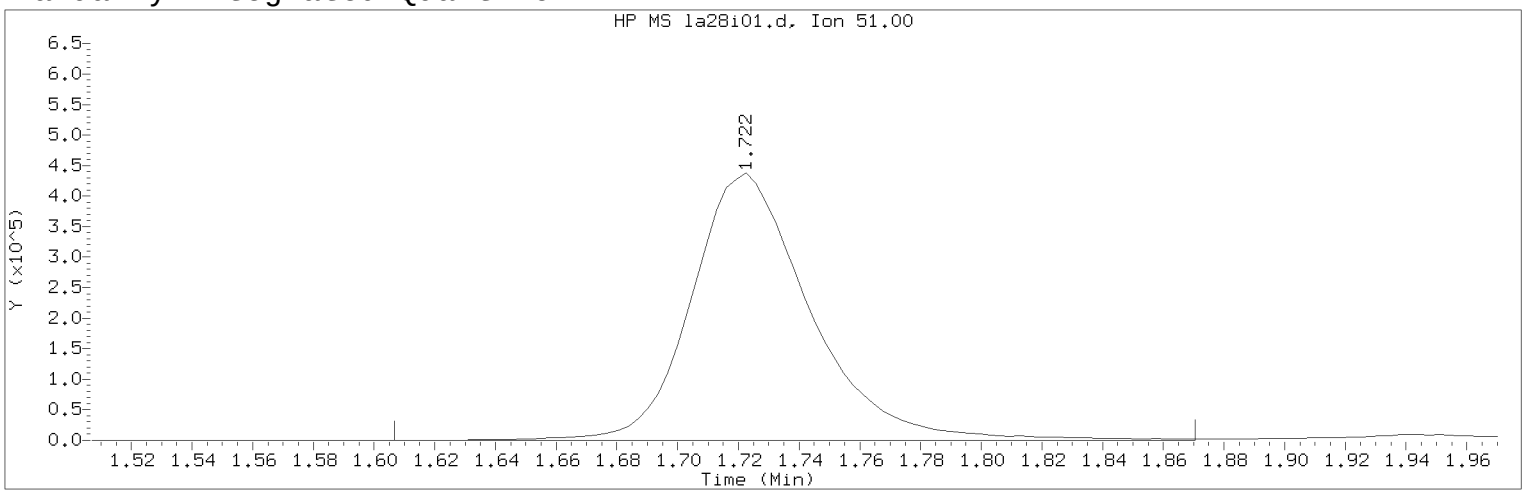


Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:09 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

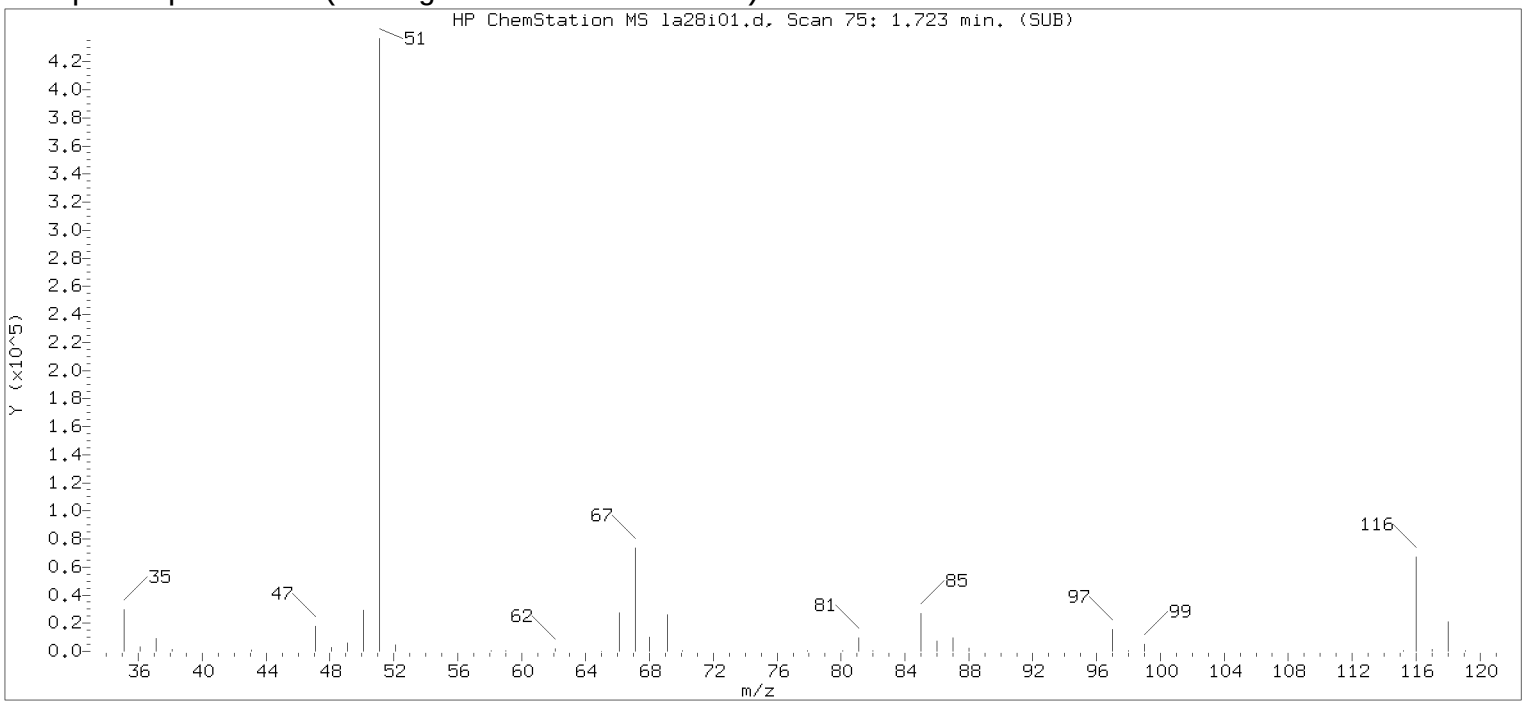
Compound Number : 2
Compound Name : Chlorodifluoromethane
Scan Number : 75
Retention Time (minutes): 1.722
Quant Ion : 51.00
Area (flag) : 1190097M
On-Column Amount (ng) : 309.3633
Integration start scan : 38 Integration stop scan: 120
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

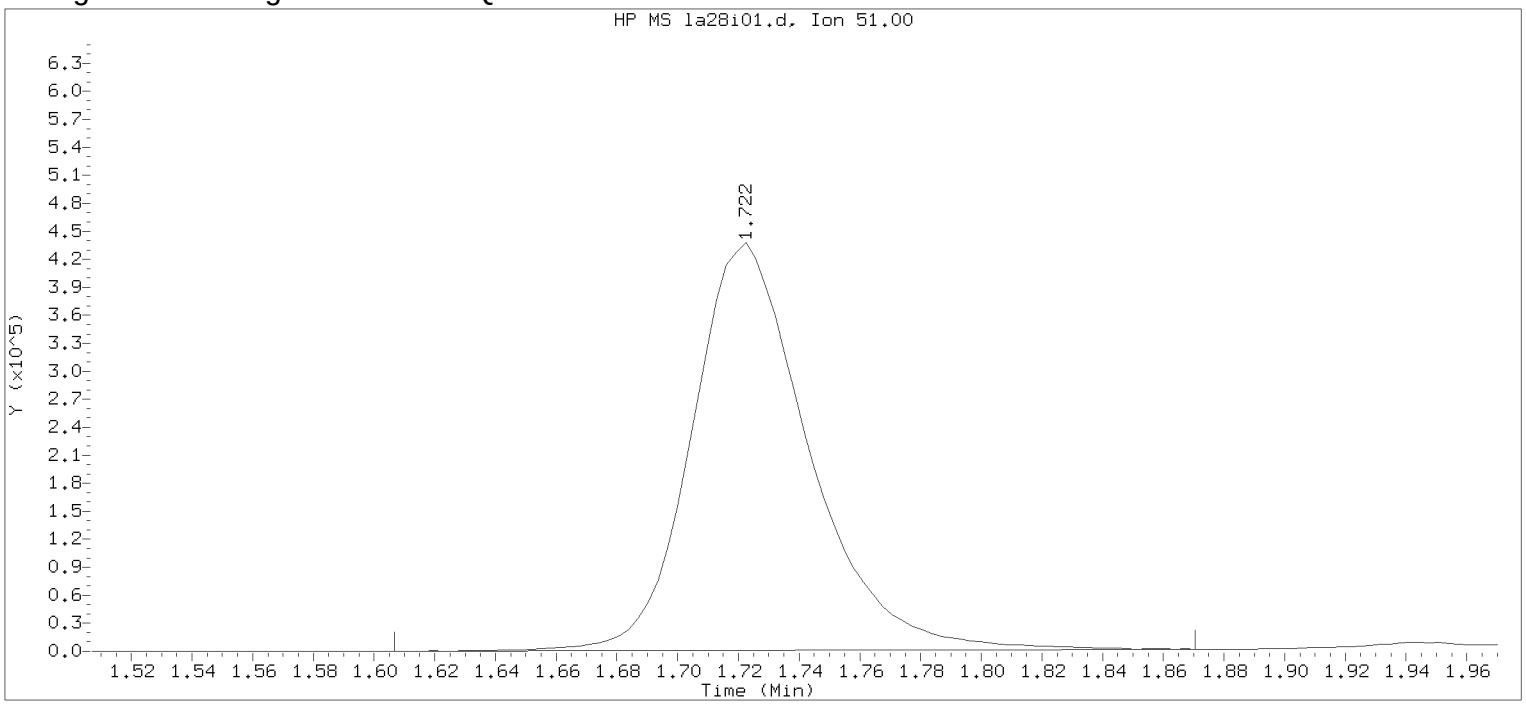
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

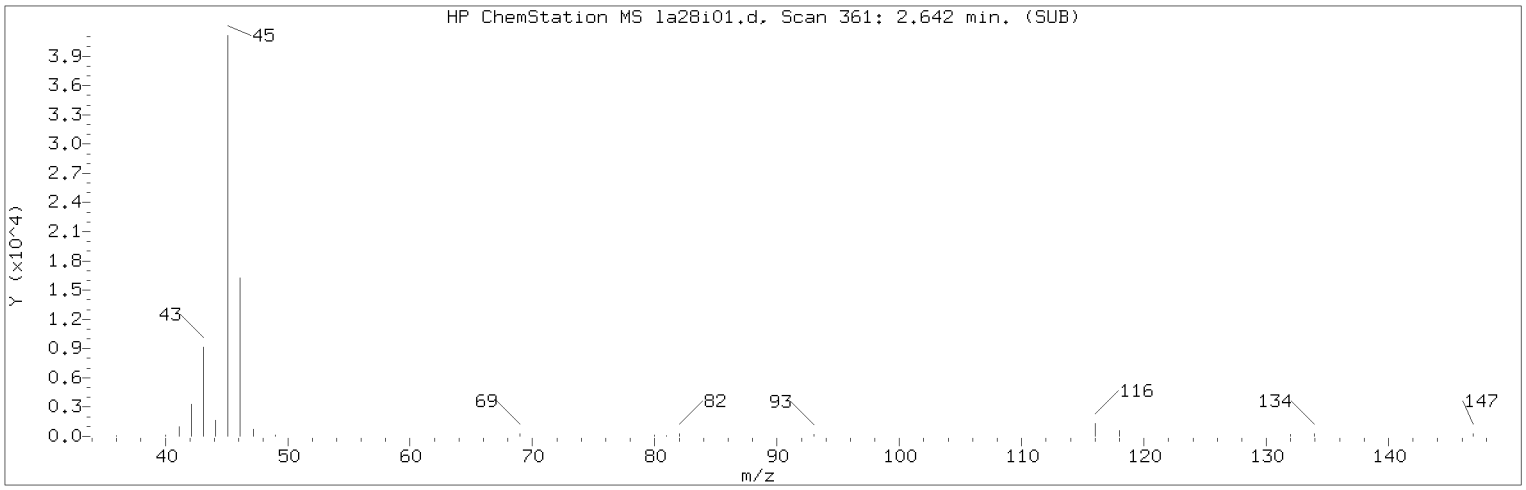
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 10:47
Date, time and analyst ID of latest file update: 28-Apr-2017 10:47 Automation

Sample Name: VSTD300 Lab Sample ID: VSTD300

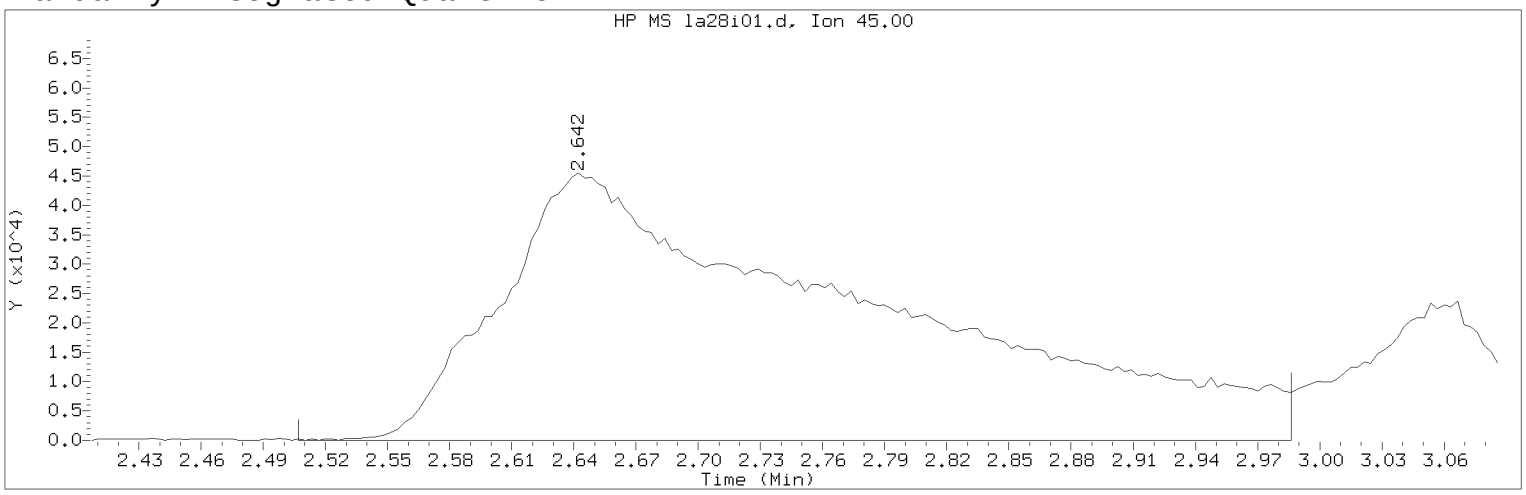
Compound Number : 2
Compound Name : Chlorodifluoromethane
Scan Number : 75
Retention Time (minutes): 1.722
Quant Ion : 51.00
Area : 1173919
On-column Amount (ng) : 300.0000
Integration start scan : 38 Integration stop scan: 120
Y at integration start : 0 Y at integration end: 2020

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:09 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

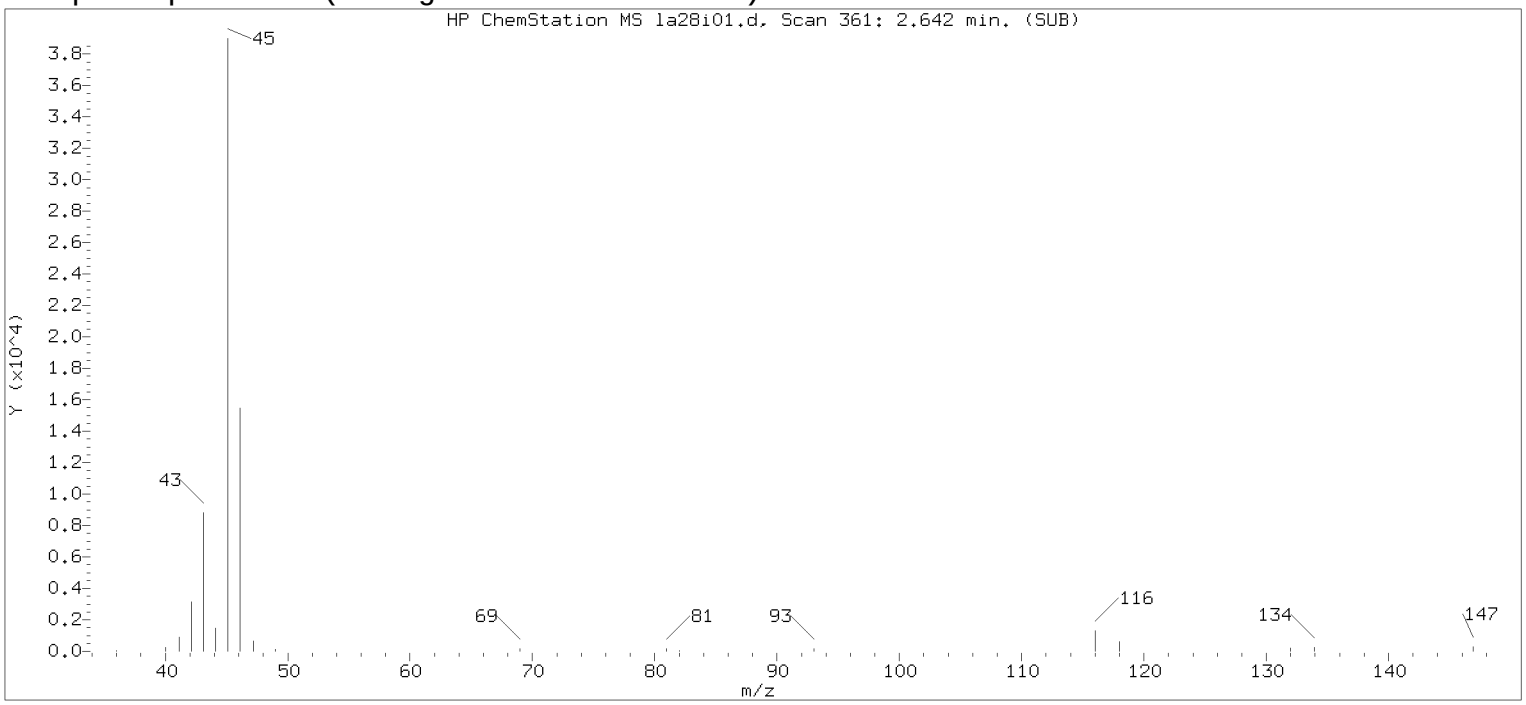
Compound Number : 13
Compound Name : Ethanol
Scan Number : 361
Retention Time (minutes): 2.642
Quant Ion : 45.00
Area (flag) : 561734M
On-Column Amount (ng) : 6871.3831
Integration start scan : 318 Integration stop scan: 467
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

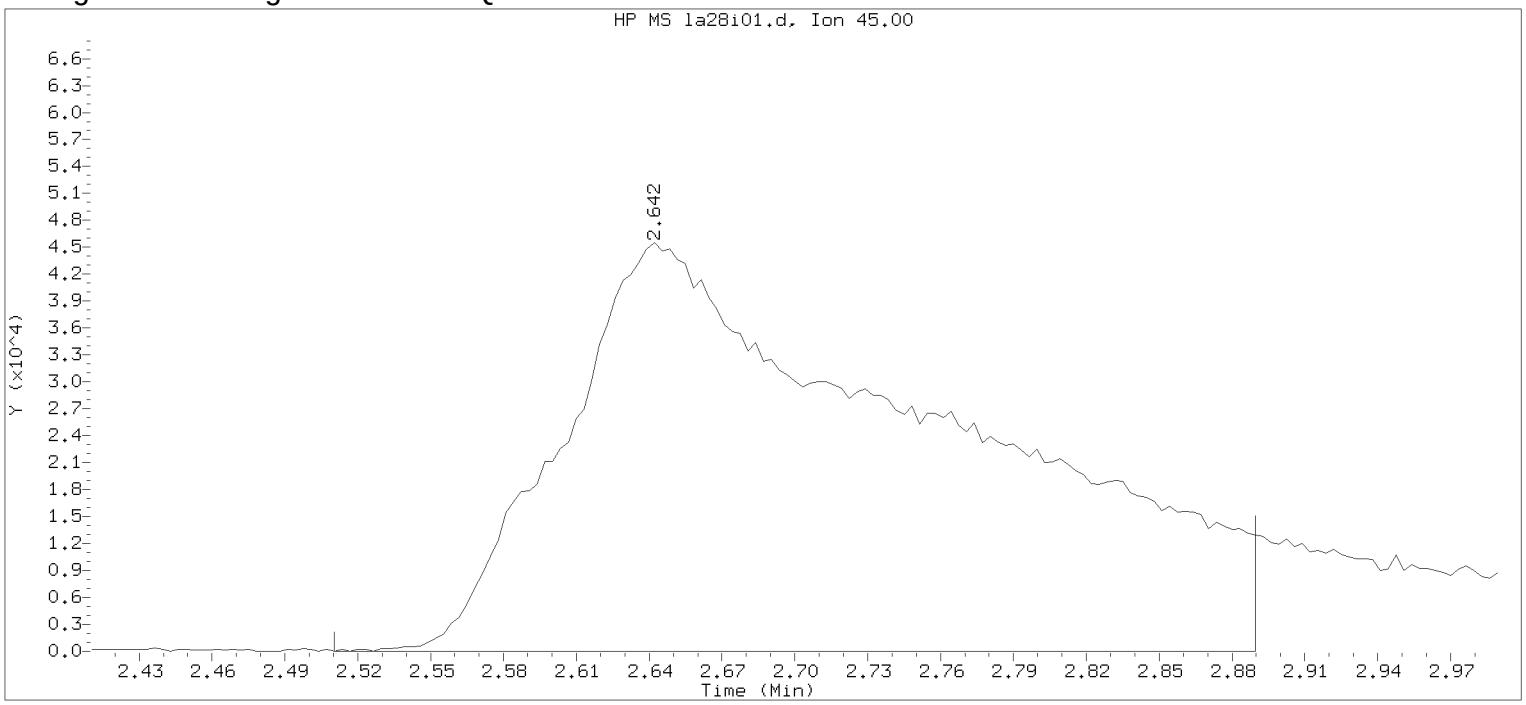
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

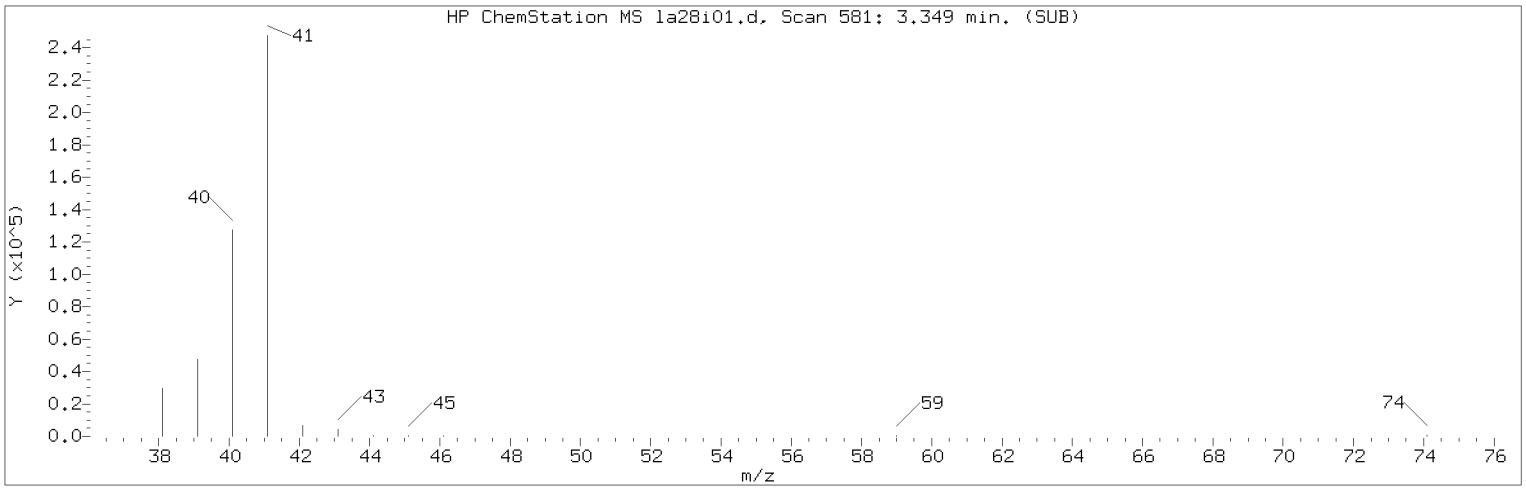
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 10:47
Date, time and analyst ID of latest file update: 28-Apr-2017 10:47 Automation

Sample Name: VSTD300 Lab Sample ID: VSTD300

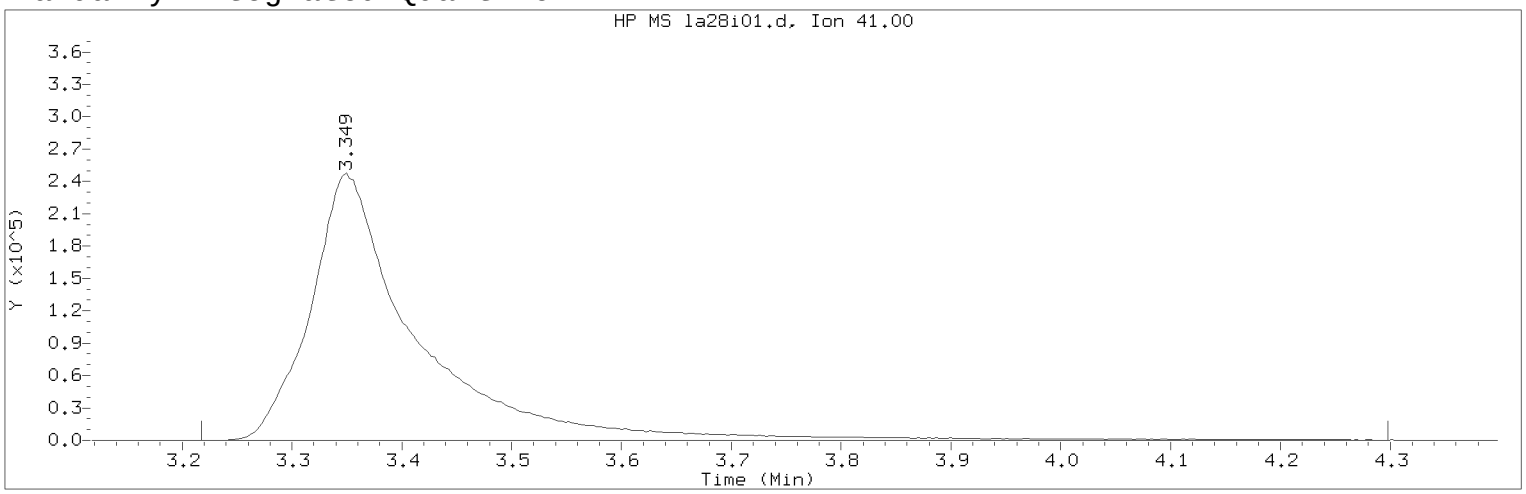
Compound Number : 13
Compound Name : Ethanol
Scan Number : 361
Retention Time (minutes): 2.642
Quant Ion : 45.00
Area : 501415
On-column Amount (ng) : 7500.0000
Integration start scan : 319 Integration stop scan: 437
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKRD87bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:09 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

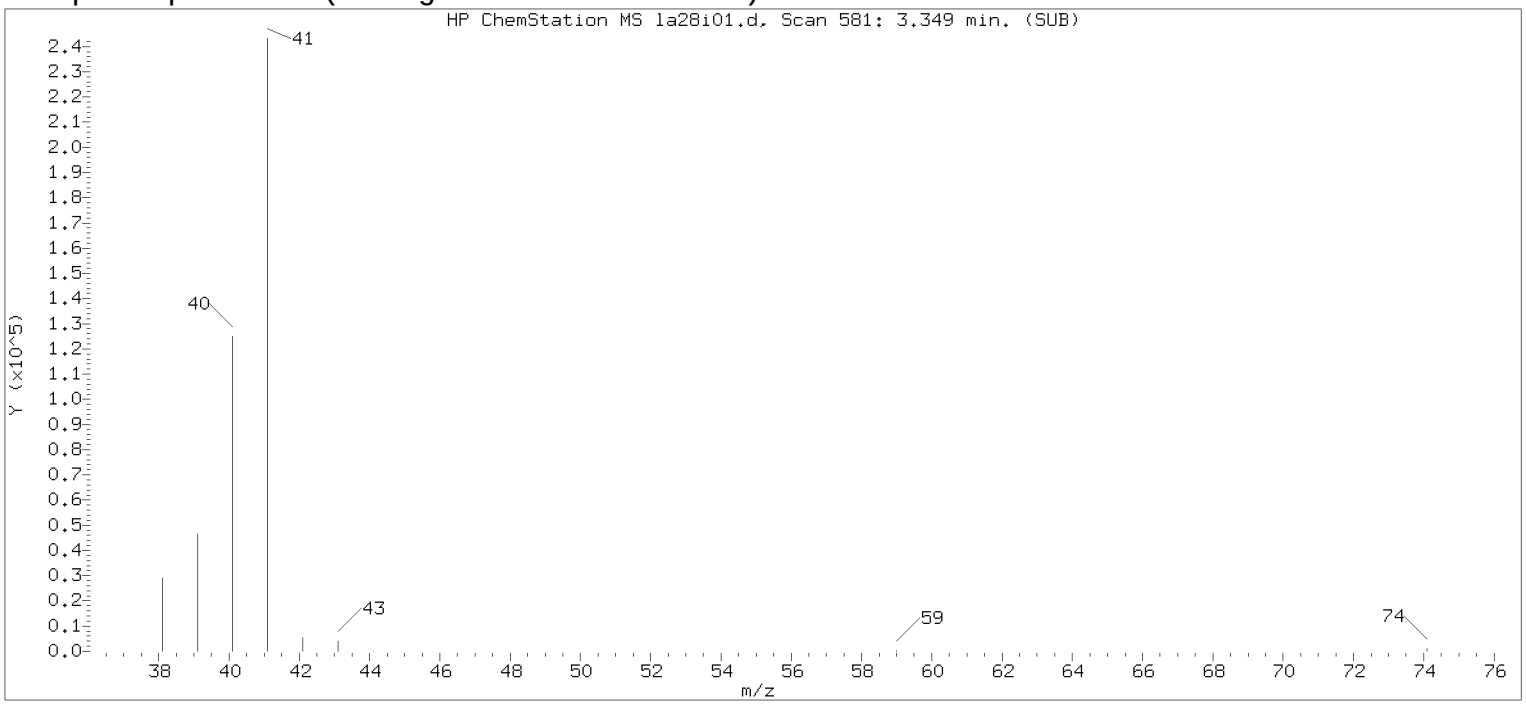
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 581
Retention Time (minutes): 3.349
Quant Ion : 41.00
Area (flag) : 1679054M
On-Column Amount (ng) : 1425.0293
Integration start scan : 539 Integration stop scan: 875
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

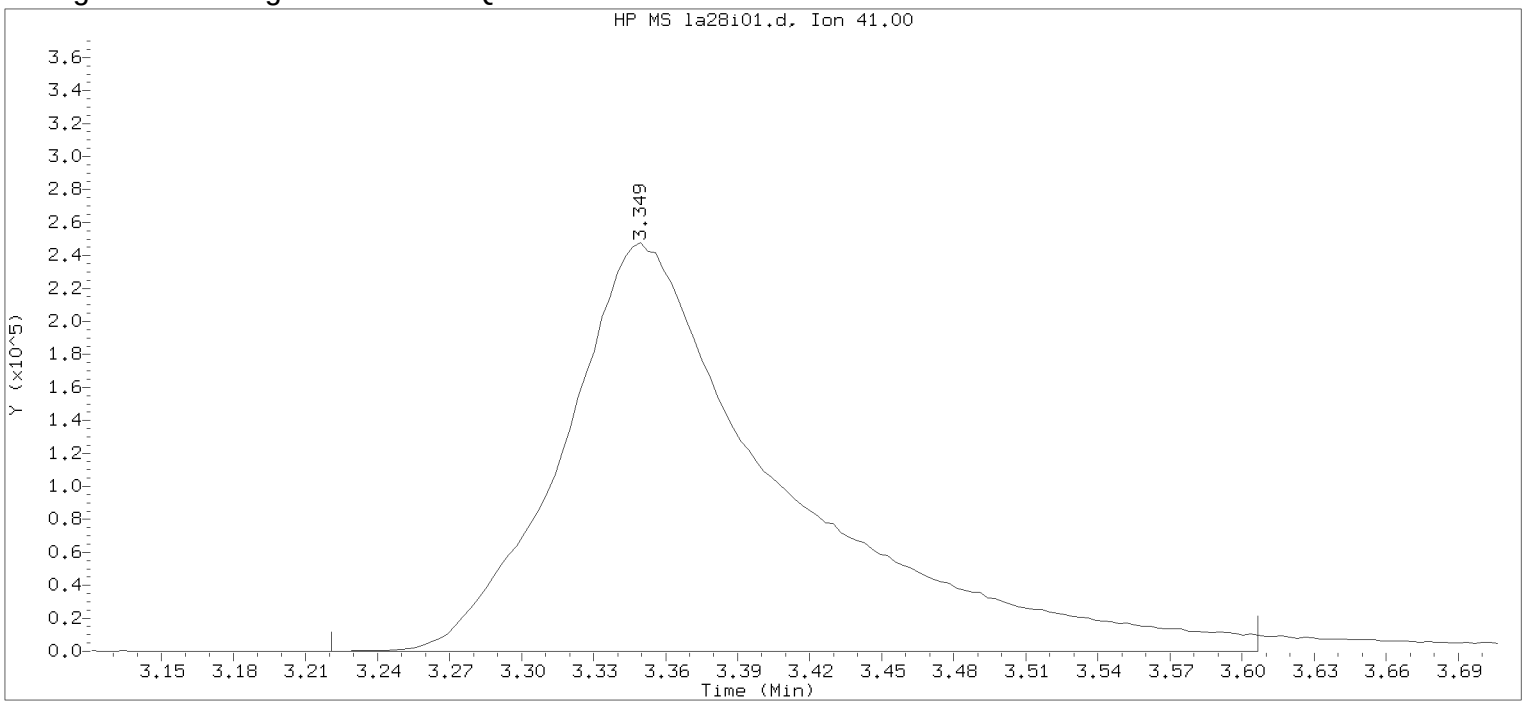
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

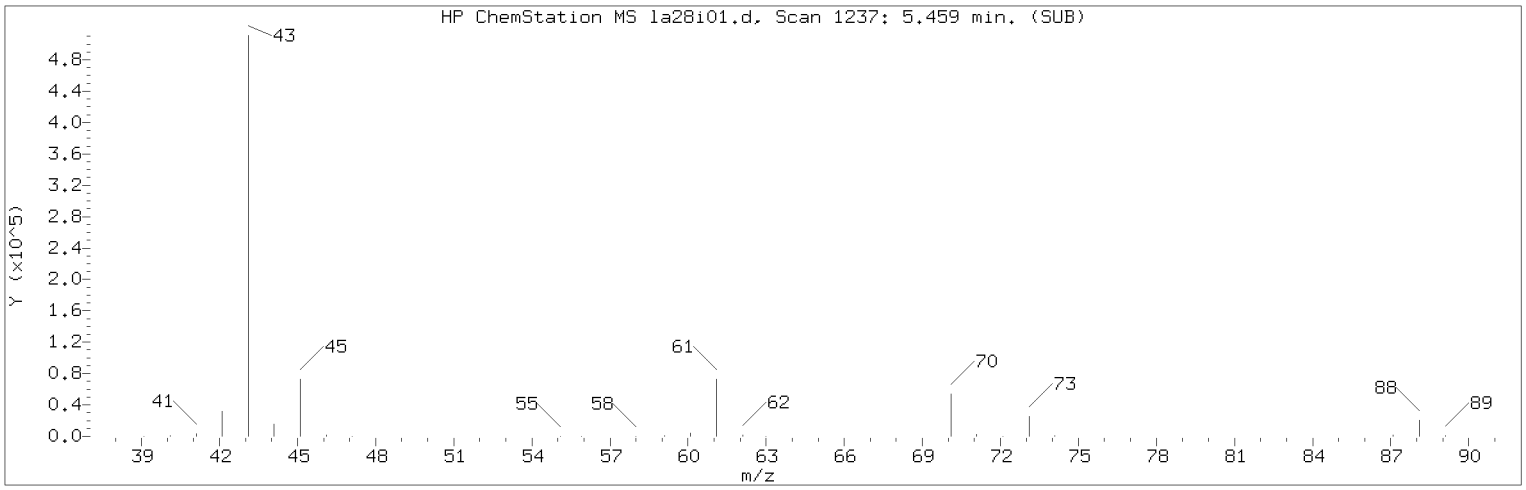
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 10:47
Date, time and analyst ID of latest file update: 28-Apr-2017 10:47 Automation

Sample Name: VSTD300 Lab Sample ID: VSTD300

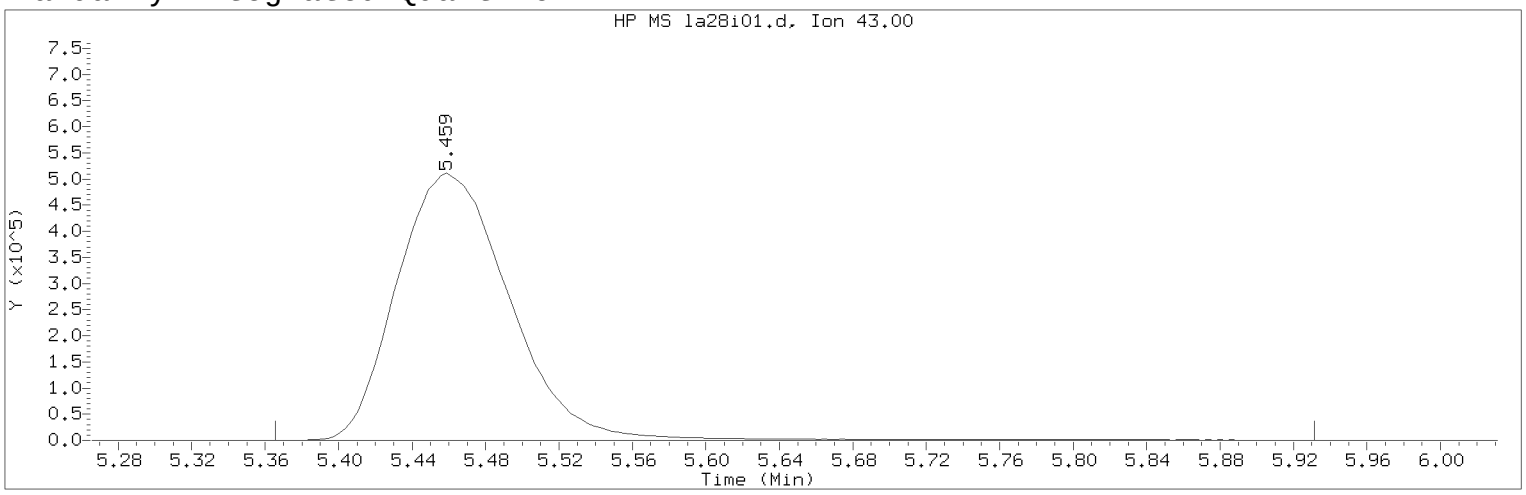
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 581
Retention Time (minutes): 3.349
Quant Ion : 41.00
Area : 1581791
On-column Amount (ng) : 1500.0000
Integration start scan : 540 Integration stop scan: 660
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKRD87bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:09 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

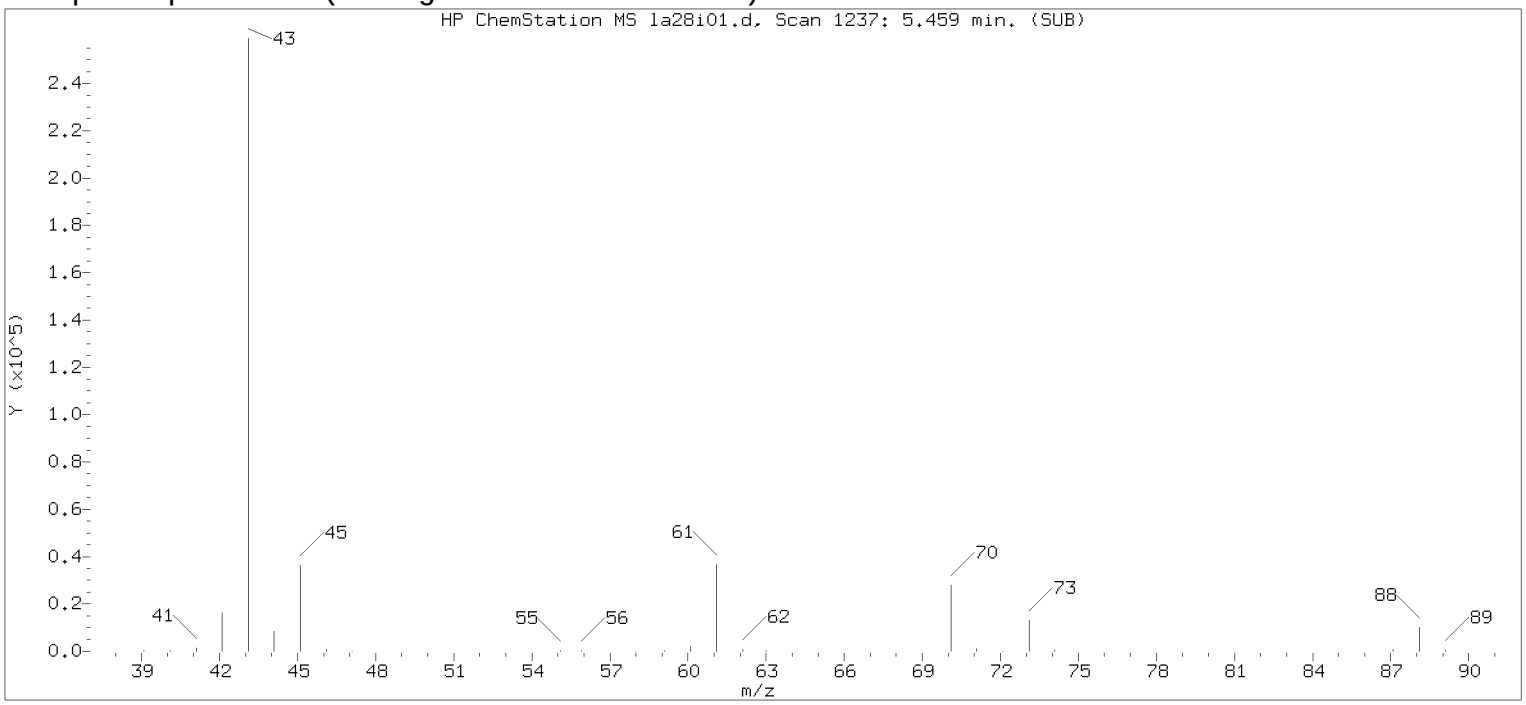
Compound Number : 46
Compound Name : Ethyl Acetate
Scan Number : 1237
Retention Time (minutes): 5.459
Quant Ion : 43.00
Area (flag) : 2177196M
On-Column Amount (ng) : 317.0836
Integration start scan : 1207 Integration stop scan: 1383
Y at integration start : 200 Y at integration end: 200

Reason for manual integration: improper integration

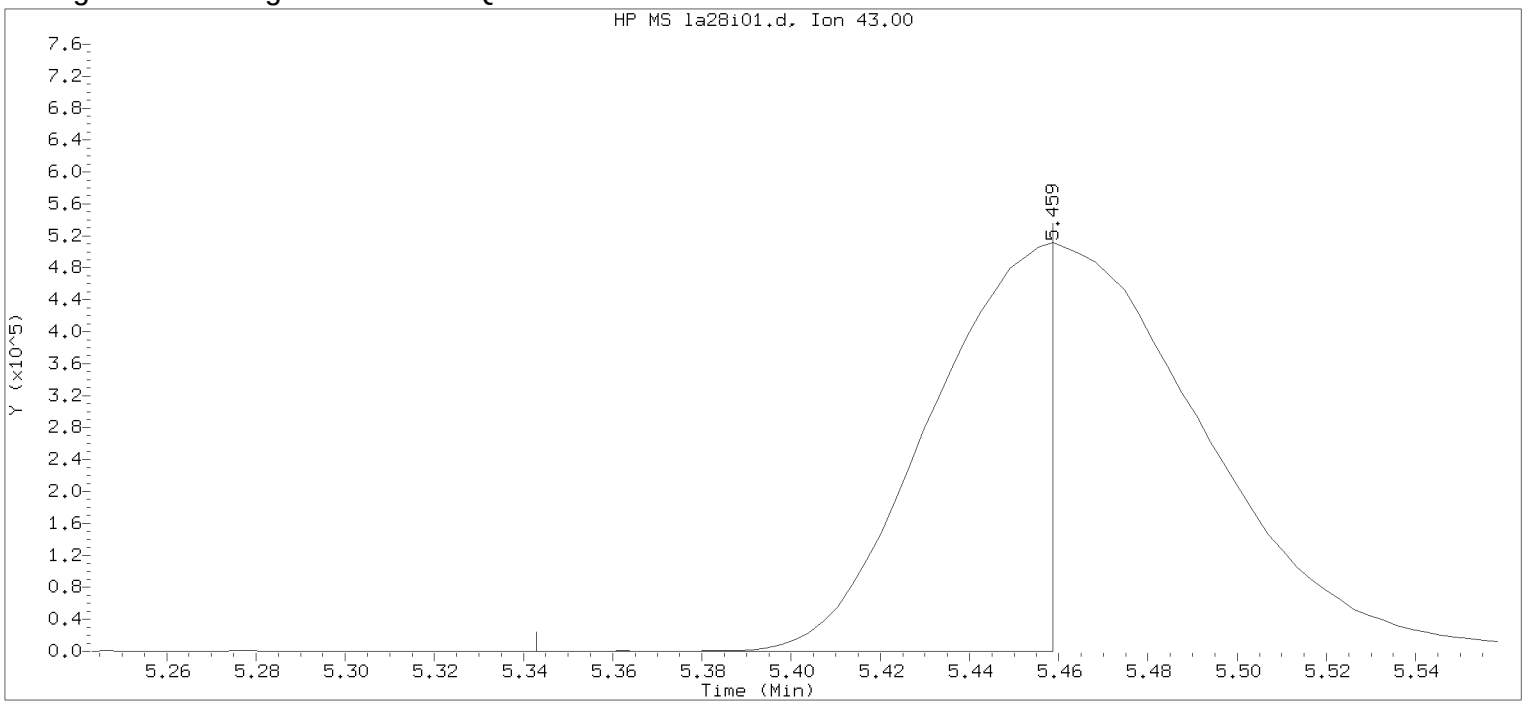
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



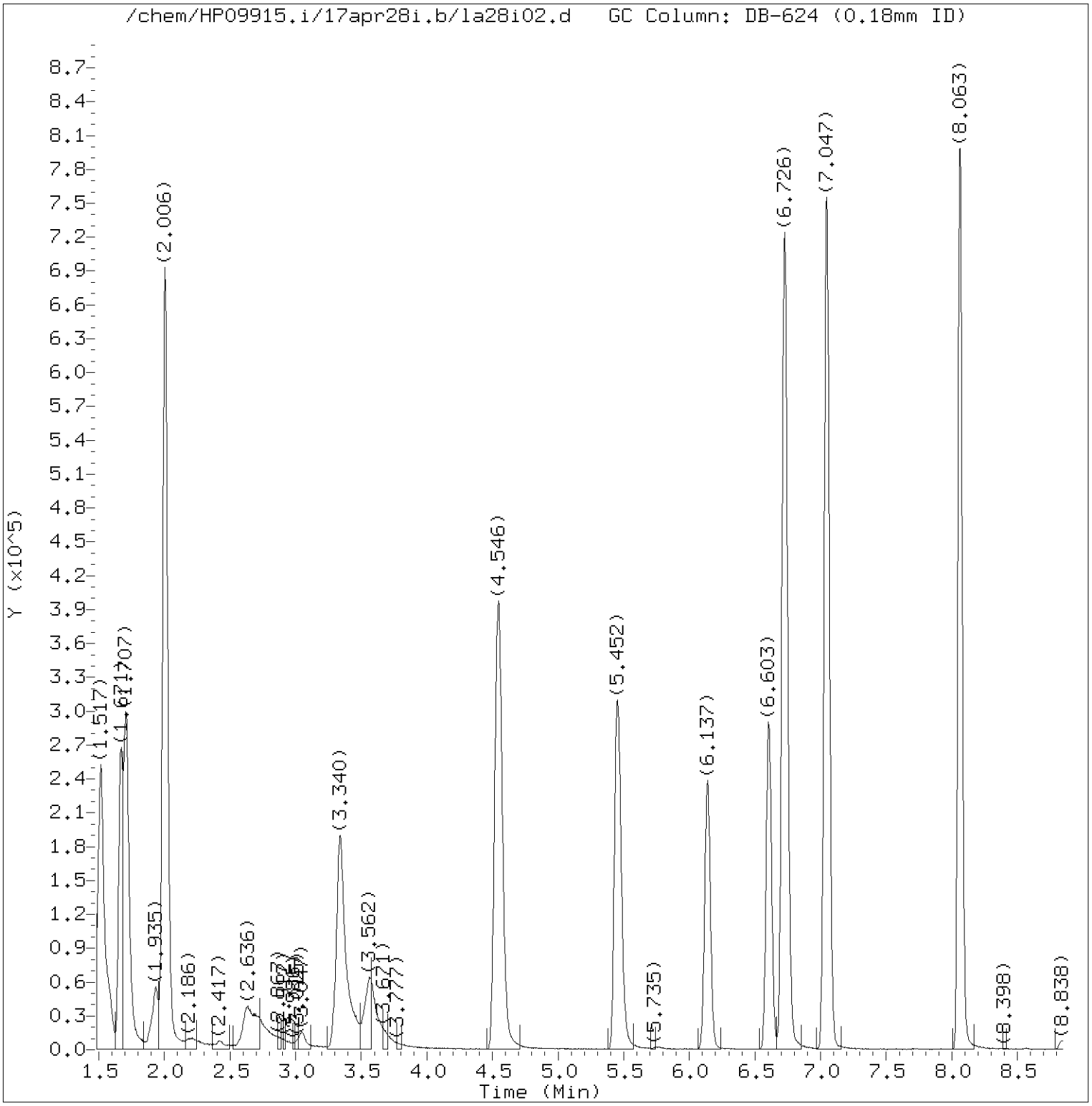

Data File: /chem/HP09915.i/17apr28i.b/la28i01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:29 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 10:47
Date, time and analyst ID of latest file update: 28-Apr-2017 10:47 Automation

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 46
Compound Name : Ethyl Acetate
Scan Number : 1237
Retention Time (minutes): 5.459
Quant Ion : 43.00
Area : 937917
On-column Amount (ng) : 300.0000
Integration start scan : 1200 Integration stop scan: 1236
Y at integration start : 224 Y at integration end: 224

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKENBWK03231




Total Ion Chromatogram (TIC)

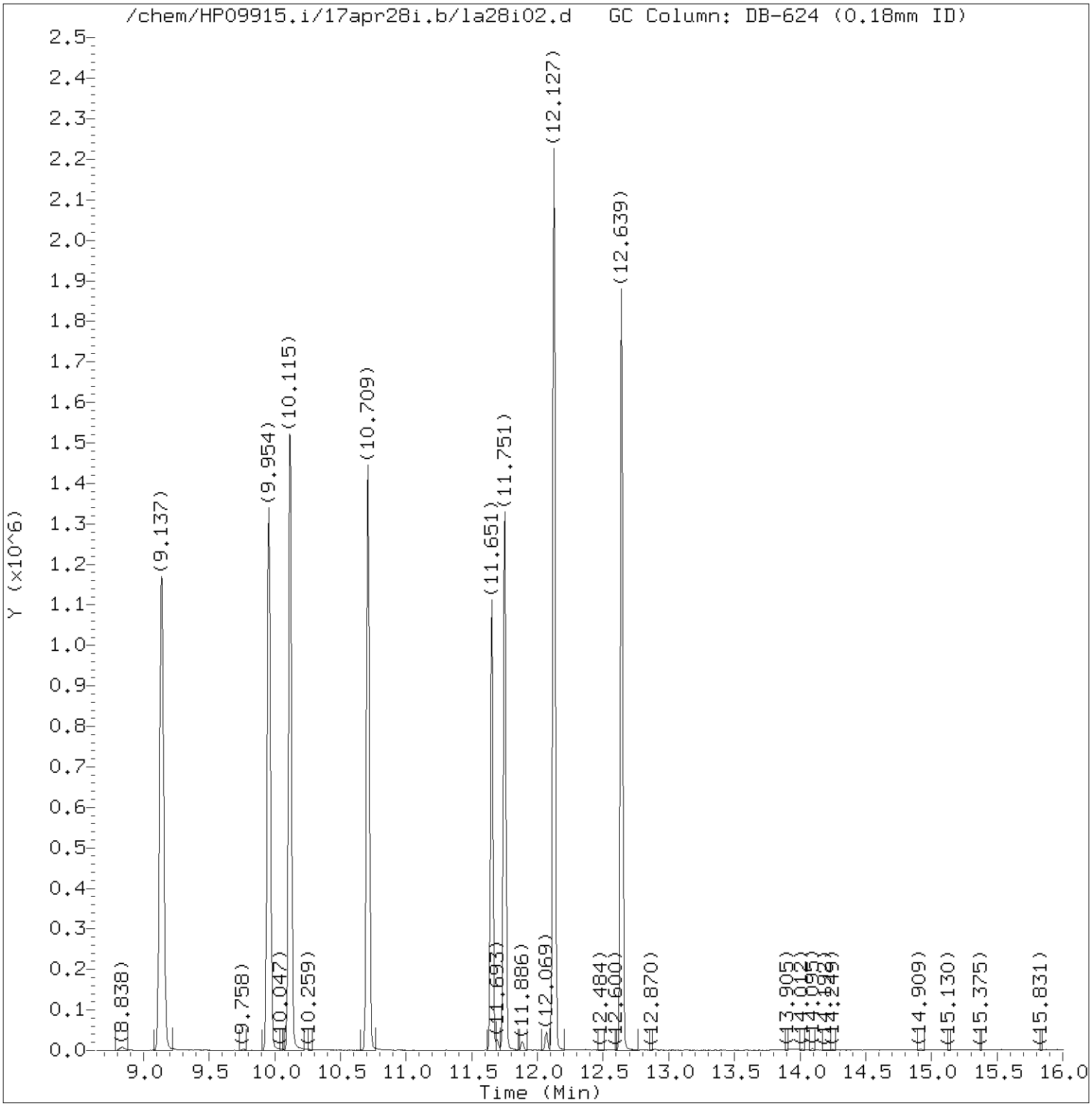
Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

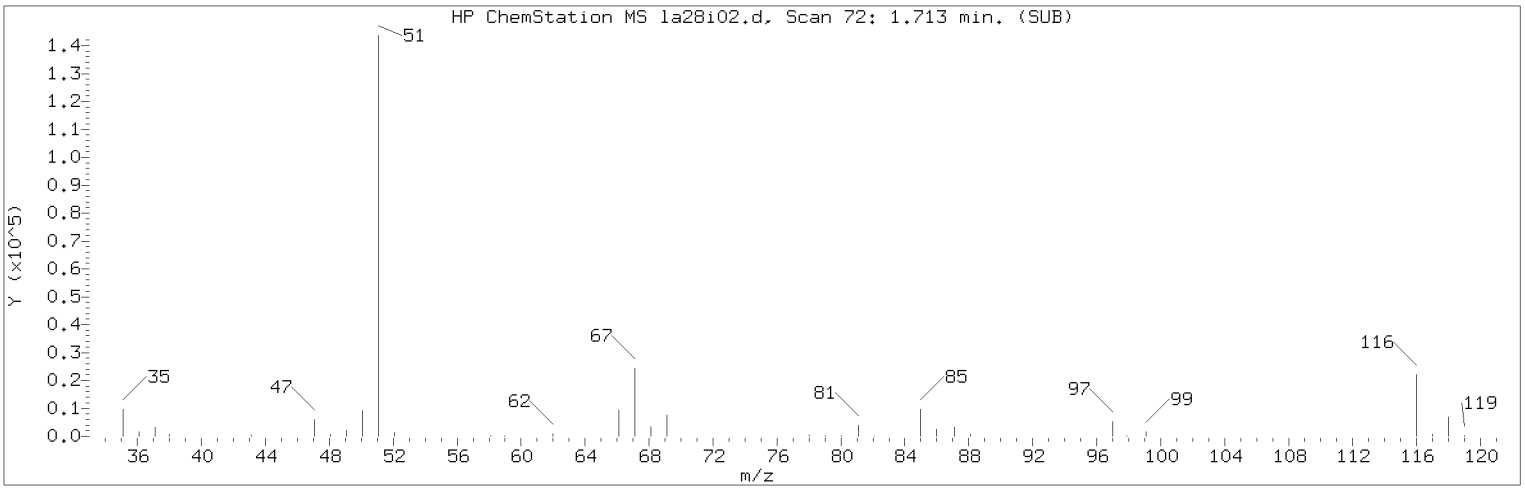
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.671 | 116 | 282777 | 103.922 |
| 2) Chlorodifluoromethane | (2) | 1.713 | 51 | 388434M | 104.020 |
| 7) Freon 133a | (2) | 2.002 | 118 | 577880 | 103.664 |
| 13) Ethanol | (1) | 2.633 | 45 | 197680M | 2605.858 |
| 24) Acetonitrile | (1) | 3.333 | 41 | 569847M | 521.185 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 195590 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.546 | 43 | 1317822 | 109.834 |
| 46) Ethyl Acetate | (2) | 5.452 | 43 | 717994 | 107.723 |
| 62) Isopropyl acetate | (2) | 6.726 | 43 | 1246318 | 108.152 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1040457 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.063 | 61 | 286290 | 112.046 |
| 95) 3,4-Dichloro-1-butene | (3) | 9.954 | 75 | 514574 | 101.135 |
| 98) Butyl acetate | (3) | 10.115 | 43 | 1110582 | 110.273 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 810715 | 50.000 |
| 113) cis-1,4-Dichloro-2-butene | (3) | 11.651 | 88 | 198980 | 135.204 |
| 123) 2,3,4-Trichlorobutene | (4) | 12.127 | 109 | 497378 | 117.962 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 436632 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.

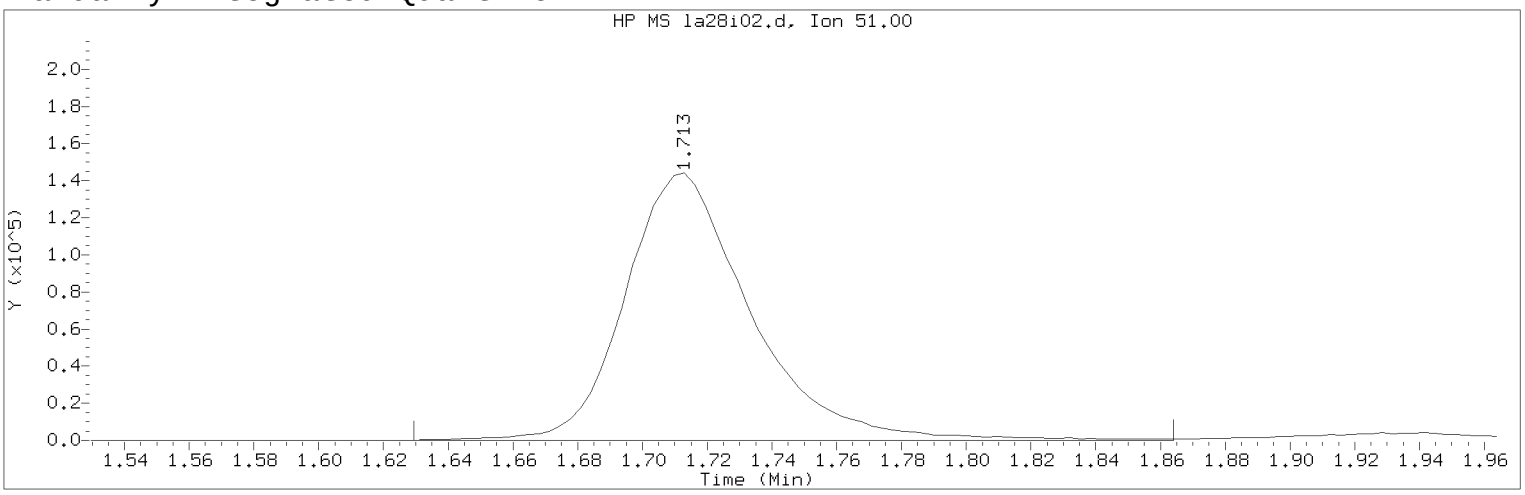


Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

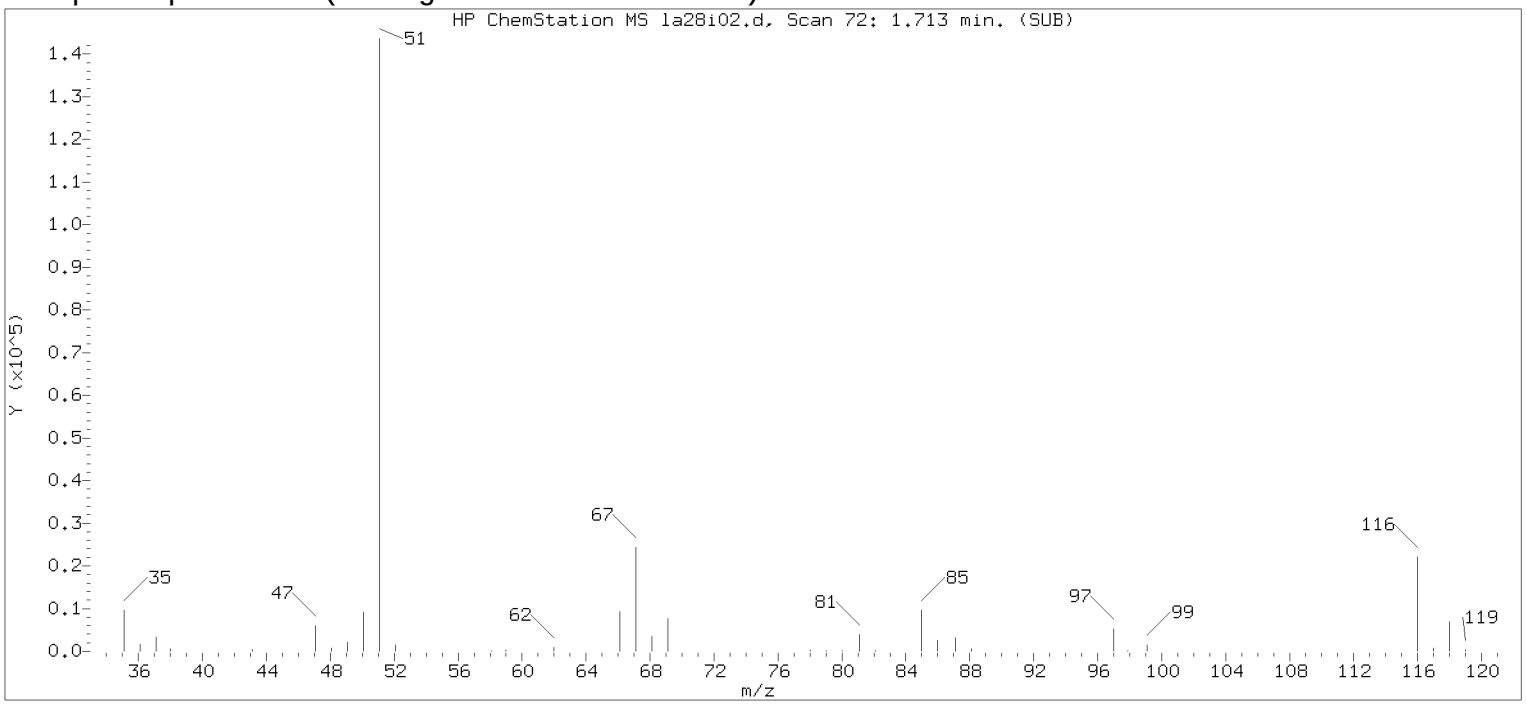
Compound Number : 2
Compound Name : Chlorodifluoromethane
Scan Number : 72
Retention Time (minutes): 1.713
Quant Ion : 51.00
Area (flag) : 388434M
On-Column Amount (ng) : 104.0196
Integration start scan : 45 Integration stop scan: 118
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

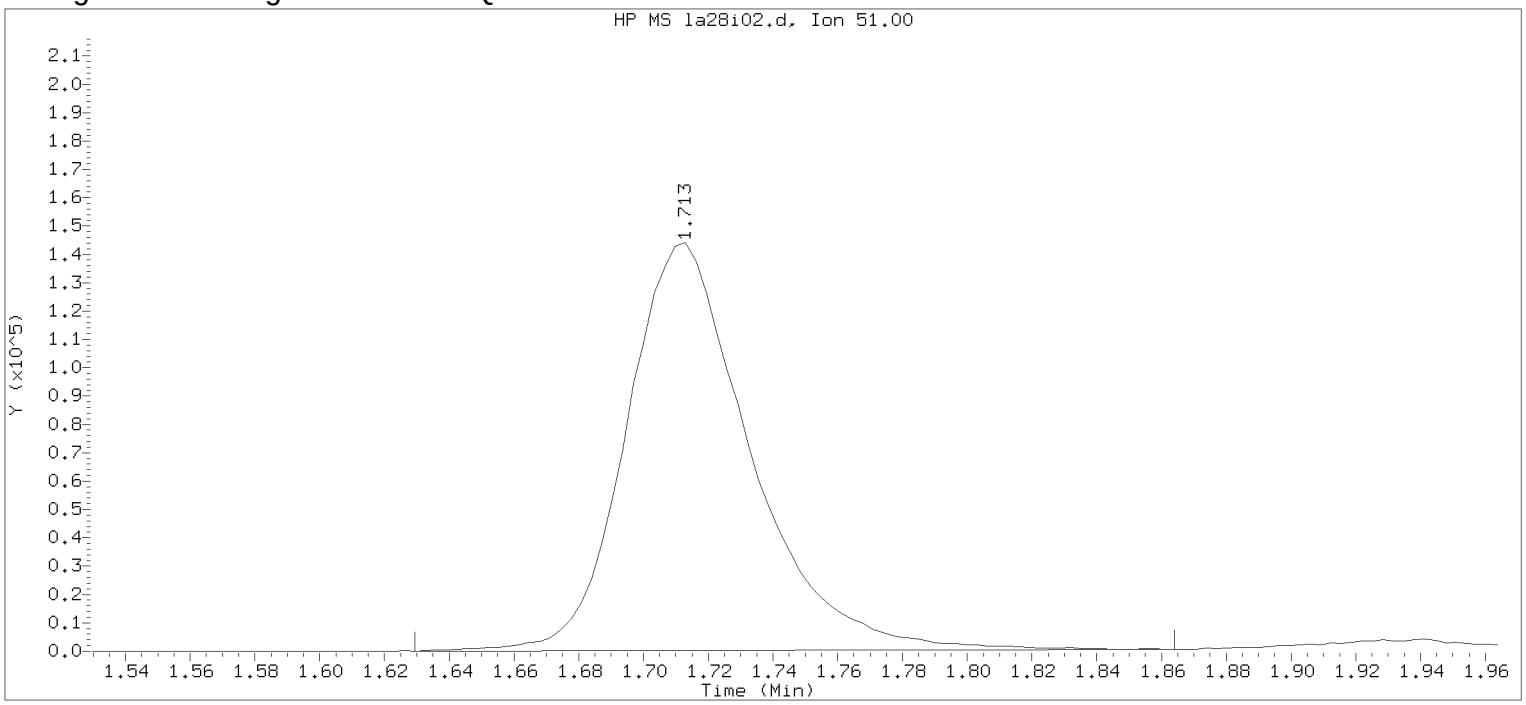
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

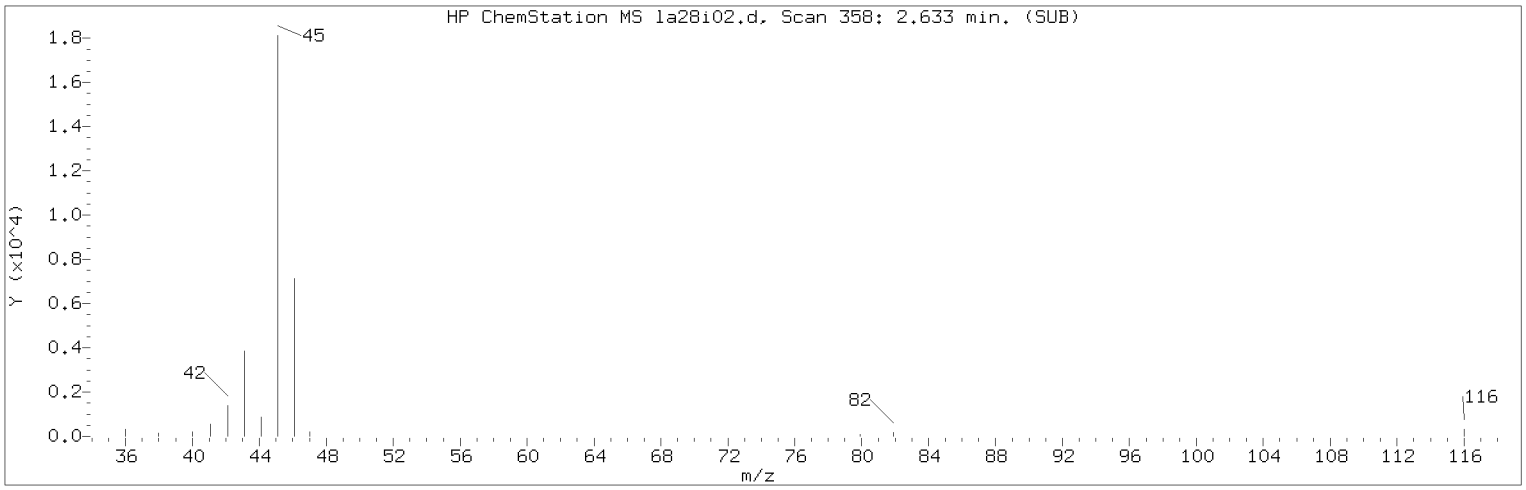
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 11:09
Date, time and analyst ID of latest file update: 28-Apr-2017 11:09 Automation

Sample Name: VSTD100 Lab Sample ID: VSTD100

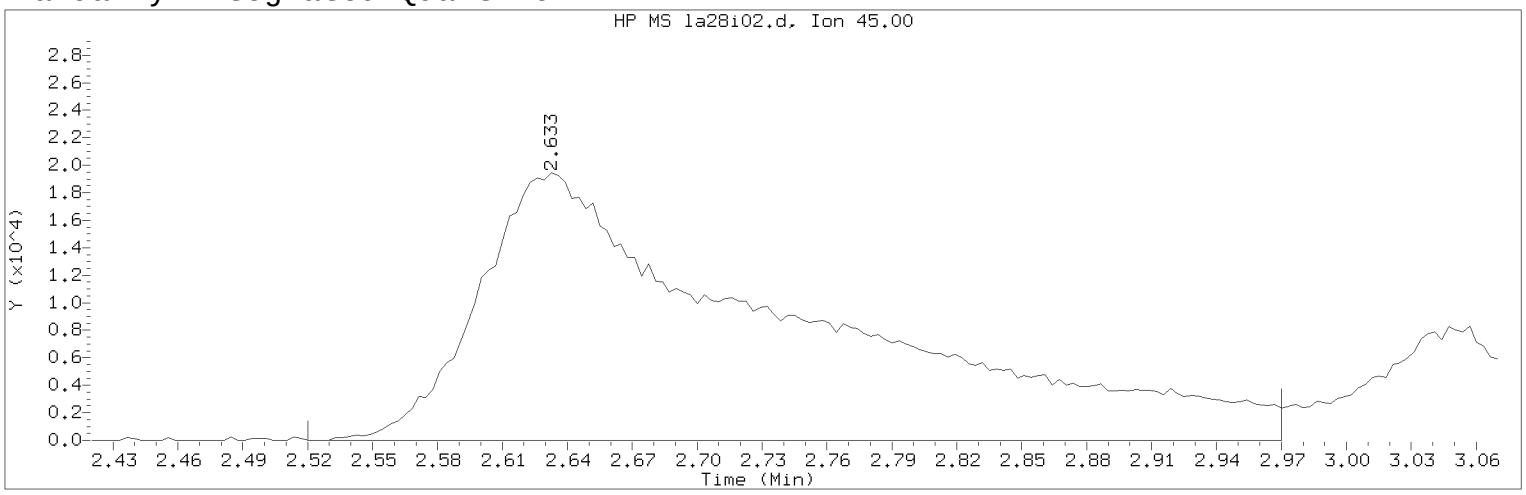
Compound Number : 2
Compound Name : Chlorodifluoromethane
Scan Number : 72
Retention Time (minutes): 1.713
Quant Ion : 51.00
Area : 383397
On-column Amount (ng) : 99.7812
Integration start scan : 45 Integration stop scan: 118
Y at integration start : 0 Y at integration end: 706

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKRD87bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

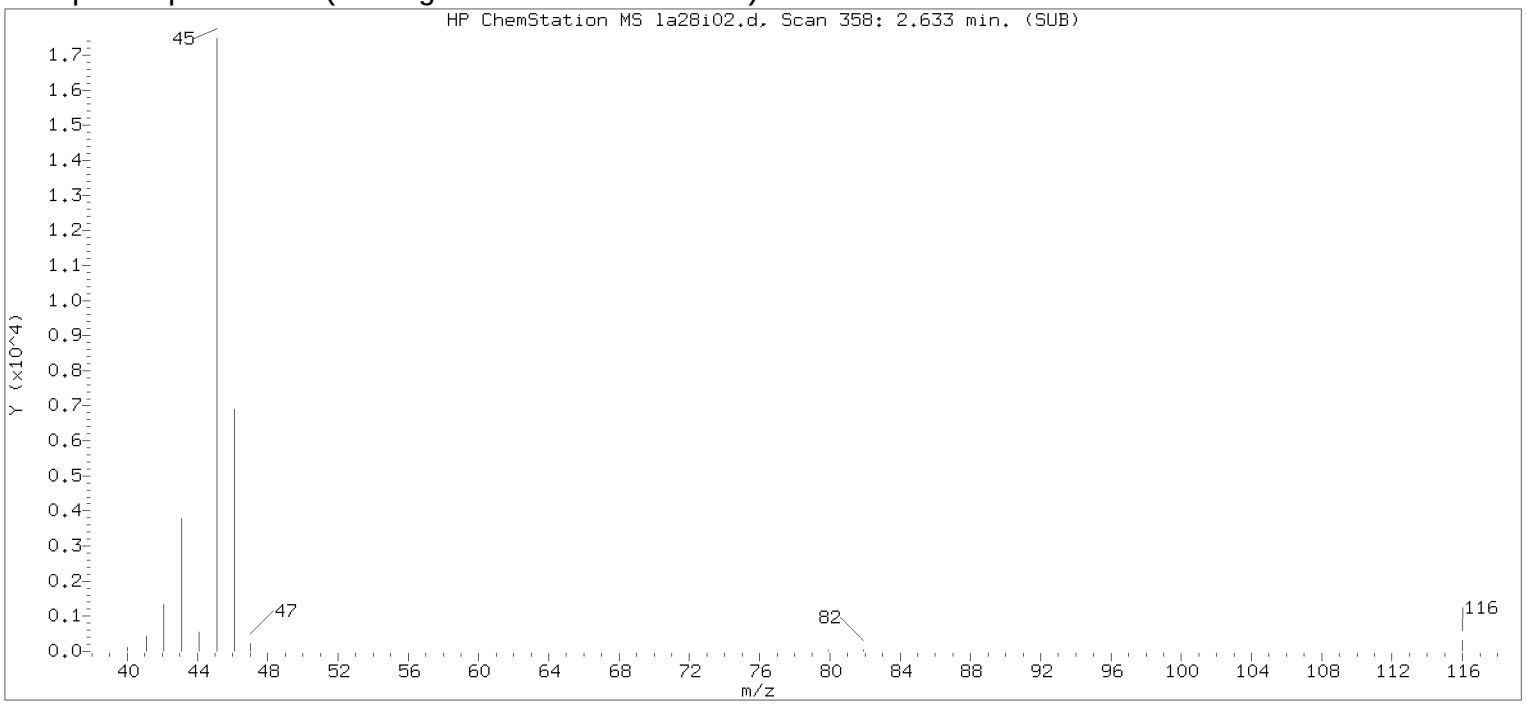
Compound Number : 13
Compound Name : Ethanol
Scan Number : 358
Retention Time (minutes): 2.633
Quant Ion : 45.00
Area (flag) : 197680M
On-Column Amount (ng) : 2605.8577
Integration start scan : 322 Integration stop scan: 462
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

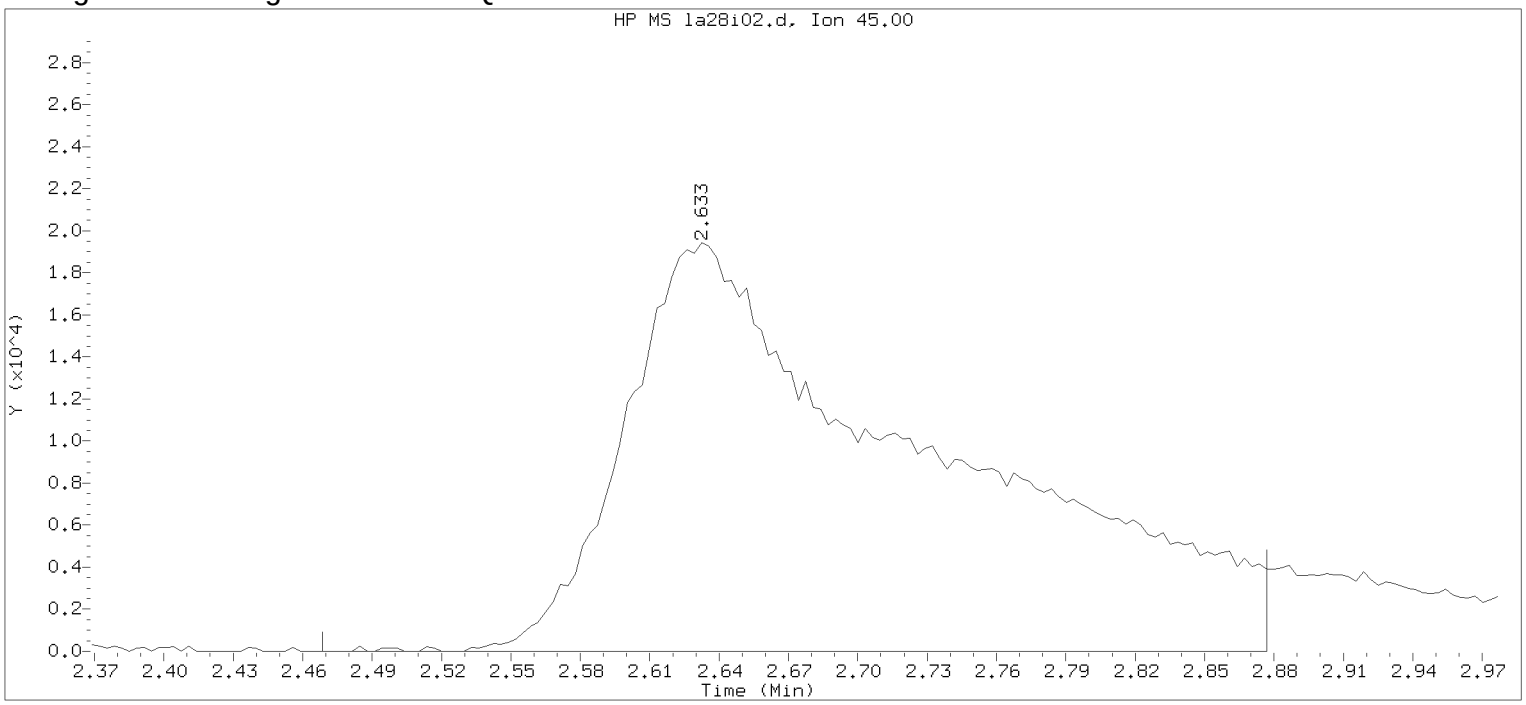
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

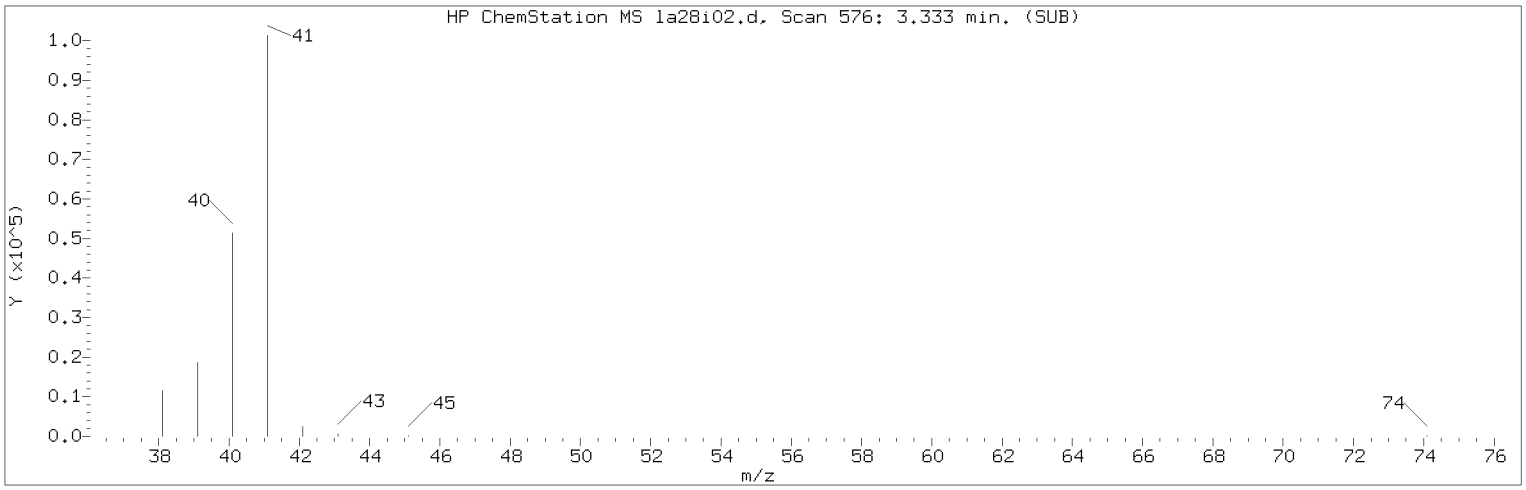
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 11:09
Date, time and analyst ID of latest file update: 28-Apr-2017 11:09 Automation

Sample Name: VSTD100 Lab Sample ID: VSTD100

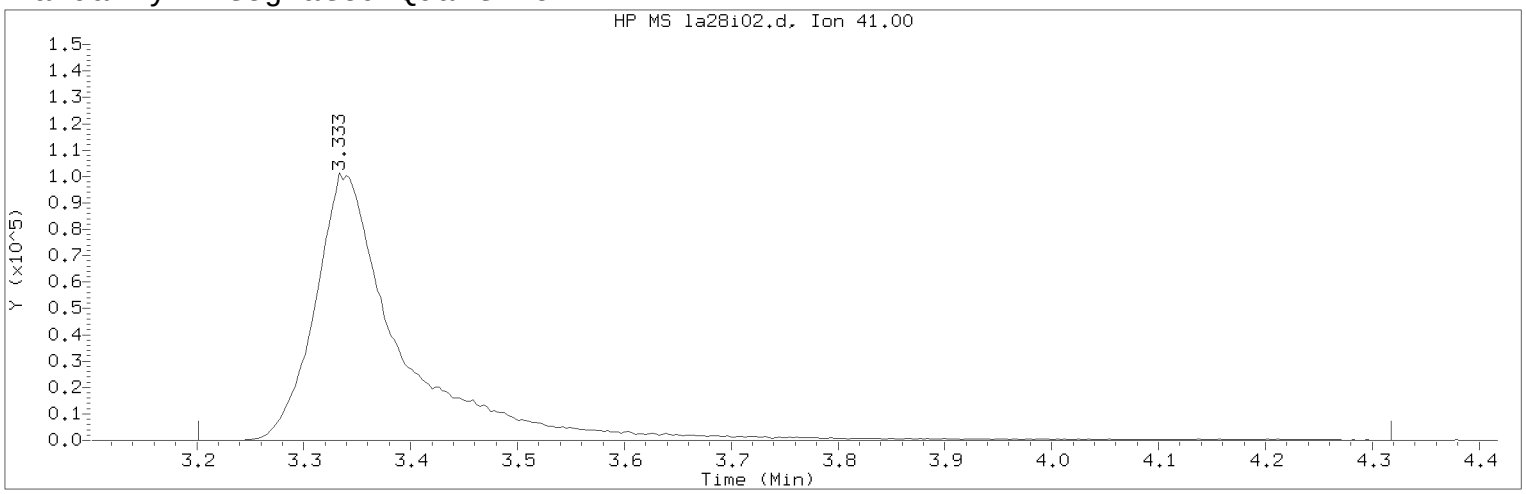
Compound Number : 13
Compound Name : Ethanol
Scan Number : 358
Retention Time (minutes): 2.633
Quant Ion : 45.00
Area : 179359
On-column Amount (ng) : 2539.6802
Integration start scan : 306 Integration stop scan: 433
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKB187bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:09
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

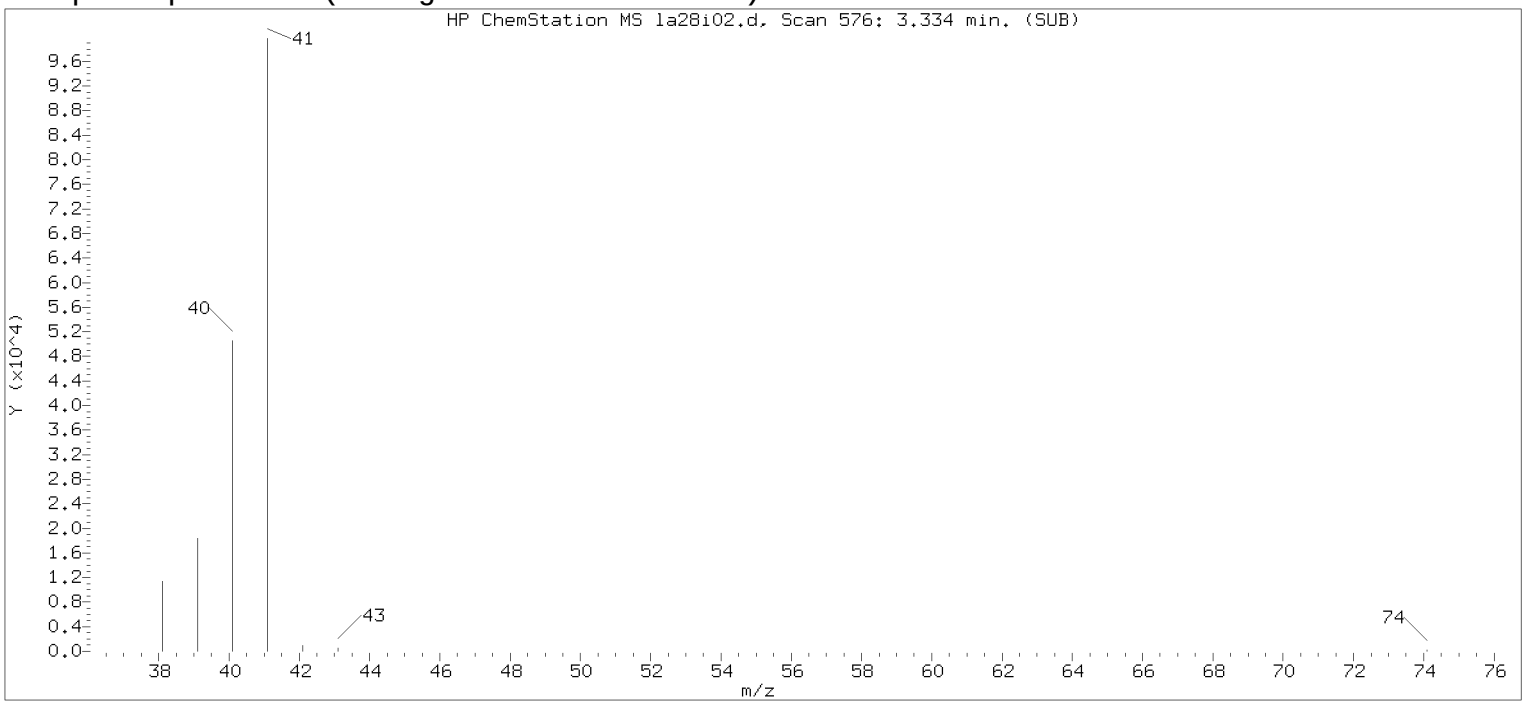
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 576
Retention Time (minutes): 3.333
Quant Ion : 41.00
Area (flag) : 569847M
On-Column Amount (ng) : 521.1850
Integration start scan : 534 Integration stop scan: 881
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

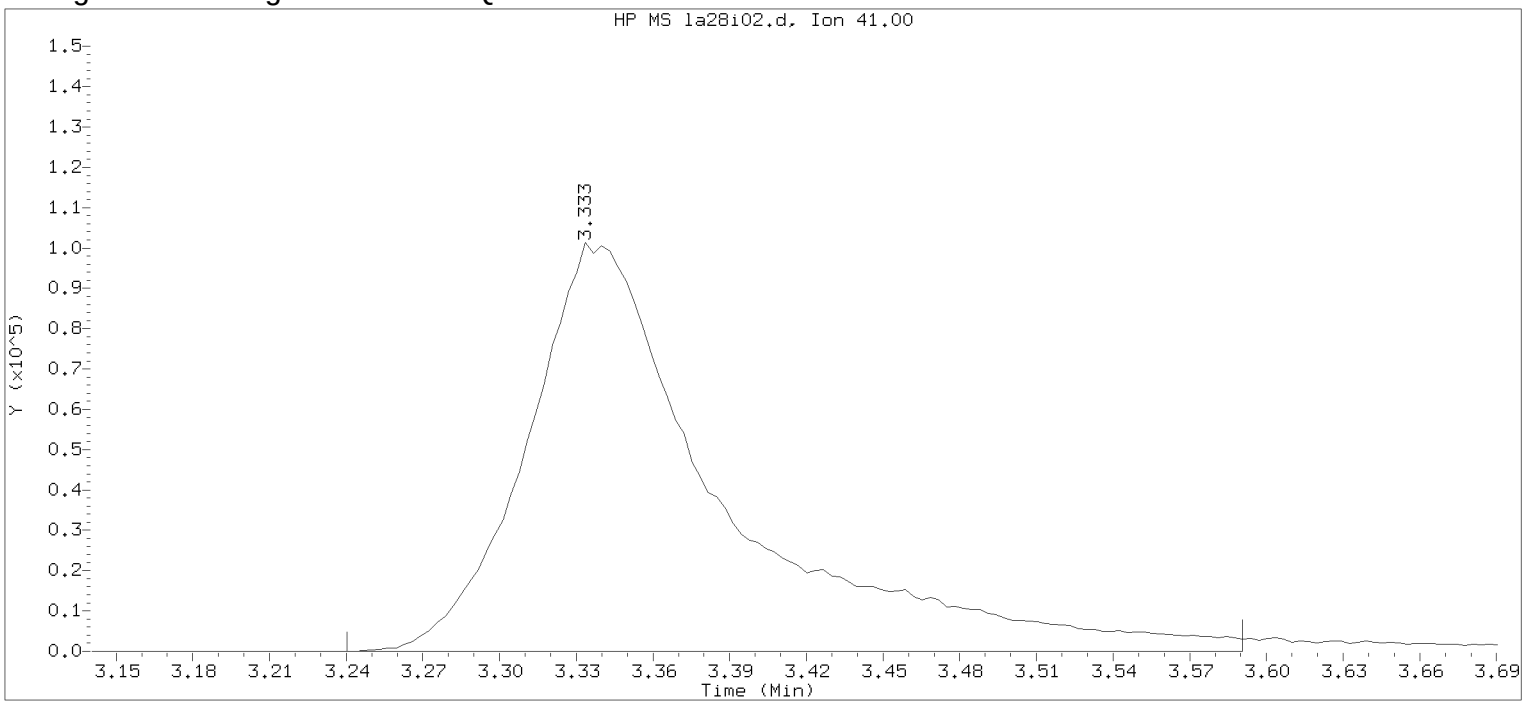
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



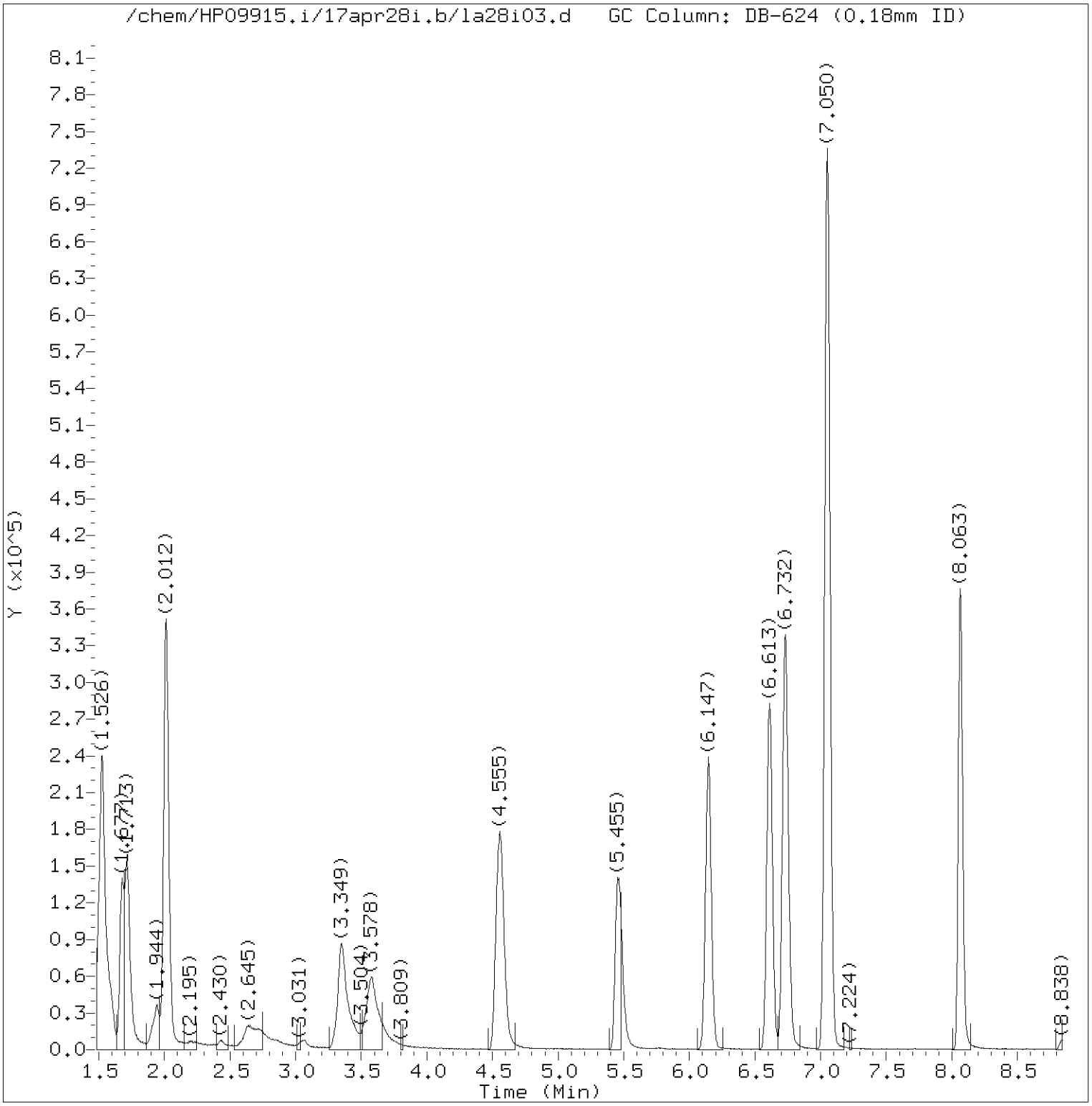

Data File: /chem/HP09915.i/17apr28i.b/la28i02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 10:51 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 11:09
Date, time and analyst ID of latest file update: 28-Apr-2017 11:09 Automation

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 576
Retention Time (minutes): 3.333
Quant Ion : 41.00
Area : 538248
On-column Amount (ng) : 508.9291
Integration start scan : 546 Integration stop scan: 655
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature user: BWK03231




Total Ion Chromatogram (TIC)

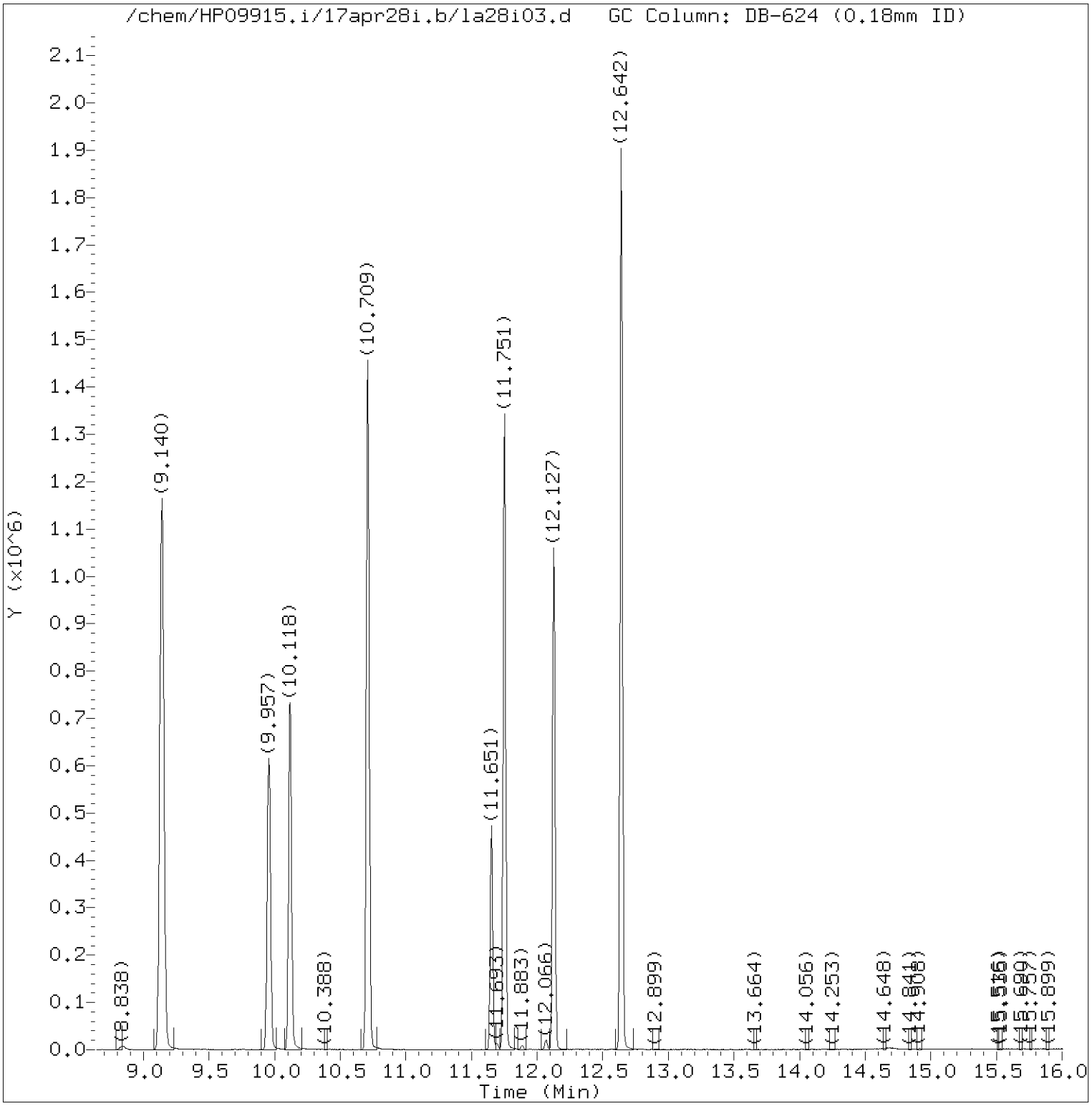
Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i03.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:13 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i03.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:13 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i03.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:13 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

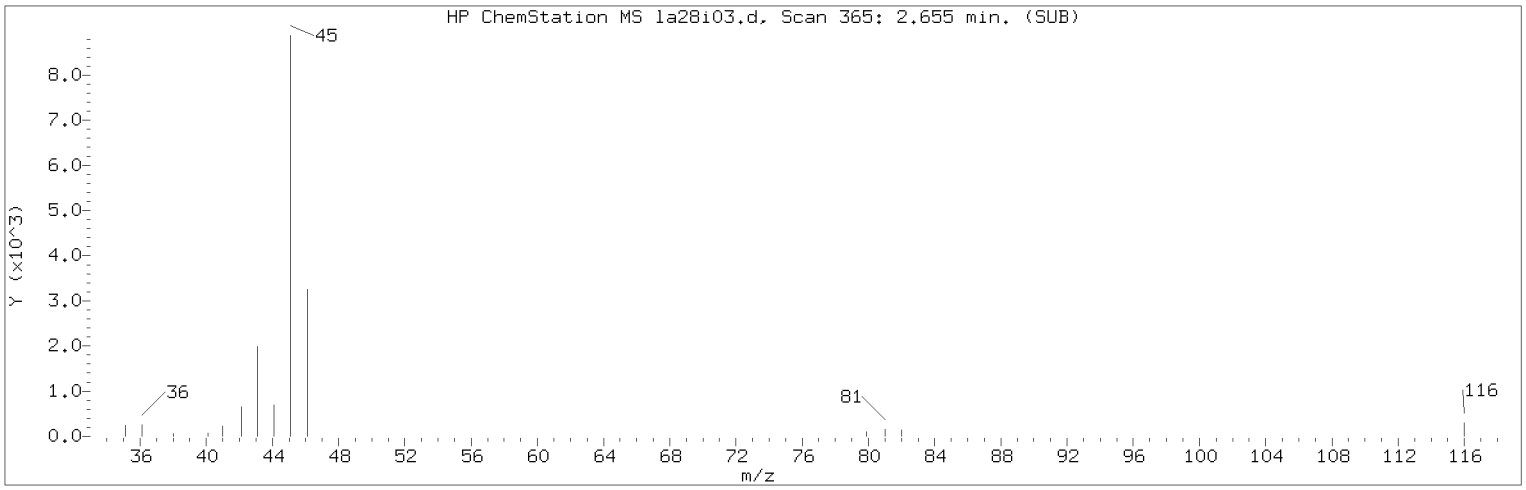
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.681 | 116 | 143294 | 52.083 |
| 2) Chlorodifluoromethane | (2) | 1.722 | 51 | 187613 | 49.689 |
| 7) Freon 133a | (2) | 2.012 | 118 | 294798 | 52.302 |
| 13) Ethanol | (1) | 2.655 | 45 | 100376M | 1318.492 |
| 24) Acetonitrile | (1) | 3.353 | 41 | 277871M | 253.242 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 196285 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.555 | 43 | 632377 | 52.127 |
| 46) Ethyl Acetate | (2) | 5.455 | 43 | 346848 | 51.467 |
| 62) Isopropyl acetate | (2) | 6.732 | 43 | 599433 | 51.446 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1052013 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.063 | 61 | 135206 | 52.335 |
| 95) 3,4-Dichloro-1-butene | (3) | 9.957 | 75 | 233851 | 48.343 |
| 98) Butyl acetate | (3) | 10.118 | 43 | 536666 | 53.111 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 813406 | 50.000 |
| 113) cis-1,4-Dichloro-2-butene | (3) | 11.651 | 88 | 81880 | 55.452 |
| 123) 2,3,4-Trichlorobutene | (4) | 12.127 | 109 | 229882 | 53.870 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 441907 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.

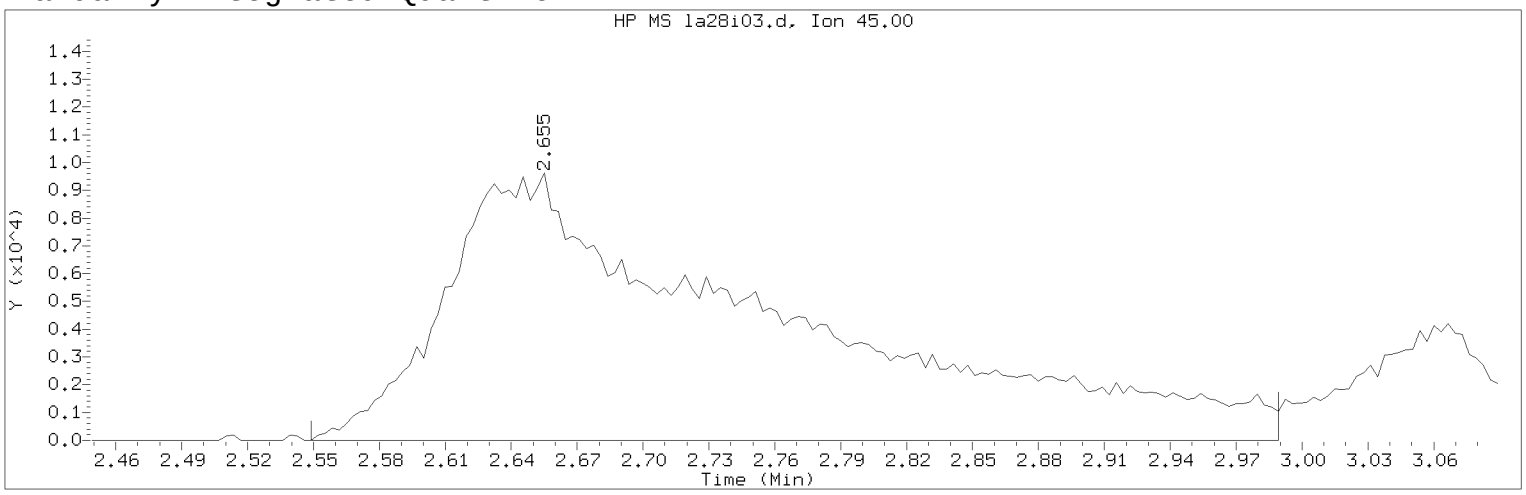


Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i03.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:13 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

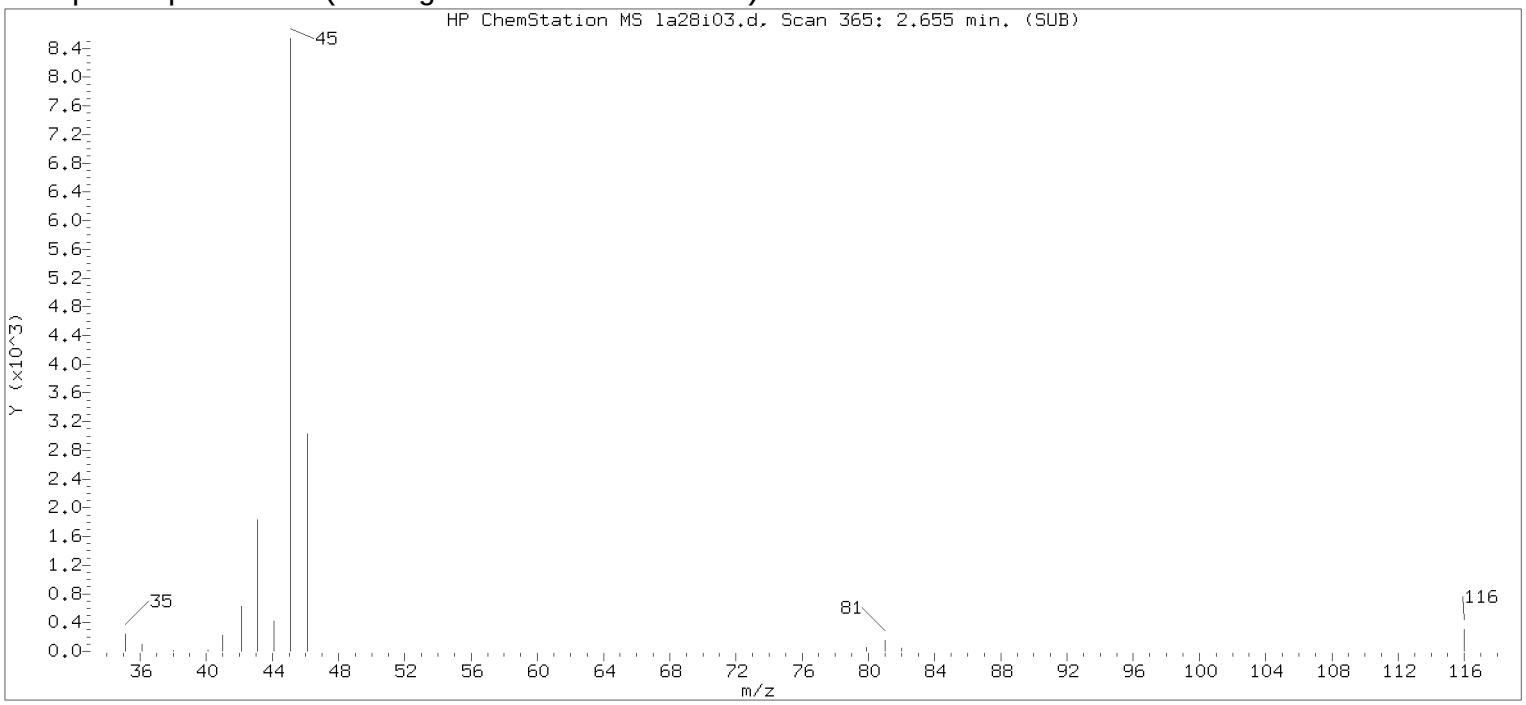
Compound Number : 13
Compound Name : Ethanol
Scan Number : 365
Retention Time (minutes): 2.655
Quant Ion : 45.00
Area (flag) : 100376M
On-Column Amount (ng) : 1318.4916
Integration start scan : 331 Integration stop scan: 468
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

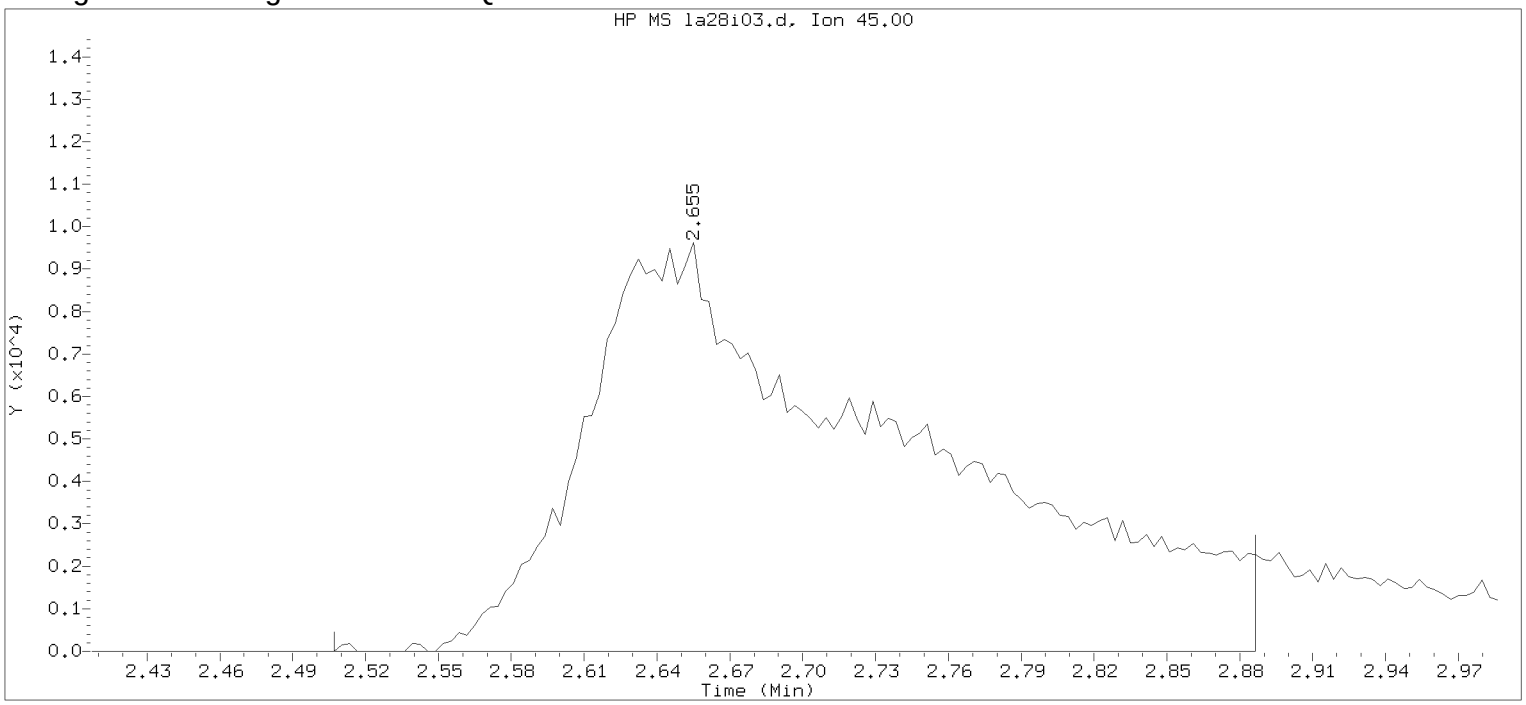
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i03.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:13 Analyst ID: BWK03231

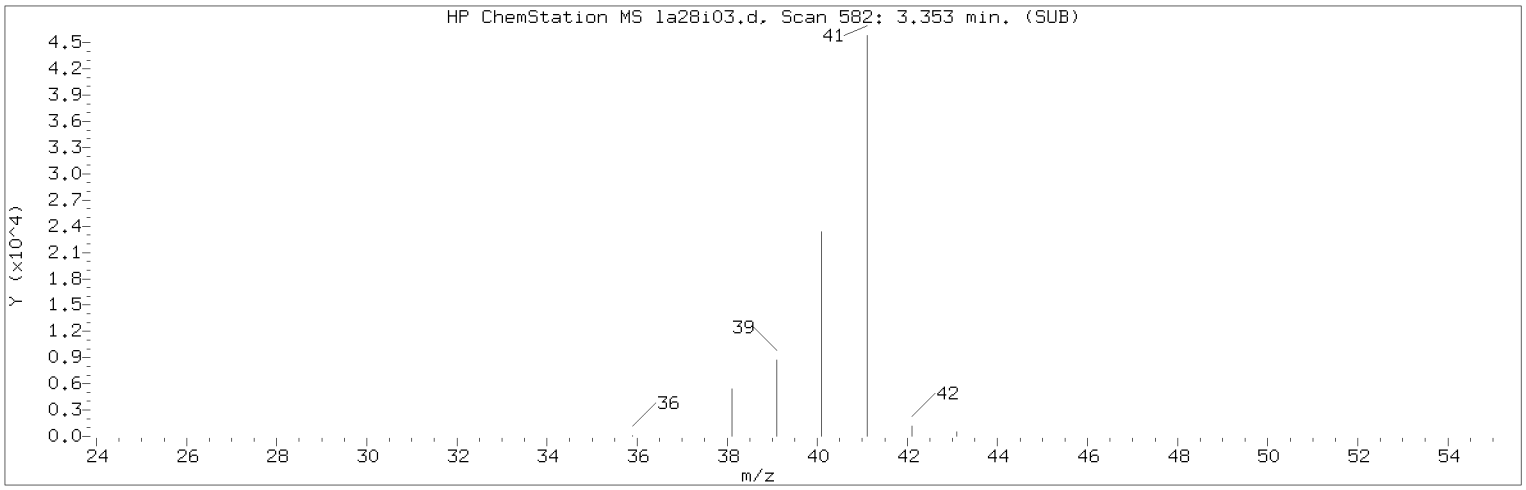
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 11:30
Date, time and analyst ID of latest file update: 28-Apr-2017 11:30 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

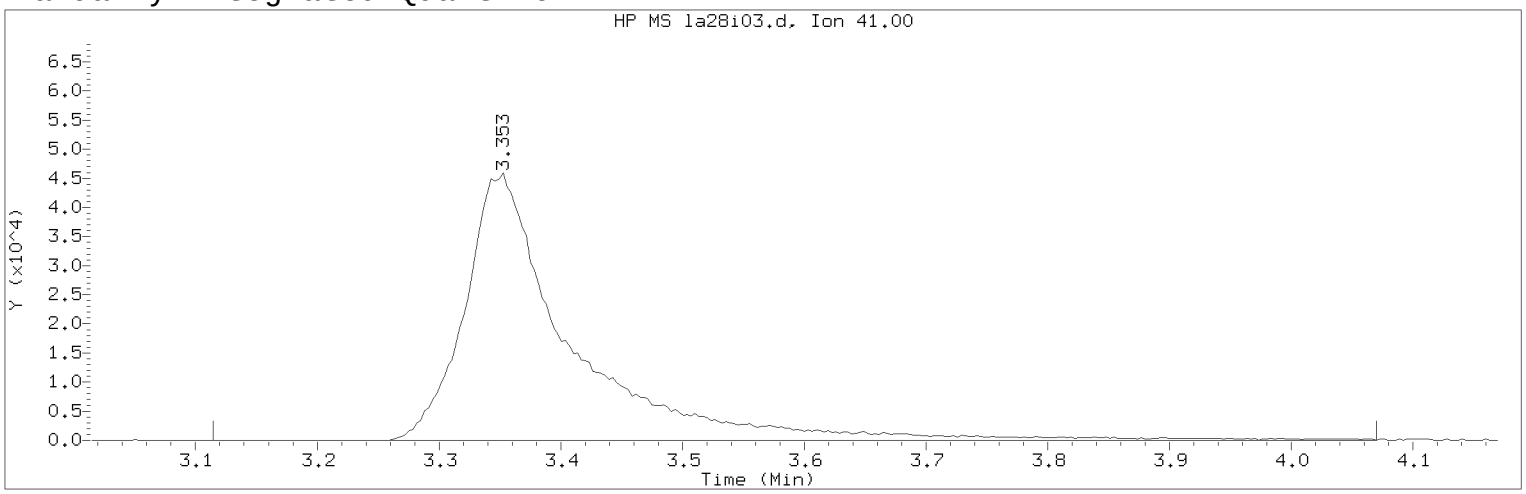
Compound Number : 13
Compound Name : Ethanol
Scan Number : 365
Retention Time (minutes): 2.655
Quant Ion : 45.00
Area : 90140
On-column Amount (ng) : 1222.4403
Integration start scan : 318 Integration stop scan: 436
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKB187bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i03.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:13 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

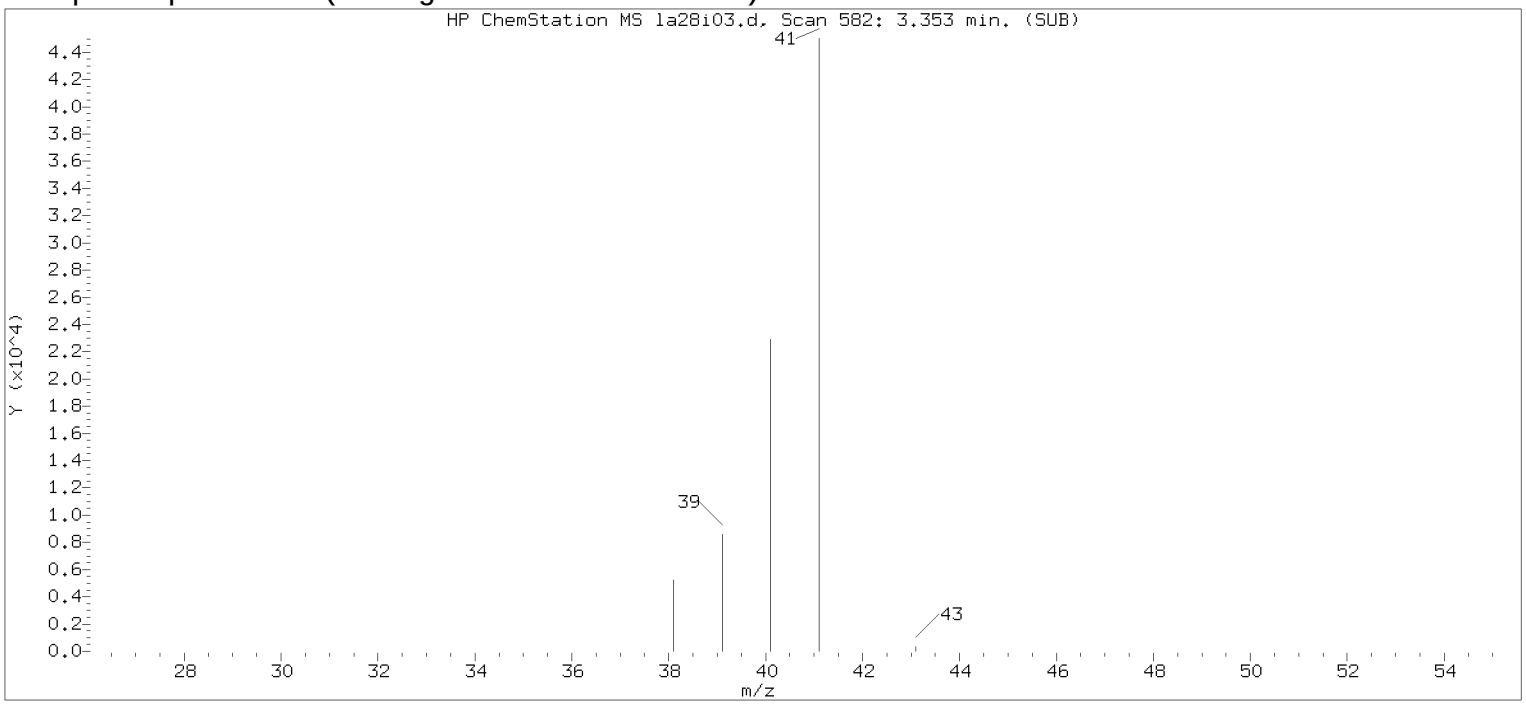
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 582
Retention Time (minutes): 3.353
Quant Ion : 41.00
Area (flag) : 277871M
On-Column Amount (ng) : 253.2424
Integration start scan : 507 Integration stop scan: 804
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

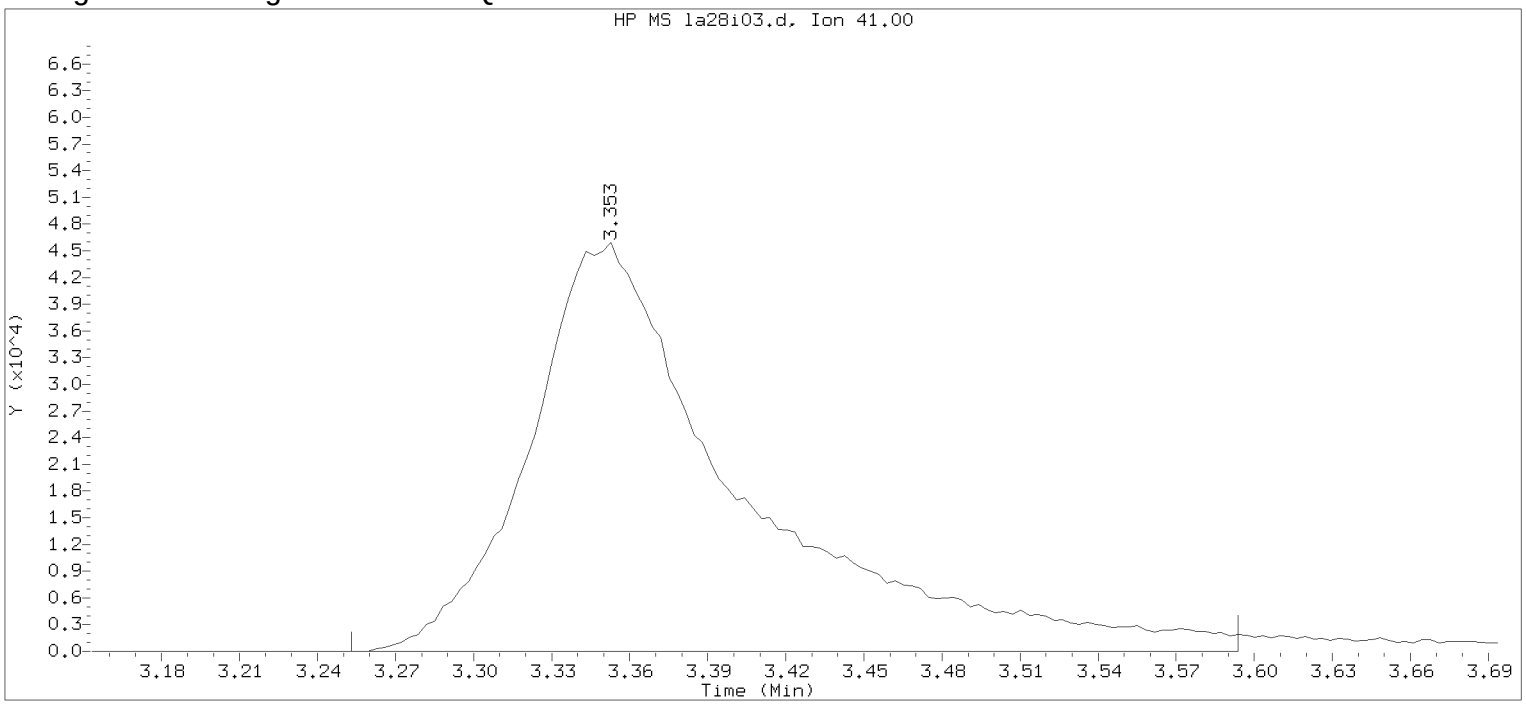
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



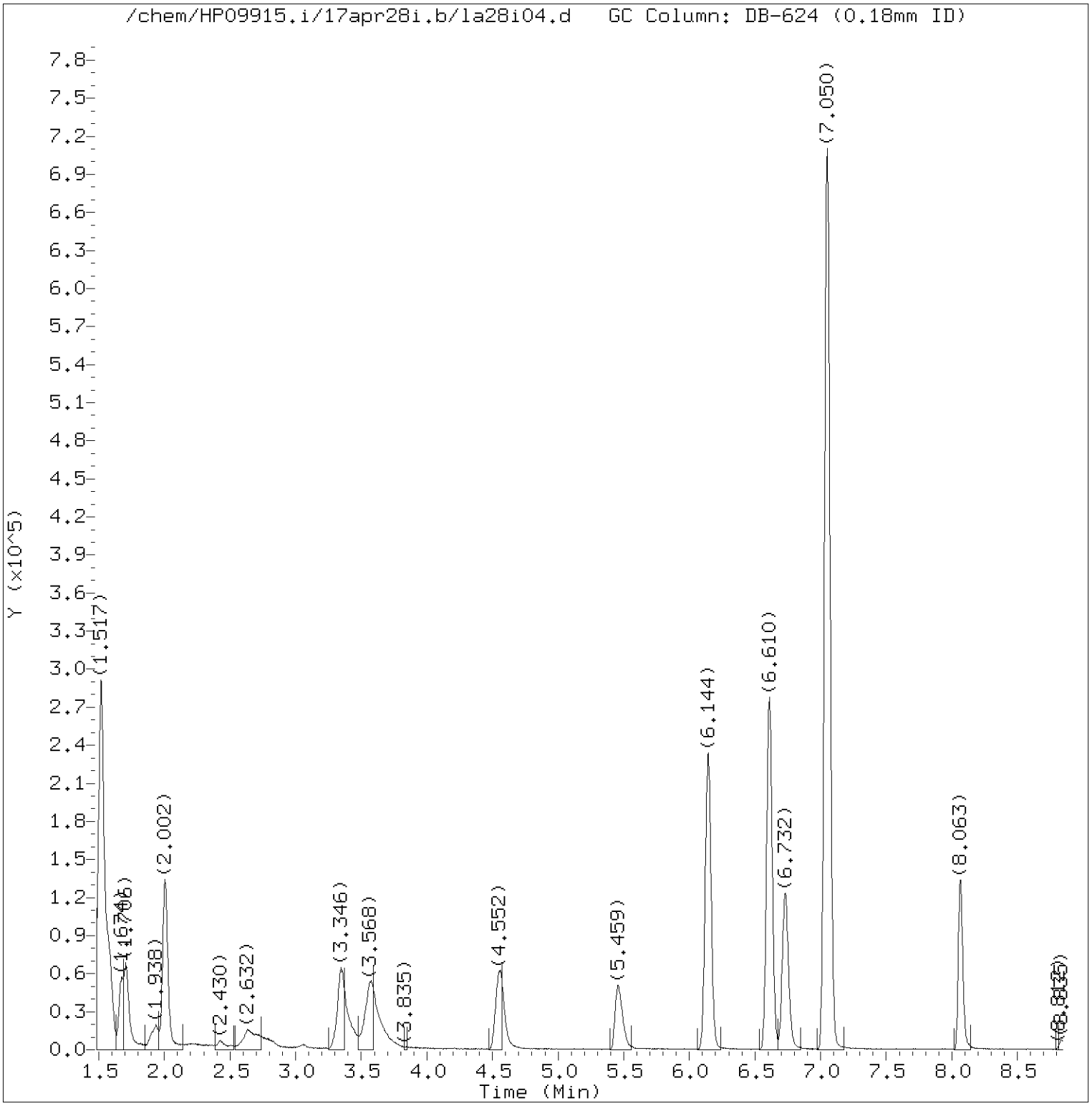

Data File: /chem/HP09915.i/17apr28i.b/la28i03.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:13 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 11:30
Date, time and analyst ID of latest file update: 28-Apr-2017 11:30 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 582
Retention Time (minutes): 3.353
Quant Ion : 41.00
Area : 261021
On-column Amount (ng) : 242.4163
Integration start scan : 550 Integration stop scan: 656
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature user: BWK03231




Total Ion Chromatogram (TIC)

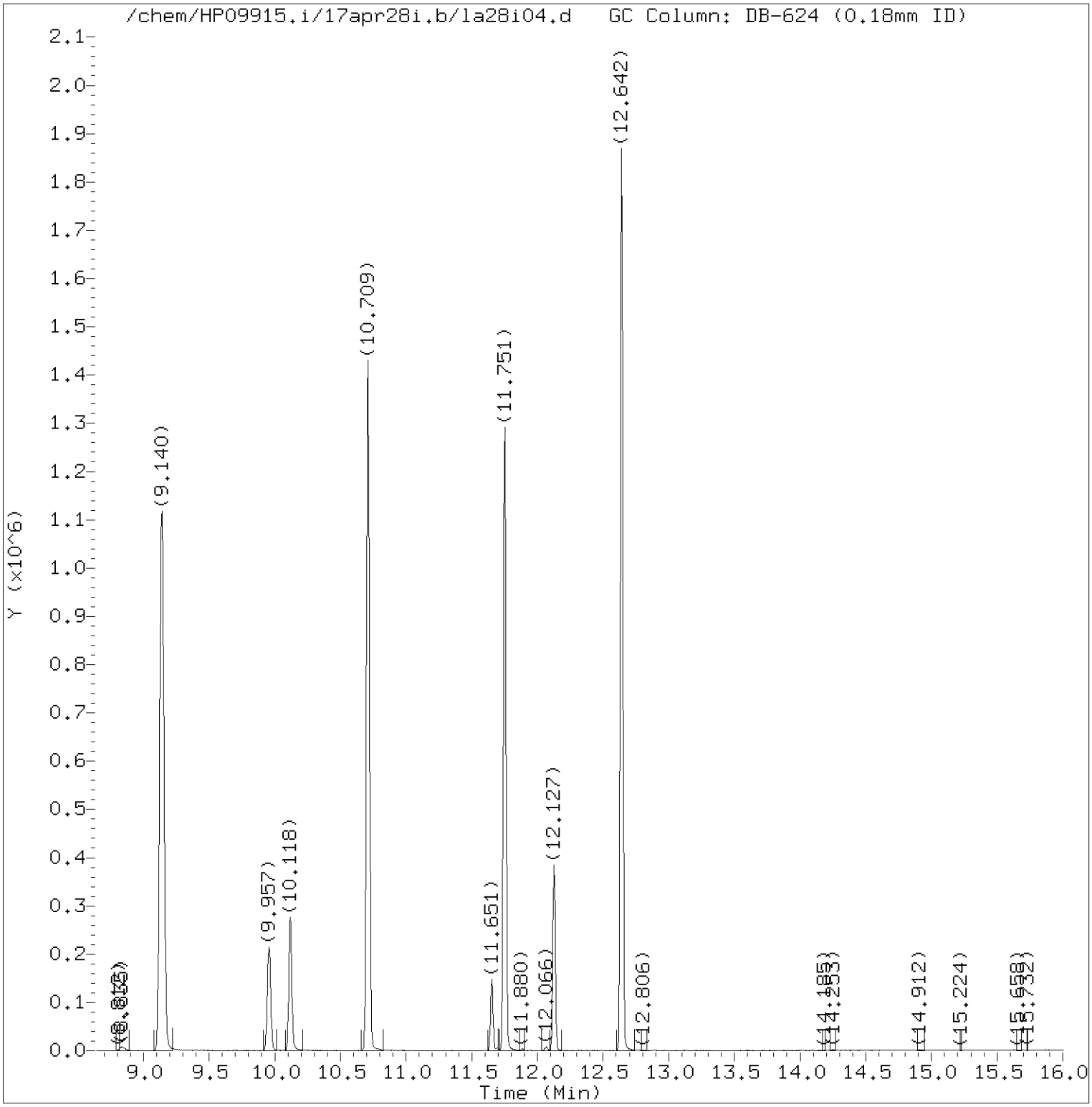
Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i04.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:35 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i04.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:35 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i04.d  Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:35  Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m  Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD020  Lab Sample ID: VSTD020

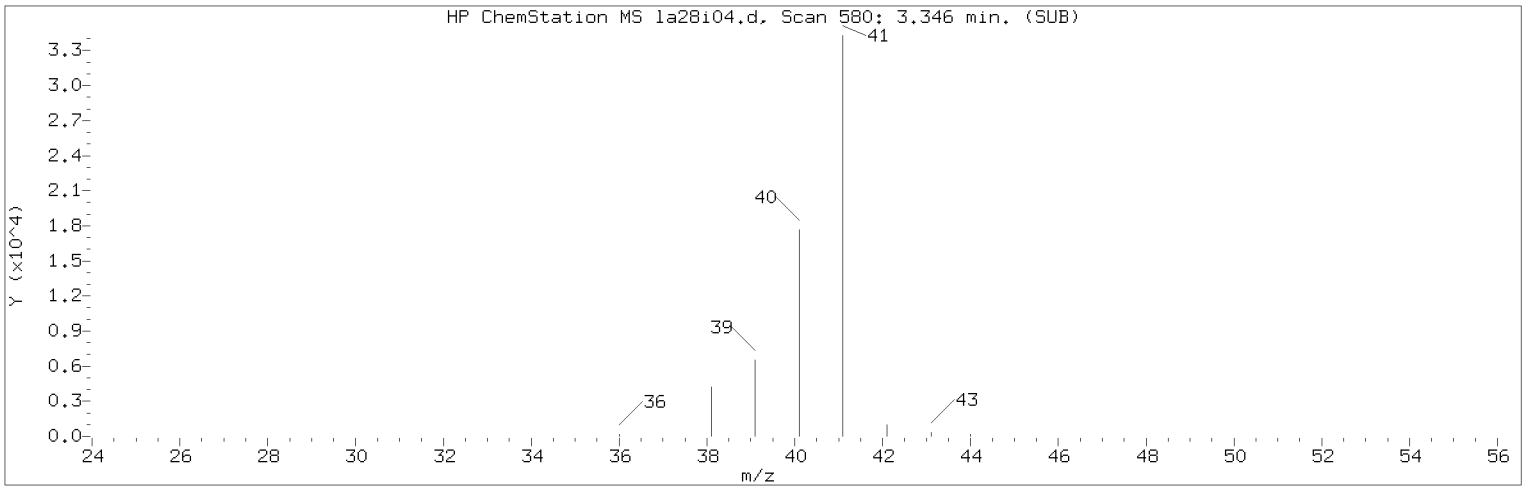
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.668 | 116 | 53335 | 19.600 |
| 2) Chlorodifluoromethane | (2) | 1.706 | 51 | 75364 | 20.181 |
| 7) Freon 133a | (2) | 2.002 | 118 | 108505 | 19.463 |
| 13) Ethanol | (1) | 2.645 | 45 | 65401 | 888.064 |
| 24) Acetonitrile | (1) | 3.346 | 41 | 209092M | 196.989 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 189878 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.562 | 43 | 231587 | 19.300 |
| 46) Ethyl Acetate | (2) | 5.459 | 43 | 127564 | 19.138 |
| 62) Isopropyl acetate | (2) | 6.729 | 43 | 223000 | 19.350 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1040527 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.066 | 61 | 49885 | 19.522 |
| 95) 3,4-Dichloro-1-butene | (3) | 9.957 | 75 | 79079 | 18.799 |
| 98) Butyl acetate | (3) | 10.118 | 43 | 196709 | 19.505 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 811836 | 50.000 |
| 113) cis-1,4-Dichloro-2-butene | (3) | 11.651 | 88 | 23249 | 15.776 |
| 123) 2,3,4-Trichlorobutene | (4) | 12.127 | 109 | 81082 | 19.054 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 440668 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.

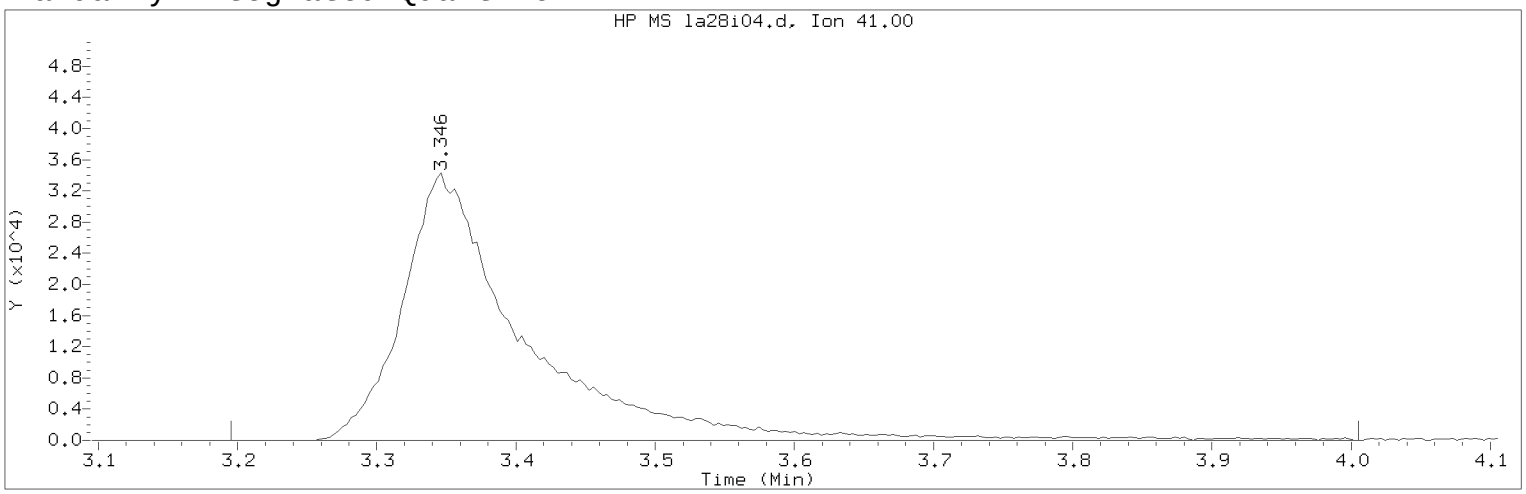


Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i04.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:35 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

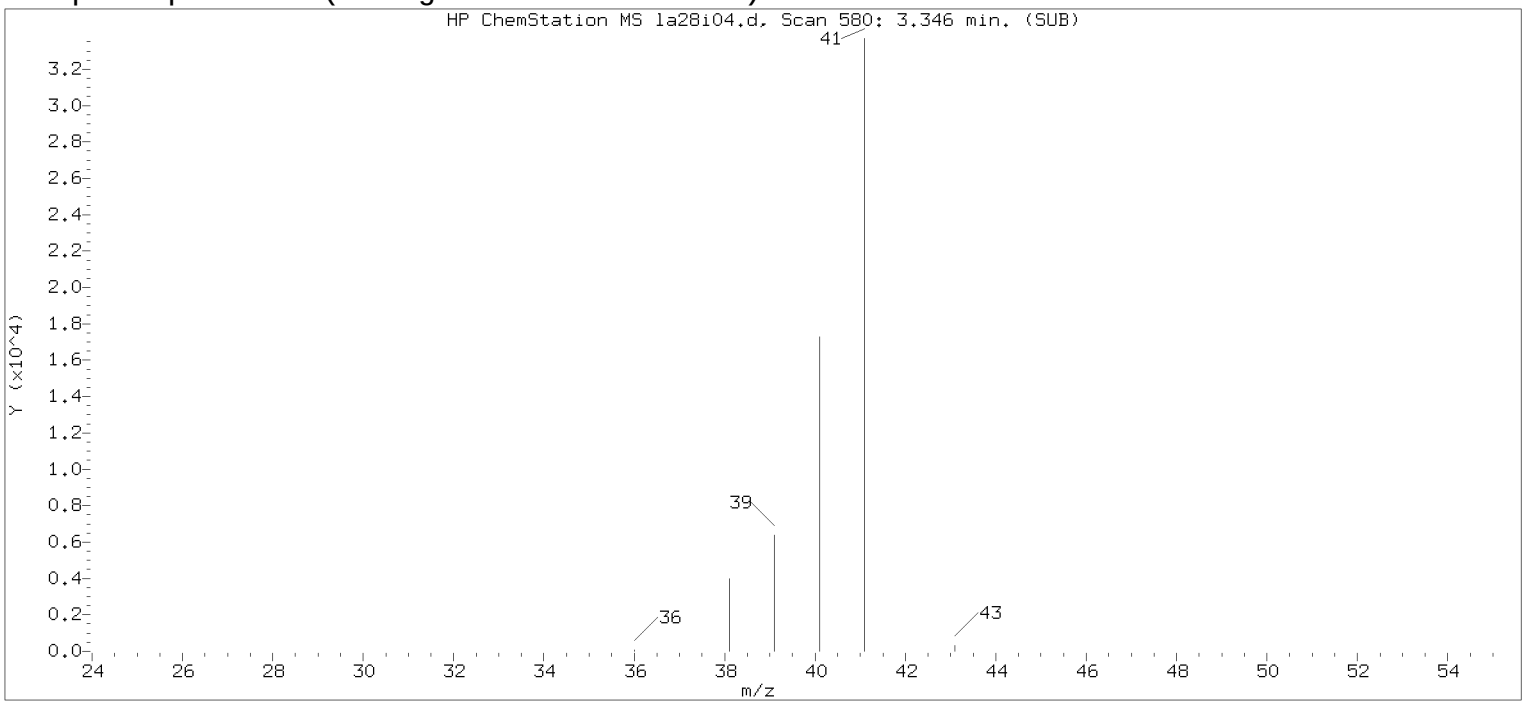
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 580
Retention Time (minutes): 3.346
Quant Ion : 41.00
Area (flag) : 209092M
On-Column Amount (ng) : 196.9895
Integration start scan : 532 Integration stop scan: 784
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

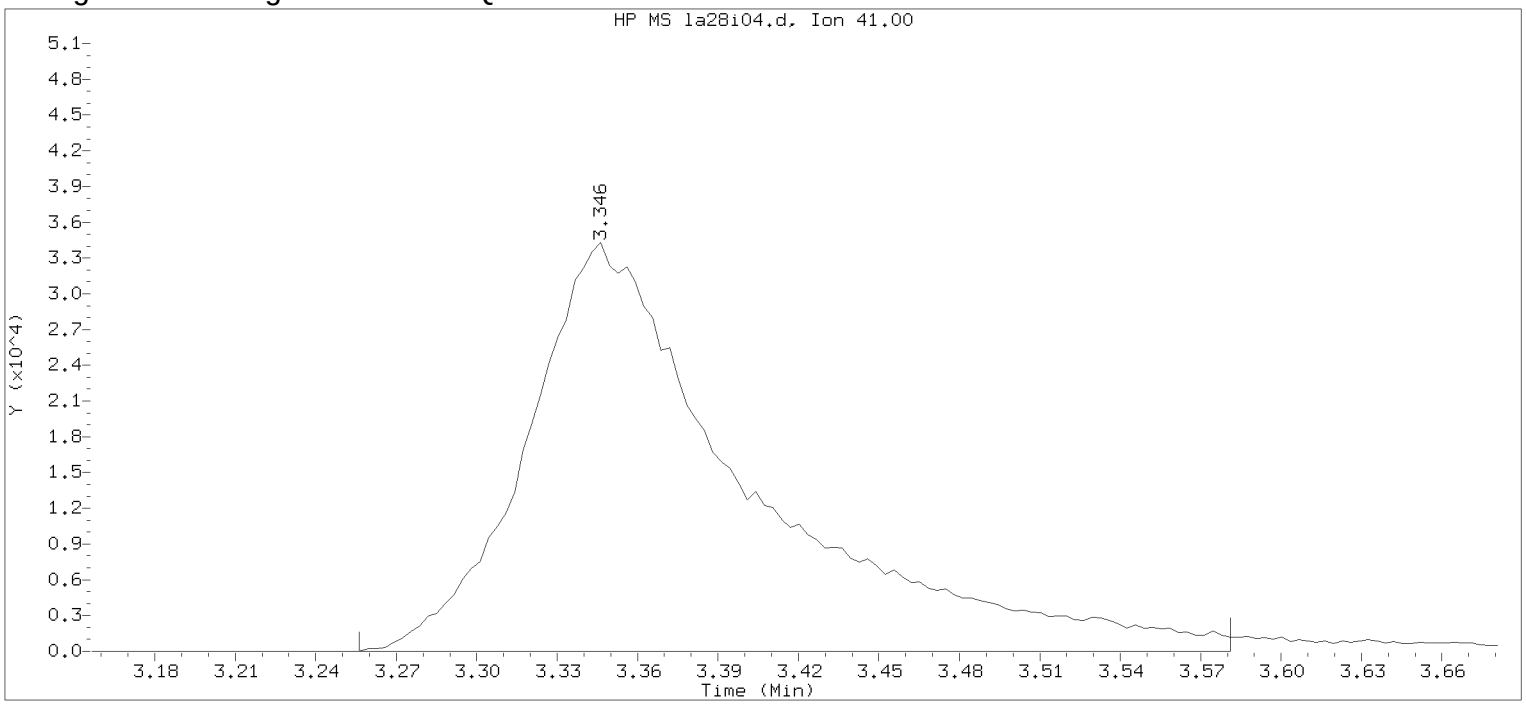
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



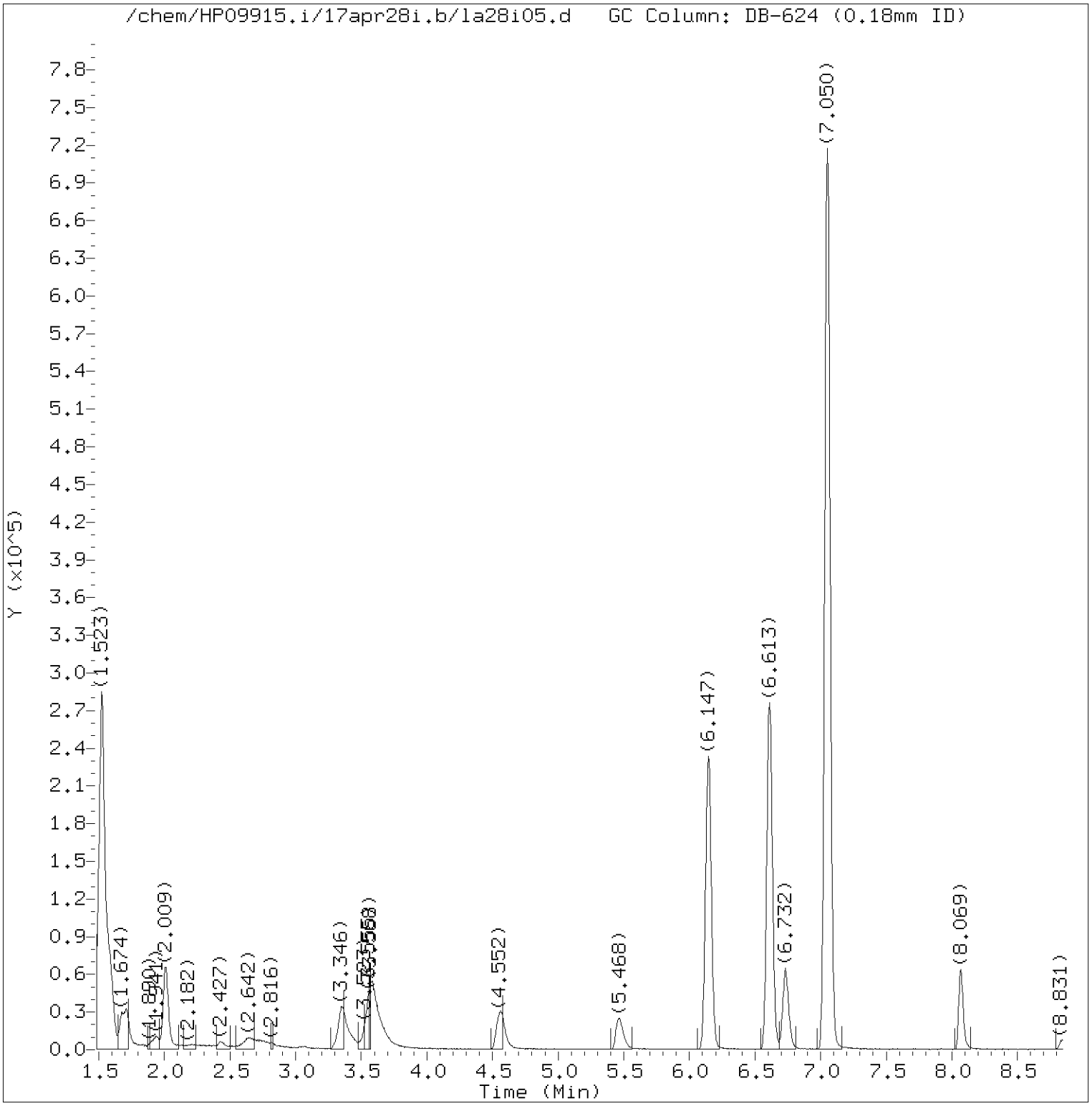

Data File: /chem/HP09915.i/17apr28i.b/la28i04.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:35 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 11:52
Date, time and analyst ID of latest file update: 28-Apr-2017 11:52 Automation

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 580
Retention Time (minutes): 3.346
Quant Ion : 41.00
Area : 197854
On-column Amount (ng) : 189.3673
Integration start scan : 551 Integration stop scan: 652
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature user: BWK03231




Total Ion Chromatogram (TIC)

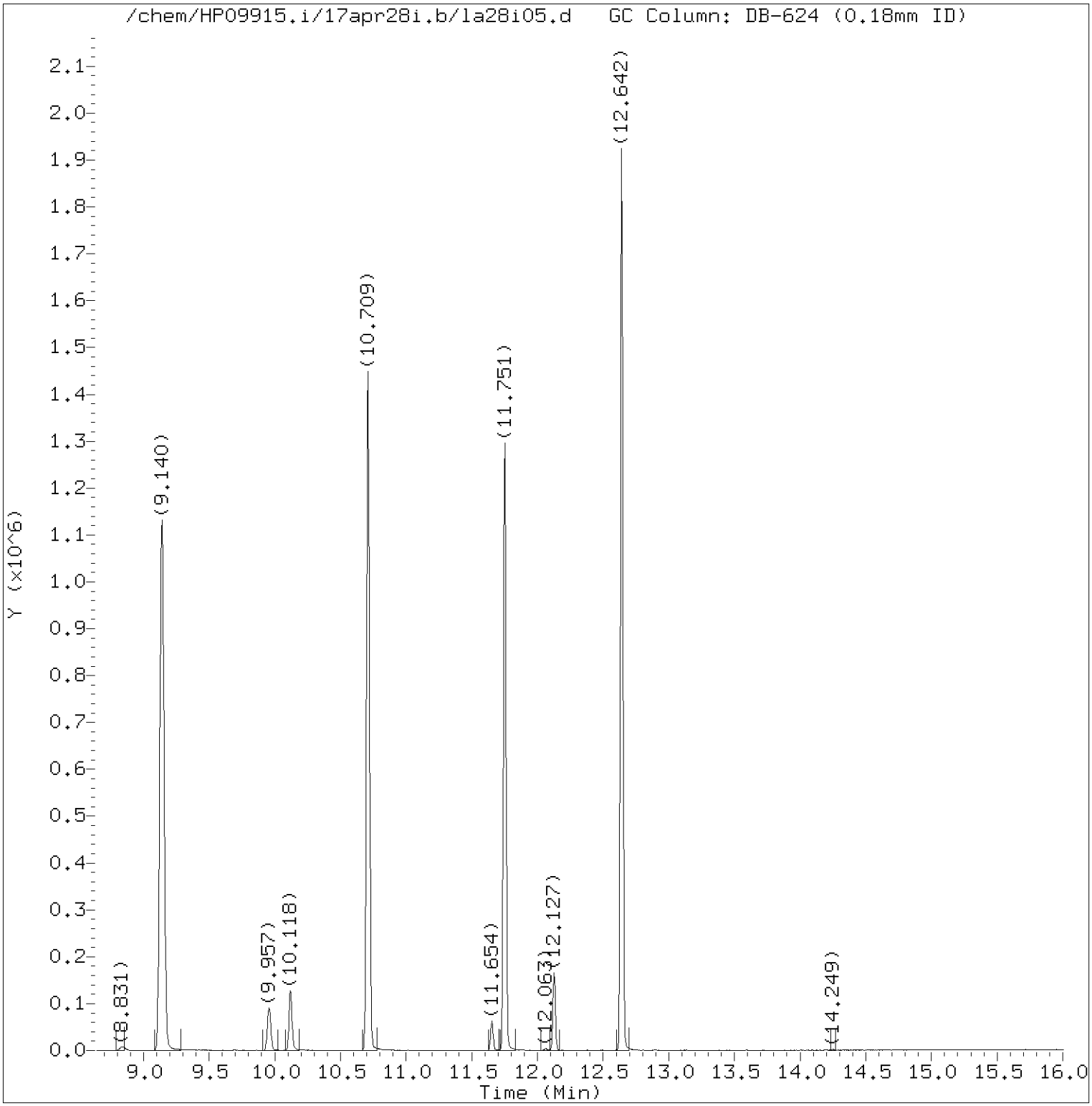
Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i05.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:56 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i05.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:56 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i05.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:56 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

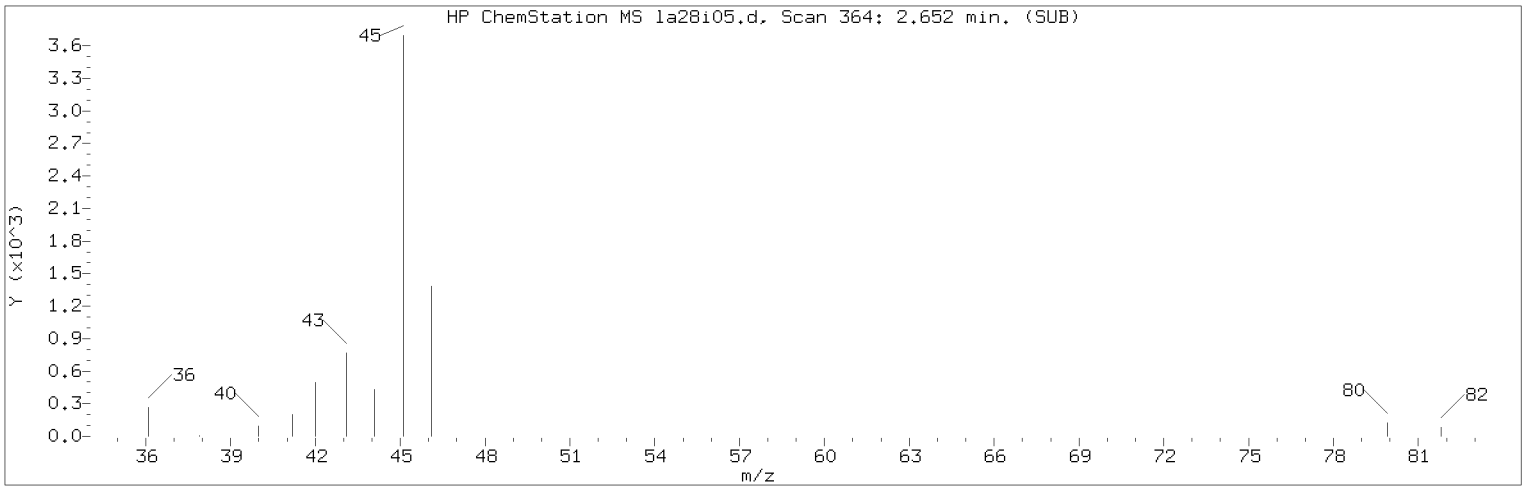
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.674 | 116 | 25873 | 9.514 |
| 2) Chlorodifluoromethane | (2) | 1.716 | 51 | 32159 | 8.617 |
| 7) Freon 133a | (2) | 2.015 | 118 | 53072 | 9.526 |
| 13) Ethanol | (1) | 2.652 | 45 | 39436M | 528.058 |
| 24) Acetonitrile | (1) | 3.359 | 41 | 109582M | 101.806 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 192551 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.562 | 43 | 110912 | 9.249 |
| 46) Ethyl Acetate | (2) | 5.459 | 43 | 63345 | 9.509 |
| 62) Isopropyl acetate | (2) | 6.732 | 43 | 107531 | 9.337 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1039868 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.066 | 61 | 23671 | 9.269 |
| 95) 3,4-Dichloro-1-butene | (3) | 9.957 | 75 | 32450 | 9.826 |
| 98) Butyl acetate | (3) | 10.118 | 43 | 94452 | 9.430 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 806258 | 50.000 |
| 113) cis-1,4-Dichloro-2-butene | (3) | 11.654 | 88 | 9668 | 6.606 |
| 123) 2,3,4-Trichlorobutene | (4) | 12.127 | 109 | 33824 | 7.922 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 442117 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.

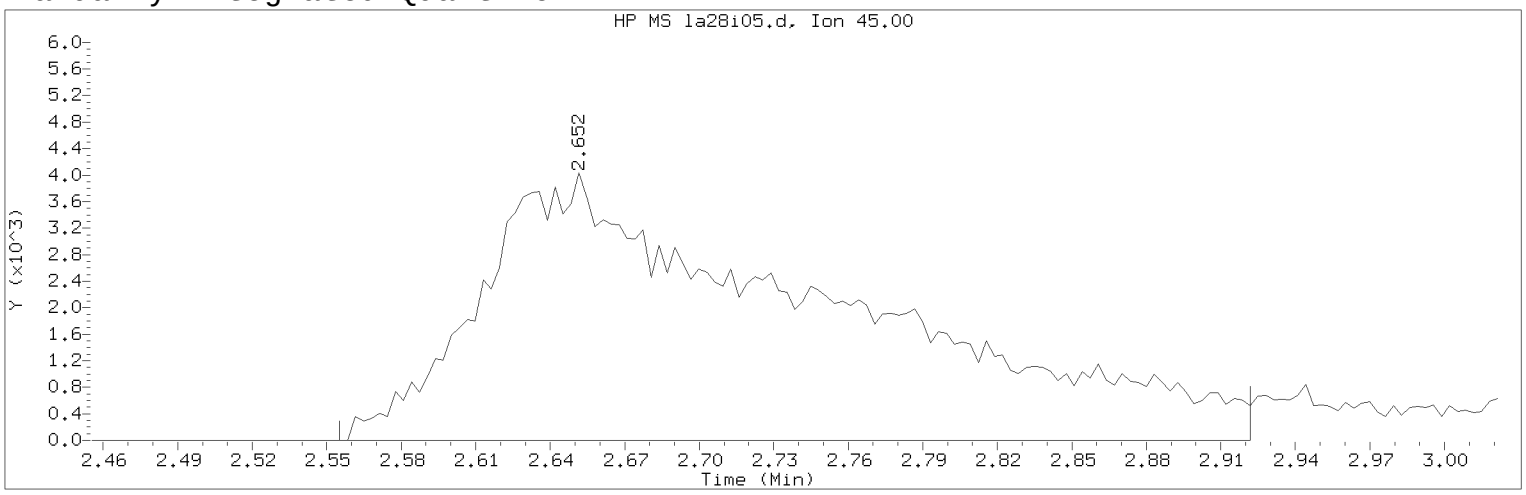


Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i05.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:56 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

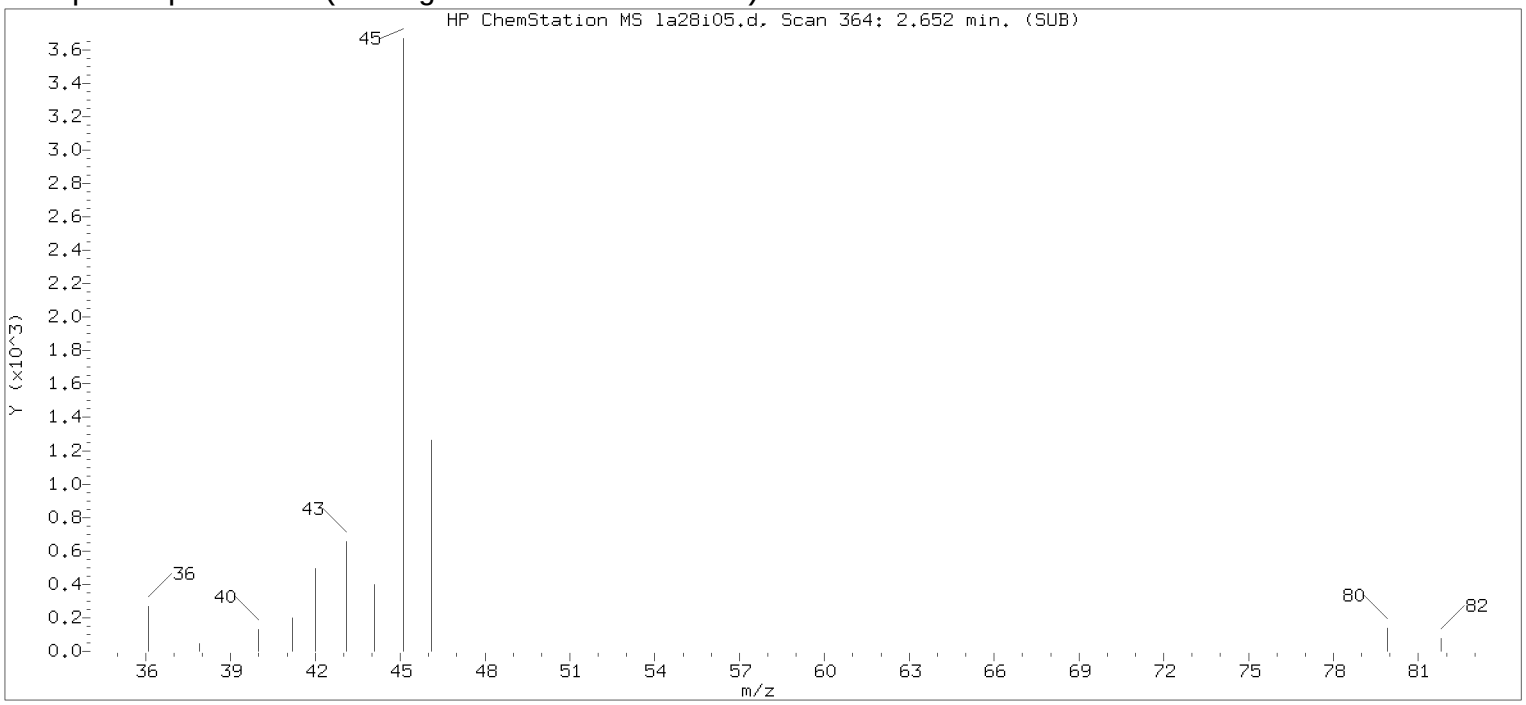
Compound Number : 13
Compound Name : Ethanol
Scan Number : 364
Retention Time (minutes): 2.652
Quant Ion : 45.00
Area (flag) : 39436M
On-Column Amount (ng) : 528.0581
Integration start scan : 333 Integration stop scan: 447
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

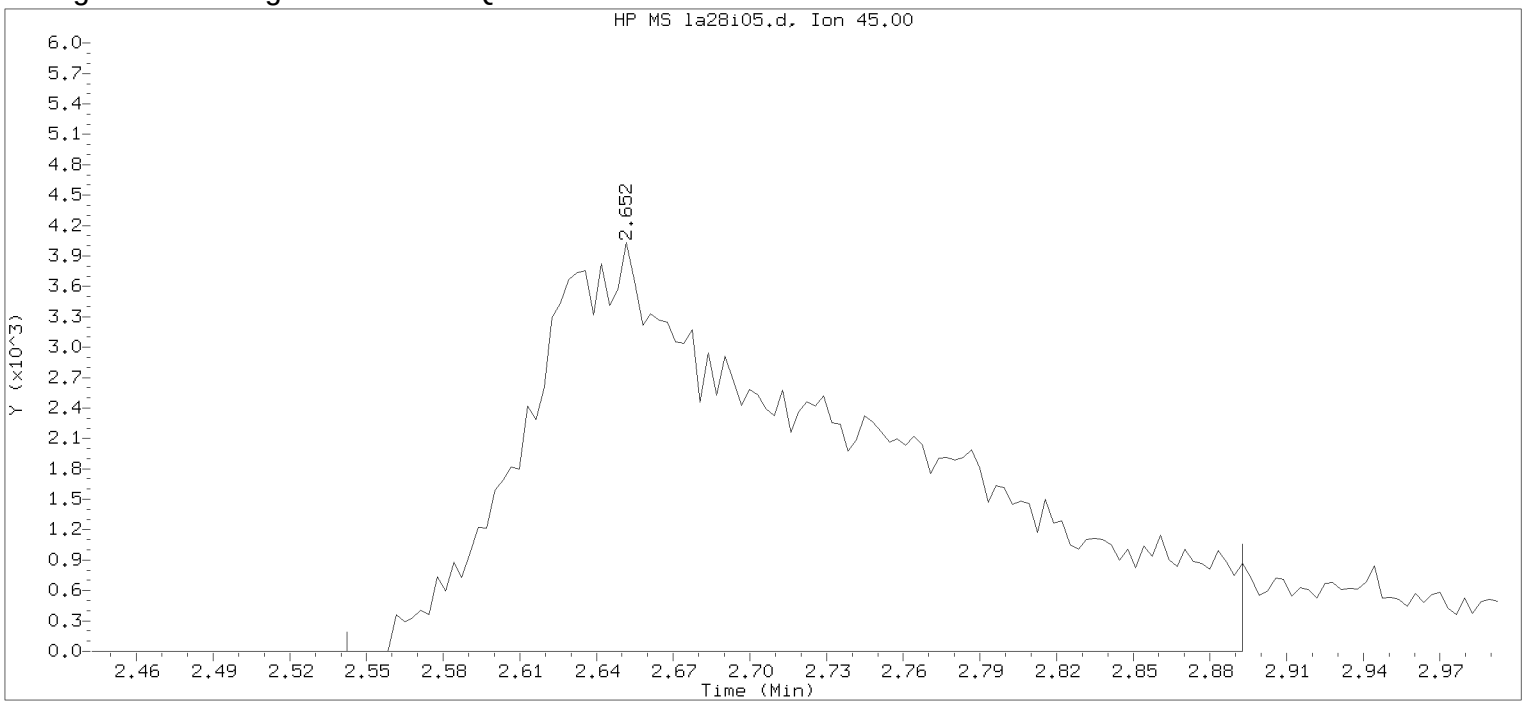
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i05.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:56 Analyst ID: BWK03231

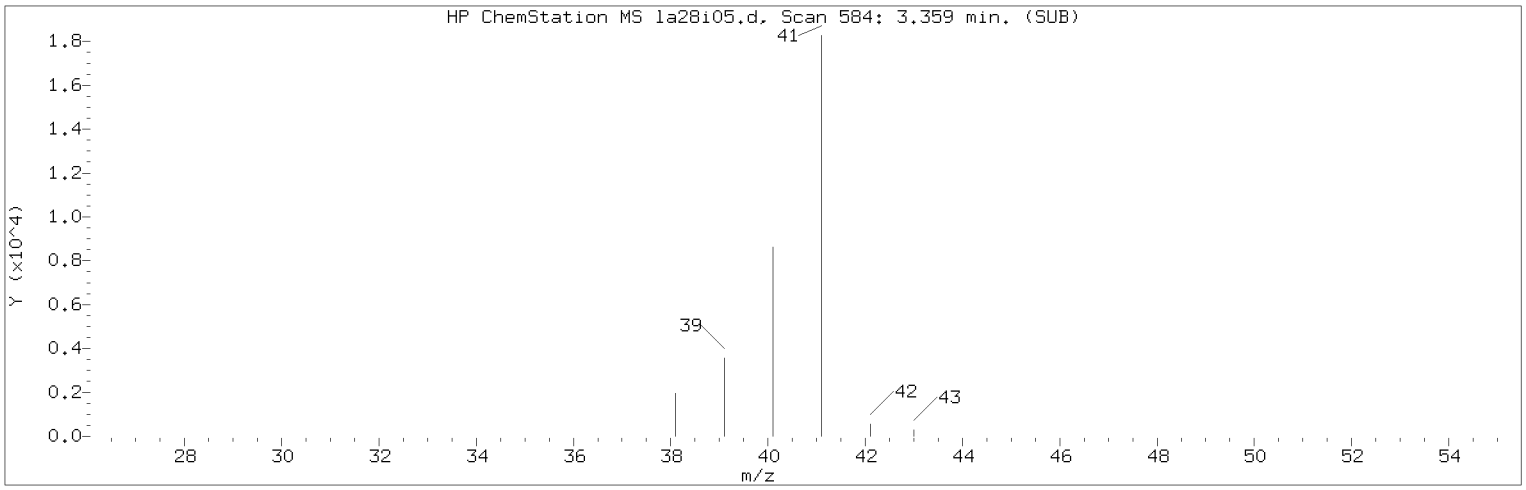
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 12:14
Date, time and analyst ID of latest file update: 28-Apr-2017 12:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

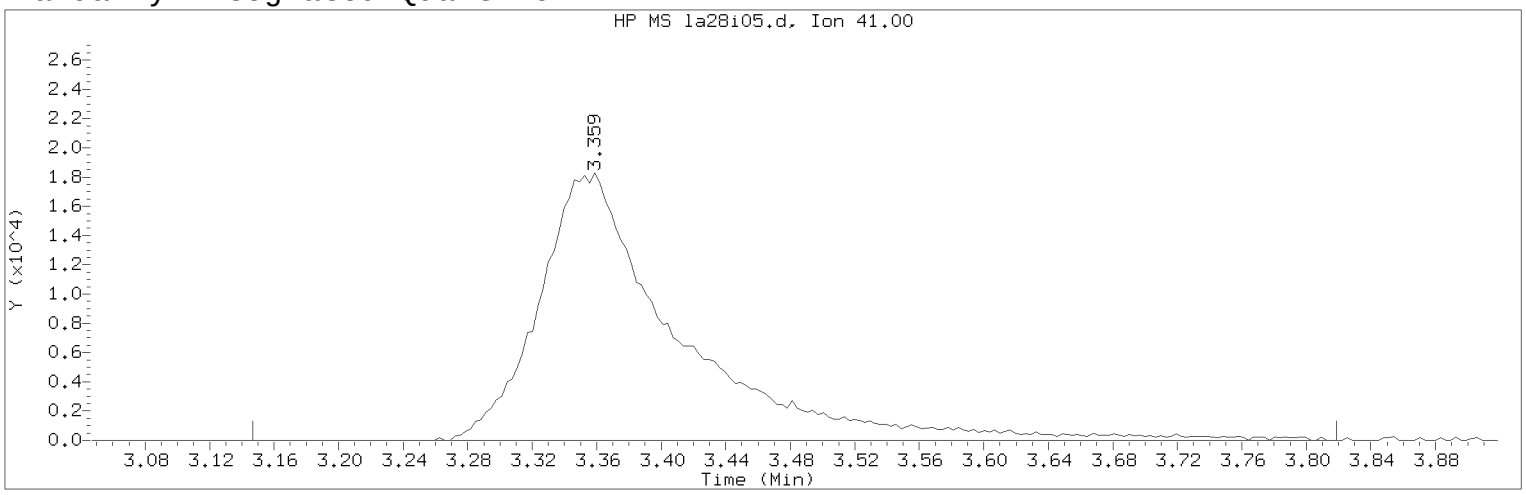
Compound Number : 13
Compound Name : Ethanol
Scan Number : 364
Retention Time (minutes): 2.652
Quant Ion : 45.00
Area : 38270
On-column Amount (ng) : 520.1165
Integration start scan : 329 Integration stop scan: 438
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKEN87bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i05.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:56 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

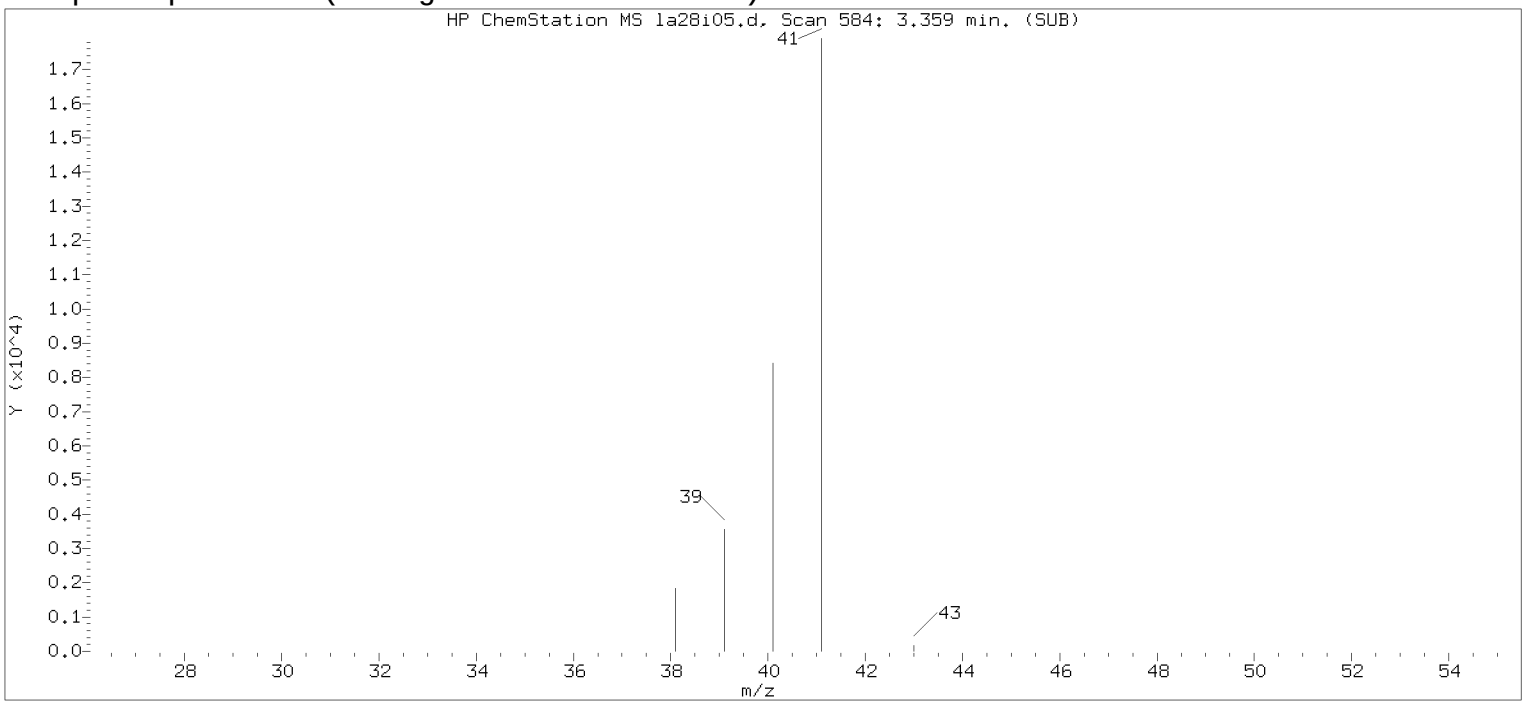
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 584
Retention Time (minutes): 3.359
Quant Ion : 41.00
Area (flag) : 109582M
On-Column Amount (ng) : 101.8061
Integration start scan : 517 Integration stop scan: 726
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

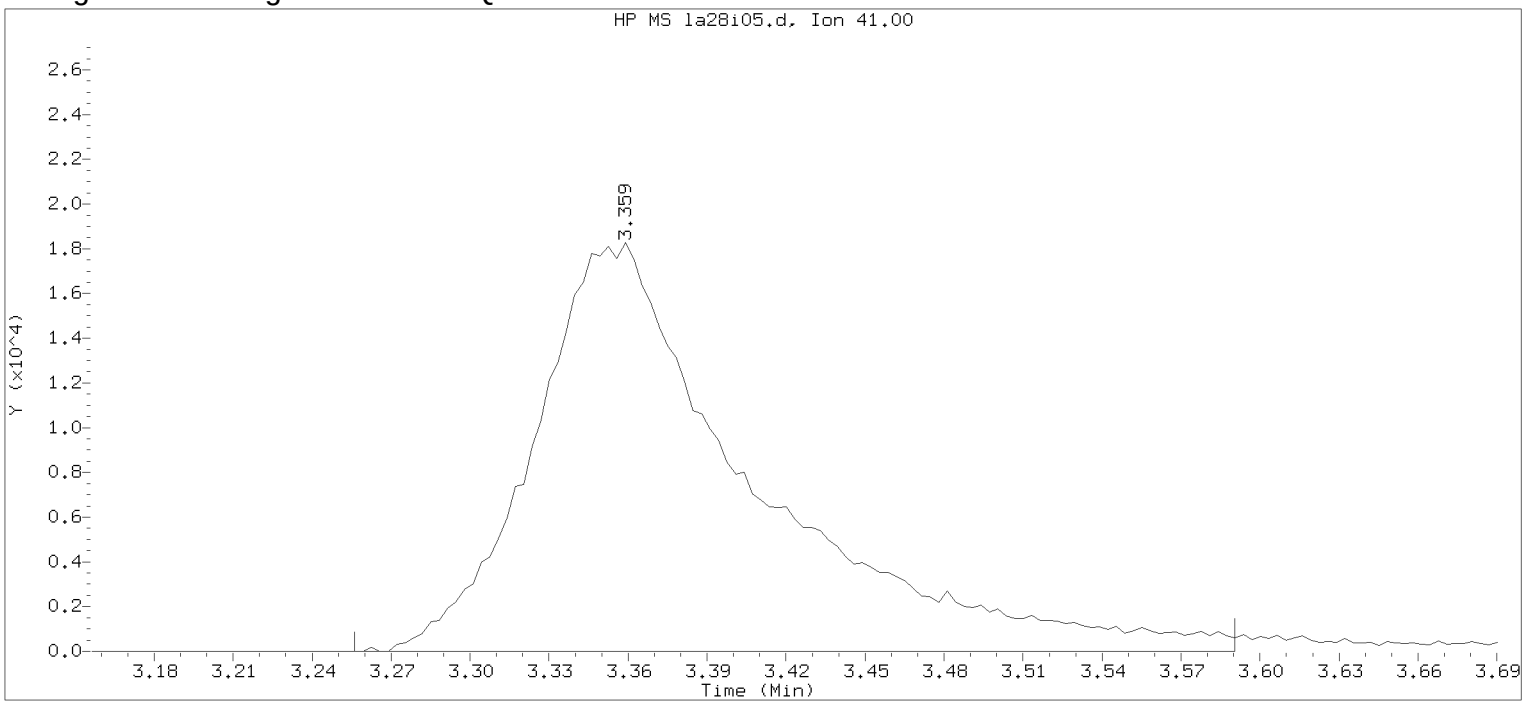
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



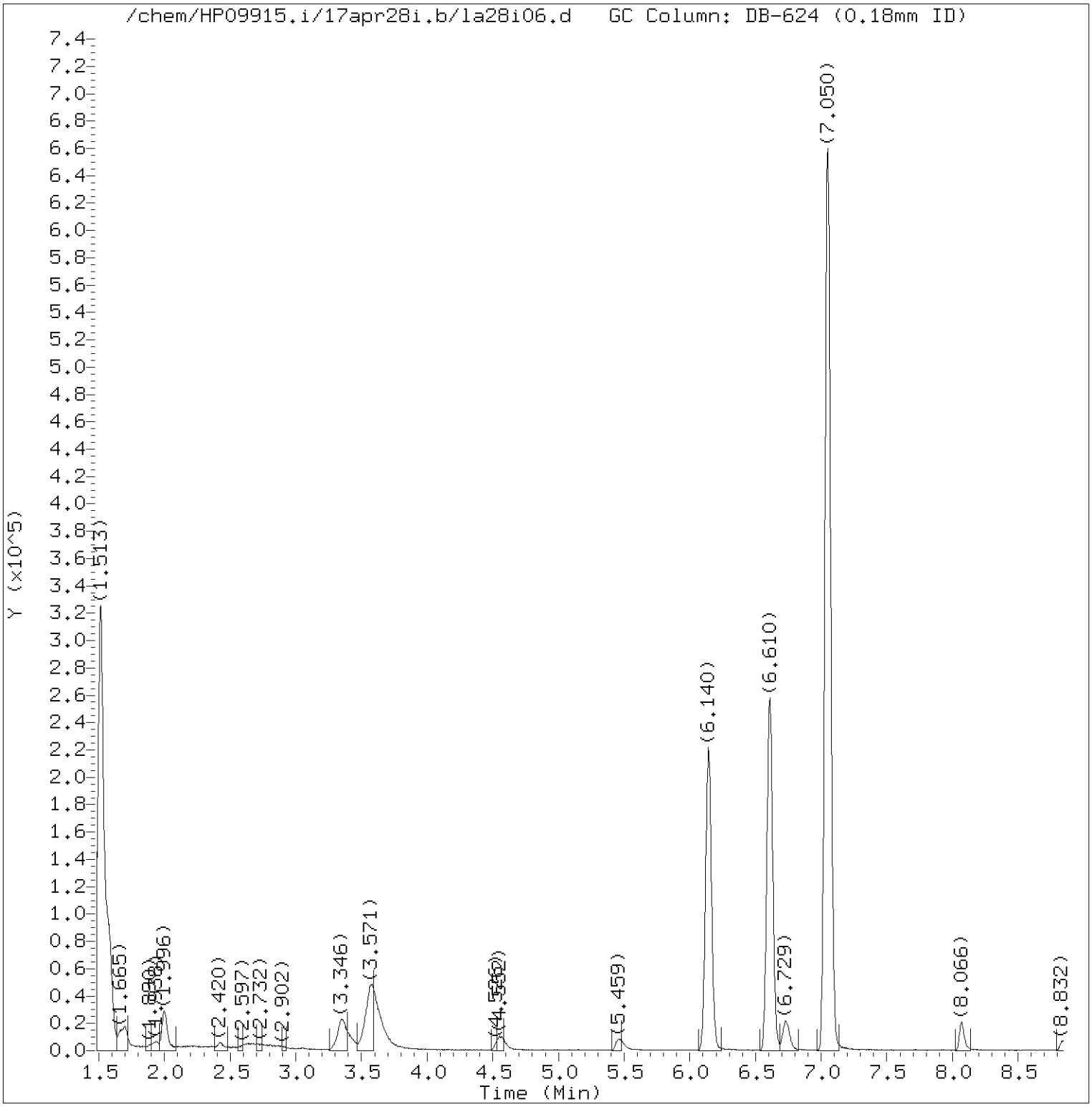

Data File: /chem/HP09915.i/17apr28i.b/la28i05.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 11:56 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 12:14
Date, time and analyst ID of latest file update: 28-Apr-2017 12:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 584
Retention Time (minutes): 3.359
Quant Ion : 41.00
Area : 105320
On-column Amount (ng) : 99.5220
Integration start scan : 551 Integration stop scan: 655
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKRD87bwk03231




Total Ion Chromatogram (TIC)

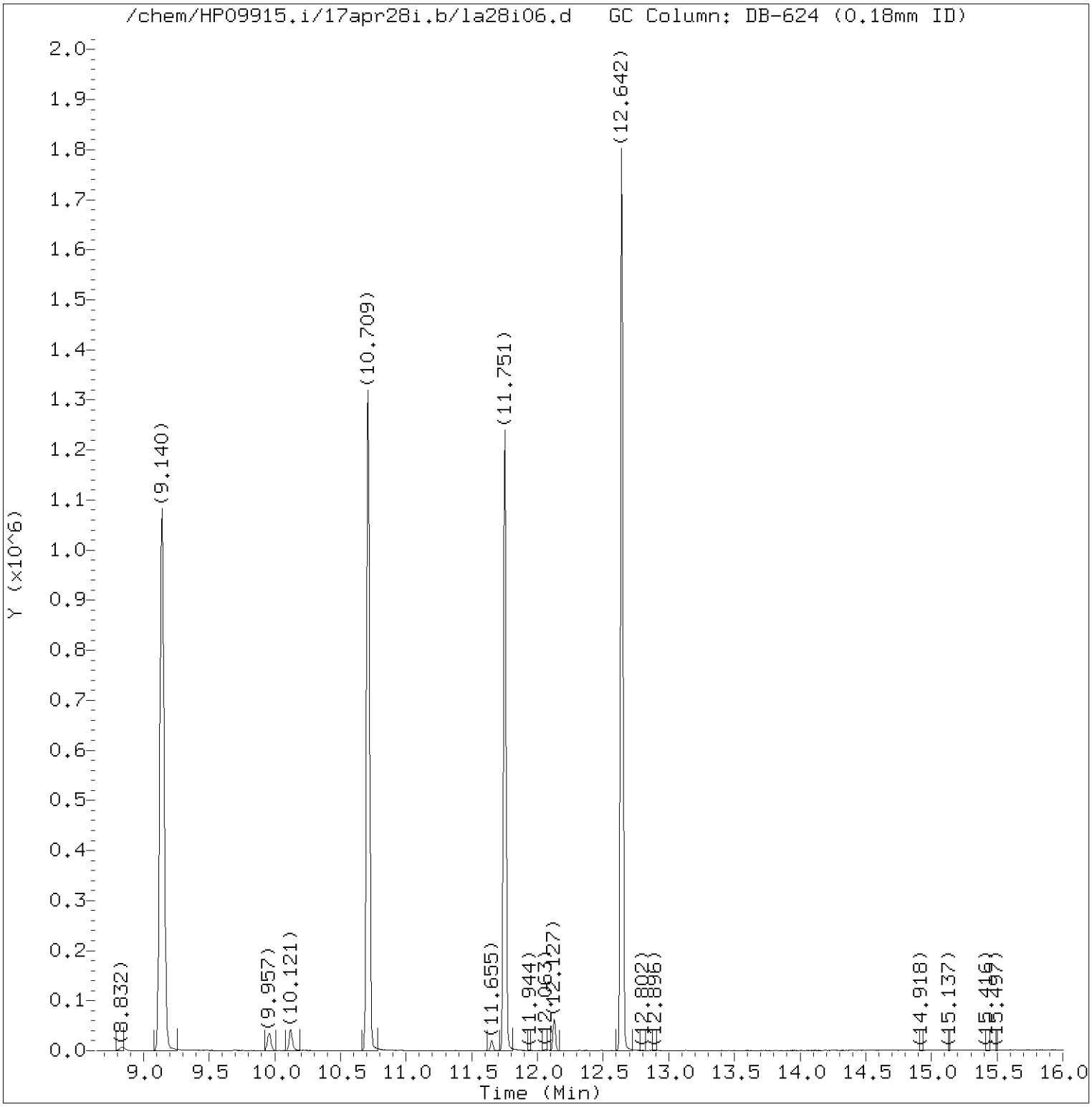
Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

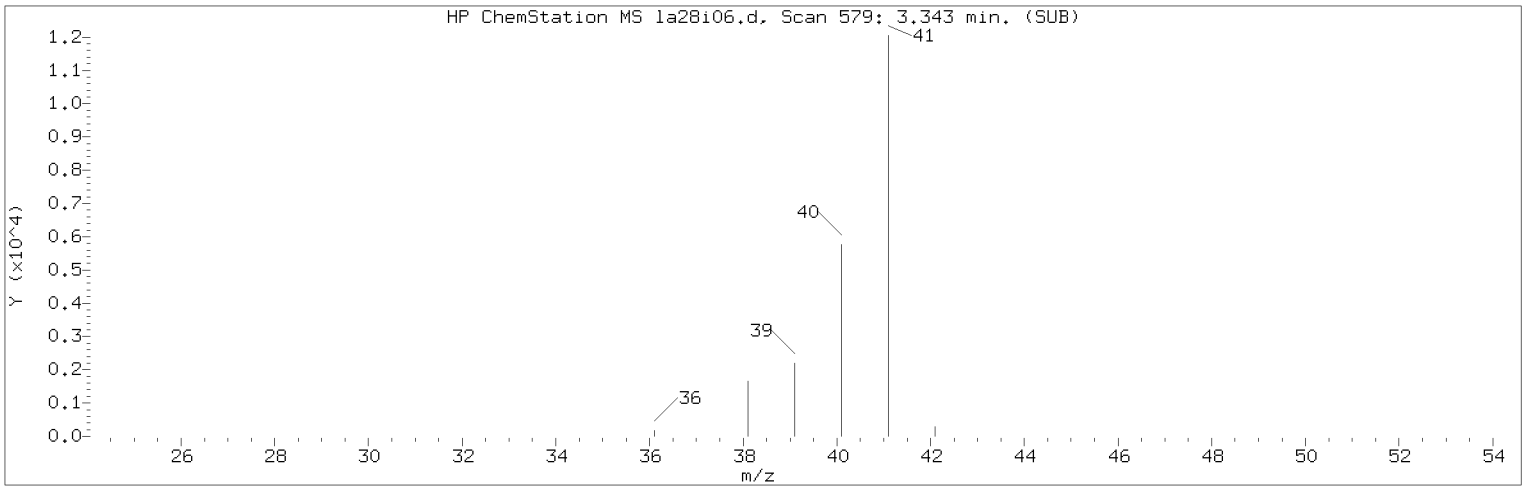
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.671 | 116 | 10286 | 3.951 |
| 2) Chlorodifluoromethane | (2) | 1.700 | 51 | 15206 | 4.256 |
| 7) Freon 133a | (2) | 1.996 | 118 | 21660 | 4.061 |
| 13) Ethanol | (1) | 2.636 | 45 | 18945 | 260.625 |
| 24) Acetonitrile | (1) | 3.343 | 41 | 83114M | 79.331 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 187419 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.552 | 43 | 40774M | 3.552 |
| 46) Ethyl Acetate | (2) | 5.472 | 43 | 23687M | 3.715 |
| 62) Isopropyl acetate | (2) | 6.732 | 43 | 40552 | 3.678 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 995396 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.066 | 61 | 8126 | 3.324 |
| 95) 3,4-Dichloro-1-butene | (3) | 9.957 | 75 | 12151 | 5.971 |
| 98) Butyl acetate | (3) | 10.121 | 43 | 32482 | 3.395 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 770281 | 50.000 |
| 113) cis-1,4-Dichloro-2-butene | (3) | 11.655 | 88 | 3038 | 2.173 |
| 123) 2,3,4-Trichlorobutene | (4) | 12.127 | 109 | 12714 | 3.115 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 422718 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.

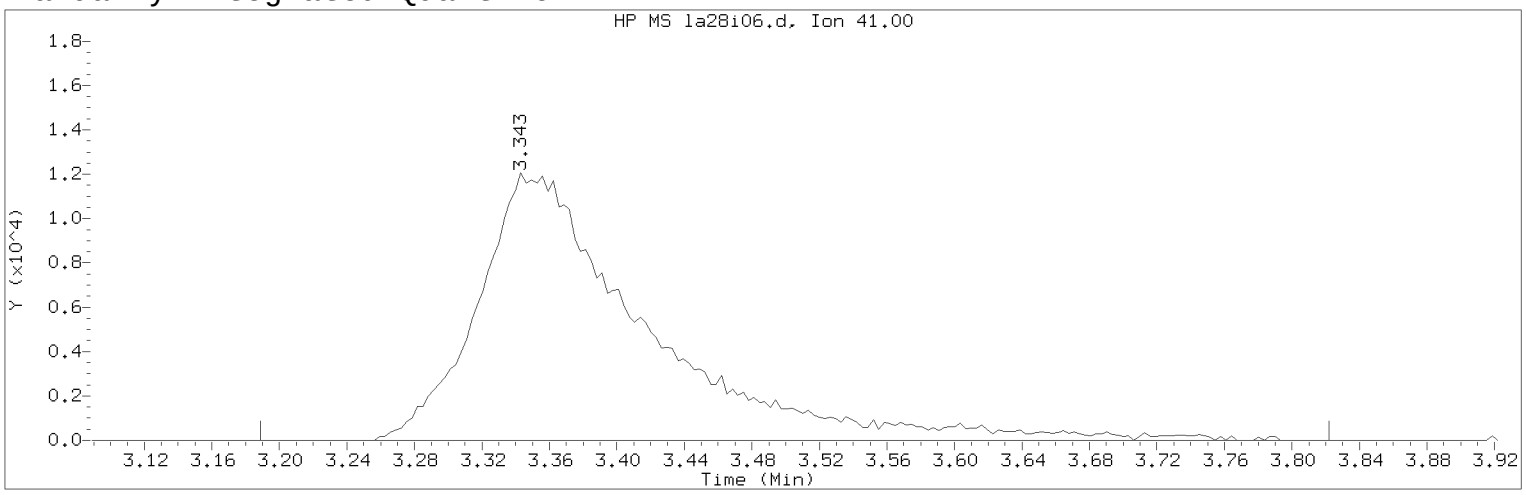


Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

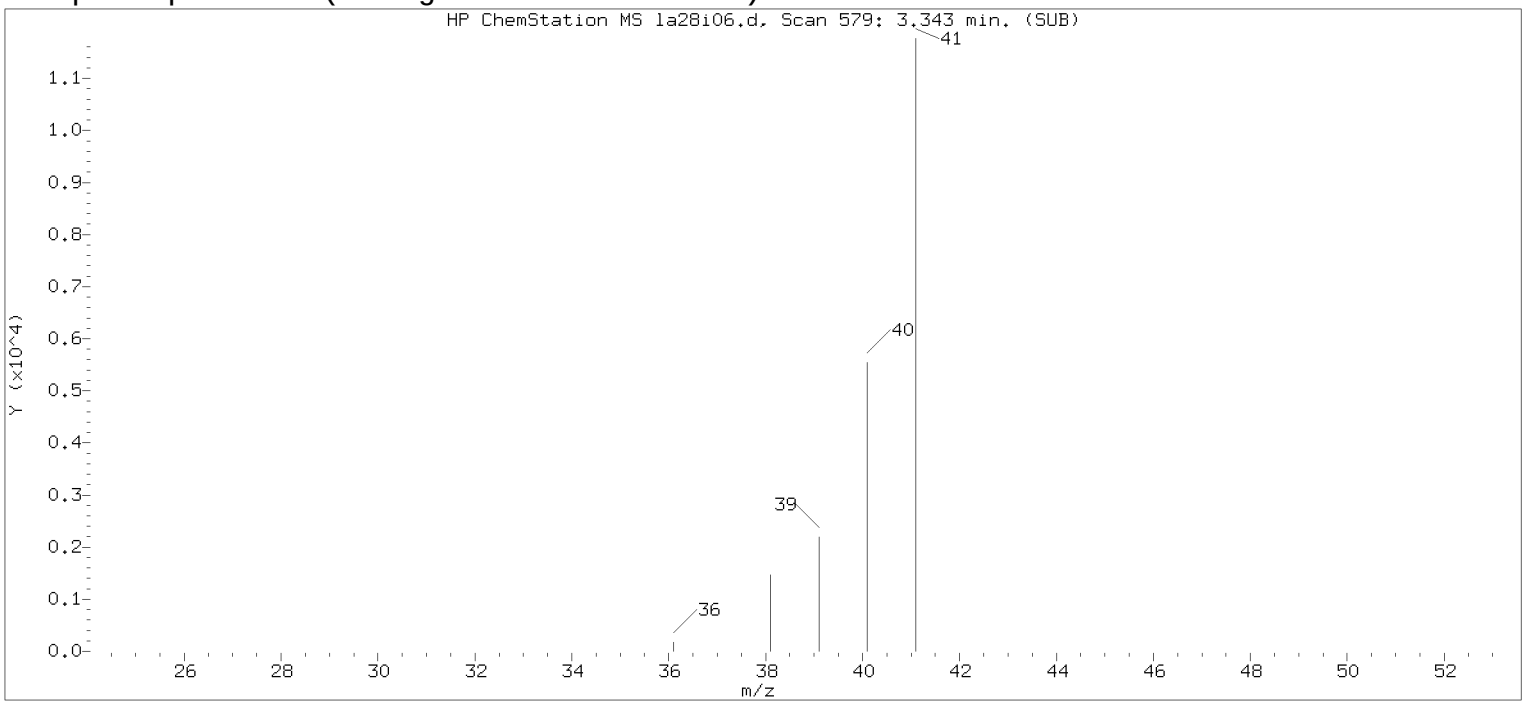
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 579
Retention Time (minutes): 3.343
Quant Ion : 41.00
Area (flag) : 83114M
On-Column Amount (ng) : 79.3306
Integration start scan : 530 Integration stop scan: 727
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

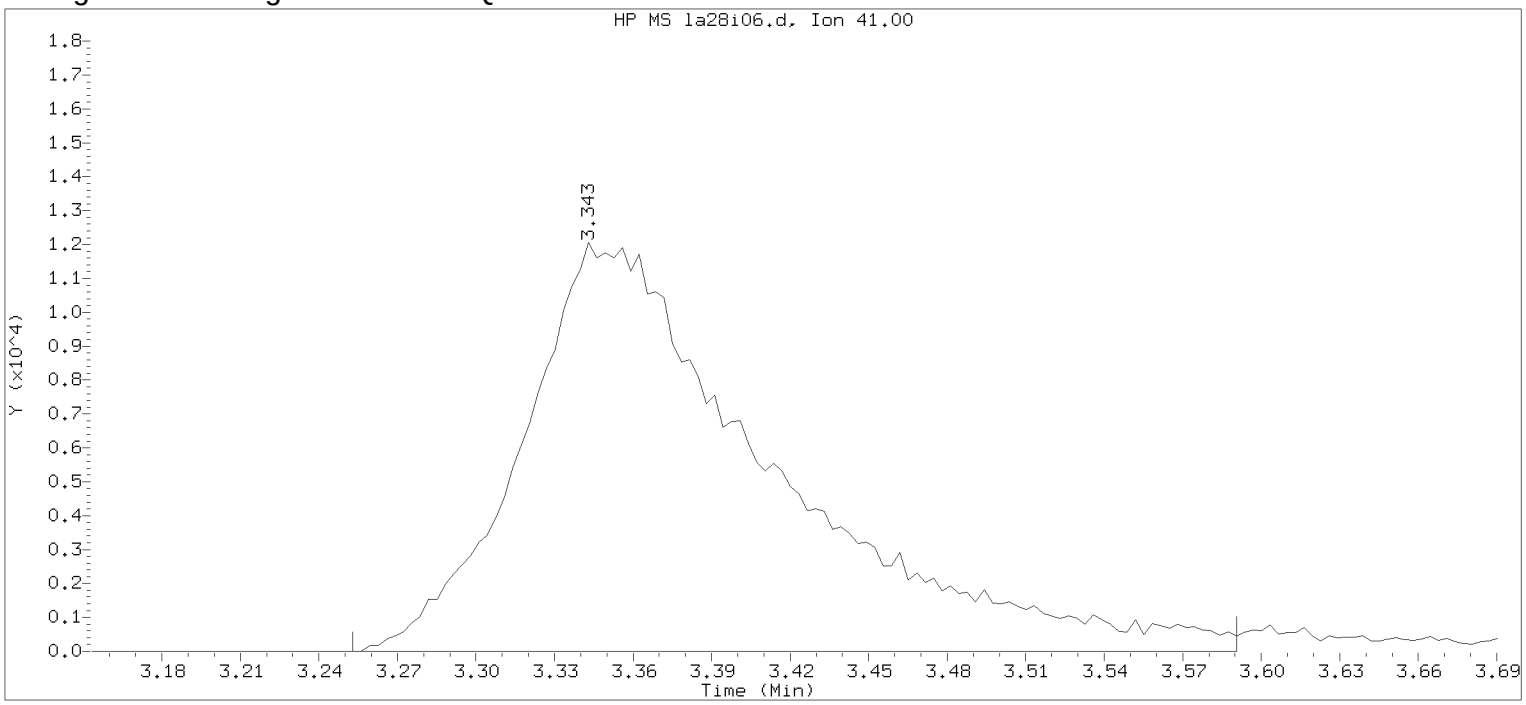
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

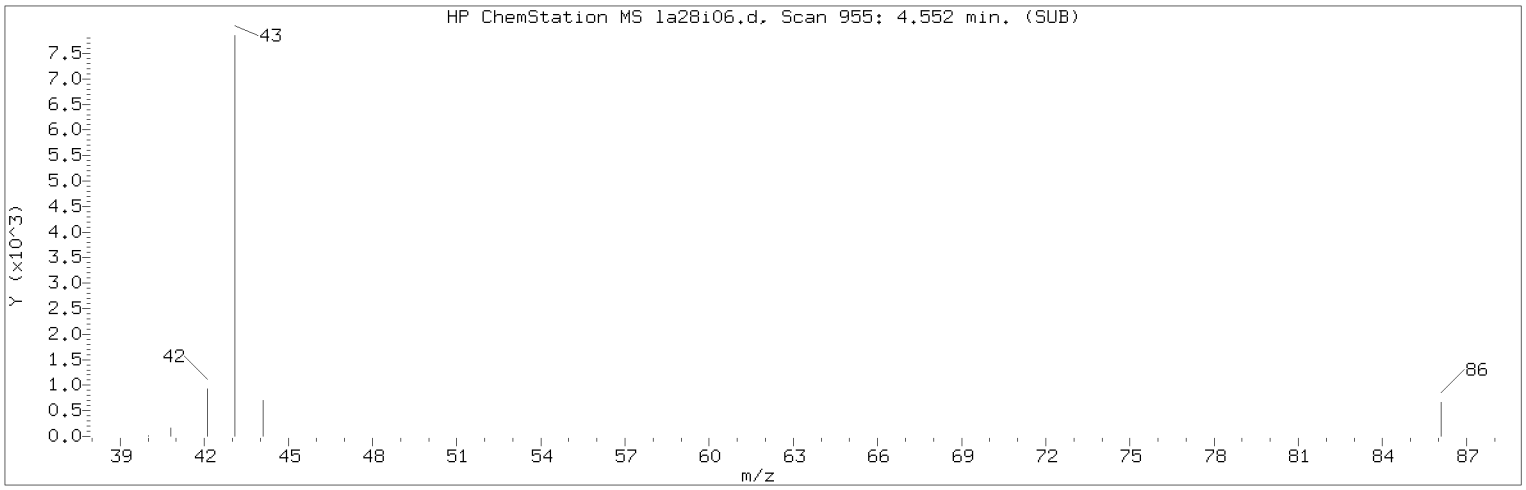
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 12:36
Date, time and analyst ID of latest file update: 28-Apr-2017 12:36 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

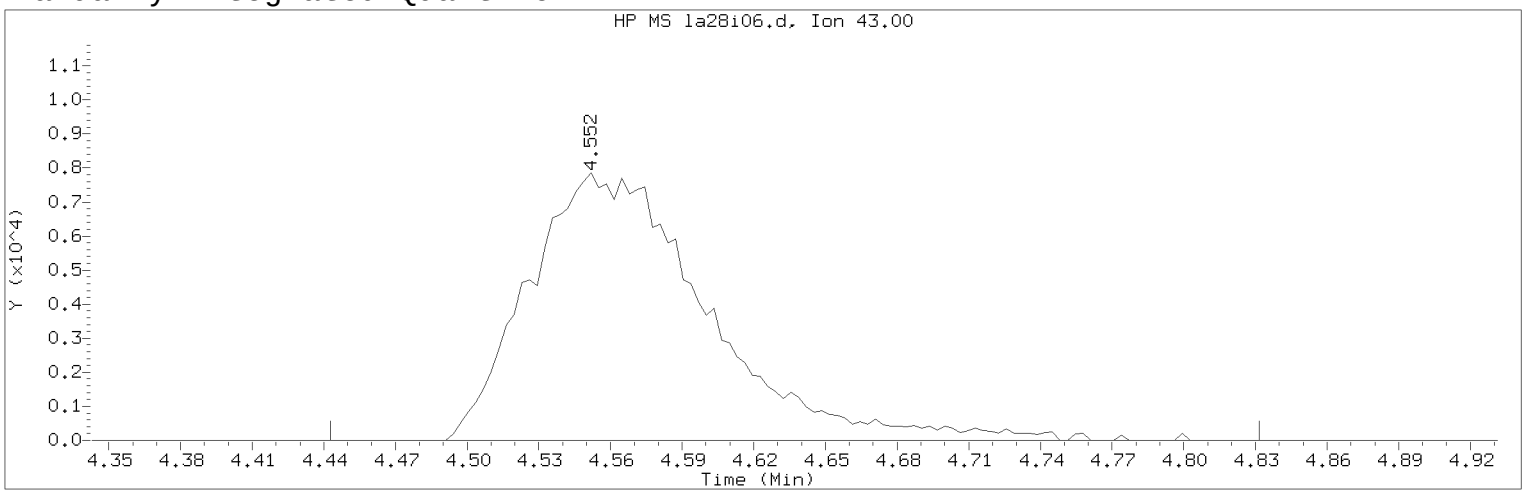
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 579
Retention Time (minutes): 3.343
Quant Ion : 41.00
Area : 79664
On-column Amount (ng) : 76.5631
Integration start scan : 550 Integration stop scan: 655
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

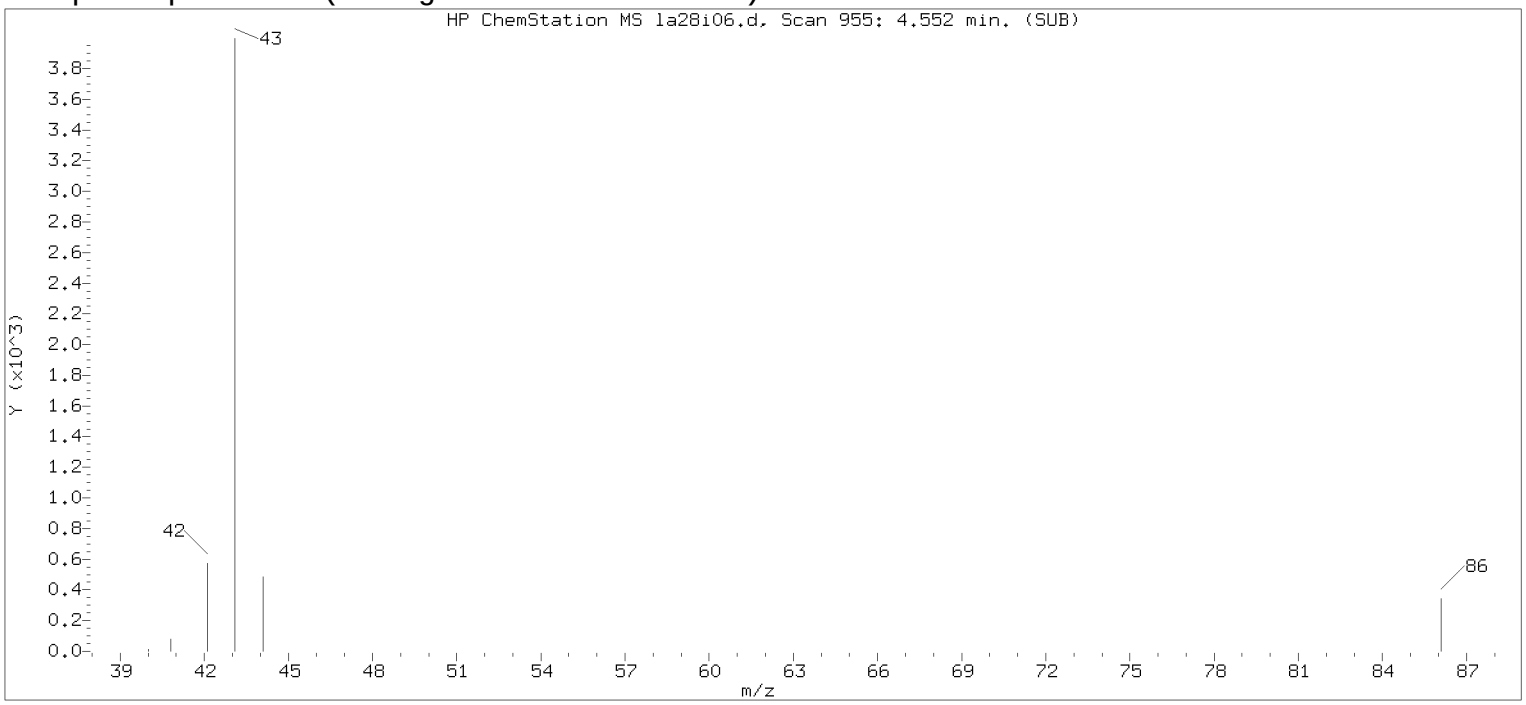
Compound Number : 37
Compound Name : Vinyl Acetate
Scan Number : 955
Retention Time (minutes): 4.552
Quant Ion : 43.00
Area (flag) : 40774M
On-Column Amount (ng) : 3.5522
Integration start scan : 920 Integration stop scan: 1041
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

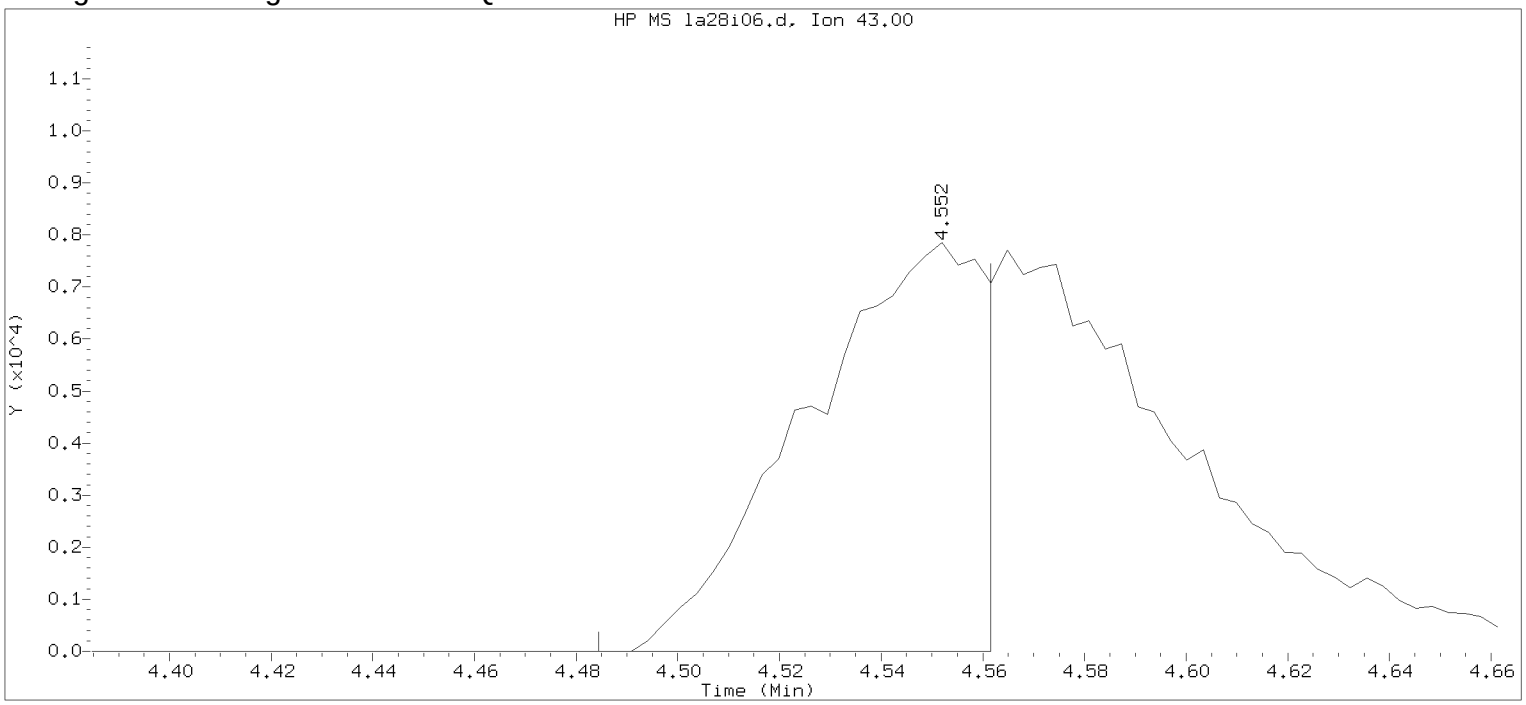
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

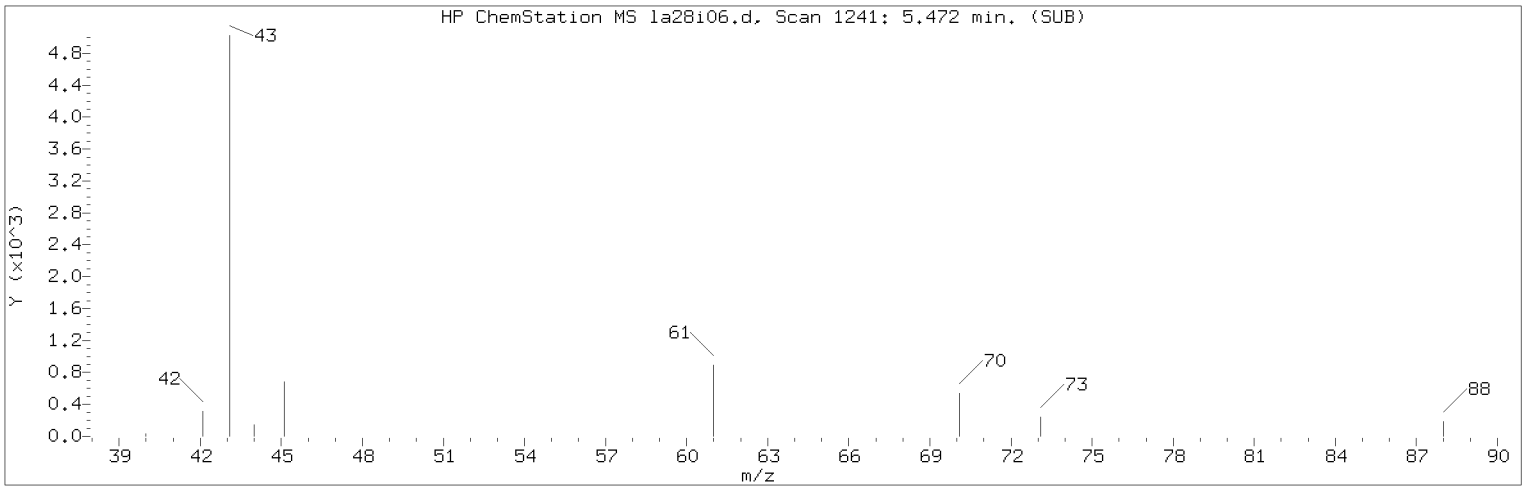
Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 12:36
Date, time and analyst ID of latest file update: 28-Apr-2017 12:36 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

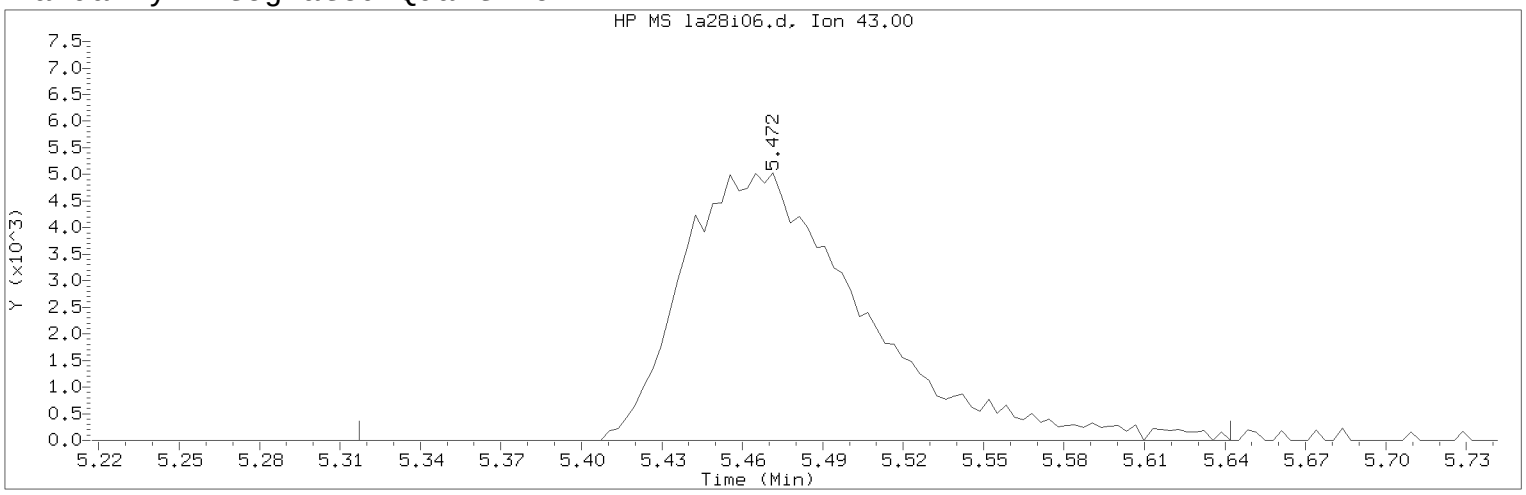
Compound Number : 37
Compound Name : Vinyl Acetate
Scan Number : 955
Retention Time (minutes): 4.552
Quant Ion : 43.00
Area : 18666
On-column Amount (ng) : 1.7681
Integration start scan : 933 Integration stop scan: 957
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKRD87bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

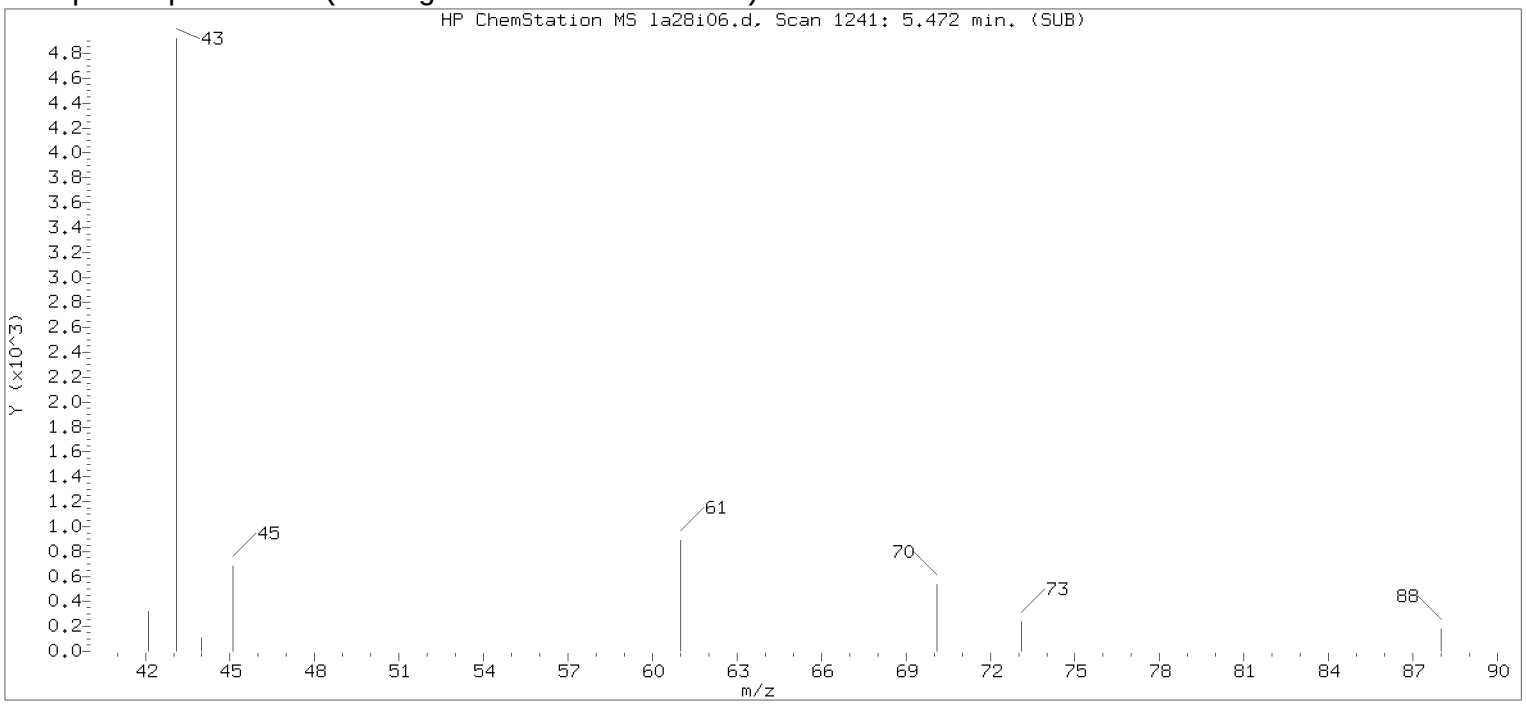
Compound Number : 46
Compound Name : Ethyl Acetate
Scan Number : 1241
Retention Time (minutes): 5.472
Quant Ion : 43.00
Area (flag) : 23687M
On-Column Amount (ng) : 3.7147
Integration start scan : 1192 Integration stop scan: 1293
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

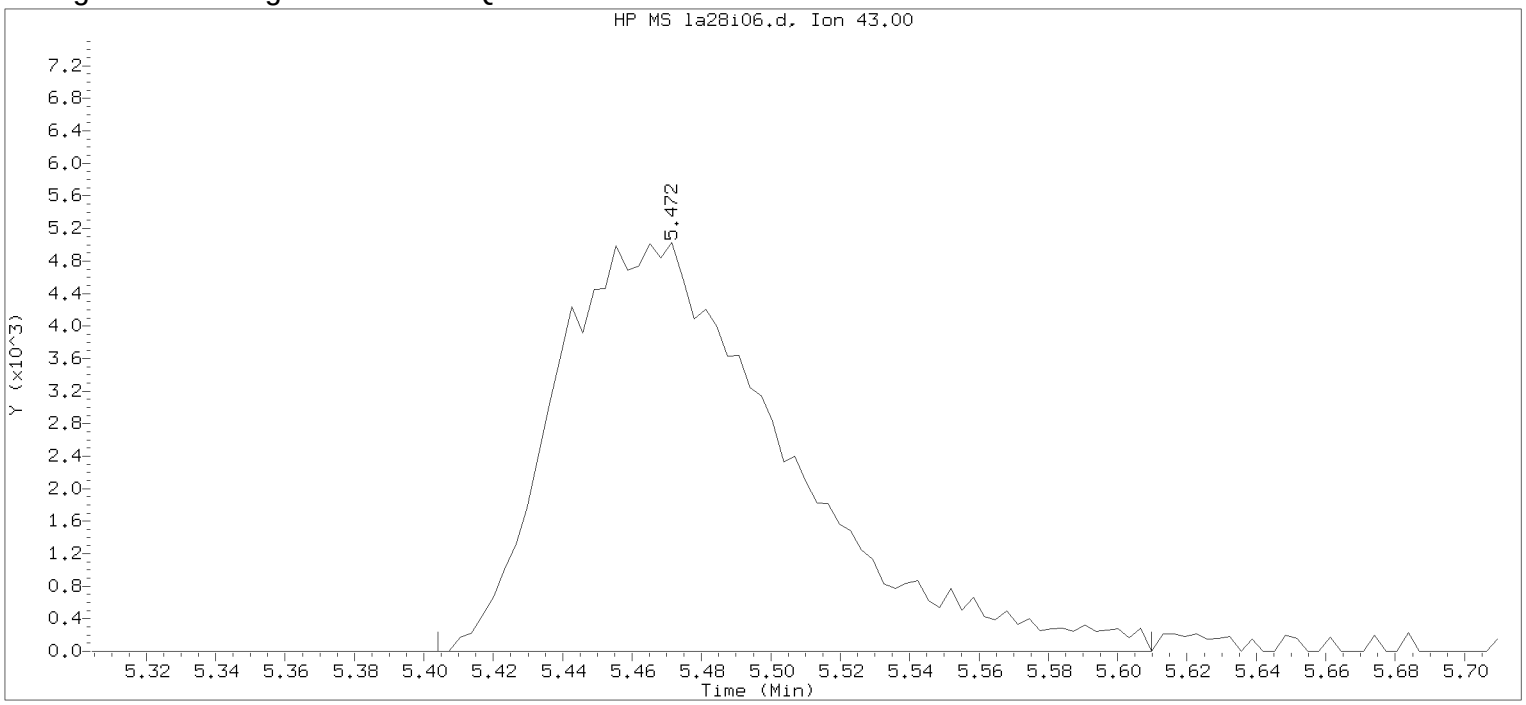
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:51.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



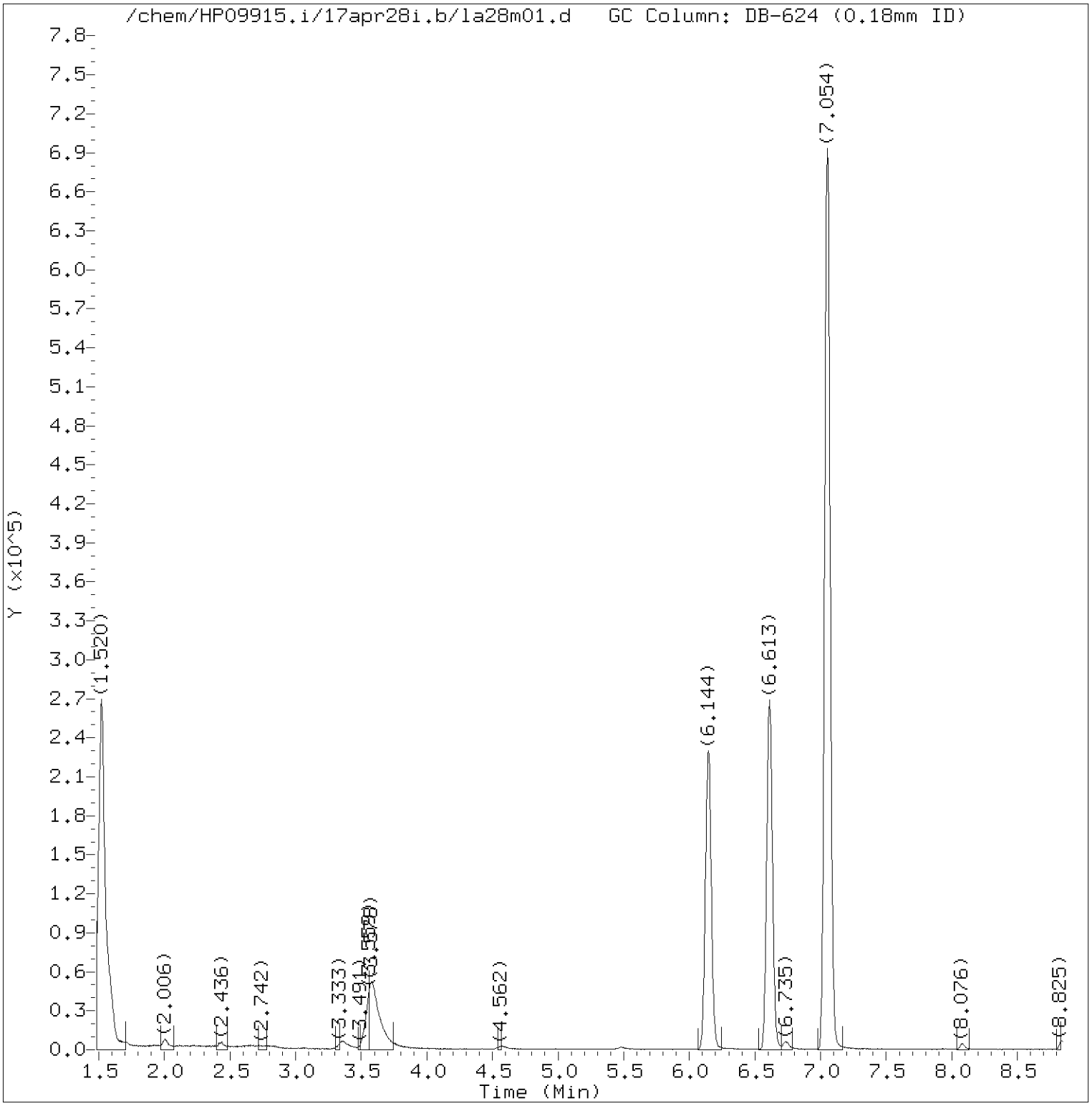

Data File: /chem/HP09915.i/17apr28i.b/la28i06.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:18 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 12:36
Date, time and analyst ID of latest file update: 28-Apr-2017 12:36 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 46
Compound Name : Ethyl Acetate
Scan Number : 1241
Retention Time (minutes): 5.472
Quant Ion : 43.00
Area : 23406
On-column Amount (ng) : 3.6774
Integration start scan : 1219 Integration stop scan: 1283
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:51.
Target 3.5 esignature userKRD87bwk03231




Total Ion Chromatogram (TIC)

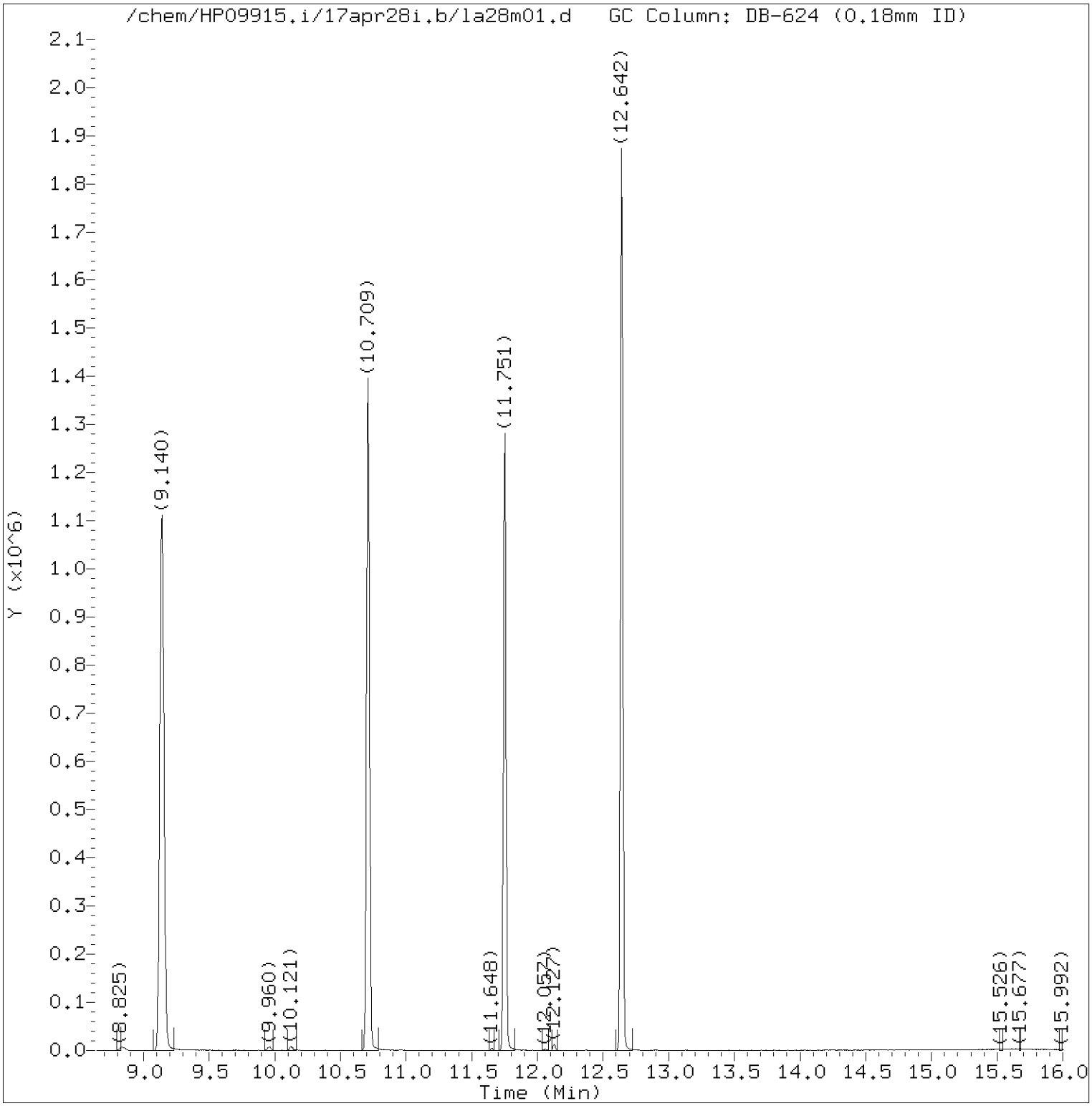
Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28m01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:40 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: MDL001 Lab Sample ID: MDL001

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:52.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28m01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:40 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: MDL001 Lab Sample ID: MDL001

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:52.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28m01.d  Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:40  Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m  Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: MDL001  Lab Sample ID: MDL001

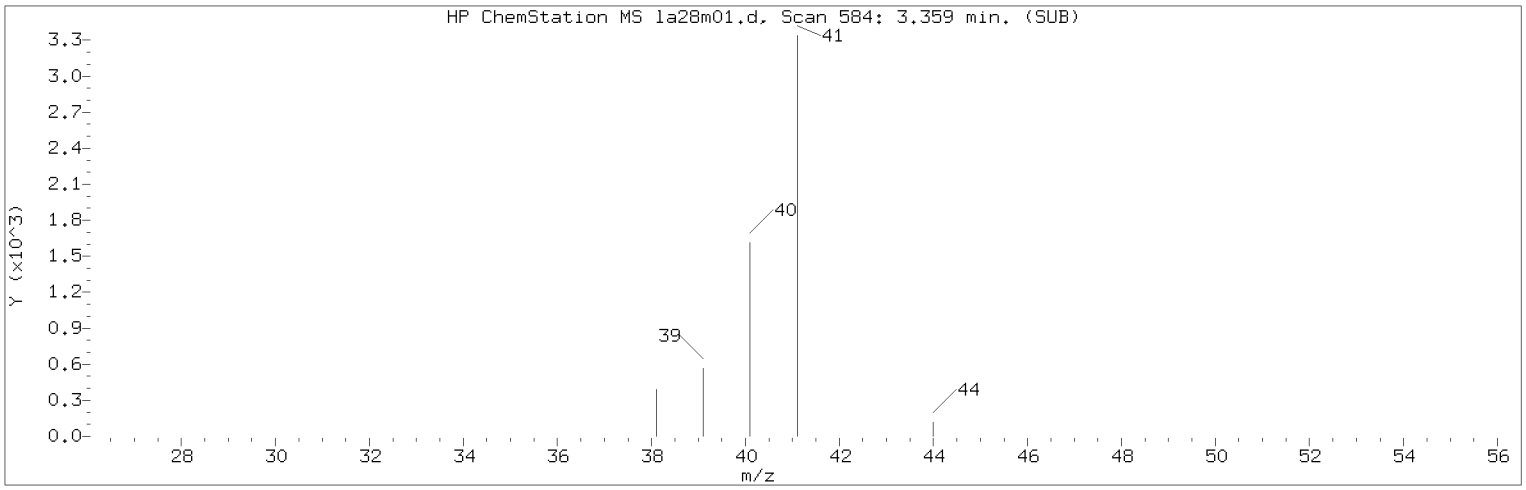
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.687 | 116 | 1833 | 0.689 |
| 2) Chlorodifluoromethane | (2) | 1.707 | 51 | 2812 | 0.770 |
| 7) Freon 133a | (2) | 2.002 | 118 | 4409 | 0.809 |
| 13) Ethanol | (1) | 2.639 | 45 | 5598 | 76.037 |
| 24) Acetonitrile | (1) | 3.359 | 41 | 21049M | 19.837 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 189819 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.575 | 43 | 8661 | 0.738 |
| 46) Ethyl Acetate | (2) | 5.484 | 43 | 5137 | 0.788 |
| 62) Isopropyl acetate | (2) | 6.732 | 43 | 9185 | 0.815 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1017140 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.066 | 61 | 1612 | 0.645 |
| 95) 3,4-Dichloro-1-butene | (3) | 9.957 | 75 | 2654 | 4.015 |
| 98) Butyl acetate | (3) | 10.121 | 43 | 6536 | 0.669 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 786503 | 50.000 |
| 113) cis-1,4-Dichloro-2-butene | (3) | 11.648 | 88 | 620 | 0.434 |
| 123) 2,3,4-Trichlorobutene | (4) | 12.127 | 109 | 2593 | 0.618 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 434722 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.

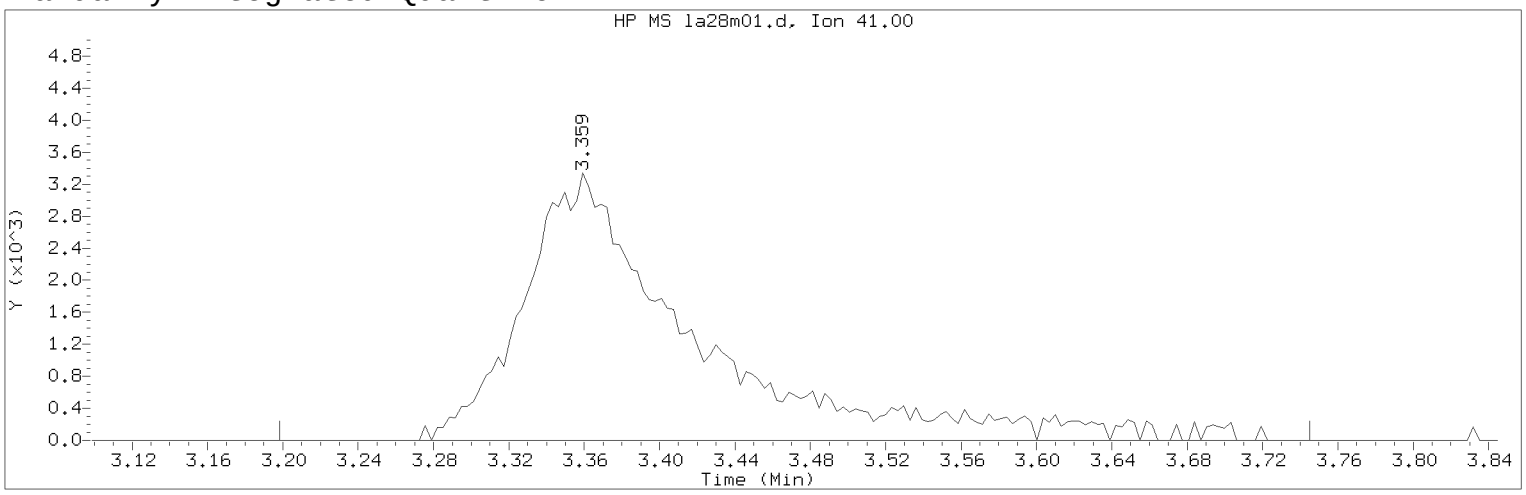


Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:52.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28m01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:40 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 13:10
Date, time and analyst ID of latest file update: 28-Apr-2017 13:10 bwk03231

Sample Name: MDL001 Lab Sample ID: MDL001

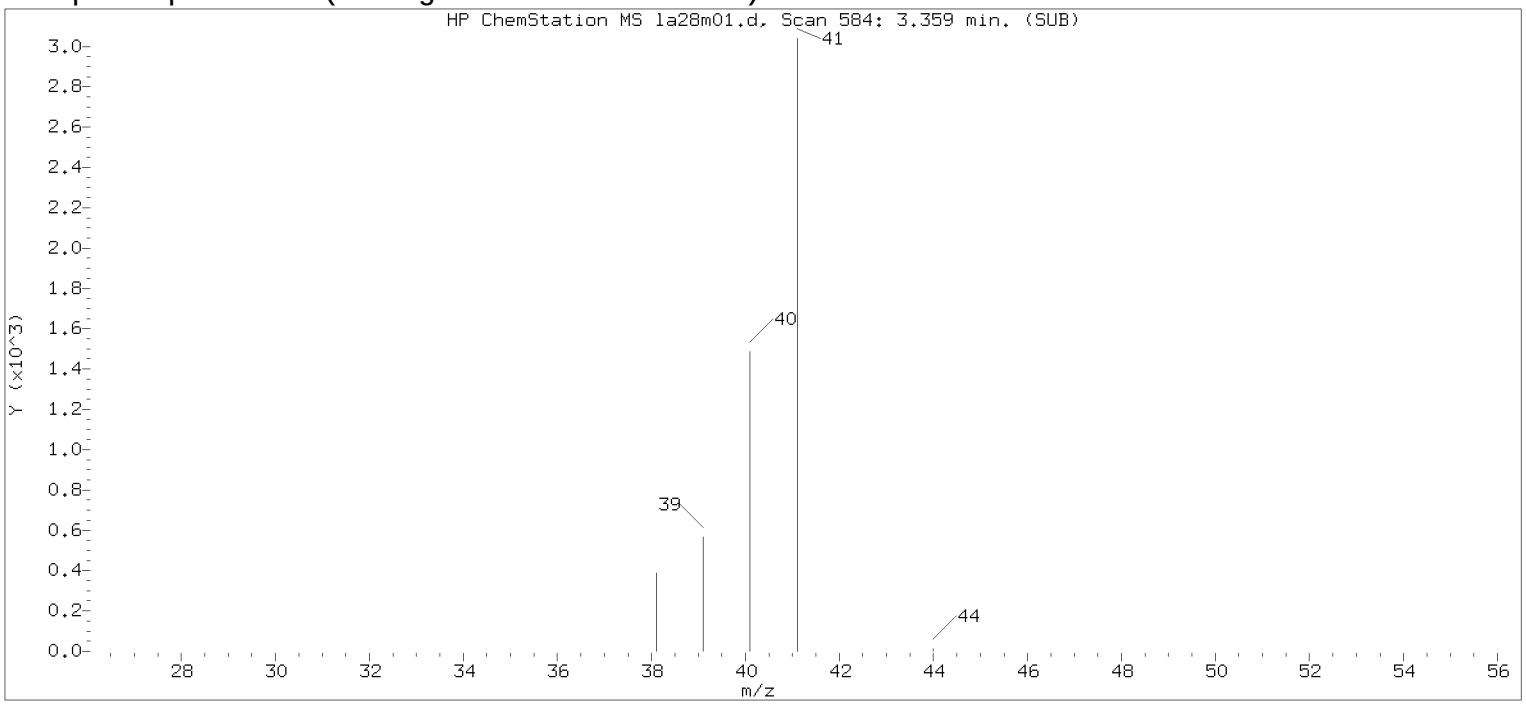
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 584
Retention Time (minutes): 3.359
Quant Ion : 41.00
Area (flag) : 21049M
On-Column Amount (ng) : 19.8368
Integration start scan : 533 Integration stop scan: 703
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

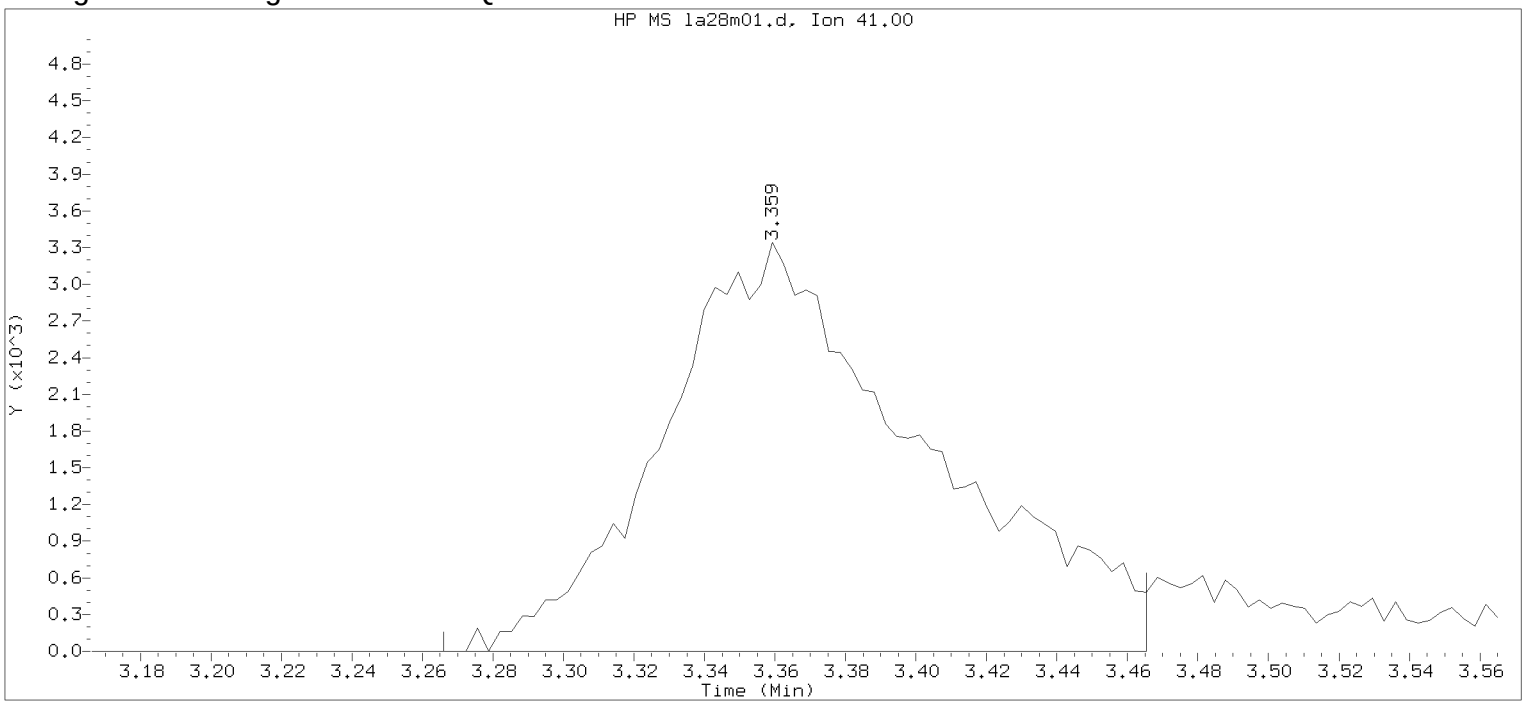
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 13:52.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



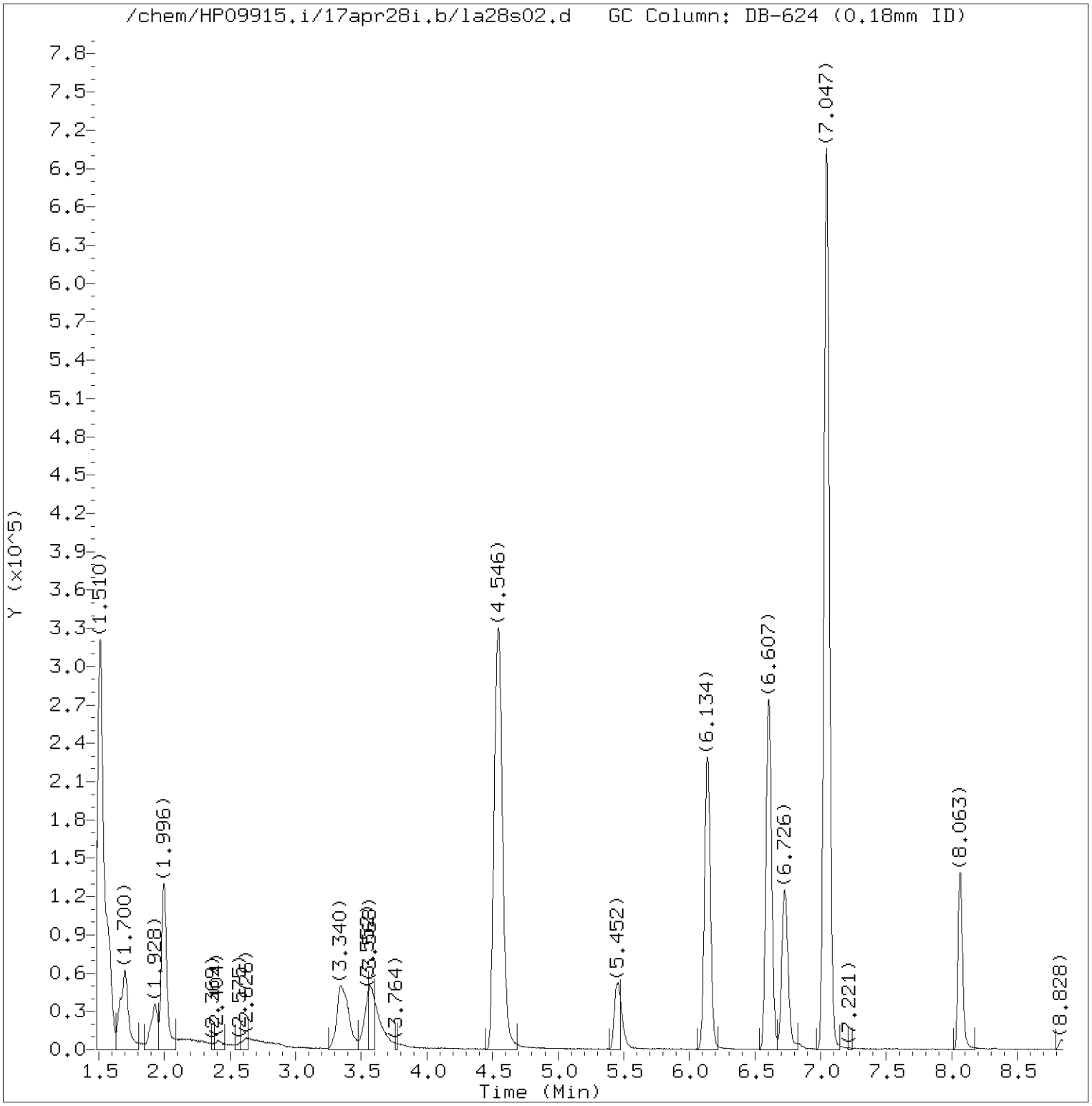

Data File: /chem/HP09915.i/17apr28i.b/la28m01.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 12:40 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-APR-2017 12:50
Date, time and analyst ID of latest file update: 28-Apr-2017 12:58 Automation

Sample Name: MDL001 Lab Sample ID: MDL001

Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 584
Retention Time (minutes): 3.359
Quant Ion : 41.00
Area : 17187
On-column Amount (ng) : 16.1979
Integration start scan : 554 Integration stop scan: 616
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 13:52.
Target 3.5 esignature user: BWK03231




Total Ion Chromatogram (TIC)

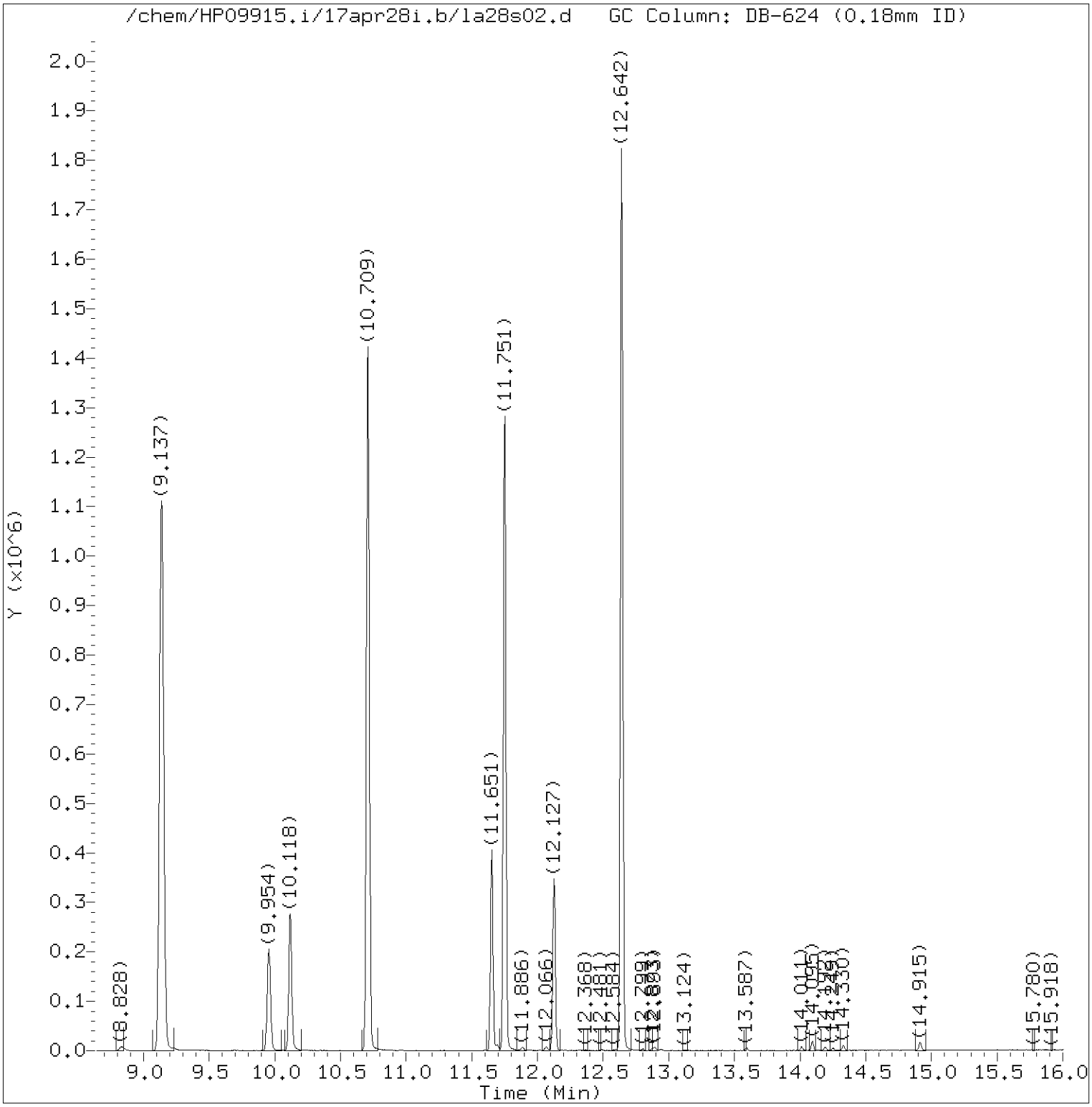
Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28s02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 13:52 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SMSTD-1
Calibration date and time: 28-APR-2017 14:26
Date, time and analyst ID of latest file update: 28-Apr-2017 14:36 bwk03231

Sample Name: LCSL56 Lab Sample ID: LCSL56

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 14:38.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28s02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 13:52 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SMSTD-1
Calibration date and time: 28-APR-2017 14:26
Date, time and analyst ID of latest file update: 28-Apr-2017 14:36 bwk03231

Sample Name: LCSL56 Lab Sample ID: LCSL56

Digitally signed by Brett W. Kenyon
on 04/28/2017 at 14:38.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr28i.b/la28s02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 13:52 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SMSTD-1
Calibration date and time: 28-APR-2017 14:26
Date, time and analyst ID of latest file update: 28-Apr-2017 14:36 bwk03231

Sample Name: LCSL56 Lab Sample ID: LCSL56

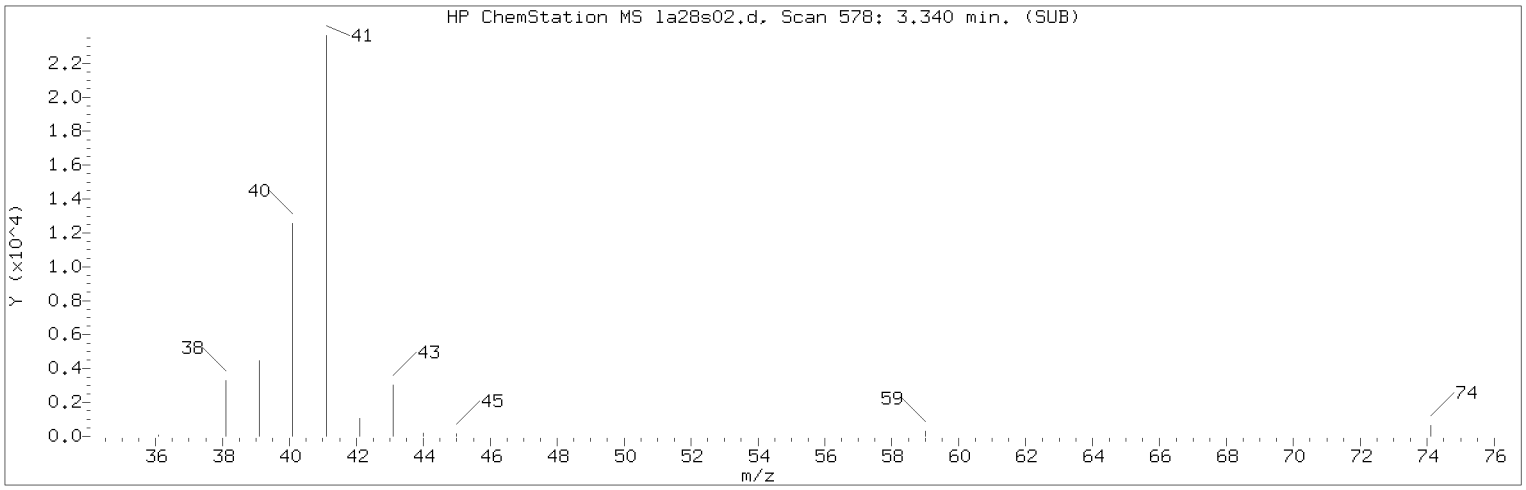
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.665 | 116 | 35662 | 13.376 |
| 2) Chlorodifluoromethane | (2) | 1.700 | 51 | 76262 | 20.843 |
| 7) Freon 133a | (2) | 1.996 | 118 | 99537 | 18.224 |
| 24) Acetonitrile | (1) | 3.340 | 41 | 150100M | 148.104 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 181298 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.546 | 43 | 1185747 | 100.863 |
| 46) Ethyl Acetate | (2) | 5.452 | 43 | 133784 | 20.486 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 229338 | 46.069 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 61992 | 50.078 |
| 62) Isopropyl acetate | (2) | 6.729 | 43 | 228032 | 20.196 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1019448 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.063 | 61 | 51916 | 20.737 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 996530 | 49.370 |
| 95) 3,4-Dichloro-1-butene | (3) | 9.954 | 75 | 72473 | 17.901 |
| 98) Butyl acetate | (3) | 10.118 | 43 | 201156 | 20.483 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 790534 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 376252 | 50.150 |
| 123) 2,3,4-Trichlorobutene | (4) | 12.127 | 109 | 74823 | 18.446 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 420060 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

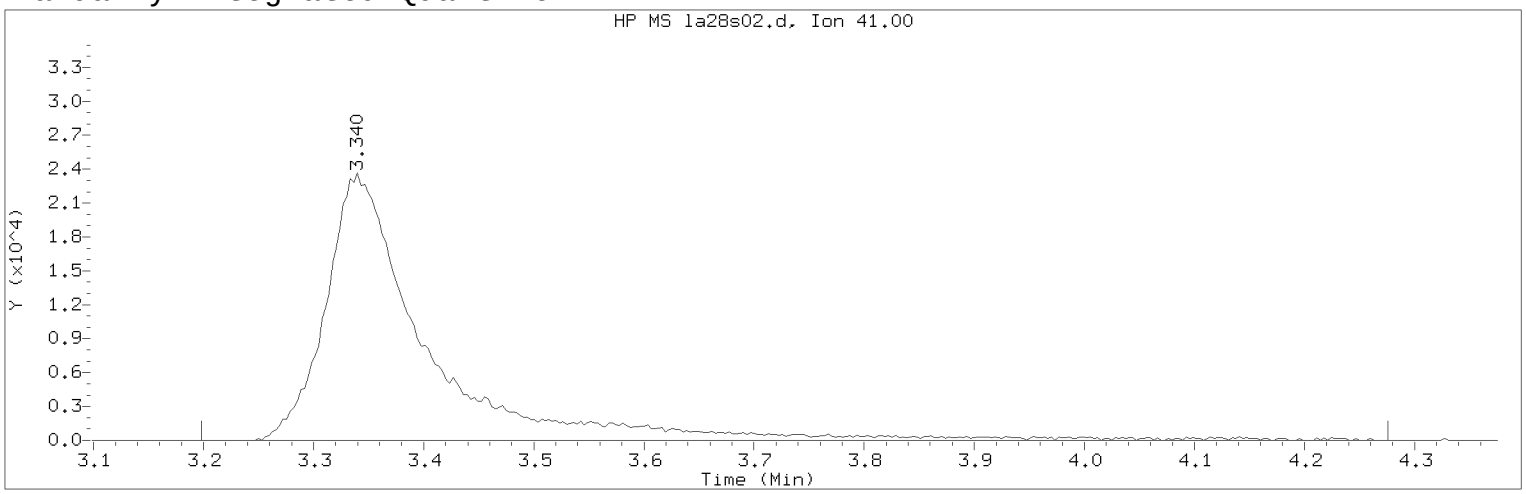


Digitally signed by Brett W. Kenyon
on 04/28/2017 at 14:38.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr28i.b/la28s02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 13:52 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SMSTD-1
Calibration date and time: 28-APR-2017 14:26
Date, time and analyst ID of latest file update: 28-Apr-2017 14:36 bwk03231

Sample Name: LCSL56 Lab Sample ID: LCSL56

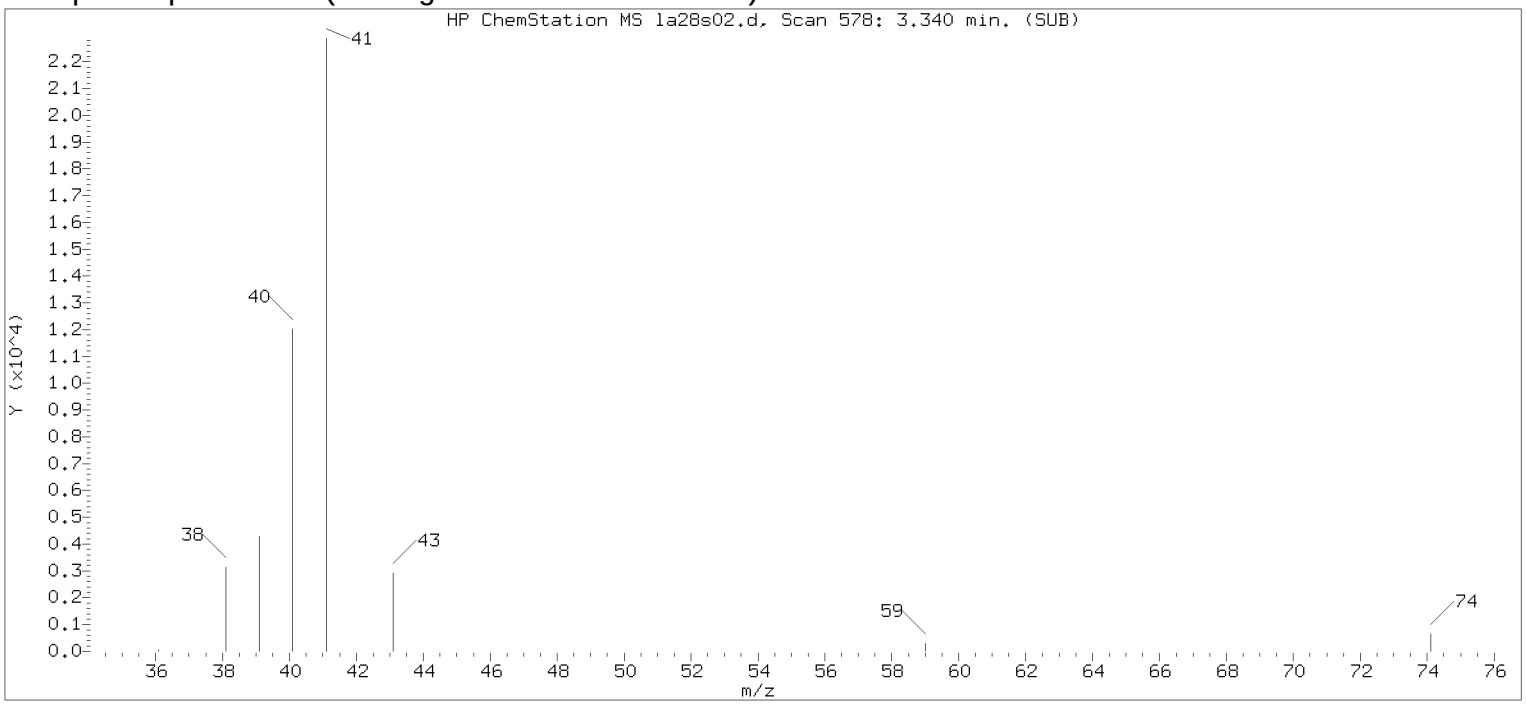
Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 578
Retention Time (minutes): 3.340
Quant Ion : 41.00
Area (flag) : 150100M
On-Column Amount (ng) : 148.1044
Integration start scan : 533 Integration stop scan: 868
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

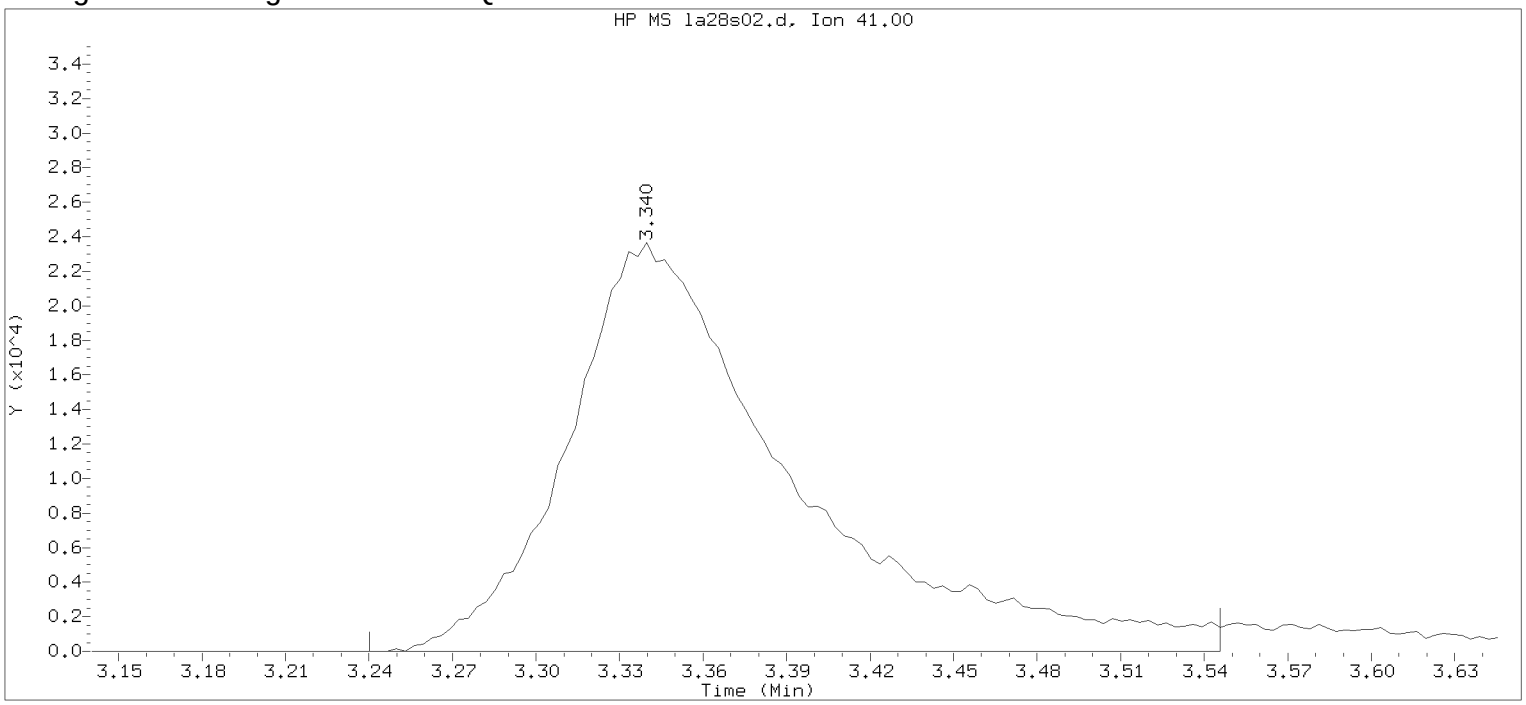
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 04/28/2017 at 14:38.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Marla S. Brewer on 04/28/2017 at 19:17.
PARALLAX ID: msl01251

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



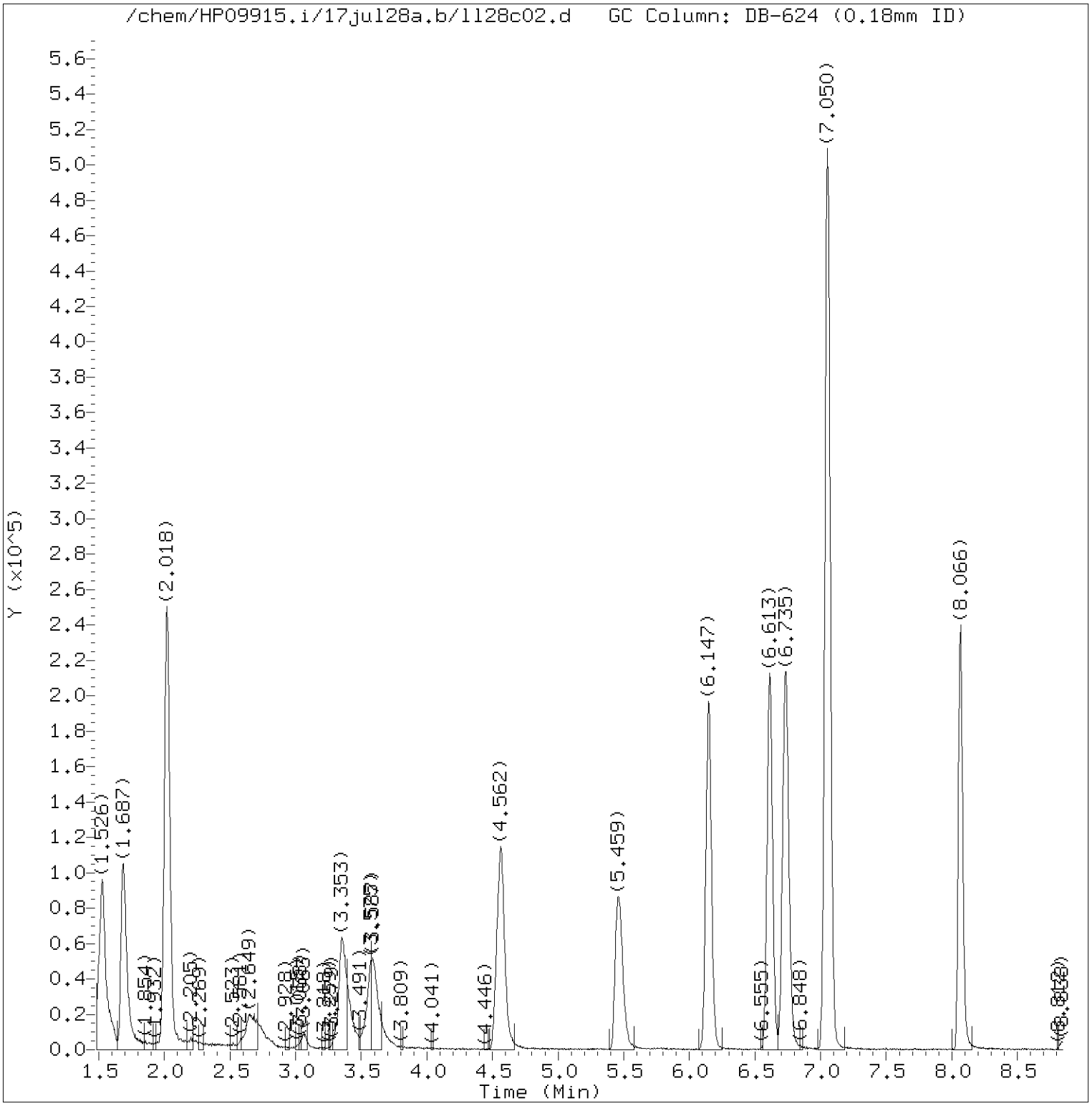

Data File: /chem/HP09915.i/17apr28i.b/la28s02.d Instrument ID: HP09915.i
Injection date and time: 28-APR-2017 13:52 Analyst ID: BWK03231

Method used: /chem/HP09915.i/17apr28i.b/m8260c5.m Sublist used: SMSTD-1
Calibration date and time: 28-APR-2017 14:11
Date, time and analyst ID of latest file update: 28-Apr-2017 14:12 bwk03231

Sample Name: LCSL56 Lab Sample ID: LCSL56

Compound Number : 24
Compound Name : Acetonitrile
Scan Number : 578
Retention Time (minutes): 3.340
Quant Ion : 41.00
Area : 132952
On-column Amount (ng) : 131.1848
Integration start scan : 546 Integration stop scan: 641
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 04/28/2017 at 14:38.
Target 3.5 esignature userKRD87bwk03231




Total Ion Chromatogram (TIC)

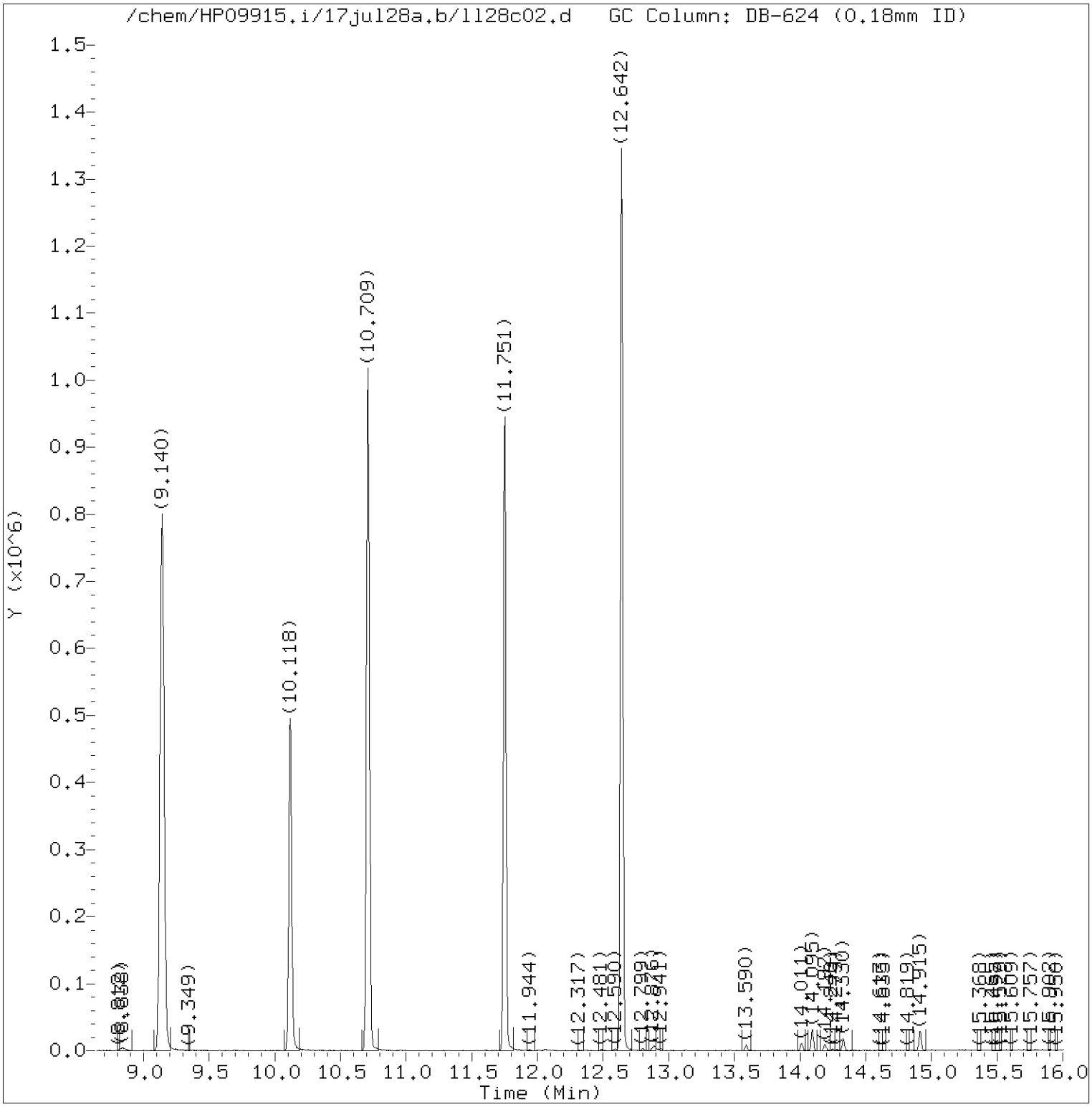
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 10:02 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 07/28/2017 at 10:03.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 10:02 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 07/28/2017 at 10:03.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28c02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 10:02 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 1) Chlorotrifluoroethene | (2) | 1.684 | 116 | 102011 | 55.160 |
| 7) Freon 133a | (2) | 2.018 | 118 | 216514 | 57.147 |
| 13) Ethanol | (1) | 2.658 | 45 | 71403 | 1265.554 |
| 24) Acetonitrile | (1) | 3.353 | 41 | 173251 | 213.052 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 145469 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.562 | 43 | 383020 | 46.970 |
| 46) Ethyl Acetate | (2) | 5.456 | 43 | 221649 | 48.930 |
| 62) Isopropyl acetate | (2) | 6.735 | 43 | 390546 | 49.865 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 707142 | 50.000 |
| 77) n-Propyl acetate | (2) | 8.066 | 61 | 82157 | 47.310 |
| 98) Butyl acetate | (3) | 10.118 | 43 | 336680 | 48.254 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 561654 | 50.000 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 303774 | 50.000 |

* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 07/28/2017 at 10:03.
Target 3.5 esignature user ID: kas02648

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28ec2.d Injection date and time: **28-JUL-2017 15:26**
Data file Sample Info. Line: SECC050;SECCB50;1;3;LCS;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 15:44 Automation

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 12:01
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.574( 0.007) | 651 | 65 | 154196 ( -1) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.007) | 1731 | 96 | 732325 ( -1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 584430 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 321170 ( -4) | 50.00 | |

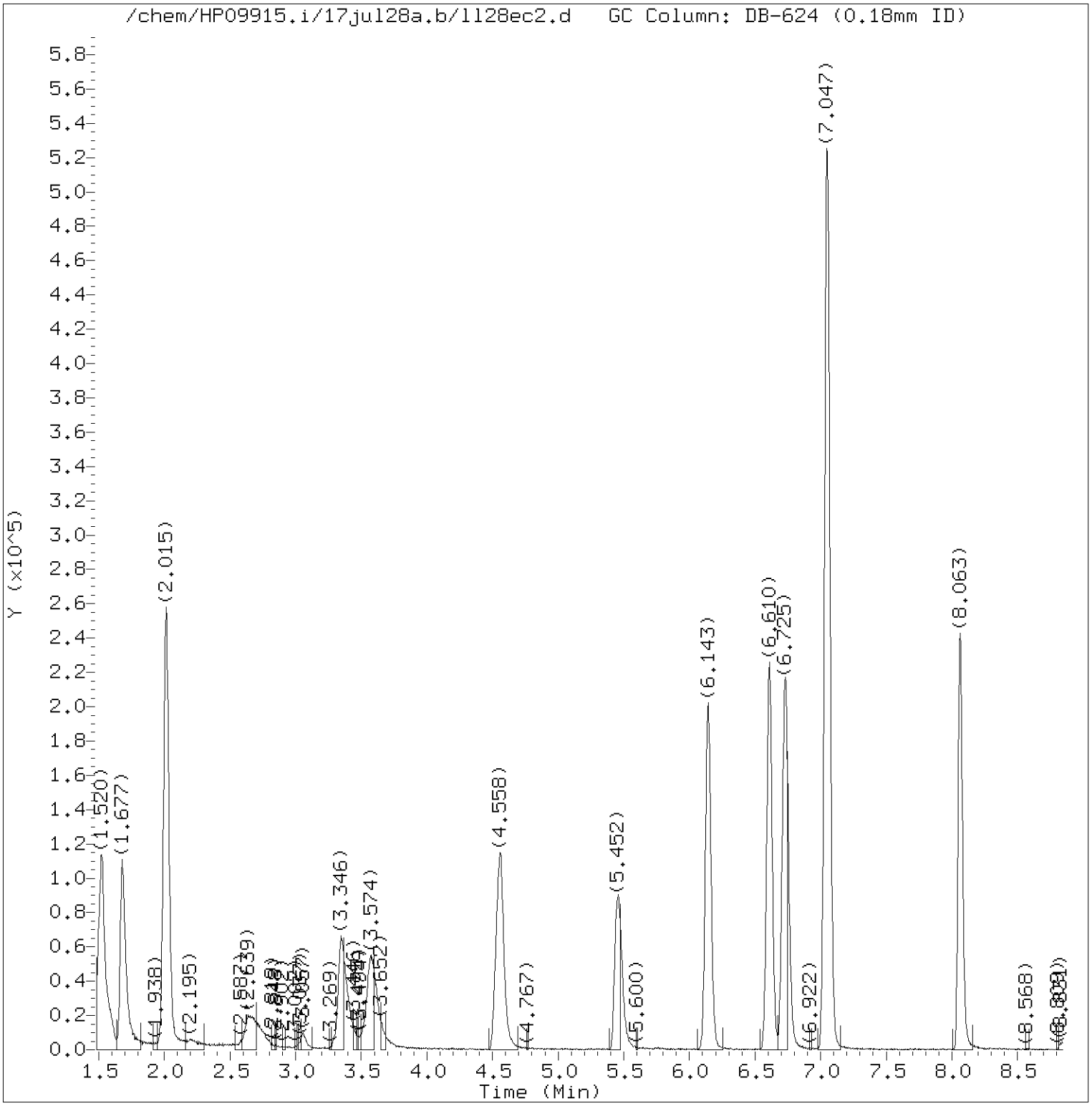
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.143( 0.000) | 113 | 188140 | 52.611 | 105% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613(-0.001) | 102 | 44922 | 50.517 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 721235 | 48.333 | 97% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 271626 | 48.973 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 37) Vinyl Acetate | (2) | 4.558(-0.000) | 43 | 380651 | 45.074 | 45.07 | | | 2 | 10 |

Total number of targets = 1

Digitally signed by Kevin Kelly on 07/28/2017 at 16:19. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 07/28/2017 at 17:22. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

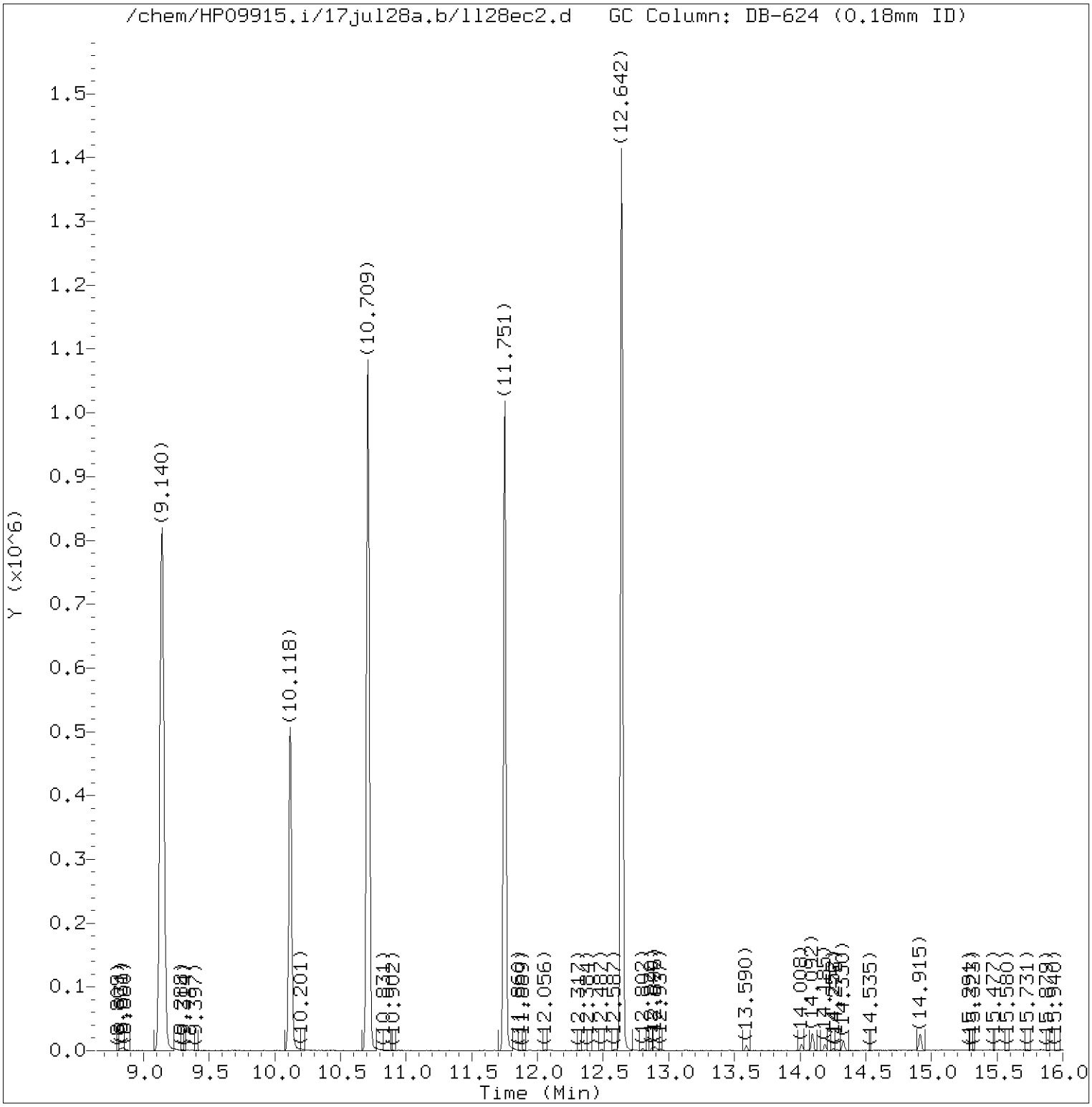
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28ec2.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 15:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 12:01
Date, time and analyst ID of latest file update: 28-Jul-2017 15:44 Automation

Sample Name: SECC050 Lab Sample ID: SECCB50

Digitally signed by Kevin Kelly
on 07/28/2017 at 16:19.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28ec2.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 15:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 12:01
Date, time and analyst ID of latest file update: 28-Jul-2017 15:44 Automation

Sample Name: SECC050 Lab Sample ID: SECCB50

Digitally signed by Kevin Kelly
on 07/28/2017 at 16:19.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28ec2.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 15:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 12:01
Date, time and analyst ID of latest file update: 28-Jul-2017 15:44 Automation

Sample Name: SECC050 Lab Sample ID: SECCB50

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 154196 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.558 | 43 | 380651 | 45.074 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 188140 | 52.611 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 44922 | 50.517 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 732325 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 721235 | 48.333 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 584430 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 271626 | 48.973 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 321170 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/28/2017 at 16:19.
Target 3.5 esignature user ID: kk10002

# Raw QC Data

# Volatiles by GC/MS

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28b01.d Injection date and time: **28-JUL-2017 11:04**
Data file Sample Info. Line: VBLKL86;VBLKL86;1;3;;;DODWW;;; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 11:33 kas02648

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091**
Calibration date and time (Last Method Edit): 28-JUL-2017 11:33
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.558( 0.022) | 646 | 65 | 143231 ( -8) | 250.00 | |
| 66) Fluorobenzene | 7.044( 0.010) | 1730 | 96 | 696837 ( -6) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 558175 ( -5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 303429 ( -10) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.134( 0.001) | 113 | 181546 | 53.352 | 107% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 42503 | 50.230 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 697503 | 48.941 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 263167 | 49.679 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 4) Chloromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 8) Bromomethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 9) Chloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 16) Acrolein | (1) | | | Not Detected | | | | | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 18) Acetone | (1) | | | Not Detected | | | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | | | Not Detected | | | | | 1 | 5 |
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 31) Acrylonitrile | (2) | | | Not Detected | | | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 37) Vinyl Acetate | (2) | | | Not Detected | | | | | 2 | 10 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | | | Not Detected | | | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | | | Not Detected | | | | | 1 | 5 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | | | Not Detected | | | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | | | Not Detected | | | | | 0.5 | 1 |

Digitally signed by Kevin A. Sposito on 07/28/2017 at 11:34. Target 3.5 esignature user ID: kas02648

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28b01.d Injection date and time: **28-JUL-2017 11:04**
Data file Sample Info. Line: VBLKL86;VBLKL86;1;3;;;DODWW;;; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 11:33 kas02648

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091**
Calibration date and time (Last Method Edit): 28-JUL-2017 11:33
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

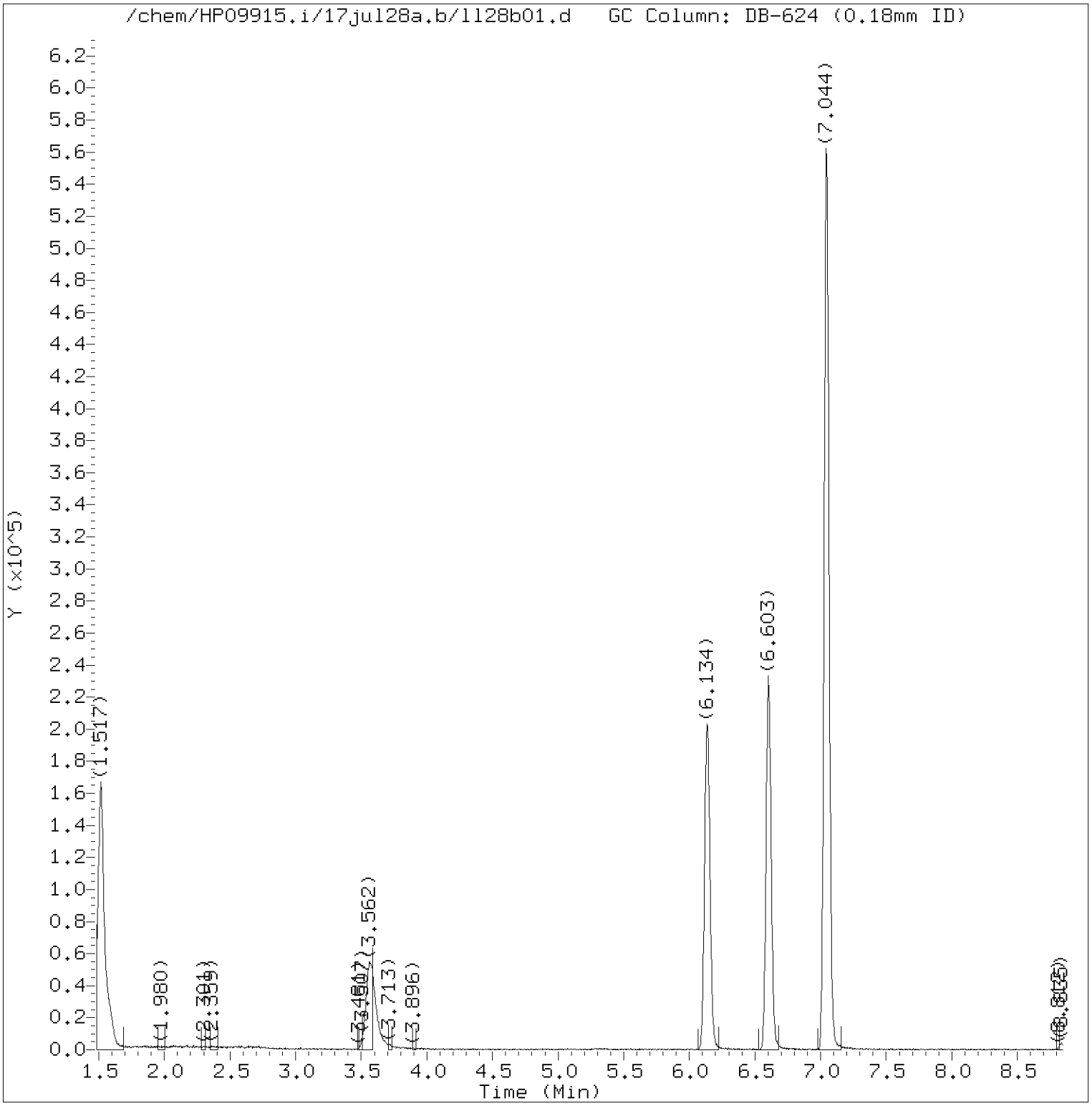
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 82) 4-Methyl-2-pentanone | (2) | | | Not Detected | | | | | 3 | 10 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | | | Not Detected | | | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 109) Styrene | (3) | | | Not Detected | | | | | 1 | 5 |
| 110) Bromoform | (3) | | | Not Detected | | | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | | | Not Detected | | | | | 1 | 5 |
| 115) Bromobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | | | Not Detected | | | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | | | Not Detected | | | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | | | Not Detected | | | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | | | Not Detected | | | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | | | Not Detected | | | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | | | Not Detected | | | | | 2 | 5 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | | | Not Detected | | | | | 1 | 5 |

Total number of targets = 69

Digitally signed by Kevin A. Sposito on 07/28/2017 at 11:34. Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Joshua E. Berrios on 07/28/2017 at 17:14. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

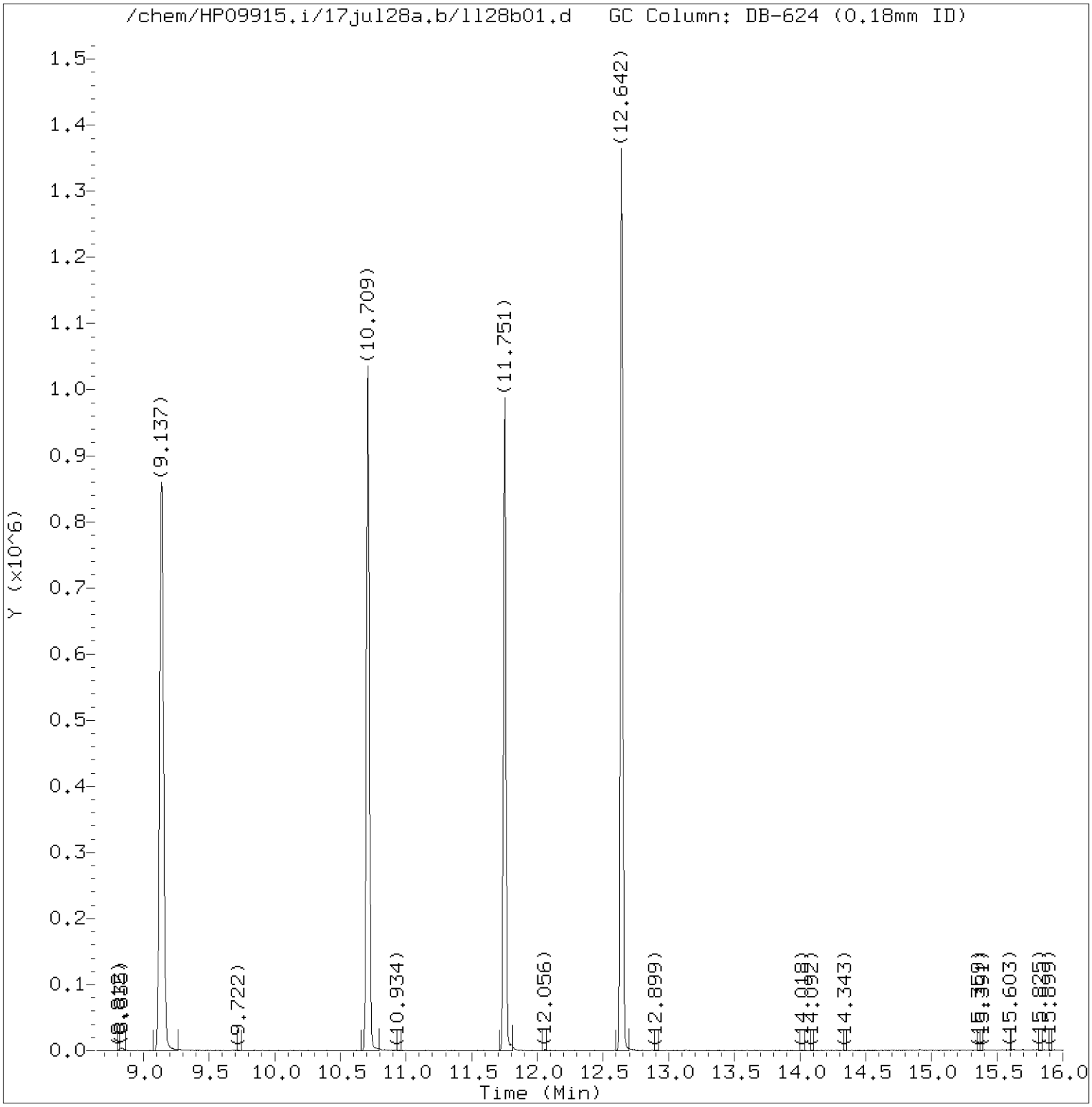
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28b01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091
Calibration date and time: 28-JUL-2017 11:33
Date, time and analyst ID of latest file update: 28-Jul-2017 11:33 kas02648

Sample Name: VBLKL86 Lab Sample ID: VBLKL86

Digitally signed by Kevin A. Sposito
on 07/28/2017 at 11:34.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28b01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091
Calibration date and time: 28-JUL-2017 11:33
Date, time and analyst ID of latest file update: 28-Jul-2017 11:33 kas02648

Sample Name: VBLKL86 Lab Sample ID: VBLKL86

Digitally signed by Kevin A. Sposito
on 07/28/2017 at 11:34.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28b01.d  Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 11:04  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m  Sublist used: L172091
Calibration date and time: 28-JUL-2017 11:33
Date, time and analyst ID of latest file update: 28-Jul-2017 11:33 kas02648

Sample Name: VBLKL86  Lab Sample ID: VBLKL86

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.558 | 65 | 143231 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.134 | 113 | 181546 | 53.352 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 42503 | 50.230 |
| 66)*Fluorobenzene | (2) | 7.044 | 96 | 696837 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 697503 | 48.941 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 558175 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 263167 | 49.679 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 303429 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 07/28/2017 at 11:34.
Target 3.5 esignature user ID: kas02648

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28s03.d Injection date and time: **28-JUL-2017 10:19**
Data file Sample Info. Line: LCSL87;LCSL87;1;3;LCS;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 17:58 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 17:56
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.574( 0.006) | 651 | 65 | 151640 ( -2) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.006) | 1731 | 96 | 719183 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 578666 ( -1) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.003) | 3470 | 152 | 313130 ( -7) | 50.00 | |

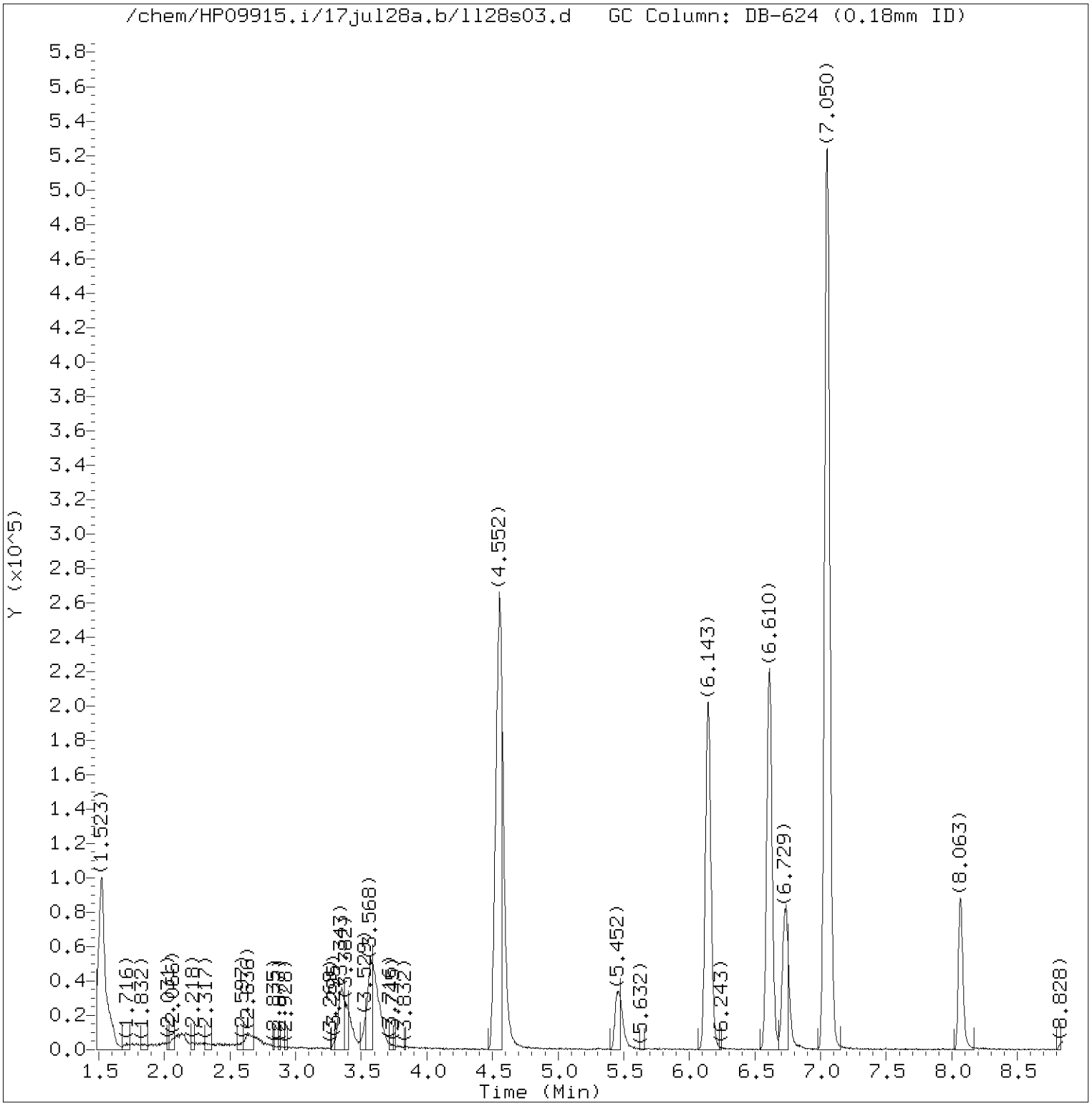
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.001) | 113 | 186296 | 53.047 | 106% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613(-0.001) | 102 | 44663 | 51.143 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 708947 | 47.982 | 96% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 271458 | 49.430 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 37) Vinyl Acetate | (2) | 4.552( 0.000) | 43 | 868540 | 104.726 | 104.73 | | | 2 | 10 |

Total number of targets = 1

Digitally signed by Kevin Kelly on 07/28/2017 at 18:28. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

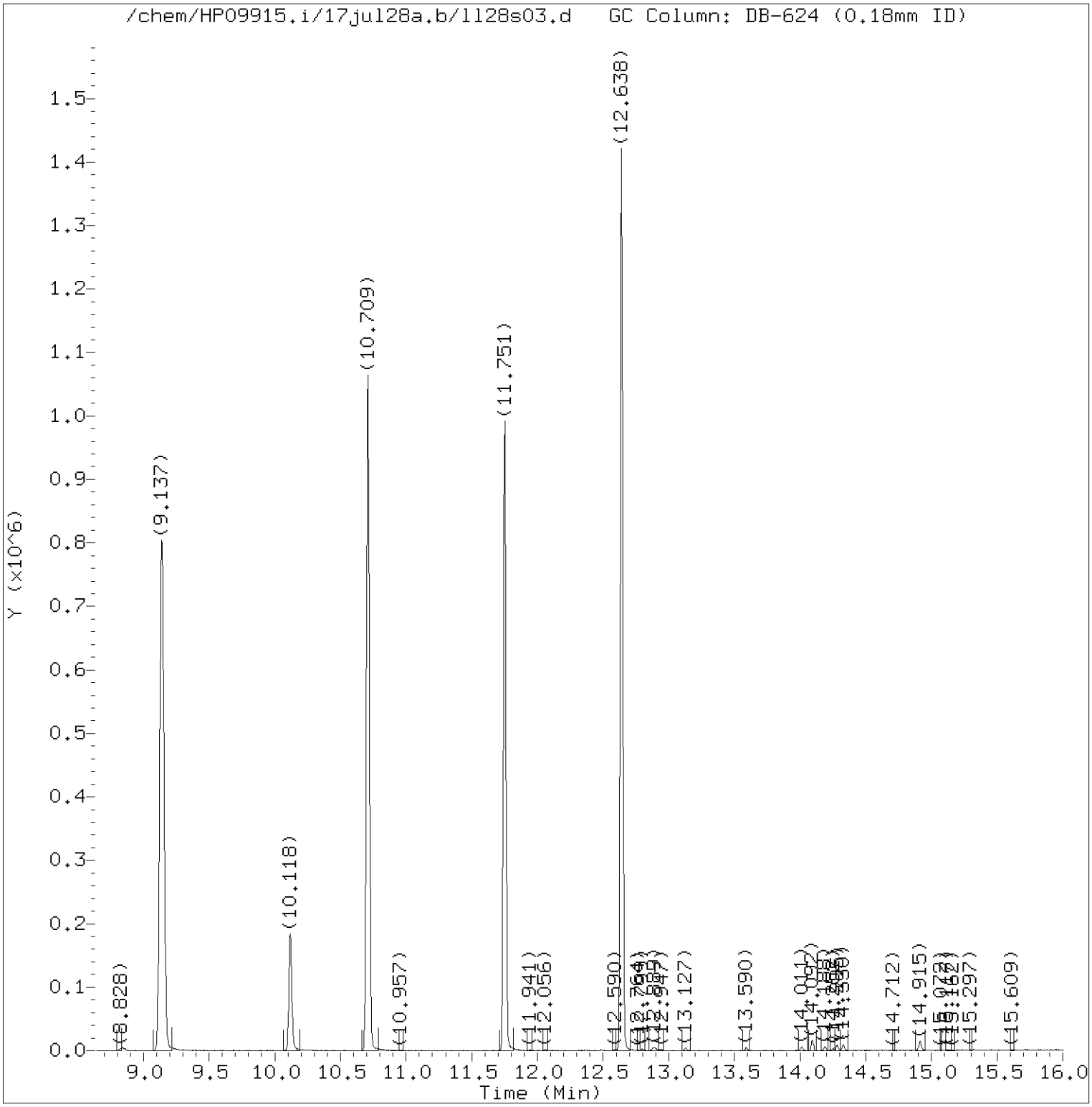
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s03.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 10:19 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:58 kk10002

Sample Name: LCSL87 Lab Sample ID: LCSL87

Digitally signed by Kevin Kelly
on 07/28/2017 at 18:28.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s03.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 10:19 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:58 kk10002

Sample Name: LCSL87 Lab Sample ID: LCSL87

Digitally signed by Kevin Kelly
on 07/28/2017 at 18:28.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s03.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 10:19 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:58 kk10002

Sample Name: LCSL87 Lab Sample ID: LCSL87

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 151640 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.552 | 43 | 868540 | 104.726 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 186296 | 53.047 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 44663 | 51.143 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 719183 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 708947 | 47.982 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 578666 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 271458 | 49.430 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 313130 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/28/2017 at 18:28.
Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28s04.d Injection date and time: **28-JUL-2017 10:41**
Data file Sample Info. Line: LCDL87;LCDL87;1;3;LCSD;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 17:58 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 17:56
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.010) | 650 | 65 | 143930 ( -7) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.007) | 1731 | 96 | 706868 ( -4) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 560323 ( -4) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 311140 ( -7) | 50.00 | |

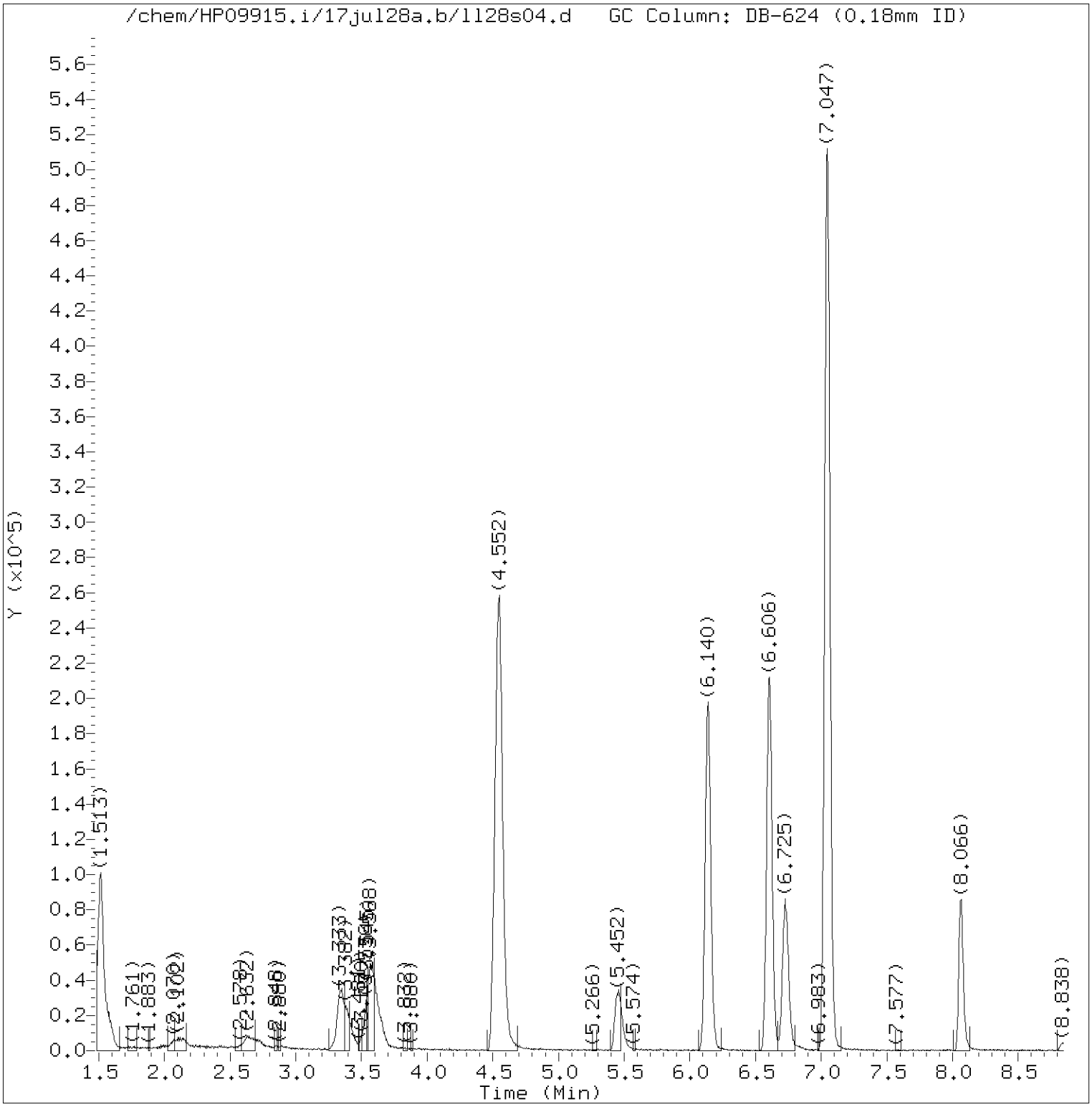
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.001) | 113 | 180903 | 52.409 | 105% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 42637 | 49.674 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 693974 | 48.507 | 97% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 264008 | 49.647 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 37) Vinyl Acetate | (2) | 4.552( 0.000) | 43 | 847457 | 103.965 | 103.96 | | | 2 | 10 |

Total number of targets = 1

Digitally signed by Kevin Kelly on 07/28/2017 at 18:28. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

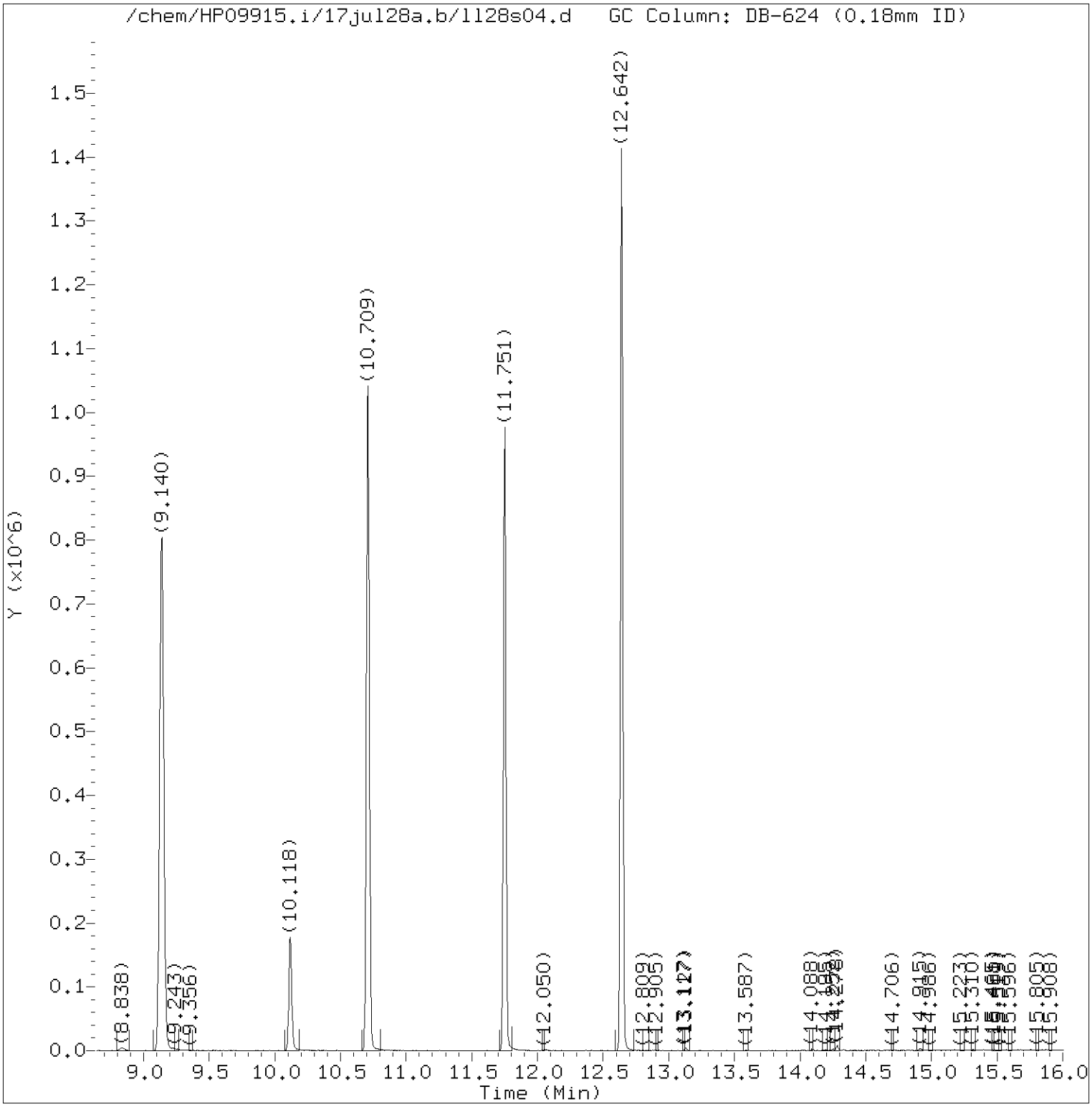
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s04.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 10:41 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:58 kk10002

Sample Name: LCDL87 Lab Sample ID: LCDL87

Digitally signed by Kevin Kelly
on 07/28/2017 at 18:28.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s04.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 10:41 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:58 kk10002

Sample Name: LCDL87 Lab Sample ID: LCDL87

Digitally signed by Kevin Kelly
on 07/28/2017 at 18:28.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s04.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 10:41 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:58 kk10002

Sample Name: LCDL87 Lab Sample ID: LCDL87

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 143930 | 250.000 |
| 37) Vinyl Acetate | (2) | 4.552 | 43 | 847457 | 103.965 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 180903 | 52.409 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 42637 | 49.674 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 706868 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 693974 | 48.507 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 560323 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 264008 | 49.647 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 311140 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/28/2017 at 18:28.
Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28s01.d Injection date and time: **28-JUL-2017 09:35**
Data file Sample Info. Line: LCSL86;LCSL86;1;3;LCS;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091-SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 17:56
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.575( 0.006) | 651 | 65 | 152011 ( -2) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.006) | 1731 | 96 | 722816 ( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 571973 ( -2) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.003) | 3470 | 152 | 328916 ( -2) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.001) | 113 | 186648 | 52.880 | 106% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 45012 | 51.284 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 731941 | 50.118 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 282794 | 52.097 | 104% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706( 0.001) | 85 | 73471 | 17.063 | 17.06 | | | 0.5 | 1 |
| 4) Chloromethane | (2) | 1.812( 0.003) | 50 | 73021 | 16.508 | 16.51 | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | 1.932( 0.002) | 62 | 72141 | 16.889 | 16.89 | | | 0.5 | 1 |
| 8) Bromomethane | (2) | 2.205( 0.002) | 94 | 55285M | 19.243 | 19.24 | | | 0.5 | 1 |
| 9) Chloroethane | (2) | 2.288( 0.001) | 64 | 42489 | 17.651 | 17.65 | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | 2.552( 0.001) | 101 | 106701 | 21.572 | 21.57 | | | 0.5 | 1 |
| 16) Acrolein | (1) | 2.896( 0.002) | 56 | 122422 | 98.380 | 98.38 | | J | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | 3.018( 0.000) | 96 | 57882 | 22.110 | 22.11 | | | 0.5 | 1 |
| 18) Acetone | (1) | 3.038( 0.002) | 58 | 79310 | 146.847 | 146.85 | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | 3.282( 0.001) | 76 | 187370 | 21.994 | 21.99 | | | 1 | 5 |
| 28) Methylene Chloride | (2) | 3.574( 0.000) | 84 | 69731 | 20.163 | 20.16 | | | 2 | 4 |
| 31) Acrylonitrile | (2) | 3.848( 0.000) | 53 | 186465 | 93.450 | 93.45 | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935( 0.000) | 96 | 66949 | 21.796 | 21.80 | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.919( 0.000) | 73 | 210654 | 21.965 | 21.96 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.558( 0.001) | 63 | 119829 | 20.761 | 20.76 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.407( 0.001) | 96 | 74072 | 21.045 | 21.05 | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | 5.382( 0.000) | 43 | 382428 | 143.141 | 143.14 | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | 5.426( 0.000) | 77 | 92980 | 24.128 | 24.13 | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | 5.761( 0.000) | 128 | 40432 | 21.796 | 21.80 | | | 1 | 5 |
| 51) Chloroform | (2) | 5.912( 0.000) | 83 | 121029 | 21.999 | 22.00 | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140( 0.000) | 97 | 104949 | 20.876 | 20.88 | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | 6.362(-0.000) | 75 | 90813 | 20.295 | 20.30 | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | 6.362(-0.000) | 117 | 86960 | 23.697 | 23.70 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.629(-0.000) | 78 | 270042 | 20.473 | 20.47 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.716(-0.000) | 62 | 106322 | 23.827 | 23.83 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.542(-0.000) | 95 | 70943 | 20.812 | 20.81 | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | 7.886(-0.001) | 63 | 70313 | 19.473 | 19.47 | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | 7.989( 0.000) | 93 | 49081 | 21.615 | 21.61 | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | 8.240(-0.000) | 83 | 87008 | 21.232 | 21.23 | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806(-0.000) | 75 | 108709 | 20.353 | 20.35 | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | 8.986(-0.000) | 43 | 526181 | 95.573 | 95.57 | | | 3 | 10 |

**M = Compound was manually integrated.**

Digitally signed by Kevin Kelly on 07/28/2017 at 18:27. Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28s01.d Injection date and time: **28-JUL-2017 09:35**
Data file Sample Info. Line: LCSL86;LCSL86;1;3;LCS;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091-SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 17:56
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

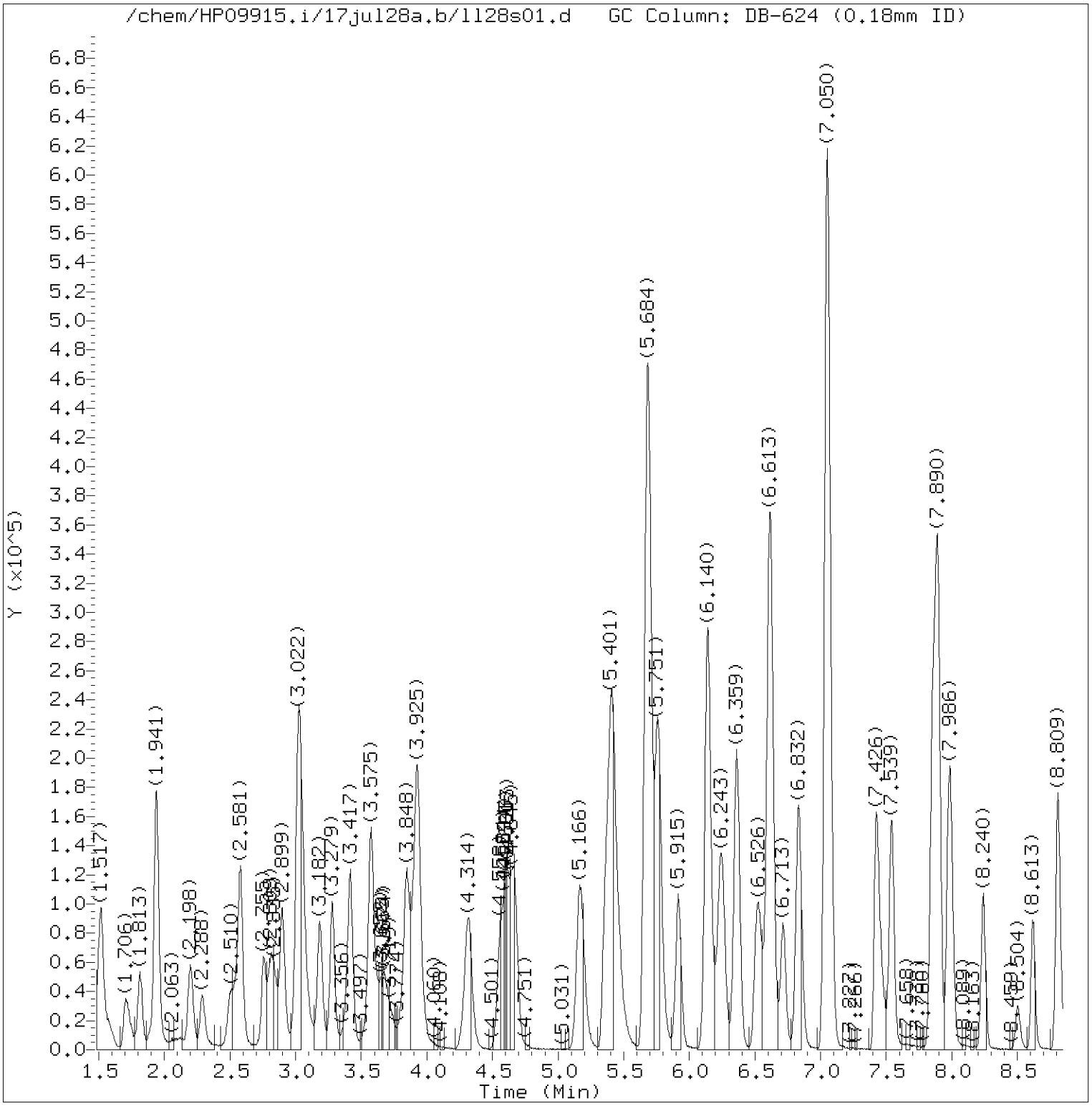
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 88) Toluene | (3) | 9.227( 0.000) | 92 | 172584 | 20.335 | 20.34 | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526(-0.000) | 75 | 98375 | 20.672 | 20.67 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748(-0.000) | 97 | 68539 | 20.958 | 20.96 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.828(-0.000) | 166 | 79174 | 21.092 | 21.09 | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | 9.915( 0.000) | 76 | 110246 | 19.428 | 19.43 | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | 9.970( 0.000) | 43 | 382864 | 93.459 | 93.46 | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | 10.143( 0.000) | 129 | 70757 | 20.889 | 20.89 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.256( 0.000) | 107 | 73260 | 20.462 | 20.46 | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | 10.738( 0.000) | 112 | 200282 | 20.451 | 20.45 | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832( 0.000) | 131 | 68185 | 21.085 | 21.08 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.835(-0.000) | 91 | 337445 | 20.613 | 20.61 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 266129 | 41.757 | 41.76 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291( 0.000) | 106 | 125239 | 19.759 | 19.76 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 391368 | 61.516 | 61.52 | | | 0.5 | 1 |
| 109) Styrene | (3) | 11.310( 0.000) | 104 | 222889 | 21.273 | 21.27 | | | 1 | 5 |
| 110) Bromoform | (3) | 11.471( 0.000) | 173 | 51753 | 21.041 | 21.04 | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 11.603( 0.000) | 105 | 339394 | 20.952 | 20.95 | | | 1 | 5 |
| 115) Bromobenzene | (4) | 11.860(-0.000) | 156 | 94572 | 20.115 | 20.12 | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857(-0.000) | 83 | 111032M | 19.018 | 19.02 | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899( 0.000) | 110 | 34383 | 20.834 | 20.83 | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | 11.938( 0.000) | 91 | 414113 | 19.934 | 19.93 | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | 12.008( 0.000) | 126 | 85039 | 19.668 | 19.67 | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | 12.108(-0.000) | 126 | 88358 | 19.635 | 19.64 | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079(-0.000) | 105 | 301949 | 20.383 | 20.38 | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | 12.320(-0.000) | 134 | 59969M | 18.727 | 18.73 | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365(-0.000) | 105 | 311008 | 20.381 | 20.38 | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | 12.484( 0.000) | 105 | 381594 | 20.194 | 20.19 | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584(-0.000) | 146 | 176518 | 19.720 | 19.72 | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | 12.597( 0.000) | 119 | 338729 | 20.301 | 20.30 | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658(-0.000) | 146 | 184457 | 19.929 | 19.93 | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912(-0.000) | 146 | 178656 | 20.305 | 20.31 | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | 12.889(-0.000) | 92 | 163493 | 19.615 | 19.62 | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458(-0.000) | 75 | 24448 | 19.802 | 19.80 | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008(-0.000) | 180 | 131070 | 18.941 | 18.94 | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | 14.095(-0.000) | 225 | 62129 | 20.674 | 20.67 | | | 2 | 5 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 390577 | 18.705 | 18.70 | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326(-0.000) | 180 | 132438 | 19.839 | 19.84 | | | 1 | 5 |

**M = Compound was manually integrated.**

Total number of targets = 68

Digitally signed by Kevin Kelly on 07/28/2017 at 18:27. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

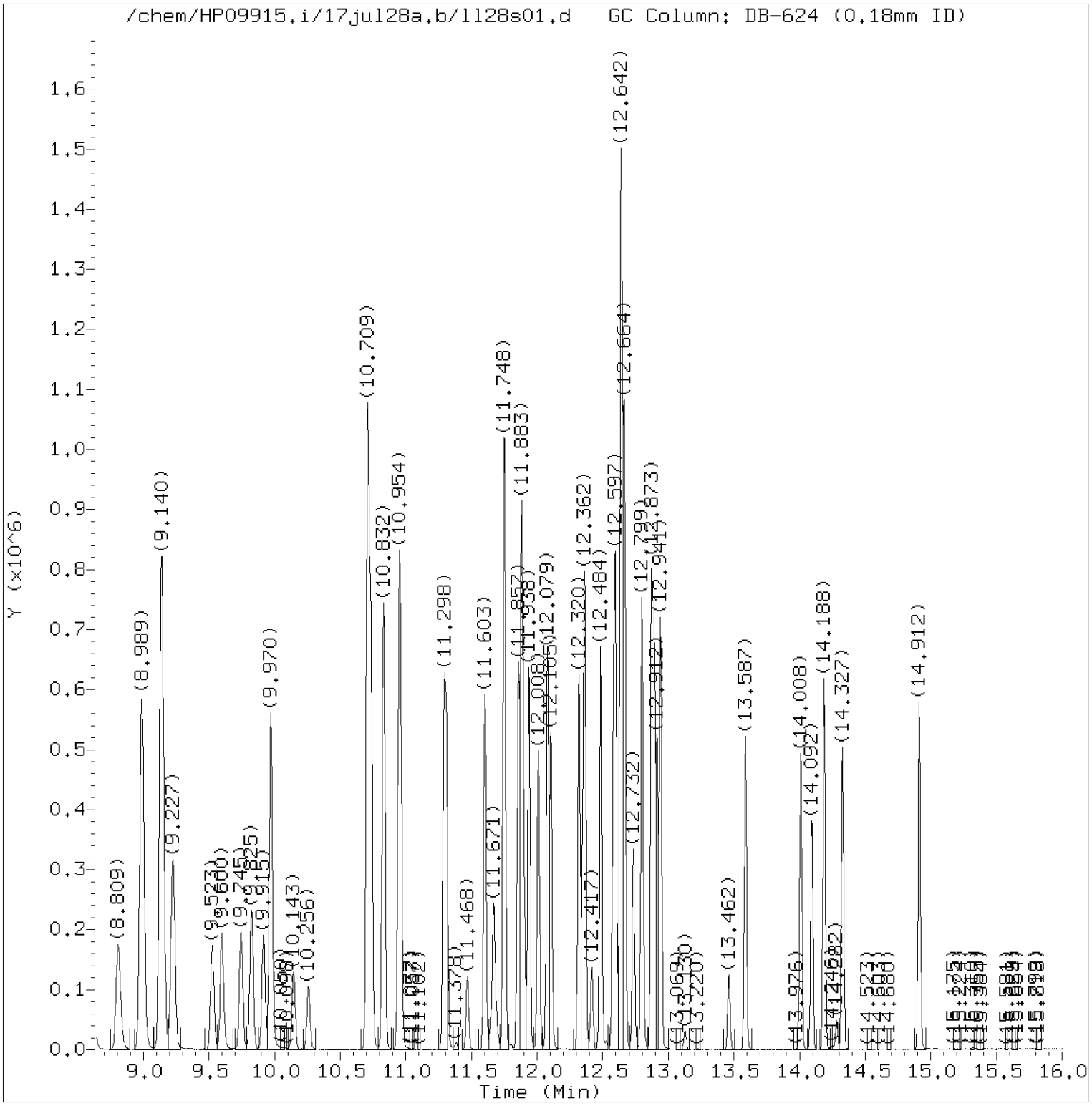
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCSL86 Lab Sample ID: LCSL86

Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCSL86 Lab Sample ID: LCSL86

Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCSL86 Lab Sample ID: LCSL86

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 73471 | 17.063 |
| 4) Chloromethane | (2) | 1.813 | 50 | 73021 | 16.508 |
| 6) Vinyl Chloride | (2) | 1.932 | 62 | 72141 | 16.889 |
| 8) Bromomethane | (2) | 2.205 | 94 | 55285M | 19.243 |
| 9) Chloroethane | (2) | 2.288 | 64 | 42489 | 17.651 |
| 12) Trichlorofluoromethane | (2) | 2.552 | 101 | 106701 | 21.572 |
| 16) Acrolein | (1) | 2.896 | 56 | 122422 | 98.380 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 96 | 57882 | 22.110 |
| 18) Acetone | (1) | 3.038 | 58 | 79310 | 146.847 |
| 23) Carbon Disulfide | (2) | 3.282 | 76 | 187370 | 21.994 |
| 28) Methylene Chloride | (2) | 3.575 | 84 | 69731 | 20.163 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 152011 | 250.000 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 186465 | 93.450 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.919 | 73 | 210654 | 21.965 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 66949 | 21.796 |
| 36) 1,1-Dichloroethane | (2) | 4.558 | 63 | 119829 | 20.761 |
| 44) 2-Butanone | (2) | 5.382 | 43 | 382428 | 143.141 |
| 42) cis-1,2-Dichloroethene | (2) | 5.407 | 96 | 74072 | 21.045 |
| 45) 2,2-Dichloropropane | (2) | 5.427 | 77 | 92980 | 24.128 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 40432 | 21.796 |
| 51) Chloroform | (2) | 5.912 | 83 | 121029 | 21.999 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 104949 | 20.876 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 186648 | 52.880 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 86960 | 23.697 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 90813 | 20.295 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 45012 | 51.284 |
| 60) Benzene | (2) | 6.629 | 78 | 270042 | 20.473 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 106322 | 23.827 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 722816 | 50.000 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 70943 | 20.812 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 70313 | 19.473 |
| 74) Dibromomethane | (2) | 7.989 | 93 | 49081 | 21.615 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 87008 | 21.232 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 108709 | 20.353 |
| 82) 4-Methyl-2-pentanone | (2) | 8.986 | 43 | 526181 | 95.573 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 731941 | 50.118 |
| 88) Toluene | (3) | 9.227 | 92 | 172584 | 20.335 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 98375 | 20.672 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCSL86 Lab Sample ID: LCSL86

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 68539 | 20.958 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 79174 | 21.092 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 110246 | 19.428 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 382864 | 93.459 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 70757 | 20.889 |
| 99) 1,2-Dibromoethane | (3) | 10.256 | 107 | 73260 | 20.462 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 571973 | 50.000 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 200282 | 20.451 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 68185 | 21.085 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 337445 | 20.613 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 266129 | 41.757 |
| 107) o-Xylene | (3) | 11.291 | 106 | 125239 | 19.759 |
| 109) Styrene | (3) | 11.311 | 104 | 222889 | 21.273 |
| 110) Bromoform | (3) | 11.471 | 173 | 51753 | 21.041 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 339394 | 20.952 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 282794 | 52.097 |
| 108) Xylene (Total) | (3) | | 106 | 391368 | 61.516 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 111032M | 19.018 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 94572 | 20.115 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 34383 | 20.834 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 414113 | 19.934 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 85039 | 19.668 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 301949 | 20.383 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 88358 | 19.635 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 59969M | 18.727 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 311008 | 20.381 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 381594 | 20.194 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 176518 | 19.720 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 338729 | 20.301 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 328916 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 184457 | 19.929 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 163493 | 19.615 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 178656 | 20.305 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 24448 | 19.802 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 131070 | 18.941 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 62129 | 20.674 |
| 148) Naphthalene | (4) | 14.188 | 128 | 390577 | 18.705 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 132438 | 19.839 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCSL86 Lab Sample ID: LCSL86

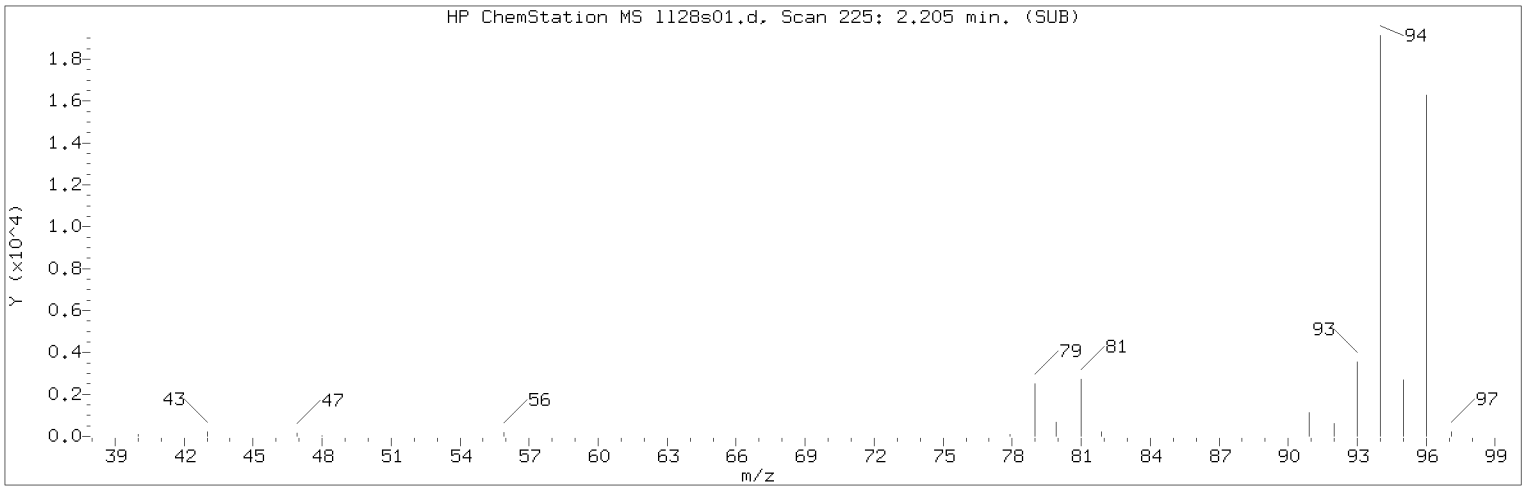
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

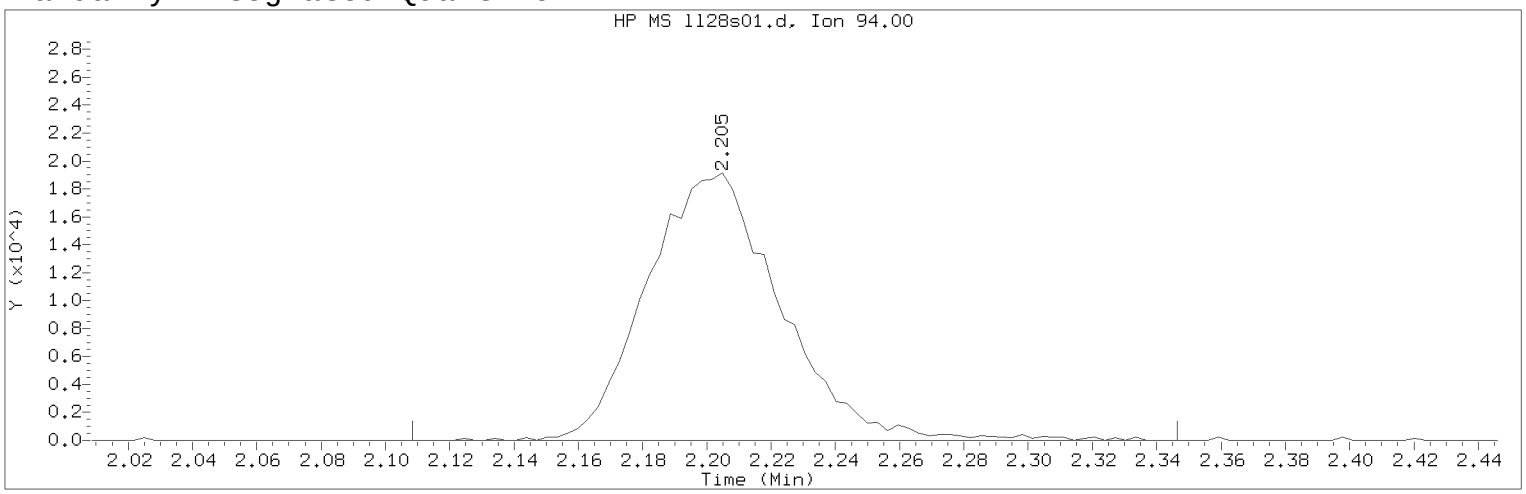


Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCSL86 Lab Sample ID: LCSL86

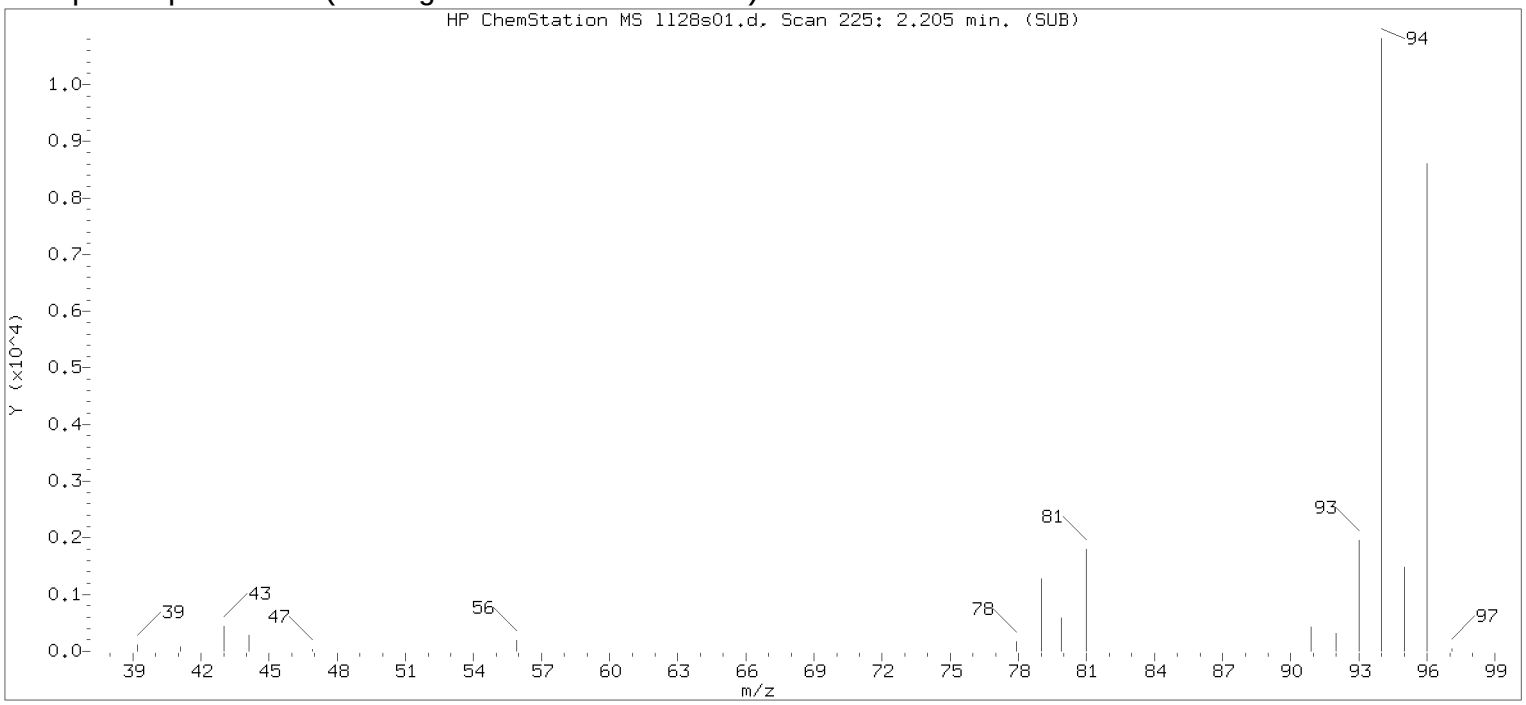
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 225
Retention Time (minutes): 2.205
Quant Ion : 94.00
Area (flag) : 55285M
On-Column Amount (ng) : 19.2434
Integration start scan : 194 Integration stop scan: 268
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

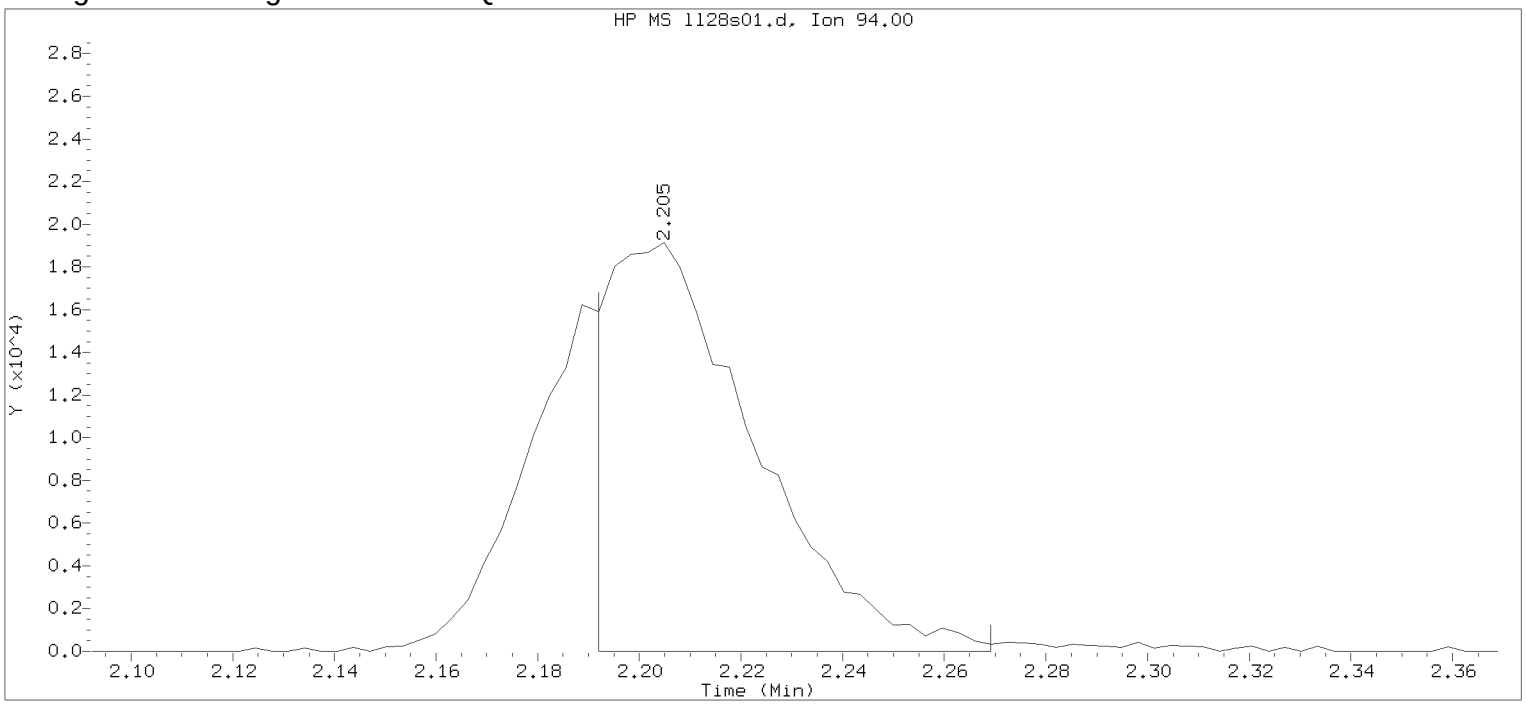
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

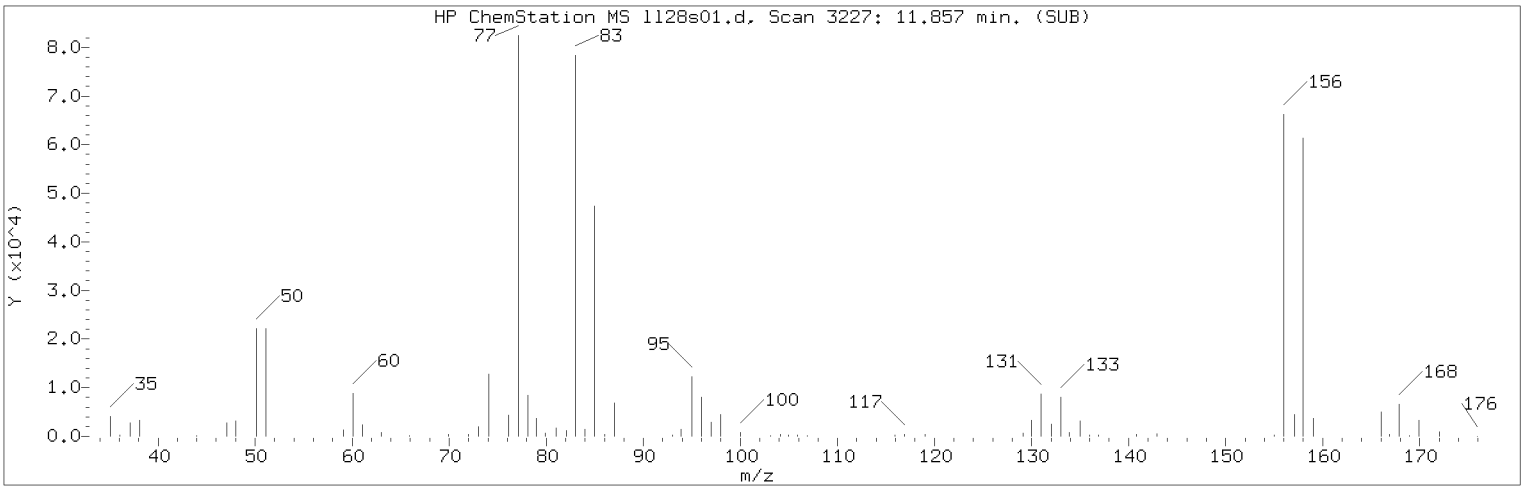
Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 09:53 Automation

Sample Name: LCSL86 Lab Sample ID: LCSL86

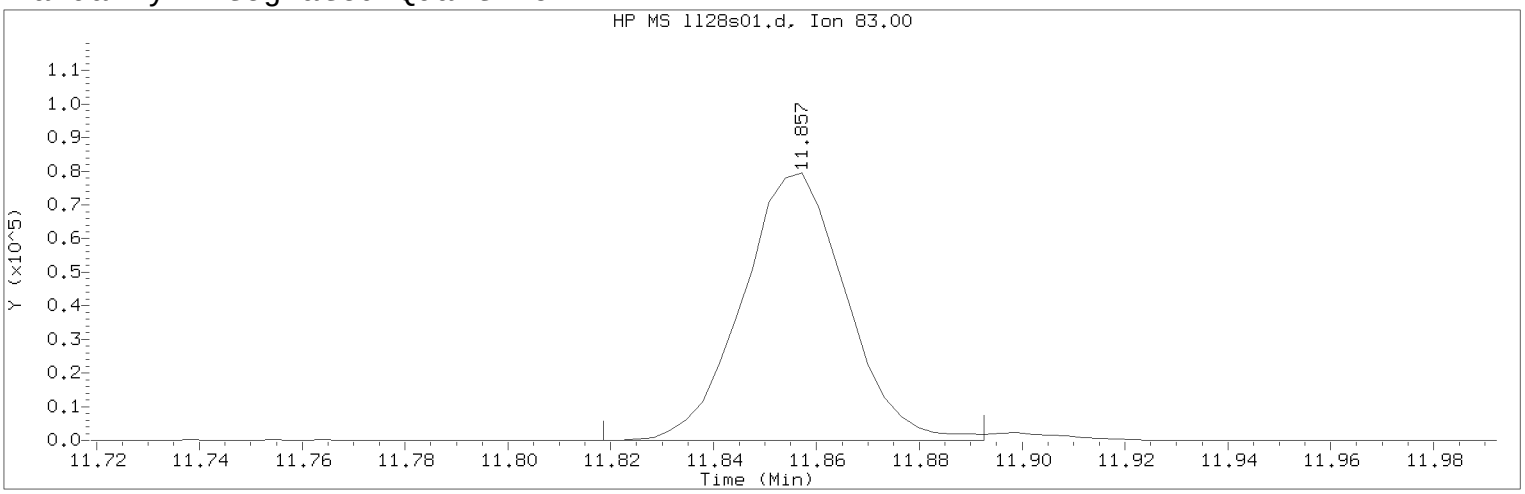
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 225
Retention Time (minutes): 2.205
Quant Ion : 94.00
Area : 38359
On-column Amount (ng) : 13.3522
Integration start scan : 220 Integration stop scan: 244
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin Kelly on 07/28/2017 at 18:27.
Target 3.5 esignature userKELLYK1 Page 424 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCSL86 Lab Sample ID: LCSL86

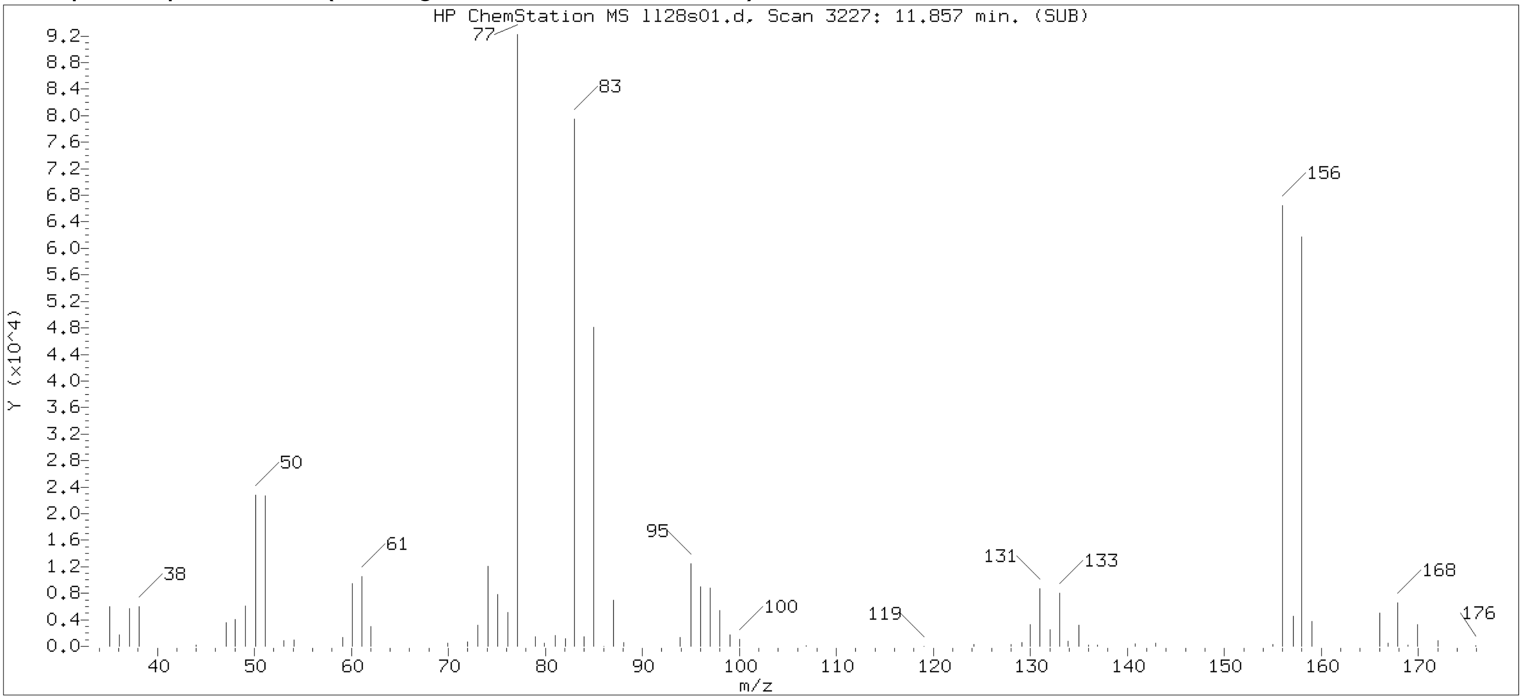
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3227
Retention Time (minutes): 11.857
Quant Ion : 83.00
Area (flag) : 111032M
On-Column Amount (ng) : 19.0182
Integration start scan : 3214 Integration stop scan: 3237
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

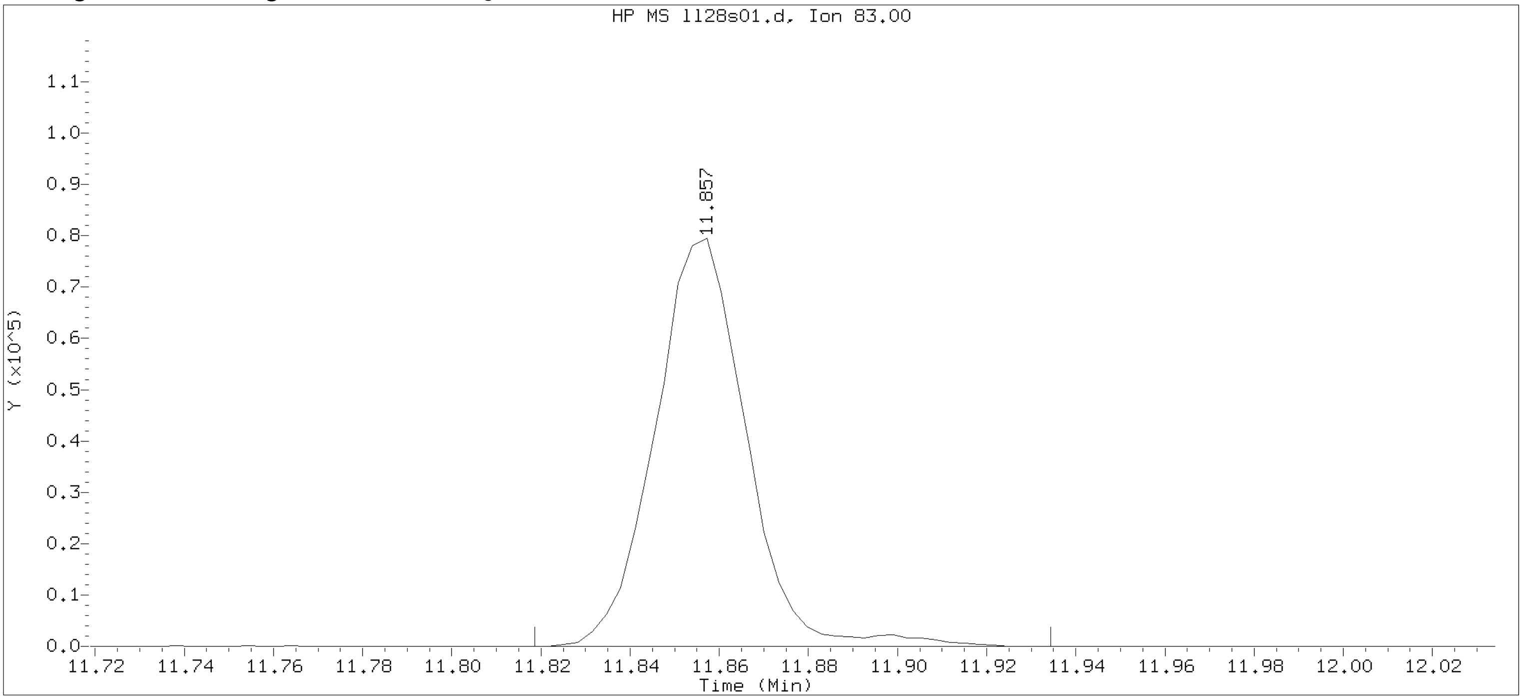
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d    Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35    Analyst ID: KAS02648

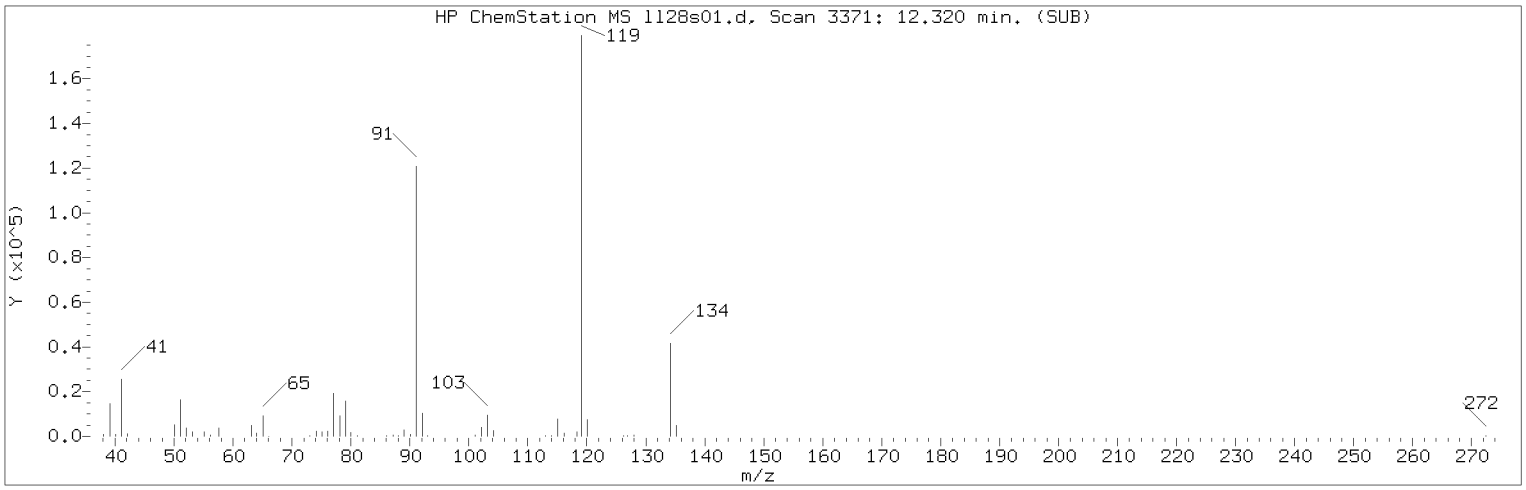
Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m    Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 09:53 Automation

Sample Name: LCSL86    Lab Sample ID: LCSL86

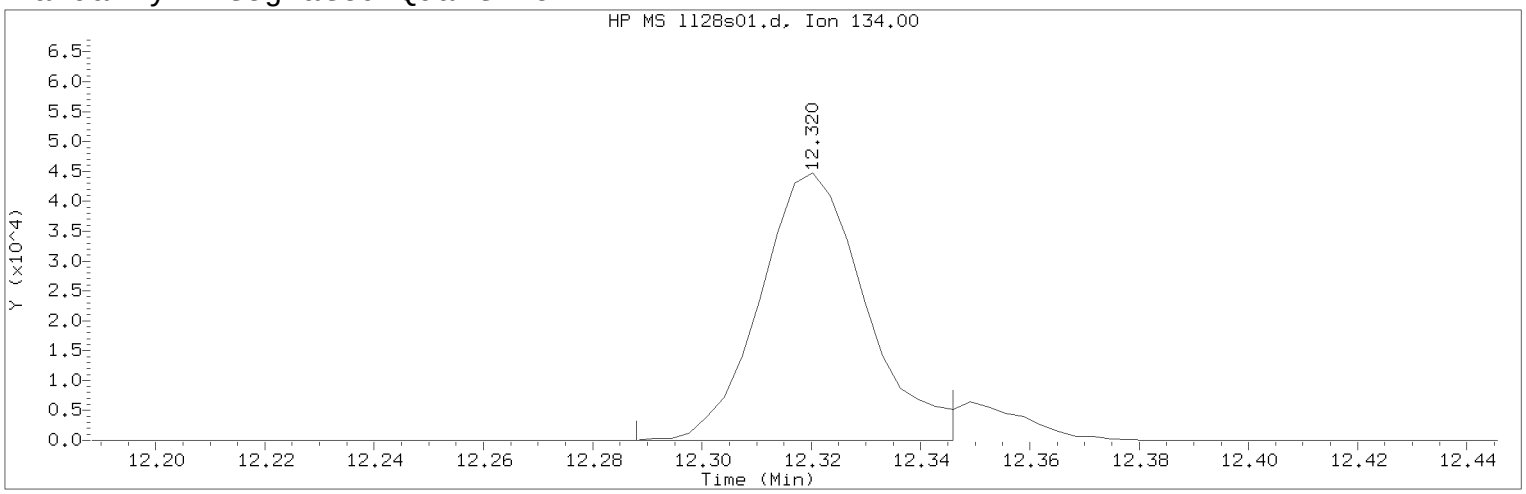
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3227
Retention Time (minutes): 11.857
Quant Ion : 83.00
Area : 113120
On-column Amount (ng) : 19.3759
Integration start scan : 3214    Integration stop scan: 3250
Y at integration start : 0    Y at integration end: 0

Digitally signed by Kevin Kelly on 07/28/2017 at 18:27.
Target 3.5 esignature user: KRD87 kk100042

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCSL86 Lab Sample ID: LCSL86

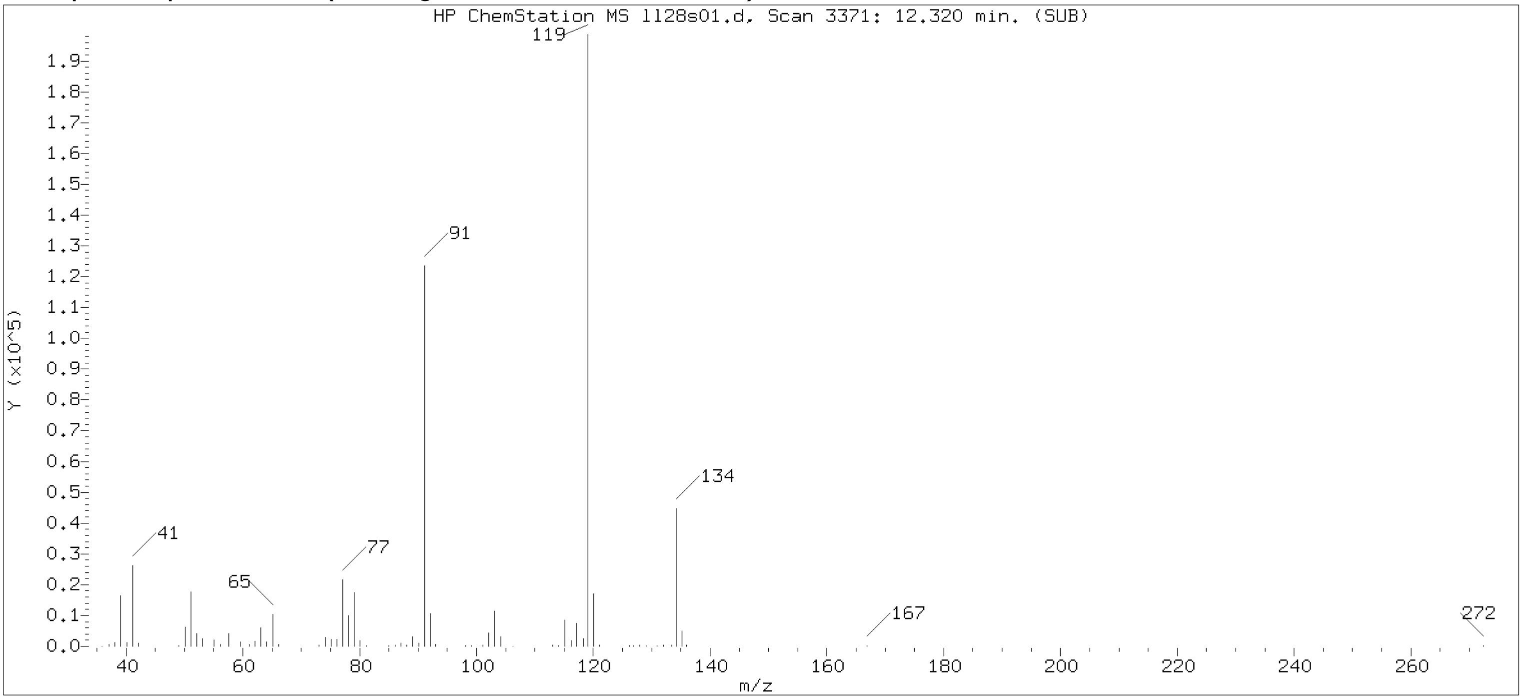
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 59969M
On-Column Amount (ng) : 18.7268
Integration start scan : 3360 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

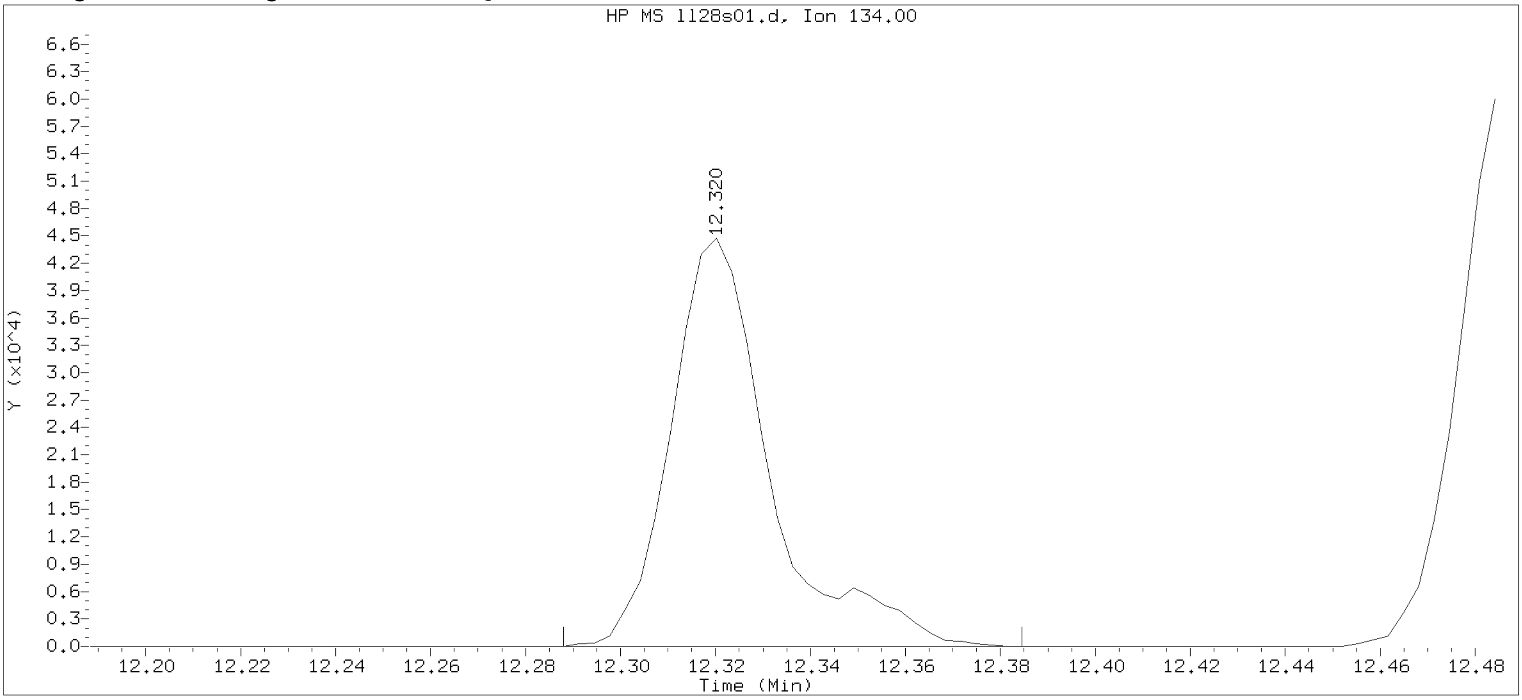
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s01.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 09:53 Automation

Sample Name: LCSL86 Lab Sample ID: LCSL86

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 65010
On-column Amount (ng) : 20.3011
Integration start scan : 3360 Integration stop scan: 3390
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin Kelly on 07/28/2017 at 18:27.
Target 3.5 esignature userKKD187kRage 4218 of 594

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28s02.d Injection date and time: **28-JUL-2017 09:57**
Data file Sample Info. Line: LCDL86;LCDL86;1;3;LCSD;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091-SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 17:56
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.013) | 649 | 65 | 153080 ( -2) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.006) | 1731 | 96 | 740638 ( 0) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 583089 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 334847 ( 0) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.001) | 113 | 190496 | 52.672 | 105% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.606( 0.000) | 102 | 44996 | 50.032 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 741948 | 49.835 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 286838 | 51.834 | 104% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710( 0.000) | 85 | 75541 | 17.122 | 17.12 | | | 0.5 | 1 |
| 4) Chloromethane | (2) | 1.819( 0.002) | 50 | 74324 | 16.398 | 16.40 | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | 1.931( 0.002) | 62 | 72654 | 16.600 | 16.60 | | | 0.5 | 1 |
| 8) Bromomethane | (2) | 2.195( 0.003) | 94 | 55045M | 18.699 | 18.70 | | | 0.5 | 1 |
| 9) Chloroethane | (2) | 2.288( 0.001) | 64 | 44110 | 17.883 | 17.88 | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | 2.542( 0.002) | 101 | 104851 | 20.688 | 20.69 | | | 0.5 | 1 |
| 16) Acrolein | (1) | 2.896( 0.000) | 56 | 135449 | 108.089 | 108.09 | | | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | 3.015( 0.001) | 96 | 58722 | 21.891 | 21.89 | | | 0.5 | 1 |
| 18) Acetone | (1) | 3.034( 0.001) | 58 | 83825 | 154.123 | 154.12 | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | 3.279( 0.001) | 76 | 189899 | 21.754 | 21.75 | | | 1 | 5 |
| 28) Methylene Chloride | (2) | 3.578( 0.000) | 84 | 71212 | 20.096 | 20.10 | | | 2 | 4 |
| 31) Acrylonitrile | (2) | 3.844( 0.001) | 53 | 187785 | 91.847 | 91.85 | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931( 0.001) | 96 | 68498 | 21.764 | 21.76 | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.918( 0.000) | 73 | 211056 | 21.477 | 21.48 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.562( 0.000) | 63 | 121802 | 20.595 | 20.60 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.407( 0.001) | 96 | 76903 | 21.324 | 21.32 | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | 5.381( 0.000) | 43 | 391438 | 142.988 | 142.99 | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | 5.417( 0.002) | 77 | 95944M | 24.298 | 24.30 | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | 5.758( 0.000) | 128 | 39682 | 20.877 | 20.88 | | | 1 | 5 |
| 51) Chloroform | (2) | 5.915( 0.000) | 83 | 124901 | 22.157 | 22.16 | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140( 0.000) | 97 | 106416 | 20.659 | 20.66 | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | 6.359( 0.000) | 75 | 91687 | 19.998 | 20.00 | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | 6.365(-0.000) | 117 | 86806 | 23.085 | 23.09 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.629(-0.000) | 78 | 273663 | 20.248 | 20.25 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.716(-0.000) | 62 | 106233 | 23.234 | 23.23 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.539(-0.000) | 95 | 72190 | 20.668 | 20.67 | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | 7.883(-0.000) | 63 | 71841 | 19.417 | 19.42 | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | 7.992(-0.000) | 93 | 49970 | 21.477 | 21.48 | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | 8.240(-0.000) | 83 | 87960 | 20.948 | 20.95 | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | 8.802(-0.000) | 75 | 109460 | 20.001 | 20.00 | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989(-0.001) | 43 | 529847 | 93.923 | 93.92 | | | 3 | 10 |

**M = Compound was manually integrated.**

Digitally signed by Kevin Kelly on 07/28/2017 at 18:27. Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul28a.b/ll28s02.d Injection date and time: **28-JUL-2017 09:57**
Data file Sample Info. Line: LCDL86;LCDL86;1;3;LCSD;;DODWW;;ll28b01; Instrument ID: **HP09915.i** Batch: **L172091AA**
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul28a.b/ll28b01.d**

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: **L172091-SM**
Calibration date and time (Last Method Edit): 28-JUL-2017 17:56
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul28a.b/ll28c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

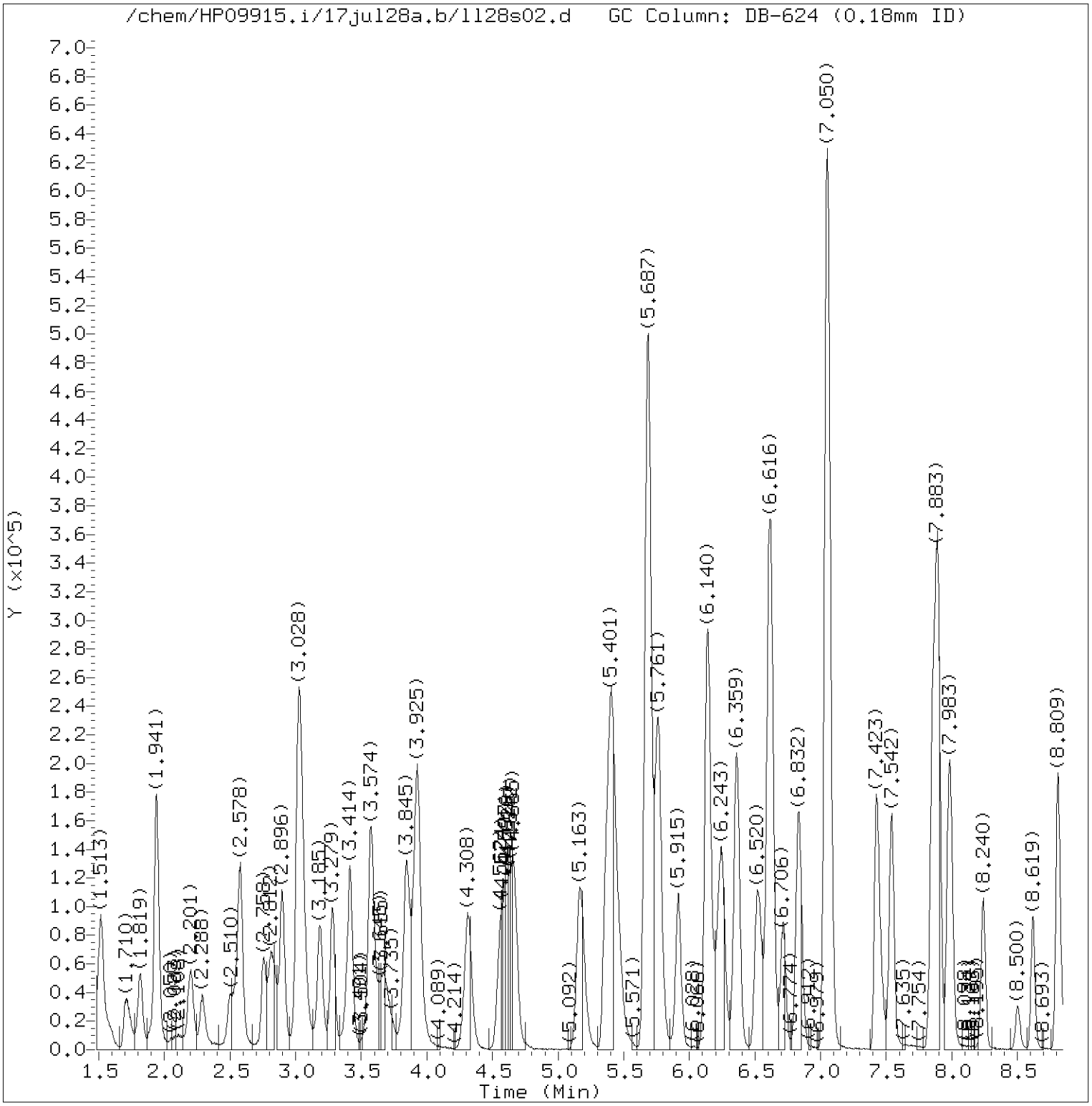
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 88) Toluene | (3) | 9.224( 0.000) | 92 | 174689 | 20.191 | 20.19 | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523( 0.000) | 75 | 98918 | 20.390 | 20.39 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745( 0.000) | 97 | 68376 | 20.509 | 20.51 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.825( 0.000) | 166 | 80456 | 21.025 | 21.03 | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | 9.918( 0.000) | 76 | 113802 | 19.672 | 19.67 | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | 9.970( 0.000) | 43 | 382718 | 91.642 | 91.64 | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | 10.140( 0.000) | 129 | 71263 | 20.637 | 20.64 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.259( 0.000) | 107 | 72898 | 19.973 | 19.97 | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | 10.738(-0.000) | 112 | 202184 | 20.252 | 20.25 | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828( 0.000) | 131 | 70774 | 21.468 | 21.47 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831(-0.000) | 91 | 340791 | 20.420 | 20.42 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.957(-0.000) | 106 | 266354 | 40.996 | 41.00 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291(-0.000) | 106 | 129457 | 20.035 | 20.04 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 395811 | 61.031 | 61.03 | | | 0.5 | 1 |
| 109) Styrene | (3) | 11.310(-0.000) | 104 | 223880 | 20.960 | 20.96 | | | 1 | 5 |
| 110) Bromoform | (3) | 11.468( 0.000) | 173 | 51374 | 20.489 | 20.49 | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 11.603(-0.000) | 105 | 345713 | 20.935 | 20.94 | | | 1 | 5 |
| 115) Bromobenzene | (4) | 11.860( 0.000) | 156 | 94587 | 19.762 | 19.76 | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857( 0.000) | 83 | 108951M | 18.331 | 18.33 | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899( 0.000) | 110 | 34325 | 20.430 | 20.43 | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | 11.937( 0.000) | 91 | 415533 | 19.648 | 19.65 | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | 12.011( 0.000) | 126 | 85071 | 19.327 | 19.33 | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | 12.105( 0.000) | 126 | 90877 | 19.837 | 19.84 | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079( 0.000) | 105 | 307178 | 20.368 | 20.37 | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | 12.320( 0.000) | 134 | 61198M | 18.772 | 18.77 | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365( 0.000) | 105 | 313137 | 20.157 | 20.16 | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | 12.487( 0.000) | 105 | 380760 | 19.793 | 19.79 | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580( 0.000) | 146 | 179245 | 19.670 | 19.67 | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | 12.596( 0.000) | 119 | 335757 | 19.767 | 19.77 | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658(-0.000) | 146 | 187199 | 19.867 | 19.87 | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915(-0.000) | 146 | 177013 | 19.762 | 19.76 | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | 12.889( 0.000) | 92 | 163854 | 19.311 | 19.31 | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462(-0.000) | 75 | 24016 | 19.107 | 19.11 | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011(-0.000) | 180 | 131686 | 18.693 | 18.69 | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | 14.092( 0.000) | 225 | 62725 | 20.502 | 20.50 | | | 2 | 5 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 393597 | 18.515 | 18.52 | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326(-0.000) | 180 | 135311 | 19.910 | 19.91 | | | 1 | 5 |

**M = Compound was manually integrated.**

Total number of targets = 68

Digitally signed by Kevin Kelly on 07/28/2017 at 18:27. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

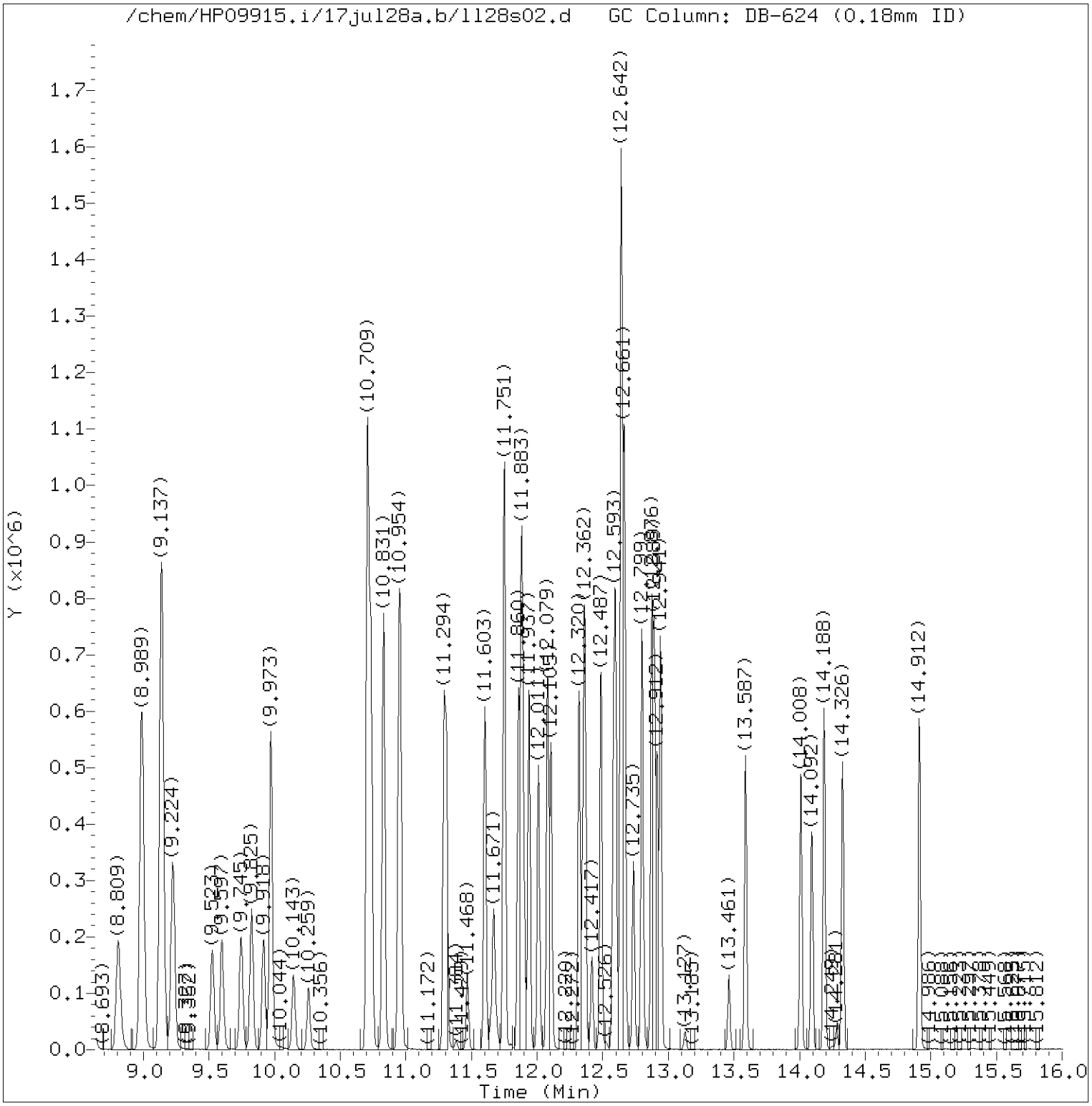
Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

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on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 75541 | 17.122 |
| 4) Chloromethane | (2) | 1.819 | 50 | 74324 | 16.398 |
| 6) Vinyl Chloride | (2) | 1.931 | 62 | 72654 | 16.600 |
| 8) Bromomethane | (2) | 2.195 | 94 | 55045M | 18.699 |
| 9) Chloroethane | (2) | 2.288 | 64 | 44110 | 17.883 |
| 12) Trichlorofluoromethane | (2) | 2.542 | 101 | 104851 | 20.688 |
| 16) Acrolein | (1) | 2.896 | 56 | 135449 | 108.089 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 96 | 58722 | 21.891 |
| 18) Acetone | (1) | 3.034 | 58 | 83825 | 154.123 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 189899 | 21.754 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 153080 | 250.000 |
| 28) Methylene Chloride | (2) | 3.578 | 84 | 71212 | 20.096 |
| 31) Acrylonitrile | (2) | 3.845 | 53 | 187785 | 91.847 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.918 | 73 | 211056 | 21.477 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 68498 | 21.764 |
| 36) 1,1-Dichloroethane | (2) | 4.562 | 63 | 121802 | 20.595 |
| 44) 2-Butanone | (2) | 5.381 | 43 | 391438 | 142.988 |
| 42) cis-1,2-Dichloroethene | (2) | 5.407 | 96 | 76903 | 21.324 |
| 45) 2,2-Dichloropropane | (2) | 5.417 | 77 | 95944M | 24.298 |
| 49) Bromochloromethane | (2) | 5.758 | 128 | 39682 | 20.877 |
| 51) Chloroform | (2) | 5.915 | 83 | 124901 | 22.157 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 190496 | 52.672 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 106416 | 20.659 |
| 55) 1,1-Dichloropropene | (2) | 6.359 | 75 | 91687 | 19.998 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 86806 | 23.085 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 44996 | 50.032 |
| 60) Benzene | (2) | 6.629 | 78 | 273663 | 20.248 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 106233 | 23.234 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 740638 | 50.000 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 72190 | 20.668 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 71841 | 19.417 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 49970 | 21.477 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 87960 | 20.948 |
| 81) cis-1,3-Dichloropropene | (2) | 8.803 | 75 | 109460 | 20.001 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 529847 | 93.923 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 741948 | 49.835 |
| 88) Toluene | (3) | 9.224 | 92 | 174689 | 20.191 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 98918 | 20.390 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 68376 | 20.509 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 80456 | 21.025 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 113802 | 19.672 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 382718 | 91.642 |
| 97) Dibromochloromethane | (3) | 10.140 | 129 | 71263 | 20.637 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 72898 | 19.973 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 583089 | 50.000 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 202184 | 20.252 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 70774 | 21.468 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 340791 | 20.420 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 266354 | 40.996 |
| 107) o-Xylene | (3) | 11.291 | 106 | 129457 | 20.035 |
| 109) Styrene | (3) | 11.310 | 104 | 223880 | 20.960 |
| 110) Bromoform | (3) | 11.468 | 173 | 51374 | 20.489 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 345713 | 20.935 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 286838 | 51.834 |
| 108) Xylene (Total) | (3) | | 106 | 395811 | 61.031 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 108951M | 18.331 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 94587 | 19.762 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 34325 | 20.430 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 415533 | 19.648 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 85071 | 19.327 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 307178 | 20.368 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 90877 | 19.837 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 61198M | 18.772 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 313137 | 20.157 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 380760 | 19.793 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 179245 | 19.670 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 335757 | 19.767 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 334847 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 187199 | 19.867 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 163854 | 19.311 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 177013 | 19.762 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.461 | 75 | 24016 | 19.107 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 131686 | 18.693 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 62725 | 20.502 |
| 148) Naphthalene | (4) | 14.188 | 128 | 393597 | 18.515 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 135311 | 19.910 |

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Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

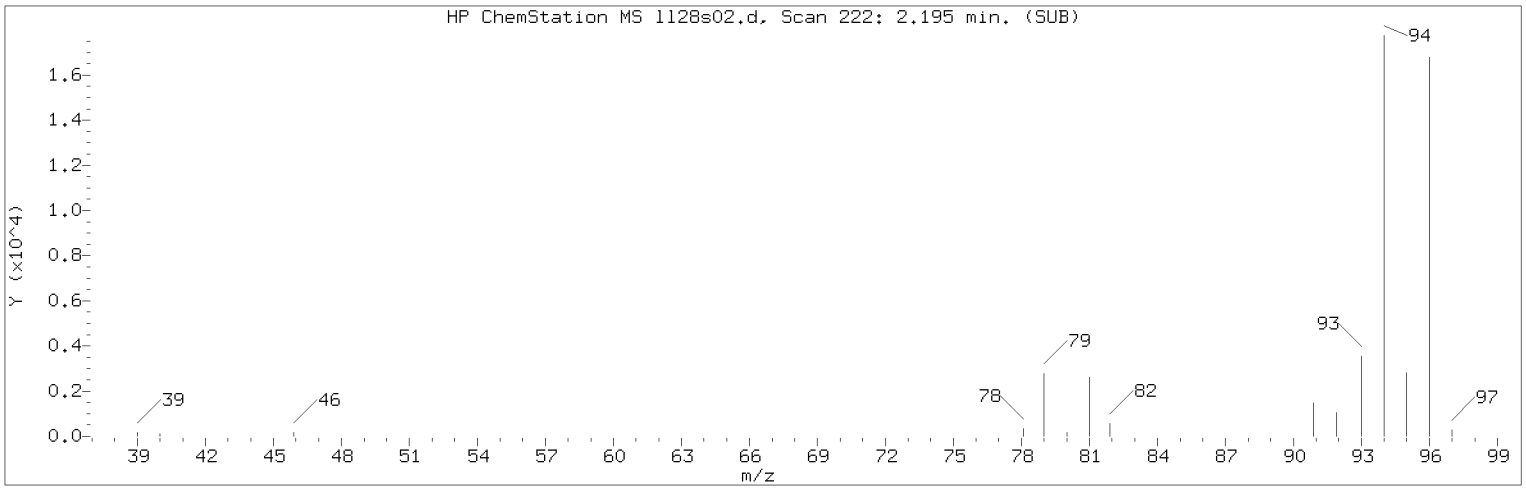
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

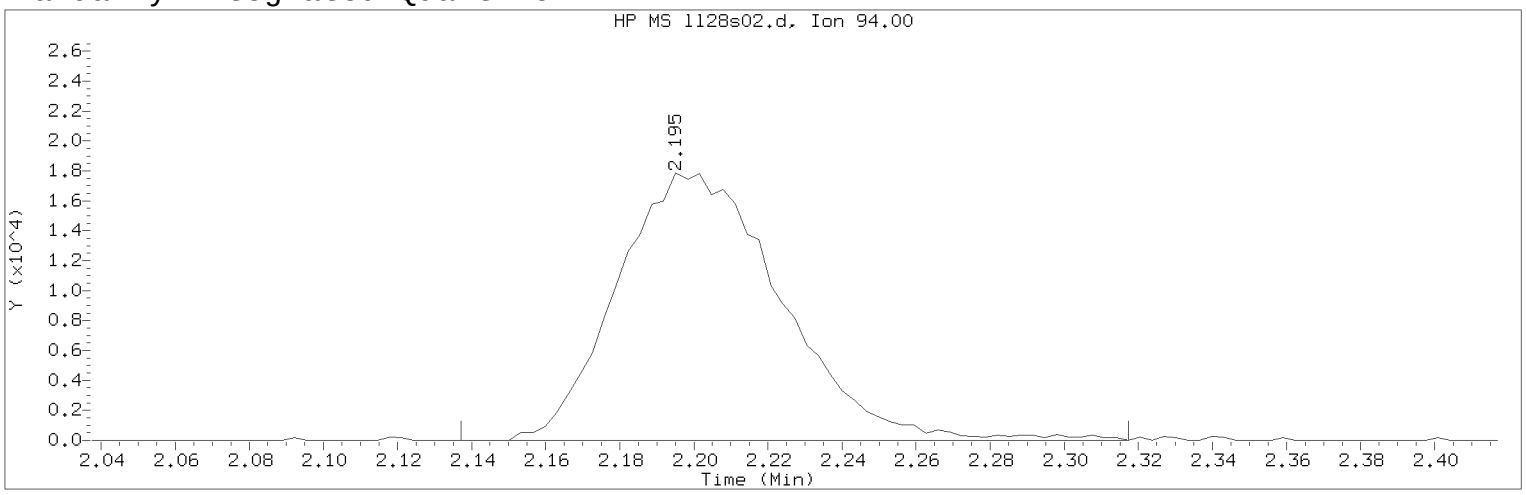


Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

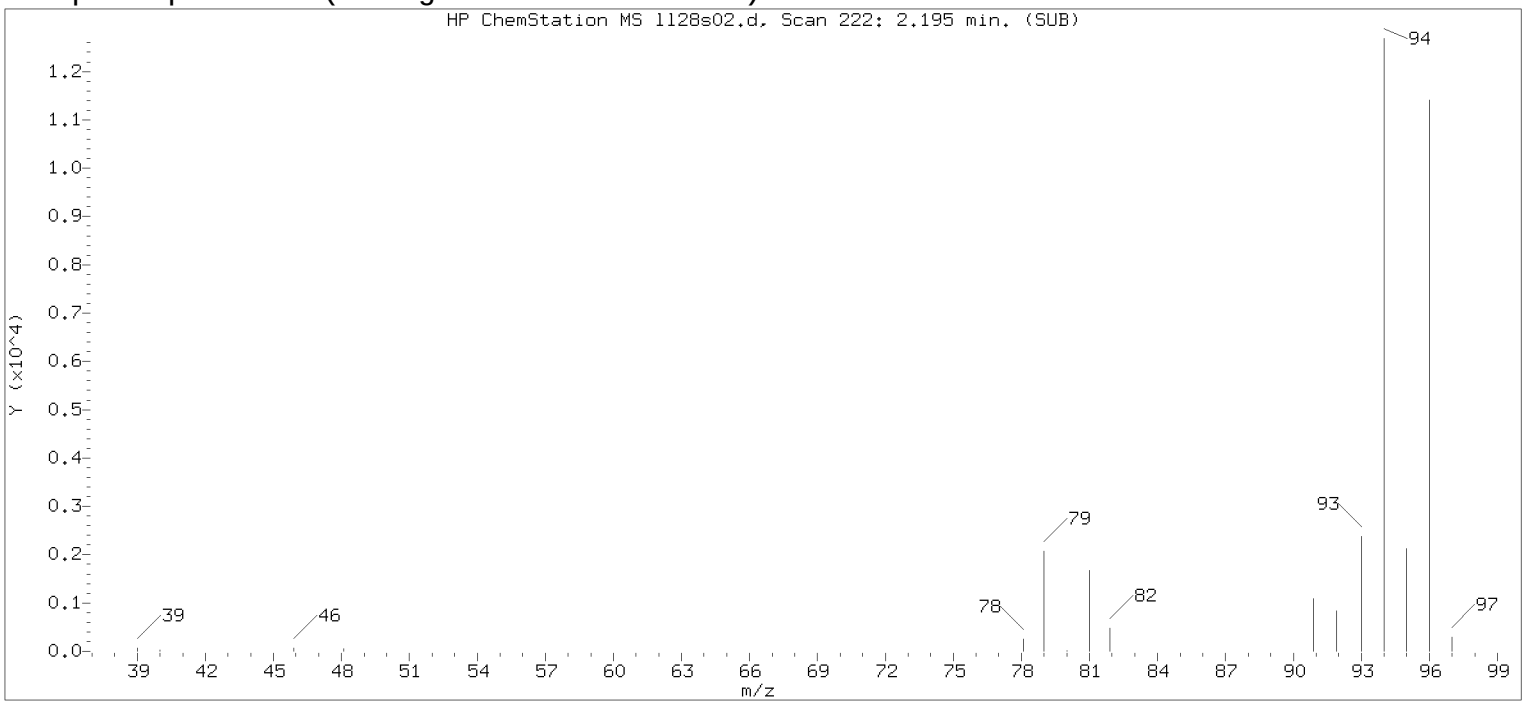
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area (flag) : 55045M
On-Column Amount (ng) : 18.6988
Integration start scan : 203 Integration stop scan: 259
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

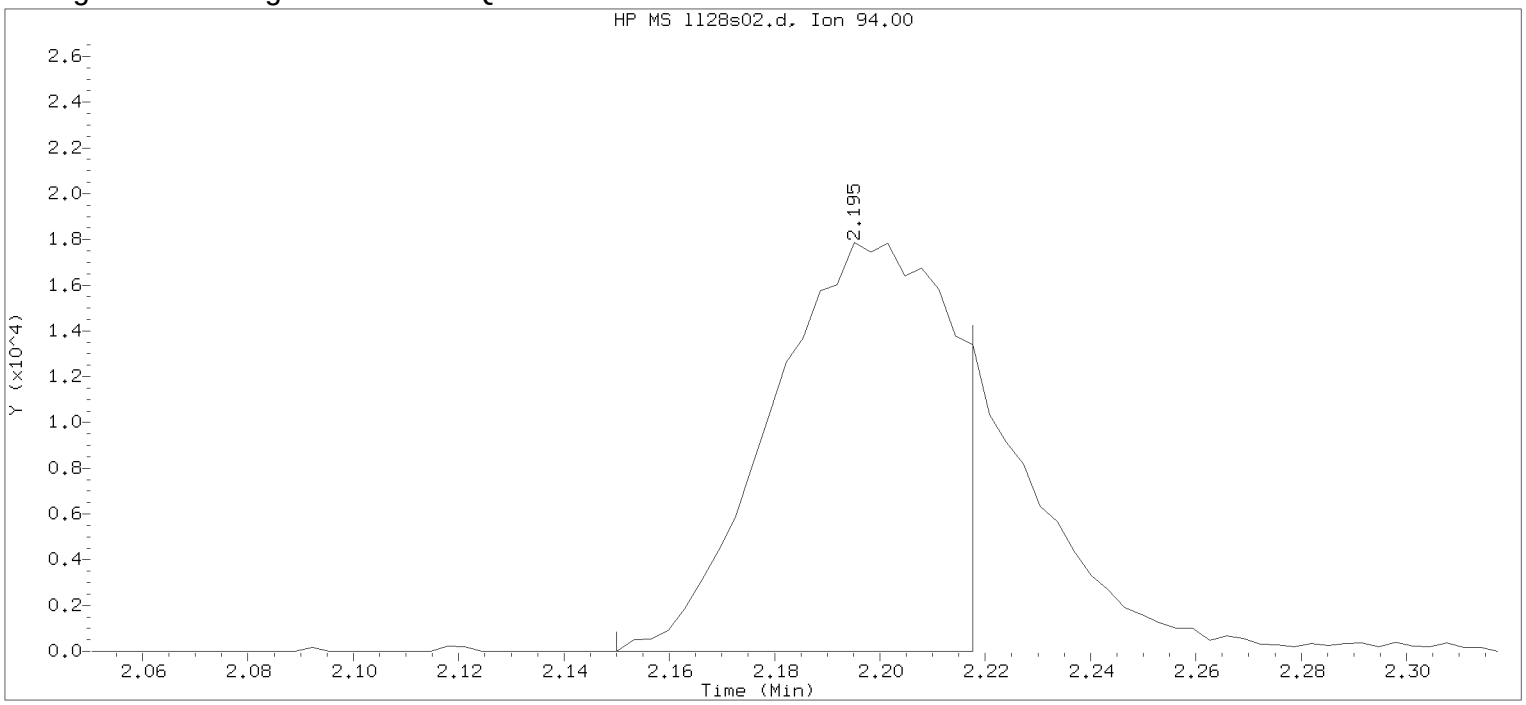
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 10:15 Automation

Sample Name: LCDL86 Lab Sample ID: LCDL86

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 41724
On-column Amount (ng) : 14.1739
Integration start scan : 207 Integration stop scan: 228
Y at integration start : 0 Y at integration end: 0

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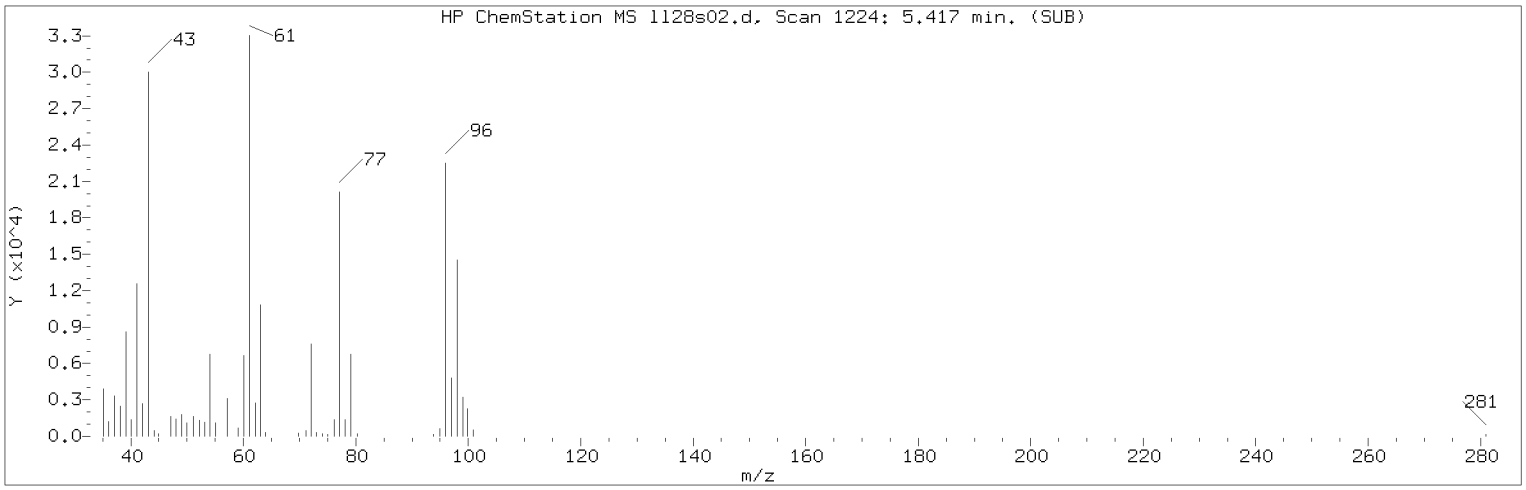
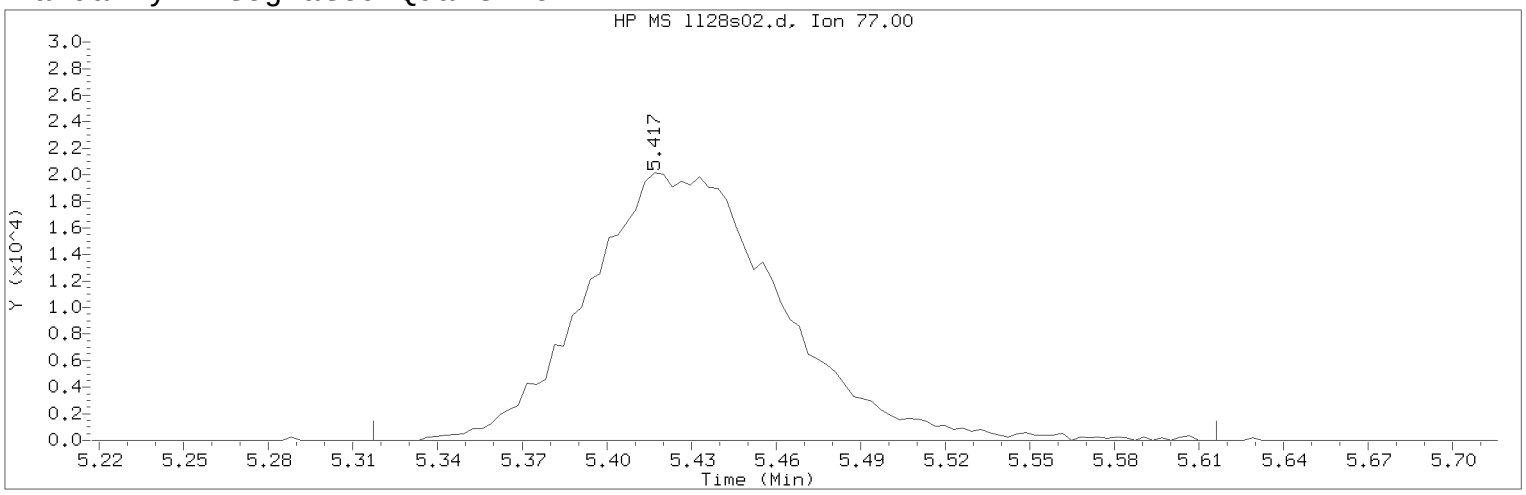
Target 3.5 esignature userKELLYK1 Page 427 of 594

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

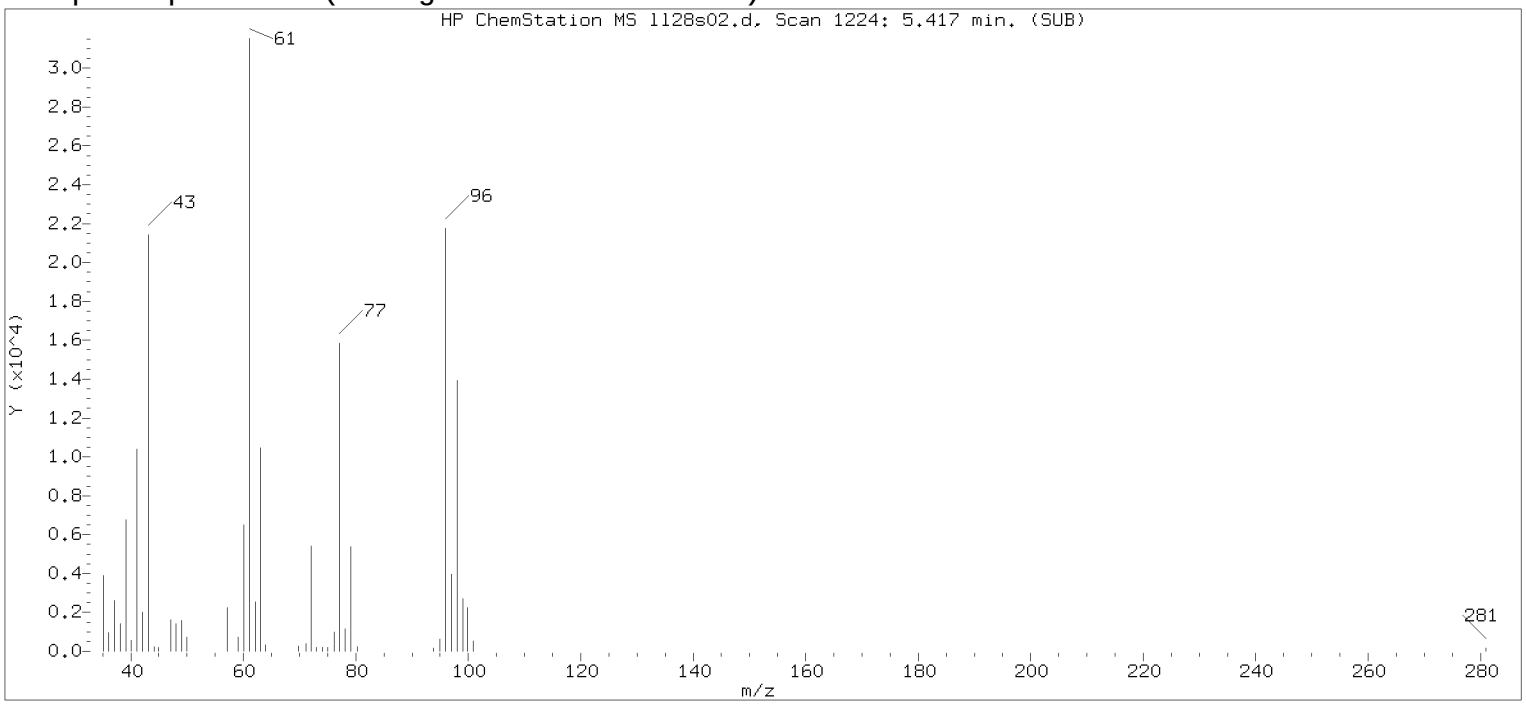
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1224
Retention Time (minutes): 5.417
Quant Ion : 77.00
Area (flag) : 95944M
On-Column Amount (ng) : 24.2981
Integration start scan : 1192 Integration stop scan: 1285
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

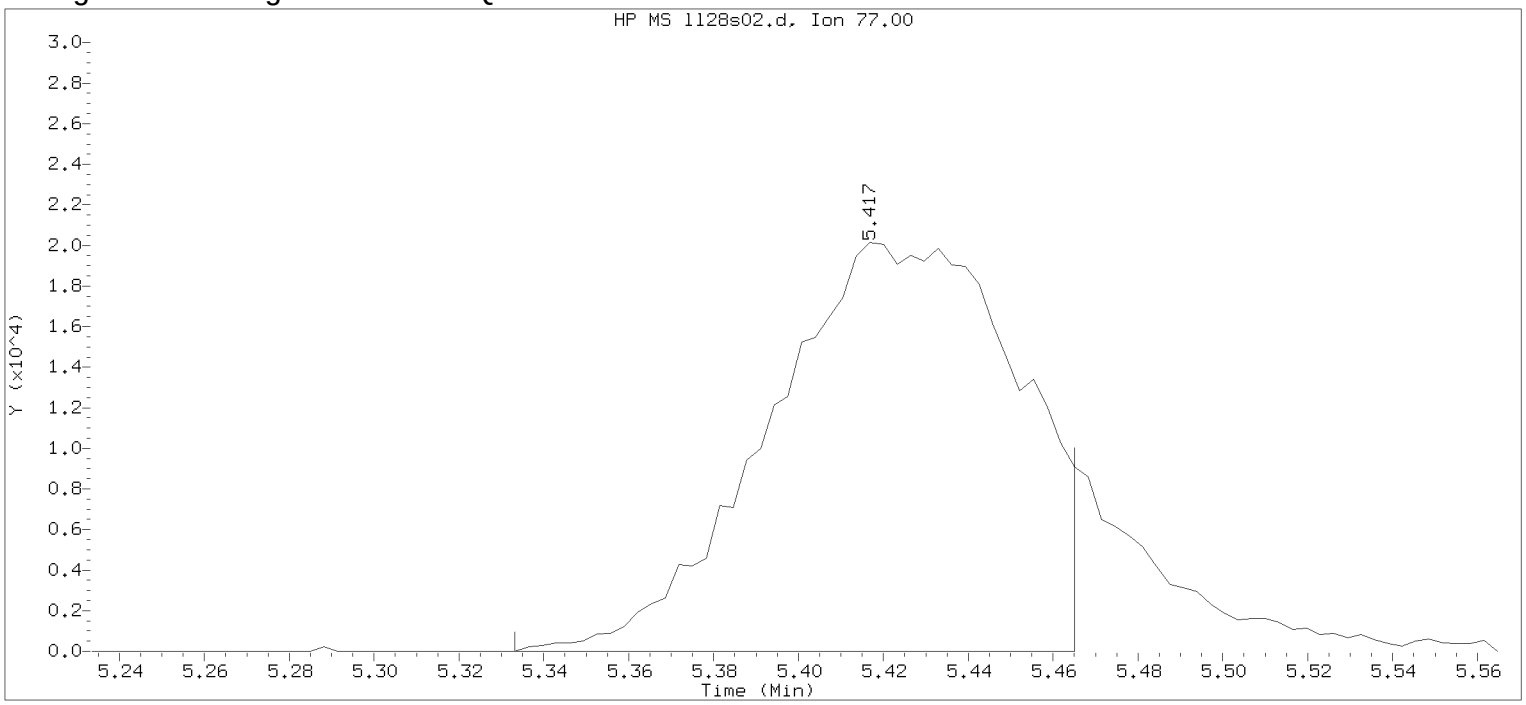
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 10:15 Automation

Sample Name: LCDL86 Lab Sample ID: LCDL86

Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1224
Retention Time (minutes): 5.417
Quant Ion : 77.00
Area : 81989
On-column Amount (ng) : 20.7641
Integration start scan : 1197 Integration stop scan: 1238
Y at integration start : 0 Y at integration end: 0

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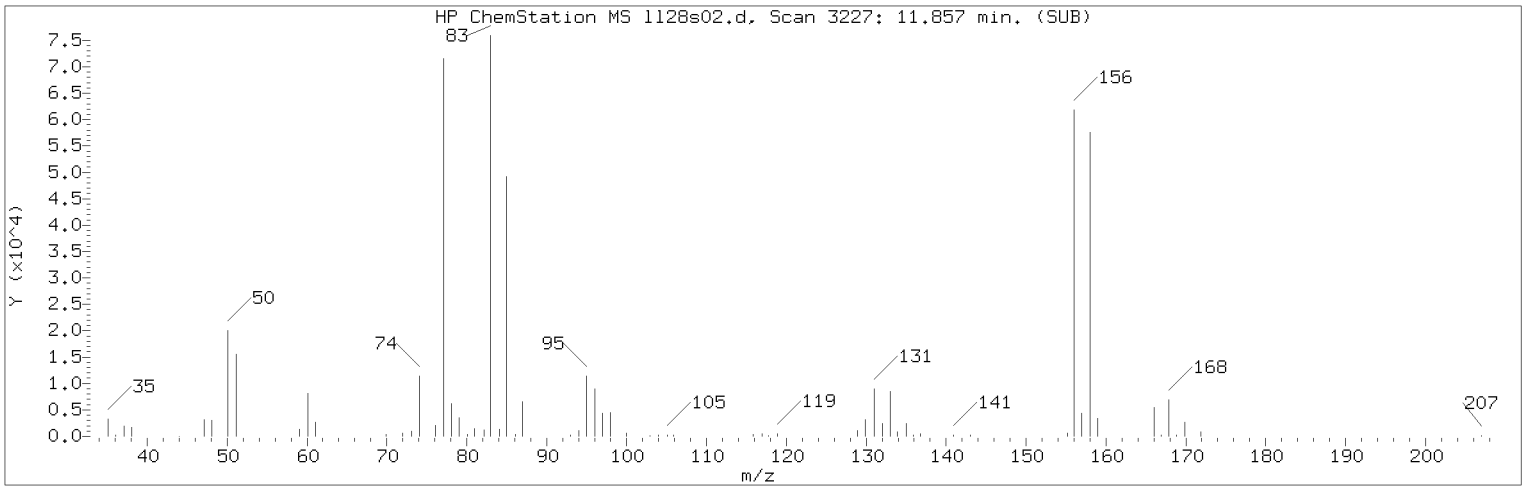
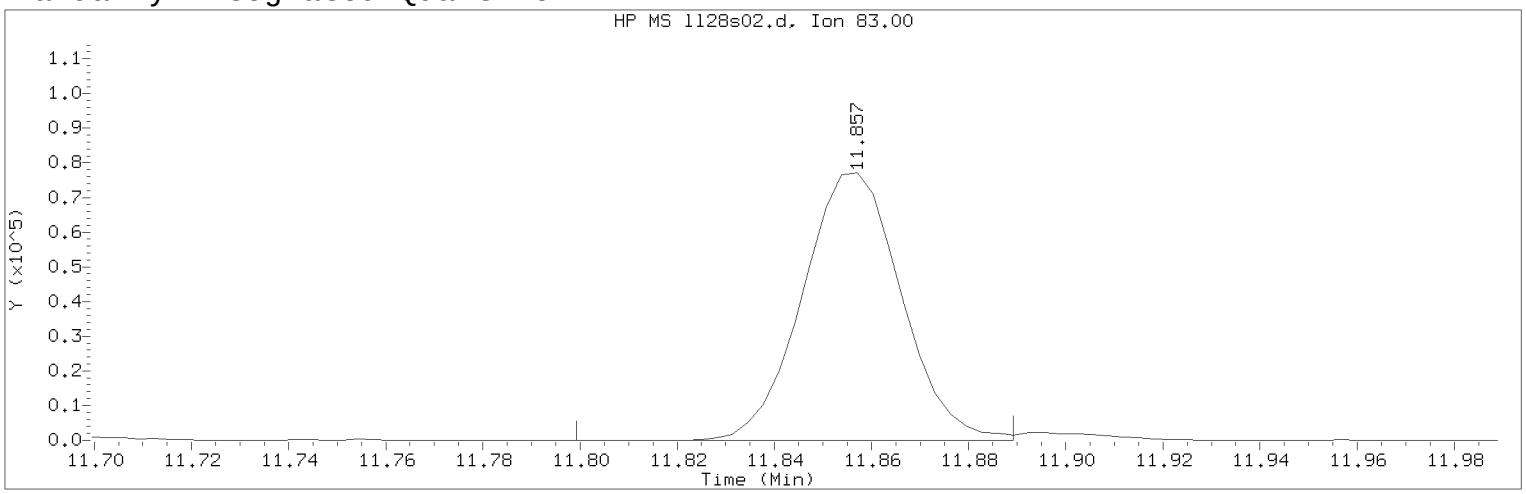
Target 3.5 esignature userKELLYK1 keyID 10042

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

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Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

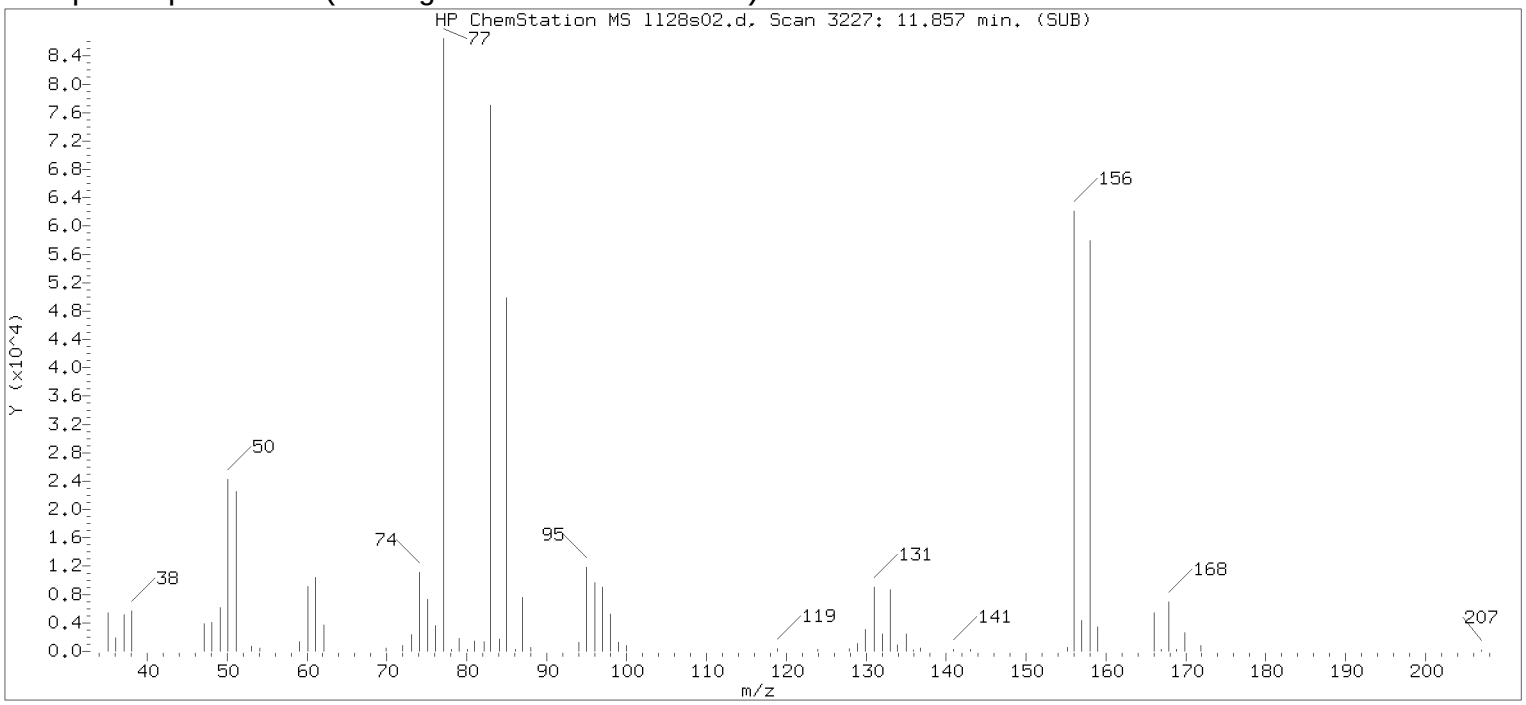
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3227
Retention Time (minutes): 11.857
Quant Ion : 83.00
Area (flag) : 108951M
On-Column Amount (ng) : 18.3312
Integration start scan : 3208 Integration stop scan: 3236
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

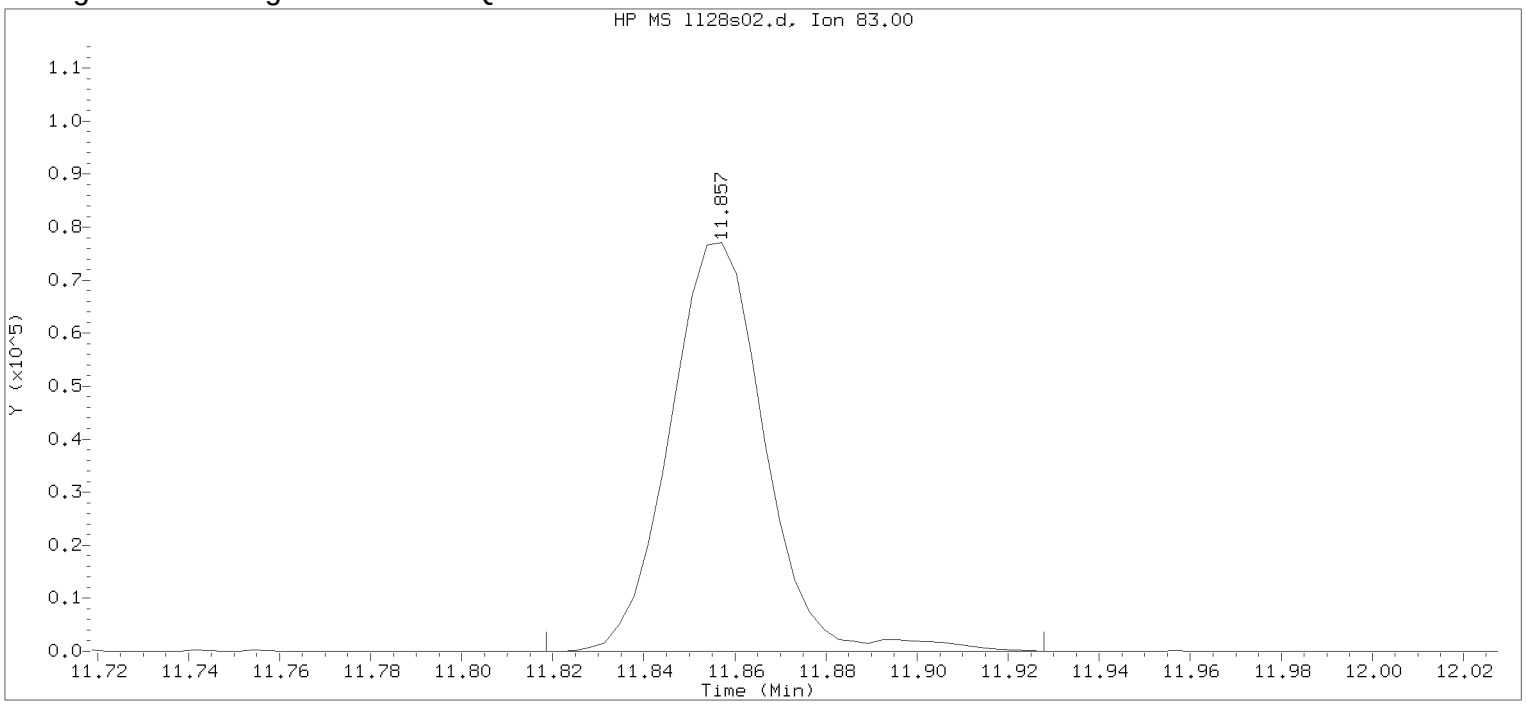
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 10:15 Automation

Sample Name: LCDL86 Lab Sample ID: LCDL86

Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3227
Retention Time (minutes): 11.857
Quant Ion : 83.00
Area : 111566
On-column Amount (ng) : 18.7711
Integration start scan : 3214 Integration stop scan: 3248
Y at integration start : 0 Y at integration end: 0

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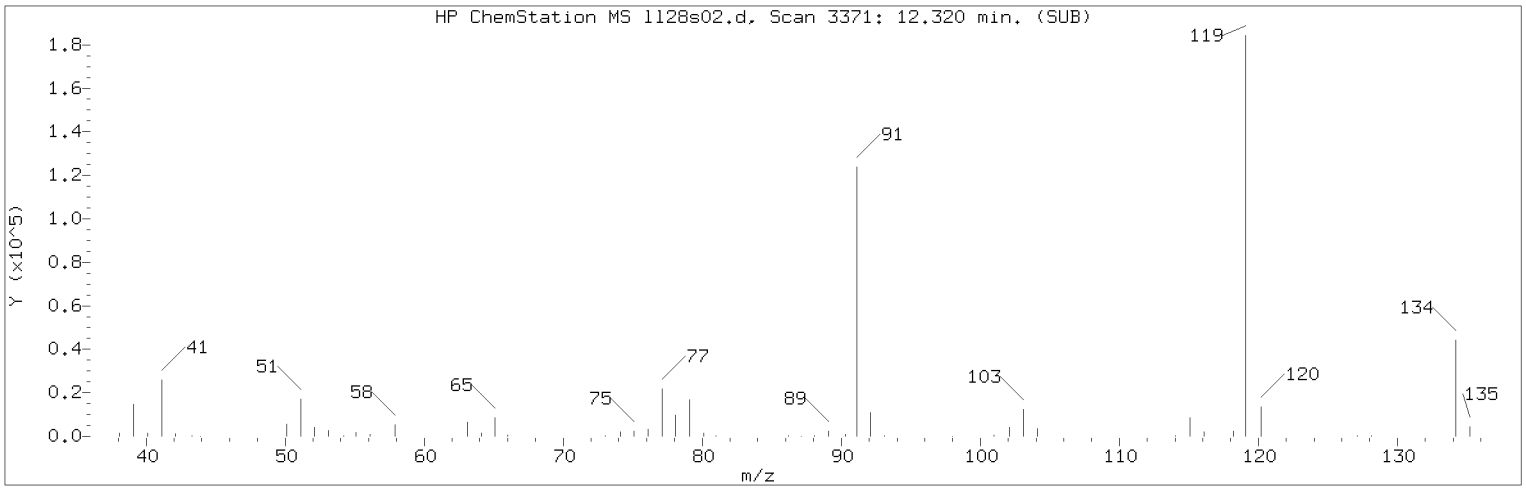
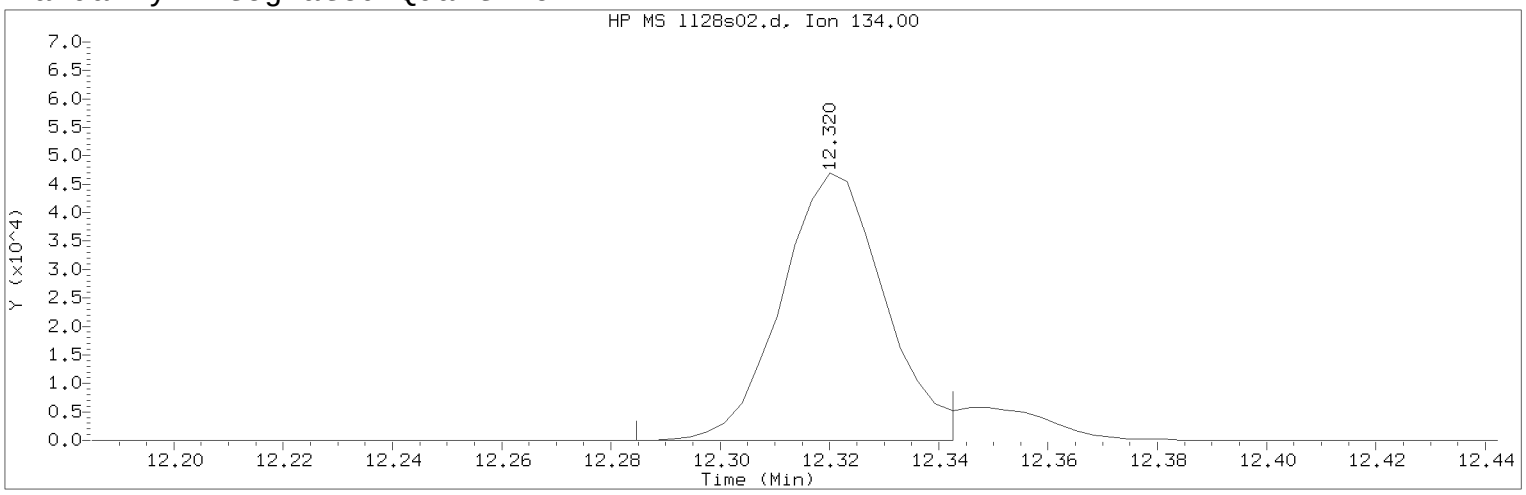
Target 3.5 esignature userKELLYkR10042

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57 Analyst ID: KAS02648

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Calibration date and time: 28-JUL-2017 17:56
Date, time and analyst ID of latest file update: 28-Jul-2017 17:57 kk10002

Sample Name: LCDL86 Lab Sample ID: LCDL86

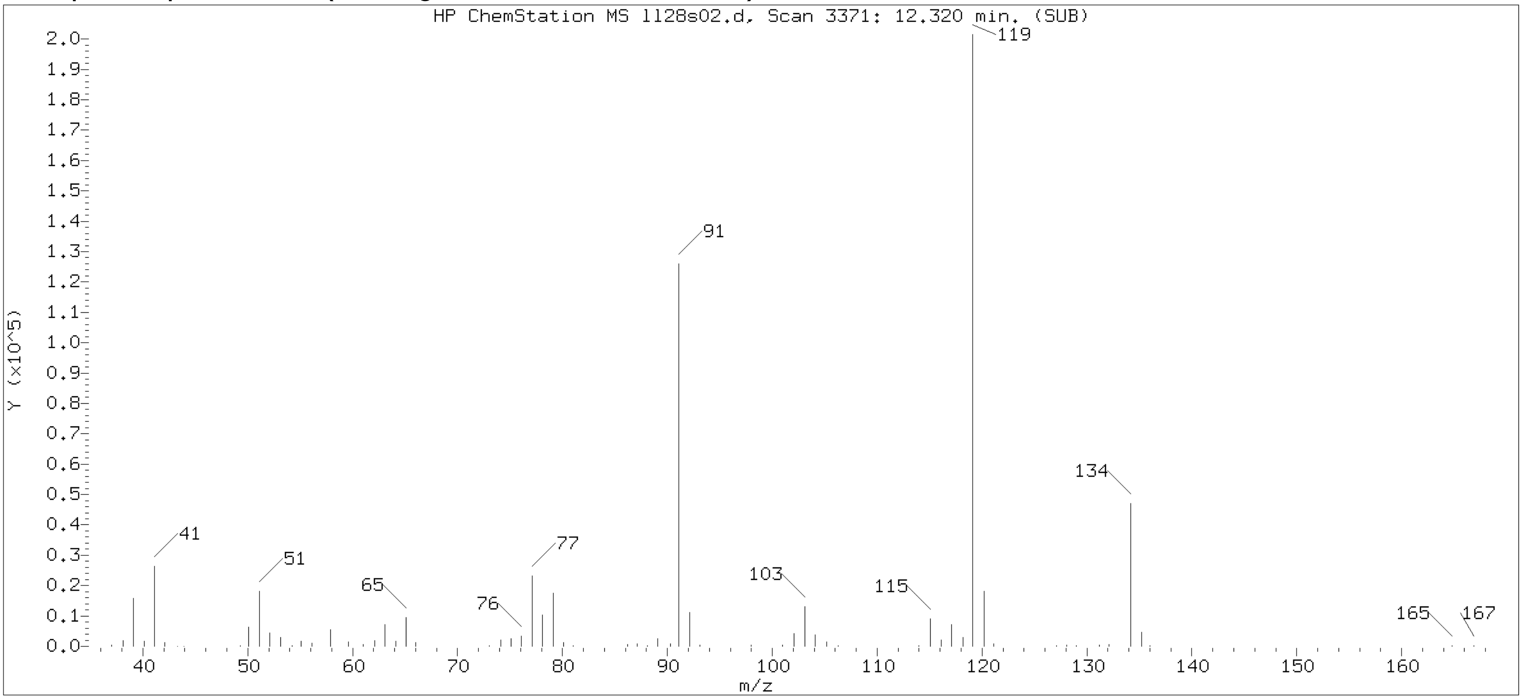
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 61198M
On-Column Amount (ng) : 18.7721
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

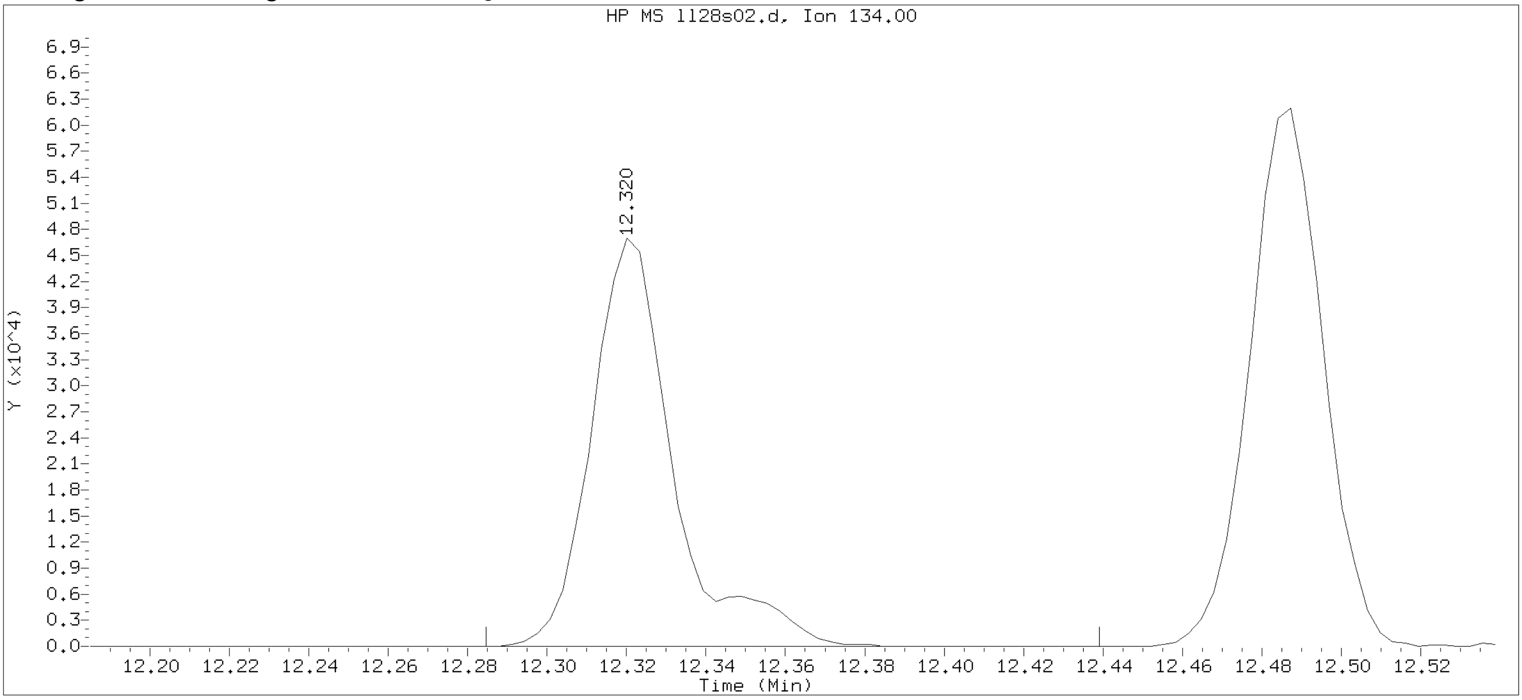
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/28/2017 at 18:27.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/31/2017 at 14:01.
PARALLAX ID: cbs01947

## Sample Spectrum (Background Subtracted)




## Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul28a.b/ll28s02.d    Instrument ID: HP09915.i
Injection date and time: 28-JUL-2017 09:57    Analyst ID: KAS02648

Method used: /chem/HP09915.i/17jul28a.b/m8260c5.m    Sublist used: L172091-SM
Calibration date and time: 28-JUL-2017 09:31
Date, time and analyst ID of latest file update: 28-Jul-2017 10:15 Automation

Sample Name: LCDL86    Lab Sample ID: LCDL86

| | | | |
|---|---|---|---|
| Compound Number | : 124 | | |
| Compound Name | : tert-Butylbenzene | | |
| Scan Number | : 3371 | | |
| Retention Time (minutes) | : 12.320 | | |
| Quant Ion | : 134.00 | | |
| Area | : 67438 | | |
| On-column Amount (ng) | : 20.6861 | | |
| Integration start scan | : 3359 | Integration stop scan: | 3407 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Kevin Kelly on 07/28/2017 at 18:27.
Target 3.5 esignature user KKD87k

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR187**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9107402 | GW216-173 | X | | 1 | |
| 9107403 | GW217-173 | X | | 1 | |
| 9107404 | GW218-173 | X | | 1 | |
| 9107405 | GW223-173 | X | | 1 | |
| 9107406 | GW224-173 | X | | 1 | |
| 9107407 | GW157-173 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9107402-9107407: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR187**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

### SAMPLE ANALYSIS:

(Sample number(s): 9107407: Analysis: 10398)
Volatile compounds have been detected above the LOQ in the sample. Since a field reagent blank (trip blank) was not submitted with this sample any potential contribution of volatiles from the sampling/transport process cannot be assessed.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

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# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR187**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172010025A | PBLK25201 | 07/21/2017 17:46:00 |
| | | LCS25201 | 07/21/2017 18:01:00 |
| | | LCSD25201 | 07/21/2017 18:17:00 |
| | | 9107402 | 07/21/2017 22:11:00 |
| | | 9107403 | 07/21/2017 22:27:00 |
| | | 9107404 | 07/21/2017 22:42:00 |
| | | 9107405 | 07/21/2017 22:58:00 |
| | | 9107406 | 07/21/2017 23:13:00 |
| | | 9107407 | 07/22/2017 00:00:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR187**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172010025A / PBLK25201<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/21/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR187**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172010025A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK25201 | 103 | 46 - 136 |
| LCS25201 | 106 | 46 - 136 |
| LCSD25201 | 112 | 46 - 136 |
| 9107402 | 107 | 46 - 136 |
| 9107403 | 110 | 46 - 136 |
| 9107404 | 101 | 46 - 136 |
| 9107405 | 120 | 46 - 136 |
| 9107406 | 119 | 46 - 136 |
| 9107407 | 106 | 46 - 136 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR187**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS25201<br>LCSD: LCSD25201<br><br>**Analyte** | Batch: **172010025A** (Sample number(s): 9107402-9107407 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 0.128 | 0.146 | 0.163 | 114 | 128 | 60-140 | 12 | 20 |

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.07 | 3.06 | 3.07 | 3.07 | 3.07 | 3.07 | 3.04 | 3.10 |
| 1,1,2,2-TETRACHLOROETHANE | 4.52 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.48 | 4.54 |
| 1,2,3-Trichloropropane | 4.58 | 4.58 | 4.57 | 4.58 | 4.58 | 4.58 | 4.58 | 4.55 | 4.61 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.87 | 6.93 |

HWM 7243 7/24/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 2.23E+04 | 2.14E+04 | 1.79E+04 | 2.05E+04 | 2.10E+04 | | 2.06E+04 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 2.54E+04 | 2.41E+04 | 2.18E+04 | 2.29E+04 | 2.30E+04 | | 2.35E+04 | 6 |
| 1,2,3-Trichloropropane | 4.01E+03 | 4.33E+03 | 3.23E+03 | 3.30E+03 | 3.06E+03 | | 3.59E+03 | 15 |
| 1,2-DIBROMO-3-CHLOROPROPA | 4.18E+04 | 4.15E+04 | 4.01E+04 | 4.01E+04 | 3.97E+04 | | 4.06E+04 | 2 |

Average % RSD: 8

linear

7/24/17

File Name: V:\CP16\16edbs1720201.CAL
Version: 8

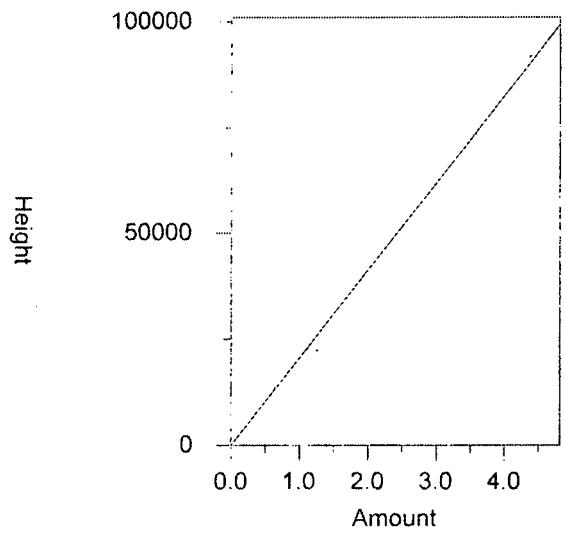
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.072 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

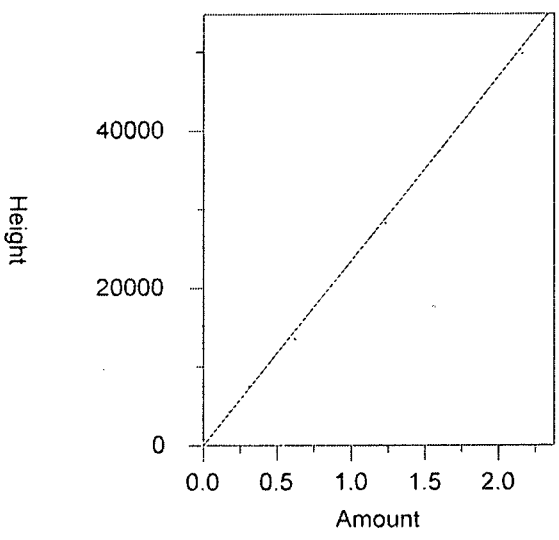
Single peak quantification by height

Y = 20615.34 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9970039
Average error: 5.382%
Average CF: 20615.34
RSD: 7.972%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 7802.336 | 22292.39 | 8.135 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0006.E |
| 2 | 0.63 | 13452.58 | 21353.3 | 3.580 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.E |
| 3 | 1.25 | 22388.71 | 17910.97 | -13.118 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.E |
| 4 | 2.5 | 51364.3 | 20545.72 | -0.338 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.E |
| 5 | 4.38 | 91867.52 | 20974.32 | 1.741 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.E |
| 6 | (6.25) | (92950.38) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.E |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.513 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

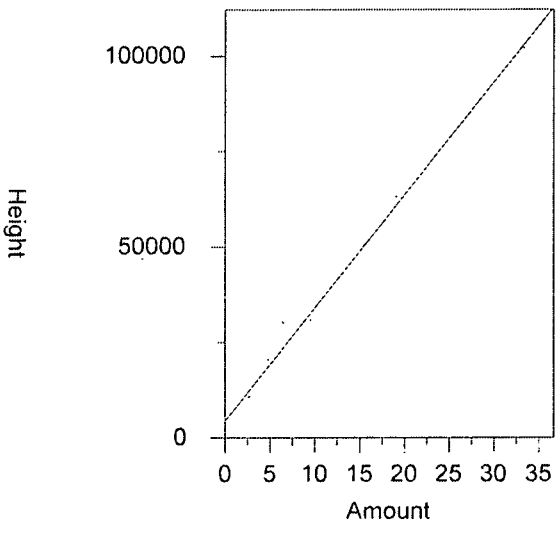
Y = 23460.12 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9982876 |
| Average error: | 4.390% |
| Average CF: | 23460.12 |
| RSD: | 5.778% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 4321.91 | 25423 | 8.367 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 0.31 | 7462.229 | 24071.71 | 2.607 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 0.62 | 13531.2 | 21824.52 | -6.972 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 1.23 | 28210.36 | 22935.25 | -2.237 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 2.16 | 49779.61 | 23046.12 | -1.765 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (3.08) | (53019.96) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.58 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

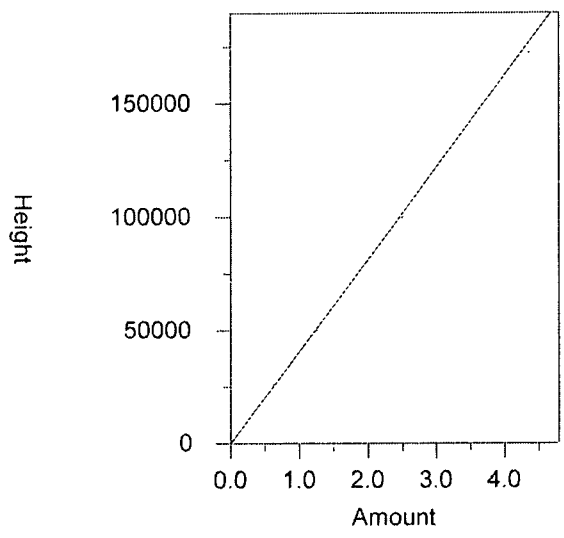
Y = 2956.05 X + 4430.097

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9971222 |
| Average error: | 6.902% |
| Average CF: | 3588.12 |
| RSD: | 15.344% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 10707.98 | 4010.479 | -13.104 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 4.76 | 20611.94 | 4330.239 | 11.411 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 9.53 | 30821.48 | 3234.153 | -5.459 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 19.05 | 62951.91 | 3304.562 | 3.637 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 33.34 | 102059.2 | 3061.164 | -0.899 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (47.63) | (104273.1) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.895 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 40636.84 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9988161 |
| Average error: | 1.953% |
| Average CF: | 40636.84 |
| RSD: | 2.286% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 14619.25 | 41769.29 | 2.787 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 0.62 | 25722.95 | 41488.63 | 2.096 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 1.24 | 49779.49 | 40144.75 | -1.211 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 2.49 | 99853.48 | 40101.8 | -1.317 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 4.35 | 172606.8 | 39679.72 | -2.355 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (6.22) | (183007.9) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT (CAL#6) RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.34 | 4.33 | 4.32 | 4.33 | 4.33 | 4.33 | 4.33 | 4.30 | 4.36 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.61 | 5.67 |
| 1,2,3-Trichloropropane | 5.77 | 5.76 | 5.76 | 5.77 | 5.77 | 5.77 | 5.77 | 5.74 | 5.80 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.92 | 7.98 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | %RSD |
| ETHYLENE DIBROMIDE | 6.54E+03 | 6.19E+03 | 5.36E+03 | 5.68E+03 | 5.69E+03 | | 5.89E+03 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 1.08E+04 | 9.08E+03 | 7.96E+03 | 8.67E+03 | 8.36E+03 | | 8.97E+03 | 12 |
| 1,2,3-Trichloropropane | 5.16E+03 | 2.81E+03 | 1.85E+03 | 1.46E+03 | 1.28E+03 | | 2.51E+03 | 63 |
| 1,2-DIBROMO-3-CHLOROPROPA | 1.62E+04 | 1.70E+04 | 1.47E+04 | 1.48E+04 | 1.45E+04 | | 1.54E+04 | 7 |

Average % RSD: 23

linear linear + lmm 7/24/17

File Name: V:\CP16\16edbs1720201b.CAL
Version: 9

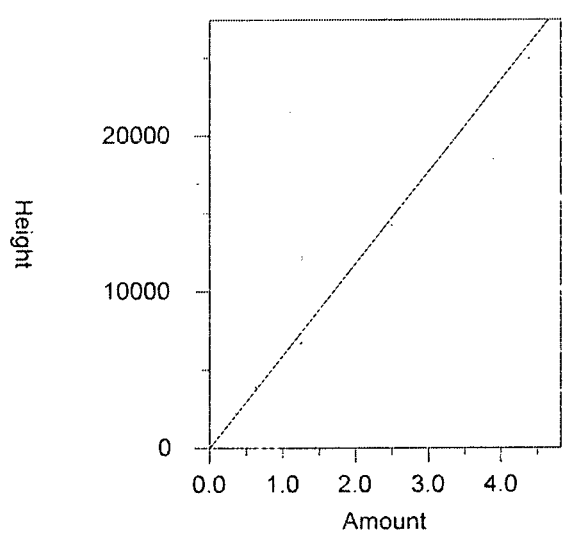
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 4.331 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

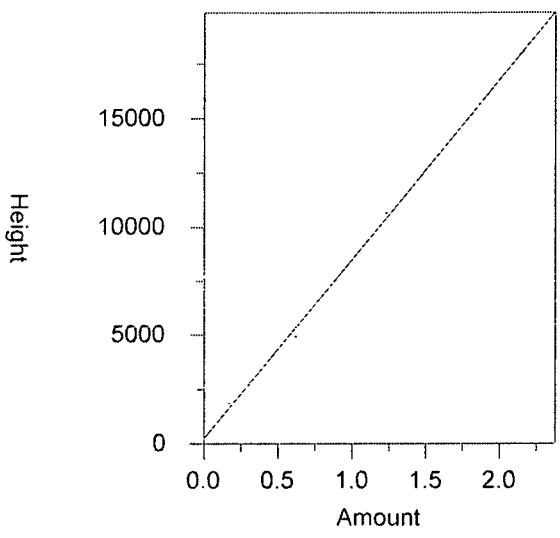
Single peak quantification by height

$Y = 5892.757\ X + 0$

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.995377
Average error: 6.423%
Average CF: 5892.757
RSD: 7.957%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 2290.409 | 6544.026 | 11.052 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0006 |
| 2 | 0.63 | 3898.299 | 6187.776 | 5.006 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0007 |
| 3 | 1.25 | 6702.179 | 5361.743 | -9.011 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0008 |
| 4 | 2.5 | 14203.42 | 5681.368 | -3.587 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0009 |
| 5 | 4.38 | 24917.26 | 5688.872 | -3.460 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0010 |
| 6 | (6.25) | (25336.41) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0011 |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.641 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

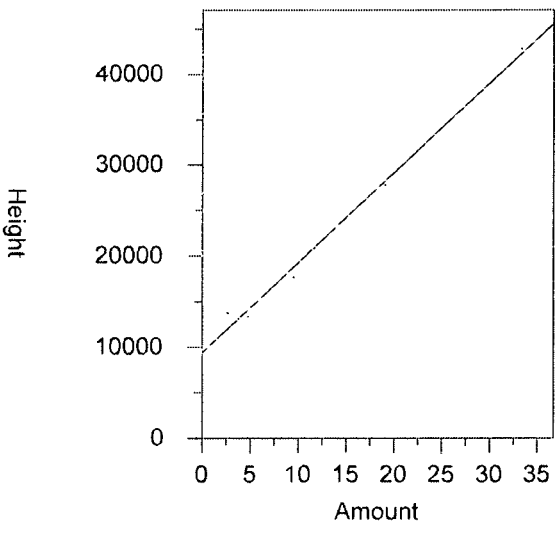
Single peak quantification by height

Y = 8267.026 X + 234.1029

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9984474 |
| Average error: | 4.569% |
| Average CF: | 8965.972 |
| RSD: | 12.109% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 1829.887 | 10764.04 | 11.613 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 0.31 | 2815.249 | 9081.448 | 0.657 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 0.62 | 4937.143 | 7963.134 | -7.883 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 1.23 | 10658.26 | 8665.252 | 2.458 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 2.16 | 18048.92 | 8355.981 | -0.232 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (3.08) | (18434.59) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.769 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

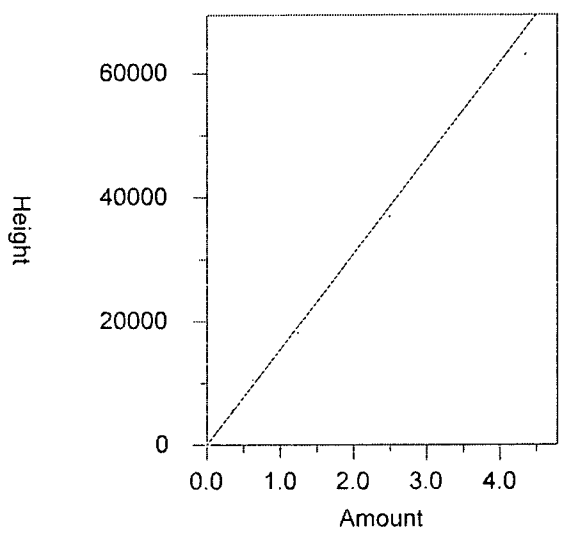
Single peak quantification by height

Y = 987.5696 X + 9390.728

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9914809 |
| Average error: | 5.673% |
| Average CF: | 2512.737 |
| RSD: | 63.371% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 13775.76 | 5159.46 | 14.535 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 4.76 | 13358.03 | 2806.309 | -5.205 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 9.53 | 17655.38 | 1852.611 | -6.100 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 19.05 | 27829.8 | 1460.882 | -1.327 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 33.34 | 42822.62 | 1284.422 | 1.197 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (47.63) | (43781.29) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.946 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 15449.69 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9905829 |
| Average error: | 5.905% |
| Average CF: | 15449.69 |
| RSD: | 7.042% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5659.925 | 16171.21 | 4.670 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 2 | 0.62 | 10545.45 | 17008.79 | 10.091 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 3 | 1.24 | 18270.78 | 14734.5 | -4.629 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 4 | 2.49 | 36898.79 | 14818.79 | -4.084 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 5 | 4.35 | 63140.97 | 14515.17 | -6.049 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 6 | (6.22) | (67644.8) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 17:14

Lab File ID: 16EDBS17202001.0013.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_3AA Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 1.33 | 1.25 | 6 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 0.62 | 0.62 | 1 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 10.32 | 9.53 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 1.31 | 1.24 | 5 |

Compounds 4 Average of %D: 5

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 17:14

Lab File ID: 16EDBS17202001B.0013.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_3AA Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 1.27 | 1.25 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 0.62 | 0.62 | 0 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 9.48 | 9.53 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 1.31 | 1.24 | 5 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKAA Sample ID: AA **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 21, 2017 17:30:25
Instrument : CP16--19853A
Result file : 16EDBS17202001.0014.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 21, 2017 17:30:25
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0014.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.08 | 3.10 | 465 | 0.001289 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25794 | 0.062828 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 7915 | 0.067370 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9419 | 0.063489 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 590 | -0.509210 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062828 | | | | 1.05 | |
| ☐ 1,2,3-TCP | A | 0.067370 | | | | 260.99 | ** |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: SDM
Date: 7/24/17

%RPD = High - Low Amount divided by the Average times 100 unless RPD > 40
** %Difference > 40, lower amount found reported
* Recovery outside QC Limits



Printed on: 7/24/2017 11:10:54

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 20:22

Lab File ID: 16EDBS17202001.0025.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_5LS Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 4.43 | 4.38 | 1 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 2.08 | 2.16 | -4 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 32.14 | 33.34 | -4 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 4.38 | 4.35 | 1 |

Compounds 4 Average of %D: 3

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 20:22

Lab File ID: 16EDBS17202001B.0025.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_5LS Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 4.27 | 4.38 | -2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 2.17 | 2.16 | 1 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 34.04 | 33.34 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 4.32 | 4.35 | -1 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSC Sample ID: SC **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

| | |
|---|---|
| Injected on | : Jul 21, 2017 20:37:50 |
| Instrument | : CP16--19853A |
| Result file | : 16EDBS17202001.0026.RAW |
| Calibration file | : 16EDBS1720201.CAL |
| Method file | : 16EDBS.MET |

## Analysis Report (B)

| | |
|---|---|
| Injected on | : Jul 21, 2017 20:37:50 |
| Instrument | : CP16--19853B |
| Result file | : 16EDBS17202001B.0026.RAW |
| Calibration file | : 16EDBS1720201B.CAL |
| Method file | : 16EDBSB.MET |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.10 | 3.10 | 383 | 0.001061 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25471 | 0.062041 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 9137 | 0.090989 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9566 | 0.064505 |
| **DBCP** | 7.92 | 7.93 | 7.98 | 949 | 0.003512 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062041 | | | | 3.89 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Sample
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 23:29

Lab File ID: 16EDBS17202001.0037.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_4QK Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 2.84 | 2.50 | 14 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 1.27 | 1.23 | 3 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 19.89 | 19.05 | 4 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 2.69 | 2.49 | 8 |

Compounds 4 Average of %D: 7

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 23:29

Lab File ID: 16EDBS17202001B.0037.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_4QK Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 2.80 | 2.50 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 1.33 | 1.23 | 8 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 20.12 | 19.05 | 6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 2.77 | 2.49 | 11 |

Compounds 4 Average of %D: 9

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSD Sample ID: SD **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

Analysis Report (A)

Injected on : Jul 21, 2017 23:44:59
Instrument : CP16--19853A
Result file : 16EDBS17202001.0038.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

Analysis Report (B)

Injected on : Jul 21, 2017 23:44:59
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0038.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 360 | 0.000998 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 26524 | 0.064606 |
| **1,2,3-TCP** | 4.55 | 4.56 | 4.61 | 7094 | 0.051494 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10066 | 0.067956 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 937 | -0.489145 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064606 | | | | 5.05 | |
| ☐ 1,2,3-TCP | A | 0.051494 | | | | 247.06 | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist

Date: JUL 24 2017

Verified by: [signature]

Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/22/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 2:36

Lab File ID: 16EDBS17202001.0049.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_3PB Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 1.44 | 1.25 | 15 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 0.66 | 0.62 | 8 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 9.66 | 9.53 | 1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 1.65 | 1.24 | 32 |

Compounds 4 Average of %D: 14

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/22/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 2:36

Lab File ID: 16EDBS17202001B.0049.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_3PB Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 1.53 | 1.25 | 22 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 0.67 | 0.62 | 9 |
| 1,2,3-Trichloropropane | 5.76 | 5.74 | 5.80 | 10.38 | 9.53 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 1.76 | 1.24 | 42 |

Compounds 4 Average of %D: 21

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSE Sample ID: SE **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 22, 2017 02:52:14
Instrument : CP16--19853A
Result file : 16EDBS17202001.0050.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 22, 2017 02:52:14
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0050.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.04 | 3.08 | 3.10 | 311 | 0.000861 |
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 26464 | 0.064460 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 5344 | 0.017669 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 9592 | 0.064684 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064460 | | | | 0.35 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: SMM316
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:15:15

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 16EDBS17202001
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0001 | CONDITIONER | | 7/21/17 14:07 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0002 | CONDITIONER | | 7/21/17 14:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0003 | CONDITIONER | | 7/21/17 14:38 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0004 | CONDITIONER | | 7/21/17 14:54 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0005 | EIBKX1724C | PIBLKAA | 7/21/17 15:09 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0006 | EDB_11724DS | EDB_1AA | 7/21/17 15:25 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0007 | EDB_21724DS | EDB_2AA | 7/21/17 15:40 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0008 | EDB_31724DS | EDB_3AA | 7/21/17 15:56 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0009 | EDB_41724DS | EDB_4AA | 7/21/17 16:12 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0010 | EDB_51724DS | EDB_5AA | 7/21/17 16:27 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0011 | EDB_61724DS | EDB_6AA | 7/21/17 16:43 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0012 | MDEDX1724DS | MDEDXAA | 7/21/17 16:59 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0013 | EDB_31724DS | EDB_3AA | 7/21/17 17:14 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0014 | EIBKX1724C | PIBLKAA | 7/21/17 17:30 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0015 | BLANKA 7/21/17 | PBLK25201 | 7/21/17 17:46 | 172010025A | 2.00 |
| Administra16EDBS17202001.0016 | LCSA 7/21/17 | LCS25201 | 7/21/17 18:01 | 172010025A | 2.00 |
| Administra16EDBS17202001.0017 | LCSDA 7/21/17 | LCSD25201 | 7/21/17 18:17 | 172010025A | 2.00 |
| Administra16EDBS17202001.0018 | 9095972 | 18417 | 7/21/17 18:32 | 172010025A | 2.00 |
| Administra16EDBS17202001.0019 | 9100482 | 18604 | 7/21/17 18:48 | 172010025A | 2.00 |
| Administra16EDBS17202001.0020 | 9100483 | 18605 | 7/21/17 19:04 | 172010025A | 2.00 |
| Administra16EDBS17202001.0021 | 9100485 | 18607 | 7/21/17 19:19 | 172010025A | 2.00 |
| Administra16EDBS17202001.0022 | 9100487 | 18609 | 7/21/17 19:35 | 172010025A | 2.00 |
| Administra16EDBS17202001.0023 | 9100489 | 18611 | 7/21/17 19:51 | 172010025A | 2.00 |
| Administra16EDBS17202001.0024 | 9100491 | 18613 | 7/21/17 20:06 | 172010025A | 2.00 |
| Administra16EDBS17202001.0025 | EDB_51724DS | EDB_5LS | 7/21/17 20:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0026 | EIBKX1724C | PIBLKSC | 7/21/17 20:37 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0027 | 9100492 | 18614 | 7/21/17 20:53 | 172010025A | 2.00 |
| Administra16EDBS17202001.0028 | 9100493 | 18615 | 7/21/17 21:09 | 172010025A | 2.00 |
| Administra16EDBS17202001.0029 | 9100494 | 18616 | 7/21/17 21:24 | 172010025A | 2.00 |
| Administra16EDBS17202001.0030 | 9100495 | 18617 | 7/21/17 21:40 | 172010025A | 2.00 |
| Administra16EDBS17202001.0031 | 9100496 | 18618 | 7/21/17 21:55 | 172010025A | 2.00 |
| Administra16EDBS17202001.0032 | 9107402 | 18701 | 7/21/17 22:11 | 172010025A | 2.00 |
| Administra16EDBS17202001.0033 | 9107403 | 18702 | 7/21/17 22:27 | 172010025A | 2.00 |
| Administra16EDBS17202001.0034 | 9107404 | 18703 | 7/21/17 22:42 | 172010025A | 2.00 |
| Administra16EDBS17202001.0035 | 9107405 | 18704 | 7/21/17 22:58 | 172010025A | 2.00 |
| Administra16EDBS17202001.0036 | 9107406 | 18705 | 7/21/17 23:13 | 172010025A | 2.00 |
| Administra16EDBS17202001.0037 | EDB_41724DS | EDB_4QK | 7/21/17 23:29 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0038 | EIBKX1724C | PIBLKSD | 7/21/17 23:44 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0039 | 9107407 | 18706 | 7/22/17 0:00 | 172010025A | 2.00 |
| Administra16EDBS17202001.0040 | 9109771 | 18801 | 7/22/17 0:16 | 172010025A | 2.00 |
| Administra16EDBS17202001.0041 | 9109772MS | 18801 | 7/22/17 0:31 | 172010025A | 2.00 |
| Administra16EDBS17202001.0042 | 9109773MSD | 18801 | 7/22/17 0:47 | 172010025A | 2.00 |
| Administra16EDBS17202001.0043 | 9109779 | 18803 | 7/22/17 1:03 | 172010025A | 2.00 |
| Administra16EDBS17202001.0044 | BLANKA 7/21/17 | PBLK21201 | 7/22/17 1:18 | 172010021A | 2.00 |
| Administra16EDBS17202001.0045 | LCSA 7/21/17 | LCS21201 | 7/22/17 1:34 | 172010021A | 2.00 |
| Administra16EDBS17202001.0046 | LCSDA 7/21/17 | LCSD21201 | 7/22/17 1:49 | 172010021A | 2.00 |
| Administra16EDBS17202001.0047 | 9098344 | 18501 | 7/22/17 2:05 | 172010021A | 2.00 |
| Administra16EDBS17202001.0048 | 9098345 | 18502 | 7/22/17 2:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0049 | EDB_31724DS | EDB_3PB | 7/22/17 2:36 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0050 | EIBKX1724C | PIBLKSE | 7/22/17 2:52 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0051 | 9098346 | 18503 | 7/22/17 3:07 | 172010021A | 2.00 |
| Administra16EDBS17202001.0052 | 9098347 | 18504 | 7/22/17 3:23 | 172010021A | 2.00 |
| Administra16EDBS17202001.0053 | 9098348 | 18505 | 7/22/17 3:39 | 172010021A | 2.00 |
| Administra16EDBS17202001.0054 | 9098349 | 18506 | 7/22/17 3:54 | 172010021A | 2.00 |
| Administra16EDBS17202001.0055 | 9098350MS | 18506 | 7/22/17 4:10 | 172010021A | 2.00 |
| Administra16EDBS17202001.0056 | 9098351MSD | 18506 | 7/22/17 4:25 | 172010021A | 2.00 |

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0057 | 9098352 | 18507 | 7/22/17 4:41 | 172010021A | 2.00 |
| Administra16EDBS17202001.0058 | 9098353 | 18508 | 7/22/17 4:57 | 172010021A | 2.00 |
| Administra16EDBS17202001.0059 | 9098354 | 18509 | 7/22/17 5:12 | 172010021A | 2.00 |
| Administra16EDBS17202001.0060 | 9098355 | 18510 | 7/22/17 5:28 | 172010021A | 2.00 |
| Administra16EDBS17202001.0061 | EDB_51724DS | EDB_5LT | 7/22/17 5:44 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0062 | EIBKX1724C | PIBLKSF | 7/22/17 5:59 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0063 | 9098356 | 18511 | 7/22/17 6:15 | 172010021A | 2.00 |
| Administra16EDBS17202001.0064 | 9098357 | 18512 | 7/22/17 6:30 | 172010021A | 2.00 |
| Administra16EDBS17202001.0065 | 9098358 | 18513 | 7/22/17 6:46 | 172010021A | 2.00 |
| Administra16EDBS17202001.0066 | 9098359 | 18514 | 7/22/17 7:02 | 172010021A | 2.00 |
| Administra16EDBS17202001.0067 | 9098360 | 18515 | 7/22/17 7:17 | 172010021A | 2.00 |
| Administra16EDBS17202001.0068 | 9098361 | 18516 | 7/22/17 7:33 | 172010021A | 2.00 |
| Administra16EDBS17202001.0069 | 9098362 | 18517 | 7/22/17 7:48 | 172010021A | 2.00 |
| Administra16EDBS17202001.0070 | 9098363 | 18518 | 7/22/17 8:04 | 172010021A | 2.00 |
| Administra16EDBS17202001.0071 | 9100479 | 18601 | 7/22/17 8:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0072 | 9100481 | 18603 | 7/22/17 8:35 | 172010021A | 2.00 |
| Administra16EDBS17202001.0073 | EDB_41724DS | EDB_4QL | 7/22/17 8:51 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0074 | EIBKX1724C | PIBLKSG | 7/22/17 9:06 | 1720199999 | 2.00 |

# Sample Data

# EDB/DBCP

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

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# Data Summary

**Sample Name: 9107402** 18701 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.62 mL Total Volume: 2 ml Analyst: 7848 SDG: KR187 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 22:11:23 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0032.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.072025

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 22:11:23 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0032.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 108% ( 46 - 136 ) Conc: 0.073032

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30939 | 0.072025 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6309 | 0.034719 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11289 | 0.073032 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 17972 | 0.474549 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.072025 | 0.0033 | 0.0067 | 0.0067 | | 1.39 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2581 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:36

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9107402** 18701 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.62 mL Total Volume: 2 ml Analyst: Administr SDG: KR187 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 22:11:23
Instrument : CP16--19853A
Result file : 16EDBS17202001.0032.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.072025

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 30939 | 0.072025 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 6309 | 0.034719 |

## Analysis Report (B)

Injected on : Jul 21, 2017 22:11:23
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0032.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 108% (46-136) Conc.: 0.073032

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 11289 | 0.073032 |
| 1,2,3-TCP | 5.74 | 5.76 | 5.80 | 17972 | 0.474549 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.072025 | | | | 1.39 | |
| ☐ 1,2,3-TCP | | | <0.2581 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

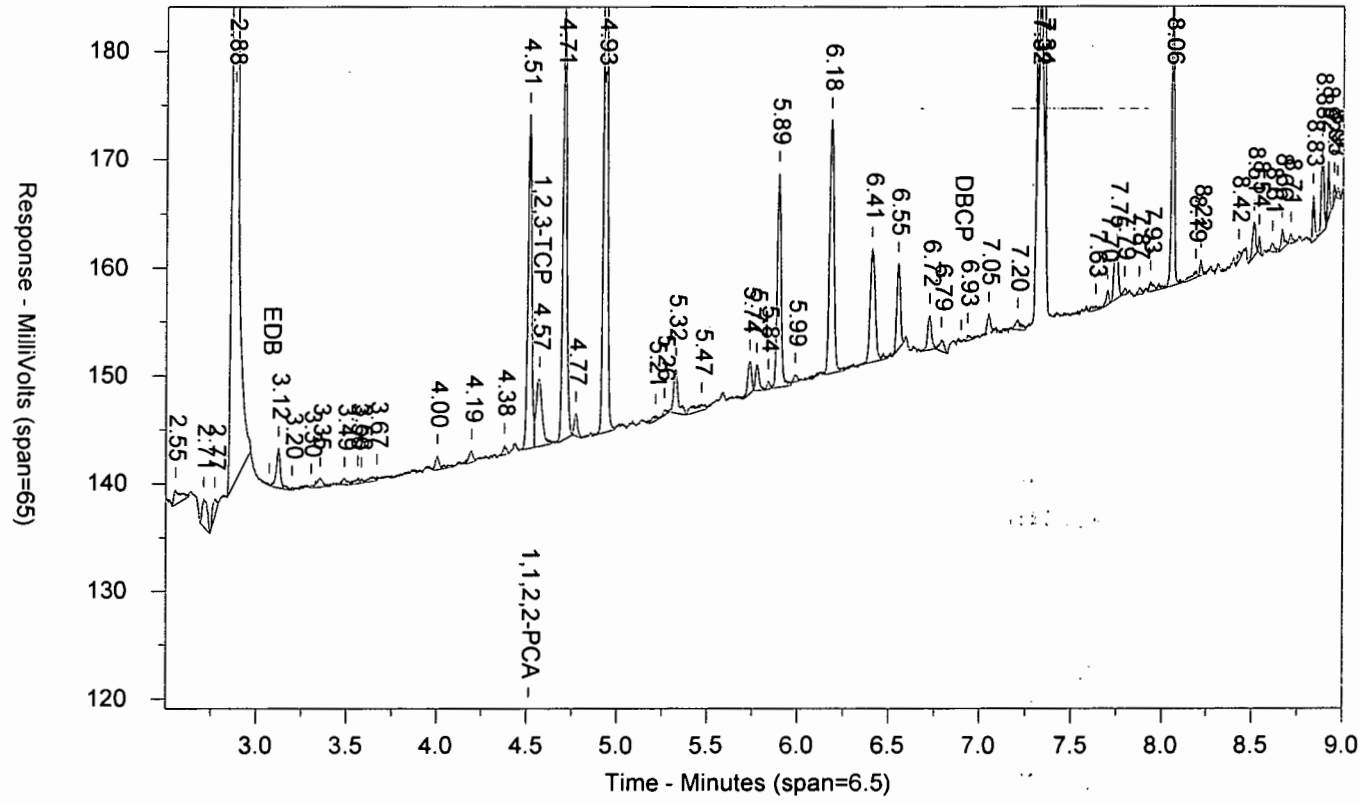
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9107402 AA18701 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0032.RAW

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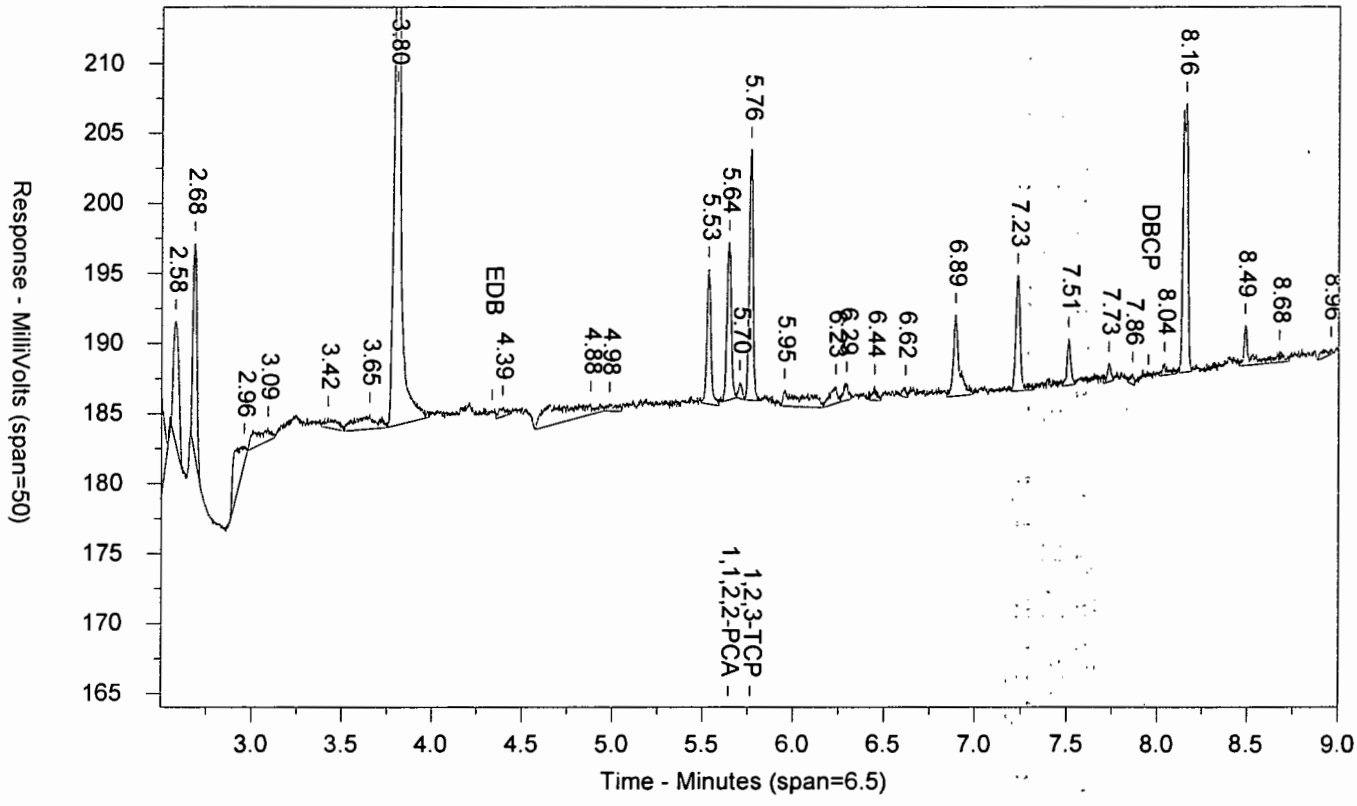

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Sample Number: 9107402 AA18701 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 10:11:23 PM Sample Weight: 36.62
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 30939 | .072 | 1,1,2,2-PCA | 5.642 | 11289 | .073 | 1,1,2,2-PCA |
| 4.57 | 6309 | .035 | 1,2,3-TCP | 5.763 | 17972 | .475 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0032.RAW
Area File: 16EDBS17202001B.0032.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 10:20:24 PM
File Reported On: 7/24/2017 at 10:57:27 AM

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# Data Summary

**Sample Name: 9107403** 18702 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.65 mL Total Volume: 2 ml Analyst: 7848 SDG: KR187 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 22:27:05 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0033.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.074269

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 22:27:05 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0033.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 112% ( 46 - 136 ) Conc: 0.075142

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 31929 | 0.074269 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5351 | 0.016997 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11618 | 0.075142 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 15289 | 0.325903 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.074269 | 0.0033 | 0.0067 | 0.0067 | | 1.17 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2578 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:38

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9107403** 18702 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.65 mL Total Volume: 2 ml Analyst: Administr SDG: KR187 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 22:27:05
Instrument : CP16--19853A
Result file : 16EDBS17202001.0033.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.074269

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 31929 | 0.074269 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 5351 | 0.016997 |

## Analysis Report (B)

Injected on : Jul 21, 2017 22:27:05
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0033.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 112% (46-136) Conc.: 0.075142

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11618 | 0.075142 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 15289 | 0.325903 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.074269 | | | | 1.17 | |
| ☐ 1,2,3-TCP | | | <0.2578 | <0.0955 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 24 2017

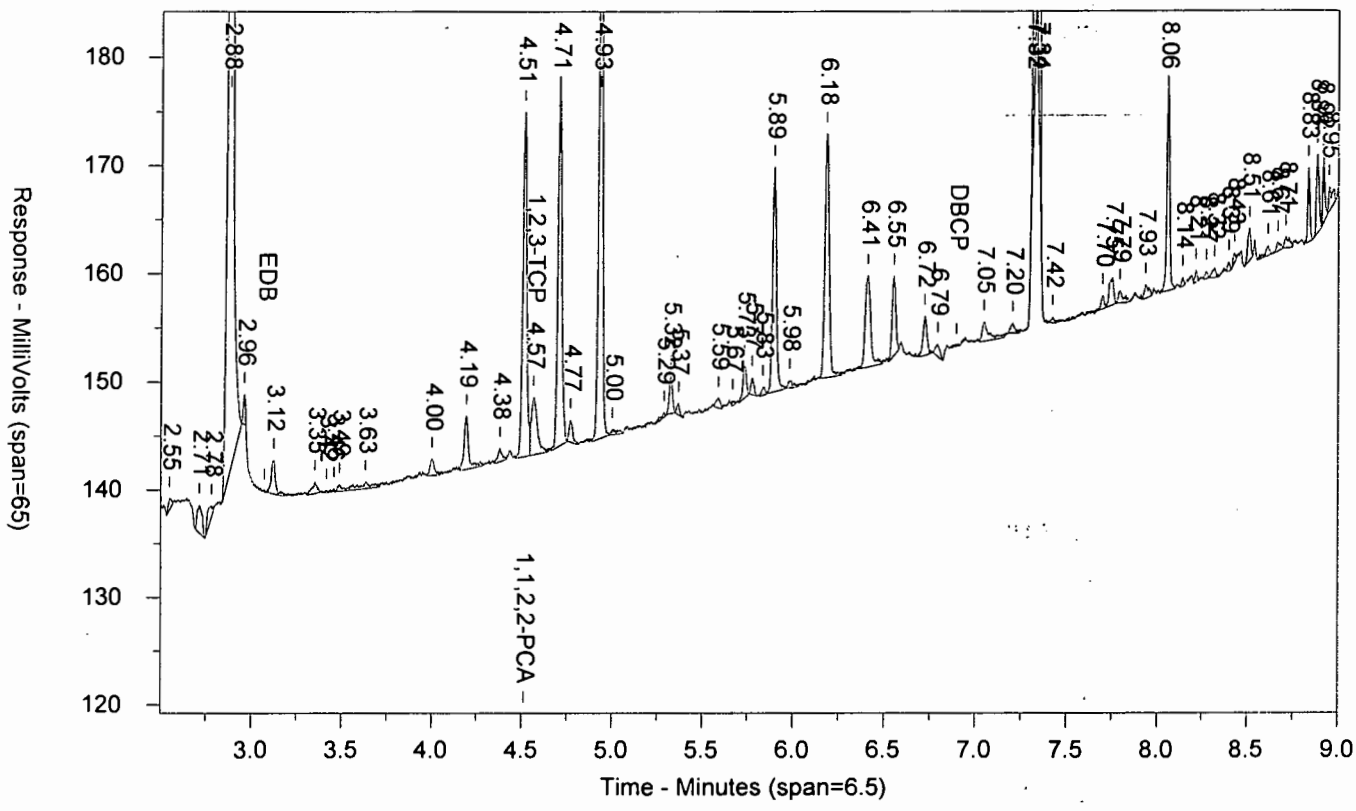
Verified by: Susan M. Goshert Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9107403 AA18702 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0033.RAW

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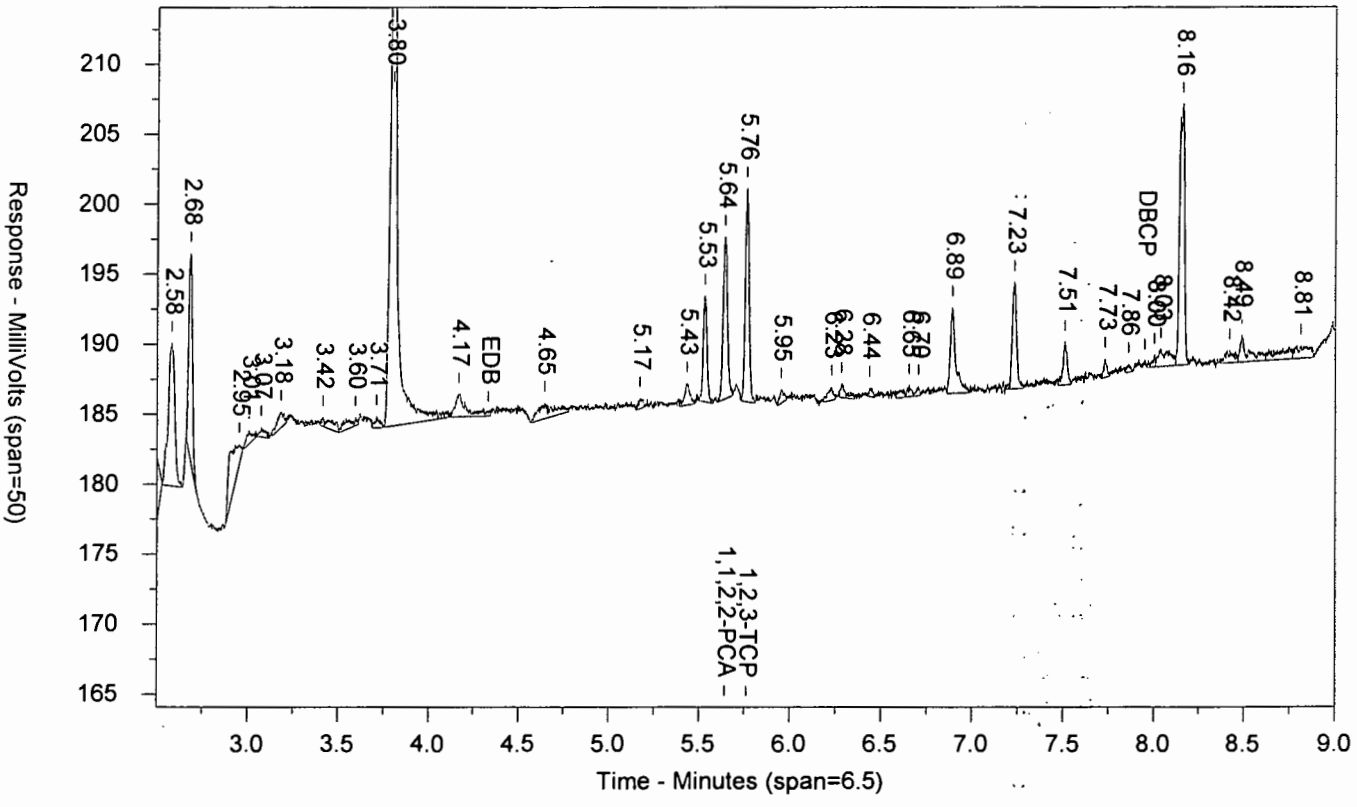

LANCASTER LABORATORIES

Sample Number: 9107403 AA18702 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 10:27:05 PM Sample Weight: 36.65
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.514 | 31929 | .074 | 1,1,2,2-PCA | 5.641 | 11618 | .075 | 1,1,2,2-PCA |
| 4.565 | 5351 | .017 | 1,2,3-TCP | 5.762 | 15289 | .326 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0033.RAW
Area File: 16EDBS17202001B.0033.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 10:36:06 PM
File Reported On: 7/24/2017 at 10:57:38 AM

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# Data Summary

**Sample Name: 9107404** 18703 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 37.04 mL Total Volume: 2 ml Analyst: 7848 SDG: KR187 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 22:42:38 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0034.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.067233

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 22:42:38 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0034.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 104% ( 46 - 136 ) Conc: 0.069062

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.10 | 3.10 | 610 | 0.001598 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29211 | 0.067233 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 8261 | 0.069968 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10808 | 0.069062 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 17708 | 0.454736 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0094 | <0.0189 | <0.0283 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.067233 | 0.0033 | 0.0066 | 0.0066 | | 2.68 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2551 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0094 | <0.0189 | <0.0283 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:41

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9107404** 18703 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 37.04 mL Total Volume: 2 ml Analyst: Administr SDG: KR187 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 22:42:38
Instrument : CP16--19853A
Result file : 16EDBS17202001.0034.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.067233

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.10 | 3.10 | 610 | 0.001598 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29211 | 0.067233 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 8261 | 0.069968 |

## Analysis Report (B)

Injected on : Jul 21, 2017 22:42:38
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0034.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 104% (46-136) Conc.: 0.069062

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10808 | 0.069062 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 17708 | 0.454736 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0283 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.067233 | | | | 2.68 | |
| ☐ 1,2,3-TCP | | | <0.2551 | <0.0945 | | | |
| ☐ DBCP | | | <0.0283 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

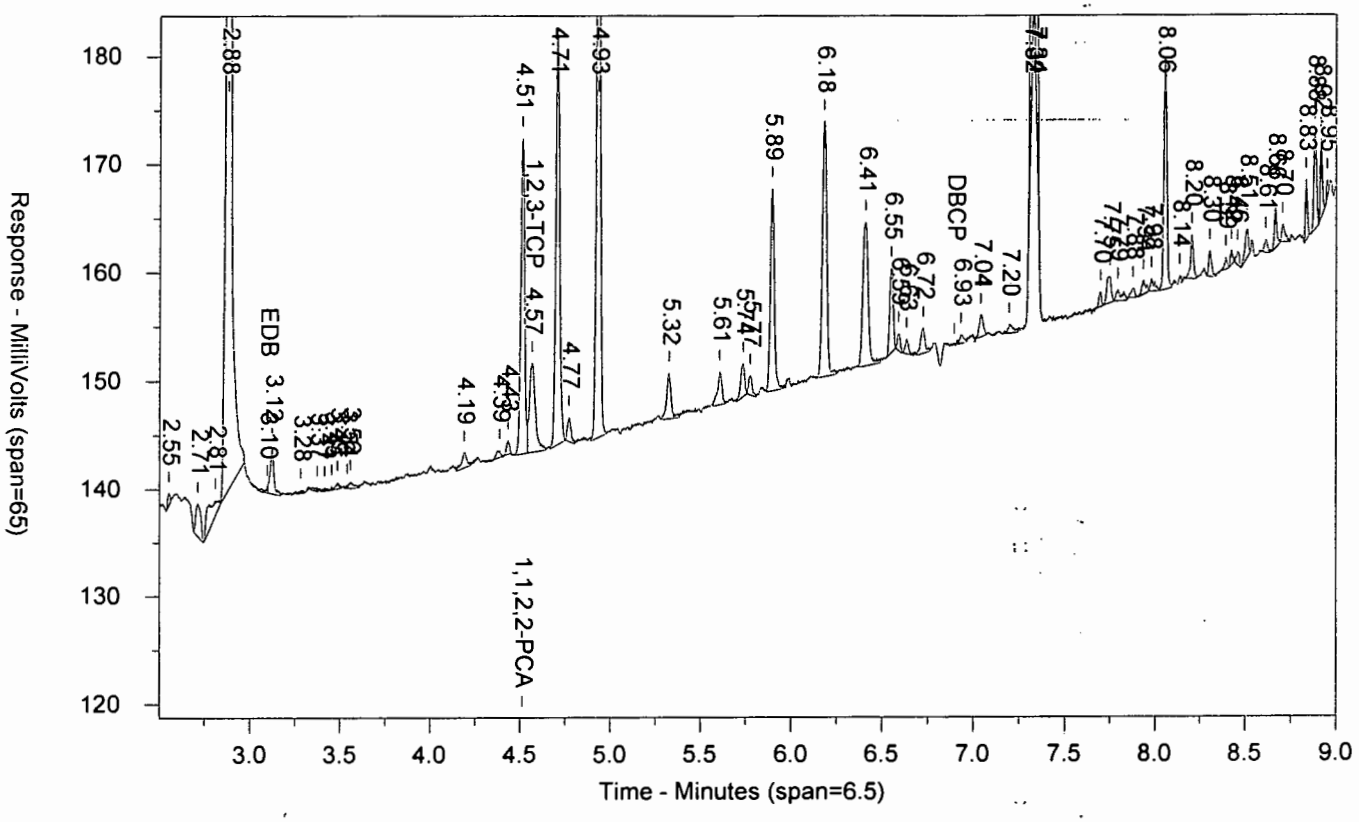
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9107404 AA18703 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0034.RAW

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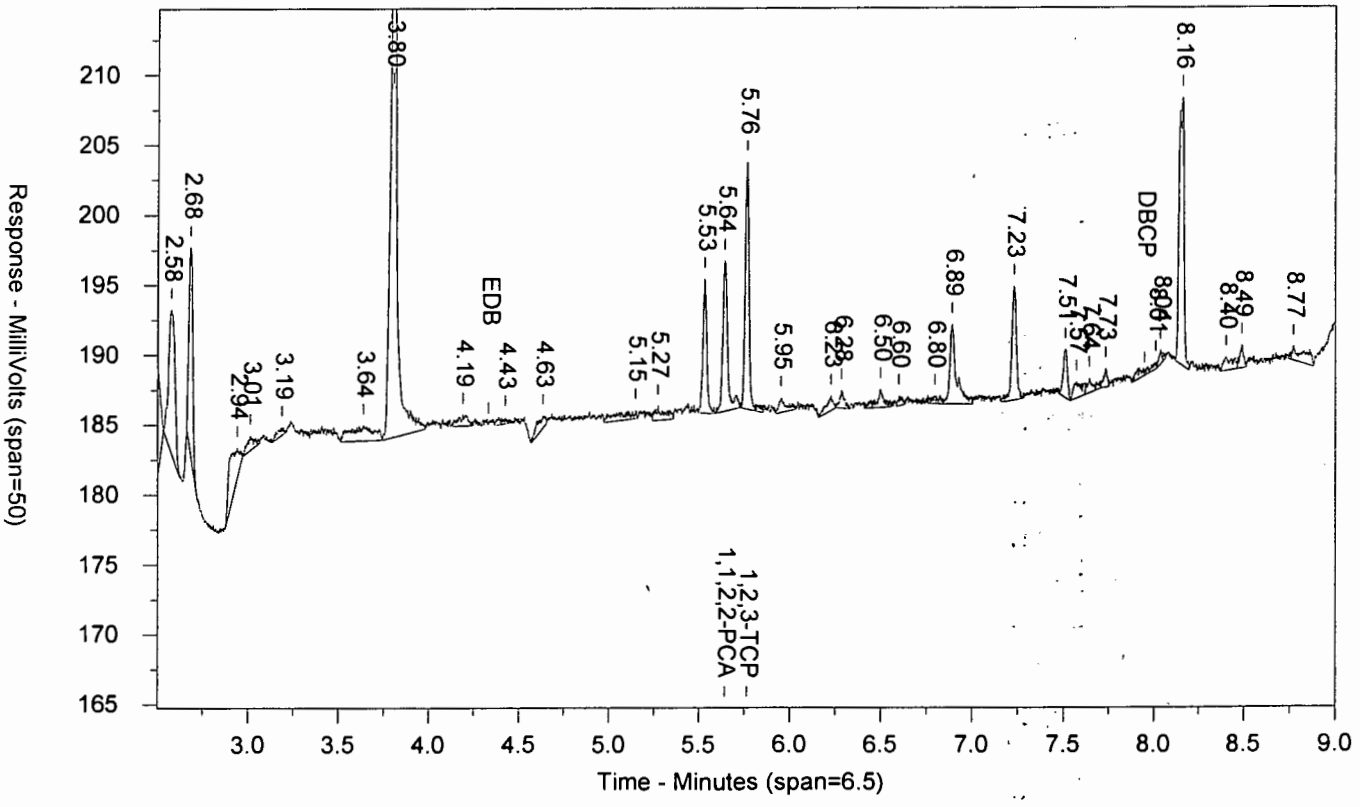

LANCASTER LABORATORIES

Sample Number: 9107404 AA18703 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 10:42:38 PM Sample Weight: 37.04
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.096 | 610 | .002 | EDB | | 0 | | EDB |
| 4.513 | 29211 | .067 | 1,1,2,2-PCA | 5.642 | 10808 | .069 | 1,1,2,2-PCA |
| 4.566 | 8261 | .07 | 1,2,3-TCP | 5.763 | 17708 | .455 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0034.RAW
Area File: 16EDBS17202001B.0034.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 10:51:40 PM
File Reported On: 7/24/2017 at 10:57:52 AM

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# Data Summary

**Sample Name: 9107405** 18704 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 37.01 mL Total Volume: 2 ml Analyst: 7848 SDG: KR187 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 22:58:15 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0035.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 120% ( 46 - 136 ) Conc: 0.079602

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 22:58:15 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0035.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 121% ( 46 - 136 ) Conc: 0.080546

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 34558 | 0.079602 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 12556 | 0.080546 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6166 | 0.031741 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 14867 | 0.299651 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0189 | <0.0284 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.079602 | 0.0033 | 0.0066 | 0.0066 | | 1.18 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2553 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0189 | <0.0284 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:43

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9107405** 18704 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 37.01 mL Total Volume: 2 ml Analyst: Administr SDG: KR187 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 22:58:15
Instrument : CP16--19853A
Result file : 16EDBS17202001.0035.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 120% (46-136) Conc.: 0.079602

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 34558 | 0.079602 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 6166 | 0.031741 |

## Analysis Report (B)

Injected on : Jul 21, 2017 22:58:15
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0035.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 121% (46-136) Conc.: 0.080546

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 12556 | 0.080546 |
| 1,2,3-TCP | 5.74 | 5.76 | 5.80 | 14867 | 0.299651 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0284 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.079602 | | | | 1.18 | |
| ☐ 1,2,3-TCP | | | <0.2553 | <0.0946 | | | |
| ☐ DBCP | | | <0.0284 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

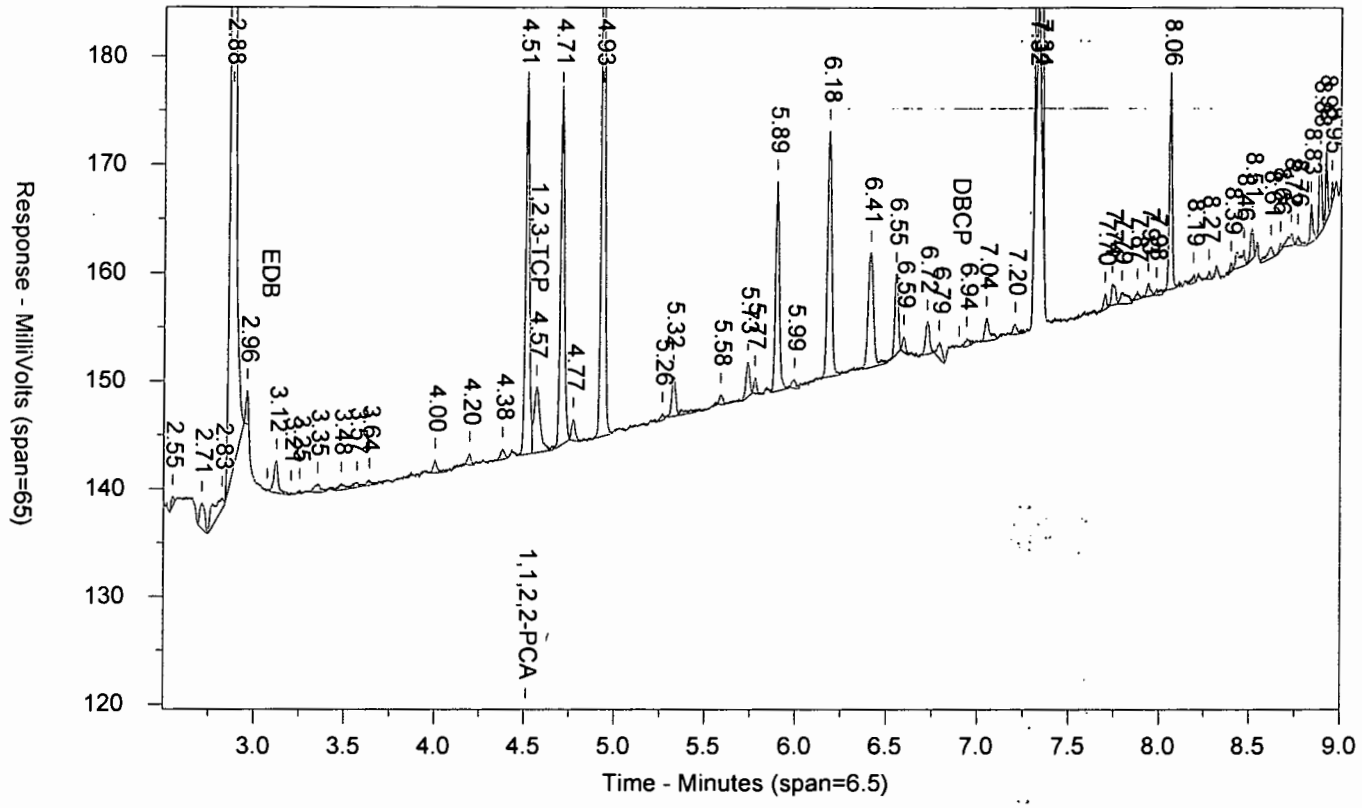
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9107405 AA18704 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0035.RAW

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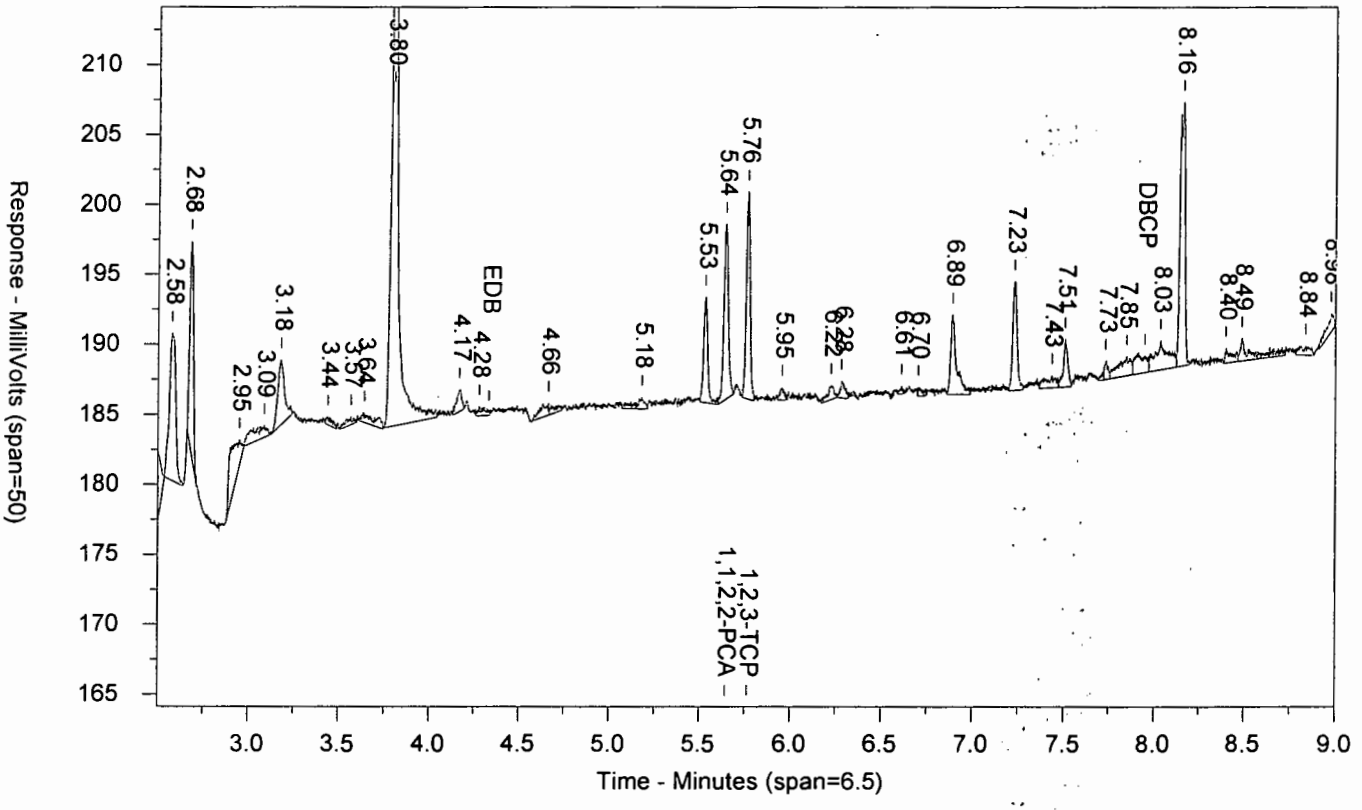

LANCASTER LABORATORIES

Sample Number: 9107405 AA18704 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 10:58:15 PM Sample Weight: 37.01
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.513 | 34558 | .08 | 1,1,2,2-PCA | 5.643 | 12556 | .081 | 1,1,2,2-PCA |
| 4.568 | 6166 | .032 | 1,2,3-TCP | 5.763 | 14867 | .3 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0035.RAW
Area File: 16EDBS17202001B.0035.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 11:07:17 PM
File Reported On: 7/24/2017 at 10:58:07 AM

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# Data Summary

**Sample Name: 9107406** 18705 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.48 mL Total Volume: 2 ml Analyst: 7848 SDG: KR187 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 23:13:47 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0036.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 119% ( 46 - 136 ) Conc: 0.08053

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 23:13:47 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0036.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 122% ( 46 - 136 ) Conc: 0.0822

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.08 | 3.10 | 1247 | 0.003317 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 34460 | 0.08053 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 5590 | 0.021505 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.34 | 4.36 | 770 | 0.007165 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 12629 | 0.0822 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 23273 | 0.770694 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.08053 | 0.0034 | 0.0067 | 0.0067 | | 2.05 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.259 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:45

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9107406** 18705 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.48 mL Total Volume: 2 ml Analyst: Administr SDG: KR187 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 23:13:47
Instrument : CP16--19853A
Result file : 16EDBS17202001.0036.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 119% (46-136) Conc.: 0.08053

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.04 | 3.08 | 3.10 | 1247 | 0.003317 |
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 34460 | 0.080530 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 5590 | 0.021505 |

## Analysis Report (B)

Injected on : Jul 21, 2017 23:13:47
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0036.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 122% (46-136) Conc.: 0.0822

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 4.30 | 4.34 | 4.36 | 770 | 0.007165 |
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 12629 | 0.082200 |
| 1,2,3-TCP | 5.74 | 5.76 | 5.80 | 23273 | 0.770694 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.080530 | | | | 2.05 | |
| ☐ 1,2,3-TCP | | | <0.259 | <0.0959 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

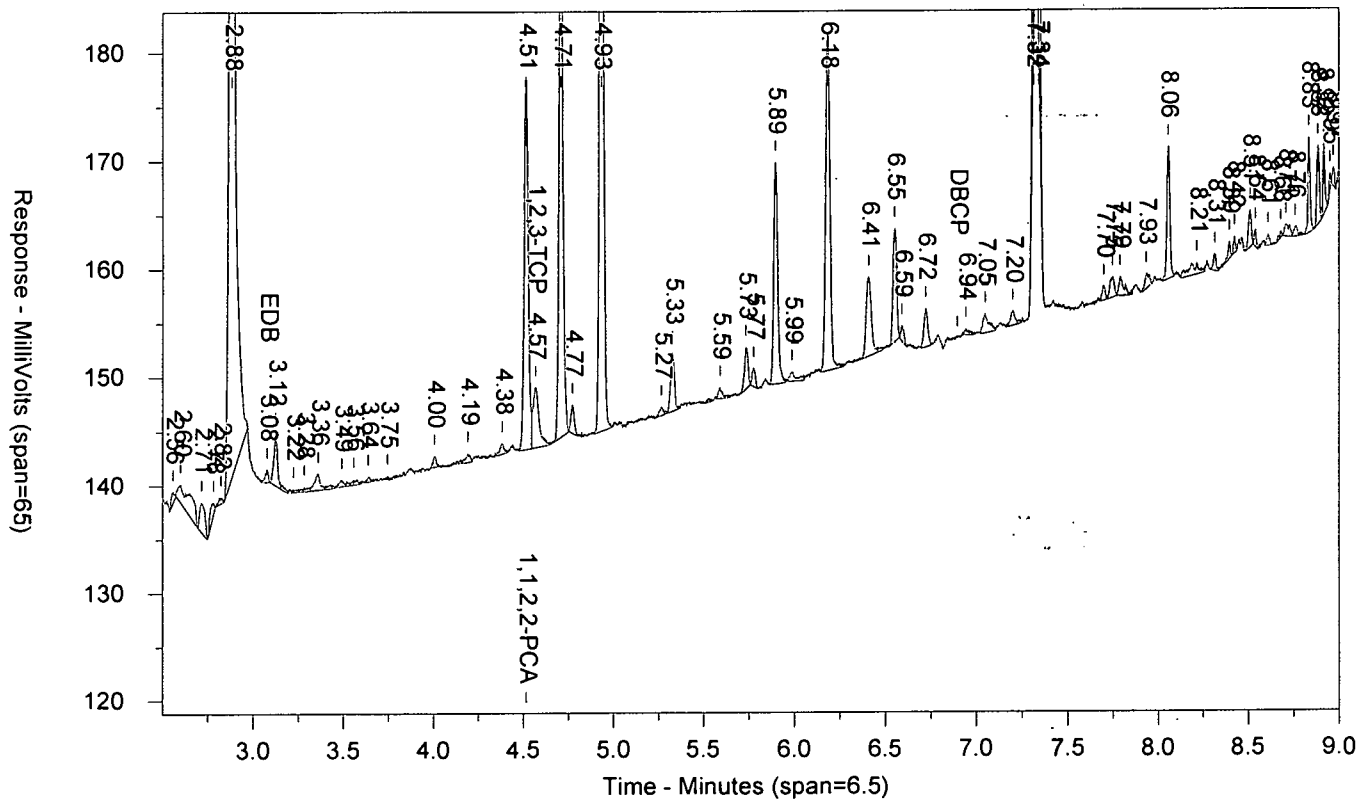
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

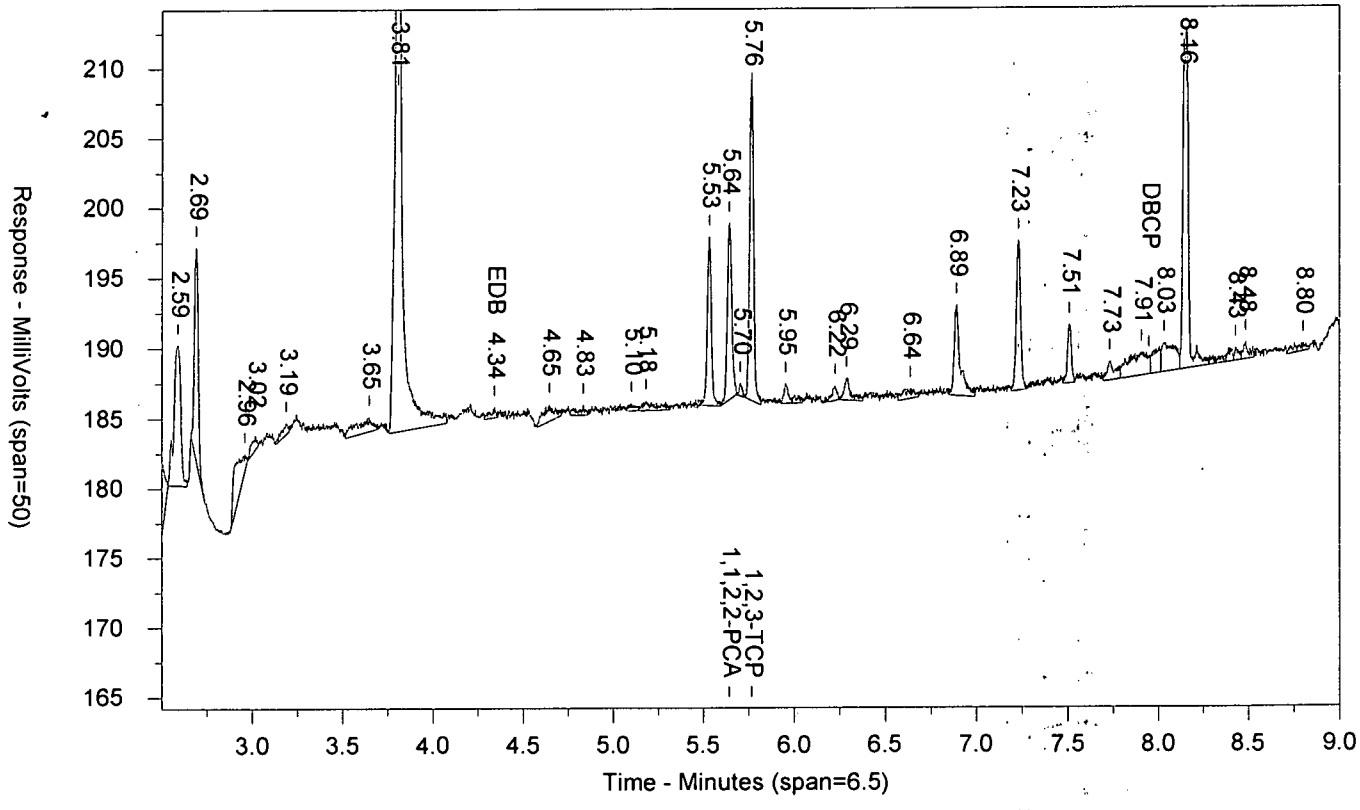
* Recovery outside QC Limits

9107406 AA18705 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0036.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0036.RAW



LANCASTER LABORATORIES

Sample Number: 9107406 AA18705 T 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 11:13:47 PM Sample Weight: 36.48
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.077 | 1247 | .003 | EDB | 4.342 | 770 | .007 | EDB |
| 4.515 | 34460 | .081 | 1,1,2,2-PCA | 5.642 | 12629 | .082 | 1,1,2,2-PCA |
| 4.568 | 5590 | .022 | 1,2,3-TCP | 5.765 | 23273 | .771 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0036.RAW
Area File: 16EDBS17202001B.0036.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 11:22:47 PM
File Reported On: 7/24/2017 at 10:58:17 AM

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# Data Summary

**Sample Name: 9107407** 18706 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.73 mL Total Volume: 2 ml Analyst: 7848 SDG: KR187 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 00:00:34 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0039.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.071064

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 22, 2017 00:00:34 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0039.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 125% ( 46 - 136 ) Conc: 0.08393

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 22034 | 0.058198 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30618 | 0.071064 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 3413 | 0 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.91 | 6.93 | 2740 | 0.003672 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 8234 | 0.07609 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 12977 | 0.08393 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 14753 | 0.295679 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.058198 | 0.0095 | 0.0191 | 0.0286 | | 26.65 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.071064 | 0.0033 | 0.0067 | 0.0067 | | 16.60 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2573 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:48

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9107407** 18706 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 36.73 mL Total Volume: 2 ml Analyst: Administr SDG: KR187 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 22, 2017 00:00:34
Instrument : CP16--19853A
Result file : 16EDBS17202001.0039.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.071064

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.04 | 3.07 | 3.10 | 22034 | 0.058198 |
| 1,1,2,2-PCA | 4.48 | 4.51 | 4.54 | 30618 | 0.071064 |
| 1,2,3-TCP | 4.55 | 4.57 | 4.61 | 3413 | -0.018727 |
| DBCP | 6.86 | 6.91 | 6.93 | 2740 | 0.003672 |

## Analysis Report (B)

Injected on : Jul 22, 2017 00:00:34
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0039.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 125% (46-136) Conc.: 0.08393

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 4.30 | 4.33 | 4.36 | 8234 | 0.076090 |
| 1,1,2,2-PCA | 5.61 | 5.64 | 5.67 | 12977 | 0.083930 |
| 1,2,3-TCP | 5.74 | 5.76 | 5.80 | 14753 | 0.295679 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.058198 | 0.0286 | 0.0095 | | 26.65 | |
| ☐ 1,1,2,2-PCA | A | 0.071064 | | | | 16.60 | |
| ☐ 1,2,3-TCP | | | <0.2573 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

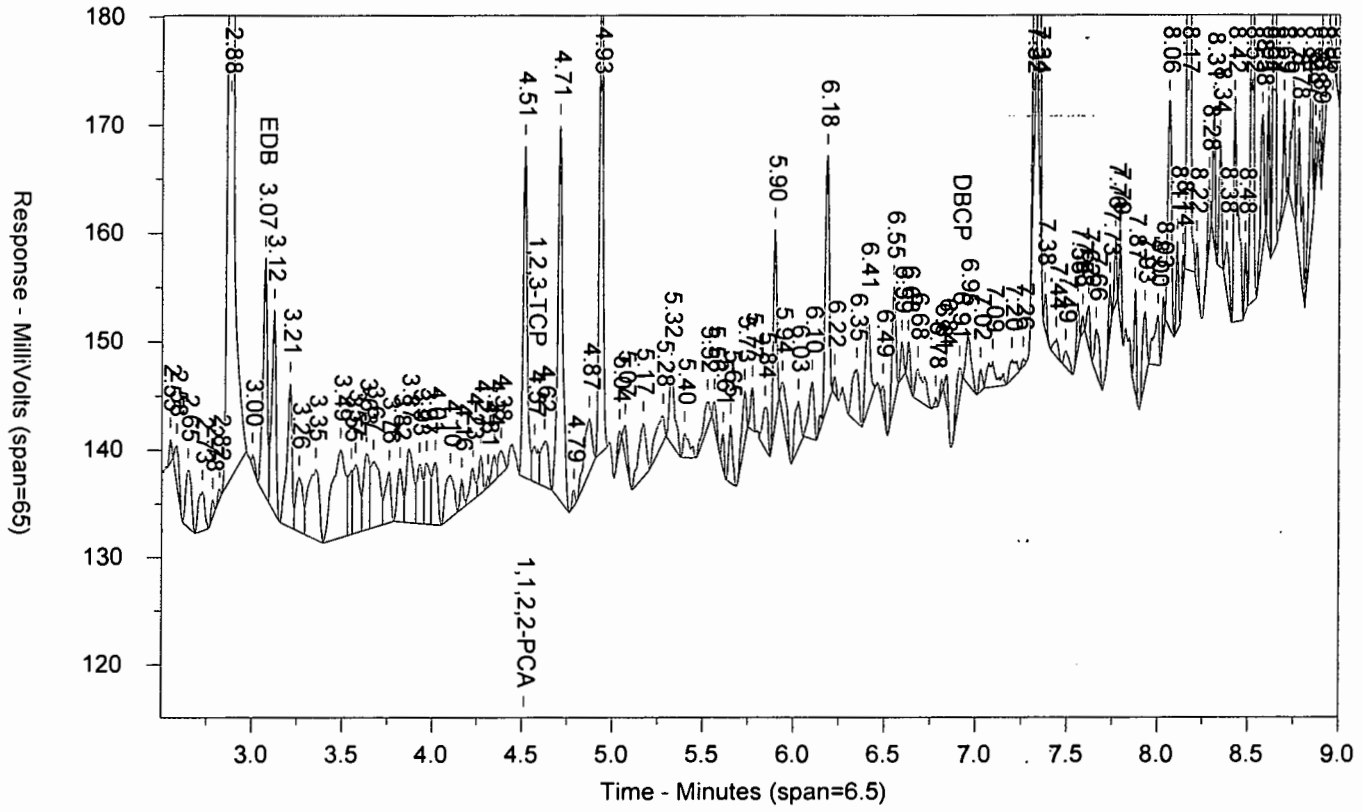
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9107407 AA18706 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0039.RAW

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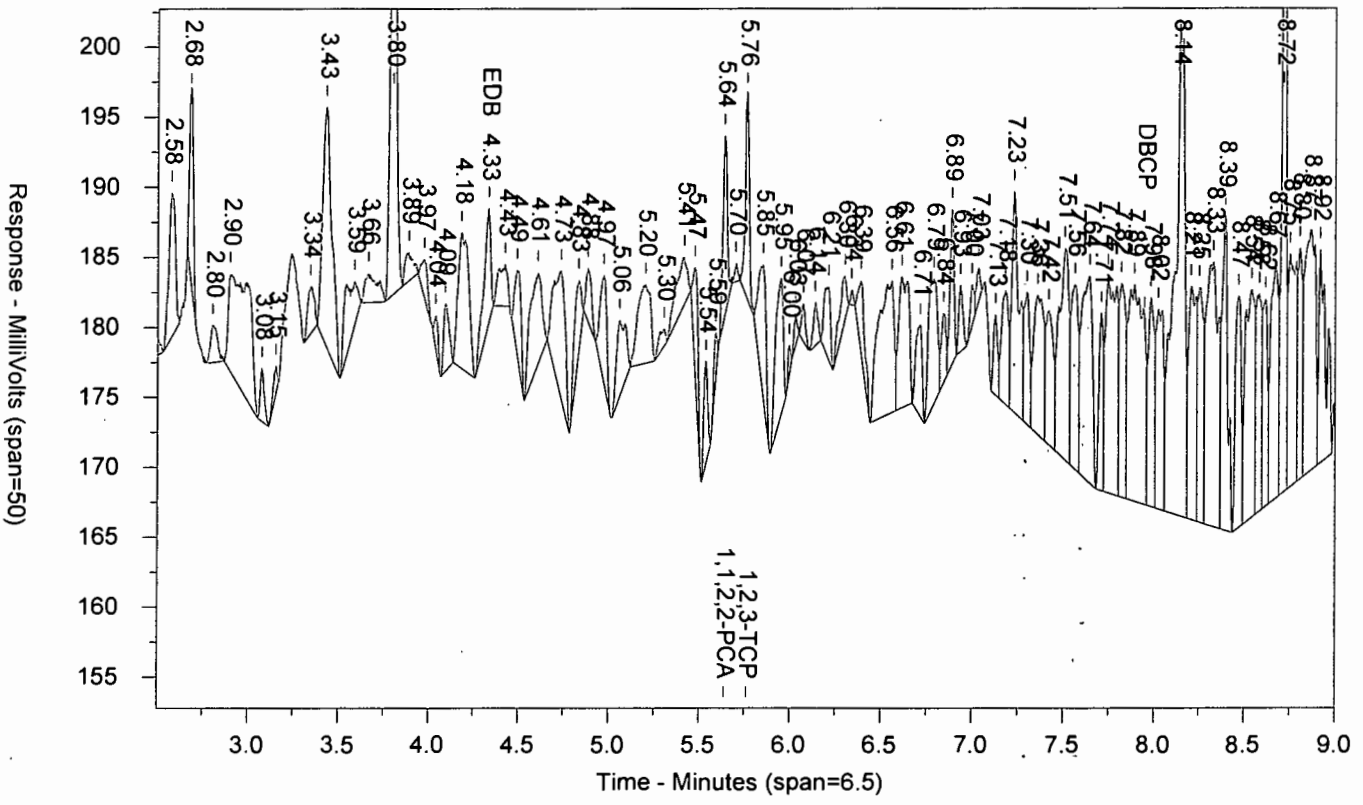


LANCASTER LABORATORIES

Sample Number: 9107407 AA18706 T 172010025A 10398 SW-846 8011
Injected On: 7/22/2017 12:00:34 AM Sample Weight: 36.73
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.073 | 22034 | .058 | EDB | 4.333 | 8234 | .076 | EDB |
| 4.514 | 30618 | .071 | 1,1,2,2-PCA | 5.639 | 12977 | .084 | 1,1,2,2-PCA |
| 4.569 | 3413 | -.019 | 1,2,3-TCP | 5.761 | 14753 | .296 | 1,2,3-TCP |
| 6.911 | 2740 | .004 | DBCP | | 0 | | DBCP |

Files:
Area File: 16EDBS17202001.0039.RAW
Area File: 16EDBS17202001B.0039.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 12:09:37 AM
File Reported On: 7/24/2017 at 10:58:49 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 4 CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 5 EIBKX1724C | 5 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 6 EDB_11724DS | 6 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 1 | 1720199999 | |
| 7 EDB_21724DS | 7 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 2 | 1720199999 | |
| 8 EDB_31724DS | 8 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 3 | 1720199999 | |
| 9 EDB_41724DS | 9 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 4 | 1720199999 | |
| 10 EDB_51724DS | 10 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 5 | 1720199999 | |
| 11 EDB_61724DS | 11 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 6 | 1720199999 | |
| 12 MDEDX1724DS | 12 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 13 EDB_31724DS | 13 | CCAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 14 EIBKX1724C | 14 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 15 BLANKA 7/21/17 | 15 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 16 LCSA 7/21/17 | 16 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 17 LCSDA 7/21/17 | 17 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 18 9095972 | 18 | T | AA | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010025A | 10398 |
| 19 9100482 | 19 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 20 9100483 | 20 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010025A | 10398 |
| 21 9100485 | 21 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 22 9100487 | 22 | T | AA | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010025A | 10398 |
| 23 9100489 | 23 | T | AA | 16EDBS.MET | 36.84 | 2 | 1 | 0 | 172010025A | 10398 |
| 24 9100491 | 24 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 25 EDB_51724DS | 25 | CCAL | LS | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 26 EIBKX1724C | 26 | PIBLK | SC | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 27 9100492 | 27 | T | AA | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010025A | 10398 |
| 28 9100493 | 28 | T | AA | 16EDBS.MET | 36.82 | 2 | 1 | 0 | 172010025A | 10398 |
| 29 9100494 | 29 | T | AA | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010025A | 10398 |
| 30 9100495 | 30 | T | AA | 16EDBS.MET | 36.76 | 2 | 1 | 0 | 172010025A | 10398 |
| 31 9100496 | 31 | T | AA | 16EDBS.MET | 36.83 | 2 | 1 | 0 | 172010025A | 10398 |
| 32 9107402 | 32 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 33 9107403 | 33 | T | AA | 16EDBS.MET | 36.65 | 2 | 1 | 0 | 172010025A | 10398 |
| 34 9107404 | 34 | T | AA | 16EDBS.MET | 37.04 | 2 | 1 | 0 | 172010025A | 10398 |
| 35 9107405 | 35 | T | AA | 16EDBS.MET | 37.01 | 2 | 1 | 0 | 172010025A | 10398 |
| 36 9107406 | 36 | T | AA | 16EDBS.MET | 36.48 | 2 | 1 | 0 | 172010025A | 10398 |
| 37 EDB_41724DS | 37 | CCAL | QK | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 38 EIBKX1724C | 38 | PIBLK | SD | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 39 9107407 | 39 | T | AA | 16EDBS.MET | 36.73 | 2 | 1 | 0 | 172010025A | 10398 |
| 40 9109771 | 40 | T | AA | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010025A | 10398 |
| 41 9109772MS | 41 | MS | AA | 16EDBS.MET | 37.02 | 2 | 1 | 0 | 172010025A | 10398 |
| 42 9109773MSD | 42 | MSD | AA | 16EDBS.MET | 36.96 | 2 | 1 | 0 | 172010025A | 10398 |
| 43 9109779 | 43 | T | AA | 16EDBS.MET | 36.35 | 2 | 1 | 0 | 172010025A | 10398 |
| 44 BLANKA 7/21/17 | 44 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 45 LCSA 7/21/17 | 45 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 46 LCSDA 7/21/17 | 46 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 47 9098344 | 47 | T | AA | 16EDBS.MET | 36.51 | 2 | 1 | 0 | 172010021A | 10398 |
| 48 9098345 | 48 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010021A | 10398 |
| 49 EDB_31724DS | 49 | CCAL | PB | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 50 EIBKX1724C | 50 | PIBLK | SE | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

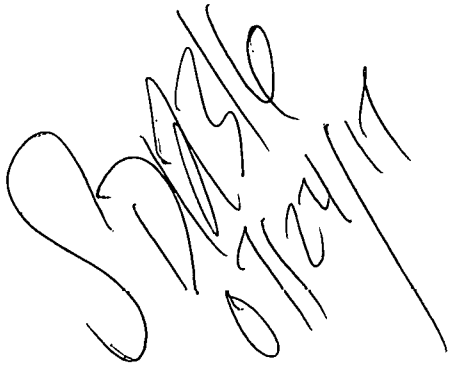
Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

| Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 9098346 | 51 | T | AA | | 16EDBS.MET | 36.12 | 2 | 1 | 0 | 172010021A | 10398 |
| 52 9098347 | 52 | T | AA | | 16EDBS.MET | 36.56 | 2 | 1 | 0 | 172010021A | 10398 |
| 53 9098348 | 53 | T | AA | | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010021A | 10398 |
| 54 9098349 | 54 | T | AA | | 16EDBS.MET | 36.66 | 2 | 1 | 0 | 172010021A | 10398 |
| 55 9098350MS | 55 | MS | AA | | 16EDBS.MET | 36.45 | 2 | 1 | 0 | 172010021A | 10398 |
| 56 9098351MSD | 56 | MSD | AA | | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010021A | 10398 |
| 57 9098352 | 57 | T | AA | | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010021A | 10398 |
| 58 9098353 | 58 | T | AA | | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010021A | 10398 |
| 59 9098354 | 59 | T | AA | | 16EDBS.MET | 36.9 | 2 | 1 | 0 | 172010021A | 10398 |
| 60 9098355 | 60 | T | AA | | 16EDBS.MET | 36.42 | 2 | 1 | 0 | 172010021A | 10398 |
| 61 EDB_51724DS | 61 | CCAL | LT | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 62 EIBKX1724C | 62 | PIBLK | SF | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 63 9098356 | 63 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 64 9098357 | 64 | T | AA | | 16EDBS.MET | 36.77 | 2 | 1 | 0 | 172010021A | 10398 |
| 65 9098358 | 65 | T | AA | | 16EDBS.MET | 37.09 | 2 | 1 | 0 | 172010021A | 10398 |
| 66 9098359 | 66 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 67 9098360 | 67 | T | AA | | 16EDBS.MET | 36.6 | 2 | 1 | 0 | 172010021A | 10398 |
| 68 9098361 | 68 | T | AA | | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010021A | 10398 |
| 69 9098362 | 69 | T | AA | | 16EDBS.MET | 36.39 | 2 | 1 | 0 | 172010021A | 10398 |
| 70 9098363 | 70 | T | AA | | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010021A | 10398 |
| 71 9100479 | 71 | T | AA | | 16EDBS.MET | 36.55 | 2 | 1 | 0 | 172010021A | 10398 |
| 72 9100481 | 72 | T | AA | | 16EDBS.MET | 36.13 | 2 | 1 | 0 | 172010021A | 10398 |
| 73 EDB_41724DS | 73 | CCAL | QL | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 74 EIBKX1724C | 74 | PIBLK | SG | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |



Set-up by: _____ Date: 7/21/17

7/21/2017

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

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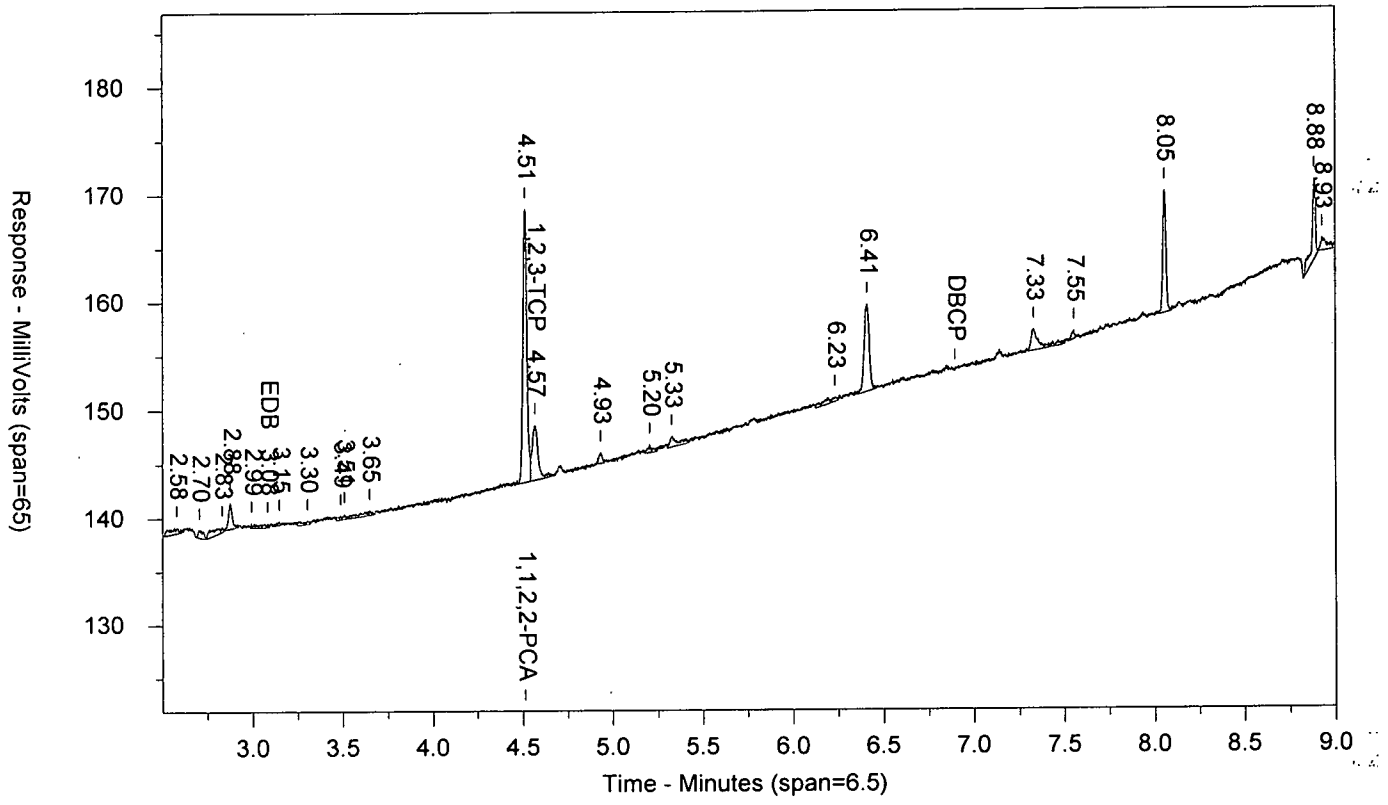


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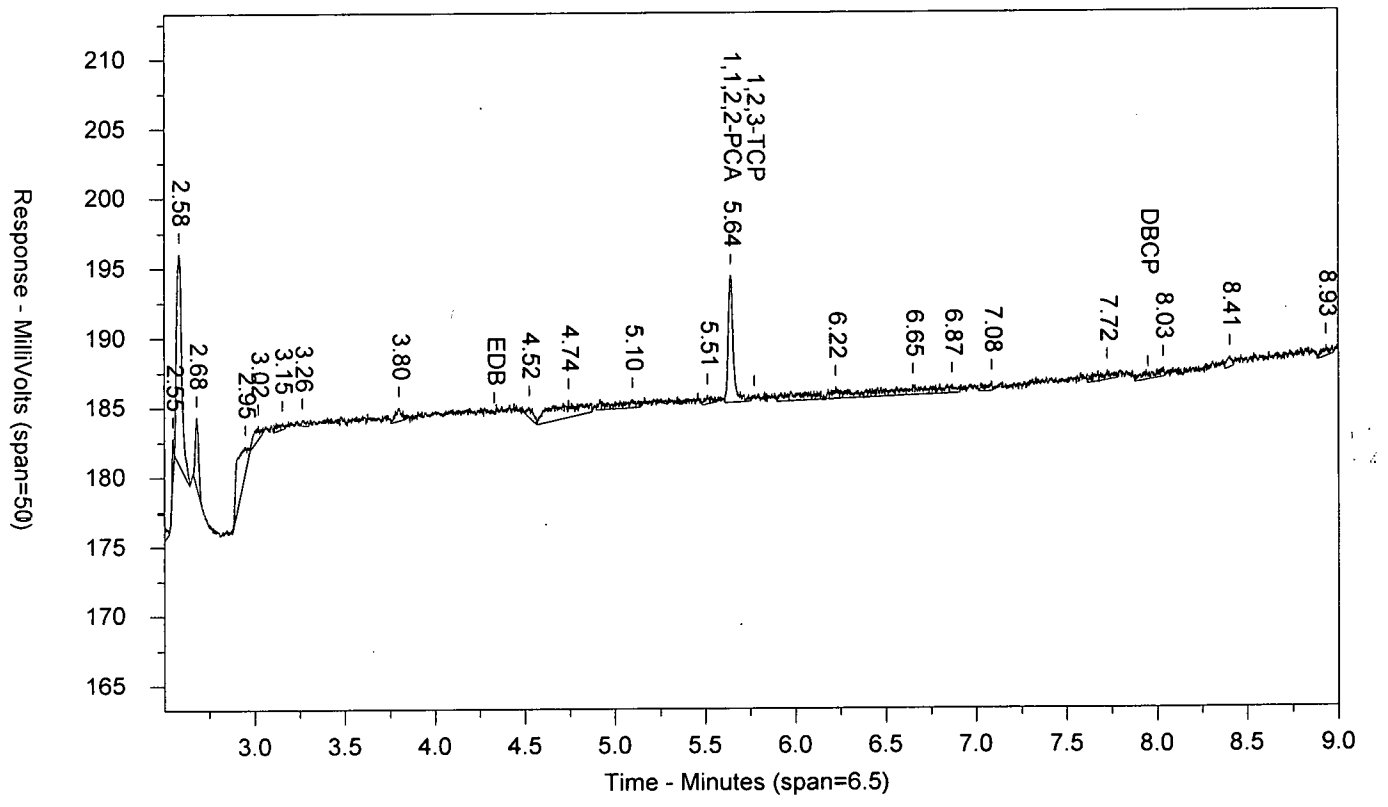

LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 3:09:45 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.083 | 400 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25406 | .066 | 1,1,2,2-PCA | 5.641 | 9102 | .066 | 1,1,2,2-PCA |
| 4.567 | 5116 | .008 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
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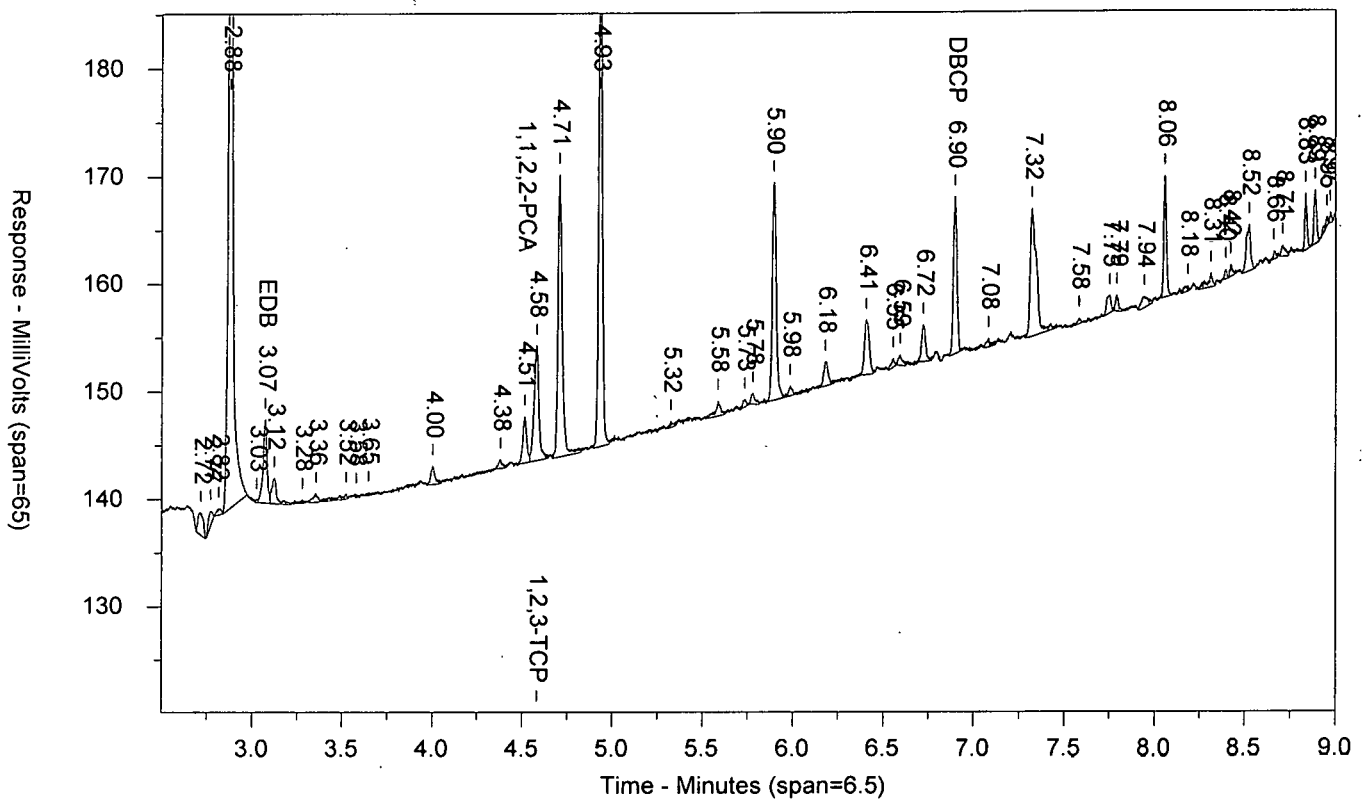
Area File: 16EDBS17202001B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:18:48 PM
File Reported On: 7/24/2017 at 10:43:10 AM

EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0006.RAW

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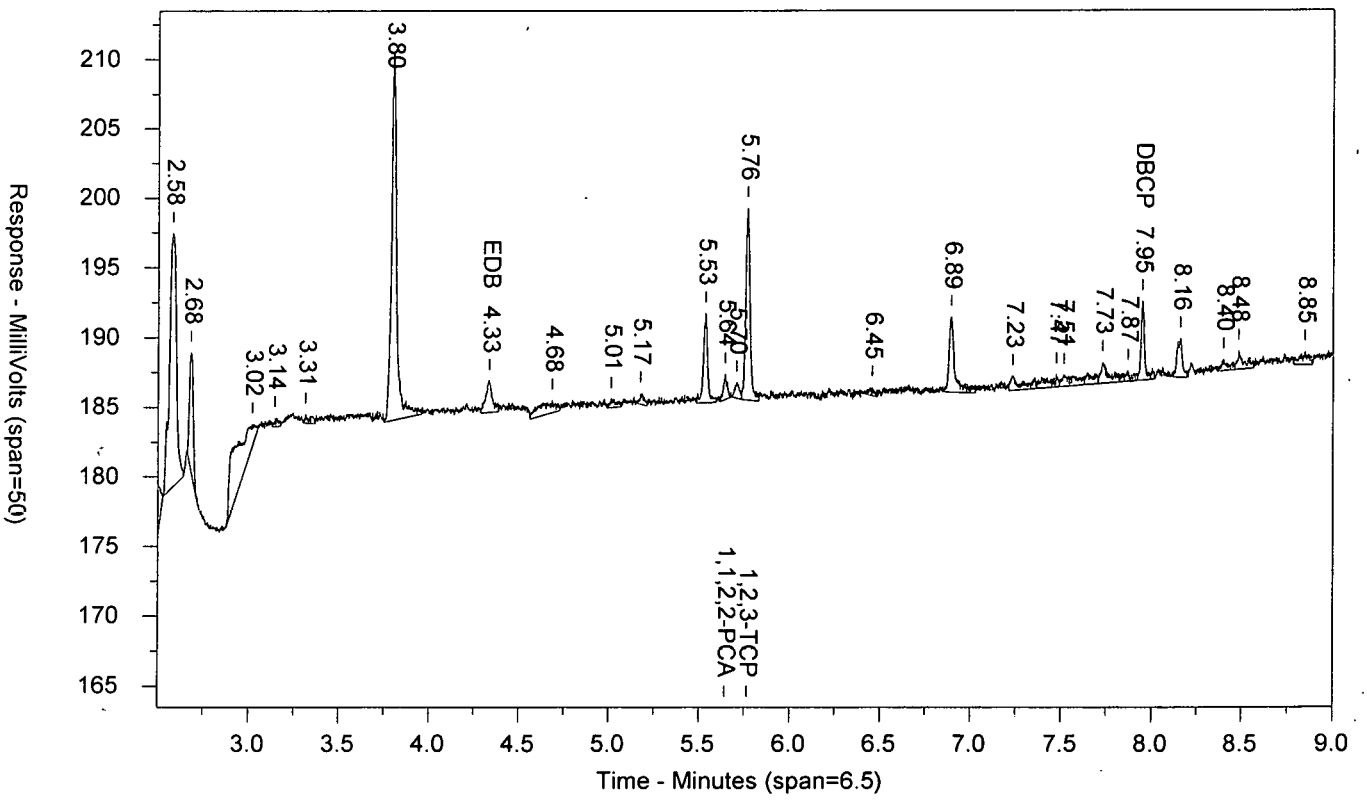

LANCASTER LABORATORIES

Sample Number: EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:25:23 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 7802 | .405 | EDB | 4.335 | 2290 | .405 | EDB |
| 4.515 | 4322 | .196 | 1,1,2,2-PCA | 5.641 | 1830 | .199 | 1,1,2,2-PCA |
| 4.58 | 10708 | 2.318 | 1,2,3-TCP | 5.765 | 13776 | 3.87 | 1,2,3-TCP |
| 6.897 | 14619 | .372 | DBCP | 7.947 | 5660 | .377 | DBCP |

Files:
Area File: 16EDBS17202001.0006.RAW
Area File: 16EDBS17202001B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:34:24 PM
File Reported On: 7/24/2017 at 10:43:26 AM

EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011

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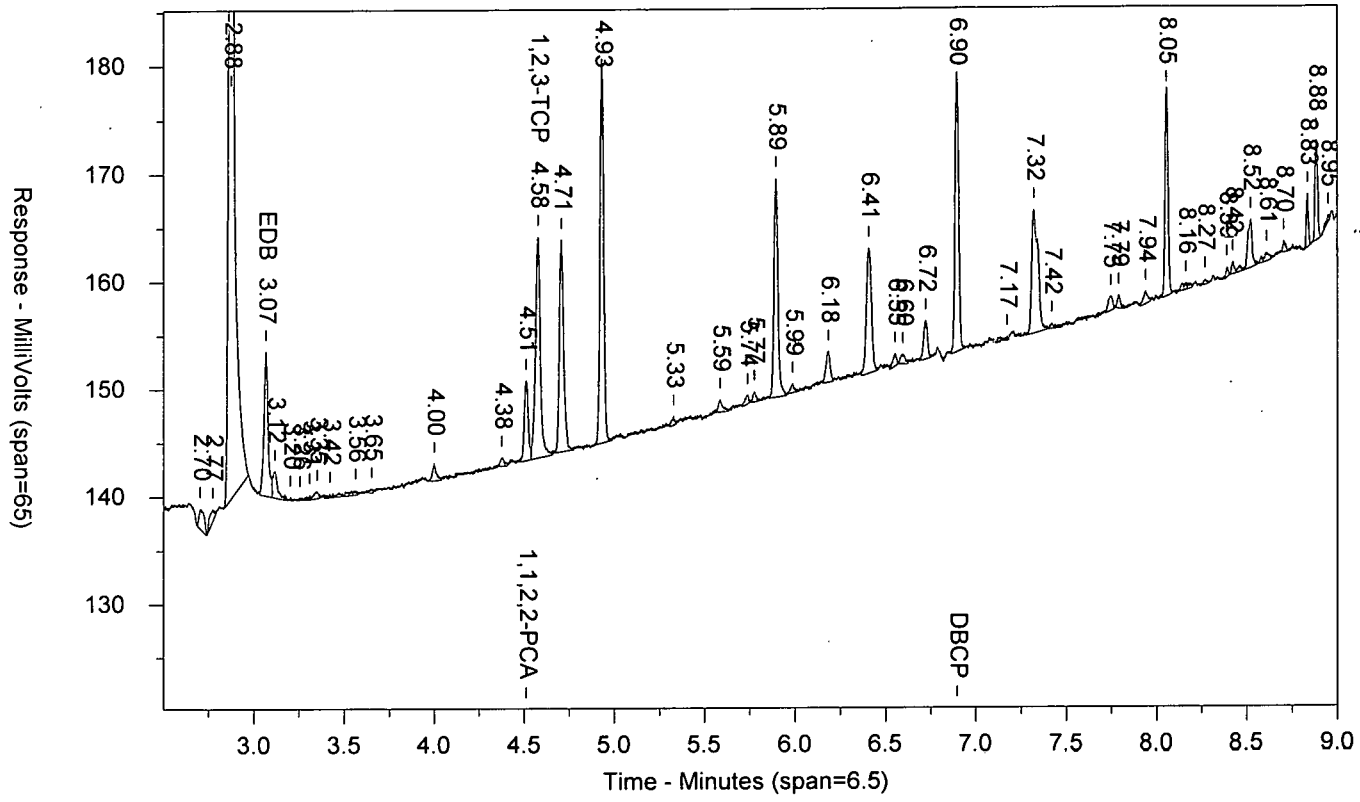


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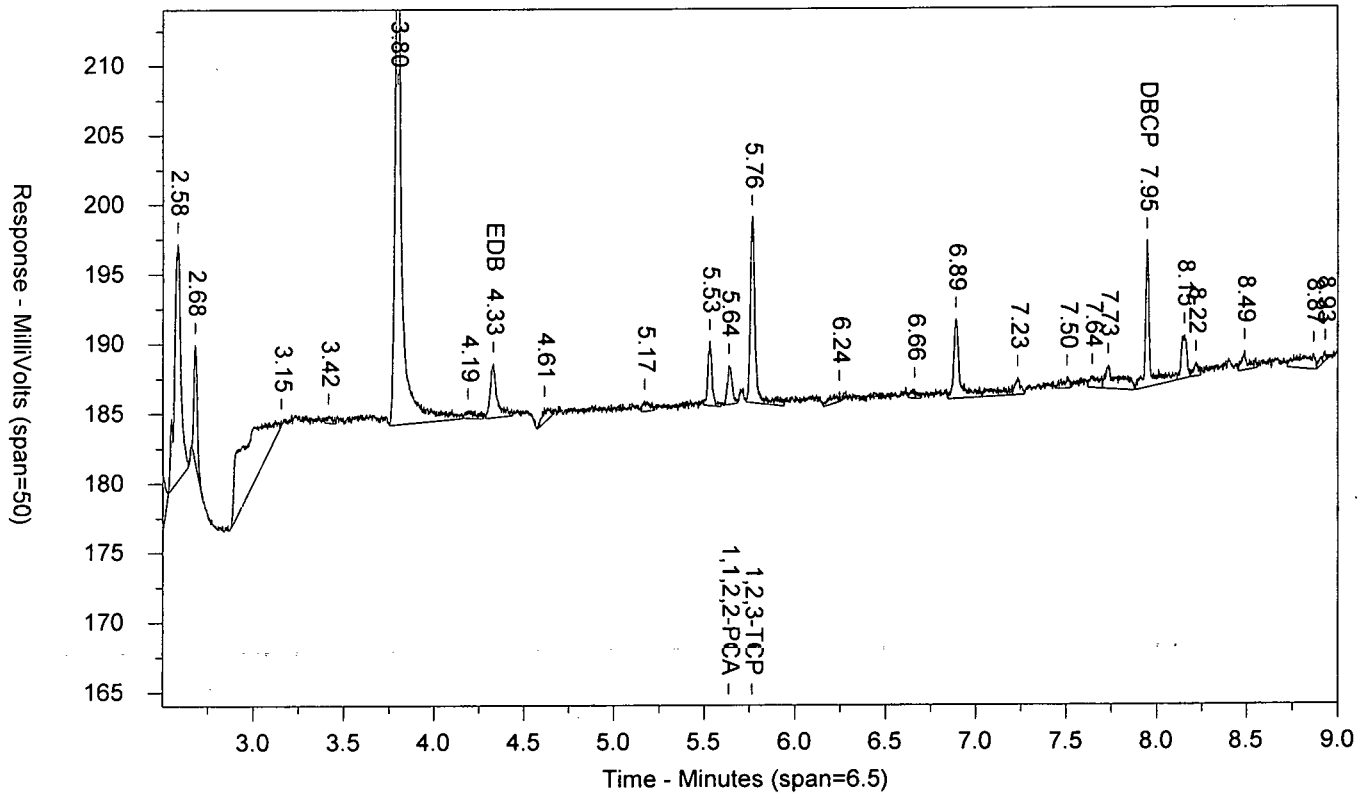

LANCASTER LABORATORIES

Sample Number: EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:40:59 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.067 | 13453 | .69 | EDB | 4.33 | 3898 | .686 | EDB |
| 4.511 | 7462 | .337 | 1,1,2,2-PCA | 5.637 | 2815 | .325 | 1,1,2,2-PCA |
| 4.578 | 20612 | 6.251 | 1,2,3-TCP | 5.764 | 13358 | 2.692 | 1,2,3-TCP |
| 6.895 | 25723 | .653 | DBCP | 7.946 | 10545 | .701 | DBCP |

Files:
Area File: 16EDBS17202001.0007.RAW
Area File: 16EDBS17202001B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:50:00 PM
File Reported On: 7/24/2017 at 10:43:42 AM

EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011

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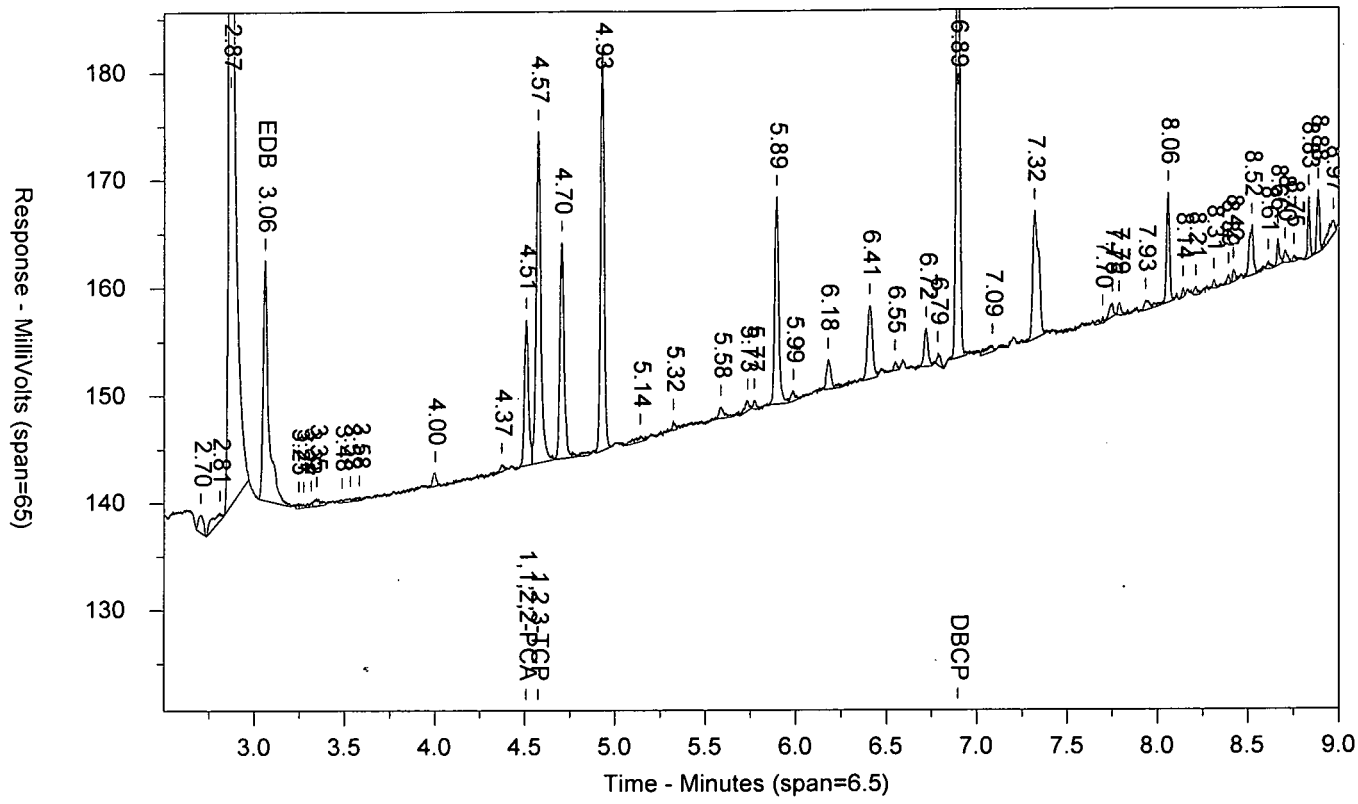


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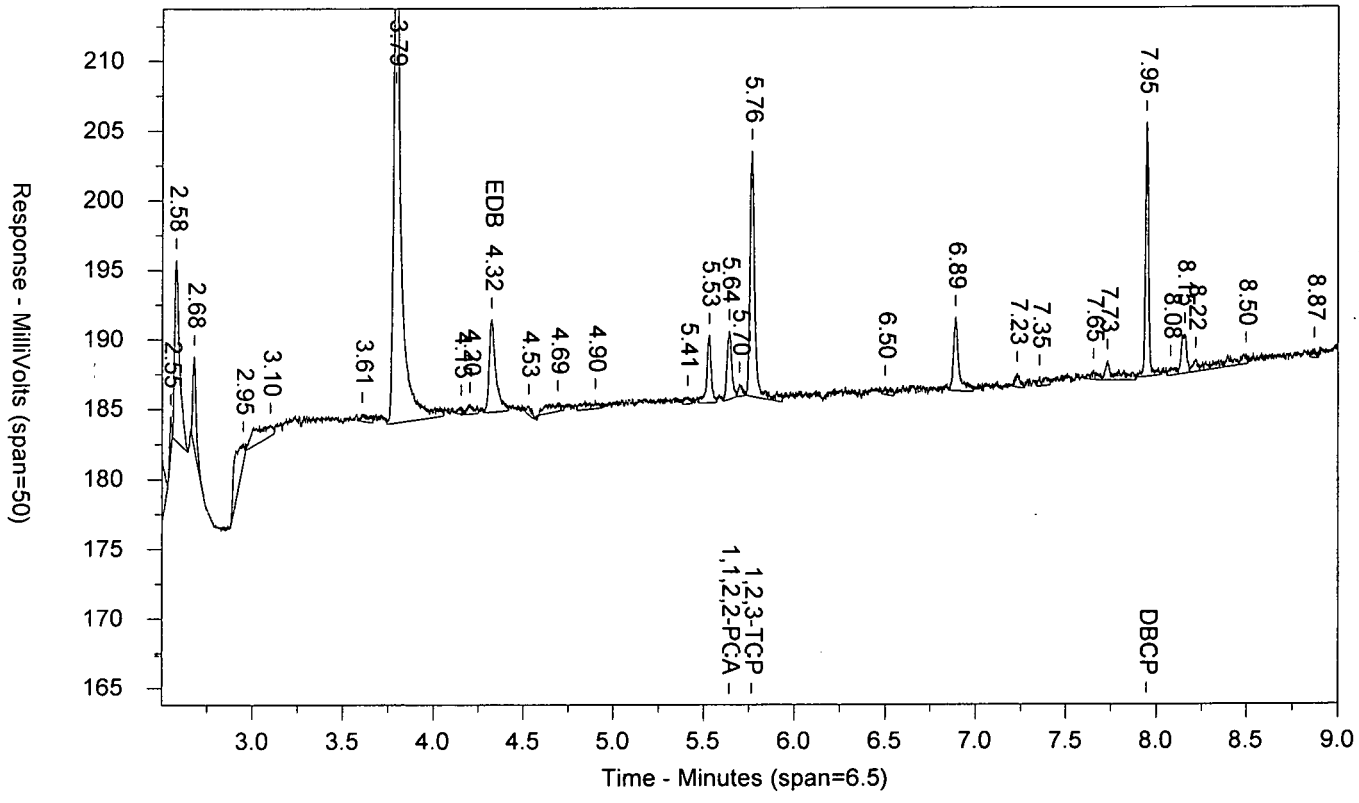

LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:56:33 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.06 | 22389 | 1.134 | EDB | 4.324 | 6702 | 1.179 | EDB |
| 4.508 | 13531 | .604 | 1,1,2,2-PCA | 5.64 | 4937 | .598 | 1,1,2,2-PCA |
| 4.574 | 30821 | 9.822 | 1,2,3-TCP | 5.763 | 17655 | 8.34 | 1,2,3-TCP |
| 6.895 | 49779 | 1.263 | DBCP | 7.946 | 18271 | 1.205 | DBCP |

Files:
Area File: 16EDBS17202001.0008.RAW
Area File: 16EDBS17202001B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:05:35 PM
File Reported On: 7/24/2017 at 10:43:58 AM

EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011

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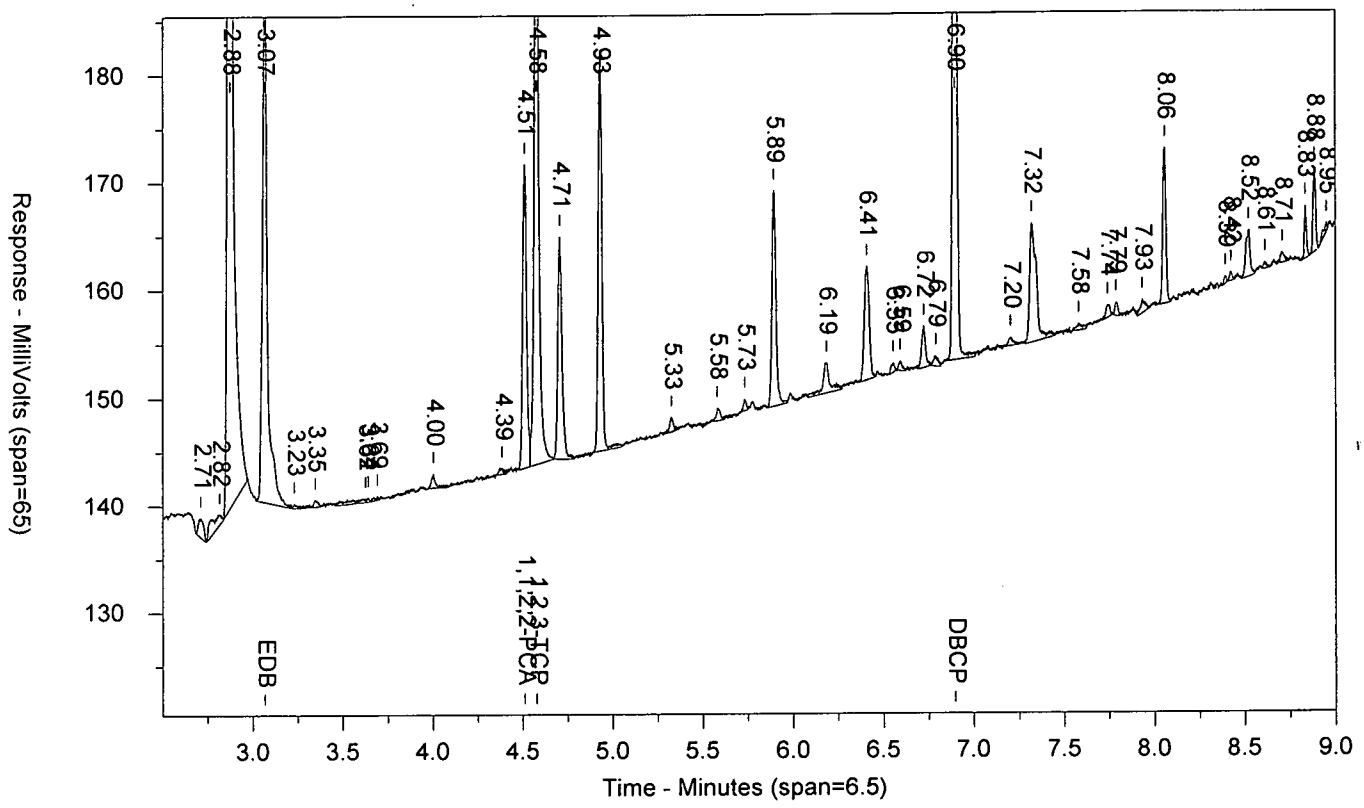


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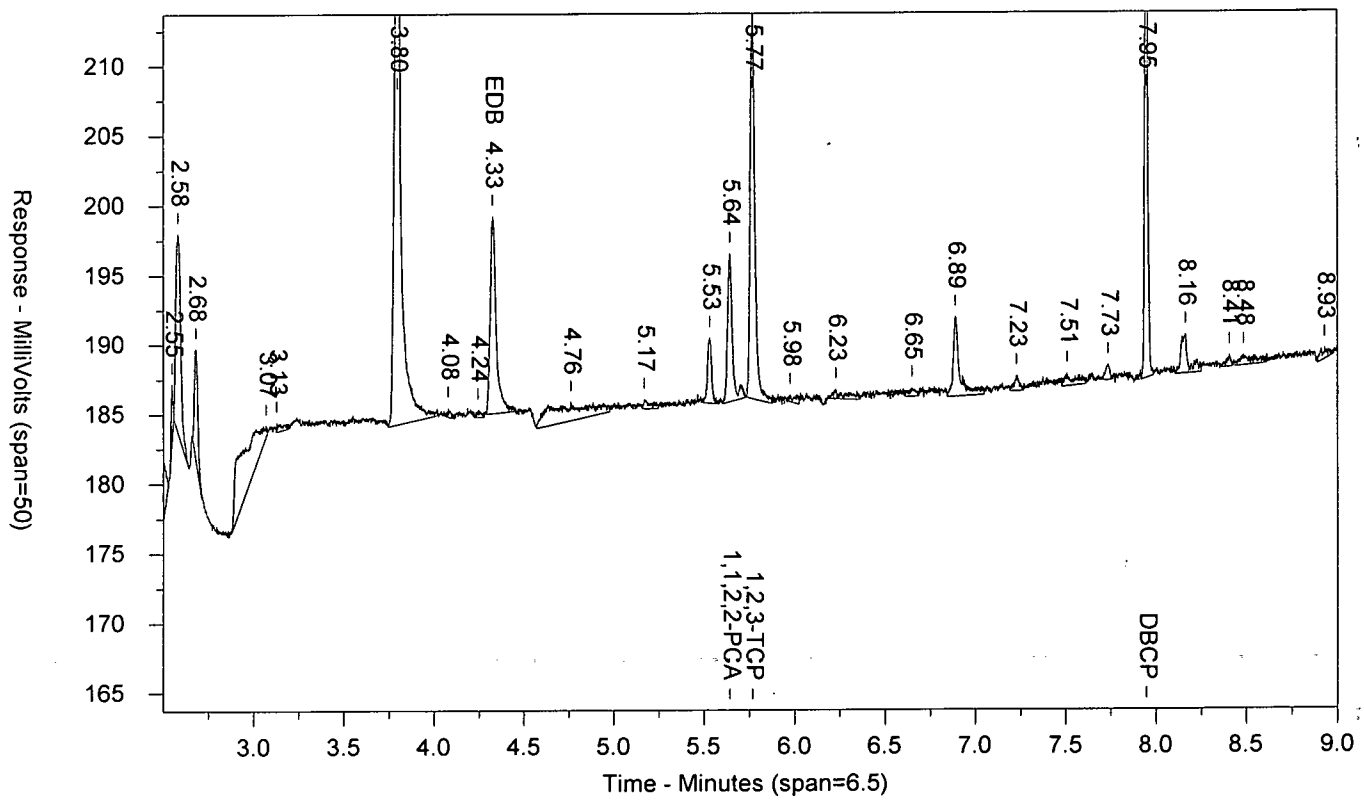


LANCASTER LABORATORIES

Sample Number: EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:12:13 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

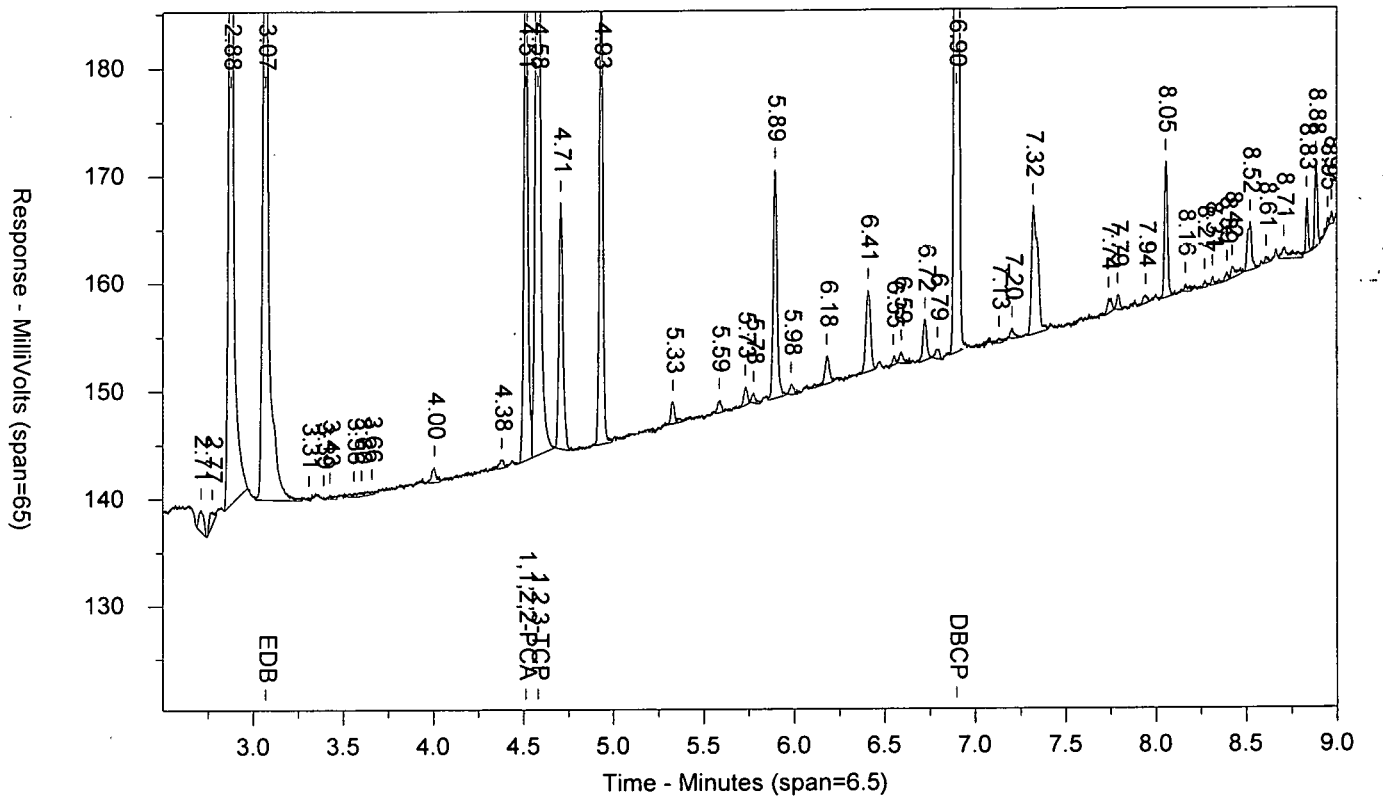
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 51364 | 2.628 | EDB | 4.327 | 14203 | 2.519 | EDB |
| 4.511 | 28210 | 1.267 | 1,1,2,2-PCA | 5.641 | 10658 | 1.354 | 1,1,2,2-PCA |
| 4.578 | 62952 | 22.383 | 1,2,3-TCP | 5.767 | 27830 | 20.965 | 1,2,3-TCP |
| 6.896 | 99853 | 2.548 | DBCP | 7.946 | 36899 | 2.475 | DBCP |

Files:
Area File: 16EDBS17202001.0009.RAW
Area File: 16EDBS17202001B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:21:14 PM
File Reported On: 7/24/2017 at 10:44:14 AM

EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.RAW

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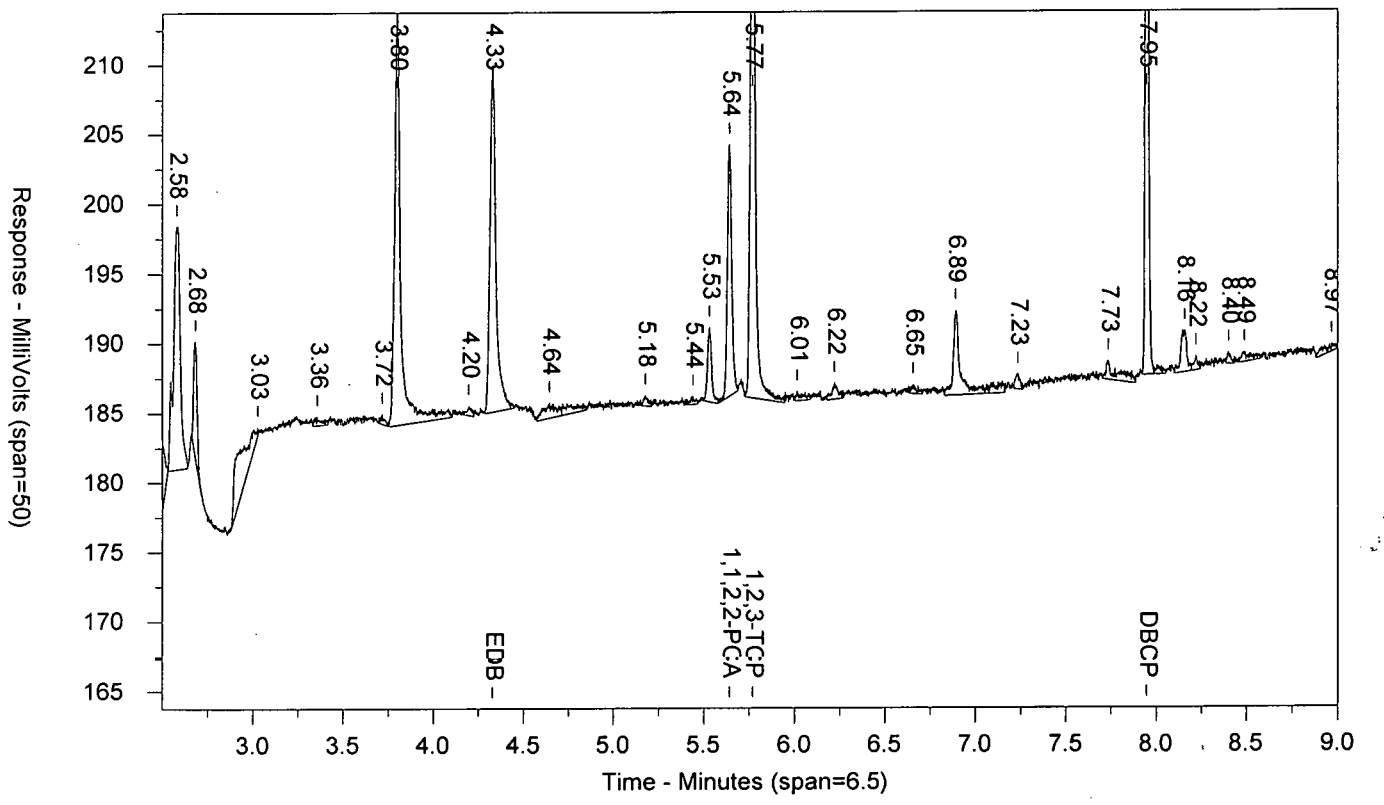


LANCASTER LABORATORIES

Sample Number: EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:27:52 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

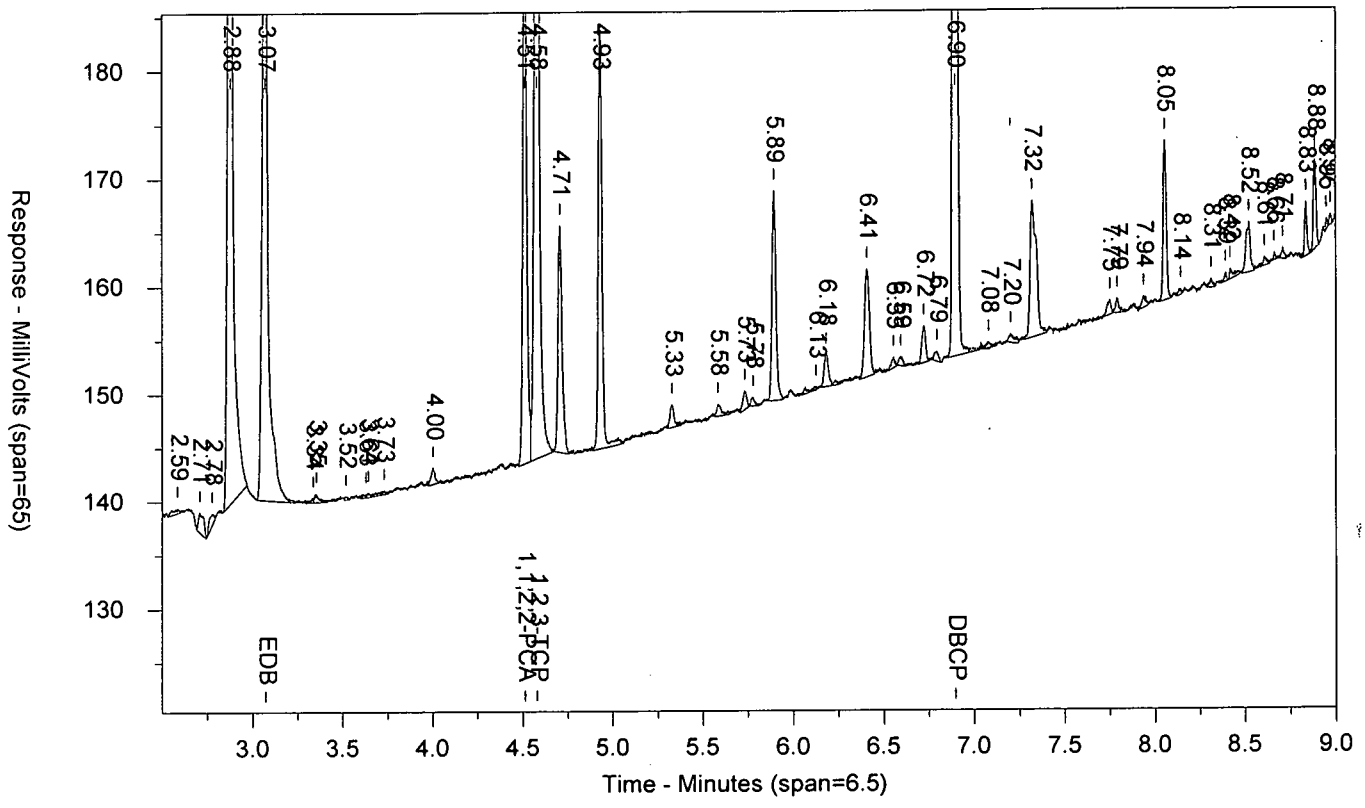
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 91868 | 4.604 | EDB | 4.329 | 24917 | 4.368 | EDB |
| 4.512 | 49780 | 2.2 | 1,1,2,2-PCA | 5.641 | 18049 | 2.296 | 1,1,2,2-PCA |
| 4.579 | 102059 | 37.347 | 1,2,3-TCP | 5.768 | 42823 | 38.187 | 1,2,3-TCP |
| 6.895 | 172607 | 4.369 | DBCP | 7.946 | 63141 | 4.208 | DBCP |

Files:
Area File: 16EDBS17202001.0010.RAW
Area File: 16EDBS17202001B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:36:53 PM
File Reported On: 7/24/2017 at 10:44:30 AM

EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.RAW

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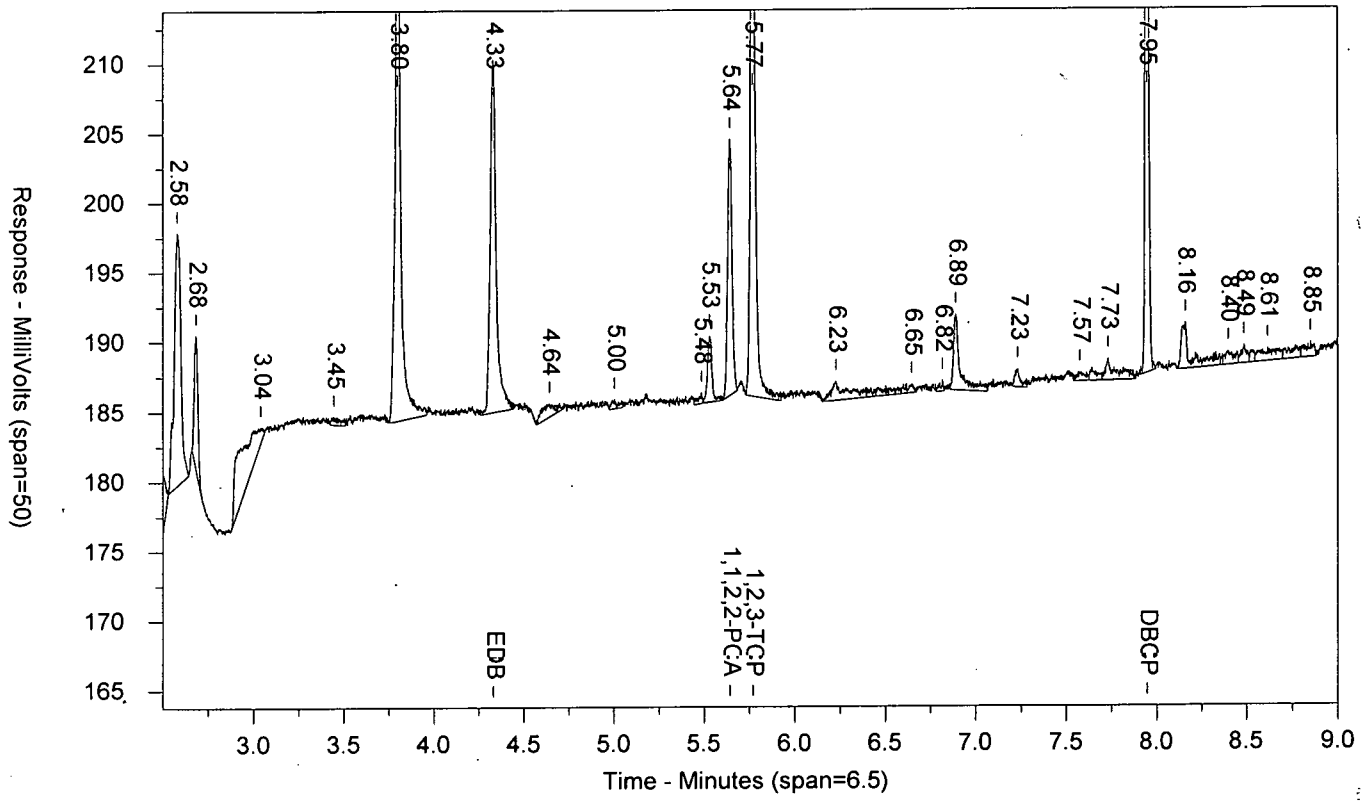


LANCASTER LABORATORIES

Sample Number: EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:43:27 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

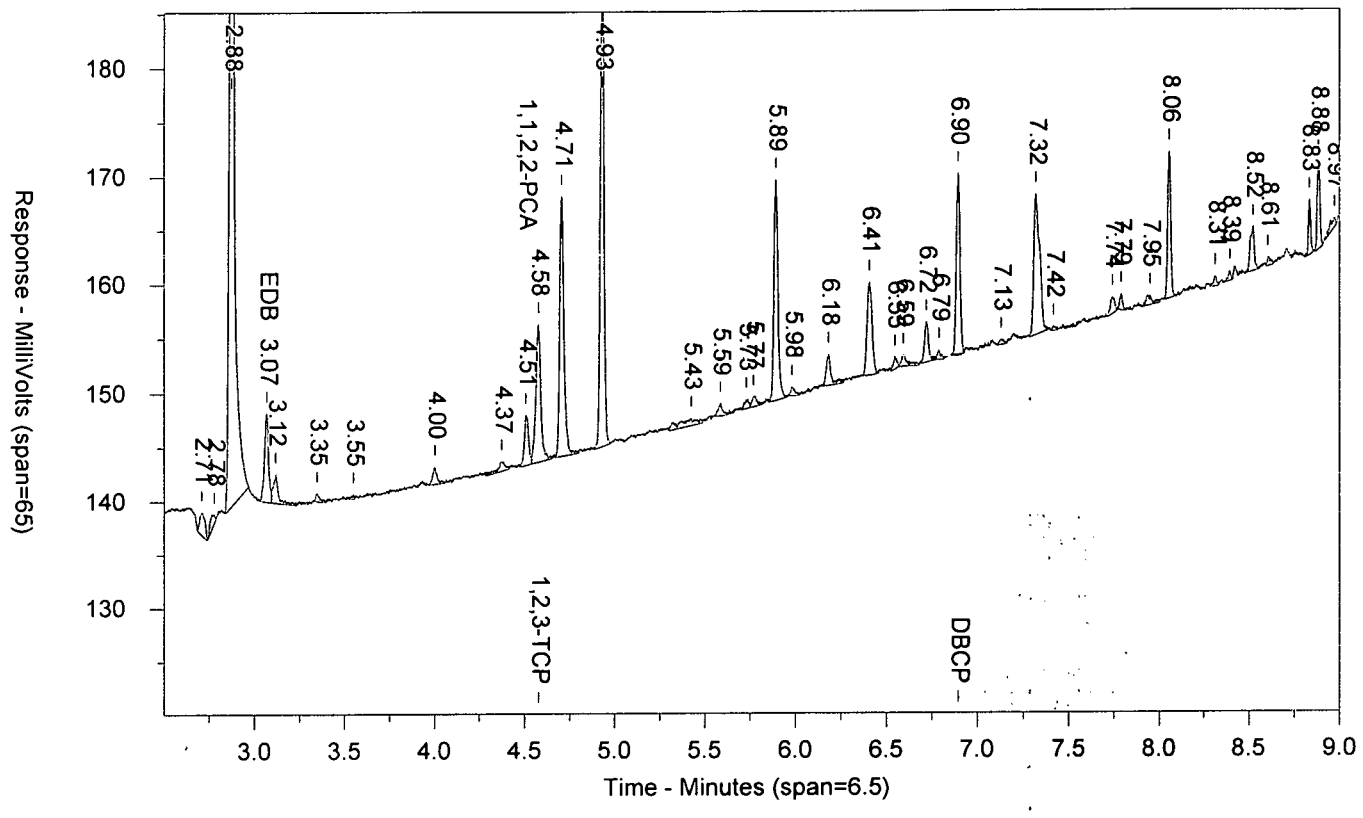
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 92950 | 4.561 | EDB | 4.331 | 25336 | 4.375 | EDB |
| 4.513 | 53020 | 2.296 | 1,1,2,2-PCA | 5.641 | 18435 | 2.295 | 1,1,2,2-PCA |
| 4.58 | 104273 | 36.659 | 1,2,3-TCP | 5.769 | 43781 | 37.288 | 1,2,3-TCP |
| 6.895 | 183008 | 4.592 | DBCP | 7.946 | 67645 | 4.471 | DBCP |

Files:
Area File: 16EDBS17202001.0011.RAW
Area File: 16EDBS17202001B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:52:27 PM
File Reported On: 7/24/2017 at 10:44:46 AM

MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0012.RAW

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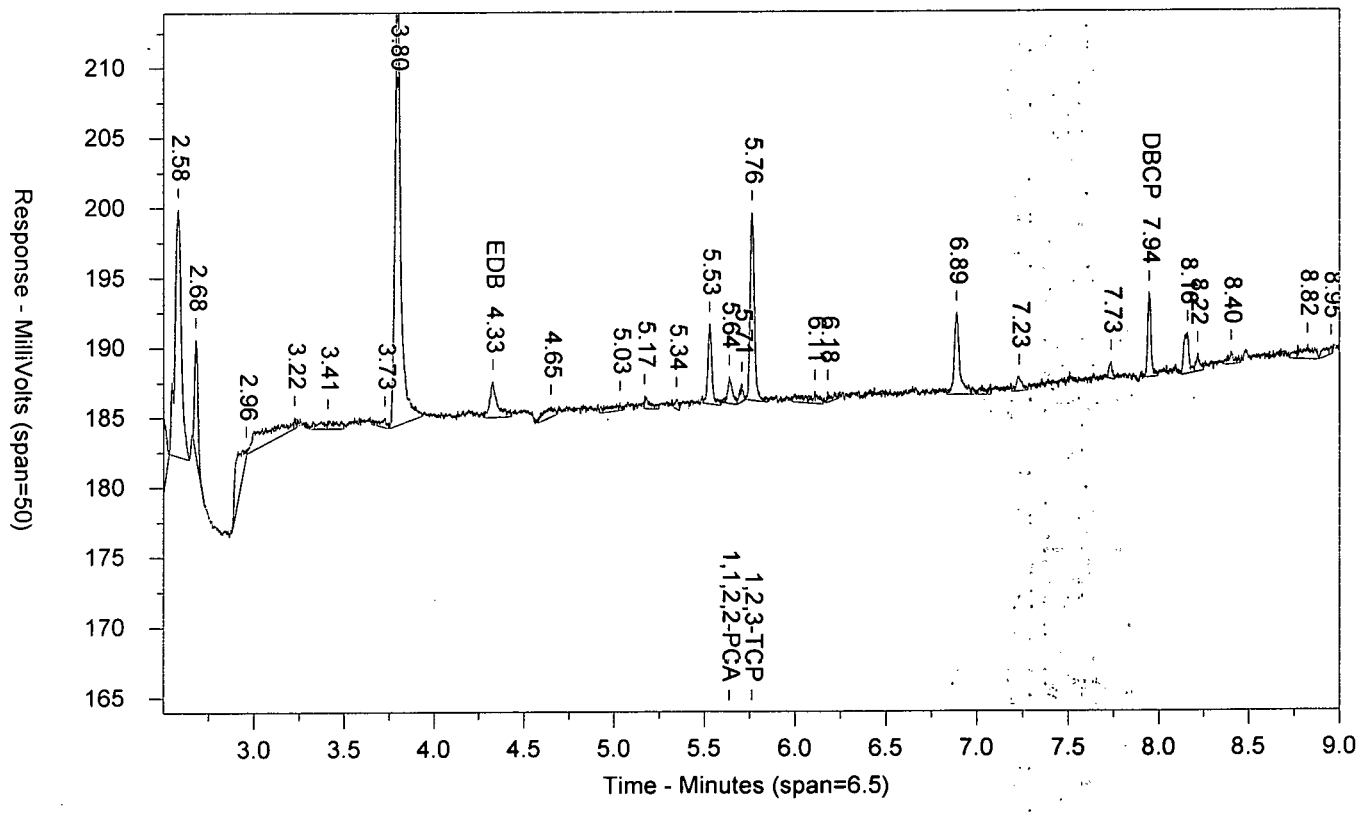


LANCASTER LABORATORIES

Sample Number: MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:59:04 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

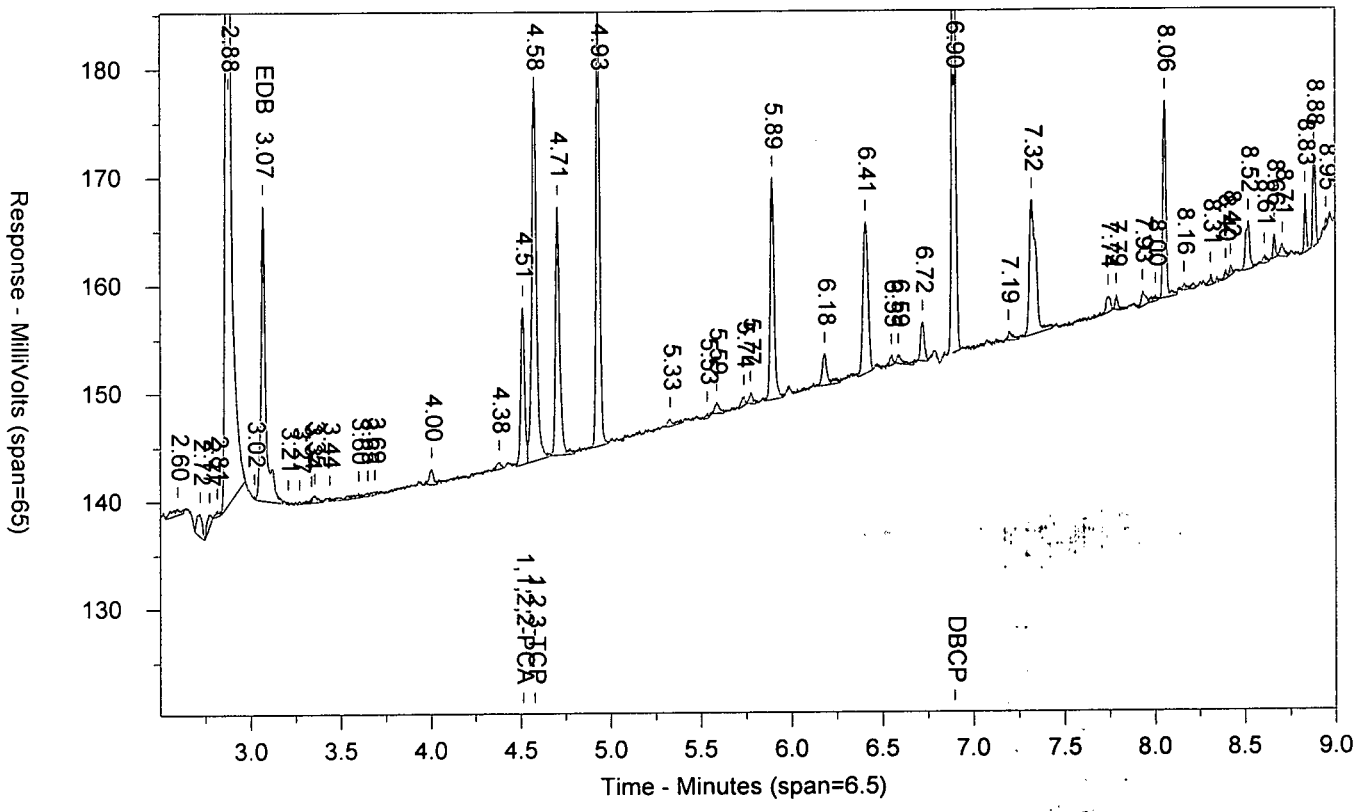
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 8227 | .399 | EDB | 4.328 | 2605 | .442 | EDB |
| 4.508 | 4705 | .201 | 1,1,2,2-PCA | 5.637 | 1947 | .207 | 1,1,2,2-PCA |
| 4.577 | 12707 | 2.8 | 1,2,3-TCP | 5.762 | 13463 | 4.124 | 1,2,3-TCP |
| 6.895 | 16774 | .413 | DBCP | 7.944 | 6091 | .394 | DBCP |

Files:
Area File: 16EDBS17202001.0012.RAW
Area File: 16EDBS17202001B.0012.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:08:05 PM
File Reported On: 7/24/2017 at 10:53:41 AM

EDB_31724DS AAEDB_3AA CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0013.RAW

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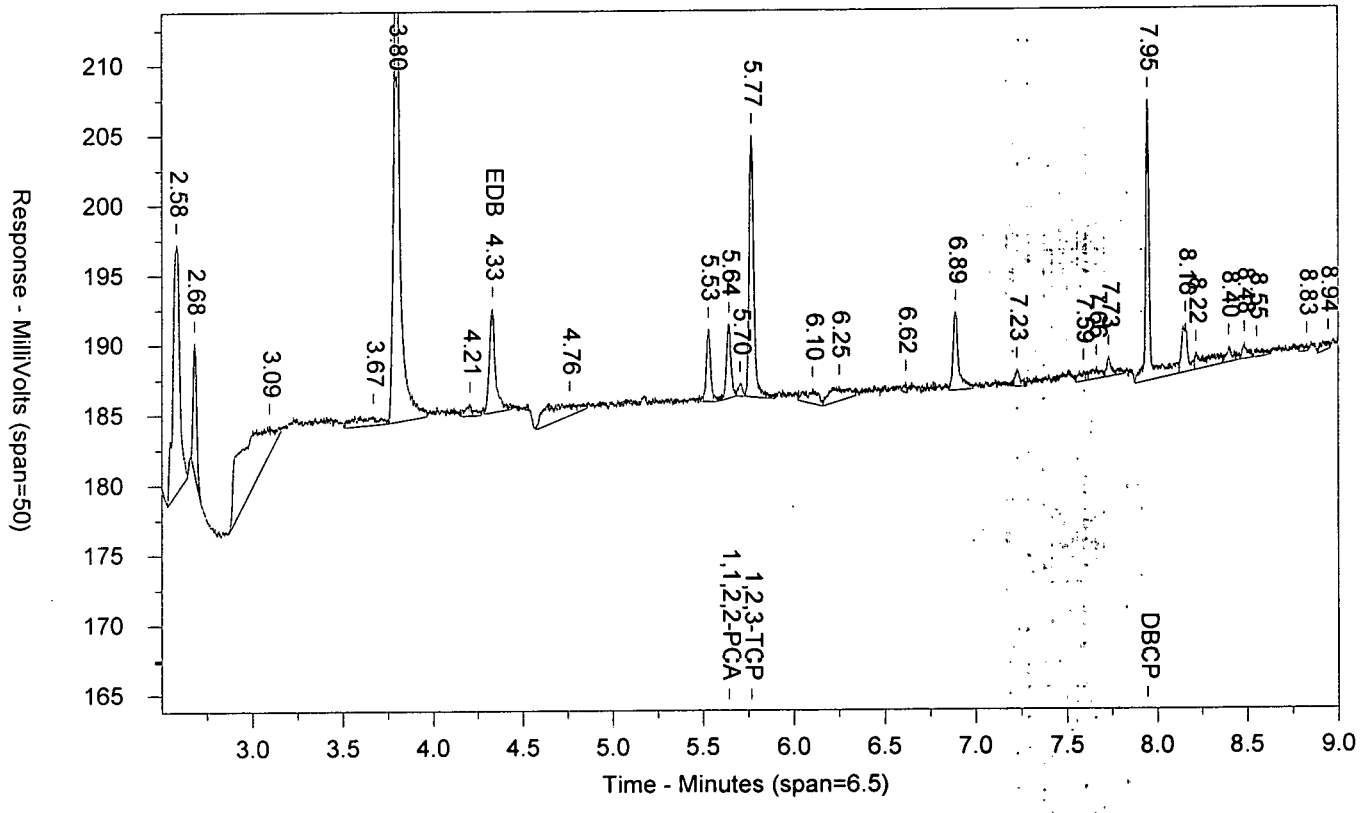


LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 5:14:46 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

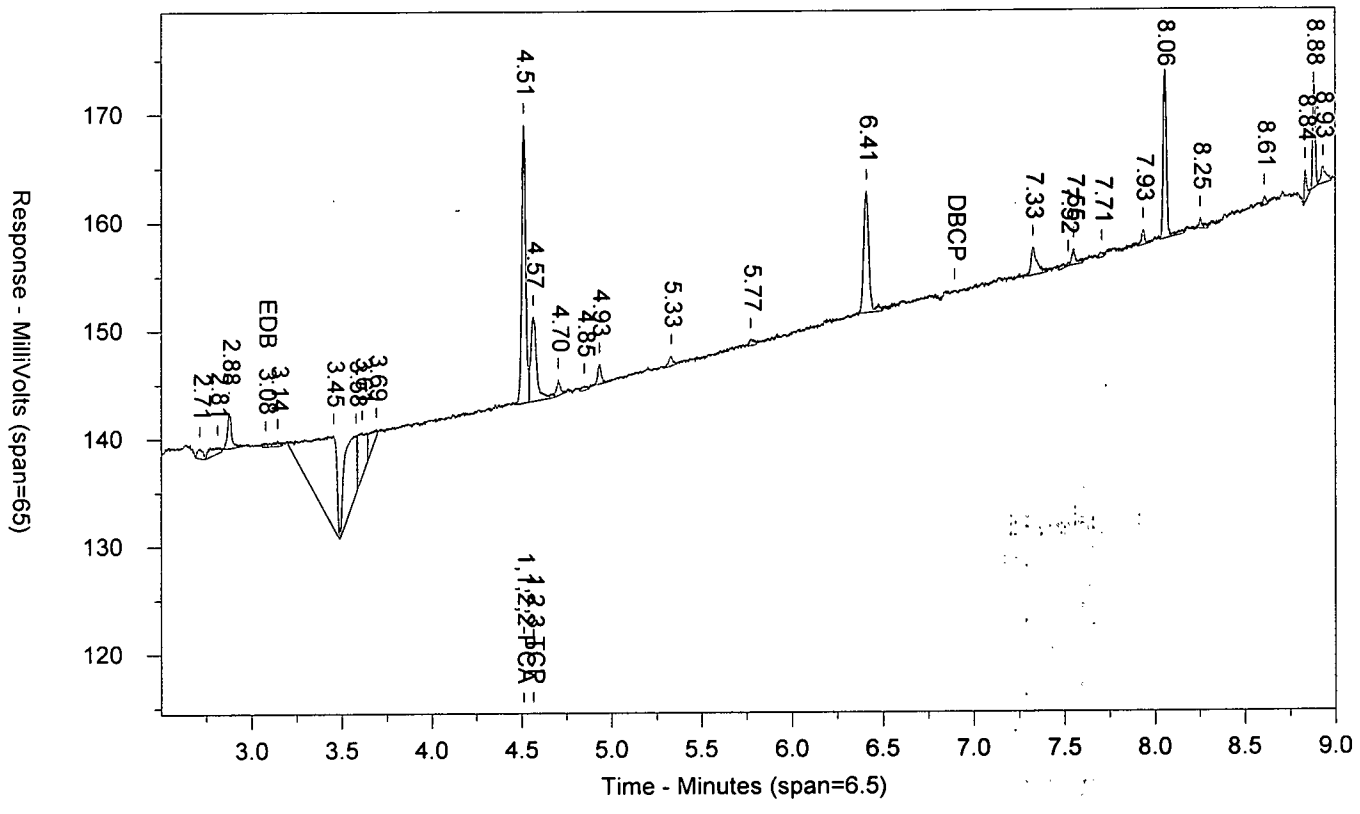
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 27334 | 1.326 | EDB | 4.332 | 7493 | 1.272 | EDB |
| 4.513 | 14601 | .622 | 1,1,2,2-PCA | 5.641 | 5326 | .616 | 1,1,2,2-PCA |
| 4.578 | 34941 | 10.322 | 1,2,3-TCP | 5.765 | 18757 | 9.484 | 1,2,3-TCP |
| 6.896 | 53176 | 1.309 | DBCP | 7.946 | 20164 | 1.305 | DBCP |

Files:
Area File: 16EDBS17202001.0013.RAW
Area File: 16EDBS17202001B.0013.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:23:47 PM
File Reported On: 7/24/2017 at 10:53:52 AM

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0014.RAW

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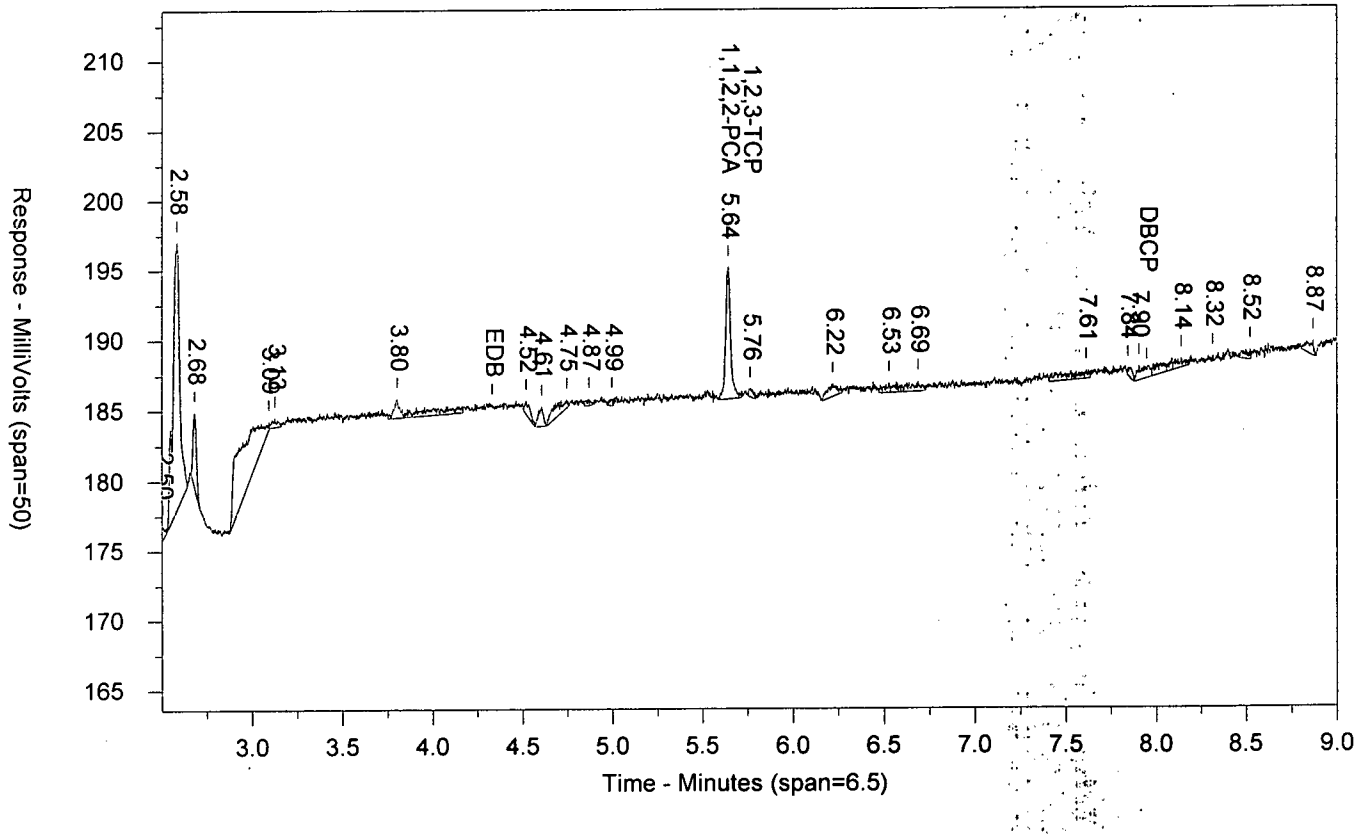


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 5:30:25 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

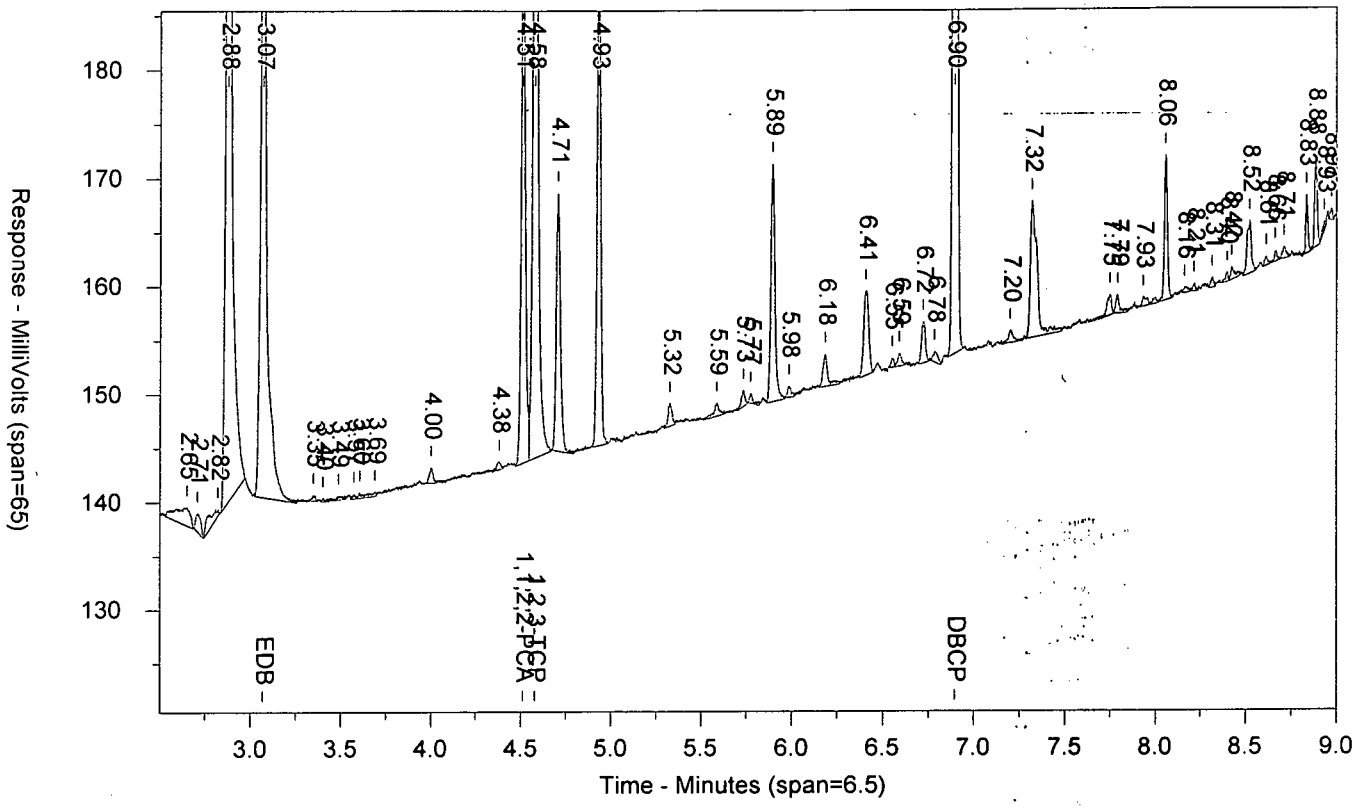
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.077 | 465 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25794 | .063 | 1,1,2,2-PCA | 5.642 | 9419 | .063 | 1,1,2,2-PCA |
| 4.565 | 7915 | .067 | 1,2,3-TCP | 5.764 | 590 | -.509 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0014.RAW
Area File: 16EDBS17202001B.0014.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:39:27 PM
File Reported On: 7/24/2017 at 10:54:01 AM

EDB_51724DS LSEDB_5LS CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0025.RAW

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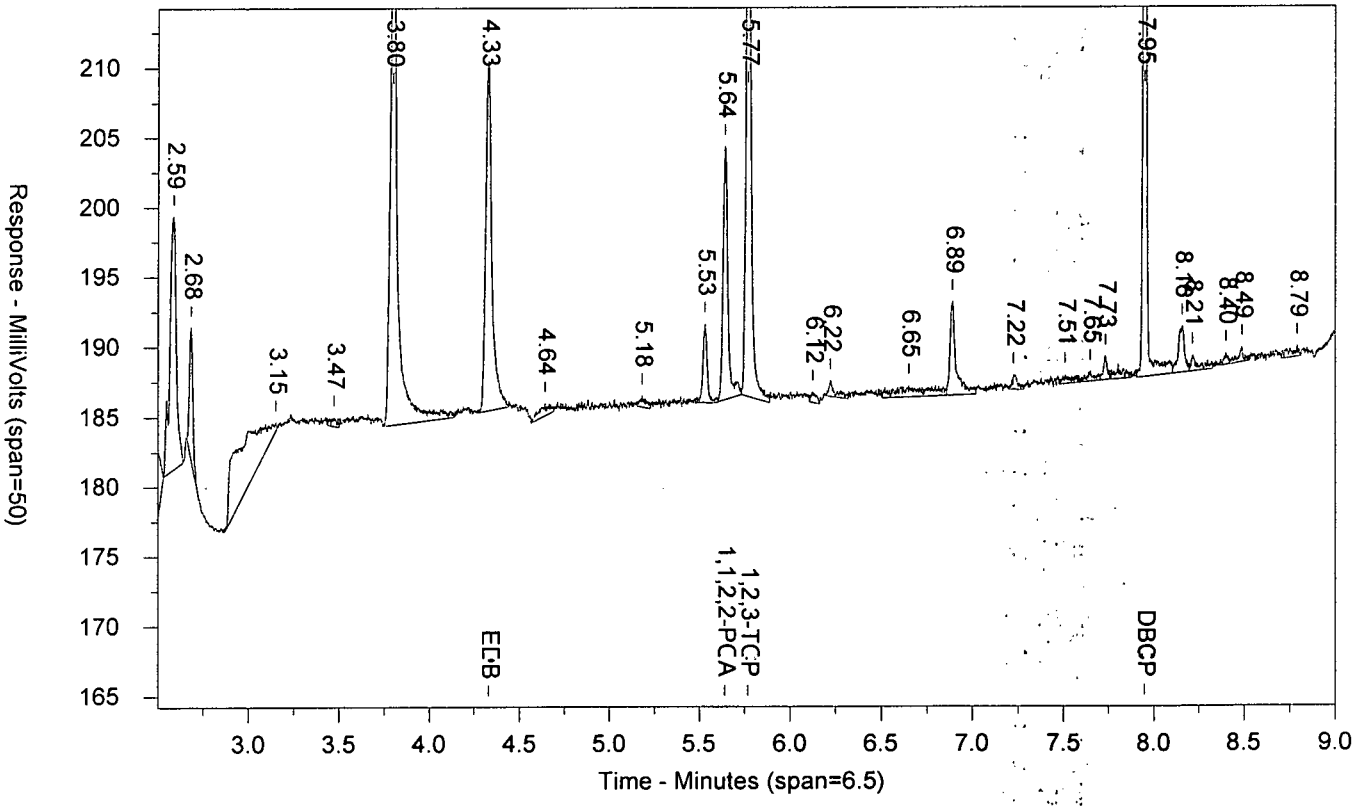


LANCASTER LABORATORIES

Sample Number: EDB_51724DS LSEDB_5LS CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 8:22:17 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

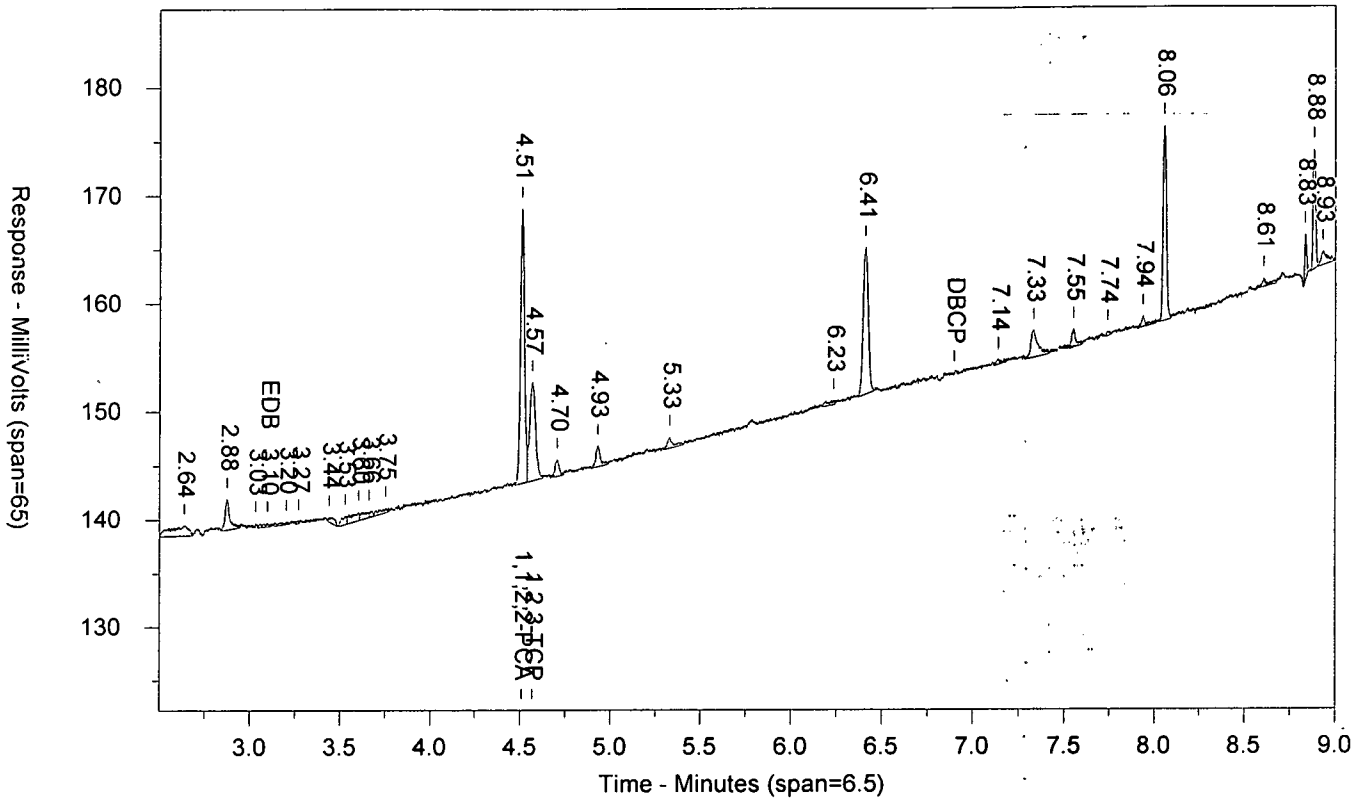
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 91403 | 4.434 | EDB | 4.329 | 25137 | 4.266 | EDB |
| 4.511 | 48710 | 2.076 | 1,1,2,2-PCA | 5.64 | 18183 | 2.171 | 1,1,2,2-PCA |
| 4.578 | 99451 | 32.145 | 1,2,3-TCP | 5.767 | 43011 | 34.043 | 1,2,3-TCP |
| 6.896 | 177937 | 4.379 | DBCP | 7.946 | 66694 | 4.317 | DBCP |

Files:
Area File: 16EDBS17202001.0025.RAW
Area File: 16EDBS17202001B.0025.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:31:18 PM
File Reported On: 7/24/2017 at 10:56:08 AM

EIBKX1724C SCPIBLKSC PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0026.RAW

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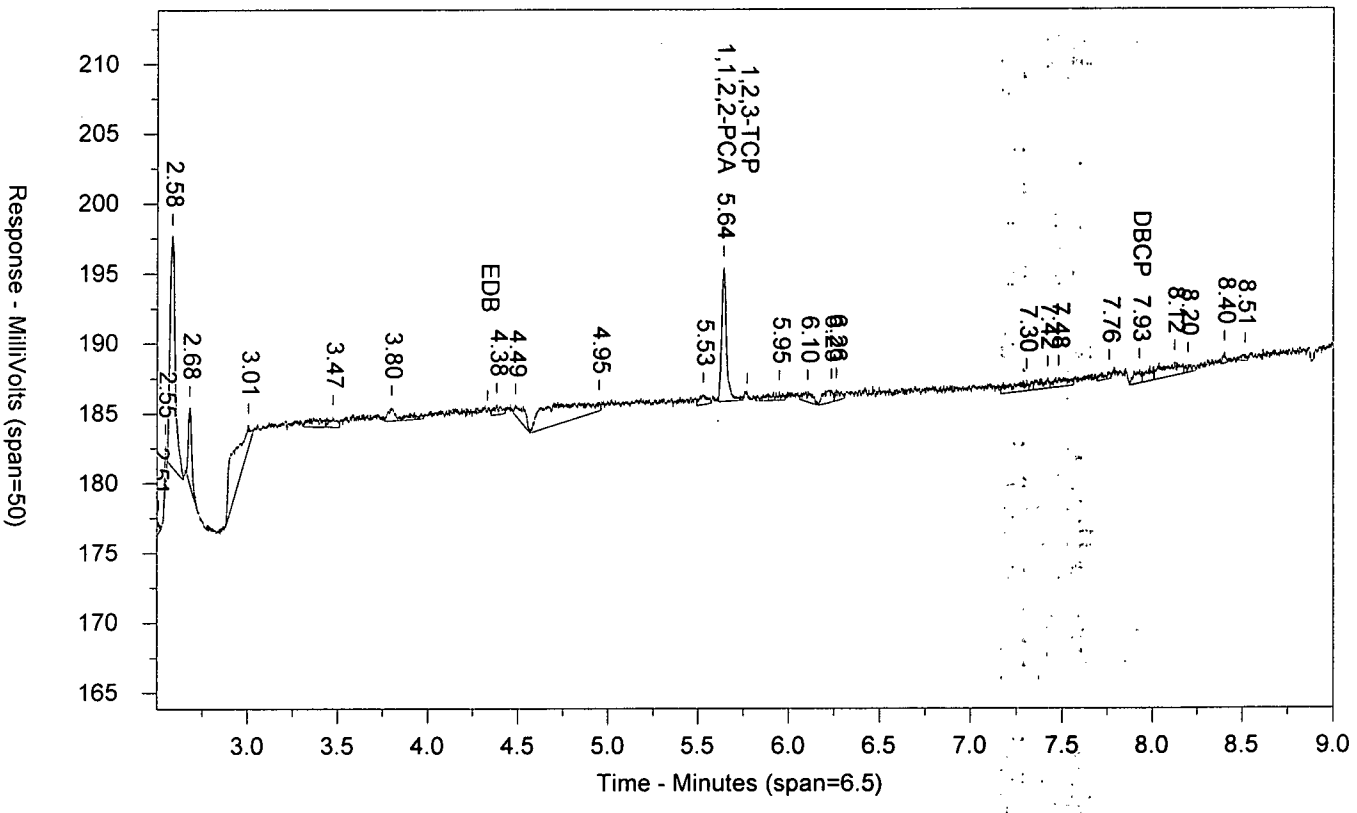


LANCASTER LABORATORIES

Sample Number: EIBKX1724C SCPIBLKSC PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 8:37:50 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

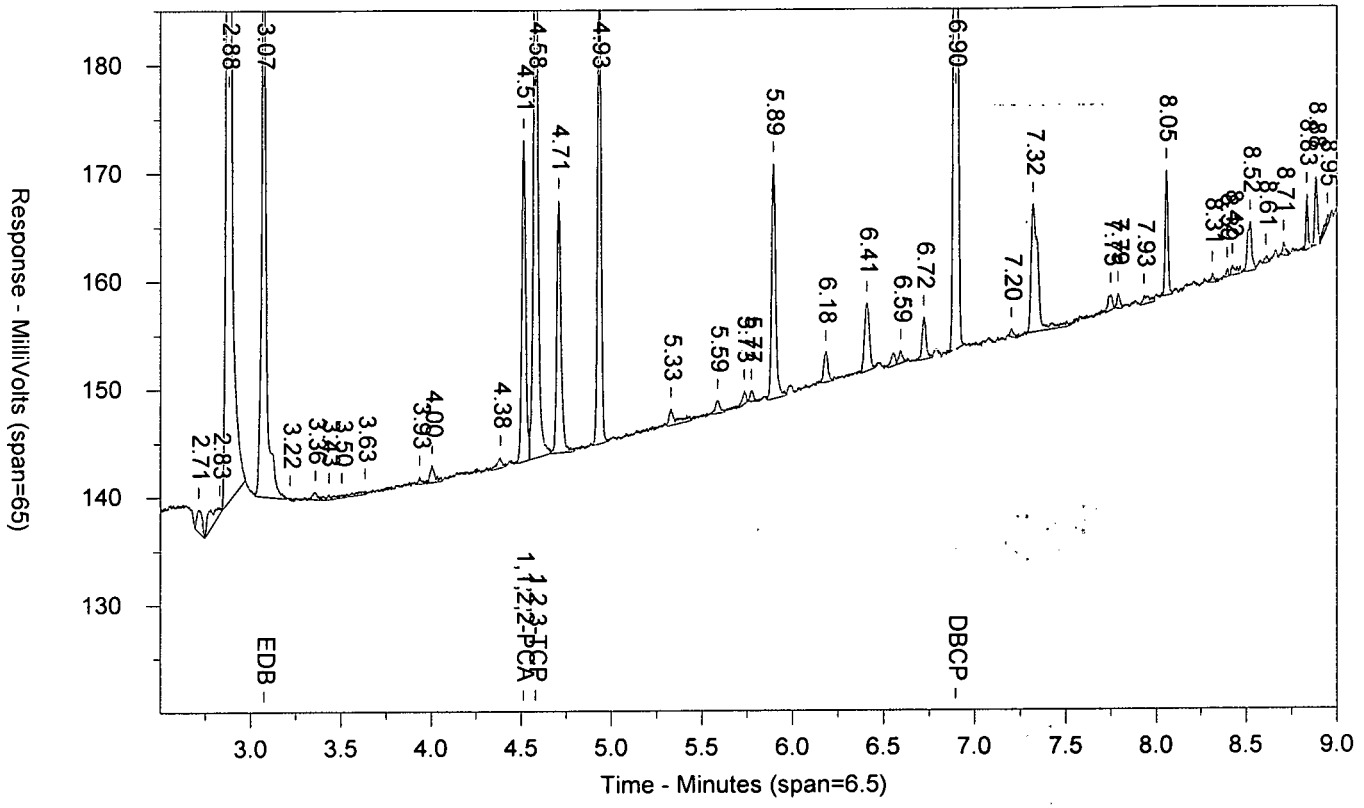
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.098 | 383 | .001 | EDB | | 0 | | EDB |
| 4.51 | 25471 | .062 | 1,1,2,2-PCA | 5.64 | 9566 | .065 | 1,1,2,2-PCA |
| 4.568 | 9137 | .091 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |
| | 0 | | DBCP | 7.927 | 949 | .004 | DBCP |

Files:
Area File: 16EDBS17202001.0026.RAW
Area File: 16EDBS17202001B.0026.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:46:51 PM
File Reported On: 7/24/2017 at 10:56:18 AM

EDB_41724DS QKEDB_4QK CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0037.RAW

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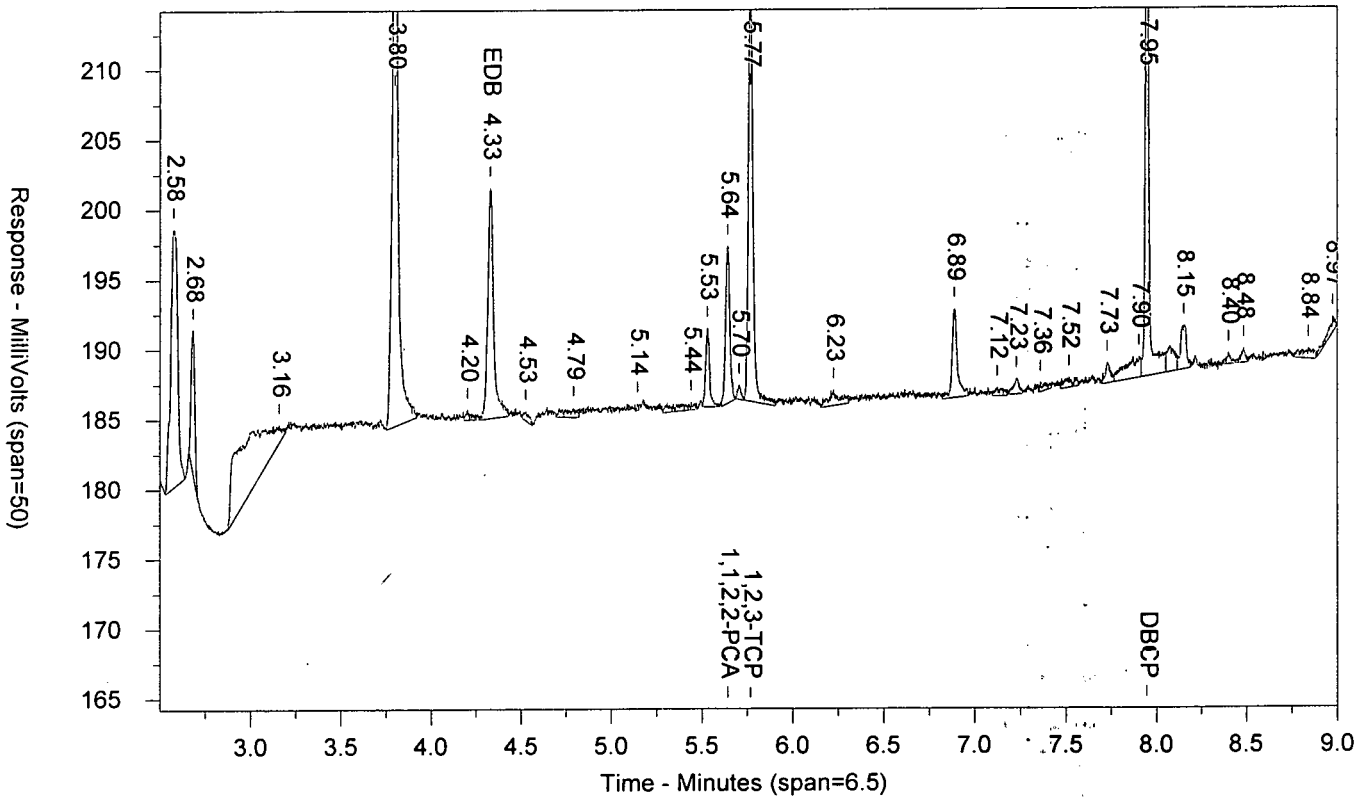


LANCASTER LABORATORIES

Sample Number: EDB_41724DS QKEDB_4QK CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 11:29:26 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

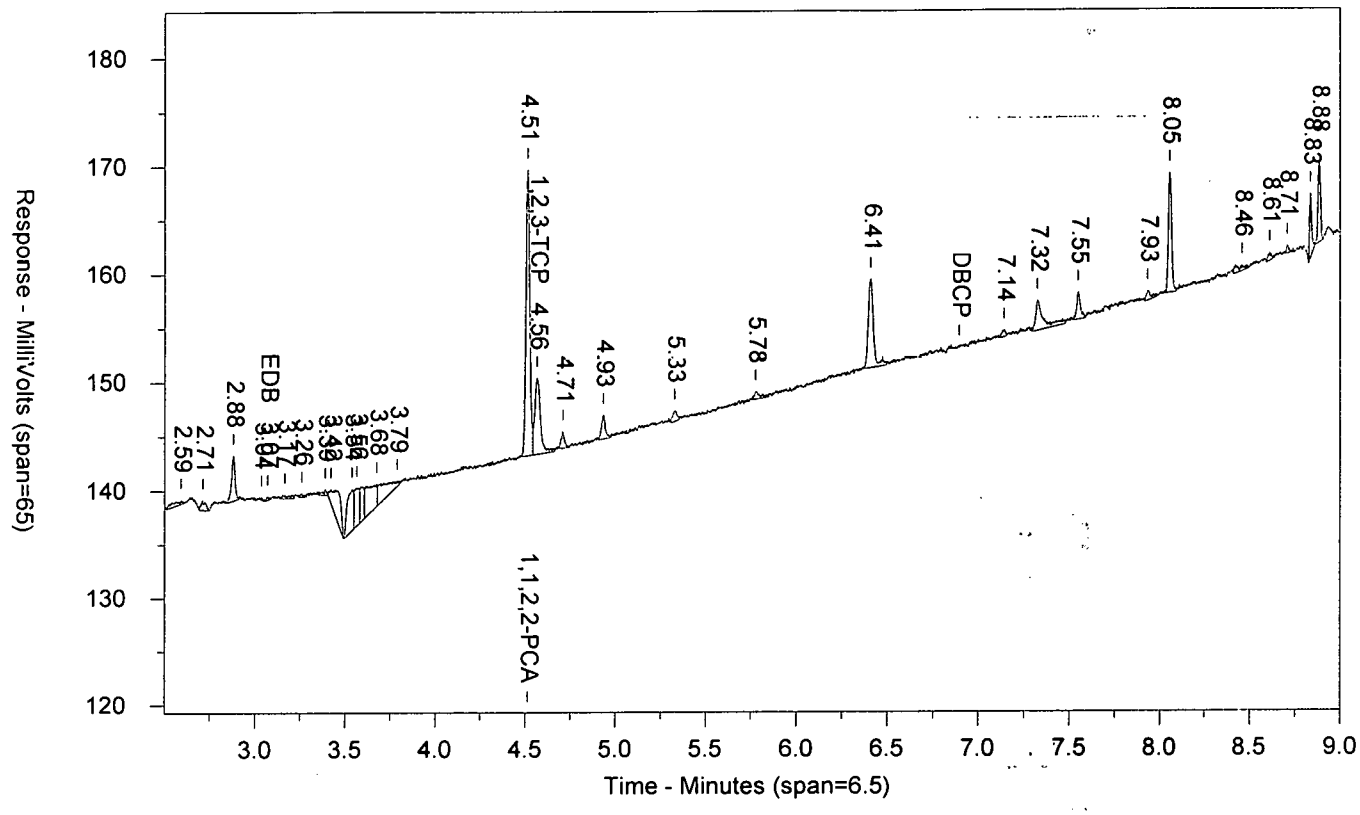
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.073 | 58501 | 2.838 | EDB | 4.33 | 16488 | 2.798 | EDB |
| 4.513 | 29839 | 1.272 | 1,1,2,2-PCA | 5.642 | 11232 | 1.33 | 1,1,2,2-PCA |
| 4.58 | 63220 | 19.888 | 1,2,3-TCP | 5.768 | 29261 | 20.121 | 1,2,3-TCP |
| 6.896 | 109308 | 2.69 | DBCP | 7.946 | 42789 | 2.77 | DBCP |

Files:
Area File: 16EDBS17202001.0037.RAW
Area File: 16EDBS17202001B.0037.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 11:38:27 PM
File Reported On: 7/24/2017 at 10:58:29 AM

EIBKX1724C SDPIBLKSD PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0038.RAW

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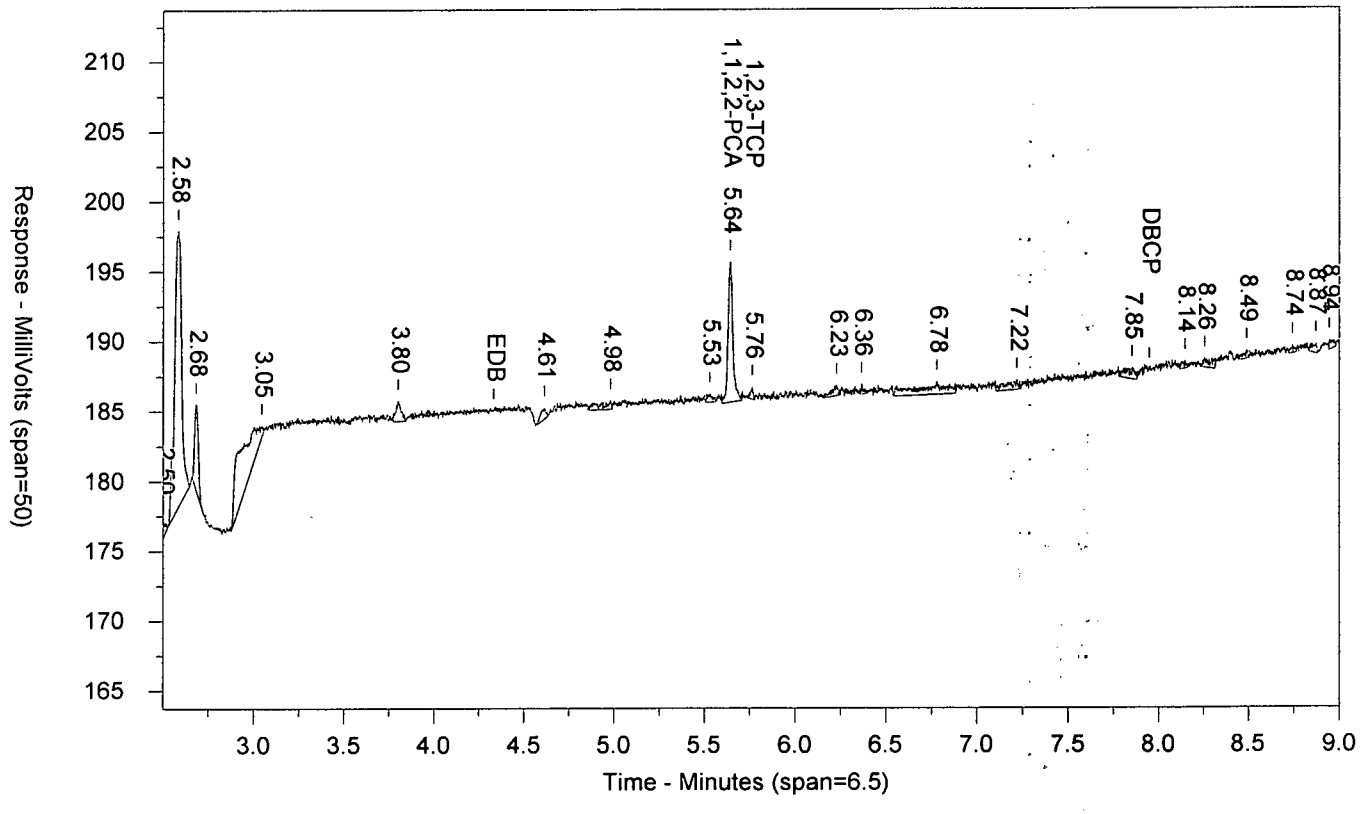


LANCASTER LABORATORIES

Sample Number: EIBKX1724C SDPIBLKSD PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 11:44:59 PM Sample Weight: .35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

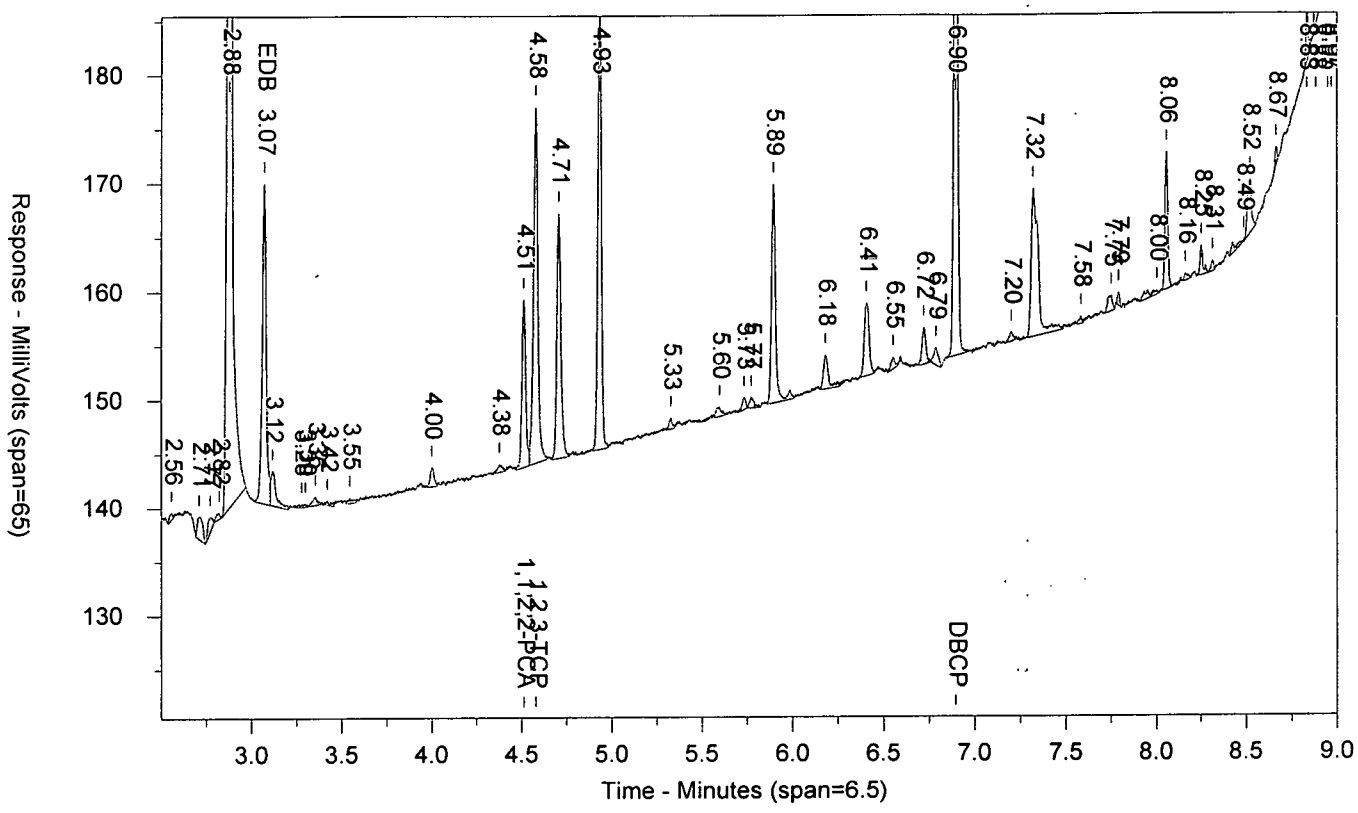
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 360 | .001 | EDB | | 0 | | EDB |
| 4.513 | 26524 | .065 | 1,1,2,2-PCA | 5.642 | 10066 | .068 | 1,1,2,2-PCA |
| 4.564 | 7094 | .051 | 1,2,3-TCP | 5.763 | 937 | -.489 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0038.RAW
Area File: 16EDBS17202001B.0038.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 11:54:02 PM
File Reported On: 7/24/2017 at 10:58:39 AM

EDB_31724DS PBEDB_3PB CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0049.RAW

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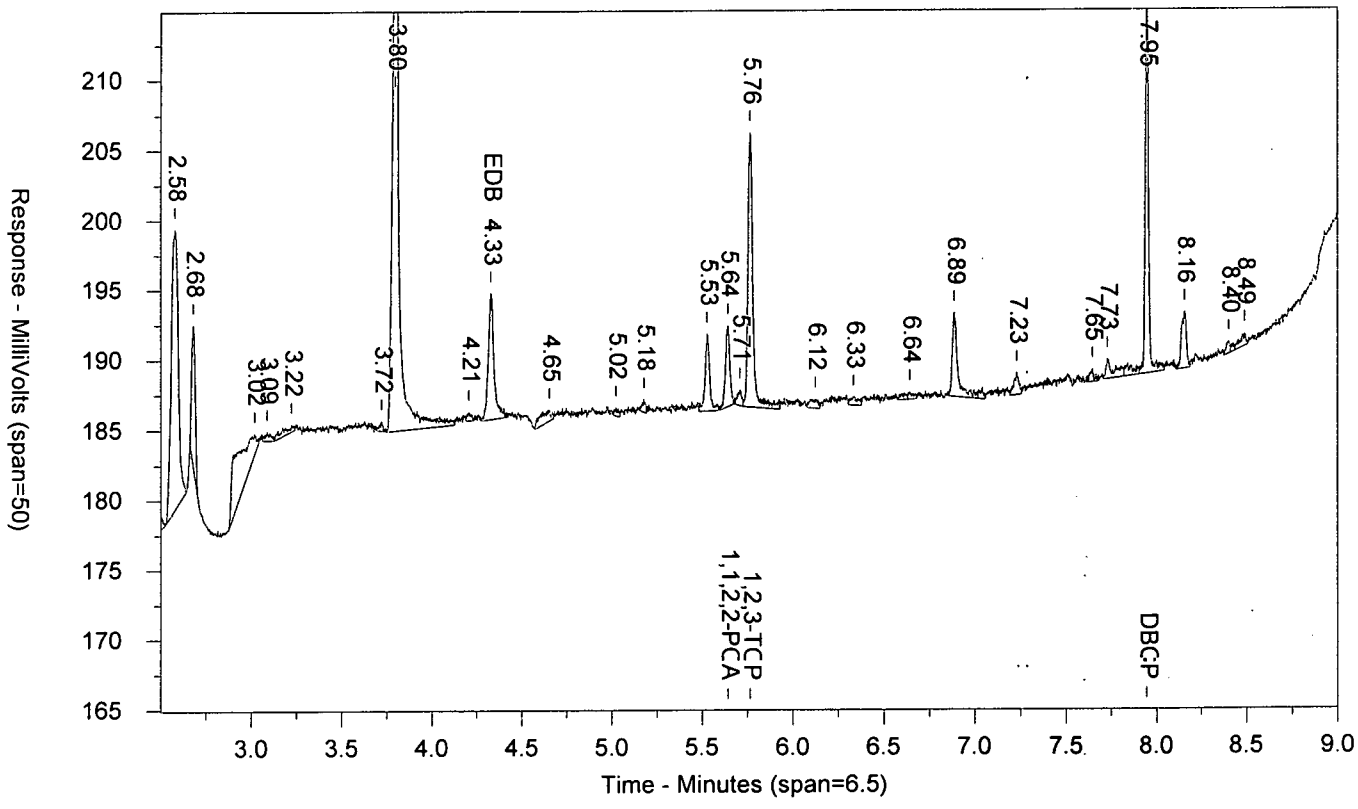


LANCASTER LABORATORIES

Sample Number: EDB_31724DS PBEDB_3PB CCAL 1720199999 SW-846 8011
Injected On: 7/22/2017 2:36:41 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

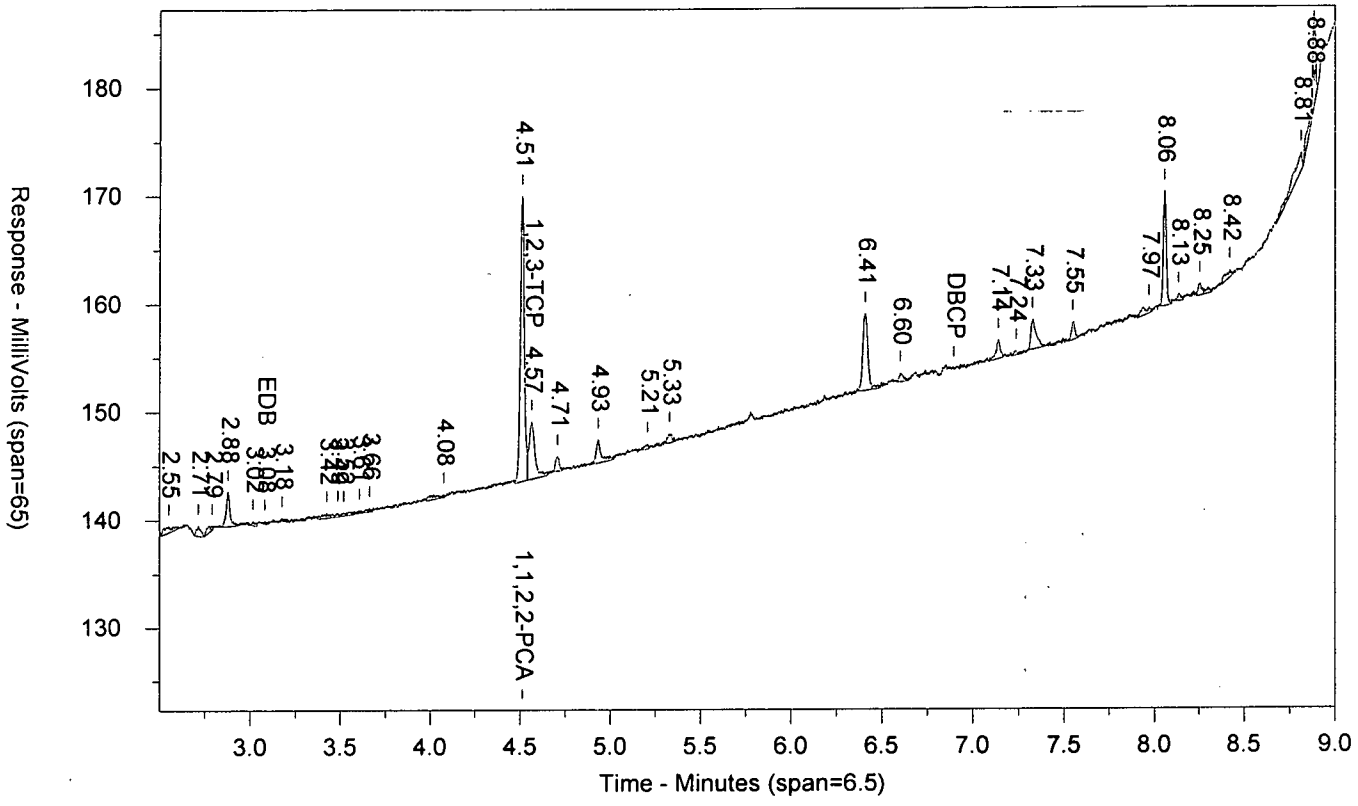
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 29622 | 1.437 | EDB | 4.328 | 9023 | 1.531 | EDB |
| 4.514 | 15581 | .664 | 1,1,2,2-PCA | 5.642 | 5796 | .673 | 1,1,2,2-PCA |
| 4.58 | 32980 | 9.658 | 1,2,3-TCP | 5.764 | 19646 | 10.384 | 1,2,3-TCP |
| 6.896 | 66898 | 1.646 | DBCP | 7.945 | 27247 | 1.764 | DBCP |

Files:
Area File: 16EDBS17202001.0049.RAW
Area File: 16EDBS17202001B.0049.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 2:45:42 AM
File Reported On: 7/24/2017 at 11:00:36 AM

EIBKX1724C SEPIBLKSE PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0050.RAW

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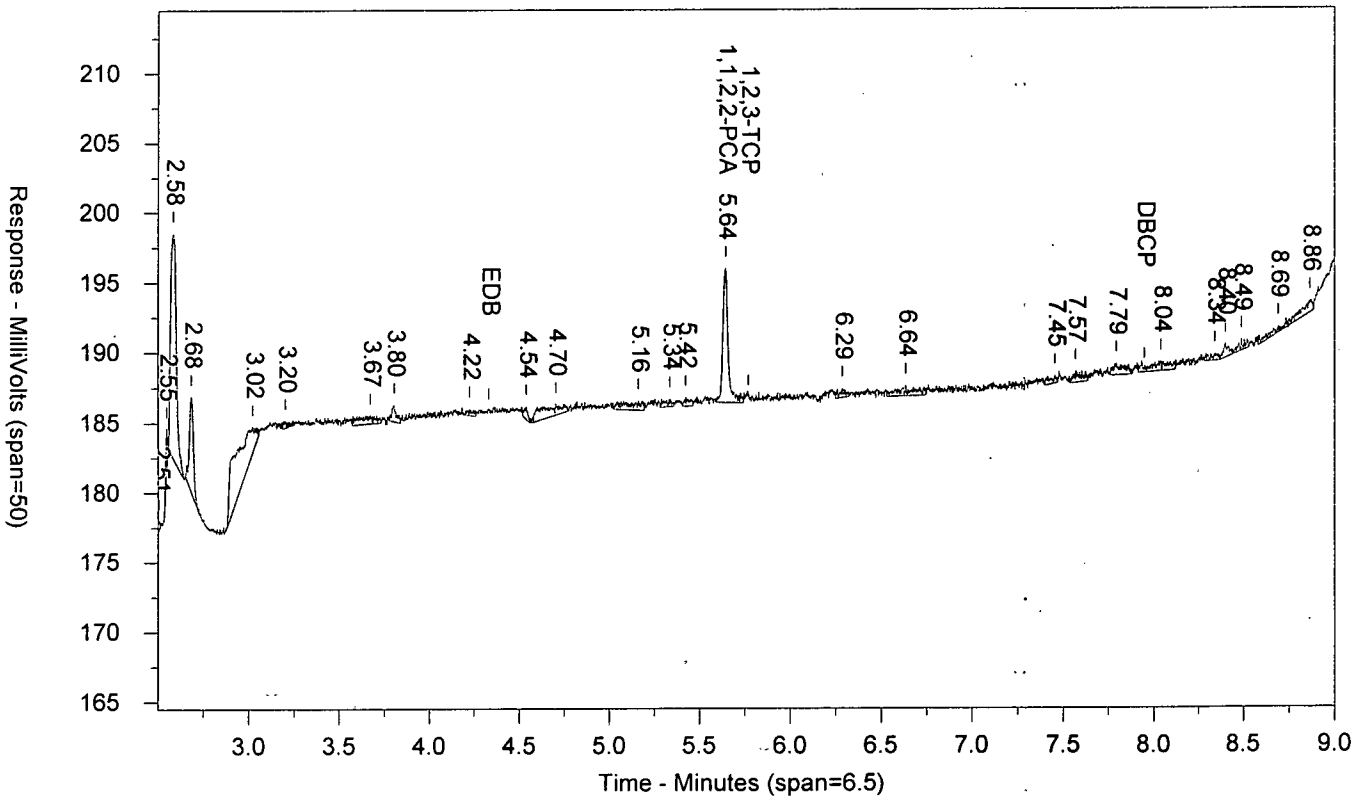

LANCASTER LABORATORIES

Sample Number: EIBKX1724C SEPIBLKSE PIBLK1720199999 SW-846 8011
Injected On: 7/22/2017 2:52:14 AM Sample Weight: .35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.082 | 311 | .001 | EDB | | 0 | | EDB |
| 4.513 | 26464 | .064 | 1,1,2,2-PCA | 5.642 | 9592 | .065 | 1,1,2,2-PCA |
| 4.565 | 5344 | .018 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0050.RAW
Area File: 16EDBS17202001B.0050.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/22/2017 3:01:15 AM
File Reported On: 7/24/2017 at 11:00:58 AM

# Raw QC Data

# EDB/DBCP

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# Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK25201 BLK Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 17:46:04 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0015.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.072447

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 17:46:04 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0015.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.071731

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.09 | 3.10 | 404 | 0.00112 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29743 | 0.072447 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6141 | 0.033067 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10612 | 0.071731 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 12217 | 0.163532 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.072447 | 0.0035 | 0.007 | 0.007 | | 0.99 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:53:57

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK25201Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 17:46:04
Instrument : CP16--19853A
Result file : 16EDBS17202001.0015.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.072447

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.09 | 3.10 | 404 | 0.001120 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29743 | 0.072447 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6141 | 0.033067 |

## Analysis Report (B)

Injected on : Jul 21, 2017 17:46:04
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0015.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.071731

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10612 | 0.071731 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 12217 | 0.163532 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.072447 | | | | 0.99 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 24 2017

Verified by: Susan M. Goshert Manager
Date: JUL 28 2017

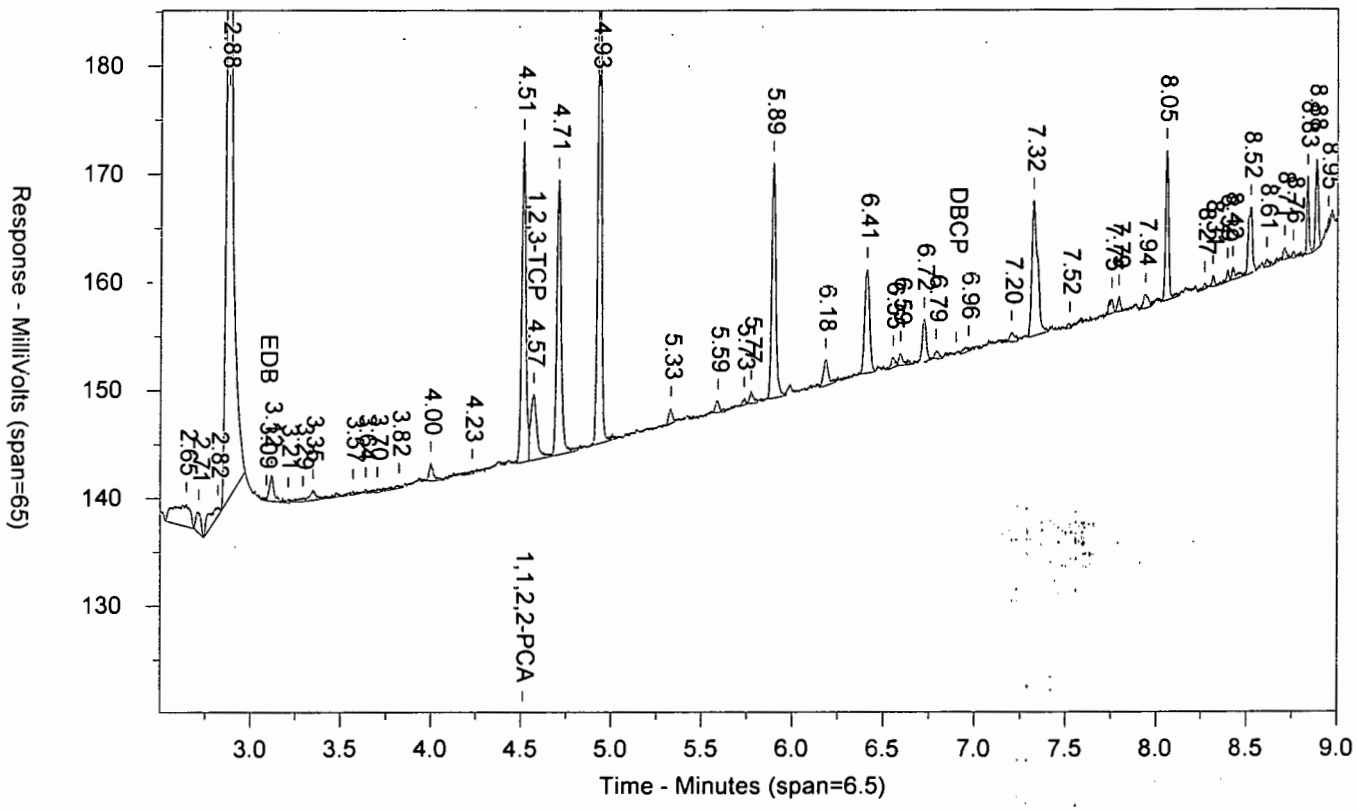
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

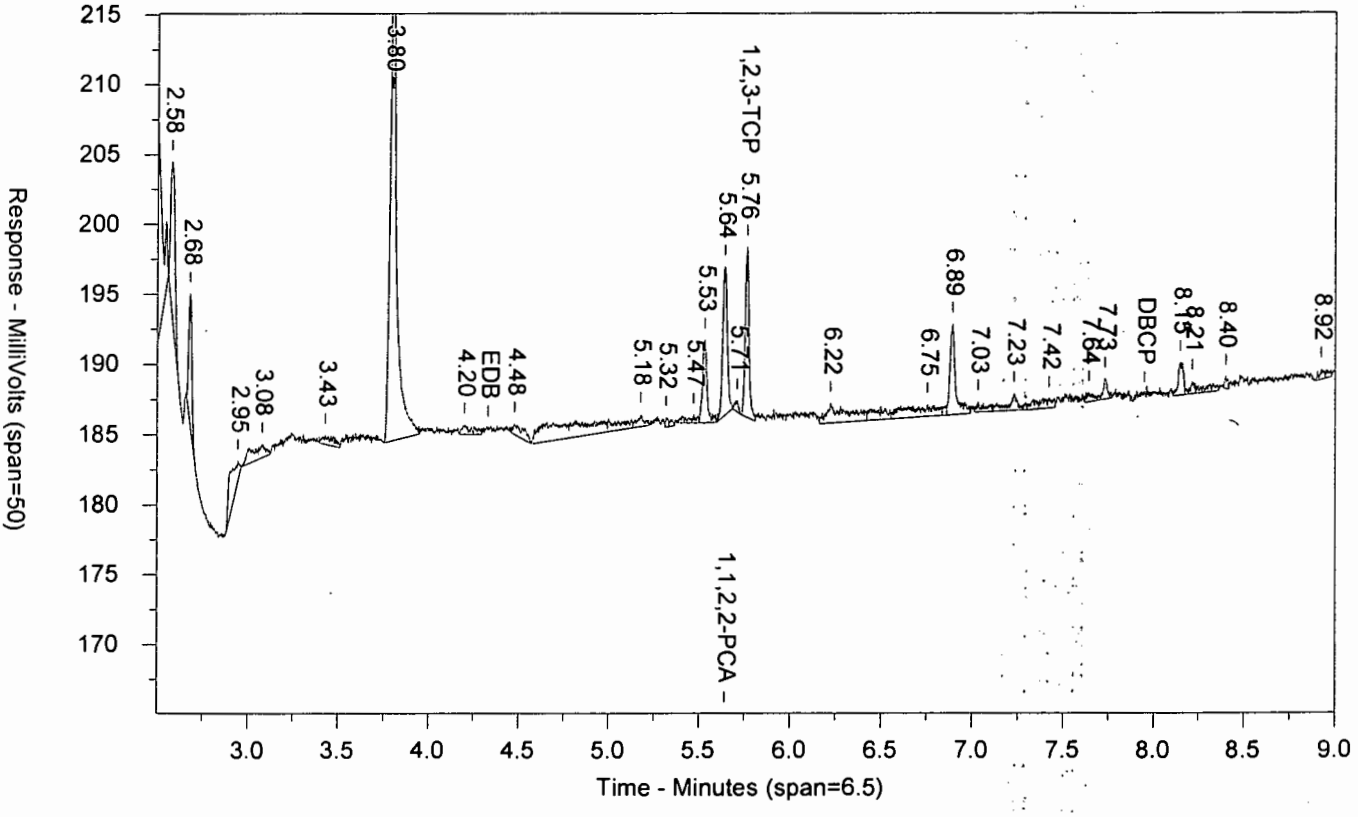
Printed on: 7/24/2017 11:11:00

BLANKA 7/21/17 AAPBLK25201 BLK 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0015.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0015.RAW



LANCASTER LABORATORIES

Sample Number: BLANKA 7/21/17 AAPBLK25201 BLK 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 5:46:04 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.089 | 404 | .001 | EDB | | 0 | | EDB |
| 4.512 | 29743 | .072 | 1,1,2,2-PCA | 5.641 | 10612 | .072 | 1,1,2,2-PCA |
| 4.568 | 6141 | .033 | 1,2,3-TCP | 5.763 | 12217 | .164 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0015.RAW
Area File: 16EDBS17202001B.0015.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:55:05 PM
File Reported On: 7/24/2017 at 10:54:09 AM

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# Data Summary

**Sample Name: LCSA** 7/21/17 LCS25201 LCS Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:01:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0016.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.074565

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:01:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0016.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.075029

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 52492 | 0.145502 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30613 | 0.074565 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 68897 | 1.246207 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 104866 | 0.14746 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 14869 | 0.144185 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11089 | 0.075029 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 31933 | 1.304341 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 39352 | 0.14555 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.145502 | 0.01 | 0.02 | 0.03 | | 0.91 | |
| 1,1,2,2-TETRACHLOROE | A | 0.074565 | 0.0035 | 0.007 | 0.007 | | 0.62 | |
| 1,2,3-Trichloropropane | A | 1.246207 | | | 0.27 | | 4.56 | |
| 1,2-Dibromo-3-chloropropa | A | 0.14746 | 0.01 | 0.02 | 0.03 | | 1.30 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:53:59

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/21/17 LCS25201 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:01:40
Instrument : CP16--19853A
Result file : 16EDBS17202001.0016.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.074565

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 52492 | 0.145502 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 30613 | 0.074565 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 68897 | 1.246207 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 104866 | 0.147461 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:01:40
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0016.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.075029

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 14869 | 0.144185 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11089 | 0.075029 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 31933 | 1.304341 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 39352 | 0.145550 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.145502 | 0.03 | 0.01 | | 0.91 | |
| ☐ 1,1,2,2-PCA | A | 0.074565 | | | | 0.62 | |
| ☑ 1,2,3-TCP | A | 1.246207 | 0.27 | 0.1 | | 4.56 | |
| ☑ DBCP | A | 0.147461 | 0.03 | 0.01 | | 1.30 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

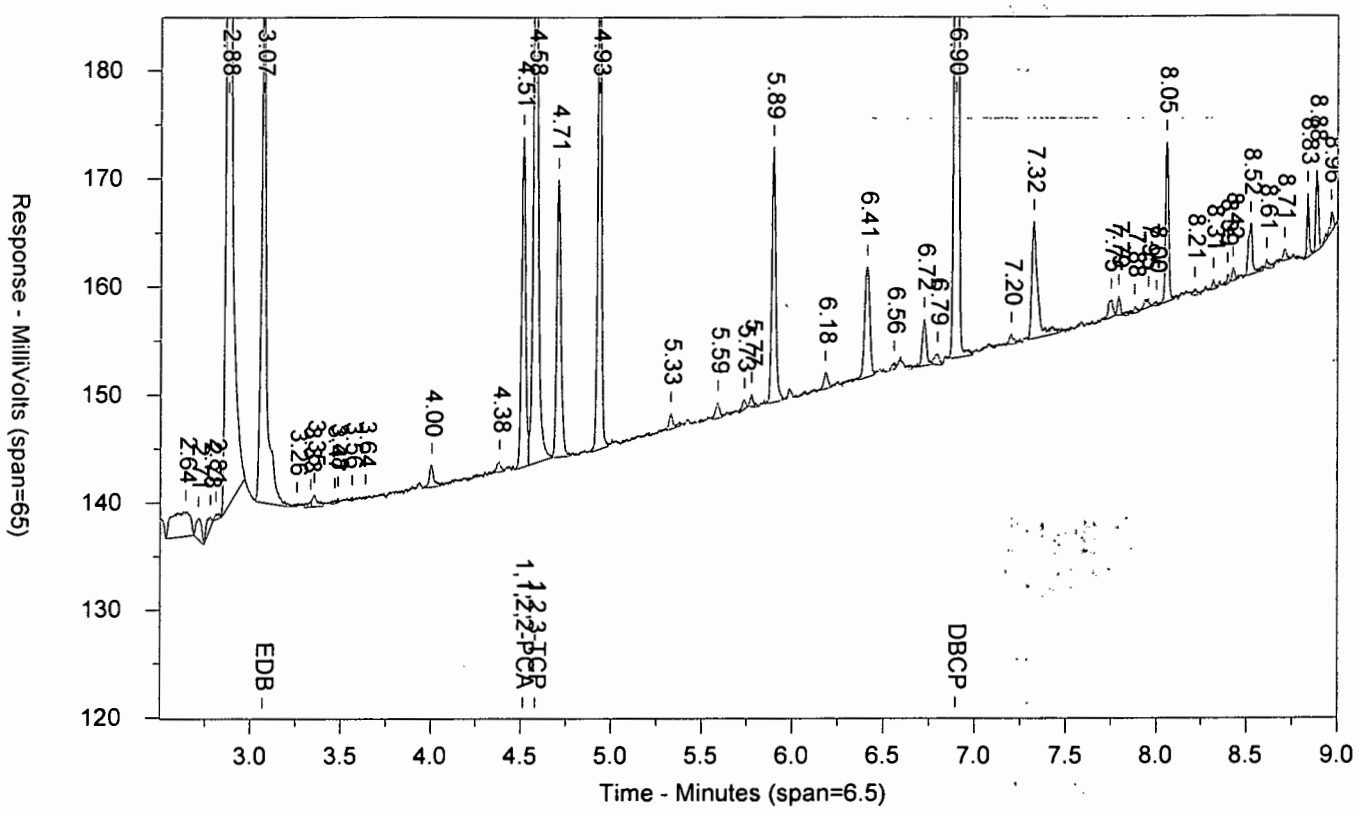
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

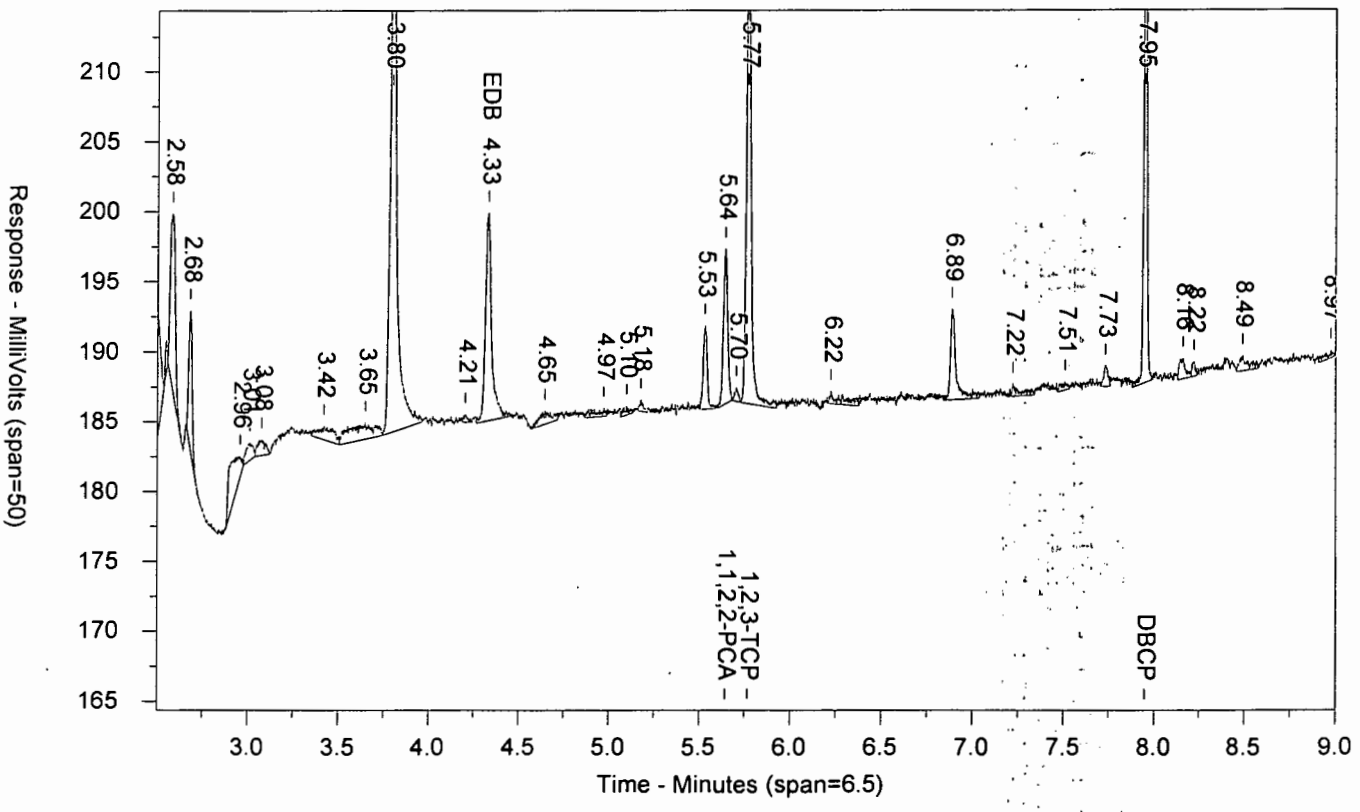
Printed on: 7/24/2017 11:11:06

LCSA 7/21/17 AALCS25201 LCS 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0016.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0016.RAW



LANCASTER LABORATORIES

Sample Number: LCSA 7/21/17 AALCS25201 LCS 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:01:40 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 52492 | .146 | EDB | 4.331 | 14869 | .144 | EDB |
| 4.512 | 30613 | .075 | 1,1,2,2-PCA | 5.641 | 11089 | .075 | 1,1,2,2-PCA |
| 4.579 | 68897 | 1.246 | 1,2,3-TCP | 5.766 | 31933 | 1.304 | 1,2,3-TCP |
| 6.896 | 104866 | .147 | DBCP | 7.947 | 39352 | .146 | DBCP |

Files:
Area File: 16EDBS17202001.0016.RAW
Area File: 16EDBS17202001B.0016.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:10:41 PM
File Reported On: 7/24/2017 at 10:54:17 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 7/21/17 LCSD25201 LCSD Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:17:18 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0017.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 112% ( 46 - 136 ) Conc: 0.079144

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:17:18 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0017.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 113% ( 46 - 136 ) Conc: 0.079835

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 58918 | 0.163313 | Ethylene dibromide | 4.30 | 4.33 | 4.36 | 16042 | 0.155566 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 32493 | 0.079144 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11784 | 0.079835 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 71820 | 1.302697 | 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 33931 | 1.419971 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 113994 | 0.160297 | 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 41886 | 0.154921 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | A | 0.163313 | 0.01 | 0.02 | 0.03 | | 4.86 | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.079144 | 0.0035 | 0.007 | 0.007 | | 0.87 | |
| ☐ 1,2,3-Trichloropropane | A | 1.302697 | | | 0.27 | | 8.61 | |
| ☐ 1,2-Dibromo-3-chloroprop | A | 0.160297 | 0.01 | 0.02 | 0.03 | | 3.41 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:02

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/21/17 LCSD25201 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:17:18
Instrument : CP16--19853A
Result file : 16EDBS17202001.0017.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 112% (46-136) Conc.: 0.079144

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 58918 | 0.163313 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 32493 | 0.079144 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 71820 | 1.302697 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 113994 | 0.160297 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:17:18
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0017.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 113% (46-136) Conc.: 0.079835

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 16042 | 0.155566 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11784 | 0.079835 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 33931 | 1.419971 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 41886 | 0.154921 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.163313 | 0.03 | 0.01 | | 4.86 | |
| ☐ 1,1,2,2-PCA | A | 0.079144 | | | | 0.87 | |
| ☑ 1,2,3-TCP | A | 1.302697 | 0.27 | 0.1 | | 8.61 | |
| ☑ DBCP | A | 0.160297 | 0.03 | 0.01 | | 3.41 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

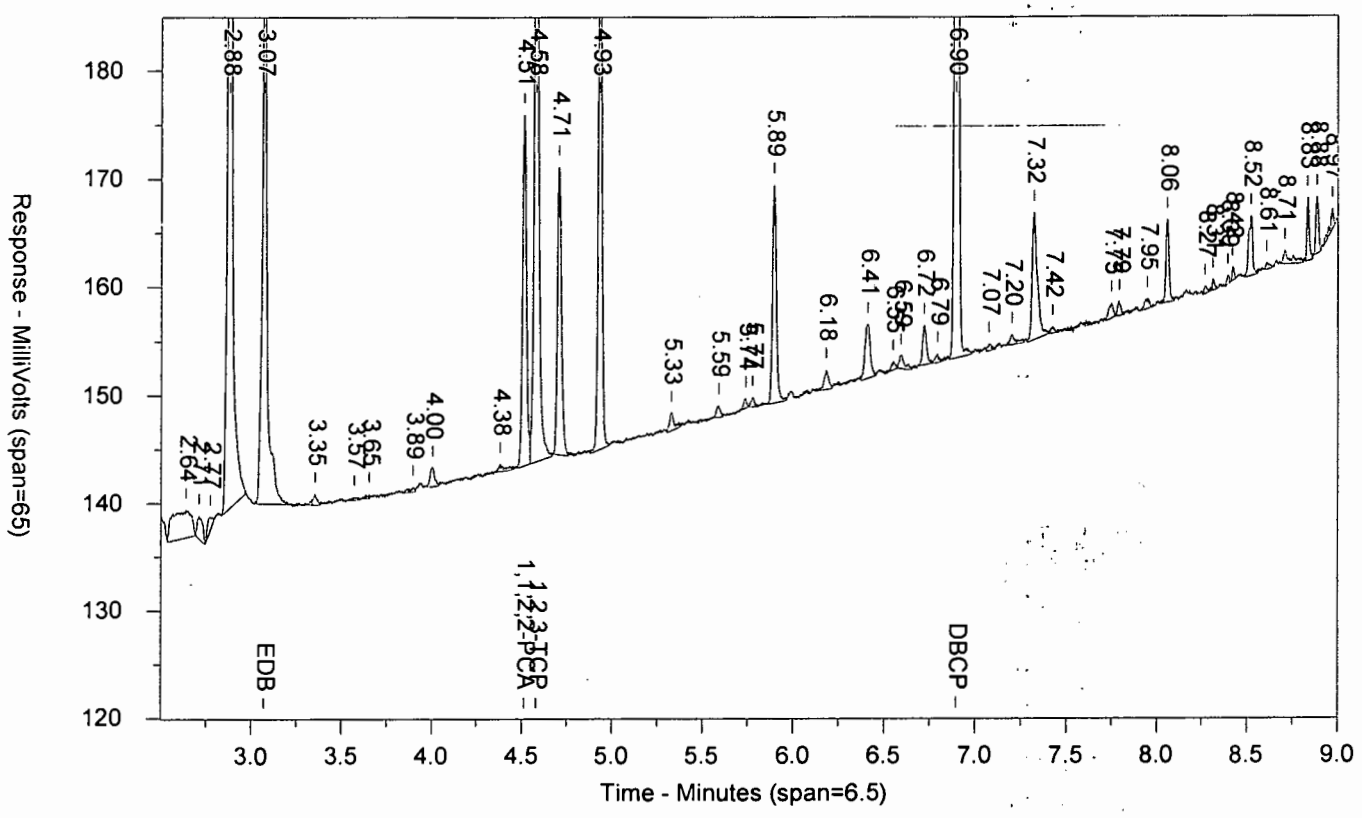
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

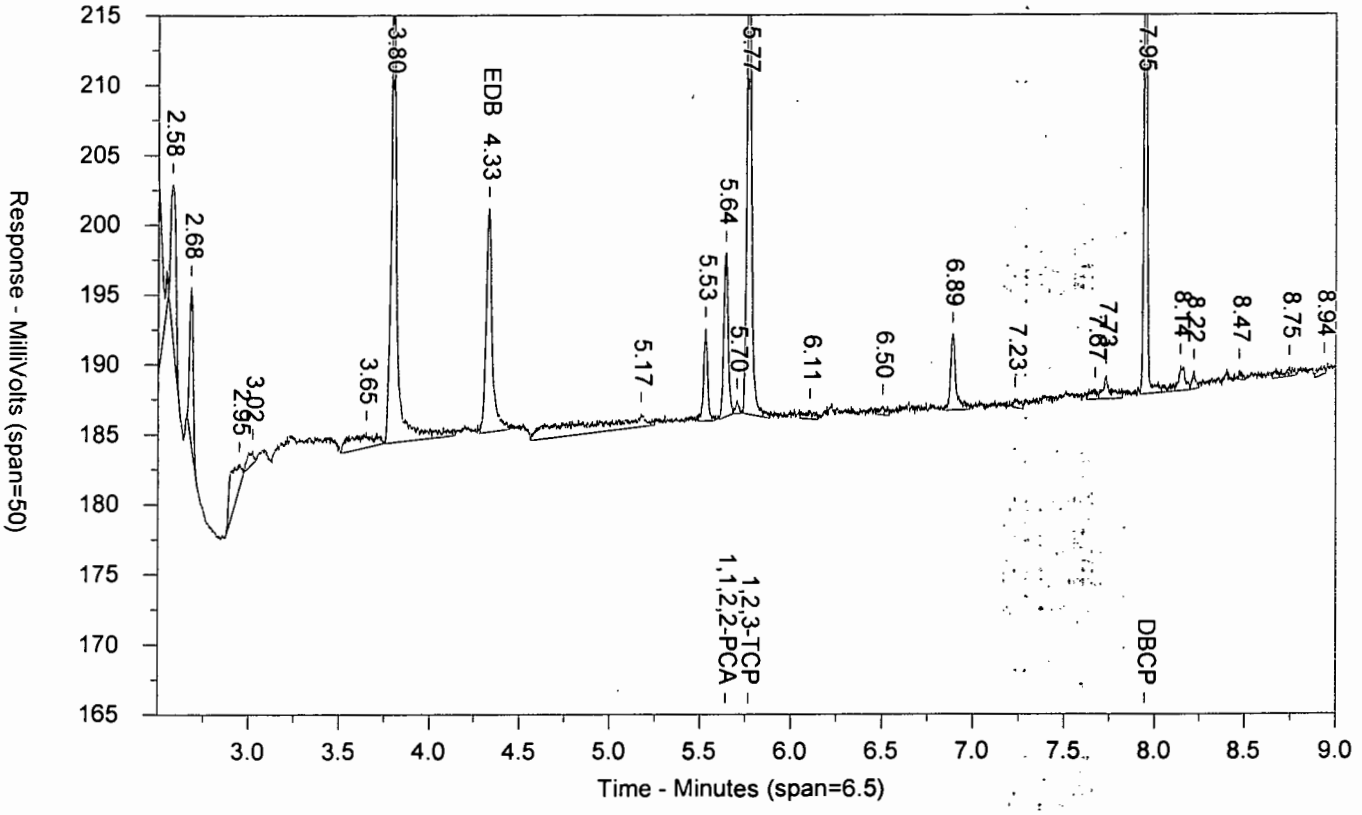
* Recovery outside QC Limits

LCSDA 7/21/17 AALCSD25201 LCSD 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0017.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0017.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 7/21/17 AALCSD25201 LCSD 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:17:18 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 58918 | .163 | EDB | 4.331 | 16042 | .156 | EDB |
| 4.513 | 32493 | .079 | 1,1,2,2-PCA | 5.642 | 11784 | .08 | 1,1,2,2-PCA |
| 4.579 | 71820 | 1.303 | 1,2,3-TCP | 5.766 | 33931 | 1.42 | 1,2,3-TCP |
| 6.896 | 113994 | .16 | DBCP | 7.946 | 41886 | .155 | DBCP |

Files:
Area File: 16EDBS17202001.0017.RAW
Area File: 16EDBS17202001B.0017.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:26:20 PM
File Reported On: 7/24/2017 at 10:54:29 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 1236 Samantha Metzgar Reviewed by: HMM7/26 Start Date: 07/21/2017 Start Time: 09:00

**· 172010025A**

Tech 1: SM 12362 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9109772MS | 18801 | 37.02 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| 9109773MSD | 18801 | 36.96 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| BLANKA | PBLK25201 | 35 | SS1718724B | .1 | — | | 2 | N | 2 | — | DIH2O |
| LCSA | LCS25201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | | DIH2O |
| LCSDA | LCSD25201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | | DIH2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391 |
| Vial Preservative Lot# | 2391F |
| | |

Spike Solutions: Witness: N/A

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9095972BKG | 18417 | 36.92 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/21/2017 | N |
| 2 9100482 | 18604 | 36.62 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 3 9100483 | 18605 | 36.75 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 4 9100485 | 18607 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 5 9100487 | 18609 | 36.74 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 6 9100489 | 18611 | 36.84 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 7 9100491 | 18613 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 8 9100492 | 18614 | 36.63 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 9 9100493 | 18615 | 36.82 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 10 9100494 | 18616 | 36.81 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 11 9100495 | 18617 | 36.76 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 12 9100496 | 18618 | 36.83 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 13 9107402 | 18701 | 36.62 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 14 9107403 | 18702 | 36.65 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 15 9107404 | 18703 | 37.04 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 16 9107405 | 18704 | 37.01 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 17 9107406 | 18705 | 36.48 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 18 9107407 | 18706 | 36.73 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 19 9109771BKG | 18801 | 36.85 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/31/2017 | N |
| 20 9109779 | 18803 | 36.35 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/31/2017 | N |

KR187 Page 542 of 594

| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172010025A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

# Metals in Liquid Data

# Case Narrative/Conformance Summary

# Metals in Liquid

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR187**

## ICP Metals

**Fraction: Metals in Liquid**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9107407 | GW157-173 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR187**

## ICP Metals

**Fraction: Metals in Liquid**

**Abbreviation Key**

| | |
|---|---|
| BKG – Background | AF - Cold Vapor Atomic Fluorescence |
| DUP – Duplicate | U - Below MDL |
| MS - Matrix Spike | B - Below LOQ |
| MSD - Matrix Spike Dup | N - Matrix Spike out of specifications |
| B – Blank | * - Duplicate out of specifications |
| Q - Laboratory Control Sample | E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution |
| Y - Laboratory Control Sample Duplicate | A - Post Digestion Spike |
| P - ICP Atomic Emission Spectrometer | L - Serial Dilution |
| MS - ICP Mass Spectrometry | R - Internal Standard Relative Intensity OOS |
| CV - Cold Vapor | NR - Not Required |

# Sample Data

# Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR187
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9107407 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/18/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 256 | B | | P |
| 7439-96-5 | Manganese | 1240 | | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

# Quality Control and Calibration Summary Forms

# Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR187
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Iron | 172001063501 | 9107407 |
| Manganese | | *09771BKG |
| | | *09771MS |
| | | *09771MSD |
| | | *09771DUP |
| | | P20063AB |
| | | P20063AQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR187

Method: P
Run Name: 1720206T71
Calibration Date(s): 07/21/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Iron | | 30000.0 | 29507.69 | 98.4 | 25000.0 | 25193.42 | 100.8 | 25000.0 | 24894.12 | 99.6 |
| Manganese | | 600.0 | 587.19 | 97.9 | 500.0 | 508.33 | 101.7 | 500.0 | 490.92 | 98.2 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR187

Method: P
Run Name: 1720206T71
Calibration Date(s): 07/21/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Iron | | 400.0 | 395.42 | 98.9 | | |
| Manganese | | 10.0 | 10.56 | 105.6 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR187

Method: P
Run Name: 1720206T71
Calibration Date(s): 07/21/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Iron | | 33.4 | U | 33.4 | U | 33.4 | U | | | | 80.500 | U | 172001063501 |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | | | | 1.600 | U | 172001063501 |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below IDL/MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR187

Instrument ID: 16315
Run Name: 1720206T71
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 509720 | 101.9 | 521483.2 | 104.3 | | | | |
| Calcium | 500000 | 500000 | 505764 | 101.2 | 517117.2 | 103.4 | | | | |
| Iron | 200000 | 200000 | 201338 | 100.7 | 205443.3 | 102.7 | | | | |
| Magnesium | 500000 | 500000 | 511440 | 102.3 | 516522.3 | 103.3 | | | | |
| Manganese | 0 | 500 | 0 | | 489.6 | 97.9 | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR187
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: *09771BKG Matrix Spike Lab Sample ID: *09771MS Matrix Spike Duplicate Lab Sample ID: *09771MSD
Batch Number(s): 172001063501

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Iron | | 436.7400 | | 1472.3100 | | 1437.8800 | | 1000.0000 | 1000.0000 | UG/L | 104 | | 100 | | 2 | | 87 - 115 | 20 | P |
| Manganese | | 258.7300 | | 761.4500 | | 748.7300 | | 500.0000 | 500.0000 | UG/L | 101 | | 98 | | 2 | | 90 - 114 | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR187
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: *09771BKG Duplicate Lab Sample ID: *09771DUP
Batch Number(s): 172001063501
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Iron | | 400.0 | 436.7400 | | 410.7000 | | 6 | | P |
| Manganese | | | 258.7300 | | 261.0100 | | 1 | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | FLAGS: |
| AF = Cold Vapor Atomic Fluorescence | * = Duplicate Out of Spec |

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR187
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Iron | | 172001063501 | UG/L | 1000.000 | 1035.710 | | 87 - 115 | 104 | P | Yes |
| Manganese | | 172001063501 | UG/L | 500.000 | 520.950 | | 90 - 114 | 104 | P | Yes |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR187
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: *09771BKG Serial Dilution Lab Sample ID: *09771L
Batch Number(s): 172001063501
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Iron | | 436.7400 | | 450.4000 | B | 3 | | P |
| Manganese | | 258.7300 | | 252.4000 | | 2 | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Iron | 261.19 | | 33.4 |
| Manganese | 257.61 | | 0.83 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR187
Matrix: WATER

Method: P
Date: 06/2017

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Iron | 261.19 | | 400 | 80.5 |
| Manganese | 257.61 | | 10.0 | 1.6 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 11
ICP INTERELEMENT CORRECTION FACTORS (BIANNUALLY)
SDG No.: KR187

Instrument ID: 16315
Date: 05/2017

| Analyte | Wavelength (nm) | Interelement Correction Factor for: AL | CA | FE | MG | -- |
|---|---|---|---|---|---|---|
| Manganese | 257.61 | 0.0000000 | 0.0000000 | 0.0000180 | 0.0000000 | |

Comments:
_____
_____
_____
_____

QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR187

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Iron | 261.19 | 10.00 | 300000.0 |
| Manganese | 257.61 | 10.00 | 20000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Batch Number: 172001063501

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9107407 | 07/20/2017 | 50.00 | 50 |
| *09771BKG | 07/20/2017 | 50.00 | 50 |
| *09771DUP | 07/20/2017 | 50.00 | 50 |
| *09771MSD | 07/20/2017 | 50.00 | 50 |
| *09771MS | 07/20/2017 | 50.00 | 50 |
| P20063AB | 07/20/2017 | 50.00 | 50 |
| P20063AQ | 07/20/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR187

Method: P
Instrument ID: 16315
Run Name: 1720206T71

Run Start Date: 07/21/2017
Run End Date: 07/21/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FE | MN | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 12:27 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:30 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:33 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 12:39 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 12:42 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 12:45 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 12:48 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 12:51 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 12:55 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 12:57 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P20063AB | 1.00 | 13:01 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P20063AQ | 1.00 | 13:04 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *09771BKG | 1.00 | 13:07 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *09771A | 1.00 | 13:10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *09771DUP | 1.00 | 13:13 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *09771MS | 1.00 | 13:16 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *09771MSD | 1.00 | 13:20 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *09771L | 5.00 | 13:23 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9107407 | 1.00 | 13:26 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 13:29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 13:32 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 13:35 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

# Raw Data

# Metals in Liquid

# ICP Data

# Metals in Liquid

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# ICP-AES Run Data Report

Reviewed By
Patrick J Engle

Reviewed Date
07/21/2017 2:00PM

Data File Name 1720206T71.TXT
Run Name: 1720206T71

Method Reference Name(s):

Verified By:
Parker D Lindstrom

Verified Date
07/21/2017 4:29PM

Analyst Employee: 3472

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 1 Date/Time: 07/21/2017 12:27

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -23.34507 | 18.966 | -0.01180 | -0.01259 | -0.01664 |
| AL | 0.000 | 32.08333 | 24.128 | 0.32786 | 0.22102 | 0.36110 |
| AS | 0.000 | 0.83667 | 35.148 | 0.01533 | 0.01238 | 0.02404 |
| B | 0.000 | -4.63632 | 79.864 | -0.00007 | -0.00008 | 0.00000 |
| BA | 0.000 | -221.37740 | 9.326 | -0.00260 | -0.00283 | -0.00235 |
| BE | 0.000 | -105.01155 | 4.002 | -0.05939 | -0.06093 | -0.06421 |
| CA | 0.000 | 24.91667 | 36.611 | 0.00325 | 0.00418 | 0.00656 |
| CD | 0.000 | -3.60333 | 19.681 | -0.05784 | -0.08155 | -0.08476 |
| CO | 0.000 | 0.75333 | 171.482 | 0.04537 | 0.00662 | -0.00550 |
| CR | 0.000 | 2.99284 | 197.220 | -0.00004 | 0.00006 | 0.00009 |
| CU | 0.000 | -21.18756 | 28.207 | -0.01139 | -0.01631 | -0.00953 |
| FE | 0.000 | 0.96667 | 284.949 | 0.00072 | -0.00041 | 0.00029 |
| K | 0.000 | 16.83333 | 229.715 | -0.12644 | 0.03850 | 0.54465 |
| LI | 0.000 | -8.76667 | 234.088 | -0.00618 | 0.00217 | -0.00137 |
| MG | 0.000 | -0.88333 | 250.416 | 0.00018 | -0.00058 | -0.00006 |
| MN | 0.000 | -6.16468 | 76.840 | -0.00532 | -0.00509 | -0.00041 |
| MO | 0.000 | -1.31567 | 20.508 | -0.03006 | -0.03100 | -0.02086 |
| NA | 0.000 | -50.61667 | 17.956 | -0.01116 | -0.00774 | -0.00986 |
| NI | 0.000 | 8.67667 | 13.900 | 0.19660 | 0.15071 | 0.19050 |
| P | 0.000 | 1.03667 | 39.375 | 0.00055 | 0.00023 | 0.00050 |
| PB | 0.000 | -3.28333 | 15.753 | -0.07187 | -0.07650 | -0.05603 |
| S | 0.000 | 0.94667 | 47.221 | 0.00018 | 0.00054 | 0.00046 |
| SB | 0.000 | 0.27000 | 185.537 | 0.00018 | -0.00012 | 0.00026 |
| SE | 0.000 | 0.36667 | 247.763 | 0.01873 | -0.01352 | 0.01664 |
| SI | 0.000 | -0.16667 | 783.444 | 0.00004 | 0.00017 | -0.00030 |
| SN | 0.000 | 0.16333 | 416.685 | 0.01676 | 0.00512 | -0.01161 |
| SR | 0.000 | -30.69990 | 23.846 | -0.00036 | -0.00027 | -0.00044 |
| TI | 0.000 | 25.37608 | 45.377 | 0.00727 | 0.01722 | 0.02015 |
| TL | 0.000 | 0.06333 | 54.632 | 0.00204 | 0.00128 | 0.00061 |
| V | 0.000 | -4.68762 | 148.459 | -0.00323 | -0.00656 | 0.00155 |
| Y1 | 0.000 | 2414.28000 | 2.591 | 2446.58000 | 2342.18500 | 2454.07500 |
| Y2A | 0.000 | 85369.28209 | 0.314 | 85677.77446 | 85198.03931 | 85232.03250 |
| Y2R | 0.000 | 5309.68333 | 5.126 | 5002.17500 | 5519.75000 | 5407.12500 |
| ZN | 0.000 | 1.75667 | 50.495 | 0.04619 | 0.04825 | 0.01528 |
| ZR | 0.000 | 12.01667 | 49.455 | 0.00115 | 0.00335 | 0.00218 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 2 Date/Time: 07/21/2017 12:30

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 2913.69372 | 2.104 | 28.24028 | 28.06472 | 27.15005 |
| CA | 50.000 | 26021.52371 | 1.923 | 5.04489 | 4.99981 | 4.86152 |
| FE | 50.000 | 5991.27521 | 2.105 | 1.16470 | 1.14976 | 1.11759 |
| K | 50.000 | 9406.44601 | 1.584 | 90.81696 | 90.42252 | 88.18008 |
| MG | 50.000 | 39040.14489 | 1.924 | 7.57641 | 7.49080 | 7.29653 |
| NA | 50.000 | 34561.71815 | 1.614 | 6.67358 | 6.64738 | 6.47741 |
| S | 50.000 | 2139.64667 | 0.957 | 0.91573 | 0.90308 | 0.91984 |
| SI | 50.000 | 4906.79863 | 2.069 | 0.95106 | 0.94494 | 0.91484 |
| Y1 | 50.000 | 2343.87333 | 0.266 | 2341.65000 | 2350.90500 | 2339.06500 |
| Y2R | 50.000 | 5237.26140 | 0.551 | 5243.67626 | 5205.74008 | 5262.36784 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 3 Date/Time: 07/21/2017 12:33

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 5758.82279 | 1.471 | 3.52270 | 3.48608 | 3.42168 |
| AS | 1.000 | 76.54000 | 3.729 | 1.58596 | 1.60800 | 1.70061 |
| B | 1.000 | 3732.80051 | 1.275 | 0.04572 | 0.04488 | 0.04462 |
| BA | 1.000 | 293504.00000 | 4.046 | 3.70722 | 3.49591 | 3.43349 |
| BE | 1.000 | 222490.00780 | 1.507 | 136.48730 | 134.02112 | 132.47308 |
| CD | 1.000 | 3665.18333 | 1.632 | 76.83103 | 78.12673 | 79.37991 |
| CO | 1.000 | 1581.38667 | 1.895 | 33.04859 | 33.73704 | 34.32465 |
| CU | 1.000 | 5212.68860 | 1.344 | 3.19371 | 3.11149 | 3.13531 |
| LI | 1.000 | 3102.54064 | 0.554 | 0.57010 | 0.57021 | 0.56470 |
| MN | 1.000 | 24157.54948 | 1.258 | 14.77234 | 14.57514 | 14.40561 |
| NI | 1.000 | 1044.07000 | 0.731 | 22.12021 | 22.19559 | 22.43206 |
| P | 1.000 | 115.40667 | 0.710 | 0.04885 | 0.04916 | 0.04955 |
| PB | 1.000 | 352.47778 | 1.229 | 7.42383 | 7.50349 | 7.60788 |
| SE | 1.000 | 59.31667 | 1.773 | 1.28189 | 1.23880 | 1.27104 |
| SR | 1.000 | 328330.76244 | 1.872 | 4.04799 | 3.94098 | 3.90538 |
| TL | 1.000 | 81.98333 | 0.728 | 1.73239 | 1.75414 | 1.75467 |
| Y1 | 1.000 | 2346.45833 | 1.439 | 2379.95000 | 2347.02000 | 2312.40500 |
| Y2A | 1.000 | 82838.48183 | 2.656 | 80586.27392 | 82945.79005 | 84983.38150 |
| Y2R | 1.000 | 5459.00438 | 0.650 | 5418.36429 | 5483.65883 | 5474.99002 |
| ZN | 1.000 | 2369.61000 | 0.978 | 50.04601 | 50.42309 | 51.02502 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 4 Date/Time: 07/21/2017 12:36

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 4823.77069 | 1.565 | 0.05651 | 0.05646 | 0.05497 |
| MO | 1.000 | 560.88467 | 1.158 | 11.75069 | 11.48174 | 11.61742 |
| SB | 1.000 | 125.32333 | 1.156 | 0.05255 | 0.05135 | 0.05183 |
| SN | 1.000 | 220.06000 | 1.093 | 4.59604 | 4.50138 | 4.57572 |
| TI | 1.000 | 21368.47785 | 0.594 | 12.48215 | 12.35984 | 12.34987 |
| V | 1.000 | 6442.95411 | 1.635 | 3.77461 | 3.77273 | 3.66781 |
| Y1 | 1.000 | 2414.58167 | 2.452 | 2369.32000 | 2481.57500 | 2392.85000 |
| Y2A | 1.000 | 86185.62744 | 1.387 | 85214.41751 | 85821.60654 | 87520.85825 |
| Y2R | 1.000 | 5267.92500 | 1.680 | 5340.07500 | 5169.20000 | 5294.50000 |
| ZR | 1.000 | 979.13333 | 1.136 | 0.18692 | 0.18726 | 0.18345 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 5 Date/Time: 07/21/2017 12:39

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.59419 | 3,457.98 | 0.687 | 0.59885 | 0.59127 | 0.59244 |
| ____ AL | 30.11870 | 1,815.98 | 1.275 | 30.08686 | 29.75161 | 30.51764 |
| ____ AS | 0.60828 | 47.61 | 1.315 | 0.60012 | 0.60860 | 0.61611 |
| ____ B | 0.57662 | 2,341.61 | 1.747 | 0.58544 | 0.56564 | 0.57877 |
| ____ BA | 0.60941 | 181,551.55 | 0.461 | 0.61205 | 0.60645 | 0.60973 |
| ____ BE | 0.57626 | 129,901.48 | 0.655 | 0.58054 | 0.57340 | 0.57483 |
| ____ CA | 30.20264 | 16,174.65 | 1.966 | 30.04819 | 29.70136 | 30.85838 |
| ____ CD | 0.58543 | 2,201.48 | 1.623 | 0.58099 | 0.57896 | 0.59634 |
| ____ CO | 0.57495 | 932.41 | 1.609 | 0.57329 | 0.56665 | 0.58492 |
| ____ CR | 0.57833 | 2,716.20 | 1.323 | 0.58628 | 0.57102 | 0.57769 |
| ____ CU | 0.58346 | 3,073.14 | 2.216 | 0.59211 | 0.56859 | 0.58967 |
| ____ FE | 29.50769 | 3,660.79 | 1.878 | 29.46119 | 28.97835 | 30.08353 |
| ____ K | 30.24974 | 5,841.98 | 2.000 | 30.15894 | 29.69520 | 30.89506 |
| ____ LI | 0.59807 | 1,822.75 | 1.893 | 0.58911 | 0.59432 | 0.61079 |
| ____ MG | 29.94960 | 24,100.93 | 2.057 | 29.87622 | 29.37361 | 30.59896 |
| ____ MN | 0.58719 | 14,389.60 | 0.475 | 0.58992 | 0.58730 | 0.58435 |
| ____ MO | 0.58641 | 326.94 | 0.752 | 0.58615 | 0.58214 | 0.59095 |
| ____ NA | 29.59766 | 20,912.75 | 1.989 | 29.41390 | 29.12288 | 30.25620 |
| ____ NI | 0.58697 | 630.31 | 0.925 | 0.58234 | 0.58561 | 0.59295 |
| ____ P | 0.59604 | 70.85 | 0.746 | 0.59092 | 0.59893 | 0.59827 |
| ____ PB | 0.58273 | 213.71 | 0.774 | 0.58311 | 0.57805 | 0.58704 |
| ____ S | 30.21118 | 1,325.49 | 0.776 | 30.10388 | 30.04952 | 30.48014 |
| ____ SB | 0.58644 | 73.23 | 1.894 | 0.57380 | 0.59467 | 0.59085 |
| ____ SE | 0.59886 | 36.46 | 1.106 | 0.60170 | 0.59129 | 0.60359 |
| ____ SI | 30.46870 | 3,066.94 | 2.043 | 30.20301 | 30.02330 | 31.17980 |
| ____ SN | 0.56642 | 124.12 | 1.324 | 0.55853 | 0.57345 | 0.56728 |
| ____ SR | 0.59540 | 198,152.81 | 0.407 | 0.59815 | 0.59359 | 0.59445 |
| ____ TI | 0.60109 | 12,547.12 | 0.559 | 0.60488 | 0.59847 | 0.59993 |
| ____ TL | 0.60877 | 48.62 | 1.354 | 0.60387 | 0.61829 | 0.60417 |
| ____ V | 0.59323 | 3,716.40 | 1.925 | 0.60197 | 0.58031 | 0.59741 |
| ____ Y1 | 2402.49167 | 2,402.49 | 1.236 | 2394.67000 | 2435.31500 | 2377.49000 |
| ____ Y2A | 83949.37768 | 83,949.38 | 1.993 | 82284.89417 | 83932.67500 | 85630.56387 |
| ____ Y2R | 5372.93876 | 5,372.94 | 3.906 | 5447.75264 | 5535.12582 | 5135.93781 |
| ____ ZN | 0.58816 | 1,434.10 | 0.685 | 0.58583 | 0.58583 | 0.59281 |
| ____ ZR | 0.59595 | 599.90 | 0.850 | 0.59781 | 0.59022 | 0.59981 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 6 Date/Time: 07/21/2017 12:42

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00006 | -20.43 | 1922.209 | 0.00136 | -0.00008 | -0.00110 |
| ____ AL | 0.00903 | 32.78 | 353.131 | 0.04185 | 0.00712 | -0.02187 |
| ____ AS | 0.00819 | 0.33 | 50.500 | 0.00383 | 0.00867 | 0.01206 |
| ____ B | 0.00296 | 6.16 | 12.909 | 0.00339 | 0.00266 | 0.00283 |
| ____ BA | -0.00189 | -130.63 | 17.308 | -0.00152 | -0.00200 | -0.00214 |
| ____ BE | 0.00032 | -56.78 | 94.352 | 0.00067 | 0.00021 | 0.00009 |
| ____ CA | -0.00470 | 22.25 | 223.917 | 0.00480 | -0.01601 | -0.00288 |
| ____ CD | 0.00045 | -3.41 | 28.383 | 0.00043 | 0.00034 | 0.00059 |
| ____ CO | 0.00054 | 1.61 | 102.020 | 0.00106 | -0.00004 | 0.00060 |
| ____ CR | 0.00137 | 3.52 | 59.924 | 0.00074 | 0.00230 | 0.00107 |
| ____ CU | 0.00011 | -17.01 | 1604.422 | 0.00182 | -0.00156 | 0.00006 |
| ____ FE | -0.01344 | -0.58 | 143.134 | -0.02459 | -0.02451 | 0.00877 |
| ____ K | 0.00828 | 17.92 | 812.057 | -0.06070 | 0.07369 | 0.01186 |
| ____ LI | 0.00141 | -5.33 | 116.220 | 0.00312 | 0.00124 | -0.00014 |
| ____ MG | -0.00305 | -5.15 | 59.511 | -0.00182 | -0.00513 | -0.00219 |
| ____ MN | 0.00023 | 2.85 | 157.860 | 0.00059 | -0.00012 | 0.00020 |
| ____ MO | 0.00013 | -0.80 | 1290.080 | -0.00178 | 0.00152 | 0.00066 |
| ____ NA | 0.15206 | -53.27 | 7.133 | 0.16456 | 0.14647 | 0.14514 |
| ____ NI | 0.00004 | 8.58 | 584.319 | 0.00023 | -0.00023 | 0.00011 |
| ____ P | -0.00263 | 0.71 | 252.242 | -0.01029 | 0.00145 | 0.00094 |
| ____ PB | -0.00304 | -2.52 | 191.140 | 0.00327 | -0.00422 | -0.00816 |
| ____ S | -0.00253 | 0.83 | 957.031 | -0.02731 | -0.00139 | 0.02111 |
| ____ SB | -0.00223 | 0.00 | 484.061 | 0.00945 | -0.01181 | -0.00432 |
| ____ SE | -0.01505 | -0.54 | 145.233 | -0.00054 | -0.04020 | -0.00442 |
| ____ SI | 0.01487 | 1.30 | 66.201 | 0.02298 | 0.01772 | 0.00392 |
| ____ SN | 0.00006 | 0.18 | 3825.132 | 0.00140 | -0.00235 | 0.00111 |
| ____ SR | 0.00019 | 35.02 | 171.463 | 0.00055 | 0.00000 | 0.00001 |
| ____ TI | 0.00019 | 29.19 | 137.338 | 0.00040 | 0.00026 | -0.00010 |
| ____ TL | -0.00048 | 0.01 | 944.169 | -0.00524 | -0.00002 | 0.00382 |
| ____ V | 0.00316 | 1.30 | 23.383 | 0.00365 | 0.00231 | 0.00351 |
| ____ Y1 | 2380.50000 | 2,380.50 | 1.780 | 2396.75000 | 2332.41500 | 2412.33500 |
| ____ Y2A | 84692.21706 | 84,692.22 | 2.808 | 85756.54476 | 86352.12500 | 81967.98140 |
| ____ Y2R | 5320.79167 | 5,320.79 | 2.360 | 5184.87500 | 5345.07500 | 5432.42500 |
| ____ ZN | -0.00069 | 0.09 | 24.959 | -0.00049 | -0.00080 | -0.00078 |
| ____ ZR | -0.00187 | 10.12 | 296.983 | -0.00798 | -0.00042 | 0.00280 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 7 Date/Time: 07/21/2017 12:45

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01105 | 44.77 | 0.429 | 0.01105 | 0.01100 | 0.01110 |
| ____ AL | 0.35979 | 52.62 | 37.663 | 0.20870 | 0.40010 | 0.47057 |
| ____ AS | 0.05184 | 3.76 | 5.369 | 0.05194 | 0.04900 | 0.05457 |
| ____ B | 0.09566 | 356.24 | 0.474 | 0.09514 | 0.09597 | 0.09586 |
| ____ BA | 0.00817 | 2,830.58 | 1.136 | 0.00827 | 0.00809 | 0.00814 |
| ____ BE | 0.01022 | 2,155.52 | 1.551 | 0.01031 | 0.01004 | 0.01031 |
| ____ CA | 0.40717 | 237.17 | 1.641 | 0.41328 | 0.40003 | 0.40818 |
| ____ CD | 0.01046 | 34.16 | 1.959 | 0.01024 | 0.01065 | 0.01049 |
| ____ CO | 0.01073 | 18.12 | 5.009 | 0.01029 | 0.01133 | 0.01056 |
| ____ CR | 0.03015 | 137.47 | 3.713 | 0.03089 | 0.02886 | 0.03070 |
| ____ CU | 0.01855 | 80.02 | 2.372 | 0.01905 | 0.01827 | 0.01832 |
| ____ FE | 0.39542 | 49.40 | 3.698 | 0.40654 | 0.37886 | 0.40087 |
| ____ K | 1.17490 | 236.23 | 2.791 | 1.15631 | 1.21276 | 1.15562 |
| ____ LI | 0.04033 | 111.05 | 13.104 | 0.03602 | 0.04622 | 0.03874 |
| ____ MG | 0.20373 | 158.18 | 3.693 | 0.20398 | 0.21113 | 0.19609 |
| ____ MN | 0.01056 | 253.73 | 2.410 | 0.01085 | 0.01044 | 0.01039 |
| ____ MO | 0.01947 | 9.98 | 7.657 | 0.01796 | 0.02094 | 0.01950 |
| ____ NA | 2.20542 | 1,370.95 | 0.488 | 2.21525 | 2.20712 | 2.19391 |
| ____ NI | 0.01911 | 28.81 | 8.161 | 0.01870 | 0.01779 | 0.02083 |
| ____ P | 0.19285 | 23.56 | 0.912 | 0.19082 | 0.19388 | 0.19386 |
| ____ PB | 0.02534 | 7.76 | 14.830 | 0.02327 | 0.02967 | 0.02306 |
| ____ S | 0.99256 | 44.35 | 2.882 | 0.97343 | 1.02544 | 0.97880 |
| ____ SB | 0.04390 | 5.68 | 14.382 | 0.05082 | 0.03845 | 0.04243 |
| ____ SE | 0.02023 | 1.57 | 93.881 | 0.01205 | 0.00669 | 0.04193 |
| ____ SI | 0.12309 | 11.92 | 6.699 | 0.13079 | 0.12409 | 0.11439 |
| ____ SN | 0.03737 | 8.32 | 12.151 | 0.04258 | 0.03528 | 0.03425 |
| ____ SR | 0.01048 | 3,430.41 | 0.794 | 0.01048 | 0.01040 | 0.01057 |
| ____ TI | 0.02113 | 460.56 | 0.647 | 0.02098 | 0.02121 | 0.02121 |
| ____ TL | 0.06810 | 5.70 | 5.405 | 0.06981 | 0.07061 | 0.06388 |
| ____ V | 0.01113 | 50.04 | 8.669 | 0.01006 | 0.01194 | 0.01139 |
| ____ Y1 | 2396.29000 | 2,396.29 | 0.836 | 2378.98000 | 2391.64500 | 2418.24500 |
| ____ Y2A | 83176.18541 | 83,176.19 | 1.266 | 82070.61526 | 84167.66348 | 83290.27750 |
| ____ Y2R | 5227.57500 | 5,227.58 | 2.538 | 5075.05000 | 5316.27500 | 5291.40000 |
| ____ ZN | 0.03956 | 97.20 | 0.677 | 0.03958 | 0.03928 | 0.03982 |
| ____ ZR | 0.08894 | 96.97 | 5.330 | 0.09312 | 0.08379 | 0.08990 |

LANCASTER LABORATORIES

Run Name: 1720206T71

Instrument ID: 16315

Tube: 8

Date/Time: 07/21/2017 12:48

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00327 | -65.01 | 35.569 | 0.00390 | 0.00398 | 0.00193 |
| ____ AL | 509.72000 | 28,054.01 | 0.686 | 513.25663 | 509.64217 | 506.26120 |
| ____ AS | 0.00812 | 0.60 | 182.000 | 0.00895 | 0.02248 | -0.00705 |
| ____ B | 0.04393 | 1,107.87 | 15.071 | 0.04028 | 0.03994 | 0.05158 |
| ____ BA | -0.00160 | -40.32 | 4.846 | -0.00166 | -0.00163 | -0.00151 |
| ____ BE | -0.00036 | -185.34 | 7.475 | -0.00035 | -0.00034 | -0.00039 |
| ____ CA | 505.76357 | 239,169.77 | 0.828 | 509.69698 | 506.23395 | 501.35978 |
| ____ CD | -0.00153 | 29.51 | 9.316 | -0.00168 | -0.00139 | -0.00152 |
| ____ CO | 0.00046 | 1.26 | 293.673 | 0.00175 | -0.00093 | 0.00055 |
| ____ CR | 0.00017 | -1.91 | 153.057 | 0.00037 | 0.00029 | -0.00013 |
| ____ CU | -0.00045 | 17.77 | 281.649 | 0.00025 | 0.00031 | -0.00193 |
| ____ FE | 201.33817 | 21,852.11 | 0.522 | 202.53939 | 200.88703 | 200.58810 |
| ____ K | 0.15774 | 44.19 | 70.805 | 0.28514 | 0.07671 | 0.11136 |
| ____ LI | 0.00424 | 21.02 | 170.578 | -0.00083 | 0.00103 | 0.01253 |
| ____ MG | 511.43977 | 343,114.51 | 2.134 | 516.09321 | 498.97118 | 519.25494 |
| ____ MN | -0.00013 | 73.31 | 14.445 | -0.00013 | -0.00015 | -0.00011 |
| ____ MO | -0.00407 | -2.75 | 8.230 | -0.00438 | -0.00412 | -0.00371 |
| ____ NA | 0.27802 | 34.45 | 16.529 | 0.22904 | 0.28481 | 0.32020 |
| ____ NI | -0.00357 | 4.18 | 69.304 | -0.00081 | -0.00432 | -0.00558 |
| ____ P | 0.01465 | 2.39 | 82.856 | 0.02445 | 0.01841 | 0.00108 |
| ____ PB | -0.01231 | 42.52 | 14.475 | -0.01393 | -0.01040 | -0.01262 |
| ____ S | 0.01576 | 1.42 | 201.162 | 0.00105 | -0.00592 | 0.05216 |
| ____ SB | -0.00326 | -0.11 | 194.990 | -0.00559 | 0.00393 | -0.00812 |
| ____ SE | -0.00642 | -0.32 | 370.618 | -0.00783 | -0.02946 | 0.01804 |
| ____ SI | 0.02138 | 1.88 | 27.761 | 0.02681 | 0.02229 | 0.01504 |
| ____ SN | -0.00120 | -0.10 | 388.718 | 0.00038 | -0.00642 | 0.00246 |
| ____ SR | 0.01710 | 4,949.47 | 0.442 | 0.01706 | 0.01705 | 0.01719 |
| ____ TI | 0.00276 | 71.90 | 20.700 | 0.00339 | 0.00260 | 0.00228 |
| ____ TL | -0.00816 | -0.80 | 148.548 | -0.02215 | -0.00164 | -0.00069 |
| ____ V | 0.00105 | -10.20 | 156.414 | -0.00049 | 0.00277 | 0.00087 |
| ____ Y1 | 2095.74833 | 2,095.75 | 3.241 | 2032.16500 | 2167.32500 | 2087.75500 |
| ____ Y2A | 73351.55796 | 73,351.56 | 1.343 | 72369.23307 | 73345.77015 | 74339.67066 |
| ____ Y2R | 5103.53849 | 5,103.54 | 1.790 | 5017.00578 | 5199.03058 | 5094.57909 |
| ____ ZN | 0.00436 | 48.42 | 20.235 | 0.00347 | 0.00523 | 0.00437 |
| ____ ZR | 0.00580 | 16.84 | 115.027 | 0.00665 | 0.01200 | -0.00126 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 9 Date/Time: 07/21/2017 12:51

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21505 | 1,014.81 | 0.737 | 0.21687 | 0.21400 | 0.21428 |
| ____ AL | 521.48317 | 28,954.57 | 0.421 | 520.53662 | 519.91879 | 523.99410 |
| ____ AS | 0.11982 | 8.41 | 15.008 | 0.09923 | 0.13243 | 0.12782 |
| ____ B | 0.03924 | 1,108.61 | 20.327 | 0.04053 | 0.04649 | 0.03069 |
| ____ BA | 0.53500 | 138,908.03 | 0.162 | 0.53599 | 0.53438 | 0.53464 |
| ____ BE | 0.50669 | 99,501.15 | 0.116 | 0.50661 | 0.50731 | 0.50615 |
| ____ CA | 517.11722 | 246,391.37 | 0.199 | 517.03836 | 516.12744 | 518.18586 |
| ____ CD | 0.93409 | 3,152.00 | 1.141 | 0.93331 | 0.92385 | 0.94512 |
| ____ CO | 0.46183 | 664.19 | 0.736 | 0.46137 | 0.45868 | 0.46543 |
| ____ CR | 0.48751 | 1,994.55 | 0.734 | 0.48960 | 0.48955 | 0.48338 |
| ____ CU | 0.52067 | 2,425.29 | 0.740 | 0.52468 | 0.52035 | 0.51699 |
| ____ FE | 205.44332 | 22,459.99 | 0.518 | 206.05282 | 204.21554 | 206.06161 |
| ____ K | 0.11317 | 36.65 | 87.334 | 0.11506 | 0.21105 | 0.01340 |
| ____ LI | -0.00216 | 2.78 | 153.352 | -0.00246 | -0.00532 | 0.00129 |
| ____ MG | 516.52231 | 349,310.84 | 0.511 | 519.31587 | 514.06938 | 516.18169 |
| ____ MN | 0.48958 | 10,522.86 | 0.338 | 0.48836 | 0.48893 | 0.49146 |
| ____ MO | -0.00075 | -1.15 | 375.649 | 0.00003 | -0.00386 | 0.00159 |
| ____ NA | 0.29885 | 48.84 | 1.875 | 0.29461 | 0.30521 | 0.29674 |
| ____ NI | 0.91916 | 873.06 | 0.495 | 0.92392 | 0.91484 | 0.91872 |
| ____ P | 0.02252 | 3.25 | 26.236 | 0.02922 | 0.01807 | 0.02027 |
| ____ PB | 0.50771 | 211.64 | 0.793 | 0.51000 | 0.50306 | 0.51008 |
| ____ S | 0.02342 | 1.75 | 126.554 | 0.05693 | 0.00066 | 0.01266 |
| ____ SB | 0.60988 | 67.55 | 4.960 | 0.64443 | 0.59703 | 0.58818 |
| ____ SE | 0.53004 | 28.44 | 1.789 | 0.51949 | 0.53787 | 0.53276 |
| ____ SI | 0.02048 | 1.83 | 37.095 | 0.01182 | 0.02604 | 0.02359 |
| ____ SN | 0.00258 | 0.65 | 179.181 | -0.00127 | 0.00130 | 0.00771 |
| ____ SR | 0.01758 | 5,074.92 | 0.307 | 0.01753 | 0.01764 | 0.01758 |
| ____ TI | 0.00218 | 69.46 | 17.465 | 0.00235 | 0.00244 | 0.00174 |
| ____ TL | 0.10934 | 6.05 | 6.331 | 0.10846 | 0.11665 | 0.10289 |
| ____ V | 0.51815 | 2,868.97 | 1.828 | 0.52480 | 0.52235 | 0.50730 |
| ____ Y1 | 2132.46000 | 2,132.46 | 0.372 | 2128.23000 | 2141.62000 | 2127.53000 |
| ____ Y2A | 73137.05227 | 73,137.05 | 1.312 | 74118.59932 | 72200.78250 | 73091.77500 |
| ____ Y2R | 5151.24842 | 5,151.25 | 1.475 | 5069.91821 | 5220.47676 | 5163.35029 |
| ____ ZN | 0.99189 | 2,174.41 | 0.509 | 0.99388 | 0.98614 | 0.99564 |
| ____ ZR | 0.00141 | 12.83 | 177.064 | -0.00115 | 0.00384 | 0.00154 |

LANCASTER LABORATORIES

Run Name: 1720206T71

Instrument ID: 16315

Tube: 10

Date/Time: 07/21/2017 12:55

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50635 | 2,837.69 | 0.476 | 0.50560 | 0.50905 | 0.50441 |
| ____ AL | 25.38661 | 1,497.86 | 0.810 | 25.43181 | 25.56592 | 25.16212 |
| ____ AS | 0.51067 | 39.30 | 2.356 | 0.49688 | 0.51901 | 0.51612 |
| ____ B | 0.49016 | 1,918.60 | 1.218 | 0.48357 | 0.49169 | 0.49521 |
| ____ BA | 0.51658 | 148,419.72 | 0.905 | 0.51658 | 0.52126 | 0.51190 |
| ____ BE | 0.48902 | 106,254.04 | 0.888 | 0.48879 | 0.49348 | 0.48480 |
| ____ CA | 25.40091 | 13,278.64 | 1.598 | 25.39723 | 25.80867 | 24.99683 |
| ____ CD | 0.49752 | 1,841.12 | 1.092 | 0.49384 | 0.49497 | 0.50376 |
| ____ CO | 0.49739 | 794.21 | 1.117 | 0.49182 | 0.49742 | 0.50293 |
| ____ CR | 0.49103 | 2,222.74 | 1.141 | 0.48659 | 0.49733 | 0.48917 |
| ____ CU | 0.49910 | 2,531.55 | 0.898 | 0.49439 | 0.50331 | 0.49960 |
| ____ FE | 25.19342 | 3,054.21 | 1.313 | 25.25280 | 25.49044 | 24.83702 |
| ____ K | 25.57203 | 4,818.66 | 1.482 | 25.68713 | 25.88007 | 25.14889 |
| ____ LI | 0.51671 | 1,534.38 | 1.243 | 0.51823 | 0.52224 | 0.50967 |
| ____ MG | 25.30308 | 19,880.46 | 1.404 | 25.37187 | 25.61900 | 24.91835 |
| ____ MN | 0.50833 | 12,008.73 | 0.718 | 0.50829 | 0.51201 | 0.50470 |
| ____ MO | 0.49451 | 271.29 | 0.782 | 0.49409 | 0.49086 | 0.49857 |
| ____ NA | 25.64949 | 17,652.33 | 1.655 | 25.69560 | 26.04898 | 25.20388 |
| ____ NI | 0.50191 | 531.86 | 0.453 | 0.50351 | 0.49931 | 0.50290 |
| ____ P | 0.49728 | 58.37 | 0.881 | 0.50187 | 0.49682 | 0.49315 |
| ____ PB | 0.49800 | 179.59 | 1.377 | 0.49876 | 0.50444 | 0.49079 |
| ____ S | 24.83103 | 1,072.72 | 0.516 | 24.69441 | 24.84996 | 24.94871 |
| ____ SB | 0.49629 | 61.05 | 0.776 | 0.49369 | 0.49446 | 0.50071 |
| ____ SE | 0.49009 | 29.45 | 2.921 | 0.50532 | 0.48804 | 0.47691 |
| ____ SI | 25.72381 | 2,525.04 | 1.716 | 25.72819 | 26.16309 | 25.28015 |
| ____ SN | 0.48106 | 103.79 | 1.046 | 0.47607 | 0.48099 | 0.48613 |
| ____ SR | 0.51496 | 165,214.03 | 0.856 | 0.51489 | 0.51941 | 0.51059 |
| ____ TI | 0.51331 | 10,332.51 | 0.810 | 0.51186 | 0.51800 | 0.51006 |
| ____ TL | 0.52152 | 41.04 | 2.133 | 0.51618 | 0.51407 | 0.53431 |
| ____ V | 0.49919 | 3,011.77 | 0.288 | 0.49755 | 0.50022 | 0.49981 |
| ____ Y1 | 2365.27167 | 2,365.27 | 1.964 | 2399.40500 | 2384.02500 | 2312.38500 |
| ____ Y2A | 80926.07190 | 80,926.07 | 1.411 | 82237.70000 | 80156.89157 | 80383.62413 |
| ____ Y2R | 5238.03826 | 5,238.04 | 2.095 | 5267.75738 | 5116.47897 | 5329.87841 |
| ____ ZN | 0.50024 | 1,201.14 | 0.526 | 0.49970 | 0.49792 | 0.50310 |
| ____ ZR | 0.49466 | 487.46 | 0.822 | 0.49476 | 0.49868 | 0.49054 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 11 Date/Time: 07/21/2017 12:57

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00052 | -23.85 | 198.941 | 0.00020 | -0.00171 | -0.00006 |
| ____ AL | -0.01856 | 31.48 | 100.854 | -0.03219 | 0.00278 | -0.02628 |
| ____ AS | 0.00801 | 0.32 | 60.507 | 0.00978 | 0.01173 | 0.00253 |
| ____ B | 0.00109 | -0.88 | 31.548 | 0.00139 | 0.00072 | 0.00116 |
| ____ BA | -0.00206 | -180.76 | 2.759 | -0.00212 | -0.00201 | -0.00204 |
| ____ BE | 0.00014 | -99.22 | 8.725 | 0.00013 | 0.00015 | 0.00013 |
| ____ CA | 0.00009 | 25.12 | 7570.919 | 0.00795 | -0.00184 | -0.00583 |
| ____ CD | 0.00037 | -3.73 | 64.549 | 0.00025 | 0.00021 | 0.00064 |
| ____ CO | 0.00143 | 3.01 | 31.377 | 0.00194 | 0.00121 | 0.00113 |
| ____ CR | 0.00031 | -1.55 | 233.453 | 0.00113 | -0.00028 | 0.00009 |
| ____ CU | 0.00100 | -12.16 | 106.410 | 0.00216 | 0.00008 | 0.00075 |
| ____ FE | 0.00870 | 2.13 | 288.254 | -0.00501 | 0.03766 | -0.00654 |
| ____ K | 0.04313 | 24.55 | 122.121 | -0.01063 | 0.09465 | 0.04537 |
| ____ LI | 0.00067 | -7.65 | 660.879 | -0.00413 | 0.00151 | 0.00464 |
| ____ MG | 0.00472 | 1.10 | 133.490 | 0.00826 | 0.00844 | -0.00255 |
| ____ MN | 0.00005 | -1.34 | 326.888 | 0.00004 | -0.00012 | 0.00024 |
| ____ MO | 0.00049 | -0.59 | 148.384 | 0.00117 | 0.00059 | -0.00028 |
| ____ NA | 0.15377 | -52.45 | 13.553 | 0.16775 | 0.16374 | 0.12982 |
| ____ NI | 0.00030 | 8.81 | 379.075 | 0.00040 | 0.00136 | -0.00087 |
| ____ P | -0.00052 | 0.95 | 415.111 | 0.00194 | -0.00138 | -0.00212 |
| ____ PB | -0.00574 | -3.48 | 144.270 | -0.01395 | -0.00590 | 0.00262 |
| ____ S | -0.01157 | 0.43 | 105.980 | -0.00395 | -0.02571 | -0.00504 |
| ____ SB | -0.00295 | -0.10 | 156.811 | -0.00787 | 0.00131 | -0.00229 |
| ____ SE | 0.00959 | 0.92 | 139.753 | 0.02370 | 0.00805 | -0.00297 |
| ____ SI | 0.01258 | 1.11 | 133.709 | 0.03047 | 0.01016 | -0.00290 |
| ____ SN | -0.00090 | -0.04 | 711.442 | 0.00646 | -0.00543 | -0.00374 |
| ____ SR | 0.00001 | -24.61 | 328.762 | -0.00002 | 0.00002 | 0.00003 |
| ____ TI | 0.00018 | 28.71 | 122.355 | 0.00029 | -0.00007 | 0.00033 |
| ____ TL | 0.00359 | 0.36 | 270.985 | 0.01128 | 0.00684 | -0.00735 |
| ____ V | 0.00116 | -11.44 | 105.128 | 0.00010 | 0.00088 | 0.00249 |
| ____ Y1 | 2368.54167 | 2,368.54 | 0.994 | 2360.61500 | 2395.02500 | 2349.98500 |
| ____ Y2A | 83903.50759 | 83,903.51 | 1.169 | 82785.51136 | 84616.79633 | 84308.21507 |
| ____ Y2R | 5372.80833 | 5,372.81 | 1.775 | 5462.45000 | 5272.62500 | 5383.35000 |
| ____ ZN | -0.00012 | 1.46 | 371.631 | -0.00041 | 0.00040 | -0.00035 |
| ____ ZR | -0.00435 | 7.65 | 55.171 | -0.00685 | -0.00206 | -0.00414 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 12 Date/Time: 07/21/2017 13:01

Sample Number: **PBW** Class: **** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00033 | -19.09 | 347.668 | 0.00158 | -0.00063 | 0.00002 |
| ____ AL | 0.02932 | 34.02 | 225.884 | 0.09159 | -0.04027 | 0.03664 |
| ____ AS | 0.01069 | 0.53 | 59.732 | 0.01473 | 0.01400 | 0.00333 |
| ____ B | 0.00127 | -0.13 | 19.905 | 0.00105 | 0.00154 | 0.00120 |
| ____ BA | -0.00202 | -173.30 | 1.855 | -0.00198 | -0.00205 | -0.00203 |
| ____ BE | 0.00011 | -105.87 | 15.945 | 0.00014 | 0.00010 | 0.00011 |
| ____ CA | 0.05506 | 54.68 | 135.390 | 0.13782 | 0.03421 | -0.00684 |
| ____ CD | 0.00037 | -3.79 | 114.564 | 0.00046 | 0.00074 | -0.00009 |
| ____ CO | 0.00040 | 1.40 | 76.599 | 0.00041 | 0.00009 | 0.00071 |
| ____ CR | 0.00116 | 2.50 | 82.543 | 0.00172 | 0.00005 | 0.00171 |
| ____ CU | -0.00131 | -24.57 | 156.615 | -0.00059 | 0.00028 | -0.00364 |
| ____ FE | 0.02264 | 3.95 | 173.374 | 0.06140 | 0.02364 | -0.01710 |
| ____ K | 0.12472 | 39.83 | 79.785 | 0.08670 | 0.04982 | 0.23762 |
| ____ LI | 0.00141 | -4.97 | 411.201 | 0.00750 | 0.00078 | -0.00405 |
| ____ MG | 0.06602 | 51.43 | 129.520 | 0.16382 | 0.02878 | 0.00544 |
| ____ MN | -0.00012 | -5.45 | 350.550 | 0.00030 | -0.00012 | -0.00053 |
| ____ MO | -0.00002 | -0.89 | 5395.336 | -0.00020 | -0.00071 | 0.00087 |
| ____ NA | 0.14012 | -61.45 | 11.757 | 0.14443 | 0.15402 | 0.12192 |
| ____ NI | -0.00035 | 8.31 | 513.044 | -0.00237 | 0.00107 | 0.00026 |
| ____ P | -0.00025 | 1.00 | 1135.276 | -0.00006 | 0.00247 | -0.00316 |
| ____ PB | -0.00399 | -2.91 | 45.225 | -0.00225 | -0.00388 | -0.00585 |
| ____ S | -0.00489 | 0.74 | 168.015 | 0.00002 | -0.01438 | -0.00031 |
| ____ SB | 0.00321 | 0.66 | 103.837 | -0.00054 | 0.00432 | 0.00585 |
| ____ SE | -0.01895 | -0.80 | 6.339 | -0.01846 | -0.01807 | -0.02032 |
| ____ SI | 0.01482 | 1.32 | 37.918 | 0.01923 | 0.01672 | 0.00849 |
| ____ SN | 0.00429 | 1.11 | 54.669 | 0.00221 | 0.00684 | 0.00383 |
| ____ SR | 0.00002 | -20.96 | 275.447 | 0.00006 | 0.00004 | -0.00004 |
| ____ TI | -0.00033 | 18.50 | 9.449 | -0.00032 | -0.00030 | -0.00036 |
| ____ TL | -0.00452 | -0.33 | 114.920 | -0.00087 | -0.00223 | -0.01047 |
| ____ V | 0.00207 | -5.74 | 36.968 | 0.00250 | 0.00118 | 0.00251 |
| ____ Y1 | 2419.83500 | 2,419.84 | 0.463 | 2408.47000 | 2430.88000 | 2420.15500 |
| ____ Y2A | 85275.00072 | 85,275.00 | 3.001 | 87651.57716 | 85606.83995 | 82566.58505 |
| ____ Y2R | 5315.21667 | 5,315.22 | 2.496 | 5468.10000 | 5246.85000 | 5230.70000 |
| ____ ZN | 0.00030 | 2.50 | 99.758 | 0.00065 | 0.00013 | 0.00013 |
| ____ ZR | -0.00472 | 7.17 | 159.387 | -0.00994 | 0.00390 | -0.00812 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 13 Date/Time: 07/21/2017 13:04

Sample Number: **LCSW** Class: **** Batch: 172001063501

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05503 | 320.14 | 3.711 | 0.05381 | 0.05739 | 0.05389 |
| ____ AL | 2.11639 | 162.21 | 4.576 | 2.22596 | 2.04217 | 2.08105 |
| ____ AS | 0.17018 | 13.32 | 2.546 | 0.16641 | 0.16922 | 0.17491 |
| ____ B | 1.91250 | 7,338.22 | 1.129 | 1.89078 | 1.91278 | 1.93395 |
| ____ BA | 2.06864 | 622,642.07 | 5.457 | 2.11482 | 1.93999 | 2.15112 |
| ____ BE | 0.05028 | 11,358.92 | 1.722 | 0.04936 | 0.05040 | 0.05108 |
| ____ CA | 4.18254 | 2,294.01 | 1.299 | 4.23986 | 4.13176 | 4.17599 |
| ____ CD | 0.05179 | 193.16 | 0.714 | 0.05218 | 0.05144 | 0.05175 |
| ____ CO | 0.52188 | 863.76 | 0.454 | 0.52256 | 0.52384 | 0.51924 |
| ____ CR | 0.20510 | 973.57 | 1.740 | 0.20168 | 0.20482 | 0.20880 |
| ____ CU | 0.26332 | 1,388.26 | 2.041 | 0.25879 | 0.26192 | 0.26926 |
| ____ FE | 1.03571 | 132.67 | 1.471 | 1.02739 | 1.02645 | 1.05329 |
| ____ K | 10.76174 | 2,111.19 | 0.965 | 10.87920 | 10.68193 | 10.72408 |
| ____ LI | 1.07088 | 3,303.72 | 1.416 | 1.08800 | 1.06546 | 1.05916 |
| ____ MG | 2.12958 | 1,741.86 | 0.782 | 2.14740 | 2.11443 | 2.12693 |
| ____ MN | 0.52095 | 12,916.64 | 0.821 | 0.51755 | 0.51957 | 0.52575 |
| ____ MO | 2.02152 | 1,149.82 | 0.921 | 2.02469 | 2.03835 | 2.00151 |
| ____ NA | 10.60435 | 7,463.83 | 2.593 | 10.91938 | 10.48153 | 10.41214 |
| ____ NI | 0.53211 | 583.28 | 0.745 | 0.53424 | 0.53455 | 0.52753 |
| ____ P | 1.00383 | 120.77 | 0.469 | 0.99904 | 1.00400 | 1.00845 |
| ____ PB | 0.14880 | 53.69 | 2.822 | 0.15290 | 0.14901 | 0.14451 |
| ____ S | 0.99515 | 45.39 | 3.385 | 1.02581 | 1.00055 | 0.95909 |
| ____ SB | 0.50685 | 63.56 | 2.137 | 0.49439 | 0.51219 | 0.51398 |
| ____ SE | 0.15985 | 10.17 | 9.352 | 0.17634 | 0.14717 | 0.15605 |
| ____ SI | 1.14188 | 118.40 | 2.470 | 1.15610 | 1.16015 | 1.10939 |
| ____ SN | 3.87684 | 863.95 | 0.782 | 3.89686 | 3.89171 | 3.84195 |
| ____ SR | 1.02651 | 345,910.53 | 3.494 | 1.00774 | 1.00393 | 1.06786 |
| ____ TI | 1.01101 | 21,312.14 | 0.947 | 1.00176 | 1.01040 | 1.02088 |
| ____ TL | 0.16985 | 12.47 | 3.103 | 0.17555 | 0.16887 | 0.16514 |
| ____ V | 0.50961 | 3,078.38 | 2.858 | 0.49948 | 0.50305 | 0.52630 |
| ____ Y1 | 2445.98667 | 2,445.99 | 2.133 | 2418.00000 | 2506.18000 | 2413.78000 |
| ____ Y2A | 85009.89274 | 85,009.89 | 1.780 | 84053.58928 | 86754.39034 | 84221.69858 |
| ____ Y2R | 5429.17019 | 5,429.17 | 4.779 | 5130.45000 | 5598.26057 | 5558.80000 |
| ____ ZN | 0.51079 | 1,263.38 | 0.762 | 0.51079 | 0.51468 | 0.50690 |
| ____ ZR | 1.00378 | 1,012.65 | 1.023 | 1.01377 | 1.00431 | 0.99325 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 14 Date/Time: 07/21/2017 13:07

Sample Number: **9109771** Class: U*** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00071 | -23.94 | 160.448 | -0.00063 | 0.00039 | -0.00188 |
| ____ AL | -0.07510 | 27.30 | 55.179 | -0.10829 | -0.08834 | -0.02866 |
| ____ AS | 0.00791 | 0.30 | 89.702 | 0.01223 | 0.01179 | -0.00028 |
| ____ B | 0.11777 | 420.23 | 1.679 | 0.11625 | 0.12000 | 0.11705 |
| ____ BA | 0.11349 | 32,366.95 | 0.221 | 0.11374 | 0.11324 | 0.11348 |
| ____ BE | -0.00007 | -137.71 | 33.653 | -0.00005 | -0.00009 | -0.00006 |
| ____ CA | 254.94955 | 128,059.91 | 2.500 | 262.25054 | 252.09628 | 250.50182 |
| ____ CD | 0.00020 | -4.10 | 232.445 | -0.00023 | 0.00013 | 0.00071 |
| ____ CO | 0.00110 | 2.07 | 68.619 | 0.00061 | 0.00072 | 0.00197 |
| ____ CR | 0.00471 | 18.20 | 26.590 | 0.00338 | 0.00587 | 0.00489 |
| ____ CU | 0.00135 | 9.51 | 86.956 | 0.00005 | 0.00234 | 0.00166 |
| ____ FE | 0.43674 | 54.33 | 2.694 | 0.43485 | 0.44933 | 0.42603 |
| ____ K | 5.78473 | 1,097.81 | 3.324 | 6.00484 | 5.69992 | 5.64943 |
| ____ LI | 0.03850 | 114.31 | 21.615 | 0.04019 | 0.02946 | 0.04584 |
| ____ MG | 41.70331 | 32,492.58 | 2.277 | 42.76866 | 41.39510 | 40.94616 |
| ____ MN | 0.25873 | 6,001.57 | 1.566 | 0.25462 | 0.26272 | 0.25884 |
| ____ MO | 0.00206 | 0.27 | 42.972 | 0.00295 | 0.00118 | 0.00206 |
| ____ NA | 86.77115 | 59,841.10 | 2.195 | 88.94416 | 85.97856 | 85.39074 |
| ____ NI | 0.00378 | 11.59 | 14.785 | 0.00313 | 0.00408 | 0.00412 |
| ____ P | 0.42037 | 47.77 | 3.151 | 0.40751 | 0.43398 | 0.41963 |
| ____ PB | -0.00412 | -2.36 | 135.978 | -0.00171 | -0.00012 | -0.01053 |
| ____ S | 149.68236 | 6,238.23 | 0.366 | 149.80044 | 149.08491 | 150.16173 |
| ____ SB | 0.00307 | 0.63 | 379.180 | 0.01643 | -0.00240 | -0.00483 |
| ____ SE | -0.00294 | 0.16 | 870.216 | 0.01363 | -0.03235 | 0.00992 |
| ____ SI | 17.30523 | 1,690.77 | 0.605 | 17.42486 | 17.26052 | 17.23032 |
| ____ SN | 0.00390 | 0.97 | 43.298 | 0.00544 | 0.00417 | 0.00209 |
| ____ SR | 1.52939 | 481,770.65 | 4.691 | 1.57800 | 1.56318 | 1.44699 |
| ____ TI | 0.00610 | 143.57 | 10.335 | 0.00576 | 0.00682 | 0.00571 |
| ____ TL | 0.00162 | 0.19 | 307.225 | -0.00072 | 0.00733 | -0.00175 |
| ____ V | 0.00086 | -12.84 | 81.966 | 0.00046 | 0.00168 | 0.00045 |
| ____ Y1 | 2283.39856 | 2,283.40 | 1.954 | 2321.15308 | 2294.88909 | 2234.15352 |
| ____ Y2A | 79542.84882 | 79,542.85 | 3.758 | 77395.57942 | 78276.27373 | 82956.69331 |
| ____ Y2R | 5213.93173 | 5,213.93 | 1.289 | 5291.46719 | 5172.67013 | 5177.65787 |
| ____ ZN | 0.00663 | 17.00 | 1.002 | 0.00664 | 0.00669 | 0.00656 |
| ____ ZR | -0.00822 | 3.73 | 45.889 | -0.01008 | -0.01071 | -0.00388 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 15 Date/Time: 07/21/2017 13:10

Sample Number: **9109771** Class: UP** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.02404 | 134.64 | 1.852 | 0.02449 | 0.02360 | 0.02403 |
| ____ AL | 1.01024 | 88.36 | 8.192 | 1.10541 | 0.95514 | 0.97017 |
| ____ AS | 0.53064 | 39.85 | 1.804 | 0.52762 | 0.52293 | 0.54135 |
| ____ B | 0.30275 | 1,149.81 | 1.333 | 0.29809 | 0.30504 | 0.30513 |
| ____ BA | 0.15915 | 47,852.70 | 1.584 | 0.15652 | 0.15938 | 0.16154 |
| ____ BE | 0.01967 | 4,319.96 | 1.890 | 0.01925 | 0.01980 | 0.01997 |
| ____ CA | 246.80460 | 121,750.34 | 1.366 | 250.45954 | 246.14035 | 243.81390 |
| ____ CD | 0.04918 | 172.88 | 0.387 | 0.04903 | 0.04912 | 0.04939 |
| ____ CO | 0.09849 | 153.86 | 0.260 | 0.09821 | 0.09871 | 0.09854 |
| ____ CR | 0.19732 | 927.24 | 1.069 | 0.19494 | 0.19895 | 0.19807 |
| ____ CU | 0.49770 | 2,646.31 | 1.741 | 0.48878 | 0.49822 | 0.50608 |
| ____ FE | 0.88757 | 107.25 | 1.197 | 0.87770 | 0.89882 | 0.88618 |
| ____ K | 7.64250 | 1,417.43 | 0.239 | 7.62638 | 7.66240 | 7.63873 |
| ____ LI | 1.05700 | 3,081.83 | 0.545 | 1.05248 | 1.05504 | 1.06348 |
| ____ MG | 41.30157 | 31,568.07 | 1.273 | 41.87568 | 41.18605 | 40.84299 |
| ____ MN | 0.30463 | 7,476.99 | 1.583 | 0.29921 | 0.30624 | 0.30845 |
| ____ MO | 0.20275 | 108.07 | 0.793 | 0.20202 | 0.20459 | 0.20163 |
| ____ NA | 85.89485 | 58,103.44 | 1.255 | 87.08729 | 85.60910 | 84.98815 |
| ____ NI | 0.14814 | 158.85 | 0.950 | 0.14910 | 0.14880 | 0.14652 |
| ____ P | 1.46257 | 165.62 | 0.900 | 1.45593 | 1.47772 | 1.45404 |
| ____ PB | 0.48075 | 166.56 | 0.218 | 0.47965 | 0.48173 | 0.48087 |
| ____ S | 147.13844 | 6,200.68 | 0.464 | 146.44660 | 147.15762 | 147.81111 |
| ____ SB | 0.40639 | 48.41 | 1.733 | 0.41000 | 0.39827 | 0.41089 |
| ____ SE | 0.77723 | 45.44 | 1.677 | 0.77531 | 0.76527 | 0.79112 |
| ____ SI | 17.74056 | 1,700.52 | 0.090 | 17.73798 | 17.72596 | 17.75773 |
| ____ SN | 0.58753 | 123.70 | 0.999 | 0.58171 | 0.59345 | 0.58743 |
| ____ SR | 1.45260 | 484,469.91 | 6.942 | 1.33753 | 1.49465 | 1.52560 |
| ____ TI | 0.10736 | 2,263.62 | 1.695 | 0.10526 | 0.10855 | 0.10826 |
| ____ TL | 0.96782 | 77.52 | 1.724 | 0.97024 | 0.98316 | 0.95006 |
| ____ V | 0.10158 | 612.14 | 1.714 | 0.09998 | 0.10133 | 0.10344 |
| ____ Y1 | 2308.79396 | 2,308.79 | 2.026 | 2322.35200 | 2256.72962 | 2347.30027 |
| ____ Y2A | 84174.55395 | 84,174.55 | 1.442 | 85570.55245 | 83587.11819 | 83365.99122 |
| ____ Y2R | 5114.90112 | 5,114.90 | 0.925 | 5156.48056 | 5124.82531 | 5063.39749 |
| ____ ZN | 0.12443 | 292.17 | 0.163 | 0.12458 | 0.12420 | 0.12451 |
| ____ ZR | 0.98723 | 938.72 | 0.315 | 0.98433 | 0.98686 | 0.99052 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 16 Date/Time: 07/21/2017 13:13

Sample Number: **9109774** Class: D*** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00036 | -22.22 | 368.471 | -0.00094 | 0.00116 | -0.00131 |
| ____ AL | -0.00623 | 30.71 | 463.078 | 0.01294 | 0.00777 | -0.03938 |
| ____ AS | 0.01120 | 0.56 | 119.633 | 0.01933 | 0.01854 | -0.00427 |
| ____ B | 0.11445 | 415.95 | 1.789 | 0.11556 | 0.11569 | 0.11208 |
| ____ BA | 0.11138 | 32,377.48 | 0.597 | 0.11081 | 0.11121 | 0.11211 |
| ____ BE | -0.00015 | -157.48 | 3.292 | -0.00015 | -0.00014 | -0.00015 |
| ____ CA | 255.63726 | 126,126.20 | 0.730 | 255.95086 | 257.32592 | 253.63498 |
| ____ CD | 0.00024 | -4.09 | 115.790 | 0.00022 | -0.00003 | 0.00053 |
| ____ CO | 0.00037 | 0.99 | 53.721 | 0.00034 | 0.00058 | 0.00018 |
| ____ CR | 0.00447 | 17.35 | 38.229 | 0.00629 | 0.00421 | 0.00290 |
| ____ CU | 0.00147 | 10.28 | 61.163 | 0.00181 | 0.00045 | 0.00215 |
| ____ FE | 0.41070 | 50.22 | 5.413 | 0.39153 | 0.43507 | 0.40550 |
| ____ K | 5.78481 | 1,078.32 | 0.853 | 5.76333 | 5.84128 | 5.74983 |
| ____ LI | 0.03625 | 105.63 | 11.417 | 0.03167 | 0.03971 | 0.03738 |
| ____ MG | 41.59499 | 31,835.65 | 0.918 | 41.55869 | 41.99388 | 41.23239 |
| ____ MN | 0.26101 | 6,169.25 | 0.310 | 0.26017 | 0.26178 | 0.26107 |
| ____ MO | 0.00130 | -0.14 | 152.552 | 0.00052 | -0.00018 | 0.00357 |
| ____ NA | 87.04362 | 58,969.71 | 0.713 | 87.00491 | 87.68233 | 86.44362 |
| ____ NI | 0.00259 | 10.77 | 34.853 | 0.00240 | 0.00358 | 0.00180 |
| ____ P | 0.42715 | 50.28 | 1.351 | 0.42606 | 0.43339 | 0.42201 |
| ____ PB | -0.00523 | -2.85 | 97.500 | -0.01089 | -0.00383 | -0.00098 |
| ____ S | 148.11395 | 6,394.96 | 0.198 | 148.44116 | 148.02614 | 147.87455 |
| ____ SB | -0.00007 | 0.26 | 4462.207 | 0.00365 | -0.00194 | -0.00192 |
| ____ SE | -0.00034 | 0.33 | 3915.256 | -0.01112 | -0.01617 | 0.02628 |
| ____ SI | 17.45556 | 1,675.69 | 0.469 | 17.38454 | 17.54505 | 17.43708 |
| ____ SN | 0.00198 | 0.59 | 45.642 | 0.00106 | 0.00287 | 0.00202 |
| ____ SR | 1.52605 | 490,425.27 | 0.664 | 1.53044 | 1.53323 | 1.51446 |
| ____ TI | 0.00554 | 135.33 | 3.149 | 0.00552 | 0.00573 | 0.00538 |
| ____ TL | 0.00502 | 0.47 | 118.638 | 0.00566 | -0.00123 | 0.01061 |
| ____ V | 0.00153 | -8.88 | 92.779 | 0.00186 | -0.00003 | 0.00275 |
| ____ Y1 | 2365.49619 | 2,365.50 | 0.307 | 2361.43386 | 2361.17770 | 2373.87702 |
| ____ Y2A | 81054.18333 | 81,054.18 | 0.877 | 80264.72500 | 81642.25000 | 81255.57500 |
| ____ Y2R | 5123.60842 | 5,123.61 | 3.223 | 5166.22526 | 4941.35000 | 5263.25000 |
| ____ ZN | 0.00610 | 16.33 | 4.146 | 0.00638 | 0.00588 | 0.00605 |
| ____ ZR | -0.00475 | 6.92 | 64.803 | -0.00823 | -0.00238 | -0.00365 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 17 Date/Time: 07/21/2017 13:16

Sample Number: **9109772** Class: R*** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05666 | 310.09 | 1.675 | 0.05642 | 0.05585 | 0.05770 |
| ____ AL | 2.19788 | 154.69 | 2.018 | 2.19333 | 2.15598 | 2.24434 |
| ____ AS | 0.17903 | 12.61 | 1.484 | 0.17607 | 0.18121 | 0.17980 |
| ____ B | 2.12103 | 7,656.64 | 0.458 | 2.11325 | 2.13193 | 2.11793 |
| ____ BA | 2.18405 | 618,600.21 | 3.945 | 2.13778 | 2.13091 | 2.28347 |
| ____ BE | 0.05076 | 10,786.60 | 0.725 | 0.05034 | 0.05091 | 0.05104 |
| ____ CA | 254.20798 | 122,878.53 | 1.272 | 255.20829 | 256.82419 | 250.59146 |
| ____ CD | 0.05070 | 169.87 | 1.526 | 0.05083 | 0.05140 | 0.04987 |
| ____ CO | 0.50409 | 749.33 | 1.452 | 0.50748 | 0.50910 | 0.49569 |
| ____ CR | 0.20553 | 917.65 | 0.806 | 0.20435 | 0.20742 | 0.20481 |
| ____ CU | 0.26318 | 1,323.74 | 1.933 | 0.26537 | 0.26680 | 0.25736 |
| ____ FE | 1.47231 | 173.84 | 0.449 | 1.47967 | 1.46690 | 1.47034 |
| ____ K | 16.61236 | 3,004.79 | 0.694 | 16.59023 | 16.50981 | 16.73703 |
| ____ LI | 1.10993 | 3,175.32 | 0.994 | 1.11629 | 1.11630 | 1.09719 |
| ____ MG | 43.03927 | 32,256.02 | 1.169 | 43.17057 | 43.46368 | 42.48355 |
| ____ MN | 0.76145 | 17,757.34 | 0.482 | 0.75995 | 0.75877 | 0.76563 |
| ____ MO | 2.08375 | 1,064.63 | 1.431 | 2.08955 | 2.11025 | 2.05145 |
| ____ NA | 95.11725 | 63,133.62 | 1.235 | 95.40911 | 96.11832 | 93.82431 |
| ____ NI | 0.50912 | 501.27 | 1.441 | 0.51243 | 0.51422 | 0.50071 |
| ____ P | 1.12757 | 121.75 | 1.814 | 1.12604 | 1.14875 | 1.10792 |
| ____ PB | 0.13703 | 44.70 | 6.320 | 0.14524 | 0.13788 | 0.12798 |
| ____ S | 148.28915 | 5,947.51 | 1.545 | 147.90300 | 150.74876 | 146.21569 |
| ____ SB | 0.53141 | 59.84 | 1.132 | 0.53502 | 0.53474 | 0.52447 |
| ____ SE | 0.08337 | 4.91 | 29.052 | 0.11124 | 0.06744 | 0.07142 |
| ____ SI | 18.03010 | 1,697.60 | 0.436 | 18.04332 | 18.10121 | 17.94579 |
| ____ SN | 3.97365 | 795.44 | 1.296 | 4.00761 | 3.99896 | 3.91438 |
| ____ SR | 2.47937 | 786,004.13 | 4.016 | 2.40957 | 2.43513 | 2.59340 |
| ____ TI | 1.04127 | 20,643.06 | 0.403 | 1.03861 | 1.03910 | 1.04611 |
| ____ TL | 0.17207 | 11.33 | 2.701 | 0.17167 | 0.16764 | 0.17691 |
| ____ V | 0.52180 | 2,964.26 | 1.146 | 0.52095 | 0.52816 | 0.51628 |
| ____ Y1 | 2197.66684 | 2,197.67 | 2.019 | 2163.15816 | 2182.11894 | 2247.72341 |
| ____ Y2A | 79950.94204 | 79,950.94 | 2.010 | 78386.32508 | 81596.60000 | 79869.90102 |
| ____ Y2R | 5018.00783 | 5,018.01 | 2.337 | 5146.70330 | 4917.21623 | 4990.10396 |
| ____ ZN | 0.51559 | 1,145.18 | 1.179 | 0.51782 | 0.52023 | 0.50871 |
| ____ ZR | 1.02136 | 952.48 | 0.673 | 1.02531 | 1.01342 | 1.02535 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 18 Date/Time: 07/21/2017 13:20

Sample Number: **9109773** Class: M*** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05593 | 314.88 | 1.723 | 0.05493 | 0.05599 | 0.05686 |
| ____ AL | 2.14262 | 165.15 | 5.095 | 2.16169 | 2.24100 | 2.02519 |
| ____ AS | 0.17103 | 13.07 | 4.501 | 0.16457 | 0.16897 | 0.17954 |
| ____ B | 2.07715 | 7,717.35 | 0.538 | 2.06436 | 2.08199 | 2.08509 |
| ____ BA | 2.21595 | 645,812.74 | 1.711 | 2.25464 | 2.21431 | 2.17888 |
| ____ BE | 0.05023 | 10,982.69 | 0.410 | 0.05028 | 0.05000 | 0.05040 |
| ____ CA | 256.96878 | 135,138.74 | 3.492 | 267.32863 | 251.90046 | 251.67724 |
| ____ CD | 0.05065 | 184.43 | 1.393 | 0.04991 | 0.05131 | 0.05074 |
| ____ CO | 0.50380 | 813.94 | 0.506 | 0.50197 | 0.50671 | 0.50272 |
| ____ CR | 0.20172 | 926.90 | 1.329 | 0.19931 | 0.20461 | 0.20124 |
| ____ CU | 0.25980 | 1,345.38 | 2.063 | 0.25415 | 0.26481 | 0.26043 |
| ____ FE | 1.43788 | 184.95 | 0.496 | 1.43127 | 1.44543 | 1.43694 |
| ____ K | 16.60742 | 3,270.77 | 1.627 | 16.91523 | 16.49717 | 16.40985 |
| ____ LI | 1.09759 | 3,419.42 | 1.076 | 1.10969 | 1.08609 | 1.09699 |
| ____ MG | 43.52213 | 35,498.98 | 3.359 | 45.20597 | 42.78312 | 42.57730 |
| ____ MN | 0.74873 | 17,973.35 | 0.886 | 0.74402 | 0.74585 | 0.75631 |
| ____ MO | 2.08740 | 1,159.13 | 0.827 | 2.07482 | 2.10708 | 2.08031 |
| ____ NA | 95.81649 | 69,223.93 | 3.402 | 99.57844 | 94.04743 | 93.82358 |
| ____ NI | 0.50493 | 540.39 | 0.919 | 0.50061 | 0.50984 | 0.50433 |
| ____ P | 1.11376 | 130.71 | 1.421 | 1.09606 | 1.12657 | 1.11865 |
| ____ PB | 0.13859 | 49.17 | 3.744 | 0.13299 | 0.13957 | 0.14322 |
| ____ S | 151.18222 | 6,589.82 | 1.170 | 150.40845 | 153.20540 | 149.93279 |
| ____ SB | 0.52205 | 63.88 | 2.840 | 0.50553 | 0.53421 | 0.52639 |
| ____ SE | 0.09358 | 5.96 | 32.252 | 0.06195 | 0.09672 | 0.12206 |
| ____ SI | 18.10029 | 1,855.44 | 2.062 | 18.53098 | 17.87405 | 17.89585 |
| ____ SN | 3.95516 | 860.54 | 0.709 | 3.92345 | 3.97672 | 3.96530 |
| ____ SR | 2.52642 | 824,291.07 | 0.514 | 2.51771 | 2.54135 | 2.52018 |
| ____ TI | 1.02441 | 20,905.92 | 1.038 | 1.01591 | 1.02098 | 1.03634 |
| ____ TL | 0.17728 | 12.75 | 3.601 | 0.17489 | 0.18452 | 0.17244 |
| ____ V | 0.51924 | 3,034.07 | 1.485 | 0.51528 | 0.52813 | 0.51431 |
| ____ Y1 | 2388.30640 | 2,388.31 | 1.130 | 2407.30842 | 2357.40593 | 2400.20484 |
| ____ Y2A | 82286.87271 | 82,286.87 | 2.454 | 80246.20076 | 82329.87428 | 84284.54309 |
| ____ Y2R | 5465.72422 | 5,465.72 | 3.276 | 5261.52270 | 5595.73671 | 5539.91324 |
| ____ ZN | 0.51251 | 1,237.21 | 0.624 | 0.50988 | 0.51607 | 0.51159 |
| ____ ZR | 1.00692 | 1,022.34 | 2.528 | 1.03629 | 0.99327 | 0.99121 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 19 Date/Time: 07/21/2017 13:23

Sample Number: **9109771** Class: UL** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00074 | -24.15 | 71.787 | -0.00106 | -0.00013 | -0.00103 |
| ____ AL | -0.00440 | 32.04 | 805.256 | 0.00961 | 0.02187 | -0.04468 |
| ____ AS | 0.00454 | 0.04 | 282.785 | 0.00383 | 0.01771 | -0.00792 |
| ____ B | 0.03317 | 116.35 | 0.961 | 0.03349 | 0.03316 | 0.03285 |
| ____ BA | 0.02009 | 6,148.94 | 1.614 | 0.02046 | 0.01994 | 0.01986 |
| ____ BE | 0.00009 | -105.81 | 22.652 | 0.00007 | 0.00008 | 0.00011 |
| ____ CA | 48.62017 | 25,749.48 | 1.067 | 48.17294 | 49.18923 | 48.49833 |
| ____ CD | 0.00047 | -3.41 | 78.235 | 0.00089 | 0.00027 | 0.00024 |
| ____ CO | 0.00032 | 1.21 | 165.273 | 0.00072 | -0.00028 | 0.00051 |
| ____ CR | 0.00166 | 4.59 | 86.037 | 0.00001 | 0.00251 | 0.00245 |
| ____ CU | -0.00181 | -22.19 | 161.767 | -0.00022 | -0.00002 | -0.00520 |
| ____ FE | 0.09008 | 12.28 | 32.660 | 0.10527 | 0.05617 | 0.10880 |
| ____ K | 1.26786 | 258.29 | 3.211 | 1.31310 | 1.25628 | 1.23420 |
| ____ LI | 0.01242 | 29.84 | 17.496 | 0.01453 | 0.01255 | 0.01019 |
| ____ MG | 8.35997 | 6,710.34 | 1.101 | 8.26431 | 8.36767 | 8.44792 |
| ____ MN | 0.05048 | 1,185.10 | 2.251 | 0.05176 | 0.05009 | 0.04958 |
| ____ MO | 0.00105 | -0.28 | 83.634 | 0.00099 | 0.00020 | 0.00196 |
| ____ NA | 17.24936 | 12,024.90 | 0.906 | 17.14279 | 17.42878 | 17.17650 |
| ____ NI | 0.00108 | 9.71 | 116.983 | -0.00002 | 0.00247 | 0.00081 |
| ____ P | 0.07705 | 10.08 | 1.600 | 0.07586 | 0.07833 | 0.07696 |
| ____ PB | -0.00782 | -4.21 | 47.623 | -0.00491 | -0.01202 | -0.00654 |
| ____ S | 28.82026 | 1,268.29 | 0.986 | 28.83176 | 28.53052 | 29.09849 |
| ____ SB | -0.00483 | -0.32 | 63.763 | -0.00784 | -0.00494 | -0.00169 |
| ____ SE | -0.00920 | -0.20 | 81.650 | -0.01702 | -0.00856 | -0.00203 |
| ____ SI | 3.32014 | 331.33 | 0.472 | 3.31496 | 3.30772 | 3.33775 |
| ____ SN | 0.00227 | 0.66 | 73.082 | 0.00087 | 0.00410 | 0.00183 |
| ____ SR | 0.30067 | 96,119.84 | 1.306 | 0.30519 | 0.29812 | 0.29869 |
| ____ TI | 0.00407 | 105.23 | 15.586 | 0.00440 | 0.00446 | 0.00334 |
| ____ TL | 0.00149 | 0.17 | 777.383 | 0.01456 | -0.00256 | -0.00753 |
| ____ V | 0.00220 | -4.67 | 23.021 | 0.00274 | 0.00211 | 0.00174 |
| ____ Y1 | 2409.33500 | 2,409.34 | 2.195 | 2363.23000 | 2397.72000 | 2467.05500 |
| ____ Y2A | 80645.76097 | 80,645.76 | 0.714 | 80981.96493 | 80974.15770 | 79981.16029 |
| ____ Y2R | 5327.53851 | 5,327.54 | 3.153 | 5142.09658 | 5371.08283 | 5469.43613 |
| ____ ZN | 0.00066 | 3.38 | 17.683 | 0.00078 | 0.00064 | 0.00055 |
| ____ ZR | -0.00560 | 6.37 | 11.522 | -0.00493 | -0.00566 | -0.00622 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 20 Date/Time: 07/21/2017 13:26

Sample Number: **9107407** Class: **** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00098 | -14.92 | 42.150 | 0.00082 | 0.00145 | 0.00067 |
| ____ AL | -0.00744 | 31.45 | 1255.958 | -0.10906 | 0.01220 | 0.07456 |
| ____ AS | 0.00689 | 0.24 | 127.980 | 0.00819 | -0.00251 | 0.01499 |
| ____ B | 0.05572 | 203.89 | 0.948 | 0.05542 | 0.05541 | 0.05633 |
| ____ BA | 0.19106 | 56,211.79 | 1.199 | 0.19340 | 0.19096 | 0.18882 |
| ____ BE | 0.00004 | -118.71 | 114.725 | -0.00001 | 0.00005 | 0.00008 |
| ____ CA | 72.79057 | 37,939.06 | 1.406 | 72.94504 | 73.72822 | 71.69844 |
| ____ CD | 0.00022 | -4.23 | 190.742 | 0.00058 | -0.00023 | 0.00030 |
| ____ CO | 0.00069 | 1.53 | 106.462 | 0.00078 | 0.00139 | -0.00008 |
| ____ CR | 0.00091 | 1.21 | 91.860 | 0.00107 | 0.00165 | 0.00000 |
| ____ CU | 0.00034 | -9.66 | 111.742 | 0.00055 | -0.00010 | 0.00057 |
| ____ FE | 0.25639 | 32.67 | 8.924 | 0.28017 | 0.25448 | 0.23453 |
| ____ K | 3.02003 | 586.13 | 3.326 | 3.03370 | 3.11294 | 2.91346 |
| ____ LI | 0.02236 | 60.40 | 13.086 | 0.02396 | 0.01898 | 0.02414 |
| ____ MG | 11.34351 | 8,988.52 | 0.612 | 11.33570 | 11.41654 | 11.27830 |
| ____ MN | 1.24404 | 29,928.90 | 1.242 | 1.26057 | 1.24162 | 1.22994 |
| ____ MO | 0.00990 | 4.63 | 7.621 | 0.01034 | 0.01032 | 0.00903 |
| ____ NA | 29.71271 | 20,579.71 | 1.182 | 29.76636 | 30.03398 | 29.33779 |
| ____ NI | 0.00465 | 13.05 | 30.153 | 0.00431 | 0.00619 | 0.00345 |
| ____ P | -0.00003 | 1.01 | 1457.775 | 0.00164 | 0.00250 | -0.00423 |
| ____ PB | -0.00317 | -2.17 | 119.034 | -0.00038 | -0.00167 | -0.00747 |
| ____ S | 19.94846 | 871.22 | 0.526 | 19.90646 | 19.87103 | 20.06787 |
| ____ SB | 0.00577 | 0.96 | 46.973 | 0.00275 | 0.00799 | 0.00658 |
| ____ SE | -0.03957 | -2.03 | 29.402 | -0.02962 | -0.03671 | -0.05236 |
| ____ SI | 16.56597 | 1,633.92 | 0.820 | 16.50962 | 16.72089 | 16.46741 |
| ____ SN | 0.00096 | 0.36 | 315.927 | -0.00142 | 0.00437 | -0.00007 |
| ____ SR | 0.46573 | 152,276.16 | 1.256 | 0.47142 | 0.46605 | 0.45973 |
| ____ TI | 0.00436 | 113.60 | 9.163 | 0.00418 | 0.00482 | 0.00408 |
| ____ TL | 0.00587 | 0.54 | 95.661 | 0.00728 | -0.00032 | 0.01065 |
| ____ V | 0.00373 | 3.94 | 2.257 | 0.00363 | 0.00376 | 0.00378 |
| ____ Y1 | 2390.43333 | 2,390.43 | 2.834 | 2448.59000 | 2316.05000 | 2406.66000 |
| ____ Y2A | 82487.41425 | 82,487.41 | 2.078 | 81418.31337 | 81579.55451 | 84464.37488 |
| ____ Y2R | 5264.03700 | 5,264.04 | 1.982 | 5382.55837 | 5185.92877 | 5223.62385 |
| ____ ZN | 0.00940 | 24.39 | 2.804 | 0.00923 | 0.00970 | 0.00926 |
| ____ ZR | -0.00731 | 4.74 | 89.566 | 0.00023 | -0.01066 | -0.01151 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 21 Date/Time: 07/21/2017 13:29

Sample Number: **9109779** Class: **** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00002 | -19.64 | 5022.167 | -0.00115 | 0.00009 | 0.00099 |
| ____ AL | 0.04346 | 33.31 | 176.909 | 0.01517 | 0.13048 | -0.01527 |
| ____ AS | 0.00319 | -0.07 | 388.870 | -0.00845 | 0.00180 | 0.01621 |
| ____ B | 0.11559 | 404.17 | 1.503 | 0.11452 | 0.11760 | 0.11466 |
| ____ BA | 0.11470 | 32,048.07 | 2.496 | 0.11294 | 0.11800 | 0.11315 |
| ____ BE | -0.00007 | -134.83 | 6.017 | -0.00007 | -0.00007 | -0.00006 |
| ____ CA | 257.82604 | 126,430.58 | 1.850 | 258.54556 | 262.19464 | 252.73793 |
| ____ CD | 0.00053 | -2.90 | 46.608 | 0.00057 | 0.00026 | 0.00074 |
| ____ CO | 0.00098 | 1.88 | 17.759 | 0.00097 | 0.00082 | 0.00116 |
| ____ CR | 0.00429 | 15.91 | 13.450 | 0.00368 | 0.00437 | 0.00482 |
| ____ CU | 0.00196 | 12.73 | 82.384 | 0.00316 | 0.00012 | 0.00260 |
| ____ FE | 0.42153 | 51.27 | 0.442 | 0.41944 | 0.42212 | 0.42302 |
| ____ K | 6.06096 | 1,122.72 | 0.804 | 6.00514 | 6.09507 | 6.08267 |
| ____ LI | 0.04507 | 130.80 | 3.374 | 0.04523 | 0.04651 | 0.04348 |
| ____ MG | 42.48256 | 32,322.68 | 1.664 | 42.67422 | 43.07371 | 41.69974 |
| ____ MN | 0.25939 | 5,894.77 | 2.975 | 0.25554 | 0.26827 | 0.25436 |
| ____ MO | 0.00277 | 0.63 | 18.728 | 0.00223 | 0.00327 | 0.00281 |
| ____ NA | 87.55085 | 58,973.27 | 1.753 | 87.71505 | 88.99722 | 85.94029 |
| ____ NI | 0.00454 | 12.23 | 21.603 | 0.00507 | 0.00514 | 0.00341 |
| ____ P | 0.06168 | 7.75 | 4.755 | 0.06105 | 0.06487 | 0.05911 |
| ____ PB | -0.01072 | -4.58 | 51.885 | -0.00539 | -0.01649 | -0.01028 |
| ____ S | 151.83821 | 6,252.92 | 1.964 | 150.75692 | 149.54716 | 155.21054 |
| ____ SB | 0.00486 | 0.81 | 114.304 | 0.00277 | 0.00065 | 0.01114 |
| ____ SE | -0.02173 | -0.89 | 128.821 | -0.02780 | 0.00880 | -0.04620 |
| ____ SI | 17.49917 | 1,670.12 | 1.579 | 17.47847 | 17.78533 | 17.23370 |
| ____ SN | 0.00188 | 0.55 | 130.314 | 0.00467 | 0.00094 | 0.00004 |
| ____ SR | 1.57118 | 485,681.07 | 3.712 | 1.58314 | 1.62260 | 1.50781 |
| ____ TI | 0.00560 | 131.35 | 1.645 | 0.00561 | 0.00550 | 0.00568 |
| ____ TL | 0.00279 | 0.27 | 252.411 | 0.00905 | -0.00481 | 0.00412 |
| ____ V | 0.00128 | -10.25 | 58.732 | 0.00048 | 0.00197 | 0.00141 |
| ____ Y1 | 2256.68410 | 2,256.68 | 1.683 | 2285.17520 | 2271.31295 | 2213.56415 |
| ____ Y2A | 77992.03886 | 77,992.04 | 4.720 | 81732.13573 | 74371.90000 | 77872.08084 |
| ____ Y2R | 5094.12213 | 5,094.12 | 1.329 | 5115.75185 | 5018.26291 | 5148.35165 |
| ____ ZN | 0.00628 | 16.00 | 4.343 | 0.00605 | 0.00621 | 0.00658 |
| ____ ZR | -0.00274 | 8.80 | 143.080 | -0.00612 | -0.00364 | 0.00155 |

LANCASTER LABORATORIES

Run Name: 1720206T71

Instrument ID: 16315

Tube: 22

Date/Time: 07/21/2017 13:32

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.48689 | 2,723.23 | 0.649 | 0.48350 | 0.48741 | 0.48975 |
| ____ AL | 25.20277 | 1,448.75 | 0.682 | 25.39423 | 25.15260 | 25.06147 |
| ____ AS | 0.49478 | 38.59 | 2.807 | 0.50464 | 0.47890 | 0.50081 |
| ____ B | 0.48241 | 1,885.33 | 1.408 | 0.47536 | 0.48296 | 0.48891 |
| ____ BA | 0.50212 | 144,056.06 | 0.174 | 0.50134 | 0.50195 | 0.50306 |
| ____ BE | 0.47632 | 103,312.01 | 0.764 | 0.47246 | 0.47679 | 0.47969 |
| ____ CA | 25.01216 | 12,739.08 | 1.255 | 25.36443 | 24.76258 | 24.90948 |
| ____ CD | 0.48881 | 1,833.65 | 0.566 | 0.48966 | 0.48572 | 0.49105 |
| ____ CO | 0.49153 | 795.56 | 1.058 | 0.49541 | 0.48562 | 0.49354 |
| ____ CR | 0.47793 | 2,159.23 | 1.523 | 0.46981 | 0.48013 | 0.48385 |
| ____ CU | 0.49148 | 2,488.08 | 1.436 | 0.48377 | 0.49762 | 0.49304 |
| ____ FE | 24.89412 | 2,940.65 | 1.318 | 24.98730 | 25.16559 | 24.52948 |
| ____ K | 25.83343 | 4,742.43 | 1.202 | 26.01874 | 26.00658 | 25.47497 |
| ____ LI | 0.51760 | 1,497.54 | 2.275 | 0.51630 | 0.52997 | 0.50652 |
| ____ MG | 25.20038 | 19,289.12 | 1.170 | 25.54039 | 25.04711 | 25.01365 |
| ____ MN | 0.49092 | 11,577.45 | 0.876 | 0.48674 | 0.49070 | 0.49533 |
| ____ MO | 0.49075 | 272.91 | 0.473 | 0.49052 | 0.48856 | 0.49318 |
| ____ NA | 25.34592 | 16,991.65 | 1.107 | 25.66560 | 25.14122 | 25.23092 |
| ____ NI | 0.49037 | 526.86 | 0.458 | 0.49292 | 0.48949 | 0.48869 |
| ____ P | 0.48199 | 57.37 | 0.433 | 0.48078 | 0.48440 | 0.48078 |
| ____ PB | 0.47715 | 174.41 | 1.481 | 0.48500 | 0.47517 | 0.47129 |
| ____ S | 24.59879 | 1,077.20 | 0.710 | 24.62441 | 24.41269 | 24.75927 |
| ____ SB | 0.49473 | 61.67 | 1.596 | 0.49669 | 0.48604 | 0.50146 |
| ____ SE | 0.47781 | 29.12 | 7.655 | 0.43695 | 0.50749 | 0.48897 |
| ____ SI | 25.40289 | 2,429.43 | 0.932 | 25.51279 | 25.56473 | 25.13114 |
| ____ SN | 0.47418 | 103.71 | 0.682 | 0.47360 | 0.47128 | 0.47767 |
| ____ SR | 0.49836 | 159,635.27 | 0.347 | 0.49678 | 0.49811 | 0.50020 |
| ____ TI | 0.50008 | 10,050.15 | 0.697 | 0.49733 | 0.49890 | 0.50399 |
| ____ TL | 0.49921 | 39.77 | 0.760 | 0.50065 | 0.49491 | 0.50208 |
| ____ V | 0.49286 | 2,967.49 | 1.230 | 0.48587 | 0.49614 | 0.49658 |
| ____ Y1 | 2397.40000 | 2,397.40 | 1.683 | 2351.95000 | 2411.21500 | 2429.03500 |
| ____ Y2A | 80805.87218 | 80,805.87 | 5.047 | 85499.77509 | 78782.85145 | 78134.99001 |
| ____ Y2R | 5101.85010 | 5,101.85 | 1.145 | 5105.24741 | 5158.48661 | 5041.81628 |
| ____ ZN | 0.49011 | 1,192.93 | 0.346 | 0.49069 | 0.48820 | 0.49145 |
| ____ ZR | 0.48954 | 470.00 | 0.909 | 0.49127 | 0.48448 | 0.49287 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 23 Date/Time: 07/21/2017 13:35

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00071 | -17.29 | 298.408 | -0.00005 | -0.00092 | 0.00310 |
| ____ AL | -0.01474 | 32.17 | 324.183 | 0.01842 | -0.06951 | 0.00687 |
| ____ AS | 0.01051 | 0.52 | 65.535 | 0.00630 | 0.01845 | 0.00677 |
| ____ B | 0.00435 | 11.90 | 19.568 | 0.00495 | 0.00338 | 0.00474 |
| ____ BA | -0.00203 | -180.03 | 3.904 | -0.00206 | -0.00194 | -0.00209 |
| ____ BE | 0.00013 | -104.89 | 18.170 | 0.00012 | 0.00016 | 0.00011 |
| ____ CA | 0.00368 | 27.37 | 280.524 | 0.01284 | 0.00572 | -0.00751 |
| ____ CD | 0.00024 | -4.30 | 153.139 | -0.00014 | 0.00026 | 0.00061 |
| ____ CO | 0.00097 | 2.32 | 98.914 | -0.00012 | 0.00169 | 0.00133 |
| ____ CR | 0.00045 | -0.91 | 159.040 | -0.00027 | 0.00047 | 0.00115 |
| ____ CU | -0.00004 | -18.24 | 3742.688 | -0.00142 | -0.00006 | 0.00136 |
| ____ FE | 0.00922 | 2.27 | 60.722 | 0.01480 | 0.00927 | 0.00360 |
| ____ K | 0.04937 | 25.62 | 199.228 | -0.00362 | 0.16285 | -0.01113 |
| ____ LI | 0.00488 | 5.28 | 50.408 | 0.00533 | 0.00708 | 0.00223 |
| ____ MG | 0.00021 | -2.43 | 2644.184 | 0.00539 | -0.00563 | 0.00087 |
| ____ MN | 0.00013 | 0.63 | 76.382 | 0.00008 | 0.00025 | 0.00007 |
| ____ MO | -0.00055 | -1.19 | 67.893 | -0.00014 | -0.00065 | -0.00086 |
| ____ NA | 0.19201 | -25.03 | 10.655 | 0.21391 | 0.17339 | 0.18873 |
| ____ NI | 0.00032 | 9.03 | 523.814 | -0.00143 | 0.00048 | 0.00192 |
| ____ P | -0.00494 | 0.46 | 116.186 | 0.00086 | -0.01061 | -0.00506 |
| ____ PB | -0.00244 | -2.35 | 190.242 | -0.00438 | 0.00285 | -0.00578 |
| ____ S | 0.00190 | 1.06 | 2085.163 | 0.04722 | -0.02522 | -0.01632 |
| ____ SB | 0.00300 | 0.64 | 101.571 | 0.00333 | -0.00020 | 0.00588 |
| ____ SE | -0.00136 | 0.27 | 754.228 | -0.00419 | -0.00990 | 0.01001 |
| ____ SI | 0.03378 | 3.26 | 18.383 | 0.03324 | 0.04024 | 0.02785 |
| ____ SN | 0.00039 | 0.25 | 875.126 | -0.00106 | 0.00433 | -0.00208 |
| ____ SR | 0.00007 | -5.05 | 54.923 | 0.00010 | 0.00008 | 0.00003 |
| ____ TI | -0.00001 | 25.72 | 966.518 | -0.00006 | 0.00012 | -0.00010 |
| ____ TL | 0.00548 | 0.53 | 107.639 | 0.01213 | 0.00087 | 0.00344 |
| ____ V | 0.00148 | -9.67 | 71.459 | 0.00033 | 0.00170 | 0.00240 |
| ____ Y1 | 2429.65667 | 2,429.66 | 1.779 | 2476.22500 | 2421.90500 | 2390.84000 |
| ____ Y2A | 87140.14373 | 87,140.14 | 1.516 | 85937.81132 | 88554.07695 | 86928.54291 |
| ____ Y2R | 5433.42500 | 5,433.43 | 4.785 | 5678.05000 | 5160.42500 | 5461.80000 |
| ____ ZN | -0.00070 | 0.08 | 31.073 | -0.00079 | -0.00045 | -0.00086 |
| ____ ZR | -0.00444 | 7.62 | 83.683 | -0.00825 | -0.00427 | -0.00082 |

# Extraction/Distillation/Digestion Logs

# Metals in Liquid

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 200 10635 01

**Start Time:** 7/20/17 5:35 **End Time:** 7/20/17 9:24 **Hot Block:** Deena1

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17182A | 5.00 |
| 1:1 HNO3 | P17182B | 2.00 |
| ICP Spike 1A | 1710327#15 | 1.00 |
| ICP Spike 1B | 1710340#15 | 1.00 |
| LCS A1 | 1710327#15 | 1.00 |
| LCS B1 | 1710340#15 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9107407 | 07/28/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 4) | **9109771U** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 5) | **9109772R** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9109773M** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 7) | **9109774D** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 8) | 9109779 | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/20/2017

v 1.1.0

# Batch# 17 200 1063 501

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/19/17 17:29 | 1184 |
| 2) | Sample Vol | | 7/20/17 5:36 | 1184 |
| 3) | Final Vol | CLEAR | 7/20/17 5:36 | 1184 |
| 4) | Trial | | 7/20/17 5:36 | 1184 |
| 5) | Upload Prep | US19PCC0669 | 7/20/17 9:25 | 1184 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

Analysis: 0635 SW846 Water

Batch# 17 200 1063 501

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9107407 | 07/28/17 | N8 | 18706 | KR187-06* | 50.0000 | 50.0000 | 1 |
| **9109771U** | 07/31/17 | N8 | 18801 | KR188-01BKG | 50.0000 | 50.0000 | 1 |
| **9109772R** | 07/31/17 | N8 | 18801 | KR188-01MS | 50.0000 | 50.0000 | 1 |
| **9109773M** | 07/31/17 | N8 | 18801 | KR188-01MSD | 50.0000 | 50.0000 | 1 |
| **9109774D** | 07/31/17 | N8 | 18801 | KR188-01DUP | 50.0000 | 50.0000 | 1 |
| 9109779 | 07/31/17 | N8 | 18803 | KR188-03 | 50.0000 | 50.0000 | 1 |

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# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 07/18/17

# SDG# KR188

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1827143 | 9109771-9109788 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **08/08/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR188
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9109771 | GW005-173 | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109772 | GW005-173 MS | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109773 | GW005-173 MSD | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109774 | GW005-173 DUP | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109775 | GW005-173 | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109776 | GW005-173 MS | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109777 | GW005-173 MSD | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109778 | GW005-173 DUP | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109779 | GW005-573 | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109780 | GW005-573 | 07/18/2017 10:00 | 07/19/2017 09:35 |
| 9109781 | TB173-22 | 07/18/2017 14:00 | 07/19/2017 09:35 |
| 9109782 | GW101-173 | 07/18/2017 11:30 | 07/19/2017 09:35 |
| 9109783 | GW101-573 | 07/18/2017 11:30 | 07/19/2017 09:35 |
| 9109784 | ER173-04 | 07/18/2017 08:15 | 07/19/2017 09:35 |
| 9109785 | TB173-23 | 07/18/2017 14:00 | 07/19/2017 09:35 |
| 9109786 | GW102-173 | 07/18/2017 13:20 | 07/19/2017 09:35 |
| 9109787 | GW003-173 | 07/18/2017 09:45 | 07/19/2017 09:35 |
| 9109788 | TB173-24 | 07/18/2017 14:00 | 07/19/2017 09:35 |

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# Sample pH Log

**SDG: KR188**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9109771 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 2:57:55PM | 12190 |
| 9109771 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:23:16PM | 895 |
| 9109771 | 038B | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/27/2017 2:08:01PM | 895 |
| 9109771 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 3:01:03PM | 12190 |
| 9109772 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 2:59:32PM | 12190 |
| 9109772 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:42PM | 895 |
| 9109773 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 2:58:19PM | 12190 |
| 9109773 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:42PM | 895 |
| 9109775 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 2:59:08PM | 12190 |
| 9109776 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 2:58:40PM | 12190 |
| 9109777 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 2:57:34PM | 12190 |
| 9109779 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 3:00:14PM | 12190 |
| 9109779 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:42PM | 895 |
| 9109779 | 038B | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |
| 9109779 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 3:01:30PM | 12190 |
| 9109780 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/19/2017 2:59:53PM | 12190 |
| 9109781 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |
| 9109782 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |
| 9109783 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |
| 9109784 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |
| 9109785 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |
| 9109786 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |
| 9109787 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |
| 9109788 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:43PM | 895 |

| Check Code Key |
|---|
| **PK** = Original container checked - pH is within the correct range. (No preservative was added) |
| **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) |
| **PV** = Volatile container checked |
| **PC** = pH checked (unpreserved container) |
| **SPK** = Subsampled from an original container. Original container checked - pH is within correct range |
| **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. |
| **SPC** = Subsampled from an original container. pH checked (unpreserved container). |
| **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. |
| **UP** = Unable to preserve due to matrix of the sample. |
| **NA** = Not applicable |

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**01163 GC/MS VOA Water Prep**

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

---

**11997 VOCs- 5ml Water by 8260C**

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

---

**10635 ICP-WW, 3005A (tot rec) - U4**

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

---

**10639 ICPMS - Water, 3020A - U4**

The sample is digested with nitric and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3020A, July 1992

---

**01750 Calcium**
**01754 Iron**
**01757 Magnesium**
**07058 Manganese**
**01762 Potassium**
**01767 Sodium**

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

---

**06025 Arsenic**
**06035 Lead**

The solution resulting from the metals digestion is analyzed by ICP/MS.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6020A, February 2007.

---

**10398 8011 Master Master**

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07786 EDB Extraction (8011)**

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07882 Total Nitrite/Nitrate Nitrogen**

Nitrate ions are reduced to nitrite by passing through a cadmium coil. The nitrite ions then react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dihydrochloride to form a soluble, highly-colored dye. The result is determined colorimetrically.

Reference: Method 353.2, Revision 2.0 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

---

**01505 Bromide**
**00224 Chloride**
**00228 Sulfate**

A small volume of sample is introduced into an ion chromatograph. The anions are then separated and measured by a system consisting of a guard column, separator column, suppressor, and conductivity detector.

Reference: Method 300.0, Revision 2.1 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

---

**12150 Total Alkalinity to pH 4.5**

Alkalinity is determined by titrating the sample with standardized sulfuric acid to a pH of 4.5 for the total alkalinity.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

---

**12149 Bicarbonate Alkalinity**

Bicarbonate is determined by a calculation based on the Alkalinity results.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

---

**12148 Carbonate Alkalinity**

Carbonate is determined by a calculation based on the Alkalinity results.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

# Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: July 28, 2017

**Project: Kirtland AFB**

Submittal Date: 07/19/2017
Group Number: 1827143
SDG: KR188
PO Number: 14800
State of Sample Origin: NM

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| GW005-173 Water | 9109771 |
| GW005-173 MS Water | 9109772 |
| GW005-173 MSD Water | 9109773 |
| GW005-173 DUP Water | 9109774 |
| GW005-173 Filtered Water | 9109775 |
| GW005-173 MS Filtered Water | 9109776 |
| GW005-173 MSD Filtered Water | 9109777 |
| GW005-173 DUP Filtered Water | 9109778 |
| GW005-573 Water | 9109779 |
| GW005-573 Filtered Water | 9109780 |
| TB173-22 Water | 9109781 |
| GW101-173 Water | 9109782 |
| GW101-573 Water | 9109783 |
| ER173-04 Water | 9109784 |
| TB173-23 Water | 9109785 |
| GW102-173 Water | 9109786 |
| GW003-173 Water | 9109787 |
| TB173-24 Water | 9109788 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |

Electronic Copy To EA Engineering, Science & Tech Attn: Pamela Moss

Respectfully Submitted,

Kay Hower

(717) 556-7364

Project Name: Kirtland AFB
LL Group #: 1827143

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

SW-846 8260C, GC/MS Volatiles

Batch #: Y172023AA (Sample number(s): 9109771-9109773, 9109779, 9109781-9109788 UNSPK: 9109771)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Benzene

SW-846 8011, Volatiles by Extraction

Batch #: 172010025A (Sample number(s): 9109771-9109773, 9109779 UNSPK: P95972, P9109771)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Ethylene dibromide

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 9109771

SW-846 6010C, Metals

Batch #: 172001063501 (Sample number(s): 9109771-9109774, 9109779 UNSPK: 9109771 BKG: 9109771)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Calcium, Magnesium, Sodium

SW-846 6010C, Metals Dissolved

Batch #: 172001063502 (Sample number(s): 9109775-9109778, 9109780 UNSPK: 9109775 BKG: 9109775)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Manganese

**EPA 300.0, Wet Chemistry**

Batch #: 17201972117A (Sample number(s): 9109771, 9109779 UNSPK: 9109771 BKG: 9109771)

The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Bromide

**SM 2320 B-1997, Wet Chemistry**

Batch #: 17202002102A (Sample number(s): 9109771, 9109779 UNSPK: 9109771 BKG: P9109771-P109966)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Total Alkalinity to pH 4.5

**Sample Description:** GW005-173 Water
ST106/SS110

**LL Sample #** WW 9109771
**LL Group #** 1827143
**Account #** 31675

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18801 SDG#: KR188-01BKG

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 420 | 5 | 10 | 10 | 10 |
| 11997 | Ethylbenzene | 100-41-4 | 54 | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 4 | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 110 | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 1.3 | 0.19 | 0.38 | 0.57 | 20 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 255 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 41.7 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 5.78 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 86.8 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0020 U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00017 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 3.4 | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 205 | 20.0 | 40.0 | 40.0 | 100 |
| 00228 | Sulfate | 14808-79-8 | 396 | 30.0 | 100 | 100 | 100 |
| | **EPA 353.2** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.22 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 220 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 220 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 01:28 | Patrick T Herres | 1 |
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172081AA | 07/27/2017 12:04 | Linda C Pape | 10 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 01:28 | Patrick T Herres | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW005-173 Water**
**ST106/SS110**

**LL Sample # WW 9109771**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18801 SDG#: KR188-01BKG

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 2 | Y172081AA | 07/27/2017 12:04 | Linda C Pape | 10 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/24/2017 13:56 | Heather M Miller | 20 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:07 | Patrick J Engle | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:07 | Patrick J Engle | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:07 | Patrick J Engle | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:07 | Patrick J Engle | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:14 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:14 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063501 | 07/20/2017 05:35 | James L Mertz | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172001063902 | 07/24/2017 22:00 | Annamaria Kuhns | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17201972117A | 07/20/2017 19:31 | Alexandria M Lanager | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17201972117A | 07/20/2017 19:48 | Alexandria M Lanager | 100 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17201972117A | 07/20/2017 19:48 | Alexandria M Lanager | 100 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17207118101A | 07/27/2017 02:30 | Joseph E McKenzie | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17202002102A | 07/21/2017 17:56 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17202002102A | 07/21/2017 17:56 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17202002102A | 07/21/2017 17:56 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW005-173 MS Water**
**ST106/SS110**

**LL Sample # WW 9109772**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18801 SDG#: KR188-01MS

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 480 | E | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 76 | | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 26 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 180 | | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 1.2 | | 0.19 | 0.38 | 0.57 | 20 |
| **Metals** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 254 | | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 43.0 | | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 16.6 | | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 95.1 | | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0107 | | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.0152 | | 0.00011 | 0.00025 | 0.0020 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 01:51 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 01:51 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/24/2017 14:12 | Heather M Miller | 20 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:16 | Patrick J Engle | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:16 | Patrick J Engle | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:16 | Patrick J Engle | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:16 | Patrick J Engle | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:19 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:19 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063501 | 07/20/2017 05:35 | James L Mertz | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172001063902 | 07/24/2017 22:00 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description:** GW005-173 MSD Water
ST106/SS110

**LL Sample # WW 9109773**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18801 SDG#: KR188-01MSD

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 480 | E | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 77 | | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 27 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 180 | | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 1.2 | | 0.19 | 0.38 | 0.57 | 20 |
| **Metals** | **SW-846 6010C** | | mg/l | | mg/l | mg/l | mg/l | |
| 01750 | Calcium | 7440-70-2 | 257 | | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 43.5 | | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 16.6 | | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 95.8 | | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | mg/l | | mg/l | mg/l | mg/l | |
| 06025 | Arsenic | 7440-38-2 | 0.0110 | | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.0154 | | 0.00011 | 0.00025 | 0.0020 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 02:13 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 02:13 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/24/2017 14:27 | Heather M Miller | 20 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:20 | Patrick J Engle | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:20 | Patrick J Engle | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:20 | Patrick J Engle | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:20 | Patrick J Engle | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:21 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:21 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063501 | 07/20/2017 05:35 | James L Mertz | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172001063902 | 07/24/2017 22:00 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW005-173 DUP Water
ST106/SS110

**LL Sample # WW 9109774**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18801 SDG#: KR188-01DUP

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals** | | **SW-846 6010C** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 256 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 41.6 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 5.78 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 87.0 | 0.321 | 0.500 | 2.00 | 1 |
| | | **SW-846 6020A** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0020 U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00015 J | 0.00011 | 0.00025 | 0.0020 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01750 | Calcium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:13 | Patrick J Engle | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:13 | Patrick J Engle | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:13 | Patrick J Engle | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:13 | Patrick J Engle | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:18 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:18 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063501 | 07/20/2017 05:35 | James L Mertz | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172001063902 | 07/24/2017 22:00 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description:** GW005-173 Filtered Water
ST106/SS110

**LL Sample # WW 9109775**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18802 SDG#: KR188-02BKG

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.153 | J | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.228 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172001063502 | 07/21/2017 18:30 | Cindy M Gehman | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172001063502 | 07/21/2017 11:52 | Patrick J Engle | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063502 | 07/20/2017 05:35 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW005-173 MS Filtered Water
ST106/SS110

**LL Sample # WW 9109776**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18802 SDG#: KR188-02MS

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 1.19 | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.660 | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172001063502 | 07/21/2017 18:39 | Cindy M Gehman | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172001063502 | 07/21/2017 12:01 | Patrick J Engle | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063502 | 07/20/2017 05:35 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW005-173 MSD Filtered Water
ST106/SS110

**LL Sample # WW 9109777**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18802 SDG#: KR188-02MSD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 1.20 | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.658 | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172001063502 | 07/21/2017 18:42 | Cindy M Gehman | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172001063502 | 07/21/2017 12:04 | Patrick J Engle | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063502 | 07/20/2017 05:35 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW005-173 DUP Filtered Water**
**ST106/SS110**

**LL Sample # WW 9109778**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18802 SDG#: KR188-02DUP

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.148 | J | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.221 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172001063502 | 07/21/2017 18:36 | Cindy M Gehman | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172001063502 | 07/21/2017 11:58 | Patrick J Engle | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063502 | 07/20/2017 05:35 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW005-573 Water
ST106/SS110

**LL Sample #** WW 9109779
**LL Group #** 1827143
**Account #** 31675

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18803 SDG#: KR188-03

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 420 | 5 | 10 | 10 | 10 |
| 11997 | Ethylbenzene | 100-41-4 | 54 | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 5 | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 110 | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.79 | 0.096 | 0.19 | 0.29 | 10 |
| **Metals** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01750 | Calcium | 7440-70-2 | 258 | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 42.5 | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 6.06 | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 87.6 | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | mg/l | mg/l | mg/l | mg/l | |
| 06025 | Arsenic | 7440-38-2 | 0.00074 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00014 J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | mg/l | mg/l | mg/l | mg/l | |
| 01505 | Bromide | 24959-67-9 | 3.4 | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 213 | 20.0 | 40.0 | 40.0 | 100 |
| 00228 | Sulfate | 14808-79-8 | 404 | 30.0 | 100 | 100 | 100 |
| | **EPA 353.2** | | mg/l | mg/l | mg/l | mg/l | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.20 | 0.040 | 0.10 | 0.10 | 1 |
| | **SM 2320 B-1997** | | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 216 | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 216 | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 02:35 | Patrick T Herres | 1 |
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 02:57 | Patrick T Herres | 10 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 02:35 | Patrick T Herres | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW005-573 Water**
**ST106/SS110**

**LL Sample # WW 9109779**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18803 SDG#: KR188-03

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 2 | Y172023AA | 07/22/2017 02:57 | Patrick T Herres | 10 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172010025A | 07/24/2017 14:43 | Heather M Miller | 10 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172010025A | 07/21/2017 09:00 | Samantha M Metzgar | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:29 | Patrick J Engle | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:29 | Patrick J Engle | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:29 | Patrick J Engle | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 172001063501 | 07/21/2017 13:29 | Patrick J Engle | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:24 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172001063902A | 07/26/2017 10:24 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063501 | 07/20/2017 05:35 | James L Mertz | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172001063902 | 07/24/2017 22:00 | Annamaria Kuhns | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17201972117A | 07/20/2017 21:46 | Alexandria M Lanager | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17201972117A | 07/20/2017 22:03 | Alexandria M Lanager | 100 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17201972117A | 07/20/2017 22:03 | Alexandria M Lanager | 100 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17207118101A | 07/27/2017 02:36 | Joseph E McKenzie | 1 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17202002102A | 07/21/2017 18:43 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17202002102A | 07/21/2017 18:43 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17202002102A | 07/21/2017 18:43 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW005-573 Filtered Water
ST106/SS110

**LL Sample # WW 9109780**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 10:00 by SB

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18804 SDG#: KR188-04

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.163 | J | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.213 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172001063502 | 07/21/2017 18:49 | Cindy M Gehman | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172001063502 | 07/21/2017 12:11 | Patrick J Engle | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172001063502 | 07/20/2017 05:35 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** TB173-22 Water
ST106/SS110

**LL Sample # WW 9109781**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 14:00

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18805 SDG#: KR188-05TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/21/2017 23:16 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/21/2017 23:16 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 00:34 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW101-173 Water
ST106/SS110

**LL Sample # WW 9109782**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 11:30 by CM

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18806 SDG#: KR188-06

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.9 | J | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 03:19 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 03:19 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 01:06 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW101-573 Water
ST106/SS110

**LL Sample # WW 9109783**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 11:30 by CM

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18807 SDG#: KR188-07

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.9 | J | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 03:41 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 03:41 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 01:22 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: ER173-04 Water**
**ST106/SS110**

**LL Sample # WW 9109784**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 08:15 by CM

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18808 SDG#: KR188-08EB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 2 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/21/2017 23:38 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/21/2017 23:38 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 01:38 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** TB173-23 Water
ST106/SS110

**LL Sample # WW 9109785**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 14:00

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18809 SDG#: KR188-09TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 00:00 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 00:00 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 02:10 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW102-173 Water
ST106/SS110

**LL Sample # WW 9109786**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 13:20 by CM

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18810 SDG#: KR188-10

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | J | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0097 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 04:03 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 04:03 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 02:58 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description:** GW003-173 Water
ST106/SS110

**LL Sample # WW 9109787**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 09:45 by CM

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18811 SDG#: KR188-11

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 04:26 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 04:26 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 03:13 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** TB173-24 Water
ST106/SS110

**LL Sample # WW 9109788**
**LL Group # 1827143**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/18/2017 14:00

Submitted: 07/19/2017 09:35
Reported: 07/28/2017 18:02

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18812 SDG#: KR188-12TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 00:22 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 00:22 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 03:29 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 18:02

Group Number: 1827143

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Batch number: Y172023AA | Sample number(s): 9109771-9109773,9109779,9109781-9109788 | | | | |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Ethylbenzene | 1 | U | 0.5 | 1 | 1 |
| Toluene | 1 | U | 0.5 | 1 | 1 |
| Xylene (Total) | 1 | U | 0.5 | 1 | 1 |
| Batch number: Y172081AA | Sample number(s): 9109771 | | | | |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Batch number: 172010025A | Sample number(s): 9109771-9109773,9109779 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| Batch number: 172020030A | Sample number(s): 9109781-9109788 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| | mg/l | | mg/l | mg/l | mg/l |
| Batch number: 172001063501 | Sample number(s): 9109771-9109774,9109779 | | | | |
| Calcium | 0.200 | U | 0.0600 | 0.200 | 0.400 |
| Magnesium | 0.0660 | J | 0.0374 | 0.100 | 0.200 |
| Potassium | 0.500 | U | 0.179 | 0.500 | 1.00 |
| Sodium | 0.500 | U | 0.321 | 0.500 | 2.00 |
| Batch number: 172001063502 | Sample number(s): 9109775-9109778,9109780 | | | | |
| Iron | 0.200 | U | 0.0805 | 0.200 | 0.400 |
| Manganese | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 |
| Batch number: 172001063902A | Sample number(s): 9109771-9109774,9109779 | | | | |
| Arsenic | 0.0020 | U | 0.00072 | 0.0020 | 0.0040 |
| Lead | 0.00025 | U | 0.00011 | 0.00025 | 0.0020 |
| Batch number: 17201972117A | Sample number(s): 9109771,9109779 | | | | |
| Bromide | 0.50 | U | 0.25 | 0.50 | 0.50 |
| Chloride | 0.40 | U | 0.20 | 0.40 | 0.40 |
| Sulfate | 1.0 | U | 0.30 | 1.0 | 1.0 |
| Batch number: 17207118101A | Sample number(s): 9109771,9109779 | | | | |
| Total Nitrite/Nitrate Nitrogen | 0.10 | U | 0.040 | 0.10 | 0.10 |
| | mg/l as CaCO3 | | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 |
| Batch number: 17202002102A | Sample number(s): 9109771,9109779 | | | | |
| Total Alkalinity to pH 4.5 | 5.0 | U | 1.7 | 5.0 | 5.0 |

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 18:02

Group Number: 1827143

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: Y172023AA | Sample number(s): 9109771-9109773,9109779,9109781-9109788 | | | | | | | | |
| Benzene | 20 | 21.06 | | | 105 | | 79-120 | | |
| Ethylbenzene | 20 | 20.83 | | | 104 | | 79-121 | | |
| Toluene | 20 | 20.81 | | | 104 | | 80-121 | | |
| Xylene (Total) | 60 | 60.62 | | | 101 | | 79-121 | | |
| Batch number: Y172081AA | Sample number(s): 9109771 | | | | | | | | |
| Benzene | 20 | 21.75 | 20 | 20.72 | 109 | 104 | 79-120 | 5 | 20 |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172010025A | Sample number(s): 9109771-9109773,9109779 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.146 | 0.128 | 0.163 | 114 | 128 | 60-140 | 12 | 20 |
| Batch number: 172020030A | Sample number(s): 9109781-9109788 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.142 | 0.128 | 0.138 | 111 | 108 | 60-140 | 3 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172001063501 | Sample number(s): 9109771-9109774,9109779 | | | | | | | | |
| Calcium | 4.00 | 4.18 | | | 105 | | 87-113 | | |
| Magnesium | 2.00 | 2.13 | | | 106 | | 85-113 | | |
| Potassium | 10 | 10.76 | | | 108 | | 86-114 | | |
| Sodium | 10 | 10.6 | | | 106 | | 87-115 | | |
| Batch number: 172001063502 | Sample number(s): 9109775-9109778,9109780 | | | | | | | | |
| Iron | 1.00 | 1.00 | | | 100 | | 87-115 | | |
| Manganese | 0.500 | 0.460 | | | 92 | | 90-114 | | |
| Batch number: 172001063902A | Sample number(s): 9109771-9109774,9109779 | | | | | | | | |
| Arsenic | 0.0100 | 0.00931 | | | 93 | | 84-116 | | |
| Lead | 0.0150 | 0.0143 | | | 95 | | 88-115 | | |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17201972117A | Sample number(s): 9109771,9109779 | | | | | | | | |
| Bromide | 7.50 | 7.05 | | | 94 | | 90-110 | | |
| Chloride | 3.00 | 3.13 | | | 104 | | 90-110 | | |
| Sulfate | 7.50 | 7.38 | | | 98 | | 90-110 | | |
| Batch number: 17207118101A | Sample number(s): 9109771,9109779 | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 2.50 | 2.55 | | | 102 | | 90-110 | | |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | | | | | |
| Batch number: 17202002102A | Sample number(s): 9109771,9109779 | | | | | | | | |
| Total Alkalinity to pH 4.5 | 188 | 164.83 | | | 88 | | 77-114 | | |

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 18:02

Group Number: 1827143

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: Y172023AA | Sample number(s): 9109771-9109773,9109779,9109781-9109788 UNSPK: 9109771, P109771 | | | | | | | | | |
| Benzene | 467.52 | 20 | 483.06 | 20 | 482.19 | 78 (2) | 73 (2) | 79-120 | 0 | 20 |
| Ethylbenzene | 54.25 | 20 | 76.01 | 20 | 77.27 | 109 | 115 | 79-121 | 2 | 20 |
| Toluene | 4.31 | 20 | 26.4 | 20 | 26.55 | 110 | 111 | 80-121 | 1 | 20 |
| Xylene (Total) | 113.89 | 60 | 177.91 | 60 | 180.22 | 107 | 111 | 79-121 | 1 | 20 |
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172010025A | Sample number(s): 9109771-9109773,9109779 UNSPK: 9109771 | | | | | | | | | |
| Ethylene dibromide | 1.29 | 0.121 | 1.17 | 0.122 | 1.20 | -101 (2) | -74 (2) | 60-140 | 3 | 20 |
| Batch number: 172020030A | Sample number(s): 9109781-9109788 UNSPK: 9109781 | | | | | | | | | |
| Ethylene dibromide | 0.019 U | 0.123 | 0.154 | | | 126 | | 60-140 | | |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172001063501 | Sample number(s): 9109771-9109774,9109779 UNSPK: 9109771 | | | | | | | | | |
| Calcium | 254.95 | 4.00 | 254.21 | 4.00 | 256.97 | -19 (2) | 50 (2) | 87-113 | 1 | 20 |
| Magnesium | 41.7 | 2.00 | 43.04 | 2.00 | 43.52 | 67 (2) | 91 (2) | 85-113 | 1 | 20 |
| Potassium | 5.78 | 10 | 16.61 | 10 | 16.61 | 108 | 108 | 86-114 | 0 | 20 |
| Sodium | 86.77 | 10 | 95.12 | 10 | 95.82 | 83 (2) | 90 (2) | 87-115 | 1 | 20 |
| Batch number: 172001063502 | Sample number(s): 9109775-9109778,9109780 UNSPK: 9109775 | | | | | | | | | |
| Iron | 0.153 | 1.00 | 1.19 | 1.00 | 1.20 | 104 | 105 | 87-115 | 1 | 20 |
| Manganese | 0.228 | 0.500 | 0.660 | 0.500 | 0.658 | 86* | 86* | 90-114 | 0 | 20 |
| Batch number: 172001063902A | Sample number(s): 9109771-9109774,9109779 UNSPK: 9109771 | | | | | | | | | |
| Arsenic | 0.0020 U | 0.0100 | 0.0107 | 0.0100 | 0.0110 | 107 | 110 | 84-116 | 3 | 20 |
| Lead | 0.000171 | 0.0150 | 0.0152 | 0.0150 | 0.0154 | 100 | 102 | 88-115 | 1 | 20 |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17201972117A | Sample number(s): 9109771,9109779 UNSPK: 9109771 | | | | | | | | | |
| Bromide | 3.38 | 25 | 23.93 | | | 82* | | 90-110 | | |
| Chloride | 204.56 | 200 | 391.96 | | | 94 | | 90-110 | | |
| Sulfate | 395.96 | 500 | 856.81 | | | 92 | | 90-110 | | |
| Batch number: 17207118101A | Sample number(s): 9109771,9109779 UNSPK: 9109771 | | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 0.221 | 1.00 | 1.25 | | | 103 | | 90-110 | | |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | | | | | |
| Batch number: 17202002102A | Sample number(s): 9109771,9109779 UNSPK: 9109771 | | | | | | | | | |
| Total Alkalinity to pH 4.5 | 219.92 | 188 | 231.32 | 188 | 232.74 | 6* | 7* | 77-114 | 1 | 10 |

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
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# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 18:02

Group Number: 1827143

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | ug/l | ug/l | | |
| Batch number: 172020030A | Sample number(s): 9109781-9109788 BKG: 9109784 | | | |
| Ethylene dibromide | 0.019 U | 0.019 U | 0 (1) | 30 |
| | mg/l | mg/l | | |
| Batch number: 172001063501 | Sample number(s): 9109771-9109774,9109779 BKG: 9109771 | | | |
| Calcium | 254.95 | 255.64 | 0 | 20 |
| Magnesium | 41.7 | 41.59 | 0 | 20 |
| Potassium | 5.78 | 5.78 | 0 | 20 |
| Sodium | 86.77 | 87.04 | 0 | 20 |
| Batch number: 172001063502 | Sample number(s): 9109775-9109778,9109780 BKG: 9109775 | | | |
| Iron | 0.153 | 0.148 | 3 (1) | 20 |
| Manganese | 0.228 | 0.221 | 3 | 20 |
| Batch number: 172001063902A | Sample number(s): 9109771-9109774,9109779 BKG: 9109771 | | | |
| Arsenic | 0.0020 U | 0.0020 U | 0 (1) | 20 |
| Lead | 0.000171 | 0.000150 | 13 (1) | 20 |
| | mg/l | mg/l | | |
| Batch number: 17201972117A | Sample number(s): 9109771,9109779 BKG: 9109771 | | | |
| Bromide | 3.38 | 3.24 | 4 (1) | 15 |
| Chloride | 204.56 | 202.16 | 1 | 15 |
| Sulfate | 395.96 | 391.97 | 1 (1) | 15 |
| Batch number: 17207118101A | Sample number(s): 9109771,9109779 BKG: 9109771 | | | |
| Total Nitrite/Nitrate Nitrogen | 0.221 | 0.203 | 9 (1) | 10 |
| | mg/l as CaCO3 | mg/l as CaCO3 | | |
| Batch number: 17202002102A | Sample number(s): 9109771,9109779 BKG: 9109771 | | | |
| Total Alkalinity to pH 4.5 | 219.92 | 223.77 | 2 | 5 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C Water
Batch number: Y172023AA

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
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(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 18:02

Group Number: 1827143

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C Water
Batch number: Y172023AA

| | Dibromofluoromethane %Rec | LOD (ug/l) | 1,2-Dichloroethane-d4 %Rec | LOD (ug/l) | Toluene-d8 %Rec | LOD (ug/l) | 4-Bromofluorobenzene %Rec | LOD (ug/l) |
|---|---|---|---|---|---|---|---|---|
| 9109771 | 99 | 1 | 99 | 1 | 103 | 1 | 105 | 1 |
| 9109772 | 99 | 1 | 97 | 1 | 105 | 1 | 106 | 1 |
| 9109773 | 98 | 1 | 95 | 1 | 104 | 1 | 106 | 1 |
| 9109779 | 97 | 1 | 97 | 1 | 105 | 1 | 104 | 1 |
| 9109781 | 106 | 1 | 102 | 1 | 101 | 1 | 96 | 1 |
| 9109782 | 101 | 1 | 99 | 1 | 104 | 1 | 100 | 1 |
| 9109783 | 101 | 1 | 98 | 1 | 103 | 1 | 99 | 1 |
| 9109784 | 105 | 1 | 100 | 1 | 104 | 1 | 98 | 1 |
| 9109785 | 104 | 1 | 101 | 1 | 102 | 1 | 96 | 1 |
| 9109786 | 102 | 1 | 98 | 1 | 103 | 1 | 98 | 1 |
| 9109787 | 101 | 1 | 97 | 1 | 103 | 1 | 99 | 1 |
| 9109788 | 107 | 1 | 102 | 1 | 102 | 1 | 95 | 1 |
| Blank | 102 | 1 | 101 | 1 | 104 | 1 | 96 | 1 |
| LCS | 99 | 1 | 97 | 1 | 104 | 1 | 103 | 1 |
| MS | 99 | 1 | 97 | 1 | 105 | 1 | 106 | 1 |
| MSD | 98 | 1 | 95 | 1 | 104 | 1 | 106 | 1 |
| Limits: | 80-119 | | 81-118 | | 89-112 | | 85-114 | |

Analysis Name: EDB 8011 Water
Batch number: 172010025A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9109771 | 169* | 0.13 (3) |
| 9109772 | 91 | 0.13 (3) |
| 9109773 | 125 | 0.13 (3) |
| 9109779 | 110 | 0.067 |
| Blank | 103 | 0.0070 |
| LCS | 106 | 0.0070 |
| LCSD | 112 | 0.0070 |
| MS | 91 | 0.13 (3) |
| MSD | 125 | 0.13 (3) |
| Limits: | 46-136 | |

Analysis Name: EDB 8011 Water
Batch number: 172020030A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9109781 | 100 | 0.0067 |
| 9109782 | 101 | 0.0067 |

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Group Number: 1827143
Reported: 07/28/2017 18:02

## Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EDB 8011 Water
Batch number: 172020030A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9109783 | 97 | 0.0068 |
| 9109784 | 95 | 0.0067 |
| 9109785 | 91 | 0.0067 |
| 9109786 | 98 | 0.0068 |
| 9109787 | 96 | 0.0067 |
| 9109788 | 96 | 0.0067 |
| Blank | 69 | 0.0070 |
| DUP | 98 | 0.0067 |
| LCS | 75 | 0.0070 |
| LCSD | 71 | 0.0070 |
| MS | 106 | 0.0067 |
| Limits: | 46-136 | |

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 | 1827143 | 9109771-88

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-005-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg)(6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW005-173 | 7/18/17 | 1000 | 25 | | SB ~~X~~ | | SB ~~X~~ 6 | SB X | SB X | 2 | 1 | 1 | |
| 2 | GW005-573 | 7/18/17 | 1000 | 11 | — | 3 | — | 2 | 1 | 1* | 2 | 1 | 1 | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered
Please run MS/MSD on the following analytes only:
BTEX, EDB, Total (As, Pb, Ca, K, Na, Mg), + Dissolved (Fe, Mn)

Pump 18073-800

TB173- 22

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734469

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7/18/17 | 1600 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Nicole Reiff | 7/19/17 | 9:35 |

31675 | 1827143 | 9109771-88

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-22

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017 |
| | | | | QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | | |
| 1 | TB173-22 | 7/18/17 | 1400 | 4 | - | 2 | - | 2 | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Associated with GW005-173
GW005-573

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734469

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby | 7/18/17 | 1600 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Nicole Reiff | 7/19/17 | 9:35 |

31675 | 1827143 | 9109771 – 88

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-101-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW101-173 | 7-18-17 | 1130 | 5 | – | 3 | – | 2 | | | | | | |
| 2 | GW101-573 | 7-18-17 | 1130 | 5 | – | 3 | – | 2 | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Pump 18073-730

TB173- 23

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734767

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-18-17 | 1430 | Stephen Busby | 7/18/17 | 1430 |
| Stephen Busby | 7/18/17 | 1600 | | | |
| | | | Nicole Reitz | 7/19/17 | 9:35 |

31675 | 1827143 | 9109771 - 88

EA 225 Schilling Circle Suite 400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-ER173-04

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 05 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 03 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | ER173-04 | 7-18-17 | 0815 | 5 | - | 3 | - | 2 | | * | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

Associated with:
GW003-173
GW101-173, GW101-573
GW102-173, TB173-23

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: 811150734767

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Carlos Montoya | 7-18-17 | 1430 | Stephen Busby | 7/18/17 | 1430 |
| Stephen Busby | 7/18/17 | 1600 | | | |
| | | | Nicole Raiff | 7/19/17 | 9:35 |

31675 | 1827143 | 9109771-88

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-23

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>Pam Moss: pmoss@eaest.com EA | 2017 |
| | | | | QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles): Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173-23 | 7/18/17 | 1400 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with GW01-173
~~GW01-173~~ SB
GW01-573
ER173-0X4
SB

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734767

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Stephen Busby | 7/18/17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Nicole Reitz | 7/19/17 | 9:35 |

31675 | 1827143 | 9109771 - 88

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400 Hunt Valley MD
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Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-102-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW102-173 | 7-18-17 | 1320 | 5 | — | 3 | — | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Pump 180713-730

TB173-24

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734458

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-18-17 | 1430 | Printed Name and Signature: Stephen Busby | 7/19/17 | 1430 |
| Printed Name and Signature: Stephen Busby | 7/18/17 | 1600 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Nicole Reitt | 7/19/17 | 9:35 |

31675 | 1827143 | 9109771-88

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-003-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | GW003-173 | 7-18-17 | 0945 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

Pump 18073-730

TB173-24

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734458

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-18-17 | 1430 | Printed Name and Signature: Stephen Bushy | 7/18/17 | 1430 |
| Printed Name and Signature: Stephen Bushy | 7/18/17 | 1600 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Nicole Rutt | 7/19/17 | 9:35 |

31675 | 1827143 | 9109771-88

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173-24

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
| 1 | TB173-24 | 7/18/17 | 1400 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with GW003-173
~~GW003~~SB
GW102-173

SAMPLER(S): Stephen Busby

COURIER AND SHIPPING NUMBER: FedEx 811156734458

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Stephen Busby Stephen Busby | 7/18/17 | 1600 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Nicole Raitt | 7/19/17 | 9:35 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 189166

Group Number(s): 1827143

Client: EA

## KIRTLAND AFB BULK FUELS

### Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/19/2017 9:35 |
| Number of Packages: | 3 | Number of Projects: | 1 |

### Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 12 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Nicole Reiff (25684) at 10:35 on 07/19/2017*

### Samples Chilled Details: KIRTLAND AFB BULK FUELS

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | 32170023 | 1.4 | IR | Wet | Y | Loose | N |
| 2 | DT146 | 0.7 | DT | Wet | Y | Loose | N |
| 3 | 32170023 | 1.1 | IR | Wet | Y | Loose | N |



2425 New Holland Pike
Lancaster, PA 17601-2429
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | none detected |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

**<** less than

**>** greater than

**ppm** parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

**ppb** parts per billion

**Dry weight basis** Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

*Laboratory Data Qualifiers:*

C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

# Volatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Volatiles by GC/MS

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9109771 | GW005-173 | X | | 1; 10 | Unspiked |
| 9109772 | GW005-173 MS | X | | 1 | Matrix Spike |
| 9109773 | GW005-173 MSD | X | | 1 | Matrix Spike Duplicate |
| 9109779 | GW005-573 | X | | 1; 10 | |
| 9109781 | TB173-22 | X | | 1 | Trip Blank |
| 9109782 | GW101-173 | X | | 1 | |
| 9109783 | GW101-573 | X | | 1 | |
| 9109784 | ER173-04 | X | | 1 | Equipment Blank |
| 9109785 | TB173-23 | X | | 1 | Trip Blank |
| 9109786 | GW102-173 | X | | 1 | |
| 9109787 | GW003-173 | X | | 1 | |
| 9109788 | TB173-24 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Volatiles by GC/MS

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# Quality Control Reference List
## GC/MS Volatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

**Fraction: Volatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| BTEX 8260C Water | Y172023AA | VBLKY06 | 07/21/2017 20:40:00 |
| | | LCSY06 | 07/21/2017 20:17:00 |
| | | 9109771 UNSPK | 07/22/2017 01:28:00 |
| | | 9109772 MS | 07/22/2017 01:51:00 |
| | | 9109773 MSD | 07/22/2017 02:13:00 |
| | | 9109779 | 07/22/2017 02:35:00 |
| | | 9109779 | 07/22/2017 02:57:00 |
| | | 9109781 | 07/21/2017 23:16:00 |
| | | 9109782 | 07/22/2017 03:19:00 |
| | | 9109783 | 07/22/2017 03:41:00 |
| | | 9109784 | 07/21/2017 23:38:00 |
| | | 9109785 | 07/22/2017 00:00:00 |
| | | 9109786 | 07/22/2017 04:03:00 |
| | | 9109787 | 07/22/2017 04:26:00 |
| | | 9109788 | 07/22/2017 00:22:00 |
| BTEX 8260C Water | Y172081AA | VBLKY18 | 07/27/2017 09:21:00 |
| | | LCSY18 | 07/27/2017 09:50:00 |
| | | LCDY18 | 07/27/2017 10:15:00 |
| | | 9109771 UNSPK | 07/27/2017 12:04:00 |

**Quality Control Summary**
**Method Blank**
**GC/MS Volatiles**
**SDG: KR188**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| Y172023AA / VBLKY06<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Benzene | 07/21/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Toluene | 07/21/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Ethylbenzene | 07/21/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Xylene (Total) | 07/21/17 | N.D. | ug/l | 0.5 | 1 | 1 |

| Y172081AA / VBLKY18<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Benzene | 07/27/17 | N.D. | ug/l | 0.5 | 1 | 1 |

**Quality Control Summary**
**Surrogates**
**GC/MS Volatiles**
**SDG: KR188**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| Y172023AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKY06 | 101 | 81 - 118 | 96 | 85 - 114 | 102 | 80 - 119 | 104 | 89 - 112 |
| LCSY06 | 97 | 81 - 118 | 103 | 85 - 114 | 99 | 80 - 119 | 104 | 89 - 112 |
| 9109771 UNSPK | 99 | 81 - 118 | 105 | 85 - 114 | 99 | 80 - 119 | 103 | 89 - 112 |
| 9109772 MS | 97 | 81 - 118 | 106 | 85 - 114 | 99 | 80 - 119 | 105 | 89 - 112 |
| 9109773 MSD | 95 | 81 - 118 | 106 | 85 - 114 | 98 | 80 - 119 | 104 | 89 - 112 |
| 9109779 | 97 | 81 - 118 | 104 | 85 - 114 | 97 | 80 - 119 | 105 | 89 - 112 |
| 9109781 | 102 | 81 - 118 | 96 | 85 - 114 | 106 | 80 - 119 | 101 | 89 - 112 |
| 9109782 | 99 | 81 - 118 | 100 | 85 - 114 | 101 | 80 - 119 | 104 | 89 - 112 |
| 9109783 | 98 | 81 - 118 | 99 | 85 - 114 | 101 | 80 - 119 | 103 | 89 - 112 |
| 9109784 | 100 | 81 - 118 | 98 | 85 - 114 | 105 | 80 - 119 | 104 | 89 - 112 |
| 9109785 | 101 | 81 - 118 | 96 | 85 - 114 | 104 | 80 - 119 | 102 | 89 - 112 |
| 9109786 | 98 | 81 - 118 | 98 | 85 - 114 | 102 | 80 - 119 | 103 | 89 - 112 |
| 9109787 | 97 | 81 - 118 | 99 | 85 - 114 | 101 | 80 - 119 | 103 | 89 - 112 |
| 9109788 | 102 | 81 - 118 | 95 | 85 - 114 | 107 | 80 - 119 | 102 | 89 - 112 |

| Y172081AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKY18 | 100 | 81 - 118 | 97 | 85 - 114 | 100 | 80 - 119 | 102 | 89 - 112 |
| LCSY18 | 99 | 81 - 118 | 103 | 85 - 114 | 99 | 80 - 119 | 103 | 89 - 112 |
| LCDY18 | 100 | 81 - 118 | 103 | 85 - 114 | 98 | 80 - 119 | 103 | 89 - 112 |

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| UNSPK: 9109771<br>MS: 9109772<br>MSD: 9109773<br>**Analyte** | Batch: **Y172023AA** (Sample number(s): 9109771-9109773, 9109779, 9109781-9109788 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Toluene | 20 | 4.31 | 26.4 | 26.55 | 110 | 111 | 80-121 | 1 | 20 |
| Ethylbenzene | 20 | 54.25 | 76.01 | 77.27 | 109 | 115 | 79-121 | 2 | 20 |
| Xylene (Total) | 60 | 113.89 | 177.91 | 180.22 | 107 | 111 | 79-121 | 1 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR188**
**Matrix: LIQUID**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSY06 | Batch: **Y172023AA** (Sample number(s): 9109771-9109773, 9109779, 9109781-9109788 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | 21.06 | NA | 105 | NA | 79-120 | NA | NA |
| Toluene | 20 | 20.81 | NA | 104 | NA | 80-121 | NA | NA |
| Ethylbenzene | 20 | 20.83 | NA | 104 | NA | 79-121 | NA | NA |
| Xylene (Total) | 60 | 60.62 | NA | 101 | NA | 79-121 | NA | NA |

| LCS: LCSY18<br>LCSD: LCDY18 | Batch: **Y172081AA** (Sample number(s): 9109771 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | 21.75 | 20.72 | 109 | 104 | 79-120 | 5 | 20 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR188___

Lab File ID: yj20t01.d  BFB Injection Date: 01/20/17

Instrument ID: HP09355  BFB Injection Time: 08:37

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 20.15 |
| 75 | 30.0 - 60.0% of mass 95 | 51.21 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.89 |
| 173 | Less than 2.0% of mass 174 | 0.00 ( 0.00)1 |
| 174 | Greater than 50.0% of mass 95 | 86.14 |
| 175 | 5.0 - 9.0% of mass 174 | 6.18 ( 7.17)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 83.46 (96.90)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.58 ( 6.68)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | yj20i01.d | 01/20/17 | 09:18 |
| 02 | VSTD100 | yj20i02.d | 01/20/17 | 09:39 |
| 03 | VSTD50 | yj20i03.d | 01/20/17 | 10:01 |
| 04 | VSTD20 | yj20i04.d | 01/20/17 | 10:23 |
| 05 | VSTD10 | yj20i05.d | 01/20/17 | 10:45 |
| 06 | VSTD4 | yj20i06.d | 01/20/17 | 11:07 |
| 07 | VSTD1 | yj20i07.d | 01/20/17 | 11:29 |
| 08 | MDL0.5 - MDL0.5 | yj20m01.d | 01/20/17 | 11:51 |
| 09 | YLGICV | yj20v01.d | 01/20/17 | 12:13 |
| 10 | VSTD300 | yj20i11.d | 01/20/17 | 13:37 |
| 11 | VSTD100 | yj20i12.d | 01/20/17 | 13:58 |
| 12 | VSTD50 | yj20i13.d | 01/20/17 | 14:20 |
| 13 | VSTD20 | yj20i14.d | 01/20/17 | 14:42 |
| 14 | VSTD10 | yj20i15.d | 01/20/17 | 15:04 |
| 15 | VSTD4 | yj20i16.d | 01/20/17 | 15:26 |
| 16 | MDL001 - MDL001 | yj20m11.d | 01/20/17 | 15:48 |
| 17 | YSMICV | yj20v11.d | 01/20/17 | 16:10 |

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# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR188___

Lab File ID: yl21t10.d  BFB Injection Date: 07/21/17

Instrument ID: HP09355  BFB Injection Time: 18:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.36 |
| 75 | 30.0 - 60.0% of mass 95 | 49.74 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.55 |
| 173 | Less than 2.0% of mass 174 | 0.00 ( 0.00)1 |
| 174 | Greater than 50.0% of mass 95 | 70.92 |
| 175 | 5.0 - 9.0% of mass 174 | 5.33 ( 7.52)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 68.88 (97.12)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.62 ( 6.71)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | yl21c05.d | 07/21/17 | 19:30 |
| 02 | LCSY06 | yl21s62.d | 07/21/17 | 20:17 |
| 03 | VBLKY06 | yl21b10.d | 07/21/17 | 20:40 |
| 04 | 9109781 | yl21s67.d | 07/21/17 | 23:16 |
| 05 | 9109784 | yl21s68.d | 07/21/17 | 23:38 |
| 06 | 9109785 | yl21s69.d | 07/22/17 | 00:00 |
| 07 | 9109788 | yl21s70.d | 07/22/17 | 00:22 |
| 08 | 9112127 | yl21s71.d | 07/22/17 | 00:44 |
| 09 | 9112128 | yl21s72.d | 07/22/17 | 01:06 |
| 10 | 9109771 | yl21s73.d | 07/22/17 | 01:28 |
| 11 | 9109772MS | yl21s74.d | 07/22/17 | 01:51 |
| 12 | 9109773MSD | yl21s75.d | 07/22/17 | 02:13 |
| 13 | 9109779 | yl21s76.d | 07/22/17 | 02:35 |
| 14 | 9109779DL | yl21s77.d | 07/22/17 | 02:57 |
| 15 | 9109782 | yl21s78.d | 07/22/17 | 03:19 |
| 16 | 9109783 | yl21s79.d | 07/22/17 | 03:41 |
| 17 | 9109786 | yl21s80.d | 07/22/17 | 04:03 |
| 18 | 9109787 | yl21s81.d | 07/22/17 | 04:26 |
| 19 | 9112123 | yl21s82.d | 07/22/17 | 04:48 |
| 20 | 9112125 | yl21s83.d | 07/22/17 | 05:10 |
| 21 | 9112126 | yl21s84.d | 07/22/17 | 05:33 |
| 22 | SECC050 | yl21c06.d | 07/22/17 | 05:55 |



FORM V VOA

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# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR188___

Lab File ID: yl27t01.d  BFB Injection Date: 07/27/17

Instrument ID: HP09355  BFB Injection Time: 07:42

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 16.32 |
| 75 | 30.0 - 60.0% of mass 95 | 46.16 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.36 |
| 173 | Less than 2.0% of mass 174 | 0.19 ( 0.25)1 |
| 174 | Greater than 50.0% of mass 95 | 77.06 |
| 175 | 5.0 - 9.0% of mass 174 | 5.29 ( 6.87)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 74.06 (96.10)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.83 ( 6.53)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | yl27c01.d | 07/27/17 | 08:37 |
| 02 | VSTD50 | yl27c02.d | 07/27/17 | 08:59 |
| 03 | VBLKY18 | yl27b01.d | 07/27/17 | 09:21 |
| 04 | VBLKY20 | yl27b05.d | 07/27/17 | 09:21 |
| 05 | LCSY18 | yl27s01.d | 07/27/17 | 09:50 |
| 06 | LCSY20 | yl27s31.d | 07/27/17 | 09:50 |
| 07 | LCDY18 | yl27s02.d | 07/27/17 | 10:15 |
| 08 | LCDY20 | yl27s32.d | 07/27/17 | 10:15 |
| 09 | LCSY19 | yl27s03.d | 07/27/17 | 10:37 |
| 10 | LCDY19 | yl27s04.d | 07/27/17 | 10:59 |
| 11 | 9109771DL | yl27s06.d | 07/27/17 | 12:04 |
| 12 | SECC050 | yl27ec1.d | 07/27/17 | 12:26 |
| 13 | SECV050 | yl27ec2.d | 07/27/17 | 12:48 |
| 14 | 9107020 | yl27s33.d | 07/27/17 | 13:10 |
| 15 | 9109081 | yl27s34.d | 07/27/17 | 13:32 |
| 16 | 9107017 | yl27s36.d | 07/27/17 | 14:16 |
| 17 | 9107018 | yl27s37.d | 07/27/17 | 14:38 |
| 18 | 9107019 | yl27s38.d | 07/27/17 | 15:00 |
| 19 | 9109082 | yl27s39.d | 07/27/17 | 15:22 |
| 20 | 9109087 | yl27s40.d | 07/27/17 | 15:44 |
| 21 | 9109088 | yl27s41.d | 07/27/17 | 16:07 |
| 22 | 9109089 | yl27s42.d | 07/27/17 | 16:29 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR188___

Lab File ID: yl27t01.d  BFB Injection Date: 07/27/17

Instrument ID: HP09355  BFB Injection Time: 07:42

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 16.32 |
| 75 | 30.0 - 60.0% of mass 95 | 46.16 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.36 |
| 173 | Less than 2.0% of mass 174 | 0.19 ( 0.25)1 |
| 174 | Greater than 50.0% of mass 95 | 77.06 |
| 175 | 5.0 - 9.0% of mass 174 | 5.29 ( 6.87)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 74.06 (96.10)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.83 ( 6.53)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 9118347 | yl27s43.d | 07/27/17 | 16:51 |
| 24 | 9118349 | yl27s44.d | 07/27/17 | 17:13 |
| 25 | 9107203 | yl27s45.d | 07/27/17 | 17:35 |
| 26 | 9107203MS | yl27s46.d | 07/27/17 | 17:57 |
| 27 | 9107203MSD | yl27s47.d | 07/27/17 | 18:20 |
| 28 | 9107164 | yl27s48.d | 07/27/17 | 18:42 |
| 29 | 9110305 | yl27s49.d | 07/27/17 | 19:04 |
| 30 | 9110308 | yl27s50.d | 07/27/17 | 19:26 |

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09355  Calibration Date(s): 01/20/17  01/20/17

Heated Purge: (Y/N) Y  Calibration Times: 09:18  11:29

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = yj20i07.d  RRF 4 = yj20i06.d  RRF 10= yj20i05.d
RRF 20= yj20i04.d  RRF 50= yj20i03.d  RRF100= yj20i02.d  RRF300= yj20i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | #0.2290 | 0.3327 | 0.3588 | 0.3111 | 0.3417 | 0.3303 | 0.2941 | 0.3139 | 14 | AVG # |
| Chloromethane | #0.3002 | 0.3601 | 0.3676 | 0.3292 | 0.3532 | 0.3476 | 0.3085 | 0.3381 | 8 | AVG # |
| 1,3-Butadiene | 0.6623 | 0.4610 | 0.3031 | 0.2823 | 0.2291 | 0.2171 | 0.1989 | 0.3363 | 50 | AVG |
| Vinyl Chloride | #0.2741 | 0.3402 | 0.3477 | 0.3079 | 0.3355 | 0.3260 | 0.2932 | 0.3178 | 9 | AVG # |
| Bromomethane | #0.2119 | 0.2409 | 0.2516 | 0.2186 | 0.2347 | 0.2253 | 0.1944 | 0.2253 | 9 | AVG # |
| Chloroethane | #0.1695 | 0.2009 | 0.2038 | 0.1791 | 0.1918 | 0.1830 | 0.1587 | 0.1838 | 9 | AVG # |
| Dichlorofluoromethane | 0.4040 | 0.4658 | 0.4098 | 0.4359 | 0.4200 | 0.4209 | 0.3782 | 0.4192 | 6 | AVG |
| n-Pentane |  | 0.5225 | 0.4291 | 0.4137 | 0.4029 | 0.3846 | 0.3565 | 0.4182 | 14 | AVG |
| Trichlorofluoromethane | #0.2889 | 0.3908 | 0.4162 | 0.3719 | 0.4063 | 0.3885 | 0.3538 | 0.3738 | 11 | AVG # |
| Ethyl ether |  | 0.2341 | 0.2213 | 0.2286 | 0.2377 | 0.2344 | 0.2237 | 0.2300 | 3 | AVG |
| Freon 123a |  | 0.2738 | 0.2486 | 0.2743 | 0.2659 | 0.2656 | 0.2477 | 0.2626 | 5 | AVG |
| Acrolein | 1.4250 | 1.5360 | 1.4648 | 1.4410 | 1.5260 | 1.5986 | 1.6712 | 1.5232 | 6 | AVG |
| 1,1-Dichloroethene | #0.1490 | 0.1883 | 0.1920 | 0.1910 | 0.2035 | 0.2028 | 0.1943 | 0.1887 | 10 | AVG # |
| 1,1-Dichloroethene(2) | #0.0688 | 0.0997 | 0.1015 | 0.1013 | 0.1051 | 0.1041 | 0.0991 | 0.0971 | 13 | AVG #<- |
| Acetone | #0.5787 | 0.7314 | 0.7297 | 0.7008 | 0.7424 | 0.7690 | 0.8174 | 0.7242 | 10 | AVG # |
| Freon 113 | # | 0.1791 | 0.1908 | 0.1956 | 0.2036 | 0.2043 | 0.1910 | 0.1941 | 5 | AVG # |
| 2-Propanol | 0.6443 | 0.5723 | 0.5868 | 0.5536 | 0.5610 | 0.6031 | 0.5210 | 0.5774 | 7 | AVG |
| Methyl Iodide | 0.2999 | 0.3509 | 0.3591 | 0.3682 | 0.3856 | 0.3835 | 0.3627 | 0.3585 | 8 | AVG |
| Carbon Disulfide | # | 0.5413 | 0.5590 | 0.5812 | 0.6295 | 0.6397 | 0.6123 | 0.5938 | 7 | AVG # |
| Allyl Chloride |  | 0.4122 | 0.3707 | 0.3899 | 0.4127 | 0.4144 | 0.3944 | 0.3990 | 4 | AVG |
| Methyl Acetate | # | 0.3739 | 0.3554 | 0.3642 | 0.3736 | 0.3698 | 0.3613 | 0.3663 | 2 | AVG # |
| Methylene Chloride | #0.2229 | 0.2387 | 0.2384 | 0.2408 | 0.2512 | 0.2468 | 0.2326 | 0.2387 | 4 | AVG # |
| t-Butyl alcohol | 1.2932 | 1.1414 | 1.1514 | 1.0963 | 1.1277 | 1.1189 | 1.0289 | 1.1368 | 7 | AVG |
| Acrylonitrile |  | 0.1820 | 0.1713 | 0.1757 | 0.1782 | 0.1700 | 0.1778 | 0.1758 | 3 | AVG |
| trans-1,2-Dichloroethene | #0.1857 | 0.2286 | 0.2298 | 0.2333 | 0.2451 | 0.2407 | 0.2346 | 0.2282 | 9 | AVG # |
| Methyl Tertiary Butyl Ether | #0.7211 | 0.7833 | 0.7871 | 0.8053 | 0.8225 | 0.8195 | 0.7579 | 0.7852 | 5 | AVG # |
| n-Hexane |  | 0.3473 | 0.3539 | 0.3622 | 0.3705 | 0.3677 | 0.3464 | 0.3580 | 3 | AVG |
| 1,1-Dichloroethane | #0.3508 | 0.4107 | 0.4190 | 0.4181 | 0.4452 | 0.4322 | 0.4094 | 0.4122 | 7 | AVG # |
| di-Isopropyl ether | 0.7629 | 0.8184 | 0.8290 | 0.8423 | 0.8684 | 0.8606 | 0.8030 | 0.8264 | 4 | AVG |
| 2-Chloro-1,3-butadiene |  | 0.3624 | 0.3782 | 0.3848 | 0.4092 | 0.4048 | 0.3893 | 0.3881 | 4 | AVG |
| Ethyl t-butyl ether | 0.7095 | 0.7630 | 0.7781 | 0.7946 | 0.8152 | 0.8103 | 0.7467 | 0.7739 | 5 | AVG |
| cis-1,2-Dichloroethene | #0.2239 | 0.2572 | 0.2664 | 0.2677 | 0.2780 | 0.2765 | 0.2684 | 0.2626 | 7 | AVG # |
| 2-Butanone | #0.2827 | 0.2907 | 0.2664 | 0.2733 | 0.2711 | 0.2550 | 0.2728 | 0.2731 | 4 | AVG # |
| 2,2-Dichloropropane | 0.2470 | 0.3185 | 0.3277 | 0.3304 | 0.3548 | 0.3536 | 0.3335 | 0.3237 | 11 | AVG |
| Propionitrile | 1.1331 | 1.2789 | 1.2679 | 1.2901 | 1.2656 | 1.3581 | 1.3502 | 1.2777 | 6 | AVG |
| Methacrylonitrile | 0.1680 | 0.1822 | 0.1830 | 0.1918 | 0.1965 | 0.1947 | 0.1892 | 0.1865 | 5 | AVG |
| Bromochloromethane |  | 0.1311 | 0.1336 | 0.1381 | 0.1433 | 0.1457 | 0.1400 | 0.1386 | 4 | AVG |
| Tetrahydrofuran | 0.9700 | 1.1407 | 1.1080 | 1.1249 | 1.1688 | 1.2047 | 1.3053 | 1.1460 | 9 | AVG |
| Chloroform | #0.3501 | 0.4046 | 0.4199 | 0.4249 | 0.4463 | 0.4404 | 0.4201 | 0.4152 | 8 | AVG # |
| 1,1,1-Trichloroethane | #0.2744 | 0.3480 | 0.3496 | 0.3578 | 0.3733 | 0.3732 | 0.3566 | 0.3476 | 10 | AVG # |
| Cyclohexane | # | 0.4175 | 0.4241 | 0.4238 | 0.4359 | 0.4340 | 0.4053 | 0.4234 | 3 | AVG # |
| Cyclohexane(2) | # | 0.3365 | 0.3507 | 0.3463 | 0.3586 | 0.3596 | 0.3349 | 0.3478 | 3 | AVG # |
| Cyclohexane(3) | # | 0.1232 | 0.1290 | 0.1290 | 0.1326 | 0.1330 | 0.1250 | 0.1286 | 3 | AVG # |
| 1,1-Dichloropropene | 0.2743 | 0.3399 | 0.3445 | 0.3447 | 0.3572 | 0.3511 | 0.3394 | 0.3359 | 8 | AVG |
| Carbon Tetrachloride | #0.2089 | 0.2725 | 0.2872 | 0.2950 | 0.3203 | 0.3245 | 0.3179 | 0.2895 | 14 | AVG # |
| Isobutyl Alcohol | 0.4184 | 0.4127 | 0.4131 | 0.4105 | 0.3901 | 0.4279 | 0.4417 | 0.4163 | 4 | AVG |
| Benzene | #0.8949 | 1.0011 | 1.0130 | 1.0149 | 1.0559 | 1.0320 | 0.9838 | 0.9994 | 5 | AVG # |
| 1,2-Dichloroethane | #0.3468 | 0.3719 | 0.3731 | 0.3671 | 0.3756 | 0.3720 | 0.3533 | 0.3657 | 3 | AVG # |
| 1,2-Dichloroethane(2) | #0.0108 | 0.0300 | 0.0323 | 0.0332 | 0.0344 | 0.0340 | 0.0331 | 0.0297 | 28 | AVG #<- |
| t-Amyl methyl ether | 0.7027 | 0.7647 | 0.7816 | 0.7960 | 0.8149 | 0.8102 | 0.7516 | 0.7745 | 5 | AVG |
| n-Heptane |  | 0.4273 | 0.4288 | 0.4225 | 0.4249 | 0.4232 | 0.4021 | 0.4215 | 2 | AVG |
| n-Butanol | 0.2716 | 0.3158 | 0.3209 | 0.3427 | 0.3077 | 0.3725 | 0.3706 | 0.3288 | 11 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09355  Calibration Date(s): 01/20/17  01/20/17

Heated Purge: (Y/N) Y  Calibration Times: 09:18  11:29

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = yj20i07.d  RRF 4 = yj20i06.d  RRF 10= yj20i05.d
RRF 20= yj20i04.d  RRF 50= yj20i03.d  RRF100= yj20i02.d  RRF300= yj20i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | #0.2155 | 0.2600 | 0.2629 | 0.2646 | 0.2764 | 0.2704 | 0.2641 | 0.2591 | 8 | AVG # |
| Methylcyclohexane | # | 0.4553 | 0.4442 | 0.4648 | 0.4725 | 0.4776 | 0.4506 | 0.4608 | 3 | AVG # |
| Methylcyclohexane(2) | # | 0.2102 | 0.1995 | 0.2086 | 0.2121 | 0.2154 | 0.2035 | 0.2082 | 3 | AVG # |
| 1,2-Dichloropropane | #0.2196 | 0.2610 | 0.2629 | 0.2701 | 0.2789 | 0.2780 | 0.2687 | 0.2627 | 8 | AVG # |
| Dibromomethane | 0.1555 | 0.1651 | 0.1700 | 0.1740 | 0.1810 | 0.1820 | 0.1759 | 0.1719 | 5 | AVG |
| 1,4-Dioxane | 0.0809 | 0.0873 | 0.0879 | 0.0886 | 0.0939 | 0.0970 | 0.0954 | 0.0901 | 6 | AVG |
| Methyl Methacrylate | | 0.2691 | 0.2733 | 0.2869 | 0.3016 | 0.3034 | 0.3006 | 0.2891 | 5 | AVG |
| Bromodichloromethane | #0.2284 | 0.2699 | 0.2840 | 0.3020 | 0.3267 | 0.3334 | 0.3312 | 0.2965 | 13 | AVG # |
| 2-Nitropropane | 0.0985 | 0.1009 | 0.1013 | 0.1145 | 0.1274 | 0.1251 | 0.1399 | 0.1154 | 14 | AVG |
| 2-Chloroethyl Vinyl Ether | | 0.2064 | 0.2169 | 0.2211 | 0.2343 | 0.2334 | 0.2384 | 0.2251 | 5 | AVG |
| cis-1,3-Dichloropropene | #0.2845 | 0.3512 | 0.3715 | 0.4001 | 0.4348 | 0.4394 | 0.4319 | 0.3876 | 15 | AVG # |
| 4-Methyl-2-pentanone | #0.4666 | 0.4886 | 0.4677 | 0.4912 | 0.5013 | 0.4819 | 0.5006 | 0.4854 | 3 | AVG # |
| Toluene | #0.7355 | 0.8655 | 0.8755 | 0.8685 | 0.9019 | 0.8800 | 0.8266 | 0.8505 | 7 | AVG # |
| trans-1,3-Dichloropropene | #0.3559 | 0.4075 | 0.4478 | 0.4849 | 0.5279 | 0.5404 | 0.5229 | 0.4696 | 15 | AVG # |
| Ethyl Methacrylate | | 0.5222 | 0.5567 | 0.5910 | 0.6266 | 0.6362 | 0.6035 | 0.5893 | 7 | AVG |
| 1,1,2-Trichloroethane | #0.3068 | 0.3333 | 0.3297 | 0.3414 | 0.3499 | 0.3491 | 0.3286 | 0.3341 | 4 | AVG # |
| Tetrachloroethene | #0.2976 | 0.3904 | 0.3816 | 0.3857 | 0.3973 | 0.3910 | 0.3760 | 0.3742 | 9 | AVG # |
| 1,3-Dichloropropane | 0.5115 | 0.5675 | 0.5740 | 0.5788 | 0.5868 | 0.5823 | 0.5502 | 0.5645 | 5 | AVG |
| 2-Hexanone | #0.4702 | 0.5157 | 0.4926 | 0.5213 | 0.5405 | 0.5050 | 0.5171 | 0.5089 | 4 | AVG # |
| Dibromochloromethane | #0.2235 | 0.2655 | 0.2910 | 0.3179 | 0.3583 | 0.3709 | 0.3697 | 0.3138 | 18 | AVG # |
| 1,2-Dibromoethane | #0.3139 | 0.3459 | 0.3586 | 0.3702 | 0.3846 | 0.3842 | 0.3666 | 0.3606 | 7 | AVG # |
| 1-Chlorohexane | | 0.4715 | 0.4687 | 0.4681 | 0.4900 | 0.4842 | 0.4615 | 0.4740 | 2 | AVG |
| Chlorobenzene | #0.8888 | 0.9880 | 0.9939 | 0.9903 | 1.0242 | 1.0046 | 0.9439 | 0.9762 | 5 | AVG # |
| 1,1,1,2-Tetrachloroethane | 0.2233 | 0.2683 | 0.2907 | 0.3082 | 0.3374 | 0.3433 | 0.3373 | 0.3012 | 15 | AVG |
| Ethylbenzene | #1.3877 | 1.6340 | 1.6817 | 1.6820 | 1.7526 | 1.7183 | 1.5962 | 1.6361 | 7 | AVG # |
| m+p-Xylene | #0.5447 | 0.6485 | 0.6604 | 0.6634 | 0.6980 | 0.6907 | 0.6544 | 0.6514 | 8 | AVG # |
| o-Xylene | #0.5049 | 0.6231 | 0.6516 | 0.6536 | 0.6840 | 0.6793 | 0.6456 | 0.6346 | 10 | AVG # |
| Styrene | # | 0.9618 | 1.0420 | 1.0874 | 1.1643 | 1.1703 | 1.1094 | 1.0892 | 7 | AVG # |
| Bromoform | # | 0.1780 | 0.2041 | 0.2300 | 0.2676 | 0.2877 | 0.2987 | 0.2443 | 20 | AVG # |
| Isopropylbenzene | # | 1.6070 | 1.6537 | 1.6812 | 1.7377 | 1.7053 | 1.5506 | 1.6559 | 4 | AVG # |
| Cyclohexanone | | 0.0621 | 0.0637 | 0.0663 | 0.0696 | 0.0732 | 0.0752 | 0.0683 | 8 | AVG |
| Bromobenzene | | 0.7901 | 0.8092 | 0.8104 | 0.8454 | 0.8496 | 0.8623 | 0.8278 | 3 | AVG |
| 1,1,2,2-Tetrachloroethane | #0.9084 | 0.9877 | 0.9983 | 1.0233 | 1.0610 | 1.0573 | 1.0229 | 1.0084 | 5 | AVG # |
| 1,2,3-Trichloropropane | | 0.3423 | 0.3401 | 0.3410 | 0.3478 | 0.3470 | 0.3379 | 0.3427 | 1 | AVG |
| trans-1,4-Dichloro-2-butene | | 0.2716 | 0.2914 | 0.3224 | 0.3445 | 0.3536 | 0.3343 | 0.3196 | 10 | AVG |
| n-Propylbenzene | | 3.5597 | 3.6273 | 3.6048 | 3.7503 | 3.6211 | 3.3041 | 3.5779 | 4 | AVG |
| 2-Chlorotoluene | | 0.7270 | 0.7365 | 0.7293 | 0.7513 | 0.7498 | 0.7236 | 0.7362 | 2 | AVG |
| 4-Chlorotoluene | | 0.7544 | 0.7712 | 0.7771 | 0.8167 | 0.7971 | 0.7724 | 0.7815 | 3 | AVG |
| 1,3,5-Trimethylbenzene | | 2.5133 | 2.6113 | 2.6200 | 2.7347 | 2.6704 | 2.5041 | 2.6090 | 3 | AVG |
| tert-Butylbenzene | | 0.5314 | 0.5496 | 0.5508 | 0.5789 | 0.5762 | 0.5600 | 0.5578 | 3 | AVG |
| Pentachloroethane | | 0.3451 | 0.3650 | 0.4069 | 0.4463 | 0.4762 | 0.4911 | 0.4218 | 14 | AVG |
| 1,2,4-Trimethylbenzene | | 2.5498 | 2.6834 | 2.6982 | 2.8306 | 2.7890 | 2.6370 | 2.6980 | 4 | AVG |
| sec-Butylbenzene | | 3.2387 | 3.2877 | 3.3184 | 3.4454 | 3.3291 | 3.0579 | 3.2796 | 4 | AVG |
| 1,3-Dichlorobenzene | # | 1.5261 | 1.5485 | 1.5614 | 1.6408 | 1.6195 | 1.5800 | 1.5794 | 3 | AVG # |
| p-Isopropyltoluene | | 2.7400 | 2.8741 | 2.9476 | 3.0673 | 3.0235 | 2.8307 | 2.9139 | 4 | AVG |
| 1,4-Dichlorobenzene | # | 1.5858 | 1.6025 | 1.6030 | 1.6749 | 1.6728 | 1.6149 | 1.6257 | 2 | AVG # |
| 1,2,3-Trimethylbenzene | | 2.6712 | 2.6154 | 2.7354 | 2.7786 | 2.8169 | 2.6429 | 2.7101 | 3 | AVG |
| Benzyl Chloride | | 1.3820 | 1.5960 | 1.8312 | 2.0579 | 2.1635 | 2.1266 | 1.8595 | 17 | AVG |
| 1,3-Diethylbenzene | | 1.6096 | 1.6345 | 1.7130 | 1.7650 | 1.7704 | 1.6890 | 1.6969 | 4 | AVG |
| 1,4-Diethylbenzene | | 1.6918 | 1.6740 | 1.7764 | 1.8393 | 1.8236 | 1.7585 | 1.7606 | 4 | AVG |
| 1,2-Dichlorobenzene | # | 1.4654 | 1.4953 | 1.5089 | 1.5613 | 1.5644 | 1.5072 | 1.5171 | 3 | AVG # |
| n-Butylbenzene | | 1.4366 | 1.4527 | 1.4695 | 1.5318 | 1.4855 | 1.4241 | 1.4667 | 3 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date(s): 01/20/17 01/20/17

Heated Purge: (Y/N) Y Calibration Times: 09:18 11:29

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = yj20i07.d RRF 4 = yj20i06.d RRF 10= yj20i05.d
RRF 20= yj20i04.d RRF 50= yj20i03.d RRF100= yj20i02.d RRF300= yj20i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diethylbenzene | | 1.3845 | 1.3752 | 1.4191 | 1.4610 | 1.4823 | 1.4213 | 1.4239 | 3 | AVG |
| 1,2-Dibromo-3-chloropropane# | | 0.2050 | 0.2247 | 0.2500 | 0.2589 | 0.2656 | 0.2657 | 0.2450 | 10 | AVG # |
| 1,3,5-Trichlorobenzene | | 1.0796 | 1.1127 | 1.1241 | 1.1377 | 1.1117 | 1.1020 | 1.1113 | 2 | AVG |
| 1,2,4-Trichlorobenzene # | | 1.0027 | 0.9853 | 1.0282 | 1.0367 | 1.0122 | 1.0285 | 1.0156 | 2 | AVG # |
| Hexachlorobutadiene | | 0.5097 | 0.4955 | 0.5062 | 0.5096 | 0.4866 | 0.4869 | 0.4991 | 2 | AVG |
| Naphthalene | | 3.0857 | 3.1313 | 3.3725 | 3.3684 | 3.3666 | 3.1768 | 3.2502 | 4 | AVG |
| 1,2,3-Trichlorobenzene | | 0.9231 | 0.9049 | 0.9282 | 0.9303 | 0.9126 | 0.9413 | 0.9234 | 1 | AVG |
| 2-Methylnaphthalene | | 1.6376 | 1.5625 | 1.7598 | 1.8086 | 1.8518 | 1.8822 | 1.7504 | 7 | AVG |
| Dibromofluoromethane | 0.2293 | 0.2308 | 0.2314 | 0.2358 | 0.2343 | 0.2342 | 0.2365 | 0.2332 | 1 | AVG |
| Dibromofluoromethane(2) | | 0.2361 | 0.2372 | 0.2398 | 0.2397 | 0.2393 | 0.2398 | 0.2386 | 1 | AVG |
| 1,2-Dichloroethane-d4 | 0.0615 | 0.0611 | 0.0616 | 0.0615 | 0.0616 | 0.0607 | 0.0599 | 0.0611 | 1 | AVG |
| 1,2-Dichloroethane-d4(2) | | 0.3146 | 0.3119 | 0.3096 | 0.3053 | 0.3035 | 0.3003 | 0.3075 | 2 | AVG |
| 1,2-Dichloroethane-d4(3) | | 0.0383 | 0.0387 | 0.0391 | 0.0393 | 0.0382 | 0.0392 | 0.0388 | 1 | AVG |
| Toluene-d8 | 1.3058 | 1.3095 | 1.3097 | 1.3045 | 1.2877 | 1.2803 | 1.2450 | 1.2918 | 2 | AVG |
| Toluene-d8(2) | | 0.8445 | 0.8435 | 0.8455 | 0.8301 | 0.8322 | 0.8112 | 0.8345 | 2 | AVG |
| 4-Bromofluorobenzene | 0.4825 | 0.4855 | 0.4876 | 0.4901 | 0.4867 | 0.4838 | 0.4752 | 0.4845 | 1 | AVG |
| 4-Bromofluorobenzene(2) | | 0.4162 | 0.4146 | 0.4174 | 0.4150 | 0.4125 | 0.4031 | 0.4131 | 1 | AVG |

Average %RSD 7

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

| | |
|---|---|
| /chem2/HP09355.i/17jan20i.b/yj20i01.d | VSTD300 |
| /chem2/HP09355.i/17jan20i.b/yj20i02.d | VSTD100 |
| /chem2/HP09355.i/17jan20i.b/yj20i03.d | VSTD050 |
| /chem2/HP09355.i/17jan20i.b/yj20i04.d | VSTD020 |
| /chem2/HP09355.i/17jan20i.b/yj20i05.d | VSTD010 |
| /chem2/HP09355.i/17jan20i.b/yj20i06.d | VSTD004 |
| /chem2/HP09355.i/17jan20i.b/yj20i07.d | VSTD001 |

Area Summary

File ID:

| Internal Standard Name | yj20i01.d | yj20i02.d | yj20i03.d | yj20i04.d | yj20i05.d | yj20i06.d | yj20i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 341463 | 332781 | 365897 | 369809 | 346736 | 344452 | 380396 | 354505 | 5 | Yes |
| Fluorobenzene | 1223002 | 1197583 | 1212862 | 1201221 | 1177225 | 1157072 | 1154548 | 1189073 | 2 | Yes |
| Chlorobenzene-d5 | 963403 | 918852 | 927146 | 910426 | 888999 | 870903 | 874803 | 907790 | 4 | Yes |
| 1,4-Dichlorobenzene-d4 | 524531 | 507846 | 512041 | 505705 | 486712 | 476531 | 479258 | 498946 | 4 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | yj20i01.d | yj20i02.d | yj20i03.d | yj20i04.d | yj20i05.d | yj20i06.d | yj20i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 4.331 | 4.319 | 4.319 | 4.313 | 4.313 | 4.325 | 4.325 | 4.321 |
| Fluorobenzene | 7.866 | 7.866 | 7.860 | 7.860 | 7.860 | 7.866 | 7.859 | 7.862 |
| Chlorobenzene-d5 | 11.321 | 11.315 | 11.315 | 11.315 | 11.315 | 11.315 | 11.315 | 11.316 |
| 1,4-Dichlorobenzene-d4 | 13.201 | 13.201 | 13.195 | 13.195 | 13.195 | 13.201 | 13.201 | 13.198 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 01/20/2017 at 13:02.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 ICV Date: 01/20/17 Time: 12:13

Lab File ID: yj20v01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.3139 | 0.2980 | 18.99 | 20 | -5 | # |
| # | Chloromethane | 0.3381 | 0.3412 | 20.19 | 20 | 1 | # |
| | 1,3-Butadiene | 0.3363 | 0.2884 | 17.15 | 20 | -14 | |
| # | Vinyl Chloride | 0.3178 | 0.3278 | 20.63 | 20 | 3 | # |
| # | Bromomethane | 0.2253 | 0.2275 | 20.19 | 20 | 1 | # |
| # | Chloroethane | 0.1838 | 0.1849 | 20.11 | 20 | 1 | # |
| | Dichlorofluoromethane | 0.4192 | 0.3871 | 18.47 | 20 | -8 | |
| | n-Pentane | 0.4182 | 0.4020 | 19.22 | 20 | -4 | |
| # | Trichlorofluoromethane | 0.3738 | 0.3883 | 20.78 | 20 | 4 | # |
| | Ethyl ether | 0.2300 | 0.2422 | 21.06 | 20 | 5 | |
| | Freon 123a | 0.2626 | 0.2535 | 19.31 | 20 | -3 | |
| | Acrolein | 1.5232 | 1.4433 | 142.13 | 150 | -5 | |
| # | 1,1-Dichloroethene | 0.1887 | 0.1914 | 20.28 | 20 | 1 | # |
| # | Acetone | 0.7242 | 0.8089 | 167.55 | 150 | 12 | # |
| # | Freon 113 | 0.1941 | 0.1861 | 19.17 | 20 | -4 | # |
| | 2-Propanol | 0.5774 | 0.4983 | 129.43 | 150 | -14 | |
| | Methyl Iodide | 0.3585 | 0.3314 | 18.48 | 20 | -8 | |
| # | Carbon Disulfide | 0.5938 | 0.5306 | 17.87 | 20 | -11 | # |
| | Allyl Chloride | 0.3990 | 0.3512 | 17.60 | 20 | -12 | |
| # | Methyl Acetate | 0.3663 | 0.3664 | 20.00 | 20 | 0 | # |
| # | Methylene Chloride | 0.2387 | 0.2252 | 18.87 | 20 | -6 | # |
| | t-Butyl alcohol | 1.1368 | 1.0231 | 179.98 | 200 | -10 | |
| | Acrylonitrile | 0.1758 | 0.1794 | 102.05 | 100 | 2 | |
| # | trans-1,2-Dichloroethene | 0.2282 | 0.2227 | 19.52 | 20 | -2 | # |
| # | Methyl Tertiary Butyl Ether | 0.7852 | 0.7143 | 18.19 | 20 | -9 | # |
| | n-Hexane | 0.3580 | 0.3542 | 19.79 | 20 | -1 | |
| # | 1,1-Dichloroethane | 0.4122 | 0.3949 | 19.16 | 20 | -4 | # |
| | di-Isopropyl ether | 0.8264 | 0.7687 | 18.61 | 20 | -7 | |
| | 2-Chloro-1,3-butadiene | 0.3881 | 0.3559 | 18.34 | 20 | -8 | |
| | Ethyl t-butyl ether | 0.7739 | 0.7033 | 18.18 | 20 | -9 | |
| # | cis-1,2-Dichloroethene | 0.2626 | 0.2461 | 18.75 | 20 | -6 | # |
| # | 2-Butanone | 0.2731 | 0.2840 | 155.94 | 150 | 4 | # |
| | 2,2-Dichloropropane | 0.3237 | 0.3020 | 18.66 | 20 | -7 | |
| | Propionitrile | 1.2777 | 1.2676 | 148.82 | 150 | -1 | |
| | Methacrylonitrile | 0.1865 | 0.1746 | 140.42 | 150 | -6 | |
| | Bromochloromethane | 0.1386 | 0.1276 | 18.41 | 20 | -8 | |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 ICV Date: 01/20/17 Time: 12:13

Lab File ID: yj20v01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.1460 | 1.2884 | 112.42 | 100 | 12 | |
| # | Chloroform | 0.4152 | 0.3915 | 18.86 | 20 | -6 | # |
| # | 1,1,1-Trichloroethane | 0.3476 | 0.3678 | 21.16 | 20 | 6 | # |
| # | Cyclohexane | 0.4234 | 0.4056 | 19.16 | 20 | -4 | # |
| | 1,1-Dichloropropene | 0.3359 | 0.3065 | 18.25 | 20 | -9 | |
| # | Carbon Tetrachloride | 0.2895 | 0.2720 | 18.80 | 20 | -6 | # |
| | Isobutyl Alcohol | 0.4163 | 0.3999 | 480.24 | 500 | -4 | |
| # | Benzene | 0.9994 | 0.9408 | 18.83 | 20 | -6 | # |
| # | 1,2-Dichloroethane | 0.3657 | 0.3410 | 18.65 | 20 | -7 | # |
| | t-Amyl methyl ether | 0.7745 | 0.7025 | 18.14 | 20 | -9 | |
| | n-Heptane | 0.4215 | 0.3857 | 18.30 | 20 | -8 | |
| | n-Butanol | 0.3288 | 0.3210 | 976.27 | 1000 | -2 | |
| # | Trichloroethene | 0.2591 | 0.2482 | 19.16 | 20 | -4 | # |
| # | Methylcyclohexane | 0.4608 | 0.4185 | 18.16 | 20 | -9 | # |
| # | 1,2-Dichloropropane | 0.2627 | 0.2450 | 18.65 | 20 | -7 | # |
| | Dibromomethane | 0.1719 | 0.1584 | 18.43 | 20 | -8 | |
| | 1,4-Dioxane | 0.0901 | 0.0868 | 481.48 | 500 | -4 | |
| | Methyl Methacrylate | 0.2891 | 0.2529 | 17.49 | 20 | -13 | |
| # | Bromodichloromethane | 0.2965 | 0.2659 | 17.93 | 20 | -10 | # |
| | 2-Nitropropane | 0.1154 | 0.1024 | 17.74 | 20 | -11 | |
| | 2-Chloroethyl Vinyl Ether | 0.2251 | 0.2006 | 17.83 | 20 | -11 | |
| # | cis-1,3-Dichloropropene | 0.3876 | 0.3548 | 18.31 | 20 | -8 | # |
| # | 4-Methyl-2-pentanone | 0.4854 | 0.5333 | 109.86 | 100 | 10 | # |
| # | Toluene | 0.8505 | 0.8093 | 19.03 | 20 | -5 | # |
| # | trans-1,3-Dichloropropene | 0.4696 | 0.4346 | 18.51 | 20 | -7 | # |
| | Ethyl Methacrylate | 0.5893 | 0.5318 | 18.05 | 20 | -10 | |
| # | 1,1,2-Trichloroethane | 0.3341 | 0.3110 | 18.62 | 20 | -7 | # |
| # | Tetrachloroethene | 0.3742 | 0.3550 | 18.97 | 20 | -5 | # |
| | 1,3-Dichloropropane | 0.5645 | 0.5201 | 18.43 | 20 | -8 | |
| # | 2-Hexanone | 0.5089 | 0.5656 | 111.13 | 100 | 11 | # |
| # | Dibromochloromethane | 0.3138 | 0.2773 | 17.67 | 20 | -12 | # |
| # | 1,2-Dibromoethane | 0.3606 | 0.3455 | 19.17 | 20 | -4 | # |
| | 1-Chlorohexane | 0.4740 | 0.4305 | 18.17 | 20 | -9 | |
| # | Chlorobenzene | 0.9762 | 0.9101 | 18.65 | 20 | -7 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3012 | 0.2767 | 18.37 | 20 | -8 | |
| # | Ethylbenzene | 1.6361 | 1.5472 | 18.91 | 20 | -5 | # |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 ICV Date: 01/20/17 Time: 12:13

Lab File ID: yj20v01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | m+p-Xylene | 0.6514 | 0.6141 | 37.70 | 40 | -6 | # |
| # | o-Xylene | 0.6346 | 0.5893 | 18.57 | 20 | -7 | # |
| # | Styrene | 1.0892 | 0.9976 | 18.32 | 20 | -8 | # |
| # | Bromoform | 0.2443 | 0.1976 | 16.17 | 20 | -19 | # |
| # | Isopropylbenzene | 1.6559 | 1.5503 | 18.72 | 20 | -6 | # |
| | Cyclohexanone | 0.0683 | 0.5921 | 4332.19 | 500 | 766 | <- |
| | Bromobenzene | 0.8278 | 0.7464 | 18.03 | 20 | -10 | |
| # | 1,1,2,2-Tetrachloroethane | 1.0084 | 0.9452 | 18.75 | 20 | -6 | # |
| | 1,2,3-Trichloropropane | 0.3427 | 0.3229 | 18.84 | 20 | -6 | |
| | trans-1,4-Dichloro-2-butene | 0.3196 | 0.2991 | 93.59 | 100 | -6 | |
| | n-Propylbenzene | 3.5779 | 3.3475 | 18.71 | 20 | -6 | |
| | 2-Chlorotoluene | 0.7362 | 0.6758 | 18.36 | 20 | -8 | |
| | 4-Chlorotoluene | 0.7815 | 0.7238 | 18.52 | 20 | -7 | |
| | 1,3,5-Trimethylbenzene | 2.6090 | 2.3979 | 18.38 | 20 | -8 | |
| | tert-Butylbenzene | 0.5578 | 0.5196 | 18.63 | 20 | -7 | |
| | Pentachloroethane | 0.4218 | 0.3621 | 17.17 | 20 | -14 | |
| | 1,2,4-Trimethylbenzene | 2.6980 | 2.4766 | 18.36 | 20 | -8 | |
| | sec-Butylbenzene | 3.2796 | 3.0910 | 18.85 | 20 | -6 | |
| # | 1,3-Dichlorobenzene | 1.5794 | 1.4170 | 17.94 | 20 | -10 | # |
| | p-Isopropyltoluene | 2.9139 | 2.6569 | 18.24 | 20 | -9 | |
| # | 1,4-Dichlorobenzene | 1.6257 | 1.4817 | 18.23 | 20 | -9 | # |
| | 1,2,3-Trimethylbenzene | 2.7101 | 2.5327 | 18.69 | 20 | -7 | |
| | Benzyl Chloride | 1.8595 | 1.5543 | 16.72 | 20 | -16 | |
| | 1,3-Diethylbenzene | 1.6969 | 1.5490 | 18.26 | 20 | -9 | |
| | 1,4-Diethylbenzene | 1.7606 | 1.6478 | 18.72 | 20 | -6 | |
| # | 1,2-Dichlorobenzene | 1.5171 | 1.3832 | 18.23 | 20 | -9 | # |
| | n-Butylbenzene | 1.4667 | 1.3463 | 18.36 | 20 | -8 | |
| | 1,2-Diethylbenzene | 1.4239 | 1.3250 | 18.61 | 20 | -7 | |
| # | 1,2-Dibromo-3-chloropropane | 0.2450 | 0.2219 | 18.12 | 20 | -9 | # |
| | 1,3,5-Trichlorobenzene | 1.1113 | 0.9952 | 17.91 | 20 | -10 | |
| # | 1,2,4-Trichlorobenzene | 1.0156 | 0.9092 | 17.91 | 20 | -10 | # |
| | Hexachlorobutadiene | 0.4991 | 0.4356 | 17.45 | 20 | -13 | |
| | Naphthalene | 3.2502 | 3.0181 | 18.57 | 20 | -7 | |
| | 1,2,3-Trichlorobenzene | 0.9234 | 0.8043 | 17.42 | 20 | -13 | |
| | 2-Methylnaphthalene | 1.7504 | 1.3650 | 15.60 | 20 | -22 | |

Average %Drift 15

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

page 3 of 3 FORM VII VOA

# Lancaster Laboratories

## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem2/HP09355.i/17jan20i.b/yj20i07.d
/chem2/HP09355.i/17jan20i.b/yj20i06.d
/chem2/HP09355.i/17jan20i.b/yj20i05.d
/chem2/HP09355.i/17jan20i.b/yj20i04.d
/chem2/HP09355.i/17jan20i.b/yj20i03.d
/chem2/HP09355.i/17jan20i.b/yj20i02.d
/chem2/HP09355.i/17jan20i.b/yj20i01.d

File /chem2/HP09355.i/17jan20i.b/yj20i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP09355.i/17jul21b.b/yl21c05.d

RT Summary

| Internal Standard Name | File ID: yl21c05.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 4.319 | 4.319 | Yes |
| Fluorobenzene | 7.860 | 7.860 | Yes |
| Chlorobenzene-d5 | 11.309 | 11.315 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.189 | 13.195 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: yl21c05.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 166934 | 365897 | 182948 | 731794 | No |
| Fluorobenzene | 1240589 | 1212862 | 606431 | 2425724 | Yes |
| Chlorobenzene-d5 | 950070 | 927146 | 463573 | 1854292 | Yes |
| 1,4-Dichlorobenzene-d4 | 487574 | 512041 | 256020 | 1024082 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 07/21/2017 at 22:42

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/21/17 Time: 19:30

Lab File ID: yl21c05.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Dichlorodifluoromethane | 0.3139 | 0.3461 | 55.11 | 50 | 10 | # |
| # Chloromethane | 0.3381 | 0.3291 | 48.68 | 50 | -3 | # |
| 1,3-Butadiene | 0.3363 | 0.2534 | 37.68 | 50 | -25 | <- |
| # Vinyl Chloride | 0.3178 | 0.3031 | 47.68 | 50 | -5 | # |
| # Bromomethane | 0.2253 | 0.2021 | 44.85 | 50 | -10 | # |
| # Chloroethane | 0.1838 | 0.1763 | 47.95 | 50 | -4 | # |
| n-Pentane | 0.4182 | 0.3958 | 47.32 | 50 | -5 | |
| # Trichlorofluoromethane | 0.3738 | 0.4120 | 55.12 | 50 | 10 | # |
| Freon 123a | 0.2626 | 0.2732 | 52.01 | 50 | 4 | |
| Acrolein | 1.5232 | 2.1292 | 698.90 | 500 | 40 | <- |
| # 1,1-Dichloroethene | 0.1887 | 0.1895 | 50.20 | 50 | 0 | # |
| # 1,1-Dichloroethene(2) | 0.0971 | 0.1034 | 53.24 | 50 | 6 | # |
| # Acetone | 0.7242 | 0.9453 | 130.53 | 100 | 31 | #<- |
| # Freon 113 | 0.1941 | 0.2049 | 52.78 | 50 | 6 | # |
| 2-Propanol | 0.5774 | 0.5237 | 226.72 | 250 | -9 | |
| Methyl Iodide | 0.3585 | 0.3334 | 46.50 | 50 | -7 | |
| # Carbon Disulfide | 0.5938 | 0.6711 | 56.50 | 50 | 13 | # |
| Allyl Chloride | 0.3990 | 0.3642 | 45.64 | 50 | -9 | |
| # Methyl Acetate | 0.3663 | 0.2246 | 30.65 | 50 | -39 | #<- |
| # Methylene Chloride | 0.2387 | 0.2417 | 50.62 | 50 | 1 | # |
| t-Butyl alcohol | 1.1368 | 1.0534 | 231.64 | 250 | -7 | |
| Acrylonitrile | 0.1758 | 0.1079 | 30.67 | 50 | -39 | <- |
| # trans-1,2-Dichloroethene | 0.2282 | 0.2343 | 51.32 | 50 | 3 | # |
| # Methyl Tertiary Butyl Ether | 0.7852 | 0.7048 | 44.88 | 50 | -10 | # |
| n-Hexane | 0.3580 | 0.3770 | 52.65 | 50 | 5 | |
| # 1,1-Dichloroethane | 0.4122 | 0.4494 | 54.52 | 50 | 9 | # |
| di-Isopropyl ether | 0.8264 | 0.7985 | 48.31 | 50 | -3 | |
| 2-Chloro-1,3-butadiene | 0.3881 | 0.3932 | 50.66 | 50 | 1 | |
| Ethyl t-butyl ether | 0.7739 | 0.6944 | 44.86 | 50 | -10 | |
| # cis-1,2-Dichloroethene | 0.2626 | 0.2641 | 50.28 | 50 | 1 | # |
| # 2-Butanone | 0.2731 | 0.1496 | 54.75 | 100 | -45 | #<- |
| 2,2-Dichloropropane | 0.3237 | 0.3459 | 53.44 | 50 | 7 | |
| Propionitrile | 1.2777 | 1.5897 | 311.04 | 250 | 24 | <- |
| Methacrylonitrile | 0.1865 | 0.1304 | 87.39 | 125 | -30 | <- |
| Bromochloromethane | 0.1386 | 0.1331 | 48.00 | 50 | -4 | |
| Tetrahydrofuran | 1.1460 | 1.4655 | 127.87 | 100 | 28 | <- |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/21/17 Time: 19:30

Lab File ID: yl21c05.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Chloroform | 0.4152 | 0.4386 | 52.82 | 50 | 6 | # |
| # 1,1,1-Trichloroethane | 0.3476 | 0.3589 | 51.63 | 50 | 3 | # |
| # Cyclohexane | 0.4234 | 0.4318 | 50.99 | 50 | 2 | # |
| # Cyclohexane(2) | 0.3478 | 0.3515 | 50.54 | 50 | 1 | # |
| # Cyclohexane(3) | 0.1286 | 0.1287 | 50.04 | 50 | 0 | # |
| 1,1-Dichloropropene | 0.3359 | 0.3623 | 53.94 | 50 | 8 | |
| # Carbon Tetrachloride | 0.2895 | 0.3146 | 54.35 | 50 | 9 | # |
| Isobutyl Alcohol | 0.4163 | 0.4360 | 654.48 | 625 | 5 | |
| # Benzene | 0.9994 | 1.0378 | 51.92 | 50 | 4 | # |
| # 1,2-Dichloroethane | 0.3657 | 0.3768 | 51.52 | 50 | 3 | # |
| # 1,2-Dichloroethane(2) | 0.0297 | 0.0316 | 53.29 | 50 | 7 | #<- |
| t-Amyl methyl ether | 0.7745 | 0.6925 | 44.71 | 50 | -11 | |
| n-Heptane | 0.4215 | 0.4335 | 51.43 | 50 | 3 | |
| n-Butanol | 0.3288 | 0.2717 | 1032.79 | 1250 | -17 | |
| # Trichloroethene | 0.2591 | 0.2667 | 51.45 | 50 | 3 | # |
| # Methylcyclohexane | 0.4608 | 0.4545 | 49.31 | 50 | -1 | # |
| # Methylcyclohexane(2) | 0.2082 | 0.2028 | 48.70 | 50 | -3 | # |
| # 1,2-Dichloropropane | 0.2627 | 0.2945 | 56.03 | 50 | 12 | # |
| Dibromomethane | 0.1719 | 0.1741 | 50.62 | 50 | 1 | |
| 1,4-Dioxane | 0.0901 | 0.0635 | 440.44 | 625 | -30 | <- |
| Methyl Methacrylate | 0.2891 | 0.2344 | 40.54 | 50 | -19 | |
| # Bromodichloromethane | 0.2965 | 0.3348 | 56.46 | 50 | 13 | # |
| 2-Nitropropane | 0.1154 | 0.0772 | 66.93 | 100 | -33 | <- |
| 2-Chloroethyl Vinyl Ether | 0.2251 | 0.1494 | 33.18 | 50 | -34 | <- |
| # cis-1,3-Dichloropropene | 0.3876 | 0.4355 | 56.17 | 50 | 12 | # |
| # 4-Methyl-2-pentanone | 0.4854 | 0.3472 | 71.54 | 100 | -28 | #<- |
| # Toluene | 0.8505 | 0.8847 | 52.01 | 50 | 4 | # |
| # trans-1,3-Dichloropropene | 0.4696 | 0.5266 | 56.07 | 50 | 12 | # |
| Ethyl Methacrylate | 0.5893 | 0.5481 | 46.50 | 50 | -7 | |
| # 1,1,2-Trichloroethane | 0.3341 | 0.3370 | 50.44 | 50 | 1 | # |
| # Tetrachloroethene | 0.3742 | 0.3393 | 45.34 | 50 | -9 | # |
| 1,3-Dichloropropane | 0.5645 | 0.5996 | 53.11 | 50 | 6 | |
| # 2-Hexanone | 0.5089 | 0.3521 | 69.19 | 100 | -31 | #<- |
| # Dibromochloromethane | 0.3138 | 0.3355 | 53.46 | 50 | 7 | # |
| # 1,2-Dibromoethane | 0.3606 | 0.3416 | 47.37 | 50 | -5 | # |
| 1-Chlorohexane | 0.4740 | 0.4811 | 50.75 | 50 | 2 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/21/17 Time: 19:30

Lab File ID: yl21c05.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Chlorobenzene | 0.9762 | 1.0289 | 52.70 | 50 | 5 | # |
| 1,1,1,2-Tetrachloroethane | 0.3012 | 0.3289 | 54.60 | 50 | 9 | |
| # Ethylbenzene | 1.6361 | 1.7500 | 53.48 | 50 | 7 | # |
| # m+p-Xylene | 0.6514 | 0.6891 | 105.78 | 100 | 6 | # |
| # o-Xylene | 0.6346 | 0.6483 | 51.08 | 50 | 2 | # |
| # Styrene | 1.0892 | 1.1263 | 51.70 | 50 | 3 | # |
| # Bromoform | 0.2443 | 0.2051 | 41.98 | 50 | -16 | # |
| # Isopropylbenzene | 1.6559 | 1.6462 | 49.71 | 50 | -1 | # |
| Bromobenzene | 0.8278 | 0.8129 | 49.10 | 50 | -2 | |
| # 1,1,2,2-Tetrachloroethane | 1.0084 | 0.9811 | 48.64 | 50 | -3 | # |
| 1,2,3-Trichloropropane | 0.3427 | 0.2820 | 41.15 | 50 | -18 | |
| trans-1,4-Dichloro-2-butene | 0.3196 | 0.2450 | 95.80 | 125 | -23 | <- |
| n-Propylbenzene | 3.5779 | 4.0922 | 57.19 | 50 | 14 | |
| 2-Chlorotoluene | 0.7362 | 0.8014 | 54.42 | 50 | 9 | |
| 4-Chlorotoluene | 0.7815 | 0.8608 | 55.08 | 50 | 10 | |
| 1,3,5-Trimethylbenzene | 2.6090 | 2.8588 | 54.79 | 50 | 10 | |
| tert-Butylbenzene | 0.5578 | 0.5500 | 49.29 | 50 | -1 | |
| Pentachloroethane | 0.4218 | 0.4445 | 52.69 | 50 | 5 | |
| 1,2,4-Trimethylbenzene | 2.6980 | 3.0081 | 55.75 | 50 | 11 | |
| sec-Butylbenzene | 3.2796 | 3.5632 | 54.32 | 50 | 9 | |
| # 1,3-Dichlorobenzene | 1.5794 | 1.6092 | 50.94 | 50 | 2 | # |
| p-Isopropyltoluene | 2.9139 | 3.1054 | 53.29 | 50 | 7 | |
| # 1,4-Dichlorobenzene | 1.6257 | 1.6459 | 50.62 | 50 | 1 | # |
| 1,2,3-Trimethylbenzene | 2.7101 | 3.0448 | 56.18 | 50 | 12 | |
| Benzyl Chloride | 1.8595 | 1.8605 | 50.02 | 50 | 0 | |
| 1,3-Diethylbenzene | 1.6969 | 1.8905 | 55.70 | 50 | 11 | |
| 1,4-Diethylbenzene | 1.7606 | 1.9613 | 55.70 | 50 | 11 | |
| # 1,2-Dichlorobenzene | 1.5171 | 1.5168 | 49.99 | 50 | 0 | # |
| n-Butylbenzene | 1.4667 | 1.6394 | 55.89 | 50 | 12 | |
| 1,2-Diethylbenzene | 1.4239 | 1.5583 | 54.72 | 50 | 9 | |
| # 1,2-Dibromo-3-chloropropane | 0.2450 | 0.1656 | 33.80 | 50 | -32 | #<- |
| 1,3,5-Trichlorobenzene | 1.1113 | 0.9758 | 43.90 | 50 | -12 | |
| # 1,2,4-Trichlorobenzene | 1.0156 | 0.8375 | 41.23 | 50 | -18 | # |
| Hexachlorobutadiene | 0.4991 | 0.3874 | 38.81 | 50 | -22 | <- |
| Naphthalene | 3.2502 | 2.2238 | 34.21 | 50 | -32 | <- |
| 1,2,3-Trichlorobenzene | 0.9234 | 0.7317 | 39.62 | 50 | -21 | <- |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/21/17 Time: 19:30

Lab File ID: yl21c05.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | 1.7504 | 0.6658 | 19.02 | 50 | -62 | <- |
| Dibromofluoromethane | 0.2332 | 0.2343 | 50.24 | 50 | 0 | |
| Dibromofluoromethane(2) | 0.2386 | 0.2381 | 49.88 | 50 | 0 | |
| 1,2-Dichloroethane-d4 | 0.0611 | 0.0592 | 48.44 | 50 | -3 | |
| 1,2-Dichloroethane-d4(2) | 0.3075 | 0.3091 | 50.26 | 50 | 1 | |
| 1,2-Dichloroethane-d4(3) | 0.0388 | 0.0368 | 47.42 | 50 | -5 | |
| Toluene-d8 | 1.2918 | 1.3165 | 50.96 | 50 | 2 | |
| Toluene-d8(2) | 0.8345 | 0.8425 | 50.48 | 50 | 1 | |
| 4-Bromofluorobenzene | 0.4845 | 0.4928 | 50.86 | 50 | 2 | |
| 4-Bromofluorobenzene(2) | 0.4131 | 0.3561 | 43.10 | 50 | -14 | |

Average %Drift 11

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem2/HP09355.i/17jul21b.b/yl21c06.d
Report Date: 07/23/2017 15:29

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09355.i
Client ID: SECC050
Lab Sample ID: SECC050
Sublist used: 17639.sub

Injection Date and Time: 22-JUL-2017 05:55
Initial Calibration Date(s): 20-JAN-2017 20-JAN-2017
Initial Calibration Time(s): 09:18 15:26
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Benzene | 0.99939 | 1.03438 | 0.01 | 3.5 | 50.0 |
| Toluene | 0.85051 | 0.88460 | 0.01 | 4.0 | 50.0 |
| Ethylbenzene | 1.63607 | 1.73674 | 0.01 | 6.2 | 50.0 |
| m+p-Xylene | 0.65143 | 0.68573 | 0.01 | 5.3 | 50.0 |
| o-Xylene | 0.63457 | 0.65804 | 0.01 | 3.7 | 50.0 |
| Xylene (Total) | 0.64581 | 0.67650 | 0.01 | 4.8 | 50.0 |

| Surrogate Standards | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Dibromofluoromethane | 0.23318 | 0.22881 | 0.01 | -1.9 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06114 | 0.05848 | 0.01 | -4.4 | 20.5 |
| Toluene-d8 | 1.29178 | 1.33766 | 0.01 | 3.6 | 20.5 |
| 4-Bromofluorobenzene | 0.48448 | 0.49107 | 0.01 | 1.4 | 20.5 |

# Lancaster Laboratories

## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem2/HP09355.i/17jan20i.b/yj20i07.d
/chem2/HP09355.i/17jan20i.b/yj20i06.d
/chem2/HP09355.i/17jan20i.b/yj20i05.d
/chem2/HP09355.i/17jan20i.b/yj20i04.d
/chem2/HP09355.i/17jan20i.b/yj20i03.d
/chem2/HP09355.i/17jan20i.b/yj20i02.d
/chem2/HP09355.i/17jan20i.b/yj20i01.d

File /chem2/HP09355.i/17jan20i.b/yj20i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP09355.i/17jul27a.b/yl27c01.d

RT Summary

| Internal Standard Name | File ID: yl27c01.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 4.361 | 4.319 | Yes |
| Fluorobenzene | 7.878 | 7.860 | Yes |
| Chlorobenzene-d5 | 11.315 | 11.315 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.195 | 13.195 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: yl27c01.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 374450 | 365897 | 182948 | 731794 | Yes |
| Fluorobenzene | 1350892 | 1212862 | 606431 | 2425724 | Yes |
| Chlorobenzene-d5 | 1074648 | 927146 | 463573 | 1854292 | Yes |
| 1,4-Dichlorobenzene-d4 | 598174 | 512041 | 256020 | 1024082 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 07/27/2017 at 09:12

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/27/17 Time: 08:37

Lab File ID: y127c01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Dichlorodifluoromethane | 0.3139 | 0.2916 | 46.44 | 50 | -7 | # |
| # Chloromethane | 0.3381 | 0.3027 | 44.78 | 50 | -10 | # |
| 1,3-Butadiene | 0.3363 | 0.2553 | 37.96 | 50 | -24 | <- |
| # Vinyl Chloride | 0.3178 | 0.3001 | 47.21 | 50 | -6 | # |
| # Bromomethane | 0.2253 | 0.2062 | 45.76 | 50 | -8 | # |
| # Chloroethane | 0.1838 | 0.1813 | 49.32 | 50 | -1 | # |
| n-Pentane | 0.4182 | 0.3410 | 40.77 | 50 | -18 | |
| # Trichlorofluoromethane | 0.3738 | 0.3328 | 44.51 | 50 | -11 | # |
| Ethyl ether | 0.2300 | 0.2379 | 51.71 | 50 | 3 | |
| Freon 123a | 0.2626 | 0.2767 | 52.67 | 50 | 5 | |
| Acrolein | 1.5232 | 1.6841 | 552.81 | 500 | 11 | |
| # 1,1-Dichloroethene | 0.1887 | 0.2018 | 53.48 | 50 | 7 | # |
| # 1,1-Dichloroethene(2) | 0.0971 | 0.1040 | 53.55 | 50 | 7 | # |
| # Acetone | 0.7242 | 0.9500 | 131.18 | 100 | 31 | #<- |
| # Freon 113 | 0.1941 | 0.2075 | 53.45 | 50 | 7 | # |
| 2-Propanol | 0.5774 | 0.6392 | 276.75 | 250 | 11 | |
| Methyl Iodide | 0.3585 | 0.3854 | 53.74 | 50 | 7 | |
| # Carbon Disulfide | 0.5938 | 0.7121 | 59.96 | 50 | 20 | # |
| Allyl Chloride | 0.3990 | 0.3655 | 45.80 | 50 | -8 | |
| # Methyl Acetate | 0.3663 | 0.3508 | 47.88 | 50 | -4 | # |
| # Methylene Chloride | 0.2387 | 0.2492 | 52.18 | 50 | 4 | # |
| t-Butyl alcohol | 1.1368 | 1.2410 | 272.89 | 250 | 9 | |
| Acrylonitrile | 0.1758 | 0.1875 | 53.33 | 50 | 7 | |
| # trans-1,2-Dichloroethene | 0.2282 | 0.2414 | 52.88 | 50 | 6 | # |
| # Methyl Tertiary Butyl Ether | 0.7852 | 0.7673 | 48.86 | 50 | -2 | # |
| n-Hexane | 0.3580 | 0.3949 | 55.15 | 50 | 10 | |
| # 1,1-Dichloroethane | 0.4122 | 0.4401 | 53.38 | 50 | 7 | # |
| di-Isopropyl ether | 0.8264 | 0.7778 | 47.06 | 50 | -6 | |
| 2-Chloro-1,3-butadiene | 0.3881 | 0.3879 | 49.97 | 50 | 0 | |
| Ethyl t-butyl ether | 0.7739 | 0.7199 | 46.51 | 50 | -7 | |
| # cis-1,2-Dichloroethene | 0.2626 | 0.2743 | 52.23 | 50 | 4 | # |
| # 2-Butanone | 0.2731 | 0.2831 | 103.63 | 100 | 4 | # |
| 2,2-Dichloropropane | 0.3237 | 0.3306 | 51.07 | 50 | 2 | |
| Propionitrile | 1.2777 | 1.4299 | 279.78 | 250 | 12 | |
| Methacrylonitrile | 0.1865 | 0.1978 | 132.54 | 125 | 6 | |
| Bromochloromethane | 0.1386 | 0.1444 | 52.07 | 50 | 4 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/27/17 Time: 08:37

Lab File ID: yl27c01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| Tetrahydrofuran | 1.1460 | 1.4059 | 122.67 | 100 | 23 | <- |
| # Chloroform | 0.4152 | 0.4347 | 52.35 | 50 | 5 | # |
| # 1,1,1-Trichloroethane | 0.3476 | 0.3611 | 51.94 | 50 | 4 | # |
| # Cyclohexane | 0.4234 | 0.4250 | 50.19 | 50 | 0 | # |
| # Cyclohexane(2) | 0.3478 | 0.3645 | 52.41 | 50 | 5 | # |
| # Cyclohexane(3) | 0.1286 | 0.1309 | 50.89 | 50 | 2 | # |
| 1,1-Dichloropropene | 0.3359 | 0.3624 | 53.94 | 50 | 8 | |
| # Carbon Tetrachloride | 0.2895 | 0.3217 | 55.58 | 50 | 11 | # |
| Isobutyl Alcohol | 0.4163 | 0.4583 | 688.03 | 625 | 10 | |
| # Benzene | 0.9994 | 1.0510 | 52.58 | 50 | 5 | # |
| # 1,2-Dichloroethane | 0.3657 | 0.3861 | 52.80 | 50 | 6 | # |
| # 1,2-Dichloroethane(2) | 0.0297 | 0.0347 | 58.42 | 50 | 17 | #<- |
| t-Amyl methyl ether | 0.7745 | 0.7384 | 47.67 | 50 | -5 | |
| n-Heptane | 0.4215 | 0.4621 | 54.82 | 50 | 10 | |
| n-Butanol | 0.3288 | 0.4046 | 1538.15 | 1250 | 23 | <- |
| # Trichloroethene | 0.2591 | 0.2760 | 53.26 | 50 | 7 | # |
| # Methylcyclohexane | 0.4608 | 0.4656 | 50.52 | 50 | 1 | # |
| # Methylcyclohexane(2) | 0.2082 | 0.2121 | 50.94 | 50 | 2 | # |
| # 1,2-Dichloropropane | 0.2627 | 0.2869 | 54.60 | 50 | 9 | # |
| Dibromomethane | 0.1719 | 0.1863 | 54.17 | 50 | 8 | |
| 1,4-Dioxane | 0.0901 | 0.0914 | 633.94 | 625 | 1 | |
| Methyl Methacrylate | 0.2891 | 0.3169 | 54.80 | 50 | 10 | |
| # Bromodichloromethane | 0.2965 | 0.3438 | 57.97 | 50 | 16 | # |
| 2-Nitropropane | 0.1154 | 0.1415 | 122.67 | 100 | 23 | <- |
| 2-Chloroethyl Vinyl Ether | 0.2251 | 0.2537 | 56.36 | 50 | 13 | |
| # cis-1,3-Dichloropropene | 0.3876 | 0.4665 | 60.17 | 50 | 20 | # |
| # 4-Methyl-2-pentanone | 0.4854 | 0.5253 | 108.23 | 100 | 8 | # |
| # Toluene | 0.8505 | 0.8843 | 51.99 | 50 | 4 | # |
| # trans-1,3-Dichloropropene | 0.4696 | 0.5636 | 60.01 | 50 | 20 | # |
| Ethyl Methacrylate | 0.5893 | 0.6319 | 53.61 | 50 | 7 | |
| # 1,1,2-Trichloroethane | 0.3341 | 0.3563 | 53.33 | 50 | 7 | # |
| # Tetrachloroethene | 0.3742 | 0.3751 | 50.11 | 50 | 0 | # |
| 1,3-Dichloropropane | 0.5645 | 0.6147 | 54.45 | 50 | 9 | |
| # 2-Hexanone | 0.5089 | 0.5703 | 112.07 | 100 | 12 | # |
| # Dibromochloromethane | 0.3138 | 0.3791 | 60.40 | 50 | 21 | #<- |
| # 1,2-Dibromoethane | 0.3606 | 0.3908 | 54.20 | 50 | 8 | # |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/27/17 Time: 08:37

Lab File ID: yl27c01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1-Chlorohexane | 0.4740 | 0.4875 | 51.42 | 50 | 3 | |
| # | Chlorobenzene | 0.9762 | 1.0466 | 53.61 | 50 | 7 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3012 | 0.3322 | 55.14 | 50 | 10 | |
| # | Ethylbenzene | 1.6361 | 1.7365 | 53.07 | 50 | 6 | # |
| # | m+p-Xylene | 0.6514 | 0.7008 | 107.58 | 100 | 8 | # |
| # | o-Xylene | 0.6346 | 0.6565 | 51.73 | 50 | 3 | # |
| # | Styrene | 1.0892 | 1.1304 | 51.89 | 50 | 4 | # |
| # | Bromoform | 0.2443 | 0.2807 | 57.43 | 50 | 15 | # |
| # | Isopropylbenzene | 1.6559 | 1.7492 | 52.82 | 50 | 6 | # |
| | Cyclohexanone | 0.0683 | 0.3178 | 2906.30 | 625 | 365 | <- |
| | Bromobenzene | 0.8278 | 0.8479 | 51.21 | 50 | 2 | |
| # | 1,1,2,2-Tetrachloroethane | 1.0084 | 1.1983 | 59.41 | 50 | 19 | # |
| | 1,2,3-Trichloropropane | 0.3427 | 0.3808 | 55.56 | 50 | 11 | |
| | trans-1,4-Dichloro-2-butene | 0.3196 | 0.3996 | 156.29 | 125 | 25 | <- |
| | n-Propylbenzene | 3.5779 | 4.0952 | 57.23 | 50 | 14 | |
| | 2-Chlorotoluene | 0.7362 | 0.8036 | 54.58 | 50 | 9 | |
| | 4-Chlorotoluene | 0.7815 | 0.8767 | 56.09 | 50 | 12 | |
| | 1,3,5-Trimethylbenzene | 2.6090 | 2.8384 | 54.40 | 50 | 9 | |
| | tert-Butylbenzene | 0.5578 | 0.5696 | 51.05 | 50 | 2 | |
| | Pentachloroethane | 0.4218 | 0.4423 | 52.43 | 50 | 5 | |
| | 1,2,4-Trimethylbenzene | 2.6980 | 2.9729 | 55.09 | 50 | 10 | |
| | sec-Butylbenzene | 3.2796 | 3.6353 | 55.42 | 50 | 11 | |
| # | 1,3-Dichlorobenzene | 1.5794 | 1.6478 | 52.16 | 50 | 4 | # |
| | p-Isopropyltoluene | 2.9139 | 3.1934 | 54.80 | 50 | 10 | |
| # | 1,4-Dichlorobenzene | 1.6257 | 1.6952 | 52.14 | 50 | 4 | # |
| | 1,2,3-Trimethylbenzene | 2.7101 | 2.9497 | 54.42 | 50 | 9 | |
| | Benzyl Chloride | 1.8595 | 2.4492 | 65.85 | 50 | 32 | <- |
| | 1,3-Diethylbenzene | 1.6969 | 1.8861 | 55.57 | 50 | 11 | |
| | 1,4-Diethylbenzene | 1.7606 | 1.9745 | 56.08 | 50 | 12 | |
| # | 1,2-Dichlorobenzene | 1.5171 | 1.5601 | 51.42 | 50 | 3 | # |
| | n-Butylbenzene | 1.4667 | 1.6887 | 57.57 | 50 | 15 | |
| | 1,2-Diethylbenzene | 1.4239 | 1.5533 | 54.54 | 50 | 9 | |
| # | 1,2-Dibromo-3-chloropropane | 0.2450 | 0.2994 | 61.10 | 50 | 22 | #<- |
| | 1,3,5-Trichlorobenzene | 1.1113 | 1.0518 | 47.32 | 50 | -5 | |
| # | 1,2,4-Trichlorobenzene | 1.0156 | 0.9284 | 45.71 | 50 | -9 | # |
| | Hexachlorobutadiene | 0.4991 | 0.4375 | 43.83 | 50 | -12 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/27/17 Time: 08:37

Lab File ID: yl27c01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Naphthalene | 3.2502 | 3.3426 | 51.42 | 50 | 3 |
| 1,2,3-Trichlorobenzene | 0.9234 | 0.8553 | 46.31 | 50 | -7 |
| 2-Methylnaphthalene | 1.7504 | 1.5076 | 43.07 | 50 | -14 |
| Dibromofluoromethane | 0.2332 | 0.2342 | 50.21 | 50 | 0 |
| Dibromofluoromethane(2) | 0.2386 | 0.2407 | 50.43 | 50 | 1 |
| 1,2-Dichloroethane-d4 | 0.0611 | 0.0621 | 50.78 | 50 | 2 |
| 1,2-Dichloroethane-d4(2) | 0.3075 | 0.2989 | 48.59 | 50 | -3 |
| 1,2-Dichloroethane-d4(3) | 0.0388 | 0.0396 | 50.99 | 50 | 2 |
| Toluene-d8 | 1.2918 | 1.2978 | 50.23 | 50 | 0 |
| Toluene-d8(2) | 0.8345 | 0.8329 | 49.91 | 50 | 0 |
| 4-Bromofluorobenzene | 0.4845 | 0.5353 | 55.25 | 50 | 10 |
| 4-Bromofluorobenzene(2) | 0.4131 | 0.4006 | 48.48 | 50 | -3 |

Average %Drift 12

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d
Report Date: 07/27/2017 13:15

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09355.i  Injection Date and Time: 27-JUL-2017 12:26
Client ID: SECC050  Initial Calibration Date(s): 20-JAN-2017 20-JAN-2017
Lab Sample ID: SECC050  Initial Calibration Time(s): 09:18 15:26
Sublist used: 18281-SM.sub  Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.31394 | 0.24497 | 0.01 | -22.0 | 50.0 |
| Chloromethane | 0.33807 | 0.27524 | 0.01 | -18.6 | 50.0 |
| Vinyl Chloride | 0.31782 | 0.26726 | 0.01 | -15.9 | 50.0 |
| Bromomethane | 0.22534 | 0.18229 | 0.01 | -19.1 | 50.0 |
| Chloroethane | 0.18382 | 0.16269 | 0.01 | -11.5 | 50.0 |
| Trichlorofluoromethane | 0.37376 | 0.35668 | 0.01 | -4.6 | 50.0 |
| Acrolein | 1.52323 | 1.78368 | 0.01 | 17.1 | 50.0 |
| 1,1-Dichloroethene | 0.18871 | 0.19898 | 0.01 | 5.4 | 50.0 |
| Acetone | 0.72420 | 1.01298 | 0.01 | 39.9 | 50.0 |
| Carbon Disulfide | 0.59384 | 0.70075 | 0.01 | 18.0 | 50.0 |
| Methylene Chloride | 0.23876 | 0.24648 | 0.01 | 3.2 | 50.0 |
| Acrylonitrile | 0.17583 | 0.19058 | 0.01 | 8.4 | 50.0 |
| trans-1,2-Dichloroethene | 0.22824 | 0.24001 | 0.01 | 5.2 | 50.0 |
| Methyl Tertiary Butyl Ether | 0.78524 | 0.78002 | 0.01 | -0.7 | 50.0 |
| 1,1-Dichloroethane | 0.41220 | 0.44661 | 0.01 | 8.4 | 50.0 |
| cis-1,2-Dichloroethene | 0.26260 | 0.27348 | 0.01 | 4.1 | 50.0 |
| 2-Butanone | 0.27315 | 0.29076 | 0.01 | 6.4 | 50.0 |
| 2,2-Dichloropropane | 0.32366 | 0.32268 | 0.01 | -0.3 | 50.0 |
| Bromochloromethane | 0.13864 | 0.14082 | 0.01 | 1.6 | 50.0 |
| Chloroform | 0.41519 | 0.42700 | 0.01 | 2.8 | 50.0 |
| 1,1,1-Trichloroethane | 0.34757 | 0.35006 | 0.01 | 0.7 | 50.0 |
| 1,1-Dichloropropene | 0.33586 | 0.36135 | 0.01 | 7.6 | 50.0 |
| Carbon Tetrachloride | 0.28946 | 0.30642 | 0.01 | 5.9 | 50.0 |
| Benzene | 0.99939 | 1.05094 | 0.01 | 5.2 | 50.0 |
| 1,2-Dichloroethane | 0.36570 | 0.37493 | 0.01 | 2.5 | 50.0 |
| Trichloroethene | 0.25913 | 0.28054 | 0.01 | 8.3 | 50.0 |
| 1,2-Dichloropropane | 0.26276 | 0.28859 | 0.01 | 9.8 | 50.0 |
| Dibromomethane | 0.17192 | 0.18469 | 0.01 | 7.4 | 50.0 |
| Bromodichloromethane | 0.29652 | 0.33706 | 0.01 | 13.7 | 50.0 |
| cis-1,3-Dichloropropene | 0.38762 | 0.45794 | 0.01 | 18.1 | 50.0 |
| 4-Methyl-2-pentanone | 0.48540 | 0.54134 | 0.01 | 11.5 | 50.0 |
| Toluene | 0.85051 | 0.88842 | 0.01 | 4.5 | 50.0 |
| trans-1,3-Dichloropropene | 0.46961 | 0.55496 | 0.01 | 18.2 | 50.0 |
| 1,1,2-Trichloroethane | 0.33410 | 0.36241 | 0.01 | 8.5 | 50.0 |
| Tetrachloroethene | 0.37423 | 0.38917 | 0.01 | 4.0 | 50.0 |
| 1,3-Dichloropropane | 0.56446 | 0.62561 | 0.01 | 10.8 | 50.0 |
| 2-Hexanone | 0.50892 | 0.58829 | 0.01 | 15.6 | 50.0 |
| Dibromochloromethane | 0.31382 | 0.36689 | 0.01 | 16.9 | 50.0 |
| 1,2-Dibromoethane | 0.36058 | 0.39691 | 0.01 | 10.1 | 50.0 |
| Chlorobenzene | 0.97623 | 1.03560 | 0.01 | 6.1 | 50.0 |
| 1,1,1,2-Tetrachloroethane | 0.30123 | 0.32404 | 0.01 | 7.6 | 50.0 |
| Ethylbenzene | 1.63607 | 1.72252 | 0.01 | 5.3 | 50.0 |
| m+p-Xylene | 0.65143 | 0.69435 | 0.01 | 6.6 | 50.0 |
| o-Xylene | 0.63457 | 0.65884 | 0.01 | 3.8 | 50.0 |
| Xylene (Total) | 0.64581 | 0.68251 | 0.01 | 5.7 | 50.0 |
| Styrene | 1.08920 | 1.15492 | 0.01 | 6.0 | 50.0 |
| Bromoform | 0.24435 | 0.26921 | 0.01 | 10.2 | 50.0 |
| Isopropylbenzene | 1.65593 | 1.63469 | 0.01 | -1.3 | 50.0 |

Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d
Report Date: 07/27/2017 13:15

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09355.i  Injection Date and Time: 27-JUL-2017 12:26
Client ID: SECC050  Initial Calibration Date(s): 20-JAN-2017 20-JAN-2017
Lab Sample ID: SECC050  Initial Calibration Time(s): 09:18 15:26
Sublist used: 18281-SM.sub  Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Bromobenzene | 0.82783 | 0.84763 | 0.01 | 2.4 | 50.0 |
| 1,1,2,2-Tetrachloroethane | 1.00843 | 1.12790 | 0.01 | 11.8 | 50.0 |
| 1,2,3-Trichloropropane | 0.34270 | 0.36826 | 0.01 | 7.5 | 50.0 |
| n-Propylbenzene | 3.57788 | 3.83787 | 0.01 | 7.3 | 50.0 |
| 2-Chlorotoluene | 0.73623 | 0.77841 | 0.01 | 5.7 | 50.0 |
| 4-Chlorotoluene | 0.78148 | 0.85091 | 0.01 | 8.9 | 50.0 |
| 1,3,5-Trimethylbenzene | 2.60897 | 2.71027 | 0.01 | 3.9 | 50.0 |
| tert-Butylbenzene | 0.55782 | 0.55885 | 0.01 | 0.2 | 50.0 |
| 1,2,4-Trimethylbenzene | 2.69801 | 2.86640 | 0.01 | 6.2 | 50.0 |
| sec-Butylbenzene | 3.27955 | 3.48909 | 0.01 | 6.4 | 50.0 |
| 1,3-Dichlorobenzene | 1.57938 | 1.62837 | 0.01 | 3.1 | 50.0 |
| p-Isopropyltoluene | 2.91385 | 3.05942 | 0.01 | 5.0 | 50.0 |
| 1,4-Dichlorobenzene | 1.62566 | 1.66302 | 0.01 | 2.3 | 50.0 |
| 1,2-Dichlorobenzene | 1.51707 | 1.52802 | 0.01 | 0.7 | 50.0 |
| n-Butylbenzene | 1.46670 | 1.59023 | 0.01 | 8.4 | 50.0 |
| 1,2-Dibromo-3-chloropropane | 0.24499 | 0.28164 | 0.01 | 15.0 | 50.0 |
| 1,2,4-Trichlorobenzene | 1.01559 | 0.93039 | 0.01 | -8.4 | 50.0 |
| Hexachlorobutadiene | 0.49908 | 0.43075 | 0.01 | -13.7 | 50.0 |
| Naphthalene | 3.25022 | 3.23764 | 0.01 | -0.4 | 50.0 |
| 1,2,3-Trichlorobenzene | 0.92341 | 0.83834 | 0.01 | -9.2 | 50.0 |

| Surrogate Standards | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Dibromofluoromethane | 0.23318 | 0.22868 | 0.01 | -1.9 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06114 | 0.06101 | 0.01 | -0.2 | 20.5 |
| Toluene-d8 | 1.29178 | 1.31690 | 0.01 | 1.9 | 20.5 |
| 4-Bromofluorobenzene | 0.48448 | 0.49436 | 0.01 | 2.0 | 20.5 |

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR188___

Lab File ID (Standard): yl21c05.d  Date Analyzed: 07/21/17

Instrument ID: HP09355  Time Analyzed: 19:30

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 166934 | 4.319 | 1240589 | 7.860 | 950070 | 11.309 | 487574 | 13.189 |
| UPPER LIMIT | 333868 | 4.819 | 2481178 | 8.360 | 1900140 | 11.809 | 975148 | 13.689 |
| LOWER LIMIT | 83467 | 3.819 | 620294 | 7.360 | 475035 | 10.809 | 243787 | 12.689 |
| LAB SAMPLE ID | | | | | | | | |
| 01 LCSY06 | 194105 | 4.337 | 1357216 | 7.866 | 1026596 | 11.309 | 521011 | 13.195 |
| 02 VBLKY06 | 177313 | 4.319 | 1196141 | 7.853 | 885762 | 11.309 | 427112 | 13.189 |
| 03 9109781 | 162231 | 4.355 | 1124892 | 7.878 | 853020 | 11.321 | 408392 | 13.201 |
| 04 9109784 | 171778 | 4.355 | 1235096 | 7.878 | 923105 | 11.315 | 449402 | 13.201 |
| 05 9109785 | 174234 | 4.356 | 1235406 | 7.878 | 935441 | 11.315 | 450480 | 13.195 |
| 06 9109788 | 159781 | 4.331 | 1109815 | 7.866 | 839112 | 11.315 | 403241 | 13.195 |
| 07 9112127 | 175044 | 4.361 | 1283766 | 7.878 | 959820 | 11.315 | 463383 | 13.195 |
| 08 9112128 | 157676 | 4.343 | 1154824 | 7.866 | 868853 | 11.315 | 419562 | 13.195 |
| 09 9109771 | 137110 | 4.349 | 1250005 | 7.872 | 978064 | 11.315 | 494045 | 13.195 |
| 10 9109772MS | 171402 | 4.331 | 1385841 | 7.860 | 1065334 | 11.309 | 538380 | 13.189 |
| 11 9109773MSD | 196183 | 4.337 | 1600966 | 7.866 | 1216078 | 11.309 | 609375 | 13.195 |
| 12 9109779 | 203768 | 4.349 | 1701286 | 7.866 | 1291327 | 11.315 | 637659 | 13.195 |
| 13 9109779DL | 231019 | 4.331 | 1641495 | 7.866 | 1224682 | 11.309 | 604110 | 13.189 |
| 14 9109782 | 271267 | 4.356 | 1777612 | 7.872 | 1313919 | 11.315 | 639014 | 13.195 |
| 15 9109783 | 249926 | 4.337 | 1653747 | 7.866 | 1234394 | 11.309 | 593798 | 13.195 |
| 16 9109786 | 223288 | 4.331 | 1545679 | 7.866 | 1146428 | 11.309 | 553092 | 13.189 |
| 17 9109787 | 283089 | 4.368 | 1965091 | 7.878 | 1464114 | 11.315 | 700586 | 13.189 |
| 18 9112123 | 218514 | 4.325 | 1471032 | 7.860 | 1107698 | 11.309 | 528505 | 13.189 |
| 19 9112125 | 244544 | 4.349 | 1749326 | 7.872 | 1295568 | 11.309 | 619009 | 13.189 |
| 20 9112126 | 252887 | 4.355 | 1810074 | 7.872 | 1339730 | 11.315 | 641758 | 13.195 |
| 21 SECC050 | 236427 | 4.343 | 1691665 | 7.866 | 1262128 | 11.315 | 630593 | 13.195 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR188___

Lab File ID (Standard): yl27c01.d Date Analyzed: 07/27/17

Instrument ID: HP09355 Time Analyzed: 08:37

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 374450 | 4.361 | 1350892 | 7.878 | 1074648 | 11.315 | 598174 | 13.195 |
| UPPER LIMIT | 748900 | 4.861 | 2701784 | 8.378 | 2149296 | 11.815 | 1196348 | 13.695 |
| LOWER LIMIT | 187225 | 3.861 | 675446 | 7.378 | 537324 | 10.815 | 299087 | 12.695 |
| LAB SAMPLE ID | | | | | | | | |
| 01 VBLKY18 | 430201 | 4.392 | 1706098 | 7.884 | 1304872 | 11.315 | 629119 | 13.195 |
| 02 VBLKY20 | 430201 | 4.392 | 1706098 | 7.884 | 1304872 | 11.315 | 629119 | 13.195 |
| 03 LCSY18 | 407981 | 4.356 | 1419883 | 7.872 | 1096283 | 11.315 | 564928 | 13.195 |
| 04 LCSY20 | 407981 | 4.356 | 1419883 | 7.872 | 1096283 | 11.315 | 564928 | 13.195 |
| 05 LCDY18 | 460624 | 4.361 | 1557286 | 7.878 | 1199638 | 11.315 | 613885 | 13.195 |
| 06 LCDY20 | 460624 | 4.361 | 1557286 | 7.878 | 1199638 | 11.315 | 613885 | 13.195 |
| 07 LCSY19 | 361387 | 4.355 | 1424252 | 7.872 | 1088760 | 11.309 | 525267 | 13.189 |
| 08 LCDY19 | 371957 | 4.355 | 1544037 | 7.872 | 1171270 | 11.309 | 562781 | 13.189 |
| 09 9109771DL | 420322 | 4.386 | 1567637 | 7.884 | 1243037 | 11.315 | 640458 | 13.195 |
| 10 SECC050 | 447010 | 4.380 | 1667075 | 7.884 | 1300005 | 11.315 | 678324 | 13.195 |
| 11 SECV050 | 325668 | 4.343 | 1365755 | 7.865 | 1051921 | 11.309 | 520290 | 13.195 |
| 12 9107020 | 399396 | 4.373 | 1465759 | 7.878 | 1129279 | 11.315 | 570602 | 13.195 |
| 13 9109081 | 357638 | 4.368 | 1475343 | 7.872 | 1137176 | 11.315 | 575198 | 13.195 |
| 14 9107017 | 300658 | 4.337 | 1106605 | 7.859 | 858348 | 11.309 | 437397 | 13.189 |
| 15 9107018 | 266289 | 4.331 | 1025822 | 7.860 | 799659 | 11.309 | 412935 | 13.189 |
| 16 9107019 | 341613 | 4.349 | 1346108 | 7.866 | 1054144 | 11.309 | 529149 | 13.189 |
| 17 9109082 | 250412 | 4.325 | 884134 | 7.853 | 676015 | 11.309 | 352742 | 13.189 |
| 18 9109087 | 231406 | 4.337 | 883942 | 7.860 | 678634 | 11.309 | 356322 | 13.189 |
| 19 9109088 | 285947 | 4.343 | 1149634 | 7.866 | 911529 | 11.309 | 461941 | 13.189 |
| 20 9109089 | 341095 | 4.362 | 1324791 | 7.872 | 1044585 | 11.309 | 521854 | 13.195 |
| 21 9118347 | 248096 | 4.343 | 1386090 | 7.866 | 1103912 | 11.309 | 569140 | 13.189 |
| 22 9118349 | 223613 | 4.319 | 1305114 | 7.854 | 1036485 | 11.309 | 516308 | 13.189 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR188___

Lab File ID (Standard): yl27c01.d Date Analyzed: 07/27/17

Instrument ID: HP09355 Time Analyzed: 08:37

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 374450 | 4.361 | 1350892 | 7.878 | 1074648 | 11.315 | 598174 | 13.195 |
| UPPER LIMIT | 748900 | 4.861 | 2701784 | 8.378 | 2149296 | 11.815 | 1196348 | 13.695 |
| LOWER LIMIT | 187225 | 3.861 | 675446 | 7.378 | 537324 | 10.815 | 299087 | 12.695 |
| LAB SAMPLE ID | | | | | | | | |
| 23 9107203 | 654367 | 4.453 | 2590121 | 7.908 | 1984170 | 11.315 | 955338 | 13.195 |
| 24 9107203MS | 344338 | 4.337 | 1665668 | 7.866 | 1274771 | 11.309 | 650186 | 13.189 |
| 25 9107203MSD | 353103 | 4.349 | 1731287 | 7.866 | 1332736 | 11.309 | 675686 | 13.189 |
| 26 9107164 | 354864 | 4.337 | 1491218 | 7.859 | 1135996 | 11.309 | 555172 | 13.189 |
| 27 9110305 | 374351 | 4.343 | 1511243 | 7.866 | 1148794 | 11.309 | 554947 | 13.189 |
| 28 9110308 | 323790 | 4.349 | 1471779 | 7.872 | 1096784 | 11.309 | 533308 | 13.195 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

# Sample Data

# Volatiles by GC/MS

**Fraction: Volatiles by GC/MS**

| 11997: BTEX 8260C Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Benzene | .5 | 1 | 1 | ug/l |
| Toluene | .5 | 1 | 1 | ug/l |
| Ethylbenzene | .5 | 1 | 1 | ug/l |
| Xylene (Total) | .5 | 1 | 1 | ug/l |

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s73.d Injection date and time: **22-JUL-2017 01:28**
Data file Sample Info. Line: 18801;9109771;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.349(-0.030) | 455 | 65 | 137110 ( -18) | 250.00 | |
| 66) Fluorobenzene | 7.872(-0.012) | 1034 | 96 | 1250005 ( 1) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 978064 ( 3) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 494045 ( 1) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.971( 0.000) | 113 | 288026 | 49.408 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.434( 0.000) | 102 | 75325 | 49.281 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1297101 | 51.332 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 498155 | 52.565 | 105% | | 85 - 114 |

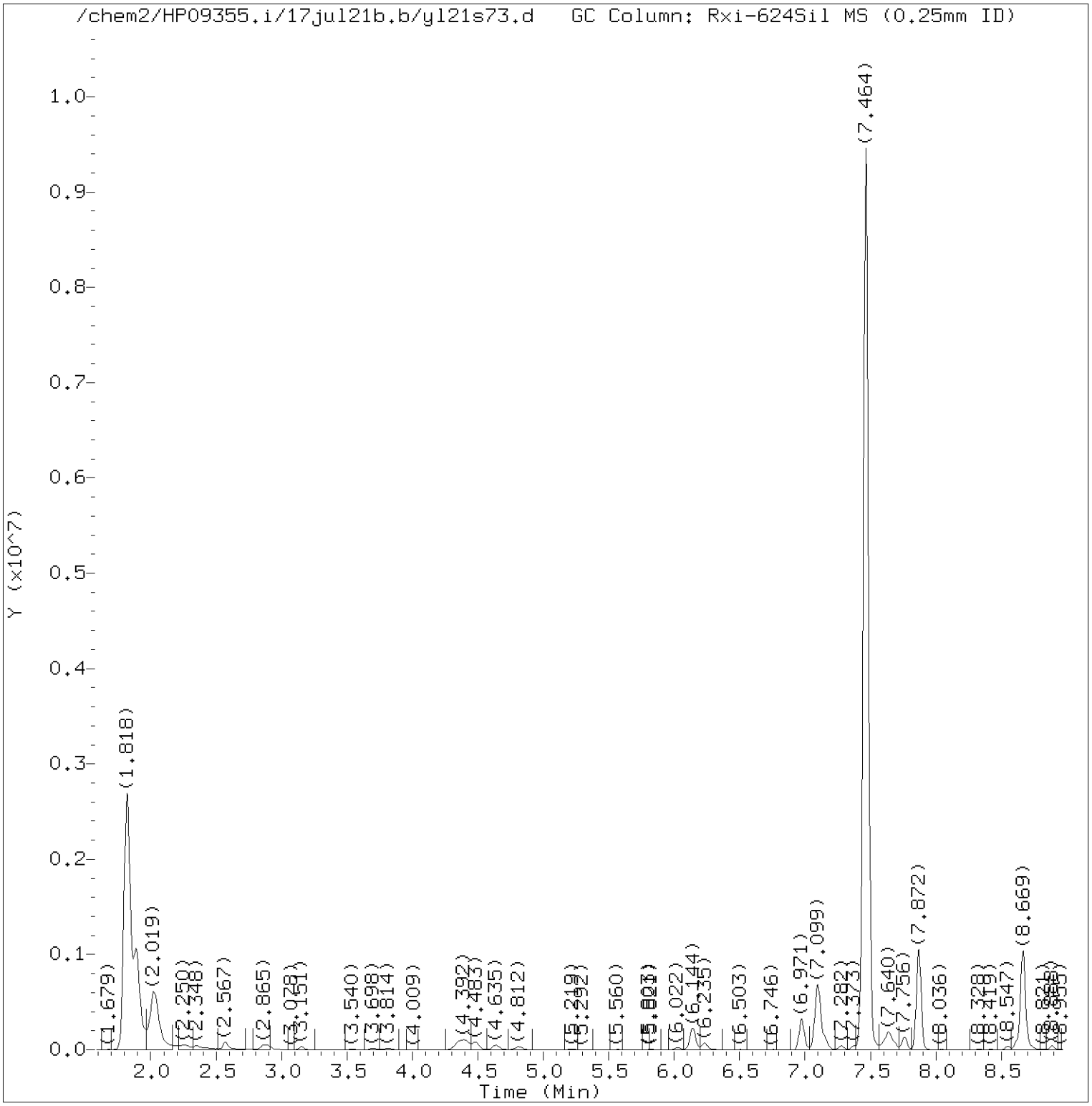
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.464( 0.000) | 78 | 11680902 | 467.519 | 467.52 | | E | 0.5 | 1 |
| 88) Toluene | (3) | 9.940( 0.000) | 92 | 71630 | 4.306 | 4.31 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.424( 0.000) | 91 | 1736289 | 54.253 | 54.25 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.540( 0.000) | 106 | 167156 | 13.118 | 13.12 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.862( 0.000) | 106 | 1250923 | 100.775 | 100.77 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 1418079 | 113.893 | 113.89 | | | 0.5 | 1 |

**E = Compound concentration above calibration range.**

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/27/2017 at 13:11. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:27. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

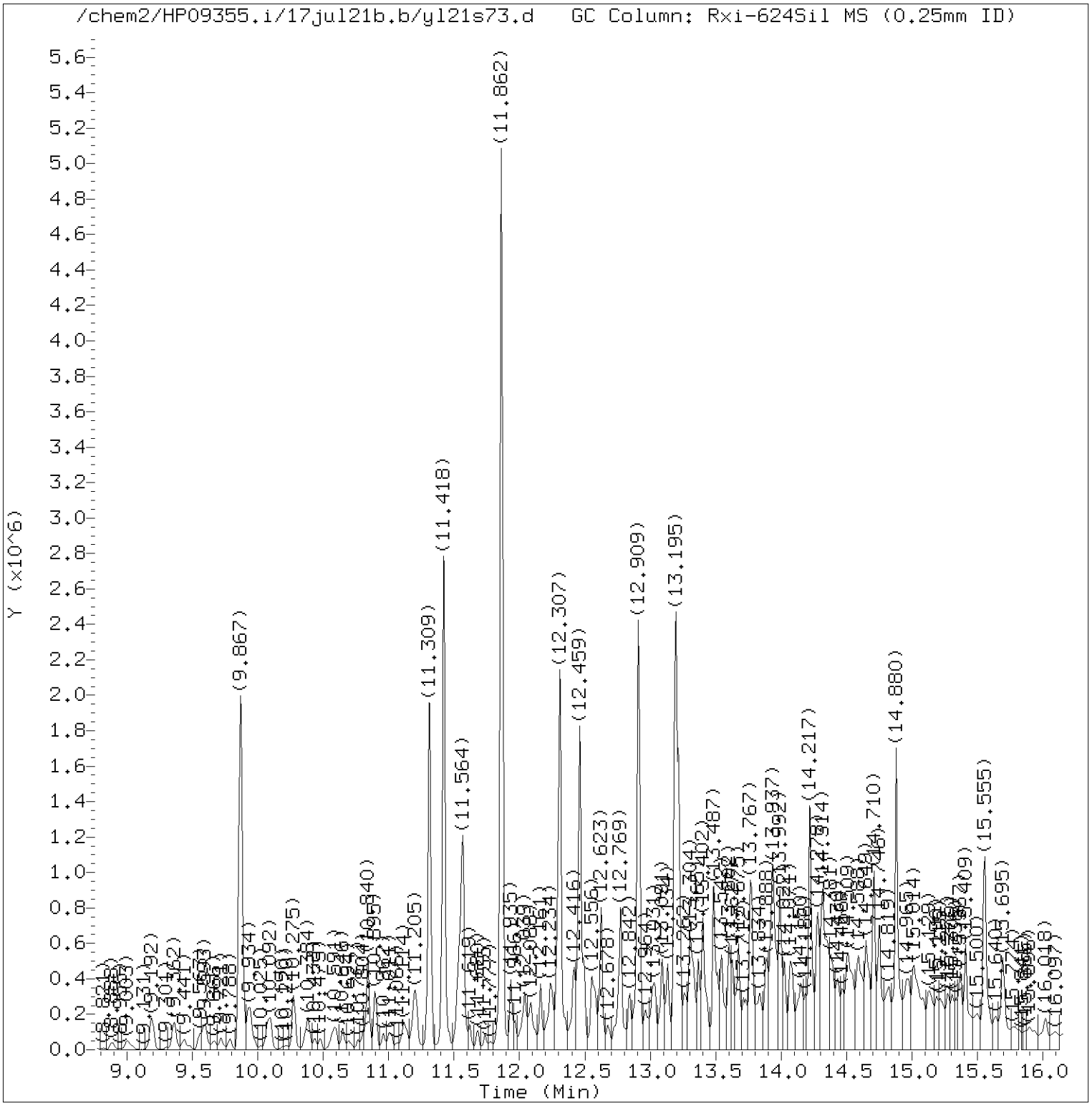
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s73.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:28 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

Sample Name: 18801 Lab Sample ID: 9109771

Digitally signed by Linda C. Pape
on 07/27/2017 at 13:11.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s73.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:28 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

Sample Name: 18801 Lab Sample ID: 9109771

Digitally signed by Linda C. Pape
on 07/27/2017 at 13:11.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s73.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:28 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

Sample Name: 18801 Lab Sample ID: 9109771

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.349 | 65 | 137110 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 288026 | 49.408 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 102 | 75325 | 49.281 |
| 60) Benzene | (2) | 7.464 | 78 | 11680902 | 467.519 |
| 66)*Fluorobenzene | (2) | 7.872 | 96 | 1250005 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1297101 | 51.332 |
| 88) Toluene | (3) | 9.940 | 92 | 71630 | 4.306 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 978064 | 50.000 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 1736289 | 54.253 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 167156 | 13.118 |
| 108) Xylene (Total) | (3) | | 106 | 1418079 | 113.893 |
| 107) o-Xylene | (3) | 11.862 | 106 | 1250923 | 100.775 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 498155 | 52.565 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 494045 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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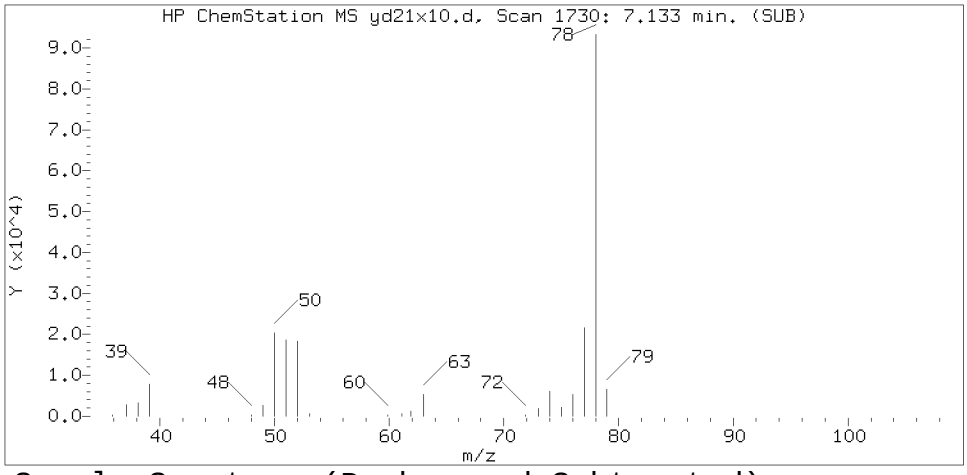
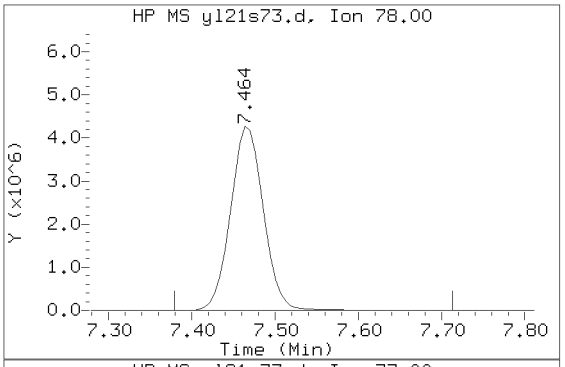
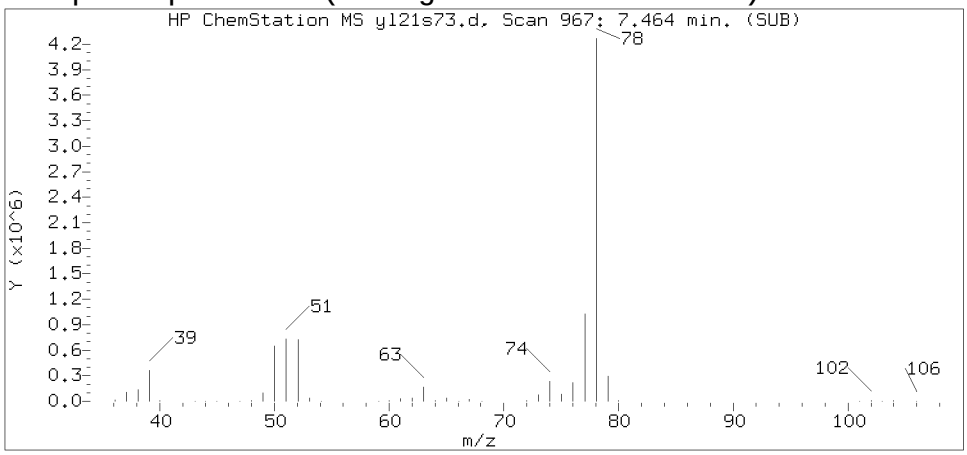
on 07/27/2017 at 13:11.
Target 3.5 esignature user ID: lcp00895

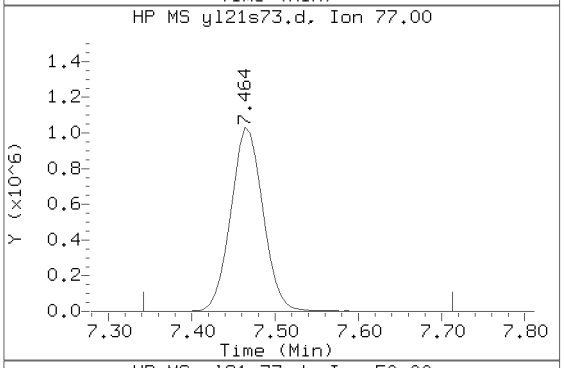
Reference Standard Spectrum for Benzene

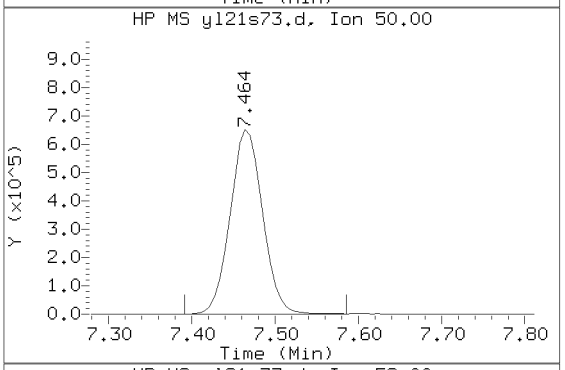


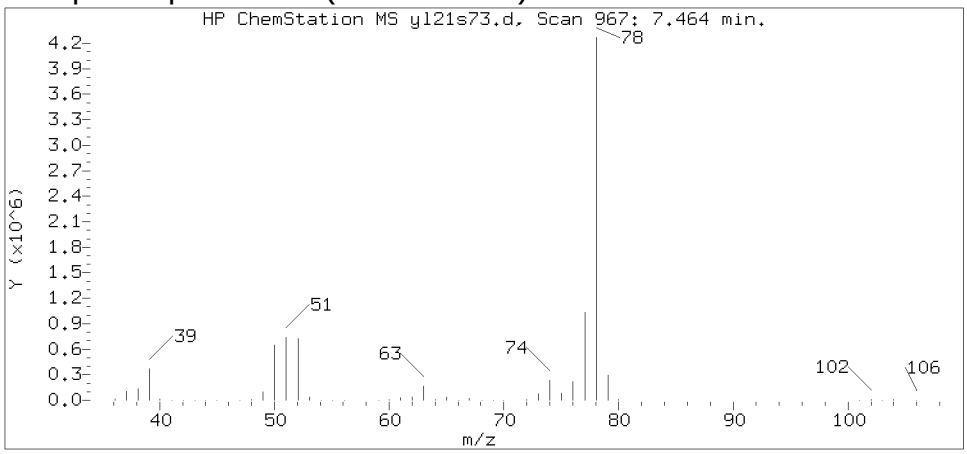

Sample Spectrum (Background Subtracted)

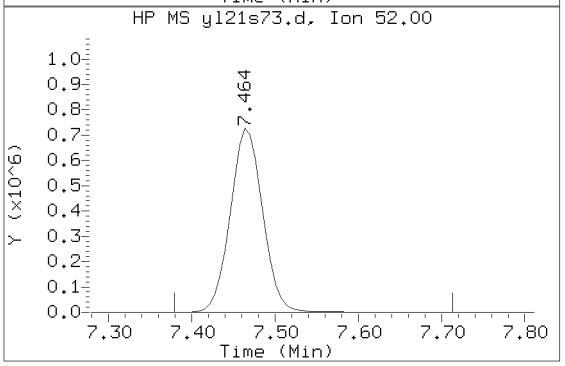



Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s73.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:28 Analyst ID: pth10165

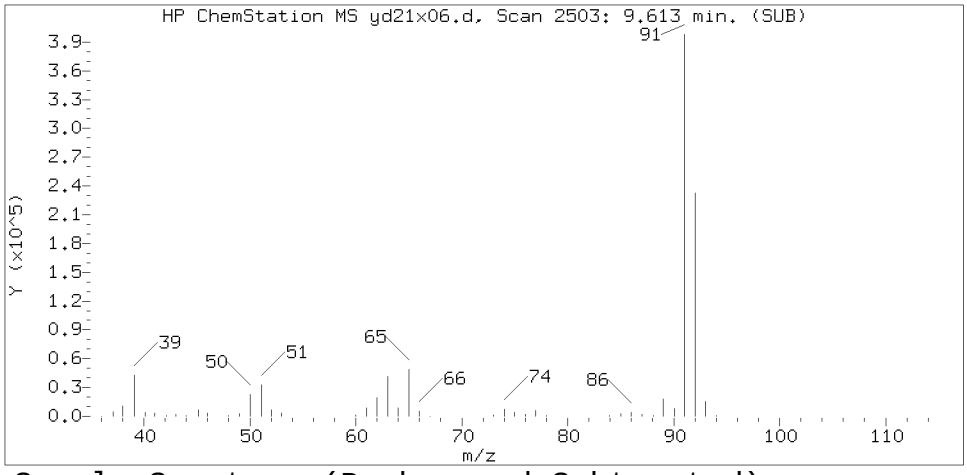
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

Sample Name: 18801 Lab Sample ID: 9109771

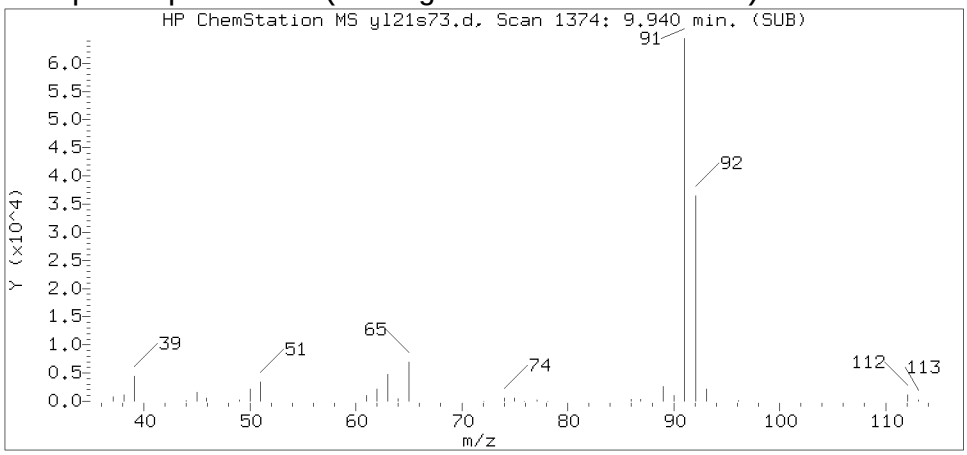
Compound Number : 60
Compound Name : Benzene
Scan Number : 967
Retention Time (minutes): 7.464
Relative Retention Time : 0.00069
Quant Ion : 78.00
Area (flag) : 11680902
On-Column Amount (ng) : 467.5194

Digitally signed by Linda C. Pape on 07/27/2017 at 13:11.
Target 3.5 esignature user ID: lcp00895

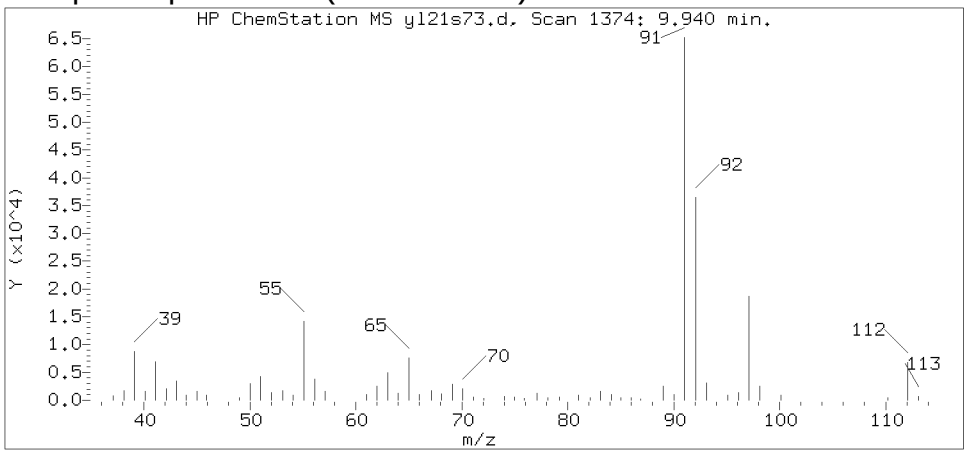
Reference Standard Spectrum for Toluene

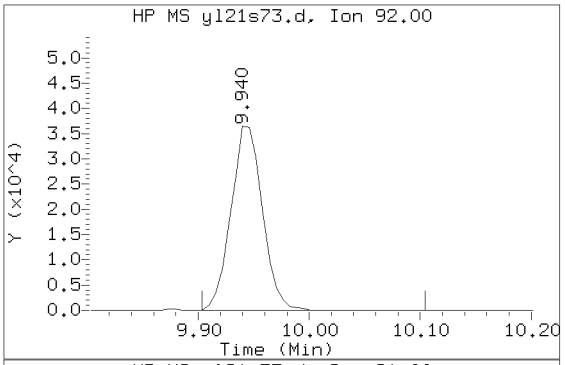


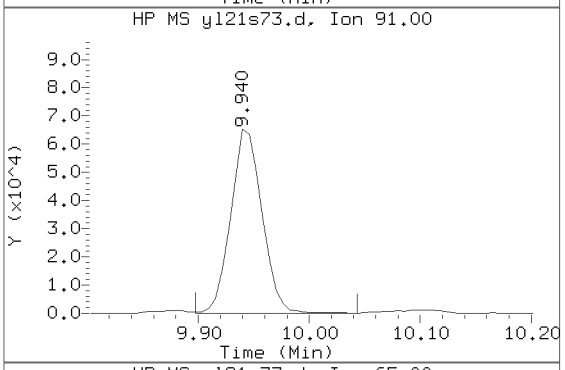

Sample Spectrum (Background Subtracted)

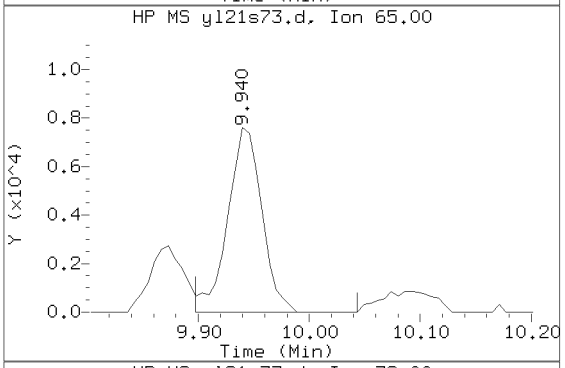


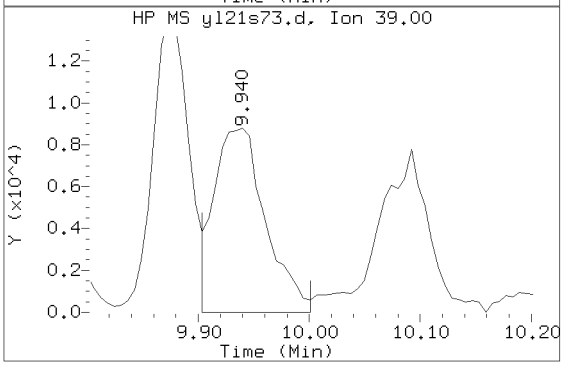

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s73.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:28  Analyst ID: pth10165

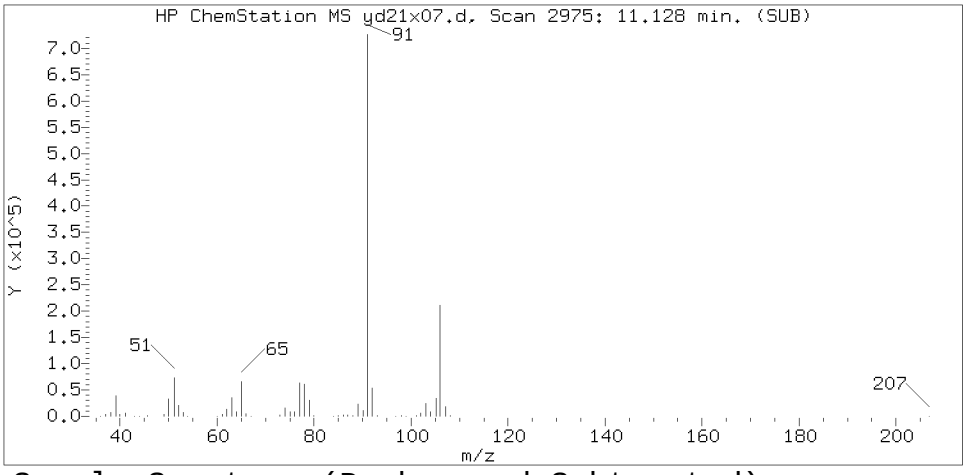
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

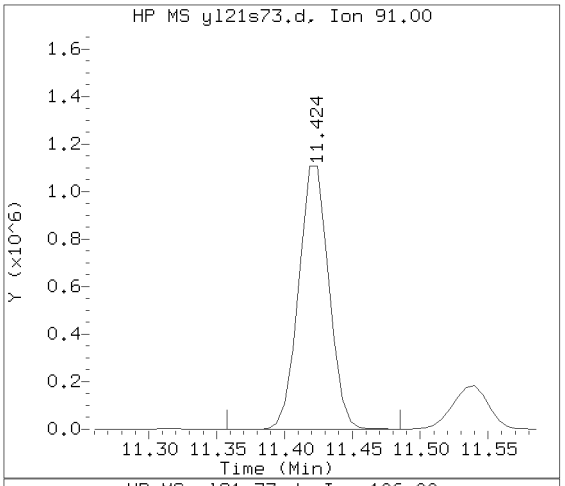
Sample Name: 18801  Lab Sample ID: 9109771

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 1374 |
| Retention Time (minutes) | : 9.940 |
| Relative Retention Time | : 0.00047 |
| Quant Ion | : 92.00 |
| Area (flag) | : 71630 |
| On-Column Amount (ng) | : 4.3055 |

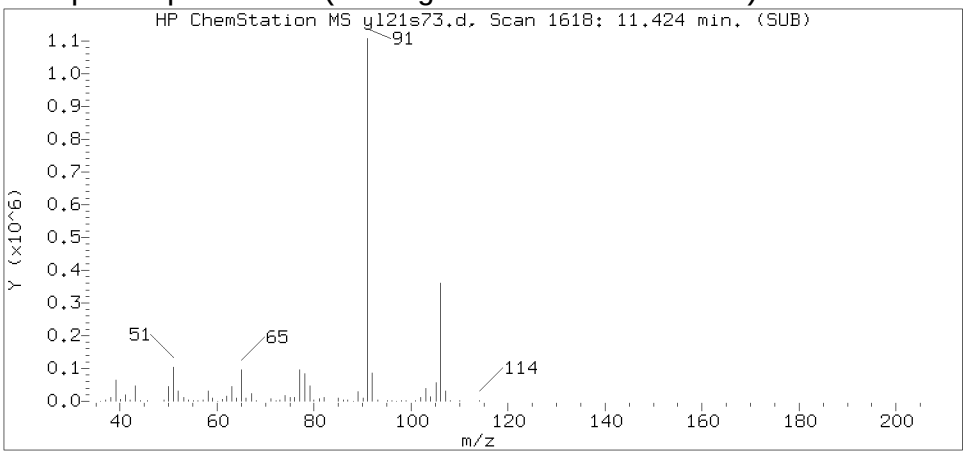
Digitally signed by Linda C. Pape on 07/27/2017 at 13:11.
Target 3.5 esignature user ID: lcp00895

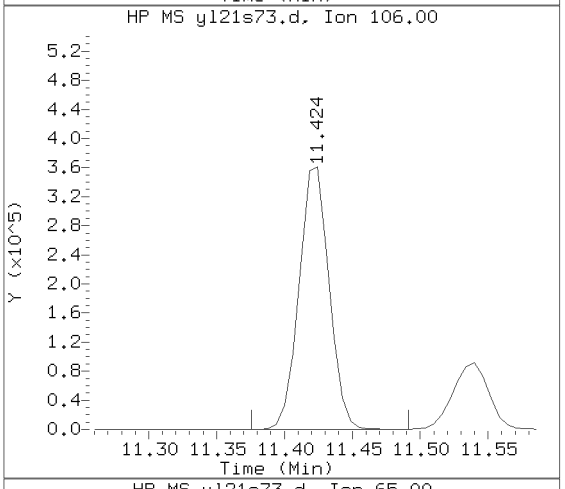
Reference Standard Spectrum for Ethylbenzene



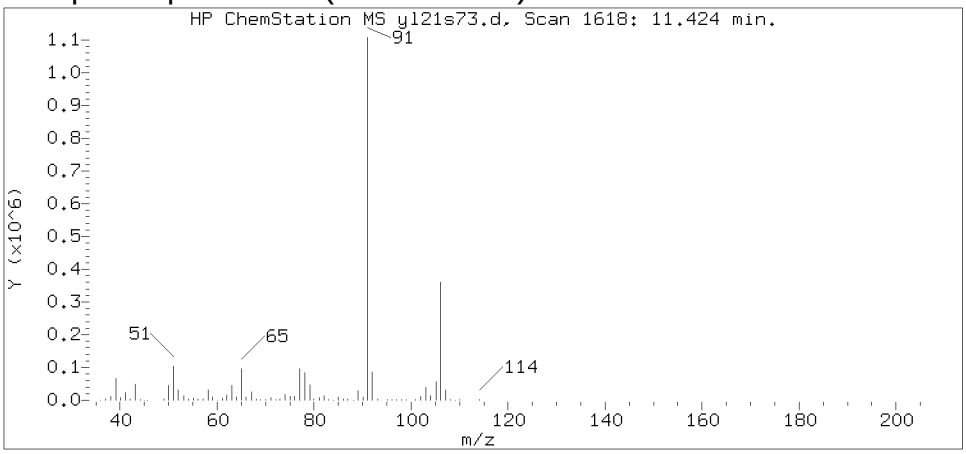



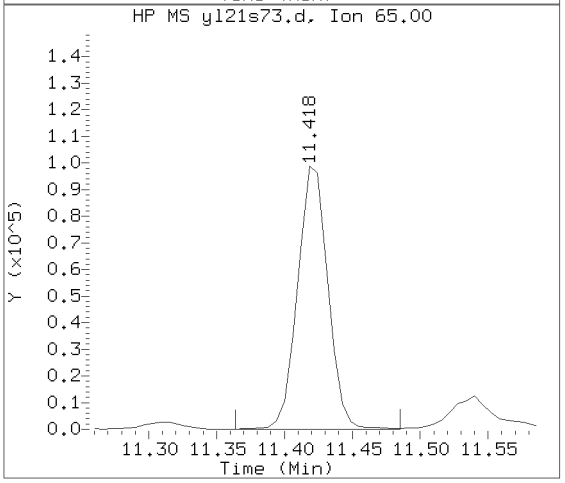

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s73.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:28 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

Sample Name: 18801 Lab Sample ID: 9109771

Compound Number : 104
Compound Name : Ethylbenzene
Scan Number : 1618
Retention Time (minutes): 11.424
Relative Retention Time : 0.00001
Quant Ion : 91.00
Area (flag) : 1736289
On-Column Amount (ng) : 54.2529

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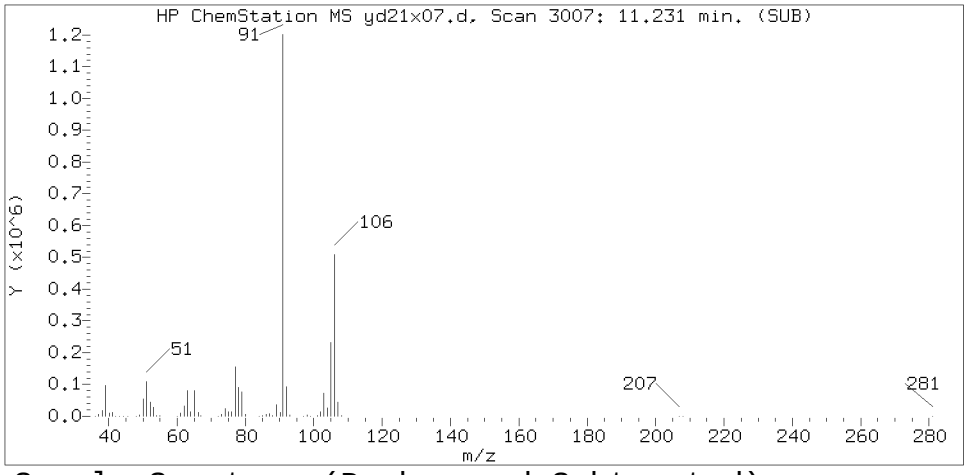
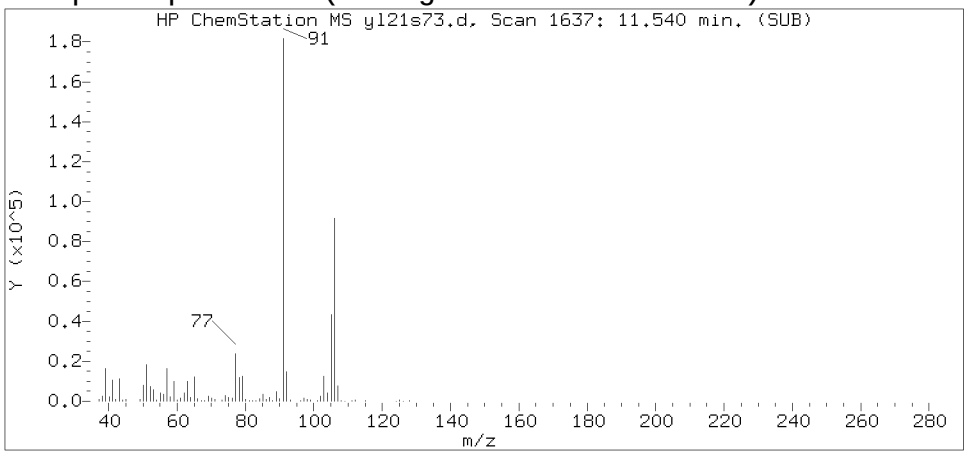
Target 3.5 esignature user ID: lcp00805

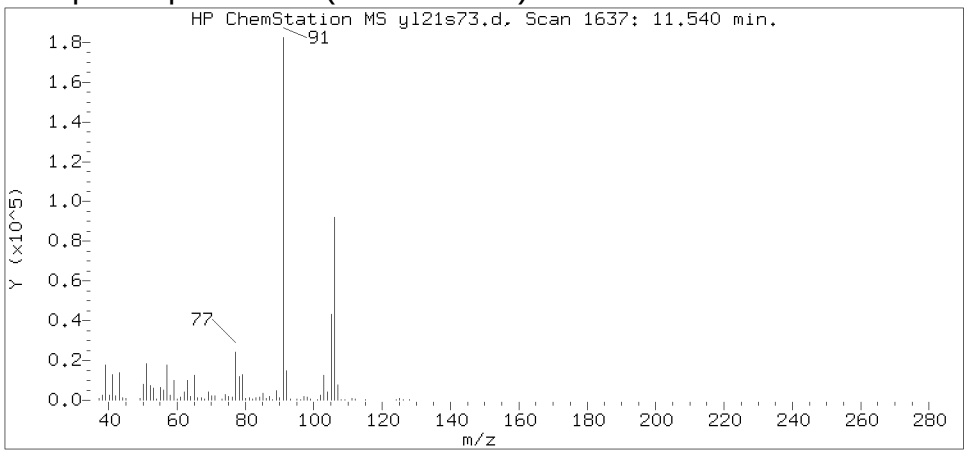
Reference Standard Spectrum for m+p-Xylene

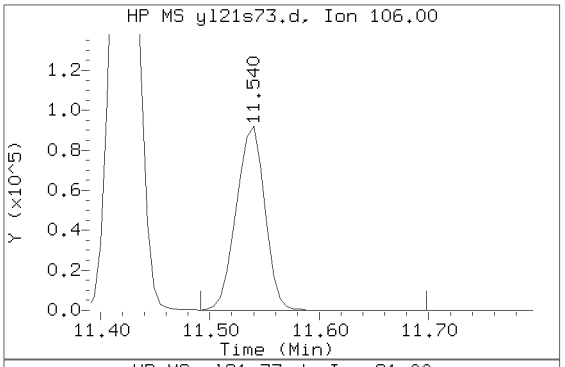


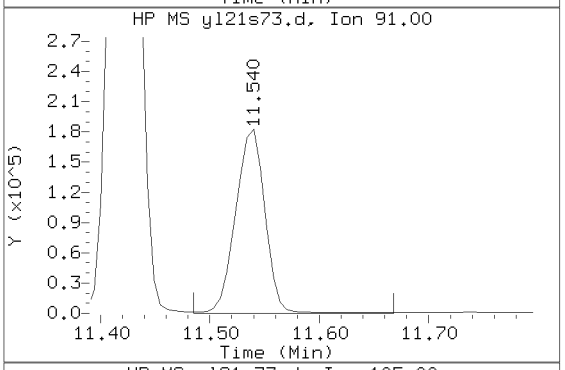

Sample Spectrum (Background Subtracted)

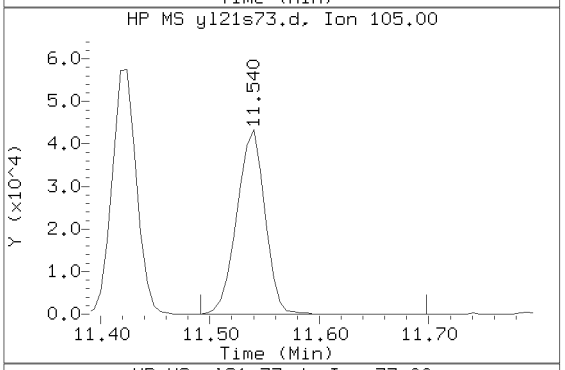


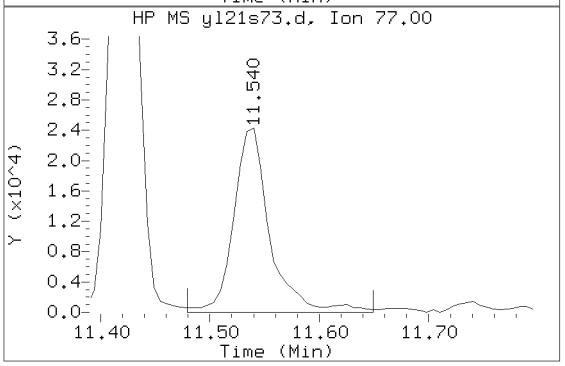

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s73.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:28  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

Sample Name: 18801  Lab Sample ID: 9109771

| | |
|---|---|
| Compound Number | : 106 |
| Compound Name | : m+p-Xylene |
| Scan Number | : 1637 |
| Retention Time (minutes) | : 11.540 |
| Relative Retention Time | : 0.00001 |
| Quant Ion | : 106.00 |
| Area (flag) | : 167156 |
| On-Column Amount (ng) | : 13.1177 |

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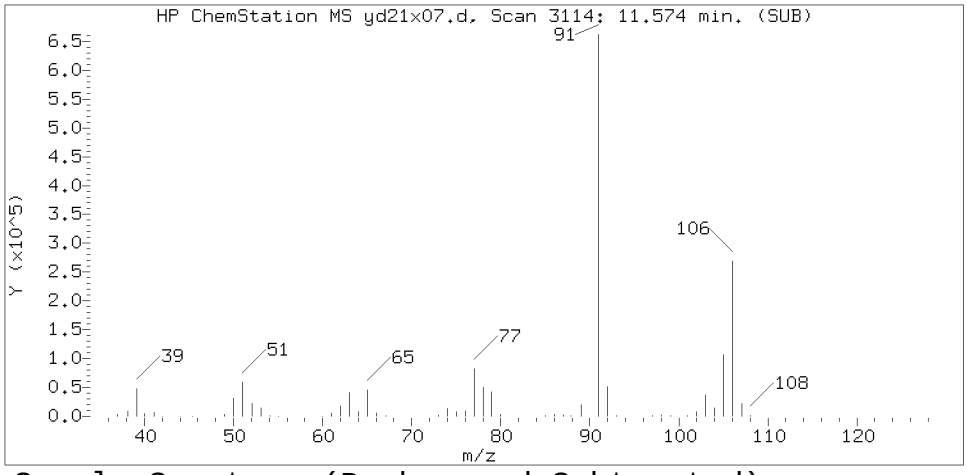
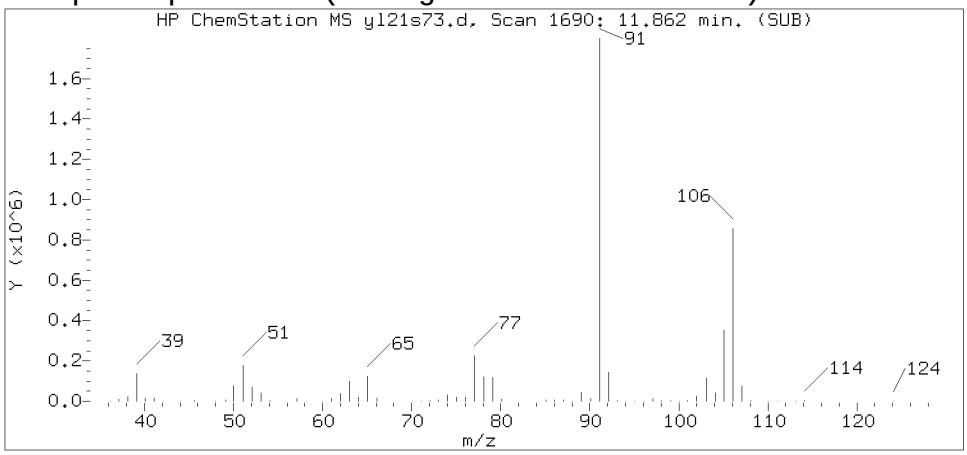
Target 3.5 esignature user ID: lcp00895

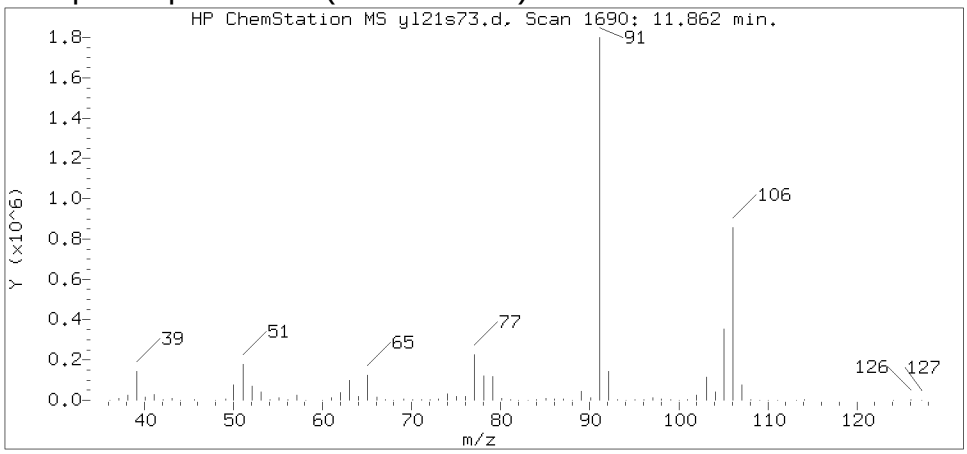
Reference Standard Spectrum for o-Xylene

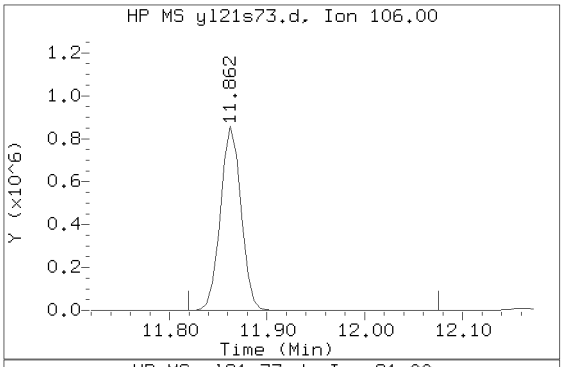


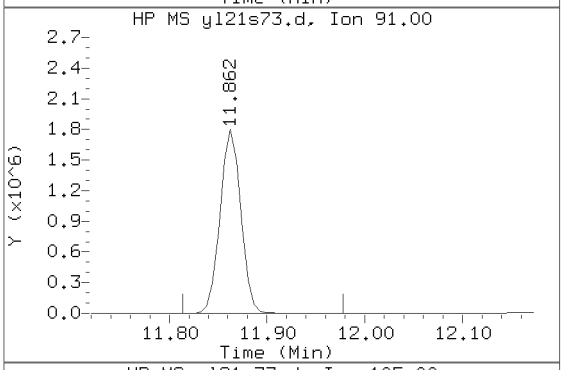

Sample Spectrum (Background Subtracted)

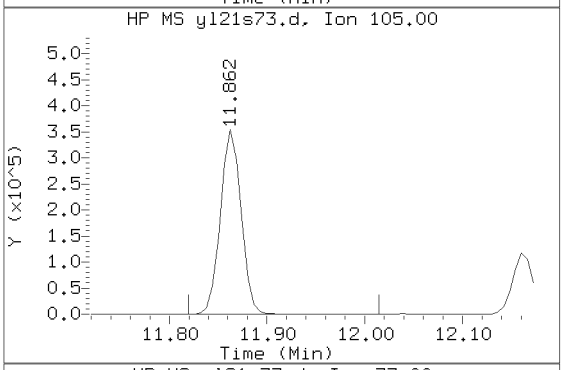


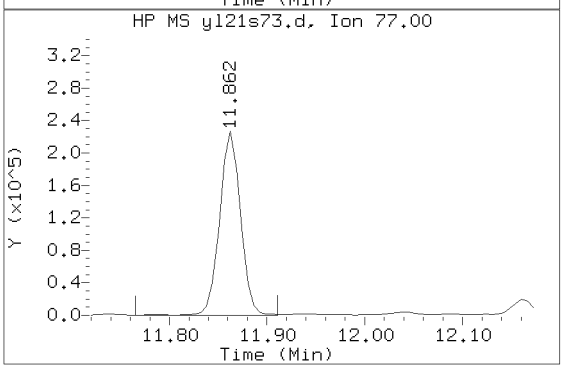

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s73.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:28  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:44 Automation

Sample Name: 18801  Lab Sample ID: 9109771

Compound Number : 107
Compound Name : o-Xylene
Scan Number : 1690
Retention Time (minutes): 11.862
Relative Retention Time : 0.00056
Quant Ion : 106.00
Area (flag) : 1250923
On-Column Amount (ng) : 100.7749

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Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul27a.b/yl27s06.d Injection date and time: **27-JUL-2017 12:04**
Data file Sample Info. Line: 18801DL;9109771DL;1;0;;KR188;DODWW;;yl27b01; Instrument ID: **HP09355.i** Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 12:19 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul27a.b/yl27b01.d**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **10.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 0.5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.386(-0.025) | 461 | 65 | 420322 ( 12) | 250.00 | |
| 66) Fluorobenzene | 7.884(-0.006) | 1036 | 96 | 1567637 ( 16) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315( 0.000) | 1600 | 117 | 1243037 ( 16) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195( 0.000) | 1909 | 152 | 640458 ( 7) | 50.00 | |

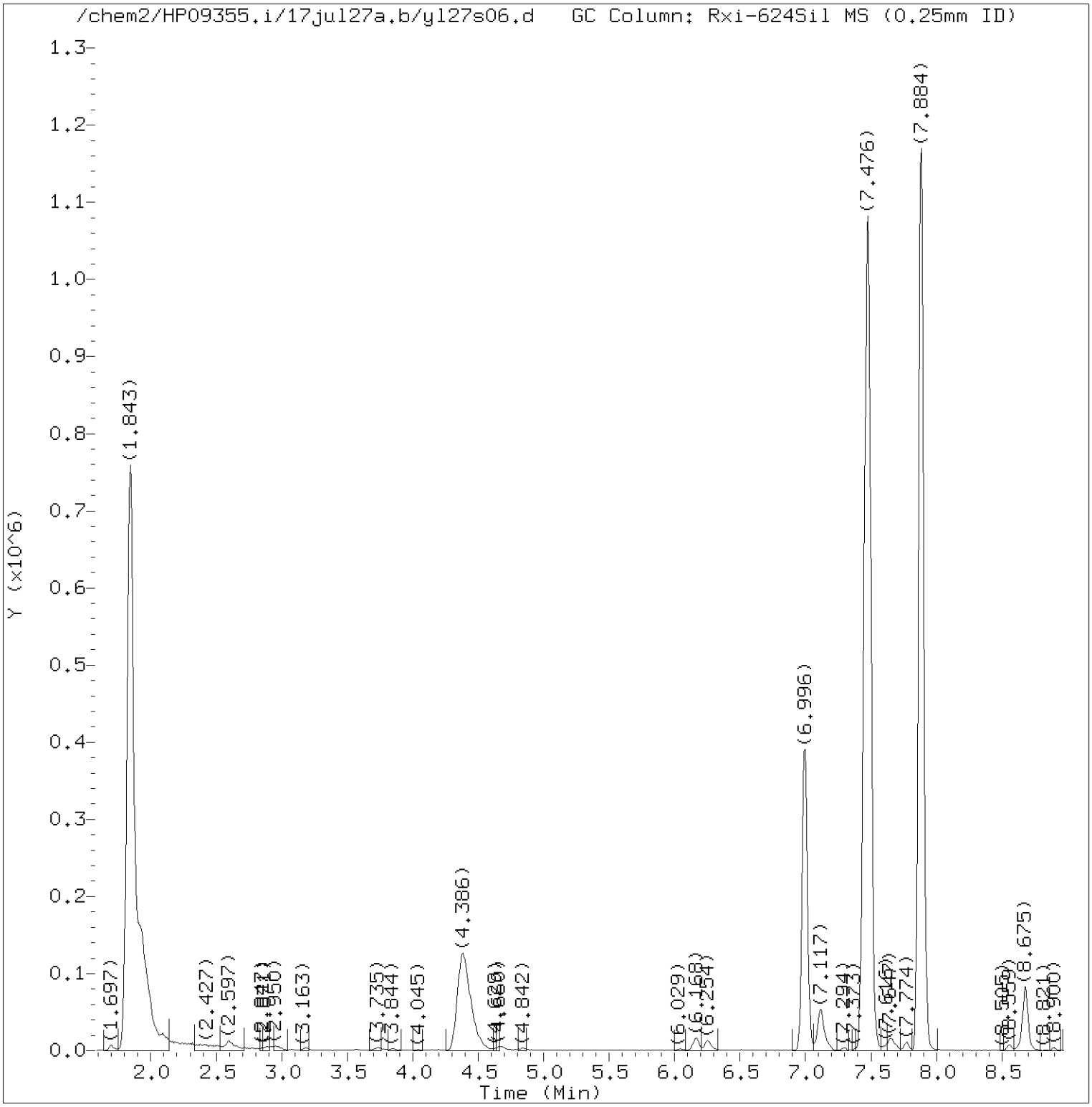
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.996( 0.000) | 113 | 361195 | 49.405 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.452( 0.000) | 102 | 96333 | 50.255 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.873( 0.000) | 98 | 1595501 | 49.681 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 608705 | 50.538 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.482(-0.000) | 78 | 1304938 | 41.647 | 416.47 | | | 5 | 10 |
| 88) Toluene | (3) | | | Not Detected | | | | | 5 | 10 |
| 104) Ethylbenzene | (3) | 11.425( 0.000) | 91 | 181947 | 4.473 | 44.73 | | | 5 | 10 |
| 106) m+p-Xylene | (3) | 11.540( 0.000) | 106 | 18885 | 1.166 | 11.66 | | | 5 | 10 |
| 107) o-Xylene | (3) | 11.869( 0.000) | 106 | 128342 | 8.135 | 81.35 | | | 5 | 10 |
| 108) Xylene (Total) | (3) | | 106 | 147227 | 9.301 | 93.01 | | | 5 | 10 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/27/2017 at 14:05. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

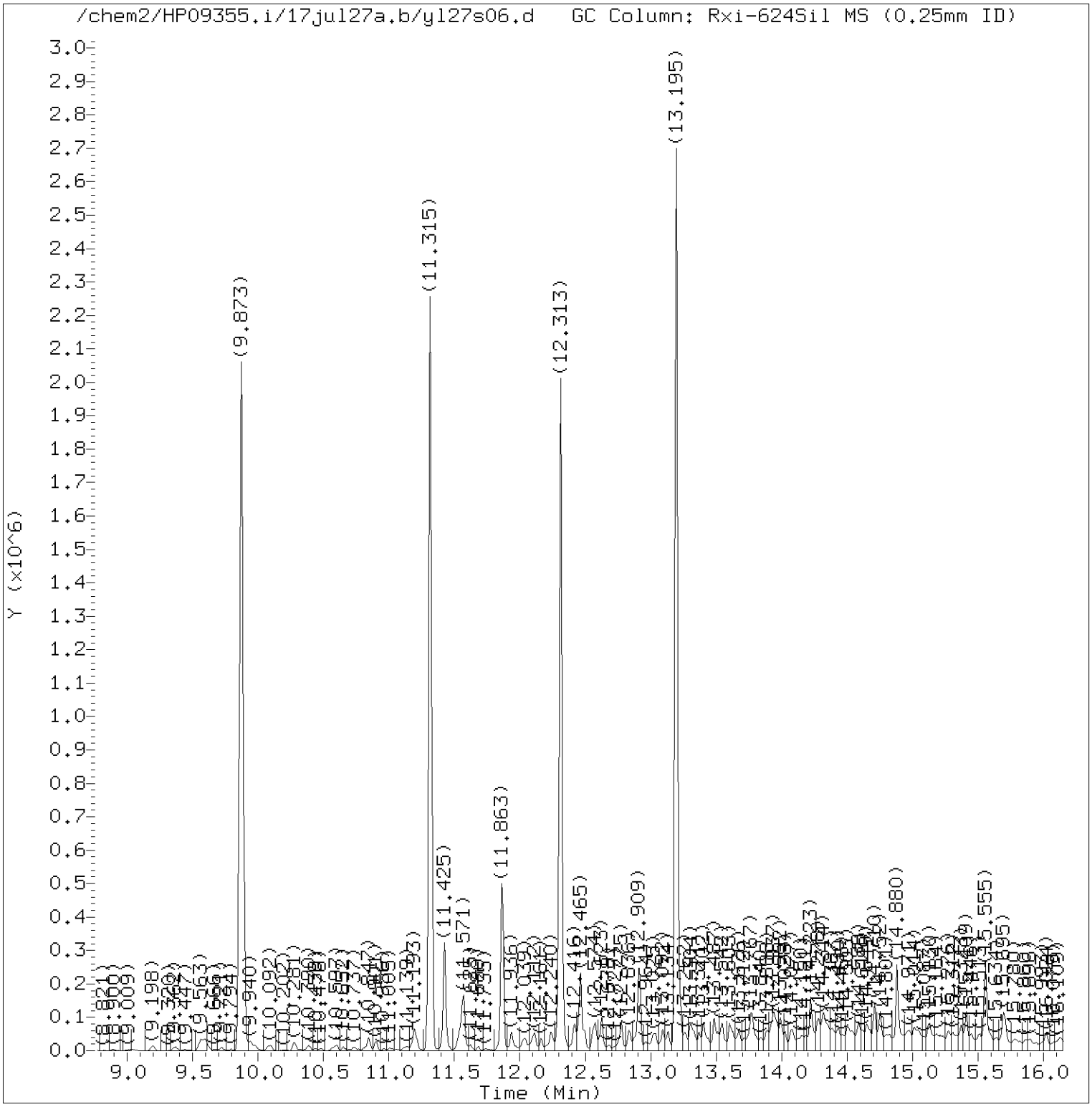
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s06.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:04 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 12:19 Automation

Sample Name: 18801DL Lab Sample ID: 9109771DL

Digitally signed by Linda C. Pape
on 07/27/2017 at 14:05.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s06.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:04 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 12:19 Automation

Sample Name: 18801DL Lab Sample ID: 9109771DL

Digitally signed by Linda C. Pape
on 07/27/2017 at 14:05.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s06.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:04 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 12:19 Automation

Sample Name: 18801DL Lab Sample ID: 9109771DL

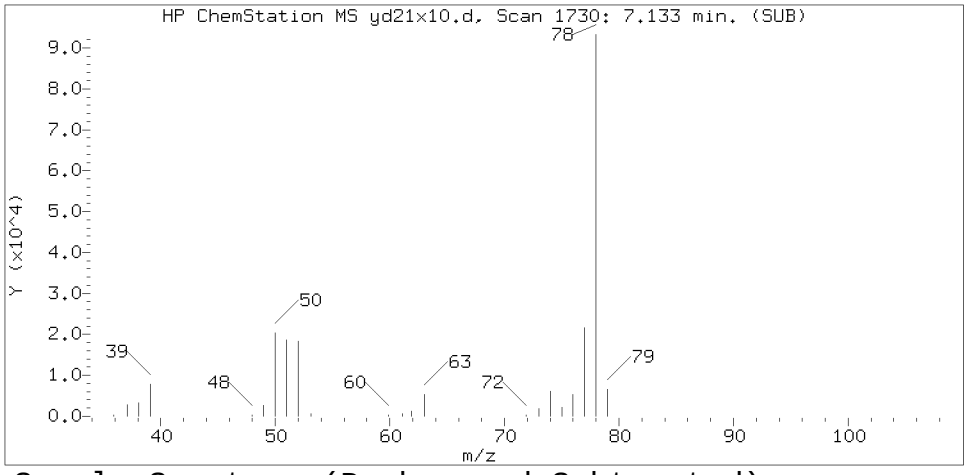
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.386 | 65 | 420322 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.996 | 113 | 361195 | 49.405 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.452 | 102 | 96333 | 50.255 |
| 60) Benzene | (2) | 7.482 | 78 | 1304938 | 41.647 |
| 66)*Fluorobenzene | (2) | 7.884 | 96 | 1567637 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1595501 | 49.681 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1243037 | 50.000 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 181947 | 4.473 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 18885 | 1.166 |
| 108) Xylene (Total) | (3) | | 106 | 147227 | 9.301 |
| 107) o-Xylene | (3) | 11.869 | 106 | 128342 | 8.135 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 608705 | 50.538 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 640458 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

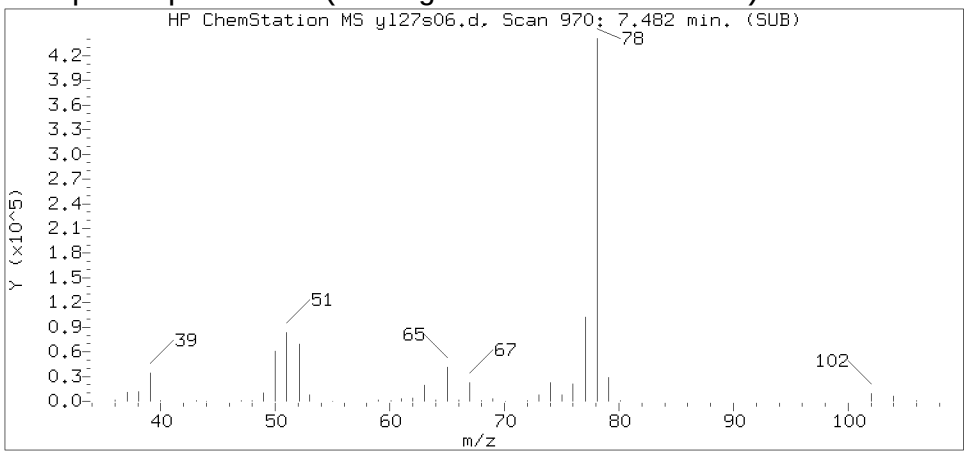


Digitally signed by Linda C. Pape
on 07/27/2017 at 14:05.
Target 3.5 esignature user ID: lcp00895

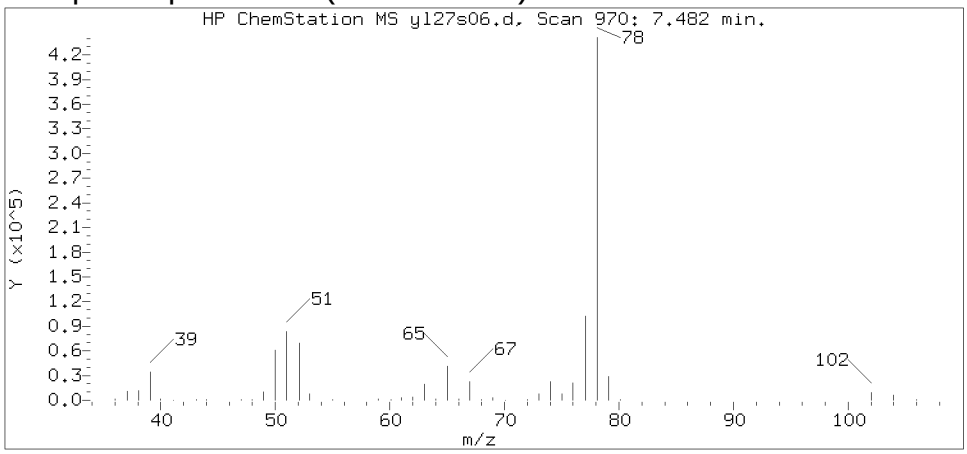
Reference Standard Spectrum for Benzene

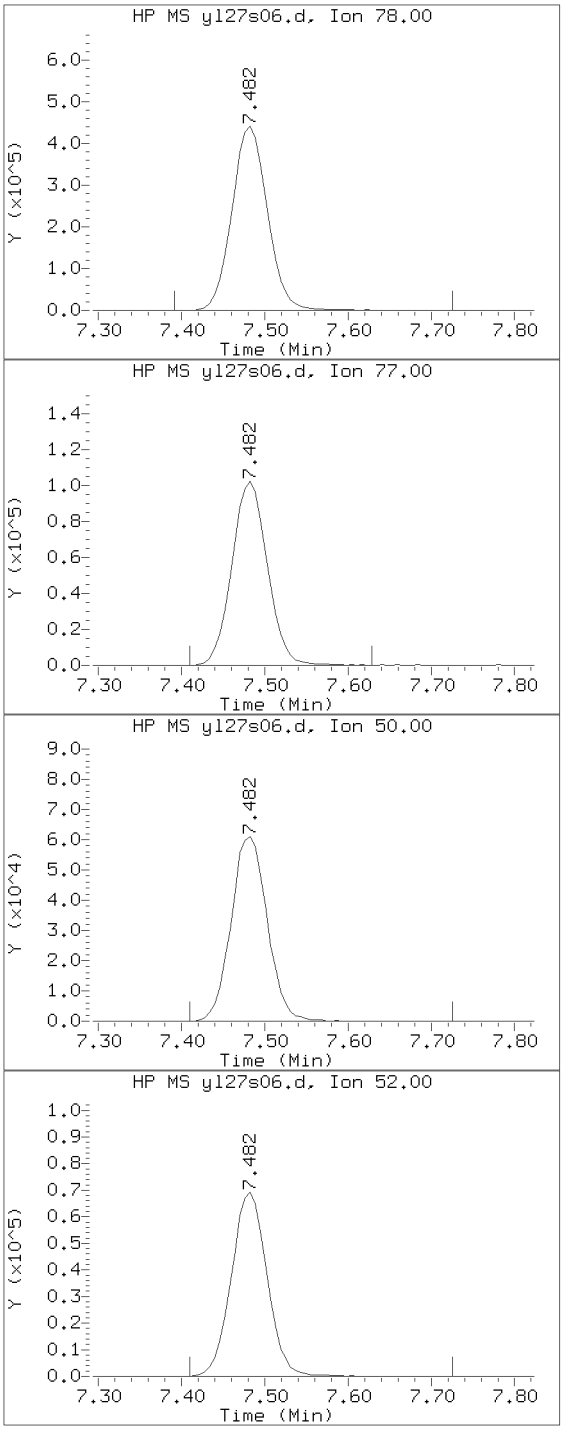



Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul27a.b/yl27s06.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:04 Analyst ID: LCP00895

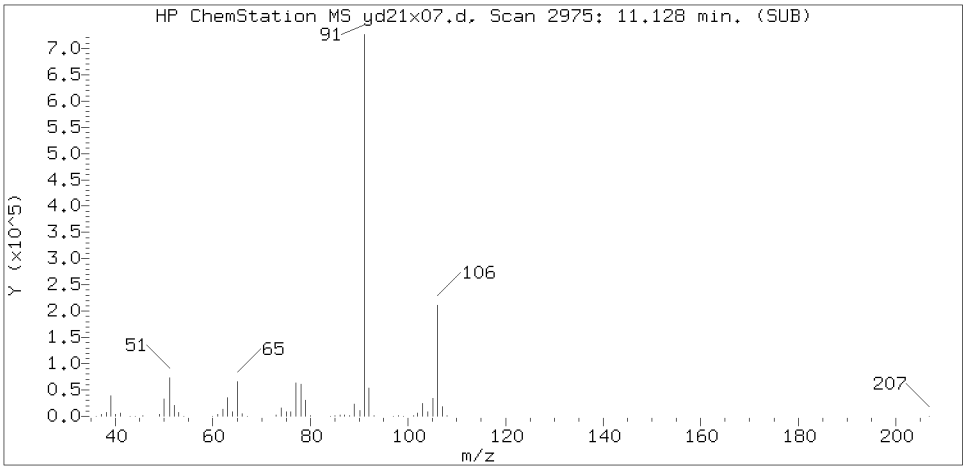
Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 12:19 Automation

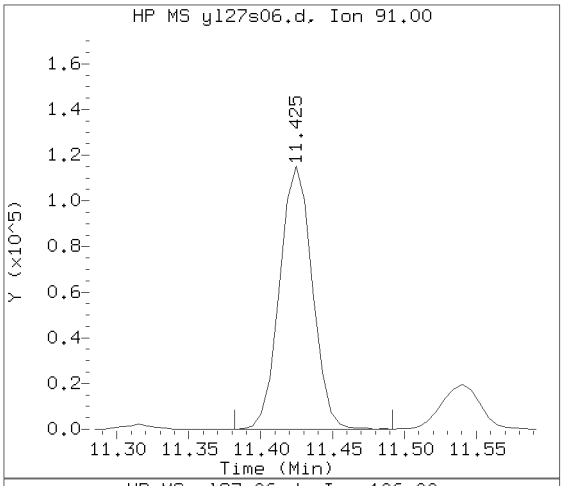
Sample Name: 18801DL Lab Sample ID: 9109771DL

Compound Number : 60
Compound Name : Benzene
Scan Number : 970
Retention Time (minutes): 7.482
Relative Retention Time :-0.00004
Quant Ion : 78.00
Area (flag) : 1304938
On-Column Amount (ng) : 41.6466

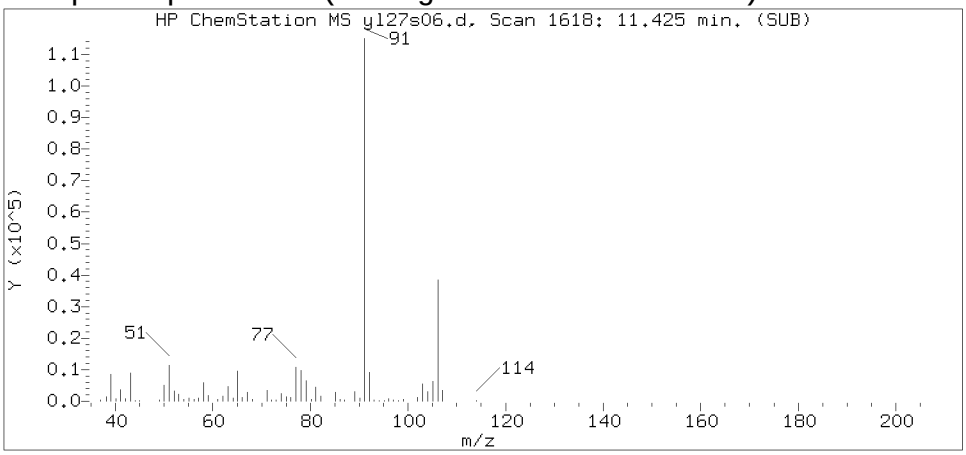
Digitally signed by Linda C. Pape on 07/27/2017 at 14:05.
Target 3.5 esignature user ID: lcp00895

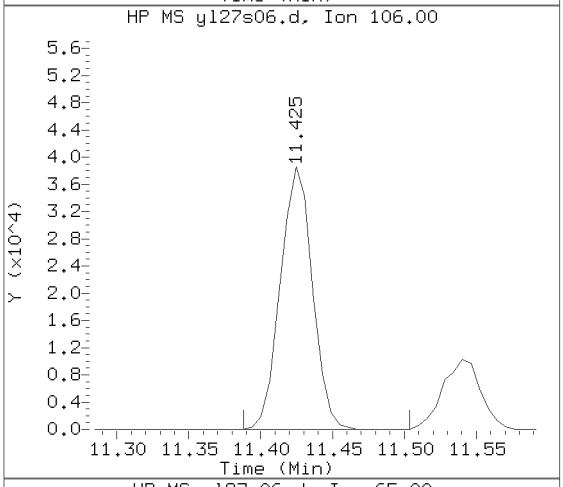
Reference Standard Spectrum for Ethylbenzene



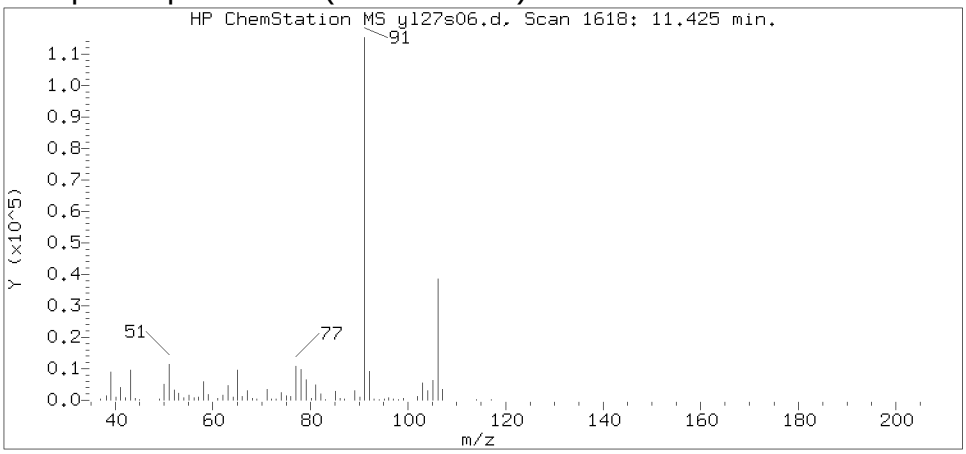



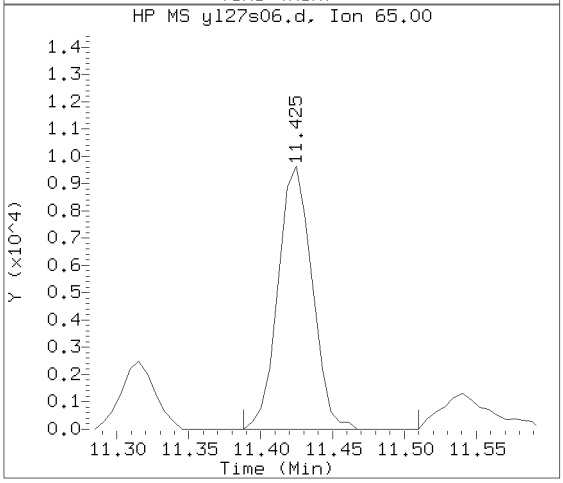

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul27a.b/yl27s06.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:04 Analyst ID: LCP00895

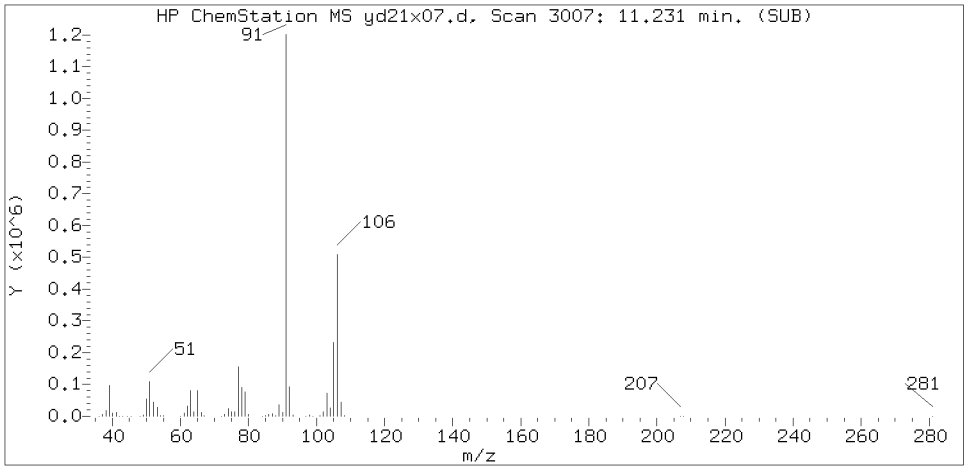
Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 12:19 Automation

Sample Name: 18801DL Lab Sample ID: 9109771DL

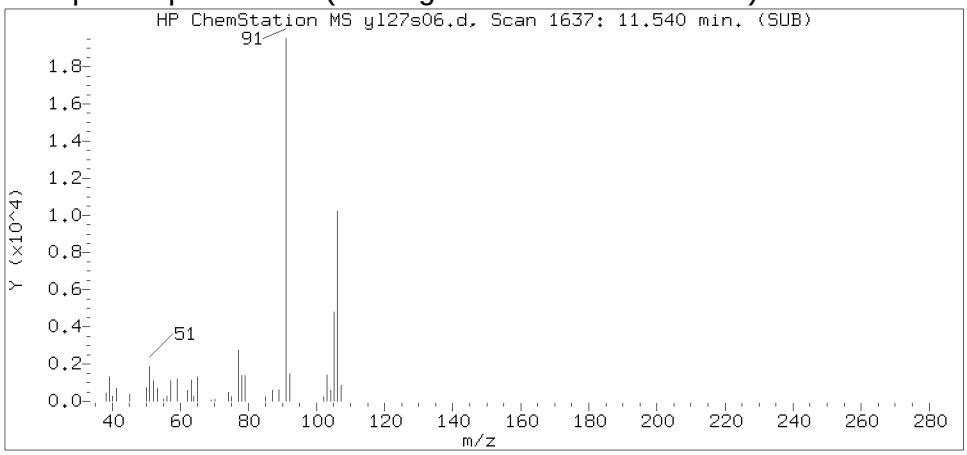
Compound Number : 104
Compound Name : Ethylbenzene
Scan Number : 1618
Retention Time (minutes): 11.425
Relative Retention Time : 0.00000
Quant Ion : 91.00
Area (flag) : 181947
On-Column Amount (ng) : 4.4733

Digitally signed by Linda C. Pape on 07/27/2017 at 14:05.
Target 3.5 esignature user ID: lcp00895

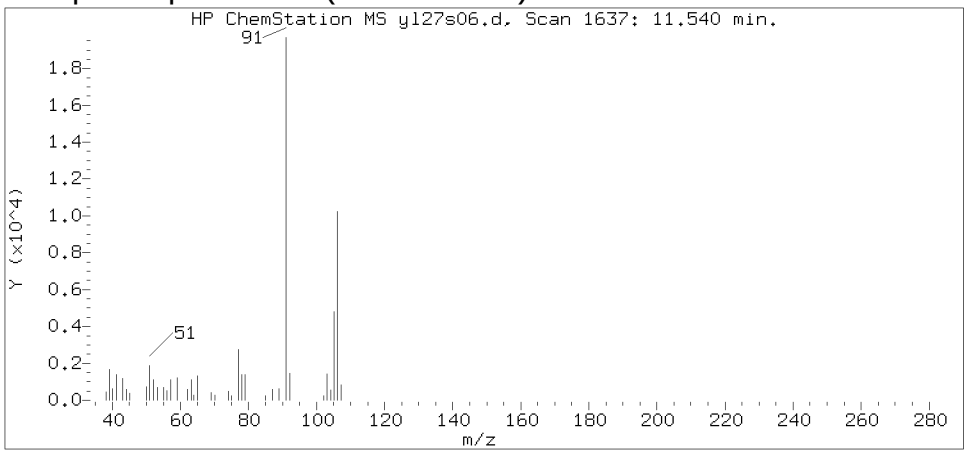
Reference Standard Spectrum for m+p-Xylene

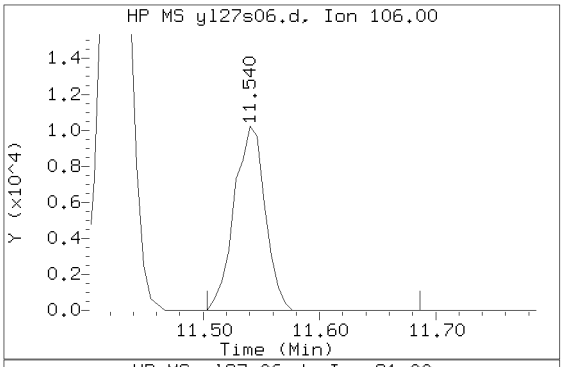


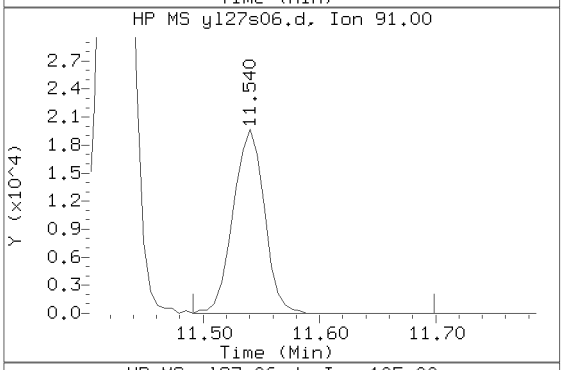

Sample Spectrum (Background Subtracted)

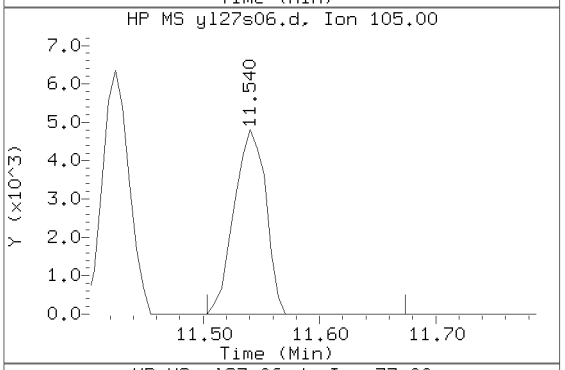


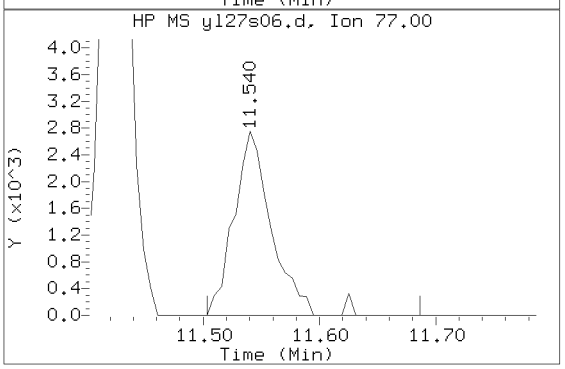

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul27a.b/yl27s06.d  Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:04  Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 12:19 Automation

Sample Name: 18801DL  Lab Sample ID: 9109771DL

Compound Number : 106
Compound Name : m+p-Xylene
Scan Number : 1637
Retention Time (minutes): 11.540
Relative Retention Time : 0.00000
Quant Ion : 106.00
Area (flag) : 18885
On-Column Amount (ng) : 1.1661

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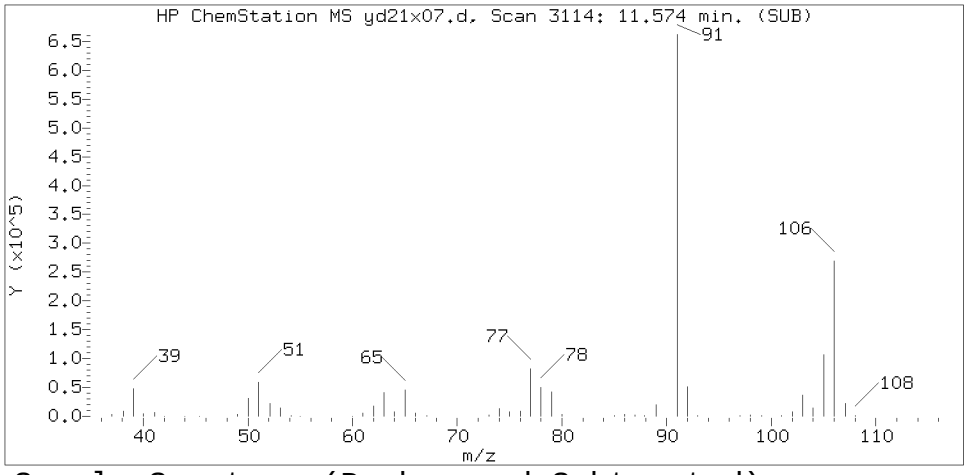
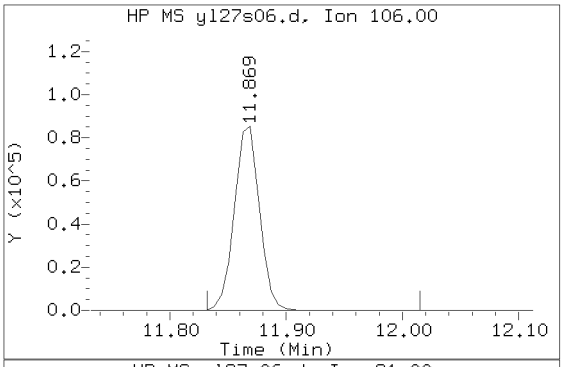
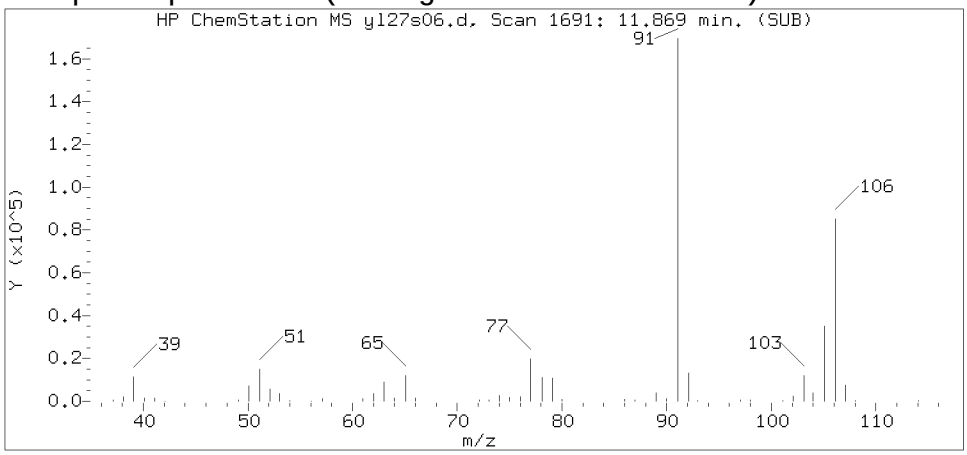
Target 3.5 esignature user ID: lcp00895

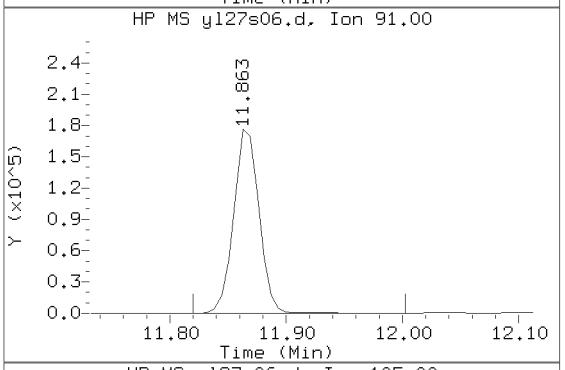
Reference Standard Spectrum for o-Xylene

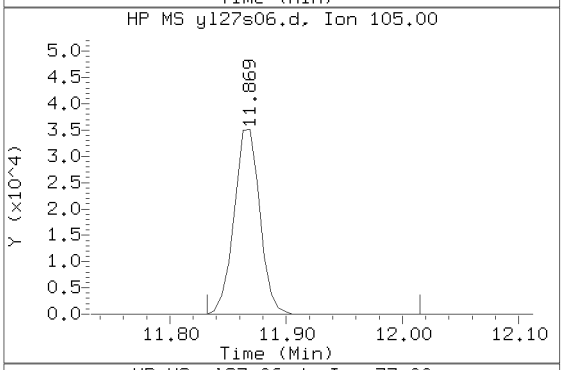


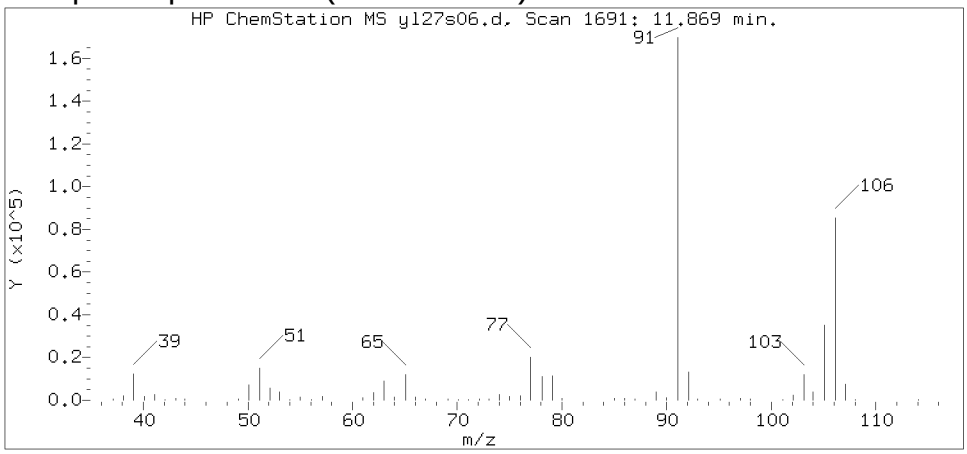

Sample Spectrum (Background Subtracted)

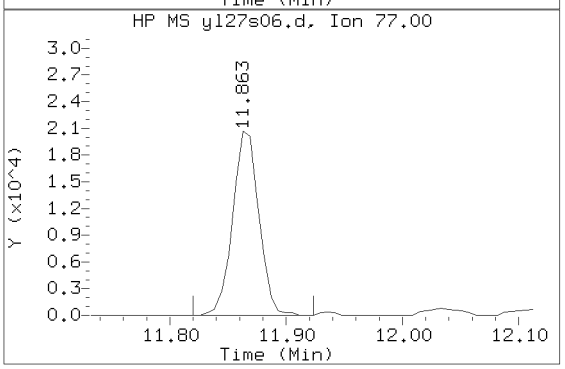



Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul27a.b/yl27s06.d  Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:04  Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 12:19 Automation

Sample Name: 18801DL  Lab Sample ID: 9109771DL

Compound Number : 107
Compound Name : o-Xylene
Scan Number : 1691
Retention Time (minutes): 11.869
Relative Retention Time : 0.00000
Quant Ion : 106.00
Area (flag) : 128342
On-Column Amount (ng) : 8.1353

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Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s76.d Injection date and time: **22-JUL-2017 02:35**
Data file Sample Info. Line: 18803;9109779;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.349(-0.030) | 455 | 65 | 203768 ( 22) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1701286 ( 37) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 1291327 ( 36) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 637659 ( 31) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.971(-0.001) | 113 | 386526 | 48.717 | 97% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.434(-0.001) | 102 | 100624 | 48.370 | 97% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1744822 | 52.299 | 105% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.001) | 95 | 647576 | 51.755 | 104% | | 85 - 114 |

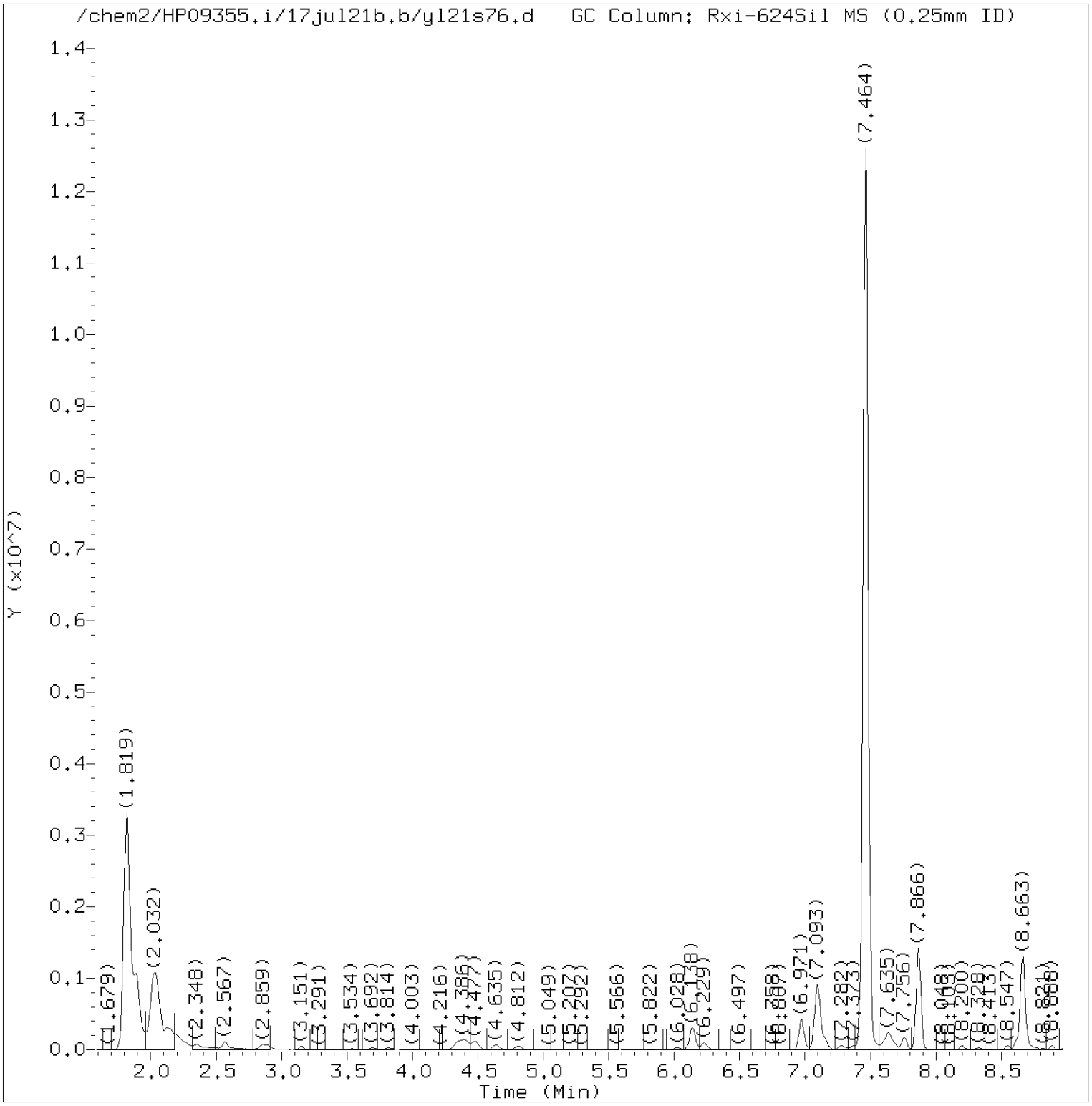
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.464(-0.000) | 78 | 15764360 | 463.590 | 463.59 | | E | 0.5 | 1 |
| 88) Toluene | (3) | 9.940( 0.000) | 92 | 100029 | 4.554 | 4.55 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.424( 0.000) | 91 | 2282635 | 54.022 | 54.02 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.540( 0.000) | 106 | 227024 | 13.494 | 13.49 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.863( 0.000) | 106 | 1634515 | 99.734 | 99.73 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 1861539 | 113.228 | 113.23 | | | 0.5 | 1 |

**E = Compound concentration above calibration range.**

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:57. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

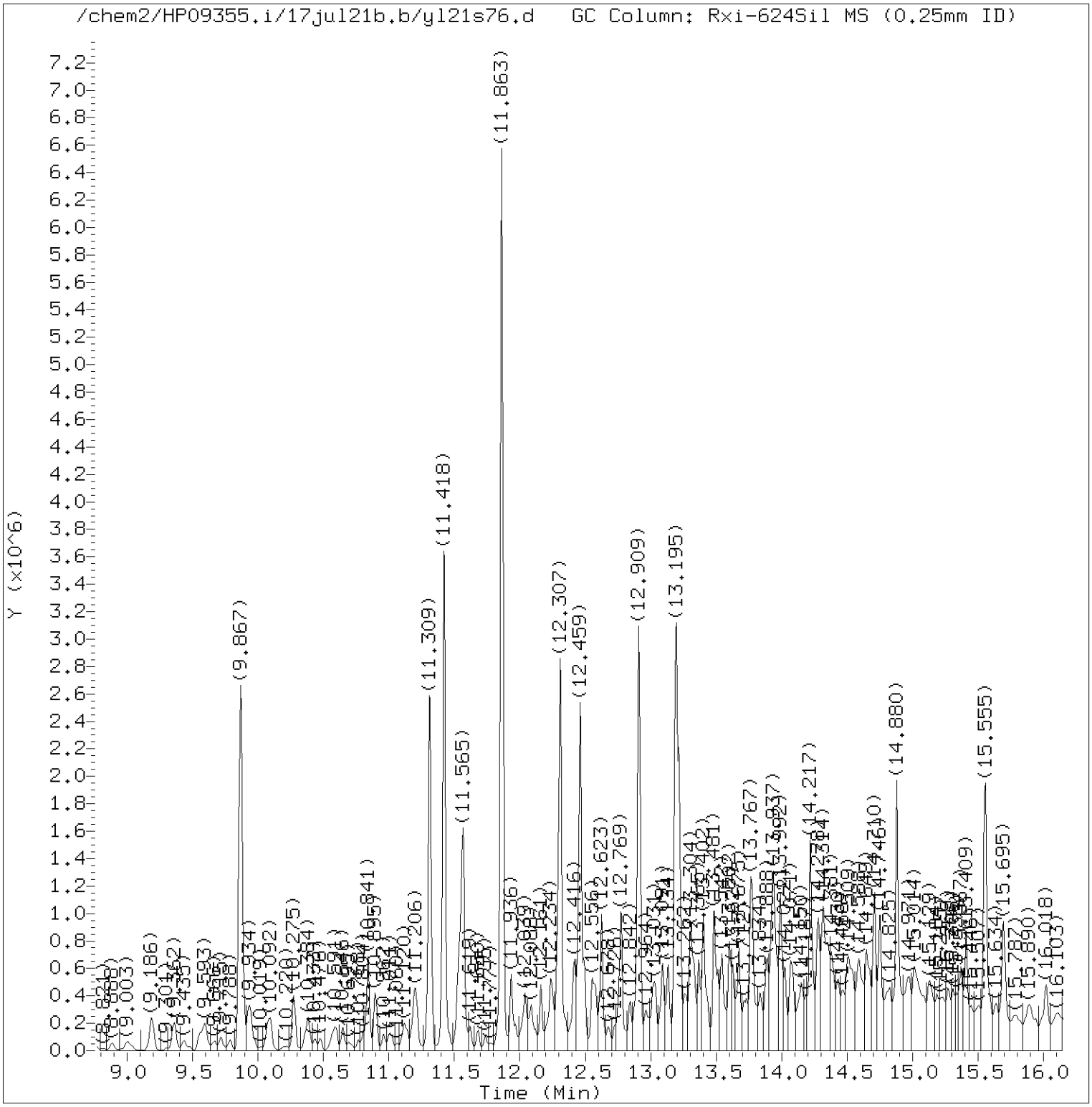
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s76.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:35 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

Sample Name: 18803 Lab Sample ID: 9109779

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:57.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s76.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:35 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

Sample Name: 18803 Lab Sample ID: 9109779

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:57.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s76.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:35 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

Sample Name: 18803 Lab Sample ID: 9109779

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.349 | 65 | 203768 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 386526 | 48.717 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 102 | 100624 | 48.370 |
| 60) Benzene | (2) | 7.464 | 78 | 15764360 | 463.590 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1701286 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1744822 | 52.299 |
| 88) Toluene | (3) | 9.940 | 92 | 100029 | 4.554 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1291327 | 50.000 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 2282635 | 54.022 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 227024 | 13.494 |
| 108) Xylene (Total) | (3) | | 106 | 1861539 | 113.228 |
| 107) o-Xylene | (3) | 11.863 | 106 | 1634515 | 99.734 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 647576 | 51.755 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 637659 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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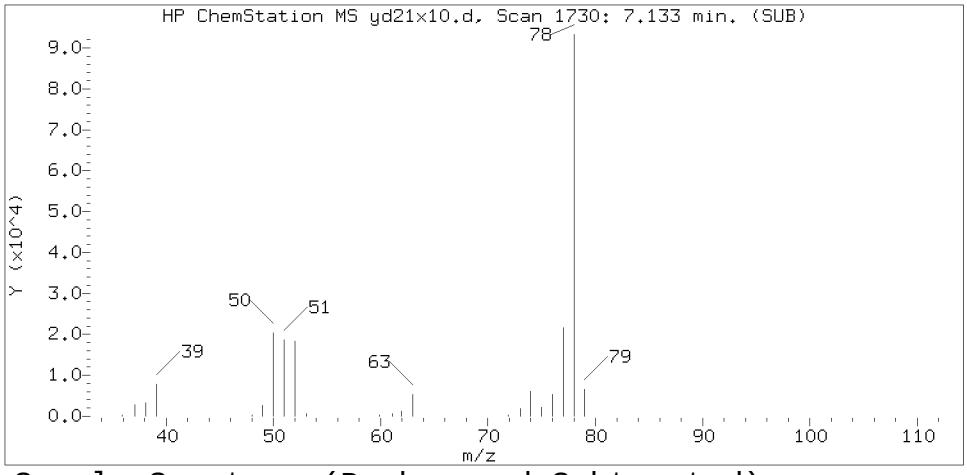
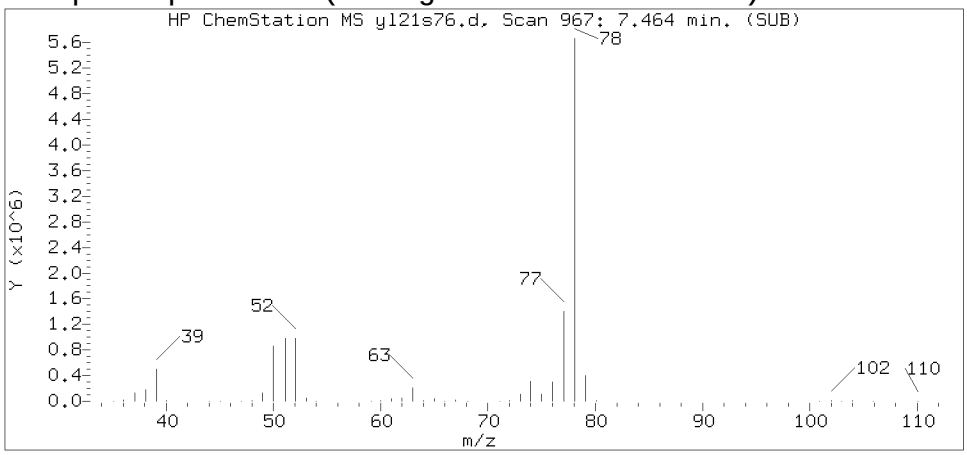
on 07/24/2017 at 10:57.
Target 3.5 esignature user ID: lcp00895

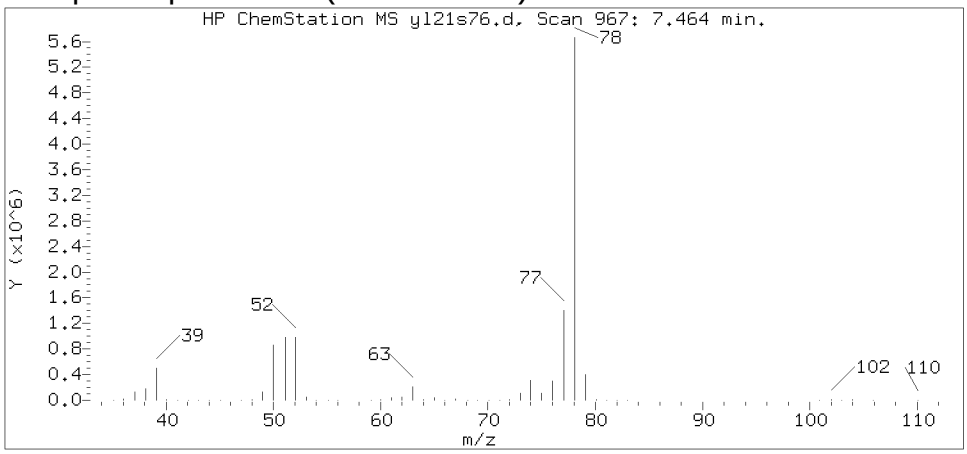
Reference Standard Spectrum for Benzene

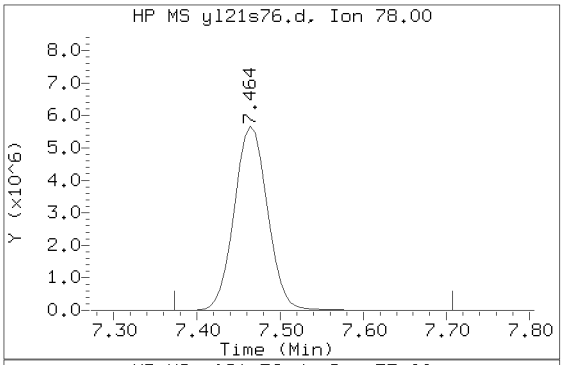


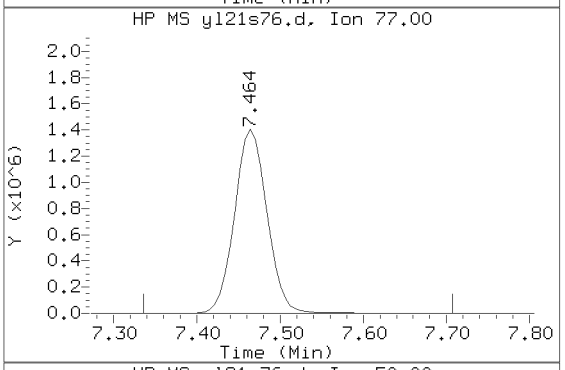

Sample Spectrum (Background Subtracted)

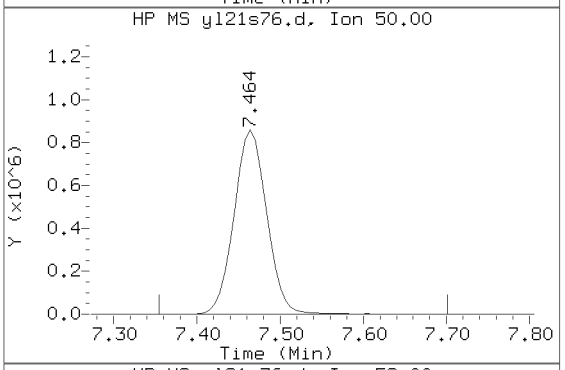


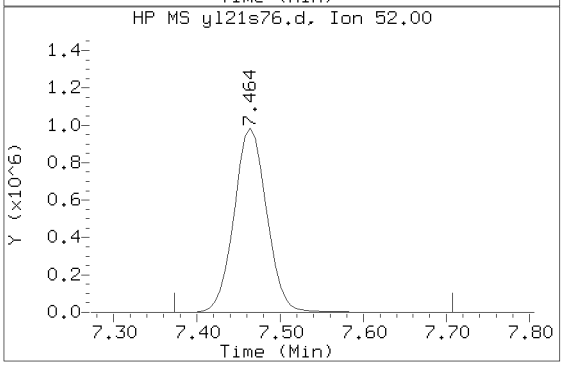

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s76.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:35  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

Sample Name: 18803  Lab Sample ID: 9109779

Compound Number : 60
Compound Name : Benzene
Scan Number : 967
Retention Time (minutes): 7.464
Relative Retention Time :-0.00004
Quant Ion : 78.00
Area (flag) : 15764360
On-Column Amount (ng) : 463.5899

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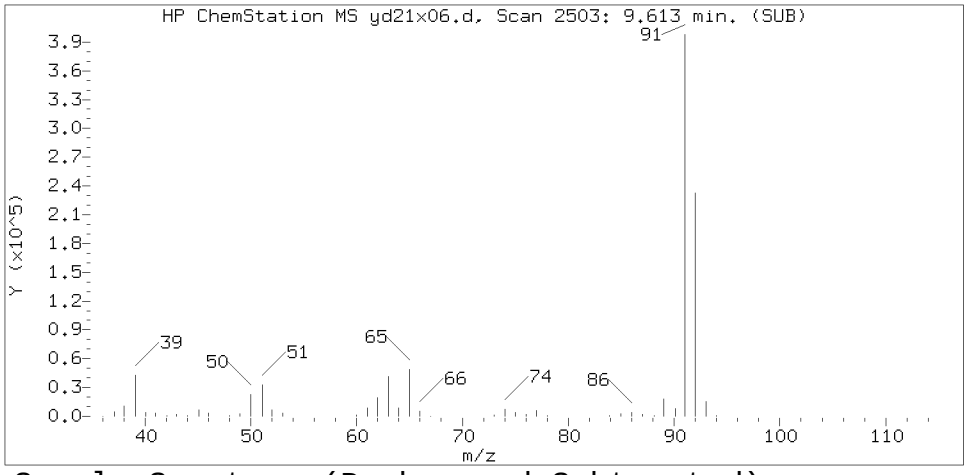
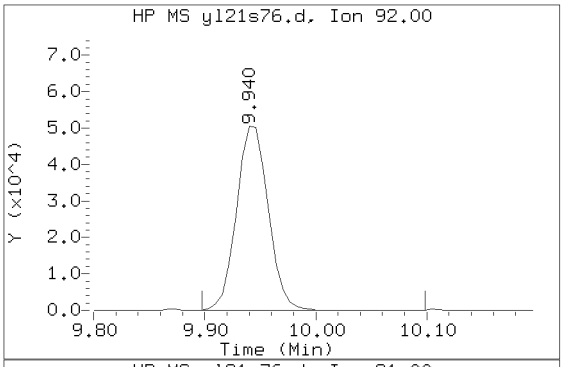
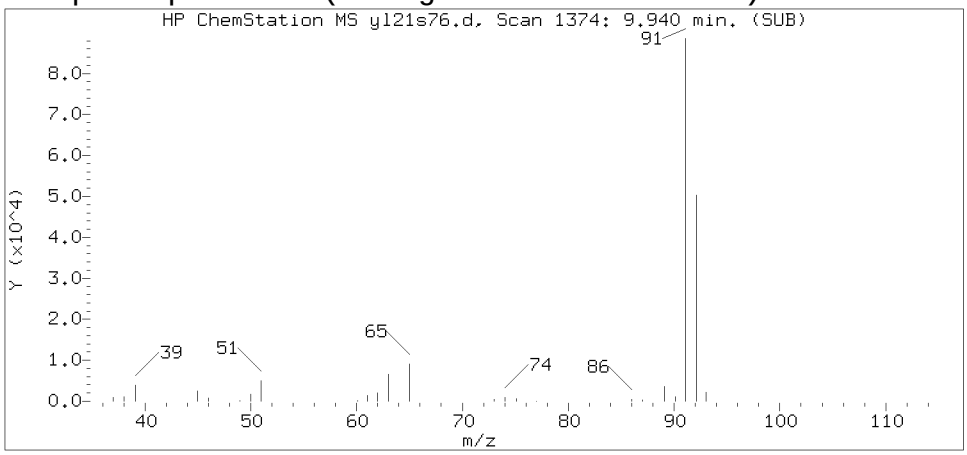
Target 3.5 esignature user ID: lcp00895

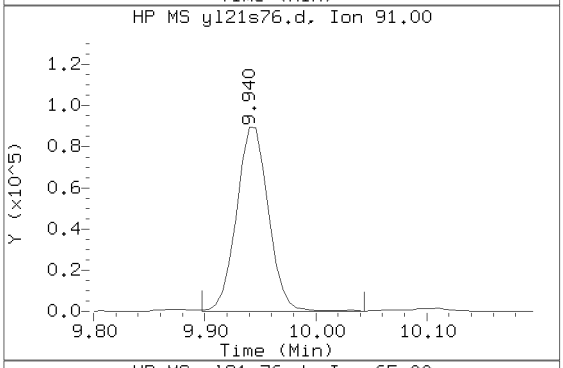
Reference Standard Spectrum for Toluene



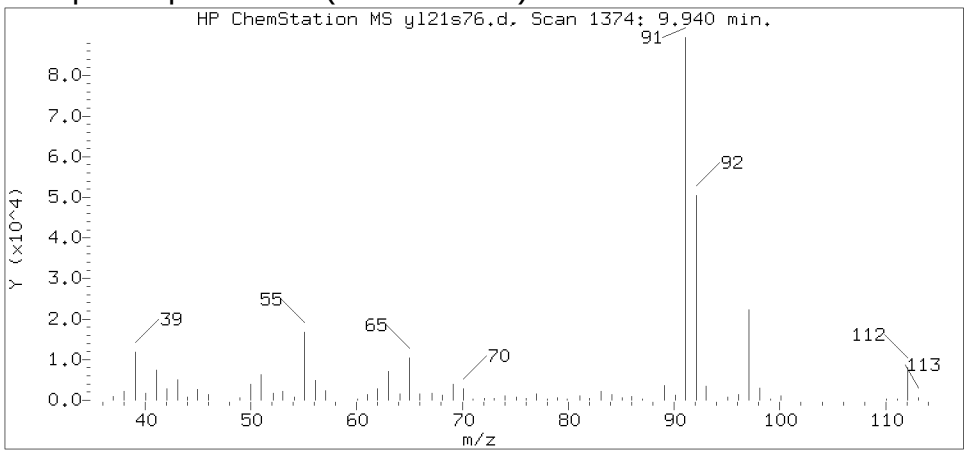



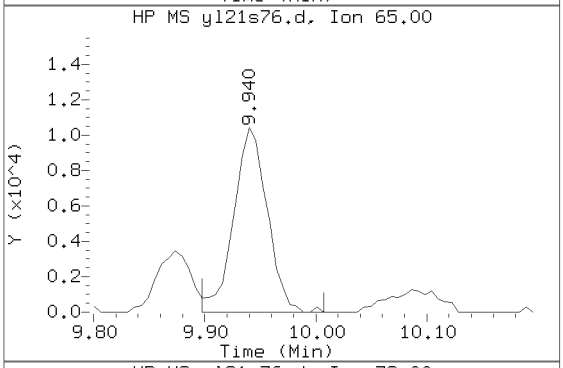

Sample Spectrum (Background Subtracted)

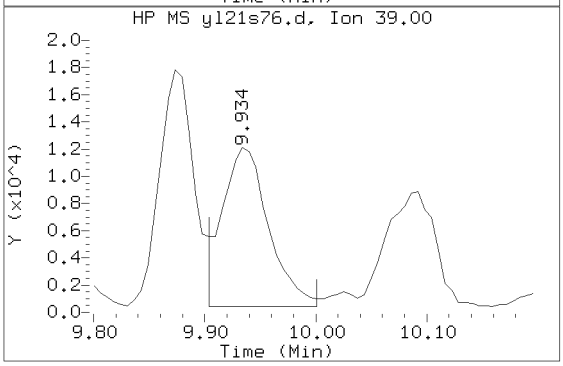



Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s76.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:35 Analyst ID: pth10165

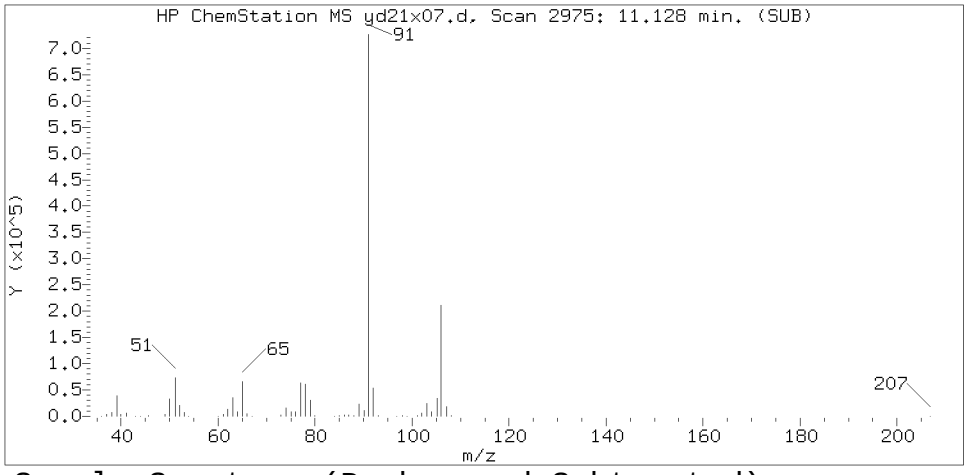
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

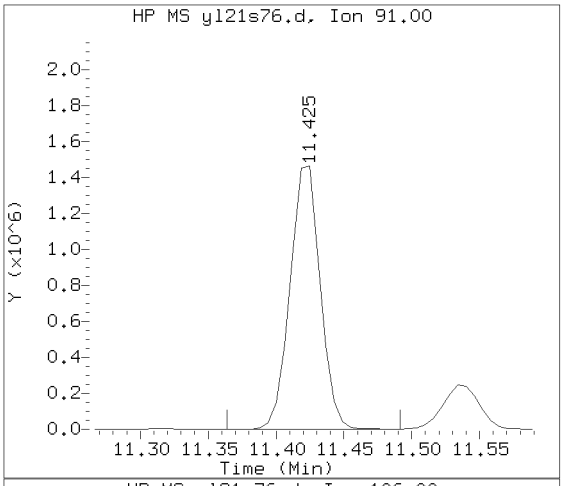
Sample Name: 18803 Lab Sample ID: 9109779

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 1374 |
| Retention Time (minutes) | : 9.940 |
| Relative Retention Time | : 0.00047 |
| Quant Ion | : 92.00 |
| Area (flag) | : 100029 |
| On-Column Amount (ng) | : 4.5539 |

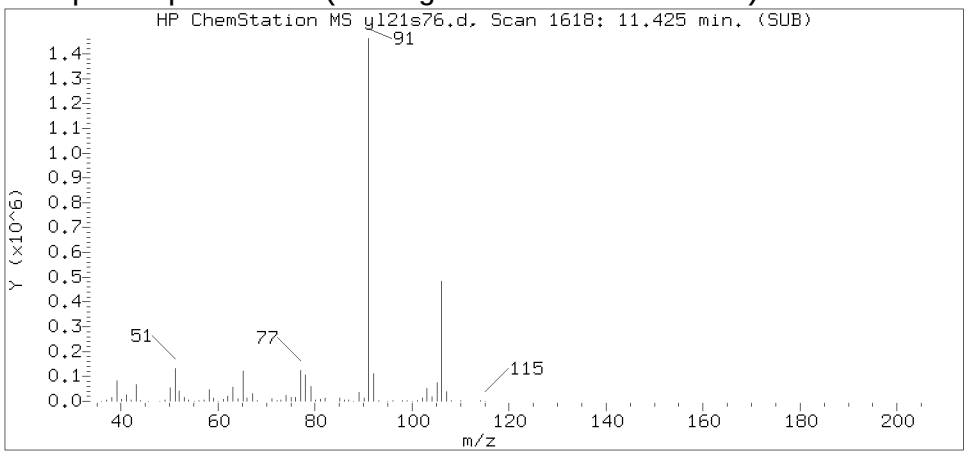
Digitally signed by Linda C. Pape on 07/24/2017 at 10:57.
Target 3.5 esignature user ID: lcp00895

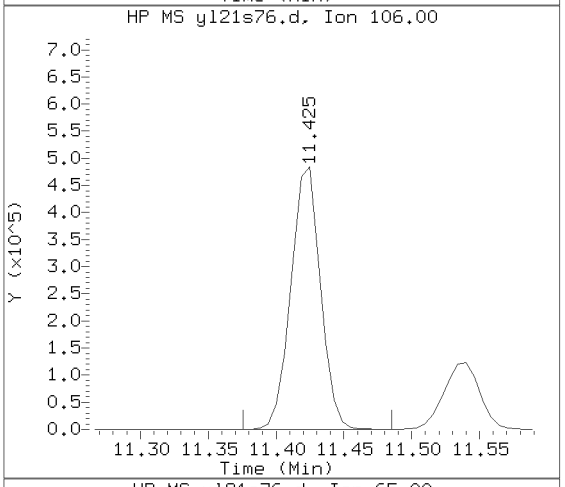
Reference Standard Spectrum for Ethylbenzene



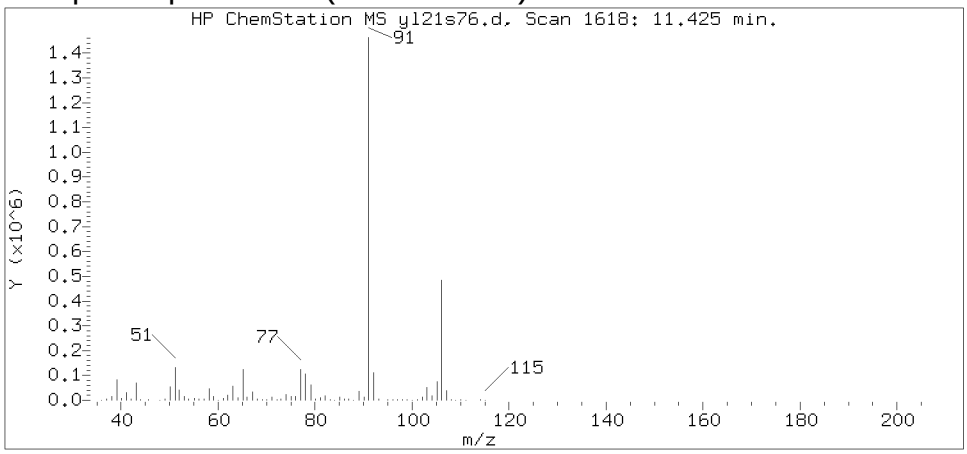



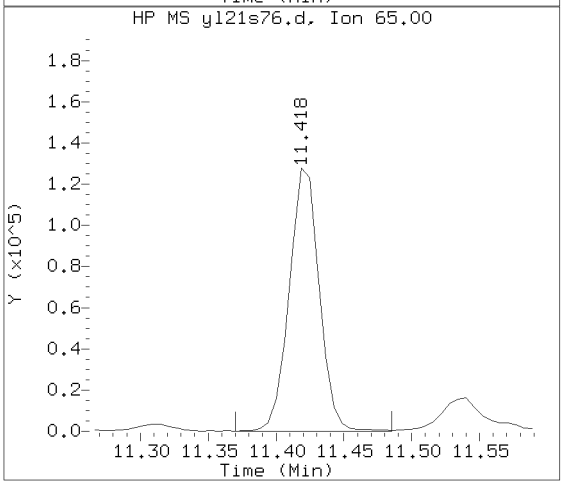

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s76.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:35 Analyst ID: pth10165

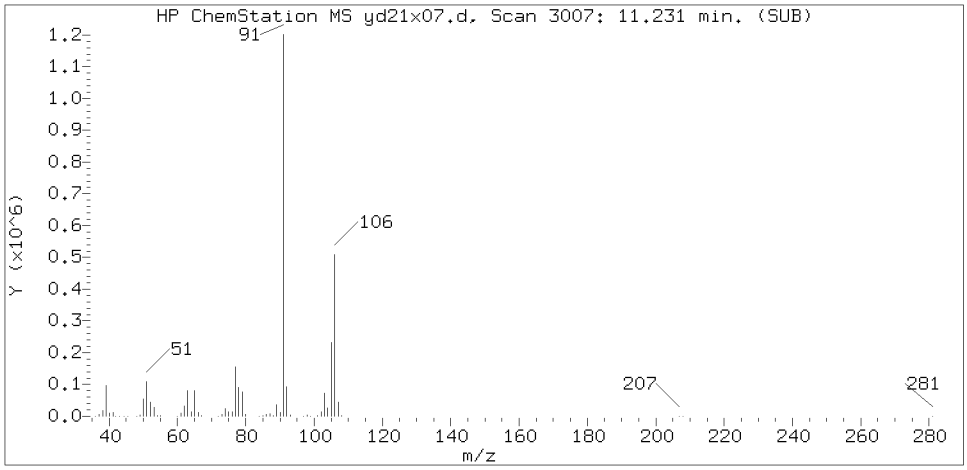
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

Sample Name: 18803 Lab Sample ID: 9109779

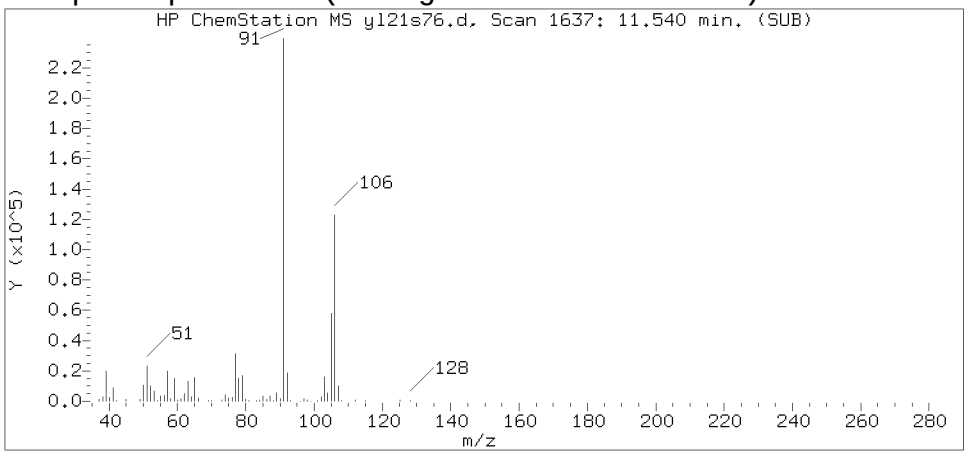
Compound Number : 104
Compound Name : Ethylbenzene
Scan Number : 1618
Retention Time (minutes): 11.425
Relative Retention Time : 0.00001
Quant Ion : 91.00
Area (flag) : 2282635
On-Column Amount (ng) : 54.0218

Digitally signed by Linda C. Pape on 07/24/2017 at 10:57.
Target 3.5 esignature user ID: lcp00895

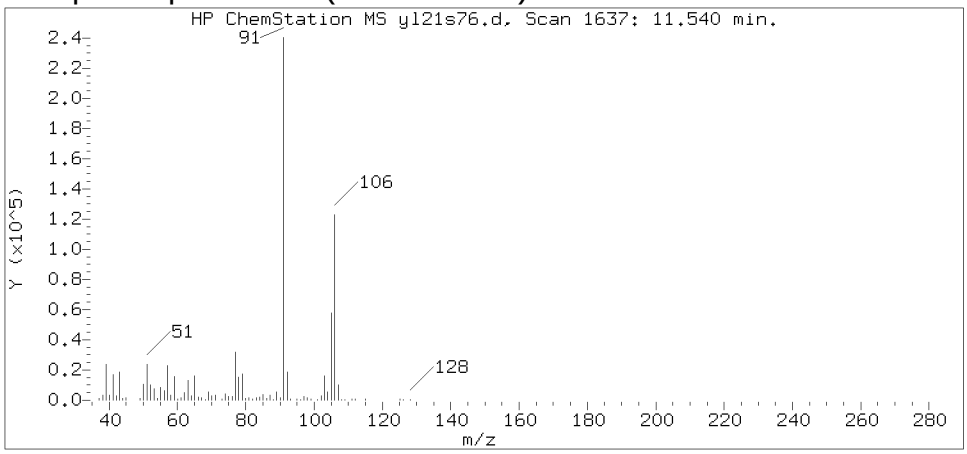
Reference Standard Spectrum for m+p-Xylene

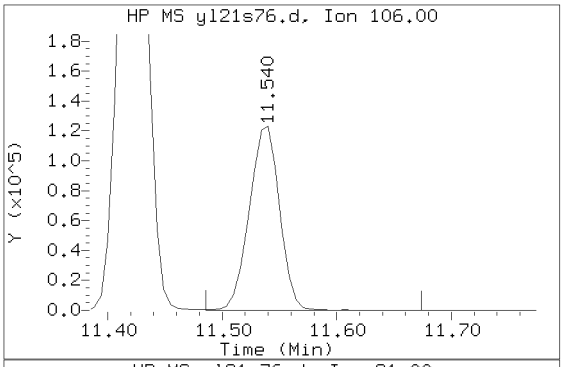


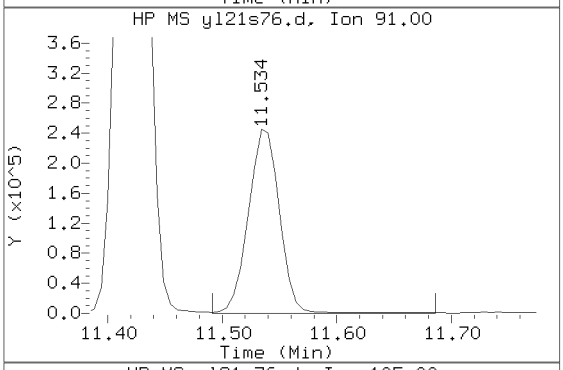

Sample Spectrum (Background Subtracted)

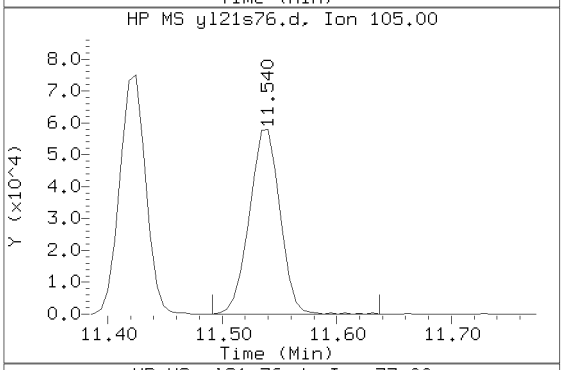


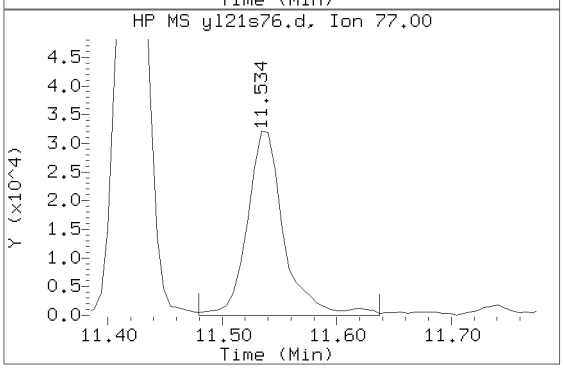

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s76.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:35  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

Sample Name: 18803  Lab Sample ID: 9109779

| | |
|---|---|
| Compound Number | : 106 |
| Compound Name | : m+p-Xylene |
| Scan Number | : 1637 |
| Retention Time (minutes) | : 11.540 |
| Relative Retention Time | : 0.00001 |
| Quant Ion | : 106.00 |
| Area (flag) | : 227024 |
| On-Column Amount (ng) | : 13.4938 |

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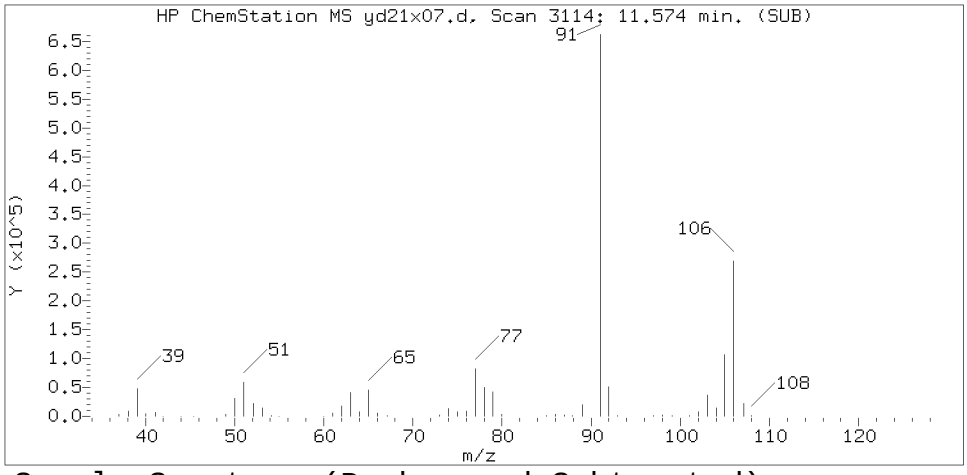
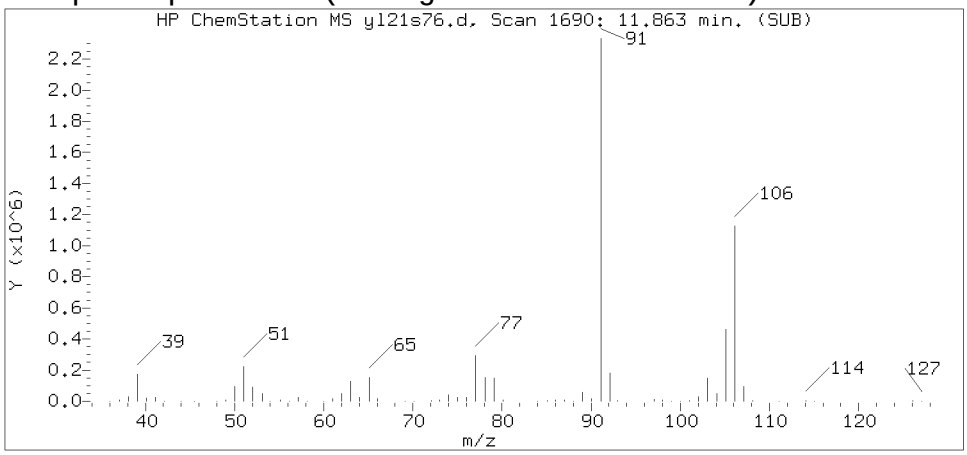
Target 3.5 esignature user ID: lcp00895

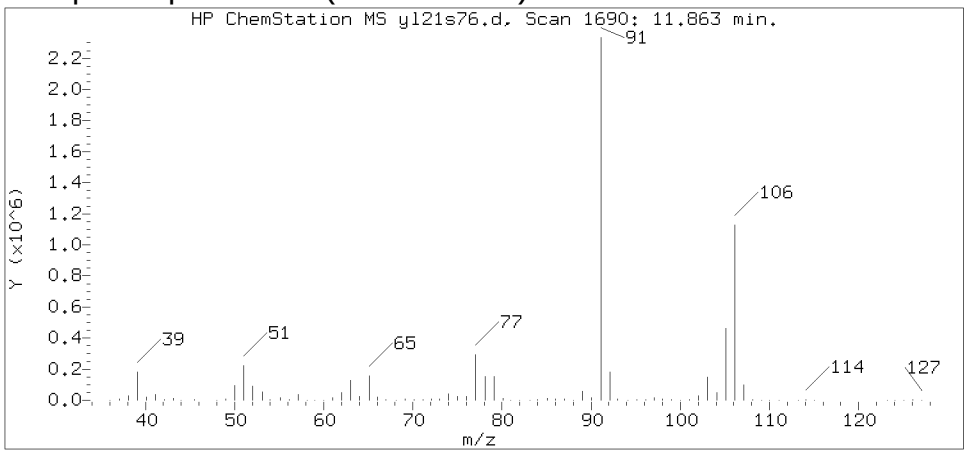
Reference Standard Spectrum for o-Xylene

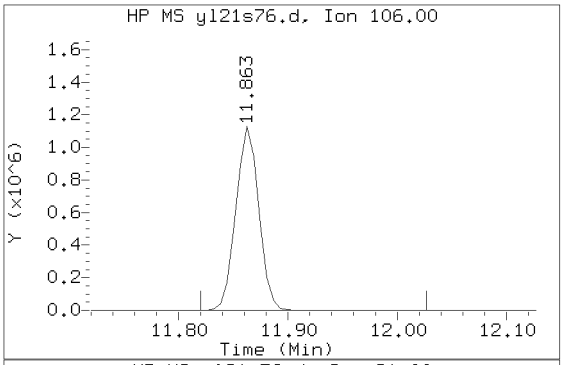


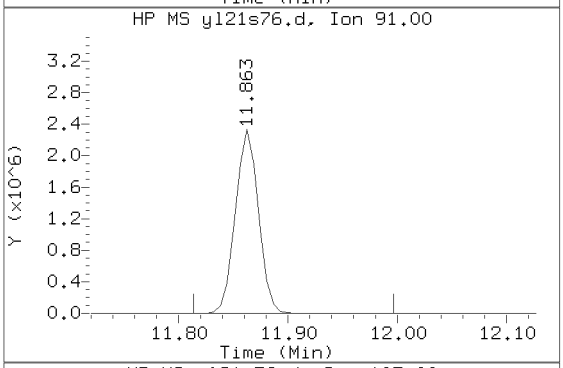

Sample Spectrum (Background Subtracted)

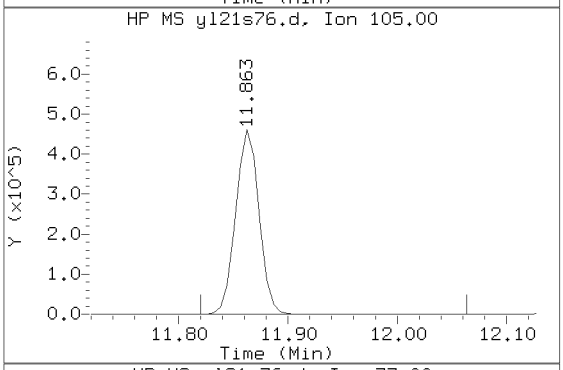


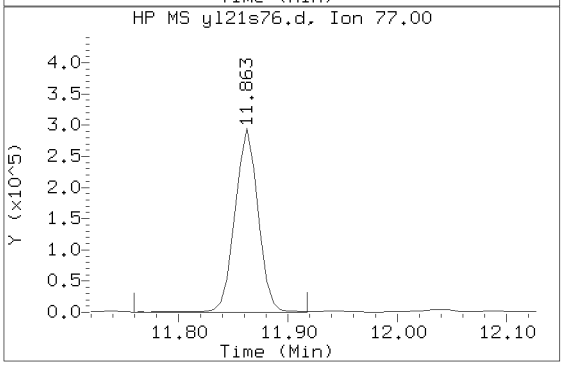

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s76.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:35  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:51 Automation

Sample Name: 18803  Lab Sample ID: 9109779

Compound Number : 107
Compound Name : o-Xylene
Scan Number : 1690
Retention Time (minutes): 11.863
Relative Retention Time : 0.00056
Quant Ion : 106.00
Area (flag) : 1634515
On-Column Amount (ng) : 99.7337

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Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s77.d Injection date and time: **22-JUL-2017 02:57**
Data file Sample Info. Line: 18803DL;9109779DL;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 03:13 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **10.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 0.5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.331(-0.012) | 452 | 65 | 231019 ( 38) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1641495 ( 32) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1224682 ( 29) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.189( 0.000) | 1908 | 152 | 604110 ( 24) | 50.00 | |

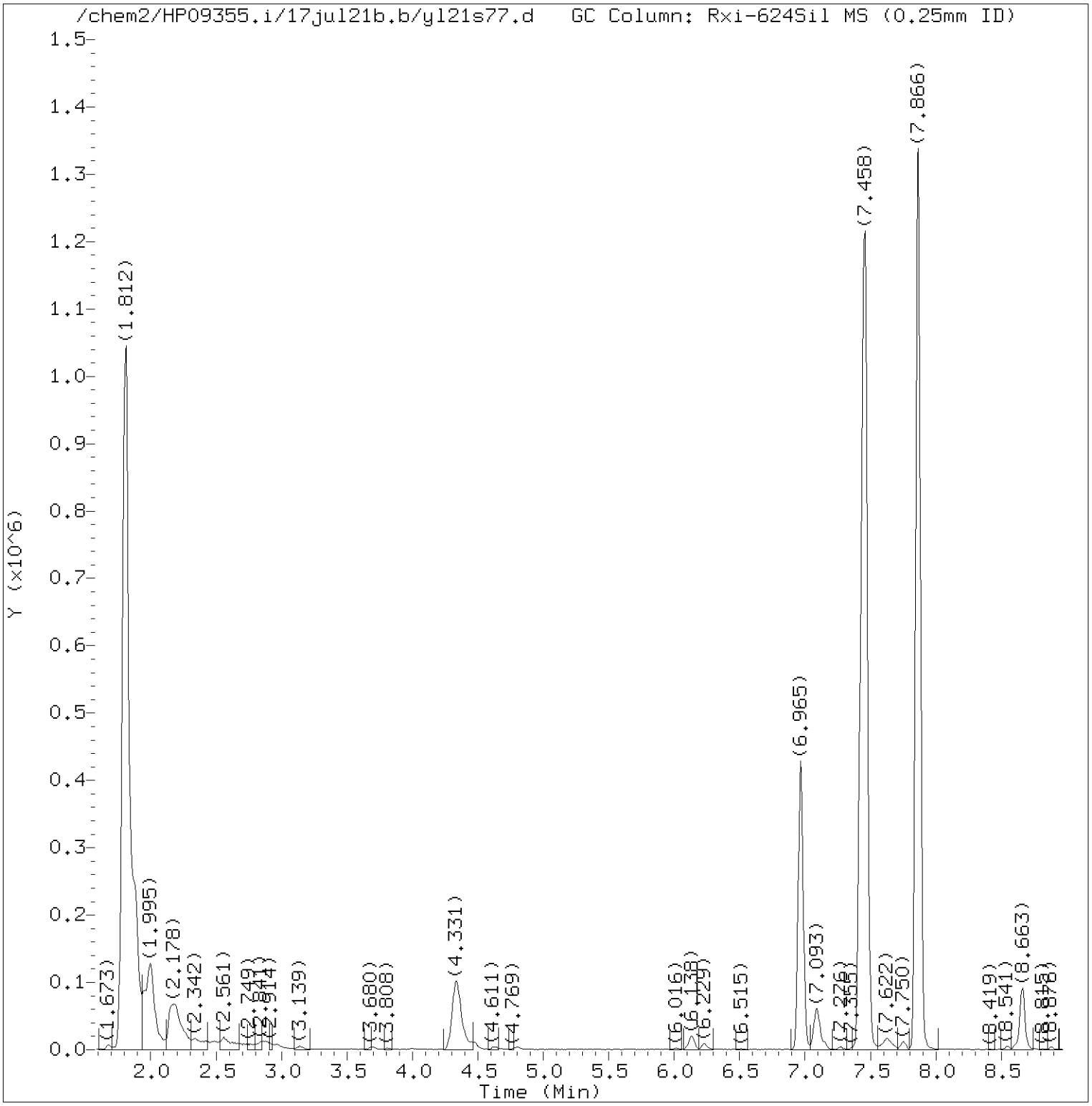
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.965( 0.000) | 113 | 378225 | 49.407 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428( 0.000) | 102 | 98297 | 48.972 | 98% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867(-0.001) | 98 | 1625543 | 51.375 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 617811 | 52.063 | 104% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.458( 0.000) | 78 | 1375536 | 41.924 | 419.24 | | | 5 | 10 |
| 88) Toluene | (3) | | | Not Detected | | | | | 5 | 10 |
| 104) Ethylbenzene | (3) | 11.418( 0.000) | 91 | 172324 | 4.300 | 43.00 | | | 5 | 10 |
| 106) m+p-Xylene | (3) | 11.534( 0.000) | 106 | 16898 | 1.059 | 10.59 | | | 5 | 10 |
| 107) o-Xylene | (3) | 11.862( 0.000) | 106 | 122371 | 7.873 | 78.73 | | | 5 | 10 |
| 108) Xylene (Total) | (3) | | 106 | 139269 | 8.932 | 89.32 | | | 5 | 10 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:58. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

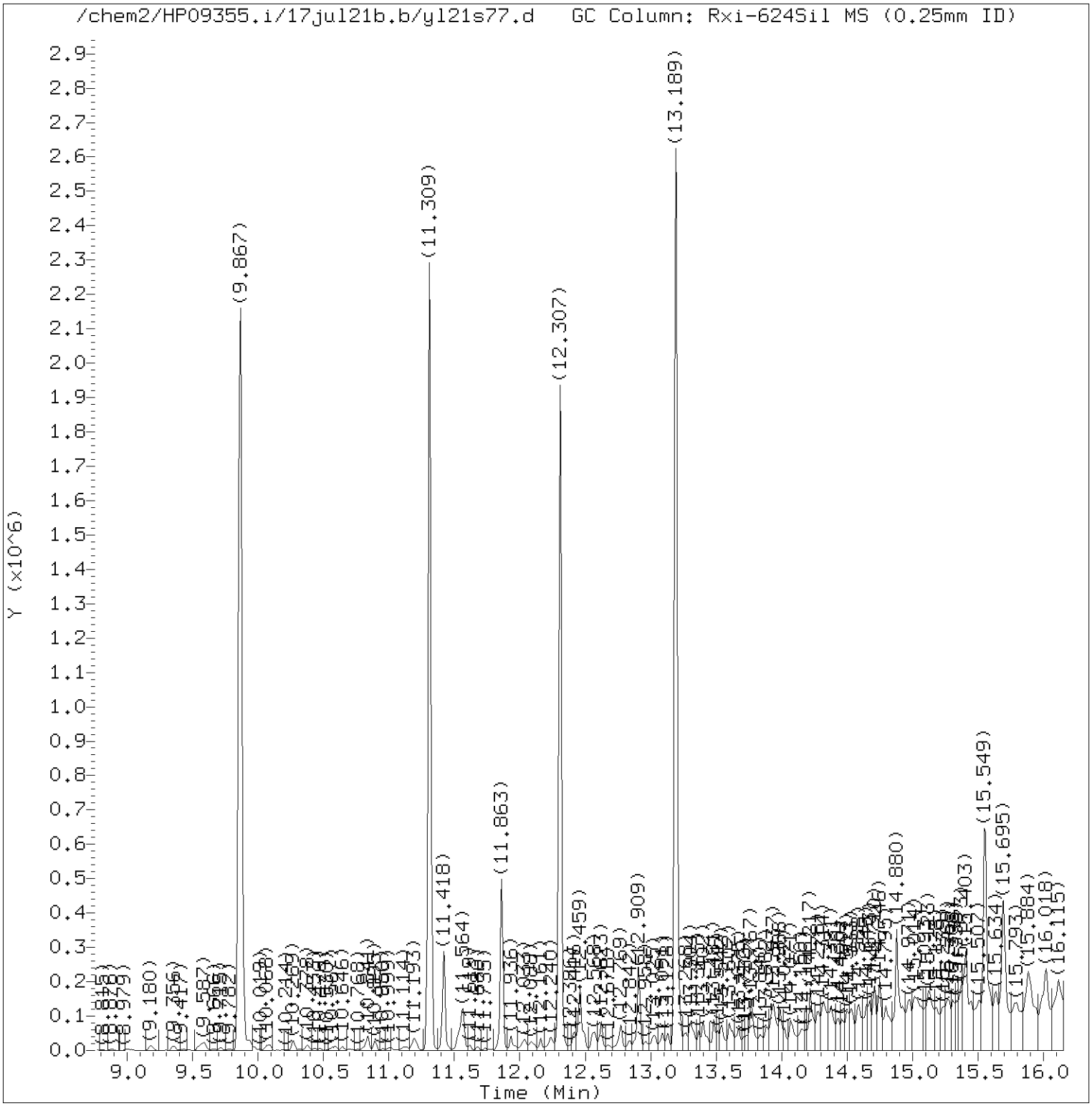
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s77.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:57 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:13 Automation

Sample Name: 18803DL Lab Sample ID: 9109779DL

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s77.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:57 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:13 Automation

Sample Name: 18803DL Lab Sample ID: 9109779DL

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s77.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:57 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:13 Automation

Sample Name: 18803DL Lab Sample ID: 9109779DL

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.331 | 65 | 231019 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 378225 | 49.407 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 98297 | 48.972 |
| 60) Benzene | (2) | 7.458 | 78 | 1375536 | 41.924 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1641495 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1625543 | 51.375 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1224682 | 50.000 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 172324 | 4.300 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 16898 | 1.059 |
| 108) Xylene (Total) | (3) | | 106 | 139269 | 8.932 |
| 107) o-Xylene | (3) | 11.863 | 106 | 122371 | 7.873 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 617811 | 52.063 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 604110 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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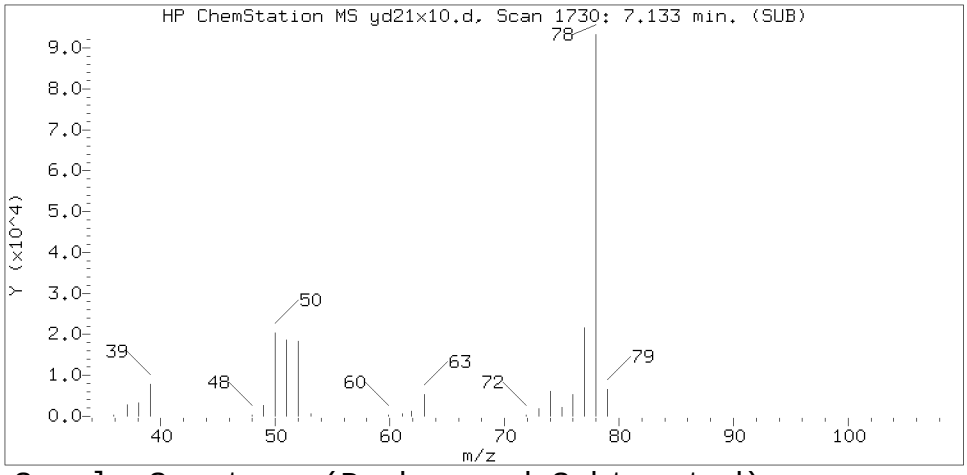
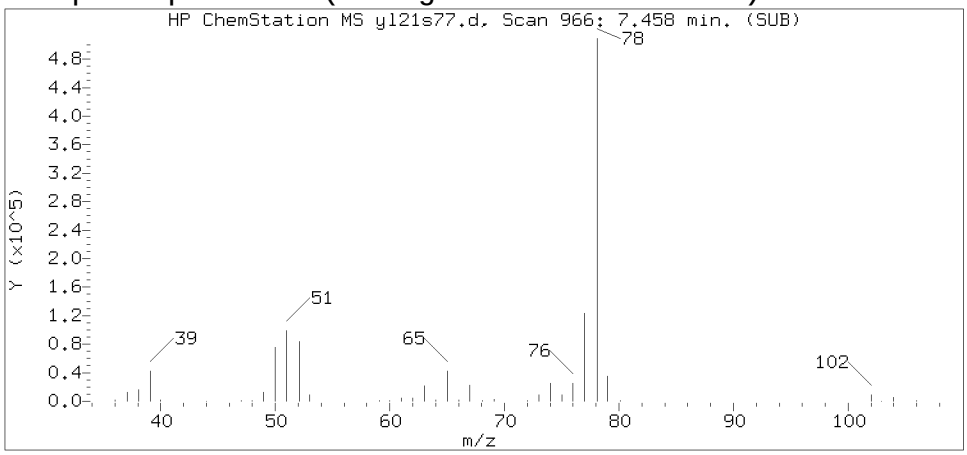
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

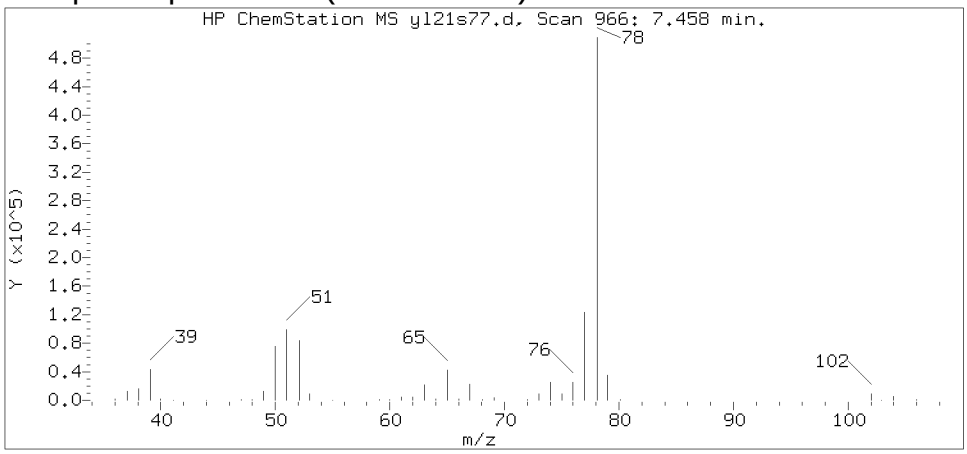
Reference Standard Spectrum for Benzene

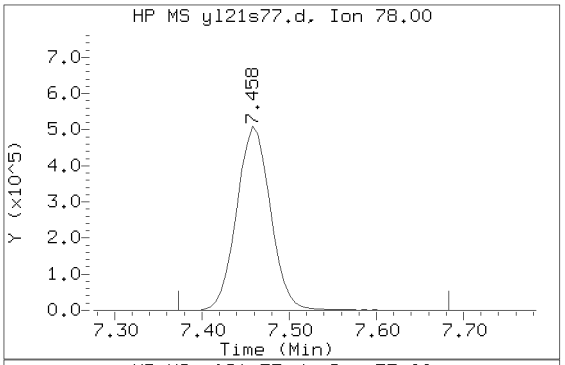


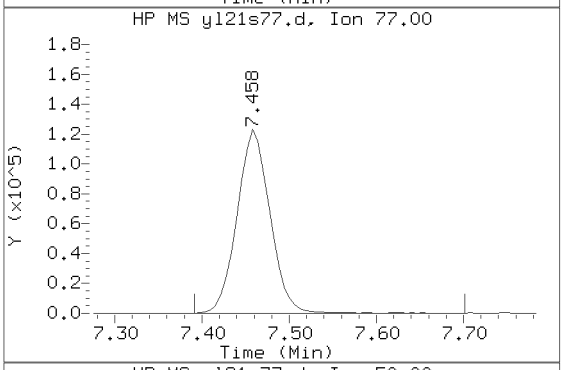

Sample Spectrum (Background Subtracted)

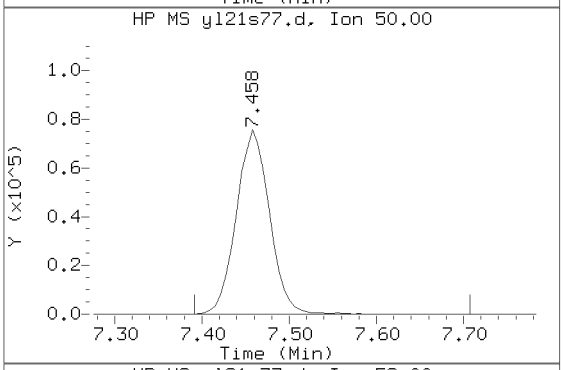


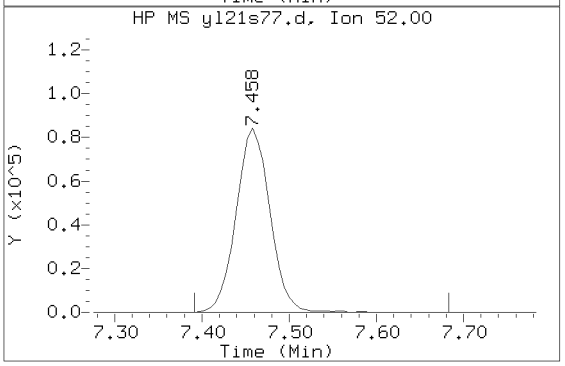

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s77.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:57  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:13 Automation

Sample Name: 18803DL  Lab Sample ID: 9109779DL

| | |
|---|---|
| Compound Number | : 60 |
| Compound Name | : Benzene |
| Scan Number | : 966 |
| Retention Time (minutes) | : 7.458 |
| Relative Retention Time | : 0.00073 |
| Quant Ion | : 78.00 |
| Area (flag) | : 1375536 |
| On-Column Amount (ng) | : 41.9245 |

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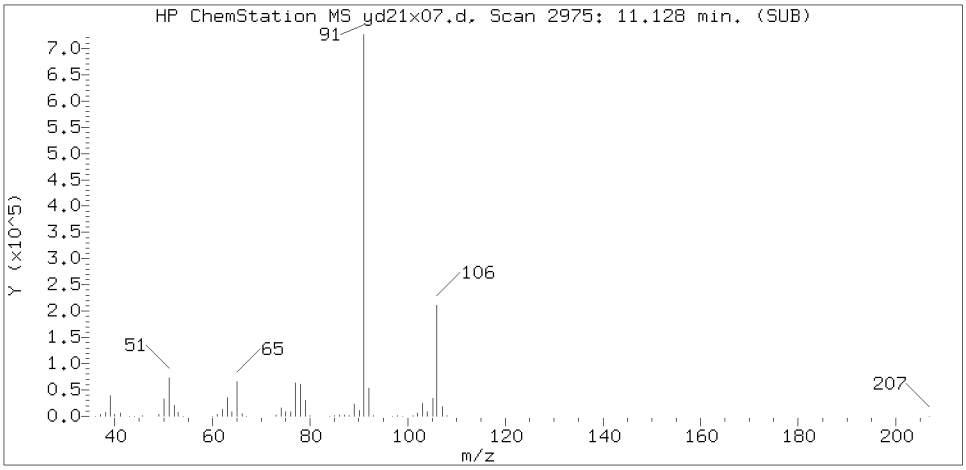
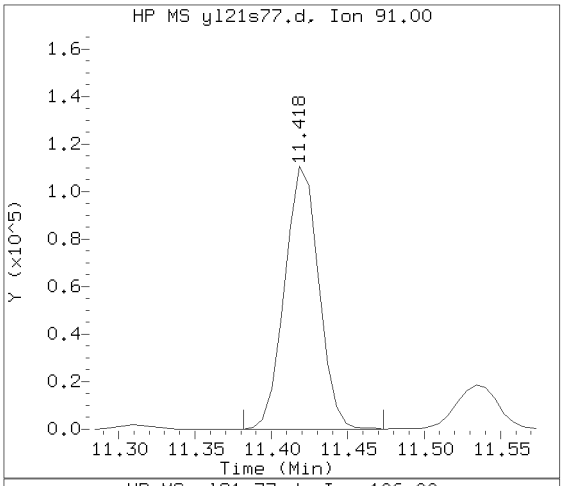
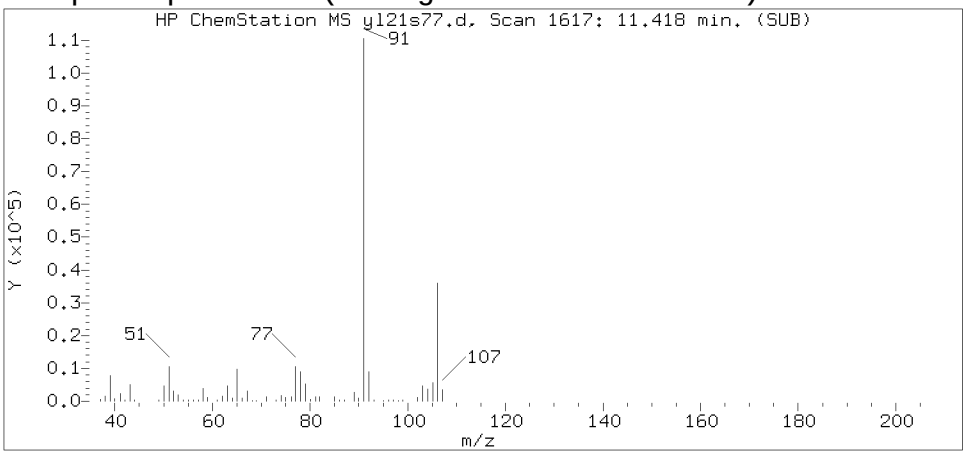
Target 3.5 esignature user ID: lcp00895

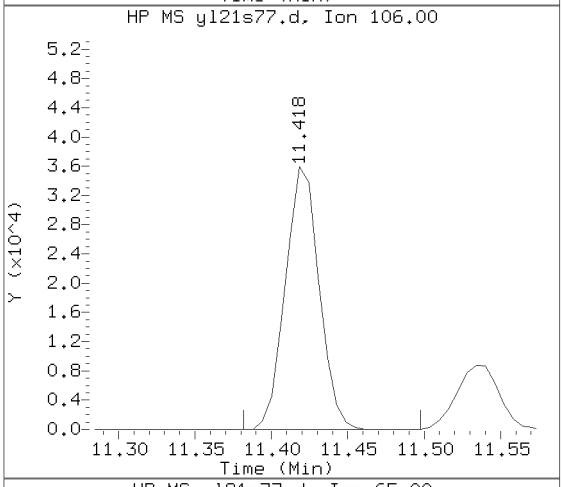
Reference Standard Spectrum for Ethylbenzene



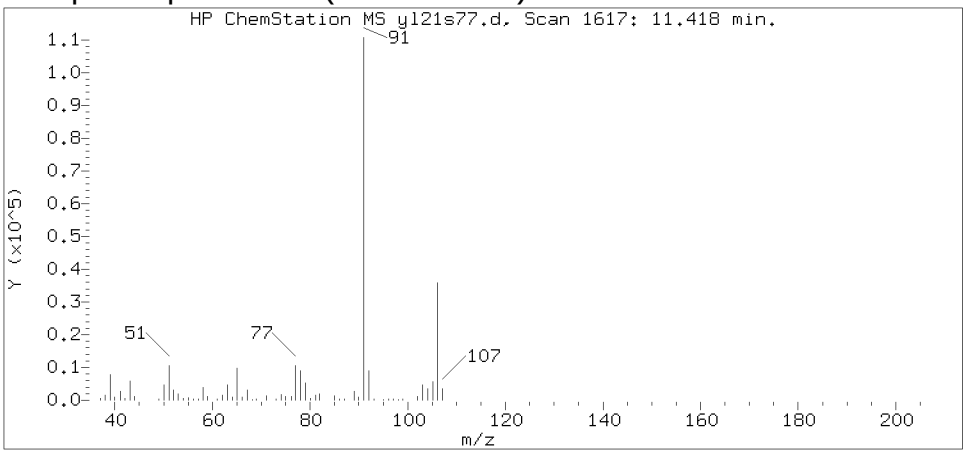



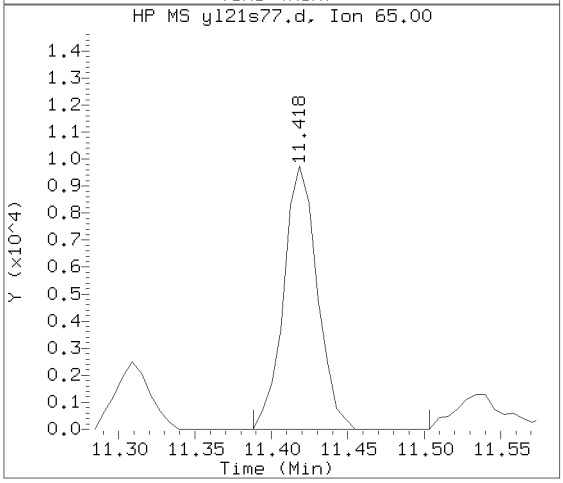

Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s77.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:57 Analyst ID: pth10165

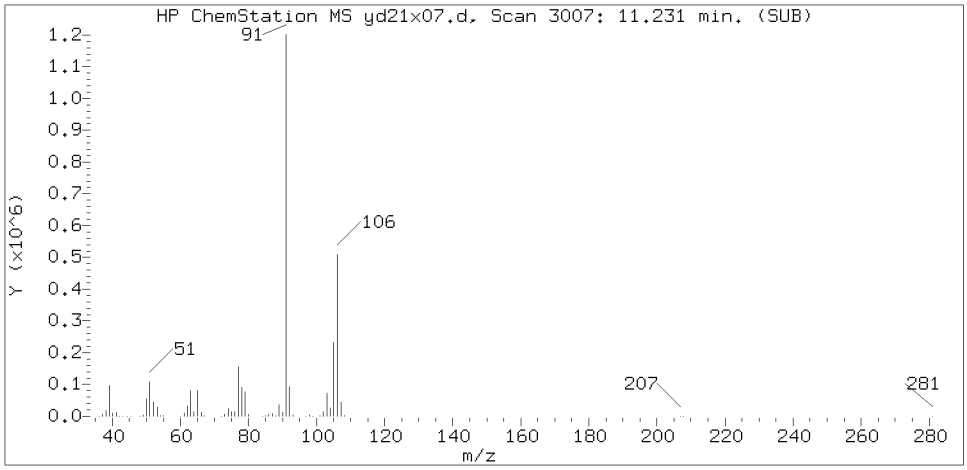
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:13 Automation

Sample Name: 18803DL Lab Sample ID: 9109779DL

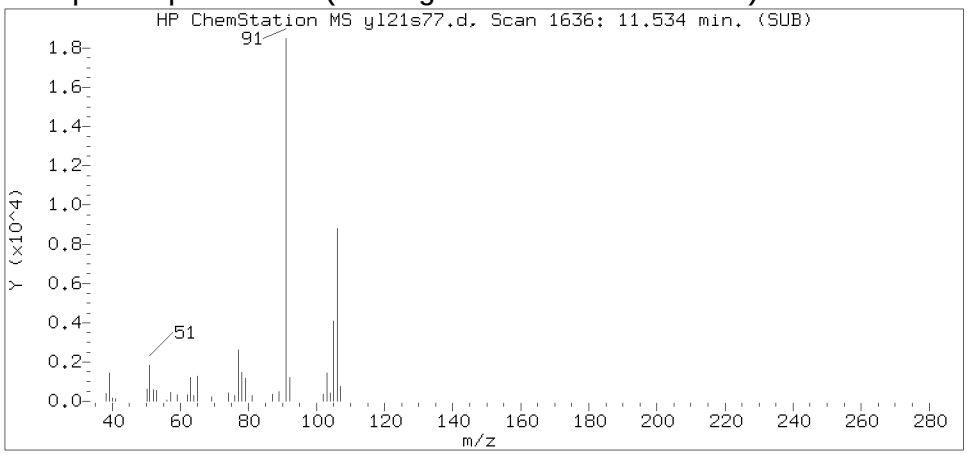
Compound Number : 104
Compound Name : Ethylbenzene
Scan Number : 1617
Retention Time (minutes): 11.418
Relative Retention Time : 0.00000
Quant Ion : 91.00
Area (flag) : 172324
On-Column Amount (ng) : 4.3002

Digitally signed by Linda C. Pape on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

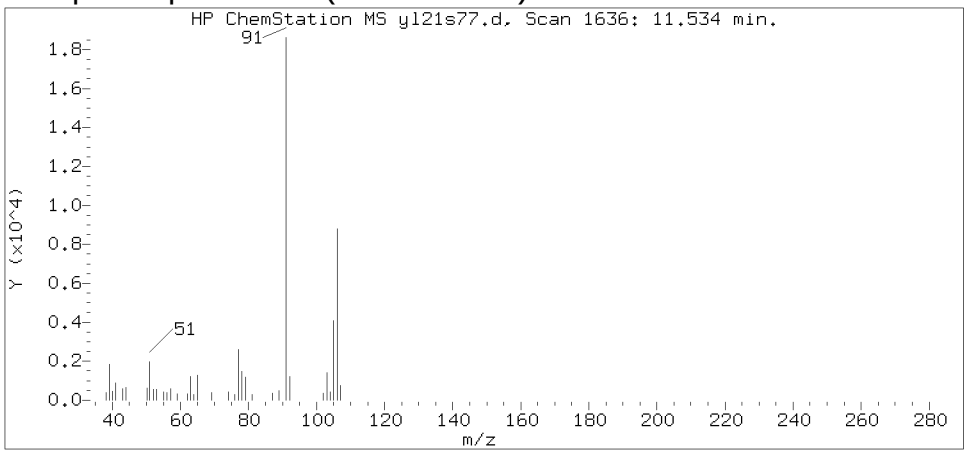
Reference Standard Spectrum for m+p-Xylene

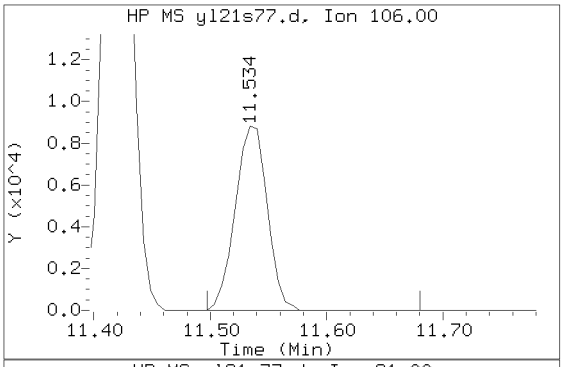


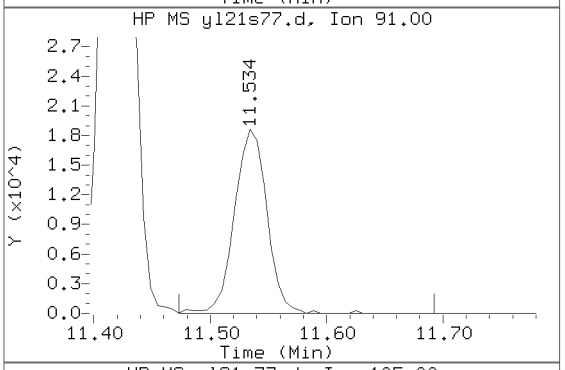

Sample Spectrum (Background Subtracted)

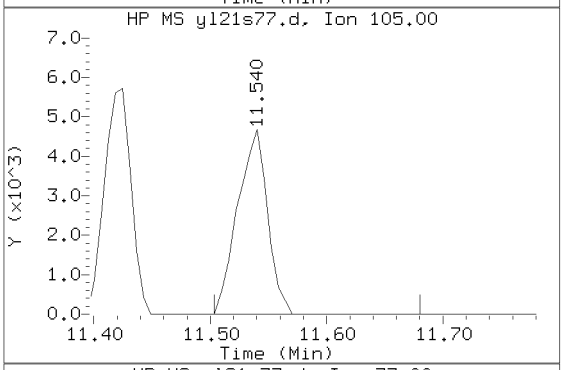


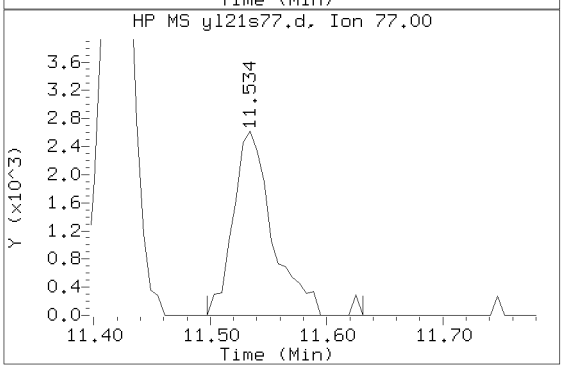

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s77.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:57  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:13 Automation

Sample Name: 18803DL  Lab Sample ID: 9109779DL

Compound Number : 106
Compound Name : m+p-Xylene
Scan Number : 1636
Retention Time (minutes): 11.534
Relative Retention Time : 0.00000
Quant Ion : 106.00
Area (flag) : 16898
On-Column Amount (ng) : 1.0591

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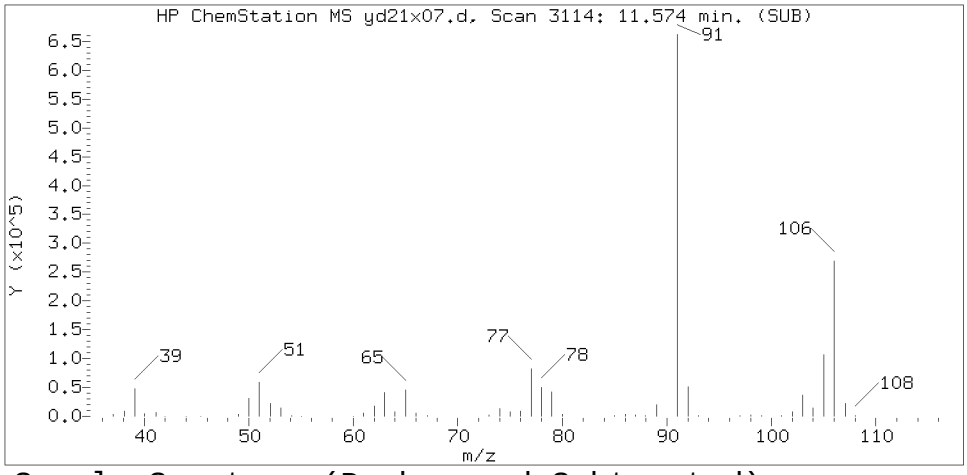
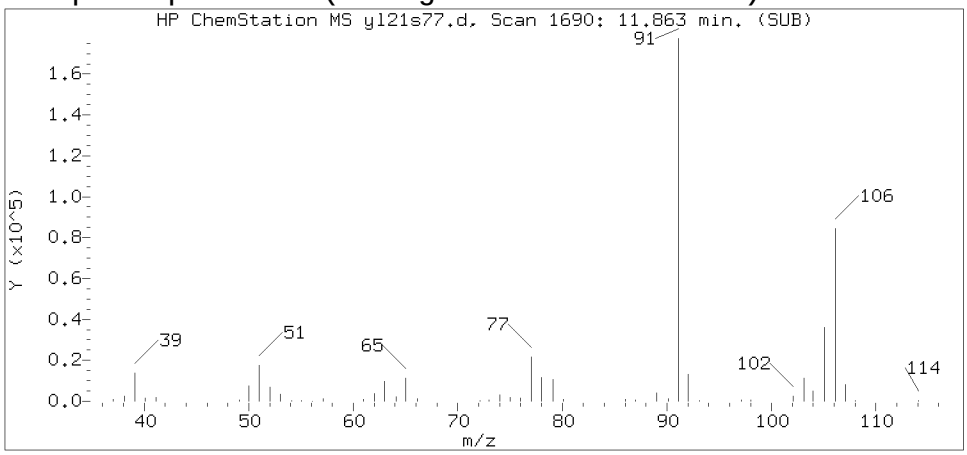
Target 3.5 esignature user ID: lcp00895

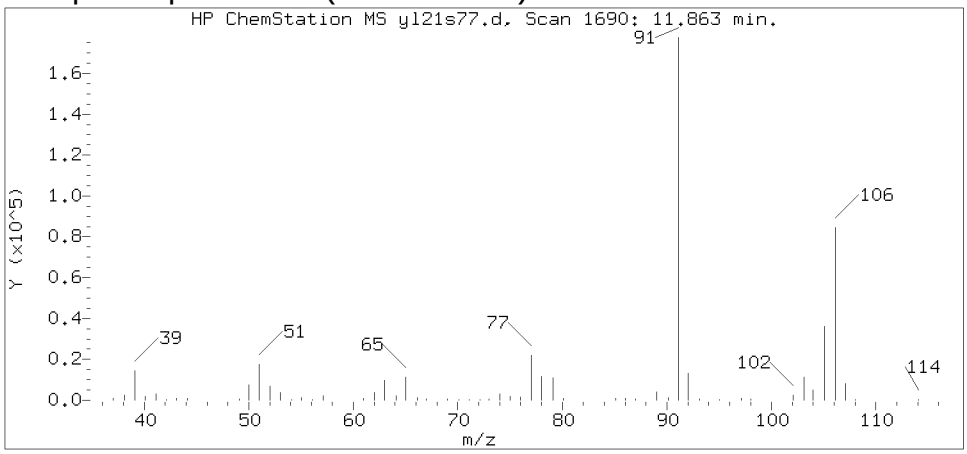
Reference Standard Spectrum for o-Xylene

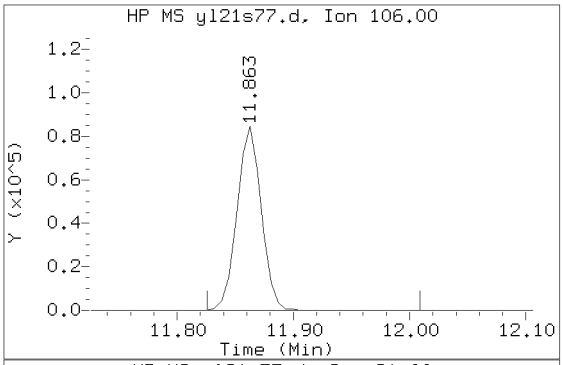


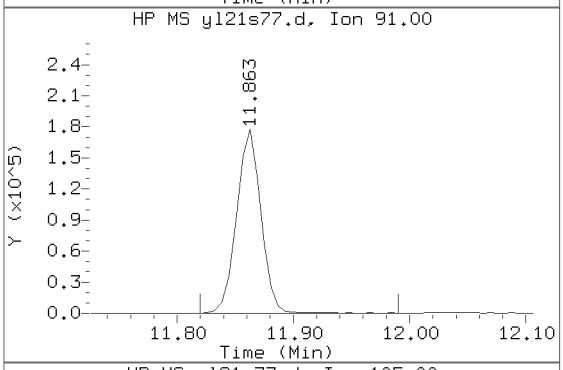

Sample Spectrum (Background Subtracted)

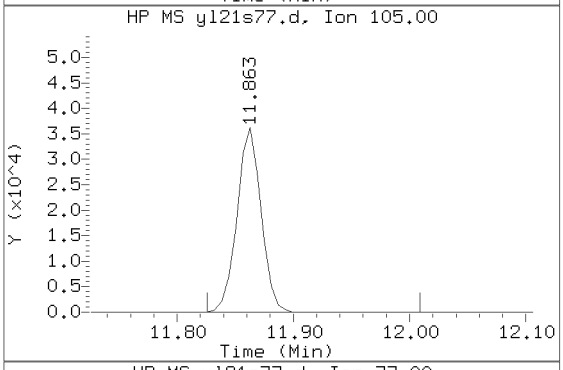


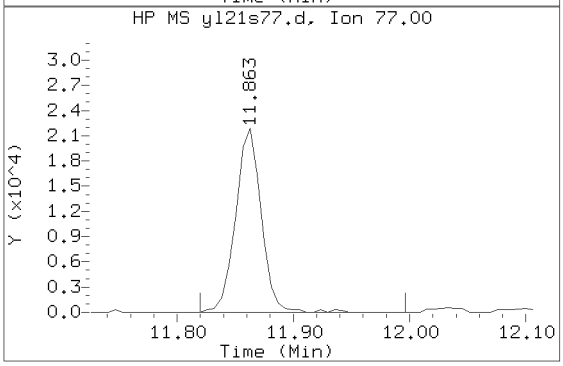

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s77.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:57  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:13 Automation

Sample Name: 18803DL  Lab Sample ID: 9109779DL

Compound Number : 107
Compound Name : o-Xylene
Scan Number : 1690
Retention Time (minutes): 11.863
Relative Retention Time : 0.00000
Quant Ion : 106.00
Area (flag) : 122371
On-Column Amount (ng) : 7.8731

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Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s67.d Injection date and time: **21-JUL-2017 23:16**
Data file Sample Info. Line: 18805;9109781;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 21-Jul-2017 23:31 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.355(-0.037) | 456 | 65 | 162231 ( -3) | 250.00 | |
| 66) Fluorobenzene | 7.878(-0.018) | 1035 | 96 | 1124892 ( -9) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.321(-0.012) | 1601 | 117 | 853020 ( -10) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.201(-0.012) | 1910 | 152 | 408392 ( -16) | 50.00 | |

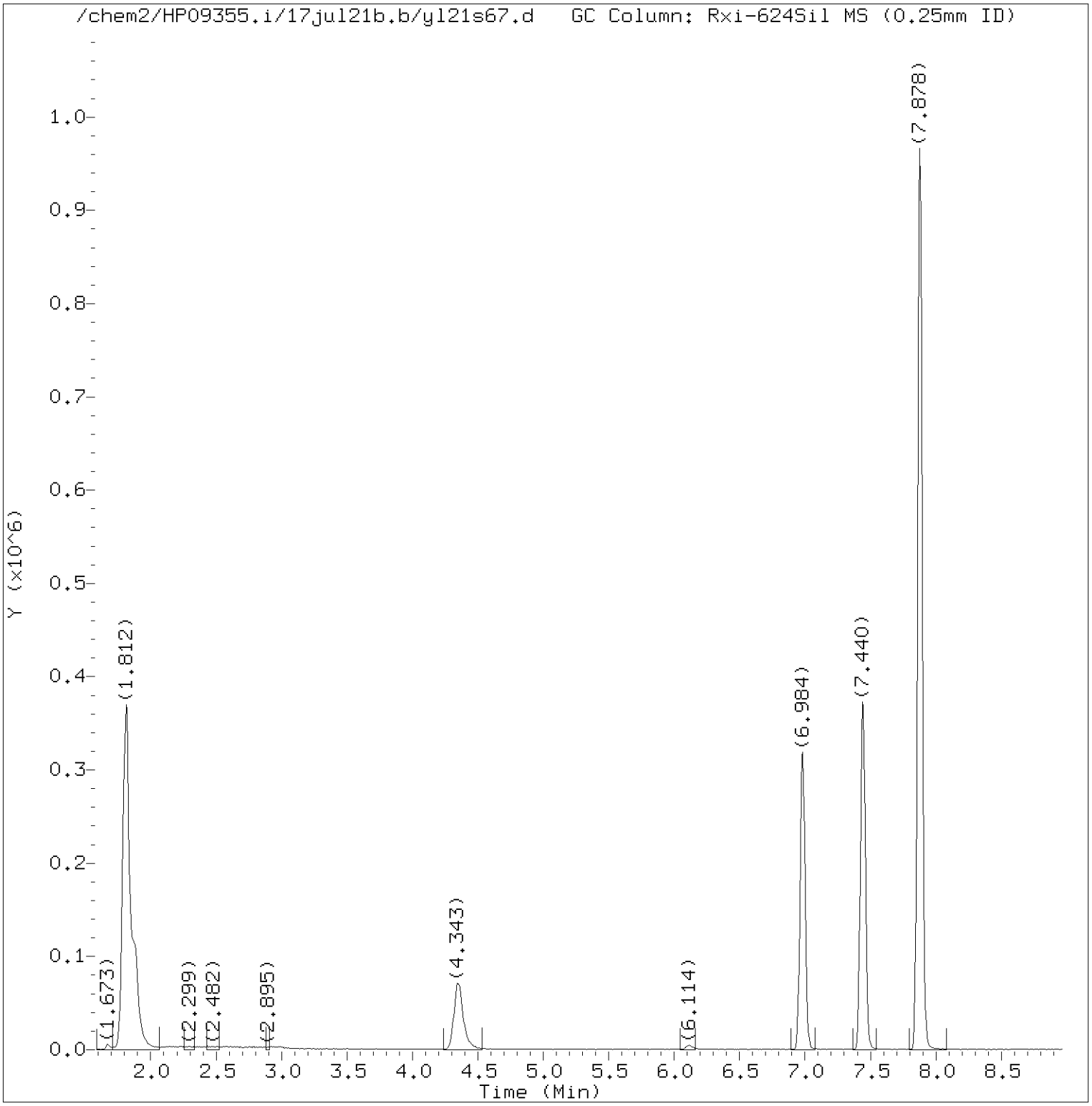
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.984(-0.001) | 113 | 277268 | 52.853 | 106% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.446(-0.001) | 102 | 70192 | 51.030 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.879(-0.001) | 98 | 1117636 | 50.713 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.319( 0.000) | 95 | 397347 | 48.074 | 96% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:50. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

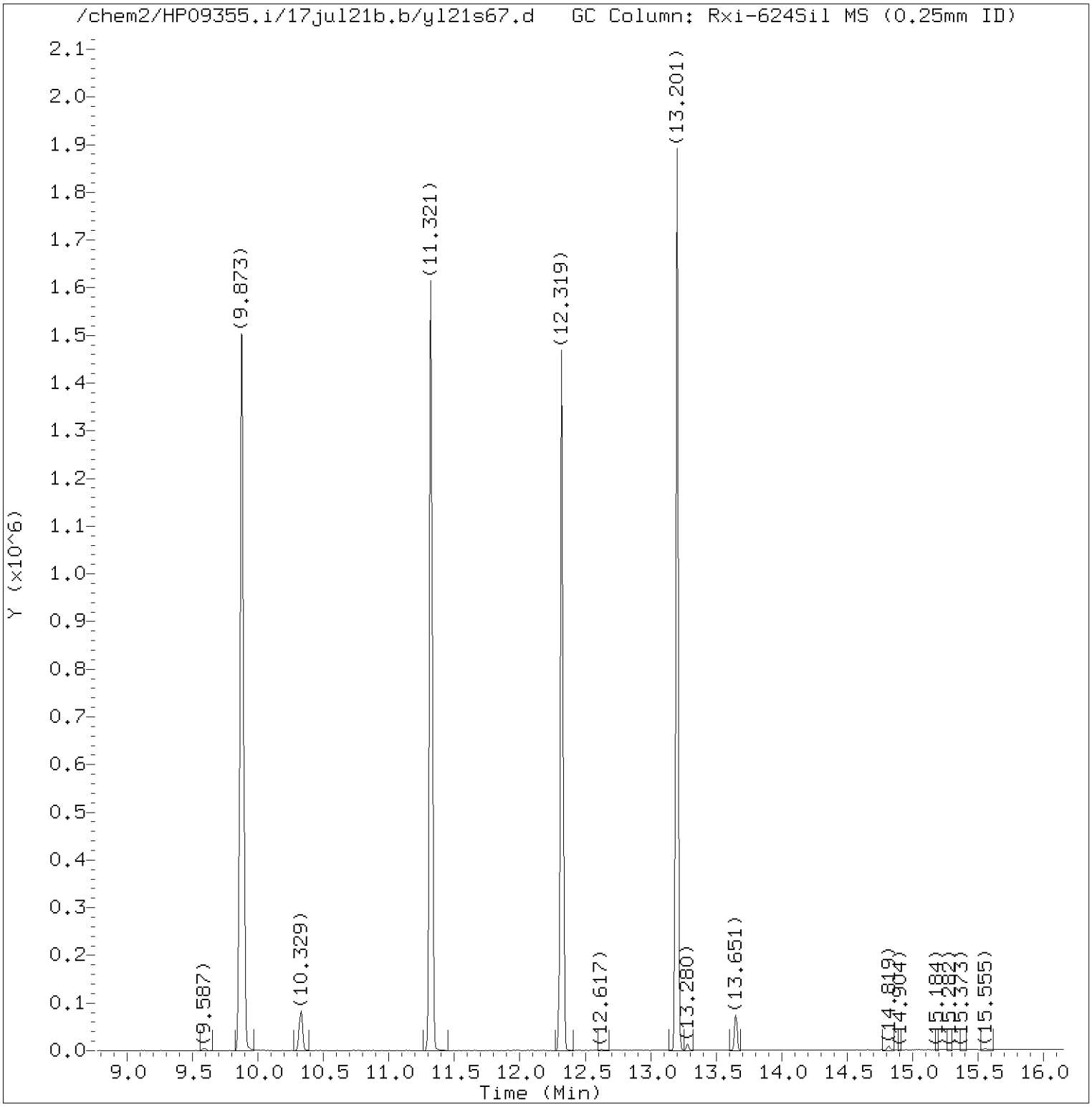
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s67.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 23:16 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:31 Automation

Sample Name: 18805 Lab Sample ID: 9109781

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:50.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s67.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 23:16 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:31 Automation

Sample Name: 18805 Lab Sample ID: 9109781

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:50.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s67.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 23:16 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:31 Automation

Sample Name: 18805 Lab Sample ID: 9109781

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.355 | 65 | 162231 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.984 | 113 | 277268 | 52.853 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.446 | 102 | 70192 | 51.030 |
| 66)*Fluorobenzene | (2) | 7.878 | 96 | 1124892 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.879 | 98 | 1117636 | 50.713 |
| 100)*Chlorobenzene-d5 | (3) | 11.321 | 117 | 853020 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 95 | 397347 | 48.074 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 408392 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/24/2017 at 10:50.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s78.d Injection date and time: **22-JUL-2017 03:19**
Data file Sample Info. Line: 18806;9109782;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 03:35 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.356(-0.037) | 456 | 65 | 271267 ( 62) | 250.00 | |
| 66) Fluorobenzene | 7.872(-0.012) | 1034 | 96 | 1777612 ( 43) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 1313919 ( 38) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 639014 ( 31) | 50.00 | |

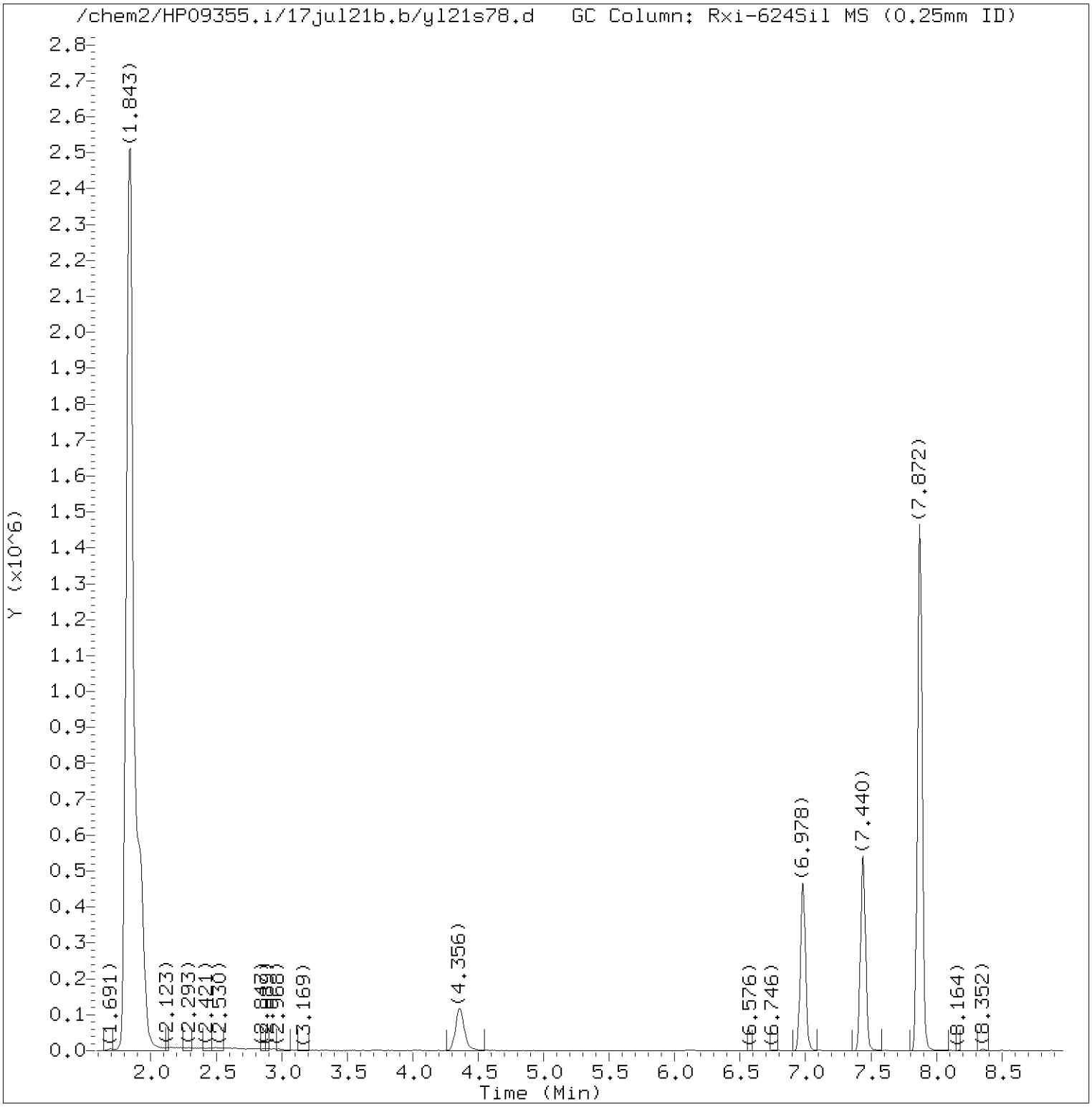
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.978(-0.001) | 113 | 420640 | 50.740 | 101% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.440(-0.001) | 102 | 107835 | 49.610 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1769772 | 52.135 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.001) | 95 | 636548 | 49.999 | 100% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.946(-0.000) | 92 | 19309 | 0.864 | 0.86 | | J | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:58. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

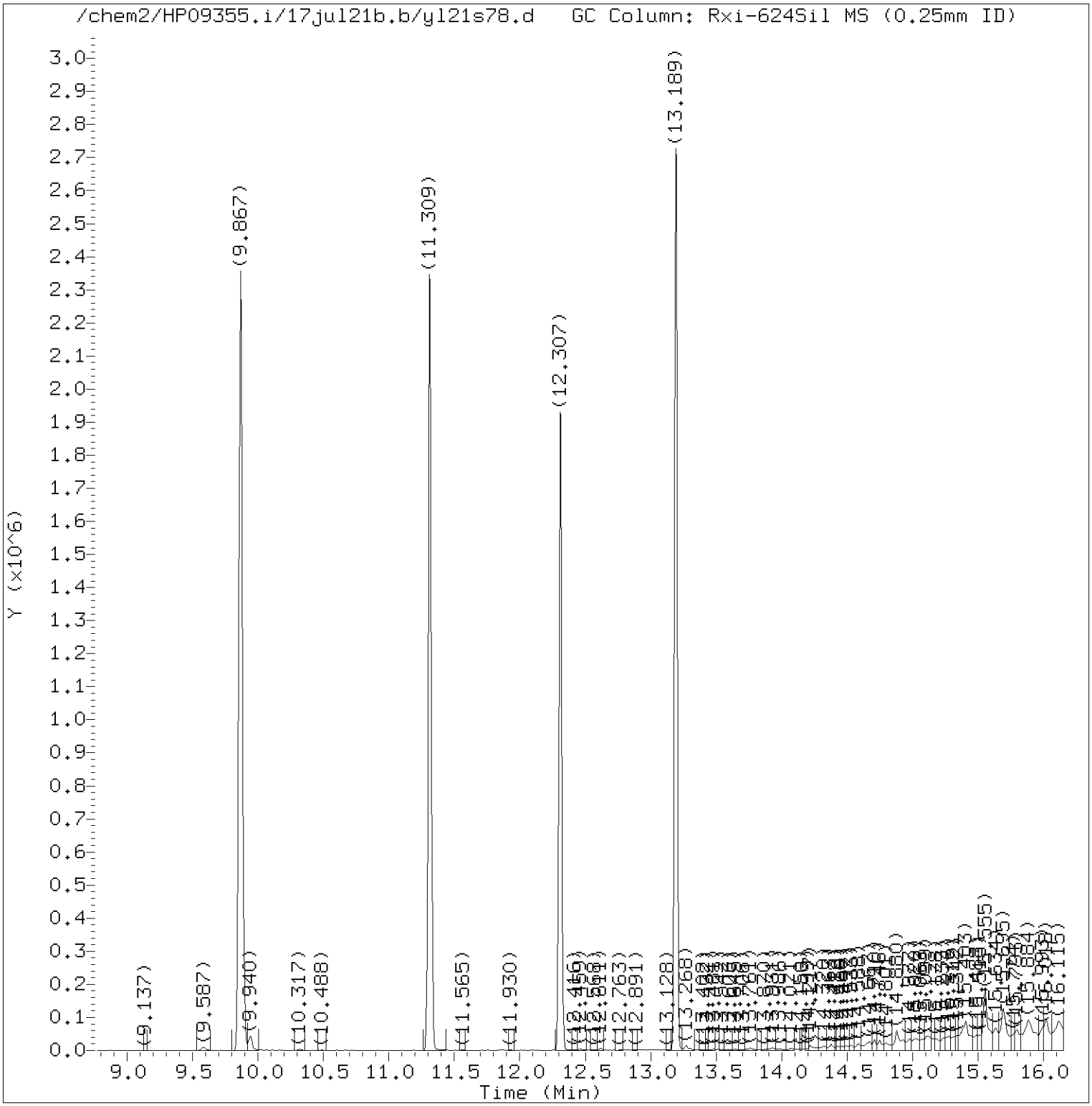
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s78.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 03:19 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:35 Automation

Sample Name: 18806 Lab Sample ID: 9109782

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s78.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 03:19 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:35 Automation

Sample Name: 18806 Lab Sample ID: 9109782

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s78.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 03:19 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:35 Automation

Sample Name: 18806 Lab Sample ID: 9109782

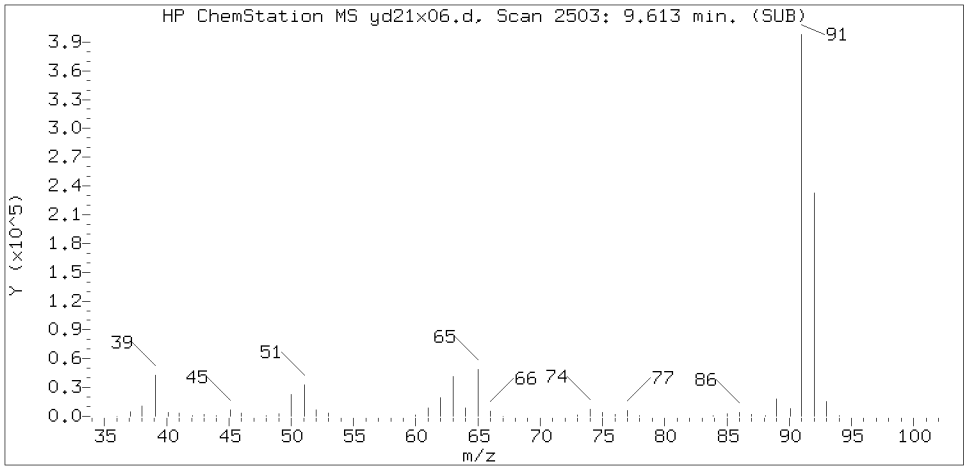
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.356 | 65 | 271267 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.978 | 113 | 420640 | 50.740 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.440 | 102 | 107835 | 49.610 |
| 66)*Fluorobenzene | (2) | 7.872 | 96 | 1777612 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1769772 | 52.135 |
| 88) Toluene | (3) | 9.946 | 92 | 19309 | 0.864 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1313919 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 636548 | 49.999 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 639014 | 50.000 |

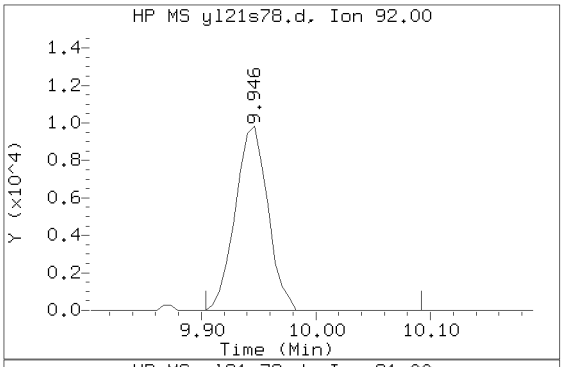
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



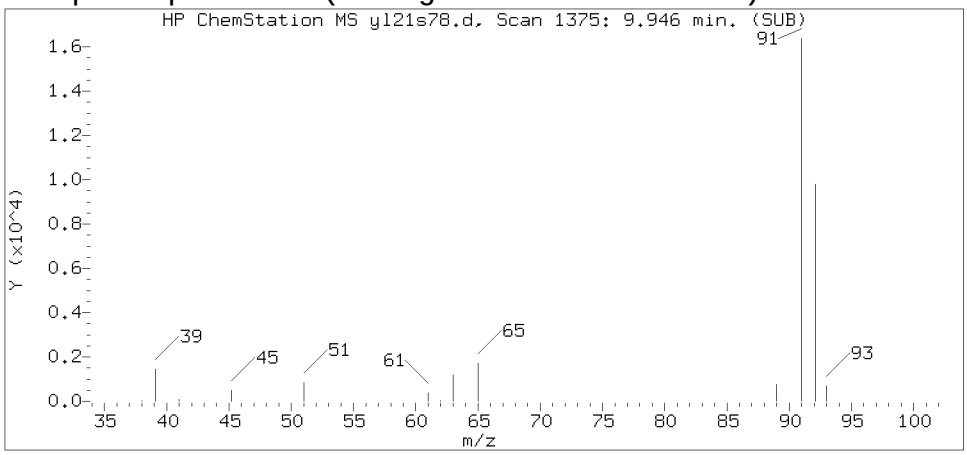
Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

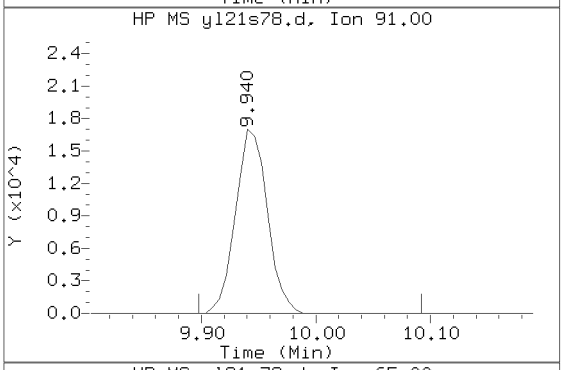
Reference Standard Spectrum for Toluene



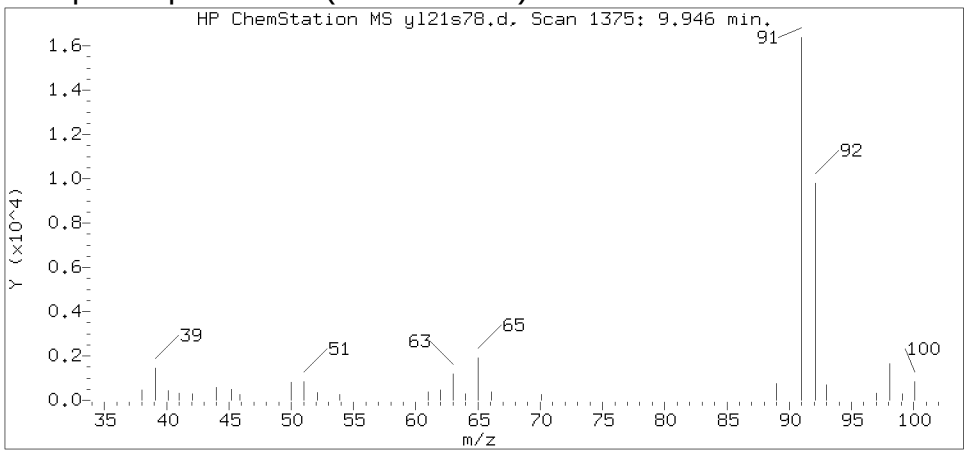



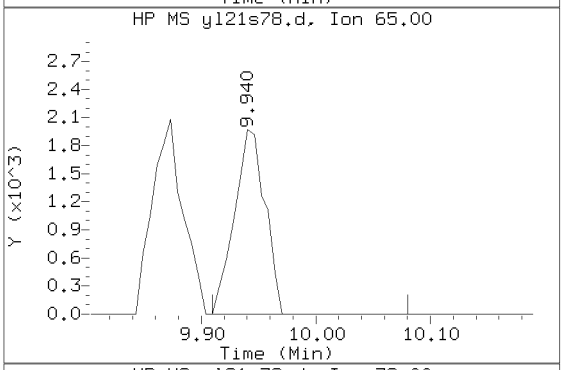

Sample Spectrum (Background Subtracted)

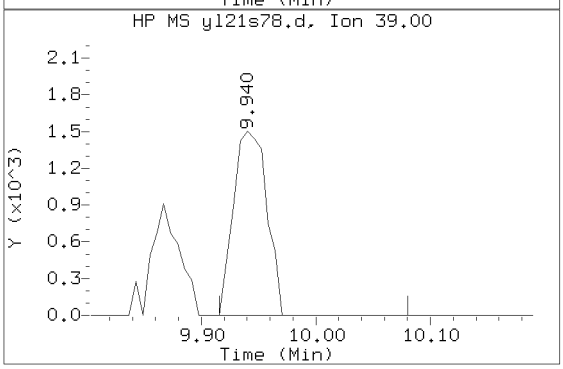



Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s78.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 03:19  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:35 Automation

Sample Name: 18806  Lab Sample ID: 9109782

Compound Number : 88
Compound Name : Toluene
Scan Number : 1375
Retention Time (minutes): 9.946
Relative Retention Time :-0.00006
Quant Ion : 92.00
Area (flag) : 19309
On-Column Amount (ng) : 0.8639

Digitally signed by Linda C. Pape on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s79.d Injection date and time: **22-JUL-2017 03:41**
Data file Sample Info. Line: 18807;9109783;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 03:57 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.337(-0.018) | 453 | 65 | 249926 ( 50) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1653747 ( 33) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1234394 ( 30) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 593798 ( 22) | 50.00 | |

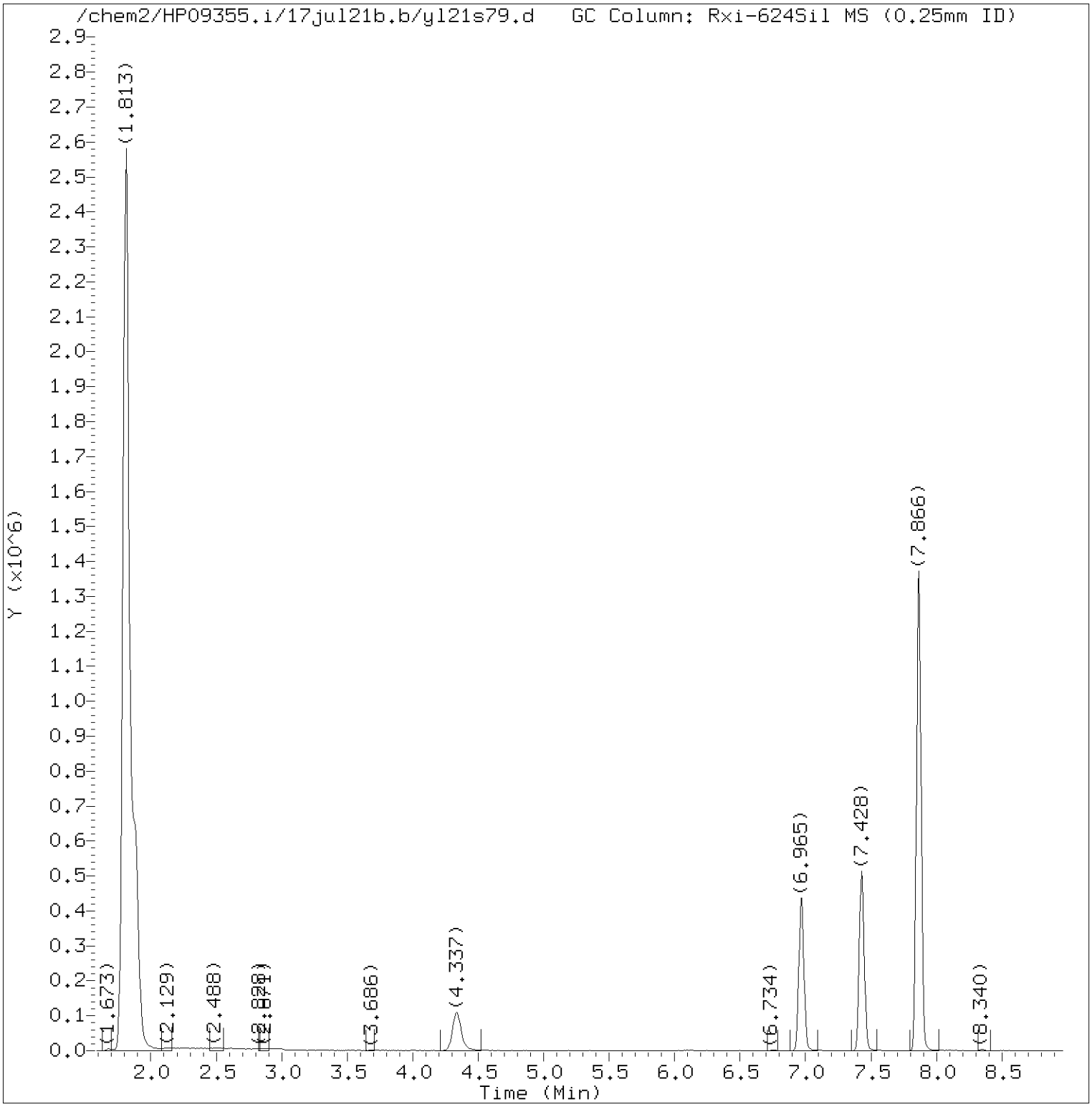
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.971(-0.001) | 113 | 390129 | 50.585 | 101% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428( 0.000) | 102 | 99588 | 49.248 | 98% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867(-0.001) | 98 | 1637871 | 51.358 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 590007 | 49.329 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.940(-0.000) | 92 | 19178 | 0.913 | 0.91 | | J | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:58. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

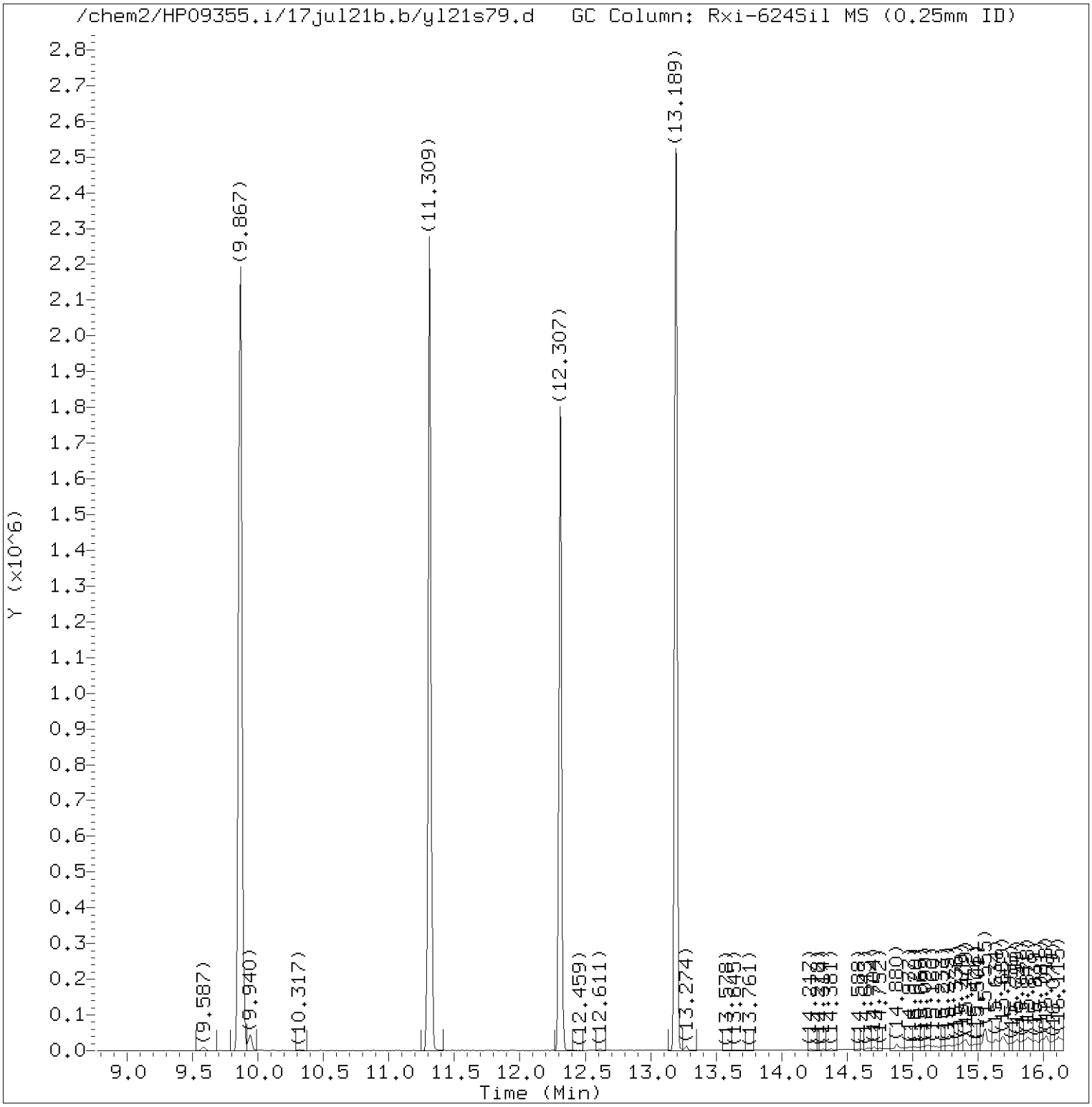
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s79.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 03:41 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:57 Automation

Sample Name: 18807 Lab Sample ID: 9109783

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s79.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 03:41 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:57 Automation

Sample Name: 18807 Lab Sample ID: 9109783

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s79.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 03:41 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:57 Automation

Sample Name: 18807 Lab Sample ID: 9109783

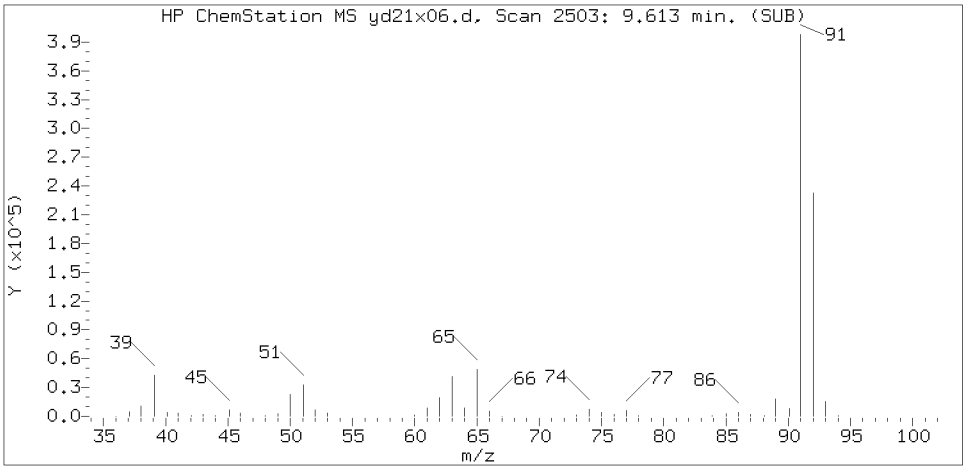
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.337 | 65 | 249926 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 390129 | 50.585 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 99588 | 49.248 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1653747 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1637871 | 51.358 |
| 88) Toluene | (3) | 9.940 | 92 | 19178 | 0.913 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1234394 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 590007 | 49.329 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 593798 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

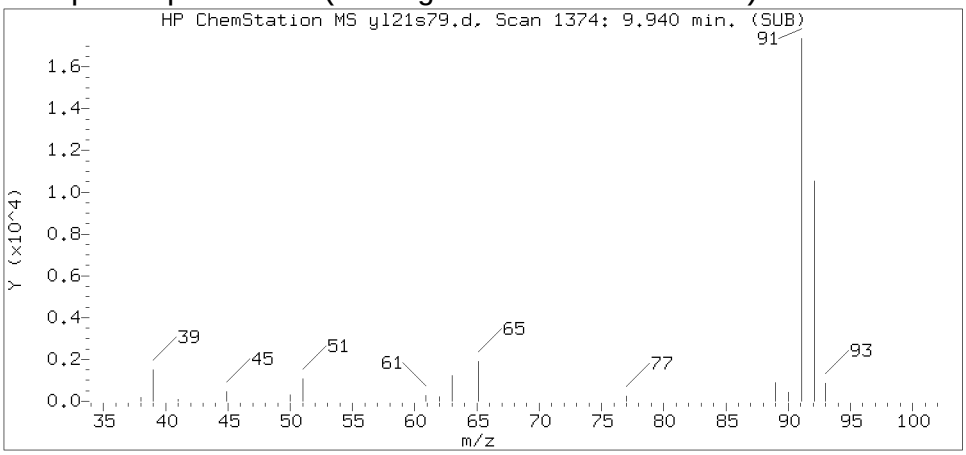


Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

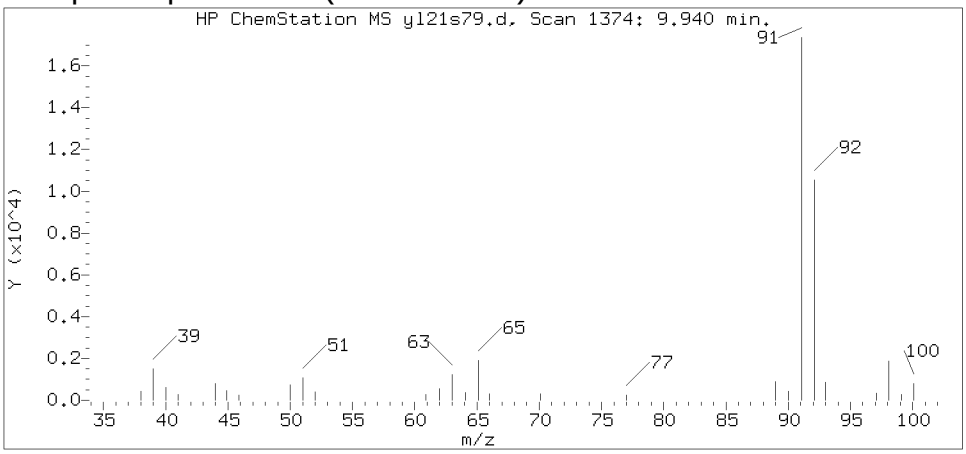
Reference Standard Spectrum for Toluene

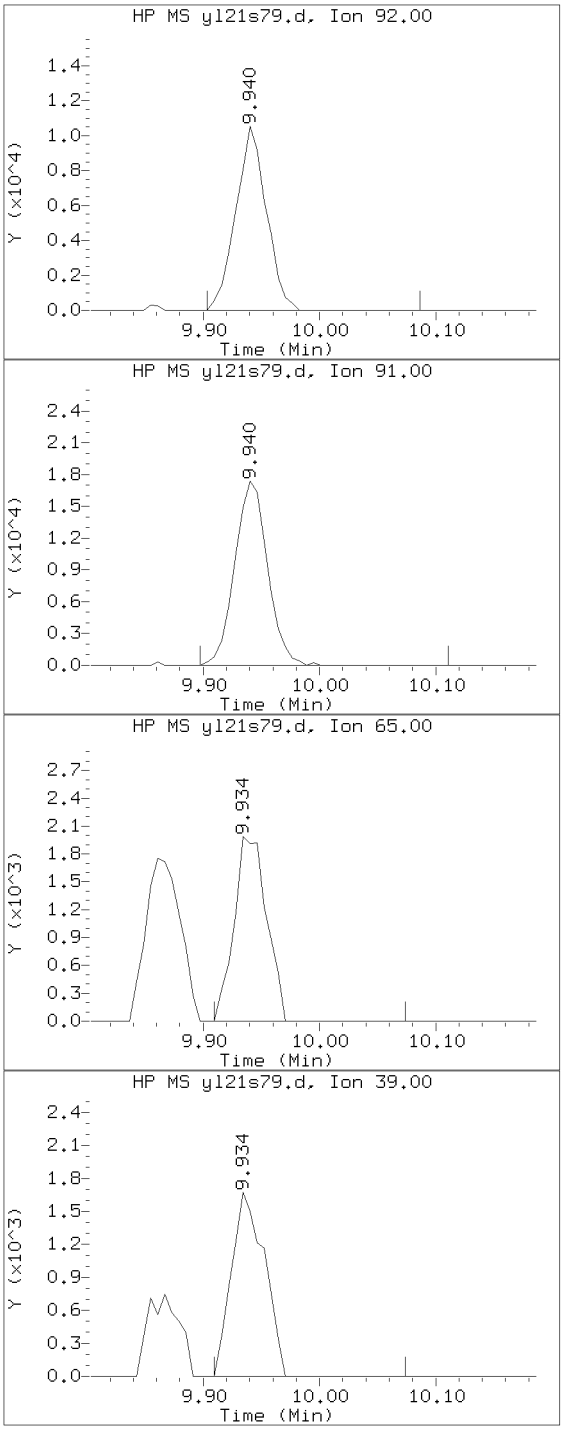



Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s79.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 03:41 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 03:57 Automation

Sample Name: 18807 Lab Sample ID: 9109783

Compound Number : 88
Compound Name : Toluene
Scan Number : 1374
Retention Time (minutes): 9.940
Relative Retention Time :-0.00000
Quant Ion : 92.00
Area (flag) : 19178
On-Column Amount (ng) : 0.9134

Digitally signed by Linda C. Pape on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s68.d Injection date and time: **21-JUL-2017 23:38**
Data file Sample Info. Line: 18808;9109784;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 21-Jul-2017 23:54 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.355(-0.036) | 456 | 65 | 171778 ( 3) | 250.00 | |
| 66) Fluorobenzene | 7.878(-0.018) | 1035 | 96 | 1235096 ( 0) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 923105 ( -3) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.201(-0.012) | 1910 | 152 | 449402 ( -8) | 50.00 | |

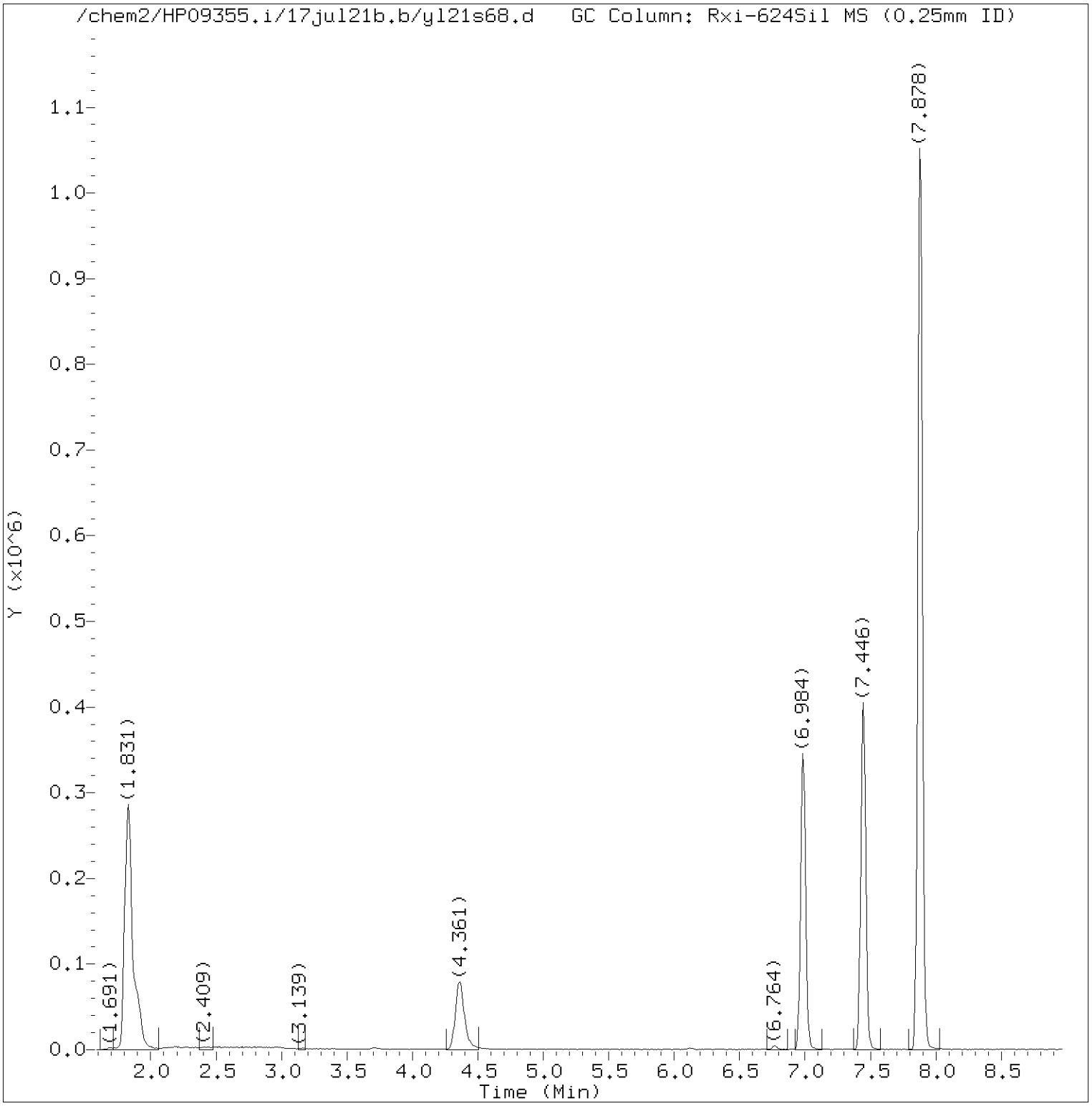
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.984(-0.001) | 113 | 301028 | 52.262 | 105% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.446(-0.001) | 102 | 75637 | 50.082 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.873(-0.001) | 98 | 1239133 | 51.957 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 436850 | 48.840 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.946(-0.000) | 92 | 27296 | 1.738 | 1.74 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:50. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

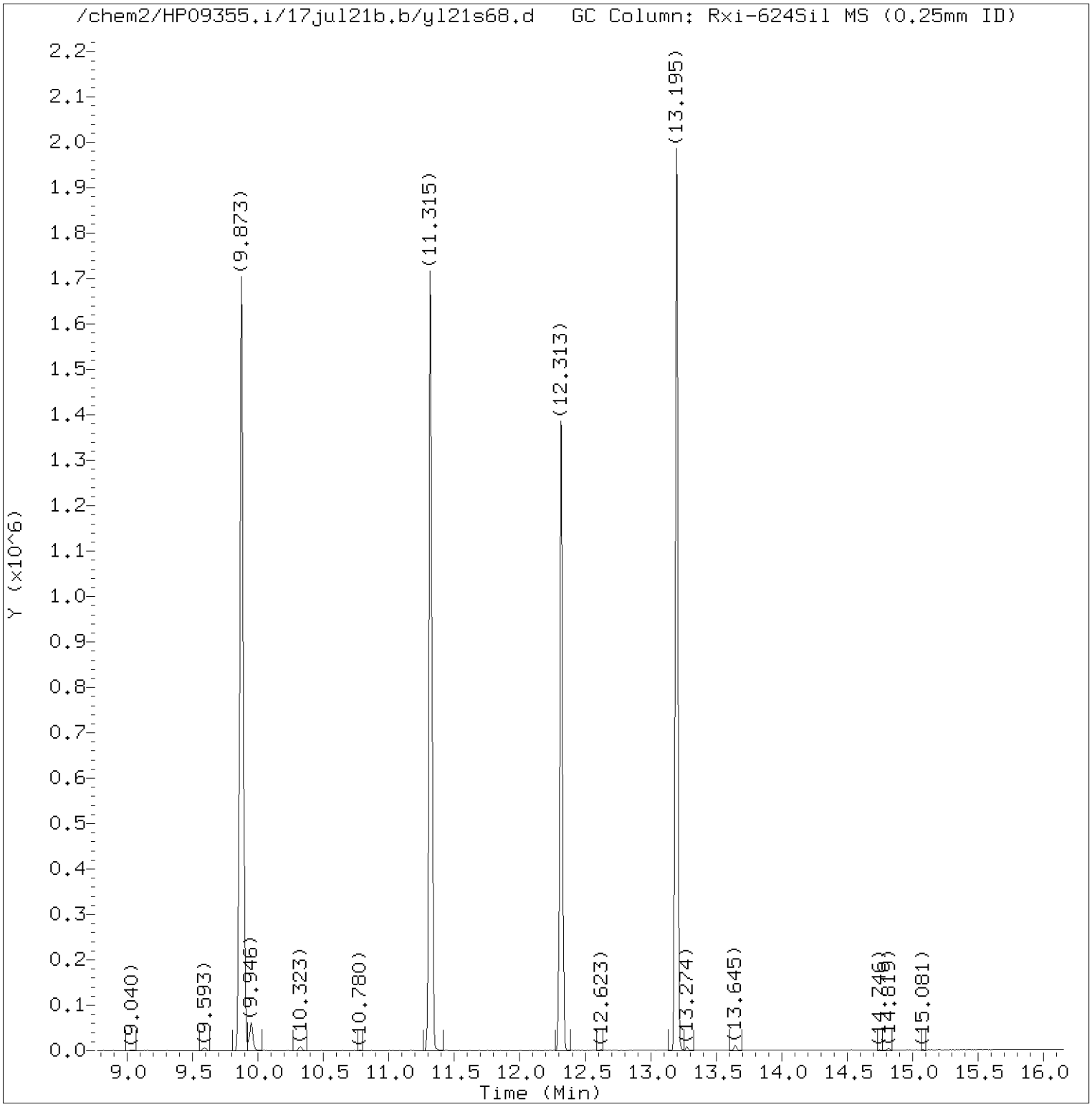
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s68.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 23:38 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:54 Automation

Sample Name: 18808 Lab Sample ID: 9109784

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:50.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s68.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 23:38 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:54 Automation

Sample Name: 18808 Lab Sample ID: 9109784

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:50.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s68.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 23:38 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:54 Automation

Sample Name: 18808 Lab Sample ID: 9109784

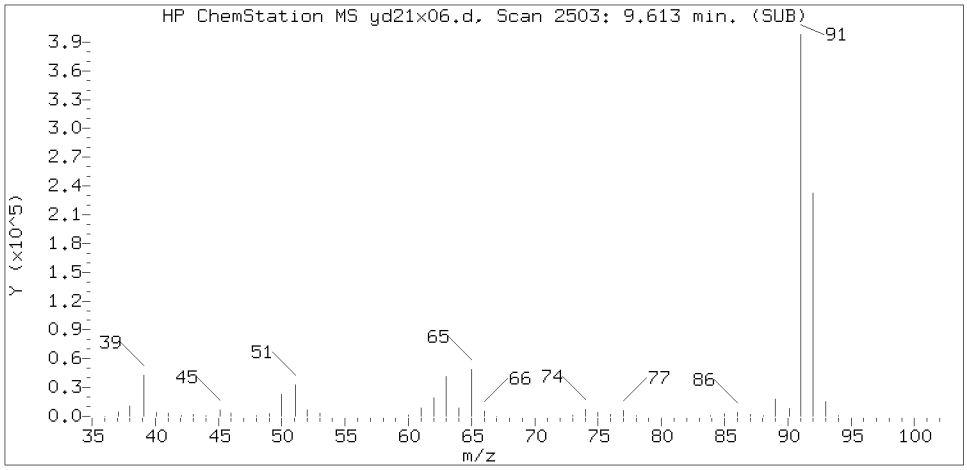
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.355 | 65 | 171778 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.984 | 113 | 301028 | 52.262 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.446 | 102 | 75637 | 50.082 |
| 66)*Fluorobenzene | (2) | 7.878 | 96 | 1235096 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1239133 | 51.957 |
| 88) Toluene | (3) | 9.946 | 92 | 27296 | 1.738 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 923105 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 436850 | 48.840 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 449402 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

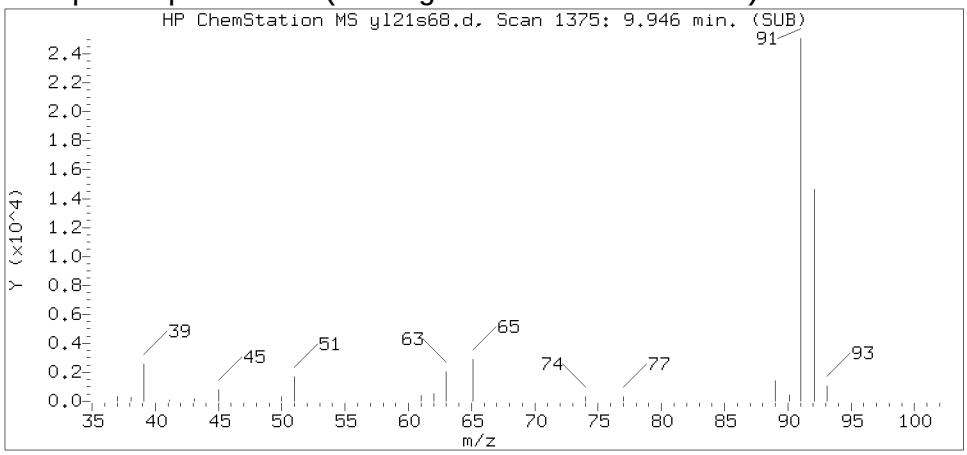


Digitally signed by Linda C. Pape
on 07/24/2017 at 10:50.
Target 3.5 esignature user ID: lcp00895

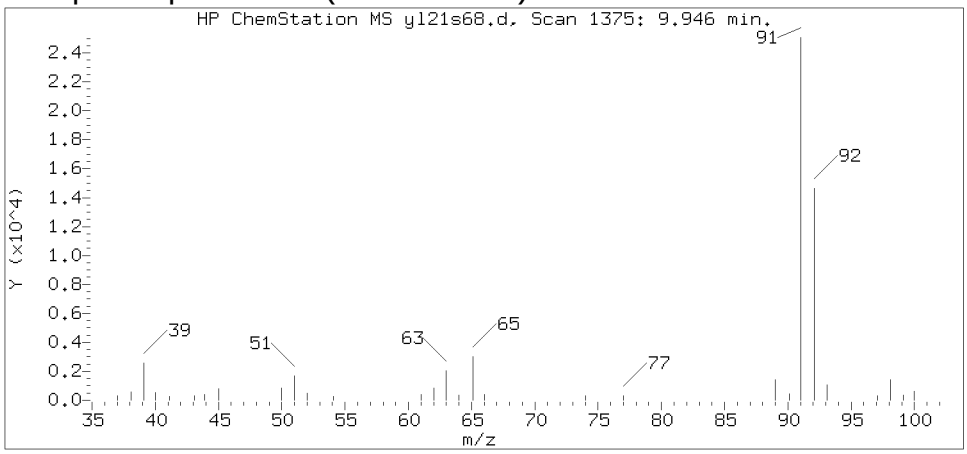
Reference Standard Spectrum for Toluene

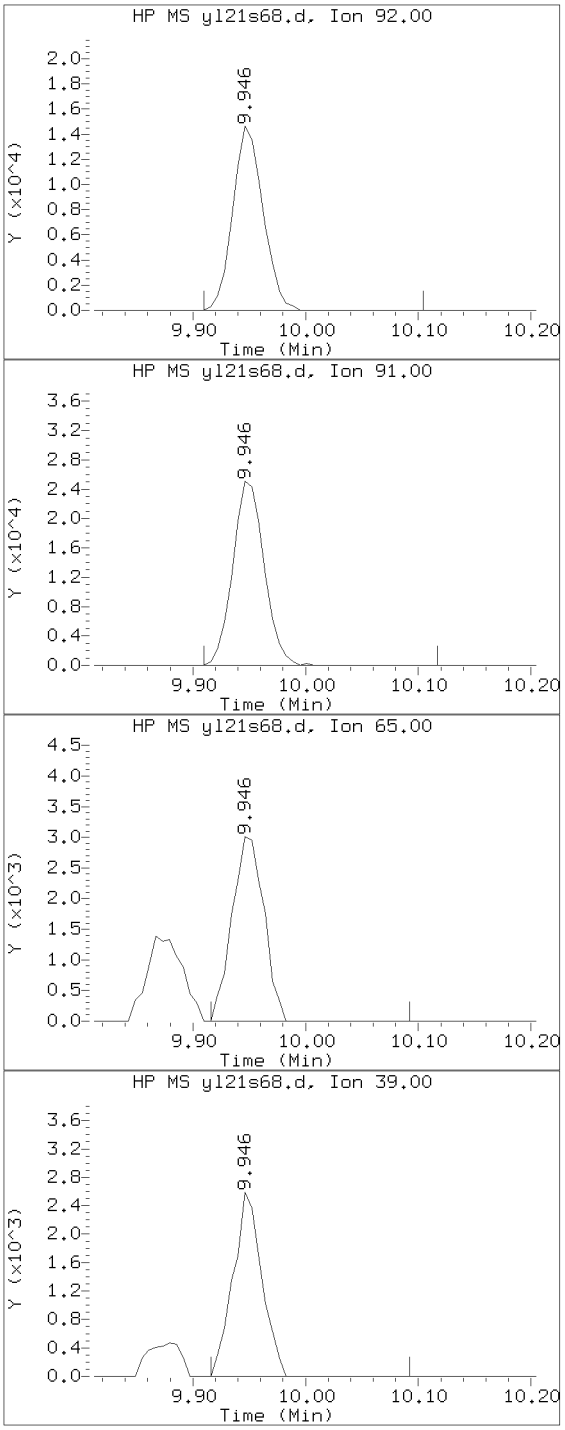



Sample Spectrum (Background Subtracted)




Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s68.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 23:38 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:54 Automation

Sample Name: 18808 Lab Sample ID: 9109784

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 1375 |
| Retention Time (minutes) | : 9.946 |
| Relative Retention Time | :-0.00006 |
| Quant Ion | : 92.00 |
| Area (flag) | : 27296 |
| On-Column Amount (ng) | : 1.7384 |

Digitally signed by Linda C. Pape on 07/24/2017 at 10:50.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s69.d Injection date and time: **22-JUL-2017 00:00**
Data file Sample Info. Line: 18809;9109785;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 00:16 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.356(-0.037) | 456 | 65 | 174234 ( 4) | 250.00 | |
| 66) Fluorobenzene | 7.878(-0.018) | 1035 | 96 | 1235406 ( 0) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 935441 ( -2) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 450480 ( -8) | 50.00 | |

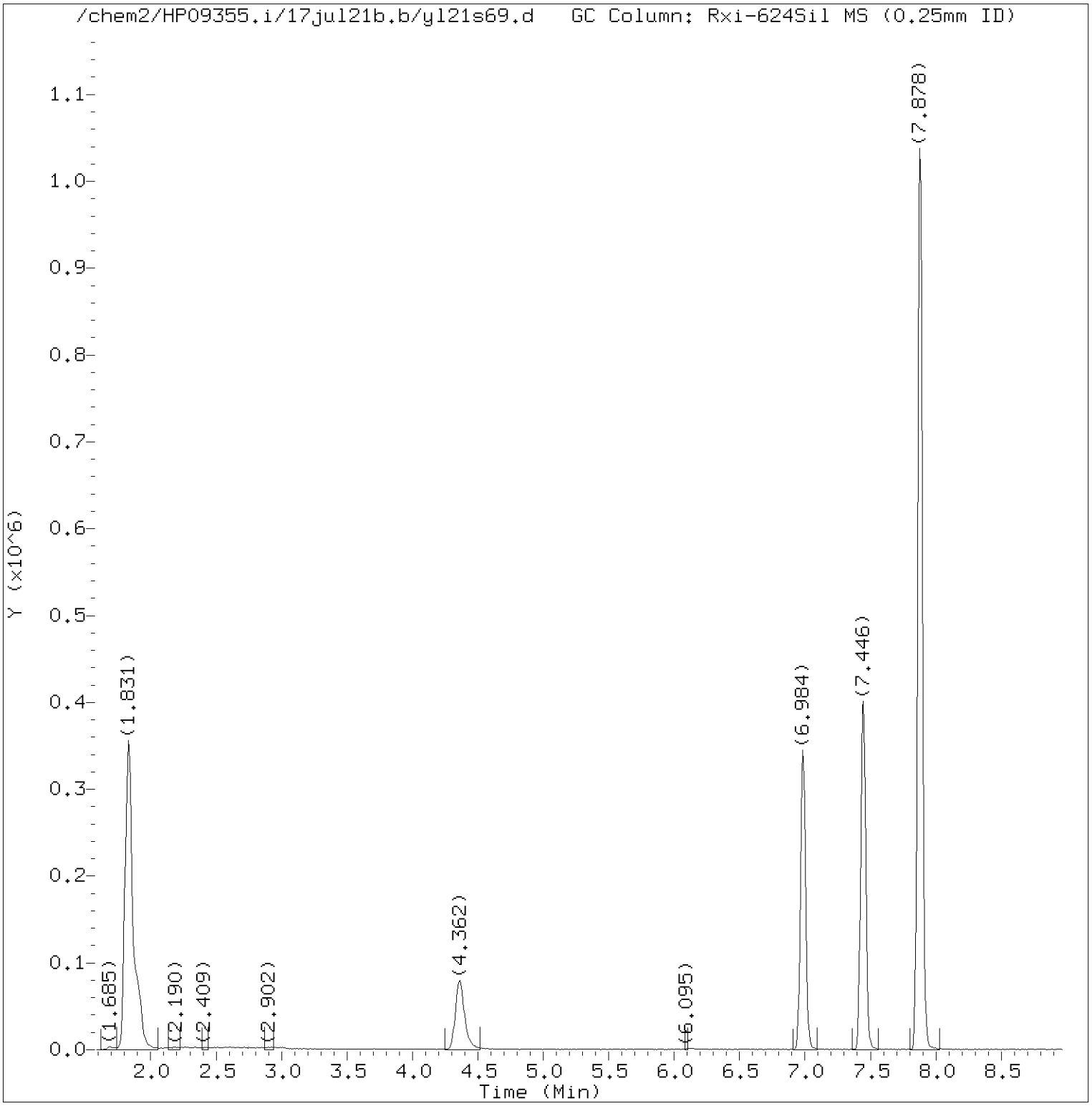
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.984(-0.001) | 113 | 300749 | 52.200 | 104% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.446(-0.001) | 102 | 76425 | 50.591 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.873(-0.001) | 98 | 1235500 | 51.122 | 102% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 436528 | 48.161 | 96% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:51. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

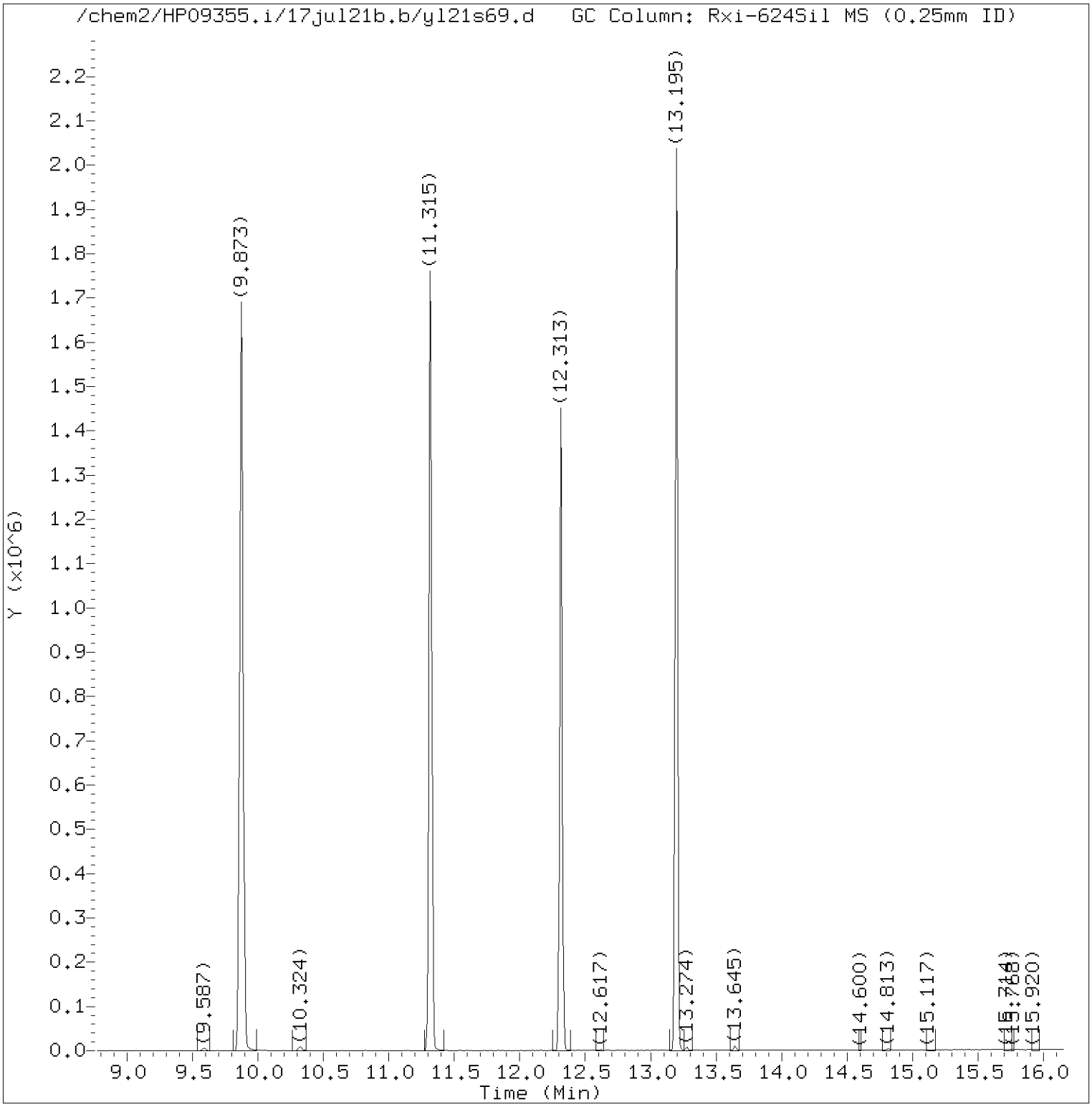
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s69.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:00 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 00:16 Automation

Sample Name: 18809 Lab Sample ID: 9109785

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:51.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s69.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:00 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 00:16 Automation

Sample Name: 18809 Lab Sample ID: 9109785

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:51.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s69.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:00 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 00:16 Automation

Sample Name: 18809 Lab Sample ID: 9109785

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.356 | 65 | 174234 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.984 | 113 | 300749 | 52.200 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.446 | 102 | 76425 | 50.591 |
| 66)*Fluorobenzene | (2) | 7.878 | 96 | 1235406 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1235500 | 51.122 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 935441 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 436528 | 48.161 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 450480 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/24/2017 at 10:51.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s80.d Injection date and time: **22-JUL-2017 04:03**
Data file Sample Info. Line: 18810;9109786;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 04:19 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.331(-0.012) | 452 | 65 | 223288 ( 34) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1545679 ( 25) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1146428 ( 21) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.189( 0.000) | 1908 | 152 | 553092 ( 13) | 50.00 | |

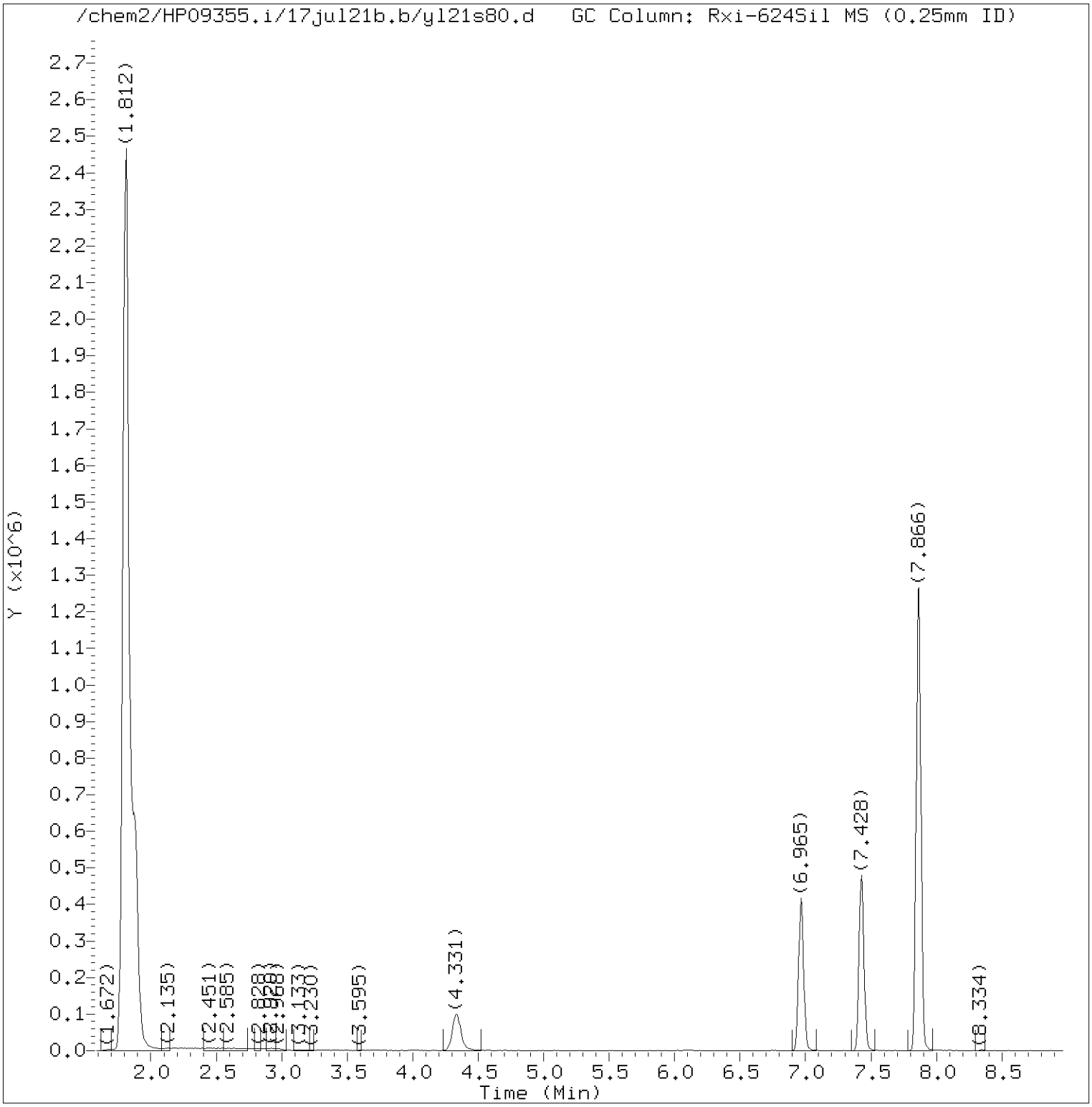
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.965( 0.000) | 113 | 366820 | 50.888 | 102% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428( 0.000) | 102 | 93040 | 49.227 | 98% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867(-0.001) | 98 | 1523779 | 51.446 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 546756 | 49.220 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.934( 0.000) | 92 | 19440 | 0.997 | 1.00 | | J | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:58. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

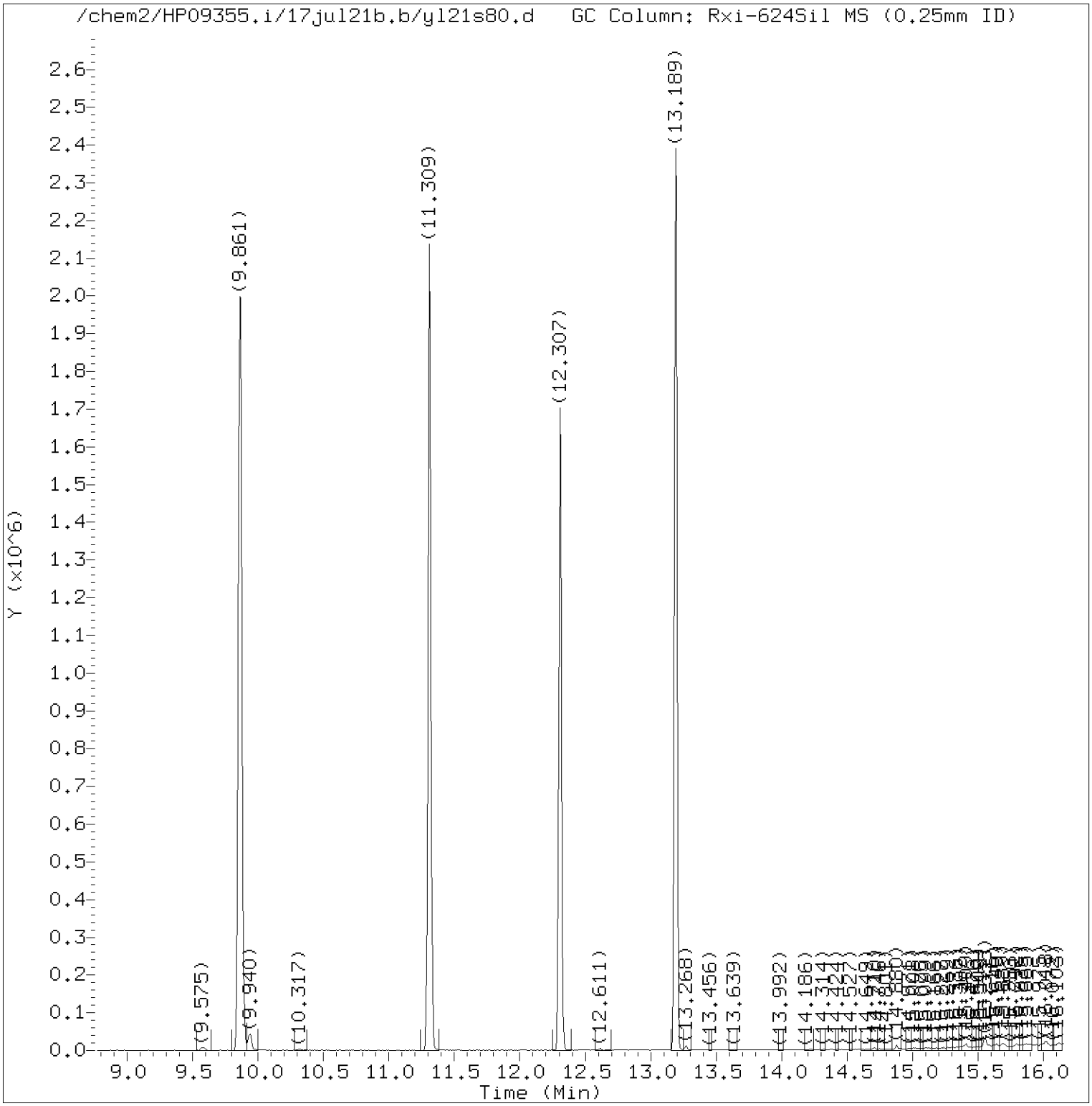
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s80.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:03 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 04:19 Automation

Sample Name: 18810 Lab Sample ID: 9109786

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s80.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:03 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 04:19 Automation

Sample Name: 18810 Lab Sample ID: 9109786

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s80.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:03 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 04:19 Automation

Sample Name: 18810 Lab Sample ID: 9109786

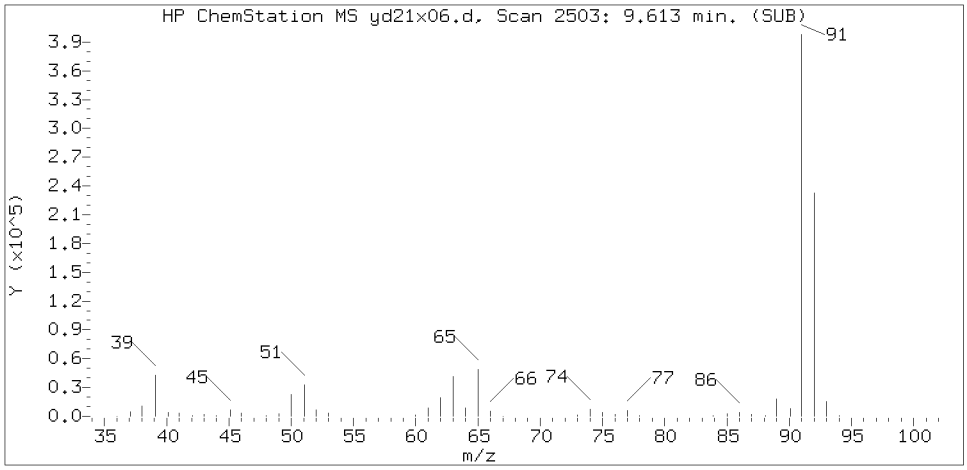
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.331 | 65 | 223288 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 366820 | 50.888 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 93040 | 49.227 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1545679 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1523779 | 51.446 |
| 88) Toluene | (3) | 9.934 | 92 | 19440 | 0.997 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1146428 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 546756 | 49.220 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 553092 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

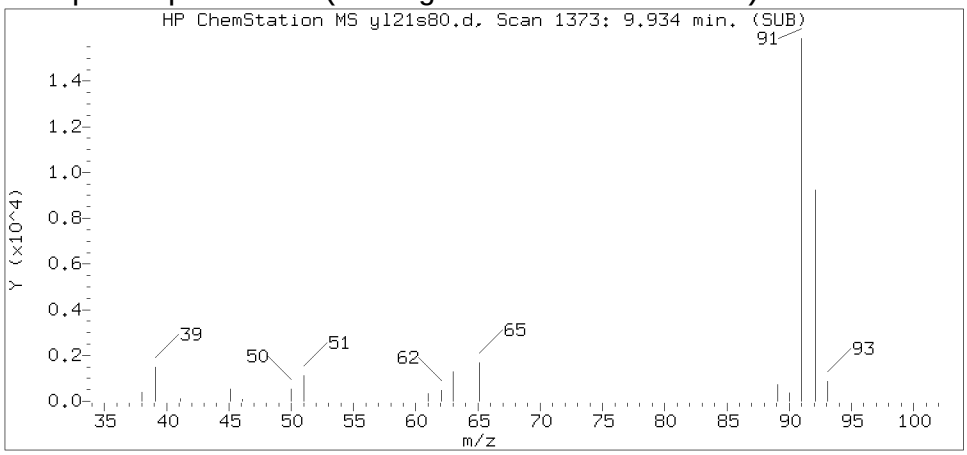


Digitally signed by Linda C. Pape
on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

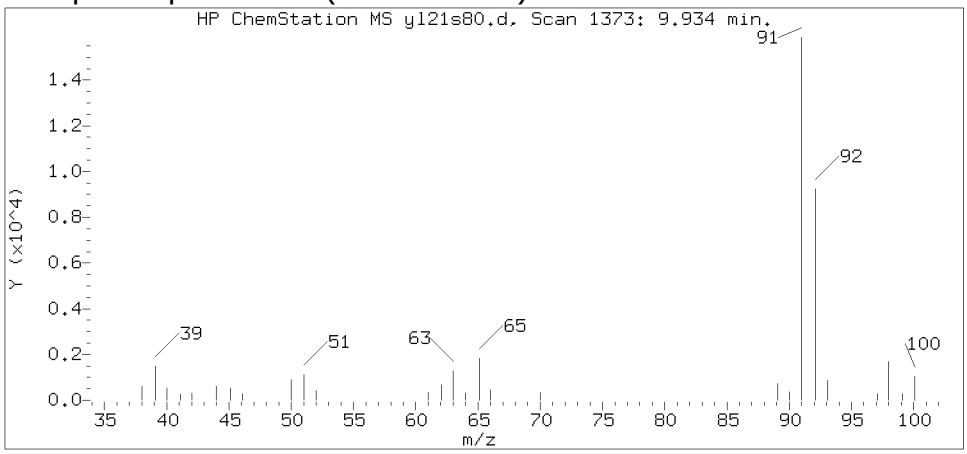
Reference Standard Spectrum for Toluene

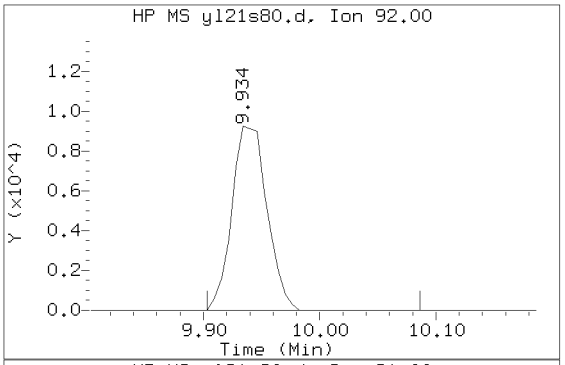


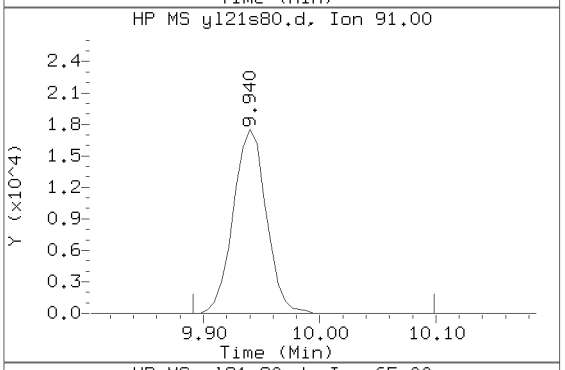

Sample Spectrum (Background Subtracted)

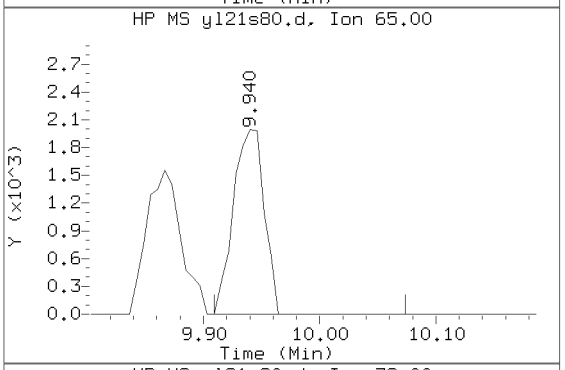


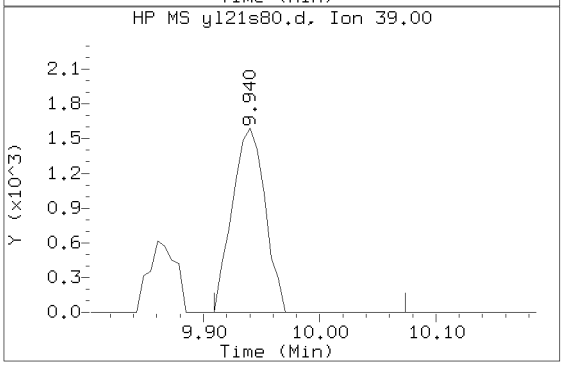

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s80.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:03  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 04:19 Automation

Sample Name: 18810  Lab Sample ID: 9109786

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 1373 |
| Retention Time (minutes) | : 9.934 |
| Relative Retention Time | : 0.00054 |
| Quant Ion | : 92.00 |
| Area (flag) | : 19440 |
| On-Column Amount (ng) | : 0.9969 |

Digitally signed by Linda C. Pape on 07/24/2017 at 10:58.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s81.d Injection date and time: **22-JUL-2017 04:26**
Data file Sample Info. Line: 18811;9109787;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 04:41 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.368(-0.049) | 458 | 65 | 283089 ( 70) | 250.00 | |
| 66) Fluorobenzene | 7.878(-0.018) | 1035 | 96 | 1965091 ( 58) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 1464114 ( 54) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.189( 0.000) | 1908 | 152 | 700586 ( 44) | 50.00 | |

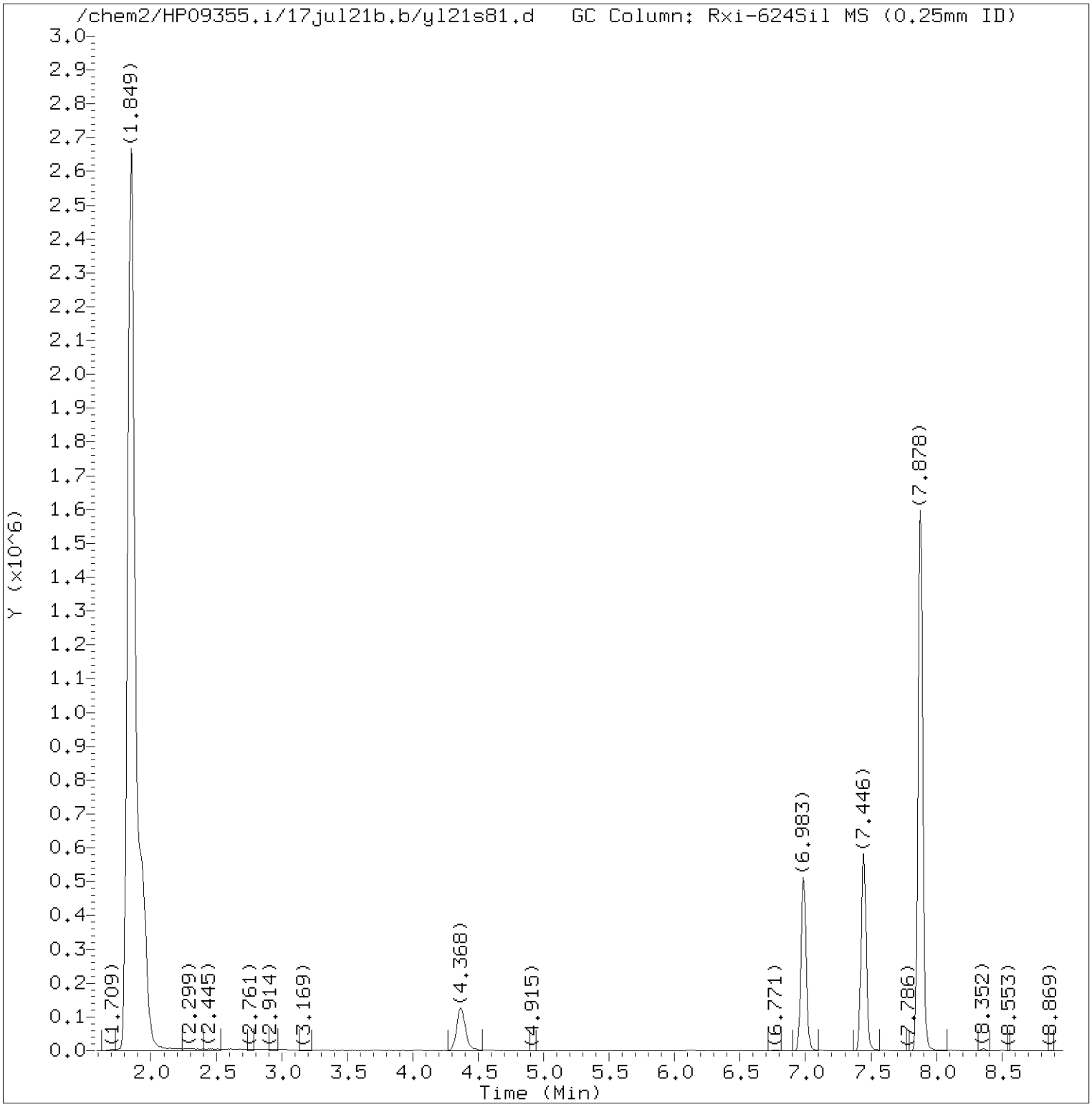
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.983(-0.001) | 113 | 461173 | 50.322 | 101% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.446(-0.001) | 102 | 116917 | 48.657 | 97% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1948405 | 51.509 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.001) | 95 | 703698 | 49.603 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.946(-0.000) | 92 | 33118 | 1.330 | 1.33 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:59. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

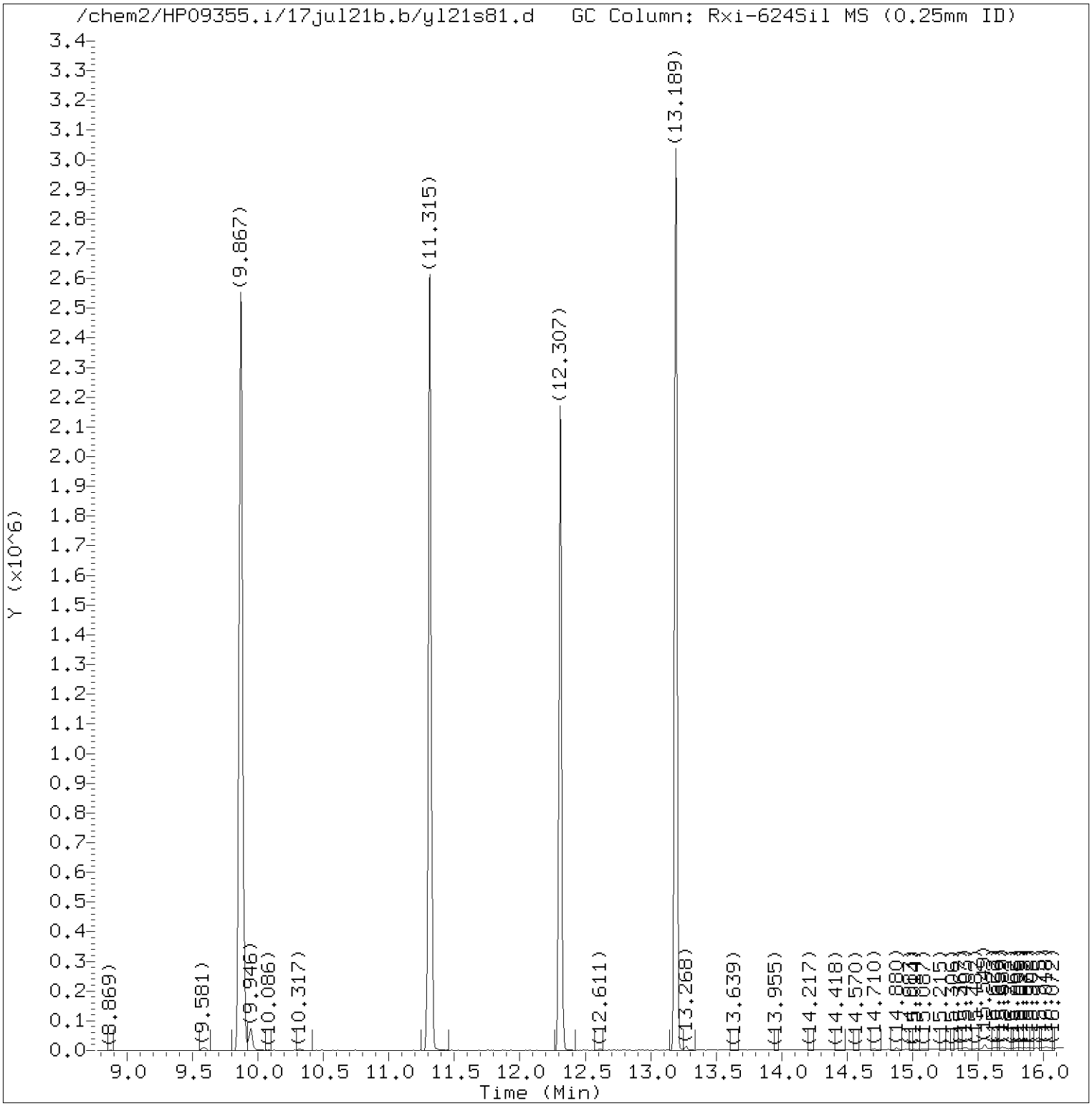
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s81.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:26 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 04:41 Automation

Sample Name: 18811 Lab Sample ID: 9109787

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s81.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:26 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 04:41 Automation

Sample Name: 18811 Lab Sample ID: 9109787

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s81.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:26 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 04:41 Automation

Sample Name: 18811 Lab Sample ID: 9109787

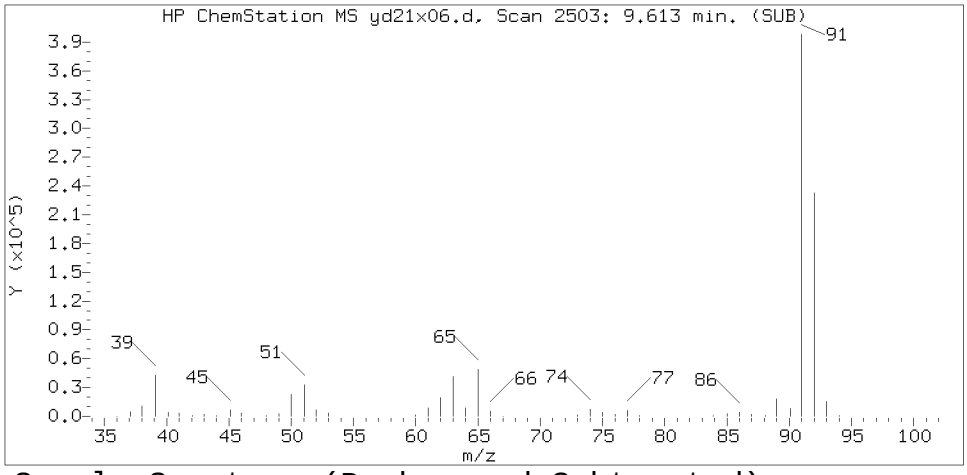
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.368 | 65 | 283089 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.983 | 113 | 461173 | 50.322 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.446 | 102 | 116917 | 48.657 |
| 66)*Fluorobenzene | (2) | 7.878 | 96 | 1965091 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1948405 | 51.509 |
| 88) Toluene | (3) | 9.946 | 92 | 33118 | 1.330 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1464114 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 703698 | 49.603 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 700586 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

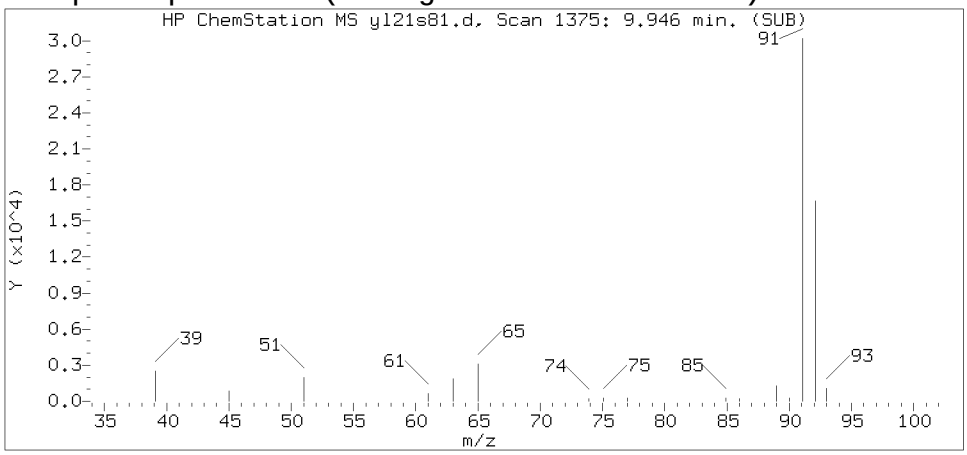


Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

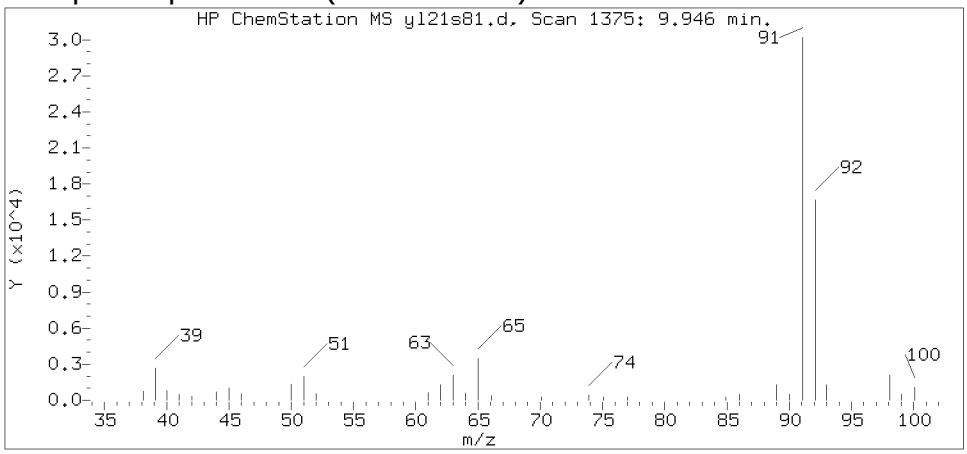
Reference Standard Spectrum for Toluene

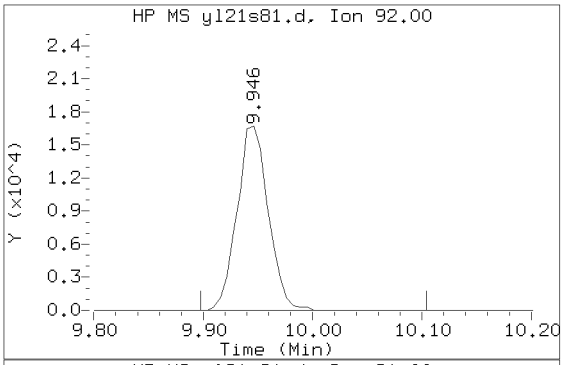


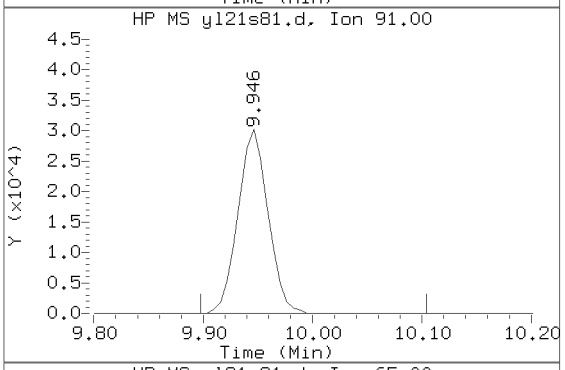

Sample Spectrum (Background Subtracted)

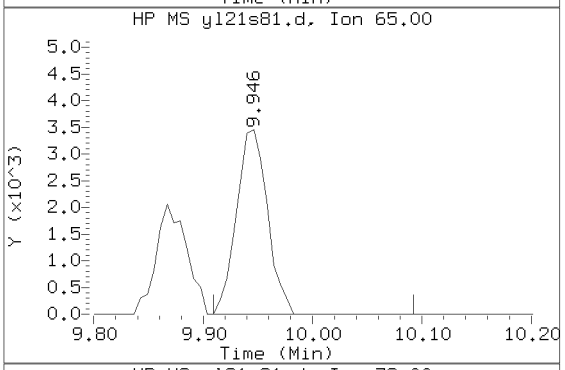


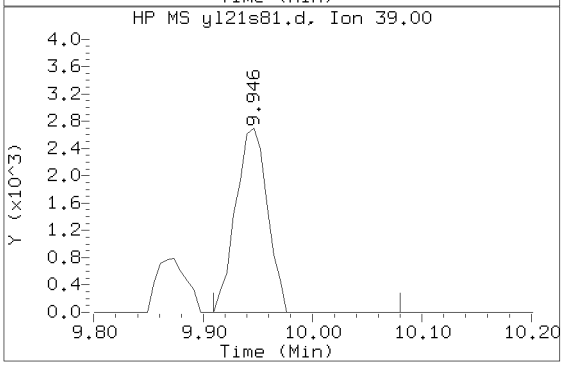

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s81.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:26 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 04:41 Automation

Sample Name: 18811 Lab Sample ID: 9109787

Compound Number : 88
Compound Name : Toluene
Scan Number : 1375
Retention Time (minutes): 9.946
Relative Retention Time :-0.00006
Quant Ion : 92.00
Area (flag) : 33118
On-Column Amount (ng) : 1.3298

Digitally signed by Linda C. Pape on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s70.d Injection date and time: **22-JUL-2017 00:22**
Data file Sample Info. Line: 18812;9109788;1;0;;KR188;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 00:38 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.331(-0.012) | 452 | 65 | 159781 ( -4) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1109815 ( -11) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 839112 ( -12) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 403241 ( -17) | 50.00 | |

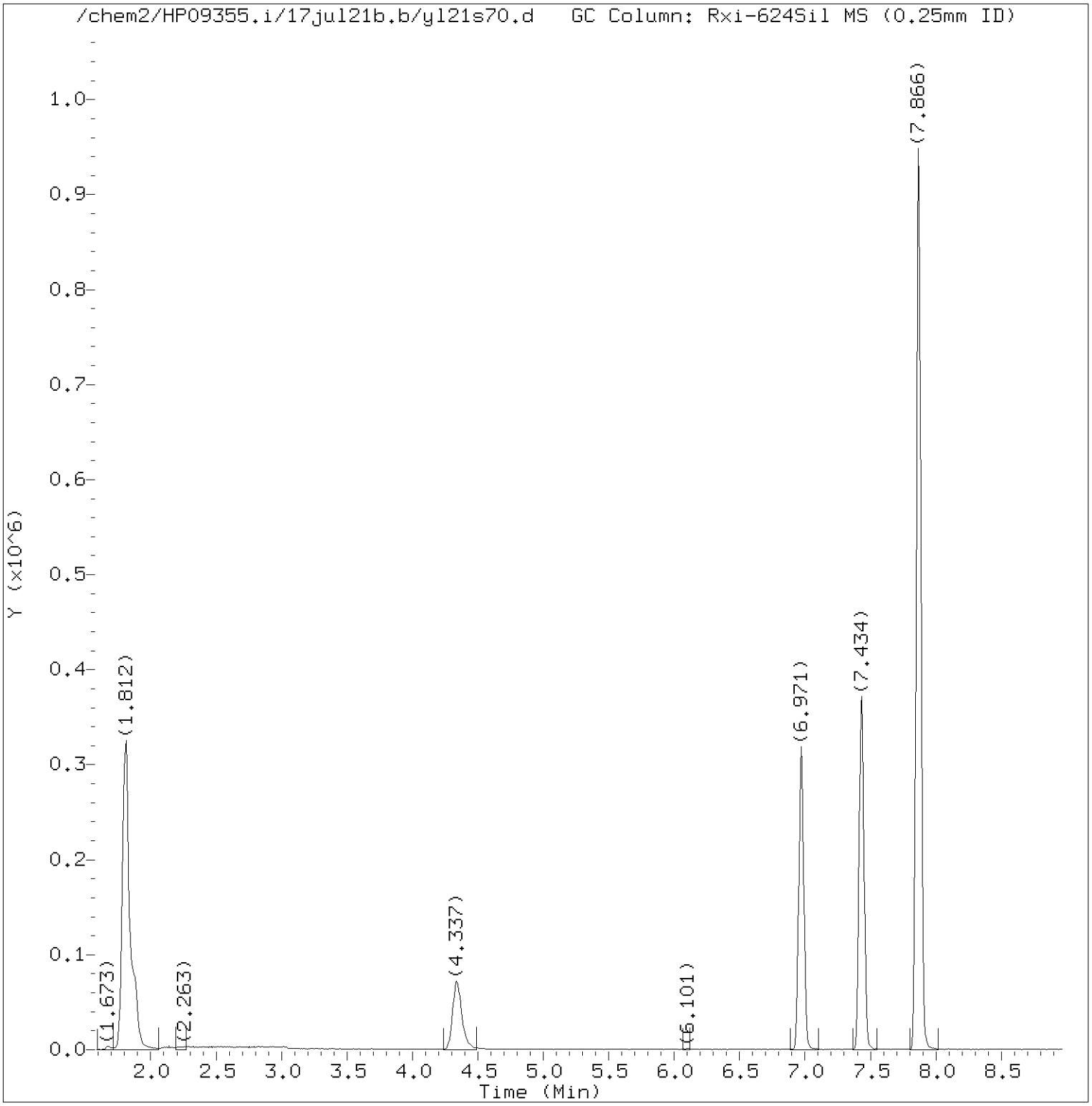
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.971(-0.001) | 113 | 276567 | 53.435 | 107% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428( 0.000) | 102 | 68918 | 50.785 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1106913 | 51.059 | 102% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 386938 | 47.590 | 95% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:51. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

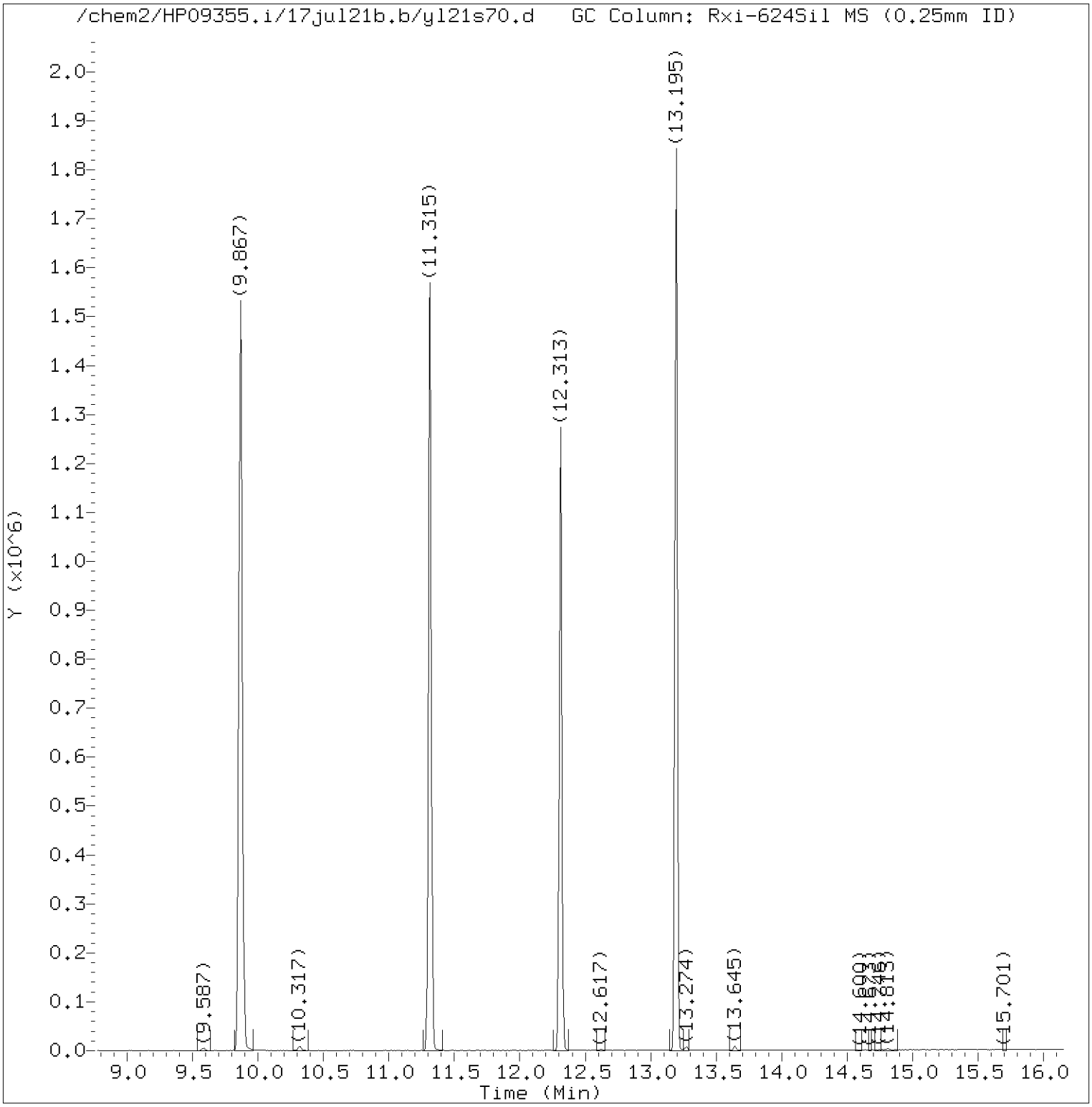
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s70.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:22 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 00:38 Automation

Sample Name: 18812 Lab Sample ID: 9109788

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:51.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s70.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:22 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 00:38 Automation

Sample Name: 18812 Lab Sample ID: 9109788

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:51.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s70.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:22 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 00:38 Automation

Sample Name: 18812 Lab Sample ID: 9109788

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.331 | 65 | 159781 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 276567 | 53.435 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 68918 | 50.785 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1109815 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1106913 | 51.059 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 839112 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 386938 | 47.590 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 403241 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/24/2017 at 10:51.
Target 3.5 esignature user ID: lcp00895

# Standards Data

# Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09355 **HP #20**

Data Directory Path is - C:\MSDCHEM\1\DATA\17JAN20I\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| BWK03231 | YJ20T01.D | 50NGBFB | 01/20/2017 | 08:37 | | |
| BWK03231 | YJ20X01.D | CBLK | 01/20/2017 | 08:55 | | |
| BWK03231 | YJ20I01.D | VSTD300 | 01/20/2017 | 09:18 | | |
| BWK03231 | YJ20I02.D | VSTD100 | 01/20/2017 | 09:39 | | |
| BWK03231 | YJ20I03.D | VSTD050 | 01/20/2017 | 10:01 | | |
| BWK03231 | YJ20I04.D | VSTD020 | 01/20/2017 | 10:23 | | |
| BWK03231 | YJ20I05.D | VSTD010 | 01/20/2017 | 10:45 | | |
| BWK03231 | YJ20I06.D | VSTD004 | 01/20/2017 | 11:07 | | |
| BWK03231 | YJ20I07.D | VSTD001 | 01/20/2017 | 11:29 | | |
| BWK03231 | YJ20M01.D | MDL0.5 | 01/20/2017 | 11:51 | | |
| BWK03231 | YJ20V01.D | YLGICV | 01/20/2017 | 12:13 | | |
| BWK03231 | YJ20X11.D | CBLK | 01/20/2017 | 13:15 | | |
| BWK03231 | YJ20I11.D | VSTD300 | 01/20/2017 | 13:37 | | |
| BWK03231 | YJ20I12.D | VSTD100 | 01/20/2017 | 13:58 | | |
| BWK03231 | YJ20I13.D | VSTD050 | 01/20/2017 | 14:20 | | |
| BWK03231 | YJ20I14.D | VSTD020 | 01/20/2017 | 14:42 | | |
| BWK03231 | YJ20I15.D | VSTD010 | 01/20/2017 | 15:04 | | |
| BWK03231 | YJ20I16.D | VSTD004 | 01/20/2017 | 15:26 | | |
| BWK03231 | YJ20M11.D | MDL001 | 01/20/2017 | 15:48 | | |
| BWK03231 | YJ20V11.D | YSMICV | 01/20/2017 | 16:10 | | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09355 **HP #20**

Data Directory Path is - C:\MSDCHEM\1\DATA\17JUL21b\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| pth10165 | YL21T10.D | 50NGBFB | 07/21/2017 | 18:45 | | |
| pth10165 | YL21X10.D | VBLKY05 | 07/21/2017 | 19:07 | Y172023AA | |
| pth10165 | YL21C05.D | VSTD050 | 07/21/2017 | 19:30 | Y172023AA | |
| pth10165 | YL21S61.D | LCSY05 | 07/21/2017 | 19:52 | Y172023AA | |
| pth10165 | YL21S62.D | LCDY05 | 07/21/2017 | 20:17 | Y172023AA | |
| pth10165 | YL21B10.D | VBLKY05 | 07/21/2017 | 20:40 | Y172023AA | |
| pth10165 | YL21S63.D | 9110418 | 07/21/2017 | 21:34 | Y172023AA | |
| pth10165 | YL21S64.D | 9111691 | 07/21/2017 | 21:56 | Y172023AA | |
| pth10165 | YL21S65.D | 9111692 | 07/21/2017 | 22:18 | Y172023AA | |
| pth10165 | YL21S67.D | 9109781 | 07/21/2017 | 23:16 | Y172023AA | |
| pth10165 | YL21S68.D | 9109784 | 07/21/2017 | 23:38 | Y172023AA | |
| pth10165 | YL21S69.D | 9109785 | 07/22/2017 | 00:00 | Y172023AA | |
| pth10165 | YL21S70.D | 9109788 | 07/22/2017 | 00:22 | Y172023AA | |
| pth10165 | YL21S71.D | 9112127 | 07/22/2017 | 00:44 | Y172023AA | |
| pth10165 | YL21S72.D | 9112128 | 07/22/2017 | 01:06 | Y172023AA | |
| pth10165 | YL21S73.D | 9109771 | 07/22/2017 | 01:28 | Y172023AA | |
| pth10165 | YL21S74.D | 9109772MS | 07/22/2017 | 01:51 | Y172023AA | |
| pth10165 | YL21S75.D | 9109773MSD | 07/22/2017 | 02:13 | Y172023AA | |
| pth10165 | YL21S76.D | 9109779 | 07/22/2017 | 02:35 | Y172023AA | |
| pth10165 | YL21S77.D | 9109779DL | 07/22/2017 | 02:57 | Y172023AA | 10 |
| pth10165 | YL21S78.D | 9109782 | 07/22/2017 | 03:19 | Y172023AA | |
| pth10165 | YL21S79.D | 9109783 | 07/22/2017 | 03:41 | Y172023AA | |
| pth10165 | YL21S80.D | 9109786 | 07/22/2017 | 04:03 | Y172023AA | |
| pth10165 | YL21S81.D | 9109787 | 07/22/2017 | 04:26 | Y172023AA | |
| pth10165 | YL21S82.D | 9112123 | 07/22/2017 | 04:48 | Y172023AA | |
| pth10165 | YL21S83.D | 9112125 | 07/22/2017 | 05:10 | Y172023AA | |
| pth10165 | YL21S84.D | 9112126 | 07/22/2017 | 05:33 | Y172023AA | |
| pth10165 | YL21C06.D | SECC050 | 07/22/2017 | 05:55 | Y172023AA | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09355 **HP #20**

Data Directory Path is - C:\MSDCHEM\1\DATA\17JUL27A\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| LCP00895 | YL27T01.D | 50NGBFB | 07/27/2017 | 07:42 | | |
| LCP00895 | YL27X01.D | CBLKY18 | 07/27/2017 | 08:15 | Y172081AA | |
| LCP00895 | YL27C01.D | VSTD050 | 07/27/2017 | 08:37 | Y172081AA | |
| LCP00895 | YL27C02.D | VSTD050 | 07/27/2017 | 08:59 | Y172081AA | |
| LCP00895 | YL27B01.D | VBLKY18 | 07/27/2017 | 09:21 | Y172081AA | |
| LCP00895 | YL27S01.D | LCSY18 | 07/27/2017 | 09:50 | Y172081AA | |
| LCP00895 | YL27S02.D | LCDY18 | 07/27/2017 | 10:15 | Y172081AA | |
| LCP00895 | YL27S03.D | LCSY19 | 07/27/2017 | 10:37 | Y172081AA | |
| LCP00895 | YL27S04.D | LCDY19 | 07/27/2017 | 10:59 | Y172081AA | |
| LCP00895 | YL27S05.D | 9107407 | 07/27/2017 | 11:41 | Y172081AA | |
| LCP00895 | YL27S06.D | 9109771DL | 07/27/2017 | 12:04 | Y172081AA | 10 |
| LCP00895 | YL27EC1.D | SECC050 | 07/27/2017 | 12:26 | Y172081AA | |
| LCP00895 | YL27EC2.D | SECV050 | 07/27/2017 | 12:48 | Y172081AA | |
| LCP00895 | YL27S33.D | 9107020 | 07/27/2017 | 13:10 | Y172082AA | |
| LCP00895 | YL27S34.D | 9109081 | 07/27/2017 | 13:32 | Y172082AA | |
| LCP00895 | YL27S35.D | 9107016 | 07/27/2017 | 13:54 | Y172082AA | |
| LCP00895 | YL27S36.D | 9107017 | 07/27/2017 | 14:16 | Y172082AA | |
| LCP00895 | YL27S37.D | 9107018 | 07/27/2017 | 14:38 | Y172082AA | |
| LCP00895 | YL27S38.D | 9107019 | 07/27/2017 | 15:00 | Y172082AA | |
| LCP00895 | YL27S39.D | 9109082 | 07/27/2017 | 15:22 | Y172082AA | |
| LCP00895 | YL27S40.D | 9109087 | 07/27/2017 | 15:44 | Y172082AA | |
| LCP00895 | YL27S41.D | 9109088 | 07/27/2017 | 16:07 | Y172082AA | |
| LCP00895 | YL27S42.D | 9109089 | 07/27/2017 | 16:29 | Y172082AA | |
| LCP00895 | YL27S43.D | 9118347 | 07/27/2017 | 16:51 | Y172082AA | |
| LCP00895 | YL27S44.D | 9118349 | 07/27/2017 | 17:13 | Y172082AA | |
| LCP00895 | YL27S45.D | 9107203 | 07/27/2017 | 17:35 | Y172082AA | 20 |
| LCP00895 | YL27S46.D | 9107203MS | 07/27/2017 | 17:57 | Y172082AA | 20 |
| LCP00895 | YL27S47.D | 9107203MSD | 07/27/2017 | 18:20 | Y172082AA | 20 |
| LCP00895 | YL27S48.D | 9107164 | 07/27/2017 | 18:42 | Y172082AA | 20 |
| LCP00895 | YL27S49.D | 9110305 | 07/27/2017 | 19:04 | Y172082AA | 20 |
| LCP00895 | YL27S50.D | 9110308 | 07/27/2017 | 19:26 | Y172082AA | 20 |

Data File: /chem2/HP09355.i/17jan20i.b/yj20t01.d

Page 1

Date : 20-JAN-2017 08:37

Client ID: BFBAUG22-16

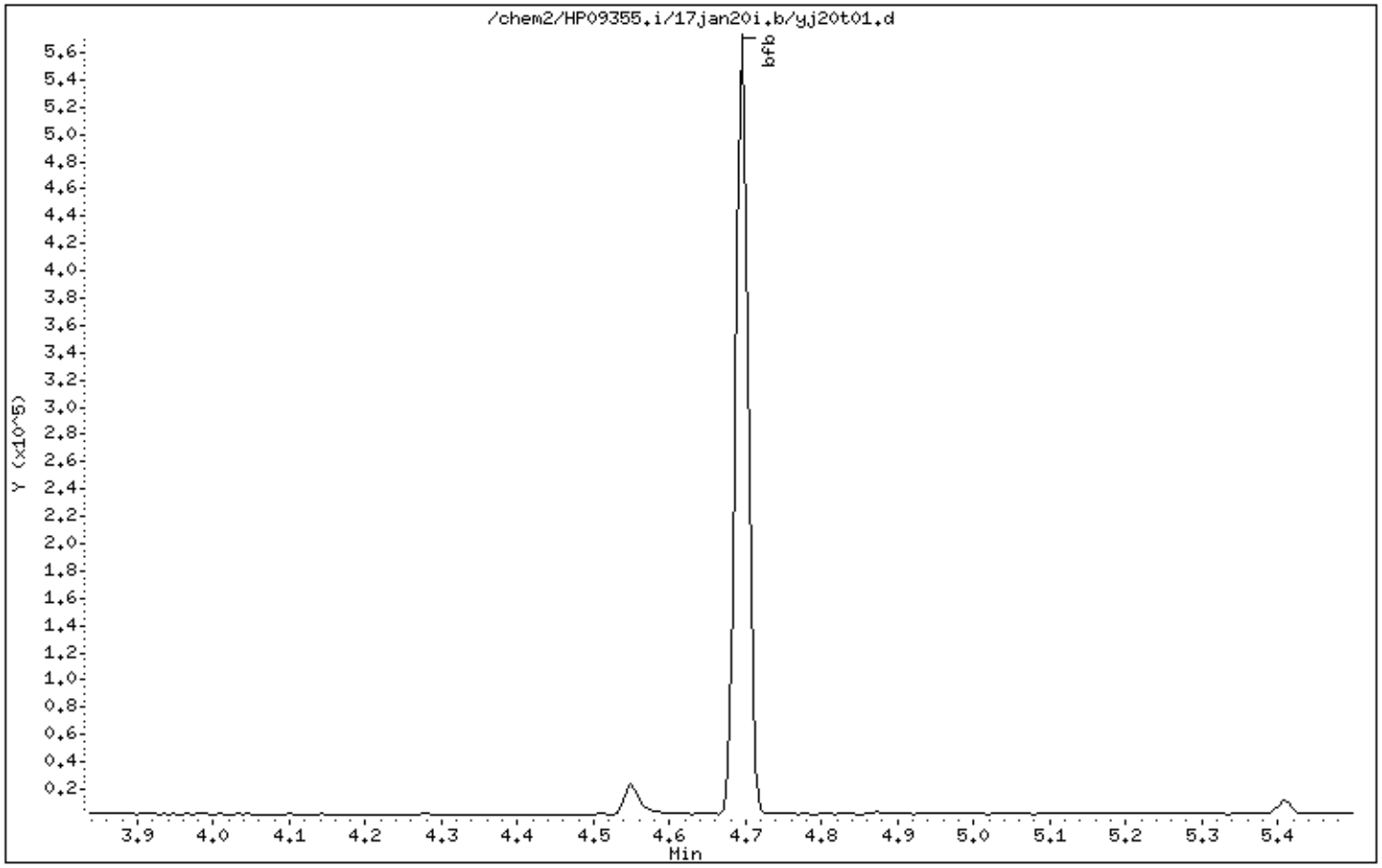
Instrument: HP09355.i

Sample Info: BFBAUG22-16;50NGBFB;1;2;;;;;;

Operator: BWK03231

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Data File: /chem2/HP09355.i/17jan20i.b/yj20t01.d

Date : 20-JAN-2017 08:37

Client ID: BFBAUG22-16

Instrument: HP09355.i

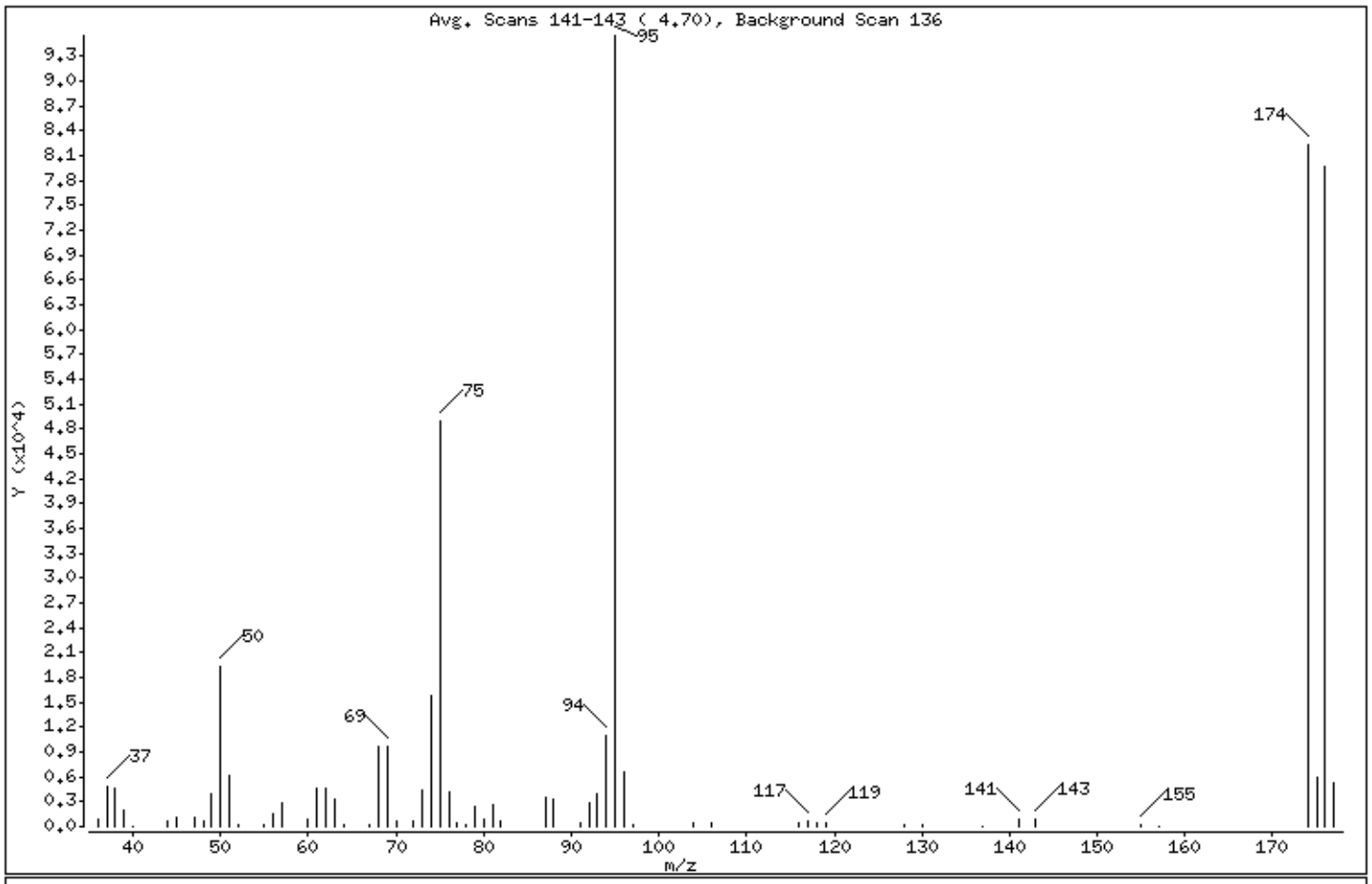
Sample Info: BFBAUG22-16;50NGBFB;1;2;;;;;;

Operator: BWK03231

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 20.15 |
| 75 | 30.00 - 60.00% of mass 95 | 51.21 |
| 96 | 5.00 - 9.00% of mass 95 | 6.89 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 86.14 |
| 175 | 5.00 - 9.00% of mass 174 | 6.18 ( 7.17) |
| 176 | 95.00 - 101.00% of mass 174 | 83.46 ( 96.90) |
| 177 | 5.00 - 9.00% of mass 176 | 5.58 ( 6.68) |

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Date : 20-JAN-2017 08:37

Client ID: BFBAUG22-16 Instrument: HP09355.i

Sample Info: BFBAUG22-16;50NGBFB;1;2;;;;;;

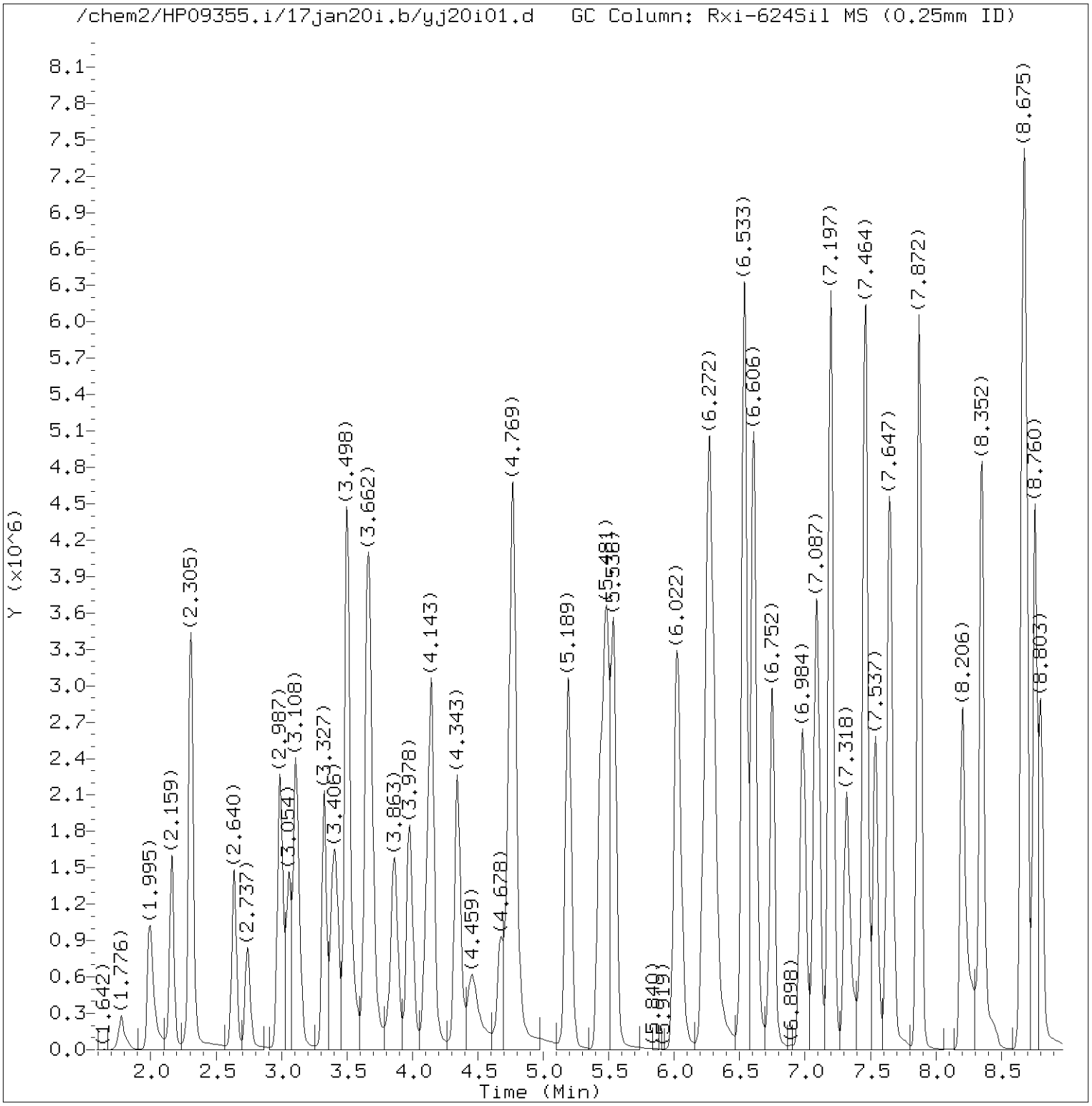
Operator: BWK03231

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: yj20t01.d
Spectrum: Avg. Scans 141-143 ( 4.70), Background Scan 136
Location of Maximum: 95.00
Number of points: 62

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 925 | 60.00 | 865 | 79.00 | 2516 | 117.00 | 634 |
| 37.00 | 4932 | 61.00 | 4520 | 80.00 | 806 | 118.00 | 371 |
| 38.00 | 4615 | 62.00 | 4551 | 81.00 | 2727 | 119.00 | 447 |
| 39.00 | 1889 | 63.00 | 3367 | 82.00 | 557 | 128.00 | 325 |
| 40.00 | 83 | 64.00 | 322 | 87.00 | 3482 | 130.00 | 313 |
| 44.00 | 569 | 67.00 | 183 | 88.00 | 3290 | 137.00 | 84 |
| 45.00 | 1034 | 68.00 | 9644 | 91.00 | 376 | 141.00 | 892 |
| 47.00 | 1121 | 69.00 | 9735 | 92.00 | 2782 | 143.00 | 974 |
| 48.00 | 594 | 70.00 | 732 | 93.00 | 3981 | 155.00 | 188 |
| 49.00 | 3993 | 72.00 | 554 | 94.00 | 10965 | 157.00 | 86 |
| 50.00 | 19232 | 73.00 | 4421 | 95.00 | 95456 | 174.00 | 82224 |
| 51.00 | 6117 | 74.00 | 15798 | 96.00 | 6575 | 175.00 | 5899 |
| 52.00 | 262 | 75.00 | 48888 | 97.00 | 181 | 176.00 | 79672 |
| 55.00 | 311 | 76.00 | 4166 | 104.00 | 400 | 177.00 | 5324 |
| 56.00 | 1460 | 77.00 | 545 | 106.00 | 409 | | |
| 57.00 | 2792 | 78.00 | 294 | 116.00 | 395 | | |

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

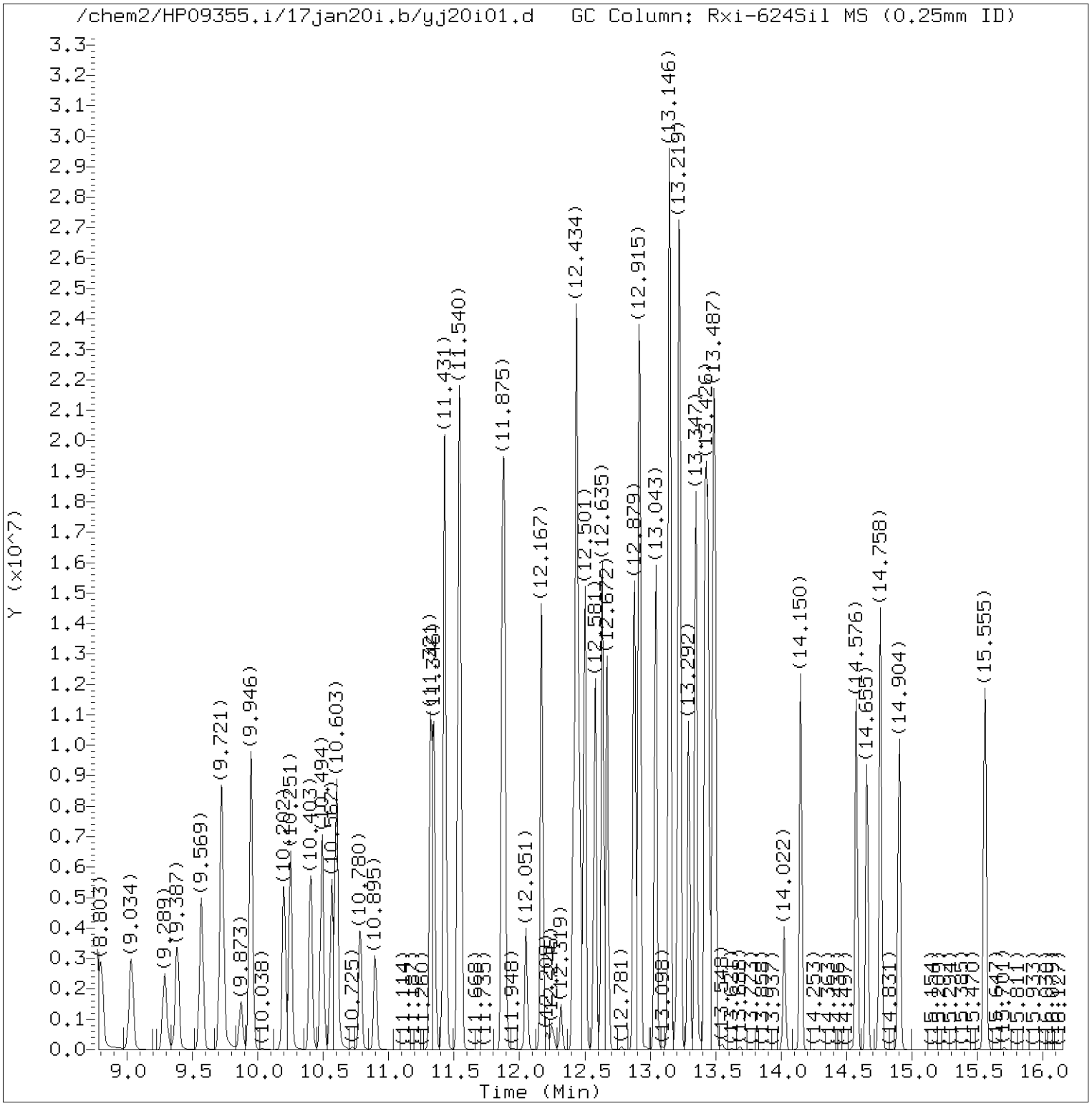
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.995 | 85 | 2157896 | 268.879 |
| 4) Chloromethane | (2) | 2.159 | 50 | 2263833 | 268.759 |
| 6) Vinyl Chloride | (2) | 2.299 | 62 | 2151797 | 270.600 |
| 5) 1,3-Butadiene | (2) | 2.311 | 39 | 1459392 | 211.639 |
| 8) Bromomethane | (2) | 2.640 | 94 | 1426288 | 256.210 |
| 9) Chloroethane | (2) | 2.737 | 64 | 1164277 | 255.620 |
| 10) Dichlorofluoromethane | (2) | 2.987 | 67 | 2775186 | 269.020 |
| 12) Trichlorofluoromethane | (2) | 3.054 | 101 | 2596013 | 273.604 |
| 11) n-Pentane | (2) | 3.108 | 43 | 2616067 | 255.730 |
| 14) Ethyl ether | (2) | 3.327 | 59 | 1641809 | 291.847 |
| 15) Freon 123a | (2) | 3.406 | 67 | 1817487 | 282.905 |
| 16) Acrolein | (1) | 3.498 | 56 | 6847928 | 3256.490 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 1426093 | 298.494 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 63 | 727464 | 292.101 |
| 18) Acetone | (1) | 3.668 | 58 | 669876 | 655.281 |
| 19) Freon 113 | (2) | 3.680 | 101 | 1401440 | 295.225 |
| 21) 2-Propanol | (1) | 3.838 | 45 | 1067460 | 1380.078 |
| 22) Methyl Iodide | (2) | 3.863 | 142 | 2661865 | 295.468 |
| 23) Carbon Disulfide | (2) | 3.978 | 76 | 4493215 | 309.338 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 2651008 | 295.837 |
| 25) Allyl Chloride | (2) | 4.149 | 41 | 2894283 | 296.526 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.331 | 65 | 341463 | 250.000 |
| 28) Methylene Chloride | (2) | 4.343 | 84 | 1706939 | 289.072 |
| 30) t-Butyl alcohol | (1) | 4.459 | 59 | 2107992 | 1389.432 |
| 31) Acrylonitrile | (2) | 4.672 | 53 | 1304779 | 303.385 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.751 | 73 | 5561183 | 285.652 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 1721345 | 299.039 |
| 34) n-Hexane | (2) | 5.189 | 57 | 2541716 | 290.260 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 3003935M | 290.727 |
| 38) di-Isopropyl ether | (2) | 5.481 | 45 | 5892173 | 287.821 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.542 | 53 | 2856393 | 300.895 |
| 40) Ethyl t-butyl ether | (2) | 6.022 | 59 | 5479642 | 285.508 |
| 44) 2-Butanone | (2) | 6.229 | 43 | 4003918 | 602.801 |
| 42) cis-1,2-Dichloroethene | (2) | 6.266 | 96 | 1969591 | 299.288 |
| 45) 2,2-Dichloropropane | (2) | 6.284 | 77 | 2446977 | 297.359 |
| 47) Propionitrile | (1) | 6.314 | 54 | 2766307 | 1555.797 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 3471613 | 748.615 |
| 49) Bromochloromethane | (2) | 6.606 | 128 | 1027467 | 302.996 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.613 | 71 | 1069690 | 666.307 |
| 51) Chloroform | (2) | 6.752 | 83 | 3082498 | 295.797 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 3690936 | 598.328 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 289184 | 50.561 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 111 | 293282 | 50.244 |
| 53) 1,1,1-Trichloroethane | (2) | 6.984 | 97 | 2616912 | 297.388 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 2973996 | 287.148 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 2457605 | 288.916 |
| 54) Cyclohexane | (2) | 7.087 | 69 | 917213 | 291.532 |
| 55) 1,1-Dichloropropene | (2) | 7.197 | 75 | 2490529 | 294.176 |
| 56) Carbon Tetrachloride | (2) | 7.203 | 117 | 2332434 | 314.818 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 2262245M | 3981.531 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 102 | 73297 | 49.056 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 65 | 367275 | 48.824 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 104 | 47887 | 50.476 |
| 60) Benzene | (2) | 7.464 | 78 | 7219445 | 290.272 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 62 | 2592881 | 287.403 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 98 | 242936 | 302.441 |
| 65) t-Amyl methyl ether | (2) | 7.647 | 73 | 5514883 | 286.669 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1223002 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 2950971 | 286.240 |
| 69) n-Butanol | (1) | 8.206 | 56 | 3796317M | 8214.121 |
| 71) Trichloroethene | (2) | 8.352 | 95 | 1937708 | 297.370 |
| 72) Methylcyclohexane | (2) | 8.669 | 83 | 3306586 | 293.356 |
| 72) Methylcyclohexane | (2) | 8.669 | 98 | 1493270 | 293.204 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 1971916 | 298.642 |
| 76) Methyl Methacrylate | (2) | 8.760 | 69 | 2205543 | 311.854 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 488672M | 3901.853 |
| 74) Dibromomethane | (2) | 8.803 | 93 | 1290488 | 302.072 |
| 78) Bromodichloromethane | (2) | 9.034 | 83 | 2430165 | 322.711 |
| 79) 2-Nitropropane | (2) | 9.289 | 41 | 2053788 | 710.426 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.387 | 63 | 1749094 | 317.713 |
| 81) cis-1,3-Dichloropropene | (2) | 9.569 | 75 | 3169502 | 320.095 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 7346859 | 614.812 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1199465 | 48.277 |
| 83)$Toluene-d8 | (3) | 9.873 | 100 | 781515 | 48.604 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 6192195 | 641.190 |
| 88) Toluene | (3) | 9.946 | 92 | 4778111 | 285.144 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.202 | 75 | 3022693 | 321.094 |
| 91) Ethyl Methacrylate | (3) | 10.251 | 69 | 3488343 | 307.189 |
| 92) 1,1,2-Trichloroethane | (3) | 10.403 | 97 | 1899273 | 291.064 |
| 93) Tetrachloroethene | (3) | 10.494 | 166 | 2173308 | 291.455 |
| 94) 1,3-Dichloropropane | (3) | 10.567 | 76 | 3180315 | 287.909 |
| 96) 2-Hexanone | (3) | 10.603 | 43 | 5977950 | 601.994 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 2137005 | 337.236 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 2119139 | 298.571 |
| 100)*Chlorobenzene-d5 | (3) | 11.321 | 117 | 963403A | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 2667427 | 292.077 |
| 102) Chlorobenzene | (3) | 11.346 | 112 | 5455961 | 285.789 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 1949894 | 322.063 |
| 104) Ethylbenzene | (3) | 11.431 | 91 | 9226513 | 285.462 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 7565673 | 586.734 |
| 108) Xylene (Total) | (3) | | 106 | 11297452 | 881.892 |
| 107) o-Xylene | (3) | 11.869 | 106 | 3731779 | 295.158 |
| 109) Styrene | (3) | 11.887 | 104 | 6412739 | 305.562 |
| 110) Bromoform | (3) | 12.051 | 173 | 1726554 | 366.718 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 8963155 | 280.918 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 384974 | 4124.299 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 95 | 457828 | 49.011 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 174 | 388344 | 48.785 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 3219232M | 299.352 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 2713962 | 312.510 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.441 | 53 | 2630328 | 784.473 |
| 117) 1,2,3-Trichloropropane | (4) | 12.465 | 110 | 1063539 | 295.827 |
| 119) n-Propylbenzene | (4) | 12.501 | 91 | 10398694 | 277.046 |
| 120) 2-Chlorotoluene | (4) | 12.581 | 126 | 2277216 | 294.840 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.635 | 105 | 7880866 | 287.941 |
| 121) 4-Chlorotoluene | (4) | 12.672 | 126 | 2430755 | 296.499 |
| 124) tert-Butylbenzene | (4) | 12.879 | 134 | 1762488M | 301.182 |
| 125) Pentachloroethane | (4) | 12.915 | 167 | 1545694 | 349.334 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.921 | 105 | 8299150 | 293.217 |
| 127) sec-Butylbenzene | (4) | 13.043 | 105 | 9623747 | 279.723 |
| 129) 1,3-Dichlorobenzene | (4) | 13.146 | 146 | 4972597 | 300.120 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 8908732 | 291.438 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 524531 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 5082529 | 298.023 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

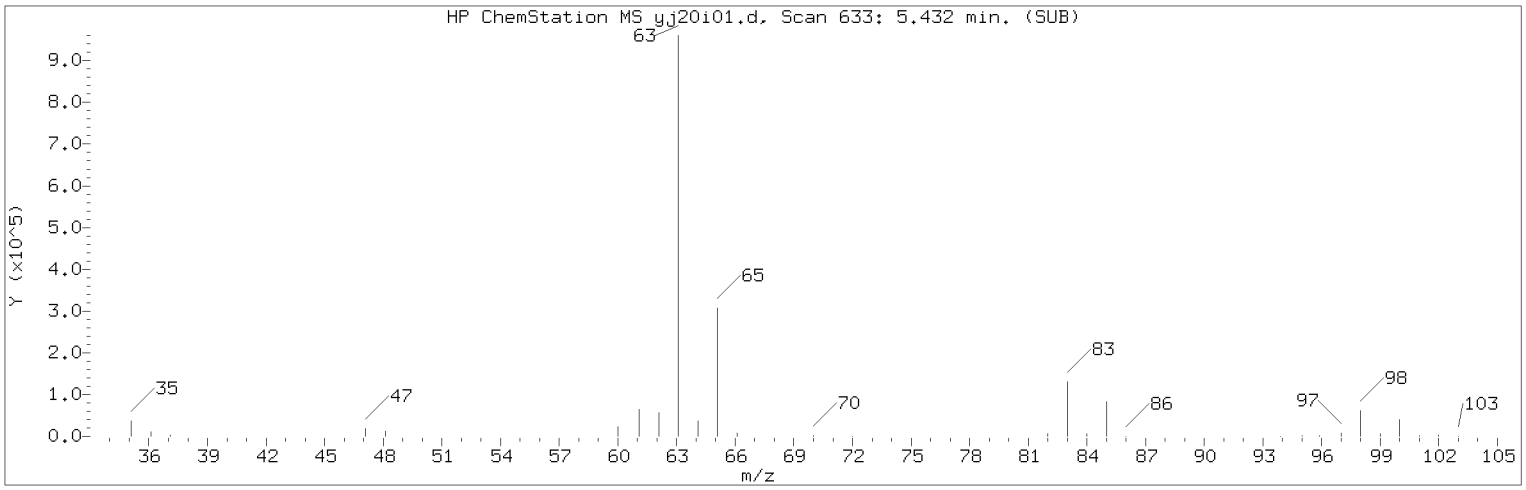
Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 8317827 | 292.569 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 6692719 | 343.081 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 5315608 | 298.602 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 5534315 | 299.642 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 4481888 | 291.285 |
| 138) 1,2-Dichlorobenzene | (4) | 13.481 | 146 | 4743419 | 298.048 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 4472948 | 299.443 |
| 141) Diethylbenzene (total) | (4) | | 100 | 15322871 | 897.686 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 836325 | 325.408 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 3468238 | 297.492 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.576 | 180 | 3236987 | 303.824 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 1532478 | 292.700 |
| 148) Naphthalene | (4) | 14.758 | 128 | 9997980 | 293.223 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 2962598 | 305.828 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 5923784 | 322.595 |

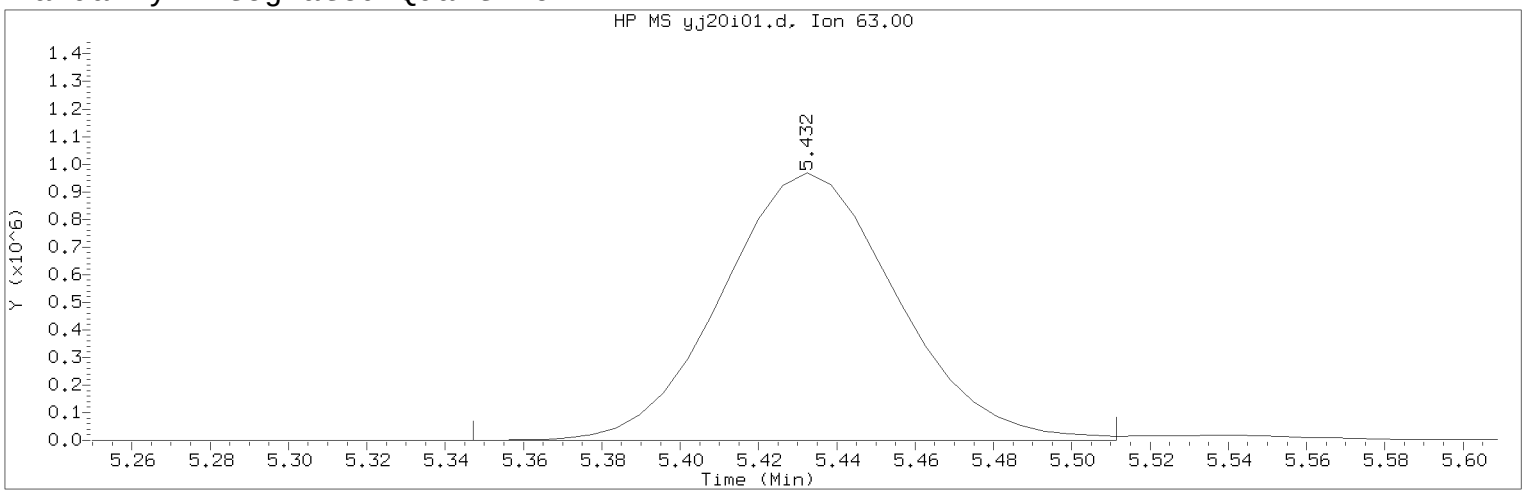


Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

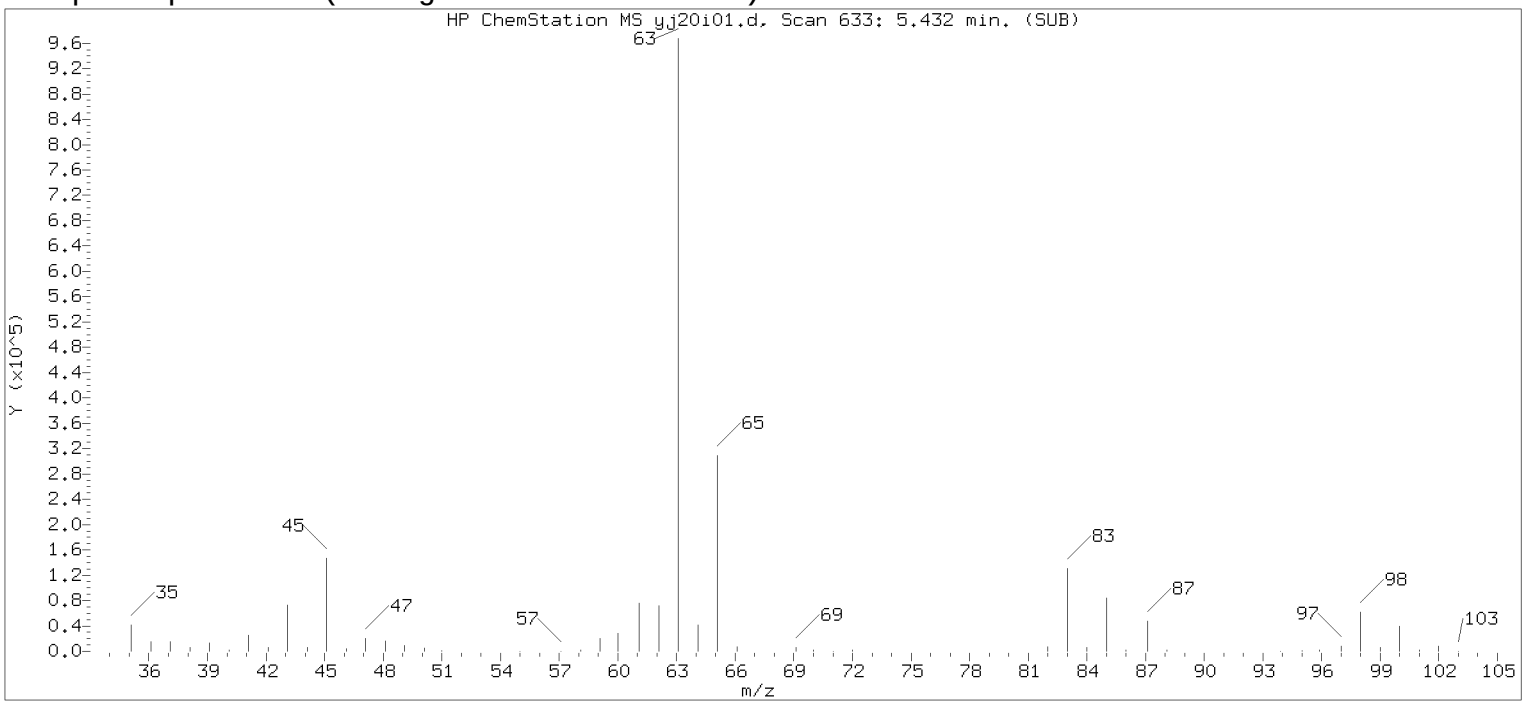
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 633
Retention Time (minutes): 5.432
Quant Ion : 63.00
Area (flag) : 3003935M
On-Column Amount (ng) : 290.7271
Integration start scan : 618 Integration stop scan: 645
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

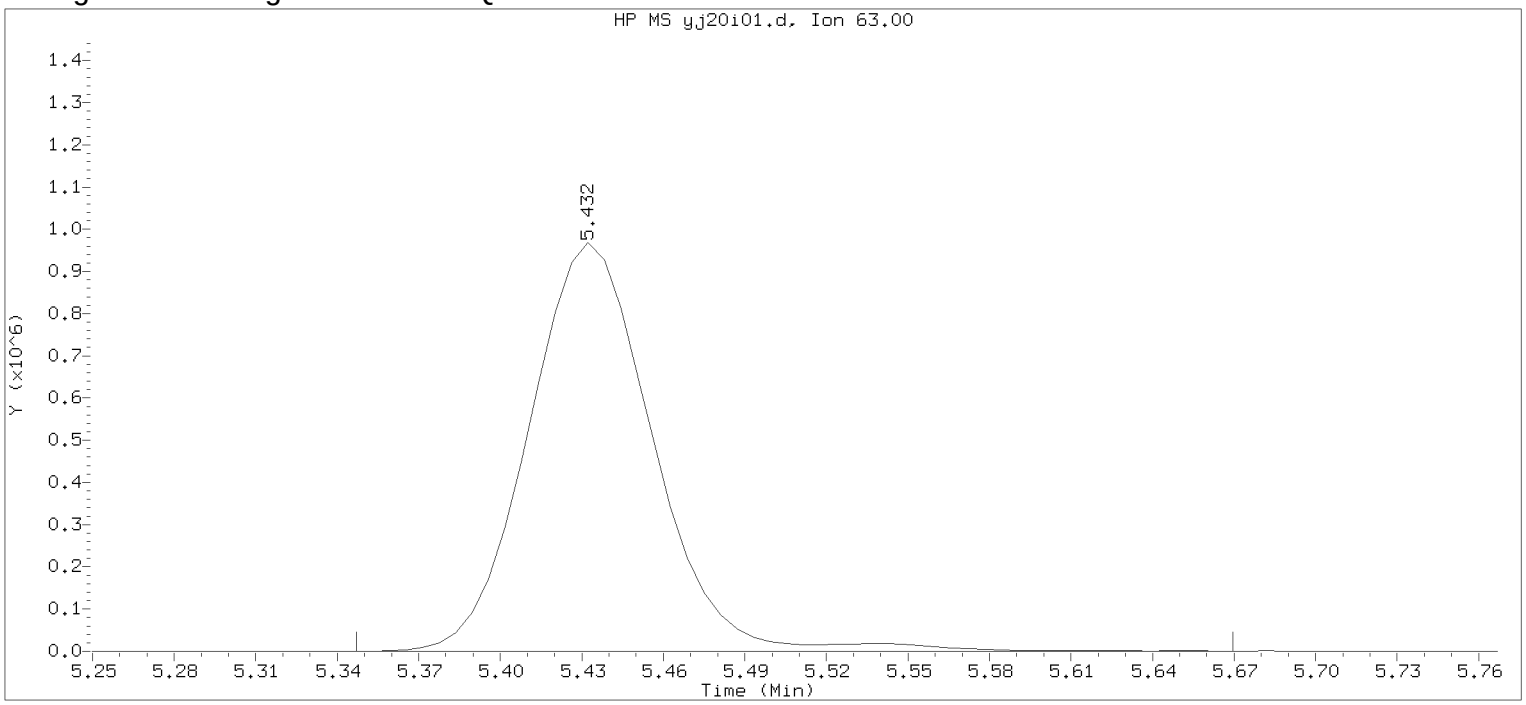
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

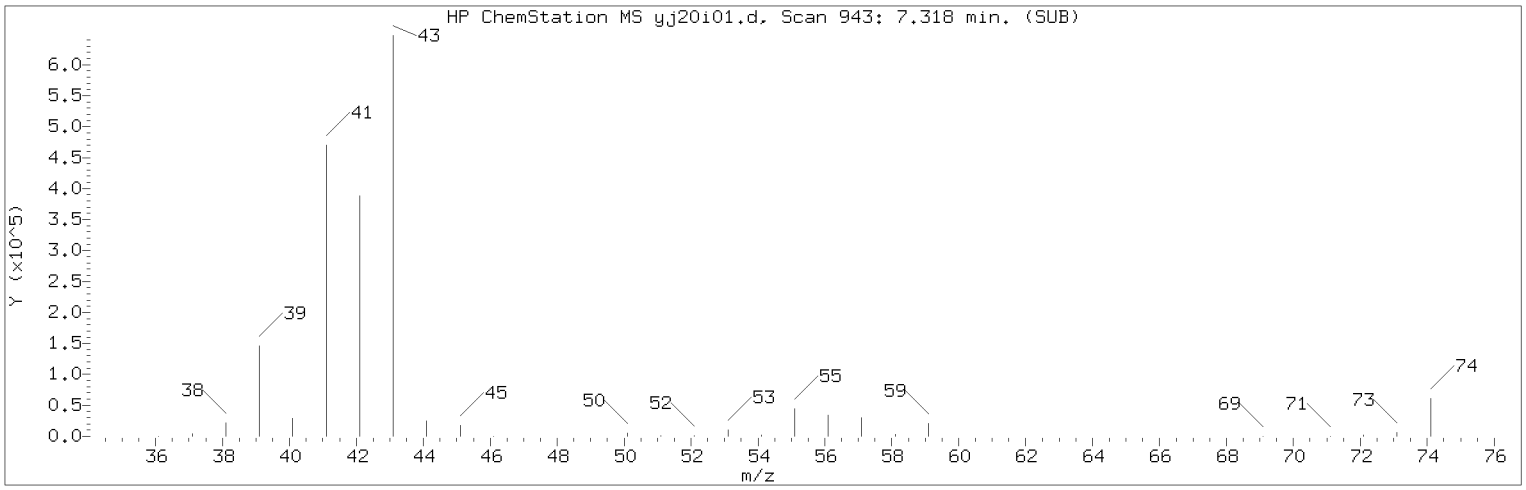
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

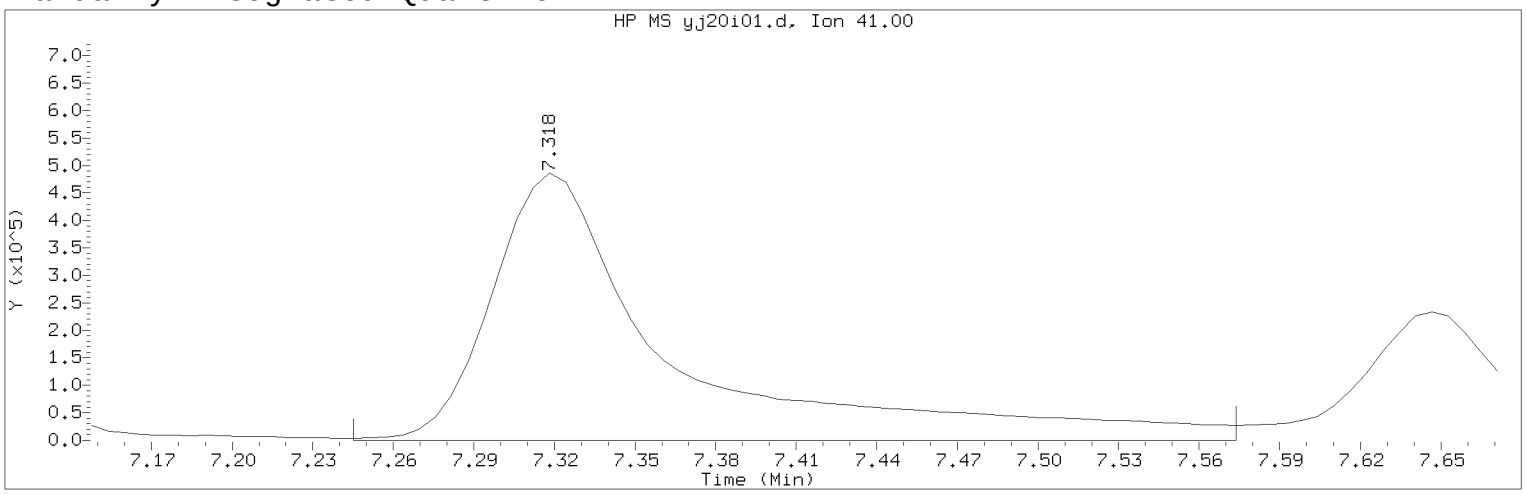
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 633
Retention Time (minutes): 5.432
Quant Ion : 63.00
Area : 3063673
On-column Amount (ng) : 290.9488
Integration start scan : 618 Integration stop scan: 671
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

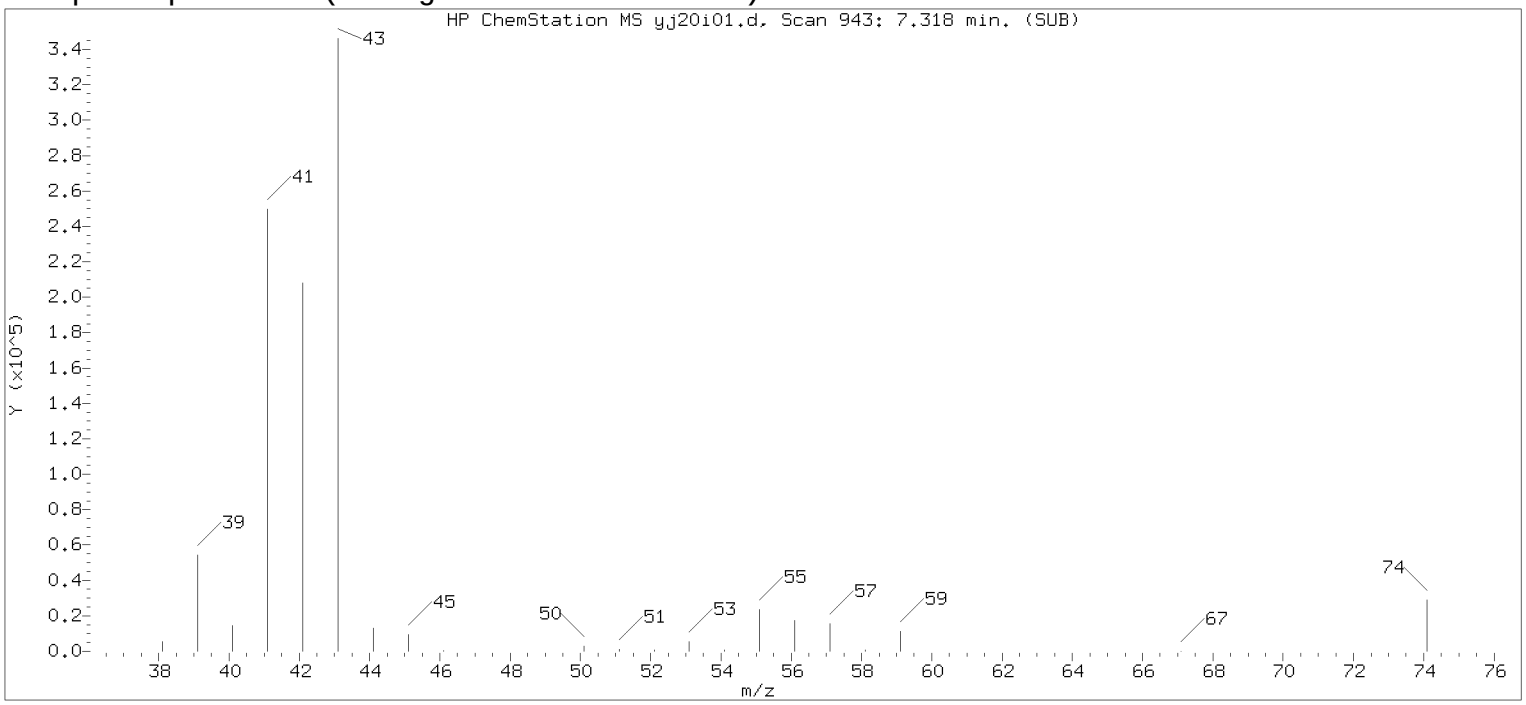
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 943
Retention Time (minutes): 7.318
Quant Ion : 41.00
Area (flag) : 2262245M
On-Column Amount (ng) : 3981.5311
Integration start scan : 930 Integration stop scan: 984
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

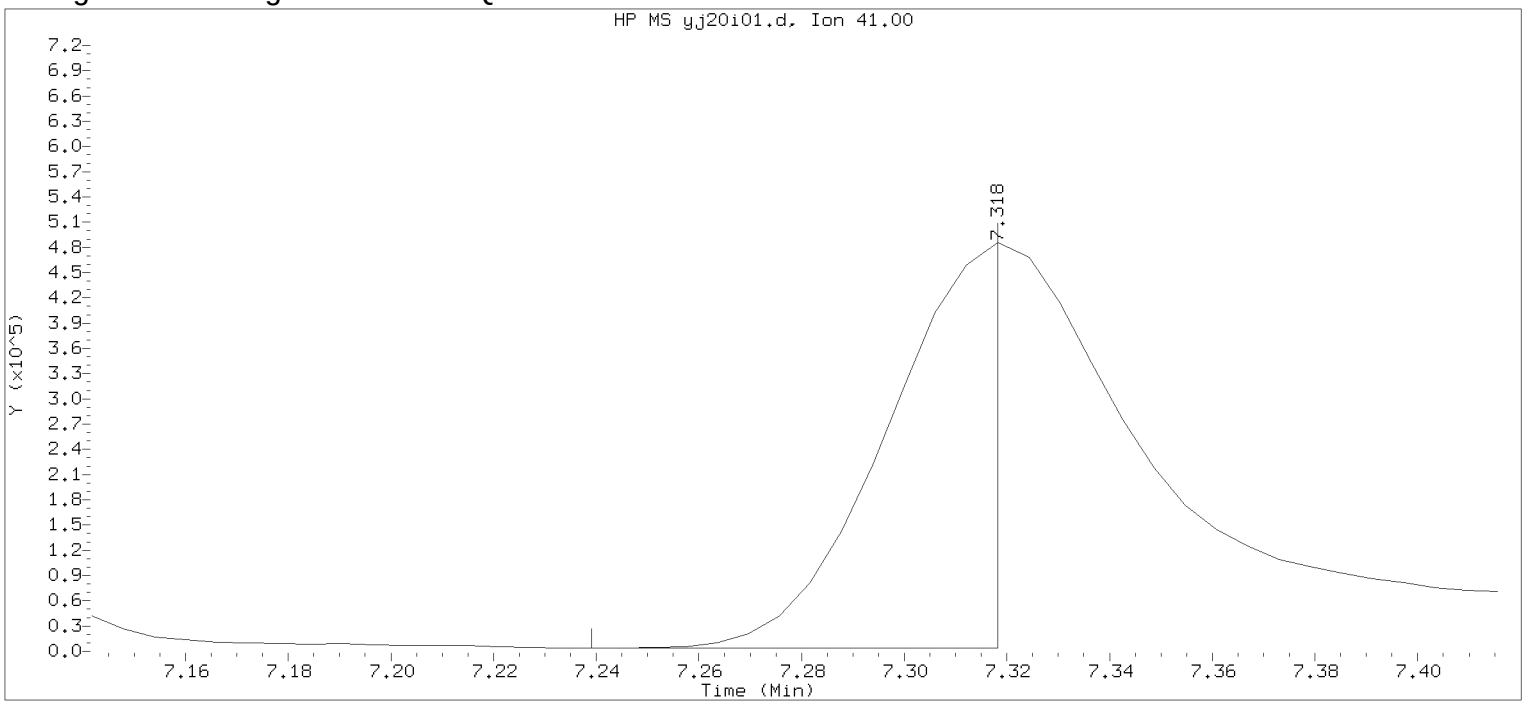
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

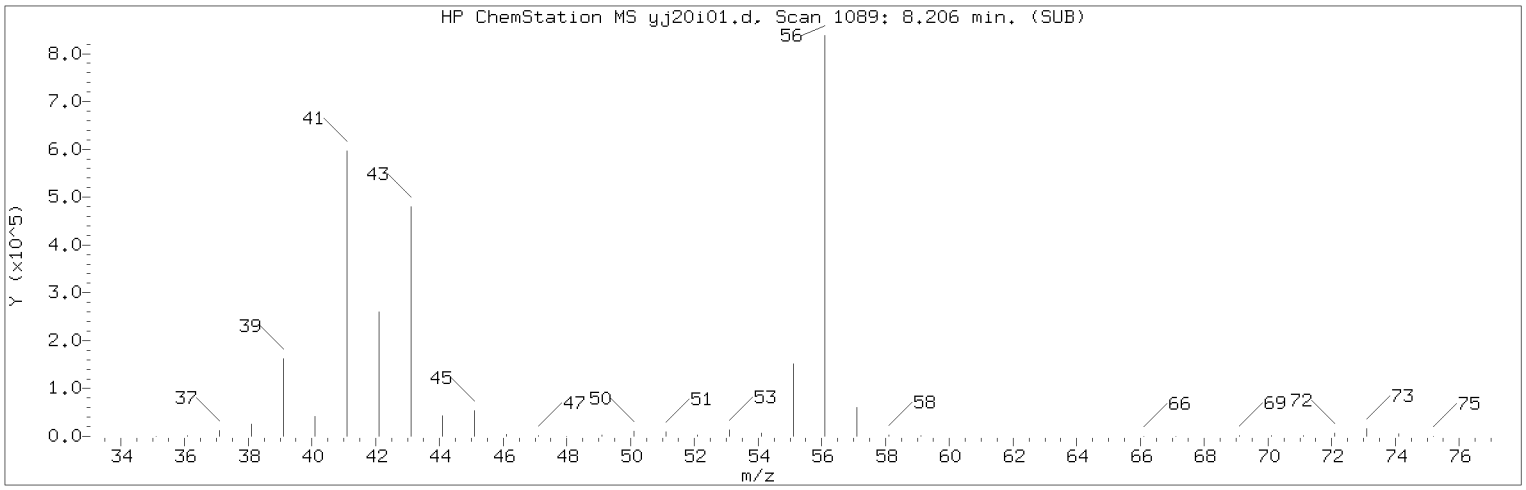
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

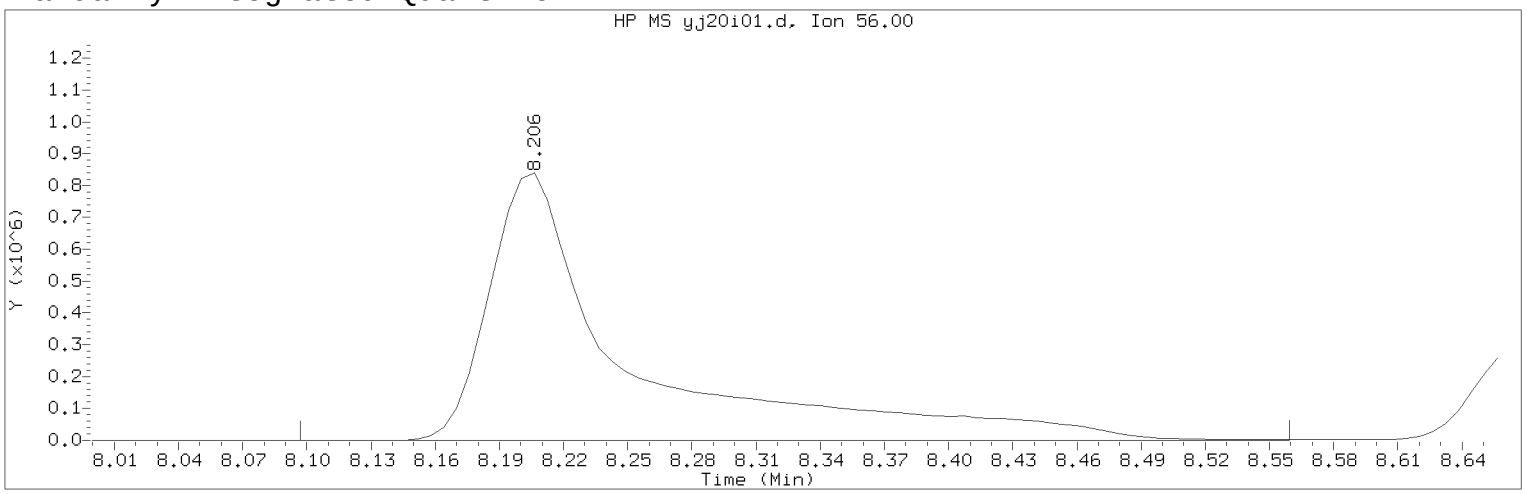
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 943
Retention Time (minutes): 7.318
Quant Ion : 41.00
Area : 694984
On-column Amount (ng) : 1469.7926
Integration start scan : 929 Integration stop scan: 942
Y at integration start : 3767 Y at integration end: 3767

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

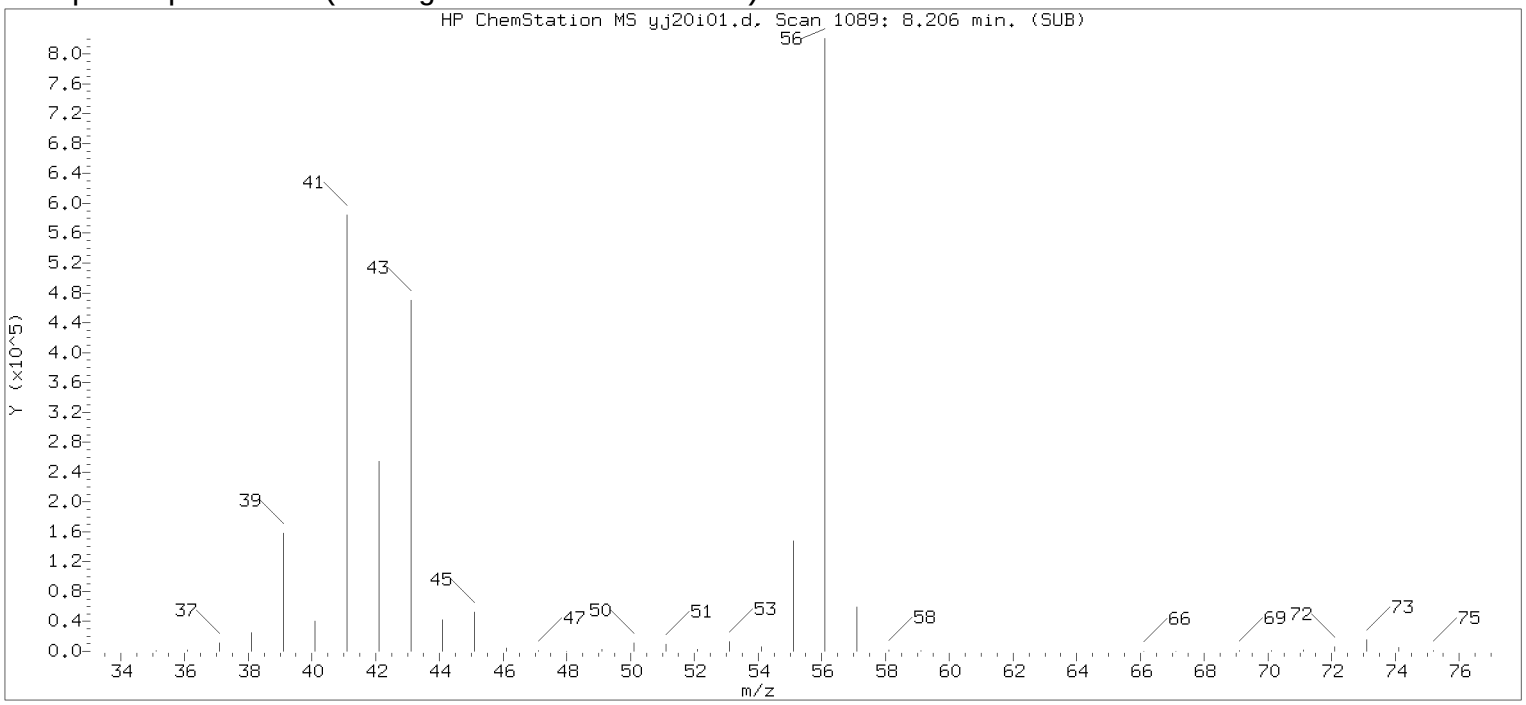
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1089
Retention Time (minutes): 8.206
Quant Ion : 56.00
Area (flag) : 3796317M
On-Column Amount (ng) : 8214.1209
Integration start scan : 1070 Integration stop scan: 1146
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

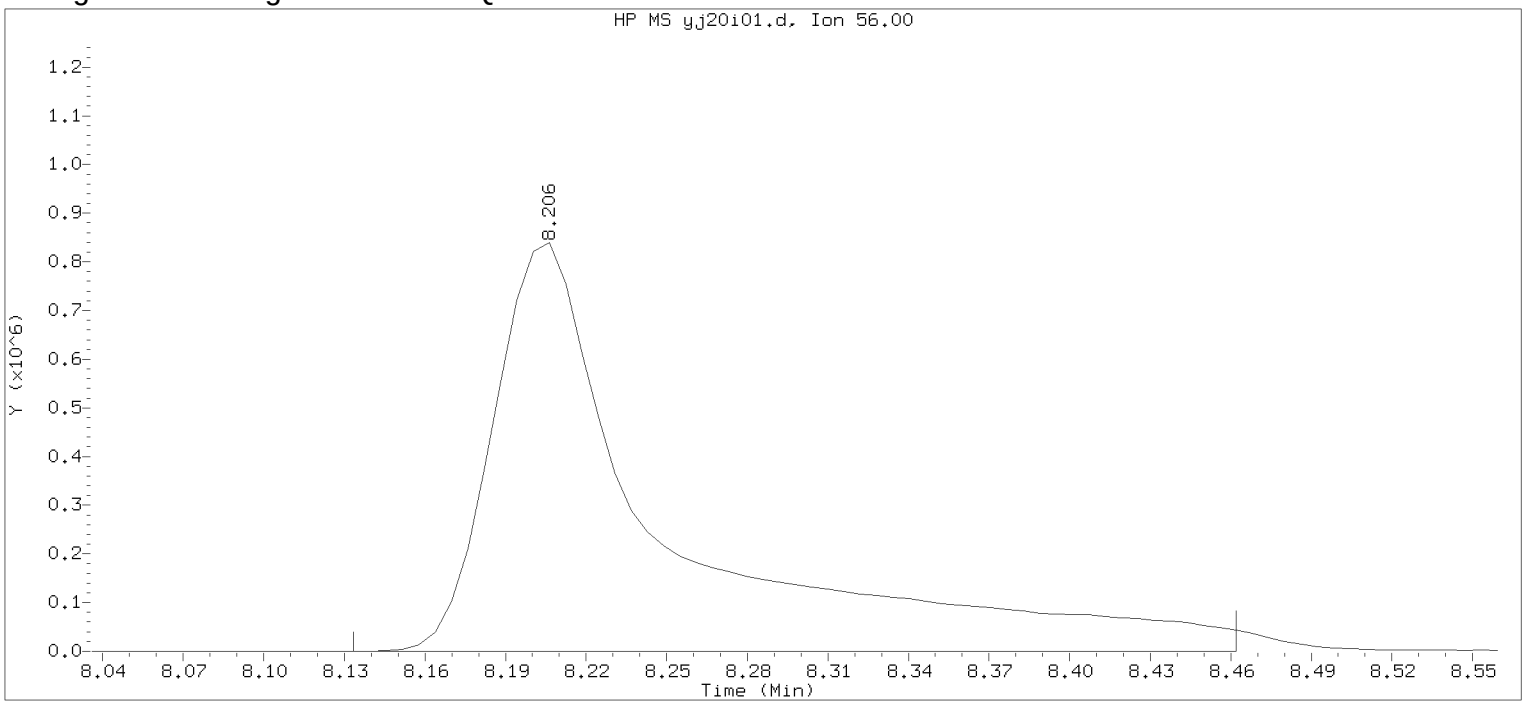
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

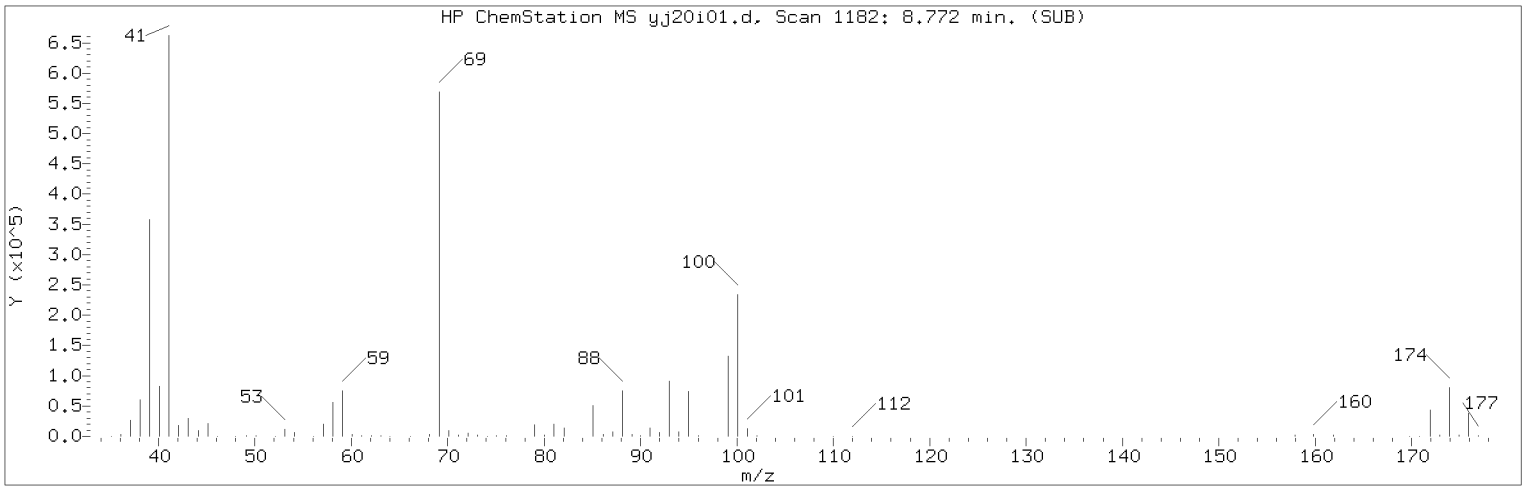
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

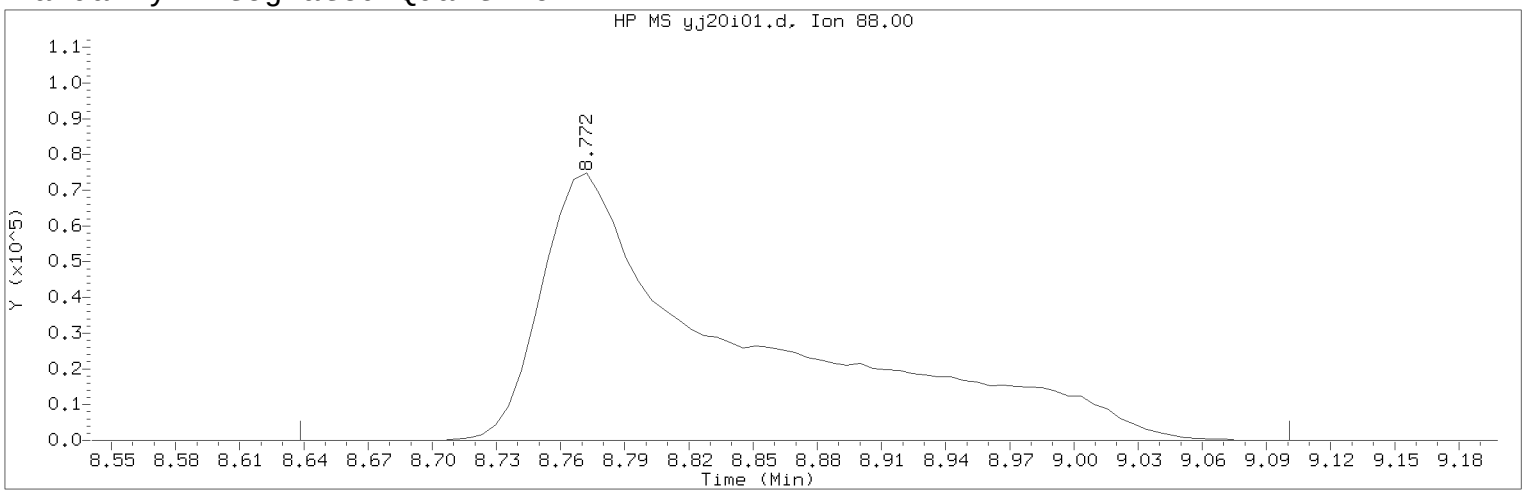
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1089
Retention Time (minutes): 8.206
Quant Ion : 56.00
Area : 3736015
On-column Amount (ng) : 8450.2006
Integration start scan : 1076 Integration stop scan: 1130
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

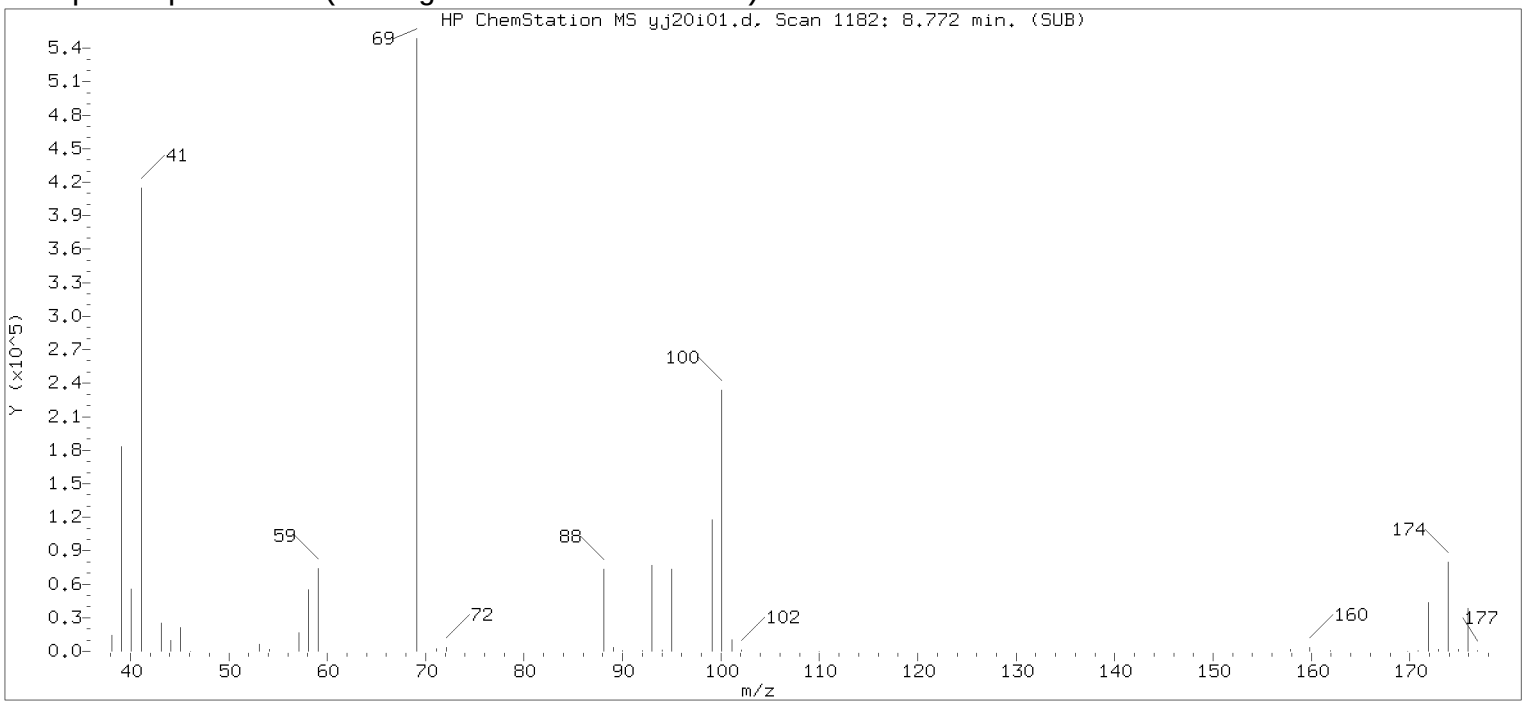
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area (flag) : 488672M
On-Column Amount (ng) : 3901.8525
Integration start scan : 1159 Integration stop scan: 1235
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

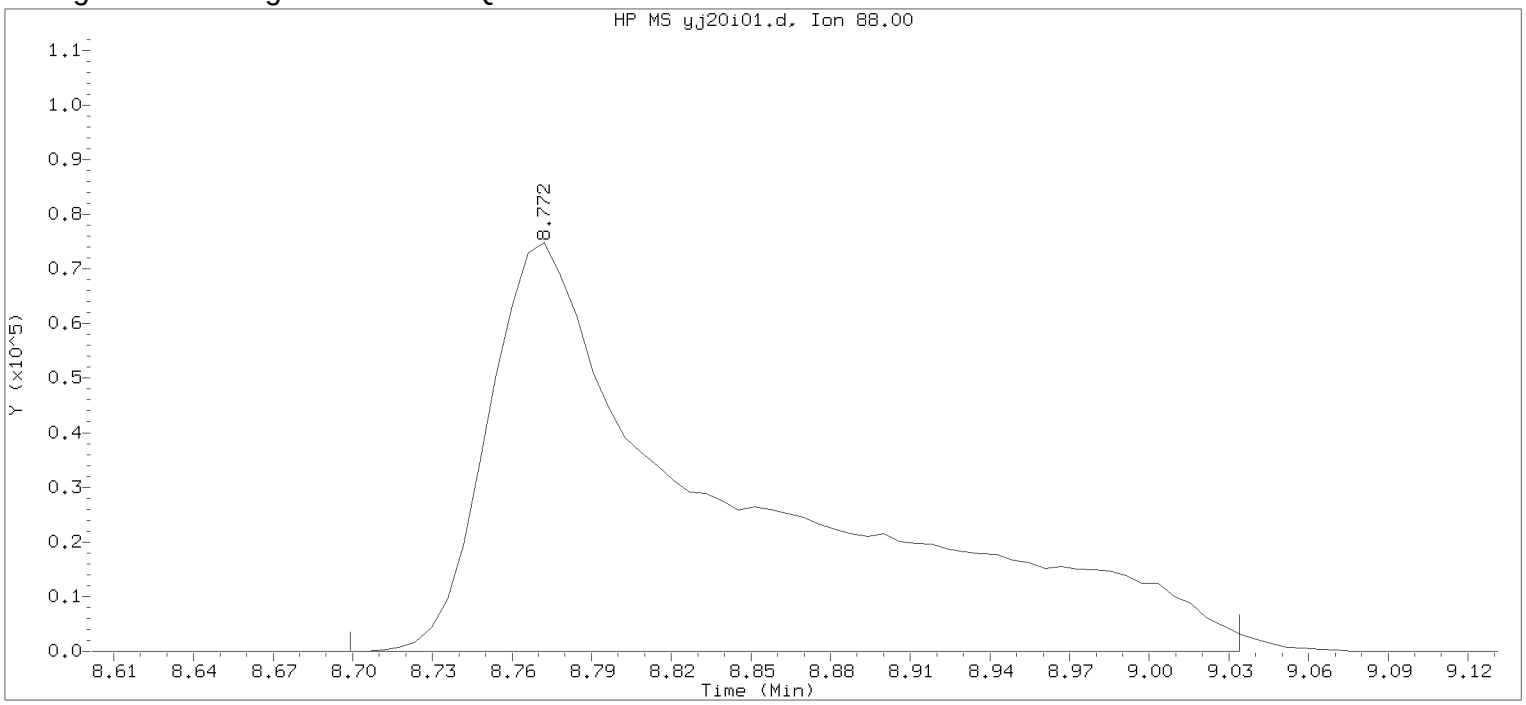
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

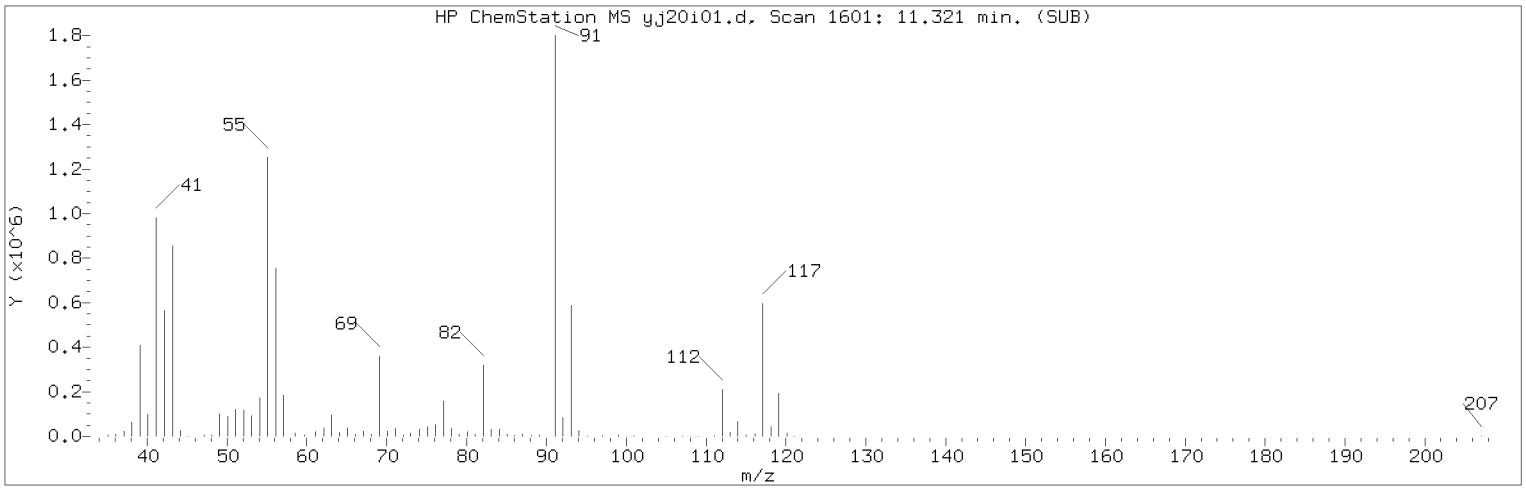
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

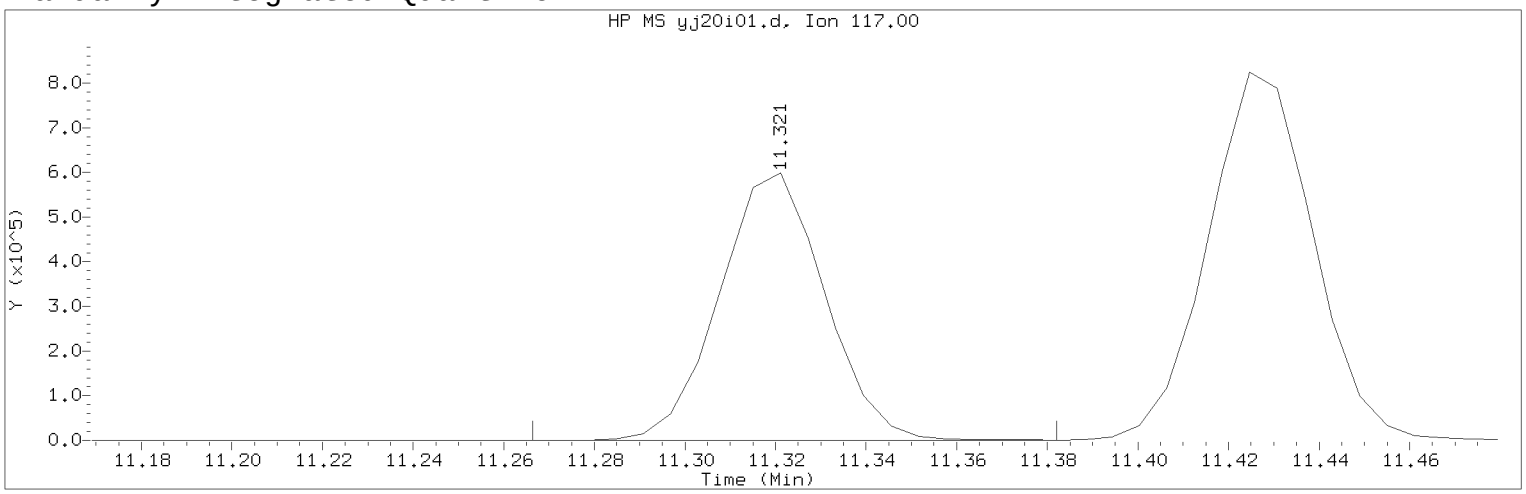
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area : 486090
On-column Amount (ng) : 4693.8314
Integration start scan : 1169 Integration stop scan: 1224
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

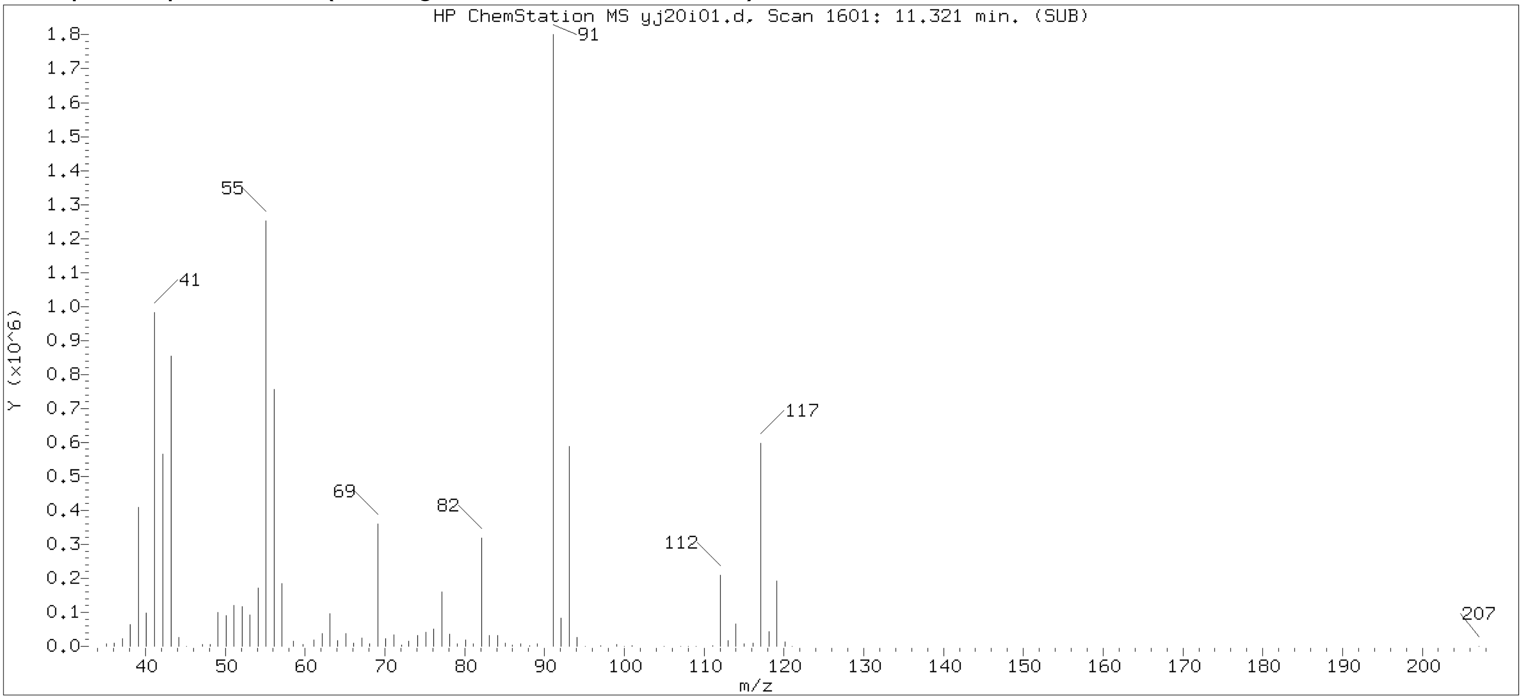
Compound Number : 100
Compound Name : Chlorobenzene-d5
Scan Number : 1601
Retention Time (minutes): 11.321
Quant Ion : 117.00
Area (flag) : 963403A
On-Column Amount (ng) : 50.0000
Integration start scan : 1591 Integration stop scan: 1610
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

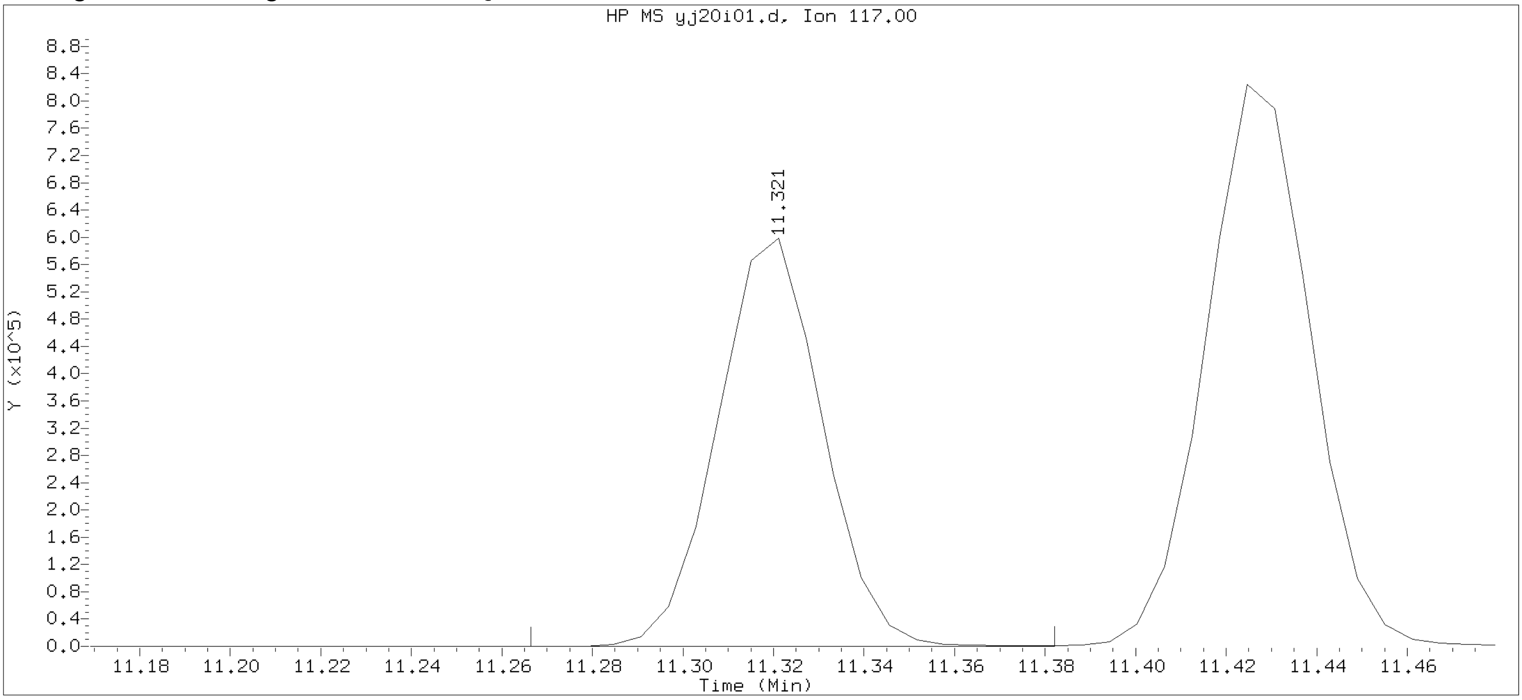
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

## Sample Spectrum (Background Subtracted)




## Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d  Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18  Analyst ID: BWK03231

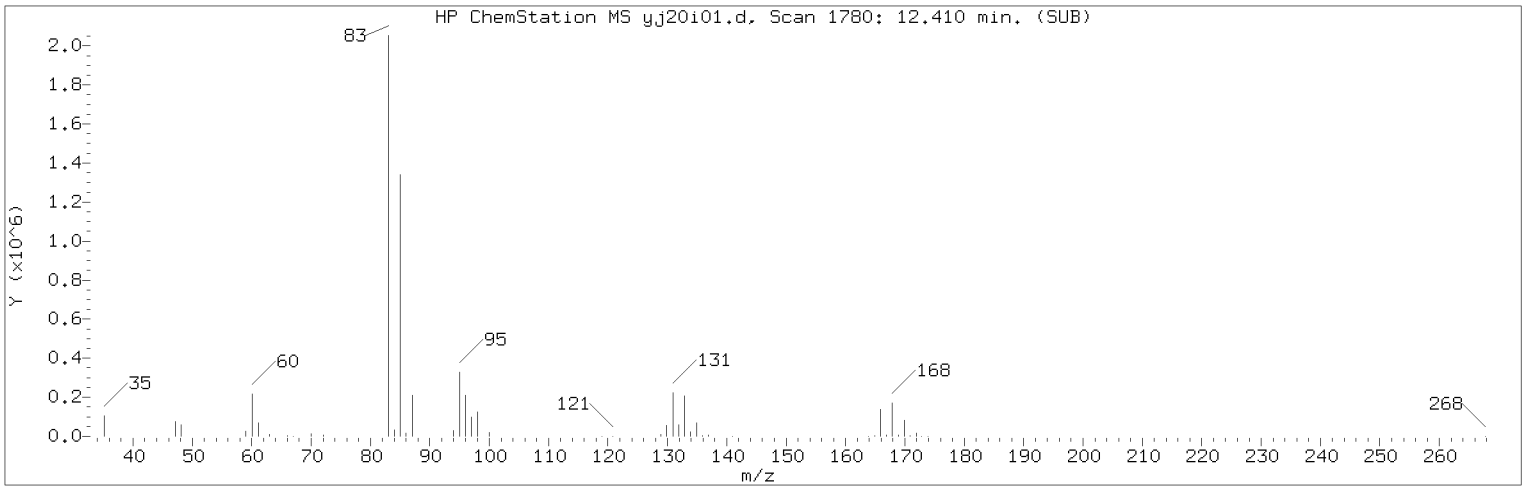
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300  Lab Sample ID: VSTD300

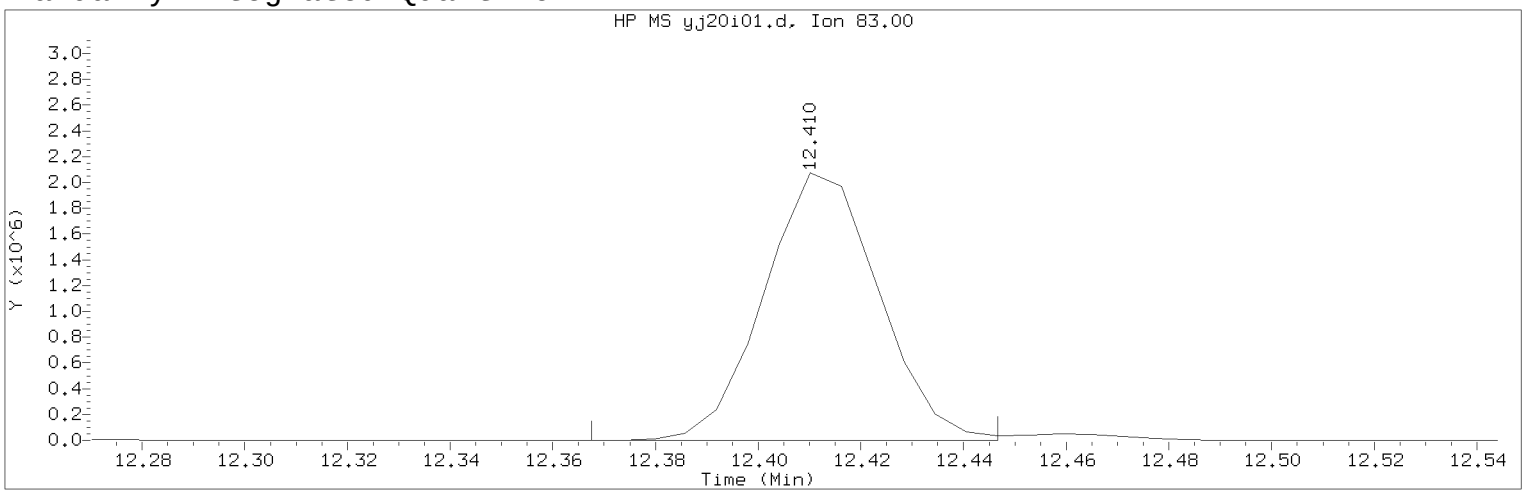
Compound Number : 100
Compound Name : Chlorobenzene-d5
Scan Number : 1601
Retention Time (minutes): 11.321
Quant Ion : 117.00
Area : 963403
On-column Amount (ng) : 50.0000
Integration start scan : 1591  Integration stop scan: 1610
Y at integration start : 0  Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

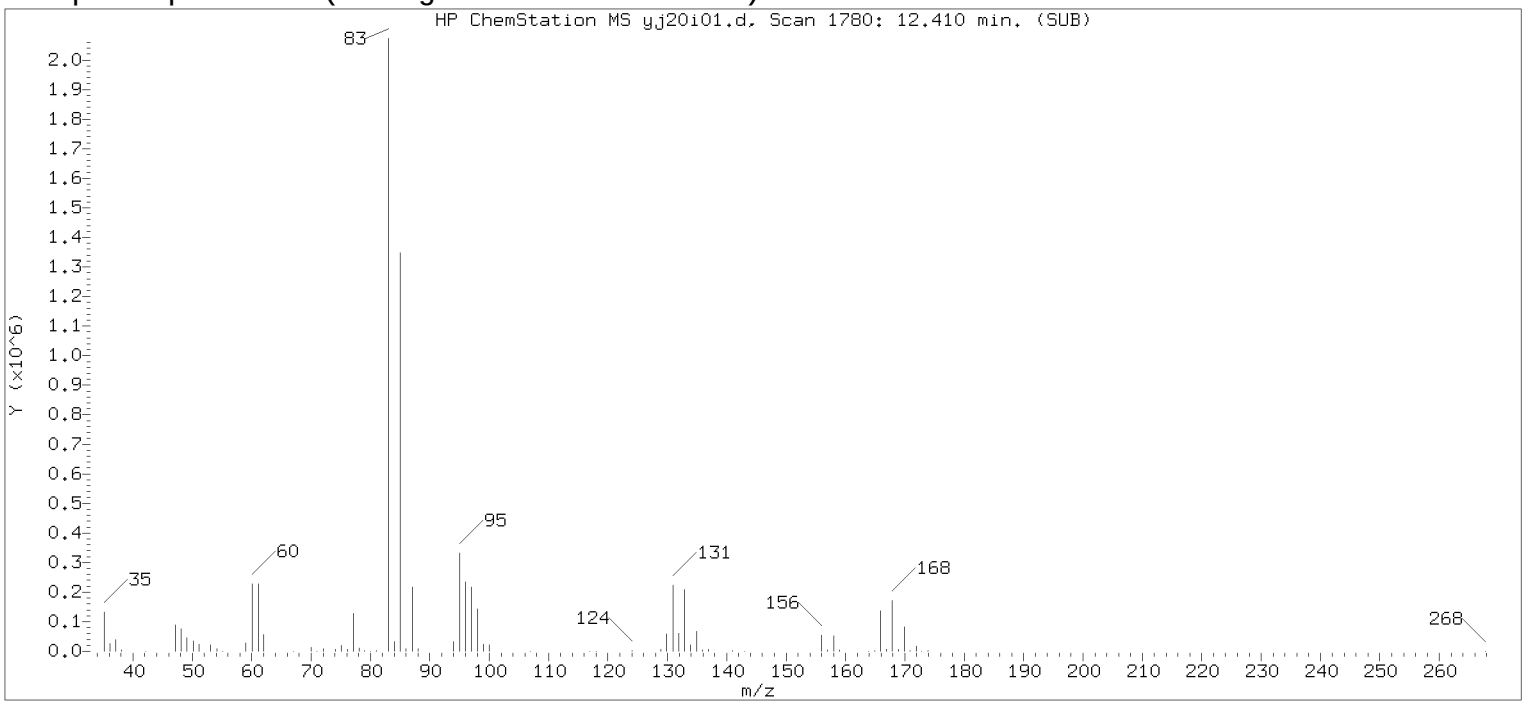
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 3219232M
On-Column Amount (ng) : 299.3521
Integration start scan : 1772 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

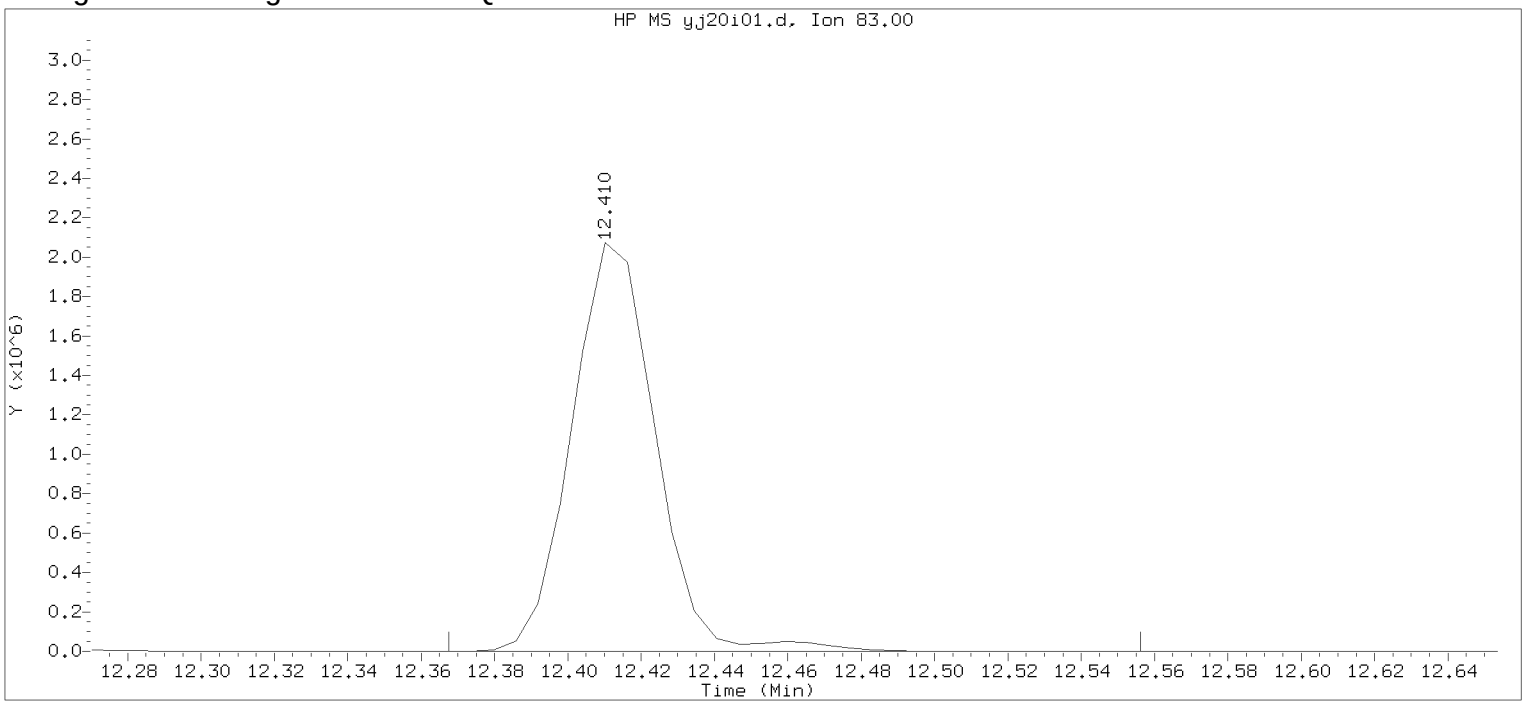
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

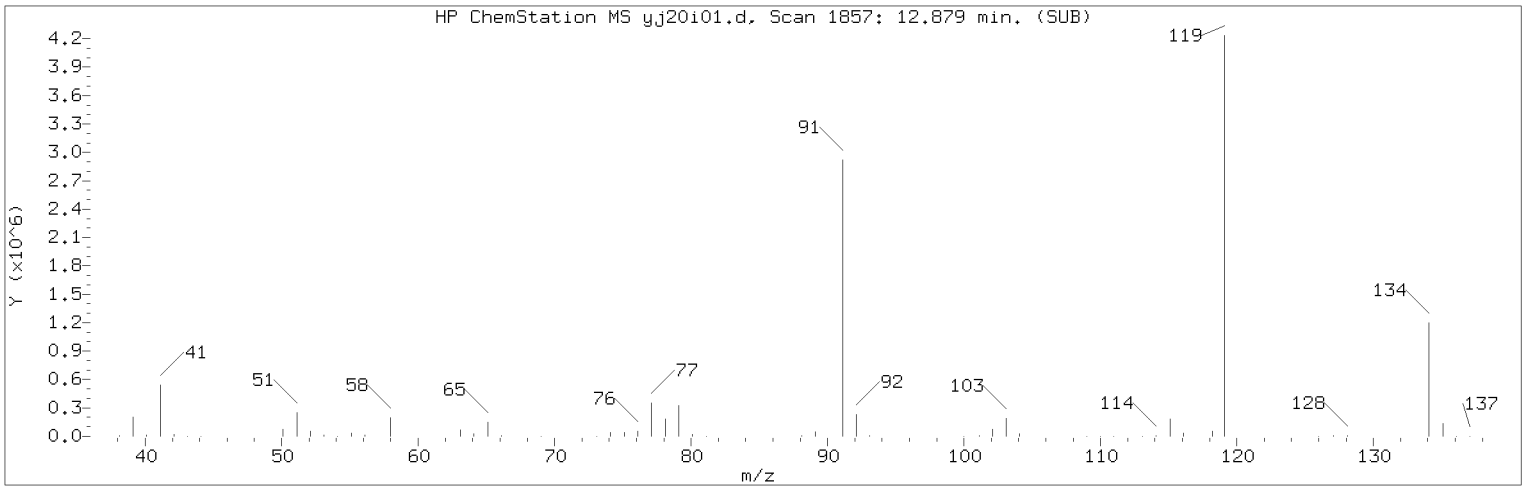
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

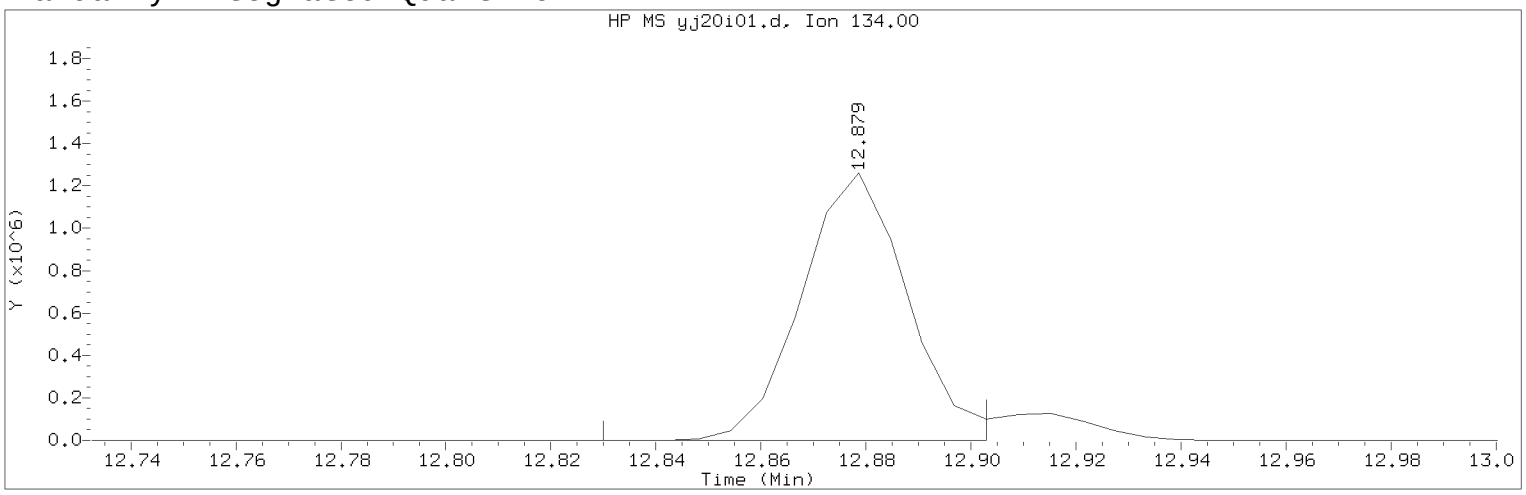
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 3289945
On-column Amount (ng) : 298.5751
Integration start scan : 1772 Integration stop scan: 1803
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

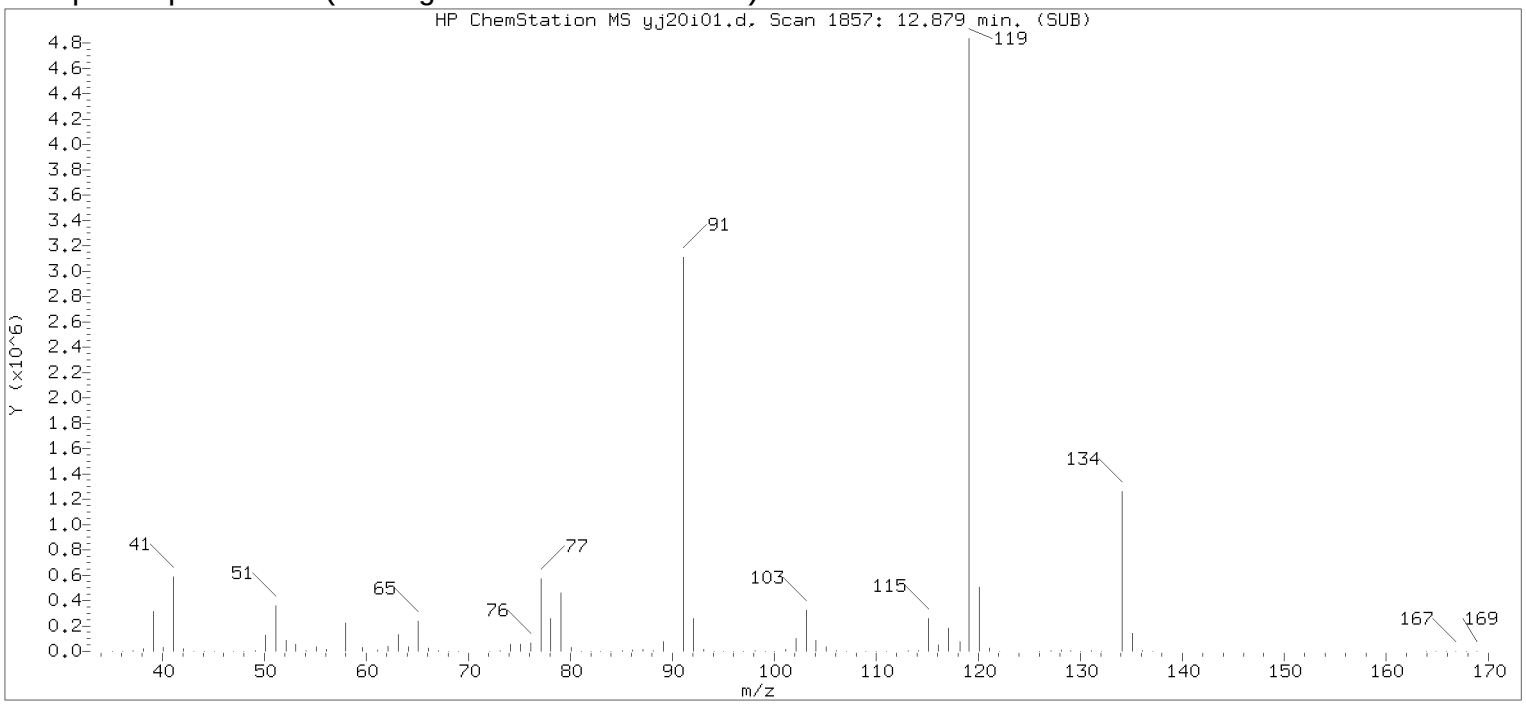
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1857
Retention Time (minutes): 12.879
Quant Ion : 134.00
Area (flag) : 1762488M
On-Column Amount (ng) : 301.1817
Integration start scan : 1848 Integration stop scan: 1860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

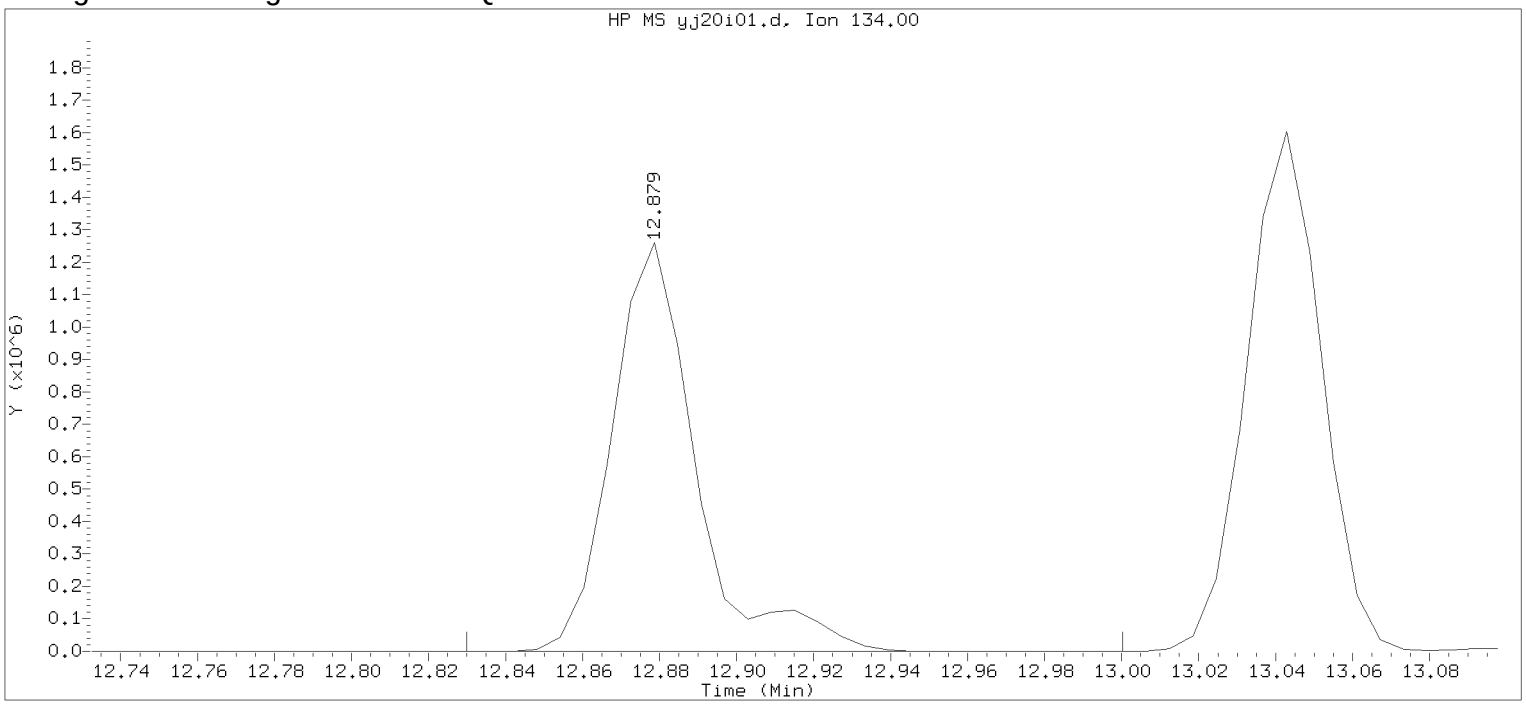
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



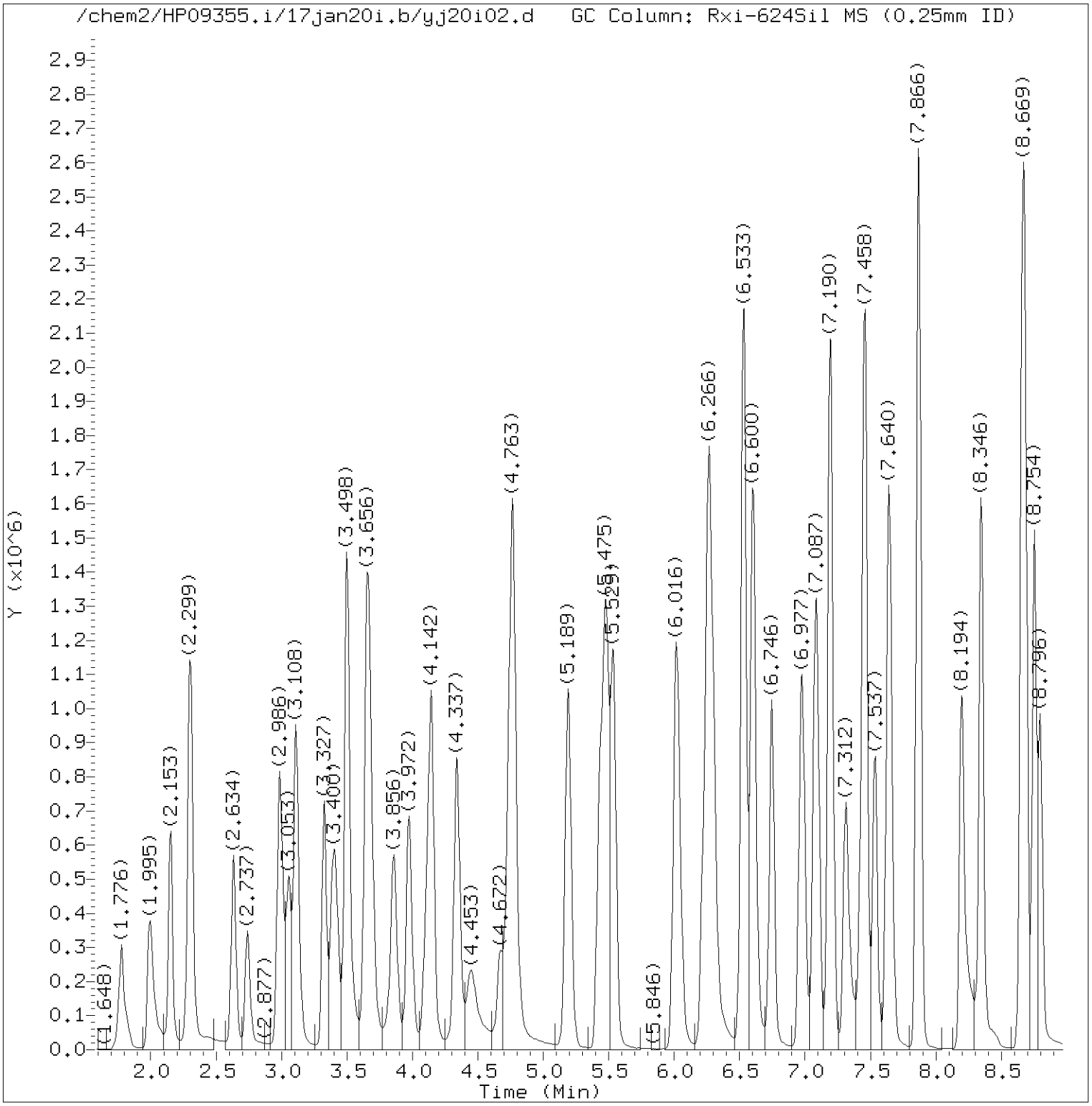

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1857
Retention Time (minutes): 12.879
Quant Ion : 134.00
Area : 1909303
On-column Amount (ng) : 301.4026
Integration start scan : 1848 Integration stop scan: 1876
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231




Total Ion Chromatogram (TIC)

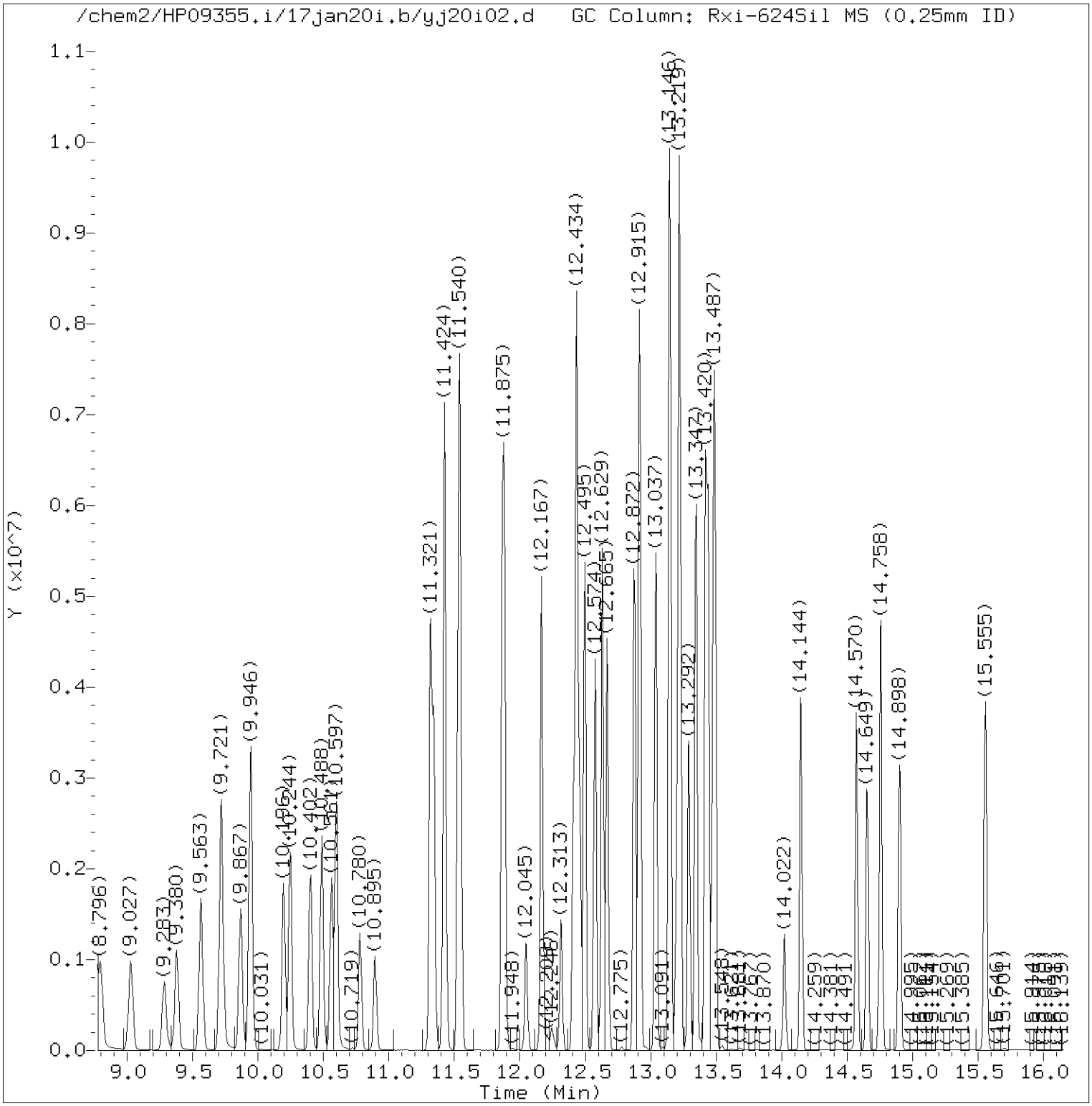
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.995 | 85 | 791153 | 100.672 |
| 4) Chloromethane | (2) | 2.153 | 50 | 832623 | 100.946 |
| 6) Vinyl Chloride | (2) | 2.293 | 62 | 780887 | 100.285 |
| 5) 1,3-Butadiene | (2) | 2.311 | 39 | 520036 | 77.016 |
| 8) Bromomethane | (2) | 2.634 | 94 | 539748 | 99.015 |
| 9) Chloroethane | (2) | 2.737 | 64 | 438357 | 98.285 |
| 10) Dichlorofluoromethane | (2) | 2.980 | 67 | 1008027 | 99.790 |
| 12) Trichlorofluoromethane | (2) | 3.053 | 101 | 930415 | 100.142 |
| 11) n-Pentane | (2) | 3.108 | 43 | 921229 | 91.965 |
| 14) Ethyl ether | (2) | 3.327 | 59 | 561446 | 101.921 |
| 15) Freon 123a | (2) | 3.400 | 67 | 636053 | 101.108 |
| 16) Acrolein | (1) | 3.498 | 56 | 2127939 | 1038.329 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 485820 | 103.845 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 63 | 249291 | 102.223 |
| 18) Acetone | (1) | 3.668 | 58 | 204716 | 205.480 |
| 19) Freon 113 | (2) | 3.674 | 101 | 489251 | 105.252 |
| 21) 2-Propanol | (1) | 3.832 | 45 | 401409M | 532.506 |
| 22) Methyl Iodide | (2) | 3.863 | 142 | 918522 | 104.120 |
| 23) Carbon Disulfide | (2) | 3.972 | 76 | 1532294 | 107.731 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 885678 | 100.934 |
| 25) Allyl Chloride | (2) | 4.142 | 41 | 992591 | 103.852 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 332781 | 250.000 |
| 28) Methylene Chloride | (2) | 4.337 | 84 | 591141 | 102.235 |
| 30) t-Butyl alcohol | (1) | 4.453 | 59 | 744718 | 503.669 |
| 31) Acrylonitrile | (2) | 4.672 | 53 | 407115 | 96.671 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.745 | 73 | 1962763 | 102.958 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 576460 | 102.271 |
| 34) n-Hexane | (2) | 5.189 | 57 | 880769 | 102.717 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 1035079M | 102.303 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 2061394 | 102.832 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.535 | 53 | 969633 | 104.310 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 1940844 | 103.271 |
| 44) 2-Butanone | (2) | 6.223 | 43 | 1221595 | 187.818 |
| 42) cis-1,2-Dichloroethene | (2) | 6.259 | 96 | 662318 | 102.778 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 847027 | 105.116 |
| 47) Propionitrile | (1) | 6.308 | 54 | 903874 | 521.610 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 1165939 | 256.758 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 349068 | 105.124 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 320710 | 204.981 |
| 51) Chloroform | (2) | 6.746 | 83 | 1054912 | 103.378 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 1238778 | 205.049 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 280445 | 50.074 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 111 | 286576 | 50.137 |
| 53) 1,1,1-Trichloroethane | (2) | 6.983 | 97 | 893813 | 103.729 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 1039392 | 102.486 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 861303 | 103.404 |
| 54) Cyclohexane | (2) | 7.087 | 69 | 318656 | 103.433 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 840998 | 101.445 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 777243 | 107.134 |
| 58) Isobutyl Alcohol | (1) | 7.312 | 41 | 712031 | 1285.862 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 72722 | 49.705 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 363458 | 49.343 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 104 | 45696 | 49.189 |
| 60) Benzene | (2) | 7.458 | 78 | 2471862 | 101.496 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 62 | 890969 | 100.854 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 98 | 81432 | 103.530 |
| 65) t-Amyl methyl ether | (2) | 7.640 | 73 | 1940444 | 103.007 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1197583 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 1013713 | 100.416 |
| 69) n-Butanol | (1) | 8.194 | 56 | 1239644M | 2752.205 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 647656 | 101.502 |
| 72) Methylcyclohexane | (2) | 8.662 | 83 | 1143884 | 103.638 |
| 72) Methylcyclohexane | (2) | 8.662 | 98 | 515890 | 103.445 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 665962 | 102.999 |
| 76) Methyl Methacrylate | (2) | 8.754 | 69 | 726640 | 104.924 |
| 75) 1,4-Dioxane | (1) | 8.766 | 88 | 161473M | 1322.935 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 435984 | 104.219 |
| 78) Bromodichloromethane | (2) | 9.027 | 83 | 798466 | 108.282 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 599243 | 211.684 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 559100 | 103.713 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 1052437 | 108.544 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 2308363 | 197.272 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1176411 | 49.645 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 764671 | 49.862 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 2045593 | 219.160 |
| 88) Toluene | (3) | 9.946 | 92 | 1617206 | 101.190 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 993156 | 110.616 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 1169093 | 107.944 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 641521 | 103.080 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 718498 | 101.027 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 1070169 | 101.578 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1856002M | 195.966 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 681694 | 112.792 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 706029 | 104.297 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 918852 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 889746 | 102.149 |
| 102) Chlorobenzene | (3) | 11.345 | 112 | 1846111 | 101.390 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424 | 131 | 630921 | 109.262 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 3157711 | 102.434 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 2538643 | 206.423 |
| 108) Xylene (Total) | (3) | | 106 | 3786968 | 309.944 |
| 107) o-Xylene | (3) | 11.869 | 106 | 1248325 | 103.521 |
| 109) Styrene | (3) | 11.881 | 104 | 2150648 | 107.445 |
| 110) Bromoform | (3) | 12.051 | 173 | 528641 | 117.727 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 3133852 | 102.982 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 121822M | 1339.151 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 444561 | 49.898 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 174 | 379057 | 49.927 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 1073938M | 103.145 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 897786 | 276.554 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 862896 | 102.626 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 352495 | 101.269 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 3677906 | 101.208 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 761590 | 101.846 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 2712296 | 102.354 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 809598 | 101.998 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 585206M | 103.288 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 483674 | 112.904 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 2832731 | 103.371 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 3381374 | 101.512 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 1644893 | 102.539 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 3070909 | 103.762 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 507846 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 1699043 | 102.899 |

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 2861125 | 103.943 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 2197428 | 116.345 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 1798167 | 104.330 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 1852177 | 103.576 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 1508795 | 101.281 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 1588913 | 103.118 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 1505571 | 104.102 |
| 141) Diethylbenzene (total) | (4) | | 100 | 5155915 | 312.008 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 269727 | 108.397 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 1129153 | 100.036 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 1028044 | 99.663 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 494255 | 97.503 |
| 148) Naphthalene | (4) | 14.758 | 128 | 3419420 | 103.580 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 926945 | 98.832 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 1880900 | 105.794 |



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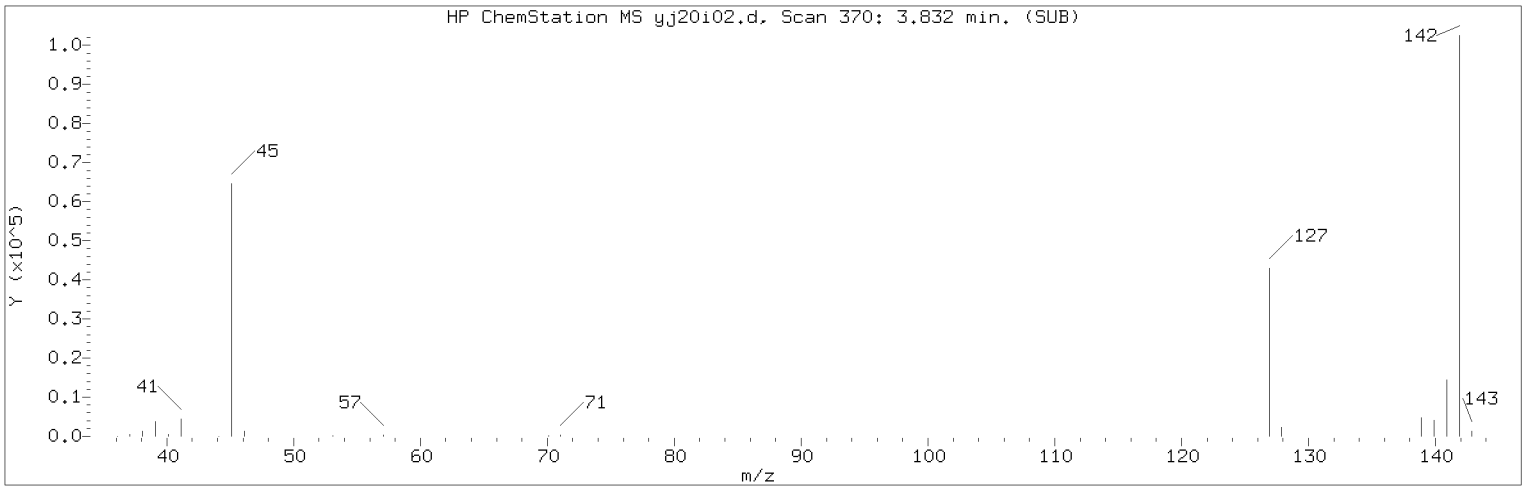
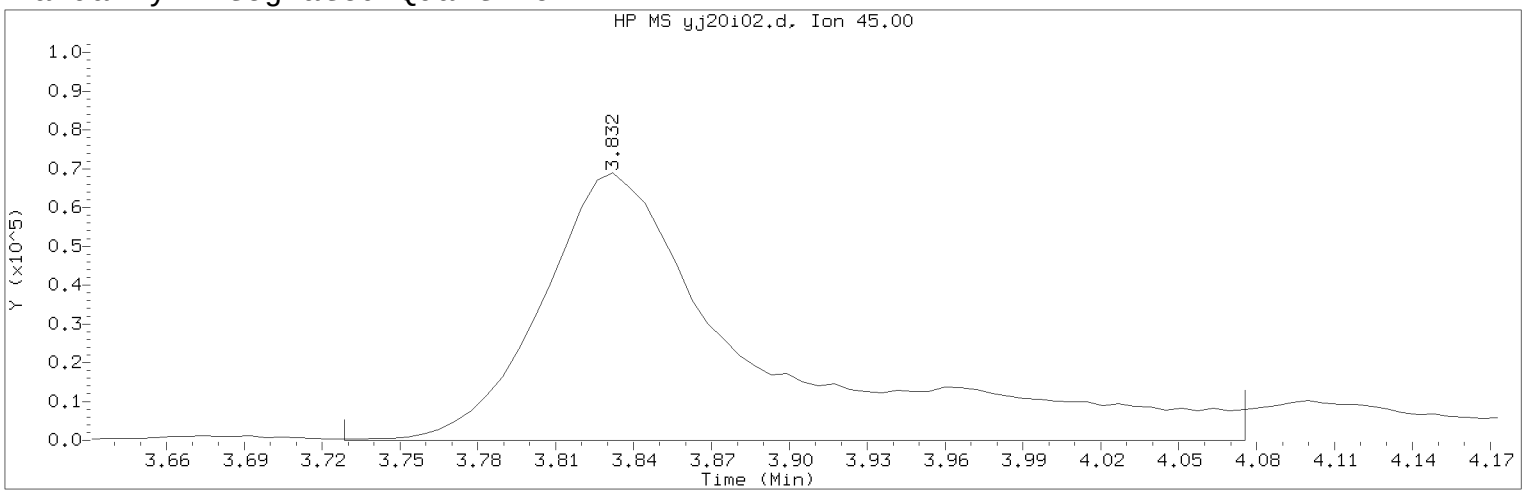
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

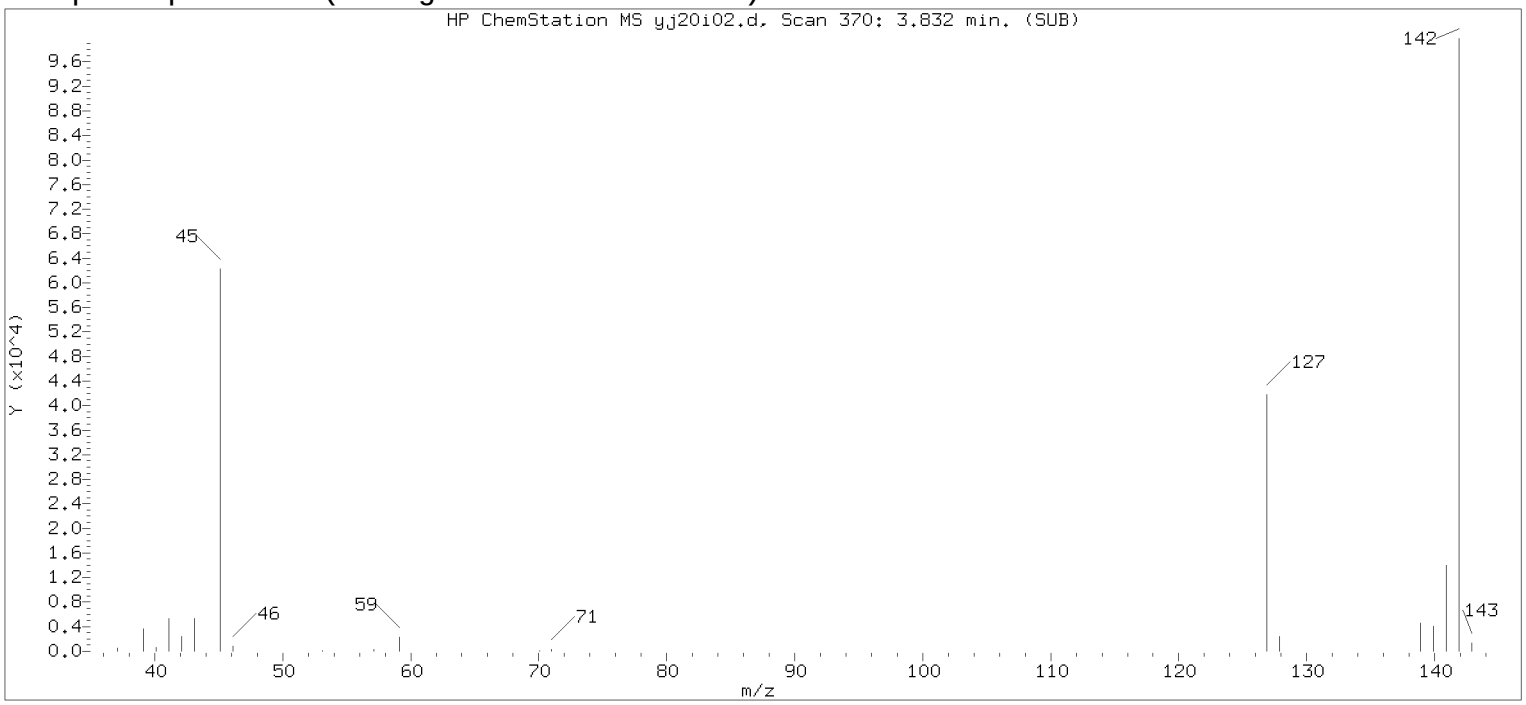
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 370
Retention Time (minutes): 3.832
Quant Ion : 45.00
Area (flag) : 401409M
On-Column Amount (ng) : 532.5056
Integration start scan : 352 Integration stop scan: 409
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

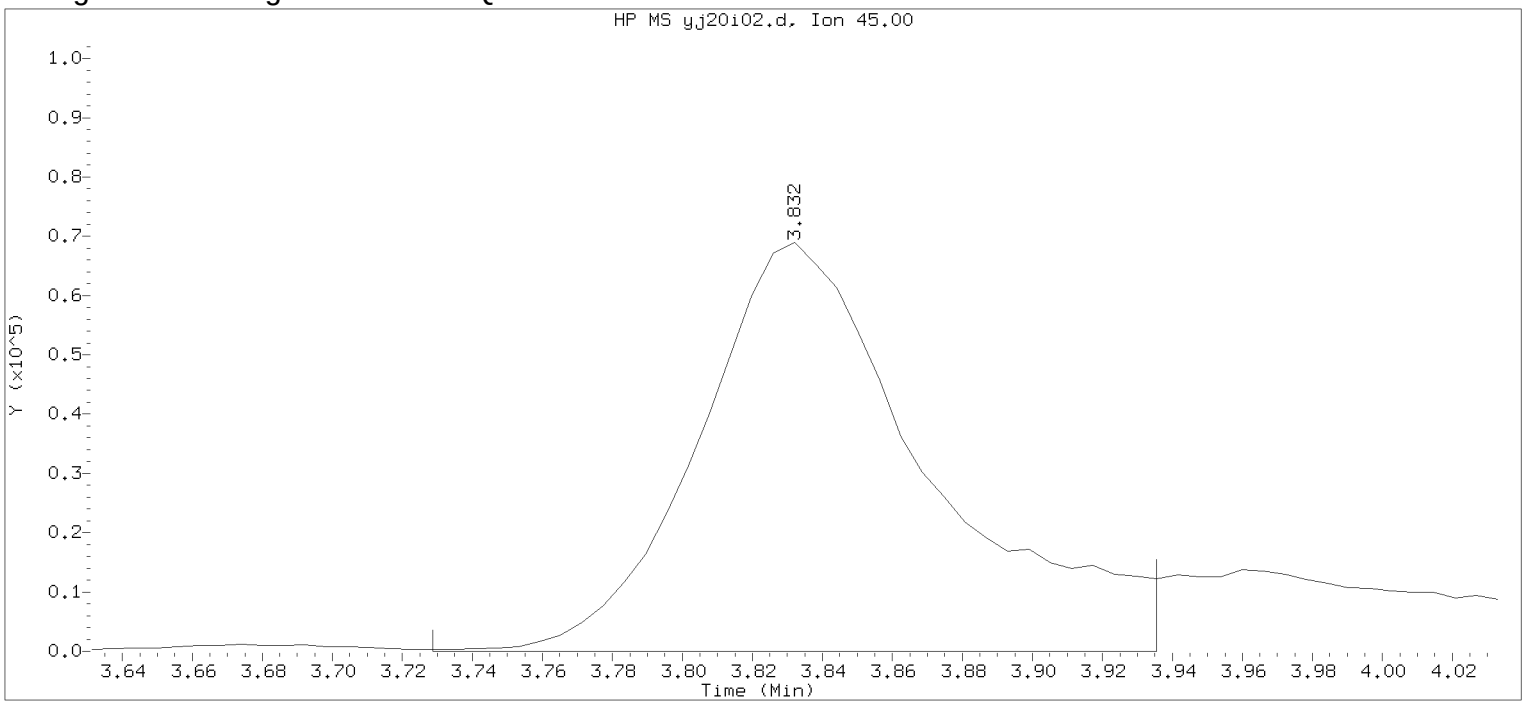
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

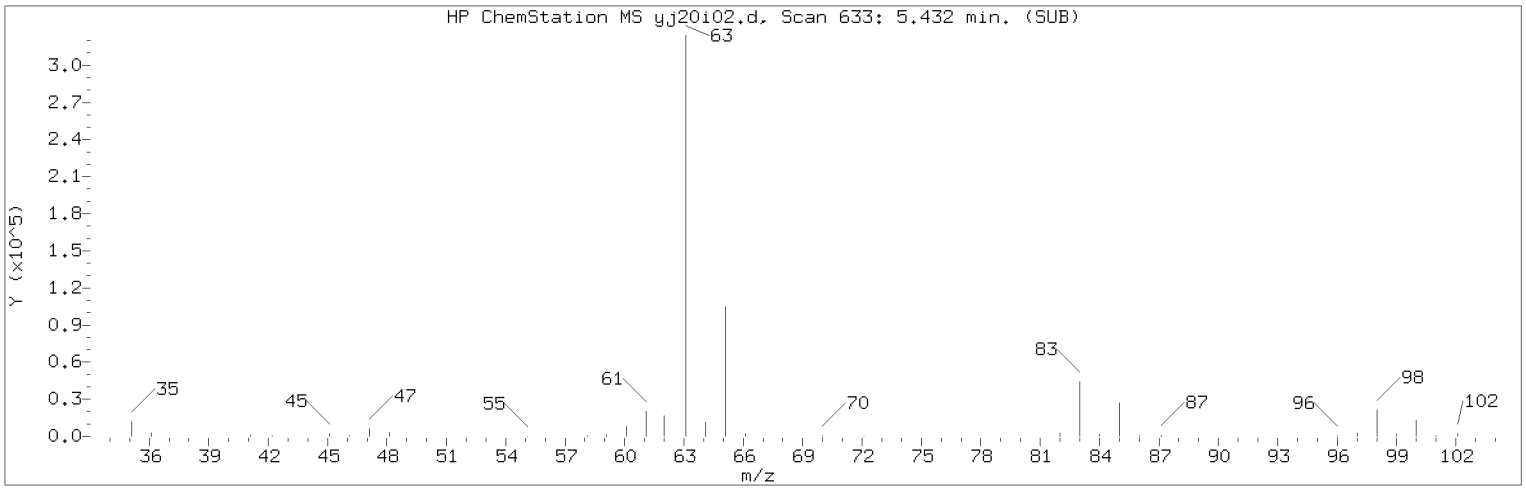
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

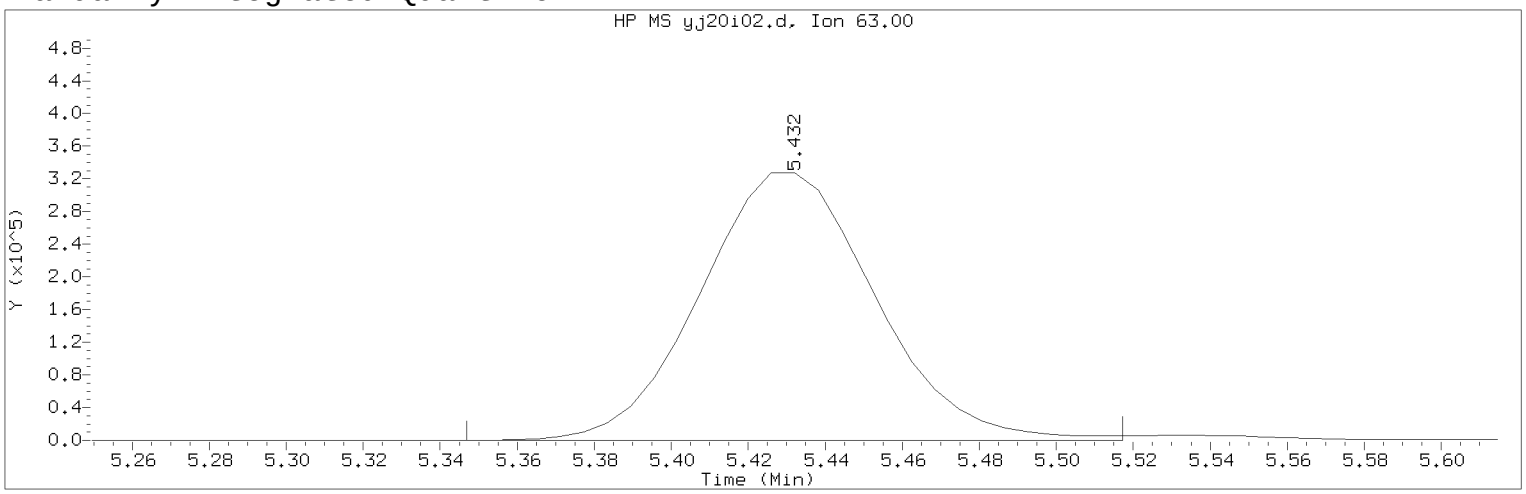
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 370
Retention Time (minutes): 3.832
Quant Ion : 45.00
Area : 312732
On-column Amount (ng) : 459.8650
Integration start scan : 352 Integration stop scan: 386
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

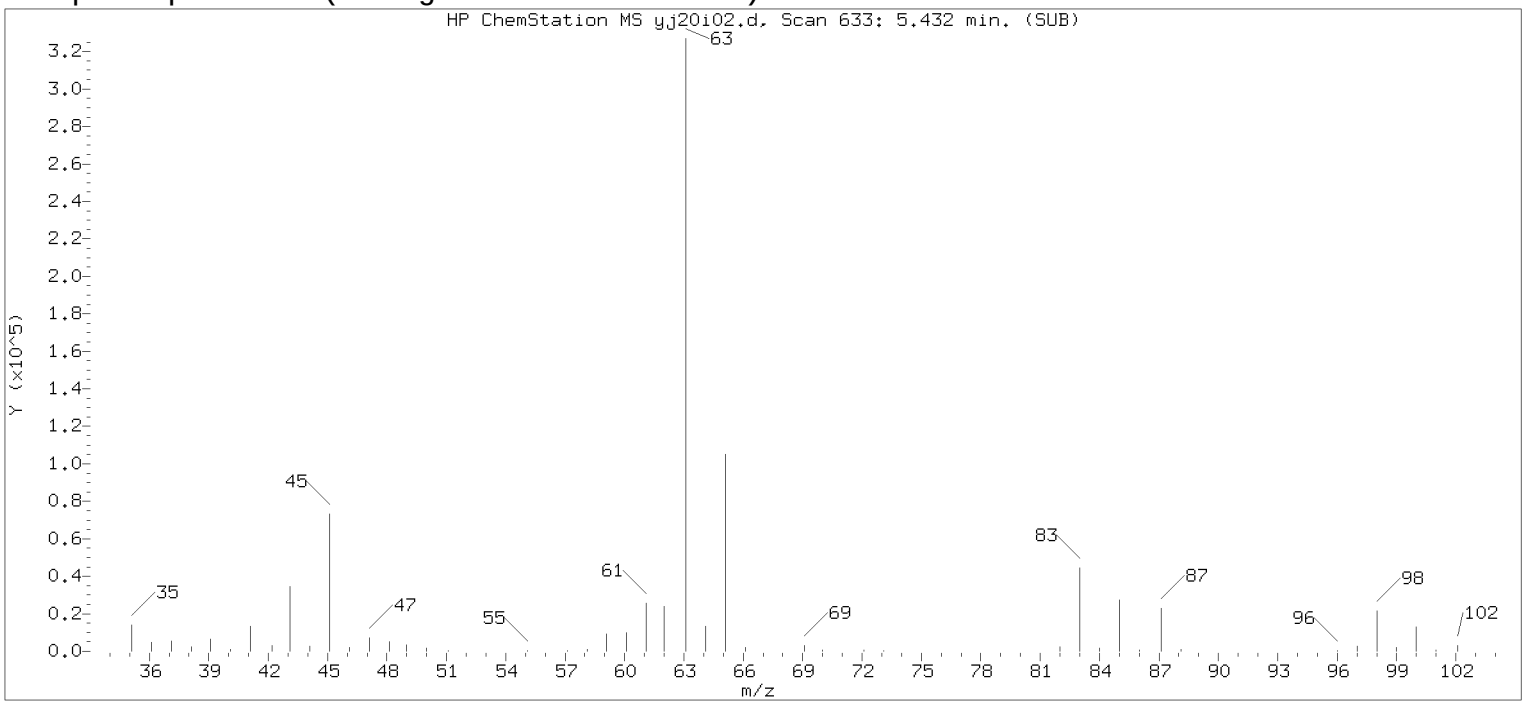
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 633
Retention Time (minutes): 5.432
Quant Ion : 63.00
Area (flag) : 1035079M
On-Column Amount (ng) : 102.3034
Integration start scan : 618 Integration stop scan: 646
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

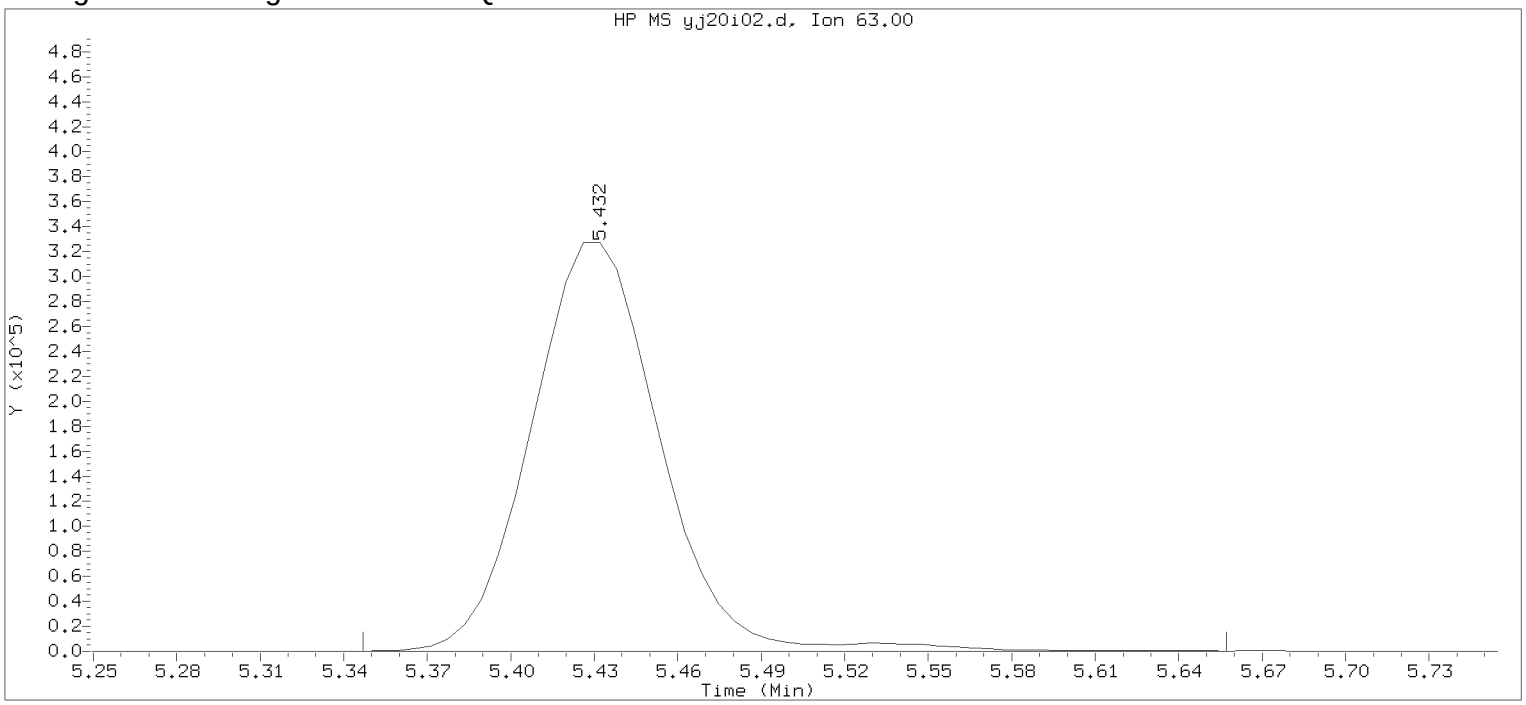
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 633
Retention Time (minutes): 5.432
Quant Ion : 63.00
Area : 1052994
On-column Amount (ng) : 102.1284
Integration start scan : 618 Integration stop scan: 669
Y at integration start : 0 Y at integration end: 0

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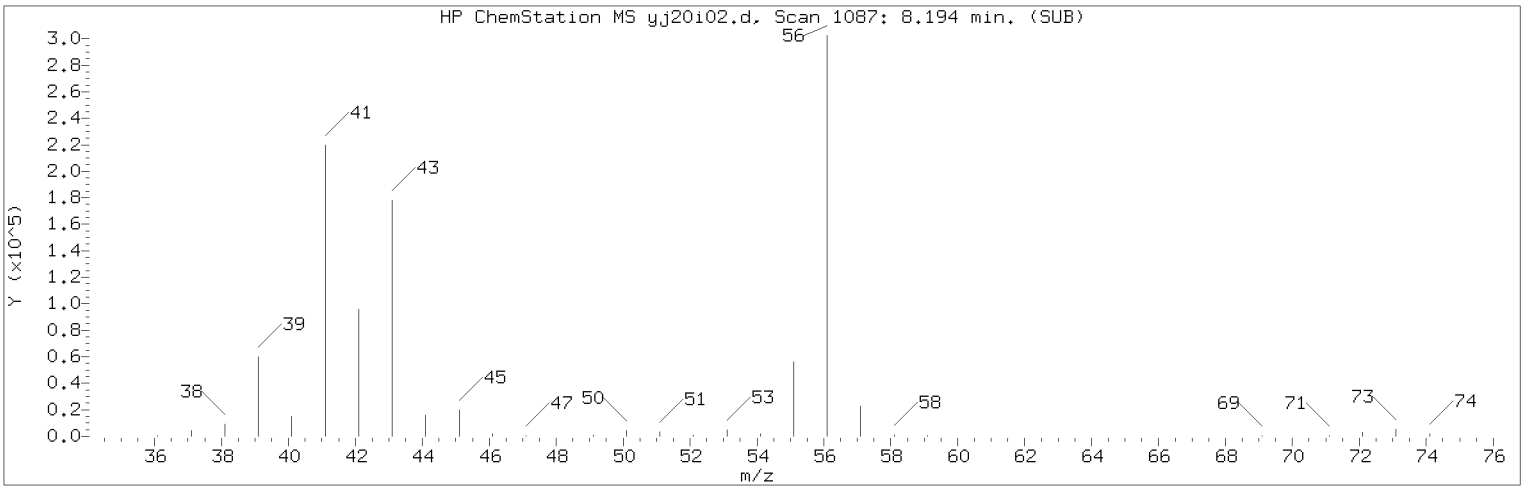
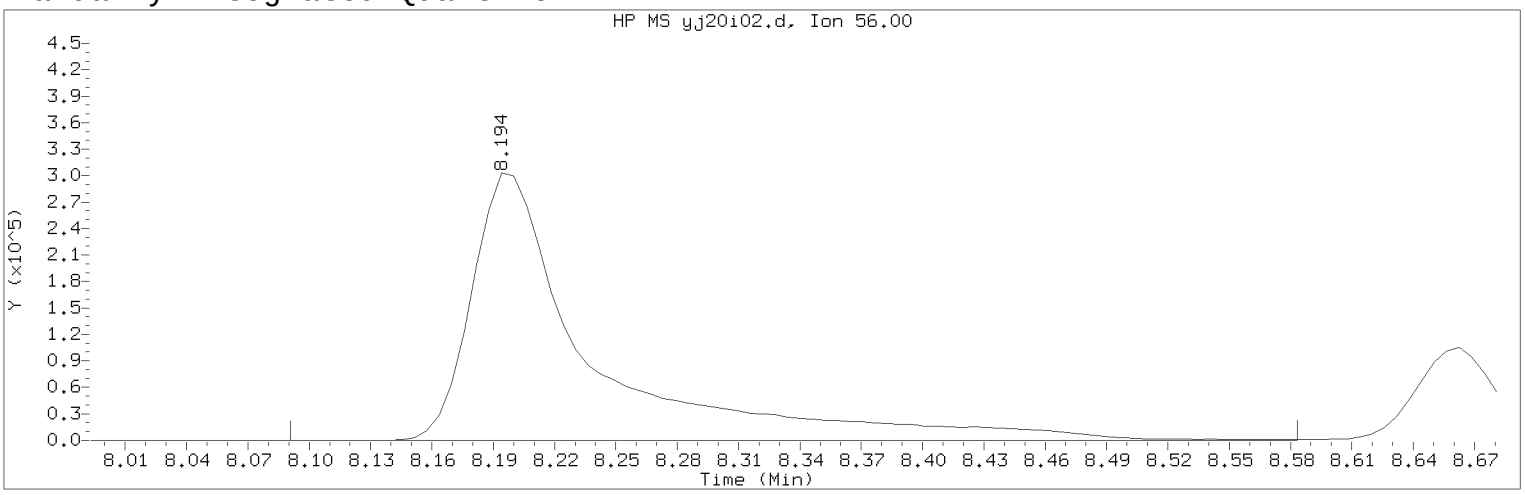
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

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Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

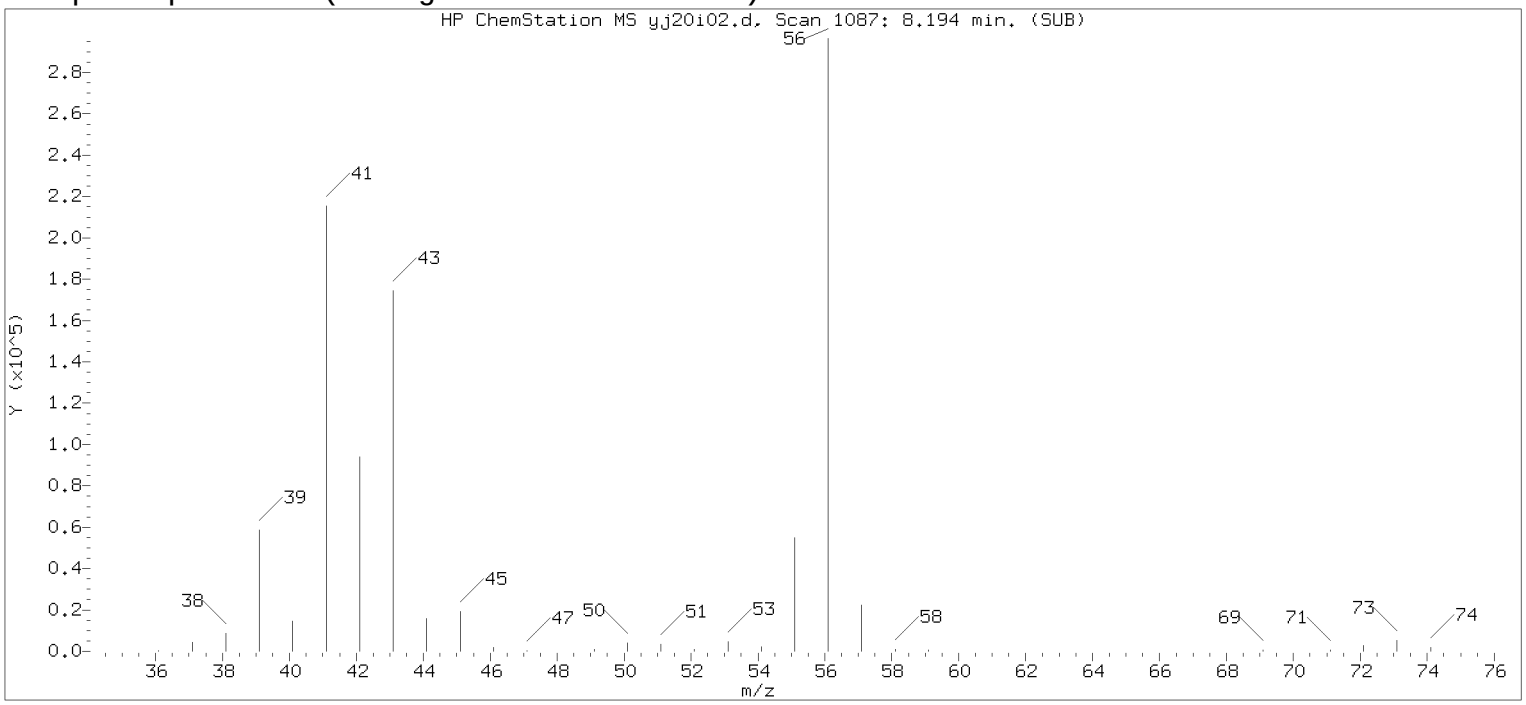
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area (flag) : 1239644M
On-Column Amount (ng) : 2752.2047
Integration start scan : 1069 Integration stop scan: 1150
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

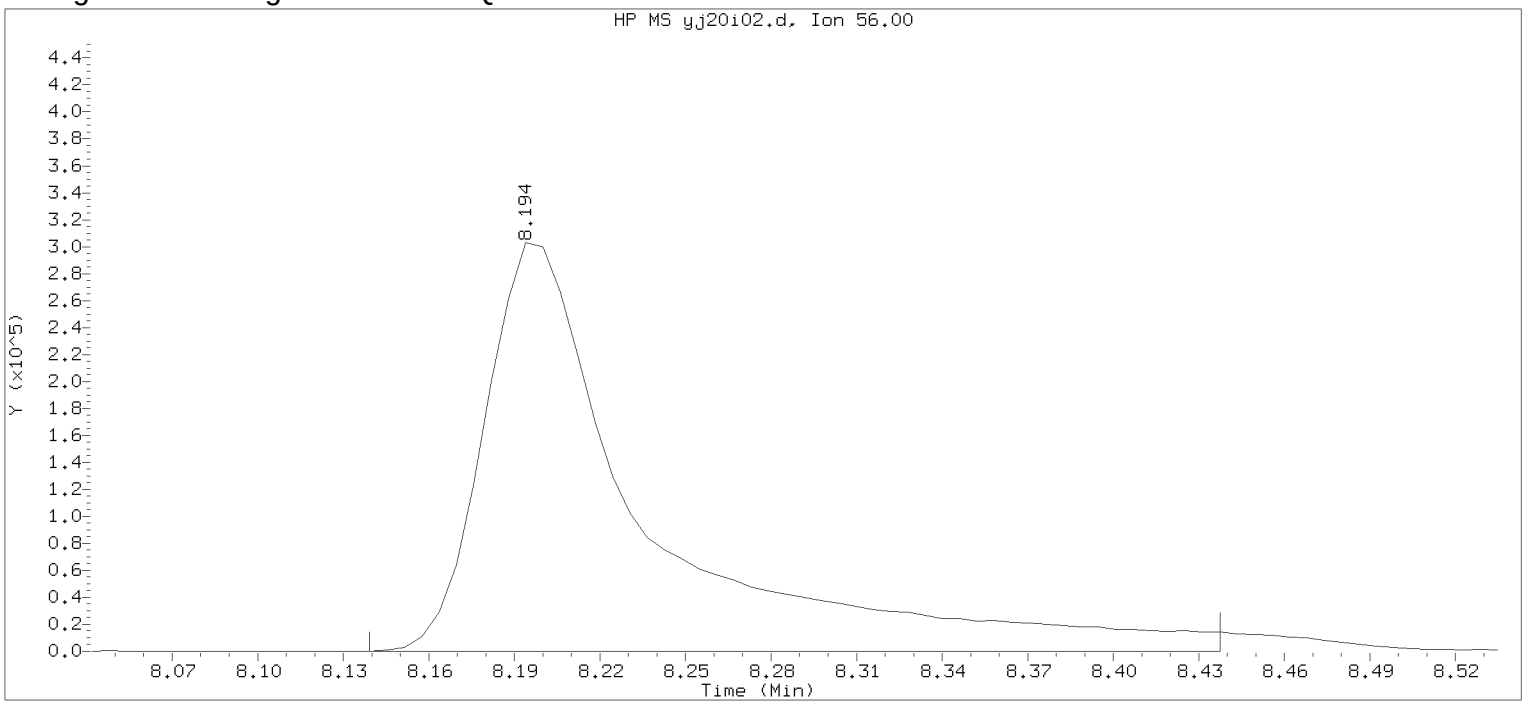
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

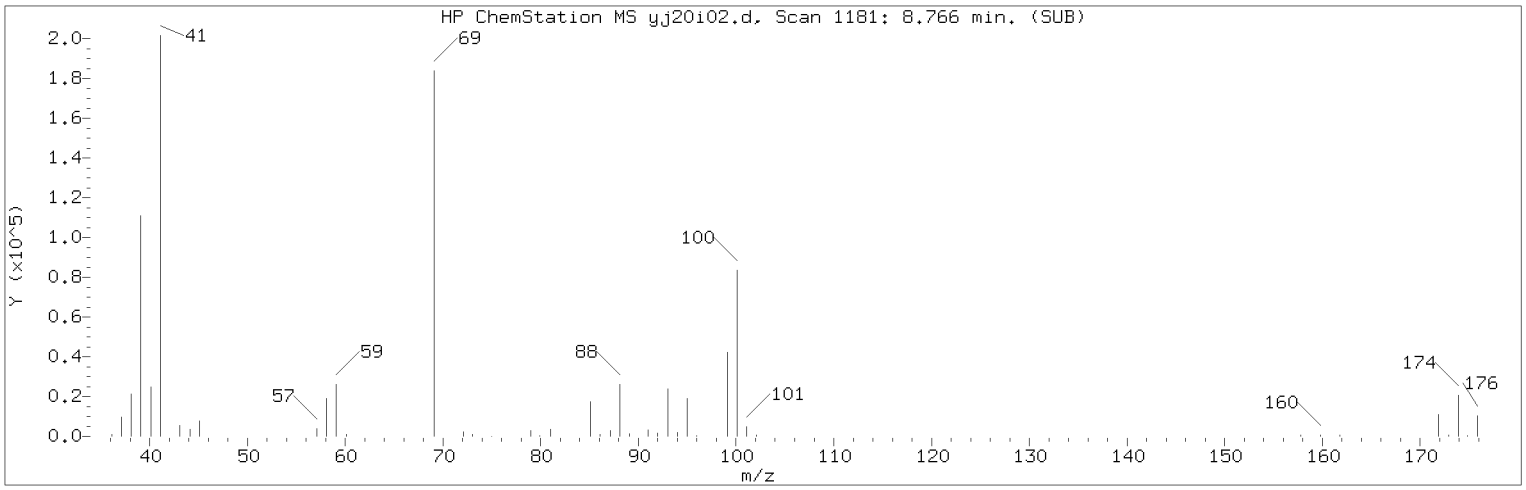
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

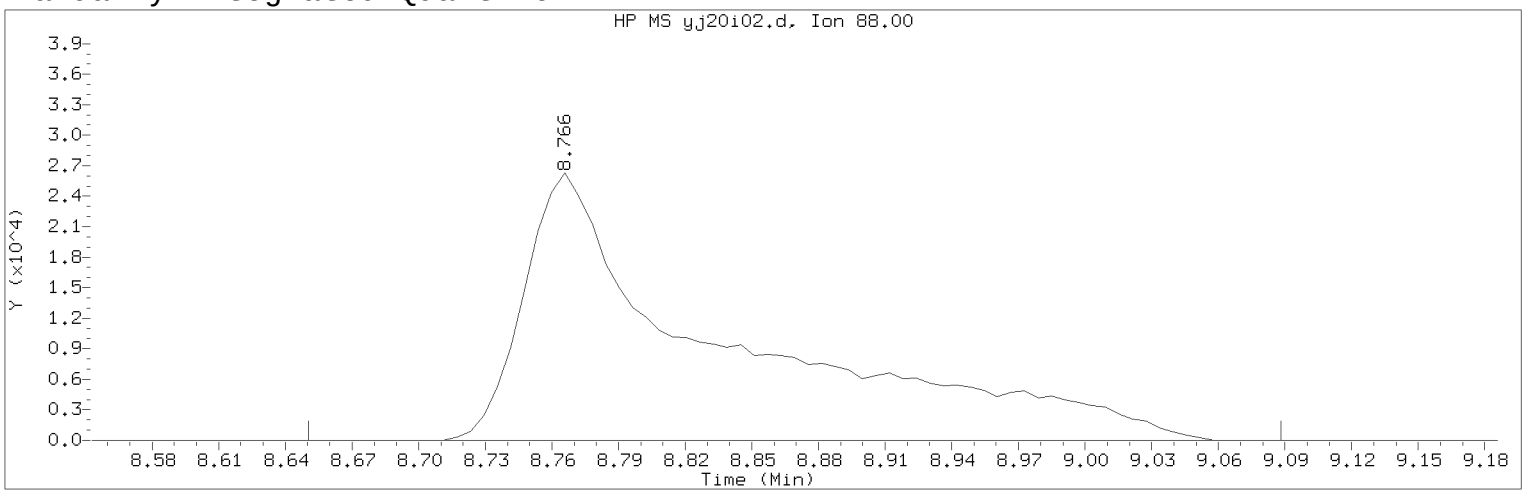
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area : 1200530
On-column Amount (ng) : 2692.5283
Integration start scan : 1077 Integration stop scan: 1126
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

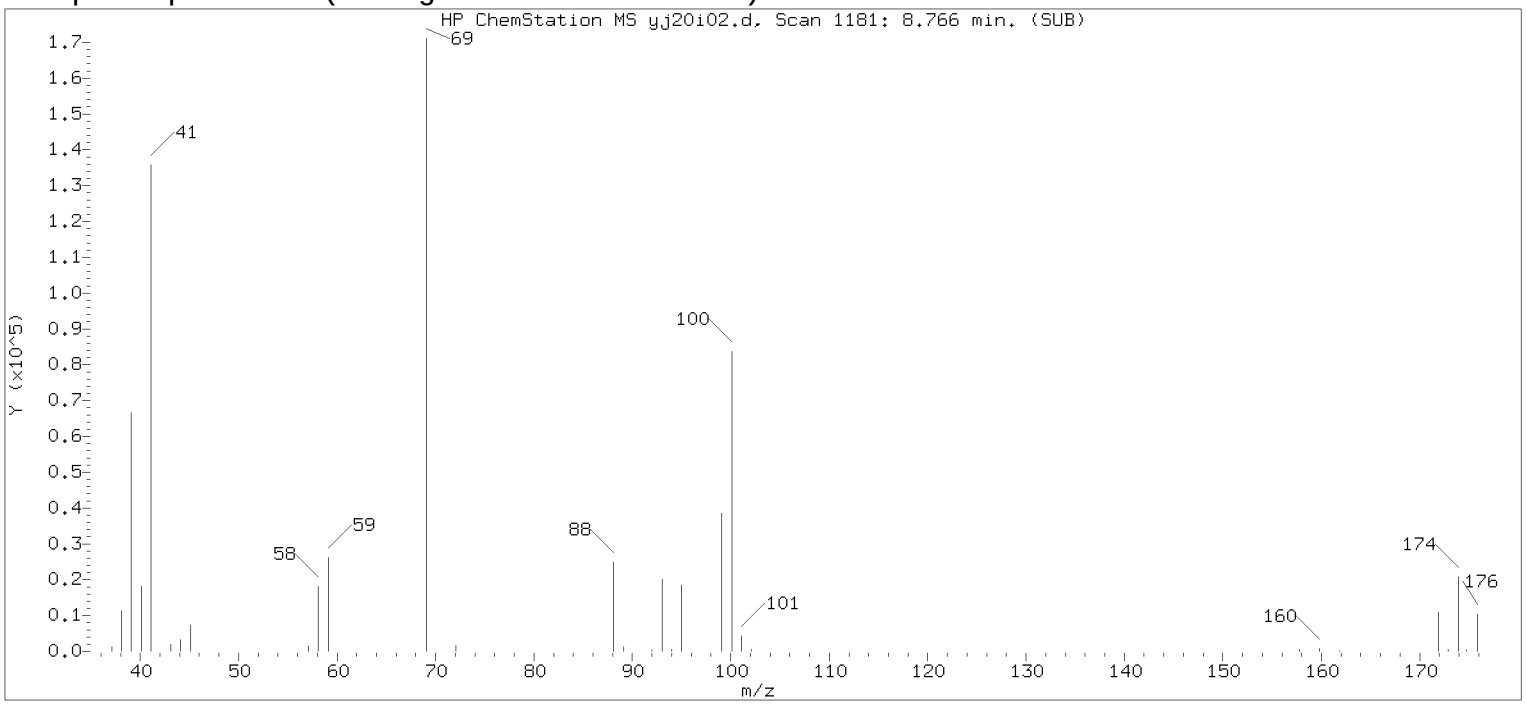
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area (flag) : 161473M
On-Column Amount (ng) : 1322.9348
Integration start scan : 1161 Integration stop scan: 1233
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

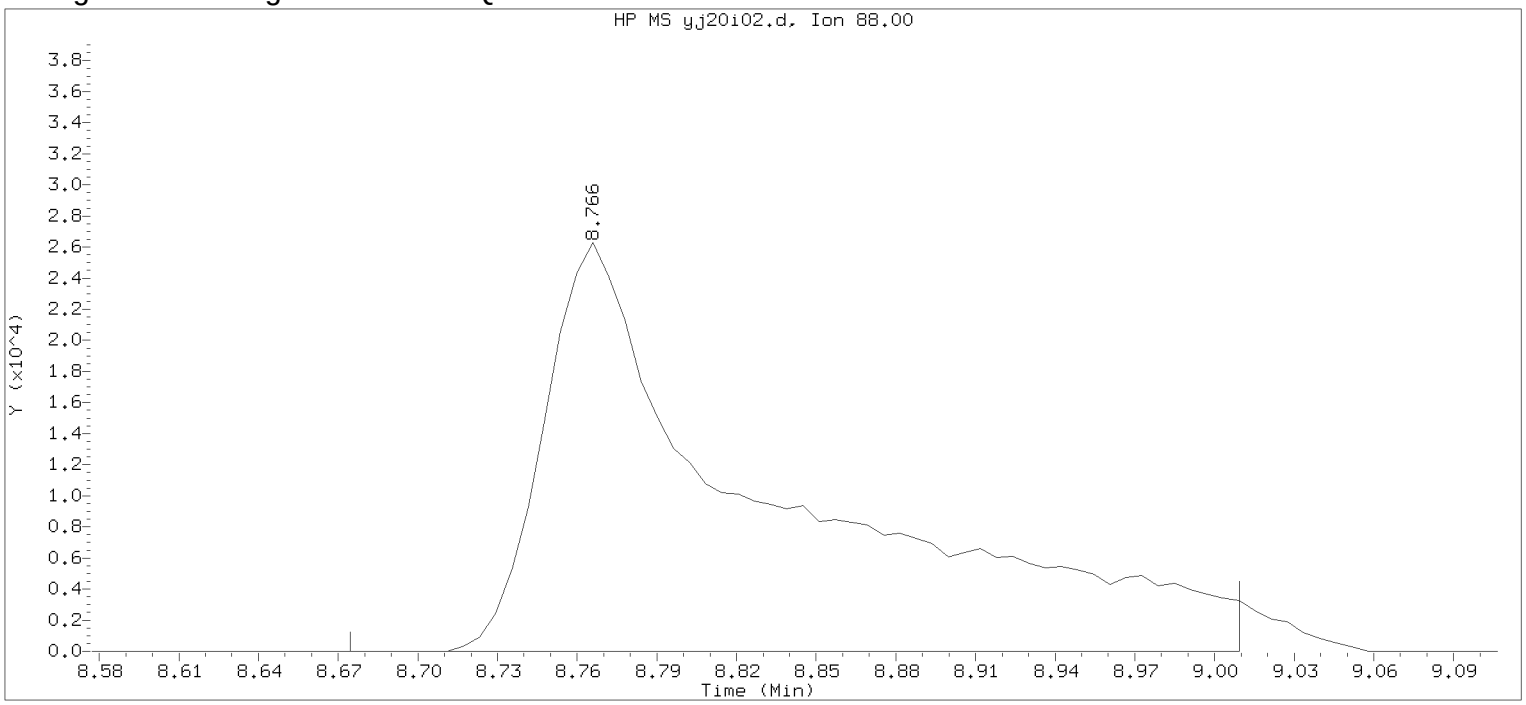
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

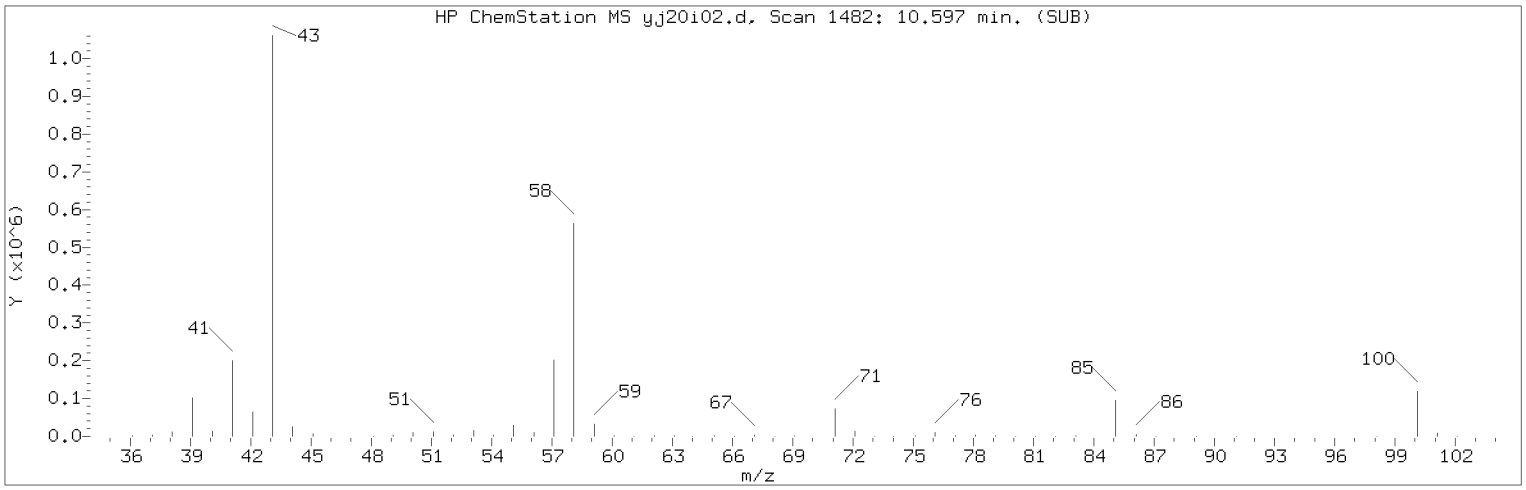
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

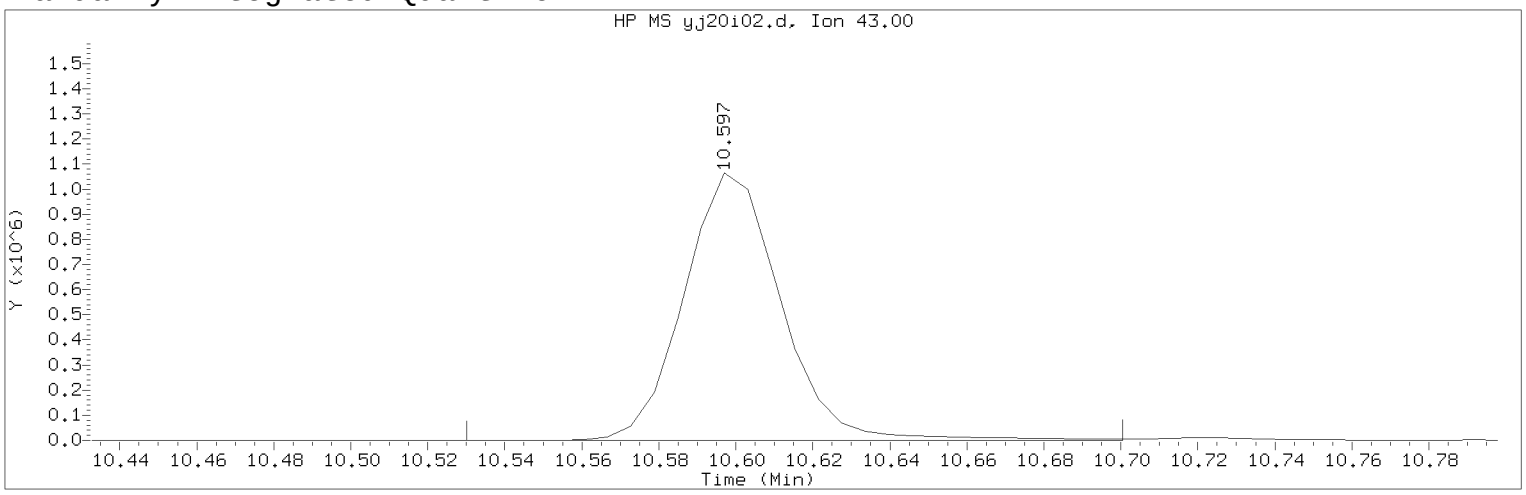
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area : 157456
On-column Amount (ng) : 1301.3557
Integration start scan : 1165 Integration stop scan: 1220
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

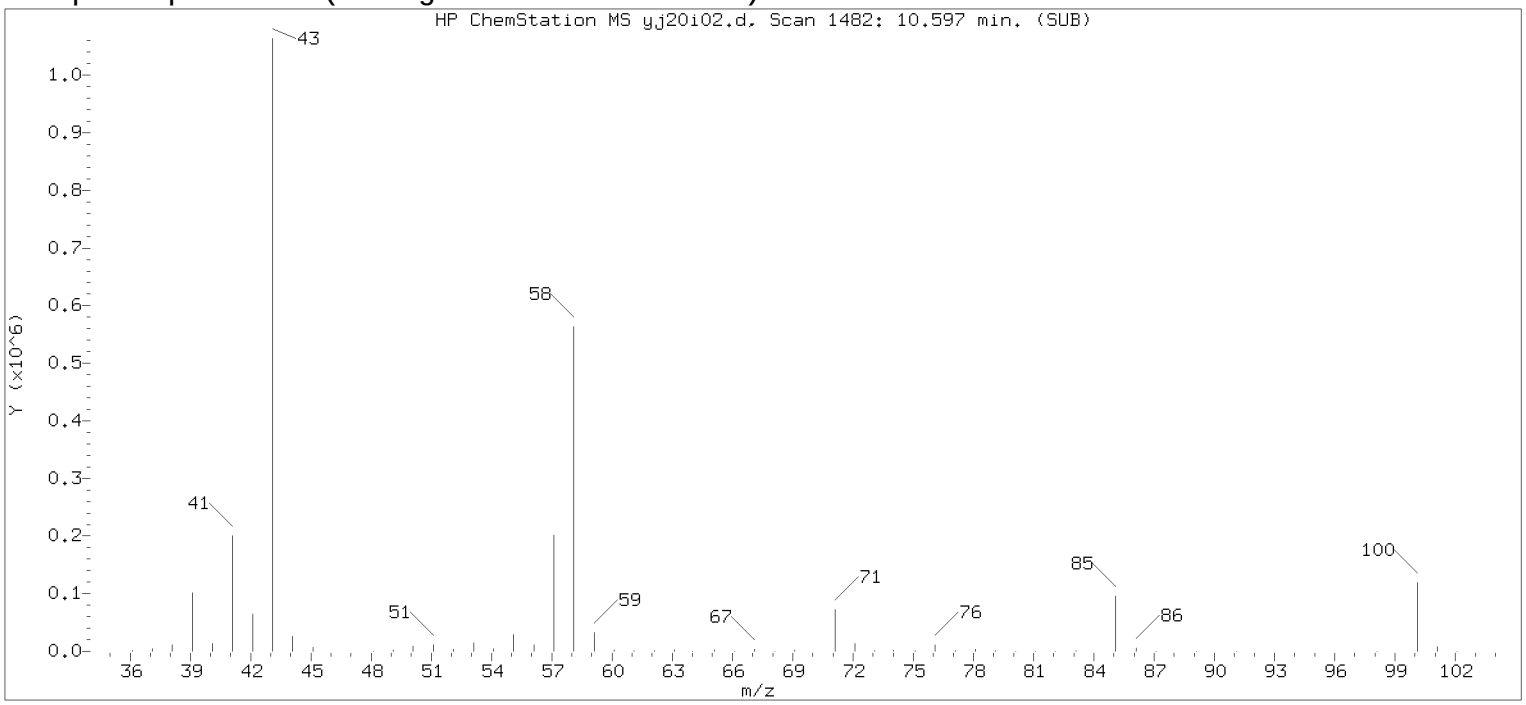
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1482
Retention Time (minutes): 10.597
Quant Ion : 43.00
Area (flag) : 1856002M
On-Column Amount (ng) : 195.9659
Integration start scan : 1470 Integration stop scan: 1498
Y at integration start : 263 Y at integration end: 263

Reason for manual integration: improper integration

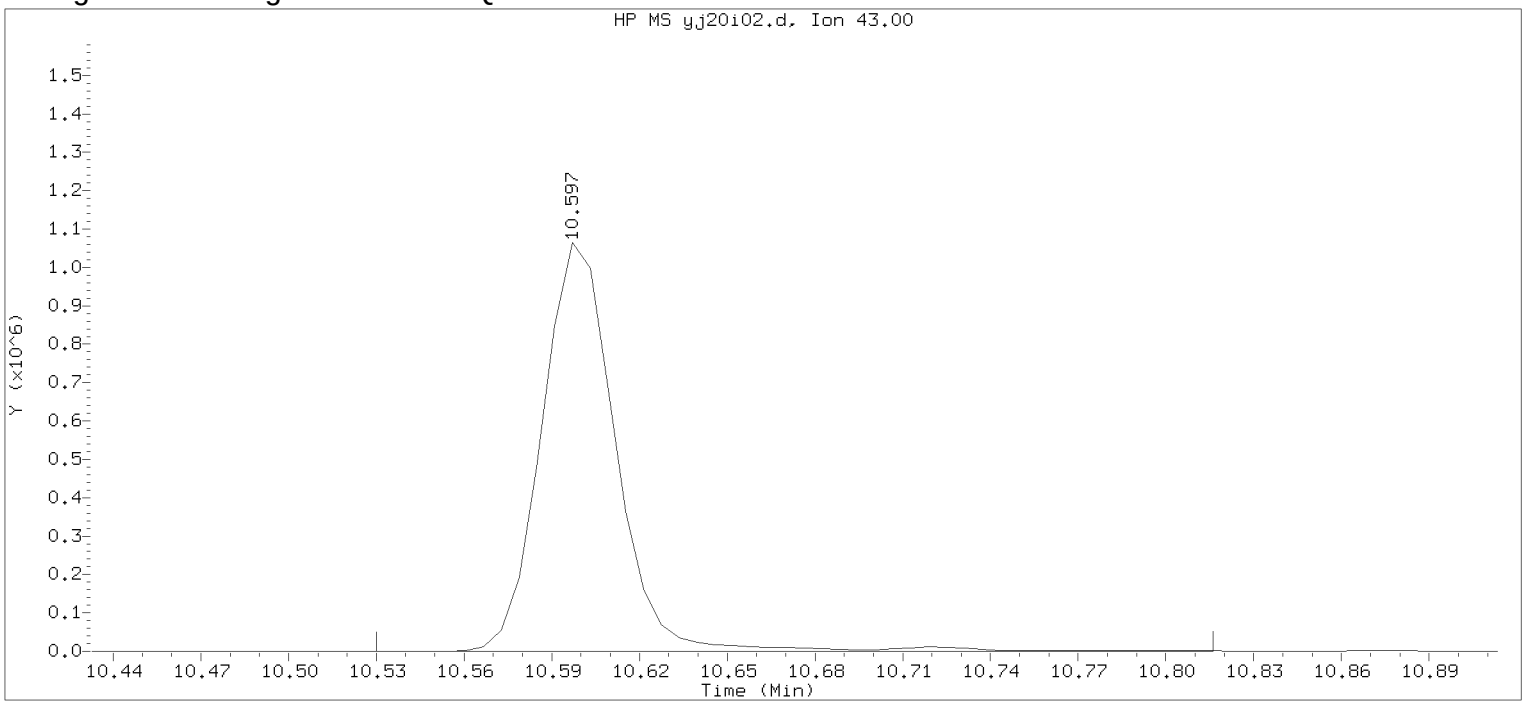
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

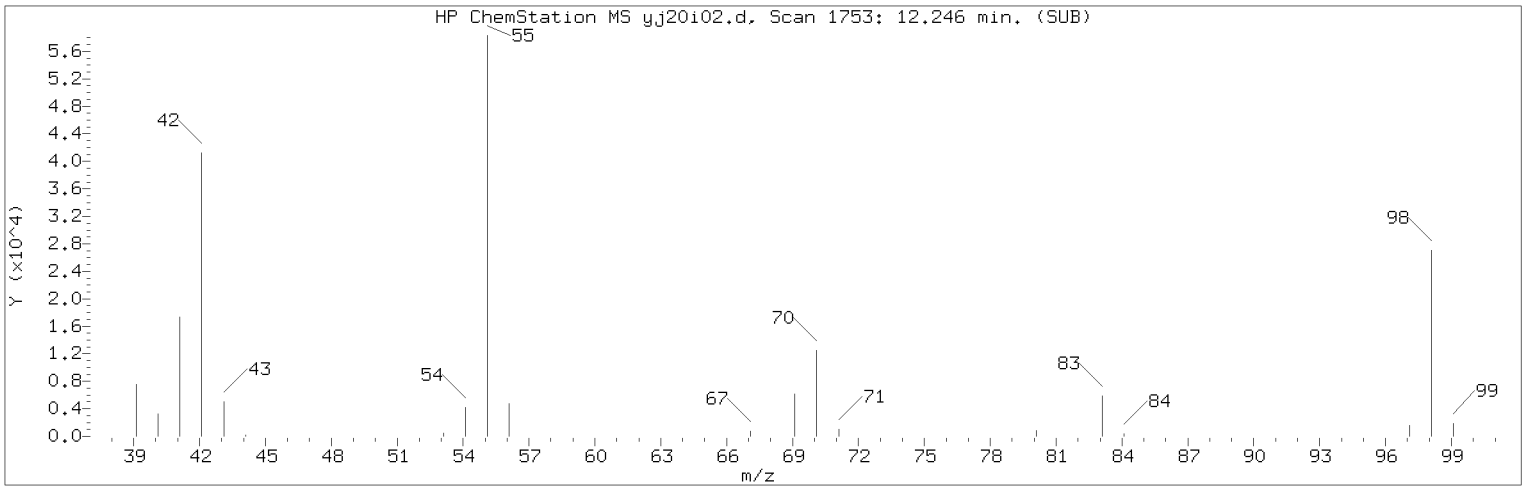
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

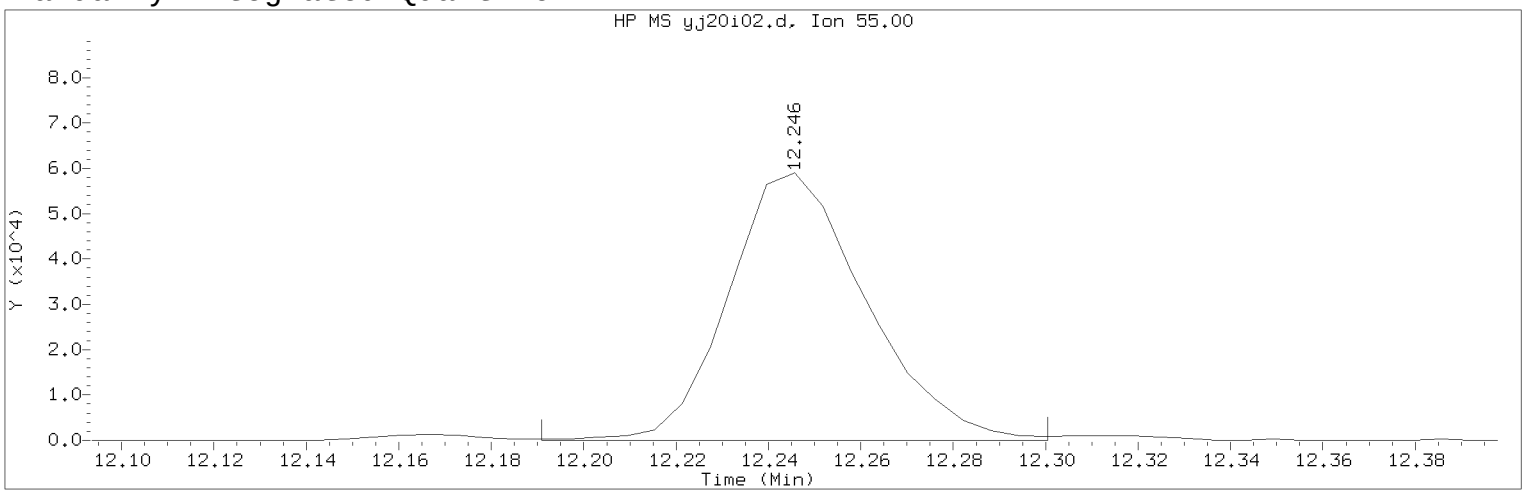
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1482
Retention Time (minutes): 10.597
Quant Ion : 43.00
Area : 1878282
On-column Amount (ng) : 25.5342
Integration start scan : 1470 Integration stop scan: 1517
Y at integration start : 263 Y at integration end: 263

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

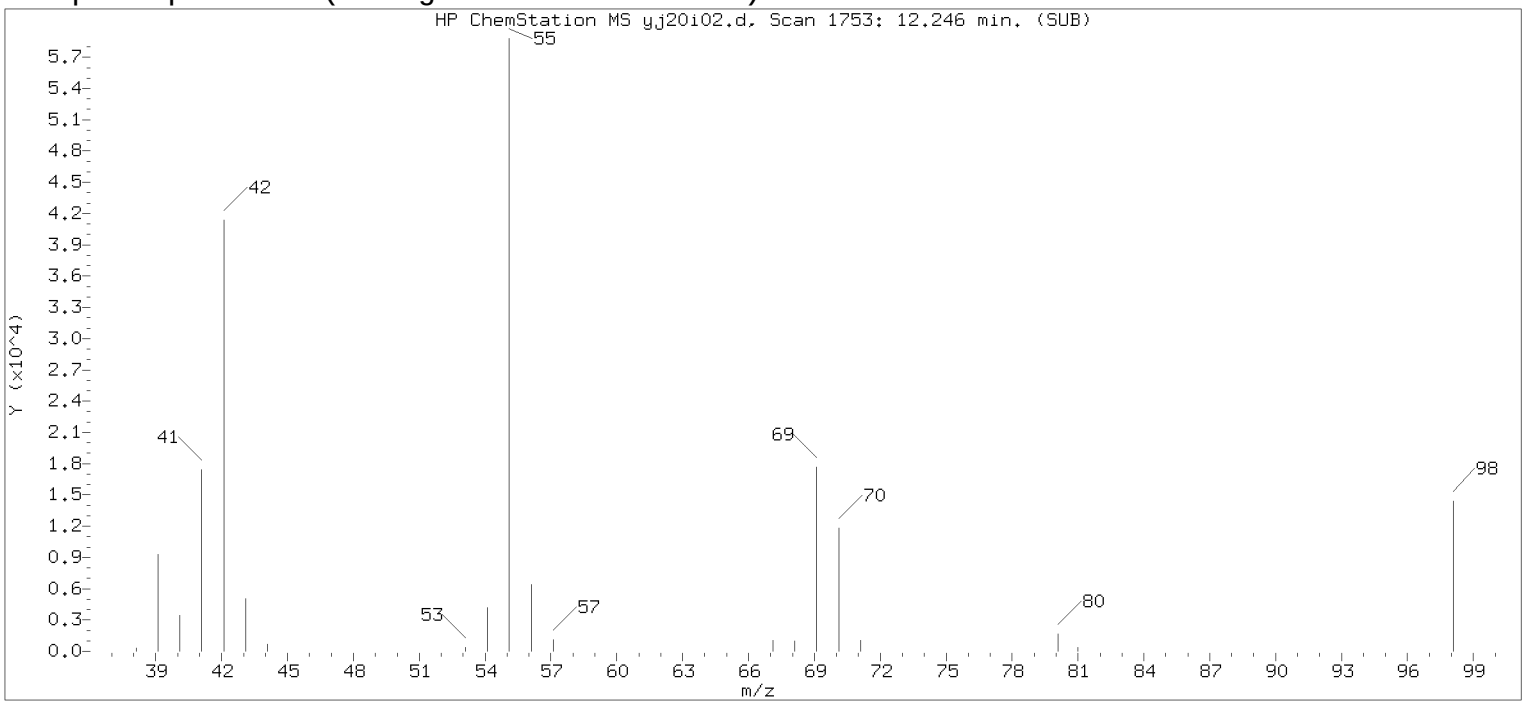
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 121822M
On-Column Amount (ng) : 1339.1510
Integration start scan : 1743 Integration stop scan: 1761
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

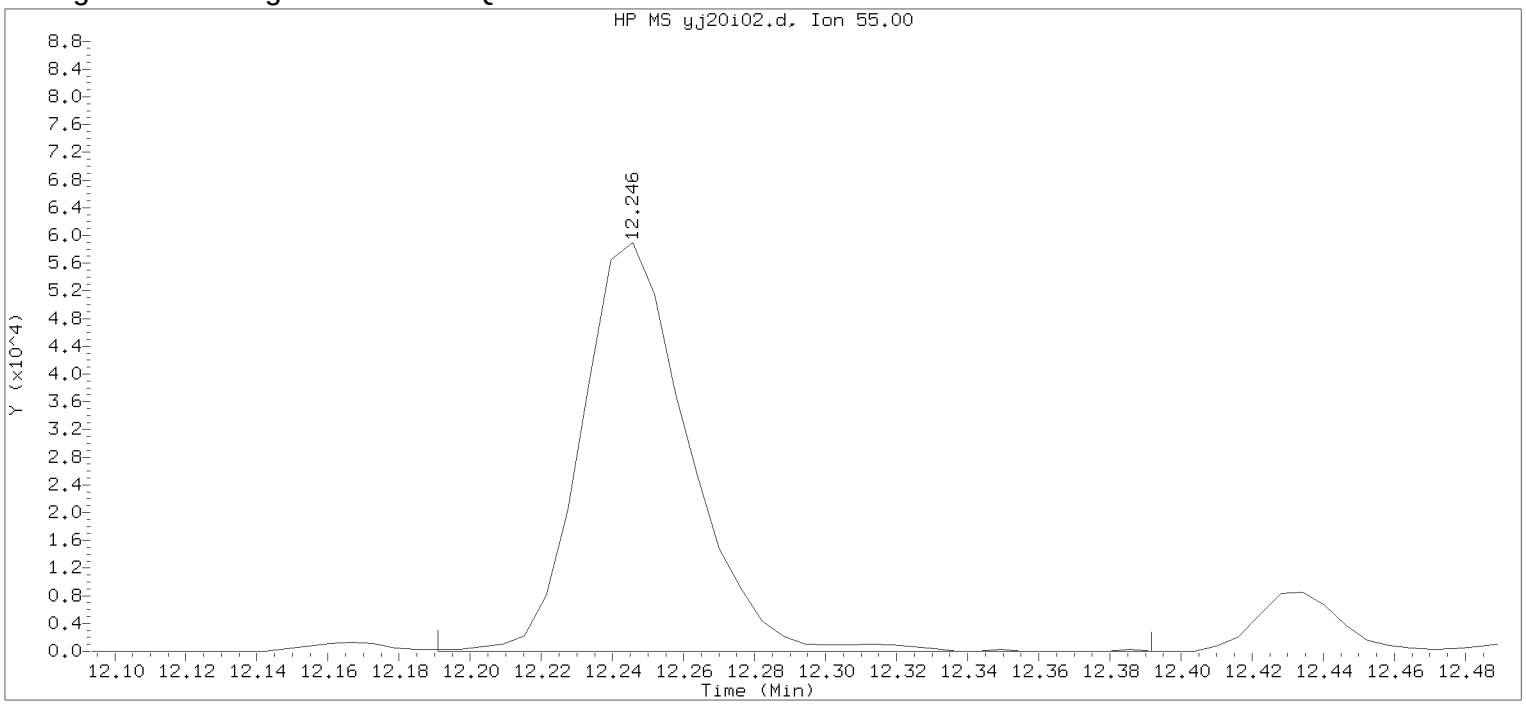
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

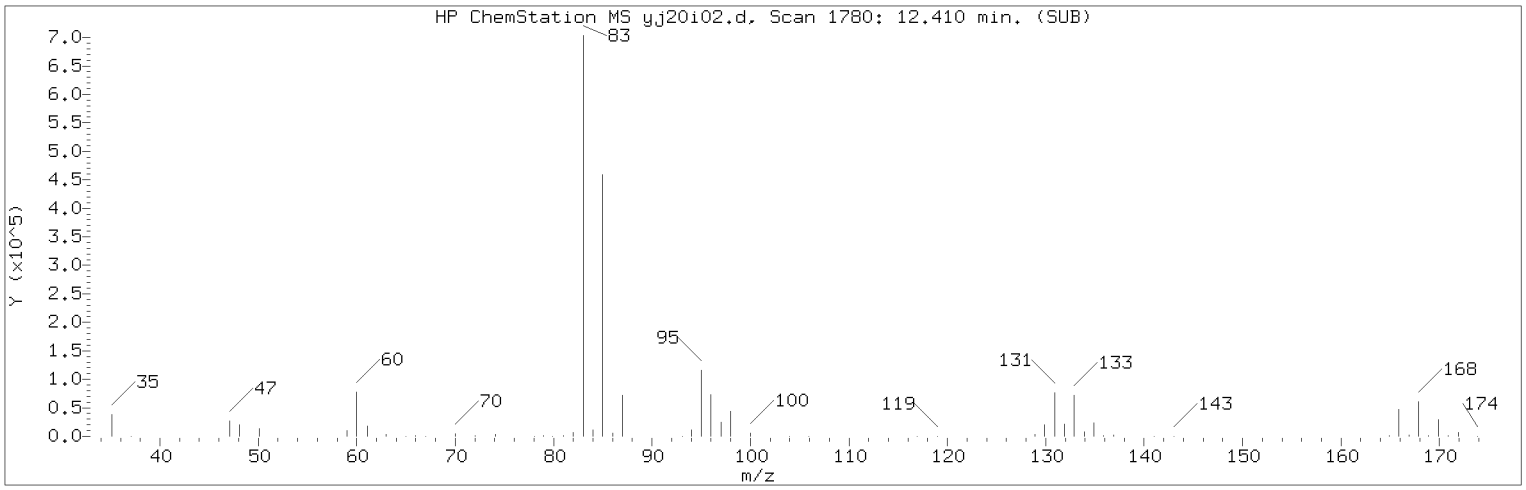
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

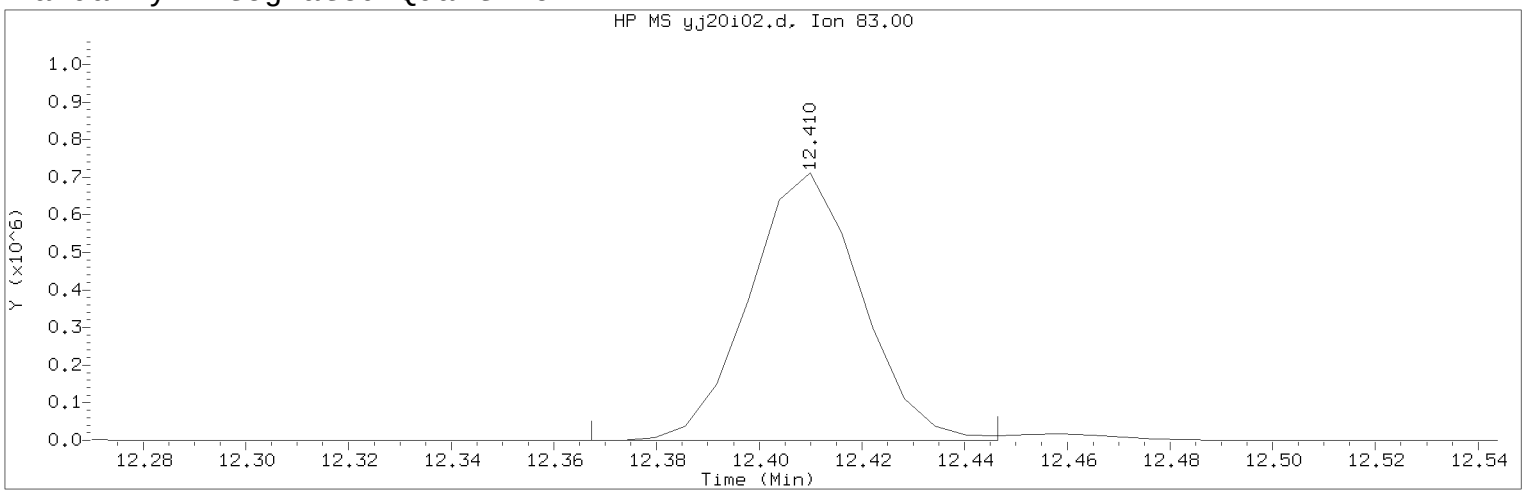
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 123426
On-column Amount (ng) : 1688.3859
Integration start scan : 1743 Integration stop scan: 1776
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

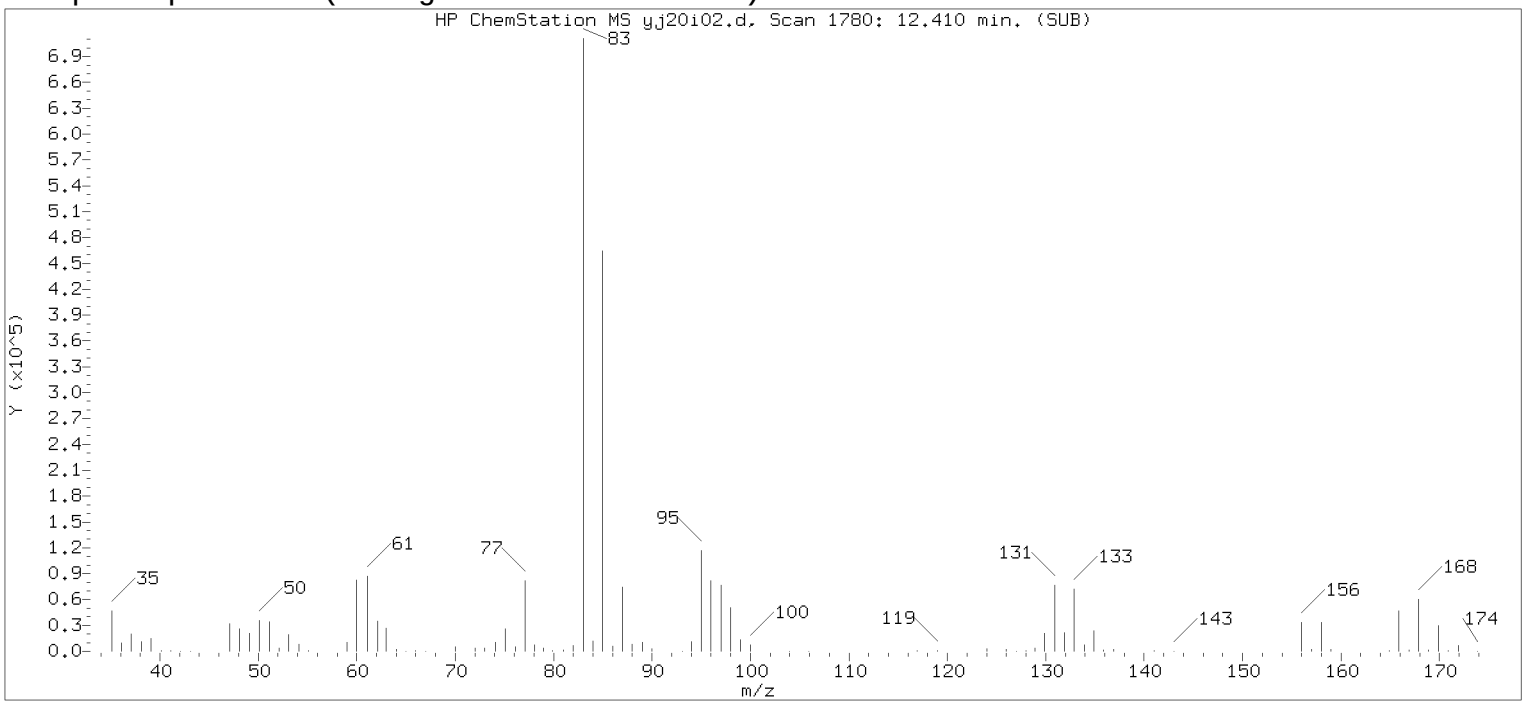
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 1073938M
On-Column Amount (ng) : 103.1450
Integration start scan : 1772 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

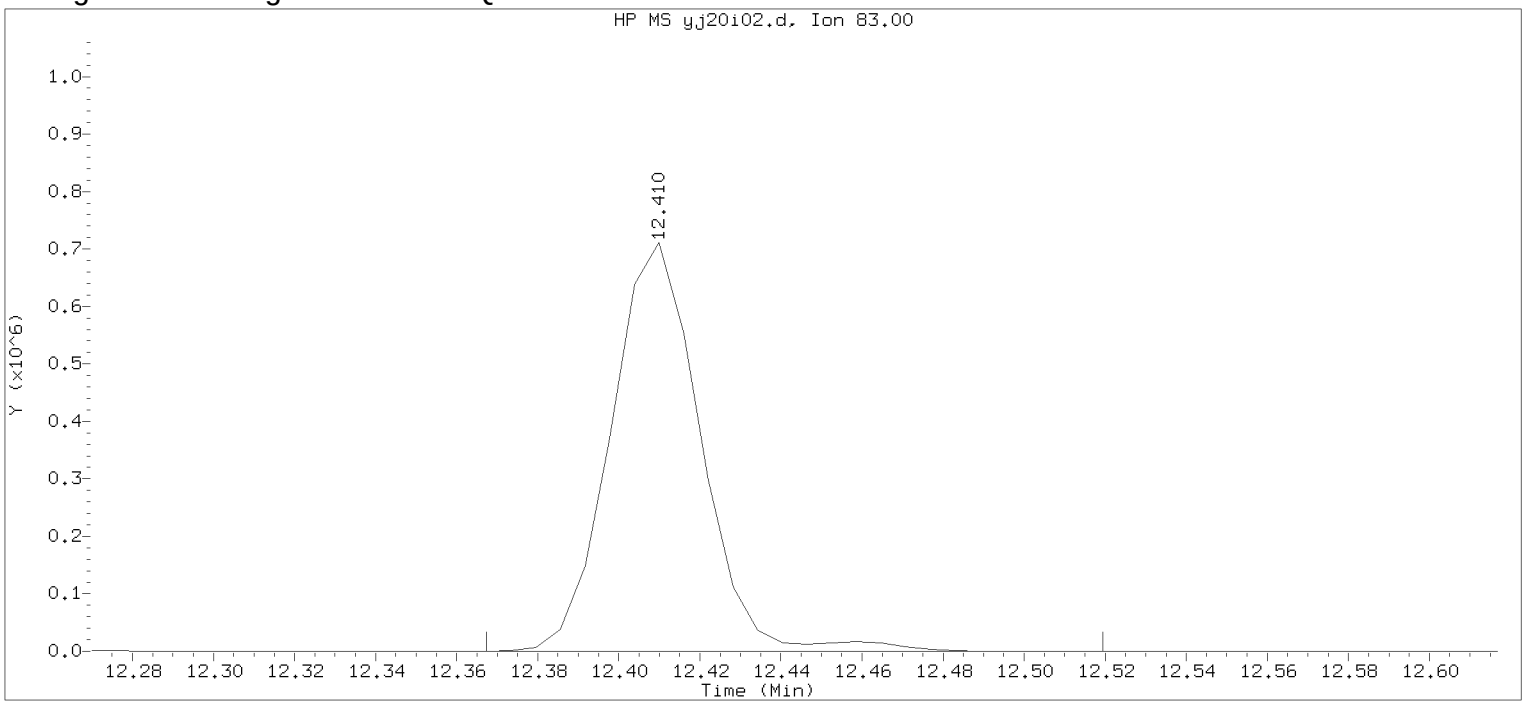
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

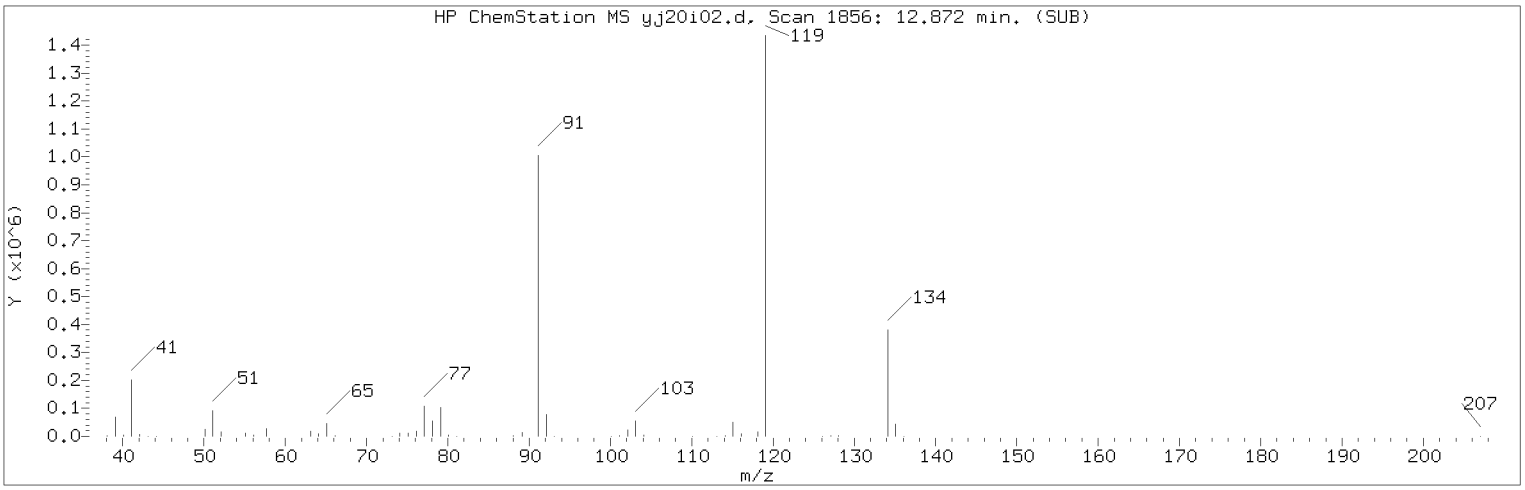
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

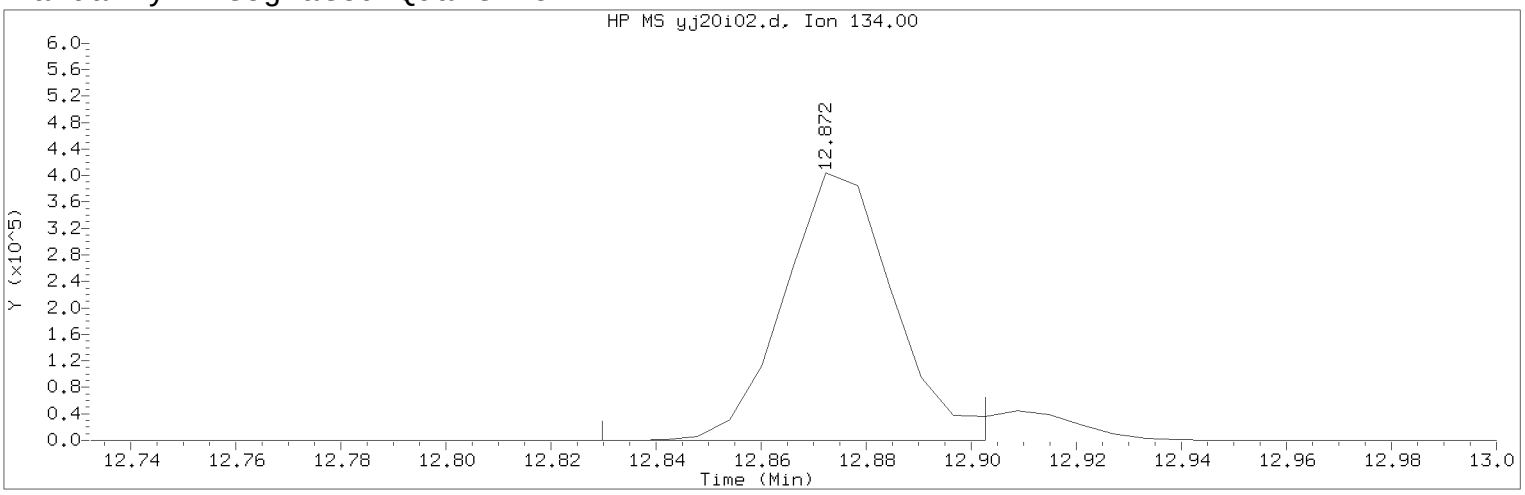
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 1095388
On-column Amount (ng) : 102.6767
Integration start scan : 1772 Integration stop scan: 1797
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

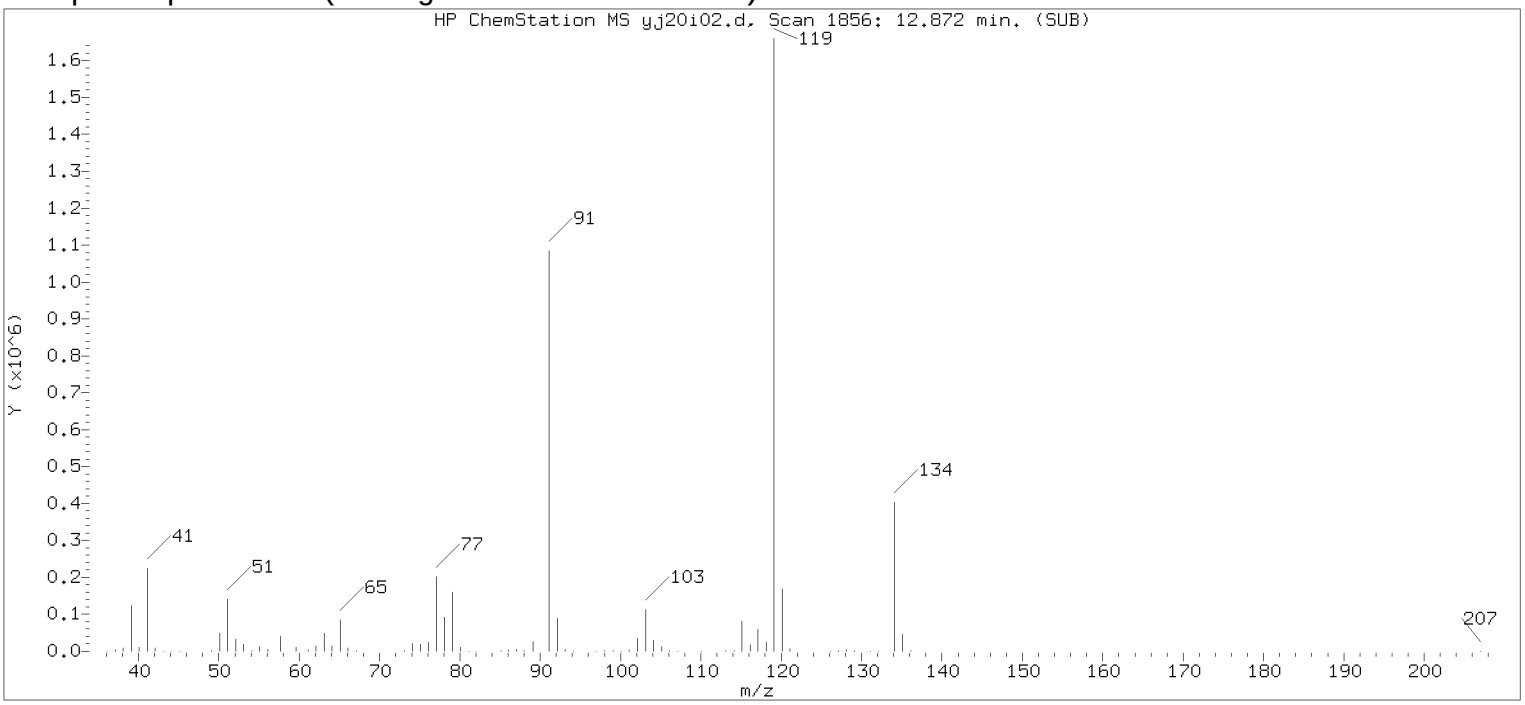
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 585206M
On-Column Amount (ng) : 103.2881
Integration start scan : 1848 Integration stop scan: 1860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

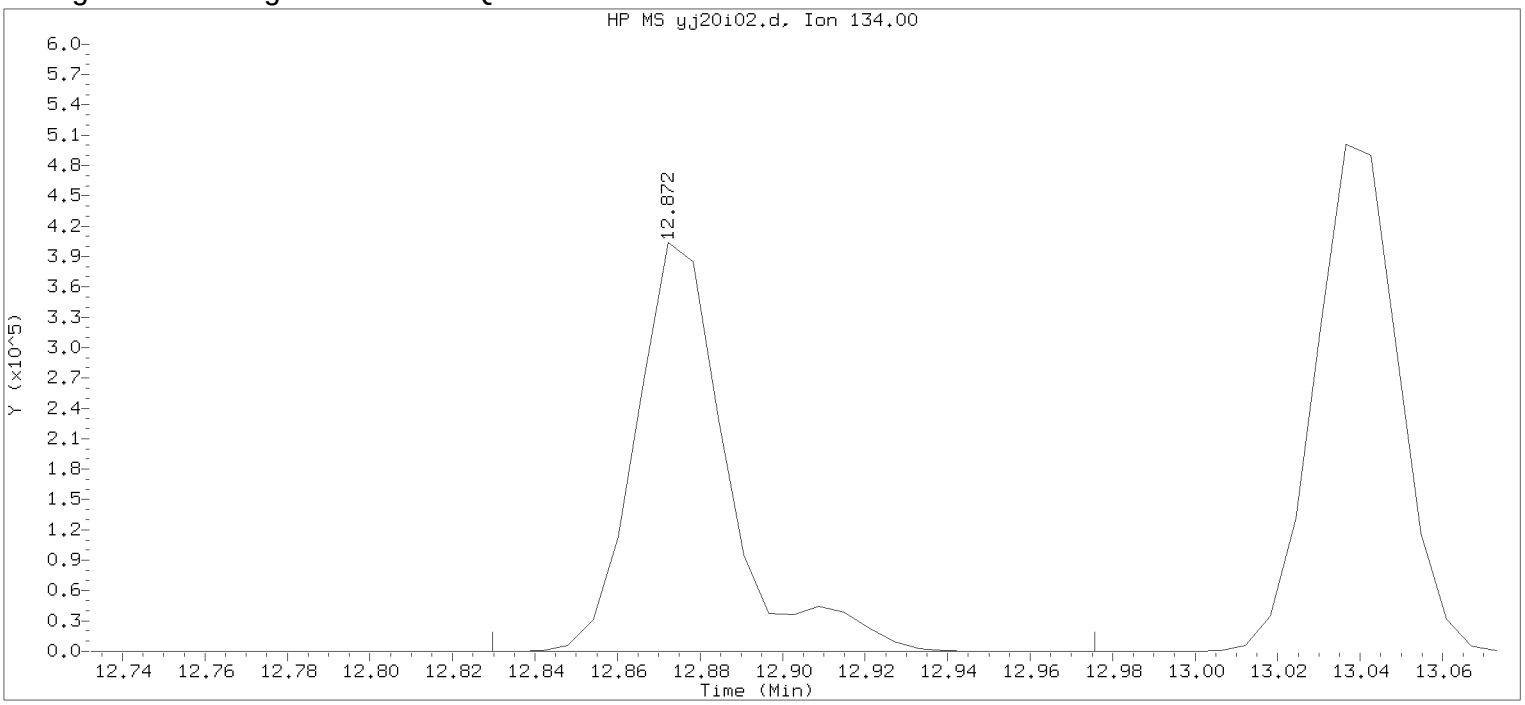
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



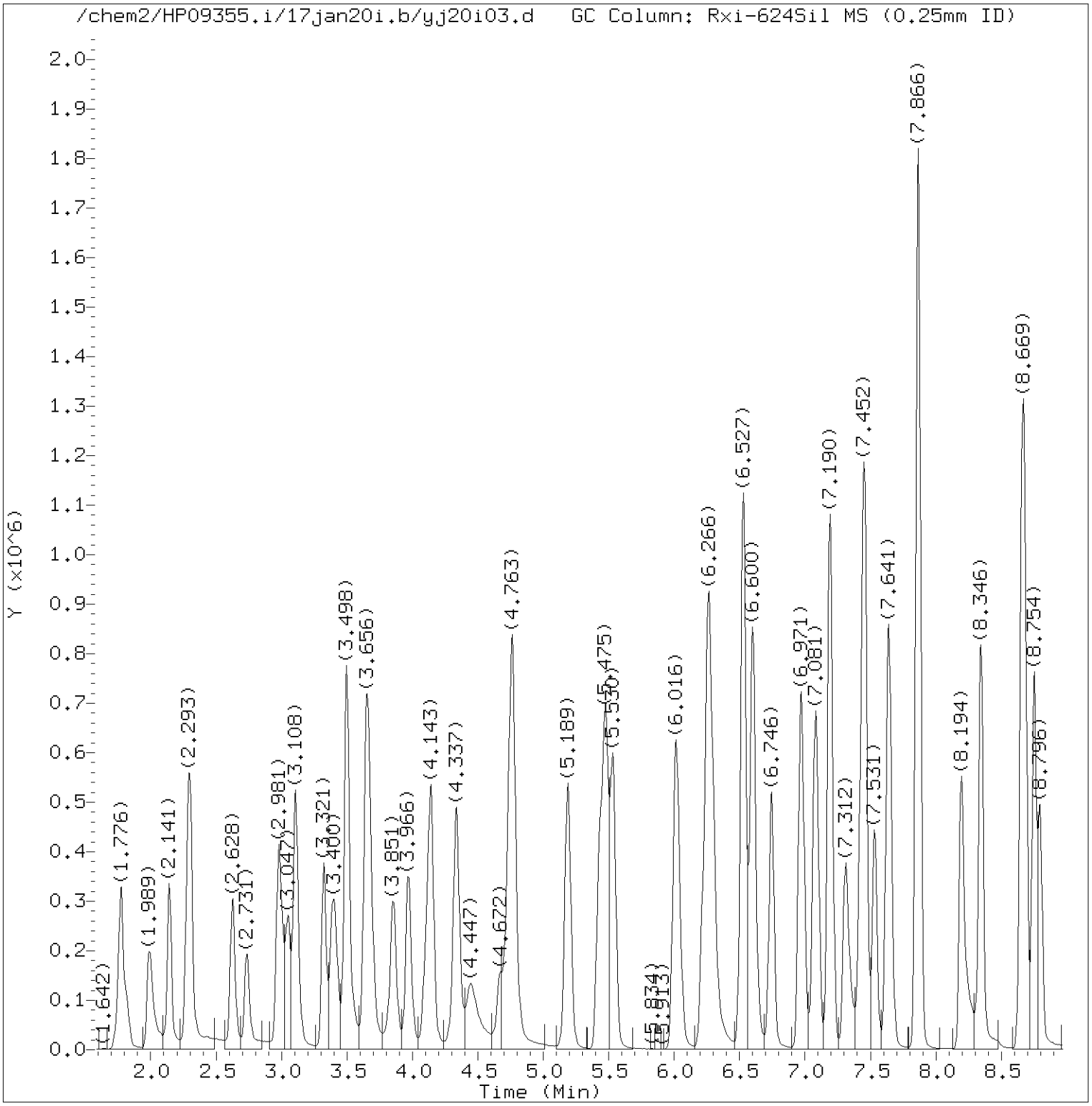

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 628714
On-column Amount (ng) : 102.5096
Integration start scan : 1848 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231




Total Ion Chromatogram (TIC)

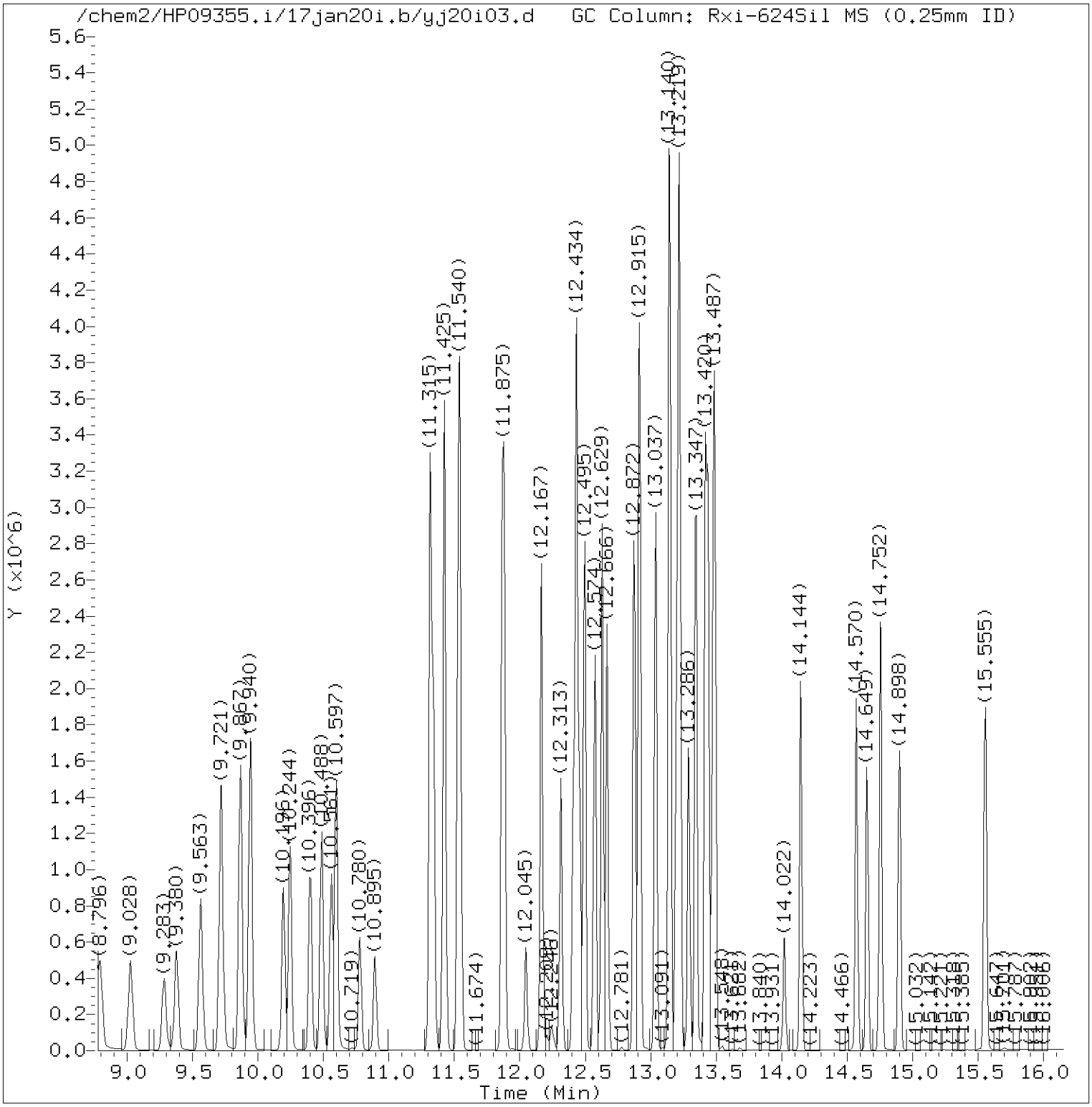
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 414402 | 52.067 |
| 4) Chloromethane | (2) | 2.141 | 50 | 428406 | 51.285 |
| 6) Vinyl Chloride | (2) | 2.281 | 62 | 406968 | 51.606 |
| 5) 1,3-Butadiene | (2) | 2.299 | 39 | 277868 | 40.633 |
| 8) Bromomethane | (2) | 2.628 | 94 | 284697 | 51.569 |
| 9) Chloroethane | (2) | 2.737 | 64 | 232635 | 51.503 |
| 10) Dichlorofluoromethane | (2) | 2.981 | 67 | 509354 | 49.788 |
| 12) Trichlorofluoromethane | (2) | 3.047 | 101 | 492773 | 52.370 |
| 11) n-Pentane | (2) | 3.108 | 43 | 488690 | 48.171 |
| 14) Ethyl ether | (2) | 3.321 | 59 | 288357 | 51.687 |
| 15) Freon 123a | (2) | 3.400 | 67 | 322501 | 50.619 |
| 16) Acrolein | (1) | 3.498 | 56 | 1116682 | 495.570 |
| 17) 1,1-Dichloroethene | (2) | 3.644 | 96 | 246782 | 52.085 |
| 17) 1,1-Dichloroethene | (2) | 3.644 | 63 | 127516 | 51.630 |
| 18) Acetone | (1) | 3.662 | 58 | 108657 | 99.192 |
| 19) Freon 113 | (2) | 3.674 | 101 | 246999 | 52.467 |
| 21) 2-Propanol | (1) | 3.832 | 45 | 205251 | 247.641 |
| 22) Methyl Iodide | (2) | 3.857 | 142 | 467634 | 52.341 |
| 23) Carbon Disulfide | (2) | 3.966 | 76 | 763493 | 53.003 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 453096 | 50.986 |
| 25) Allyl Chloride | (2) | 4.143 | 41 | 500511 | 51.707 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 365897 | 250.000 |
| 28) Methylene Chloride | (2) | 4.337 | 84 | 304675 | 52.028 |
| 30) t-Butyl alcohol | (1) | 4.447 | 59 | 412618 | 253.806 |
| 31) Acrylonitrile | (2) | 4.672 | 53 | 216102 | 50.668 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.745 | 73 | 997588 | 51.670 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 297237 | 52.069 |
| 34) n-Hexane | (2) | 5.189 | 57 | 449382 | 51.748 |
| 36) 1,1-Dichloroethane | (2) | 5.426 | 63 | 540012 | 52.700 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 1053225 | 51.878 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 496246 | 52.712 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 988742 | 51.947 |
| 44) 2-Butanone | (2) | 6.223 | 43 | 657730 | 99.851 |
| 42) cis-1,2-Dichloroethene | (2) | 6.260 | 96 | 337175 | 51.664 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 430363 | 52.735 |
| 47) Propionitrile | (1) | 6.302 | 54 | 463075 | 243.046 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 595816 | 129.555 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 173760 | 51.670 |

* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 171057 | 99.436 |
| 51) Chloroform | (2) | 6.746 | 83 | 541291 | 52.377 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 634412 | 103.733 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 284192 | 50.104 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 111 | 290750 | 50.226 |
| 53) 1,1,1-Trichloroethane | (2) | 6.978 | 97 | 452772 | 51.884 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 528679 | 51.472 |
| 54) Cyclohexane | (2) | 7.081 | 84 | 434876 | 51.551 |
| 54) Cyclohexane | (2) | 7.081 | 69 | 160776 | 51.529 |
| 56) Carbon Tetrachloride | (2) | 7.190 | 117 | 388464 | 52.871 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 433251 | 51.602 |
| 58) Isobutyl Alcohol | (1) | 7.312 | 41 | 356825 | 586.071 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 74685 | 50.403 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 370284 | 49.636 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 104 | 47721 | 50.722 |
| 60) Benzene | (2) | 7.458 | 78 | 1280716 | 51.924 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 455554 | 50.917 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 98 | 41782 | 52.451 |
| 65) t-Amyl methyl ether | (2) | 7.641 | 73 | 988413 | 51.808 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1212862 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 515377 | 50.409 |
| 69) n-Butanol | (1) | 8.194 | 56 | 562918 | 1136.655 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 335231 | 51.876 |
| 72) Methylcyclohexane | (2) | 8.657 | 83 | 573099 | 51.270 |
| 72) Methylcyclohexane | (2) | 8.663 | 98 | 257266 | 50.937 |
| 73) 1,2-Dichloropropane | (2) | 8.681 | 63 | 338306 | 51.664 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 365855 | 52.163 |
| 75) 1,4-Dioxane | (1) | 8.766 | 88 | 85849M | 639.696 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 219488 | 51.806 |
| 78) Bromodichloromethane | (2) | 9.028 | 83 | 396219 | 53.055 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 308938 | 107.758 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 284187 | 52.053 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 527405 | 53.709 |
| 82) 4-Methyl-2-pentanone | (2) | 9.715 | 43 | 1216011 | 102.611 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1193923 | 49.933 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 769651 | 49.738 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1016884 | 107.739 |
| 88) Toluene | (3) | 9.940 | 92 | 836202 | 51.854 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 489479 | 54.030 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 580940 | 53.159 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 324418A | 51.661 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 368397 | 51.337 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 544080 | 51.181 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1002299 | 104.881 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 332183 | 54.471 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 356551 | 52.200 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 927146A | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 454278A | 51.688 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 949581 | 51.685 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 1624959A | 52.241 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 312854 | 53.695 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 1294212A | 104.294 |
| 108) Xylene (Total) | (3) | | 106 | 1928344 | 156.411 |
| 107) o-Xylene | (3) | 11.869 | 106 | 634132 | 52.117 |
| 109) Styrene | (3) | 11.881 | 104 | 1079446A | 53.446 |
| 110) Bromoform | (3) | 12.045 | 173 | 248127 | 54.763 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 1611094A | 52.469 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 63653MA | 636.389 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 451215A | 50.192 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 174 | 384762A | 50.225 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 543279M | 51.751 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 440992 | 134.730 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 432871 | 51.060 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 178083 | 50.743 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 1920314 | 52.410 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 384700 | 51.024 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 1400286 | 52.410 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 418197 | 52.255 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 296435M | 51.892 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 228543 | 52.912 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 1449388 | 52.457 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 1764190 | 52.529 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 840152 | 51.944 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 1570571 | 52.633 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 512041 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 857626 | 51.515 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

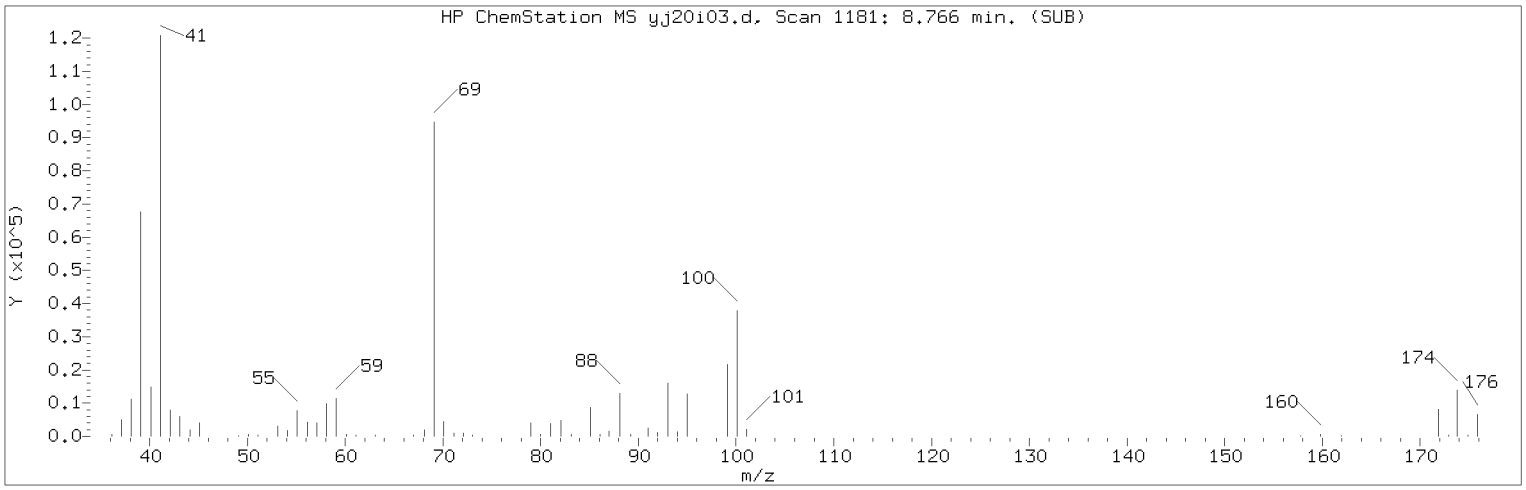
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 1422743 | 51.264 |
| 135) Benzyl Chloride | (4) | 13.286 | 91 | 1053751 | 55.335 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 903734 | 52.005 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 941796 | 52.235 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 784370 | 52.221 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 799451 | 51.458 |
| 140) 1,2-Diethylbenzene | (4) | 13.487 | 119 | 748091M | 51.303 |
| 141) Diethylbenzene (total) | (4) | | 100 | 2593621 | 155.543 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 132577 | 52.843 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 582529 | 51.186 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 530818 | 51.038 |
| 147) Hexachlorobutadiene | (4) | 14.649 | 225 | 260911 | 51.049 |
| 148) Naphthalene | (4) | 14.758 | 128 | 1724779 | 51.819 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 476357 | 50.374 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 926058 | 51.661 |

M = Compound was manually integrated.

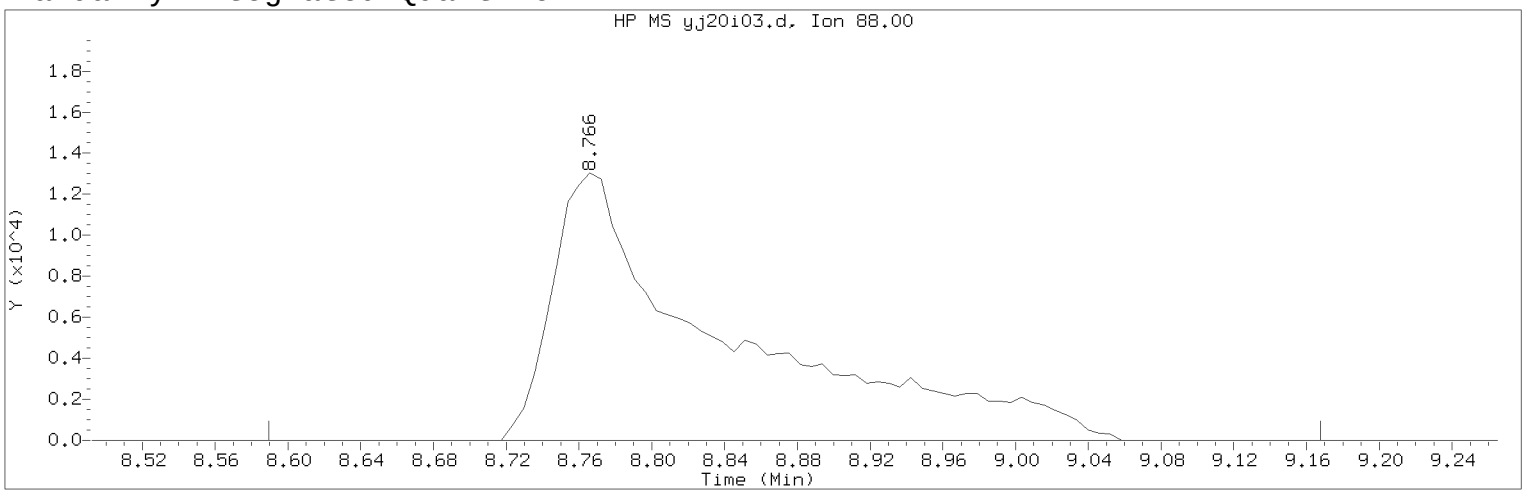


Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

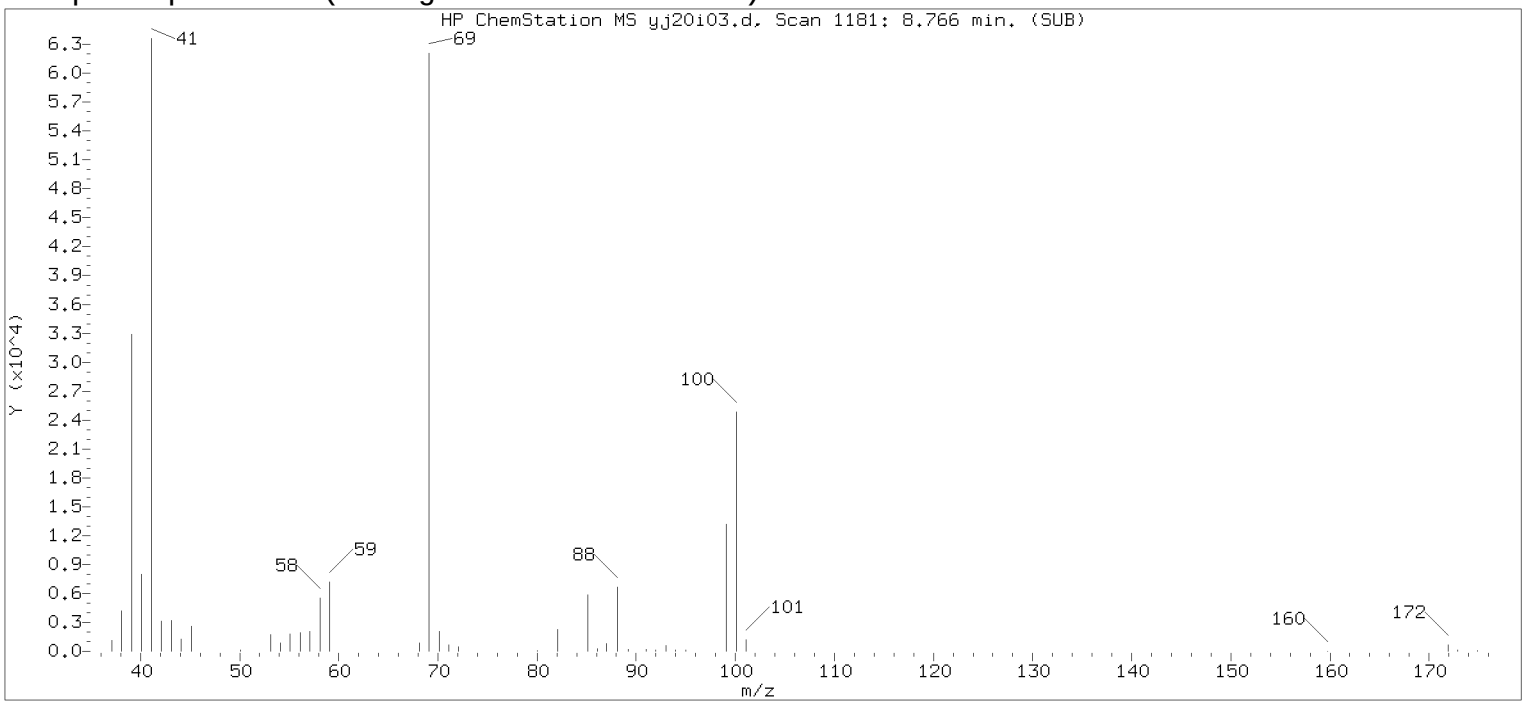
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area (flag) : 85849M
On-Column Amount (ng) : 639.6957
Integration start scan : 1151 Integration stop scan: 1246
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

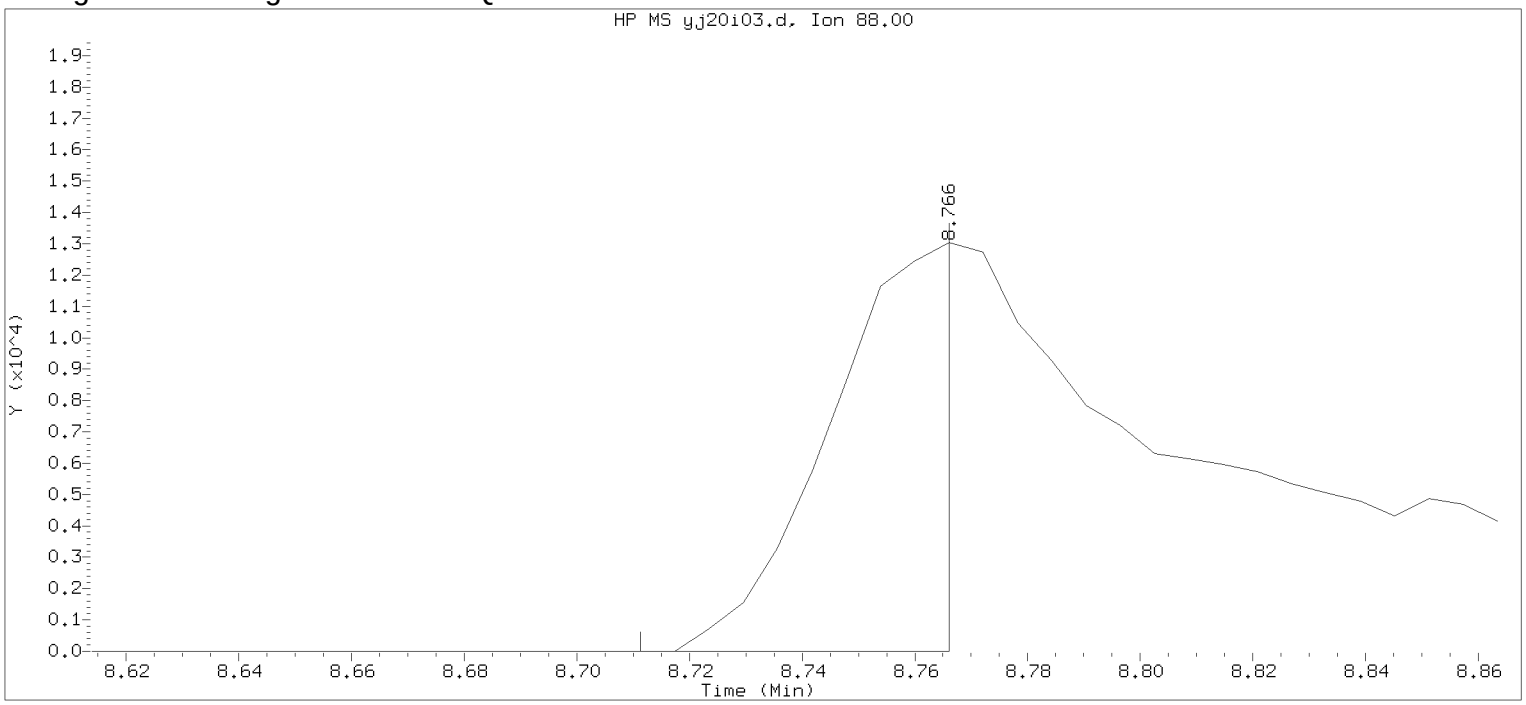
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

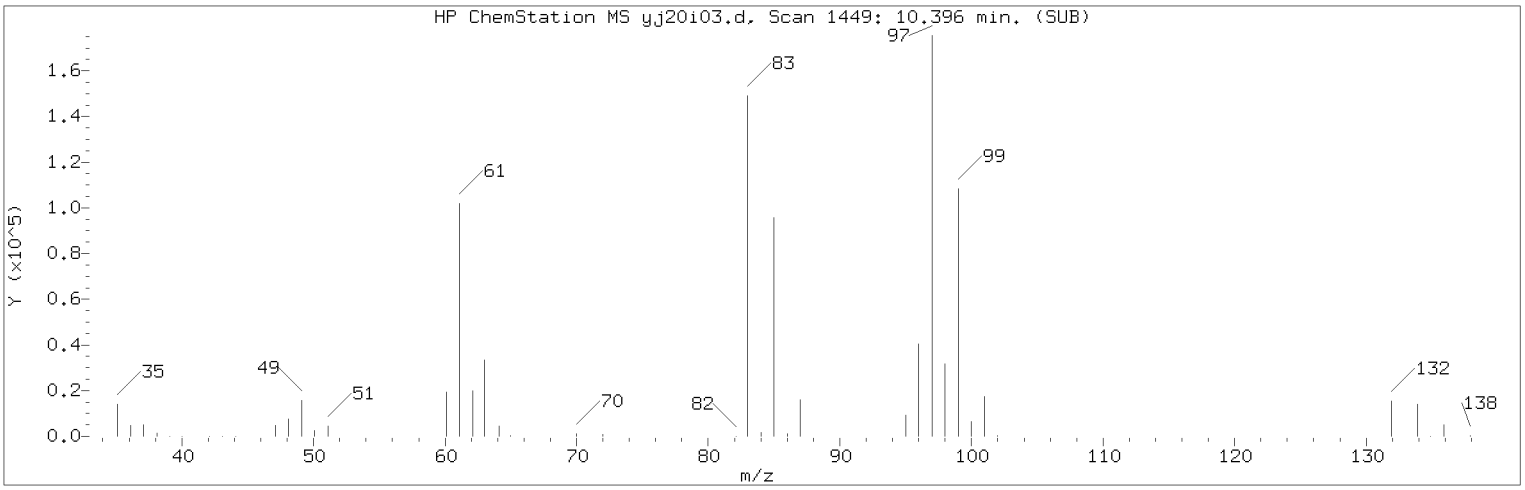
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

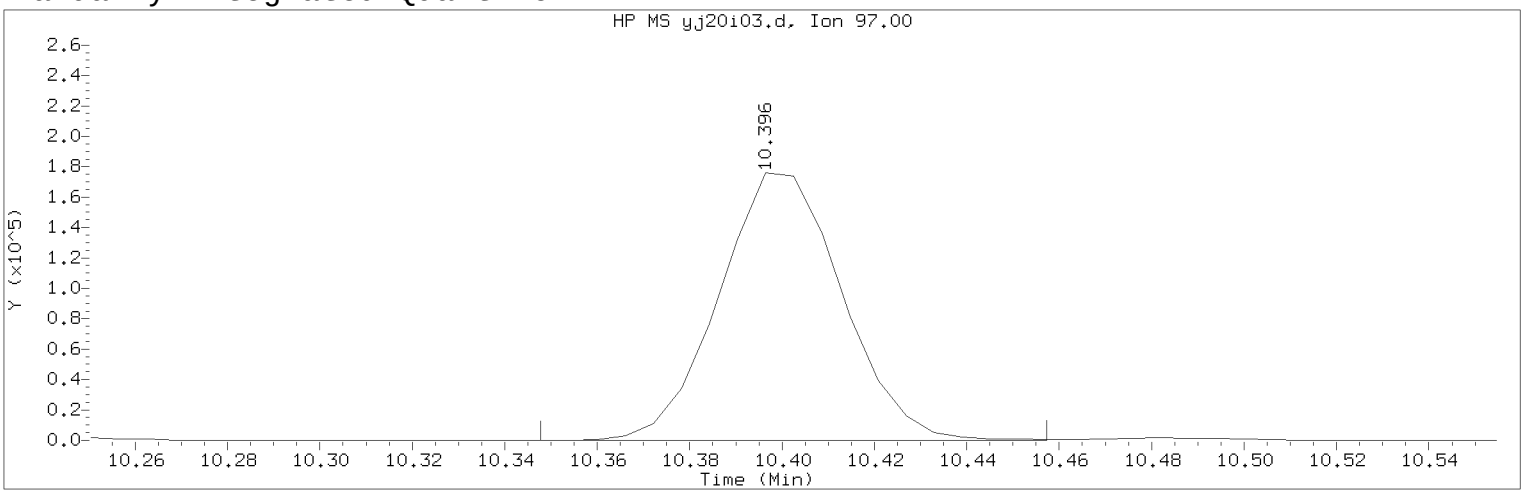
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area : 18440
On-column Amount (ng) : 190.5458
Integration start scan : 1171 Integration stop scan: 1180
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

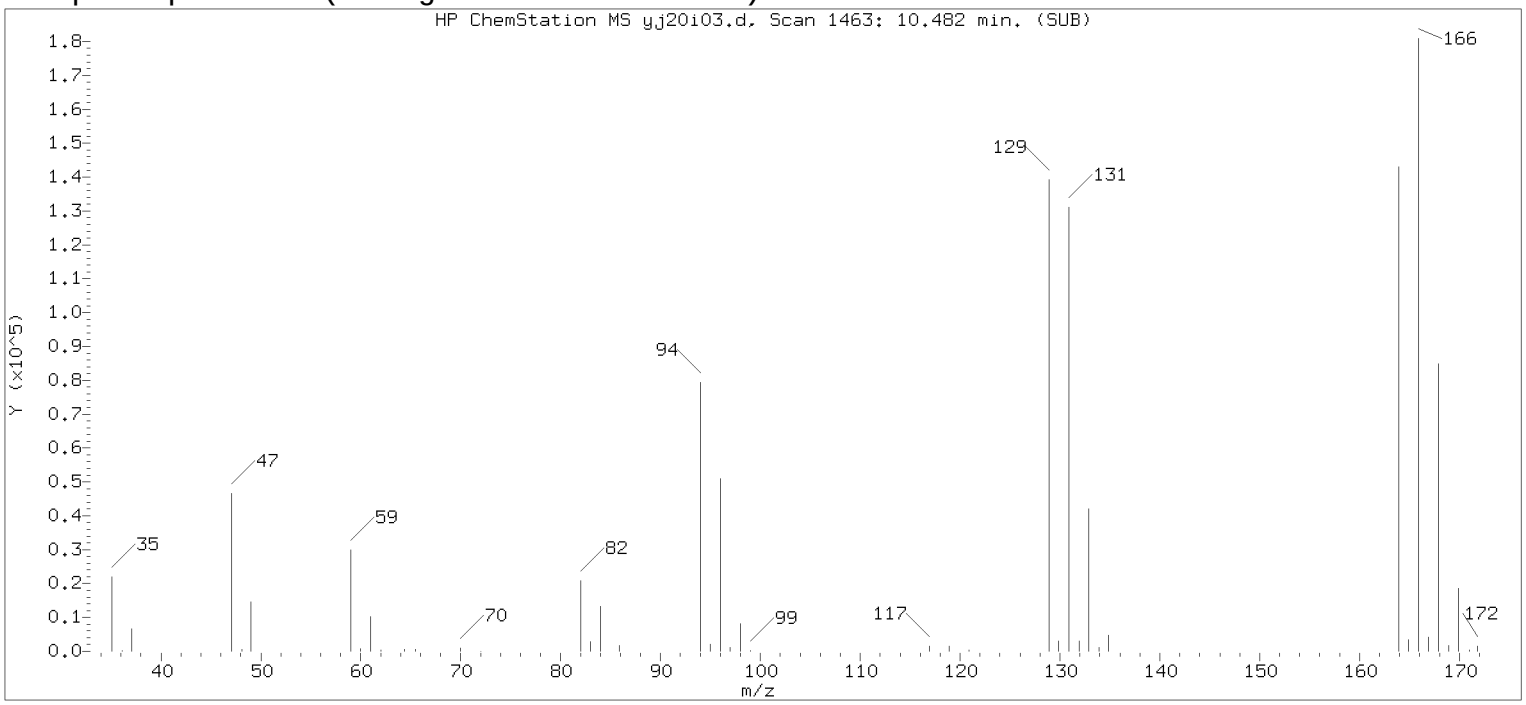
Compound Number : 92
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1449
Retention Time (minutes): 10.396
Quant Ion : 97.00
Area (flag) : 324418A
On-Column Amount (ng) : 51.6614
Integration start scan : 1440 Integration stop scan: 1458
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

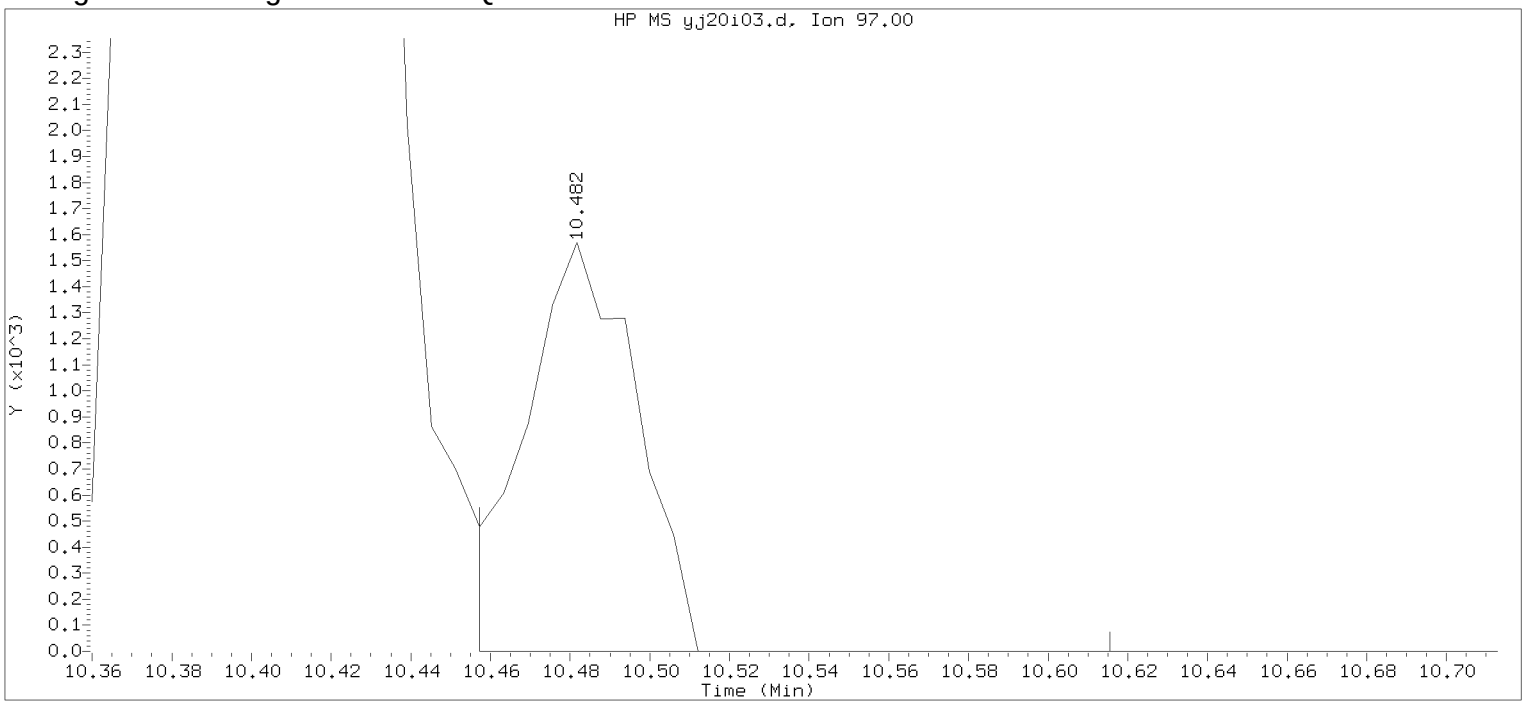
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

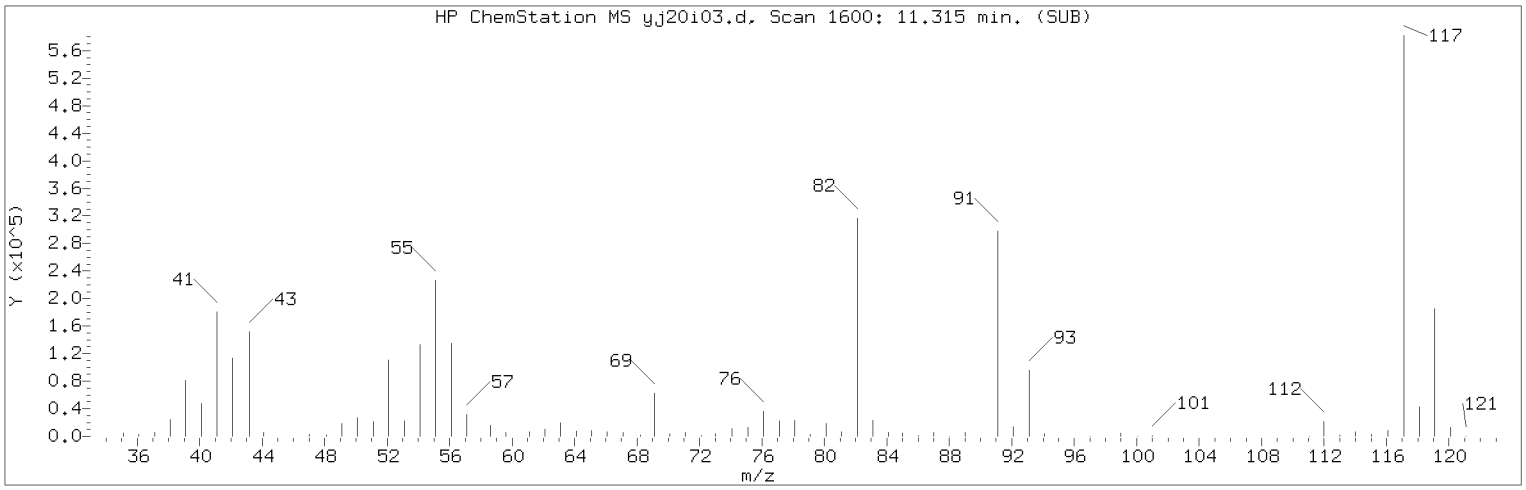
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

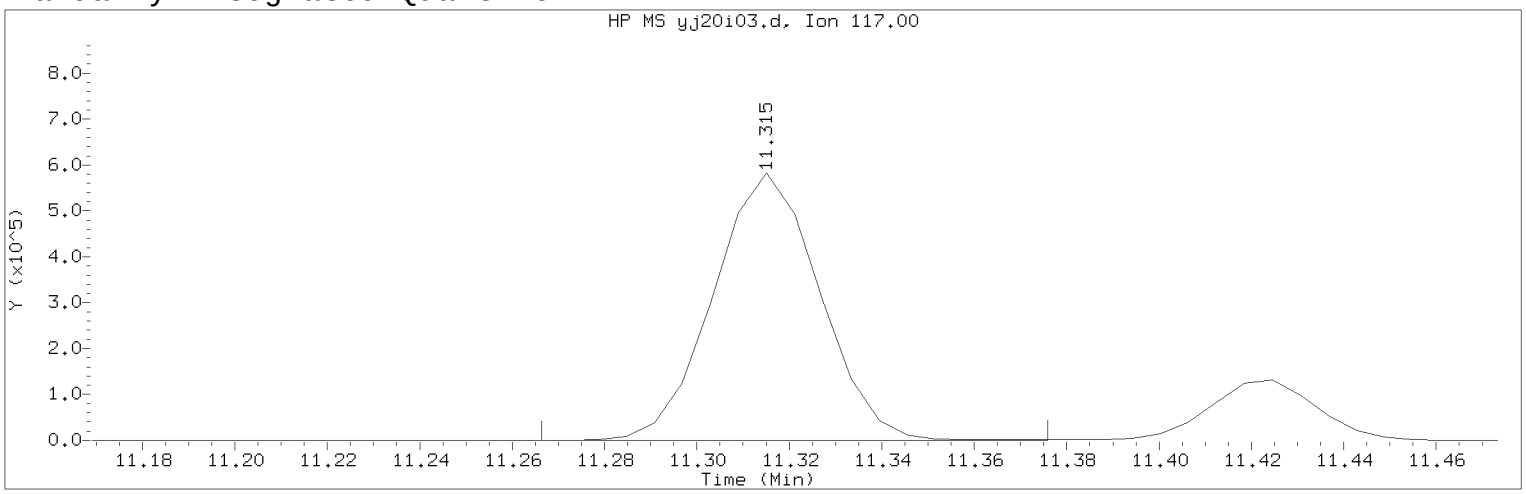
Compound Number : 92
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1463
Retention Time (minutes): 10.482
Quant Ion : 97.00
Area : 3033
On-column Amount (ng) : 3.8295
Integration start scan : 1458 Integration stop scan: 1484
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

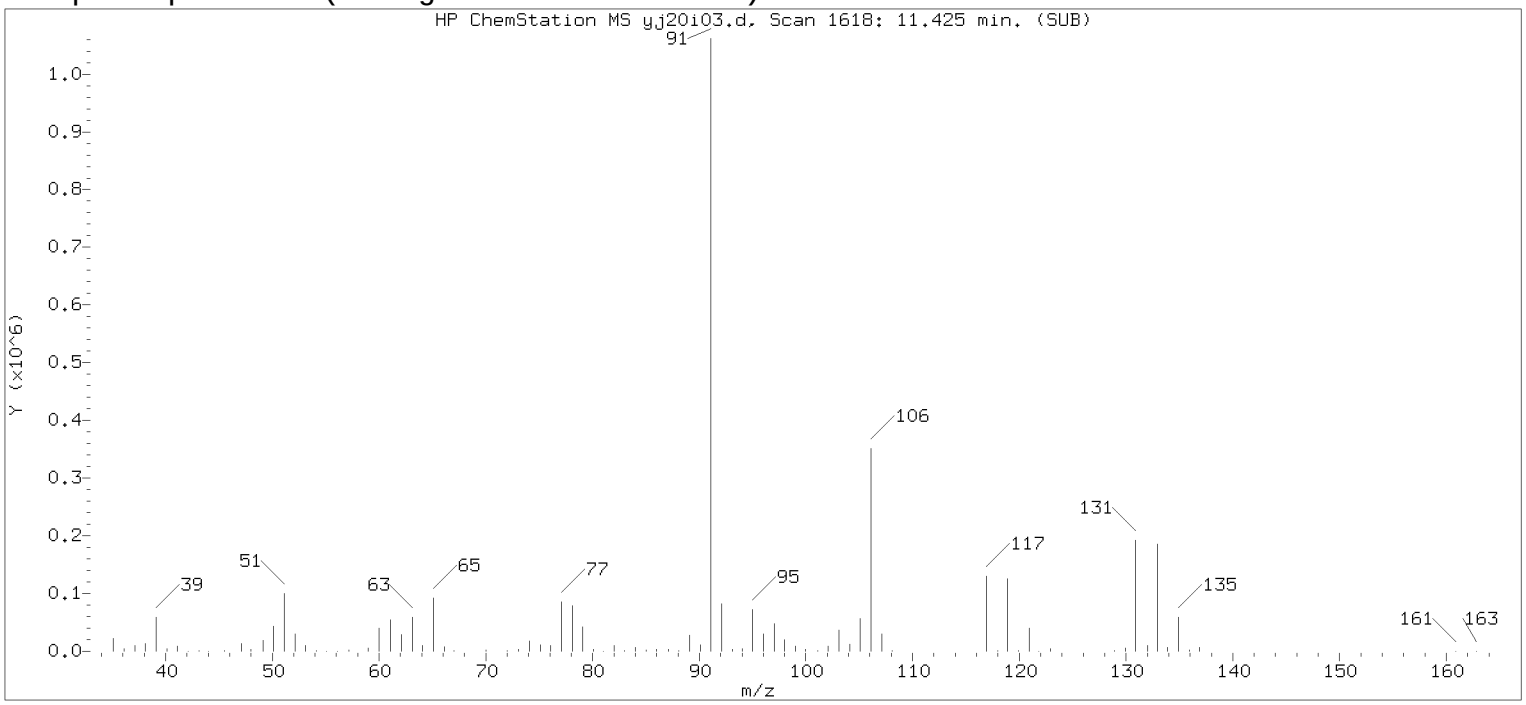
Compound Number : 100
Compound Name : Chlorobenzene-d5
Scan Number : 1600
Retention Time (minutes): 11.315
Quant Ion : 117.00
Area (flag) : 927146A
On-Column Amount (ng) : 50.0000
Integration start scan : 1591 Integration stop scan: 1609
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

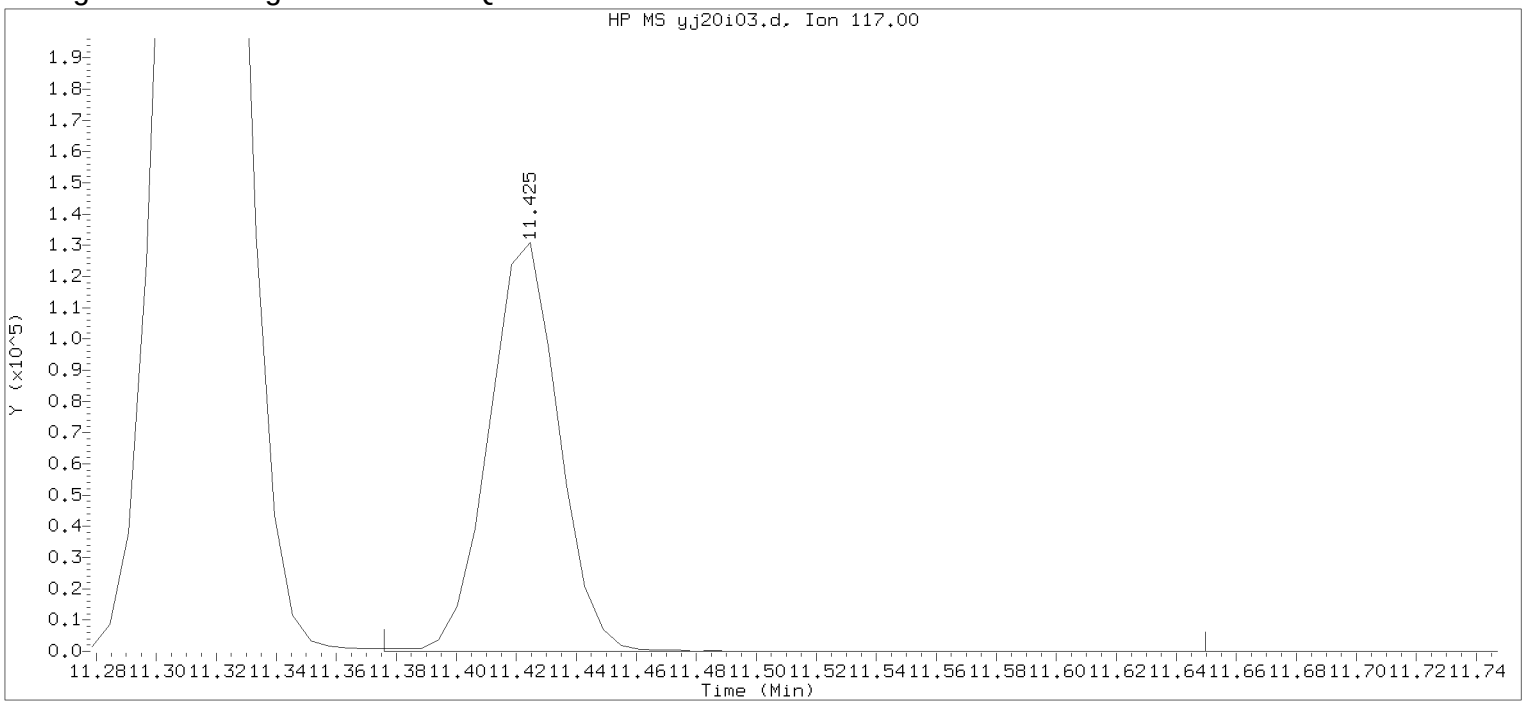
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

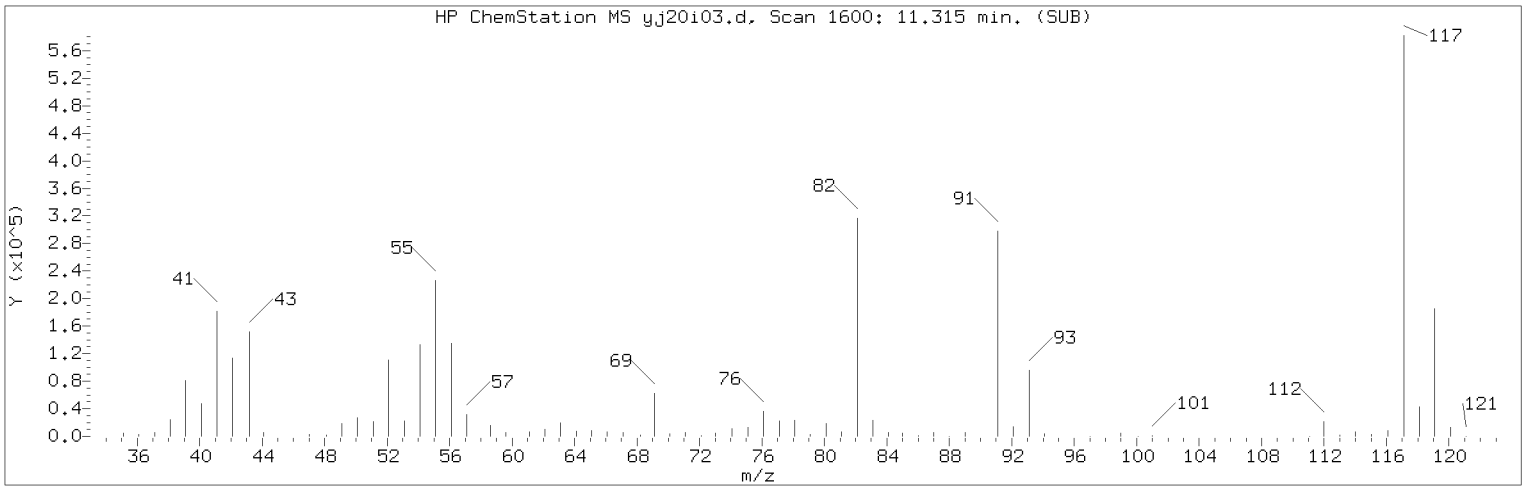
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

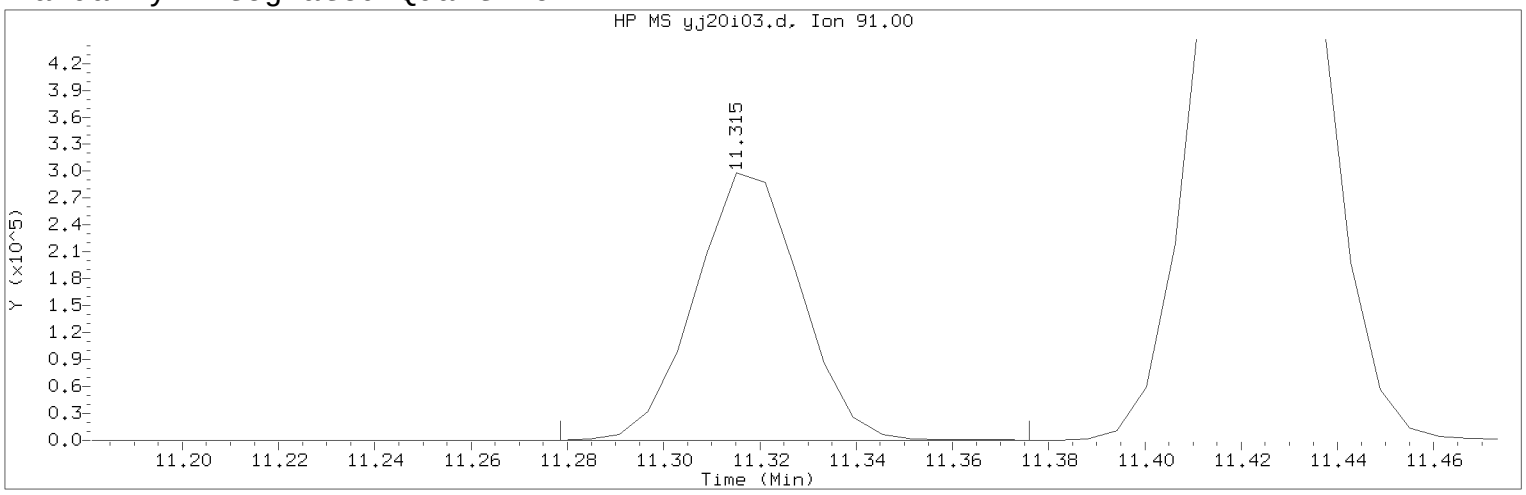
Compound Number : 100
Compound Name : Chlorobenzene-d5
Scan Number : 1618
Retention Time (minutes): 11.425
Quant Ion : 117.00
Area : 211163
On-column Amount (ng) : 50.0000
Integration start scan : 1609 Integration stop scan: 1654
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

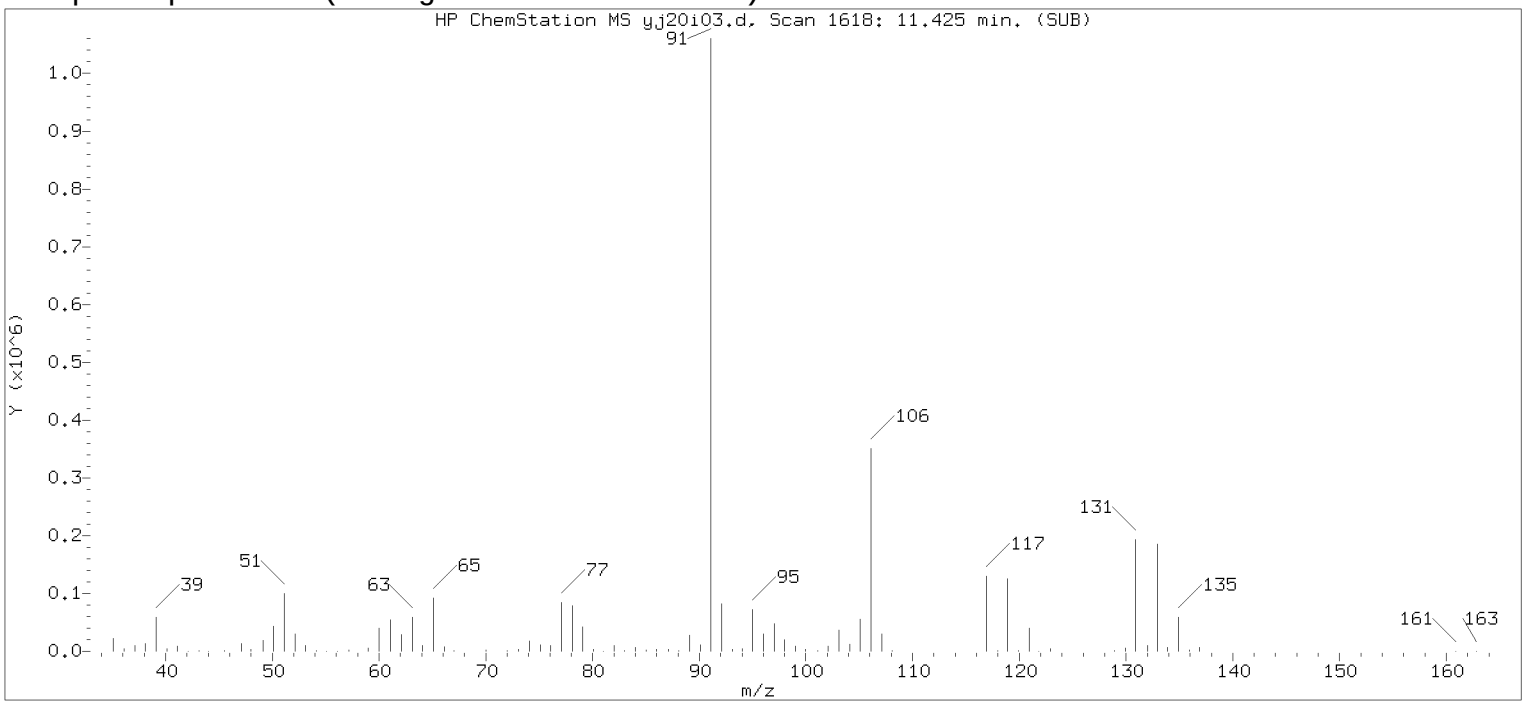
Compound Number : 101
Compound Name : 1-Chlorohexane
Scan Number : 1600
Retention Time (minutes): 11.315
Quant Ion : 91.00
Area (flag) : 454278A
On-Column Amount (ng) : 51.6876
Integration start scan : 1593 Integration stop scan: 1609
Y at integration start : 0 Y at integration end: 298

Reason for manual integration: improper integration

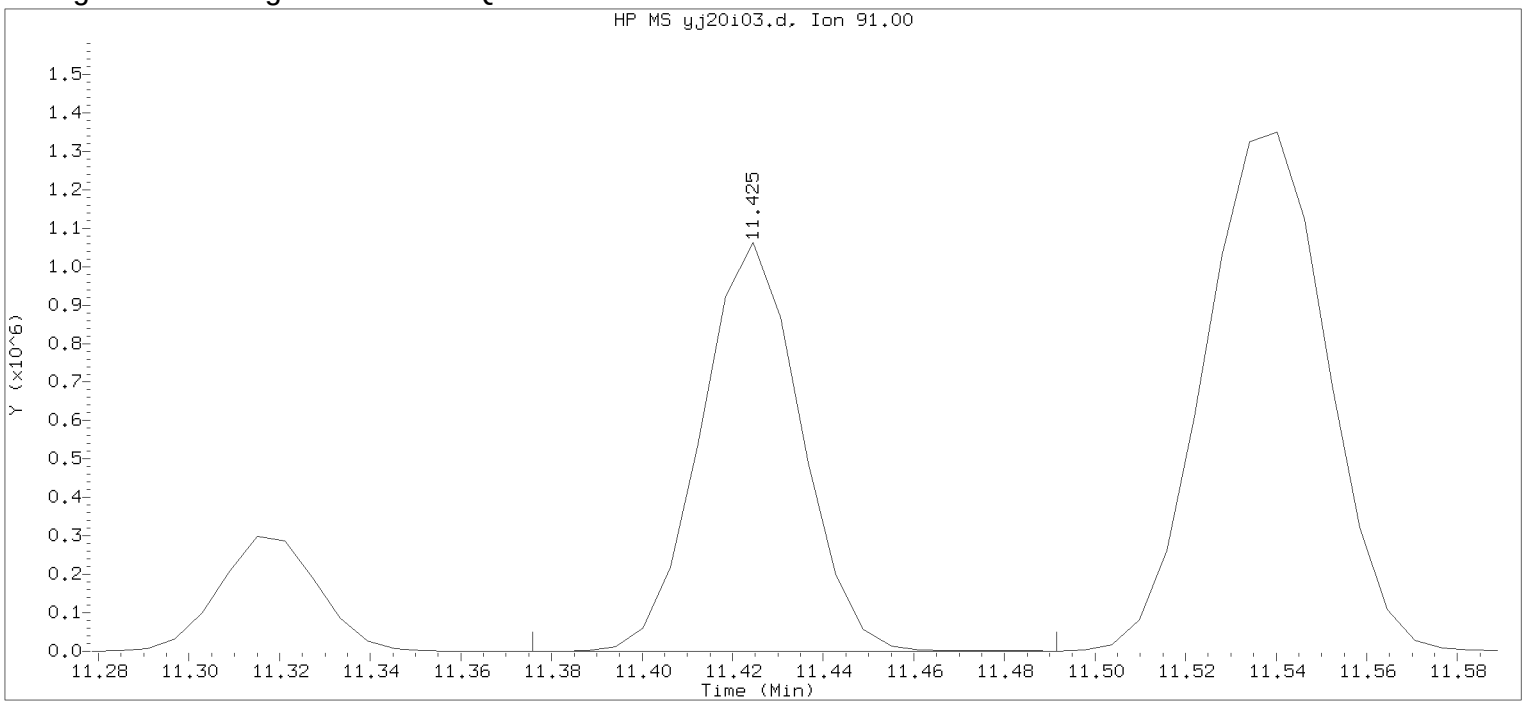
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

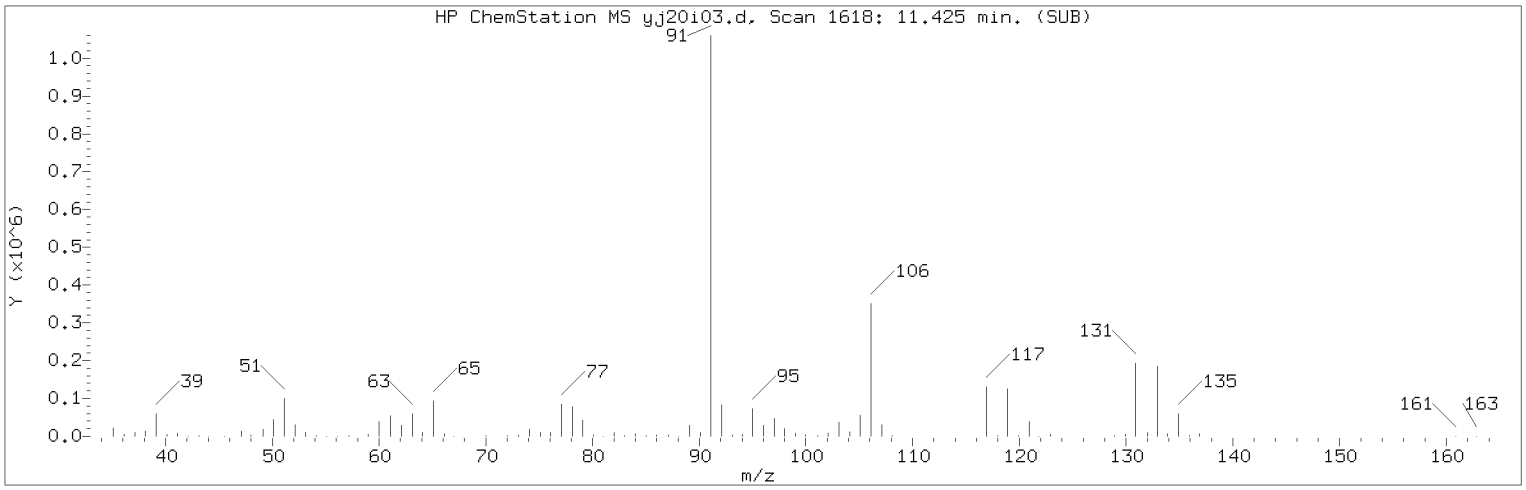
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

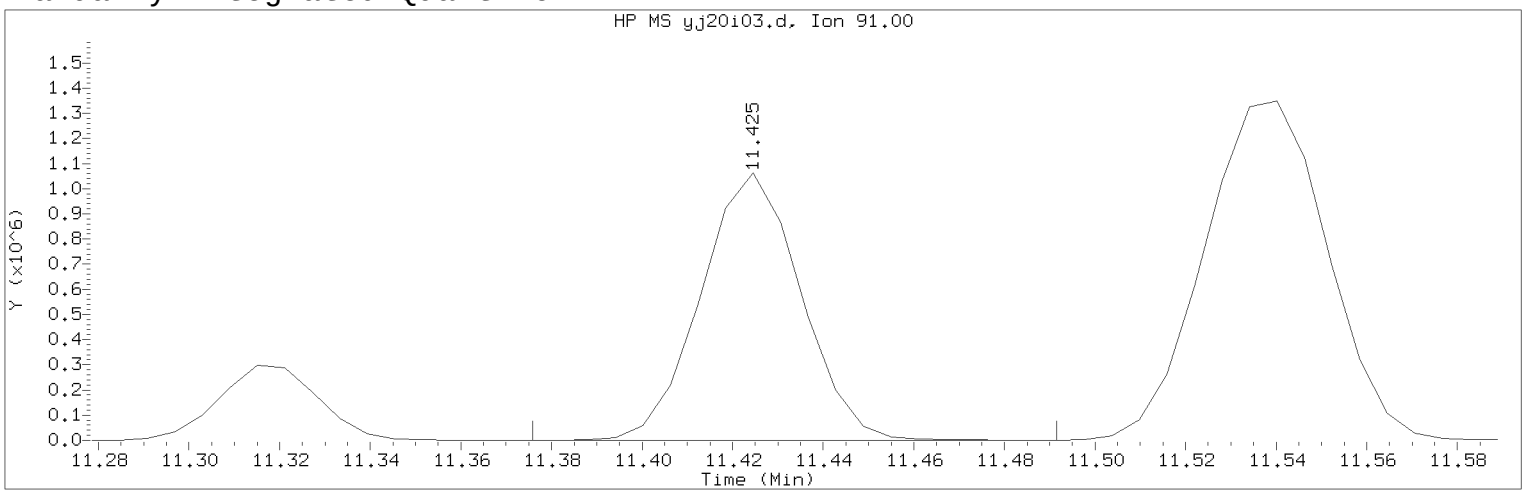
Compound Number : 101
Compound Name : 1-Chlorohexane
Scan Number : 1618
Retention Time (minutes): 11.425
Quant Ion : 91.00
Area : 1622140
On-column Amount (ng) : 165.9614
Integration start scan : 1609 Integration stop scan: 1628
Y at integration start : 298 Y at integration end: 515

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

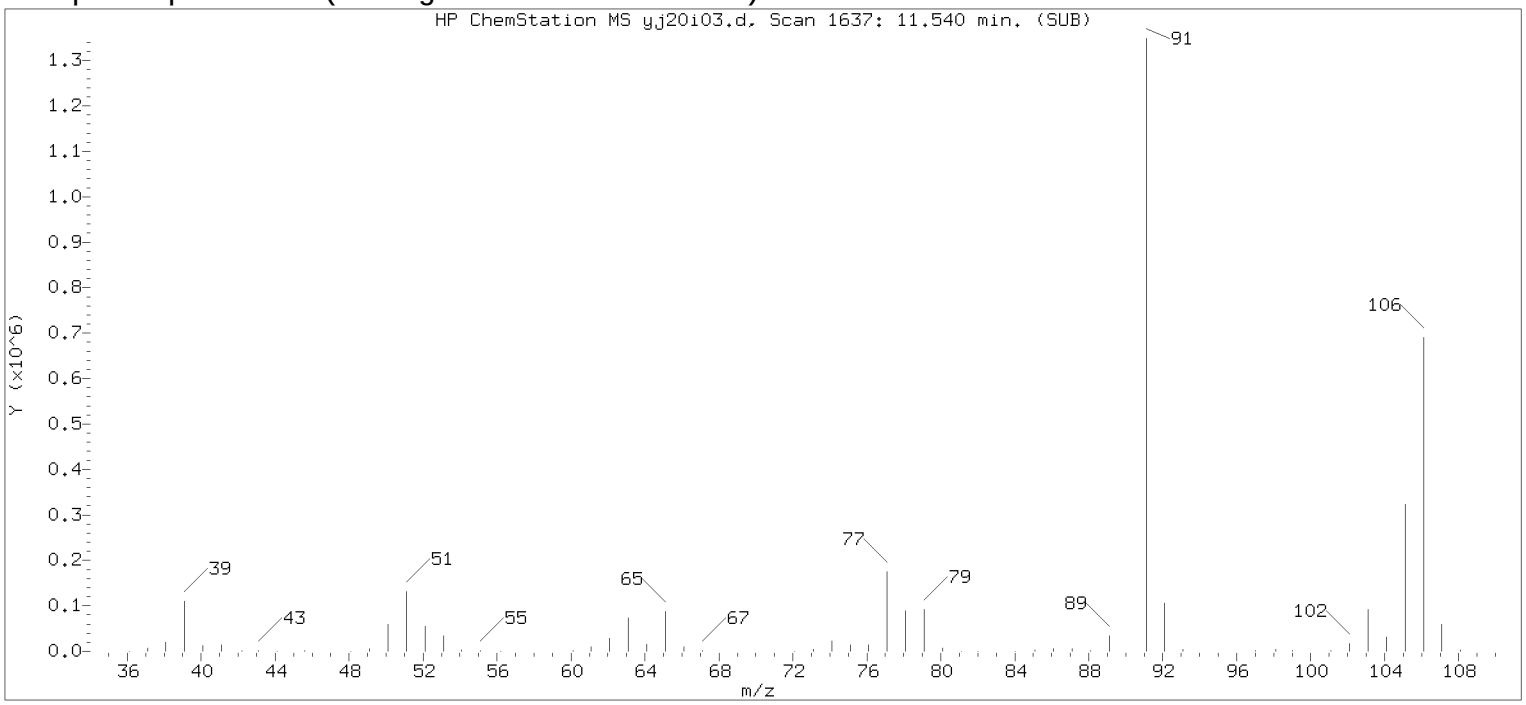
Compound Number : 104
Compound Name : Ethylbenzene
Scan Number : 1618
Retention Time (minutes): 11.425
Quant Ion : 91.00
Area (flag) : 1624959A
On-Column Amount (ng) : 52.2412
Integration start scan : 1609 Integration stop scan: 1628
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

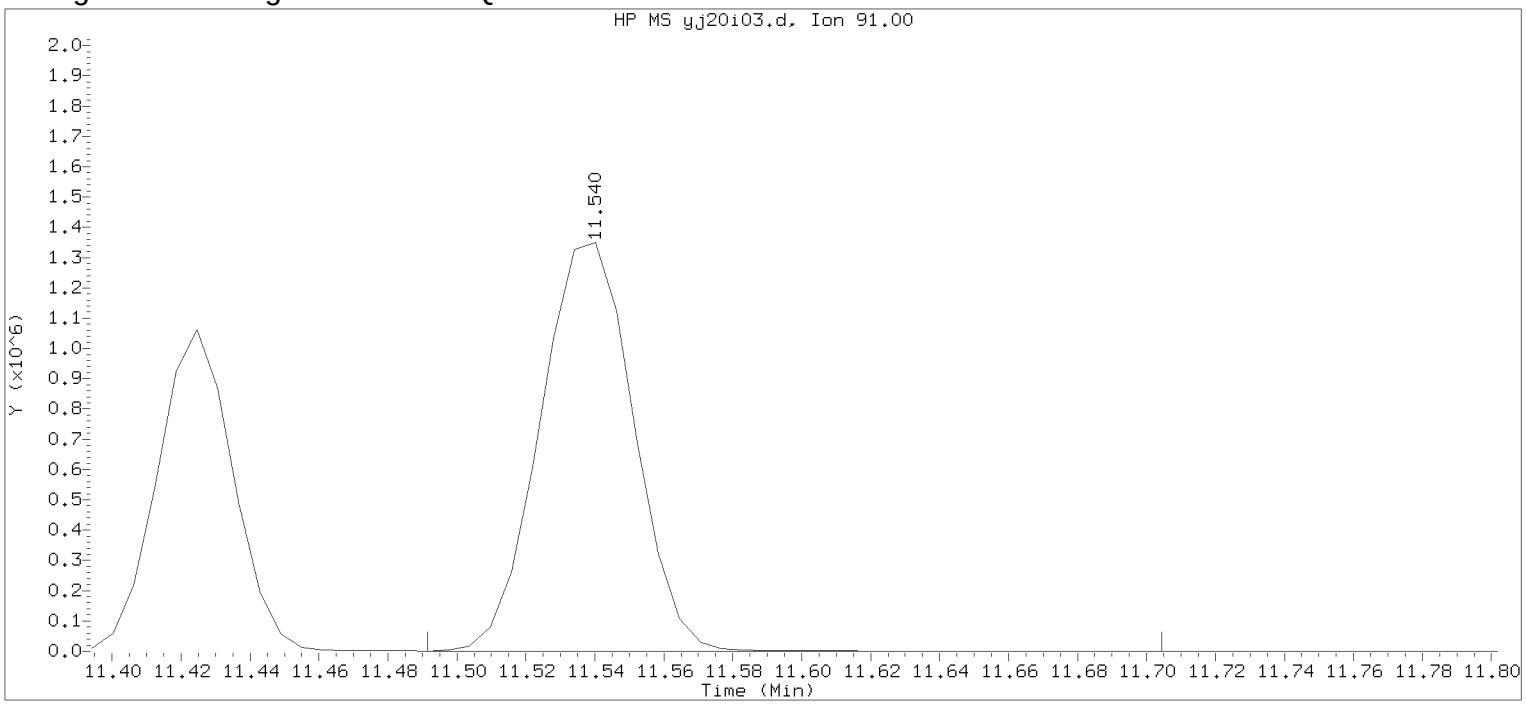
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

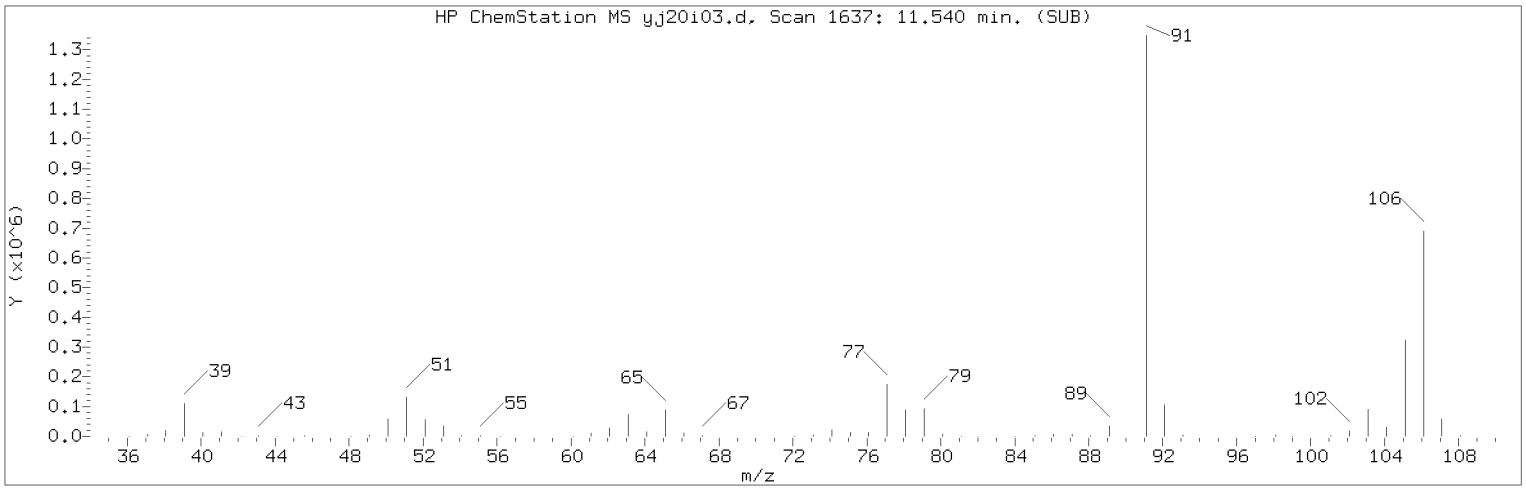
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

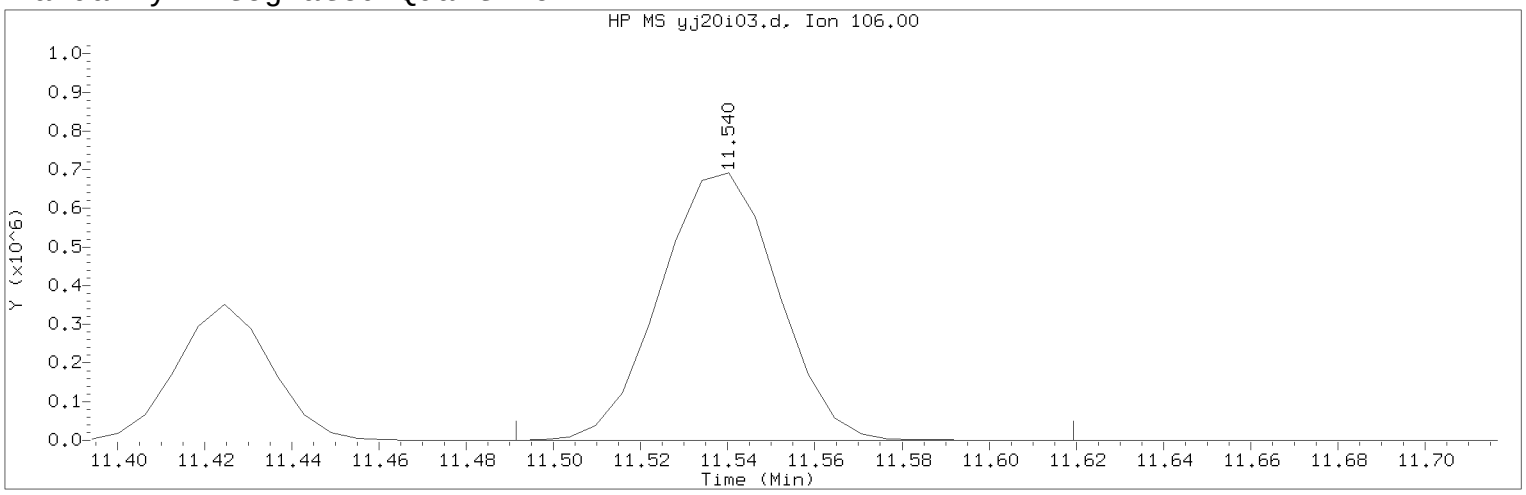
Compound Number : 104
Compound Name : Ethylbenzene
Scan Number : 1637
Retention Time (minutes): 11.540
Quant Ion : 91.00
Area : 2547453
On-column Amount (ng) : 162.2970
Integration start scan : 1628 Integration stop scan: 1663
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

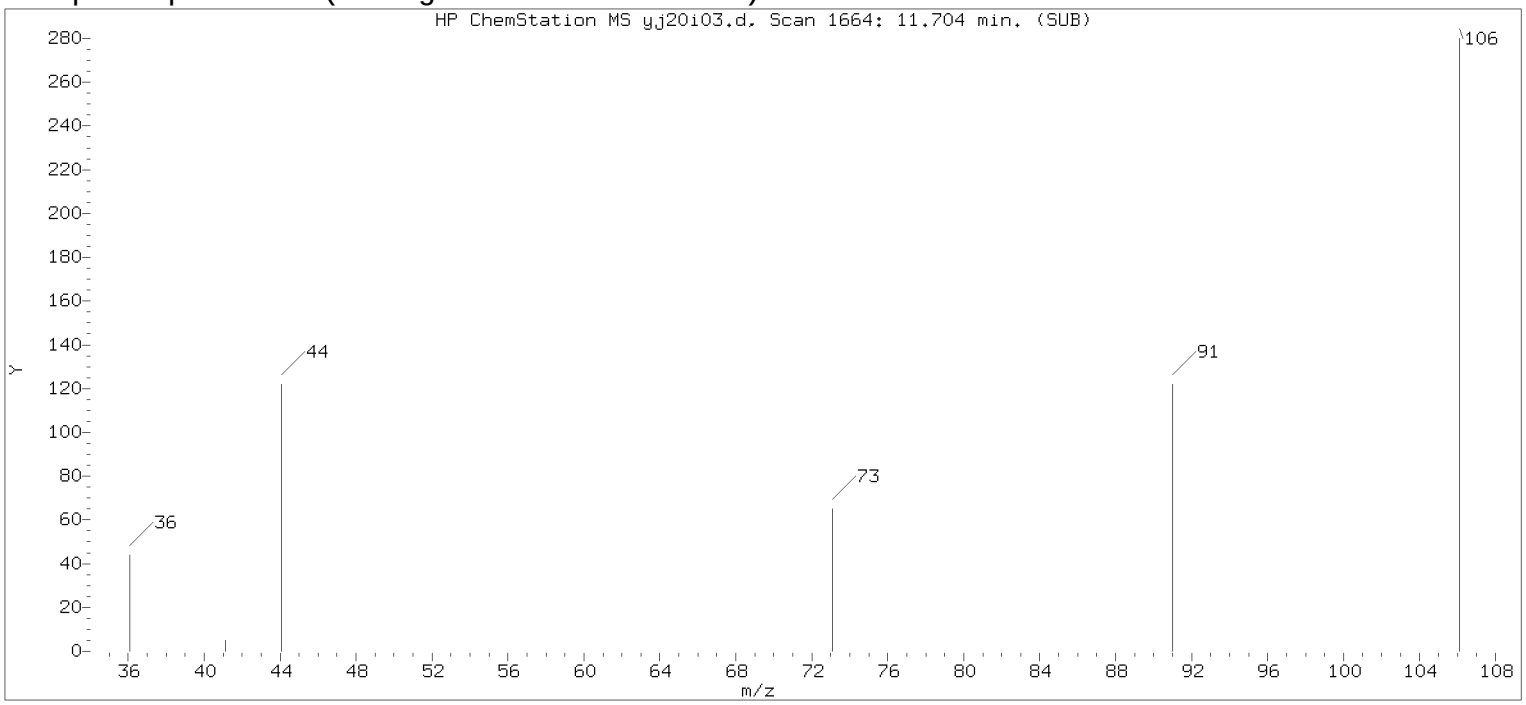
Compound Number : 106
Compound Name : m+p-Xylene
Scan Number : 1637
Retention Time (minutes): 11.540
Quant Ion : 106.00
Area (flag) : 1294212A
On-Column Amount (ng) : 104.2939
Integration start scan : 1628 Integration stop scan: 1649
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

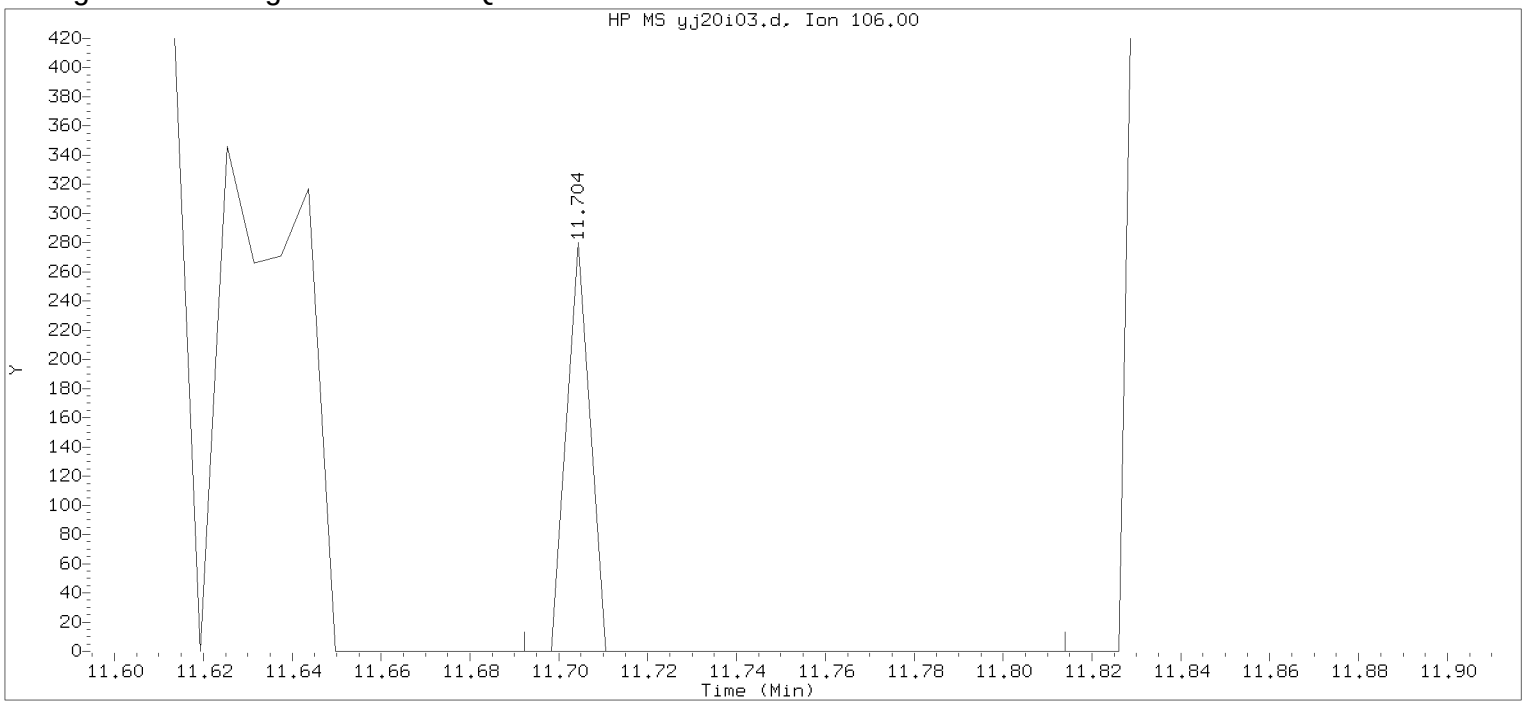
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

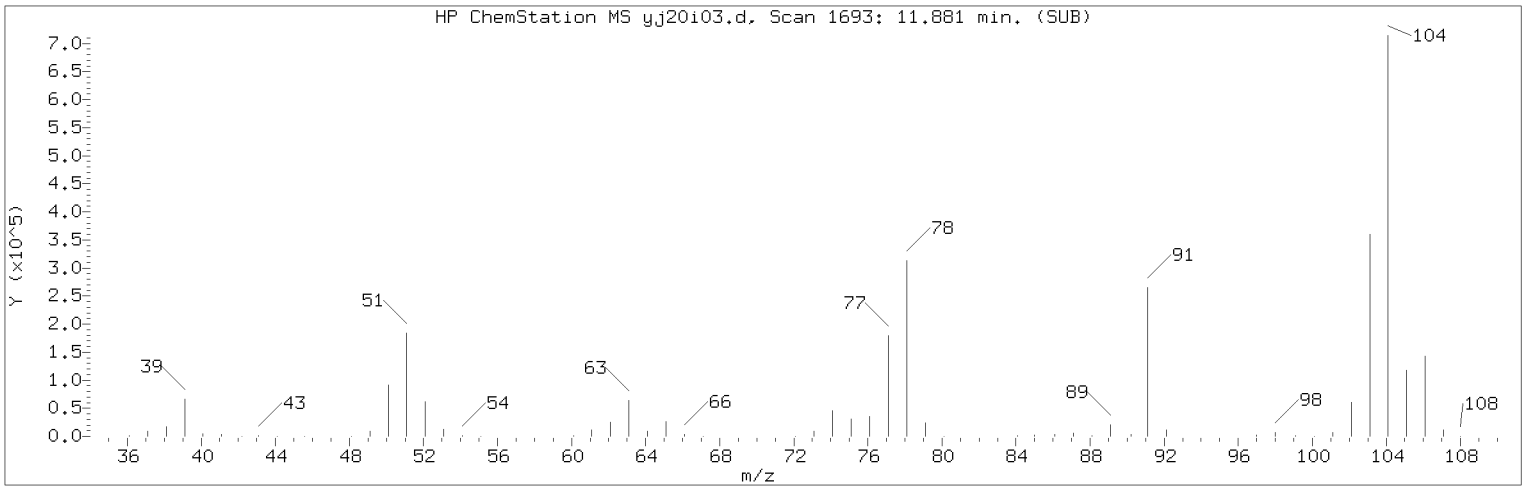
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

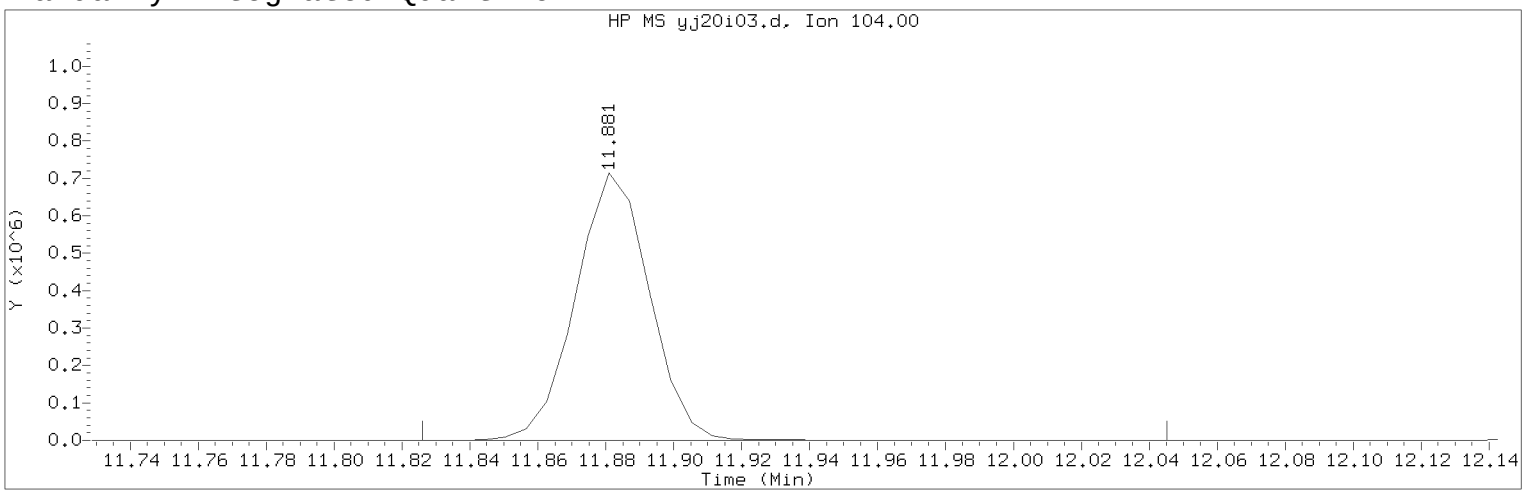
Compound Number : 106
Compound Name : m+p-Xylene
Scan Number : 1664
Retention Time (minutes): 11.704
Quant Ion : 106.00
Area : 102
On-column Amount (ng) : 0.0379
Integration start scan : 1661 Integration stop scan: 1681
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

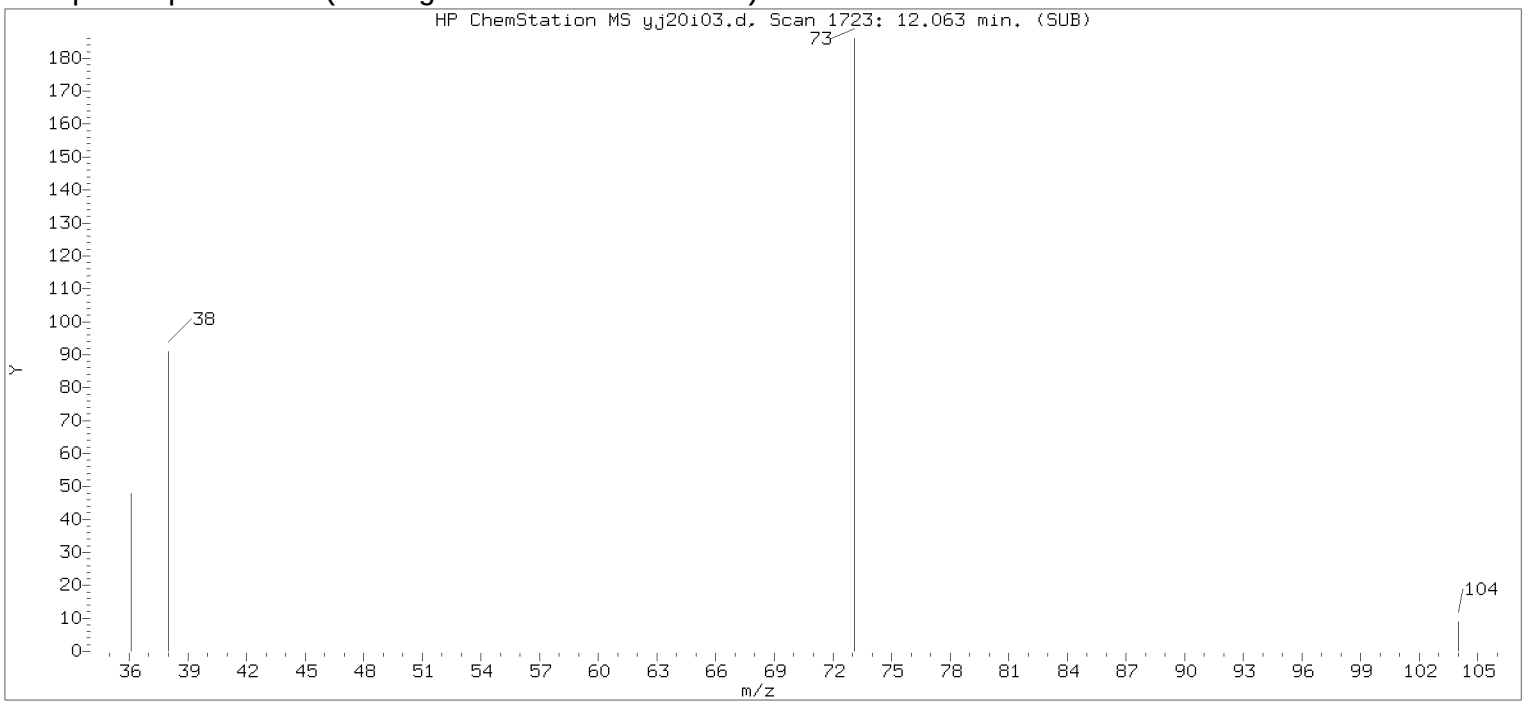
Compound Number : 109
Compound Name : Styrene
Scan Number : 1693
Retention Time (minutes): 11.881
Quant Ion : 104.00
Area (flag) : 1079446A
On-Column Amount (ng) : 53.4461
Integration start scan : 1683 Integration stop scan: 1719
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

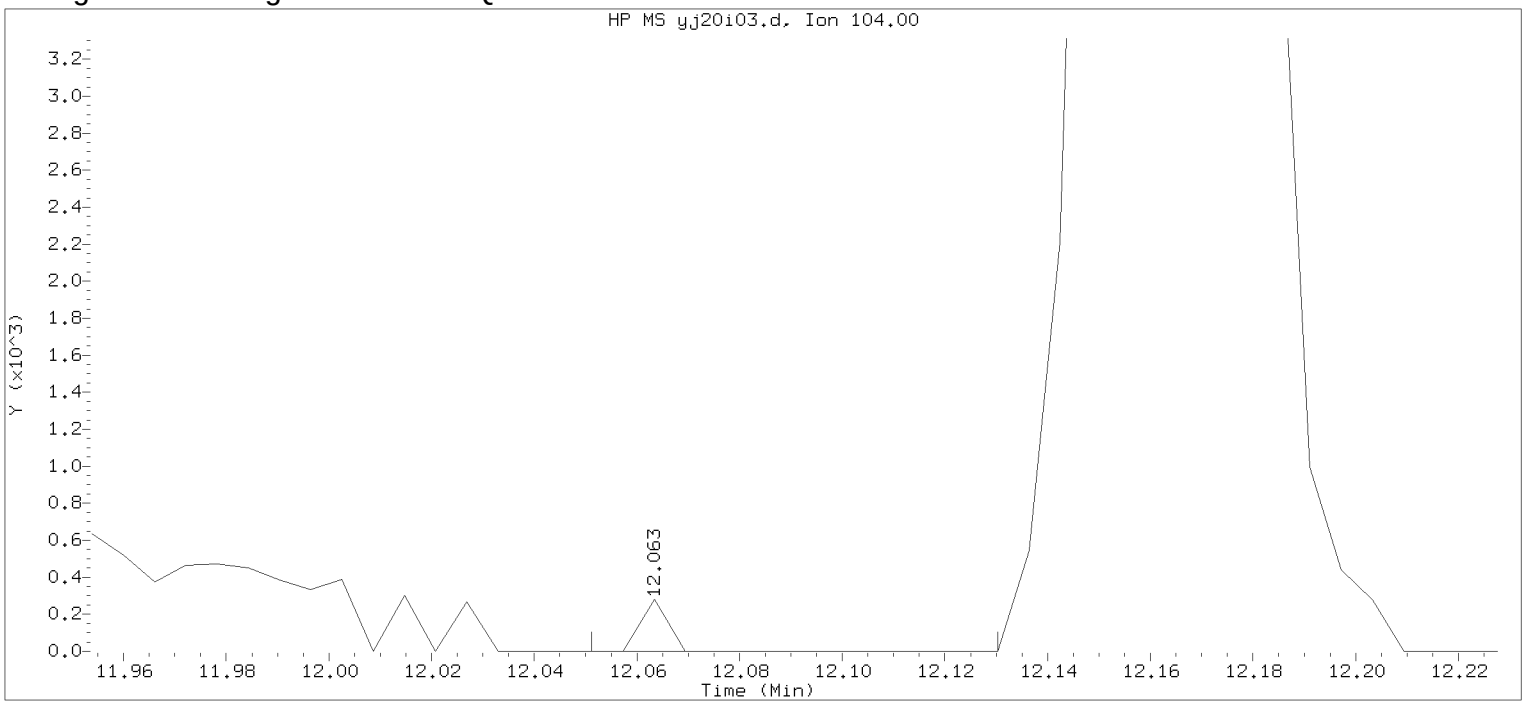
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

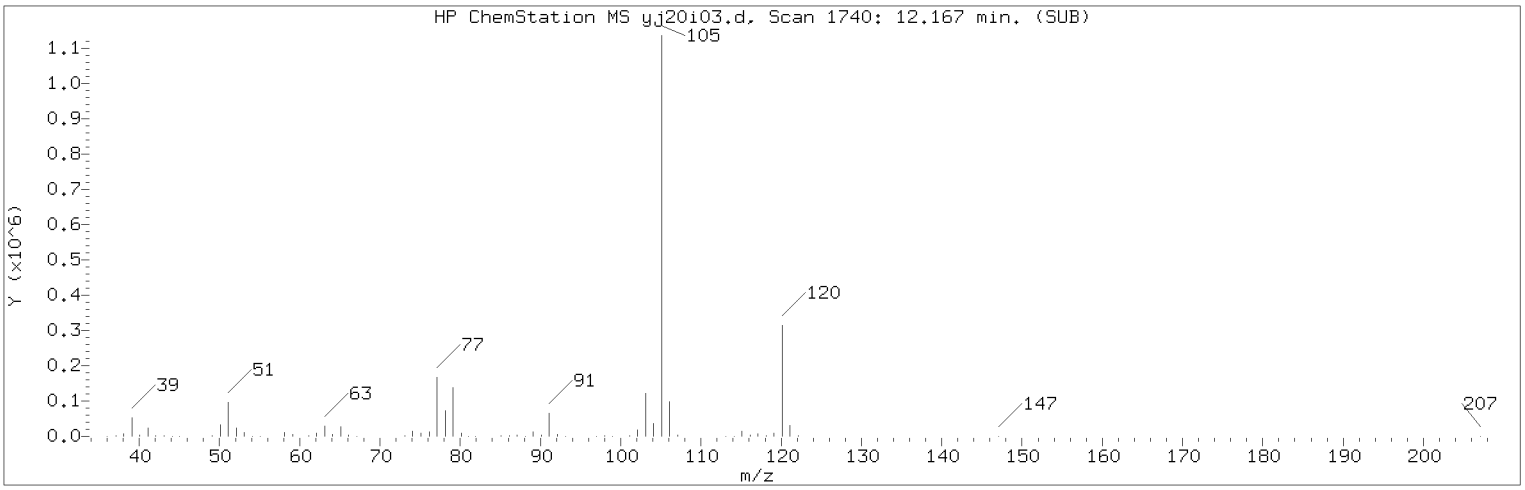
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

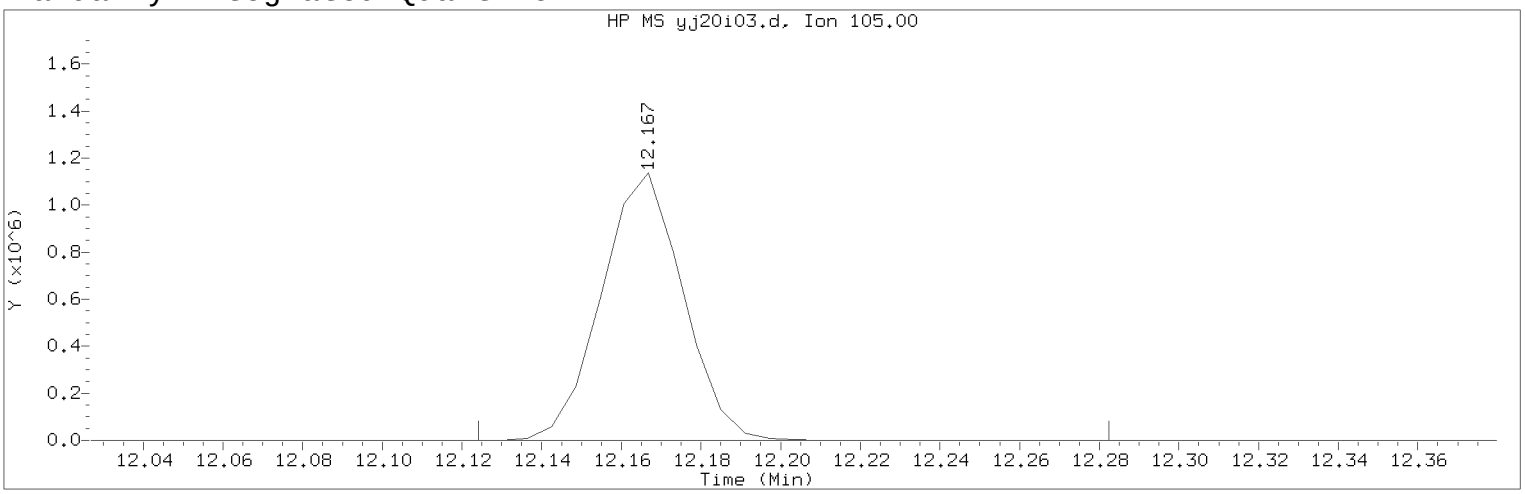
Compound Number : 109
Compound Name : Styrene
Scan Number : 1723
Retention Time (minutes): 12.063
Quant Ion : 104.00
Area : 102
On-column Amount (ng) : 0.0365
Integration start scan : 1720 Integration stop scan: 1733
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

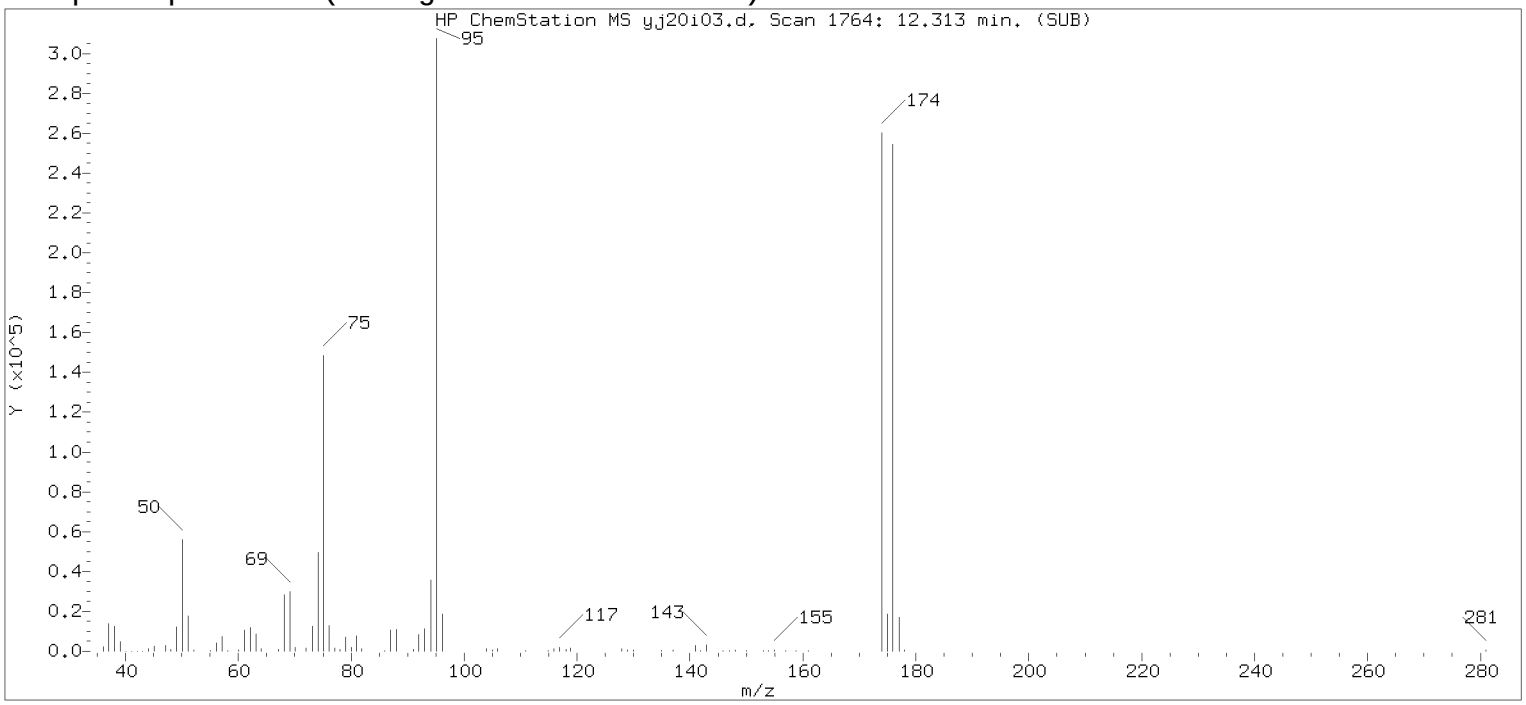
Compound Number : 111
Compound Name : Isopropylbenzene
Scan Number : 1740
Retention Time (minutes): 12.167
Quant Ion : 105.00
Area (flag) : 1611094A
On-Column Amount (ng) : 52.4687
Integration start scan : 1732 Integration stop scan: 1758
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

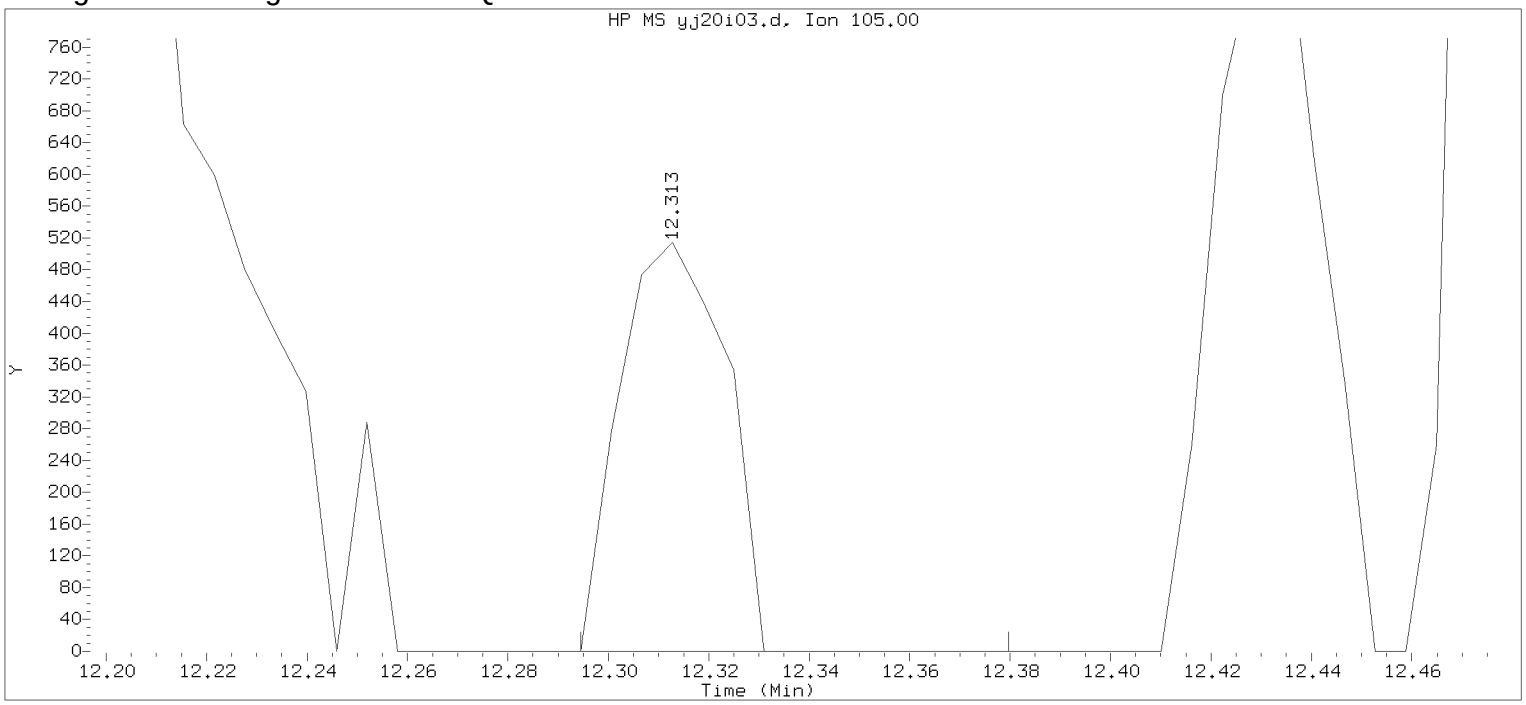
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

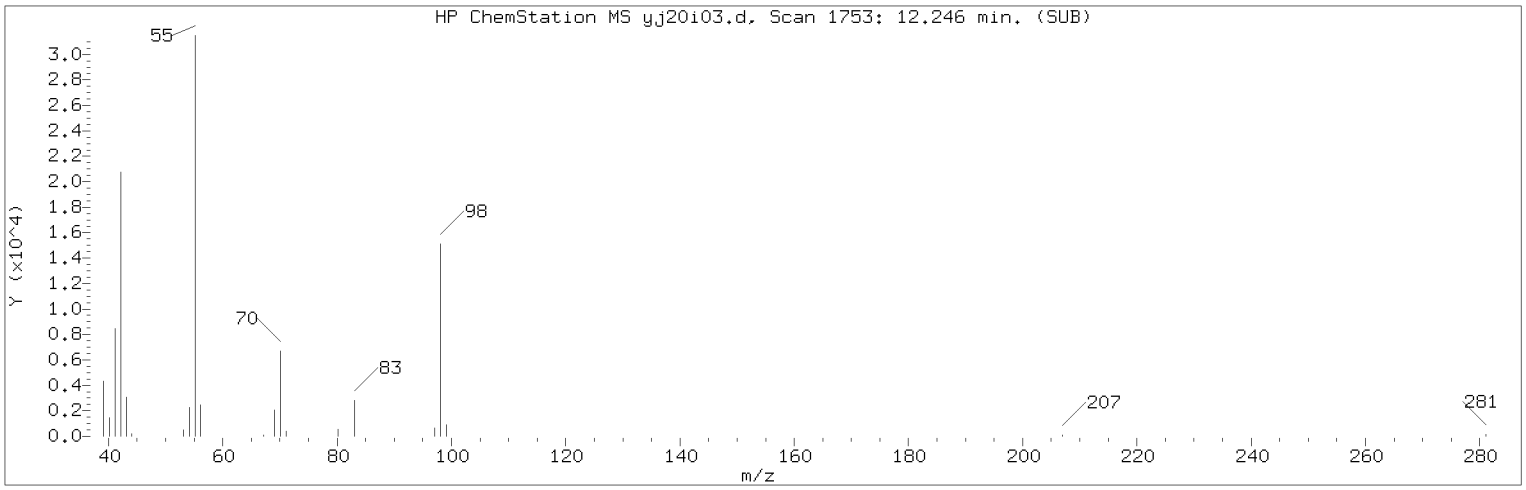
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

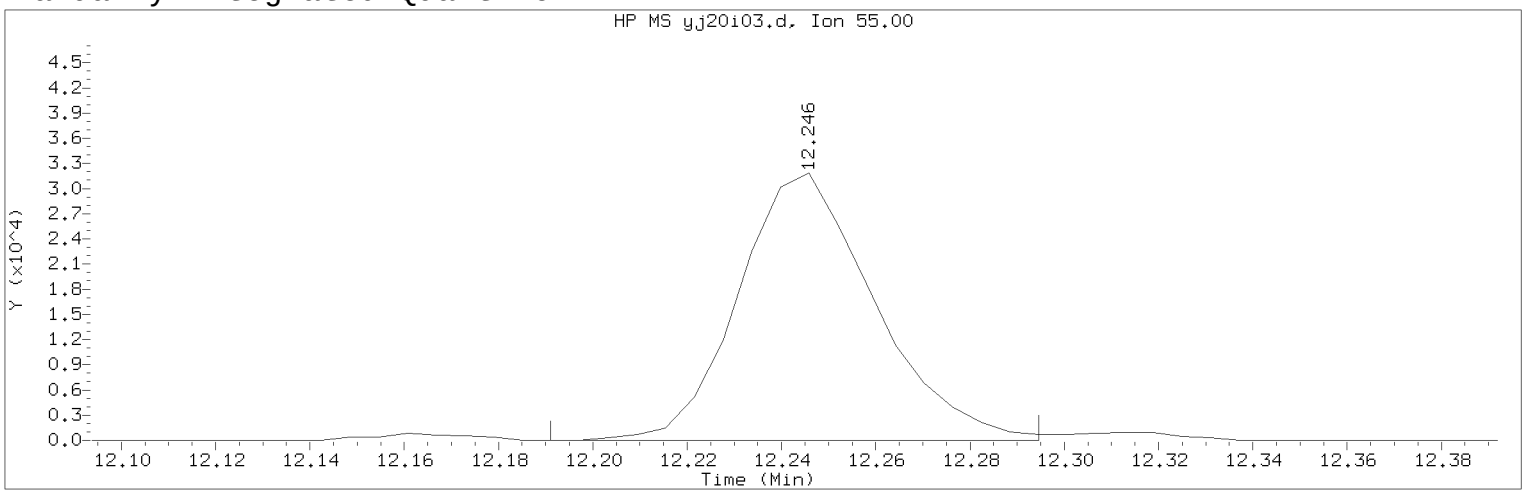
Compound Number : 111
Compound Name : Isopropylbenzene
Scan Number : 1764
Retention Time (minutes): 12.313
Quant Ion : 105.00
Area : 751
On-column Amount (ng) : 0.2183
Integration start scan : 1760 Integration stop scan: 1774
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

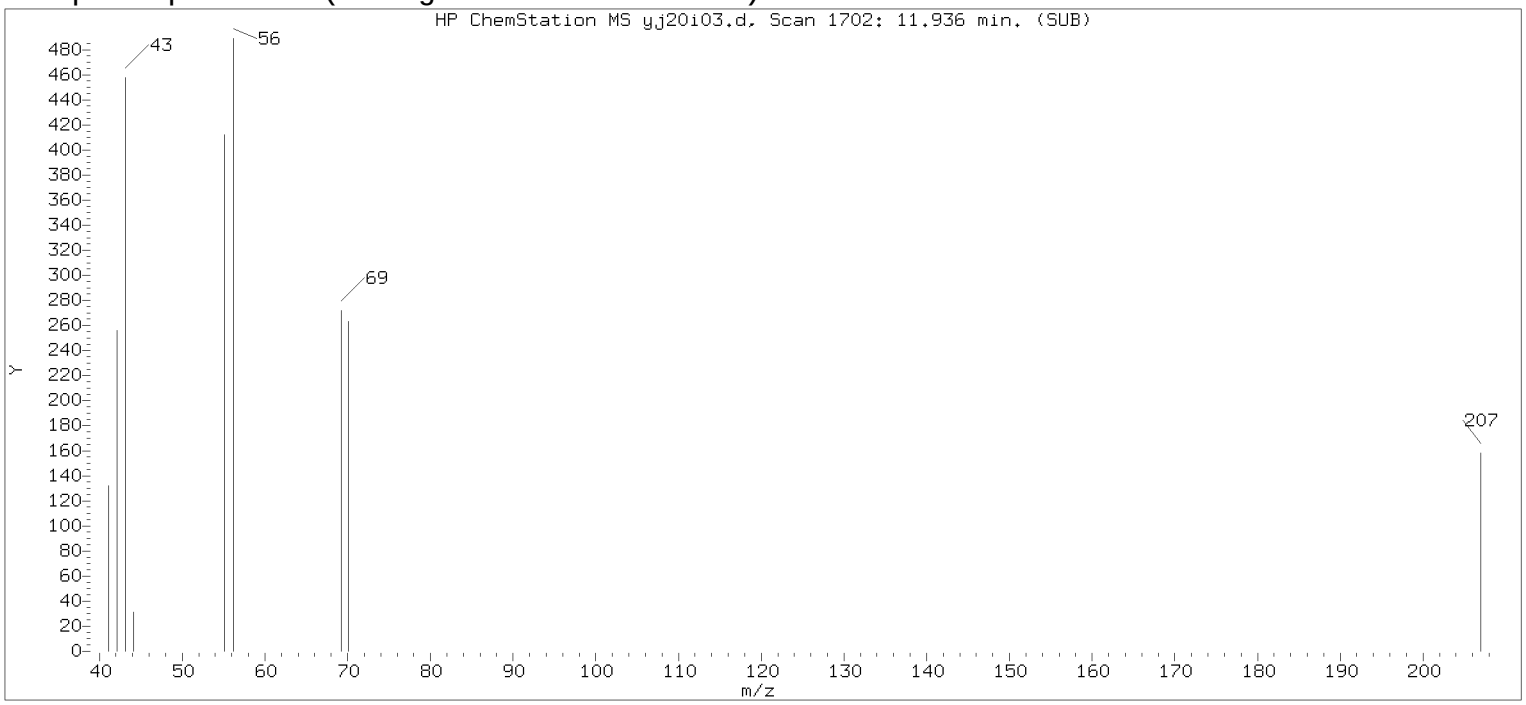
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 63653MA
On-Column Amount (ng) : 636.3886
Integration start scan : 1743 Integration stop scan: 1760
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

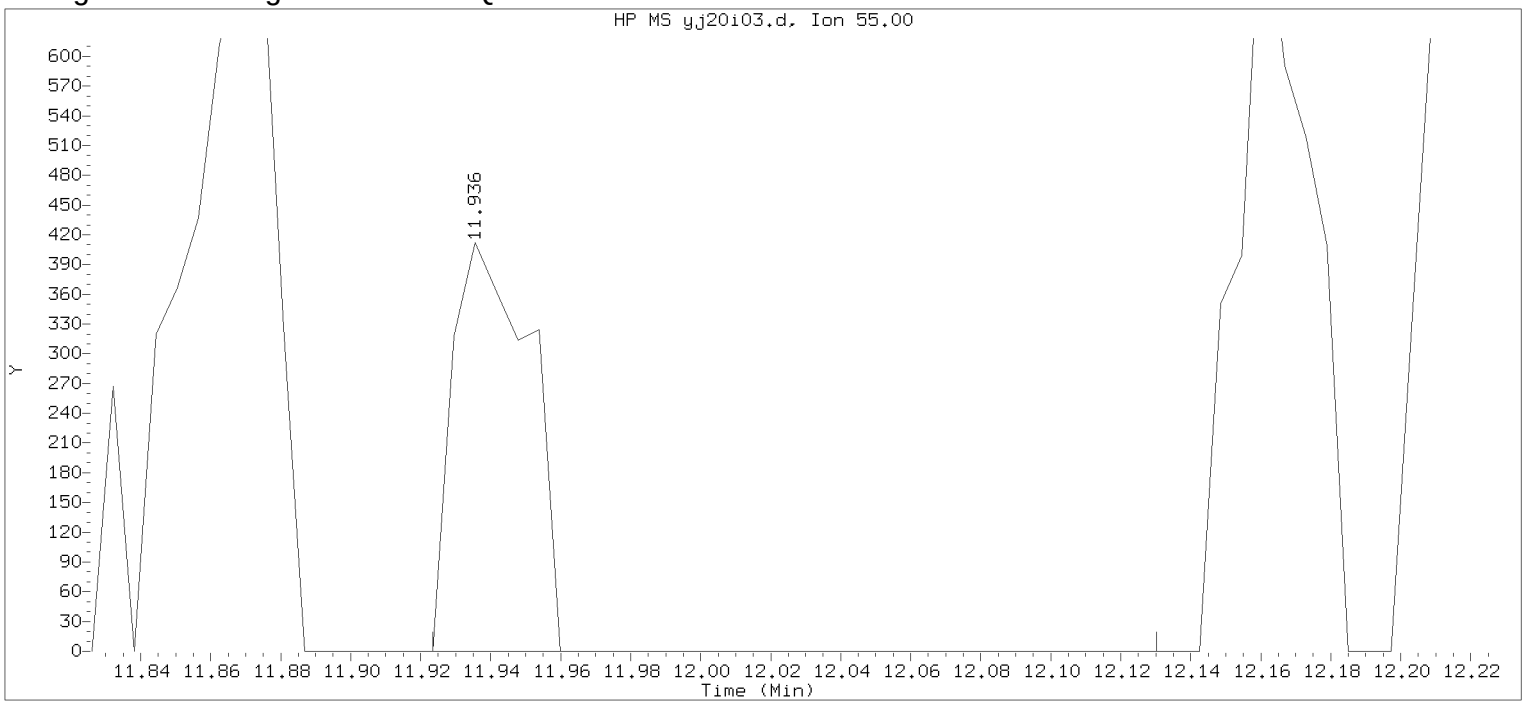
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

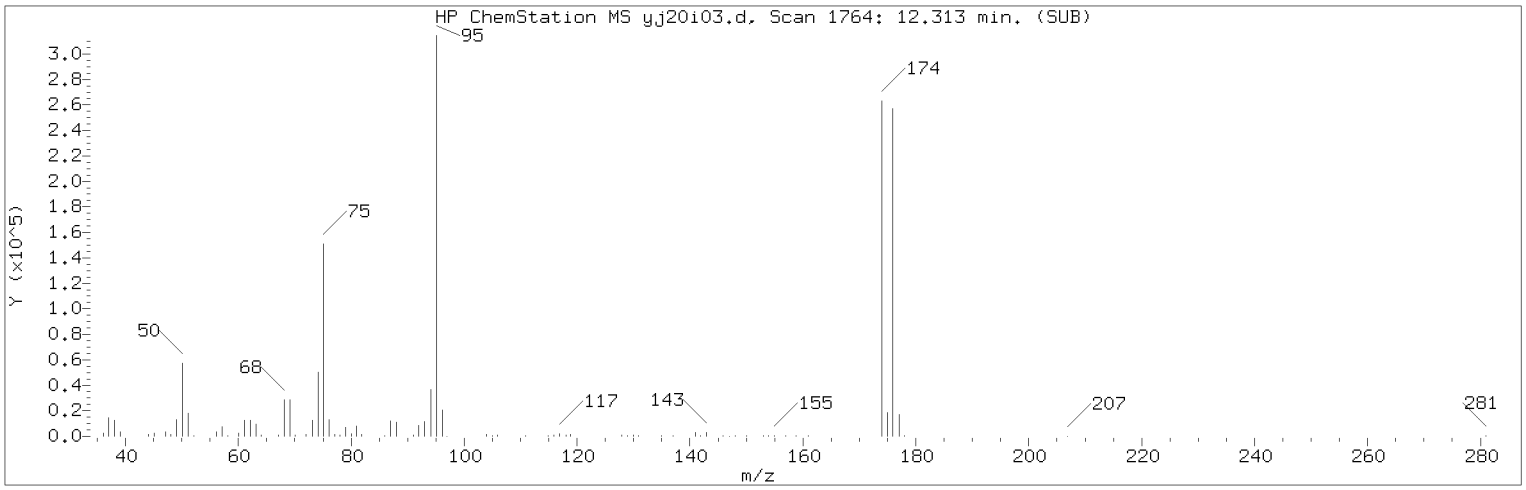
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

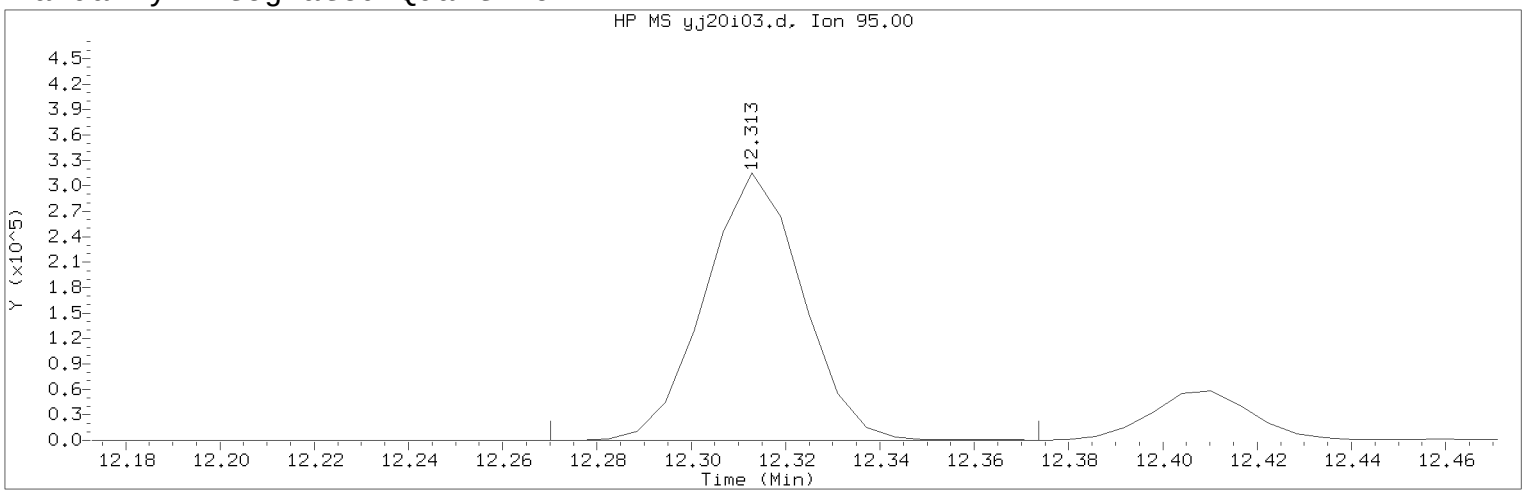
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1702
Retention Time (minutes): 11.936
Quant Ion : 55.00
Area : 631
On-column Amount (ng) : 1.7979
Integration start scan : 1699 Integration stop scan: 1733
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKEN88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

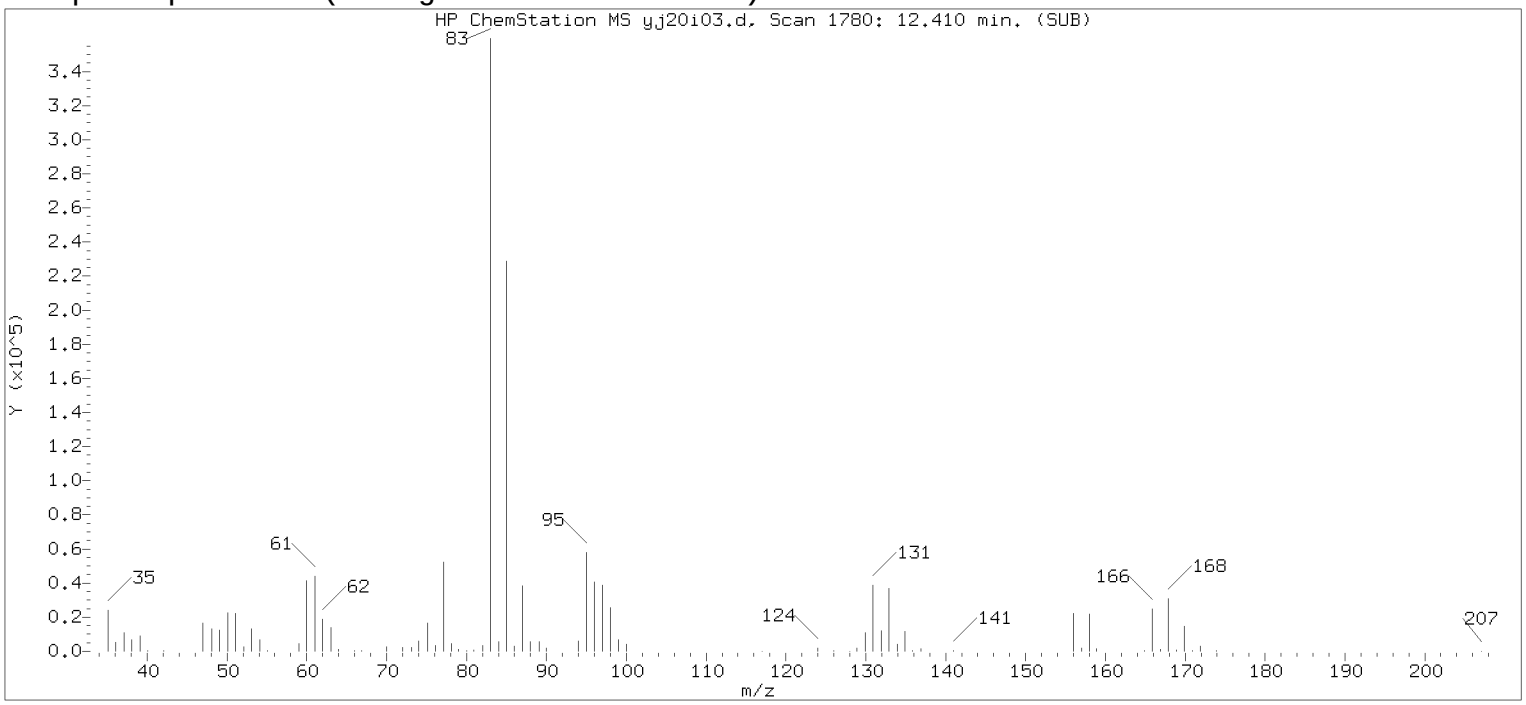
Compound Number : 114
Compound Name : 4-Bromofluorobenzene
Scan Number : 1764
Retention Time (minutes): 12.313
Quant Ion : 95.00
Area (flag) : 451215A
On-Column Amount (ng) : 50.1919
Integration start scan : 1756 Integration stop scan: 1773
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

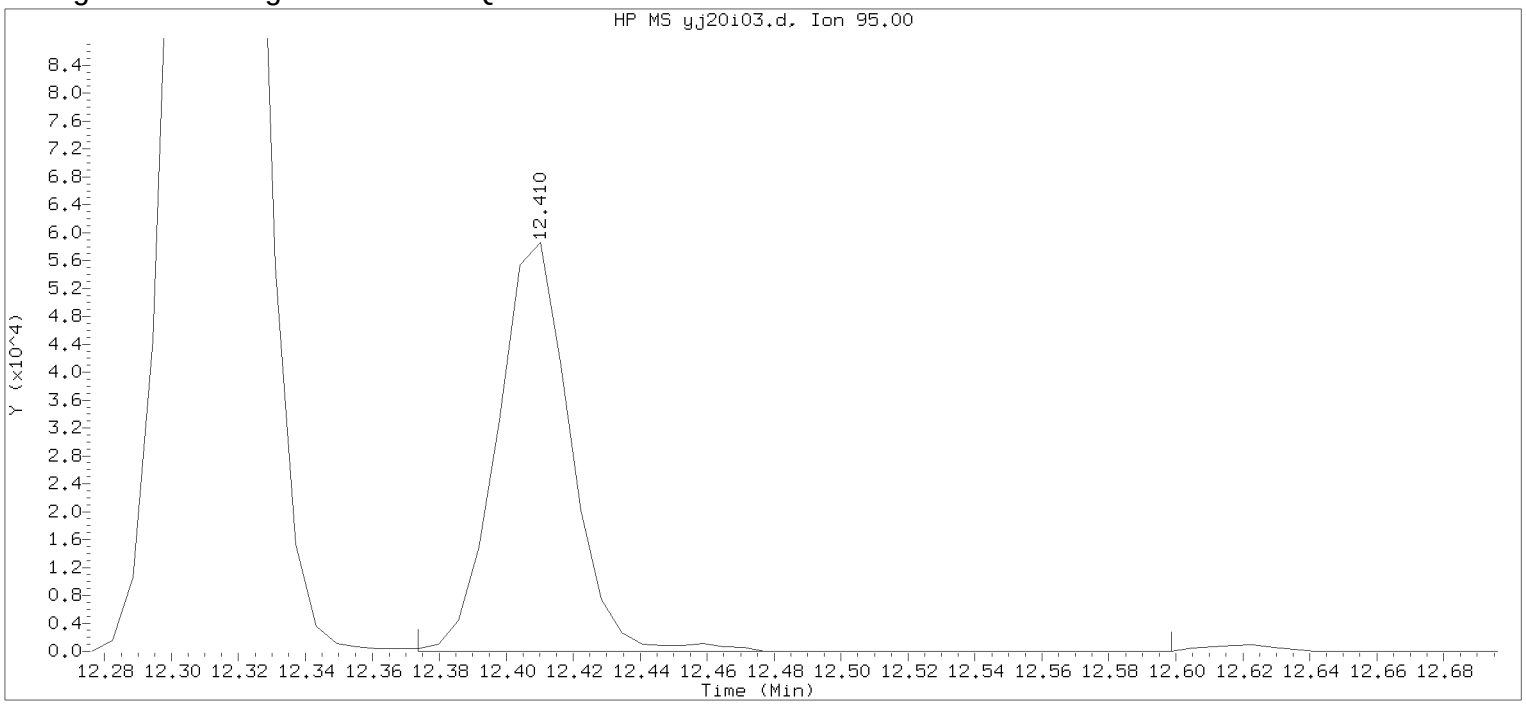
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

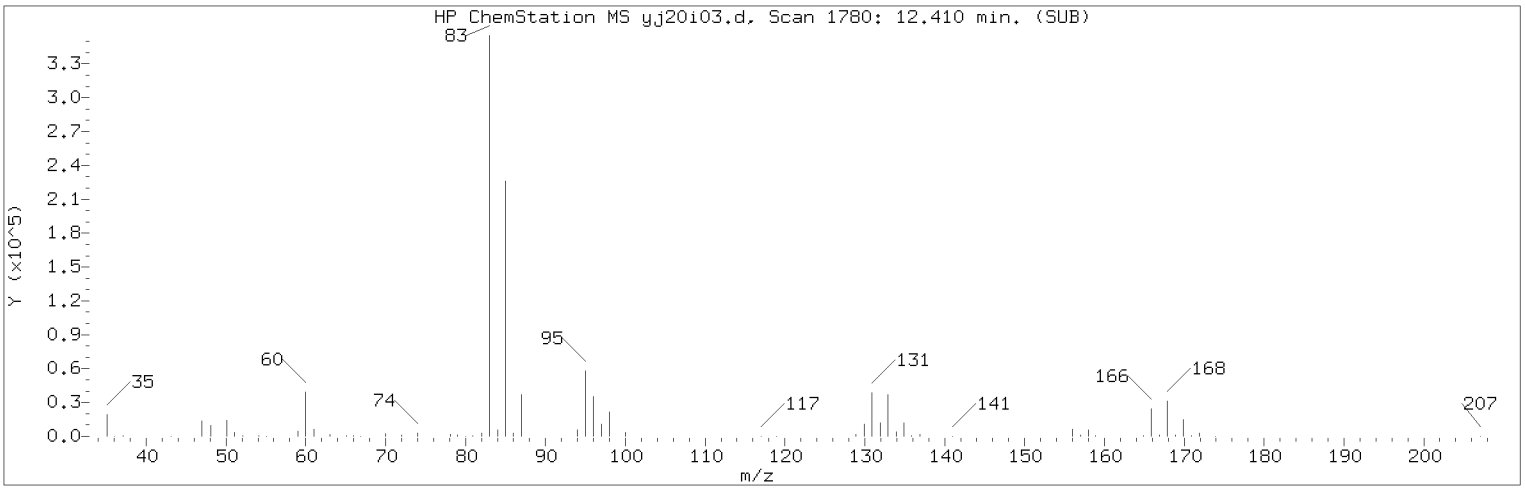
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

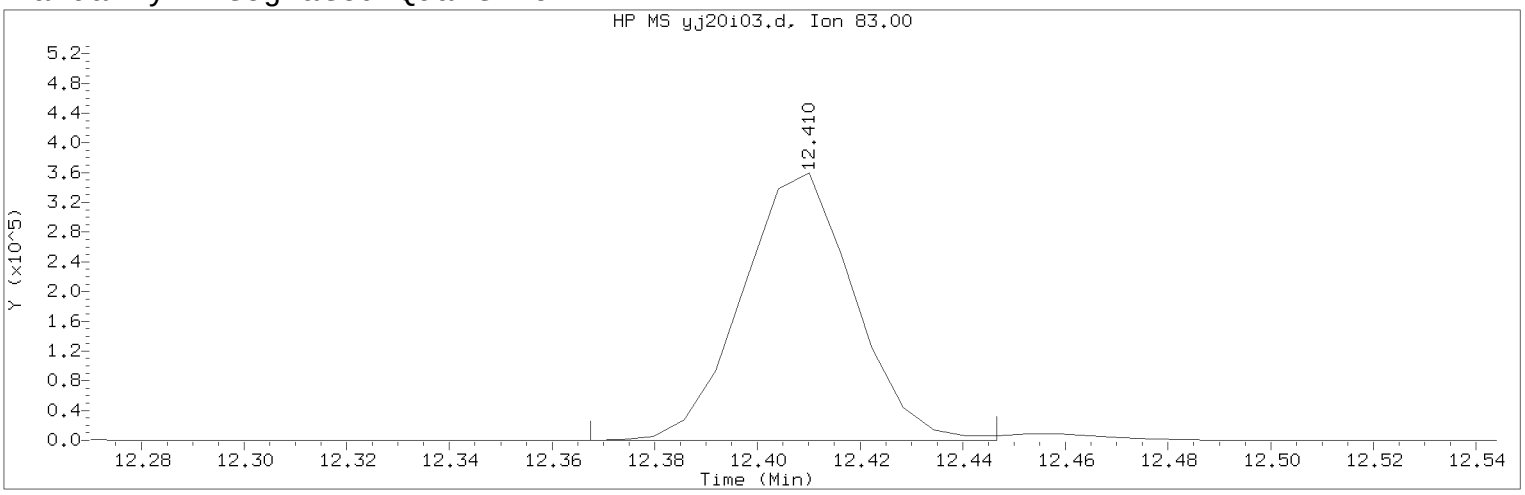
Compound Number : 114
Compound Name : 4-Bromofluorobenzene
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 95.00
Area : 89269
On-column Amount (ng) : 46.0934
Integration start scan : 1773 Integration stop scan: 1810
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

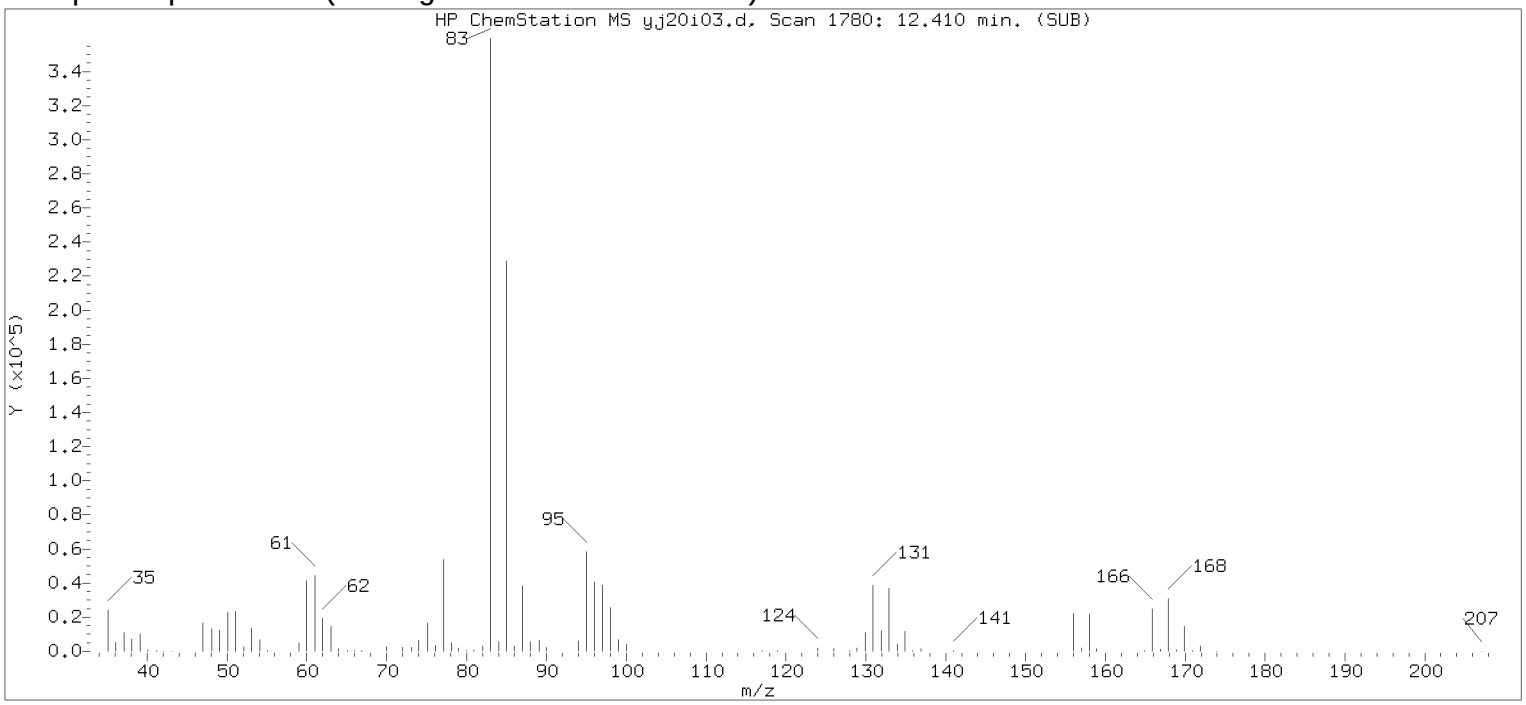
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 543279M
On-Column Amount (ng) : 51.7511
Integration start scan : 1772 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

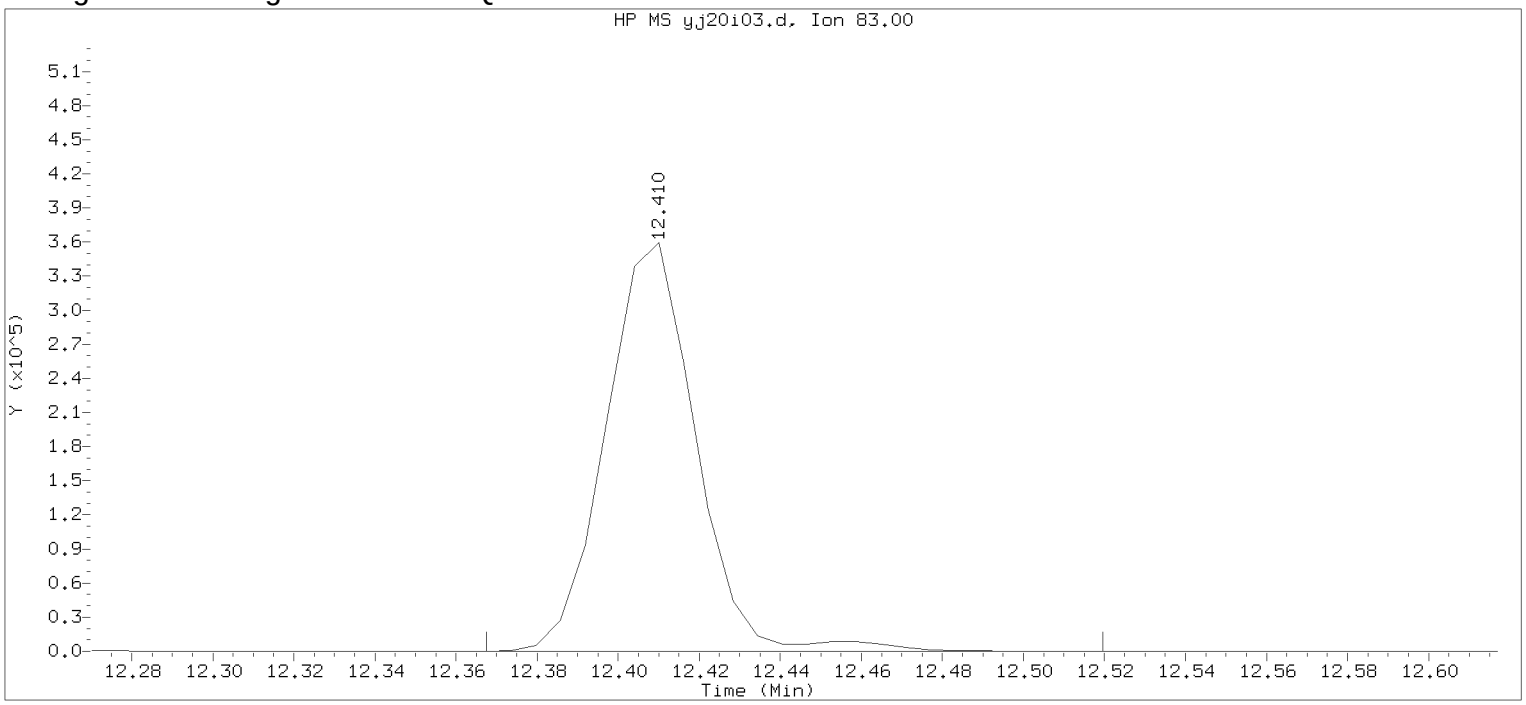
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

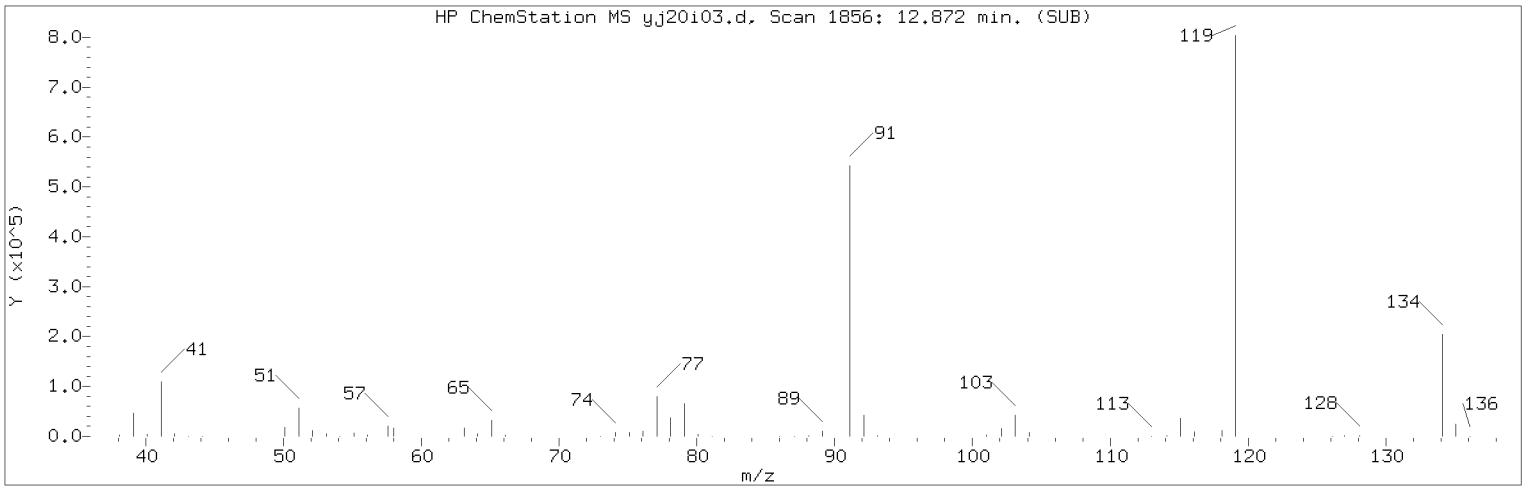
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

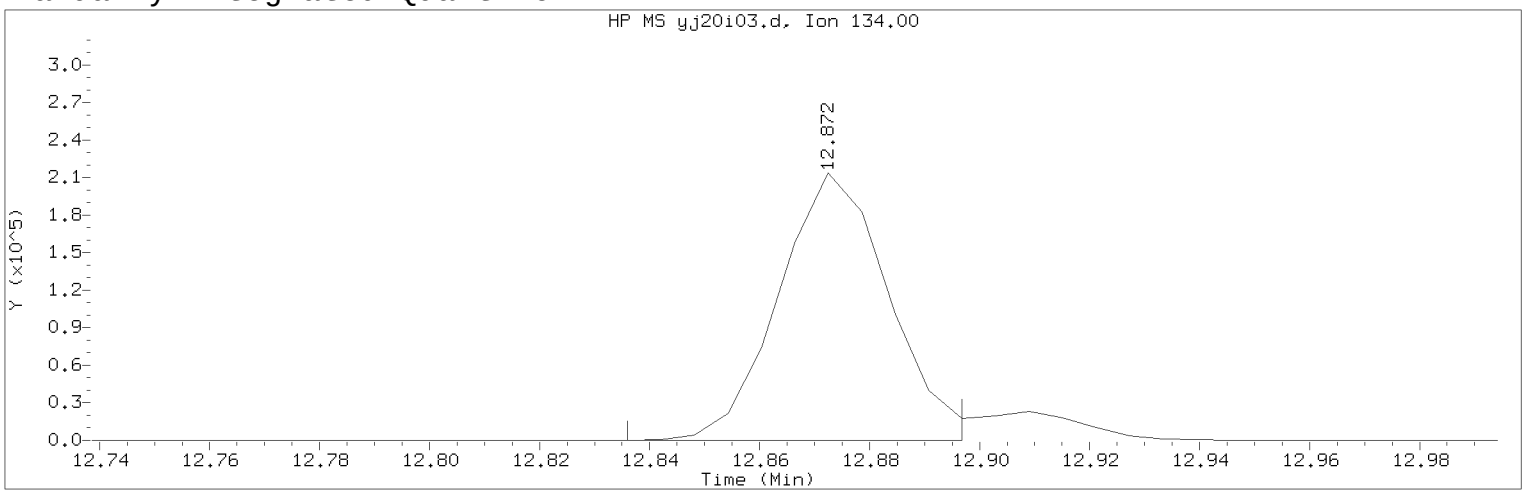
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 553813
On-column Amount (ng) : 52.6731
Integration start scan : 1772 Integration stop scan: 1797
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

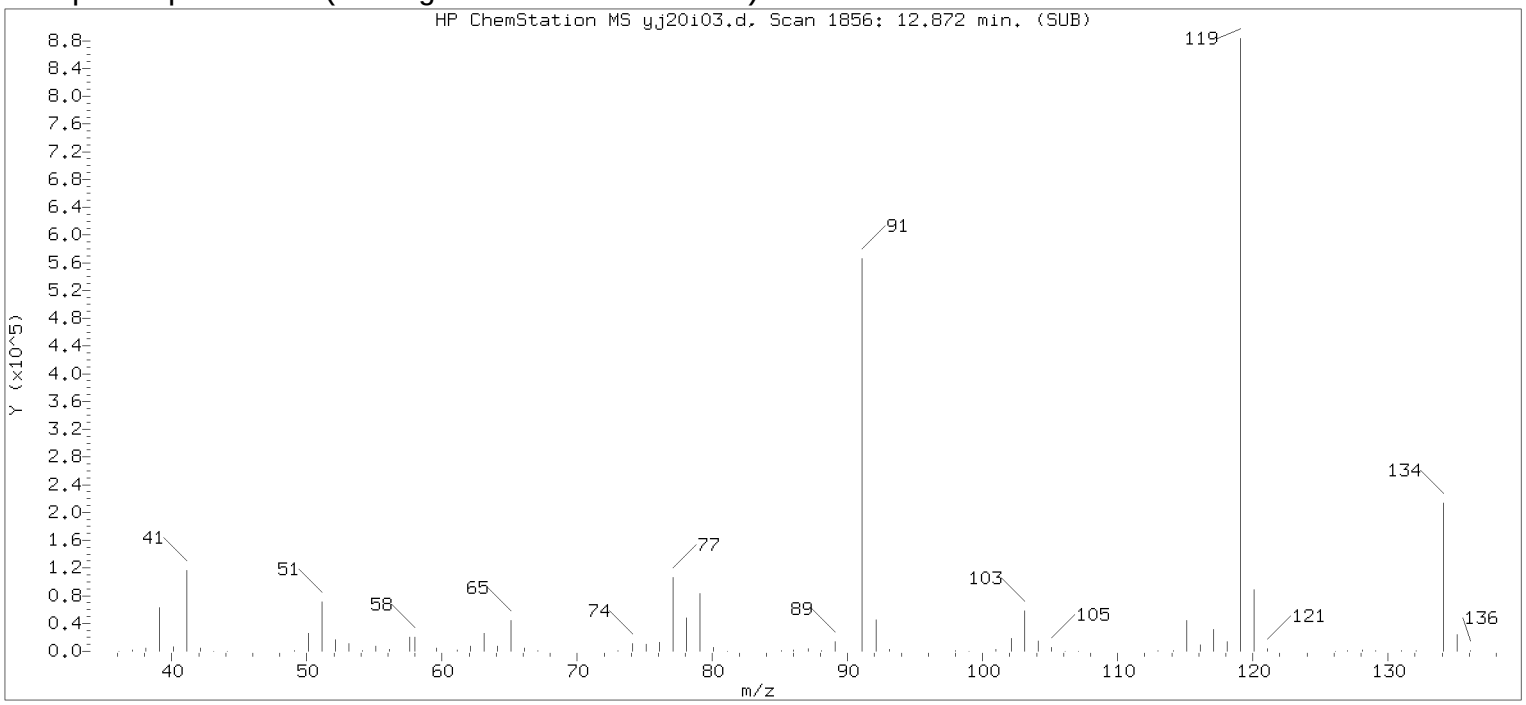
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 296435M
On-Column Amount (ng) : 51.8918
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

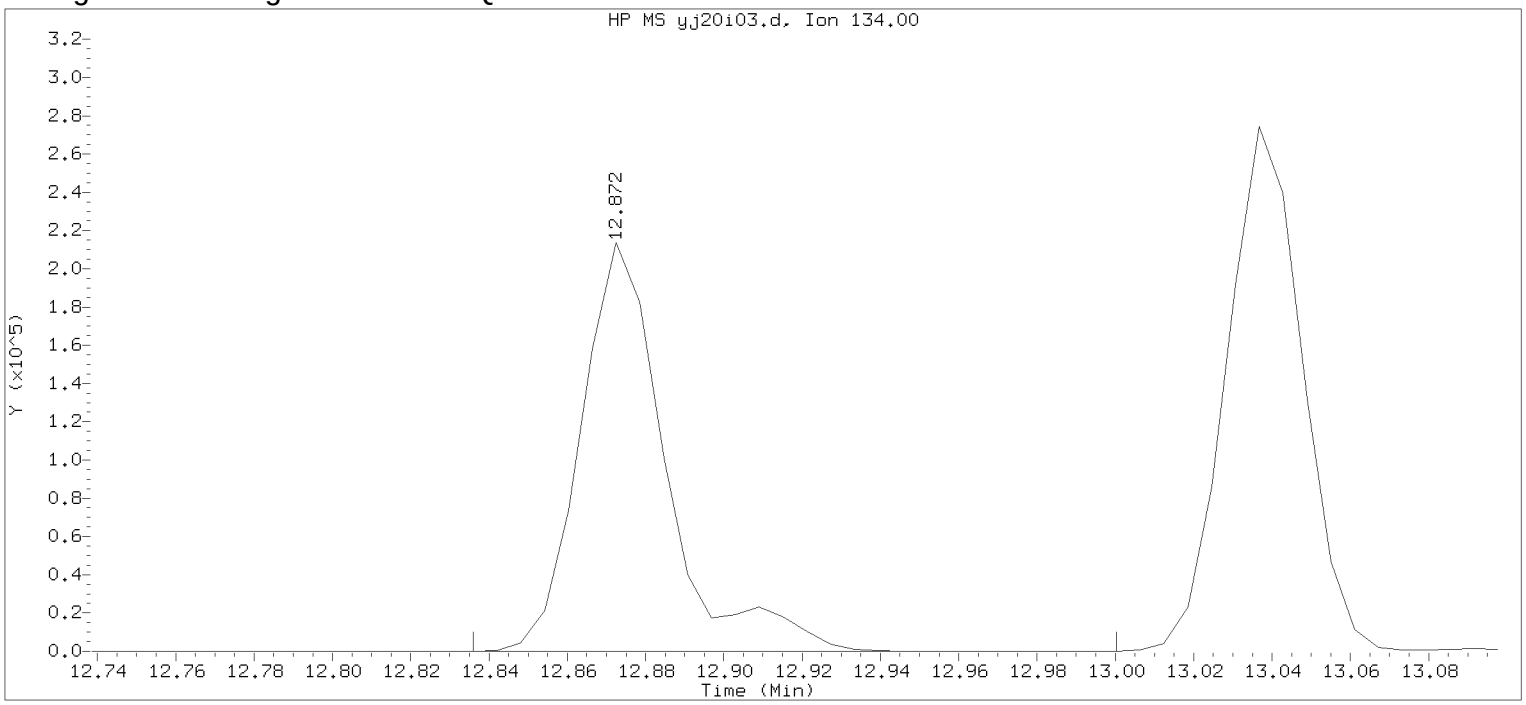
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

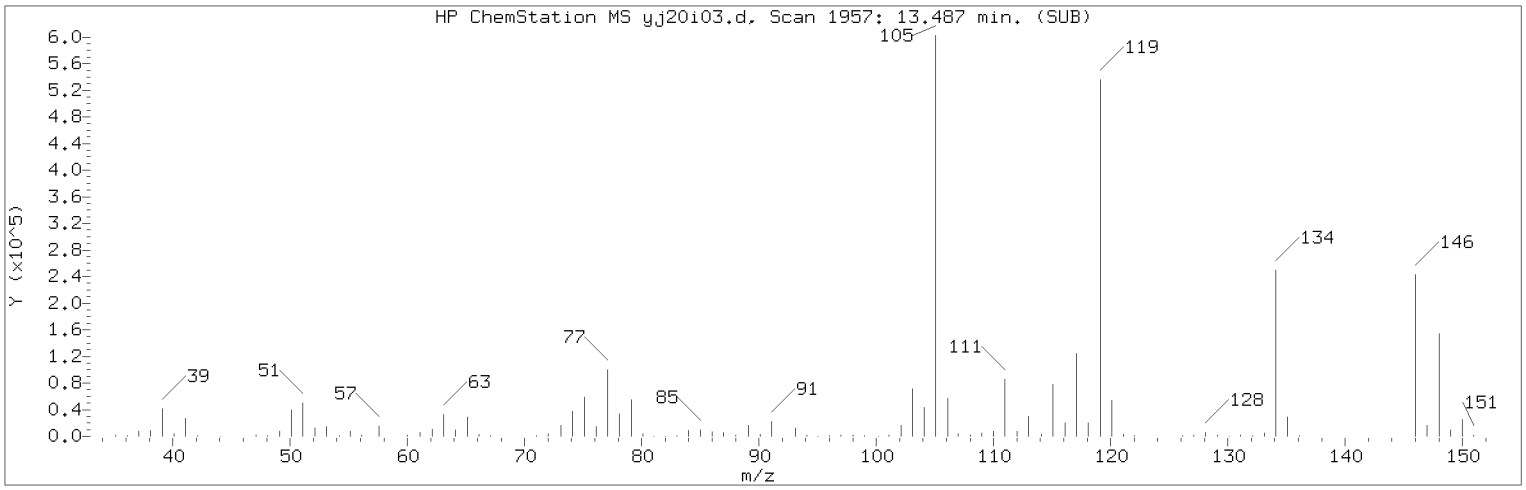
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

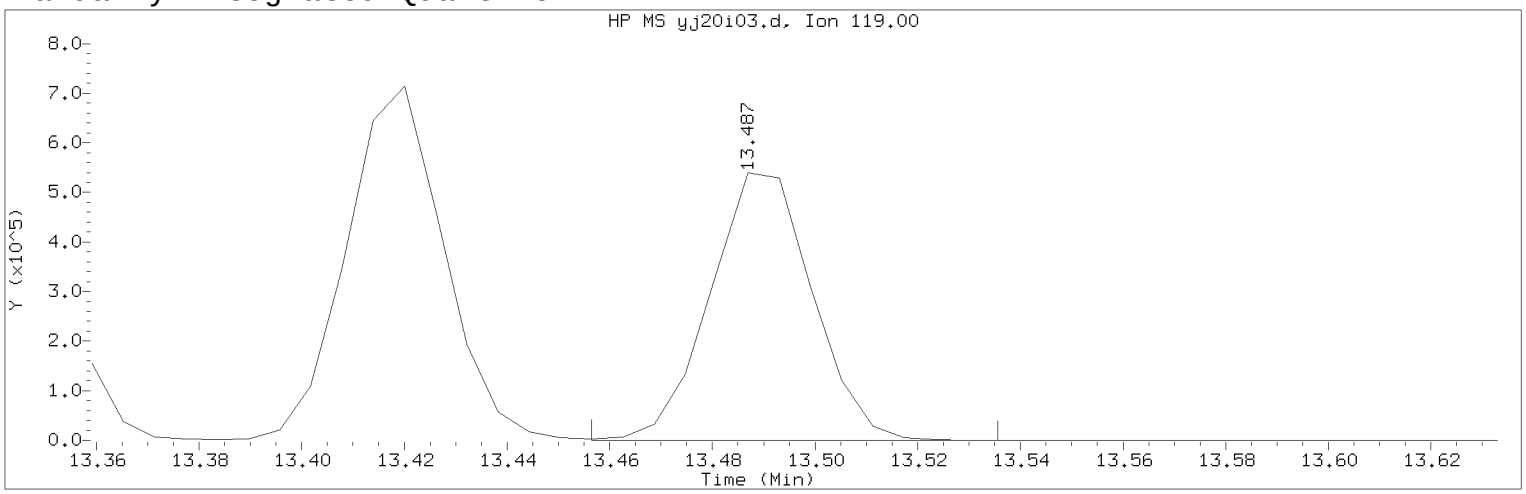
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 324116
On-column Amount (ng) : 54.9701
Integration start scan : 1849 Integration stop scan: 1876
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

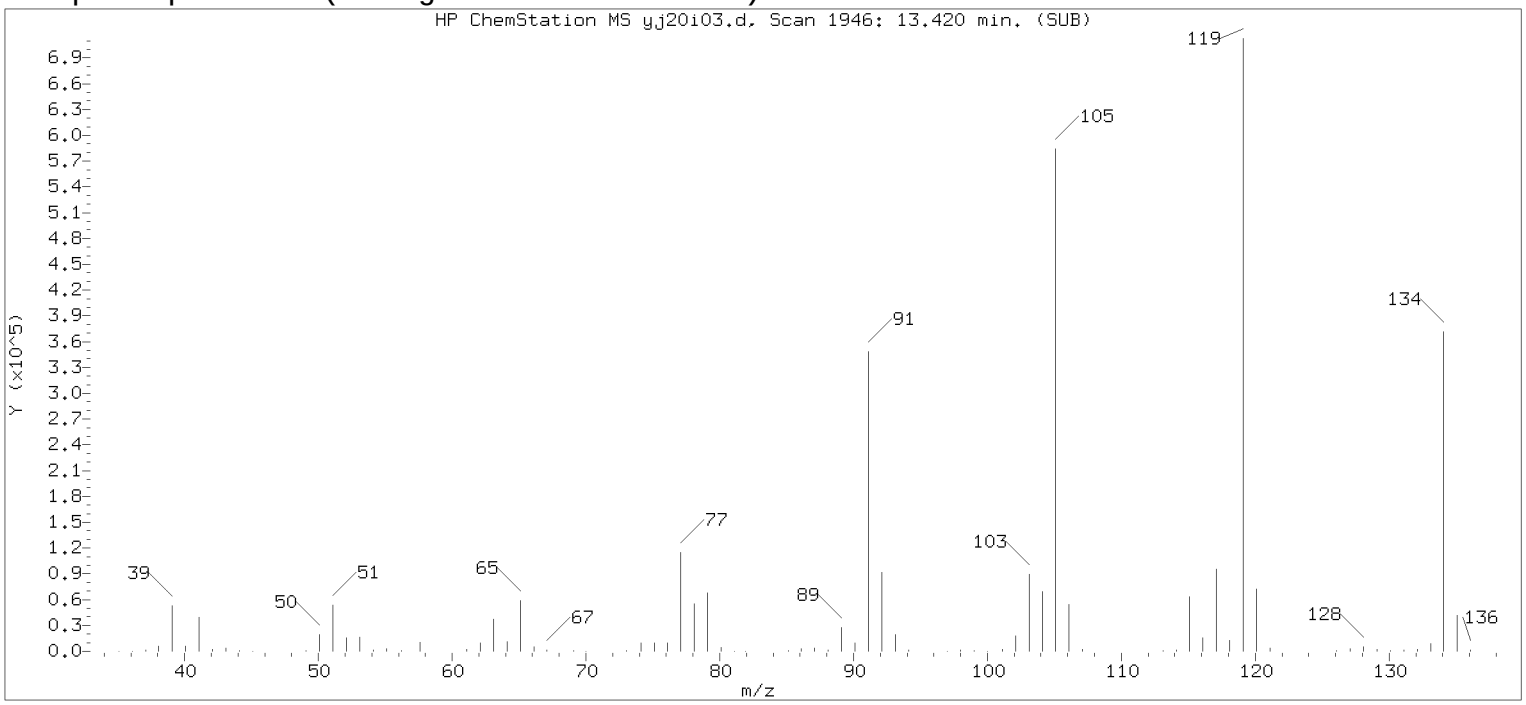
Compound Number : 140
Compound Name : 1,2-Diethylbenzene
Scan Number : 1957
Retention Time (minutes): 13.487
Quant Ion : 119.00
Area (flag) : 748091M
On-Column Amount (ng) : 51.3027
Integration start scan : 1951 Integration stop scan: 1964
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

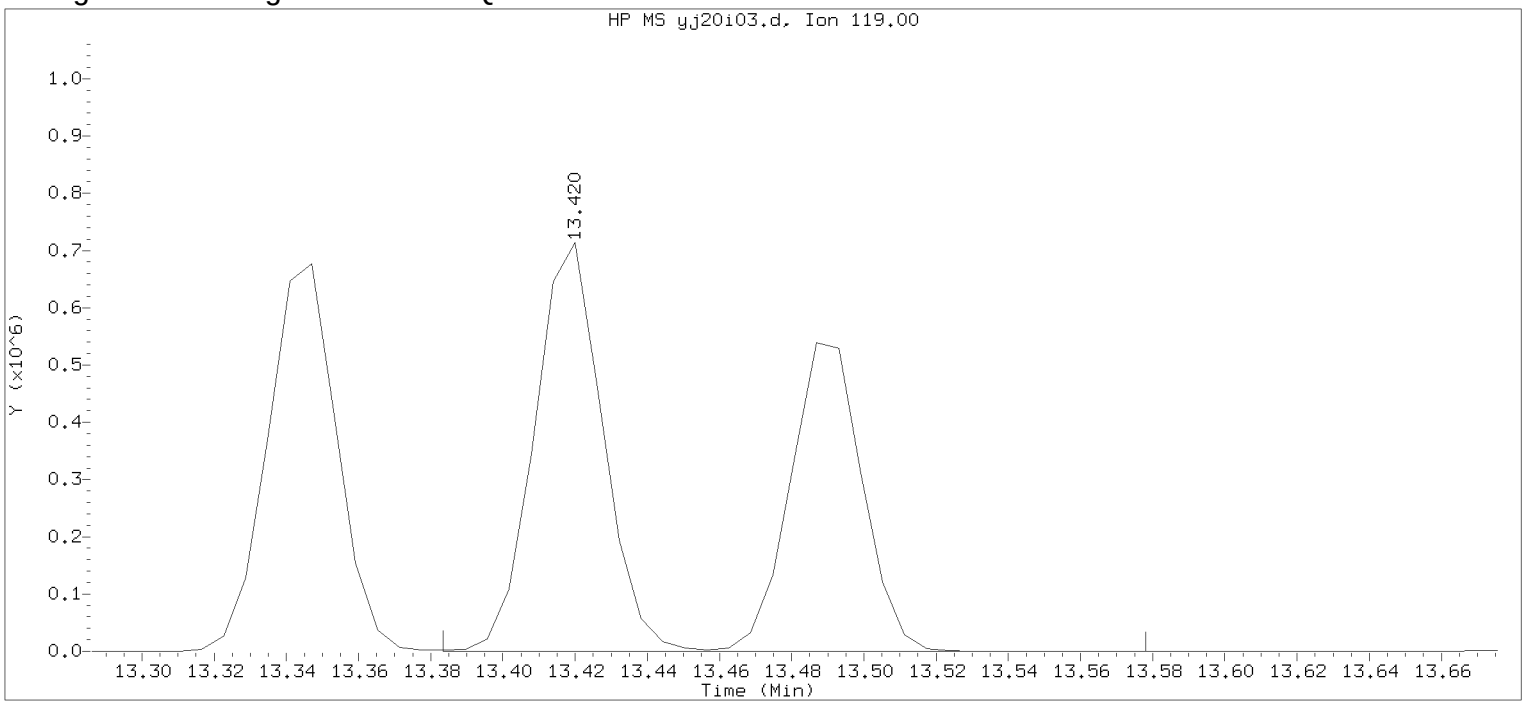
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 140
Compound Name : 1,2-Diethylbenzene
Scan Number : 1946
Retention Time (minutes): 13.420
Quant Ion : 119.00
Area : 1689671
On-column Amount (ng) : 95.6507
Integration start scan : 1939 Integration stop scan: 1971
Y at integration start : 0 Y at integration end: 0

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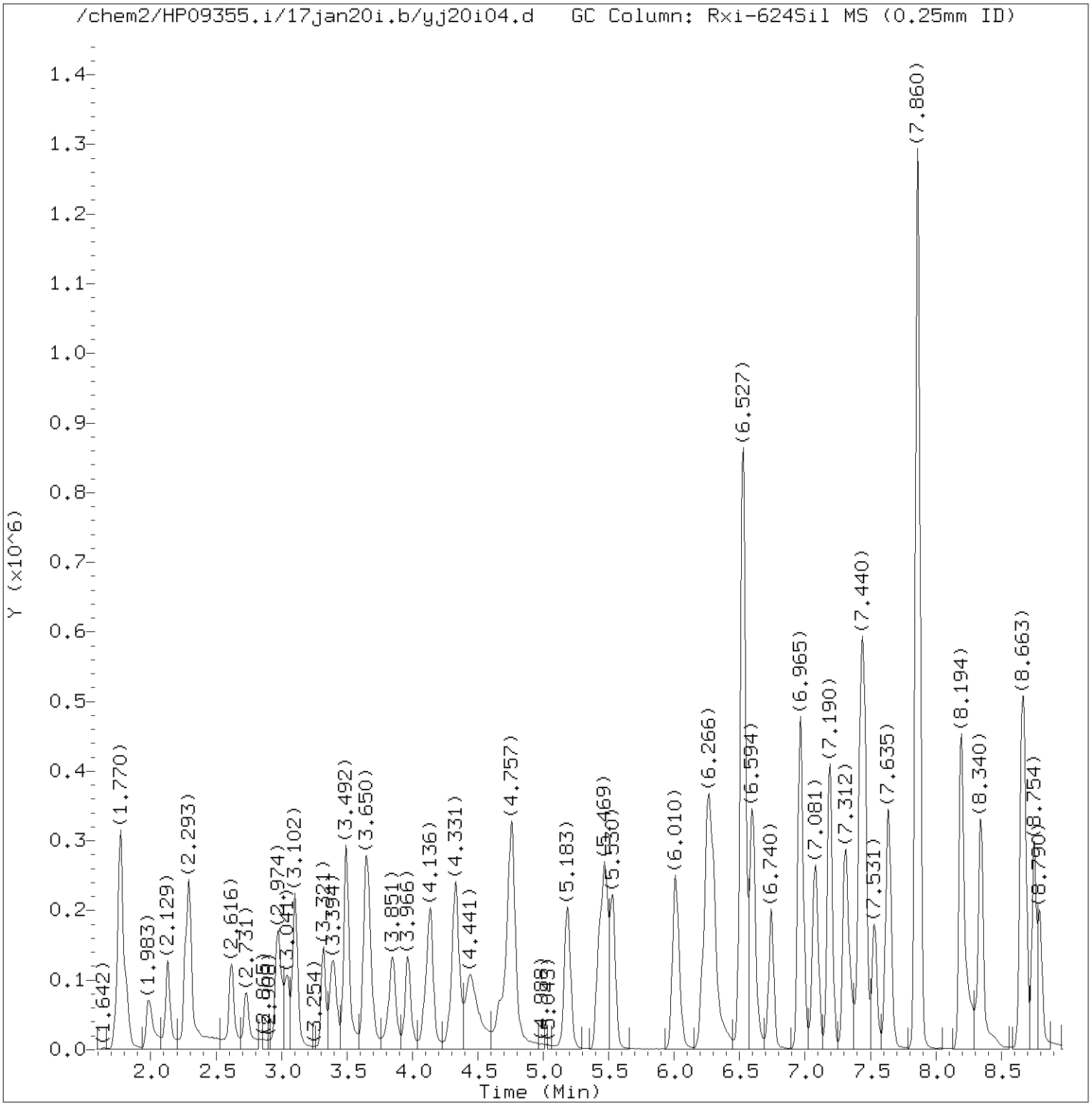
Target 3.5 esignature user: BWK03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

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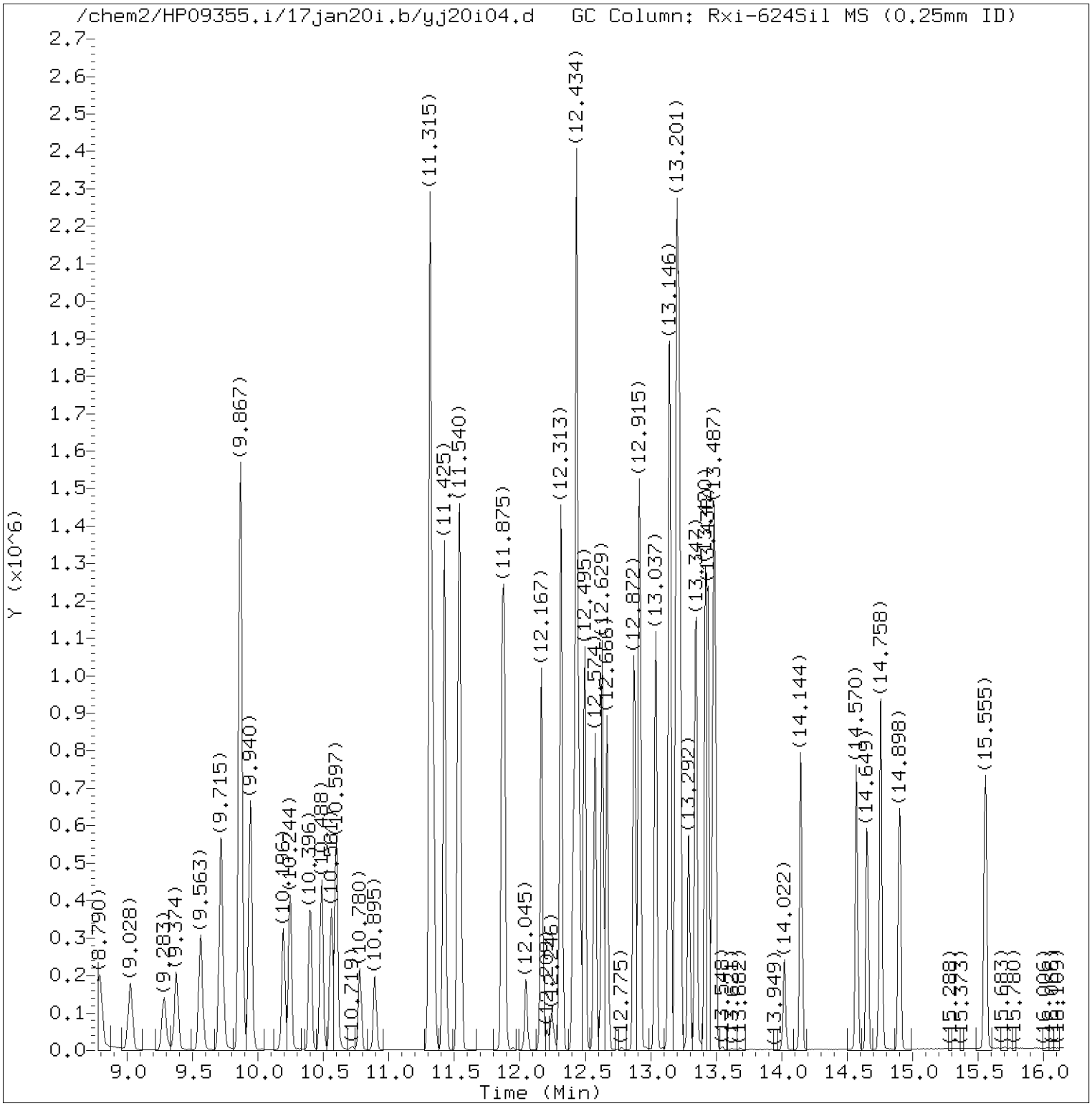
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

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Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

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Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 149490 | 18.965 |
| 4) Chloromethane | (2) | 2.129 | 50 | 158186 | 19.120 |
| 6) Vinyl Chloride | (2) | 2.269 | 62 | 147919 | 18.939 |
| 5) 1,3-Butadiene | (2) | 2.293 | 39 | 135654 | 20.029 |
| 8) Bromomethane | (2) | 2.616 | 94 | 105045 | 19.212 |
| 9) Chloroethane | (2) | 2.731 | 64 | 86040 | 19.233 |
| 10) Dichlorofluoromethane | (2) | 2.968 | 67 | 209448 | 20.672 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 178713 | 19.177 |
| 11) n-Pentane | (2) | 3.102 | 43 | 198795 | 19.785 |
| 14) Ethyl ether | (2) | 3.321 | 59 | 109853 | 19.881 |
| 15) Freon 123a | (2) | 3.394 | 67 | 131805M | 20.888 |
| 16) Acrolein | (1) | 3.492 | 56 | 426323 | 187.196 |
| 17) 1,1-Dichloroethene | (2) | 3.638 | 96 | 91764 | 19.555 |
| 17) 1,1-Dichloroethene | (2) | 3.644 | 63 | 48680 | 19.901 |
| 18) Acetone | (1) | 3.662 | 58 | 41465 | 37.453 |
| 19) Freon 113 | (2) | 3.662 | 101 | 93994 | 20.160 |
| 21) 2-Propanol | (1) | 3.826 | 45 | 163788M | 195.524 |
| 22) Methyl Iodide | (2) | 3.851 | 142 | 176896 | 19.992 |
| 23) Carbon Disulfide | (2) | 3.966 | 76 | 279252 | 19.574 |
| 27) Methyl Acetate | (2) | 4.100 | 43 | 175012 | 19.884 |
| 25) Allyl Chloride | (2) | 4.136 | 41 | 187337 | 19.541 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.313 | 65 | 369809 | 250.000 |
| 28) Methylene Chloride | (2) | 4.331 | 84 | 115699 | 19.949 |
| 30) t-Butyl alcohol | (1) | 4.441 | 59 | 324348 | 197.399 |
| 31) Acrylonitrile | (2) | 4.666 | 53 | 84419 | 19.985 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.739 | 73 | 386937 | 20.236 |
| 32) trans-1,2-Dichloroethene | (2) | 4.763 | 96 | 112079 | 19.824 |
| 34) n-Hexane | (2) | 5.189 | 57 | 174018 | 20.233 |
| 36) 1,1-Dichloroethane | (2) | 5.426 | 63 | 200878M | 19.794 |
| 38) di-Isopropyl ether | (2) | 5.469 | 45 | 404703 | 20.127 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 184884 | 19.829 |
| 40) Ethyl t-butyl ether | (2) | 6.010 | 59 | 381773 | 20.252 |
| 44) 2-Butanone | (2) | 6.217 | 43 | 262658 | 40.261 |
| 42) cis-1,2-Dichloroethene | (2) | 6.254 | 96 | 128641 | 19.902 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 158775 | 19.644 |
| 47) Propionitrile | (1) | 6.302 | 54 | 381679 | 198.206 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 460824 | 101.173 |
| 49) Bromochloromethane | (2) | 6.594 | 128 | 66353 | 19.922 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

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Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 66562 | 38.283 |
| 51) Chloroform | (2) | 6.740 | 83 | 204170 | 19.947 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 240720 | 39.726 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 113 | 283208 | 50.414 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 111 | 288020 | 50.237 |
| 53) 1,1,1-Trichloroethane | (2) | 6.977 | 97 | 171911 | 19.890 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 203636 | 20.018 |
| 54) Cyclohexane | (2) | 7.081 | 84 | 166390 | 19.916 |
| 54) Cyclohexane | (2) | 7.081 | 69 | 61966 | 20.053 |
| 56) Carbon Tetrachloride | (2) | 7.190 | 117 | 141751 | 19.480 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 165604 | 19.915 |
| 58) Isobutyl Alcohol | (1) | 7.312 | 41 | 303613 | 493.398 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 102 | 73918 | 50.369 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 65 | 371957 | 50.343 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 104 | 46911 | 50.344 |
| 60) Benzene | (2) | 7.452 | 78 | 487654 | 19.963 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 176390 | 19.906 |
| 61) 1,2-Dichloroethane | (2) | 7.525 | 98 | 15940 | 20.204 |
| 65) t-Amyl methyl ether | (2) | 7.641 | 73 | 382475 | 20.242 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1201221 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 203020 | 20.050 |
| 69) n-Butanol | (1) | 8.194 | 56 | 506922M | 1012.759 |
| 71) Trichloroethene | (2) | 8.340 | 95 | 127142 | 19.866 |
| 72) Methylcyclohexane | (2) | 8.657 | 83 | 223308 | 20.171 |
| 72) Methylcyclohexane | (2) | 8.663 | 98 | 100237 | 20.038 |
| 73) 1,2-Dichloropropane | (2) | 8.681 | 63 | 129765 | 20.009 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 137828 | 19.842 |
| 75) 1,4-Dioxane | (1) | 8.760 | 88 | 65556M | 483.317 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 83624 | 19.929 |
| 78) Bromodichloromethane | (2) | 9.028 | 83 | 145108 | 19.619 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 110073 | 38.766 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.374 | 63 | 106215M | 19.643 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 192243 | 19.767 |
| 82) 4-Methyl-2-pentanone | (2) | 9.715 | 43 | 472064 | 40.220 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1187650 | 50.583 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 769751 | 50.658 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 368820 | 39.616 |
| 88) Toluene | (3) | 9.940 | 92 | 316277 | 19.973 |

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Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 176577 | 19.849 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 215214 | 20.055 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 124310 | 20.159 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 140445 | 19.931 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 210792 | 20.193 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 379668 | 40.458 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 115768 | 19.332 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 134830 | 20.102 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 910426 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 170486 | 19.754 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 360622 | 19.989 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 612519 | 20.054 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 112234 | 19.616 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 483181 | 39.652 |
| 108) Xylene (Total) | (3) | | 106 | 721199 | 59.573 |
| 107) o-Xylene | (3) | 11.869 | 106 | 238018 | 19.921 |
| 109) Styrene | (3) | 11.881 | 104 | 396000 | 19.967 |
| 110) Bromoform | (3) | 12.045 | 173 | 83769 | 18.828 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 612257 | 20.306 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 49041M | 485.114 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 446183 | 50.544 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 174 | 379980 | 50.512 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 207005M | 19.966 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 326064 | 100.866 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 163922 | 19.578 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 68987 | 19.903 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 729186 | 20.150 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 147520 | 19.811 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 529985 | 20.085 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 157198 | 19.889 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 111423M | 19.749 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 82304 | 19.294 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 545805 | 20.002 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 671255 | 20.237 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 315848 | 19.773 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 596245 | 20.232 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 505705 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 324253 | 19.721 |

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Quant Report

Target Revision 3.5

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Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 553331 | 20.187 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 370426 | 19.696 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 346511 | 20.190 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 359343 | 20.180 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 297255 | 20.038 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 305221 | 19.892 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 287060 | 19.933 |
| 141) Diethylbenzene (total) | (4) | | 100 | 992914 | 60.302 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 50571 | 20.409 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 227385 | 20.230 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 207978 | 20.248 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 102391 | 20.285 |
| 148) Naphthalene | (4) | 14.758 | 128 | 682201 | 20.753 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 187767 | 20.105 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 355974 | 20.107 |



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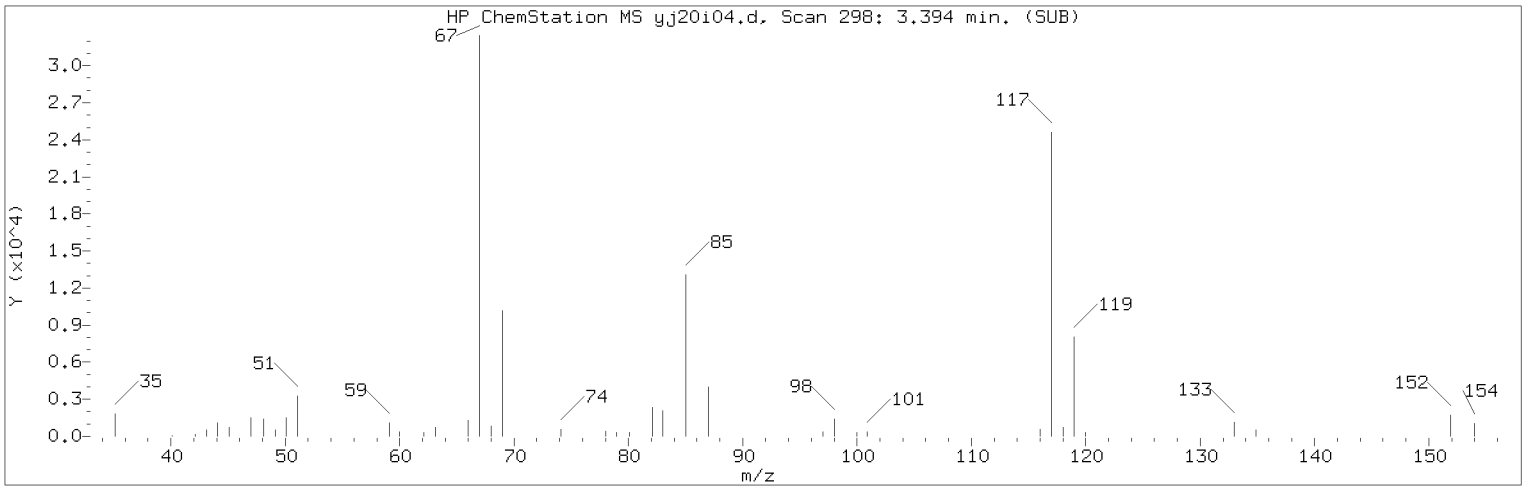
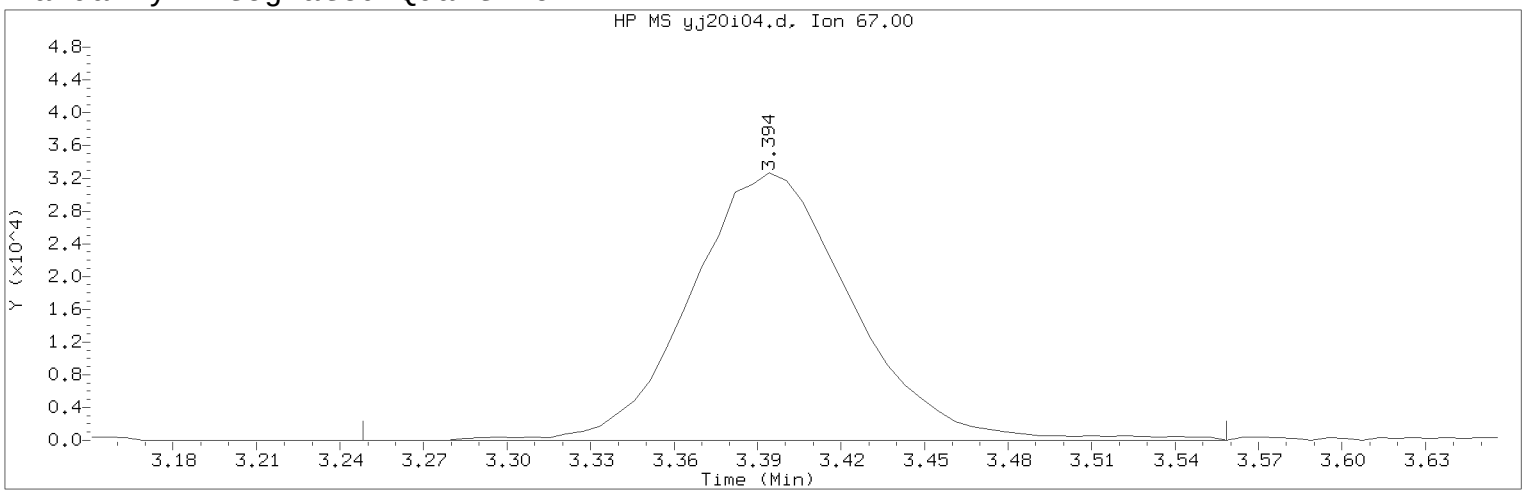
Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

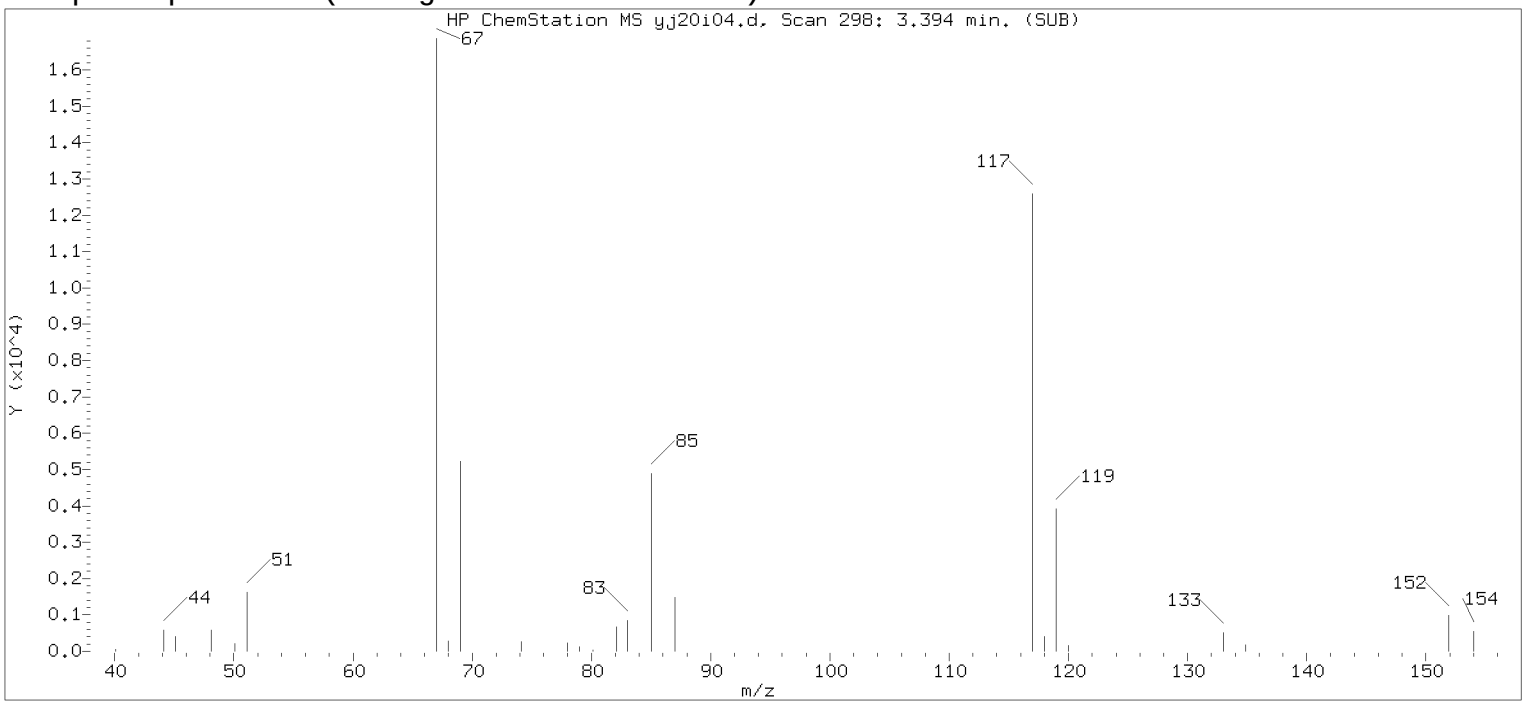
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 298
Retention Time (minutes): 3.394
Quant Ion : 67.00
Area (flag) : 131805M
On-Column Amount (ng) : 20.8884
Integration start scan : 273 Integration stop scan: 324
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

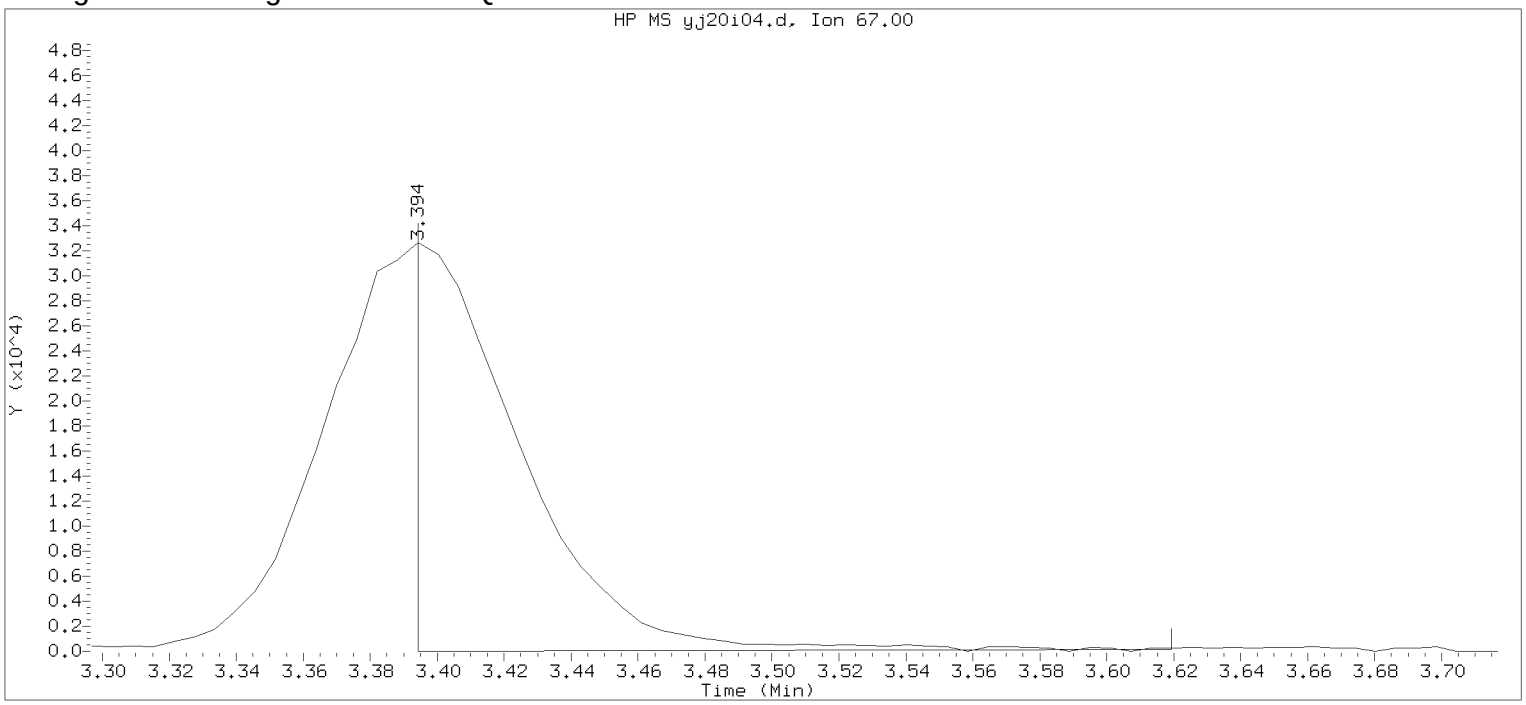
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

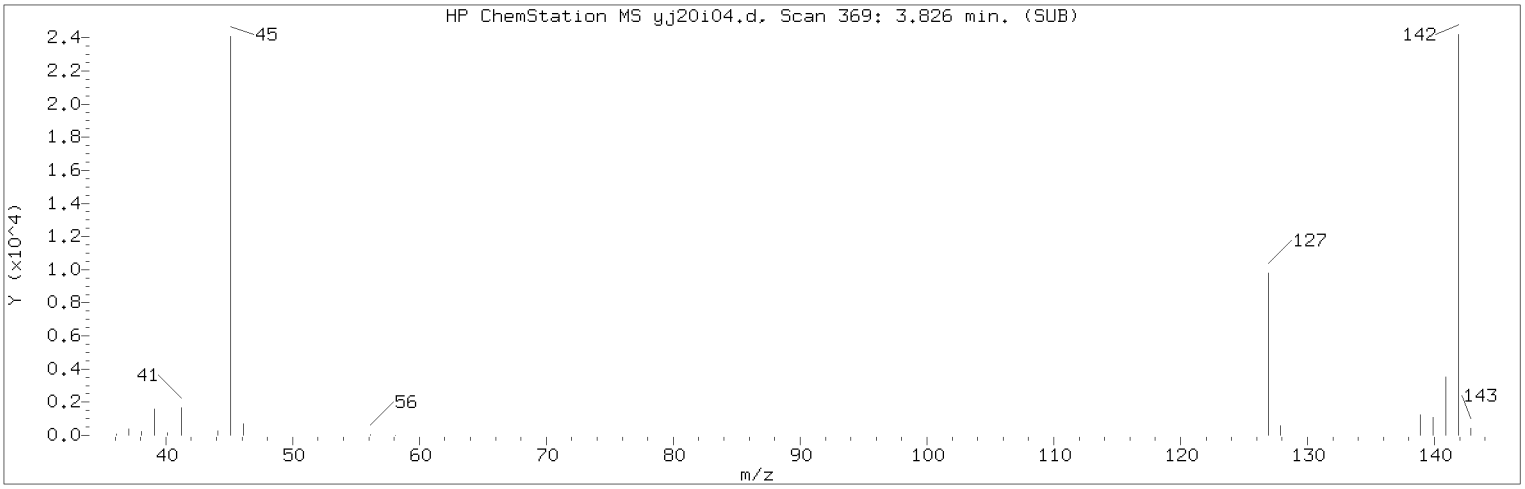
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

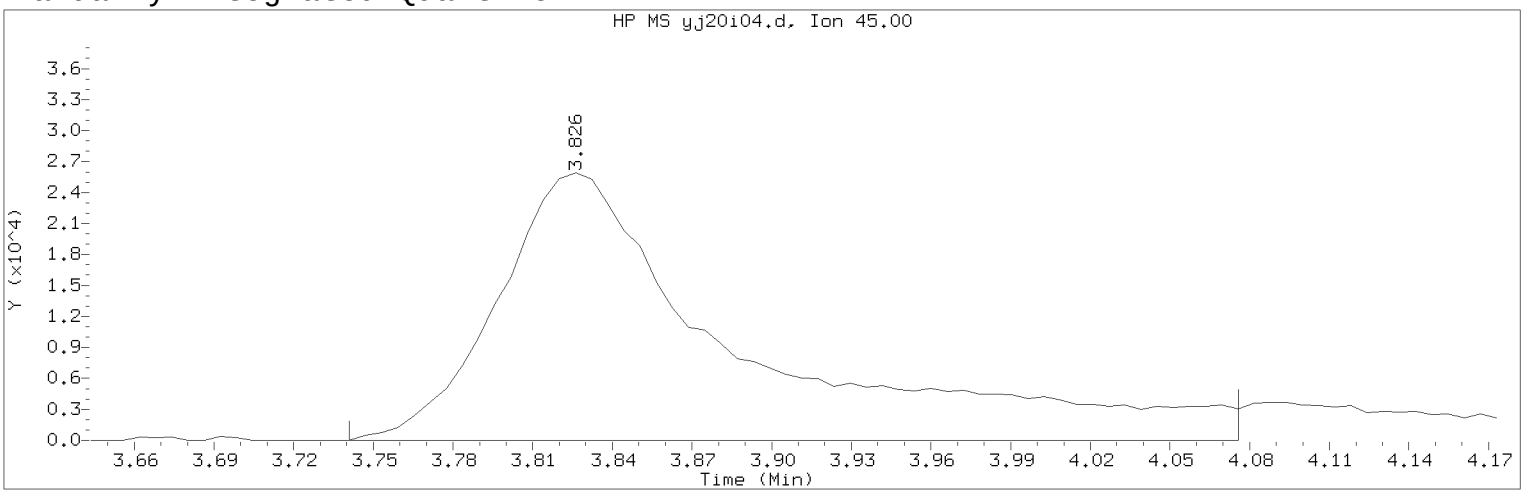
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 298
Retention Time (minutes): 3.394
Quant Ion : 67.00
Area : 68641
On-column Amount (ng) : 12.2038
Integration start scan : 297 Integration stop scan: 334
Y at integration start : 0 Y at integration end: 137

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

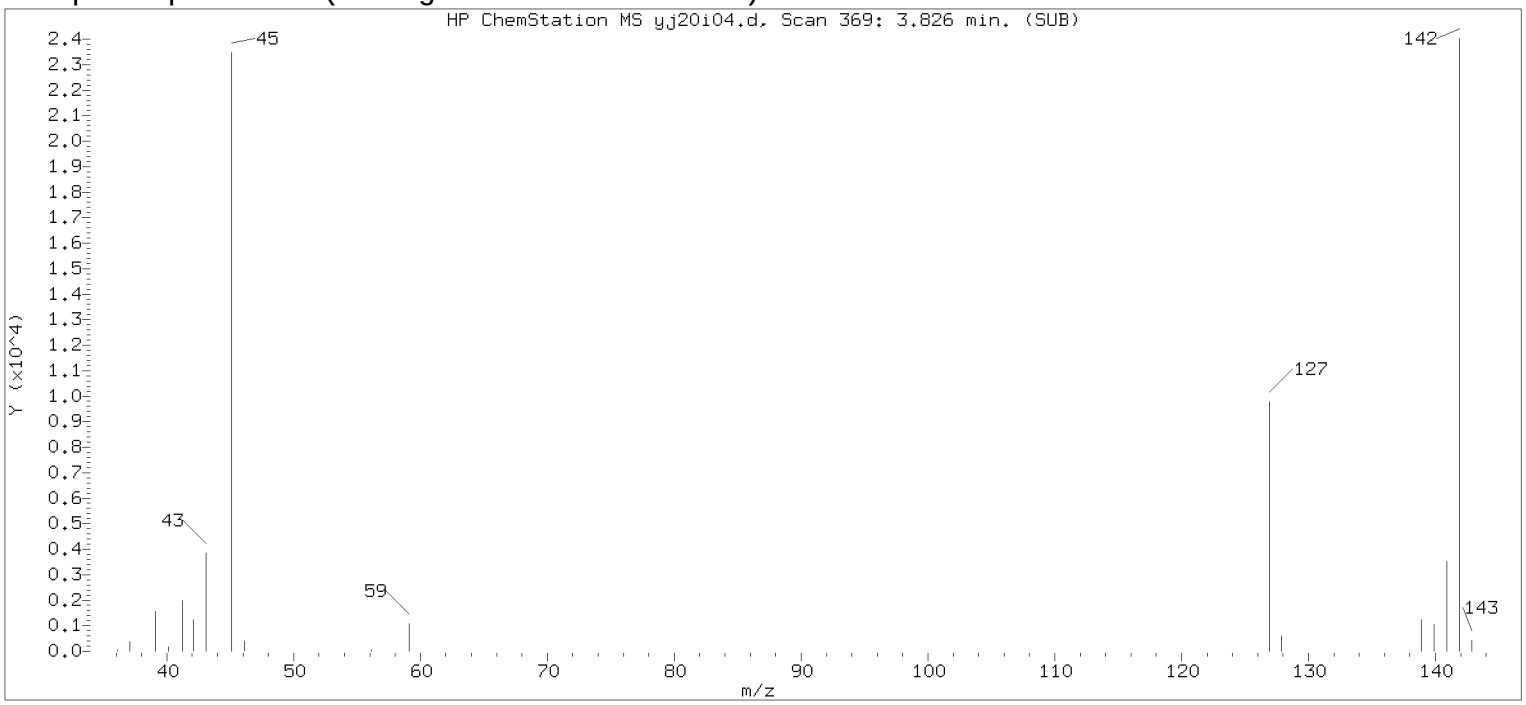
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 369
Retention Time (minutes): 3.826
Quant Ion : 45.00
Area (flag) : 163788M
On-Column Amount (ng) : 195.5241
Integration start scan : 354 Integration stop scan: 409
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

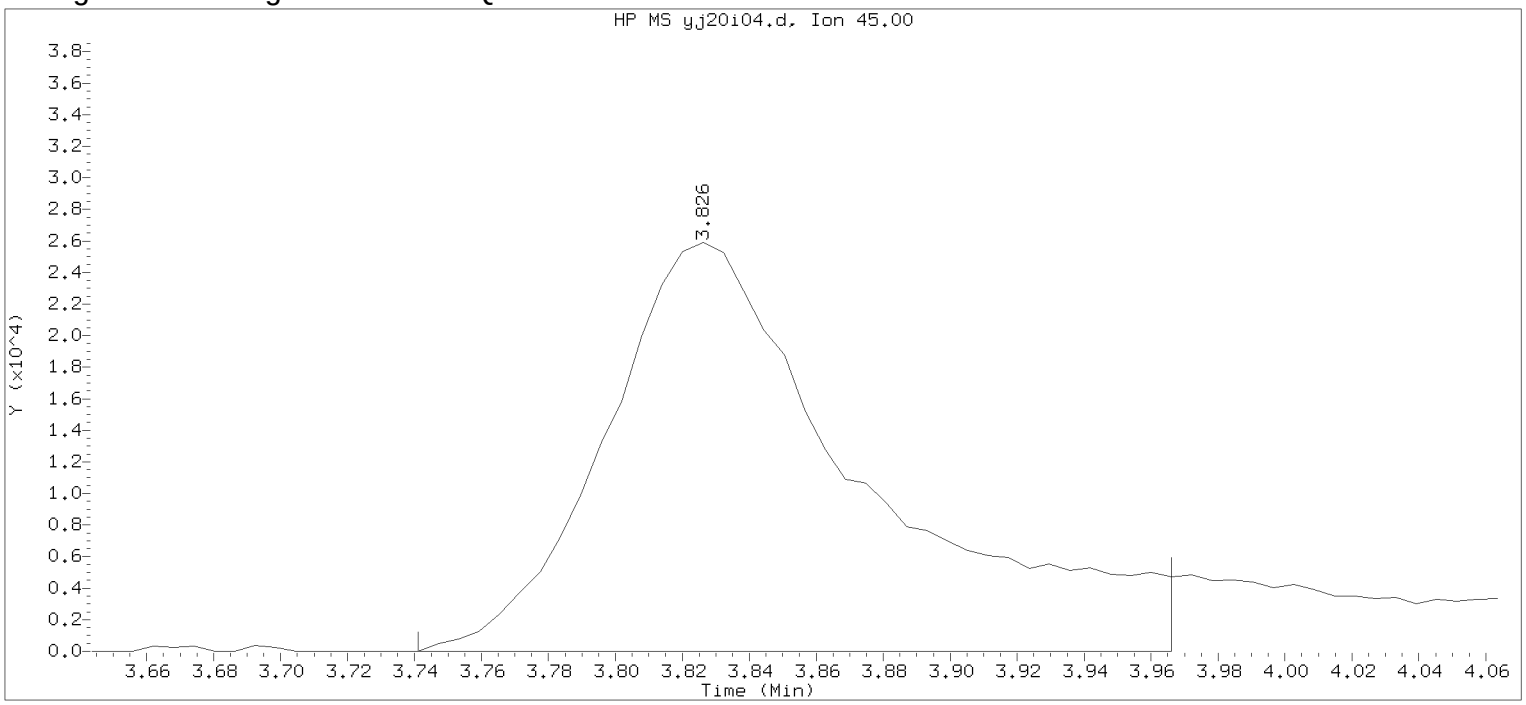
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

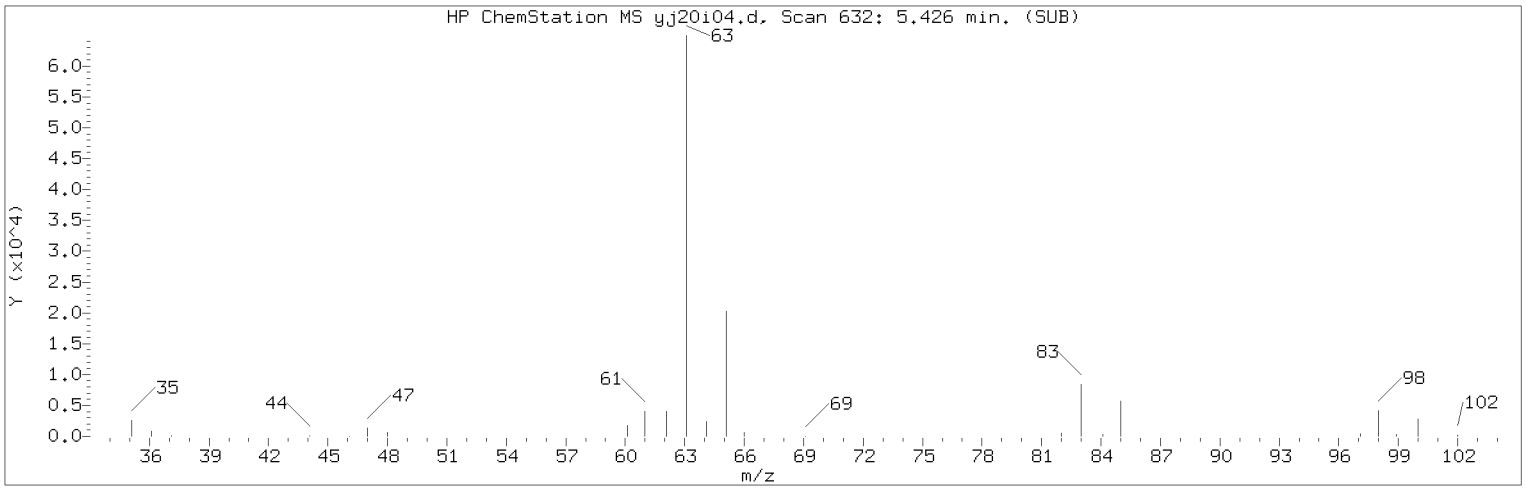
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

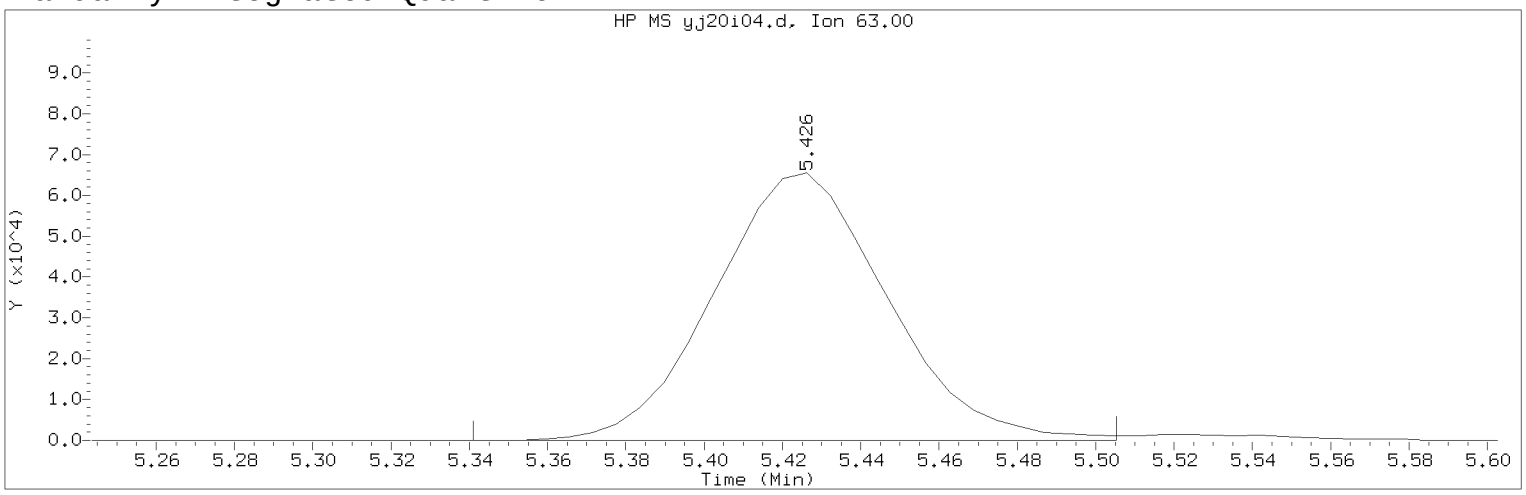
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 369
Retention Time (minutes): 3.826
Quant Ion : 45.00
Area : 138612
On-column Amount (ng) : 183.4164
Integration start scan : 354 Integration stop scan: 391
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

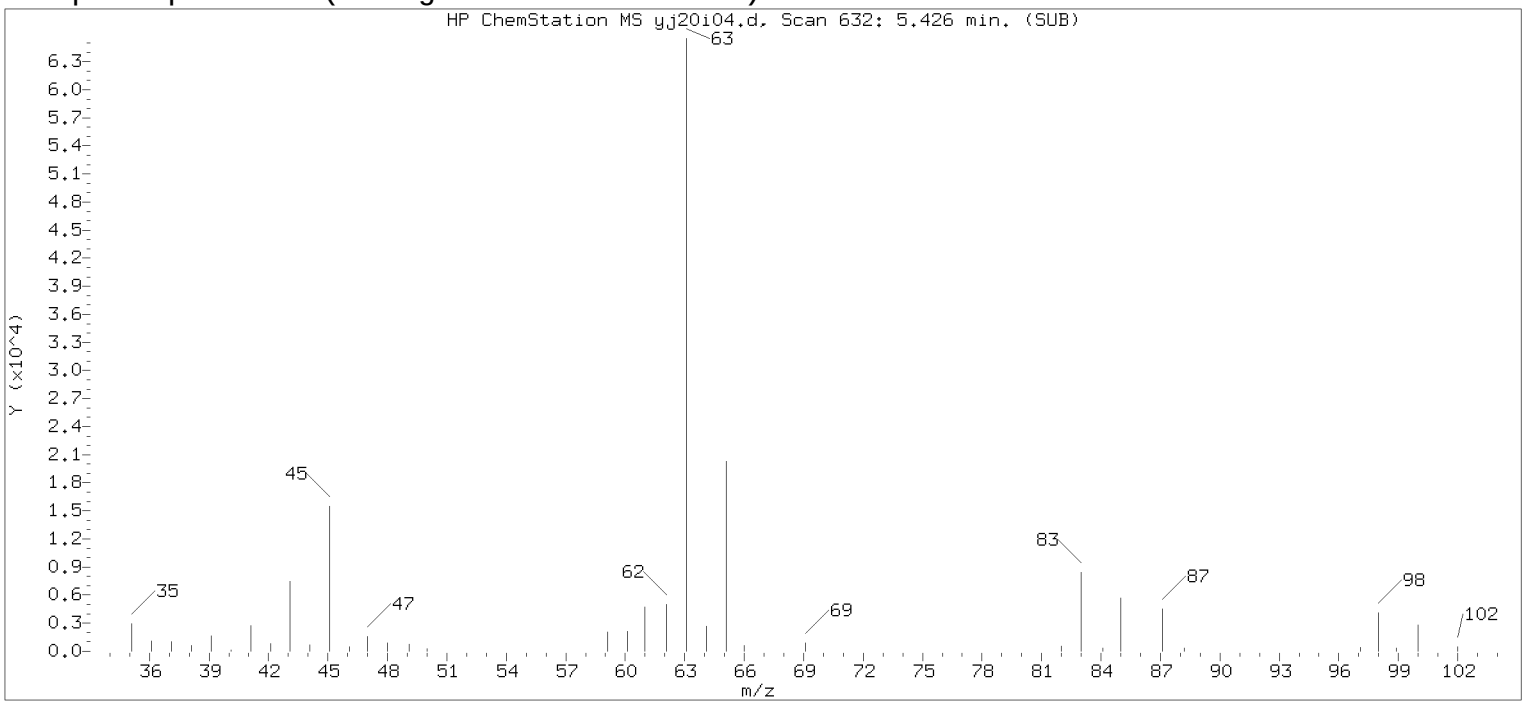
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 632
Retention Time (minutes): 5.426
Quant Ion : 63.00
Area (flag) : 200878M
On-Column Amount (ng) : 19.7939
Integration start scan : 617 Integration stop scan: 644
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

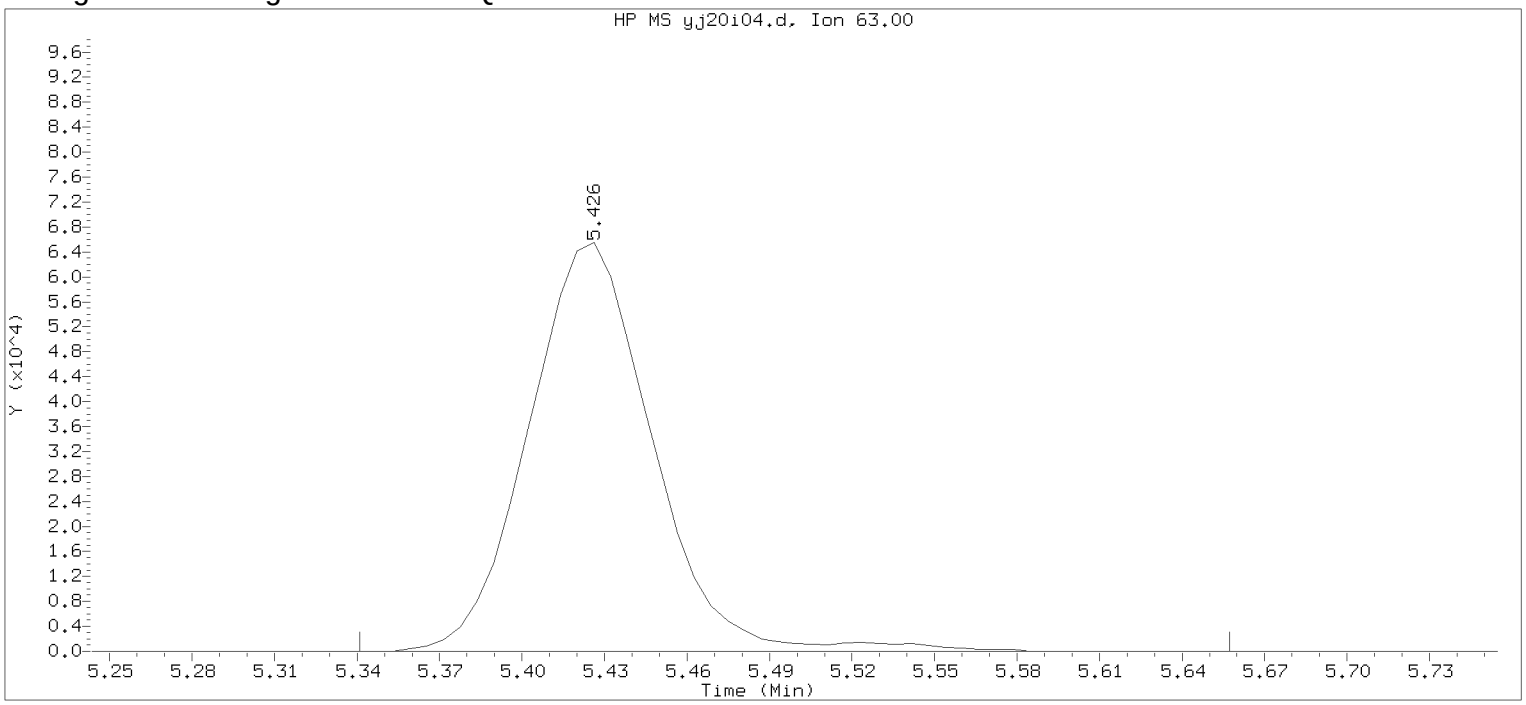
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

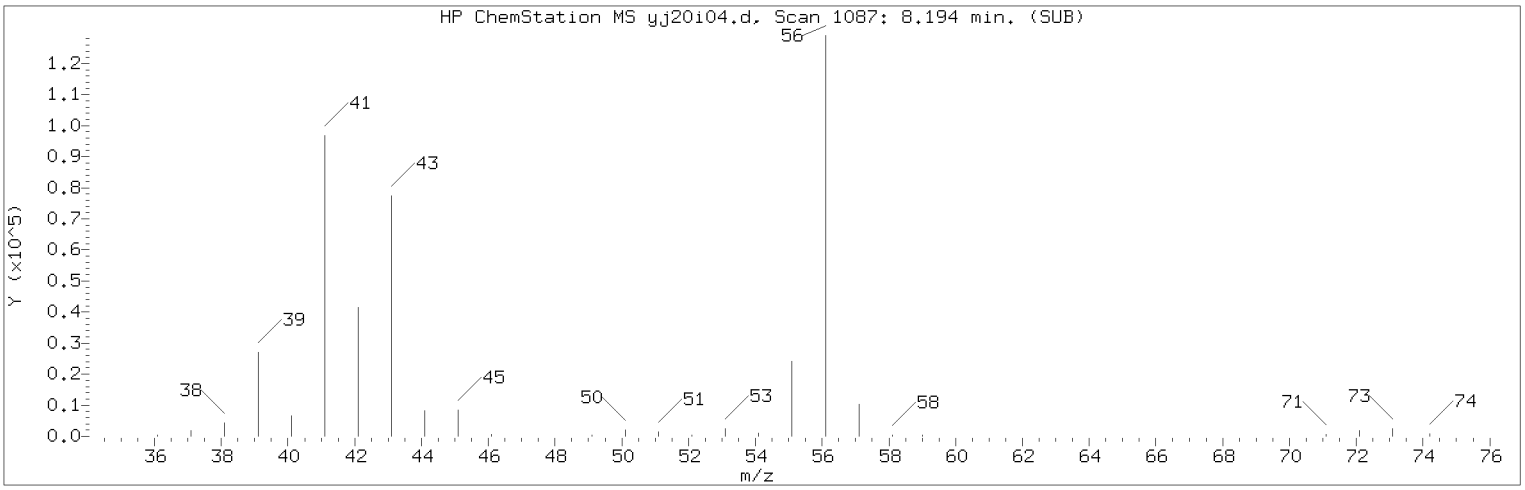
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

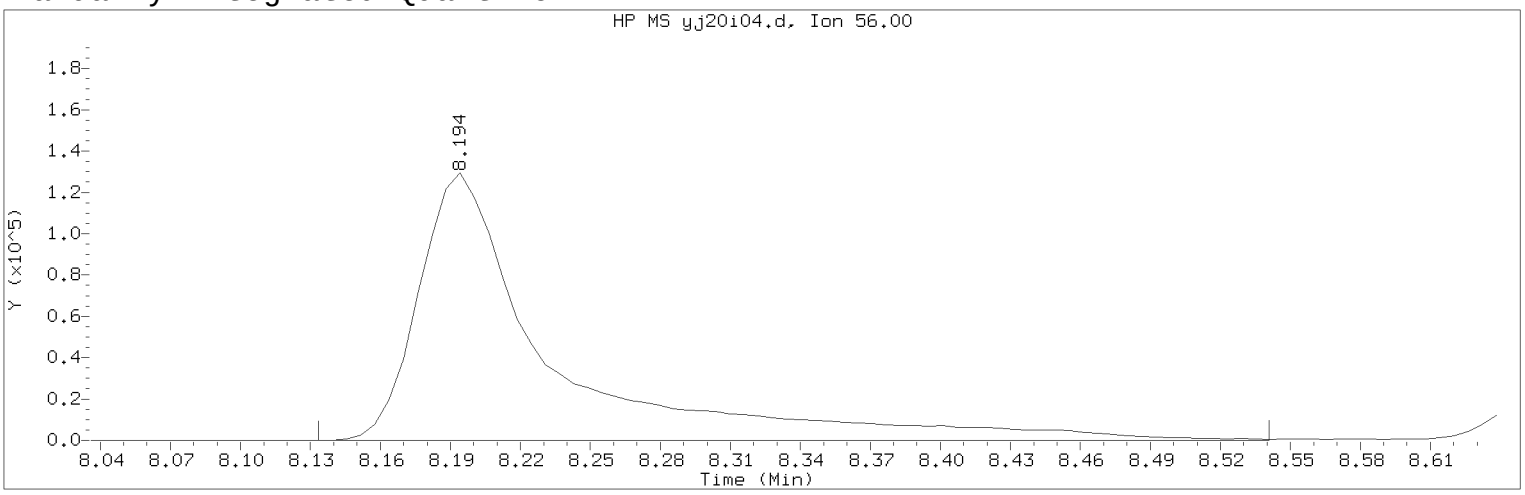
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 632
Retention Time (minutes): 5.426
Quant Ion : 63.00
Area : 204652
On-column Amount (ng) : 19.7887
Integration start scan : 617 Integration stop scan: 669
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

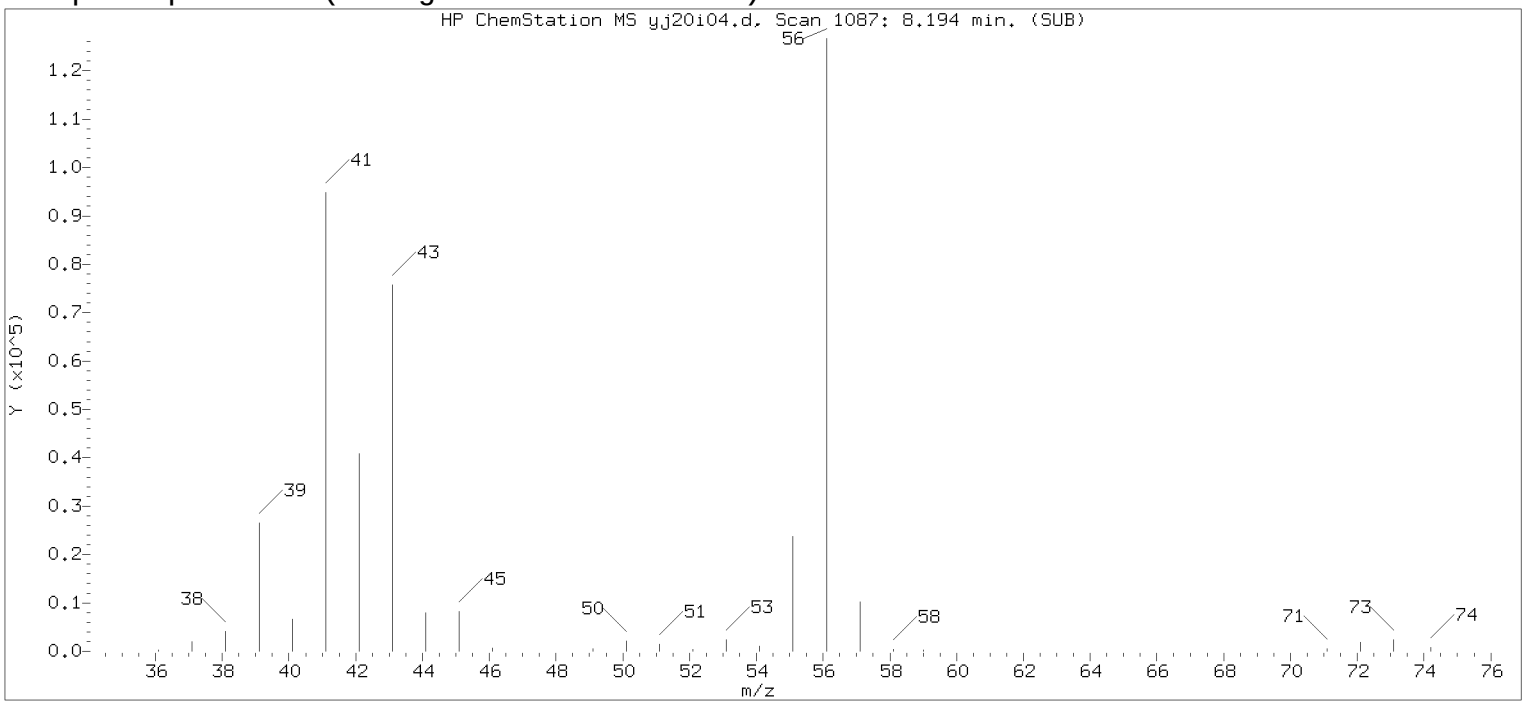
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area (flag) : 506922M
On-Column Amount (ng) : 1012.7586
Integration start scan : 1076 Integration stop scan: 1143
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

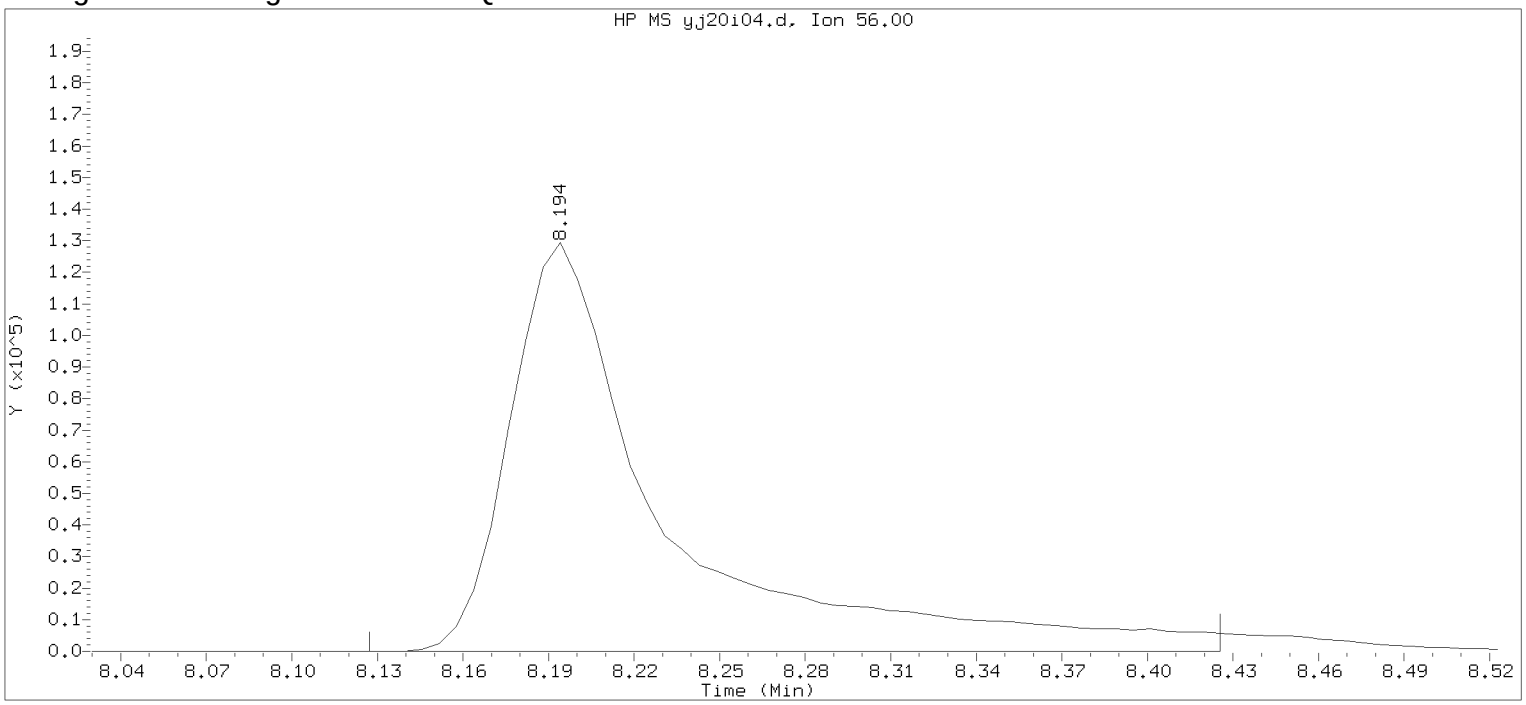
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

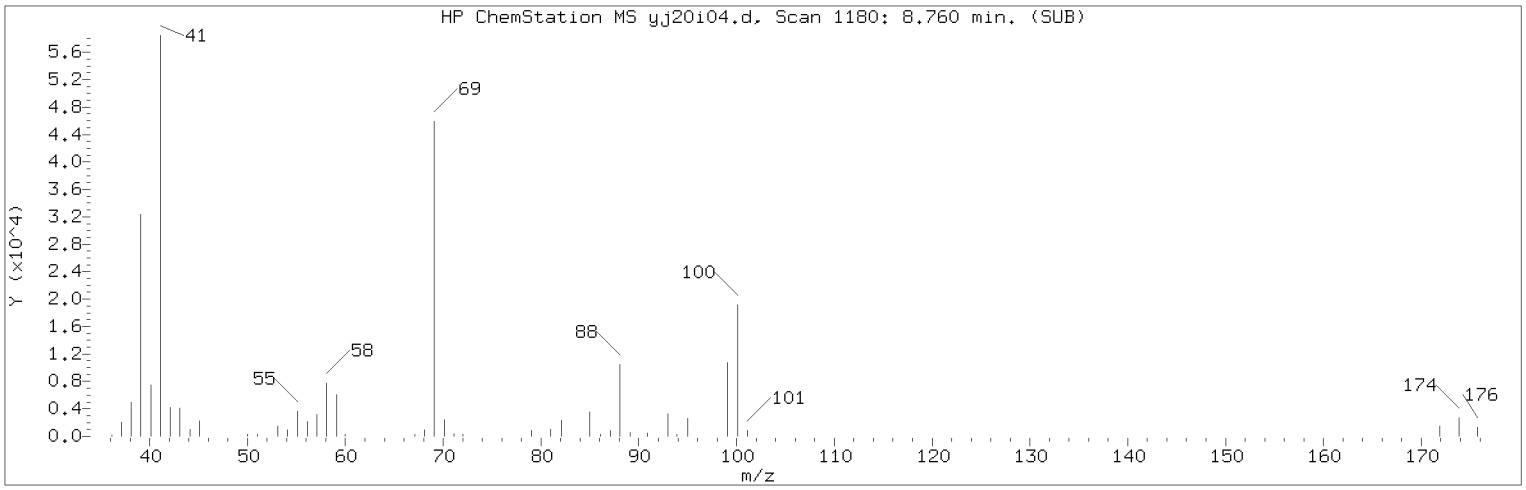
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

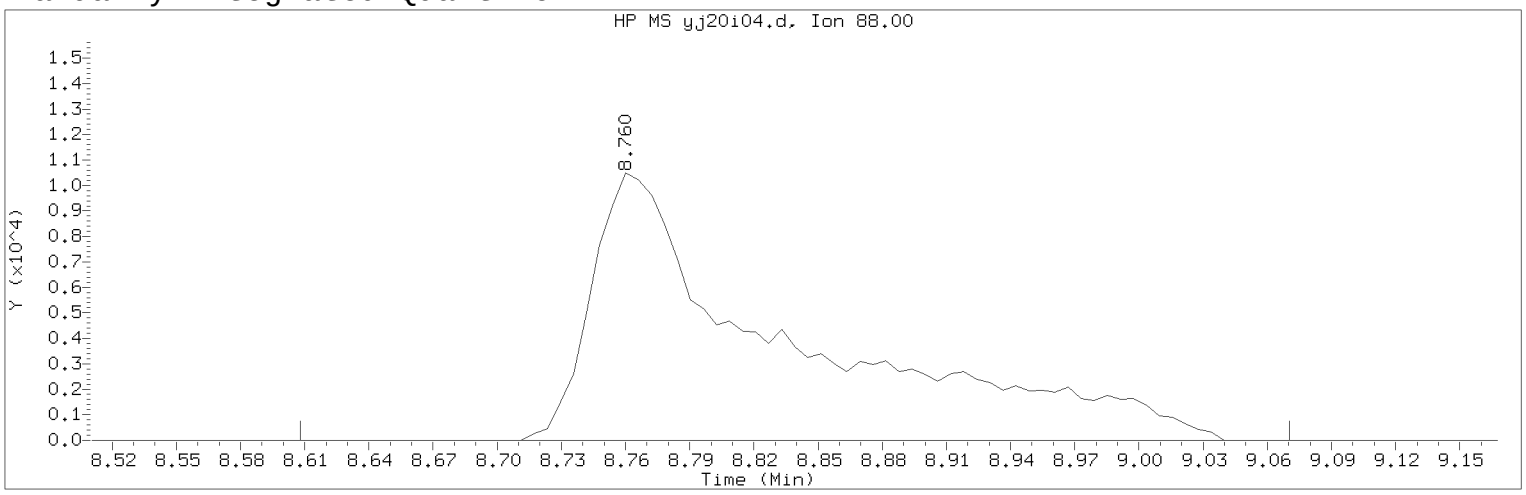
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area : 488846
On-column Amount (ng) : 986.5996
Integration start scan : 1075 Integration stop scan: 1124
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK#3231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

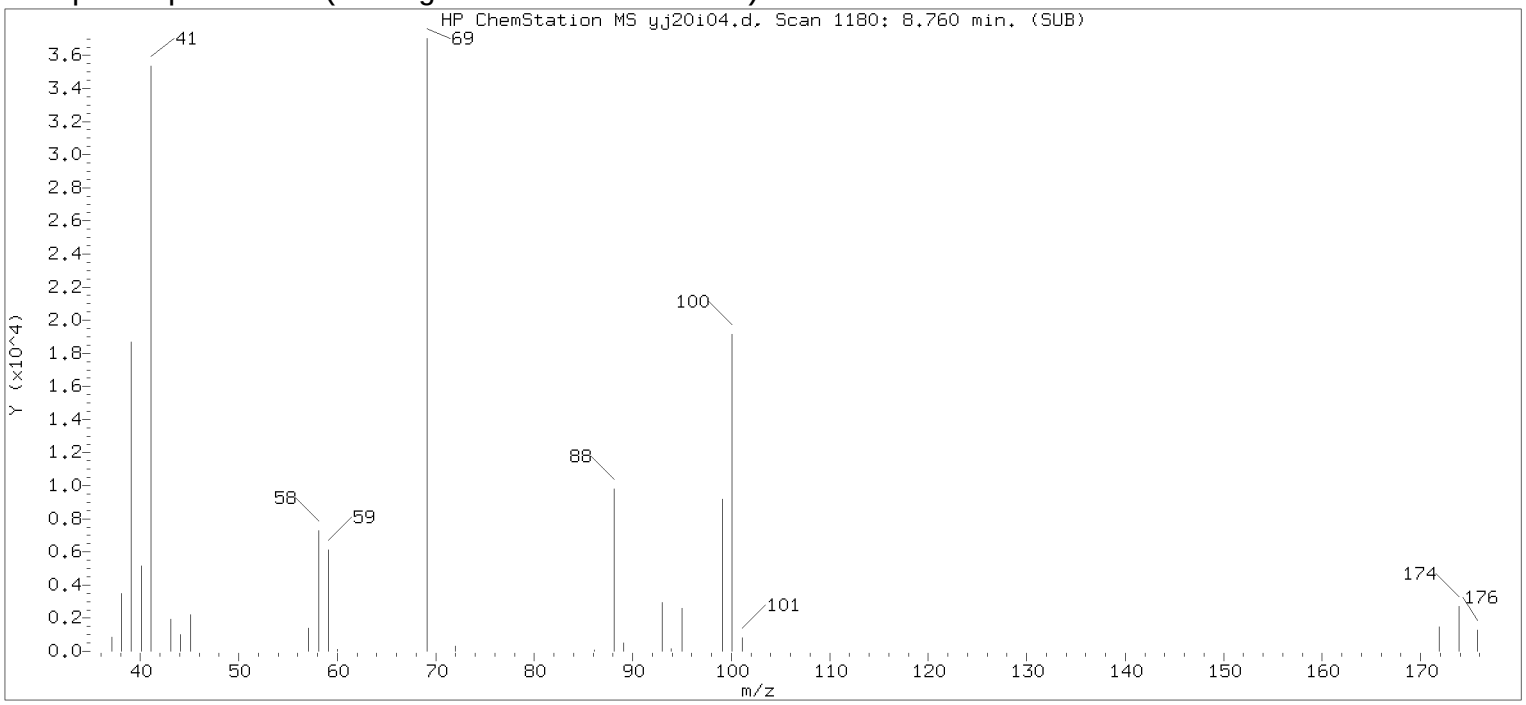
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1180
Retention Time (minutes): 8.760
Quant Ion : 88.00
Area (flag) : 65556M
On-Column Amount (ng) : 483.3169
Integration start scan : 1154 Integration stop scan: 1230
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

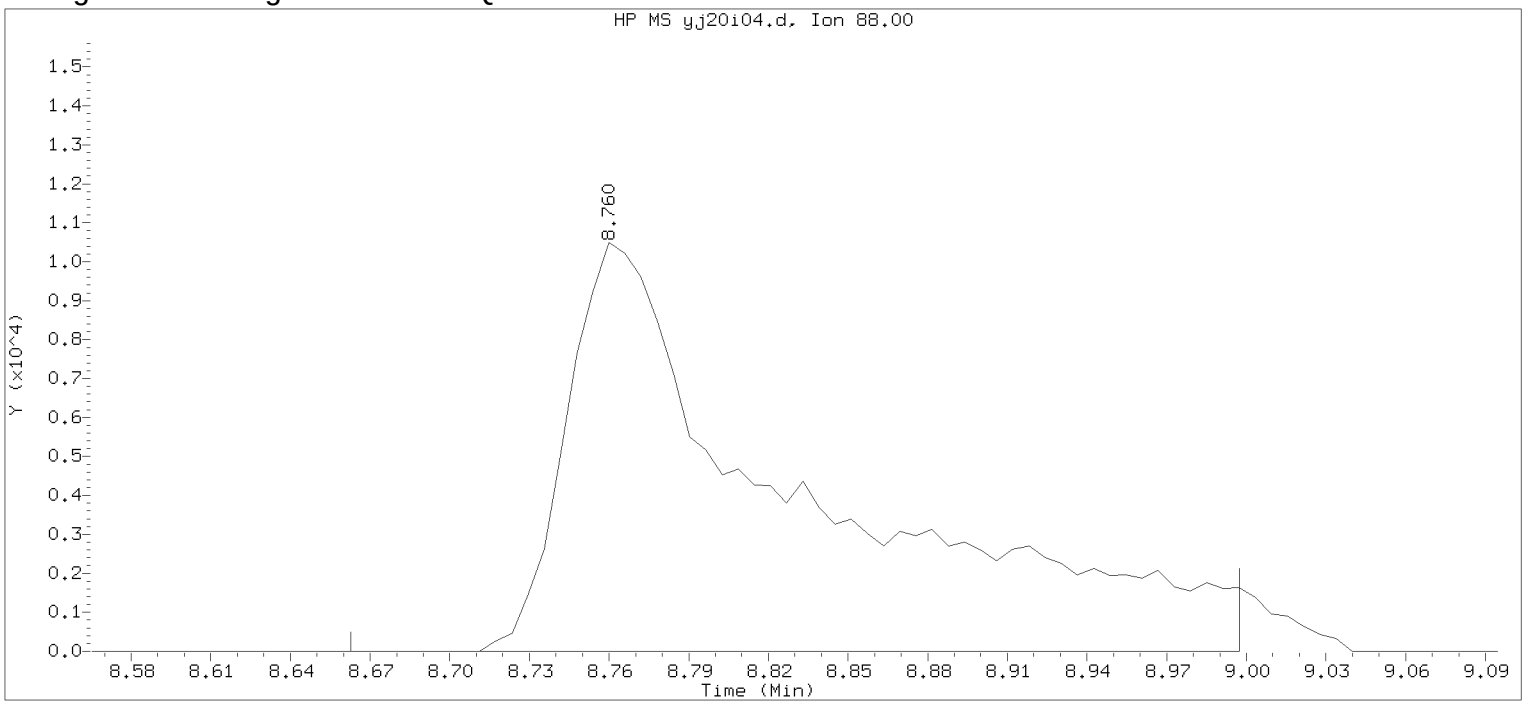
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

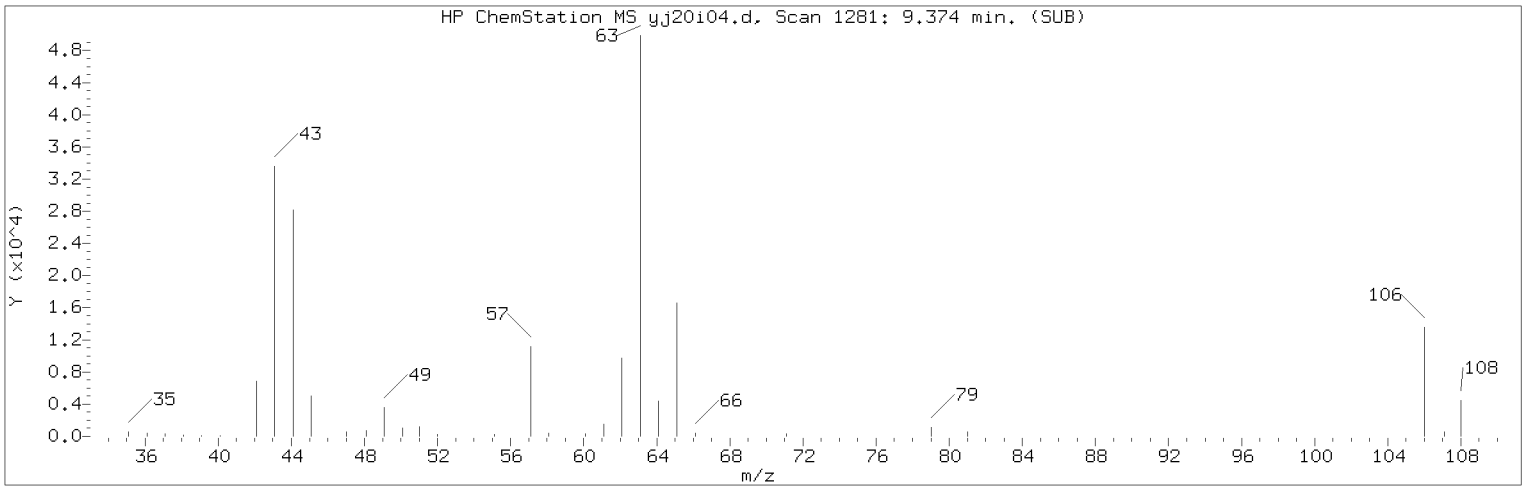
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

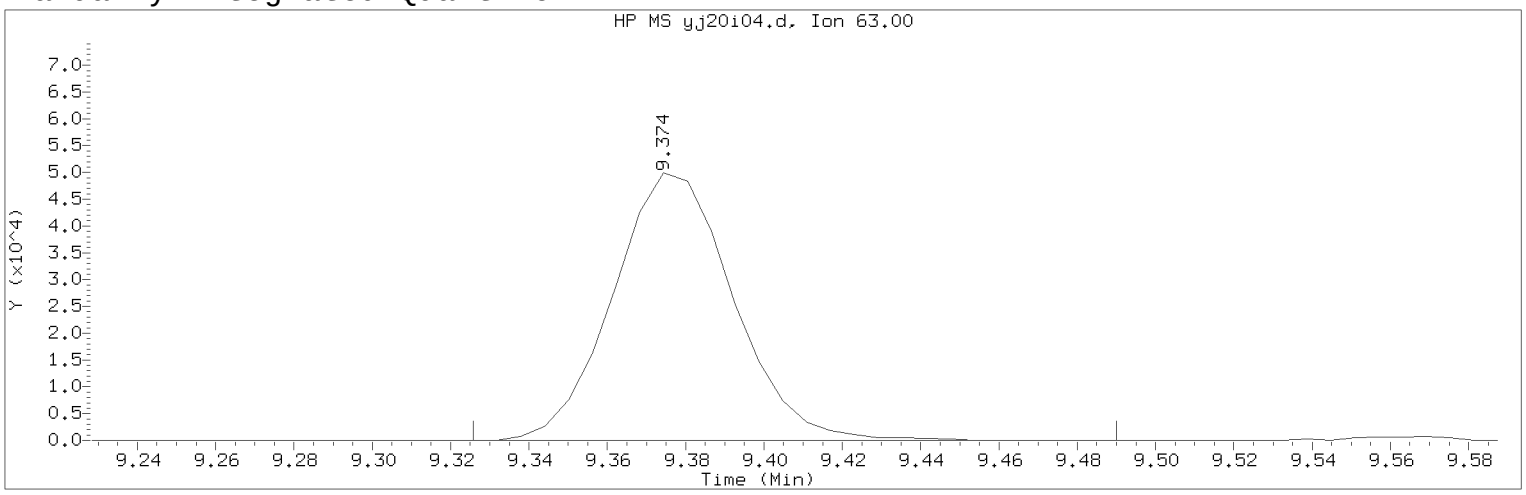
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1180
Retention Time (minutes): 8.760
Quant Ion : 88.00
Area : 63557
On-column Amount (ng) : 472.6999
Integration start scan : 1163 Integration stop scan: 1218
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

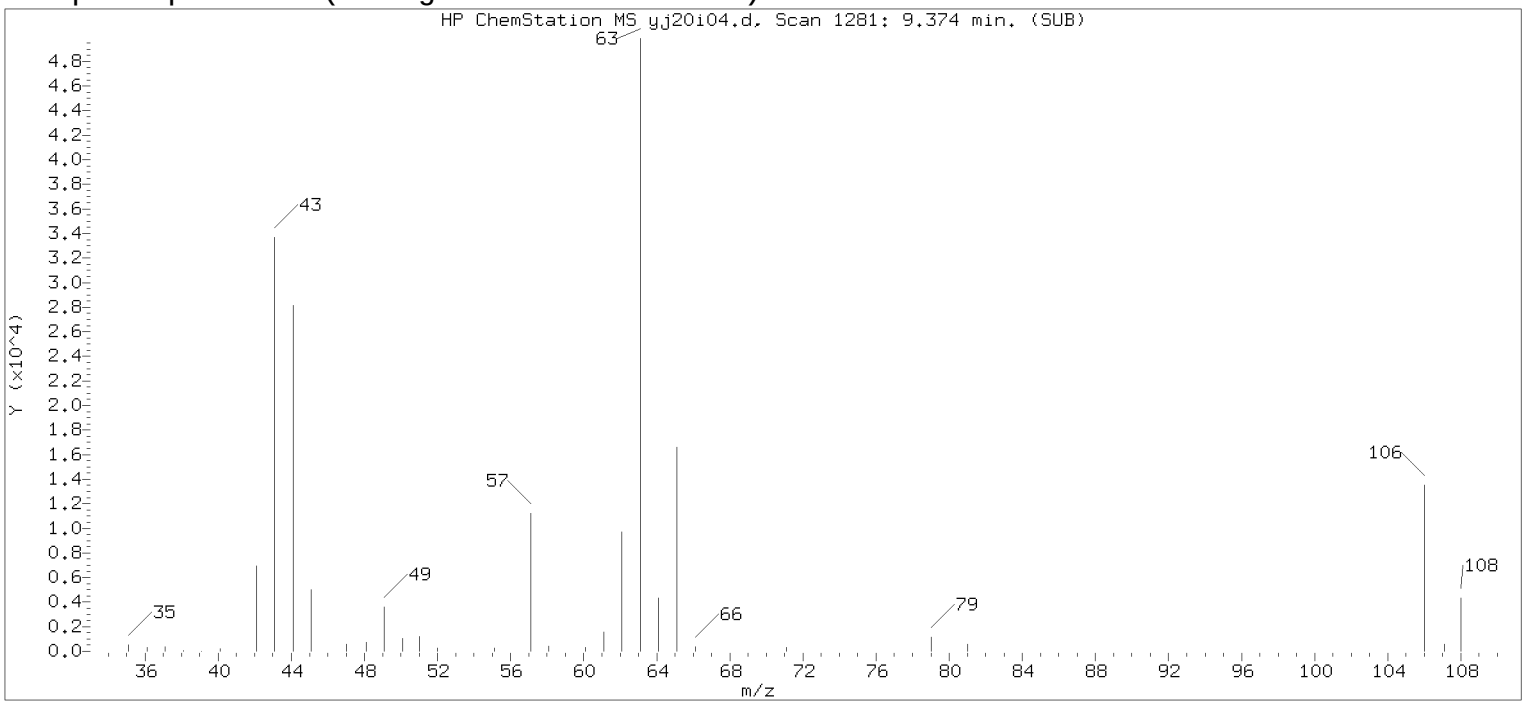
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1281
Retention Time (minutes): 9.374
Quant Ion : 63.00
Area (flag) : 106215M
On-Column Amount (ng) : 19.6432
Integration start scan : 1272 Integration stop scan: 1299
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

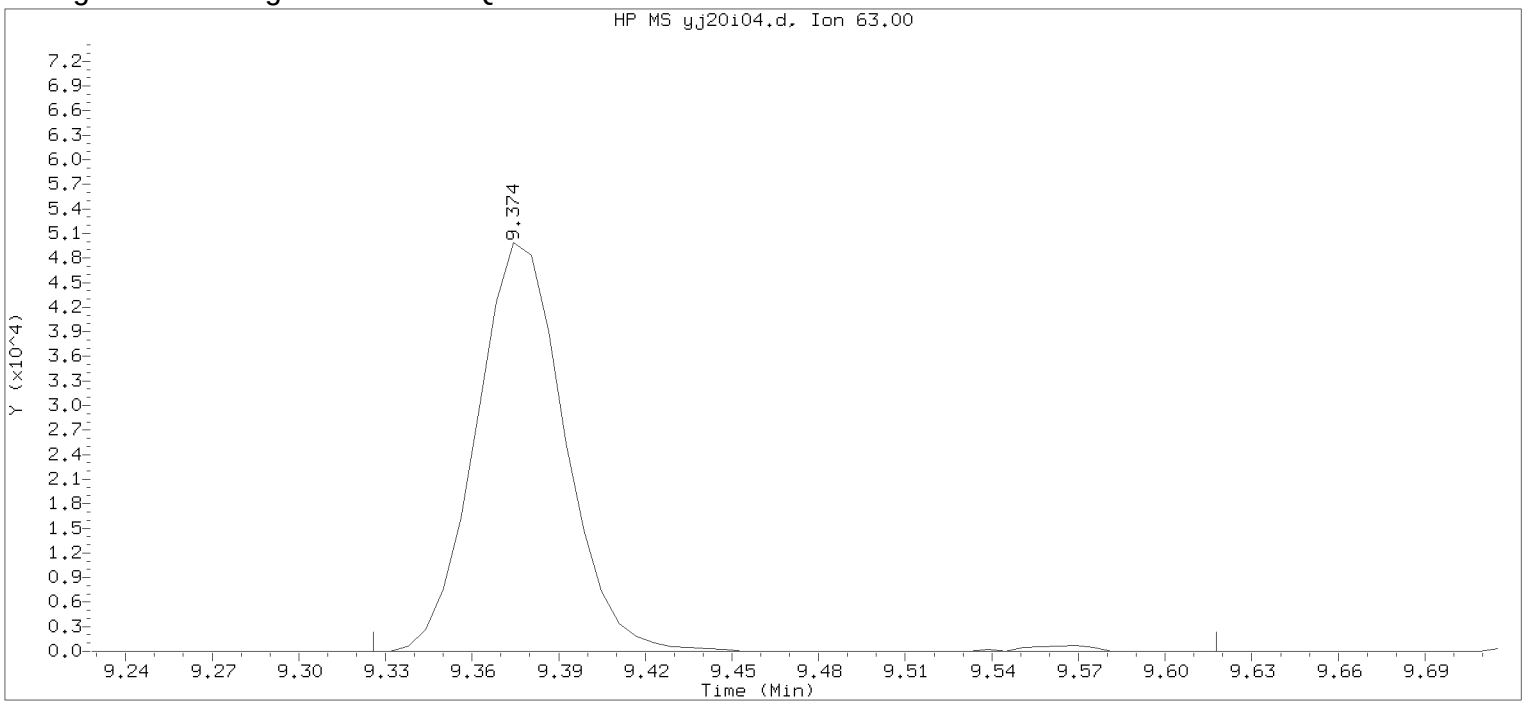
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

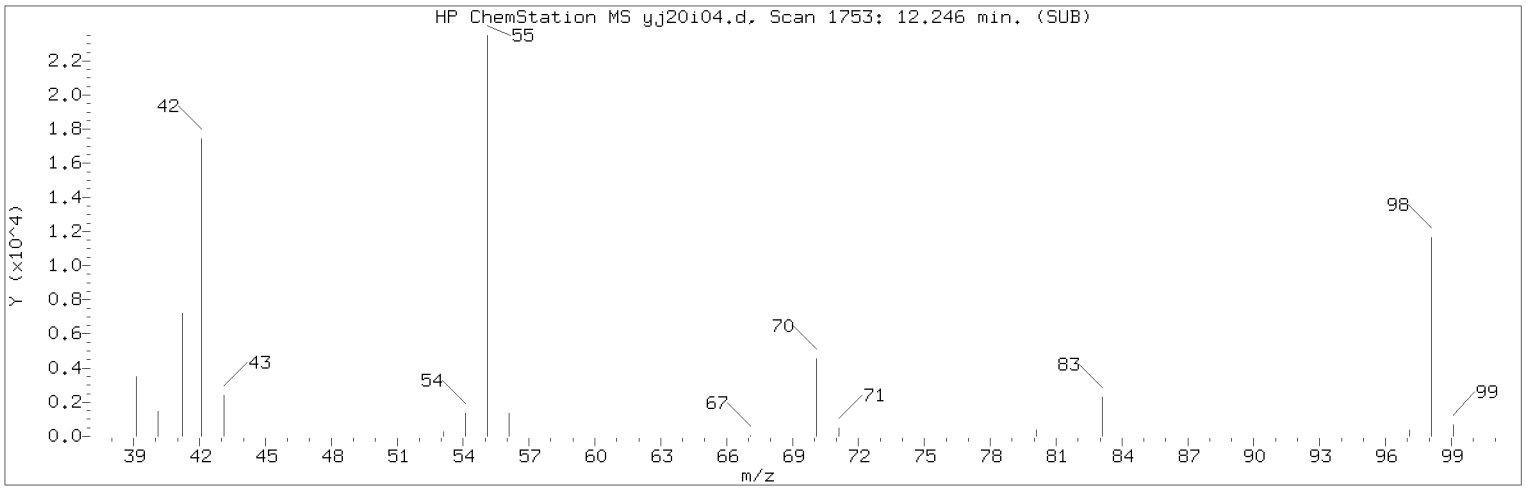
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

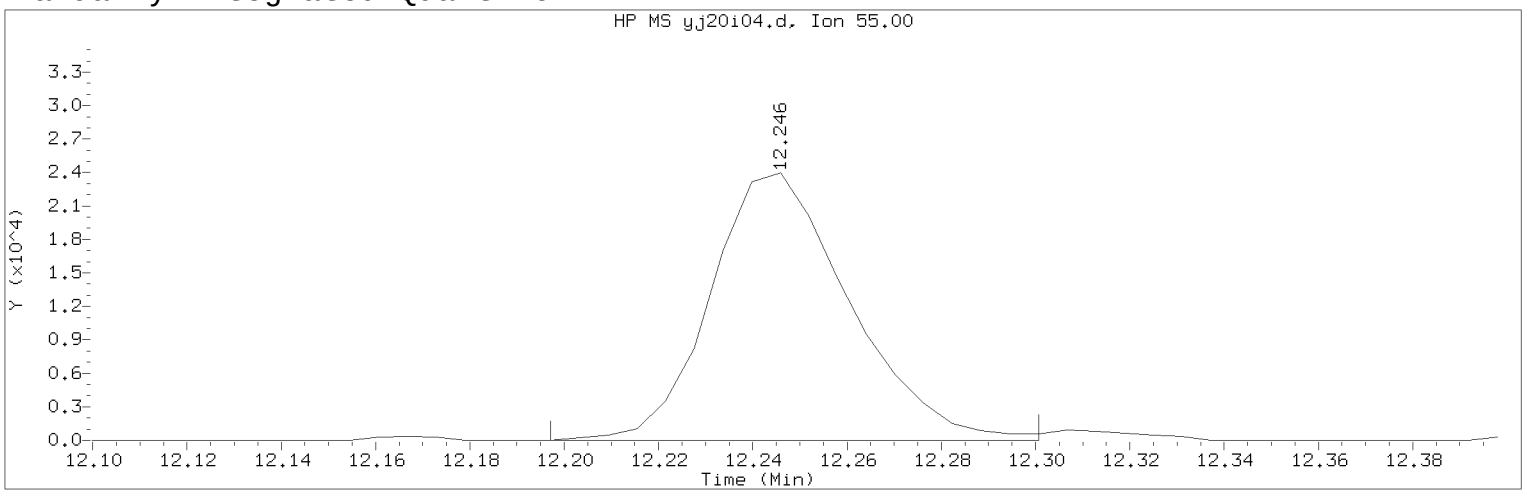
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1281
Retention Time (minutes): 9.374
Quant Ion : 63.00
Area : 107337
On-column Amount (ng) : 19.4472
Integration start scan : 1272 Integration stop scan: 1320
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

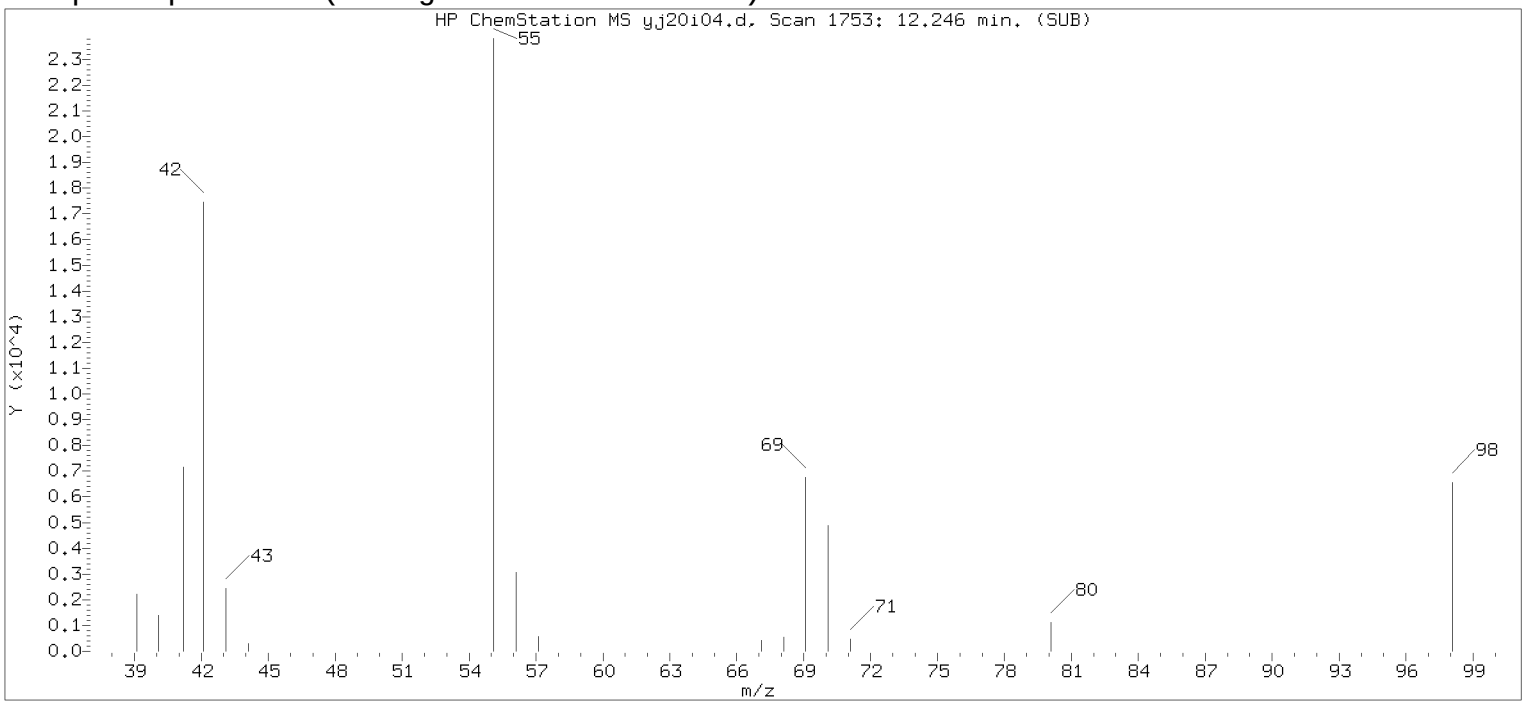
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 49041M
On-Column Amount (ng) : 485.1144
Integration start scan : 1744 Integration stop scan: 1761
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

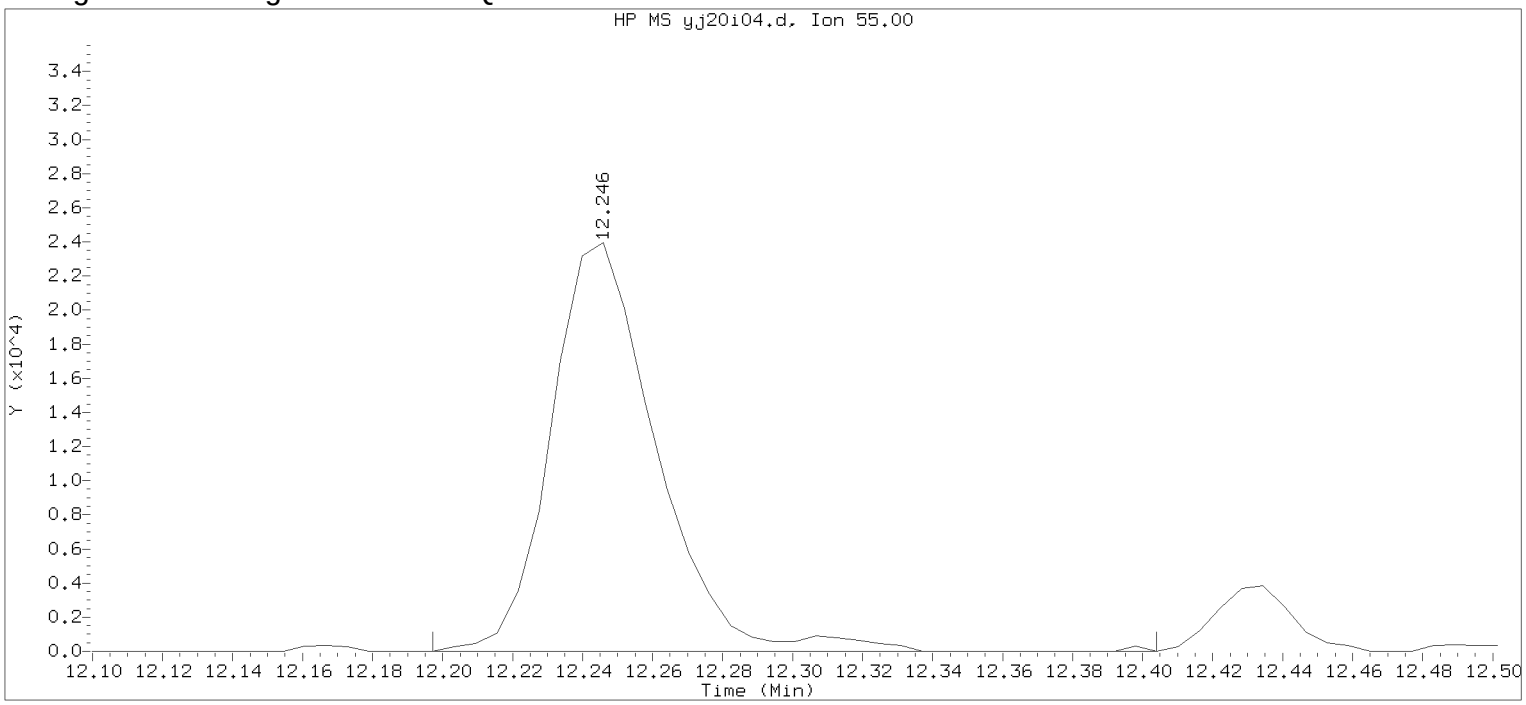
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

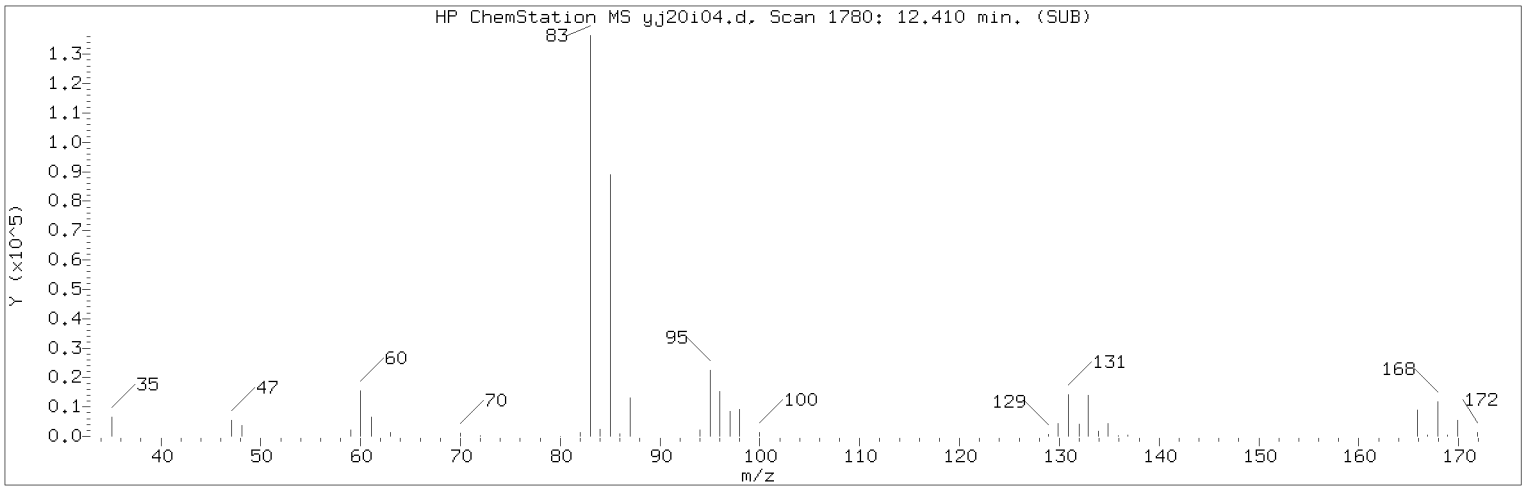
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

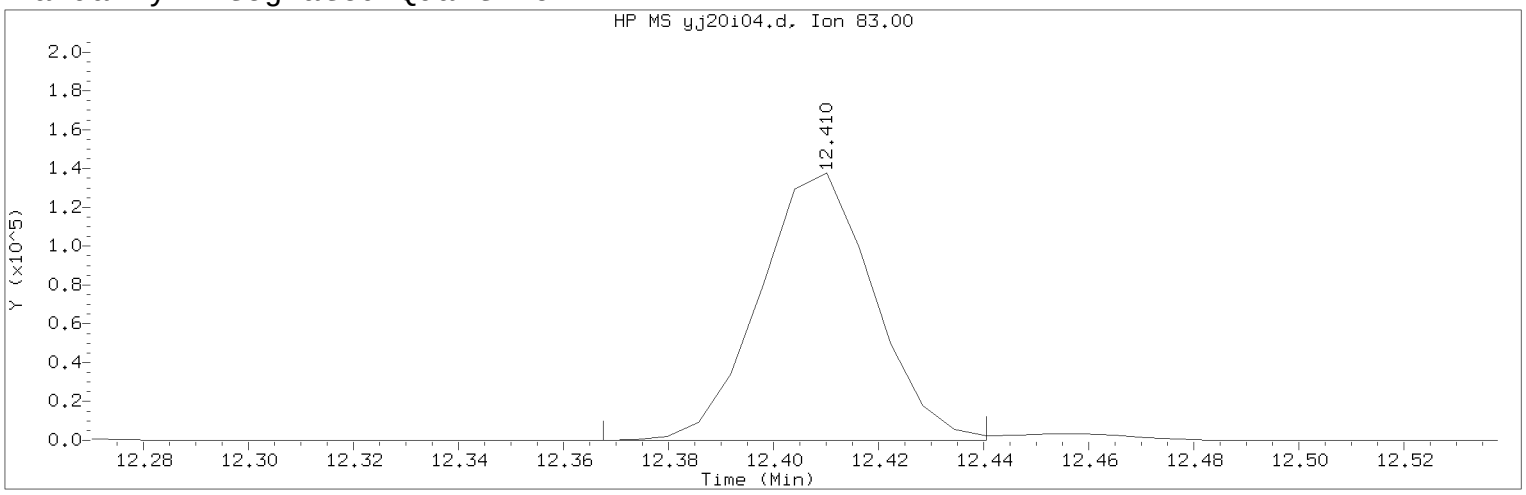
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 50299
On-column Amount (ng) : 474.0312
Integration start scan : 1744 Integration stop scan: 1778
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

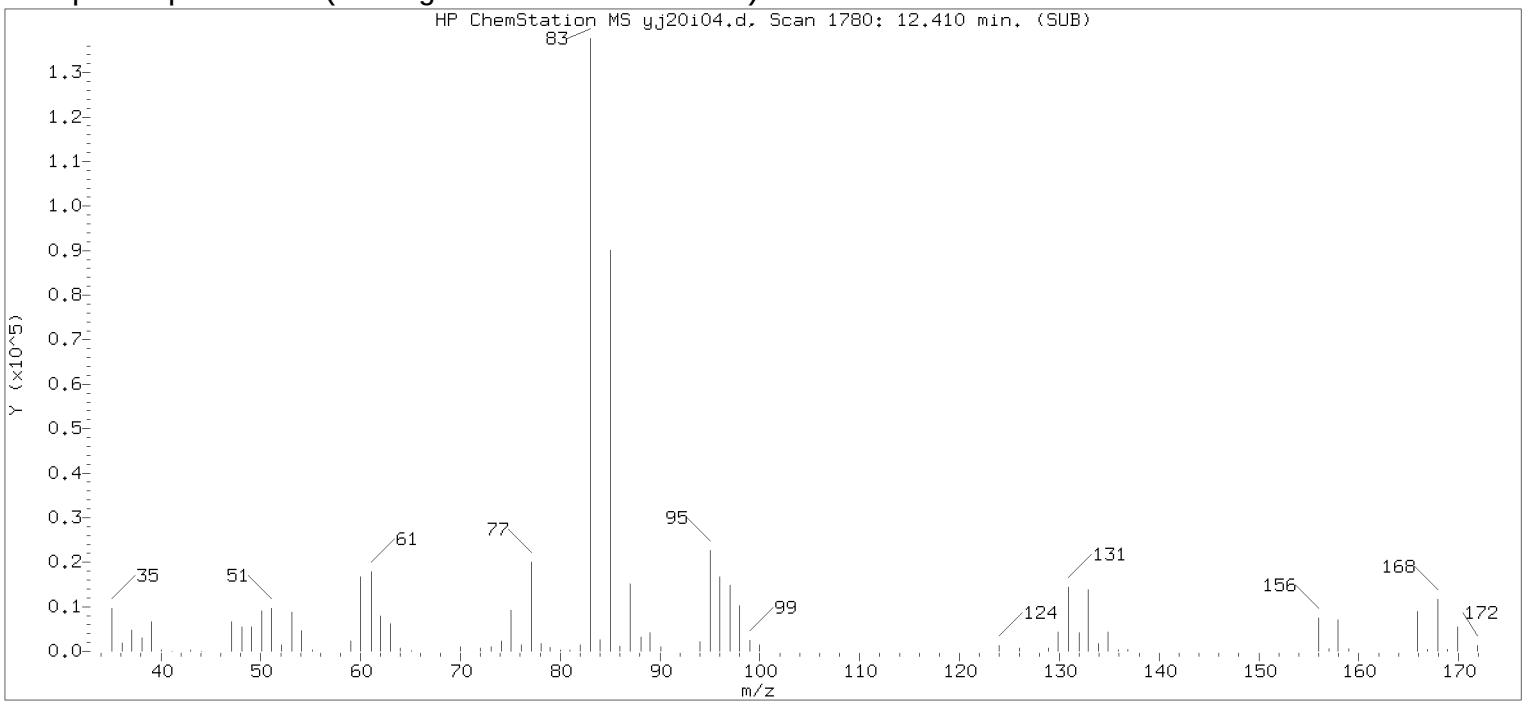
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 207005M
On-Column Amount (ng) : 19.9657
Integration start scan : 1772 Integration stop scan: 1784
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

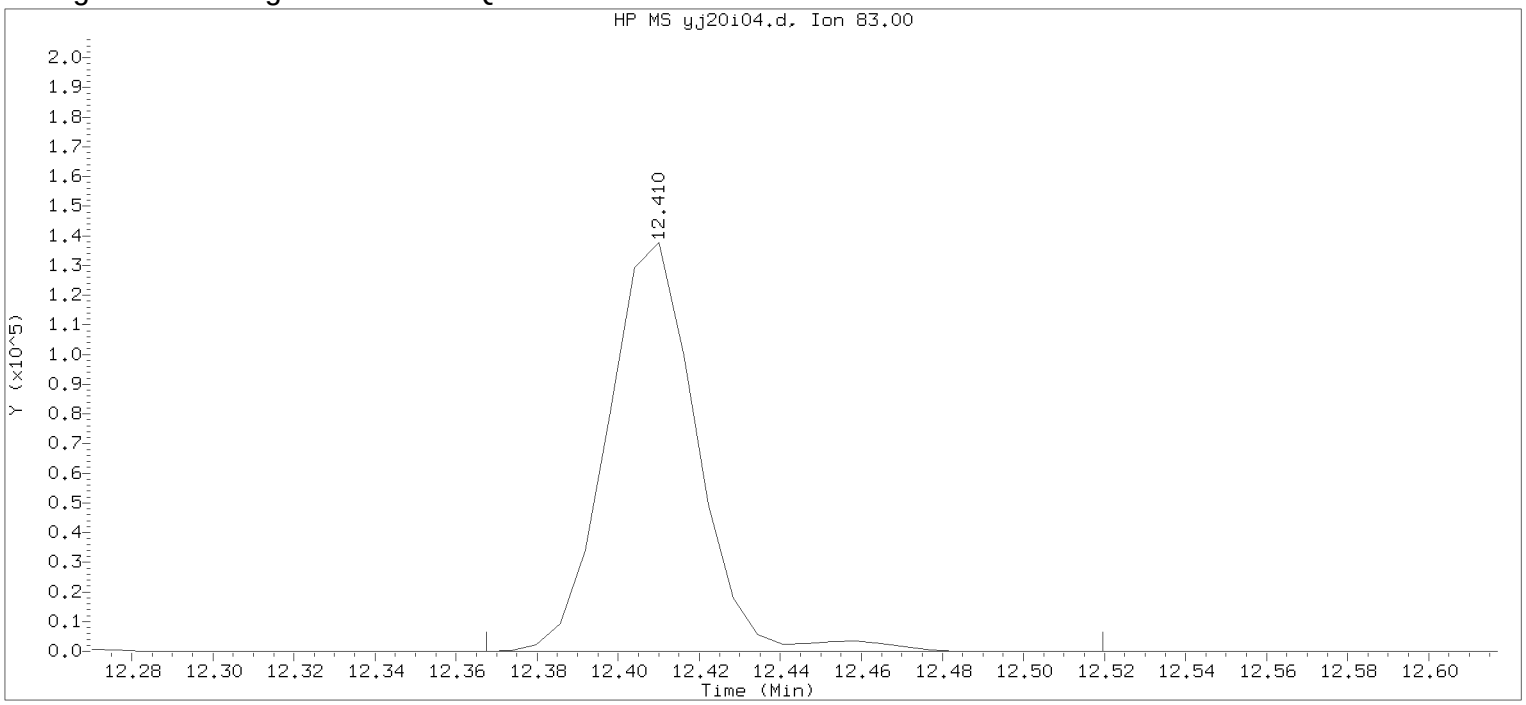
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

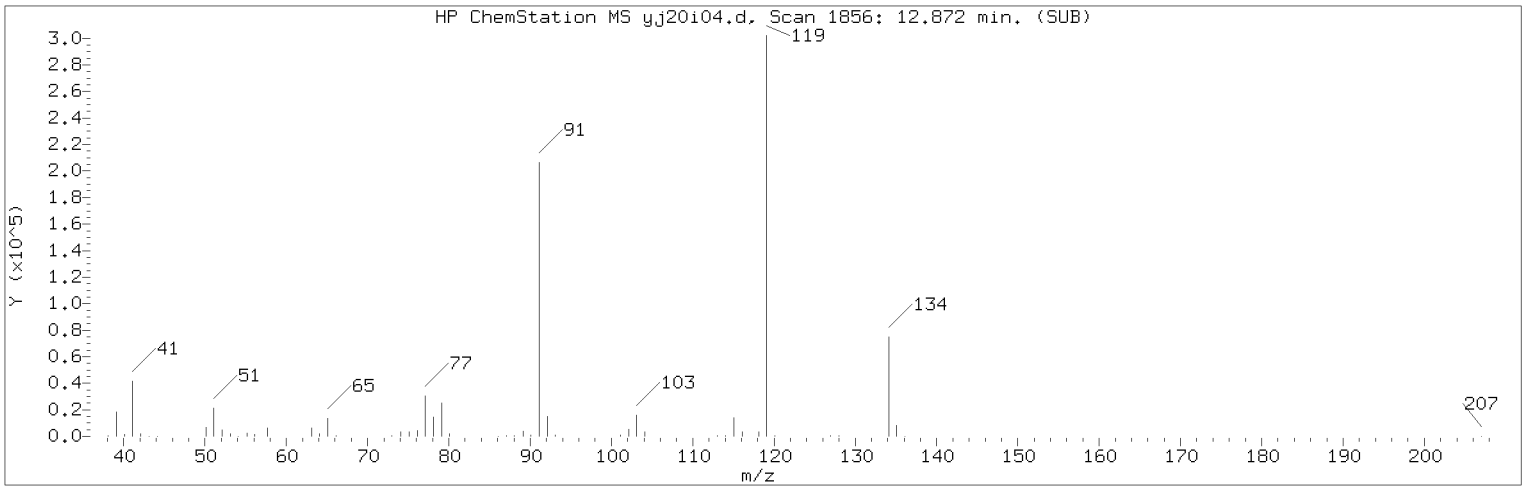
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

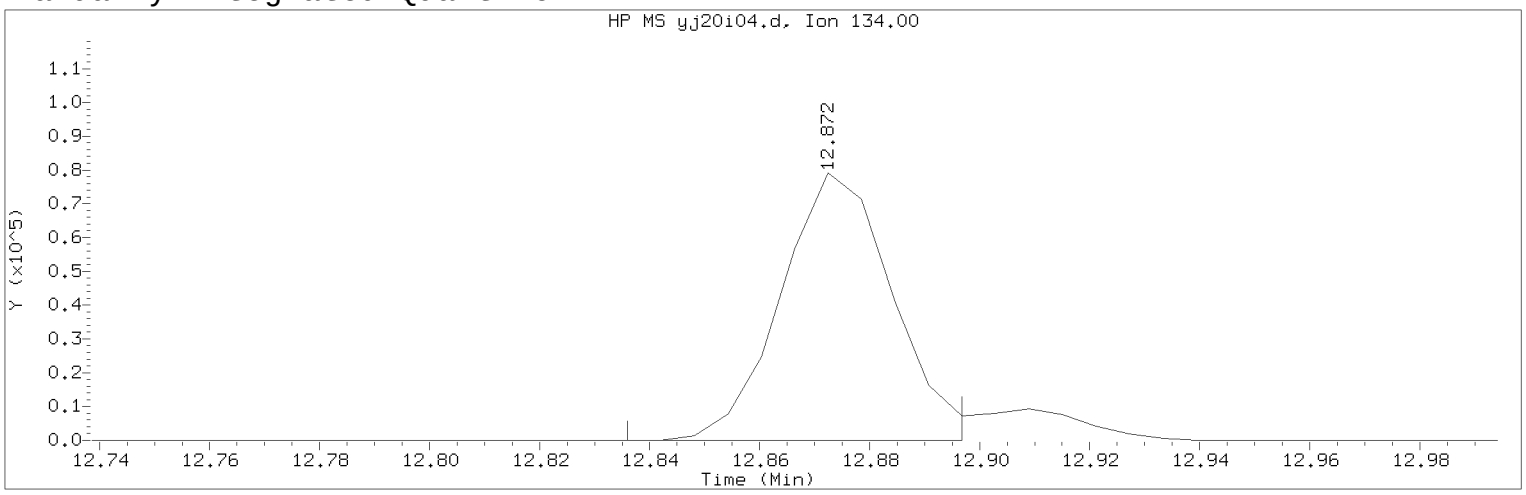
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 212103
On-column Amount (ng) : 19.9658
Integration start scan : 1772 Integration stop scan: 1797
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENbwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

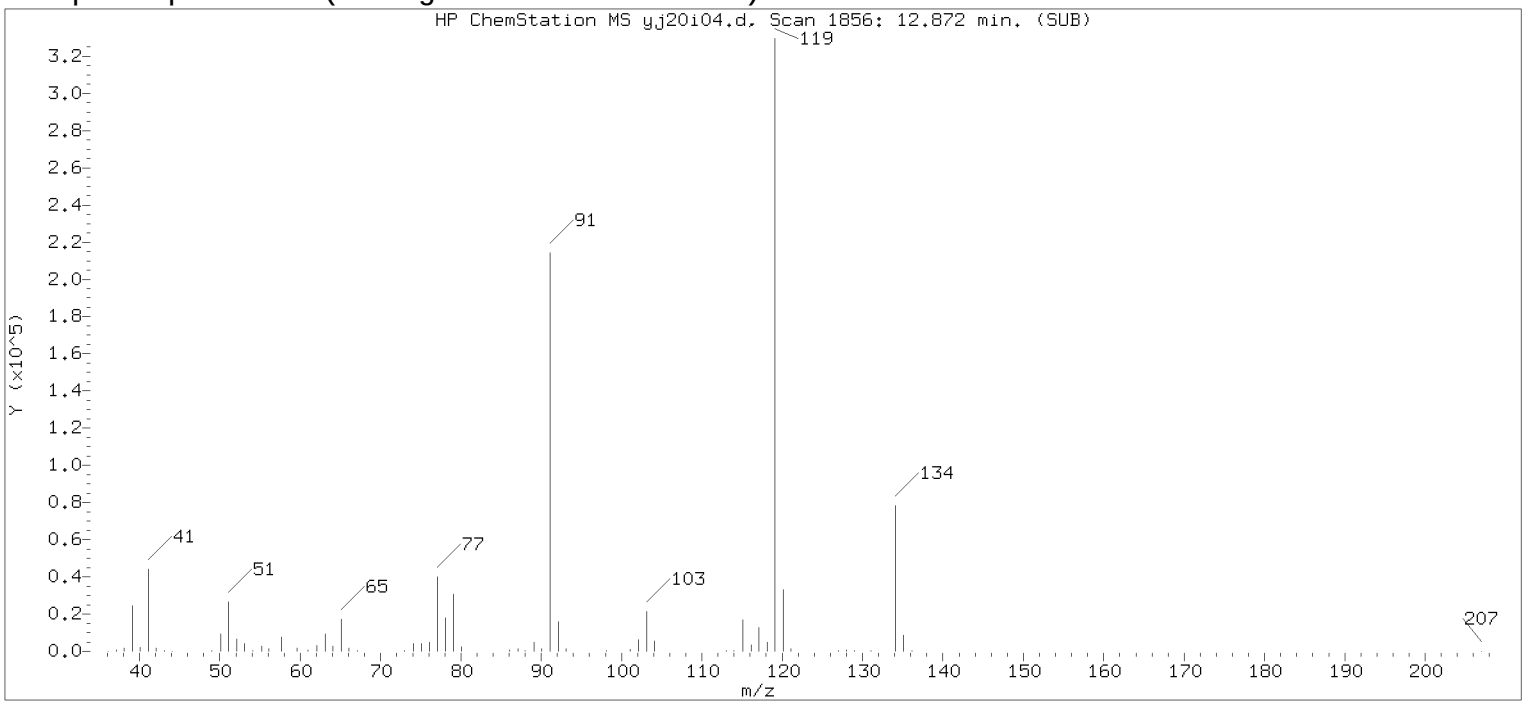
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 111423M
On-Column Amount (ng) : 19.7493
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

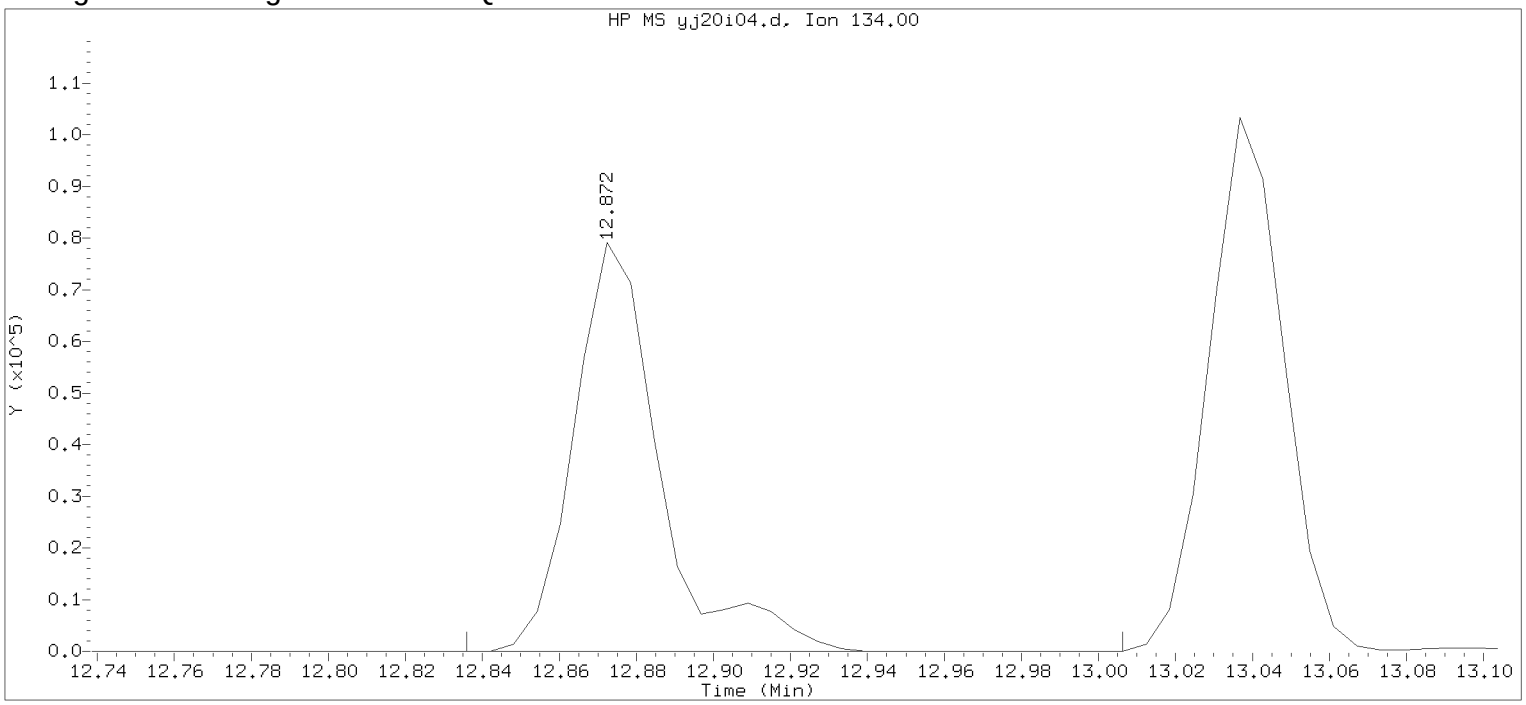
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



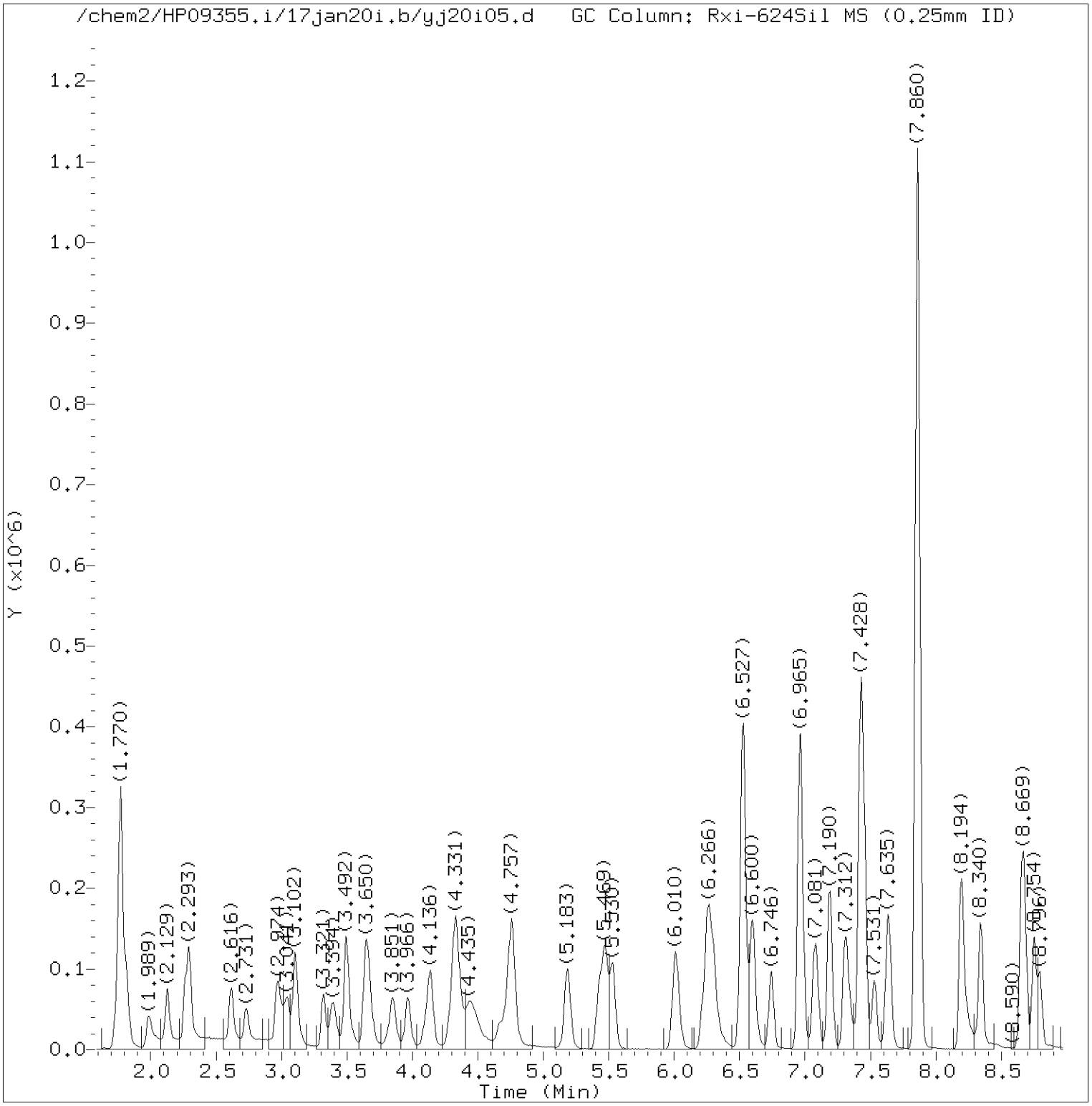

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 122886
On-column Amount (ng) : 20.1210
Integration start scan : 1849 Integration stop scan: 1877
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231




Total Ion Chromatogram (TIC)

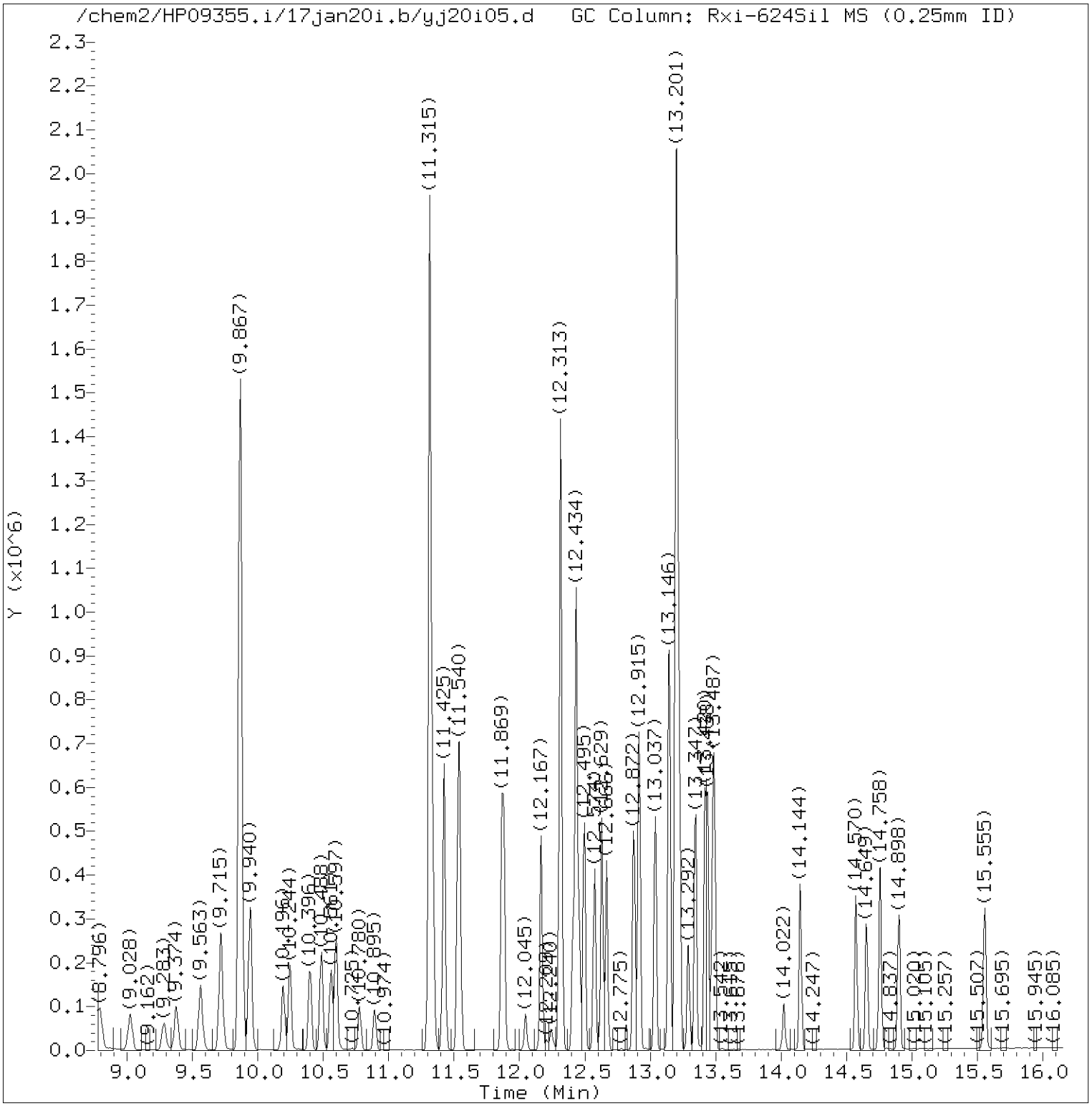
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 84479 | 10.936 |
| 4) Chloromethane | (2) | 2.129 | 50 | 86546 | 10.674 |
| 6) Vinyl Chloride | (2) | 2.263 | 62 | 81873 | 10.696 |
| 5) 1,3-Butadiene | (2) | 2.293 | 39 | 71352 | 10.750 |
| 8) Bromomethane | (2) | 2.616 | 94 | 59239 | 11.055 |
| 9) Chloroethane | (2) | 2.731 | 64 | 47989 | 10.946 |
| 10) Dichlorofluoromethane | (2) | 2.968 | 67 | 96483 | 9.717 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 97981 | 10.728 |
| 11) n-Pentane | (2) | 3.102 | 43 | 101025 | 10.260 |
| 14) Ethyl ether | (2) | 3.321 | 59 | 52115 | 9.624 |
| 15) Freon 123a | (2) | 3.394 | 67 | 58530 | 9.465 |
| 16) Acrolein | (1) | 3.492 | 56 | 203157 | 95.141 |
| 17) 1,1-Dichloroethene | (2) | 3.644 | 96 | 45217 | 9.832 |
| 17) 1,1-Dichloroethene | (2) | 3.638 | 63 | 23903 | 9.971 |
| 19) Freon 113 | (2) | 3.662 | 101 | 44915 | 9.830 |
| 18) Acetone | (1) | 3.668 | 58 | 20242 | 19.500 |
| 21) 2-Propanol | (1) | 3.826 | 45 | 81380 | 103.613 |
| 22) Methyl Iodide | (2) | 3.851 | 142 | 84539 | 9.749 |
| 23) Carbon Disulfide | (2) | 3.966 | 76 | 131618 | 9.414 |
| 27) Methyl Acetate | (2) | 4.100 | 43 | 83672 | 9.700 |
| 25) Allyl Chloride | (2) | 4.136 | 41 | 87269 | 9.289 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.313 | 65 | 346736 | 250.000 |
| 28) Methylene Chloride | (2) | 4.331 | 84 | 56122 | 9.874 |
| 30) t-Butyl alcohol | (1) | 4.447 | 59 | 159696 | 103.659 |
| 31) Acrylonitrile | (2) | 4.666 | 53 | 40339 | 9.744 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.739 | 73 | 185314 | 9.889 |
| 32) trans-1,2-Dichloroethene | (2) | 4.763 | 96 | 54109 | 9.766 |
| 34) n-Hexane | (2) | 5.189 | 57 | 83317 | 9.885 |
| 36) 1,1-Dichloroethane | (2) | 5.420 | 63 | 98646M | 9.918 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 195180 | 9.905 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 89047 | 9.745 |
| 40) Ethyl t-butyl ether | (2) | 6.010 | 59 | 183198 | 9.916 |
| 44) 2-Butanone | (2) | 6.217 | 43 | 125426 | 19.618 |
| 42) cis-1,2-Dichloroethene | (2) | 6.254 | 96 | 62728 | 9.902 |
| 45) 2,2-Dichloropropane | (2) | 6.272 | 77 | 77157 | 9.741 |
| 47) Propionitrile | (1) | 6.302 | 54 | 175848 | 97.395 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 215486 | 48.274 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 31460 | 9.638 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d  Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45  Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 30735 | 18.854 |
| 51) Chloroform | (2) | 6.746 | 83 | 98868 | 9.856 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 116837 | 19.668 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 113 | 272459 | 49.490 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 111 | 279195 | 49.690 |
| 53) 1,1,1-Trichloroethane | (2) | 6.978 | 97 | 82323 | 9.719 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 99861 | 10.017 |
| 54) Cyclohexane | (2) | 7.081 | 84 | 82567 | 10.084 |
| 54) Cyclohexane | (2) | 7.081 | 69 | 30363 | 10.026 |
| 56) Carbon Tetrachloride | (2) | 7.190 | 117 | 67625 | 9.483 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 81102 | 9.952 |
| 58) Isobutyl Alcohol | (1) | 7.306 | 41 | 143233 | 248.255 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 72545 | 50.441 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 367200 | 50.713 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 104 | 45552 | 49.882 |
| 60) Benzene | (2) | 7.452 | 78 | 238512 | 9.963 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 87848 | 10.116 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 98 | 7604 | 9.835 |
| 65) t-Amyl methyl ether | (2) | 7.635 | 73 | 184032 | 9.938 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1177225 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 100952 | 10.173 |
| 69) n-Butanol | (1) | 8.194 | 56 | 222560M | 474.232 |
| 71) Trichloroethene | (2) | 8.340 | 95 | 61907 | 9.870 |
| 72) Methylcyclohexane | (2) | 8.657 | 83 | 104580 | 9.639 |
| 72) Methylcyclohexane | (2) | 8.657 | 98 | 46963 | 9.580 |
| 73) 1,2-Dichloropropane | (2) | 8.681 | 63 | 61904 | 9.740 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 64353 | 9.453 |
| 75) 1,4-Dioxane | (1) | 8.766 | 88 | 30475M | 239.630 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 40017 | 9.731 |
| 78) Bromodichloromethane | (2) | 9.028 | 83 | 66878 | 9.226 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 47711 | 17.145 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.381 | 63 | 51071M | 9.637 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 87456 | 9.176 |
| 82) 4-Methyl-2-pentanone | (2) | 9.715 | 43 | 220224 | 19.146 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1164292 | 50.784 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 749861 | 50.538 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 167066 | 18.340 |
| 88) Toluene | (3) | 9.940 | 92 | 155665 | 10.067 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 79610 | 9.165 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 98985 | 9.446 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 58627 | 9.737 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 67857 | 9.862 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 102064 | 10.013 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 175181M | 19.118 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 51736 | 8.848 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 63767 | 9.736 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 888999 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 83326 | 9.888 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 176720 | 10.032 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 299011 | 10.025 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 51690 | 9.252 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 234830 | 19.736 |
| 108) Xylene (Total) | (3) | | 106 | 350677 | 29.665 |
| 107) o-Xylene | (3) | 11.869 | 106 | 115847 | 9.930 |
| 109) Styrene | (3) | 11.881 | 104 | 185270 | 9.567 |
| 110) Bromoform | (3) | 12.045 | 173 | 36283 | 8.351 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 294033 | 9.987 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 22070M | 232.844 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 433459 | 50.286 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 174 | 368617 | 50.182 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 97180M | 9.739 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 141811 | 45.580 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 78771 | 9.775 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 33108 | 9.925 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 353086 | 10.138 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 71688 | 10.003 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 254188 | 10.009 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 75072 | 9.869 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 53497M | 9.852 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 35528 | 8.653 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 261209 | 9.946 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 320037 | 10.025 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 150735 | 9.804 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 279773 | 9.864 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 486712 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 155990 | 9.857 |

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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 254590 | 9.651 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 155359 | 8.583 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 159110 | 9.632 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 162950 | 9.508 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 141411 | 9.905 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 145555 | 9.856 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 133864 | 9.658 |
| 141) Diethylbenzene (total) | (4) | | 100 | 455924 | 28.798 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 21877 | 9.174 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 108314 | 10.013 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 95910 | 9.702 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 48230 | 9.928 |
| 148) Naphthalene | (4) | 14.758 | 128 | 304809 | 9.634 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 88081 | 9.799 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 152093 | 8.926 |



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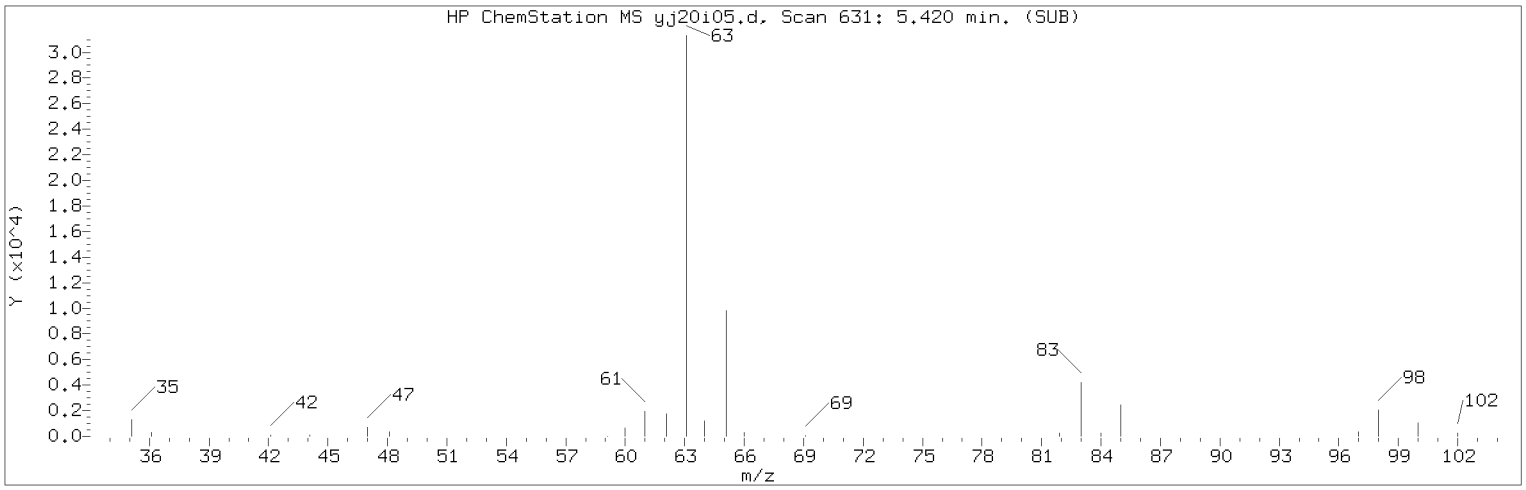
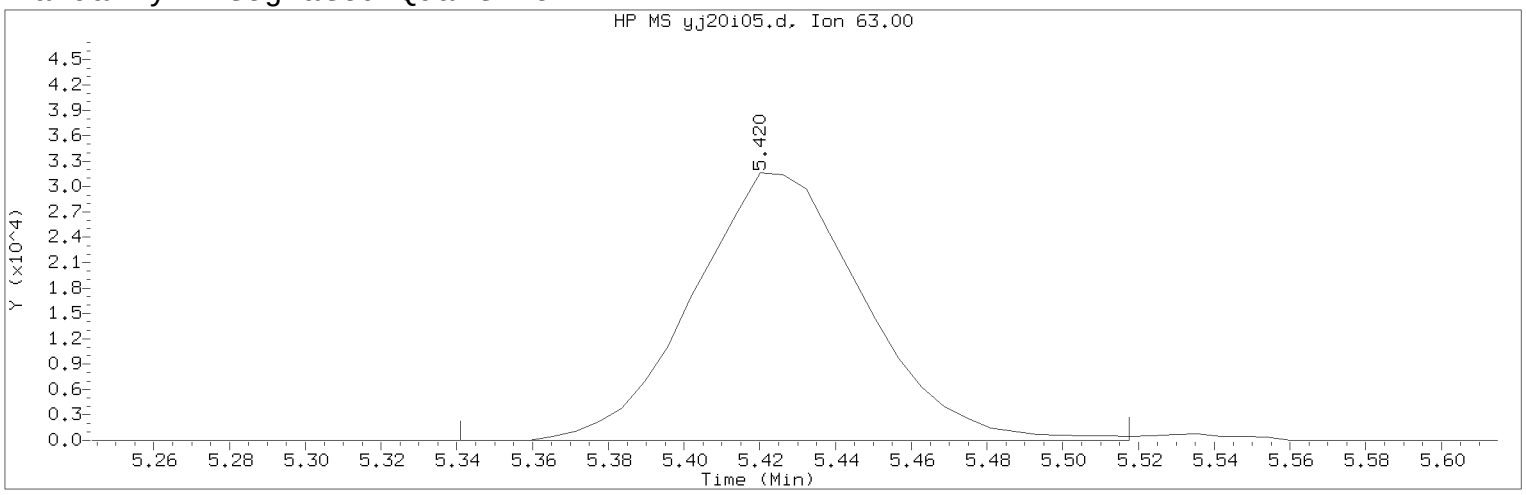
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

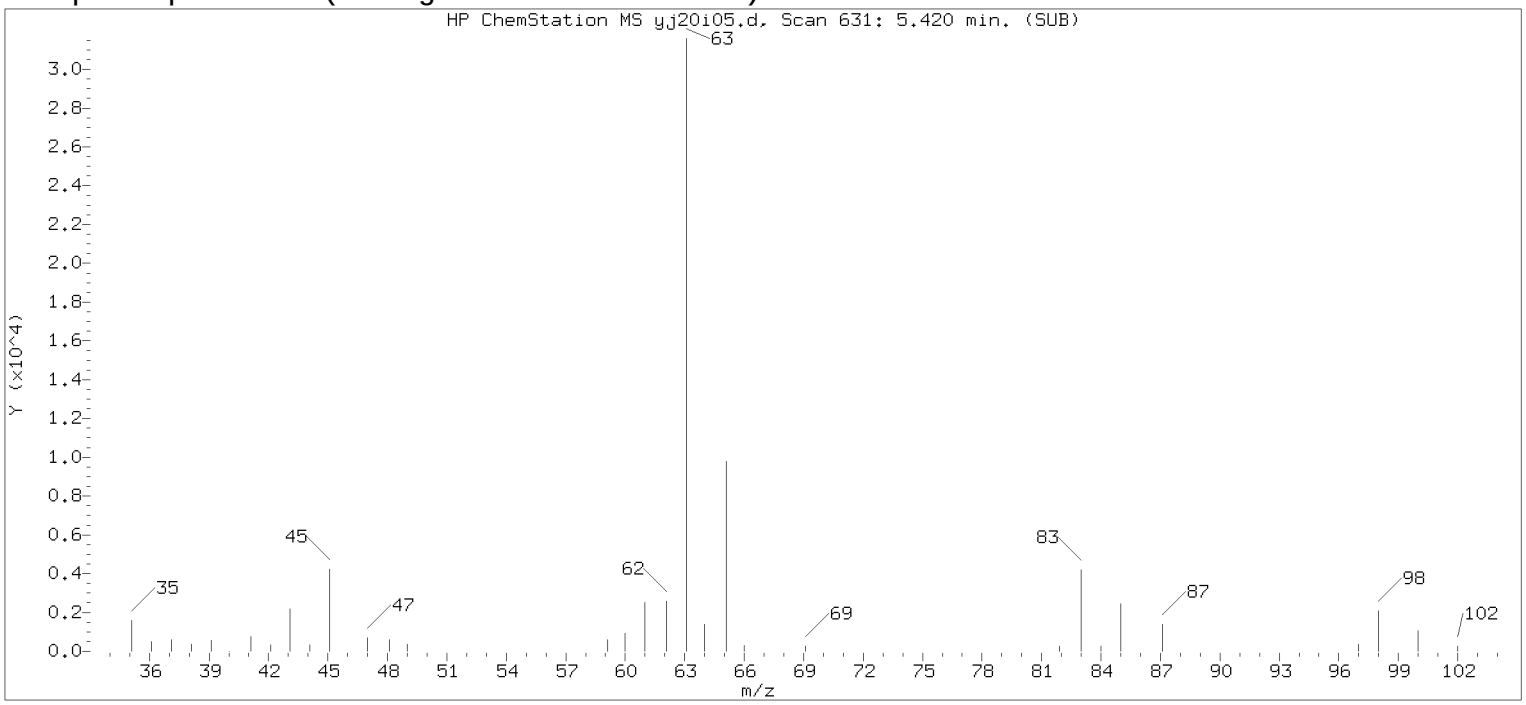
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 631
Retention Time (minutes): 5.420
Quant Ion : 63.00
Area (flag) : 98646M
On-Column Amount (ng) : 9.9184
Integration start scan : 617 Integration stop scan: 646
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

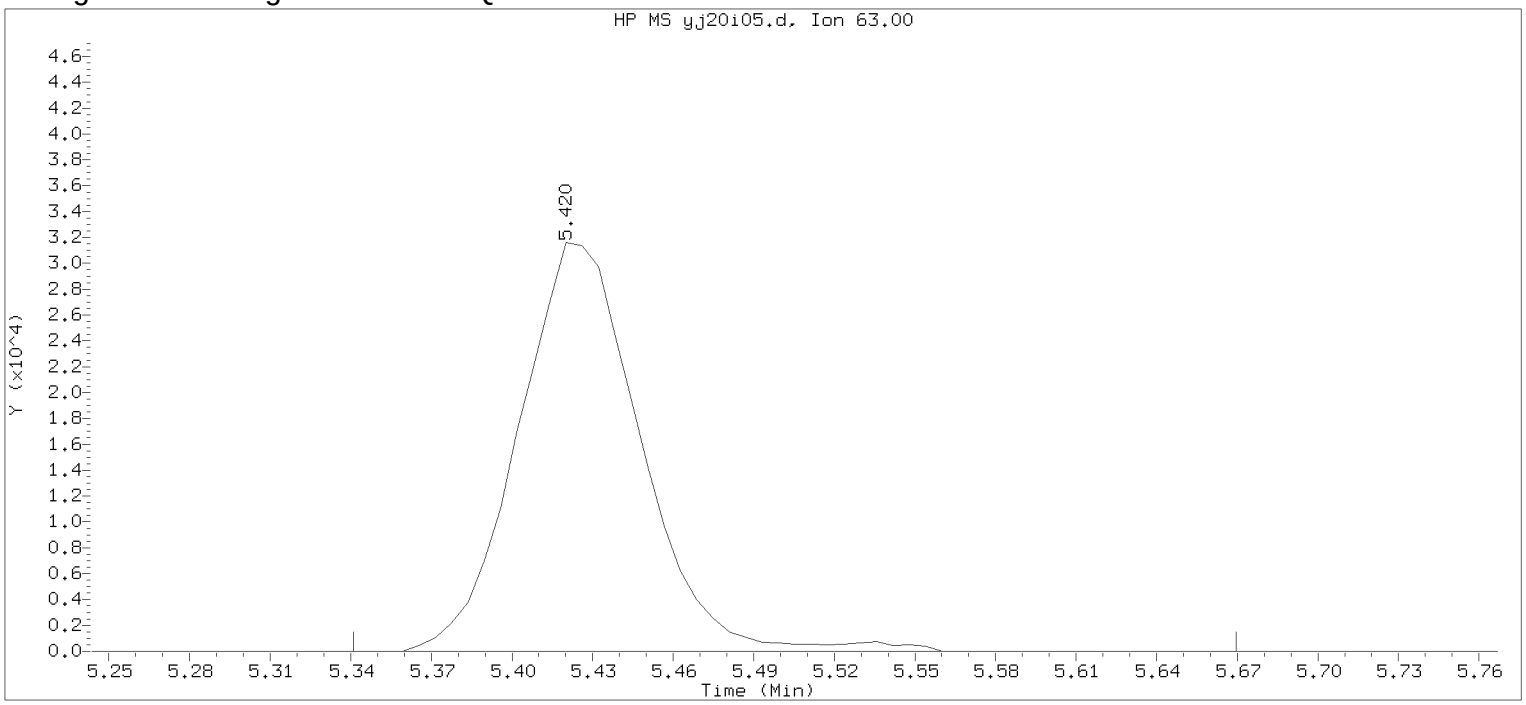
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

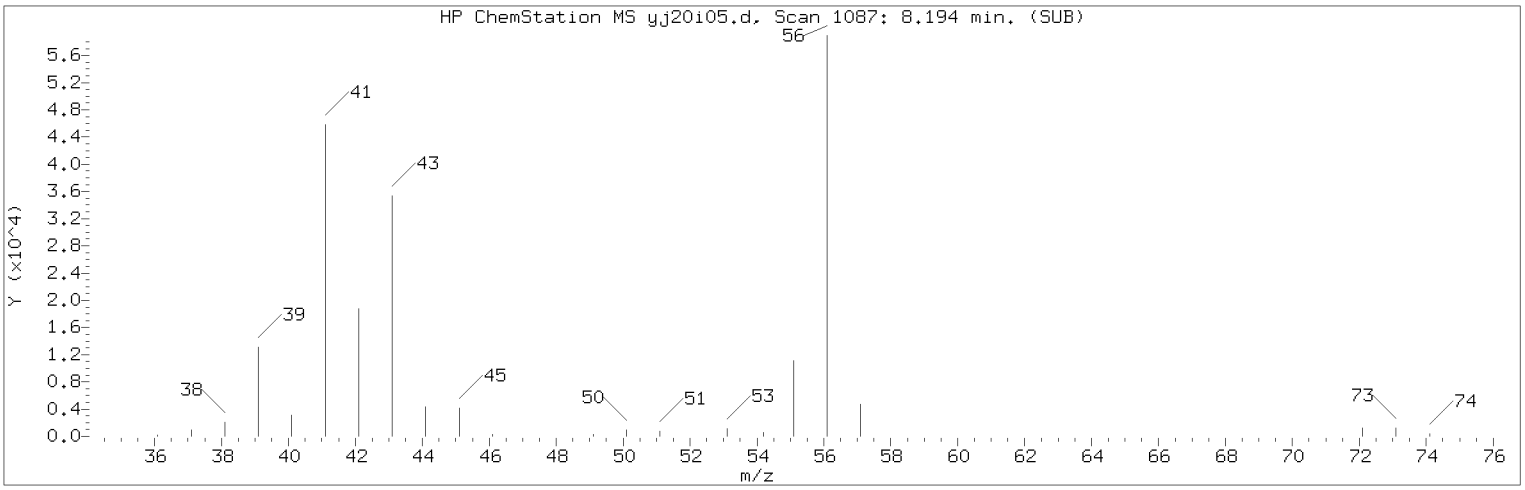
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

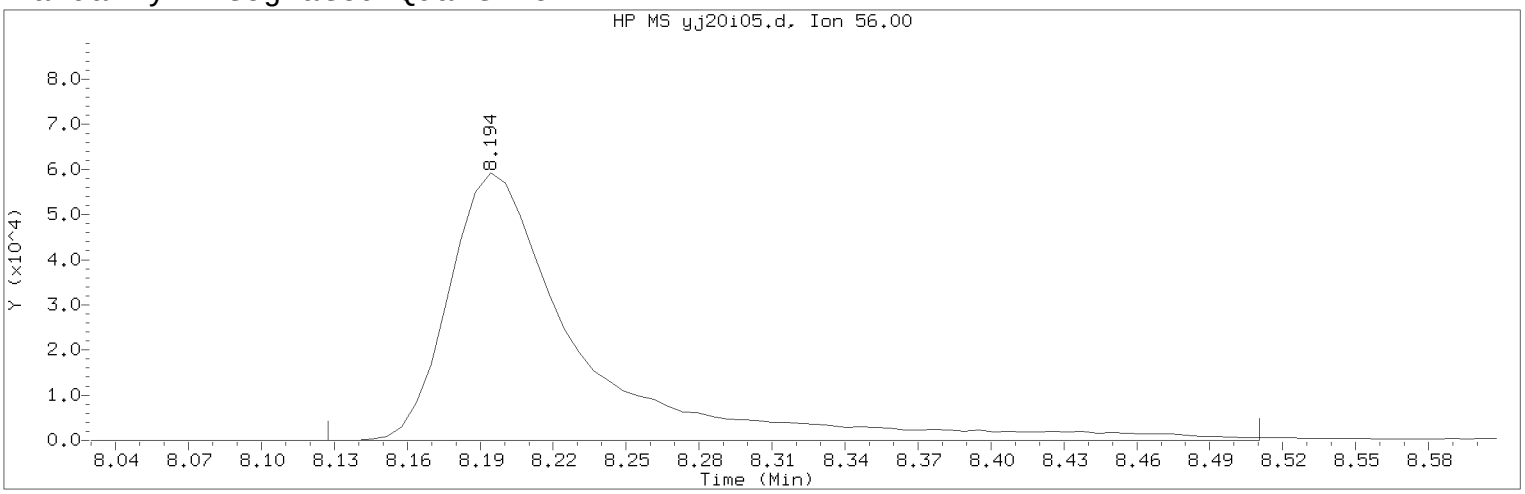
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 631
Retention Time (minutes): 5.420
Quant Ion : 63.00
Area : 99847
On-column Amount (ng) : 9.8514
Integration start scan : 617 Integration stop scan: 671
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

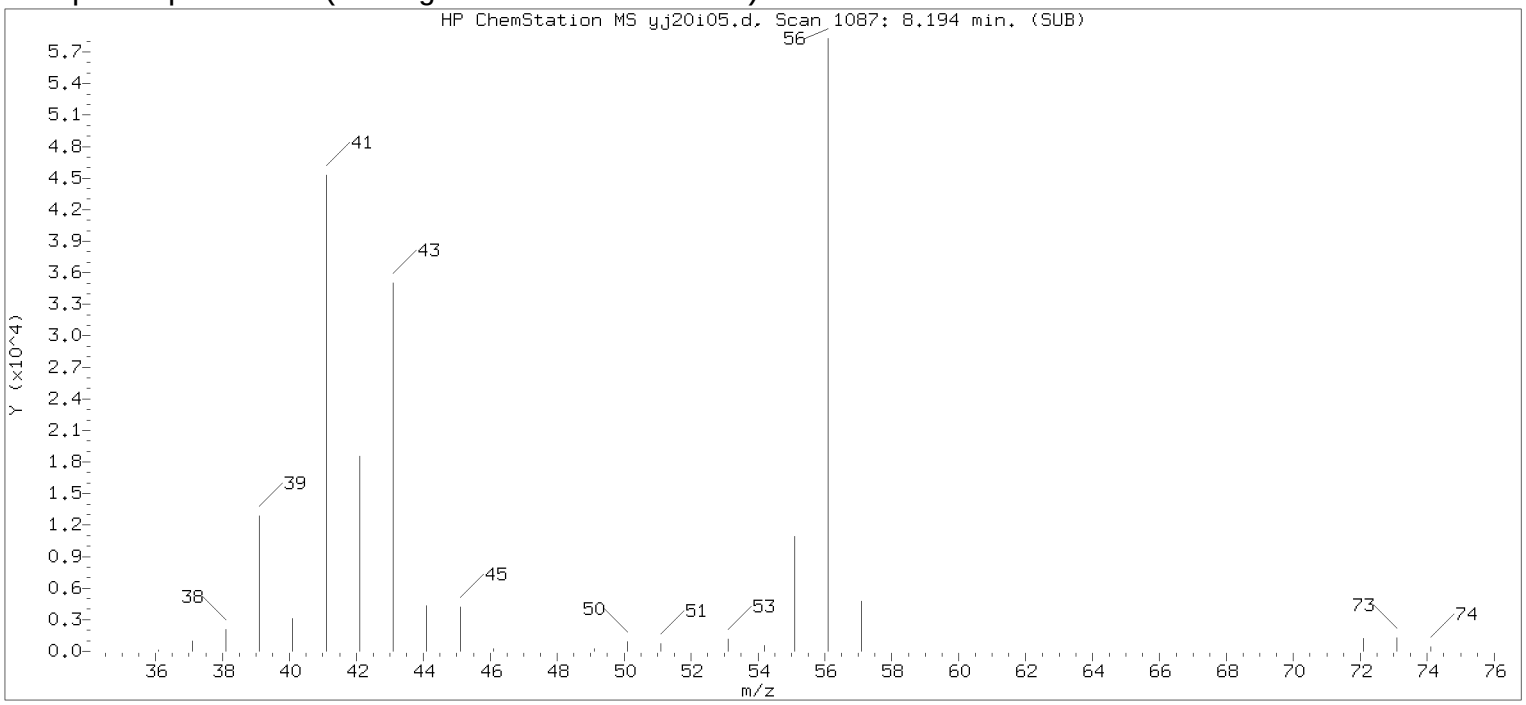
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area (flag) : 222560M
On-Column Amount (ng) : 474.2316
Integration start scan : 1075 Integration stop scan: 1138
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

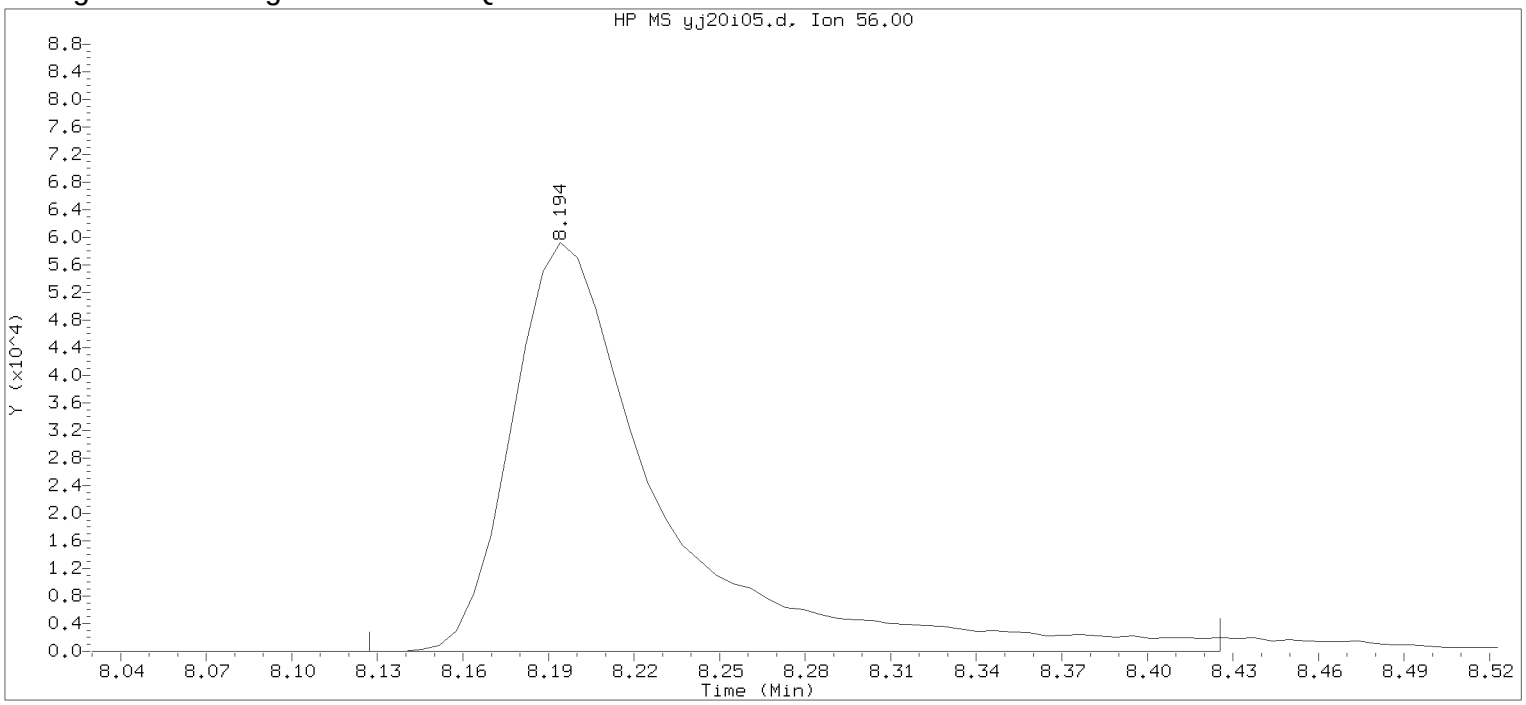
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

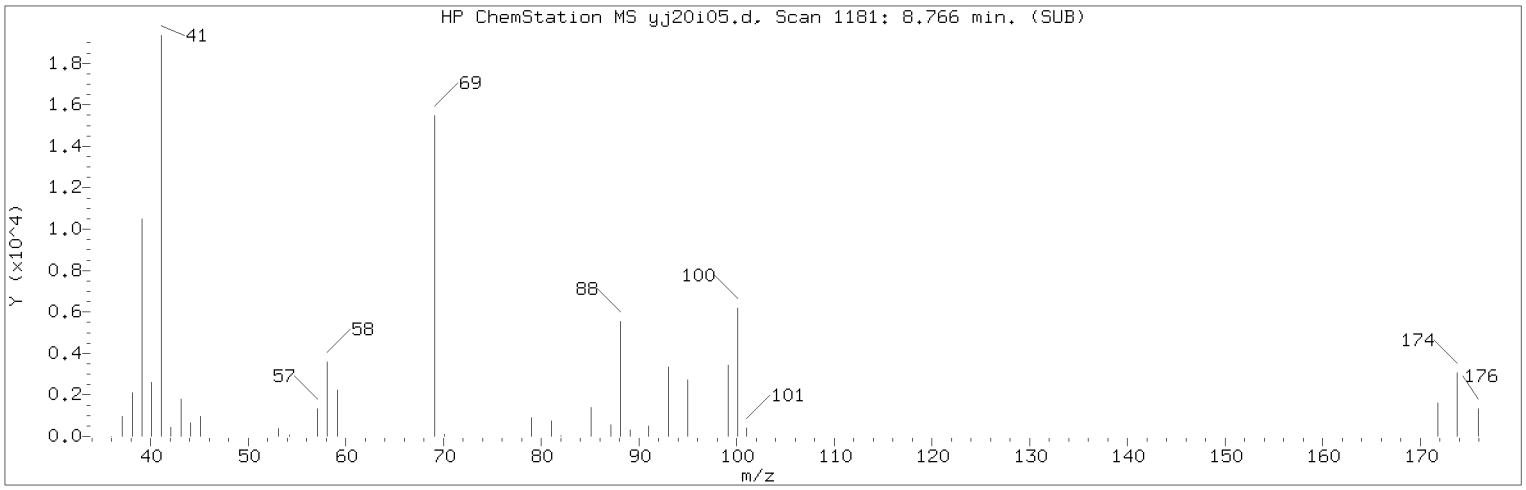
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

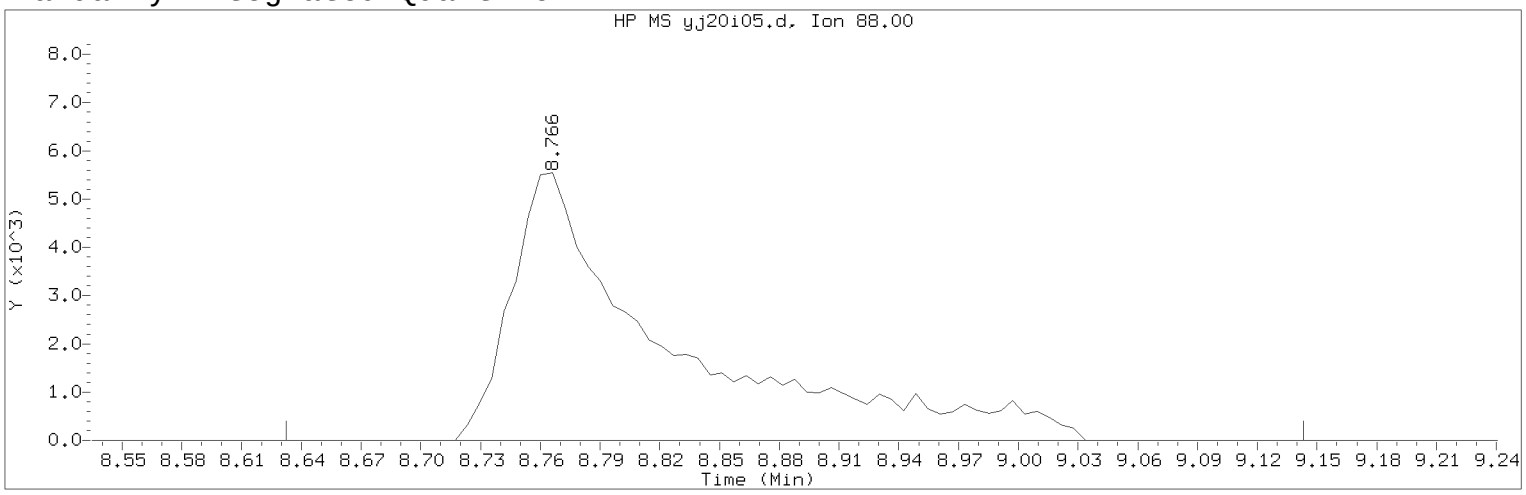
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area : 215791
On-column Amount (ng) : 464.4943
Integration start scan : 1075 Integration stop scan: 1124
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

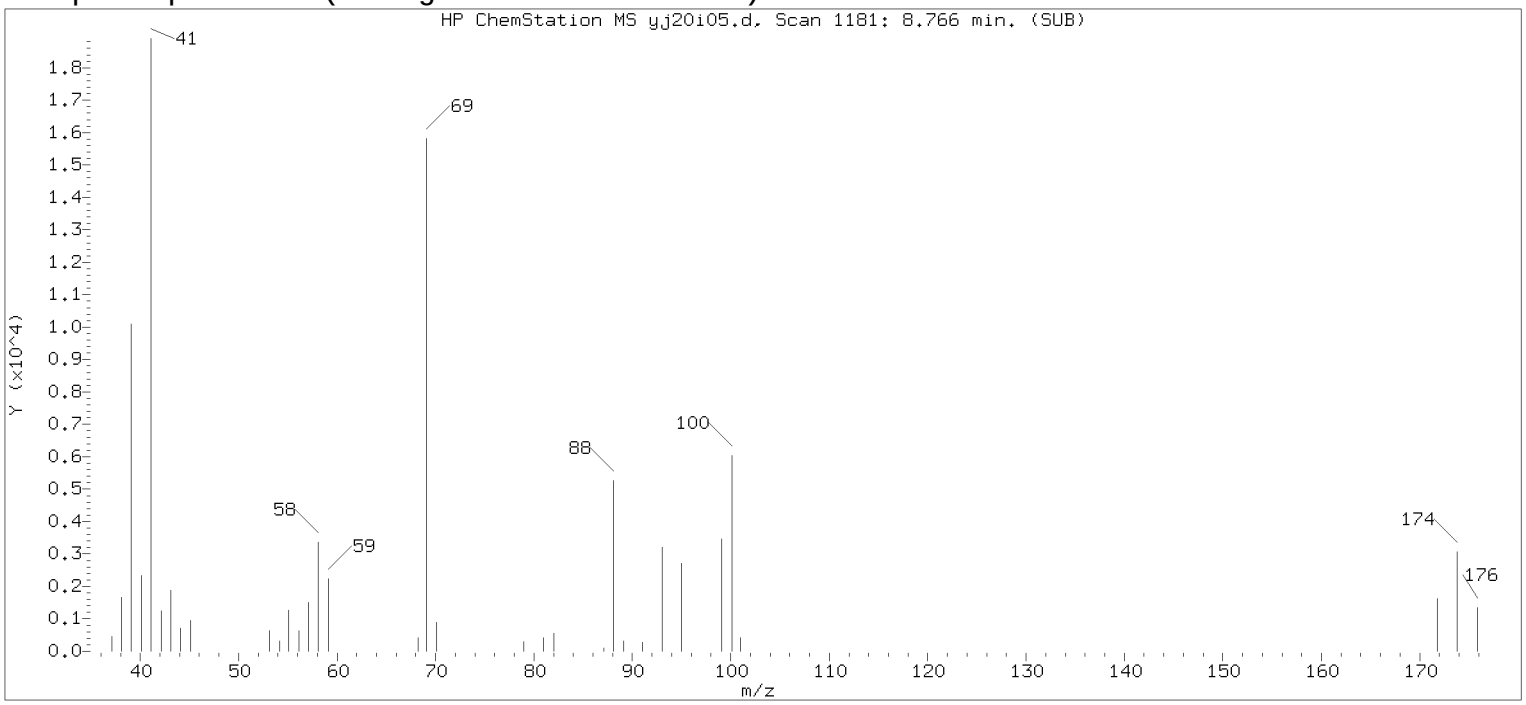
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area (flag) : 30475M
On-Column Amount (ng) : 239.6304
Integration start scan : 1158 Integration stop scan: 1242
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

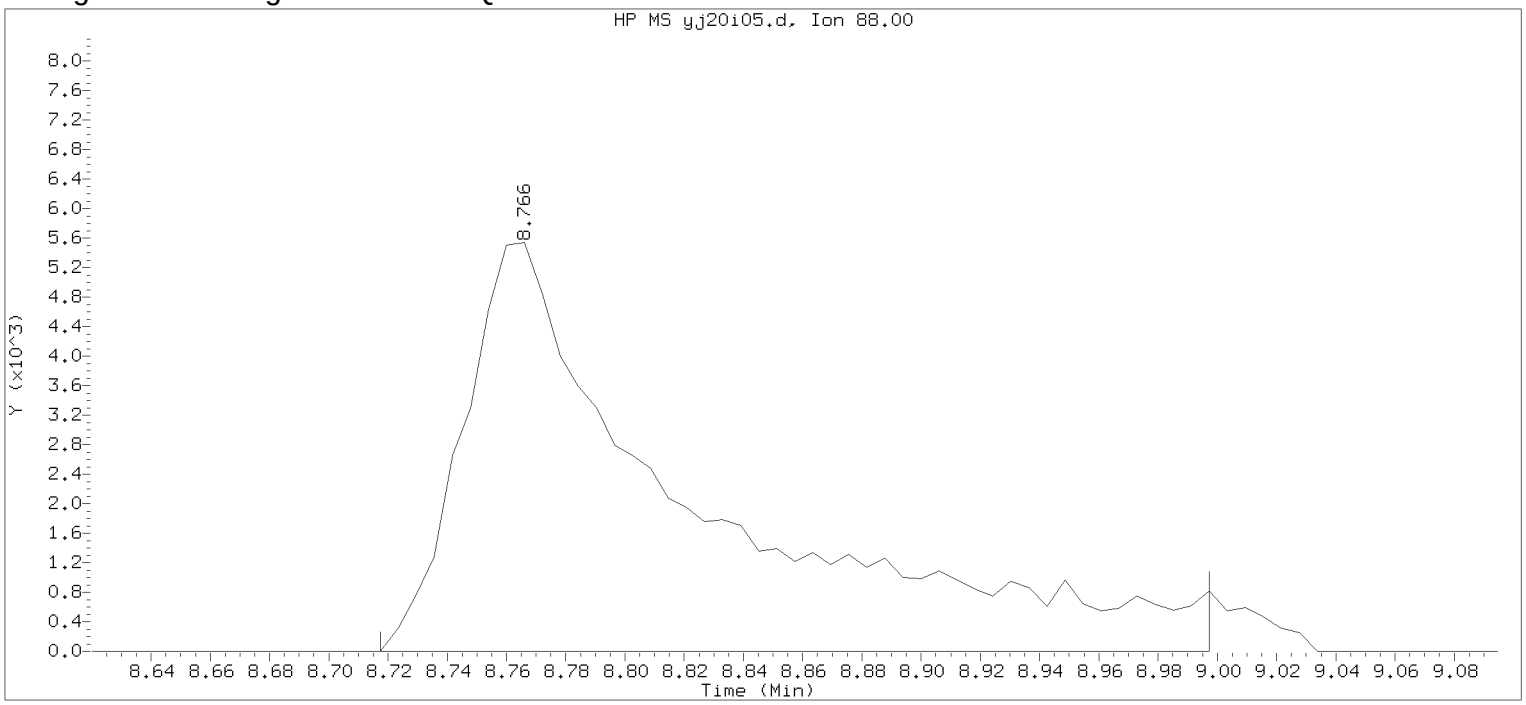
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

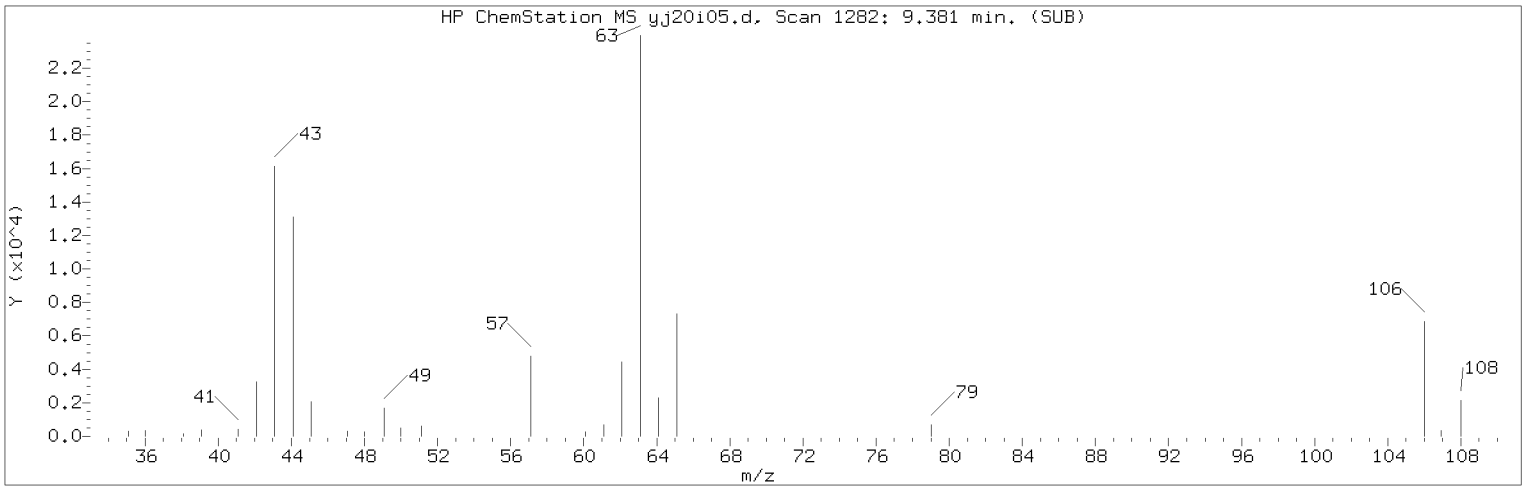
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

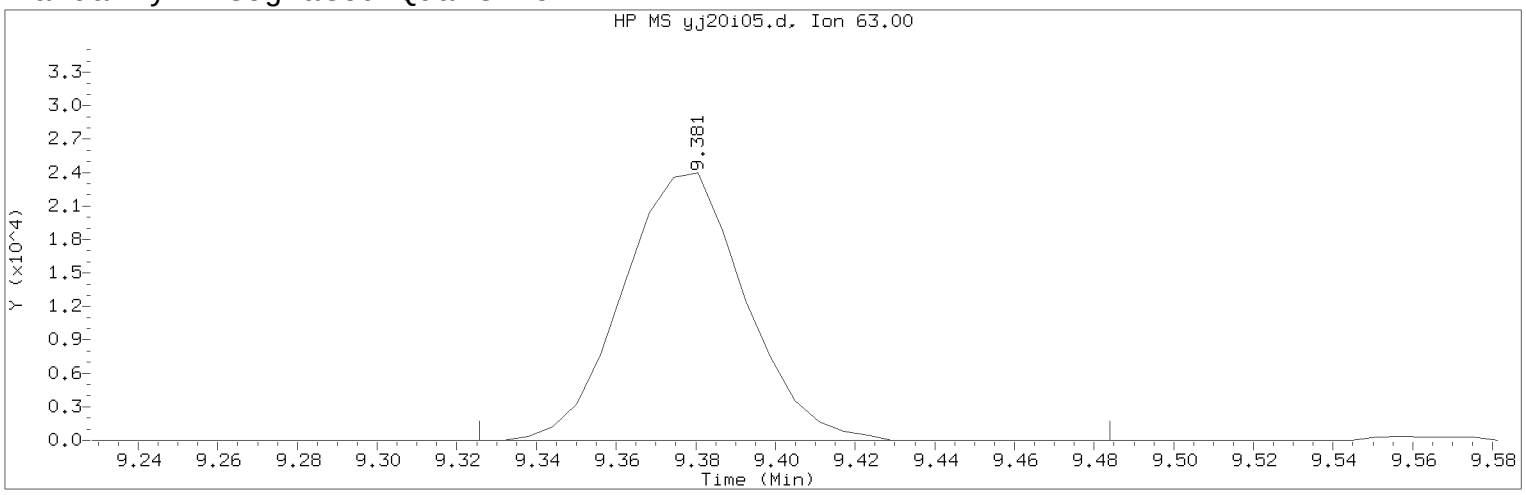
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area : 29529
On-column Amount (ng) : 234.2327
Integration start scan : 1172 Integration stop scan: 1218
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

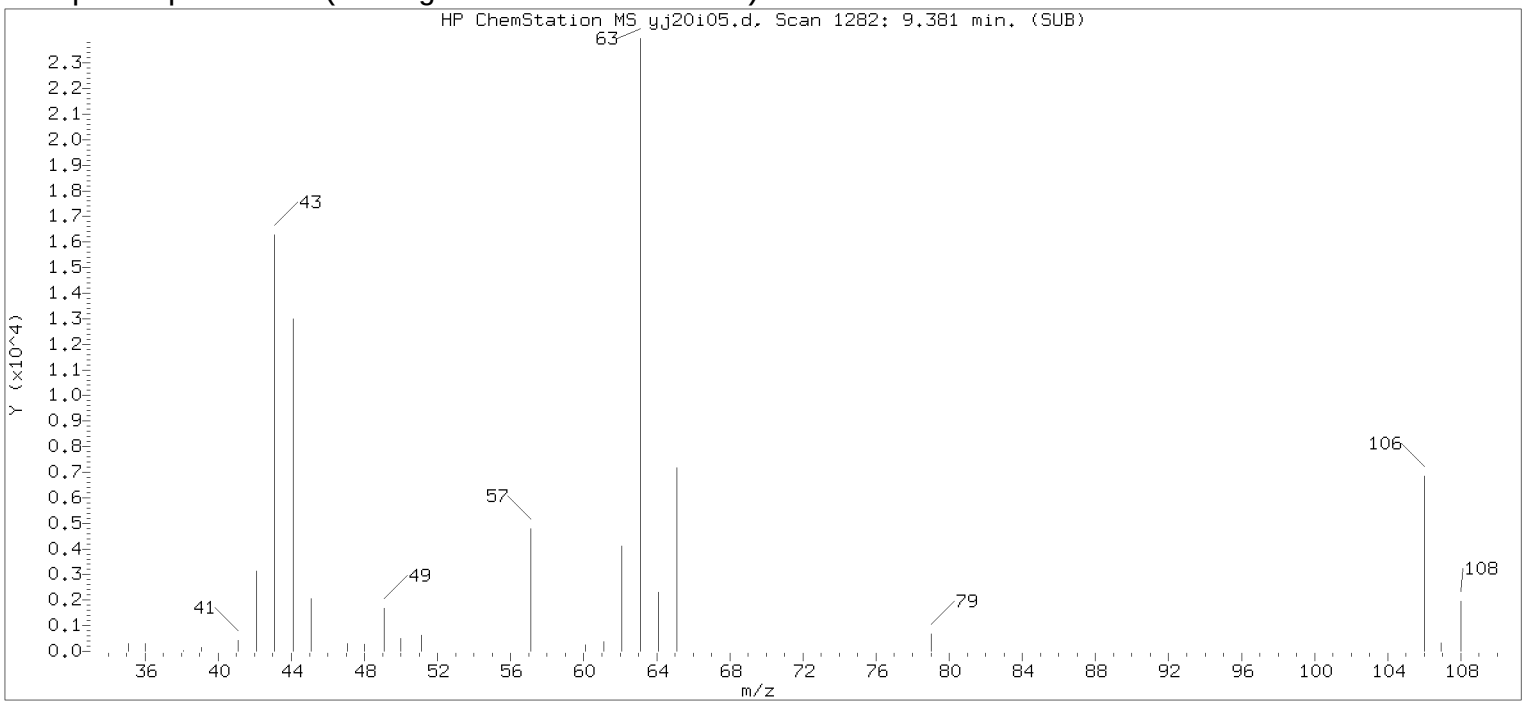
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1282
Retention Time (minutes): 9.381
Quant Ion : 63.00
Area (flag) : 51071M
On-Column Amount (ng) : 9.6375
Integration start scan : 1272 Integration stop scan: 1298
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

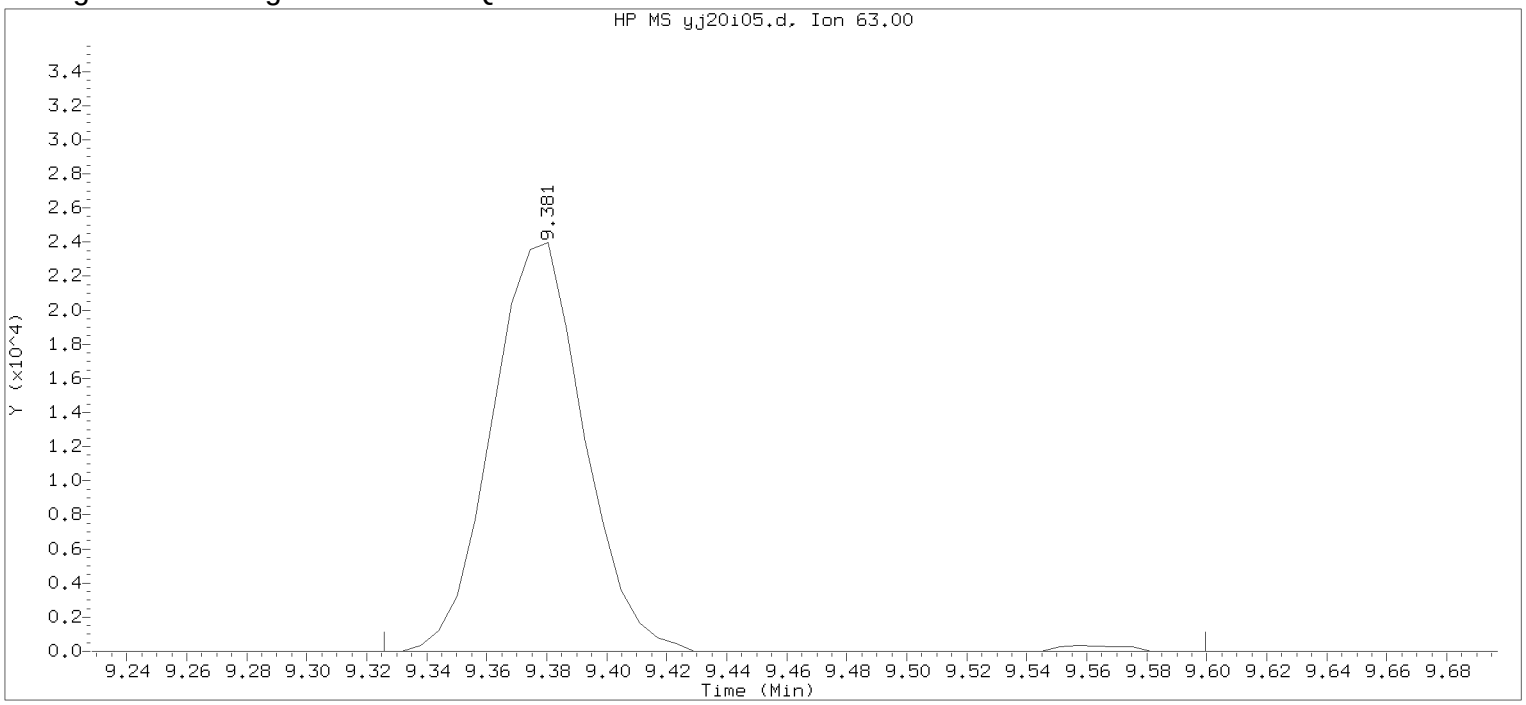
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

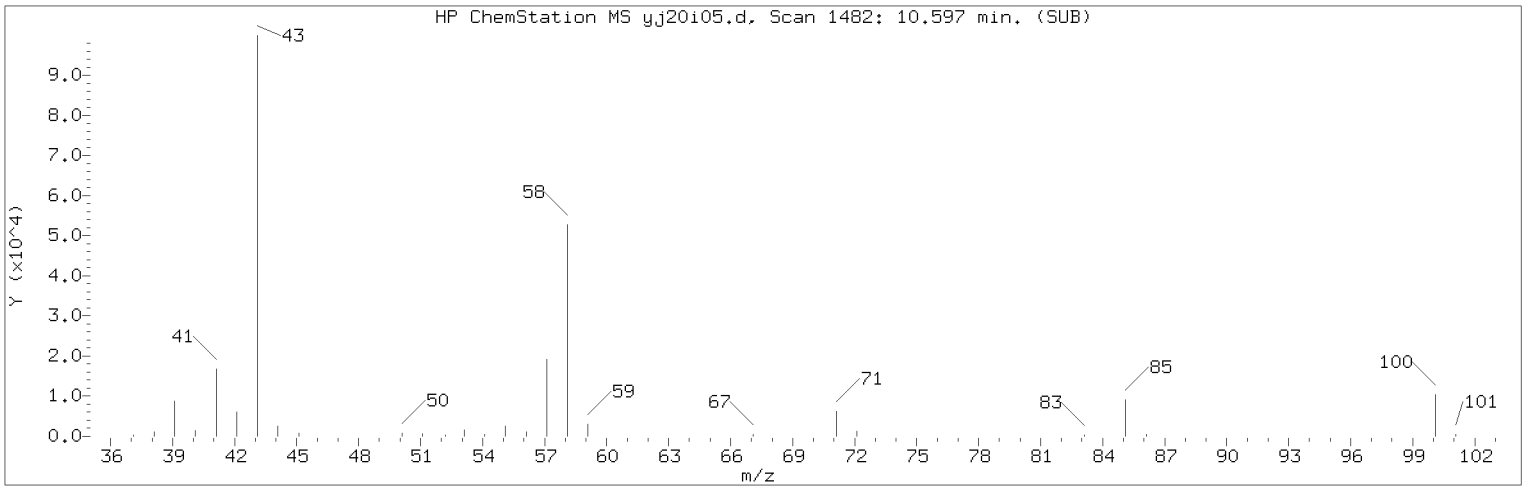
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

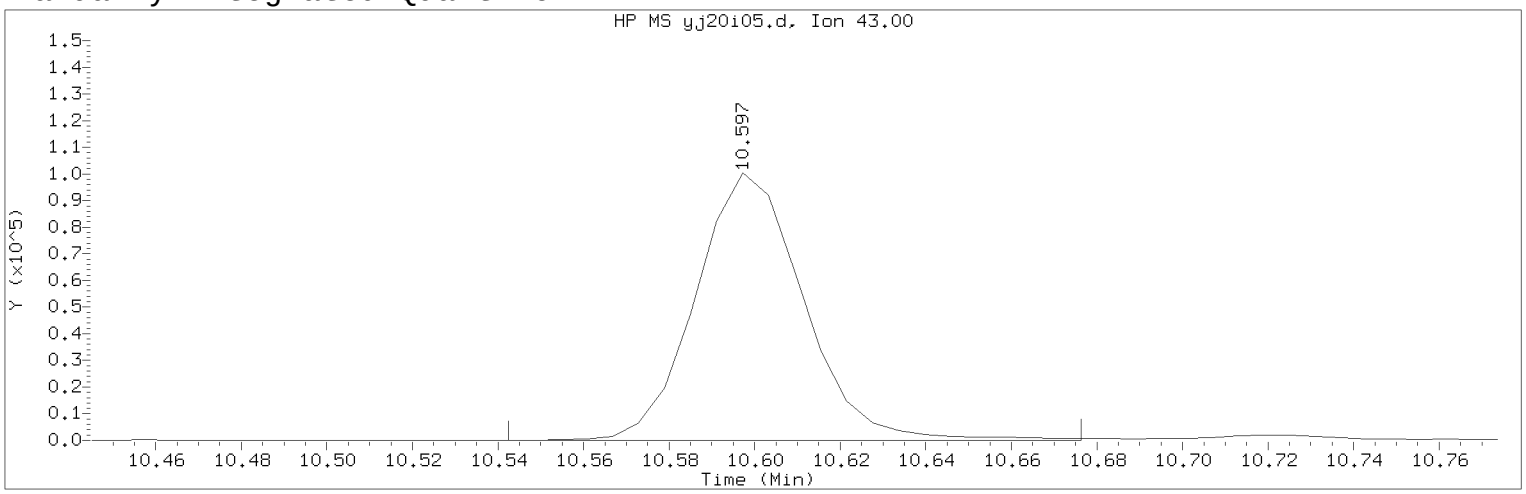
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1282
Retention Time (minutes): 9.381
Quant Ion : 63.00
Area : 51614
On-column Amount (ng) : 9.5421
Integration start scan : 1272 Integration stop scan: 1317
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENbwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

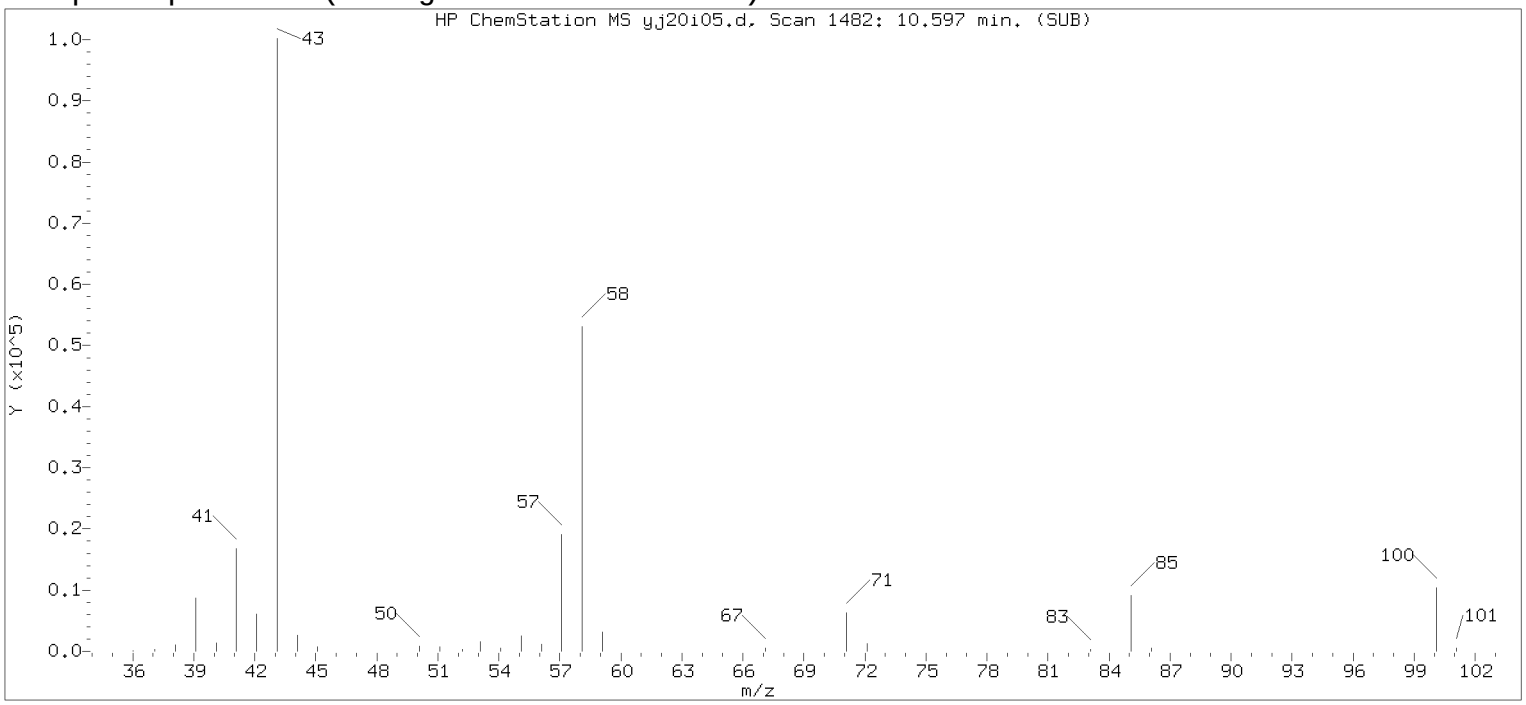
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1482
Retention Time (minutes): 10.597
Quant Ion : 43.00
Area (flag) : 175181M
On-Column Amount (ng) : 19.1176
Integration start scan : 1472 Integration stop scan: 1494
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

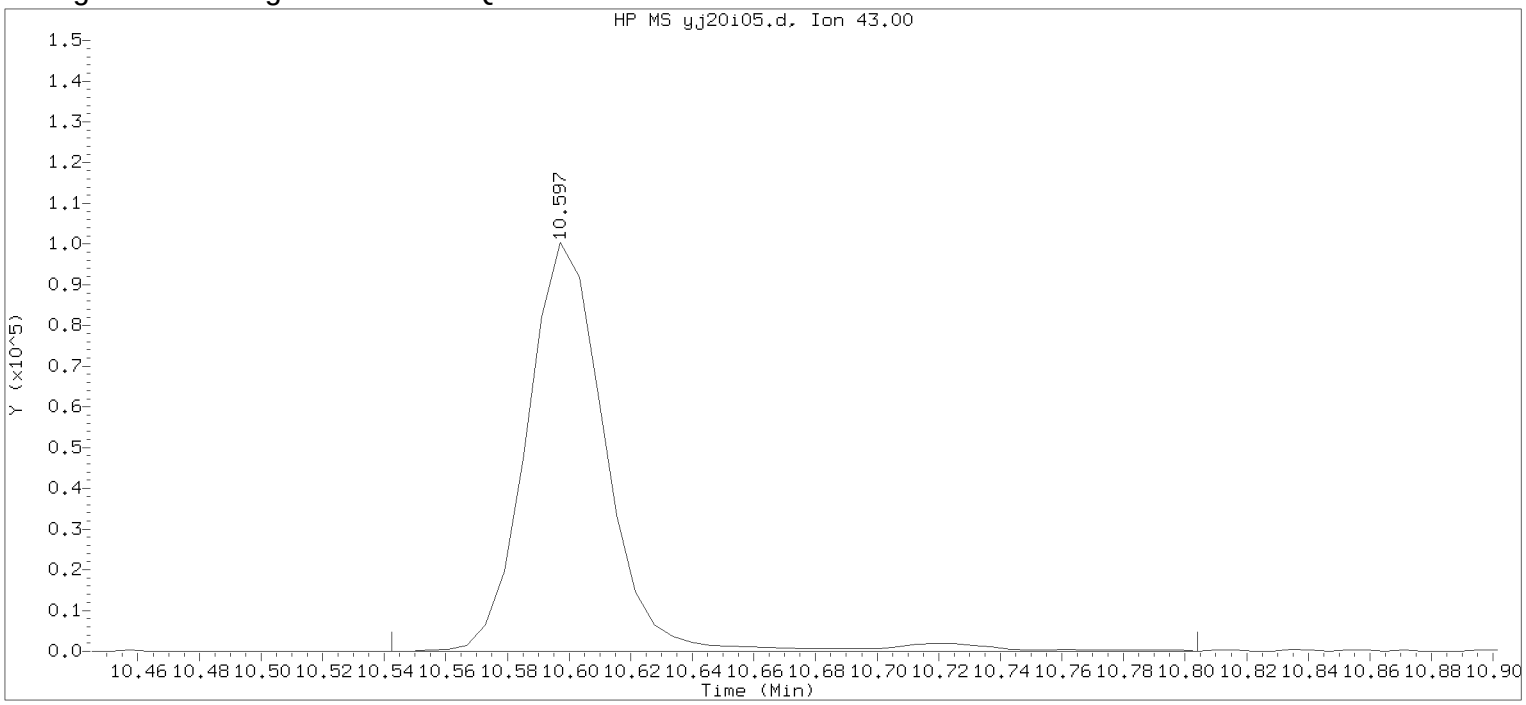
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

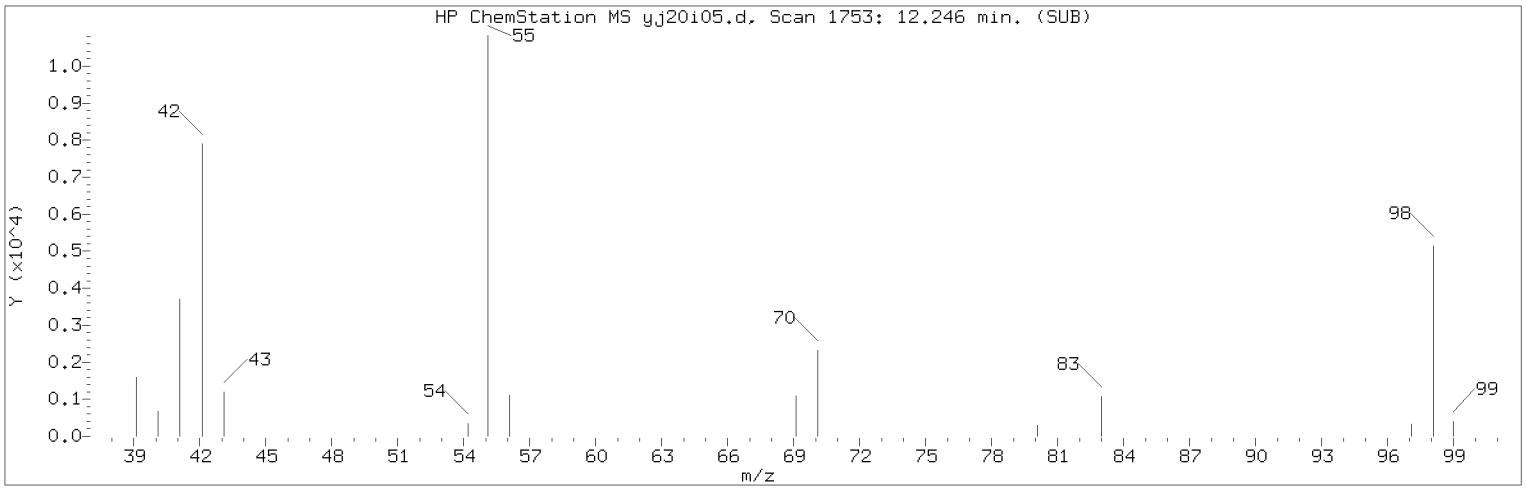
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

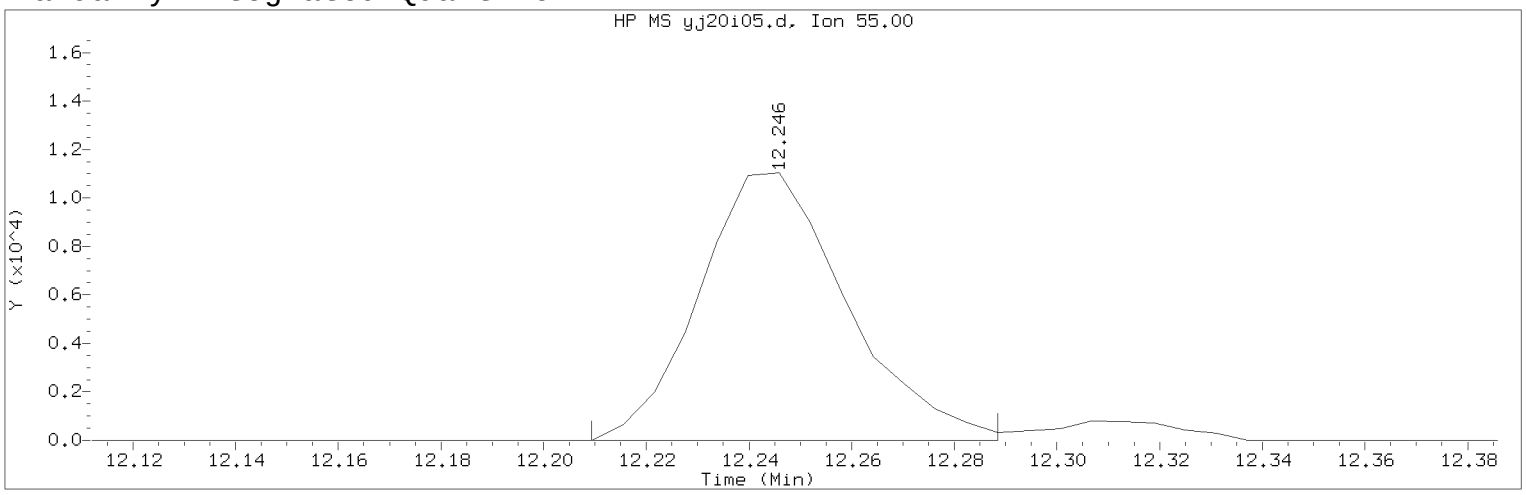
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1482
Retention Time (minutes): 10.597
Quant Ion : 43.00
Area : 180733
On-column Amount (ng) : 19.5617
Integration start scan : 1472 Integration stop scan: 1515
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

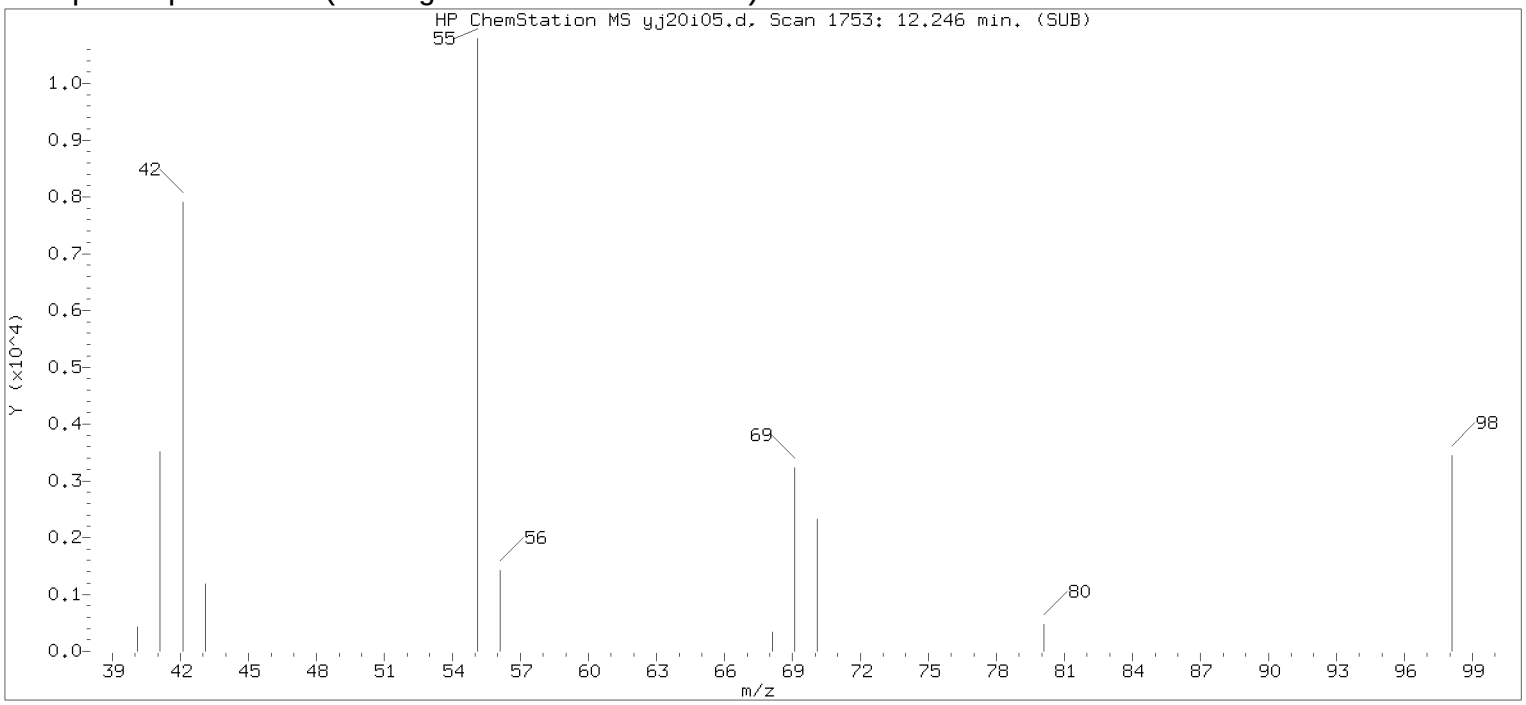
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 22070M
On-Column Amount (ng) : 232.8444
Integration start scan : 1746 Integration stop scan: 1759
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

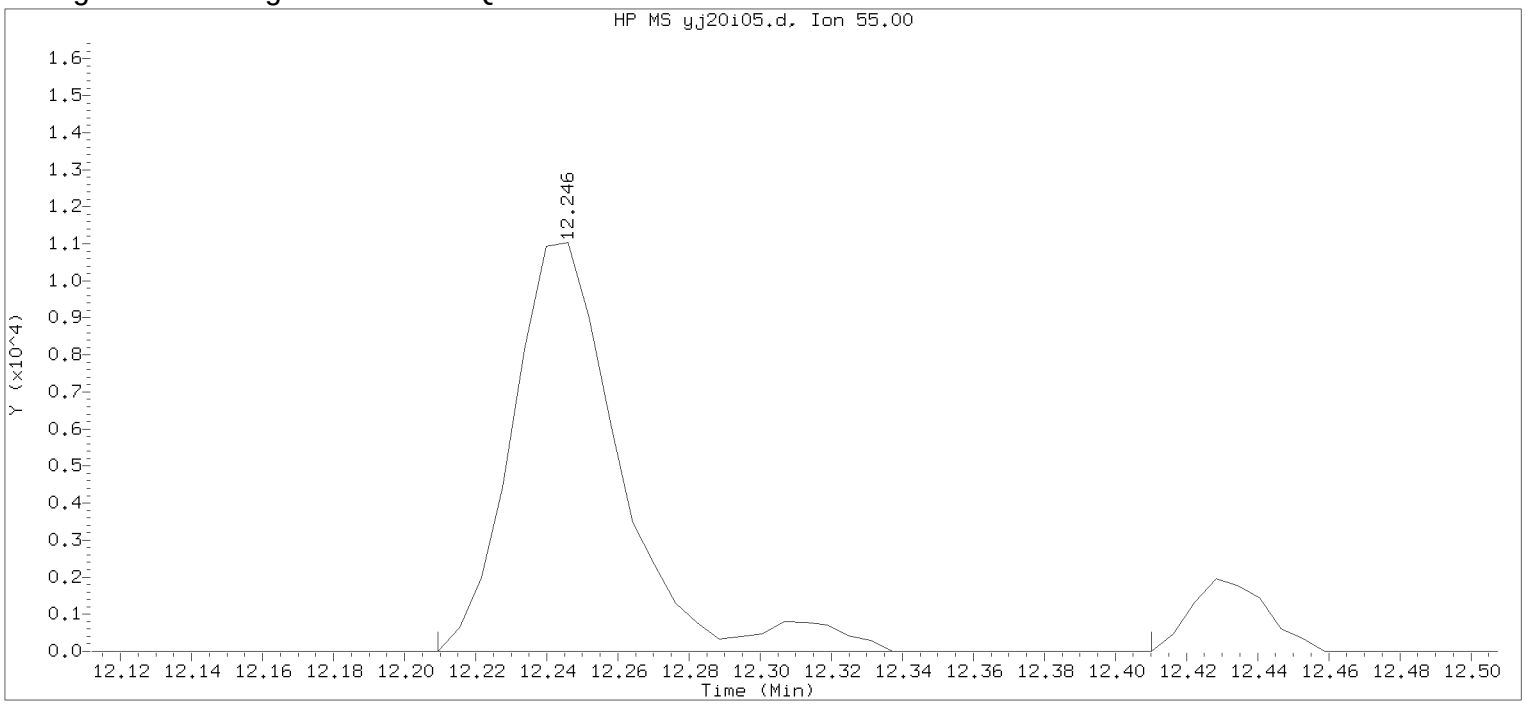
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

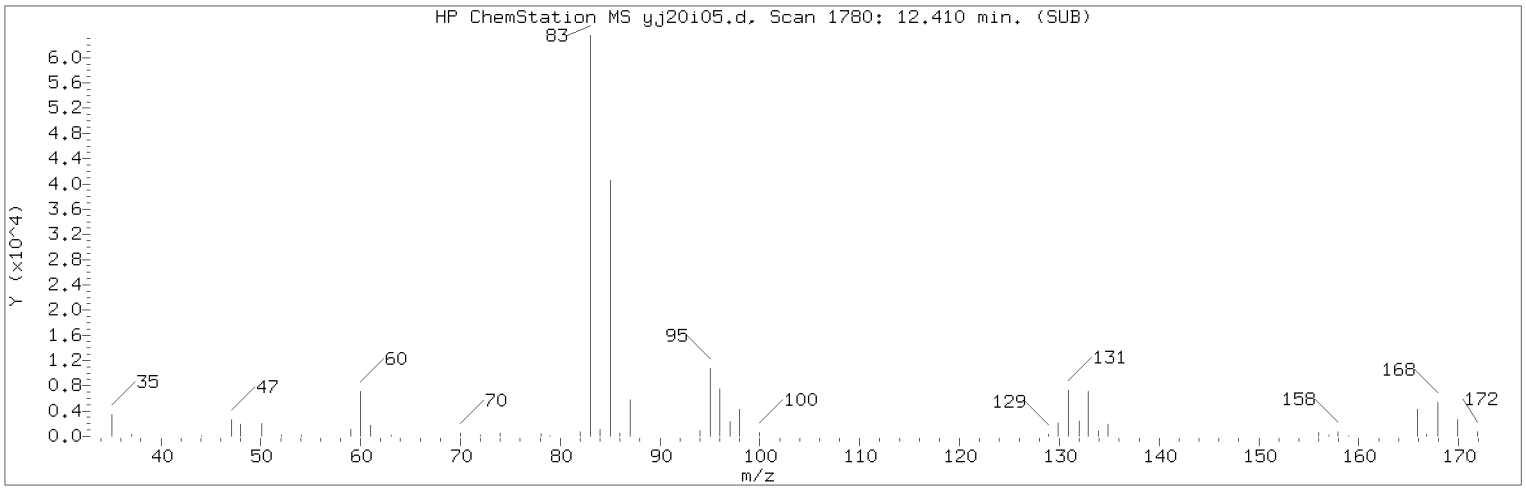
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

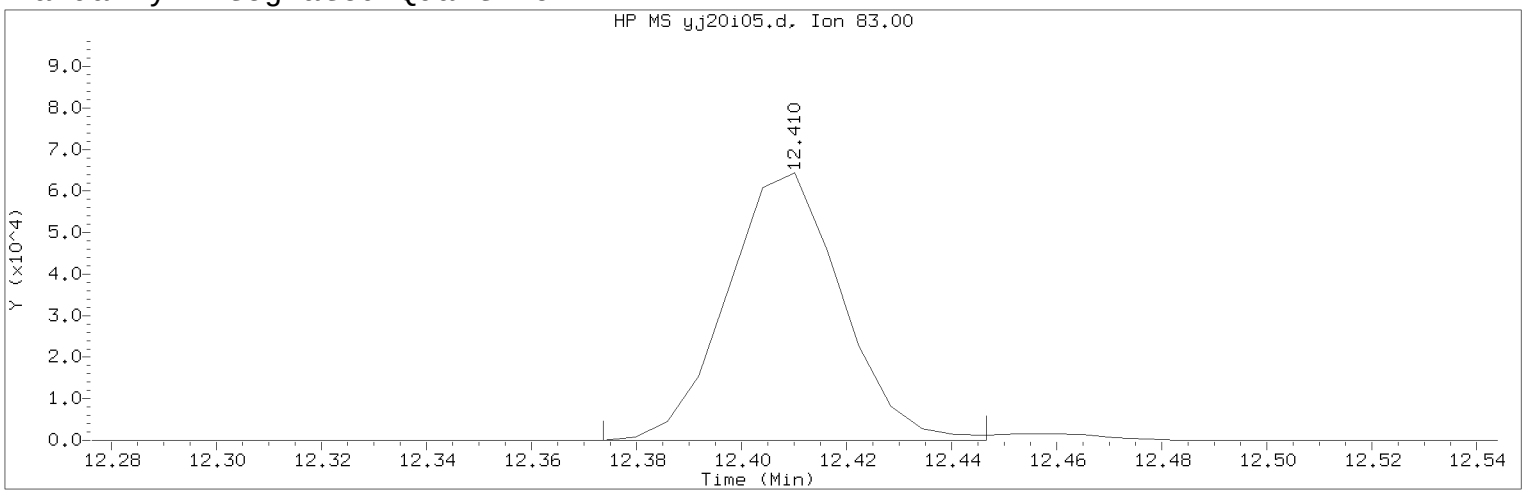
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 23480
On-column Amount (ng) : 238.6802
Integration start scan : 1746 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

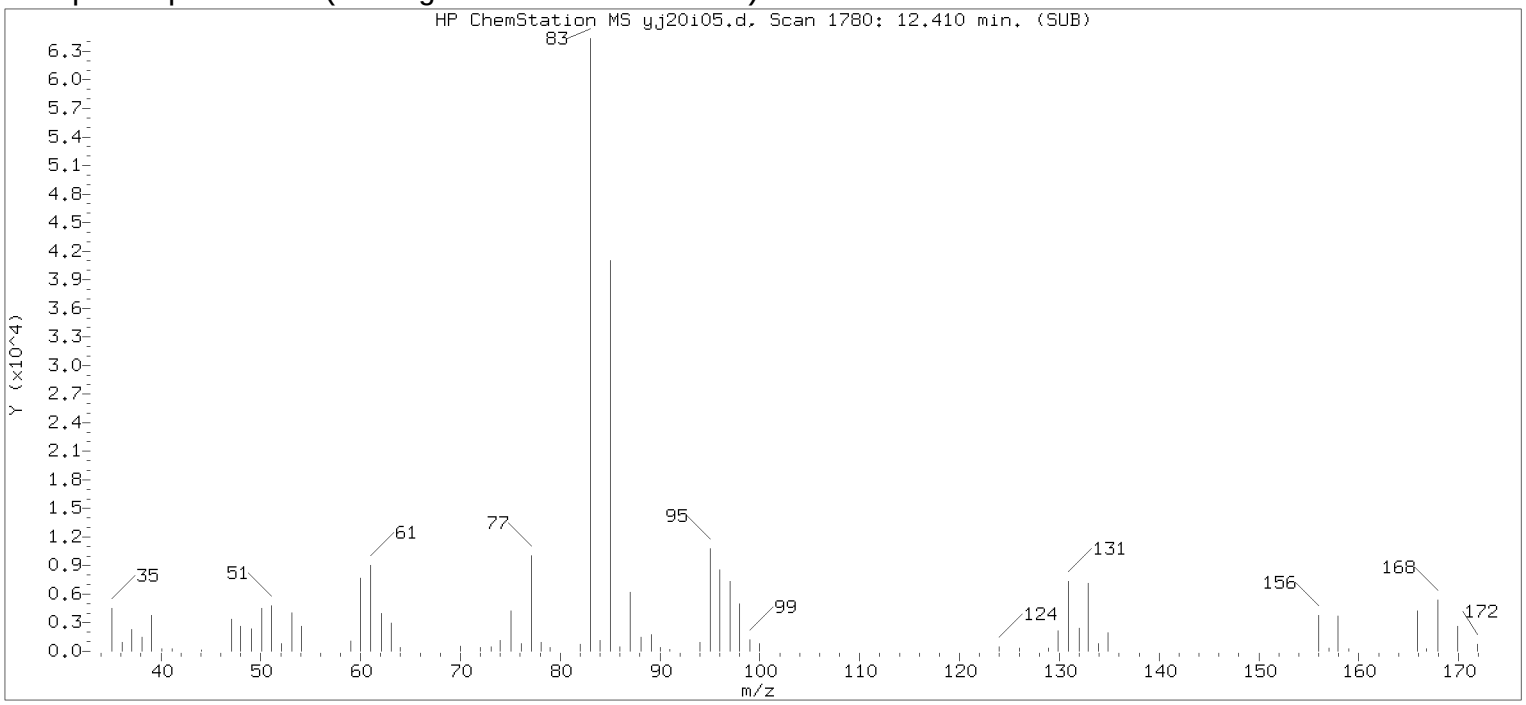
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 97180M
On-Column Amount (ng) : 9.7388
Integration start scan : 1773 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

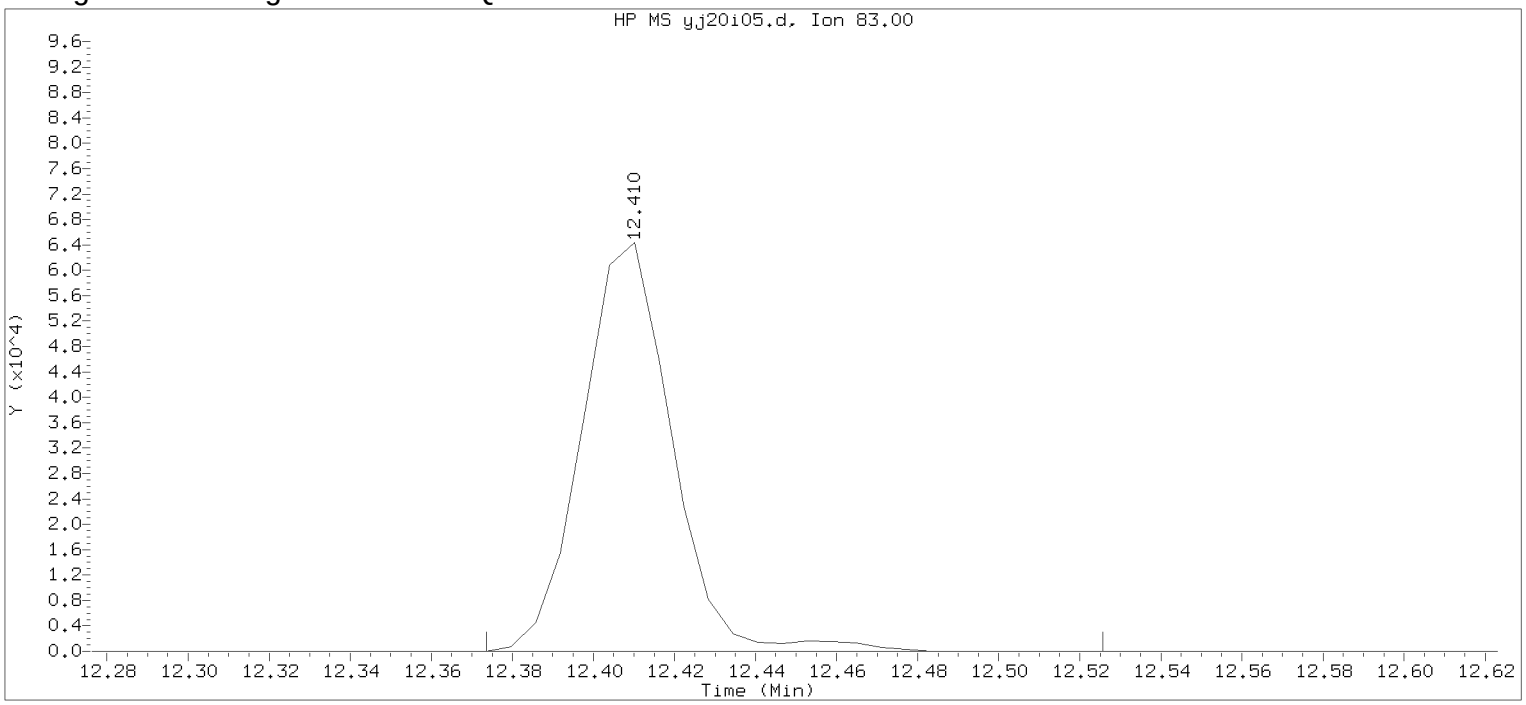
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

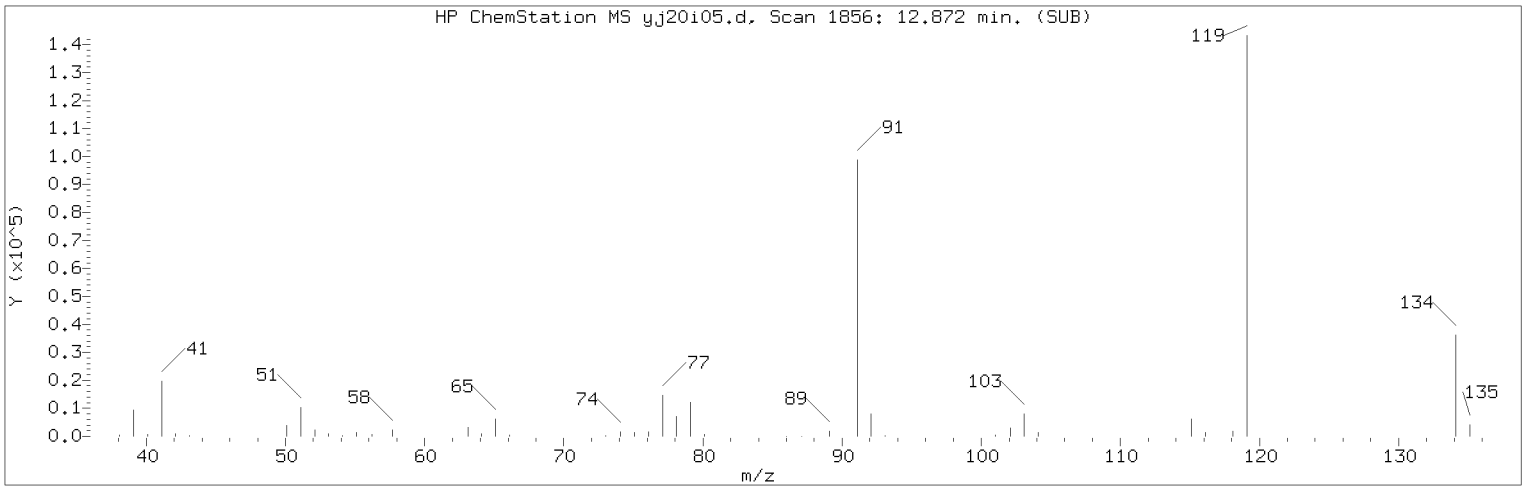
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

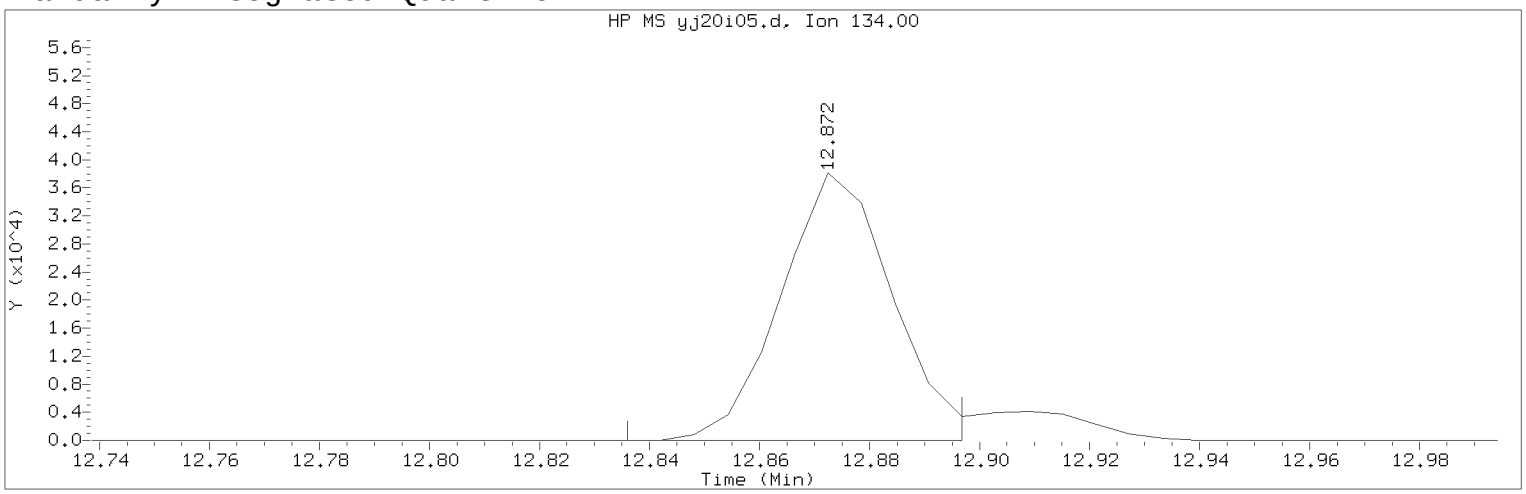
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 99130
On-column Amount (ng) : 9.6955
Integration start scan : 1773 Integration stop scan: 1798
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

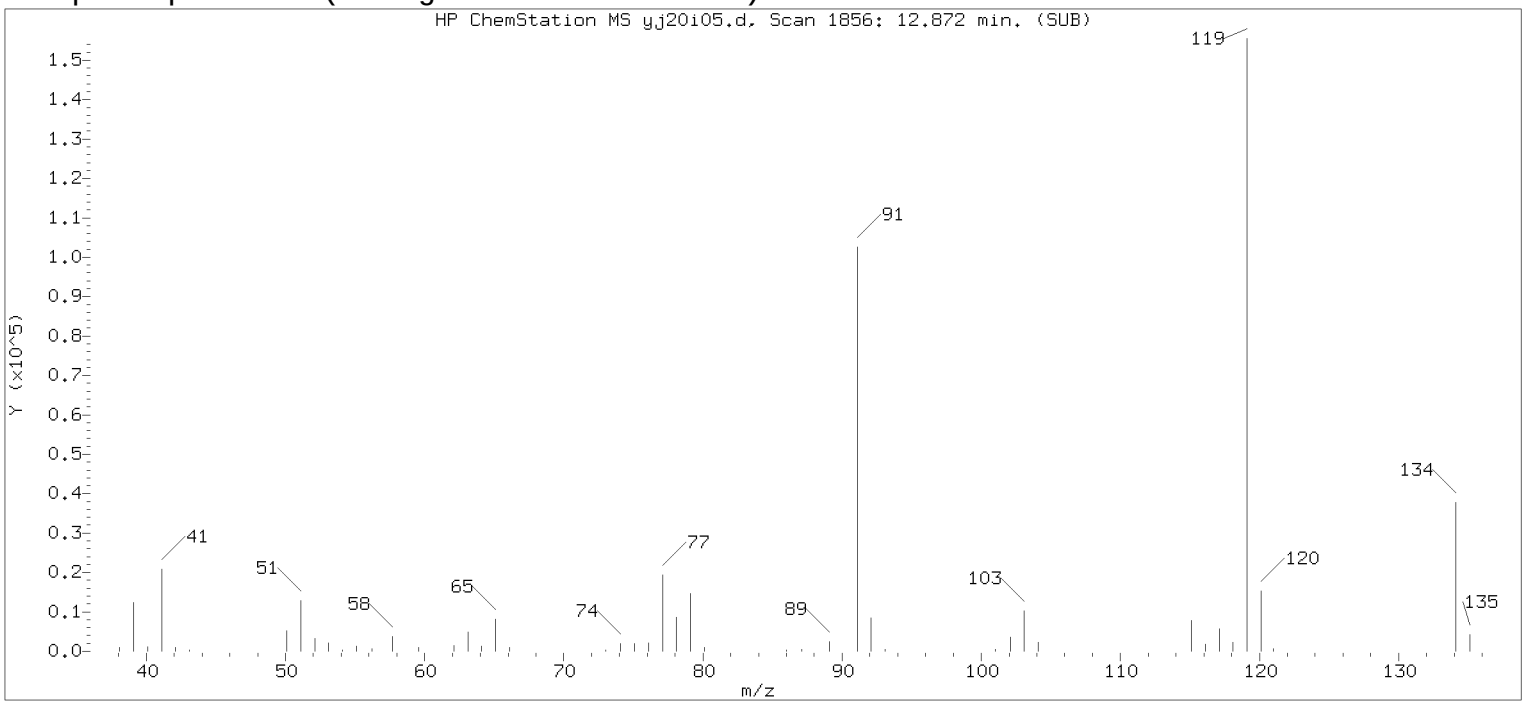
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 53497M
On-Column Amount (ng) : 9.8521
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

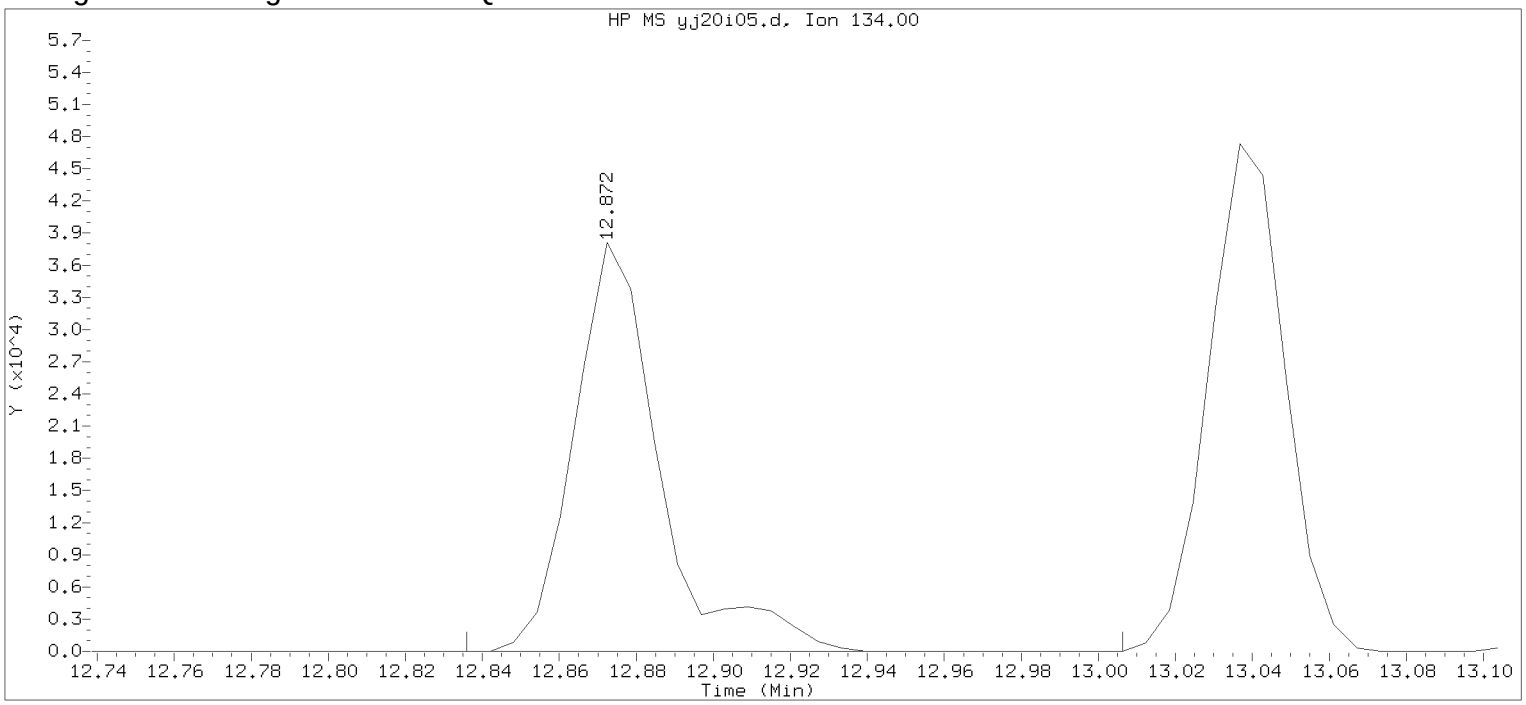
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



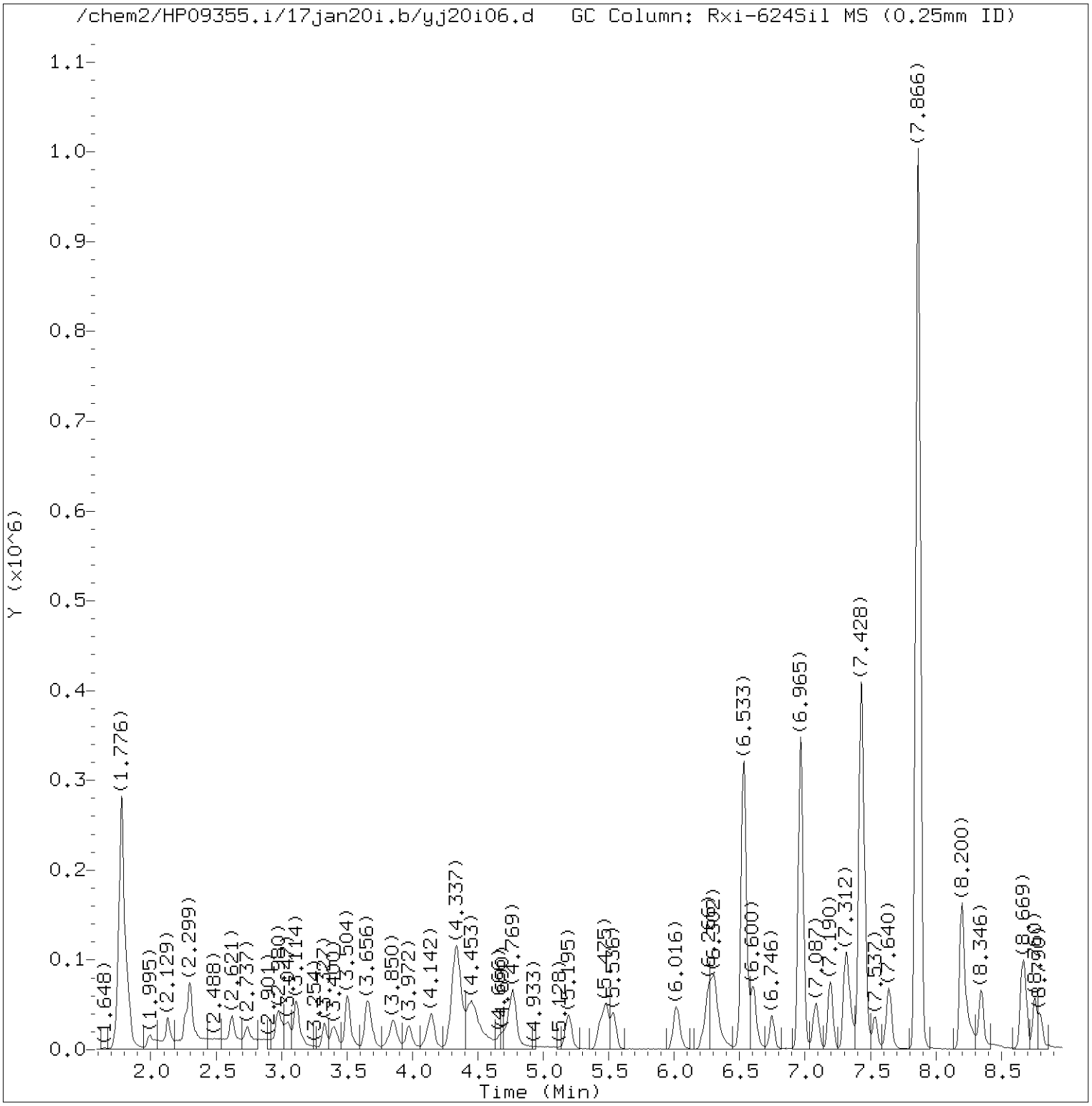

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 59102
On-column Amount (ng) : 10.0549
Integration start scan : 1849 Integration stop scan: 1877
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231




Total Ion Chromatogram (TIC)

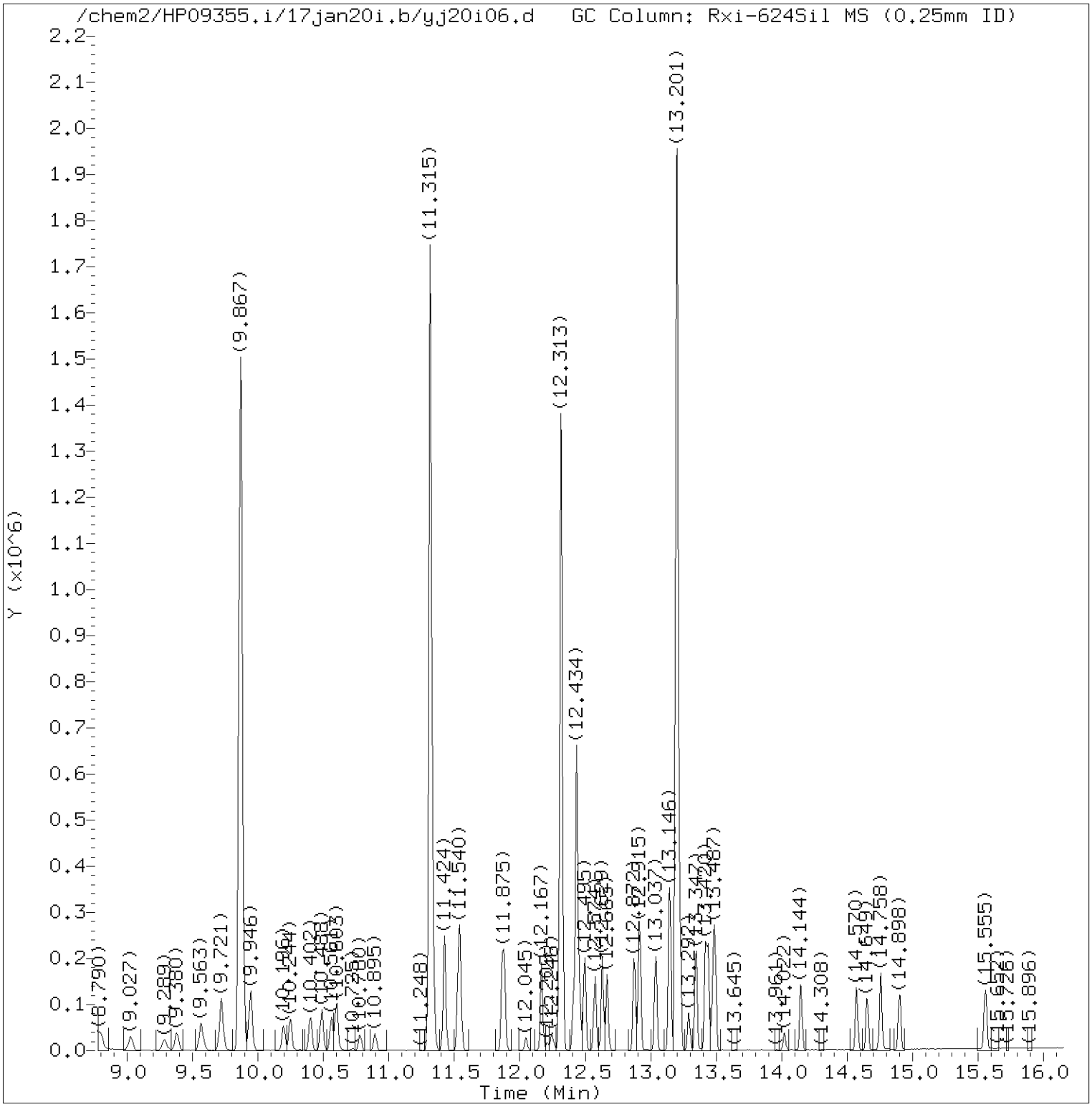
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.995 | 85 | 30793 | 4.056 |
| 4) Chloromethane | (2) | 2.129 | 50 | 33329 | 4.182 |
| 6) Vinyl Chloride | (2) | 2.263 | 62 | 31491 | 4.186 |
| 5) 1,3-Butadiene | (2) | 2.299 | 39 | 42674 | 6.541 |
| 8) Bromomethane | (2) | 2.621 | 94 | 22296 | 4.233 |
| 9) Chloroethane | (2) | 2.737 | 64 | 18595 | 4.315 |
| 10) Dichlorofluoromethane | (2) | 2.974 | 67 | 43114 | 4.418 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 36177 | 4.030 |
| 11) n-Pentane | (2) | 3.114 | 43 | 48364 | 4.997 |
| 14) Ethyl ether | (2) | 3.327 | 59 | 21667 | 4.071 |
| 15) Freon 123a | (2) | 3.400 | 67 | 25348 | 4.170 |
| 16) Acrolein | (1) | 3.504 | 56 | 84651 | 39.906 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 17427 | 3.855 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 63 | 9230 | 3.917 |
| 18) Acetone | (1) | 3.674 | 58 | 8062 | 7.818 |
| 19) Freon 113 | (2) | 3.674 | 101 | 16583 | 3.692 |
| 21) 2-Propanol | (1) | 3.838 | 45 | 63083M | 80.850 |
| 22) Methyl Iodide | (2) | 3.856 | 142 | 32478 | 3.810 |
| 23) Carbon Disulfide | (2) | 3.972 | 76 | 50102 | 3.646 |
| 27) Methyl Acetate | (2) | 4.112 | 43 | 34609 | 4.082 |
| 25) Allyl Chloride | (2) | 4.148 | 41 | 38157 | 4.132 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.325 | 65 | 344452 | 250.000 |
| 28) Methylene Chloride | (2) | 4.343 | 84 | 22093 | 3.955 |
| 30) t-Butyl alcohol | (1) | 4.459 | 59 | 125810 | 82.205 |
| 31) Acrylonitrile | (2) | 4.678 | 53 | 16845 | 4.140 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.745 | 73 | 72511 | 3.937 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 21160 | 3.885 |
| 34) n-Hexane | (2) | 5.195 | 57 | 32152 | 3.881 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 38020 | 3.889 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 75757 | 3.911 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 33544 | 3.735 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 70627 | 3.890 |
| 44) 2-Butanone | (2) | 6.229 | 43 | 53809 | 8.563 |
| 42) cis-1,2-Dichloroethene | (2) | 6.266 | 96 | 23808 | 3.824 |
| 45) 2,2-Dichloropropane | (2) | 6.284 | 77 | 29480 | 3.787 |
| 47) Propionitrile | (1) | 6.308 | 54 | 140968 | 78.594 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 168678 | 38.446 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 12133 | 3.782 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 12573 | 7.764 |
| 51) Chloroform | (2) | 6.746 | 83 | 37453 | 3.799 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 44968 | 7.709 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 267074 | 49.356 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 111 | 273173 | 49.465 |
| 53) 1,1,1-Trichloroethane | (2) | 6.983 | 97 | 32213 | 3.869 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 38644 | 3.944 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 31151 | 3.871 |
| 54) Cyclohexane | (2) | 7.087 | 69 | 11407 | 3.832 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 31460 | 3.928 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 25223M | 3.598 |
| 58) Isobutyl Alcohol | (1) | 7.312 | 41 | 113719 | 198.408 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 70716 | 50.026 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 363960 | 51.141 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 104 | 44327 | 49.386 |
| 60) Benzene | (2) | 7.458 | 78 | 92670 | 3.938 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 62 | 34422 | 4.033 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 98 | 2778 | 3.656 |
| 65) t-Amyl methyl ether | (2) | 7.640 | 73 | 70786 | 3.889 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1157072 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 39551 | 4.055 |
| 69) n-Butanol | (1) | 8.200 | 56 | 174058M | 373.343 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 24066 | 3.904 |
| 72) Methylcyclohexane | (2) | 8.656 | 83 | 42141 | 3.952 |
| 72) Methylcyclohexane | (2) | 8.662 | 98 | 19458 | 4.038 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 24159 | 3.867 |
| 76) Methyl Methacrylate | (2) | 8.754 | 69 | 24907 | 3.722 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 24067M | 190.498 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 15281 | 3.781 |
| 78) Bromodichloromethane | (2) | 9.027 | 83 | 24987 | 3.507 |
| 79) 2-Nitropropane | (2) | 9.289 | 41 | 18676 | 6.828 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 19102 | 3.667 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 32505 | 3.470 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 90449 | 8.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1140440 | 50.777 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 735502 | 50.600 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 60895 | 6.806 |
| 88) Toluene | (3) | 9.946 | 92 | 60301 | 3.981 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 28390 | 3.336 |
| 91) Ethyl Methacrylate | (3) | 10.250 | 69 | 36382 | 3.544 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 23221 | 3.937 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 27200 | 4.035 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 39541 | 3.960 |
| 96) 2-Hexanone | (3) | 10.603 | 43 | 71865 | 8.006 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 18495 | 3.229 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 24101 | 3.756 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 870903 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 32848 | 3.979 |
| 102) Chlorobenzene | (3) | 11.345 | 112 | 68836 | 3.989 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424 | 131 | 18694 | 3.416 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 113841 | 3.896 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 90358 | 7.752 |
| 108) Xylene (Total) | (3) | | 106 | 133771 | 11.550 |
| 107) o-Xylene | (3) | 11.869 | 106 | 43413 | 3.798 |
| 109) Styrene | (3) | 11.881 | 104 | 67012 | 3.532 |
| 110) Bromoform | (3) | 12.045 | 173 | 12403 | 2.914 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 111965 | 3.882 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 17119M | 181.808 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 422813 | 50.070 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 174 | 362466 | 50.370 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 37654M | 3.854 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 103534 | 33.988 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 30120 | 3.818 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 13048 | 3.995 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 135704 | 3.980 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 27714 | 3.950 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 95813 | 3.853 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 28758 | 3.861 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 20259M | 3.811 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 13157 | 3.273 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 97206 | 3.780 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 123468 | 3.950 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 58178 | 3.865 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 104455 | 3.761 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 476531 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 60456 | 3.902 |

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Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

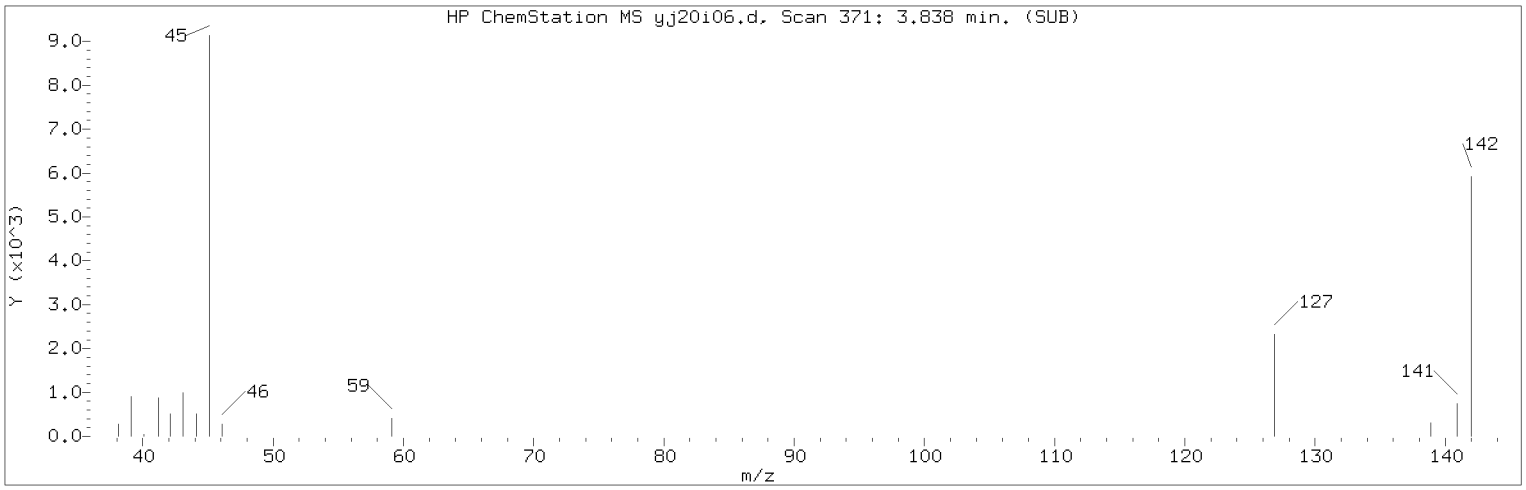
Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 101831 | 3.943 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 52685 | 2.973 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 61361 | 3.794 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 64495 | 3.844 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 54765 | 3.918 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 55863 | 3.864 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 52782 | 3.889 |
| 141) Diethylbenzene (total) | (4) | | 100 | 178638 | 11.527 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 7814 | 3.347 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 41158 | 3.886 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.576 | 180 | 38226 | 3.949 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 19432 | 4.085 |
| 148) Naphthalene | (4) | 14.758 | 128 | 117633 | 3.797 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 35190 | 3.999 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 62429 | 3.742 |

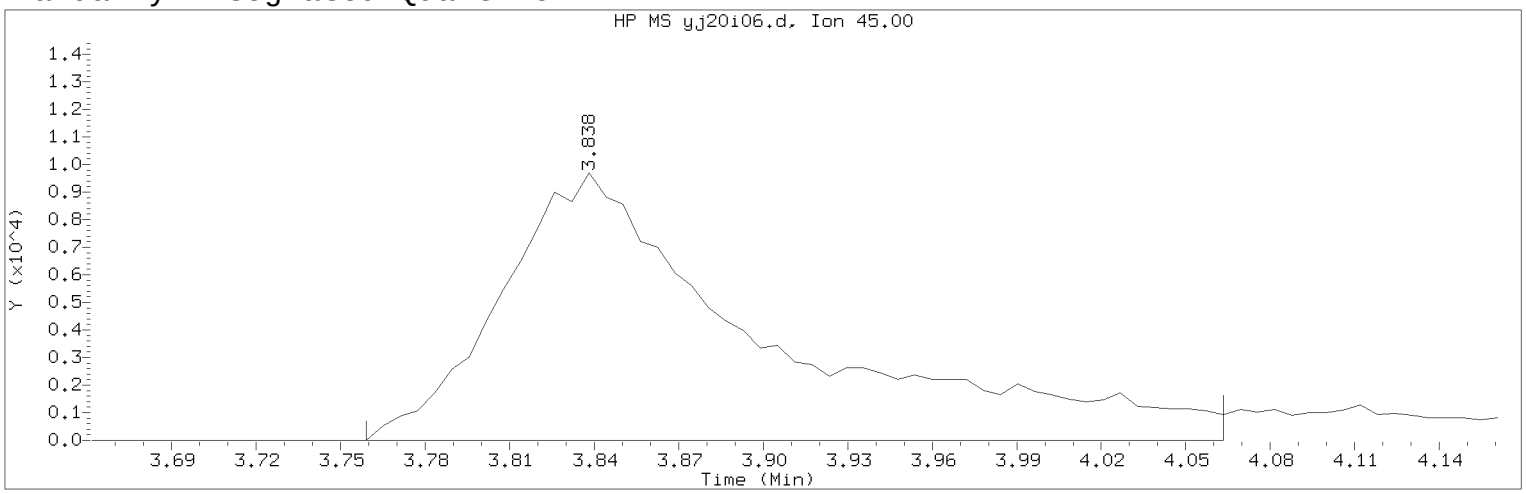


Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

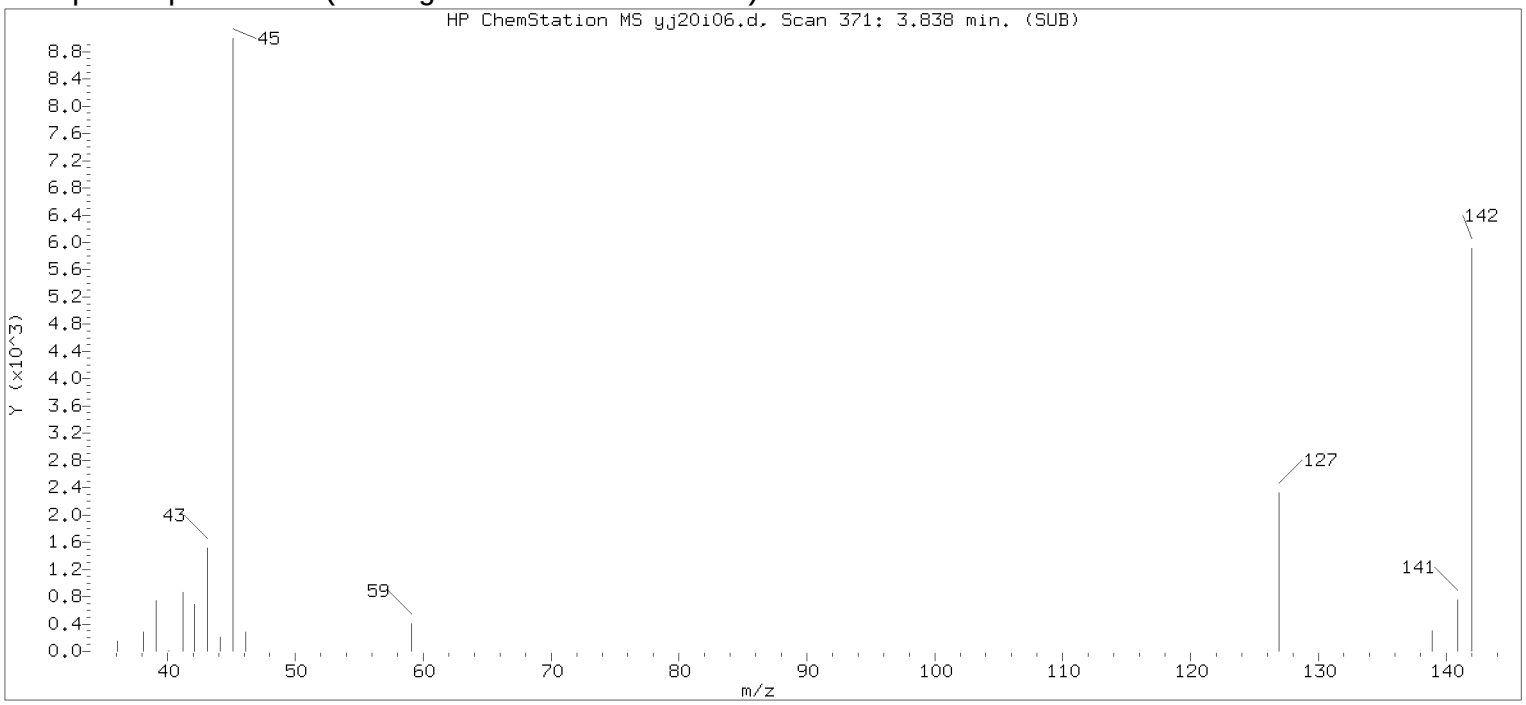
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 371
Retention Time (minutes): 3.838
Quant Ion : 45.00
Area (flag) : 63083M
On-Column Amount (ng) : 80.8499
Integration start scan : 357 Integration stop scan: 407
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

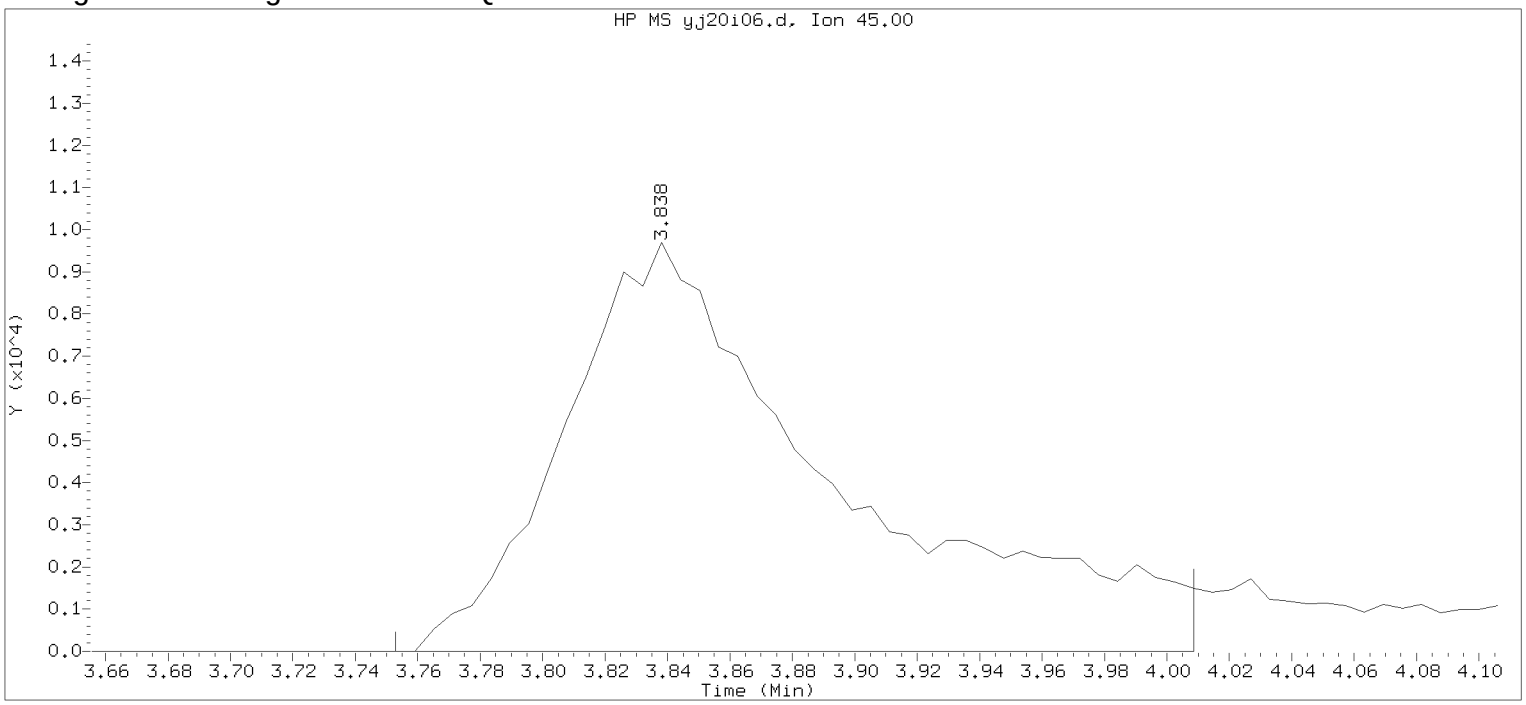
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

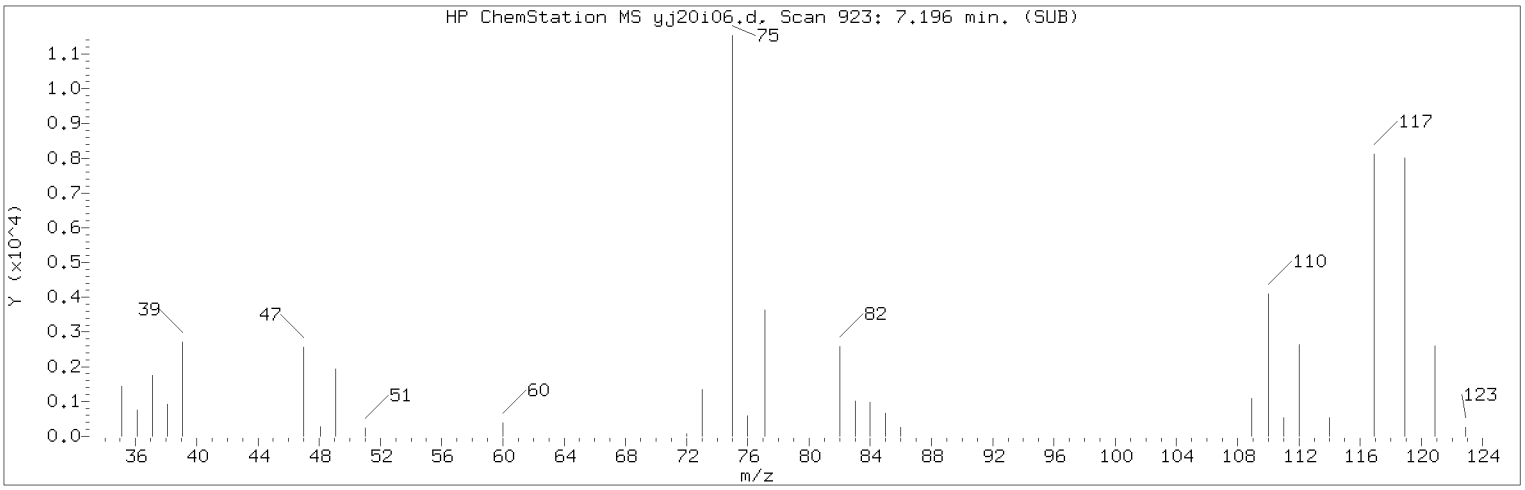
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

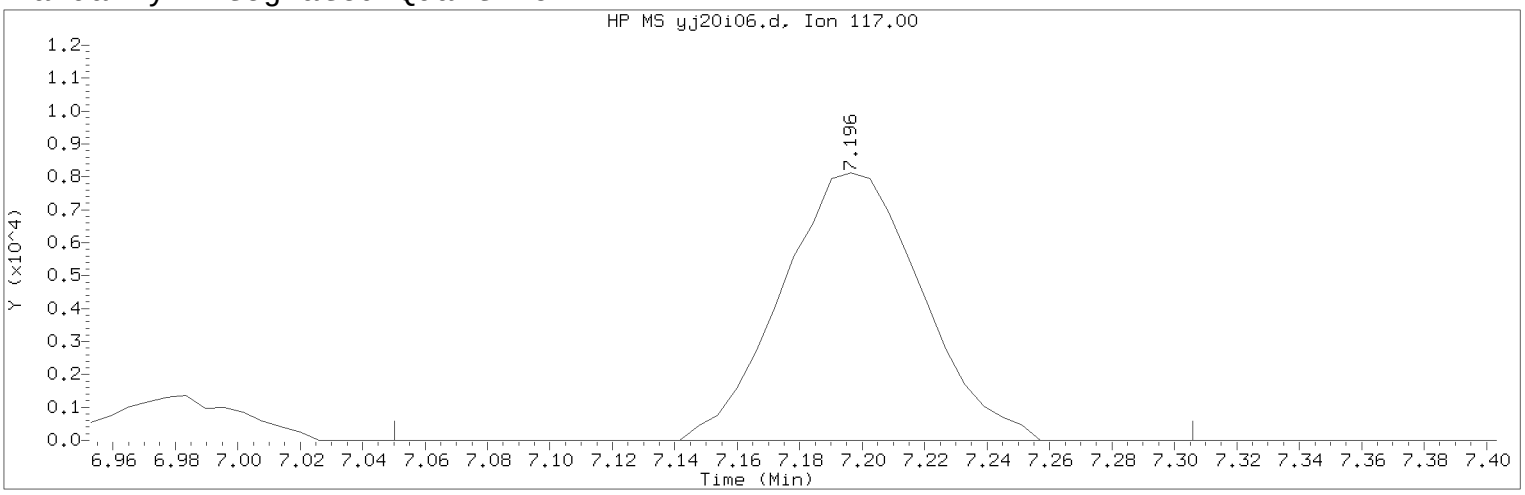
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 371
Retention Time (minutes): 3.838
Quant Ion : 45.00
Area : 58693
On-column Amount (ng) : 81.4095
Integration start scan : 356 Integration stop scan: 398
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

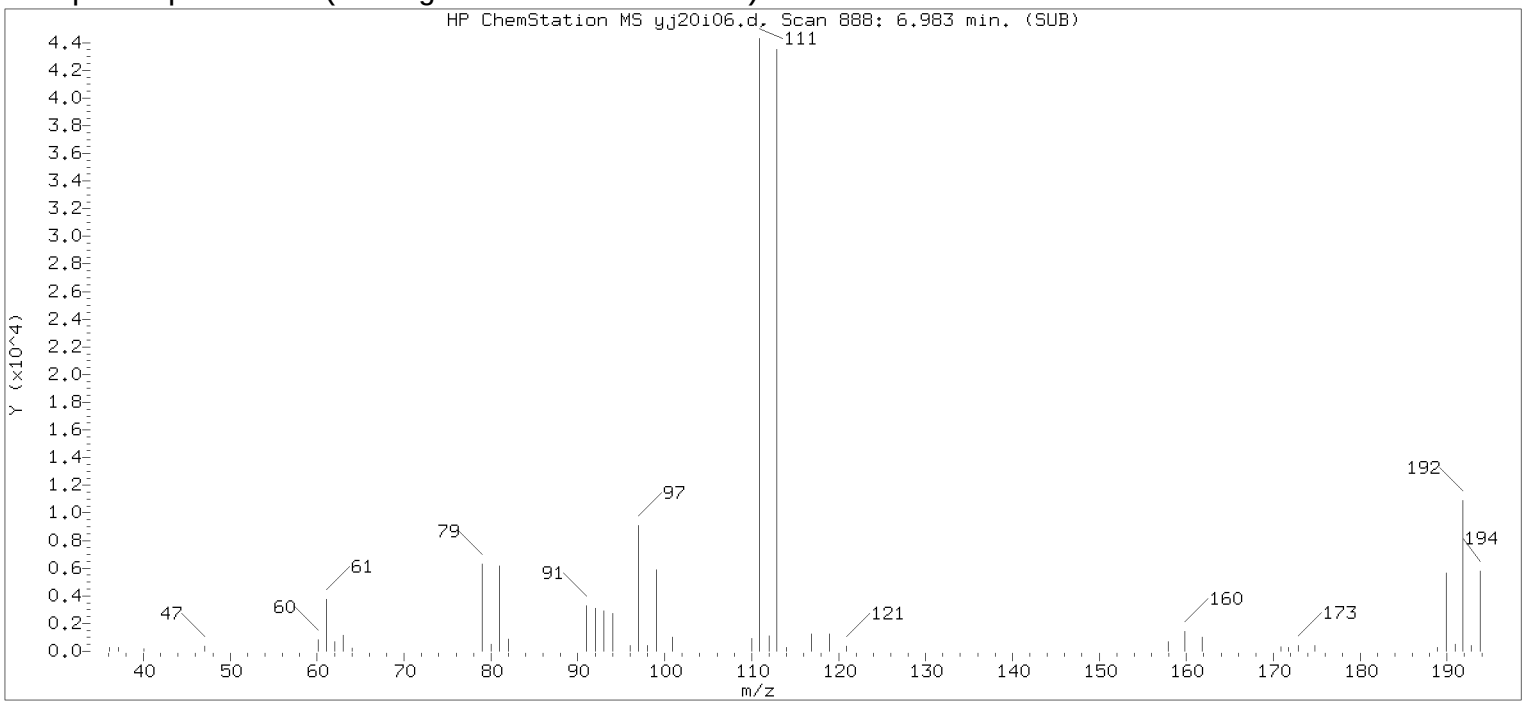
Compound Number : 56
Compound Name : Carbon Tetrachloride
Scan Number : 923
Retention Time (minutes): 7.196
Quant Ion : 117.00
Area (flag) : 25223M
On-Column Amount (ng) : 3.5984
Integration start scan : 898 Integration stop scan: 940
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

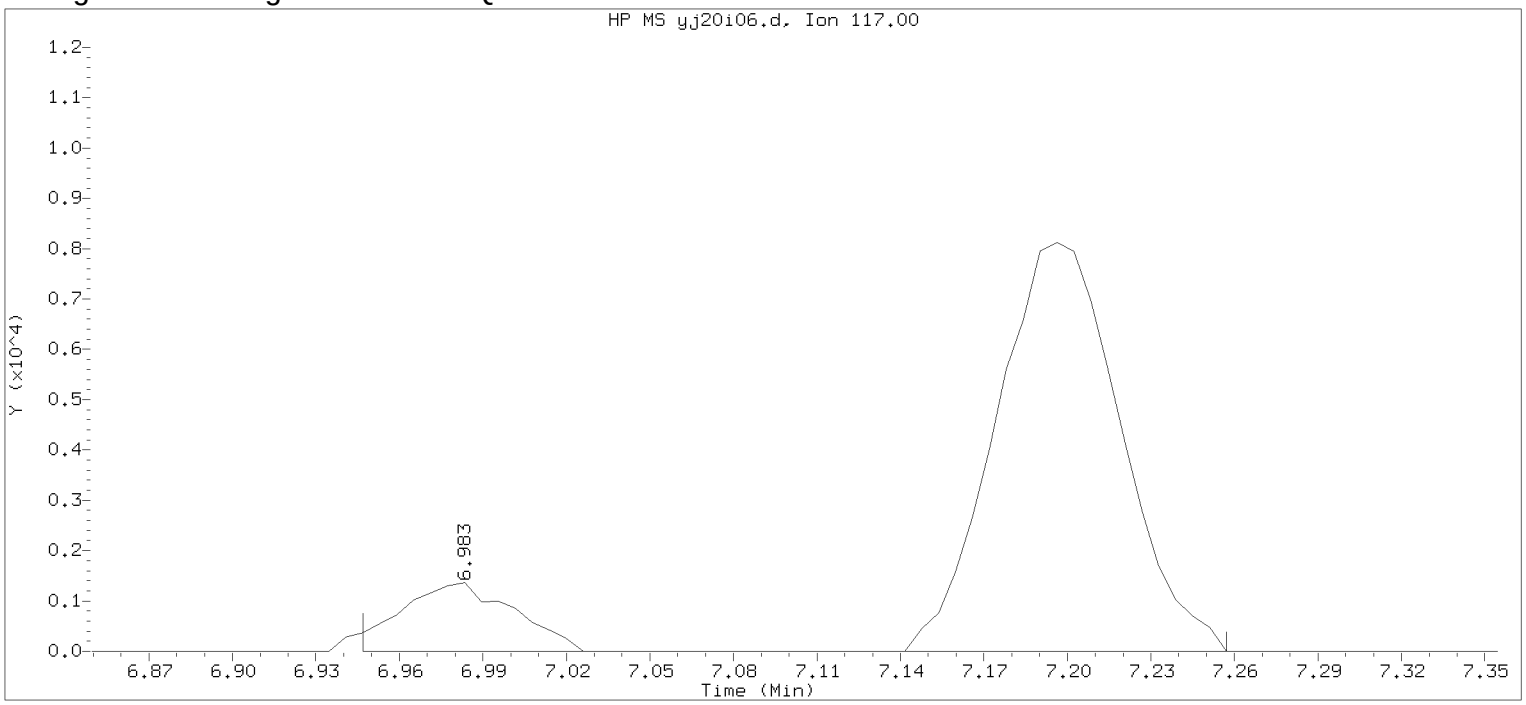
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

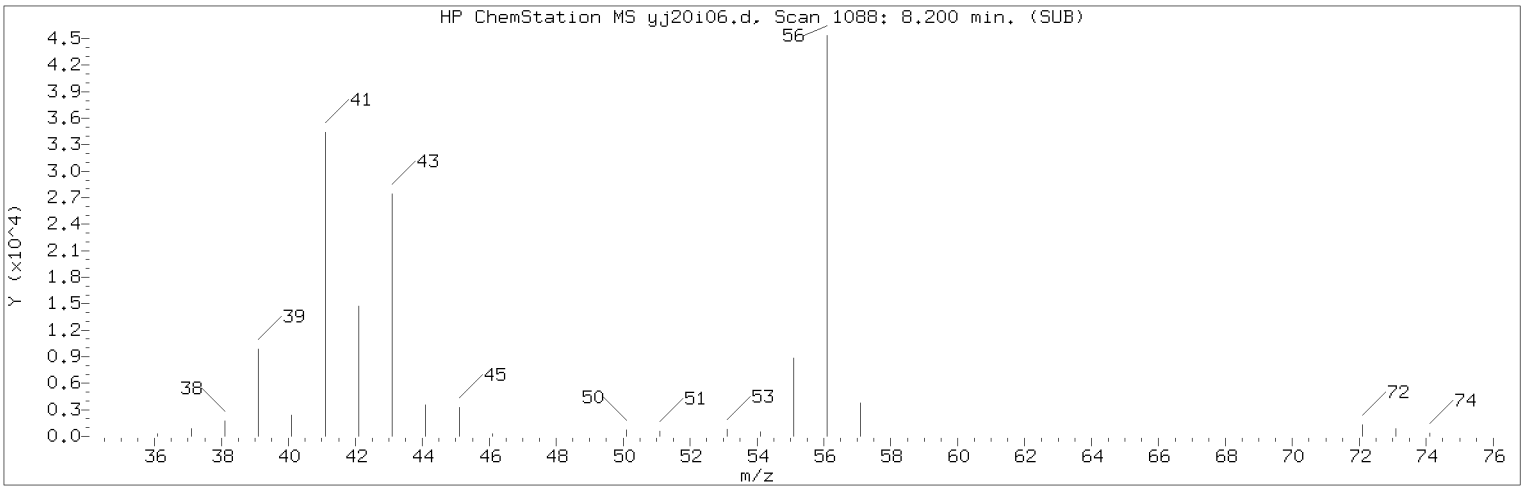
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

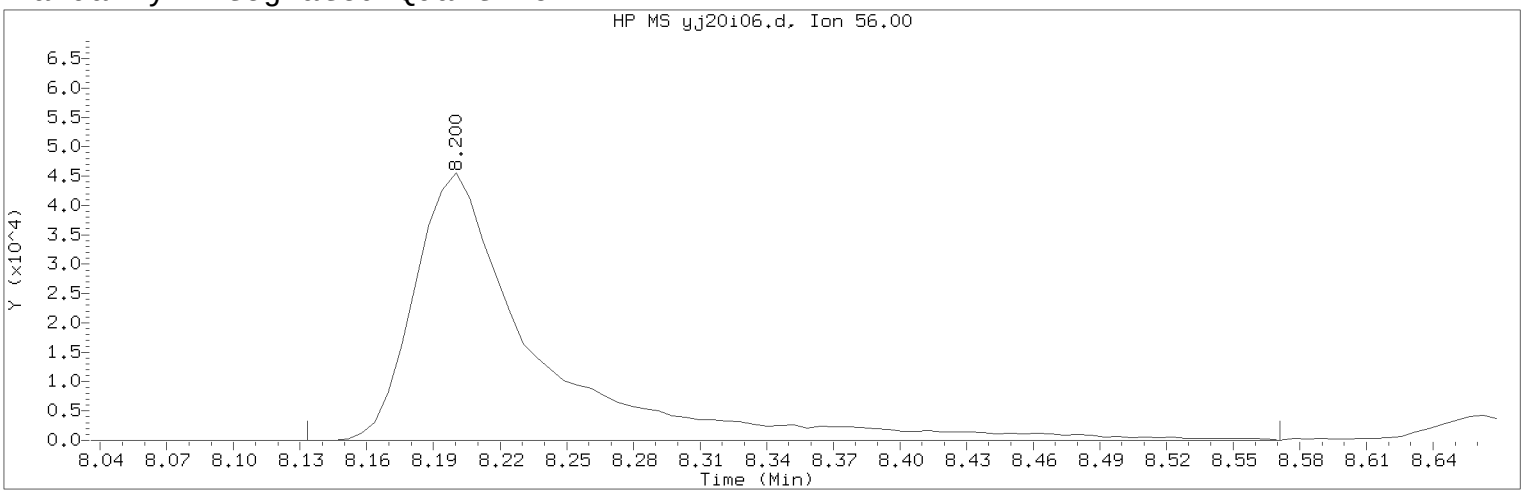
Compound Number : 56
Compound Name : Carbon Tetrachloride
Scan Number : 888
Retention Time (minutes): 6.983
Quant Ion : 117.00
Area : 29019
On-column Amount (ng) : 4.0487
Integration start scan : 881 Integration stop scan: 932
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

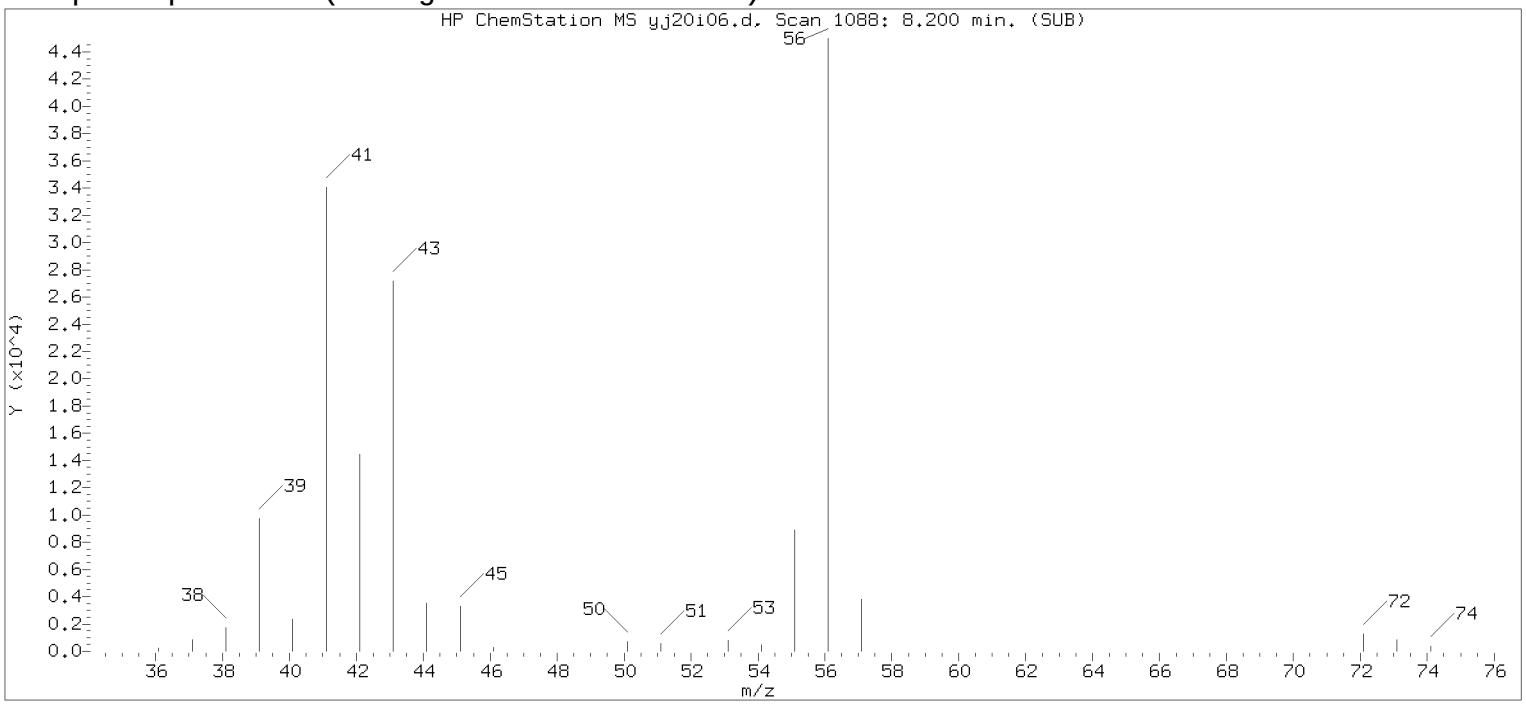
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1088
Retention Time (minutes): 8.200
Quant Ion : 56.00
Area (flag) : 174058M
On-Column Amount (ng) : 373.3426
Integration start scan : 1076 Integration stop scan: 1148
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

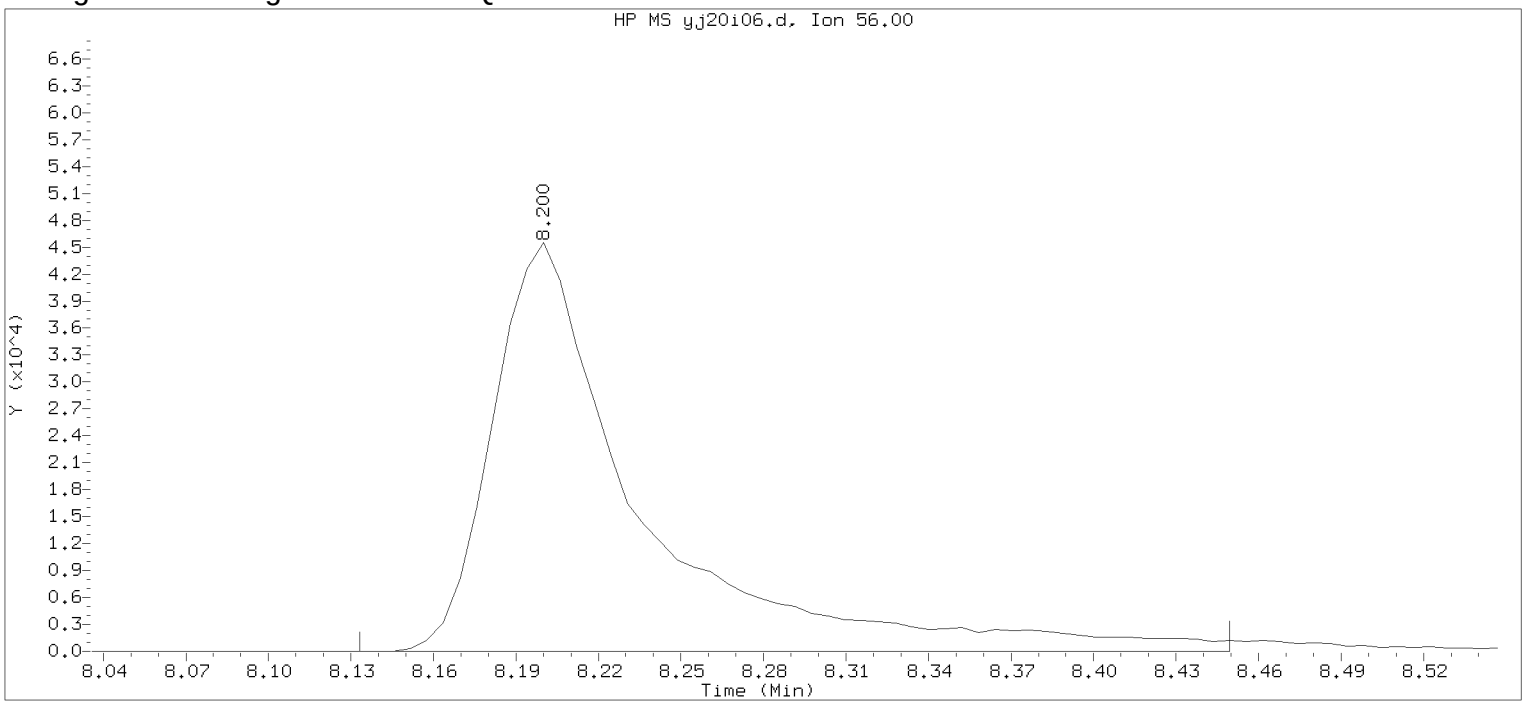
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

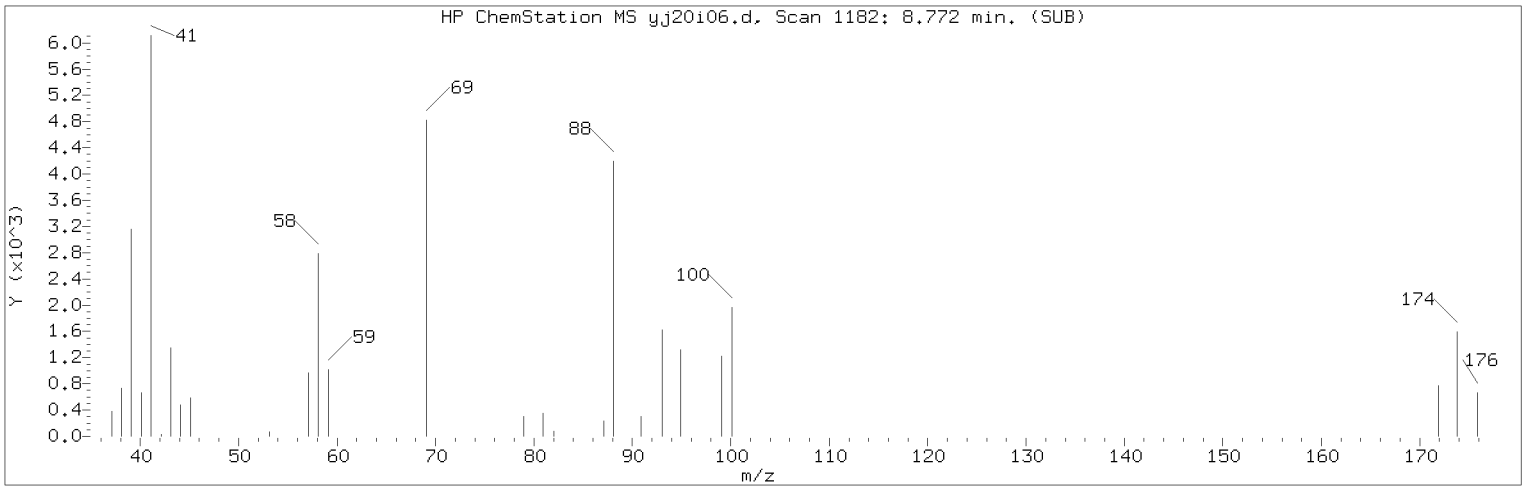
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

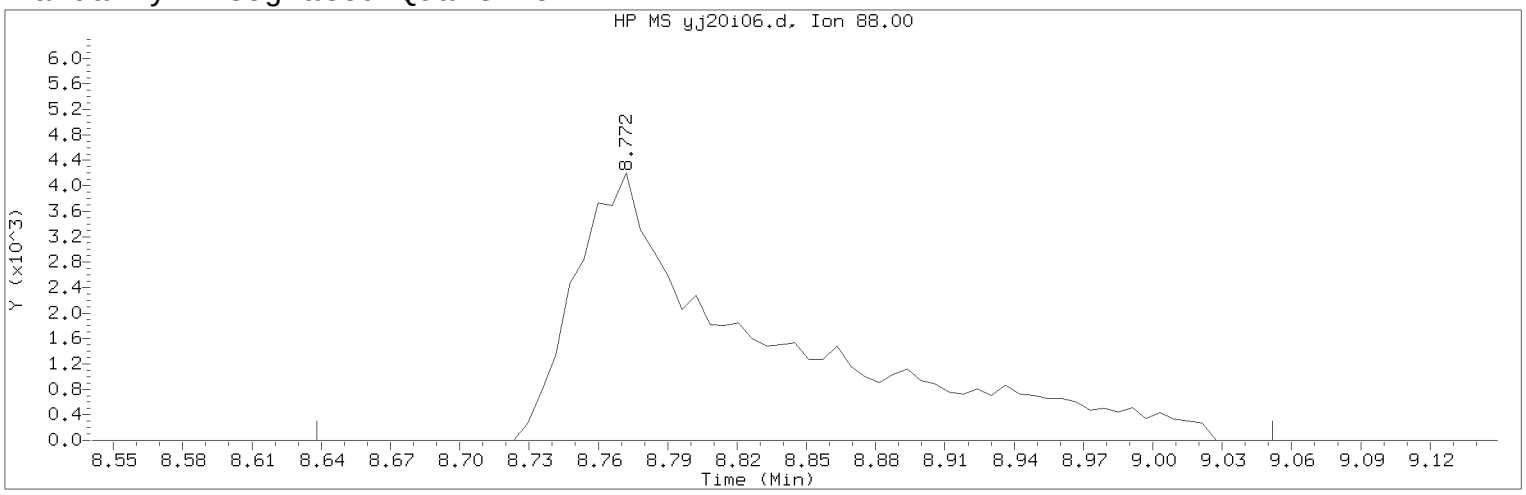
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1088
Retention Time (minutes): 8.200
Quant Ion : 56.00
Area : 169725
On-column Amount (ng) : 371.6645
Integration start scan : 1076 Integration stop scan: 1128
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

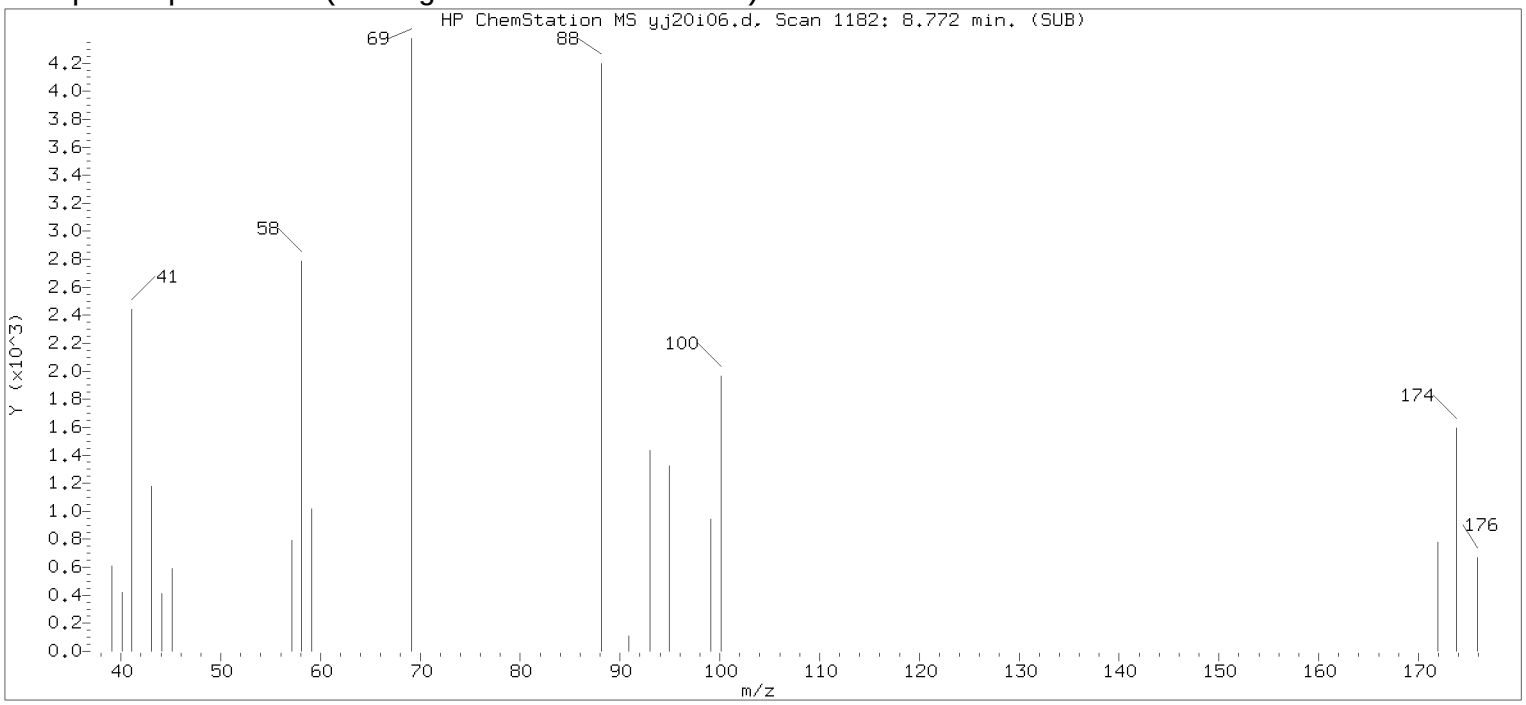
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area (flag) : 24067M
On-Column Amount (ng) : 190.4979
Integration start scan : 1159 Integration stop scan: 1227
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

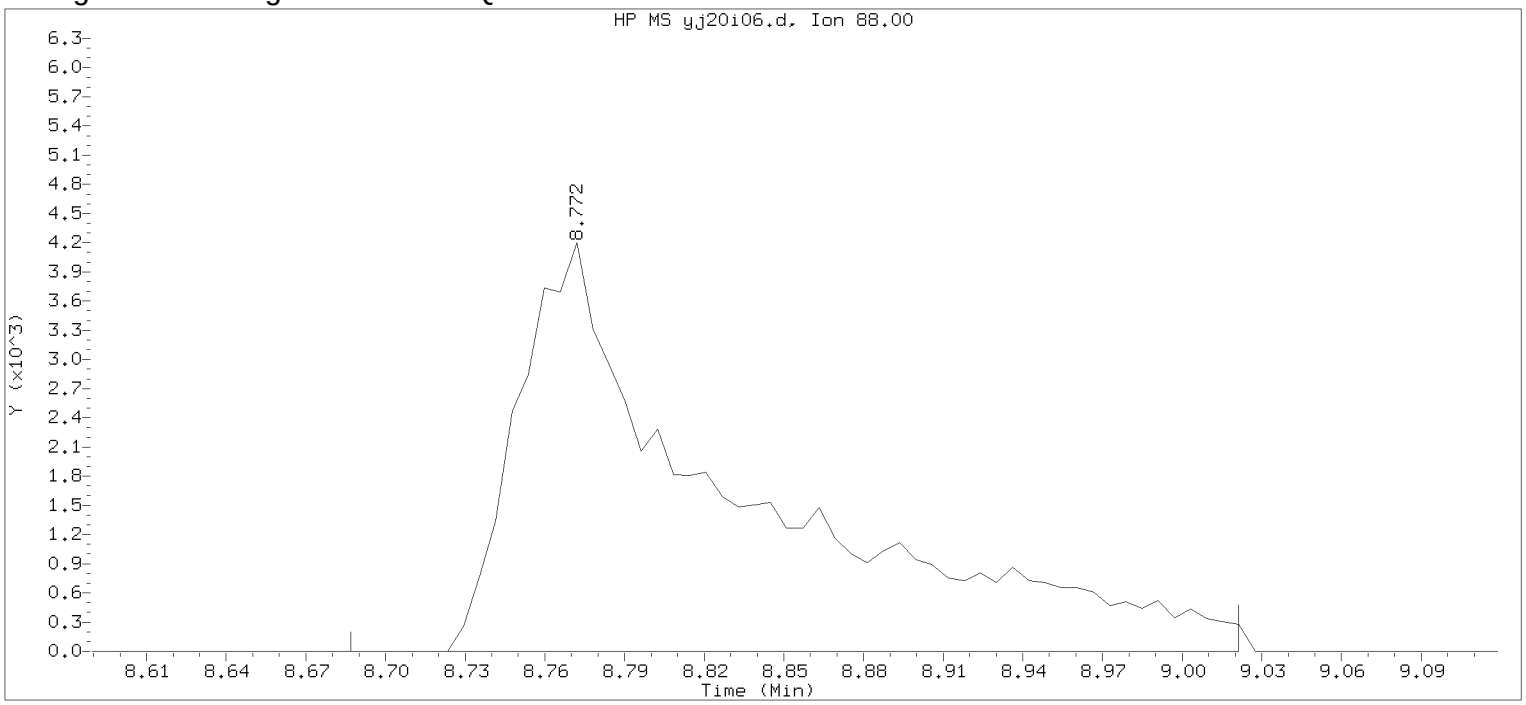
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

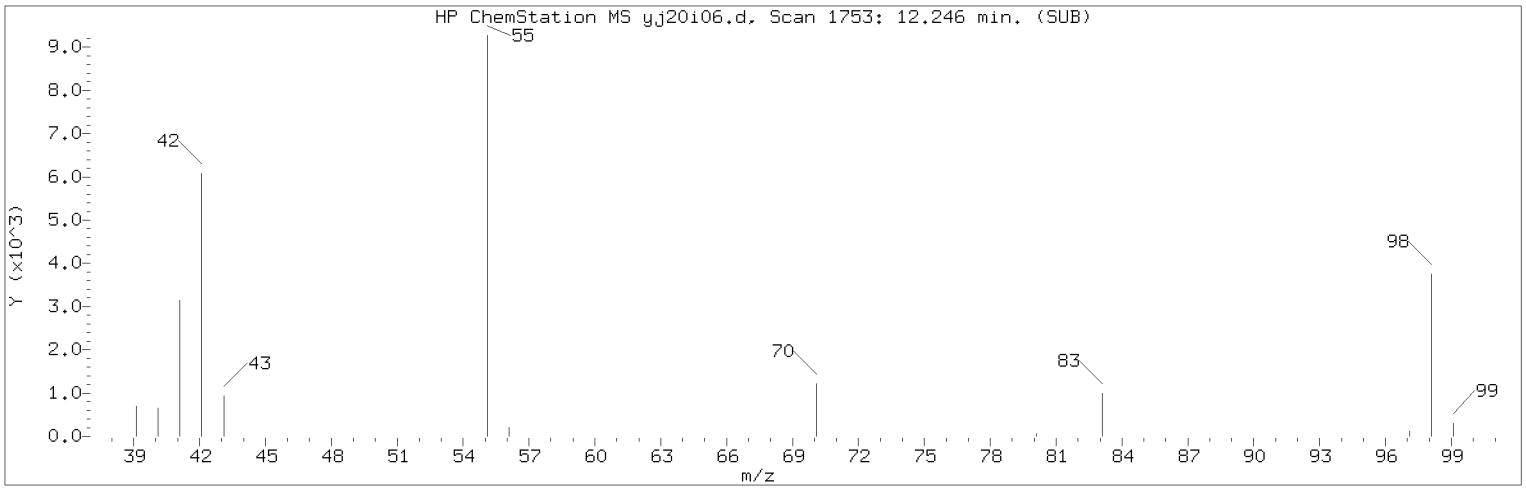
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

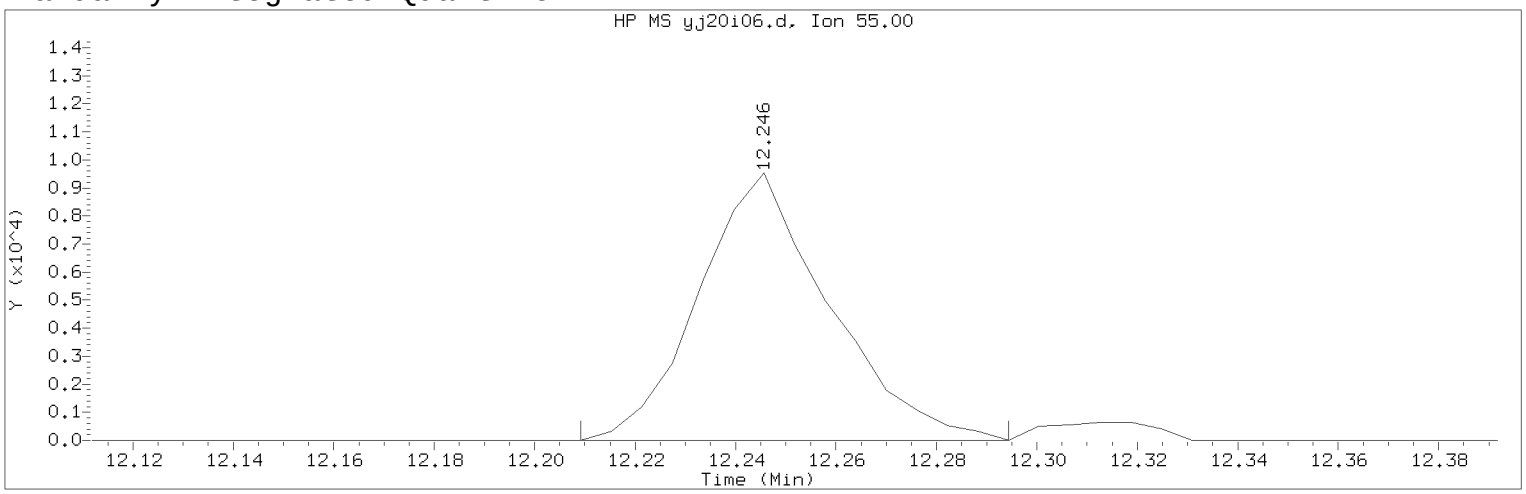
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area : 24016
On-column Amount (ng) : 192.9134
Integration start scan : 1167 Integration stop scan: 1222
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

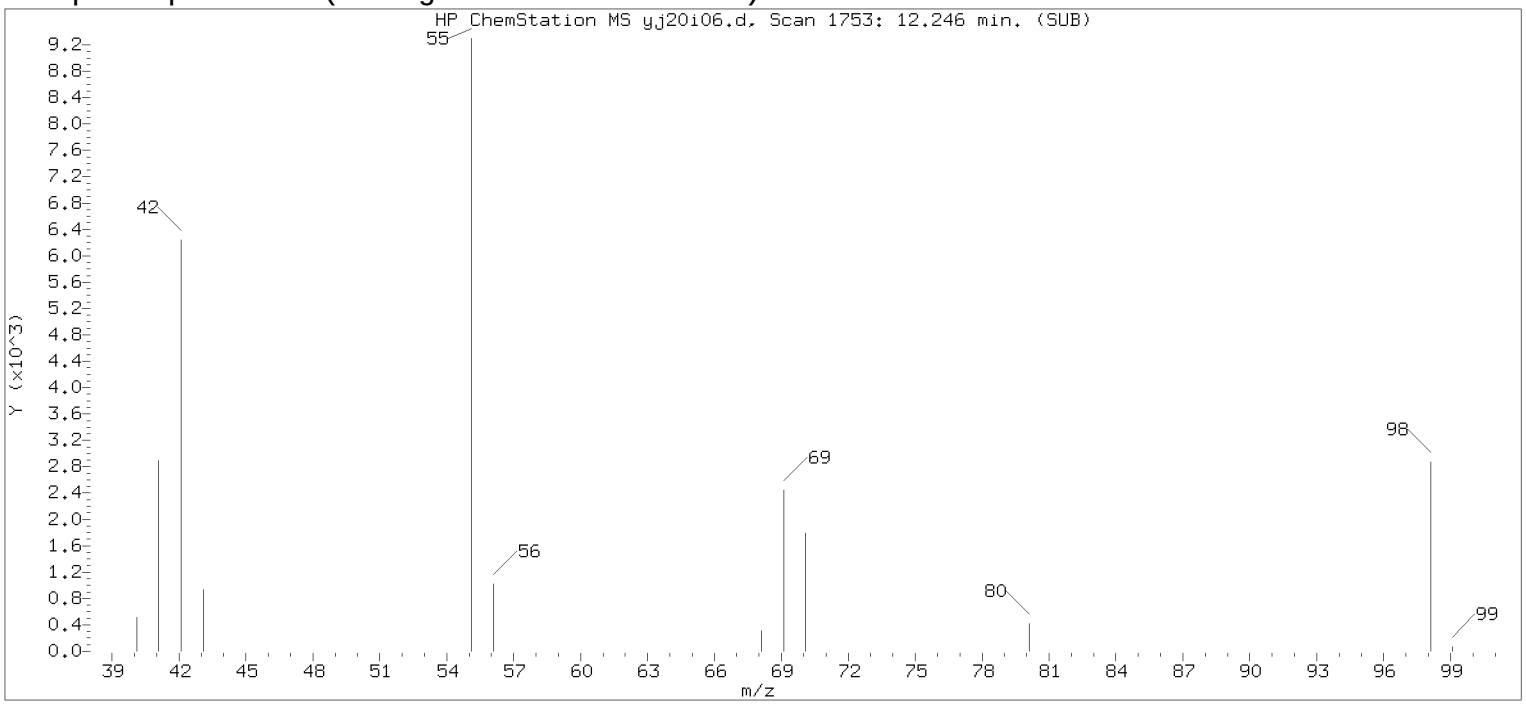
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 17119M
On-Column Amount (ng) : 181.8076
Integration start scan : 1746 Integration stop scan: 1760
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

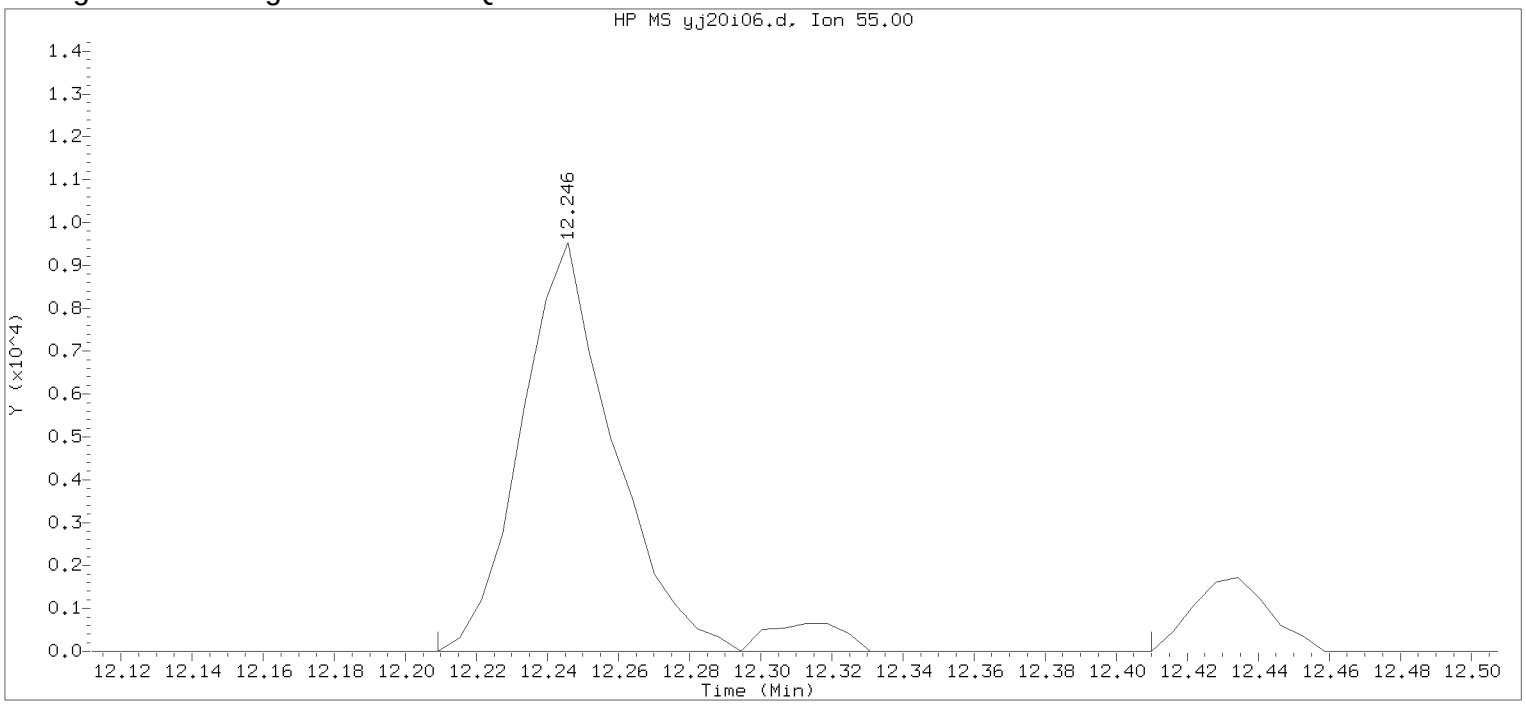
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

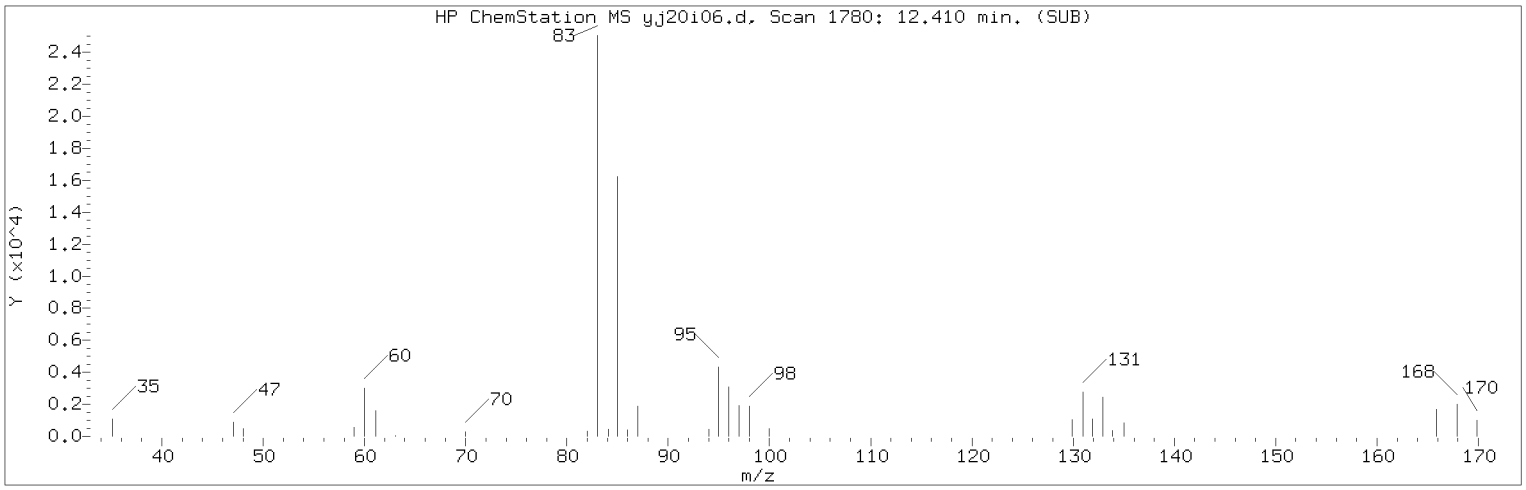
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

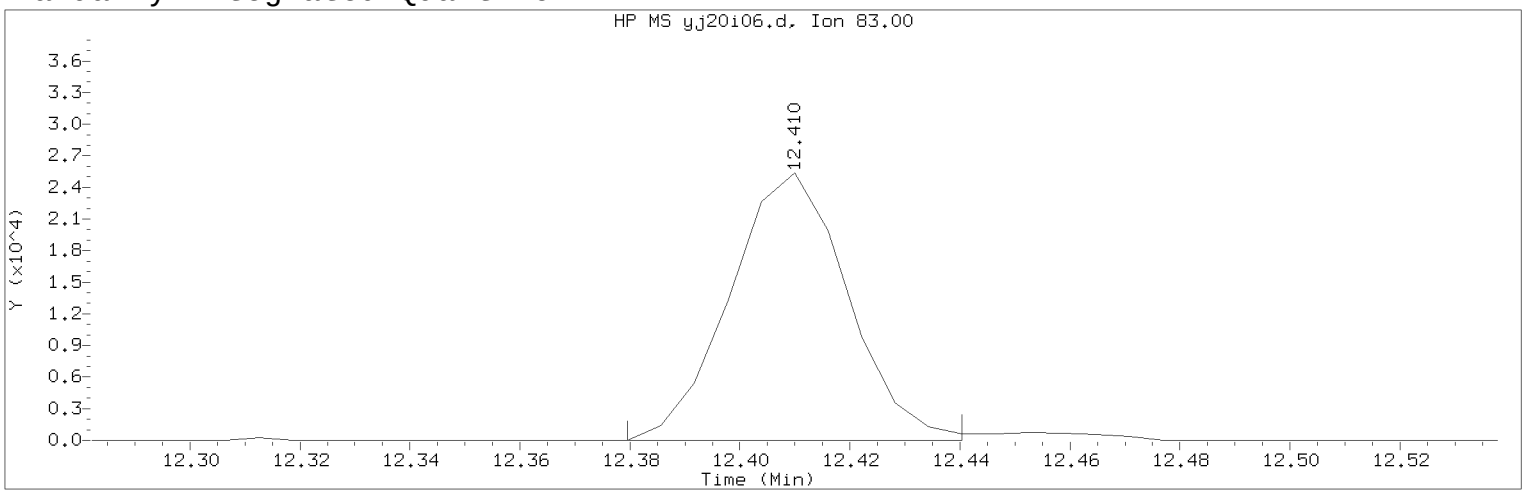
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 18127
On-column Amount (ng) : 187.7575
Integration start scan : 1746 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

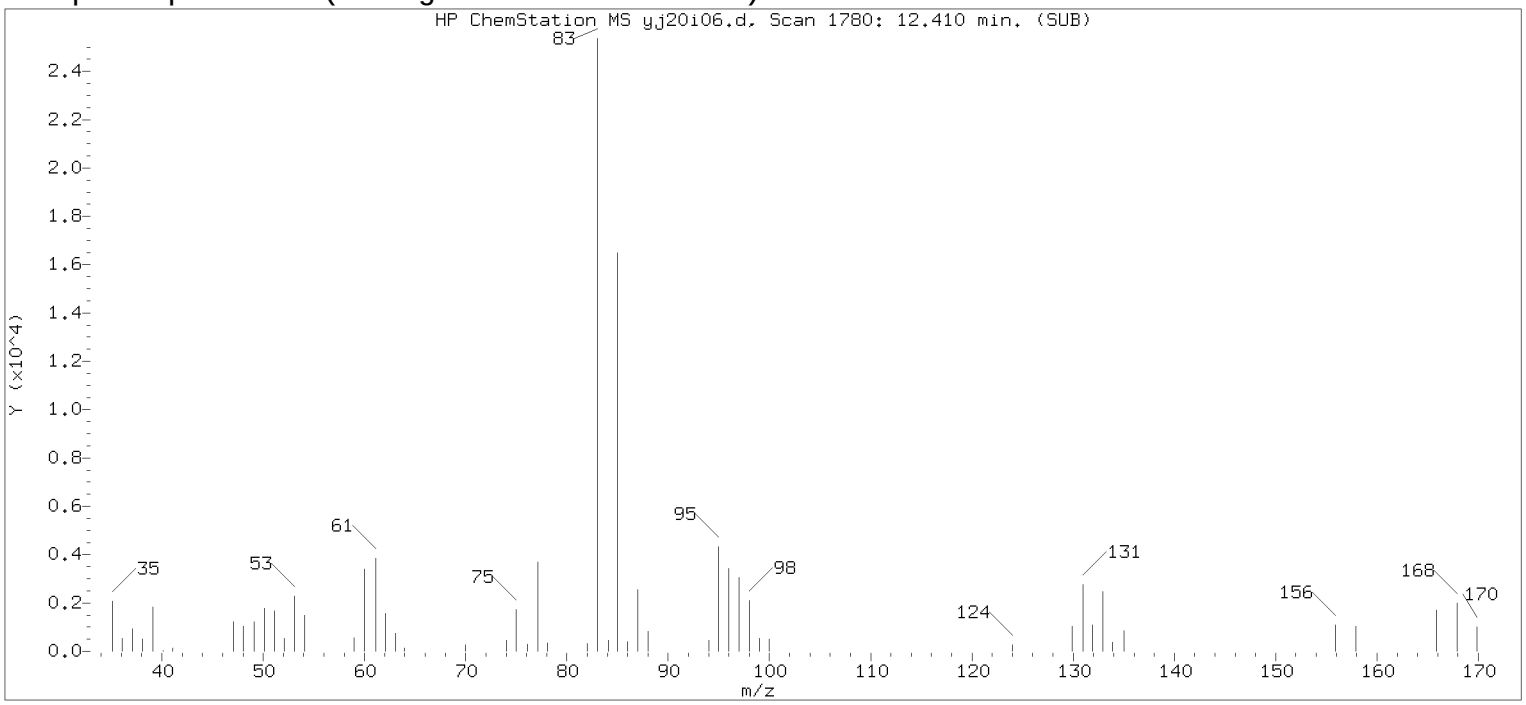
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 37654M
On-Column Amount (ng) : 3.8541
Integration start scan : 1774 Integration stop scan: 1784
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

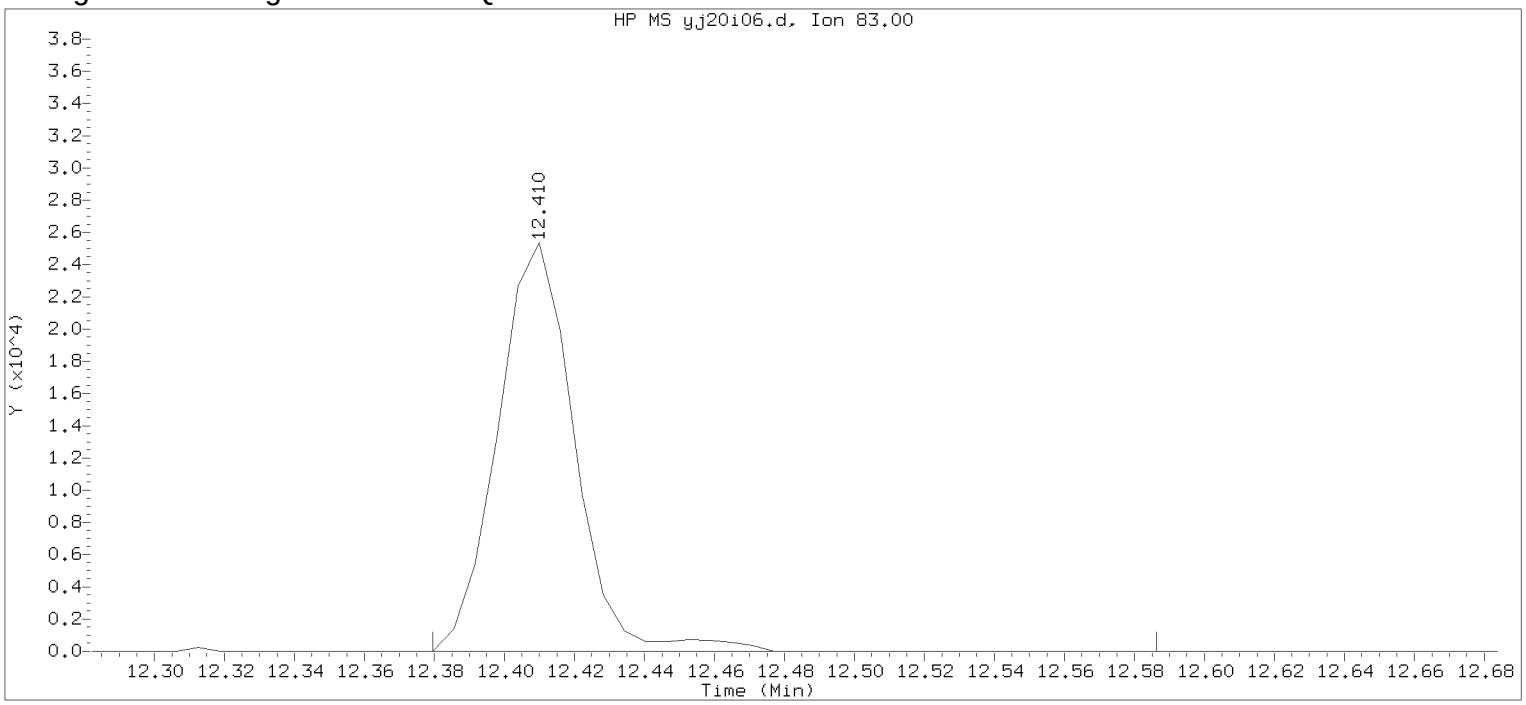
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

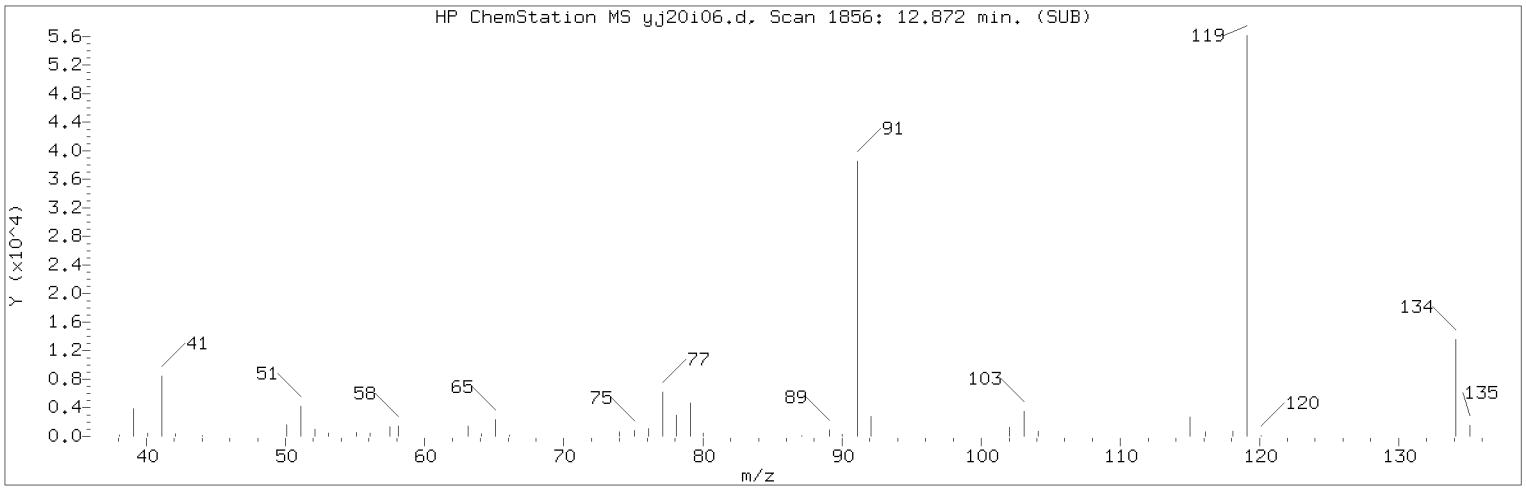
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

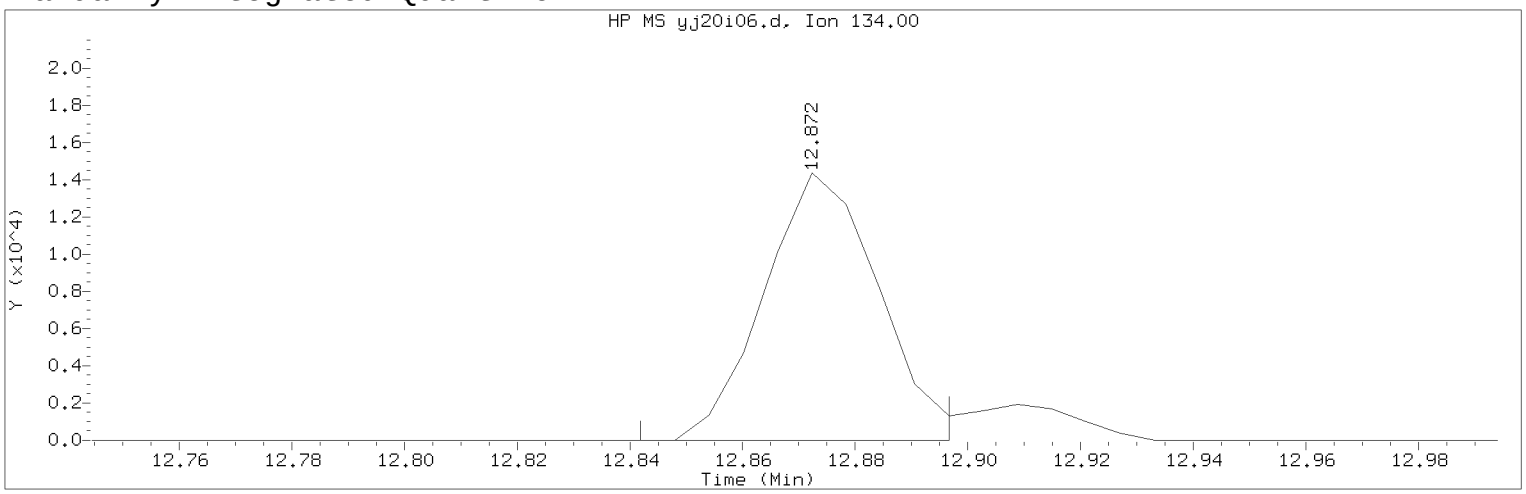
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 38720
On-column Amount (ng) : 3.9034
Integration start scan : 1774 Integration stop scan: 1808
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

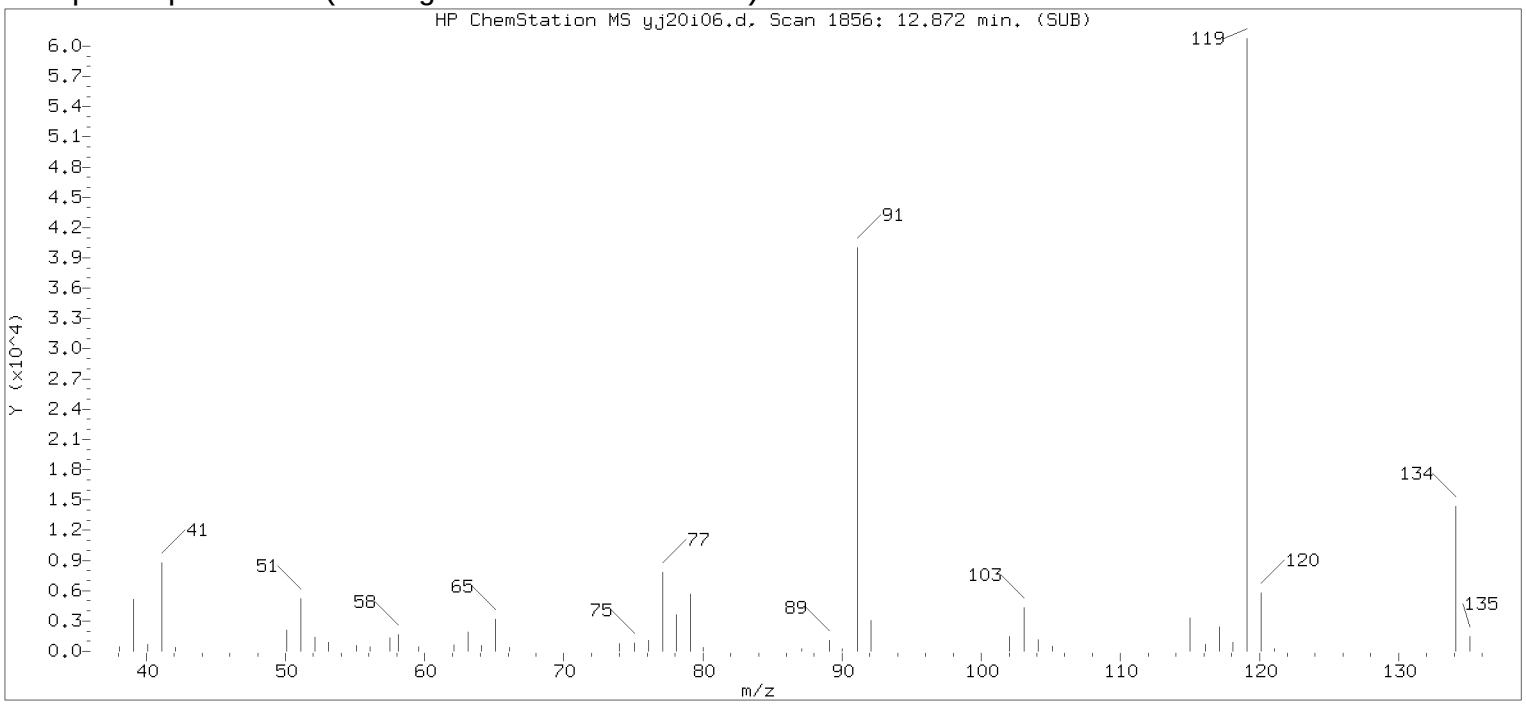
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 20259M
On-Column Amount (ng) : 3.8107
Integration start scan : 1850 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

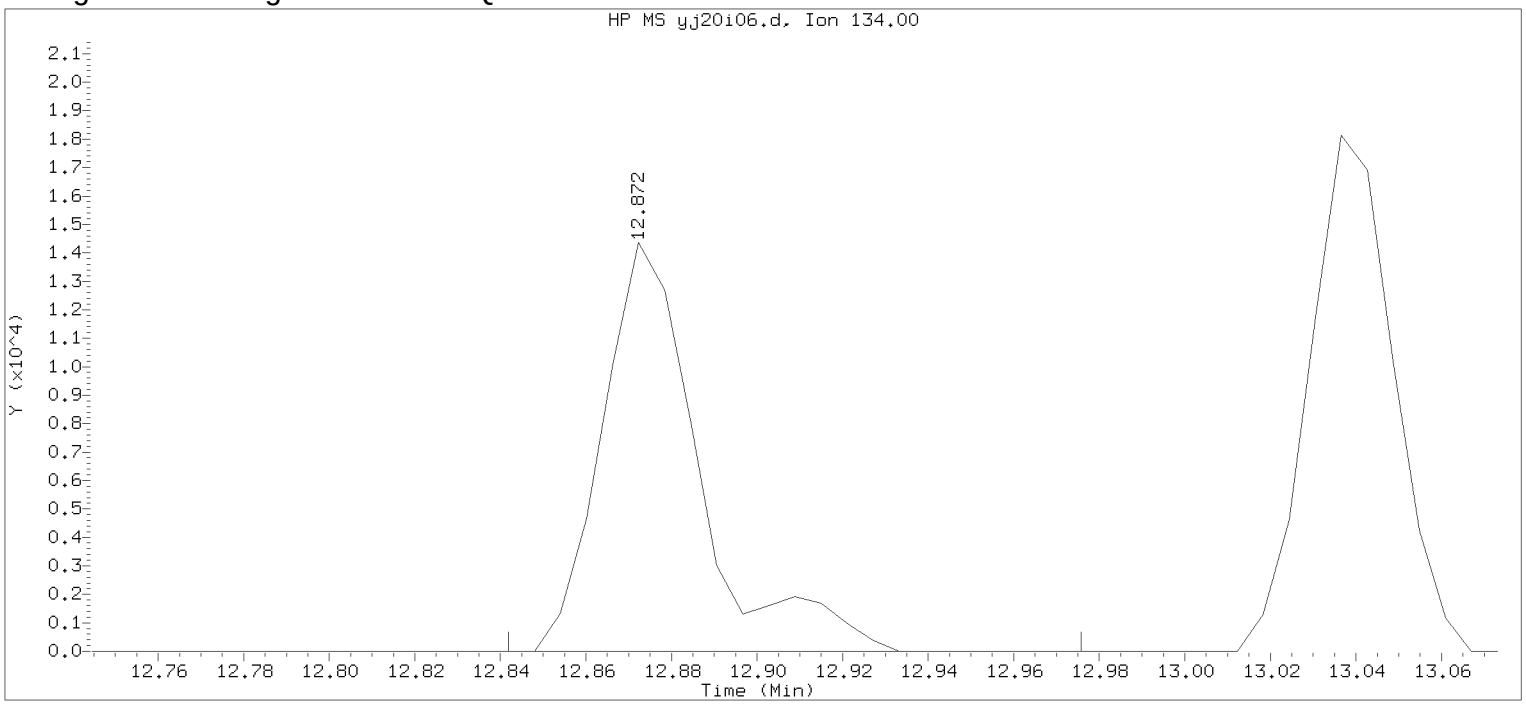
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



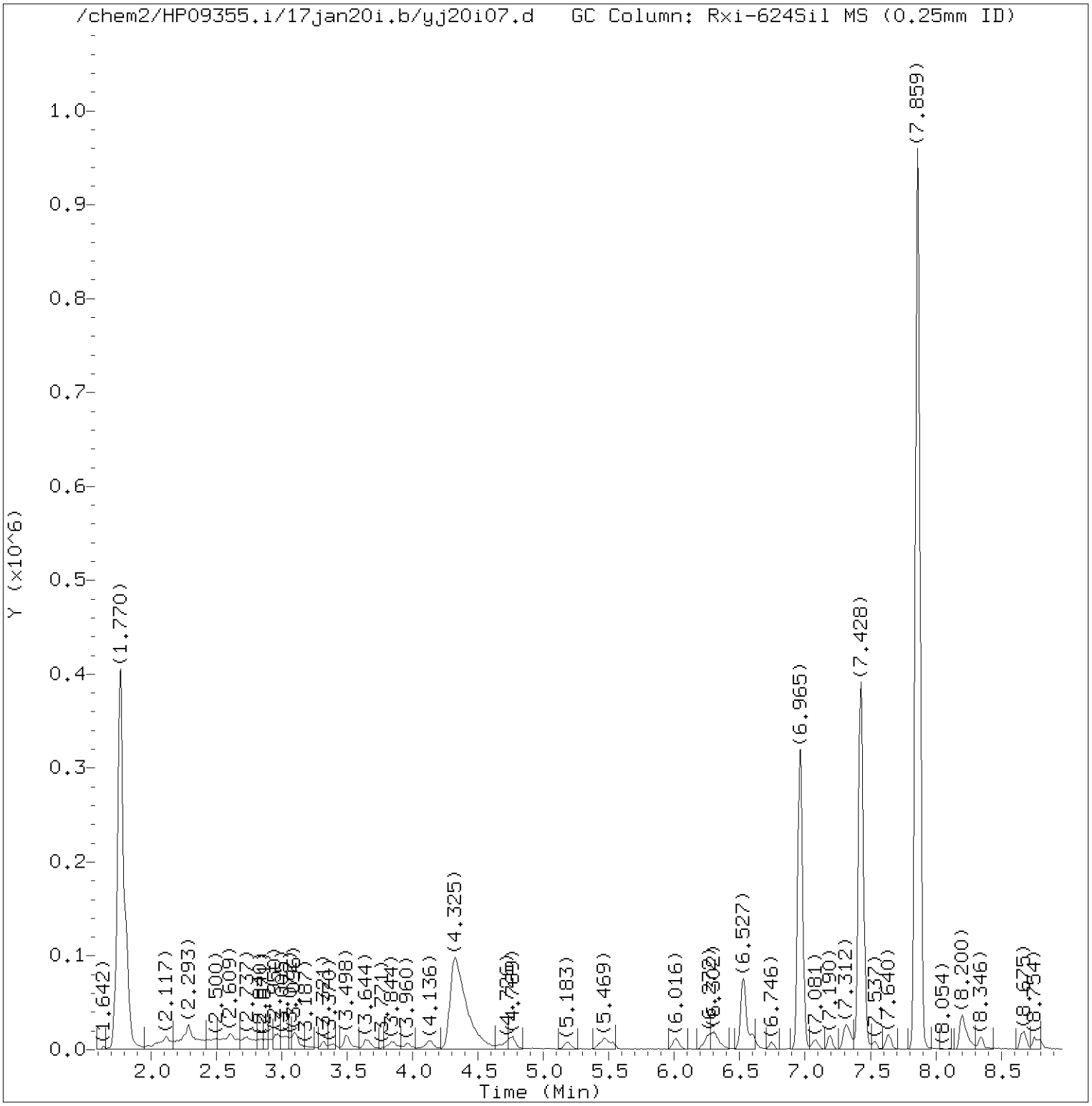

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 22665
On-column Amount (ng) : 4.0001
Integration start scan : 1850 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKENBWK03231




Total Ion Chromatogram (TIC)

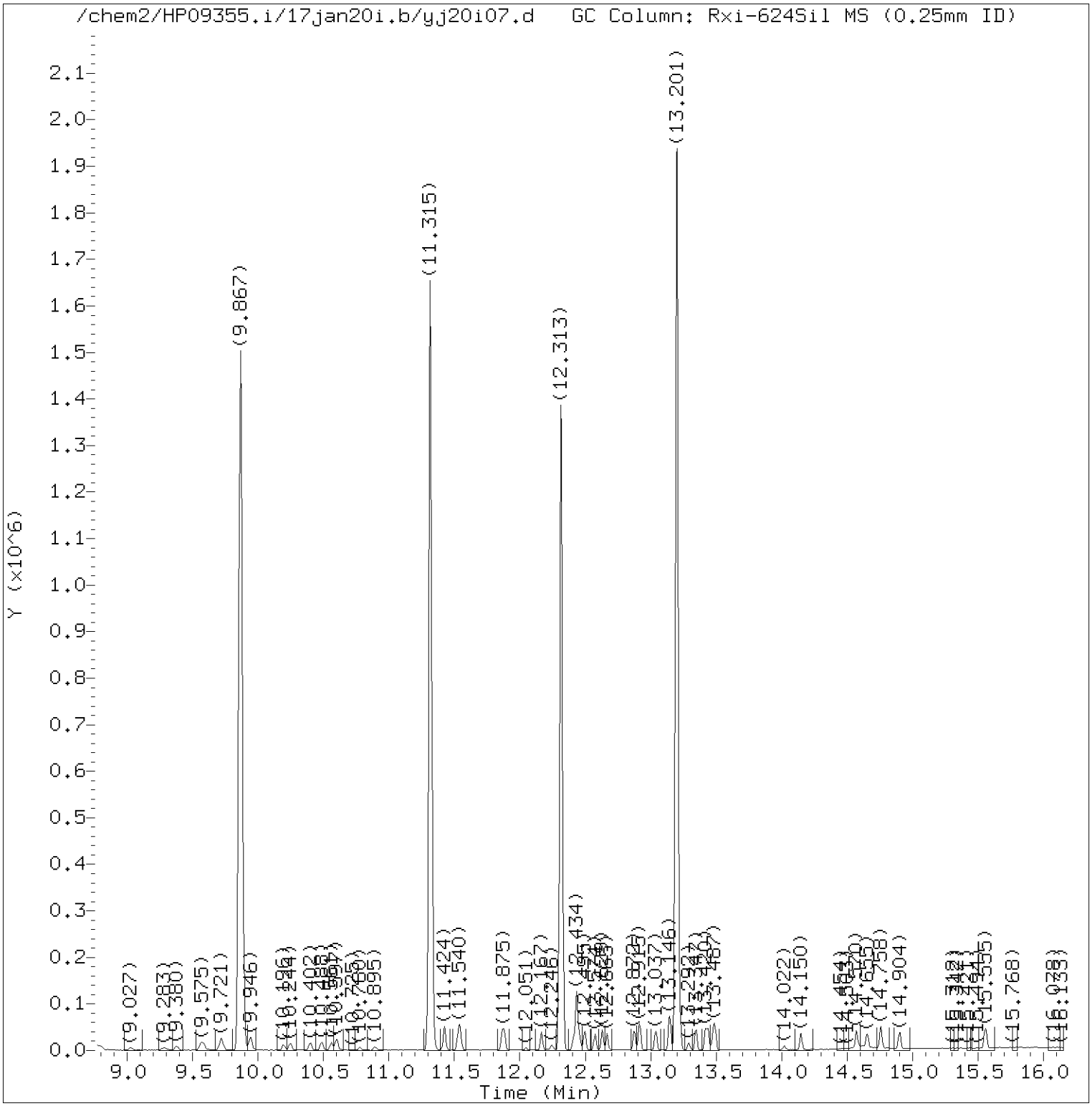
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

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on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 5287 | 0.729 |
| 4) Chloromethane | (2) | 2.117 | 50 | 6933 | 0.888 |
| 6) Vinyl Chloride | (2) | 2.256 | 62 | 6330 | 0.863 |
| 5) 1,3-Butadiene | (2) | 2.293 | 39 | 15293 | 1.970 |
| 8) Bromomethane | (2) | 2.609 | 94 | 4892 | 0.940 |
| 9) Chloroethane | (2) | 2.731 | 64 | 3913 | 0.922 |
| 10) Dichlorofluoromethane | (2) | 2.956 | 67 | 9329 | 0.964 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 6671 | 0.773 |
| 11) n-Pentane | (2) | 3.108 | 43 | 12337 | 1.277 |
| 14) Ethyl ether | (2) | 3.315 | 59 | 4843 | 0.912 |
| 15) Freon 123a | (2) | 3.394 | 67 | 4949 | 0.816 |
| 16) Acrolein | (1) | 3.498 | 56 | 21683 | 9.355 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 3441M | 0.790 |
| 17) 1,1-Dichloroethene | (2) | 3.625 | 63 | 1589 | 0.709 |
| 18) Acetone | (1) | 3.668 | 58 | 1761 | 1.598 |
| 19) Freon 113 | (2) | 3.668 | 101 | 2999 | 0.669 |
| 21) 2-Propanol | (1) | 3.838 | 45 | 19608M | 22.317 |
| 22) Methyl Iodide | (2) | 3.856 | 142 | 6925 | 0.836 |
| 23) Carbon Disulfide | (2) | 3.960 | 76 | 10157 | 0.741 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 10469 | 1.238 |
| 25) Allyl Chloride | (2) | 4.136 | 41 | 8820M | 0.957 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.325 | 65 | 380396 | 250.000 |
| 28) Methylene Chloride | (2) | 4.331 | 84 | 5146 | 0.933 |
| 30) t-Butyl alcohol | (1) | 4.440 | 59 | 39355 | 22.751 |
| 31) Acrylonitrile | (2) | 4.678 | 53 | 3563 | 0.878 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.739 | 73 | 16651 | 0.918 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 4287 | 0.813 |
| 34) n-Hexane | (2) | 5.189 | 57 | 6105 | 0.739 |
| 36) 1,1-Dichloroethane | (2) | 5.420 | 63 | 8101 | 0.851 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 17616 | 0.923 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.529 | 53 | 6615 | 0.738 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 16382 | 0.917 |
| 44) 2-Butanone | (2) | 6.223 | 43 | 13056 | 2.070 |
| 42) cis-1,2-Dichloroethene | (2) | 6.253 | 96 | 5170M | 0.853 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 5704 | 0.763 |
| 47) Propionitrile | (1) | 6.302 | 54 | 34481 | 17.736 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 38804 | 9.010 |
| 50) Tetrahydrofuran | (1) | 6.594 | 71 | 2952 | 1.693 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 49) Bromochloromethane | (2) | 6.594 | 128 | 2630 | 0.822 |
| 51) Chloroform | (2) | 6.746 | 83 | 8084 | 0.843 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 9457 | 1.666 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 264722 | 49.165 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 111 | 267810 | 48.600 |
| 53) 1,1,1-Trichloroethane | (2) | 6.983 | 97 | 6337 | 0.790 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 7661 | 0.784 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 6390 | 0.796 |
| 54) Cyclohexane | (2) | 7.075 | 69 | 2106 | 0.709 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 6333 | 0.817 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 4823 | 0.722 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 31831 | 50.247 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.421 | 102 | 70967 | 50.268 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 366827 | 51.656 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 104 | 44286 | 49.448 |
| 60) Benzene | (2) | 7.458 | 78 | 20663 | 0.895 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 8009 | 0.948 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 98 | 250 | 0.365 |
| 65) t-Amyl methyl ether | (2) | 7.640 | 73 | 16226 | 0.907 |
| 66)*Fluorobenzene | (2) | 7.859 | 96 | 1154548 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 8337 | 0.857 |
| 69) n-Butanol | (1) | 8.200 | 56 | 41321 | 82.585 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 4976 | 0.832 |
| 72) Methylcyclohexane | (2) | 8.656 | 83 | 7944 | 0.747 |
| 72) Methylcyclohexane | (2) | 8.656 | 98 | 3429 | 0.713 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 5071 | 0.836 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 5551 | 0.831 |
| 75) 1,4-Dioxane | (1) | 8.778 | 88 | 6154 | 44.863 |
| 74) Dibromomethane | (2) | 8.790 | 93 | 3590 | 0.904 |
| 78) Bromodichloromethane | (2) | 9.027 | 83 | 5275 | 0.770 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 4548 | 1.707 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 4374 | 0.842 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 6569 | 0.734 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 21547 | 1.922 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1142276 | 50.541 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 734492 | 50.306 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 12795 | 1.492 |
| 88) Toluene | (3) | 9.946 | 92 | 12869 | 0.865 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 6226 | 0.758 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 8006 | 0.776 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 5367 | 0.918 |
| 93) Tetrachloroethene | (3) | 10.494 | 166 | 5207 | 0.795 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 8949 | 0.906 |
| 96) 2-Hexanone | (3) | 10.603 | 43 | 16454M | 1.848 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 3910 | 0.712 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 5492 | 0.871 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 874803 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 7889 | 0.951 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 15550 | 0.910 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.418 | 131 | 3907 | 0.741 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 24280 | 0.848 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 19061 | 1.672 |
| 108) Xylene (Total) | (3) | | 106 | 27895 | 2.468 |
| 107) o-Xylene | (3) | 11.868 | 106 | 8834 | 0.796 |
| 109) Styrene | (3) | 11.887 | 104 | 13853 | 0.727 |
| 110) Bromoform | (3) | 12.051 | 173 | 2763 | 0.646 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 23377 | 0.807 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 4491M | 43.189 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 422074 | 49.794 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 174 | 361386 | 49.996 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 8707 | 0.901 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 20498 | 6.691 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 6555 | 0.826 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 3167 | 0.964 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 27986 | 0.816 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 5803 | 0.822 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 20071 | 0.803 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 6314 | 0.843 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 4413M | 0.825 |
| 125) Pentachloroethane | (4) | 12.915 | 167 | 2659 | 0.658 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 20488 | 0.792 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 24836 | 0.790 |
| 129) 1,3-Dichlorobenzene | (4) | 13.146 | 146 | 12954 | 0.856 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 21424 | 0.767 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 479258 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 14188 | 0.911 |

M = Compound was manually integrated.
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on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 22716 | 0.874 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 10548 | 0.592 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 13355 | 0.821 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 13337 | 0.790 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 11264M | 0.801 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 13261 | 0.912 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 11263 | 0.825 |
| 141) Diethylbenzene (total) | (4) | | 100 | 37955 | 2.437 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 1945 | 0.828 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 10444 | 0.980 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 10655 | 1.095 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 5102 | 1.067 |
| 148) Naphthalene | (4) | 14.758 | 128 | 33987 | 1.091 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 10533 | 1.190 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 22489 | 1.340 |

M = Compound was manually integrated.



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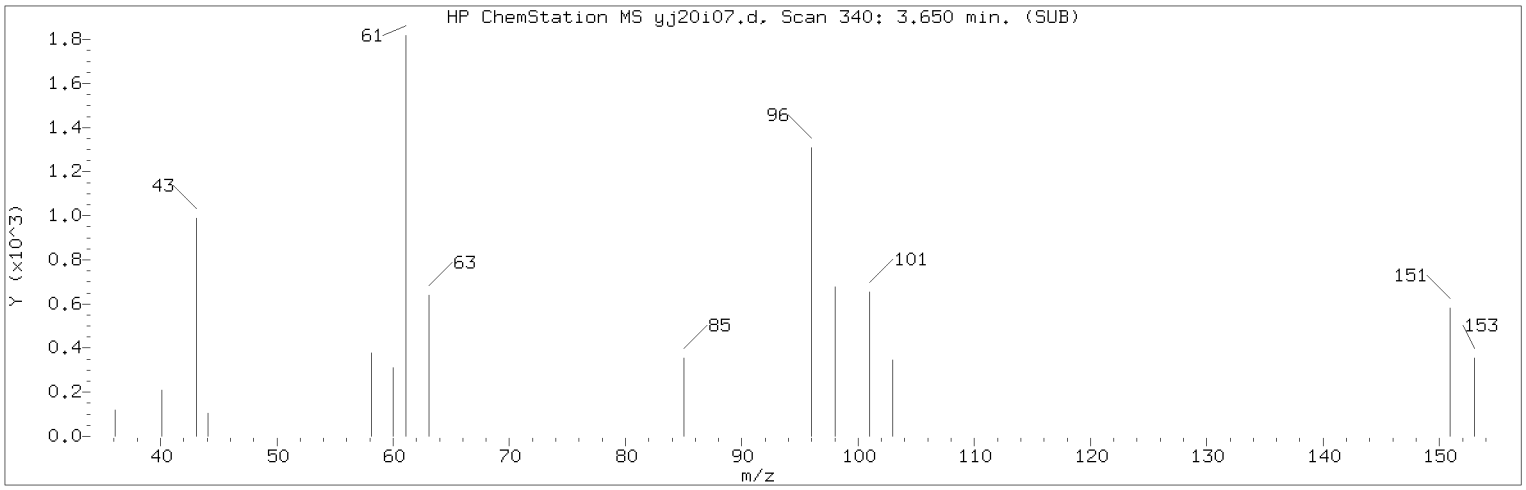
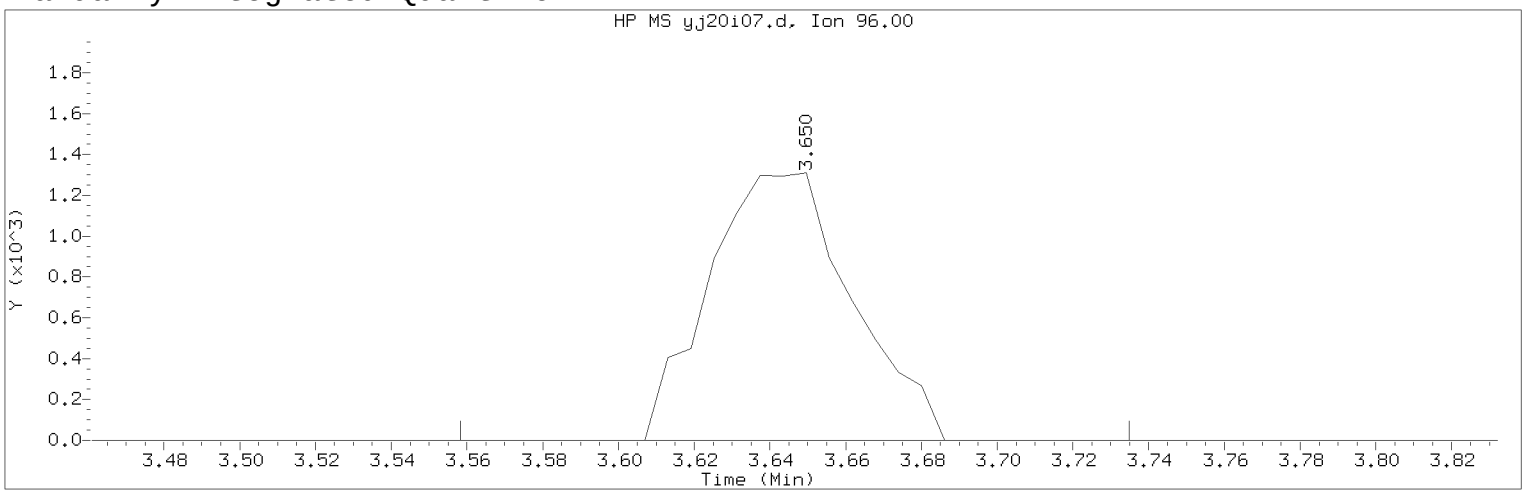
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

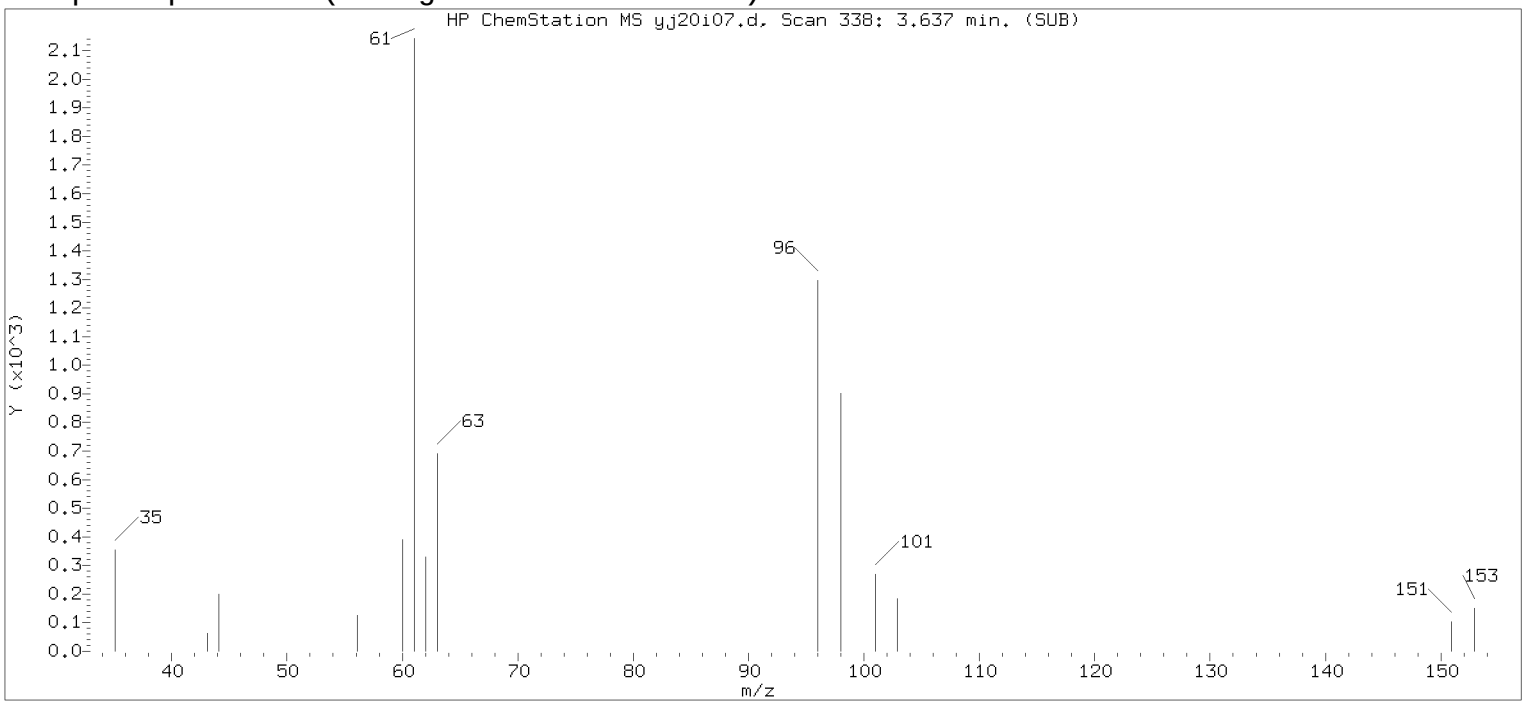
Compound Number : 17
Compound Name : 1,1-Dichloroethene
Scan Number : 340
Retention Time (minutes): 3.650
Quant Ion : 96.00
Area (flag) : 3441M
On-Column Amount (ng) : 0.7897
Integration start scan : 324 Integration stop scan: 353
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

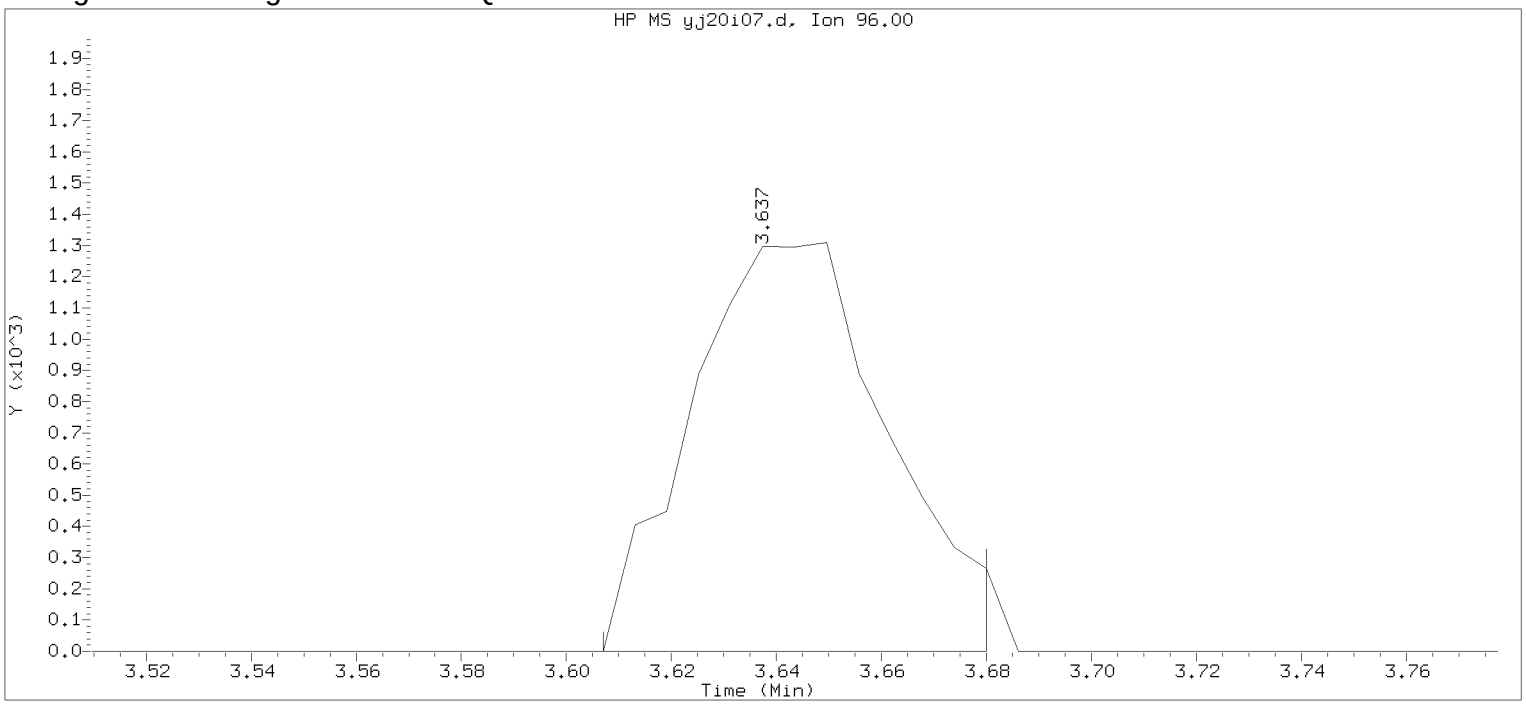
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

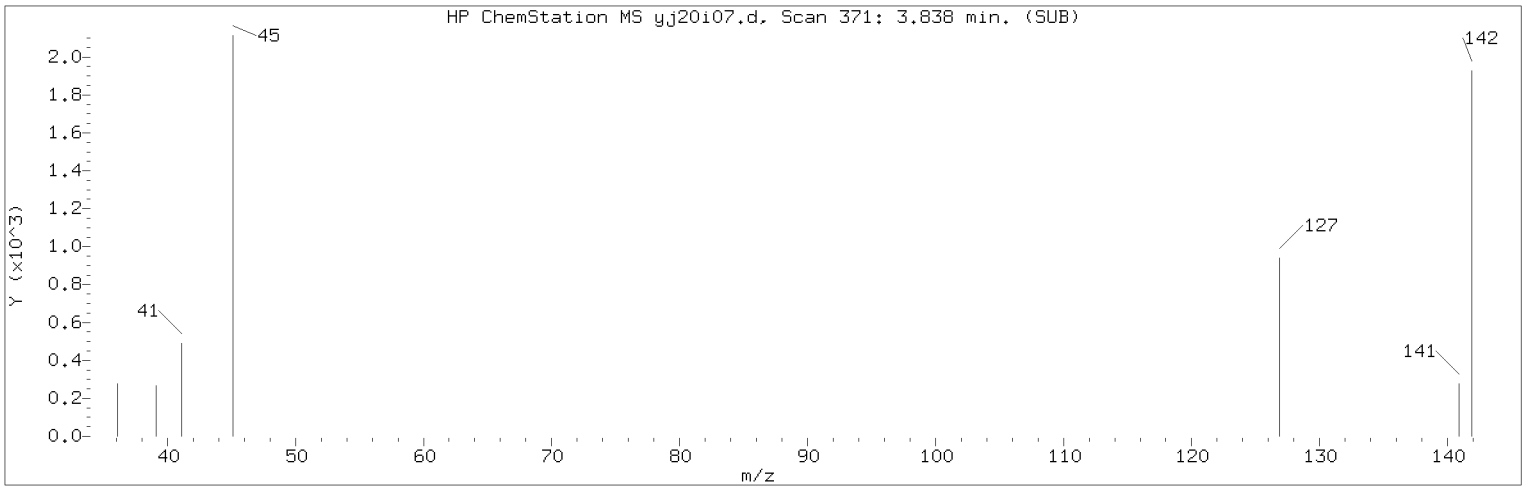
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

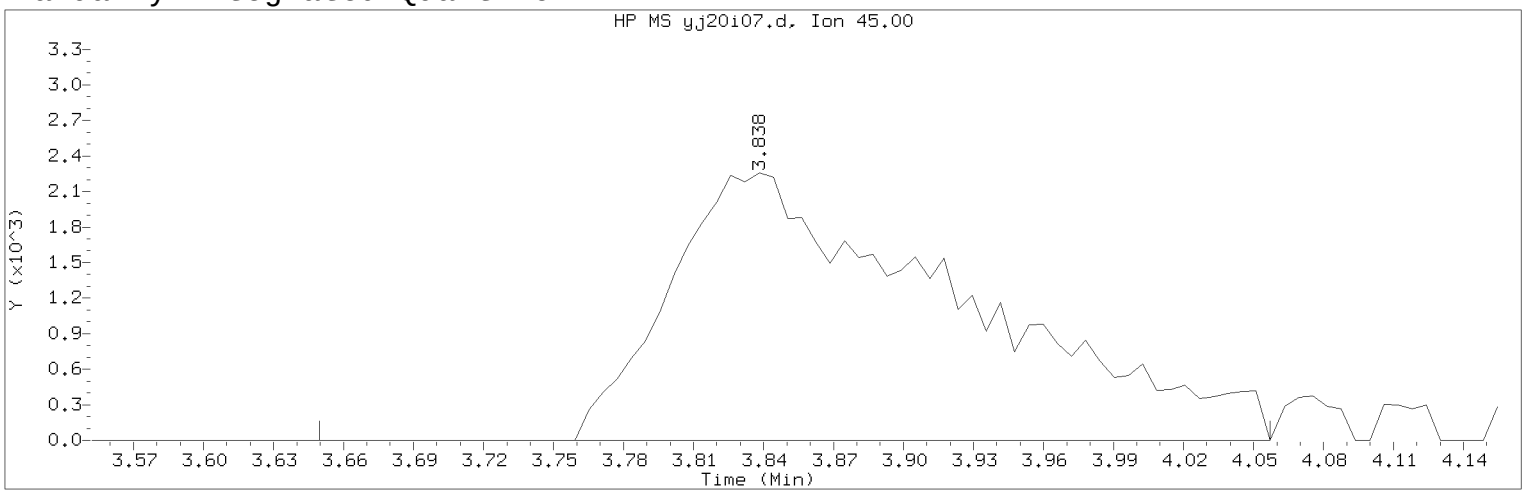
Compound Number : 17
Compound Name : 1,1-Dichloroethene
Scan Number : 338
Retention Time (minutes): 3.637
Quant Ion : 96.00
Area : 3393
On-column Amount (ng) : 0.7799
Integration start scan : 332 Integration stop scan: 344
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

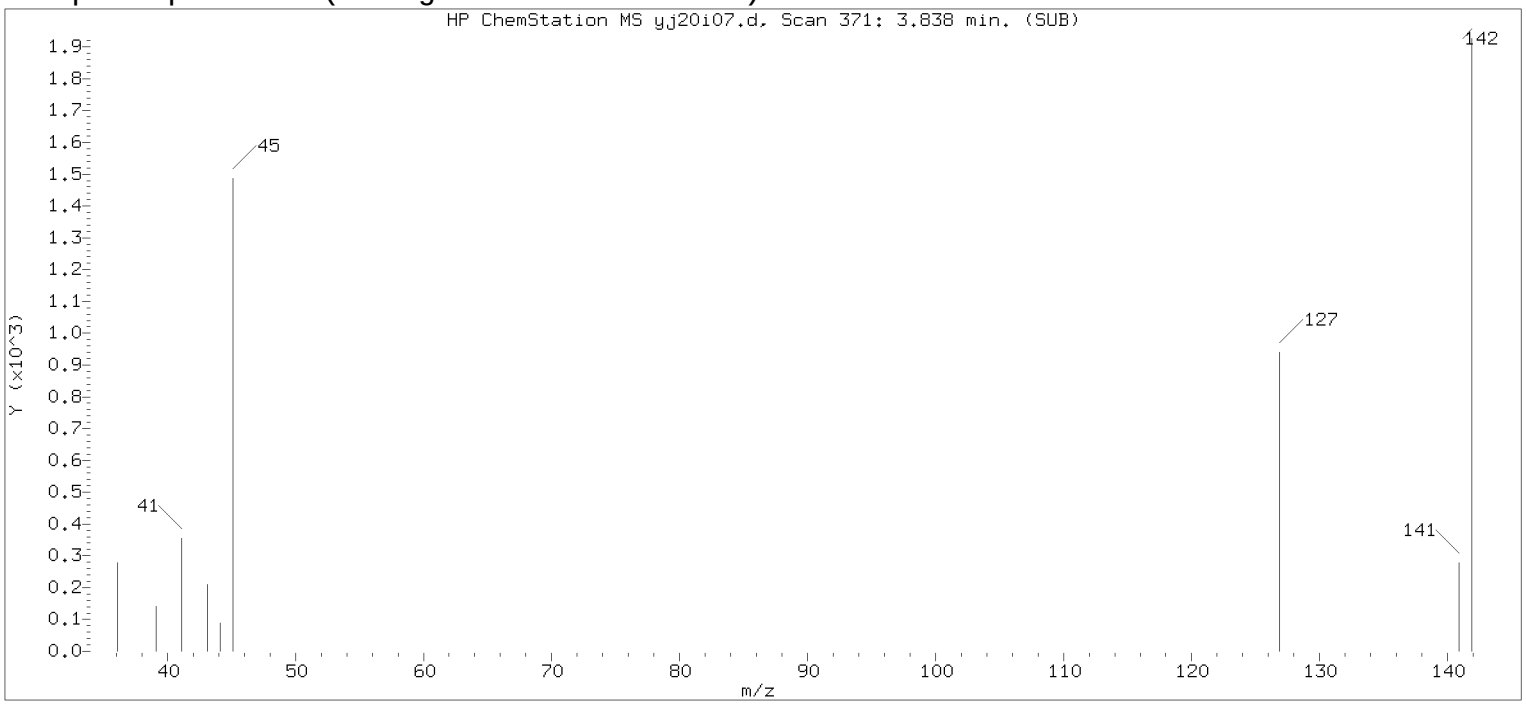
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 371
Retention Time (minutes): 3.838
Quant Ion : 45.00
Area (flag) : 19608M
On-Column Amount (ng) : 22.3166
Integration start scan : 339 Integration stop scan: 406
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

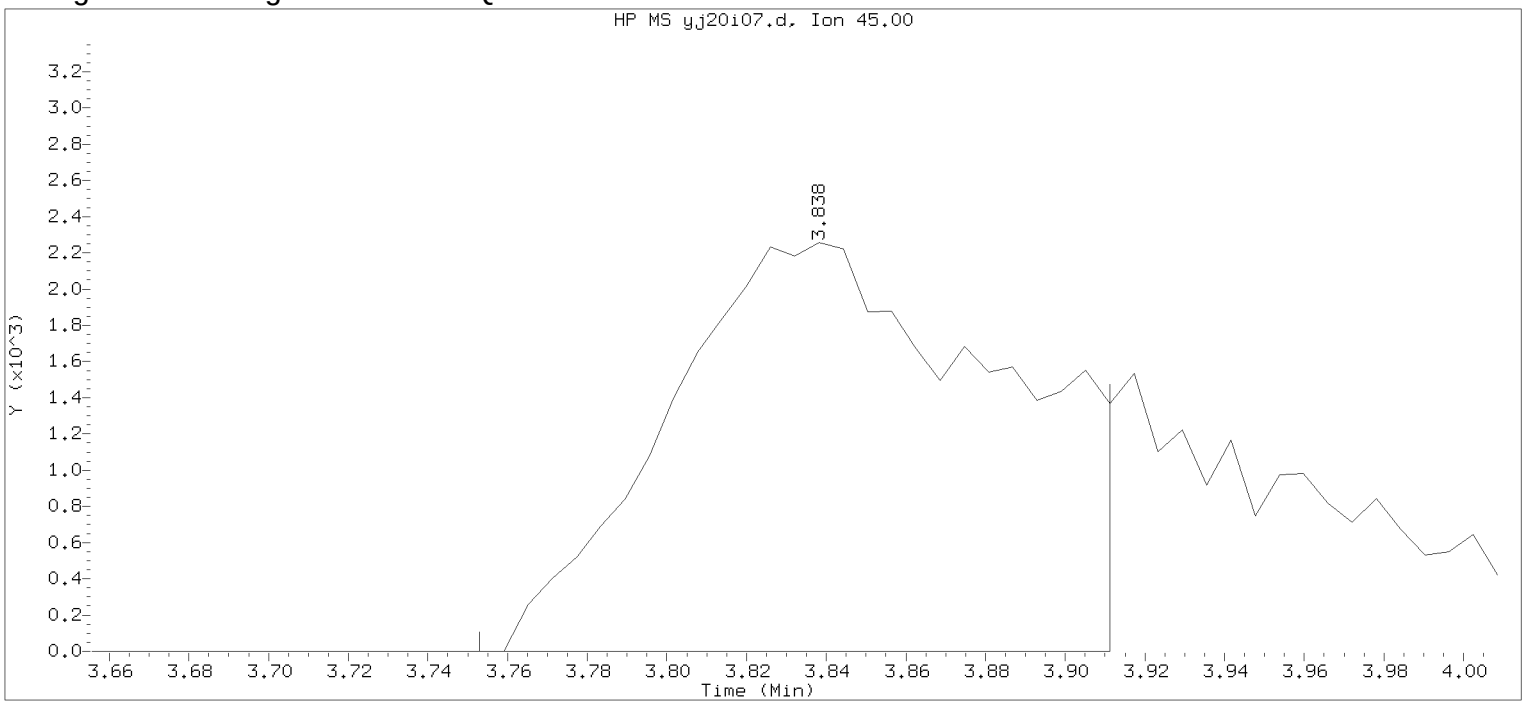
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

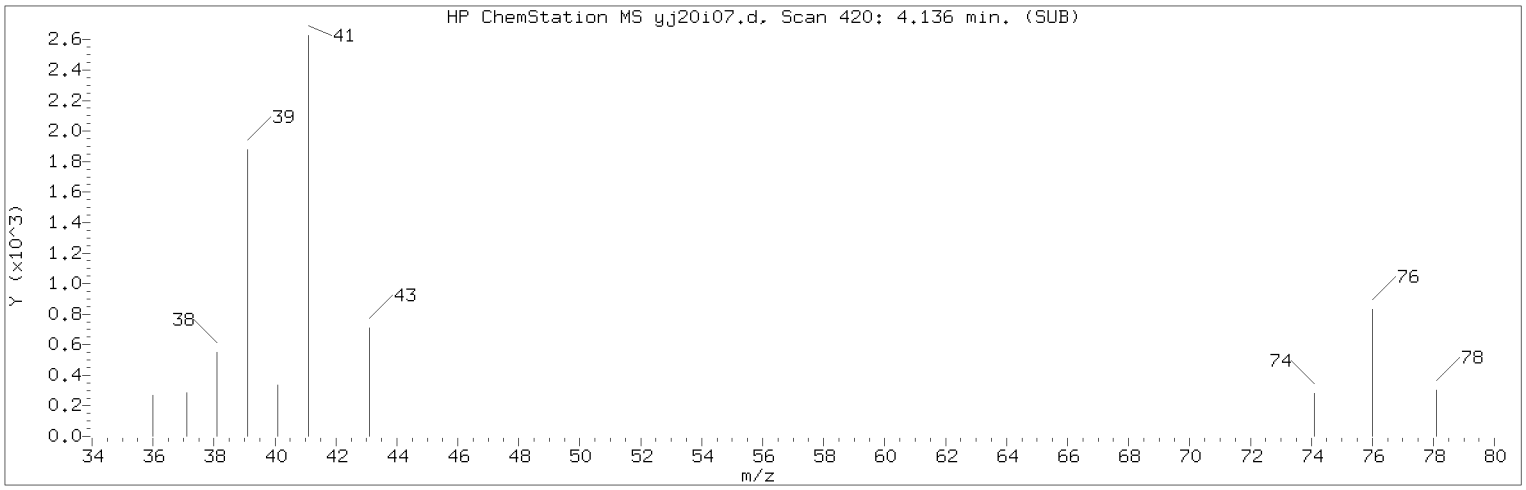
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

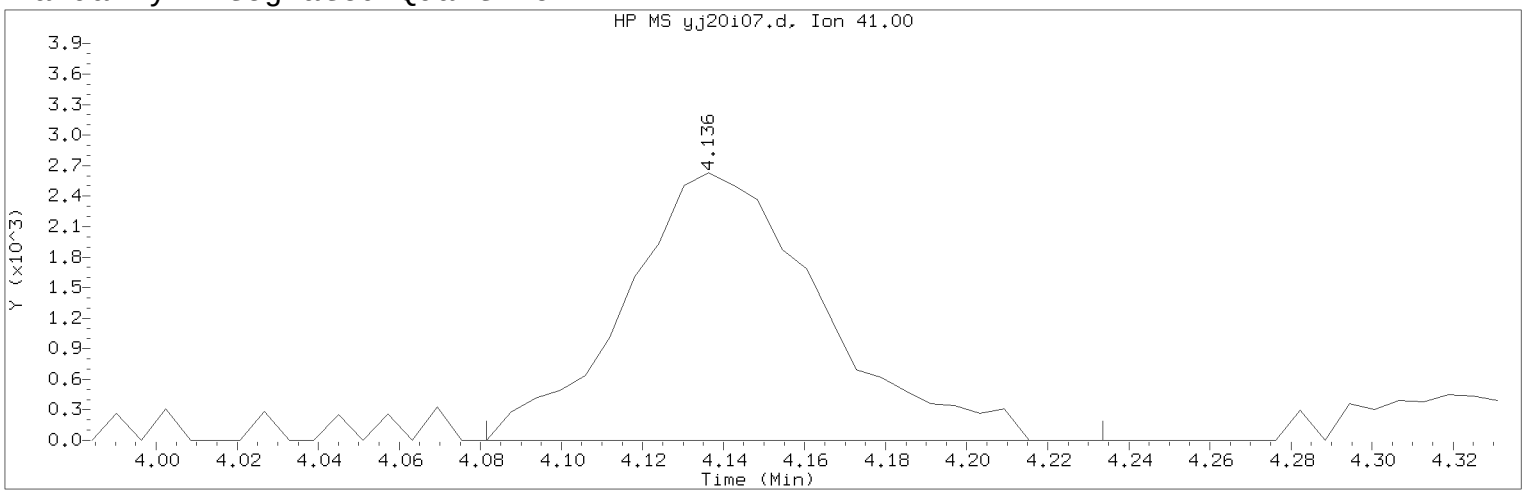
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 371
Retention Time (minutes): 3.838
Quant Ion : 45.00
Area : 13273
On-column Amount (ng) : 15.9273
Integration start scan : 356 Integration stop scan: 382
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

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Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

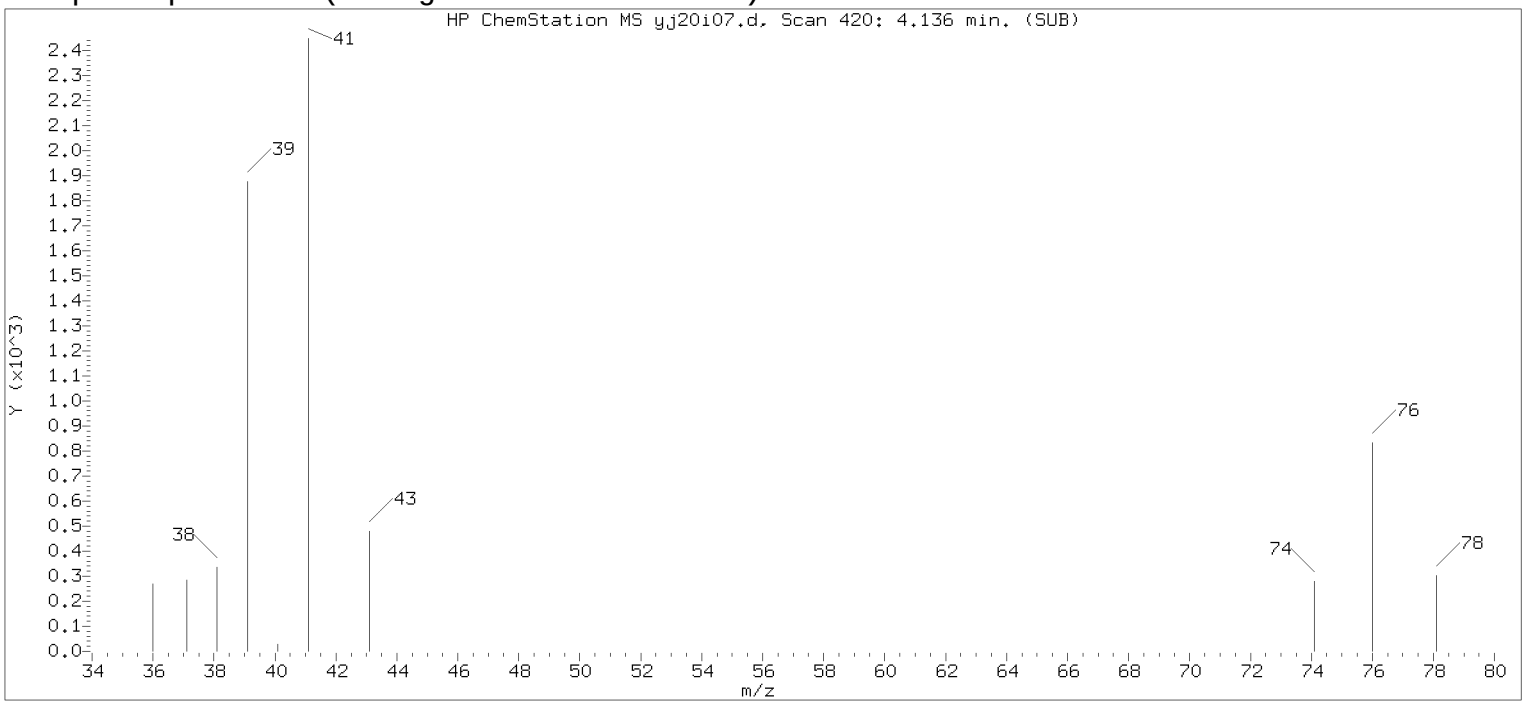
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 420
Retention Time (minutes): 4.136
Quant Ion : 41.00
Area (flag) : 8820M
On-Column Amount (ng) : 0.9572
Integration start scan : 410 Integration stop scan: 435
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

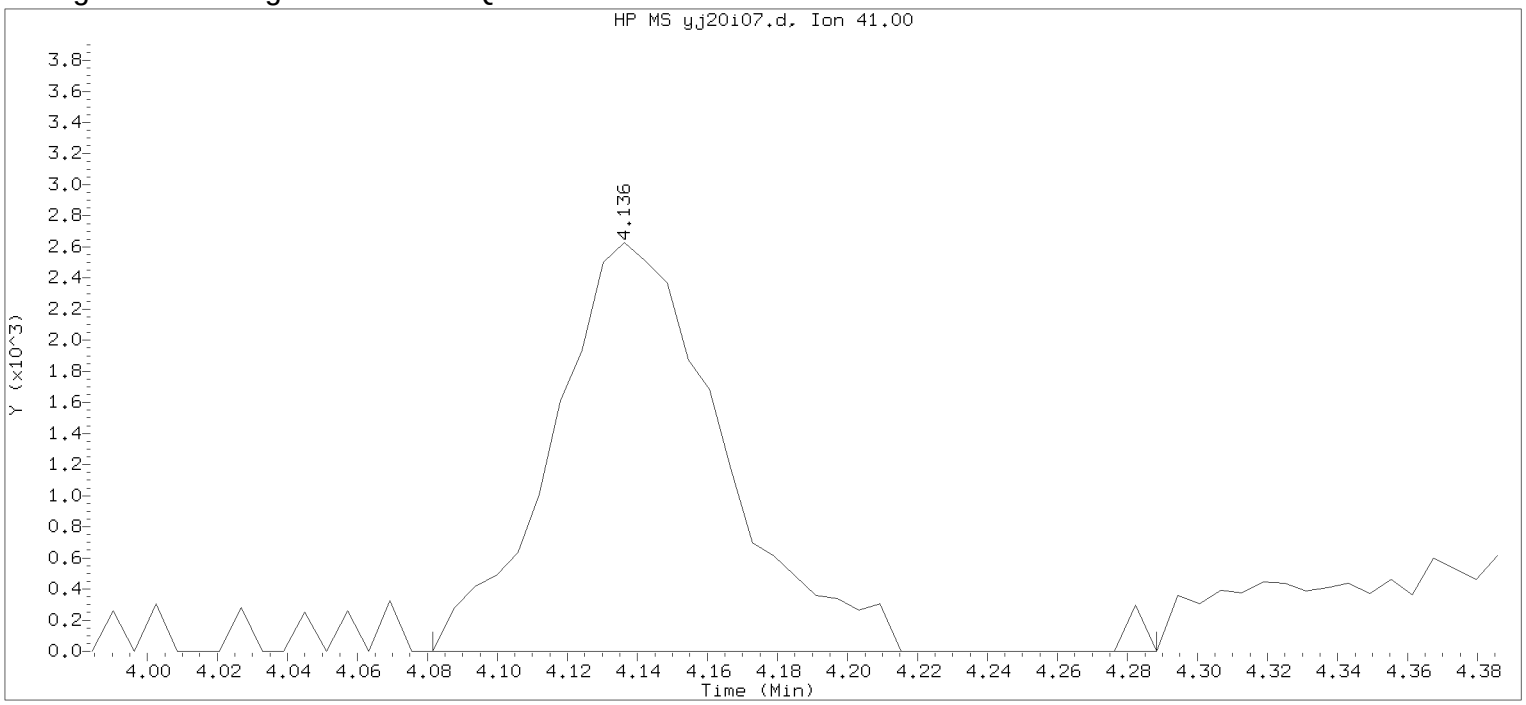
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

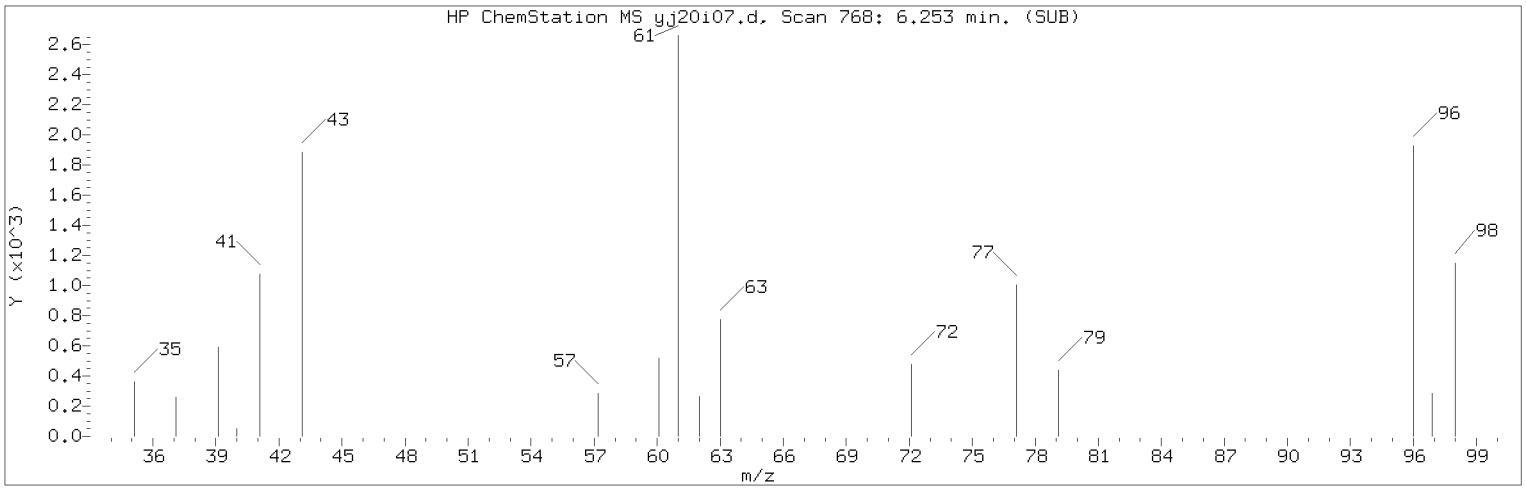
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

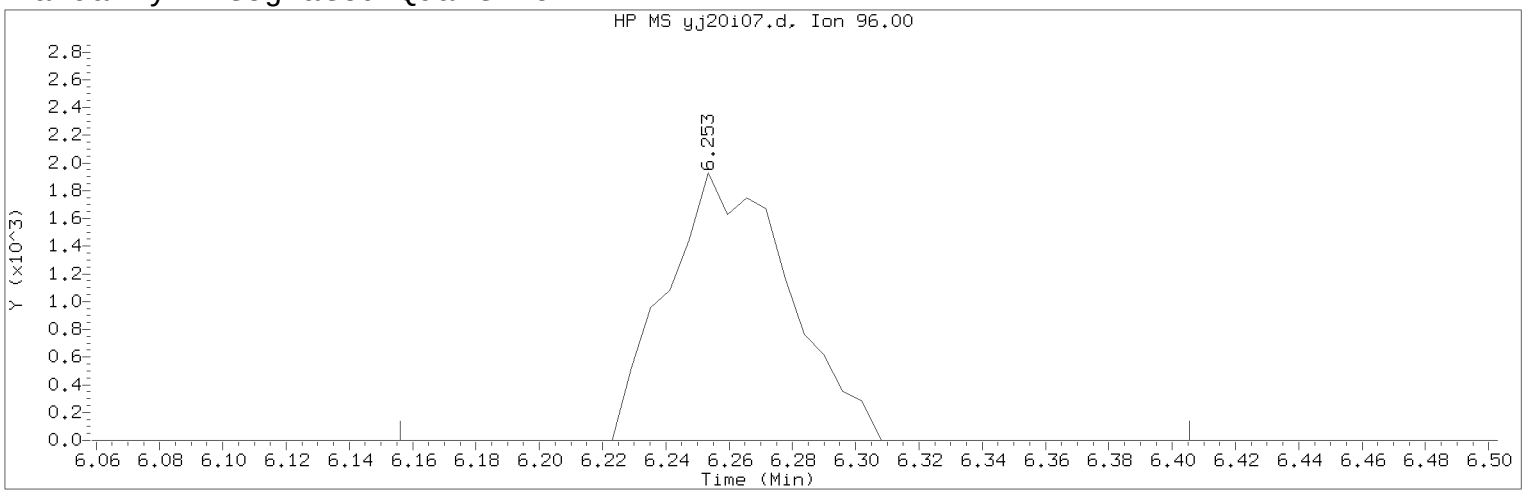
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 420
Retention Time (minutes): 4.136
Quant Ion : 41.00
Area : 8929
On-column Amount (ng) : 0.9691
Integration start scan : 410 Integration stop scan: 444
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

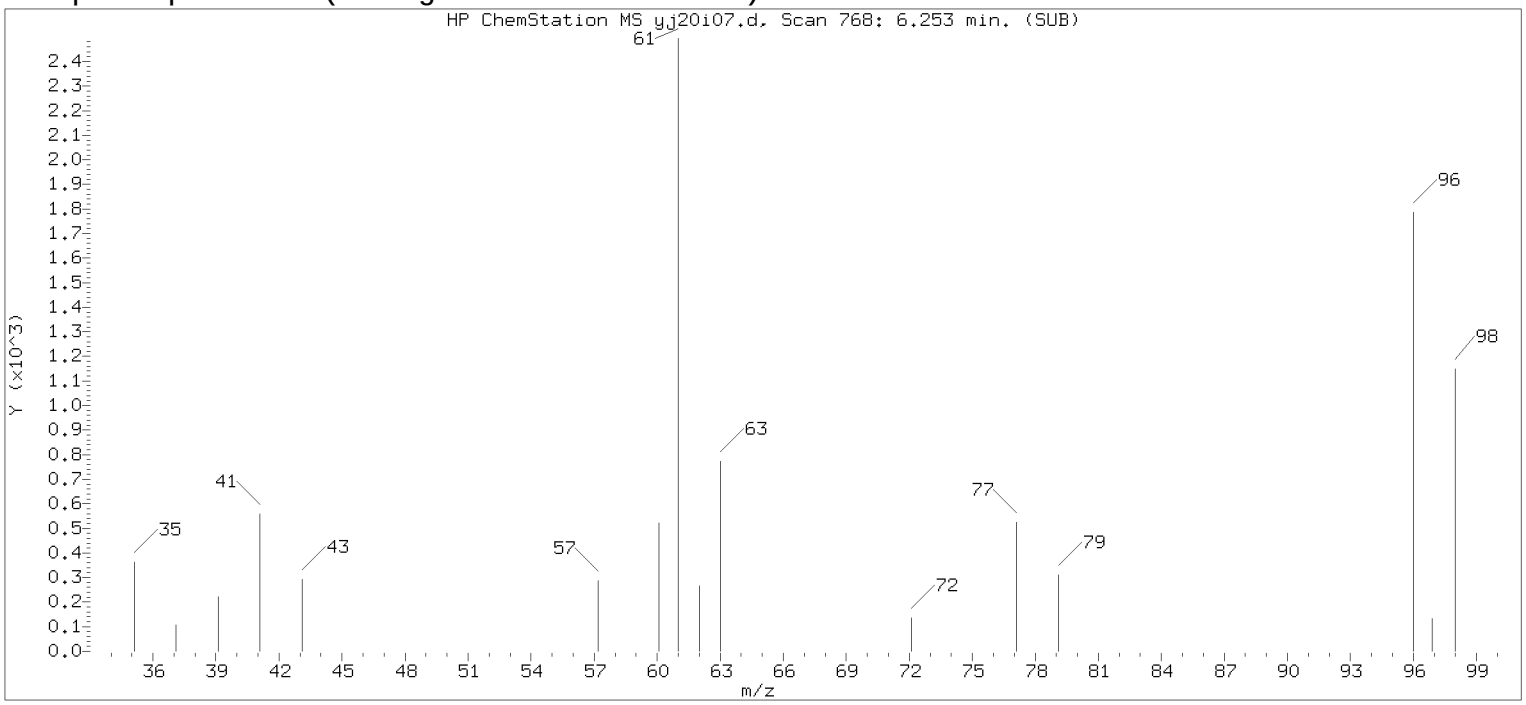
Compound Number : 42
Compound Name : cis-1,2-Dichloroethene
Scan Number : 768
Retention Time (minutes): 6.253
Quant Ion : 96.00
Area (flag) : 5170M
On-Column Amount (ng) : 0.8526
Integration start scan : 751 Integration stop scan: 792
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

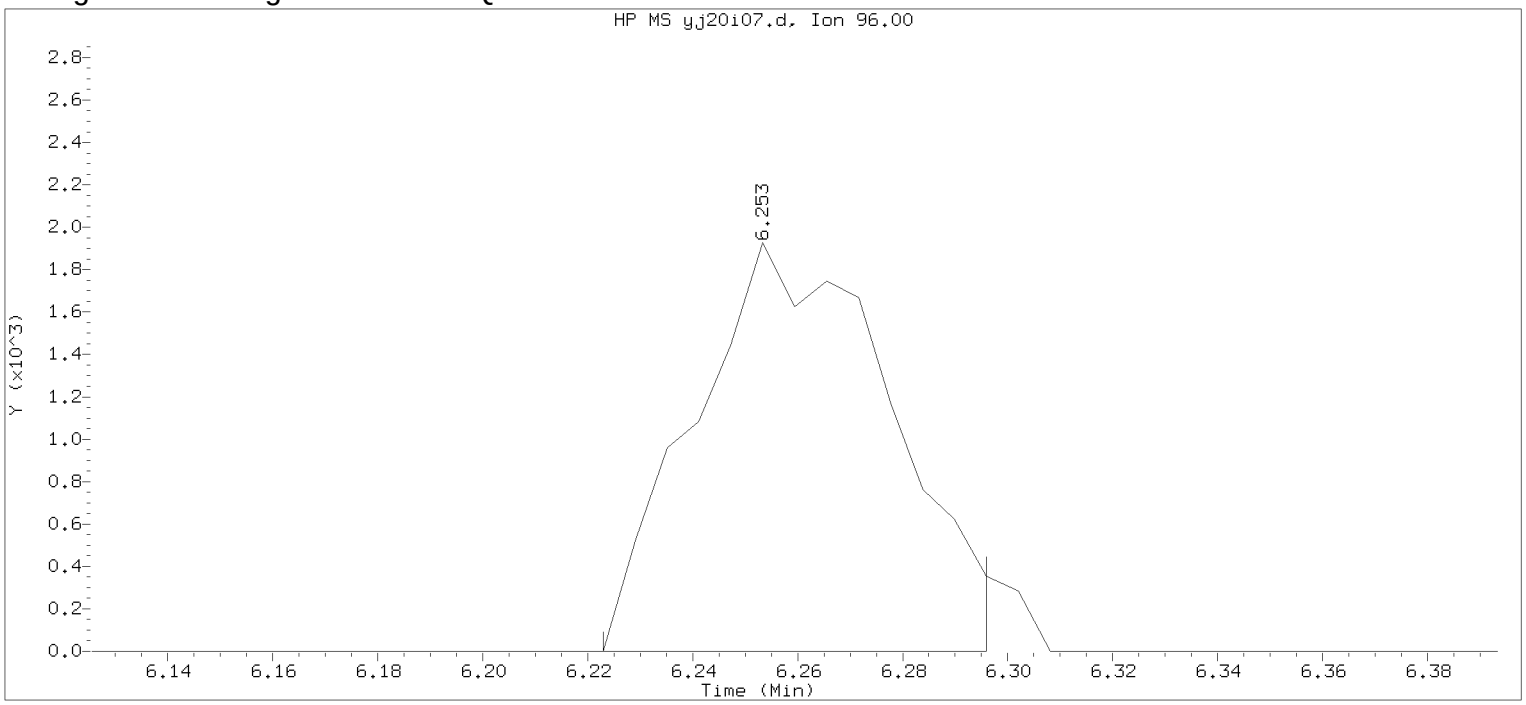
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

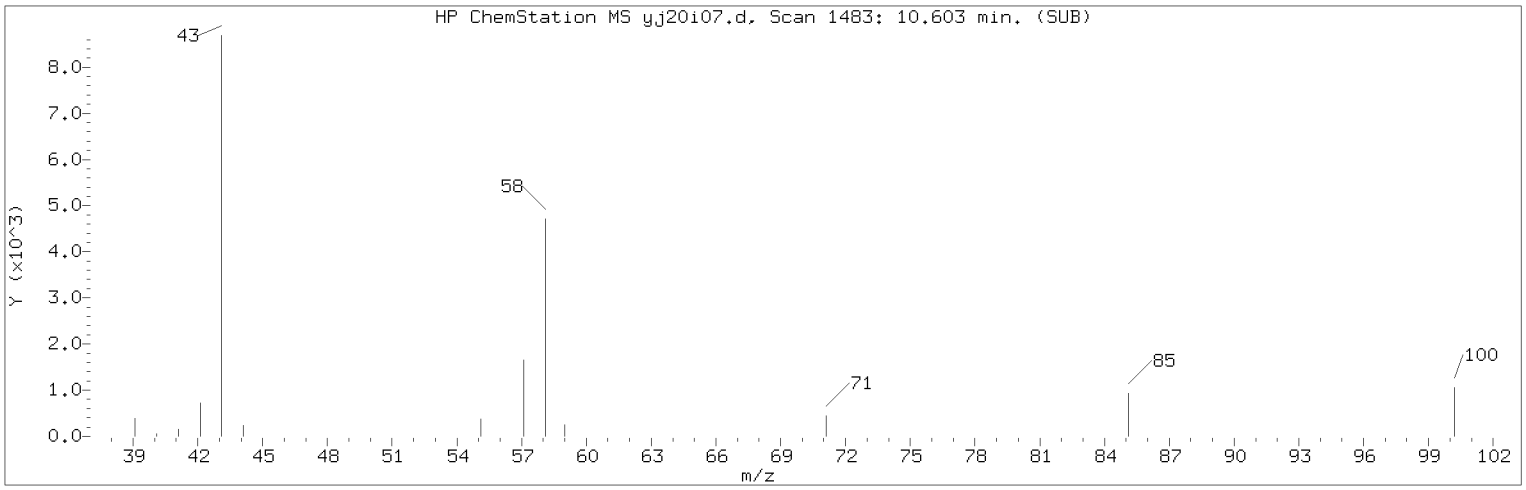
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

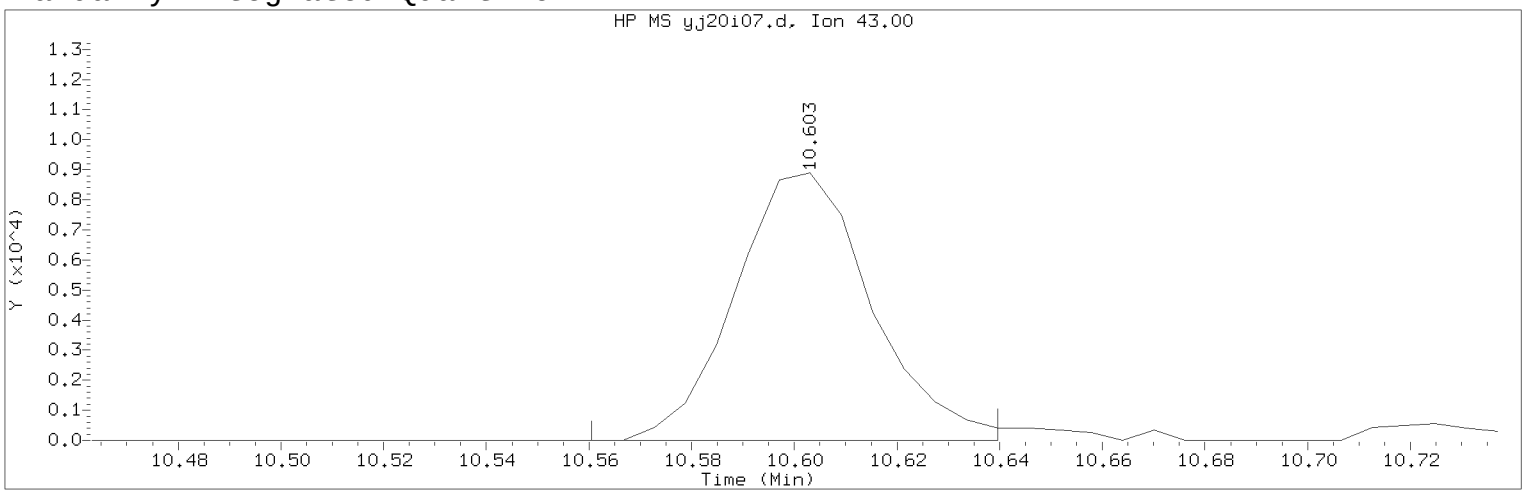
Compound Number : 42
Compound Name : cis-1,2-Dichloroethene
Scan Number : 768
Retention Time (minutes): 6.253
Quant Ion : 96.00
Area : 5002
On-column Amount (ng) : 0.8282
Integration start scan : 762 Integration stop scan: 774
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

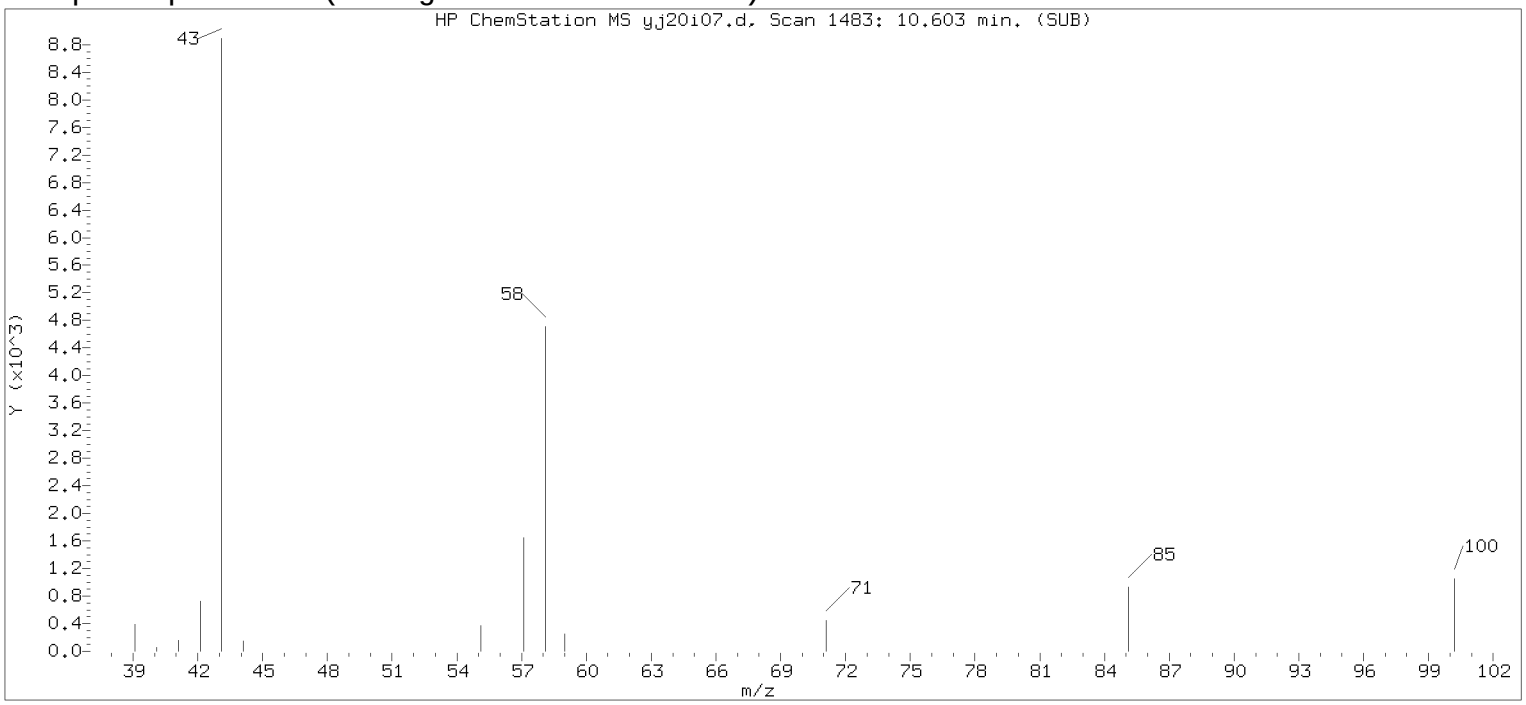
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1483
Retention Time (minutes): 10.603
Quant Ion : 43.00
Area (flag) : 16454M
On-Column Amount (ng) : 1.8479
Integration start scan : 1475 Integration stop scan: 1488
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

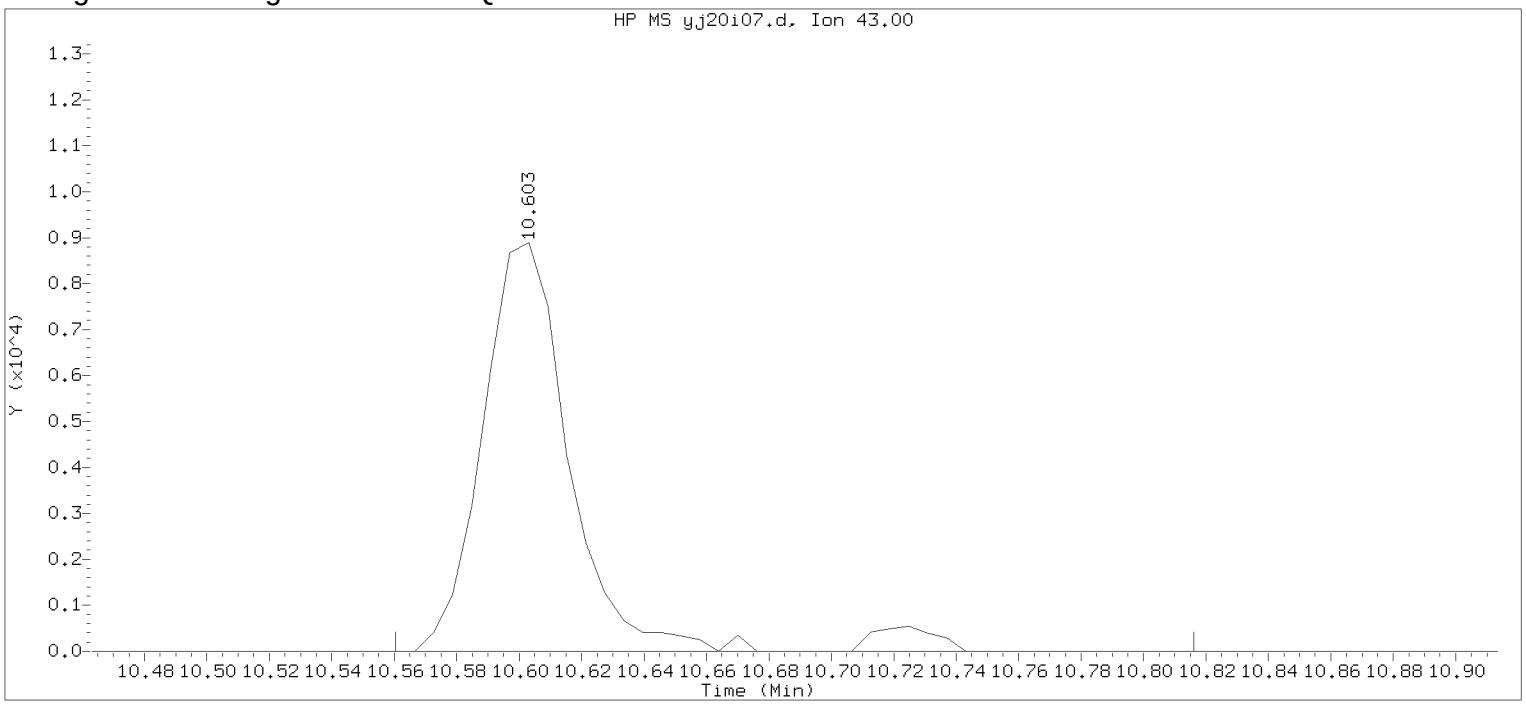
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

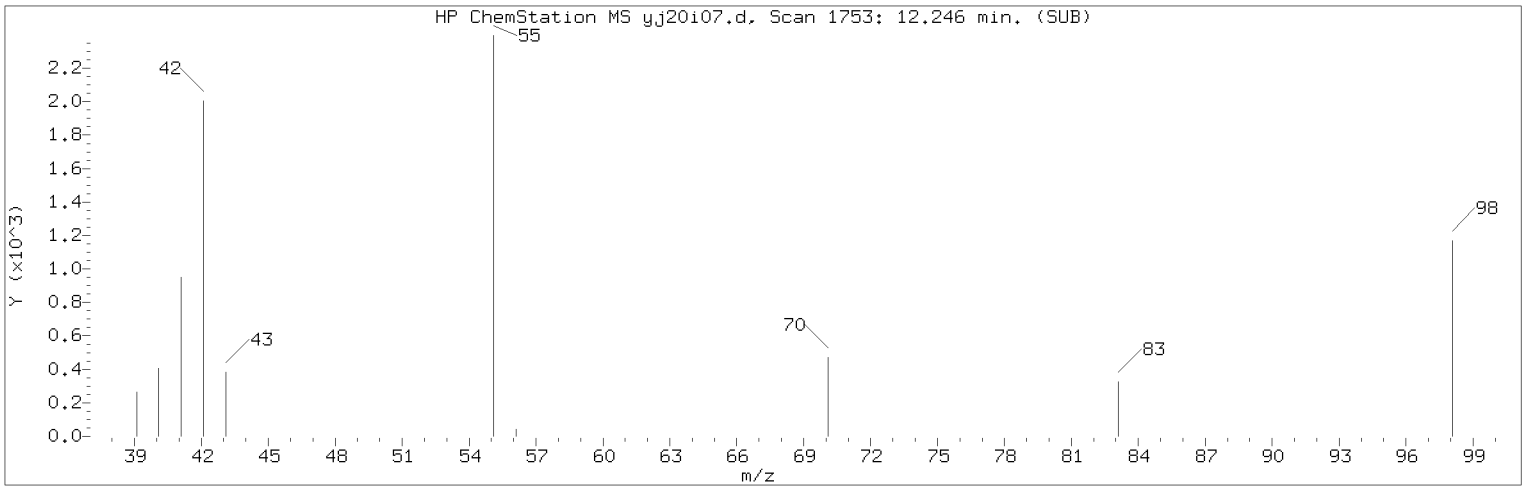
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

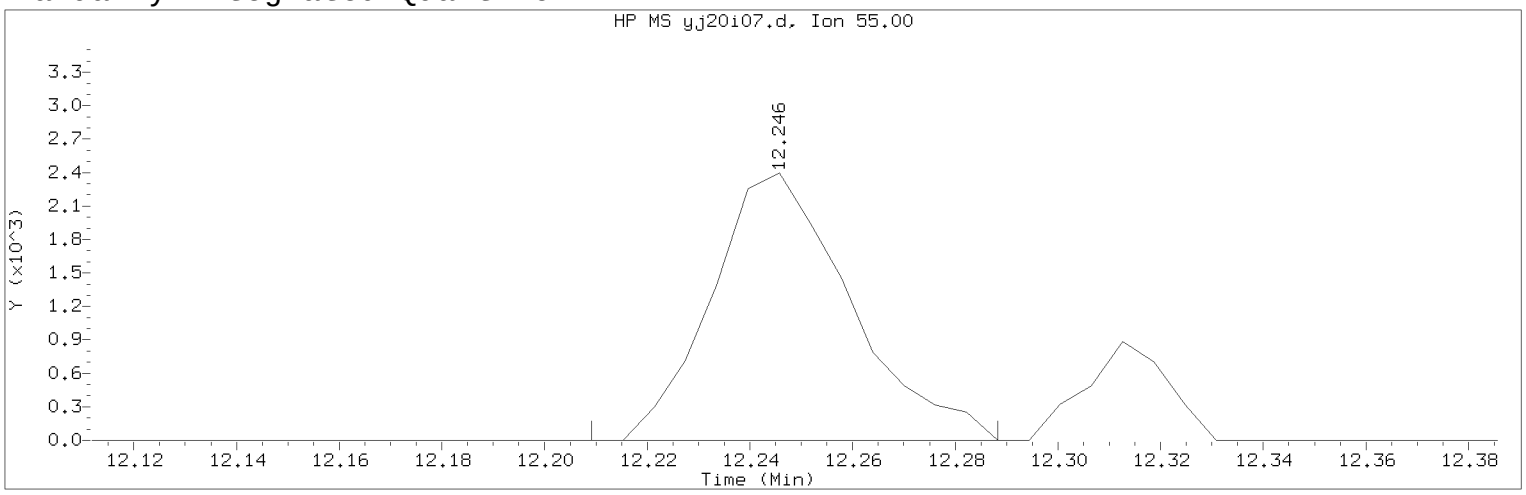
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1483
Retention Time (minutes): 10.603
Quant Ion : 43.00
Area : 17729
On-column Amount (ng) : 1.9710
Integration start scan : 1475 Integration stop scan: 1517
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

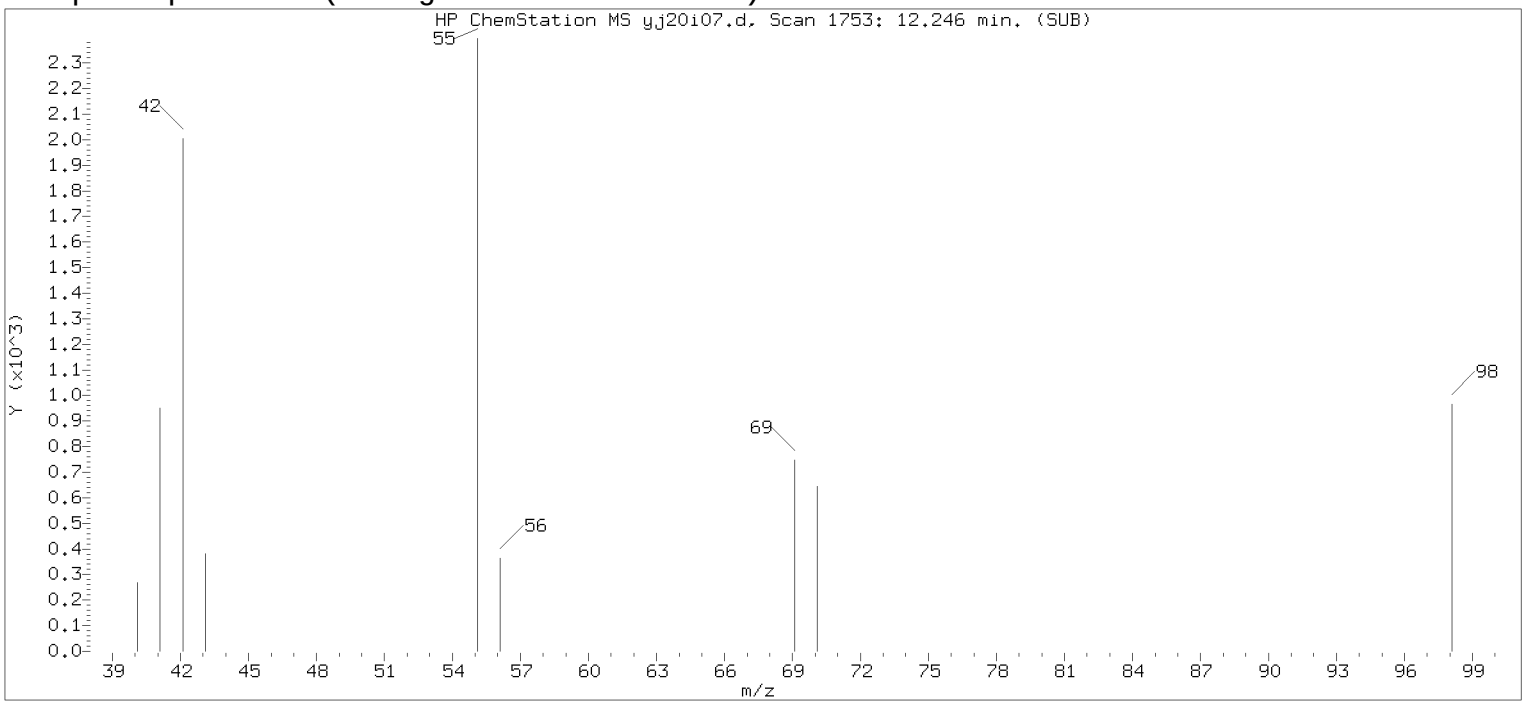
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 4491M
On-Column Amount (ng) : 43.1886
Integration start scan : 1746 Integration stop scan: 1759
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

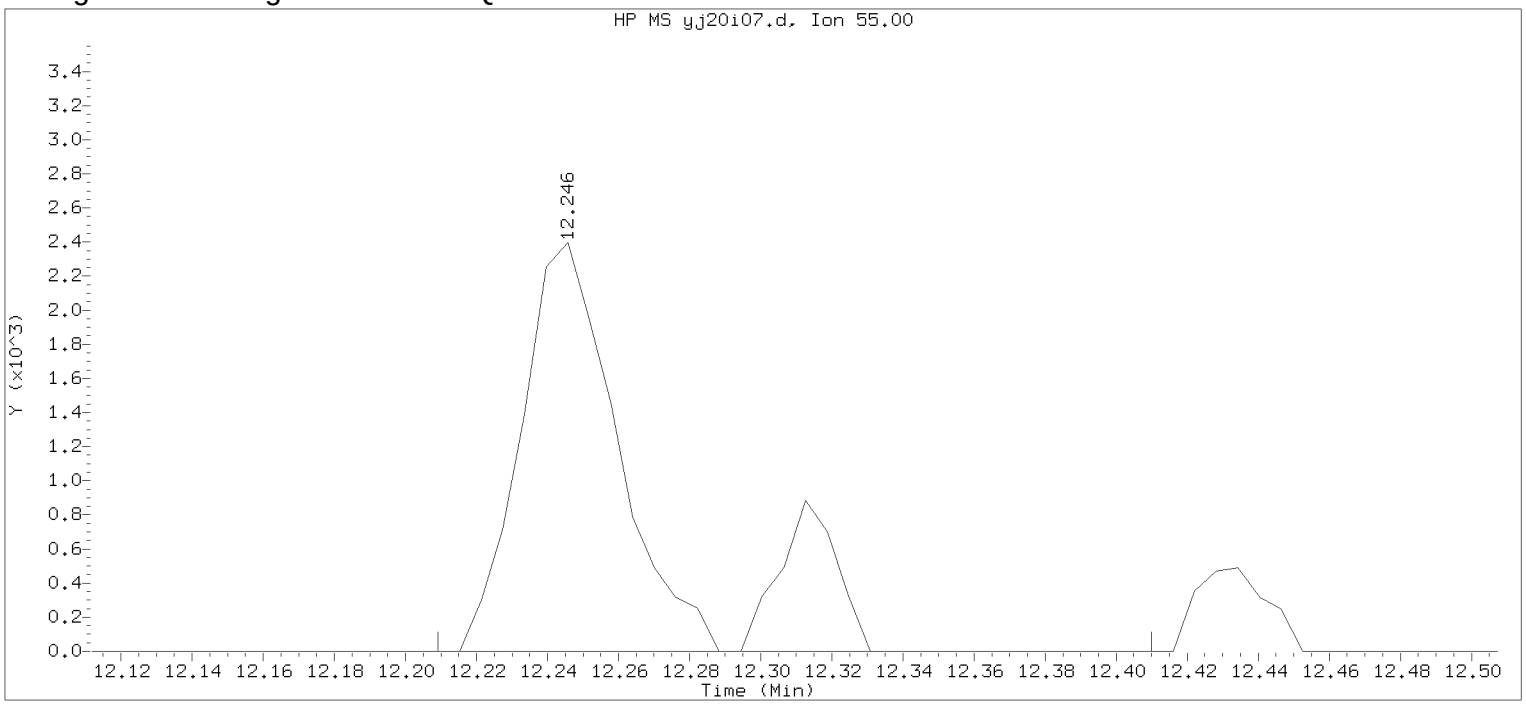
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

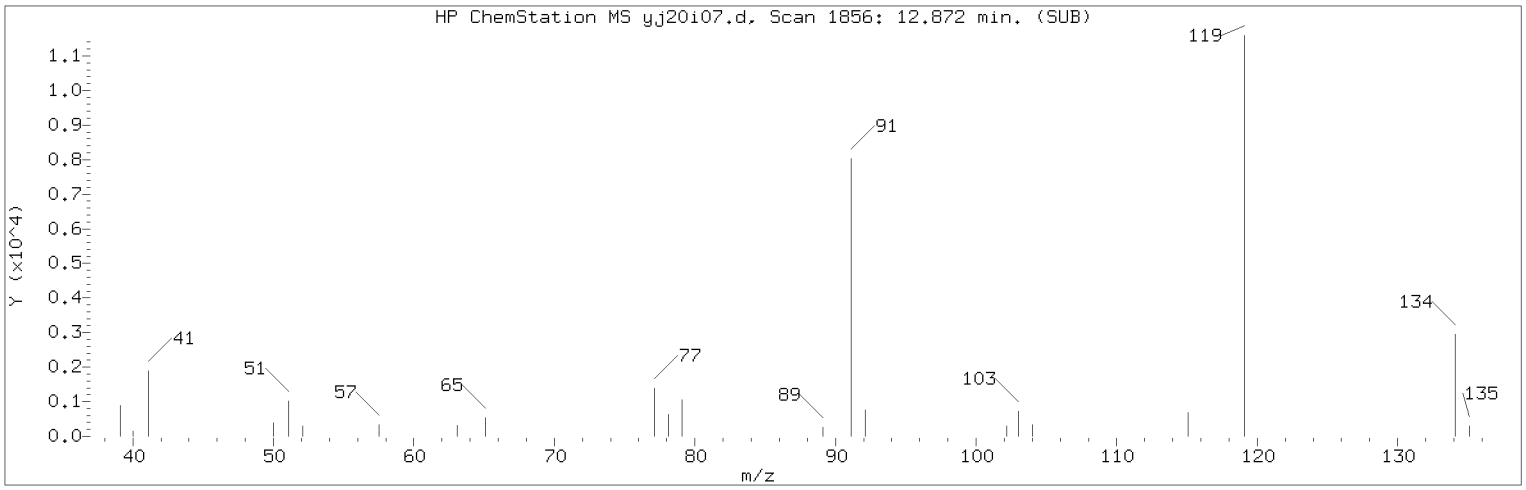
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

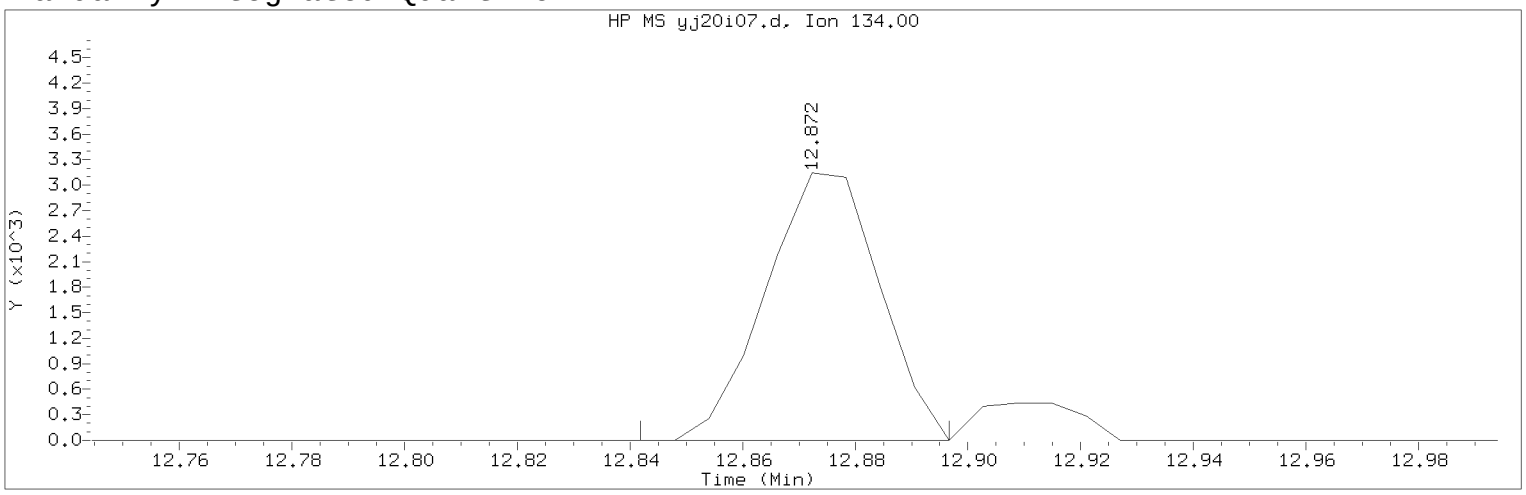
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 5484
On-column Amount (ng) : 52.7409
Integration start scan : 1746 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

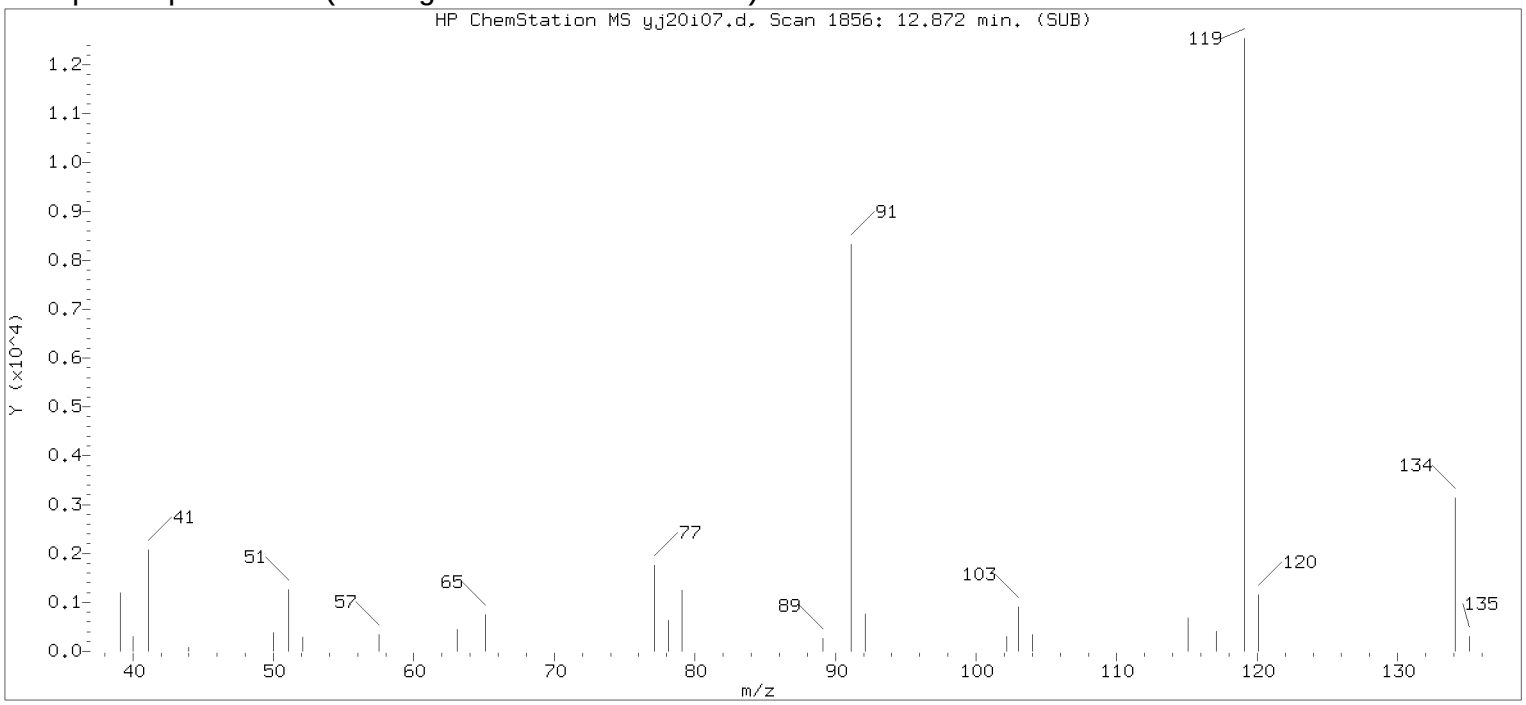
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 4413M
On-Column Amount (ng) : 0.8254
Integration start scan : 1850 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

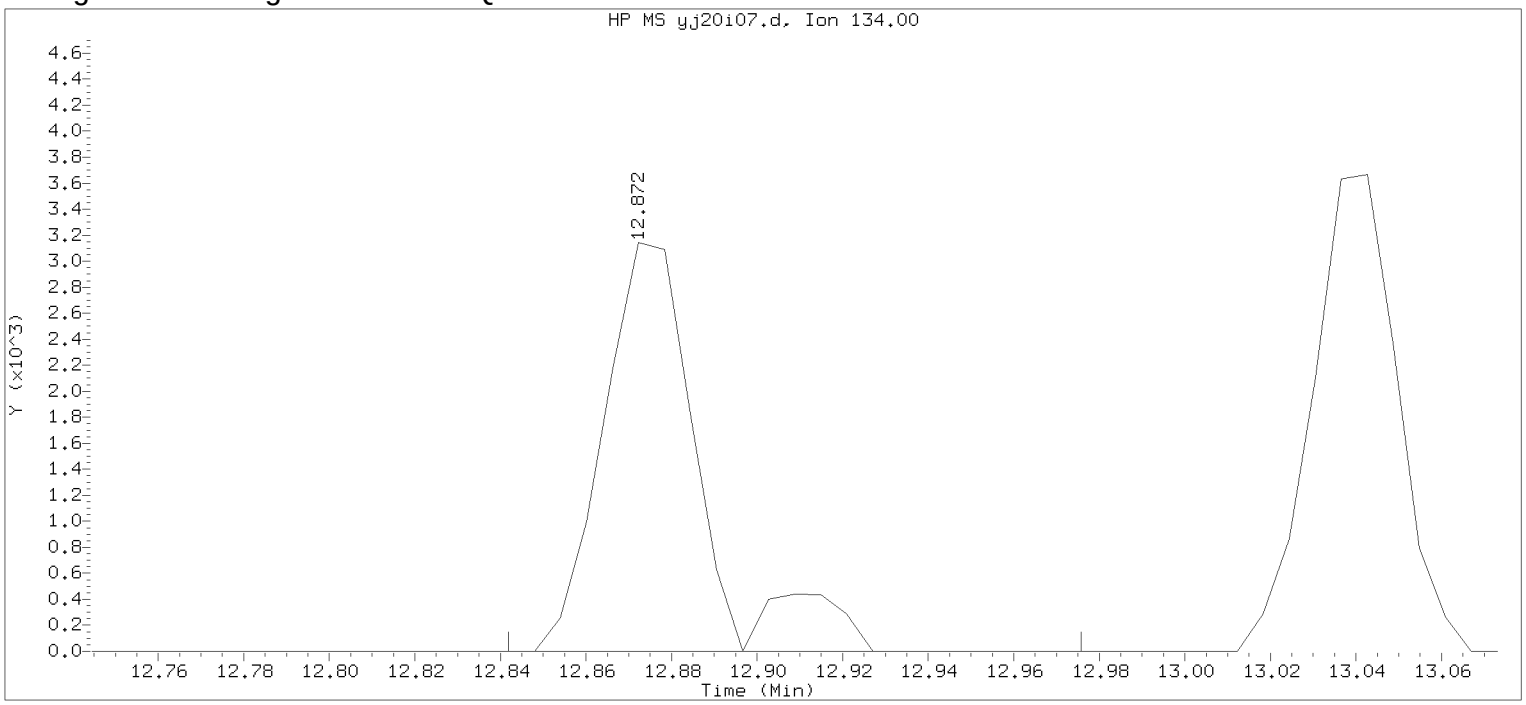
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

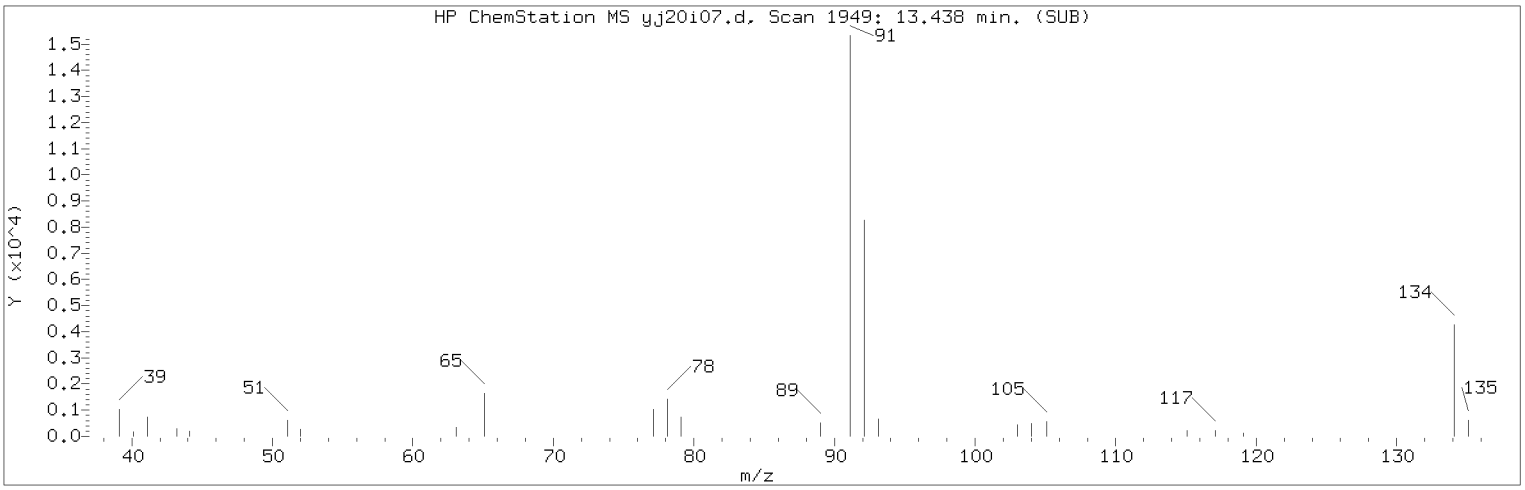
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

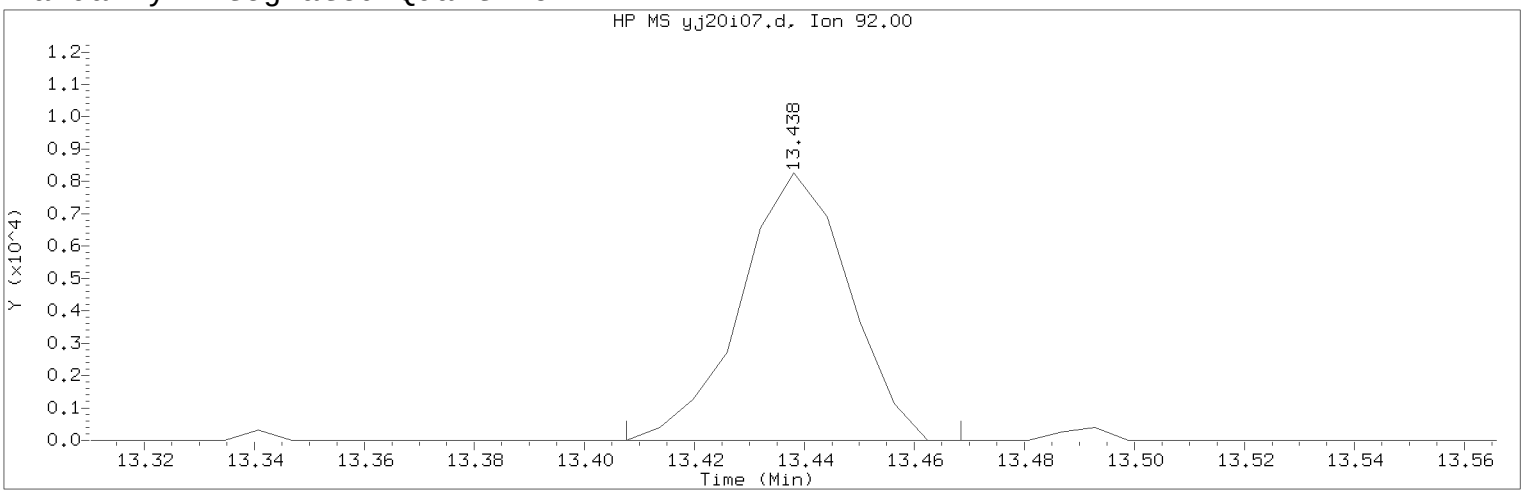
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 4983
On-column Amount (ng) : 0.9321
Integration start scan : 1850 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

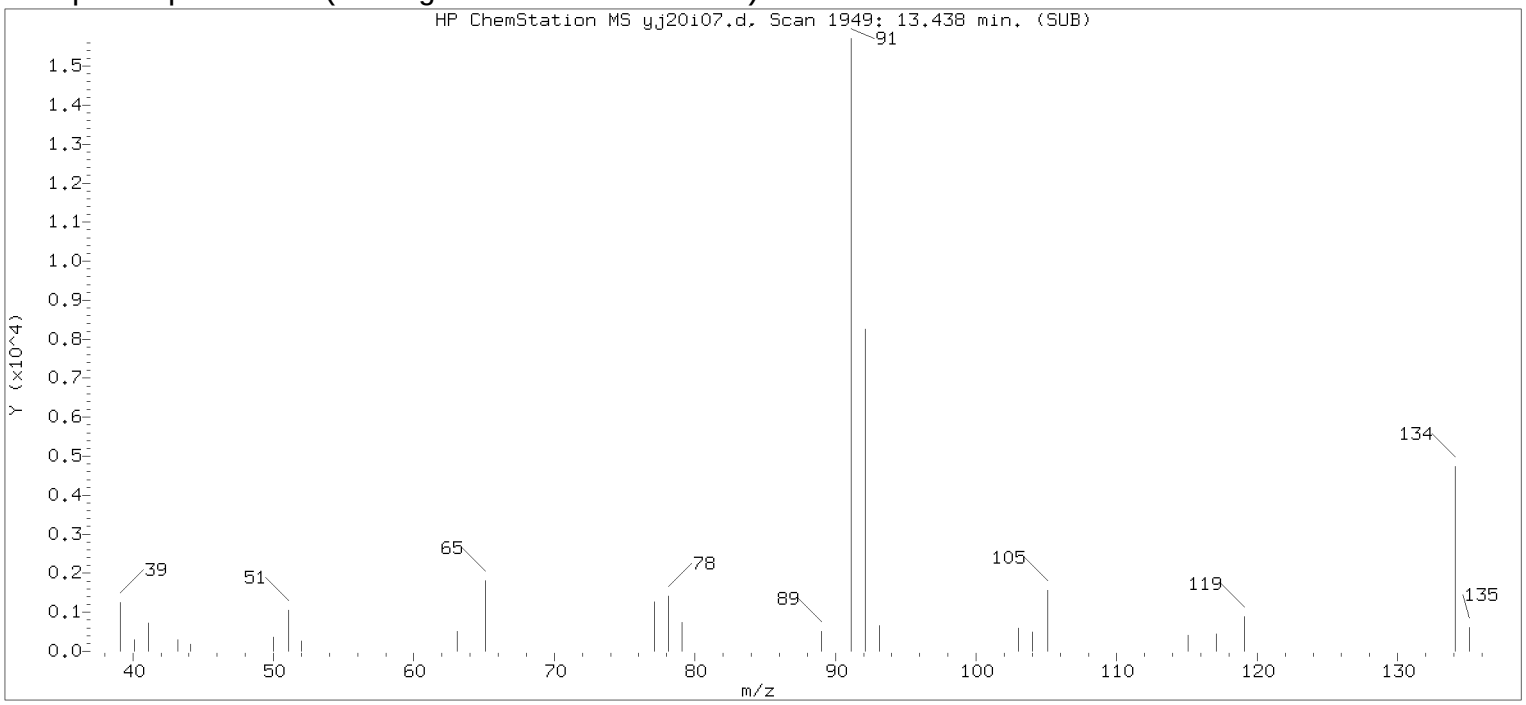
Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 1949
Retention Time (minutes): 13.438
Quant Ion : 92.00
Area (flag) : 11264M
On-Column Amount (ng) : 0.8012
Integration start scan : 1943 Integration stop scan: 1953
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

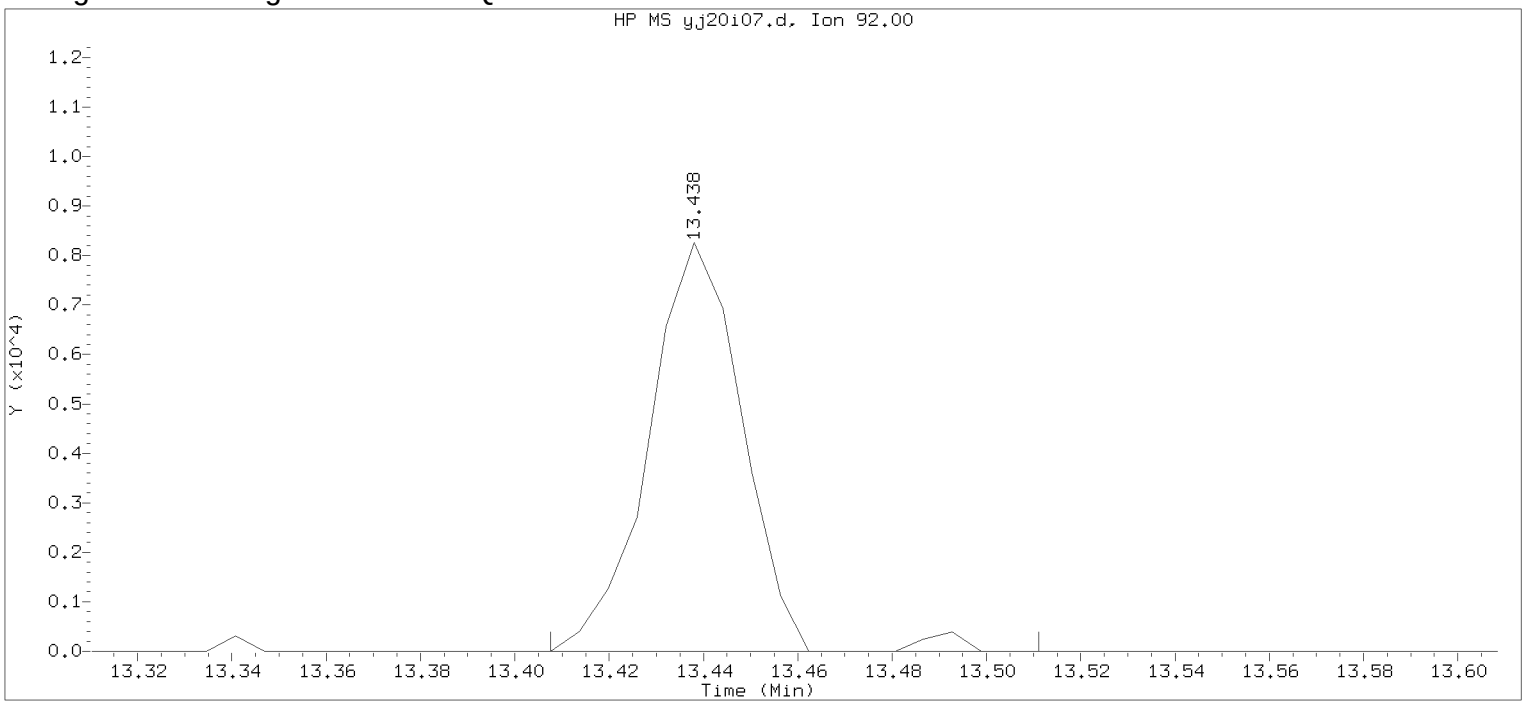
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



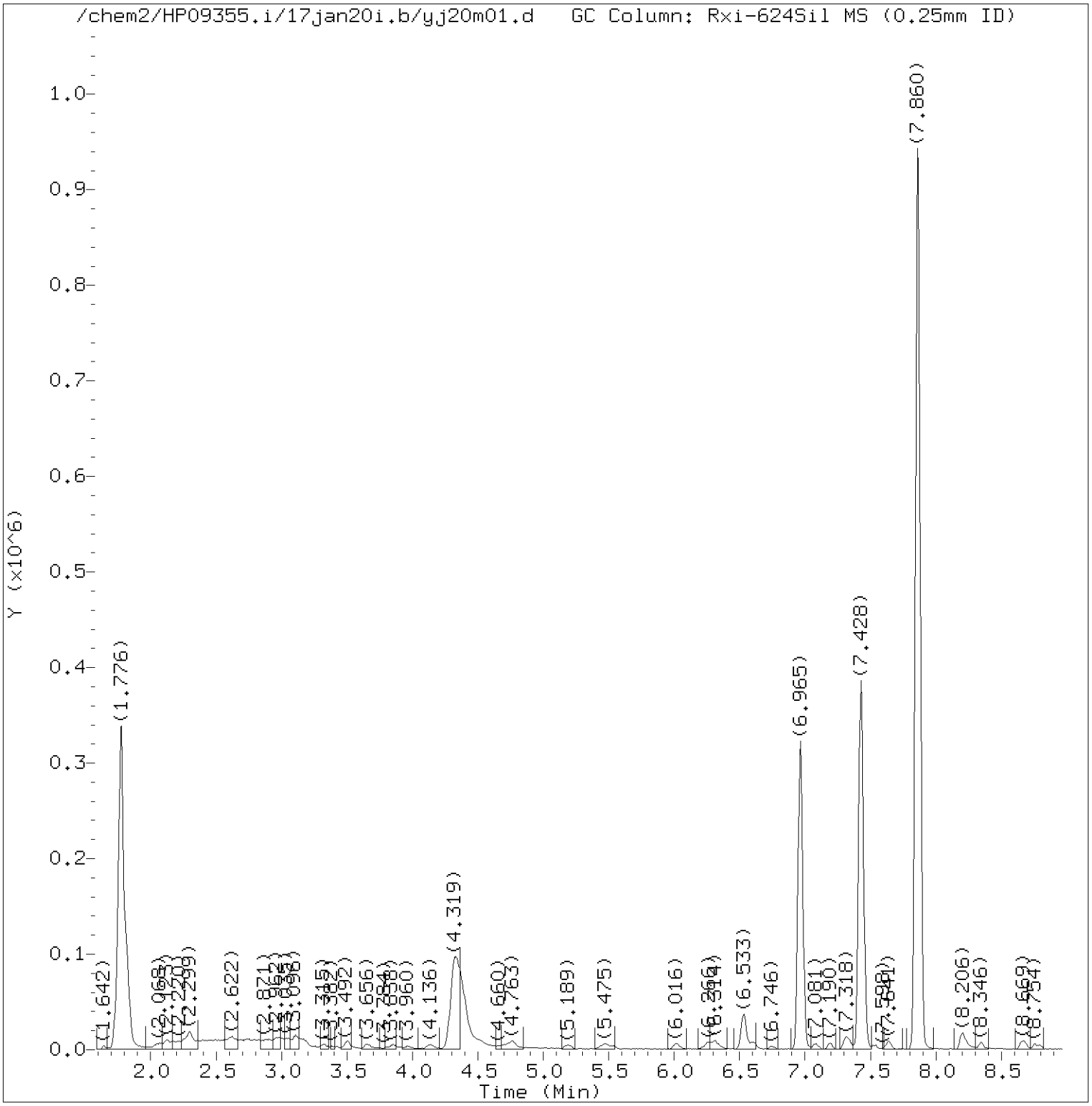

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 1949
Retention Time (minutes): 13.438
Quant Ion : 92.00
Area : 11497
On-column Amount (ng) : 0.8178
Integration start scan : 1943 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user KRD88bwk03231




Total Ion Chromatogram (TIC)

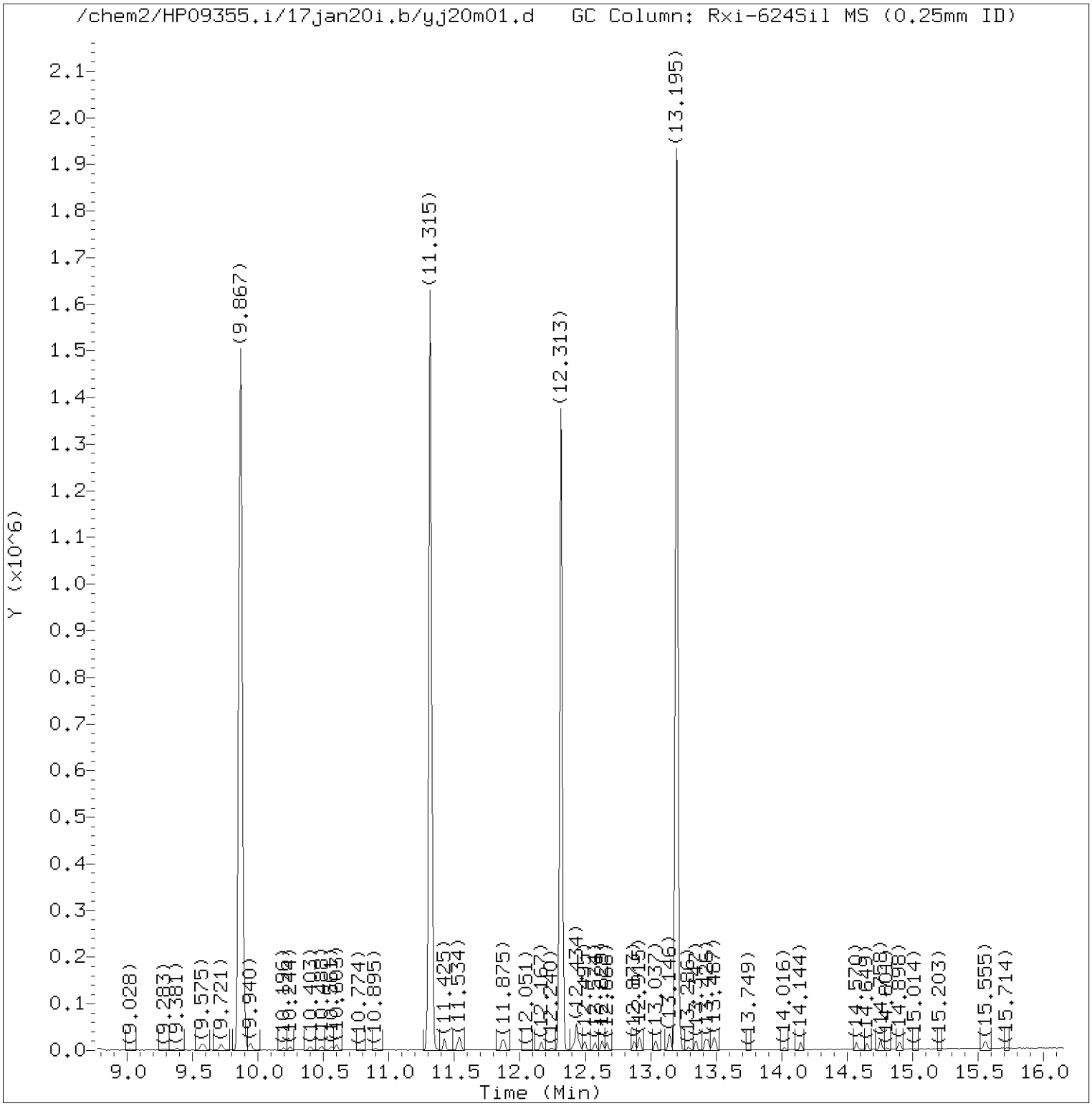
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 2406 | 0.336 |
| 4) Chloromethane | (2) | 2.123 | 50 | 3512 | 0.456 |
| 6) Vinyl Chloride | (2) | 2.257 | 62 | 3082 | 0.425 |
| 5) 1,3-Butadiene | (2) | 2.299 | 39 | 11891M | 1.552 |
| 8) Bromomethane | (2) | 2.610 | 94 | 2602 | 0.507 |
| 9) Chloroethane | (2) | 2.731 | 64 | 2201 | 0.525 |
| 10) Dichlorofluoromethane | (2) | 2.968 | 67 | 4951 | 0.518 |
| 12) Trichlorofluoromethane | (2) | 3.048 | 101 | 3067 | 0.360 |
| 11) n-Pentane | (2) | 3.108 | 43 | 10786 | 1.132 |
| 14) Ethyl ether | (2) | 3.333 | 59 | 2270 | 0.433 |
| 15) Freon 123a | (2) | 3.394 | 67 | 2433 | 0.406 |
| 16) Acrolein | (1) | 3.504 | 56 | 10547 | 4.797 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 1469 | 0.342 |
| 18) Acetone | (1) | 3.662 | 58 | 462 | 0.442 |
| 19) Freon 113 | (2) | 3.680 | 101 | 1288 | 0.291 |
| 21) 2-Propanol | (1) | 3.844 | 45 | 8922 | 10.704 |
| 22) Methyl Iodide | (2) | 3.857 | 142 | 2987 | 0.366 |
| 23) Carbon Disulfide | (2) | 3.972 | 76 | 5100 | 0.377 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 5232 | 0.627 |
| 25) Allyl Chloride | (2) | 4.136 | 41 | 5133 | 0.564 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 360861 | 250.000 |
| 28) Methylene Chloride | (2) | 4.331 | 84 | 2692 | 0.495 |
| 30) t-Butyl alcohol | (1) | 4.447 | 59 | 19780 | 12.054 |
| 31) Acrylonitrile | (2) | 4.684 | 53 | 1355 | 0.338 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.745 | 73 | 8048 | 0.450 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 2125 | 0.409 |
| 34) n-Hexane | (2) | 5.195 | 57 | 3238 | 0.397 |
| 36) 1,1-Dichloroethane | (2) | 5.426 | 63 | 3766 | 0.401 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 8623 | 0.458 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 3214 | 0.363 |
| 40) Ethyl t-butyl ether | (2) | 6.022 | 59 | 7849 | 0.445 |
| 44) 2-Butanone | (2) | 6.229 | 43 | 7050 | 1.132 |
| 42) cis-1,2-Dichloroethene | (2) | 6.260 | 96 | 2508 | 0.419 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 2813 | 0.381 |
| 47) Propionitrile | (1) | 6.308 | 54 | 16711 | 9.061 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 18682 | 4.395 |
| 49) Bromochloromethane | (2) | 6.606 | 128 | 1202 | 0.380 |
| 50) Tetrahydrofuran | (1) | 6.612 | 71 | 1256 | 0.759 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 6.746 | 83 | 3807 | 0.402 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4633 | 0.828 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 260446 | 49.008 |
| 53) 1,1,1-Trichloroethane | (2) | 6.978 | 97 | 3224 | 0.407 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 3962 | 0.411 |
| 56) Carbon Tetrachloride | (2) | 7.184 | 117 | 2238 | 0.339 |
| 55) 1,1-Dichloropropene | (2) | 7.197 | 75 | 3101 | 0.405 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 16305 | 27.132 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 70149 | 50.343 |
| 60) Benzene | (2) | 7.458 | 78 | 10237 | 0.449 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 3787M | 0.454 |
| 65) t-Amyl methyl ether | (2) | 7.641 | 73 | 8233 | 0.466 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1139539 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 4596 | 0.478 |
| 69) n-Butanol | (1) | 8.206 | 56 | 18341 | 38.641 |
| 71) Trichloroethene | (2) | 8.340 | 95 | 2405 | 0.407 |
| 72) Methylcyclohexane | (2) | 8.663 | 83 | 4025 | 0.383 |
| 73) 1,2-Dichloropropane | (2) | 8.681 | 63 | 2582 | 0.431 |
| 76) Methyl Methacrylate | (2) | 8.754 | 69 | 2582 | 0.392 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 1426 | 10.958 |
| 74) Dibromomethane | (2) | 8.790 | 93 | 1668 | 0.426 |
| 78) Bromodichloromethane | (2) | 9.028 | 83 | 2512 | 0.372 |
| 79) 2-Nitropropane | (2) | 9.277 | 41 | 2757 | 1.049 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.374 | 63 | 2181 | 0.425 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 3389 | 0.384 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 10413 | 0.941 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1131866 | 50.890 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 6313 | 0.745 |
| 88) Toluene | (3) | 9.940 | 92 | 6564 | 0.448 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 2924 | 0.362 |
| 91) Ethyl Methacrylate | (3) | 10.250 | 69 | 3761 | 0.371 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 2716 | 0.472 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 2661 | 0.413 |
| 94) 1,3-Dichloropropane | (3) | 10.567 | 76 | 4506 | 0.464 |
| 96) 2-Hexanone | (3) | 10.603 | 43 | 8033M | 0.917 |
| 97) Dibromochloromethane | (3) | 10.774 | 129 | 1767 | 0.327 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 2668 | 0.430 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 860874 | 50.000 |

M = Compound was manually integrated.
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Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 4801 | 0.588 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 7783 | 0.463 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 11959 | 0.425 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 1888 | 0.364 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 9508 | 0.848 |
| 108) Xylene (Total) | (3) | | 106 | 14047 | 1.263 |
| 107) o-Xylene | (3) | 11.869 | 106 | 4539 | 0.415 |
| 109) Styrene | (3) | 11.887 | 104 | 6589 | 0.351 |
| 110) Bromoform | (3) | 12.051 | 173 | 1176 | 0.280 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 11524 | 0.404 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 1831 | 18.561 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 419496 | 50.290 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 4107 | 0.433 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 9189 | 3.054 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 3539 | 0.454 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 1310 | 0.406 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 13967 | 0.415 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 3006 | 0.434 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 9647 | 0.393 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 3055 | 0.415 |
| 124) tert-Butylbenzene | (4) | 12.873 | 134 | 1851M | 0.352 |
| 125) Pentachloroethane | (4) | 12.915 | 167 | 1018 | 0.256 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 10376 | 0.408 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 12537 | 0.406 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 6729 | 0.453 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 9870 | 0.360 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 470763 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 7190 | 0.470 |
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 11339 | 0.444 |
| 135) Benzyl Chloride | (4) | 13.286 | 91 | 5081 | 0.290 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 6054 | 0.379 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 6595 | 0.398 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 5639M | 0.408 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 6638 | 0.465 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 5430 | 0.405 |
| 141) Diethylbenzene (total) | (4) | | 100 | 18079 | 1.182 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 773 | 0.335 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 5247 | 0.501 |

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on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.576 | 180 | 5166 | 0.540 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 2444 | 0.520 |
| 148) Naphthalene | (4) | 14.758 | 128 | 15860 | 0.518 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 5420 | 0.623 |
| 150) 2-Methylnaphthalene | (4) | 15.561 | 142 | 8810 | 0.535 |



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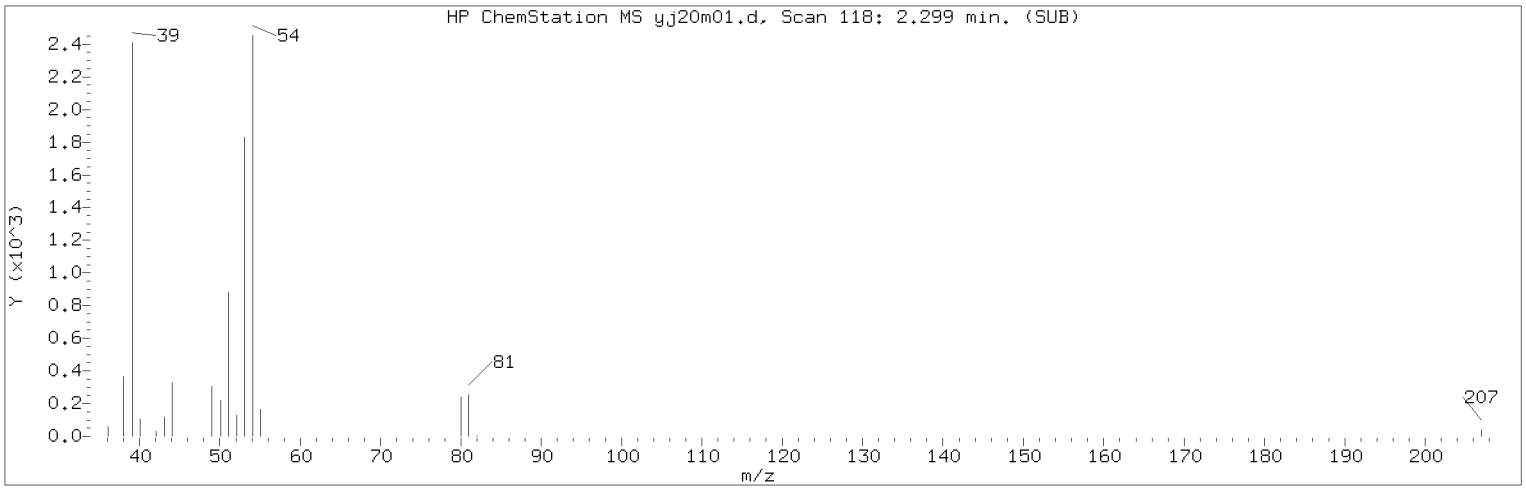
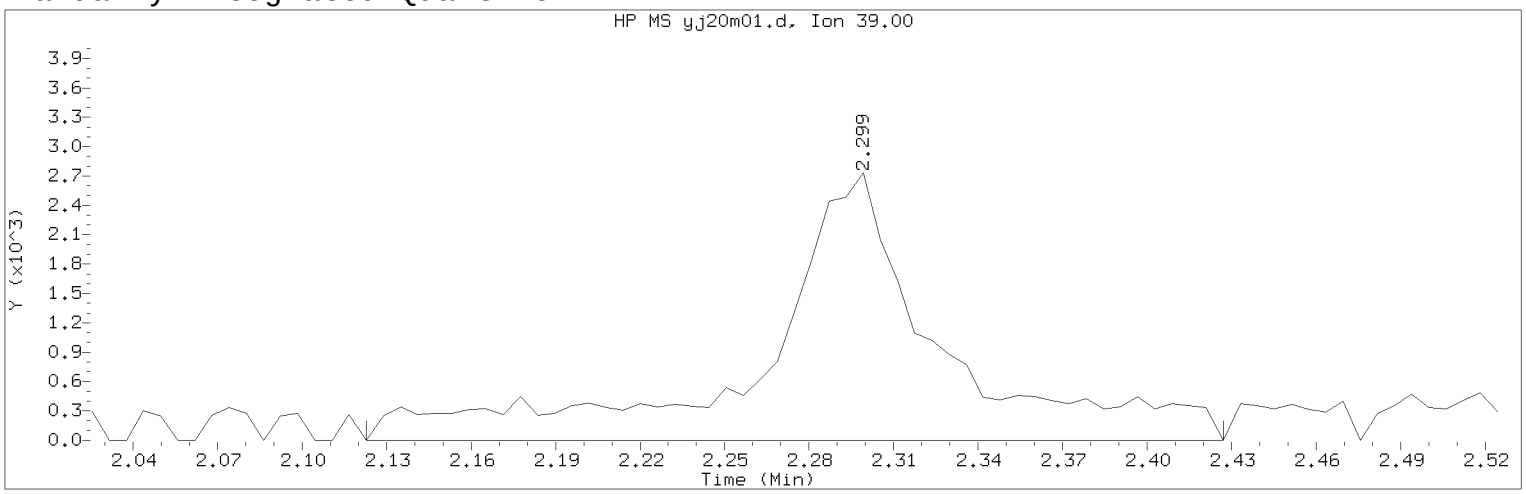
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

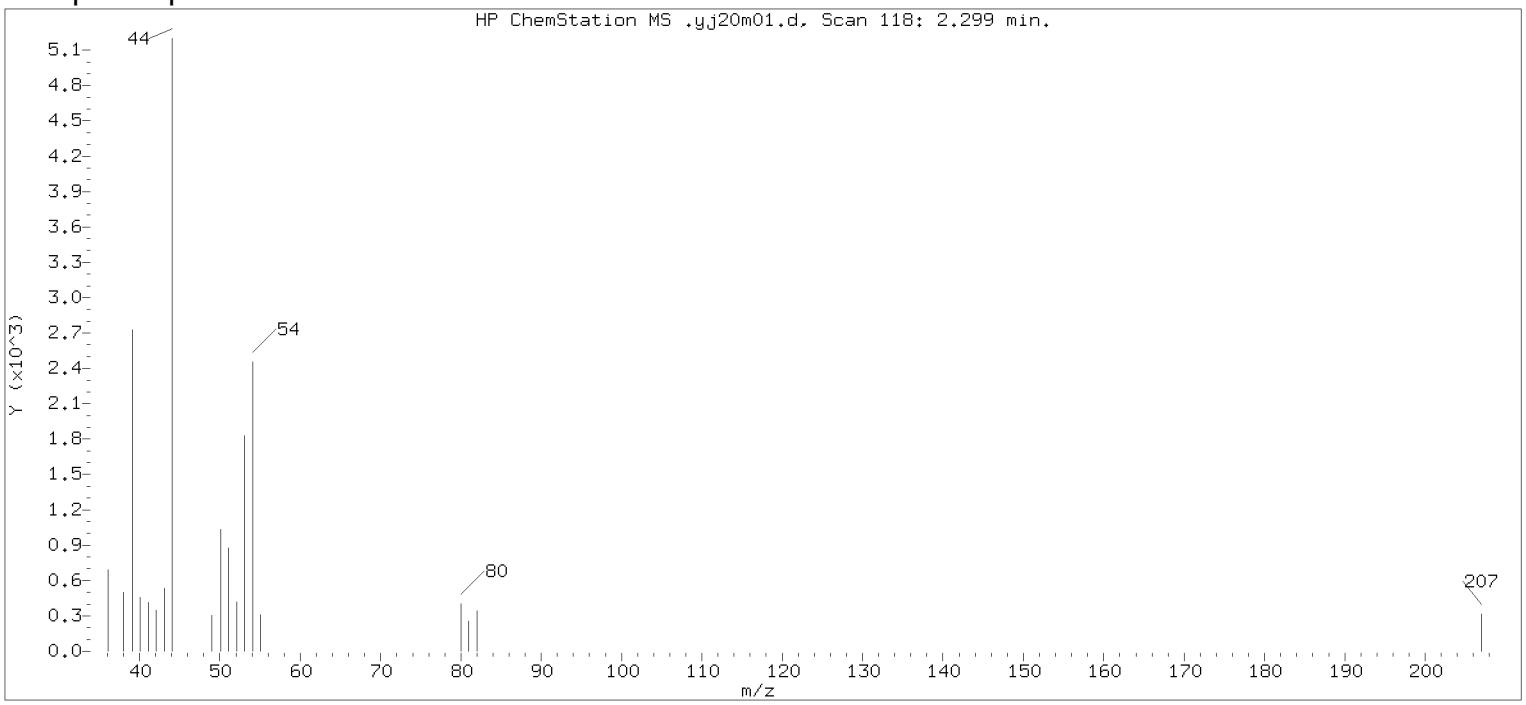
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 118
Retention Time (minutes): 2.299
Quant Ion : 39.00
Area (flag) : 11891M
On-Column Amount (ng) : 1.5516
Integration start scan : 88 Integration stop scan: 138
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

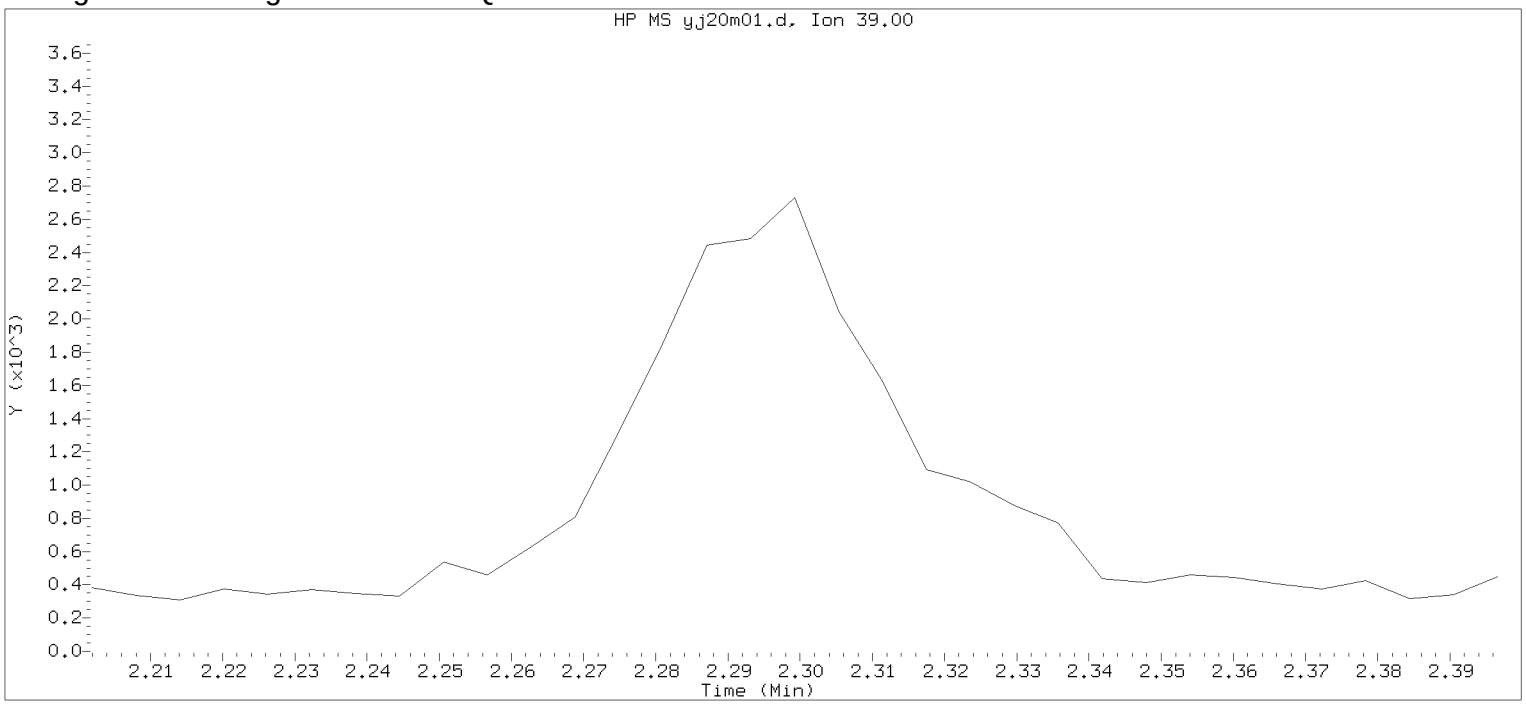
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

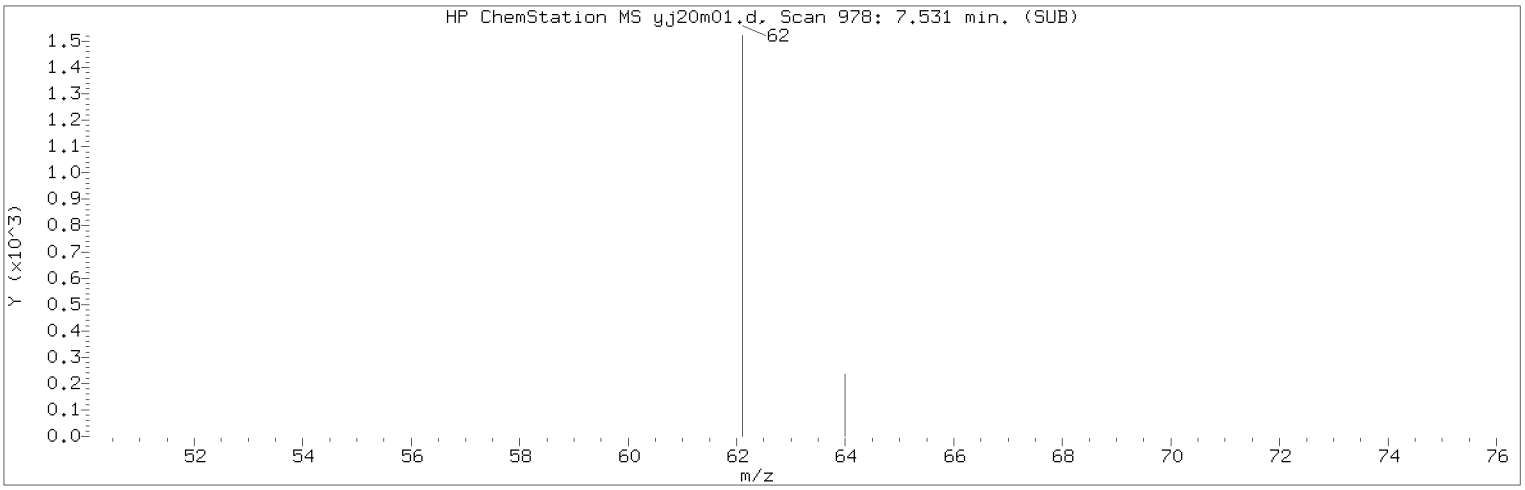
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

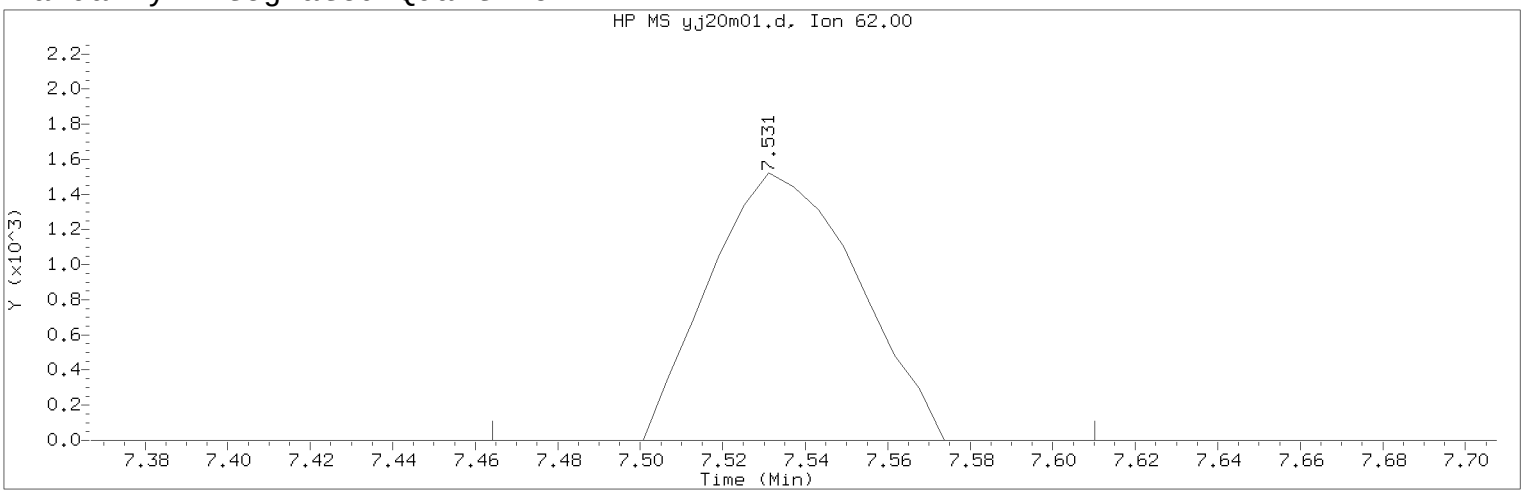
Compound Number : 5
Compound Name : 1,3-Butadiene
Expected RT (minutes) : 2.299
Quant Ion : 39.00

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

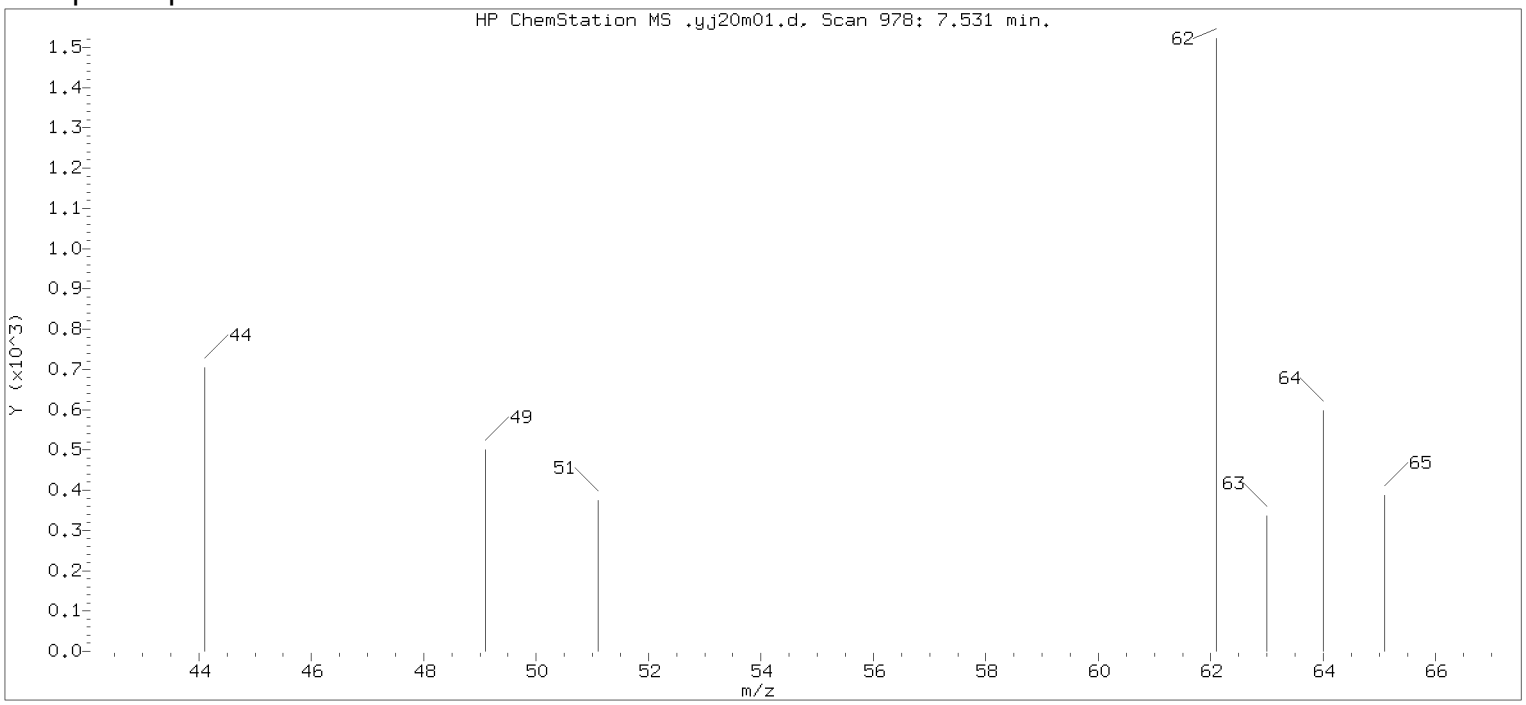
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 978
Retention Time (minutes): 7.531
Quant Ion : 62.00
Area (flag) : 3787M
On-Column Amount (ng) : 0.4544
Integration start scan : 966 Integration stop scan: 990
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

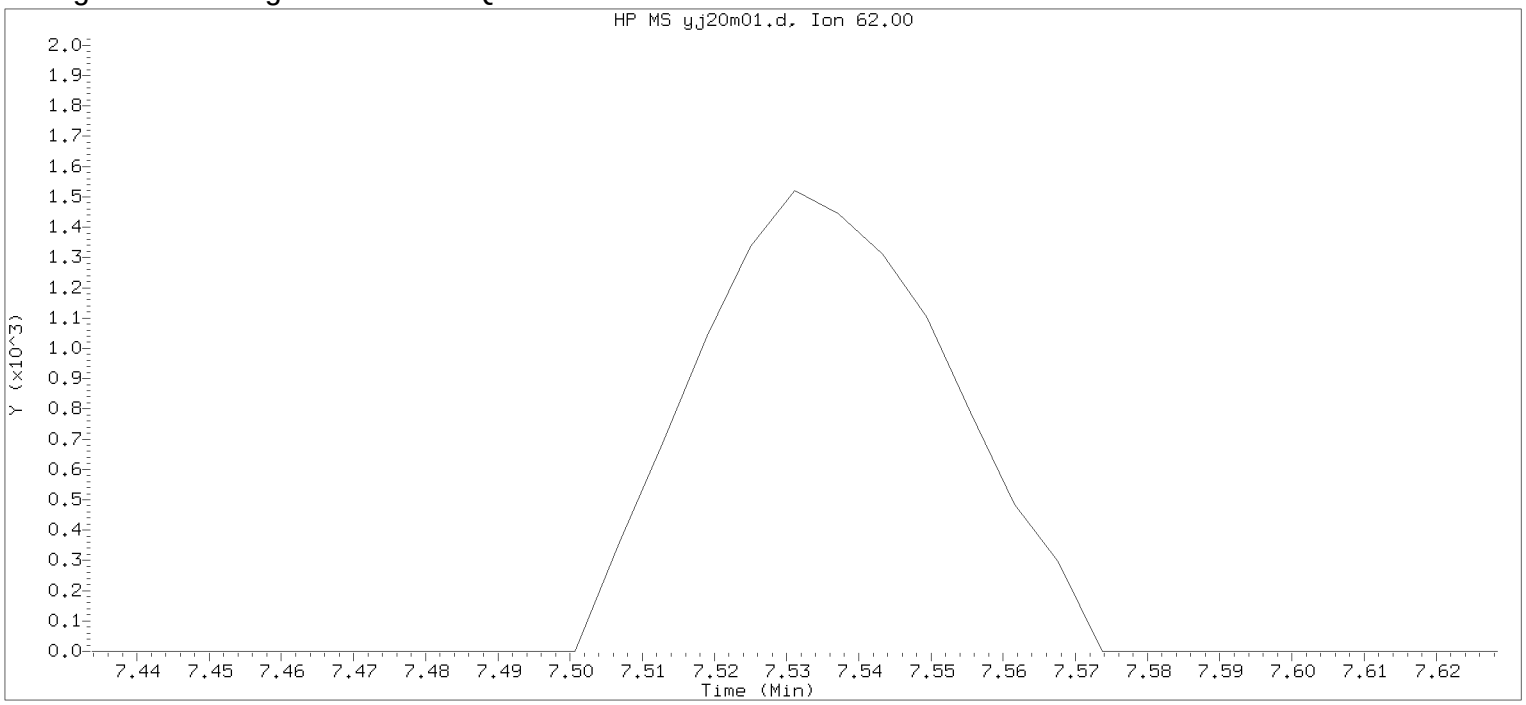
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

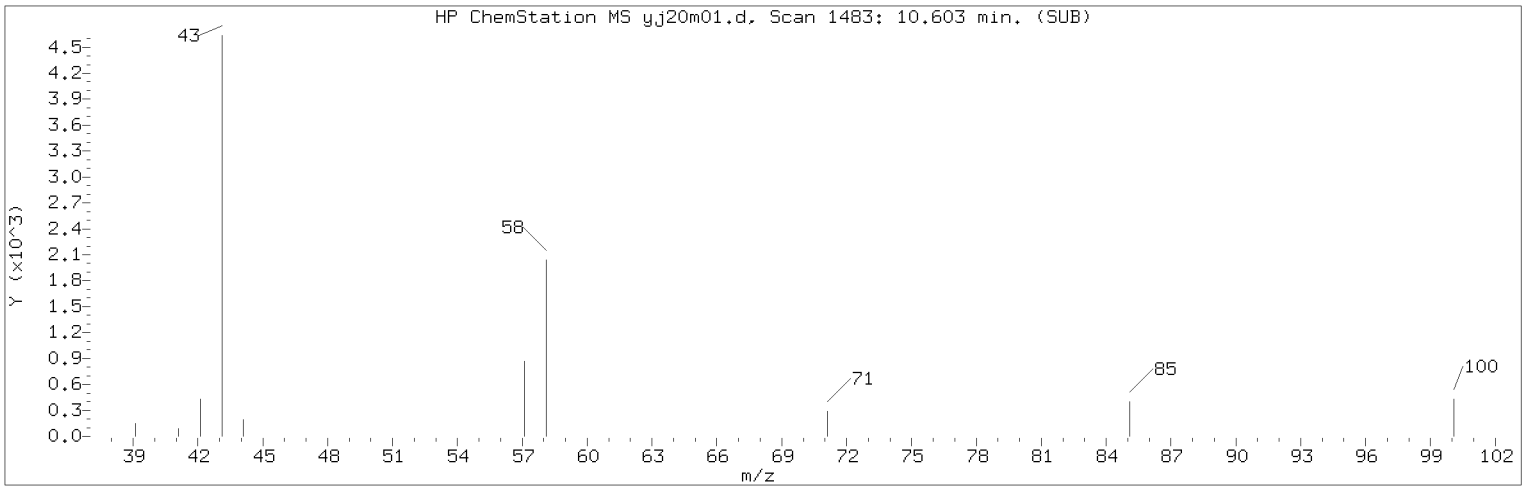
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

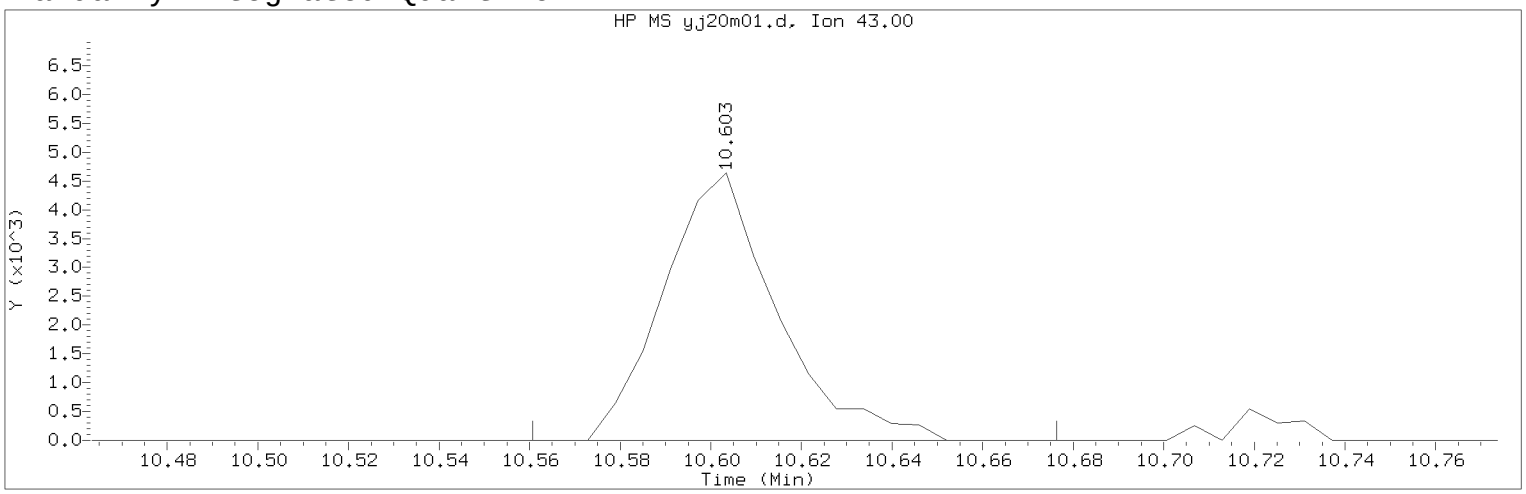
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Expected RT (minutes) : 7.531
Quant Ion : 62.00

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

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Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

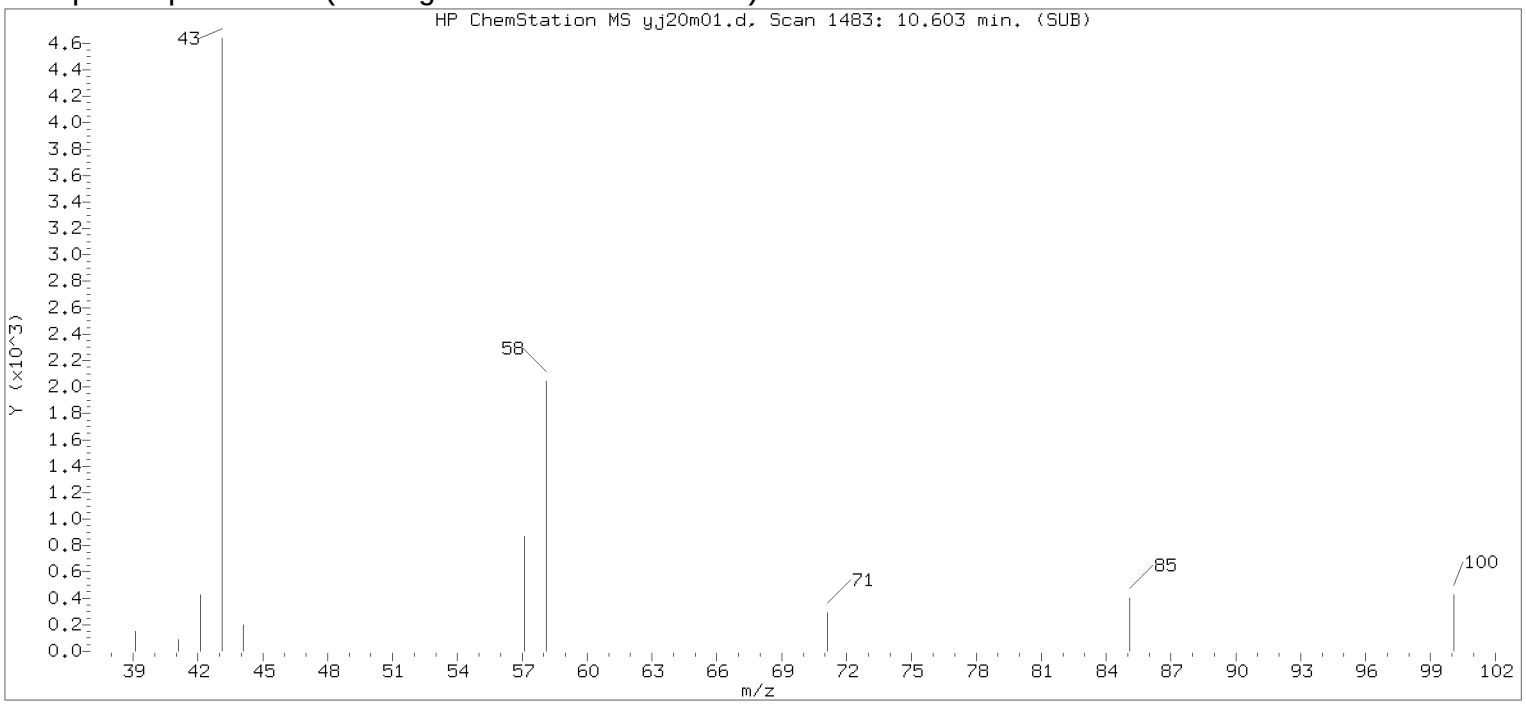
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1483
Retention Time (minutes): 10.603
Quant Ion : 43.00
Area (flag) : 8033M
On-Column Amount (ng) : 0.9168
Integration start scan : 1475 Integration stop scan: 1494
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

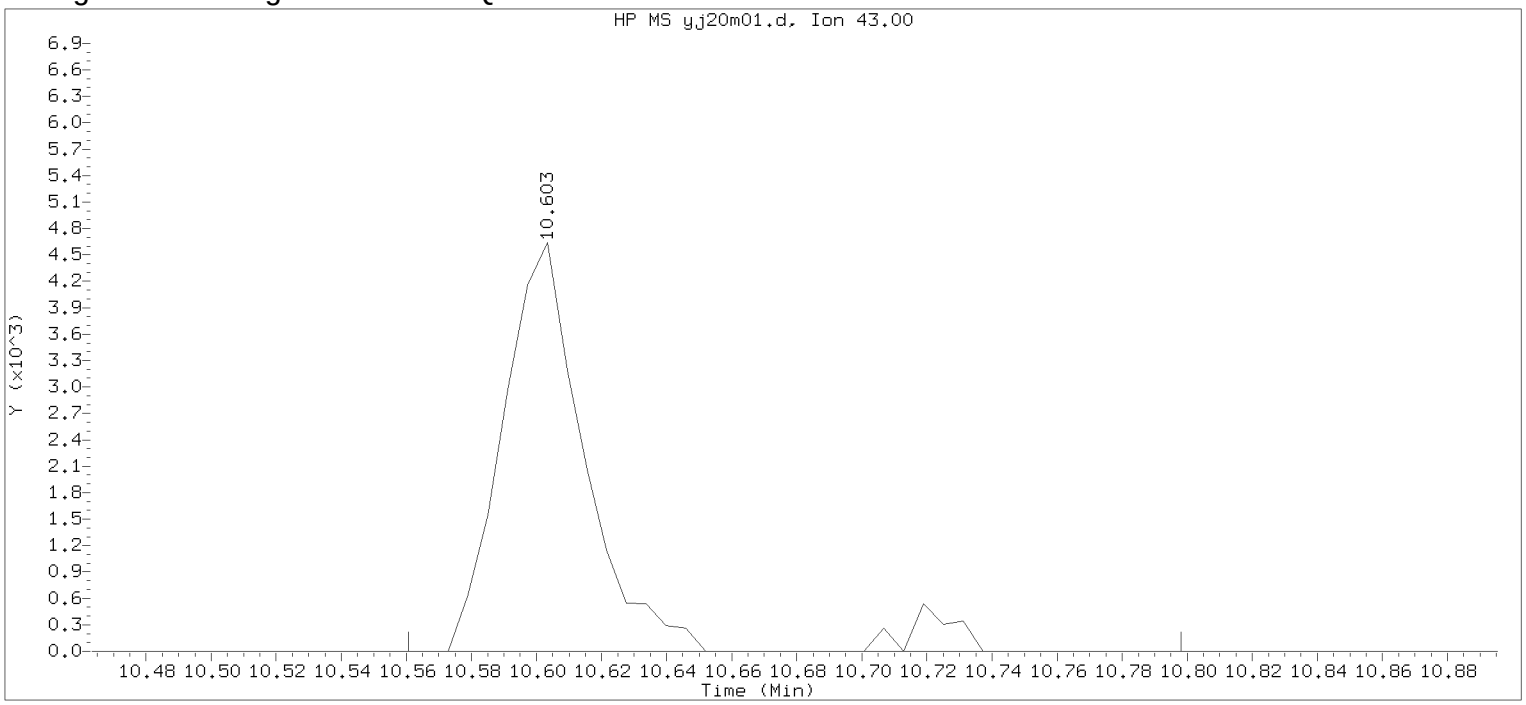
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

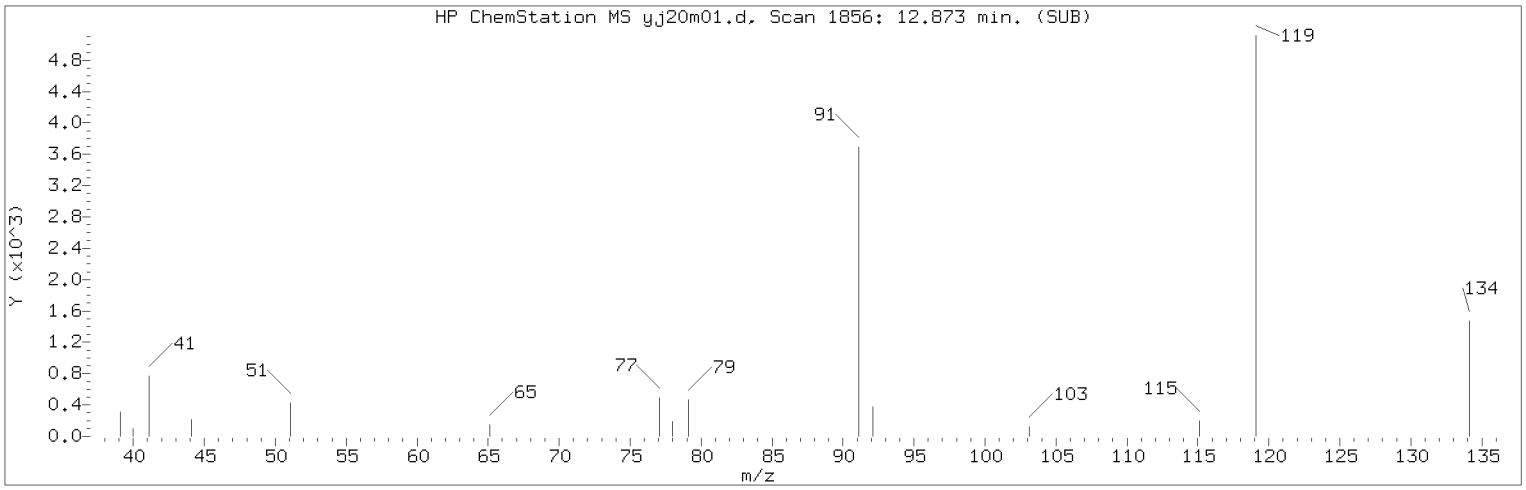
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

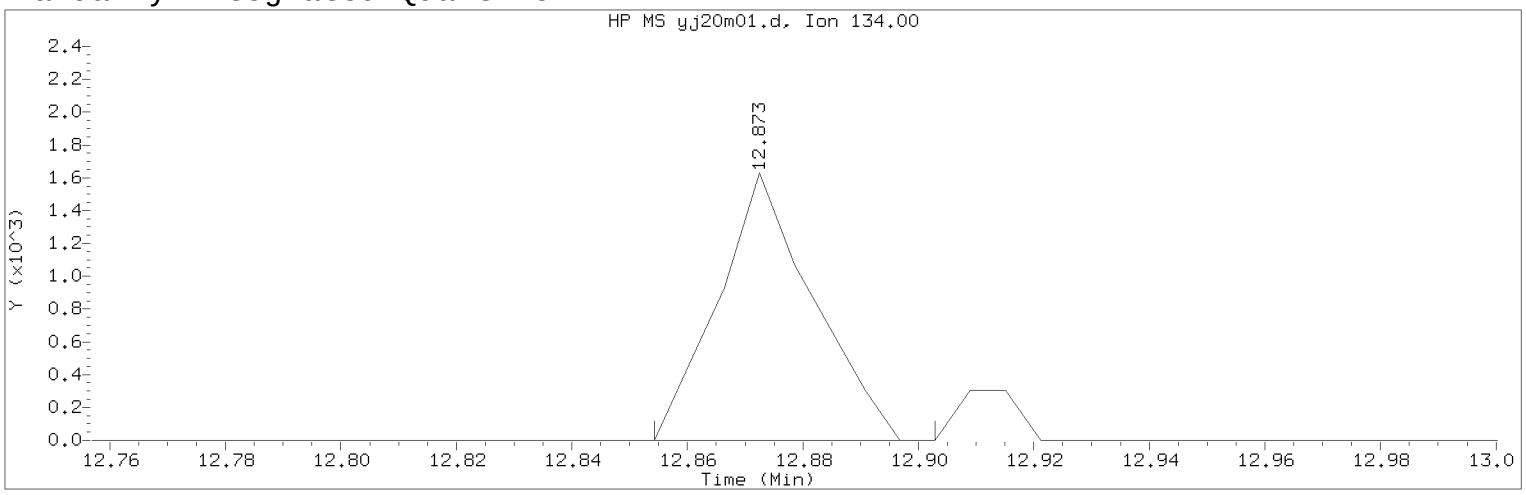
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1483
Retention Time (minutes): 10.603
Quant Ion : 43.00
Area : 8561
On-column Amount (ng) : 0.9771
Integration start scan : 1475 Integration stop scan: 1514
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user KENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
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Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

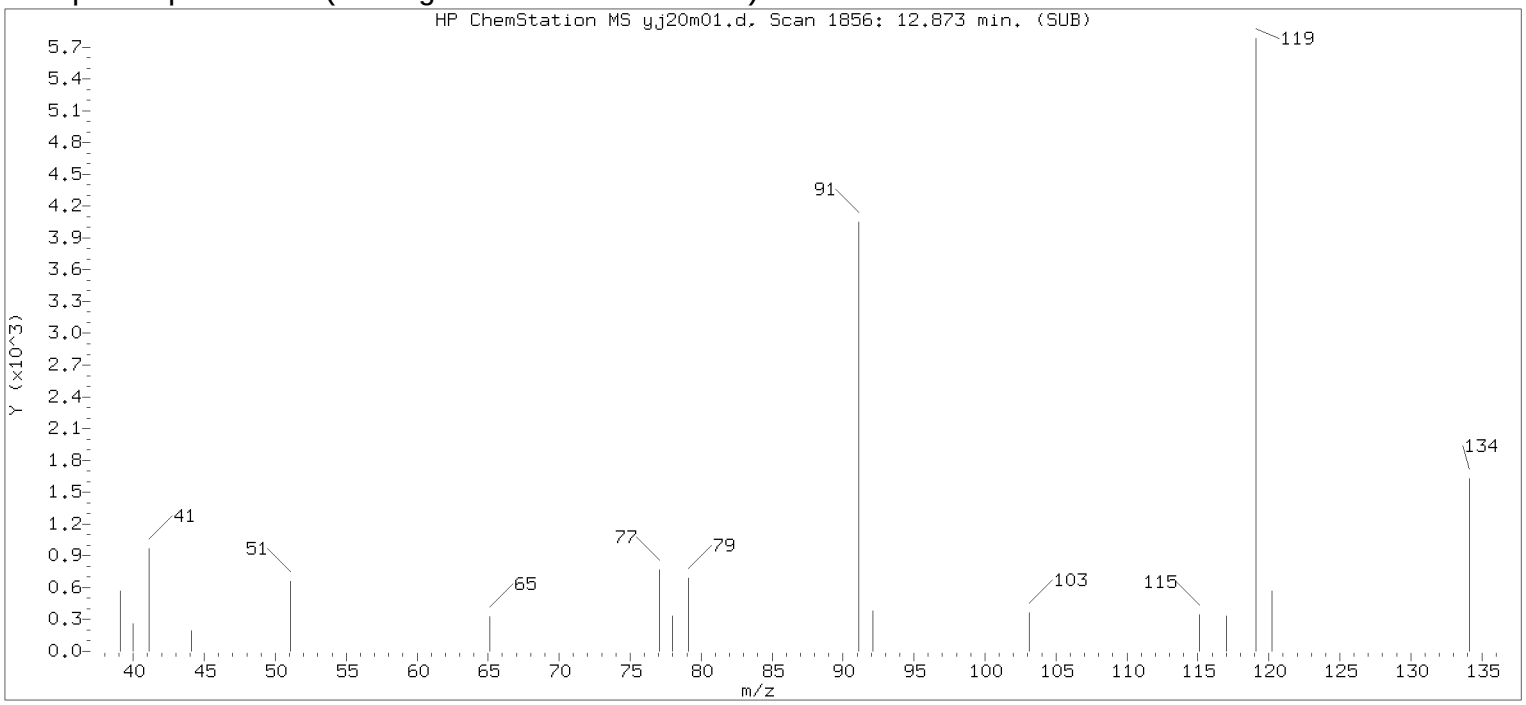
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.873
Quant Ion : 134.00
Area (flag) : 1851M
On-Column Amount (ng) : 0.3524
Integration start scan : 1852 Integration stop scan: 1860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

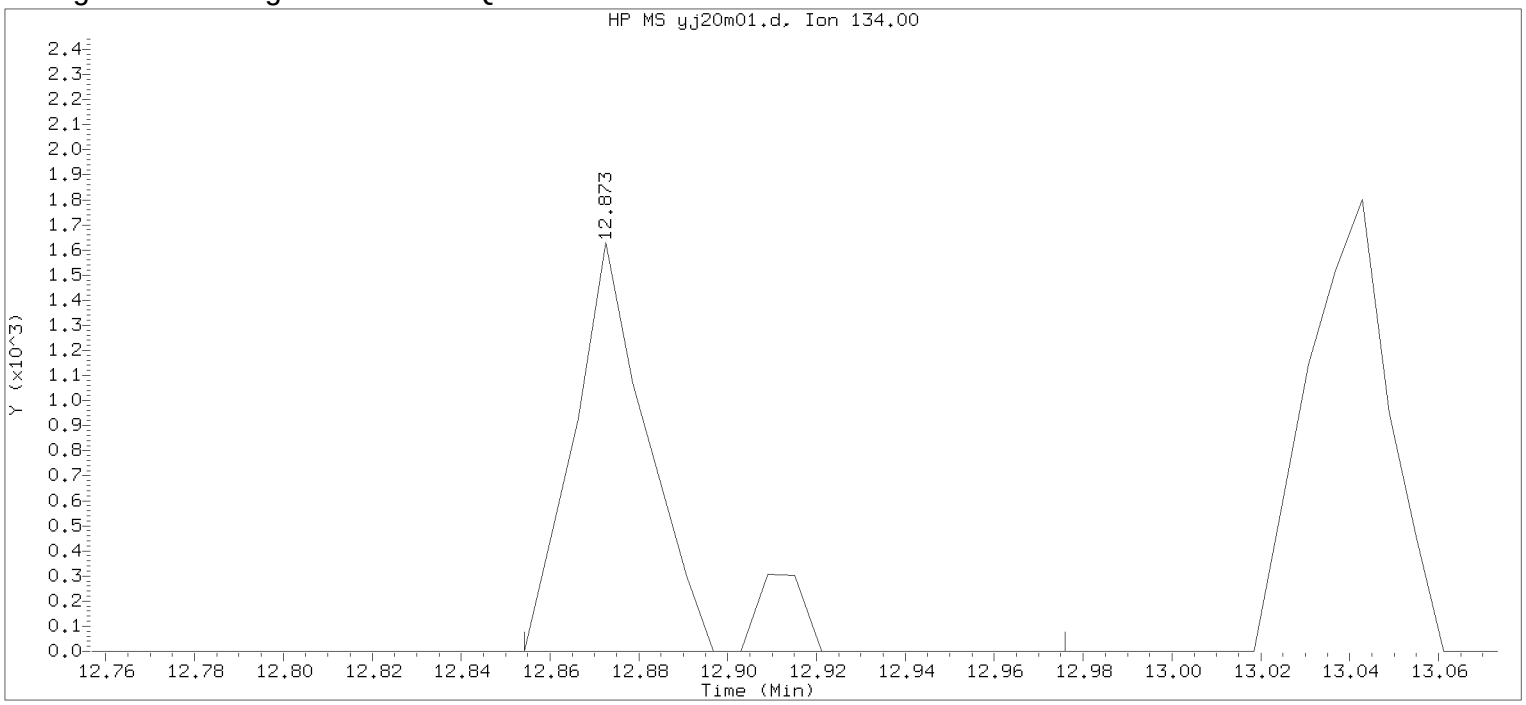
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

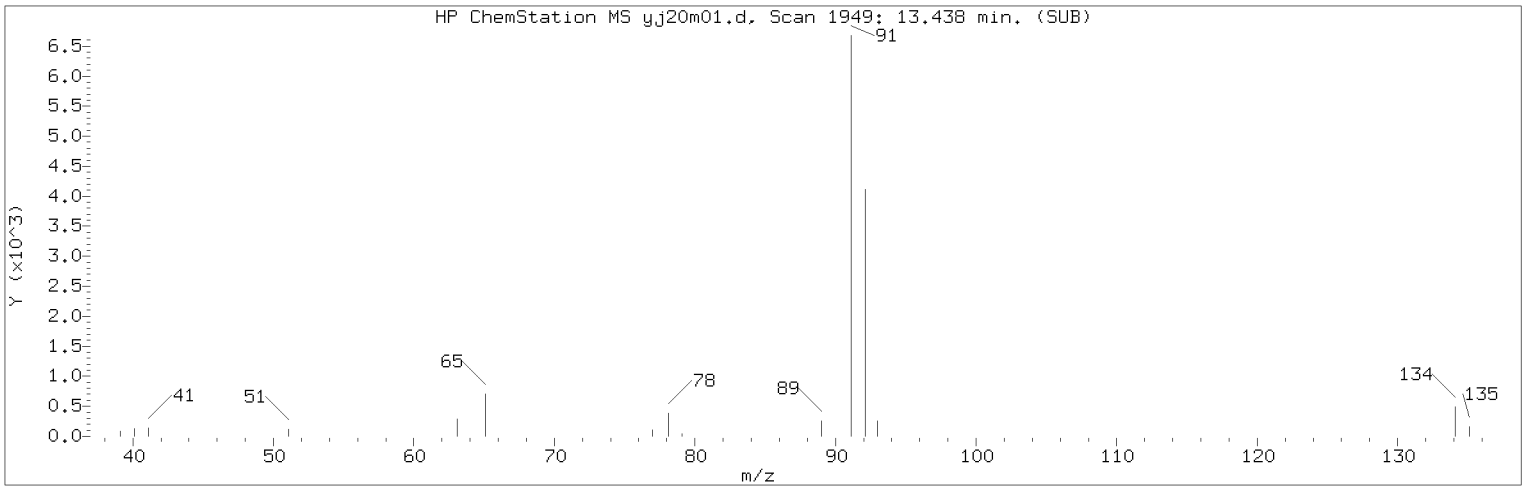
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

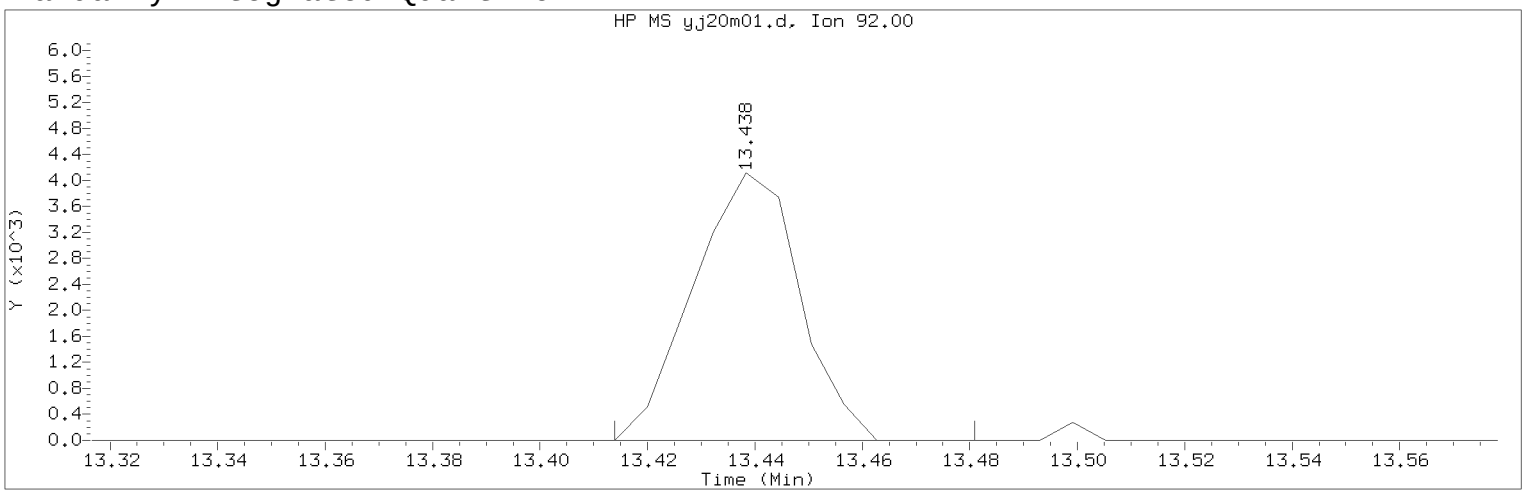
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.873
Quant Ion : 134.00
Area : 2073
On-column Amount (ng) : 0.3949
Integration start scan : 1852 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKENBWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

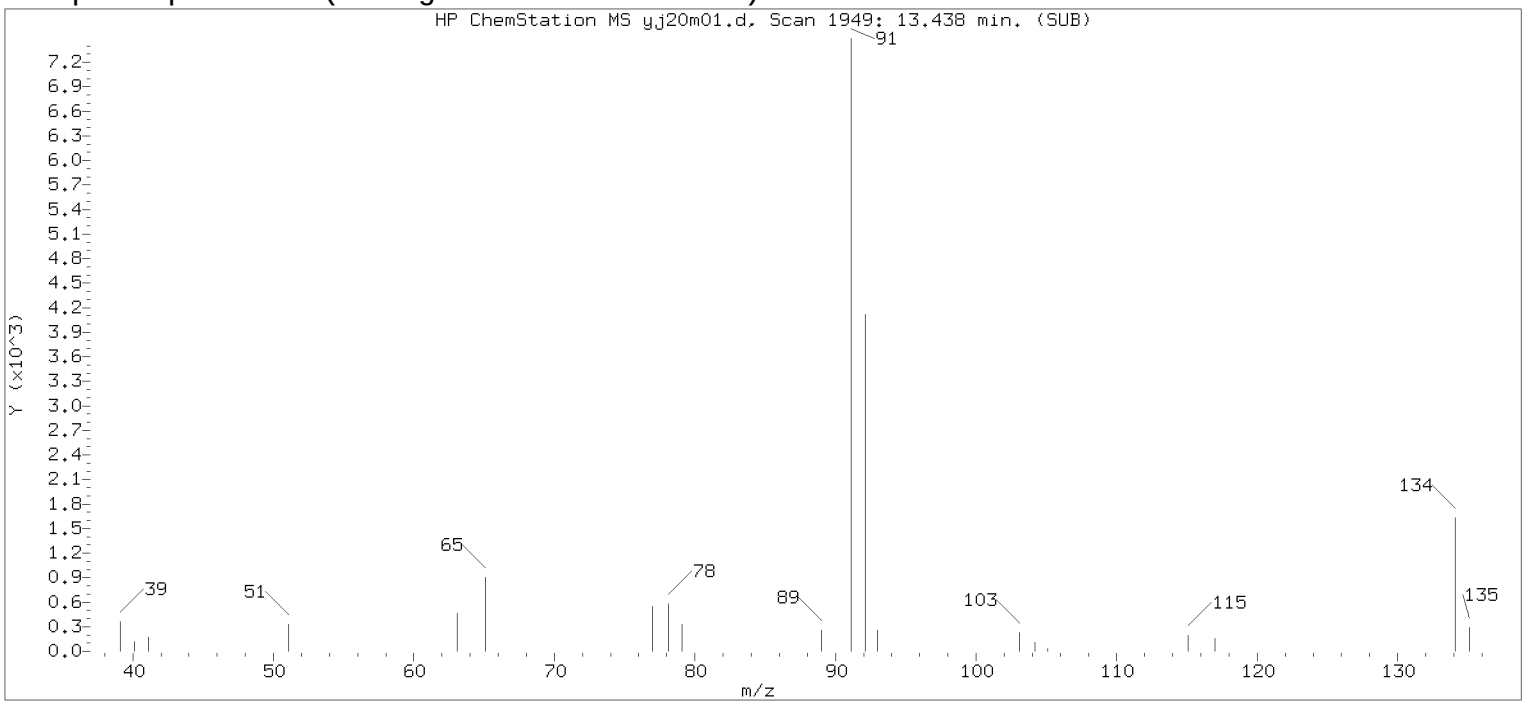
Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 1949
Retention Time (minutes): 13.438
Quant Ion : 92.00
Area (flag) : 5639M
On-Column Amount (ng) : 0.4083
Integration start scan : 1944 Integration stop scan: 1955
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

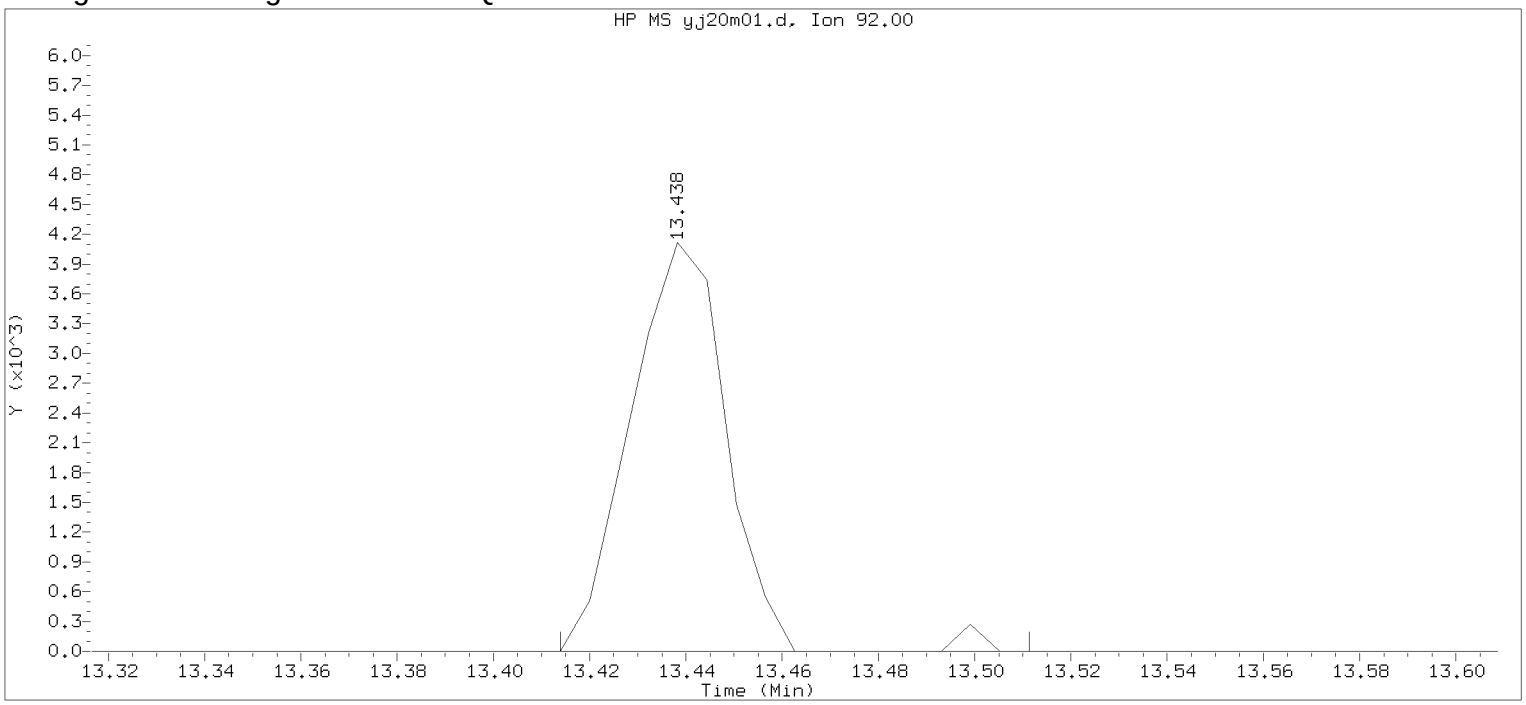
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



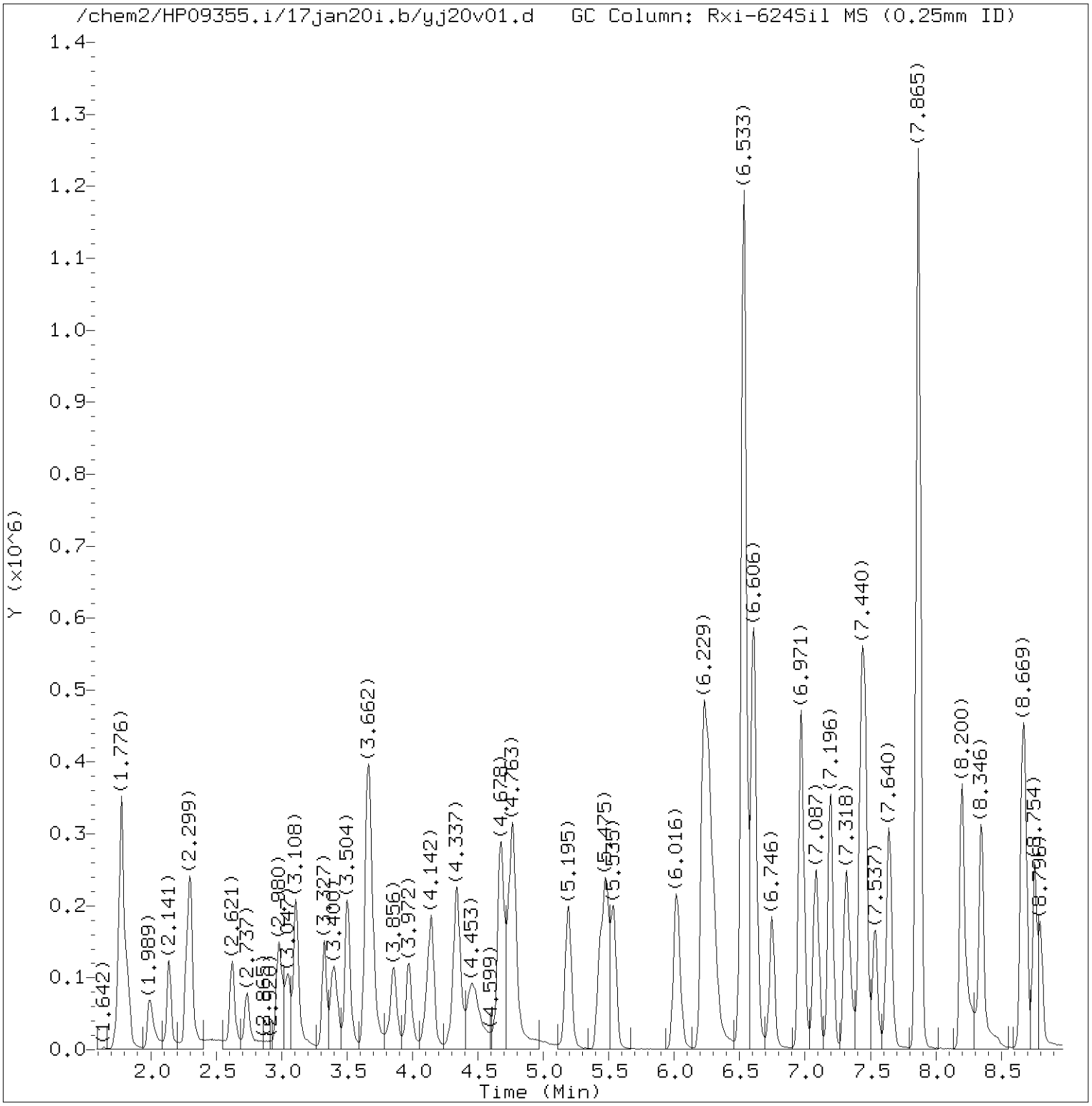

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 1949
Retention Time (minutes): 13.438
Quant Ion : 92.00
Area : 5739
On-column Amount (ng) : 0.4156
Integration start scan : 1944 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231




Total Ion Chromatogram (TIC)

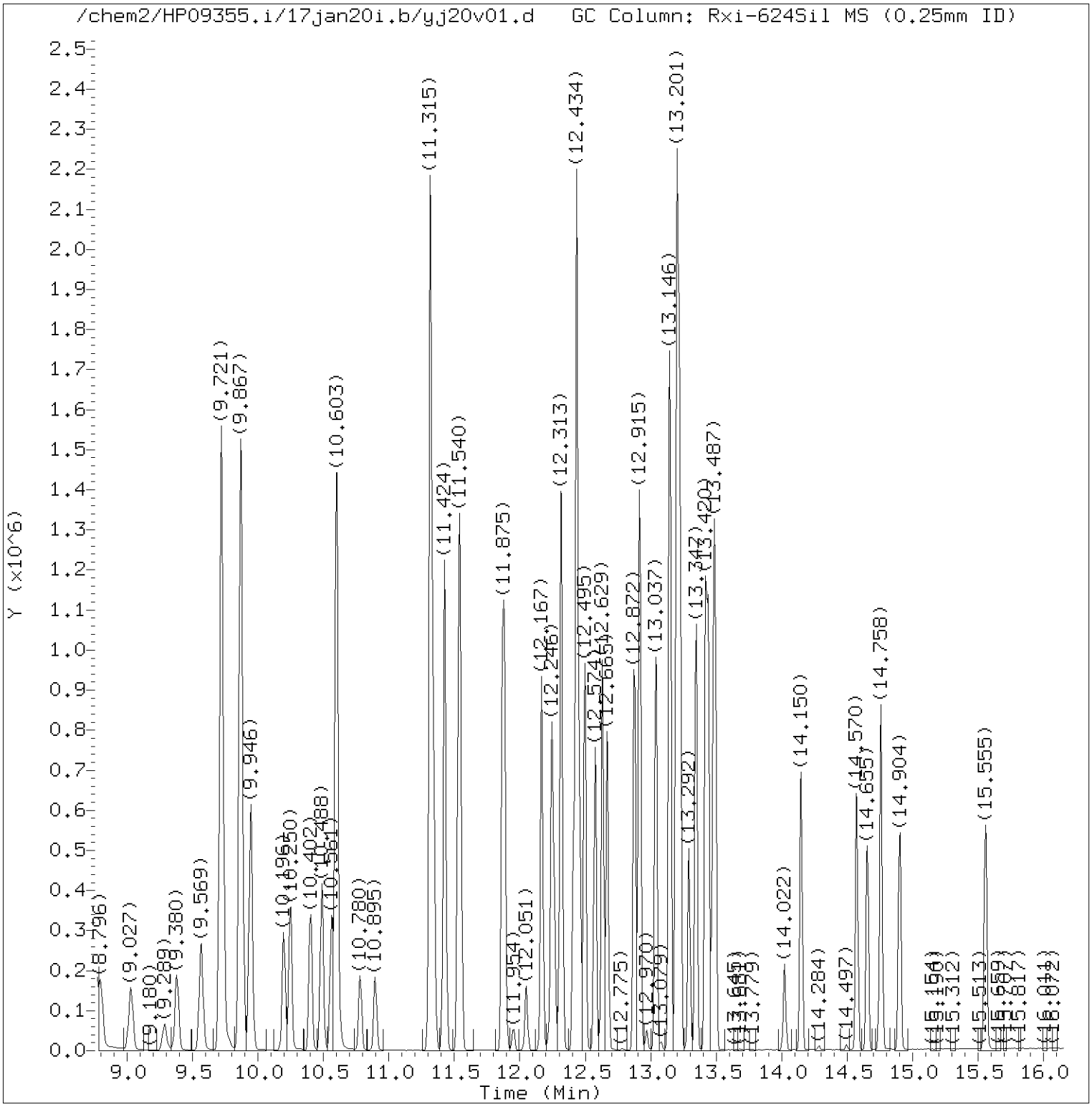
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

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Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 139747 | 18.986 |
| 4) Chloromethane | (2) | 2.141 | 50 | 160004 | 20.187 |
| 6) Vinyl Chloride | (2) | 2.275 | 62 | 153730 | 20.631 |
| 5) 1,3-Butadiene | (2) | 2.299 | 39 | 135232 | 17.154 |
| 8) Bromomethane | (2) | 2.621 | 94 | 106690 | 20.194 |
| 9) Chloroethane | (2) | 2.737 | 64 | 86679 | 20.113 |
| 10) Dichlorofluoromethane | (2) | 2.980 | 67 | 181493 | 18.466 |
| 12) Trichlorofluoromethane | (2) | 3.047 | 101 | 182082 | 20.779 |
| 11) n-Pentane | (2) | 3.108 | 43 | 188477 | 19.222 |
| 14) Ethyl ether | (2) | 3.327 | 59 | 113576 | 21.063 |
| 15) Freon 123a | (2) | 3.406 | 67 | 118878 | 19.305 |
| 16) Acrolein | (1) | 3.504 | 56 | 291736 | 142.128 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 89746 | 20.285 |
| 18) Acetone | (1) | 3.674 | 58 | 163513 | 167.552 |
| 19) Freon 113 | (2) | 3.674 | 101 | 87244 | 19.174 |
| 21) 2-Propanol | (1) | 3.838 | 45 | 100717 | 129.433 |
| 22) Methyl Iodide | (2) | 3.856 | 142 | 155384 | 18.485 |
| 23) Carbon Disulfide | (2) | 3.972 | 76 | 248778 | 17.869 |
| 27) Methyl Acetate | (2) | 4.112 | 43 | 171797 | 20.001 |
| 25) Allyl Chloride | (2) | 4.148 | 41 | 164668 | 17.601 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.331 | 65 | 336889 | 250.000 |
| 28) Methylene Chloride | (2) | 4.337 | 84 | 105604 | 18.865 |
| 30) t-Butyl alcohol | (1) | 4.453 | 59 | 275728 | 179.984 |
| 31) Acrylonitrile | (2) | 4.678 | 53 | 420663 | 102.045 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.751 | 73 | 334950 | 18.194 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 104440 | 19.518 |
| 34) n-Hexane | (2) | 5.195 | 57 | 166089 | 19.788 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 185156 | 19.159 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 360462 | 18.605 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.542 | 53 | 166891 | 18.341 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 329801 | 18.176 |
| 44) 2-Butanone | (2) | 6.223 | 43 | 998616 | 155.937 |
| 42) cis-1,2-Dichloroethene | (2) | 6.266 | 96 | 115407 | 18.745 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 141606 | 18.661 |
| 47) Propionitrile | (1) | 6.308 | 54 | 256234 | 148.821 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 614049 | 140.424 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 59836 | 18.409 |
| 50) Tetrahydrofuran | (1) | 6.612 | 71 | 173621 | 112.422 |

* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 6.746 | 83 | 183573 | 18.858 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 219847 | 38.263 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 272217 | 49.793 |
| 53) 1,1,1-Trichloroethane | (2) | 6.977 | 97 | 172461 | 21.164 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 190208 | 19.160 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 127554 | 18.795 |
| 55) 1,1-Dichloropropene | (2) | 7.196 | 75 | 143701 | 18.250 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 269431 | 480.239 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.427 | 102 | 71302 | 49.742 |
| 60) Benzene | (2) | 7.458 | 78 | 441151 | 18.828 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 62 | 159876 | 18.647 |
| 65) t-Amyl methyl ether | (2) | 7.640 | 73 | 329427 | 18.141 |
| 66)*Fluorobenzene | (2) | 7.865 | 96 | 1172261 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 180873 | 18.304 |
| 69) n-Butanol | (1) | 8.200 | 56 | 432602M | 976.272 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 116386 | 19.157 |
| 72) Methylcyclohexane | (2) | 8.662 | 83 | 196227 | 18.163 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 114895 | 18.651 |
| 76) Methyl Methacrylate | (2) | 8.754 | 69 | 118568 | 17.491 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 58492M | 481.483 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 74291 | 18.432 |
| 78) Bromodichloromethane | (2) | 9.027 | 83 | 124670 | 17.933 |
| 79) 2-Nitropropane | (2) | 9.289 | 41 | 47995 | 17.743 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 94075M | 17.828 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 166383 | 18.308 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 1250294 | 109.864 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1164533 | 50.425 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 321760 | 36.815 |
| 88) Toluene | (3) | 9.946 | 92 | 289363 | 19.030 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 155377 | 18.507 |
| 91) Ethyl Methacrylate | (3) | 10.250 | 69 | 190143 | 18.046 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 111214 | 18.619 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 126922 | 18.971 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 185954 | 18.427 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1011121 | 111.131 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 99158 | 17.674 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 123553 | 19.166 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 893893 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 153937 | 18.166 |
| 102) Chlorobenzene | (3) | 11.345 | 112 | 325422 | 18.646 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424 | 131 | 98943 | 18.373 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 553197 | 18.913 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 439120 | 37.705 |
| 108) Xylene (Total) | (3) | | 106 | 649836 | 56.279 |
| 107) o-Xylene | (3) | 11.868 | 106 | 210716 | 18.574 |
| 109) Styrene | (3) | 11.887 | 104 | 356711 | 18.319 |
| 110) Bromoform | (3) | 12.051 | 173 | 70655 | 16.174 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 554328 | 18.724 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 398962 | 4332.186 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 439588 | 50.752 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 188544M | 18.746 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 298344 | 93.591 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 148877 | 18.032 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 64405 | 18.843 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 667740 | 18.712 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 134798 | 18.358 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 478317 | 18.382 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 144371 | 18.523 |
| 124) tert-Butylbenzene | (4) | 12.878 | 134 | 103654M | 18.631 |
| 125) Pentachloroethane | (4) | 12.915 | 167 | 72227 | 17.170 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 494011 | 18.359 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 616577 | 18.850 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 282648 | 17.943 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 529971 | 18.236 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 498682 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 295550 | 18.228 |
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 505209 | 18.691 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 310049 | 16.718 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 308986 | 18.257 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 328686 | 18.718 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 268546 | 18.358 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 275901 | 18.235 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 264302 | 18.611 |
| 141) Diethylbenzene (total) | (4) | | 100 | 901974 | 55.586 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 44270 | 18.118 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 198509 | 17.910 |

M = Compound was manually integrated.
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Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

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Sample Name: YLGICV Lab Sample ID: YLGICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.576 | 180 | 181367 | 17.906 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 86884 | 17.455 |
| 148) Naphthalene | (4) | 14.758 | 128 | 602035 | 18.572 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 160442 | 17.421 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 272271 | 15.596 |



Digitally signed by Brett W. Kenyon
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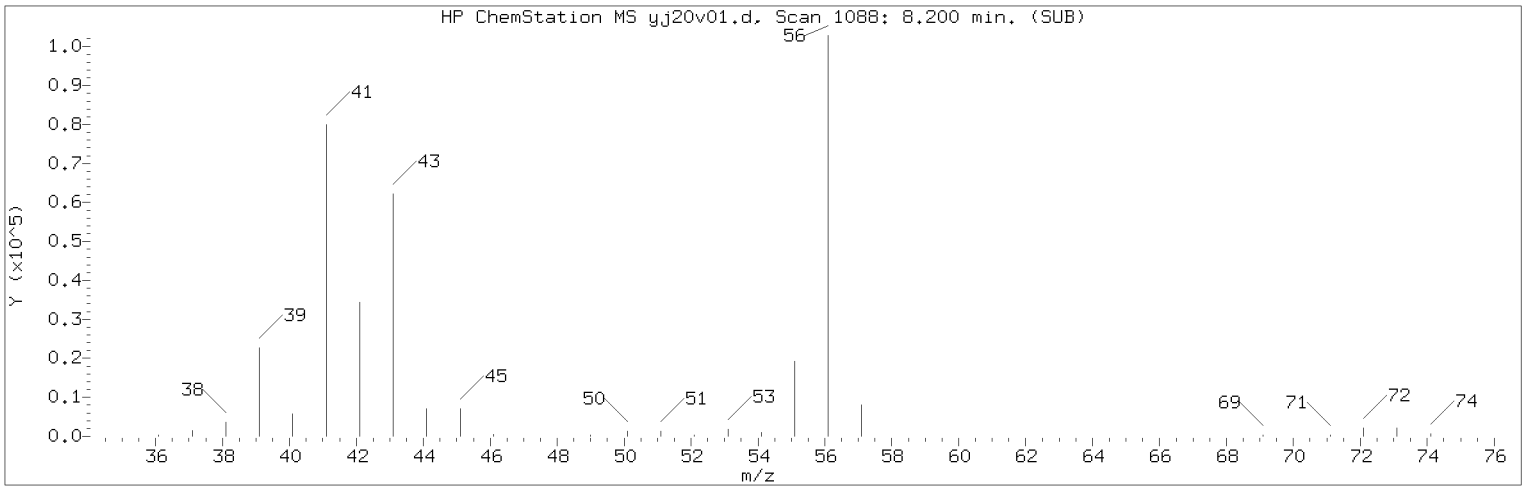
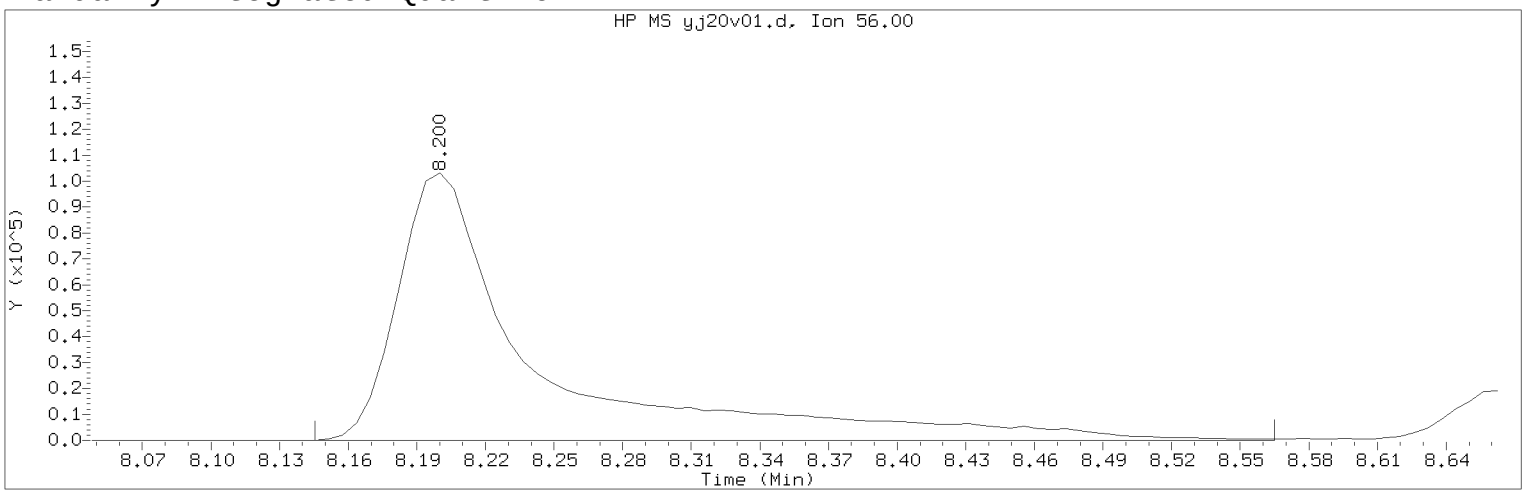
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

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Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

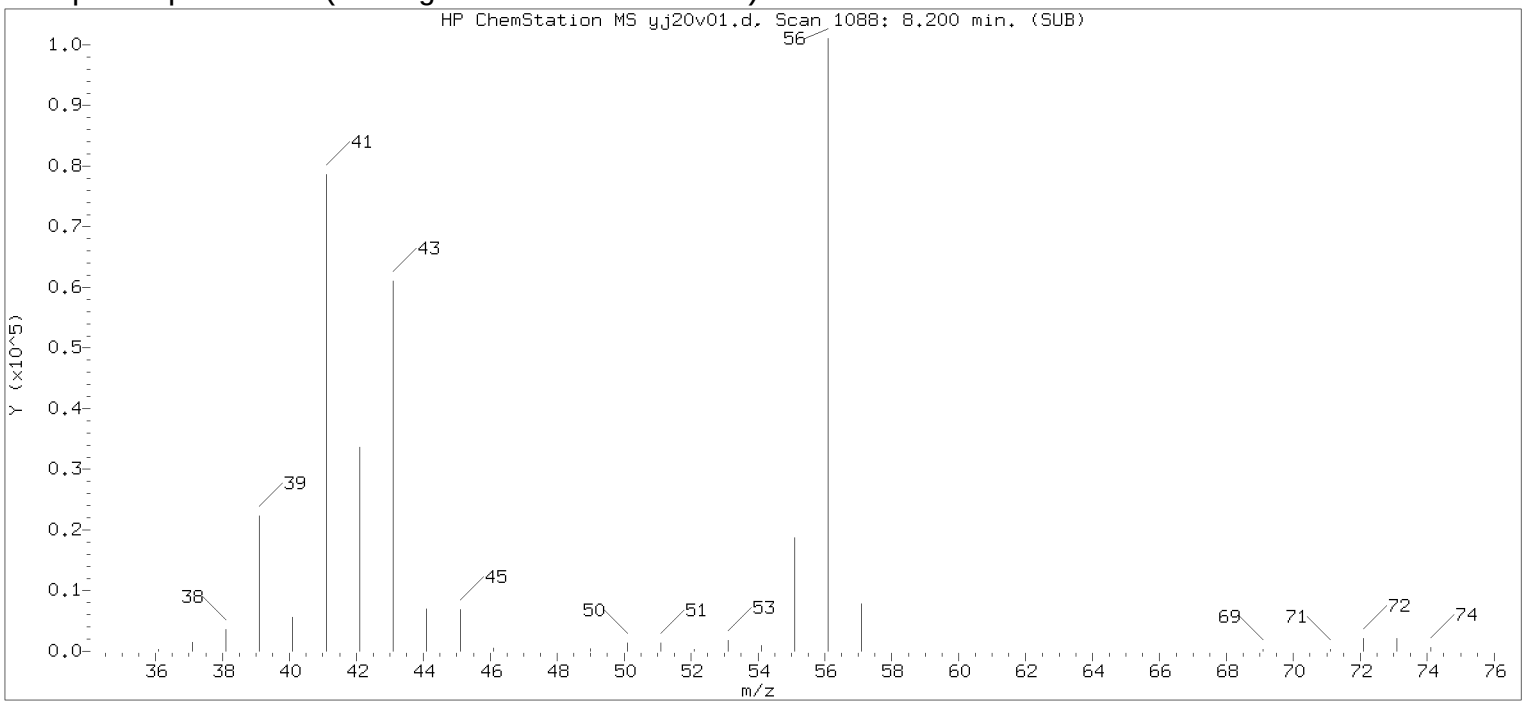
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1088
Retention Time (minutes): 8.200
Quant Ion : 56.00
Area (flag) : 432602M
On-Column Amount (ng) : 976.2715
Integration start scan : 1078 Integration stop scan: 1147
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

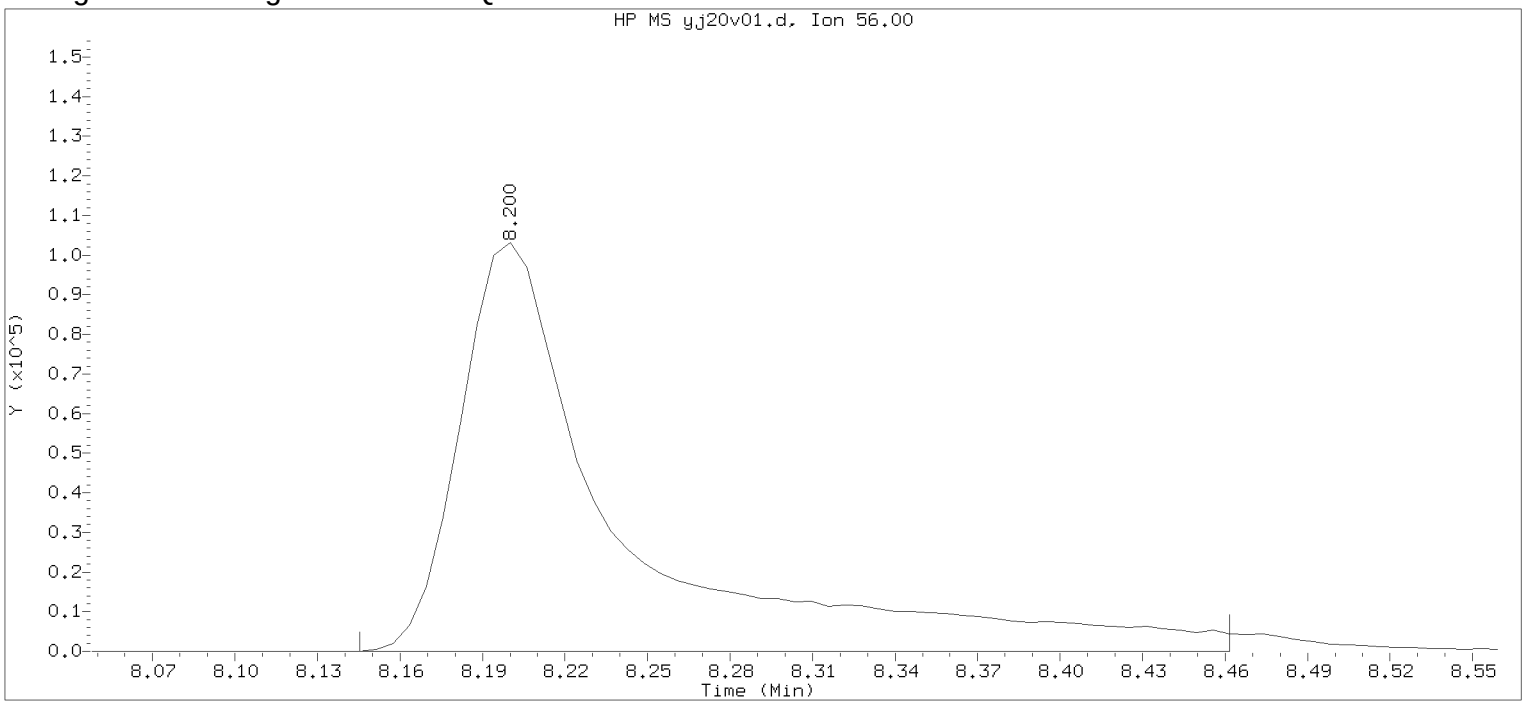
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

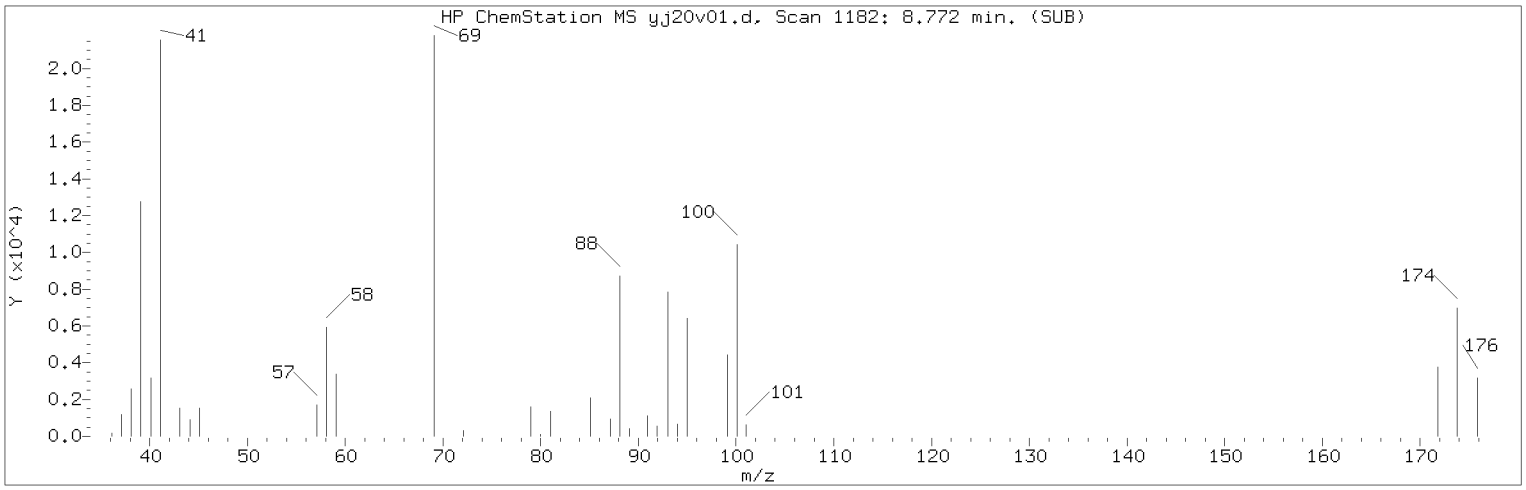
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

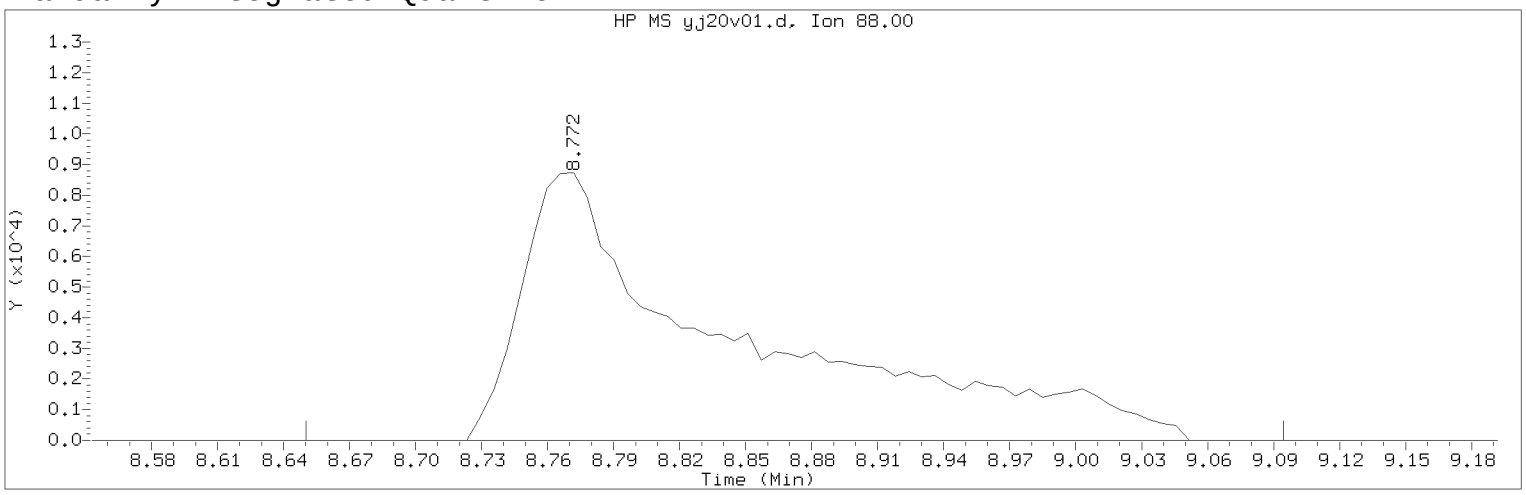
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1088
Retention Time (minutes): 8.200
Quant Ion : 56.00
Area : 421146
On-column Amount (ng) : 950.4147
Integration start scan : 1078 Integration stop scan: 1130
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

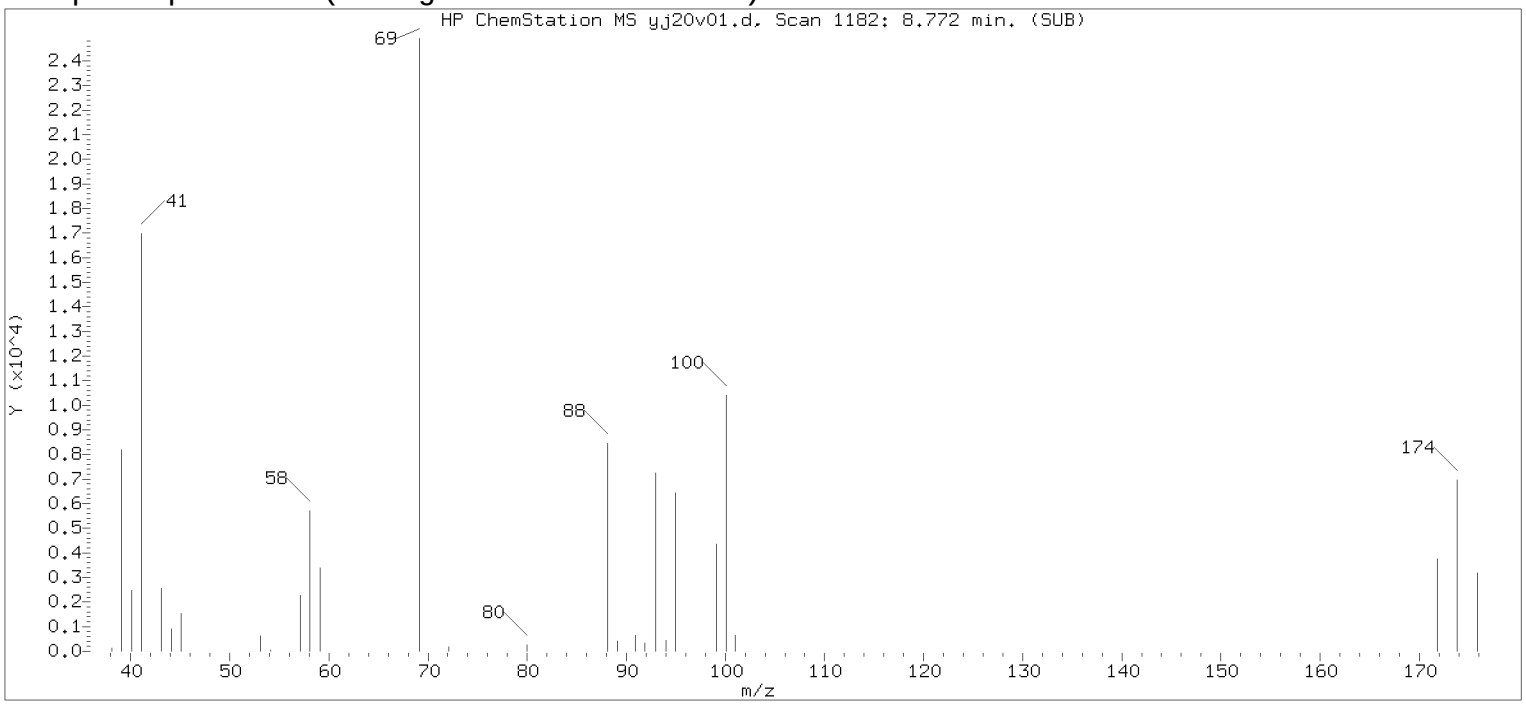
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area (flag) : 58492M
On-Column Amount (ng) : 481.4826
Integration start scan : 1161 Integration stop scan: 1234
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

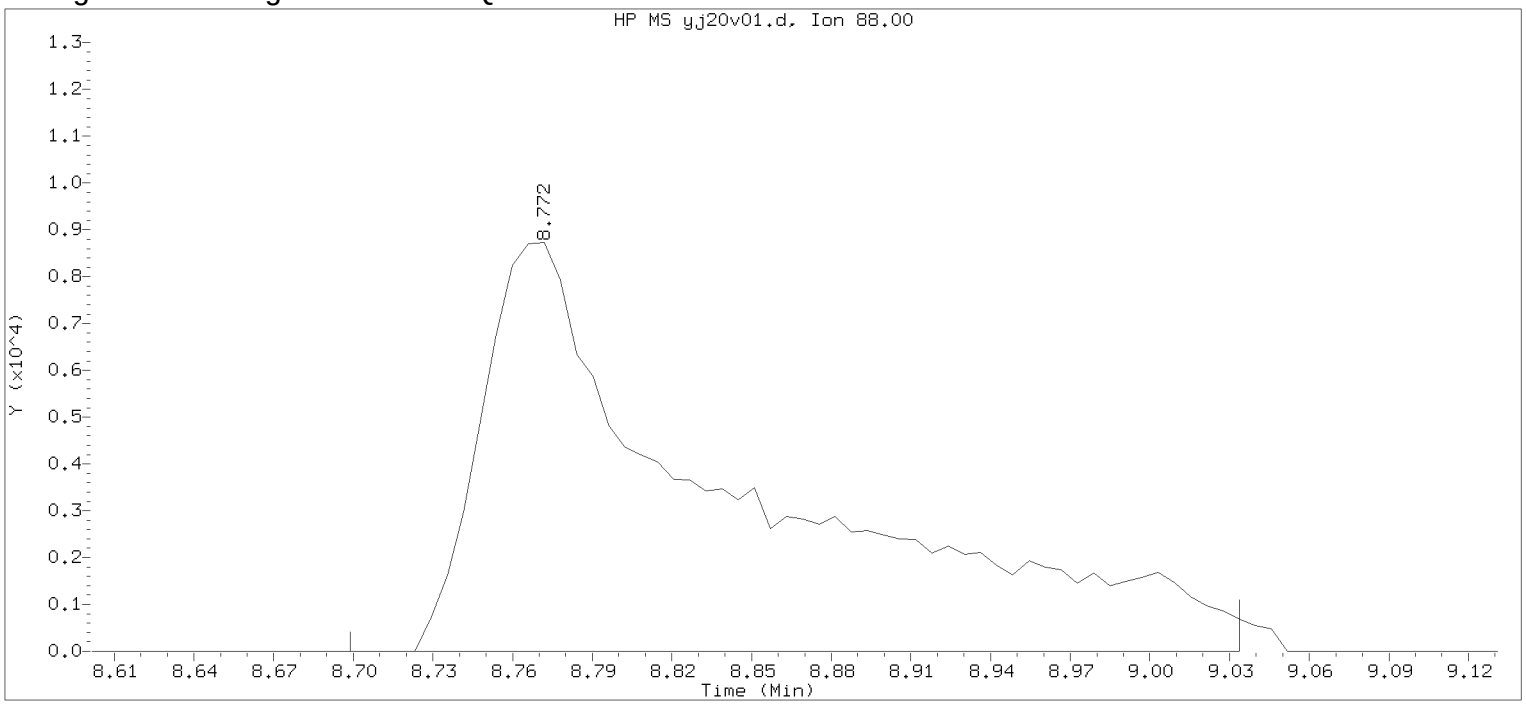
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

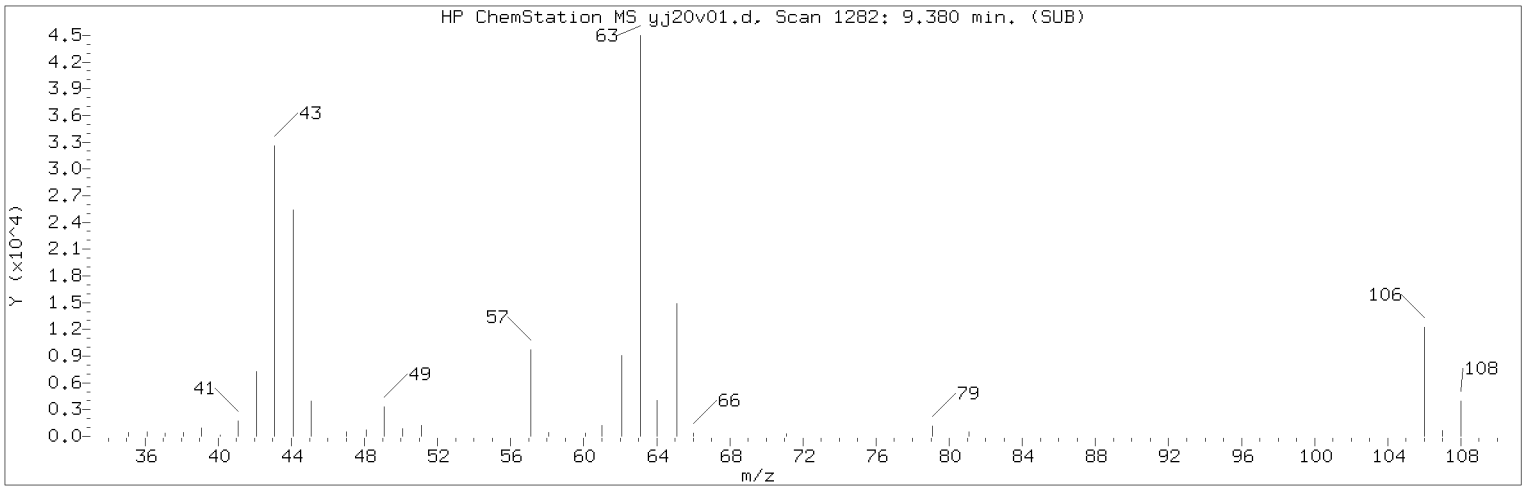
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

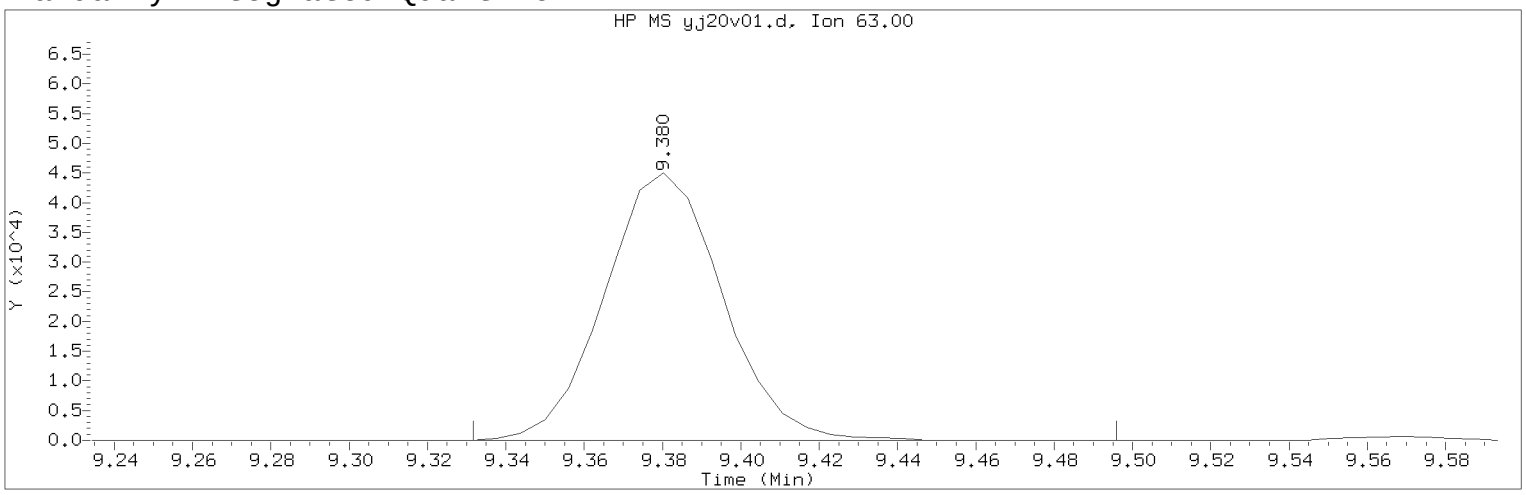
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area : 57997
On-column Amount (ng) : 477.4119
Integration start scan : 1169 Integration stop scan: 1224
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

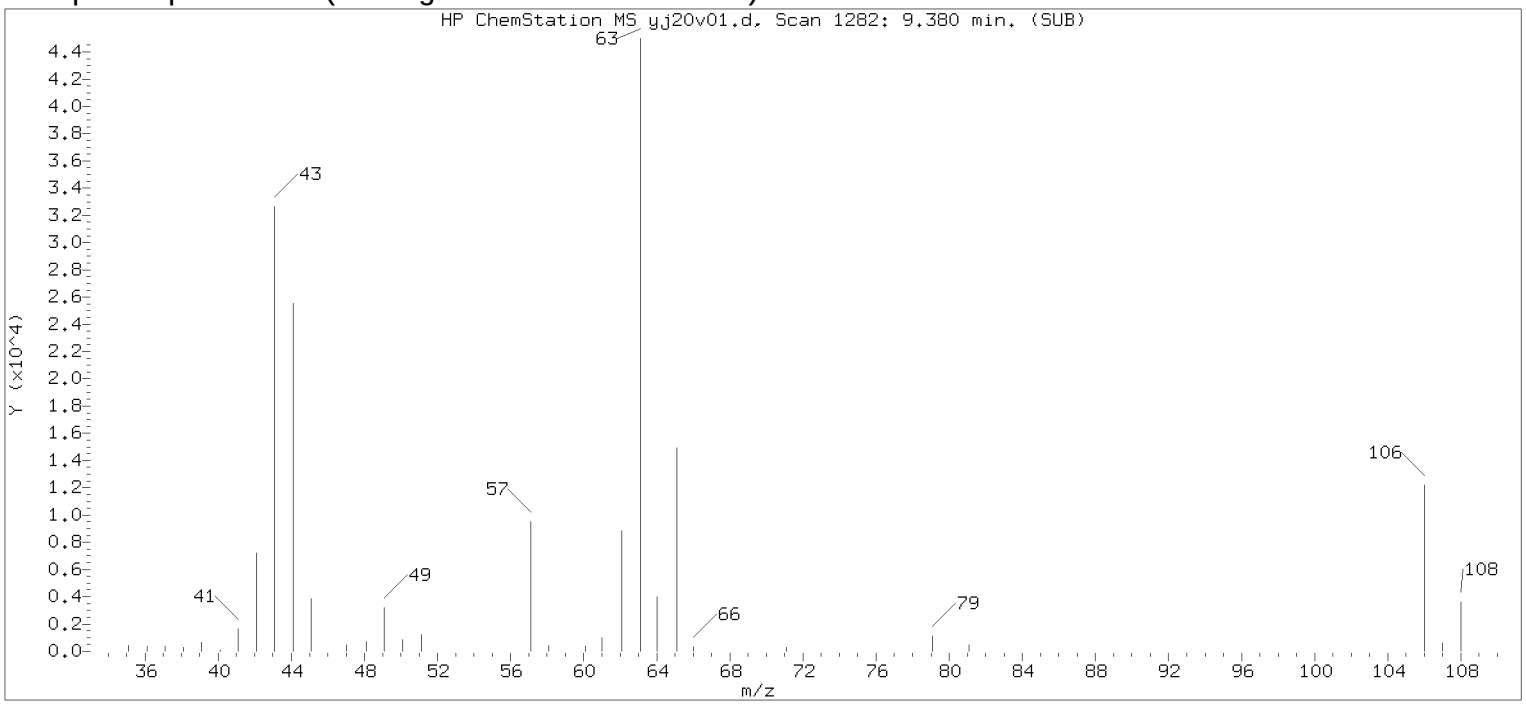
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1282
Retention Time (minutes): 9.380
Quant Ion : 63.00
Area (flag) : 94075M
On-Column Amount (ng) : 17.8278
Integration start scan : 1273 Integration stop scan: 1300
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

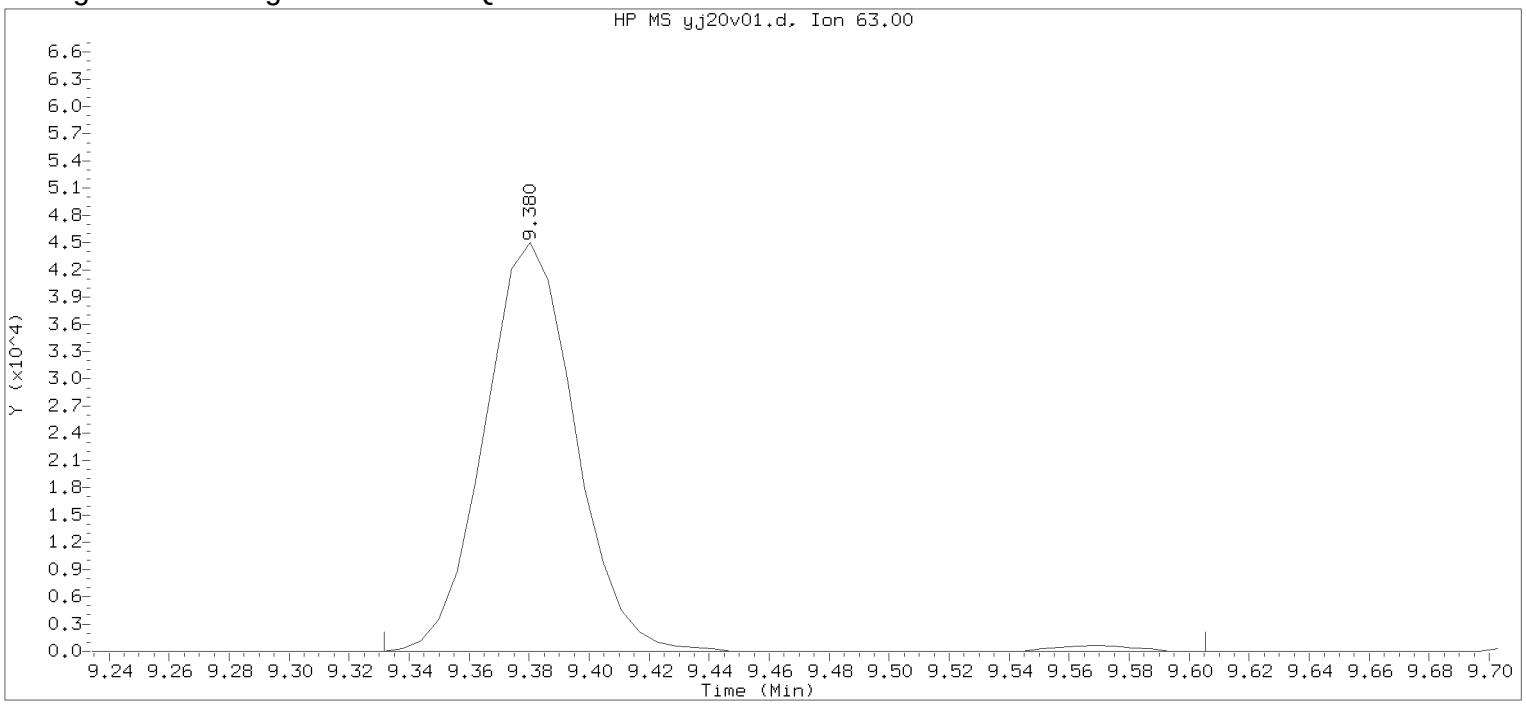
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

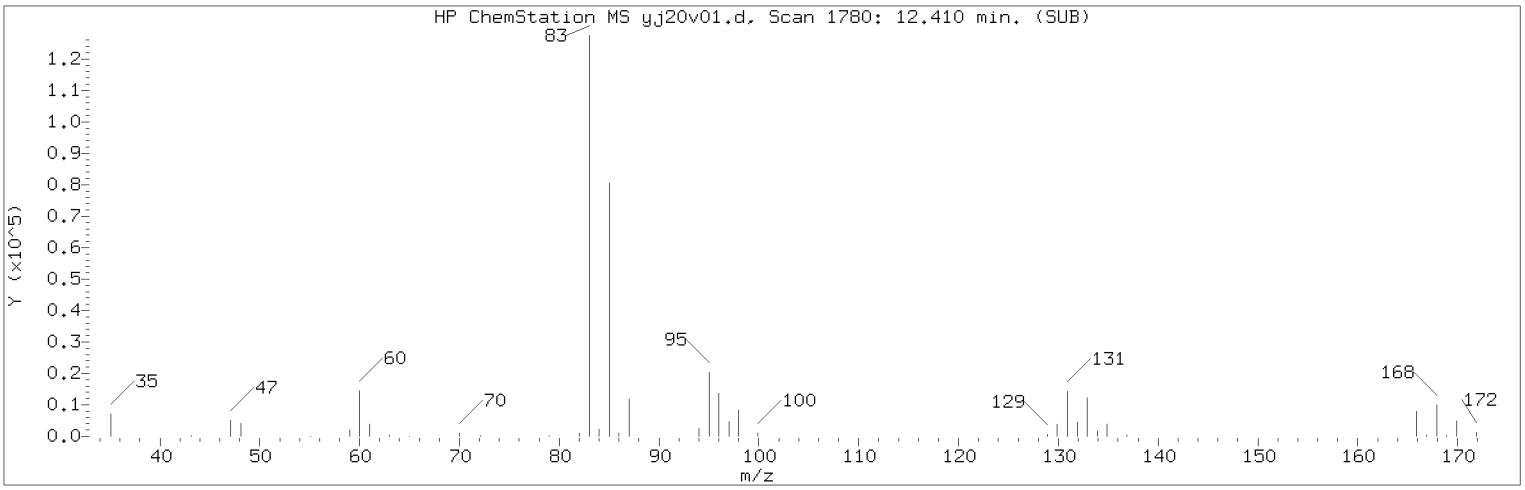
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

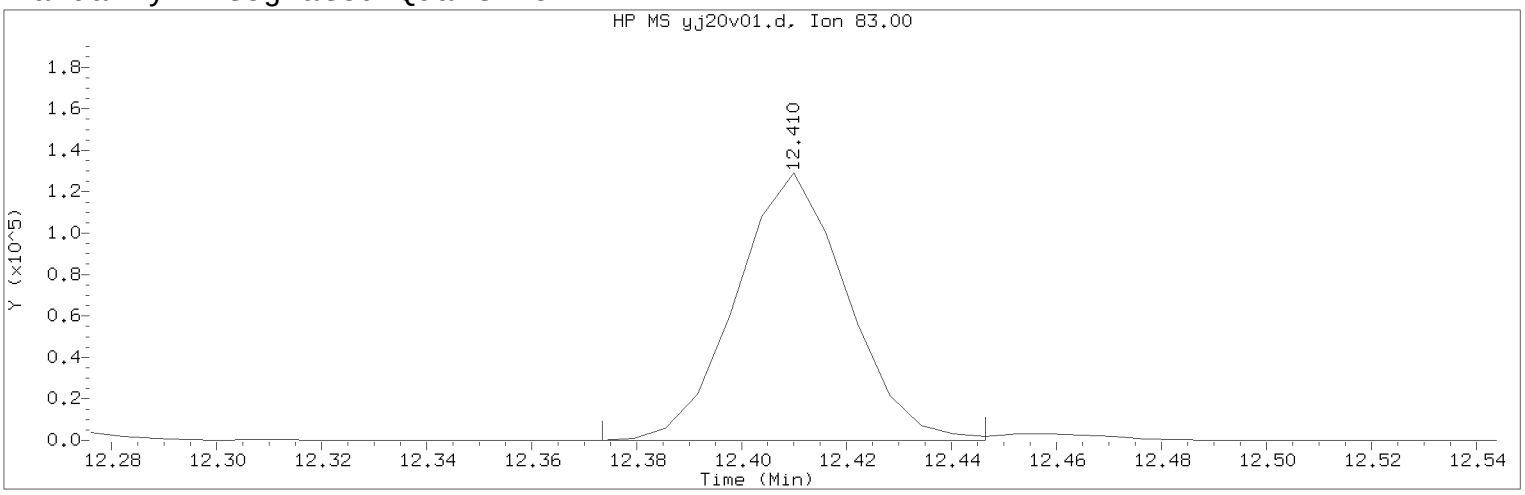
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1282
Retention Time (minutes): 9.380
Quant Ion : 63.00
Area : 95184
On-column Amount (ng) : 18.0381
Integration start scan : 1273 Integration stop scan: 1318
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD88bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

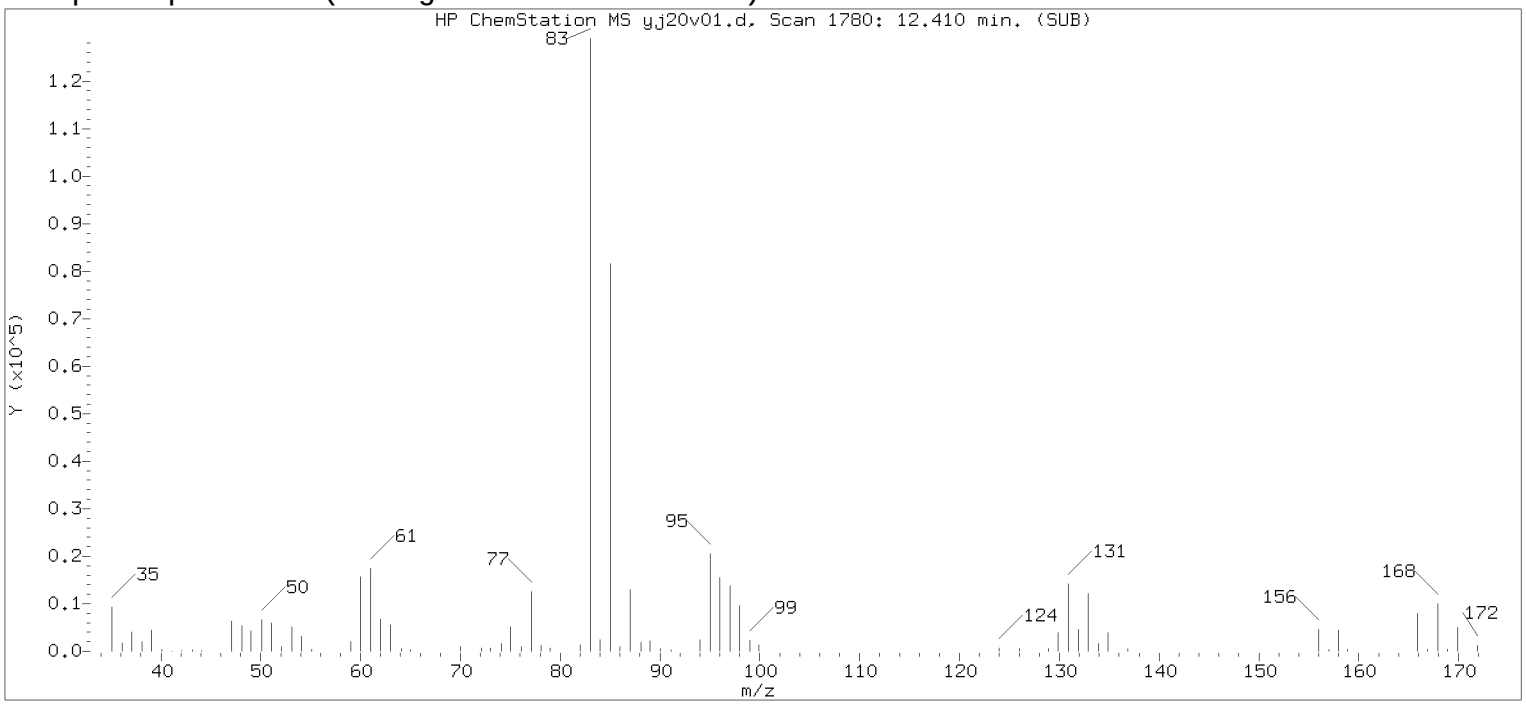
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 188544M
On-Column Amount (ng) : 18.7462
Integration start scan : 1773 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

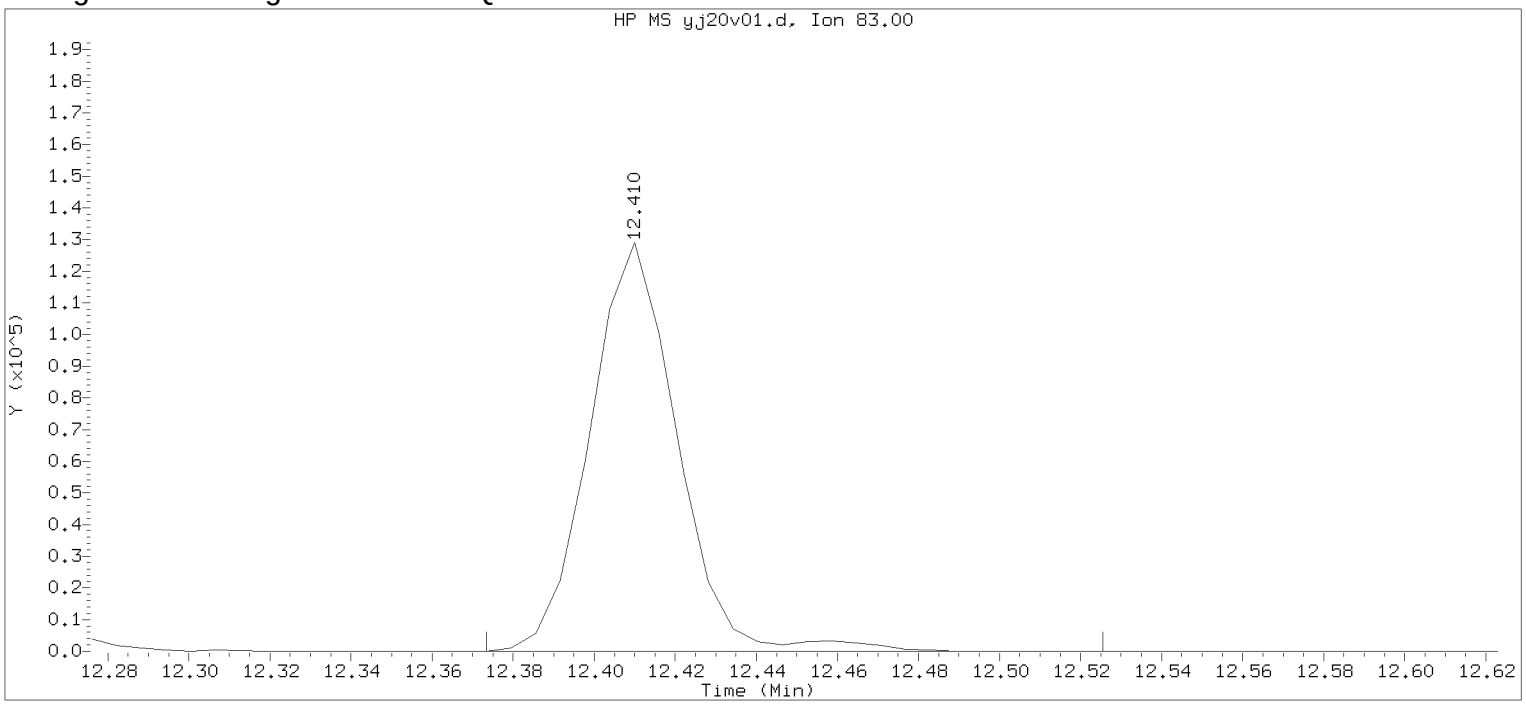
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

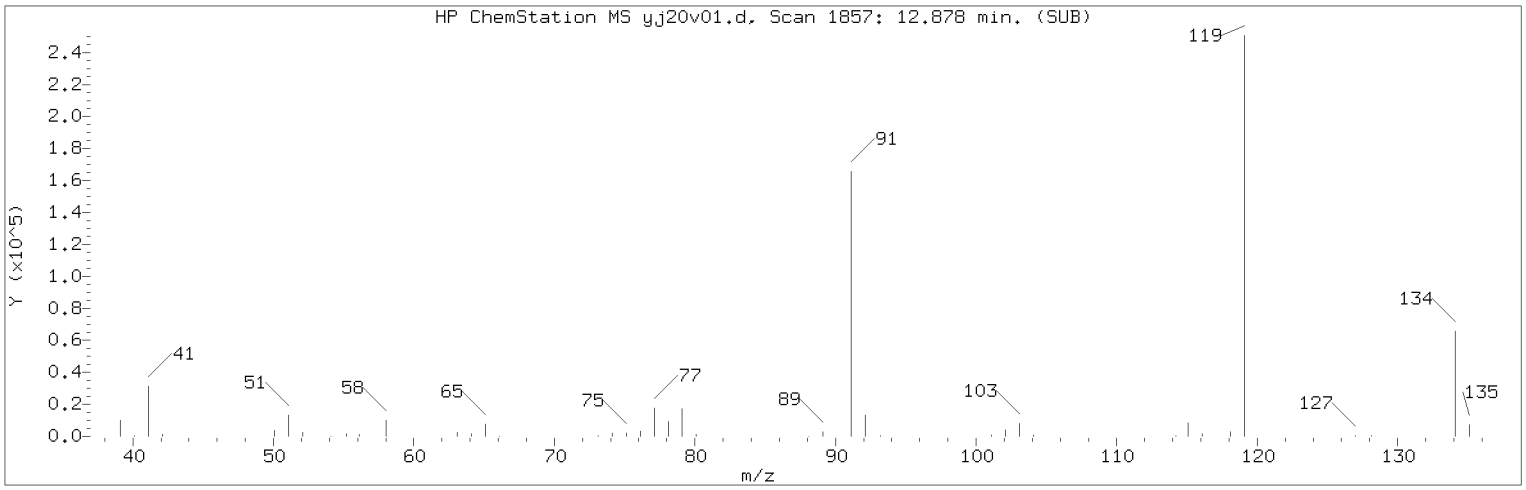
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

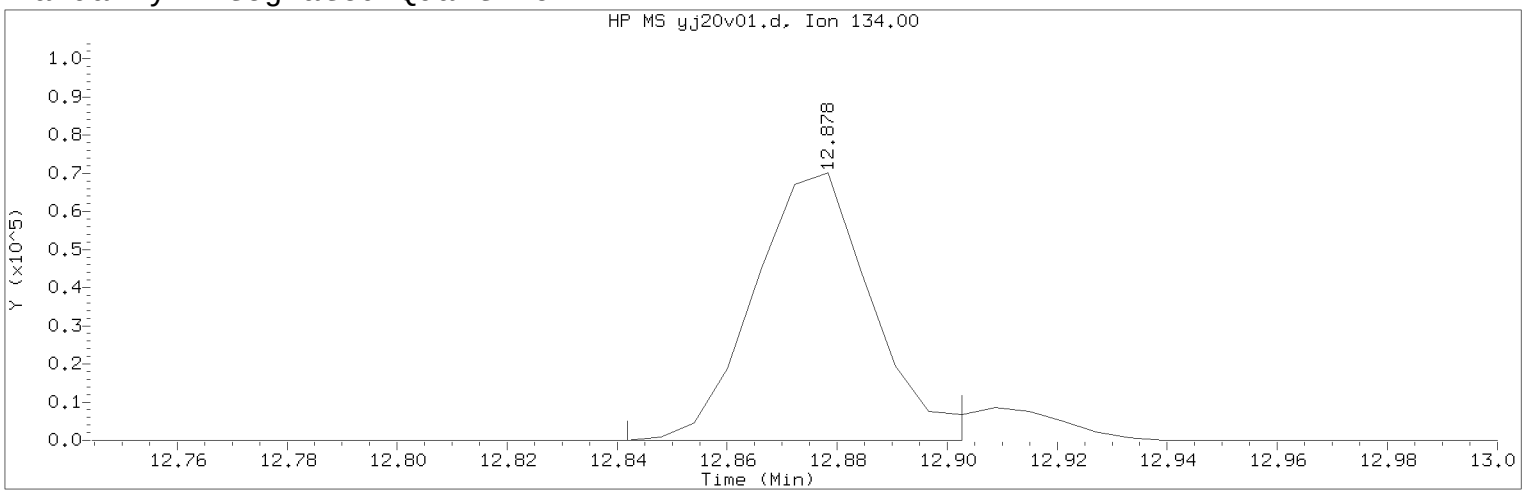
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 192700
On-column Amount (ng) : 19.1595
Integration start scan : 1773 Integration stop scan: 1798
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

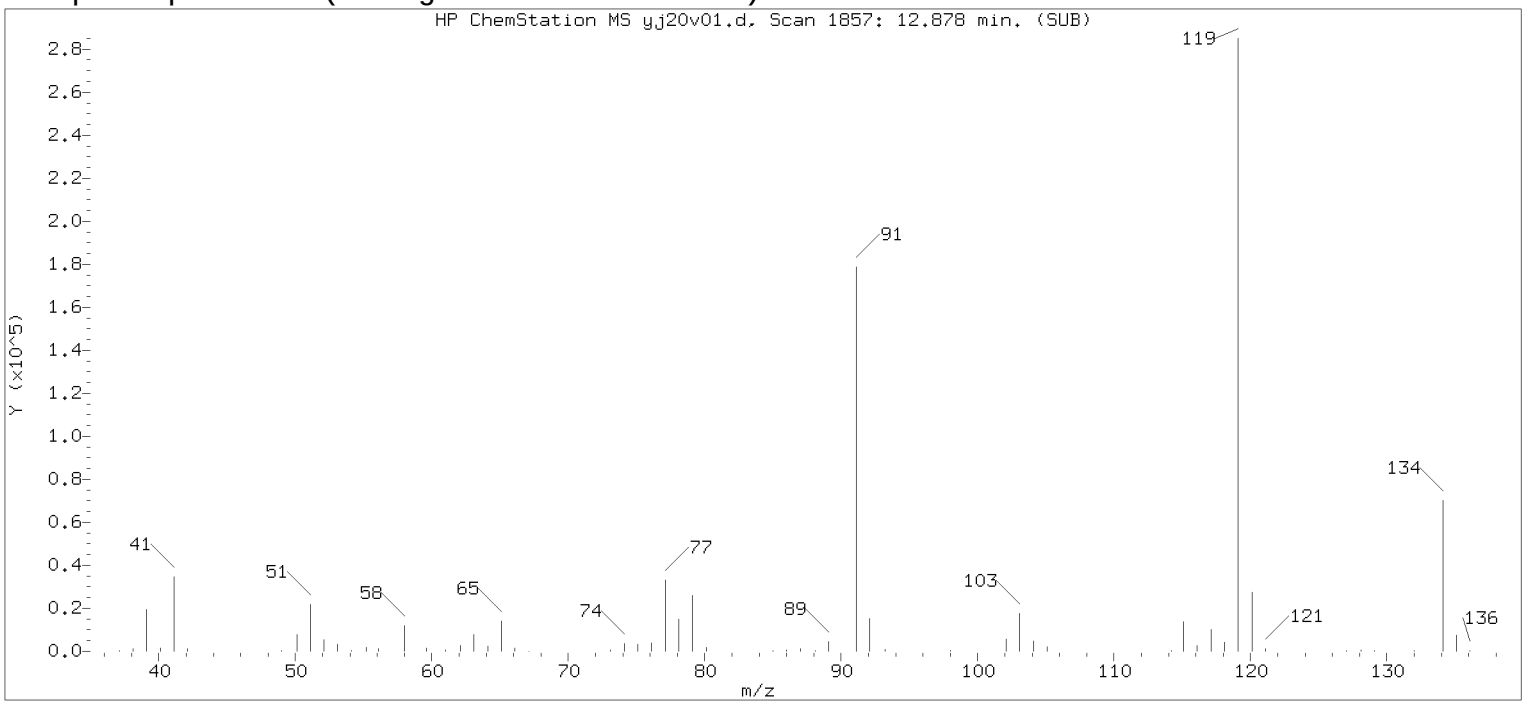
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1857
Retention Time (minutes): 12.878
Quant Ion : 134.00
Area (flag) : 103654M
On-Column Amount (ng) : 18.6311
Integration start scan : 1850 Integration stop scan: 1860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

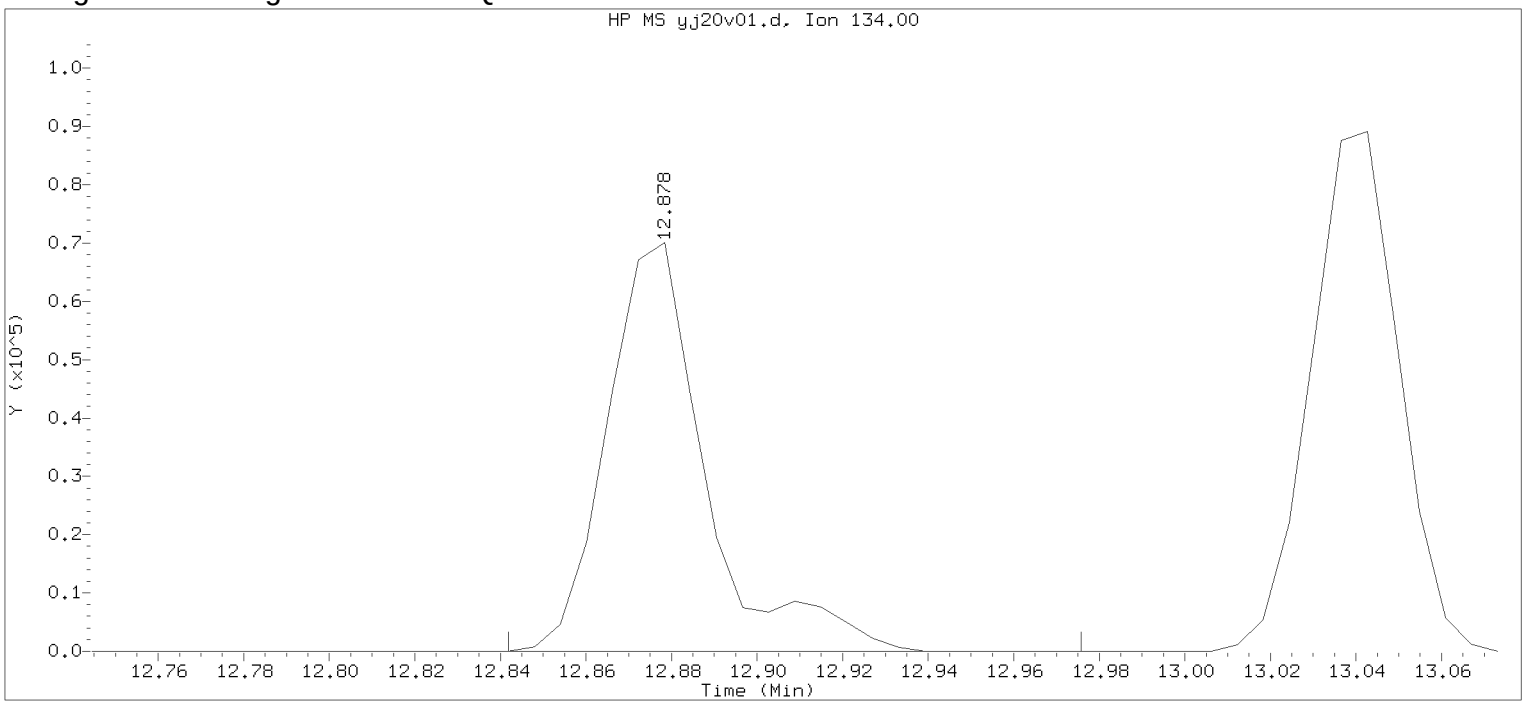
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1857
Retention Time (minutes): 12.878
Quant Ion : 134.00
Area : 112416
On-column Amount (ng) : 20.2059
Integration start scan : 1850 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKENBWK03231

Data File: /chem2/HP09355.i/17jul21b.b/yl21t10.d



Date : 21-JUL-2017 18:45

Client ID: BFBFEB20-2017

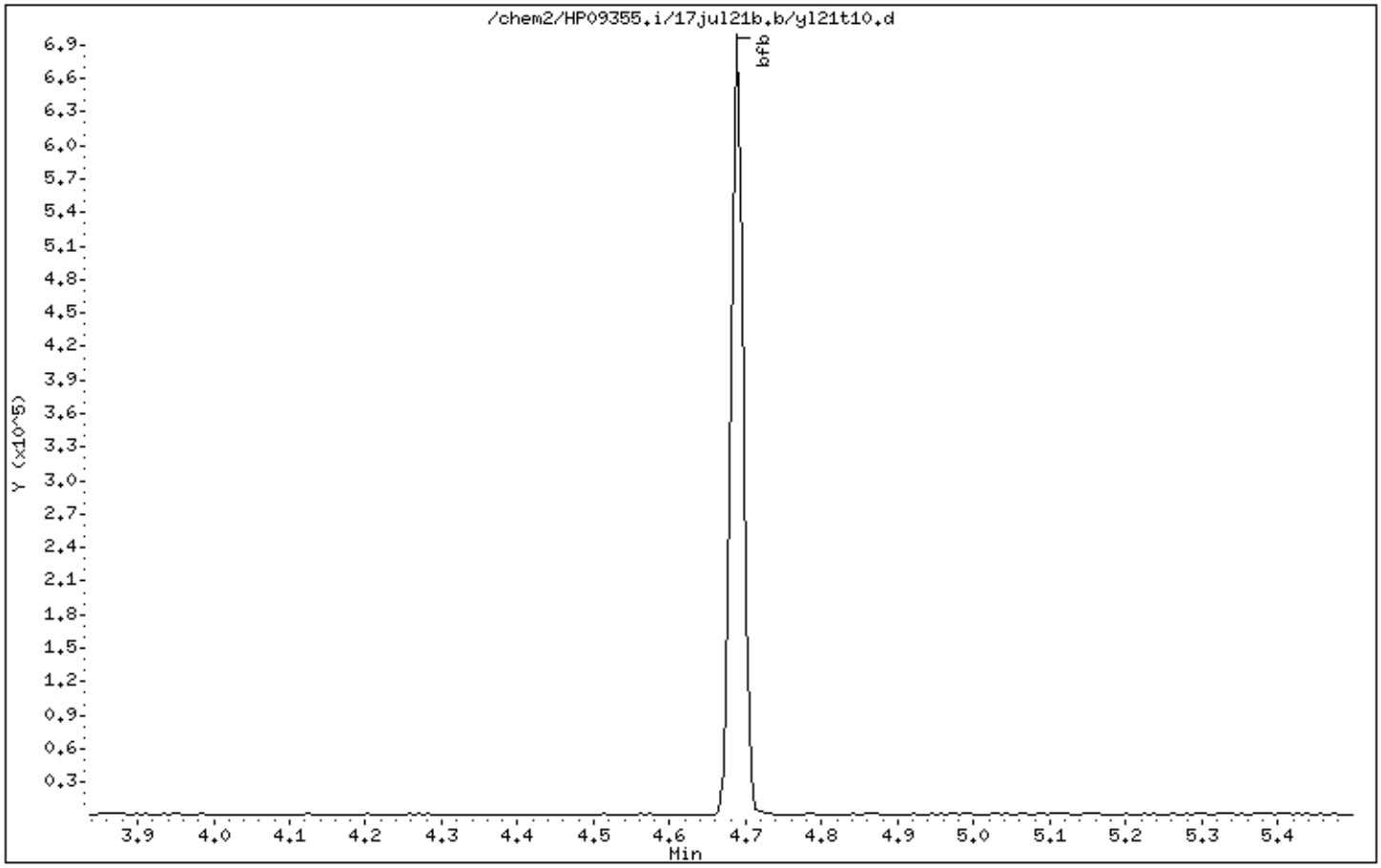
Instrument: HP09355.i

Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

Operator: pth10165

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Patrick T. Herres on 07/21/2017 at 20:07.
Target 3.5 esignature user ID: pth10165

Data File: /chem2/HP09355.i/17jul21b.b/yl21t10.d

Date : 21-JUL-2017 18:45

Client ID: BFBFEB20-2017

Instrument: HP09355.i

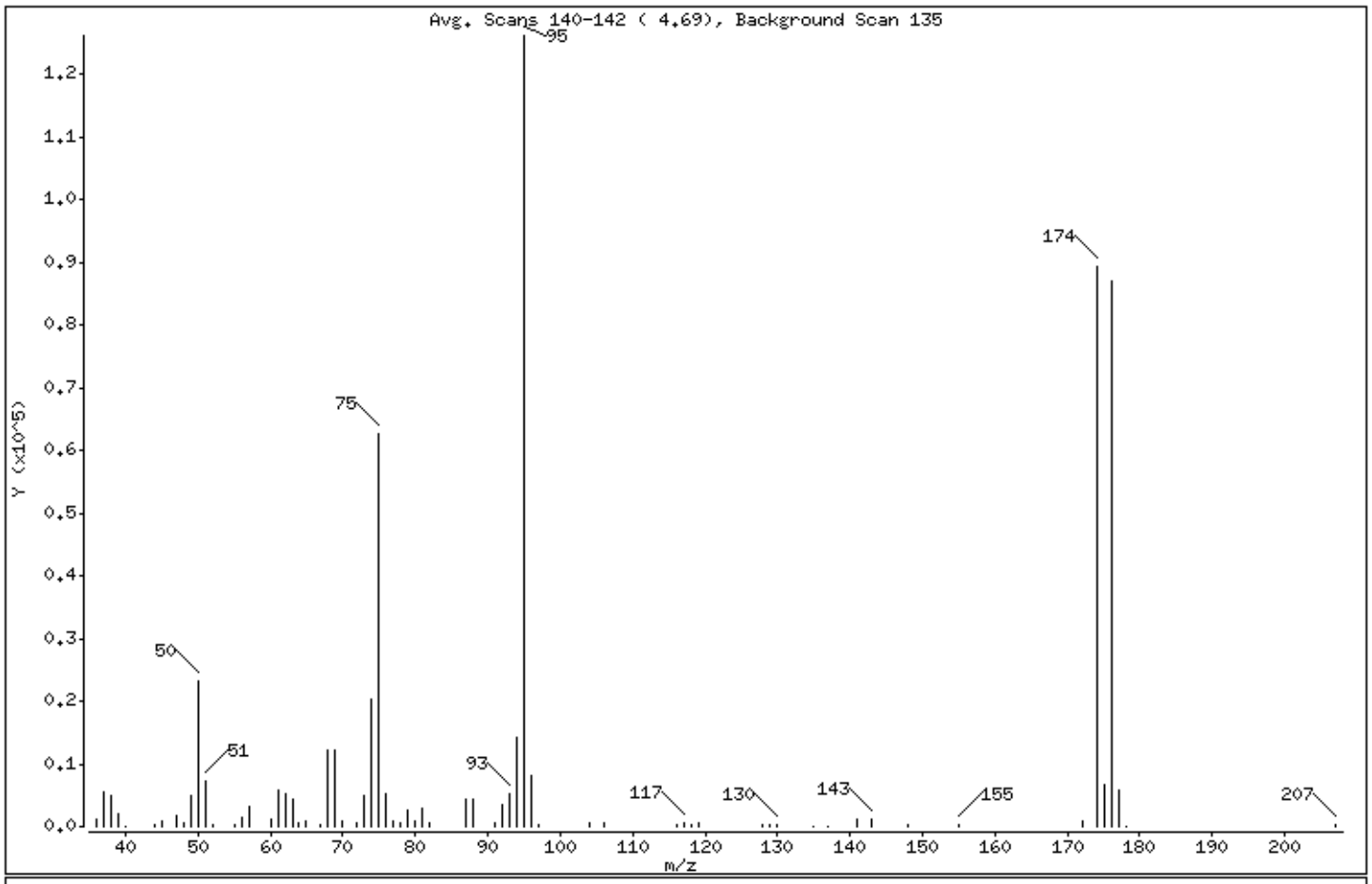
Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

Operator: pth10165

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.36 |
| 75 | 30.00 - 60.00% of mass 95 | 49.74 |
| 96 | 5.00 - 9.00% of mass 95 | 6.55 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 70.92 |
| 175 | 5.00 - 9.00% of mass 174 | 5.33 ( 7.52) |
| 176 | 95.00 - 101.00% of mass 174 | 68.88 ( 97.12) |
| 177 | 5.00 - 9.00% of mass 176 | 4.62 ( 6.71) |

Digitally signed by Patrick T. Herres on 07/21/2017 at 20:07.
Target 3.5 esignature user ID: pth10165

Data File: /chem2/HP09355.i/17jul21b.b/yl21t10.d

Date : 21-JUL-2017 18:45

Client ID: BFBFEB20-2017 Instrument: HP09355.i

Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

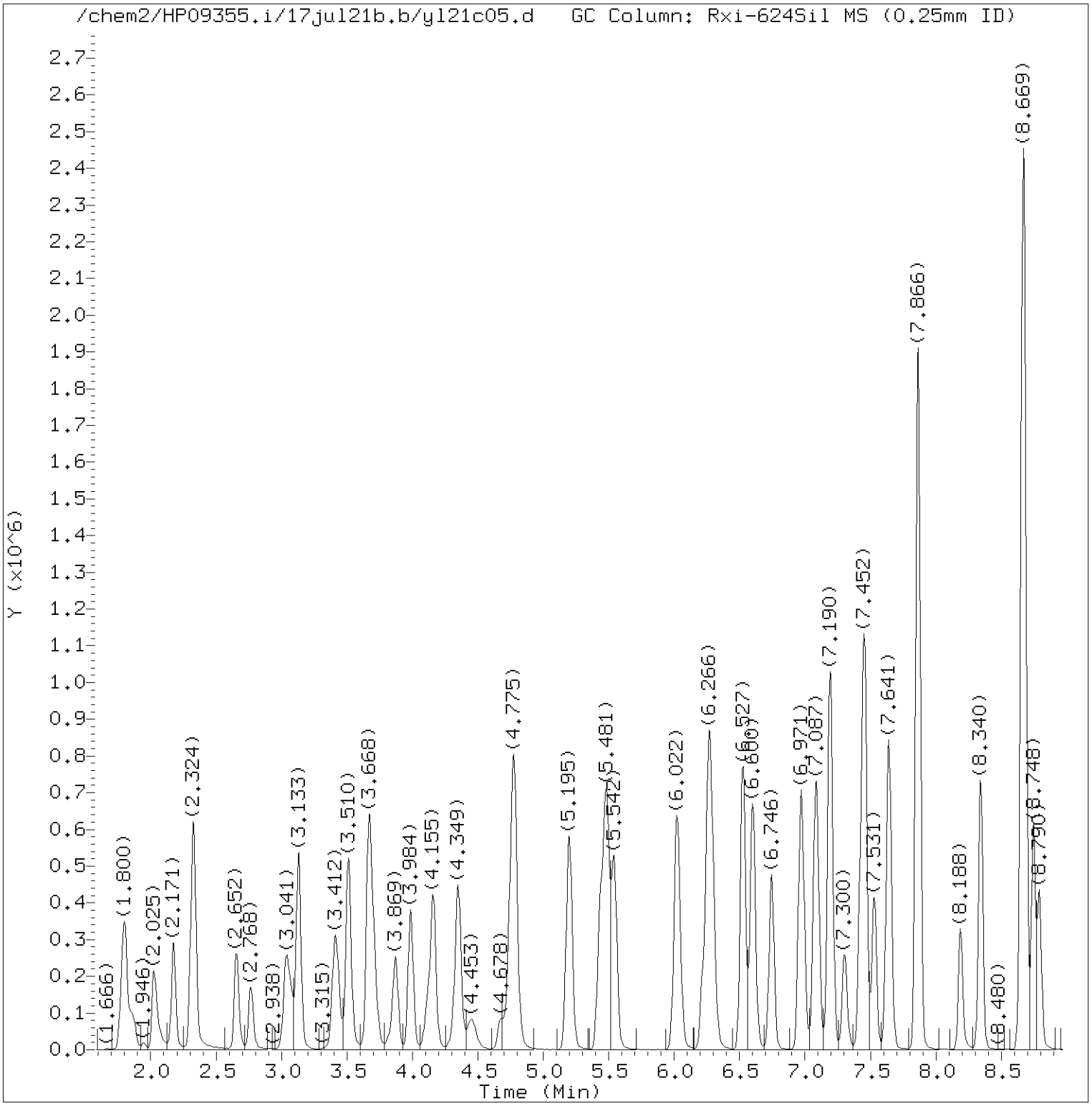
Operator: pth10165

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: yl21t10.d
Spectrum: Avg. Scans 140-142 ( 4.69), Background Scan 135
Location of Maximum: 95.00
Number of points: 68

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 1082 | 62.00 | 5346 | 82.00 | 637 | 130.00 | 408 |
| 37.00 | 5437 | 63.00 | 4306 | 87.00 | 4444 | 135.00 | 111 |
| 38.00 | 4853 | 64.00 | 483 | 88.00 | 4483 | 137.00 | 87 |
| 39.00 | 2144 | 65.00 | 736 | 91.00 | 469 | 141.00 | 1119 |
| 40.00 | 140 | 67.00 | 215 | 92.00 | 3381 | 143.00 | 1124 |
| 44.00 | 289 | 68.00 | 12107 | 93.00 | 5136 | 148.00 | 189 |
| 45.00 | 943 | 69.00 | 12057 | 94.00 | 14280 | 155.00 | 216 |
| 47.00 | 1617 | 70.00 | 943 | 95.00 | 126208 | 172.00 | 941 |
| 48.00 | 668 | 72.00 | 583 | 96.00 | 8265 | 174.00 | 89504 |
| 49.00 | 4888 | 73.00 | 5042 | 97.00 | 233 | 175.00 | 6730 |
| 50.00 | 23168 | 74.00 | 20440 | 104.00 | 463 | 176.00 | 86928 |
| 51.00 | 7251 | 75.00 | 62768 | 106.00 | 472 | 177.00 | 5837 |
| 52.00 | 283 | 76.00 | 5270 | 116.00 | 373 | 178.00 | 85 |
| 55.00 | 339 | 77.00 | 801 | 117.00 | 714 | 207.00 | 210 |
| 56.00 | 1429 | 78.00 | 491 | 118.00 | 390 | | |
| 57.00 | 3203 | 79.00 | 2599 | 119.00 | 677 | | |
| 60.00 | 1019 | 80.00 | 867 | 128.00 | 398 | | |
| 61.00 | 5706 | 81.00 | 2872 | 129.00 | 226 | | |

Digitally signed by Patrick T. Herres on 07/21/2017 at 20:07.
Target 3.5 esignature user ID: pth10165




Total Ion Chromatogram (TIC)

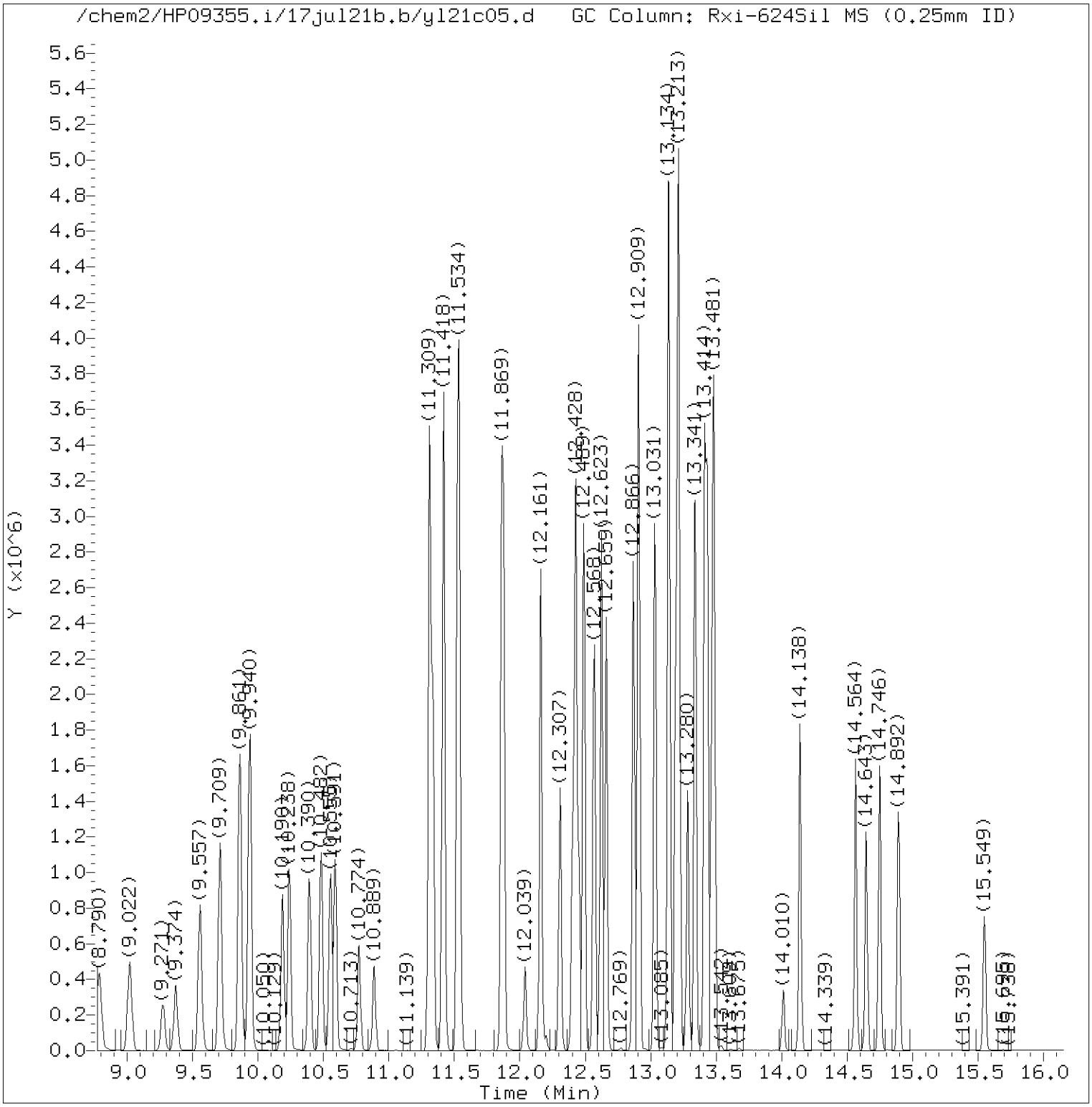
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Patrick T. Herres
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Patrick T. Herres
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.025 | 85 | 429310 | 55.114 |
| 4) Chloromethane | (2) | 2.171 | 50 | 408324 | 48.679 |
| 6) Vinyl Chloride | (2) | 2.311 | 62 | 375960 | 47.676 |
| 5) 1,3-Butadiene | (2) | 2.330 | 39 | 314380 | 37.682 |
| 8) Bromomethane | (2) | 2.652 | 94 | 250756 | 44.849 |
| 9) Chloroethane | (2) | 2.768 | 64 | 218673 | 47.946 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 511181 | 55.121 |
| 11) n-Pentane | (2) | 3.133 | 43 | 491075 | 47.324 |
| 15) Freon 123a | (2) | 3.406 | 67 | 338950 | 52.012 |
| 16) Acrolein | (1) | 3.510 | 56 | 710857 | 698.897 |
| 17) 1,1-Dichloroethene | (2) | 3.662 | 96 | 235042 | 50.199 |
| 17) 1,1-Dichloroethene | (2) | 3.668 | 63 | 128263 | 53.237 |
| 18) Acetone | (1) | 3.674 | 58 | 63119 | 130.527 |
| 19) Freon 113 | (2) | 3.698 | 101 | 254142 | 52.778 |
| 21) 2-Propanol | (1) | 3.832 | 45 | 87418 | 226.718 |
| 22) Methyl Iodide | (2) | 3.869 | 142 | 413670 | 46.500 |
| 23) Carbon Disulfide | (2) | 3.984 | 76 | 832519 | 56.503 |
| 27) Methyl Acetate | (2) | 4.118 | 43 | 278631 | 30.653 |
| 25) Allyl Chloride | (2) | 4.161 | 41 | 451865 | 45.638 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 166934 | 250.000 |
| 28) Methylene Chloride | (2) | 4.349 | 84 | 299879 | 50.621 |
| 30) t-Butyl alcohol | (1) | 4.453 | 59 | 175844 | 231.645 |
| 31) Acrylonitrile | (2) | 4.678 | 53 | 133813 | 30.673 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.757 | 73 | 874348 | 44.877 |
| 32) trans-1,2-Dichloroethene | (2) | 4.781 | 96 | 290626 | 51.321 |
| 34) n-Hexane | (2) | 5.195 | 57 | 467689 | 52.652 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 557543 | 54.515 |
| 38) di-Isopropyl ether | (2) | 5.481 | 45 | 990585 | 48.313 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.542 | 53 | 487815 | 50.658 |
| 40) Ethyl t-butyl ether | (2) | 6.022 | 59 | 861422 | 44.861 |
| 44) 2-Butanone | (2) | 6.217 | 43 | 371080 | 54.754 |
| 42) cis-1,2-Dichloroethene | (2) | 6.260 | 96 | 327587 | 50.278 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 429172 | 53.443 |
| 47) Propionitrile | (1) | 6.296 | 54 | 265370 | 311.043 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 404433 | 87.394 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 165120 | 48.003 |
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 97855 | 127.872 |
| 51) Chloroform | (2) | 6.746 | 83 | 544148 | 52.821 |

* = Compound is an internal standard.



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on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 618213 | 101.599 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 113 | 290647 | 50.236 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 111 | 295367 | 49.884 |
| 53) 1,1,1-Trichloroethane | (2) | 6.977 | 97 | 445261 | 51.632 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 535703 | 50.990 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 436070 | 50.538 |
| 54) Cyclohexane | (2) | 7.081 | 69 | 159689 | 50.037 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 449450 | 53.935 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 390311 | 54.345 |
| 58) Isobutyl Alcohol | (1) | 7.300 | 41 | 181947 | 654.480 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 102 | 73484 | 48.441 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 65 | 383525 | 50.262 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 104 | 45633 | 47.419 |
| 60) Benzene | (2) | 7.458 | 78 | 1287452 | 51.920 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 467433 | 51.516 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 98 | 39260 | 53.286 |
| 65) t-Amyl methyl ether | (2) | 7.641 | 73 | 859151 | 44.707 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1240589 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 537814 | 51.428 |
| 69) n-Butanol | (1) | 8.188 | 56 | 226772 | 1032.791 |
| 71) Trichloroethene | (2) | 8.340 | 95 | 330822 | 51.454 |
| 72) Methylcyclohexane | (2) | 8.656 | 83 | 563823 | 49.313 |
| 72) Methylcyclohexane | (2) | 8.656 | 98 | 251608 | 48.703 |
| 73) 1,2-Dichloropropane | (2) | 8.675 | 63 | 365309 | 56.034 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 290842 | 40.541 |
| 75) 1,4-Dioxane | (1) | 8.760 | 88 | 26513M | 440.438 |
| 74) Dibromomethane | (2) | 8.790 | 93 | 215928 | 50.621 |
| 78) Bromodichloromethane | (2) | 9.022 | 83 | 415372 | 56.458 |
| 79) 2-Nitropropane | (2) | 9.271 | 41 | 191593 | 66.929 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.374 | 63 | 185284 | 33.179 |
| 81) cis-1,3-Dichloropropene | (2) | 9.557 | 75 | 540252 | 56.173 |
| 82) 4-Methyl-2-pentanone | (2) | 9.709 | 43 | 861581 | 71.538 |
| 83)$Toluene-d8 | (3) | 9.861 | 98 | 1250735 | 50.955 |
| 83)$Toluene-d8 | (3) | 9.861 | 100 | 800459 | 50.481 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1040535 | 112.239 |
| 88) Toluene | (3) | 9.940 | 92 | 840563 | 52.012 |
| 89) trans-1,3-Dichloropropene | (3) | 10.190 | 75 | 500283 | 56.065 |
| 91) Ethyl Methacrylate | (3) | 10.238 | 69 | 520764 | 46.503 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 10.390 | 97 | 320205 | 50.439 |
| 93) Tetrachloroethene | (3) | 10.482 | 166 | 322380 | 45.336 |
| 94) 1,3-Dichloropropane | (3) | 10.555 | 76 | 569685 | 53.115 |
| 96) 2-Hexanone | (3) | 10.591 | 43 | 669037 | 69.185 |
| 97) Dibromochloromethane | (3) | 10.774 | 129 | 318793 | 53.462 |
| 99) 1,2-Dibromoethane | (3) | 10.889 | 107 | 324524 | 47.365 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 950070 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.309 | 91 | 457084 | 50.752 |
| 102) Chlorobenzene | (3) | 11.333 | 112 | 977502 | 52.696 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 1662626 | 53.482 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.418 | 131 | 312500 | 54.596 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 1309392 | 105.782 |
| 108) Xylene (Total) | (3) | | 106 | 1925347 | 156.866 |
| 107) o-Xylene | (3) | 11.863 | 106 | 615955 | 51.084 |
| 109) Styrene | (3) | 11.875 | 104 | 1070063 | 51.703 |
| 110) Bromoform | (3) | 12.039 | 173 | 194904 | 41.978 |
| 111) Isopropylbenzene | (3) | 12.161 | 105 | 1564007 | 49.706 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 468219 | 50.862 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 174 | 338320 | 43.097 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.398 | 83 | 478335 | 48.642 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.428 | 53 | 298597 | 95.804 |
| 115) Bromobenzene | (4) | 12.428 | 156 | 396336 | 49.097 |
| 117) 1,2,3-Trichloropropane | (4) | 12.453 | 110 | 137517M | 41.150 |
| 119) n-Propylbenzene | (4) | 12.489 | 91 | 1995237 | 57.187 |
| 120) 2-Chlorotoluene | (4) | 12.568 | 126 | 390722 | 54.423 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.623 | 105 | 1393884 | 54.788 |
| 121) 4-Chlorotoluene | (4) | 12.659 | 126 | 419715 | 55.077 |
| 124) tert-Butylbenzene | (4) | 12.866 | 134 | 268143M | 49.295 |
| 125) Pentachloroethane | (4) | 12.903 | 167 | 216711 | 52.690 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.909 | 105 | 1466671 | 55.747 |
| 127) sec-Butylbenzene | (4) | 13.031 | 105 | 1737325 | 54.325 |
| 129) 1,3-Dichlorobenzene | (4) | 13.134 | 146 | 784594 | 50.943 |
| 130) p-Isopropyltoluene | (4) | 13.140 | 119 | 1514116 | 53.287 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 487574 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.207 | 146 | 802498 | 50.623 |
| 134) 1,2,3-Trimethylbenzene | (4) | 13.213 | 105 | 1484564 | 56.176 |
| 135) Benzyl Chloride | (4) | 13.280 | 91 | 907108 | 50.025 |
| 136) 1,3-Diethylbenzene | (4) | 13.341 | 119 | 921773 | 55.705 |

M = Compound was manually integrated.
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on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 137) 1,4-Diethylbenzene | (4) | 13.414 | 119 | 956292 | 55.701 |
| 139) n-Butylbenzene | (4) | 13.432 | 92 | 799307 | 55.886 |
| 138) 1,2-Dichlorobenzene | (4) | 13.469 | 146 | 739559 | 49.992 |
| 140) 1,2-Diethylbenzene | (4) | 13.481 | 119 | 759794M | 54.720 |
| 141) Diethylbenzene (total) | (4) | | 100 | 2637859 | 166.126 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.010 | 75 | 80745 | 33.799 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.138 | 180 | 475754 | 43.902 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.564 | 180 | 408323 | 41.230 |
| 147) Hexachlorobutadiene | (4) | 14.643 | 225 | 188881 | 38.810 |
| 148) Naphthalene | (4) | 14.746 | 128 | 1084256 | 34.210 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.892 | 180 | 356758 | 39.619 |
| 150) 2-Methylnaphthalene | (4) | 15.549 | 142 | 324636 | 19.019 |

M = Compound was manually integrated.



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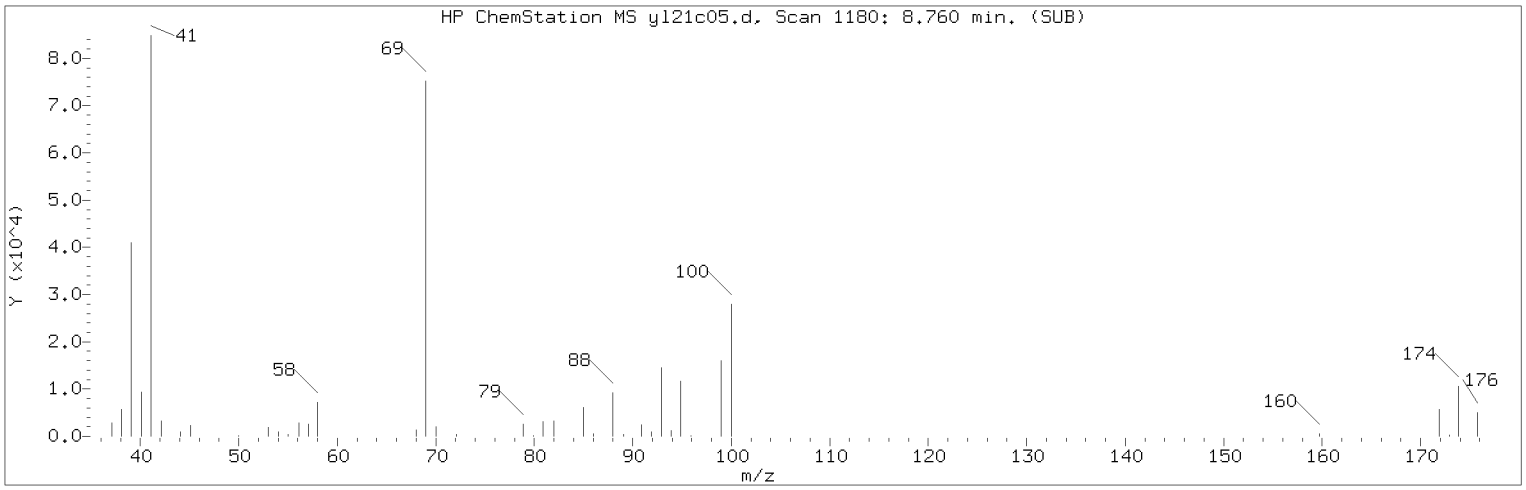
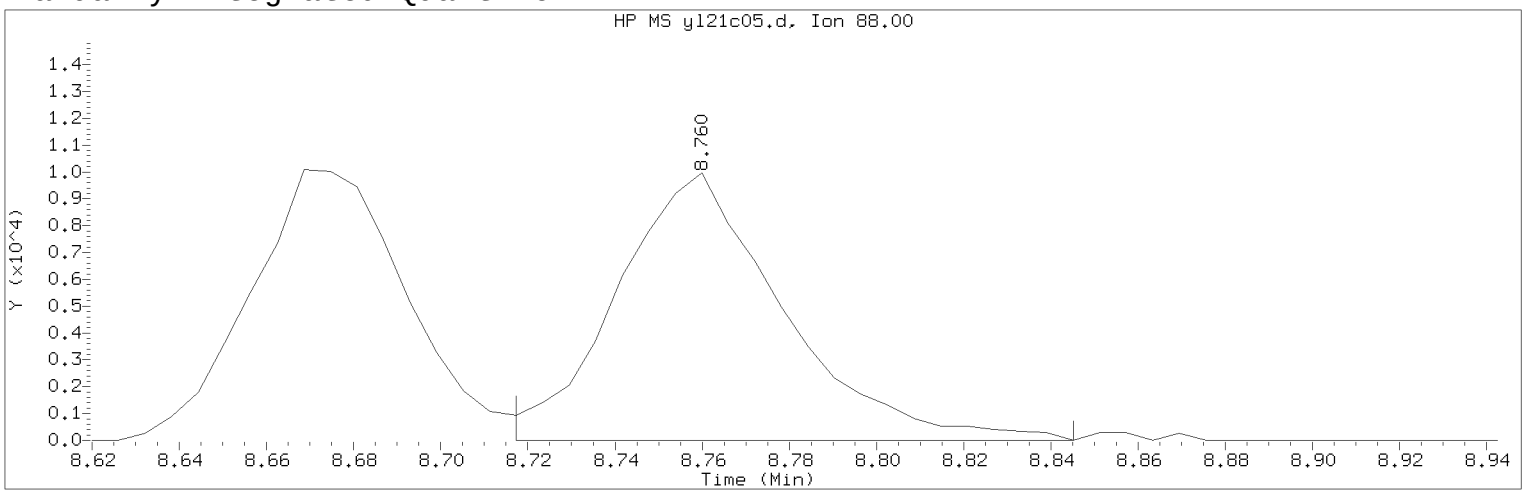
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

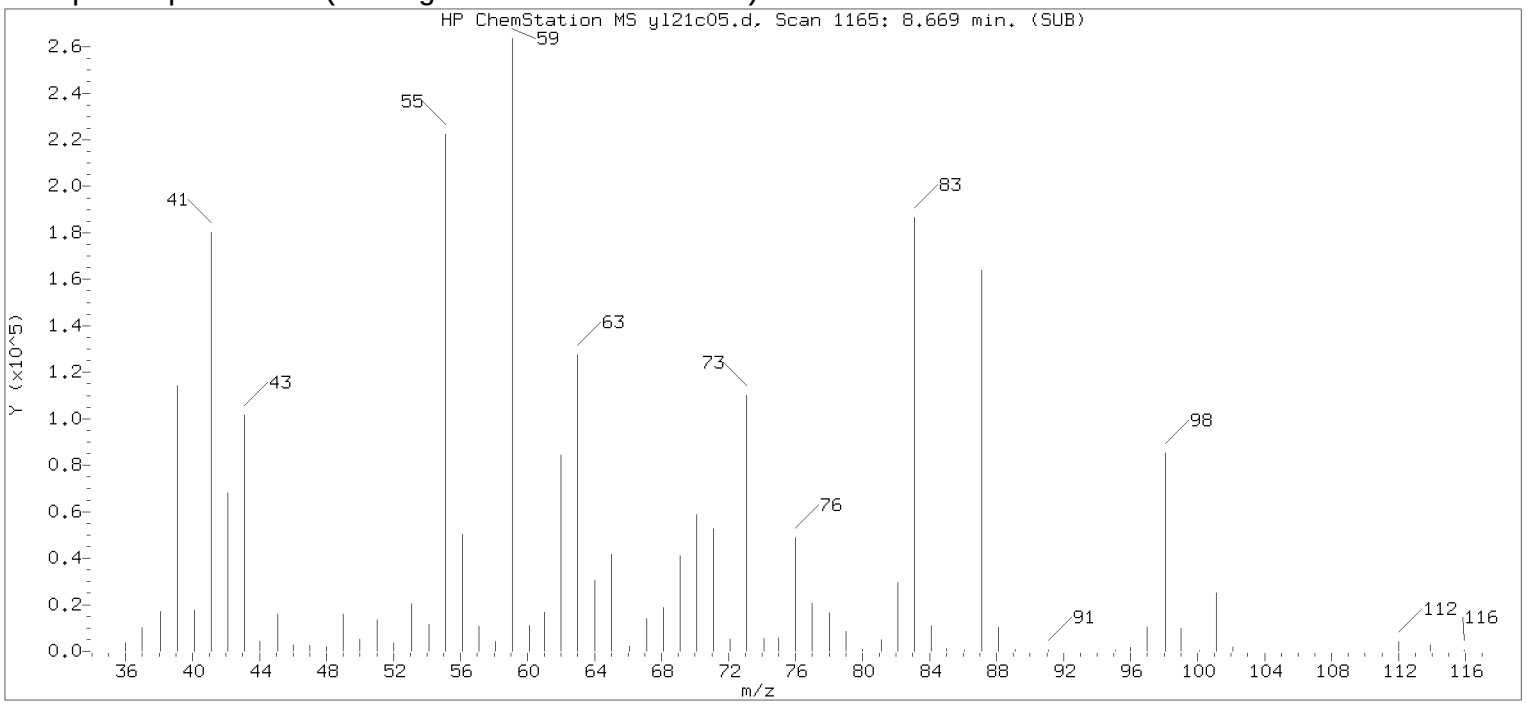
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1180
Retention Time (minutes): 8.760
Quant Ion : 88.00
Area (flag) : 26513M
On-Column Amount (ng) : 440.4380
Integration start scan : 1172 Integration stop scan: 1193
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

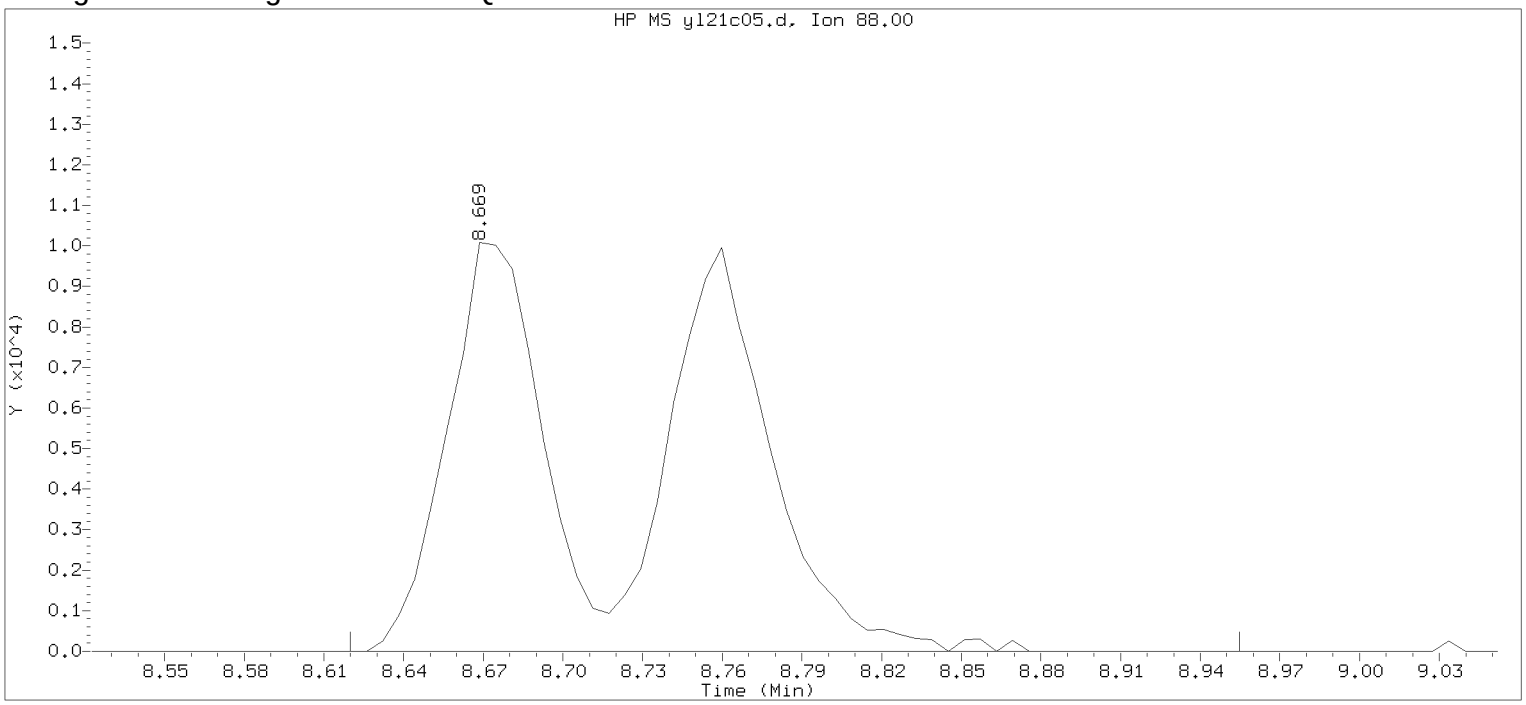
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

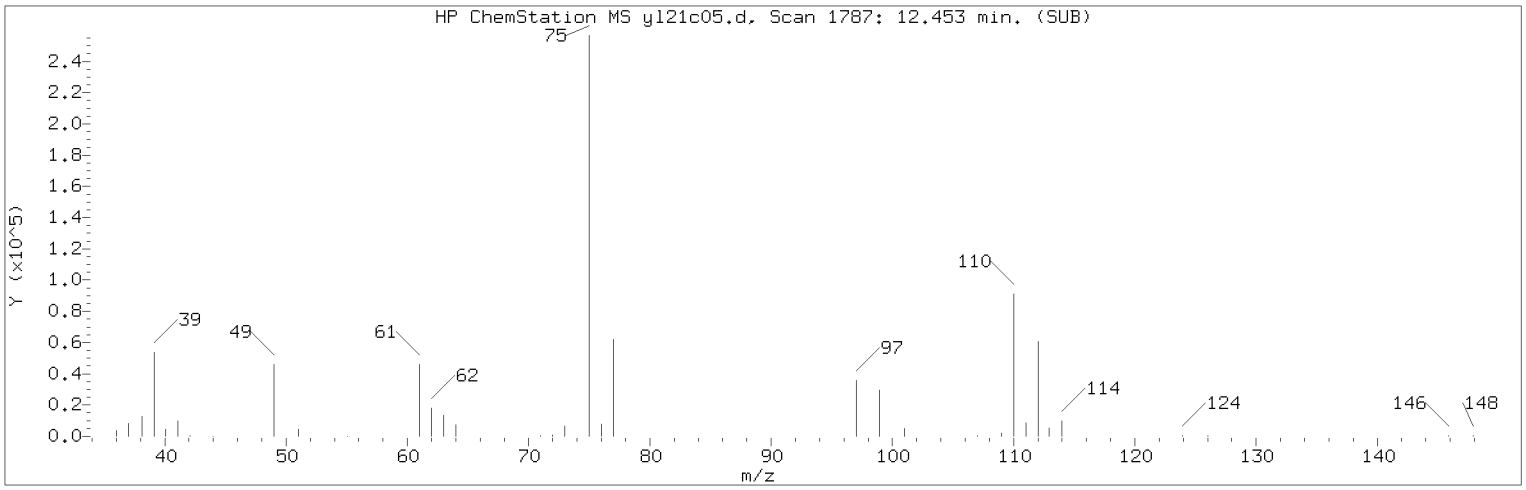
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:34 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

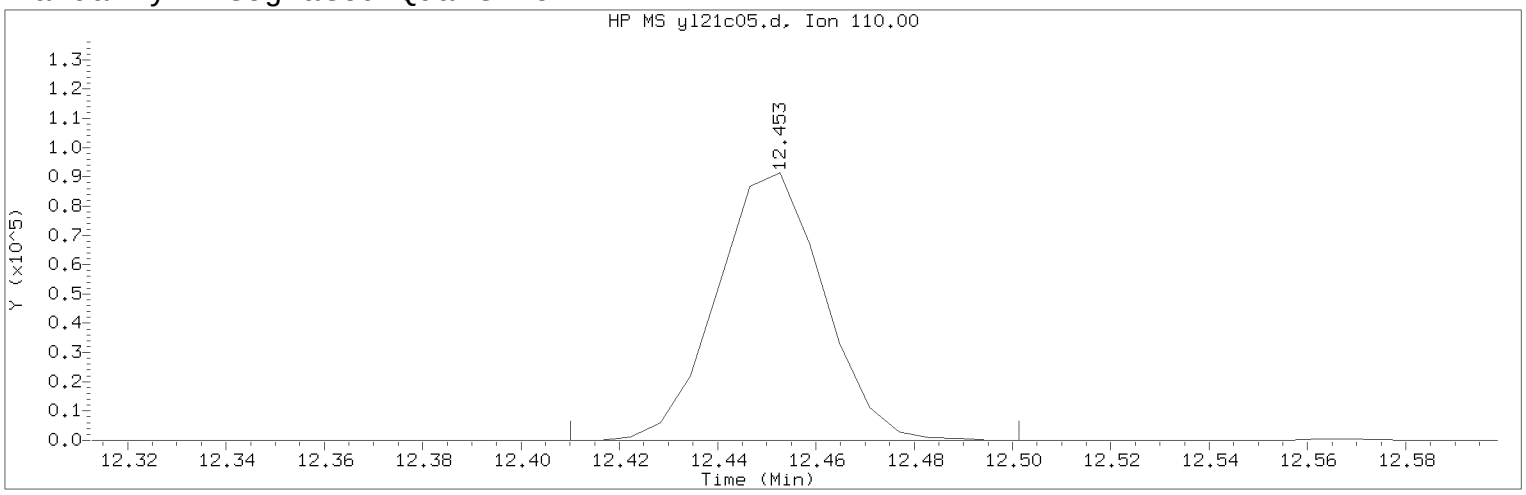
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1165
Retention Time (minutes): 8.669
Quant Ion : 88.00
Area : 51550
On-column Amount (ng) : 856.3541
Integration start scan : 1156 Integration stop scan: 1211
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature userKD88pth10165

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

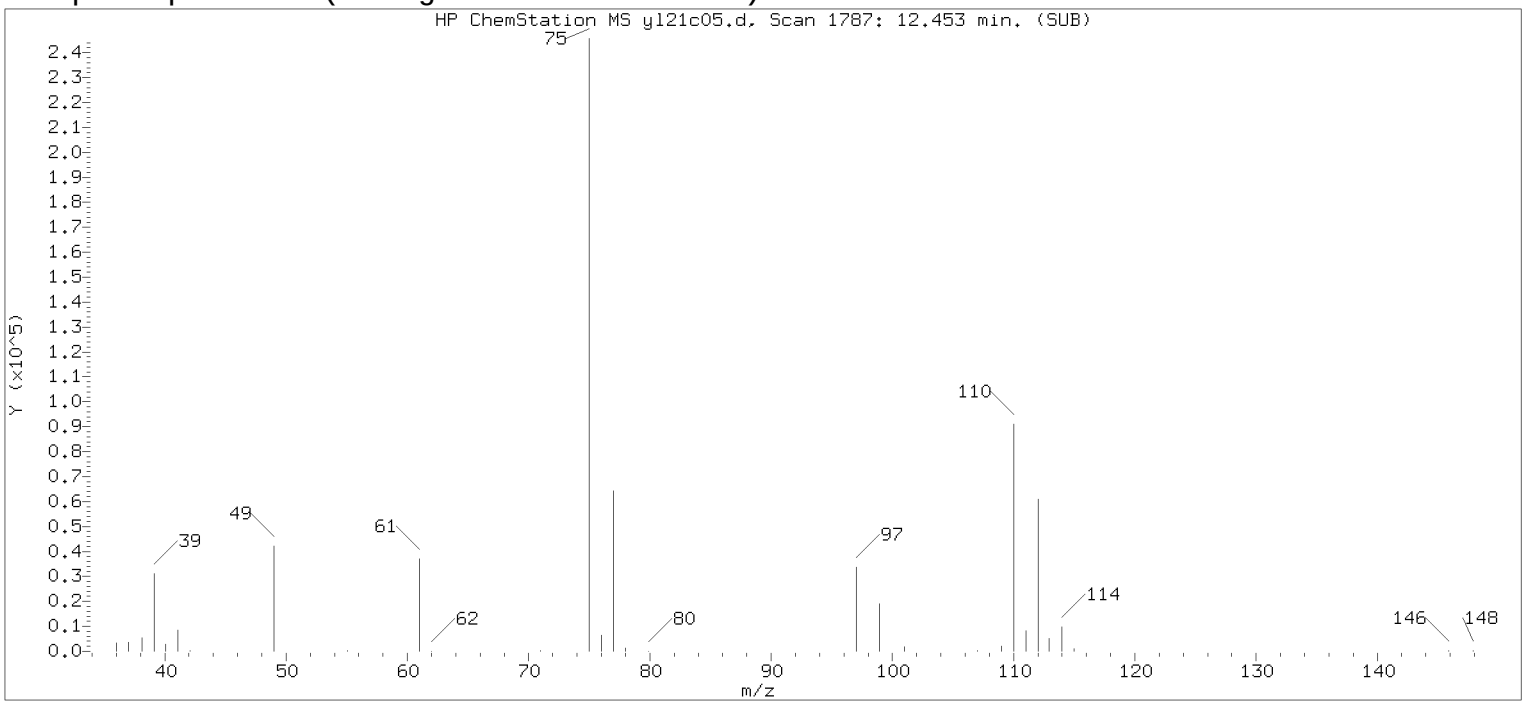
Compound Number : 117
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1787
Retention Time (minutes): 12.453
Quant Ion : 110.00
Area (flag) : 137517M
On-Column Amount (ng) : 41.1502
Integration start scan : 1779 Integration stop scan: 1794
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

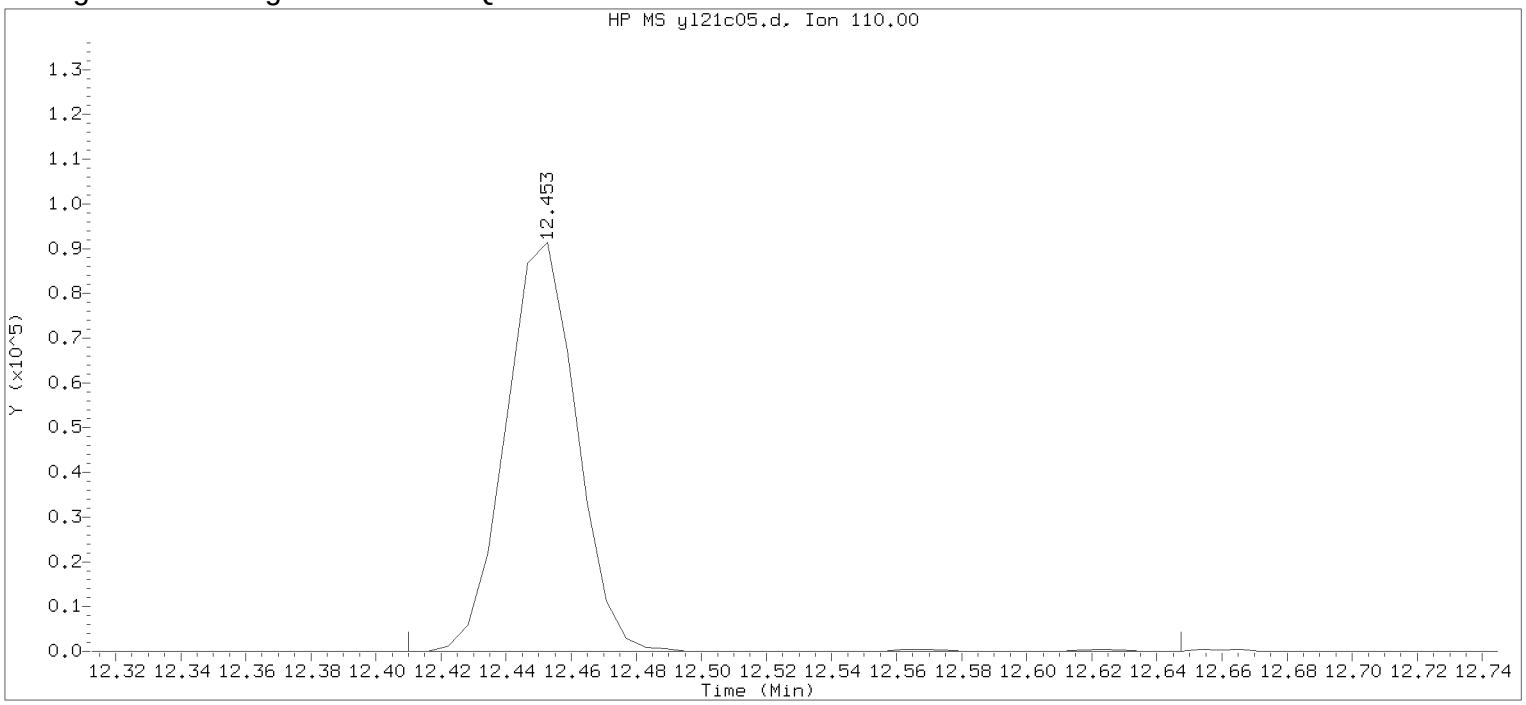
Analyst responsible for change: Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

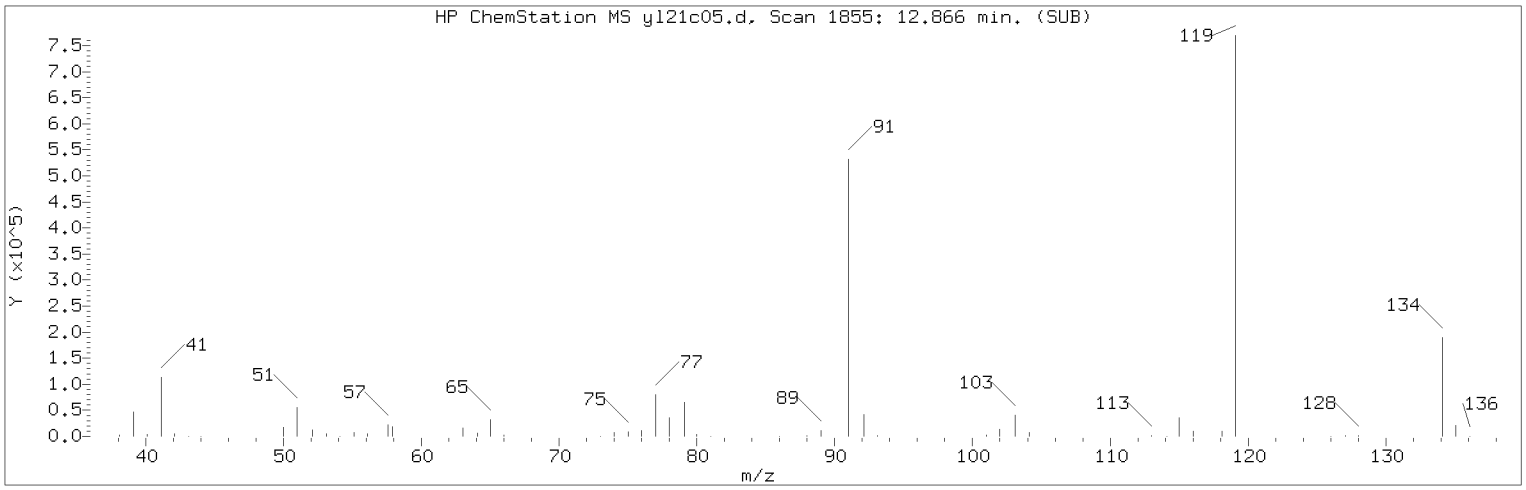
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:34 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

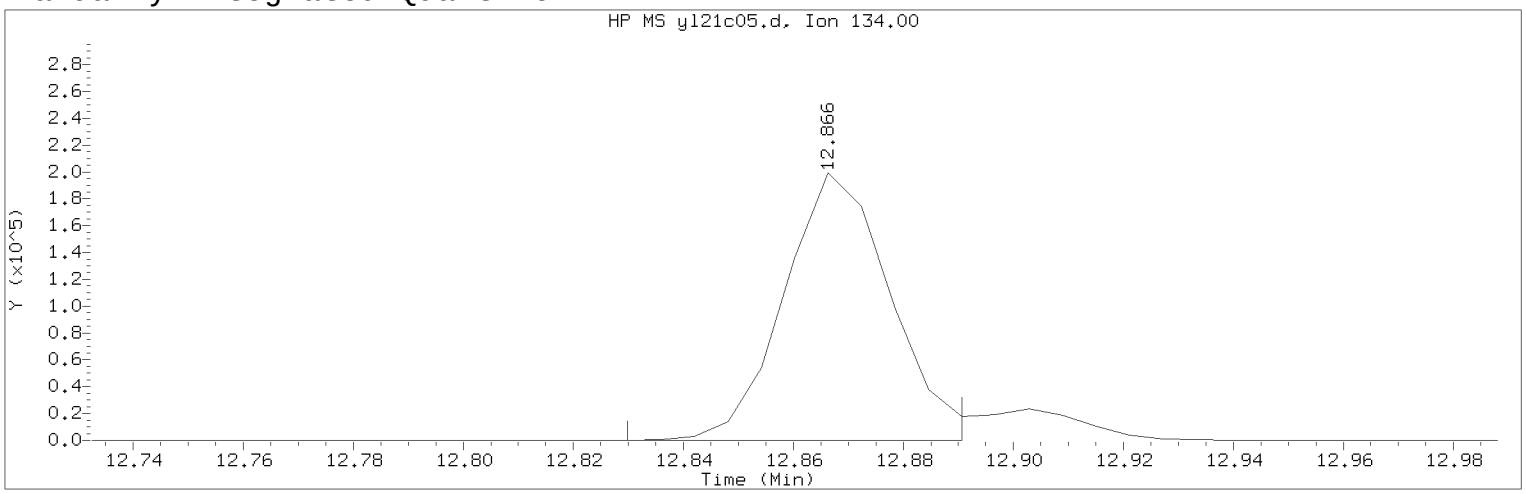
Compound Number : 117
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1787
Retention Time (minutes): 12.453
Quant Ion : 110.00
Area : 138259
On-column Amount (ng) : 41.3722
Integration start scan : 1779 Integration stop scan: 1818
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature userKRD88pth10165

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

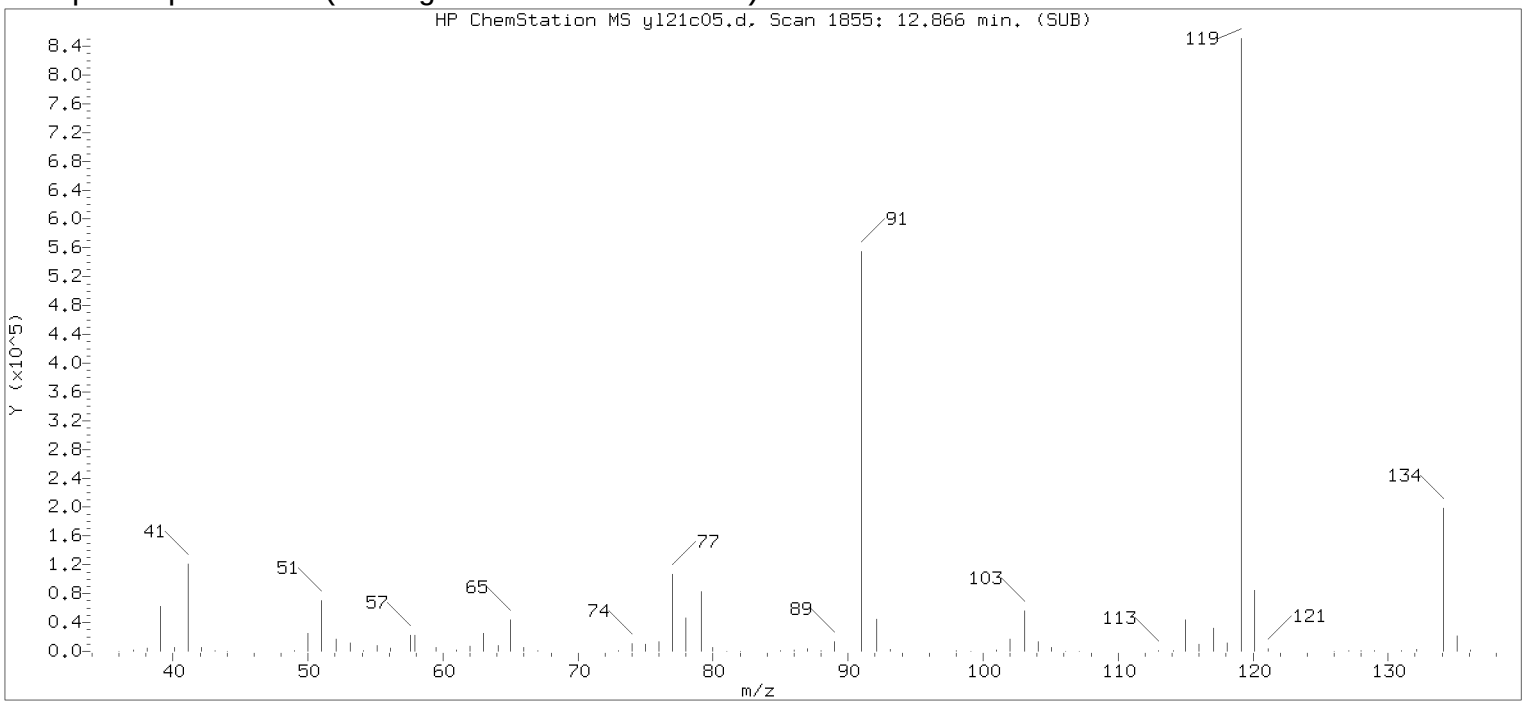
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1855
Retention Time (minutes): 12.866
Quant Ion : 134.00
Area (flag) : 268143M
On-Column Amount (ng) : 49.2948
Integration start scan : 1848 Integration stop scan: 1858
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

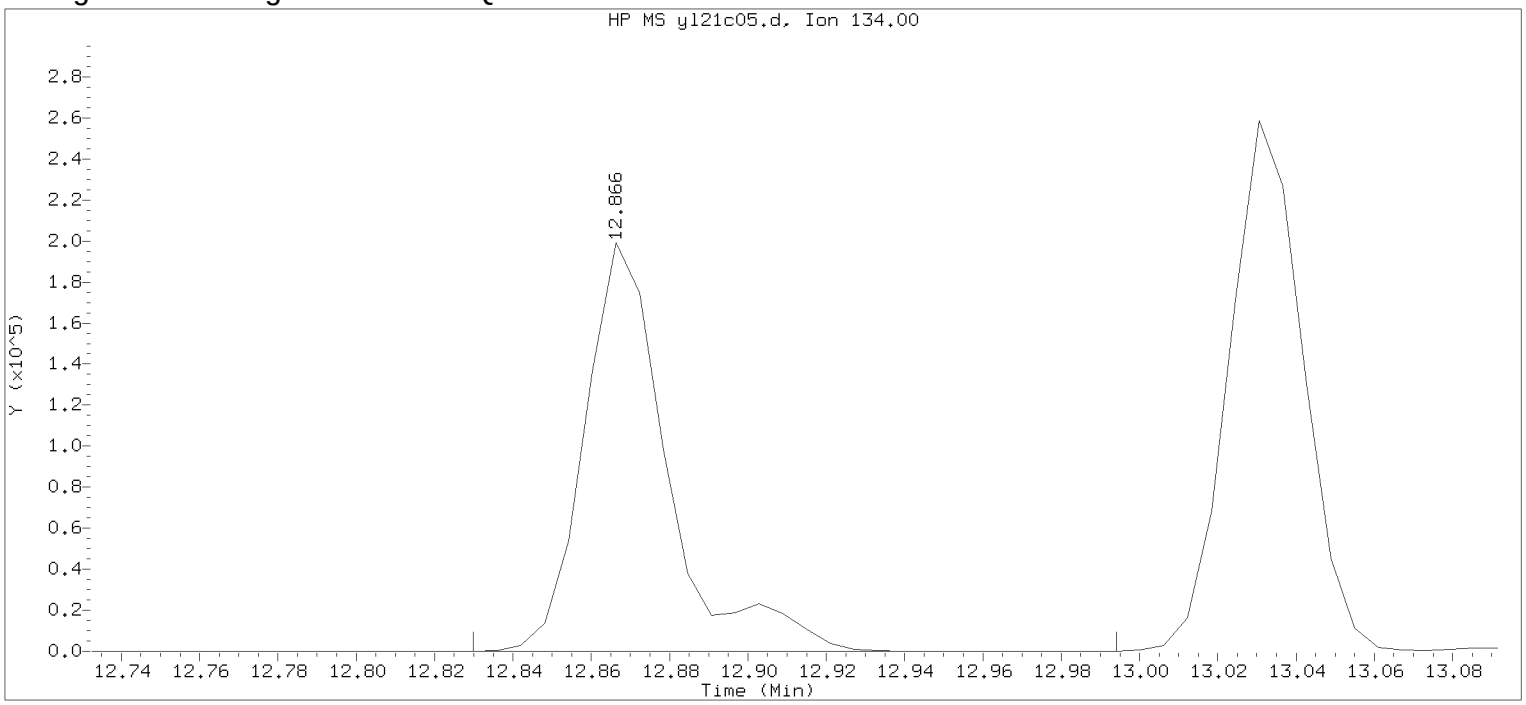
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

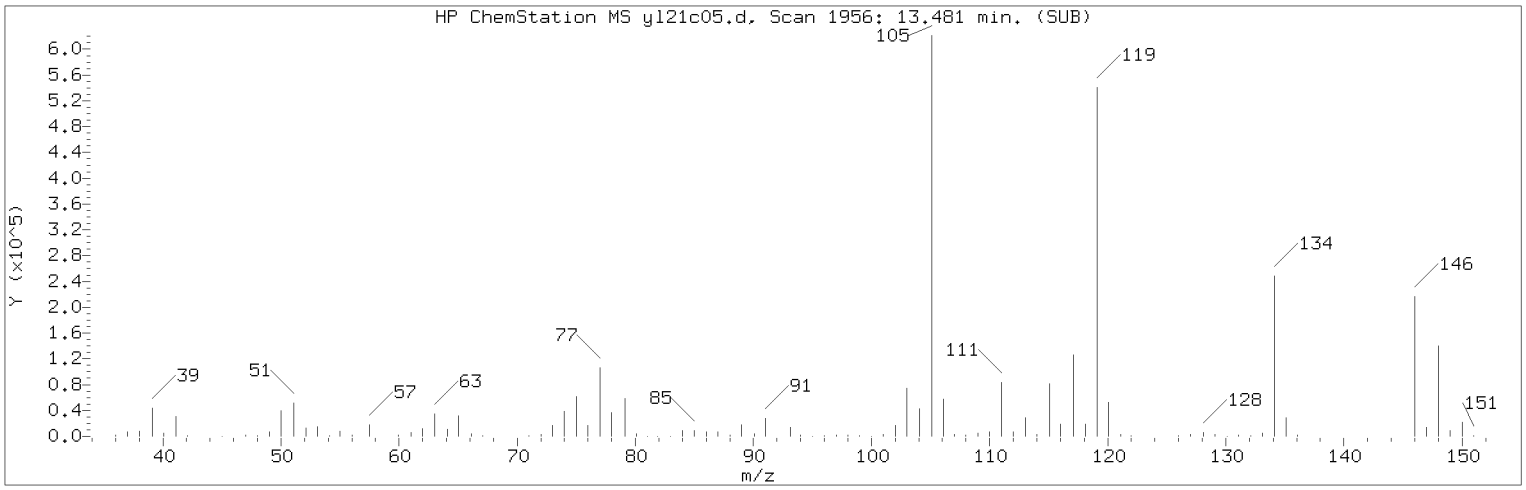
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:34 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

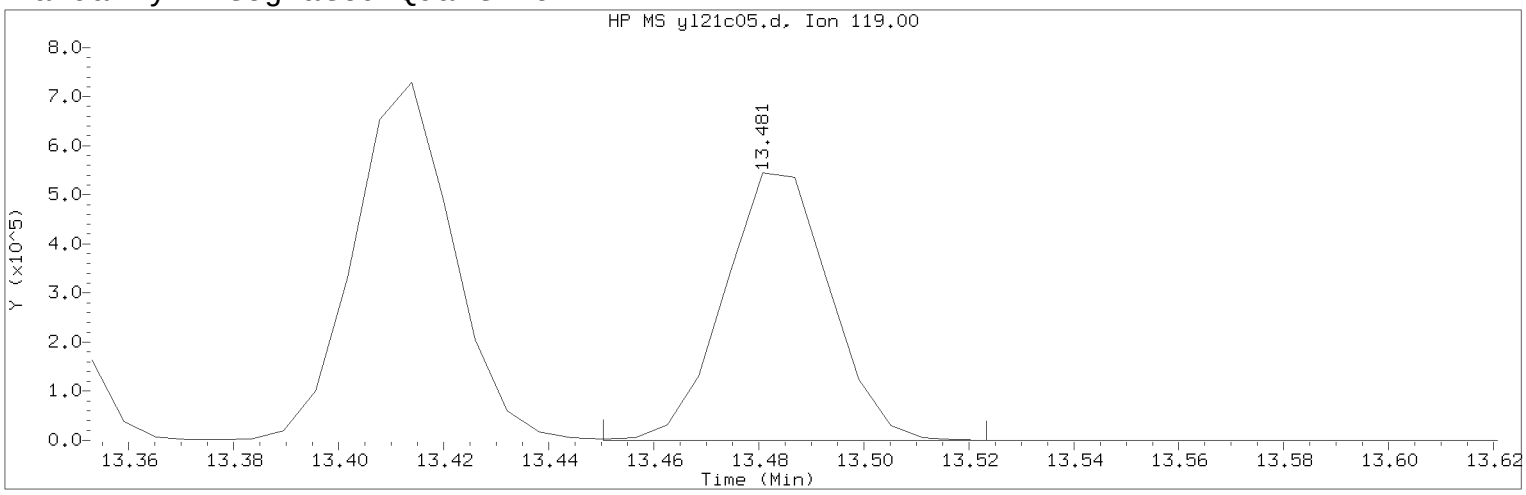
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1855
Retention Time (minutes): 12.866
Quant Ion : 134.00
Area : 295889
On-column Amount (ng) : 54.3955
Integration start scan : 1848 Integration stop scan: 1875
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature userKRD88pth10165

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

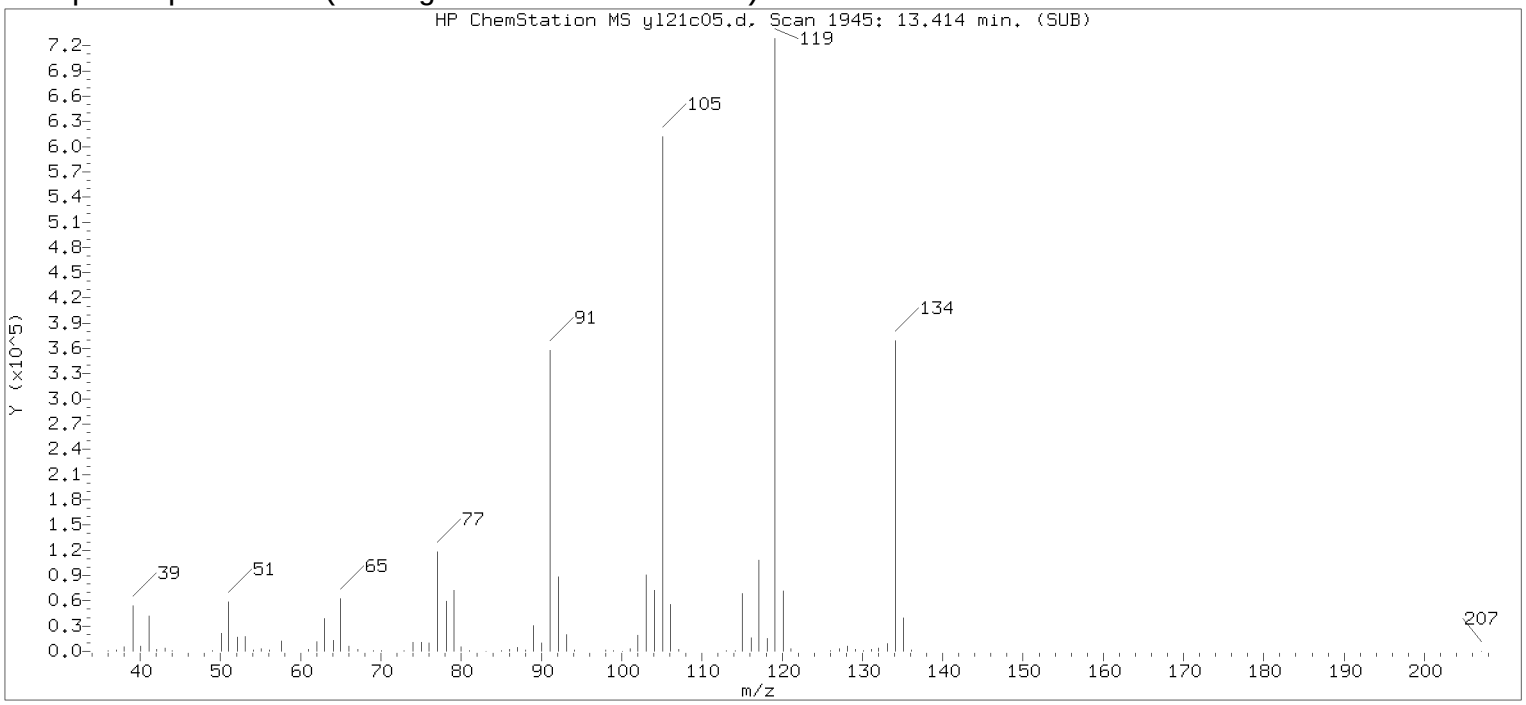
Compound Number : 140
Compound Name : 1,2-Diethylbenzene
Scan Number : 1956
Retention Time (minutes): 13.481
Quant Ion : 119.00
Area (flag) : 759794M
On-Column Amount (ng) : 54.7200
Integration start scan : 1950 Integration stop scan: 1962
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

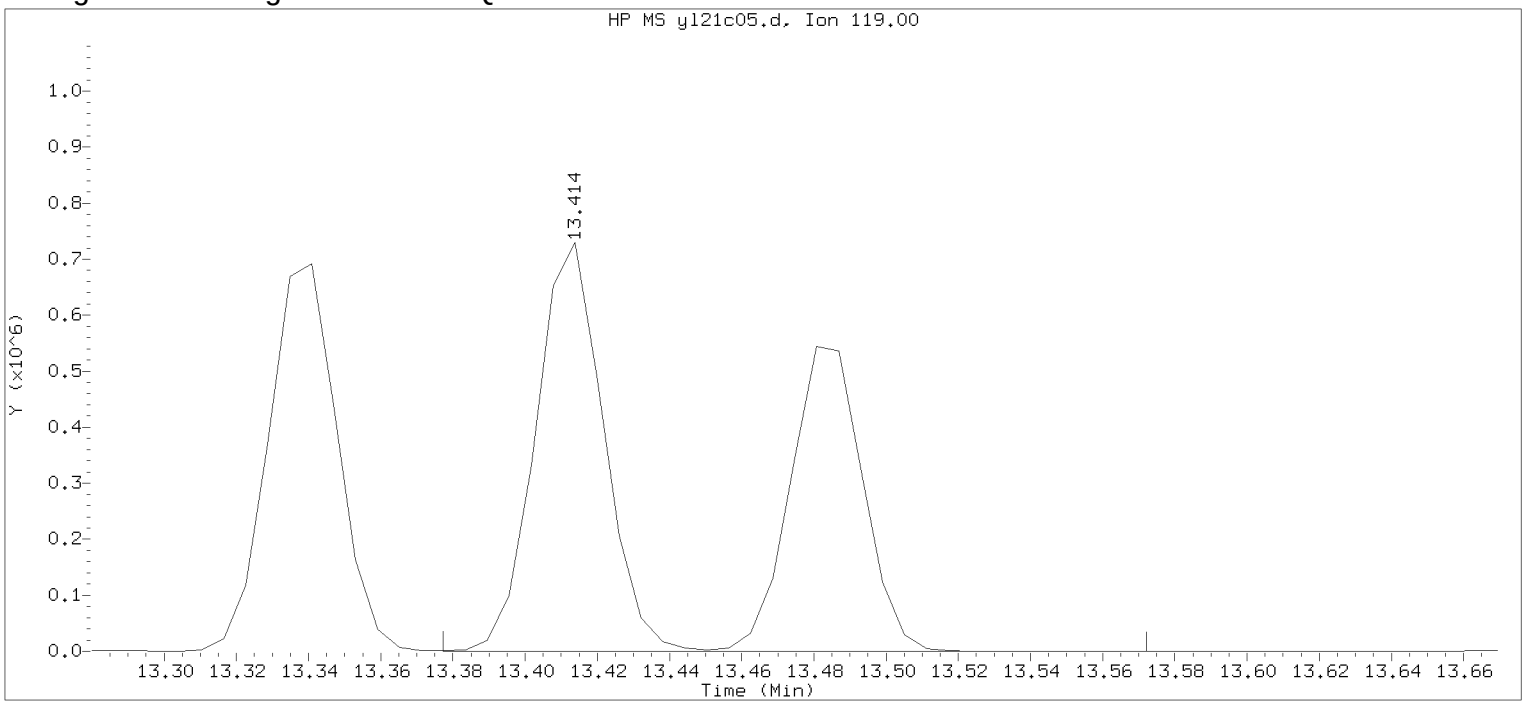
Analyst responsible for change: Digitally signed by Patrick T. Herres
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:34 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 140
Compound Name : 1,2-Diethylbenzene
Scan Number : 1945
Retention Time (minutes): 13.414
Quant Ion : 119.00
Area : 1715874
On-column Amount (ng) : 123.5765
Integration start scan : 1938 Integration stop scan: 1970
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21c06.d Injection date and time: **22-JUL-2017 05:55**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 06:10 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.343(-0.024) | 454 | 65 | 236427 ( 42) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1691665 ( 36) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 1262128 ( 33) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 630593 ( 29) | 50.00 | |

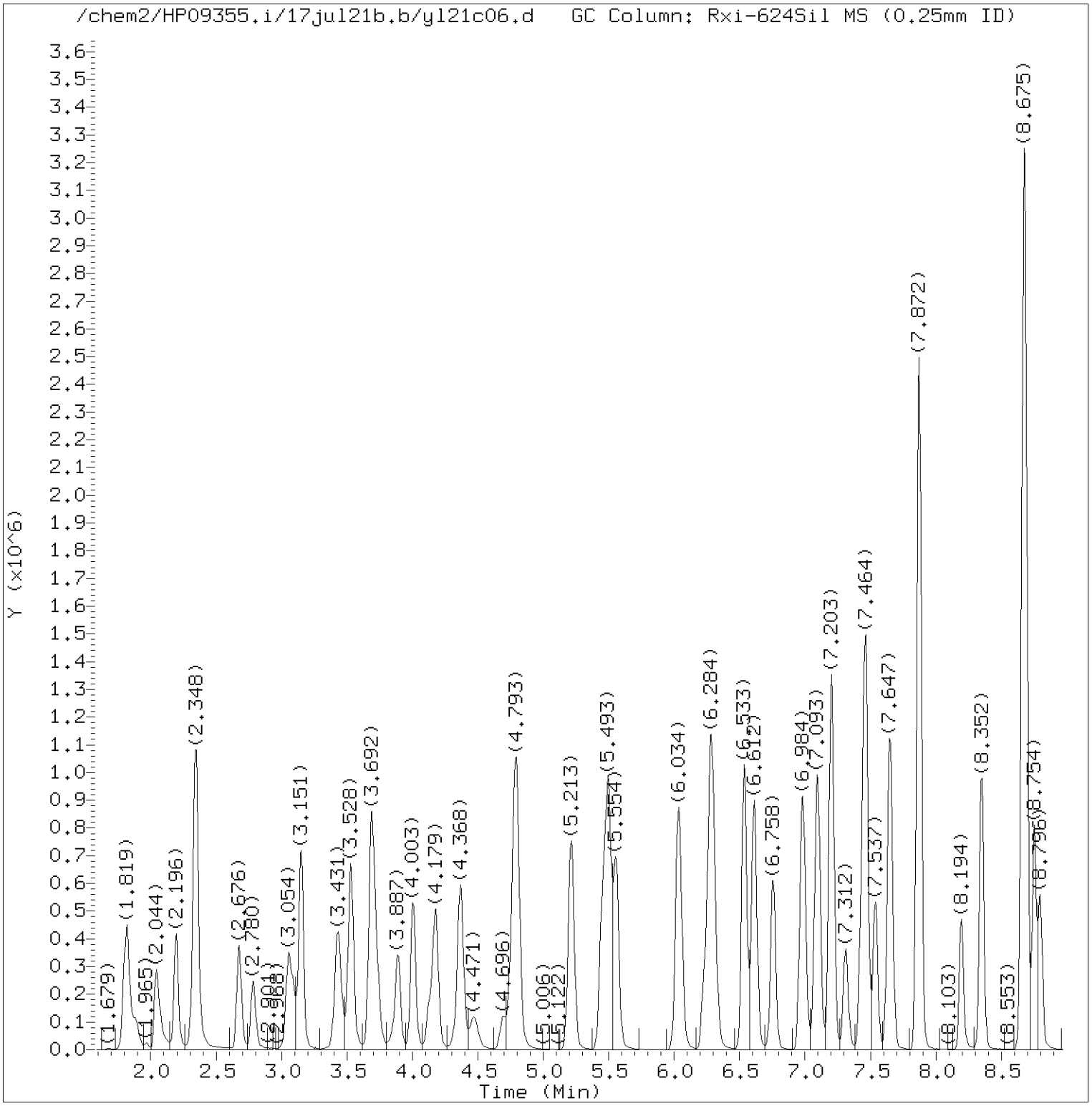
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.971(-0.001) | 113 | 387074 | 49.064 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.434(-0.001) | 102 | 98927 | 47.824 | 96% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1688297 | 51.776 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.001) | 95 | 619799 | 50.681 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.464(-0.000) | 78 | 1749831 | 51.751 | 51.75 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.940( 0.000) | 92 | 1116484 | 52.005 | 52.00 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.418( 0.000) | 91 | 2191987 | 53.077 | 53.08 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.534( 0.000) | 106 | 1730955 | 105.265 | 105.26 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.862( 0.000) | 106 | 830534 | 51.849 | 51.85 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 2561489 | 157.114 | 157.11 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 12:03. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

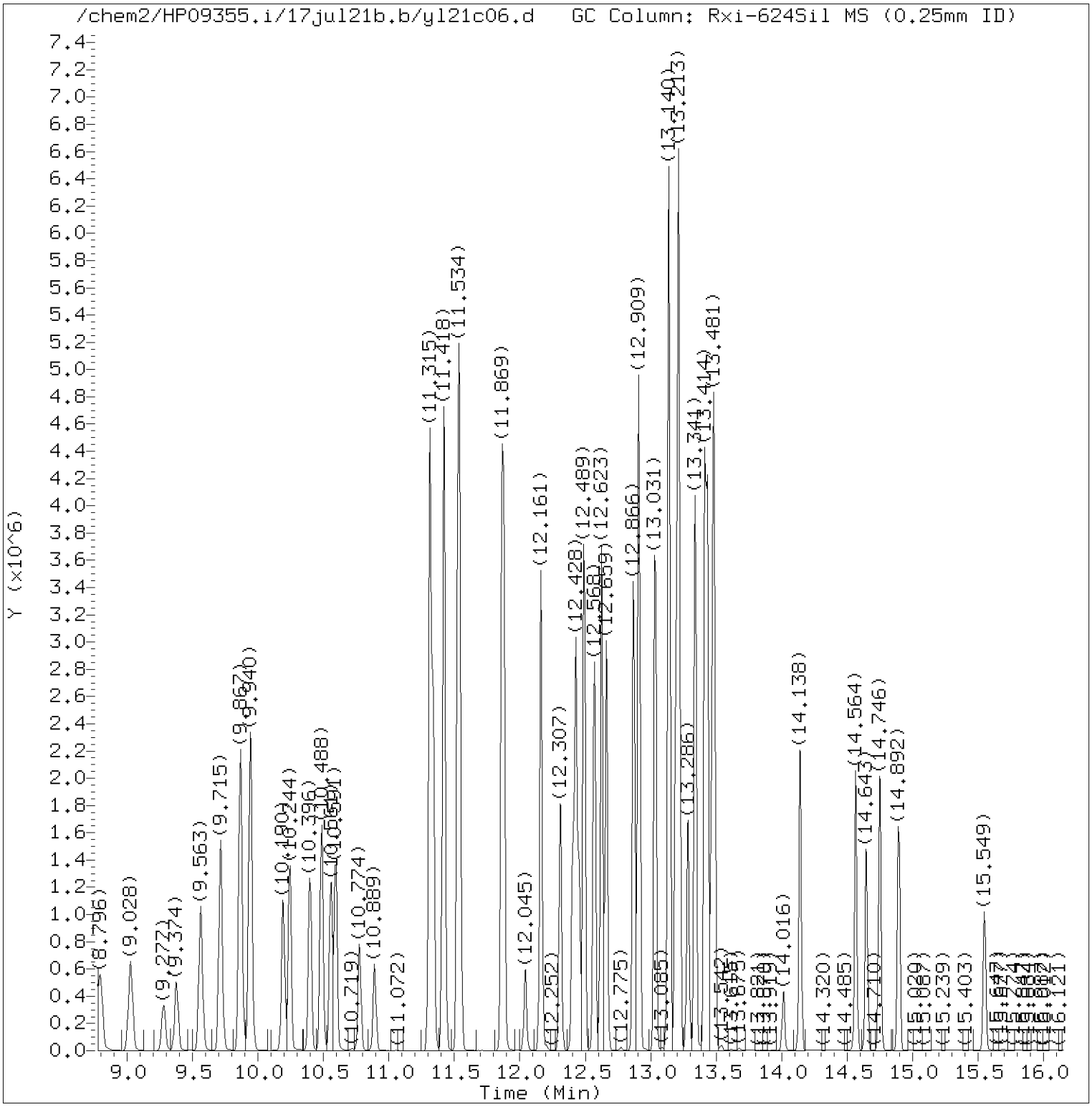
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c06.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:55 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 06:10 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Linda C. Pape
on 07/24/2017 at 12:03.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c06.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:55 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 06:10 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Linda C. Pape
on 07/24/2017 at 12:03.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c06.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:55 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 06:10 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.343 | 65 | 236427 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 387074 | 49.064 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 102 | 98927 | 47.824 |
| 60) Benzene | (2) | 7.464 | 78 | 1749831 | 51.751 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1691665 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1688297 | 51.776 |
| 88) Toluene | (3) | 9.940 | 92 | 1116484 | 52.005 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1262128 | 50.000 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 2191987 | 53.077 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 1730955 | 105.265 |
| 108) Xylene (Total) | (3) | | 106 | 2561489 | 157.114 |
| 107) o-Xylene | (3) | 11.863 | 106 | 830534 | 51.849 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 619799 | 50.681 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 630593 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/24/2017 at 12:03.
Target 3.5 esignature user ID: lcp00895

Data File: /chem2/HP09355.i/17jul27a.b/yl27t01.d

Page 1

Date : 27-JUL-2017 07:42

Client ID: BFBFEB20-2017

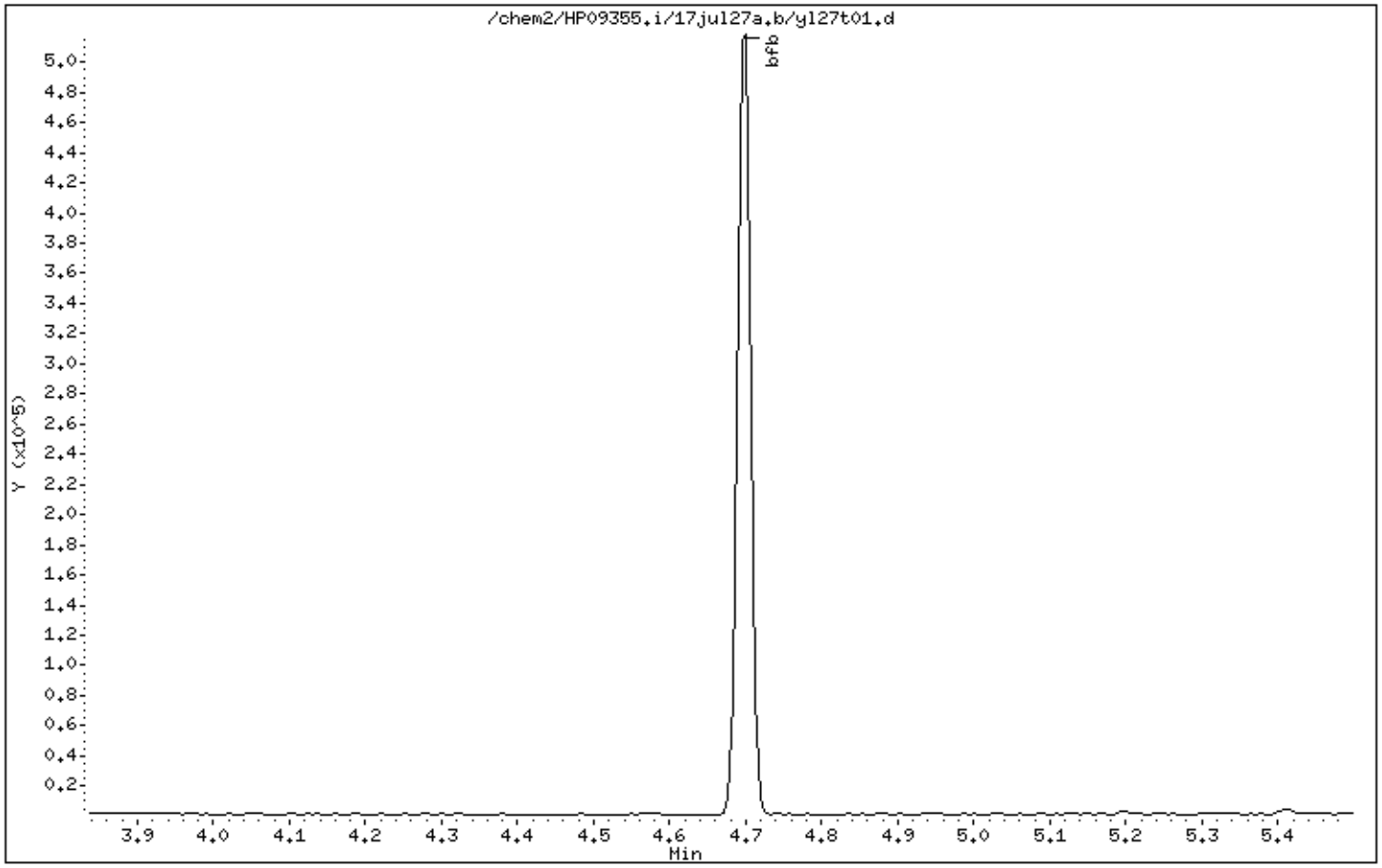
Instrument: HP09355.i

Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

Operator: LCP00895

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Linda C. Pape on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Data File: /chem2/HP09355.i/17jul27a.b/yl27t01.d

Date : 27-JUL-2017 07:42

Client ID: BFBFEB20-2017

Instrument: HP09355.i

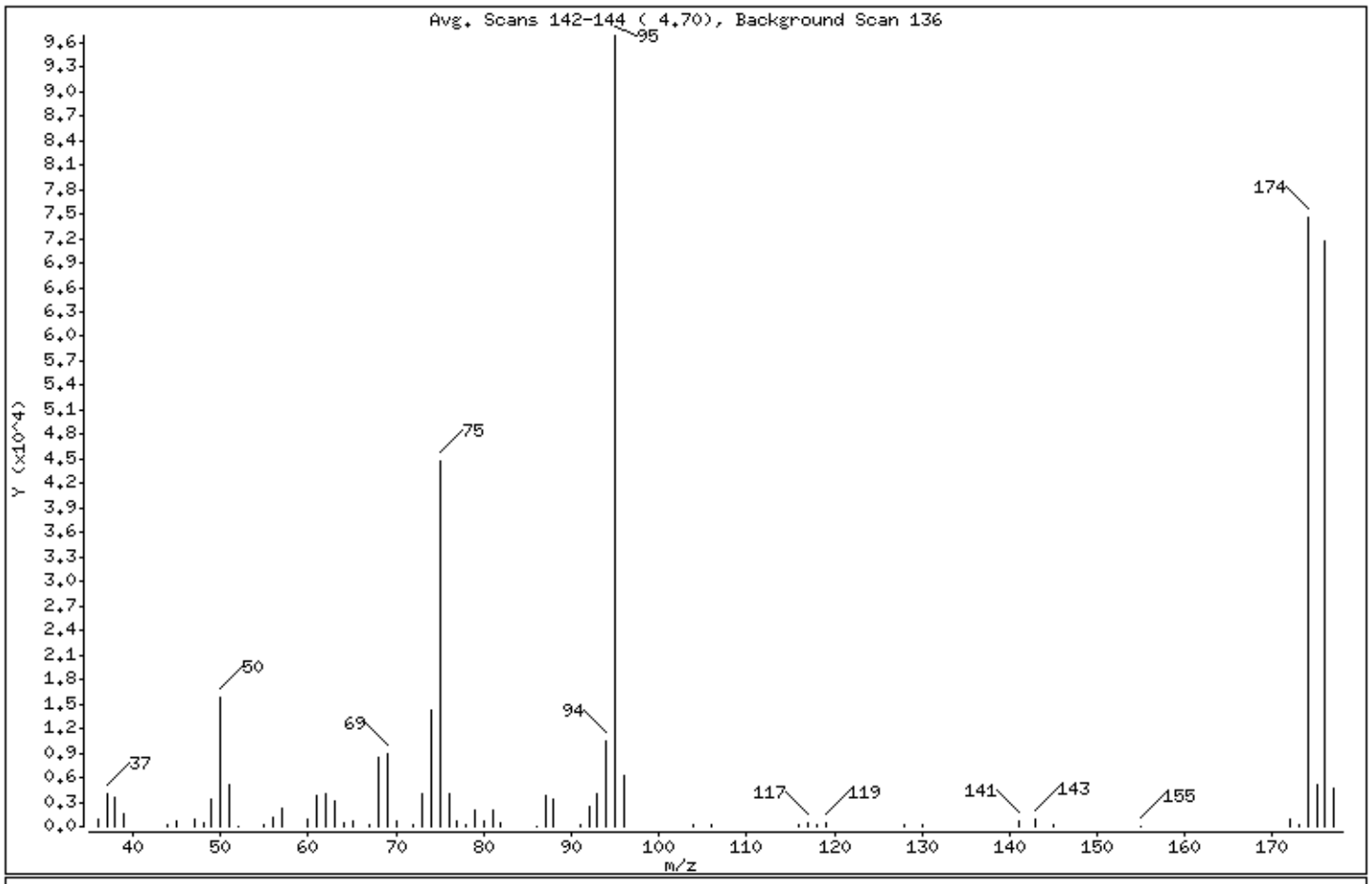
Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

Operator: LCP00895

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 16.32 |
| 75 | 30.00 - 60.00% of mass 95 | 46.16 |
| 96 | 5.00 - 9.00% of mass 95 | 6.36 |
| 173 | Less than 2.00% of mass 174 | 0.19 ( 0.25) |
| 174 | 50.00 - 100.00% of mass 95 | 77.06 |
| 175 | 5.00 - 9.00% of mass 174 | 5.29 ( 6.87) |
| 176 | 95.00 - 101.00% of mass 174 | 74.06 ( 96.10) |
| 177 | 5.00 - 9.00% of mass 176 | 4.83 ( 6.53) |

Digitally signed by Linda C. Pape on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Date : 27-JUL-2017 07:42

Client ID: BFBFEB20-2017 Instrument: HP09355.i

Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

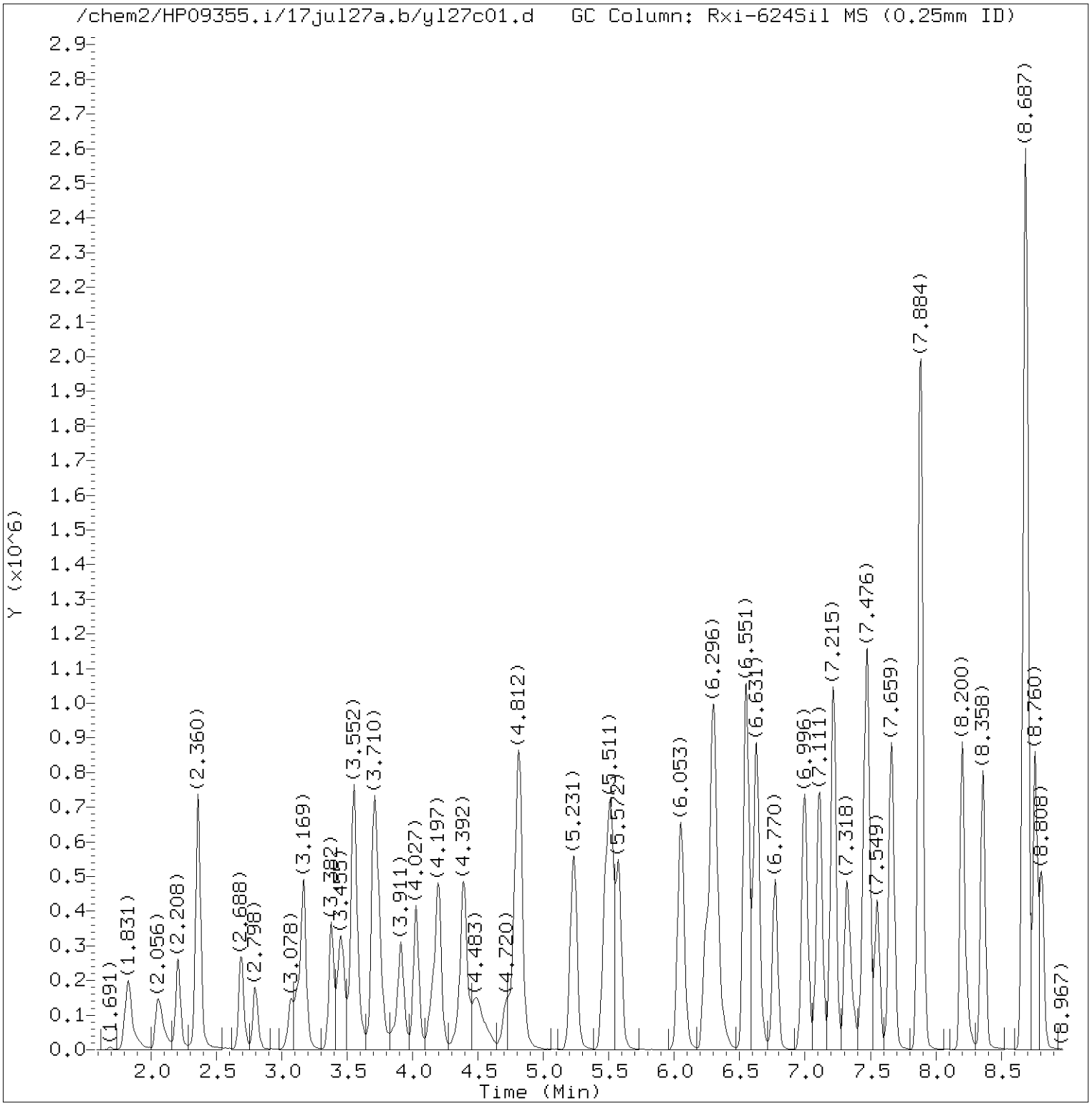
Operator: LCP00895

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: yl27t01.d
Spectrum: Avg. Scans 142-144 ( 4.70), Background Scan 136
Location of Maximum: 95.00
Number of points: 63

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 860 | 61.00 | 3821 | 79.00 | 1905 | 117.00 | 547 |
| 37.00 | 3994 | 62.00 | 4089 | 80.00 | 638 | 118.00 | 239 |
| 38.00 | 3541 | 63.00 | 3069 | 81.00 | 1942 | 119.00 | 400 |
| 39.00 | 1577 | 64.00 | 373 | 82.00 | 552 | 128.00 | 297 |
| 44.00 | 332 | 65.00 | 654 | 86.00 | 102 | 130.00 | 299 |
| 45.00 | 733 | 67.00 | 124 | 87.00 | 3845 | 141.00 | 748 |
| 47.00 | 992 | 68.00 | 8460 | 88.00 | 3392 | 143.00 | 1000 |
| 48.00 | 502 | 69.00 | 8828 | 91.00 | 204 | 145.00 | 200 |
| 49.00 | 3240 | 70.00 | 630 | 92.00 | 2482 | 155.00 | 103 |
| 50.00 | 15799 | 72.00 | 323 | 93.00 | 4065 | 172.00 | 845 |
| 51.00 | 5021 | 73.00 | 4008 | 94.00 | 10353 | 173.00 | 184 |
| 52.00 | 94 | 74.00 | 14341 | 95.00 | 96832 | 174.00 | 74624 |
| 55.00 | 196 | 75.00 | 44696 | 96.00 | 6163 | 175.00 | 5123 |
| 56.00 | 1117 | 76.00 | 4078 | 104.00 | 255 | 176.00 | 71712 |
| 57.00 | 2221 | 77.00 | 573 | 106.00 | 253 | 177.00 | 4680 |
| 60.00 | 842 | 78.00 | 288 | 116.00 | 252 | | |

Digitally signed by Linda C. Pape on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

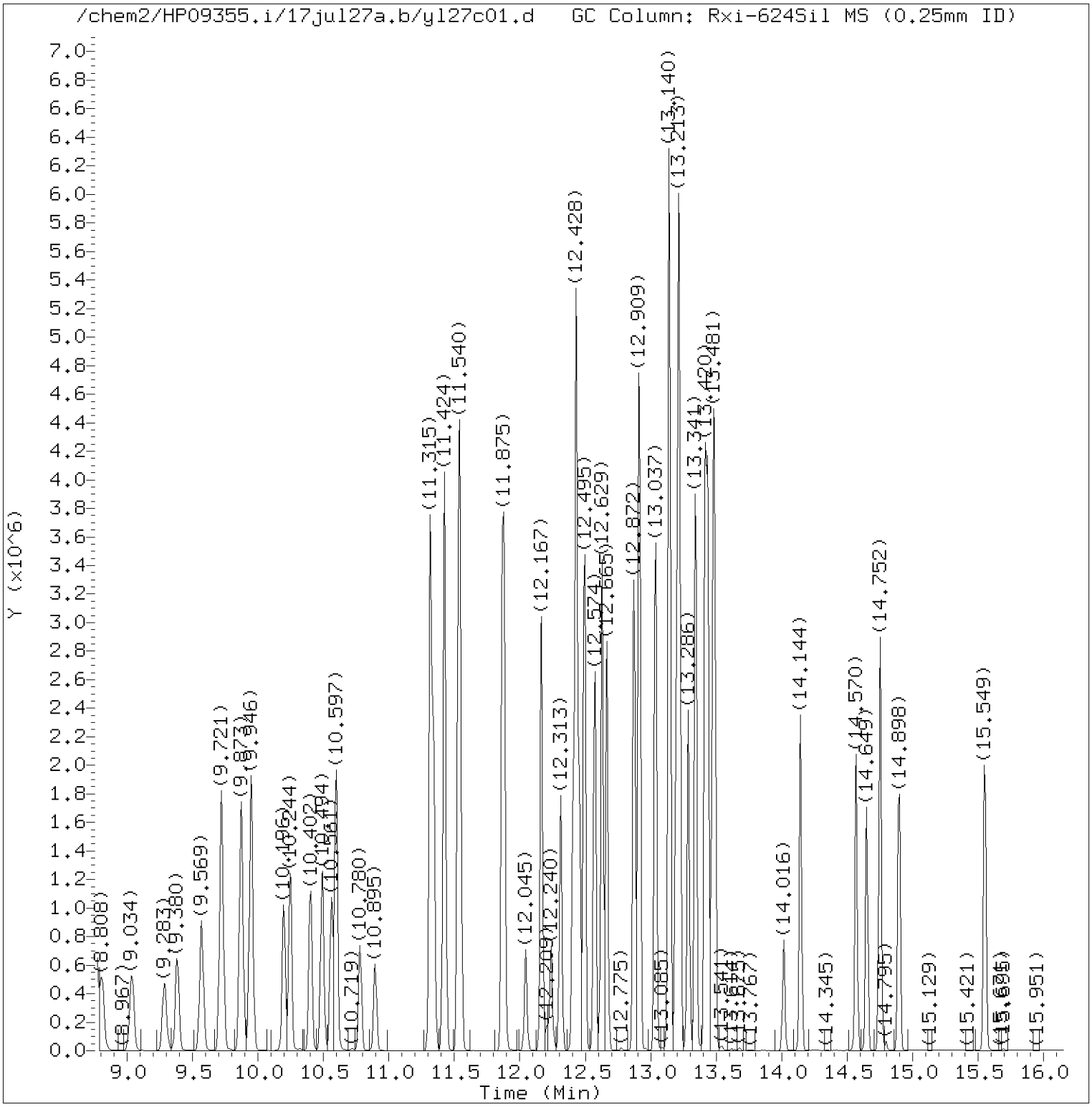
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Linda C. Pape
on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Linda C. Pape
on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.056 | 85 | 393877 | 46.436 |
| 4) Chloromethane | (2) | 2.208 | 50 | 408971A | 44.775 |
| 6) Vinyl Chloride | (2) | 2.354 | 62 | 405411 | 47.213 |
| 5) 1,3-Butadiene | (2) | 2.366 | 39 | 344871A | 37.961 |
| 8) Bromomethane | (2) | 2.694 | 94 | 278607 | 45.761 |
| 9) Chloroethane | (2) | 2.798 | 64 | 244947 | 49.321 |
| 12) Trichlorofluoromethane | (2) | 3.120 | 101 | 449523 | 44.515 |
| 11) n-Pentane | (2) | 3.169 | 43 | 460706 | 40.772 |
| 14) Ethyl ether | (2) | 3.382 | 59 | 321348 | 51.715 |
| 15) Freon 123a | (2) | 3.455 | 67 | 373749 | 52.669 |
| 16) Acrolein | (1) | 3.552 | 56 | 1261240 | 552.815 |
| 17) 1,1-Dichloroethene | (2) | 3.704 | 96 | 272648 | 53.476 |
| 17) 1,1-Dichloroethene | (2) | 3.704 | 63 | 140500 | 53.554 |
| 18) Acetone | (1) | 3.710 | 58 | 142288 | 131.177 |
| 19) Freon 113 | (2) | 3.741 | 101 | 280284 | 53.454 |
| 21) 2-Propanol | (1) | 3.875 | 45 | 239359 | 276.749 |
| 22) Methyl Iodide | (2) | 3.911 | 142 | 520614 | 53.744 |
| 23) Carbon Disulfide | (2) | 4.027 | 76 | 962024 | 59.961 |
| 27) Methyl Acetate | (2) | 4.155 | 43 | 473928 | 47.881 |
| 25) Allyl Chloride | (2) | 4.197 | 41 | 493804 | 45.802 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.361 | 65 | 374450 | 250.000 |
| 28) Methylene Chloride | (2) | 4.392 | 84 | 336594 | 52.179 |
| 30) t-Butyl alcohol | (1) | 4.495 | 59 | 464674 | 272.894 |
| 31) Acrylonitrile | (2) | 4.720 | 53 | 253334 | 53.328 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.799 | 73 | 1036528 | 48.857 |
| 32) trans-1,2-Dichloroethene | (2) | 4.824 | 96 | 326080 | 52.880 |
| 34) n-Hexane | (2) | 5.237 | 57 | 533449 | 55.152 |
| 36) 1,1-Dichloroethane | (2) | 5.469 | 63 | 594461 | 53.379 |
| 38) di-Isopropyl ether | (2) | 5.511 | 45 | 1050751 | 47.063 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.572 | 53 | 524000 | 49.973 |
| 40) Ethyl t-butyl ether | (2) | 6.053 | 59 | 972473 | 46.509 |
| 44) 2-Butanone | (2) | 6.241 | 43 | 764781 | 103.631 |
| 42) cis-1,2-Dichloroethene | (2) | 6.290 | 96 | 370596 | 52.235 |
| 45) 2,2-Dichloropropane | (2) | 6.308 | 77 | 446593 | 51.071 |
| 47) Propionitrile | (1) | 6.320 | 54 | 535431 | 279.784 |
| 48) Methacrylonitrile | (2) | 6.551 | 67 | 667898 | 132.541 |
| 50) Tetrahydrofuran | (1) | 6.631 | 71 | 210577 | 122.674 |
| 49) Bromochloromethane | (2) | 6.631 | 128 | 195046 | 52.073 |

A = User selected an alternate hit.
* = Compound is an internal standard.



Digitally signed by Linda C. Pape
on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 6.770 | 83 | 587218 | 52.348 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 696676 | 105.114 |
| 52)$Dibromofluoromethane | (2) | 6.989 | 113 | 316330 | 50.211 |
| 52)$Dibromofluoromethane | (2) | 6.989 | 111 | 325173 | 50.433 |
| 53) 1,1,1-Trichloroethane | (2) | 7.002 | 97 | 487740 | 51.940 |
| 54) Cyclohexane | (2) | 7.111 | 56 | 574171 | 50.189 |
| 54) Cyclohexane | (2) | 7.111 | 84 | 492443 | 52.411 |
| 54) Cyclohexane | (2) | 7.111 | 69 | 176866 | 50.894 |
| 55) 1,1-Dichloropropene | (2) | 7.215 | 75 | 489497 | 53.944 |
| 56) Carbon Tetrachloride | (2) | 7.221 | 117 | 434642 | 55.576 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 429046 | 688.028 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.446 | 102 | 83885 | 50.782 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.446 | 65 | 403719 | 48.588 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.446 | 104 | 53435 | 50.992 |
| 60) Benzene | (2) | 7.476 | 78 | 1419727 | 52.580 |
| 61) 1,2-Dichloroethane | (2) | 7.549 | 62 | 521634 | 52.795 |
| 61) 1,2-Dichloroethane | (2) | 7.549 | 98 | 46873 | 58.424 |
| 65) t-Amyl methyl ether | (2) | 7.659 | 73 | 997515 | 47.668 |
| 66)*Fluorobenzene | (2) | 7.878 | 96 | 1350892 | 50.000 |
| 67) n-Heptane | (2) | 7.884 | 43 | 624273 | 54.821 |
| 69) n-Butanol | (1) | 8.200 | 56 | 757573 | 1538.150 |
| 71) Trichloroethene | (2) | 8.358 | 95 | 372848 | 53.256 |
| 72) Methylcyclohexane | (2) | 8.675 | 83 | 628997 | 50.521 |
| 72) Methylcyclohexane | (2) | 8.675 | 98 | 286586 | 50.944 |
| 73) 1,2-Dichloropropane | (2) | 8.693 | 63 | 387621 | 54.601 |
| 76) Methyl Methacrylate | (2) | 8.760 | 69 | 428128 | 54.804 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 85599M | 633.941 |
| 74) Dibromomethane | (2) | 8.808 | 93 | 251626 | 54.174 |
| 78) Bromodichloromethane | (2) | 9.040 | 83 | 464426 | 57.971 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 382387 | 122.672 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 342739 | 56.363 |
| 81) cis-1,3-Dichloropropene | (2) | 9.569 | 75 | 630126 | 60.168 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 1419382 | 108.230 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1394664 | 50.232 |
| 83)$Toluene-d8 | (3) | 9.873 | 100 | 895126 | 49.907 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1235800 | 120.176 |
| 88) Toluene | (3) | 9.946 | 92 | 950300 | 51.986 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 605674 | 60.008 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 679104 | 53.612 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 382944 | 53.329 |
| 93) Tetrachloroethene | (3) | 10.494 | 166 | 403056 | 50.111 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 660570 | 54.449 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1225851 | 112.070 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 407362 | 60.395 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 420015 | 54.196 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1074648 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 523856 | 51.423 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 1124743 | 53.605 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 1866112 | 53.069 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424 | 131 | 357027 | 55.145 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 1506225 | 107.578 |
| 108) Xylene (Total) | (3) | | 106 | 2211755 | 159.307 |
| 107) o-Xylene | (3) | 11.868 | 106 | 705530 | 51.730 |
| 109) Styrene | (3) | 11.881 | 104 | 1214752 | 51.890 |
| 110) Bromoform | (3) | 12.045 | 173 | 301608 | 57.430 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 1879787 | 52.816 |
| 112) Cyclohexanone | (1) | 12.240 | 55 | 297490 | 2906.303 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 575300 | 55.249 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 174 | 430519 | 48.484 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.404 | 83 | 716781 | 59.413 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.428 | 53 | 597599 | 156.287 |
| 115) Bromobenzene | (4) | 12.428 | 156 | 507186 | 51.212 |
| 117) 1,2,3-Trichloropropane | (4) | 12.453 | 110 | 227789 | 55.560 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 2449613 | 57.229 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 480701 | 54.576 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 1697829 | 54.396 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 524435 | 56.094 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 340698M | 51.052 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 264557 | 52.430 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 1778322 | 55.095 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 2174570 | 55.424 |
| 130) p-Isopropyltoluene | (4) | 13.140 | 119 | 1910194 | 54.796 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 985647 | 52.165 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 598174 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 1014004 | 52.138 |
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 1764458 | 54.422 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 135) Benzyl Chloride | (4) | 13.286 | 91 | 1465035 | 65.854 |
| 136) 1,3-Diethylbenzene | (4) | 13.341 | 119 | 1128198 | 55.574 |
| 137) 1,4-Diethylbenzene | (4) | 13.414 | 119 | 1181100 | 56.075 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 1010146 | 57.569 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 933236 | 51.420 |
| 140) 1,2-Diethylbenzene | (4) | 13.487 | 119 | 929125 | 54.543 |
| 141) Diethylbenzene (total) | (4) | | 100 | 3238423 | 166.191 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 179079 | 61.100 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 629132 | 47.321 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 555355 | 45.708 |
| 147) Hexachlorobutadiene | (4) | 14.649 | 225 | 261711 | 43.832 |
| 148) Naphthalene | (4) | 14.752 | 128 | 1999451 | 51.421 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 511640 | 46.314 |
| 150) 2-Methylnaphthalene | (4) | 15.549 | 142 | 901831 | 43.065 |



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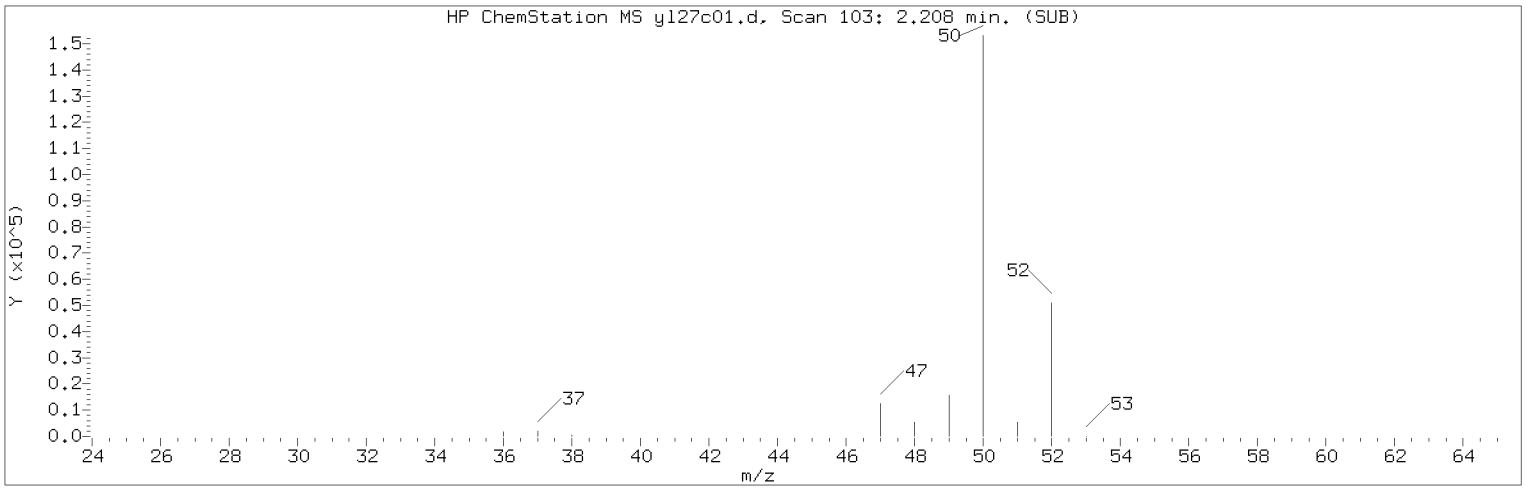
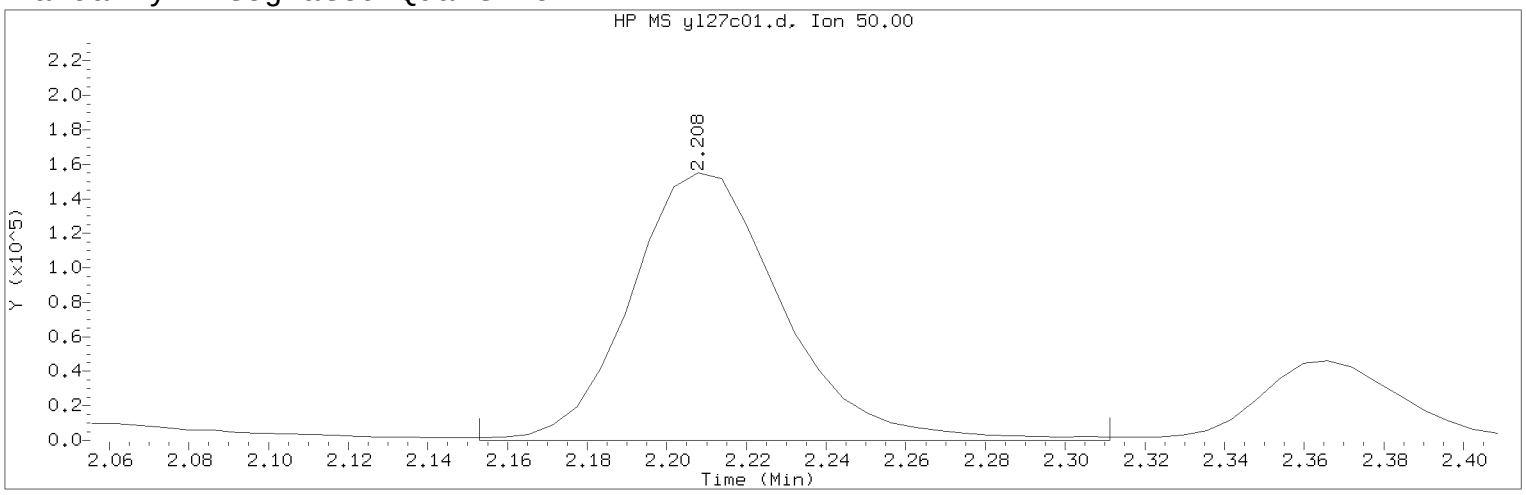
Target 3.5 esignature user ID: lcp00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

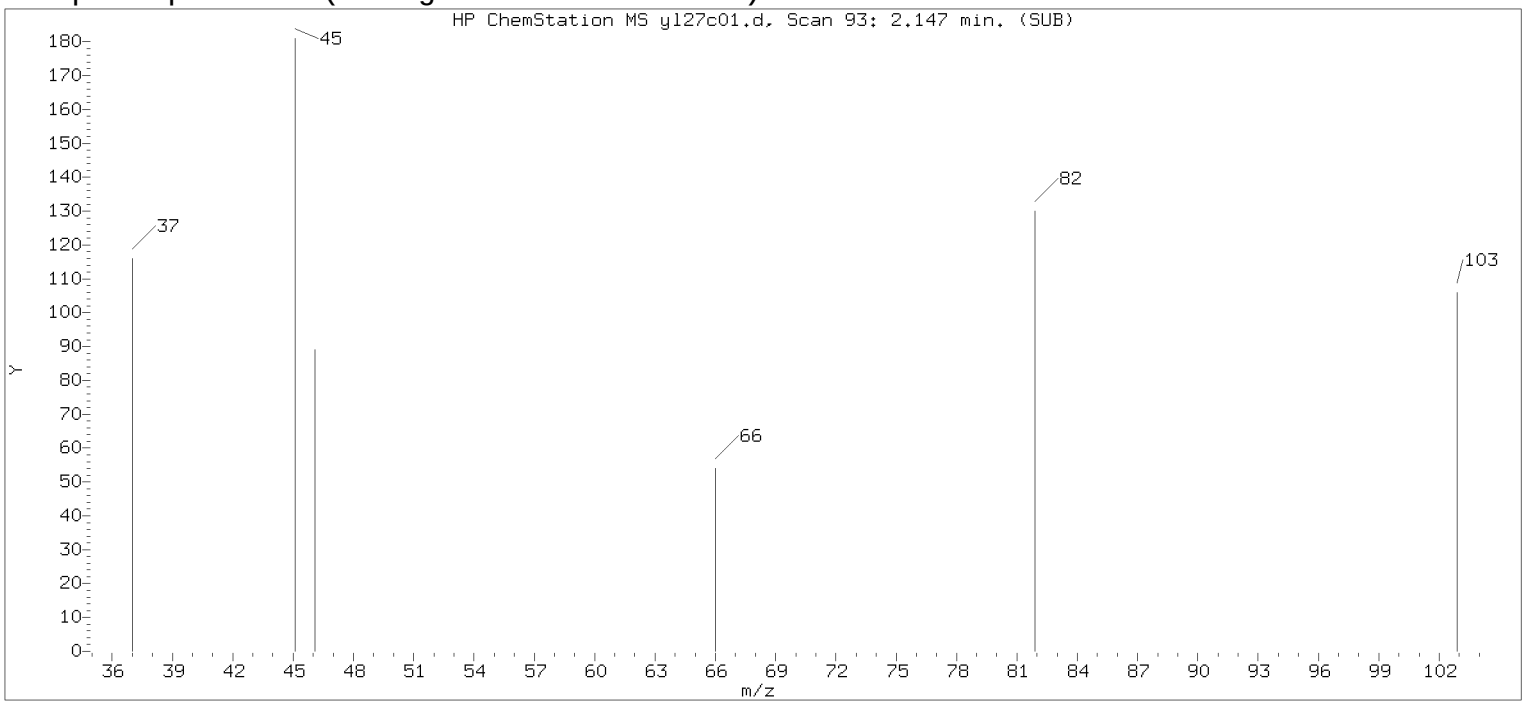
Compound Number : 4
Compound Name : Chloromethane
Scan Number : 103
Retention Time (minutes): 2.208
Quant Ion : 50.00
Area (flag) : 408971A
On-Column Amount (ng) : 44.7755
Integration start scan : 93 Integration stop scan: 119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

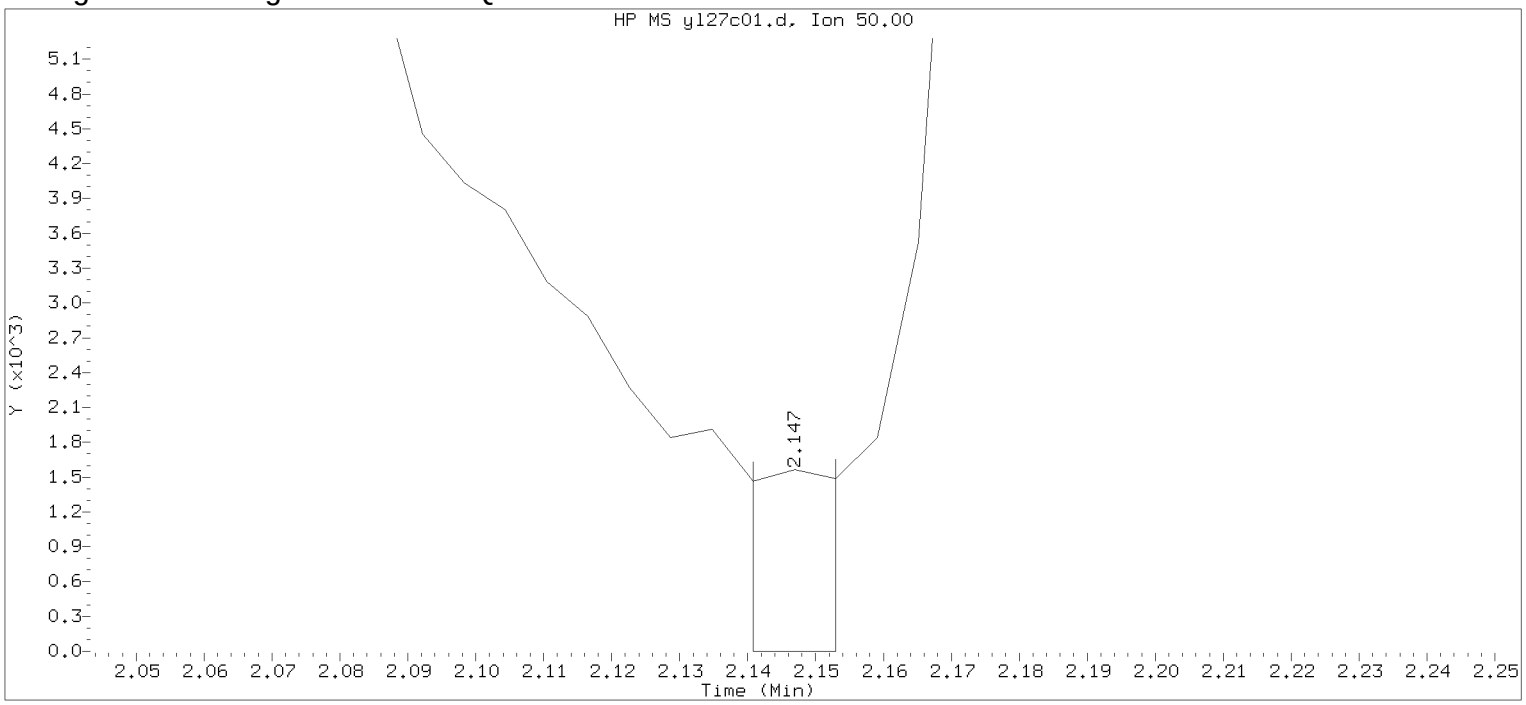
Analyst responsible for change: Digitally signed by Linda C. Pape
on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:08 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 4
Compound Name : Chloromethane
Scan Number : 93
Retention Time (minutes): 2.147
Quant Ion : 50.00
Area : 1109
On-column Amount (ng) : 0.1214
Integration start scan : 91 Integration stop scan: 93
Y at integration start : 0 Y at integration end: 0

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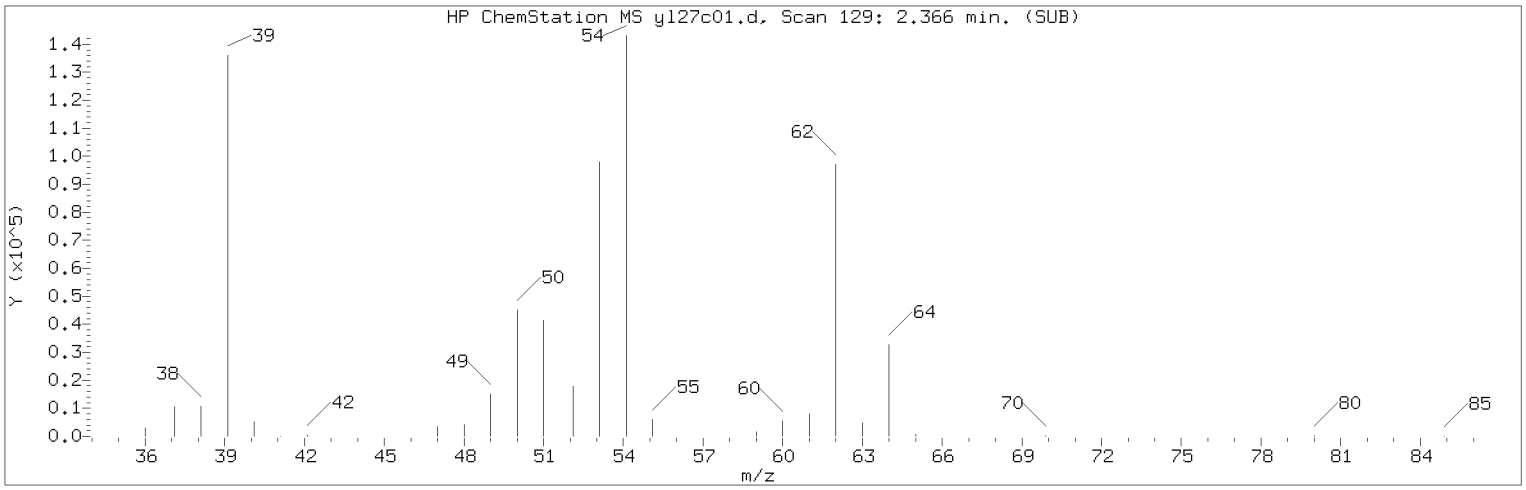
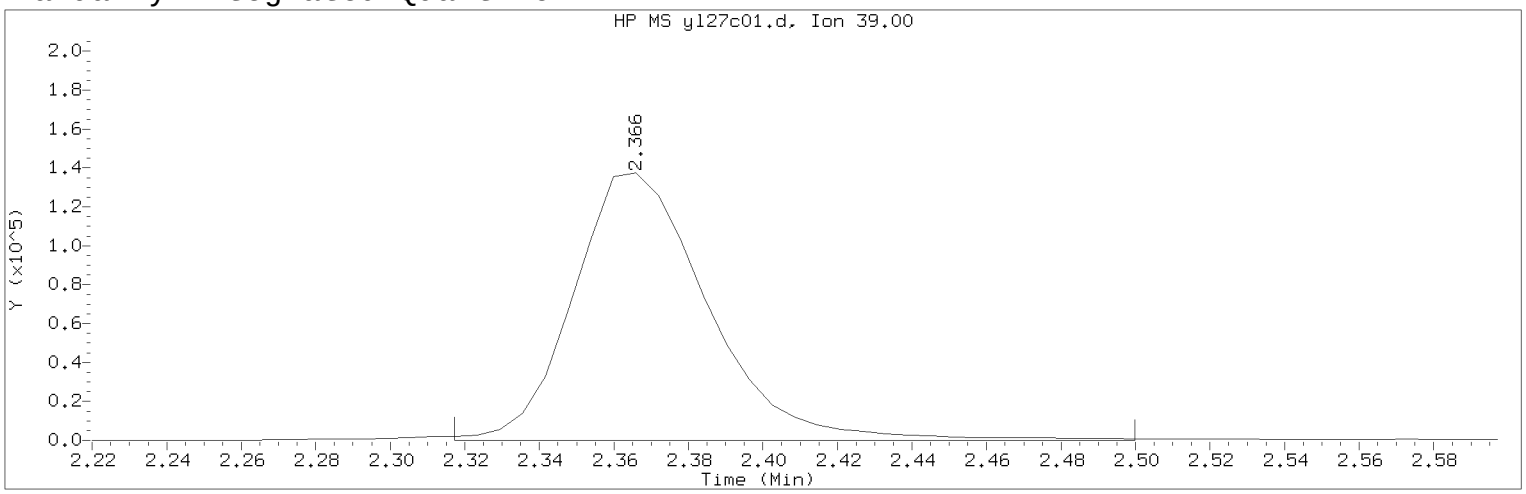
Target 3.5 esignature user LCP00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

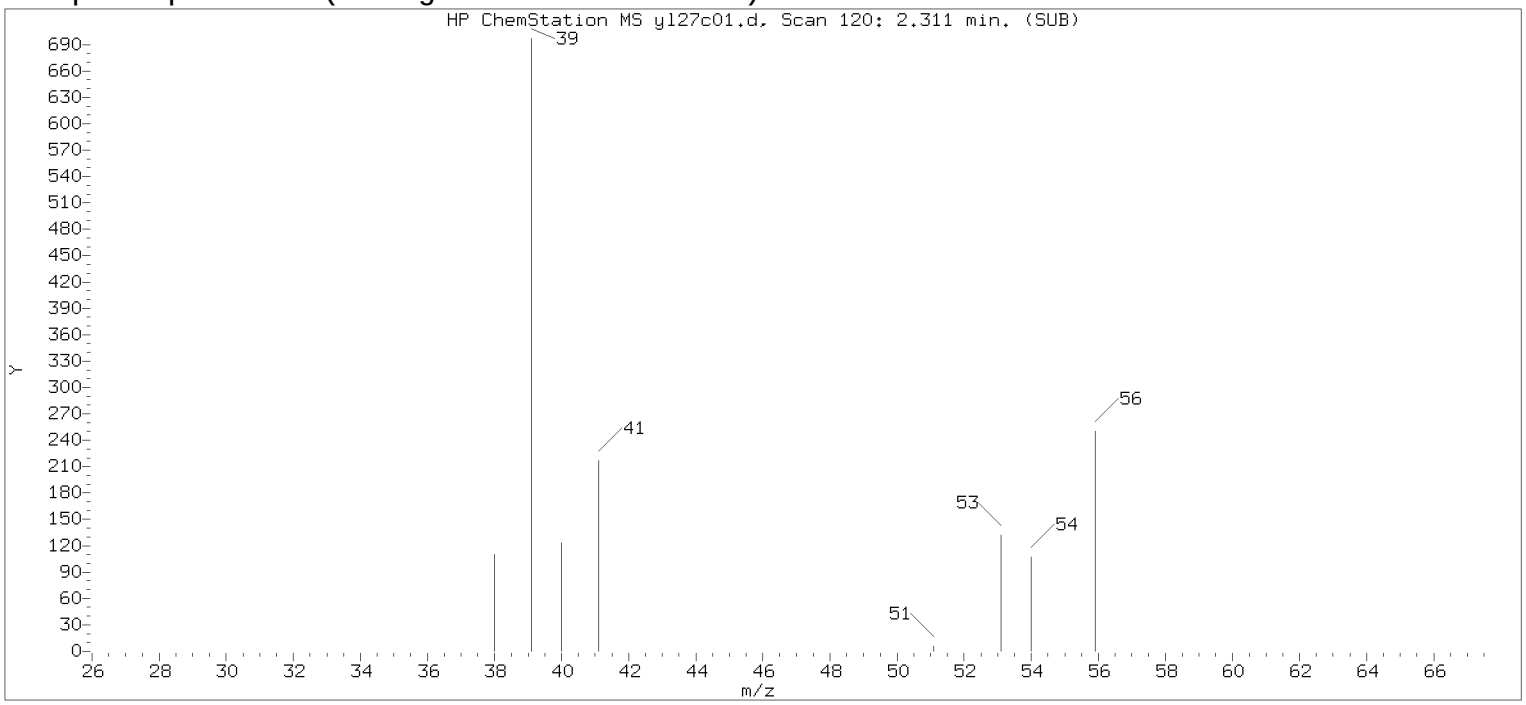
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 129
Retention Time (minutes): 2.366
Quant Ion : 39.00
Area (flag) : 344871A
On-Column Amount (ng) : 37.9610
Integration start scan : 120 Integration stop scan: 150
Y at integration start : 65 Y at integration end: 142

Reason for manual integration: improper integration

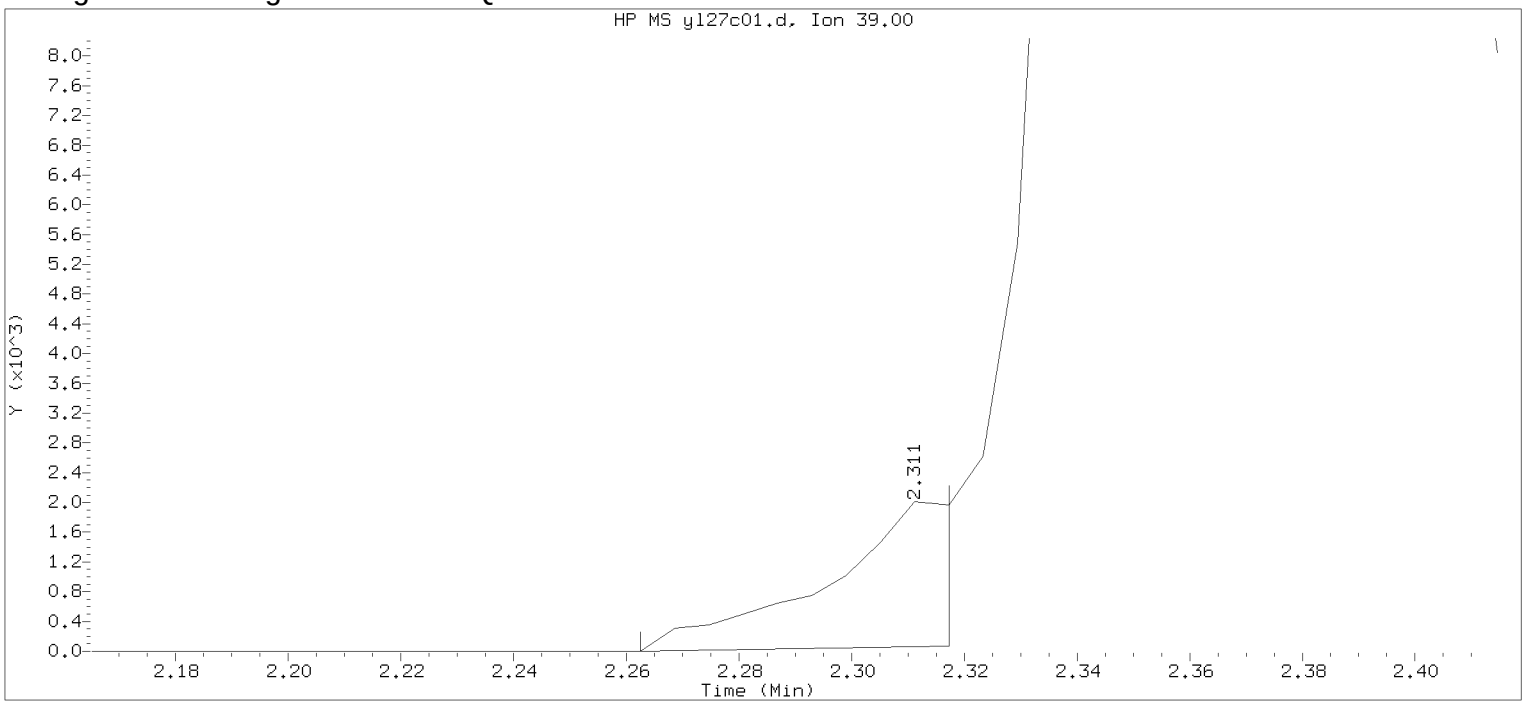
Analyst responsible for change: Digitally signed by Linda C. Pape
on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:08 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 120
Retention Time (minutes): 2.311
Quant Ion : 39.00
Area : 2828
On-column Amount (ng) : 0.3113
Integration start scan : 111 Integration stop scan: 120
Y at integration start : 0 Y at integration end: 65

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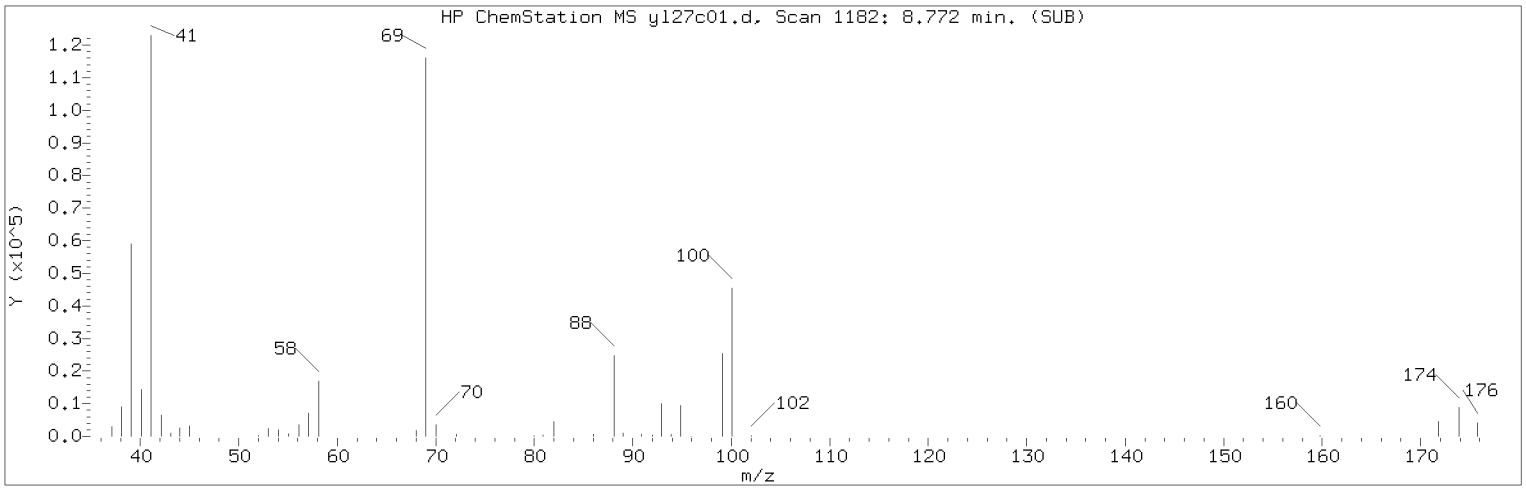
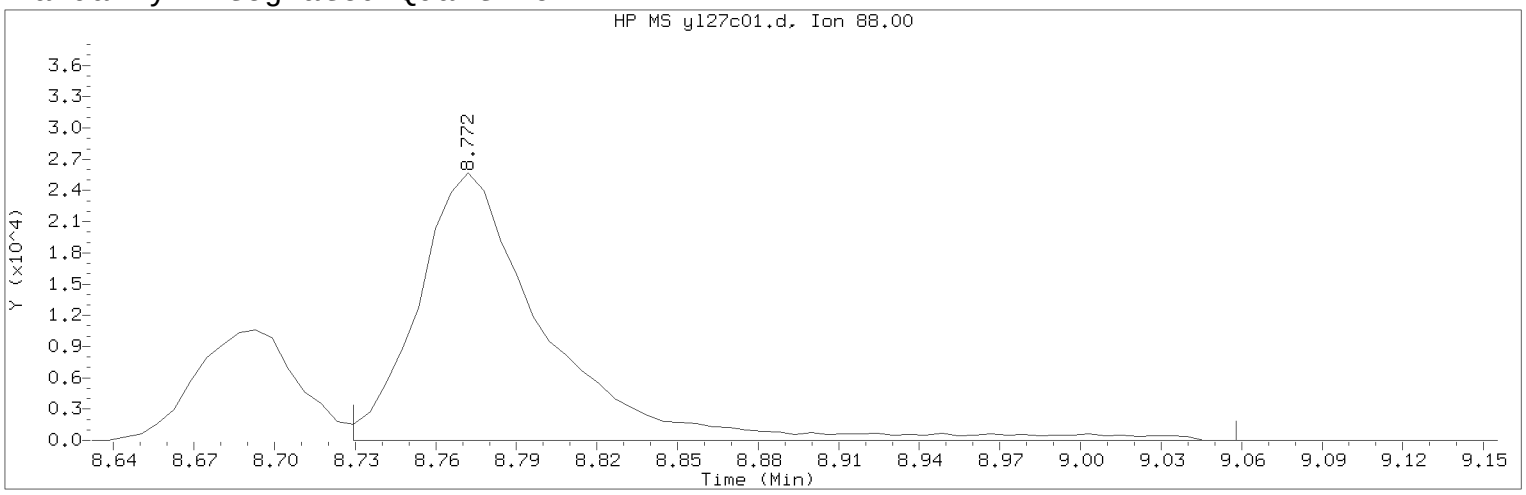
Target 3.5 esignature user id: LCP00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

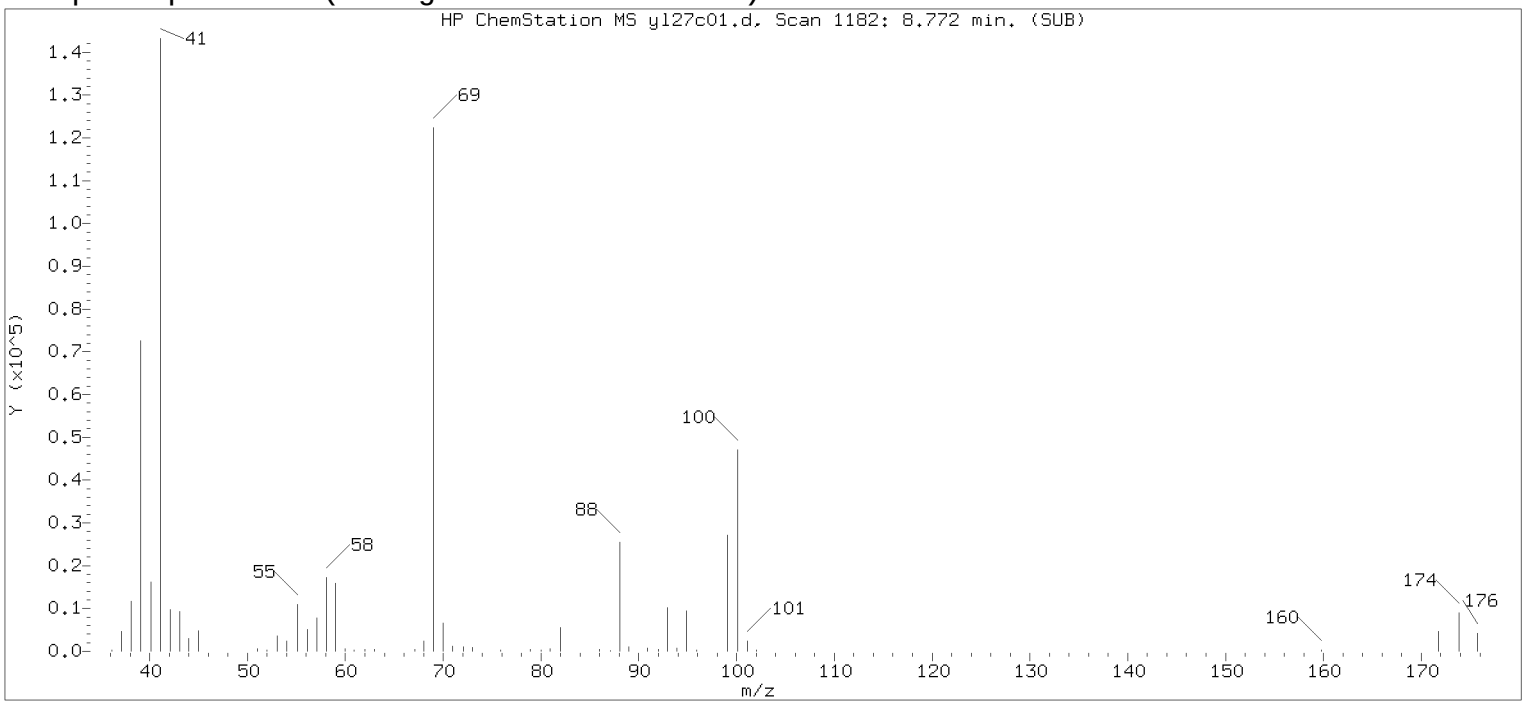
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area (flag) : 85599M
On-Column Amount (ng) : 633.9410
Integration start scan : 1174 Integration stop scan: 1228
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

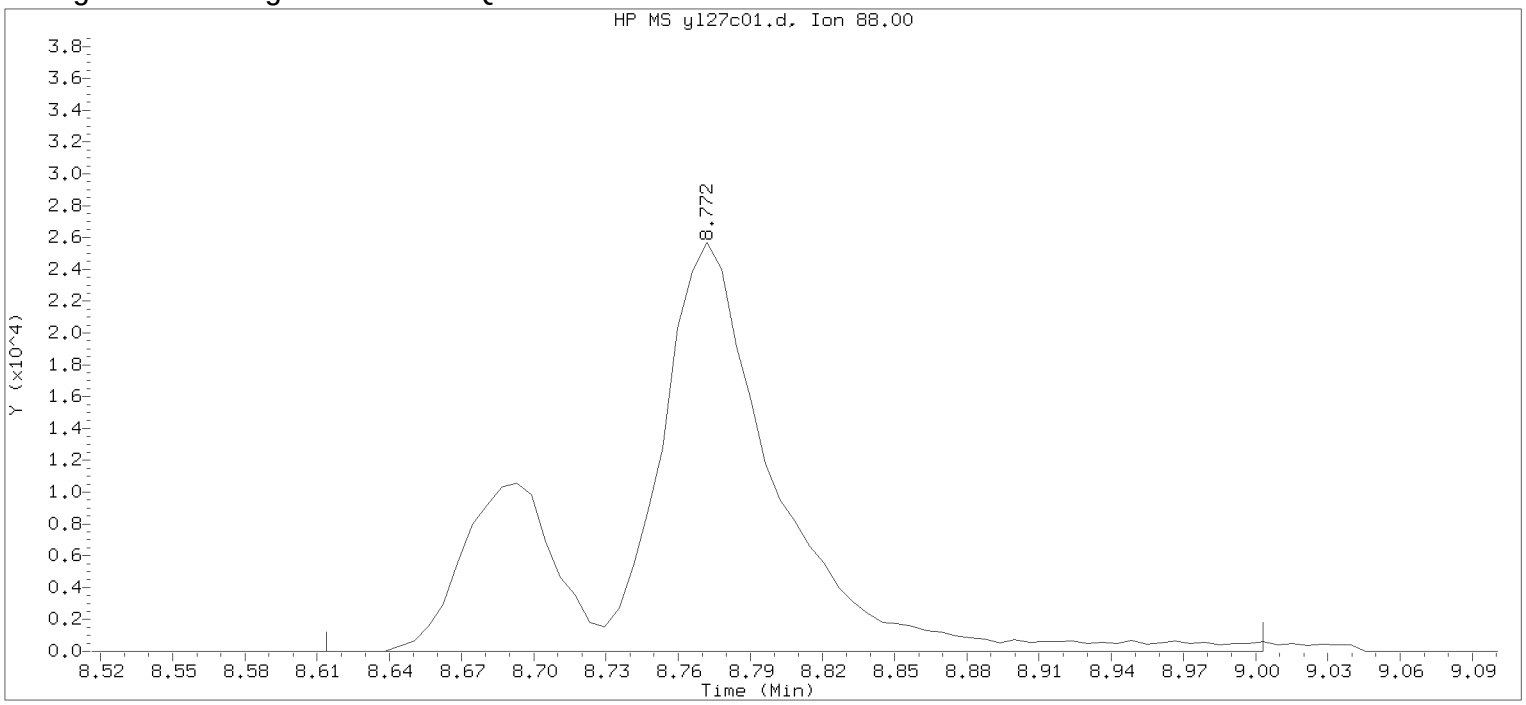
Analyst responsible for change: Digitally signed by Linda C. Pape
on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

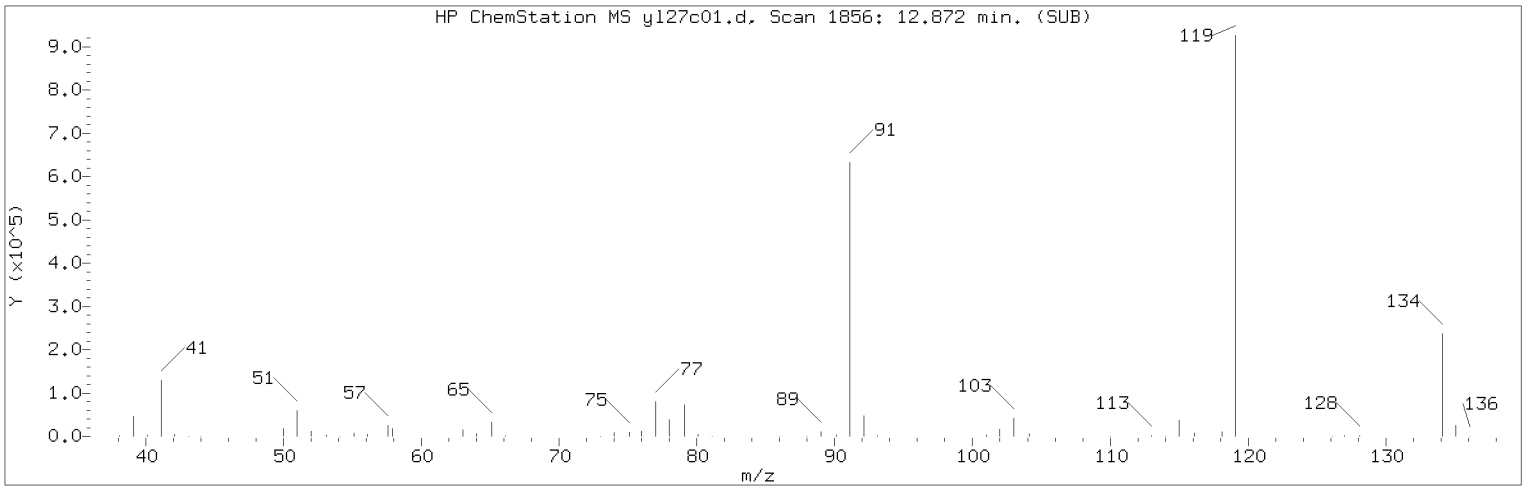
Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:08 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

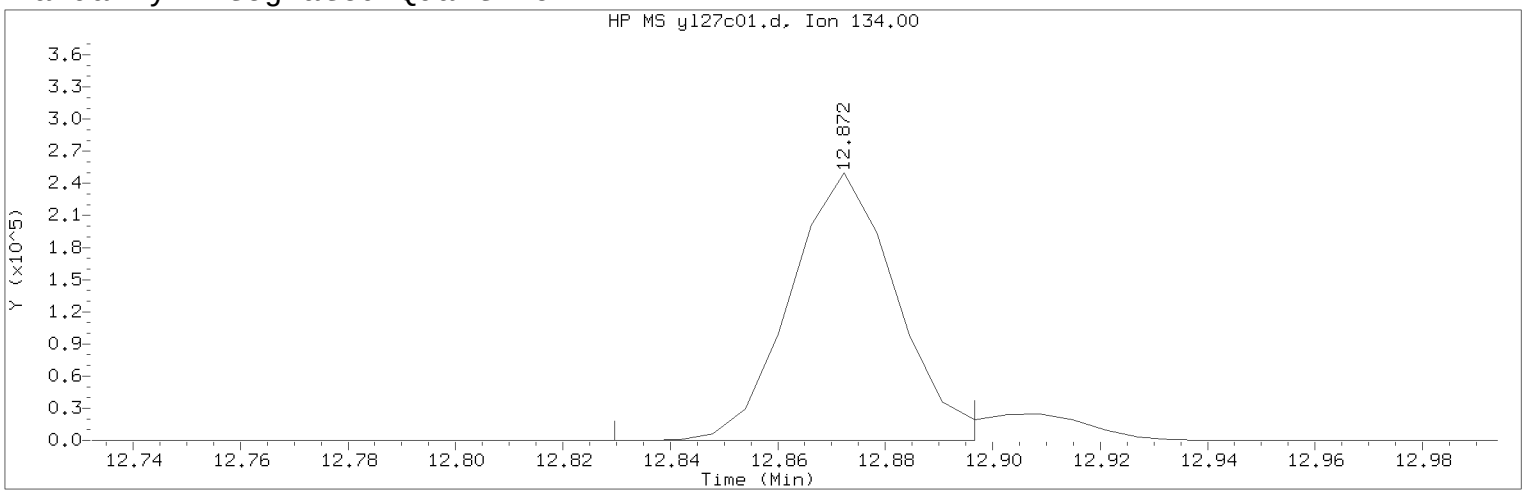
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area : 112308
On-column Amount (ng) : 831.7389
Integration start scan : 1155 Integration stop scan: 1219
Y at integration start : 0 Y at integration end: 0

Digitally signed by Linda C. Pape on 07/27/2017 at 09:11.
Target 3.5 esignature userKRD38 lcp00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:11 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

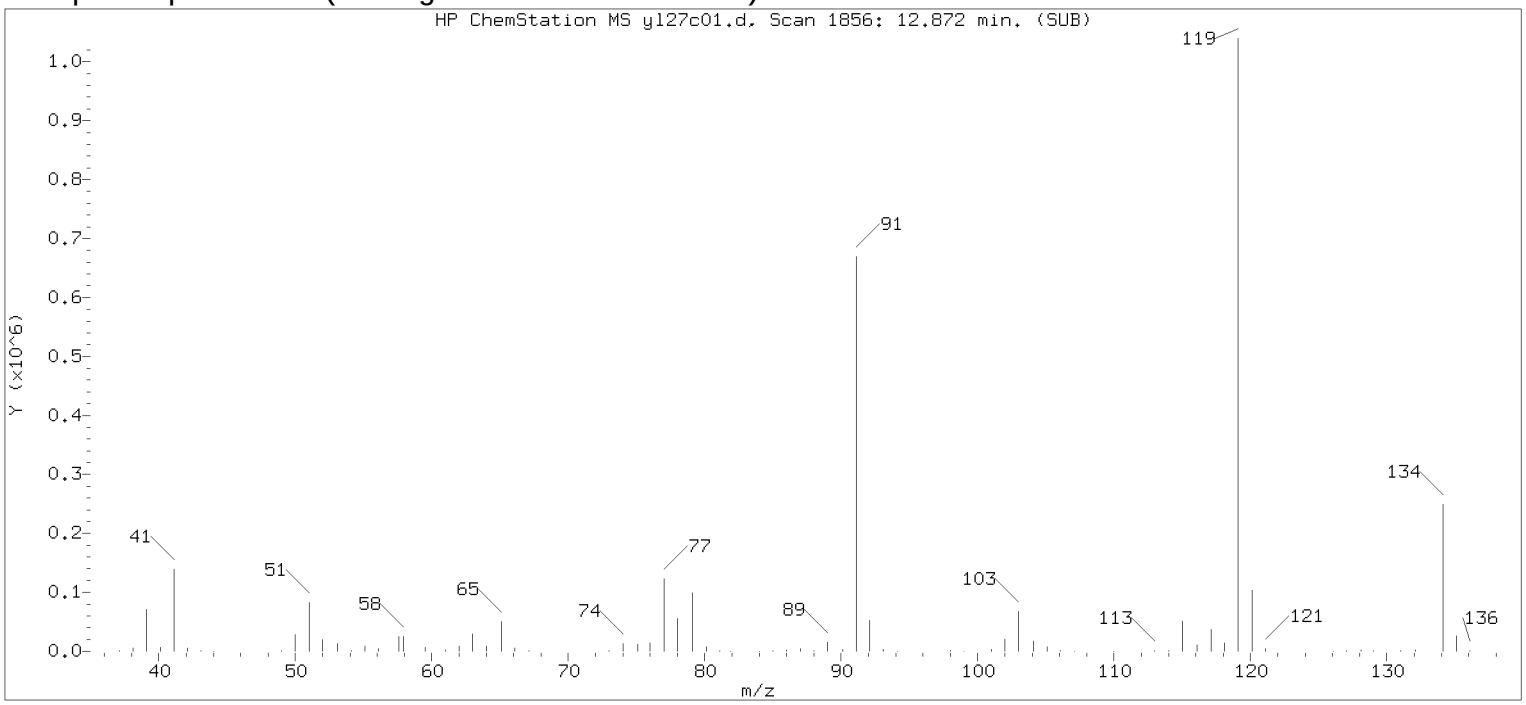
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 340698M
On-Column Amount (ng) : 51.0524
Integration start scan : 1848 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

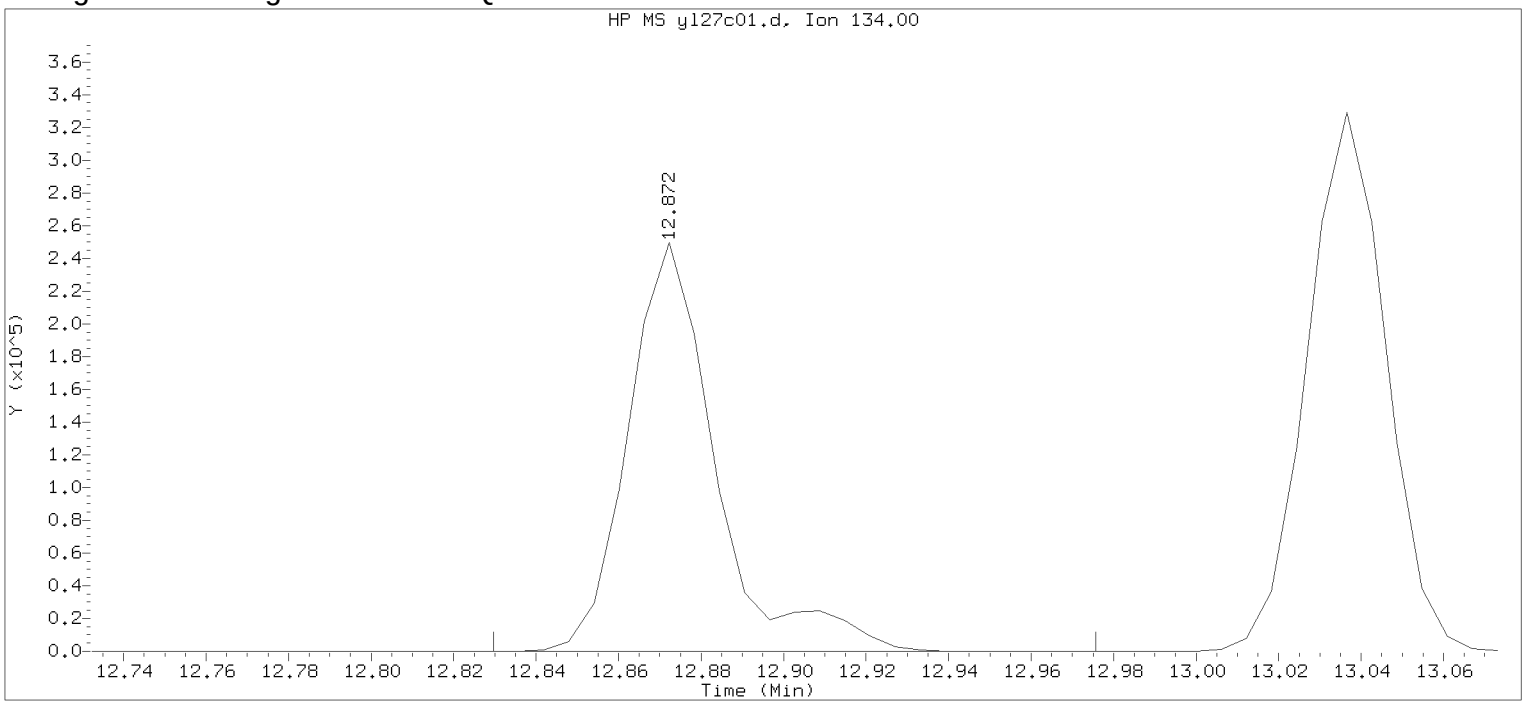
Analyst responsible for change: Digitally signed by Linda C. Pape
on 07/27/2017 at 09:11.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27c01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 08:37 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 27-JUL-2017 09:08
Date, time and analyst ID of latest file update: 27-Jul-2017 09:08 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 370083
On-column Amount (ng) : 55.4556
Integration start scan : 1848 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Linda C. Pape on 07/27/2017 at 09:11.
Target 3.5 esignature userKRD38 lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Injection date and time: **27-JUL-2017 12:26**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;; Instrument ID: **HP09355.i** Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 13:10 lcp00895

Blank Data file reference: **Does not exist or can't be found**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: **18281-SM**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.380(-0.018) | 460 | 65 | 447010 ( 19) | 250.00 | |
| 66) Fluorobenzene | 7.884(-0.006) | 1036 | 96 | 1667075 ( 23) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315( 0.000) | 1600 | 117 | 1300005 ( 21) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195( 0.000) | 1909 | 152 | 678324 ( 13) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.996( 0.000) | 113 | 381224 | 49.035 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.452( 0.000) | 102 | 101704 | 49.892 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.873( 0.000) | 98 | 1711978 | 50.972 | 102% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 642664 | 51.019 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.074(-0.002) | 85 | 408379 | 39.015 | 39.01 | | | 0.5 | 1 |
| 4) Chloromethane | (2) | 2.226(-0.002) | 50 | 458848 | 40.708 | 40.71 | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | 2.372(-0.002) | 62 | 445538 | 42.046 | 42.05 | | | 0.5 | 1 |
| 8) Bromomethane | (2) | 2.707(-0.001) | 94 | 303892 | 40.447 | 40.45 | | | 0.5 | 1 |
| 9) Chloroethane | (2) | 2.816(-0.002) | 64 | 271209 | 44.252 | 44.25 | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | 3.139(-0.002) | 101 | 594609 | 47.714 | 47.71 | | | 0.5 | 1 |
| 16) Acrolein | (1) | 3.564( 0.000) | 56 | 1594645 | 585.494 | 585.49 | | | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | 3.717(-0.001) | 96 | 331714 | 52.721 | 52.72 | | | 0.5 | 1 |
| 18) Acetone | (1) | 3.729(-0.000) | 58 | 181125 | 139.876 | 139.88 | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | 4.039(-0.001) | 76 | 1168200 | 59.002 | 59.00 | | | 1 | 5 |
| 28) Methylene Chloride | (2) | 4.404(-0.001) | 84 | 410907 | 51.618 | 51.62 | | | 2 | 4 |
| 31) Acrylonitrile | (2) | 4.732(-0.001) | 53 | 317703 | 54.194 | 54.19 | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | 4.836(-0.001) | 96 | 400113 | 52.579 | 52.58 | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.806(-0.000) | 73 | 1300350 | 49.668 | 49.67 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 5.481(-0.001) | 63 | 744540 | 54.175 | 54.18 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 6.296(-0.000) | 96 | 455907 | 52.072 | 52.07 | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | 6.247(-0.000) | 43 | 969447 | 106.449 | 106.45 | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | 6.314(-0.000) | 77 | 537931 | 49.849 | 49.85 | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | 6.637(-0.000) | 128 | 234750 | 50.786 | 50.79 | | | 1 | 5 |
| 51) Chloroform | (2) | 6.777(-0.000) | 83 | 711836 | 51.422 | 51.42 | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | 7.008(-0.000) | 97 | 583568 | 50.358 | 50.36 | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | 7.221(-0.000) | 75 | 602404 | 53.796 | 53.80 | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | 7.227(-0.000) | 117 | 510830 | 52.930 | 52.93 | | | 0.5 | 1 |
| 60) Benzene | (2) | 7.482(-0.000) | 78 | 1752004 | 52.579 | 52.58 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 7.555(-0.000) | 62 | 625041 | 51.263 | 51.26 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 8.364( 0.000) | 95 | 467675 | 54.131 | 54.13 | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | 8.693( 0.000) | 63 | 481095 | 54.915 | 54.92 | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | 8.808( 0.000) | 93 | 307898 | 53.716 | 53.72 | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | 9.040( 0.000) | 83 | 561897 | 56.835 | 56.83 | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | 9.569( 0.000) | 75 | 763426 | 59.071 | 59.07 | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721( 0.000) | 43 | 1804914 | 111.524 | 111.52 | | | 3 | 10 |

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# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Injection date and time: **27-JUL-2017 12:26**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;; Instrument ID: **HP09355.i** Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 13:10 lcp00895

Blank Data file reference: **Does not exist or can't be found**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: **18281-SM**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

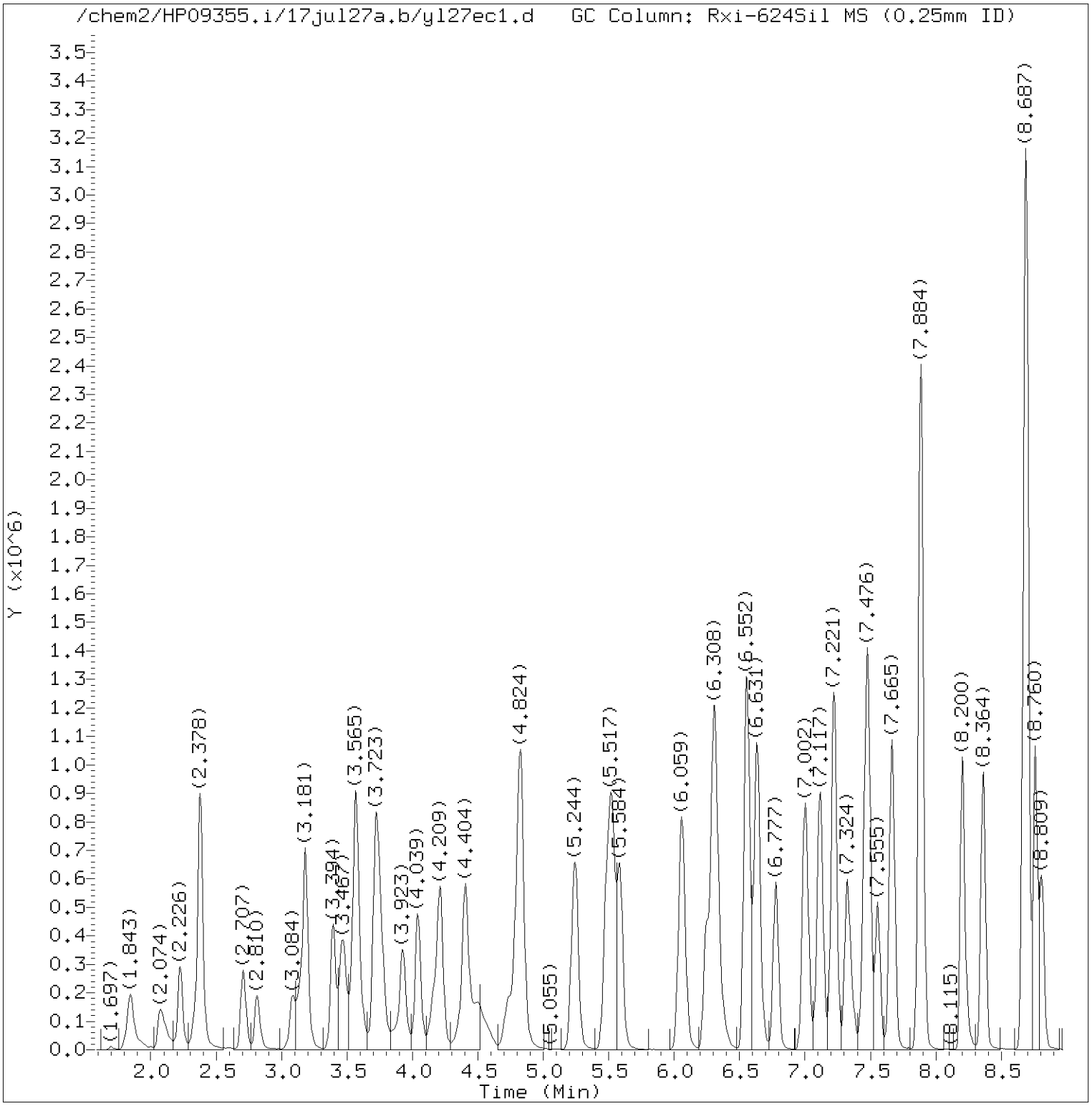
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 88) Toluene | (3) | 9.946(-0.000) | 92 | 1154949 | 52.229 | 52.23 | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196(-0.000) | 75 | 721450 | 59.088 | 59.09 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402(-0.000) | 97 | 471132 | 54.236 | 54.24 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 10.494(-0.000) | 166 | 505922 | 51.996 | 52.00 | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | 10.561(-0.000) | 76 | 813291 | 55.416 | 55.42 | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | 10.597(-0.000) | 43 | 1529562 | 115.595 | 115.60 | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | 10.780(-0.000) | 129 | 476958 | 58.455 | 58.46 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.895(-0.000) | 107 | 515987 | 55.038 | 55.04 | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | 11.339( 0.000) | 112 | 1346285 | 53.041 | 53.04 | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424( 0.000) | 131 | 421256 | 53.786 | 53.79 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.424( 0.000) | 91 | 2239289 | 52.642 | 52.64 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.540( 0.000) | 106 | 1805305 | 106.587 | 106.59 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.862( 0.000) | 106 | 856497 | 51.912 | 51.91 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 2661802 | 158.500 | 158.50 | | | 0.5 | 1 |
| 109) Styrene | (3) | 11.881( 0.000) | 104 | 1501400 | 53.017 | 53.02 | | | 1 | 5 |
| 110) Bromoform | (3) | 12.045( 0.000) | 173 | 349973 | 55.087 | 55.09 | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 12.161( 0.000) | 105 | 2125103 | 49.359 | 49.36 | | | 1 | 5 |
| 115) Bromobenzene | (4) | 12.428(-0.000) | 156 | 574971 | 51.196 | 51.20 | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.404(-0.000) | 83 | 765079 | 55.923 | 55.92 | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | 12.453(-0.000) | 110 | 249798 | 53.729 | 53.73 | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | 12.489( 0.000) | 91 | 2603322 | 53.633 | 53.63 | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | 12.574(-0.000) | 126 | 528016 | 52.864 | 52.86 | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | 12.666(-0.000) | 126 | 577195 | 54.443 | 54.44 | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629( 0.000) | 105 | 1838438 | 51.941 | 51.94 | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | 12.872(-0.000) | 134 | 379079M | 50.092 | 50.09 | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.909( 0.000) | 105 | 1944346 | 53.121 | 53.12 | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | 13.037( 0.000) | 105 | 2366734 | 53.195 | 53.19 | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140(-0.000) | 146 | 1104561 | 51.551 | 51.55 | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | 13.140(-0.000) | 119 | 2075279 | 52.498 | 52.50 | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213( 0.000) | 146 | 1128068 | 51.149 | 51.15 | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | 13.468( 0.000) | 146 | 1036490 | 50.361 | 50.36 | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | 13.432( 0.000) | 92 | 1078689 | 54.211 | 54.21 | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016( 0.000) | 75 | 191041 | 57.480 | 57.48 | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570( 0.000) | 180 | 631106 | 45.806 | 45.81 | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | 14.649( 0.000) | 225 | 292188 | 43.154 | 43.15 | | | 2 | 5 |
| 148) Naphthalene | (4) | 14.752( 0.000) | 128 | 2196167 | 49.806 | 49.81 | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898( 0.000) | 180 | 568667 | 45.394 | 45.39 | | | 1 | 5 |

**M = Compound was manually integrated.**

Total number of targets = 68

Digitally signed by Linda C. Pape on 07/27/2017 at 13:45. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

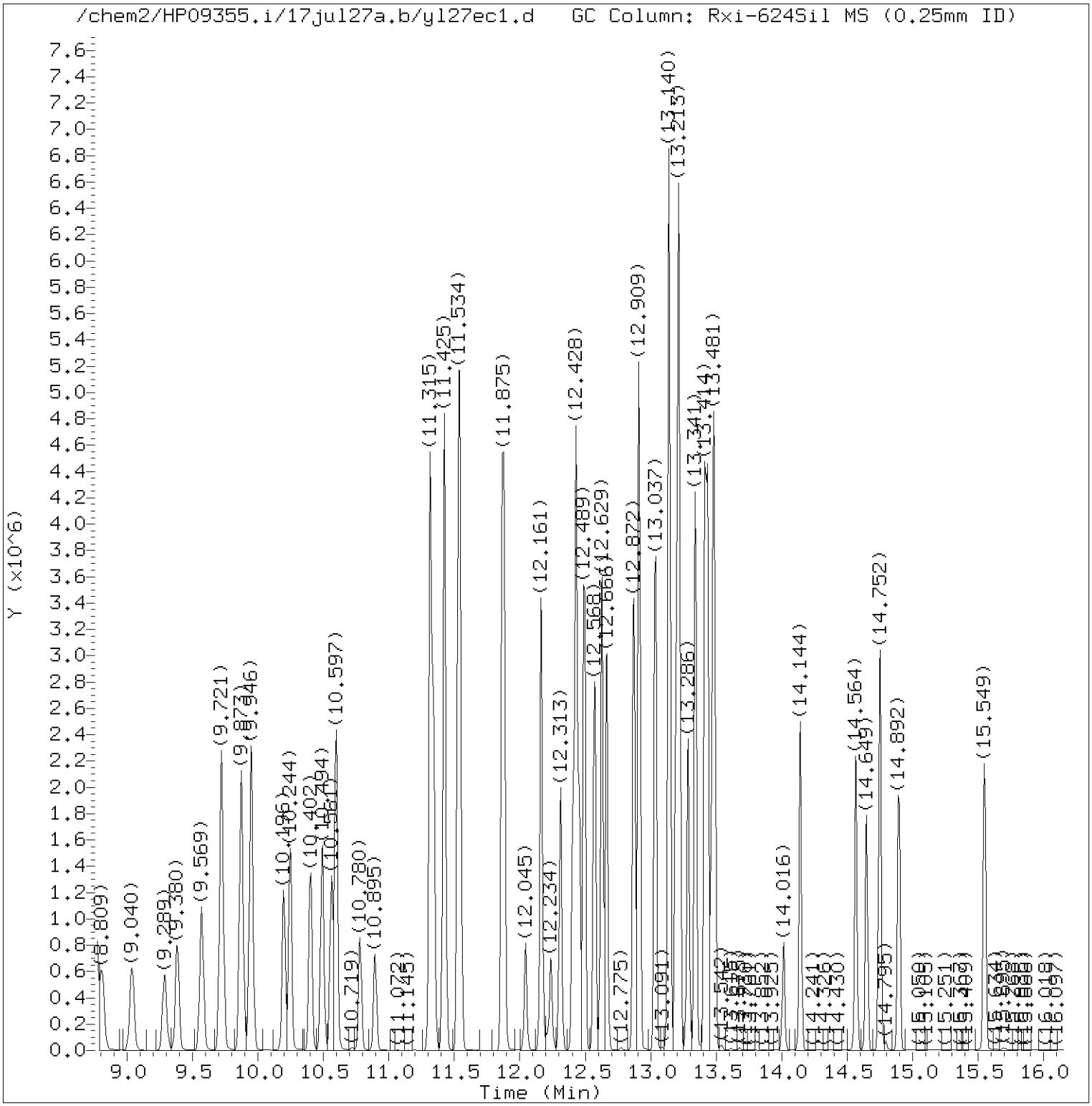
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:26 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 13:10 lcp00895

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Linda C. Pape
on 07/27/2017 at 13:45.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:26 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 13:10 lcp00895

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Linda C. Pape
on 07/27/2017 at 13:45.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:26 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 13:10 lcp00895

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.074 | 85 | 408379 | 39.015 |
| 4) Chloromethane | (2) | 2.226 | 50 | 458848 | 40.708 |
| 6) Vinyl Chloride | (2) | 2.372 | 62 | 445538 | 42.046 |
| 8) Bromomethane | (2) | 2.707 | 94 | 303892 | 40.447 |
| 9) Chloroethane | (2) | 2.816 | 64 | 271209 | 44.252 |
| 12) Trichlorofluoromethane | (2) | 3.139 | 101 | 594609 | 47.714 |
| 16) Acrolein | (1) | 3.565 | 56 | 1594645 | 585.494 |
| 17) 1,1-Dichloroethene | (2) | 3.717 | 96 | 331714 | 52.721 |
| 18) Acetone | (1) | 3.729 | 58 | 181125 | 139.876 |
| 23) Carbon Disulfide | (2) | 4.039 | 76 | 1168200 | 59.002 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.380 | 65 | 447010 | 250.000 |
| 28) Methylene Chloride | (2) | 4.404 | 84 | 410907 | 51.618 |
| 31) Acrylonitrile | (2) | 4.733 | 53 | 317703 | 54.194 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.806 | 73 | 1300350 | 49.668 |
| 32) trans-1,2-Dichloroethene | (2) | 4.836 | 96 | 400113 | 52.579 |
| 36) 1,1-Dichloroethane | (2) | 5.481 | 63 | 744540 | 54.175 |
| 44) 2-Butanone | (2) | 6.247 | 43 | 969447 | 106.449 |
| 42) cis-1,2-Dichloroethene | (2) | 6.296 | 96 | 455907 | 52.072 |
| 45) 2,2-Dichloropropane | (2) | 6.314 | 77 | 537931 | 49.849 |
| 49) Bromochloromethane | (2) | 6.637 | 128 | 234750 | 50.786 |
| 51) Chloroform | (2) | 6.777 | 83 | 711836 | 51.422 |
| 52)$Dibromofluoromethane | (2) | 6.996 | 113 | 381224 | 49.035 |
| 53) 1,1,1-Trichloroethane | (2) | 7.008 | 97 | 583568 | 50.358 |
| 55) 1,1-Dichloropropene | (2) | 7.221 | 75 | 602404 | 53.796 |
| 56) Carbon Tetrachloride | (2) | 7.227 | 117 | 510830 | 52.930 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.452 | 102 | 101704 | 49.892 |
| 60) Benzene | (2) | 7.482 | 78 | 1752004 | 52.579 |
| 61) 1,2-Dichloroethane | (2) | 7.555 | 62 | 625041 | 51.263 |
| 66)*Fluorobenzene | (2) | 7.884 | 96 | 1667075 | 50.000 |
| 71) Trichloroethene | (2) | 8.364 | 95 | 467675 | 54.131 |
| 73) 1,2-Dichloropropane | (2) | 8.693 | 63 | 481095 | 54.915 |
| 74) Dibromomethane | (2) | 8.809 | 93 | 307898 | 53.716 |
| 78) Bromodichloromethane | (2) | 9.040 | 83 | 561897 | 56.835 |
| 81) cis-1,3-Dichloropropene | (2) | 9.569 | 75 | 763426 | 59.071 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 1804914 | 111.524 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1711978 | 50.972 |
| 88) Toluene | (3) | 9.946 | 92 | 1154949 | 52.229 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 721450 | 59.088 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/27/2017 at 13:45.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:26 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 13:10 lcp00895

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 471132 | 54.236 |
| 93) Tetrachloroethene | (3) | 10.494 | 166 | 505922 | 51.996 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 813291 | 55.416 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1529562 | 115.595 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 476958 | 58.455 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 515987 | 55.038 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1300005 | 50.000 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 1346285 | 53.041 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 2239289 | 52.642 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 421256 | 53.786 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 1805305 | 106.587 |
| 108) Xylene (Total) | (3) | | 106 | 2661802 | 158.500 |
| 107) o-Xylene | (3) | 11.863 | 106 | 856497 | 51.912 |
| 109) Styrene | (3) | 11.881 | 104 | 1501400 | 53.017 |
| 110) Bromoform | (3) | 12.045 | 173 | 349973 | 55.087 |
| 111) Isopropylbenzene | (3) | 12.161 | 105 | 2125103 | 49.359 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 642664 | 51.019 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.404 | 83 | 765079 | 55.923 |
| 115) Bromobenzene | (4) | 12.428 | 156 | 574971 | 51.196 |
| 117) 1,2,3-Trichloropropane | (4) | 12.453 | 110 | 249798 | 53.729 |
| 119) n-Propylbenzene | (4) | 12.489 | 91 | 2603322 | 53.633 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 528016 | 52.864 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 1838438 | 51.941 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 577195 | 54.443 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 379079M | 50.092 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.909 | 105 | 1944346 | 53.121 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 2366734 | 53.195 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 1104561 | 51.551 |
| 130) p-Isopropyltoluene | (4) | 13.140 | 119 | 2075279 | 52.498 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 678324 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 1128068 | 51.149 |
| 139) n-Butylbenzene | (4) | 13.432 | 92 | 1078689 | 54.211 |
| 138) 1,2-Dichlorobenzene | (4) | 13.469 | 146 | 1036490 | 50.361 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 191041 | 57.480 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 631106 | 45.806 |
| 147) Hexachlorobutadiene | (4) | 14.649 | 225 | 292188 | 43.154 |
| 148) Naphthalene | (4) | 14.752 | 128 | 2196167 | 49.806 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 568667 | 45.394 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/27/2017 at 13:45.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:26 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 13:10 lcp00895

Sample Name: SECC050 Lab Sample ID: SECC050

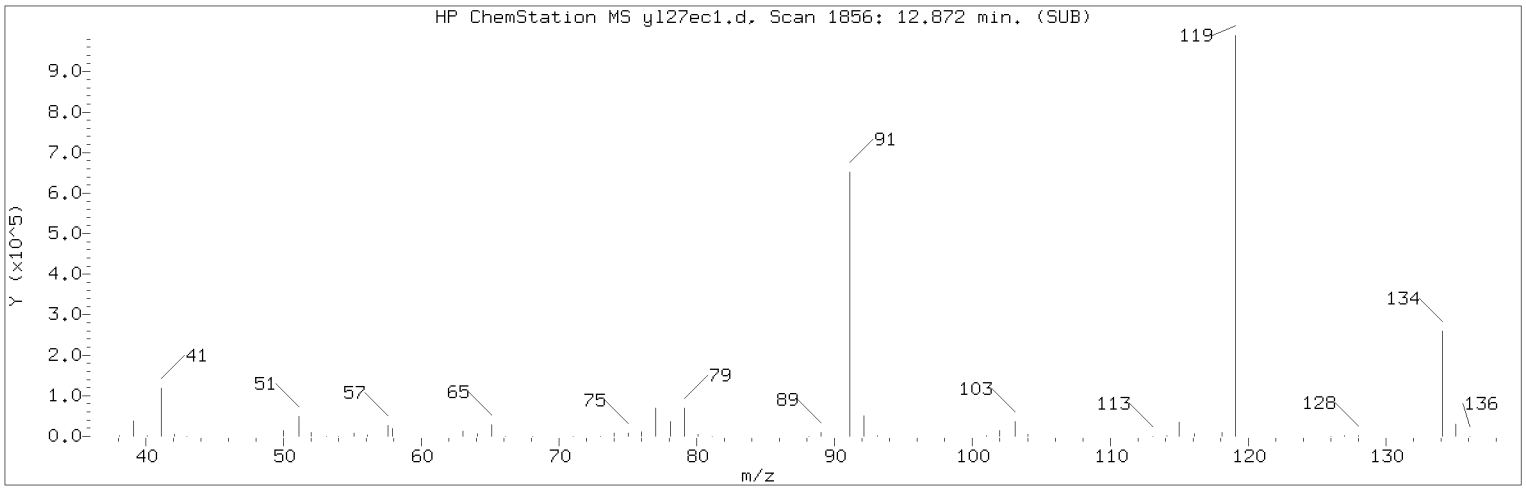
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

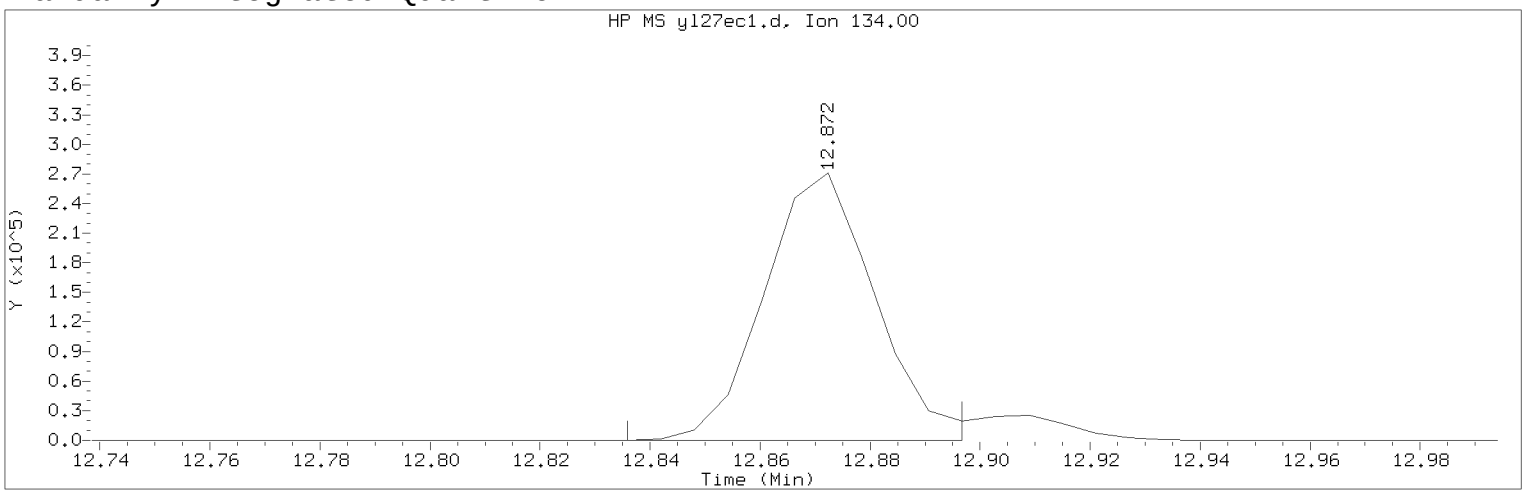


Digitally signed by Linda C. Pape
on 07/27/2017 at 13:45.
Target 3.5 esignature user ID: lcp00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:26 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 13:10 lcp00895

Sample Name: SECC050 Lab Sample ID: SECC050

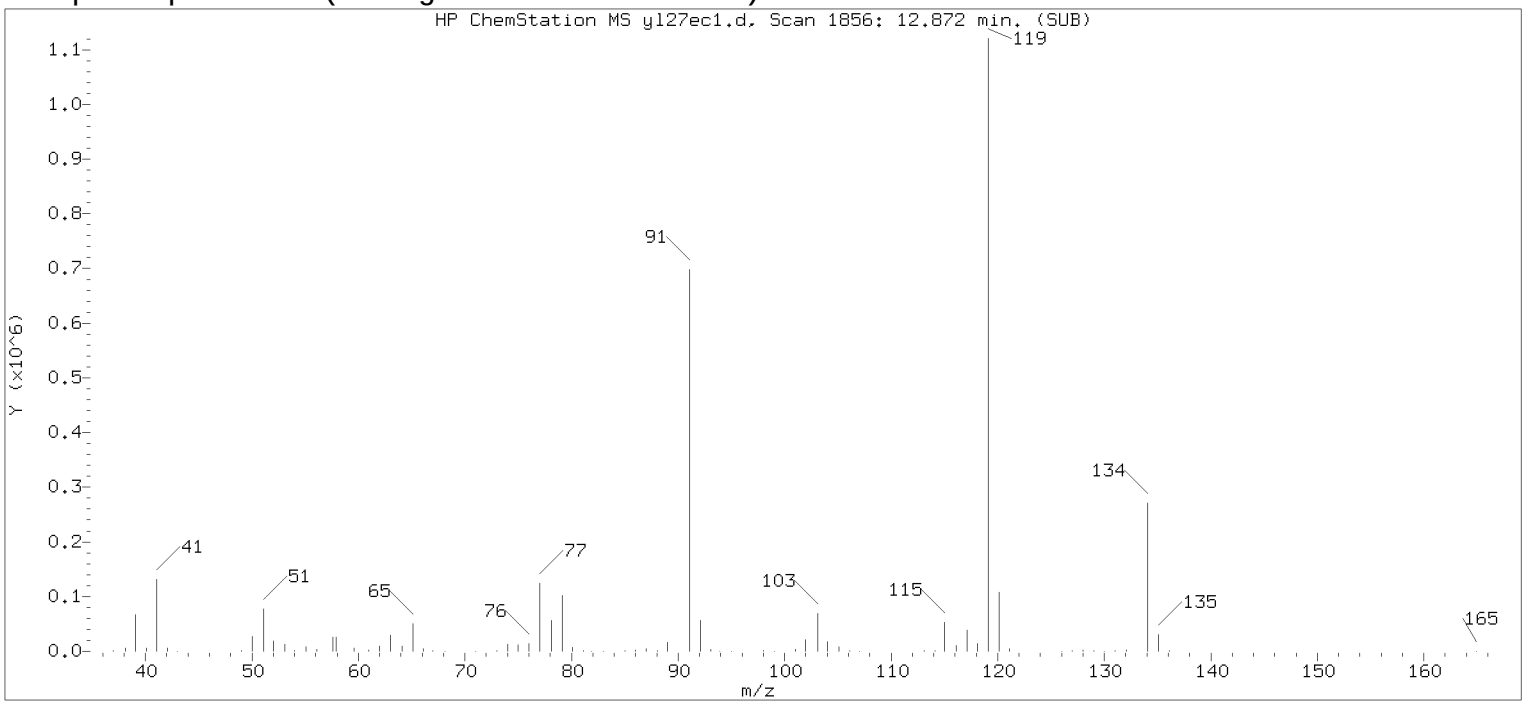
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 379079M
On-Column Amount (ng) : 50.0918
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

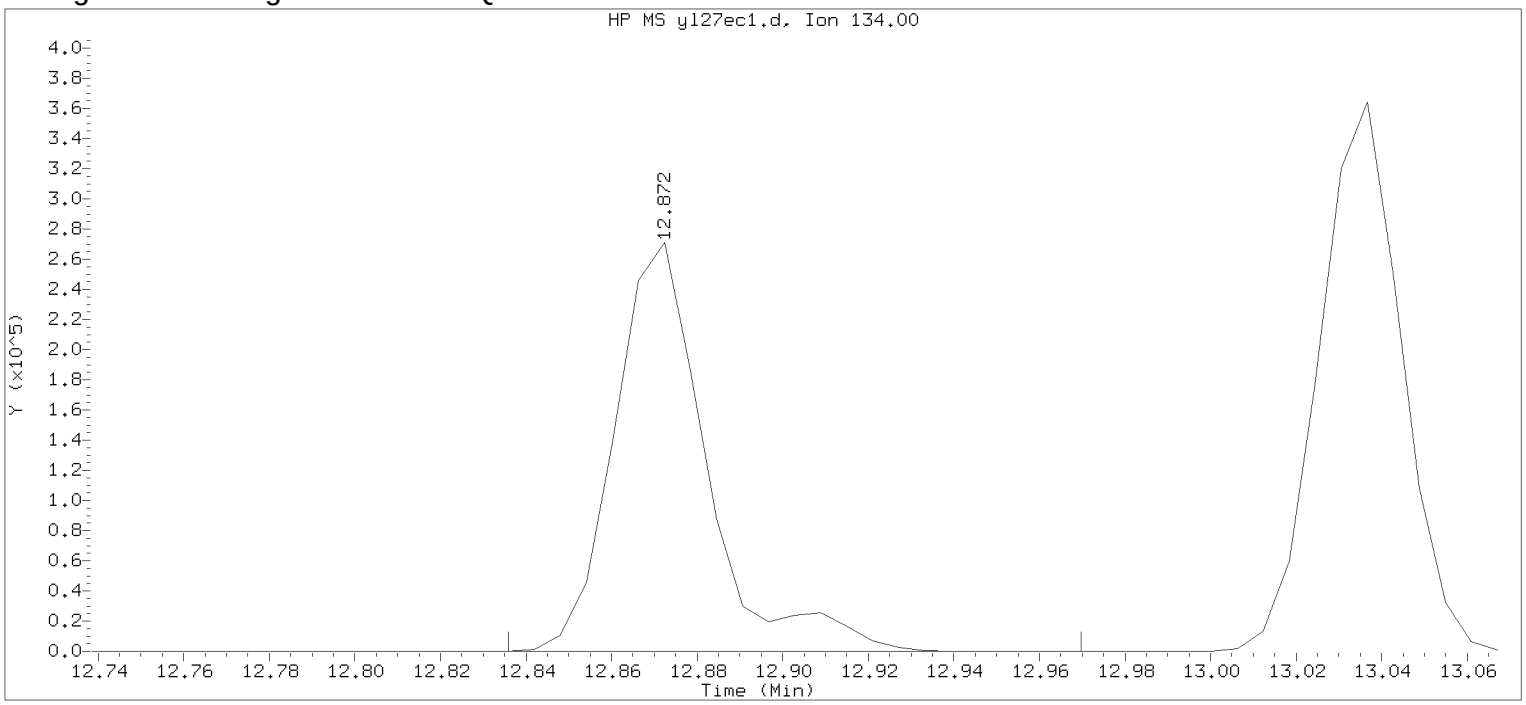
Analyst responsible for change: Digitally signed by Linda C. Pape
on 07/27/2017 at 13:45.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27ec1.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 12:26 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 12:41 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 406938
On-column Amount (ng) : 53.7731
Integration start scan : 1849 Integration stop scan: 1871
Y at integration start : 0 Y at integration end: 0

Digitally signed by Linda C. Pape on 07/27/2017 at 13:45.
Target 3.5 esignature userKD38 LCP00895

# Raw QC Data

# Volatiles by GC/MS

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21b10.d Injection date and time: **21-JUL-2017 20:40**
Data file Sample Info. Line: VBLKY06;VBLKY06;1;3;;;DODWW;;; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.319( 0.000) | 450 | 65 | 177313 ( 6) | 250.00 | |
| 66) Fluorobenzene | 7.853( 0.006) | 1031 | 96 | 1196141 ( -4) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 885762 ( -7) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.189( 0.000) | 1908 | 152 | 427112 ( -12) | 50.00 | |

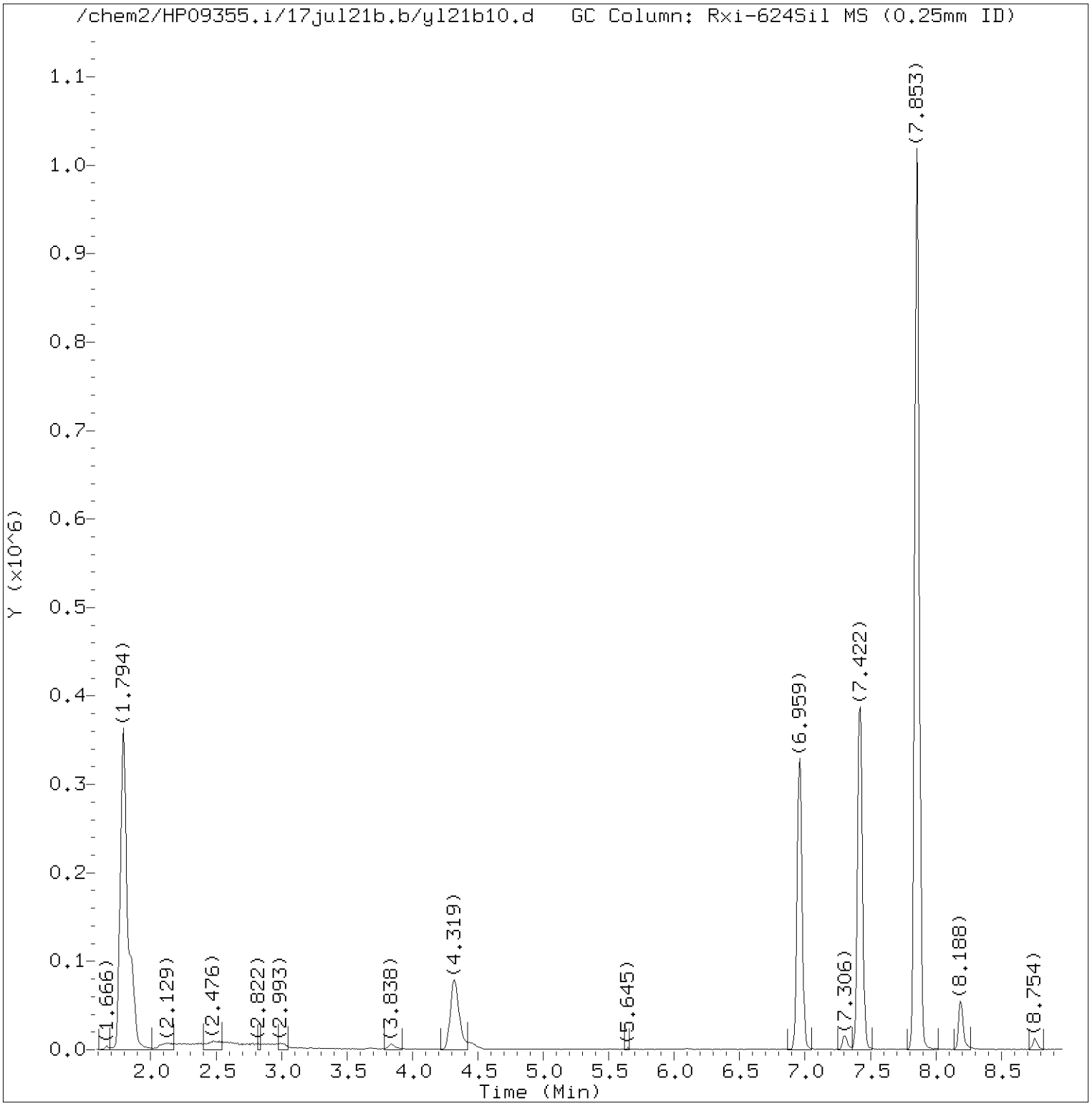
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.959(-0.001) | 113 | 285395 | 51.162 | 102% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.422(-0.001) | 102 | 73704 | 50.392 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.861( 0.000) | 98 | 1193646 | 52.160 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 410049 | 47.777 | 96% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Patrick T. Herres on 07/21/2017 at 23:04. Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

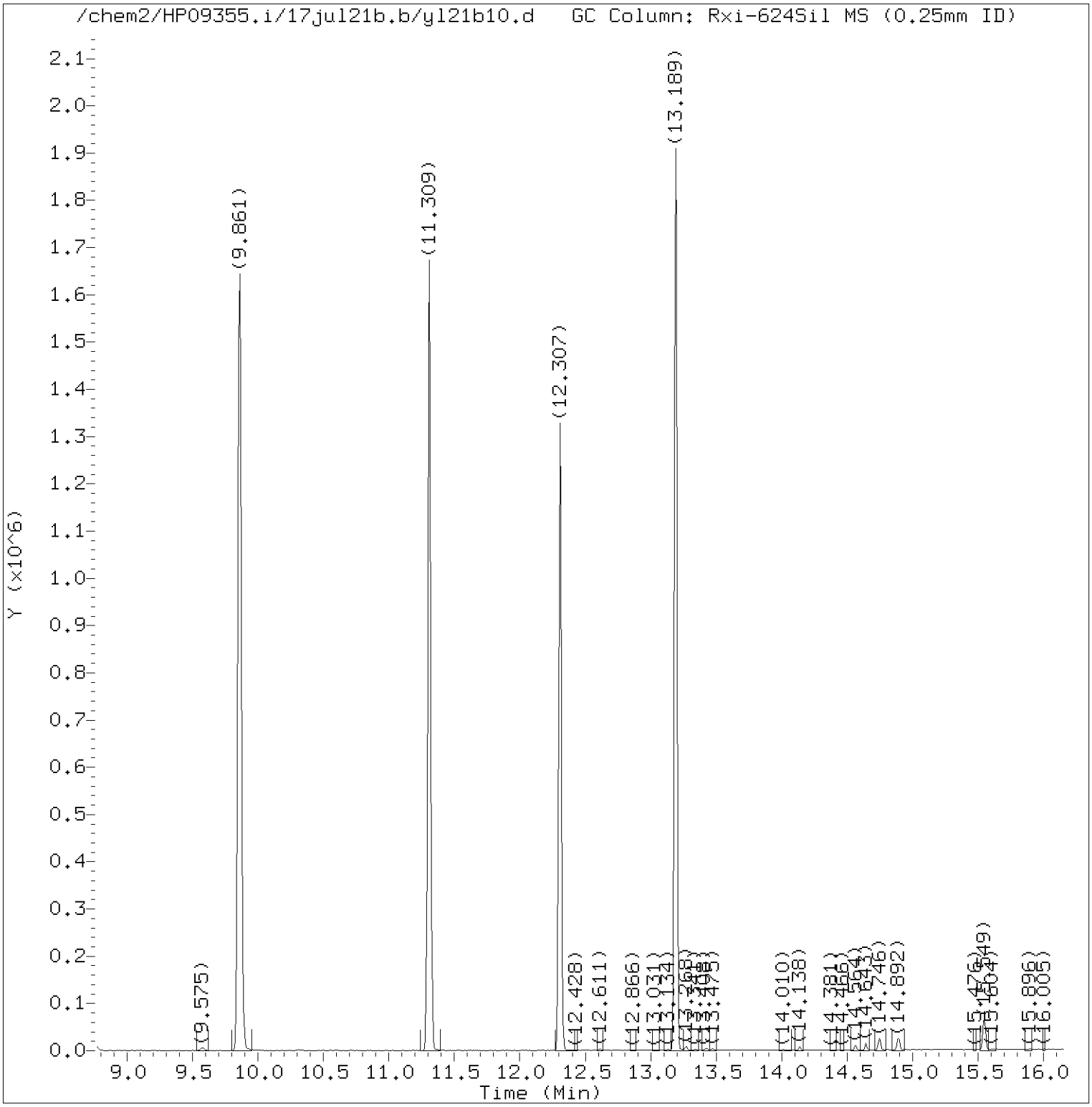
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21b10.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:40 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: VBLKY06 Lab Sample ID: VBLKY06

Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:04.
Target 3.5 esignature user ID: pth10165




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21b10.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:40 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: VBLKY06 Lab Sample ID: VBLKY06

Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:04.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21b10.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:40 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: VBLKY06 Lab Sample ID: VBLKY06

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 177313 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 113 | 285395 | 51.162 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 102 | 73704 | 50.392 |
| 66)*Fluorobenzene | (2) | 7.853 | 96 | 1196141 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.861 | 98 | 1193646 | 52.160 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 885762 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 410049 | 47.777 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 427112 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:04.
Target 3.5 esignature user ID: pth10165

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

VBLKY18

Data file: /chem2/HP09355.i/17jul27a.b/yl27b01.d  Injection date and time: **27-JUL-2017 09:21**
Data file Sample Info. Line: VBLKY18;VBLKY18;1;3;;;DODWW;;;  Instrument ID: **HP09355.i**  Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 10:16 lcp00895

Blank Data file reference: **/chem2/HP09355.i/17jul27a.b/yl27b01.d**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m  Sublist used: **18281**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code:  Matrix: WATER  Level: Low

On-Column Amount units: ng  In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo)  VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml  Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.392(-0.031) | 462 | 65 | 430201 ( 15) | 250.00 | |
| 66) Fluorobenzene | 7.884(-0.006) | 1036 | 96 | 1706098 ( 26) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315( 0.000) | 1600 | 117 | 1304872 ( 21) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195( 0.000) | 1909 | 152 | 629119 ( 5) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.996( 0.000) | 113 | 396864 | 49.879 | 100% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.452( 0.000) | 102 | 104534 | 50.108 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.873( 0.000) | 98 | 1723165 | 51.114 | 102% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.001) | 95 | 610847 | 48.313 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 4) Chloromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 8) Bromomethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 9) Chloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 16) Acrolein | (1) | | | Not Detected | | | | | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 18) Acetone | (1) | | | Not Detected | | | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | | | Not Detected | | | | | 1 | 5 |
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 31) Acrylonitrile | (2) | | | Not Detected | | | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 37) Vinyl Acetate | (2) | | | Not Detected | | | | | 2 | 10 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | | | Not Detected | | | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | | | Not Detected | | | | | 1 | 5 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | | | Not Detected | | | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | | | Not Detected | | | | | 0.5 | 1 |

Digitally signed by Linda C. Pape on 07/27/2017 at 10:16. Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul27a.b/yl27b01.d Injection date and time: **27-JUL-2017 09:21**
Data file Sample Info. Line: VBLKY18;VBLKY18;1;3;;;DODWW;;; Instrument ID: **HP09355.i** Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 10:16 lcp00895

Blank Data file reference: **/chem2/HP09355.i/17jul27a.b/yl27b01.d**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: **18281**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

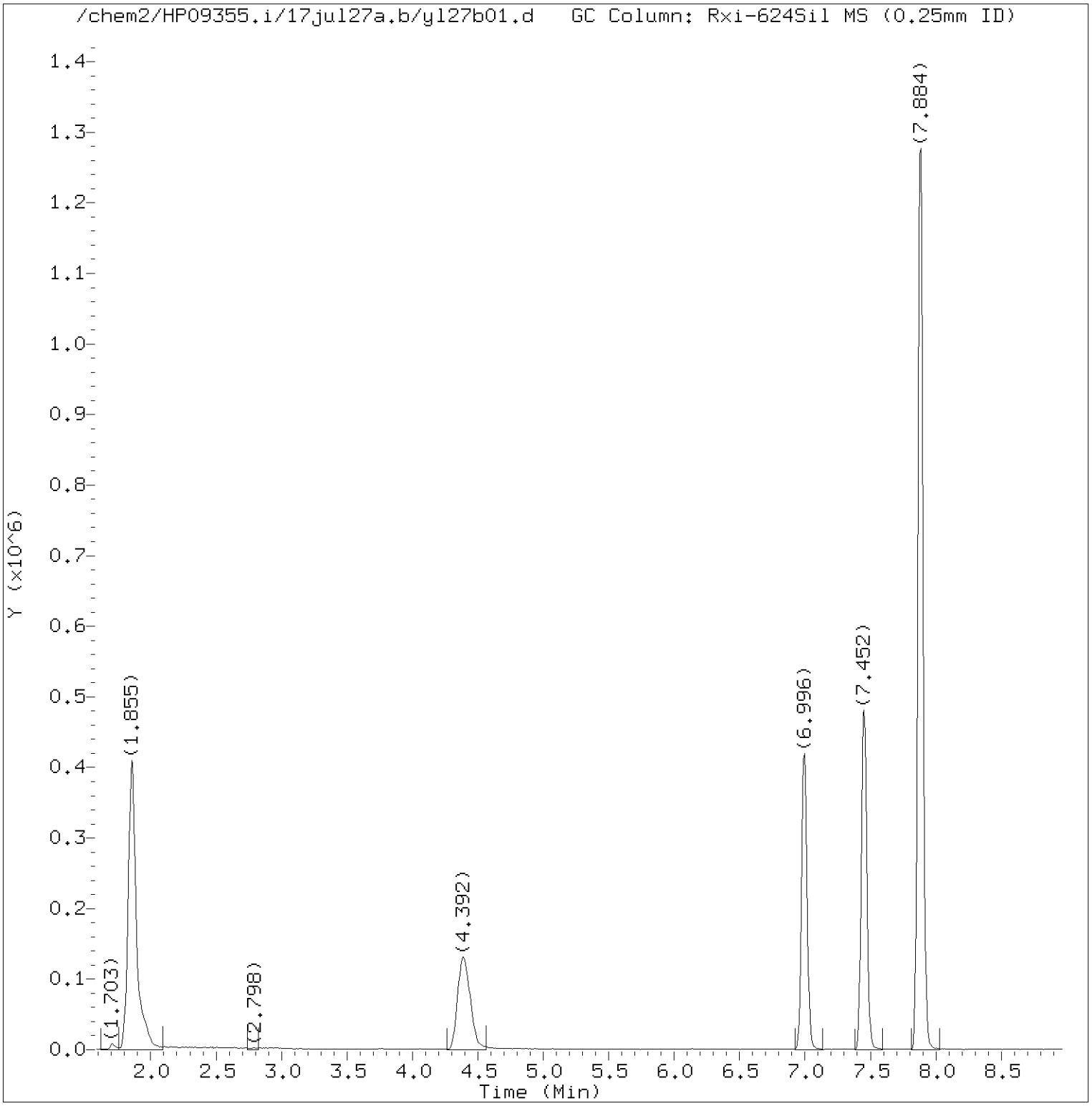
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 82) 4-Methyl-2-pentanone | (2) | | | | Not Detected | | | | | 3 | 10 |
| 88) Toluene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | | | | Not Detected | | | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 109) Styrene | (3) | | | | Not Detected | | | | | 1 | 5 |
| 110) Bromoform | (3) | | | | Not Detected | | | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | | | | Not Detected | | | | | 1 | 5 |
| 115) Bromobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | | Not Detected | | | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | | | | Not Detected | | | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | | | | Not Detected | | | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | | | | Not Detected | | | | | 2 | 5 |
| 148) Naphthalene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |

Total number of targets = 69

Digitally signed by Linda C. Pape on 07/27/2017 at 10:16. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

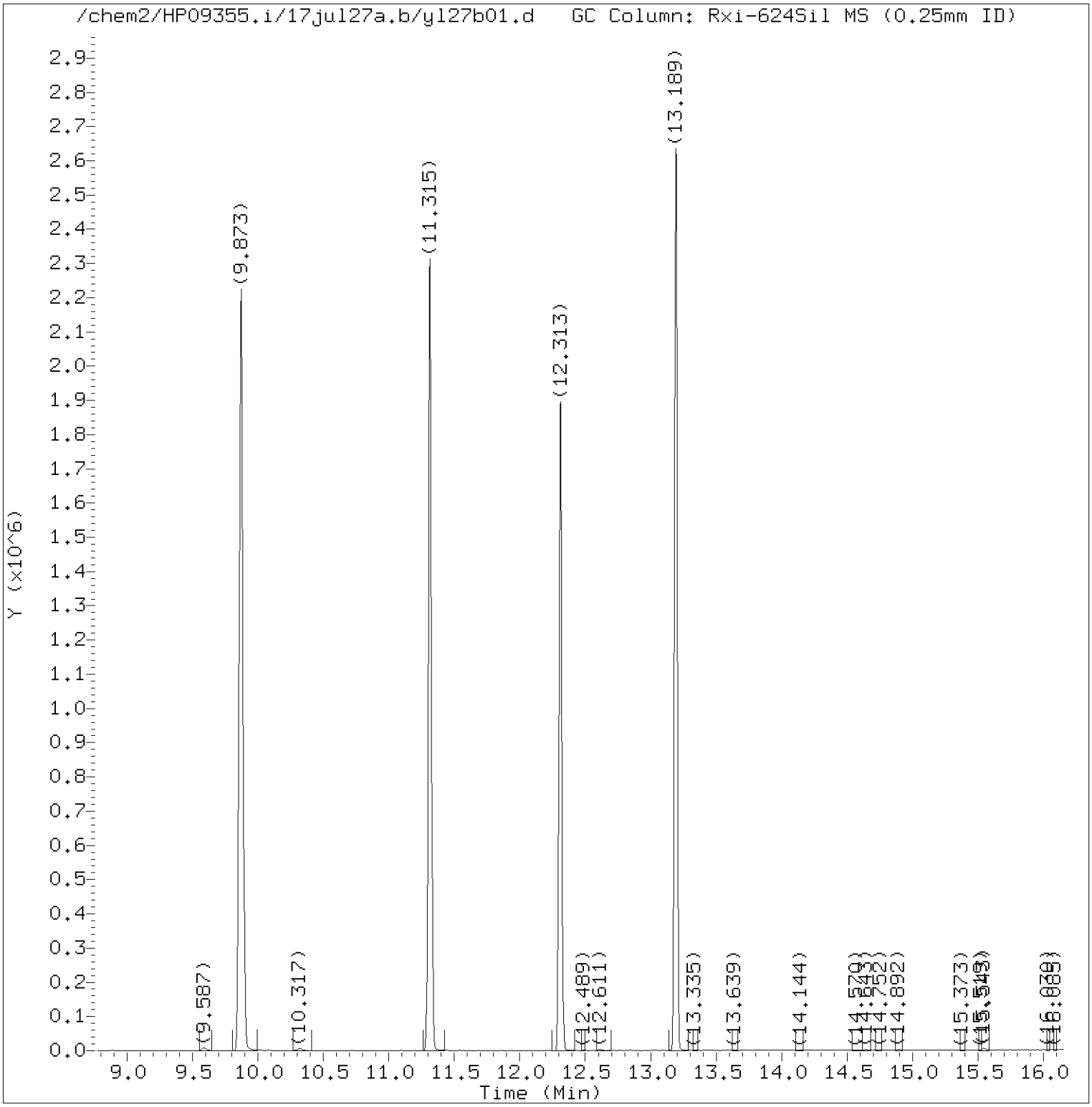
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27b01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:21 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:16 lcp00895

Sample Name: VBLKY18 Lab Sample ID: VBLKY18

Digitally signed by Linda C. Pape
on 07/27/2017 at 10:16.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27b01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:21 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:16 lcp00895

Sample Name: VBLKY18 Lab Sample ID: VBLKY18

Digitally signed by Linda C. Pape
on 07/27/2017 at 10:16.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27b01.d  Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:21  Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m  Sublist used: 18281
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:16 lcp00895

Sample Name: VBLKY18  Lab Sample ID: VBLKY18

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.392 | 65 | 430201 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.996 | 113 | 396864 | 49.879 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.452 | 102 | 104534 | 50.108 |
| 66)*Fluorobenzene | (2) | 7.884 | 96 | 1706098 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1723165 | 51.114 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1304872 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 610847 | 48.313 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 629119 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/27/2017 at 10:16.
Target 3.5 esignature user ID: lcp00895

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles



Data file: /chem2/HP09355.i/17jul21b.b/yl21s74.d Injection date and time: **22-JUL-2017 01:51**
Data file Sample Info. Line: 18801MS;9109772MS;1;3;MS;KR188;DODWW;;yl21b10 Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 02:06 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.331(-0.012) | 452 | 65 | 171402 ( 3) | 250.00 | |
| 66) Fluorobenzene | 7.860( 0.000) | 1032 | 96 | 1385841 ( 12) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1065334 ( 12) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.189( 0.000) | 1908 | 152 | 538380 ( 10) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.965(-0.001) | 113 | 320554 | 49.598 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428(-0.001) | 102 | 82092 | 48.444 | 97% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.861( 0.000) | 98 | 1438457 | 52.263 | 105% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 544997 | 52.796 | 106% | | 85 - 114 |

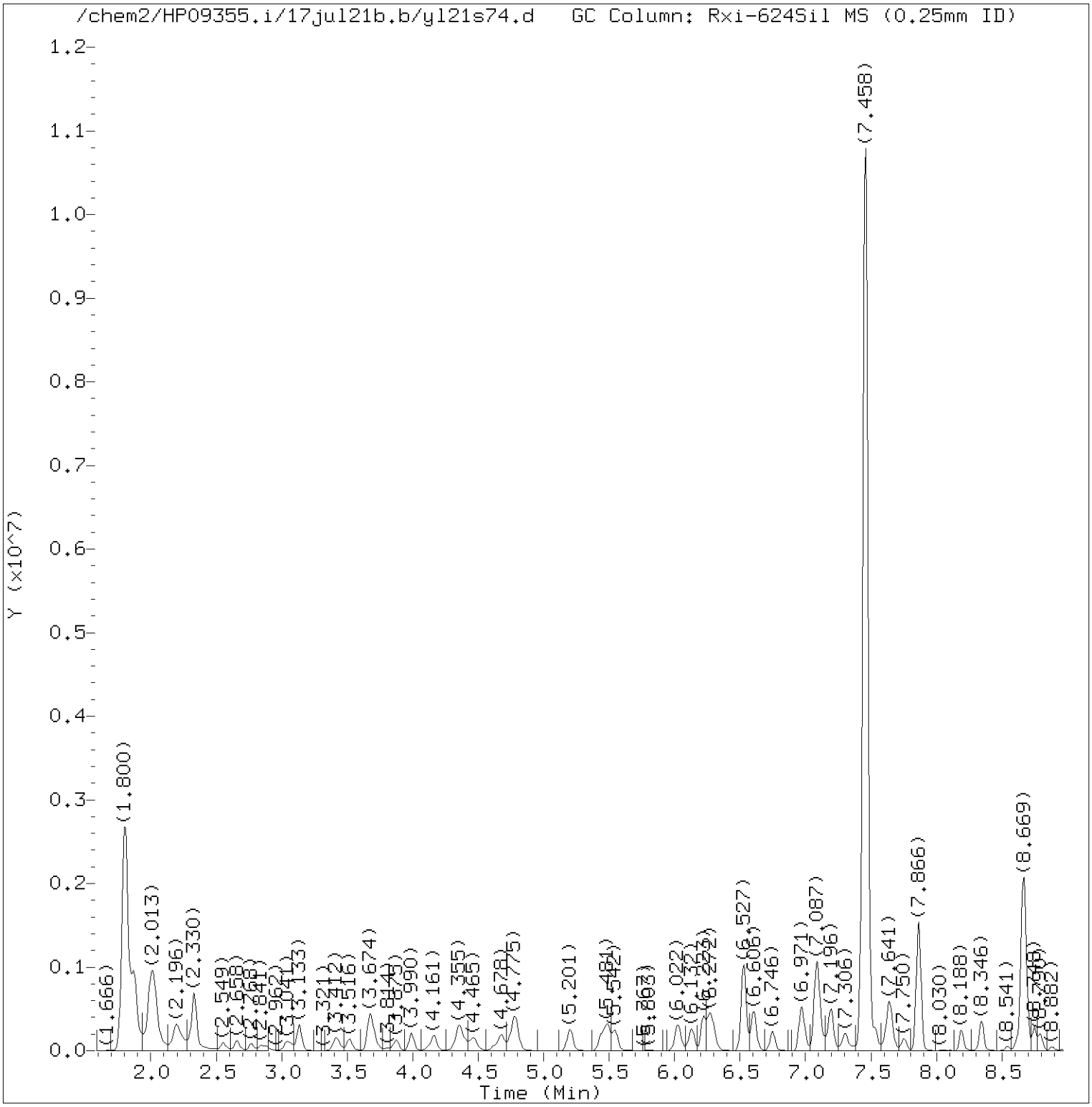
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.458( 0.000) | 78 | 13380635 | 483.057 | 483.06 | | E | 0.5 | 1 |
| 88) Toluene | (3) | 9.940( 0.000) | 92 | 478478 | 26.404 | 26.40 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.418( 0.000) | 91 | 2649619 | 76.009 | 76.01 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.534( 0.000) | 106 | 780787 | 56.253 | 56.25 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.862( 0.000) | 106 | 1644943 | 121.662 | 121.66 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 2425730 | 177.915 | 177.91 | | | 0.5 | 1 |

**E = Compound concentration above calibration range.**

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:56. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

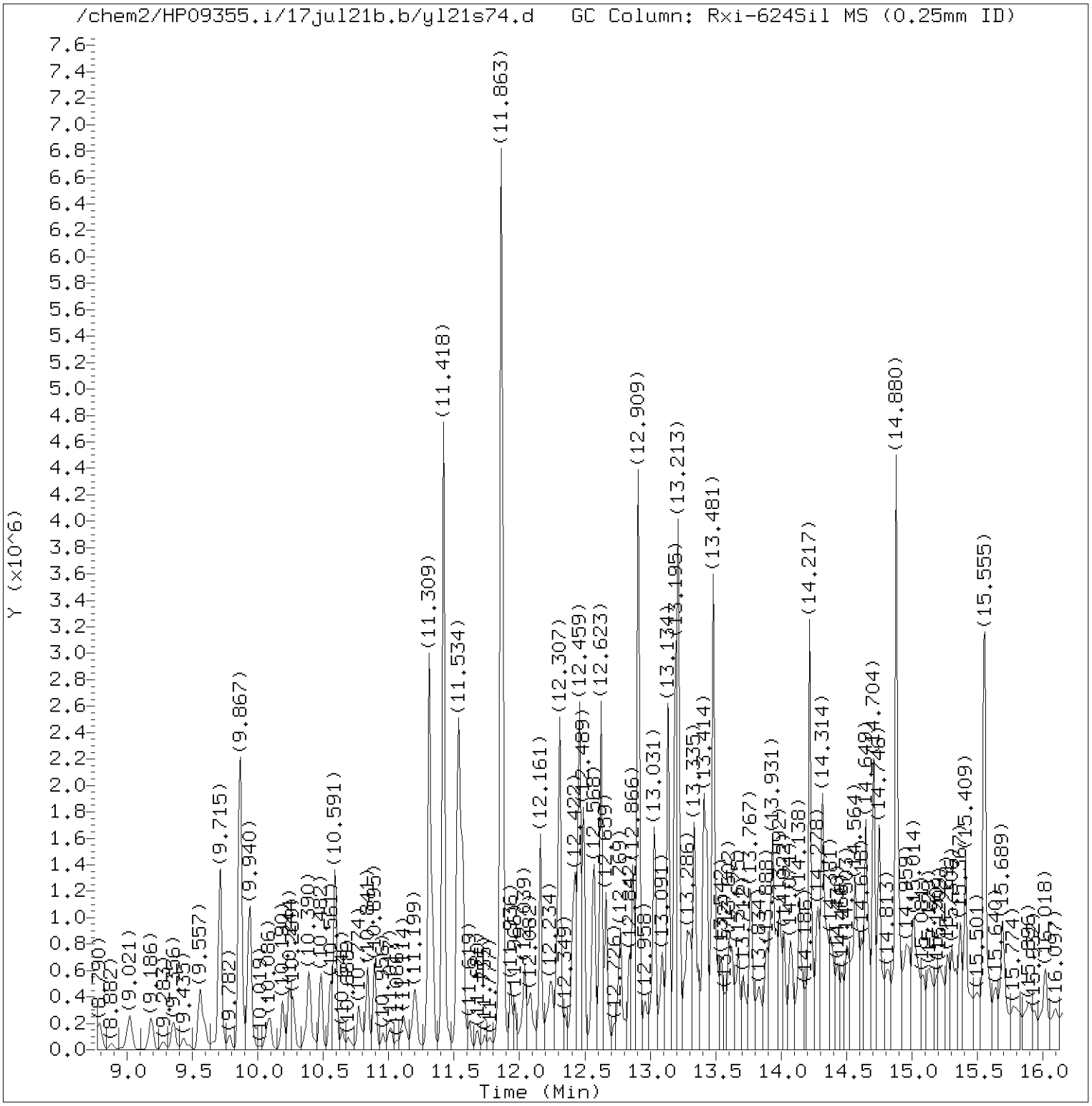
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s74.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:51 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:06 Automation

Sample Name: 18801MS Lab Sample ID: 9109772MS

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:56.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s74.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:51 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:06 Automation

Sample Name: 18801MS Lab Sample ID: 9109772MS

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:56.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s74.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:51 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 02:06 Automation

Sample Name: 18801MS Lab Sample ID: 9109772MS

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.331 | 65 | 171402 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 320554 | 49.598 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 82092 | 48.444 |
| 60) Benzene | (2) | 7.458 | 78 | 13380635 | 483.057 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1385841 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.861 | 98 | 1438457 | 52.263 |
| 88) Toluene | (3) | 9.940 | 92 | 478478 | 26.404 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1065334 | 50.000 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 2649619 | 76.009 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 780787 | 56.253 |
| 108) Xylene (Total) | (3) | | 106 | 2425730 | 177.915 |
| 107) o-Xylene | (3) | 11.863 | 106 | 1644943 | 121.662 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 544997 | 52.796 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 538380 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/24/2017 at 10:56.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s75.d Injection date and time: **22-JUL-2017 02:13**
Data file Sample Info. Line: 18801MSD;9109773MSD;1;3;MSD;;DODWW;;yl21b10 Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 26-Jul-2017 06:47 lcp00895

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.337(-0.018) | 453 | 65 | 196183 ( 18) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1600966 ( 29) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1216078 ( 28) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 609375 ( 25) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.971(-0.001) | 113 | 365565 | 48.962 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428( 0.000) | 102 | 93319 | 47.669 | 95% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867(-0.001) | 98 | 1638433 | 52.149 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 622499 | 52.829 | 106% | | 85 - 114 |

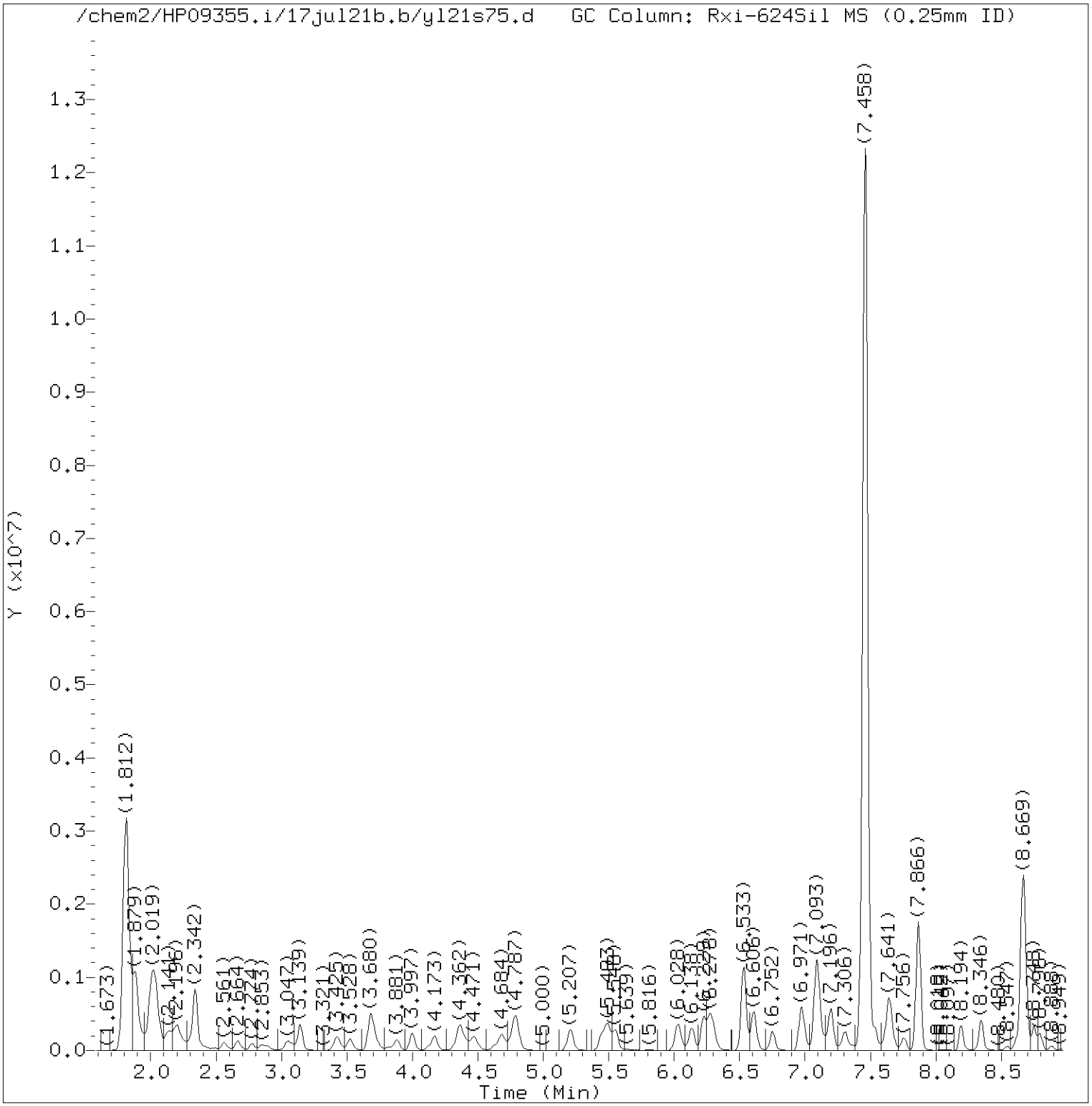
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.458( 0.000) | 78 | 15430120 | 482.195 | 482.19 | | E | 0.5 | 1 |
| 88) Toluene | (3) | 9.940( 0.000) | 92 | 549259 | 26.553 | 26.55 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.418( 0.000) | 91 | 3074849 | 77.274 | 77.27 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.534( 0.000) | 106 | 897506 | 56.647 | 56.65 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.862( 0.000) | 106 | 1907263 | 123.577 | 123.58 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 2804769 | 180.224 | 180.22 | | | 0.5 | 1 |

**E = Compound concentration above calibration range.**

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/26/2017 at 06:48. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/26/2017 at 09:55. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

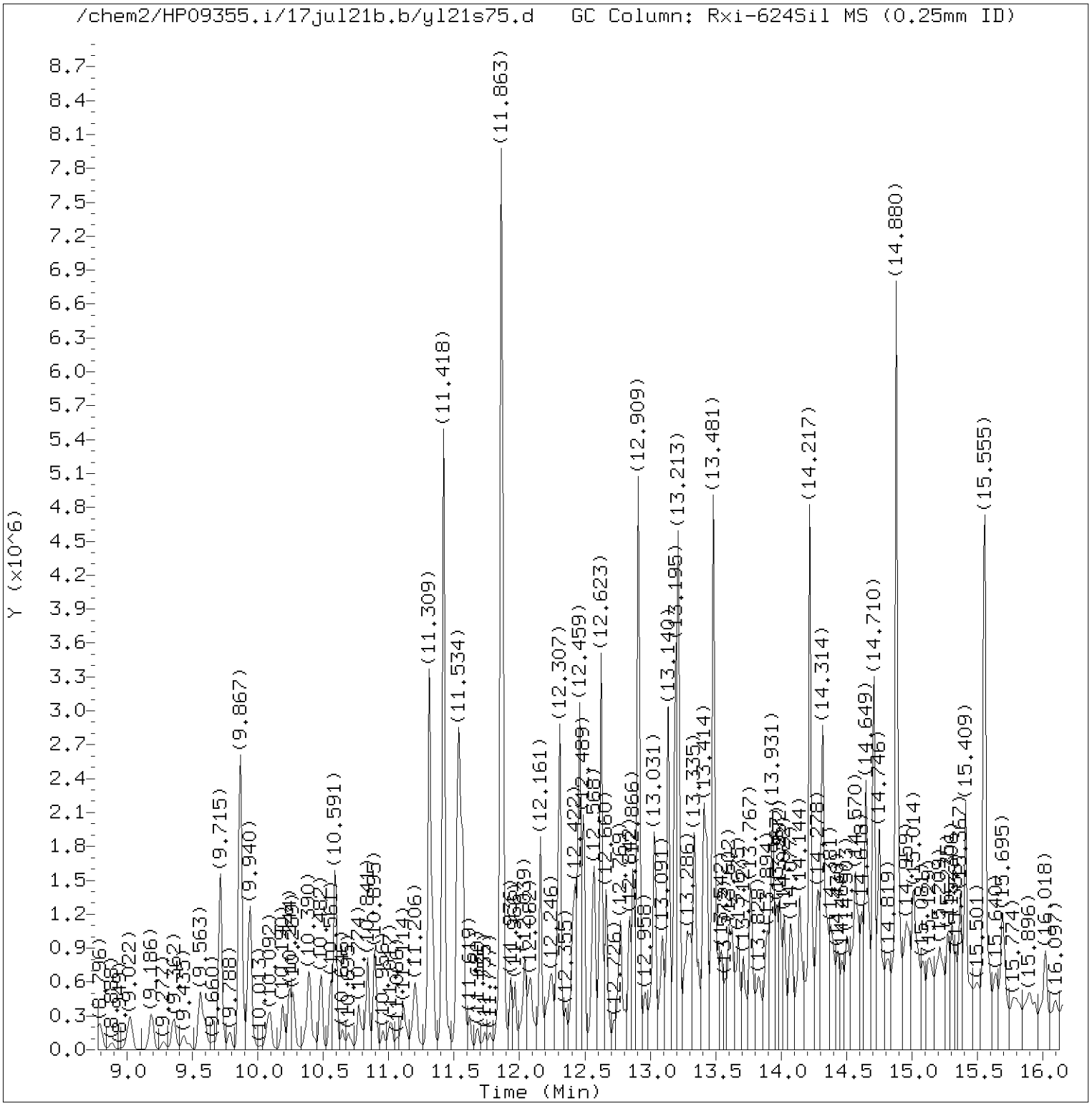
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s75.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:13 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 26-Jul-2017 06:47 lcp00895

Sample Name: 18801MSD Lab Sample ID: 9109773MSD

Digitally signed by Linda C. Pape
on 07/26/2017 at 06:48.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s75.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:13 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 26-Jul-2017 06:47 lcp00895

Sample Name: 18801MSD Lab Sample ID: 9109773MSD

Digitally signed by Linda C. Pape
on 07/26/2017 at 06:48.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s75.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 02:13 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 26-Jul-2017 06:47 lcp00895

Sample Name: 18801MSD Lab Sample ID: 9109773MSD

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.337 | 65 | 196183 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 365565 | 48.962 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 93319 | 47.669 |
| 60) Benzene | (2) | 7.458 | 78 | 15430120 | 482.195 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1600966 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1638433 | 52.149 |
| 88) Toluene | (3) | 9.940 | 92 | 549259 | 26.553 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1216078 | 50.000 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 3074849 | 77.274 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 897506 | 56.647 |
| 108) Xylene (Total) | (3) | | 106 | 2804769 | 180.224 |
| 107) o-Xylene | (3) | 11.863 | 106 | 1907263 | 123.577 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 622499 | 52.829 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 609375 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/26/2017 at 06:48.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s62.d Injection date and time: **21-JUL-2017 20:17**
Data file Sample Info. Line: LCSY06;LCSY06;1;3;LCS;;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.337(-0.018) | 453 | 65 | 194105 ( 16) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1357216 ( 9) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1026596 ( 8) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 521011 ( 7) | 50.00 | |

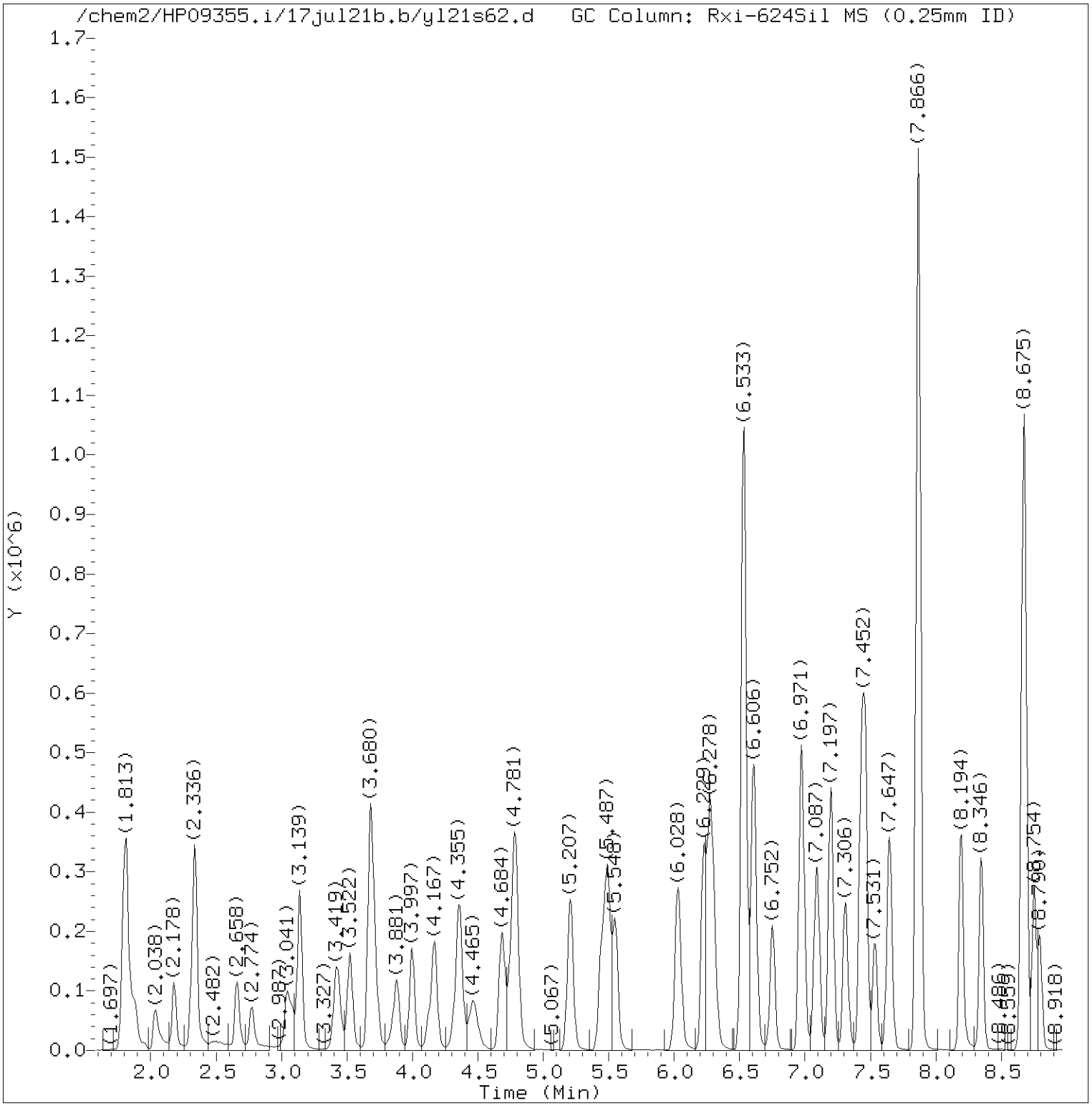
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.965( 0.000) | 113 | 313514 | 49.532 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428( 0.000) | 102 | 80172 | 48.308 | 97% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867(-0.001) | 98 | 1382735 | 52.134 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 510071 | 51.278 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.458( 0.000) | 78 | 571194 | 21.056 | 21.06 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.940( 0.000) | 92 | 363408 | 20.811 | 20.81 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.418( 0.000) | 91 | 699741 | 20.831 | 20.83 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.534( 0.000) | 106 | 555181 | 41.508 | 41.51 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.863( 0.000) | 106 | 248986 | 19.110 | 19.11 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 804167 | 60.618 | 60.62 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Patrick T. Herres on 07/21/2017 at 23:05. Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

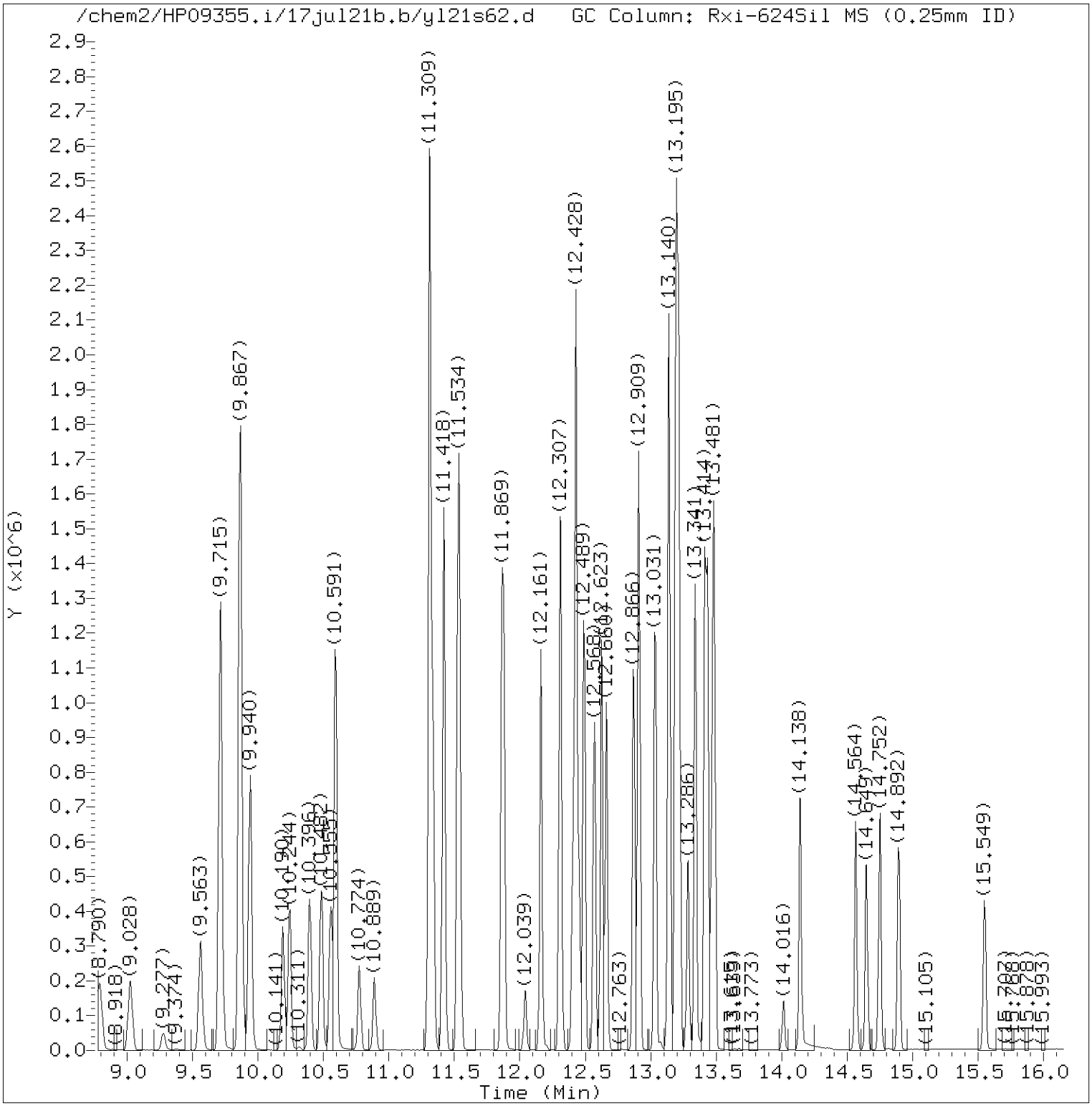
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s62.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:17 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: LCSY06 Lab Sample ID: LCSY06

Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:04.
Target 3.5 esignature user ID: pth10165




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s62.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:17 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: LCSY06 Lab Sample ID: LCSY06

Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:05.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s62.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:17 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: LCSY06 Lab Sample ID: LCSY06

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.337 | 65 | 194105 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 313514 | 49.532 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 80172 | 48.308 |
| 60) Benzene | (2) | 7.458 | 78 | 571194 | 21.056 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1357216 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1382735 | 52.134 |
| 88) Toluene | (3) | 9.940 | 92 | 363408 | 20.811 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1026596 | 50.000 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 699741 | 20.831 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 555181 | 41.508 |
| 108) Xylene (Total) | (3) | | 106 | 804167 | 60.618 |
| 107) o-Xylene | (3) | 11.863 | 106 | 248986 | 19.110 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 510071 | 51.278 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 521011 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:05.
Target 3.5 esignature user ID: pth10165

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul27a.b/yl27s01.d Injection date and time: **27-JUL-2017 09:50**
Data file Sample Info. Line: LCSY18;LCSY18;1;3;LCS;;DODWW;;yl27b01; Instrument ID: **HP09355.i** Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 10:17 lcp00895

Blank Data file reference: **/chem2/HP09355.i/17jul27a.b/yl27b01.d**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: **18281-SM**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.356( 0.006) | 456 | 65 | 407981 ( 9) | 250.00 | |
| 66) Fluorobenzene | 7.872( 0.006) | 1034 | 96 | 1419883 ( 5) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315( 0.000) | 1600 | 117 | 1096283 ( 2) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195( 0.000) | 1909 | 152 | 564928 ( -6) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.978( 0.001) | 113 | 326806 | 49.353 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.440( 0.000) | 102 | 85686 | 49.352 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.001) | 98 | 1454024 | 51.337 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 548676 | 51.652 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.050( 0.000) | 85 | 140365 | 15.744 | 15.74 | | | 0.5 | 1 |
| 4) Chloromethane | (2) | 2.190( 0.002) | 50 | 149974 | 15.622 | 15.62 | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | 2.330( 0.002) | 62 | 152453 | 16.892 | 16.89 | | | 0.5 | 1 |
| 8) Bromomethane | (2) | 2.670( 0.002) | 94 | 107895 | 16.861 | 16.86 | | | 0.5 | 1 |
| 9) Chloroethane | (2) | 2.786( 0.001) | 64 | 91935 | 17.612 | 17.61 | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | 3.102( 0.001) | 101 | 211250 | 19.903 | 19.90 | | | 0.5 | 1 |
| 16) Acrolein | (1) | 3.546( 0.000) | 56 | 382551 | 153.895 | 153.90 | | | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | 3.692( 0.001) | 96 | 123249 | 22.999 | 23.00 | | | 0.5 | 1 |
| 18) Acetone | (1) | 3.704( 0.000) | 58 | 229402 | 194.107 | 194.11 | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | 4.015( 0.001) | 76 | 399274 | 23.677 | 23.68 | | | 1 | 5 |
| 28) Methylene Chloride | (2) | 4.380( 0.001) | 84 | 147665 | 21.779 | 21.78 | | | 2 | 4 |
| 31) Acrylonitrile | (2) | 4.708( 0.001) | 53 | 541907 | 108.532 | 108.53 | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | 4.806( 0.001) | 96 | 143147 | 22.086 | 22.09 | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.787( 0.001) | 73 | 440927 | 19.773 | 19.77 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 5.457( 0.000) | 63 | 259857 | 22.200 | 22.20 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 6.284( 0.000) | 96 | 162103 | 21.738 | 21.74 | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | 6.229( 0.000) | 43 | 1276537 | 164.572 | 164.57 | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | 6.296( 0.000) | 77 | 196049 | 21.330 | 21.33 | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | 6.619( 0.000) | 128 | 79611 | 20.222 | 20.22 | | | 1 | 5 |
| 51) Chloroform | (2) | 6.765( 0.000) | 83 | 250816 | 21.273 | 21.27 | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | 6.996( 0.000) | 97 | 218476 | 22.135 | 22.14 | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | 7.209( 0.000) | 75 | 206976 | 21.701 | 21.70 | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | 7.209( 0.000) | 117 | 177809 | 21.631 | 21.63 | | | 0.5 | 1 |
| 60) Benzene | (2) | 7.470( 0.000) | 78 | 617209 | 21.748 | 21.75 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 7.543( 0.000) | 62 | 216267 | 20.825 | 20.83 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 8.352(-0.000) | 95 | 156651 | 21.288 | 21.29 | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | 8.687(-0.000) | 63 | 173225 | 23.215 | 23.22 | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | 8.803(-0.000) | 93 | 107621 | 22.044 | 22.04 | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | 9.034(-0.000) | 83 | 190014 | 22.566 | 22.57 | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563(-0.000) | 75 | 254724 | 23.141 | 23.14 | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | 9.715(-0.000) | 43 | 1576340 | 114.357 | 114.36 | | | 3 | 10 |

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# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul27a.b/yl27s01.d Injection date and time: **27-JUL-2017 09:50**
Data file Sample Info. Line: LCSY18;LCSY18;1;3;LCS;;DODWW;;yl27b01; Instrument ID: **HP09355.i** Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 10:17 lcp00895

Blank Data file reference: **/chem2/HP09355.i/17jul27a.b/yl27b01.d**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: **18281-SM**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 88) Toluene | (3) | 9.946(-0.000) | 92 | 402312 | 21.574 | 21.57 | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196(-0.000) | 75 | 239797 | 23.289 | 23.29 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396( 0.000) | 97 | 168180 | 22.959 | 22.96 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 10.488( 0.000) | 166 | 161523 | 19.685 | 19.69 | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | 10.561(-0.000) | 76 | 282856 | 22.855 | 22.85 | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | 10.597( 0.000) | 43 | 1320824 | 118.370 | 118.37 | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | 10.774( 0.000) | 129 | 159355 | 23.160 | 23.16 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.889( 0.000) | 107 | 174434 | 22.064 | 22.06 | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | 11.339( 0.000) | 112 | 469432 | 21.932 | 21.93 | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.418( 0.000) | 131 | 142717 | 21.608 | 21.61 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.425( 0.000) | 91 | 767585 | 21.398 | 21.40 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.534( 0.000) | 106 | 618992 | 43.337 | 43.34 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.863( 0.000) | 106 | 281515 | 20.233 | 20.23 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 900507 | 63.571 | 63.57 | | | 0.5 | 1 |
| 109) Styrene | (3) | 11.881( 0.000) | 104 | 499614 | 20.921 | 20.92 | | | 1 | 5 |
| 110) Bromoform | (3) | 12.045( 0.000) | 173 | 107797 | 20.121 | 20.12 | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 12.161( 0.000) | 105 | 713465 | 19.651 | 19.65 | | | 1 | 5 |
| 115) Bromobenzene | (4) | 12.428(-0.000) | 156 | 194257 | 20.769 | 20.77 | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.404(-0.000) | 83 | 281230 | 24.683 | 24.68 | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | 12.453(-0.000) | 110 | 90432 | 23.355 | 23.36 | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | 12.489( 0.000) | 91 | 937648 | 23.195 | 23.19 | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | 12.568( 0.000) | 126 | 185071 | 22.248 | 22.25 | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | 12.666(-0.000) | 126 | 199992 | 22.650 | 22.65 | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.623( 0.000) | 105 | 643578 | 21.833 | 21.83 | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | 12.872(-0.000) | 134 | 128305M | 20.358 | 20.36 | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.909( 0.000) | 105 | 671841 | 22.039 | 22.04 | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | 13.037(-0.000) | 105 | 824178 | 22.242 | 22.24 | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140(-0.000) | 146 | 371370 | 20.811 | 20.81 | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | 13.140(-0.000) | 119 | 710898 | 21.593 | 21.59 | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213(-0.000) | 146 | 388826 | 21.169 | 21.17 | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | 13.469( 0.000) | 146 | 356174 | 20.779 | 20.78 | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | 13.432( 0.000) | 92 | 380832 | 22.981 | 22.98 | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.010( 0.000) | 75 | 66021 | 23.851 | 23.85 | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.564( 0.000) | 180 | 202509 | 17.648 | 17.65 | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | 14.649( 0.000) | 225 | 97446 | 17.281 | 17.28 | | | 2 | 5 |
| 148) Naphthalene | (4) | 14.752( 0.000) | 128 | 734109 | 19.991 | 19.99 | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.892( 0.000) | 180 | 196202 | 18.806 | 18.81 | | | 1 | 5 |

**M = Compound was manually integrated.**

Total number of targets = 68

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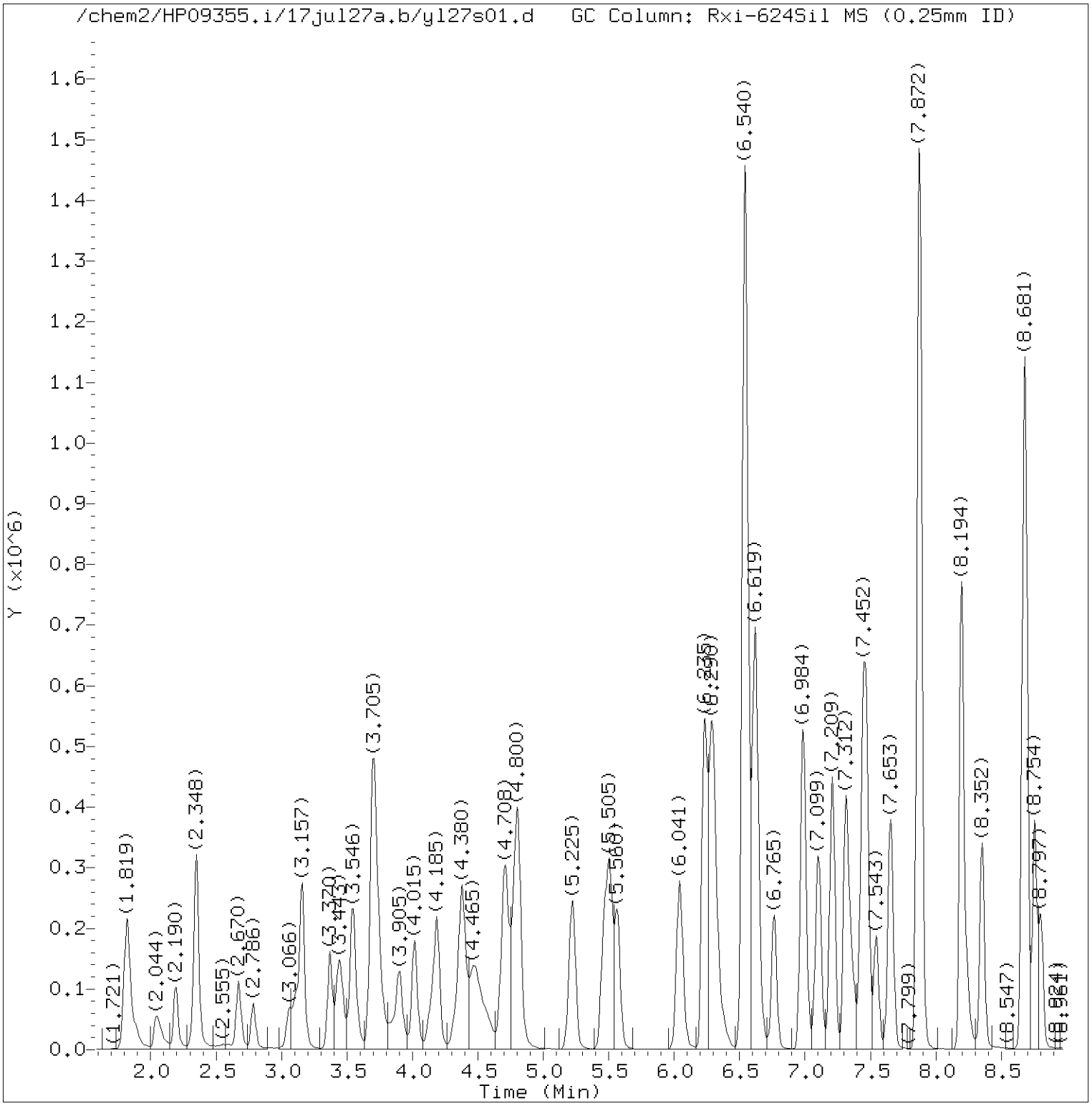
Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:50 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:17 lcp00895

Sample Name: LCSY18 Lab Sample ID: LCSY18

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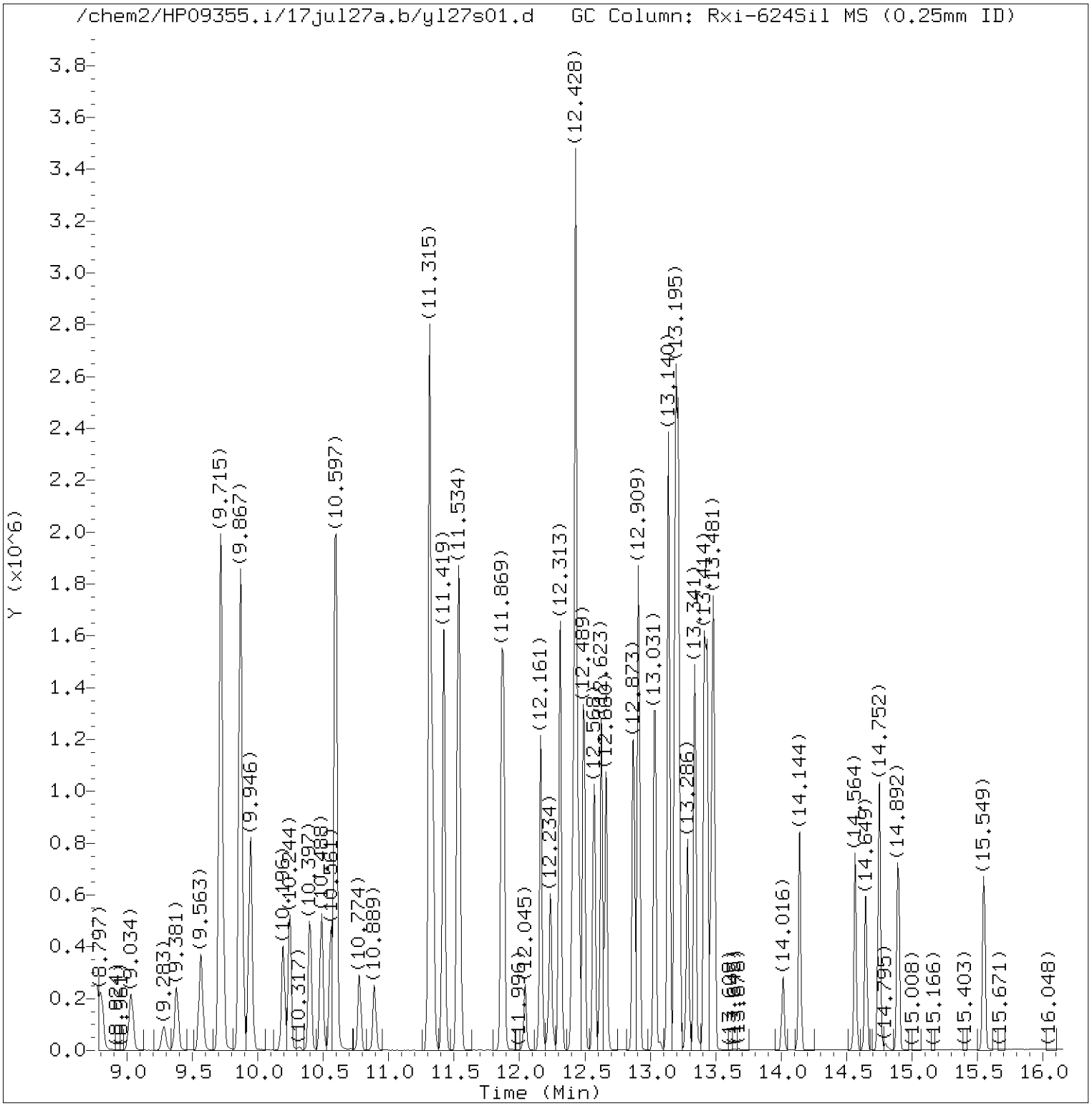
on 07/27/2017 at 10:17.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:50 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:17 lcp00895

Sample Name: LCSY18 Lab Sample ID: LCSY18

Digitally signed by Linda C. Pape
on 07/27/2017 at 10:17.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:50 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:17 lcp00895

Sample Name: LCSY18 Lab Sample ID: LCSY18

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.050 | 85 | 140365 | 15.744 |
| 4) Chloromethane | (2) | 2.190 | 50 | 149974 | 15.622 |
| 6) Vinyl Chloride | (2) | 2.330 | 62 | 152453 | 16.892 |
| 8) Bromomethane | (2) | 2.670 | 94 | 107895 | 16.861 |
| 9) Chloroethane | (2) | 2.786 | 64 | 91935 | 17.612 |
| 12) Trichlorofluoromethane | (2) | 3.102 | 101 | 211250 | 19.903 |
| 16) Acrolein | (1) | 3.546 | 56 | 382551 | 153.895 |
| 17) 1,1-Dichloroethene | (2) | 3.692 | 96 | 123249 | 22.999 |
| 18) Acetone | (1) | 3.705 | 58 | 229402 | 194.107 |
| 23) Carbon Disulfide | (2) | 4.015 | 76 | 399274 | 23.677 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.356 | 65 | 407981 | 250.000 |
| 28) Methylene Chloride | (2) | 4.380 | 84 | 147665 | 21.779 |
| 31) Acrylonitrile | (2) | 4.708 | 53 | 541907 | 108.532 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.787 | 73 | 440927 | 19.773 |
| 32) trans-1,2-Dichloroethene | (2) | 4.806 | 96 | 143147 | 22.086 |
| 36) 1,1-Dichloroethane | (2) | 5.457 | 63 | 259857 | 22.200 |
| 44) 2-Butanone | (2) | 6.229 | 43 | 1276537 | 164.572 |
| 42) cis-1,2-Dichloroethene | (2) | 6.284 | 96 | 162103 | 21.738 |
| 45) 2,2-Dichloropropane | (2) | 6.296 | 77 | 196049 | 21.330 |
| 49) Bromochloromethane | (2) | 6.619 | 128 | 79611 | 20.222 |
| 51) Chloroform | (2) | 6.765 | 83 | 250816 | 21.273 |
| 52)$Dibromofluoromethane | (2) | 6.978 | 113 | 326806 | 49.353 |
| 53) 1,1,1-Trichloroethane | (2) | 6.996 | 97 | 218476 | 22.135 |
| 56) Carbon Tetrachloride | (2) | 7.209 | 117 | 177809 | 21.631 |
| 55) 1,1-Dichloropropene | (2) | 7.209 | 75 | 206976 | 21.701 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.440 | 102 | 85686 | 49.352 |
| 60) Benzene | (2) | 7.470 | 78 | 617209 | 21.748 |
| 61) 1,2-Dichloroethane | (2) | 7.543 | 62 | 216267 | 20.825 |
| 66)*Fluorobenzene | (2) | 7.872 | 96 | 1419883 | 50.000 |
| 71) Trichloroethene | (2) | 8.352 | 95 | 156651 | 21.288 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 173225 | 23.215 |
| 74) Dibromomethane | (2) | 8.803 | 93 | 107621 | 22.044 |
| 78) Bromodichloromethane | (2) | 9.034 | 83 | 190014 | 22.566 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 254724 | 23.141 |
| 82) 4-Methyl-2-pentanone | (2) | 9.715 | 43 | 1576340 | 114.357 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1454024 | 51.337 |
| 88) Toluene | (3) | 9.946 | 92 | 402312 | 21.574 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 239797 | 23.289 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/27/2017 at 10:17.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:50 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:17 lcp00895

Sample Name: LCSY18 Lab Sample ID: LCSY18

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 10.397 | 97 | 168180 | 22.959 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 161523 | 19.685 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 282856 | 22.855 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1320824 | 118.370 |
| 97) Dibromochloromethane | (3) | 10.774 | 129 | 159355 | 23.160 |
| 99) 1,2-Dibromoethane | (3) | 10.889 | 107 | 174434 | 22.064 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1096283 | 50.000 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 469432 | 21.932 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.419 | 131 | 142717 | 21.608 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 767585 | 21.398 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 618992 | 43.337 |
| 108) Xylene (Total) | (3) | | 106 | 900507 | 63.571 |
| 107) o-Xylene | (3) | 11.863 | 106 | 281515 | 20.233 |
| 109) Styrene | (3) | 11.881 | 104 | 499614 | 20.921 |
| 110) Bromoform | (3) | 12.045 | 173 | 107797 | 20.121 |
| 111) Isopropylbenzene | (3) | 12.161 | 105 | 713465 | 19.651 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 548676 | 51.652 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.404 | 83 | 281230 | 24.683 |
| 115) Bromobenzene | (4) | 12.428 | 156 | 194257 | 20.769 |
| 117) 1,2,3-Trichloropropane | (4) | 12.453 | 110 | 90432 | 23.355 |
| 119) n-Propylbenzene | (4) | 12.489 | 91 | 937648 | 23.195 |
| 120) 2-Chlorotoluene | (4) | 12.568 | 126 | 185071 | 22.248 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.623 | 105 | 643578 | 21.833 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 199992 | 22.650 |
| 124) tert-Butylbenzene | (4) | 12.873 | 134 | 128305M | 20.358 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.909 | 105 | 671841 | 22.039 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 824178 | 22.242 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 371370 | 20.811 |
| 130) p-Isopropyltoluene | (4) | 13.140 | 119 | 710898 | 21.593 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 564928 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 388826 | 21.169 |
| 139) n-Butylbenzene | (4) | 13.432 | 92 | 380832 | 22.981 |
| 138) 1,2-Dichlorobenzene | (4) | 13.469 | 146 | 356174 | 20.779 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.010 | 75 | 66021 | 23.851 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.564 | 180 | 202509 | 17.648 |
| 147) Hexachlorobutadiene | (4) | 14.649 | 225 | 97446 | 17.281 |
| 148) Naphthalene | (4) | 14.752 | 128 | 734109 | 19.991 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.892 | 180 | 196202 | 18.806 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/27/2017 at 10:17.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:50 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:17 lcp00895

Sample Name: LCSY18 Lab Sample ID: LCSY18

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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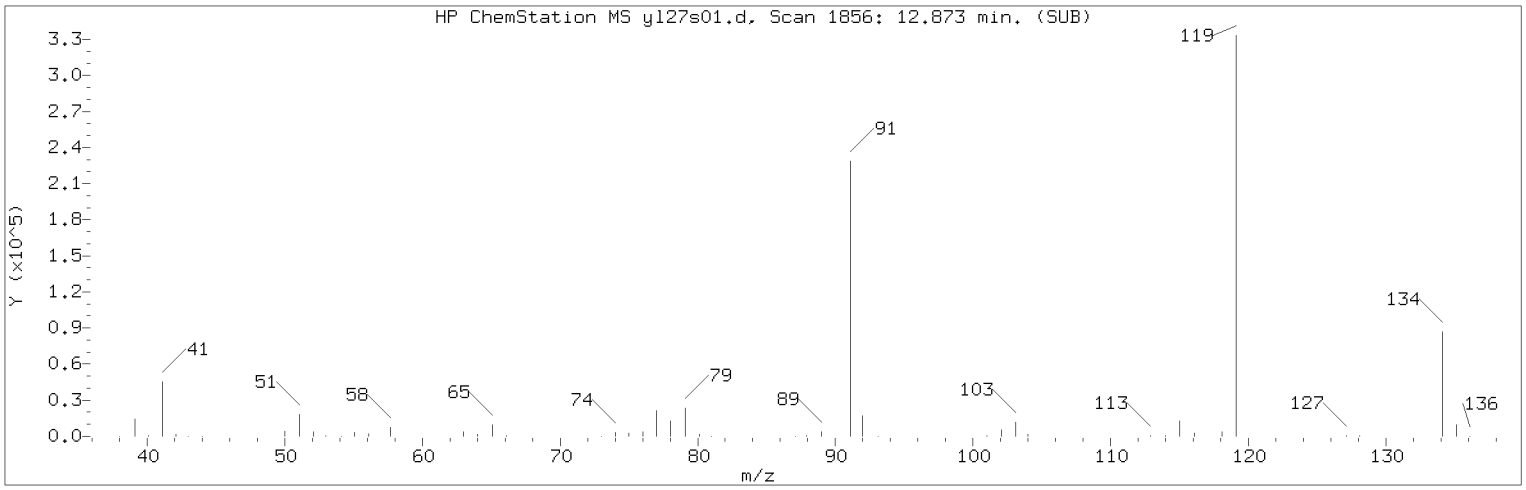
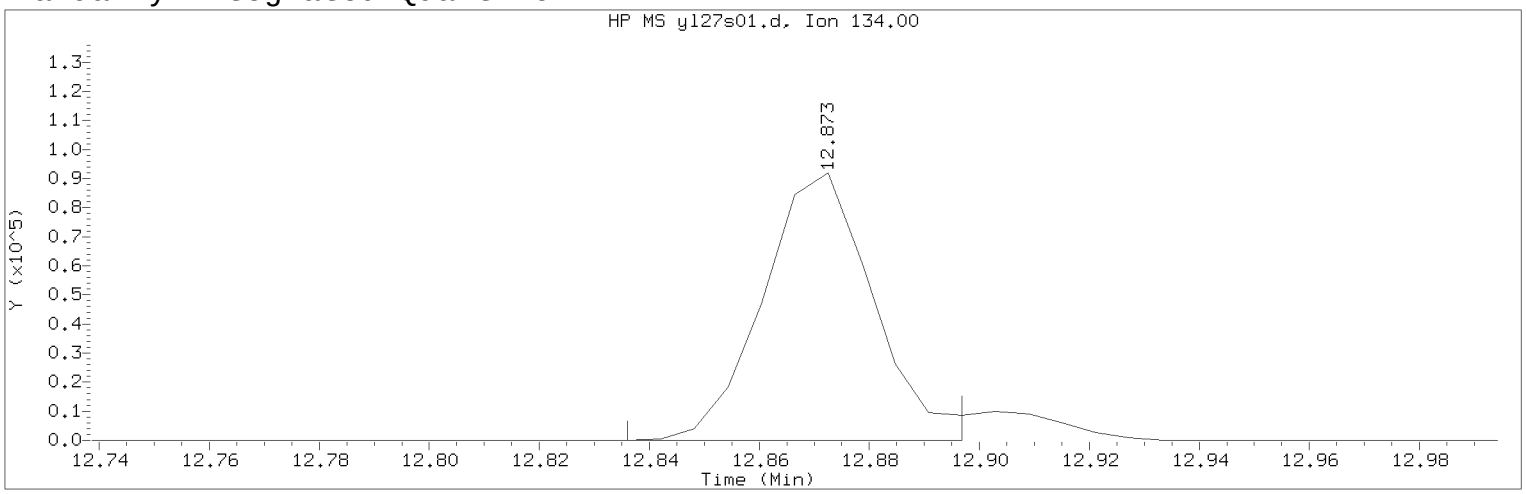
on 07/27/2017 at 10:17.
Target 3.5 esignature user ID: lcp00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27s01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:50 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:17 lcp00895

Sample Name: LCSY18 Lab Sample ID: LCSY18

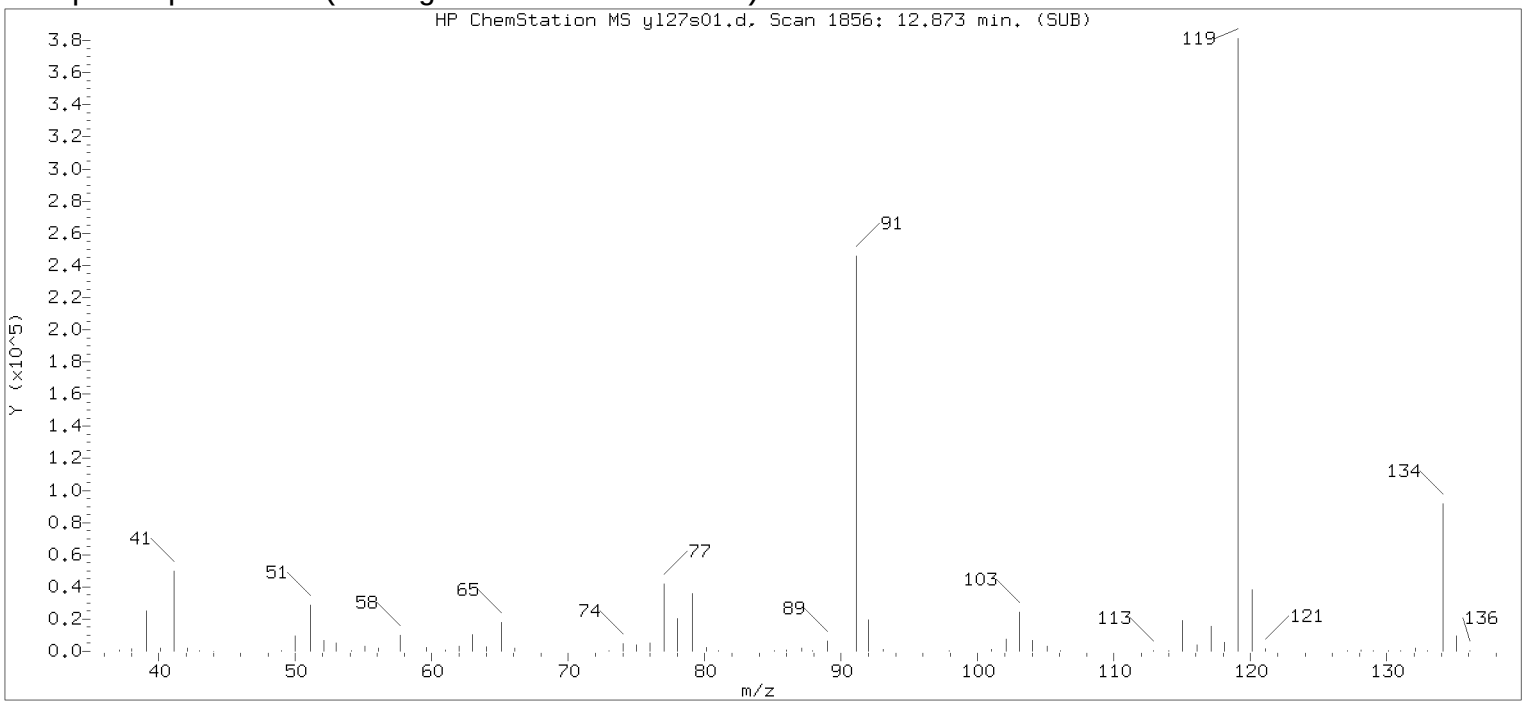
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.873
Quant Ion : 134.00
Area (flag) : 128305M
On-Column Amount (ng) : 20.3576
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

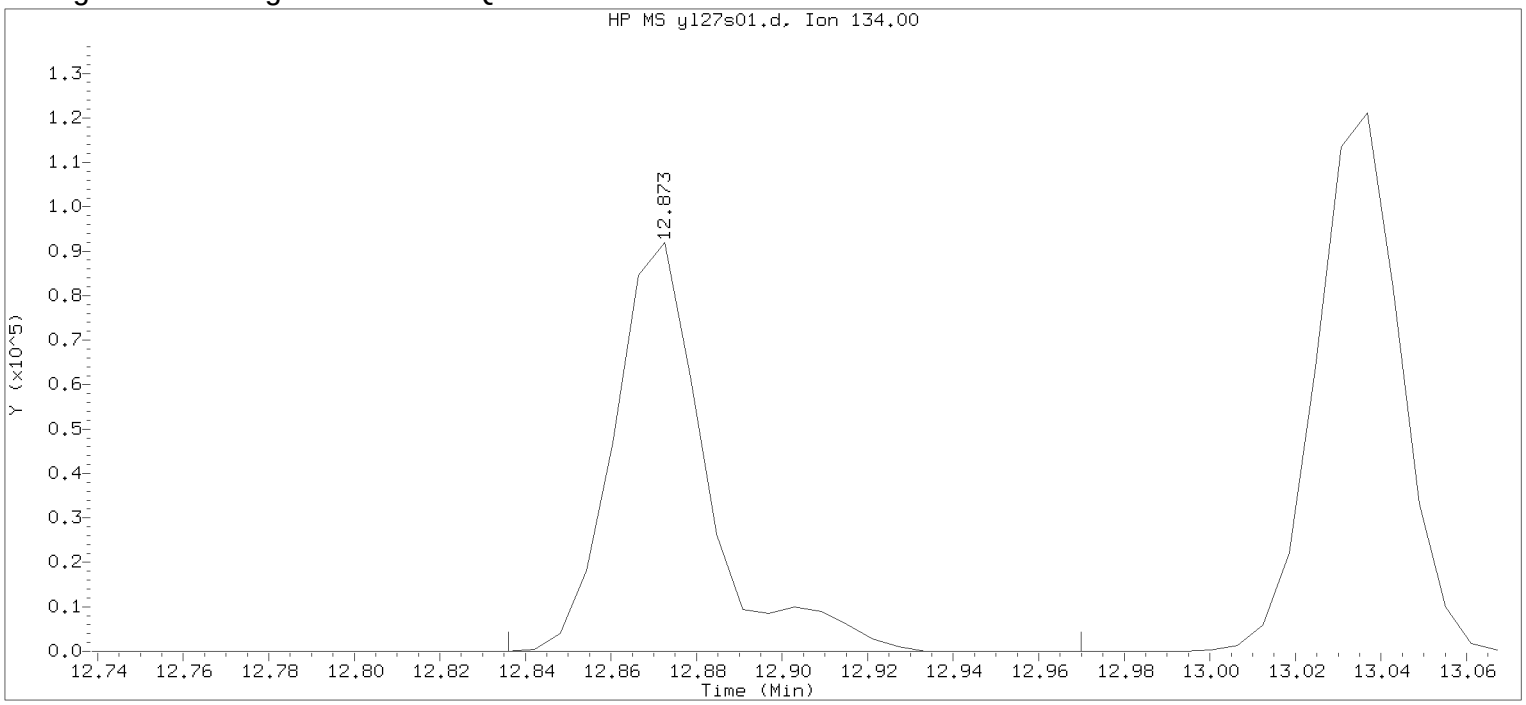
Analyst responsible for change: Digitally signed by Linda C. Pape
on 07/27/2017 at 10:17.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27s01.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 09:50 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:16 lcp00895

Sample Name: LCSY18 Lab Sample ID: LCSY18

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.873
Quant Ion : 134.00
Area : 138695
On-column Amount (ng) : 22.0061
Integration start scan : 1849 Integration stop scan: 1871
Y at integration start : 0 Y at integration end: 0

Digitally signed by Linda C. Pape on 07/27/2017 at 10:17.
Target 3.5 esignature userKRD38 LCP00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul27a.b/yl27s02.d Injection date and time: **27-JUL-2017 10:15**
Data file Sample Info. Line: LCDY18;LCDY18;1;3;LCSD;;DODWW;;yl27b01; Instrument ID: **HP09355.i** Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 10:42 lcp00895

Blank Data file reference: **/chem2/HP09355.i/17jul27a.b/yl27b01.d**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: **18281-SM**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.361( 0.000) | 457 | 65 | 460624 ( 23) | 250.00 | |
| 66) Fluorobenzene | 7.878( 0.000) | 1035 | 96 | 1557286 ( 15) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315( 0.000) | 1600 | 117 | 1199638 ( 12) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195( 0.000) | 1909 | 152 | 613885 ( 3) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.983( 0.001) | 113 | 355960 | 49.013 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.446( 0.000) | 102 | 94857 | 49.814 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.001) | 98 | 1592209 | 51.372 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 598257 | 51.468 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.050( 0.000) | 85 | 148879 | 15.226 | 15.23 | | | 0.5 | 1 |
| 4) Chloromethane | (2) | 2.196( 0.001) | 50 | 168140 | 15.969 | 15.97 | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | 2.336( 0.002) | 62 | 165227 | 16.692 | 16.69 | | | 0.5 | 1 |
| 8) Bromomethane | (2) | 2.676( 0.002) | 94 | 113673 | 16.196 | 16.20 | | | 0.5 | 1 |
| 9) Chloroethane | (2) | 2.786( 0.001) | 64 | 93222 | 16.283 | 16.28 | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | 3.102( 0.002) | 101 | 227882 | 19.576 | 19.58 | | | 0.5 | 1 |
| 16) Acrolein | (1) | 3.552(-0.000) | 56 | 426450 | 151.949 | 151.95 | | | 40 | 100 |
| 17) 1,1-Dichloroethene | (2) | 3.698( 0.000) | 96 | 128520 | 21.867 | 21.87 | | | 0.5 | 1 |
| 18) Acetone | (1) | 3.710(-0.000) | 58 | 241081 | 180.676 | 180.68 | | | 6 | 20 |
| 23) Carbon Disulfide | (2) | 4.021( 0.000) | 76 | 416063 | 22.495 | 22.50 | | | 1 | 5 |
| 28) Methylene Chloride | (2) | 4.386( 0.000) | 84 | 154409 | 20.764 | 20.76 | | | 2 | 4 |
| 31) Acrylonitrile | (2) | 4.714( 0.000) | 53 | 577624 | 105.478 | 105.48 | | | 4 | 20 |
| 32) trans-1,2-Dichloroethene | (2) | 4.818( 0.000) | 96 | 150673 | 21.196 | 21.20 | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.793( 0.000) | 73 | 462071 | 18.893 | 18.89 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 5.462( 0.000) | 63 | 275397 | 21.451 | 21.45 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 6.290( 0.000) | 96 | 172120 | 21.045 | 21.04 | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | 6.235( 0.000) | 43 | 1339621 | 157.466 | 157.47 | | | 3 | 10 |
| 45) 2,2-Dichloropropane | (2) | 6.302( 0.000) | 77 | 205574 | 20.393 | 20.39 | | | 0.5 | 1 |
| 49) Bromochloromethane | (2) | 6.624( 0.000) | 128 | 85083 | 19.705 | 19.70 | | | 1 | 5 |
| 51) Chloroform | (2) | 6.764( 0.000) | 83 | 262190 | 20.275 | 20.28 | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | 6.996( 0.000) | 97 | 227036 | 20.973 | 20.97 | | | 0.5 | 1 |
| 55) 1,1-Dichloropropene | (2) | 7.208( 0.000) | 75 | 213834 | 20.442 | 20.44 | | | 1 | 5 |
| 56) Carbon Tetrachloride | (2) | 7.208( 0.001) | 117 | 184734 | 20.491 | 20.49 | | | 0.5 | 1 |
| 60) Benzene | (2) | 7.470( 0.000) | 78 | 645094 | 20.725 | 20.72 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 7.549( 0.000) | 62 | 227166 | 19.945 | 19.94 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 8.358( 0.000) | 95 | 167092 | 20.704 | 20.70 | | | 0.5 | 1 |
| 73) 1,2-Dichloropropane | (2) | 8.693( 0.000) | 63 | 181367 | 22.162 | 22.16 | | | 0.5 | 1 |
| 74) Dibromomethane | (2) | 8.808( 0.000) | 93 | 112183 | 20.951 | 20.95 | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | 9.034( 0.000) | 83 | 198523 | 21.496 | 21.50 | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | 9.569( 0.000) | 75 | 272096 | 22.538 | 22.54 | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721( 0.000) | 43 | 1650978 | 109.204 | 109.20 | | | 3 | 10 |

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# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul27a.b/yl27s02.d Injection date and time: **27-JUL-2017 10:15**
Data file Sample Info. Line: LCDY18;LCDY18;1;3;LCSD;;DODWW;;yl27b01; Instrument ID: **HP09355.i** Batch: **Y172081AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 10:42 lcp00895

Blank Data file reference: **/chem2/HP09355.i/17jul27a.b/yl27b01.d**

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: **18281-SM**
Calibration date and time (Last Method Edit): 27-JUL-2017 10:15
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul27a.b/yl27c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

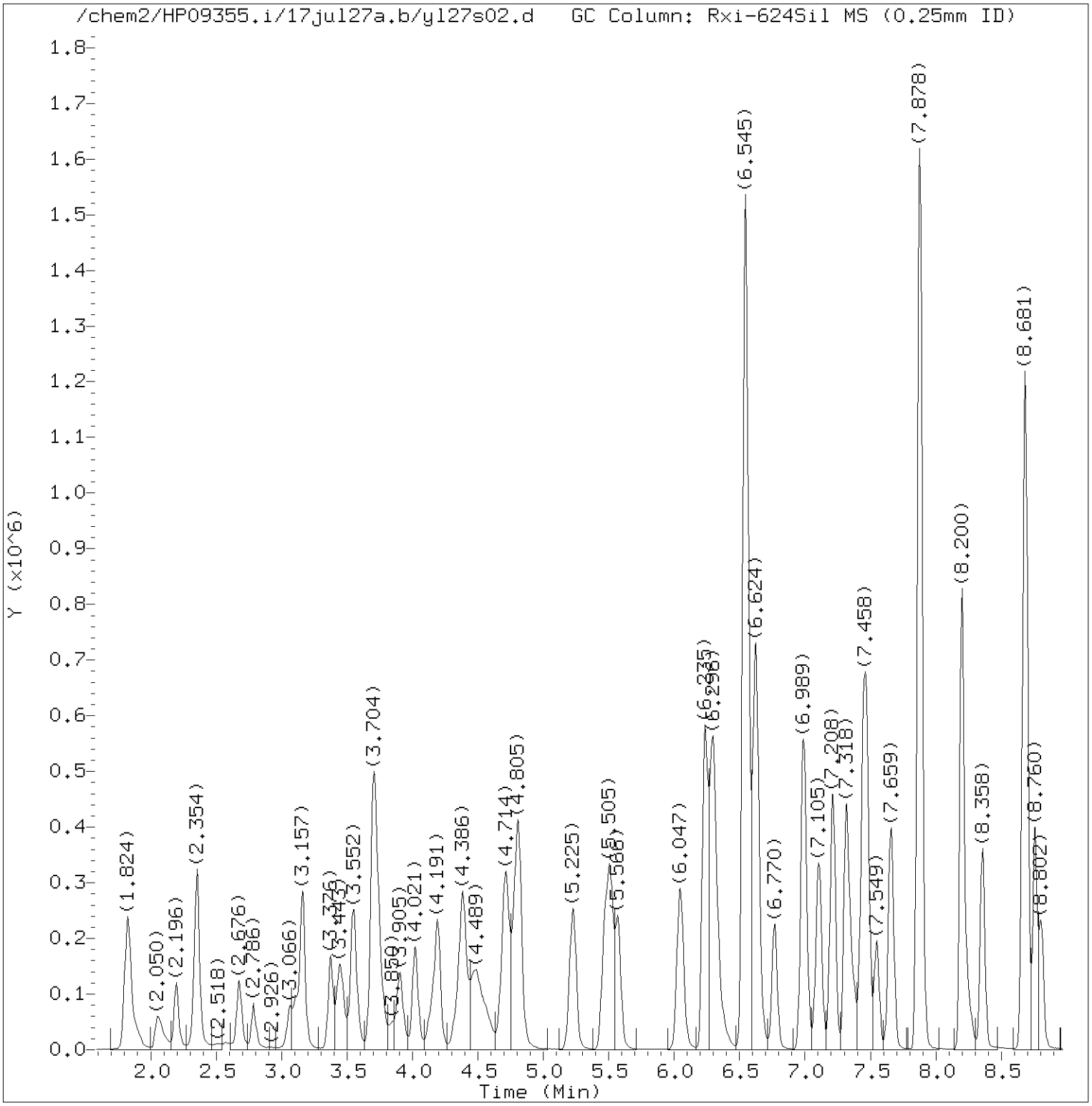
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 88) Toluene | (3) | 9.946( 0.000) | 92 | 422113 | 20.686 | 20.69 | | | 0.5 | 1 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196( 0.000) | 75 | 256628 | 22.777 | 22.78 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402( 0.000) | 97 | 177993 | 22.205 | 22.20 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 10.488( 0.000) | 166 | 171456 | 19.096 | 19.10 | | | 0.5 | 1 |
| 94) 1,3-Dichloropropane | (3) | 10.560( 0.000) | 76 | 297527 | 21.969 | 21.97 | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | 10.597( 0.000) | 43 | 1392813 | 114.067 | 114.07 | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | 10.780( 0.000) | 129 | 166283 | 22.084 | 22.08 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.895( 0.000) | 107 | 183148 | 21.170 | 21.17 | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | 11.339( 0.000) | 112 | 490807 | 20.955 | 20.95 | | | 0.5 | 1 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424( 0.000) | 131 | 150914 | 20.881 | 20.88 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.424( 0.000) | 91 | 814642 | 20.753 | 20.75 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.540( 0.000) | 106 | 649664 | 41.566 | 41.57 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.868( 0.000) | 106 | 296517 | 19.476 | 19.48 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 946181 | 61.041 | 61.04 | | | 0.5 | 1 |
| 109) Styrene | (3) | 11.881( 0.000) | 104 | 521881 | 19.970 | 19.97 | | | 1 | 5 |
| 110) Bromoform | (3) | 12.045( 0.000) | 173 | 110969 | 18.928 | 18.93 | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 12.166( 0.000) | 105 | 759870 | 19.126 | 19.13 | | | 1 | 5 |
| 115) Bromobenzene | (4) | 12.428( 0.000) | 156 | 203429 | 20.015 | 20.02 | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.404( 0.000) | 83 | 289402 | 23.374 | 23.37 | | | 0.5 | 1 |
| 117) 1,2,3-Trichloropropane | (4) | 12.452( 0.000) | 110 | 95232 | 22.633 | 22.63 | | | 1 | 5 |
| 119) n-Propylbenzene | (4) | 12.495( 0.000) | 91 | 988988 | 22.514 | 22.51 | | | 1 | 5 |
| 120) 2-Chlorotoluene | (4) | 12.574( 0.000) | 126 | 194246 | 21.489 | 21.49 | | | 1 | 5 |
| 121) 4-Chlorotoluene | (4) | 12.665( 0.000) | 126 | 209332 | 21.817 | 21.82 | | | 1 | 5 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629( 0.000) | 105 | 671130 | 20.952 | 20.95 | | | 1 | 5 |
| 124) tert-Butylbenzene | (4) | 12.872( 0.000) | 134 | 133284M | 19.461 | 19.46 | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915( 0.000) | 105 | 700209 | 21.138 | 21.14 | | | 1 | 5 |
| 127) sec-Butylbenzene | (4) | 13.036( 0.000) | 105 | 861365 | 21.392 | 21.39 | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140( 0.000) | 146 | 385127 | 19.861 | 19.86 | | | 1 | 5 |
| 130) p-Isopropyltoluene | (4) | 13.140( 0.000) | 119 | 742898 | 20.766 | 20.77 | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213( 0.000) | 146 | 400534 | 20.067 | 20.07 | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | 13.468( 0.000) | 146 | 368104 | 19.763 | 19.76 | | | 1 | 5 |
| 139) n-Butylbenzene | (4) | 13.432( 0.000) | 92 | 395940 | 21.987 | 21.99 | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016( 0.000) | 75 | 68934 | 22.918 | 22.92 | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570( 0.000) | 180 | 210749 | 16.902 | 16.90 | | | 1 | 5 |
| 147) Hexachlorobutadiene | (4) | 14.649( 0.000) | 225 | 102068 | 16.657 | 16.66 | | | 2 | 5 |
| 148) Naphthalene | (4) | 14.752( 0.000) | 128 | 761952 | 19.094 | 19.09 | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898( 0.000) | 180 | 203516 | 17.951 | 17.95 | | | 1 | 5 |

**M = Compound was manually integrated.**

Total number of targets = 68

Digitally signed by Linda C. Pape on 07/27/2017 at 10:43. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

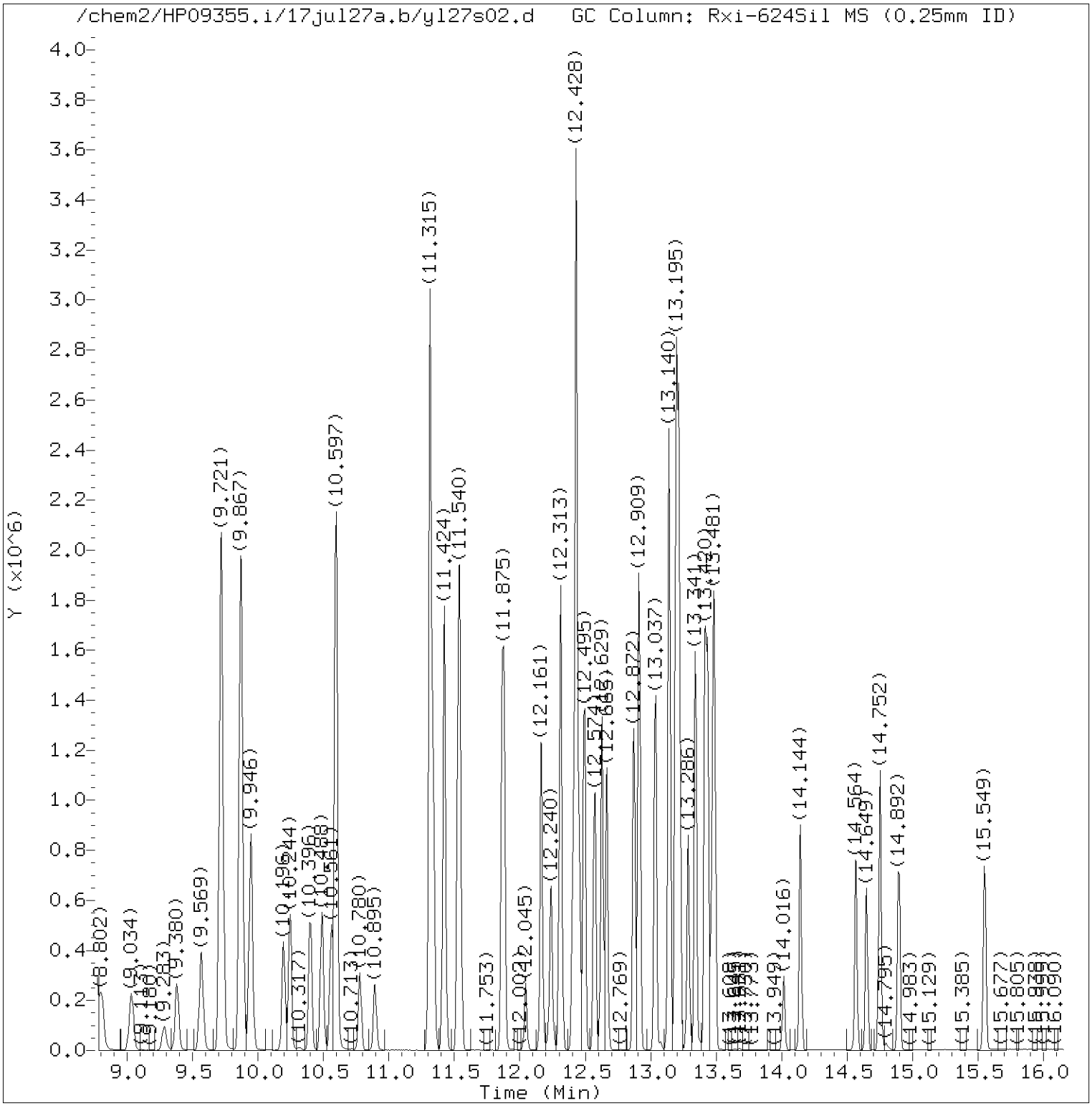
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s02.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 10:15 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:42 lcp00895

Sample Name: LCDY18 Lab Sample ID: LCDY18

Digitally signed by Linda C. Pape
on 07/27/2017 at 10:43.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s02.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 10:15 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:42 lcp00895

Sample Name: LCDY18 Lab Sample ID: LCDY18

Digitally signed by Linda C. Pape
on 07/27/2017 at 10:43.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s02.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 10:15 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:42 lcp00895

Sample Name: LCDY18 Lab Sample ID: LCDY18

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.050 | 85 | 148879 | 15.226 |
| 4) Chloromethane | (2) | 2.196 | 50 | 168140 | 15.969 |
| 6) Vinyl Chloride | (2) | 2.336 | 62 | 165227 | 16.692 |
| 8) Bromomethane | (2) | 2.676 | 94 | 113673 | 16.196 |
| 9) Chloroethane | (2) | 2.786 | 64 | 93222 | 16.283 |
| 12) Trichlorofluoromethane | (2) | 3.102 | 101 | 227882 | 19.576 |
| 16) Acrolein | (1) | 3.552 | 56 | 426450 | 151.949 |
| 17) 1,1-Dichloroethene | (2) | 3.698 | 96 | 128520 | 21.867 |
| 18) Acetone | (1) | 3.710 | 58 | 241081 | 180.676 |
| 23) Carbon Disulfide | (2) | 4.021 | 76 | 416063 | 22.495 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.361 | 65 | 460624 | 250.000 |
| 28) Methylene Chloride | (2) | 4.386 | 84 | 154409 | 20.764 |
| 31) Acrylonitrile | (2) | 4.714 | 53 | 577624 | 105.478 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.793 | 73 | 462071 | 18.893 |
| 32) trans-1,2-Dichloroethene | (2) | 4.818 | 96 | 150673 | 21.196 |
| 36) 1,1-Dichloroethane | (2) | 5.462 | 63 | 275397 | 21.451 |
| 44) 2-Butanone | (2) | 6.235 | 43 | 1339621 | 157.466 |
| 42) cis-1,2-Dichloroethene | (2) | 6.290 | 96 | 172120 | 21.045 |
| 45) 2,2-Dichloropropane | (2) | 6.302 | 77 | 205574 | 20.393 |
| 49) Bromochloromethane | (2) | 6.624 | 128 | 85083 | 19.705 |
| 51) Chloroform | (2) | 6.764 | 83 | 262190 | 20.275 |
| 52)$Dibromofluoromethane | (2) | 6.983 | 113 | 355960 | 49.013 |
| 53) 1,1,1-Trichloroethane | (2) | 6.996 | 97 | 227036 | 20.973 |
| 56) Carbon Tetrachloride | (2) | 7.208 | 117 | 184734 | 20.491 |
| 55) 1,1-Dichloropropene | (2) | 7.208 | 75 | 213834 | 20.442 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.446 | 102 | 94857 | 49.814 |
| 60) Benzene | (2) | 7.470 | 78 | 645094 | 20.725 |
| 61) 1,2-Dichloroethane | (2) | 7.549 | 62 | 227166 | 19.945 |
| 66)*Fluorobenzene | (2) | 7.878 | 96 | 1557286 | 50.000 |
| 71) Trichloroethene | (2) | 8.358 | 95 | 167092 | 20.704 |
| 73) 1,2-Dichloropropane | (2) | 8.693 | 63 | 181367 | 22.162 |
| 74) Dibromomethane | (2) | 8.808 | 93 | 112183 | 20.951 |
| 78) Bromodichloromethane | (2) | 9.034 | 83 | 198523 | 21.496 |
| 81) cis-1,3-Dichloropropene | (2) | 9.569 | 75 | 272096 | 22.538 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 1650978 | 109.204 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1592209 | 51.372 |
| 88) Toluene | (3) | 9.946 | 92 | 422113 | 20.686 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 256628 | 22.777 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/27/2017 at 10:43.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s02.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 10:15 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:42 lcp00895

Sample Name: LCDY18 Lab Sample ID: LCDY18

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 177993 | 22.205 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 171456 | 19.096 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 297527 | 21.969 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1392813 | 114.067 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 166283 | 22.084 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 183148 | 21.170 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1199638 | 50.000 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 490807 | 20.955 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 814642 | 20.753 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424 | 131 | 150914 | 20.881 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 649664 | 41.566 |
| 108) Xylene (Total) | (3) | | 106 | 946181 | 61.041 |
| 107) o-Xylene | (3) | 11.868 | 106 | 296517 | 19.476 |
| 109) Styrene | (3) | 11.881 | 104 | 521881 | 19.970 |
| 110) Bromoform | (3) | 12.045 | 173 | 110969 | 18.928 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 759870 | 19.126 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 598257 | 51.468 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.404 | 83 | 289402 | 23.374 |
| 115) Bromobenzene | (4) | 12.428 | 156 | 203429 | 20.015 |
| 117) 1,2,3-Trichloropropane | (4) | 12.453 | 110 | 95232 | 22.633 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 988988 | 22.514 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 194246 | 21.489 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 671130 | 20.952 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 209332 | 21.817 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 133284M | 19.461 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 700209 | 21.138 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 861365 | 21.392 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 385127 | 19.861 |
| 130) p-Isopropyltoluene | (4) | 13.140 | 119 | 742898 | 20.766 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 613885 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 400534 | 20.067 |
| 139) n-Butylbenzene | (4) | 13.432 | 92 | 395940 | 21.987 |
| 138) 1,2-Dichlorobenzene | (4) | 13.468 | 146 | 368104 | 19.763 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 68934 | 22.918 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 210749 | 16.902 |
| 147) Hexachlorobutadiene | (4) | 14.649 | 225 | 102068 | 16.657 |
| 148) Naphthalene | (4) | 14.752 | 128 | 761952 | 19.094 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 203516 | 17.951 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/27/2017 at 10:43.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul27a.b/yl27s02.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 10:15 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:42 lcp00895

Sample Name: LCDY18 Lab Sample ID: LCDY18

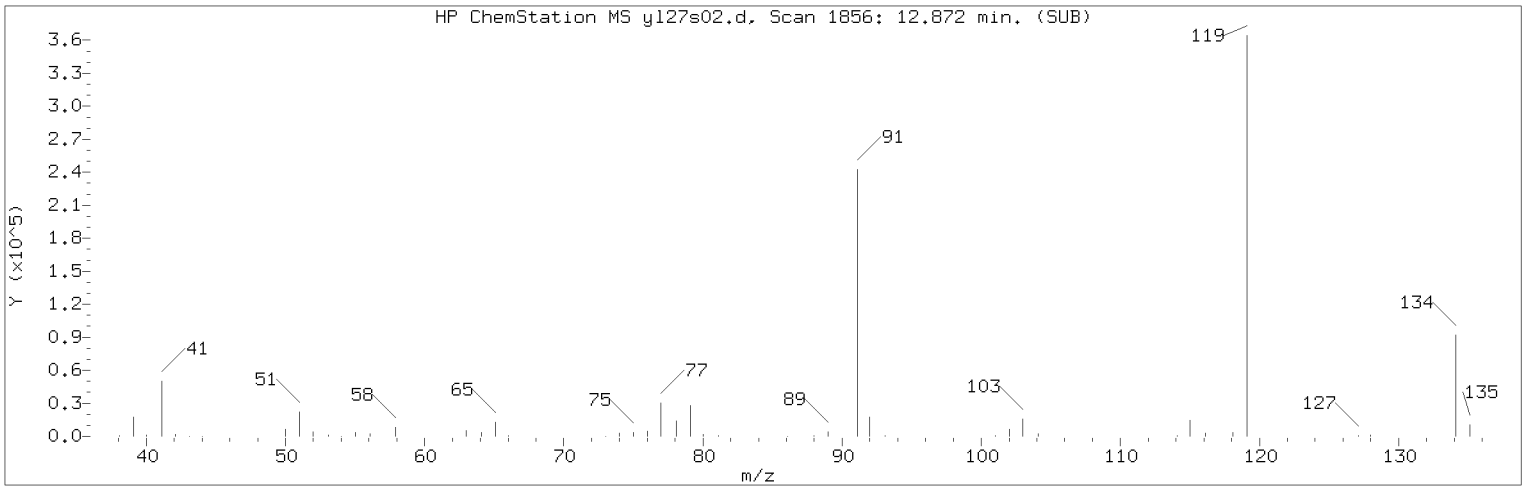
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

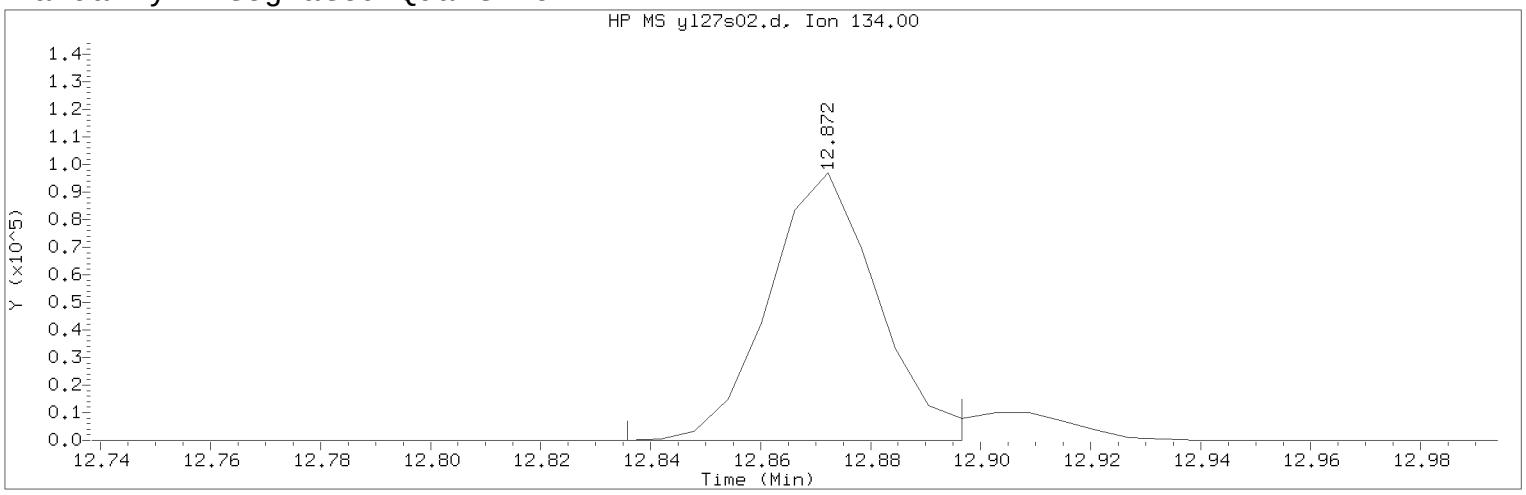


Digitally signed by Linda C. Pape
on 07/27/2017 at 10:43.
Target 3.5 esignature user ID: lcp00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27s02.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 10:15 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:42 lcp00895

Sample Name: LCDY18 Lab Sample ID: LCDY18

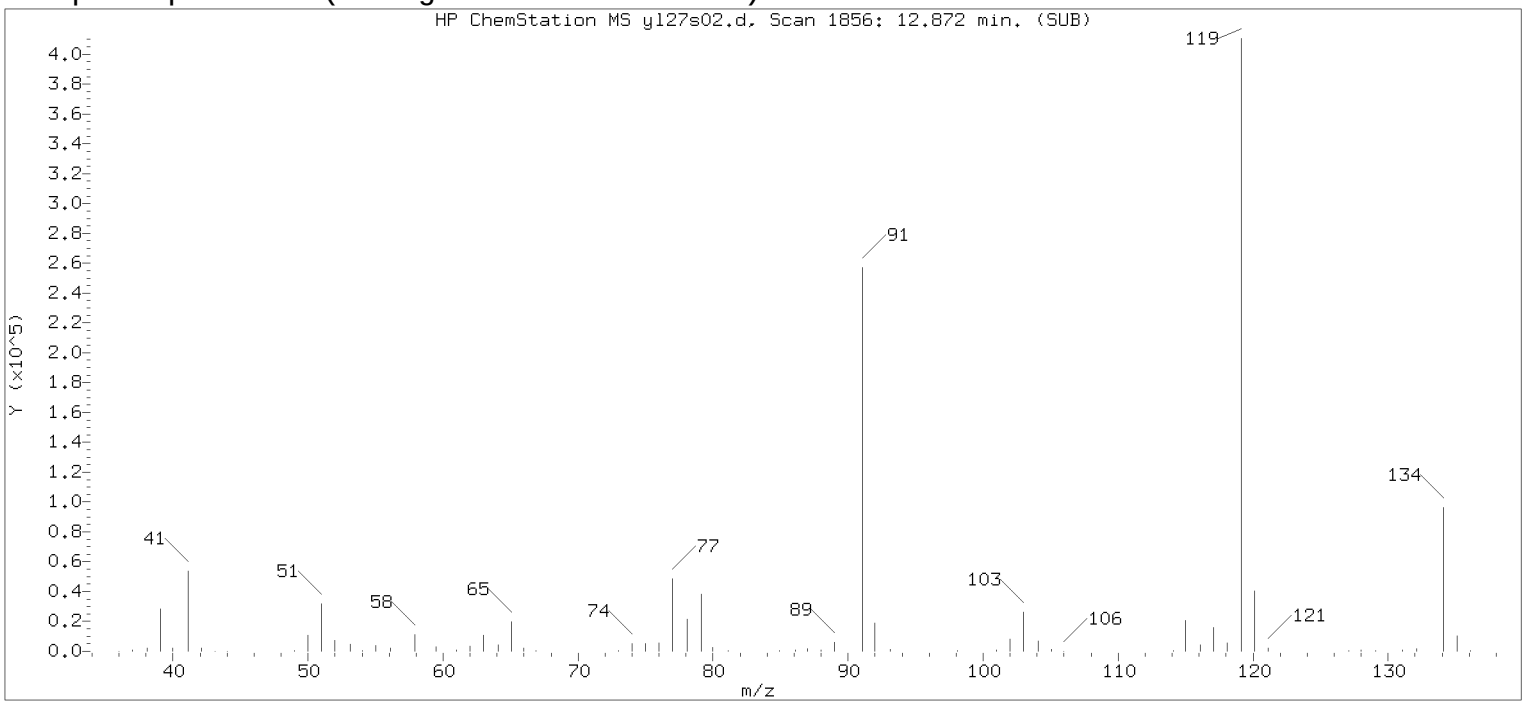
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 133284M
On-Column Amount (ng) : 19.4611
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

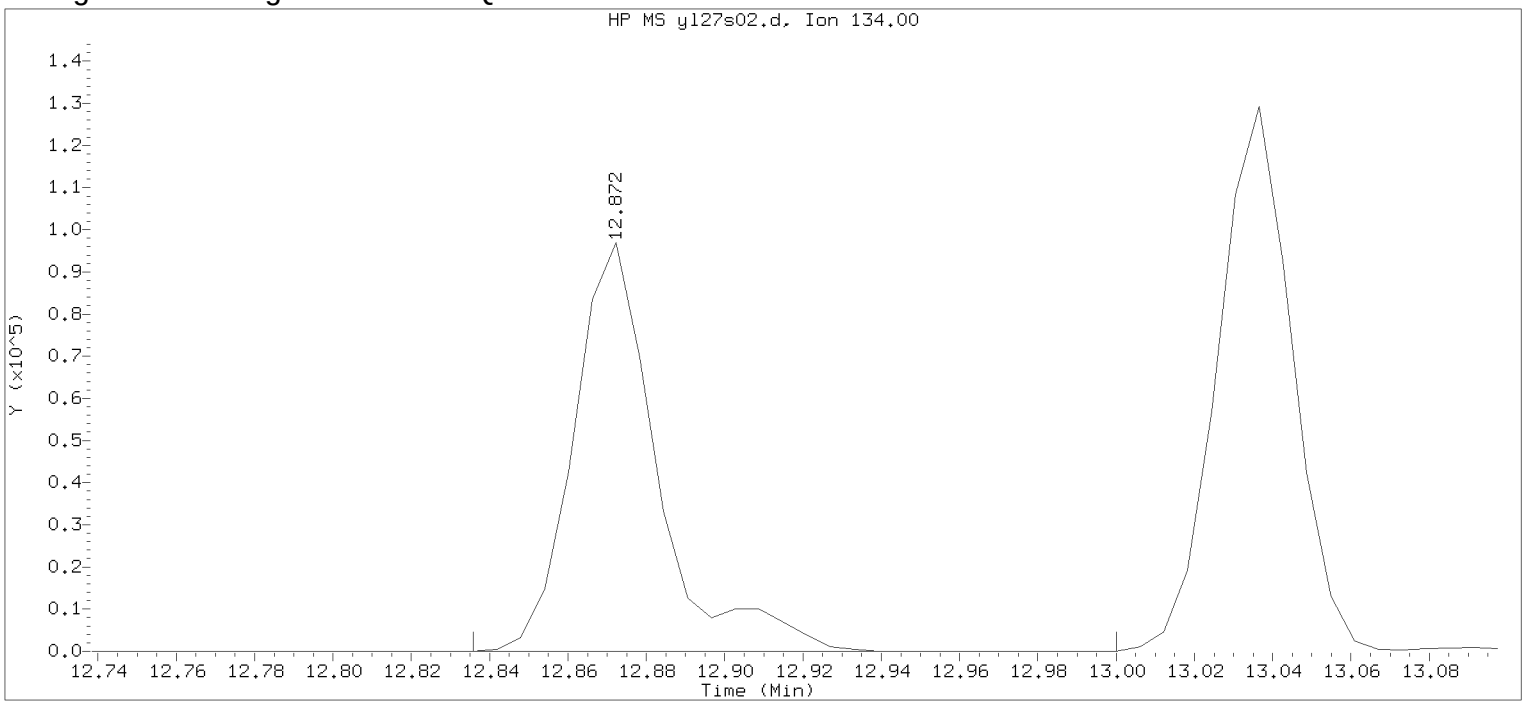
Analyst responsible for change: Digitally signed by Linda C. Pape
on 07/27/2017 at 10:43.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:25.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul27a.b/yl27s02.d Instrument ID: HP09355.i
Injection date and time: 27-JUL-2017 10:15 Analyst ID: LCP00895

Method used: /chem2/HP09355.i/17jul27a.b/m8260c5.m Sublist used: 18281-SM
Calibration date and time: 27-JUL-2017 10:15
Date, time and analyst ID of latest file update: 27-Jul-2017 10:31 Automation

Sample Name: LCDY18 Lab Sample ID: LCDY18

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 145048
On-column Amount (ng) : 21.1787
Integration start scan : 1849 Integration stop scan: 1876
Y at integration start : 0 Y at integration end: 0

Digitally signed by Linda C. Pape on 07/27/2017 at 10:43.
Target 3.5 esignature userKRD38 LP00895

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9109771 | GW005-173 | X | | 20 | Unspiked |
| 9109772 | GW005-173 MS | X | | 20 | Matrix Spike |
| 9109773 | GW005-173 MSD | X | | 20 | Matrix Spike Duplicate |
| 9109779 | GW005-573 | X | | 10 | |
| 9109781 | TB173-22 | X | | 1 | Trip Blank |
| 9109782 | GW101-173 | X | | 1 | |
| 9109783 | GW101-573 | X | | 1 | |
| 9109784 | ER173-04 | X | | 1 | Equipment Blank |
| 9109785 | TB173-23 | X | | 1 | Trip Blank |
| 9109786 | GW102-173 | X | | 1 | |
| 9109787 | GW003-173 | X | | 1 | |
| 9109788 | TB173-24 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9109771-9109773, 9109779, 9109781-9109788: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

**MS/MSD**

Please note that US EPA Methods for organic compounds do not require action by the laboratory based on out-of-specification MS/MSD results.

Batch#: 172010025A (Sample number(s): 9109771-9109773, 9109779, UNSPK: 9109771)
The recovery(ies) for the following analyte(s) in the MS and MSD were below the acceptance window: Ethylene dibromide

**Surrogate**

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted. For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

Batch#: 172010025A (Sample number(s): 9109771-9109773, 9109779, UNSPK: 9109771)
The recovery(ies) for the following surrogate(s) exceeded the acceptance window: 1,1,2,2-Tetrachloroethane (9109771 UNSPK)

## SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172010025A | PBLK25201 | 07/21/2017 17:46:00 |
| | | LCS25201 | 07/21/2017 18:01:00 |
| | | LCSD25201 | 07/21/2017 18:17:00 |
| | | 9109771 UNSPK | 07/24/2017 13:56:00 |
| | | 9109772 MS | 07/24/2017 14:12:00 |
| | | 9109773 MSD | 07/24/2017 14:27:00 |
| | | 9109779 | 07/24/2017 14:43:00 |
| EDB 8011 Water | 172020030A | PBLK30202 | 07/25/2017 23:47:00 |
| | | LCS30202 | 07/26/2017 00:03:00 |
| | | LCSD30202 | 07/26/2017 00:19:00 |
| | | 9109781 UNSPK | 07/26/2017 00:34:00 |
| | | 9109781 MS | 07/26/2017 00:50:00 |
| | | 9109782 | 07/26/2017 01:06:00 |
| | | 9109783 | 07/26/2017 01:22:00 |
| | | 9109784 BKG | 07/26/2017 01:38:00 |
| | | 9109784 DUP | 07/26/2017 01:54:00 |
| | | 9109785 | 07/26/2017 02:10:00 |
| | | 9109786 | 07/26/2017 02:58:00 |
| | | 9109787 | 07/26/2017 03:13:00 |
| | | 9109788 | 07/26/2017 03:29:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR188**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172010025A / PBLK25201<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/21/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

| 172020030A / PBLK30202<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/25/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR188**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172010025A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK25201 | 103 | 46 - 136 |
| LCS25201 | 106 | 46 - 136 |
| LCSD25201 | 112 | 46 - 136 |
| 9109771 UNSPK | 169 * | 46 - 136 |
| 9109772 MS | 91 | 46 - 136 |
| 9109773 MSD | 125 | 46 - 136 |
| 9109779 | 110 | 46 - 136 |

| 172020030A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK30202 | 69 | 46 - 136 |
| LCS30202 | 75 | 46 - 136 |
| LCSD30202 | 71 | 46 - 136 |
| 9109781 UNSPK | 100 | 46 - 136 |
| 9109781 MS | 106 | 46 - 136 |
| 9109782 | 101 | 46 - 136 |
| 9109783 | 97 | 46 - 136 |
| 9109784 BKG | 95 | 46 - 136 |
| 9109784 DUP | 98 | 46 - 136 |
| 9109785 | 91 | 46 - 136 |
| 9109786 | 98 | 46 - 136 |
| 9109787 | 96 | 46 - 136 |
| 9109788 | 96 | 46 - 136 |

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted. For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| UNSPK: 9109771<br>MS: 9109772<br>MSD: 9109773<br>**Analyte** | Batch: **172010025A** (Sample number(s): 9109771-9109773, 9109779 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l MS/MSD** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.121 / 0.122 | 1.29 | 1.17 | 1.20 | -101 (2) | -74 (2) | 60-140 | 3 | 20 |

| UNSPK: 9109781<br>MS: 9109781<br><br>**Analyte** | Batch: **172020030A** (Sample number(s): 9109781-9109788 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.123 | N.D. | 0.154 | NA | 126 | NA | 60-140 | NA | NA |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR188**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS25201<br>LCSD: LCSD25201 | Batch: **172010025A** (Sample number(s): 9109771-9109773, 9109779 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.146 | 0.163 | 114 | 128 | 60-140 | 12 | 20 |

| LCS: LCS30202<br>LCSD: LCSD30202 | Batch: **172020030A** (Sample number(s): 9109781-9109788 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.142 | 0.138 | 111 | 108 | 60-140 | 3 | 20 |

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.07 | 3.06 | 3.07 | 3.07 | 3.07 | 3.07 | 3.04 | 3.10 |
| 1,1,2,2-TETRACHLOROETHANE | 4.52 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.51 | 4.48 | 4.54 |
| 1,2,3-Trichloropropane | 4.58 | 4.58 | 4.57 | 4.58 | 4.58 | 4.58 | 4.58 | 4.55 | 4.61 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 6.87 | 6.93 |

HMM 7243 7/24/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1720201

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.23E+04 | 2.14E+04 | 1.79E+04 | 2.05E+04 | 2.10E+04 | | 2.06E+04 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 2.54E+04 | 2.41E+04 | 2.18E+04 | 2.29E+04 | 2.30E+04 | | 2.35E+04 | 6 |
| 1,2,3-Trichloropropane | 4.01E+03 | 4.33E+03 | 3.23E+03 | 3.30E+03 | 3.06E+03 | | 3.59E+03 | 15 |
| 1,2-DIBROMO-3-CHLOROPROPA | 4.18E+04 | 4.15E+04 | 4.01E+04 | 4.01E+04 | 3.97E+04 | | 4.06E+04 | 2 |

Average % RSD: 8

liner

File Name: V:\CP16\16edbs1720201.CAL
Version: 8

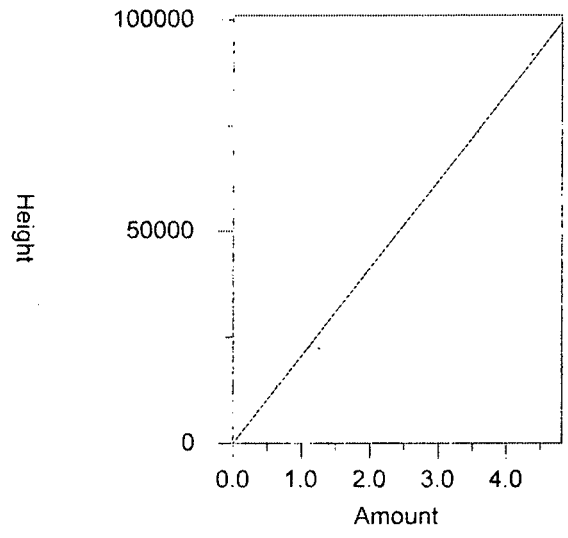
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.072 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

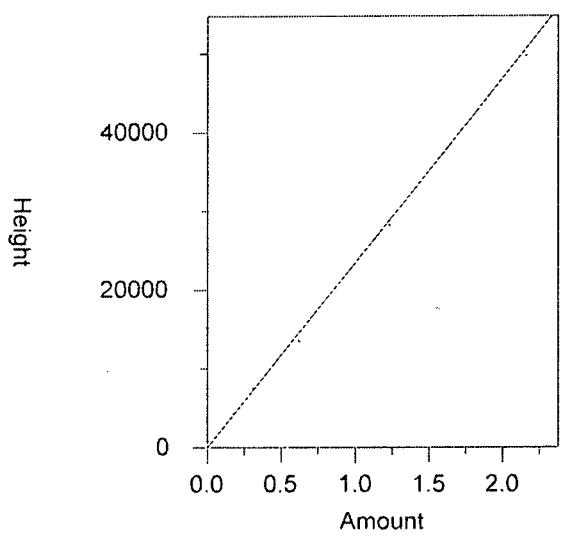
Single peak quantification by height

Y = 20615.34 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9970039
Average error: 5.382%
Average CF: 20615.34
RSD: 7.972%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 7802.336 | 22292.39 | 8.135 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0006.E |
| 2 | 0.63 | 13452.58 | 21353.3 | 3.580 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.E |
| 3 | 1.25 | 22388.71 | 17910.97 | -13.118 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.E |
| 4 | 2.5 | 51364.3 | 20545.72 | -0.338 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.E |
| 5 | 4.38 | 91867.52 | 20974.32 | 1.741 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.E |
| 6 | (6.25) | (92950.38) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0011.E |

2 1,1,2,2-PCA




Expected retention time: 4.513 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

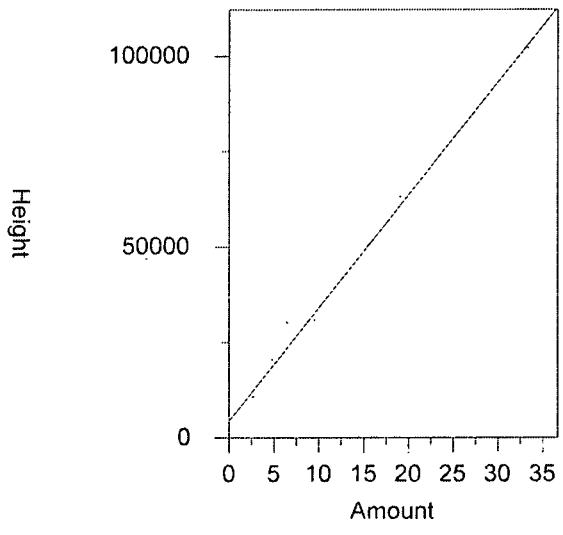
Single peak quantification by height

Y = 23460.12 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9982876
Average error: 4.390%
Average CF: 23460.12
RSD: 5.778%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 4321.91 | 25423 | 8.367 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 2 | 0.31 | 7462.229 | 24071.71 | 2.607 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 3 | 0.62 | 13531.2 | 21824.52 | -6.972 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 4 | 1.23 | 28210.36 | 22935.25 | -2.237 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 5 | 2.16 | 49779.61 | 23046.12 | -1.765 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 6 | (3.08) | (53019.96) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |

3 1,2,3-TCP




Expected retention time: 4.58 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

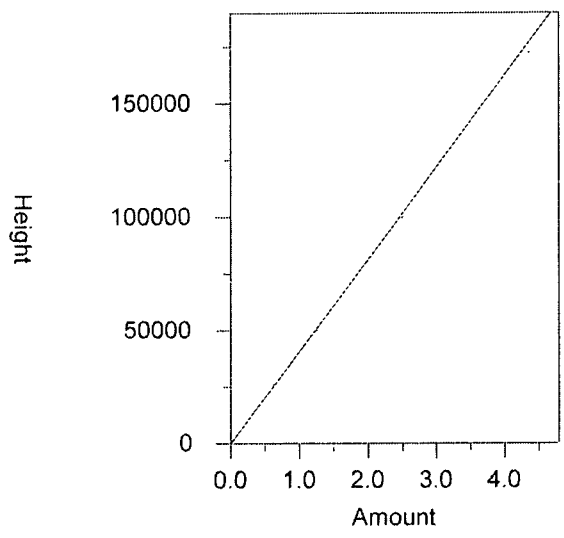
Single peak quantification by height

Y = 2956.05 X + 4430.097

Linear fit with equal weighting
Coefficient of determination: 0.9971222
Average error: 6.902%
Average CF: 3588.12
RSD: 15.344%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 10707.98 | 4010.479 | -13.104 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 2 | 4.76 | 20611.94 | 4330.239 | 11.411 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 3 | 9.53 | 30821.48 | 3234.153 | -5.459 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 4 | 19.05 | 62951.91 | 3304.562 | 3.637 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 5 | 33.34 | 102059.2 | 3061.164 | -0.899 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |
| 6 | (47.63) | (104273.1) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.( |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.895 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 40636.84 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9988161 |
| Average error: | 1.953% |
| Average CF: | 40636.84 |
| RSD: | 2.286% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 14619.25 | 41769.29 | 2.787 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 2 | 0.62 | 25722.95 | 41488.63 | 2.096 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 3 | 1.24 | 49779.49 | 40144.75 | -1.211 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 4 | 2.49 | 99853.48 | 40101.8 | -1.317 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 5 | 4.35 | 172606.8 | 39679.72 | -2.355 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |
| 6 | (6.22) | (183007.9) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.C |

# 6D

# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT (CALC'D) RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.34 | 4.33 | 4.32 | 4.33 | 4.33 | 4.33 | 4.33 | 4.30 | 4.36 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.64 | 5.61 | 5.67 |
| 1,2,3-Trichloropropane | 5.77 | 5.76 | 5.76 | 5.77 | 5.77 | 5.77 | 5.77 | 5.74 | 5.80 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.95 | 7.92 | 7.98 |

7/24/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1720201B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/21/2017  7/21/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | %RSD |
| ETHYLENE DIBROMIDE | 6.54E+03 | 6.19E+03 | 5.36E+03 | 5.68E+03 | 5.69E+03 | | 5.89E+03 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 1.08E+04 | 9.08E+03 | 7.96E+03 | 8.67E+03 | 8.36E+03 | | 8.97E+03 | 12 |
| 1,2,3-Trichloropropane | 5.16E+03 | 2.81E+03 | 1.85E+03 | 1.46E+03 | 1.28E+03 | | 2.51E+03 | 63 |
| 1,2-DIBROMO-3-CHLOROPROPA | 1.62E+04 | 1.70E+04 | 1.47E+04 | 1.48E+04 | 1.45E+04 | | 1.54E+04 | 7 |

Average % RSD: 23

linear linear + lumm 7/24/17

File Name: V:\CP16\16edbs1720201b.CAL
Version: 9

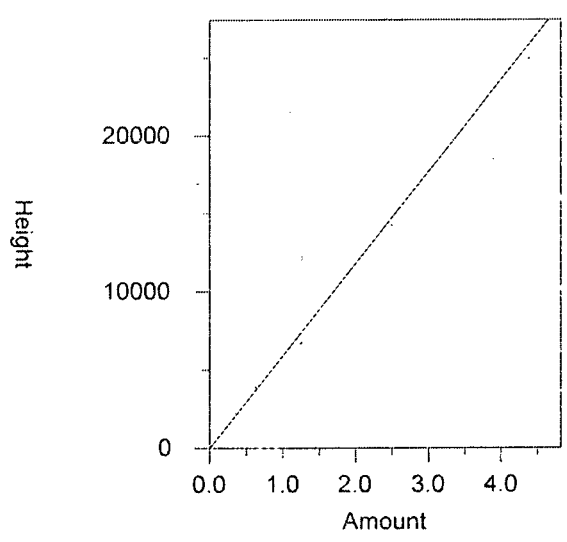
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 4.331 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

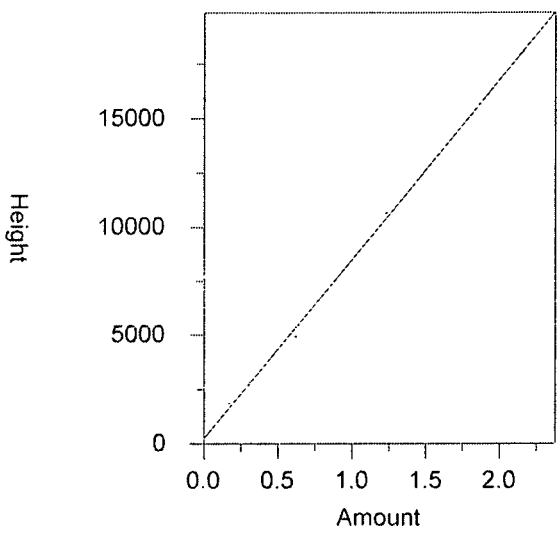
Single peak quantification by height

$Y = 5892.757\ X + 0$

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.995377
Average error: 6.423%
Average CF: 5892.757
RSD: 7.957%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 2290.409 | 6544.026 | 11.052 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0006 |
| 2 | 0.63 | 3898.299 | 6187.776 | 5.006 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0007 |
| 3 | 1.25 | 6702.179 | 5361.743 | -9.011 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0008 |
| 4 | 2.5 | 14203.42 | 5681.368 | -3.587 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0009 |
| 5 | 4.38 | 24917.26 | 5688.872 | -3.460 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0010 |
| 6 | (6.25) | (25336.41) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0011 |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.641 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

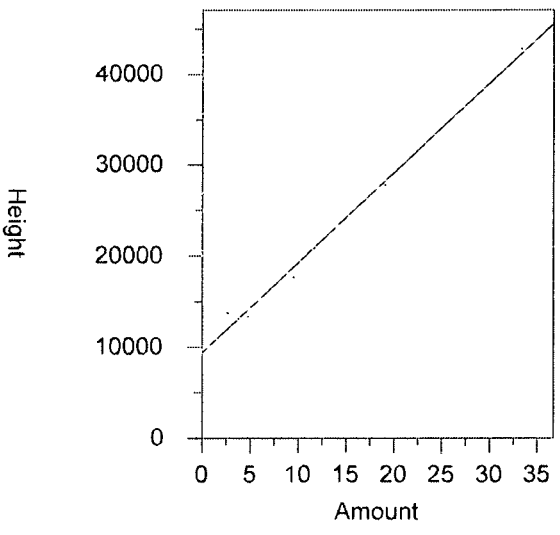
Single peak quantification by height

Y = 8267.026 X + 234.1029

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9984474 |
| Average error: | 4.569% |
| Average CF: | 8965.972 |
| RSD: | 12.109% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 1829.887 | 10764.04 | 11.613 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 0.31 | 2815.249 | 9081.448 | 0.657 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 0.62 | 4937.143 | 7963.134 | -7.883 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 1.23 | 10658.26 | 8665.252 | 2.458 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 2.16 | 18048.92 | 8355.981 | -0.232 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (3.08) | (18434.59) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.769 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

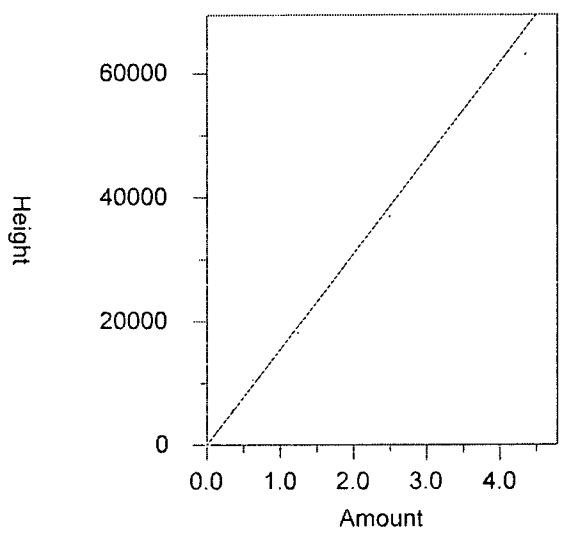
Single peak quantification by height

Y = 987.5696 X + 9390.728

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9914809 |
| Average error: | 5.673% |
| Average CF: | 2512.737 |
| RSD: | 63.371% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 13775.76 | 5159.46 | 14.535 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 2 | 4.76 | 13358.03 | 2806.309 | -5.205 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 3 | 9.53 | 17655.38 | 1852.611 | -6.100 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 4 | 19.05 | 27829.8 | 1460.882 | -1.327 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 5 | 33.34 | 42822.62 | 1284.422 | 1.197 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |
| 6 | (47.63) | (43781.29) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.946 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 15449.69 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9905829 |
| Average error: | 5.905% |
| Average CF: | 15449.69 |
| RSD: | 7.042% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5659.925 | 16171.21 | 4.670 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 2 | 0.62 | 10545.45 | 17008.79 | 10.091 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 3 | 1.24 | 18270.78 | 14734.5 | -4.629 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 4 | 2.49 | 36898.79 | 14818.79 | -4.084 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 5 | 4.35 | 63140.97 | 14515.17 | -6.049 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |
| 6 | (6.22) | (67644.8) | -- | -- | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B. |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1720501

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.85 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 | 3.81 | 3.87 |
| 1,1,2,2-TETRACHLOROETHANE | 5.33 | 5.32 | 5.33 | 5.32 | 5.32 | 5.32 | 5.32 | 5.29 | 5.35 |
| 1,2,3-Trichloropropane | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.37 | 5.43 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.65 | 7.71 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1720501

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.26E+04 | 1.18E+04 | 1.05E+04 | 1.02E+04 | 9.22E+03 | 8.88E+03 | 1.05E+04 | 14 |
| 1,1,2,2-TETRACHLOROETHANE | 1.39E+04 | 1.33E+04 | 1.28E+04 | 1.18E+04 | 1.11E+04 | 1.11E+04 | 1.23E+04 | 9 |
| 1,2,3-Trichloropropane | 1.94E+03 | 1.81E+03 | 1.74E+03 | 1.57E+03 | 1.48E+03 | 1.48E+03 | 1.67E+03 | 11 |
| 1,2-DIBROMO-3-CHLOROPROPA | 2.46E+04 | 2.33E+04 | 2.31E+04 | 2.09E+04 | 2.10E+04 | 2.13E+04 | 2.23E+04 | 7 |

Average % RSD: 10

linear linear 4/25/17

File Name: V:\CP18\18EDBS1720501.CAL
Version: 8

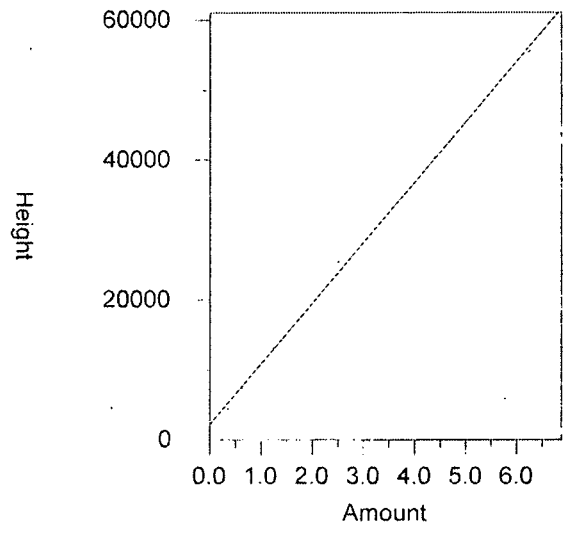
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.843 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

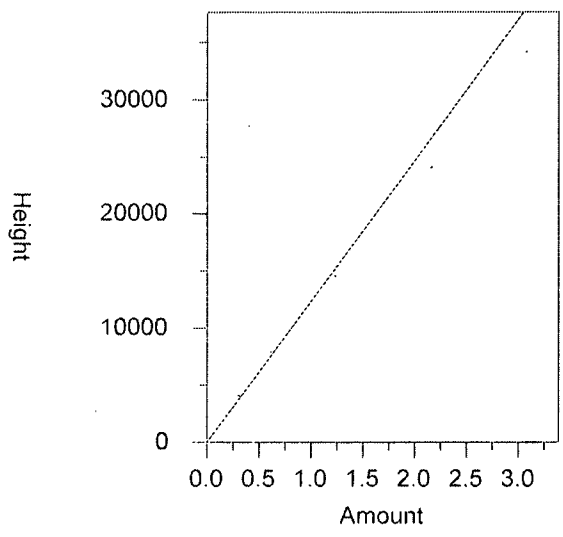
Single peak quantification by height

Y = 8638.205 X + 2245.084

Linear fit with equal weighting
Coefficient of determination: 0.9981241
Average error: 4.751%
Average CF: 10517.59
RSD: 13.769%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 4411.598 | 12604.57 | -16.264 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.006.BN |
| 2 | 0.63 | 7425.705 | 11786.83 | -3.401 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.007.BN |
| 3 | 1.25 | 13085.5 | 10468.4 | 0.327 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.008.BN |
| 4 | 2.5 | 25380.56 | 10152.22 | 6.459 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.009.BN |
| 5 | 4.38 | 40367.42 | 9216.306 | 0.716 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.010.BN |
| 6 | 6.25 | 55482.57 | 8877.211 | -1.336 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.011.BN |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.324 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

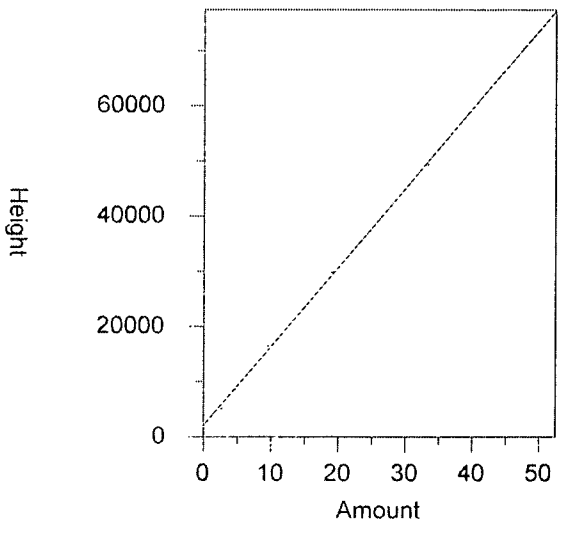
Y = 12331.18 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9723406 |
| Average error: | 7.996% |
| Average CF: | 12331.18 |
| RSD: | 9.455% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 2407.838 | 13918.14 | 12.869 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 0.308 | 4086.132 | 13266.66 | 7.586 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 0.616 | 7864.292 | 12766.71 | 3.532 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 1.23 | 14501.67 | 11789.98 | -4.389 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 2.16 | 24060.62 | 11139.17 | -9.667 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |
| 6 | 3.08 | 34207.75 | 11106.41 | -9.932 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.398 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

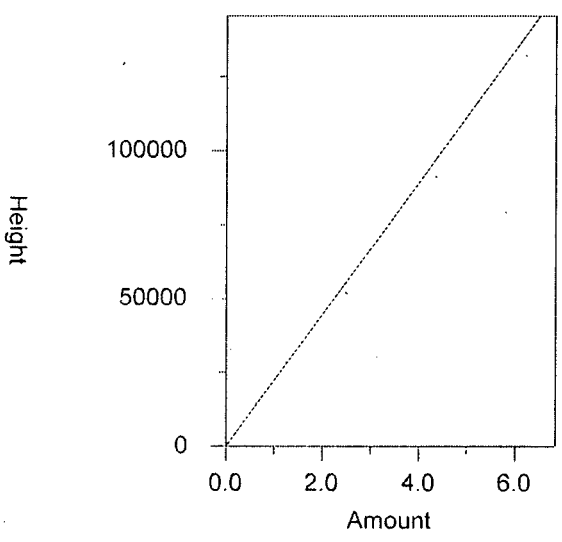
Y = 1435.139 X + 2038.979

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9994225 |
| Average error: | 3.883% |
| Average CF: | 1670.156 |
| RSD: | 11.343% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 5183.897 | 1941.534 | -11.700 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 4.76 | 8598.273 | 1806.36 | -3.066 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 9.52 | 16579.96 | 1741.592 | 5.595 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 19.05 | 29943.89 | 1571.858 | 1.925 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 33.34 | 49389.79 | 1481.397 | -0.996 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |
| 6 | 47.63 | 70406.27 | 1478.192 | 0.017 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.679 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 22348.63 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9918822 |
| Average error: | 5.849% |
| Average CF: | 22348.63 |
| RSD: | 6.828% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 8603.578 | 24581.65 | 9.992 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 0.62 | 14448.06 | 23303.32 | 4.272 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 1.24 | 28621.88 | 23082.16 | 3.282 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 2.49 | 51969.48 | 20871.28 | -6.610 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 4.35 | 91292.15 | 20986.7 | -6.094 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0: |
| 6 | 6.22 | 132278.8 | 21266.69 | -4.841 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0: |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1720501B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.79 | 2.79 | 2.78 | 2.79 | 2.79 | 2.79 | 2.76 | 2.82 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.01 | 4.07 |
| 1,2,3-Trichloropropane | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.13 | 4.19 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.41 | 6.47 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1720501B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.68E+04 | 1.68E+04 | 1.47E+04 | 1.45E+04 | 1.31E+04 | 1.26E+04 | 1.47E+04 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 2.00E+04 | 1.93E+04 | 1.74E+04 | 1.57E+04 | 1.55E+04 | 1.51E+04 | 1.72E+04 | 12 |
| 1,2,3-Trichloropropane | 2.48E+03 | 2.44E+03 | 2.28E+03 | 2.08E+03 | 1.97E+03 | 1.91E+03 | 2.19E+03 | 11 |
| 1,2-DIBROMO-3-CHLOROPROPA | 2.87E+04 | 2.73E+04 | 2.57E+04 | 2.28E+04 | 2.16E+04 | 2.06E+04 | 2.44E+04 | 13 |

Average % RSD: 12

linear linear linear linear

HWY 7/26/17 7/25/17

File Name: V:\CP18\18EDBS1720501b.CAL
Version: 8

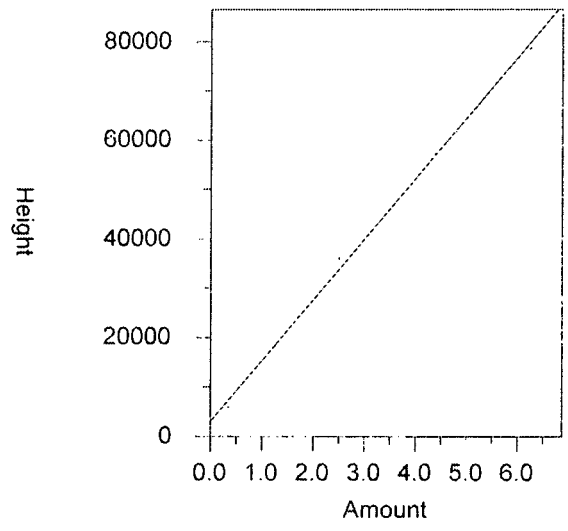
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 2.785 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

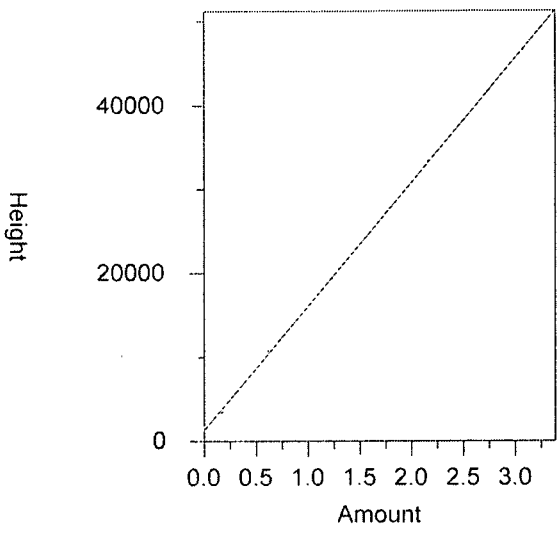
Single peak quantification by height

Y = 12288.05 X + 3051.388

Linear fit with equal weighting
Coefficient of determination: 0.9976688
Average error: 5.239%
Average CF: 14746.95
RSD: 12.137%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5879.512 | 16798.61 | -20.031 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.006.B |
| 2 | 0.63 | 10602.94 | 16830.06 | -1.760 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.007.B |
| 3 | 1.25 | 18381.3 | 14705.04 | -0.164 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.008.B |
| 4 | 2.5 | 36156.34 | 14462.54 | 7.062 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.009.B |
| 5 | 4.38 | 57388.45 | 13102.39 | 0.906 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.010.B |
| 6 | 6.25 | 78644.2 | 12583.07 | -1.512 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.011.B |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.04 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

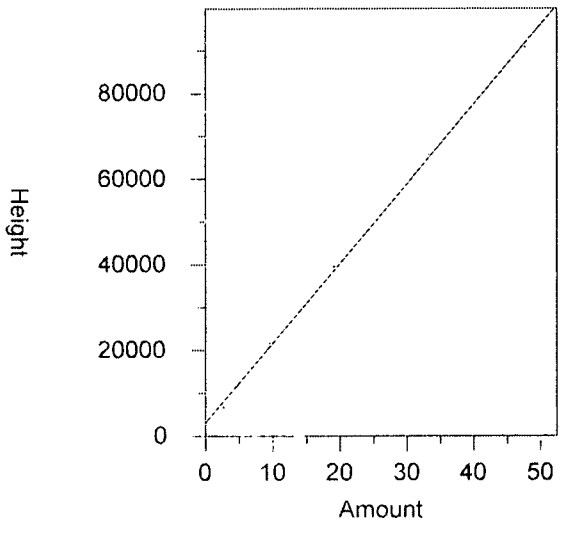
Single peak quantification by height

Y = 14761.19 X + 1285.783

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9997328 |
| Average error: | 2.747% |
| Average CF: | 17160.96 |
| RSD: | 12.182% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 3465.057 | 20029.23 | -9.752 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 0.308 | 5937.518 | 19277.66 | 1.805 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 0.616 | 10688.68 | 17351.75 | 2.987 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 1.23 | 19317.39 | 15705.2 | -0.641 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 2.16 | 33456.21 | 15488.99 | 0.863 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 3.08 | 46547.8 | 15112.92 | -0.433 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.158 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

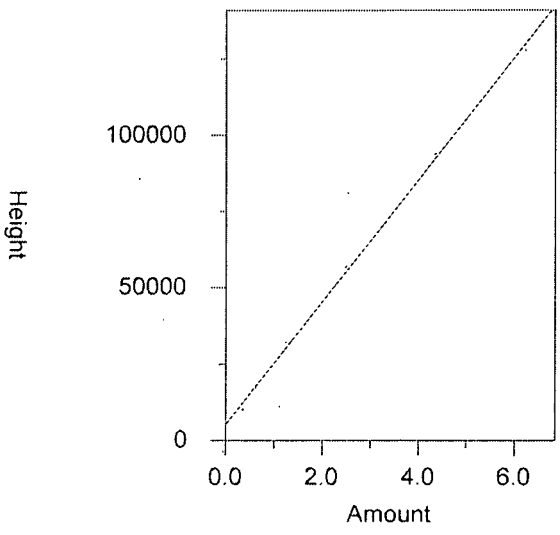
Single peak quantification by height

Y = 1862.06 X + 3028.528

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9990299 |
| Average error: | 4.822% |
| Average CF: | 2191.157 |
| RSD: | 11.050% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 6622.405 | 2480.301 | -17.222 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 4.76 | 11596.27 | 2436.191 | -2.486 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 9.53 | 21683.32 | 2275.27 | 4.377 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 19.05 | 39566.1 | 2076.961 | 2.767 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 33.34 | 65776.43 | 1972.898 | 1.024 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 47.63 | 90750.45 | 1905.321 | -1.055 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.436 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 20014.06 X + 5310.747

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9984107 |
| Average error: | 5.782% |
| Average CF: | 24448.19 |
| RSD: | 13.424% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 10051.81 | 28719.46 | -18.382 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 0.62 | 16928.15 | 27303.47 | -4.466 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 1.24 | 31855.28 | 25689.74 | 5.732 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 2.49 | 56857.13 | 22834.19 | 3.103 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 4.35 | 93834.88 | 21571.24 | 1.584 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 6.22 | 127951.9 | 20571.04 | -1.422 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 17:14

Lab File ID: 16EDBS17202001.0013.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_3AA Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 1.33 | 1.25 | 6 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 0.62 | 0.62 | 1 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 10.32 | 9.53 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 1.31 | 1.24 | 5 |

Compounds 4 Average of %D: 5

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 17:14

Lab File ID: 16EDBS17202001B.0013.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_3AA Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 1.27 | 1.25 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 0.62 | 0.62 | 0 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 9.48 | 9.53 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 1.31 | 1.24 | 5 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKAA Sample ID: AA **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 21, 2017 17:30:25
Instrument : CP16--19853A
Result file : 16EDBS17202001.0014.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 21, 2017 17:30:25
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0014.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.08 | 3.10 | 465 | 0.001289 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25794 | 0.062828 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 7915 | 0.067370 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9419 | 0.063489 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 590 | -0.509210 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062828 | | | | 1.05 | |
| ☐ 1,2,3-TCP | A | 0.067370 | | | | 260.99 | ** |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: JUL 24 2017

Verified by: SDM

Date: 7/24/17

%RPD = High - Low Amount divided by the Average times 100 unless RPD > 40
** %Difference > 40, lower amount found reported
* Recovery outside QC Limits



Printed on: 7/24/2017 11:10:54

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/21/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 20:22

Lab File ID: 16EDBS17202001.0025.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_5LS Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 4.43 | 4.38 | 1 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 2.08 | 2.16 | -4 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 32.14 | 33.34 | -4 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 4.38 | 4.35 | 1 |

Compounds 4 Average of %D: 3

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/21/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 20:22

Lab File ID: 16EDBS17202001B.0025.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_5LS Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 4.27 | 4.38 | -2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 2.17 | 2.16 | 1 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 34.04 | 33.34 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 4.32 | 4.35 | -1 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKSC Sample ID: SC **Batchnumber: 1720199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

| | |
|---|---|
| Injected on | : Jul 21, 2017 20:37:50 |
| Instrument | : CP16--19853A |
| Result file | : 16EDBS17202001.0026.RAW |
| Calibration file | : 16EDBS1720201.CAL |
| Method file | : 16EDBS.MET |

## Analysis Report (B)

| | |
|---|---|
| Injected on | : Jul 21, 2017 20:37:50 |
| Instrument | : CP16--19853B |
| Result file | : 16EDBS17202001B.0026.RAW |
| Calibration file | : 16EDBS1720201B.CAL |
| Method file | : 16EDBSB.MET |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.10 | 3.10 | 383 | 0.001061 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 25471 | 0.062041 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 9137 | 0.090989 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9566 | 0.064505 |
| **DBCP** | 7.92 | 7.93 | 7.98 | 949 | 0.003512 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062041 | | | | 3.89 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Sample
Date: 07/24/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 07/24/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 13:25

Lab File ID: 16EDBS17202002.0004.RAW Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_3PE Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 1.21 | 1.25 | -3 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 0.56 | 0.62 | -9 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 8.89 | 9.53 | -7 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 1.08 | 1.24 | -13 |

Compounds 4 Average of %D: 8

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 07/24/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 13:25

Lab File ID: 16EDBS17202002B.0004.RAW Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_3PE Init. Calib Date(s): 07/21/17 07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 1.13 | 1.25 | -9 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 0.57 | 0.62 | -7 |
| 1,2,3-Trichloropropane | 5.76 | 5.74 | 5.80 | 8.86 | 9.53 | -7 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.95 | 7.92 | 7.98 | 1.09 | 1.24 | -12 |

Compounds 4 Average of %D: 9

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKTM Sample ID: TM **Batchnumber: 1720499999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 24, 2017 13:40:52
Instrument : CP16--19853A
Result file : 16EDBS17202002.0005.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 24, 2017 13:40:52
Instrument : CP16--19853B
Result file : 16EDBS17202002B.0005.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 24832 | 0.060484 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 4694 | 0.005098 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9333 | 0.062894 |
| **DBCP** | 7.92 | 7.96 | 7.98 | 867 | 0.003206 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.060484 | | | | 3.91 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather M. Miller Heather M. Miller Chemist
Date: JUL 24 2017

Verified by: Susan M Geehert Susan M. Geehert Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Date Analyzed: 07/24/17

GC Column (1) : DB CLP1  ID: .32 (mm)  Time Analyzed: 14:59

Lab File ID: 16EDBS17202002.0010.RAW  Initial Calibration: 16EDBS1720201

Lab Standard ID: EDB_5LU  Init. Calib Date(s): 07/21/17  07/21/17

Calibration: 16EDBS1720201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.07 | 3.04 | 3.10 | 4.82 | 4.38 | 10 |
| 1,1,2,2-TETRACHLOROETHANE | 4.51 | 4.48 | 4.54 | 2.08 | 2.16 | -4 |
| 1,2,3-Trichloropropane | 4.58 | 4.55 | 4.61 | 34.11 | 33.34 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.90 | 6.87 | 6.93 | 4.69 | 4.35 | 8 |

Compounds 4  Average of %D: 6

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Date Analyzed: 07/24/17

GC Column (2) : DB CLP2  ID: .32 (mm)  Time Analyzed: 14:59

Lab File ID: 16EDBS17202002B.0010.RAW  Initial Calibration: 16EDBS1720201B

Lab Standard ID: EDB_5LU  Init. Calib Date(s): 07/21/17  07/21/17

Calibration: 16EDBS1720201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.33 | 4.30 | 4.36 | 4.66 | 4.38 | 7 |
| 1,1,2,2-TETRACHLOROETHANE | 5.64 | 5.61 | 5.67 | 2.15 | 2.16 | 0 |
| 1,2,3-Trichloropropane | 5.77 | 5.74 | 5.80 | 33.48 | 33.34 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.94 | 7.92 | 7.98 | 5.11 | 4.35 | 17 |

Compounds 4  Average of %D: 6

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKTN Sample ID: TN **Batchnumber: 1720499999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Jul 24, 2017 15:14:38
Instrument : CP16--19853A
Result file : 16EDBS17202002.0011.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Jul 24, 2017 15:14:38
Instrument : CP16--19853B
Result file : 16EDBS17202002B.0011.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 26031 | 0.063405 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 10248 | 0.112472 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.35 | 4.36 | 691 | 0.006699 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 9980 | 0.067365 |
| **DBCP** | 7.92 | 7.92 | 7.98 | 1242 | 0.004594 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.063405 | | | | 6.06 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather M. Miller Heather M. Miller Chemist
Date: JUL 24 2017

Verified by: Susan M. Goshert Susan M. Goshert Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/25/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 23:15

Lab File ID: 18EDBS17205002.045.RAW Initial Calibration: 18EDBS1720501

Lab Standard ID: EDB_5LX Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 4.23 | 4.38 | -3 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 1.96 | 2.16 | -9 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 31.27 | 33.34 | -6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 3.82 | 4.35 | -12 |

Compounds 4 Average of %D: 8

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/25/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 23:15

Lab File ID: 18EDBS17205002B.045.RAW Initial Calibration: 18EDBS1720501B

Lab Standard ID: EDB_5LX Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 4.19 | 4.38 | -4 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 2.15 | 2.16 | -1 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 32.39 | 33.34 | -3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 4.64 | 4.35 | 7 |

Compounds 4 Average of %D: 4

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKUX Sample ID: UX **Batchnumber: 1720599999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 23:31:11
Instrument : CP18--19846A
Result file : 18EDBS17205002.046.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.064459

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13910 | 0.064459 |
| **1,2,3-TCP** | 5.37 | 5.41 | 5.43 | 297 | -0.069366 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 385 | 0.000983 |

## Analysis Report (B)

Injected on : Jul 25, 2017 23:31:11
Instrument : CP18--19846B
Result file : 18EDBS17205002B.046.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.069858

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19332 | 0.069858 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1012 | -0.061871 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064459 | | | | 8.04 | |
| ☑ 1,2,3-TCP | A | -0.069366 | | | | 11.42 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist Verified by:

Date: JUL 26 2017 Date:

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/26/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 2:26

Lab File ID: 18EDBS17205002.057.RAW Initial Calibration: 18EDBS1720501

Lab Standard ID: EDB_3PO Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 1.37 | 1.25 | 10 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 0.65 | 0.62 | 5 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 10.34 | 9.53 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 1.30 | 1.24 | 4 |

Compounds 4 Average of %D: 7

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/26/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 2:26

Lab File ID: 18EDBS17205002B.057.RAW Initial Calibration: 18EDBS1720501B

Lab Standard ID: EDB_3PO Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 1.40 | 1.25 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 0.73 | 0.62 | 19 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 10.88 | 9.53 | 14 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 1.54 | 1.24 | 24 |

Compounds 4 Average of %D: 17

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKUY Sample ID: UY **Batchnumber: 1720599999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 02:42:11
Instrument : CP18--19846A
Result file : 18EDBS17205002.058.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 93% (46-136) Conc.: 0.063146

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13627 | 0.063146 |
| **1,2,3-TCP** | 5.37 | 5.37 | 5.43 | 309 | -0.068874 |

## Analysis Report (B)

Injected on : Jul 26, 2017 02:42:11
Instrument : CP18--19846B
Result file : 18EDBS17205002B.058.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 104% (46-136) Conc.: 0.070562

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19513 | 0.070562 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 726 | -0.070656 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.063146 | | | | 11.09 | |
| ☑ 1,2,3-TCP | A | -0.068874 | | | | 2.55 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

Verified by: _____
Date: _____

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/26/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 5:05

Lab File ID: 18EDBS17205002.067.RAW Initial Calibration: 18EDBS1720501

Lab Standard ID: EDB_4QP Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 2.73 | 2.50 | 9 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 1.21 | 1.23 | -2 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 19.17 | 19.05 | 1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 2.33 | 2.49 | -6 |

Compounds 4 Average of %D: 5

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Date Analyzed: 07/26/17

GC Column (2) : ZB MR2  ID: .32 (mm)  Time Analyzed: 5:05

Lab File ID: 18EDBS17205002B.067.RAW  Initial Calibration: 18EDBS1720501B

Lab Standard ID: EDB_4QP  Init. Calib Date(s): 07/24/17  07/24/17

Calibration: 18EDBS1720501B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 2.71 | 2.50 | 9 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 1.32 | 1.23 | 7 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 20.11 | 19.05 | 6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 2.88 | 2.49 | 16 |

Compounds 4  Average of %D: 10

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKUZ Sample ID: UZ **Batchnumber: 1720599999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 05:21:13
Instrument : CP18--19846A
Result file : 18EDBS17205002.068.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 98% (46-136) Conc.: 0.0665

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14350 | 0.066500 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 409 | -0.064907 |

## Analysis Report (B)

Injected on : Jul 26, 2017 05:21:13
Instrument : CP18--19846B
Result file : 18EDBS17205002B.068.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.072039

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19895 | 0.072039 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 813 | -0.067983 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.066500 | | | | 8.00 | |
| ☑ 1,2,3-TCP | A | -0.064907 | | | | 4.63 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 26 2017

Verified by: _____
Date: _____

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 16EDBS17202001
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0001 | CONDITIONER | | 7/21/17 14:07 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0002 | CONDITIONER | | 7/21/17 14:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0003 | CONDITIONER | | 7/21/17 14:38 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0004 | CONDITIONER | | 7/21/17 14:54 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0005 | EIBKX1724C | PIBLKAA | 7/21/17 15:09 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0006 | EDB_11724DS | EDB_1AA | 7/21/17 15:25 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0007 | EDB_21724DS | EDB_2AA | 7/21/17 15:40 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0008 | EDB_31724DS | EDB_3AA | 7/21/17 15:56 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0009 | EDB_41724DS | EDB_4AA | 7/21/17 16:12 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0010 | EDB_51724DS | EDB_5AA | 7/21/17 16:27 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0011 | EDB_61724DS | EDB_6AA | 7/21/17 16:43 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0012 | MDEDX1724DS | MDEDXAA | 7/21/17 16:59 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0013 | EDB_31724DS | EDB_3AA | 7/21/17 17:14 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0014 | EIBKX1724C | PIBLKAA | 7/21/17 17:30 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0015 | BLANKA 7/21/17 | PBLK25201 | 7/21/17 17:46 | 172010025A | 2.00 |
| Administra16EDBS17202001.0016 | LCSA 7/21/17 | LCS25201 | 7/21/17 18:01 | 172010025A | 2.00 |
| Administra16EDBS17202001.0017 | LCSDA 7/21/17 | LCSD25201 | 7/21/17 18:17 | 172010025A | 2.00 |
| Administra16EDBS17202001.0018 | 9095972 | 18417 | 7/21/17 18:32 | 172010025A | 2.00 |
| Administra16EDBS17202001.0019 | 9100482 | 18604 | 7/21/17 18:48 | 172010025A | 2.00 |
| Administra16EDBS17202001.0020 | 9100483 | 18605 | 7/21/17 19:04 | 172010025A | 2.00 |
| Administra16EDBS17202001.0021 | 9100485 | 18607 | 7/21/17 19:19 | 172010025A | 2.00 |
| Administra16EDBS17202001.0022 | 9100487 | 18609 | 7/21/17 19:35 | 172010025A | 2.00 |
| Administra16EDBS17202001.0023 | 9100489 | 18611 | 7/21/17 19:51 | 172010025A | 2.00 |
| Administra16EDBS17202001.0024 | 9100491 | 18613 | 7/21/17 20:06 | 172010025A | 2.00 |
| Administra16EDBS17202001.0025 | EDB_51724DS | EDB_5LS | 7/21/17 20:22 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0026 | EIBKX1724C | PIBLKSC | 7/21/17 20:37 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0027 | 9100492 | 18614 | 7/21/17 20:53 | 172010025A | 2.00 |
| Administra16EDBS17202001.0028 | 9100493 | 18615 | 7/21/17 21:09 | 172010025A | 2.00 |
| Administra16EDBS17202001.0029 | 9100494 | 18616 | 7/21/17 21:24 | 172010025A | 2.00 |
| Administra16EDBS17202001.0030 | 9100495 | 18617 | 7/21/17 21:40 | 172010025A | 2.00 |
| Administra16EDBS17202001.0031 | 9100496 | 18618 | 7/21/17 21:55 | 172010025A | 2.00 |
| Administra16EDBS17202001.0032 | 9107402 | 18701 | 7/21/17 22:11 | 172010025A | 2.00 |
| Administra16EDBS17202001.0033 | 9107403 | 18702 | 7/21/17 22:27 | 172010025A | 2.00 |
| Administra16EDBS17202001.0034 | 9107404 | 18703 | 7/21/17 22:42 | 172010025A | 2.00 |
| Administra16EDBS17202001.0035 | 9107405 | 18704 | 7/21/17 22:58 | 172010025A | 2.00 |
| Administra16EDBS17202001.0036 | 9107406 | 18705 | 7/21/17 23:13 | 172010025A | 2.00 |
| Administra16EDBS17202001.0037 | EDB_41724DS | EDB_4QK | 7/21/17 23:29 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0038 | EIBKX1724C | PIBLKSD | 7/21/17 23:44 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0039 | 9107407 | 18706 | 7/22/17 0:00 | 172010025A | 2.00 |
| Administra16EDBS17202001.0040 | 9109771 | 18801 | 7/22/17 0:16 | 172010025A | 2.00 |
| Administra16EDBS17202001.0041 | 9109772MS | 18801 | 7/22/17 0:31 | 172010025A | 2.00 |
| Administra16EDBS17202001.0042 | 9109773MSD | 18801 | 7/22/17 0:47 | 172010025A | 2.00 |
| Administra16EDBS17202001.0043 | 9109779 | 18803 | 7/22/17 1:03 | 172010025A | 2.00 |
| Administra16EDBS17202001.0044 | BLANKA 7/21/17 | PBLK21201 | 7/22/17 1:18 | 172010021A | 2.00 |
| Administra16EDBS17202001.0045 | LCSA 7/21/17 | LCS21201 | 7/22/17 1:34 | 172010021A | 2.00 |
| Administra16EDBS17202001.0046 | LCSDA 7/21/17 | LCSD21201 | 7/22/17 1:49 | 172010021A | 2.00 |
| Administra16EDBS17202001.0047 | 9098344 | 18501 | 7/22/17 2:05 | 172010021A | 2.00 |
| Administra16EDBS17202001.0048 | 9098345 | 18502 | 7/22/17 2:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0049 | EDB_31724DS | EDB_3PB | 7/22/17 2:36 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0050 | EIBKX1724C | PIBLKSE | 7/22/17 2:52 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0051 | 9098346 | 18503 | 7/22/17 3:07 | 172010021A | 2.00 |
| Administra16EDBS17202001.0052 | 9098347 | 18504 | 7/22/17 3:23 | 172010021A | 2.00 |
| Administra16EDBS17202001.0053 | 9098348 | 18505 | 7/22/17 3:39 | 172010021A | 2.00 |
| Administra16EDBS17202001.0054 | 9098349 | 18506 | 7/22/17 3:54 | 172010021A | 2.00 |
| Administra16EDBS17202001.0055 | 9098350MS | 18506 | 7/22/17 4:10 | 172010021A | 2.00 |
| Administra16EDBS17202001.0056 | 9098351MSD | 18506 | 7/22/17 4:25 | 172010021A | 2.00 |

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17202001.0057 | 9098352 | 18507 | 7/22/17 4:41 | 172010021A | 2.00 |
| Administra16EDBS17202001.0058 | 9098353 | 18508 | 7/22/17 4:57 | 172010021A | 2.00 |
| Administra16EDBS17202001.0059 | 9098354 | 18509 | 7/22/17 5:12 | 172010021A | 2.00 |
| Administra16EDBS17202001.0060 | 9098355 | 18510 | 7/22/17 5:28 | 172010021A | 2.00 |
| Administra16EDBS17202001.0061 | EDB_51724DS | EDB_5LT | 7/22/17 5:44 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0062 | EIBKX1724C | PIBLKSF | 7/22/17 5:59 | 1720199999 | 2.00 |
| Administra16EDBS17202001.0063 | 9098356 | 18511 | 7/22/17 6:15 | 172010021A | 2.00 |
| Administra16EDBS17202001.0064 | 9098357 | 18512 | 7/22/17 6:30 | 172010021A | 2.00 |
| Administra16EDBS17202001.0065 | 9098358 | 18513 | 7/22/17 6:46 | 172010021A | 2.00 |
| Administra16EDBS17202001.0066 | 9098359 | 18514 | 7/22/17 7:02 | 172010021A | 2.00 |
| Administra16EDBS17202001.0067 | 9098360 | 18515 | 7/22/17 7:17 | 172010021A | 2.00 |
| Administra16EDBS17202001.0068 | 9098361 | 18516 | 7/22/17 7:33 | 172010021A | 2.00 |
| Administra16EDBS17202001.0069 | 9098362 | 18517 | 7/22/17 7:48 | 172010021A | 2.00 |
| Administra16EDBS17202001.0070 | 9098363 | 18518 | 7/22/17 8:04 | 172010021A | 2.00 |
| Administra16EDBS17202001.0071 | 9100479 | 18601 | 7/22/17 8:20 | 172010021A | 2.00 |
| Administra16EDBS17202001.0072 | 9100481 | 18603 | 7/22/17 8:35 | 172010021A | 2.00 |
| Administra16EDBS17202001.0073 | EDB_41724DS | EDB_4QL | 7/22/17 8:51 | 1720199999 | 1.00 |
| Administra16EDBS17202001.0074 | EIBKX1724C | PIBLKSG | 7/22/17 9:06 | 1720199999 | 2.00 |

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Pesticide Residue Analysis
Runlog for 16EDBS17202002
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| Administra | 16EDBS17202002.0001 | CONDITIONER | | 7/24/17 12:38 | 1720499999 | 1.00 |
| Administra | 16EDBS17202002.0002 | CONDITIONER | | 7/24/17 12:54 | 1720499999 | 1.00 |
| Administra | 16EDBS17202002.0003 | CONDITIONER | | 7/24/17 13:09 | 1720499999 | 1.00 |
| Administra | 16EDBS17202002.0004 | EDB_31724DS | EDB_3PE | 7/24/17 13:25 | 1720499999 | 1.00 |
| Administra | 16EDBS17202002.0005 | EIBKX1724C | PIBLKTM | 7/24/17 13:40 | 1720499999 | 2.00 |
| Administra | 16EDBS17202002.0006 | 9109771DF20 | 18801 | 7/24/17 13:56 | 172010025A | 40.00 |
| Administra | 16EDBS17202002.0007 | 9109772MSDF20 | 18801 | 7/24/17 14:12 | 172010025A | 40.00 |
| Administra | 16EDBS17202002.0008 | 9109773MSDDF20 | 18801 | 7/24/17 14:27 | 172010025A | 40.00 |
| Administra | 16EDBS17202002.0009 | 9109779DF10 | 18803 | 7/24/17 14:43 | 172010025A | 20.00 |
| Administra | 16EDBS17202002.0010 | EDB_51724DS | EDB_5LU | 7/24/17 14:59 | 1720499999 | 1.00 |
| Administra | 16EDBS17202002.0011 | EIBKX1724C | PIBLKTN | 7/24/17 15:14 | 1720499999 | 2.00 |

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Pesticide Residue Analysis
Runlog for 18EDBS17205001
Instrument CP18--19846A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17205001.001 | CONDITIONER | | 7/24/17 15:01 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.002 | CONDITIONER | | 7/24/17 15:17 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.003 | CONDITIONER | | 7/24/17 15:32 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.004 | CONDITIONER | | 7/24/17 15:48 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.005 | EIBKX1724C | PIBLKAA | 7/24/17 16:04 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.006 | EDB_11724DT | EDB_1AA | 7/24/17 16:20 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.007 | EDB_21724DT | EDB_2AA | 7/24/17 16:36 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.008 | EDB_31724DT | EDB_3AA | 7/24/17 16:52 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.009 | EDB_41724DT | EDB_4AA | 7/24/17 17:08 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.010 | EDB_51724DT | EDB_5AA | 7/24/17 17:24 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.011 | EDB_61724DT | EDB_6AA | 7/24/17 17:40 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.012 | MDEDX1724DT | MDEDXAA | 7/24/17 17:57 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.013 | EDB_31724DT | EDB_3AA | 7/24/17 18:13 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.014 | EIBKX1724C | PIBLKAA | 7/24/17 18:28 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.015 | BLANKA 7/23/17 | PBLK52202 | 7/24/17 18:44 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.016 | LCSA 7/23/17 | LCS52202 | 7/24/17 19:01 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.017 | LCSDA 7/23/17 | LCSD52202 | 7/24/17 19:17 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.018 | 9112697 | 12201 | 7/24/17 19:33 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.019 | 9112698 | 12202 | 7/24/17 19:48 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.020 | 9112699 | 12203 | 7/24/17 20:04 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.021 | 9112700 | 12204 | 7/24/17 20:20 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.022 | 9112701 | 12205 | 7/24/17 20:36 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.023 | EDB_51724DT | EDB_5LV | 7/24/17 20:52 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.024 | EIBKX1724C | PIBLKTO | 7/24/17 21:08 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.025 | 9114466 | C22-1 | 7/24/17 21:24 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.026 | 9114467MS | C22-1 | 7/24/17 21:40 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.027 | 9114468MSD | C22-1 | 7/24/17 21:56 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.028 | 9114469 | C22-2 | 7/24/17 22:12 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.029 | 9114470 | C22-3 | 7/24/17 22:28 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.030 | 9114471 | C22-4 | 7/24/17 22:44 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.031 | 9114472 | C22-5 | 7/24/17 23:00 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.032 | 9114473 | C22-6 | 7/24/17 23:16 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.033 | 9114474 | C22-7 | 7/24/17 23:32 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.034 | EDB_41724DT | EDB_4QM | 7/24/17 23:48 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.035 | EIBKX1724C | PIBLKTP | 7/25/17 0:04 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.036 | BLANKA 7/23/17 | PBLK53202 | 7/25/17 0:20 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.037 | LCSA 7/23/17 | LCS53202 | 7/25/17 0:36 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.038 | LCSDA 7/23/17 | LCSD53202 | 7/25/17 0:52 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.039 | 9114605 | 19001 | 7/25/17 1:08 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.040 | 9114606 | 19002 | 7/25/17 1:24 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.041 | 9114607 | 19003 | 7/25/17 1:40 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.042 | 9114608 | 19004DUP | 7/25/17 1:56 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.043 | 9114608 | 19004 | 7/25/17 2:12 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.044 | 9114609 | 19005 | 7/25/17 2:28 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.045 | 9114609MS | 19005MS | 7/25/17 2:44 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.046 | EDB_31724DT | EDB_3PI | 7/25/17 3:00 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.047 | EIBKX1724C | PIBLKTQ | 7/25/17 3:15 | 1720499999 | 2.00 |

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Pesticide Residue Analysis
Runlog for 18EDBS17205002
Instrument CP18--19846A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17205002.001 | CONDITIONER | | 7/25/17 11:25 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.002 | CONDITIONER | | 7/25/17 11:40 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.003 | CONDITIONER | | 7/25/17 11:56 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.004 | EDB_41724DT | EDB_4QN | 7/25/17 12:12 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.005 | EIBKX1724C | PIBLKUQ | 7/25/17 12:28 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.006 | BLANKA 7/25/17 | PBLK29202 | 7/25/17 12:44 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.007 | LCSA 7/25/17 | LCS29202 | 7/25/17 13:00 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.008 | LCSDA 7/25/17 | LCSD29202 | 7/25/17 13:16 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.009 | 9102850 | GCL09 | 7/25/17 13:32 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.010 | 9102851MS | GCL09 | 7/25/17 13:47 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.011 | 9102852MSD | GCL09 | 7/25/17 14:03 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.012 | 9102854 | GCLTB | 7/25/17 14:19 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.013 | 9109581 | CG371 | 7/25/17 14:35 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.014 | 9109582 | CG372 | 7/25/17 14:51 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.015 | 9109583 | CG373 | 7/25/17 15:07 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.016 | EDB_51724DT | EDB_5LW | 7/25/17 15:23 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.017 | EIBKX1724C | PIBLKUR | 7/25/17 15:39 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.018 | 9109584 | CG374 | 7/25/17 15:55 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.019 | 9112789 | TMQG1 | 7/25/17 16:10 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.020 | 9112790 | TMQGD | 7/25/17 16:26 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.021 | 9112791 | TMQT1 | 7/25/17 16:42 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.022 | 9112792 | TMQT2 | 7/25/17 16:58 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.023 | 9112793 | TMQT3 | 7/25/17 17:14 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.024 | 9112794 | TMQE1 | 7/25/17 17:41 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.025 | 9112795 | TMQE2 | 7/25/17 17:56 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.026 | 9112796 | TMQE3 | 7/25/17 18:12 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.027 | 9112797 | TMQE4 | 7/25/17 18:28 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.028 | EDB_31724DT | EDB_3PL | 7/25/17 18:44 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.029 | EIBKX1724C | PIBLKUS | 7/25/17 19:00 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.030 | BLANKA 7/25/17 | PBLK21205 | 7/25/17 19:16 | 172050021A | 2.00 |
| 7848 | 18EDBS17205002.031 | LCSA 7/25/17 | LCS21205 | 7/25/17 19:32 | 172050021A | 2.00 |
| 7848 | 18EDBS17205002.032 | LCSDA 7/25/17 | LCSD21205 | 7/25/17 19:48 | 172050021A | 2.00 |
| 7848 | 18EDBS17205002.033 | 9107261 | EDS5R | 7/25/17 20:04 | 172050021A | 2.00 |
| 7848 | 18EDBS17205002.034 | EDB_41724DT | EDB_4QO | 7/25/17 20:20 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.035 | EIBKX1724C | PIBLKUW | 7/25/17 20:36 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.036 | BLANKA 7/25/17 | PBLK31202 | 7/25/17 20:51 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.037 | LCSA 7/25/17 | LCS31202 | 7/25/17 21:07 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.038 | LCSDA 7/25/17 | LCSD31202 | 7/25/17 21:23 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.039 | 9109585 | CG375 | 7/25/17 21:39 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.040 | 9109586MS | CG375 | 7/25/17 21:55 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.041 | 9109587MSD | CG375 | 7/25/17 22:11 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.042 | 9109588 | CG376 | 7/25/17 22:27 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.043 | 9109589 | CG377 | 7/25/17 22:43 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.044 | 9109590 | CG378 | 7/25/17 22:59 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.045 | EDB_51724DT | EDB_5LX | 7/25/17 23:15 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.046 | EIBKX1724C | PIBLKUX | 7/25/17 23:31 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.047 | BLANKA 7/25/17 | PBLK30202 | 7/25/17 23:47 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.048 | LCSA 7/25/17 | LCS30202 | 7/26/17 0:03 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.049 | LCSDA 7/25/17 | LCSD30202 | 7/26/17 0:19 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.050 | 9109781 | 18805 | 7/26/17 0:34 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.051 | 9109781MS | 18805MS | 7/26/17 0:50 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.052 | 9109782 | 18806 | 7/26/17 1:06 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.053 | 9109783 | 18807 | 7/26/17 1:22 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.054 | 9109784 | 18808 | 7/26/17 1:38 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.055 | 9109784 | 18808DUP | 7/26/17 1:54 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.056 | 9109785 | 18809 | 7/26/17 2:10 | 172020030A | 2.00 |

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17205002.057 | EDB_31724DT | EDB_3PO | 7/26/17 2:26 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.058 | EIBKX1724C | PIBLKUY | 7/26/17 2:42 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.059 | 9109786 | 18810 | 7/26/17 2:58 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.060 | 9109787 | 18811 | 7/26/17 3:13 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.061 | 9109788 | 18812 | 7/26/17 3:29 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.062 | 9112123 | 18901 | 7/26/17 3:45 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.063 | 9112125 | 18903 | 7/26/17 4:01 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.064 | 9112126 | 18904 | 7/26/17 4:17 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.065 | 9112127 | 18905 | 7/26/17 4:33 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.066 | 9112128 | 18906 | 7/26/17 4:49 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.067 | EDB_41724DT | EDB_4QP | 7/26/17 5:05 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.068 | EIBKX1724C | PIBLKUZ | 7/26/17 5:21 | 1720599999 | 2.00 |

# Sample Data

# EDB/DBCP

**LOQ/MDL Summary**
**Pesticide Residue Analysis**

**SDG: KR188**

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

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# Data Summary

**Sample Name: 9109771** DF20 18801 Sample ID: AC **Batchnumber: 172010025A**
Sample Amount: 36.85 mL Total Volume: 40 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 24, 2017 13:56:27 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202002.0006.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) * 169% ( 46 - 136 ) Conc: 0.113095

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 24, 2017 13:56:27 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202002B.0006.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) * 217% ( 46 - 136 ) Conc: 0.144861

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 24573 | 1.293889 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 2444 | 0.113095 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 2435 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 7122 | 1.311995 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 1337 | 0.144861 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 3652 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 1.293889 | 0.19 | 0.3799 | 0.5699 | | 1.39 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.113095 | 0.0665 | <0.133 | <0.133 | | 24.63 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <5.1289 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.19 | <0.3799 | <0.5699 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:50

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9109771** DF20 18801 Sample ID: AC **Batchnumber: 172010025A**
Sample Amount: 36.85 mL Total Volume: 40 ml Analyst: Administr SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 24, 2017 13:56:27
Instrument : CP16--19853A
Result file : 16EDBS17202002.0006.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : *169% (46-136) Conc.: 0.113095

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 24573 | 1.293889 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 2444 | 0.113095 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 2435 | -0.732647 |

## Analysis Report (B)

Injected on : Jul 24, 2017 13:56:27
Instrument : CP16--19853B
Result file : 16EDBS17202002B.0006.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : *217% (46-136) Conc.: 0.144861

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 7122 | 1.311995 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 1337 | 0.144861 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 3652 | -6.307540 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 1.293889 | 0.5699 | 0.19 | | 1.39 | |
| ☐ 1,1,2,2-PCA | A | 0.113095 | | | | 24.63 | |
| ☐ 1,2,3-TCP | | | <5.1289 | <1.8996 | | | |
| ☐ DBCP | | | <0.5699 | <0.19 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

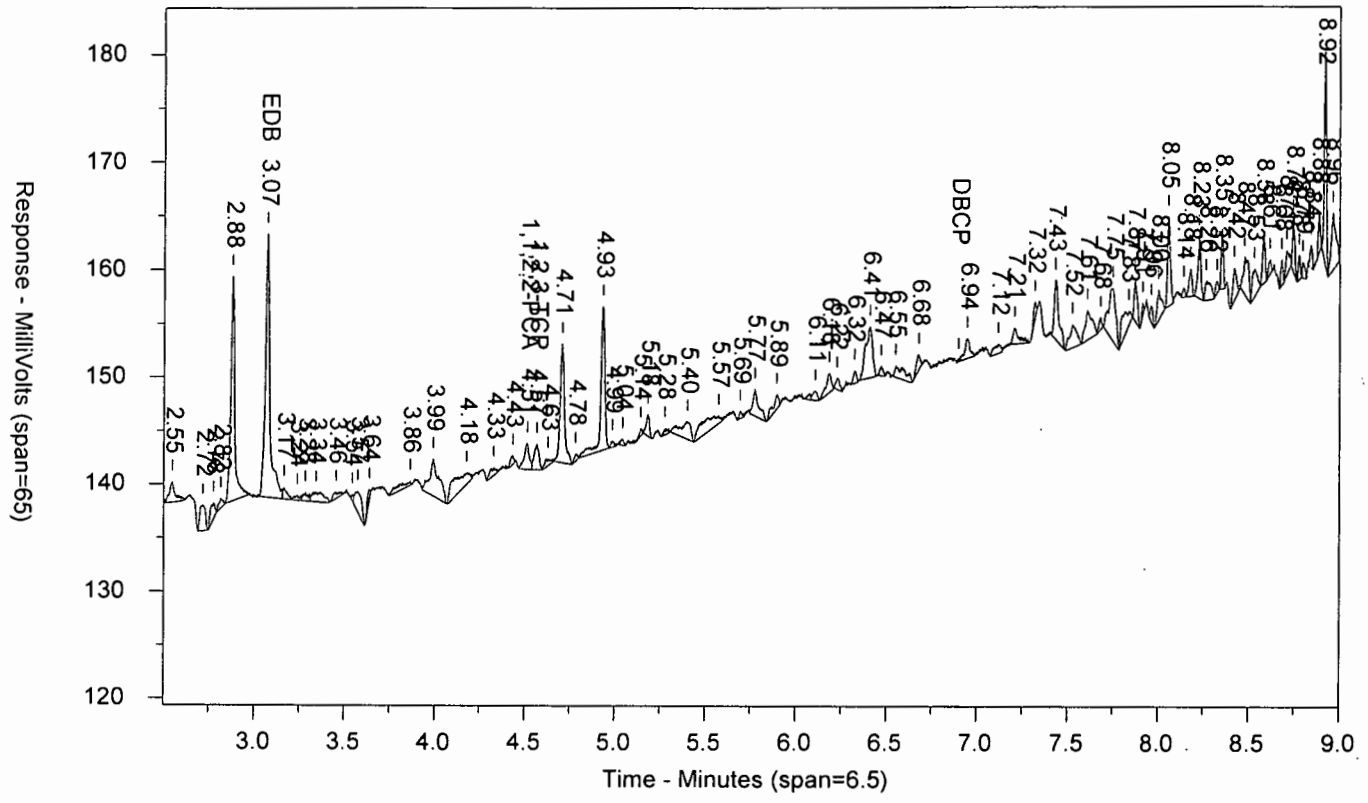
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109771DF20 AC18801 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002.0006.RAW

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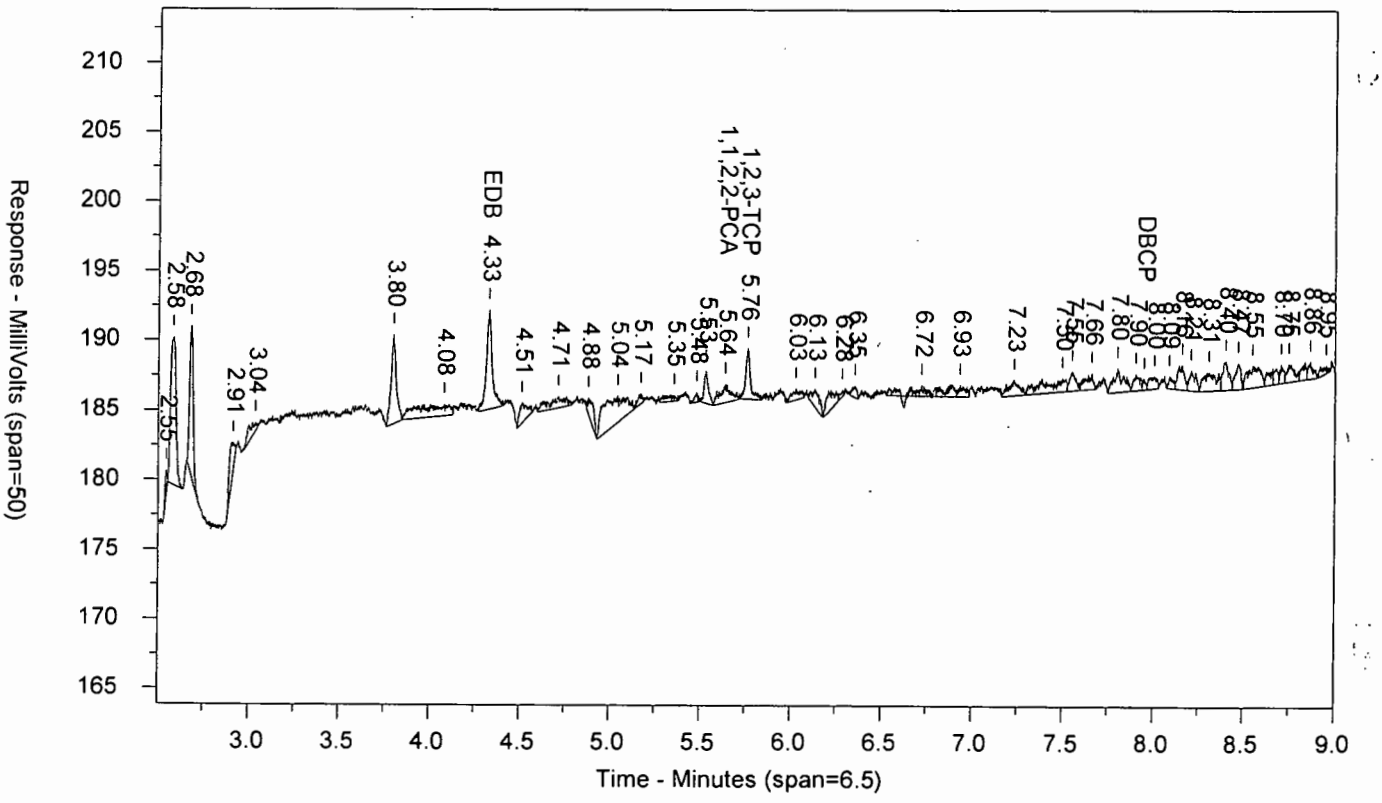

LANCASTER LABORATORIES

Sample Number: 9109771DF20 AC18801 T 172010025A 10398 SW-846 8011
Injected On: 7/24/2017 1:56:27 PM Sample Weight: 36.85
Instrument ID: CP16-19853 Dilution Factor: 40
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 24573 | 1.294 | EDB | 4.33 | 7122 | 1.312 | EDB |
| 4.514 | 2444 | .113 | 1,1,2,2-PCA | 5.639 | 1337 | .145 | 1,1,2,2-PCA |
| 4.567 | 2435 | -.733 | 1,2,3-TCP | 5.761 | 3652 | -6.308 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202002.0006.RAW
Area File: 16EDBS17202002B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/24/2017 2:05:30 PM
File Reported On: 7/24/2017 at 3:25:08 PM

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# Data Summary

**Sample Name: 9109779** DF10 18803 Sample ID: AC **Batchnumber: 172010025A**
Sample Amount: 36.35 mL Total Volume: 20 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 24, 2017 14:43:24 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202002.0009.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.074439

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 24, 2017 14:43:24 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202002B.0009.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) * 143% ( 46 - 136 ) Conc: 0.097101

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 29619 | 0.790508 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 3174 | 0.074439 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 2127 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 8739 | 0.81598 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 1693 | 0.097101 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 4650 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.790508 | 0.0963 | 0.1926 | 0.2889 | | 3.17 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.074439 | 0.0337 | 0.0674 | 0.0674 | | 26.42 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <2.5997 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0963 | <0.1926 | <0.2889 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:58

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9109779** DF10 18803 Sample ID: AC **Batchnumber: 172010025A**
Sample Amount: 36.35 mL Total Volume: 20 ml Analyst: Administr SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 24, 2017 14:43:24
Instrument : CP16--19853A
Result file : 16EDBS17202002.0009.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.074439

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 29619 | 0.790508 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 3174 | 0.074439 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 2127 | -0.428737 |

## Analysis Report (B)

Injected on : Jul 24, 2017 14:43:24
Instrument : CP16--19853B
Result file : 16EDBS17202002B.0009.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : *143% (46-136) Conc.: 0.097101

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 8739 | 0.815980 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 1693 | 0.097101 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 4650 | -2.641388 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.790508 | 0.2889 | 0.0963 | | 3.17 | |
| ☐ 1,1,2,2-PCA | A | 0.074439 | | | | 26.42 | |
| ☐ 1,2,3-TCP | | | <2.5997 | <0.9629 | | | |
| ☐ DBCP | | | <0.2889 | <0.0963 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Susan M Gosbert
Susan M. Gosbert
Manager
Date: JUL 28 2017

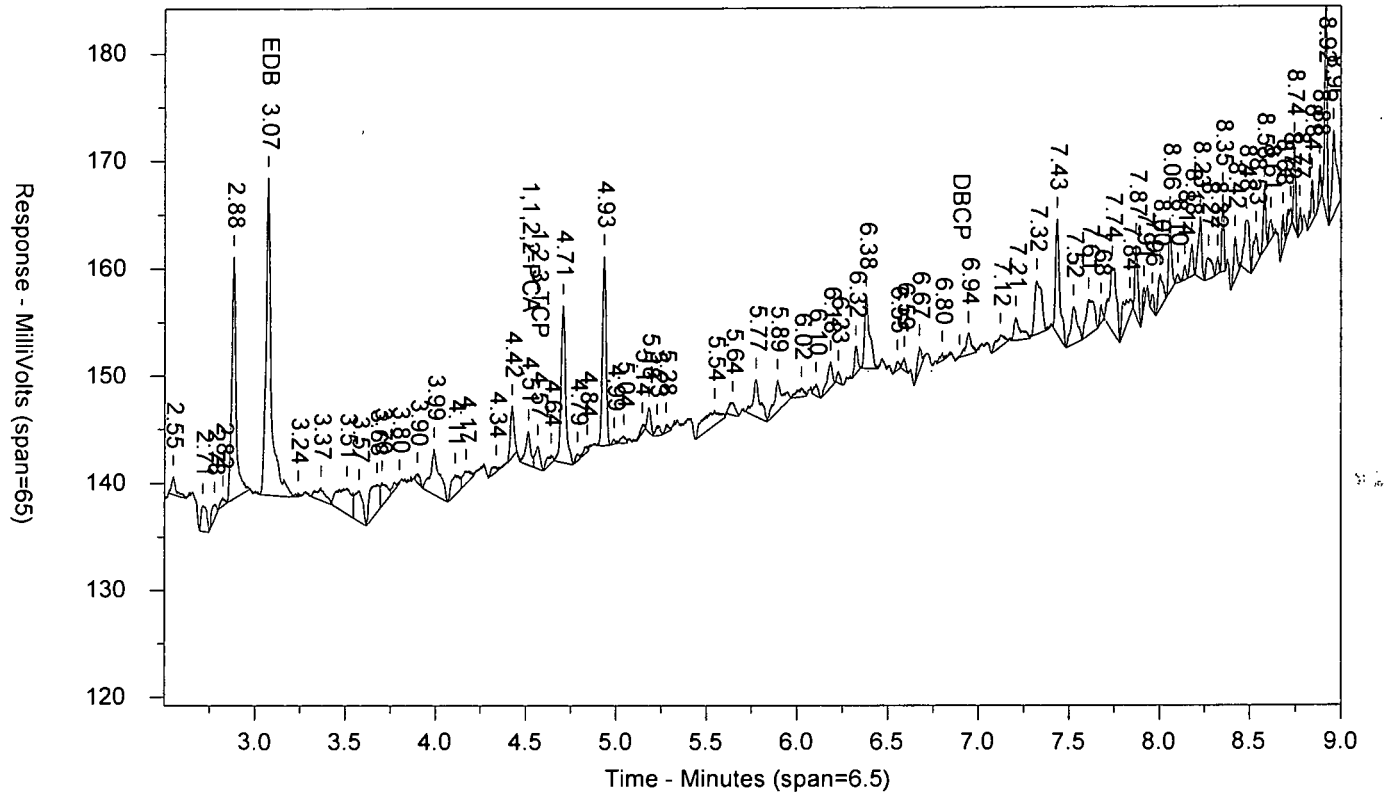
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 15:27:58

9109779DF10 AC18803 T 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002.0009.RAW

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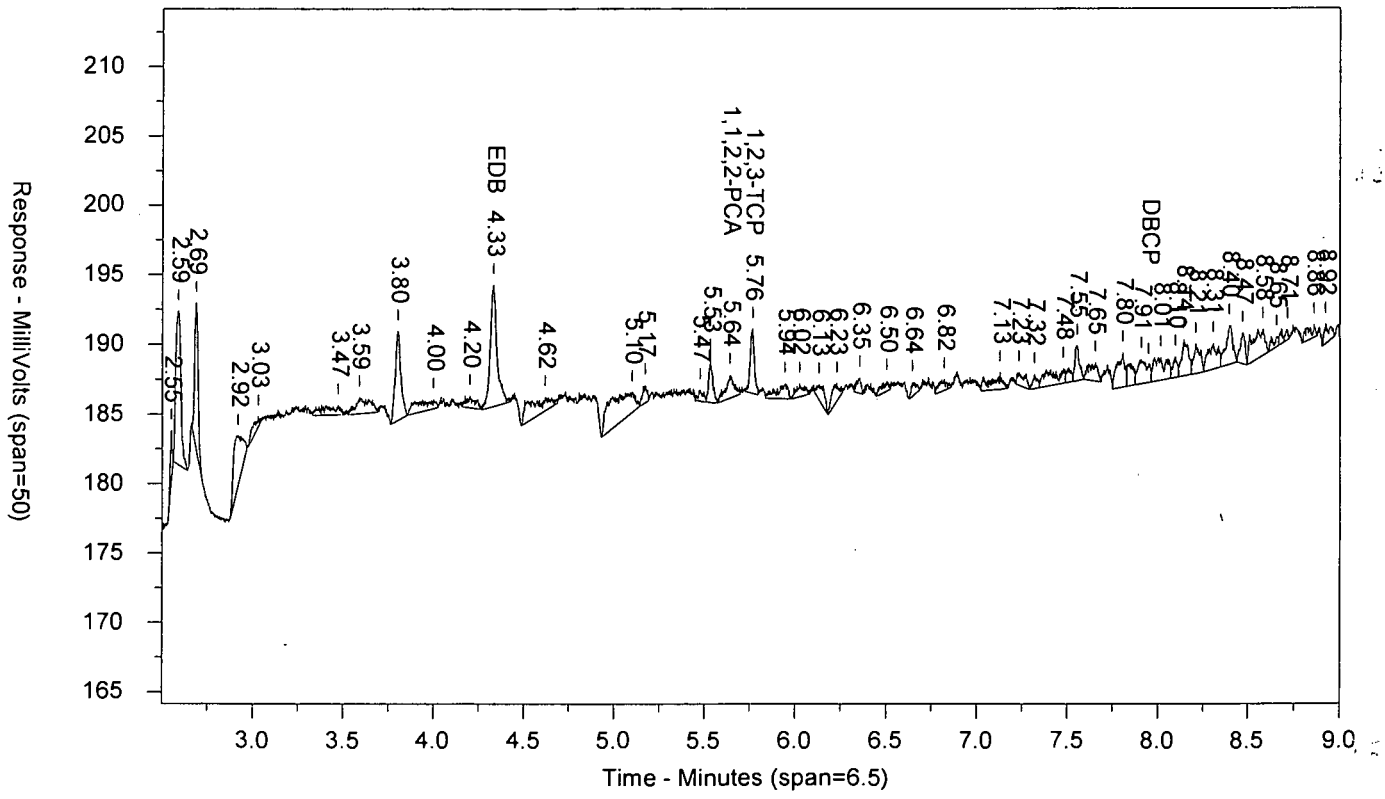

LANCASTER LABORATORIES

Sample Number: 9109779DF10 AC18803 T 172010025A 10398 SW-846 8011
Injected On: 7/24/2017 2:43:24 PM Sample Weight: 36.35
Instrument ID: CP16-19853 Dilution Factor: 20
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.073 | 29619 | .791 | EDB | 4.331 | 8739 | .816 | EDB |
| 4.514 | 3174 | .074 | 1,1,2,2-PCA | 5.638 | 1693 | .097 | 1,1,2,2-PCA |
| 4.565 | 2127 | -.429 | 1,2,3-TCP | 5.764 | 4650 | -2.641 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202002.0009.RAW
Area File: 16EDBS17202002B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/24/2017 2:52:23 PM
File Reported On: 7/24/2017 at 3:25:54 PM

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# Data Summary

**Sample Name: 9109781** 18805 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.33 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:34:51 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.050.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.068129

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:34:51 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.050.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 112% ( 46 - 136 ) Conc: 0.0762

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15261 | 0.068129 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 374 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21718 | 0.0762 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 819 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.068129 | 0.0034 | 0.0067 | 0.0067 | | 11.18 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2601 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:43

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109781** 18805 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.33 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 00:34:51
Instrument : CP18--19846A
Result file : 18EDBS17205002.050.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.068129

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15261 | 0.068129 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 374 | -0.063860 |

## Analysis Report (B)

Injected on : Jul 26, 2017 00:34:51
Instrument : CP18--19846B
Result file : 18EDBS17205002B.050.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 112% (46-136) Conc.: 0.0762

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21718 | 0.076200 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 819 | -0.065324 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.068129 | | | | 11.18 | |
| ☐ 1,2,3-TCP | | | <0.2601 | <0.0963 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

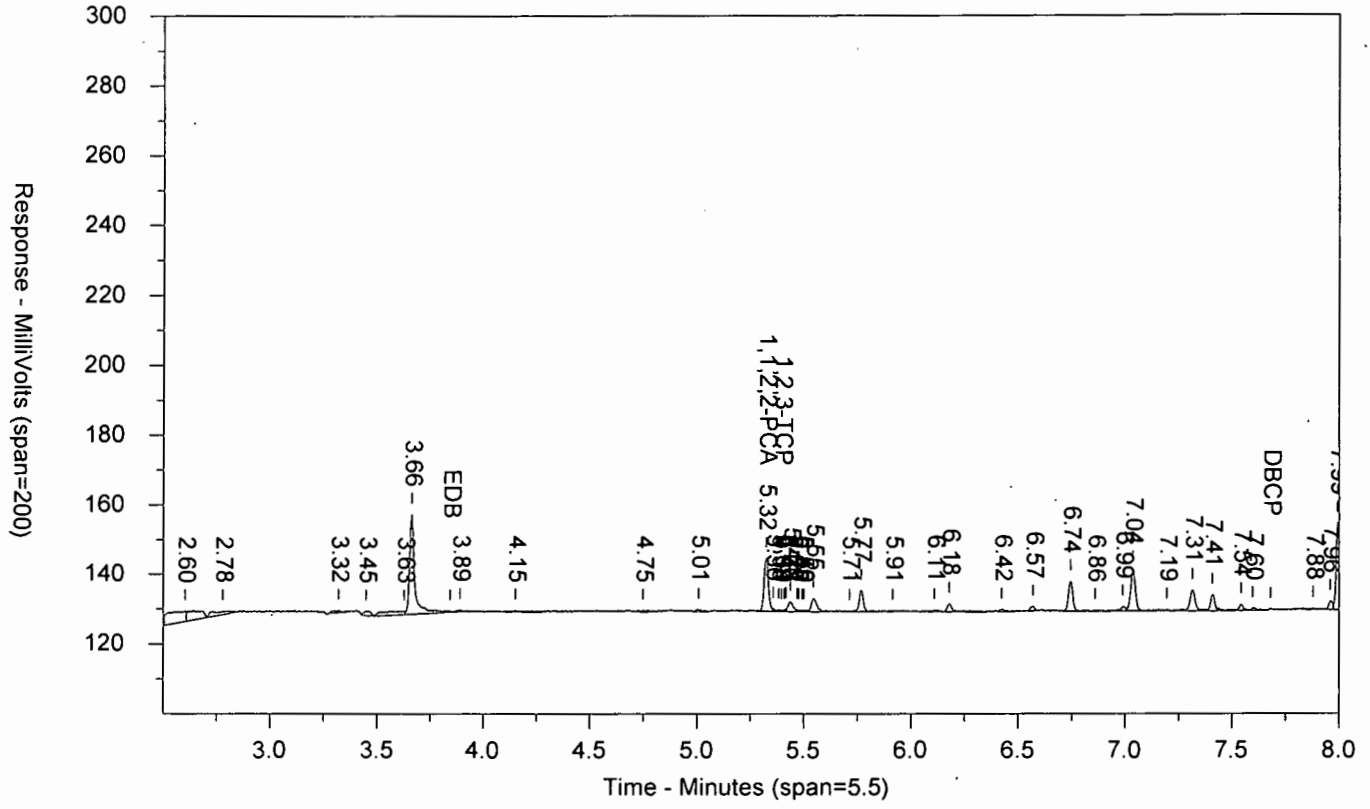
Verified by: Susan M. Gosbert
Susan M. Gosbert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109781 AA18805 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.050.RAW

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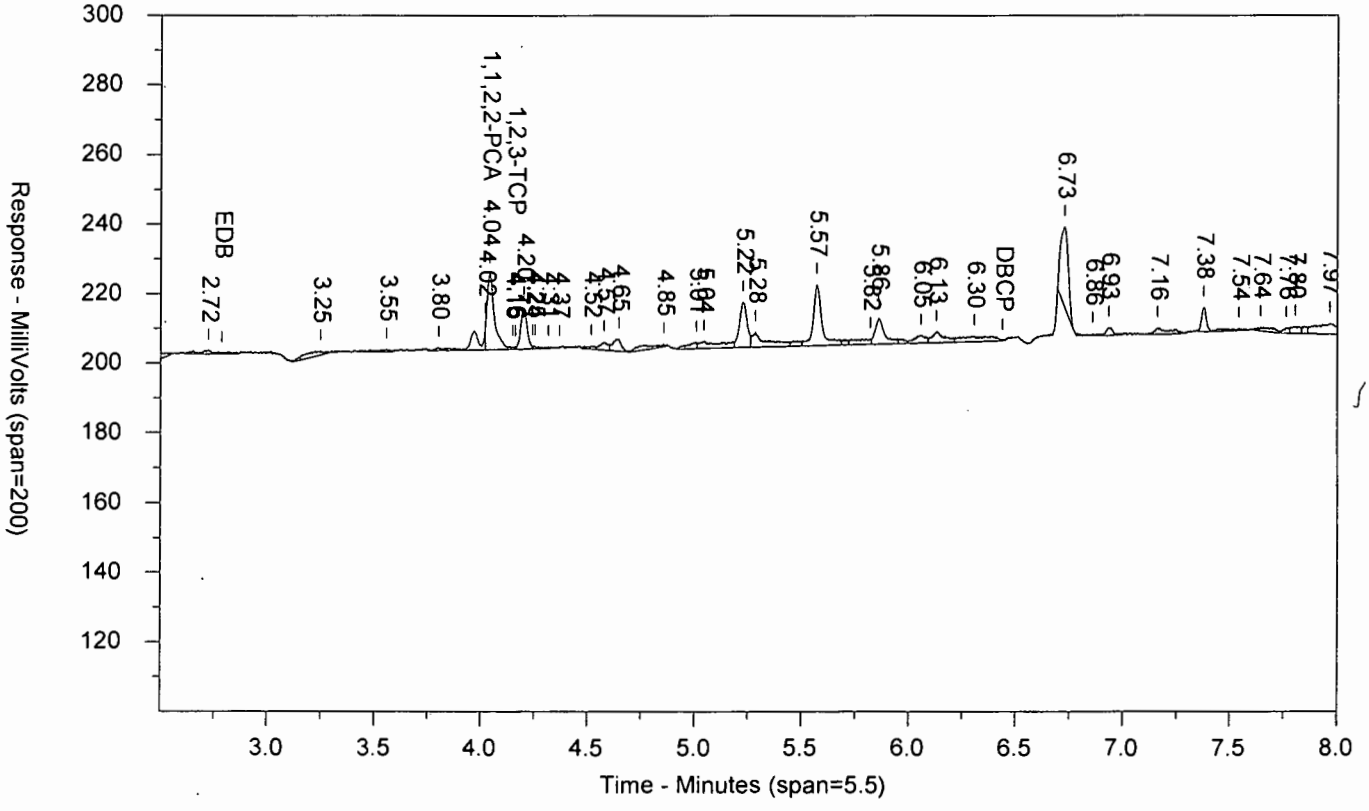

LANCASTER LABORATORIES

Sample Number: 9109781 AA18805 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 12:34:51 AM Sample Weight: 36.33
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 15261 | .068 | 1,1,2,2-PCA | 4.04 | 21718 | .076 | 1,1,2,2-PCA |
| 5.394 | 374 | -.064 | 1,2,3-TCP | 4.157 | 819 | -.065 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.050.RAW
Area File: 18EDBS17205002B.050.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 12:43:25 AM
File Reported On: 7/26/2017 at 10:12:19 AM

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# Data Summary

**Sample Name: 9109782** 18806 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.59 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 01:06:44 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.052.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.06783

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 01:06:44 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.052.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.074438

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15302 | 0.06783 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 442 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21388 | 0.074438 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 862 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.06783 | 0.0033 | 0.0067 | 0.0067 | | 9.29 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2583 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:49

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109782** 18806 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.59 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 01:06:44
Instrument : CP18--19846A
Result file : 18EDBS17205002.052.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.06783

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15302 | 0.067830 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 442 | -0.060840 |

## Analysis Report (B)

Injected on : Jul 26, 2017 01:06:44
Instrument : CP18--19846B
Result file : 18EDBS17205002B.052.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.074438

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21388 | 0.074438 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 862 | -0.063592 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.067830 | | | | 9.29 | |
| ☐ 1,2,3-TCP | | | <0.2583 | <0.0957 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

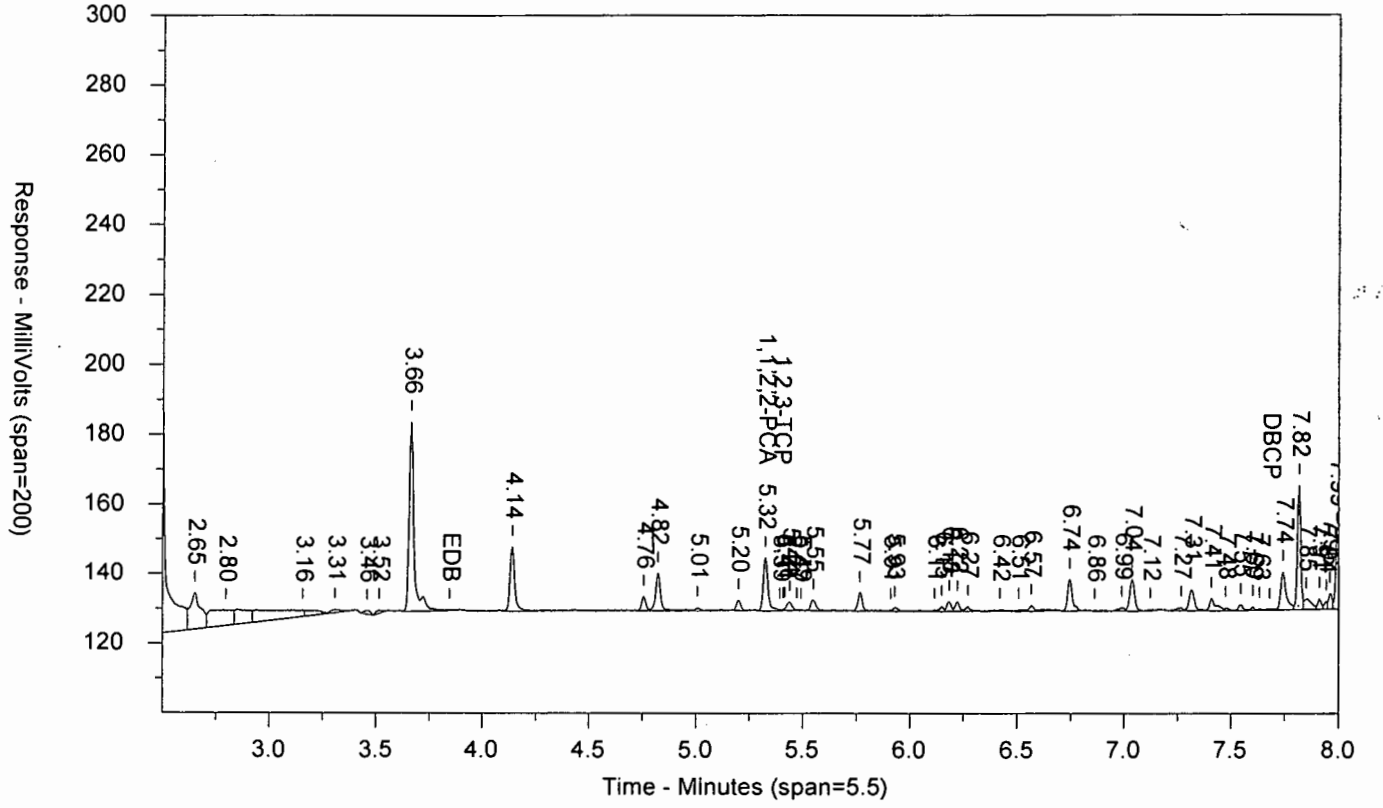
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109782 AA18806 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.052.RAW

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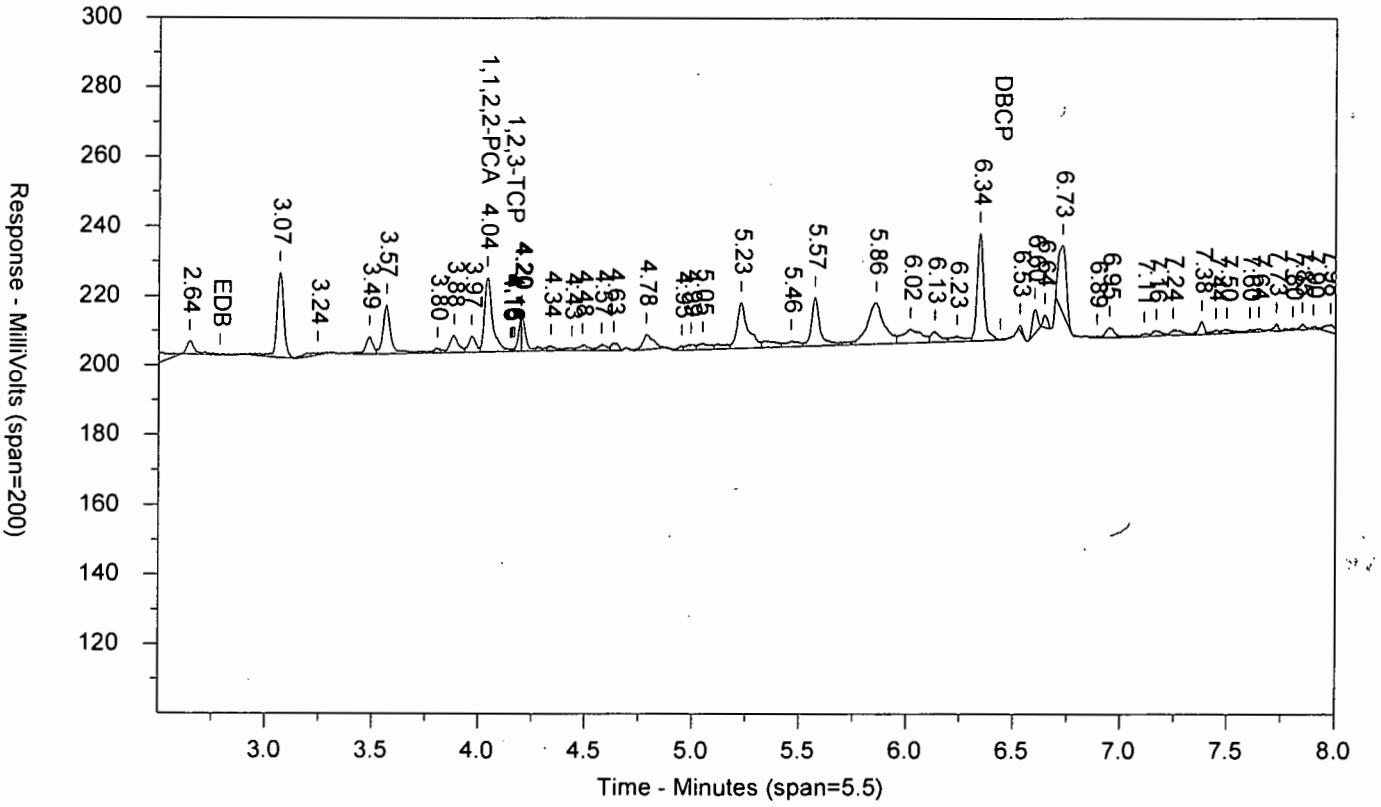

LANCASTER LABORATORIES

Sample Number: 9109782 AA18806 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 1:06:44 AM Sample Weight: 36.59
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 15302 | .068 | 1,1,2,2-PCA | 4.04 | 21388 | .074 | 1,1,2,2-PCA |
| 5.392 | 442 | -.061 | 1,2,3-TCP | 4.157 | 862 | -.064 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.052.RAW
Area File: 18EDBS17205002B.052.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 1:15:18 AM
File Reported On: 7/26/2017 at 10:12:49 AM

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# Data Summary

**Sample Name: 9109783** 18807 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.29 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 01:22:38 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.053.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.065659

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 01:22:38 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.053.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.072134

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14691 | 0.065659 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 557 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20606 | 0.072134 |
| 1,2,3-Trichloropropane | 4.13 | 4.17 | 4.19 | 492 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.065659 | 0.0034 | 0.0068 | 0.0068 | | 9.40 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2604 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:51

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109783** 18807 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.29 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 01:22:38
Instrument : CP18--19846A
Result file : 18EDBS17205002.053.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.065659

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14691 | 0.065659 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 557 | -0.056892 |

## Analysis Report (B)

Injected on : Jul 26, 2017 01:22:38
Instrument : CP18--19846B
Result file : 18EDBS17205002B.053.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.072134

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20606 | 0.072134 |
| **1,2,3-TCP** | 4.13 | 4.17 | 4.19 | 492 | -0.075079 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065659 | | | | 9.40 | |
| ☐ 1,2,3-TCP | | | <0.2604 | <0.0964 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

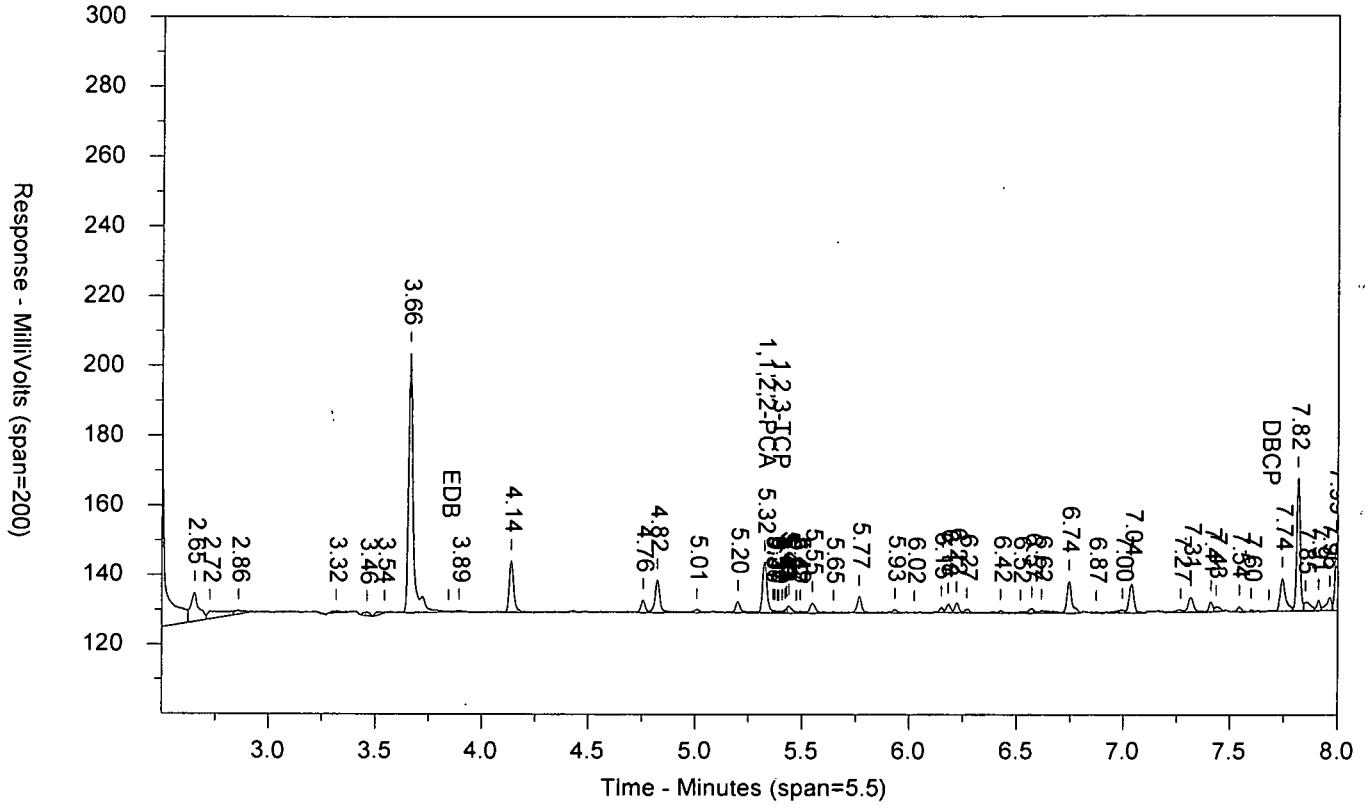
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109783 AA18807 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.053.RAW

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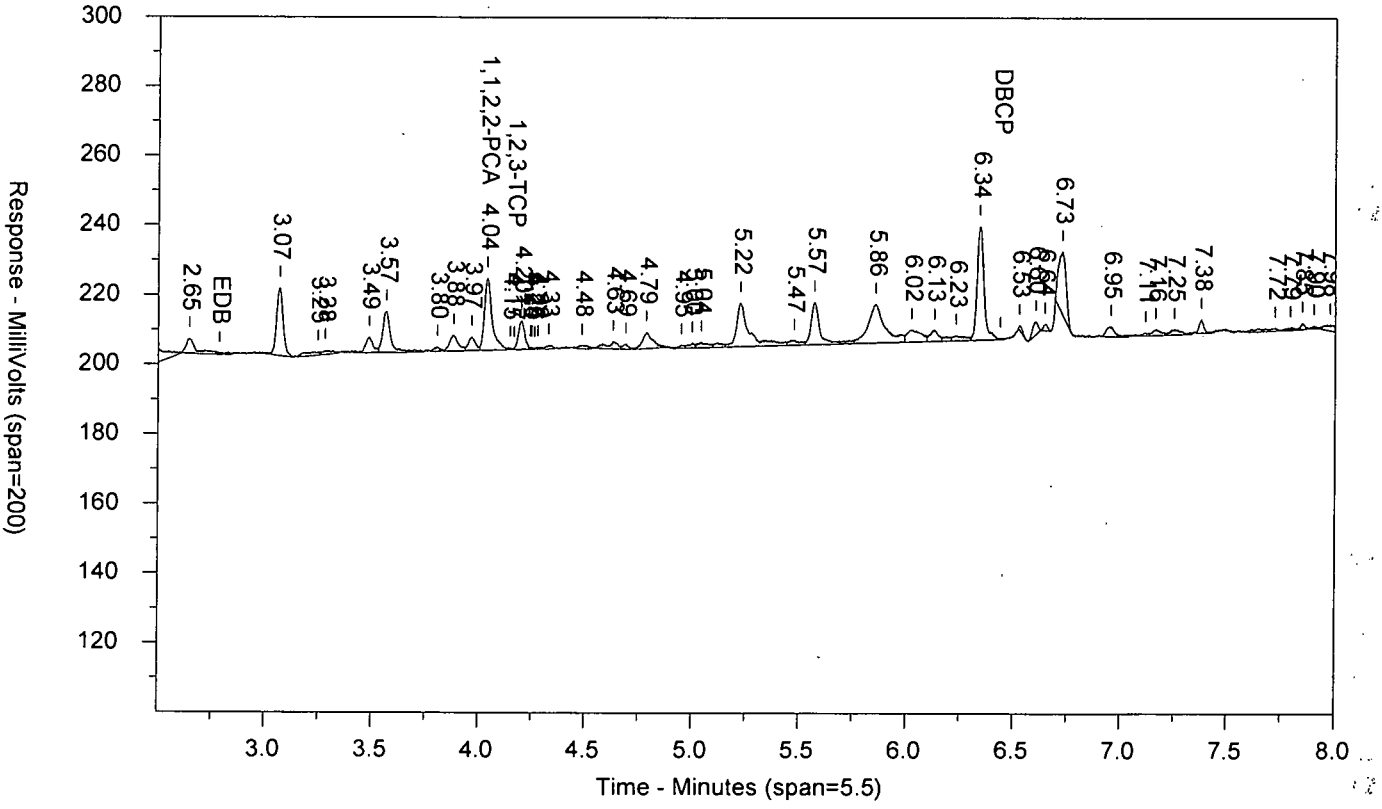

LANCASTER LABORATORIES

Sample Number: 9109783 AA18807 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 1:22:38 AM Sample Weight: 36.29
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14691 | .066 | 1,1,2,2-PCA | 4.041 | 20606 | .072 | 1,1,2,2-PCA |
| 5.39 | 557 | -.057 | 1,2,3-TCP | 4.165 | 492 | -.075 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.053.RAW
Area File: 18EDBS17205002B.053.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 1:31:10 AM
File Reported On: 7/26/2017 at 10:13:05 AM

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# Data Summary

**Sample Name: 9109784** 18808 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.59 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 01:38:35 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.054.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.063848

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 01:38:35 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.054.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 104% ( 46 - 136 ) Conc: 0.069876

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14404 | 0.063848 |
| 1,2,3-Trichloropropane | 5.37 | 5.41 | 5.43 | 378 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.69 | 7.71 | 407 | 0.000995 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20156 | 0.069876 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1087 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063848 | 0.0033 | 0.0067 | 0.0067 | | 9.02 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2583 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:54

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109784** 18808 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.59 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 01:38:35
Instrument : CP18--19846A
Result file : 18EDBS17205002.054.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.063848

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14404 | 0.063848 |
| **1,2,3-TCP** | 5.37 | 5.41 | 5.43 | 378 | -0.063249 |
| **DBCP** | 7.65 | 7.69 | 7.71 | 407 | 0.000995 |

## Analysis Report (B)

Injected on : Jul 26, 2017 01:38:35
Instrument : CP18--19846B
Result file : 18EDBS17205002B.054.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 104% (46-136) Conc.: 0.069876

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20156 | 0.069876 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1087 | -0.057006 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063848 | | | | 9.02 | |
| ☐ 1,2,3-TCP | | | <0.2583 | <0.0957 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 26 2017

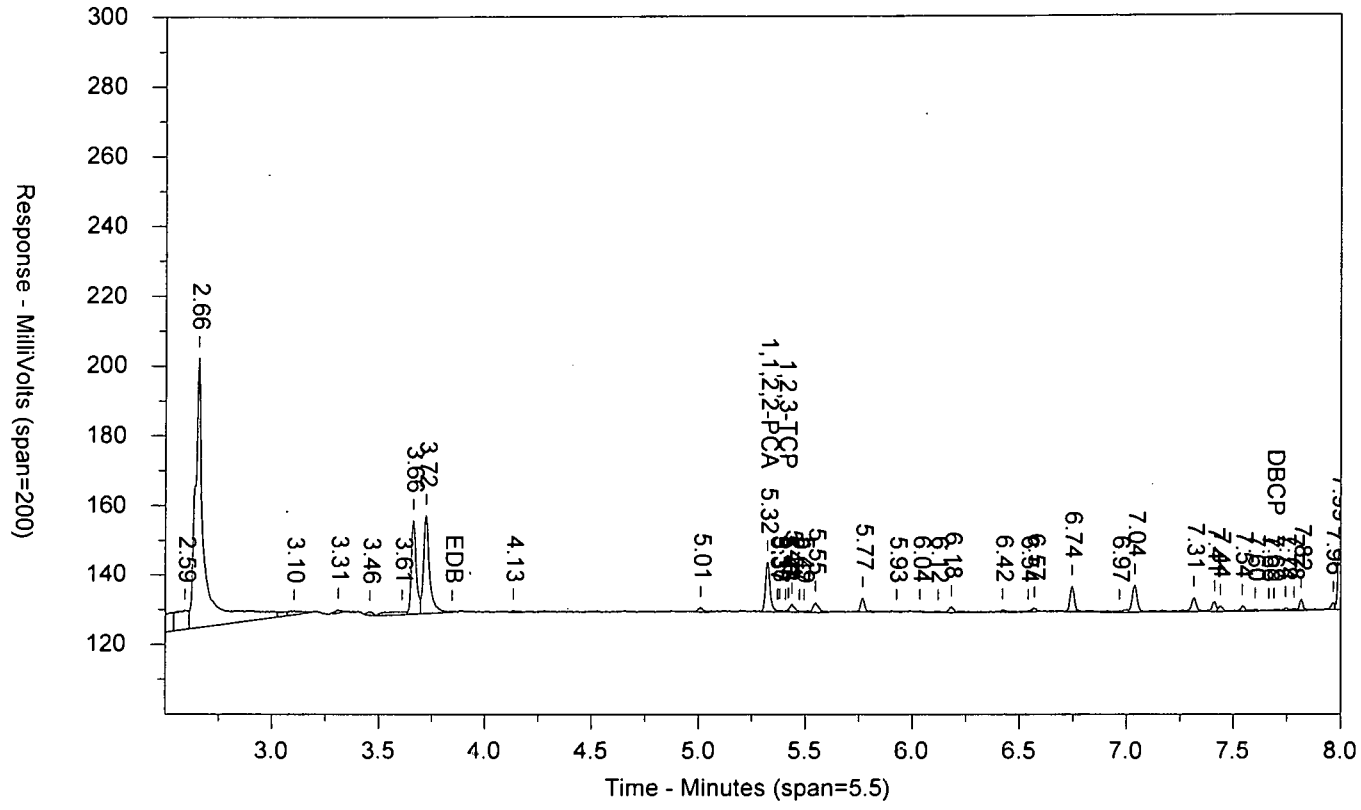
Verified by: Susan M. Goebel
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109784 AA18808 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.054.RAW

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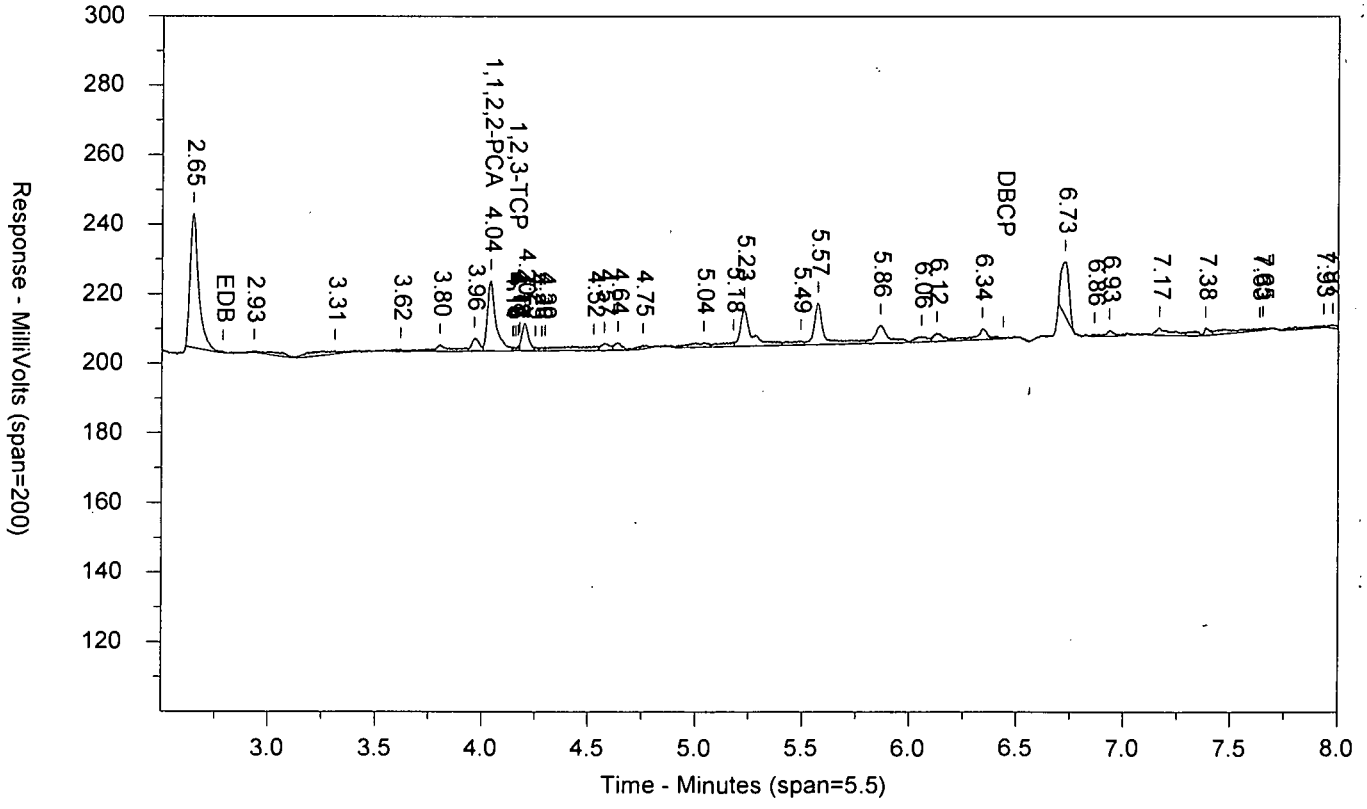


LANCASTER LABORATORIES

Sample Number: 9109784 AA18808 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 1:38:35 AM Sample Weight: 36.59
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14404 | .064 | 1,1,2,2-PCA | 4.04 | 20156 | .07 | 1,1,2,2-PCA |
| 5.408 | 378 | -.063 | 1,2,3-TCP | 4.158 | 1087 | -.057 | 1,2,3-TCP |
| 7.69 | 407 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17205002.054.RAW
Area File: 18EDBS17205002B.054.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 1:47:10 AM
File Reported On: 7/26/2017 at 10:13:23 AM

# Data Summary

**Sample Name: 9109785** 18809 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.33 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 02:10:26 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.056.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 91% ( 46 - 136 ) Conc: 0.061989

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 02:10:26 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.056.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.068563

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 13885 | 0.061989 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 348 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 19670 | 0.068563 |
| 1,2,3-Trichloropropane | 4.13 | 4.17 | 4.19 | 916 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.061989 | 0.0034 | 0.0067 | 0.0067 | | 10.07 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2601 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:00

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109785** 18809 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.33 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 02:10:26
Instrument : CP18--19846A
Result file : 18EDBS17205002.056.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 91% (46-136) Conc.: 0.061989

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13885 | 0.061989 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 348 | -0.064871 |

## Analysis Report (B)

Injected on : Jul 26, 2017 02:10:26
Instrument : CP18--19846B
Result file : 18EDBS17205002B.056.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.068563

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19670 | 0.068563 |
| **1,2,3-TCP** | 4.13 | 4.17 | 4.19 | 916 | -0.062463 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.061989 | | | | 10.07 | |
| ☐ 1,2,3-TCP | | | <0.2601 | <0.0963 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 26 2017

Verified by: Susan M. Goshert
Manager
Date: JUL 28 2017

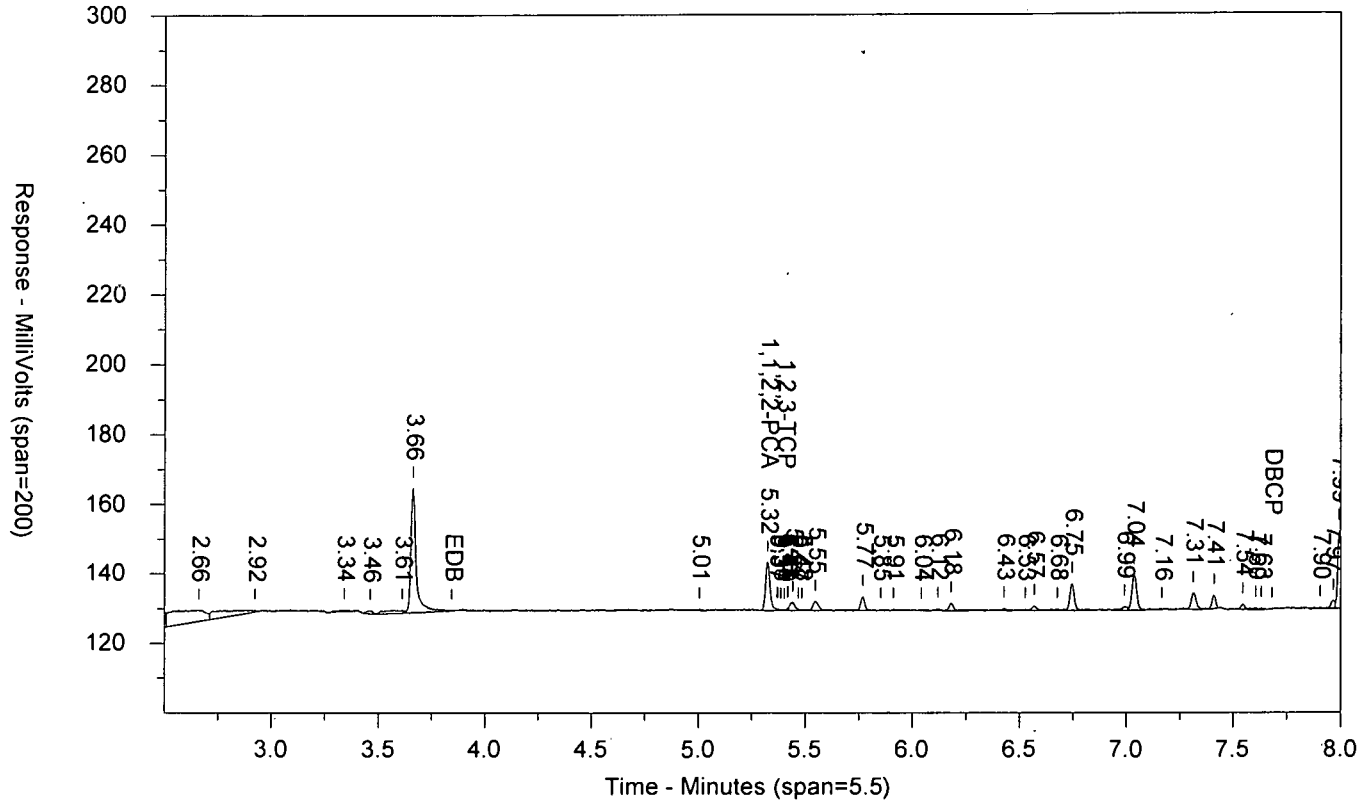
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/26/2017 10:22:32

9109785 AA18809 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.056.RAW

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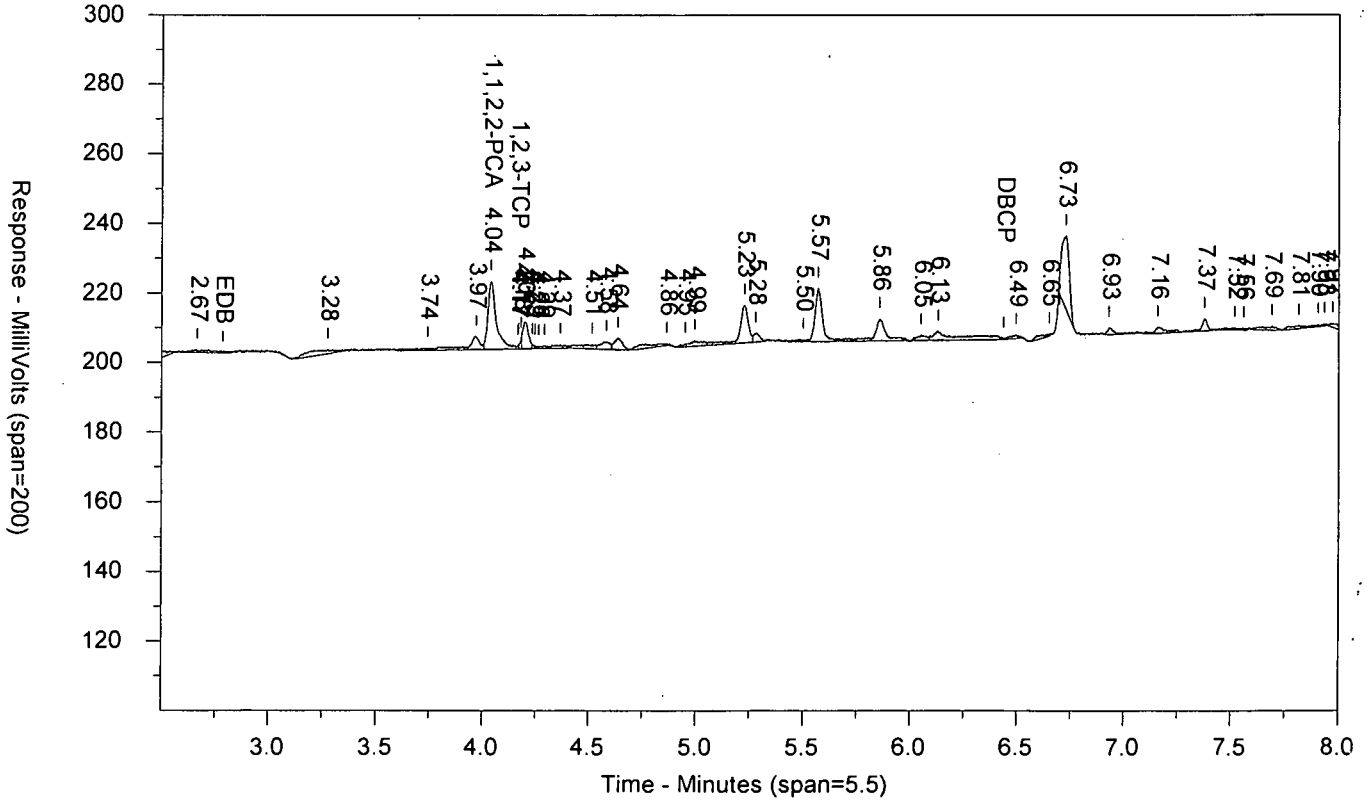


LANCASTER LABORATORIES

Sample Number: 9109785 AA18809 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 2:10:26 AM Sample Weight: 36.33
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.323 | 13885 | .062 | 1,1,2,2-PCA | 4.04 | 19670 | .069 | 1,1,2,2-PCA |
| 5.401 | 348 | -.065 | 1,2,3-TCP | 4.165 | 916 | -.062 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.056.RAW
Area File: 18EDBS17205002B.056.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 2:18:59 AM
File Reported On: 7/26/2017 at 10:13:53 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9109786** 18810 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.25 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 02:58:08 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.059.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 98% ( 46 - 136 ) Conc: 0.066328

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 02:58:08 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.059.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 109% ( 46 - 136 ) Conc: 0.073882

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14824 | 0.066328 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 420 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.69 | 7.71 | 553 | 0.001366 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21053 | 0.073882 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 533 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0097 | <0.0193 | <0.029 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.066328 | 0.0034 | 0.0068 | 0.0068 | | 10.78 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2607 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0097 | <0.0193 | <0.029 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:03

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109786** 18810 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.25 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 02:58:08
Instrument : CP18--19846A
Result file : 18EDBS17205002.059.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 98% (46-136) Conc.: 0.066328

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14824 | 0.066328 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 420 | -0.062238 |
| **DBCP** | 7.65 | 7.69 | 7.71 | 553 | 0.001366 |

## Analysis Report (B)

Injected on : Jul 26, 2017 02:58:08
Instrument : CP18--19846B
Result file : 18EDBS17205002B.059.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 109% (46-136) Conc.: 0.073882

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21053 | 0.073882 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 533 | -0.073946 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.029 | <0.0097 | | | |
| ☐ 1,1,2,2-PCA | A | 0.066328 | | | | 10.78 | |
| ☐ 1,2,3-TCP | | | <0.2607 | <0.0966 | | | |
| ☐ DBCP | | | <0.029 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

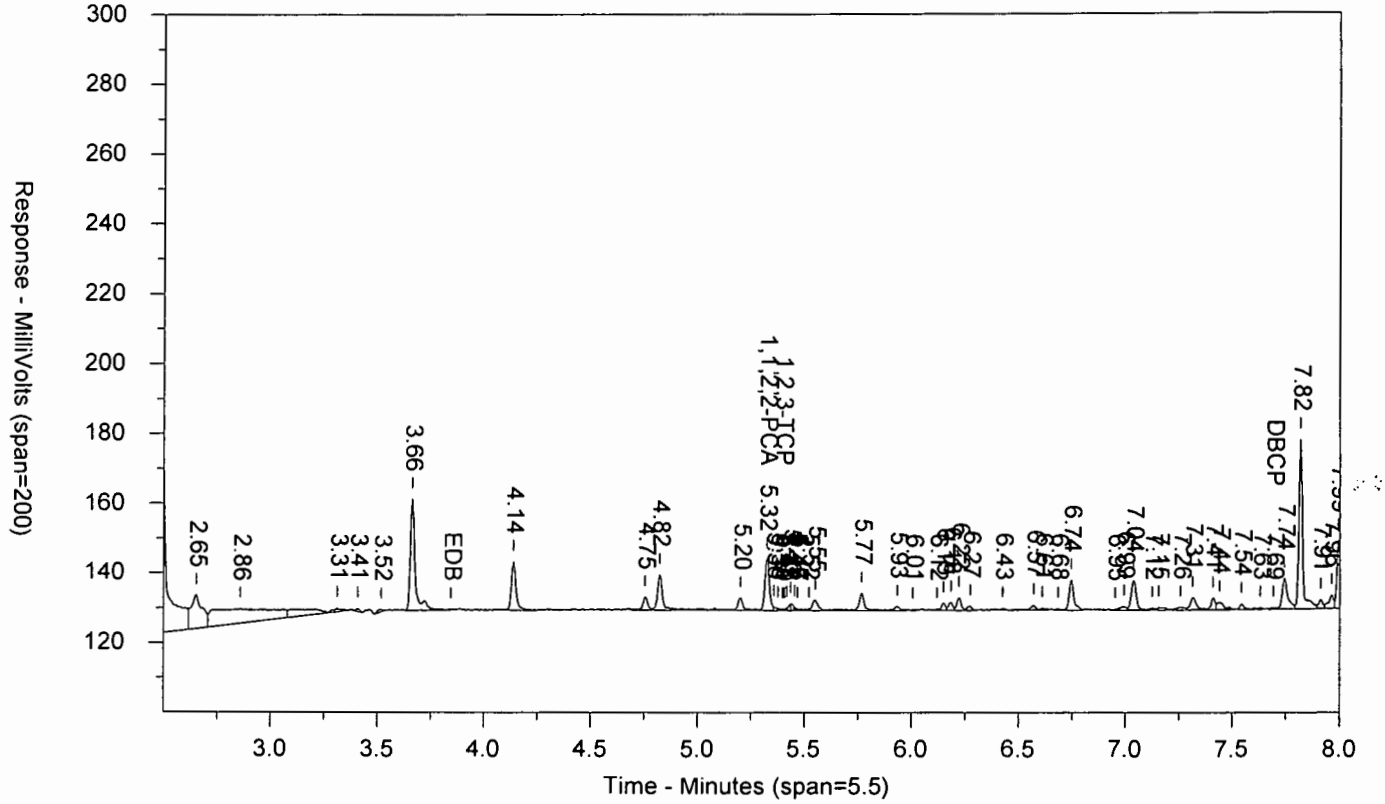
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109786 AA18810 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.059.RAW

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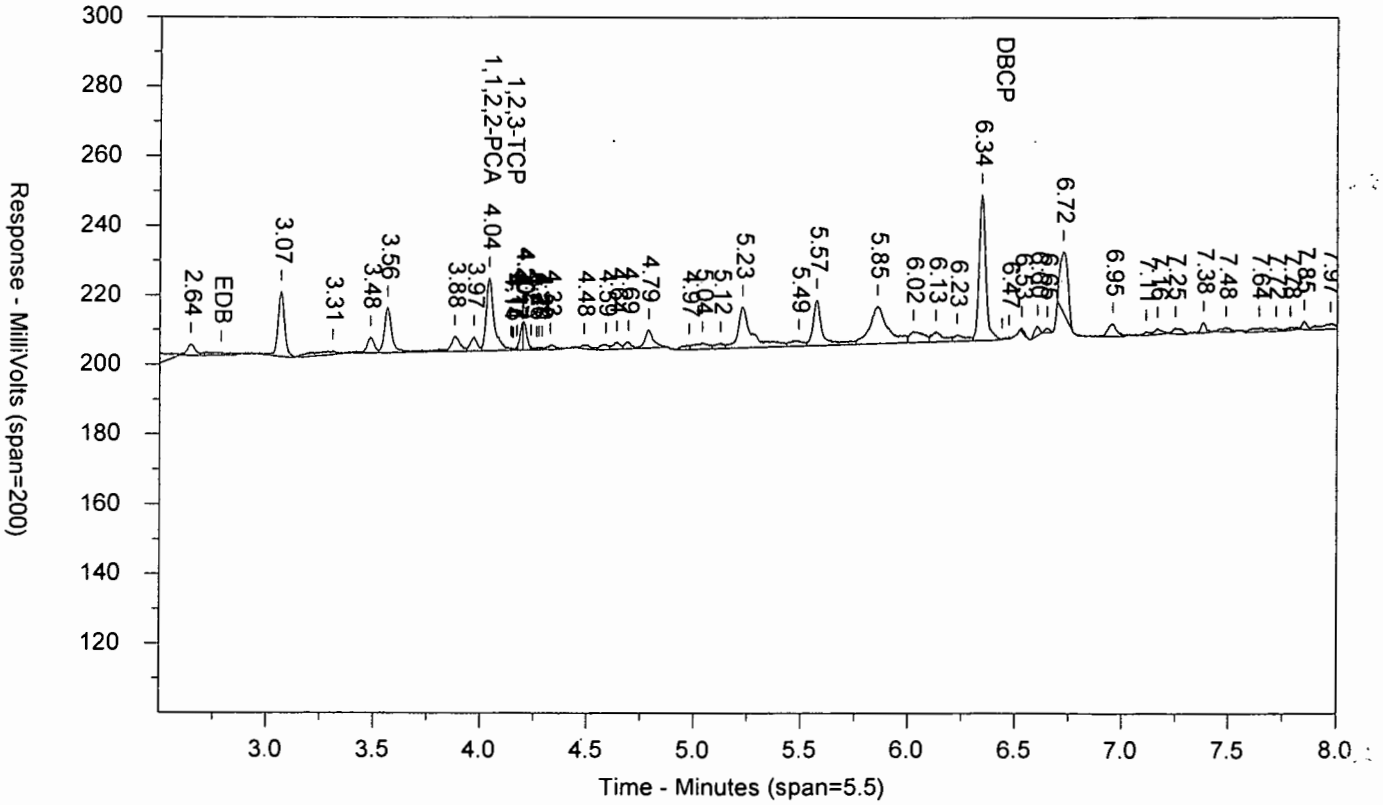


LANCASTER LABORATORIES

Sample Number: 9109786 AA18810 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 2:58:08 AM Sample Weight: 36.25
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14824 | .066 | 1,1,2,2-PCA | 4.041 | 21053 | .074 | 1,1,2,2-PCA |
| 5.396 | 420 | -.062 | 1,2,3-TCP | 4.152 | 533 | -.074 | 1,2,3-TCP |
| 7.69 | 553 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17205002.059.RAW
Area File: 18EDBS17205002B.059.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 3:06:40 AM
File Reported On: 7/26/2017 at 10:14:37 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9109787** 18811 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.51 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 03:13:58 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.060.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.065015

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 03:13:58 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.060.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.071726

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14635 | 0.065015 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 406 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.76 | 2.82 | 934 | 0 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20613 | 0.071726 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 1205 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.065015 | 0.0034 | 0.0067 | 0.0067 | | 9.82 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2588 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:06

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109787** 18811 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.51 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 03:13:58
Instrument : CP18--19846A
Result file : 18EDBS17205002.060.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.065015

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14635 | 0.065015 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 406 | -0.062332 |

## Analysis Report (B)

Injected on : Jul 26, 2017 03:13:58
Instrument : CP18--19846B
Result file : 18EDBS17205002B.060.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.071726

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.76 | 2.82 | 934 | -0.009441 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20613 | 0.071726 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 1205 | -0.053645 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065015 | | | | 9.82 | |
| ☐ 1,2,3-TCP | | | <0.2588 | <0.0959 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

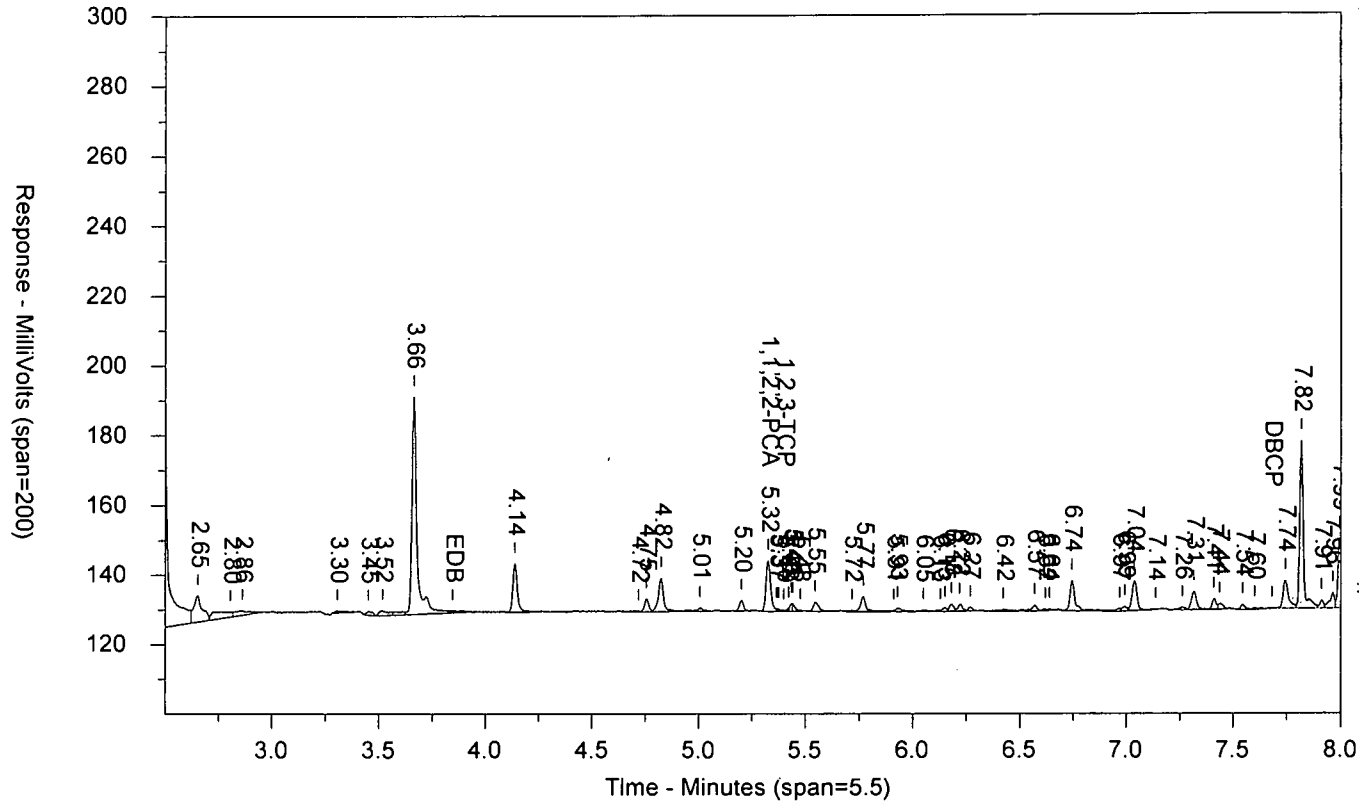
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109787 AA18811 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.060.RAW

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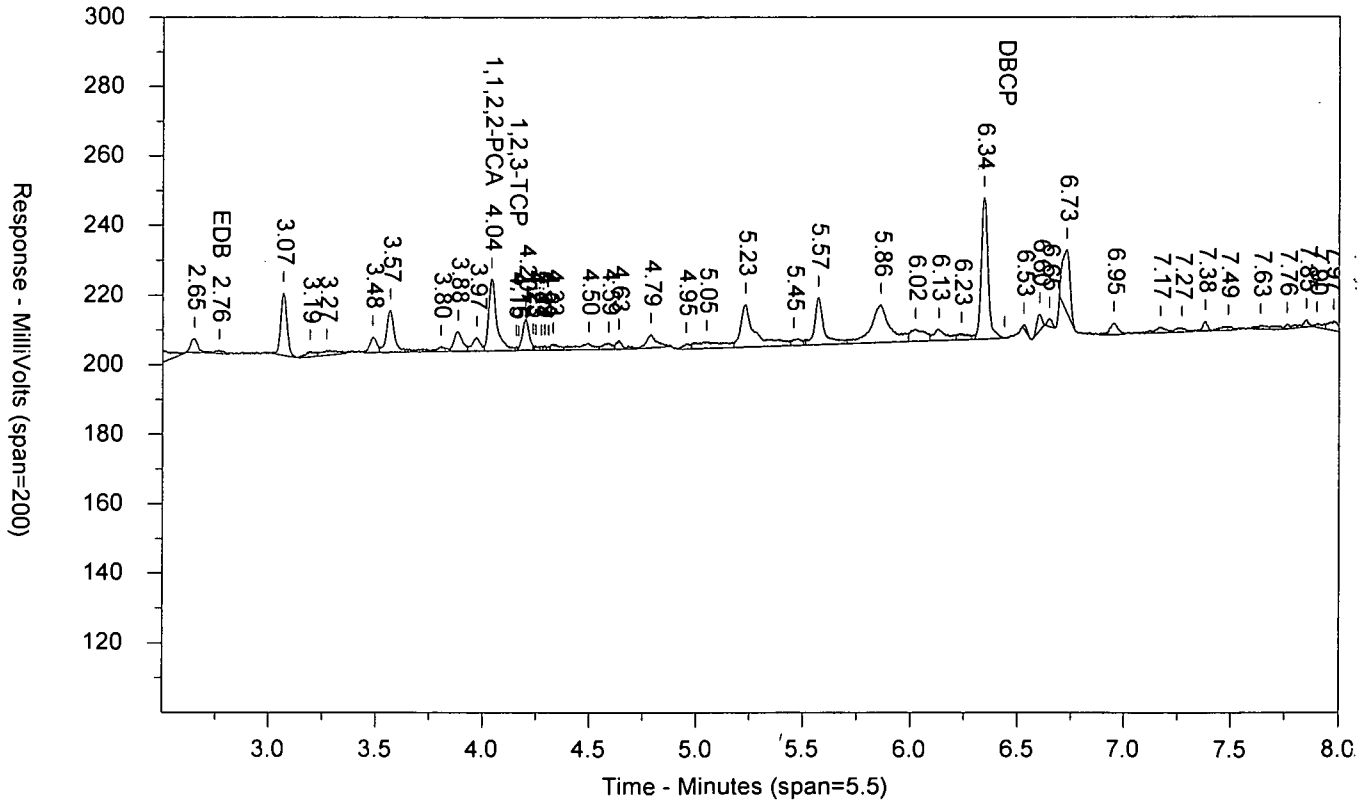


LANCASTER LABORATORIES

Sample Number: 9109787 AA18811 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 3:13:58 AM Sample Weight: 36.51
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 2.765 | 934 | -.009 | EDB |
| 5.325 | 14635 | .065 | 1,1,2,2-PCA | 4.039 | 20613 | .072 | 1,1,2,2-PCA |
| 5.397 | 406 | -.062 | 1,2,3-TCP | 4.155 | 1205 | -.054 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.060.RAW
Area File: 18EDBS17205002B.060.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 3:22:33 AM
File Reported On: 7/26/2017 at 10:14:53 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9109788** 18812 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.45 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 03:29:55 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.061.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.06478

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 03:29:55 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.061.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 108% ( 46 - 136 ) Conc: 0.072805

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14558 | 0.06478 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 402 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20872 | 0.072805 |
| 1,2,3-Trichloropropane | 4.13 | 4.17 | 4.19 | 795 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.06478 | 0.0034 | 0.0067 | 0.0067 | | 11.67 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2593 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:09

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109788** 18812 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.45 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 03:29:55
Instrument : CP18--19846A
Result file : 18EDBS17205002.061.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.06478

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14558 | 0.064780 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 402 | -0.062570 |

## Analysis Report (B)

Injected on : Jul 26, 2017 03:29:55
Instrument : CP18--19846B
Result file : 18EDBS17205002B.061.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 108% (46-136) Conc.: 0.072805

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20872 | 0.072805 |
| **1,2,3-TCP** | 4.13 | 4.17 | 4.19 | 795 | -0.065805 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.064780 | | | | 11.67 | |
| ☐ 1,2,3-TCP | | | <0.2593 | <0.096 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

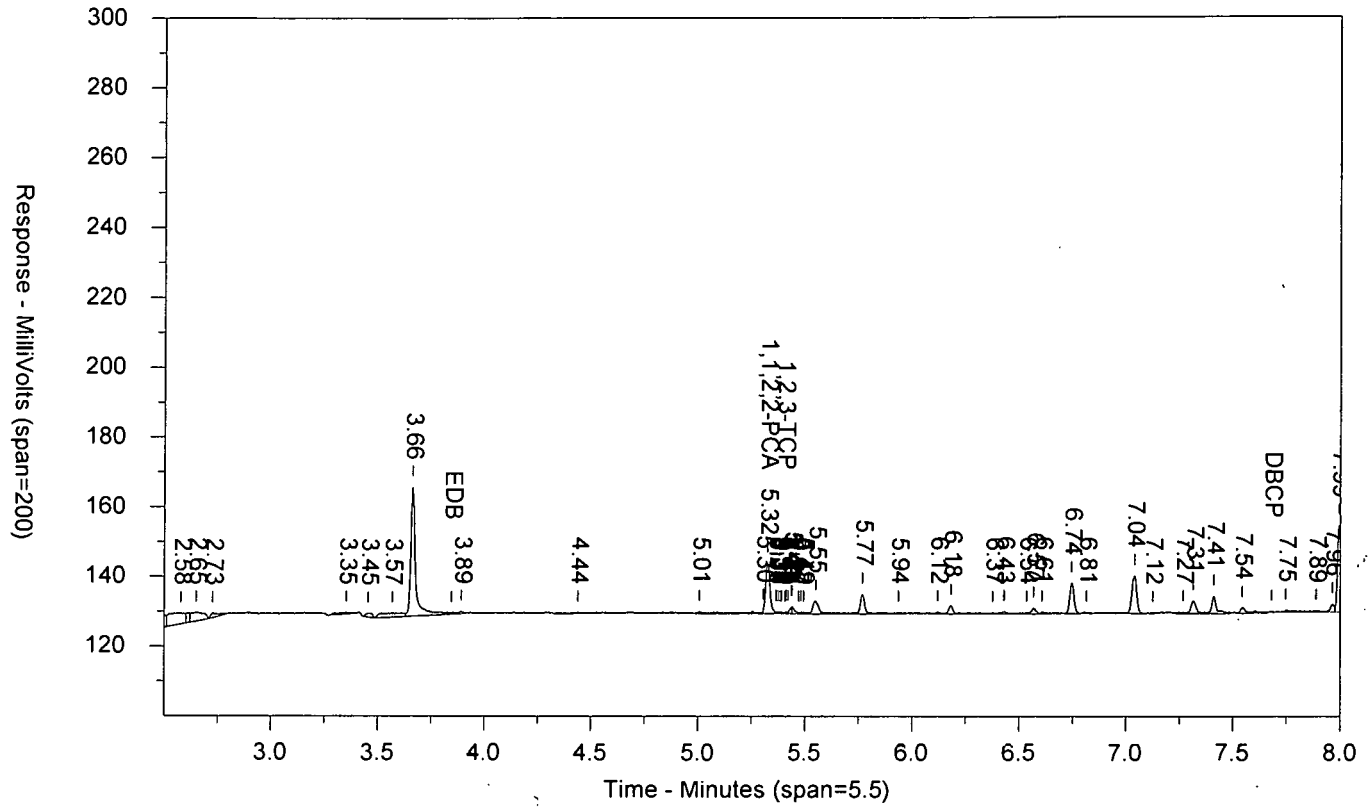
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109788 AA18812 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.061.RAW

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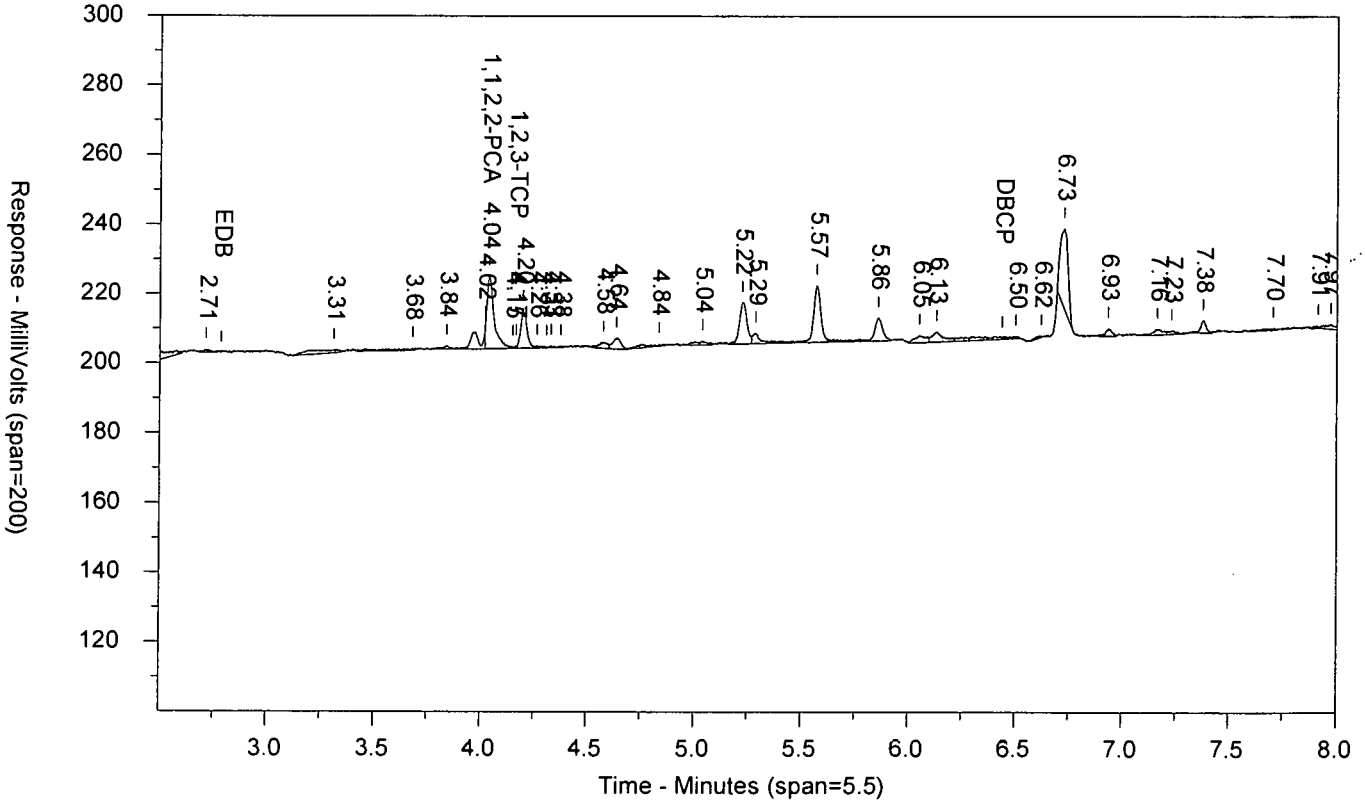

LANCASTER LABORATORIES

Sample Number: 9109788 AA18812 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 3:29:55 AM Sample Weight: 36.45
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14558 | .065 | 1,1,2,2-PCA | 4.039 | 20872 | .073 | 1,1,2,2-PCA |
| 5.403 | 402 | -.063 | 1,2,3-TCP | 4.165 | 795 | -.066 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.061.RAW
Area File: 18EDBS17205002B.061.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 3:38:30 AM
File Reported On: 7/26/2017 at 10:15:10 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 4 CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 5 EIBKX1724C | 5 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 6 EDB_11724DS | 6 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 1 | 1720199999 | |
| 7 EDB_21724DS | 7 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 2 | 1720199999 | |
| 8 EDB_31724DS | 8 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 3 | 1720199999 | |
| 9 EDB_41724DS | 9 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 4 | 1720199999 | |
| 10 EDB_51724DS | 10 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 5 | 1720199999 | |
| 11 EDB_61724DS | 11 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 6 | 1720199999 | |
| 12 MDEDX1724DS | 12 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 13 EDB_31724DS | 13 | CCAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 14 EIBKX1724C | 14 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 15 BLANKA 7/21/17 | 15 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 16 LCSA 7/21/17 | 16 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 17 LCSDA 7/21/17 | 17 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010025A | 10398 |
| 18 9095972 | 18 | T | AA | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010025A | 10398 |
| 19 9100482 | 19 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 20 9100483 | 20 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010025A | 10398 |
| 21 9100485 | 21 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 22 9100487 | 22 | T | AA | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010025A | 10398 |
| 23 9100489 | 23 | T | AA | 16EDBS.MET | 36.84 | 2 | 1 | 0 | 172010025A | 10398 |
| 24 9100491 | 24 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010025A | 10398 |
| 25 EDB_51724DS | 25 | CCAL | LS | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 26 EIBKX1724C | 26 | PIBLK | SC | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 27 9100492 | 27 | T | AA | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010025A | 10398 |
| 28 9100493 | 28 | T | AA | 16EDBS.MET | 36.82 | 2 | 1 | 0 | 172010025A | 10398 |
| 29 9100494 | 29 | T | AA | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010025A | 10398 |
| 30 9100495 | 30 | T | AA | 16EDBS.MET | 36.76 | 2 | 1 | 0 | 172010025A | 10398 |
| 31 9100496 | 31 | T | AA | 16EDBS.MET | 36.83 | 2 | 1 | 0 | 172010025A | 10398 |
| 32 9107402 | 32 | T | AA | 16EDBS.MET | 36.62 | 2 | 1 | 0 | 172010025A | 10398 |
| 33 9107403 | 33 | T | AA | 16EDBS.MET | 36.65 | 2 | 1 | 0 | 172010025A | 10398 |
| 34 9107404 | 34 | T | AA | 16EDBS.MET | 37.04 | 2 | 1 | 0 | 172010025A | 10398 |
| 35 9107405 | 35 | T | AA | 16EDBS.MET | 37.01 | 2 | 1 | 0 | 172010025A | 10398 |
| 36 9107406 | 36 | T | AA | 16EDBS.MET | 36.48 | 2 | 1 | 0 | 172010025A | 10398 |
| 37 EDB_41724DS | 37 | CCAL | QK | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 38 EIBKX1724C | 38 | PIBLK | SD | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 39 9107407 | 39 | T | AA | 16EDBS.MET | 36.73 | 2 | 1 | 0 | 172010025A | 10398 |
| 40 9109771 | 40 | T | AA | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010025A | 10398 |
| 41 9109772MS | 41 | MS | AA | 16EDBS.MET | 37.02 | 2 | 1 | 0 | 172010025A | 10398 |
| 42 9109773MSD | 42 | MSD | AA | 16EDBS.MET | 36.96 | 2 | 1 | 0 | 172010025A | 10398 |
| 43 9109779 | 43 | T | AA | 16EDBS.MET | 36.35 | 2 | 1 | 0 | 172010025A | 10398 |
| 44 BLANKA 7/21/17 | 44 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 45 LCSA 7/21/17 | 45 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 46 LCSDA 7/21/17 | 46 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172010021A | 10398 |
| 47 9098344 | 47 | T | AA | 16EDBS.MET | 36.51 | 2 | 1 | 0 | 172010021A | 10398 |
| 48 9098345 | 48 | T | AA | 16EDBS.MET | 36.75 | 2 | 1 | 0 | 172010021A | 10398 |
| 49 EDB_31724DS | 49 | CCAL | PB | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 50 EIBKX1724C | 50 | PIBLK | SE | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17202001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 74

| Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 9098346 | 51 | T | AA | | 16EDBS.MET | 36.12 | 2 | 1 | 0 | 172010021A | 10398 |
| 52 9098347 | 52 | T | AA | | 16EDBS.MET | 36.56 | 2 | 1 | 0 | 172010021A | 10398 |
| 53 9098348 | 53 | T | AA | | 16EDBS.MET | 36.92 | 2 | 1 | 0 | 172010021A | 10398 |
| 54 9098349 | 54 | T | AA | | 16EDBS.MET | 36.66 | 2 | 1 | 0 | 172010021A | 10398 |
| 55 9098350MS | 55 | MS | AA | | 16EDBS.MET | 36.45 | 2 | 1 | 0 | 172010021A | 10398 |
| 56 9098351MSD | 56 | MSD | AA | | 16EDBS.MET | 36.81 | 2 | 1 | 0 | 172010021A | 10398 |
| 57 9098352 | 57 | T | AA | | 16EDBS.MET | 36.85 | 2 | 1 | 0 | 172010021A | 10398 |
| 58 9098353 | 58 | T | AA | | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172010021A | 10398 |
| 59 9098354 | 59 | T | AA | | 16EDBS.MET | 36.9 | 2 | 1 | 0 | 172010021A | 10398 |
| 60 9098355 | 60 | T | AA | | 16EDBS.MET | 36.42 | 2 | 1 | 0 | 172010021A | 10398 |
| 61 EDB_51724DS | 61 | CCAL | LT | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 62 EIBKX1724C | 62 | PIBLK | SF | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |
| 63 9098356 | 63 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 64 9098357 | 64 | T | AA | | 16EDBS.MET | 36.77 | 2 | 1 | 0 | 172010021A | 10398 |
| 65 9098358 | 65 | T | AA | | 16EDBS.MET | 37.09 | 2 | 1 | 0 | 172010021A | 10398 |
| 66 9098359 | 66 | T | AA | | 16EDBS.MET | 36.7 | 2 | 1 | 0 | 172010021A | 10398 |
| 67 9098360 | 67 | T | AA | | 16EDBS.MET | 36.6 | 2 | 1 | 0 | 172010021A | 10398 |
| 68 9098361 | 68 | T | AA | | 16EDBS.MET | 36.74 | 2 | 1 | 0 | 172010021A | 10398 |
| 69 9098362 | 69 | T | AA | | 16EDBS.MET | 36.39 | 2 | 1 | 0 | 172010021A | 10398 |
| 70 9098363 | 70 | T | AA | | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172010021A | 10398 |
| 71 9100479 | 71 | T | AA | | 16EDBS.MET | 36.55 | 2 | 1 | 0 | 172010021A | 10398 |
| 72 9100481 | 72 | T | AA | | 16EDBS.MET | 36.13 | 2 | 1 | 0 | 172010021A | 10398 |
| 73 EDB_41724DS | 73 | CCAL | QL | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720199999 | |
| 74 EIBKX1724C | 74 | PIBLK | SG | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720199999 | |

Set-up by: _____ Date: 7/21/17

7/21/2017

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperf\chromperfect-data\Dept-24\Active\CP16\16EDBS17202002.seq

Chromatography Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 11

| | Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 2 | CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 3 | CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 4 | EDB_31724DS | 4 | CCAL | PE | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 5 | EIBKX1724C | 5 | PIBLK | TM | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | |
| 6 | 9109771DF20 | 6 | T | AC | 16EDBS.MET | 36.85 | 40 | 1 | 0 | 172010025A | 10398 |
| 7 | 9109772MSDF20 | 7 | MS | AC | 16EDBS.MET | 37.02 | 40 | 1 | 0 | 172010025A | 10398 |
| 8 | 9109773MSDDF20 | 8 | MSD | AC | 16EDBS.MET | 36.96 | 40 | 1 | 0 | 172010025A | 10398 |
| 9 | 9109779DF10 | 9 | T | AC | 16EDBS.MET | 36.35 | 20 | 1 | 0 | 172010025A | 10398 |
| 10 | EDB_51724DS | 10 | CCAL | LU | 16EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 11 | EIBKX1724C | 11 | PIBLK | TN | 16EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | |

JE11173 7/24/17

Heather Miller
Heather M. Miller
Chemist

JUL 24 2017

Set-up by: _____ Date: _____

7/24/2017

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17205001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 47

| | Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 2 | CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 3 | CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 4 | CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 5 | EIBKX1724C | 5 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 6 | EDB_11724DT | 6 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 1 | 1720499999 | 10398 |
| 7 | EDB_21724DT | 7 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 2 | 1720499999 | 10398 |
| 8 | EDB_31724DT | 8 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 3 | 1720499999 | 10398 |
| 9 | EDB_41724DT | 9 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 4 | 1720499999 | 10398 |
| 10 | EDB_51724DT | 10 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 5 | 1720499999 | 10398 |
| 11 | EDB_61724DT | 11 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 6 | 1720499999 | 10398 |
| 12 | MDEDX1724DT | 12 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 13 | EDB_31724DT | 13 | CCAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 14 | EIBKX1724C | 14 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 15 | BLANKA 7/23/17 | 15 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 16 | LCSA 7/23/17 | 16 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 17 | LCSDA 7/23/17 | 17 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 18 | 9112697 | 18 | T | AA | 18EDBS.MET | 37.35 | 2 | 1 | 0 | 172020052A | 10398 |
| 19 | 9112698 | 19 | T | AA | 18EDBS.MET | 37.1 | 2 | 1 | 0 | 172020052A | 10398 |
| 20 | 9112699 | 20 | T | AA | 18EDBS.MET | 36.83 | 2 | 1 | 0 | 172020052A | 10398 |
| 21 | 9112700 | 21 | T | AA | 18EDBS.MET | 37.07 | 2 | 1 | 0 | 172020052A | 10398 |
| 22 | 9112701 | 22 | T | AA | 18EDBS.MET | 37.02 | 2 | 1 | 0 | 172020052A | 10398 |
| 23 | EDB_51724DT | 23 | CCAL | LV | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 24 | EIBKX1724C | 24 | PIBLK | TO | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 25 | 9114466 | 25 | T | AA | 18EDBS.MET | 37.26 | 2 | 1 | 0 | 172020052A | 10398 |
| 26 | 9114467MS | 26 | MS | AA | 18EDBS.MET | 37.25 | 2 | 1 | 0 | 172020052A | 10398 |
| 27 | 9114468MSD | 27 | MSD | AA | 18EDBS.MET | 37.35 | 2 | 1 | 0 | 172020052A | 10398 |
| 28 | 9114469 | 28 | T | AA | 18EDBS.MET | 37.47 | 2 | 1 | 0 | 172020052A | 10398 |
| 29 | 9114470 | 29 | T | AA | 18EDBS.MET | 37.23 | 2 | 1 | 0 | 172020052A | 10398 |
| 30 | 9114471 | 30 | T | AA | 18EDBS.MET | 37.43 | 2 | 1 | 0 | 172020052A | 10398 |
| 31 | 9114472 | 31 | T | AA | 18EDBS.MET | 37.29 | 2 | 1 | 0 | 172020052A | 10398 |
| 32 | 9114473 | 32 | T | AA | 18EDBS.MET | 36.94 | 2 | 1 | 0 | 172020052A | 10398 |
| 33 | 9114474 | 33 | T | AA | 18EDBS.MET | 37.12 | 2 | 1 | 0 | 172020052A | 10398 |
| 34 | EDB_41724DT | 34 | CCAL | QM | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 35 | EIBKX1724C | 35 | PIBLK | TP | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 36 | BLANKA 7/23/17 | 36 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 37 | LCSA 7/23/17 | 37 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 38 | LCSDA 7/23/17 | 38 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 39 | 9114605 | 39 | T | AA | 18EDBS.MET | 37.17 | 2 | 1 | 0 | 172020053A | 10398 |
| 40 | 9114606 | 40 | T | AA | 18EDBS.MET | 37.02 | 2 | 1 | 0 | 172020053A | 10398 |
| 41 | 9114607 | 41 | T | AA | 18EDBS.MET | 37.31 | 2 | 1 | 0 | 172020053A | 10398 |
| 42 | 9114608 | 42 | DUP | AA | 18EDBS.MET | 37.22 | 2 | 1 | 0 | 172020053A | 10398 |
| 43 | 9114608 | 43 | T | AA | 18EDBS.MET | 37.39 | 2 | 1 | 0 | 172020053A | 10398 |
| 44 | 9114609 | 44 | T | AA | 18EDBS.MET | 37.15 | 2 | 1 | 0 | 172020053A | 10398 |
| 45 | 9114609MS | 45 | MS | AA | 18EDBS.MET | 37.14 | 2 | 1 | 0 | 172020053A | 10398 |
| 46 | EDB_31724DT | 46 | CCAL | PI | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 47 | EIBKX1724C | 47 | PIBLK | TQ | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |

DD12669 7/25/17

Heather Miller
Heather M. Miller
Chemist

Set-up by: _____ Date: JUL 24 2017

7/24/2017

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17205002.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 68

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | |
| 4 EDB_41724DT | 4 | CCAL | QN | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 5 EIBKX1724C | 5 | PIBLK | UQ | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 6 BLANKA 7/25/17 | 6 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020029A | 10398 |
| 7 LCSA 7/25/17 | 7 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020029A | 10398 |
| 8 LCSDA 7/25/17 | 8 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020029A | 10398 |
| 9 9102850 | 9 | T | AA | 18EDBS.MET | 35.67 | 2 | 1 | 0 | 172020029A | 10398 |
| 10 9102851MS | 10 | MS | AA | 18EDBS.MET | 35.86 | 2 | 1 | 0 | 172020029A | 10398 |
| 11 9102852MSD | 11 | MSD | AA | 18EDBS.MET | 35.62 | 2 | 1 | 0 | 172020029A | 10398 |
| 12 9102854 | 12 | T | AA | 18EDBS.MET | 36.83 | 2 | 1 | 0 | 172020029A | 10398 |
| 13 9109581 | 13 | T | AA | 18EDBS.MET | 37.02 | 2 | 1 | 0 | 172020029A | 10398 |
| 14 9109582 | 14 | T | AA | 18EDBS.MET | 36.86 | 2 | 1 | 0 | 172020029A | 10398 |
| 15 9109583 | 15 | T | AA | 18EDBS.MET | 36.87 | 2 | 1 | 0 | 172020029A | 10398 |
| 16 EDB_51724DT | 16 | CCAL | LW | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 17 EIBKX1724C | 17 | PIBLK | UR | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 18 9109584 | 18 | T | AA | 18EDBS.MET | 36.82 | 2 | 1 | 0 | 172020029A | 10398 |
| 19 9112789 | 19 | T | AA | 18EDBS.MET | 36.63 | 2 | 1 | 0 | 172020029A | 10398 |
| 20 9112790 | 20 | T | AA | 18EDBS.MET | 36.79 | 2 | 1 | 0 | 172020029A | 10398 |
| 21 9112791 | 21 | T | AA | 18EDBS.MET | 36.71 | 2 | 1 | 0 | 172020029A | 10398 |
| 22 9112792 | 22 | T | AA | 18EDBS.MET | 36.38 | 2 | 1 | 0 | 172020029A | 10398 |
| 23 9112793 | 23 | T | AA | 18EDBS.MET | 36.7 | 2 | 1 | 0 | 172020029A | 10398 |
| 24 9112794 | 24 | T | AA | 18EDBS.MET | 36.69 | 2 | 1 | 0 | 172020029A | 10398 |
| 25 9112795 | 25 | T | AA | 18EDBS.MET | 36.5 | 2 | 1 | 0 | 172020029A | 10398 |
| 26 9112796 | 26 | T | AA | 18EDBS.MET | 36.54 | 2 | 1 | 0 | 172020029A | 10398 |
| 27 9112797 | 27 | T | AA | 18EDBS.MET | 36.67 | 2 | 1 | 0 | 172020029A | 10398 |
| 28 EDB_31724DT | 28 | CCAL | PL | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 29 EIBKX1724C | 29 | PIBLK | US | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 30 BLANKA 7/25/17 | 30 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172050021A | 10398 |
| 31 LCSA 7/25/17 | 31 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172050021A | 10398 |
| 32 LCSDA 7/25/17 | 32 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172050021A | 10398 |
| 33 9107261 | 33 | T | AA | 18EDBS.MET | 36.11 | 2 | 1 | 0 | 172050021A | 10398 |
| 34 EDB_41724DT | 34 | CCAL | QO | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 35 EIBKX1724C | 35 | PIBLK | UW | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 36 BLANKA 7/25/17 | 36 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020031A | 10398 |
| 37 LCSA 7/25/17 | 37 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020031A | 10398 |
| 38 LCSDA 7/25/17 | 38 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020031A | 10398 |
| 39 9109585 | 39 | T | AA | 18EDBS.MET | 36.13 | 2 | 1 | 0 | 172020031A | 10398 |
| 40 9109586MS | 40 | MS | AA | 18EDBS.MET | 36.38 | 2 | 1 | 0 | 172020031A | 10398 |
| 41 9109587MSD | 41 | MSD | AA | 18EDBS.MET | 36.66 | 2 | 1 | 0 | 172020031A | 10398 |
| 42 9109588 | 42 | T | AA | 18EDBS.MET | 36.25 | 2 | 1 | 0 | 172020031A | 10398 |
| 43 9109589 | 43 | T | AA | 18EDBS.MET | 36.61 | 2 | 1 | 0 | 172020031A | 10398 |
| 44 9109590 | 44 | T | AA | 18EDBS.MET | 36.63 | 2 | 1 | 0 | 172020031A | 10398 |
| 45 EDB_51724DT | 45 | CCAL | LX | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 46 EIBKX1724C | 46 | PIBLK | UX | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 47 BLANKA 7/25/17 | 47 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020030A | 10398 |
| 48 LCSA 7/25/17 | 48 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020030A | 10398 |
| 49 LCSDA 7/25/17 | 49 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020030A | 10398 |
| 50 9109781 | 50 | T | AA | 18EDBS.MET | 36.33 | 2 | 1 | 0 | 172020030A | 10398 |

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17205002.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 68

| | Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 9109781MS | 51 | MS | AA | | 18EDBS.MET | 36.56 | 2 | 1 | 0 | 172020030A | 10398 |
| 52 | 9109782 | 52 | T | AA | | 18EDBS.MET | 36.59 | 2 | 1 | 0 | 172020030A | 10398 |
| 53 | 9109783 | 53 | T | AA | | 18EDBS.MET | 36.29 | 2 | 1 | 0 | 172020030A | 10398 |
| 54 | 9109784 | 54 | T | AA | | 18EDBS.MET | 36.59 | 2 | 1 | 0 | 172020030A | 10398 |
| 55 | 9109784 | 55 | DUP | AA | | 18EDBS.MET | 36.56 | 2 | 1 | 0 | 172020030A | 10398 |
| 56 | 9109785 | 56 | T | AA | | 18EDBS.MET | 36.33 | 2 | 1 | 0 | 172020030A | 10398 |
| 57 | EDB_31724DT | 57 | CCAL | PO | | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 58 | EIBKX1724C | 58 | PIBLK | UY | | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 59 | 9109786 | 59 | T | AA | | 18EDBS.MET | 36.25 | 2 | 1 | 0 | 172020030A | 10398 |
| 60 | 9109787 | 60 | T | AA | | 18EDBS.MET | 36.51 | 2 | 1 | 0 | 172020030A | 10398 |
| 61 | 9109788 | 61 | T | AA | | 18EDBS.MET | 36.45 | 2 | 1 | 0 | 172020030A | 10398 |
| 62 | 9112123 | 62 | T | AA | | 18EDBS.MET | 36.51 | 2 | 1 | 0 | 172020030A | 10398 |
| 63 | 9112125 | 63 | T | AA | | 18EDBS.MET | 36.53 | 2 | 1 | 0 | 172020030A | 10398 |
| 64 | 9112126 | 64 | T | AA | | 18EDBS.MET | 36.87 | 2 | 1 | 0 | 172020030A | 10398 |
| 65 | 9112127 | 65 | T | AA | | 18EDBS.MET | 36.86 | 2 | 1 | 0 | 172020030A | 10398 |
| 66 | 9112128 | 66 | T | AA | | 18EDBS.MET | 36.3 | 2 | 1 | 0 | 172020030A | 10398 |
| 67 | EDB_41724DT | 67 | CCAL | QP | | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 68 | EIBKX1724C | 68 | PIBLK | UZ | | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |

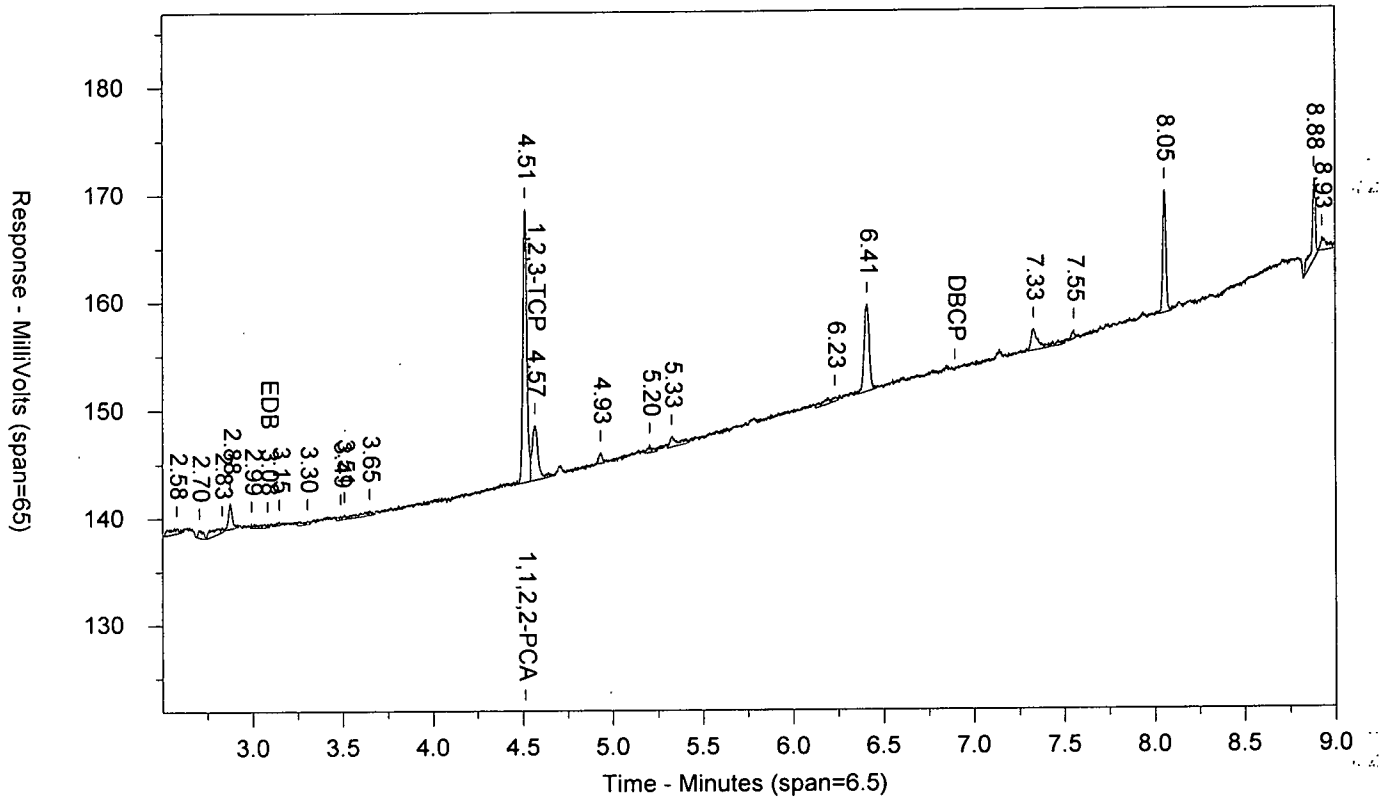
Heather Miller
Heather M. Miller
Chemist

Set-up by: JUL 25 2017 Date:

7/25/2017

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0005.RAW

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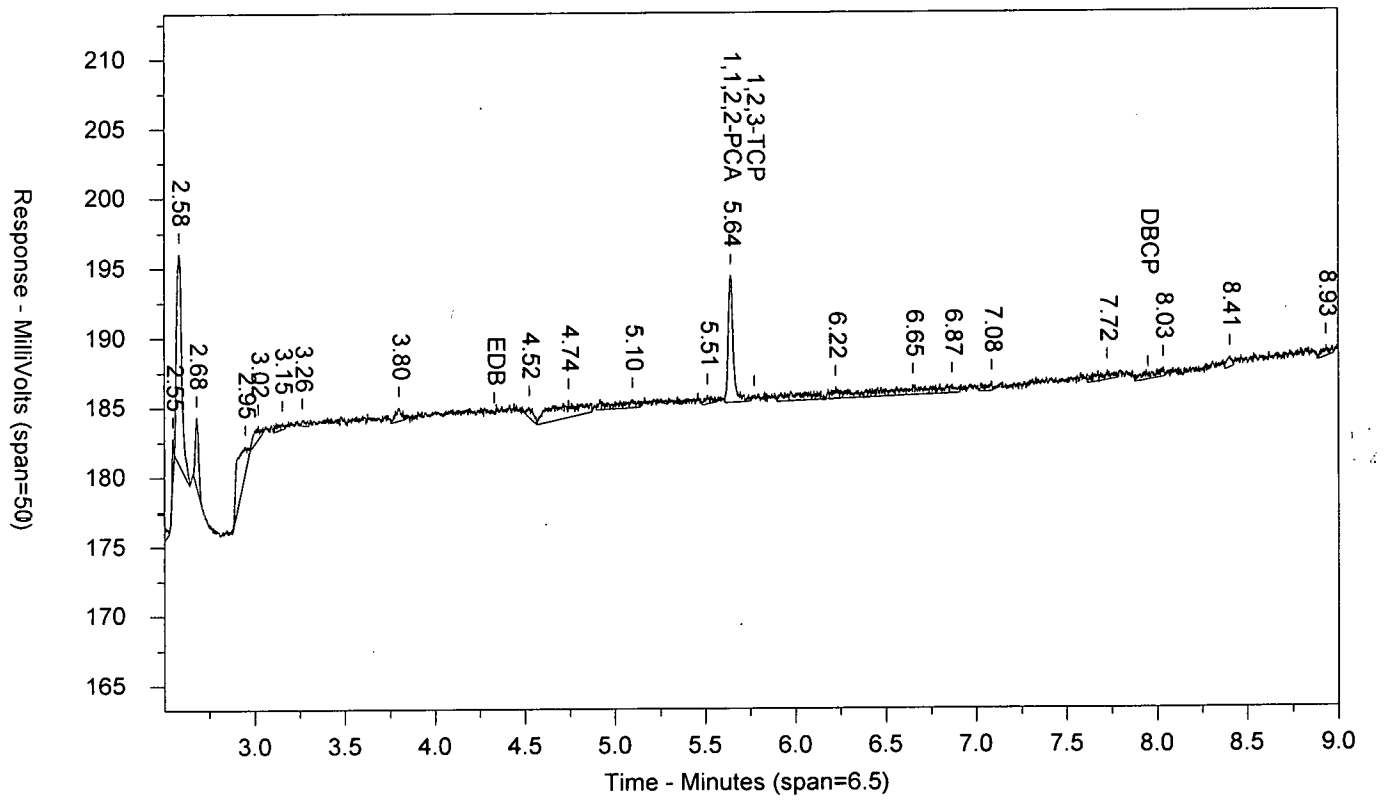

LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 3:09:45 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.083 | 400 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25406 | .066 | 1,1,2,2-PCA | 5.641 | 9102 | .066 | 1,1,2,2-PCA |
| 4.567 | 5116 | .008 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0005.RAW
Area File: 16EDBS17202001B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:18:48 PM
File Reported On: 7/24/2017 at 10:43:10 AM

EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011

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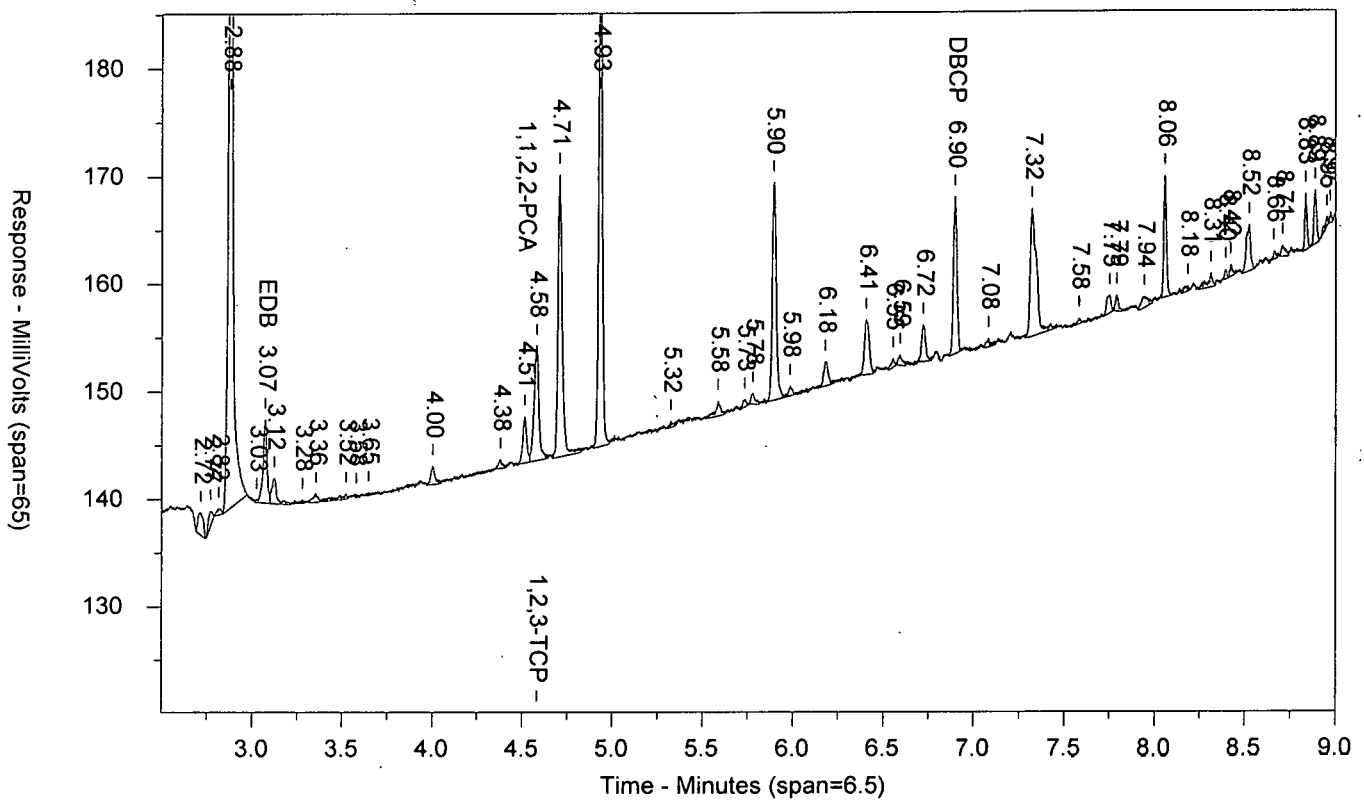


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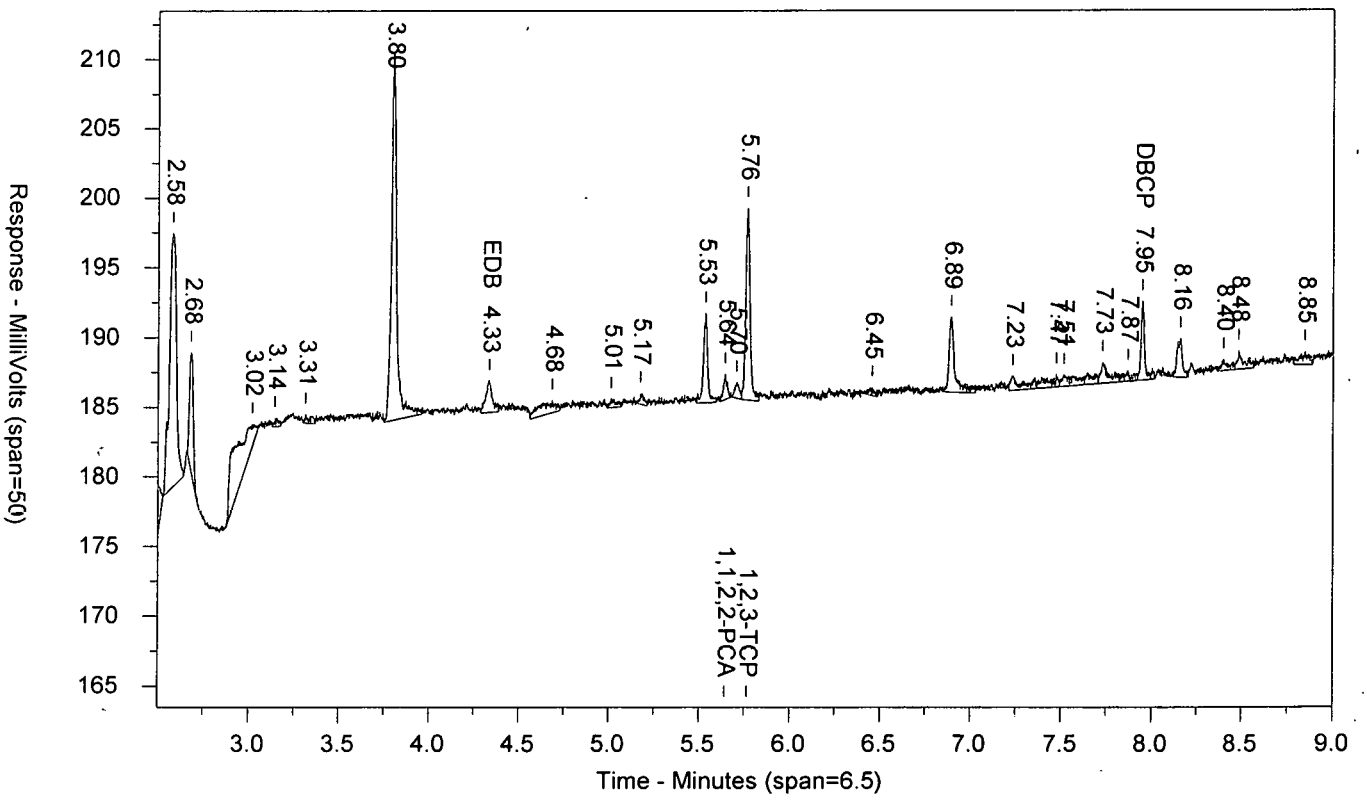


LANCASTER LABORATORIES

Sample Number: EDB_11724DS AAEDB_1AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:25:23 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

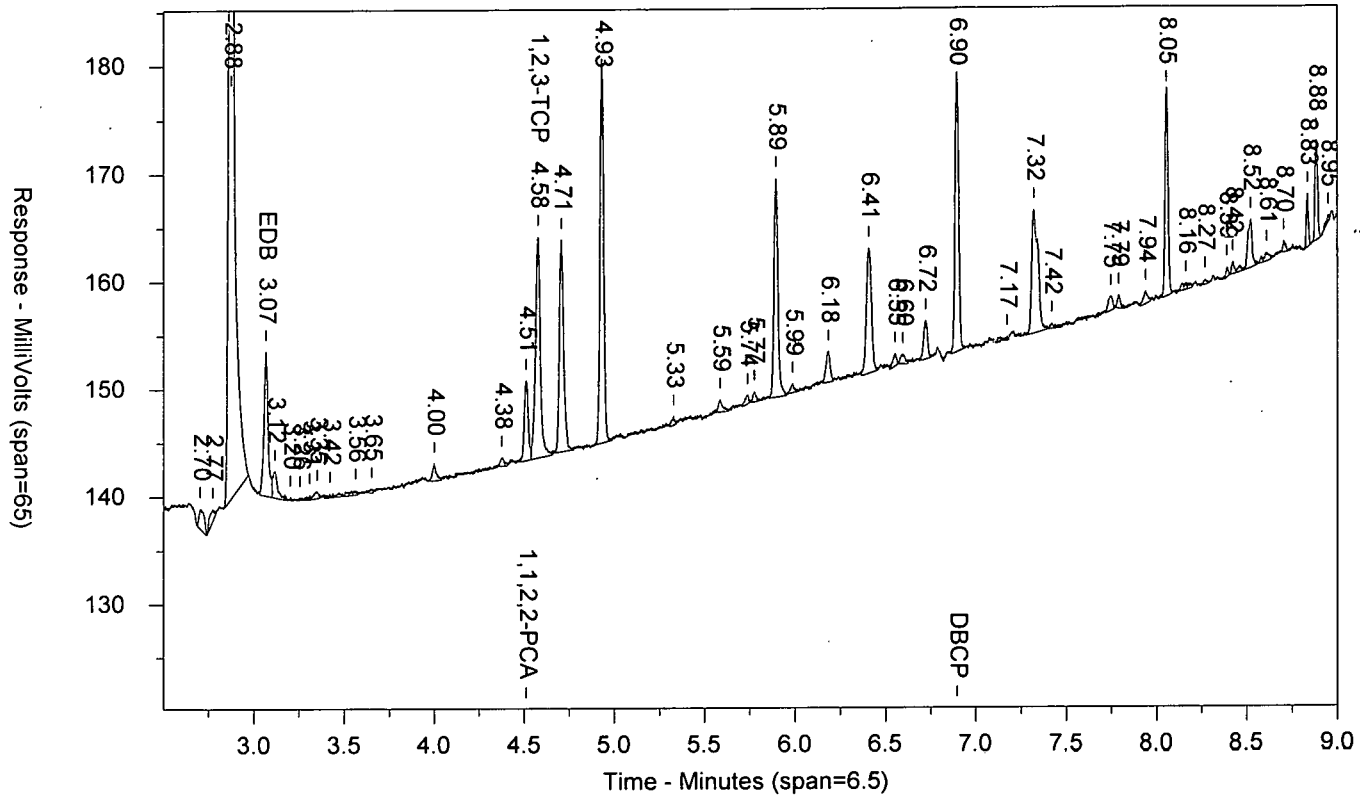
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 7802 | .405 | EDB | 4.335 | 2290 | .405 | EDB |
| 4.515 | 4322 | .196 | 1,1,2,2-PCA | 5.641 | 1830 | .199 | 1,1,2,2-PCA |
| 4.58 | 10708 | 2.318 | 1,2,3-TCP | 5.765 | 13776 | 3.87 | 1,2,3-TCP |
| 6.897 | 14619 | .372 | DBCP | 7.947 | 5660 | .377 | DBCP |

Files:
Area File: 16EDBS17202001.0006.RAW
Area File: 16EDBS17202001B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:34:24 PM
File Reported On: 7/24/2017 at 10:43:26 AM

EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0007.RAW

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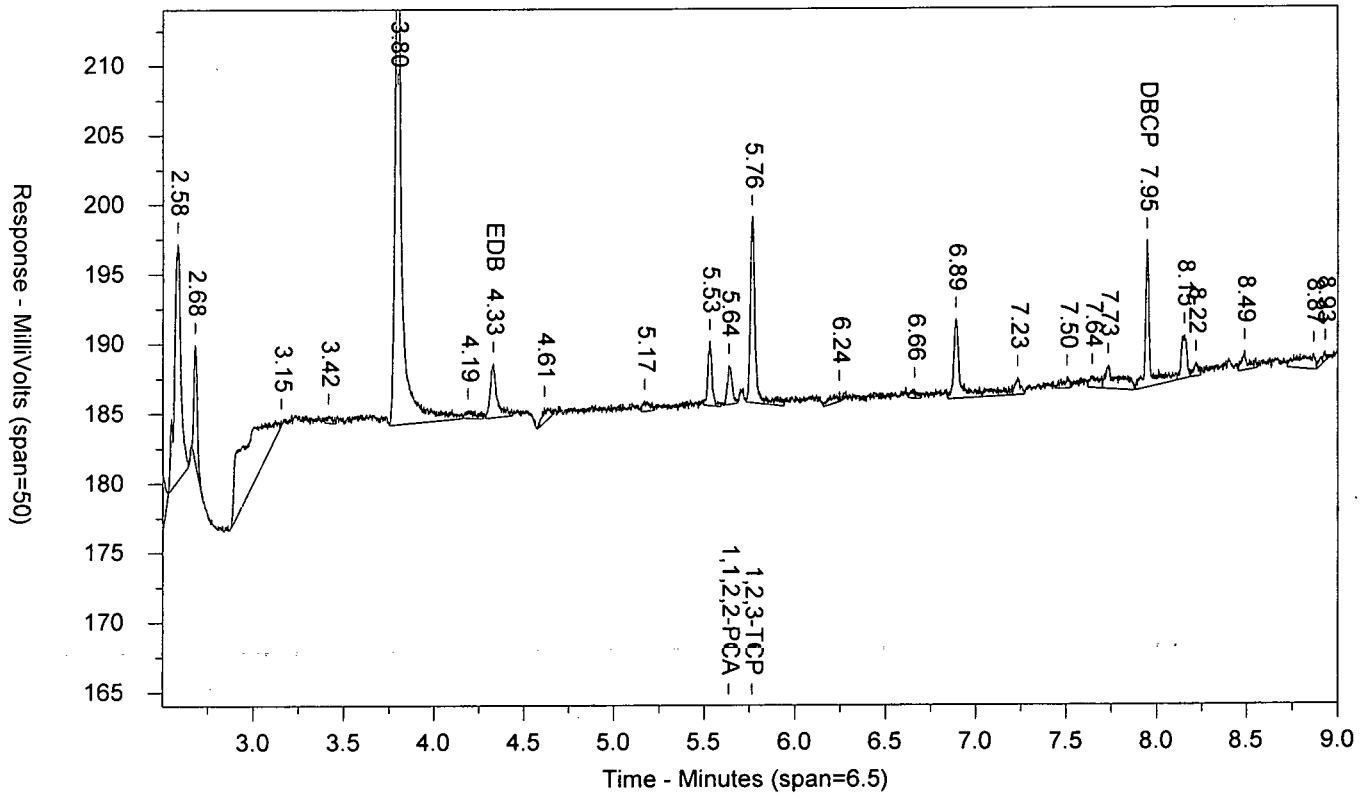


LANCASTER LABORATORIES

Sample Number: EDB_21724DS AAEDB_2AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:40:59 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

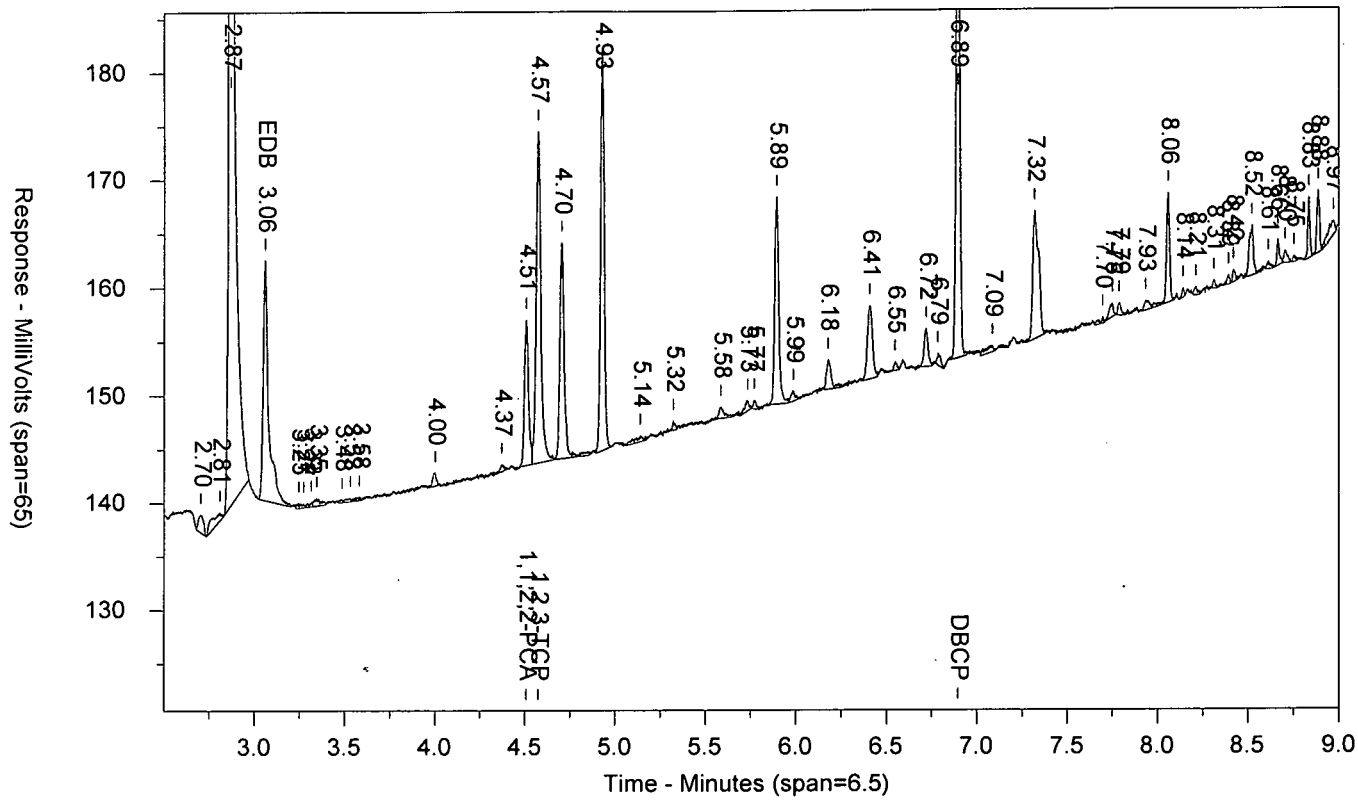
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.067 | 13453 | .69 | EDB | 4.33 | 3898 | .686 | EDB |
| 4.511 | 7462 | .337 | 1,1,2,2-PCA | 5.637 | 2815 | .325 | 1,1,2,2-PCA |
| 4.578 | 20612 | 6.251 | 1,2,3-TCP | 5.764 | 13358 | 2.692 | 1,2,3-TCP |
| 6.895 | 25723 | .653 | DBCP | 7.946 | 10545 | .701 | DBCP |

Files:
Area File: 16EDBS17202001.0007.RAW
Area File: 16EDBS17202001B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 3:50:00 PM
File Reported On: 7/24/2017 at 10:43:42 AM

EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0008.RAW

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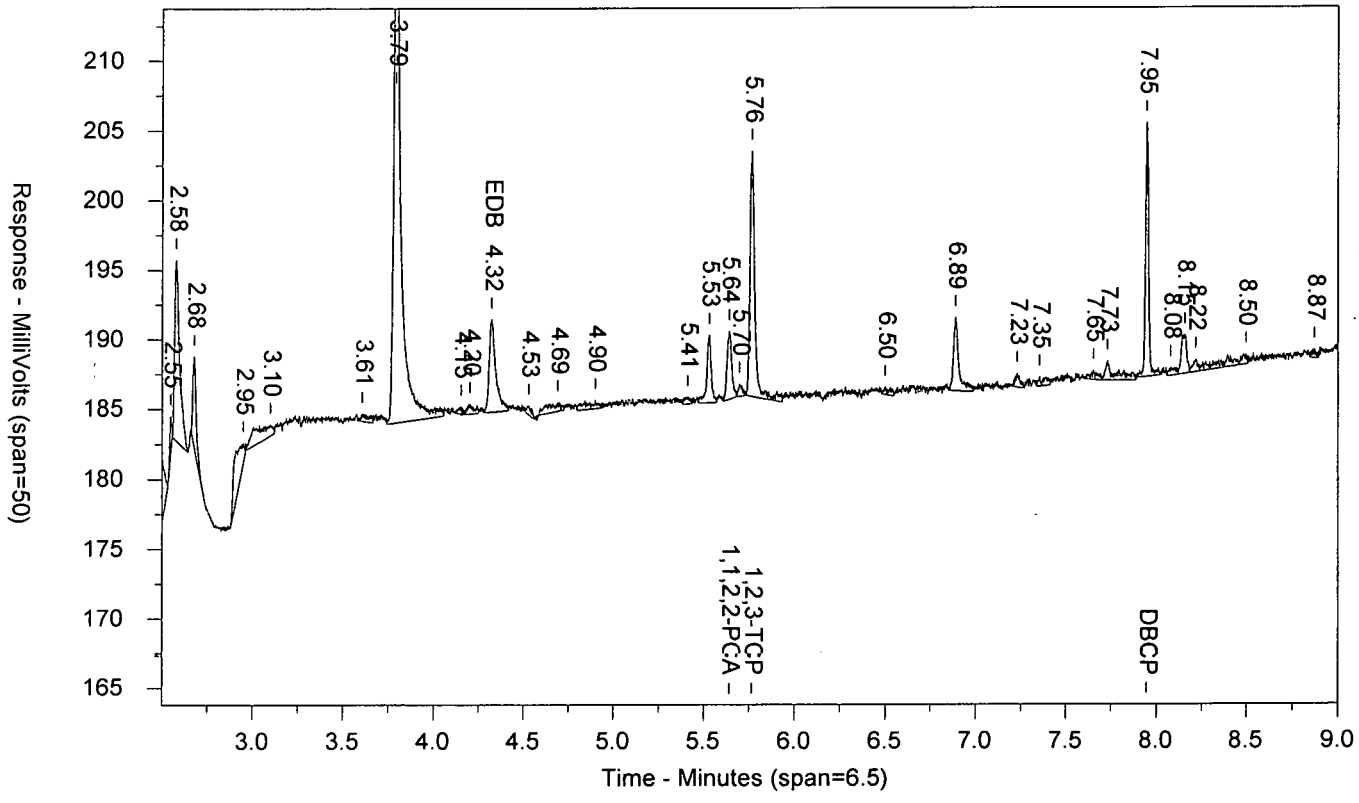


LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 3:56:33 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

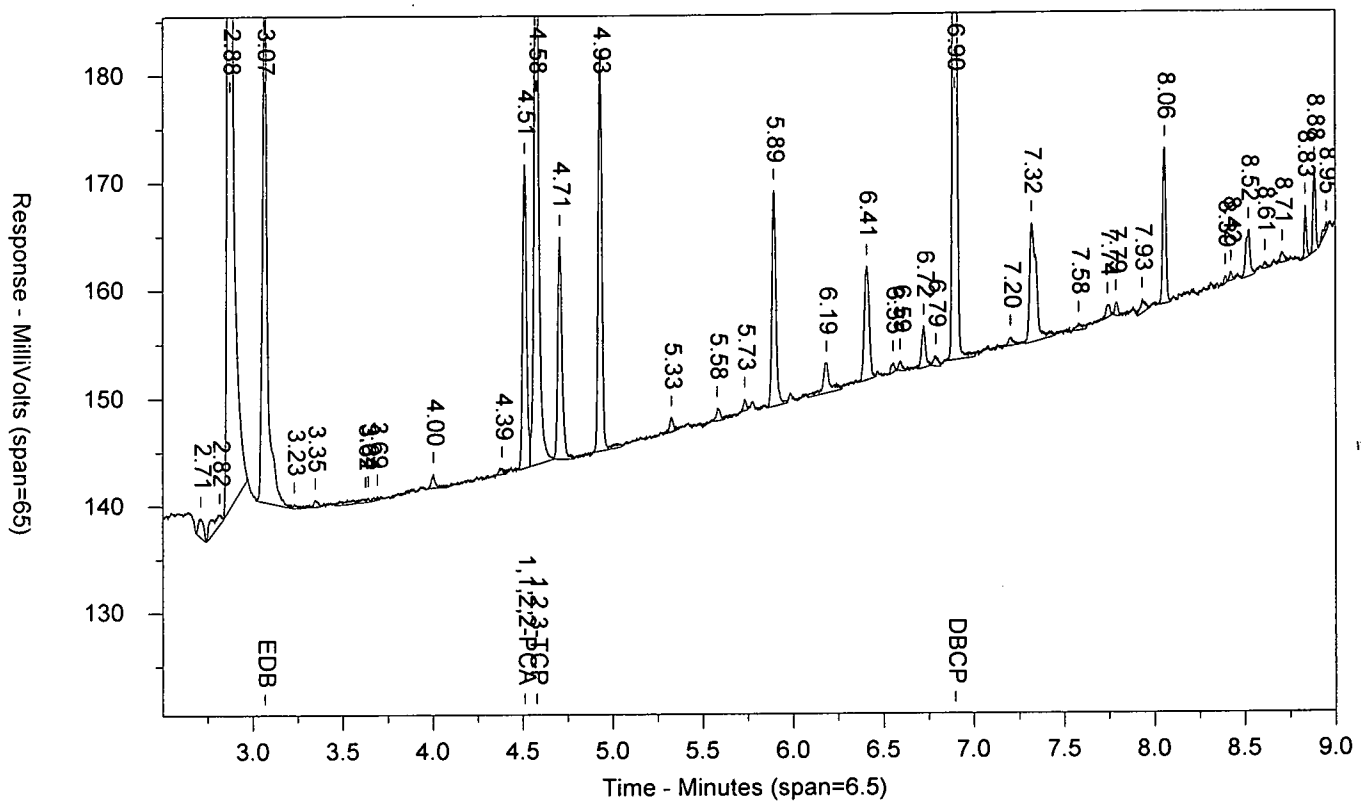
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.06 | 22389 | 1.134 | EDB | 4.324 | 6702 | 1.179 | EDB |
| 4.508 | 13531 | .604 | 1,1,2,2-PCA | 5.64 | 4937 | .598 | 1,1,2,2-PCA |
| 4.574 | 30821 | 9.822 | 1,2,3-TCP | 5.763 | 17655 | 8.34 | 1,2,3-TCP |
| 6.895 | 49779 | 1.263 | DBCP | 7.946 | 18271 | 1.205 | DBCP |

Files:
Area File: 16EDBS17202001.0008.RAW
Area File: 16EDBS17202001B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:05:35 PM
File Reported On: 7/24/2017 at 10:43:58 AM

EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0009.RAW

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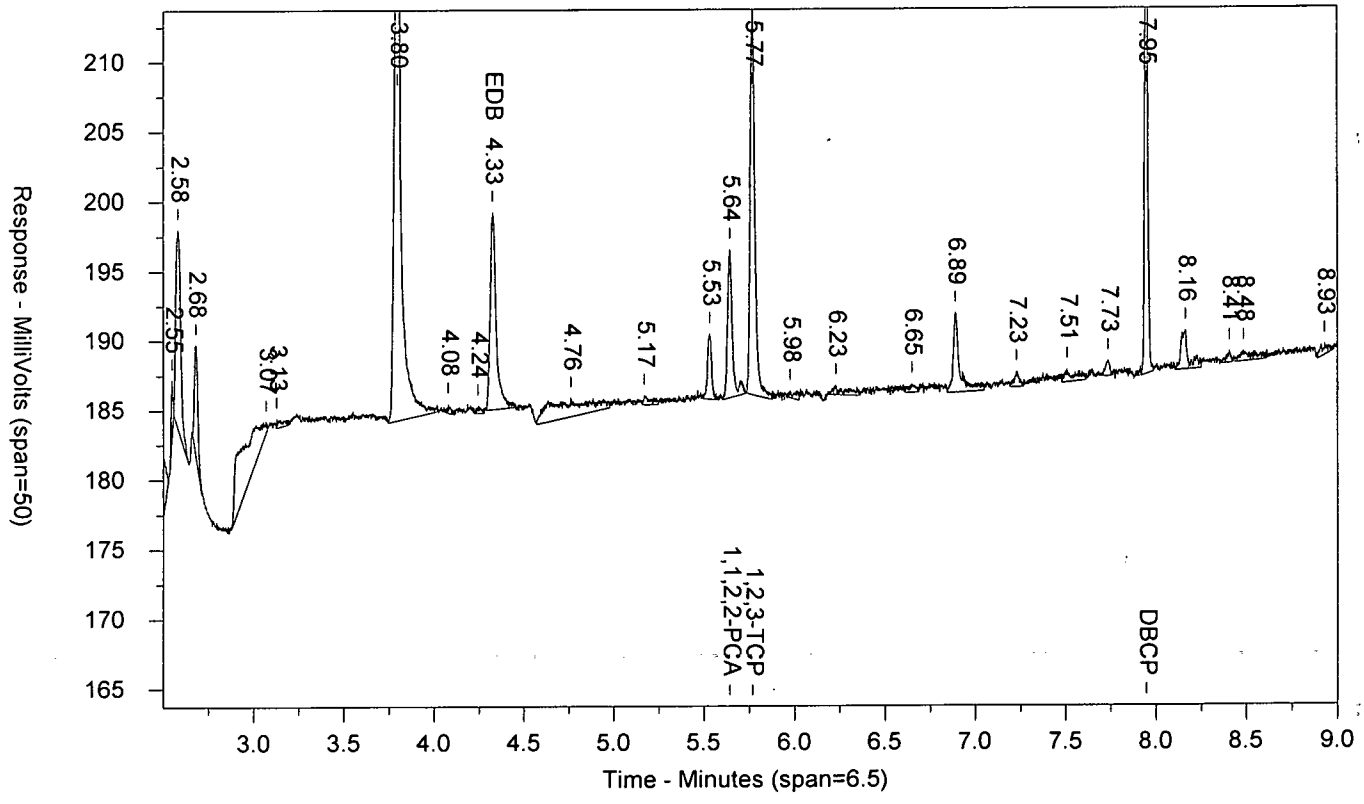


LANCASTER LABORATORIES

Sample Number: EDB_41724DS AAEDB_4AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:12:13 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

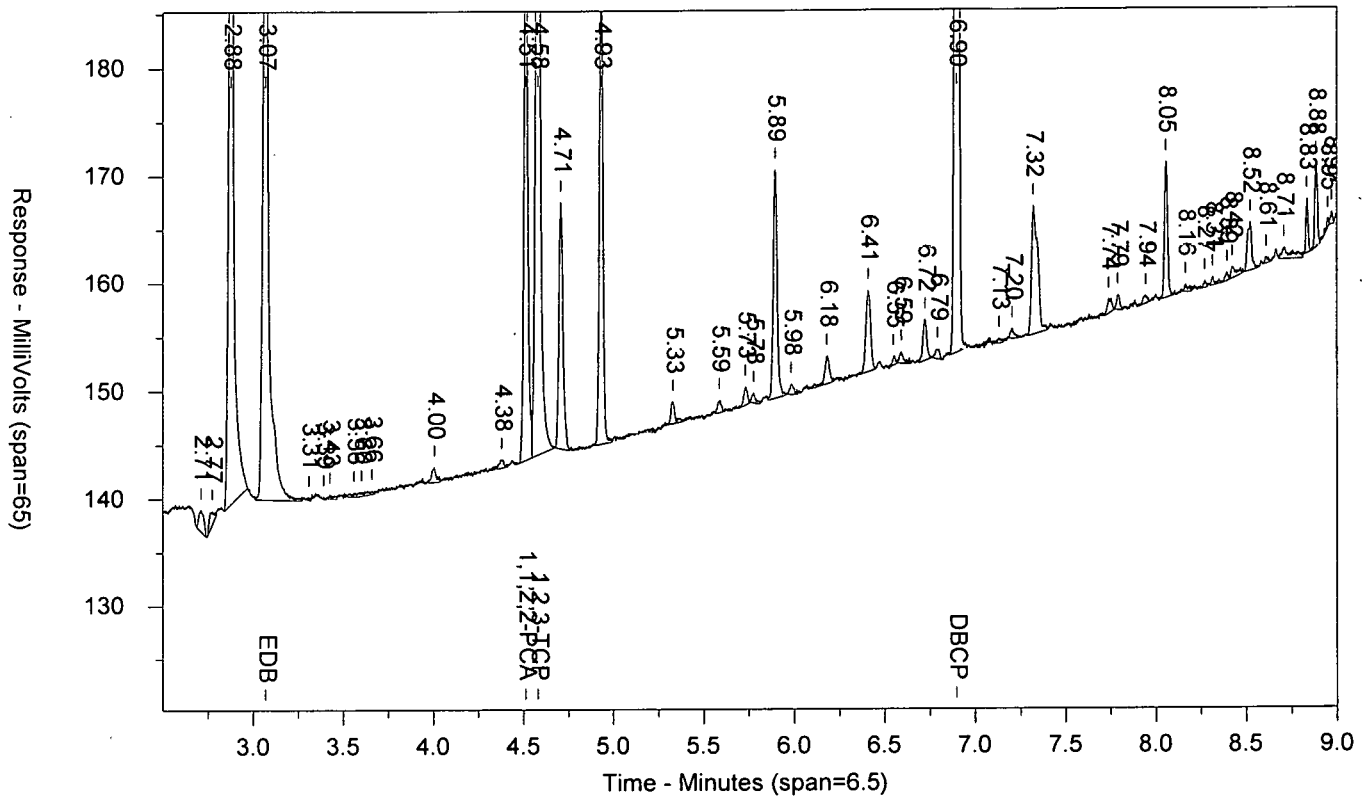
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 51364 | 2.628 | EDB | 4.327 | 14203 | 2.519 | EDB |
| 4.511 | 28210 | 1.267 | 1,1,2,2-PCA | 5.641 | 10658 | 1.354 | 1,1,2,2-PCA |
| 4.578 | 62952 | 22.383 | 1,2,3-TCP | 5.767 | 27830 | 20.965 | 1,2,3-TCP |
| 6.896 | 99853 | 2.548 | DBCP | 7.946 | 36899 | 2.475 | DBCP |

Files:
Area File: 16EDBS17202001.0009.RAW
Area File: 16EDBS17202001B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:21:14 PM
File Reported On: 7/24/2017 at 10:44:14 AM

EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0010.RAW

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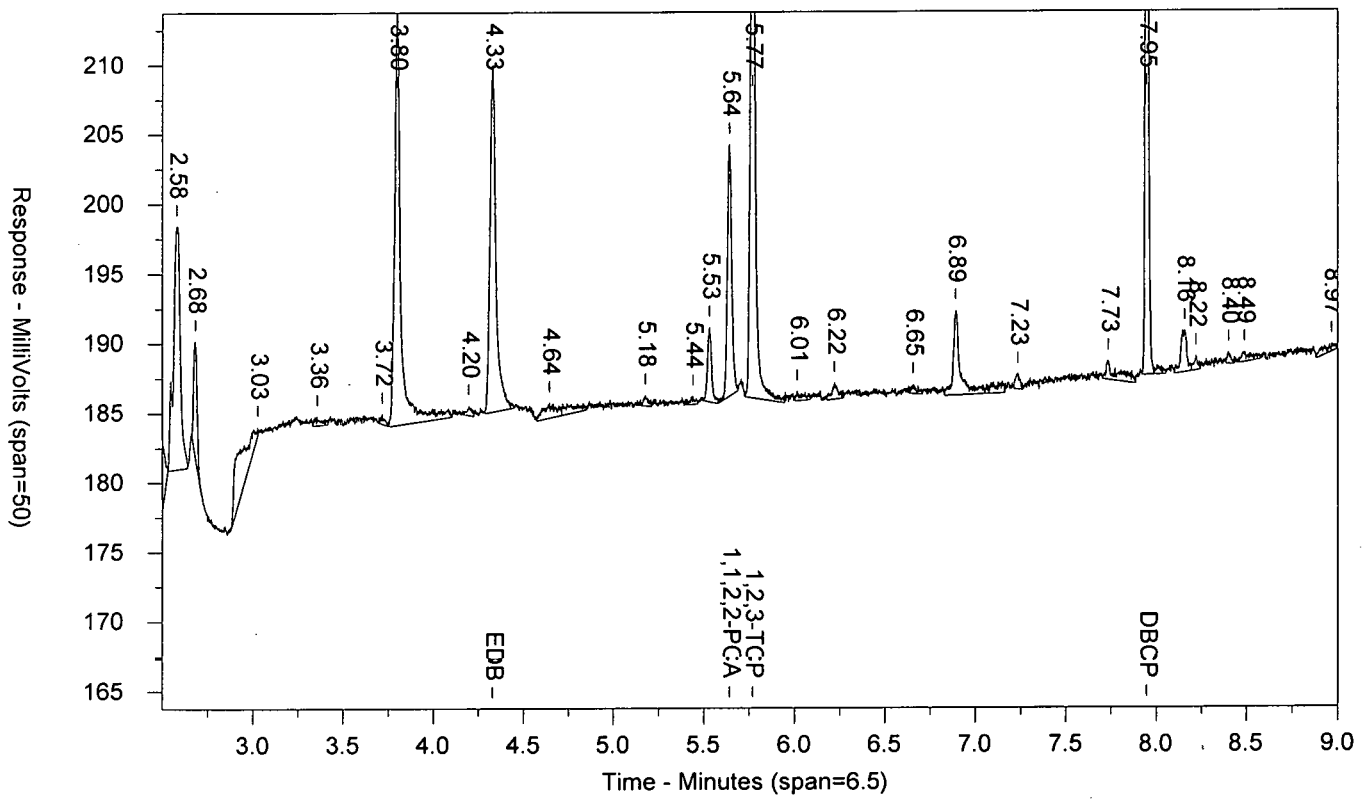

LANCASTER LABORATORIES

Sample Number: EDB_51724DS AAEDB_5AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:27:52 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 91868 | 4.604 | EDB | 4.329 | 24917 | 4.368 | EDB |
| 4.512 | 49780 | 2.2 | 1,1,2,2-PCA | 5.641 | 18049 | 2.296 | 1,1,2,2-PCA |
| 4.579 | 102059 | 37.347 | 1,2,3-TCP | 5.768 | 42823 | 38.187 | 1,2,3-TCP |
| 6.895 | 172607 | 4.369 | DBCP | 7.946 | 63141 | 4.208 | DBCP |

Files:
Area File: 16EDBS17202001.0010.RAW
Area File: 16EDBS17202001B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 4:36:53 PM
File Reported On: 7/24/2017 at 10:44:30 AM

EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011

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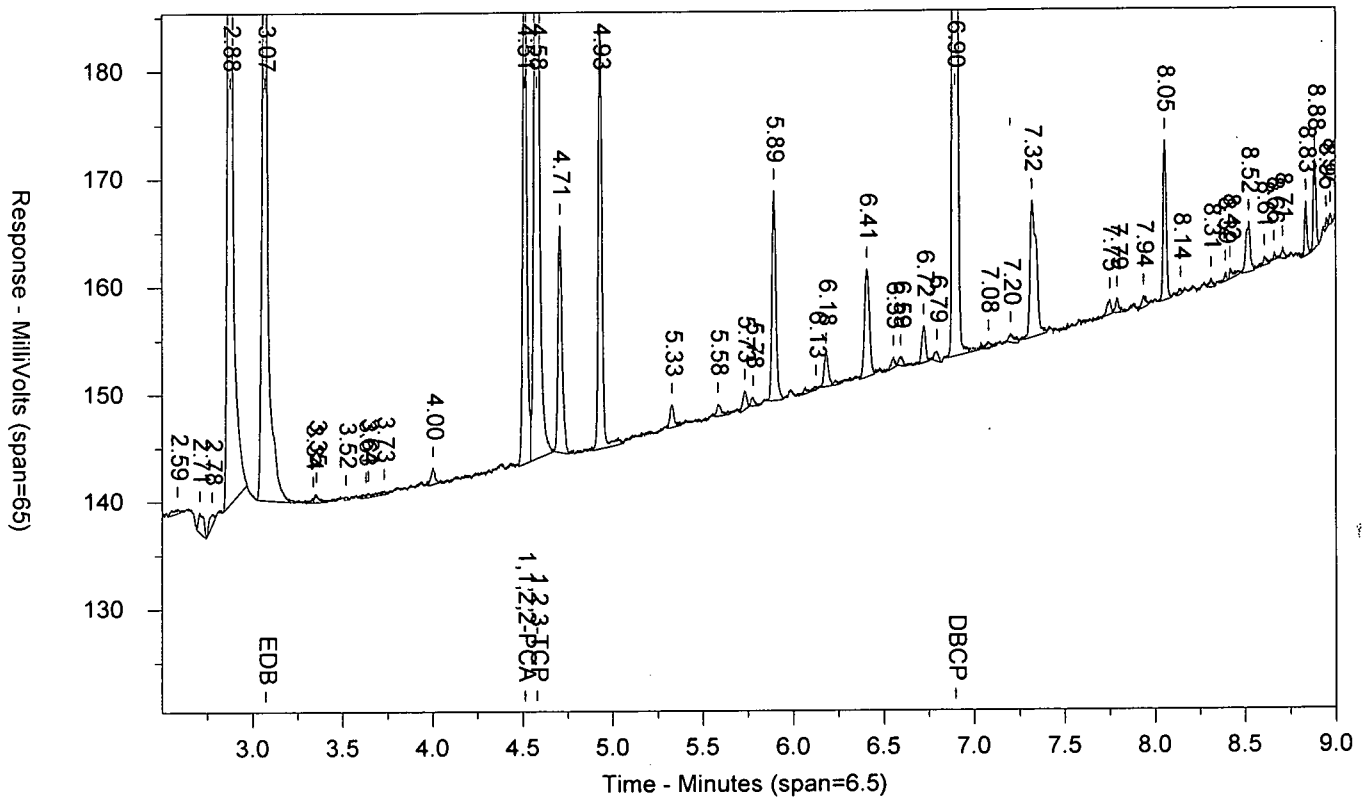


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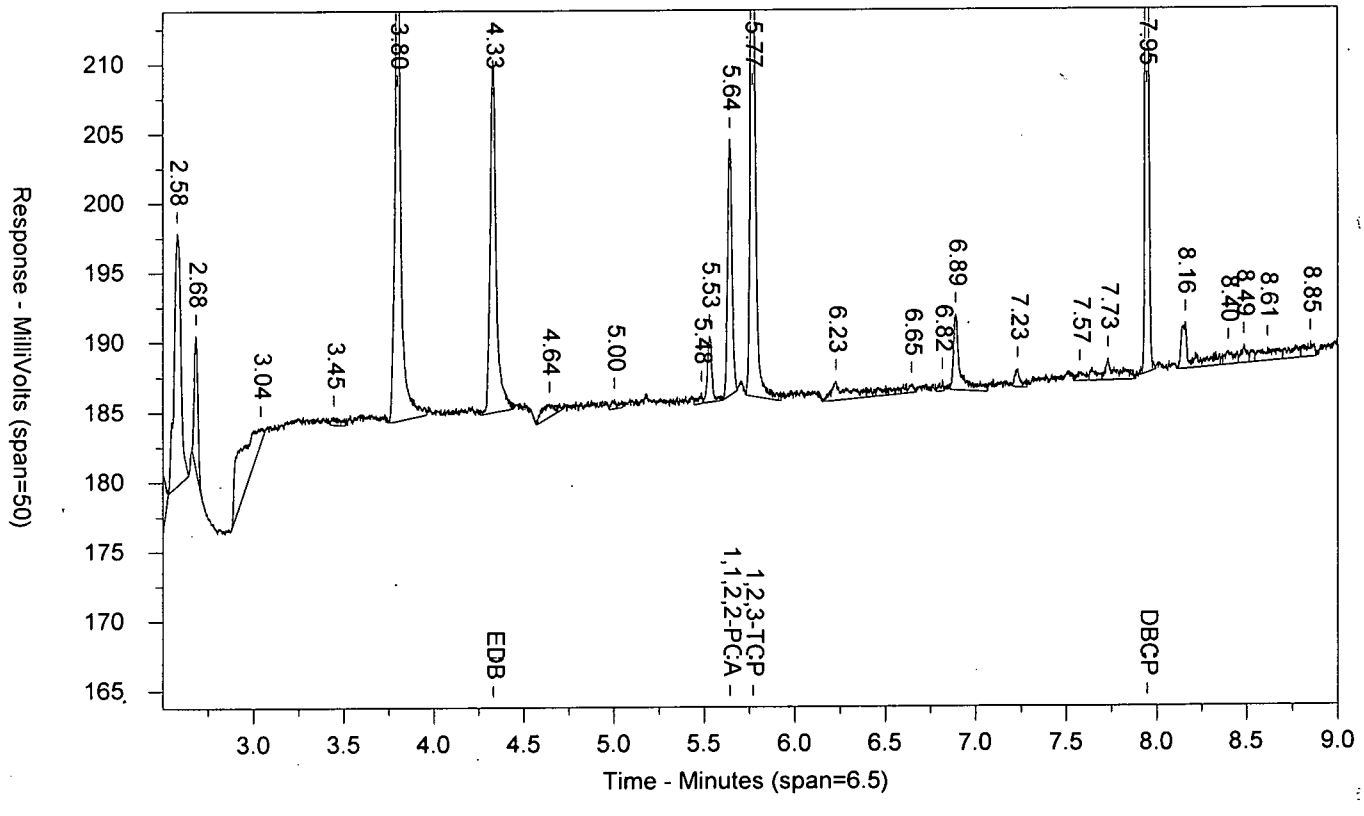

LANCASTER LABORATORIES

Sample Number: EDB_61724DS AAEDB_6AA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:43:27 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.072 | 92950 | 4.561 | EDB | 4.331 | 25336 | 4.375 | EDB |
| 4.513 | 53020 | 2.296 | 1,1,2,2-PCA | 5.641 | 18435 | 2.295 | 1,1,2,2-PCA |
| 4.58 | 104273 | 36.659 | 1,2,3-TCP | 5.769 | 43781 | 37.288 | 1,2,3-TCP |
| 6.895 | 183008 | 4.592 | DBCP | 7.946 | 67645 | 4.471 | DBCP |

Files:
Area File: 16EDBS17202001.0011.RAW
Area File: 16EDBS17202001B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
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File Reported On: 7/24/2017 at 10:44:46 AM

MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011

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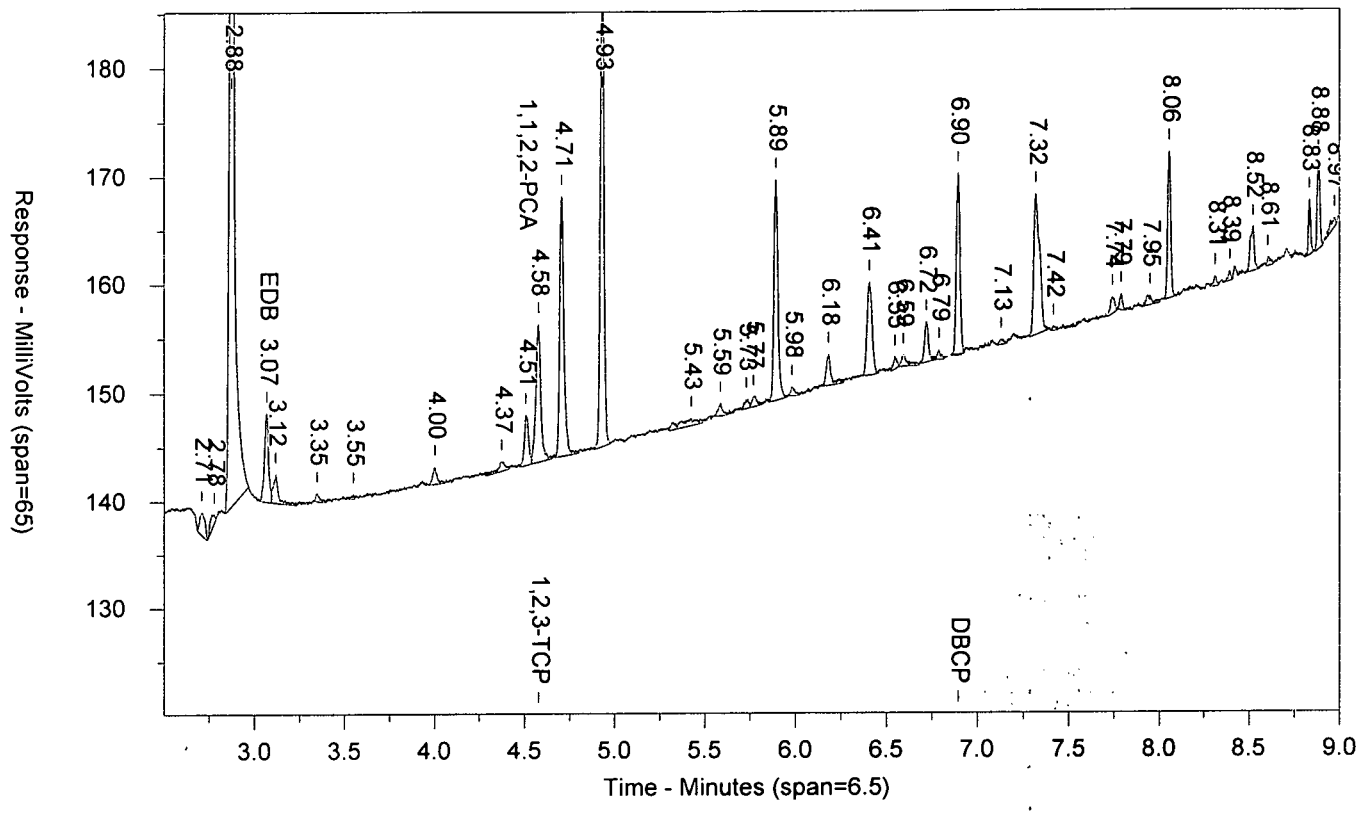


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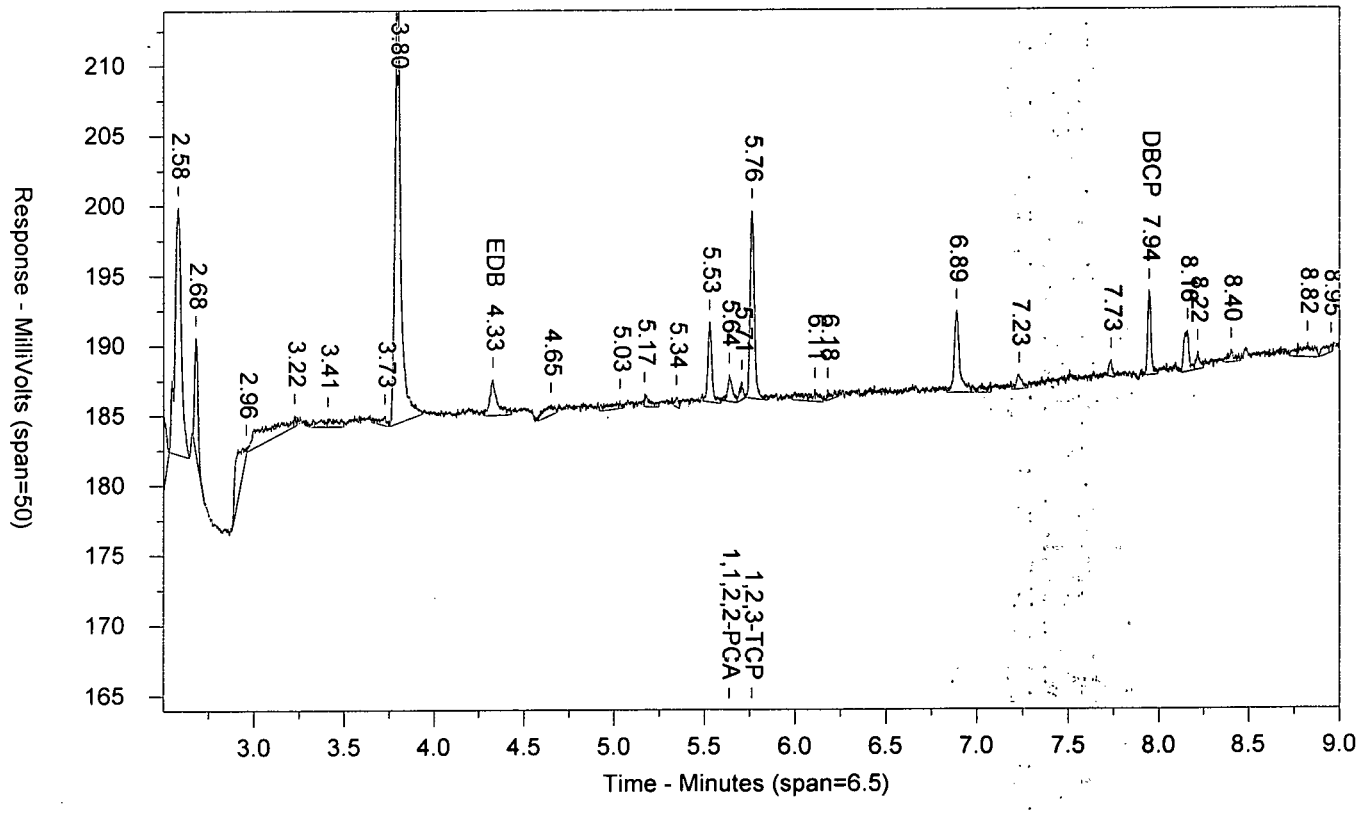


LANCASTER LABORATORIES

Sample Number: MDEDX1724DS AAMDEDXAA ICAL 1720199999 SW-846 8011
Injected On: 7/21/2017 4:59:04 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

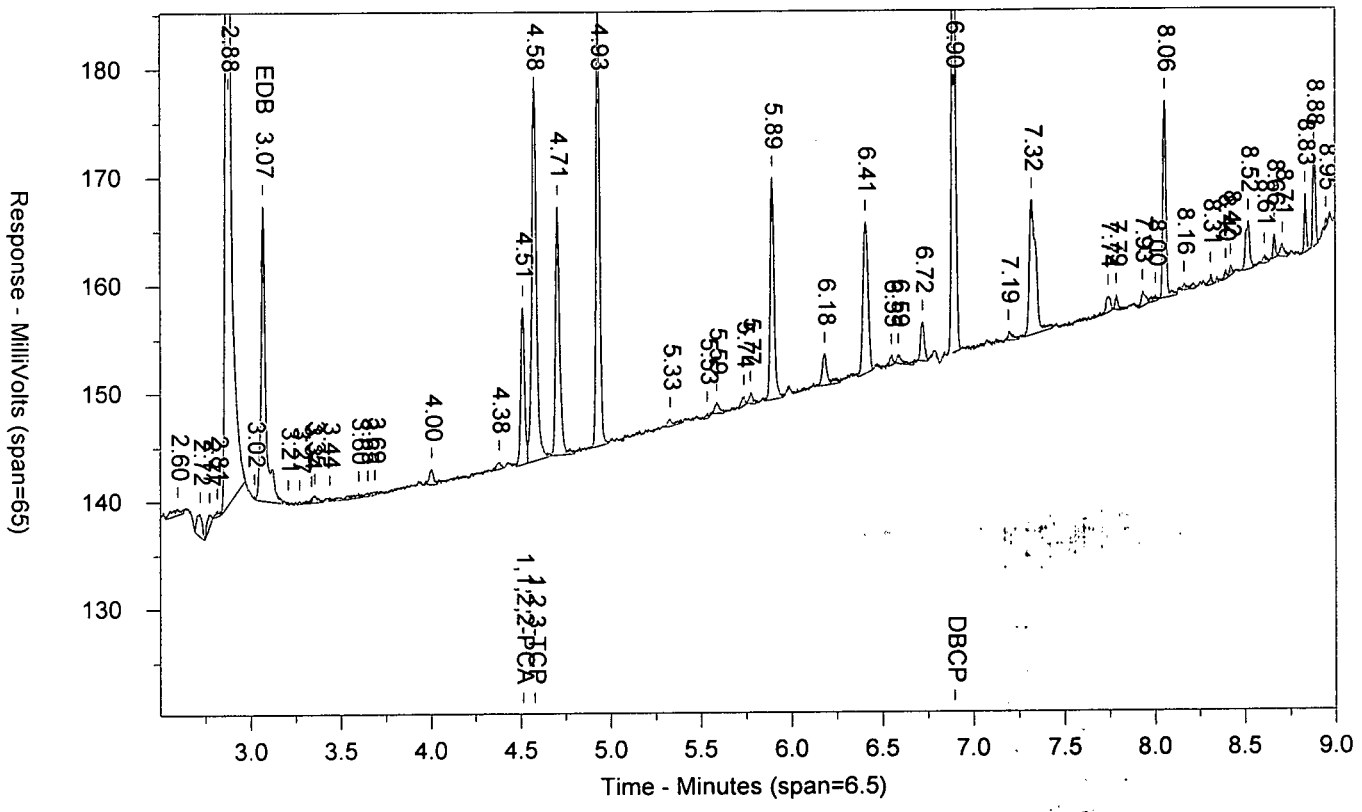
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 8227 | .399 | EDB | 4.328 | 2605 | .442 | EDB |
| 4.508 | 4705 | .201 | 1,1,2,2-PCA | 5.637 | 1947 | .207 | 1,1,2,2-PCA |
| 4.577 | 12707 | 2.8 | 1,2,3-TCP | 5.762 | 13463 | 4.124 | 1,2,3-TCP |
| 6.895 | 16774 | .413 | DBCP | 7.944 | 6091 | .394 | DBCP |

Files:
Area File: 16EDBS17202001.0012.RAW
Area File: 16EDBS17202001B.0012.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:08:05 PM
File Reported On: 7/24/2017 at 10:53:41 AM

EDB_31724DS AAEDB_3AA CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0013.RAW

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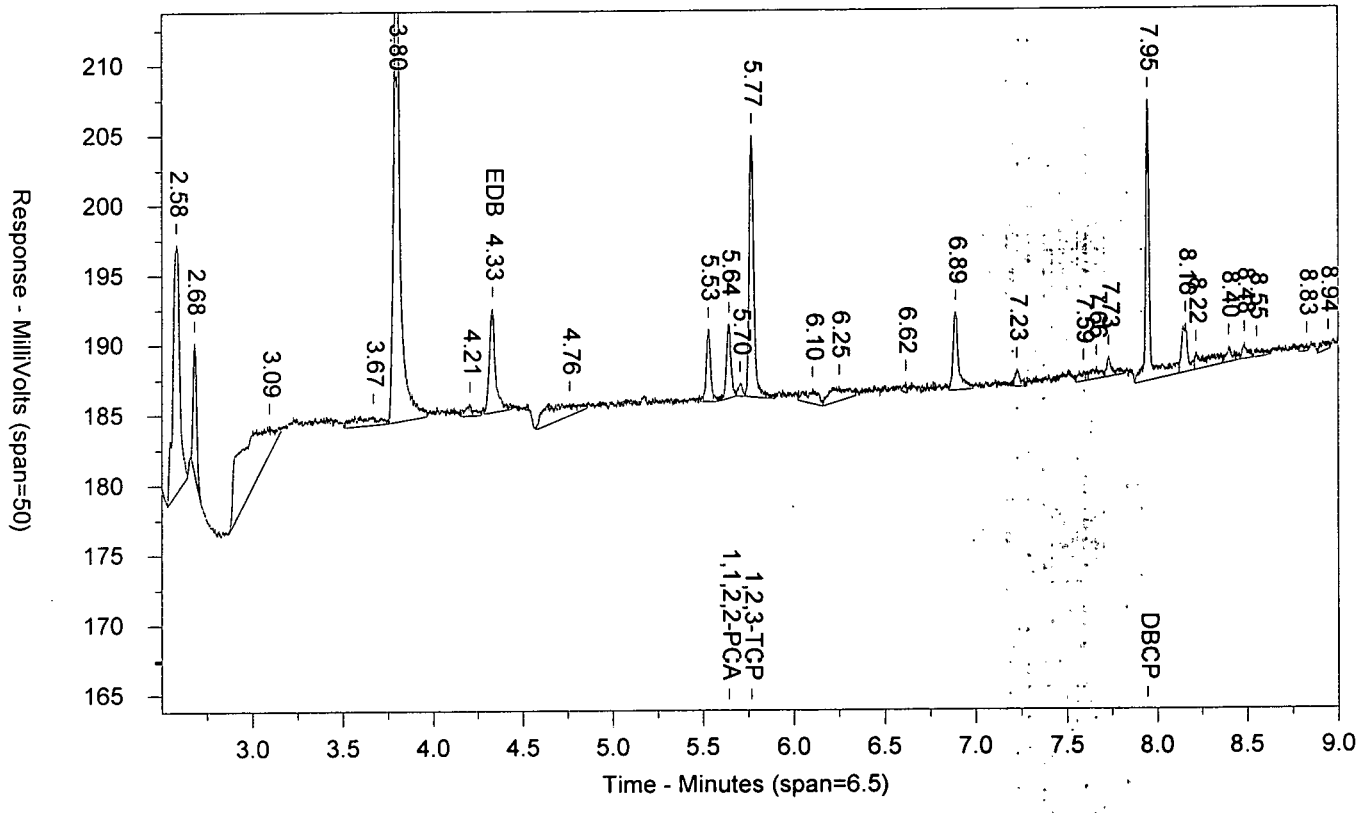


LANCASTER LABORATORIES

Sample Number: EDB_31724DS AAEDB_3AA CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 5:14:46 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

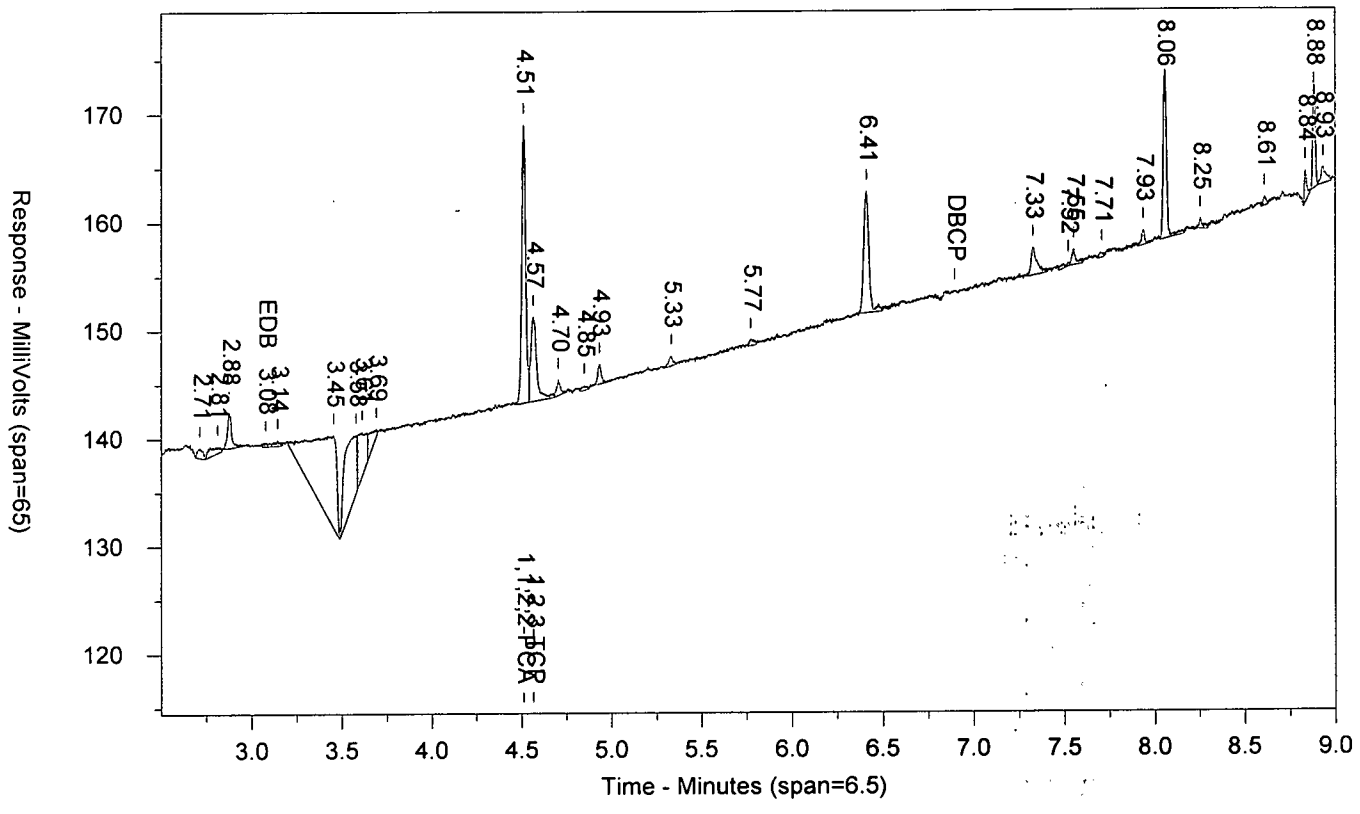
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 27334 | 1.326 | EDB | 4.332 | 7493 | 1.272 | EDB |
| 4.513 | 14601 | .622 | 1,1,2,2-PCA | 5.641 | 5326 | .616 | 1,1,2,2-PCA |
| 4.578 | 34941 | 10.322 | 1,2,3-TCP | 5.765 | 18757 | 9.484 | 1,2,3-TCP |
| 6.896 | 53176 | 1.309 | DBCP | 7.946 | 20164 | 1.305 | DBCP |

Files:
Area File: 16EDBS17202001.0013.RAW
Area File: 16EDBS17202001B.0013.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:23:47 PM
File Reported On: 7/24/2017 at 10:53:52 AM

EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0014.RAW

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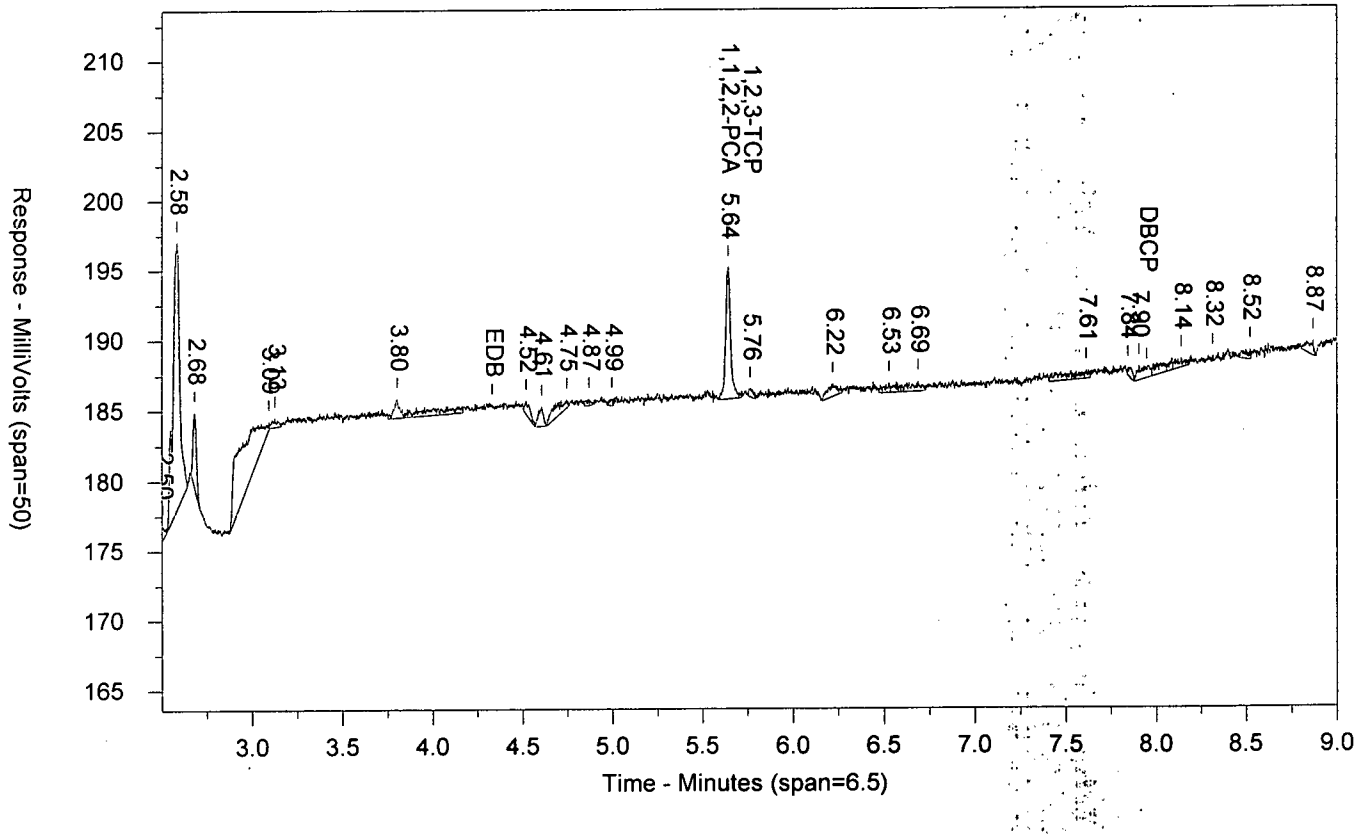


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 5:30:25 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

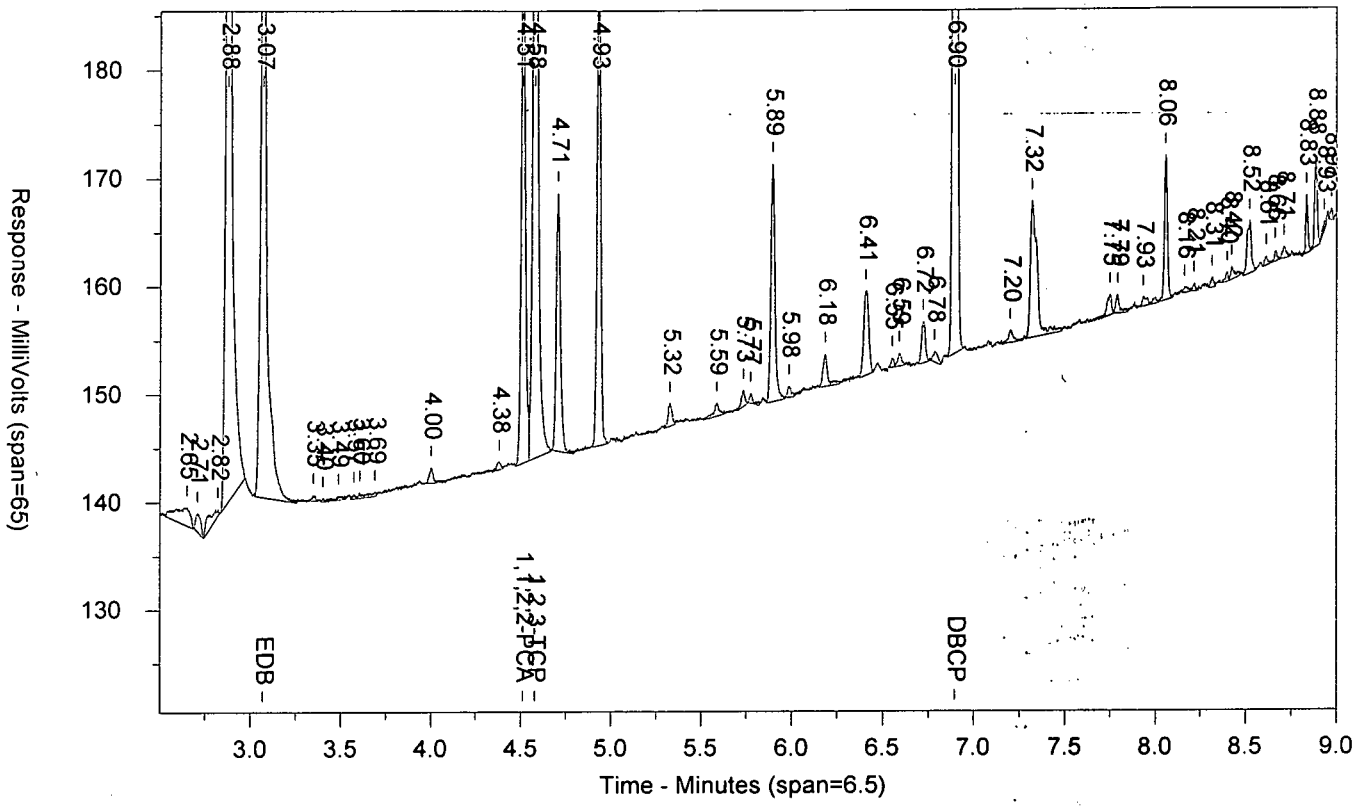
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.077 | 465 | .001 | EDB | | 0 | | EDB |
| 4.512 | 25794 | .063 | 1,1,2,2-PCA | 5.642 | 9419 | .063 | 1,1,2,2-PCA |
| 4.565 | 7915 | .067 | 1,2,3-TCP | 5.764 | 590 | -.509 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0014.RAW
Area File: 16EDBS17202001B.0014.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:39:27 PM
File Reported On: 7/24/2017 at 10:54:01 AM

EDB_51724DS LSEDB_5LS CCAL 1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0025.RAW

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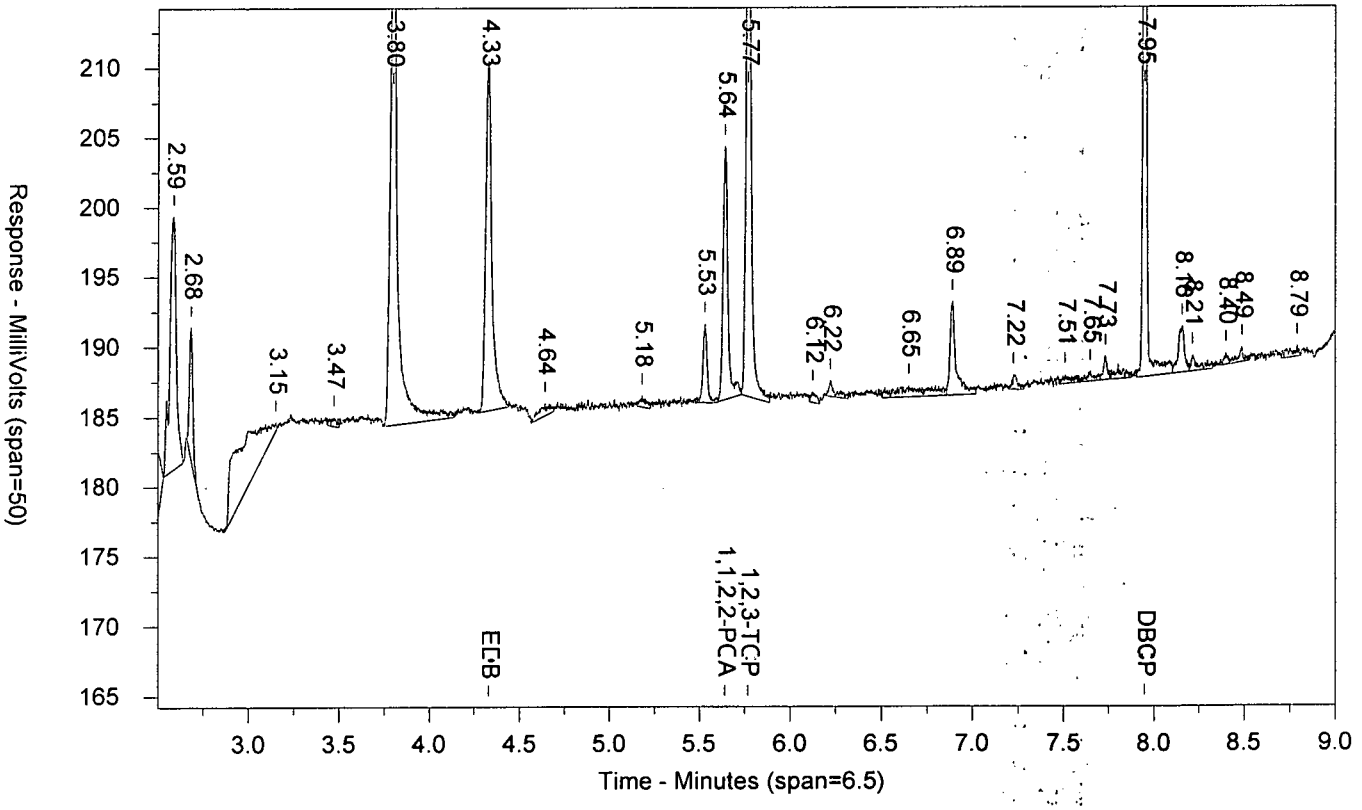


LANCASTER LABORATORIES

Sample Number: EDB_51724DS LSEDB_5LS CCAL 1720199999 SW-846 8011
Injected On: 7/21/2017 8:22:17 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

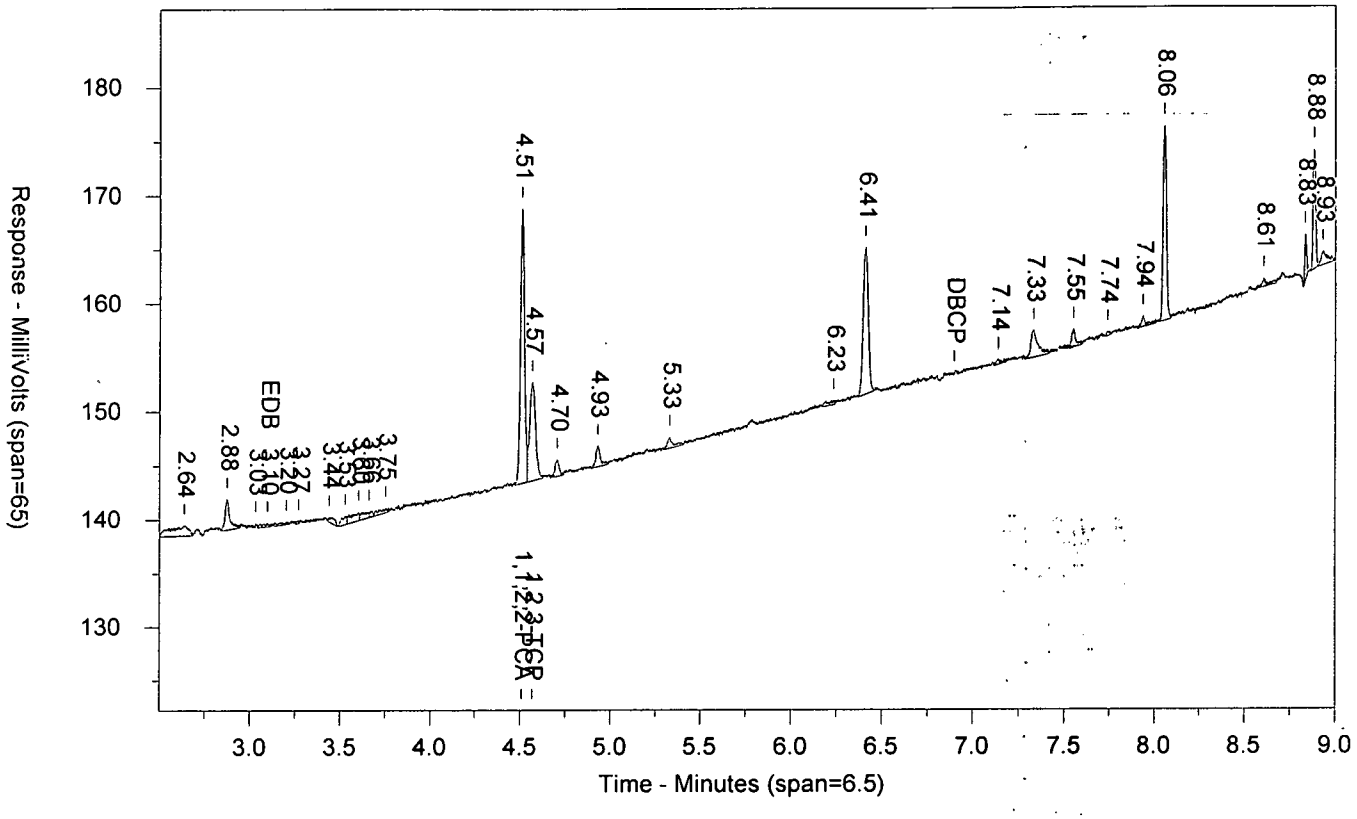
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 91403 | 4.434 | EDB | 4.329 | 25137 | 4.266 | EDB |
| 4.511 | 48710 | 2.076 | 1,1,2,2-PCA | 5.64 | 18183 | 2.171 | 1,1,2,2-PCA |
| 4.578 | 99451 | 32.145 | 1,2,3-TCP | 5.767 | 43011 | 34.043 | 1,2,3-TCP |
| 6.896 | 177937 | 4.379 | DBCP | 7.946 | 66694 | 4.317 | DBCP |

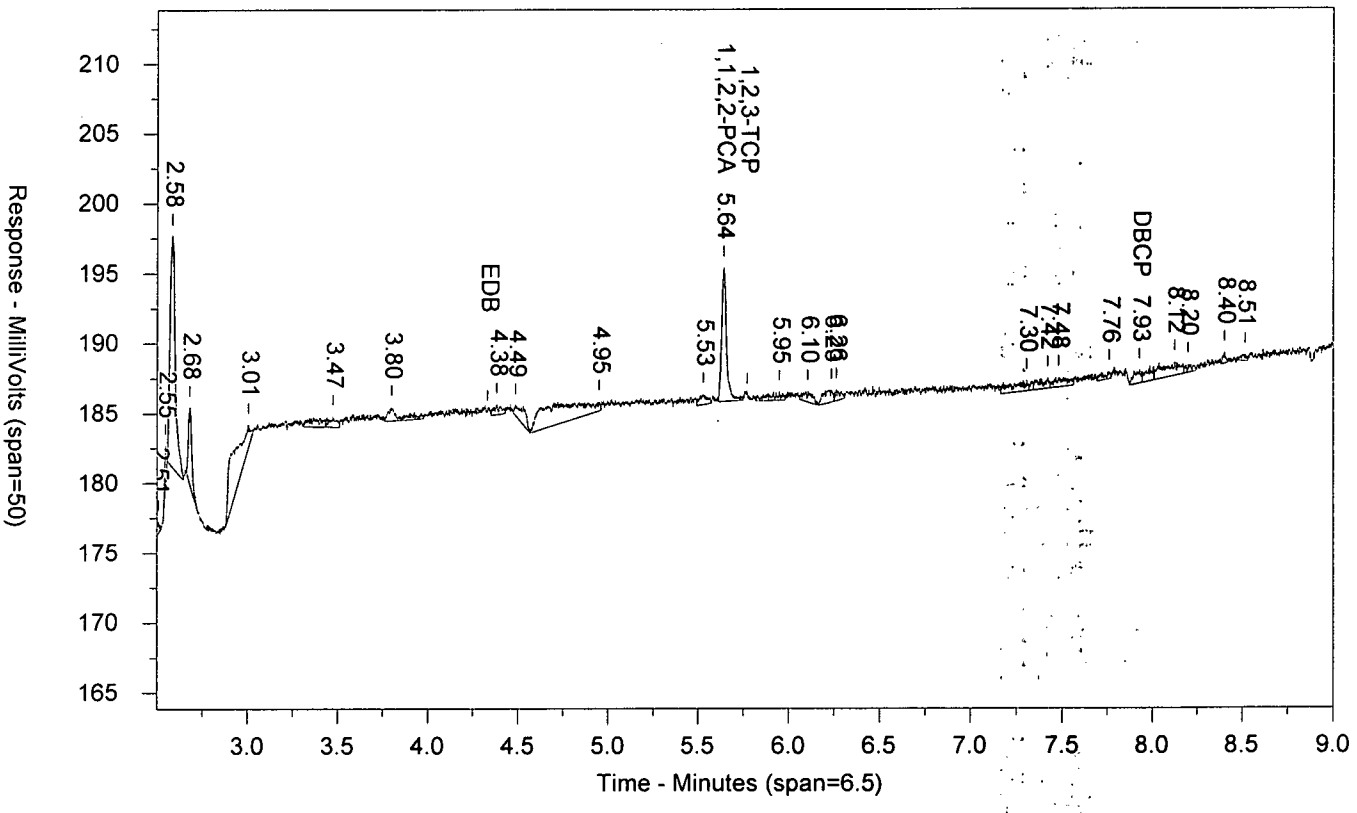
Files:
Area File: 16EDBS17202001.0025.RAW
Area File: 16EDBS17202001B.0025.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:31:18 PM
File Reported On: 7/24/2017 at 10:56:08 AM

EIBKX1724C SCPIBLKSC PIBLK1720199999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0026.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0026.RAW



LANCASTER LABORATORIES

Sample Number: EIBKX1724C SCPIBLKSC PIBLK1720199999 SW-846 8011
Injected On: 7/21/2017 8:37:50 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

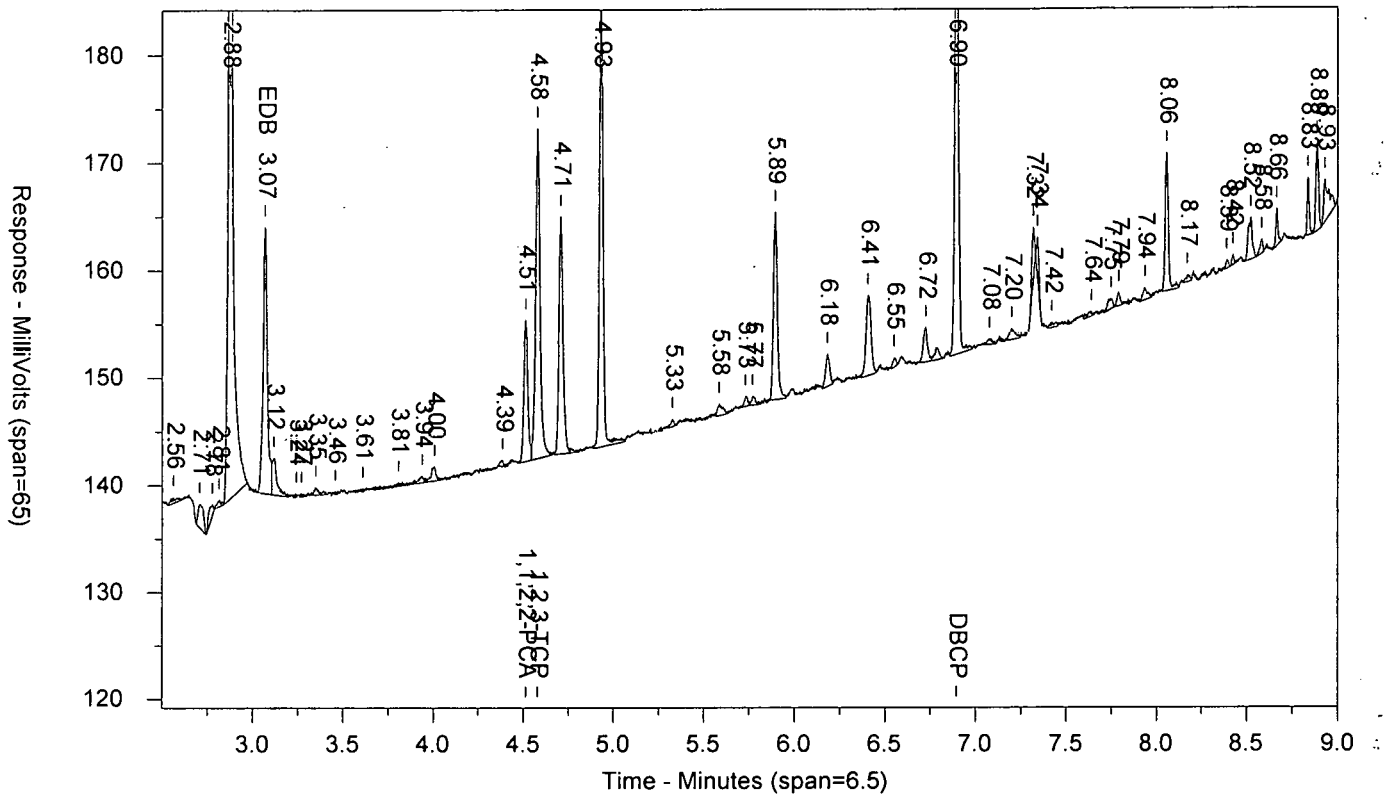
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.098 | 383 | .001 | EDB | | 0 | | EDB |
| 4.51 | 25471 | .062 | 1,1,2,2-PCA | 5.64 | 9566 | .065 | 1,1,2,2-PCA |
| 4.568 | 9137 | .091 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |
| | 0 | | DBCP | 7.927 | 949 | .004 | DBCP |

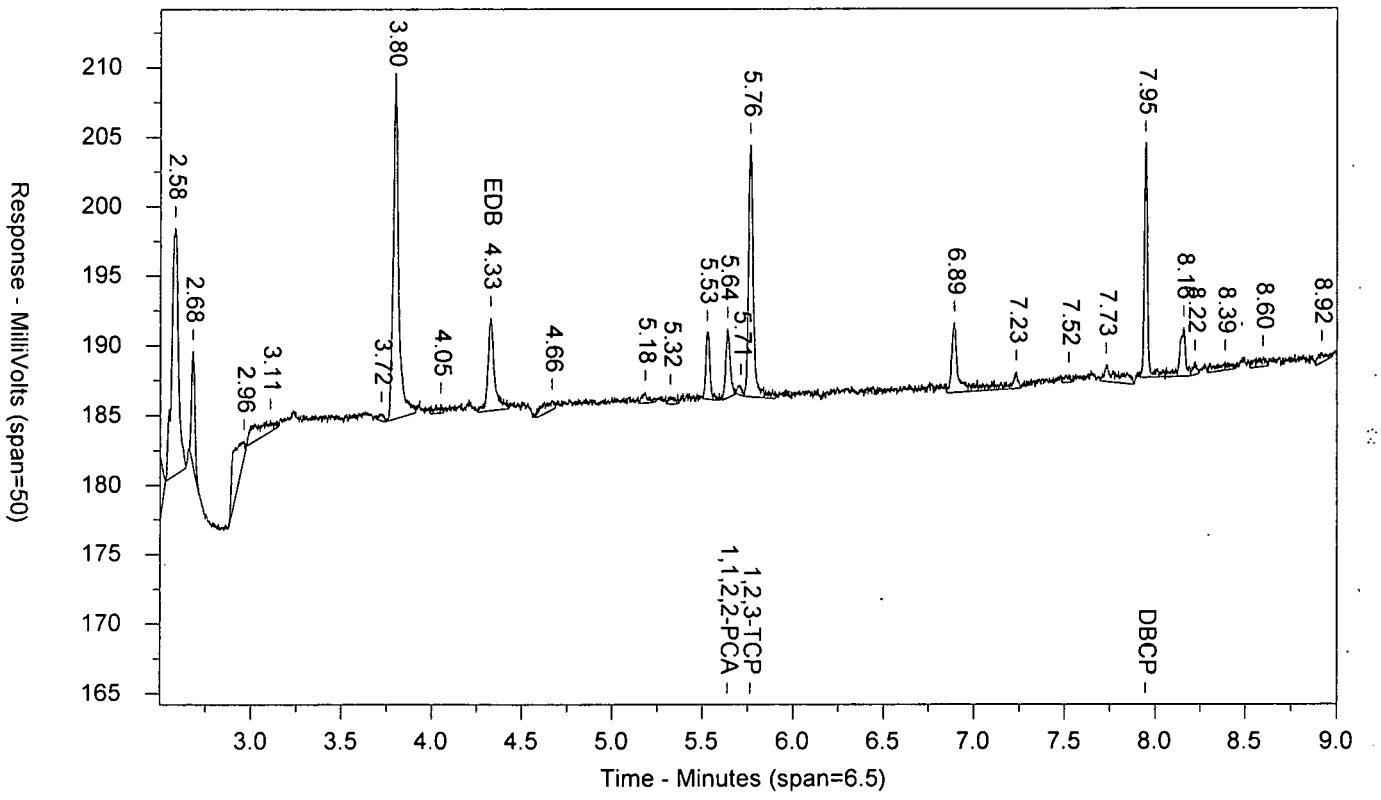
Files:
Area File: 16EDBS17202001.0026.RAW
Area File: 16EDBS17202001B.0026.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 8:46:51 PM
File Reported On: 7/24/2017 at 10:56:18 AM

EDB_31724DS PEEDB_3PE CCAL 1720499999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002.0004.RAW




\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002B.0004.RAW



LANCASTER LABORATORIES

Sample Number: EDB_31724DS PEEDB_3PE CCAL 1720499999 SW-846 8011
Injected On: 7/24/2017 1:25:14 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

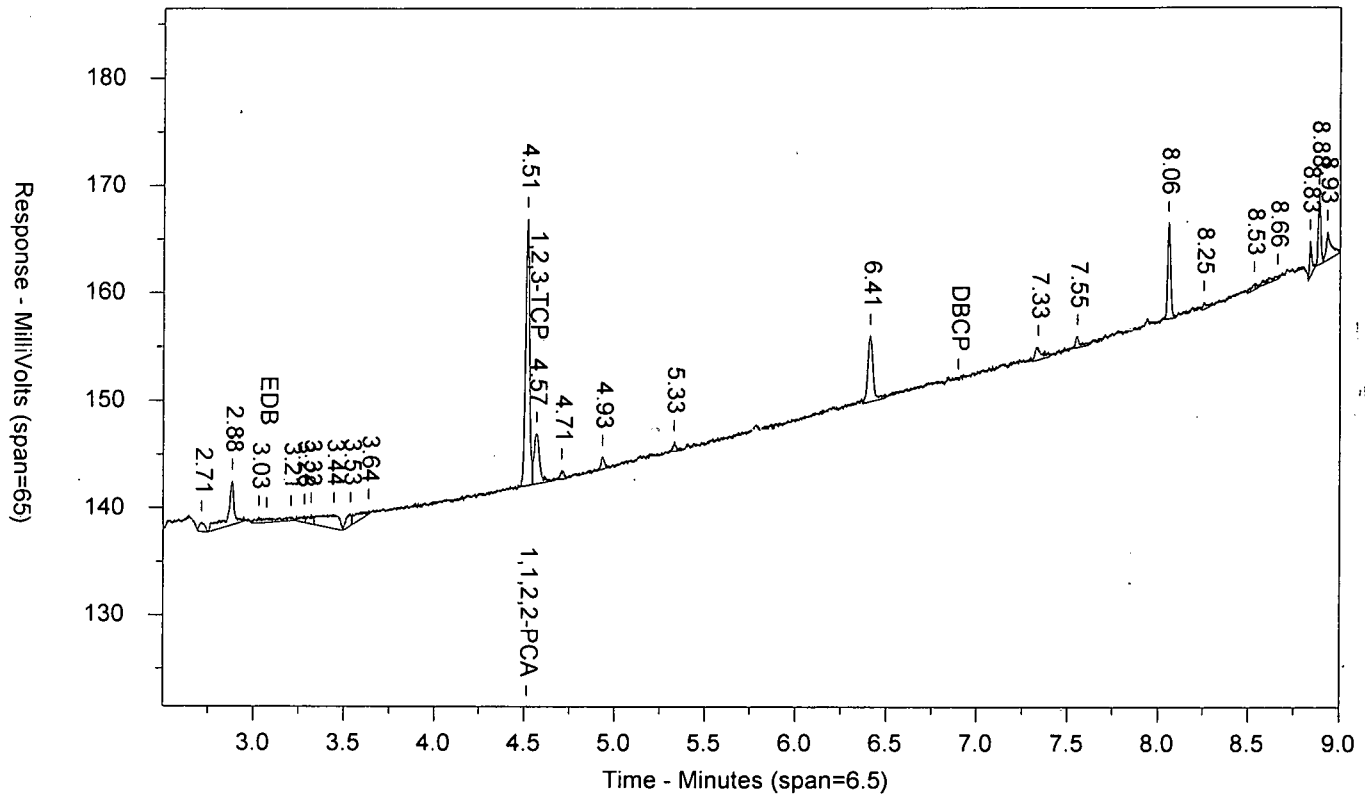
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 24900 | 1.208 | EDB | 4.327 | 6669 | 1.132 | EDB |
| 4.512 | 13195 | .562 | 1,1,2,2-PCA | 5.638 | 4950 | .57 | 1,1,2,2-PCA |
| 4.578 | 30714 | 8.892 | 1,2,3-TCP | 5.764 | 18138 | 8.858 | 1,2,3-TCP |
| 6.896 | 44037 | 1.084 | DBCP | 7.945 | 16892 | 1.093 | DBCP |

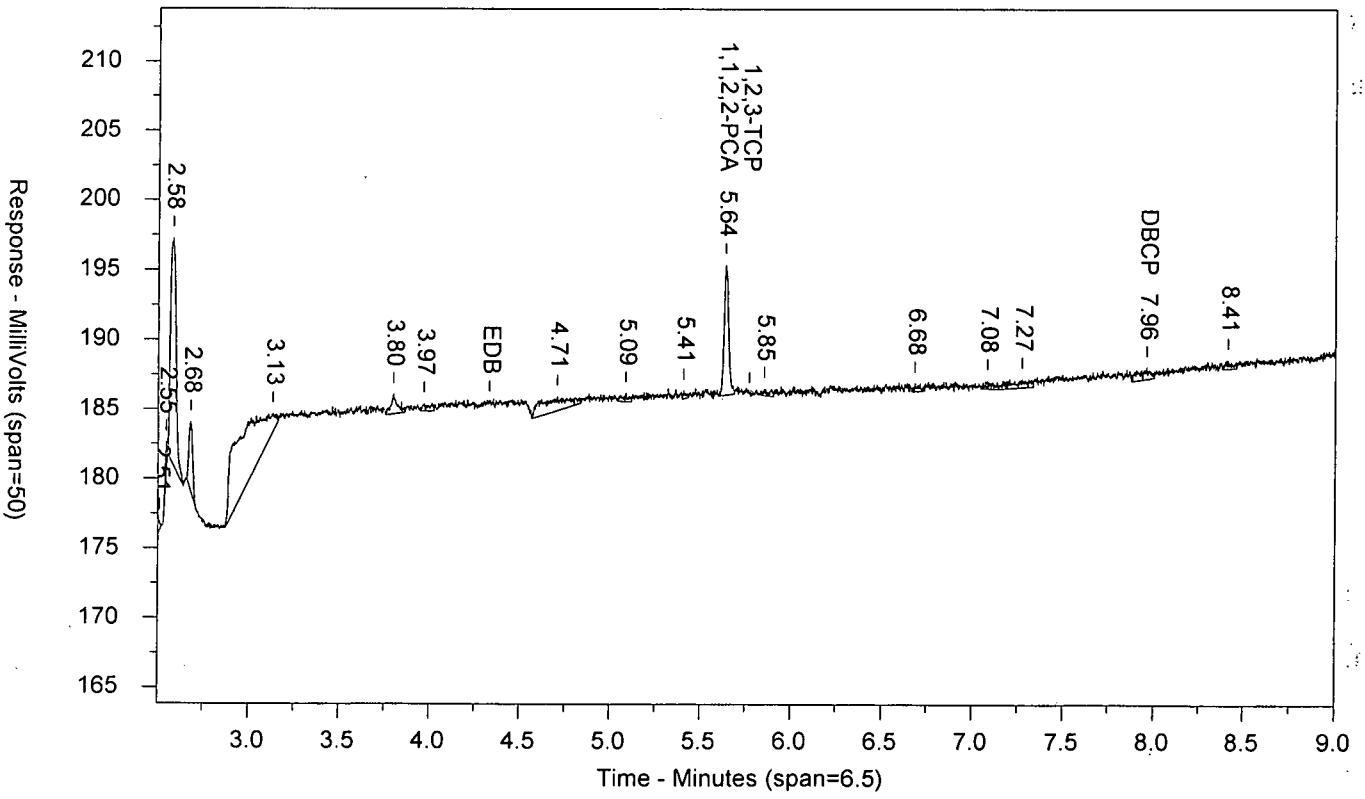
Files:
Area File: 16EDBS17202002.0004.RAW
Area File: 16EDBS17202002B.0004.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/24/2017 1:34:16 PM
File Reported On: 7/24/2017 at 3:24:38 PM

EIBKX1724C TMPIBLKTM PIBLK1720499999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002.0005.RAW




\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002B.0005.RAW



LANCASTER LABORATORIES

Sample Number: EIBKX1724C TMPIBLKTM PIBLK1720499999 SW-846 8011
Injected On: 7/24/2017 1:40:52 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

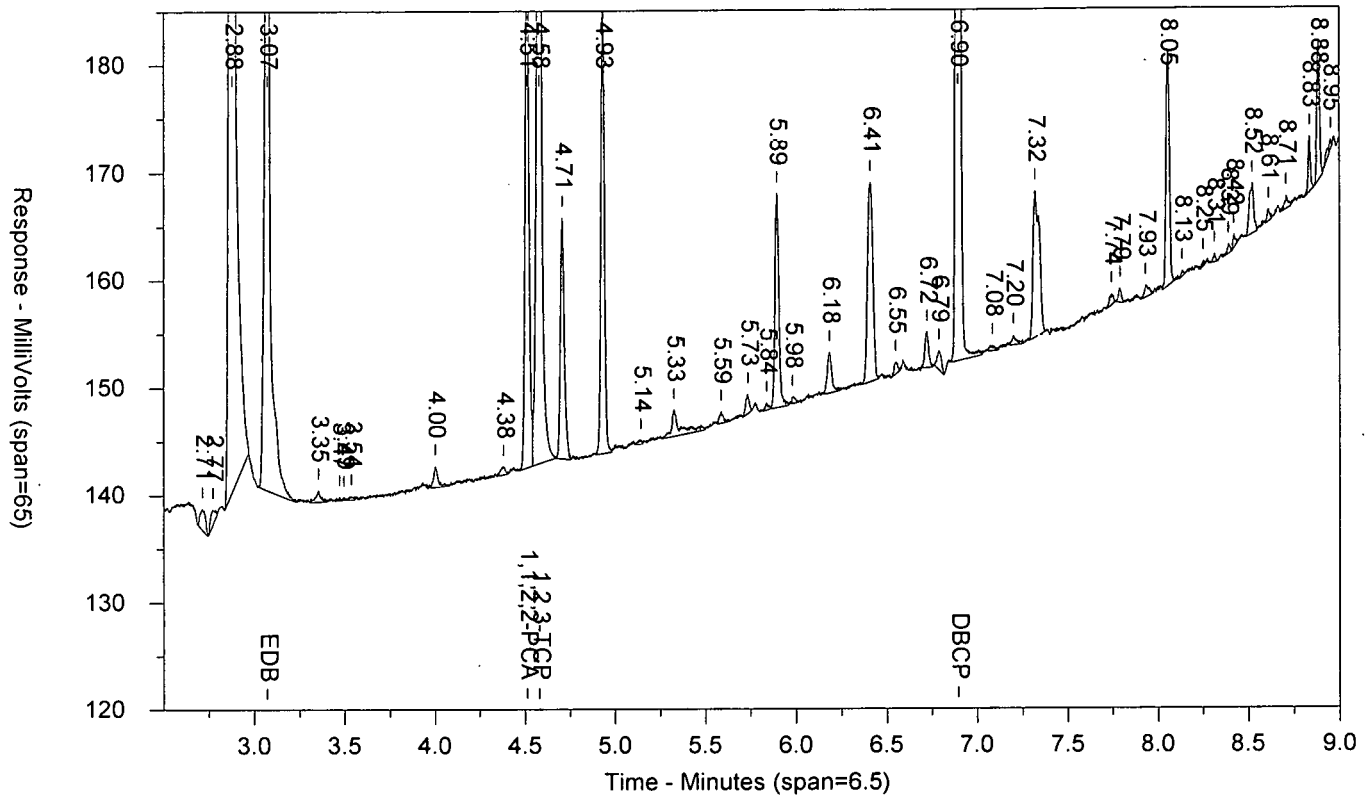
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.515 | 24832 | .06 | 1,1,2,2-PCA | 5.638 | 9333 | .063 | 1,1,2,2-PCA |
| 4.567 | 4694 | .005 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |
| | 0 | | DBCP | 7.959 | 867 | .003 | DBCP |

Files:
Area File: 16EDBS17202002.0005.RAW
Area File: 16EDBS17202002B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/24/2017 1:49:53 PM
File Reported On: 7/24/2017 at 3:24:52 PM

EDB_51724DS LUEDB_5LU CCAL 1720499999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002.0010.RAW

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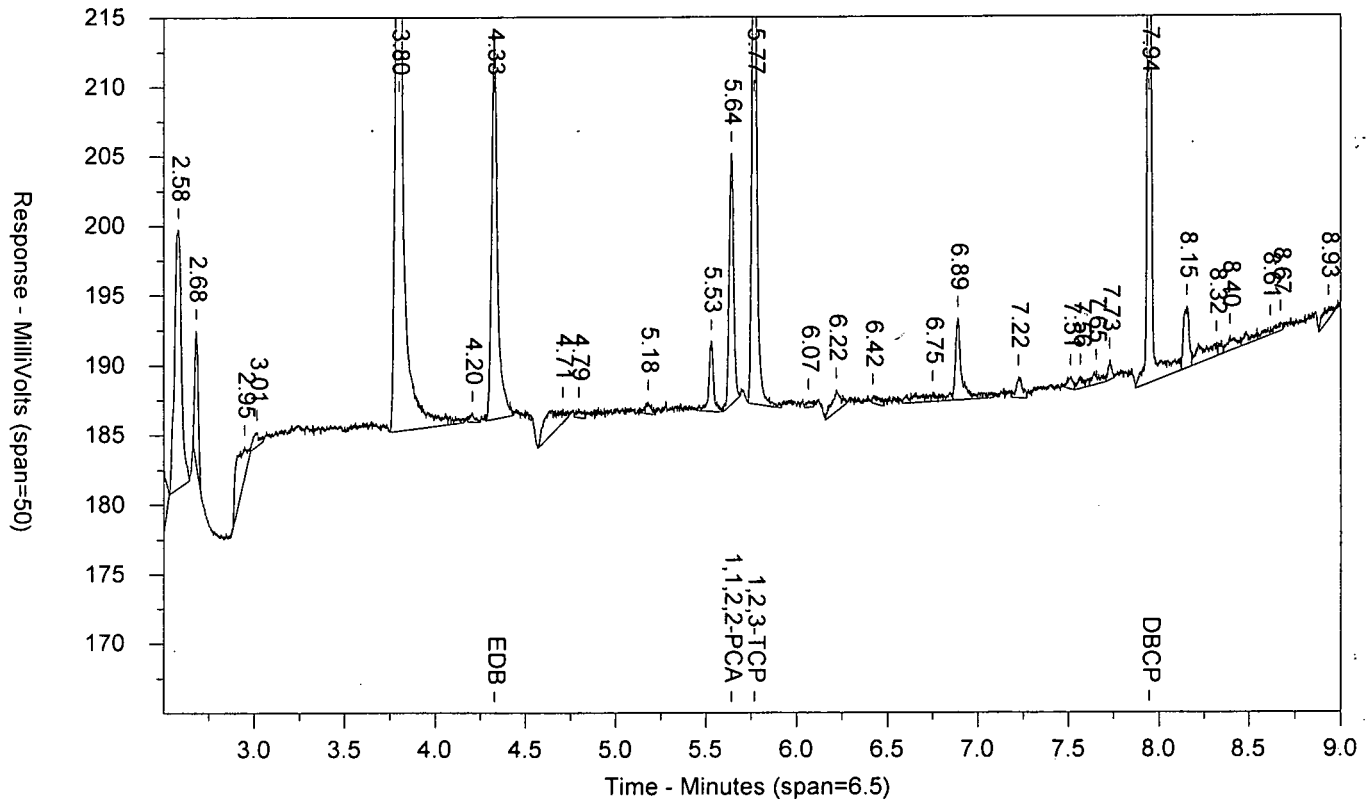


LANCASTER LABORATORIES

Sample Number: EDB_51724DS LUEDB_5LU CCAL 1720499999 SW-846 8011
Injected On: 7/24/2017 2:59:03 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

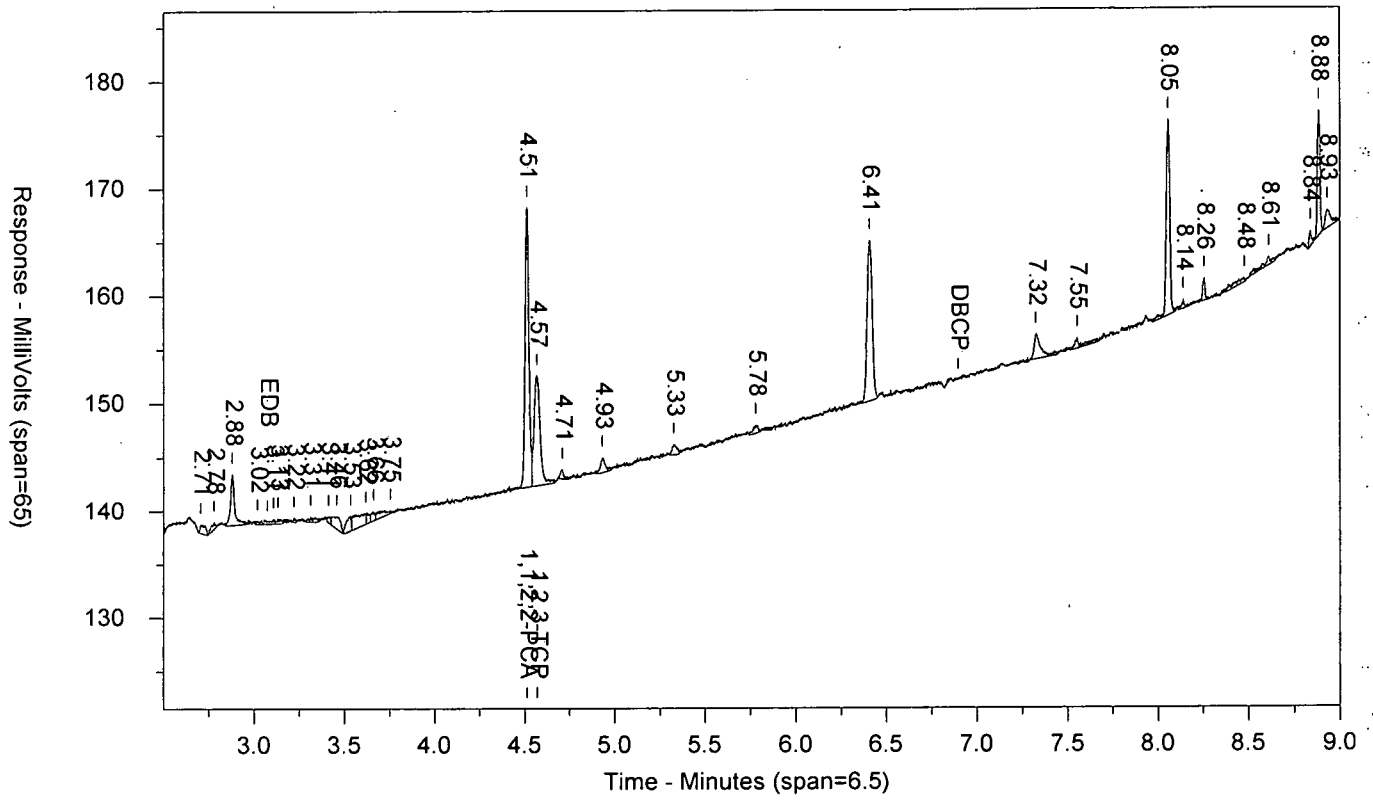
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.07 | 99340 | 4.819 | EDB | 4.328 | 27466 | 4.661 | EDB |
| 4.513 | 48700 | 2.076 | 1,1,2,2-PCA | 5.64 | 18044 | 2.154 | 1,1,2,2-PCA |
| 4.579 | 105256 | 34.108 | 1,2,3-TCP | 5.767 | 42453 | 33.479 | 1,2,3-TCP |
| 6.896 | 190731 | 4.694 | DBCP | 7.945 | 79002 | 5.113 | DBCP |

Files:
Area File: 16EDBS17202002.0010.RAW
Area File: 16EDBS17202002B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/24/2017 3:08:04 PM
File Reported On: 7/24/2017 at 3:26:10 PM

EIBKX1724C TNPIBLKTN PIBLK1720499999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002.0011.RAW

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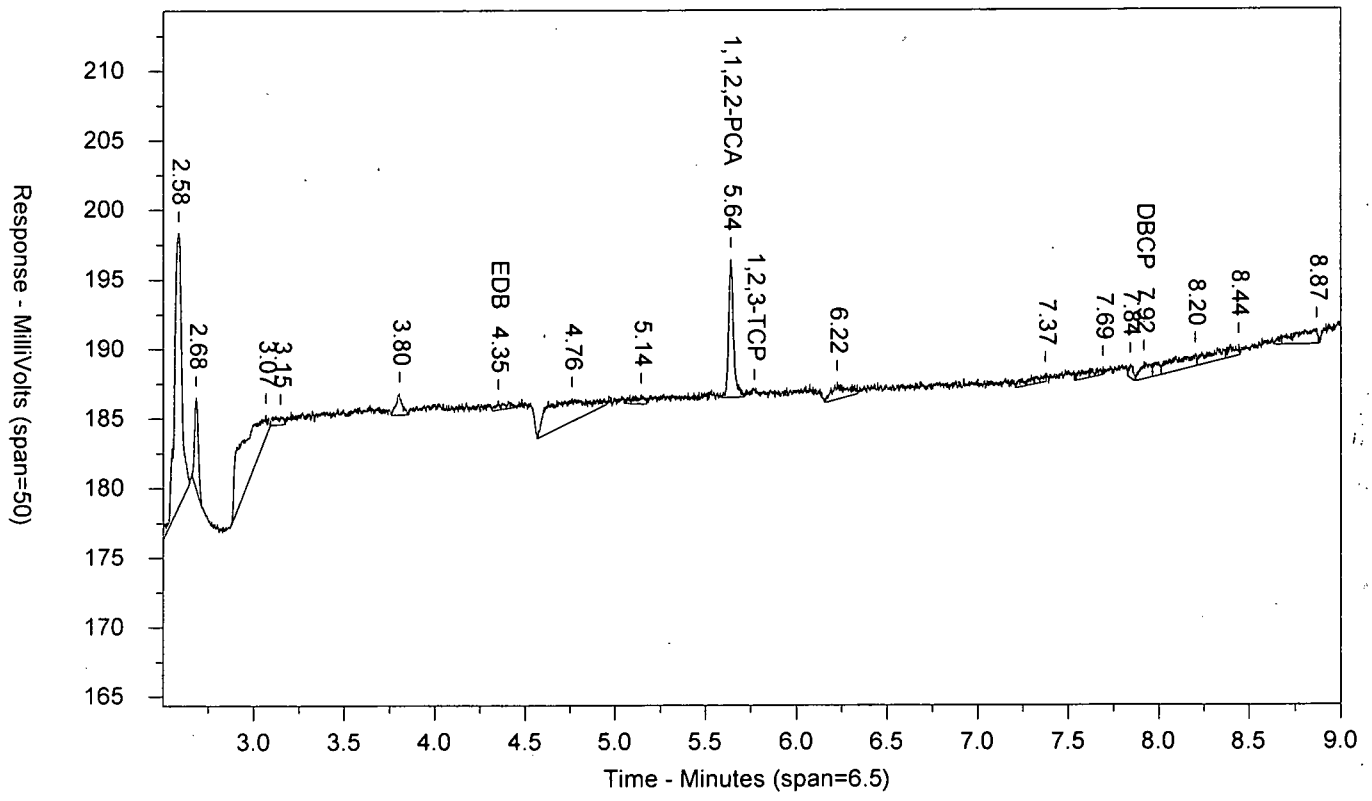


LANCASTER LABORATORIES

Sample Number: EIBKX1724C TNPIBLKTN PIBLK1720499999 SW-846 8011
Injected On: 7/24/2017 3:14:38 PM
Instrument ID: CP16-19853
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul
Sample Weight: 35
Dilution Factor: 2

Threshold: 3
Calibration Type: external
Quantitation: Height

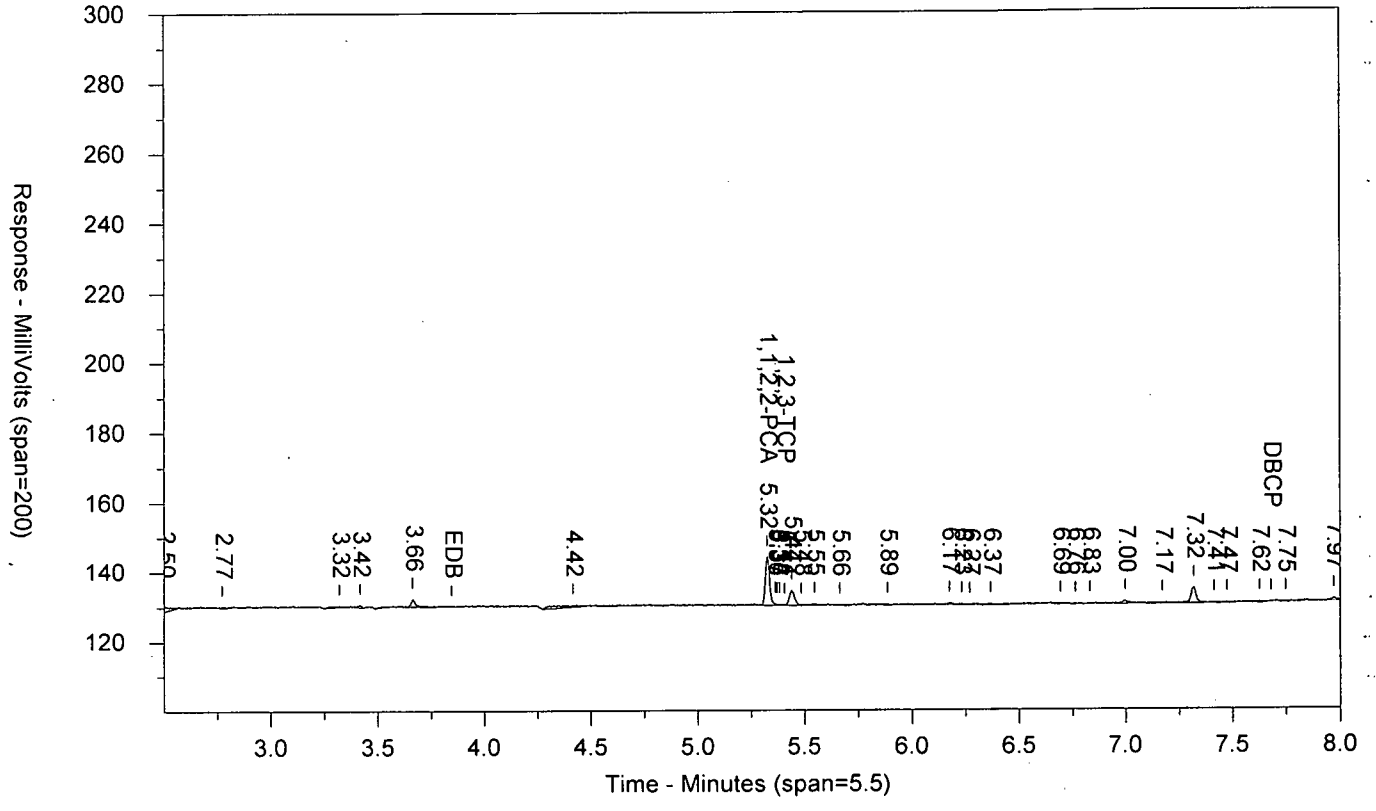
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 4.351 | 691 | .007 | EDB |
| 4.513 | 26031 | .063 | 1,1,2,2-PCA | 5.64 | 9980 | .067 | 1,1,2,2-PCA |
| 4.569 | 10248 | .112 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |
| | 0 | | DBCP | 7.919 | 1242 | .005 | DBCP |

Files:
Area File: 16EDBS17202002.0011.RAW
Area File: 16EDBS17202002B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/24/2017 3:23:40 PM
File Reported On: 7/24/2017 at 3:29:01 PM

EIBKX1724C AAPIBLKAA PIBLK1720499999 10398 SW-846 8011...

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.005.RAW

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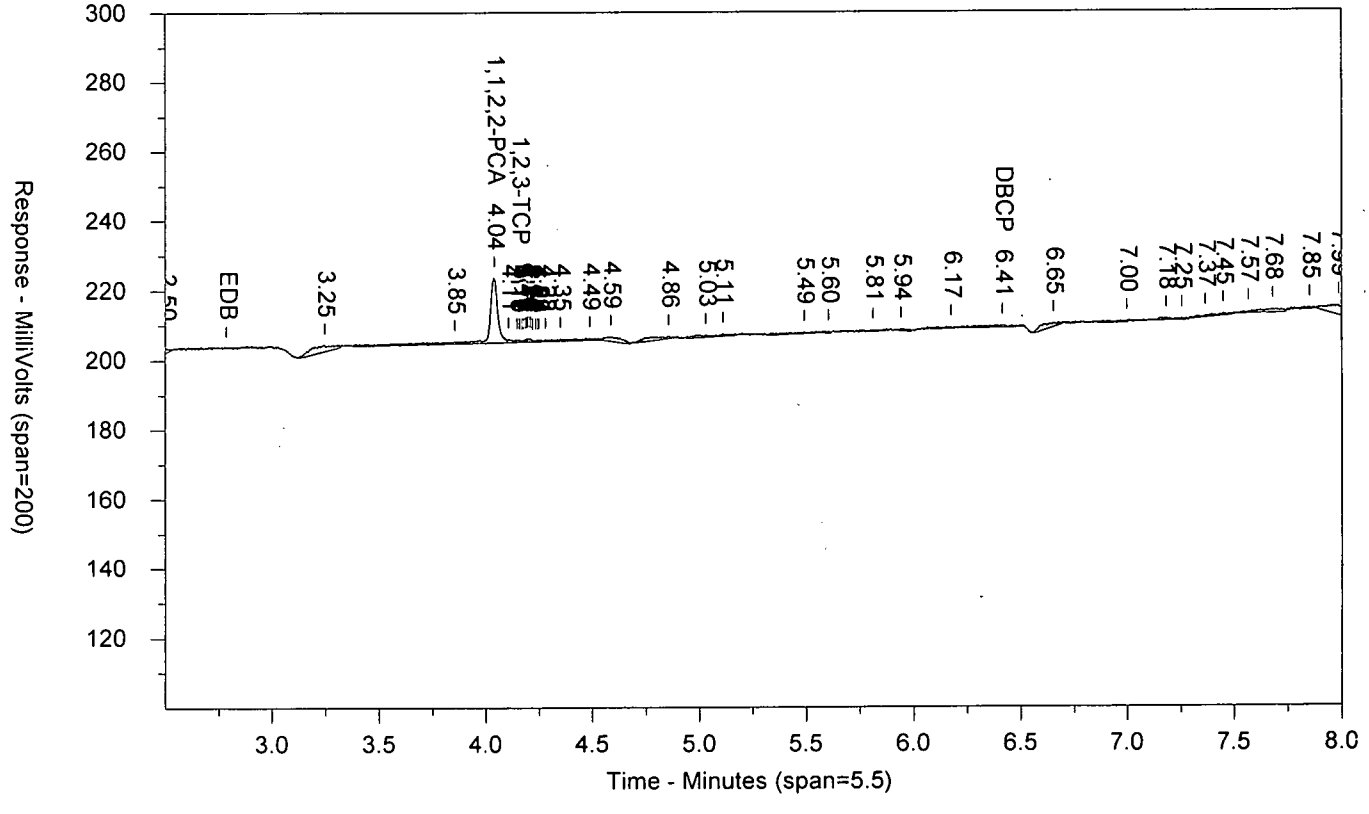


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:04:58 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

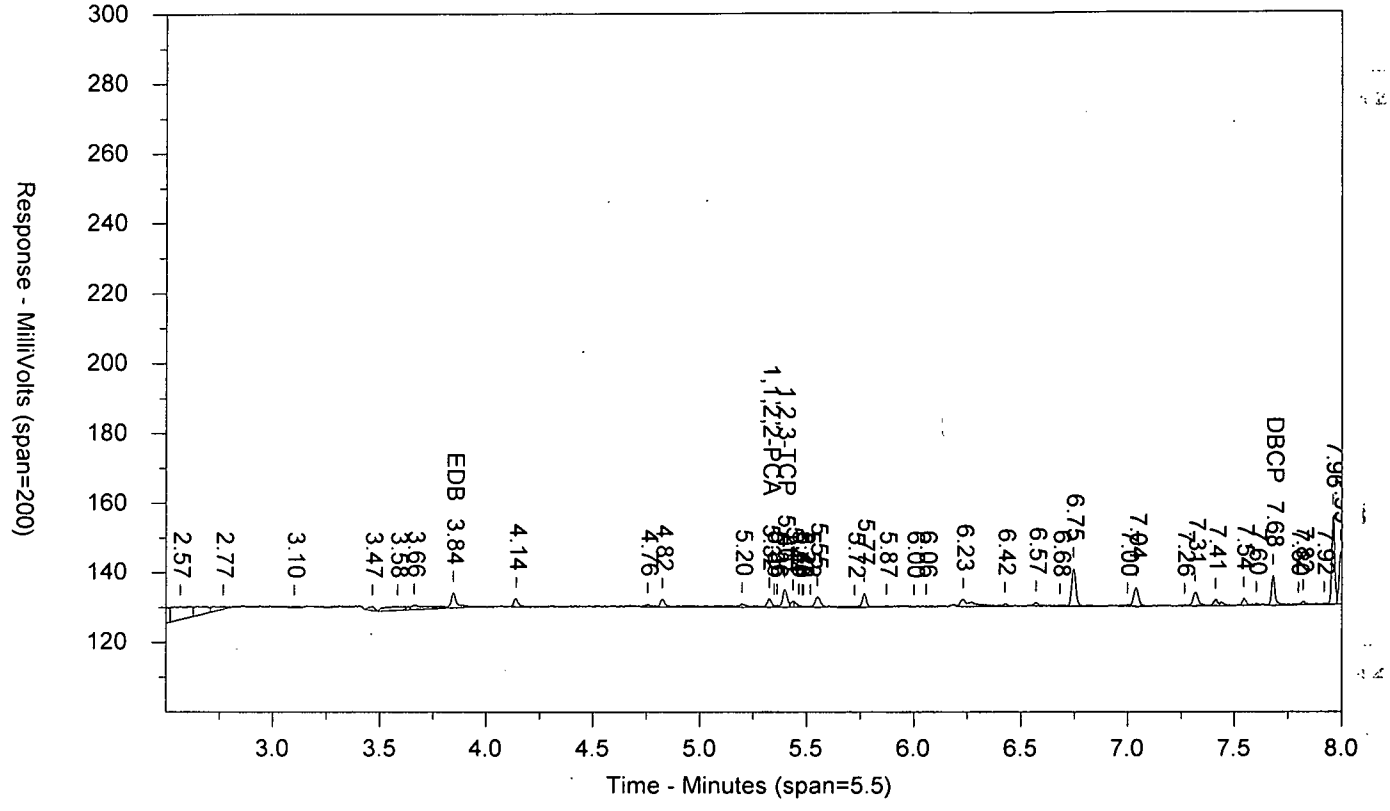
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 13844 | .068 | 1,1,2,2-PCA | 4.04 | 18692 | .067 | 1,1,2,2-PCA |
| 5.406 | 297 | .01 | 1,2,3-TCP | 4.157 | 753 | .02 | 1,2,3-TCP |
| | 0 | | DBCP | 6.415 | 765 | -.017 | DBCP |

Files:
Area File: 18EDBS17205001.005.RAW
Area File: 18EDBS17205001B.005.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:13:33 PM
File Reported On: 7/25/2017 at 10:02:39 AM

EDB_11724DT AAEDB_1AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.006.RAW

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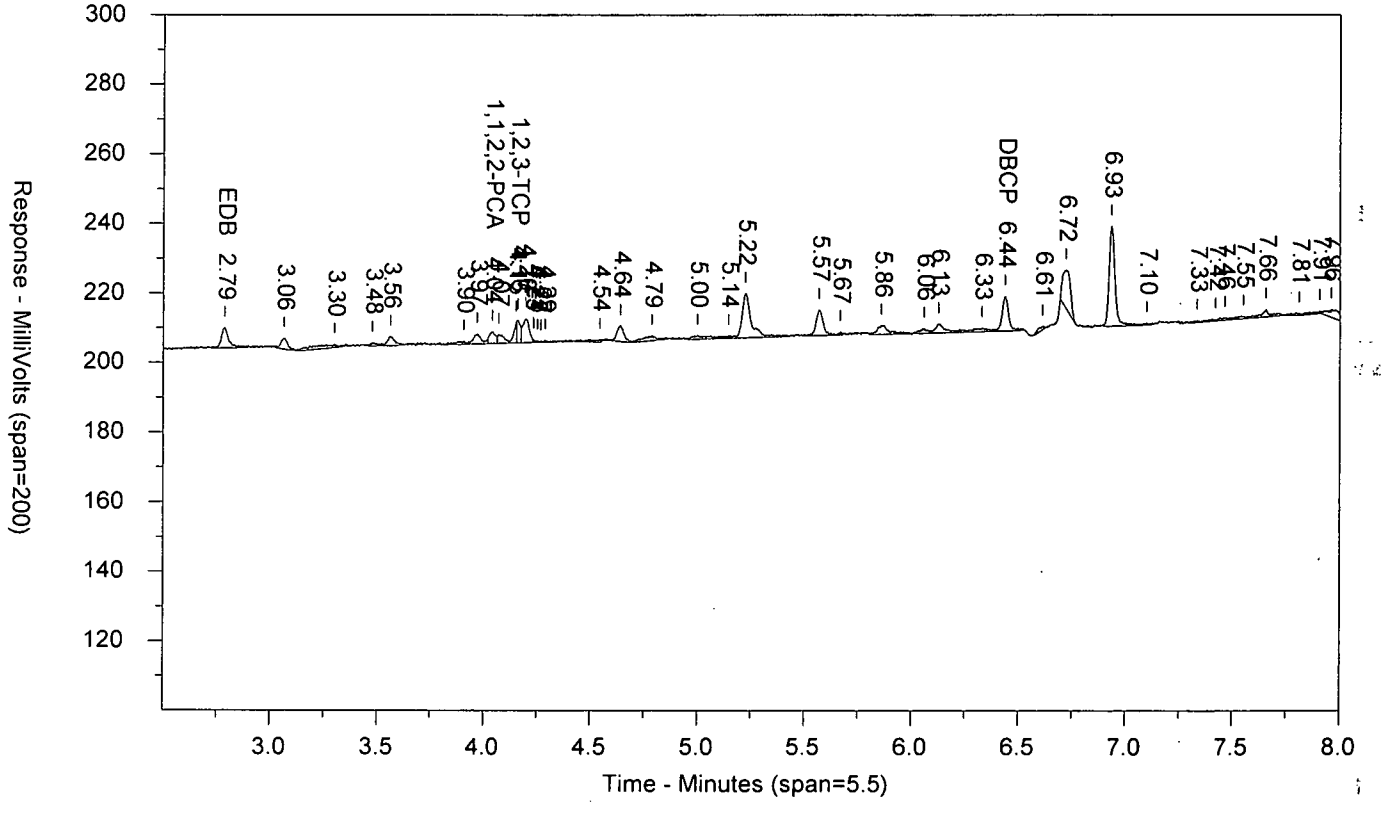

LANCASTER LABORATORIES

Sample Number: EDB_11724DT AAEDB_1AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:20:58 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 4412 | .436 | EDB | 2.787 | 5880 | .323 | EDB |
| 5.325 | 2408 | .207 | 1,1,2,2-PCA | 4.041 | 3465 | .218 | 1,1,2,2-PCA |
| 5.397 | 5184 | 3.153 | 1,2,3-TCP | 4.161 | 6622 | 3.131 | 1,2,3-TCP |
| 7.679 | 8604 | .36 | DBCP | 6.436 | 10052 | .117 | DBCP |

Files:
Area File: 18EDBS17205001.006.RAW
Area File: 18EDBS17205001B.006.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:29:32 PM
File Reported On: 7/25/2017 at 10:02:55 AM

EDB_21724DT AAEDB_2AA ICAL 1720499999 10398 SW-846 8011

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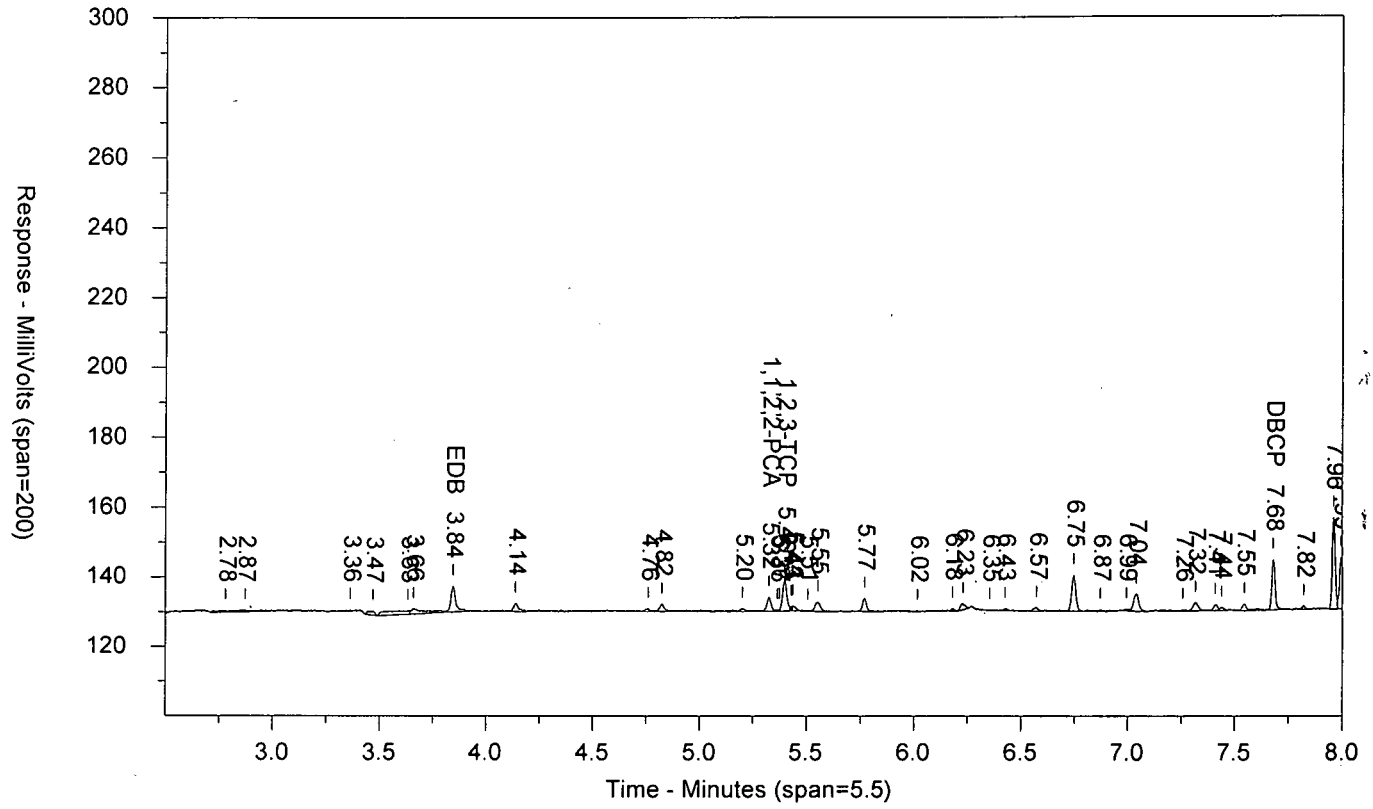


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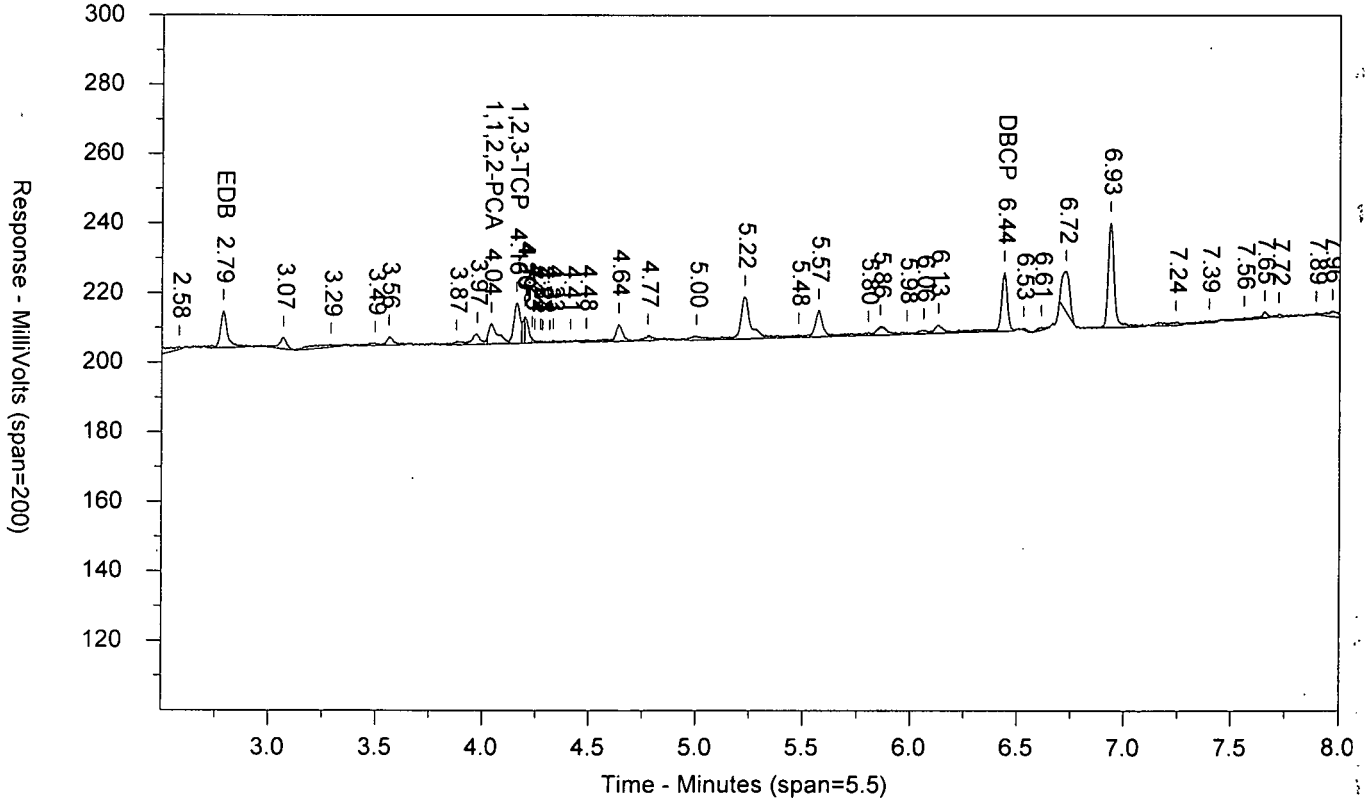

LANCASTER LABORATORIES

Sample Number: EDB_21724DT AAEDB_2AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:36:56 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.845 | 7426 | .701 | EDB | 2.786 | 10603 | .654 | EDB |
| 5.324 | 4086 | .346 | 1,1,2,2-PCA | 4.039 | 5938 | .366 | 1,1,2,2-PCA |
| 5.397 | 8598 | 5.171 | 1,2,3-TCP | 4.158 | 11596 | 5.404 | 1,2,3-TCP |
| 7.679 | 14448 | .609 | DBCP | 6.437 | 16928 | .441 | DBCP |

Files:
Area File: 18EDBS17205001.007.RAW
Area File: 18EDBS17205001B.007.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:45:31 PM
File Reported On: 7/25/2017 at 10:03:09 AM

EDB_31724DT AAEDB_3AA ICAL 1720499999 10398 SW-846 8011

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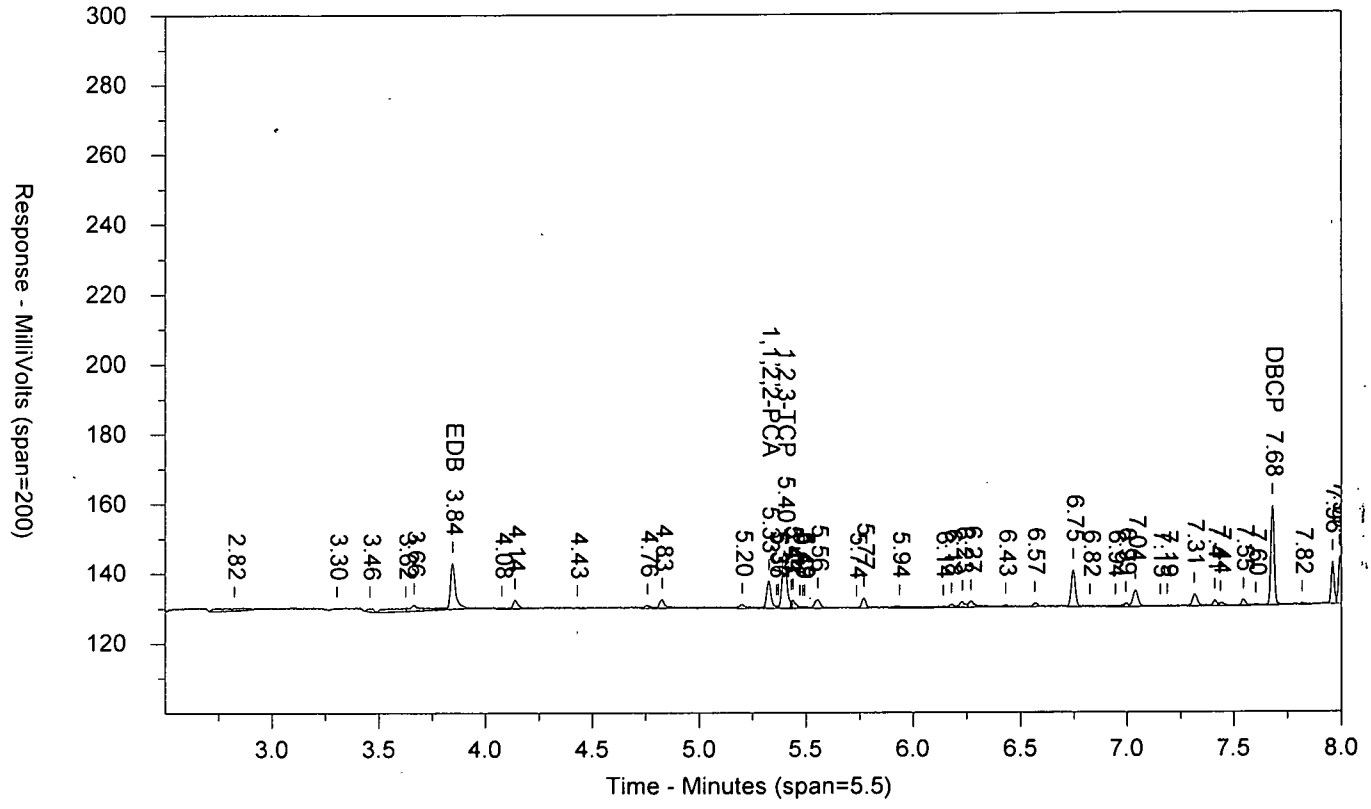


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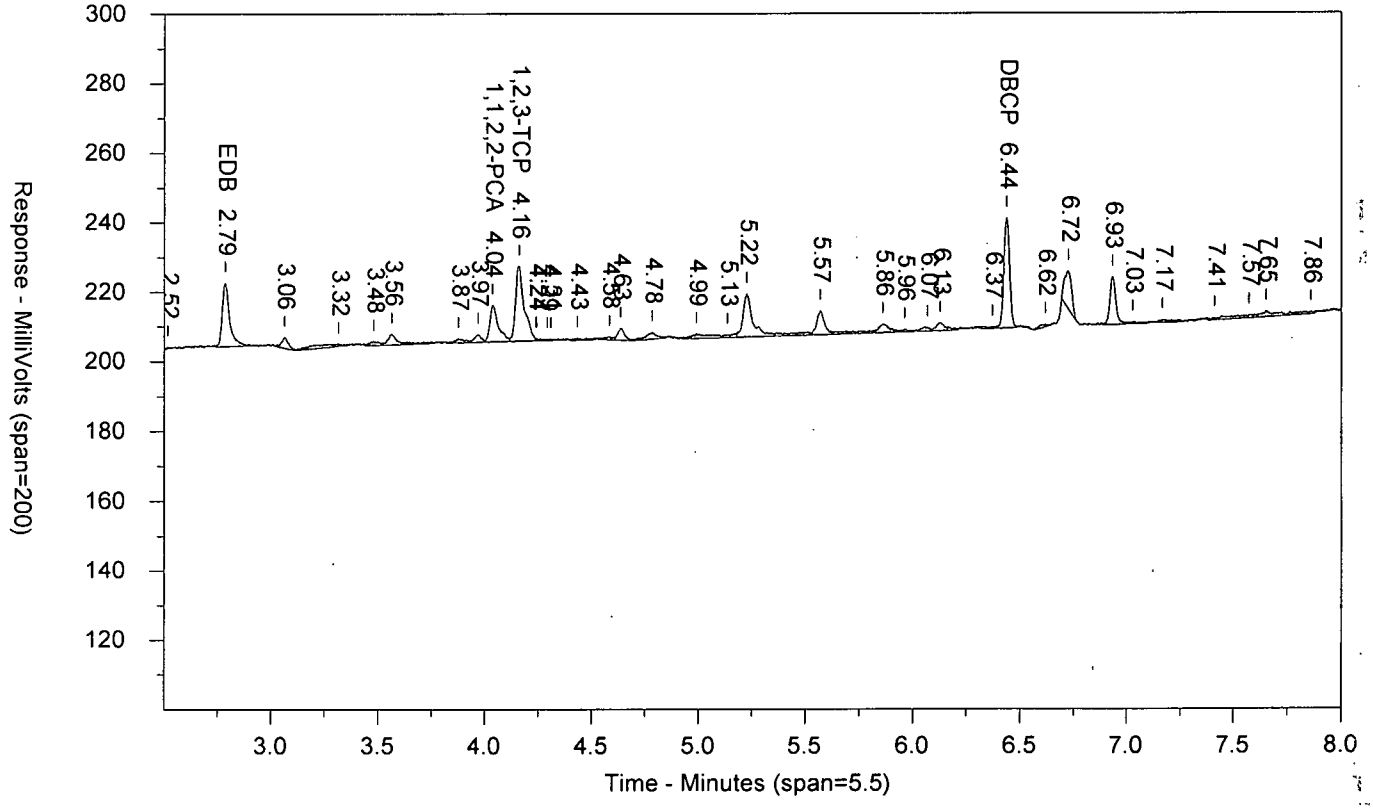


LANCASTER LABORATORIES

Sample Number: EDB_31724DT AAEDB_3AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:52:58 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

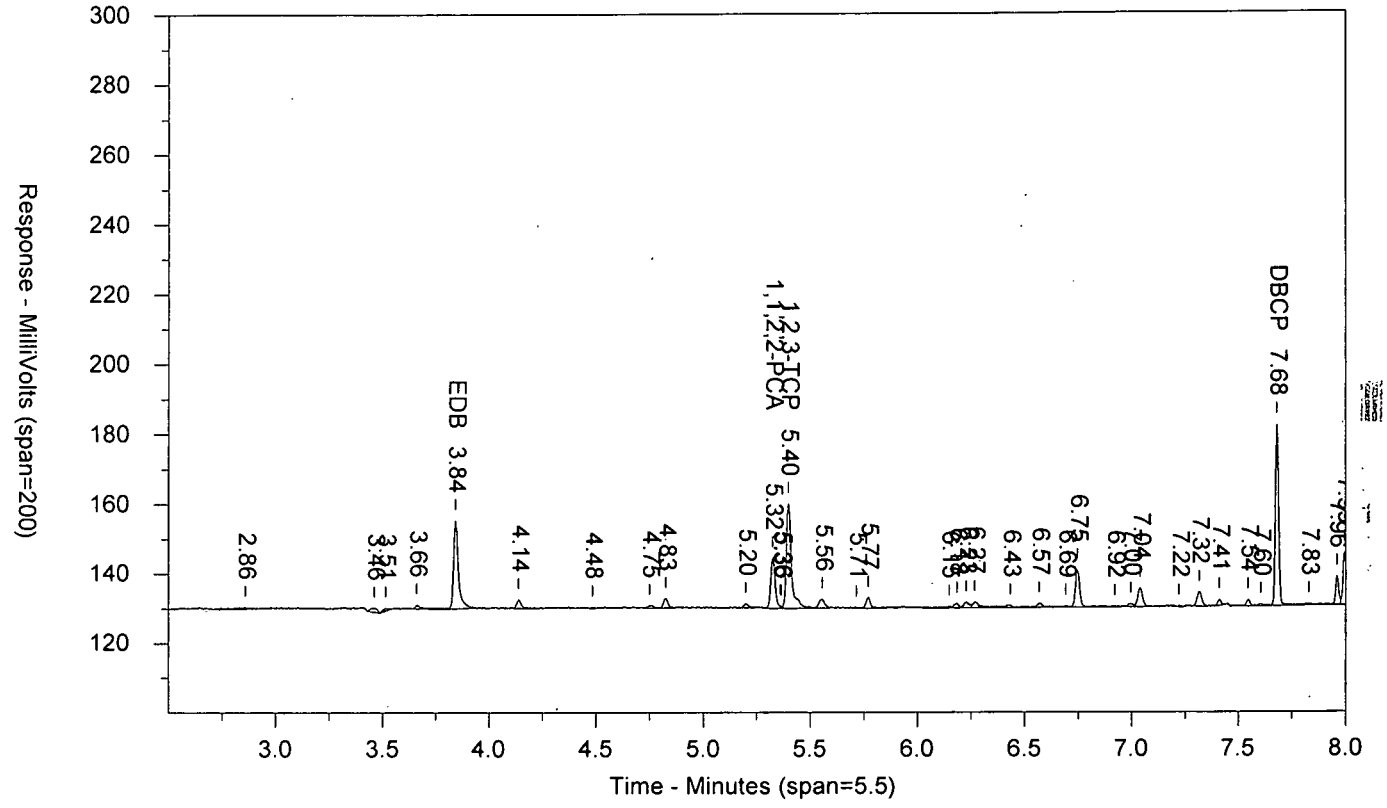
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 13086 | 1.227 | EDB | 2.786 | 18381 | 1.271 | EDB |
| 5.326 | 7864 | .657 | 1,1,2,2-PCA | 4.037 | 10689 | .642 | 1,1,2,2-PCA |
| 5.399 | 16580 | 9.939 | 1,2,3-TCP | 4.16 | 21683 | 9.962 | 1,2,3-TCP |
| 7.679 | 28622 | 1.224 | DBCP | 6.436 | 31855 | 1.133 | DBCP |

Files:
Area File: 18EDBS17205001.008.RAW
Area File: 18EDBS17205001B.008.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:01:32 PM
File Reported On: 7/25/2017 at 10:03:25 AM

EDB_41724DT AAEDB_4AA ICAL 1720499999 10398 SW-846 801

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.009.RAW

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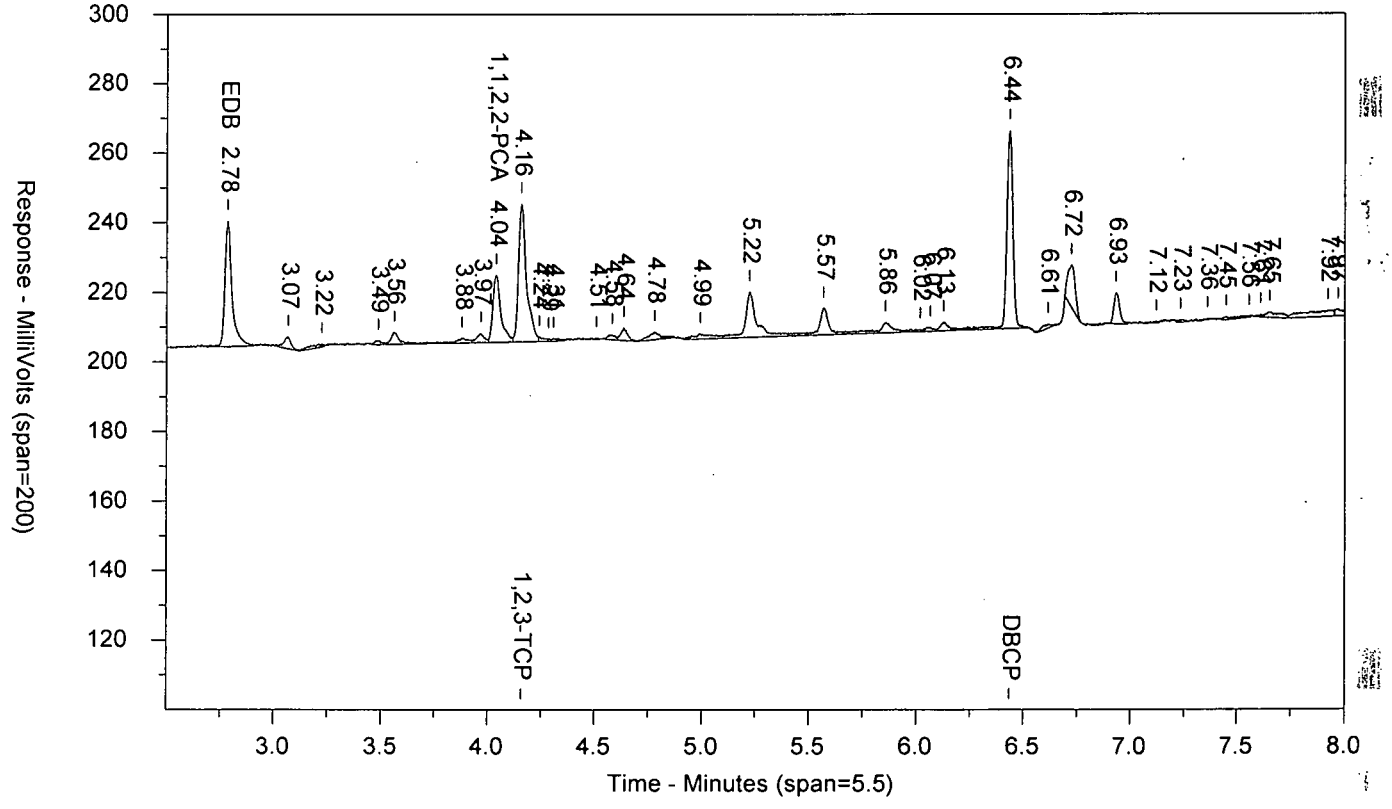


LANCASTER LABORATORIES

Sample Number: EDB_41724DT AAEDB_4AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:08:59 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

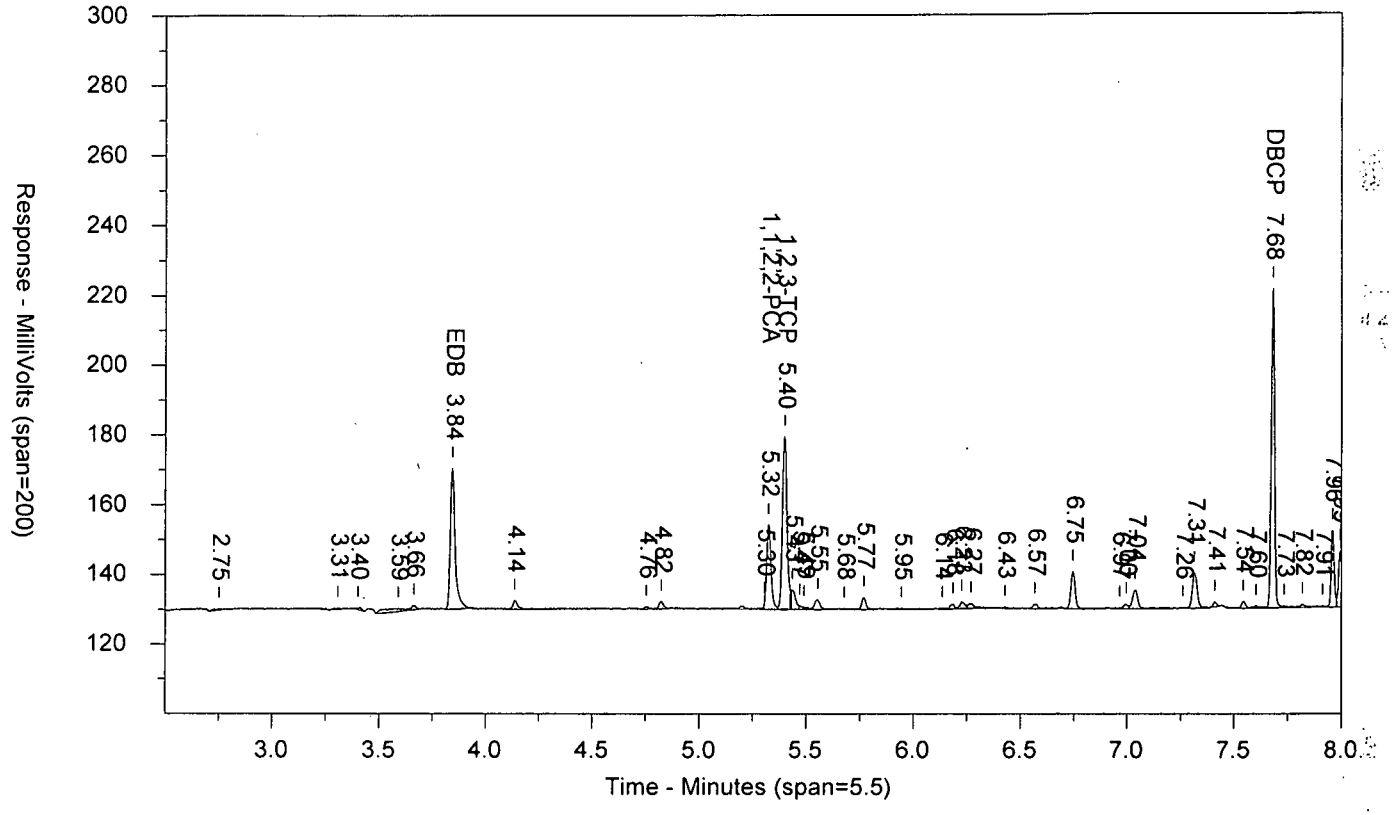
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 25381 | 2.381 | EDB | 2.784 | 36156 | 2.742 | EDB |
| 5.324 | 14502 | 1.188 | 1,1,2,2-PCA | 4.041 | 19317 | 1.147 | 1,1,2,2-PCA |
| 5.397 | 29944 | 17.845 | 1,2,3-TCP | 4.158 | 39566 | 18.1 | 1,2,3-TCP |
| 7.679 | 51969 | 2.25 | DBCP | 6.437 | 56857 | 2.265 | DBCP |

Files:
Area File: 18EDBS17205001.009.RAW
Area File: 18EDBS17205001B.009.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:17:32 PM
File Reported On: 7/25/2017 at 10:03:39 AM

EDB_51724DT AAEDB_5AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.010.RAW

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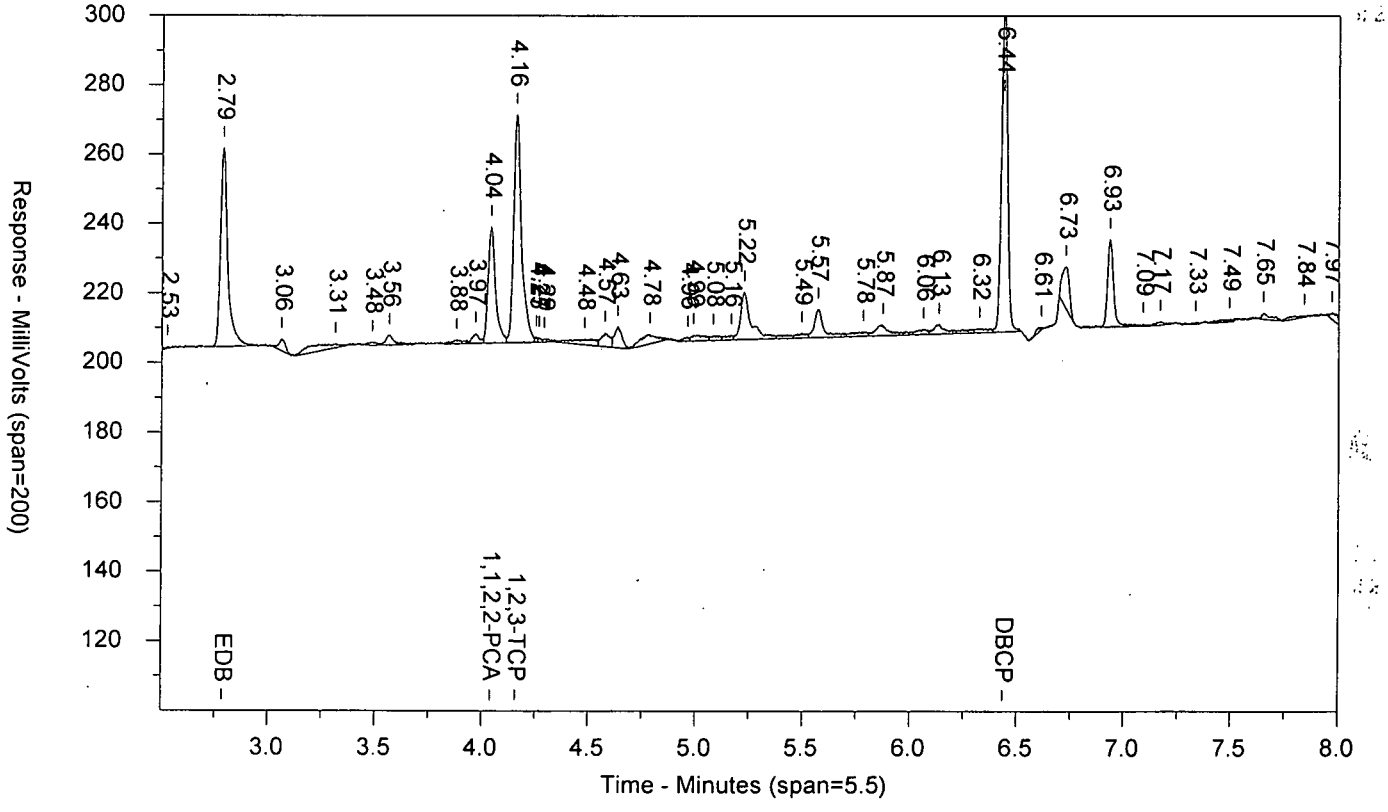


LANCASTER LABORATORIES

Sample Number: EDB_51724DT AAEDB_5AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:24:57 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

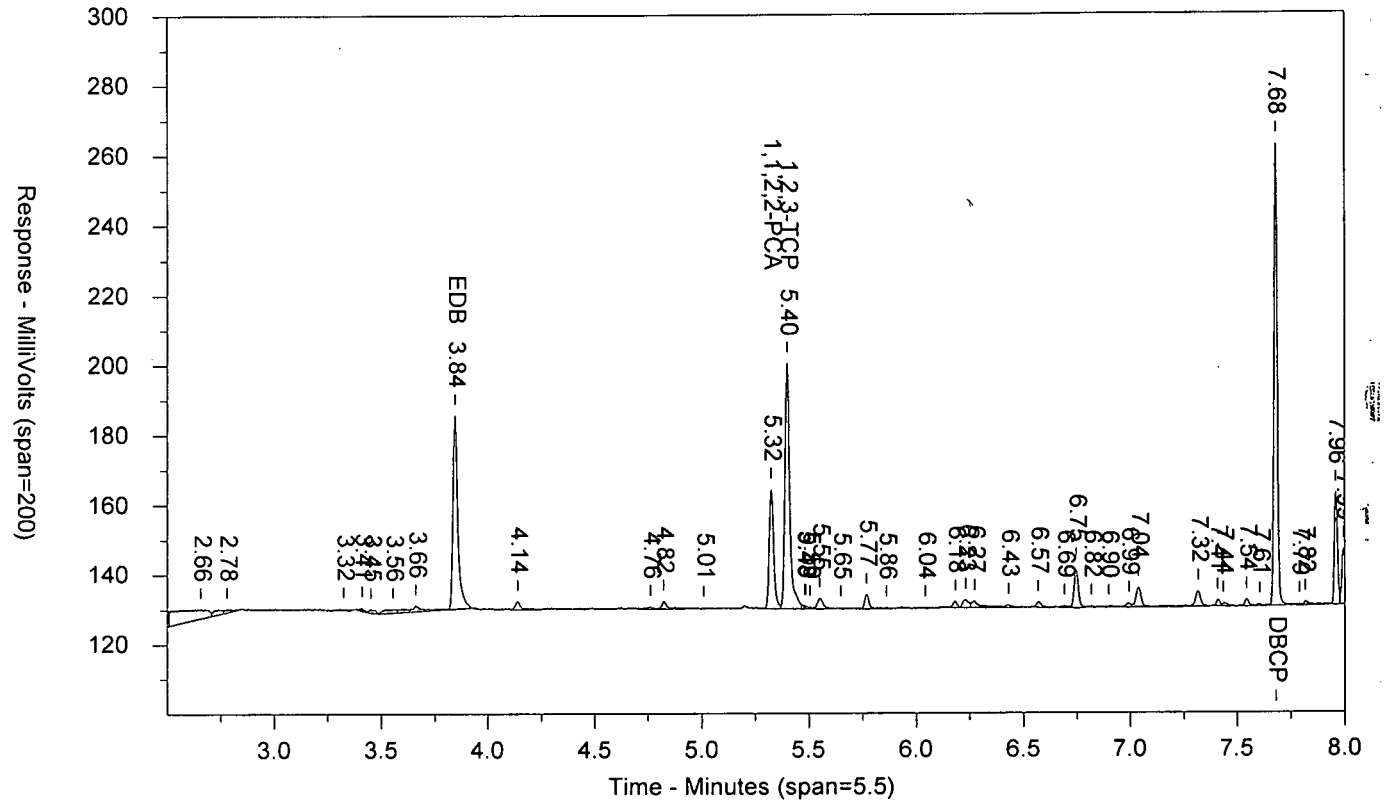
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 40367 | 3.828 | EDB | 2.786 | 57388 | 4.498 | EDB |
| 5.324 | 24061 | 1.974 | 1,1,2,2-PCA | 4.039 | 33456 | 1.99 | 1,1,2,2-PCA |
| 5.397 | 49390 | 29.707 | 1,2,3-TCP | 4.158 | 65776 | 30.242 | 1,2,3-TCP |
| 7.679 | 91292 | 4.031 | DBCP | 6.435 | 93835 | 3.954 | DBCP |

Files:
Area File: 18EDBS17205001.010.RAW
Area File: 18EDBS17205001B.010.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:33:28 PM
File Reported On: 7/25/2017 at 10:03:53 AM

EDB_61724DT AAEDB_6AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.011.RAW

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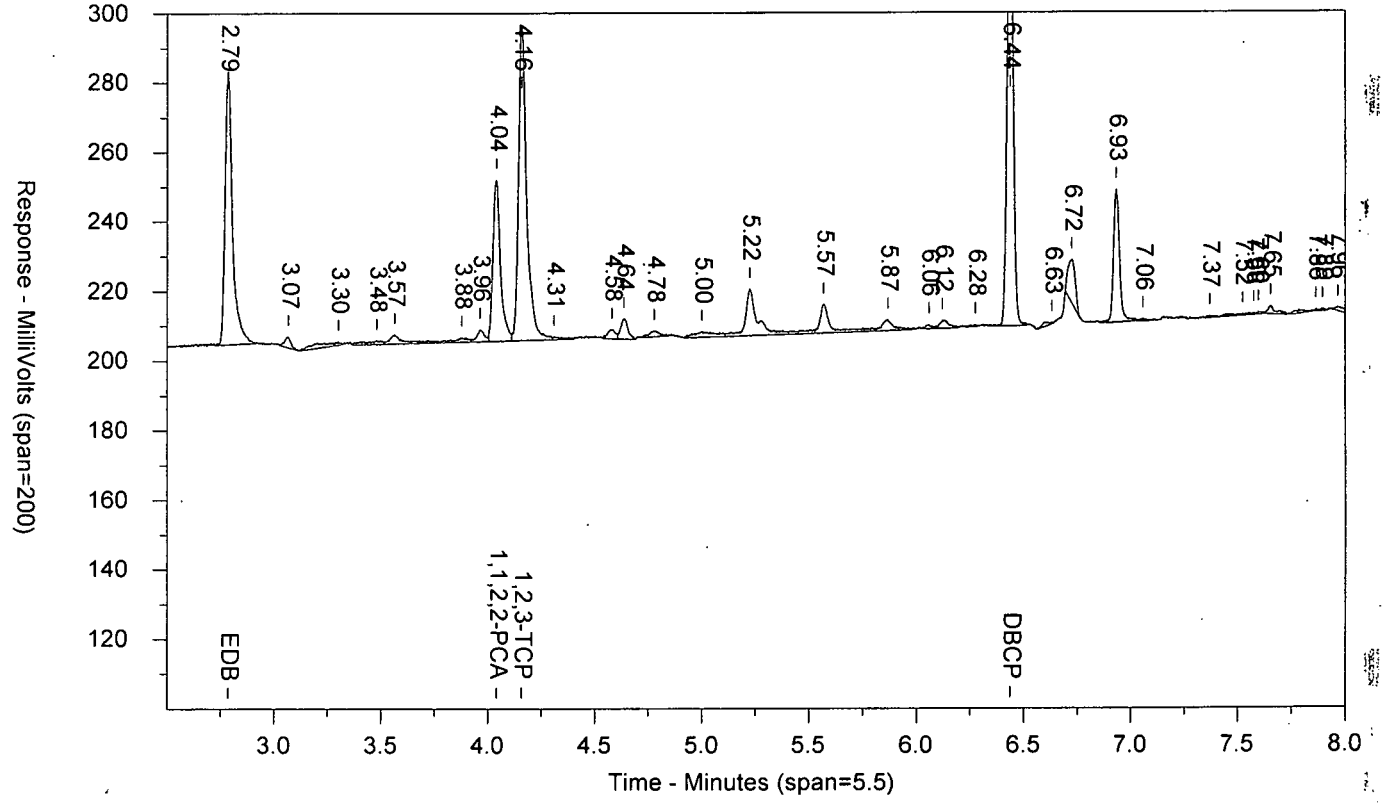


LANCASTER LABORATORIES

Sample Number: EDB_61724DT AAEDB_6AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:40:57 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

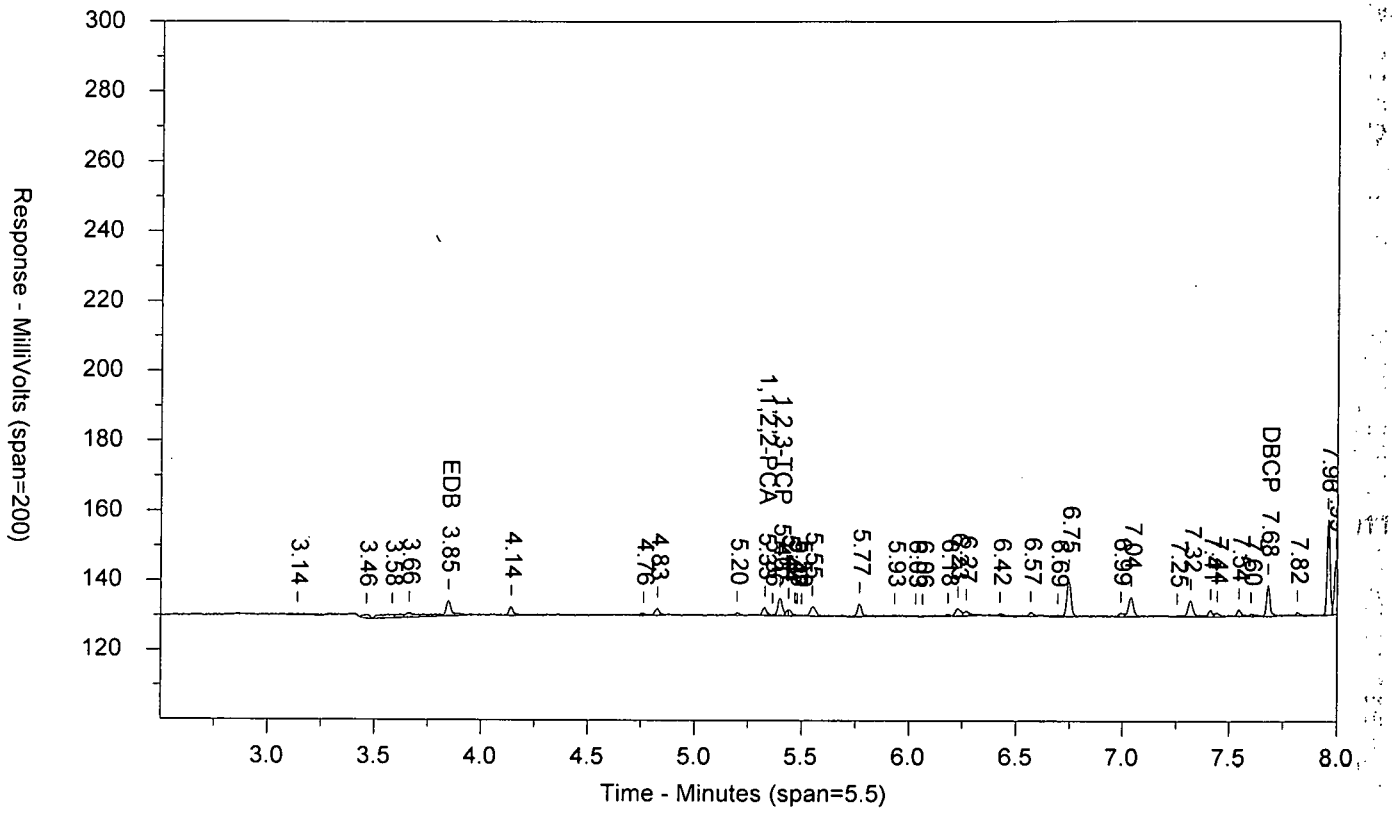
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 55483 | 5.274 | EDB | 2.785 | 78644 | 6.218 | EDB |
| 5.324 | 34208 | 2.799 | 1,1,2,2-PCA | 4.04 | 46548 | 2.742 | 1,1,2,2-PCA |
| 5.398 | 70406 | 42.327 | 1,2,3-TCP | 4.158 | 90750 | 41.603 | 1,2,3-TCP |
| 7.679 | 132279 | 5.889 | DBCP | 6.436 | 127952 | 5.662 | DBCP |

Files:
Area File: 18EDBS17205001.011.RAW
Area File: 18EDBS17205001B.011.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:49:32 PM
File Reported On: 7/25/2017 at 10:04:07 AM

MDEDX1724DT AAMDEDXAA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.012.RAW

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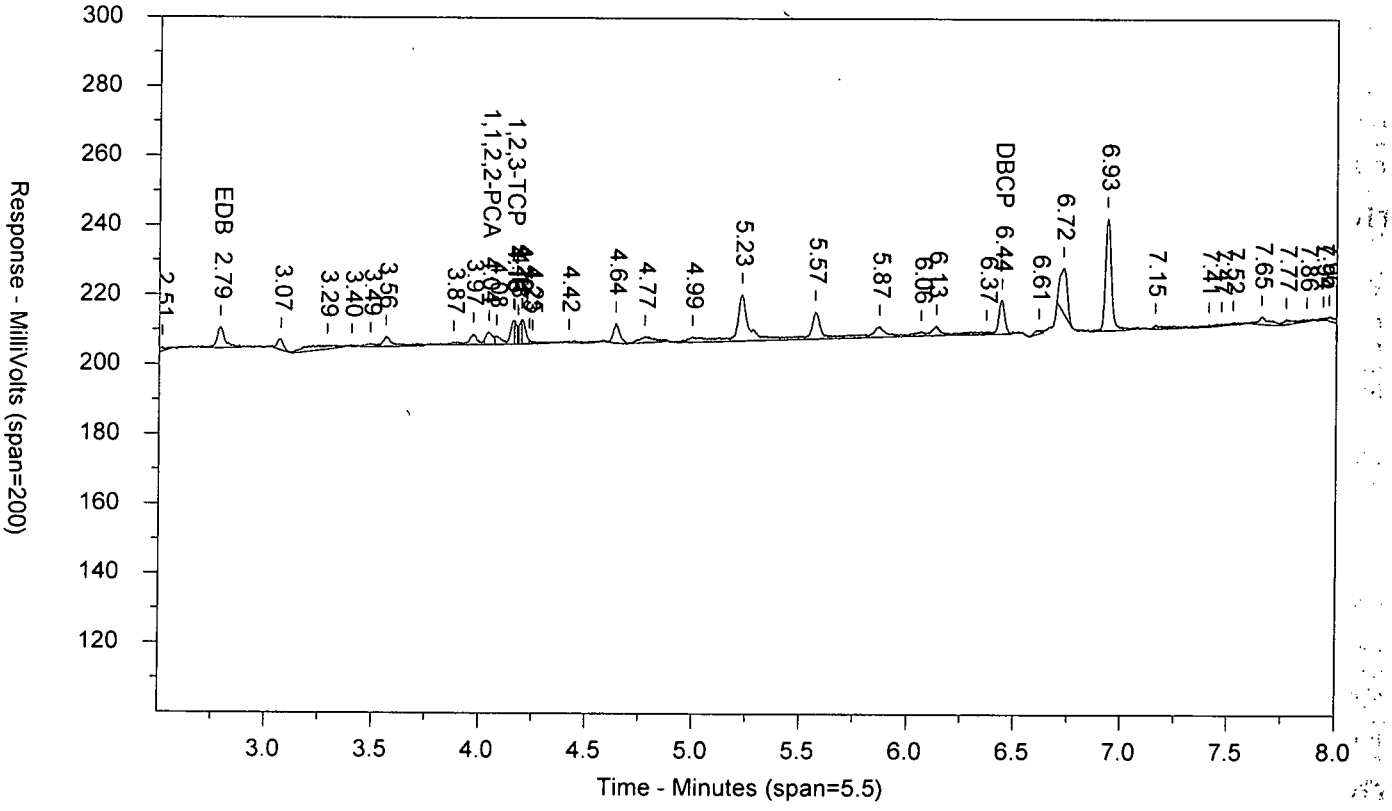


LANCASTER LABORATORIES

Sample Number: MDEDX1724DT AAMDEDXAA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:57:00 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

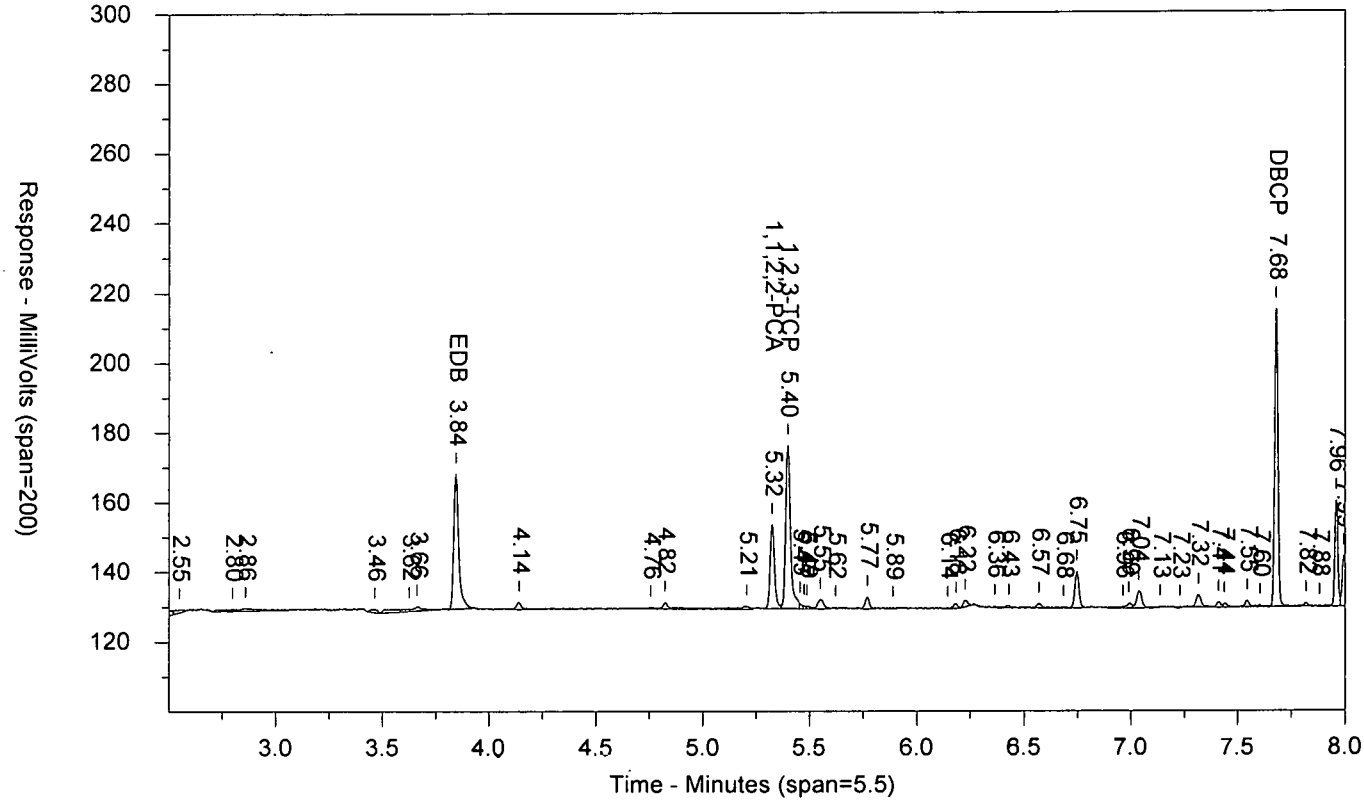
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.845 | 4372 | .246 | EDB | 2.788 | 6007 | .241 | EDB |
| 5.327 | 2294 | .186 | 1,1,2,2-PCA | 4.042 | 3608 | .157 | 1,1,2,2-PCA |
| 5.398 | 5036 | 2.088 | 1,2,3-TCP | 4.158 | 6848 | 2.051 | 1,2,3-TCP |
| 7.679 | 8811 | .394 | DBCP | 6.437 | 9817 | .225 | DBCP |

Files:
Area File: 18EDBS17205001.012.RAW
Area File: 18EDBS17205001B.012.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 6:05:32 PM
File Reported On: 7/25/2017 at 10:13:09 AM

EDB_51724DT LXEDB_5LX CCAL 1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.045.RAW

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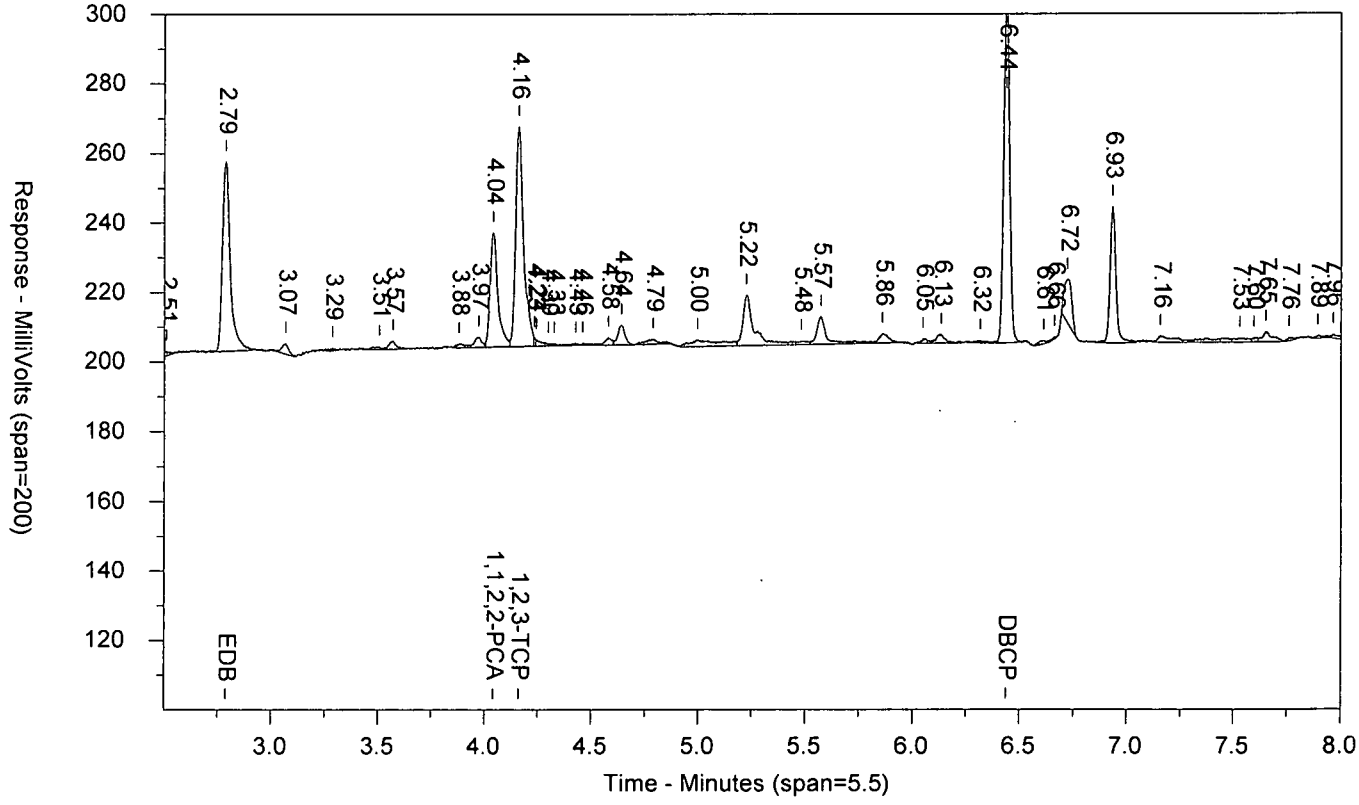


LANCASTER LABORATORIES

Sample Number: EDB_51724DT LXEDB_5LX CCAL 1720599999 10398 SW-846 8011
Injected On: 7/25/2017 11:15:14 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

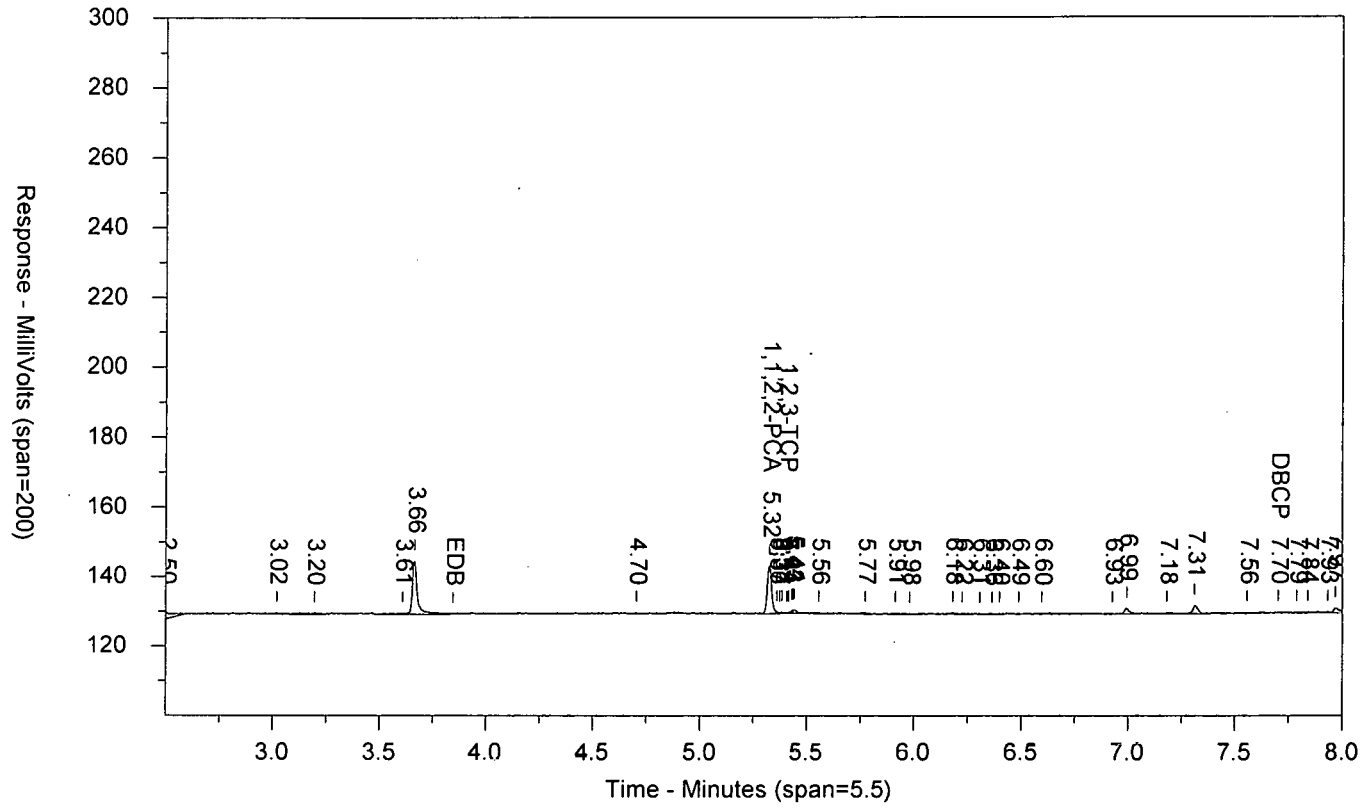
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 38811 | 4.233 | EDB | 2.788 | 54579 | 4.193 | EDB |
| 5.324 | 24128 | 1.957 | 1,1,2,2-PCA | 4.041 | 32963 | 2.146 | 1,1,2,2-PCA |
| 5.397 | 46912 | 31.267 | 1,2,3-TCP | 4.16 | 63333 | 32.386 | 1,2,3-TCP |
| 7.678 | 85437 | 3.823 | DBCP | 6.437 | 98241 | 4.643 | DBCP |

Files:
Area File: 18EDBS17205002.045.RAW
Area File: 18EDBS17205002B.045.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 11:23:46 PM
File Reported On: 7/26/2017 at 10:10:58 AM

EIBKX1724C UXPIBLKUX PIBLK1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.046.RAW

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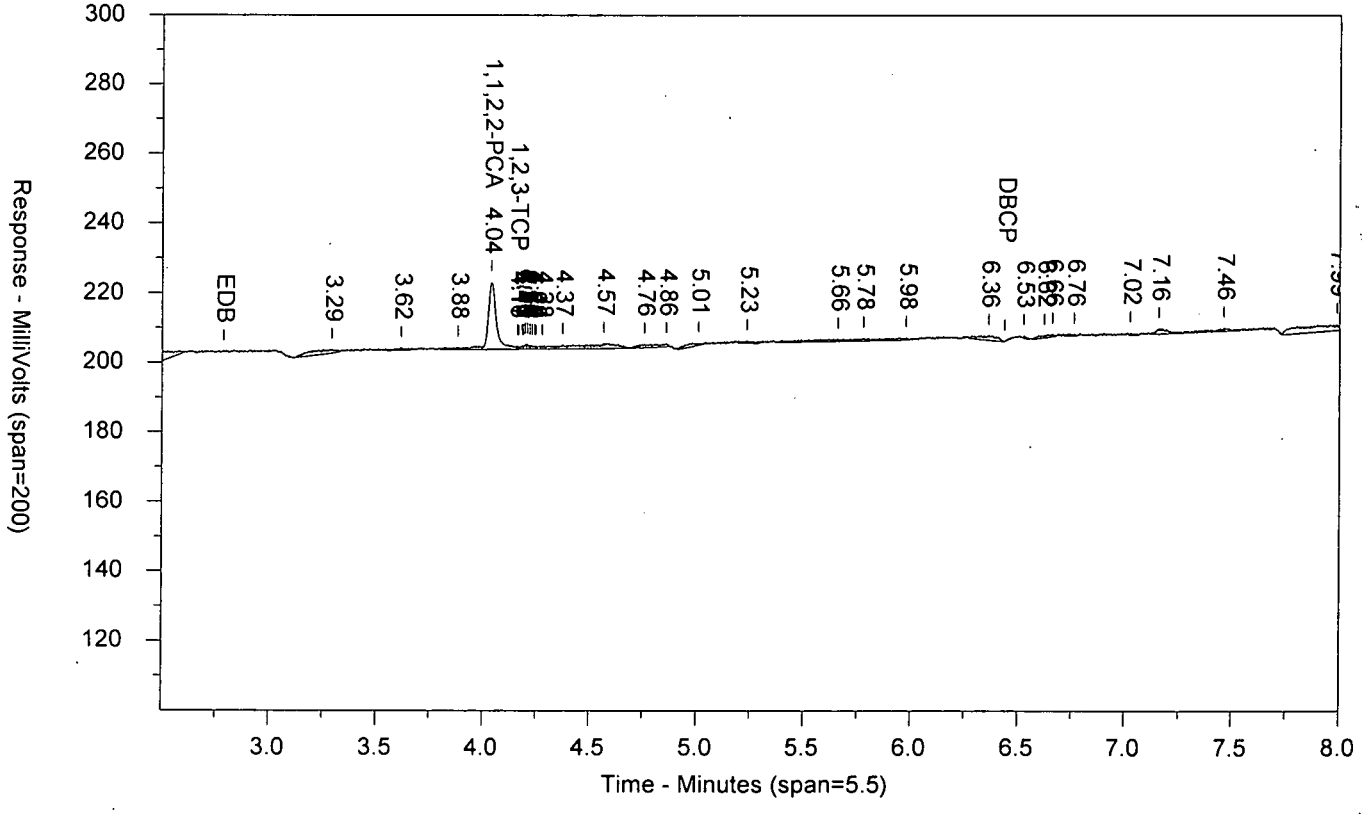


LANCASTER LABORATORIES

Sample Number: EIBKX1724C UXPIBLKUX PIBLK1720599999 10398 SW-846 8011
Injected On: 7/25/2017 11:31:11 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

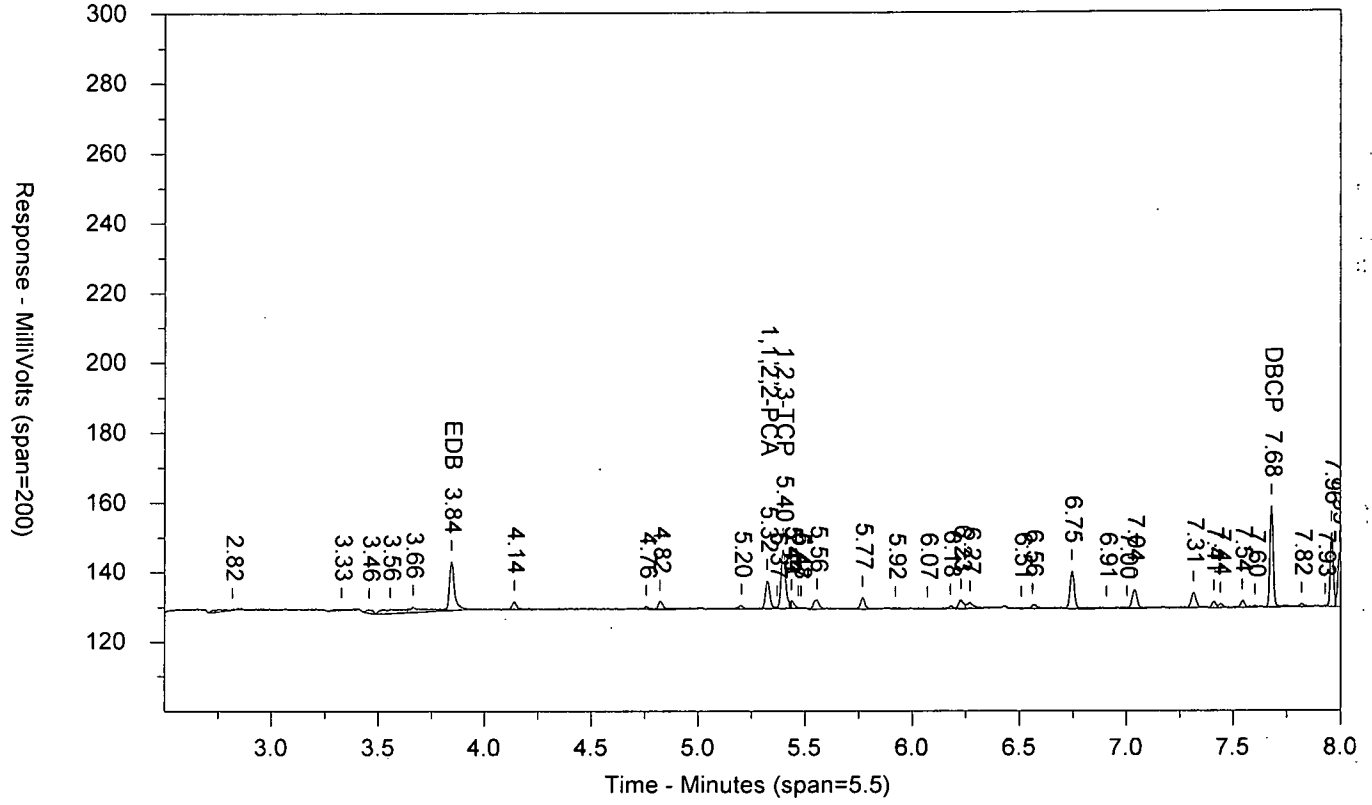
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 13910 | .064 | 1,1,2,2-PCA | 4.04 | 19332 | .07 | 1,1,2,2-PCA |
| 5.406 | 297 | -.069 | 1,2,3-TCP | 4.161 | 1012 | -.062 | 1,2,3-TCP |
| 7.7 | 385 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17205002.046.RAW
Area File: 18EDBS17205002B.046.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 11:39:45 PM
File Reported On: 7/26/2017 at 10:11:14 AM

EDB_31724DT POEDB_3PO CCAL 1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.057.RAW

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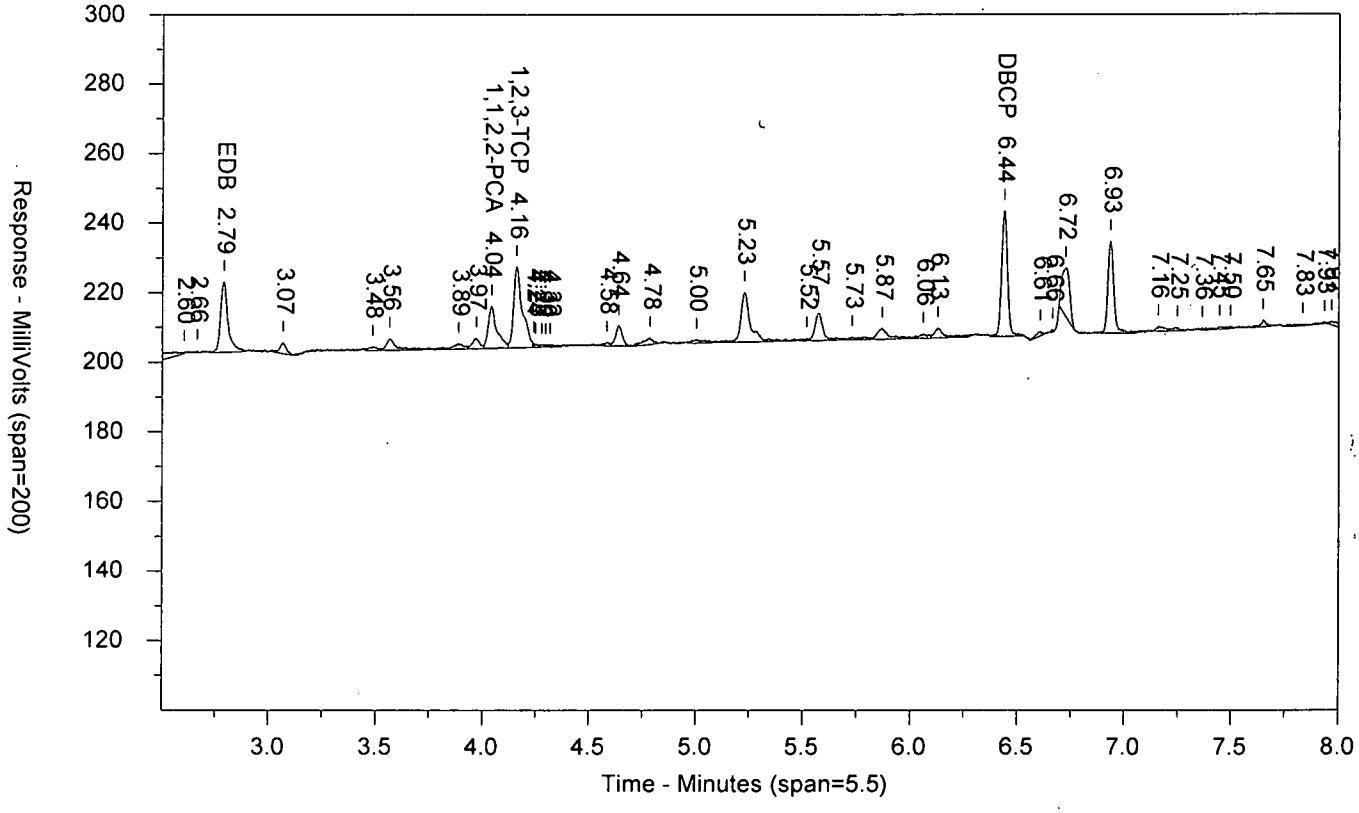


LANCASTER LABORATORIES

Sample Number: EDB_31724DT POEDB_3PO CCAL 1720599999 10398 SW-846 8011
Injected On: 7/26/2017 2:26:19 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

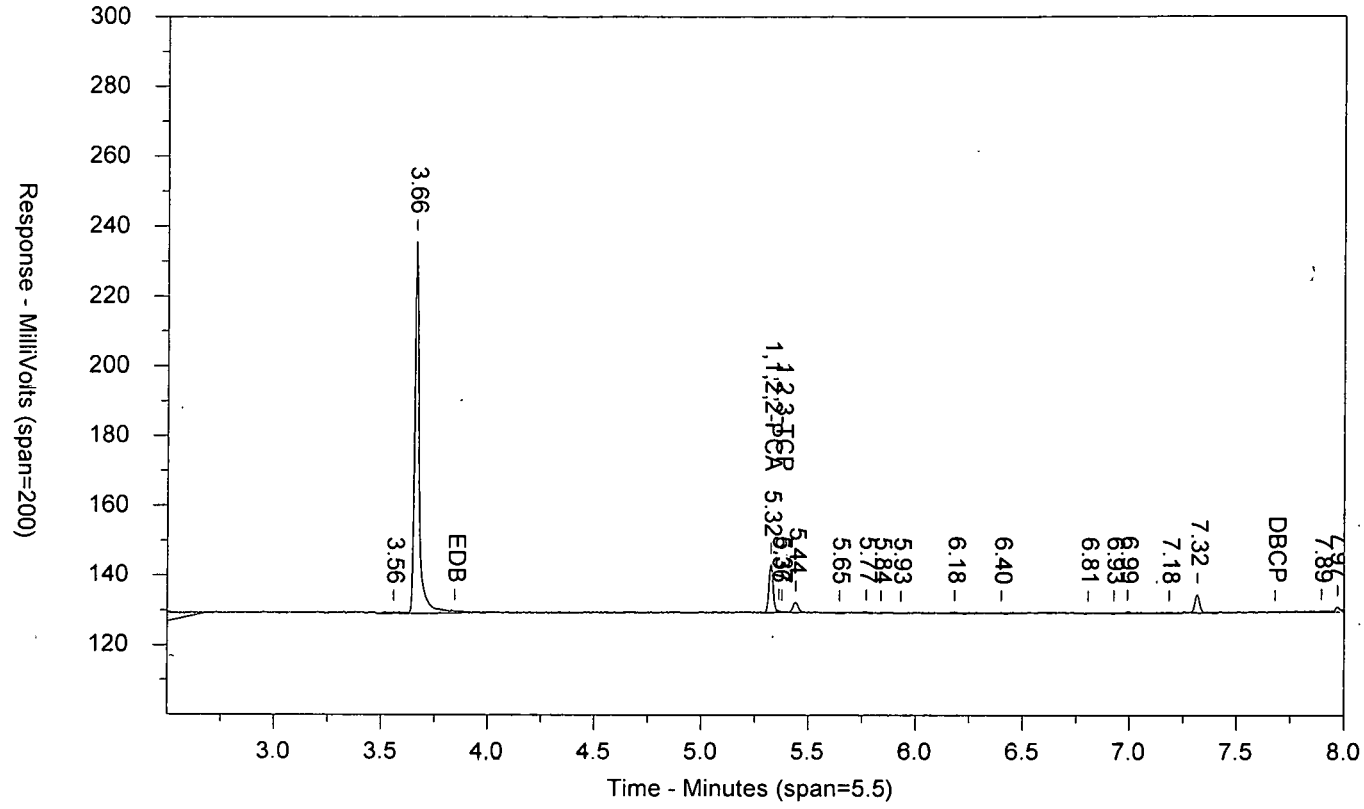
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 14072 | 1.369 | EDB | 2.788 | 20226 | 1.398 | EDB |
| 5.323 | 7999 | .649 | 1,1,2,2-PCA | 4.042 | 12110 | .733 | 1,1,2,2-PCA |
| 5.397 | 16879 | 10.34 | 1,2,3-TCP | 4.16 | 23294 | 10.883 | 1,2,3-TCP |
| 7.679 | 28946 | 1.295 | DBCP | 6.437 | 36079 | 1.537 | DBCP |

Files:
Area File: 18EDBS17205002.057.RAW
Area File: 18EDBS17205002B.057.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 2:34:55 AM
File Reported On: 7/26/2017 at 10:14:07 AM

EIBKX1724C UYPIBLKUY PIBLK1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.058.RAW

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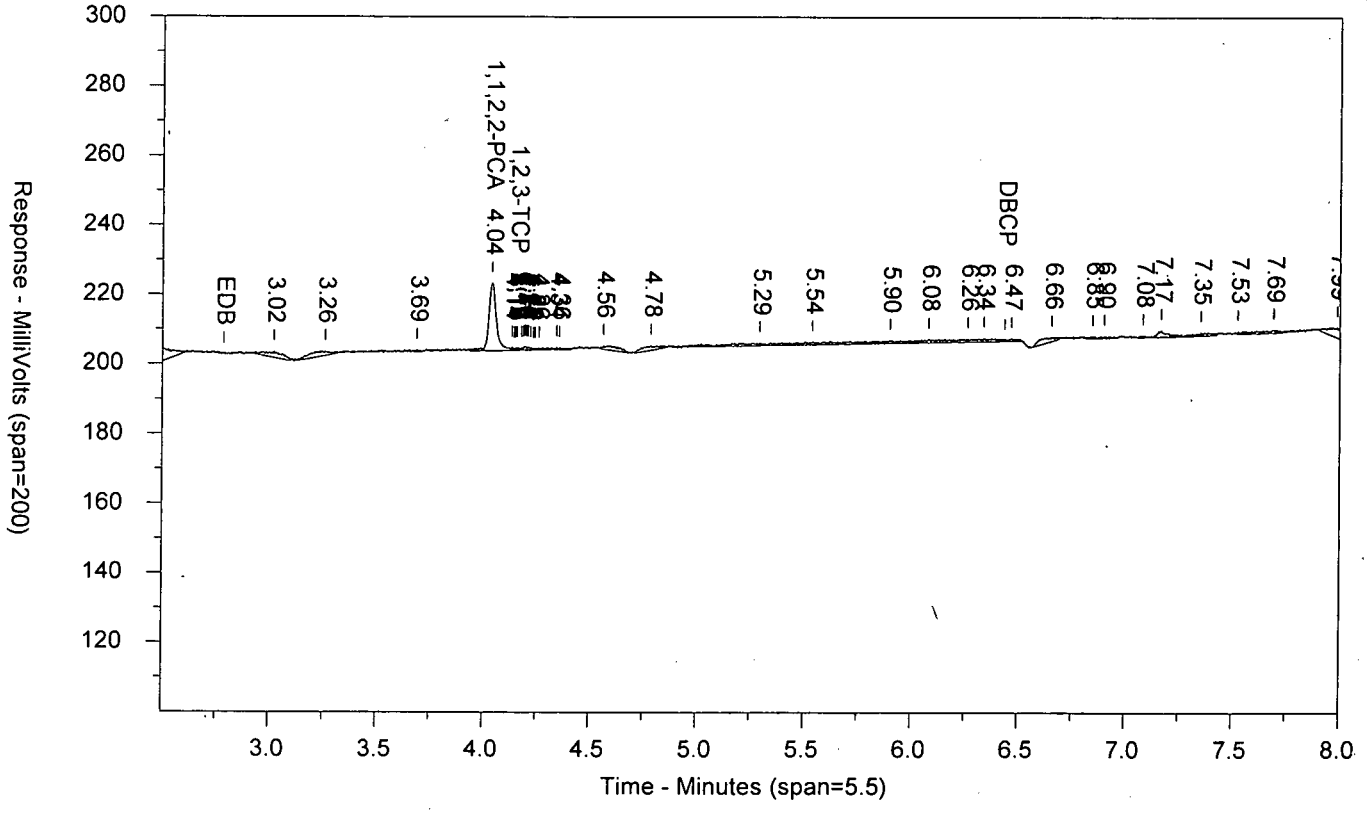


LANCASTER LABORATORIES

Sample Number: EIBKX1724C UYPIBLKUY PIBLK1720599999 10398 SW-846 8011
Injected On: 7/26/2017 2:42:11 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

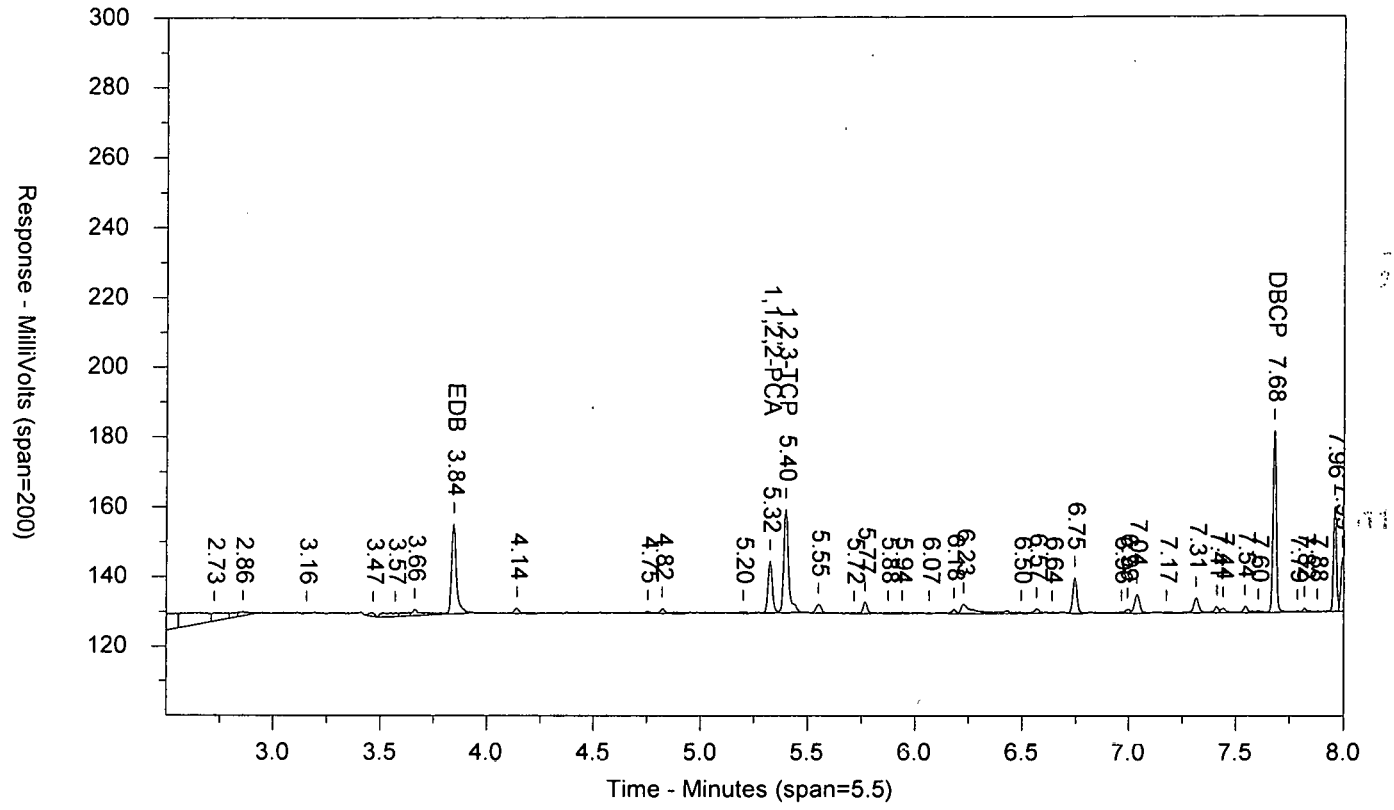
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 13627 | .063 | 1,1,2,2-PCA | 4.041 | 19513 | .071 | 1,1,2,2-PCA |
| 5.375 | 309 | -.069 | 1,2,3-TCP | 4.16 | 726 | -.071 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.058.RAW
Area File: 18EDBS17205002B.058.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 2:50:46 AM
File Reported On: 7/26/2017 at 10:14:21 AM

EDB_41724DT QPEDB_4QP CCAL 1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.067.RAW

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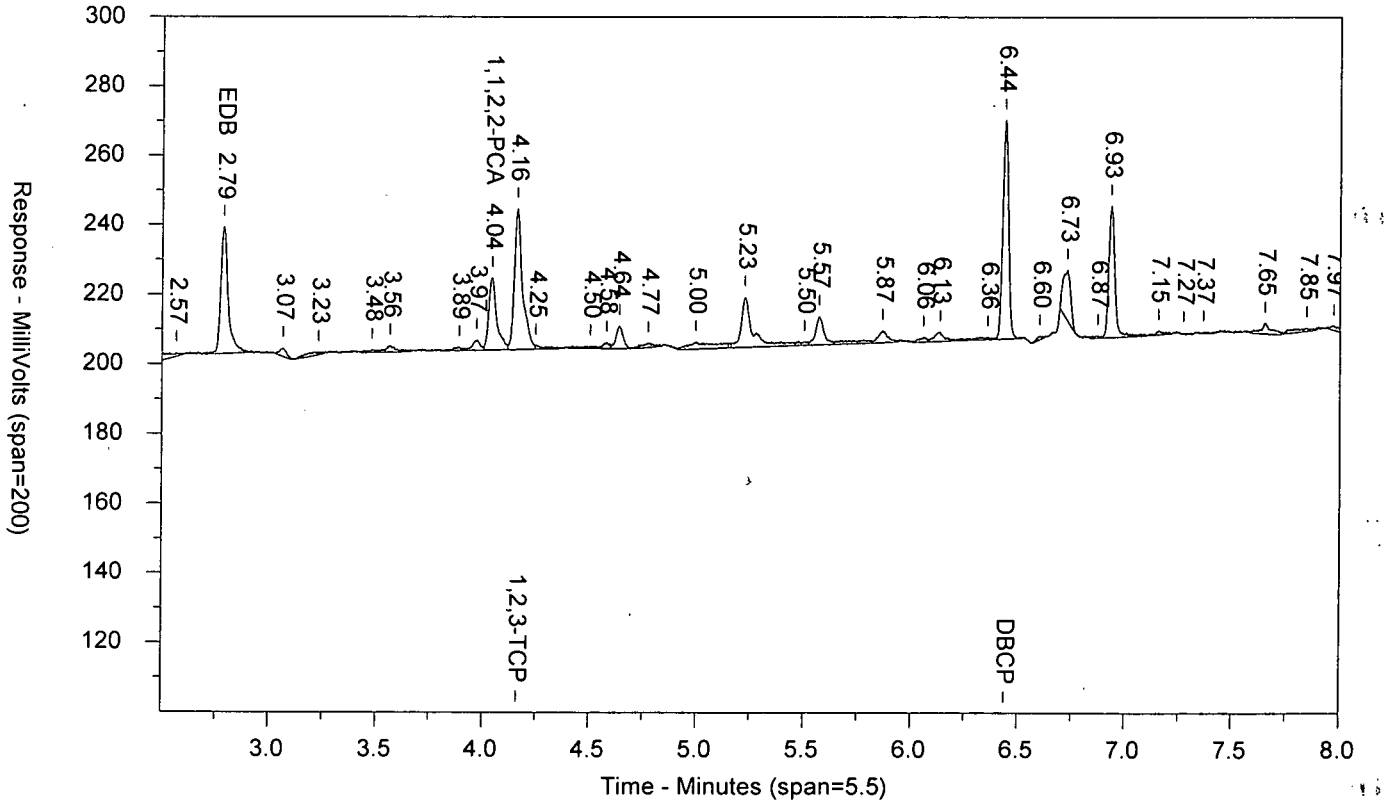


LANCASTER LABORATORIES

Sample Number: EDB_41724DT QPEDB_4QP CCAL 1720599999 10398 SW-846 8011
Injected On: 7/26/2017 5:05:13 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

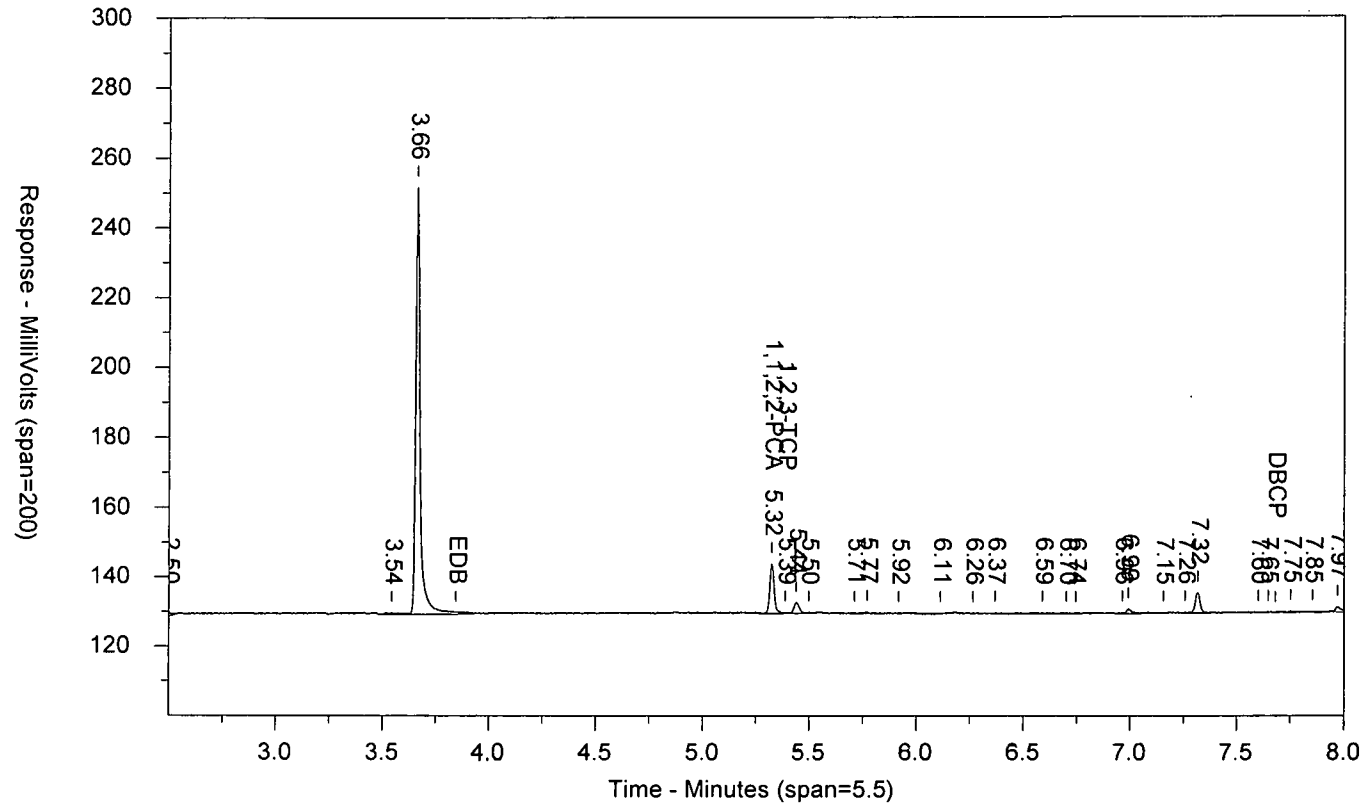
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 25801 | 2.727 | EDB | 2.787 | 36387 | 2.713 | EDB |
| 5.324 | 14874 | 1.206 | 1,1,2,2-PCA | 4.043 | 20753 | 1.319 | 1,1,2,2-PCA |
| 5.396 | 29550 | 19.17 | 1,2,3-TCP | 4.161 | 40482 | 20.114 | 1,2,3-TCP |
| 7.679 | 52020 | 2.328 | DBCP | 6.438 | 62965 | 2.881 | DBCP |

Files:
Area File: 18EDBS17205002.067.RAW
Area File: 18EDBS17205002B.067.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 5:13:47 AM
File Reported On: 7/26/2017 at 10:16:44 AM

EIBKX1724C UZPIBLKUZ PIBLK1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.068.RAW

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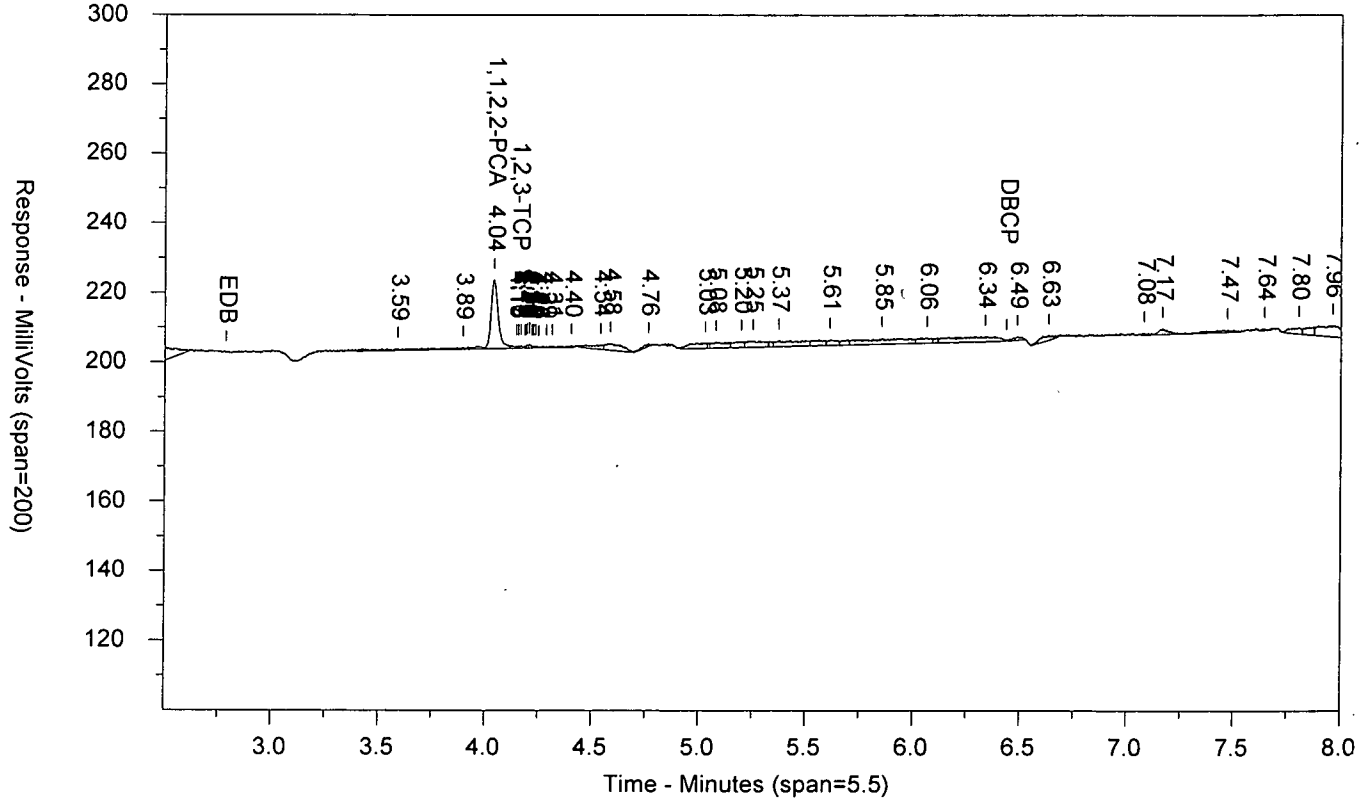

LANCASTER LABORATORIES

Sample Number: EIBKX1724C UZPIBLKUZ PIBLK1720599999 10398 SW-846 8011
Injected On: 7/26/2017 5:21:13 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.323 | 14350 | .066 | 1,1,2,2-PCA | 4.041 | 19895 | .072 | 1,1,2,2-PCA |
| 5.385 | 409 | -.065 | 1,2,3-TCP | 4.158 | 813 | -.068 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.068.RAW
Area File: 18EDBS17205002B.068.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 5:29:45 AM
File Reported On: 7/26/2017 at 10:16:58 AM

# Raw QC Data

# EDB/DBCP

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# Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK25201 BLK Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 17:46:04 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0015.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.072447

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 17:46:04 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0015.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.071731

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.09 | 3.10 | 404 | 0.00112 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 10612 | 0.071731 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 29743 | 0.072447 | 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 12217 | 0.163532 |
| 1,2,3-Trichloropropane | 4.55 | 4.57 | 4.61 | 6141 | 0.033067 | | | | | | |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.072447 | 0.0035 | 0.007 | 0.007 | | 0.99 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:53:57

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 7/21/17 PBLK25201Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 17:46:04
Instrument : CP16--19853A
Result file : 16EDBS17202001.0015.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.072447

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.09 | 3.10 | 404 | 0.001120 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 29743 | 0.072447 |
| **1,2,3-TCP** | 4.55 | 4.57 | 4.61 | 6141 | 0.033067 |

## Analysis Report (B)

Injected on : Jul 21, 2017 17:46:04
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0015.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.071731

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 10612 | 0.071731 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 12217 | 0.163532 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.072447 | | | | 0.99 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 24 2017

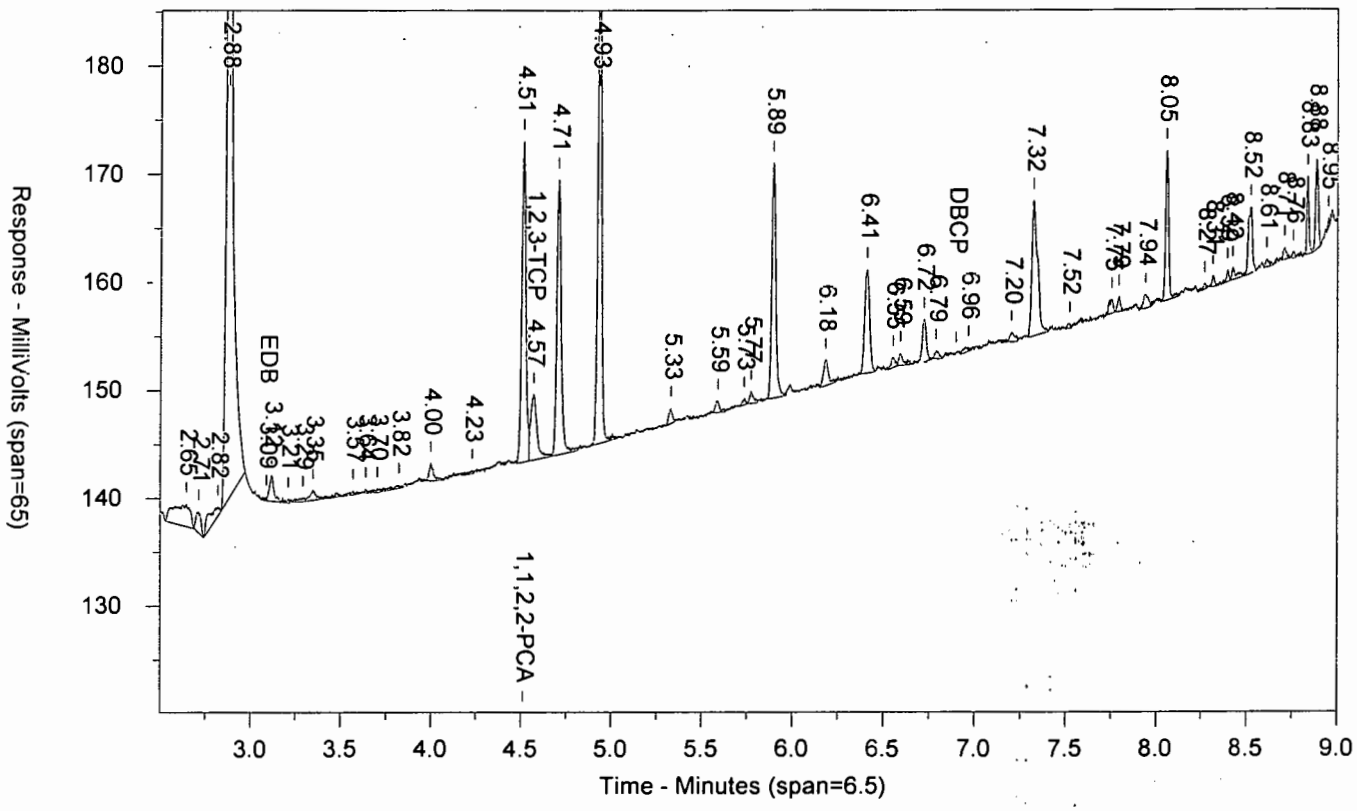
Verified by: Susan M. Goshert Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

BLANKA 7/21/17 AAPBLK25201 BLK 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0015.RAW

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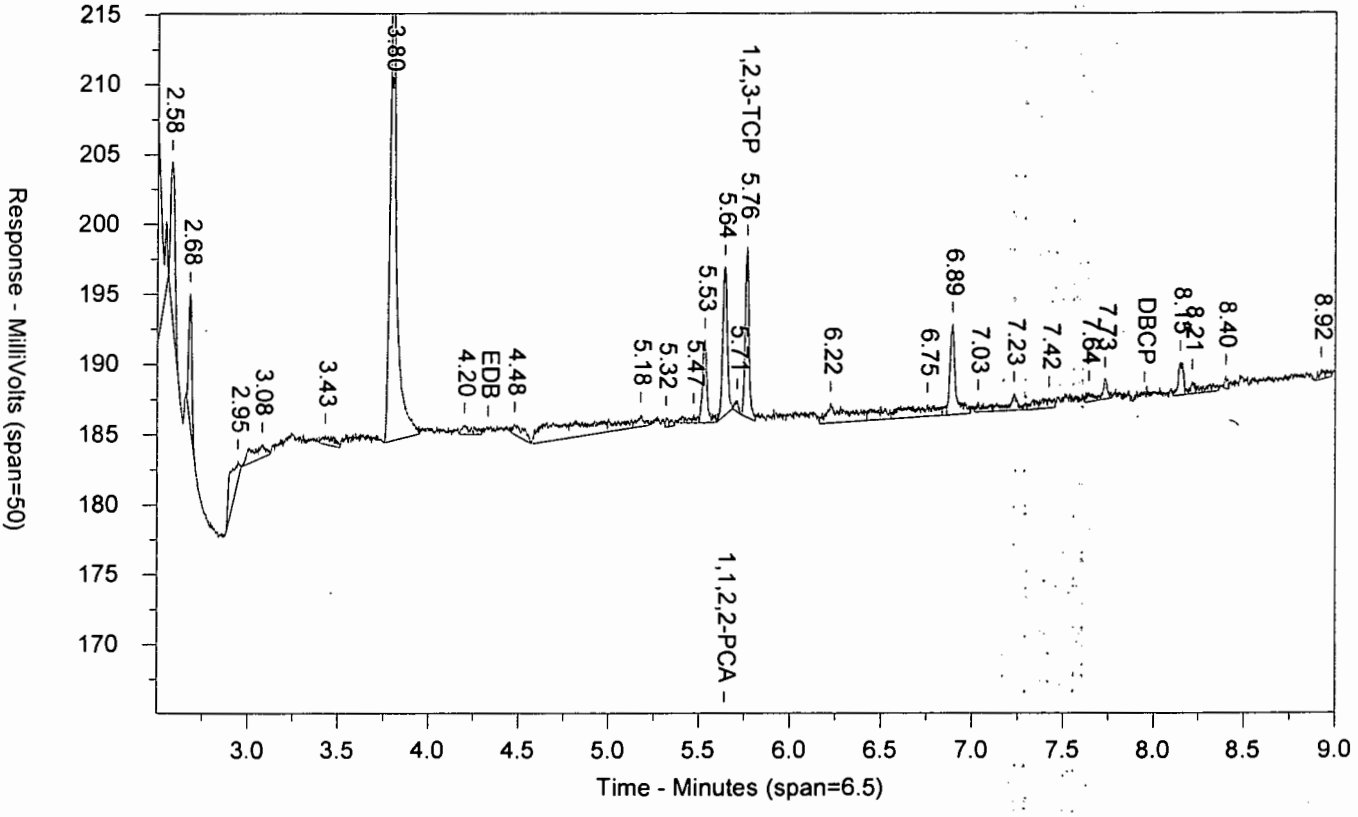

LANCASTER LABORATORIES

Sample Number: BLANKA 7/21/17 AAPBLK25201 BLK 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 5:46:04 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.089 | 404 | .001 | EDB | | 0 | | EDB |
| 4.512 | 29743 | .072 | 1,1,2,2-PCA | 5.641 | 10612 | .072 | 1,1,2,2-PCA |
| 4.568 | 6141 | .033 | 1,2,3-TCP | 5.763 | 12217 | .164 | 1,2,3-TCP |

Files:
Area File: 16EDBS17202001.0015.RAW
Area File: 16EDBS17202001B.0015.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 5:55:05 PM
File Reported On: 7/24/2017 at 10:54:09 AM

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# Data Summary

**Sample Name: 9109772** MSDF20 18801 MS Sample ID: AC **Batchnumber: 172010025A**
Sample Amount: 37.02 mL Total Volume: 40 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 24, 2017 14:12:07 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202002.0007.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 91% ( 46 - 136 ) Conc: 0.060579

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 24, 2017 14:12:07 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202002B.0007.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) * 0% ( 46 - 136 ) Conc: 0

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 22340 | 1.170908 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 1315 | 0.060579 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 5040 | 0.222887 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 6942 | 0.184579 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 6273 | 1.150214 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 4648 | 0 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 3537 | 0.247398 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 1.170908 | 0.1891 | 0.3782 | 0.5673 | | 1.78 | |
| 1,1,2,2-TETRACHLOROE | A | 0.060579 | <0.0662 | <0.1324 | <0.1324 | | 200.00 | |
| 1,2,3-Trichloropropane | A | 0.222887 | | | <5.1053 | | 200.00 | |
| 1,2-Dibromo-3-chloropropa | A | 0.184579 | <0.1891 | <0.3782 | <0.5673 | | 29.08 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:53

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9109772** MSDF20 18801 Sample ID: AC **Batchnumber: 172010025A**
Sample Amount: 37.02 mL Total Volume: 40 ml Analyst: Administr SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 24, 2017 14:12:07
Instrument : CP16--19853A
Result file : 16EDBS17202002.0007.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 91% (46-136) Conc.: 0.060579

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 22340 | 1.170908 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 1315 | 0.060579 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 5040 | 0.222887 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 6942 | 0.184579 |

## Analysis Report (B)

Injected on : Jul 24, 2017 14:12:07
Instrument : CP16--19853B
Result file : 16EDBS17202002B.0007.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : *0% (46-136) Conc.: 0

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 6273 | 1.150214 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 4648 | -5.189424 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 3537 | 0.247399 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 1.170908 | 0.5673 | 0.1891 | | 1.78 | |
| ☐ 1,1,2,2-PCA | | | | | | | |
| ☐ 1,2,3-TCP | | | <5.1053 | <1.8909 | | | |
| ☐ DBCP | | | <0.5673 | <0.1891 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Susan M. Gosher
Susan M. Gosher
Manager
Date: JUL 28 2017

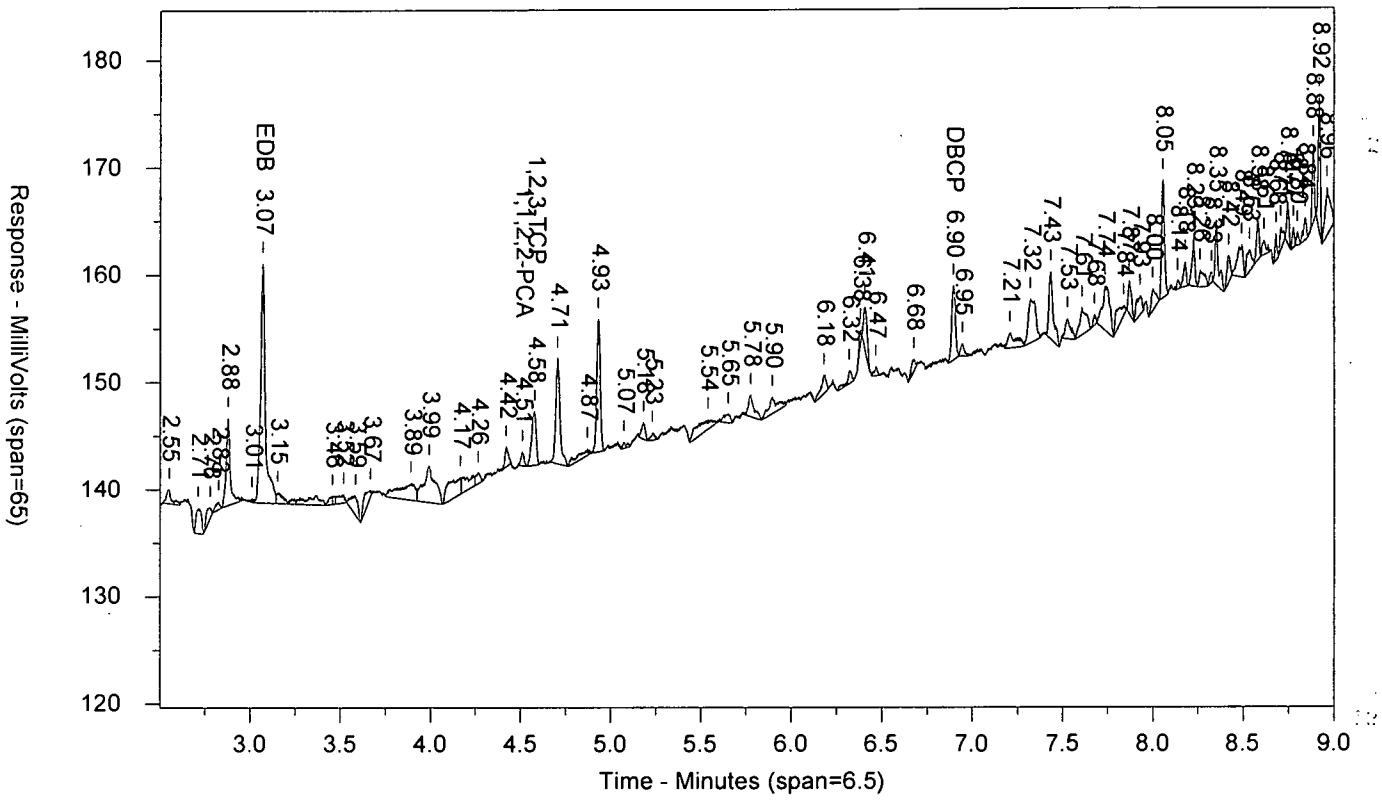
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 15:27:42

9109772MSDF20 AC18801 MS 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002.0007.RAW

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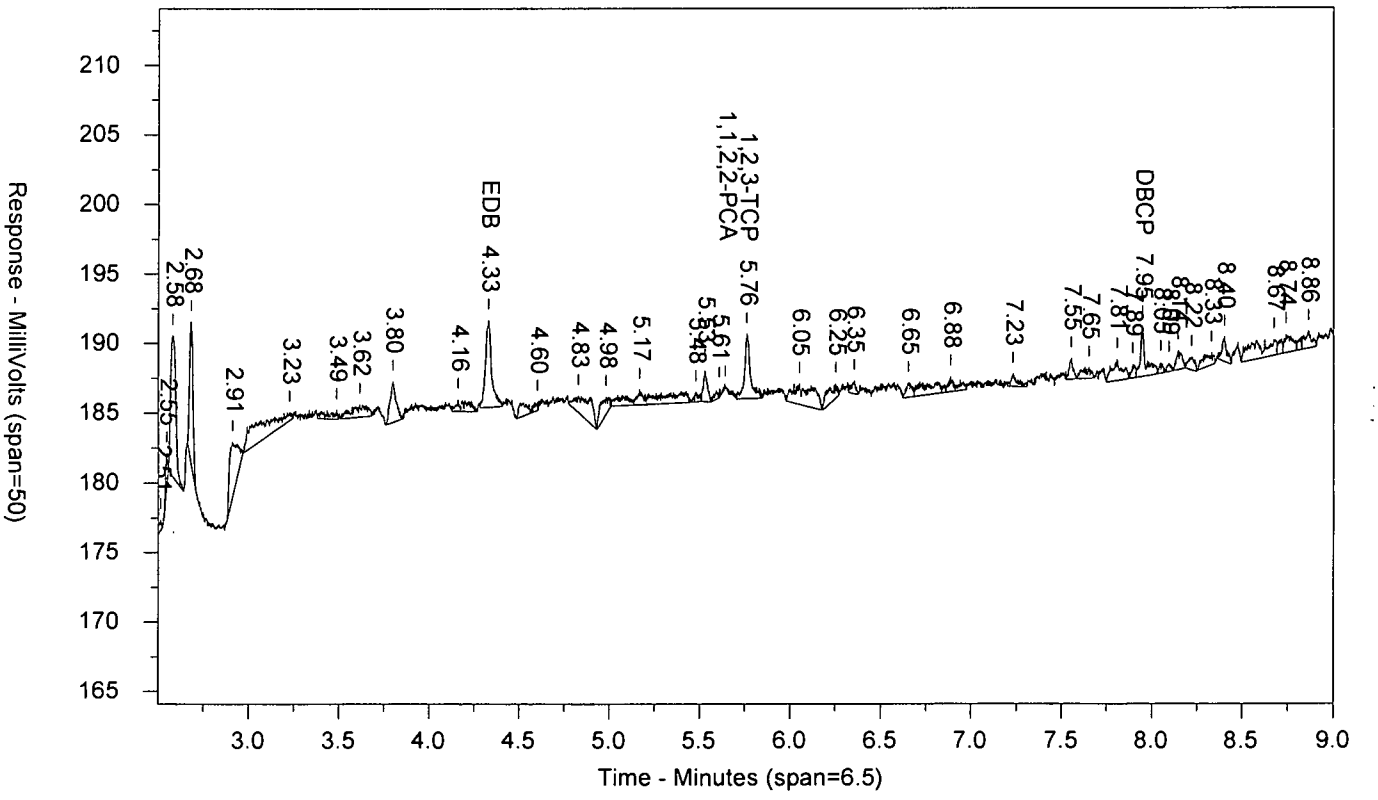

LANCASTER LABORATORIES

Sample Number: 9109772MSDF20 AC18801 MS 172010025A 10398 SW-846 8011
Injected On: 7/24/2017 2:12:07 PM Sample Weight: 37.02
Instrument ID: CP16-19853 Dilution Factor: 40
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 22340 | 1.171 | EDB | 4.33 | 6273 | 1.15 | EDB |
| 4.511 | 1315 | .061 | 1,1,2,2-PCA | | 0 | | 1,1,2,2-PCA |
| 4.579 | 5040 | .223 | 1,2,3-TCP | 5.76 | 4648 | -5.189 | 1,2,3-TCP |
| 6.895 | 6942 | .185 | DBCP | 7.947 | 3537 | .247 | DBCP |

Files:
Area File: 16EDBS17202002.0007.RAW
Area File: 16EDBS17202002B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/24/2017 2:21:08 PM
File Reported On: 7/24/2017 at 3:25:24 PM

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# Data Summary

**Sample Name: 9109773** MSDDF20 18801 MSD Sample ID: AC **Batchnumber: 172010025A**
Sample Amount: 36.96 mL Total Volume: 40 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 24, 2017 14:27:42 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202002.0008.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 125% ( 46 - 136 ) Conc: 0.083523

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 24, 2017 14:27:42 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202002B.0008.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) * 193% ( 46 - 136 ) Conc: 0.128888

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 22896 | 1.20197 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 1811 | 0.083523 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 4368 | 0 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.89 | 6.93 | 6890 | 0.183496 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 6445 | 1.18363 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 1219 | 0.128888 |
| 1,2,3-Trichloropropane | 5.74 | 5.76 | 5.80 | 4478 | 0 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 3711 | 0.25999 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 1.20197 | 0.1894 | 0.3788 | 0.5682 | | 1.54 | |
| 1,1,2,2-TETRACHLOROE | A | 0.083523 | 0.0663 | <0.1326 | <0.1326 | | 42.71 | |
| 1,2,3-Trichloropropane | | | | | <5.1136 | | | |
| 1,2-Dibromo-3-chloropropa | A | 0.183496 | <0.1894 | <0.3788 | <0.5682 | | 34.50 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:56

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9109773** MSDDF20 18801 Sample ID: AC **Batchnumber: 172010025A**
Sample Amount: 36.96 mL Total Volume: 40 ml Analyst: Administr SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 24, 2017 14:27:42
Instrument : CP16--19853A
Result file : 16EDBS17202002.0008.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 125% (46-136) Conc.: 0.083523

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 22896 | 1.201970 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 1811 | 0.083523 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 4368 | -0.022908 |
| **DBCP** | 6.86 | 6.89 | 6.93 | 6890 | 0.183496 |

## Analysis Report (B)

Injected on : Jul 24, 2017 14:27:42
Instrument : CP16--19853B
Result file : 16EDBS17202002B.0008.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : *193% (46-136) Conc.: 0.128888

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 6445 | 1.183630 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 1219 | 0.128888 |
| **1,2,3-TCP** | 5.74 | 5.76 | 5.80 | 4478 | -5.383567 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 3711 | 0.259990 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 1.201970 | 0.5682 | 0.1894 | | 1.54 | |
| ☐ 1,1,2,2-PCA | A | 0.083523 | | | | 42.72 | |
| ☐ 1,2,3-TCP | | | <5.1136 | <1.8939 | | | |
| ☐ DBCP | | | <0.5682 | <0.1894 | | | |

Units: ug/l

Heather M. Miller
Chemist

Reviewed by: _____ Date: JUL 24 2017

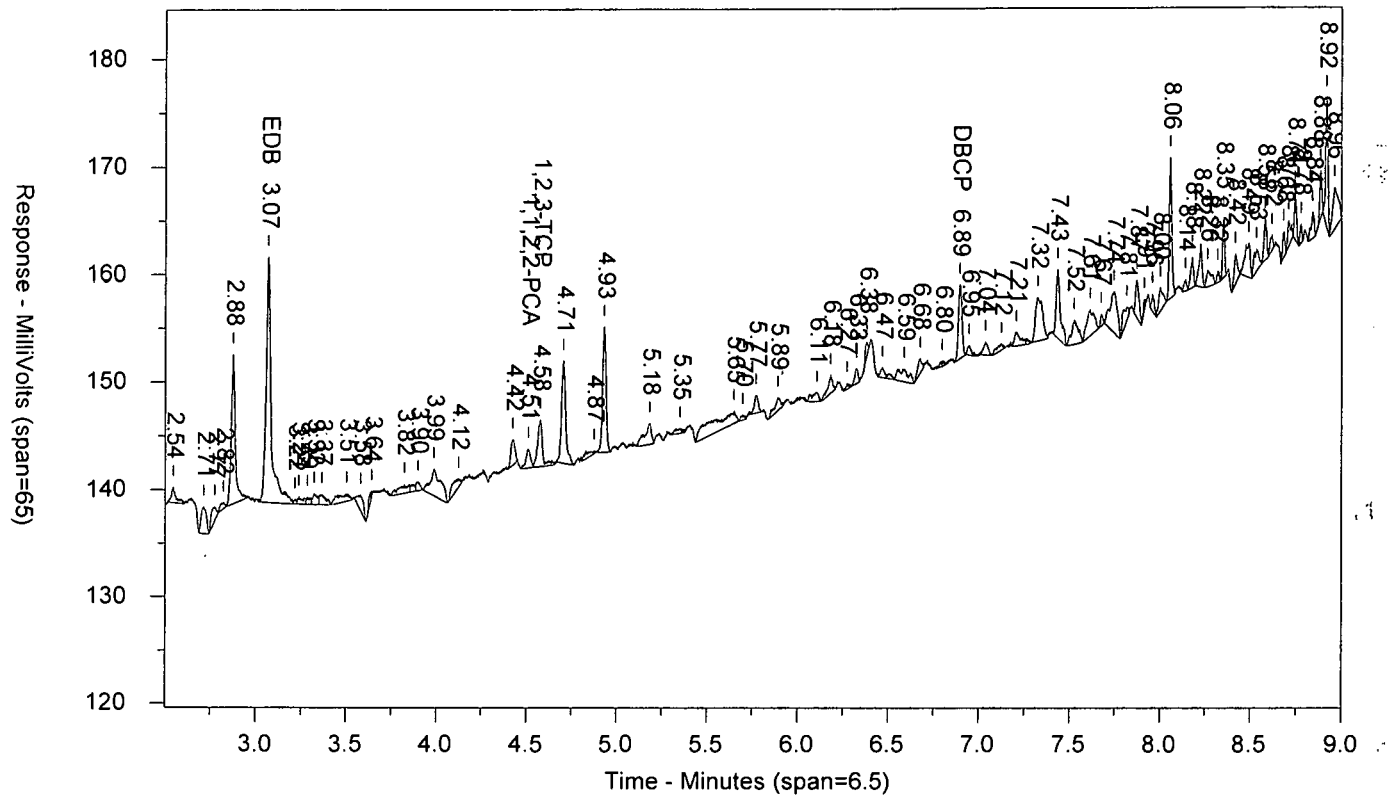
Verified by: Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

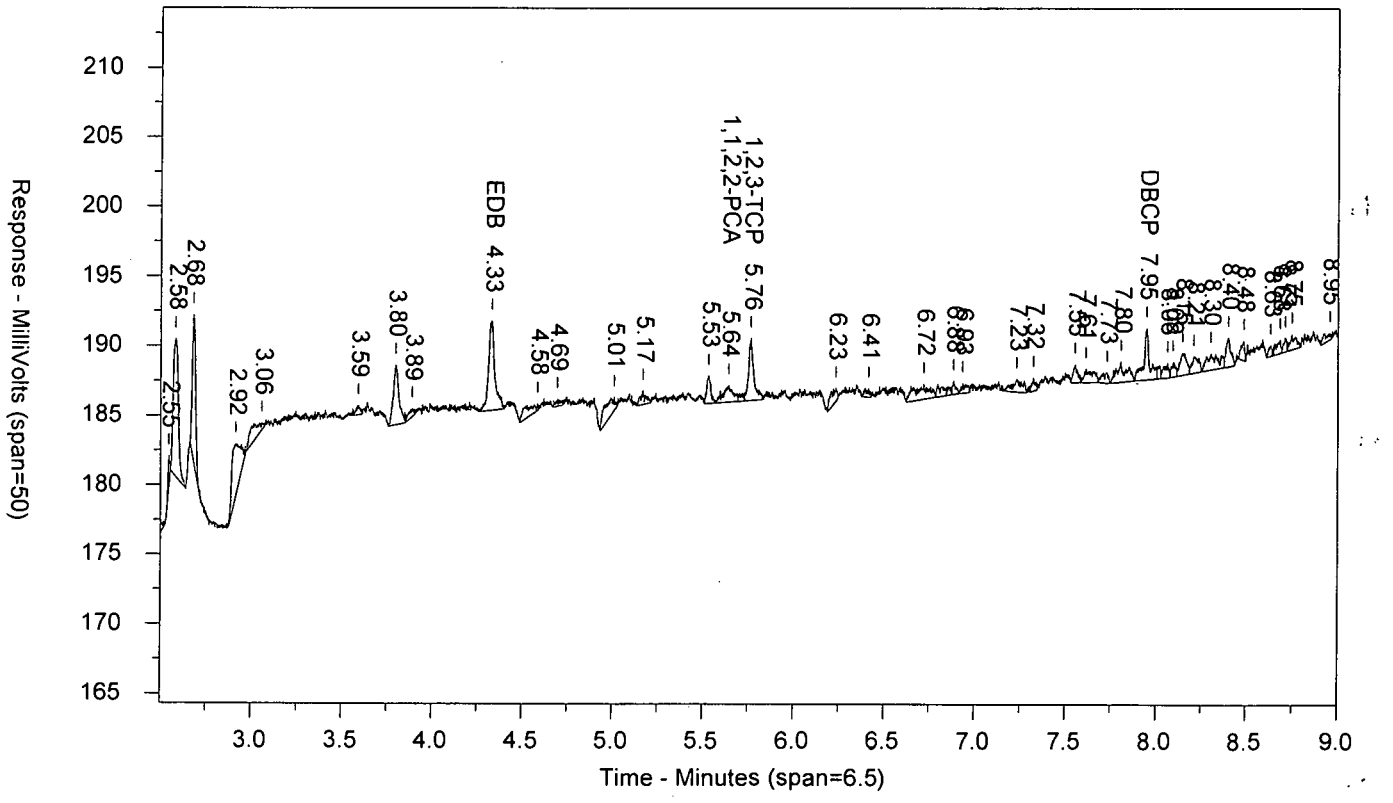
* Recovery outside QC Limits

9109773MSDDF20 AC18801 MSD 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002.0008.RAW




\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202002B.0008.RAW



LANCASTER LABORATORIES

Sample Number: 9109773MSDDF20 AC18801 MSD 172010025A 10398 SW-846 8011
Injected On: 7/24/2017 2:27:42 PM Sample Weight: 36.96
Instrument ID: CP16-19853 Dilution Factor: 40
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 22896 | 1.202 | EDB | 4.331 | 6445 | 1.184 | EDB |
| 4.511 | 1811 | .084 | 1,1,2,2-PCA | 5.642 | 1219 | .129 | 1,1,2,2-PCA |
| 4.578 | 4368 | -.023 | 1,2,3-TCP | 5.763 | 4478 | -5.384 | 1,2,3-TCP |
| 6.895 | 6890 | .183 | DBCP | 7.946 | 3711 | .26 | DBCP |

Files:
Area File: 16EDBS17202002.0008.RAW
Area File: 16EDBS17202002B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/24/2017 2:36:42 PM
File Reported On: 7/24/2017 at 3:25:40 PM

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# Data Summary

**Sample Name: LCSA** 7/21/17 LCS25201 LCS Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:01:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0016.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.074565

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:01:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0016.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.075029

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 52492 | 0.145502 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 30613 | 0.074565 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 68897 | 1.246207 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 104866 | 0.14746 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.30 | 4.33 | 4.36 | 14869 | 0.144185 |
| 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11089 | 0.075029 |
| 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 31933 | 1.304341 |
| 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 39352 | 0.14555 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.145502 | 0.01 | 0.02 | 0.03 | | 0.91 | |
| 1,1,2,2-TETRACHLOROE | A | 0.074565 | 0.0035 | 0.007 | 0.007 | | 0.62 | |
| 1,2,3-Trichloropropane | A | 1.246207 | | | 0.27 | | 4.56 | |
| 1,2-Dibromo-3-chloropropa | A | 0.14746 | 0.01 | 0.02 | 0.03 | | 1.30 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:53:59

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/21/17 LCS25201 Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:01:40
Instrument : CP16--19853A
Result file : 16EDBS17202001.0016.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.074565

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 52492 | 0.145502 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 30613 | 0.074565 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 68897 | 1.246207 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 104866 | 0.147461 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:01:40
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0016.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.075029

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 14869 | 0.144185 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11089 | 0.075029 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 31933 | 1.304341 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 39352 | 0.145550 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.145502 | 0.03 | 0.01 | | 0.91 | |
| ☐ 1,1,2,2-PCA | A | 0.074565 | | | | 0.62 | |
| ☑ 1,2,3-TCP | A | 1.246207 | 0.27 | 0.1 | | 4.56 | |
| ☑ DBCP | A | 0.147461 | 0.03 | 0.01 | | 1.30 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 24 2017

Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

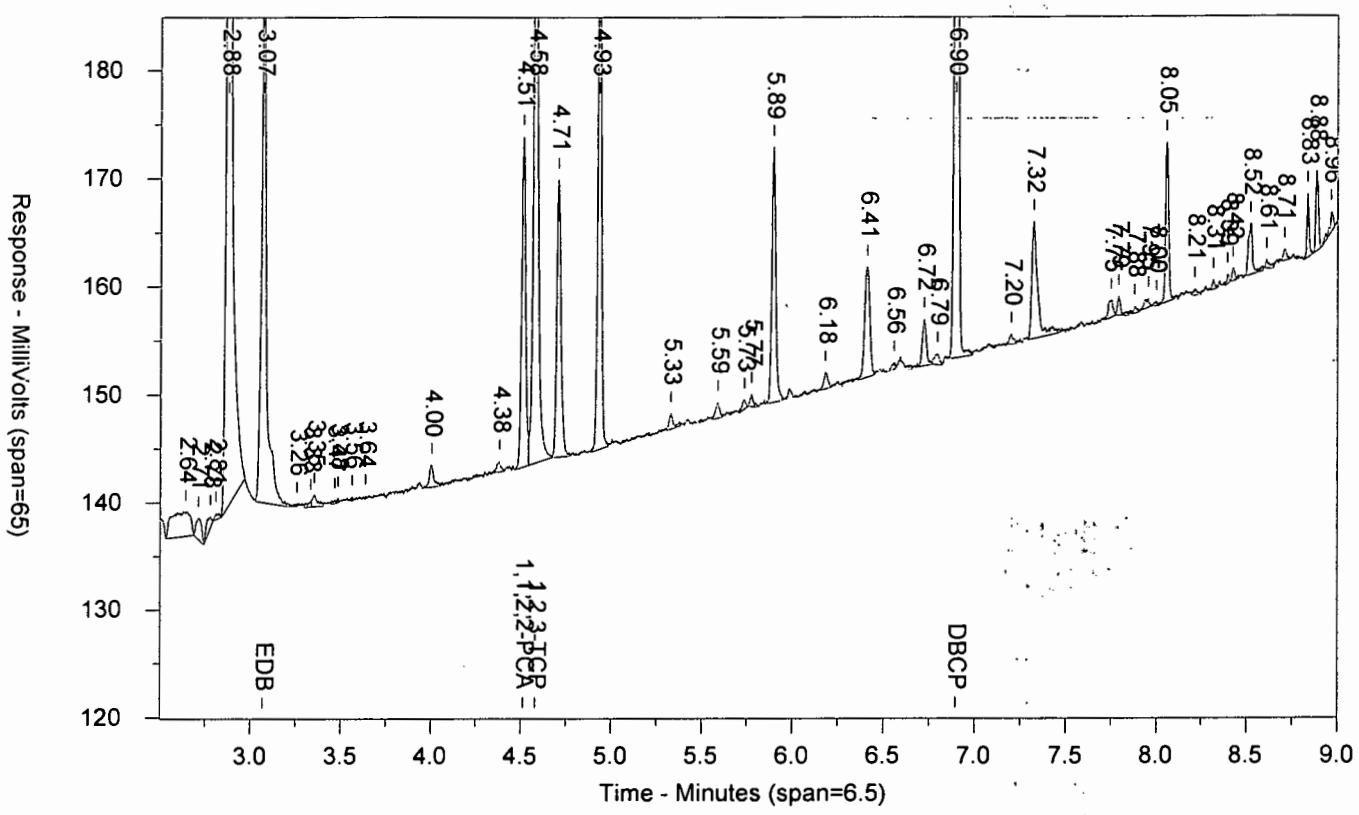
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/24/2017 11:11:06

LCSA 7/21/17 AALCS25201 LCS 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0016.RAW

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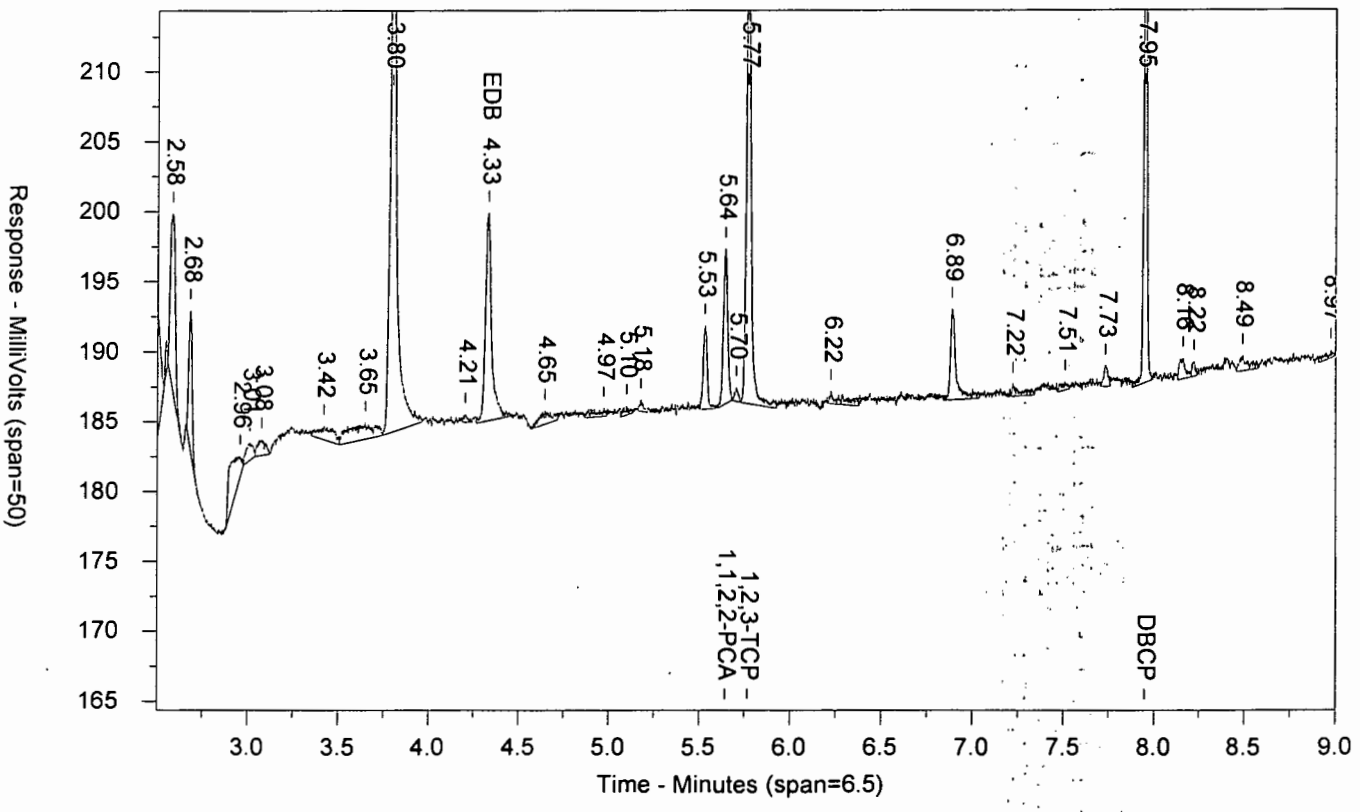


LANCASTER LABORATORIES

Sample Number: LCSA 7/21/17 AALCS25201 LCS 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:01:40 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.069 | 52492 | .146 | EDB | 4.331 | 14869 | .144 | EDB |
| 4.512 | 30613 | .075 | 1,1,2,2-PCA | 5.641 | 11089 | .075 | 1,1,2,2-PCA |
| 4.579 | 68897 | 1.246 | 1,2,3-TCP | 5.766 | 31933 | 1.304 | 1,2,3-TCP |
| 6.896 | 104866 | .147 | DBCP | 7.947 | 39352 | .146 | DBCP |

Files:
Area File: 16EDBS17202001.0016.RAW
Area File: 16EDBS17202001B.0016.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:10:41 PM
File Reported On: 7/24/2017 at 10:54:17 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 7/21/17 LCSD25201 LCSD Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:17:18 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17202001.0017.RAW |
| **Calibration file** | 16EDBS1720201 |
| **Method file** | 16EDBS |

%SSR(PCA) 112% ( 46 - 136 ) Conc: 0.079144

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 21, 2017 18:17:18 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17202001B.0017.RAW |
| **Calibration file** | 16EDBS1720201B |
| **Method file** | 16EDBSB |

%SSR(PCA) 113% ( 46 - 136 ) Conc: 0.079835

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.04 | 3.07 | 3.10 | 58918 | 0.163313 | Ethylene dibromide | 4.30 | 4.33 | 4.36 | 16042 | 0.155566 |
| 1,1,2,2-TETRACHLORO | 4.48 | 4.51 | 4.54 | 32493 | 0.079144 | 1,1,2,2-TETRACHLORO | 5.61 | 5.64 | 5.67 | 11784 | 0.079835 |
| 1,2,3-Trichloropropane | 4.55 | 4.58 | 4.61 | 71820 | 1.302697 | 1,2,3-Trichloropropane | 5.74 | 5.77 | 5.80 | 33931 | 1.419971 |
| 1,2-Dibromo-3-chloropro | 6.86 | 6.90 | 6.93 | 113994 | 0.160297 | 1,2-Dibromo-3-chloropro | 7.92 | 7.95 | 7.98 | 41886 | 0.154921 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | A | 0.163313 | 0.01 | 0.02 | 0.03 | | 4.86 | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.079144 | 0.0035 | 0.007 | 0.007 | | 0.87 | |
| ☐ 1,2,3-Trichloropropane | A | 1.302697 | | | 0.27 | | 8.61 | |
| ☐ 1,2-Dibromo-3-chloroprop | A | 0.160297 | 0.01 | 0.02 | 0.03 | | 3.41 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/24/2017 15:54:02

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/21/17 LCSD25201Sample ID: AA **Batchnumber: 172010025A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 21, 2017 18:17:18
Instrument : CP16--19853A
Result file : 16EDBS17202001.0017.RAW
Calibration file : 16EDBS1720201.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 112% (46-136) Conc.: 0.079144

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.04 | 3.07 | 3.10 | 58918 | 0.163313 |
| **1,1,2,2-PCA** | 4.48 | 4.51 | 4.54 | 32493 | 0.079144 |
| **1,2,3-TCP** | 4.55 | 4.58 | 4.61 | 71820 | 1.302697 |
| **DBCP** | 6.86 | 6.90 | 6.93 | 113994 | 0.160297 |

## Analysis Report (B)

Injected on : Jul 21, 2017 18:17:18
Instrument : CP16--19853B
Result file : 16EDBS17202001B.0017.RAW
Calibration file : 16EDBS1720201B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 113% (46-136) Conc.: 0.079835

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.30 | 4.33 | 4.36 | 16042 | 0.155566 |
| **1,1,2,2-PCA** | 5.61 | 5.64 | 5.67 | 11784 | 0.079835 |
| **1,2,3-TCP** | 5.74 | 5.77 | 5.80 | 33931 | 1.419971 |
| **DBCP** | 7.92 | 7.95 | 7.98 | 41886 | 0.154921 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.163313 | 0.03 | 0.01 | | 4.86 | |
| ☐ 1,1,2,2-PCA | A | 0.079144 | | | | 0.87 | |
| ☑ 1,2,3-TCP | A | 1.302697 | 0.27 | 0.1 | | 8.61 | |
| ☑ DBCP | A | 0.160297 | 0.03 | 0.01 | | 3.41 | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: JUL 24 2017

Verified by: Susan M Goshert Susan M. Goshert Manager
Date: JUL 28 2017

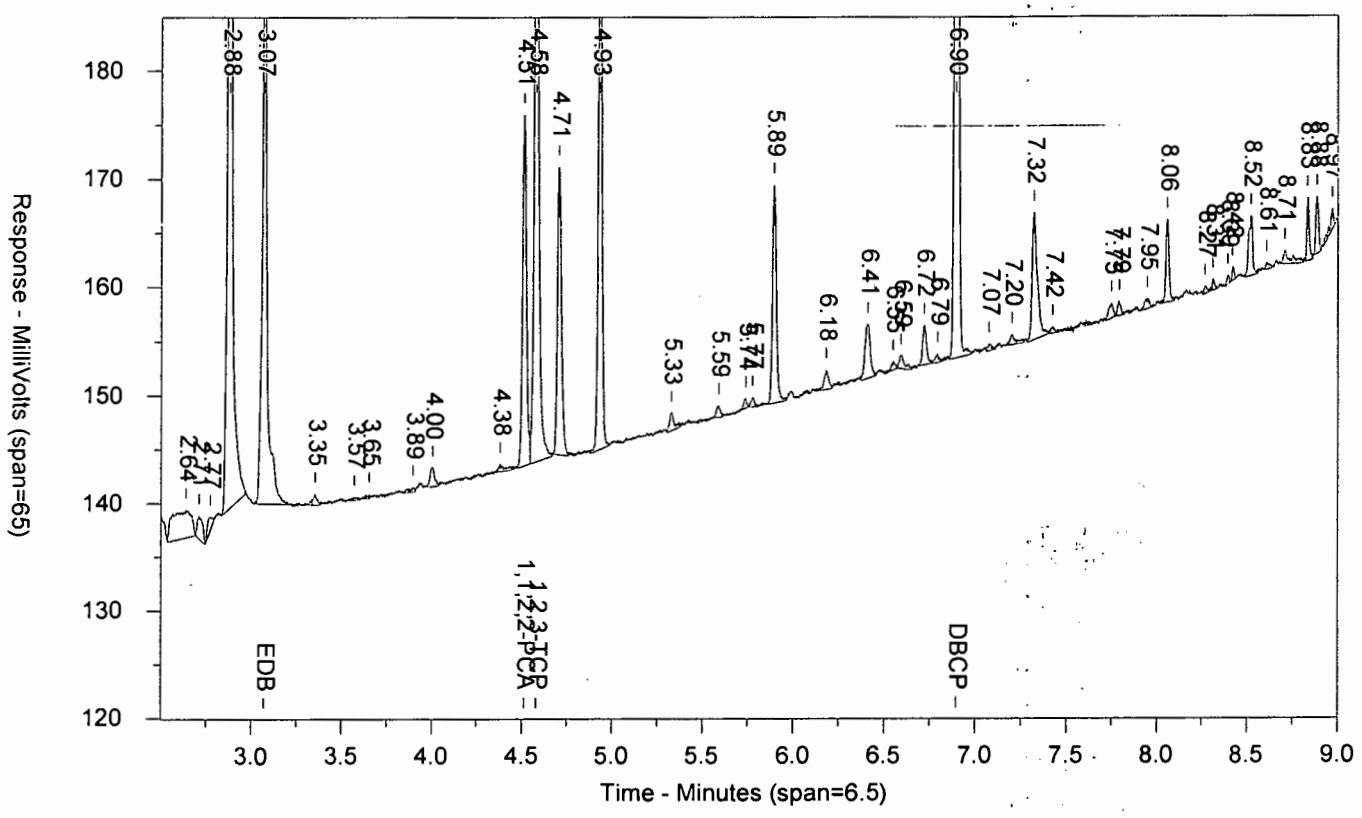
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

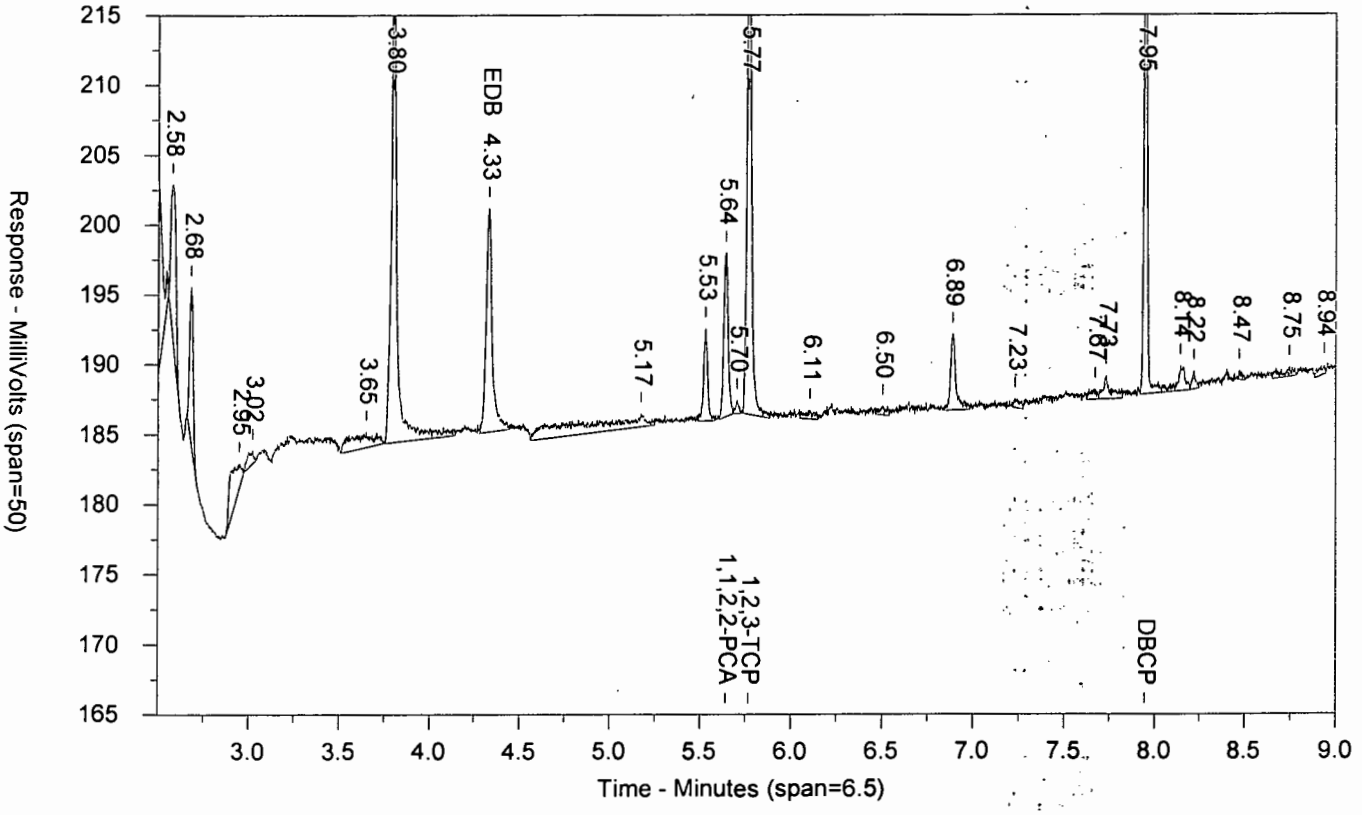
Printed on: 7/24/2017 11:11:12

LCSDA 7/21/17 AALCSD25201 LCSD 172010025A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001.0017.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17202001B.0017.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 7/21/17 AALCSD25201 LCSD 172010025A 10398 SW-846 8011
Injected On: 7/21/2017 6:17:18 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 58918 | .163 | EDB | 4.331 | 16042 | .156 | EDB |
| 4.513 | 32493 | .079 | 1,1,2,2-PCA | 5.642 | 11784 | .08 | 1,1,2,2-PCA |
| 4.579 | 71820 | 1.303 | 1,2,3-TCP | 5.766 | 33931 | 1.42 | 1,2,3-TCP |
| 6.896 | 113994 | .16 | DBCP | 7.946 | 41886 | .155 | DBCP |

Files:
Area File: 16EDBS17202001.0017.RAW
Area File: 16EDBS17202001B.0017.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1720201.CAL
Calibration File B: 16edbs1720201b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 7/21/2017 6:26:20 PM
File Reported On: 7/24/2017 at 10:54:29 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: BLANKA** 7/25/17 PBLK30202 BLK Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 23:47:05 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.047.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 69% ( 46 - 136 ) Conc: 0.048302

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 23:47:05 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.047.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.052846

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10423 | 0.048302 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 413 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 14937 | 0.052846 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 984 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.048302 | 0.0035 | 0.007 | 0.007 | | 8.98 | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:34

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **BLANKA** 7/25/17 PBLK30202Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 23:47:05
Instrument : CP18--19846A
Result file : 18EDBS17205002.047.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 69% (46-136) Conc.: 0.048302

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.29 | 5.32 | 5.35 | 10423 | 0.048302 |
| 1,2,3-TCP | 5.37 | 5.40 | 5.43 | 413 | -0.064733 |

## Analysis Report (B)

Injected on : Jul 25, 2017 23:47:05
Instrument : CP18--19846B
Result file : 18EDBS17205002B.047.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.052846

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.01 | 4.04 | 4.07 | 14937 | 0.052846 |
| 1,2,3-TCP | 4.13 | 4.16 | 4.19 | 984 | -0.062748 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.048302 | | | | 8.98 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

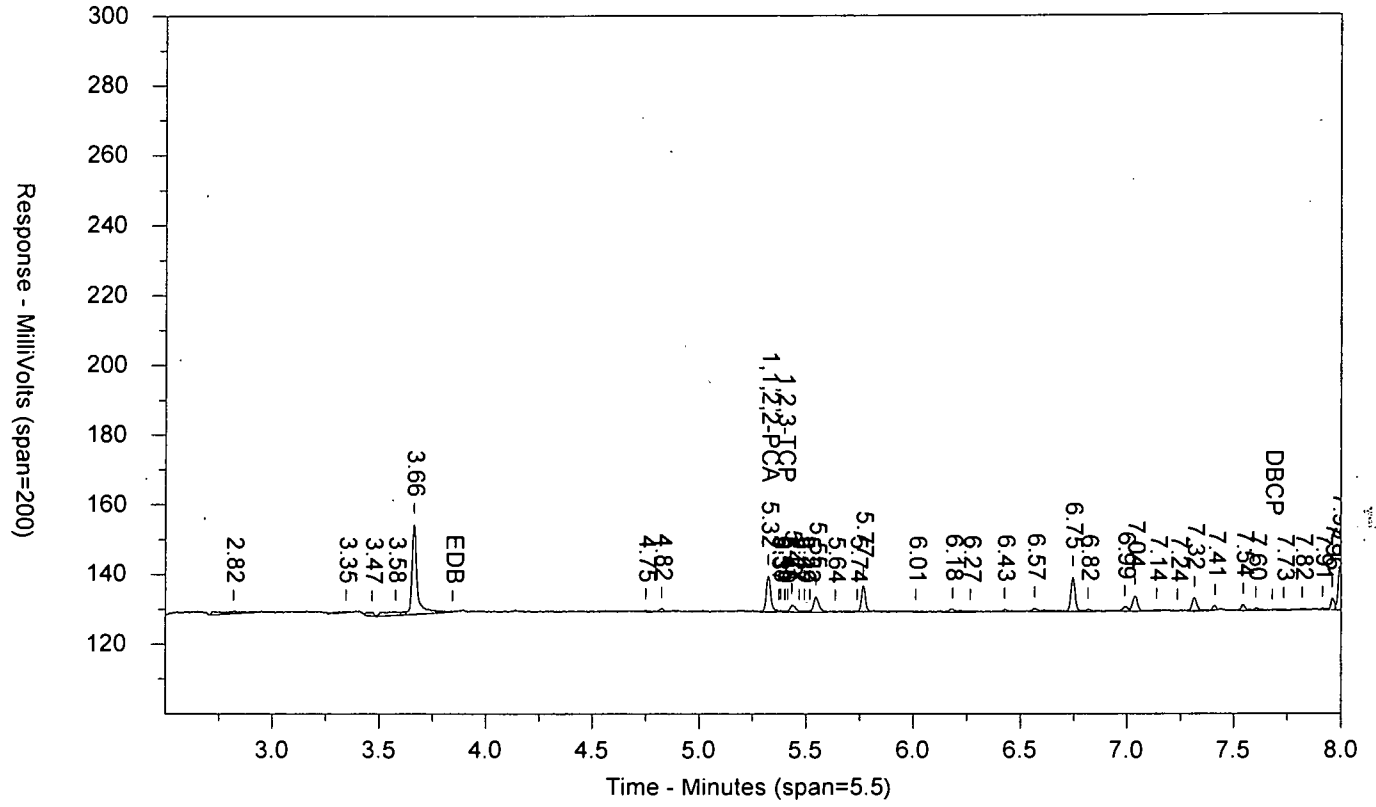
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

BLANKA 7/25/17 AAPBLK30202 BLK 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.047.RAW

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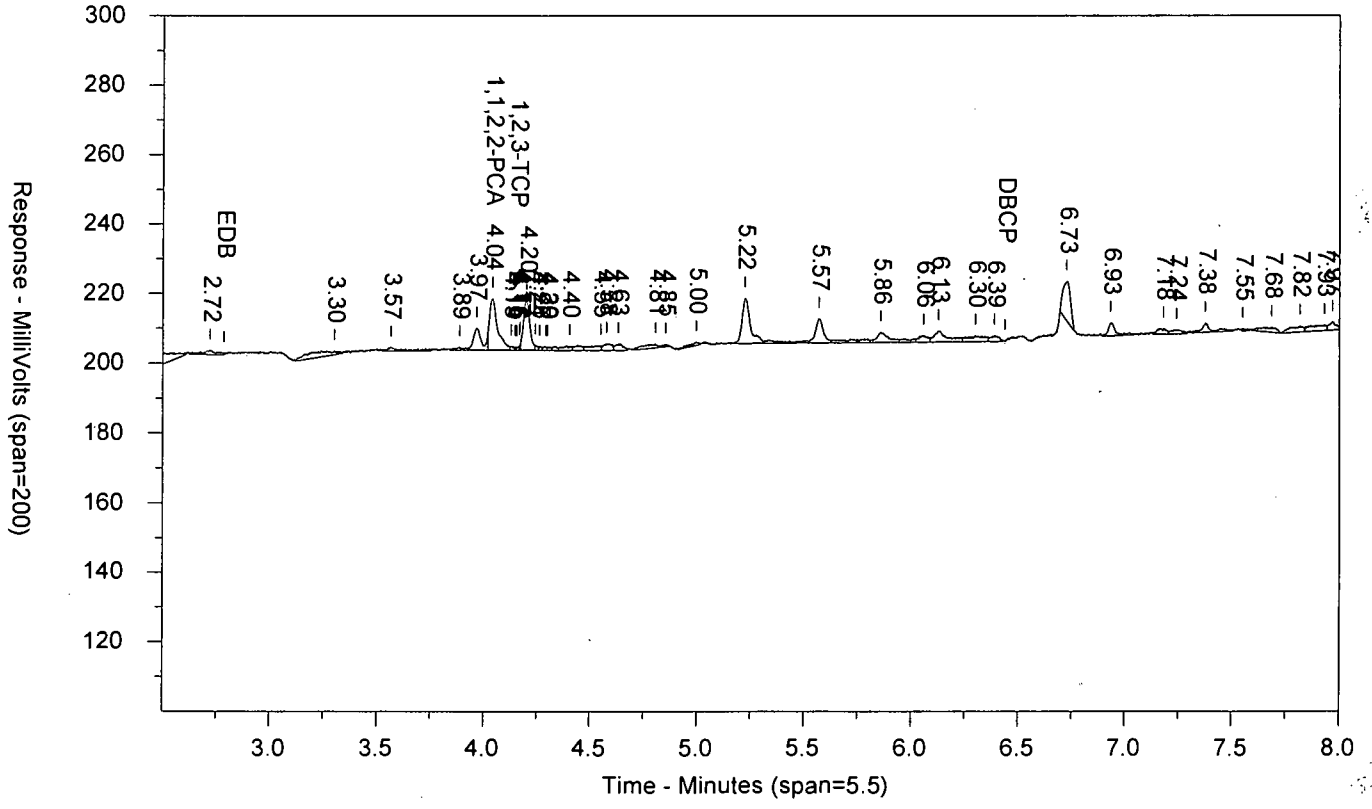

LANCASTER LABORATORIES

Sample Number: BLANKA 7/25/17 AAPBLK30202 BLK 172020030A 10398 SW-846 8011
Injected On: 7/25/2017 11:47:05 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 10423 | .048 | 1,1,2,2-PCA | 4.042 | 14937 | .053 | 1,1,2,2-PCA |
| 5.399 | 413 | -.065 | 1,2,3-TCP | 4.157 | 984 | -.063 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.047.RAW
Area File: 18EDBS17205002B.047.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 11:55:40 PM
File Reported On: 7/26/2017 at 10:11:30 AM

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# Data Summary

**Sample Name: 9109784** 18808DUP DUP Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.56 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 01:54:28 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.055.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 98% ( 46 - 136 ) Conc: 0.065929

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 01:54:28 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.055.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 112% ( 46 - 136 ) Conc: 0.075209

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14861 | 0.065929 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21580 | 0.075209 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1115 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.065929 | 0.0034 | 0.0067 | 0.0067 | | 13.15 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.2585 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:57

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9109784** 18808DUP Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.56 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 01:54:28
Instrument : CP18--19846A
Result file : 18EDBS17205002.055.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 98% (46-136) Conc.: 0.065929

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14861 | 0.065929 |

## Analysis Report (B)

Injected on : Jul 26, 2017 01:54:28
Instrument : CP18--19846B
Result file : 18EDBS17205002B.055.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 112% (46-136) Conc.: 0.075209

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21580 | 0.075209 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1115 | -0.056230 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065929 | | | | 13.15 | |
| ☐ 1,2,3-TCP | | | <0.2585 | <0.0957 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

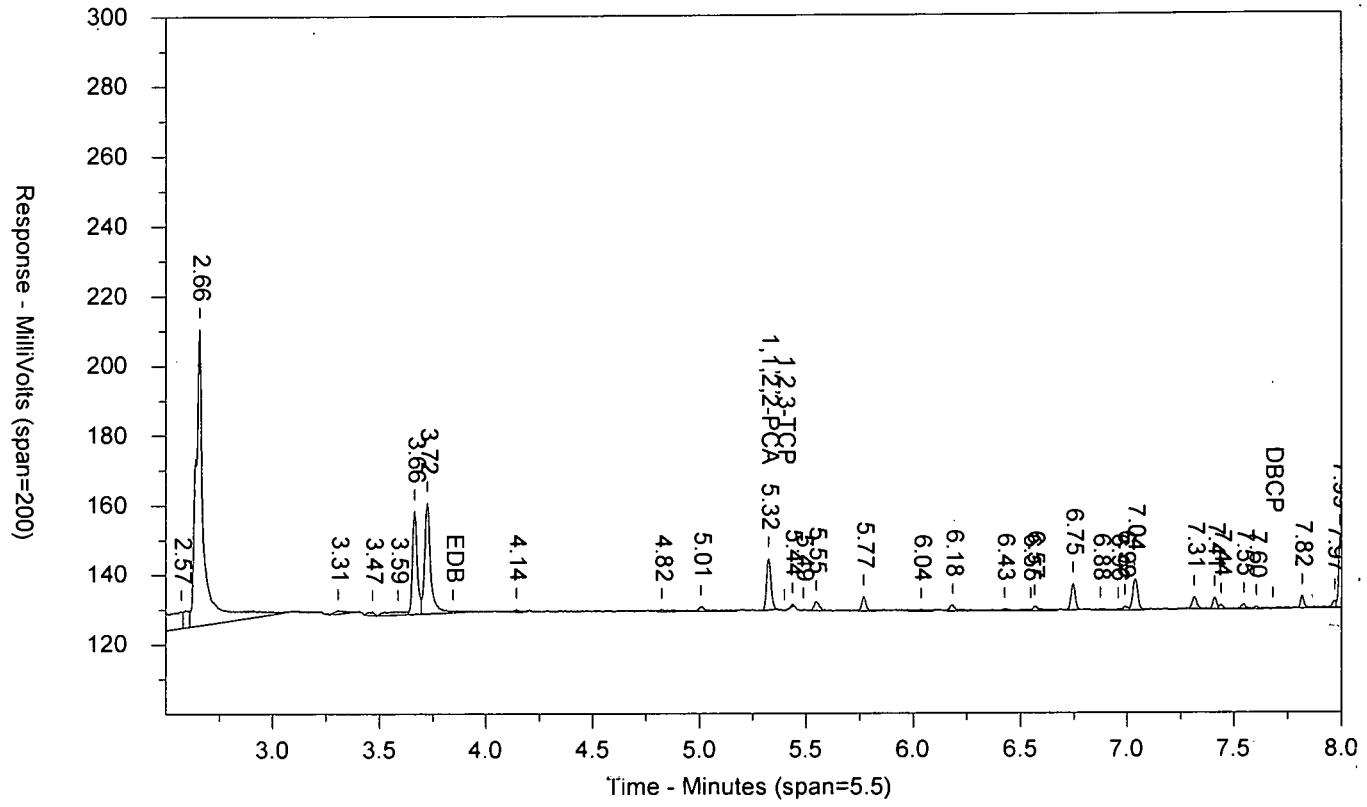
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109784 AA18808DUP DUP 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.055.RAW

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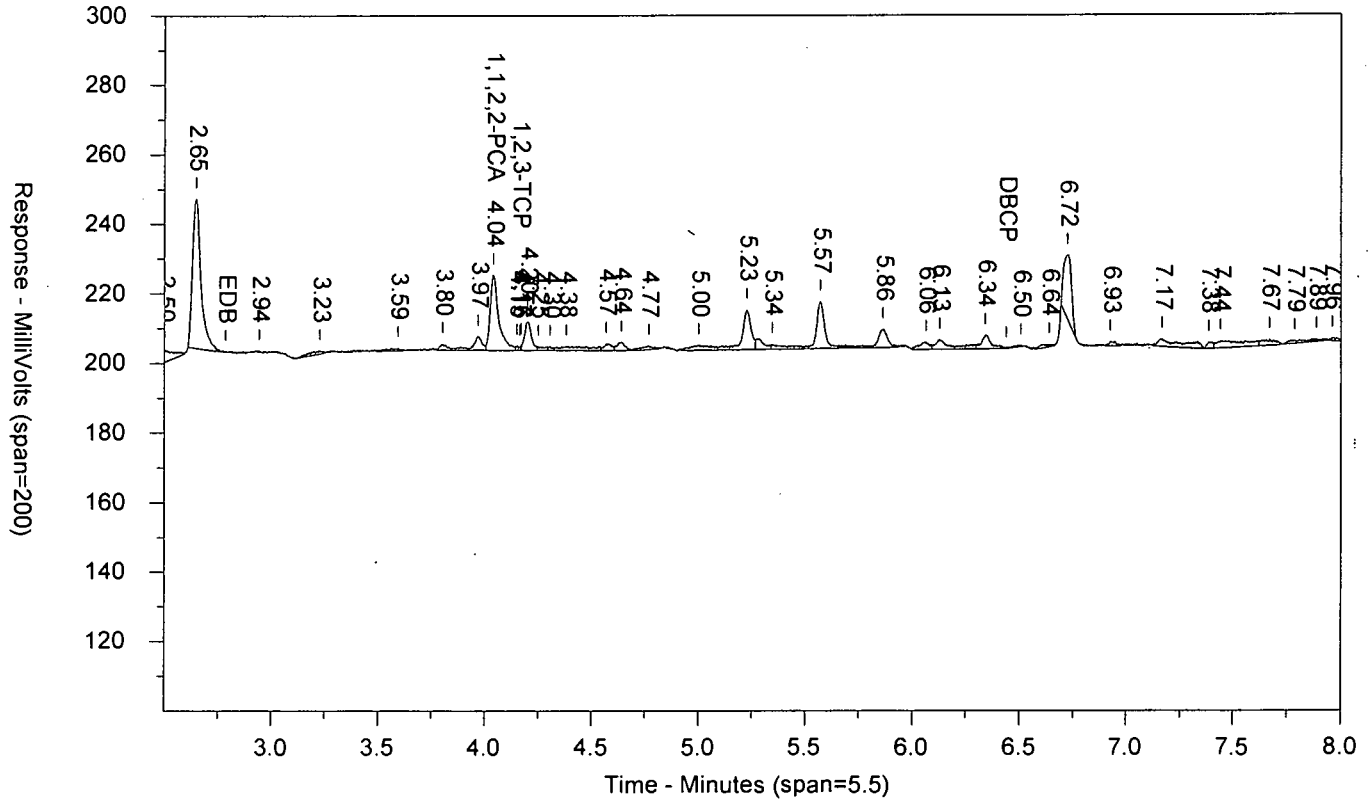

LANCASTER LABORATORIES

Sample Number: 9109784 AA18808DUP DUP 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 1:54:28 AM Sample Weight: 36.56
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14861 | .066 | 1,1,2,2-PCA | 4.041 | 21580 | .075 | 1,1,2,2-PCA |
| | 0 | | 1,2,3-TCP | 4.162 | 1115 | -.056 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.055.RAW
Area File: 18EDBS17205002B.055.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 2:03:03 AM
File Reported On: 7/26/2017 at 10:13:39 AM

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# Data Summary

**Sample Name: 9109781** MS 18805MS MS Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.56 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:50:47 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.051.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.071259

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:50:47 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.051.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 116% ( 46 - 136 ) Conc: 0.078393

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 26630 | 0.154429 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 16063 | 0.071259 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 37211 | 1.340695 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 61491 | 0.150517 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 37288 | 0.152415 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 22439 | 0.078393 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 50727 | 1.401313 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 71881 | 0.181957 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.154429 | 0.0096 | 0.0191 | 0.0287 | | 1.31 | |
| 1,1,2,2-TETRACHLOROE | A | 0.071259 | 0.0034 | 0.0067 | 0.0067 | | 9.53 | |
| 1,2,3-Trichloropropane | A | 1.340695 | | | 0.2585 | | 4.42 | |
| 1,2-Dibromo-3-chloroprop | A | 0.150517 | 0.0096 | 0.0191 | 0.0287 | | 18.91 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:46

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9109781** MS 18805MS Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.56 mL Total Volume: 2 ml Analyst: 7848 SDG: KR188 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 00:50:47
Instrument : CP18--19846A
Result file : 18EDBS17205002.051.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.071259

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 26630 | 0.154429 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 16063 | 0.071259 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 37211 | 1.340695 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 61491 | 0.150517 |

## Analysis Report (B)

Injected on : Jul 26, 2017 00:50:47
Instrument : CP18--19846B
Result file : 18EDBS17205002B.051.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 116% (46-136) Conc.: 0.078393

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 37288 | 0.152415 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 22439 | 0.078393 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 50727 | 1.401313 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 71881 | 0.181957 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.154429 | 0.0287 | 0.0096 | | 1.31 | |
| ☐ 1,1,2,2-PCA | A | 0.071259 | | | | 9.53 | |
| ☐ 1,2,3-TCP | A | 1.340695 | 0.2585 | 0.0957 | | 4.42 | |
| ☐ DBCP | A | 0.150517 | 0.0287 | 0.0096 | | 18.91 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

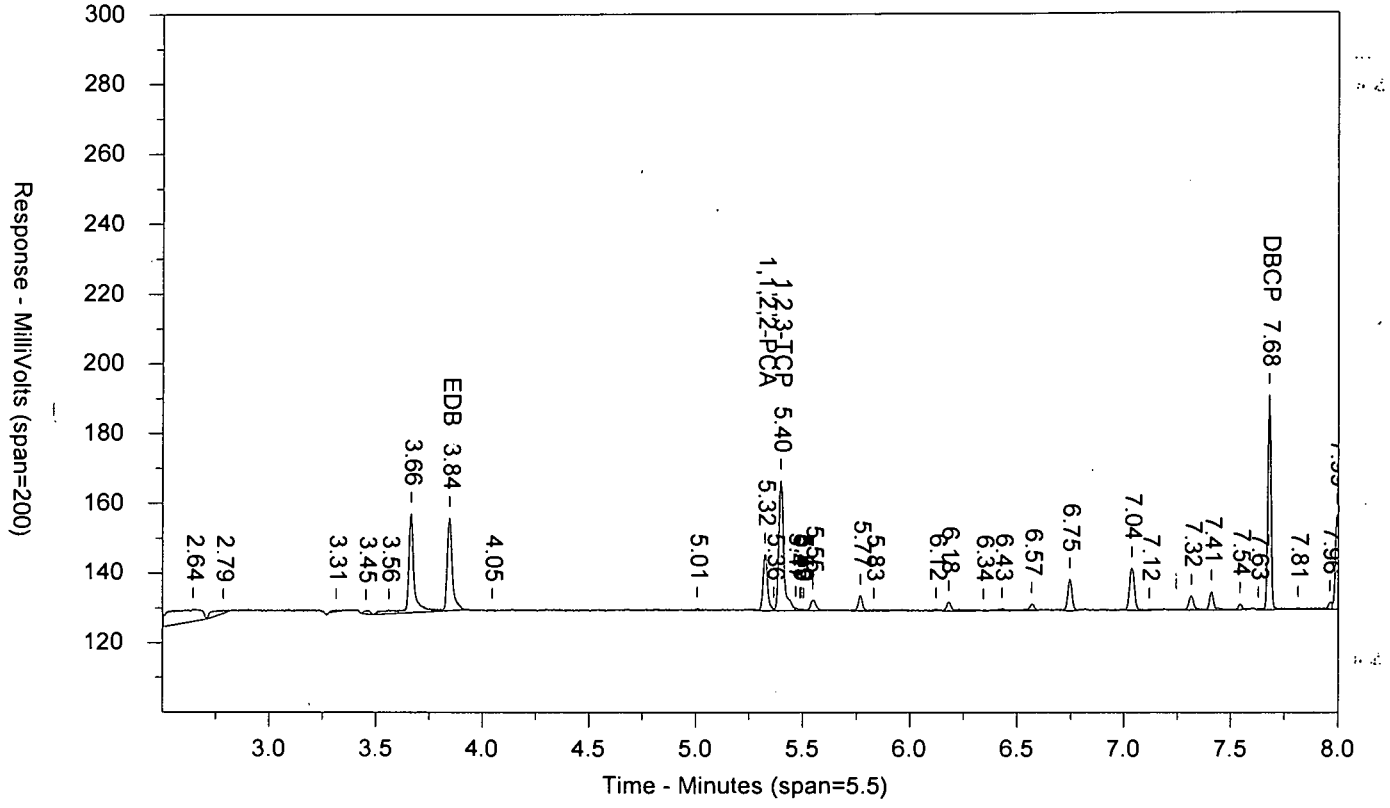
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9109781MS AA18805MS MS 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.051.RAW

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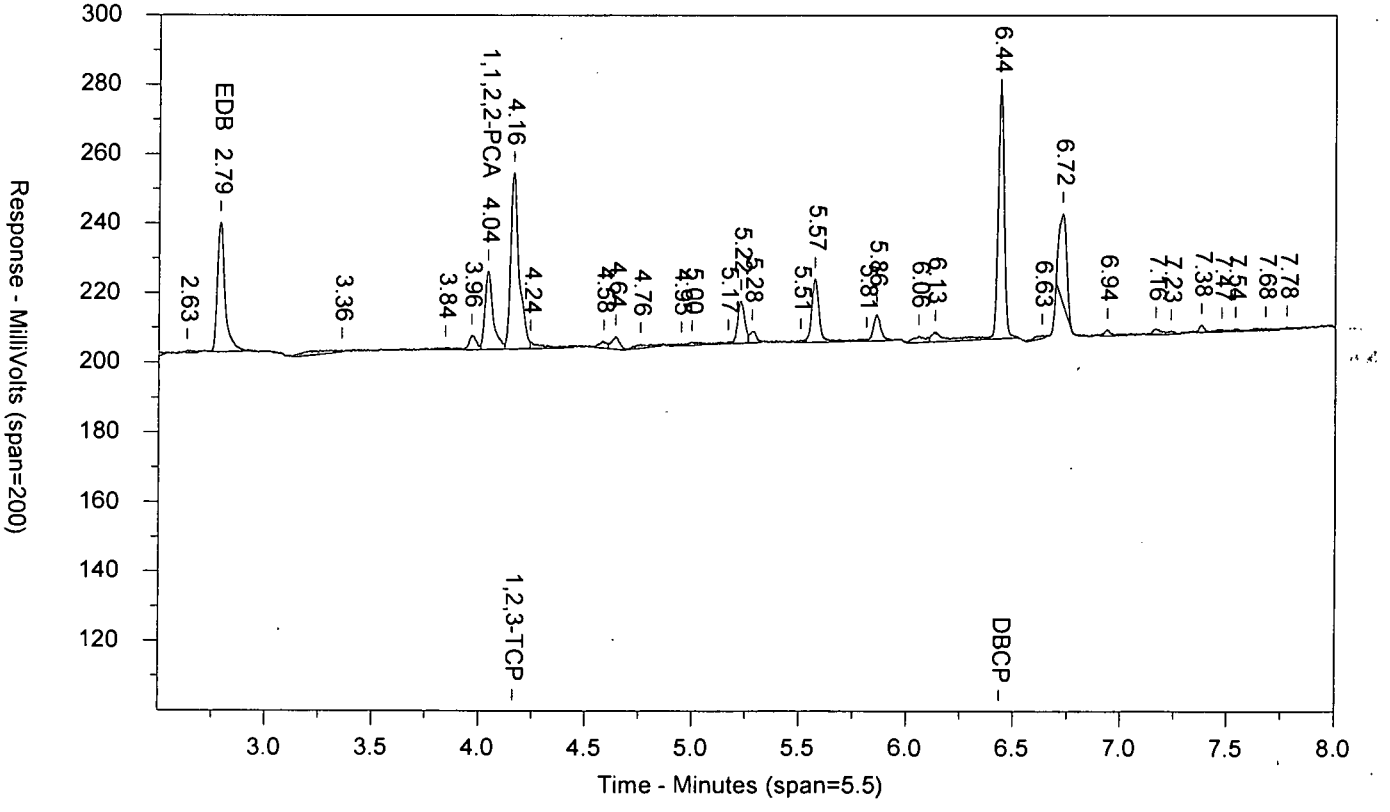


LANCASTER LABORATORIES

Sample Number: 9109781MS AA18805MS MS 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 12:50:47 AM Sample Weight: 36.56
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 26630 | .154 | EDB | 2.787 | 37288 | .152 | EDB |
| 5.324 | 16063 | .071 | 1,1,2,2-PCA | 4.04 | 22439 | .078 | 1,1,2,2-PCA |
| 5.397 | 37211 | 1.341 | 1,2,3-TCP | 4.16 | 50727 | 1.401 | 1,2,3-TCP |
| 7.679 | 61491 | .151 | DBCP | 6.436 | 71881 | .182 | DBCP |

Files:
Area File: 18EDBS17205002.051.RAW
Area File: 18EDBS17205002B.051.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 12:59:22 AM
File Reported On: 7/26/2017 at 10:12:35 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSA** 7/25/17 LCS30202 LCS Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:03:07 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.048.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.052476

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:03:07 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.048.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.05927

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 23709 | 0.141989 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 11324 | 0.052476 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 31924 | 1.18993 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 50662 | 0.129537 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 33257 | 0.140466 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 16596 | 0.05927 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 44705 | 1.278972 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 60798 | 0.158425 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | A | 0.141989 | 0.01 | 0.02 | 0.03 | | 1.08 | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.052476 | 0.0035 | 0.007 | 0.007 | | 12.16 | |
| ☐ 1,2,3-Trichloropropane | A | 1.18993 | | | 0.27 | | 7.21 | |
| ☐ 1,2-Dibromo-3-chloroprop | A | 0.129537 | 0.01 | 0.02 | 0.03 | | 20.06 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:37

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/25/17 LCS30202 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 00:03:07
Instrument : CP18--19846A
Result file : 18EDBS17205002.048.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.052476

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 23709 | 0.141989 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 11324 | 0.052476 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 31924 | 1.189930 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 50662 | 0.129537 |

## Analysis Report (B)

Injected on : Jul 26, 2017 00:03:07
Instrument : CP18--19846B
Result file : 18EDBS17205002B.048.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.05927

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 33257 | 0.140466 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 16596 | 0.059270 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 44705 | 1.278972 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 60798 | 0.158425 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.141989 | 0.03 | 0.01 | | 1.08 | |
| ☐ 1,1,2,2-PCA | A | 0.052476 | | | | 12.16 | |
| ☑ 1,2,3-TCP | A | 1.189930 | 0.27 | 0.1 | | 7.21 | |
| ☑ DBCP | A | 0.129537 | 0.03 | 0.01 | | 20.06 | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 26 2017

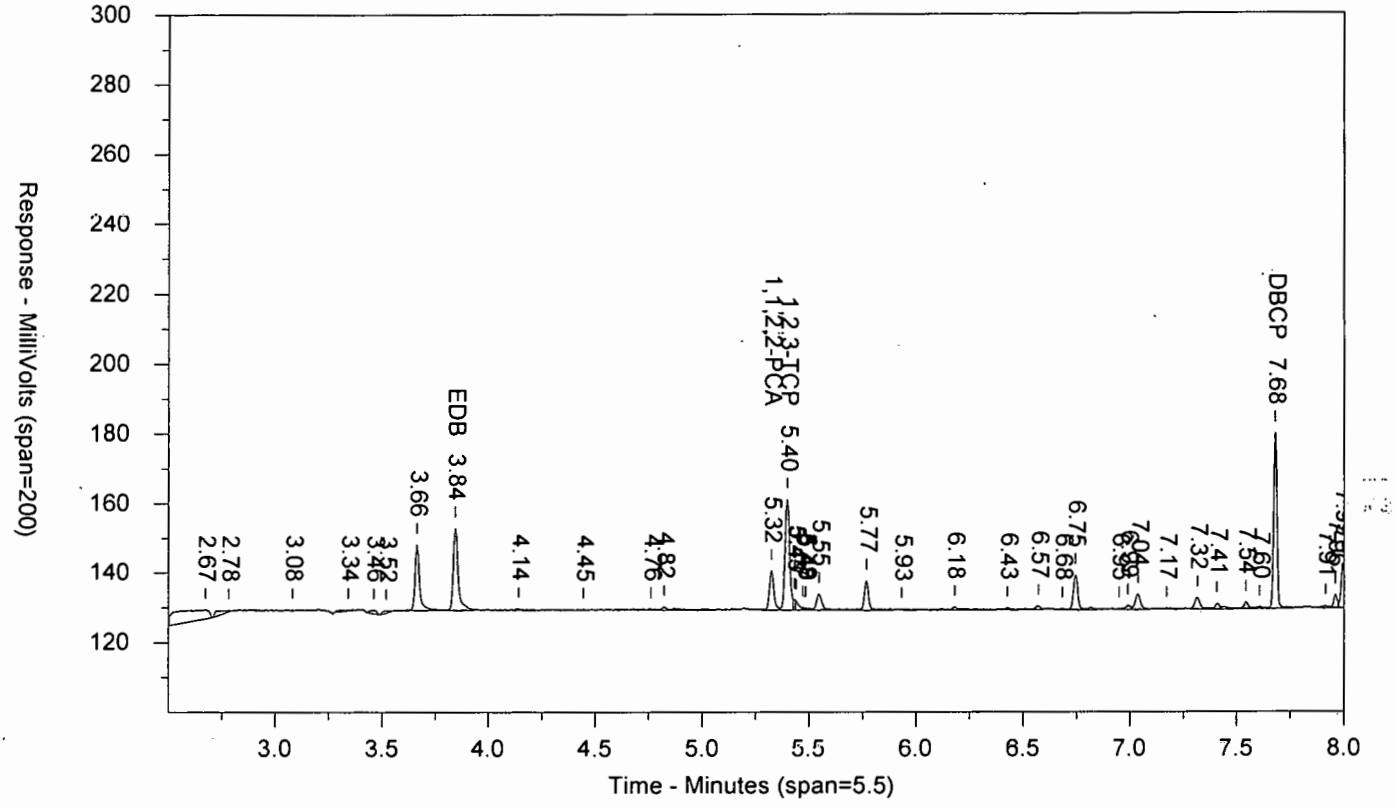
Verified by: Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSA 7/25/17 AALCS30202 LCS 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.048.RAW

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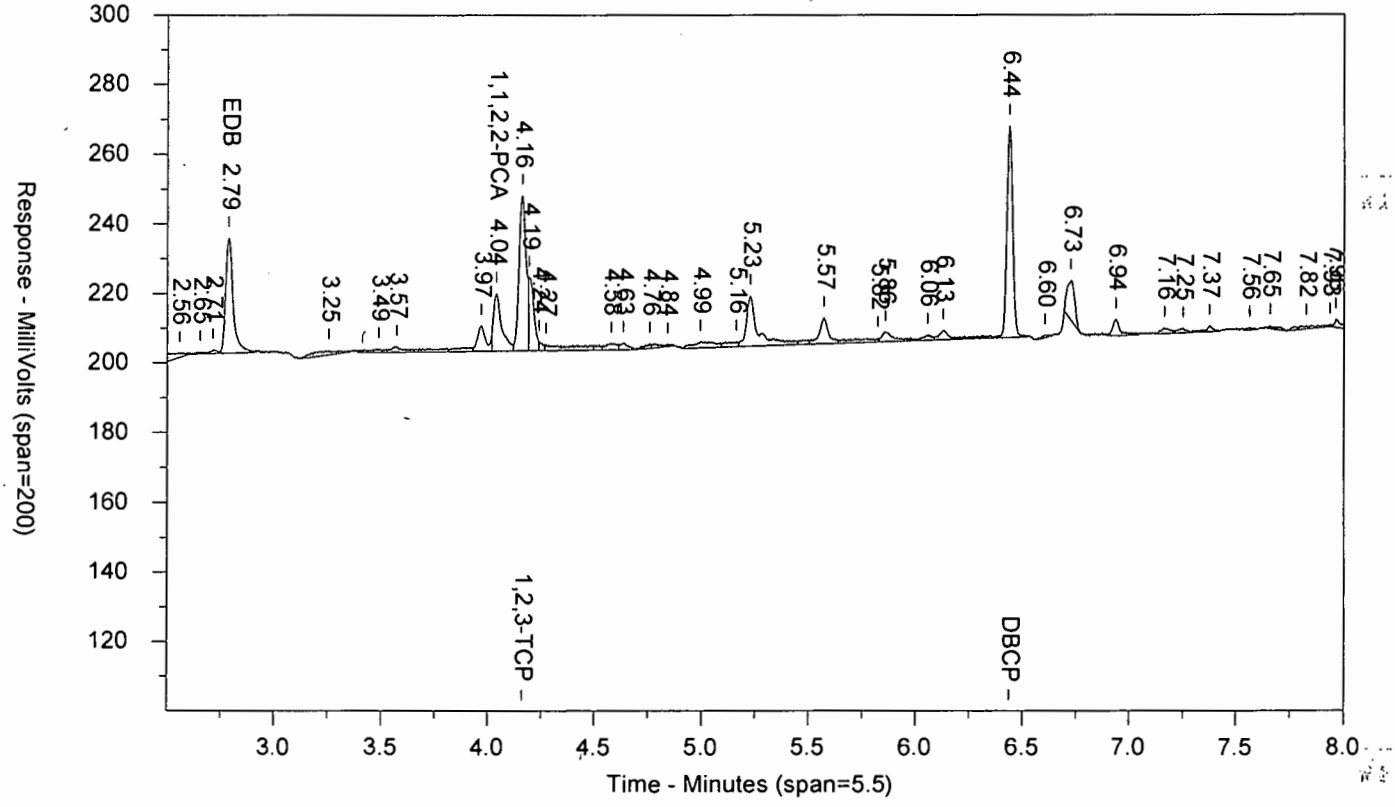

LANCASTER LABORATORIES

Sample Number: LCSA 7/25/17 AALCS30202 LCS 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 12:03:07 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 23709 | .142 | EDB | 2.787 | 33257 | .14 | EDB |
| 5.324 | 11324 | .052 | 1,1,2,2-PCA | 4.041 | 16596 | .059 | 1,1,2,2-PCA |
| 5.397 | 31924 | 1.19 | 1,2,3-TCP | 4.16 | 44705 | 1.279 | 1,2,3-TCP |
| 7.678 | 50662 | .13 | DBCP | 6.437 | 60798 | .158 | DBCP |

Files:
Area File: 18EDBS17205002.048.RAW
Area File: 18EDBS17205002B.048.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 12:11:38 AM
File Reported On: 7/26/2017 at 10:11:46 AM

# Data Summary

**Sample Name: LCSDA** 7/25/17 LCSD30202 LCSD Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:19:02 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.049.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 71% ( 46 - 136 ) Conc: 0.050252

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:19:02 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.049.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 76% ( 46 - 136 ) Conc: 0.053853

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 23139 | 0.138217 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10844 | 0.050252 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 32455 | 1.211081 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 50118 | 0.128145 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 32372 | 0.136347 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15197 | 0.053853 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 43626 | 1.245853 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 60681 | 0.158091 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.138217 | 0.01 | 0.02 | 0.03 | | 1.36 | |
| 1,1,2,2-TETRACHLOROE | A | 0.050252 | 0.0035 | 0.007 | 0.007 | | 6.92 | |
| 1,2,3-Trichloropropane | A | 1.211081 | | | 0.27 | | 2.83 | |
| 1,2-Dibromo-3-chloroprop | A | 0.128145 | 0.01 | 0.02 | 0.03 | | 20.92 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:40

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/25/17 LCSD30202 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 00:19:02
Instrument : CP18--19846A
Result file : 18EDBS17205002.049.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 71% (46-136) Conc.: 0.050252

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 23139 | 0.138217 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10844 | 0.050252 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 32455 | 1.211081 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 50118 | 0.128145 |

## Analysis Report (B)

Injected on : Jul 26, 2017 00:19:02
Instrument : CP18--19846B
Result file : 18EDBS17205002B.049.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 76% (46-136) Conc.: 0.053853

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 32372 | 0.136347 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 15197 | 0.053853 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 43626 | 1.245853 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 60681 | 0.158091 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.138217 | 0.03 | 0.01 | | 1.36 | |
| ☐ 1,1,2,2-PCA | A | 0.050252 | | | | 6.92 | |
| ☑ 1,2,3-TCP | A | 1.211081 | 0.27 | 0.1 | | 2.83 | |
| ☑ DBCP | A | 0.128145 | 0.03 | 0.01 | | 20.92 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSDA 7/25/17 AALCSD30202 LCSD 172020030A 10398 SW-846 8011

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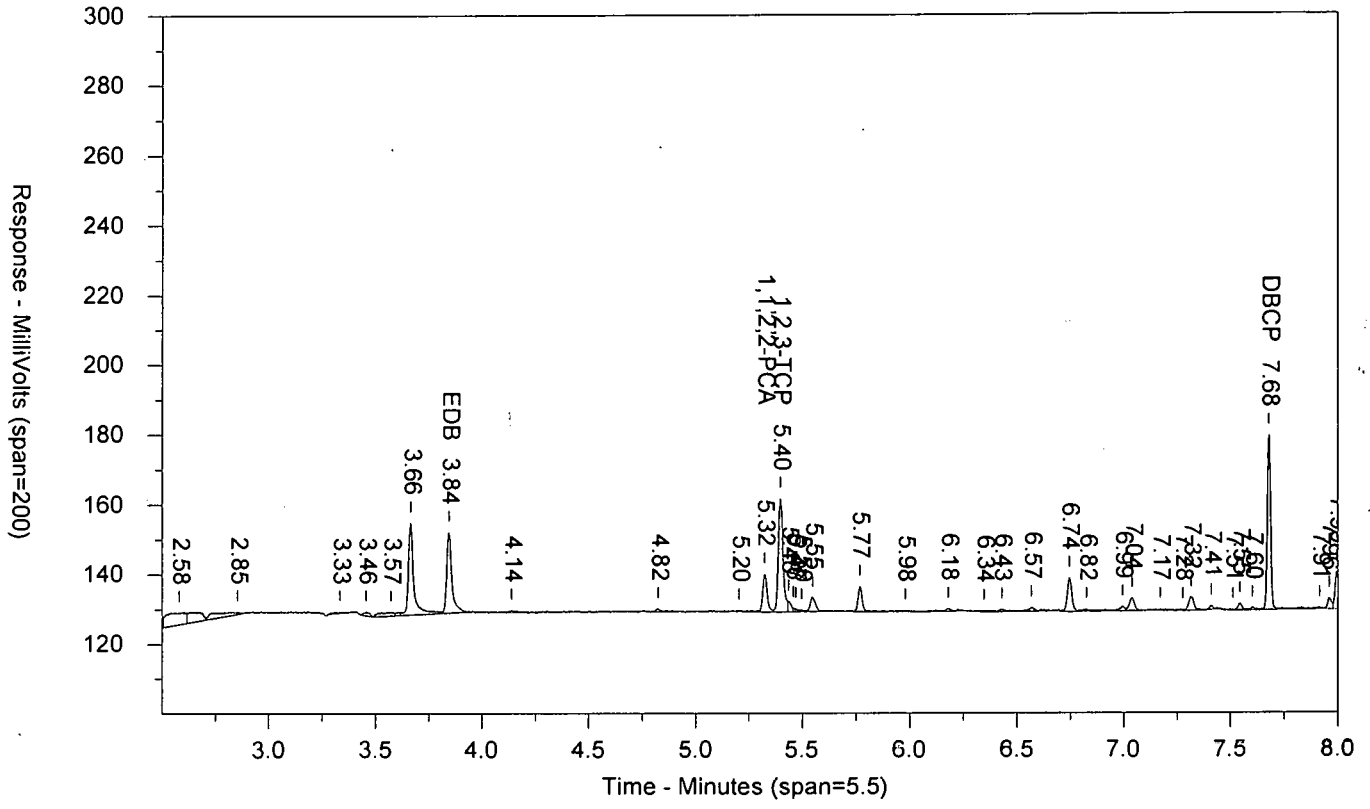


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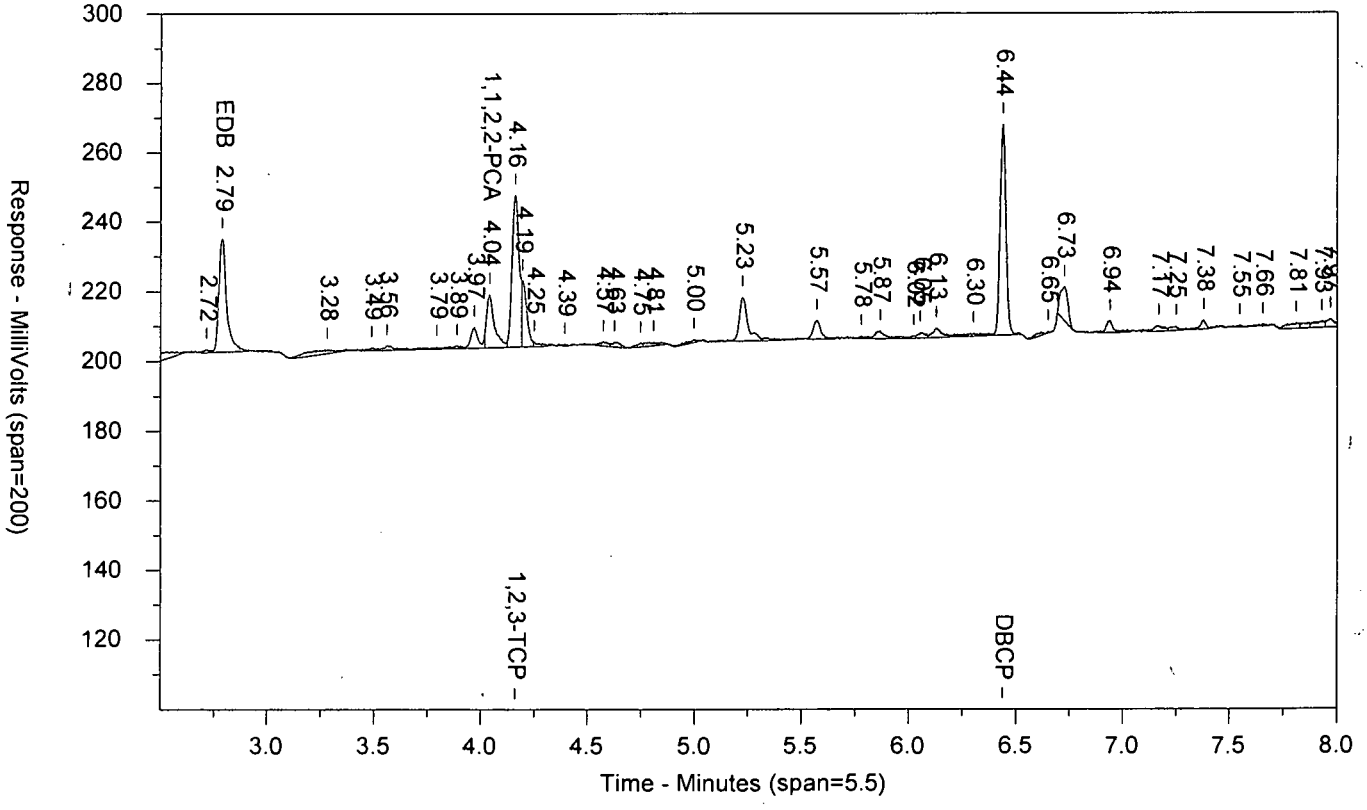

LANCASTER LABORATORIES

Sample Number: LCSDA 7/25/17 AALCSD30202 LCSD 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 12:19:02 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 23139 | .138 | EDB | 2.788 | 32372 | .136 | EDB |
| 5.324 | 10844 | .05 | 1,1,2,2-PCA | 4.042 | 15197 | .054 | 1,1,2,2-PCA |
| 5.397 | 32455 | 1.211 | 1,2,3-TCP | 4.161 | 43626 | 1.246 | 1,2,3-TCP |
| 7.679 | 50118 | .128 | DBCP | 6.438 | 60681 | .158 | DBCP |

Files:
Area File: 18EDBS17205002.049.RAW
Area File: 18EDBS17205002B.049.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 12:27:33 AM
File Reported On: 7/26/2017 at 10:12:00 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 1236 Samantha Metzgar Reviewed by: HMM7/26 Start Date: 07/21/2017 Start Time: 09:00

**· 172010025A**

Tech 1: SM 12362 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9109772MS | 18801 | 37.02 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| 9109773MSD | 18801 | 36.96 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | 057a | CLEAR |
| BLANKA | PBLK25201 | 35 | SS1718724B | .1 | — | — | 2 | N | 2 | — | DIH2O |
| LCSA | LCS25201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | — | DIH2O |
| LCSDA | LCSD25201 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | 2 | — | DIH2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391 |
| Vial Preservative Lot# | 2391F |
| | |

Spike Solutions: Witness: N/A

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9095972BKG | 18417 | 36.92 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/21/2017 | N |
| 2 9100482 | 18604 | 36.62 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 3 9100483 | 18605 | 36.75 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 4 9100485 | 18607 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 5 9100487 | 18609 | 36.74 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 6 9100489 | 18611 | 36.84 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 7 9100491 | 18613 | 36.71 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 8 9100492 | 18614 | 36.63 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 9 9100493 | 18615 | 36.82 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 10 9100494 | 18616 | 36.81 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 11 9100495 | 18617 | 36.76 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 12 9100496 | 18618 | 36.83 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/25/2017 | N |
| 13 9107402 | 18701 | 36.62 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 14 9107403 | 18702 | 36.65 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 15 9107404 | 18703 | 37.04 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 16 9107405 | 18704 | 37.01 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 17 9107406 | 18705 | 36.48 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 18 9107407 | 18706 | 36.73 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/28/2017 | N |
| 19 9109771BKG | 18801 | 36.85 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/31/2017 | N |
| 20 9109779 | 18803 | 36.35 | SS1718724B | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 07/31/2017 | N |

KR188_Page 656 of 985

| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172010025A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

**Organic Extraction Batchlog** Assigned to: 898 Olivia Arosemena Reviewed by: 898 Start Date: 07/25/2017 Start Time: 10:30

**172020030A**

Tech 1: _____ Tech 2: _____

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9109781MS | 18805MS | 36.56 | SS1718724B | .1 | MS1718124B | .07 | 2 | ZN | 8 Z<2 | 057a | clear;slightly dirty |
| 9109784DUP | 18808DUP | 36.56 | SS1718724B | .1 | | | 2 | ZN | Z<2 | 057a | clear;slightly dirty |
| BLANKA | PBLK30202 | 35 | SS1718724B | .1 | | | 2 | Z | Z | | DI H2O |
| LCSA | LCS30202 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | Z | Z | | DI H2O |
| LCSDA | LCSD30202 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | Z | Z | | DI H2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391F |
| Vial Preservative Lot# | 2391 |
| | |

(8) 898 7-25-17 Notchlorine For Sample <2 pH for all Samples

Spike Solutions: Witness: _____

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9109781 | 18805 | 36.33 | SS1718724B | 0.10 | 2.00 | 8 Z N | 8 Z <2 | 057b | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 2 9109782 | 18806 | 36.59 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty; | 10398 | 17641 | 07/31/2017 | N |
| 3 9109783 | 18807 | 36.29 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 4 9109784 | 18808 | 36.59 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057b | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 5 9109785 | 18809 | 36.33 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty; | 10398 | 17641 | 07/31/2017 | N |
| 6 9109786 | 18810 | 36.25 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 7 9109787 | 18811 | 36.51 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 8 9109788 | 18812 | 36.45 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 9 9112123 | 18901 | 36.51 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |
| 10 9112125 | 18903 | 36.53 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |
| 11 9112126 | 18904 | 36.87 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |
| 12 9112127 | 18905 | 36.86 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |
| 13 9112128 | 18906 | 36.30 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |

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| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172020030A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

# Metals in Liquid Data

# Case Narrative/Conformance Summary

# Metals in Liquid

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## ICP Metals

**Fraction: Metals in Liquid**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9109771 | GW005-173 | X | | 1 | Background/Unspiked |
| 9109772 | GW005-173 MS | X | | 1 | Matrix Spike |
| 9109773 | GW005-173 MSD | X | | 1 | Matrix Spike Duplicate |
| 9109774 | GW005-173 DUP | X | | 1 | Duplicate |
| 9109775 | GW005-173 | X | | 1 | Background/ |
| 9109776 | GW005-173 MS | X | | 1 | Matrix Spike |
| 9109777 | GW005-173 MSD | X | | 1 | Matrix Spike Duplicate |
| 9109778 | GW005-173 DUP | X | | 1 | Duplicate |
| 9109779 | GW005-573 | X | | 1 | |
| 9109780 | GW005-573 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**Method Blank**

For noncompliant preparation/method blanks, corrective action is not required if the sample is ND or > 10 times the blank concentration, unless otherwise specified in the method or by the client.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## ICP Metals

**Fraction: Metals in Liquid**

**MS/MSD**

Method defined actions are taken for any failed matrix QC.

Batch#: 172001063502 (Sample number(s): 9109775-9109778, 9109780, UNSPK: 9109775, BKG: 9109775)
The recovery(ies) for the following analyte(s) in the MS and MSD were below the acceptance window: Manganese

Batch#: 172001063501 (Sample number(s): 9109771-9109774, 9109779, UNSPK: 9109771, BKG: 9109771)
The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Magnesium, Sodium
The recovery(ies) for the following analyte(s) in the MS and MSD were below the acceptance window: Calcium

## SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

**Abbreviation Key**

| | |
|---|---|
| BKG – Background | AF - Cold Vapor Atomic Fluorescence |
| DUP – Duplicate | U - Below MDL |
| MS - Matrix Spike | B - Below LOQ |
| MSD - Matrix Spike Dup | N - Matrix Spike out of specifications |
| B – Blank | * - Duplicate out of specifications |
| Q - Laboratory Control Sample | E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution |
| Y - Laboratory Control Sample Duplicate | A - Post Digestion Spike |
| P - ICP Atomic Emission Spectrometer | L - Serial Dilution |
| MS - ICP Mass Spectrometry | R - Internal Standard Relative Intensity OOS |
| CV - Cold Vapor | NR - Not Required |

# Sample Data

# Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109771BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7440-70-2 | Calcium | 255000 | | | P |
| 7439-92-1 | Lead | 0.17 | B | | MS |
| 7439-95-4 | Magnesium | 41700 | | | P |
| 7440-09-7 | Potassium | 5780 | | | P |
| 7440-23-5 | Sodium | 86800 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109772MS % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 10.7 | | | MS |
| 7440-70-2 | Calcium | 254000 | | | P |
| 7439-92-1 | Lead | 15.2 | | | MS |
| 7439-95-4 | Magnesium | 43000 | | | P |
| 7440-09-7 | Potassium | 16600 | | | P |
| 7440-23-5 | Sodium | 95100 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109773MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 11.0 | | | MS |
| 7440-70-2 | Calcium | 257000 | | | P |
| 7439-92-1 | Lead | 15.4 | | | MS |
| 7439-95-4 | Magnesium | 43500 | | | P |
| 7440-09-7 | Potassium | 16600 | | | P |
| 7440-23-5 | Sodium | 95800 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109774DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7440-70-2 | Calcium | 256000 | | | P |
| 7439-92-1 | Lead | 0.15 | B | | MS |
| 7439-95-4 | Magnesium | 41600 | | | P |
| 7440-09-7 | Potassium | 5780 | | | P |
| 7440-23-5 | Sodium | 87000 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109775BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 153 | B | | P |
| 7439-96-5 | Manganese | 228 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109776MS % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 1190 | | | P |
| 7439-96-5 | Manganese | 660 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109777MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 1200 | | | P |
| 7439-96-5 | Manganese | 658 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109778DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 148 | B | | P |
| 7439-96-5 | Manganese | 221 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109779 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.74 | B | | MS |
| 7440-70-2 | Calcium | 258000 | | | P |
| 7439-92-1 | Lead | 0.14 | B | | MS |
| 7439-95-4 | Magnesium | 42500 | | | P |
| 7440-09-7 | Potassium | 6060 | | | P |
| 7440-23-5 | Sodium | 87600 | | | P |

Comments:

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_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9109780 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/19/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 163 | B | | P |
| 7439-96-5 | Manganese | 213 | | | P |

Comments:

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_____
_____
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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

# Quality Control and Calibration Summary Forms

# Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR188
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Calcium | 172001063501 | 9109771BKG |
| Magnesium | | 9109772MS |
| Potassium | | 9109773MSD |
| Sodium | | 9109774DUP |
| | | 9109779 |
| | | P20063AB |
| | | P20063AQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR188
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Iron | 172001063502 | 9109775BKG |
| Manganese | | 9109776MS |
| | | 9109777MSD |
| | | 9109778DUP |
| | | 9109780 |
| | | P20063BB |
| | | P20063BQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR188
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Arsenic | 172001063902 | 9109771BKG |
| Lead | | 9109772MS |
| | | 9109773MSD |
| | | 9109774DUP |
| | | 9109779 |
| | | P20063BB |
| | | P20063BQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR188

Method: P
Run Name: 1720206T73
Calibration Date(s): 07/21/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | | | | | | | | |
| Iron | | | | | | | | | | |
| Magnesium | | | | | | | | | | |
| Manganese | | 600.0 | 605.43 | 100.9 | 500.0 | 497.43 | 99.5 | 500.0 | 462.07 | 92.4 |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR188

Method: P
Run Name: 1720206T71
Calibration Date(s): 07/21/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Calcium | | 30000.0 | 30202.64 | 100.7 | 25000.0 | 25400.91 | 101.6 | 25000.0 | 25012.16 | 100.0 |
| Iron | | | | | | | | | | |
| Magnesium | | 30000.0 | 29949.60 | 99.8 | 25000.0 | 25303.08 | 101.2 | 25000.0 | 25200.38 | 100.8 |
| Manganese | | | | | | | | | | |
| Potassium | | 30000.0 | 30249.74 | 100.8 | 25000.0 | 25572.03 | 102.3 | 25000.0 | 25833.43 | 103.3 |
| Sodium | | 30000.0 | 29597.66 | 98.7 | 25000.0 | 25649.49 | 102.6 | 25000.0 | 25345.92 | 101.4 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR188

Method: P
Run Name: 1720209T71
Calibration Date(s): 07/21/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | | | | | | | | |
| Iron | | 30000.0 | 29499.23 | 98.3 | 25000.0 | 24584.03 | 98.3 | 25000.0 | 24674.90 | 98.7 |
| Magnesium | | | | | | | | | | |
| Manganese | | | | | | | | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR188

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Arsenic | 75 | 500.0 | 509.20 | 101.8 | 250.0 | 263.50 | 105.4 | 250.0 | 253.60 | 101.4 |
| Lead | 208 | 50.0 | 50.78 | 101.6 | 25.0 | 25.65 | 102.6 | 25.0 | 25.11 | 100.4 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR188

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | | | 250.0 | 252.10 | 100.8 | 250.0 | 252.50 | 101.0 |
| Lead | 208 | | | | 25.0 | 24.94 | 99.8 | 25.0 | 25.12 | 100.5 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR188

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | | | 250.0 | 256.50 | 102.6 | | | |
| Lead | 208 | | | | 25.0 | 24.92 | 99.7 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR188

Method: P
Run Name: 1720206T73
Calibration Date(s): 07/21/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | | | | | |
| Iron | | | | | | |
| Magnesium | | | | | | |
| Manganese | | 10.0 | 10.99 | 109.9 | | |
| Potassium | | | | | | |
| Sodium | | | | | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR188

Method: P
Run Name: 1720206T71
Calibration Date(s): 07/21/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | 400.0 | 407.17 | 101.8 | | |
| Iron | | | | | | |
| Magnesium | | 200.0 | 203.73 | 101.9 | | |
| Manganese | | | | | | |
| Potassium | | 1000.0 | 1174.90 | 117.5 | | |
| Sodium | | 2000.0 | 2205.42 | 110.3 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR188

Method: P
Run Name: 1720209T71
Calibration Date(s): 07/21/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | | | | | |
| Iron | | 400.0 | 408.39 | 102.1 | | |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Potassium | | | | | | |
| Sodium | | | | | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR188

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Concentration Units: UG/L

| Analyte | Mass | True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Arsenic | 75 | 4.0 | 4.05 | 101.3 | 3.65 | 91.3 |
| Lead | 208 | 2.0 | 1.99 | 99.5 | 1.99 | 99.5 |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR188

Method: P
Run Name: 1720206T73
Calibration Date(s): 07/21/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | | | | | | | | | | | | |
| Iron | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | | | | |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | | | | 1.600 | U | 172001063502 |
| Potassium | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence | U= Below IDL/MDL<br>B= Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR188

Method: P
Run Name: 1720206T71
Calibration Date(s): 07/21/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | 33.4 | U | 33.4 | U | 33.4 | U | | | | 60.000 | U | 172001063501 |
| Iron | | | | | | | | | | | | | |
| Magnesium | | 16.7 | U | 16.7 | U | 16.7 | U | | | | 66.020 | B | 172001063501 |
| Manganese | | | | | | | | | | | | | |
| Potassium | | 127 | U | 127 | U | 127 | U | | | | 179.000 | U | 172001063501 |
| Sodium | | 167 | U | 167 | U | 192 | B | | | | 321.000 | U | 172001063501 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR188

Method: P
Run Name: 1720209T71
Calibration Date(s): 07/21/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | | | | | | | | | | | | |
| Iron | | 33.4 | U | 33.4 | U | 33.4 | U | | | | 80.500 | U | 172001063502 |
| Magnesium | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | | | |
| Potassium | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR188

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Arsenic | 75 | 0.49 | B | 0.40 | U | 0.40 | U | 0.40 | U | 75 | 0.720 | U | 172001063902A |
| Lead | 208 | 0.038 | U | 0.038 | U | 0.038 | U | 0.038 | U | 208 | 0.110 | U | 172001063902A |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below IDL/MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR188

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Arsenic | 75 | | | 0.40 | U | 0.40 | U | | | | | | |
| Lead | 208 | | | 0.038 | U | 0.038 | U | | | | | | |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence | U= Below IDL/MDL<br>B= Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR188

Instrument ID: 18255
Run Name: 1720206T73
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 484361 | 96.9 | 484357.0 | 96.9 | | | | |
| Calcium | 500000 | 500000 | 476272 | 95.3 | 476354.3 | 95.3 | | | | |
| Iron | 200000 | 200000 | 194070 | 97.0 | 193769.6 | 96.9 | | | | |
| Magnesium | 500000 | 500000 | 413949 | 82.8 | 410688.1 | 82.1 | | | | |
| Manganese | 0 | 500 | 4 | | 482.6 | 96.5 | | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR188

Instrument ID: 16315
Run Name: 1720206T71
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 509720 | 101.9 | 521483.2 | 104.3 | | | | |
| Calcium | 500000 | 500000 | 505764 | 101.2 | 517117.2 | 103.4 | | | | |
| Iron | 200000 | 200000 | 201338 | 100.7 | 205443.3 | 102.7 | | | | |
| Magnesium | 500000 | 500000 | 511440 | 102.3 | 516522.3 | 103.3 | | | | |
| Manganese | | | | | | | | | | |
| Potassium | 0 | 0 | 158 | | 113.2 | | | | | |
| Sodium | 0 | 0 | 278 | | 298.9 | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR188

Instrument ID: 16315
Run Name: 1720209T71
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 514533 | 102.9 | 517202.8 | 103.4 | | | | |
| Calcium | 500000 | 500000 | 508575 | 101.7 | 511365.2 | 102.3 | | | | |
| Iron | 200000 | 200000 | 200911 | 100.5 | 202087.0 | 101.0 | | | | |
| Magnesium | 500000 | 500000 | 509358 | 101.9 | 505189.5 | 101.0 | | | | |
| Manganese | | | | | | | | | | |
| Potassium | | | | | | | | | | |
| Sodium | | | | | | | | | | |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR188

Instrument ID: 11332
Run Name: 1720704E03
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 109200 | 109.2 | 106200.0 | 106.2 |
| Arsenic | 75 | 0 | 100 | 1 | | 100.7 | 100.7 |
| Calcium | 44 | 300000 | 300000 | 307800 | 102.6 | 298700.0 | 99.6 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Iron | 57 | 250000 | 250000 | 265000 | 106.0 | 257800.0 | 103.1 |
| Lead | 208 | 0 | 0 | 0 | | 0.3 | |
| Magnesium | 24 | 100000 | 100000 | 106500 | 106.5 | 103800.0 | 103.8 |
| Molybdenum | 98 | 2000 | 2000 | 2260 | 113.0 | 2284.0 | 114.2 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 115000 | 115.0 | 112200.0 | 112.2 |
| Sodium | 23 | 250000 | 250000 | 258300 | 103.3 | 251800.0 | 100.7 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Titanium | 47 | 2000 | 2000 | 2242 | 112.1 | 2204.0 | 110.2 |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR188

Instrument ID: 11332
Run Name: 1720704E03
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 106500 | 106.5 | 106500.0 | 106.5 |
| Arsenic | 75 | 0 | 100 | 1 | | 100.4 | 100.4 |
| Calcium | 44 | 300000 | 300000 | 306700 | 102.2 | 299800.0 | 99.9 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Iron | 57 | 250000 | 250000 | 260600 | 104.2 | 258200.0 | 103.3 |
| Lead | 208 | 0 | 0 | 0 | | 0.3 | |
| Magnesium | 24 | 100000 | 100000 | 105000 | 105.0 | 104600.0 | 104.6 |
| Molybdenum | 98 | 2000 | 2000 | 2231 | 111.6 | 2299.0 | 115.0 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 113900 | 113.9 | 113400.0 | 113.4 |
| Sodium | 23 | 250000 | 250000 | 254200 | 101.7 | 254900.0 | 102.0 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Titanium | 47 | 2000 | 2000 | 2195 | 109.8 | 2216.0 | 110.8 |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9109771BKG Matrix Spike Lab Sample ID: 9109772MS Matrix Spike Duplicate Lab Sample ID: 9109773MSD
Batch Number(s): 172001063902, 172001063501

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Arsenic | 75 | 0.7230 | U | 10.6900 | | 10.9900 | | 10.0000 | 10.0000 | UG/L | 107 | | 110 | | 3 | | 84 - 116 | 20 | MS |
| Calcium | | 254949.5500 | | 254207.9800 | | 256968.7800 | | 4000.0000 | 4000.0000 | UG/L | -19 | | 50 | | 1 | | | 20 | P |
| Lead | 208 | 0.1709 | B | 15.2300 | | 15.4000 | | 15.0000 | 15.0000 | UG/L | 100 | | 102 | | 1 | | 88 - 115 | 20 | MS |
| Magnesium | | 41703.3100 | | 43039.2700 | | 43522.1300 | | 2000.0000 | 2000.0000 | UG/L | 67 | | 91 | | 1 | | | 20 | P |
| Potassium | | 5784.7300 | | 16612.3600 | | 16607.4200 | | 10000.0000 | 10000.0000 | UG/L | 108 | | 108 | | 0 | | 86 - 114 | 20 | P |
| Sodium | | 86771.1500 | | 95117.2500 | | 95816.4900 | | 10000.0000 | 10000.0000 | UG/L | 83 | | 90 | | 1 | | | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9109775BKG Matrix Spike Lab Sample ID: 9109776MS Matrix Spike Duplicate Lab Sample ID: 9109777MSD
Batch Number(s): 172001063502

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Iron | | 152.8200 | B | 1190.6900 | | 1199.4100 | | 1000.0000 | 1000.0000 | UG/L | 104 | | 105 | | 1 | | 87 - 115 | 20 | P |
| Manganese | | 228.3300 | | 659.7200 | | 657.7500 | | 500.0000 | 500.0000 | UG/L | 86 | N | 86 | N | 0 | | 90 - 114 | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 5B
POST DIGEST SPIKE SAMPLE RECOVERY
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9109775BKG

| Analyte | Mass | Sample Result(SR) | C | Spike Added(SA) | Spiked Sample Result(SSR) | C | SRR %R | Spiked Sample Duplicate(SSD) | C | SSD %R | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | | 228.3300 | | 60.0000 | 276.1000 | | 80 | NA | U | NA | P |

Comments:

Note: Results shown are reported on an as-received basis.

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9109771BKG Duplicate Lab Sample ID: 9109774DUP
Batch Number(s): 172001063902, 172001063501
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | 0.7230 | U | 0.7230 | U | | | MS |
| Calcium | | | 254949.5500 | | 255637.2600 | | 0 | | P |
| Lead | 208 | | 0.1709 | B | 0.1496 | B | 13 | | MS |
| Magnesium | | | 41703.3100 | | 41594.9900 | | 0 | | P |
| Potassium | | | 5784.7300 | | 5784.8100 | | 0 | | P |
| Sodium | | | 86771.1500 | | 87043.6200 | | 0 | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9109775BKG Duplicate Lab Sample ID: 9109778DUP
Batch Number(s): 172001063502
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Iron | | | 152.8200 | B | 148.0200 | B | 3 | | P |
| Manganese | | | 228.3300 | | 221.3700 | | 3 | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | FLAGS: |
| AF = Cold Vapor Atomic Fluorescence | * = Duplicate Out of Spec |

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR188
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 172001063902 | UG/L | 10.000 | 9.308 | | 84 - 116 | 93 | MS | Yes |
| Calcium | | 172001063501 | UG/L | 4000.000 | 4182.540 | | 87 - 113 | 105 | P | Yes |
| Iron | | 172001063502 | UG/L | 1000.000 | 1003.820 | | 87 - 115 | 100 | P | Yes |
| Lead | 208 | 172001063902 | UG/L | 15.000 | 14.310 | | 88 - 115 | 95 | MS | Yes |
| Magnesium | | 172001063501 | UG/L | 2000.000 | 2129.580 | | 85 - 113 | 106 | P | Yes |
| Manganese | | 172001063502 | UG/L | 500.000 | 459.990 | | 90 - 114 | 92 | P | Yes |
| Potassium | | 172001063501 | UG/L | 10000.000 | 10761.740 | | 86 - 114 | 108 | P | Yes |
| Sodium | | 172001063501 | UG/L | 10000.000 | 10604.350 | | 87 - 115 | 106 | P | Yes |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9109771BKG Serial Dilution Lab Sample ID: 9109771L
Batch Number(s): 172001063902, 172001063501
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 0.7230 | U | 3.6150 | U | | | MS |
| Calcium | | 254949.5500 | | 243100.8500 | | 5 | | P |
| Lead | 208 | 0.1709 | B | 0.5550 | U | 100 | | MS |
| Magnesium | | 41703.3100 | | 41799.8500 | | 0 | | P |
| Potassium | | 5784.7300 | | 6339.3000 | | 10 | | P |
| Sodium | | 86771.1500 | | 86246.8000 | | 1 | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR188
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9109775BKG Serial Dilution Lab Sample ID: 9109775L
Batch Number(s): 172001063502
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Iron | | 152.8200 | B | 402.5000 | U | 100 | | P |
| Manganese | | 228.3300 | | 232.1000 | | 2 | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Calcium | 317.93 | | 33.4 |
| Iron | 261.19 | | 33.4 |
| Magnesium | 285.21 | | 16.7 |
| Manganese | | | |
| Potassium | 766.49 | | 127 |
| Sodium | 589.59 | | 167 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Instrument ID: 18255
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Calcium | | | |
| Iron | | | |
| Magnesium | | | |
| Manganese | 257.61 | | 0.83 |
| Potassium | | | |
| Sodium | | | |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS (QUARTERLY)
SDG No.: KR188

Method: MS
Instrument ID: 11332
Date: 07/2017

| Analyte | MASS (amu) | Background | IDL (UG/L) |
|---|---|---|---|
| Arsenic | 75 | | 0.40 |
| Lead | 208 | | 0.038 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR188
Matrix: WATER

Method: P
Date: 06/2017

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Calcium | 317.93 | | 400 | 60.0 |
| Iron | 261.19 | | 400 | 80.5 |
| Magnesium | 285.21 | | 200 | 37.4 |
| Manganese | 257.61 | | 10.0 | 1.6 |
| Potassium | 766.49 | | 1000 | 179 |
| Sodium | 589.59 | | 2000 | 321 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR188
Matrix: WATER

Method: MS
Date: 06/2017

| Analyte | Mass | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Arsenic | 75 | | 4.0 | 0.72 |
| Lead | 208 | | 2.0 | 0.11 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR188

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Calcium | 317.93 | 10.00 | 600000.0 |
| Iron | 261.19 | 10.00 | 300000.0 |
| Magnesium | 285.21 | 10.00 | 600000.0 |
| Manganese | | | |
| Potassium | 766.49 | 10.00 | 500000.0 |
| Sodium | 589.59 | 10.00 | 500000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR188

Method: P
Instrument ID: 18255
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Calcium | | | |
| Iron | | | |
| Magnesium | | | |
| Manganese | 257.61 | 10.00 | 20000.0 |
| Potassium | | | |
| Sodium | | | |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Batch Number: 172001063501

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9109779 | 07/20/2017 | 50.00 | 50 |
| 9109771BKG | 07/20/2017 | 50.00 | 50 |
| 9109774DUP | 07/20/2017 | 50.00 | 50 |
| 9109773MSD | 07/20/2017 | 50.00 | 50 |
| 9109772MS | 07/20/2017 | 50.00 | 50 |
| P20063AB | 07/20/2017 | 50.00 | 50 |
| P20063AQ | 07/20/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: P
Batch Number: 172001063502

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9109780 | 07/20/2017 | 50.00 | 50 |
| 9109775BKG | 07/20/2017 | 50.00 | 50 |
| 9109778DUP | 07/20/2017 | 50.00 | 50 |
| 9109777MSD | 07/20/2017 | 50.00 | 50 |
| 9109776MS | 07/20/2017 | 50.00 | 50 |
| P20063BB | 07/20/2017 | 50.00 | 50 |
| P20063BQ | 07/20/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: MS
Batch Number: 172001063902

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9109779 | 07/24/2017 | 50.00 | 50 |
| 9109771BKG | 07/24/2017 | 50.00 | 50 |
| 9109774DUP | 07/24/2017 | 50.00 | 50 |
| 9109773MSD | 07/24/2017 | 50.00 | 50 |
| 9109772MS | 07/24/2017 | 50.00 | 50 |
| P20063BB | 07/24/2017 | 50.00 | 50 |
| P20063BQ | 07/24/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR188

Method: P
Instrument ID: 18255
Run Name: 1720206T73

Run Start Date: 07/21/2017
Run End Date: 07/21/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 11:12 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:18 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 11:24 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 11:27 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 11:30 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 11:33 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 11:37 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:40 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:43 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| P20063BB | 1.00 | 11:46 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| P20063BQ | 1.00 | 11:49 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109775BKG | 1.00 | 11:52 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109775A | 1.00 | 11:55 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109778DUP | 1.00 | 11:58 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109776MS | 1.00 | 12:01 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109777MSD | 1.00 | 12:04 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109775L | 5.00 | 12:08 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109780 | 1.00 | 12:11 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 12:14 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 12:17 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR188

Method: P
Instrument ID: 16315
Run Name: 1720206T71

Run Start Date: 07/21/2017
Run End Date: 07/21/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 12:27 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:30 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 12:39 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 12:42 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 12:45 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 12:48 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 12:51 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 12:55 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 12:57 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| P20063AB | 1.00 | 13:01 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| P20063AQ | 1.00 | 13:04 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9109771BKG | 1.00 | 13:07 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9109771A | 1.00 | 13:10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109774DUP | 1.00 | 13:13 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9109772MS | 1.00 | 13:16 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9109773MSD | 1.00 | 13:20 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9109771L | 5.00 | 13:23 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 13:26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109779 | 1.00 | 13:29 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 13:32 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 13:35 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |

| METHODS: | LEGEND: |
|---|---|
| P = ICP Atomic Emission Spectrometer | BKG = Background |
| MS = ICP Mass Spectrometry | DUP = Duplicate |
| CV = Cold Vapor | MS = Matrix Spike |
| AF = Cold Vapor Atomic Fluorescence | MSD = Matrix Spike Duplicate |
| | A = Post Digest Spike |
| | L = Serial Dilution |
| | B = Blank |
| | Q = Laboratory Control Sample |
| | Y = Laboratory Control Sample Duplicate |

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR188

Method: P
Instrument ID: 16315
Run Name: 1720209T71

Run Start Date: 07/21/2017
Run End Date: 07/21/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 17:50 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 17:53 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 17:56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 17:59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 18:02 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 18:05 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 18:08 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 18:11 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 18:14 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 18:17 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 18:20 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P20063BB | 1.00 | 18:23 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P20063BQ | 1.00 | 18:26 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109775BKG | 1.00 | 18:30 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109775A | 1.00 | 18:33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109778DUP | 1.00 | 18:36 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109776MS | 1.00 | 18:39 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109777MSD | 1.00 | 18:42 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109775L | 5.00 | 18:46 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109780 | 1.00 | 18:49 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 18:52 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 18:55 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR188

Method: MS
Instrument ID: 11332
Run Name: 1720704E03

Run Start Date: 07/26/2017
Run End Date: 07/26/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 08:56 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 08:57 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 08:59 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 09:01 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 09:03 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 09:04 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 09:06 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 09:08 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 09:09 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 09:13 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 09:15 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 09:28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 09:33 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 09:35 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 09:54 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 09:55 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 10.00 | 09:59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR188

Method: MS
Instrument ID: 11332
Run Name: 1720704E03

Run Start Date: 07/26/2017
Run End Date: 07/26/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 10:01 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 10:02 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 10:04 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:07 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:09 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P20063BB | 1.00 | 10:11 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P20063BQ | 1.00 | 10:12 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109771BKG | 1.00 | 10:14 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109771A | 1.00 | 10:16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109774DUP | 1.00 | 10:18 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109772MS | 1.00 | 10:19 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109773MSD | 1.00 | 10:21 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109771L | 5.00 | 10:23 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109779 | 1.00 | 10:24 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9109779 | 10.00 | 10:26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:28 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:29 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 15
ICP-MS TUNE
SDG No.: KR188
Matrix: WATER

Instrument ID: 11332
Date: 07/25/2017

| Analyte | Mass | Avg. Measured Mass (amu) | Avg. Peak Width at 5% Peak Height (amu) | %RSD |
|---|---|---|---|---|
| Lithium | 6.000 | 6.00 | 0.70 | 1.8 |
| Magnesium | 24.000 | 23.95 | 0.65 | 1.1 |
| Rhodium | 103.000 | 103.00 | 0.65 | 1.3 |
| Indium | 115.000 | 115.00 | 0.65 | 0.5 |
| Cerium | 140.000 | 140.00 | 0.65 | 1.1 |
| Lead | 208.000 | 207.95 | 0.60 | 2.2 |
| Uranium | 238.000 | 237.90 | 0.55 | 1.2 |

Comments:

_____
_____
_____
_____

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR188

Instrument ID: 11332
Run Name: 1720704E03

Start Date: 07/26/2017
End Date: 07/26/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| BI-1-209 | PB | IN-1-115 | AS |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element BI-1-209 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S0 | 08:56 | 100 | | 100 | | | | | | | | | | | |
| S | 08:57 | 94 | | 93 | | | | | | | | | | | |
| CCS | 08:59 | 94 | | 96 | | | | | | | | | | | |
| CCS | 09:01 | 95 | | 96 | | | | | | | | | | | |
| ICV | 09:03 | 95 | | 96 | | | | | | | | | | | |
| ICB | 09:04 | 97 | | 100 | | | | | | | | | | | |
| LLC | 09:06 | 99 | | 101 | | | | | | | | | | | |
| ICSA | 09:08 | 89 | | 83 | | | | | | | | | | | |
| ICSAB | 09:09 | 94 | | 87 | | | | | | | | | | | |
| ZZZZZZ | 09:11 | | | | | | | | | | | | | | |
| CCV | 09:13 | 97 | | 100 | | | | | | | | | | | |
| CCB | 09:15 | 100 | | 101 | | | | | | | | | | | |
| ZZZZZZ | 09:16 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:18 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:20 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:21 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:23 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:25 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:27 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:28 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:30 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:32 | | | | | | | | | | | | | | |
| CCV | 09:33 | 99 | | 101 | | | | | | | | | | | |
| CCB | 09:35 | 101 | | 102 | | | | | | | | | | | |
| ZZZZZZ | 09:37 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:38 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:40 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:42 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:43 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:45 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:47 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:49 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:50 | | | | | | | | | | | | | | |

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR188

Instrument ID: 11332
Run Name: 1720704E03

Start Date: 07/26/2017
End Date: 07/26/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| BI-1-209 | PB | IN-1-115 | AS |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element BI-1-209 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZZZZZZ | 09:52 | | | | | | | | | | | | | | |
| CCV | 09:54 | 100 | | 102 | | | | | | | | | | | |
| CCB | 09:55 | 100 | | 102 | | | | | | | | | | | |
| ZZZZZZ | 09:57 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:59 | | | | | | | | | | | | | | |
| LLC | 10:01 | 102 | | 100 | | | | | | | | | | | |
| ICSA | 10:02 | 94 | | 86 | | | | | | | | | | | |
| ICSAB | 10:04 | 93 | | 86 | | | | | | | | | | | |
| ZZZZZZ | 10:06 | | | | | | | | | | | | | | |
| CCV | 10:07 | 103 | | 104 | | | | | | | | | | | |
| CCB | 10:09 | 100 | | 102 | | | | | | | | | | | |
| P20063BB | 10:11 | 107 | | 103 | | | | | | | | | | | |
| P20063BQ | 10:12 | 107 | | 106 | | | | | | | | | | | |
| 9109771BKG | 10:14 | 100 | | 96 | | | | | | | | | | | |
| 9109771A | 10:16 | 101 | | 95 | | | | | | | | | | | |
| 9109774DUP | 10:18 | 104 | | 97 | | | | | | | | | | | |
| 9109772MS | 10:19 | 101 | | 95 | | | | | | | | | | | |
| 9109773MSD | 10:21 | 98 | | 94 | | | | | | | | | | | |
| 9109771L | 10:23 | 105 | | 104 | | | | | | | | | | | |
| 9109779 | 10:24 | 101 | | 95 | | | | | | | | | | | |
| 9109779 | 10:26 | | | | | | | | | | | | | | |
| CCV | 10:28 | 100 | | 102 | | | | | | | | | | | |
| CCB | 10:29 | 99 | | 101 | | | | | | | | | | | |

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike

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R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

# Raw Data

# Metals in Liquid

# ICP Data

# Metals in Liquid

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# ICP-AES Run Data Report

Reviewed By
Patrick J Engle

Reviewed Date
07/21/2017 12:32PM

Data File Name 1720206T73.TXT
Run Name: 1720206T73

Method Reference Name(s):

Verified By:
Parker D Lindstrom

Verified Date
07/21/2017 3:07PM

Analyst Employee: 3472

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 1 Date/Time: 07/21/2017 11:12

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -26.25210 | 19.139 | -0.00554 | -0.00592 | -0.00784 |
| AL | 0.000 | 9.35803 | 45.348 | 0.05890 | 0.03723 | 0.02311 |
| AS | 0.000 | -1.31987 | 24.471 | -0.01035 | -0.01703 | -0.01359 |
| B | 0.000 | 14.22151 | 35.321 | 0.00010 | 0.00005 | 0.00006 |
| BA | 0.000 | 168.38241 | 5.929 | 0.00088 | 0.00081 | 0.00079 |
| BE | 0.000 | -254.17703 | 2.141 | -0.06378 | -0.06117 | -0.06201 |
| CA | 0.000 | 45.11161 | 6.025 | 0.00406 | 0.00360 | 0.00383 |
| CD | 0.000 | -4.71620 | 14.073 | -0.05670 | -0.04454 | -0.04509 |
| CO | 0.000 | -3.35966 | 59.009 | -0.05773 | -0.01838 | -0.02810 |
| CR | 0.000 | 16.72985 | 27.028 | 0.00010 | 0.00009 | 0.00006 |
| CU | 0.000 | -2.44046 | 319.762 | 0.00049 | 0.00051 | -0.00279 |
| FE | 0.000 | 5.85803 | 17.972 | 0.00044 | 0.00045 | 0.00060 |
| K | 0.000 | 262.98912 | 6.346 | 1.07221 | 1.19771 | 1.07808 |
| LI | 0.000 | 9.75442 | 105.494 | -0.00017 | 0.00120 | 0.00145 |
| MG | 0.000 | 3.59510 | 58.023 | 0.00042 | 0.00010 | 0.00039 |
| MN | 0.000 | 6.76778 | 24.564 | 0.00174 | 0.00122 | 0.00202 |
| MO | 0.000 | -0.77992 | 25.934 | -0.00693 | -0.01049 | -0.00679 |
| NA | 0.000 | 369.13185 | 3.716 | 0.03001 | 0.03175 | 0.03222 |
| NI | 0.000 | 2.59641 | 35.413 | 0.02793 | 0.01682 | 0.03572 |
| P | 0.000 | 1.54985 | 49.627 | 0.00045 | 0.00037 | 0.00014 |
| PB | 0.000 | -1.61095 | 122.885 | -0.03690 | 0.00398 | -0.01699 |
| S | 0.000 | 17.05829 | 2.386 | 0.00348 | 0.00363 | 0.00348 |
| SB | 0.000 | 1.63984 | 51.636 | 0.00024 | 0.00054 | 0.00023 |
| SE | 0.000 | -1.43875 | 74.129 | -0.01897 | -0.02336 | -0.00240 |
| SI | 0.000 | 2.40465 | 27.113 | 0.00014 | 0.00024 | 0.00024 |
| SN | 0.000 | -0.57994 | 160.979 | -0.00166 | 0.00073 | -0.01699 |
| SR | 0.000 | -99.03036 | 13.078 | -0.00041 | -0.00052 | -0.00052 |
| TI | 0.000 | 53.76395 | 15.220 | 0.01501 | 0.01351 | 0.01104 |
| TL | 0.000 | -0.32663 | 29.372 | -0.00362 | -0.00228 | -0.00422 |
| V | 0.000 | -9.78571 | 88.309 | -0.00485 | -0.00097 | -0.00140 |
| Y1 | 0.000 | 4834.68453 | 0.428 | 4832.33077 | 4815.26647 | 4856.45635 |
| Y2A | 0.000 | 203955.27137 | 0.673 | 202371.04737 | 204725.09968 | 204769.66707 |
| Y2R | 0.000 | 11783.09328 | 0.345 | 11751.20758 | 11769.25379 | 11828.81847 |
| ZN | 0.000 | 7.65590 | 5.558 | 0.08422 | 0.07725 | 0.07608 |
| ZR | 0.000 | -12.23094 | 38.134 | -0.00144 | -0.00065 | -0.00102 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 2 Date/Time: 07/21/2017 11:15

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 6035.73027 | 1.309 | 26.10661 | 26.09822 | 25.51521 |
| CA | 50.000 | 46122.59270 | 1.127 | 3.99565 | 3.97284 | 3.90951 |
| FE | 50.000 | 8833.05005 | 1.318 | 0.76621 | 0.76157 | 0.74704 |
| K | 50.000 | 24042.47194 | 1.228 | 104.21454 | 103.59549 | 101.77629 |
| MG | 50.000 | 71249.16578 | 1.035 | 6.17020 | 6.13197 | 6.04659 |
| NA | 50.000 | 79915.49055 | 1.328 | 6.93458 | 6.88772 | 6.75872 |
| S | 50.000 | 3415.36846 | 1.225 | 0.73840 | 0.74181 | 0.72479 |
| SI | 50.000 | 6604.17606 | 1.023 | 0.57080 | 0.56971 | 0.56026 |
| Y1 | 50.000 | 4647.09129 | 0.884 | 4631.77282 | 4615.86641 | 4693.63464 |
| Y2R | 50.000 | 11649.99755 | 1.050 | 11543.47610 | 11622.90000 | 11783.61655 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 3 Date/Time: 07/21/2017 11:18

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 13307.79042 | 1.307 | 3.33629 | 3.36214 | 3.42221 |
| AS | 1.000 | 125.98221 | 0.632 | 1.34895 | 1.33272 | 1.33667 |
| B | 1.000 | 7729.48529 | 1.255 | 0.03896 | 0.03885 | 0.03975 |
| BA | 1.000 | 675400.53179 | 0.760 | 3.40913 | 3.40902 | 3.45417 |
| BE | 1.000 | 466242.88843 | 1.117 | 116.82453 | 118.28892 | 119.45940 |
| CD | 1.000 | 7692.27135 | 0.685 | 82.40217 | 81.64318 | 81.30847 |
| CO | 1.000 | 4043.97223 | 0.458 | 43.20876 | 42.95660 | 42.82095 |
| CU | 1.000 | 13354.25650 | 1.246 | 3.35756 | 3.36448 | 3.43383 |
| LI | 1.000 | 9886.03577 | 1.134 | 0.83094 | 0.84878 | 0.83420 |
| MN | 1.000 | 61146.41310 | 1.393 | 15.34926 | 15.40509 | 15.74797 |
| NI | 1.000 | 2452.15815 | 0.431 | 26.17849 | 26.08096 | 25.95429 |
| P | 1.000 | 115.57821 | 0.765 | 0.02477 | 0.02457 | 0.02439 |
| PB | 1.000 | 636.70710 | 0.060 | 6.77253 | 6.77080 | 6.76482 |
| SE | 1.000 | 101.84520 | 1.879 | 1.10606 | 1.07449 | 1.06803 |
| SR | 1.000 | 703030.49291 | 1.060 | 3.52203 | 3.57597 | 3.59483 |
| TL | 1.000 | 114.28598 | 0.482 | 1.21887 | 1.20834 | 1.21803 |
| Y1 | 1.000 | 4702.84989 | 0.423 | 4679.91004 | 4713.62964 | 4715.00998 |
| Y2A | 1.000 | 197261.98299 | 1.432 | 199844.67426 | 197695.14388 | 194246.13083 |
| Y2R | 1.000 | 11798.66541 | 1.259 | 11889.51098 | 11627.19211 | 11879.29313 |
| ZN | 1.000 | 3842.76368 | 0.459 | 41.05606 | 40.82821 | 40.68429 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 4 Date/Time: 07/21/2017 11:21

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 9707.37991 | 0.603 | 0.04755 | 0.04708 | 0.04704 |
| MO | 1.000 | 1115.89174 | 0.733 | 11.31917 | 11.44961 | 11.47508 |
| SB | 1.000 | 252.63807 | 0.360 | 0.05184 | 0.05148 | 0.05173 |
| SN | 1.000 | 359.13742 | 0.831 | 3.64617 | 3.66832 | 3.70653 |
| TI | 1.000 | 53584.69927 | 0.572 | 13.11851 | 12.98560 | 12.99362 |
| V | 1.000 | 17996.21802 | 0.461 | 4.39807 | 4.35789 | 4.37475 |
| Y1 | 1.000 | 4888.06986 | 0.327 | 4905.61144 | 4884.30557 | 4874.29257 |
| Y2A | 1.000 | 205583.66352 | 0.571 | 204393.39189 | 205616.56000 | 206741.03868 |
| Y2R | 1.000 | 11959.71909 | 0.620 | 11918.85834 | 11915.03797 | 12045.26095 |
| ZR | 1.000 | 2484.51183 | 1.294 | 0.20921 | 0.20939 | 0.20465 |

LANCASTER LABORATORIES

Run Name: 1720206T73

Instrument ID: 18255

Tube: 5

Date/Time: 07/21/2017 11:24

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.61414 | 8,083.17 | 0.619 | 0.60979 | 0.61679 | 0.61584 |
| ____ AL | 30.78226 | 3,705.31 | 0.743 | 31.04641 | 30.64896 | 30.65140 |
| ____ AS | 0.59229 | 74.68 | 2.005 | 0.58528 | 0.58558 | 0.60600 |
| ____ B | 0.59278 | 4,740.66 | 0.614 | 0.58922 | 0.59649 | 0.59264 |
| ____ BA | 0.60484 | 405,231.36 | 1.100 | 0.59815 | 0.61145 | 0.60491 |
| ____ BE | 0.59437 | 274,769.30 | 0.782 | 0.58995 | 0.59921 | 0.59394 |
| ____ CA | 30.53264 | 28,133.03 | 0.619 | 30.74893 | 30.44983 | 30.39916 |
| ____ CD | 0.58814 | 4,609.24 | 0.968 | 0.58662 | 0.58336 | 0.59443 |
| ____ CO | 0.57788 | 2,379.76 | 1.037 | 0.57435 | 0.57449 | 0.58480 |
| ____ CR | 0.59506 | 5,502.14 | 0.975 | 0.58902 | 0.60059 | 0.59556 |
| ____ CU | 0.60906 | 8,032.65 | 0.771 | 0.60381 | 0.61285 | 0.61051 |
| ____ FE | 29.96585 | 5,301.52 | 0.466 | 30.07232 | 29.80788 | 30.01736 |
| ____ K | 30.16473 | 14,569.60 | 0.174 | 30.20546 | 30.18333 | 30.10538 |
| ____ LI | 0.61074 | 5,960.55 | 0.358 | 0.61245 | 0.61150 | 0.60828 |
| ____ MG | 30.37871 | 43,567.78 | 0.814 | 30.66410 | 30.23182 | 30.24021 |
| ____ MN | 0.60543 | 36,712.40 | 0.866 | 0.60012 | 0.61061 | 0.60554 |
| ____ MO | 0.59727 | 651.97 | 1.246 | 0.59515 | 0.59112 | 0.60555 |
| ____ NA | 29.71597 | 47,518.59 | 0.415 | 29.85795 | 29.63415 | 29.65580 |
| ____ NI | 0.58780 | 1,464.87 | 0.987 | 0.58463 | 0.58428 | 0.59449 |
| ____ P | 0.58786 | 69.68 | 1.028 | 0.58692 | 0.58233 | 0.59431 |
| ____ PB | 0.58785 | 383.21 | 1.017 | 0.58607 | 0.58295 | 0.59451 |
| ____ S | 29.99170 | 2,114.00 | 1.087 | 29.79280 | 29.81439 | 30.36792 |
| ____ SB | 0.59236 | 147.76 | 1.354 | 0.59509 | 0.58334 | 0.59867 |
| ____ SE | 0.57755 | 58.84 | 2.769 | 0.57694 | 0.56188 | 0.59384 |
| ____ SI | 30.51176 | 4,023.68 | 0.383 | 30.64283 | 30.47336 | 30.41910 |
| ____ SN | 0.58206 | 204.15 | 1.488 | 0.58005 | 0.57458 | 0.59155 |
| ____ SR | 0.60110 | 419,007.73 | 0.981 | 0.59566 | 0.60736 | 0.60027 |
| ____ TI | 0.60929 | 31,260.15 | 0.712 | 0.60536 | 0.61395 | 0.60857 |
| ____ TL | 0.59011 | 68.73 | 0.219 | 0.59158 | 0.58960 | 0.58915 |
| ____ V | 0.61829 | 10,587.03 | 0.853 | 0.61249 | 0.62280 | 0.61957 |
| ____ Y1 | 4779.75464 | 4,779.75 | 1.086 | 4808.14704 | 4811.27287 | 4719.84402 |
| ____ Y2A | 195593.61930 | 195,593.62 | 0.705 | 196844.52424 | 194114.06156 | 195822.27209 |
| ____ Y2R | 11618.51253 | 11,618.51 | 0.362 | 11578.29302 | 11662.09758 | 11615.14697 |
| ____ ZN | 0.58448 | 2,297.79 | 1.137 | 0.58224 | 0.57923 | 0.59195 |
| ____ ZR | 0.61367 | 1,474.03 | 0.442 | 0.61661 | 0.61314 | 0.61127 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 6 Date/Time: 07/21/2017 11:27

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00068 | -20.50 | 39.802 | -0.00095 | -0.00041 | -0.00067 |
| ____ AL | 0.00374 | 9.86 | 363.887 | -0.01135 | 0.01510 | 0.00747 |
| ____ AS | -0.00382 | -2.05 | 150.207 | -0.00152 | -0.01035 | 0.00041 |
| ____ B | 0.00503 | 30.44 | 11.903 | 0.00561 | 0.00442 | 0.00505 |
| ____ BA | 0.00004 | 196.84 | 13.534 | 0.00004 | 0.00005 | 0.00005 |
| ____ BE | 0.00002 | -226.52 | 92.163 | 0.00005 | 0.00001 | 0.00001 |
| ____ CA | -0.00191 | 43.47 | 319.254 | 0.00028 | -0.00880 | 0.00279 |
| ____ CD | -0.00004 | -3.85 | 249.581 | 0.00001 | 0.00003 | -0.00017 |
| ____ CO | 0.00006 | -0.68 | 298.555 | -0.00007 | 0.00000 | 0.00024 |
| ____ CR | 0.00027 | 19.19 | 61.902 | 0.00045 | 0.00027 | 0.00011 |
| ____ CU | 0.00136 | -7.69 | 60.004 | 0.00180 | 0.00186 | 0.00042 |
| ____ FE | -0.01248 | 3.63 | 37.382 | -0.00883 | -0.01087 | -0.01774 |
| ____ K | -0.14485 | 193.96 | 26.187 | -0.16570 | -0.16779 | -0.10107 |
| ____ LI | -0.00148 | -4.85 | 30.332 | -0.00096 | -0.00177 | -0.00170 |
| ____ MG | -0.00326 | -1.21 | 26.714 | -0.00257 | -0.00297 | -0.00424 |
| ____ MN | 0.00000 | 6.51 | 2046.944 | -0.00001 | -0.00006 | 0.00007 |
| ____ MO | -0.00059 | 0.09 | 171.815 | 0.00057 | -0.00108 | -0.00125 |
| ____ NA | -0.03966 | 306.45 | 10.613 | -0.03697 | -0.04451 | -0.03750 |
| ____ NI | -0.00024 | 1.99 | 327.115 | 0.00066 | -0.00076 | -0.00061 |
| ____ P | -0.00753 | 0.66 | 91.432 | -0.01383 | -0.00859 | -0.00018 |
| ____ PB | -0.00321 | -1.18 | 13.137 | -0.00274 | -0.00355 | -0.00335 |
| ____ S | -0.06108 | 12.67 | 8.851 | -0.05485 | -0.06392 | -0.06448 |
| ____ SB | -0.00046 | 1.51 | 926.913 | -0.00477 | -0.00038 | 0.00377 |
| ____ SE | -0.00213 | -2.14 | 364.956 | 0.00192 | -0.01108 | 0.00278 |
| ____ SI | 0.01579 | 4.52 | 49.858 | 0.01669 | 0.00751 | 0.02318 |
| ____ SN | 0.00204 | 0.15 | 45.982 | 0.00311 | 0.00154 | 0.00145 |
| ____ SR | 0.00002 | -55.30 | 101.864 | 0.00000 | 0.00004 | 0.00003 |
| ____ TI | -0.00006 | 49.88 | 155.635 | 0.00002 | -0.00004 | -0.00016 |
| ____ TL | 0.00257 | 0.14 | 149.162 | 0.00553 | -0.00176 | 0.00394 |
| ____ V | 0.00011 | -13.59 | 371.456 | 0.00057 | -0.00017 | -0.00008 |
| ____ Y1 | 4809.06776 | 4,809.07 | 0.321 | 4826.88731 | 4800.21598 | 4800.09999 |
| ____ Y2A | 201937.76766 | 201,937.77 | 0.345 | 201860.64361 | 201283.72209 | 202668.93728 |
| ____ Y2R | 11829.21750 | 11,829.22 | 0.892 | 11857.19561 | 11917.93695 | 11712.51995 |
| ____ ZN | -0.00057 | 5.39 | 21.029 | -0.00070 | -0.00046 | -0.00056 |
| ____ ZR | 0.00151 | -15.30 | 120.295 | 0.00358 | 0.00027 | 0.00067 |

LANCASTER LABORATORIES

Run Name: 1720206T73

Instrument ID: 18255

Tube: 7

Date/Time: 07/21/2017 11:30

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01077 | 140.47 | 4.929 | 0.01057 | 0.01037 | 0.01137 |
| ____ AL | 0.44572 | 63.55 | 0.567 | 0.44863 | 0.44450 | 0.44403 |
| ____ AS | 0.04351 | 4.13 | 10.111 | 0.04525 | 0.03851 | 0.04678 |
| ____ B | 0.10140 | 807.66 | 1.038 | 0.10197 | 0.10019 | 0.10205 |
| ____ BA | 0.01079 | 7,744.99 | 1.483 | 0.01075 | 0.01065 | 0.01096 |
| ____ BE | 0.01029 | 4,739.72 | 0.953 | 0.01026 | 0.01021 | 0.01040 |
| ____ CA | 0.41698 | 434.66 | 0.203 | 0.41759 | 0.41601 | 0.41734 |
| ____ CD | 0.01064 | 80.58 | 0.817 | 0.01071 | 0.01066 | 0.01054 |
| ____ CO | 0.01039 | 42.36 | 1.260 | 0.01028 | 0.01053 | 0.01037 |
| ____ CR | 0.03135 | 319.17 | 1.416 | 0.03101 | 0.03118 | 0.03185 |
| ____ CU | 0.02243 | 282.65 | 1.468 | 0.02212 | 0.02278 | 0.02240 |
| ____ FE | 0.41774 | 81.11 | 6.464 | 0.39579 | 0.40954 | 0.44790 |
| ____ K | 0.92675 | 708.79 | 4.765 | 0.94818 | 0.87596 | 0.95609 |
| ____ LI | 0.04134 | 417.56 | 6.544 | 0.04023 | 0.03937 | 0.04442 |
| ____ MG | 0.21143 | 315.33 | 0.105 | 0.21168 | 0.21125 | 0.21137 |
| ____ MN | 0.01099 | 704.21 | 0.907 | 0.01101 | 0.01089 | 0.01109 |
| ____ MO | 0.02068 | 23.48 | 3.511 | 0.01994 | 0.02070 | 0.02139 |
| ____ NA | 2.07077 | 3,701.44 | 0.317 | 2.07788 | 2.06496 | 2.06948 |
| ____ NI | 0.02289 | 60.09 | 1.245 | 0.02260 | 0.02316 | 0.02290 |
| ____ P | 0.19828 | 24.73 | 1.169 | 0.19808 | 0.19608 | 0.20070 |
| ____ PB | 0.02919 | 19.95 | 10.400 | 0.03210 | 0.02604 | 0.02943 |
| ____ S | 0.97203 | 85.56 | 0.982 | 0.96738 | 0.98301 | 0.96571 |
| ____ SB | 0.04007 | 11.58 | 10.732 | 0.03710 | 0.03810 | 0.04500 |
| ____ SE | 0.04632 | 3.00 | 14.751 | 0.04413 | 0.05398 | 0.04085 |
| ____ SI | 0.10497 | 16.56 | 16.959 | 0.11678 | 0.11364 | 0.08449 |
| ____ SN | 0.04352 | 14.86 | 7.086 | 0.04502 | 0.04556 | 0.03997 |
| ____ SR | 0.01060 | 7,655.23 | 1.790 | 0.01057 | 0.01042 | 0.01080 |
| ____ TI | 0.02090 | 1,171.03 | 0.961 | 0.02087 | 0.02072 | 0.02112 |
| ____ TL | 0.06466 | 7.75 | 2.666 | 0.06577 | 0.06268 | 0.06555 |
| ____ V | 0.01094 | 176.77 | 2.283 | 0.01083 | 0.01076 | 0.01122 |
| ____ Y1 | 4820.62537 | 4,820.63 | 0.306 | 4836.72862 | 4817.39826 | 4807.74923 |
| ____ Y2A | 204651.44001 | 204,651.44 | 0.710 | 205026.47471 | 205879.67909 | 203048.16623 |
| ____ Y2R | 11782.31048 | 11,782.31 | 0.516 | 11819.55307 | 11815.25475 | 11712.12363 |
| ____ ZN | 0.04251 | 174.36 | 0.664 | 0.04270 | 0.04263 | 0.04218 |
| ____ ZR | 0.10653 | 243.83 | 0.620 | 0.10647 | 0.10590 | 0.10722 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 8 Date/Time: 07/21/2017 11:33

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00335 | -188.12 | 34.690 | 0.00211 | 0.00352 | 0.00441 |
| ____ AL | 484.36142 | 56,962.21 | 1.299 | 485.59064 | 477.54621 | 489.94741 |
| ____ AS | -0.00809 | -6.89 | 166.688 | 0.00184 | -0.02344 | -0.00267 |
| ____ B | -0.01114 | 1,084.56 | 31.631 | -0.01006 | -0.00828 | -0.01507 |
| ____ BA | 0.00032 | 338.19 | 9.916 | 0.00036 | 0.00031 | 0.00030 |
| ____ BE | -0.00025 | -309.34 | 17.050 | -0.00025 | -0.00020 | -0.00029 |
| ____ CA | 476.27173 | 408,142.74 | 1.612 | 480.34693 | 467.41850 | 481.04975 |
| ____ CD | 0.00130 | 79.31 | 5.609 | 0.00134 | 0.00121 | 0.00134 |
| ____ CO | -0.00001 | -0.84 | 3560.788 | 0.00079 | -0.00069 | -0.00013 |
| ____ CR | 0.00166 | 28.18 | 10.522 | 0.00185 | 0.00151 | 0.00162 |
| ____ CU | 0.00437 | 151.55 | 25.355 | 0.00543 | 0.00446 | 0.00322 |
| ____ FE | 194.07049 | 31,643.88 | 1.333 | 194.47630 | 191.30465 | 196.43052 |
| ____ K | 0.60115 | 517.77 | 21.368 | 0.74919 | 0.51913 | 0.53513 |
| ____ LI | -0.00487 | 29.27 | 60.907 | -0.00742 | -0.00558 | -0.00161 |
| ____ MG | 413.94868 | 465,198.02 | 1.473 | 418.12898 | 406.95165 | 416.76541 |
| ____ MN | 0.00383 | 214.65 | 0.587 | 0.00383 | 0.00381 | 0.00385 |
| ____ MO | -0.00544 | -4.60 | 6.599 | -0.00583 | -0.00536 | -0.00512 |
| ____ NA | 0.14971 | 571.93 | 4.805 | 0.14514 | 0.14600 | 0.15800 |
| ____ NI | 0.00321 | 9.34 | 15.630 | 0.00328 | 0.00367 | 0.00268 |
| ____ P | 0.01479 | 2.88 | 28.388 | 0.01849 | 0.01565 | 0.01023 |
| ____ PB | -0.00027 | 48.23 | 2073.078 | -0.00492 | 0.00603 | -0.00193 |
| ____ S | 0.04978 | 18.02 | 30.834 | 0.03694 | 0.04561 | 0.06678 |
| ____ SB | 0.00712 | 7.42 | 118.318 | -0.00147 | 0.01537 | 0.00746 |
| ____ SE | -0.05084 | -8.25 | 46.156 | -0.02818 | -0.04931 | -0.07504 |
| ____ SI | 0.00685 | 3.08 | 122.965 | 0.01222 | -0.00286 | 0.01119 |
| ____ SN | 0.00542 | 1.18 | 19.515 | 0.00533 | 0.00651 | 0.00440 |
| ____ SR | 0.01652 | 10,291.45 | 0.956 | 0.01670 | 0.01644 | 0.01641 |
| ____ TI | -0.00309 | -94.16 | 1.463 | -0.00314 | -0.00307 | -0.00305 |
| ____ TL | -0.00413 | 0.45 | 72.531 | -0.00129 | -0.00726 | -0.00383 |
| ____ V | 0.00098 | 3.31 | 87.843 | 0.00120 | 0.00003 | 0.00171 |
| ____ Y1 | 4232.82805 | 4,232.83 | 0.735 | 4249.08309 | 4196.96630 | 4252.43476 |
| ____ Y2A | 175870.77421 | 175,870.77 | 0.921 | 174029.73432 | 176506.74516 | 177075.84315 |
| ____ Y2R | 11048.29027 | 11,048.29 | 1.121 | 11048.69470 | 11171.95487 | 10924.22125 |
| ____ ZN | 0.00843 | 103.86 | 4.938 | 0.00815 | 0.00891 | 0.00822 |
| ____ ZR | -0.01122 | -43.72 | 5.738 | -0.01187 | -0.01059 | -0.01120 |

LANCASTER LABORATORIES

Run Name: 1720206T73

Instrument ID: 18255

Tube: 9

Date/Time: 07/21/2017 11:37

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21556 | 2,348.67 | 1.386 | 0.21223 | 0.21802 | 0.21641 |
| ____ AL | 484.35699 | 57,192.10 | 0.529 | 487.19356 | 483.67220 | 482.20522 |
| ____ AS | 0.08699 | 4.10 | 2.468 | 0.08722 | 0.08901 | 0.08473 |
| ____ B | -0.01451 | 1,066.64 | 14.413 | -0.01685 | -0.01282 | -0.01386 |
| ____ BA | 0.50276 | 304,837.38 | 1.963 | 0.49143 | 0.50950 | 0.50734 |
| ____ BE | 0.48771 | 204,048.49 | 1.600 | 0.47913 | 0.49440 | 0.48959 |
| ____ CA | 476.35432 | 409,876.55 | 0.359 | 478.25079 | 474.92586 | 475.88632 |
| ____ CD | 0.90926 | 6,434.81 | 0.157 | 0.91090 | 0.90834 | 0.90855 |
| ____ CO | 0.45681 | 1,679.60 | 0.245 | 0.45810 | 0.45623 | 0.45610 |
| ____ CR | 0.47507 | 3,979.21 | 1.539 | 0.46694 | 0.48109 | 0.47719 |
| ____ CU | 0.52399 | 6,393.40 | 1.462 | 0.51548 | 0.53032 | 0.52617 |
| ____ FE | 193.76964 | 31,725.34 | 0.131 | 194.05865 | 193.66674 | 193.58354 |
| ____ K | 0.22864 | 351.17 | 10.411 | 0.20966 | 0.22092 | 0.25535 |
| ____ LI | -0.00323 | 44.65 | 70.746 | -0.00323 | -0.00094 | -0.00551 |
| ____ MG | 410.68814 | 464,219.20 | 1.732 | 418.71820 | 405.18522 | 408.16099 |
| ____ MN | 0.48260 | 26,491.41 | 1.535 | 0.47455 | 0.48913 | 0.48413 |
| ____ MO | -0.00447 | -3.70 | 23.002 | -0.00551 | -0.00443 | -0.00346 |
| ____ NA | 0.14198 | 562.57 | 3.074 | 0.13720 | 0.14575 | 0.14299 |
| ____ NI | 0.90113 | 2,009.85 | 0.195 | 0.90178 | 0.90246 | 0.89914 |
| ____ P | 0.00314 | 1.70 | 265.947 | -0.00648 | 0.00861 | 0.00729 |
| ____ PB | 0.50051 | 338.31 | 1.184 | 0.50466 | 0.49372 | 0.50314 |
| ____ S | 0.03465 | 17.26 | 26.903 | 0.02402 | 0.03848 | 0.04144 |
| ____ SB | 0.60320 | 139.86 | 0.760 | 0.60121 | 0.60845 | 0.59995 |
| ____ SE | 0.48106 | 41.84 | 1.720 | 0.47603 | 0.49062 | 0.47655 |
| ____ SI | -0.00160 | 2.05 | 672.838 | -0.00825 | -0.00736 | 0.01081 |
| ____ SN | 0.00638 | 1.50 | 21.465 | 0.00642 | 0.00498 | 0.00772 |
| ____ SR | 0.01644 | 10,310.62 | 1.744 | 0.01613 | 0.01669 | 0.01650 |
| ____ TI | -0.00403 | -82.30 | 0.981 | -0.00398 | -0.00405 | -0.00405 |
| ____ TL | 0.09455 | 8.76 | 8.295 | 0.09656 | 0.10119 | 0.08590 |
| ____ V | 0.50463 | 7,965.54 | 1.403 | 0.49705 | 0.51106 | 0.50580 |
| ____ Y1 | 4276.99054 | 4,276.99 | 0.155 | 4270.18185 | 4283.46896 | 4277.32080 |
| ____ Y2A | 177072.39184 | 177,072.39 | 1.565 | 180217.58242 | 174990.93906 | 176008.65404 |
| ____ Y2R | 11092.24652 | 11,092.25 | 0.497 | 11032.86741 | 11102.18214 | 11141.69000 |
| ____ ZN | 0.97534 | 3,474.26 | 0.395 | 0.97813 | 0.97095 | 0.97695 |
| ____ ZR | -0.01182 | -45.29 | 16.389 | -0.01354 | -0.01221 | -0.00972 |

LANCASTER LABORATORIES

Run Name: 1720206T73

Instrument ID: 18255

Tube: 10

Date/Time: 07/21/2017 11:40

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49875 | 6,596.71 | 0.490 | 0.49993 | 0.49594 | 0.50038 |
| ____ AL | 24.88589 | 2,982.74 | 0.553 | 25.01073 | 24.73848 | 24.90847 |
| ____ AS | 0.49076 | 61.06 | 0.496 | 0.49211 | 0.48795 | 0.49221 |
| ____ B | 0.47813 | 3,846.11 | 0.662 | 0.47756 | 0.47529 | 0.48155 |
| ____ BA | 0.49509 | 333,482.59 | 0.748 | 0.49298 | 0.49292 | 0.49936 |
| ____ BE | 0.48502 | 225,362.34 | 0.301 | 0.48529 | 0.48344 | 0.48632 |
| ____ CA | 24.72550 | 22,694.32 | 0.746 | 24.84051 | 24.51279 | 24.82321 |
| ____ CD | 0.49130 | 3,814.74 | 0.137 | 0.49204 | 0.49111 | 0.49074 |
| ____ CO | 0.48867 | 1,993.90 | 0.488 | 0.49058 | 0.48943 | 0.48600 |
| ____ CR | 0.48796 | 4,538.74 | 0.134 | 0.48871 | 0.48756 | 0.48760 |
| ____ CU | 0.49967 | 6,620.00 | 0.460 | 0.49967 | 0.49737 | 0.50196 |
| ____ FE | 24.75349 | 4,364.90 | 0.004 | 24.75422 | 24.75233 | 24.75392 |
| ____ K | 24.66638 | 11,907.45 | 0.301 | 24.70489 | 24.58074 | 24.71352 |
| ____ LI | 0.50407 | 4,899.03 | 0.326 | 0.50376 | 0.50260 | 0.50584 |
| ____ MG | 24.68998 | 35,342.66 | 0.926 | 24.84822 | 24.42793 | 24.79380 |
| ____ MN | 0.49743 | 30,324.17 | 0.339 | 0.49665 | 0.49626 | 0.49936 |
| ____ MO | 0.49777 | 538.57 | 0.153 | 0.49825 | 0.49690 | 0.49817 |
| ____ NA | 24.81990 | 39,571.23 | 0.251 | 24.88421 | 24.75962 | 24.81588 |
| ____ NI | 0.48957 | 1,209.52 | 0.283 | 0.49038 | 0.48797 | 0.49036 |
| ____ P | 0.48168 | 56.85 | 0.807 | 0.48360 | 0.48423 | 0.47720 |
| ____ PB | 0.48956 | 316.32 | 0.150 | 0.49040 | 0.48903 | 0.48926 |
| ____ S | 24.22775 | 1,695.49 | 0.355 | 24.28034 | 24.27452 | 24.12838 |
| ____ SB | 0.49936 | 123.70 | 1.670 | 0.50663 | 0.50118 | 0.49026 |
| ____ SE | 0.49230 | 49.43 | 1.790 | 0.48505 | 0.48973 | 0.50211 |
| ____ SI | 24.48076 | 3,214.43 | 0.353 | 24.55219 | 24.38484 | 24.50526 |
| ____ SN | 0.48796 | 169.51 | 0.192 | 0.48901 | 0.48764 | 0.48721 |
| ____ SR | 0.49726 | 348,438.15 | 1.168 | 0.49252 | 0.49552 | 0.50374 |
| ____ TI | 0.50004 | 25,798.53 | 0.309 | 0.49852 | 0.50000 | 0.50161 |
| ____ TL | 0.49338 | 56.88 | 0.180 | 0.49238 | 0.49366 | 0.49409 |
| ____ V | 0.50494 | 8,685.68 | 0.394 | 0.50458 | 0.50315 | 0.50708 |
| ____ Y1 | 4736.14239 | 4,736.14 | 0.162 | 4744.38356 | 4729.22908 | 4734.81452 |
| ____ Y2A | 196623.97340 | 196,623.97 | 0.611 | 197554.04838 | 197050.50878 | 195267.36305 |
| ____ Y2R | 11566.44891 | 11,566.45 | 0.502 | 11528.55573 | 11633.28352 | 11537.50747 |
| ____ ZN | 0.49089 | 1,913.33 | 0.427 | 0.49313 | 0.49057 | 0.48898 |
| ____ ZR | 0.50384 | 1,201.46 | 0.117 | 0.50441 | 0.50386 | 0.50324 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 11 Date/Time: 07/21/2017 11:43

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00141 | -30.33 | 12.048 | -0.00129 | -0.00132 | -0.00160 |
| ____ AL | 0.01003 | 10.37 | 254.883 | -0.00872 | 0.03914 | -0.00033 |
| ____ AS | -0.00423 | -2.10 | 42.739 | -0.00632 | -0.00327 | -0.00310 |
| ____ B | 0.00382 | 20.96 | 29.966 | 0.00500 | 0.00271 | 0.00375 |
| ____ BA | 0.00006 | 208.25 | 49.926 | 0.00009 | 0.00006 | 0.00003 |
| ____ BE | 0.00001 | -229.90 | 232.555 | 0.00005 | 0.00001 | -0.00002 |
| ____ CA | 0.00391 | 47.80 | 126.589 | 0.00730 | 0.00621 | -0.00177 |
| ____ CD | 0.00025 | -1.50 | 180.613 | -0.00012 | 0.00012 | 0.00076 |
| ____ CO | 0.00002 | -0.81 | 470.708 | -0.00010 | 0.00006 | 0.00010 |
| ____ CR | 0.00058 | 21.94 | 107.658 | 0.00003 | 0.00044 | 0.00125 |
| ____ CU | 0.00048 | -19.70 | 128.448 | 0.00102 | -0.00019 | 0.00060 |
| ____ FE | 0.00423 | 6.49 | 111.604 | 0.00803 | 0.00570 | -0.00105 |
| ____ K | -0.17879 | 173.11 | 27.927 | -0.23529 | -0.16049 | -0.14059 |
| ____ LI | -0.00391 | -28.30 | 12.817 | -0.00444 | -0.00384 | -0.00345 |
| ____ MG | 0.01105 | 19.47 | 9.107 | 0.01140 | 0.00992 | 0.01184 |
| ____ MN | -0.00001 | 5.99 | 205.762 | 0.00000 | -0.00004 | 0.00000 |
| ____ MO | -0.00054 | 0.15 | 117.498 | -0.00042 | -0.00122 | 0.00003 |
| ____ NA | -0.03823 | 301.04 | 29.457 | -0.04168 | -0.04736 | -0.02564 |
| ____ NI | 0.00056 | 3.98 | 163.085 | -0.00029 | 0.00045 | 0.00153 |
| ____ P | -0.00586 | 0.86 | 23.714 | -0.00666 | -0.00425 | -0.00666 |
| ____ PB | -0.00341 | -1.30 | 89.243 | -0.00351 | -0.00641 | -0.00032 |
| ____ S | -0.08914 | 10.67 | 16.963 | -0.09257 | -0.10224 | -0.07259 |
| ____ SB | 0.00254 | 2.26 | 67.952 | 0.00293 | 0.00065 | 0.00404 |
| ____ SE | 0.00951 | -0.91 | 91.322 | 0.00917 | 0.01836 | 0.00100 |
| ____ SI | -0.00265 | 2.00 | 284.169 | -0.00423 | -0.00925 | 0.00554 |
| ____ SN | 0.00242 | 0.28 | 23.362 | 0.00271 | 0.00177 | 0.00278 |
| ____ SR | 0.00002 | -56.38 | 81.577 | 0.00004 | 0.00002 | 0.00000 |
| ____ TI | -0.00007 | 49.22 | 133.560 | -0.00001 | -0.00002 | -0.00017 |
| ____ TL | 0.00845 | 0.86 | 17.398 | 0.01008 | 0.00803 | 0.00723 |
| ____ V | 0.00037 | -8.78 | 35.638 | 0.00031 | 0.00029 | 0.00053 |
| ____ Y1 | 4792.61807 | 4,792.62 | 0.721 | 4769.05709 | 4776.50235 | 4832.29477 |
| ____ Y2A | 201229.21356 | 201,229.21 | 0.636 | 202658.12512 | 200837.92863 | 200191.58692 |
| ____ Y2R | 11538.75275 | 11,538.75 | 1.597 | 11673.75250 | 11613.62729 | 11328.87845 |
| ____ ZN | -0.00053 | 5.57 | 123.586 | -0.00111 | -0.00065 | 0.00018 |
| ____ ZR | 0.00121 | -15.64 | 32.191 | 0.00135 | 0.00077 | 0.00151 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 12 Date/Time: 07/21/2017 11:46

Sample Number: **PBW** Class: **** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00103 | -28.09 | 47.741 | -0.00090 | -0.00062 | -0.00158 |
| ____ AL | 0.01619 | 11.84 | 179.308 | -0.01617 | 0.03992 | 0.02481 |
| ____ AS | 0.00105 | -1.55 | 368.666 | 0.00328 | 0.00326 | -0.00341 |
| ____ B | 0.00307 | 16.47 | 11.209 | 0.00322 | 0.00267 | 0.00330 |
| ____ BA | 0.00000 | 183.38 | 1503.772 | -0.00003 | 0.00003 | -0.00001 |
| ____ BE | -0.00001 | -266.15 | 154.072 | 0.00000 | 0.00000 | -0.00001 |
| ____ CA | 0.00478 | 51.60 | 83.634 | 0.00534 | 0.00847 | 0.00053 |
| ____ CD | -0.00014 | -5.07 | 45.166 | -0.00011 | -0.00010 | -0.00022 |
| ____ CO | -0.00037 | -2.65 | 65.235 | -0.00016 | -0.00031 | -0.00063 |
| ____ CR | 0.00005 | 18.91 | 982.468 | -0.00054 | 0.00026 | 0.00043 |
| ____ CU | 0.00098 | -14.30 | 20.583 | 0.00105 | 0.00113 | 0.00075 |
| ____ FE | -0.01594 | 3.08 | 36.023 | -0.01186 | -0.01345 | -0.02250 |
| ____ K | -0.18762 | 179.45 | 23.427 | -0.17157 | -0.15395 | -0.23734 |
| ____ LI | -0.00181 | -8.22 | 40.130 | -0.00166 | -0.00260 | -0.00117 |
| ____ MG | 0.00454 | 10.78 | 31.517 | 0.00290 | 0.00515 | 0.00556 |
| ____ MN | 0.00005 | 11.16 | 228.596 | 0.00003 | 0.00019 | -0.00006 |
| ____ MO | -0.00074 | -0.08 | 121.561 | -0.00172 | -0.00054 | 0.00005 |
| ____ NA | -0.04795 | 303.95 | 24.653 | -0.04704 | -0.03661 | -0.06020 |
| ____ NI | 0.00027 | 3.54 | 109.847 | 0.00046 | 0.00042 | -0.00007 |
| ____ P | -0.00219 | 1.40 | 306.650 | -0.00190 | -0.00905 | 0.00438 |
| ____ PB | -0.00339 | -1.41 | 89.611 | -0.00351 | -0.00029 | -0.00636 |
| ____ S | -0.12427 | 8.96 | 4.705 | -0.12560 | -0.11787 | -0.12934 |
| ____ SB | 0.00114 | 2.09 | 450.099 | 0.00679 | -0.00327 | -0.00009 |
| ____ SE | 0.01003 | -0.93 | 14.814 | 0.00997 | 0.01155 | 0.00858 |
| ____ SI | 0.00482 | 3.17 | 130.516 | 0.01208 | 0.00084 | 0.00155 |
| ____ SN | 0.00117 | -0.17 | 265.386 | 0.00414 | -0.00206 | 0.00144 |
| ____ SR | 0.00000 | -79.14 | 215.707 | 0.00000 | 0.00000 | 0.00000 |
| ____ TI | -0.00020 | 47.07 | 12.833 | -0.00017 | -0.00020 | -0.00022 |
| ____ TL | -0.00302 | -0.59 | 85.850 | -0.00255 | -0.00069 | -0.00581 |
| ____ V | 0.00014 | -14.32 | 98.178 | 0.00001 | 0.00012 | 0.00029 |
| ____ Y1 | 5240.39255 | 5,240.39 | 0.344 | 5235.50959 | 5225.31456 | 5260.35351 |
| ____ Y2A | 223719.64746 | 223,719.65 | 0.263 | 224105.17689 | 223042.77867 | 224010.98682 |
| ____ Y2R | 12295.15791 | 12,295.16 | 5.380 | 11992.93825 | 11838.78449 | 13053.75100 |
| ____ ZN | -0.00031 | 6.98 | 95.994 | -0.00032 | -0.00001 | -0.00060 |
| ____ ZR | 0.00195 | -14.78 | 18.809 | 0.00237 | 0.00173 | 0.00173 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 13 Date/Time: 07/21/2017 11:49

Sample Number: **LCSW** Class: **** Batch: 172001063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04910 | 752.96 | 1.532 | 0.04826 | 0.04970 | 0.04934 |
| ____ AL | 1.88125 | 264.53 | 2.070 | 1.87903 | 1.92126 | 1.84347 |
| ____ AS | 0.13069 | 17.54 | 4.202 | 0.13505 | 0.13249 | 0.12452 |
| ____ B | 1.71266 | 14,814.87 | 0.439 | 1.70401 | 1.71752 | 1.71646 |
| ____ BA | 1.80665 | 1,364,254.87 | 0.423 | 1.80131 | 1.81541 | 1.80324 |
| ____ BE | 0.04415 | 22,822.19 | 0.275 | 0.04401 | 0.04425 | 0.04418 |
| ____ CA | 3.63653 | 3,777.03 | 0.733 | 3.63861 | 3.66208 | 3.60891 |
| ____ CD | 0.04612 | 387.86 | 1.936 | 0.04708 | 0.04596 | 0.04532 |
| ____ CO | 0.46557 | 2,083.01 | 1.445 | 0.47317 | 0.46316 | 0.46038 |
| ____ CR | 0.17896 | 1,878.38 | 0.336 | 0.17942 | 0.17917 | 0.17828 |
| ____ CU | 0.23359 | 3,400.93 | 0.296 | 0.23283 | 0.23374 | 0.23418 |
| ____ FE | 0.90635 | 185.62 | 0.725 | 0.90418 | 0.90113 | 0.91373 |
| ____ K | 8.98476 | 5,031.99 | 0.881 | 9.03484 | 9.02593 | 8.89352 |
| ____ LI | 0.92001 | 9,969.10 | 0.356 | 0.92057 | 0.92297 | 0.91649 |
| ____ MG | 1.84503 | 2,986.89 | 0.903 | 1.84836 | 1.85978 | 1.82696 |
| ____ MN | 0.45999 | 31,452.12 | 0.401 | 0.45786 | 0.46100 | 0.46112 |
| ____ MO | 1.84150 | 2,178.66 | 1.360 | 1.87021 | 1.83005 | 1.82422 |
| ____ NA | 9.05987 | 16,403.68 | 0.434 | 9.01911 | 9.09756 | 9.06295 |
| ____ NI | 0.47203 | 1,281.29 | 1.165 | 0.47829 | 0.46980 | 0.46799 |
| ____ P | 0.89390 | 114.06 | 1.885 | 0.91335 | 0.88476 | 0.88359 |
| ____ PB | 0.13717 | 94.15 | 1.402 | 0.13895 | 0.13743 | 0.13513 |
| ____ S | 0.79014 | 78.66 | 1.614 | 0.78458 | 0.78112 | 0.80473 |
| ____ SB | 0.41739 | 103.99 | 2.324 | 0.42743 | 0.41666 | 0.40807 |
| ____ SE | 0.13912 | 13.84 | 3.818 | 0.13349 | 0.13985 | 0.14403 |
| ____ SI | 0.87317 | 141.88 | 0.642 | 0.86680 | 0.87537 | 0.87735 |
| ____ SN | 3.54651 | 1,352.38 | 1.353 | 3.60137 | 3.52584 | 3.51233 |
| ____ SR | 0.90299 | 709,762.74 | 0.454 | 0.89971 | 0.90759 | 0.90169 |
| ____ TI | 0.89119 | 51,248.37 | 0.434 | 0.88691 | 0.89445 | 0.89221 |
| ____ TL | 0.15821 | 17.74 | 0.936 | 0.15944 | 0.15861 | 0.15657 |
| ____ V | 0.46607 | 8,467.41 | 0.263 | 0.46490 | 0.46734 | 0.46598 |
| ____ Y1 | 5184.40779 | 5,184.41 | 0.999 | 5127.29781 | 5197.65093 | 5228.27462 |
| ____ Y2A | 220527.67245 | 220,527.67 | 0.339 | 221263.27080 | 220552.70405 | 219767.04251 |
| ____ Y2R | 12929.42236 | 12,929.42 | 0.456 | 12997.47051 | 12893.28209 | 12897.51447 |
| ____ ZN | 0.45697 | 1,939.82 | 1.343 | 0.46368 | 0.45559 | 0.45165 |
| ____ ZR | 0.91078 | 2,444.63 | 0.761 | 0.91537 | 0.91416 | 0.90281 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 14 Date/Time: 07/21/2017 11:52

Sample Number: **9109775** Class: U*** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00092 | -23.50 | 74.555 | -0.00024 | -0.00162 | -0.00092 |
| ____ AL | 0.03056 | 13.81 | 23.898 | 0.02406 | 0.03846 | 0.02915 |
| ____ AS | -0.00220 | -1.84 | 231.201 | 0.00326 | -0.00682 | -0.00304 |
| ____ B | 0.10606 | 843.89 | 0.741 | 0.10634 | 0.10665 | 0.10517 |
| ____ BA | 0.10190 | 71,648.08 | 0.303 | 0.10212 | 0.10204 | 0.10155 |
| ____ BE | -0.00011 | -291.89 | 22.909 | -0.00009 | -0.00013 | -0.00010 |
| ____ CA | 221.31121 | 216,221.78 | 0.117 | 221.01668 | 221.42057 | 221.49638 |
| ____ CD | -0.00021 | -5.09 | 79.197 | -0.00024 | -0.00036 | -0.00003 |
| ____ CO | -0.00029 | -2.09 | 166.889 | -0.00004 | -0.00084 | 0.00002 |
| ____ CR | 0.00126 | 28.98 | 13.044 | 0.00111 | 0.00143 | 0.00124 |
| ____ CU | 0.00214 | 69.06 | 67.843 | 0.00080 | 0.00368 | 0.00194 |
| ____ FE | 0.11361 | 27.81 | 8.293 | 0.12320 | 0.11324 | 0.10437 |
| ____ K | 5.01531 | 2,826.28 | 0.596 | 5.02442 | 4.98190 | 5.03960 |
| ____ LI | 0.03264 | 350.35 | 1.960 | 0.03338 | 0.03226 | 0.03228 |
| ____ MG | 36.50086 | 55,914.05 | 0.165 | 36.43787 | 36.55824 | 36.50647 |
| ____ MN | 0.22833 | 14,508.56 | 0.655 | 0.22925 | 0.22912 | 0.22660 |
| ____ MO | 0.00068 | 1.47 | 136.108 | 0.00172 | 0.00002 | 0.00029 |
| ____ NA | 78.70624 | 134,169.00 | 0.345 | 78.55846 | 79.01922 | 78.54102 |
| ____ NI | 0.00334 | 9.85 | 15.756 | 0.00369 | 0.00359 | 0.00273 |
| ____ P | 0.02688 | 4.67 | 11.857 | 0.02787 | 0.02331 | 0.02945 |
| ____ PB | -0.00182 | -0.29 | 299.295 | -0.00797 | 0.00020 | 0.00233 |
| ____ S | 139.51903 | 9,804.49 | 0.909 | 139.09470 | 138.51752 | 140.94486 |
| ____ SB | 0.00116 | 1.91 | 178.457 | 0.00123 | 0.00319 | -0.00094 |
| ____ SE | -0.00231 | -2.15 | 162.190 | -0.00352 | -0.00528 | 0.00189 |
| ____ SI | 14.57180 | 2,057.97 | 0.074 | 14.57871 | 14.55936 | 14.57734 |
| ____ SN | 0.00371 | 0.74 | 28.635 | 0.00494 | 0.00315 | 0.00305 |
| ____ SR | 1.37845 | 1,006,683.26 | 1.137 | 1.38893 | 1.38599 | 1.36043 |
| ____ TI | -0.00022 | 42.07 | 49.538 | -0.00032 | -0.00023 | -0.00010 |
| ____ TL | 0.00546 | 0.50 | 88.338 | 0.00164 | 0.01089 | 0.00386 |
| ____ V | 0.00095 | 1.15 | 27.747 | 0.00125 | 0.00085 | 0.00075 |
| ____ Y1 | 4795.37535 | 4,795.38 | 0.607 | 4827.40290 | 4788.26725 | 4770.45591 |
| ____ Y2A | 204901.72896 | 204,901.73 | 0.895 | 204565.90046 | 203259.28443 | 206880.00200 |
| ____ Y2R | 12444.89611 | 12,444.90 | 0.027 | 12441.91647 | 12448.56029 | 12444.21158 |
| ____ ZN | 0.00264 | 17.98 | 8.154 | 0.00287 | 0.00260 | 0.00244 |
| ____ ZR | 0.00320 | -11.69 | 17.606 | 0.00385 | 0.00287 | 0.00288 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 15 Date/Time: 07/21/2017 11:55

Sample Number: **9109775** Class: UP** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.02118 | 312.47 | 4.049 | 0.02213 | 0.02095 | 0.02047 |
| ____ AL | 0.91094 | 126.24 | 2.967 | 0.88277 | 0.93665 | 0.91341 |
| ____ AS | 0.47814 | 61.33 | 1.386 | 0.47068 | 0.48334 | 0.48039 |
| ____ B | 0.28323 | 2,265.83 | 0.409 | 0.28202 | 0.28334 | 0.28433 |
| ____ BA | 0.14454 | 101,477.72 | 0.585 | 0.14369 | 0.14455 | 0.14538 |
| ____ BE | 0.01778 | 8,366.24 | 0.365 | 0.01771 | 0.01780 | 0.01784 |
| ____ CA | 217.12940 | 210,825.82 | 1.228 | 214.58838 | 219.90617 | 216.89365 |
| ____ CD | 0.04371 | 343.35 | 0.747 | 0.04333 | 0.04390 | 0.04389 |
| ____ CO | 0.08753 | 364.73 | 1.336 | 0.08619 | 0.08835 | 0.08804 |
| ____ CR | 0.17855 | 1,737.18 | 0.544 | 0.17790 | 0.17809 | 0.17967 |
| ____ CU | 0.46348 | 6,447.91 | 0.376 | 0.46147 | 0.46461 | 0.46436 |
| ____ FE | 0.54771 | 109.72 | 2.105 | 0.54069 | 0.54142 | 0.56101 |
| ____ K | 6.75983 | 3,689.28 | 0.627 | 6.71717 | 6.80198 | 6.76034 |
| ____ LI | 0.95238 | 9,869.12 | 1.380 | 0.93915 | 0.96543 | 0.95255 |
| ____ MG | 36.51928 | 55,585.24 | 1.250 | 36.09460 | 37.00214 | 36.46110 |
| ____ MN | 0.27610 | 17,501.23 | 0.412 | 0.27517 | 0.27576 | 0.27737 |
| ____ MO | 0.18483 | 205.11 | 0.799 | 0.18339 | 0.18476 | 0.18634 |
| ____ NA | 78.60216 | 133,141.50 | 1.000 | 78.00378 | 79.49193 | 78.31078 |
| ____ NI | 0.13464 | 341.75 | 1.083 | 0.13297 | 0.13569 | 0.13525 |
| ____ P | 0.97146 | 115.76 | 0.215 | 0.96918 | 0.97328 | 0.97194 |
| ____ PB | 0.44164 | 290.11 | 0.881 | 0.44182 | 0.43766 | 0.44544 |
| ____ S | 136.23858 | 9,677.00 | 0.706 | 135.15594 | 136.56504 | 136.99474 |
| ____ SB | 0.36480 | 92.27 | 0.651 | 0.36475 | 0.36244 | 0.36719 |
| ____ SE | 0.70824 | 73.77 | 1.461 | 0.70045 | 0.70428 | 0.71998 |
| ____ SI | 15.13723 | 2,125.27 | 1.295 | 14.95033 | 15.34118 | 15.12018 |
| ____ SN | 0.53143 | 188.97 | 0.934 | 0.52984 | 0.52746 | 0.53700 |
| ____ SR | 1.35879 | 989,991.27 | 0.929 | 1.34469 | 1.36262 | 1.36905 |
| ____ TI | 0.09244 | 4,980.30 | 0.282 | 0.09226 | 0.09231 | 0.09274 |
| ____ TL | 0.82007 | 101.12 | 0.906 | 0.81927 | 0.82787 | 0.81308 |
| ____ V | 0.09483 | 1,650.57 | 0.440 | 0.09451 | 0.09469 | 0.09530 |
| ____ Y1 | 4846.73619 | 4,846.74 | 0.312 | 4863.76736 | 4841.52109 | 4834.92013 |
| ____ Y2A | 204409.45730 | 204,409.46 | 0.186 | 204712.29050 | 204532.18276 | 203983.89864 |
| ____ Y2R | 12366.75541 | 12,366.76 | 1.193 | 12527.26909 | 12237.23574 | 12335.76139 |
| ____ ZN | 0.10984 | 444.24 | 0.887 | 0.10900 | 0.10960 | 0.11091 |
| ____ ZR | 0.90797 | 2,330.74 | 1.020 | 0.89923 | 0.91767 | 0.90700 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 16 Date/Time: 07/21/2017 11:58

Sample Number: **9109778** Class: D*** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00113 | -26.51 | 43.756 | -0.00057 | -0.00131 | -0.00151 |
| ____ AL | 0.00052 | 9.91 | 1427.426 | -0.00363 | -0.02022 | 0.02541 |
| ____ AS | 0.00308 | -1.18 | 134.748 | -0.00171 | 0.00564 | 0.00532 |
| ____ B | 0.09992 | 798.83 | 0.397 | 0.09965 | 0.10038 | 0.09974 |
| ____ BA | 0.09843 | 69,569.86 | 0.807 | 0.09754 | 0.09907 | 0.09867 |
| ____ BE | -0.00009 | -283.76 | 26.136 | -0.00006 | -0.00010 | -0.00009 |
| ____ CA | 214.16752 | 208,612.26 | 1.937 | 218.09799 | 209.83205 | 214.57253 |
| ____ CD | -0.00038 | -6.57 | 71.614 | -0.00066 | -0.00012 | -0.00037 |
| ____ CO | -0.00040 | -2.62 | 116.774 | -0.00095 | -0.00016 | -0.00010 |
| ____ CR | 0.00106 | 27.22 | 70.236 | 0.00138 | 0.00160 | 0.00021 |
| ____ CU | 0.00120 | 54.25 | 65.339 | 0.00108 | 0.00048 | 0.00204 |
| ____ FE | 0.12147 | 29.21 | 5.747 | 0.11512 | 0.12035 | 0.12894 |
| ____ K | 4.89905 | 2,757.97 | 2.107 | 5.00206 | 4.79559 | 4.89949 |
| ____ LI | 0.03283 | 351.18 | 4.144 | 0.03434 | 0.03243 | 0.03171 |
| ____ MG | 35.28035 | 53,893.61 | 1.954 | 35.91892 | 34.54941 | 35.37273 |
| ____ MN | 0.22137 | 14,140.28 | 0.898 | 0.21908 | 0.22271 | 0.22231 |
| ____ MO | 0.00044 | 1.25 | 53.463 | 0.00018 | 0.00052 | 0.00063 |
| ____ NA | 76.11767 | 129,339.05 | 1.738 | 77.54096 | 74.92512 | 75.88693 |
| ____ NI | 0.00259 | 8.19 | 23.135 | 0.00268 | 0.00195 | 0.00315 |
| ____ P | 0.02698 | 4.78 | 4.065 | 0.02776 | 0.02747 | 0.02573 |
| ____ PB | -0.00130 | 0.07 | 224.697 | -0.00466 | 0.00070 | 0.00005 |
| ____ S | 135.48173 | 9,721.47 | 0.819 | 136.22673 | 136.01255 | 134.20591 |
| ____ SB | -0.00110 | 1.38 | 326.439 | -0.00511 | 0.00178 | 0.00003 |
| ____ SE | 0.00110 | -1.83 | 704.731 | 0.00840 | -0.00708 | 0.00199 |
| ____ SI | 14.11870 | 1,987.45 | 1.467 | 14.32023 | 13.90636 | 14.12950 |
| ____ SN | 0.00257 | 0.35 | 102.935 | -0.00042 | 0.00462 | 0.00352 |
| ____ SR | 1.33586 | 980,731.26 | 0.313 | 1.33117 | 1.33921 | 1.33721 |
| ____ TI | -0.00014 | 46.41 | 37.238 | -0.00013 | -0.00009 | -0.00020 |
| ____ TL | 0.00536 | 0.50 | 89.589 | 0.00690 | 0.00920 | -0.00002 |
| ____ V | 0.00098 | 1.76 | 42.497 | 0.00057 | 0.00141 | 0.00096 |
| ____ Y1 | 4896.32256 | 4,896.32 | 0.911 | 4849.93910 | 4900.12992 | 4938.89866 |
| ____ Y2A | 205973.62388 | 205,973.62 | 0.731 | 207074.14551 | 204258.64752 | 206588.07861 |
| ____ Y2R | 12404.93450 | 12,404.93 | 1.188 | 12326.87850 | 12574.94501 | 12312.98000 |
| ____ ZN | 0.00239 | 17.35 | 13.182 | 0.00272 | 0.00237 | 0.00209 |
| ____ ZR | 0.00494 | -7.13 | 42.781 | 0.00315 | 0.00440 | 0.00728 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 17 Date/Time: 07/21/2017 12:01

Sample Number: **9109776** Class: R*** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04899 | 690.63 | 0.520 | 0.04872 | 0.04903 | 0.04923 |
| ____ AL | 1.85264 | 246.04 | 1.443 | 1.87589 | 1.82344 | 1.85860 |
| ____ AS | 0.14699 | 18.53 | 0.694 | 0.14810 | 0.14679 | 0.14609 |
| ____ B | 1.87379 | 14,883.55 | 1.430 | 1.89347 | 1.84327 | 1.88464 |
| ____ BA | 1.86465 | 1,292,887.95 | 0.578 | 1.87579 | 1.85429 | 1.86385 |
| ____ BE | 0.04446 | 21,107.68 | 1.547 | 0.04506 | 0.04371 | 0.04462 |
| ____ CA | 214.43949 | 205,498.87 | 0.611 | 214.83558 | 215.50548 | 212.97740 |
| ____ CD | 0.04394 | 345.26 | 0.813 | 0.04436 | 0.04374 | 0.04373 |
| ____ CO | 0.43774 | 1,830.49 | 1.859 | 0.44618 | 0.42994 | 0.43710 |
| ____ CR | 0.17812 | 1,716.73 | 1.299 | 0.18041 | 0.17578 | 0.17817 |
| ____ CU | 0.23257 | 3,170.69 | 1.428 | 0.23504 | 0.22880 | 0.23387 |
| ____ FE | 1.03491 | 199.17 | 0.369 | 1.03549 | 1.03841 | 1.03084 |
| ____ K | 14.23493 | 7,365.03 | 1.208 | 14.32716 | 14.34114 | 14.03650 |
| ____ LI | 0.96807 | 9,899.84 | 0.588 | 0.96626 | 0.97445 | 0.96350 |
| ____ MG | 36.45297 | 54,755.64 | 0.511 | 36.51807 | 36.59785 | 36.24300 |
| ____ MN | 0.65972 | 41,413.97 | 1.509 | 0.66758 | 0.64852 | 0.66304 |
| ____ MO | 1.83676 | 2,030.52 | 1.736 | 1.87228 | 1.81065 | 1.82734 |
| ____ NA | 84.01470 | 140,406.12 | 0.715 | 83.96713 | 84.63752 | 83.43944 |
| ____ NI | 0.44277 | 1,122.34 | 1.836 | 0.45134 | 0.43518 | 0.44178 |
| ____ P | 0.97584 | 116.21 | 1.421 | 0.99137 | 0.96469 | 0.97147 |
| ____ PB | 0.13019 | 83.42 | 0.329 | 0.13011 | 0.12981 | 0.13066 |
| ____ S | 130.53500 | 9,267.62 | 1.876 | 133.30463 | 128.65451 | 129.64584 |
| ____ SB | 0.42050 | 98.09 | 2.605 | 0.43310 | 0.41315 | 0.41526 |
| ____ SE | 0.07663 | 6.24 | 15.556 | 0.08992 | 0.06687 | 0.07312 |
| ____ SI | 14.87686 | 2,070.72 | 0.895 | 14.85800 | 15.01835 | 14.75421 |
| ____ SN | 3.49563 | 1,245.53 | 1.603 | 3.55365 | 3.44180 | 3.49144 |
| ____ SR | 2.13827 | 1,543,288.52 | 1.178 | 2.15103 | 2.10925 | 2.15453 |
| ____ TI | 0.90066 | 47,554.53 | 1.338 | 0.91093 | 0.88740 | 0.90365 |
| ____ TL | 0.14480 | 15.09 | 6.773 | 0.15031 | 0.15060 | 0.13347 |
| ____ V | 0.47429 | 7,924.78 | 1.748 | 0.48112 | 0.46506 | 0.47670 |
| ____ Y1 | 4844.50547 | 4,844.51 | 1.182 | 4793.71954 | 4906.59411 | 4833.20276 |
| ____ Y2A | 202498.38981 | 202,498.39 | 0.925 | 201625.33426 | 204649.40012 | 201220.43504 |
| ____ Y2R | 12202.90436 | 12,202.90 | 0.229 | 12190.78396 | 12183.12000 | 12234.80911 |
| ____ ZN | 0.44925 | 1,781.67 | 1.659 | 0.45751 | 0.44303 | 0.44721 |
| ____ ZR | 0.91464 | 2,317.07 | 0.520 | 0.91057 | 0.91986 | 0.91347 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 18 Date/Time: 07/21/2017 12:04

Sample Number: **9109777** Class: M*** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04843 | 650.00 | 1.267 | 0.04776 | 0.04856 | 0.04897 |
| ____ AL | 1.80279 | 229.46 | 1.212 | 1.82623 | 1.79918 | 1.78297 |
| ____ AS | 0.13505 | 16.32 | 3.835 | 0.13271 | 0.14099 | 0.13146 |
| ____ B | 1.84908 | 14,012.01 | 1.297 | 1.82213 | 1.85704 | 1.86806 |
| ____ BA | 1.81933 | 1,203,445.28 | 0.986 | 1.79953 | 1.82399 | 1.83449 |
| ____ BE | 0.04397 | 19,912.18 | 1.086 | 0.04342 | 0.04419 | 0.04430 |
| ____ CA | 207.13503 | 190,041.47 | 1.071 | 207.42098 | 209.19639 | 204.78772 |
| ____ CD | 0.04353 | 328.99 | 0.356 | 0.04355 | 0.04337 | 0.04368 |
| ____ CO | 0.43633 | 1,755.37 | 0.540 | 0.43631 | 0.43399 | 0.43870 |
| ____ CR | 0.17692 | 1,626.87 | 0.964 | 0.17501 | 0.17828 | 0.17747 |
| ____ CU | 0.22704 | 2,951.64 | 2.099 | 0.22155 | 0.23008 | 0.22949 |
| ____ FE | 0.97874 | 180.58 | 2.490 | 0.98385 | 1.00015 | 0.95221 |
| ____ K | 13.63188 | 6,761.27 | 0.621 | 13.57321 | 13.72884 | 13.59358 |
| ____ LI | 0.92549 | 9,058.52 | 0.881 | 0.92781 | 0.93223 | 0.91643 |
| ____ MG | 35.37827 | 50,884.84 | 1.183 | 35.48696 | 35.73174 | 34.91612 |
| ____ MN | 0.65775 | 39,393.79 | 0.994 | 0.65024 | 0.66088 | 0.66214 |
| ____ MO | 1.82123 | 1,937.03 | 0.531 | 1.82319 | 1.81072 | 1.82978 |
| ____ NA | 80.97960 | 129,538.43 | 0.907 | 81.34645 | 81.45833 | 80.13401 |
| ____ NI | 0.44016 | 1,073.49 | 0.397 | 0.44029 | 0.43835 | 0.44184 |
| ____ P | 0.95729 | 109.70 | 1.303 | 0.95407 | 0.94674 | 0.97105 |
| ____ PB | 0.12752 | 78.59 | 2.786 | 0.12791 | 0.13086 | 0.12379 |
| ____ S | 129.58936 | 8,851.87 | 0.636 | 129.47746 | 128.82716 | 130.46346 |
| ____ SB | 0.41890 | 94.00 | 1.120 | 0.42431 | 0.41641 | 0.41597 |
| ____ SE | 0.08380 | 6.75 | 11.842 | 0.09499 | 0.07605 | 0.08037 |
| ____ SI | 14.37160 | 1,914.86 | 1.291 | 14.43269 | 14.51888 | 14.16324 |
| ____ SN | 3.48810 | 1,195.74 | 0.412 | 3.49023 | 3.47278 | 3.50129 |
| ____ SR | 2.10038 | 1,446,291.95 | 0.131 | 2.09777 | 2.10008 | 2.10327 |
| ____ TI | 0.88607 | 44,635.04 | 1.139 | 0.87492 | 0.88870 | 0.89458 |
| ____ TL | 0.13843 | 13.76 | 2.230 | 0.13852 | 0.13530 | 0.14147 |
| ____ V | 0.46723 | 7,443.86 | 1.479 | 0.45951 | 0.46932 | 0.47285 |
| ____ Y1 | 4660.34649 | 4,660.35 | 0.584 | 4637.84708 | 4690.58436 | 4652.60804 |
| ____ Y2A | 193181.37373 | 193,181.37 | 0.282 | 193745.03099 | 192658.42831 | 193140.66187 |
| ____ Y2R | 11679.14614 | 11,679.15 | 0.688 | 11751.14702 | 11592.49651 | 11693.79489 |
| ____ ZN | 0.44766 | 1,708.00 | 0.862 | 0.44719 | 0.44406 | 0.45173 |
| ____ ZR | 0.86710 | 2,101.37 | 1.270 | 0.87211 | 0.87473 | 0.85448 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 19 Date/Time: 07/21/2017 12:08

Sample Number: **9109775** Class: UL** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00068 | -20.42 | 36.761 | -0.00092 | -0.00070 | -0.00042 |
| ____ AL | 0.01291 | 10.67 | 168.139 | 0.03778 | 0.00317 | -0.00222 |
| ____ AS | -0.00116 | -1.73 | 390.273 | -0.00637 | 0.00089 | 0.00199 |
| ____ B | 0.03009 | 229.24 | 0.502 | 0.03011 | 0.03022 | 0.02992 |
| ____ BA | 0.02030 | 14,205.13 | 0.511 | 0.02026 | 0.02042 | 0.02023 |
| ____ BE | -0.00002 | -248.47 | 58.251 | -0.00004 | -0.00001 | -0.00002 |
| ____ CA | 43.95685 | 40,033.07 | 0.236 | 44.07502 | 43.91562 | 43.87990 |
| ____ CD | -0.00033 | -6.18 | 41.464 | -0.00029 | -0.00048 | -0.00022 |
| ____ CO | -0.00007 | -1.21 | 606.288 | -0.00050 | -0.00004 | 0.00034 |
| ____ CR | 0.00013 | 17.82 | 625.460 | 0.00054 | 0.00067 | -0.00082 |
| ____ CU | 0.00093 | -0.73 | 94.283 | 0.00182 | 0.00088 | 0.00008 |
| ____ FE | 0.01923 | 9.09 | 70.308 | 0.00624 | 0.01823 | 0.03321 |
| ____ K | 0.77086 | 618.43 | 2.122 | 0.75447 | 0.78719 | 0.77092 |
| ____ LI | 0.00626 | 69.77 | 14.883 | 0.00564 | 0.00581 | 0.00733 |
| ____ MG | 7.40570 | 10,622.86 | 0.326 | 7.43141 | 7.38350 | 7.40219 |
| ____ MN | 0.04642 | 2,913.05 | 0.212 | 0.04645 | 0.04649 | 0.04631 |
| ____ MO | 0.00084 | 1.68 | 84.858 | 0.00072 | 0.00020 | 0.00161 |
| ____ NA | 15.60234 | 24,858.56 | 0.128 | 15.61696 | 15.61042 | 15.57964 |
| ____ NI | 0.00133 | 5.79 | 69.224 | 0.00042 | 0.00132 | 0.00226 |
| ____ P | -0.00437 | 1.05 | 32.554 | -0.00529 | -0.00273 | -0.00508 |
| ____ PB | -0.00065 | 0.48 | 347.132 | 0.00146 | -0.00305 | -0.00037 |
| ____ S | 26.49217 | 1,908.64 | 0.954 | 26.47098 | 26.25082 | 26.75470 |
| ____ SB | 0.00149 | 2.03 | 200.601 | 0.00287 | -0.00194 | 0.00353 |
| ____ SE | 0.00537 | -1.37 | 157.112 | -0.00101 | 0.00218 | 0.01493 |
| ____ SI | 2.85459 | 374.31 | 0.749 | 2.86017 | 2.87265 | 2.83097 |
| ____ SN | 0.00124 | -0.14 | 56.765 | 0.00201 | 0.00063 | 0.00109 |
| ____ SR | 0.27662 | 199,097.38 | 0.229 | 0.27608 | 0.27732 | 0.27646 |
| ____ TI | 0.00090 | 100.31 | 13.043 | 0.00102 | 0.00090 | 0.00078 |
| ____ TL | 0.00334 | 0.24 | 141.239 | -0.00182 | 0.00745 | 0.00440 |
| ____ V | 0.00028 | -11.07 | 53.366 | 0.00015 | 0.00044 | 0.00024 |
| ____ Y1 | 4880.40863 | 4,880.41 | 0.511 | 4877.34427 | 4906.75732 | 4857.12429 |
| ____ Y2A | 201987.35733 | 201,987.36 | 0.315 | 201270.25190 | 202211.04779 | 202480.77230 |
| ____ Y2R | 11496.38550 | 11,496.39 | 0.469 | 11527.96053 | 11434.17381 | 11527.02217 |
| ____ ZN | 0.00007 | 8.04 | 437.663 | 0.00037 | -0.00021 | 0.00004 |
| ____ ZR | 0.00110 | -15.84 | 124.504 | 0.00006 | 0.00059 | 0.00266 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 20 Date/Time: 07/21/2017 12:11

Sample Number: **9109780** Class: **** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00116 | -26.30 | 19.998 | -0.00092 | -0.00138 | -0.00119 |
| ____ AL | 0.02529 | 12.06 | 135.716 | 0.03504 | 0.05368 | -0.01285 |
| ____ AS | 0.00114 | -1.40 | 920.984 | -0.00224 | 0.01291 | -0.00726 |
| ____ B | 0.09965 | 774.08 | 0.421 | 0.09962 | 0.09925 | 0.10009 |
| ____ BA | 0.09350 | 64,210.36 | 1.407 | 0.09337 | 0.09225 | 0.09487 |
| ____ BE | -0.00011 | -286.78 | 18.449 | -0.00009 | -0.00011 | -0.00013 |
| ____ CA | 214.70151 | 193,479.14 | 1.919 | 218.81208 | 214.71936 | 210.57309 |
| ____ CD | -0.00046 | -6.97 | 33.061 | -0.00035 | -0.00063 | -0.00039 |
| ____ CO | -0.00036 | -2.37 | 85.418 | -0.00066 | -0.00037 | -0.00005 |
| ____ CR | 0.00151 | 30.64 | 7.621 | 0.00138 | 0.00156 | 0.00158 |
| ____ CU | 0.00091 | 48.83 | 100.862 | 0.00079 | 0.00006 | 0.00187 |
| ____ FE | 0.13519 | 29.39 | 11.720 | 0.14636 | 0.14215 | 0.11705 |
| ____ K | 4.84252 | 2,525.39 | 1.890 | 4.94813 | 4.79266 | 4.78676 |
| ____ LI | 0.03352 | 331.37 | 5.761 | 0.03569 | 0.03287 | 0.03199 |
| ____ MG | 35.37070 | 49,985.44 | 2.079 | 36.09138 | 35.39916 | 34.62156 |
| ____ MN | 0.21320 | 13,230.98 | 1.384 | 0.21337 | 0.21017 | 0.21606 |
| ____ MO | 0.00023 | 0.98 | 451.047 | 0.00099 | -0.00093 | 0.00062 |
| ____ NA | 76.09091 | 119,614.77 | 2.039 | 77.71164 | 75.94254 | 74.61856 |
| ____ NI | 0.00272 | 8.29 | 17.107 | 0.00325 | 0.00236 | 0.00255 |
| ____ P | 0.01947 | 3.77 | 57.320 | 0.01223 | 0.01386 | 0.03233 |
| ____ PB | -0.00193 | -0.36 | 142.967 | -0.00426 | 0.00111 | -0.00264 |
| ____ S | 128.37322 | 8,949.10 | 1.621 | 125.99137 | 129.84217 | 129.28613 |
| ____ SB | -0.00010 | 1.59 | 3212.885 | 0.00352 | -0.00189 | -0.00192 |
| ____ SE | 0.00162 | -1.72 | 624.911 | 0.00778 | -0.01008 | 0.00717 |
| ____ SI | 14.07813 | 1,833.40 | 2.016 | 14.37657 | 14.04602 | 13.81180 |
| ____ SN | 0.00442 | 0.98 | 36.741 | 0.00492 | 0.00261 | 0.00574 |
| ____ SR | 1.28384 | 915,710.94 | 0.565 | 1.28871 | 1.27551 | 1.28731 |
| ____ TI | 0.00022 | 63.68 | 22.643 | 0.00018 | 0.00020 | 0.00027 |
| ____ TL | 0.00065 | -0.09 | 1813.519 | -0.00136 | -0.00999 | 0.01330 |
| ____ V | 0.00060 | -5.07 | 53.923 | 0.00029 | 0.00056 | 0.00093 |
| ____ Y1 | 4757.13858 | 4,757.14 | 1.789 | 4854.85760 | 4699.15051 | 4717.40763 |
| ____ Y2A | 200109.05826 | 200,109.06 | 0.863 | 201657.07302 | 200422.15682 | 198247.94493 |
| ____ Y2R | 11478.39768 | 11,478.40 | 2.438 | 11294.91915 | 11339.74410 | 11800.52979 |
| ____ ZN | 0.00249 | 17.24 | 6.022 | 0.00236 | 0.00245 | 0.00266 |
| ____ ZR | 0.00210 | -13.35 | 78.519 | 0.00122 | 0.00107 | 0.00400 |

LANCASTER LABORATORIES

Run Name: 1720206T73

Instrument ID: 18255

Tube: 21

Date/Time: 07/21/2017 12:14

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.46221 | 6,011.06 | 0.870 | 0.46380 | 0.46519 | 0.45764 |
| ____ AL | 22.42722 | 2,635.51 | 0.542 | 22.30100 | 22.43709 | 22.54357 |
| ____ AS | 0.45025 | 55.71 | 1.294 | 0.44418 | 0.45077 | 0.45580 |
| ____ B | 0.44615 | 3,522.05 | 1.047 | 0.44297 | 0.45151 | 0.44396 |
| ____ BA | 0.45218 | 299,520.36 | 0.449 | 0.45248 | 0.45404 | 0.45001 |
| ____ BE | 0.44890 | 205,078.44 | 0.936 | 0.44765 | 0.45358 | 0.44546 |
| ____ CA | 22.31973 | 20,088.49 | 0.808 | 22.13269 | 22.33374 | 22.49276 |
| ____ CD | 0.45291 | 3,503.82 | 0.749 | 0.45491 | 0.44900 | 0.45483 |
| ____ CO | 0.45012 | 1,830.10 | 0.785 | 0.45262 | 0.44608 | 0.45166 |
| ____ CR | 0.45261 | 4,140.64 | 1.252 | 0.45067 | 0.45899 | 0.44817 |
| ____ CU | 0.45835 | 5,969.11 | 0.937 | 0.45737 | 0.46306 | 0.45464 |
| ____ FE | 22.15577 | 3,832.12 | 0.813 | 22.02818 | 22.07742 | 22.36169 |
| ____ K | 22.35801 | 10,603.64 | 0.951 | 22.14402 | 22.36072 | 22.56928 |
| ____ LI | 0.45559 | 4,341.53 | 0.373 | 0.45552 | 0.45393 | 0.45733 |
| ____ MG | 22.27514 | 31,291.73 | 0.890 | 22.06006 | 22.31513 | 22.45024 |
| ____ MN | 0.46207 | 27,698.47 | 1.065 | 0.46009 | 0.46767 | 0.45844 |
| ____ MO | 0.45322 | 488.71 | 0.787 | 0.45491 | 0.44912 | 0.45562 |
| ____ NA | 22.54712 | 35,270.02 | 1.007 | 22.31806 | 22.55118 | 22.77212 |
| ____ NI | 0.45095 | 1,110.43 | 0.565 | 0.45185 | 0.44807 | 0.45293 |
| ____ P | 0.44132 | 52.03 | 1.115 | 0.44067 | 0.43676 | 0.44654 |
| ____ PB | 0.45352 | 292.01 | 1.076 | 0.45536 | 0.44799 | 0.45722 |
| ____ S | 21.84179 | 1,524.80 | 0.721 | 21.90604 | 21.66230 | 21.95703 |
| ____ SB | 0.45042 | 111.30 | 1.636 | 0.45777 | 0.44304 | 0.45045 |
| ____ SE | 0.45704 | 45.60 | 2.560 | 0.44470 | 0.45844 | 0.46798 |
| ____ SI | 22.04002 | 2,837.07 | 0.851 | 21.83154 | 22.09345 | 22.19507 |
| ____ SN | 0.44984 | 155.67 | 1.024 | 0.44680 | 0.44757 | 0.45513 |
| ____ SR | 0.45478 | 313,343.78 | 1.444 | 0.45051 | 0.46234 | 0.45148 |
| ____ TI | 0.46084 | 23,383.05 | 1.077 | 0.45851 | 0.46653 | 0.45746 |
| ____ TL | 0.45937 | 52.78 | 1.645 | 0.46800 | 0.45393 | 0.45619 |
| ____ V | 0.46683 | 7,897.20 | 0.905 | 0.46426 | 0.47170 | 0.46452 |
| ____ Y1 | 4719.63804 | 4,719.64 | 0.481 | 4717.19828 | 4743.48165 | 4698.23418 |
| ____ Y2A | 193348.09016 | 193,348.09 | 0.964 | 193791.66002 | 191302.80000 | 194949.81045 |
| ____ Y2R | 11338.62644 | 11,338.63 | 1.082 | 11479.01777 | 11284.88511 | 11251.97644 |
| ____ ZN | 0.45087 | 1,751.56 | 0.599 | 0.45132 | 0.44796 | 0.45331 |
| ____ ZR | 0.45321 | 1,057.56 | 0.619 | 0.45027 | 0.45350 | 0.45585 |

LANCASTER LABORATORIES

Run Name: 1720206T73 Instrument ID: 18255

Tube: 22 Date/Time: 07/21/2017 12:17

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00086 | -22.92 | 141.608 | -0.00195 | 0.00045 | -0.00108 |
| ____ AL | 0.02520 | 11.87 | 72.870 | 0.04527 | 0.02109 | 0.00924 |
| ____ AS | 0.00215 | -1.30 | 132.927 | -0.00031 | 0.00148 | 0.00527 |
| ____ B | 0.00533 | 32.72 | 7.184 | 0.00529 | 0.00497 | 0.00573 |
| ____ BA | 0.00003 | 187.20 | 113.875 | -0.00001 | 0.00004 | 0.00006 |
| ____ BE | -0.00003 | -249.01 | 98.124 | -0.00003 | 0.00000 | -0.00005 |
| ____ CA | 0.00421 | 46.86 | 47.324 | 0.00435 | 0.00614 | 0.00216 |
| ____ CD | -0.00022 | -5.33 | 105.795 | -0.00009 | -0.00049 | -0.00008 |
| ____ CO | -0.00038 | -2.50 | 36.723 | -0.00049 | -0.00022 | -0.00041 |
| ____ CR | 0.00051 | 21.33 | 119.058 | -0.00002 | 0.00037 | 0.00117 |
| ____ CU | 0.00056 | -18.51 | 29.113 | 0.00042 | 0.00075 | 0.00052 |
| ____ FE | -0.00872 | 4.09 | 225.669 | 0.00848 | -0.03017 | -0.00446 |
| ____ K | -0.26306 | 130.36 | 18.946 | -0.25014 | -0.31808 | -0.22095 |
| ____ LI | -0.00160 | -5.71 | 145.856 | -0.00410 | -0.00120 | 0.00051 |
| ____ MG | -0.00477 | -3.28 | 35.499 | -0.00663 | -0.00435 | -0.00332 |
| ____ MN | -0.00003 | 4.63 | 206.058 | -0.00008 | 0.00004 | -0.00006 |
| ____ MO | -0.00071 | -0.04 | 38.240 | -0.00040 | -0.00080 | -0.00091 |
| ____ NA | -0.04201 | 288.02 | 16.484 | -0.03491 | -0.04238 | -0.04875 |
| ____ NI | 0.00006 | 2.79 | 733.663 | 0.00043 | 0.00024 | -0.00048 |
| ____ P | -0.00631 | 0.82 | 47.873 | -0.00284 | -0.00777 | -0.00832 |
| ____ PB | -0.00060 | 0.53 | 469.214 | -0.00332 | 0.00232 | -0.00081 |
| ____ S | -0.15746 | 5.98 | 11.409 | -0.13960 | -0.17553 | -0.15726 |
| ____ SB | -0.00111 | 1.37 | 78.714 | -0.00015 | -0.00185 | -0.00132 |
| ____ SE | 0.00032 | -1.91 | 2538.933 | -0.00504 | -0.00353 | 0.00951 |
| ____ SI | -0.00136 | 2.12 | 885.754 | -0.01310 | 0.01100 | -0.00198 |
| ____ SN | 0.00264 | 0.37 | 92.440 | 0.00360 | 0.00445 | -0.00013 |
| ____ SR | 0.00002 | -60.55 | 149.912 | 0.00003 | 0.00004 | -0.00001 |
| ____ TI | -0.00005 | 50.23 | 140.441 | -0.00004 | -0.00012 | 0.00002 |
| ____ TL | 0.00381 | 0.30 | 216.722 | 0.00979 | -0.00561 | 0.00724 |
| ____ V | -0.00004 | -16.14 | 1196.624 | -0.00041 | 0.00048 | -0.00018 |
| ____ Y1 | 4881.40713 | 4,881.41 | 0.390 | 4874.36851 | 4902.96370 | 4866.88918 |
| ____ Y2A | 201237.19014 | 201,237.19 | 0.132 | 201396.10014 | 200929.89413 | 201385.57616 |
| ____ Y2R | 11257.26132 | 11,257.26 | 0.260 | 11227.81437 | 11257.55698 | 11286.41261 |
| ____ ZN | -0.00093 | 4.05 | 12.638 | -0.00081 | -0.00105 | -0.00093 |
| ____ ZR | 0.00134 | -14.95 | 133.011 | 0.00174 | -0.00061 | 0.00289 |

eurofins | Lancaster Laboratories Environmental

# ICP-AES Run Data Report

Reviewed By
Patrick J Engle

Reviewed Date
07/21/2017 2:00PM

Data File Name 1720206T71.TXT
Run Name: 1720206T71

Method Reference Name(s):

Verified By:
Parker D Lindstrom

Verified Date
07/21/2017 4:29PM

Analyst Employee: 3472

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 1 Date/Time: 07/21/2017 12:27

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -23.34507 | 18.966 | -0.01180 | -0.01259 | -0.01664 |
| AL | 0.000 | 32.08333 | 24.128 | 0.32786 | 0.22102 | 0.36110 |
| AS | 0.000 | 0.83667 | 35.148 | 0.01533 | 0.01238 | 0.02404 |
| B | 0.000 | -4.63632 | 79.864 | -0.00007 | -0.00008 | 0.00000 |
| BA | 0.000 | -221.37740 | 9.326 | -0.00260 | -0.00283 | -0.00235 |
| BE | 0.000 | -105.01155 | 4.002 | -0.05939 | -0.06093 | -0.06421 |
| CA | 0.000 | 24.91667 | 36.611 | 0.00325 | 0.00418 | 0.00656 |
| CD | 0.000 | -3.60333 | 19.681 | -0.05784 | -0.08155 | -0.08476 |
| CO | 0.000 | 0.75333 | 171.482 | 0.04537 | 0.00662 | -0.00550 |
| CR | 0.000 | 2.99284 | 197.220 | -0.00004 | 0.00006 | 0.00009 |
| CU | 0.000 | -21.18756 | 28.207 | -0.01139 | -0.01631 | -0.00953 |
| FE | 0.000 | 0.96667 | 284.949 | 0.00072 | -0.00041 | 0.00029 |
| K | 0.000 | 16.83333 | 229.715 | -0.12644 | 0.03850 | 0.54465 |
| LI | 0.000 | -8.76667 | 234.088 | -0.00618 | 0.00217 | -0.00137 |
| MG | 0.000 | -0.88333 | 250.416 | 0.00018 | -0.00058 | -0.00006 |
| MN | 0.000 | -6.16468 | 76.840 | -0.00532 | -0.00509 | -0.00041 |
| MO | 0.000 | -1.31567 | 20.508 | -0.03006 | -0.03100 | -0.02086 |
| NA | 0.000 | -50.61667 | 17.956 | -0.01116 | -0.00774 | -0.00986 |
| NI | 0.000 | 8.67667 | 13.900 | 0.19660 | 0.15071 | 0.19050 |
| P | 0.000 | 1.03667 | 39.375 | 0.00055 | 0.00023 | 0.00050 |
| PB | 0.000 | -3.28333 | 15.753 | -0.07187 | -0.07650 | -0.05603 |
| S | 0.000 | 0.94667 | 47.221 | 0.00018 | 0.00054 | 0.00046 |
| SB | 0.000 | 0.27000 | 185.537 | 0.00018 | -0.00012 | 0.00026 |
| SE | 0.000 | 0.36667 | 247.763 | 0.01873 | -0.01352 | 0.01664 |
| SI | 0.000 | -0.16667 | 783.444 | 0.00004 | 0.00017 | -0.00030 |
| SN | 0.000 | 0.16333 | 416.685 | 0.01676 | 0.00512 | -0.01161 |
| SR | 0.000 | -30.69990 | 23.846 | -0.00036 | -0.00027 | -0.00044 |
| TI | 0.000 | 25.37608 | 45.377 | 0.00727 | 0.01722 | 0.02015 |
| TL | 0.000 | 0.06333 | 54.632 | 0.00204 | 0.00128 | 0.00061 |
| V | 0.000 | -4.68762 | 148.459 | -0.00323 | -0.00656 | 0.00155 |
| Y1 | 0.000 | 2414.28000 | 2.591 | 2446.58000 | 2342.18500 | 2454.07500 |
| Y2A | 0.000 | 85369.28209 | 0.314 | 85677.77446 | 85198.03931 | 85232.03250 |
| Y2R | 0.000 | 5309.68333 | 5.126 | 5002.17500 | 5519.75000 | 5407.12500 |
| ZN | 0.000 | 1.75667 | 50.495 | 0.04619 | 0.04825 | 0.01528 |
| ZR | 0.000 | 12.01667 | 49.455 | 0.00115 | 0.00335 | 0.00218 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 2 Date/Time: 07/21/2017 12:30

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 2913.69372 | 2.104 | 28.24028 | 28.06472 | 27.15005 |
| CA | 50.000 | 26021.52371 | 1.923 | 5.04489 | 4.99981 | 4.86152 |
| FE | 50.000 | 5991.27521 | 2.105 | 1.16470 | 1.14976 | 1.11759 |
| K | 50.000 | 9406.44601 | 1.584 | 90.81696 | 90.42252 | 88.18008 |
| MG | 50.000 | 39040.14489 | 1.924 | 7.57641 | 7.49080 | 7.29653 |
| NA | 50.000 | 34561.71815 | 1.614 | 6.67358 | 6.64738 | 6.47741 |
| S | 50.000 | 2139.64667 | 0.957 | 0.91573 | 0.90308 | 0.91984 |
| SI | 50.000 | 4906.79863 | 2.069 | 0.95106 | 0.94494 | 0.91484 |
| Y1 | 50.000 | 2343.87333 | 0.266 | 2341.65000 | 2350.90500 | 2339.06500 |
| Y2R | 50.000 | 5237.26140 | 0.551 | 5243.67626 | 5205.74008 | 5262.36784 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 3 Date/Time: 07/21/2017 12:33

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 5758.82279 | 1.471 | 3.52270 | 3.48608 | 3.42168 |
| AS | 1.000 | 76.54000 | 3.729 | 1.58596 | 1.60800 | 1.70061 |
| B | 1.000 | 3732.80051 | 1.275 | 0.04572 | 0.04488 | 0.04462 |
| BA | 1.000 | 293504.00000 | 4.046 | 3.70722 | 3.49591 | 3.43349 |
| BE | 1.000 | 222490.00780 | 1.507 | 136.48730 | 134.02112 | 132.47308 |
| CD | 1.000 | 3665.18333 | 1.632 | 76.83103 | 78.12673 | 79.37991 |
| CO | 1.000 | 1581.38667 | 1.895 | 33.04859 | 33.73704 | 34.32465 |
| CU | 1.000 | 5212.68860 | 1.344 | 3.19371 | 3.11149 | 3.13531 |
| LI | 1.000 | 3102.54064 | 0.554 | 0.57010 | 0.57021 | 0.56470 |
| MN | 1.000 | 24157.54948 | 1.258 | 14.77234 | 14.57514 | 14.40561 |
| NI | 1.000 | 1044.07000 | 0.731 | 22.12021 | 22.19559 | 22.43206 |
| P | 1.000 | 115.40667 | 0.710 | 0.04885 | 0.04916 | 0.04955 |
| PB | 1.000 | 352.47778 | 1.229 | 7.42383 | 7.50349 | 7.60788 |
| SE | 1.000 | 59.31667 | 1.773 | 1.28189 | 1.23880 | 1.27104 |
| SR | 1.000 | 328330.76244 | 1.872 | 4.04799 | 3.94098 | 3.90538 |
| TL | 1.000 | 81.98333 | 0.728 | 1.73239 | 1.75414 | 1.75467 |
| Y1 | 1.000 | 2346.45833 | 1.439 | 2379.95000 | 2347.02000 | 2312.40500 |
| Y2A | 1.000 | 82838.48183 | 2.656 | 80586.27392 | 82945.79005 | 84983.38150 |
| Y2R | 1.000 | 5459.00438 | 0.650 | 5418.36429 | 5483.65883 | 5474.99002 |
| ZN | 1.000 | 2369.61000 | 0.978 | 50.04601 | 50.42309 | 51.02502 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 4 Date/Time: 07/21/2017 12:36

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 4823.77069 | 1.565 | 0.05651 | 0.05646 | 0.05497 |
| MO | 1.000 | 560.88467 | 1.158 | 11.75069 | 11.48174 | 11.61742 |
| SB | 1.000 | 125.32333 | 1.156 | 0.05255 | 0.05135 | 0.05183 |
| SN | 1.000 | 220.06000 | 1.093 | 4.59604 | 4.50138 | 4.57572 |
| TI | 1.000 | 21368.47785 | 0.594 | 12.48215 | 12.35984 | 12.34987 |
| V | 1.000 | 6442.95411 | 1.635 | 3.77461 | 3.77273 | 3.66781 |
| Y1 | 1.000 | 2414.58167 | 2.452 | 2369.32000 | 2481.57500 | 2392.85000 |
| Y2A | 1.000 | 86185.62744 | 1.387 | 85214.41751 | 85821.60654 | 87520.85825 |
| Y2R | 1.000 | 5267.92500 | 1.680 | 5340.07500 | 5169.20000 | 5294.50000 |
| ZR | 1.000 | 979.13333 | 1.136 | 0.18692 | 0.18726 | 0.18345 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 5 Date/Time: 07/21/2017 12:39

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.59419 | 3,457.98 | 0.687 | 0.59885 | 0.59127 | 0.59244 |
| ____ AL | 30.11870 | 1,815.98 | 1.275 | 30.08686 | 29.75161 | 30.51764 |
| ____ AS | 0.60828 | 47.61 | 1.315 | 0.60012 | 0.60860 | 0.61611 |
| ____ B | 0.57662 | 2,341.61 | 1.747 | 0.58544 | 0.56564 | 0.57877 |
| ____ BA | 0.60941 | 181,551.55 | 0.461 | 0.61205 | 0.60645 | 0.60973 |
| ____ BE | 0.57626 | 129,901.48 | 0.655 | 0.58054 | 0.57340 | 0.57483 |
| ____ CA | 30.20264 | 16,174.65 | 1.966 | 30.04819 | 29.70136 | 30.85838 |
| ____ CD | 0.58543 | 2,201.48 | 1.623 | 0.58099 | 0.57896 | 0.59634 |
| ____ CO | 0.57495 | 932.41 | 1.609 | 0.57329 | 0.56665 | 0.58492 |
| ____ CR | 0.57833 | 2,716.20 | 1.323 | 0.58628 | 0.57102 | 0.57769 |
| ____ CU | 0.58346 | 3,073.14 | 2.216 | 0.59211 | 0.56859 | 0.58967 |
| ____ FE | 29.50769 | 3,660.79 | 1.878 | 29.46119 | 28.97835 | 30.08353 |
| ____ K | 30.24974 | 5,841.98 | 2.000 | 30.15894 | 29.69520 | 30.89506 |
| ____ LI | 0.59807 | 1,822.75 | 1.893 | 0.58911 | 0.59432 | 0.61079 |
| ____ MG | 29.94960 | 24,100.93 | 2.057 | 29.87622 | 29.37361 | 30.59896 |
| ____ MN | 0.58719 | 14,389.60 | 0.475 | 0.58992 | 0.58730 | 0.58435 |
| ____ MO | 0.58641 | 326.94 | 0.752 | 0.58615 | 0.58214 | 0.59095 |
| ____ NA | 29.59766 | 20,912.75 | 1.989 | 29.41390 | 29.12288 | 30.25620 |
| ____ NI | 0.58697 | 630.31 | 0.925 | 0.58234 | 0.58561 | 0.59295 |
| ____ P | 0.59604 | 70.85 | 0.746 | 0.59092 | 0.59893 | 0.59827 |
| ____ PB | 0.58273 | 213.71 | 0.774 | 0.58311 | 0.57805 | 0.58704 |
| ____ S | 30.21118 | 1,325.49 | 0.776 | 30.10388 | 30.04952 | 30.48014 |
| ____ SB | 0.58644 | 73.23 | 1.894 | 0.57380 | 0.59467 | 0.59085 |
| ____ SE | 0.59886 | 36.46 | 1.106 | 0.60170 | 0.59129 | 0.60359 |
| ____ SI | 30.46870 | 3,066.94 | 2.043 | 30.20301 | 30.02330 | 31.17980 |
| ____ SN | 0.56642 | 124.12 | 1.324 | 0.55853 | 0.57345 | 0.56728 |
| ____ SR | 0.59540 | 198,152.81 | 0.407 | 0.59815 | 0.59359 | 0.59445 |
| ____ TI | 0.60109 | 12,547.12 | 0.559 | 0.60488 | 0.59847 | 0.59993 |
| ____ TL | 0.60877 | 48.62 | 1.354 | 0.60387 | 0.61829 | 0.60417 |
| ____ V | 0.59323 | 3,716.40 | 1.925 | 0.60197 | 0.58031 | 0.59741 |
| ____ Y1 | 2402.49167 | 2,402.49 | 1.236 | 2394.67000 | 2435.31500 | 2377.49000 |
| ____ Y2A | 83949.37768 | 83,949.38 | 1.993 | 82284.89417 | 83932.67500 | 85630.56387 |
| ____ Y2R | 5372.93876 | 5,372.94 | 3.906 | 5447.75264 | 5535.12582 | 5135.93781 |
| ____ ZN | 0.58816 | 1,434.10 | 0.685 | 0.58583 | 0.58583 | 0.59281 |
| ____ ZR | 0.59595 | 599.90 | 0.850 | 0.59781 | 0.59022 | 0.59981 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 6 Date/Time: 07/21/2017 12:42

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00006 | -20.43 | 1922.209 | 0.00136 | -0.00008 | -0.00110 |
| ____ AL | 0.00903 | 32.78 | 353.131 | 0.04185 | 0.00712 | -0.02187 |
| ____ AS | 0.00819 | 0.33 | 50.500 | 0.00383 | 0.00867 | 0.01206 |
| ____ B | 0.00296 | 6.16 | 12.909 | 0.00339 | 0.00266 | 0.00283 |
| ____ BA | -0.00189 | -130.63 | 17.308 | -0.00152 | -0.00200 | -0.00214 |
| ____ BE | 0.00032 | -56.78 | 94.352 | 0.00067 | 0.00021 | 0.00009 |
| ____ CA | -0.00470 | 22.25 | 223.917 | 0.00480 | -0.01601 | -0.00288 |
| ____ CD | 0.00045 | -3.41 | 28.383 | 0.00043 | 0.00034 | 0.00059 |
| ____ CO | 0.00054 | 1.61 | 102.020 | 0.00106 | -0.00004 | 0.00060 |
| ____ CR | 0.00137 | 3.52 | 59.924 | 0.00074 | 0.00230 | 0.00107 |
| ____ CU | 0.00011 | -17.01 | 1604.422 | 0.00182 | -0.00156 | 0.00006 |
| ____ FE | -0.01344 | -0.58 | 143.134 | -0.02459 | -0.02451 | 0.00877 |
| ____ K | 0.00828 | 17.92 | 812.057 | -0.06070 | 0.07369 | 0.01186 |
| ____ LI | 0.00141 | -5.33 | 116.220 | 0.00312 | 0.00124 | -0.00014 |
| ____ MG | -0.00305 | -5.15 | 59.511 | -0.00182 | -0.00513 | -0.00219 |
| ____ MN | 0.00023 | 2.85 | 157.860 | 0.00059 | -0.00012 | 0.00020 |
| ____ MO | 0.00013 | -0.80 | 1290.080 | -0.00178 | 0.00152 | 0.00066 |
| ____ NA | 0.15206 | -53.27 | 7.133 | 0.16456 | 0.14647 | 0.14514 |
| ____ NI | 0.00004 | 8.58 | 584.319 | 0.00023 | -0.00023 | 0.00011 |
| ____ P | -0.00263 | 0.71 | 252.242 | -0.01029 | 0.00145 | 0.00094 |
| ____ PB | -0.00304 | -2.52 | 191.140 | 0.00327 | -0.00422 | -0.00816 |
| ____ S | -0.00253 | 0.83 | 957.031 | -0.02731 | -0.00139 | 0.02111 |
| ____ SB | -0.00223 | 0.00 | 484.061 | 0.00945 | -0.01181 | -0.00432 |
| ____ SE | -0.01505 | -0.54 | 145.233 | -0.00054 | -0.04020 | -0.00442 |
| ____ SI | 0.01487 | 1.30 | 66.201 | 0.02298 | 0.01772 | 0.00392 |
| ____ SN | 0.00006 | 0.18 | 3825.132 | 0.00140 | -0.00235 | 0.00111 |
| ____ SR | 0.00019 | 35.02 | 171.463 | 0.00055 | 0.00000 | 0.00001 |
| ____ TI | 0.00019 | 29.19 | 137.338 | 0.00040 | 0.00026 | -0.00010 |
| ____ TL | -0.00048 | 0.01 | 944.169 | -0.00524 | -0.00002 | 0.00382 |
| ____ V | 0.00316 | 1.30 | 23.383 | 0.00365 | 0.00231 | 0.00351 |
| ____ Y1 | 2380.50000 | 2,380.50 | 1.780 | 2396.75000 | 2332.41500 | 2412.33500 |
| ____ Y2A | 84692.21706 | 84,692.22 | 2.808 | 85756.54476 | 86352.12500 | 81967.98140 |
| ____ Y2R | 5320.79167 | 5,320.79 | 2.360 | 5184.87500 | 5345.07500 | 5432.42500 |
| ____ ZN | -0.00069 | 0.09 | 24.959 | -0.00049 | -0.00080 | -0.00078 |
| ____ ZR | -0.00187 | 10.12 | 296.983 | -0.00798 | -0.00042 | 0.00280 |

LANCASTER LABORATORIES

Run Name: 1720206T71

Instrument ID: 16315

Tube: 7

Date/Time: 07/21/2017 12:45

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01105 | 44.77 | 0.429 | 0.01105 | 0.01100 | 0.01110 |
| ____ AL | 0.35979 | 52.62 | 37.663 | 0.20870 | 0.40010 | 0.47057 |
| ____ AS | 0.05184 | 3.76 | 5.369 | 0.05194 | 0.04900 | 0.05457 |
| ____ B | 0.09566 | 356.24 | 0.474 | 0.09514 | 0.09597 | 0.09586 |
| ____ BA | 0.00817 | 2,830.58 | 1.136 | 0.00827 | 0.00809 | 0.00814 |
| ____ BE | 0.01022 | 2,155.52 | 1.551 | 0.01031 | 0.01004 | 0.01031 |
| ____ CA | 0.40717 | 237.17 | 1.641 | 0.41328 | 0.40003 | 0.40818 |
| ____ CD | 0.01046 | 34.16 | 1.959 | 0.01024 | 0.01065 | 0.01049 |
| ____ CO | 0.01073 | 18.12 | 5.009 | 0.01029 | 0.01133 | 0.01056 |
| ____ CR | 0.03015 | 137.47 | 3.713 | 0.03089 | 0.02886 | 0.03070 |
| ____ CU | 0.01855 | 80.02 | 2.372 | 0.01905 | 0.01827 | 0.01832 |
| ____ FE | 0.39542 | 49.40 | 3.698 | 0.40654 | 0.37886 | 0.40087 |
| ____ K | 1.17490 | 236.23 | 2.791 | 1.15631 | 1.21276 | 1.15562 |
| ____ LI | 0.04033 | 111.05 | 13.104 | 0.03602 | 0.04622 | 0.03874 |
| ____ MG | 0.20373 | 158.18 | 3.693 | 0.20398 | 0.21113 | 0.19609 |
| ____ MN | 0.01056 | 253.73 | 2.410 | 0.01085 | 0.01044 | 0.01039 |
| ____ MO | 0.01947 | 9.98 | 7.657 | 0.01796 | 0.02094 | 0.01950 |
| ____ NA | 2.20542 | 1,370.95 | 0.488 | 2.21525 | 2.20712 | 2.19391 |
| ____ NI | 0.01911 | 28.81 | 8.161 | 0.01870 | 0.01779 | 0.02083 |
| ____ P | 0.19285 | 23.56 | 0.912 | 0.19082 | 0.19388 | 0.19386 |
| ____ PB | 0.02534 | 7.76 | 14.830 | 0.02327 | 0.02967 | 0.02306 |
| ____ S | 0.99256 | 44.35 | 2.882 | 0.97343 | 1.02544 | 0.97880 |
| ____ SB | 0.04390 | 5.68 | 14.382 | 0.05082 | 0.03845 | 0.04243 |
| ____ SE | 0.02023 | 1.57 | 93.881 | 0.01205 | 0.00669 | 0.04193 |
| ____ SI | 0.12309 | 11.92 | 6.699 | 0.13079 | 0.12409 | 0.11439 |
| ____ SN | 0.03737 | 8.32 | 12.151 | 0.04258 | 0.03528 | 0.03425 |
| ____ SR | 0.01048 | 3,430.41 | 0.794 | 0.01048 | 0.01040 | 0.01057 |
| ____ TI | 0.02113 | 460.56 | 0.647 | 0.02098 | 0.02121 | 0.02121 |
| ____ TL | 0.06810 | 5.70 | 5.405 | 0.06981 | 0.07061 | 0.06388 |
| ____ V | 0.01113 | 50.04 | 8.669 | 0.01006 | 0.01194 | 0.01139 |
| ____ Y1 | 2396.29000 | 2,396.29 | 0.836 | 2378.98000 | 2391.64500 | 2418.24500 |
| ____ Y2A | 83176.18541 | 83,176.19 | 1.266 | 82070.61526 | 84167.66348 | 83290.27750 |
| ____ Y2R | 5227.57500 | 5,227.58 | 2.538 | 5075.05000 | 5316.27500 | 5291.40000 |
| ____ ZN | 0.03956 | 97.20 | 0.677 | 0.03958 | 0.03928 | 0.03982 |
| ____ ZR | 0.08894 | 96.97 | 5.330 | 0.09312 | 0.08379 | 0.08990 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 8 Date/Time: 07/21/2017 12:48

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00327 | -65.01 | 35.569 | 0.00390 | 0.00398 | 0.00193 |
| ____ AL | 509.72000 | 28,054.01 | 0.686 | 513.25663 | 509.64217 | 506.26120 |
| ____ AS | 0.00812 | 0.60 | 182.000 | 0.00895 | 0.02248 | -0.00705 |
| ____ B | 0.04393 | 1,107.87 | 15.071 | 0.04028 | 0.03994 | 0.05158 |
| ____ BA | -0.00160 | -40.32 | 4.846 | -0.00166 | -0.00163 | -0.00151 |
| ____ BE | -0.00036 | -185.34 | 7.475 | -0.00035 | -0.00034 | -0.00039 |
| ____ CA | 505.76357 | 239,169.77 | 0.828 | 509.69698 | 506.23395 | 501.35978 |
| ____ CD | -0.00153 | 29.51 | 9.316 | -0.00168 | -0.00139 | -0.00152 |
| ____ CO | 0.00046 | 1.26 | 293.673 | 0.00175 | -0.00093 | 0.00055 |
| ____ CR | 0.00017 | -1.91 | 153.057 | 0.00037 | 0.00029 | -0.00013 |
| ____ CU | -0.00045 | 17.77 | 281.649 | 0.00025 | 0.00031 | -0.00193 |
| ____ FE | 201.33817 | 21,852.11 | 0.522 | 202.53939 | 200.88703 | 200.58810 |
| ____ K | 0.15774 | 44.19 | 70.805 | 0.28514 | 0.07671 | 0.11136 |
| ____ LI | 0.00424 | 21.02 | 170.578 | -0.00083 | 0.00103 | 0.01253 |
| ____ MG | 511.43977 | 343,114.51 | 2.134 | 516.09321 | 498.97118 | 519.25494 |
| ____ MN | -0.00013 | 73.31 | 14.445 | -0.00013 | -0.00015 | -0.00011 |
| ____ MO | -0.00407 | -2.75 | 8.230 | -0.00438 | -0.00412 | -0.00371 |
| ____ NA | 0.27802 | 34.45 | 16.529 | 0.22904 | 0.28481 | 0.32020 |
| ____ NI | -0.00357 | 4.18 | 69.304 | -0.00081 | -0.00432 | -0.00558 |
| ____ P | 0.01465 | 2.39 | 82.856 | 0.02445 | 0.01841 | 0.00108 |
| ____ PB | -0.01231 | 42.52 | 14.475 | -0.01393 | -0.01040 | -0.01262 |
| ____ S | 0.01576 | 1.42 | 201.162 | 0.00105 | -0.00592 | 0.05216 |
| ____ SB | -0.00326 | -0.11 | 194.990 | -0.00559 | 0.00393 | -0.00812 |
| ____ SE | -0.00642 | -0.32 | 370.618 | -0.00783 | -0.02946 | 0.01804 |
| ____ SI | 0.02138 | 1.88 | 27.761 | 0.02681 | 0.02229 | 0.01504 |
| ____ SN | -0.00120 | -0.10 | 388.718 | 0.00038 | -0.00642 | 0.00246 |
| ____ SR | 0.01710 | 4,949.47 | 0.442 | 0.01706 | 0.01705 | 0.01719 |
| ____ TI | 0.00276 | 71.90 | 20.700 | 0.00339 | 0.00260 | 0.00228 |
| ____ TL | -0.00816 | -0.80 | 148.548 | -0.02215 | -0.00164 | -0.00069 |
| ____ V | 0.00105 | -10.20 | 156.414 | -0.00049 | 0.00277 | 0.00087 |
| ____ Y1 | 2095.74833 | 2,095.75 | 3.241 | 2032.16500 | 2167.32500 | 2087.75500 |
| ____ Y2A | 73351.55796 | 73,351.56 | 1.343 | 72369.23307 | 73345.77015 | 74339.67066 |
| ____ Y2R | 5103.53849 | 5,103.54 | 1.790 | 5017.00578 | 5199.03058 | 5094.57909 |
| ____ ZN | 0.00436 | 48.42 | 20.235 | 0.00347 | 0.00523 | 0.00437 |
| ____ ZR | 0.00580 | 16.84 | 115.027 | 0.00665 | 0.01200 | -0.00126 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 9 Date/Time: 07/21/2017 12:51

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21505 | 1,014.81 | 0.737 | 0.21687 | 0.21400 | 0.21428 |
| ____ AL | 521.48317 | 28,954.57 | 0.421 | 520.53662 | 519.91879 | 523.99410 |
| ____ AS | 0.11982 | 8.41 | 15.008 | 0.09923 | 0.13243 | 0.12782 |
| ____ B | 0.03924 | 1,108.61 | 20.327 | 0.04053 | 0.04649 | 0.03069 |
| ____ BA | 0.53500 | 138,908.03 | 0.162 | 0.53599 | 0.53438 | 0.53464 |
| ____ BE | 0.50669 | 99,501.15 | 0.116 | 0.50661 | 0.50731 | 0.50615 |
| ____ CA | 517.11722 | 246,391.37 | 0.199 | 517.03836 | 516.12744 | 518.18586 |
| ____ CD | 0.93409 | 3,152.00 | 1.141 | 0.93331 | 0.92385 | 0.94512 |
| ____ CO | 0.46183 | 664.19 | 0.736 | 0.46137 | 0.45868 | 0.46543 |
| ____ CR | 0.48751 | 1,994.55 | 0.734 | 0.48960 | 0.48955 | 0.48338 |
| ____ CU | 0.52067 | 2,425.29 | 0.740 | 0.52468 | 0.52035 | 0.51699 |
| ____ FE | 205.44332 | 22,459.99 | 0.518 | 206.05282 | 204.21554 | 206.06161 |
| ____ K | 0.11317 | 36.65 | 87.334 | 0.11506 | 0.21105 | 0.01340 |
| ____ LI | -0.00216 | 2.78 | 153.352 | -0.00246 | -0.00532 | 0.00129 |
| ____ MG | 516.52231 | 349,310.84 | 0.511 | 519.31587 | 514.06938 | 516.18169 |
| ____ MN | 0.48958 | 10,522.86 | 0.338 | 0.48836 | 0.48893 | 0.49146 |
| ____ MO | -0.00075 | -1.15 | 375.649 | 0.00003 | -0.00386 | 0.00159 |
| ____ NA | 0.29885 | 48.84 | 1.875 | 0.29461 | 0.30521 | 0.29674 |
| ____ NI | 0.91916 | 873.06 | 0.495 | 0.92392 | 0.91484 | 0.91872 |
| ____ P | 0.02252 | 3.25 | 26.236 | 0.02922 | 0.01807 | 0.02027 |
| ____ PB | 0.50771 | 211.64 | 0.793 | 0.51000 | 0.50306 | 0.51008 |
| ____ S | 0.02342 | 1.75 | 126.554 | 0.05693 | 0.00066 | 0.01266 |
| ____ SB | 0.60988 | 67.55 | 4.960 | 0.64443 | 0.59703 | 0.58818 |
| ____ SE | 0.53004 | 28.44 | 1.789 | 0.51949 | 0.53787 | 0.53276 |
| ____ SI | 0.02048 | 1.83 | 37.095 | 0.01182 | 0.02604 | 0.02359 |
| ____ SN | 0.00258 | 0.65 | 179.181 | -0.00127 | 0.00130 | 0.00771 |
| ____ SR | 0.01758 | 5,074.92 | 0.307 | 0.01753 | 0.01764 | 0.01758 |
| ____ TI | 0.00218 | 69.46 | 17.465 | 0.00235 | 0.00244 | 0.00174 |
| ____ TL | 0.10934 | 6.05 | 6.331 | 0.10846 | 0.11665 | 0.10289 |
| ____ V | 0.51815 | 2,868.97 | 1.828 | 0.52480 | 0.52235 | 0.50730 |
| ____ Y1 | 2132.46000 | 2,132.46 | 0.372 | 2128.23000 | 2141.62000 | 2127.53000 |
| ____ Y2A | 73137.05227 | 73,137.05 | 1.312 | 74118.59932 | 72200.78250 | 73091.77500 |
| ____ Y2R | 5151.24842 | 5,151.25 | 1.475 | 5069.91821 | 5220.47676 | 5163.35029 |
| ____ ZN | 0.99189 | 2,174.41 | 0.509 | 0.99388 | 0.98614 | 0.99564 |
| ____ ZR | 0.00141 | 12.83 | 177.064 | -0.00115 | 0.00384 | 0.00154 |

LANCASTER LABORATORIES

Run Name: 1720206T71

Instrument ID: 16315

Tube: 10

Date/Time: 07/21/2017 12:55

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50635 | 2,837.69 | 0.476 | 0.50560 | 0.50905 | 0.50441 |
| ____ AL | 25.38661 | 1,497.86 | 0.810 | 25.43181 | 25.56592 | 25.16212 |
| ____ AS | 0.51067 | 39.30 | 2.356 | 0.49688 | 0.51901 | 0.51612 |
| ____ B | 0.49016 | 1,918.60 | 1.218 | 0.48357 | 0.49169 | 0.49521 |
| ____ BA | 0.51658 | 148,419.72 | 0.905 | 0.51658 | 0.52126 | 0.51190 |
| ____ BE | 0.48902 | 106,254.04 | 0.888 | 0.48879 | 0.49348 | 0.48480 |
| ____ CA | 25.40091 | 13,278.64 | 1.598 | 25.39723 | 25.80867 | 24.99683 |
| ____ CD | 0.49752 | 1,841.12 | 1.092 | 0.49384 | 0.49497 | 0.50376 |
| ____ CO | 0.49739 | 794.21 | 1.117 | 0.49182 | 0.49742 | 0.50293 |
| ____ CR | 0.49103 | 2,222.74 | 1.141 | 0.48659 | 0.49733 | 0.48917 |
| ____ CU | 0.49910 | 2,531.55 | 0.898 | 0.49439 | 0.50331 | 0.49960 |
| ____ FE | 25.19342 | 3,054.21 | 1.313 | 25.25280 | 25.49044 | 24.83702 |
| ____ K | 25.57203 | 4,818.66 | 1.482 | 25.68713 | 25.88007 | 25.14889 |
| ____ LI | 0.51671 | 1,534.38 | 1.243 | 0.51823 | 0.52224 | 0.50967 |
| ____ MG | 25.30308 | 19,880.46 | 1.404 | 25.37187 | 25.61900 | 24.91835 |
| ____ MN | 0.50833 | 12,008.73 | 0.718 | 0.50829 | 0.51201 | 0.50470 |
| ____ MO | 0.49451 | 271.29 | 0.782 | 0.49409 | 0.49086 | 0.49857 |
| ____ NA | 25.64949 | 17,652.33 | 1.655 | 25.69560 | 26.04898 | 25.20388 |
| ____ NI | 0.50191 | 531.86 | 0.453 | 0.50351 | 0.49931 | 0.50290 |
| ____ P | 0.49728 | 58.37 | 0.881 | 0.50187 | 0.49682 | 0.49315 |
| ____ PB | 0.49800 | 179.59 | 1.377 | 0.49876 | 0.50444 | 0.49079 |
| ____ S | 24.83103 | 1,072.72 | 0.516 | 24.69441 | 24.84996 | 24.94871 |
| ____ SB | 0.49629 | 61.05 | 0.776 | 0.49369 | 0.49446 | 0.50071 |
| ____ SE | 0.49009 | 29.45 | 2.921 | 0.50532 | 0.48804 | 0.47691 |
| ____ SI | 25.72381 | 2,525.04 | 1.716 | 25.72819 | 26.16309 | 25.28015 |
| ____ SN | 0.48106 | 103.79 | 1.046 | 0.47607 | 0.48099 | 0.48613 |
| ____ SR | 0.51496 | 165,214.03 | 0.856 | 0.51489 | 0.51941 | 0.51059 |
| ____ TI | 0.51331 | 10,332.51 | 0.810 | 0.51186 | 0.51800 | 0.51006 |
| ____ TL | 0.52152 | 41.04 | 2.133 | 0.51618 | 0.51407 | 0.53431 |
| ____ V | 0.49919 | 3,011.77 | 0.288 | 0.49755 | 0.50022 | 0.49981 |
| ____ Y1 | 2365.27167 | 2,365.27 | 1.964 | 2399.40500 | 2384.02500 | 2312.38500 |
| ____ Y2A | 80926.07190 | 80,926.07 | 1.411 | 82237.70000 | 80156.89157 | 80383.62413 |
| ____ Y2R | 5238.03826 | 5,238.04 | 2.095 | 5267.75738 | 5116.47897 | 5329.87841 |
| ____ ZN | 0.50024 | 1,201.14 | 0.526 | 0.49970 | 0.49792 | 0.50310 |
| ____ ZR | 0.49466 | 487.46 | 0.822 | 0.49476 | 0.49868 | 0.49054 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 11 Date/Time: 07/21/2017 12:57

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00052 | -23.85 | 198.941 | 0.00020 | -0.00171 | -0.00006 |
| ____ AL | -0.01856 | 31.48 | 100.854 | -0.03219 | 0.00278 | -0.02628 |
| ____ AS | 0.00801 | 0.32 | 60.507 | 0.00978 | 0.01173 | 0.00253 |
| ____ B | 0.00109 | -0.88 | 31.548 | 0.00139 | 0.00072 | 0.00116 |
| ____ BA | -0.00206 | -180.76 | 2.759 | -0.00212 | -0.00201 | -0.00204 |
| ____ BE | 0.00014 | -99.22 | 8.725 | 0.00013 | 0.00015 | 0.00013 |
| ____ CA | 0.00009 | 25.12 | 7570.919 | 0.00795 | -0.00184 | -0.00583 |
| ____ CD | 0.00037 | -3.73 | 64.549 | 0.00025 | 0.00021 | 0.00064 |
| ____ CO | 0.00143 | 3.01 | 31.377 | 0.00194 | 0.00121 | 0.00113 |
| ____ CR | 0.00031 | -1.55 | 233.453 | 0.00113 | -0.00028 | 0.00009 |
| ____ CU | 0.00100 | -12.16 | 106.410 | 0.00216 | 0.00008 | 0.00075 |
| ____ FE | 0.00870 | 2.13 | 288.254 | -0.00501 | 0.03766 | -0.00654 |
| ____ K | 0.04313 | 24.55 | 122.121 | -0.01063 | 0.09465 | 0.04537 |
| ____ LI | 0.00067 | -7.65 | 660.879 | -0.00413 | 0.00151 | 0.00464 |
| ____ MG | 0.00472 | 1.10 | 133.490 | 0.00826 | 0.00844 | -0.00255 |
| ____ MN | 0.00005 | -1.34 | 326.888 | 0.00004 | -0.00012 | 0.00024 |
| ____ MO | 0.00049 | -0.59 | 148.384 | 0.00117 | 0.00059 | -0.00028 |
| ____ NA | 0.15377 | -52.45 | 13.553 | 0.16775 | 0.16374 | 0.12982 |
| ____ NI | 0.00030 | 8.81 | 379.075 | 0.00040 | 0.00136 | -0.00087 |
| ____ P | -0.00052 | 0.95 | 415.111 | 0.00194 | -0.00138 | -0.00212 |
| ____ PB | -0.00574 | -3.48 | 144.270 | -0.01395 | -0.00590 | 0.00262 |
| ____ S | -0.01157 | 0.43 | 105.980 | -0.00395 | -0.02571 | -0.00504 |
| ____ SB | -0.00295 | -0.10 | 156.811 | -0.00787 | 0.00131 | -0.00229 |
| ____ SE | 0.00959 | 0.92 | 139.753 | 0.02370 | 0.00805 | -0.00297 |
| ____ SI | 0.01258 | 1.11 | 133.709 | 0.03047 | 0.01016 | -0.00290 |
| ____ SN | -0.00090 | -0.04 | 711.442 | 0.00646 | -0.00543 | -0.00374 |
| ____ SR | 0.00001 | -24.61 | 328.762 | -0.00002 | 0.00002 | 0.00003 |
| ____ TI | 0.00018 | 28.71 | 122.355 | 0.00029 | -0.00007 | 0.00033 |
| ____ TL | 0.00359 | 0.36 | 270.985 | 0.01128 | 0.00684 | -0.00735 |
| ____ V | 0.00116 | -11.44 | 105.128 | 0.00010 | 0.00088 | 0.00249 |
| ____ Y1 | 2368.54167 | 2,368.54 | 0.994 | 2360.61500 | 2395.02500 | 2349.98500 |
| ____ Y2A | 83903.50759 | 83,903.51 | 1.169 | 82785.51136 | 84616.79633 | 84308.21507 |
| ____ Y2R | 5372.80833 | 5,372.81 | 1.775 | 5462.45000 | 5272.62500 | 5383.35000 |
| ____ ZN | -0.00012 | 1.46 | 371.631 | -0.00041 | 0.00040 | -0.00035 |
| ____ ZR | -0.00435 | 7.65 | 55.171 | -0.00685 | -0.00206 | -0.00414 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 12 Date/Time: 07/21/2017 13:01

Sample Number: **PBW** Class: **** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00033 | -19.09 | 347.668 | 0.00158 | -0.00063 | 0.00002 |
| ____ AL | 0.02932 | 34.02 | 225.884 | 0.09159 | -0.04027 | 0.03664 |
| ____ AS | 0.01069 | 0.53 | 59.732 | 0.01473 | 0.01400 | 0.00333 |
| ____ B | 0.00127 | -0.13 | 19.905 | 0.00105 | 0.00154 | 0.00120 |
| ____ BA | -0.00202 | -173.30 | 1.855 | -0.00198 | -0.00205 | -0.00203 |
| ____ BE | 0.00011 | -105.87 | 15.945 | 0.00014 | 0.00010 | 0.00011 |
| ____ CA | 0.05506 | 54.68 | 135.390 | 0.13782 | 0.03421 | -0.00684 |
| ____ CD | 0.00037 | -3.79 | 114.564 | 0.00046 | 0.00074 | -0.00009 |
| ____ CO | 0.00040 | 1.40 | 76.599 | 0.00041 | 0.00009 | 0.00071 |
| ____ CR | 0.00116 | 2.50 | 82.543 | 0.00172 | 0.00005 | 0.00171 |
| ____ CU | -0.00131 | -24.57 | 156.615 | -0.00059 | 0.00028 | -0.00364 |
| ____ FE | 0.02264 | 3.95 | 173.374 | 0.06140 | 0.02364 | -0.01710 |
| ____ K | 0.12472 | 39.83 | 79.785 | 0.08670 | 0.04982 | 0.23762 |
| ____ LI | 0.00141 | -4.97 | 411.201 | 0.00750 | 0.00078 | -0.00405 |
| ____ MG | 0.06602 | 51.43 | 129.520 | 0.16382 | 0.02878 | 0.00544 |
| ____ MN | -0.00012 | -5.45 | 350.550 | 0.00030 | -0.00012 | -0.00053 |
| ____ MO | -0.00002 | -0.89 | 5395.336 | -0.00020 | -0.00071 | 0.00087 |
| ____ NA | 0.14012 | -61.45 | 11.757 | 0.14443 | 0.15402 | 0.12192 |
| ____ NI | -0.00035 | 8.31 | 513.044 | -0.00237 | 0.00107 | 0.00026 |
| ____ P | -0.00025 | 1.00 | 1135.276 | -0.00006 | 0.00247 | -0.00316 |
| ____ PB | -0.00399 | -2.91 | 45.225 | -0.00225 | -0.00388 | -0.00585 |
| ____ S | -0.00489 | 0.74 | 168.015 | 0.00002 | -0.01438 | -0.00031 |
| ____ SB | 0.00321 | 0.66 | 103.837 | -0.00054 | 0.00432 | 0.00585 |
| ____ SE | -0.01895 | -0.80 | 6.339 | -0.01846 | -0.01807 | -0.02032 |
| ____ SI | 0.01482 | 1.32 | 37.918 | 0.01923 | 0.01672 | 0.00849 |
| ____ SN | 0.00429 | 1.11 | 54.669 | 0.00221 | 0.00684 | 0.00383 |
| ____ SR | 0.00002 | -20.96 | 275.447 | 0.00006 | 0.00004 | -0.00004 |
| ____ TI | -0.00033 | 18.50 | 9.449 | -0.00032 | -0.00030 | -0.00036 |
| ____ TL | -0.00452 | -0.33 | 114.920 | -0.00087 | -0.00223 | -0.01047 |
| ____ V | 0.00207 | -5.74 | 36.968 | 0.00250 | 0.00118 | 0.00251 |
| ____ Y1 | 2419.83500 | 2,419.84 | 0.463 | 2408.47000 | 2430.88000 | 2420.15500 |
| ____ Y2A | 85275.00072 | 85,275.00 | 3.001 | 87651.57716 | 85606.83995 | 82566.58505 |
| ____ Y2R | 5315.21667 | 5,315.22 | 2.496 | 5468.10000 | 5246.85000 | 5230.70000 |
| ____ ZN | 0.00030 | 2.50 | 99.758 | 0.00065 | 0.00013 | 0.00013 |
| ____ ZR | -0.00472 | 7.17 | 159.387 | -0.00994 | 0.00390 | -0.00812 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 13 Date/Time: 07/21/2017 13:04

Sample Number: **LCSW** Class: **** Batch: 172001063501

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05503 | 320.14 | 3.711 | 0.05381 | 0.05739 | 0.05389 |
| ____ AL | 2.11639 | 162.21 | 4.576 | 2.22596 | 2.04217 | 2.08105 |
| ____ AS | 0.17018 | 13.32 | 2.546 | 0.16641 | 0.16922 | 0.17491 |
| ____ B | 1.91250 | 7,338.22 | 1.129 | 1.89078 | 1.91278 | 1.93395 |
| ____ BA | 2.06864 | 622,642.07 | 5.457 | 2.11482 | 1.93999 | 2.15112 |
| ____ BE | 0.05028 | 11,358.92 | 1.722 | 0.04936 | 0.05040 | 0.05108 |
| ____ CA | 4.18254 | 2,294.01 | 1.299 | 4.23986 | 4.13176 | 4.17599 |
| ____ CD | 0.05179 | 193.16 | 0.714 | 0.05218 | 0.05144 | 0.05175 |
| ____ CO | 0.52188 | 863.76 | 0.454 | 0.52256 | 0.52384 | 0.51924 |
| ____ CR | 0.20510 | 973.57 | 1.740 | 0.20168 | 0.20482 | 0.20880 |
| ____ CU | 0.26332 | 1,388.26 | 2.041 | 0.25879 | 0.26192 | 0.26926 |
| ____ FE | 1.03571 | 132.67 | 1.471 | 1.02739 | 1.02645 | 1.05329 |
| ____ K | 10.76174 | 2,111.19 | 0.965 | 10.87920 | 10.68193 | 10.72408 |
| ____ LI | 1.07088 | 3,303.72 | 1.416 | 1.08800 | 1.06546 | 1.05916 |
| ____ MG | 2.12958 | 1,741.86 | 0.782 | 2.14740 | 2.11443 | 2.12693 |
| ____ MN | 0.52095 | 12,916.64 | 0.821 | 0.51755 | 0.51957 | 0.52575 |
| ____ MO | 2.02152 | 1,149.82 | 0.921 | 2.02469 | 2.03835 | 2.00151 |
| ____ NA | 10.60435 | 7,463.83 | 2.593 | 10.91938 | 10.48153 | 10.41214 |
| ____ NI | 0.53211 | 583.28 | 0.745 | 0.53424 | 0.53455 | 0.52753 |
| ____ P | 1.00383 | 120.77 | 0.469 | 0.99904 | 1.00400 | 1.00845 |
| ____ PB | 0.14880 | 53.69 | 2.822 | 0.15290 | 0.14901 | 0.14451 |
| ____ S | 0.99515 | 45.39 | 3.385 | 1.02581 | 1.00055 | 0.95909 |
| ____ SB | 0.50685 | 63.56 | 2.137 | 0.49439 | 0.51219 | 0.51398 |
| ____ SE | 0.15985 | 10.17 | 9.352 | 0.17634 | 0.14717 | 0.15605 |
| ____ SI | 1.14188 | 118.40 | 2.470 | 1.15610 | 1.16015 | 1.10939 |
| ____ SN | 3.87684 | 863.95 | 0.782 | 3.89686 | 3.89171 | 3.84195 |
| ____ SR | 1.02651 | 345,910.53 | 3.494 | 1.00774 | 1.00393 | 1.06786 |
| ____ TI | 1.01101 | 21,312.14 | 0.947 | 1.00176 | 1.01040 | 1.02088 |
| ____ TL | 0.16985 | 12.47 | 3.103 | 0.17555 | 0.16887 | 0.16514 |
| ____ V | 0.50961 | 3,078.38 | 2.858 | 0.49948 | 0.50305 | 0.52630 |
| ____ Y1 | 2445.98667 | 2,445.99 | 2.133 | 2418.00000 | 2506.18000 | 2413.78000 |
| ____ Y2A | 85009.89274 | 85,009.89 | 1.780 | 84053.58928 | 86754.39034 | 84221.69858 |
| ____ Y2R | 5429.17019 | 5,429.17 | 4.779 | 5130.45000 | 5598.26057 | 5558.80000 |
| ____ ZN | 0.51079 | 1,263.38 | 0.762 | 0.51079 | 0.51468 | 0.50690 |
| ____ ZR | 1.00378 | 1,012.65 | 1.023 | 1.01377 | 1.00431 | 0.99325 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 14 Date/Time: 07/21/2017 13:07

Sample Number: **9109771** Class: U*** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00071 | -23.94 | 160.448 | -0.00063 | 0.00039 | -0.00188 |
| ____ AL | -0.07510 | 27.30 | 55.179 | -0.10829 | -0.08834 | -0.02866 |
| ____ AS | 0.00791 | 0.30 | 89.702 | 0.01223 | 0.01179 | -0.00028 |
| ____ B | 0.11777 | 420.23 | 1.679 | 0.11625 | 0.12000 | 0.11705 |
| ____ BA | 0.11349 | 32,366.95 | 0.221 | 0.11374 | 0.11324 | 0.11348 |
| ____ BE | -0.00007 | -137.71 | 33.653 | -0.00005 | -0.00009 | -0.00006 |
| ____ CA | 254.94955 | 128,059.91 | 2.500 | 262.25054 | 252.09628 | 250.50182 |
| ____ CD | 0.00020 | -4.10 | 232.445 | -0.00023 | 0.00013 | 0.00071 |
| ____ CO | 0.00110 | 2.07 | 68.619 | 0.00061 | 0.00072 | 0.00197 |
| ____ CR | 0.00471 | 18.20 | 26.590 | 0.00338 | 0.00587 | 0.00489 |
| ____ CU | 0.00135 | 9.51 | 86.956 | 0.00005 | 0.00234 | 0.00166 |
| ____ FE | 0.43674 | 54.33 | 2.694 | 0.43485 | 0.44933 | 0.42603 |
| ____ K | 5.78473 | 1,097.81 | 3.324 | 6.00484 | 5.69992 | 5.64943 |
| ____ LI | 0.03850 | 114.31 | 21.615 | 0.04019 | 0.02946 | 0.04584 |
| ____ MG | 41.70331 | 32,492.58 | 2.277 | 42.76866 | 41.39510 | 40.94616 |
| ____ MN | 0.25873 | 6,001.57 | 1.566 | 0.25462 | 0.26272 | 0.25884 |
| ____ MO | 0.00206 | 0.27 | 42.972 | 0.00295 | 0.00118 | 0.00206 |
| ____ NA | 86.77115 | 59,841.10 | 2.195 | 88.94416 | 85.97856 | 85.39074 |
| ____ NI | 0.00378 | 11.59 | 14.785 | 0.00313 | 0.00408 | 0.00412 |
| ____ P | 0.42037 | 47.77 | 3.151 | 0.40751 | 0.43398 | 0.41963 |
| ____ PB | -0.00412 | -2.36 | 135.978 | -0.00171 | -0.00012 | -0.01053 |
| ____ S | 149.68236 | 6,238.23 | 0.366 | 149.80044 | 149.08491 | 150.16173 |
| ____ SB | 0.00307 | 0.63 | 379.180 | 0.01643 | -0.00240 | -0.00483 |
| ____ SE | -0.00294 | 0.16 | 870.216 | 0.01363 | -0.03235 | 0.00992 |
| ____ SI | 17.30523 | 1,690.77 | 0.605 | 17.42486 | 17.26052 | 17.23032 |
| ____ SN | 0.00390 | 0.97 | 43.298 | 0.00544 | 0.00417 | 0.00209 |
| ____ SR | 1.52939 | 481,770.65 | 4.691 | 1.57800 | 1.56318 | 1.44699 |
| ____ TI | 0.00610 | 143.57 | 10.335 | 0.00576 | 0.00682 | 0.00571 |
| ____ TL | 0.00162 | 0.19 | 307.225 | -0.00072 | 0.00733 | -0.00175 |
| ____ V | 0.00086 | -12.84 | 81.966 | 0.00046 | 0.00168 | 0.00045 |
| ____ Y1 | 2283.39856 | 2,283.40 | 1.954 | 2321.15308 | 2294.88909 | 2234.15352 |
| ____ Y2A | 79542.84882 | 79,542.85 | 3.758 | 77395.57942 | 78276.27373 | 82956.69331 |
| ____ Y2R | 5213.93173 | 5,213.93 | 1.289 | 5291.46719 | 5172.67013 | 5177.65787 |
| ____ ZN | 0.00663 | 17.00 | 1.002 | 0.00664 | 0.00669 | 0.00656 |
| ____ ZR | -0.00822 | 3.73 | 45.889 | -0.01008 | -0.01071 | -0.00388 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 15 Date/Time: 07/21/2017 13:10

Sample Number: **9109771** Class: UP** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.02404 | 134.64 | 1.852 | 0.02449 | 0.02360 | 0.02403 |
| ____ AL | 1.01024 | 88.36 | 8.192 | 1.10541 | 0.95514 | 0.97017 |
| ____ AS | 0.53064 | 39.85 | 1.804 | 0.52762 | 0.52293 | 0.54135 |
| ____ B | 0.30275 | 1,149.81 | 1.333 | 0.29809 | 0.30504 | 0.30513 |
| ____ BA | 0.15915 | 47,852.70 | 1.584 | 0.15652 | 0.15938 | 0.16154 |
| ____ BE | 0.01967 | 4,319.96 | 1.890 | 0.01925 | 0.01980 | 0.01997 |
| ____ CA | 246.80460 | 121,750.34 | 1.366 | 250.45954 | 246.14035 | 243.81390 |
| ____ CD | 0.04918 | 172.88 | 0.387 | 0.04903 | 0.04912 | 0.04939 |
| ____ CO | 0.09849 | 153.86 | 0.260 | 0.09821 | 0.09871 | 0.09854 |
| ____ CR | 0.19732 | 927.24 | 1.069 | 0.19494 | 0.19895 | 0.19807 |
| ____ CU | 0.49770 | 2,646.31 | 1.741 | 0.48878 | 0.49822 | 0.50608 |
| ____ FE | 0.88757 | 107.25 | 1.197 | 0.87770 | 0.89882 | 0.88618 |
| ____ K | 7.64250 | 1,417.43 | 0.239 | 7.62638 | 7.66240 | 7.63873 |
| ____ LI | 1.05700 | 3,081.83 | 0.545 | 1.05248 | 1.05504 | 1.06348 |
| ____ MG | 41.30157 | 31,568.07 | 1.273 | 41.87568 | 41.18605 | 40.84299 |
| ____ MN | 0.30463 | 7,476.99 | 1.583 | 0.29921 | 0.30624 | 0.30845 |
| ____ MO | 0.20275 | 108.07 | 0.793 | 0.20202 | 0.20459 | 0.20163 |
| ____ NA | 85.89485 | 58,103.44 | 1.255 | 87.08729 | 85.60910 | 84.98815 |
| ____ NI | 0.14814 | 158.85 | 0.950 | 0.14910 | 0.14880 | 0.14652 |
| ____ P | 1.46257 | 165.62 | 0.900 | 1.45593 | 1.47772 | 1.45404 |
| ____ PB | 0.48075 | 166.56 | 0.218 | 0.47965 | 0.48173 | 0.48087 |
| ____ S | 147.13844 | 6,200.68 | 0.464 | 146.44660 | 147.15762 | 147.81111 |
| ____ SB | 0.40639 | 48.41 | 1.733 | 0.41000 | 0.39827 | 0.41089 |
| ____ SE | 0.77723 | 45.44 | 1.677 | 0.77531 | 0.76527 | 0.79112 |
| ____ SI | 17.74056 | 1,700.52 | 0.090 | 17.73798 | 17.72596 | 17.75773 |
| ____ SN | 0.58753 | 123.70 | 0.999 | 0.58171 | 0.59345 | 0.58743 |
| ____ SR | 1.45260 | 484,469.91 | 6.942 | 1.33753 | 1.49465 | 1.52560 |
| ____ TI | 0.10736 | 2,263.62 | 1.695 | 0.10526 | 0.10855 | 0.10826 |
| ____ TL | 0.96782 | 77.52 | 1.724 | 0.97024 | 0.98316 | 0.95006 |
| ____ V | 0.10158 | 612.14 | 1.714 | 0.09998 | 0.10133 | 0.10344 |
| ____ Y1 | 2308.79396 | 2,308.79 | 2.026 | 2322.35200 | 2256.72962 | 2347.30027 |
| ____ Y2A | 84174.55395 | 84,174.55 | 1.442 | 85570.55245 | 83587.11819 | 83365.99122 |
| ____ Y2R | 5114.90112 | 5,114.90 | 0.925 | 5156.48056 | 5124.82531 | 5063.39749 |
| ____ ZN | 0.12443 | 292.17 | 0.163 | 0.12458 | 0.12420 | 0.12451 |
| ____ ZR | 0.98723 | 938.72 | 0.315 | 0.98433 | 0.98686 | 0.99052 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 16 Date/Time: 07/21/2017 13:13

Sample Number: **9109774** Class: D*** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00036 | -22.22 | 368.471 | -0.00094 | 0.00116 | -0.00131 |
| ____ AL | -0.00623 | 30.71 | 463.078 | 0.01294 | 0.00777 | -0.03938 |
| ____ AS | 0.01120 | 0.56 | 119.633 | 0.01933 | 0.01854 | -0.00427 |
| ____ B | 0.11445 | 415.95 | 1.789 | 0.11556 | 0.11569 | 0.11208 |
| ____ BA | 0.11138 | 32,377.48 | 0.597 | 0.11081 | 0.11121 | 0.11211 |
| ____ BE | -0.00015 | -157.48 | 3.292 | -0.00015 | -0.00014 | -0.00015 |
| ____ CA | 255.63726 | 126,126.20 | 0.730 | 255.95086 | 257.32592 | 253.63498 |
| ____ CD | 0.00024 | -4.09 | 115.790 | 0.00022 | -0.00003 | 0.00053 |
| ____ CO | 0.00037 | 0.99 | 53.721 | 0.00034 | 0.00058 | 0.00018 |
| ____ CR | 0.00447 | 17.35 | 38.229 | 0.00629 | 0.00421 | 0.00290 |
| ____ CU | 0.00147 | 10.28 | 61.163 | 0.00181 | 0.00045 | 0.00215 |
| ____ FE | 0.41070 | 50.22 | 5.413 | 0.39153 | 0.43507 | 0.40550 |
| ____ K | 5.78481 | 1,078.32 | 0.853 | 5.76333 | 5.84128 | 5.74983 |
| ____ LI | 0.03625 | 105.63 | 11.417 | 0.03167 | 0.03971 | 0.03738 |
| ____ MG | 41.59499 | 31,835.65 | 0.918 | 41.55869 | 41.99388 | 41.23239 |
| ____ MN | 0.26101 | 6,169.25 | 0.310 | 0.26017 | 0.26178 | 0.26107 |
| ____ MO | 0.00130 | -0.14 | 152.552 | 0.00052 | -0.00018 | 0.00357 |
| ____ NA | 87.04362 | 58,969.71 | 0.713 | 87.00491 | 87.68233 | 86.44362 |
| ____ NI | 0.00259 | 10.77 | 34.853 | 0.00240 | 0.00358 | 0.00180 |
| ____ P | 0.42715 | 50.28 | 1.351 | 0.42606 | 0.43339 | 0.42201 |
| ____ PB | -0.00523 | -2.85 | 97.500 | -0.01089 | -0.00383 | -0.00098 |
| ____ S | 148.11395 | 6,394.96 | 0.198 | 148.44116 | 148.02614 | 147.87455 |
| ____ SB | -0.00007 | 0.26 | 4462.207 | 0.00365 | -0.00194 | -0.00192 |
| ____ SE | -0.00034 | 0.33 | 3915.256 | -0.01112 | -0.01617 | 0.02628 |
| ____ SI | 17.45556 | 1,675.69 | 0.469 | 17.38454 | 17.54505 | 17.43708 |
| ____ SN | 0.00198 | 0.59 | 45.642 | 0.00106 | 0.00287 | 0.00202 |
| ____ SR | 1.52605 | 490,425.27 | 0.664 | 1.53044 | 1.53323 | 1.51446 |
| ____ TI | 0.00554 | 135.33 | 3.149 | 0.00552 | 0.00573 | 0.00538 |
| ____ TL | 0.00502 | 0.47 | 118.638 | 0.00566 | -0.00123 | 0.01061 |
| ____ V | 0.00153 | -8.88 | 92.779 | 0.00186 | -0.00003 | 0.00275 |
| ____ Y1 | 2365.49619 | 2,365.50 | 0.307 | 2361.43386 | 2361.17770 | 2373.87702 |
| ____ Y2A | 81054.18333 | 81,054.18 | 0.877 | 80264.72500 | 81642.25000 | 81255.57500 |
| ____ Y2R | 5123.60842 | 5,123.61 | 3.223 | 5166.22526 | 4941.35000 | 5263.25000 |
| ____ ZN | 0.00610 | 16.33 | 4.146 | 0.00638 | 0.00588 | 0.00605 |
| ____ ZR | -0.00475 | 6.92 | 64.803 | -0.00823 | -0.00238 | -0.00365 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 17 Date/Time: 07/21/2017 13:16

Sample Number: **9109772** Class: R*** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05666 | 310.09 | 1.675 | 0.05642 | 0.05585 | 0.05770 |
| ____ AL | 2.19788 | 154.69 | 2.018 | 2.19333 | 2.15598 | 2.24434 |
| ____ AS | 0.17903 | 12.61 | 1.484 | 0.17607 | 0.18121 | 0.17980 |
| ____ B | 2.12103 | 7,656.64 | 0.458 | 2.11325 | 2.13193 | 2.11793 |
| ____ BA | 2.18405 | 618,600.21 | 3.945 | 2.13778 | 2.13091 | 2.28347 |
| ____ BE | 0.05076 | 10,786.60 | 0.725 | 0.05034 | 0.05091 | 0.05104 |
| ____ CA | 254.20798 | 122,878.53 | 1.272 | 255.20829 | 256.82419 | 250.59146 |
| ____ CD | 0.05070 | 169.87 | 1.526 | 0.05083 | 0.05140 | 0.04987 |
| ____ CO | 0.50409 | 749.33 | 1.452 | 0.50748 | 0.50910 | 0.49569 |
| ____ CR | 0.20553 | 917.65 | 0.806 | 0.20435 | 0.20742 | 0.20481 |
| ____ CU | 0.26318 | 1,323.74 | 1.933 | 0.26537 | 0.26680 | 0.25736 |
| ____ FE | 1.47231 | 173.84 | 0.449 | 1.47967 | 1.46690 | 1.47034 |
| ____ K | 16.61236 | 3,004.79 | 0.694 | 16.59023 | 16.50981 | 16.73703 |
| ____ LI | 1.10993 | 3,175.32 | 0.994 | 1.11629 | 1.11630 | 1.09719 |
| ____ MG | 43.03927 | 32,256.02 | 1.169 | 43.17057 | 43.46368 | 42.48355 |
| ____ MN | 0.76145 | 17,757.34 | 0.482 | 0.75995 | 0.75877 | 0.76563 |
| ____ MO | 2.08375 | 1,064.63 | 1.431 | 2.08955 | 2.11025 | 2.05145 |
| ____ NA | 95.11725 | 63,133.62 | 1.235 | 95.40911 | 96.11832 | 93.82431 |
| ____ NI | 0.50912 | 501.27 | 1.441 | 0.51243 | 0.51422 | 0.50071 |
| ____ P | 1.12757 | 121.75 | 1.814 | 1.12604 | 1.14875 | 1.10792 |
| ____ PB | 0.13703 | 44.70 | 6.320 | 0.14524 | 0.13788 | 0.12798 |
| ____ S | 148.28915 | 5,947.51 | 1.545 | 147.90300 | 150.74876 | 146.21569 |
| ____ SB | 0.53141 | 59.84 | 1.132 | 0.53502 | 0.53474 | 0.52447 |
| ____ SE | 0.08337 | 4.91 | 29.052 | 0.11124 | 0.06744 | 0.07142 |
| ____ SI | 18.03010 | 1,697.60 | 0.436 | 18.04332 | 18.10121 | 17.94579 |
| ____ SN | 3.97365 | 795.44 | 1.296 | 4.00761 | 3.99896 | 3.91438 |
| ____ SR | 2.47937 | 786,004.13 | 4.016 | 2.40957 | 2.43513 | 2.59340 |
| ____ TI | 1.04127 | 20,643.06 | 0.403 | 1.03861 | 1.03910 | 1.04611 |
| ____ TL | 0.17207 | 11.33 | 2.701 | 0.17167 | 0.16764 | 0.17691 |
| ____ V | 0.52180 | 2,964.26 | 1.146 | 0.52095 | 0.52816 | 0.51628 |
| ____ Y1 | 2197.66684 | 2,197.67 | 2.019 | 2163.15816 | 2182.11894 | 2247.72341 |
| ____ Y2A | 79950.94204 | 79,950.94 | 2.010 | 78386.32508 | 81596.60000 | 79869.90102 |
| ____ Y2R | 5018.00783 | 5,018.01 | 2.337 | 5146.70330 | 4917.21623 | 4990.10396 |
| ____ ZN | 0.51559 | 1,145.18 | 1.179 | 0.51782 | 0.52023 | 0.50871 |
| ____ ZR | 1.02136 | 952.48 | 0.673 | 1.02531 | 1.01342 | 1.02535 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 18 Date/Time: 07/21/2017 13:20

Sample Number: **9109773** Class: M*** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05593 | 314.88 | 1.723 | 0.05493 | 0.05599 | 0.05686 |
| ____ AL | 2.14262 | 165.15 | 5.095 | 2.16169 | 2.24100 | 2.02519 |
| ____ AS | 0.17103 | 13.07 | 4.501 | 0.16457 | 0.16897 | 0.17954 |
| ____ B | 2.07715 | 7,717.35 | 0.538 | 2.06436 | 2.08199 | 2.08509 |
| ____ BA | 2.21595 | 645,812.74 | 1.711 | 2.25464 | 2.21431 | 2.17888 |
| ____ BE | 0.05023 | 10,982.69 | 0.410 | 0.05028 | 0.05000 | 0.05040 |
| ____ CA | 256.96878 | 135,138.74 | 3.492 | 267.32863 | 251.90046 | 251.67724 |
| ____ CD | 0.05065 | 184.43 | 1.393 | 0.04991 | 0.05131 | 0.05074 |
| ____ CO | 0.50380 | 813.94 | 0.506 | 0.50197 | 0.50671 | 0.50272 |
| ____ CR | 0.20172 | 926.90 | 1.329 | 0.19931 | 0.20461 | 0.20124 |
| ____ CU | 0.25980 | 1,345.38 | 2.063 | 0.25415 | 0.26481 | 0.26043 |
| ____ FE | 1.43788 | 184.95 | 0.496 | 1.43127 | 1.44543 | 1.43694 |
| ____ K | 16.60742 | 3,270.77 | 1.627 | 16.91523 | 16.49717 | 16.40985 |
| ____ LI | 1.09759 | 3,419.42 | 1.076 | 1.10969 | 1.08609 | 1.09699 |
| ____ MG | 43.52213 | 35,498.98 | 3.359 | 45.20597 | 42.78312 | 42.57730 |
| ____ MN | 0.74873 | 17,973.35 | 0.886 | 0.74402 | 0.74585 | 0.75631 |
| ____ MO | 2.08740 | 1,159.13 | 0.827 | 2.07482 | 2.10708 | 2.08031 |
| ____ NA | 95.81649 | 69,223.93 | 3.402 | 99.57844 | 94.04743 | 93.82358 |
| ____ NI | 0.50493 | 540.39 | 0.919 | 0.50061 | 0.50984 | 0.50433 |
| ____ P | 1.11376 | 130.71 | 1.421 | 1.09606 | 1.12657 | 1.11865 |
| ____ PB | 0.13859 | 49.17 | 3.744 | 0.13299 | 0.13957 | 0.14322 |
| ____ S | 151.18222 | 6,589.82 | 1.170 | 150.40845 | 153.20540 | 149.93279 |
| ____ SB | 0.52205 | 63.88 | 2.840 | 0.50553 | 0.53421 | 0.52639 |
| ____ SE | 0.09358 | 5.96 | 32.252 | 0.06195 | 0.09672 | 0.12206 |
| ____ SI | 18.10029 | 1,855.44 | 2.062 | 18.53098 | 17.87405 | 17.89585 |
| ____ SN | 3.95516 | 860.54 | 0.709 | 3.92345 | 3.97672 | 3.96530 |
| ____ SR | 2.52642 | 824,291.07 | 0.514 | 2.51771 | 2.54135 | 2.52018 |
| ____ TI | 1.02441 | 20,905.92 | 1.038 | 1.01591 | 1.02098 | 1.03634 |
| ____ TL | 0.17728 | 12.75 | 3.601 | 0.17489 | 0.18452 | 0.17244 |
| ____ V | 0.51924 | 3,034.07 | 1.485 | 0.51528 | 0.52813 | 0.51431 |
| ____ Y1 | 2388.30640 | 2,388.31 | 1.130 | 2407.30842 | 2357.40593 | 2400.20484 |
| ____ Y2A | 82286.87271 | 82,286.87 | 2.454 | 80246.20076 | 82329.87428 | 84284.54309 |
| ____ Y2R | 5465.72422 | 5,465.72 | 3.276 | 5261.52270 | 5595.73671 | 5539.91324 |
| ____ ZN | 0.51251 | 1,237.21 | 0.624 | 0.50988 | 0.51607 | 0.51159 |
| ____ ZR | 1.00692 | 1,022.34 | 2.528 | 1.03629 | 0.99327 | 0.99121 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 19 Date/Time: 07/21/2017 13:23

Sample Number: **9109771** Class: UL** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00074 | -24.15 | 71.787 | -0.00106 | -0.00013 | -0.00103 |
| ____ AL | -0.00440 | 32.04 | 805.256 | 0.00961 | 0.02187 | -0.04468 |
| ____ AS | 0.00454 | 0.04 | 282.785 | 0.00383 | 0.01771 | -0.00792 |
| ____ B | 0.03317 | 116.35 | 0.961 | 0.03349 | 0.03316 | 0.03285 |
| ____ BA | 0.02009 | 6,148.94 | 1.614 | 0.02046 | 0.01994 | 0.01986 |
| ____ BE | 0.00009 | -105.81 | 22.652 | 0.00007 | 0.00008 | 0.00011 |
| ____ CA | 48.62017 | 25,749.48 | 1.067 | 48.17294 | 49.18923 | 48.49833 |
| ____ CD | 0.00047 | -3.41 | 78.235 | 0.00089 | 0.00027 | 0.00024 |
| ____ CO | 0.00032 | 1.21 | 165.273 | 0.00072 | -0.00028 | 0.00051 |
| ____ CR | 0.00166 | 4.59 | 86.037 | 0.00001 | 0.00251 | 0.00245 |
| ____ CU | -0.00181 | -22.19 | 161.767 | -0.00022 | -0.00002 | -0.00520 |
| ____ FE | 0.09008 | 12.28 | 32.660 | 0.10527 | 0.05617 | 0.10880 |
| ____ K | 1.26786 | 258.29 | 3.211 | 1.31310 | 1.25628 | 1.23420 |
| ____ LI | 0.01242 | 29.84 | 17.496 | 0.01453 | 0.01255 | 0.01019 |
| ____ MG | 8.35997 | 6,710.34 | 1.101 | 8.26431 | 8.36767 | 8.44792 |
| ____ MN | 0.05048 | 1,185.10 | 2.251 | 0.05176 | 0.05009 | 0.04958 |
| ____ MO | 0.00105 | -0.28 | 83.634 | 0.00099 | 0.00020 | 0.00196 |
| ____ NA | 17.24936 | 12,024.90 | 0.906 | 17.14279 | 17.42878 | 17.17650 |
| ____ NI | 0.00108 | 9.71 | 116.983 | -0.00002 | 0.00247 | 0.00081 |
| ____ P | 0.07705 | 10.08 | 1.600 | 0.07586 | 0.07833 | 0.07696 |
| ____ PB | -0.00782 | -4.21 | 47.623 | -0.00491 | -0.01202 | -0.00654 |
| ____ S | 28.82026 | 1,268.29 | 0.986 | 28.83176 | 28.53052 | 29.09849 |
| ____ SB | -0.00483 | -0.32 | 63.763 | -0.00784 | -0.00494 | -0.00169 |
| ____ SE | -0.00920 | -0.20 | 81.650 | -0.01702 | -0.00856 | -0.00203 |
| ____ SI | 3.32014 | 331.33 | 0.472 | 3.31496 | 3.30772 | 3.33775 |
| ____ SN | 0.00227 | 0.66 | 73.082 | 0.00087 | 0.00410 | 0.00183 |
| ____ SR | 0.30067 | 96,119.84 | 1.306 | 0.30519 | 0.29812 | 0.29869 |
| ____ TI | 0.00407 | 105.23 | 15.586 | 0.00440 | 0.00446 | 0.00334 |
| ____ TL | 0.00149 | 0.17 | 777.383 | 0.01456 | -0.00256 | -0.00753 |
| ____ V | 0.00220 | -4.67 | 23.021 | 0.00274 | 0.00211 | 0.00174 |
| ____ Y1 | 2409.33500 | 2,409.34 | 2.195 | 2363.23000 | 2397.72000 | 2467.05500 |
| ____ Y2A | 80645.76097 | 80,645.76 | 0.714 | 80981.96493 | 80974.15770 | 79981.16029 |
| ____ Y2R | 5327.53851 | 5,327.54 | 3.153 | 5142.09658 | 5371.08283 | 5469.43613 |
| ____ ZN | 0.00066 | 3.38 | 17.683 | 0.00078 | 0.00064 | 0.00055 |
| ____ ZR | -0.00560 | 6.37 | 11.522 | -0.00493 | -0.00566 | -0.00622 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 20 Date/Time: 07/21/2017 13:26

Sample Number: **9107407** Class: **** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00098 | -14.92 | 42.150 | 0.00082 | 0.00145 | 0.00067 |
| ____ AL | -0.00744 | 31.45 | 1255.958 | -0.10906 | 0.01220 | 0.07456 |
| ____ AS | 0.00689 | 0.24 | 127.980 | 0.00819 | -0.00251 | 0.01499 |
| ____ B | 0.05572 | 203.89 | 0.948 | 0.05542 | 0.05541 | 0.05633 |
| ____ BA | 0.19106 | 56,211.79 | 1.199 | 0.19340 | 0.19096 | 0.18882 |
| ____ BE | 0.00004 | -118.71 | 114.725 | -0.00001 | 0.00005 | 0.00008 |
| ____ CA | 72.79057 | 37,939.06 | 1.406 | 72.94504 | 73.72822 | 71.69844 |
| ____ CD | 0.00022 | -4.23 | 190.742 | 0.00058 | -0.00023 | 0.00030 |
| ____ CO | 0.00069 | 1.53 | 106.462 | 0.00078 | 0.00139 | -0.00008 |
| ____ CR | 0.00091 | 1.21 | 91.860 | 0.00107 | 0.00165 | 0.00000 |
| ____ CU | 0.00034 | -9.66 | 111.742 | 0.00055 | -0.00010 | 0.00057 |
| ____ FE | 0.25639 | 32.67 | 8.924 | 0.28017 | 0.25448 | 0.23453 |
| ____ K | 3.02003 | 586.13 | 3.326 | 3.03370 | 3.11294 | 2.91346 |
| ____ LI | 0.02236 | 60.40 | 13.086 | 0.02396 | 0.01898 | 0.02414 |
| ____ MG | 11.34351 | 8,988.52 | 0.612 | 11.33570 | 11.41654 | 11.27830 |
| ____ MN | 1.24404 | 29,928.90 | 1.242 | 1.26057 | 1.24162 | 1.22994 |
| ____ MO | 0.00990 | 4.63 | 7.621 | 0.01034 | 0.01032 | 0.00903 |
| ____ NA | 29.71271 | 20,579.71 | 1.182 | 29.76636 | 30.03398 | 29.33779 |
| ____ NI | 0.00465 | 13.05 | 30.153 | 0.00431 | 0.00619 | 0.00345 |
| ____ P | -0.00003 | 1.01 | 1457.775 | 0.00164 | 0.00250 | -0.00423 |
| ____ PB | -0.00317 | -2.17 | 119.034 | -0.00038 | -0.00167 | -0.00747 |
| ____ S | 19.94846 | 871.22 | 0.526 | 19.90646 | 19.87103 | 20.06787 |
| ____ SB | 0.00577 | 0.96 | 46.973 | 0.00275 | 0.00799 | 0.00658 |
| ____ SE | -0.03957 | -2.03 | 29.402 | -0.02962 | -0.03671 | -0.05236 |
| ____ SI | 16.56597 | 1,633.92 | 0.820 | 16.50962 | 16.72089 | 16.46741 |
| ____ SN | 0.00096 | 0.36 | 315.927 | -0.00142 | 0.00437 | -0.00007 |
| ____ SR | 0.46573 | 152,276.16 | 1.256 | 0.47142 | 0.46605 | 0.45973 |
| ____ TI | 0.00436 | 113.60 | 9.163 | 0.00418 | 0.00482 | 0.00408 |
| ____ TL | 0.00587 | 0.54 | 95.661 | 0.00728 | -0.00032 | 0.01065 |
| ____ V | 0.00373 | 3.94 | 2.257 | 0.00363 | 0.00376 | 0.00378 |
| ____ Y1 | 2390.43333 | 2,390.43 | 2.834 | 2448.59000 | 2316.05000 | 2406.66000 |
| ____ Y2A | 82487.41425 | 82,487.41 | 2.078 | 81418.31337 | 81579.55451 | 84464.37488 |
| ____ Y2R | 5264.03700 | 5,264.04 | 1.982 | 5382.55837 | 5185.92877 | 5223.62385 |
| ____ ZN | 0.00940 | 24.39 | 2.804 | 0.00923 | 0.00970 | 0.00926 |
| ____ ZR | -0.00731 | 4.74 | 89.566 | 0.00023 | -0.01066 | -0.01151 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 21 Date/Time: 07/21/2017 13:29

Sample Number: **9109779** Class: **** Batch: 172001063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00002 | -19.64 | 5022.167 | -0.00115 | 0.00009 | 0.00099 |
| ____ AL | 0.04346 | 33.31 | 176.909 | 0.01517 | 0.13048 | -0.01527 |
| ____ AS | 0.00319 | -0.07 | 388.870 | -0.00845 | 0.00180 | 0.01621 |
| ____ B | 0.11559 | 404.17 | 1.503 | 0.11452 | 0.11760 | 0.11466 |
| ____ BA | 0.11470 | 32,048.07 | 2.496 | 0.11294 | 0.11800 | 0.11315 |
| ____ BE | -0.00007 | -134.83 | 6.017 | -0.00007 | -0.00007 | -0.00006 |
| ____ CA | 257.82604 | 126,430.58 | 1.850 | 258.54556 | 262.19464 | 252.73793 |
| ____ CD | 0.00053 | -2.90 | 46.608 | 0.00057 | 0.00026 | 0.00074 |
| ____ CO | 0.00098 | 1.88 | 17.759 | 0.00097 | 0.00082 | 0.00116 |
| ____ CR | 0.00429 | 15.91 | 13.450 | 0.00368 | 0.00437 | 0.00482 |
| ____ CU | 0.00196 | 12.73 | 82.384 | 0.00316 | 0.00012 | 0.00260 |
| ____ FE | 0.42153 | 51.27 | 0.442 | 0.41944 | 0.42212 | 0.42302 |
| ____ K | 6.06096 | 1,122.72 | 0.804 | 6.00514 | 6.09507 | 6.08267 |
| ____ LI | 0.04507 | 130.80 | 3.374 | 0.04523 | 0.04651 | 0.04348 |
| ____ MG | 42.48256 | 32,322.68 | 1.664 | 42.67422 | 43.07371 | 41.69974 |
| ____ MN | 0.25939 | 5,894.77 | 2.975 | 0.25554 | 0.26827 | 0.25436 |
| ____ MO | 0.00277 | 0.63 | 18.728 | 0.00223 | 0.00327 | 0.00281 |
| ____ NA | 87.55085 | 58,973.27 | 1.753 | 87.71505 | 88.99722 | 85.94029 |
| ____ NI | 0.00454 | 12.23 | 21.603 | 0.00507 | 0.00514 | 0.00341 |
| ____ P | 0.06168 | 7.75 | 4.755 | 0.06105 | 0.06487 | 0.05911 |
| ____ PB | -0.01072 | -4.58 | 51.885 | -0.00539 | -0.01649 | -0.01028 |
| ____ S | 151.83821 | 6,252.92 | 1.964 | 150.75692 | 149.54716 | 155.21054 |
| ____ SB | 0.00486 | 0.81 | 114.304 | 0.00277 | 0.00065 | 0.01114 |
| ____ SE | -0.02173 | -0.89 | 128.821 | -0.02780 | 0.00880 | -0.04620 |
| ____ SI | 17.49917 | 1,670.12 | 1.579 | 17.47847 | 17.78533 | 17.23370 |
| ____ SN | 0.00188 | 0.55 | 130.314 | 0.00467 | 0.00094 | 0.00004 |
| ____ SR | 1.57118 | 485,681.07 | 3.712 | 1.58314 | 1.62260 | 1.50781 |
| ____ TI | 0.00560 | 131.35 | 1.645 | 0.00561 | 0.00550 | 0.00568 |
| ____ TL | 0.00279 | 0.27 | 252.411 | 0.00905 | -0.00481 | 0.00412 |
| ____ V | 0.00128 | -10.25 | 58.732 | 0.00048 | 0.00197 | 0.00141 |
| ____ Y1 | 2256.68410 | 2,256.68 | 1.683 | 2285.17520 | 2271.31295 | 2213.56415 |
| ____ Y2A | 77992.03886 | 77,992.04 | 4.720 | 81732.13573 | 74371.90000 | 77872.08084 |
| ____ Y2R | 5094.12213 | 5,094.12 | 1.329 | 5115.75185 | 5018.26291 | 5148.35165 |
| ____ ZN | 0.00628 | 16.00 | 4.343 | 0.00605 | 0.00621 | 0.00658 |
| ____ ZR | -0.00274 | 8.80 | 143.080 | -0.00612 | -0.00364 | 0.00155 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 22 Date/Time: 07/21/2017 13:32

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.48689 | 2,723.23 | 0.649 | 0.48350 | 0.48741 | 0.48975 |
| ____ AL | 25.20277 | 1,448.75 | 0.682 | 25.39423 | 25.15260 | 25.06147 |
| ____ AS | 0.49478 | 38.59 | 2.807 | 0.50464 | 0.47890 | 0.50081 |
| ____ B | 0.48241 | 1,885.33 | 1.408 | 0.47536 | 0.48296 | 0.48891 |
| ____ BA | 0.50212 | 144,056.06 | 0.174 | 0.50134 | 0.50195 | 0.50306 |
| ____ BE | 0.47632 | 103,312.01 | 0.764 | 0.47246 | 0.47679 | 0.47969 |
| ____ CA | 25.01216 | 12,739.08 | 1.255 | 25.36443 | 24.76258 | 24.90948 |
| ____ CD | 0.48881 | 1,833.65 | 0.566 | 0.48966 | 0.48572 | 0.49105 |
| ____ CO | 0.49153 | 795.56 | 1.058 | 0.49541 | 0.48562 | 0.49354 |
| ____ CR | 0.47793 | 2,159.23 | 1.523 | 0.46981 | 0.48013 | 0.48385 |
| ____ CU | 0.49148 | 2,488.08 | 1.436 | 0.48377 | 0.49762 | 0.49304 |
| ____ FE | 24.89412 | 2,940.65 | 1.318 | 24.98730 | 25.16559 | 24.52948 |
| ____ K | 25.83343 | 4,742.43 | 1.202 | 26.01874 | 26.00658 | 25.47497 |
| ____ LI | 0.51760 | 1,497.54 | 2.275 | 0.51630 | 0.52997 | 0.50652 |
| ____ MG | 25.20038 | 19,289.12 | 1.170 | 25.54039 | 25.04711 | 25.01365 |
| ____ MN | 0.49092 | 11,577.45 | 0.876 | 0.48674 | 0.49070 | 0.49533 |
| ____ MO | 0.49075 | 272.91 | 0.473 | 0.49052 | 0.48856 | 0.49318 |
| ____ NA | 25.34592 | 16,991.65 | 1.107 | 25.66560 | 25.14122 | 25.23092 |
| ____ NI | 0.49037 | 526.86 | 0.458 | 0.49292 | 0.48949 | 0.48869 |
| ____ P | 0.48199 | 57.37 | 0.433 | 0.48078 | 0.48440 | 0.48078 |
| ____ PB | 0.47715 | 174.41 | 1.481 | 0.48500 | 0.47517 | 0.47129 |
| ____ S | 24.59879 | 1,077.20 | 0.710 | 24.62441 | 24.41269 | 24.75927 |
| ____ SB | 0.49473 | 61.67 | 1.596 | 0.49669 | 0.48604 | 0.50146 |
| ____ SE | 0.47781 | 29.12 | 7.655 | 0.43695 | 0.50749 | 0.48897 |
| ____ SI | 25.40289 | 2,429.43 | 0.932 | 25.51279 | 25.56473 | 25.13114 |
| ____ SN | 0.47418 | 103.71 | 0.682 | 0.47360 | 0.47128 | 0.47767 |
| ____ SR | 0.49836 | 159,635.27 | 0.347 | 0.49678 | 0.49811 | 0.50020 |
| ____ TI | 0.50008 | 10,050.15 | 0.697 | 0.49733 | 0.49890 | 0.50399 |
| ____ TL | 0.49921 | 39.77 | 0.760 | 0.50065 | 0.49491 | 0.50208 |
| ____ V | 0.49286 | 2,967.49 | 1.230 | 0.48587 | 0.49614 | 0.49658 |
| ____ Y1 | 2397.40000 | 2,397.40 | 1.683 | 2351.95000 | 2411.21500 | 2429.03500 |
| ____ Y2A | 80805.87218 | 80,805.87 | 5.047 | 85499.77509 | 78782.85145 | 78134.99001 |
| ____ Y2R | 5101.85010 | 5,101.85 | 1.145 | 5105.24741 | 5158.48661 | 5041.81628 |
| ____ ZN | 0.49011 | 1,192.93 | 0.346 | 0.49069 | 0.48820 | 0.49145 |
| ____ ZR | 0.48954 | 470.00 | 0.909 | 0.49127 | 0.48448 | 0.49287 |

LANCASTER LABORATORIES

Run Name: 1720206T71 Instrument ID: 16315

Tube: 23 Date/Time: 07/21/2017 13:35

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00071 | -17.29 | 298.408 | -0.00005 | -0.00092 | 0.00310 |
| ____ AL | -0.01474 | 32.17 | 324.183 | 0.01842 | -0.06951 | 0.00687 |
| ____ AS | 0.01051 | 0.52 | 65.535 | 0.00630 | 0.01845 | 0.00677 |
| ____ B | 0.00435 | 11.90 | 19.568 | 0.00495 | 0.00338 | 0.00474 |
| ____ BA | -0.00203 | -180.03 | 3.904 | -0.00206 | -0.00194 | -0.00209 |
| ____ BE | 0.00013 | -104.89 | 18.170 | 0.00012 | 0.00016 | 0.00011 |
| ____ CA | 0.00368 | 27.37 | 280.524 | 0.01284 | 0.00572 | -0.00751 |
| ____ CD | 0.00024 | -4.30 | 153.139 | -0.00014 | 0.00026 | 0.00061 |
| ____ CO | 0.00097 | 2.32 | 98.914 | -0.00012 | 0.00169 | 0.00133 |
| ____ CR | 0.00045 | -0.91 | 159.040 | -0.00027 | 0.00047 | 0.00115 |
| ____ CU | -0.00004 | -18.24 | 3742.688 | -0.00142 | -0.00006 | 0.00136 |
| ____ FE | 0.00922 | 2.27 | 60.722 | 0.01480 | 0.00927 | 0.00360 |
| ____ K | 0.04937 | 25.62 | 199.228 | -0.00362 | 0.16285 | -0.01113 |
| ____ LI | 0.00488 | 5.28 | 50.408 | 0.00533 | 0.00708 | 0.00223 |
| ____ MG | 0.00021 | -2.43 | 2644.184 | 0.00539 | -0.00563 | 0.00087 |
| ____ MN | 0.00013 | 0.63 | 76.382 | 0.00008 | 0.00025 | 0.00007 |
| ____ MO | -0.00055 | -1.19 | 67.893 | -0.00014 | -0.00065 | -0.00086 |
| ____ NA | 0.19201 | -25.03 | 10.655 | 0.21391 | 0.17339 | 0.18873 |
| ____ NI | 0.00032 | 9.03 | 523.814 | -0.00143 | 0.00048 | 0.00192 |
| ____ P | -0.00494 | 0.46 | 116.186 | 0.00086 | -0.01061 | -0.00506 |
| ____ PB | -0.00244 | -2.35 | 190.242 | -0.00438 | 0.00285 | -0.00578 |
| ____ S | 0.00190 | 1.06 | 2085.163 | 0.04722 | -0.02522 | -0.01632 |
| ____ SB | 0.00300 | 0.64 | 101.571 | 0.00333 | -0.00020 | 0.00588 |
| ____ SE | -0.00136 | 0.27 | 754.228 | -0.00419 | -0.00990 | 0.01001 |
| ____ SI | 0.03378 | 3.26 | 18.383 | 0.03324 | 0.04024 | 0.02785 |
| ____ SN | 0.00039 | 0.25 | 875.126 | -0.00106 | 0.00433 | -0.00208 |
| ____ SR | 0.00007 | -5.05 | 54.923 | 0.00010 | 0.00008 | 0.00003 |
| ____ TI | -0.00001 | 25.72 | 966.518 | -0.00006 | 0.00012 | -0.00010 |
| ____ TL | 0.00548 | 0.53 | 107.639 | 0.01213 | 0.00087 | 0.00344 |
| ____ V | 0.00148 | -9.67 | 71.459 | 0.00033 | 0.00170 | 0.00240 |
| ____ Y1 | 2429.65667 | 2,429.66 | 1.779 | 2476.22500 | 2421.90500 | 2390.84000 |
| ____ Y2A | 87140.14373 | 87,140.14 | 1.516 | 85937.81132 | 88554.07695 | 86928.54291 |
| ____ Y2R | 5433.42500 | 5,433.43 | 4.785 | 5678.05000 | 5160.42500 | 5461.80000 |
| ____ ZN | -0.00070 | 0.08 | 31.073 | -0.00079 | -0.00045 | -0.00086 |
| ____ ZR | -0.00444 | 7.62 | 83.683 | -0.00825 | -0.00427 | -0.00082 |

eurofins | Lancaster Laboratories Environmental

# ICP-AES Run Data Report

Reviewed By
Cindy M Gehman

Reviewed Date
07/21/2017 8:05PM

Data File Name 1720209T71.TXT
Run Name: 1720209T71

Method Reference Name(s):

Verified By:
Tara L Snyder

Verified Date
07/25/2017 10:14PM

Analyst Employee: 3024

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 1 Date/Time: 07/21/2017 17:50

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -19.29163 | 6.915 | -0.01172 | -0.01108 | -0.01021 |
| AL | 0.000 | 33.80000 | 6.516 | 0.29560 | 0.31428 | 0.33667 |
| AS | 0.000 | 0.76667 | 187.182 | 0.02900 | 0.03576 | -0.01791 |
| B | 0.000 | -3.57379 | 101.052 | -0.00008 | -0.00004 | 0.00000 |
| BA | 0.000 | -193.38121 | 9.005 | -0.00243 | -0.00214 | -0.00205 |
| BE | 0.000 | -104.32224 | 10.703 | -0.06403 | -0.06232 | -0.05224 |
| CA | 0.000 | 28.53333 | 9.114 | 0.00586 | 0.00521 | 0.00491 |
| CD | 0.000 | -3.97000 | 28.911 | -0.07869 | -0.05791 | -0.10425 |
| CO | 0.000 | 2.23000 | 54.318 | 0.05091 | 0.06645 | 0.01831 |
| CR | 0.000 | -1.36482 | 171.467 | -0.00001 | 0.00001 | -0.00004 |
| CU | 0.000 | -27.95817 | 24.497 | -0.01201 | -0.01981 | -0.01591 |
| FE | 0.000 | 1.06667 | 39.482 | 0.00021 | 0.00011 | 0.00027 |
| K | 0.000 | 34.80000 | 78.811 | 0.59950 | 0.27672 | 0.09553 |
| LI | 0.000 | -24.63333 | 57.307 | -0.00672 | -0.00165 | -0.00533 |
| MG | 0.000 | 0.55000 | 927.214 | 0.00075 | 0.00059 | -0.00102 |
| MN | 0.000 | -3.31109 | 85.429 | -0.00020 | -0.00202 | -0.00338 |
| MO | 0.000 | -0.86933 | 41.352 | -0.01616 | -0.02552 | -0.01117 |
| NA | 0.000 | -47.90000 | 24.886 | -0.00713 | -0.01145 | -0.00832 |
| NI | 0.000 | 8.86333 | 13.343 | 0.20241 | 0.15463 | 0.18113 |
| P | 0.000 | 0.52333 | 94.938 | -0.00002 | 0.00033 | 0.00032 |
| PB | 0.000 | -4.36667 | 56.589 | -0.11256 | -0.03082 | -0.12143 |
| S | 0.000 | 0.49333 | 164.479 | 0.00027 | -0.00016 | 0.00048 |
| SB | 0.000 | -0.28667 | 116.511 | -0.00006 | -0.00002 | -0.00027 |
| SE | 0.000 | -0.04444 | 1658.411 | 0.00879 | 0.00576 | -0.01711 |
| SI | 0.000 | 1.15000 | 37.601 | 0.00014 | 0.00020 | 0.00030 |
| SN | 0.000 | 0.41000 | 119.576 | 0.01156 | -0.00284 | 0.01610 |
| SR | 0.000 | -25.00721 | 30.648 | -0.00035 | -0.00019 | -0.00032 |
| TI | 0.000 | 30.91358 | 24.509 | 0.02191 | 0.01785 | 0.01326 |
| TL | 0.000 | -0.64333 | 126.201 | -0.00142 | -0.03190 | -0.00584 |
| V | 0.000 | -11.34478 | 64.686 | -0.00171 | -0.00955 | -0.00803 |
| Y1 | 0.000 | 2470.09833 | 0.509 | 2465.28000 | 2460.65000 | 2484.36500 |
| Y2A | 0.000 | 87722.58924 | 1.804 | 86123.60391 | 87756.83360 | 89287.33020 |
| Y2R | 0.000 | 5356.76667 | 1.620 | 5421.15000 | 5258.05000 | 5391.10000 |
| ZN | 0.000 | 1.90000 | 89.141 | 0.00183 | 0.04369 | 0.06964 |
| ZR | 0.000 | 6.05000 | 11.714 | 0.00105 | 0.00128 | 0.00106 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 2 Date/Time: 07/21/2017 17:53

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 2927.41185 | 0.580 | 27.51141 | 27.50872 | 27.23463 |
| CA | 50.000 | 26198.42994 | 0.591 | 4.90539 | 4.93730 | 4.87942 |
| FE | 50.000 | 5982.10154 | 0.483 | 1.11845 | 1.12666 | 1.11643 |
| K | 50.000 | 9604.78692 | 1.101 | 90.16806 | 90.83355 | 88.88426 |
| MG | 50.000 | 39194.33335 | 0.703 | 7.34890 | 7.38961 | 7.28707 |
| NA | 50.000 | 35033.28768 | 0.592 | 6.57015 | 6.59675 | 6.52022 |
| S | 50.000 | 2078.82000 | 1.033 | 0.89292 | 0.88893 | 0.90658 |
| SI | 50.000 | 4887.64629 | 0.993 | 0.91945 | 0.92213 | 0.90521 |
| Y1 | 50.000 | 2319.87333 | 2.226 | 2379.38500 | 2293.51000 | 2286.72500 |
| Y2R | 50.000 | 5338.81091 | 1.983 | 5239.77704 | 5326.27668 | 5450.37901 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 3 Date/Time: 07/21/2017 17:56

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 5845.06629 | 1.003 | 3.41543 | 3.42598 | 3.47979 |
| AS | 1.000 | 78.73000 | 1.548 | 1.60428 | 1.63592 | 1.58678 |
| B | 1.000 | 3818.83297 | 1.569 | 0.04439 | 0.04473 | 0.04575 |
| BA | 1.000 | 307509.24961 | 1.140 | 3.57257 | 3.64770 | 3.63967 |
| BE | 1.000 | 227894.29206 | 1.254 | 132.80783 | 133.58546 | 136.03035 |
| CD | 1.000 | 3775.66667 | 1.745 | 76.26667 | 78.71257 | 76.51268 |
| CO | 1.000 | 1630.45000 | 1.681 | 32.92471 | 33.96210 | 33.07792 |
| CU | 1.000 | 5373.02195 | 1.850 | 3.14934 | 3.11193 | 3.22665 |
| LI | 1.000 | 3128.06066 | 3.506 | 0.60203 | 0.59315 | 0.56284 |
| MN | 1.000 | 24552.90336 | 1.047 | 14.33108 | 14.40300 | 14.62160 |
| NI | 1.000 | 1086.75000 | 1.249 | 22.02094 | 22.52789 | 22.07882 |
| P | 1.000 | 118.84333 | 1.629 | 0.04840 | 0.04944 | 0.04789 |
| PB | 1.000 | 362.92778 | 1.847 | 7.34160 | 7.57541 | 7.33489 |
| SE | 1.000 | 63.07778 | 1.792 | 1.27221 | 1.27915 | 1.31523 |
| SR | 1.000 | 337303.53586 | 1.755 | 3.92882 | 3.93259 | 4.05139 |
| TL | 1.000 | 84.79333 | 2.003 | 1.76280 | 1.74079 | 1.69477 |
| Y1 | 1.000 | 2446.86333 | 1.229 | 2460.29500 | 2412.41000 | 2467.88500 |
| Y2A | 1.000 | 84953.94293 | 1.204 | 85953.44896 | 84999.12779 | 83909.25205 |
| Y2R | 1.000 | 5343.21813 | 4.244 | 5170.41600 | 5259.23338 | 5600.00499 |
| ZN | 1.000 | 2461.84333 | 1.207 | 49.91292 | 51.00999 | 50.01003 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 4 Date/Time: 07/21/2017 17:59

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 4741.93441 | 0.639 | 0.05570 | 0.05504 | 0.05559 |
| MO | 1.000 | 556.05733 | 1.223 | 11.58843 | 11.44274 | 11.30851 |
| SB | 1.000 | 125.63000 | 0.388 | 0.05167 | 0.05193 | 0.05154 |
| SN | 1.000 | 217.60667 | 1.443 | 4.55342 | 4.45391 | 4.43219 |
| TI | 1.000 | 20960.16670 | 0.934 | 12.29407 | 12.12715 | 12.34627 |
| V | 1.000 | 6319.43302 | 0.474 | 3.70988 | 3.67531 | 3.69745 |
| Y1 | 1.000 | 2429.31167 | 2.772 | 2354.93500 | 2486.13000 | 2446.87000 |
| Y2A | 1.000 | 85535.35397 | 6.199 | 88183.93782 | 88992.03933 | 79430.08475 |
| Y2R | 1.000 | 5359.91667 | 1.134 | 5405.25000 | 5290.82500 | 5383.67500 |
| ZR | 1.000 | 978.40000 | 1.359 | 0.18524 | 0.18037 | 0.18197 |

LANCASTER LABORATORIES

Run Name: 1720209T71

Instrument ID: 16315

Tube: 5

Date/Time: 07/21/2017 18:02

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.58726 | 3,375.77 | 0.643 | 0.58325 | 0.58780 | 0.59074 |
| ____ AL | 30.25445 | 1,757.15 | 1.297 | 30.62965 | 30.28709 | 29.84663 |
| ____ AS | 0.59579 | 45.81 | 1.725 | 0.58543 | 0.59597 | 0.60598 |
| ____ B | 0.57192 | 2,313.90 | 0.607 | 0.56882 | 0.57127 | 0.57567 |
| ____ BA | 0.58852 | 178,495.20 | 1.100 | 0.58222 | 0.58818 | 0.59516 |
| ____ BE | 0.56675 | 127,360.21 | 1.194 | 0.56026 | 0.56623 | 0.57376 |
| ____ CA | 30.19566 | 15,609.59 | 0.735 | 30.40663 | 30.21602 | 29.96433 |
| ____ CD | 0.58673 | 2,171.17 | 1.260 | 0.57833 | 0.58957 | 0.59228 |
| ____ CO | 0.57703 | 922.20 | 1.576 | 0.56662 | 0.58341 | 0.58106 |
| ____ CR | 0.57627 | 2,677.37 | 1.088 | 0.57141 | 0.57406 | 0.58335 |
| ____ CU | 0.57346 | 3,030.27 | 1.064 | 0.56839 | 0.57177 | 0.58023 |
| ____ FE | 29.49923 | 3,502.95 | 0.847 | 29.46588 | 29.76422 | 29.26760 |
| ____ K | 30.17531 | 5,712.15 | 0.972 | 30.50520 | 30.07688 | 29.94385 |
| ____ LI | 0.59269 | 1,814.10 | 1.008 | 0.59886 | 0.59228 | 0.58693 |
| ____ MG | 30.02162 | 23,252.14 | 0.856 | 30.20226 | 30.13520 | 29.72741 |
| ____ MN | 0.58127 | 14,091.55 | 0.839 | 0.57630 | 0.58145 | 0.58605 |
| ____ MO | 0.58896 | 322.29 | 0.767 | 0.58447 | 0.58890 | 0.59350 |
| ____ NA | 29.66339 | 20,367.23 | 1.099 | 29.91823 | 29.77588 | 29.29604 |
| ____ NI | 0.58051 | 619.93 | 0.301 | 0.57856 | 0.58101 | 0.58194 |
| ____ P | 0.59616 | 69.50 | 1.517 | 0.59272 | 0.58934 | 0.60642 |
| ____ PB | 0.57576 | 207.82 | 1.486 | 0.57907 | 0.56604 | 0.58217 |
| ____ S | 30.17980 | 1,294.62 | 0.592 | 29.99953 | 30.18277 | 30.35711 |
| ____ SB | 0.57526 | 71.07 | 1.146 | 0.56861 | 0.58179 | 0.57538 |
| ____ SE | 0.56511 | 34.81 | 3.977 | 0.57785 | 0.57832 | 0.53916 |
| ____ SI | 30.58176 | 2,940.31 | 0.811 | 30.81601 | 30.60746 | 30.32182 |
| ____ SN | 0.56807 | 121.97 | 1.742 | 0.56670 | 0.55892 | 0.57857 |
| ____ SR | 0.58463 | 194,533.48 | 1.134 | 0.57798 | 0.58466 | 0.59124 |
| ____ TI | 0.59581 | 12,276.54 | 0.885 | 0.59048 | 0.59593 | 0.60102 |
| ____ TL | 0.60841 | 47.72 | 0.396 | 0.60632 | 0.61105 | 0.60786 |
| ____ V | 0.59084 | 3,651.97 | 1.049 | 0.58644 | 0.58817 | 0.59793 |
| ____ Y1 | 2393.16833 | 2,393.17 | 1.014 | 2416.69000 | 2394.57500 | 2368.24000 |
| ____ Y2A | 83816.15979 | 83,816.16 | 2.438 | 85650.46389 | 84184.53094 | 81613.48455 |
| ____ Y2R | 5248.46833 | 5,248.47 | 1.522 | 5201.42914 | 5203.28711 | 5340.68872 |
| ____ ZN | 0.57807 | 1,399.08 | 0.487 | 0.57495 | 0.57882 | 0.58044 |
| ____ ZR | 0.58788 | 565.63 | 0.372 | 0.58869 | 0.58540 | 0.58954 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 6 Date/Time: 07/21/2017 18:05

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00018 | -20.93 | 687.641 | 0.00119 | -0.00124 | 0.00060 |
| ____ AL | -0.03651 | 32.45 | 102.345 | 0.00116 | -0.07357 | -0.03713 |
| ____ AS | 0.01325 | 0.76 | 48.166 | 0.02061 | 0.00941 | 0.00972 |
| ____ B | 0.00302 | 5.88 | 17.986 | 0.00275 | 0.00267 | 0.00365 |
| ____ BA | -0.00028 | -183.14 | 9.166 | -0.00029 | -0.00030 | -0.00025 |
| ____ BE | 0.00015 | -100.79 | 20.082 | 0.00019 | 0.00014 | 0.00013 |
| ____ CA | -0.00836 | 24.70 | 24.834 | -0.00977 | -0.00934 | -0.00598 |
| ____ CD | 0.00033 | -3.97 | 100.349 | 0.00070 | 0.00014 | 0.00013 |
| ____ CO | -0.00060 | 1.25 | 114.453 | -0.00135 | 0.00001 | -0.00047 |
| ____ CR | 0.00003 | -0.30 | 3533.364 | 0.00082 | 0.00132 | -0.00206 |
| ____ CU | -0.00118 | -24.35 | 100.126 | -0.00045 | -0.00254 | -0.00054 |
| ____ FE | -0.01206 | -0.43 | 95.125 | -0.01107 | -0.00112 | -0.02399 |
| ____ K | 0.03663 | 42.67 | 204.171 | 0.09876 | 0.05750 | -0.04638 |
| ____ LI | 0.00728 | -1.53 | 71.078 | 0.01178 | 0.00163 | 0.00844 |
| ____ MG | 0.00157 | -1.37 | 319.809 | 0.00736 | -0.00101 | -0.00164 |
| ____ MN | 0.00005 | -2.22 | 200.811 | 0.00015 | -0.00001 | -0.00001 |
| ____ MO | -0.00001 | -0.93 | 9227.142 | 0.00068 | 0.00194 | -0.00264 |
| ____ NA | 0.12920 | -71.33 | 7.000 | 0.13962 | 0.12341 | 0.12457 |
| ____ NI | 0.00010 | 8.95 | 1011.079 | 0.00110 | 0.00020 | -0.00099 |
| ____ P | 0.00354 | 0.94 | 46.965 | 0.00407 | 0.00487 | 0.00168 |
| ____ PB | -0.00714 | -3.89 | 51.786 | -0.01113 | -0.00649 | -0.00381 |
| ____ S | 0.00387 | 0.66 | 358.558 | 0.01671 | 0.00578 | -0.01087 |
| ____ SB | 0.00843 | 0.78 | 57.030 | 0.00552 | 0.01398 | 0.00580 |
| ____ SE | 0.00614 | 0.35 | 128.303 | 0.00356 | 0.01498 | -0.00013 |
| ____ SI | -0.01120 | 0.04 | 124.369 | 0.00488 | -0.01959 | -0.01890 |
| ____ SN | -0.00348 | -0.36 | 107.570 | -0.00779 | -0.00167 | -0.00099 |
| ____ SR | 0.00005 | -13.35 | 36.568 | 0.00006 | 0.00003 | 0.00004 |
| ____ TI | -0.00015 | 27.74 | 109.146 | 0.00003 | -0.00019 | -0.00029 |
| ____ TL | 0.00930 | 0.15 | 20.121 | 0.00988 | 0.01081 | 0.00720 |
| ____ V | 0.00123 | -8.62 | 27.939 | 0.00087 | 0.00155 | 0.00126 |
| ____ Y1 | 2463.22333 | 2,463.22 | 0.666 | 2449.17500 | 2481.25500 | 2459.24000 |
| ____ Y2A | 87474.95875 | 87,474.96 | 0.673 | 88154.26063 | 87151.18952 | 87119.42611 |
| ____ Y2R | 5488.87500 | 5,488.88 | 1.103 | 5424.45000 | 5497.55000 | 5544.62500 |
| ____ ZN | -0.00050 | 0.67 | 62.794 | -0.00064 | -0.00014 | -0.00072 |
| ____ ZR | -0.00177 | 4.48 | 315.241 | -0.00522 | -0.00473 | 0.00465 |

LANCASTER LABORATORIES

Run Name: 1720209T71

Instrument ID: 16315

Tube: 7

Date/Time: 07/21/2017 18:08

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01271 | 52.01 | 20.551 | 0.01572 | 0.01129 | 0.01111 |
| ____ AL | 0.38282 | 54.67 | 15.894 | 0.42445 | 0.31299 | 0.41102 |
| ____ AS | 0.05246 | 3.79 | 10.014 | 0.04904 | 0.04983 | 0.05851 |
| ____ B | 0.09627 | 348.64 | 0.755 | 0.09558 | 0.09703 | 0.09619 |
| ____ BA | 0.00997 | 2,842.75 | 1.245 | 0.01002 | 0.01006 | 0.00983 |
| ____ BE | 0.01030 | 2,118.04 | 0.649 | 0.01037 | 0.01027 | 0.01025 |
| ____ CA | 0.40741 | 238.08 | 1.801 | 0.39954 | 0.41407 | 0.40863 |
| ____ CD | 0.01070 | 34.77 | 1.634 | 0.01074 | 0.01051 | 0.01085 |
| ____ CO | 0.01019 | 18.53 | 5.504 | 0.01036 | 0.01064 | 0.00956 |
| ____ CR | 0.03024 | 135.71 | 2.642 | 0.03010 | 0.02951 | 0.03109 |
| ____ CU | 0.01940 | 83.35 | 11.678 | 0.01972 | 0.02149 | 0.01699 |
| ____ FE | 0.40839 | 49.93 | 3.262 | 0.40638 | 0.39618 | 0.42260 |
| ____ K | 1.12576 | 244.68 | 2.709 | 1.14962 | 1.13626 | 1.09141 |
| ____ LI | 0.04799 | 124.67 | 15.686 | 0.03937 | 0.05324 | 0.05137 |
| ____ MG | 0.21674 | 165.85 | 2.086 | 0.21847 | 0.21161 | 0.22014 |
| ____ MN | 0.01048 | 243.09 | 1.577 | 0.01047 | 0.01032 | 0.01065 |
| ____ MO | 0.01970 | 9.96 | 1.718 | 0.01938 | 0.02005 | 0.01966 |
| ____ NA | 2.20655 | 1,363.17 | 1.171 | 2.18543 | 2.19886 | 2.23537 |
| ____ NI | 0.02248 | 32.46 | 6.607 | 0.02138 | 0.02190 | 0.02417 |
| ____ P | 0.20321 | 24.14 | 0.219 | 0.20351 | 0.20270 | 0.20342 |
| ____ PB | 0.02099 | 6.31 | 6.352 | 0.02250 | 0.02046 | 0.02000 |
| ____ S | 1.04486 | 45.49 | 1.159 | 1.05879 | 1.03893 | 1.03685 |
| ____ SB | 0.04892 | 5.79 | 13.238 | 0.04150 | 0.05176 | 0.05348 |
| ____ SE | 0.04834 | 2.96 | 2.447 | 0.04967 | 0.04740 | 0.04796 |
| ____ SI | 0.11534 | 12.24 | 25.194 | 0.09189 | 0.14784 | 0.10627 |
| ____ SN | 0.03849 | 8.67 | 4.386 | 0.03778 | 0.03727 | 0.04041 |
| ____ SR | 0.01049 | 3,355.62 | 0.322 | 0.01049 | 0.01052 | 0.01045 |
| ____ TI | 0.02032 | 433.16 | 0.504 | 0.02042 | 0.02033 | 0.02022 |
| ____ TL | 0.07647 | 5.74 | 5.745 | 0.07413 | 0.07374 | 0.08154 |
| ____ V | 0.01073 | 48.20 | 5.040 | 0.01042 | 0.01041 | 0.01135 |
| ____ Y1 | 2404.51667 | 2,404.52 | 2.371 | 2347.28500 | 2461.31500 | 2404.95000 |
| ____ Y2A | 81206.26045 | 81,206.26 | 1.194 | 80326.30843 | 82246.05079 | 81046.42215 |
| ____ Y2R | 5224.25833 | 5,224.26 | 3.086 | 5055.75000 | 5377.05000 | 5239.97500 |
| ____ ZN | 0.04007 | 98.52 | 1.875 | 0.04056 | 0.03921 | 0.04045 |
| ____ ZR | 0.10280 | 103.35 | 2.530 | 0.10019 | 0.10280 | 0.10539 |

LANCASTER LABORATORIES

Run Name: 1720209T71

Instrument ID: 16315

Tube: 8

Date/Time: 07/21/2017 18:11

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00279 | -67.40 | 22.977 | 0.00275 | 0.00217 | 0.00345 |
| ____ AL | 514.53263 | 28,396.80 | 0.914 | 517.31920 | 509.10368 | 517.17502 |
| ____ AS | 0.01516 | 1.09 | 95.667 | 0.02202 | 0.02497 | -0.00150 |
| ____ B | 0.04890 | 1,122.64 | 11.897 | 0.04848 | 0.04331 | 0.05492 |
| ____ BA | 0.00015 | -38.85 | 73.837 | 0.00005 | 0.00014 | 0.00027 |
| ____ BE | -0.00032 | -177.25 | 17.909 | -0.00036 | -0.00025 | -0.00033 |
| ____ CA | 508.57462 | 241,712.55 | 0.779 | 510.85532 | 503.99830 | 510.87025 |
| ____ CD | -0.00110 | 30.98 | 29.282 | -0.00076 | -0.00115 | -0.00140 |
| ____ CO | 0.00051 | 2.65 | 165.613 | 0.00093 | 0.00108 | -0.00046 |
| ____ CR | 0.00107 | 3.91 | 100.970 | 0.00230 | 0.00024 | 0.00069 |
| ____ CU | -0.00034 | 19.01 | 192.524 | -0.00019 | -0.00105 | 0.00023 |
| ____ FE | 200.91141 | 21,751.90 | 0.497 | 201.40619 | 199.76185 | 201.56620 |
| ____ K | 0.04414 | 42.06 | 173.617 | 0.02784 | 0.12761 | -0.02303 |
| ____ LI | 0.01114 | 29.36 | 11.949 | 0.01212 | 0.01168 | 0.00962 |
| ____ MG | 509.35764 | 342,750.43 | 4.536 | 515.82663 | 483.70896 | 528.53733 |
| ____ MN | 0.00014 | 77.80 | 194.073 | 0.00045 | -0.00006 | 0.00004 |
| ____ MO | -0.00340 | -2.46 | 35.128 | -0.00474 | -0.00302 | -0.00244 |
| ____ NA | 0.25380 | 17.80 | 15.590 | 0.21022 | 0.26373 | 0.28746 |
| ____ NI | -0.00343 | 4.42 | 0.172 | -0.00344 | -0.00343 | -0.00343 |
| ____ P | 0.01493 | 1.99 | 34.978 | 0.00977 | 0.02021 | 0.01479 |
| ____ PB | -0.00819 | 44.60 | 96.478 | -0.01592 | -0.00014 | -0.00850 |
| ____ S | 0.03831 | 1.88 | 65.234 | 0.06714 | 0.02499 | 0.02280 |
| ____ SB | 0.01056 | 0.90 | 58.571 | 0.01764 | 0.00789 | 0.00616 |
| ____ SE | 0.01711 | 0.61 | 206.629 | 0.02316 | 0.04904 | -0.02088 |
| ____ SI | -0.01509 | -0.32 | 17.060 | -0.01286 | -0.01450 | -0.01791 |
| ____ SN | -0.00162 | 0.04 | 66.822 | -0.00043 | -0.00254 | -0.00190 |
| ____ SR | 0.01764 | 5,131.09 | 1.298 | 0.01750 | 0.01751 | 0.01790 |
| ____ TI | 0.00219 | 65.64 | 5.048 | 0.00223 | 0.00228 | 0.00207 |
| ____ TL | 0.01450 | 0.24 | 38.302 | 0.01040 | 0.02082 | 0.01228 |
| ____ V | -0.00032 | -15.52 | 90.661 | -0.00047 | 0.00001 | -0.00051 |
| ____ Y1 | 2131.61167 | 2,131.61 | 1.038 | 2118.76000 | 2118.92000 | 2157.15500 |
| ____ Y2A | 73601.06709 | 73,601.07 | 3.060 | 71032.50449 | 75237.42500 | 74533.27177 |
| ____ Y2R | 5196.64705 | 5,196.65 | 1.772 | 5189.38261 | 5292.14043 | 5108.41811 |
| ____ ZN | 0.00471 | 49.77 | 7.340 | 0.00455 | 0.00510 | 0.00446 |
| ____ ZR | 0.00674 | 12.20 | 72.240 | 0.00208 | 0.00634 | 0.01180 |

LANCASTER LABORATORIES

Run Name: 1720209T71

Instrument ID: 16315

Tube: 9

Date/Time: 07/21/2017 18:14

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21411 | 1,028.61 | 2.873 | 0.20796 | 0.22027 | 0.21411 |
| ____ AL | 517.20283 | 28,595.90 | 1.183 | 524.19807 | 512.85025 | 514.56016 |
| ____ AS | 0.10567 | 7.51 | 23.466 | 0.07807 | 0.12606 | 0.11289 |
| ____ B | 0.03739 | 1,114.79 | 22.562 | 0.02860 | 0.04542 | 0.03815 |
| ____ BA | 0.51622 | 140,575.82 | 2.149 | 0.50460 | 0.52669 | 0.51736 |
| ____ BE | 0.49699 | 100,265.22 | 2.363 | 0.48530 | 0.50878 | 0.49687 |
| ____ CA | 511.36520 | 243,390.81 | 1.322 | 519.10060 | 506.58407 | 508.41094 |
| ____ CD | 0.92310 | 3,152.16 | 0.429 | 0.92513 | 0.91854 | 0.92563 |
| ____ CO | 0.45738 | 666.97 | 0.168 | 0.45786 | 0.45649 | 0.45778 |
| ____ CR | 0.48589 | 2,026.86 | 2.352 | 0.47414 | 0.49698 | 0.48653 |
| ____ CU | 0.51089 | 2,460.87 | 2.047 | 0.49950 | 0.52005 | 0.51313 |
| ____ FE | 202.08703 | 21,906.58 | 1.408 | 205.37132 | 200.55049 | 200.33929 |
| ____ K | 0.03195 | 39.66 | 32.285 | 0.04385 | 0.02624 | 0.02575 |
| ____ LI | 0.01157 | 30.54 | 40.202 | 0.01573 | 0.01242 | 0.00655 |
| ____ MG | 505.18945 | 341,020.88 | 3.933 | 524.20033 | 484.55982 | 506.80820 |
| ____ MN | 0.48278 | 10,579.33 | 1.951 | 0.47341 | 0.49224 | 0.48270 |
| ____ MO | -0.00348 | -2.56 | 6.178 | -0.00329 | -0.00371 | -0.00342 |
| ____ NA | 0.23418 | 4.56 | 16.933 | 0.22536 | 0.19968 | 0.27751 |
| ____ NI | 0.89903 | 873.40 | 0.354 | 0.89887 | 0.90230 | 0.89593 |
| ____ P | 0.01957 | 2.53 | 20.481 | 0.01505 | 0.02099 | 0.02268 |
| ____ PB | 0.49544 | 209.74 | 0.908 | 0.49081 | 0.49979 | 0.49572 |
| ____ S | 0.03336 | 1.74 | 66.382 | 0.05559 | 0.01130 | 0.03318 |
| ____ SB | 0.60152 | 67.81 | 1.006 | 0.60749 | 0.60167 | 0.59540 |
| ____ SE | 0.52833 | 29.44 | 6.726 | 0.54338 | 0.55386 | 0.48775 |
| ____ SI | 0.00087 | 1.22 | 1162.763 | -0.01020 | 0.00965 | 0.00315 |
| ____ SN | -0.00353 | -0.33 | 126.363 | -0.00629 | -0.00592 | 0.00162 |
| ____ SR | 0.01725 | 5,129.46 | 2.149 | 0.01687 | 0.01761 | 0.01726 |
| ____ TI | 0.00226 | 76.69 | 32.743 | 0.00219 | 0.00155 | 0.00302 |
| ____ TL | 0.12545 | 6.80 | 9.884 | 0.11675 | 0.11995 | 0.13965 |
| ____ V | 0.52051 | 2,931.29 | 2.649 | 0.50490 | 0.53103 | 0.52560 |
| ____ Y1 | 2184.57000 | 2,184.57 | 0.660 | 2192.66000 | 2167.92000 | 2193.13000 |
| ____ Y2A | 75286.36027 | 75,286.36 | 3.583 | 77908.80535 | 72519.07160 | 75431.20387 |
| ____ Y2R | 5207.54487 | 5,207.54 | 3.468 | 4999.02753 | 5314.23646 | 5309.37064 |
| ____ ZN | 0.97904 | 2,190.34 | 0.194 | 0.97704 | 0.98083 | 0.97926 |
| ____ ZR | 0.00506 | 10.75 | 84.807 | 0.00108 | 0.00450 | 0.00961 |

LANCASTER LABORATORIES

Run Name: 1720209T71

Instrument ID: 16315

Tube: 10

Date/Time: 07/21/2017 18:17

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49646 | 2,858.20 | 1.585 | 0.49042 | 0.50536 | 0.49360 |
| ____ AL | 24.87698 | 1,530.67 | 1.520 | 25.30198 | 24.75100 | 24.57796 |
| ____ AS | 0.53447 | 38.76 | 4.337 | 0.56115 | 0.51928 | 0.52299 |
| ____ B | 0.47662 | 1,932.51 | 1.609 | 0.47027 | 0.48514 | 0.47444 |
| ____ BA | 0.49344 | 150,054.05 | 1.623 | 0.48877 | 0.50269 | 0.48888 |
| ____ BE | 0.47482 | 106,970.90 | 1.863 | 0.47042 | 0.48500 | 0.46903 |
| ____ CA | 24.82032 | 13,549.87 | 0.888 | 25.06928 | 24.74160 | 24.65009 |
| ____ CD | 0.52507 | 1,831.62 | 5.567 | 0.55878 | 0.50682 | 0.50961 |
| ____ CO | 0.52247 | 787.78 | 5.279 | 0.55428 | 0.50521 | 0.50792 |
| ____ CR | 0.48417 | 2,255.53 | 1.718 | 0.47949 | 0.49377 | 0.47925 |
| ____ CU | 0.48870 | 2,587.08 | 1.005 | 0.48561 | 0.49436 | 0.48611 |
| ____ FE | 24.58403 | 3,086.44 | 0.788 | 24.80329 | 24.51301 | 24.43579 |
| ____ K | 24.98552 | 4,995.16 | 0.965 | 25.25689 | 24.79602 | 24.90366 |
| ____ LI | 0.49993 | 1,610.02 | 1.768 | 0.50455 | 0.50550 | 0.48973 |
| ____ MG | 24.64761 | 20,163.54 | 0.896 | 24.89092 | 24.59216 | 24.45973 |
| ____ MN | 0.49297 | 11,981.91 | 2.006 | 0.48811 | 0.50435 | 0.48645 |
| ____ MO | 0.52472 | 270.72 | 5.433 | 0.55755 | 0.50624 | 0.51036 |
| ____ NA | 25.16163 | 18,198.70 | 0.790 | 25.37824 | 25.11881 | 24.98783 |
| ____ NI | 0.52216 | 526.70 | 5.798 | 0.55711 | 0.50396 | 0.50541 |
| ____ P | 0.52440 | 57.71 | 5.821 | 0.55964 | 0.50693 | 0.50662 |
| ____ PB | 0.51992 | 176.58 | 5.564 | 0.55231 | 0.51076 | 0.49667 |
| ____ S | 26.09886 | 1,055.95 | 5.477 | 27.74901 | 25.24172 | 25.30585 |
| ____ SB | 0.51654 | 60.07 | 6.859 | 0.55647 | 0.48887 | 0.50428 |
| ____ SE | 0.50042 | 29.12 | 2.570 | 0.50843 | 0.48558 | 0.50725 |
| ____ SI | 25.11295 | 2,547.11 | 0.949 | 25.38813 | 24.98069 | 24.97004 |
| ____ SN | 0.51357 | 104.05 | 5.408 | 0.54497 | 0.49221 | 0.50353 |
| ____ SR | 0.49924 | 166,569.69 | 1.675 | 0.49421 | 0.50889 | 0.49460 |
| ____ TI | 0.50065 | 10,348.22 | 1.836 | 0.49620 | 0.51122 | 0.49453 |
| ____ TL | 0.55009 | 40.85 | 3.011 | 0.56791 | 0.53517 | 0.54718 |
| ____ V | 0.49448 | 3,059.15 | 1.087 | 0.49288 | 0.50047 | 0.49008 |
| ____ Y1 | 2263.55833 | 2,263.56 | 7.978 | 2055.10500 | 2362.82000 | 2372.75000 |
| ____ Y2A | 84050.52114 | 84,050.52 | 2.234 | 85528.96341 | 81937.62500 | 84684.97500 |
| ____ Y2R | 5536.00517 | 5,536.01 | 0.880 | 5488.50460 | 5533.62792 | 5585.88300 |
| ____ ZN | 0.52284 | 1,192.74 | 6.116 | 0.55976 | 0.50401 | 0.50474 |
| ____ ZR | 0.49446 | 502.82 | 1.177 | 0.48790 | 0.49900 | 0.49648 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 11 Date/Time: 07/21/2017 18:20

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00150 | -29.82 | 92.228 | -0.00031 | -0.00302 | -0.00118 |
| ____ AL | -0.03038 | 32.42 | 272.327 | 0.05227 | -0.03023 | -0.11317 |
| ____ AS | 0.02018 | 1.31 | 23.183 | 0.02009 | 0.02490 | 0.01555 |
| ____ B | 0.00320 | 6.42 | 3.466 | 0.00324 | 0.00308 | 0.00329 |
| ____ BA | -0.00027 | -174.76 | 53.321 | -0.00011 | -0.00037 | -0.00034 |
| ____ BE | 0.00015 | -96.90 | 15.345 | 0.00015 | 0.00018 | 0.00013 |
| ____ CA | -0.01187 | 22.52 | 50.434 | -0.00546 | -0.01731 | -0.01285 |
| ____ CD | 0.00012 | -4.74 | 400.564 | 0.00068 | -0.00016 | -0.00016 |
| ____ CO | -0.00027 | 1.79 | 181.409 | -0.00080 | -0.00016 | 0.00015 |
| ____ CR | 0.00073 | 2.98 | 18.183 | 0.00072 | 0.00087 | 0.00060 |
| ____ CU | -0.00004 | -17.34 | 5057.447 | 0.00207 | -0.00041 | -0.00178 |
| ____ FE | 0.00175 | 1.28 | 927.809 | 0.00485 | 0.01616 | -0.01578 |
| ____ K | 0.03141 | 41.32 | 85.620 | 0.02634 | 0.00741 | 0.06048 |
| ____ LI | 0.00805 | 1.15 | 69.902 | 0.00227 | 0.01352 | 0.00837 |
| ____ MG | 0.00184 | -1.13 | 161.271 | 0.00523 | -0.00024 | 0.00053 |
| ____ MN | -0.00003 | -3.94 | 626.070 | -0.00018 | -0.00006 | 0.00016 |
| ____ MO | -0.00002 | -0.94 | 5109.462 | -0.00104 | 0.00089 | 0.00009 |
| ____ NA | 0.13261 | -68.00 | 8.831 | 0.11953 | 0.14211 | 0.13618 |
| ____ NI | -0.00013 | 8.71 | 1593.396 | -0.00204 | -0.00025 | 0.00192 |
| ____ P | 0.00290 | 0.87 | 87.265 | 0.00011 | 0.00505 | 0.00356 |
| ____ PB | -0.00934 | -4.71 | 14.724 | -0.01086 | -0.00899 | -0.00817 |
| ____ S | 0.00099 | 0.54 | 1183.449 | 0.01446 | -0.00445 | -0.00704 |
| ____ SB | 0.00520 | 0.38 | 125.681 | 0.01271 | 0.00080 | 0.00209 |
| ____ SE | -0.01014 | -0.69 | 36.356 | -0.01387 | -0.00650 | -0.01004 |
| ____ SI | 0.01621 | 2.77 | 21.135 | 0.01985 | 0.01573 | 0.01305 |
| ____ SN | -0.00053 | 0.29 | 507.748 | -0.00302 | 0.00233 | -0.00090 |
| ____ SR | 0.00003 | -16.15 | 43.920 | 0.00004 | 0.00002 | 0.00005 |
| ____ TI | 0.00007 | 31.25 | 229.255 | 0.00027 | 0.00000 | -0.00005 |
| ____ TL | 0.01269 | 0.44 | 20.377 | 0.01244 | 0.01539 | 0.01024 |
| ____ V | 0.00208 | -2.95 | 19.498 | 0.00215 | 0.00244 | 0.00164 |
| ____ Y1 | 2467.23833 | 2,467.24 | 1.158 | 2490.01500 | 2435.19000 | 2476.51000 |
| ____ Y2A | 84247.46733 | 84,247.47 | 1.912 | 85367.40387 | 82400.94293 | 84974.05519 |
| ____ Y2R | 5429.38333 | 5,429.38 | 1.711 | 5328.17500 | 5449.22500 | 5510.75000 |
| ____ ZN | -0.00032 | 1.11 | 28.577 | -0.00041 | -0.00032 | -0.00023 |
| ____ ZR | 0.00217 | 8.18 | 390.151 | 0.01115 | 0.00105 | -0.00568 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 12 Date/Time: 07/21/2017 18:23

Sample Number: **PBW** Class: **** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00121 | -14.53 | 99.921 | 0.00219 | -0.00014 | 0.00156 |
| ____ AL | -0.08379 | 30.48 | 101.977 | -0.15000 | -0.11404 | 0.01267 |
| ____ AS | 0.01382 | 0.79 | 102.743 | 0.02304 | 0.02095 | -0.00253 |
| ____ B | 0.00286 | 5.19 | 63.327 | 0.00095 | 0.00307 | 0.00455 |
| ____ BA | -0.00028 | -182.14 | 28.916 | -0.00022 | -0.00025 | -0.00038 |
| ____ BE | 0.00019 | -91.79 | 46.040 | 0.00009 | 0.00024 | 0.00023 |
| ____ CA | 0.00185 | 31.05 | 600.398 | 0.01447 | -0.00247 | -0.00644 |
| ____ CD | -0.00011 | -5.57 | 308.703 | 0.00022 | -0.00047 | -0.00009 |
| ____ CO | -0.00049 | 1.42 | 82.129 | -0.00003 | -0.00073 | -0.00070 |
| ____ CR | 0.00076 | 3.17 | 53.929 | 0.00120 | 0.00067 | 0.00040 |
| ____ CU | -0.00083 | -22.14 | 142.735 | -0.00199 | 0.00038 | -0.00089 |
| ____ FE | 0.00301 | 1.50 | 486.840 | 0.01901 | -0.00981 | -0.00017 |
| ____ K | 0.04163 | 44.92 | 151.840 | 0.11256 | -0.00879 | 0.02113 |
| ____ LI | 0.01064 | 9.62 | 22.154 | 0.01334 | 0.00957 | 0.00900 |
| ____ MG | 0.00004 | -2.65 | 4272.042 | -0.00165 | 0.00209 | -0.00030 |
| ____ MN | 0.00009 | -1.18 | 91.151 | 0.00006 | 0.00017 | 0.00002 |
| ____ MO | 0.00096 | -0.38 | 29.933 | 0.00064 | 0.00105 | 0.00119 |
| ____ NA | 0.08367 | -107.18 | 8.023 | 0.09044 | 0.08353 | 0.07702 |
| ____ NI | -0.00080 | 7.90 | 40.956 | -0.00117 | -0.00067 | -0.00056 |
| ____ P | 0.00371 | 0.96 | 104.001 | 0.00814 | 0.00100 | 0.00200 |
| ____ PB | -0.00728 | -3.94 | 76.192 | -0.01060 | -0.00088 | -0.01036 |
| ____ S | 0.01816 | 1.28 | 47.880 | 0.00945 | 0.02684 | 0.01820 |
| ____ SB | 0.00787 | 0.69 | 158.961 | -0.00536 | 0.01949 | 0.00947 |
| ____ SE | 0.01451 | 0.89 | 138.568 | 0.00410 | 0.00175 | 0.03769 |
| ____ SI | -0.00614 | 0.58 | 207.064 | 0.00125 | 0.00115 | -0.02082 |
| ____ SN | -0.00323 | -0.31 | 128.799 | -0.00688 | 0.00129 | -0.00409 |
| ____ SR | 0.00005 | -13.15 | 154.277 | 0.00004 | 0.00012 | -0.00002 |
| ____ TI | -0.00018 | 26.76 | 28.907 | -0.00021 | -0.00021 | -0.00012 |
| ____ TL | 0.01325 | 0.48 | 18.777 | 0.01274 | 0.01596 | 0.01106 |
| ____ V | 0.00167 | -5.72 | 48.620 | 0.00170 | 0.00085 | 0.00247 |
| ____ Y1 | 2441.46667 | 2,441.47 | 2.297 | 2445.47500 | 2383.48500 | 2495.44000 |
| ____ Y2A | 86180.10043 | 86,180.10 | 0.858 | 86912.53238 | 86193.67392 | 85434.09499 |
| ____ Y2R | 5642.78333 | 5,642.78 | 0.737 | 5597.25000 | 5678.77500 | 5652.32500 |
| ____ ZN | -0.00028 | 1.18 | 45.359 | -0.00020 | -0.00021 | -0.00042 |
| ____ ZR | 0.00000 | 6.40 | 5306.524 | -0.00530 | 0.00221 | 0.00308 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 13 Date/Time: 07/21/2017 18:26

Sample Number: **LCSW** Class: **** Batch: 172001063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05509 | 312.55 | 3.677 | 0.05276 | 0.05646 | 0.05604 |
| ____ AL | 2.11224 | 157.31 | 3.489 | 2.19731 | 2.07141 | 2.06800 |
| ____ AS | 0.16849 | 13.02 | 6.242 | 0.16314 | 0.16172 | 0.18061 |
| ____ B | 1.87000 | 7,071.21 | 0.816 | 1.85301 | 1.87444 | 1.88255 |
| ____ BA | 2.00744 | 610,432.05 | 0.992 | 1.99432 | 2.03037 | 1.99764 |
| ____ BE | 0.04955 | 11,040.01 | 0.555 | 0.04925 | 0.04961 | 0.04978 |
| ____ CA | 4.16519 | 2,202.25 | 0.623 | 4.19083 | 4.16576 | 4.13898 |
| ____ CD | 0.05172 | 190.66 | 0.623 | 0.05148 | 0.05159 | 0.05208 |
| ____ CO | 0.51559 | 844.82 | 1.187 | 0.51263 | 0.51152 | 0.52263 |
| ____ CR | 0.20321 | 946.12 | 0.250 | 0.20379 | 0.20303 | 0.20282 |
| ____ CU | 0.25540 | 1,336.56 | 1.804 | 0.25230 | 0.25319 | 0.26069 |
| ____ FE | 1.00382 | 122.70 | 1.345 | 1.01209 | 1.01114 | 0.98825 |
| ____ K | 10.62307 | 2,048.69 | 0.712 | 10.66289 | 10.53579 | 10.67053 |
| ____ LI | 1.04094 | 3,227.25 | 0.631 | 1.04399 | 1.03339 | 1.04543 |
| ____ MG | 2.10772 | 1,654.38 | 0.633 | 2.12301 | 2.10172 | 2.09842 |
| ____ MN | 0.51187 | 12,424.42 | 0.899 | 0.50695 | 0.51257 | 0.51608 |
| ____ MO | 2.01157 | 1,128.02 | 0.794 | 2.00808 | 1.99762 | 2.02899 |
| ____ NA | 10.69033 | 7,294.67 | 1.818 | 10.83354 | 10.76836 | 10.46907 |
| ____ NI | 0.52038 | 569.87 | 1.229 | 0.51804 | 0.51547 | 0.52761 |
| ____ P | 0.99088 | 117.81 | 1.010 | 0.99642 | 0.97933 | 0.99690 |
| ____ PB | 0.14497 | 51.84 | 4.521 | 0.15209 | 0.14362 | 0.13919 |
| ____ S | 0.99922 | 44.31 | 0.929 | 1.00421 | 0.98851 | 1.00495 |
| ____ SB | 0.50700 | 63.09 | 1.516 | 0.51091 | 0.49814 | 0.51194 |
| ____ SE | 0.13377 | 8.42 | 16.496 | 0.15838 | 0.12717 | 0.11575 |
| ____ SI | 1.11539 | 111.44 | 1.379 | 1.09803 | 1.12080 | 1.12734 |
| ____ SN | 3.87430 | 848.39 | 1.055 | 3.87319 | 3.83399 | 3.91572 |
| ____ SR | 1.00746 | 335,992.53 | 0.821 | 0.99852 | 1.00900 | 1.01486 |
| ____ TI | 0.99800 | 20,549.51 | 0.309 | 0.99450 | 0.99919 | 1.00030 |
| ____ TL | 0.18353 | 12.96 | 2.166 | 0.17946 | 0.18372 | 0.18740 |
| ____ V | 0.50528 | 2,981.02 | 0.861 | 0.50392 | 0.50177 | 0.51014 |
| ____ Y1 | 2447.73500 | 2,447.74 | 2.166 | 2478.97500 | 2477.70000 | 2386.53000 |
| ____ Y2A | 83998.89564 | 83,998.90 | 2.936 | 86844.36739 | 82482.02859 | 82670.29094 |
| ____ Y2R | 5288.69743 | 5,288.70 | 1.145 | 5226.10000 | 5293.02500 | 5346.96728 |
| ____ ZN | 0.50205 | 1,237.79 | 1.092 | 0.50105 | 0.49714 | 0.50797 |
| ____ ZR | 1.01574 | 980.36 | 0.638 | 1.02253 | 1.01505 | 1.00962 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 14 Date/Time: 07/21/2017 18:30

Sample Number: **9109775** Class: U*** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00066 | -16.37 | 109.989 | 0.00131 | 0.00079 | -0.00012 |
| ____ AL | -0.10069 | 26.59 | 49.039 | -0.14833 | -0.04974 | -0.10399 |
| ____ AS | 0.01096 | 0.53 | 118.879 | 0.00021 | 0.00722 | 0.02544 |
| ____ B | 0.11983 | 423.30 | 2.300 | 0.11734 | 0.11936 | 0.12279 |
| ____ BA | 0.11293 | 32,351.18 | 0.962 | 0.11345 | 0.11168 | 0.11365 |
| ____ BE | -0.00008 | -140.22 | 5.826 | -0.00008 | -0.00007 | -0.00008 |
| ____ CA | 259.59164 | 125,574.26 | 1.336 | 263.43876 | 258.62965 | 256.70651 |
| ____ CD | 0.00037 | -3.41 | 81.051 | 0.00064 | 0.00040 | 0.00005 |
| ____ CO | 0.00021 | 2.00 | 149.747 | 0.00058 | 0.00004 | 0.00002 |
| ____ CR | 0.00373 | 15.96 | 19.894 | 0.00328 | 0.00332 | 0.00458 |
| ____ CU | 0.00300 | 18.47 | 24.656 | 0.00255 | 0.00385 | 0.00259 |
| ____ FE | 0.15282 | 18.82 | 9.527 | 0.16960 | 0.14530 | 0.14355 |
| ____ K | 5.83565 | 1,097.56 | 2.736 | 6.00663 | 5.69051 | 5.80981 |
| ____ LI | 0.04257 | 114.12 | 2.297 | 0.04250 | 0.04162 | 0.04358 |
| ____ MG | 42.21168 | 31,606.81 | 1.345 | 42.83993 | 42.05951 | 41.73560 |
| ____ MN | 0.26480 | 6,068.52 | 1.238 | 0.26278 | 0.26304 | 0.26858 |
| ____ MO | 0.00157 | -0.04 | 84.554 | 0.00219 | 0.00247 | 0.00005 |
| ____ NA | 88.51121 | 59,238.64 | 1.260 | 89.76630 | 88.13428 | 87.63303 |
| ____ NI | 0.00381 | 11.28 | 18.033 | 0.00307 | 0.00394 | 0.00443 |
| ____ P | 0.04092 | 4.85 | 11.420 | 0.04450 | 0.04263 | 0.03563 |
| ____ PB | -0.00595 | -2.75 | 126.789 | 0.00174 | -0.01333 | -0.00626 |
| ____ S | 151.48460 | 6,009.48 | 2.087 | 155.10950 | 149.29237 | 150.05194 |
| ____ SB | 0.00418 | 0.22 | 107.402 | 0.00768 | 0.00575 | -0.00088 |
| ____ SE | -0.00169 | -0.14 | 588.365 | 0.00758 | -0.01215 | -0.00049 |
| ____ SI | 17.73111 | 1,653.12 | 1.089 | 17.94358 | 17.56635 | 17.68339 |
| ____ SN | 0.00470 | 1.30 | 13.008 | 0.00533 | 0.00465 | 0.00411 |
| ____ SR | 1.55500 | 489,886.23 | 2.087 | 1.59041 | 1.52664 | 1.54795 |
| ____ TI | 0.00482 | 121.50 | 7.289 | 0.00454 | 0.00470 | 0.00521 |
| ____ TL | 0.02756 | 1.53 | 56.865 | 0.04515 | 0.02243 | 0.01509 |
| ____ V | 0.00027 | -13.66 | 47.916 | 0.00012 | 0.00034 | 0.00035 |
| ____ Y1 | 2214.57211 | 2,214.57 | 2.766 | 2147.57670 | 2267.69584 | 2228.44380 |
| ____ Y2A | 79323.23522 | 79,323.24 | 1.235 | 80400.37500 | 79084.24076 | 78485.08991 |
| ____ Y2R | 5090.02836 | 5,090.03 | 2.304 | 4965.87056 | 5198.97500 | 5105.23952 |
| ____ ZN | 0.00339 | 9.27 | 8.607 | 0.00370 | 0.00334 | 0.00312 |
| ____ ZR | 0.00290 | 8.44 | 178.719 | 0.00473 | 0.00691 | -0.00295 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 15 Date/Time: 07/21/2017 18:33

Sample Number: **9109775** Class: UP** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.02477 | 130.19 | 2.864 | 0.02539 | 0.02399 | 0.02492 |
| ____ AL | 1.00812 | 87.62 | 8.180 | 0.91291 | 1.05697 | 1.05447 |
| ____ AS | 0.52998 | 39.13 | 2.775 | 0.51442 | 0.53184 | 0.54366 |
| ____ B | 0.31561 | 1,128.90 | 2.088 | 0.32292 | 0.31012 | 0.31379 |
| ____ BA | 0.16339 | 46,996.39 | 2.177 | 0.16749 | 0.16109 | 0.16159 |
| ____ BE | 0.02067 | 4,290.16 | 2.748 | 0.02129 | 0.02018 | 0.02052 |
| ____ CA | 259.01248 | 124,504.09 | 0.889 | 256.85234 | 261.43542 | 258.74967 |
| ____ CD | 0.04936 | 170.95 | 0.150 | 0.04935 | 0.04929 | 0.04944 |
| ____ CO | 0.09875 | 153.39 | 1.468 | 0.09813 | 0.10041 | 0.09772 |
| ____ CR | 0.20610 | 909.04 | 3.682 | 0.21320 | 0.19810 | 0.20698 |
| ____ CU | 0.51174 | 2,586.72 | 3.015 | 0.52824 | 0.49767 | 0.50930 |
| ____ FE | 0.65889 | 77.37 | 1.418 | 0.64843 | 0.66184 | 0.66639 |
| ____ K | 7.95604 | 1,475.31 | 1.017 | 7.86263 | 8.00358 | 8.00190 |
| ____ LI | 1.07393 | 3,193.51 | 0.718 | 1.06557 | 1.07549 | 1.08074 |
| ____ MG | 42.95742 | 31,953.52 | 0.846 | 42.63113 | 43.34922 | 42.89192 |
| ____ MN | 0.32121 | 7,386.49 | 2.850 | 0.33089 | 0.31269 | 0.32005 |
| ____ MO | 0.20451 | 107.14 | 0.127 | 0.20447 | 0.20427 | 0.20479 |
| ____ NA | 89.84367 | 59,747.83 | 0.756 | 89.32428 | 90.61193 | 89.59479 |
| ____ NI | 0.14782 | 157.85 | 0.652 | 0.14675 | 0.14807 | 0.14863 |
| ____ P | 1.10826 | 123.93 | 0.816 | 1.10376 | 1.10234 | 1.11867 |
| ____ PB | 0.48237 | 164.70 | 1.233 | 0.47633 | 0.48256 | 0.48822 |
| ____ S | 147.46189 | 6,085.79 | 0.407 | 146.80429 | 147.59953 | 147.98186 |
| ____ SB | 0.41273 | 48.54 | 0.666 | 0.41284 | 0.41541 | 0.40992 |
| ____ SE | 0.76688 | 45.55 | 4.936 | 0.80094 | 0.72613 | 0.77357 |
| ____ SI | 18.50150 | 1,714.17 | 0.676 | 18.42653 | 18.43212 | 18.64586 |
| ____ SN | 0.59788 | 123.50 | 1.578 | 0.59005 | 0.59523 | 0.60835 |
| ____ SR | 1.55161 | 490,306.03 | 2.208 | 1.58946 | 1.54263 | 1.52274 |
| ____ TI | 0.11215 | 2,213.78 | 3.296 | 0.11564 | 0.10827 | 0.11255 |
| ____ TL | 0.96886 | 76.76 | 0.256 | 0.97100 | 0.96943 | 0.96614 |
| ____ V | 0.10521 | 595.70 | 2.955 | 0.10879 | 0.10367 | 0.10318 |
| ____ Y1 | 2303.16253 | 2,303.16 | 2.779 | 2376.95613 | 2262.68217 | 2269.84927 |
| ____ Y2A | 79594.41668 | 79,594.42 | 1.649 | 78284.12270 | 79589.25000 | 80909.87734 |
| ____ Y2R | 5056.68154 | 5,056.68 | 0.818 | 5024.55135 | 5042.16627 | 5103.32702 |
| ____ ZN | 0.12258 | 286.08 | 1.033 | 0.12112 | 0.12342 | 0.12320 |
| ____ ZR | 1.04395 | 963.29 | 0.228 | 1.04151 | 1.04408 | 1.04627 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 16 Date/Time: 07/21/2017 18:36

Sample Number: **9109778** Class: D*** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00227 | -32.58 | 31.100 | -0.00304 | -0.00165 | -0.00212 |
| ____ AL | -0.01973 | 31.50 | 530.000 | 0.09256 | -0.03747 | -0.11426 |
| ____ AS | 0.01925 | 1.15 | 39.999 | 0.01772 | 0.02760 | 0.01243 |
| ____ B | 0.11473 | 406.89 | 3.007 | 0.11214 | 0.11864 | 0.11339 |
| ____ BA | 0.10971 | 31,563.01 | 0.870 | 0.10911 | 0.11081 | 0.10920 |
| ____ BE | -0.00012 | -149.00 | 42.007 | -0.00006 | -0.00014 | -0.00015 |
| ____ CA | 249.99024 | 122,908.08 | 0.536 | 251.33677 | 249.97754 | 248.65642 |
| ____ CD | 0.00014 | -4.27 | 161.405 | 0.00017 | 0.00035 | -0.00010 |
| ____ CO | 0.00041 | 2.37 | 198.493 | 0.00106 | -0.00051 | 0.00069 |
| ____ CR | 0.00173 | 7.22 | 57.775 | 0.00196 | 0.00064 | 0.00259 |
| ____ CU | -0.00005 | 2.42 | 3861.718 | 0.00152 | -0.00235 | 0.00068 |
| ____ FE | 0.14802 | 18.56 | 11.913 | 0.16838 | 0.13819 | 0.13749 |
| ____ K | 5.62850 | 1,075.78 | 1.620 | 5.66795 | 5.52421 | 5.69335 |
| ____ LI | 0.04671 | 128.06 | 7.461 | 0.04268 | 0.04872 | 0.04872 |
| ____ MG | 40.52411 | 30,807.94 | 0.553 | 40.71727 | 40.57646 | 40.27860 |
| ____ MN | 0.25951 | 5,973.89 | 1.715 | 0.25457 | 0.26320 | 0.26077 |
| ____ MO | 0.00207 | 0.23 | 15.079 | 0.00243 | 0.00185 | 0.00194 |
| ____ NA | 85.40381 | 58,004.08 | 0.586 | 85.85098 | 85.49756 | 84.86289 |
| ____ NI | 0.00338 | 11.15 | 52.952 | 0.00181 | 0.00301 | 0.00533 |
| ____ P | 0.03866 | 4.73 | 28.017 | 0.03017 | 0.03494 | 0.05085 |
| ____ PB | -0.00741 | -3.28 | 71.085 | -0.00616 | -0.00288 | -0.01320 |
| ____ S | 147.38050 | 6,009.31 | 0.138 | 147.30966 | 147.60920 | 147.22264 |
| ____ SB | 0.00130 | -0.11 | 550.987 | -0.00408 | -0.00142 | 0.00940 |
| ____ SE | -0.01904 | -1.15 | 221.828 | -0.01004 | 0.01798 | -0.06506 |
| ____ SI | 17.25089 | 1,632.30 | 0.068 | 17.25675 | 17.23742 | 17.25851 |
| ____ SN | 0.00124 | 0.63 | 231.268 | 0.00361 | -0.00195 | 0.00206 |
| ____ SR | 1.50412 | 475,875.90 | 0.754 | 1.50705 | 1.51372 | 1.49160 |
| ____ TI | 0.00475 | 120.66 | 12.303 | 0.00416 | 0.00533 | 0.00476 |
| ____ TL | 0.00619 | -0.11 | 151.718 | 0.01661 | -0.00158 | 0.00352 |
| ____ V | 0.00133 | -7.40 | 87.242 | 0.00218 | 0.00001 | 0.00181 |
| ____ Y1 | 2275.31035 | 2,275.31 | 0.671 | 2289.79622 | 2276.75232 | 2259.38249 |
| ____ Y2A | 79672.08603 | 79,672.09 | 0.034 | 79683.78244 | 79640.90229 | 79691.57337 |
| ____ Y2R | 5164.88936 | 5,164.89 | 0.392 | 5183.48991 | 5167.82154 | 5143.35664 |
| ____ ZN | 0.00318 | 9.06 | 3.324 | 0.00314 | 0.00330 | 0.00310 |
| ____ ZR | 0.00247 | 8.16 | 391.419 | -0.00177 | 0.01355 | -0.00436 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 17 Date/Time: 07/21/2017 18:39

Sample Number: **9109776** Class: R*** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05819 | 312.89 | 2.481 | 0.05659 | 0.05859 | 0.05940 |
| ____ AL | 2.11903 | 149.21 | 3.411 | 2.16407 | 2.03567 | 2.15735 |
| ____ AS | 0.17383 | 12.64 | 6.704 | 0.16038 | 0.18085 | 0.18027 |
| ____ B | 2.11071 | 7,550.44 | 0.788 | 2.09766 | 2.10504 | 2.12943 |
| ____ BA | 2.12222 | 610,186.21 | 2.089 | 2.13266 | 2.16040 | 2.07360 |
| ____ BE | 0.05090 | 10,729.53 | 0.622 | 0.05074 | 0.05069 | 0.05126 |
| ____ CA | 249.83308 | 118,902.48 | 2.870 | 257.64652 | 243.55173 | 248.30100 |
| ____ CD | 0.05021 | 173.96 | 1.314 | 0.05094 | 0.04966 | 0.05002 |
| ____ CO | 0.49675 | 765.36 | 1.035 | 0.50259 | 0.49292 | 0.49475 |
| ____ CR | 0.20847 | 917.88 | 0.652 | 0.20746 | 0.20794 | 0.21002 |
| ____ CU | 0.26292 | 1,320.43 | 0.641 | 0.26303 | 0.26118 | 0.26455 |
| ____ FE | 1.19069 | 137.39 | 3.981 | 1.24443 | 1.15487 | 1.17275 |
| ____ K | 16.29286 | 2,953.62 | 0.923 | 16.41159 | 16.12366 | 16.34332 |
| ____ LI | 1.06027 | 3,117.04 | 1.987 | 1.07938 | 1.03768 | 1.06376 |
| ____ MG | 42.09326 | 30,965.20 | 2.582 | 43.28844 | 41.16401 | 41.82733 |
| ____ MN | 0.74916 | 17,201.45 | 0.762 | 0.74385 | 0.74844 | 0.75519 |
| ____ MO | 2.07151 | 1,092.31 | 1.018 | 2.09528 | 2.05501 | 2.06425 |
| ____ NA | 94.01932 | 61,828.67 | 2.612 | 96.70353 | 91.88584 | 93.46859 |
| ____ NI | 0.50086 | 515.71 | 1.131 | 0.50740 | 0.49741 | 0.49777 |
| ____ P | 1.11196 | 124.26 | 1.645 | 1.13190 | 1.09598 | 1.10798 |
| ____ PB | 0.14066 | 47.64 | 2.548 | 0.14353 | 0.14181 | 0.13664 |
| ____ S | 144.17632 | 5,946.30 | 1.665 | 146.91934 | 143.15267 | 142.45695 |
| ____ SB | 0.52802 | 61.80 | 2.177 | 0.53658 | 0.53253 | 0.51496 |
| ____ SE | 0.08773 | 5.17 | 20.448 | 0.10640 | 0.08619 | 0.07062 |
| ____ SI | 17.76314 | 1,629.34 | 2.028 | 18.12262 | 17.40218 | 17.76462 |
| ____ SN | 3.98904 | 821.38 | 1.071 | 4.03577 | 3.95193 | 3.97942 |
| ____ SR | 2.46656 | 777,867.93 | 1.876 | 2.48236 | 2.50286 | 2.41447 |
| ____ TI | 1.03347 | 20,126.30 | 1.069 | 1.02355 | 1.03149 | 1.04537 |
| ____ TL | 0.17651 | 11.53 | 4.793 | 0.18532 | 0.17574 | 0.16846 |
| ____ V | 0.52838 | 2,951.61 | 0.153 | 0.52888 | 0.52745 | 0.52881 |
| ____ Y1 | 2301.21662 | 2,301.22 | 1.086 | 2328.28152 | 2296.38681 | 2278.98153 |
| ____ Y2A | 79431.65127 | 79,431.65 | 2.213 | 77753.24287 | 79283.03767 | 81258.67327 |
| ____ Y2R | 5000.73511 | 5,000.74 | 1.170 | 4933.46653 | 5029.16418 | 5039.57462 |
| ____ ZN | 0.50655 | 1,174.04 | 0.992 | 0.51226 | 0.50278 | 0.50461 |
| ____ ZR | 1.01928 | 930.09 | 2.262 | 1.04423 | 0.99876 | 1.01483 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 18 Date/Time: 07/21/2017 18:42

Sample Number: **9109777** Class: M*** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05806 | 321.12 | 2.190 | 0.05894 | 0.05863 | 0.05660 |
| ____ AL | 2.12413 | 149.90 | 2.063 | 2.17385 | 2.10742 | 2.09114 |
| ____ AS | 0.18175 | 13.15 | 4.773 | 0.17175 | 0.18631 | 0.18719 |
| ____ B | 2.16557 | 7,967.46 | 0.652 | 2.18184 | 2.15671 | 2.15816 |
| ____ BA | 2.13428 | 631,049.30 | 4.266 | 2.17595 | 2.19705 | 2.02985 |
| ____ BE | 0.05145 | 11,156.55 | 0.978 | 0.05203 | 0.05121 | 0.05111 |
| ____ CA | 253.22728 | 120,799.97 | 2.134 | 259.34630 | 251.23233 | 249.10322 |
| ____ CD | 0.05018 | 172.65 | 1.676 | 0.05078 | 0.05054 | 0.04922 |
| ____ CO | 0.49417 | 756.27 | 1.777 | 0.50338 | 0.49325 | 0.48589 |
| ____ CR | 0.21045 | 953.04 | 0.572 | 0.21173 | 0.20934 | 0.21028 |
| ____ CU | 0.26951 | 1,392.39 | 1.107 | 0.27293 | 0.26815 | 0.26745 |
| ____ FE | 1.19941 | 138.84 | 0.752 | 1.18973 | 1.20756 | 1.20095 |
| ____ K | 16.31661 | 2,966.11 | 1.172 | 16.52417 | 16.27814 | 16.14753 |
| ____ LI | 1.08940 | 3,212.15 | 1.838 | 1.11231 | 1.08060 | 1.07529 |
| ____ MG | 42.61039 | 31,429.80 | 2.144 | 43.62903 | 42.33791 | 41.86424 |
| ____ MN | 0.77045 | 18,194.99 | 0.658 | 0.77553 | 0.76540 | 0.77042 |
| ____ MO | 2.05654 | 1,076.97 | 1.838 | 2.09260 | 2.05982 | 2.01720 |
| ____ NA | 95.35865 | 62,889.86 | 2.041 | 97.56913 | 94.60234 | 93.90449 |
| ____ NI | 0.50397 | 515.28 | 1.243 | 0.50761 | 0.50757 | 0.49674 |
| ____ P | 1.11892 | 124.18 | 0.637 | 1.12426 | 1.12168 | 1.11083 |
| ____ PB | 0.14225 | 47.86 | 2.191 | 0.13881 | 0.14489 | 0.14303 |
| ____ S | 144.36004 | 5,913.08 | 2.010 | 147.52252 | 143.73937 | 141.81823 |
| ____ SB | 0.52888 | 61.47 | 2.489 | 0.53906 | 0.53356 | 0.51401 |
| ____ SE | 0.08901 | 5.21 | 9.283 | 0.09360 | 0.07947 | 0.09396 |
| ____ SI | 18.25166 | 1,678.69 | 2.092 | 18.67513 | 18.14640 | 17.93346 |
| ____ SN | 3.99410 | 816.77 | 1.277 | 4.02470 | 4.02236 | 3.93524 |
| ____ SR | 2.46721 | 800,037.21 | 4.941 | 2.49060 | 2.57571 | 2.33531 |
| ____ TI | 1.05199 | 21,070.20 | 0.635 | 1.05782 | 1.04469 | 1.05346 |
| ____ TL | 0.17140 | 10.99 | 8.022 | 0.16660 | 0.18690 | 0.16068 |
| ____ V | 0.53719 | 3,091.53 | 1.208 | 0.54449 | 0.53500 | 0.53208 |
| ____ Y1 | 2285.86512 | 2,285.87 | 2.104 | 2291.94048 | 2235.01697 | 2330.63792 |
| ____ Y2A | 81704.36746 | 81,704.37 | 1.784 | 81549.26515 | 80330.40892 | 83233.42831 |
| ____ Y2R | 5015.18625 | 5,015.19 | 2.210 | 4932.22832 | 4972.25543 | 5141.07500 |
| ____ ZN | 0.50970 | 1,173.17 | 1.631 | 0.51551 | 0.51341 | 0.50017 |
| ____ ZR | 1.03538 | 947.45 | 1.081 | 1.04764 | 1.03280 | 1.02571 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 19 Date/Time: 07/21/2017 18:46

Sample Number: **9109775** Class: UL** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00068 | -16.54 | 176.913 | -0.00070 | 0.00124 | 0.00151 |
| ____ AL | -0.05660 | 30.74 | 94.673 | 0.00464 | -0.09486 | -0.07958 |
| ____ AS | 0.00265 | -0.08 | 347.111 | 0.00355 | 0.01137 | -0.00696 |
| ____ B | 0.03517 | 122.32 | 7.069 | 0.03268 | 0.03765 | 0.03519 |
| ____ BA | 0.02255 | 6,496.63 | 1.212 | 0.02250 | 0.02285 | 0.02231 |
| ____ BE | 0.00005 | -115.13 | 68.883 | 0.00002 | 0.00008 | 0.00005 |
| ____ CA | 50.05102 | 26,482.71 | 1.151 | 49.80726 | 49.63709 | 50.70871 |
| ____ CD | 0.00033 | -3.93 | 57.610 | 0.00011 | 0.00044 | 0.00043 |
| ____ CO | 0.00032 | 2.67 | 157.737 | -0.00025 | 0.00070 | 0.00050 |
| ____ CR | 0.00115 | 4.70 | 59.974 | 0.00148 | 0.00036 | 0.00161 |
| ____ CU | -0.00039 | -14.69 | 483.698 | -0.00076 | -0.00205 | 0.00164 |
| ____ FE | 0.02234 | 3.80 | 74.310 | 0.00365 | 0.03537 | 0.02798 |
| ____ K | 1.14261 | 256.10 | 6.419 | 1.17394 | 1.05881 | 1.19509 |
| ____ LI | 0.01647 | 29.12 | 48.291 | 0.00942 | 0.02508 | 0.01489 |
| ____ MG | 8.71406 | 6,968.33 | 1.443 | 8.60841 | 8.68057 | 8.85320 |
| ____ MN | 0.05491 | 1,276.34 | 1.362 | 0.05405 | 0.05522 | 0.05545 |
| ____ MO | 0.00192 | 0.16 | 30.385 | 0.00177 | 0.00257 | 0.00143 |
| ____ NA | 17.83423 | 12,514.13 | 0.901 | 17.75890 | 17.72506 | 18.01871 |
| ____ NI | 0.00091 | 9.68 | 24.203 | 0.00076 | 0.00117 | 0.00081 |
| ____ P | 0.01466 | 2.25 | 24.920 | 0.01045 | 0.01702 | 0.01651 |
| ____ PB | -0.00697 | -3.72 | 51.842 | -0.00926 | -0.00884 | -0.00280 |
| ____ S | 30.80198 | 1,350.99 | 0.838 | 31.04551 | 30.82892 | 30.53150 |
| ____ SB | 0.00239 | 0.02 | 252.037 | -0.00306 | 0.00888 | 0.00136 |
| ____ SE | -0.00545 | -0.38 | 348.020 | -0.02608 | 0.01119 | -0.00145 |
| ____ SI | 3.47475 | 343.98 | 1.835 | 3.40129 | 3.50720 | 3.51576 |
| ____ SN | 0.00045 | 0.50 | 604.849 | 0.00040 | -0.00226 | 0.00323 |
| ____ SR | 0.31752 | 101,628.53 | 0.939 | 0.31750 | 0.32051 | 0.31455 |
| ____ TI | 0.00327 | 93.21 | 18.579 | 0.00291 | 0.00398 | 0.00293 |
| ____ TL | 0.00499 | -0.21 | 79.403 | 0.00685 | 0.00768 | 0.00044 |
| ____ V | 0.00000 | -15.55 | )437.928 | 0.00121 | -0.00098 | -0.00022 |
| ____ Y1 | 2446.85167 | 2,446.85 | 0.296 | 2440.31000 | 2454.62500 | 2445.62000 |
| ____ Y2A | 80610.40510 | 80,610.41 | 1.524 | 80763.30211 | 81754.98902 | 79312.92415 |
| ____ Y2R | 5389.99193 | 5,389.99 | 3.841 | 5493.02639 | 5151.65000 | 5525.29940 |
| ____ ZN | 0.00082 | 3.90 | 46.205 | 0.00095 | 0.00039 | 0.00111 |
| ____ ZR | 0.00089 | 6.89 | 426.120 | -0.00322 | 0.00420 | 0.00168 |

LANCASTER LABORATORIES

Run Name: 1720209T71 Instrument ID: 16315

Tube: 20 Date/Time: 07/21/2017 18:49

Sample Number: **9109780** Class: **** Batch: 172001063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00114 | -14.12 | 68.618 | 0.00144 | 0.00025 | 0.00174 |
| ____ AL | -0.08176 | 29.17 | 44.838 | -0.07481 | -0.04907 | -0.12139 |
| ____ AS | 0.00520 | 0.11 | 282.181 | 0.00905 | 0.01758 | -0.01102 |
| ____ B | 0.11511 | 420.00 | 0.600 | 0.11442 | 0.11508 | 0.11581 |
| ____ BA | 0.10815 | 32,006.58 | 1.440 | 0.10960 | 0.10650 | 0.10835 |
| ____ BE | -0.00013 | -155.56 | 5.323 | -0.00012 | -0.00013 | -0.00013 |
| ____ CA | 251.05520 | 128,654.34 | 1.338 | 254.65107 | 250.51636 | 247.99818 |
| ____ CD | 0.00056 | -2.94 | 27.042 | 0.00072 | 0.00043 | 0.00052 |
| ____ CO | -0.00073 | 0.67 | 40.696 | -0.00052 | -0.00059 | -0.00107 |
| ____ CR | 0.00403 | 17.88 | 28.315 | 0.00272 | 0.00479 | 0.00460 |
| ____ CU | -0.00004 | 2.67 | 1824.427 | 0.00074 | -0.00066 | -0.00020 |
| ____ FE | 0.16333 | 21.26 | 12.402 | 0.15460 | 0.14891 | 0.18649 |
| ____ K | 5.57576 | 1,111.59 | 1.257 | 5.56137 | 5.51401 | 5.65190 |
| ____ LI | 0.04062 | 114.10 | 11.338 | 0.04469 | 0.04155 | 0.03562 |
| ____ MG | 40.69354 | 32,249.46 | 1.145 | 41.16807 | 40.67620 | 40.23636 |
| ____ MN | 0.25375 | 6,008.22 | 0.446 | 0.25417 | 0.25247 | 0.25461 |
| ____ MO | 0.00284 | 0.66 | 13.545 | 0.00240 | 0.00312 | 0.00299 |
| ____ NA | 85.85437 | 60,787.68 | 1.204 | 86.92251 | 85.78213 | 84.85847 |
| ____ NI | 0.00291 | 11.17 | 31.710 | 0.00389 | 0.00279 | 0.00206 |
| ____ P | 0.04457 | 5.63 | 17.861 | 0.05282 | 0.04397 | 0.03693 |
| ____ PB | -0.00854 | -3.84 | 19.832 | -0.00711 | -0.00811 | -0.01041 |
| ____ S | 145.02775 | 6,182.46 | 0.836 | 143.76704 | 146.18590 | 145.13029 |
| ____ SB | 0.00724 | 0.61 | 24.818 | 0.00580 | 0.00925 | 0.00667 |
| ____ SE | 0.00529 | 0.29 | 259.633 | -0.01057 | 0.01342 | 0.01304 |
| ____ SI | 17.22561 | 1,699.24 | 0.358 | 17.17797 | 17.29529 | 17.20357 |
| ____ SN | -0.00310 | -0.27 | 130.587 | 0.00100 | -0.00711 | -0.00320 |
| ____ SR | 1.52117 | 494,899.13 | 1.780 | 1.52766 | 1.54443 | 1.49144 |
| ____ TI | 0.00480 | 125.20 | 5.976 | 0.00453 | 0.00510 | 0.00476 |
| ____ TL | 0.01528 | 0.65 | 28.260 | 0.01442 | 0.01145 | 0.01996 |
| ____ V | 0.00008 | -15.38 | 877.799 | -0.00027 | -0.00036 | 0.00085 |
| ____ Y1 | 2378.76919 | 2,378.77 | 1.010 | 2354.47008 | 2379.32274 | 2402.51475 |
| ____ Y2A | 81946.07159 | 81,946.07 | 2.055 | 82410.15000 | 80079.11266 | 83348.95210 |
| ____ Y2R | 5384.78088 | 5,384.78 | 2.050 | 5379.59632 | 5277.07086 | 5497.67546 |
| ____ ZN | 0.00276 | 8.45 | 21.448 | 0.00257 | 0.00342 | 0.00228 |
| ____ ZR | 0.00386 | 9.86 | 65.356 | 0.00677 | 0.00237 | 0.00244 |

LANCASTER LABORATORIES

Run Name: 1720209T71

Instrument ID: 16315

Tube: 21

Date/Time: 07/21/2017 18:52

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.50916 | 2,889.25 | 0.961 | 0.51132 | 0.50356 | 0.51259 |
| ____ AL | 24.90793 | 1,441.07 | 2.257 | 25.04564 | 25.38853 | 24.28963 |
| ____ AS | 0.50890 | 37.83 | 2.323 | 0.50166 | 0.50250 | 0.52254 |
| ____ B | 0.49506 | 1,973.74 | 0.615 | 0.49505 | 0.49202 | 0.49811 |
| ____ BA | 0.50121 | 150,211.99 | 0.305 | 0.50243 | 0.49950 | 0.50170 |
| ____ BE | 0.48300 | 107,239.49 | 0.558 | 0.48475 | 0.47989 | 0.48435 |
| ____ CA | 24.88704 | 12,772.78 | 2.944 | 25.25485 | 25.36289 | 24.04338 |
| ____ CD | 0.49883 | 1,785.73 | 1.519 | 0.49306 | 0.49603 | 0.50741 |
| ____ CO | 0.49480 | 765.68 | 1.410 | 0.48939 | 0.49234 | 0.50268 |
| ____ CR | 0.49510 | 2,272.81 | 1.084 | 0.49492 | 0.48982 | 0.50055 |
| ____ CU | 0.49799 | 2,598.30 | 0.177 | 0.49901 | 0.49747 | 0.49749 |
| ____ FE | 24.67490 | 2,913.29 | 1.653 | 24.77085 | 25.02636 | 24.22749 |
| ____ K | 25.15323 | 4,728.56 | 2.013 | 25.31597 | 25.55809 | 24.58564 |
| ____ LI | 0.50753 | 1,537.24 | 2.343 | 0.50903 | 0.51859 | 0.49495 |
| ____ MG | 24.77194 | 19,051.18 | 2.931 | 25.07545 | 25.29707 | 23.94331 |
| ____ MN | 0.50514 | 12,100.50 | 0.305 | 0.50519 | 0.50357 | 0.50665 |
| ____ MO | 0.49806 | 263.67 | 0.980 | 0.49353 | 0.49742 | 0.50323 |
| ____ NA | 25.28178 | 17,191.30 | 2.927 | 25.61320 | 25.79811 | 24.43402 |
| ____ NI | 0.49969 | 517.79 | 0.776 | 0.49562 | 0.50334 | 0.50011 |
| ____ P | 0.51640 | 58.34 | 0.559 | 0.51776 | 0.51309 | 0.51836 |
| ____ PB | 0.49528 | 172.77 | 1.034 | 0.49867 | 0.49778 | 0.48939 |
| ____ S | 24.89376 | 1,034.00 | 1.058 | 24.66282 | 25.18056 | 24.83789 |
| ____ SB | 0.49957 | 59.72 | 1.472 | 0.49207 | 0.50677 | 0.49988 |
| ____ SE | 0.49132 | 29.27 | 1.932 | 0.49855 | 0.48057 | 0.49485 |
| ____ SI | 25.37698 | 2,420.58 | 1.706 | 25.46341 | 25.76016 | 24.90738 |
| ____ SN | 0.48802 | 101.48 | 0.629 | 0.48531 | 0.48738 | 0.49135 |
| ____ SR | 0.50917 | 167,422.50 | 0.440 | 0.51079 | 0.50661 | 0.51009 |
| ____ TI | 0.51072 | 10,403.36 | 0.438 | 0.51313 | 0.50871 | 0.51032 |
| ____ TL | 0.52370 | 39.69 | 0.605 | 0.52487 | 0.52011 | 0.52611 |
| ____ V | 0.50260 | 3,067.98 | 0.320 | 0.50443 | 0.50192 | 0.50144 |
| ____ Y1 | 2316.45833 | 2,316.46 | 3.883 | 2281.73500 | 2418.60000 | 2249.04000 |
| ____ Y2A | 82819.39150 | 82,819.39 | 2.760 | 81655.30227 | 85452.92208 | 81349.95015 |
| ____ Y2R | 5208.86348 | 5,208.86 | 4.737 | 5184.55118 | 4975.15978 | 5466.87949 |
| ____ ZN | 0.50189 | 1,175.89 | 0.702 | 0.49785 | 0.50431 | 0.50351 |
| ____ ZR | 0.50612 | 483.57 | 3.524 | 0.51066 | 0.52125 | 0.48645 |

LANCASTER LABORATORIES

Run Name: 1720209T71

Instrument ID: 16315

Tube: 22

Date/Time: 07/21/2017 18:55

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00092 | -27.06 | 166.895 | -0.00210 | 0.00081 | -0.00146 |
| ____ AL | 0.01758 | 34.43 | 322.671 | 0.06953 | -0.04294 | 0.02615 |
| ____ AS | 0.01434 | 0.83 | 58.573 | 0.00553 | 0.01524 | 0.02226 |
| ____ B | 0.00526 | 14.47 | 15.430 | 0.00558 | 0.00434 | 0.00586 |
| ____ BA | -0.00029 | -181.16 | 22.215 | -0.00024 | -0.00036 | -0.00026 |
| ____ BE | 0.00015 | -99.91 | 18.978 | 0.00018 | 0.00012 | 0.00014 |
| ____ CA | -0.01152 | 22.17 | 37.236 | -0.00688 | -0.01534 | -0.01236 |
| ____ CD | 0.00022 | -4.36 | 70.553 | 0.00004 | 0.00030 | 0.00031 |
| ____ CO | -0.00023 | 1.83 | 287.360 | -0.00088 | -0.00022 | 0.00042 |
| ____ CR | -0.00037 | -2.23 | 141.402 | -0.00094 | 0.00008 | -0.00025 |
| ____ CU | -0.00191 | -27.93 | 88.404 | -0.00222 | -0.00009 | -0.00341 |
| ____ FE | -0.00199 | 0.83 | 469.675 | -0.01163 | 0.00700 | -0.00133 |
| ____ K | -0.01739 | 31.10 | 68.885 | -0.03016 | -0.01564 | -0.00639 |
| ____ LI | 0.01733 | 29.63 | 37.662 | 0.02423 | 0.01126 | 0.01649 |
| ____ MG | 0.00192 | -1.02 | 115.052 | 0.00223 | 0.00395 | -0.00043 |
| ____ MN | -0.00003 | -3.87 | 939.429 | 0.00012 | -0.00030 | 0.00011 |
| ____ MO | 0.00037 | -0.72 | 192.171 | -0.00031 | 0.00031 | 0.00111 |
| ____ NA | 0.14426 | -58.22 | 14.230 | 0.13651 | 0.16754 | 0.12874 |
| ____ NI | -0.00120 | 7.52 | 41.575 | -0.00071 | -0.00119 | -0.00171 |
| ____ P | 0.00202 | 0.75 | 170.205 | -0.00115 | 0.00154 | 0.00566 |
| ____ PB | -0.01013 | -4.96 | 21.077 | -0.01213 | -0.00788 | -0.01037 |
| ____ S | -0.00701 | 0.17 | 179.166 | -0.01734 | -0.01065 | 0.00697 |
| ____ SB | 0.00331 | 0.15 | 194.662 | 0.00228 | 0.01020 | -0.00255 |
| ____ SE | 0.00422 | 0.22 | 281.244 | 0.01254 | -0.00936 | 0.00946 |
| ____ SI | 0.00938 | 2.06 | 53.343 | 0.00714 | 0.01511 | 0.00589 |
| ____ SN | -0.00011 | 0.38 | 1616.592 | -0.00181 | 0.00180 | -0.00033 |
| ____ SR | 0.00006 | -9.35 | 63.708 | 0.00002 | 0.00009 | 0.00007 |
| ____ TI | 0.00027 | 35.94 | 148.119 | 0.00071 | -0.00005 | 0.00015 |
| ____ TL | 0.00374 | -0.33 | 260.234 | 0.01257 | -0.00669 | 0.00534 |
| ____ V | 0.00024 | -14.90 | 642.584 | 0.00061 | 0.00158 | -0.00146 |
| ____ Y1 | 2455.47500 | 2,455.48 | 3.772 | 2502.71500 | 2514.95000 | 2348.76000 |
| ____ Y2A | 85618.89115 | 85,618.89 | 2.003 | 86832.85087 | 83656.48074 | 86367.34185 |
| ____ Y2R | 5305.55000 | 5,305.55 | 3.054 | 5123.17500 | 5432.87500 | 5360.60000 |
| ____ ZN | -0.00057 | 0.46 | 49.234 | -0.00089 | -0.00038 | -0.00045 |
| ____ ZR | 0.00467 | 10.55 | 76.429 | 0.00081 | 0.00533 | 0.00786 |

# ICP-MS Data

# Metals in Liquid

eurofins | Lancaster Laboratories Environmental

# ICP-MS Run Data Report

Method Reference Name(s):

Date File Name: 17G26F00.E03

Run Name: 1720704E03

Analyst: 1242

Reviewed By: Choon Y Tian
Reviewed Date: 07/26/2017 11:09

Verified By: Robert Strocko
Verified Date: 07/27/2017 15:11

Instrument Parameters:

Rinse Time (sec): 25.00

| INTERNAL STD. | ELEMENT | MASS |
|---|---|---|
| **SC-1** | | 45 |
| | NA | 23 |
| | MG | 24 |
| | AL | 27 |
| | K | 39 |
| | CA | 44 |
| | TI | 47 |
| | V | 51 |
| | CR | 52 |
| | MN | 55 |
| | FE | 57 |
| **IN-1** | | 115 |
| | CO | 59 |
| | NI | 60 |
| | CU | 63 |
| | ZN | 66 |
| | AS | 75 |
| | SR | 88 |
| | MO | 98 |
| | AG | 107 |
| | CD | 111 |
| | SN | 120 |
| | SB | 121 |
| | BA | 137 |
| **BI-1** | | 209 |
| | TL | 203 |
| | PB | 208 |
| | U | 238 |

Run Name: 1720704E03 Date/Time: 07/26/2017 8:56:00
Tube Number: 1
Sample Number: **S0**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| *NA* | 23 | 0.00000 | 12983.60000 | 25584700 | 1.00838 | -0.70781 | -0.30103 |
| *MG* | 24 | 0.00000 | 60.00270 | 127453000000 | 0.00152 | -0.27095 | 0.26944 |
| *AL* | 27 | 0.00000 | 6.66691 | -17294200000 | -0.25829 | 0.51659 | -0.25829 |
| *K* | 39 | 0.00003 | 17455.50000 | 16964500 | -3.63960 | -2.55860 | 6.19648 |
| *CA* | 44 | 0.00000 | 413.35800 | 1919860000 | 21.90844 | -31.58600 | 9.67803 |
| *SC-1* | 45 | 49297.10000 | 0.00000 | 0.278 | 49233.50000 | 49203.40000 | 49454.40000 |
| *TI* | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *V* | 51 | 0.00000 | 20.00070 | 1227750000 | -0.01993 | 0.02006 | -0.00013 |
| *CR* | 52 | 0.00000 | 86.67040 | -14081600000 | -0.05702 | 0.03671 | 0.02031 |
| *MN* | 55 | 0.00000 | 23.33450 | 1656530000 | -0.00882 | -0.03573 | 0.04455 |
| *FE* | 57 | 0.00000 | 30.00110 | 938462000 | 0.73867 | 0.74048 | -1.47915 |
| *CO* | 59 | 0.00000 | 90.00500 | 1387310000 | -0.01470 | -0.03174 | 0.04645 |
| *NI* | 60 | 0.00000 | 20.00080 | -2459270000 | 0.06545 | -0.00112 | -0.06434 |
| *CU* | 63 | 0.00000 | 43.33520 | -4367040000 | -0.00305 | 0.01881 | -0.01576 |
| *ZN* | 66 | 0.00000 | 23.33420 | 9896680000 | -0.02640 | -0.11893 | 0.14532 |
| *GE-1* | 72 | 113045.00000 | 0.00000 | 1.132 | 111714.00000 | 114267.00000 | 113155.00000 |
| *AS* | 75 | 0.00000 | 30.66690 | 2182070000 | 0.23504 | -0.11788 | -0.11716 |
| *SR* | 88 | 0.00000 | 10.00040 | -4913890000 | -0.02253 | -0.00003 | 0.02255 |
| *MO* | 98 | 0.00000 | 3.33346 | 3385070000 | -0.00529 | 0.01058 | -0.00529 |
| *AG* | 107 | 0.00000 | 3.33346 | -19113700000 | -0.00229 | -0.00229 | 0.00458 |
| *CD* | 111 | 0.00000 | 2.00002 | -15971200000 | 0.01161 | -0.01143 | -0.00018 |
| *IN-1* | 115 | 55459.90000 | 0.00000 | 1.455 | 54529.70000 | 55975.30000 | 55874.70000 |
| *SN* | 120 | 0.00000 | 43.33500 | 8581140000 | -0.00509 | -0.06420 | 0.06929 |
| *SB* | 121 | 0.00000 | 13.33410 | 31888800000 | -0.03908 | 0.04881 | -0.00973 |
| *BA* | 137 | 0.00000 | 3.33347 | 4894150000 | -0.02122 | -0.02122 | 0.04244 |
| *TB-1* | 159 | 187398.00000 | 0.00000 | 0.732 | 187259.00000 | 188833.00000 | 186102.00000 |
| *TL* | 203 | 0.00000 | 3.33347 | -4510170000 | 0.00564 | -0.00282 | -0.00282 |
| *PB* | 208 | 0.00000 | 116.67200 | -452645000 | 0.00361 | -0.00986 | 0.00625 |
| *BI-1* | 209 | 140529.00000 | 0.00000 | 0.840 | 139858.00000 | 141892.00000 | 139836.00000 |
| *U* | 238 | 0.00000 | 10.00040 | -23157800 | 0.00001 | -0.00002 | 0.00001 |

Run Name: 1720704E03 Date/Time: 07/26/2017 8:57:00
Tube Number: 2
Sample Number: **S1**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 48501.00000 | 0.00000 | 3.561 | 46794.70000 | 48460.90000 | 50247.50000 |
| AL | 27 | 10000.00000 | 254240.00000 | 3.467 | 10244.26476 | 10152.59754 | 9603.12834 |
| CA | 44 | 10000.00000 | 26136.90000 | 2.840 | 10198.64145 | 10126.71584 | 9674.65703 |
| CR | 52 | 1000.00000 | 630811.00000 | 4.161 | 1036.00094 | 1009.56901 | 954.43767 |
| FE | 57 | 10000.00000 | 133353.00000 | 4.388 | 10478.54522 | 9904.76614 | 9616.66596 |
| K | 39 | 10000.00000 | 478737.00000 | 3.001 | 10277.71412 | 10040.63531 | 9681.65364 |
| MG | 24 | 10000.00000 | 721720.00000 | 3.610 | 10391.23880 | 9929.01212 | 9679.78587 |
| MN | 55 | 1000.00000 | 365686.00000 | 3.103 | 1033.18638 | 995.10906 | 971.70292 |
| NA | 23 | 10000.00000 | 1575340.00000 | 3.494 | 10356.60831 | 9985.10777 | 9658.21911 |
| TI | 47 | 1000.00000 | 15322.90000 | 7.404 | 1083.19803 | 975.42753 | 941.37411 |
| V | 51 | 1000.00000 | 492696.00000 | 3.535 | 1036.22127 | 998.17073 | 965.60096 |
| **IN-1** | 115 | 51900.40000 | 0.00000 | 2.025 | 51567.50000 | 51055.70000 | 53078.00000 |
| AG | 107 | 100.00000 | 135137.00000 | 1.946 | 100.03505 | 101.92830 | 98.03746 |
| AS | 75 | 1000.00000 | 55620.60000 | 2.305 | 1011.65349 | 1014.89720 | 973.45747 |
| BA | 137 | 1000.00000 | 145873.00000 | 2.163 | 998.36624 | 1022.39888 | 979.23559 |
| CD | 111 | 100.00000 | 16520.80000 | 2.129 | 100.60437 | 101.76124 | 97.63452 |
| CO | 59 | 1000.00000 | 1189100.00000 | 0.766 | 1000.77615 | 1007.24422 | 991.97952 |
| CU | 63 | 1000.00000 | 802981.00000 | 2.029 | 1019.79714 | 1000.95215 | 979.24289 |
| MO | 98 | 100.00000 | 58415.10000 | 3.658 | 101.39168 | 102.75774 | 95.85046 |
| NI | 60 | 1000.00000 | 293297.00000 | 1.865 | 1016.11471 | 1004.32012 | 979.56273 |
| SB | 121 | 100.00000 | 31657.50000 | 2.264 | 98.59570 | 102.61177 | 98.79247 |
| SN | 120 | 100.00000 | 48755.70000 | 1.211 | 100.35998 | 100.99006 | 98.64989 |
| SR | 88 | 100.00000 | 41217.60000 | 1.416 | 101.61806 | 99.39379 | 98.98798 |
| ZN | 66 | 1000.00000 | 105520.00000 | 2.640 | 1027.96834 | 996.49462 | 975.53299 |
| **BI-1** | 209 | 131392.00000 | 0.00000 | 2.446 | 134921.00000 | 128633.00000 | 130622.00000 |
| PB | 208 | 100.00000 | 356695.00000 | 1.964 | 97.77720 | 101.50140 | 100.72155 |
| TL | 203 | 100.00000 | 111139.00000 | 1.723 | 98.87845 | 99.13717 | 101.98438 |
| U | 238 | 100.00000 | 417442.00000 | 2.161 | 98.19327 | 102.39358 | 99.41310 |
| *GE-1* | 72 | 104043.00000 | 0.00000 | 1.424 | 104069.00000 | 102548.00000 | 105511.00000 |
| *TB-1* | 159 | 181199.00000 | 0.00000 | 1.102 | 179838.00000 | 180269.00000 | 183491.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 8:59:00
Tube Number: 3
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 48333.90000 | 0.00000 | 2.650 | 49123.50000 | 46855.40000 | 49022.90000 |
| AL | 27 | 5.98100 | 156.67300 | 57.298 | 4.39855 | 9.91319 | 3.63040 |
| CA | 44 | -3.59000 | 396.69000 | -505.014 | -4.53448 | -21.23195 | 14.99452 |
| CR | 52 | 0.91280 | 660.04400 | 10.766 | 1.02231 | 0.83236 | 0.88362 |
| FE | 57 | 14.83000 | 226.67700 | 5.113 | 14.06217 | 14.85027 | 15.57843 |
| K | 39 | 2.11700 | 17208.60000 | 177.421 | 1.03887 | 6.29482 | -0.98272 |
| MG | 24 | 10.33000 | 803.39600 | 16.854 | 9.16279 | 9.50264 | 12.33422 |
| MN | 55 | 0.54020 | 220.01000 | 30.692 | 0.39604 | 0.50311 | 0.72145 |
| NA | 23 | 29.21000 | 17271.90000 | 19.743 | 30.96510 | 33.90009 | 22.77206 |
| TI | 47 | 0.65370 | 10.00040 | 98.440 | 1.28660 | 0.67444 | 0.00000 |
| V | 51 | 0.34770 | 190.00900 | 42.565 | 0.18035 | 0.40095 | 0.46172 |
| **IN-1** | 115 | 52388.40000 | 0.00000 | 6.286 | 55492.30000 | 48934.70000 | 52738.20000 |
| AG | 107 | 0.07850 | 110.00600 | 25.006 | 0.08766 | 0.09187 | 0.05596 |
| AS | 75 | 1.17800 | 94.66770 | 18.990 | 0.99565 | 1.42738 | 1.11010 |
| BA | 137 | 0.32890 | 50.00250 | 79.964 | 0.04288 | 0.56032 | 0.38348 |
| CD | 111 | 0.02822 | 6.66672 | 58.186 | 0.04517 | 0.02708 | 0.01240 |
| CO | 59 | 0.32190 | 470.02600 | 13.302 | 0.27535 | 0.33065 | 0.35964 |
| CU | 63 | 0.42560 | 386.68800 | 7.481 | 0.46198 | 0.41178 | 0.40295 |
| MO | 98 | 0.08966 | 56.66890 | 32.612 | 0.12275 | 0.06731 | 0.07891 |
| NI | 60 | 0.47130 | 160.00800 | 45.916 | 0.70091 | 0.44187 | 0.27117 |
| SB | 121 | 0.67800 | 230.01300 | 10.397 | 0.72925 | 0.59762 | 0.70717 |
| SN | 120 | 0.45370 | 260.01400 | 48.160 | 0.20472 | 0.61338 | 0.54295 |
| SR | 88 | 0.14110 | 66.66950 | 60.354 | 0.04556 | 0.20911 | 0.16852 |
| ZN | 66 | 0.43140 | 66.67000 | 73.714 | 0.23638 | 0.79837 | 0.25953 |
| **BI-1** | 209 | 134291.00000 | 0.00000 | 2.976 | 137517.00000 | 129819.00000 | 135537.00000 |
| PB | 208 | 0.02165 | 190.00900 | 48.730 | 0.00955 | 0.02896 | 0.02645 |
| TL | 203 | 0.03857 | 46.66860 | 54.421 | 0.01438 | 0.05182 | 0.04952 |
| U | 238 | 0.03925 | 176.67500 | 27.592 | 0.02751 | 0.04139 | 0.04884 |
| *GE-1* | 72 | 108332.00000 | 0.00000 | 5.937 | 114224.00000 | 101471.00000 | 109302.00000 |
| *TB-1* | 159 | 181342.00000 | 0.00000 | 2.217 | 185078.00000 | 177088.00000 | 181860.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:01:00
Tube Number: 4
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 48815.60000 | 0.00000 | 1.863 | 48018.80000 | 49806.50000 | 48621.50000 |
| AL | 27 | 3.51100 | 96.67350 | 38.678 | 2.12373 | 3.56948 | 4.83877 |
| CA | 44 | 40.47000 | 513.36500 | 61.329 | 65.69019 | 16.05908 | 39.67017 |
| CR | 52 | 0.52100 | 416.69000 | 8.528 | 0.56893 | 0.51281 | 0.48120 |
| FE | 57 | 13.18000 | 206.67700 | 9.302 | 14.43684 | 13.10953 | 11.98797 |
| K | 39 | 1.53800 | 17348.80000 | 862.809 | 9.17894 | -13.78460 | 9.21626 |
| MG | 24 | 6.10900 | 503.36000 | 31.282 | 4.77712 | 5.25052 | 8.29888 |
| MN | 55 | 0.12830 | 70.00320 | 76.041 | 0.24098 | 0.07040 | 0.07364 |
| NA | 23 | 18.96000 | 15843.50000 | 6.414 | 17.58306 | 19.88145 | 19.41942 |
| TI | 47 | 0.43870 | 6.66692 | 173.216 | 1.31619 | 0.00000 | 0.00000 |
| V | 51 | 0.08094 | 60.00330 | 42.847 | 0.10348 | 0.09834 | 0.04101 |
| **IN-1** | 115 | 52805.00000 | 0.00000 | 1.668 | 52400.50000 | 53815.40000 | 52199.00000 |
| AG | 107 | 0.01218 | 20.00080 | 57.693 | 0.01237 | 0.01911 | 0.00507 |
| AS | 75 | 0.58990 | 62.66730 | 10.595 | 0.55063 | 0.55722 | 0.66203 |
| BA | 137 | 0.04692 | 10.00040 | 251.492 | -0.02122 | -0.02122 | 0.18322 |
| CD | 111 | 0.02418 | 6.00006 | 84.657 | 0.00056 | 0.03527 | 0.03671 |
| CO | 59 | 0.04506 | 140.00600 | 49.911 | 0.07087 | 0.03471 | 0.02961 |
| CU | 63 | 0.10050 | 123.34100 | 43.144 | 0.14688 | 0.09365 | 0.06097 |
| MO | 98 | 0.11860 | 73.33640 | 44.528 | 0.16420 | 0.06072 | 0.13082 |
| NI | 60 | 0.06904 | 40.00200 | 93.801 | 0.07073 | 0.13294 | 0.00346 |
| SB | 121 | 0.08422 | 40.00210 | 108.003 | 0.08610 | 0.17422 | -0.00766 |
| SN | 120 | 0.08499 | 83.33690 | 15.943 | 0.07940 | 0.07513 | 0.10044 |
| SR | 88 | 0.07268 | 40.00150 | 30.930 | 0.04958 | 0.09449 | 0.07398 |
| ZN | 66 | 0.29130 | 53.33540 | 39.375 | 0.35640 | 0.15880 | 0.35857 |
| **BI-1** | 209 | 135434.00000 | 0.00000 | 0.533 | 134647.00000 | 136065.00000 | 135590.00000 |
| PB | 208 | -0.00069 | 110.00500 | -1826.110 | 0.01041 | 0.00186 | -0.01433 |
| TL | 203 | 0.00591 | 10.00040 | 0.788 | 0.00596 | 0.00587 | 0.00590 |
| U | 238 | 0.00553 | 33.33470 | 106.696 | 0.01178 | 0.00007 | 0.00472 |
| *GE-1* | 72 | 106822.00000 | 0.00000 | 0.189 | 107044.00000 | 106771.00000 | 106650.00000 |
| *TB-1* | 159 | 181925.00000 | 0.00000 | 0.215 | 181493.00000 | 182023.00000 | 182258.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:03:00
Tube Number: 5
Sample Number: **ICV**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 49237.00000 | 0.00000 | 1.984 | 48571.00000 | 48781.70000 | 50358.20000 |
| AL | 27 | 5234.00000 | 135163.00000 | 2.407 | 5333.62304 | 5276.93889 | 5092.69171 |
| CA | 44 | 5080.00000 | 13684.30000 | 6.110 | 5434.18996 | 4857.19722 | 4947.38645 |
| CR | 52 | 514.10000 | 329475.00000 | 2.587 | 527.74900 | 513.33491 | 501.18706 |
| FE | 57 | 5179.00000 | 70176.80000 | 3.192 | 5345.80474 | 5177.45589 | 5015.22318 |
| K | 39 | 5155.00000 | 259075.00000 | 2.625 | 5273.81352 | 5183.71117 | 5007.81089 |
| MG | 24 | 5229.00000 | 383371.00000 | 1.928 | 5312.16377 | 5258.00905 | 5116.95340 |
| MN | 55 | 518.20000 | 192479.00000 | 1.963 | 528.01290 | 518.88234 | 507.71349 |
| NA | 23 | 4801.00000 | 774909.00000 | 2.649 | 4908.84927 | 4833.52727 | 4660.68450 |
| TI | 47 | 518.10000 | 8072.78000 | 1.439 | 509.57858 | 523.59020 | 521.00885 |
| V | 51 | 505.90000 | 253187.00000 | 2.560 | 508.73898 | 517.21402 | 491.77245 |
| **IN-1** | 115 | 52702.40000 | 0.00000 | 2.861 | 52480.70000 | 51317.40000 | 54309.30000 |
| AG | 107 | 51.42000 | 70534.60000 | 3.790 | 52.15065 | 52.90393 | 49.21431 |
| AS | 75 | 509.20000 | 28769.40000 | 2.769 | 517.79368 | 516.89220 | 492.93526 |
| BA | 137 | 513.10000 | 75980.00000 | 3.660 | 521.93371 | 525.88751 | 491.57010 |
| CD | 111 | 51.96000 | 8714.38000 | 3.543 | 51.33359 | 54.02878 | 50.50765 |
| CO | 59 | 468.30000 | 565250.00000 | 3.150 | 472.74830 | 480.34347 | 451.86351 |
| CU | 63 | 515.50000 | 420160.00000 | 3.680 | 524.49597 | 528.30200 | 493.70708 |
| MO | 98 | 50.47000 | 29932.80000 | 3.719 | 50.58502 | 52.28684 | 48.53759 |
| NI | 60 | 522.30000 | 155469.00000 | 4.656 | 520.68298 | 547.41638 | 498.86535 |
| SB | 121 | 54.47000 | 17509.50000 | 3.059 | 53.77174 | 56.36714 | 53.26032 |
| SN | 120 | 53.25000 | 26368.60000 | 4.299 | 54.71915 | 54.42188 | 50.61326 |
| SR | 88 | 49.63000 | 20754.30000 | 6.135 | 50.24557 | 52.31935 | 46.32344 |
| ZN | 66 | 507.60000 | 54381.90000 | 2.723 | 514.09917 | 516.90090 | 491.69003 |
| **BI-1** | 209 | 134662.00000 | 0.00000 | 3.021 | 134083.00000 | 130916.00000 | 138989.00000 |
| PB | 208 | 50.78000 | 185657.00000 | 2.802 | 50.76627 | 52.21260 | 49.36761 |
| TL | 203 | 50.55000 | 57546.40000 | 2.930 | 50.89625 | 51.81936 | 48.92092 |
| U | 238 | 51.22000 | 219052.00000 | 3.536 | 52.18670 | 52.33637 | 49.12813 |
| *GE-1* | 72 | 108856.00000 | 0.00000 | 4.090 | 109544.00000 | 104101.00000 | 112924.00000 |
| *TB-1* | 159 | 185298.00000 | 0.00000 | 2.526 | 184864.00000 | 180850.00000 | 190182.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:04:00
Tube Number: 6
Sample Number: **ICB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 50635.60000 | 0.00000 | 2.830 | 52024.50000 | 49163.10000 | 50719.10000 |
| AL | 27 | 4.49400 | 126.67200 | 24.989 | 4.87178 | 3.23157 | 5.37967 |
| CA | 44 | 22.15000 | 483.36100 | 98.465 | 19.50359 | 45.15595 | 1.78285 |
| CR | 52 | 0.67550 | 533.36200 | 10.598 | 0.61810 | 0.75570 | 0.65263 |
| FE | 57 | 2.83200 | 70.00270 | 47.599 | 1.27884 | 3.69983 | 3.51840 |
| K | 39 | -12.58000 | 17308.70000 | -124.324 | -30.05742 | 0.09352 | -7.79000 |
| MG | 24 | 6.93600 | 583.37000 | 30.666 | 4.86278 | 6.83259 | 9.11359 |
| MN | 55 | 0.33800 | 153.34000 | 14.950 | 0.39594 | 0.31479 | 0.30321 |
| NA | 23 | 31.38000 | 18440.20000 | 19.293 | 25.16171 | 37.25524 | 31.70833 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.39520 | 223.34300 | 24.539 | 0.37605 | 0.50031 | 0.30918 |
| **IN-1** | 115 | 54069.90000 | 0.00000 | 0.739 | 53975.40000 | 53726.20000 | 54508.20000 |
| AG | 107 | 0.06162 | 90.00380 | 11.353 | 0.06885 | 0.05489 | 0.06111 |
| AS | 75 | 0.49410 | 58.66720 | 25.278 | 0.55403 | 0.35054 | 0.57779 |
| BA | 137 | 0.32990 | 53.33630 | 30.828 | 0.44012 | 0.30982 | 0.23982 |
| CD | 111 | 0.05036 | 10.66670 | 73.014 | 0.03513 | 0.02365 | 0.09230 |
| CO | 59 | 0.21150 | 350.02100 | 41.210 | 0.12335 | 0.21362 | 0.29762 |
| CU | 63 | 0.34810 | 333.35100 | 20.980 | 0.27283 | 0.41868 | 0.35267 |
| MO | 98 | 0.08773 | 56.66910 | 28.155 | 0.06053 | 0.09390 | 0.10876 |
| NI | 60 | 0.25150 | 96.67060 | 44.811 | 0.26347 | 0.13326 | 0.35765 |
| SB | 121 | 0.22390 | 86.67110 | 28.812 | 0.17359 | 0.29666 | 0.20160 |
| SN | 120 | 0.25150 | 170.00800 | 47.396 | 0.11413 | 0.31332 | 0.32718 |
| SR | 88 | 0.14020 | 70.00300 | 65.685 | 0.04747 | 0.14156 | 0.23163 |
| ZN | 66 | 0.09560 | 33.33460 | 236.820 | -0.11567 | 0.06785 | 0.33462 |
| **BI-1** | 209 | 140624.00000 | 0.00000 | 2.347 | 142742.00000 | 142309.00000 | 136820.00000 |
| PB | 208 | 0.01392 | 170.00800 | 7.615 | 0.01324 | 0.01338 | 0.01514 |
| TL | 203 | 0.02519 | 33.33470 | 50.099 | 0.01375 | 0.03872 | 0.02310 |
| U | 238 | 0.03297 | 156.67400 | 30.121 | 0.02421 | 0.03093 | 0.04376 |
| *GE-1* | 72 | 112365.00000 | 0.00000 | 1.157 | 113427.00000 | 112752.00000 | 110915.00000 |
| *TB-1* | 159 | 189479.00000 | 0.00000 | 1.705 | 192246.00000 | 190264.00000 | 185928.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:06:00
Tube Number: 7
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51194.40000 | 0.00000 | 0.898 | 50769.80000 | 51130.70000 | 51682.60000 |
| AL | 27 | 211.30000 | 5681.47000 | 3.718 | 215.32180 | 202.23405 | 216.30888 |
| CA | 44 | 401.10000 | 1520.15000 | 20.763 | 394.97912 | 321.06782 | 487.28644 |
| CR | 52 | 4.44600 | 3053.83000 | 5.668 | 4.23863 | 4.37311 | 4.72647 |
| FE | 57 | 203.70000 | 2900.43000 | 7.830 | 221.86980 | 191.84999 | 197.51531 |
| K | 39 | 379.90000 | 36648.70000 | 1.616 | 383.98331 | 382.96139 | 372.87184 |
| MG | 24 | 203.50000 | 15573.00000 | 1.804 | 206.04276 | 205.10931 | 199.26837 |
| MN | 55 | 3.98700 | 1563.50000 | 7.928 | 4.34986 | 3.77421 | 3.83580 |
| NA | 23 | 371.40000 | 74789.30000 | 2.959 | 379.62385 | 358.92257 | 375.64638 |
| TI | 47 | 31.65000 | 513.36500 | 26.692 | 31.12232 | 23.48629 | 40.35634 |
| V | 51 | 1.02400 | 553.36700 | 12.705 | 1.16135 | 0.90277 | 1.00690 |
| **IN-1** | 115 | 54796.50000 | 0.00000 | 2.057 | 53744.80000 | 54658.60000 | 55986.10000 |
| AG | 107 | 1.07200 | 1533.49000 | 7.938 | 1.11235 | 0.97426 | 1.12944 |
| AS | 75 | 4.04500 | 268.00500 | 8.336 | 4.10130 | 3.68257 | 4.34982 |
| BA | 137 | 4.32900 | 670.04700 | 1.979 | 4.34717 | 4.40435 | 4.23587 |
| CD | 111 | 0.96270 | 170.00200 | 2.706 | 0.93535 | 0.96549 | 0.98721 |
| CO | 59 | 0.87120 | 1183.43000 | 13.430 | 0.89574 | 0.74382 | 0.97399 |
| CU | 63 | 4.43100 | 3797.37000 | 5.024 | 4.57980 | 4.53786 | 4.17499 |
| MO | 98 | 0.83960 | 520.03000 | 17.758 | 0.96970 | 0.87214 | 0.67684 |
| NI | 60 | 4.01100 | 1260.11000 | 12.431 | 4.38029 | 4.20887 | 3.44381 |
| SB | 121 | 2.21600 | 753.39200 | 13.885 | 2.03576 | 2.57110 | 2.04055 |
| SN | 120 | 3.94200 | 2070.26000 | 11.147 | 4.27768 | 3.44458 | 4.10309 |
| SR | 88 | 2.22200 | 976.74800 | 7.556 | 2.32089 | 2.02827 | 2.31708 |
| ZN | 66 | 32.42000 | 3630.66000 | 8.307 | 35.21626 | 32.19391 | 29.84344 |
| **BI-1** | 209 | 141308.00000 | 0.00000 | 0.617 | 140354.00000 | 142065.00000 | 141504.00000 |
| PB | 208 | 1.99300 | 7764.65000 | 4.003 | 1.90916 | 2.00253 | 2.06787 |
| TL | 203 | 0.93680 | 1123.44000 | 6.104 | 0.88166 | 0.99583 | 0.93294 |
| U | 238 | 1.03200 | 4644.43000 | 3.523 | 0.99116 | 1.06118 | 1.04315 |
| *GE-1* | 72 | 113616.00000 | 0.00000 | 1.690 | 114285.00000 | 115112.00000 | 111451.00000 |
| *TB-1* | 159 | 190546.00000 | 0.00000 | 0.440 | 190847.00000 | 189598.00000 | 191194.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:08:00
Tube Number: 8
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 44724.50000 | 0.00000 | 1.645 | 43905.50000 | 45329.80000 | 44938.30000 |
| AL | 27 | 109200.00000 | 2562300.00000 | 1.382 | 110649.55114 | 107644.68133 | 109386.75699 |
| CA | 44 | 307800.00000 | 731023.00000 | 1.170 | 311371.76056 | 307786.95195 | 304170.49062 |
| CR | 52 | 1.76100 | 1103.42000 | 6.848 | 1.89480 | 1.72932 | 1.66008 |
| FE | 57 | 265000.00000 | 3260670.00000 | 1.422 | 265187.63650 | 261085.79942 | 268610.45903 |
| K | 39 | 115000.00000 | 4914210.00000 | 0.967 | 115275.36027 | 113790.16185 | 115967.31676 |
| MG | 24 | 106500.00000 | 7092580.00000 | 0.302 | 106792.68362 | 106530.87504 | 106152.36227 |
| MN | 55 | 93.62000 | 31609.20000 | 0.728 | 94.17930 | 92.86023 | 93.81606 |
| NA | 23 | 258300.00000 | 37265700.00000 | 1.550 | 259674.02356 | 253859.01858 | 261535.17367 |
| TI | 47 | 2242.00000 | 31722.70000 | 3.457 | 2299.51293 | 2153.88273 | 2272.72399 |
| V | 51 | 0.07112 | 50.00190 | 138.498 | 0.18413 | 0.00349 | 0.02576 |
| **IN-1** | 115 | 49196.10000 | 0.00000 | 3.748 | 47268.70000 | 49376.80000 | 50943.00000 |
| AG | 107 | 0.36450 | 470.02900 | 9.646 | 0.37952 | 0.32434 | 0.38967 |
| AS | 75 | 0.60450 | 59.33400 | 25.807 | 0.42971 | 0.72948 | 0.65449 |
| BA | 137 | 1.35600 | 190.01000 | 24.535 | 1.63439 | 0.98736 | 1.44516 |
| CD | 111 | 0.46880 | 75.33420 | 9.480 | 0.45372 | 0.43386 | 0.51882 |
| CO | 59 | 0.88560 | 1076.76000 | 14.510 | 0.99121 | 0.74256 | 0.92318 |
| CU | 63 | 1.10500 | 880.06500 | 5.937 | 1.05702 | 1.17991 | 1.07865 |
| MO | 98 | 2260.00000 | 1251020.00000 | 3.059 | 2330.94503 | 2256.37349 | 2192.80816 |
| NI | 60 | 1.07100 | 316.68300 | 11.223 | 0.94634 | 1.08237 | 1.18604 |
| SB | 121 | 1.06100 | 330.01800 | 0.816 | 1.07106 | 1.05687 | 1.05536 |
| SN | 120 | 0.12540 | 96.67070 | 20.423 | 0.09706 | 0.13251 | 0.14679 |
| SR | 88 | 10.56000 | 4134.18000 | 1.923 | 10.55670 | 10.76852 | 10.36237 |
| ZN | 66 | 2.55700 | 276.68000 | 21.236 | 2.18653 | 3.18014 | 2.30358 |
| **BI-1** | 209 | 116840.00000 | 0.00000 | 2.444 | 113568.00000 | 118831.00000 | 118121.00000 |
| PB | 208 | 0.20090 | 733.37400 | 27.417 | 0.21589 | 0.13987 | 0.24693 |
| TL | 203 | 0.11870 | 120.00500 | 30.817 | 0.13251 | 0.14641 | 0.07725 |
| U | 238 | 0.06966 | 266.68100 | 25.352 | 0.07257 | 0.05072 | 0.08567 |
| *GE-1* | 72 | 99531.30000 | 0.00000 | 1.901 | 97832.20000 | 101571.00000 | 99191.00000 |
| *TB-1* | 159 | 159677.00000 | 0.00000 | 1.336 | 157466.00000 | 161721.00000 | 159843.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:09:00
Tube Number: 9
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 48547.90000 | 0.00000 | 3.629 | 49383.90000 | 46523.80000 | 49735.90000 |
| AL | 27 | 106200.00000 | 2702780.00000 | 2.467 | 106065.50243 | 108862.68815 | 103627.64046 |
| CA | 44 | 298700.00000 | 769976.00000 | 2.009 | 295974.09110 | 305646.85398 | 294658.49667 |
| CR | 52 | 212.60000 | 134305.00000 | 3.196 | 210.52400 | 220.13070 | 207.00501 |
| FE | 57 | 257800.00000 | 3442800.00000 | 1.728 | 256779.47120 | 262706.63921 | 253977.88836 |
| K | 39 | 112200.00000 | 5203250.00000 | 2.339 | 110963.61508 | 115252.22251 | 110486.64026 |
| MG | 24 | 103800.00000 | 7500720.00000 | 1.789 | 102532.42406 | 105924.63129 | 102920.63288 |
| MN | 55 | 299.60000 | 109712.00000 | 2.724 | 300.97588 | 307.03850 | 290.88253 |
| NA | 23 | 251800.00000 | 39419400.00000 | 1.367 | 249592.91337 | 255786.55965 | 250086.30460 |
| TI | 47 | 2204.00000 | 33827.90000 | 3.955 | 2176.55182 | 2301.52104 | 2133.75754 |
| V | 51 | 219.80000 | 108437.00000 | 2.605 | 216.54899 | 226.40939 | 216.43607 |
| **IN-1** | 115 | 52081.00000 | 0.00000 | 4.051 | 53512.80000 | 49657.70000 | 53072.60000 |
| AG | 107 | 47.23000 | 64013.10000 | 2.778 | 46.47682 | 48.74143 | 46.46253 |
| AS | 75 | 100.70000 | 5649.27000 | 0.338 | 100.45343 | 101.10970 | 100.62231 |
| BA | 137 | 0.98460 | 146.67400 | 35.426 | 1.17531 | 1.19656 | 0.58200 |
| CD | 111 | 93.99000 | 15568.30000 | 4.243 | 92.05743 | 98.57190 | 91.32790 |
| CO | 59 | 184.90000 | 220642.00000 | 1.947 | 182.21021 | 189.01261 | 183.56832 |
| CU | 63 | 196.10000 | 157975.00000 | 3.224 | 194.71269 | 203.03692 | 190.63310 |
| MO | 98 | 2284.00000 | 1338310.00000 | 2.755 | 2261.36134 | 2354.74162 | 2234.97115 |
| NI | 60 | 194.40000 | 57227.20000 | 1.001 | 195.52323 | 195.45891 | 192.12158 |
| SB | 121 | 1.15600 | 380.02100 | 5.831 | 1.21731 | 1.08369 | 1.16595 |
| SN | 120 | 0.10780 | 93.33750 | 28.590 | 0.07602 | 0.10984 | 0.13756 |
| SR | 88 | 10.89000 | 4510.98000 | 2.367 | 10.59366 | 11.06245 | 11.01400 |
| ZN | 66 | 92.22000 | 9767.36000 | 7.686 | 89.90389 | 100.17052 | 86.57104 |
| **BI-1** | 209 | 122939.00000 | 0.00000 | 2.874 | 125095.00000 | 118861.00000 | 124859.00000 |
| PB | 208 | 0.29310 | 1080.06000 | 4.306 | 0.27857 | 0.30099 | 0.29981 |
| TL | 203 | 0.16750 | 176.67600 | 15.021 | 0.15784 | 0.19611 | 0.14868 |
| U | 238 | 0.09924 | 396.68800 | 13.150 | 0.08832 | 0.09572 | 0.11369 |
| *GE-1* | 72 | 105363.00000 | 0.00000 | 1.613 | 106973.00000 | 103586.00000 | 105532.00000 |
| *TB-1* | 159 | 167666.00000 | 0.00000 | 1.791 | 169524.00000 | 164202.00000 | 169272.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:11:00
Tube Number: 10
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51907.30000 | 0.00000 | 0.815 | 51793.50000 | 52375.80000 | 51552.60000 |
| AL | 27 | 52.14000 | 1426.80000 | 18.792 | 40.96689 | 56.16105 | 59.28096 |
| CA | 44 | 131.30000 | 796.72200 | 47.845 | 71.21695 | 126.22320 | 196.54078 |
| CR | 52 | 0.53640 | 453.35800 | 20.078 | 0.63629 | 0.42235 | 0.55048 |
| FE | 57 | 146.20000 | 2120.27000 | 14.692 | 124.09859 | 147.67955 | 166.99661 |
| K | 39 | 28.24000 | 19775.70000 | 36.119 | 16.53757 | 32.90411 | 35.28058 |
| MG | 24 | 45.58000 | 3587.31000 | 22.137 | 33.93452 | 51.75963 | 51.03518 |
| MN | 55 | 0.32030 | 150.00800 | 27.446 | 0.21884 | 0.36756 | 0.37443 |
| NA | 23 | 108.90000 | 31909.60000 | 11.322 | 100.08648 | 122.99701 | 103.64906 |
| TI | 47 | 1.62200 | 26.66770 | 21.159 | 1.83040 | 1.81005 | 1.22597 |
| V | 51 | 0.16230 | 106.67200 | 29.704 | 0.11202 | 0.16668 | 0.20814 |
| **IN-1** | 115 | 56825.80000 | 0.00000 | 3.335 | 57070.60000 | 58586.60000 | 54820.30000 |
| AG | 107 | 0.01551 | 26.66800 | 63.346 | 0.01789 | 0.02393 | 0.00471 |
| AS | 75 | 0.17910 | 42.66710 | 109.715 | 0.07068 | 0.40593 | 0.06080 |
| BA | 137 | -0.00098 | 3.33347 | -3568.520 | -0.02122 | 0.03950 | -0.02122 |
| CD | 111 | 0.03288 | 8.00007 | 58.972 | 0.01059 | 0.04219 | 0.04587 |
| CO | 59 | 0.06001 | 170.00800 | 16.764 | 0.06693 | 0.04847 | 0.06462 |
| CU | 63 | 0.24050 | 256.68100 | 22.349 | 0.21000 | 0.30254 | 0.20890 |
| MO | 98 | 2.17000 | 1386.80000 | 27.650 | 1.58207 | 2.14743 | 2.78137 |
| NI | 60 | 0.04832 | 36.66810 | 177.007 | -0.00233 | 0.14707 | 0.00021 |
| SB | 121 | 0.06533 | 36.66810 | 121.338 | 0.01839 | 0.15685 | 0.02075 |
| SN | 120 | 0.03407 | 63.33630 | 258.409 | -0.02723 | 0.13496 | -0.00550 |
| SR | 88 | 0.11090 | 60.00260 | 23.012 | 0.08781 | 0.10645 | 0.13829 |
| ZN | 66 | 0.39650 | 70.00290 | 33.846 | 0.48269 | 0.46484 | 0.24182 |
| **BI-1** | 209 | 144222.00000 | 0.00000 | 3.251 | 141496.00000 | 149635.00000 | 141535.00000 |
| PB | 208 | 0.00689 | 146.67400 | 84.698 | 0.00321 | 0.00384 | 0.01362 |
| TL | 203 | -0.00003 | 3.33347 | -14445.800 | -0.00282 | -0.00282 | 0.00554 |
| U | 238 | 0.00497 | 33.33470 | 61.738 | 0.00221 | 0.00828 | 0.00443 |
| *GE-1* | 72 | 114703.00000 | 0.00000 | 2.515 | 115255.00000 | 117271.00000 | 111581.00000 |
| *TB-1* | 159 | 193994.00000 | 0.00000 | 2.383 | 192868.00000 | 199075.00000 | 190039.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:13:00
Tube Number: 11
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 50264.30000 | 0.00000 | 2.988 | 48561.00000 | 50829.90000 | 51402.10000 |
| AL | 27 | 2555.00000 | 67358.80000 | 3.064 | 2631.05396 | 2474.73545 | 2560.53232 |
| CA | 44 | 2458.00000 | 6972.12000 | 5.797 | 2581.66636 | 2489.00482 | 2301.88979 |
| CR | 52 | 262.20000 | 171558.00000 | 2.728 | 269.89026 | 255.75143 | 260.92863 |
| FE | 57 | 2642.00000 | 36549.20000 | 4.712 | 2759.53852 | 2511.50773 | 2655.08733 |
| K | 39 | 2572.00000 | 140872.00000 | 2.049 | 2628.16371 | 2523.65051 | 2564.12287 |
| MG | 24 | 2554.00000 | 191109.00000 | 2.432 | 2625.16930 | 2520.75425 | 2514.68408 |
| MN | 55 | 261.20000 | 99056.50000 | 1.824 | 266.72313 | 258.20937 | 258.76300 |
| NA | 23 | 2441.00000 | 408617.00000 | 2.595 | 2508.22846 | 2431.51918 | 2382.56396 |
| TI | 47 | 262.50000 | 4174.17000 | 7.135 | 269.45277 | 241.25598 | 276.70001 |
| V | 51 | 258.50000 | 132038.00000 | 2.460 | 265.80560 | 255.03043 | 254.56767 |
| **IN-1** | 115 | 53951.10000 | 0.00000 | 0.772 | 53781.80000 | 53645.90000 | 54425.50000 |
| AG | 107 | 26.43000 | 37142.50000 | 1.143 | 26.71108 | 26.11103 | 26.47281 |
| AS | 75 | 263.50000 | 15260.40000 | 0.777 | 264.38832 | 261.12231 | 264.89414 |
| BA | 137 | 258.60000 | 39226.30000 | 0.319 | 257.99715 | 258.25493 | 259.53611 |
| CD | 111 | 27.00000 | 4639.55000 | 1.432 | 27.30259 | 26.56356 | 27.12971 |
| CO | 59 | 238.40000 | 294769.00000 | 0.841 | 237.64451 | 236.84979 | 240.65102 |
| CU | 63 | 264.00000 | 220420.00000 | 0.280 | 263.97121 | 264.72196 | 263.24593 |
| MO | 98 | 25.84000 | 15697.00000 | 4.009 | 25.67232 | 26.94717 | 24.89477 |
| NI | 60 | 266.60000 | 81311.80000 | 0.589 | 268.40333 | 265.59735 | 265.78467 |
| SB | 121 | 27.44000 | 9040.29000 | 3.305 | 28.47983 | 27.02240 | 26.81575 |
| SN | 120 | 27.90000 | 14171.80000 | 1.682 | 27.93949 | 28.34824 | 27.41195 |
| SR | 88 | 25.49000 | 10928.50000 | 1.228 | 25.46623 | 25.81298 | 25.18791 |
| ZN | 66 | 265.90000 | 29190.50000 | 0.918 | 263.11180 | 267.63507 | 266.96956 |
| **BI-1** | 209 | 140001.00000 | 0.00000 | 0.199 | 140200.00000 | 139683.00000 | 140119.00000 |
| PB | 208 | 25.65000 | 97594.50000 | 0.724 | 25.84166 | 25.47171 | 25.62829 |
| TL | 203 | 24.93000 | 29527.30000 | 1.667 | 25.35122 | 24.52020 | 24.91762 |
| U | 238 | 25.20000 | 112135.00000 | 1.702 | 25.61401 | 24.75796 | 25.22954 |
| *GE-1* | 72 | 111737.00000 | 0.00000 | 0.858 | 110685.00000 | 111966.00000 | 112559.00000 |
| *TB-1* | 159 | 188837.00000 | 0.00000 | 1.375 | 186603.00000 | 188224.00000 | 191685.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:15:00
Tube Number: 12
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51191.20000 | 0.00000 | 2.030 | 50097.30000 | 51311.60000 | 52164.80000 |
| AL | 27 | 8.96900 | 246.68100 | 33.973 | 12.29939 | 8.28697 | 6.31986 |
| CA | 44 | -9.61500 | 403.35700 | -177.223 | -11.27547 | -25.76228 | 8.19083 |
| CR | 52 | 0.58470 | 480.02900 | 14.372 | 0.57039 | 0.50878 | 0.67500 |
| FE | 57 | 12.25000 | 203.34300 | 20.914 | 15.19692 | 10.53508 | 11.02330 |
| K | 39 | -2.37500 | 18006.20000 | -358.484 | 6.58988 | -10.35205 | -3.36486 |
| MG | 24 | 8.43900 | 703.38300 | 44.472 | 12.18611 | 4.67995 | 8.45224 |
| MN | 55 | 0.22130 | 110.00500 | 28.676 | 0.14900 | 0.24732 | 0.26766 |
| NA | 23 | 38.24000 | 19779.00000 | 19.004 | 46.44739 | 35.66530 | 32.61458 |
| TI | 47 | 0.61250 | 10.00040 | 100.555 | 0.00000 | 1.23173 | 0.60579 |
| V | 51 | 0.17740 | 113.33900 | 20.265 | 0.13680 | 0.19013 | 0.20523 |
| **IN-1** | 115 | 55550.10000 | 0.00000 | 1.957 | 55272.60000 | 54629.10000 | 56748.50000 |
| AG | 107 | 0.04597 | 70.00300 | 39.026 | 0.06023 | 0.02583 | 0.05184 |
| AS | 75 | 0.33290 | 50.66720 | 18.949 | 0.39378 | 0.26784 | 0.33717 |
| BA | 137 | 0.06484 | 13.33390 | 151.481 | 0.17185 | 0.04389 | -0.02122 |
| CD | 111 | 0.03751 | 8.66673 | 14.823 | 0.03403 | 0.03457 | 0.04392 |
| CO | 59 | 0.16500 | 300.01600 | 13.842 | 0.18986 | 0.14500 | 0.16001 |
| CU | 63 | 0.19020 | 206.67600 | 11.304 | 0.20677 | 0.19798 | 0.16592 |
| MO | 98 | 0.17020 | 110.00500 | 23.302 | 0.18753 | 0.12477 | 0.19816 |
| NI | 60 | 0.20020 | 83.33700 | 33.911 | 0.15975 | 0.16238 | 0.27863 |
| SB | 121 | 0.16680 | 70.00300 | 51.091 | 0.07959 | 0.17104 | 0.24988 |
| SN | 120 | 0.01275 | 50.00220 | 157.176 | -0.00614 | 0.03377 | 0.01063 |
| SR | 88 | 0.04588 | 30.00140 | 88.470 | 0.02304 | 0.09274 | 0.02186 |
| ZN | 66 | 0.41160 | 70.00290 | 40.792 | 0.23815 | 0.42346 | 0.57327 |
| **BI-1** | 209 | 142384.00000 | 0.00000 | 1.163 | 141302.00000 | 141558.00000 | 144290.00000 |
| PB | 208 | 0.00822 | 150.00700 | 67.750 | 0.01369 | 0.00840 | 0.00256 |
| TL | 203 | 0.04994 | 63.33620 | 82.779 | 0.03065 | 0.09740 | 0.02176 |
| U | 238 | 0.02425 | 120.00600 | 14.425 | 0.02226 | 0.02221 | 0.02829 |
| *GE-1* | 72 | 113116.00000 | 0.00000 | 1.213 | 113318.00000 | 111653.00000 | 114376.00000 |
| *TB-1* | 159 | 189228.00000 | 0.00000 | 1.535 | 192580.00000 | 187471.00000 | 187634.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:16:00
Tube Number: 13 Batch: 172021063903A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53232.40000 | 0.00000 | 2.991 | 54614.40000 | 53591.00000 | 51491.90000 |
| AL | 27 | 4.88300 | 143.34000 | 44.706 | 2.88320 | 7.21196 | 4.55463 |
| CA | 44 | -7.27400 | 426.69100 | -343.827 | 21.43693 | -24.35168 | -18.90969 |
| CR | 52 | 0.52370 | 456.69200 | 3.216 | 0.54018 | 0.52441 | 0.50653 |
| FE | 57 | 6.62500 | 130.00700 | 55.759 | 5.77136 | 10.67122 | 3.43242 |
| K | 39 | -7.12700 | 18467.10000 | -282.166 | -22.00518 | -15.12935 | 15.75124 |
| MG | 24 | 5.33500 | 486.69900 | 25.792 | 3.85564 | 6.57659 | 5.57366 |
| MN | 55 | 0.13770 | 80.00380 | 58.039 | 0.13149 | 0.06100 | 0.22050 |
| NA | 23 | 20.06000 | 17455.50000 | 15.155 | 16.56910 | 22.15490 | 21.44179 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.07790 | 63.33700 | 64.146 | 0.06815 | 0.03351 | 0.13202 |
| **IN-1** | 115 | 57602.50000 | 0.00000 | 1.828 | 58487.40000 | 57882.80000 | 56437.40000 |
| AG | 107 | 0.00219 | 6.66693 | 177.331 | -0.00229 | 0.00434 | 0.00451 |
| AS | 75 | -0.01195 | 31.33360 | -1341.420 | 0.02451 | 0.12692 | -0.18731 |
| BA | 137 | 0.02006 | 6.66693 | 178.315 | 0.03960 | -0.02122 | 0.04181 |
| CD | 111 | 0.04692 | 10.66670 | 37.745 | 0.04228 | 0.03198 | 0.06649 |
| CO | 59 | -0.02501 | 60.00230 | -84.166 | -0.04088 | -0.03303 | -0.00113 |
| CU | 63 | 0.08766 | 123.33800 | 23.945 | 0.10424 | 0.09469 | 0.06405 |
| MO | 98 | 0.07200 | 50.00250 | 23.403 | 0.05545 | 0.07143 | 0.08913 |
| NI | 60 | 0.09957 | 53.33540 | 47.093 | 0.05667 | 0.14964 | 0.09242 |
| SB | 121 | 0.01709 | 20.00080 | 433.704 | 0.10111 | -0.01075 | -0.03908 |
| SN | 120 | 0.04049 | 66.66960 | 100.988 | 0.02605 | 0.00879 | 0.08664 |
| SR | 88 | 0.04282 | 30.00140 | 48.459 | 0.06361 | 0.04275 | 0.02210 |
| ZN | 66 | 0.47750 | 80.00410 | 20.509 | 0.38189 | 0.47301 | 0.57759 |
| **BI-1** | 209 | 146215.00000 | 0.00000 | 0.376 | 146728.00000 | 145635.00000 | 146282.00000 |
| PB | 208 | 0.00713 | 150.00700 | 184.967 | 0.02209 | -0.00281 | 0.00211 |
| TL | 203 | 0.00526 | 10.00040 | 153.175 | 0.01330 | 0.00530 | -0.00282 |
| U | 238 | 0.00278 | 23.33460 | 117.711 | 0.00634 | 0.00208 | -0.00009 |
| *GE-1* | 72 | 115876.00000 | 0.00000 | 2.971 | 119653.00000 | 115062.00000 | 112913.00000 |
| *TB-1* | 159 | 195711.00000 | 0.00000 | 1.783 | 197318.00000 | 198106.00000 | 191707.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:18:00
Tube Number: 14 Batch: 172021063903A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 52580.00000 | 0.00000 | 1.862 | 53209.30000 | 51451.90000 | 53078.60000 |
| AL | 27 | 1986.00000 | 54768.20000 | 1.463 | 1952.04325 | 2003.46567 | 2001.17222 |
| CA | 44 | 3846.00000 | 11171.90000 | 3.996 | 3670.95398 | 3959.24231 | 3907.66457 |
| CR | 52 | 49.76000 | 34145.50000 | 2.685 | 50.40800 | 50.65291 | 48.22598 |
| FE | 57 | 1010.00000 | 14638.70000 | 4.171 | 988.70603 | 1058.60977 | 982.92996 |
| K | 39 | 9959.00000 | 517207.00000 | 1.476 | 9841.16789 | 10123.67637 | 9911.97533 |
| MG | 24 | 1981.00000 | 155108.00000 | 2.858 | 1972.53625 | 2040.99559 | 1928.65015 |
| MN | 55 | 49.41000 | 19622.10000 | 2.973 | 49.87133 | 50.59645 | 47.76863 |
| NA | 23 | 9664.00000 | 1651890.00000 | 2.238 | 9654.10552 | 9885.19642 | 9453.00723 |
| TI | 47 | 251.90000 | 4190.85000 | 3.906 | 241.75538 | 252.47192 | 261.40807 |
| V | 51 | 48.86000 | 26137.10000 | 3.668 | 49.81390 | 49.98409 | 46.79820 |
| **IN-1** | 115 | 55003.80000 | 0.00000 | 1.953 | 56215.40000 | 54625.80000 | 54170.30000 |
| AG | 107 | 49.67000 | 71111.40000 | 4.377 | 47.25728 | 50.26524 | 51.47925 |
| AS | 75 | 9.66400 | 599.35200 | 10.606 | 8.71320 | 9.52859 | 10.75027 |
| BA | 137 | 50.44000 | 7799.42000 | 6.471 | 49.35103 | 47.85511 | 54.10544 |
| CD | 111 | 5.10300 | 895.37200 | 2.644 | 4.97273 | 5.09477 | 5.24208 |
| CO | 59 | 232.40000 | 292888.00000 | 1.606 | 228.49963 | 235.94518 | 232.67493 |
| CU | 63 | 51.11000 | 43541.00000 | 1.913 | 50.75741 | 52.21189 | 50.35341 |
| MO | 98 | 50.51000 | 31286.10000 | 2.797 | 49.85311 | 52.13523 | 49.54924 |
| NI | 60 | 51.92000 | 16160.60000 | 1.820 | 52.24828 | 50.85164 | 52.65320 |
| SB | 121 | 5.93200 | 2000.24000 | 14.181 | 5.06604 | 6.74580 | 5.98537 |
| SN | 120 | 51.70000 | 26739.40000 | 1.763 | 51.66706 | 52.62522 | 50.80313 |
| SR | 88 | 39.25000 | 17148.80000 | 2.935 | 37.95373 | 40.14400 | 39.66689 |
| ZN | 66 | 506.00000 | 56587.70000 | 2.802 | 490.03816 | 517.22659 | 510.63840 |
| **BI-1** | 209 | 137595.00000 | 0.00000 | 3.724 | 143268.00000 | 133303.00000 | 136215.00000 |
| PB | 208 | 15.08000 | 56378.30000 | 3.587 | 14.45092 | 15.36766 | 15.40671 |
| TL | 203 | 1.92700 | 2246.98000 | 2.376 | 1.97783 | 1.91298 | 1.88943 |
| U | 238 | 0.00155 | 16.66740 | 80.155 | 0.00215 | 0.00012 | 0.00238 |
| *GE-1* | 72 | 112501.00000 | 0.00000 | 2.846 | 116022.00000 | 109766.00000 | 111714.00000 |
| *TB-1* | 159 | 192128.00000 | 0.00000 | 2.759 | 196065.00000 | 186100.00000 | 194217.00000 |

Run Name: 1720704E03
Tube Number: 15
Sample Number: **9112058**

Date/Time: 07/26/2017 9:20:00
Batch: 172021063903A
Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53644.30000 | 0.00000 | 4.321 | 54875.70000 | 55086.70000 | 50970.40000 |
| AL | 27 | 267.20000 | 7525.72000 | 0.993 | 264.18235 | 268.36227 | 269.10183 |
| CA | 44 | 44200.00000 | 126277.00000 | 1.512 | 43447.74124 | 44419.47514 | 44728.32008 |
| CR | 52 | 6.83500 | 4861.11000 | 5.469 | 6.44617 | 6.86734 | 7.19161 |
| FE | 57 | 152200.00000 | 2244570.00000 | 2.638 | 148158.89227 | 152117.03747 | 156189.00793 |
| K | 39 | 6675.00000 | 359961.00000 | 1.408 | 6567.03830 | 6736.53039 | 6722.25911 |
| MG | 24 | 32230.00000 | 2572970.00000 | 2.527 | 31495.59109 | 32085.14282 | 33105.29980 |
| MN | 55 | 6994.00000 | 2829170.00000 | 2.534 | 6807.96382 | 7013.75928 | 7160.69351 |
| NA | 23 | 22680.00000 | 3937100.00000 | 1.160 | 22386.03258 | 22888.70116 | 22771.41811 |
| TI | 47 | 8.03500 | 136.67300 | 12.330 | 7.48630 | 9.17859 | 7.43987 |
| V | 51 | 7.82300 | 4290.87000 | 4.733 | 7.56155 | 8.24693 | 7.66135 |
| **IN-1** | 115 | 55814.20000 | 0.00000 | 2.648 | 56376.40000 | 56928.90000 | 54137.40000 |
| AG | 107 | 0.03435 | 53.33540 | 29.228 | 0.02495 | 0.04492 | 0.03317 |
| AS | 75 | 15.89000 | 981.37900 | 4.889 | 15.11062 | 16.66409 | 15.89490 |
| BA | 137 | 238.00000 | 37347.00000 | 0.887 | 236.31190 | 240.34831 | 237.25685 |
| CD | 111 | 0.03354 | 8.00007 | 65.593 | 0.01086 | 0.05478 | 0.03499 |
| CO | 59 | 10.25000 | 13197.20000 | 0.447 | 10.23150 | 10.30034 | 10.21369 |
| CU | 63 | 0.18470 | 203.34400 | 51.911 | 0.08710 | 0.27876 | 0.18830 |
| MO | 98 | 0.23730 | 153.34000 | 34.737 | 0.27827 | 0.29112 | 0.14236 |
| NI | 60 | 13.06000 | 4144.17000 | 7.096 | 13.71596 | 13.45781 | 11.99739 |
| SB | 121 | 0.08720 | 43.33530 | 67.110 | 0.10636 | 0.13375 | 0.02150 |
| SN | 120 | 0.26810 | 183.34200 | 59.642 | 0.08683 | 0.32843 | 0.38902 |
| SR | 88 | 529.40000 | 234654.00000 | 0.762 | 527.36520 | 534.03551 | 526.76810 |
| ZN | 66 | 7.31000 | 856.73000 | 25.992 | 7.47120 | 9.12470 | 5.33548 |
| **BI-1** | 209 | 136405.00000 | 0.00000 | 2.515 | 136559.00000 | 139755.00000 | 132900.00000 |
| PB | 208 | 0.04788 | 290.01500 | 24.206 | 0.05030 | 0.03527 | 0.05807 |
| TL | 203 | 0.00015 | 3.33347 | 3482.030 | -0.00282 | -0.00282 | 0.00608 |
| U | 238 | 0.07702 | 343.35400 | 33.056 | 0.10607 | 0.05856 | 0.06643 |
| *GE-1* | 72 | 112306.00000 | 0.00000 | 3.068 | 112287.00000 | 115760.00000 | 108871.00000 |
| *TB-1* | 159 | 195458.00000 | 0.00000 | 2.535 | 193259.00000 | 201131.00000 | 191984.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:21:00
Tube Number: 16 Batch: 172021063903A
Sample Number: **9112058** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54273.90000 | 0.00000 | 1.548 | 54344.10000 | 53401.00000 | 55076.50000 |
| AL | 27 | 445.20000 | 12683.20000 | 0.935 | 440.54359 | 446.54360 | 448.54025 |
| CA | 44 | 42930.00000 | 124111.00000 | 2.409 | 42145.59186 | 44099.86166 | 42539.36845 |
| CR | 52 | 10.44000 | 7469.08000 | 5.313 | 10.39988 | 11.01787 | 9.91091 |
| FE | 57 | 146100.00000 | 2181400.00000 | 2.953 | 142544.41841 | 150896.85236 | 144848.72099 |
| K | 39 | 6779.00000 | 369550.00000 | 2.146 | 6831.71261 | 6891.46616 | 6614.97050 |
| MG | 24 | 30870.00000 | 2495200.00000 | 0.592 | 30693.20117 | 31058.22544 | 30866.00039 |
| MN | 55 | 6616.00000 | 2708890.00000 | 1.675 | 6504.98770 | 6726.62308 | 6616.27546 |
| NA | 23 | 22130.00000 | 3885520.00000 | 4.063 | 21447.36764 | 23147.79315 | 21791.01994 |
| TI | 47 | 39.97000 | 686.71500 | 3.260 | 40.70597 | 38.46608 | 40.73887 |
| V | 51 | 8.42300 | 4671.00000 | 3.031 | 8.32390 | 8.23210 | 8.71300 |
| **IN-1** | 115 | 55822.90000 | 0.00000 | 0.896 | 56265.10000 | 55923.60000 | 55279.90000 |
| AG | 107 | 0.92230 | 1343.45000 | 12.545 | 0.78939 | 1.00023 | 0.97717 |
| AS | 75 | 18.80000 | 1155.40000 | 6.957 | 18.92385 | 17.44025 | 20.04715 |
| BA | 137 | 232.50000 | 36478.10000 | 3.535 | 226.50948 | 229.04278 | 241.84067 |
| CD | 111 | 1.04300 | 187.33600 | 2.244 | 1.03809 | 1.02203 | 1.06816 |
| CO | 59 | 10.64000 | 13704.50000 | 2.486 | 10.51594 | 10.94786 | 10.46751 |
| CU | 63 | 4.34200 | 3794.04000 | 3.125 | 4.18855 | 4.44561 | 4.39271 |
| MO | 98 | 1.34100 | 846.73300 | 5.978 | 1.33645 | 1.42405 | 1.26396 |
| NI | 60 | 17.55000 | 5558.07000 | 2.316 | 17.42399 | 18.00554 | 17.22297 |
| SB | 121 | 1.67400 | 583.36700 | 6.989 | 1.62219 | 1.80825 | 1.59246 |
| SN | 120 | 4.02000 | 2150.26000 | 5.744 | 4.21490 | 3.76486 | 4.07942 |
| SR | 88 | 519.80000 | 230406.00000 | 0.376 | 518.62496 | 518.68894 | 522.04078 |
| ZN | 66 | 37.78000 | 4310.88000 | 4.304 | 36.86506 | 36.82715 | 39.66183 |
| **BI-1** | 209 | 137075.00000 | 0.00000 | 0.739 | 135995.00000 | 137226.00000 | 138005.00000 |
| PB | 208 | 2.00800 | 7587.96000 | 1.832 | 2.00388 | 2.04737 | 1.97423 |
| TL | 203 | 1.16200 | 1350.14000 | 1.412 | 1.14473 | 1.17753 | 1.16232 |
| U | 238 | 10.11000 | 44054.30000 | 1.794 | 10.24662 | 10.18236 | 9.90527 |
| *GE-1* | 72 | 115042.00000 | 0.00000 | 2.637 | 111550.00000 | 116536.00000 | 117039.00000 |
| *TB-1* | 159 | 195261.00000 | 0.00000 | 0.568 | 194039.00000 | 195543.00000 | 196202.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:23:00
Tube Number: 17 Batch: 172021063903A
Sample Number: **9112058** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 53443.50000 | 0.00000 | 1.752 | 52867.60000 | 54524.10000 | 52938.80000 |
| AL | 27 | 258.70000 | 7255.61000 | 4.302 | 259.79654 | 247.00112 | 269.17389 |
| CA | 44 | 43610.00000 | 124139.00000 | 2.330 | 43477.42418 | 42664.10902 | 44683.05105 |
| CR | 52 | 6.87500 | 4877.78000 | 7.721 | 7.33578 | 6.99598 | 6.29494 |
| FE | 57 | 148900.00000 | 2188910.00000 | 2.099 | 150012.71416 | 145343.79216 | 151280.02454 |
| K | 39 | 6583.00000 | 353874.00000 | 2.633 | 6651.98163 | 6385.88103 | 6711.32362 |
| MG | 24 | 31170.00000 | 2480210.00000 | 3.545 | 31228.44254 | 30043.07708 | 32250.17607 |
| MN | 55 | 6771.00000 | 2729070.00000 | 4.069 | 6844.33132 | 6466.49639 | 7002.74775 |
| NA | 23 | 22390.00000 | 3871510.00000 | 2.838 | 22690.93759 | 21662.57474 | 22823.58343 |
| TI | 47 | 9.09500 | 153.34100 | 39.351 | 13.15045 | 6.37535 | 7.76021 |
| V | 51 | 7.45000 | 4067.45000 | 5.027 | 7.75725 | 7.03307 | 7.56084 |
| **IN-1** | 115 | 55840.60000 | 0.00000 | 0.992 | 55201.70000 | 56134.80000 | 56185.40000 |
| AG | 107 | 0.01378 | 23.33450 | 103.701 | 0.01858 | -0.00229 | 0.02505 |
| AS | 75 | 14.81000 | 916.70500 | 11.519 | 16.55922 | 13.14931 | 14.73180 |
| BA | 137 | 225.20000 | 35364.80000 | 0.777 | 224.66937 | 223.85878 | 227.21383 |
| CD | 111 | 0.01879 | 5.33337 | 175.412 | 0.05685 | -0.00024 | -0.00025 |
| CO | 59 | 10.01000 | 12890.10000 | 2.955 | 10.34779 | 9.83989 | 9.83097 |
| CU | 63 | 0.14250 | 166.67400 | 5.526 | 0.14857 | 0.14526 | 0.13358 |
| MO | 98 | 0.23300 | 150.00700 | 34.914 | 0.18778 | 0.32696 | 0.18439 |
| NI | 60 | 14.87000 | 4714.42000 | 4.176 | 15.09931 | 15.35196 | 14.17249 |
| SB | 121 | 0.10810 | 50.00220 | 72.748 | 0.16886 | 0.13619 | 0.01929 |
| SN | 120 | 0.17090 | 133.34000 | 21.902 | 0.12904 | 0.18245 | 0.20117 |
| SR | 88 | 521.20000 | 231110.00000 | 0.900 | 523.31647 | 515.83323 | 524.47117 |
| ZN | 66 | 6.69300 | 783.38300 | 3.290 | 6.74339 | 6.45260 | 6.88442 |
| **BI-1** | 209 | 135665.00000 | 0.00000 | 1.328 | 135131.00000 | 134191.00000 | 137673.00000 |
| PB | 208 | 0.03181 | 230.01100 | 6.052 | 0.03207 | 0.02976 | 0.03359 |
| TL | 203 | 0.00582 | 10.00040 | 147.484 | 0.00593 | -0.00282 | 0.01436 |
| U | 238 | 0.06822 | 303.34800 | 26.766 | 0.05598 | 0.08922 | 0.05947 |
| *GE-1* | 72 | 112976.00000 | 0.00000 | 0.752 | 113779.00000 | 113064.00000 | 112086.00000 |
| *TB-1* | 159 | 196211.00000 | 0.00000 | 0.487 | 195537.00000 | 195789.00000 | 197305.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:25:00
Tube Number: 18 Batch: 172021063903A
Sample Number: **9112058** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52895.00000 | 0.00000 | 2.093 | 52004.20000 | 54133.80000 | 52547.00000 |
| AL | 27 | 2246.00000 | 62324.10000 | 3.124 | 2292.51994 | 2279.45951 | 2164.96997 |
| CA | 44 | 47900.00000 | 134935.00000 | 1.246 | 48525.20572 | 47334.54512 | 47856.33432 |
| CR | 52 | 55.59000 | 38361.00000 | 2.790 | 57.37327 | 54.86853 | 54.53508 |
| FE | 57 | 152000.00000 | 2212940.00000 | 0.456 | 151232.88330 | 152486.04510 | 152374.12400 |
| K | 39 | 16770.00000 | 863495.00000 | 1.453 | 17052.47666 | 16652.36804 | 16611.64744 |
| MG | 24 | 33320.00000 | 2624190.00000 | 0.871 | 33647.40596 | 33103.70359 | 33199.89292 |
| MN | 55 | 7029.00000 | 2804790.00000 | 0.999 | 7109.07673 | 6997.46568 | 6979.41747 |
| NA | 23 | 31820.00000 | 5440270.00000 | 1.115 | 31993.33059 | 31412.70182 | 32056.02567 |
| TI | 47 | 260.20000 | 4354.22000 | 6.122 | 278.35934 | 253.97532 | 248.41062 |
| V | 51 | 57.84000 | 31117.90000 | 3.817 | 60.33354 | 57.06614 | 56.12638 |
| **IN-1** | 115 | 55171.40000 | 0.00000 | 2.905 | 53655.50000 | 56849.60000 | 55009.10000 |
| AG | 107 | 48.55000 | 69729.70000 | 2.550 | 49.95779 | 47.63964 | 48.04759 |
| AS | 75 | 25.16000 | 1518.10000 | 4.189 | 25.64513 | 25.88287 | 23.94924 |
| BA | 137 | 281.00000 | 43594.50000 | 1.179 | 283.14975 | 282.74936 | 277.22222 |
| CD | 111 | 4.94600 | 870.70300 | 0.534 | 4.97635 | 4.92818 | 4.93356 |
| CO | 59 | 239.50000 | 302877.00000 | 1.288 | 242.34854 | 240.05766 | 236.24135 |
| CU | 63 | 49.32000 | 42146.40000 | 2.012 | 50.01523 | 49.75716 | 48.18201 |
| MO | 98 | 51.49000 | 31988.00000 | 2.061 | 52.28184 | 51.89697 | 50.28277 |
| NI | 60 | 62.38000 | 19455.10000 | 4.529 | 65.54178 | 60.11067 | 61.47977 |
| SB | 121 | 6.23700 | 2113.59000 | 12.333 | 6.44055 | 6.88423 | 5.38671 |
| SN | 120 | 50.91000 | 26398.50000 | 2.536 | 51.84803 | 49.43655 | 51.44291 |
| SR | 88 | 573.00000 | 250930.00000 | 2.749 | 591.14705 | 564.94121 | 562.90748 |
| ZN | 66 | 492.60000 | 55249.00000 | 2.418 | 505.13733 | 481.44499 | 491.08853 |
| **BI-1** | 209 | 135159.00000 | 0.00000 | 1.506 | 134071.00000 | 137509.00000 | 133899.00000 |
| PB | 208 | 15.29000 | 56197.70000 | 1.271 | 15.49395 | 15.10835 | 15.25761 |
| TL | 203 | 2.24900 | 2573.72000 | 5.385 | 2.37829 | 2.13817 | 2.23119 |
| U | 238 | 0.07534 | 333.35100 | 8.251 | 0.07991 | 0.07786 | 0.06826 |
| *GE-1* | 72 | 113865.00000 | 0.00000 | 1.348 | 112155.00000 | 115124.00000 | 114317.00000 |
| *TB-1* | 159 | 195225.00000 | 0.00000 | 2.539 | 191088.00000 | 200717.00000 | 193869.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:27:00
Tube Number: 19 Batch: 172021063903A
Sample Number: **9112058** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51539.50000 | 0.00000 | 1.197 | 51322.20000 | 52235.70000 | 51060.60000 |
| AL | 27 | 2239.00000 | 60549.10000 | 2.531 | 2181.19717 | 2294.44908 | 2241.13106 |
| CA | 44 | 48230.00000 | 132383.00000 | 1.176 | 47789.08107 | 48033.56518 | 48870.73230 |
| CR | 52 | 57.07000 | 38387.60000 | 2.740 | 55.49475 | 58.62204 | 57.10737 |
| FE | 57 | 154400.00000 | 2189940.00000 | 3.273 | 150120.54531 | 153182.72636 | 159992.75122 |
| K | 39 | 17020.00000 | 853809.00000 | 1.781 | 16673.39114 | 17179.53398 | 17215.79893 |
| MG | 24 | 34040.00000 | 2612710.00000 | 1.652 | 33437.45453 | 34552.03922 | 34122.85183 |
| MN | 55 | 7106.00000 | 2763190.00000 | 2.626 | 6902.70597 | 7145.74977 | 7269.44852 |
| NA | 23 | 32440.00000 | 5404520.00000 | 3.801 | 31251.09899 | 32363.32782 | 33712.90743 |
| TI | 47 | 245.70000 | 4007.44000 | 6.443 | 229.08790 | 247.47125 | 260.59478 |
| V | 51 | 58.21000 | 30519.90000 | 0.413 | 58.46550 | 57.98975 | 58.16710 |
| **IN-1** | 115 | 54564.10000 | 0.00000 | 3.502 | 54890.90000 | 56290.50000 | 52511.00000 |
| AG | 107 | 48.72000 | 69241.20000 | 2.048 | 47.58200 | 49.43063 | 49.15729 |
| AS | 75 | 24.77000 | 1476.76000 | 5.188 | 23.76388 | 24.32093 | 26.21537 |
| BA | 137 | 285.30000 | 43725.10000 | 4.339 | 275.27900 | 281.37601 | 299.11388 |
| CD | 111 | 4.98400 | 868.70200 | 4.809 | 4.93276 | 5.24509 | 4.77398 |
| CO | 59 | 237.00000 | 296121.00000 | 4.141 | 228.30354 | 234.97056 | 247.62386 |
| CU | 63 | 49.17000 | 41540.80000 | 2.390 | 48.14365 | 48.91530 | 50.45208 |
| MO | 98 | 51.28000 | 31480.10000 | 4.688 | 49.49975 | 50.32427 | 54.01440 |
| NI | 60 | 63.35000 | 19548.80000 | 3.615 | 60.93509 | 63.63651 | 65.48783 |
| SB | 121 | 6.59300 | 2206.95000 | 1.988 | 6.44408 | 6.69088 | 6.64427 |
| SN | 120 | 50.21000 | 25747.30000 | 2.545 | 49.37613 | 49.56885 | 51.67878 |
| SR | 88 | 565.90000 | 245033.00000 | 3.557 | 547.86911 | 562.13384 | 587.61317 |
| ZN | 66 | 491.60000 | 54505.40000 | 4.103 | 487.10444 | 474.01986 | 513.61507 |
| **BI-1** | 209 | 132601.00000 | 0.00000 | 1.822 | 134129.00000 | 133860.00000 | 129815.00000 |
| PB | 208 | 15.28000 | 55125.60000 | 2.527 | 14.87663 | 15.64508 | 15.32889 |
| TL | 203 | 1.98200 | 2223.63000 | 10.964 | 1.75133 | 2.01102 | 2.18305 |
| U | 238 | 0.07282 | 316.68500 | 25.405 | 0.06110 | 0.09415 | 0.06321 |
| *GE-1* | 72 | 111061.00000 | 0.00000 | 0.794 | 110139.00000 | 111148.00000 | 111895.00000 |
| *TB-1* | 159 | 191530.00000 | 0.00000 | 1.997 | 189066.00000 | 195935.00000 | 189588.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:28:00
Tube Number: 20 Batch: 172021063903A
Sample Number: **9112058** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 52683.80000 | 0.00000 | 3.358 | 53550.40000 | 53851.90000 | 50649.00000 |
| AL | 27 | 55.04000 | 1526.81000 | 5.463 | 55.63547 | 51.78235 | 57.70821 |
| CA | 44 | 8404.00000 | 23942.60000 | 1.025 | 8476.08282 | 8308.45826 | 8426.72792 |
| CR | 52 | 1.74300 | 1290.11000 | 9.501 | 1.77314 | 1.89084 | 1.56387 |
| FE | 57 | 28730.00000 | 416315.00000 | 3.105 | 28710.53130 | 27853.54227 | 29637.01784 |
| K | 39 | 1265.00000 | 82076.60000 | 2.138 | 1273.73297 | 1234.09987 | 1285.77559 |
| MG | 24 | 5941.00000 | 465955.00000 | 2.005 | 5936.60824 | 5823.73572 | 6061.80298 |
| MN | 55 | 1314.00000 | 521919.00000 | 2.697 | 1316.55489 | 1276.88478 | 1347.59176 |
| NA | 23 | 4219.00000 | 729960.00000 | 3.631 | 4170.78412 | 4095.39185 | 4390.23419 |
| TI | 47 | 1.59400 | 26.66770 | 41.706 | 2.36046 | 1.17363 | 1.24784 |
| V | 51 | 1.61900 | 890.06800 | 9.481 | 1.76029 | 1.64062 | 1.45555 |
| **IN-1** | 115 | 55053.60000 | 0.00000 | 2.792 | 55432.80000 | 56365.30000 | 53362.80000 |
| AG | 107 | 0.07007 | 103.33800 | 27.701 | 0.05313 | 0.06584 | 0.09125 |
| AS | 75 | 3.03800 | 209.33700 | 13.884 | 3.08509 | 2.59496 | 3.43475 |
| BA | 137 | 44.97000 | 6962.19000 | 3.493 | 46.38746 | 43.28341 | 45.25305 |
| CD | 111 | 0.02282 | 6.00005 | 4.231 | 0.02257 | 0.02201 | 0.02389 |
| CO | 59 | 2.03900 | 2660.37000 | 1.429 | 2.02393 | 2.02027 | 2.07245 |
| CU | 63 | 0.09486 | 123.33900 | 38.604 | 0.11276 | 0.05273 | 0.11909 |
| MO | 98 | 0.17230 | 110.00500 | 49.344 | 0.07482 | 0.23106 | 0.21107 |
| NI | 60 | 2.90400 | 923.40200 | 2.531 | 2.96807 | 2.82373 | 2.91993 |
| SB | 121 | 0.01960 | 20.00080 | 259.286 | 0.04967 | 0.04820 | -0.03908 |
| SN | 120 | 0.28160 | 186.67500 | 71.981 | 0.16659 | 0.16246 | 0.51565 |
| SR | 88 | 97.45000 | 42585.30000 | 3.577 | 97.99374 | 93.72878 | 100.63713 |
| ZN | 66 | 2.15200 | 263.34700 | 16.589 | 2.01151 | 1.88755 | 2.55847 |
| **BI-1** | 209 | 139031.00000 | 0.00000 | 3.725 | 143336.00000 | 140473.00000 | 133283.00000 |
| PB | 208 | 0.01122 | 156.67300 | 125.045 | 0.00278 | 0.00346 | 0.02741 |
| TL | 203 | 0.00294 | 6.66694 | 169.667 | -0.00282 | 0.00560 | 0.00605 |
| U | 238 | 0.01055 | 56.66900 | 21.346 | 0.01313 | 0.00896 | 0.00957 |
| *GE-1* | 72 | 113423.00000 | 0.00000 | 3.088 | 116304.00000 | 114440.00000 | 109526.00000 |
| *TB-1* | 159 | 191197.00000 | 0.00000 | 1.957 | 192808.00000 | 193863.00000 | 186921.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:30:00
Tube Number: 21 Batch: 172021063903A
Sample Number: **9112028** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53617.40000 | 0.00000 | 1.288 | 53861.40000 | 52837.70000 | 54153.20000 |
| AL | 27 | 6.98600 | 203.34300 | 26.582 | 5.75859 | 9.12242 | 6.07829 |
| CA | 44 | 41130.00000 | 117511.00000 | 2.499 | 41680.41780 | 41774.75306 | 39949.07105 |
| CR | 52 | 0.62900 | 533.36400 | 10.677 | 0.70652 | 0.59197 | 0.58850 |
| FE | 57 | 639.00000 | 9460.46000 | 0.697 | 643.75977 | 634.93351 | 638.26237 |
| K | 39 | 866.90000 | 63242.80000 | 2.268 | 866.81222 | 886.63032 | 847.31128 |
| MG | 24 | 21810.00000 | 1740970.00000 | 1.733 | 21809.36687 | 22182.99725 | 21426.85225 |
| MN | 55 | 320.40000 | 129593.00000 | 2.914 | 323.41199 | 327.78271 | 309.87672 |
| NA | 23 | 12040.00000 | 2096090.00000 | 2.794 | 12386.01310 | 12029.86427 | 11713.54188 |
| TI | 47 | 0.58460 | 10.00060 | 99.829 | 0.58671 | 0.00000 | 1.16714 |
| V | 51 | 0.59100 | 343.35300 | 19.695 | 0.54451 | 0.72338 | 0.50502 |
| **IN-1** | 115 | 57762.90000 | 0.00000 | 1.297 | 56898.50000 | 58165.00000 | 58225.20000 |
| AG | 107 | 0.00661 | 13.33380 | 116.644 | 0.01121 | 0.01091 | -0.00229 |
| AS | 75 | 0.98900 | 93.33450 | 11.790 | 0.85983 | 1.08656 | 1.02079 |
| BA | 137 | 18.83000 | 3060.52000 | 5.157 | 19.92476 | 18.51150 | 18.06458 |
| CD | 111 | 0.01401 | 4.66670 | 161.313 | 0.02169 | 0.03177 | -0.01143 |
| CO | 59 | 1.45300 | 2016.91000 | 2.288 | 1.44825 | 1.42268 | 1.48862 |
| CU | 63 | 0.29660 | 310.01700 | 13.901 | 0.32437 | 0.31621 | 0.24923 |
| MO | 98 | 1.13200 | 740.05400 | 7.039 | 1.05615 | 1.12465 | 1.21501 |
| NI | 60 | 2.19900 | 740.04900 | 17.249 | 1.77042 | 2.49100 | 2.33639 |
| SB | 121 | 0.53000 | 200.01000 | 31.302 | 0.71025 | 0.38381 | 0.49603 |
| SN | 120 | 0.07085 | 83.33660 | 68.497 | 0.12271 | 0.06328 | 0.02654 |
| SR | 88 | 174.20000 | 79910.20000 | 1.520 | 176.86957 | 174.21716 | 171.57496 |
| ZN | 66 | 0.50080 | 83.33750 | 58.426 | 0.22543 | 0.80799 | 0.46902 |
| **BI-1** | 209 | 143641.00000 | 0.00000 | 1.371 | 143013.00000 | 142060.00000 | 145848.00000 |
| PB | 208 | 0.02067 | 200.00900 | 45.172 | 0.01058 | 0.02901 | 0.02241 |
| TL | 203 | 0.00824 | 13.33390 | 116.224 | 0.01372 | 0.01383 | -0.00282 |
| U | 238 | 0.06276 | 296.68300 | 23.375 | 0.07917 | 0.05092 | 0.05817 |
| *GE-1* | 72 | 117362.00000 | 0.00000 | 0.975 | 118007.00000 | 116041.00000 | 118037.00000 |
| *TB-1* | 159 | 200392.00000 | 0.00000 | 0.758 | 199560.00000 | 199471.00000 | 202146.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:32:00
Tube Number: 22 Batch: 172021063903A
Sample Number: **9112031** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51730.10000 | 0.00000 | 1.063 | 51261.40000 | 52335.70000 | 51593.20000 |
| AL | 27 | 52.06000 | 1420.13000 | 7.512 | 48.08927 | 52.19691 | 55.90878 |
| CA | 44 | 47190.00000 | 130010.00000 | 1.393 | 46900.03524 | 46723.43057 | 47939.96588 |
| CR | 52 | 0.87440 | 680.04400 | 9.527 | 0.85412 | 0.96595 | 0.80309 |
| FE | 57 | 5451.00000 | 77626.10000 | 1.186 | 5378.13353 | 5473.06441 | 5501.61056 |
| K | 39 | 2497.00000 | 141321.00000 | 0.895 | 2485.67606 | 2482.35634 | 2522.59731 |
| MG | 24 | 16960.00000 | 1306250.00000 | 1.216 | 16856.96357 | 16818.22066 | 17193.15879 |
| MN | 55 | 405.40000 | 158252.00000 | 0.332 | 404.30912 | 406.90352 | 404.98403 |
| NA | 23 | 27540.00000 | 4608050.00000 | 1.540 | 27153.67698 | 27484.09461 | 27995.25889 |
| TI | 47 | 1.62400 | 26.66770 | 42.174 | 1.23294 | 2.41525 | 1.22501 |
| V | 51 | 0.53020 | 300.01600 | 11.665 | 0.45900 | 0.56154 | 0.57019 |
| **IN-1** | 115 | 54749.80000 | 0.00000 | 0.478 | 54749.80000 | 55011.70000 | 54487.90000 |
| AG | 107 | 0.00473 | 10.00040 | 148.859 | -0.00229 | 0.00469 | 0.01180 |
| AS | 75 | 11.35000 | 696.02500 | 0.558 | 11.27883 | 11.35839 | 11.40405 |
| BA | 137 | 180.40000 | 27771.90000 | 3.268 | 175.52742 | 178.77167 | 186.96827 |
| CD | 111 | 0.00006 | 2.00002 | 17823.500 | -0.01143 | -0.00001 | 0.01163 |
| CO | 59 | 0.30150 | 466.69800 | 16.723 | 0.31195 | 0.24664 | 0.34582 |
| CU | 63 | 0.13450 | 156.67400 | 33.167 | 0.18562 | 0.11401 | 0.10373 |
| MO | 98 | 2.60100 | 1606.83000 | 5.709 | 2.47673 | 2.56181 | 2.76579 |
| NI | 60 | 1.09900 | 360.02100 | 38.489 | 1.58388 | 0.80408 | 0.90985 |
| SB | 121 | 0.34020 | 126.67200 | 9.683 | 0.32034 | 0.37824 | 0.32206 |
| SN | 120 | 0.09176 | 90.00430 | 55.569 | 0.13079 | 0.11041 | 0.03407 |
| SR | 88 | 426.50000 | 185442.00000 | 2.067 | 416.90355 | 428.53521 | 434.19431 |
| ZN | 66 | 3.26500 | 386.68800 | 21.075 | 3.83600 | 3.45912 | 2.50134 |
| **BI-1** | 209 | 137820.00000 | 0.00000 | 0.878 | 136490.00000 | 138855.00000 | 138116.00000 |
| PB | 208 | 0.03961 | 263.34600 | 66.448 | 0.01525 | 0.06753 | 0.03605 |
| TL | 203 | -0.00282 | 0.00000 | 0.000 | -0.00282 | -0.00282 | -0.00282 |
| U | 238 | 0.01450 | 73.33640 | 8.331 | 0.01390 | 0.01589 | 0.01371 |
| *GE-1* | 72 | 112533.00000 | 0.00000 | 0.849 | 111431.00000 | 113054.00000 | 113114.00000 |
| *TB-1* | 159 | 192566.00000 | 0.00000 | 0.079 | 192741.00000 | 192488.00000 | 192468.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:33:00
Tube Number: 23
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51285.10000 | 0.00000 | 3.705 | 52637.40000 | 52104.90000 | 49113.10000 |
| AL | 27 | 2491.00000 | 66990.50000 | 2.385 | 2472.04635 | 2443.62017 | 2557.77373 |
| CA | 44 | 2485.00000 | 7182.24000 | 8.527 | 2272.81435 | 2485.75041 | 2696.68082 |
| CR | 52 | 254.10000 | 169580.00000 | 3.007 | 252.31649 | 247.43315 | 262.41717 |
| FE | 57 | 2612.00000 | 36886.60000 | 0.962 | 2614.89468 | 2585.66902 | 2635.70939 |
| K | 39 | 2487.00000 | 139539.00000 | 3.729 | 2438.56763 | 2429.42205 | 2594.43990 |
| MG | 24 | 2528.00000 | 193000.00000 | 2.513 | 2505.05902 | 2478.65388 | 2599.49157 |
| MN | 55 | 254.10000 | 98288.30000 | 3.000 | 255.20184 | 245.97042 | 261.09176 |
| NA | 23 | 2378.00000 | 406458.00000 | 2.984 | 2374.72010 | 2308.30343 | 2450.11057 |
| TI | 47 | 250.50000 | 4057.46000 | 7.301 | 239.57639 | 240.20662 | 271.57358 |
| V | 51 | 251.40000 | 130927.00000 | 4.920 | 247.06582 | 241.69659 | 265.30054 |
| **IN-1** | 115 | 54877.30000 | 0.00000 | 3.814 | 57268.60000 | 53987.70000 | 53375.70000 |
| AG | 107 | 26.25000 | 37489.90000 | 2.772 | 25.44763 | 26.42350 | 26.87051 |
| AS | 75 | 253.60000 | 14934.70000 | 2.634 | 246.69334 | 260.02077 | 254.14980 |
| BA | 137 | 253.80000 | 39176.20000 | 1.475 | 257.30556 | 254.30586 | 249.86476 |
| CD | 111 | 25.88000 | 4519.50000 | 3.129 | 24.98120 | 26.09266 | 26.55674 |
| CO | 59 | 235.30000 | 295749.00000 | 1.967 | 230.08515 | 239.01526 | 236.66313 |
| CU | 63 | 259.90000 | 220641.00000 | 2.045 | 254.38932 | 260.34638 | 264.99321 |
| MO | 98 | 25.11000 | 15513.30000 | 3.159 | 24.48111 | 26.00241 | 24.85108 |
| NI | 60 | 261.70000 | 81188.30000 | 1.435 | 259.33305 | 266.06233 | 259.80778 |
| SB | 121 | 27.83000 | 9317.12000 | 4.646 | 26.39938 | 28.18865 | 28.91155 |
| SN | 120 | 26.42000 | 13637.90000 | 4.633 | 25.06021 | 26.76578 | 27.43325 |
| SR | 88 | 24.83000 | 10821.70000 | 2.760 | 24.04607 | 25.32214 | 25.11678 |
| ZN | 66 | 260.00000 | 29030.10000 | 1.650 | 256.02961 | 264.56916 | 259.57529 |
| **BI-1** | 209 | 142448.00000 | 0.00000 | 2.583 | 146226.00000 | 138875.00000 | 142243.00000 |
| PB | 208 | 25.11000 | 97246.10000 | 0.429 | 25.07192 | 25.03713 | 25.23881 |
| TL | 203 | 24.67000 | 29717.80000 | 2.097 | 24.47647 | 25.25185 | 24.27050 |
| U | 238 | 24.57000 | 111196.00000 | 2.042 | 24.28894 | 25.14696 | 24.26766 |
| *GE-1* | 72 | 113378.00000 | 0.00000 | 2.831 | 117000.00000 | 110885.00000 | 112248.00000 |
| *TB-1* | 159 | 194623.00000 | 0.00000 | 1.879 | 198797.00000 | 191993.00000 | 193078.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:35:00
Tube Number: 24
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51465.60000 | 0.00000 | 1.920 | 52546.50000 | 51241.80000 | 50608.60000 |
| AL | 27 | 3.08100 | 90.00430 | 37.196 | 3.00688 | 1.97388 | 4.26197 |
| CA | 44 | -26.12000 | 360.02200 | -75.345 | -21.69706 | -47.64218 | -9.03378 |
| CR | 52 | 0.59940 | 493.36900 | 26.577 | 0.77146 | 0.56965 | 0.45701 |
| FE | 57 | 4.63600 | 96.67060 | 40.984 | 2.62741 | 4.87850 | 6.40342 |
| K | 39 | -15.84000 | 17432.20000 | -144.003 | -39.25949 | -14.58108 | 6.30667 |
| MG | 24 | 2.97500 | 290.01500 | 21.324 | 2.25033 | 3.24580 | 3.42932 |
| MN | 55 | 0.35040 | 160.00700 | 21.515 | 0.26526 | 0.37708 | 0.40877 |
| NA | 23 | 2.25700 | 13927.90000 | 50.953 | 1.17165 | 3.46283 | 2.13572 |
| TI | 47 | 0.20810 | 3.33346 | 173.234 | 0.00000 | 0.00000 | 0.62442 |
| V | 51 | 0.19640 | 123.34000 | 50.825 | 0.10985 | 0.30563 | 0.17389 |
| **IN-1** | 115 | 55801.80000 | 0.00000 | 2.208 | 56879.30000 | 56066.90000 | 54459.30000 |
| AG | 107 | 0.02994 | 46.66850 | 29.138 | 0.02471 | 0.02510 | 0.04001 |
| AS | 75 | 0.16030 | 40.66710 | 94.635 | 0.33521 | 0.08122 | 0.06464 |
| BA | 137 | 0.15050 | 26.66770 | 91.429 | 0.10386 | 0.04222 | 0.30537 |
| CD | 111 | 0.02241 | 6.00006 | 50.781 | 0.01066 | 0.03339 | 0.02318 |
| CO | 59 | 0.11970 | 243.34400 | 10.911 | 0.10576 | 0.13167 | 0.12162 |
| CU | 63 | 0.16900 | 190.00900 | 33.142 | 0.23359 | 0.13397 | 0.13941 |
| MO | 98 | 0.05304 | 36.66840 | 45.155 | 0.07278 | 0.02639 | 0.05994 |
| NI | 60 | 0.07306 | 43.33500 | 24.473 | 0.06009 | 0.09345 | 0.06562 |
| SB | 121 | 0.03032 | 23.33420 | 205.409 | -0.03908 | 0.04866 | 0.08136 |
| SN | 120 | 0.04438 | 66.66930 | 109.757 | -0.00832 | 0.08777 | 0.05369 |
| SR | 88 | 0.03012 | 23.33450 | 154.681 | 0.06604 | -0.02253 | 0.04685 |
| ZN | 66 | 0.23370 | 50.00190 | 36.166 | 0.31205 | 0.14411 | 0.24479 |
| **BI-1** | 209 | 143298.00000 | 0.00000 | 3.161 | 147822.00000 | 143308.00000 | 138765.00000 |
| PB | 208 | 0.01832 | 190.01000 | 66.594 | 0.00675 | 0.03106 | 0.01715 |
| TL | 203 | 0.04955 | 63.33600 | 12.787 | 0.04517 | 0.04668 | 0.05682 |
| U | 238 | 0.02255 | 113.33800 | 41.446 | 0.03182 | 0.01313 | 0.02271 |
| *GE-1* | 72 | 115482.00000 | 0.00000 | 0.957 | 115445.00000 | 116606.00000 | 114396.00000 |
| *TB-1* | 159 | 190909.00000 | 0.00000 | 2.129 | 195545.00000 | 187961.00000 | 189220.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:37:00
Tube Number: 25 Batch: 172021063903A
Sample Number: **9112034** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51579.40000 | 0.00000 | 0.732 | 51863.30000 | 51150.90000 | 51723.90000 |
| AL | 27 | 10.09000 | 280.01300 | 9.035 | 10.40141 | 9.05902 | 10.79862 |
| CA | 44 | 113300.00000 | 310581.00000 | 1.581 | 114033.31011 | 114567.09802 | 111231.86981 |
| CR | 52 | 0.96680 | 740.05300 | 14.098 | 1.12411 | 0.88631 | 0.88985 |
| FE | 57 | 13450.00000 | 191005.00000 | 1.856 | 13706.99055 | 13451.03400 | 13207.84891 |
| K | 39 | 9925.00000 | 505797.00000 | 1.631 | 10073.64675 | 9949.44128 | 9752.47640 |
| MG | 24 | 21850.00000 | 1678650.00000 | 0.518 | 21900.08970 | 21723.83926 | 21934.96675 |
| MN | 55 | 2804.00000 | 1091160.00000 | 1.133 | 2795.15663 | 2839.26921 | 2777.60315 |
| NA | 23 | 17710.00000 | 2958390.00000 | 1.982 | 17770.63918 | 18022.97448 | 17329.41803 |
| TI | 47 | 0.40670 | 6.66692 | 86.624 | 0.60931 | 0.00000 | 0.61096 |
| V | 51 | 3.20200 | 1700.18000 | 4.491 | 3.31736 | 3.24870 | 3.04108 |
| **IN-1** | 115 | 53165.60000 | 0.00000 | 1.681 | 52700.70000 | 52600.10000 | 54196.00000 |
| AG | 107 | 0.00250 | 6.66693 | 166.000 | 0.00500 | -0.00229 | 0.00479 |
| AS | 75 | 37.51000 | 2166.86000 | 2.074 | 37.77373 | 36.64022 | 38.12971 |
| BA | 137 | 128.60000 | 19212.20000 | 5.757 | 135.28423 | 129.85381 | 120.63966 |
| CD | 111 | 0.00038 | 2.00002 | 3115.530 | 0.01241 | -0.01143 | 0.00016 |
| CO | 59 | 0.93080 | 1220.10000 | 0.591 | 0.93144 | 0.92505 | 0.93601 |
| CU | 63 | 0.42390 | 390.02100 | 19.420 | 0.35422 | 0.51473 | 0.40269 |
| MO | 98 | 1.25900 | 756.72000 | 15.910 | 1.09013 | 1.48060 | 1.20739 |
| NI | 60 | 1.58800 | 496.69500 | 6.074 | 1.48008 | 1.61760 | 1.66601 |
| SB | 121 | 0.06353 | 33.33460 | 54.950 | 0.08538 | 0.02327 | 0.08195 |
| SN | 120 | 0.06379 | 73.33650 | 20.207 | 0.07848 | 0.05853 | 0.05436 |
| SR | 88 | 665.60000 | 280906.00000 | 2.468 | 674.67269 | 675.41240 | 646.59989 |
| ZN | 66 | 1.76500 | 213.34300 | 18.753 | 1.93984 | 1.38288 | 1.97138 |
| **BI-1** | 209 | 134197.00000 | 0.00000 | 1.736 | 136782.00000 | 132260.00000 | 133549.00000 |
| PB | 208 | 0.03614 | 243.34600 | 34.588 | 0.04209 | 0.04457 | 0.02178 |
| TL | 203 | -0.00282 | 0.00000 | 0.000 | -0.00282 | -0.00282 | -0.00282 |
| U | 238 | 0.18690 | 806.73100 | 6.244 | 0.18871 | 0.19762 | 0.17449 |
| *GE-1* | 72 | 109632.00000 | 0.00000 | 1.385 | 110482.00000 | 107879.00000 | 110533.00000 |
| *TB-1* | 159 | 193698.00000 | 0.00000 | 1.429 | 196846.00000 | 191645.00000 | 192602.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:38:00
Tube Number: 26 Batch: 172021063903A
Sample Number: **9112037** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 49494.80000 | 0.00000 | 1.481 | 48912.80000 | 50317.90000 | 49253.60000 |
| AL | 27 | 6.28500 | 170.00800 | 31.535 | 7.53663 | 7.31900 | 3.99929 |
| CA | 44 | 94860.00000 | 249582.00000 | 2.408 | 96204.02493 | 92219.31599 | 96145.01127 |
| CR | 52 | 0.58570 | 463.36300 | 27.147 | 0.72884 | 0.41461 | 0.61369 |
| FE | 57 | 2354.00000 | 32087.20000 | 2.437 | 2420.04198 | 2314.78757 | 2327.84432 |
| K | 39 | 4247.00000 | 217680.00000 | 2.494 | 4315.30099 | 4125.35862 | 4301.56661 |
| MG | 24 | 60220.00000 | 4438270.00000 | 1.029 | 60455.55608 | 59517.08707 | 60687.70630 |
| MN | 55 | 979.30000 | 365640.00000 | 2.078 | 998.33363 | 957.83927 | 981.67320 |
| NA | 23 | 21550.00000 | 3451720.00000 | 1.713 | 21955.30852 | 21232.81494 | 21462.48934 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 1.02000 | 533.36600 | 22.323 | 0.80474 | 0.99619 | 1.25825 |
| **IN-1** | 115 | 51957.80000 | 0.00000 | 3.285 | 53193.10000 | 52670.70000 | 50009.70000 |
| AG | 107 | -0.00229 | 0.00000 | 0.000 | -0.00229 | -0.00229 | -0.00229 |
| AS | 75 | 3.19800 | 206.67000 | 5.610 | 3.13152 | 3.06140 | 3.40116 |
| BA | 137 | 49.34000 | 7205.74000 | 2.566 | 48.81046 | 48.41658 | 50.77964 |
| CD | 111 | 0.02931 | 6.66672 | 68.441 | 0.01219 | 0.02435 | 0.05138 |
| CO | 59 | 4.03800 | 4884.45000 | 6.429 | 3.89321 | 3.88281 | 4.33766 |
| CU | 63 | 0.43740 | 393.35500 | 15.108 | 0.45983 | 0.48943 | 0.36308 |
| MO | 98 | 0.28530 | 170.00800 | 15.338 | 0.24515 | 0.33195 | 0.27885 |
| NI | 60 | 11.55000 | 3410.56000 | 1.891 | 11.51265 | 11.35868 | 11.78960 |
| SB | 121 | 0.12890 | 53.33540 | 76.897 | 0.05340 | 0.24112 | 0.09208 |
| SN | 120 | 0.03938 | 60.00240 | 82.961 | 0.07698 | 0.01789 | 0.02327 |
| SR | 88 | 813.10000 | 335281.00000 | 3.009 | 806.75271 | 792.46544 | 840.14338 |
| ZN | 66 | 2.97600 | 336.68500 | 15.571 | 3.49197 | 2.59480 | 2.84221 |
| **BI-1** | 209 | 128314.00000 | 0.00000 | 1.235 | 126489.00000 | 129337.00000 | 129117.00000 |
| PB | 208 | 0.00859 | 136.67300 | 67.377 | 0.00723 | 0.01494 | 0.00361 |
| TL | 203 | 0.01873 | 23.33430 | 57.395 | 0.02522 | 0.00632 | 0.02465 |
| U | 238 | 4.01000 | 16358.80000 | 2.374 | 4.06567 | 4.06372 | 3.89984 |
| *GE-1* | 72 | 105742.00000 | 0.00000 | 0.404 | 105621.00000 | 106217.00000 | 105388.00000 |
| *TB-1* | 159 | 182401.00000 | 0.00000 | 1.212 | 179854.00000 | 183522.00000 | 183827.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:40:00
Tube Number: 27 Batch: 172021063903A
Sample Number: **9112040** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 48247.40000 | 0.00000 | 8.554 | 50056.20000 | 51161.10000 | 43524.80000 |
| AL | 27 | 82.32000 | 2063.58000 | 23.895 | 66.77439 | 75.76144 | 104.43103 |
| CA | 44 | 35050.00000 | 89636.60000 | 10.856 | 32325.41267 | 33425.20020 | 39395.81908 |
| CR | 52 | 2.39800 | 1573.49000 | 22.439 | 1.93706 | 2.26772 | 2.98942 |
| FE | 57 | 17800.00000 | 234694.00000 | 11.933 | 16665.20965 | 16477.29522 | 20246.70720 |
| K | 39 | 4281.00000 | 212575.00000 | 10.815 | 4037.24905 | 3990.79515 | 4814.87320 |
| MG | 24 | 28260.00000 | 2016230.00000 | 12.718 | 25845.17755 | 26546.11562 | 32390.59148 |
| MN | 55 | 2412.00000 | 871803.00000 | 12.405 | 2238.18435 | 2239.89547 | 2757.32908 |
| NA | 23 | 10190.00000 | 1587150.00000 | 12.355 | 9382.05964 | 9549.09307 | 11641.80457 |
| TI | 47 | 1.24000 | 20.00070 | 131.613 | 0.63131 | 3.08838 | 0.00000 |
| V | 51 | 1.99100 | 983.41500 | 24.942 | 1.98423 | 1.49826 | 2.49139 |
| **IN-1** | 115 | 49693.40000 | 0.00000 | 7.444 | 51717.30000 | 51938.60000 | 45424.30000 |
| AG | 107 | 0.00266 | 6.66693 | 322.414 | 0.01256 | -0.00229 | -0.00229 |
| AS | 75 | 4.88300 | 285.33900 | 17.207 | 4.35458 | 4.44164 | 5.85151 |
| BA | 137 | 136.80000 | 19035.30000 | 8.918 | 133.38028 | 126.70643 | 150.37131 |
| CD | 111 | 0.01800 | 4.66670 | 35.078 | 0.02501 | 0.01276 | 0.01623 |
| CO | 59 | 3.96700 | 4587.67000 | 5.377 | 4.00636 | 3.73677 | 4.15784 |
| CU | 63 | 0.26230 | 240.01100 | 17.545 | 0.29943 | 0.21084 | 0.27678 |
| MO | 98 | 0.10730 | 63.33610 | 49.618 | 0.16644 | 0.06311 | 0.09247 |
| NI | 60 | 8.46300 | 2386.99000 | 6.820 | 8.14746 | 8.11230 | 9.12915 |
| SB | 121 | 0.05742 | 30.00120 | 143.330 | 0.15116 | 0.02407 | -0.00298 |
| SN | 120 | 0.06152 | 66.66960 | 60.338 | 0.04036 | 0.03983 | 0.10438 |
| SR | 88 | 352.30000 | 138320.00000 | 10.335 | 329.01470 | 333.65999 | 394.27498 |
| ZN | 66 | 6.44100 | 670.04400 | 8.874 | 5.78501 | 6.70660 | 6.83177 |
| **BI-1** | 209 | 128198.00000 | 0.00000 | 8.456 | 135588.00000 | 133252.00000 | 115754.00000 |
| PB | 208 | 0.02362 | 190.00900 | 31.863 | 0.03186 | 0.02190 | 0.01711 |
| TL | 203 | -0.00282 | 0.00000 | 0.000 | -0.00282 | -0.00282 | -0.00282 |
| U | 238 | 0.01414 | 66.67000 | 17.567 | 0.01169 | 0.01665 | 0.01407 |
| *GE-1* | 72 | 103715.00000 | 0.00000 | 8.570 | 107810.00000 | 109817.00000 | 93517.80000 |
| *TB-1* | 159 | 177321.00000 | 0.00000 | 7.805 | 186131.00000 | 184468.00000 | 161363.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:42:00
Tube Number: 28 Batch: 172021063903A
Sample Number: **9112043** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51174.60000 | 0.00000 | 2.910 | 49474.80000 | 51802.90000 | 52246.10000 |
| AL | 27 | 6.09800 | 170.00700 | 19.482 | 7.44809 | 5.62973 | 5.21489 |
| CA | 44 | 40710.00000 | 110959.00000 | 3.046 | 42132.93504 | 40151.59028 | 39849.66979 |
| CR | 52 | 0.61750 | 500.03000 | 16.972 | 0.73455 | 0.53234 | 0.58550 |
| FE | 57 | 539.50000 | 7619.19000 | 7.255 | 576.80515 | 543.06136 | 498.76596 |
| K | 39 | 912.20000 | 62566.40000 | 1.097 | 922.91389 | 910.55220 | 903.10083 |
| MG | 24 | 21500.00000 | 1637380.00000 | 2.966 | 22230.71547 | 21184.80137 | 21075.90438 |
| MN | 55 | 310.00000 | 119661.00000 | 3.217 | 321.25187 | 306.76546 | 302.13823 |
| NA | 23 | 12010.00000 | 1994390.00000 | 3.071 | 12430.92066 | 11869.84275 | 11735.86970 |
| TI | 47 | 0.61960 | 10.00040 | 98.483 | 0.63873 | 1.22005 | 0.00000 |
| V | 51 | 0.59670 | 333.35300 | 35.814 | 0.35773 | 0.66267 | 0.76967 |
| **IN-1** | 115 | 55382.70000 | 0.00000 | 2.508 | 53885.40000 | 55633.60000 | 56629.00000 |
| AG | 107 | -0.00229 | 0.00000 | 0.000 | -0.00229 | -0.00229 | -0.00229 |
| AS | 75 | 0.90690 | 84.66770 | 18.315 | 0.83295 | 0.79050 | 1.09713 |
| BA | 137 | 18.23000 | 2840.44000 | 2.708 | 18.79459 | 17.88390 | 18.00886 |
| CD | 111 | 0.04505 | 10.00010 | 98.335 | 0.04686 | -0.00014 | 0.08841 |
| CO | 59 | 1.39000 | 1853.53000 | 1.254 | 1.39547 | 1.40431 | 1.37069 |
| CU | 63 | 0.35380 | 346.68500 | 9.910 | 0.32134 | 0.39098 | 0.34898 |
| MO | 98 | 1.29200 | 806.72100 | 17.469 | 1.54403 | 1.22395 | 1.10824 |
| NI | 60 | 2.39900 | 770.05700 | 14.481 | 2.72679 | 2.03478 | 2.43534 |
| SB | 121 | 0.54480 | 196.67600 | 18.465 | 0.66085 | 0.49148 | 0.48215 |
| SN | 120 | 0.05817 | 73.33670 | 42.685 | 0.07492 | 0.06995 | 0.02964 |
| SR | 88 | 173.70000 | 76343.00000 | 3.802 | 180.60158 | 173.01407 | 167.44395 |
| ZN | 66 | 0.82650 | 116.67200 | 28.300 | 0.70601 | 0.67733 | 1.09606 |
| **BI-1** | 209 | 138539.00000 | 0.00000 | 1.714 | 135902.00000 | 139211.00000 | 140505.00000 |
| PB | 208 | 0.03663 | 253.34500 | 38.193 | 0.02358 | 0.05140 | 0.03491 |
| TL | 203 | -0.00001 | 3.33347 | -37426.800 | -0.00282 | -0.00282 | 0.00560 |
| U | 238 | 0.06684 | 303.34800 | 23.938 | 0.08343 | 0.06557 | 0.05151 |
| *GE-1* | 72 | 110805.00000 | 0.00000 | 2.412 | 107850.00000 | 113054.00000 | 111512.00000 |
| *TB-1* | 159 | 194221.00000 | 0.00000 | 1.155 | 191692.00000 | 195973.00000 | 194997.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:43:00
Tube Number: 29 Batch: 172021063903A
Sample Number: **9112046** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51653.50000 | 0.00000 | 4.728 | 54334.40000 | 51070.70000 | 49555.50000 |
| AL | 27 | 9.10700 | 253.35200 | 10.155 | 8.86402 | 8.32747 | 10.12868 |
| CA | 44 | 14210.00000 | 39360.50000 | 5.353 | 13989.25719 | 13583.55445 | 15056.27771 |
| CR | 52 | 3.08600 | 2163.58000 | 4.666 | 2.94760 | 3.23486 | 3.07428 |
| FE | 57 | 6.62300 | 126.67300 | 43.726 | 9.82594 | 4.19056 | 5.85313 |
| K | 39 | 2300.00000 | 131282.00000 | 5.161 | 2197.71331 | 2273.26142 | 2430.31249 |
| MG | 24 | 15020.00000 | 1153950.00000 | 4.377 | 14453.84252 | 14864.77800 | 15740.86725 |
| MN | 55 | 0.74970 | 316.68200 | 13.041 | 0.79116 | 0.63810 | 0.82000 |
| NA | 23 | 8720.00000 | 1464600.00000 | 4.155 | 8512.52449 | 8510.15831 | 9138.91352 |
| TI | 47 | 0.40010 | 6.66692 | 86.728 | 0.58160 | 0.61877 | 0.00000 |
| V | 51 | 5.90000 | 3117.16000 | 4.476 | 5.82640 | 5.68111 | 6.19358 |
| **IN-1** | 115 | 55721.00000 | 0.00000 | 1.462 | 56428.00000 | 54829.90000 | 55905.10000 |
| AG | 107 | 0.00000 | 3.33346 | -319067.000 | -0.00229 | -0.00229 | 0.00458 |
| AS | 75 | 1.89700 | 144.00200 | 15.609 | 1.56599 | 2.13741 | 1.98617 |
| BA | 137 | 2.06400 | 326.68400 | 25.014 | 1.68084 | 1.86022 | 2.65124 |
| CD | 111 | 0.00356 | 2.66669 | 177.156 | 0.01084 | 0.00003 | -0.00019 |
| CO | 59 | -0.05771 | 16.66730 | -7.586 | -0.05526 | -0.06277 | -0.05512 |
| CU | 63 | 0.32100 | 320.01900 | 13.903 | 0.27023 | 0.33851 | 0.35415 |
| MO | 98 | 0.29720 | 190.00800 | 12.867 | 0.34097 | 0.27007 | 0.28066 |
| NI | 60 | 0.72960 | 250.01400 | 1.600 | 0.71958 | 0.74243 | 0.72691 |
| SB | 121 | -0.00984 | 10.00070 | -298.190 | -0.01002 | -0.03908 | 0.01959 |
| SN | 120 | 0.06931 | 80.00370 | 69.932 | 0.12443 | 0.03334 | 0.05015 |
| SR | 88 | 100.30000 | 44381.60000 | 2.191 | 99.69290 | 98.42701 | 102.70637 |
| ZN | 66 | 1.20700 | 160.00700 | 16.346 | 1.01354 | 1.40794 | 1.20093 |
| **BI-1** | 209 | 141467.00000 | 0.00000 | 4.031 | 147915.00000 | 137094.00000 | 139390.00000 |
| PB | 208 | 0.00585 | 140.00600 | 46.811 | 0.00424 | 0.00430 | 0.00901 |
| TL | 203 | 0.00581 | 10.00040 | 257.320 | -0.00282 | 0.02305 | -0.00282 |
| U | 238 | 0.06443 | 300.01600 | 9.932 | 0.06584 | 0.05744 | 0.07000 |
| *GE-1* | 72 | 113207.00000 | 0.00000 | 2.722 | 116758.00000 | 111623.00000 | 111239.00000 |
| *TB-1* | 159 | 194128.00000 | 0.00000 | 3.245 | 200980.00000 | 188589.00000 | 192817.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:45:00
Tube Number: 30 Batch: 172021063903A
Sample Number: **9112049** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 50258.00000 | 0.00000 | 3.727 | 48541.30000 | 49977.10000 | 52255.70000 |
| AL | 27 | 63.78000 | 1690.19000 | 9.715 | 65.33159 | 56.96218 | 69.06117 |
| CA | 44 | 8079.00000 | 21969.10000 | 1.316 | 8165.62765 | 8111.53453 | 7960.57414 |
| CR | 52 | 1.75800 | 1236.78000 | 9.647 | 1.93840 | 1.60211 | 1.73218 |
| FE | 57 | 48100.00000 | 664640.00000 | 4.522 | 50595.51201 | 47136.50801 | 46581.89759 |
| K | 39 | 600.30000 | 46473.00000 | 9.152 | 663.69995 | 569.19376 | 567.89675 |
| MG | 24 | 3884.00000 | 290458.00000 | 3.800 | 4045.36127 | 3849.01038 | 3756.22470 |
| MN | 55 | 1426.00000 | 540176.00000 | 3.670 | 1485.19695 | 1404.85156 | 1386.92773 |
| NA | 23 | 4394.00000 | 724777.00000 | 3.457 | 4562.82569 | 4352.43742 | 4267.80562 |
| TI | 47 | 1.45100 | 23.33420 | 62.205 | 1.30203 | 0.63231 | 2.41895 |
| V | 51 | 2.42400 | 1256.78000 | 11.300 | 2.73644 | 2.22361 | 2.31318 |
| **IN-1** | 115 | 55499.80000 | 0.00000 | 0.632 | 55904.70000 | 55292.50000 | 55302.30000 |
| AG | 107 | 0.00002 | 3.33346 | 16621.100 | -0.00229 | 0.00465 | -0.00229 |
| AS | 75 | 3.14700 | 218.00400 | 5.748 | 3.35519 | 3.06049 | 3.02608 |
| BA | 137 | 97.41000 | 15203.30000 | 4.419 | 100.44954 | 92.48034 | 99.28955 |
| CD | 111 | 0.03764 | 8.66677 | 106.084 | 0.03352 | 0.07946 | -0.00007 |
| CO | 59 | 2.14200 | 2813.75000 | 4.598 | 2.23272 | 2.03713 | 2.15520 |
| CU | 63 | 0.61310 | 570.03300 | 9.633 | 0.65473 | 0.63916 | 0.54554 |
| MO | 98 | 0.11740 | 76.66990 | 16.116 | 0.10592 | 0.13927 | 0.10713 |
| NI | 60 | 3.65300 | 1166.77000 | 12.310 | 4.14527 | 3.55184 | 3.26320 |
| SB | 121 | 0.04956 | 30.00120 | 1.126 | 0.04892 | 0.04989 | 0.04988 |
| SN | 120 | -0.00638 | 40.00180 | -800.940 | -0.02607 | 0.05163 | -0.04471 |
| SR | 88 | 85.00000 | 37469.40000 | 0.358 | 84.66997 | 85.26649 | 85.06875 |
| ZN | 66 | 1.80000 | 226.67700 | 24.078 | 2.25674 | 1.39443 | 1.74991 |
| **BI-1** | 209 | 138686.00000 | 0.00000 | 1.025 | 138531.00000 | 137348.00000 | 140179.00000 |
| PB | 208 | 0.01539 | 173.34100 | 34.211 | 0.01989 | 0.00960 | 0.01667 |
| TL | 203 | 0.00286 | 6.66694 | 171.848 | -0.00282 | 0.00579 | 0.00562 |
| U | 238 | 0.02267 | 110.00600 | 33.467 | 0.01820 | 0.01838 | 0.03143 |
| *GE-1* | 72 | 111011.00000 | 0.00000 | 1.520 | 111138.00000 | 109264.00000 | 112630.00000 |
| *TB-1* | 159 | 191937.00000 | 0.00000 | 1.045 | 192974.00000 | 189625.00000 | 193212.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:47:00
Tube Number: 31 Batch: 172021063903A
Sample Number: **9112052** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52753.90000 | 0.00000 | 1.372 | 53580.60000 | 52445.90000 | 52235.10000 |
| AL | 27 | 5.52100 | 160.00900 | 10.572 | 5.79023 | 5.92120 | 4.85110 |
| CA | 44 | 25680.00000 | 72350.10000 | 2.415 | 24999.60216 | 25840.19585 | 26210.00253 |
| CR | 52 | 0.53990 | 463.36000 | 9.226 | 0.51019 | 0.59740 | 0.51211 |
| FE | 57 | 109.60000 | 1623.49000 | 5.926 | 115.81539 | 110.05174 | 102.85176 |
| K | 39 | 969.70000 | 67386.10000 | 2.248 | 946.97296 | 971.67735 | 990.43104 |
| MG | 24 | 27200.00000 | 2136350.00000 | 2.036 | 26561.52481 | 27463.22861 | 27569.30597 |
| MN | 55 | 183.90000 | 73216.90000 | 2.442 | 179.26228 | 184.31193 | 188.21939 |
| NA | 23 | 6741.00000 | 1160350.00000 | 1.998 | 6635.56487 | 6694.44184 | 6892.66399 |
| TI | 47 | 0.40250 | 6.66692 | 86.609 | 0.00000 | 0.60255 | 0.60498 |
| V | 51 | 2.39900 | 1306.78000 | 12.572 | 2.05302 | 2.60476 | 2.54009 |
| **IN-1** | 115 | 56176.00000 | 0.00000 | 0.526 | 56356.60000 | 56336.50000 | 55835.00000 |
| AG | 107 | 0.00227 | 6.66693 | 173.835 | -0.00229 | 0.00453 | 0.00459 |
| AS | 75 | 2.08700 | 156.66900 | 25.208 | 1.73426 | 1.83446 | 2.69139 |
| BA | 137 | 7.38500 | 1170.11000 | 13.337 | 8.31089 | 7.49306 | 6.34995 |
| CD | 111 | 0.04820 | 10.66680 | 13.079 | 0.04431 | 0.05548 | 0.04483 |
| CO | 59 | 0.32040 | 503.36200 | 9.597 | 0.28553 | 0.33215 | 0.34359 |
| CU | 63 | 0.63610 | 596.70600 | 9.420 | 0.56879 | 0.68375 | 0.65562 |
| MO | 98 | 0.55360 | 353.35200 | 20.954 | 0.42021 | 0.60954 | 0.63096 |
| NI | 60 | 7.14200 | 2286.95000 | 13.367 | 6.68628 | 6.50022 | 8.23902 |
| SB | 121 | 0.12660 | 56.66890 | 67.457 | 0.07731 | 0.07735 | 0.22524 |
| SN | 120 | 0.08762 | 90.00410 | 94.887 | -0.00762 | 0.12477 | 0.14571 |
| SR | 88 | 165.80000 | 73951.40000 | 1.693 | 164.67731 | 163.67916 | 168.96199 |
| ZN | 66 | 4.08100 | 490.02800 | 23.146 | 5.02996 | 4.07139 | 3.14074 |
| **BI-1** | 209 | 142690.00000 | 0.00000 | 2.049 | 145109.00000 | 139441.00000 | 143520.00000 |
| PB | 208 | 0.03396 | 250.01200 | 11.475 | 0.03030 | 0.03806 | 0.03354 |
| TL | 203 | 0.01373 | 20.00080 | 59.068 | 0.02162 | 0.01414 | 0.00542 |
| U | 238 | 0.30280 | 1383.48000 | 1.805 | 0.29921 | 0.30017 | 0.30912 |
| *GE-1* | 72 | 115808.00000 | 0.00000 | 1.575 | 117898.00000 | 114536.00000 | 114990.00000 |
| *TB-1* | 159 | 197804.00000 | 0.00000 | 0.727 | 199436.00000 | 196725.00000 | 197251.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:49:00
Tube Number: 32 Batch: 172021063903A
Sample Number: **9112055** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51424.80000 | 0.00000 | 0.664 | 51772.70000 | 51411.50000 | 51090.20000 |
| AL | 27 | 9.25100 | 256.68000 | 15.674 | 10.05190 | 10.12423 | 7.57765 |
| CA | 44 | 8297.00000 | 23077.80000 | 3.857 | 8105.41050 | 8119.53281 | 8666.52120 |
| CR | 52 | 1.12500 | 843.39800 | 6.436 | 1.11148 | 1.06046 | 1.20334 |
| FE | 57 | 17.35000 | 276.68100 | 52.663 | 9.71952 | 27.47647 | 14.85848 |
| K | 39 | 442.60000 | 39881.30000 | 5.300 | 416.11516 | 451.15398 | 460.65790 |
| MG | 24 | 7444.00000 | 570180.00000 | 0.279 | 7461.60124 | 7450.64231 | 7421.46775 |
| MN | 55 | 7.10500 | 2780.42000 | 4.743 | 6.72252 | 7.23434 | 7.35811 |
| NA | 23 | 12170.00000 | 2032110.00000 | 1.164 | 12010.69886 | 12255.21410 | 12257.04094 |
| TI | 47 | 0.61310 | 10.00040 | 99.560 | 1.22076 | 0.00000 | 0.61853 |
| V | 51 | 0.61050 | 340.01800 | 0.707 | 0.60608 | 0.61062 | 0.61471 |
| **IN-1** | 115 | 55740.90000 | 0.00000 | 0.579 | 56106.30000 | 55623.20000 | 55493.20000 |
| AG | 107 | -0.00229 | 0.00000 | 0.000 | -0.00229 | -0.00229 | -0.00229 |
| AS | 75 | 0.28520 | 48.00050 | 101.718 | 0.48004 | -0.04823 | 0.42379 |
| BA | 137 | 6.38300 | 1003.41000 | 2.655 | 6.19226 | 6.43809 | 6.51732 |
| CD | 111 | 0.00361 | 2.66669 | 181.342 | -0.00023 | 0.01116 | -0.00011 |
| CO | 59 | -0.01860 | 66.67000 | -146.452 | 0.00706 | -0.04719 | -0.01567 |
| CU | 63 | 0.57950 | 543.36400 | 5.619 | 0.59460 | 0.54211 | 0.60172 |
| MO | 98 | 0.24970 | 160.00800 | 19.335 | 0.24798 | 0.20228 | 0.29879 |
| NI | 60 | 2.02000 | 656.71100 | 5.752 | 2.14326 | 2.00335 | 1.91253 |
| SB | 121 | 0.03952 | 26.66800 | 114.347 | -0.00985 | 0.07885 | 0.04957 |
| SN | 120 | 0.09504 | 93.33810 | 81.176 | 0.10663 | 0.16574 | 0.01275 |
| SR | 88 | 69.64000 | 30834.60000 | 2.464 | 71.19925 | 69.91145 | 67.79975 |
| ZN | 66 | 13.91000 | 1600.16000 | 4.676 | 14.60976 | 13.32347 | 13.79833 |
| **BI-1** | 209 | 141236.00000 | 0.00000 | 1.502 | 143075.00000 | 138916.00000 | 141718.00000 |
| PB | 208 | 0.02247 | 203.34400 | 36.044 | 0.01314 | 0.02771 | 0.02656 |
| TL | 203 | 0.01101 | 16.66740 | 114.805 | 0.02197 | -0.00282 | 0.01387 |
| U | 238 | 0.02375 | 116.67200 | 23.166 | 0.02855 | 0.02494 | 0.01774 |
| *GE-1* | 72 | 112218.00000 | 0.00000 | 1.853 | 111844.00000 | 114457.00000 | 110351.00000 |
| *TB-1* | 159 | 189762.00000 | 0.00000 | 1.025 | 190369.00000 | 191331.00000 | 187586.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:50:00
Tube Number: 33 Batch: 172021063903A
Sample Number: **9112061** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 55987.40000 | 0.00000 | 3.176 | 58039.40000 | 54906.90000 | 55015.90000 |
| AL | 27 | 197.80000 | 5821.54000 | 6.618 | 204.41816 | 182.75245 | 206.30875 |
| CA | 44 | 14710.00000 | 44175.60000 | 1.430 | 14551.43782 | 14626.46158 | 14947.55760 |
| CR | 52 | 18.03000 | 13227.20000 | 3.296 | 17.34626 | 18.44180 | 18.29301 |
| FE | 57 | 12860.00000 | 198141.00000 | 0.621 | 12768.93577 | 12899.60523 | 12913.94167 |
| K | 39 | 656.30000 | 54785.30000 | 4.646 | 623.01315 | 682.83791 | 663.11642 |
| MG | 24 | 7178.00000 | 598401.00000 | 1.089 | 7114.90770 | 7265.13878 | 7152.64550 |
| MN | 55 | 166.90000 | 70515.80000 | 2.025 | 163.16933 | 167.96614 | 169.69041 |
| NA | 23 | 11660.00000 | 2117110.00000 | 3.762 | 11154.65300 | 11836.48008 | 11973.81012 |
| TI | 47 | 7.33300 | 130.00600 | 19.992 | 7.62273 | 8.63313 | 5.74398 |
| V | 51 | 12.38000 | 7065.49000 | 2.556 | 12.03030 | 12.64717 | 12.46115 |
| **IN-1** | 115 | 59129.40000 | 0.00000 | 2.916 | 61118.90000 | 58084.60000 | 58184.70000 |
| AG | 107 | 0.00421 | 10.00040 | 4.428 | 0.00399 | 0.00432 | 0.00431 |
| AS | 75 | 5.89700 | 406.01000 | 5.591 | 5.52919 | 6.16649 | 5.99457 |
| BA | 137 | 27.49000 | 4574.36000 | 0.685 | 27.68751 | 27.48100 | 27.31148 |
| CD | 111 | 0.02046 | 6.00005 | 52.884 | 0.01941 | 0.01020 | 0.03176 |
| CO | 59 | 3.72700 | 5144.56000 | 1.530 | 3.68634 | 3.79248 | 3.70325 |
| CU | 63 | 0.21590 | 243.34500 | 10.560 | 0.19274 | 0.21658 | 0.23833 |
| MO | 98 | 0.08996 | 63.33580 | 26.534 | 0.08190 | 0.07116 | 0.11682 |
| NI | 60 | 18.59000 | 6235.11000 | 1.069 | 18.58393 | 18.79589 | 18.39873 |
| SB | 121 | 0.01735 | 20.00080 | 325.418 | -0.03908 | 0.07385 | 0.01729 |
| SN | 120 | 0.01791 | 56.66890 | 288.107 | 0.07363 | -0.02821 | 0.00831 |
| SR | 88 | 218.80000 | 102673.00000 | 3.302 | 210.82806 | 224.92803 | 220.61260 |
| ZN | 66 | 2.19900 | 290.01600 | 17.899 | 2.60995 | 1.82555 | 2.16022 |
| **BI-1** | 209 | 146490.00000 | 0.00000 | 3.795 | 152874.00000 | 142711.00000 | 143885.00000 |
| PB | 208 | 0.03229 | 250.01100 | 10.130 | 0.02961 | 0.03132 | 0.03593 |
| TL | 203 | -0.00008 | 3.33347 | -6015.720 | -0.00282 | -0.00282 | 0.00540 |
| U | 238 | 0.07387 | 353.35500 | 19.345 | 0.06569 | 0.09037 | 0.06556 |
| *GE-1* | 72 | 119438.00000 | 0.00000 | 3.804 | 124670.00000 | 116484.00000 | 117160.00000 |
| *TB-1* | 159 | 207156.00000 | 0.00000 | 4.433 | 217680.00000 | 203018.00000 | 200770.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:52:00
Tube Number: 34 Batch: 172021063903A
Sample Number: **9112064** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54340.70000 | 0.00000 | 0.260 | 54333.90000 | 54485.10000 | 54203.10000 |
| AL | 27 | 3.71600 | 113.34000 | 23.474 | 3.60120 | 4.64017 | 2.90707 |
| CA | 44 | 76180.00000 | 220210.00000 | 0.405 | 76517.43063 | 76114.83696 | 75910.40675 |
| CR | 52 | 0.58590 | 510.02900 | 27.701 | 0.74163 | 0.59819 | 0.41774 |
| FE | 57 | 2162.00000 | 32361.30000 | 2.437 | 2219.98720 | 2148.91465 | 2117.08886 |
| K | 39 | 9257.00000 | 498319.00000 | 1.320 | 9367.62397 | 9278.44316 | 9125.99348 |
| MG | 24 | 26160.00000 | 2116930.00000 | 0.790 | 26030.11899 | 26397.00905 | 26048.83137 |
| MN | 55 | 738.50000 | 302815.00000 | 1.720 | 753.18031 | 731.84547 | 730.56958 |
| NA | 23 | 37440.00000 | 6574670.00000 | 0.851 | 37790.91885 | 37367.11645 | 37166.80485 |
| TI | 47 | 0.19390 | 3.33346 | 173.182 | 0.58161 | 0.00000 | 0.00000 |
| V | 51 | 1.95200 | 1100.10000 | 9.862 | 2.06021 | 1.72943 | 2.06532 |
| **IN-1** | 115 | 55894.60000 | 0.00000 | 2.229 | 56448.20000 | 54468.20000 | 56767.50000 |
| AG | 107 | 0.00447 | 10.00040 | 262.017 | -0.00229 | -0.00229 | 0.01800 |
| AS | 75 | 5.74000 | 374.67500 | 3.789 | 5.50046 | 5.92487 | 5.79544 |
| BA | 137 | 103.80000 | 16308.00000 | 2.557 | 101.87860 | 106.82621 | 102.68708 |
| CD | 111 | 0.07527 | 15.33350 | 48.585 | 0.06647 | 0.11544 | 0.04390 |
| CO | 59 | 0.55420 | 800.05800 | 3.991 | 0.56333 | 0.57036 | 0.52901 |
| CU | 63 | 2.22500 | 1970.22000 | 9.987 | 2.45703 | 2.01424 | 2.20384 |
| MO | 98 | 9.39600 | 5914.94000 | 2.672 | 9.16933 | 9.66596 | 9.35259 |
| NI | 60 | 7.52400 | 2396.98000 | 3.686 | 7.20833 | 7.63515 | 7.72852 |
| SB | 121 | 0.40240 | 150.00700 | 28.305 | 0.42572 | 0.50283 | 0.27867 |
| SN | 120 | 0.01858 | 53.33570 | 123.358 | -0.00775 | 0.03411 | 0.02936 |
| SR | 88 | 467.30000 | 207316.00000 | 4.314 | 470.83881 | 485.51374 | 445.65967 |
| ZN | 66 | 1.00500 | 136.67300 | 67.930 | 0.49029 | 1.77987 | 0.74631 |
| **BI-1** | 209 | 137057.00000 | 0.00000 | 1.493 | 138967.00000 | 134898.00000 | 137306.00000 |
| PB | 208 | 0.02583 | 210.01100 | 100.155 | 0.00648 | 0.01579 | 0.05522 |
| TL | 203 | 0.00865 | 13.33390 | 55.616 | 0.01420 | 0.00595 | 0.00579 |
| U | 238 | 0.92850 | 4054.21000 | 1.866 | 0.94445 | 0.93100 | 0.91005 |
| *GE-1* | 72 | 113532.00000 | 0.00000 | 0.972 | 114797.00000 | 112772.00000 | 113026.00000 |
| *TB-1* | 159 | 196085.00000 | 0.00000 | 1.286 | 198818.00000 | 193850.00000 | 195588.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:54:00
Tube Number: 35
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52747.40000 | 0.00000 | 0.685 | 53138.60000 | 52677.50000 | 52426.10000 |
| AL | 27 | 2418.00000 | 66920.00000 | 0.529 | 2411.21830 | 2410.50546 | 2433.02873 |
| CA | 44 | 2639.00000 | 7832.61000 | 1.823 | 2657.77892 | 2675.29130 | 2584.60528 |
| CR | 52 | 249.50000 | 171398.00000 | 0.792 | 251.59649 | 247.68216 | 249.18264 |
| FE | 57 | 2511.00000 | 36482.40000 | 1.479 | 2473.61875 | 2547.87362 | 2512.82613 |
| K | 39 | 2413.00000 | 139875.00000 | 1.642 | 2416.64487 | 2371.34496 | 2450.29523 |
| MG | 24 | 2498.00000 | 196284.00000 | 1.187 | 2481.85341 | 2480.14208 | 2532.34808 |
| MN | 55 | 248.00000 | 98720.60000 | 1.404 | 251.93867 | 246.63770 | 245.37571 |
| NA | 23 | 2325.00000 | 409418.00000 | 1.548 | 2341.33780 | 2284.35566 | 2350.96014 |
| TI | 47 | 253.10000 | 4224.19000 | 6.306 | 252.18934 | 237.59680 | 269.48538 |
| V | 51 | 246.10000 | 132000.00000 | 1.069 | 246.69723 | 243.23661 | 248.39948 |
| **IN-1** | 115 | 55462.80000 | 0.00000 | 1.548 | 56189.50000 | 54515.50000 | 55683.30000 |
| AG | 107 | 26.13000 | 37747.50000 | 1.185 | 26.48456 | 25.92797 | 25.97125 |
| AS | 75 | 252.10000 | 15011.50000 | 2.789 | 252.93752 | 258.73098 | 244.73741 |
| BA | 137 | 253.80000 | 39574.30000 | 2.302 | 254.69147 | 259.17416 | 247.58667 |
| CD | 111 | 25.84000 | 4564.19000 | 2.227 | 25.18162 | 26.09350 | 26.24576 |
| CO | 59 | 233.30000 | 296598.00000 | 2.249 | 236.62576 | 236.10727 | 227.28989 |
| CU | 63 | 255.80000 | 219527.00000 | 1.474 | 256.09337 | 259.35926 | 251.83797 |
| MO | 98 | 25.54000 | 15954.00000 | 0.875 | 25.61645 | 25.71787 | 25.29036 |
| NI | 60 | 257.50000 | 80738.50000 | 0.674 | 255.53459 | 258.78503 | 258.21213 |
| SB | 121 | 26.09000 | 8836.74000 | 2.411 | 26.29371 | 26.59073 | 25.38375 |
| SN | 120 | 26.33000 | 13748.00000 | 3.809 | 25.84678 | 27.48380 | 25.66107 |
| SR | 88 | 25.97000 | 11445.50000 | 2.901 | 25.65248 | 26.83405 | 25.43332 |
| ZN | 66 | 264.20000 | 29825.30000 | 3.732 | 260.77722 | 256.58159 | 275.36742 |
| **BI-1** | 209 | 143885.00000 | 0.00000 | 1.692 | 146577.00000 | 141841.00000 | 143237.00000 |
| PB | 208 | 24.94000 | 97544.90000 | 0.960 | 24.74978 | 25.21137 | 24.87055 |
| TL | 203 | 25.16000 | 30623.40000 | 1.155 | 24.95951 | 25.02447 | 25.49231 |
| U | 238 | 24.22000 | 110776.00000 | 2.095 | 24.80073 | 23.98039 | 23.87275 |
| *GE-1* | 72 | 113404.00000 | 0.00000 | 0.728 | 114345.00000 | 112801.00000 | 113065.00000 |
| *TB-1* | 159 | 194260.00000 | 0.00000 | 1.138 | 196664.00000 | 192314.00000 | 193802.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:55:00
Tube Number: 36
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51218.10000 | 0.00000 | 1.466 | 50539.00000 | 51091.00000 | 52024.10000 |
| AL | 27 | 2.22700 | 66.66940 | 20.732 | 2.75933 | 1.98050 | 1.94031 |
| CA | 44 | -9.50000 | 403.35800 | -329.895 | -23.74060 | 26.43426 | -31.19493 |
| CR | 52 | 0.46920 | 403.35900 | 24.318 | 0.45782 | 0.36119 | 0.58857 |
| FE | 57 | 2.97700 | 73.33690 | 47.498 | 1.38151 | 3.47673 | 4.07329 |
| K | 39 | -25.89000 | 16871.40000 | -27.717 | -29.37672 | -17.64135 | -30.66233 |
| MG | 24 | 2.93600 | 286.68000 | 21.250 | 2.23927 | 3.12633 | 3.44285 |
| MN | 55 | 0.17010 | 90.00440 | 78.954 | 0.25206 | 0.01517 | 0.24308 |
| NA | 23 | -1.44400 | 13250.50000 | -42.403 | -0.75885 | -1.93729 | -1.63700 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.12610 | 86.66990 | 44.726 | 0.11579 | 0.07561 | 0.18698 |
| **IN-1** | 115 | 55202.30000 | 0.00000 | 1.700 | 54217.10000 | 56086.30000 | 55303.60000 |
| AG | 107 | 0.02781 | 43.33500 | 37.648 | 0.01896 | 0.02509 | 0.03937 |
| AS | 75 | 0.28120 | 47.33380 | 70.626 | 0.10167 | 0.24743 | 0.49453 |
| BA | 137 | 0.06553 | 13.33390 | 153.365 | 0.17561 | 0.04220 | -0.02122 |
| CD | 111 | 0.02269 | 6.00006 | 86.558 | 0.01175 | 0.01097 | 0.04537 |
| CO | 59 | 0.03979 | 140.00600 | 49.284 | 0.01782 | 0.04600 | 0.05554 |
| CU | 63 | 0.12550 | 150.00600 | 26.749 | 0.15218 | 0.08781 | 0.13651 |
| MO | 98 | 0.02172 | 16.66730 | 88.260 | 0.04385 | 0.01055 | 0.01077 |
| NI | 60 | 0.09662 | 50.00220 | 88.915 | 0.13147 | -0.00124 | 0.15962 |
| SB | 121 | 0.06988 | 36.66810 | 24.957 | 0.08190 | 0.07787 | 0.04987 |
| SN | 120 | -0.00637 | 40.00160 | -510.435 | -0.04393 | 0.01173 | 0.01308 |
| SR | 88 | 0.03804 | 26.66770 | 90.536 | 0.00070 | 0.04484 | 0.06856 |
| ZN | 66 | 0.03133 | 26.66790 | 173.604 | 0.06537 | -0.03140 | 0.06003 |
| **BI-1** | 209 | 142766.00000 | 0.00000 | 1.998 | 142811.00000 | 139890.00000 | 145596.00000 |
| PB | 208 | 0.00127 | 123.33900 | 750.432 | -0.00742 | 0.01150 | -0.00027 |
| TL | 203 | 0.02479 | 33.33470 | 19.334 | 0.03030 | 0.02254 | 0.02154 |
| U | 238 | 0.01684 | 86.67060 | 61.639 | 0.02861 | 0.00901 | 0.01289 |
| *GE-1* | 72 | 112382.00000 | 0.00000 | 1.188 | 111320.00000 | 111945.00000 | 113881.00000 |
| *TB-1* | 159 | 192818.00000 | 0.00000 | 3.267 | 186405.00000 | 193053.00000 | 198997.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:57:00
Tube Number: 37 Batch: 172021063903A
Sample Number: **9112067** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 52519.70000 | 0.00000 | 1.625 | 51542.50000 | 52897.70000 | 53118.90000 |
| AL | 27 | 4.45300 | 130.00600 | 41.545 | 3.44030 | 6.58905 | 3.33054 |
| CA | 44 | 63970.00000 | 178716.00000 | 3.792 | 66738.80211 | 62214.80932 | 62956.21613 |
| CR | 52 | 0.57360 | 483.36300 | 26.325 | 0.74439 | 0.51853 | 0.45795 |
| FE | 57 | 8781.00000 | 126896.00000 | 3.101 | 9058.76437 | 8514.58612 | 8769.40711 |
| K | 39 | 9758.00000 | 506616.00000 | 0.461 | 9807.82871 | 9720.96552 | 9744.25023 |
| MG | 24 | 18270.00000 | 1428310.00000 | 2.232 | 18706.50079 | 18188.51486 | 17902.03378 |
| MN | 55 | 720.30000 | 285368.00000 | 2.697 | 742.74937 | 708.57754 | 709.62639 |
| NA | 23 | 30520.00000 | 5181810.00000 | 0.624 | 30725.64454 | 30483.39782 | 30350.16209 |
| TI | 47 | 0.81140 | 13.33380 | 115.677 | 1.83931 | 0.00000 | 0.59491 |
| V | 51 | 1.62800 | 890.06700 | 5.766 | 1.73499 | 1.55934 | 1.58973 |
| **IN-1** | 115 | 54395.00000 | 0.00000 | 3.857 | 54167.10000 | 52420.30000 | 56597.60000 |
| AG | 107 | 0.00470 | 10.00040 | 150.969 | 0.01189 | -0.00229 | 0.00449 |
| AS | 75 | 9.96400 | 610.01900 | 6.314 | 9.88937 | 10.62789 | 9.37647 |
| BA | 137 | 70.56000 | 10791.80000 | 1.184 | 69.81691 | 71.46421 | 70.40201 |
| CD | 111 | 0.81590 | 142.66900 | 21.179 | 0.95116 | 0.87538 | 0.62124 |
| CO | 59 | 5.51700 | 6962.12000 | 1.093 | 5.49872 | 5.58432 | 5.46790 |
| CU | 63 | 8.98900 | 7599.15000 | 6.604 | 8.56610 | 9.66744 | 8.73305 |
| MO | 98 | 27.87000 | 17042.10000 | 6.896 | 28.18193 | 29.61320 | 25.80876 |
| NI | 60 | 7.14600 | 2213.61000 | 6.301 | 7.41654 | 7.39574 | 6.62637 |
| SB | 121 | 1.41100 | 480.03100 | 10.829 | 1.32324 | 1.58763 | 1.32269 |
| SN | 120 | 0.11690 | 103.33900 | 88.110 | 0.17243 | -0.00195 | 0.18028 |
| SR | 88 | 415.90000 | 179464.00000 | 3.849 | 417.22228 | 431.18858 | 399.25537 |
| ZN | 66 | 491.70000 | 54338.80000 | 4.354 | 494.25985 | 511.68178 | 469.09860 |
| **BI-1** | 209 | 136401.00000 | 0.00000 | 1.589 | 137836.00000 | 133908.00000 | 137458.00000 |
| PB | 208 | 0.20540 | 873.38400 | 10.905 | 0.20990 | 0.22521 | 0.18108 |
| TL | 203 | 0.02024 | 26.66780 | 48.162 | 0.03149 | 0.01484 | 0.01438 |
| U | 238 | 0.72190 | 3137.23000 | 5.692 | 0.70558 | 0.76865 | 0.69149 |
| *GE-1* | 72 | 112090.00000 | 0.00000 | 0.496 | 112471.00000 | 112348.00000 | 111452.00000 |
| *TB-1* | 159 | 191552.00000 | 0.00000 | 0.299 | 191169.00000 | 191277.00000 | 192210.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:59:00
Tube Number: 38 Batch: 172021063903A
Sample Number: **9112067** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 10.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52064.80000 | 0.00000 | 4.345 | 49565.00000 | 52657.90000 | 53971.60000 |
| AL | 27 | 3.48400 | 103.33800 | 43.025 | 2.04939 | 3.36196 | 5.03991 |
| CA | 44 | 6836.00000 | 19294.90000 | 6.416 | 7339.01402 | 6633.58813 | 6534.76961 |
| CR | 52 | 0.51410 | 440.02500 | 6.221 | 0.50047 | 0.55069 | 0.49128 |
| FE | 57 | 946.80000 | 13574.30000 | 6.327 | 1014.58731 | 900.99206 | 924.84217 |
| K | 39 | 1028.00000 | 69283.40000 | 8.335 | 1120.25335 | 1012.79698 | 950.93100 |
| MG | 24 | 1877.00000 | 145356.00000 | 5.292 | 1991.17061 | 1813.95331 | 1824.74917 |
| MN | 55 | 79.32000 | 31114.60000 | 7.537 | 85.88422 | 77.88459 | 74.18943 |
| NA | 23 | 3168.00000 | 544606.00000 | 5.713 | 3366.86214 | 3122.84615 | 3013.21266 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.24850 | 153.34100 | 18.459 | 0.19824 | 0.25898 | 0.28815 |
| **IN-1** | 115 | 56229.90000 | 0.00000 | 6.425 | 52058.50000 | 58245.50000 | 58385.80000 |
| AG | 107 | 0.03660 | 56.66910 | 29.727 | 0.04197 | 0.02408 | 0.04375 |
| AS | 75 | 0.96140 | 88.66760 | 21.146 | 1.16722 | 0.95615 | 0.76078 |
| BA | 137 | 8.57100 | 1360.13000 | 4.666 | 8.24708 | 9.01798 | 8.44795 |
| CD | 111 | 0.08091 | 16.66680 | 39.402 | 0.06098 | 0.06407 | 0.11769 |
| CO | 59 | 0.64280 | 913.40800 | 20.395 | 0.76774 | 0.50630 | 0.65444 |
| CU | 63 | 1.04600 | 950.07100 | 13.776 | 1.17862 | 0.89269 | 1.06754 |
| MO | 98 | 2.98900 | 1893.55000 | 3.857 | 3.09985 | 2.99875 | 2.86985 |
| NI | 60 | 0.72860 | 253.34600 | 14.137 | 0.61542 | 0.81663 | 0.75390 |
| SB | 121 | 0.15510 | 66.66980 | 18.214 | 0.14992 | 0.12984 | 0.18561 |
| SN | 120 | 0.07026 | 80.00400 | 81.853 | 0.12140 | 0.08137 | 0.00799 |
| SR | 88 | 43.45000 | 19338.70000 | 8.670 | 47.72102 | 42.02211 | 40.60295 |
| ZN | 66 | 52.10000 | 5948.26000 | 15.741 | 59.33181 | 53.76761 | 43.18745 |
| **BI-1** | 209 | 142358.00000 | 0.00000 | 4.526 | 134973.00000 | 146830.00000 | 145271.00000 |
| PB | 208 | 0.01353 | 170.00900 | 91.205 | 0.01850 | -0.00052 | 0.02262 |
| TL | 203 | -0.00013 | 3.33347 | -3477.190 | -0.00282 | 0.00523 | -0.00282 |
| U | 238 | 0.07924 | 366.69100 | 25.972 | 0.09335 | 0.05563 | 0.08874 |
| *GE-1* | 72 | 114780.00000 | 0.00000 | 5.195 | 108265.00000 | 116109.00000 | 119966.00000 |
| *TB-1* | 159 | 191324.00000 | 0.00000 | 6.894 | 176409.00000 | 201438.00000 | 196126.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:01:00
Tube Number: 39
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 50793.00000 | 0.00000 | 1.607 | 51111.10000 | 51402.00000 | 49865.80000 |
| AL | 27 | 211.70000 | 5648.06000 | 2.910 | 206.78879 | 218.60367 | 209.66303 |
| CA | 44 | 356.00000 | 1386.80000 | 20.565 | 302.81570 | 439.49004 | 325.65903 |
| CR | 52 | 4.75100 | 3230.51000 | 7.640 | 5.14157 | 4.42399 | 4.68775 |
| FE | 57 | 199.40000 | 2820.42000 | 8.551 | 190.50092 | 219.11730 | 188.75378 |
| K | 39 | 405.70000 | 37604.70000 | 2.679 | 413.76152 | 393.31635 | 409.92336 |
| MG | 24 | 209.40000 | 15903.40000 | 1.716 | 208.21402 | 213.44150 | 206.55689 |
| MN | 55 | 4.18200 | 1626.84000 | 4.983 | 3.98314 | 4.39875 | 4.16394 |
| NA | 23 | 372.60000 | 74414.40000 | 2.450 | 372.21398 | 381.90664 | 363.66189 |
| TI | 47 | 31.15000 | 500.02900 | 19.952 | 34.62453 | 23.97690 | 34.85507 |
| V | 51 | 1.10300 | 590.03800 | 4.035 | 1.15334 | 1.07003 | 1.08449 |
| **IN-1** | 115 | 56456.50000 | 0.00000 | 0.458 | 56749.10000 | 56257.70000 | 56362.80000 |
| AG | 107 | 1.07500 | 1583.50000 | 5.998 | 1.10069 | 1.00112 | 1.12189 |
| AS | 75 | 3.64700 | 252.00500 | 10.779 | 4.08702 | 3.33089 | 3.52242 |
| BA | 137 | 4.07400 | 650.04700 | 12.059 | 4.42937 | 4.27858 | 3.51313 |
| CD | 111 | 1.06800 | 194.00300 | 11.779 | 1.11770 | 1.16106 | 0.92481 |
| CO | 59 | 0.90350 | 1260.12000 | 2.947 | 0.87535 | 0.90688 | 0.92829 |
| CU | 63 | 3.75900 | 3327.22000 | 14.371 | 3.35499 | 4.37295 | 3.55039 |
| MO | 98 | 1.14300 | 730.05300 | 19.878 | 1.19981 | 1.33662 | 0.89288 |
| NI | 60 | 3.91500 | 1270.11000 | 7.719 | 4.17617 | 3.58415 | 3.98546 |
| SB | 121 | 1.89700 | 666.71200 | 13.400 | 1.95478 | 2.11795 | 1.61931 |
| SN | 120 | 4.20700 | 2273.62000 | 2.852 | 4.23457 | 4.31012 | 4.07508 |
| SR | 88 | 1.73200 | 786.72300 | 7.379 | 1.86391 | 1.72369 | 1.60869 |
| ZN | 66 | 30.29000 | 3500.61000 | 8.300 | 29.78618 | 33.02174 | 28.07133 |
| **BI-1** | 209 | 139975.00000 | 0.00000 | 1.735 | 141952.00000 | 140708.00000 | 137265.00000 |
| PB | 208 | 1.98500 | 7664.65000 | 5.068 | 2.10017 | 1.94358 | 1.91259 |
| TL | 203 | 1.05900 | 1256.79000 | 2.472 | 1.02994 | 1.08111 | 1.06521 |
| U | 238 | 1.00100 | 4464.38000 | 0.791 | 1.00215 | 0.99315 | 1.00892 |
| *GE-1* | 72 | 113953.00000 | 0.00000 | 3.118 | 117938.00000 | 112804.00000 | 111117.00000 |
| *TB-1* | 159 | 189877.00000 | 0.00000 | 2.735 | 193301.00000 | 192428.00000 | 183901.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:02:00
Tube Number: 40
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 47611.10000 | 0.00000 | 3.524 | 48229.90000 | 48892.20000 | 45711.10000 |
| AL | 27 | 106500.00000 | 2657880.00000 | 3.116 | 104540.60082 | 104613.86802 | 110326.09448 |
| CA | 44 | 306700.00000 | 774867.00000 | 4.294 | 301924.61646 | 296650.47988 | 321639.53625 |
| CR | 52 | 1.72500 | 1150.09000 | 16.875 | 1.88803 | 1.38921 | 1.89867 |
| FE | 57 | 260600.00000 | 3411420.00000 | 3.856 | 254301.87646 | 255348.05867 | 272211.91375 |
| K | 39 | 113900.00000 | 5176060.00000 | 3.570 | 111985.51230 | 111107.81340 | 118547.91127 |
| MG | 24 | 105000.00000 | 7437390.00000 | 3.286 | 102530.26294 | 103469.08886 | 108920.52981 |
| MN | 55 | 92.96000 | 33390.40000 | 3.865 | 89.66825 | 92.42205 | 96.79313 |
| NA | 23 | 254200.00000 | 39004700.00000 | 3.575 | 248773.18521 | 249140.26297 | 264694.16023 |
| TI | 47 | 2195.00000 | 33056.10000 | 3.549 | 2119.59353 | 2191.31215 | 2275.22547 |
| V | 51 | 0.11860 | 76.67060 | 26.669 | 0.08246 | 0.14116 | 0.13224 |
| **IN-1** | 115 | 51990.80000 | 0.00000 | 3.593 | 51977.60000 | 53865.30000 | 50129.50000 |
| AG | 107 | 0.34680 | 473.36100 | 6.840 | 0.35970 | 0.36128 | 0.31943 |
| AS | 75 | 0.59550 | 62.00060 | 16.217 | 0.48750 | 0.62553 | 0.67351 |
| BA | 137 | 1.19100 | 176.67500 | 12.326 | 1.21065 | 1.03540 | 1.32701 |
| CD | 111 | 0.54580 | 92.00100 | 20.319 | 0.65330 | 0.43174 | 0.55249 |
| CO | 59 | 0.80420 | 1043.42000 | 5.308 | 0.78583 | 0.85306 | 0.77386 |
| CU | 63 | 0.99640 | 840.06800 | 12.776 | 1.06863 | 0.84941 | 1.07119 |
| MO | 98 | 2231.00000 | 1304870.00000 | 4.223 | 2212.22483 | 2147.80488 | 2333.35912 |
| NI | 60 | 1.24000 | 383.35500 | 6.660 | 1.33135 | 1.21676 | 1.17104 |
| SB | 121 | 1.00800 | 333.35000 | 29.375 | 0.74963 | 1.33087 | 0.94227 |
| SN | 120 | 0.05199 | 66.67010 | 160.858 | 0.12171 | 0.07498 | -0.04073 |
| SR | 88 | 10.02000 | 4147.50000 | 5.429 | 10.61628 | 9.89251 | 9.55088 |
| ZN | 66 | 3.20400 | 360.02000 | 6.779 | 3.19993 | 2.98923 | 3.42367 |
| **BI-1** | 209 | 120743.00000 | 0.00000 | 0.967 | 120699.00000 | 121931.00000 | 119599.00000 |
| PB | 208 | 0.21730 | 813.38000 | 11.574 | 0.21964 | 0.24128 | 0.19114 |
| TL | 203 | 0.10830 | 113.33900 | 34.848 | 0.13431 | 0.06505 | 0.12569 |
| U | 238 | 0.07158 | 283.34800 | 4.568 | 0.07076 | 0.07518 | 0.06880 |
| *GE-1* | 72 | 102971.00000 | 0.00000 | 1.459 | 103172.00000 | 104363.00000 | 101378.00000 |
| *TB-1* | 159 | 169124.00000 | 0.00000 | 0.590 | 168234.00000 | 170203.00000 | 168935.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:04:00
Tube Number: 41
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 48340.10000 | 0.00000 | 1.996 | 47226.30000 | 48912.40000 | 48881.70000 |
| AL | 27 | 106500.00000 | 2698910.00000 | 3.066 | 110210.53594 | 104173.52731 | 105035.28575 |
| CA | 44 | 299800.00000 | 769486.00000 | 1.500 | 304953.59346 | 297401.00794 | 296948.16042 |
| CR | 52 | 213.70000 | 134500.00000 | 3.183 | 221.54396 | 209.35220 | 210.21456 |
| FE | 57 | 258200.00000 | 3432750.00000 | 3.111 | 265903.00180 | 249865.56350 | 258705.35637 |
| K | 39 | 113400.00000 | 5237620.00000 | 1.939 | 115277.48088 | 110993.72046 | 113996.32245 |
| MG | 24 | 104600.00000 | 7529780.00000 | 2.100 | 106967.68274 | 104297.86426 | 102609.09483 |
| MN | 55 | 300.40000 | 109534.00000 | 2.871 | 310.30896 | 294.74852 | 296.08064 |
| NA | 23 | 254900.00000 | 39736400.00000 | 0.680 | 256681.81801 | 253223.44552 | 254726.32931 |
| TI | 47 | 2216.00000 | 33891.50000 | 3.491 | 2280.01872 | 2130.17610 | 2238.45683 |
| V | 51 | 222.40000 | 109287.00000 | 2.607 | 227.42931 | 223.68839 | 216.05565 |
| **IN-1** | 115 | 51546.00000 | 0.00000 | 2.402 | 52570.00000 | 50169.90000 | 51898.00000 |
| AG | 107 | 47.70000 | 64023.30000 | 2.052 | 46.86966 | 48.78205 | 47.46275 |
| AS | 75 | 100.40000 | 5573.90000 | 1.373 | 99.31608 | 101.96985 | 99.99680 |
| BA | 137 | 1.56800 | 230.01100 | 27.200 | 1.80576 | 1.82226 | 1.07545 |
| CD | 111 | 94.13000 | 15444.20000 | 3.968 | 94.89282 | 97.42770 | 90.07433 |
| CO | 59 | 185.90000 | 219515.00000 | 1.843 | 184.12765 | 189.79645 | 183.62815 |
| CU | 63 | 198.60000 | 158430.00000 | 2.745 | 196.73781 | 204.80727 | 194.41960 |
| MO | 98 | 2299.00000 | 1333710.00000 | 2.494 | 2294.70364 | 2357.66070 | 2243.18549 |
| NI | 60 | 199.40000 | 58107.90000 | 2.157 | 202.51163 | 201.18636 | 194.48613 |
| SB | 121 | 1.00900 | 330.01700 | 10.238 | 1.11508 | 0.90880 | 1.00362 |
| SN | 120 | 0.07612 | 76.67050 | 88.282 | 0.05861 | 0.15034 | 0.01940 |
| SR | 88 | 10.86000 | 4450.94000 | 10.479 | 11.31114 | 11.70274 | 9.56440 |
| ZN | 66 | 91.01000 | 9550.56000 | 7.572 | 90.20926 | 98.26342 | 84.55163 |
| **BI-1** | 209 | 121441.00000 | 0.00000 | 1.860 | 123792.00000 | 119288.00000 | 121244.00000 |
| PB | 208 | 0.25550 | 943.38900 | 1.244 | 0.25802 | 0.25657 | 0.25193 |
| TL | 203 | 0.12060 | 126.67300 | 17.388 | 0.10223 | 0.11611 | 0.14345 |
| U | 238 | 0.09698 | 383.35900 | 16.859 | 0.09944 | 0.07954 | 0.11196 |
| *GE-1* | 72 | 105369.00000 | 0.00000 | 1.475 | 106933.00000 | 103826.00000 | 105348.00000 |
| *TB-1* | 159 | 169409.00000 | 0.00000 | 0.766 | 170904.00000 | 168581.00000 | 168742.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:06:00
Tube Number: 42
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54210.20000 | 0.00000 | 1.561 | 55187.60000 | 53721.80000 | 53721.20000 |
| AL | 27 | 35.61000 | 1020.09000 | 2.678 | 36.01358 | 36.29357 | 34.51954 |
| CA | 44 | 102.40000 | 750.05400 | 57.061 | 135.64215 | 34.93663 | 136.64327 |
| CR | 52 | 0.42700 | 396.68900 | 3.787 | 0.43573 | 0.40839 | 0.43700 |
| FE | 57 | 99.59000 | 1516.81000 | 12.772 | 86.69268 | 99.94349 | 112.12270 |
| K | 39 | 20.15000 | 20243.10000 | 76.427 | 37.05563 | 6.90641 | 16.50204 |
| MG | 24 | 37.13000 | 3063.80000 | 3.711 | 37.03063 | 35.81309 | 38.56386 |
| MN | 55 | 0.28770 | 143.33900 | 25.898 | 0.29760 | 0.35678 | 0.20874 |
| NA | 23 | 87.61000 | 29604.10000 | 9.454 | 95.15938 | 88.93379 | 78.75140 |
| TI | 47 | 2.53300 | 43.33500 | 54.165 | 1.71783 | 4.11763 | 1.76472 |
| V | 51 | 0.04489 | 46.66840 | 48.407 | 0.03138 | 0.03333 | 0.06995 |
| **IN-1** | 115 | 57934.90000 | 0.00000 | 2.720 | 59191.00000 | 56166.70000 | 58446.90000 |
| AG | 107 | 0.02435 | 40.00160 | 30.255 | 0.01717 | 0.03189 | 0.02399 |
| AS | 75 | 0.20190 | 44.66710 | 26.256 | 0.14420 | 0.21309 | 0.24845 |
| BA | 137 | 0.03913 | 10.00070 | 153.591 | 0.09898 | -0.02122 | 0.03964 |
| CD | 111 | 0.05787 | 12.66680 | 64.265 | 0.04164 | 0.10042 | 0.03156 |
| CO | 59 | 0.09721 | 223.34500 | 37.465 | 0.08412 | 0.06915 | 0.13837 |
| CU | 63 | 0.11960 | 153.34000 | 50.426 | 0.13515 | 0.05310 | 0.17069 |
| MO | 98 | 1.80100 | 1176.77000 | 13.309 | 1.52521 | 1.92388 | 1.95501 |
| NI | 60 | 0.08882 | 50.00220 | 102.770 | -0.00455 | 0.09317 | 0.17785 |
| SB | 121 | 0.00794 | 16.66730 | 405.086 | -0.01137 | -0.00988 | 0.04509 |
| SN | 120 | 0.02804 | 60.00240 | 186.662 | -0.01124 | 0.08746 | 0.00790 |
| SR | 88 | 0.15980 | 83.33730 | 44.337 | 0.08386 | 0.22413 | 0.17141 |
| ZN | 66 | 0.33280 | 63.33630 | 54.658 | 0.12560 | 0.40621 | 0.46645 |
| **BI-1** | 209 | 148511.00000 | 0.00000 | 1.309 | 150373.00000 | 146495.00000 | 148664.00000 |
| PB | 208 | -0.00174 | 116.67200 | -337.428 | 0.00367 | -0.00800 | -0.00090 |
| TL | 203 | 0.01321 | 20.00080 | 106.510 | 0.00504 | 0.02946 | 0.00513 |
| U | 238 | 0.00690 | 43.33540 | 75.515 | 0.01241 | 0.00206 | 0.00623 |
| *GE-1* | 72 | 117733.00000 | 0.00000 | 1.085 | 119200.00000 | 116868.00000 | 117132.00000 |
| *TB-1* | 159 | 199667.00000 | 0.00000 | 1.913 | 203953.00000 | 198423.00000 | 196626.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:07:00
Tube Number: 43
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53276.10000 | 0.00000 | 1.824 | 54123.10000 | 53489.90000 | 52215.10000 |
| AL | 27 | 2479.00000 | 69298.80000 | 0.484 | 2489.15141 | 2465.94035 | 2482.84887 |
| CA | 44 | 2512.00000 | 7552.44000 | 2.084 | 2571.76221 | 2473.67125 | 2490.98337 |
| CR | 52 | 252.70000 | 175324.00000 | 0.691 | 250.68240 | 253.57683 | 253.82417 |
| FE | 57 | 2510.00000 | 36829.90000 | 1.166 | 2510.07857 | 2481.18539 | 2539.70721 |
| K | 39 | 2516.00000 | 146520.00000 | 0.711 | 2498.29748 | 2534.07904 | 2516.03691 |
| MG | 24 | 2500.00000 | 198421.00000 | 1.263 | 2525.20582 | 2464.68201 | 2510.53626 |
| MN | 55 | 254.30000 | 102254.00000 | 1.354 | 258.23768 | 251.85213 | 252.81300 |
| NA | 23 | 2359.00000 | 419223.00000 | 1.603 | 2343.69497 | 2331.50653 | 2402.26072 |
| TI | 47 | 245.80000 | 4144.17000 | 5.008 | 238.25749 | 259.99056 | 239.09448 |
| V | 51 | 253.50000 | 137356.00000 | 0.712 | 255.61758 | 252.60328 | 252.39108 |
| **IN-1** | 115 | 57193.30000 | 0.00000 | 3.906 | 59676.90000 | 56556.50000 | 55346.60000 |
| AG | 107 | 25.63000 | 38148.70000 | 3.297 | 24.70452 | 25.82930 | 26.35917 |
| AS | 75 | 252.50000 | 15492.70000 | 3.115 | 243.41847 | 257.27492 | 256.79751 |
| BA | 137 | 252.90000 | 40651.10000 | 2.102 | 248.23705 | 251.84113 | 258.70043 |
| CD | 111 | 26.19000 | 4770.27000 | 1.216 | 25.84708 | 26.47376 | 26.25794 |
| CO | 59 | 232.60000 | 304893.00000 | 0.939 | 230.30697 | 233.03937 | 234.62211 |
| CU | 63 | 259.20000 | 229355.00000 | 2.420 | 252.54084 | 264.97908 | 260.17880 |
| MO | 98 | 25.86000 | 16641.50000 | 3.485 | 24.81949 | 26.44070 | 26.31184 |
| NI | 60 | 256.90000 | 83008.80000 | 2.369 | 249.84980 | 260.39424 | 260.39073 |
| SB | 121 | 25.69000 | 8970.24000 | 2.303 | 25.27765 | 25.42668 | 26.36882 |
| SN | 120 | 27.02000 | 14552.30000 | 1.054 | 26.99411 | 26.75302 | 27.32062 |
| SR | 88 | 25.06000 | 11392.30000 | 1.380 | 24.87064 | 25.46382 | 24.85937 |
| ZN | 66 | 258.00000 | 30005.90000 | 2.503 | 251.88685 | 257.34176 | 264.75276 |
| **BI-1** | 209 | 145533.00000 | 0.00000 | 3.122 | 150559.00000 | 144320.00000 | 141719.00000 |
| PB | 208 | 25.12000 | 99340.00000 | 2.112 | 24.51106 | 25.42867 | 25.43142 |
| TL | 203 | 25.00000 | 30777.30000 | 1.148 | 24.79562 | 24.88209 | 25.33046 |
| U | 238 | 24.29000 | 112294.00000 | 2.022 | 23.72696 | 24.49289 | 24.64249 |
| *GE-1* | 72 | 116832.00000 | 0.00000 | 1.505 | 118858.00000 | 115708.00000 | 115930.00000 |
| *TB-1* | 159 | 201176.00000 | 0.00000 | 1.652 | 204900.00000 | 200116.00000 | 198512.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:09:00
Tube Number: 44
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51011.20000 | 0.00000 | 3.337 | 52878.60000 | 49545.20000 | 50609.90000 |
| AL | 27 | 4.46700 | 126.67200 | 9.705 | 4.78896 | 3.97416 | 4.63847 |
| CA | 44 | 31.31000 | 513.36700 | 143.724 | 62.95389 | 51.19822 | -20.20715 |
| CR | 52 | 0.69870 | 553.37000 | 15.787 | 0.72218 | 0.79535 | 0.57843 |
| FE | 57 | 6.59100 | 123.34000 | 18.905 | 5.34636 | 6.58838 | 7.83942 |
| K | 39 | -4.91900 | 17795.90000 | -510.470 | -31.60376 | 18.23700 | -1.39225 |
| MG | 24 | 5.50000 | 480.02900 | 16.204 | 5.27904 | 4.74038 | 6.48117 |
| MN | 55 | 0.22560 | 110.00500 | 50.044 | 0.11280 | 0.33863 | 0.22543 |
| NA | 23 | 11.64000 | 15342.80000 | 27.827 | 10.57501 | 15.27665 | 9.06616 |
| TI | 47 | 1.03200 | 16.66730 | 34.409 | 1.19523 | 1.27564 | 0.62440 |
| V | 51 | 0.21910 | 133.33900 | 44.185 | 0.10891 | 0.25789 | 0.29050 |
| **IN-1** | 115 | 55637.40000 | 0.00000 | 3.906 | 57874.60000 | 55503.60000 | 53534.00000 |
| AG | 107 | 0.03242 | 50.00220 | 45.620 | 0.03088 | 0.01846 | 0.04792 |
| AS | 75 | 0.21010 | 43.33370 | 38.610 | 0.12701 | 0.28909 | 0.21418 |
| BA | 137 | 0.10500 | 20.00110 | 117.238 | 0.22464 | -0.02122 | 0.11167 |
| CD | 111 | 0.03363 | 8.00007 | 30.598 | 0.04284 | 0.02253 | 0.03551 |
| CO | 59 | 0.18190 | 320.01600 | 38.895 | 0.14044 | 0.14159 | 0.26355 |
| CU | 63 | 0.16580 | 186.67600 | 12.732 | 0.18405 | 0.17077 | 0.14269 |
| MO | 98 | 0.12830 | 83.33660 | 17.779 | 0.10213 | 0.13872 | 0.14402 |
| NI | 60 | 0.28530 | 110.00500 | 28.735 | 0.33311 | 0.19069 | 0.33228 |
| SB | 121 | 0.07853 | 40.00180 | 34.203 | 0.10259 | 0.04955 | 0.08345 |
| SN | 120 | 0.06490 | 76.67050 | 127.442 | 0.04561 | -0.00646 | 0.15556 |
| SR | 88 | 0.03671 | 26.66770 | 120.676 | 0.08628 | 0.02286 | 0.00100 |
| ZN | 66 | -0.05826 | 16.66730 | -238.757 | -0.03682 | -0.20680 | 0.06884 |
| **BI-1** | 209 | 143143.00000 | 0.00000 | 2.241 | 146537.00000 | 142732.00000 | 140161.00000 |
| PB | 208 | 0.01563 | 180.00800 | 26.334 | 0.01965 | 0.01583 | 0.01142 |
| TL | 203 | 0.05502 | 70.00340 | 2.346 | 0.05366 | 0.05516 | 0.05623 |
| U | 238 | 0.02272 | 113.33900 | 13.319 | 0.01923 | 0.02422 | 0.02470 |
| *GE-1* | 72 | 114205.00000 | 0.00000 | 3.393 | 118444.00000 | 113326.00000 | 110844.00000 |
| *TB-1* | 159 | 192067.00000 | 0.00000 | 2.434 | 196837.00000 | 191870.00000 | 187495.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:11:00
Tube Number: 45 Batch: 172001063902A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 53782.10000 | 0.00000 | 0.913 | 54003.10000 | 53219.50000 | 54123.70000 |
| AL | 27 | 7.41900 | 216.67800 | 6.490 | 7.86097 | 6.90591 | 7.49060 |
| CA | 44 | -3.78200 | 440.02600 | -128.080 | -4.44120 | 1.35781 | -8.26376 |
| CR | 52 | 0.48920 | 436.69000 | 17.774 | 0.41979 | 0.58675 | 0.46114 |
| FE | 57 | 6.78700 | 133.33900 | 24.031 | 6.53477 | 5.29780 | 8.52977 |
| K | 39 | -8.99400 | 18583.80000 | -77.885 | -1.30401 | -15.00923 | -10.67182 |
| MG | 24 | 4.84400 | 453.35800 | 7.987 | 4.40595 | 4.98765 | 5.13877 |
| MN | 55 | 0.16710 | 93.33740 | 46.733 | 0.25642 | 0.11168 | 0.13325 |
| NA | 23 | 6.08400 | 15222.60000 | 49.244 | 8.88365 | 2.92343 | 6.44365 |
| TI | 47 | 0.19790 | 3.33346 | 173.219 | 0.00000 | 0.59379 | 0.00000 |
| V | 51 | 0.02103 | 33.33460 | 49.120 | 0.03295 | 0.01554 | 0.01461 |
| **IN-1** | 115 | 59123.80000 | 0.00000 | 0.925 | 59743.00000 | 58708.10000 | 58920.30000 |
| AG | 107 | 0.00421 | 10.00040 | 155.294 | 0.00414 | 0.01079 | -0.00229 |
| AS | 75 | 0.11260 | 40.00040 | 144.583 | 0.23182 | -0.07292 | 0.17893 |
| BA | 137 | 0.05872 | 13.33390 | 117.916 | 0.09786 | -0.02122 | 0.09952 |
| CD | 111 | 0.00633 | 3.33336 | 196.178 | -0.00091 | 0.02067 | -0.00077 |
| CO | 59 | -0.03376 | 50.00190 | -38.685 | -0.04151 | -0.01869 | -0.04110 |
| CU | 63 | 0.09541 | 133.34000 | 29.724 | 0.06853 | 0.09265 | 0.12504 |
| MO | 98 | 0.08980 | 63.33630 | 8.653 | 0.09877 | 0.08548 | 0.08515 |
| NI | 60 | 0.05551 | 40.00180 | 55.233 | 0.02451 | 0.05622 | 0.08581 |
| SB | 121 | -0.02061 | 6.66693 | -77.584 | -0.01163 | -0.01115 | -0.03908 |
| SN | 120 | 0.00073 | 46.66850 | 2732.260 | 0.02375 | -0.01065 | -0.01091 |
| SR | 88 | 0.29740 | 150.00800 | 26.685 | 0.23044 | 0.38507 | 0.27674 |
| ZN | 66 | 0.31950 | 63.33630 | 53.365 | 0.45185 | 0.37968 | 0.12712 |
| **BI-1** | 209 | 145282.00000 | 0.00000 | 2.366 | 148894.00000 | 144900.00000 | 142052.00000 |
| PB | 208 | 0.00652 | 146.67400 | 92.806 | 0.00648 | 0.01259 | 0.00049 |
| TL | 203 | 0.01100 | 16.66740 | 157.727 | -0.00282 | 0.00534 | 0.03047 |
| U | 238 | 0.00560 | 36.66820 | 141.790 | 0.01467 | -0.00007 | 0.00219 |
| *GE-1* | 72 | 118863.00000 | 0.00000 | 0.725 | 118757.00000 | 118059.00000 | 119773.00000 |
| *TB-1* | 159 | 196619.00000 | 0.00000 | 2.385 | 201600.00000 | 195967.00000 | 192289.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:12:00
Tube Number: 46 Batch: 172001063902A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 56268.60000 | 0.00000 | 0.920 | 55870.40000 | 56853.90000 | 56081.40000 |
| AL | 27 | 1939.00000 | 57234.60000 | 0.717 | 1953.25261 | 1925.52146 | 1937.69048 |
| CA | 44 | 3764.00000 | 11712.40000 | 5.157 | 3977.88915 | 3714.00188 | 3599.25004 |
| CR | 52 | 49.55000 | 36381.80000 | 3.578 | 51.29711 | 47.75128 | 49.59212 |
| FE | 57 | 963.00000 | 14945.80000 | 2.915 | 985.14813 | 972.54888 | 931.47136 |
| K | 39 | 9765.00000 | 543090.00000 | 2.978 | 10088.55511 | 9526.39710 | 9678.71240 |
| MG | 24 | 1946.00000 | 163095.00000 | 0.936 | 1965.87629 | 1930.50853 | 1940.57591 |
| MN | 55 | 47.78000 | 20306.60000 | 2.526 | 48.20563 | 46.41343 | 48.71130 |
| NA | 23 | 9351.00000 | 1711240.00000 | 2.343 | 9595.61489 | 9172.15301 | 9286.18288 |
| TI | 47 | 247.80000 | 4410.94000 | 6.812 | 259.66318 | 228.48262 | 255.30320 |
| V | 51 | 47.91000 | 27433.00000 | 2.100 | 48.49727 | 48.49049 | 46.75105 |
| **IN-1** | 115 | 59204.50000 | 0.00000 | 0.733 | 59586.70000 | 58732.70000 | 59294.20000 |
| AG | 107 | 49.69000 | 76626.70000 | 1.933 | 50.54576 | 48.65101 | 49.87058 |
| AS | 75 | 9.30800 | 623.35300 | 4.323 | 9.22473 | 8.95320 | 9.74502 |
| BA | 137 | 47.87000 | 7972.88000 | 4.510 | 48.46961 | 45.47648 | 49.66829 |
| CD | 111 | 4.99000 | 942.71000 | 4.397 | 4.80672 | 4.93026 | 5.23311 |
| CO | 59 | 223.90000 | 303881.00000 | 2.712 | 230.57293 | 218.67035 | 222.52366 |
| CU | 63 | 51.06000 | 46822.60000 | 0.486 | 51.34413 | 50.90936 | 50.91952 |
| MO | 98 | 49.38000 | 32930.40000 | 4.947 | 52.09811 | 47.36718 | 48.67589 |
| NI | 60 | 50.74000 | 16998.40000 | 4.062 | 52.11320 | 51.72595 | 48.36647 |
| SB | 121 | 5.60200 | 2036.93000 | 5.682 | 5.85073 | 5.71293 | 5.24354 |
| SN | 120 | 50.39000 | 28052.40000 | 0.787 | 50.15496 | 50.84863 | 50.16816 |
| SR | 88 | 38.15000 | 17943.30000 | 3.048 | 37.03263 | 39.35392 | 38.06626 |
| ZN | 66 | 499.90000 | 60197.50000 | 0.550 | 502.26166 | 496.86900 | 500.49083 |
| **BI-1** | 209 | 149612.00000 | 0.00000 | 0.731 | 148398.00000 | 150516.00000 | 149922.00000 |
| PB | 208 | 14.31000 | 58261.50000 | 2.407 | 14.57451 | 14.44503 | 13.92389 |
| TL | 203 | 1.90200 | 2410.34000 | 1.871 | 1.90138 | 1.93743 | 1.86624 |
| U | 238 | 0.00338 | 26.66780 | 95.981 | 0.00624 | -0.00015 | 0.00406 |
| *GE-1* | 72 | 120213.00000 | 0.00000 | 0.397 | 120109.00000 | 119796.00000 | 120734.00000 |
| *TB-1* | 159 | 203318.00000 | 0.00000 | 1.283 | 205813.00000 | 203531.00000 | 200610.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:14:00
Tube Number: 47 Batch: 172001063902A
Sample Number: **9109771** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54240.20000 | 0.00000 | 1.810 | 53520.50000 | 55358.30000 | 53841.80000 |
| AL | 27 | 21.91000 | 630.03900 | 16.869 | 21.11373 | 18.68212 | 25.94301 |
| CA | 44 | 229900.00000 | 662317.00000 | 0.336 | 230130.82421 | 229010.38501 | 230491.26599 |
| CR | 52 | 2.41500 | 1800.19000 | 1.363 | 2.43457 | 2.37705 | 2.43351 |
| FE | 57 | 462.00000 | 6928.75000 | 1.254 | 467.81005 | 462.05916 | 456.22384 |
| K | 39 | 5345.00000 | 295218.00000 | 1.779 | 5412.87789 | 5235.97322 | 5384.85227 |
| MG | 24 | 39060.00000 | 3155250.00000 | 2.247 | 38114.95222 | 39211.33583 | 39850.20271 |
| MN | 55 | 234.10000 | 95825.60000 | 2.311 | 233.12315 | 229.31268 | 239.98741 |
| NA | 23 | 77570.00000 | 13581700.00000 | 0.944 | 76750.71564 | 77809.61339 | 78157.35801 |
| TI | 47 | 1.93400 | 33.33480 | 61.634 | 2.36183 | 2.85422 | 0.58692 |
| V | 51 | 1.09000 | 623.37100 | 6.717 | 1.00771 | 1.11509 | 1.14762 |
| **IN-1** | 115 | 55689.10000 | 0.00000 | 1.316 | 55072.80000 | 56499.40000 | 55495.20000 |
| AG | 107 | 0.06183 | 93.33910 | 51.706 | 0.02560 | 0.08606 | 0.07382 |
| AS | 75 | 0.53400 | 62.66740 | 51.948 | 0.56656 | 0.24183 | 0.79376 |
| BA | 137 | 109.60000 | 17159.20000 | 3.228 | 111.08503 | 105.56996 | 112.16608 |
| CD | 111 | 0.04479 | 10.00010 | 48.694 | 0.02279 | 0.06640 | 0.04517 |
| CO | 59 | 0.26380 | 426.69200 | 3.327 | 0.27007 | 0.25373 | 0.26747 |
| CU | 63 | 0.83870 | 766.71600 | 11.880 | 0.72406 | 0.88752 | 0.90450 |
| MO | 98 | 1.13800 | 716.72200 | 9.104 | 1.25262 | 1.11081 | 1.05097 |
| NI | 60 | 2.90200 | 933.40600 | 10.992 | 3.24497 | 2.84819 | 2.61393 |
| SB | 121 | 0.45250 | 166.67500 | 33.481 | 0.43733 | 0.30921 | 0.61100 |
| SN | 120 | 1.52400 | 840.06000 | 7.966 | 1.44489 | 1.46286 | 1.66361 |
| SR | 88 | 1483.00000 | 655932.00000 | 0.466 | 1484.76804 | 1475.86634 | 1489.45852 |
| ZN | 66 | 6.68200 | 780.05300 | 1.057 | 6.67040 | 6.75791 | 6.61809 |
| **BI-1** | 209 | 134695.00000 | 0.00000 | 0.439 | 134028.00000 | 134900.00000 | 135156.00000 |
| PB | 208 | 0.17090 | 736.70800 | 11.527 | 0.17551 | 0.18783 | 0.14926 |
| TL | 203 | 0.02354 | 30.00120 | 37.783 | 0.03247 | 0.02347 | 0.01468 |
| U | 238 | 2.63100 | 11272.60000 | 4.964 | 2.52050 | 2.77505 | 2.59732 |
| *GE-1* | 72 | 114857.00000 | 0.00000 | 1.767 | 113195.00000 | 117119.00000 | 114256.00000 |
| *TB-1* | 159 | 199675.00000 | 0.00000 | 1.283 | 197526.00000 | 202508.00000 | 198990.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:16:00
Tube Number: 48 Batch: 172001063902A
Sample Number: **9109771** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54554.60000 | 0.00000 | 2.489 | 55408.10000 | 55267.50000 | 52988.10000 |
| AL | 27 | 211.50000 | 6058.34000 | 5.844 | 197.27525 | 219.17059 | 218.17404 |
| CA | 44 | 222300.00000 | 644239.00000 | 1.508 | 223969.13524 | 218473.87567 | 224548.71447 |
| CR | 52 | 6.37600 | 4627.69000 | 8.805 | 7.02098 | 6.10743 | 5.99891 |
| FE | 57 | 627.10000 | 9447.15000 | 3.813 | 650.01715 | 602.31685 | 629.01273 |
| K | 39 | 5622.00000 | 311347.00000 | 1.778 | 5650.11622 | 5511.10312 | 5704.97651 |
| MG | 24 | 38690.00000 | 3142730.00000 | 0.702 | 38563.45906 | 38499.84722 | 38998.87984 |
| MN | 55 | 233.20000 | 96000.40000 | 2.069 | 235.61210 | 227.66041 | 236.37359 |
| NA | 23 | 76660.00000 | 13494300.00000 | 2.399 | 76348.67056 | 74996.56148 | 78634.75424 |
| TI | 47 | 31.68000 | 546.70100 | 12.825 | 27.37668 | 35.45132 | 32.20513 |
| V | 51 | 1.82600 | 1036.75000 | 11.035 | 1.93072 | 1.95357 | 1.59375 |
| **IN-1** | 115 | 56276.40000 | 0.00000 | 2.774 | 57778.70000 | 56388.00000 | 54662.50000 |
| AG | 107 | 0.85930 | 1263.45000 | 4.407 | 0.90159 | 0.82853 | 0.84774 |
| AS | 75 | 4.22100 | 285.33900 | 8.628 | 3.84341 | 4.24892 | 4.57014 |
| BA | 137 | 108.40000 | 17149.20000 | 4.369 | 107.36228 | 104.32644 | 113.61479 |
| CD | 111 | 0.99520 | 180.66900 | 10.591 | 1.05409 | 1.05808 | 0.87349 |
| CO | 59 | 0.93920 | 1300.11000 | 9.256 | 0.85848 | 0.92784 | 1.03123 |
| CU | 63 | 4.77500 | 4200.84000 | 6.356 | 4.51383 | 5.10796 | 4.70308 |
| MO | 98 | 1.75100 | 1113.43000 | 3.517 | 1.76246 | 1.80608 | 1.68450 |
| NI | 60 | 5.95500 | 1913.55000 | 9.740 | 6.15264 | 5.30168 | 6.40995 |
| SB | 121 | 2.25800 | 786.72500 | 13.432 | 2.14631 | 2.02571 | 2.60093 |
| SN | 120 | 5.80200 | 3107.18000 | 5.757 | 5.43007 | 6.07616 | 5.90024 |
| SR | 88 | 1424.00000 | 636171.00000 | 0.888 | 1421.02777 | 1412.72954 | 1437.57381 |
| ZN | 66 | 33.78000 | 3884.09000 | 7.043 | 31.04012 | 34.95209 | 35.34174 |
| **BI-1** | 209 | 134089.00000 | 0.00000 | 2.356 | 136924.00000 | 134658.00000 | 130683.00000 |
| PB | 208 | 2.16800 | 7998.06000 | 4.912 | 2.17036 | 2.05964 | 2.27263 |
| TL | 203 | 1.03200 | 1173.44000 | 0.265 | 1.03333 | 1.03320 | 1.02854 |
| U | 238 | 13.08000 | 55757.60000 | 1.027 | 12.95606 | 13.07308 | 13.22401 |
| *GE-1* | 72 | 113592.00000 | 0.00000 | 1.251 | 115204.00000 | 113053.00000 | 112520.00000 |
| *TB-1* | 159 | 200042.00000 | 0.00000 | 1.759 | 203526.00000 | 200110.00000 | 196491.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:18:00
Tube Number: 49 Batch: 172001063902A
Sample Number: **9109774** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 56519.80000 | 0.00000 | 2.505 | 56472.90000 | 57959.10000 | 55127.50000 |
| AL | 27 | 13.47000 | 406.70100 | 8.849 | 12.23206 | 13.55730 | 14.61165 |
| CA | 44 | 217200.00000 | 652161.00000 | 1.470 | 216336.40156 | 214626.76184 | 220809.44744 |
| CR | 52 | 2.15400 | 1683.51000 | 2.659 | 2.20500 | 2.09195 | 2.16454 |
| FE | 57 | 404.50000 | 6325.10000 | 2.868 | 391.08682 | 411.11063 | 411.23570 |
| K | 39 | 5103.00000 | 294593.00000 | 1.794 | 5098.10877 | 5013.72142 | 5196.65068 |
| MG | 24 | 37770.00000 | 3177840.00000 | 2.341 | 37720.62935 | 36910.93647 | 38677.52990 |
| MN | 55 | 222.10000 | 94740.80000 | 1.710 | 218.94594 | 221.16107 | 226.34848 |
| NA | 23 | 74260.00000 | 13546600.00000 | 1.943 | 72920.09381 | 74086.44438 | 75789.18999 |
| TI | 47 | 1.11400 | 20.00070 | 48.366 | 0.55958 | 1.63568 | 1.14647 |
| V | 51 | 0.96540 | 576.70600 | 26.932 | 0.69167 | 0.99537 | 1.20916 |
| **IN-1** | 115 | 57632.60000 | 0.00000 | 1.966 | 56380.70000 | 58589.10000 | 57928.00000 |
| AG | 107 | 0.01319 | 23.33420 | 76.270 | 0.00452 | 0.01082 | 0.02422 |
| AS | 75 | 0.54340 | 65.33400 | 58.171 | 0.77316 | 0.18287 | 0.67422 |
| BA | 137 | 104.30000 | 16902.20000 | 0.560 | 104.97210 | 104.05198 | 103.88820 |
| CD | 111 | 0.02136 | 6.00005 | 101.873 | 0.02200 | -0.00071 | 0.04279 |
| CO | 59 | 0.11650 | 246.67900 | 35.562 | 0.16152 | 0.10806 | 0.07996 |
| CU | 63 | 0.77540 | 736.71900 | 7.265 | 0.77487 | 0.83202 | 0.71936 |
| MO | 98 | 0.83240 | 543.36700 | 3.826 | 0.86110 | 0.79812 | 0.83796 |
| NI | 60 | 2.89200 | 963.40900 | 4.696 | 2.79157 | 3.04636 | 2.83745 |
| SB | 121 | 0.32200 | 126.67200 | 23.801 | 0.39719 | 0.32477 | 0.24400 |
| SN | 120 | 1.63600 | 930.07600 | 1.483 | 1.65508 | 1.64412 | 1.60864 |
| SR | 88 | 1412.00000 | 646149.00000 | 1.161 | 1430.93156 | 1404.46503 | 1400.94707 |
| ZN | 66 | 6.13300 | 743.38400 | 10.266 | 5.90017 | 6.84535 | 5.65212 |
| **BI-1** | 209 | 136996.00000 | 0.00000 | 0.750 | 137073.00000 | 137984.00000 | 135931.00000 |
| PB | 208 | 0.14960 | 670.03700 | 21.952 | 0.12255 | 0.14023 | 0.18617 |
| TL | 203 | 0.00006 | 3.33347 | 8698.460 | 0.00581 | -0.00282 | -0.00282 |
| U | 238 | 2.58000 | 11245.90000 | 4.403 | 2.54946 | 2.70611 | 2.48518 |
| *GE-1* | 72 | 116276.00000 | 0.00000 | 1.452 | 115435.00000 | 118219.00000 | 115174.00000 |
| *TB-1* | 159 | 202949.00000 | 0.00000 | 0.885 | 204679.00000 | 201092.00000 | 203077.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:19:00
Tube Number: 50 Batch: 172001063902A
Sample Number: **9109772** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53995.90000 | 0.00000 | 0.587 | 54012.70000 | 54304.10000 | 53671.00000 |
| AL | 27 | 1953.00000 | 55323.20000 | 2.767 | 1971.50740 | 1892.22188 | 1995.48328 |
| CA | 44 | 229100.00000 | 657033.00000 | 1.140 | 231628.78545 | 226410.24738 | 229174.44079 |
| CR | 52 | 50.54000 | 35619.70000 | 1.022 | 50.31346 | 50.18422 | 51.13648 |
| FE | 57 | 1365.00000 | 20306.60000 | 1.177 | 1346.56195 | 1369.48621 | 1377.52098 |
| K | 39 | 15060.00000 | 793698.00000 | 1.556 | 15268.51534 | 14808.08621 | 15114.63051 |
| MG | 24 | 40870.00000 | 3286240.00000 | 2.152 | 40493.68027 | 40243.24348 | 41876.40983 |
| MN | 55 | 275.50000 | 112253.00000 | 0.720 | 276.80676 | 273.20738 | 276.45061 |
| NA | 23 | 87100.00000 | 15177600.00000 | 1.051 | 87397.19510 | 86069.96670 | 87825.85281 |
| TI | 47 | 248.60000 | 4247.49000 | 4.533 | 244.01046 | 240.37172 | 261.46541 |
| V | 51 | 48.73000 | 26771.60000 | 4.127 | 50.91583 | 46.95676 | 48.31934 |
| **IN-1** | 115 | 55924.40000 | 0.00000 | 2.328 | 56837.00000 | 54433.20000 | 56503.00000 |
| AG | 107 | 45.07000 | 65628.20000 | 1.509 | 44.47843 | 45.81196 | 44.91234 |
| AS | 75 | 10.69000 | 672.02300 | 7.614 | 10.84559 | 9.80418 | 11.40836 |
| BA | 137 | 154.30000 | 24261.20000 | 2.542 | 157.72641 | 155.13570 | 150.01736 |
| CD | 111 | 4.45600 | 794.69700 | 6.636 | 4.17764 | 4.76659 | 4.42478 |
| CO | 59 | 219.60000 | 281357.00000 | 1.810 | 220.16762 | 223.18547 | 215.30847 |
| CU | 63 | 48.40000 | 41929.20000 | 0.180 | 48.45631 | 48.29993 | 48.44453 |
| MO | 98 | 50.85000 | 32024.70000 | 1.899 | 51.79816 | 50.88040 | 49.86731 |
| NI | 60 | 49.90000 | 15790.20000 | 3.064 | 50.55427 | 50.99962 | 48.15679 |
| SB | 121 | 6.13000 | 2103.60000 | 3.113 | 6.22213 | 6.25761 | 5.91087 |
| SN | 120 | 51.92000 | 27293.90000 | 2.631 | 52.13393 | 53.16514 | 50.45896 |
| SR | 88 | 1467.00000 | 651015.00000 | 2.757 | 1450.12945 | 1512.68825 | 1436.99261 |
| ZN | 66 | 449.20000 | 51081.70000 | 2.901 | 445.22650 | 463.80195 | 438.67689 |
| **BI-1** | 209 | 133191.00000 | 0.00000 | 2.083 | 136287.00000 | 130926.00000 | 132362.00000 |
| PB | 208 | 15.23000 | 55169.00000 | 0.624 | 15.29044 | 15.27165 | 15.11727 |
| TL | 203 | 2.02100 | 2280.32000 | 3.772 | 2.00118 | 1.95680 | 2.10530 |
| U | 238 | 2.64400 | 11205.80000 | 2.736 | 2.70287 | 2.56342 | 2.66643 |
| *GE-1* | 72 | 112371.00000 | 0.00000 | 1.664 | 111591.00000 | 114506.00000 | 111017.00000 |
| *TB-1* | 159 | 198830.00000 | 0.00000 | 1.741 | 202821.00000 | 196630.00000 | 197038.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:21:00
Tube Number: 51 Batch: 172001063902A
Sample Number: **9109773** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54273.80000 | 0.00000 | 2.832 | 53028.60000 | 53801.30000 | 55991.40000 |
| AL | 27 | 1939.00000 | 55166.00000 | 3.968 | 2021.83139 | 1924.12680 | 1870.04811 |
| CA | 44 | 233300.00000 | 672302.00000 | 2.985 | 241280.55546 | 230132.67970 | 228472.13765 |
| CR | 52 | 49.80000 | 35258.60000 | 3.299 | 51.67038 | 49.12220 | 48.59911 |
| FE | 57 | 1399.00000 | 20927.50000 | 1.701 | 1425.81494 | 1393.11307 | 1379.50337 |
| K | 39 | 15190.00000 | 803970.00000 | 2.604 | 15632.36969 | 15063.52078 | 14871.92235 |
| MG | 24 | 41520.00000 | 3353730.00000 | 3.822 | 43335.86388 | 40797.82699 | 40417.61134 |
| MN | 55 | 285.00000 | 116664.00000 | 2.962 | 294.60207 | 281.47173 | 278.84174 |
| NA | 23 | 88250.00000 | 15453200.00000 | 2.158 | 90353.49073 | 87769.16951 | 86639.33448 |
| TI | 47 | 241.70000 | 4154.16000 | 2.828 | 236.61898 | 239.09465 | 249.50157 |
| V | 51 | 51.19000 | 28258.10000 | 2.368 | 52.58617 | 50.43760 | 50.54014 |
| **IN-1** | 115 | 54525.70000 | 0.00000 | 1.008 | 54850.70000 | 53891.00000 | 54835.50000 |
| AG | 107 | 46.31000 | 65762.10000 | 1.591 | 47.09584 | 46.18676 | 45.63724 |
| AS | 75 | 10.99000 | 672.69000 | 2.750 | 10.91678 | 10.73941 | 11.32846 |
| BA | 137 | 164.20000 | 25166.40000 | 2.758 | 168.57301 | 164.36707 | 159.52278 |
| CD | 111 | 4.78200 | 832.03400 | 3.628 | 4.93638 | 4.81467 | 4.59406 |
| CO | 59 | 226.50000 | 283044.00000 | 1.936 | 231.00844 | 226.21725 | 222.24798 |
| CU | 63 | 49.38000 | 41704.80000 | 0.461 | 49.62167 | 49.17084 | 49.33974 |
| MO | 98 | 52.54000 | 32265.20000 | 0.818 | 52.99231 | 52.13574 | 52.50365 |
| NI | 60 | 51.07000 | 15760.10000 | 2.755 | 50.86900 | 49.77071 | 52.56318 |
| SB | 121 | 5.95500 | 1993.58000 | 5.034 | 5.79112 | 5.77315 | 6.30118 |
| SN | 120 | 52.78000 | 27063.40000 | 3.393 | 54.70593 | 51.16549 | 52.46270 |
| SR | 88 | 1541.00000 | 667049.00000 | 1.080 | 1559.58176 | 1533.67044 | 1528.54574 |
| ZN | 66 | 461.90000 | 51222.80000 | 2.265 | 466.75862 | 469.02527 | 449.87209 |
| **BI-1** | 209 | 132438.00000 | 0.00000 | 1.142 | 133767.00000 | 130792.00000 | 132755.00000 |
| PB | 208 | 15.40000 | 55479.20000 | 1.656 | 15.66958 | 15.16358 | 15.36135 |
| TL | 203 | 2.09700 | 2353.66000 | 5.756 | 2.20689 | 1.96784 | 2.11684 |
| U | 238 | 2.64000 | 11122.50000 | 4.428 | 2.74440 | 2.66240 | 2.51385 |
| *GE-1* | 72 | 111800.00000 | 0.00000 | 0.658 | 110956.00000 | 112307.00000 | 112138.00000 |
| *TB-1* | 159 | 198274.00000 | 0.00000 | 2.844 | 200648.00000 | 191838.00000 | 202337.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:23:00
Tube Number: 52 Batch: 172001063902A
Sample Number: **9109771** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54946.90000 | 0.00000 | 4.748 | 57889.30000 | 54033.60000 | 52917.60000 |
| AL | 27 | 9.45700 | 280.01500 | 22.238 | 9.95048 | 7.15077 | 11.26974 |
| CA | 44 | 47150.00000 | 137869.00000 | 3.236 | 45398.00586 | 48141.84764 | 47926.25483 |
| CR | 52 | 0.84020 | 696.71600 | 4.948 | 0.79397 | 0.87448 | 0.85221 |
| FE | 57 | 89.64000 | 1390.14000 | 9.230 | 90.70638 | 97.33694 | 80.89120 |
| K | 39 | 1034.00000 | 73442.20000 | 6.040 | 966.26294 | 1045.13611 | 1089.58139 |
| MG | 24 | 8160.00000 | 667091.00000 | 3.234 | 7874.97477 | 8209.37127 | 8395.72916 |
| MN | 55 | 49.18000 | 20383.50000 | 5.132 | 46.27018 | 50.60907 | 50.67407 |
| NA | 23 | 16500.00000 | 2933670.00000 | 4.044 | 15765.23652 | 16657.89176 | 17070.58170 |
| TI | 47 | 0.19900 | 3.33346 | 173.266 | 0.00000 | 0.00000 | 0.59717 |
| V | 51 | 0.27690 | 176.67700 | 11.690 | 0.26595 | 0.25136 | 0.31328 |
| **IN-1** | 115 | 58120.00000 | 0.00000 | 1.500 | 58805.40000 | 58415.40000 | 57139.00000 |
| AG | 107 | 0.02648 | 43.33530 | 64.577 | 0.02383 | 0.01086 | 0.04475 |
| AS | 75 | 0.10290 | 38.66710 | 94.888 | 0.18029 | -0.00678 | 0.13532 |
| BA | 137 | 22.19000 | 3630.67000 | 5.002 | 23.45261 | 21.35560 | 21.77100 |
| CD | 111 | 0.01739 | 5.33337 | 94.250 | 0.03130 | -0.00067 | 0.02155 |
| CO | 59 | 0.09211 | 216.67700 | 14.863 | 0.07772 | 0.09365 | 0.10496 |
| CU | 63 | 0.24240 | 263.35000 | 2.711 | 0.23529 | 0.24825 | 0.24362 |
| MO | 98 | 0.24440 | 163.34100 | 7.815 | 0.25146 | 0.22277 | 0.25895 |
| NI | 60 | 0.78750 | 280.01500 | 10.516 | 0.77816 | 0.87464 | 0.70982 |
| SB | 121 | 0.09211 | 46.66850 | 61.839 | 0.15612 | 0.07321 | 0.04702 |
| SN | 120 | 0.52170 | 330.01900 | 1.751 | 0.51456 | 0.51856 | 0.53201 |
| SR | 88 | 292.90000 | 135186.00000 | 1.378 | 294.93949 | 295.44276 | 288.21267 |
| ZN | 66 | 2.19300 | 283.34700 | 28.258 | 2.55344 | 1.47725 | 2.54784 |
| **BI-1** | 209 | 146037.00000 | 0.00000 | 3.086 | 151092.00000 | 144582.00000 | 142439.00000 |
| PB | 208 | 0.05817 | 353.35200 | 33.385 | 0.07908 | 0.04071 | 0.05471 |
| TL | 203 | 0.00777 | 13.33390 | 153.094 | 0.02066 | -0.00282 | 0.00548 |
| U | 238 | 0.50790 | 2370.34000 | 5.349 | 0.53932 | 0.49186 | 0.49267 |
| *GE-1* | 72 | 118924.00000 | 0.00000 | 2.449 | 122096.00000 | 118302.00000 | 116374.00000 |
| *TB-1* | 159 | 202277.00000 | 0.00000 | 3.122 | 209384.00000 | 200141.00000 | 197306.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:24:00
Tube Number: 53 Batch: 172001063902A
Sample Number: **9109779** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 55034.10000 | 0.00000 | 4.966 | 56071.90000 | 51933.80000 | 57096.50000 |
| AL | 27 | 16.61000 | 486.69500 | 8.200 | 15.04121 | 17.36145 | 17.43784 |
| CA | 44 | 221900.00000 | 648353.00000 | 1.349 | 219557.75267 | 225244.46998 | 220784.97610 |
| CR | 52 | 2.38600 | 1806.87000 | 1.494 | 2.38617 | 2.35035 | 2.42167 |
| FE | 57 | 425.20000 | 6468.53000 | 2.516 | 430.21069 | 432.46103 | 412.90276 |
| K | 39 | 5134.00000 | 288342.00000 | 2.491 | 5070.40937 | 5281.27244 | 5050.32123 |
| MG | 24 | 38070.00000 | 3119570.00000 | 1.239 | 37581.05982 | 38521.25631 | 38120.50107 |
| MN | 55 | 225.90000 | 93757.50000 | 2.151 | 223.93874 | 231.43372 | 222.32930 |
| NA | 23 | 76250.00000 | 13531400.00000 | 3.424 | 74423.93183 | 79244.43508 | 75096.14950 |
| TI | 47 | 0.38730 | 6.66692 | 86.884 | 0.00000 | 0.60849 | 0.55347 |
| V | 51 | 1.31200 | 756.71800 | 15.450 | 1.53897 | 1.24810 | 1.14884 |
| **IN-1** | 115 | 55806.40000 | 0.00000 | 1.638 | 55995.50000 | 54812.70000 | 56610.90000 |
| AG | 107 | 0.07567 | 113.33800 | 4.073 | 0.07314 | 0.07477 | 0.07910 |
| AS | 75 | 0.74150 | 75.33420 | 4.131 | 0.74870 | 0.70793 | 0.76790 |
| BA | 137 | 104.60000 | 16418.20000 | 0.823 | 105.43900 | 104.72505 | 103.72582 |
| CD | 111 | 0.04474 | 10.00010 | 65.936 | 0.07832 | 0.02295 | 0.03296 |
| CO | 59 | 0.09126 | 206.67600 | 70.020 | 0.14752 | 0.10445 | 0.02179 |
| CU | 63 | 0.63640 | 593.37200 | 4.698 | 0.63051 | 0.60982 | 0.66877 |
| MO | 98 | 0.72590 | 460.02600 | 13.900 | 0.67672 | 0.65904 | 0.84189 |
| NI | 60 | 2.92100 | 940.07400 | 16.477 | 3.00082 | 3.35751 | 2.40485 |
| SB | 121 | 0.36130 | 136.67300 | 31.442 | 0.42948 | 0.23017 | 0.42438 |
| SN | 120 | 1.66200 | 913.40900 | 13.610 | 1.76216 | 1.82143 | 1.40338 |
| SR | 88 | 1440.00000 | 638082.00000 | 2.021 | 1472.74097 | 1417.59046 | 1429.06368 |
| ZN | 66 | 6.33100 | 740.05600 | 22.793 | 6.11788 | 7.86969 | 5.00652 |
| **BI-1** | 209 | 133751.00000 | 0.00000 | 2.894 | 135992.00000 | 129281.00000 | 135980.00000 |
| PB | 208 | 0.14330 | 630.03300 | 15.673 | 0.12106 | 0.16598 | 0.14275 |
| TL | 203 | 0.00892 | 13.33390 | 54.841 | 0.01457 | 0.00633 | 0.00588 |
| U | 238 | 2.62100 | 11145.70000 | 4.296 | 2.49098 | 2.68378 | 2.68810 |
| *GE-1* | 72 | 113116.00000 | 0.00000 | 1.631 | 114559.00000 | 111037.00000 | 113750.00000 |
| *TB-1* | 159 | 197616.00000 | 0.00000 | 1.256 | 199420.00000 | 194786.00000 | 198643.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:26:00
Tube Number: 54 Batch: 172001063902A
Sample Number: **9109779** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 10.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54307.30000 | 0.00000 | 1.214 | 54414.00000 | 54906.90000 | 53601.00000 |
| AL | 27 | 3.95400 | 120.00500 | 1.298 | 3.94578 | 3.90804 | 4.00958 |
| CA | 44 | 23700.00000 | 68778.00000 | 1.474 | 23886.82786 | 23298.96612 | 23919.86845 |
| CR | 52 | 0.72840 | 610.04200 | 22.529 | 0.54268 | 0.78845 | 0.85396 |
| FE | 57 | 42.77000 | 673.37700 | 23.135 | 43.87212 | 52.06319 | 32.36636 |
| K | 39 | 505.10000 | 45345.80000 | 3.455 | 505.25179 | 487.60214 | 522.49616 |
| MG | 24 | 4134.00000 | 334344.00000 | 1.788 | 4122.35678 | 4066.53328 | 4212.95815 |
| MN | 55 | 24.20000 | 9937.47000 | 3.764 | 24.74435 | 23.14484 | 24.70000 |
| NA | 23 | 8595.00000 | 1519190.00000 | 2.050 | 8506.10793 | 8481.82793 | 8798.37326 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.16540 | 113.33800 | 16.983 | 0.19509 | 0.13924 | 0.16196 |
| **IN-1** | 115 | 57561.80000 | 0.00000 | 1.906 | 58234.50000 | 58154.90000 | 56296.00000 |
| AG | 107 | 0.02015 | 33.33490 | 85.906 | 0.01749 | 0.00431 | 0.03863 |
| AS | 75 | 0.02345 | 33.33360 | 580.810 | -0.13341 | 0.09180 | 0.11194 |
| BA | 137 | 10.60000 | 1716.86000 | 9.896 | 10.18035 | 9.82738 | 11.79569 |
| CD | 111 | 0.01425 | 4.66670 | 121.333 | -0.00064 | 0.01018 | 0.03321 |
| CO | 59 | -0.01946 | 66.66950 | -290.031 | -0.05574 | -0.04822 | 0.04557 |
| CU | 63 | 0.11810 | 150.00700 | 11.998 | 0.11601 | 0.10512 | 0.13322 |
| MO | 98 | 0.10850 | 73.33640 | 52.148 | 0.05571 | 0.10161 | 0.16825 |
| NI | 60 | 0.39720 | 150.00700 | 28.323 | 0.26988 | 0.48332 | 0.43854 |
| SB | 121 | 0.03736 | 26.66770 | 177.248 | -0.03908 | 0.07371 | 0.07743 |
| SN | 120 | 0.16450 | 133.33900 | 50.140 | 0.09969 | 0.13658 | 0.25737 |
| SR | 88 | 149.00000 | 68085.90000 | 1.400 | 149.58119 | 146.63013 | 150.65990 |
| ZN | 66 | 1.13500 | 156.67400 | 28.432 | 1.14462 | 0.80815 | 1.45328 |
| **BI-1** | 209 | 145322.00000 | 0.00000 | 0.842 | 145778.00000 | 146253.00000 | 143935.00000 |
| PB | 208 | 0.01335 | 173.34100 | 69.206 | 0.00475 | 0.01219 | 0.02311 |
| TL | 203 | 0.00262 | 6.66694 | 179.642 | 0.00529 | -0.00282 | 0.00540 |
| U | 238 | 0.23660 | 1103.44000 | 13.969 | 0.20284 | 0.26887 | 0.23826 |
| *GE-1* | 72 | 116686.00000 | 0.00000 | 1.761 | 118895.00000 | 116333.00000 | 114831.00000 |
| *TB-1* | 159 | 201146.00000 | 0.00000 | 1.766 | 204475.00000 | 201558.00000 | 197404.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:28:00
Tube Number: 55
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53333.40000 | 0.00000 | 0.976 | 53470.80000 | 53771.50000 | 52757.90000 |
| AL | 27 | 2462.00000 | 68900.20000 | 0.981 | 2487.94790 | 2439.89020 | 2459.48742 |
| CA | 44 | 2482.00000 | 7475.76000 | 2.918 | 2545.11782 | 2498.46482 | 2403.03259 |
| CR | 52 | 247.10000 | 171661.00000 | 1.724 | 252.03965 | 244.73754 | 244.59026 |
| FE | 57 | 2508.00000 | 36840.00000 | 1.009 | 2535.93494 | 2486.50223 | 2501.83753 |
| K | 39 | 2414.00000 | 141493.00000 | 1.456 | 2452.73606 | 2404.56318 | 2384.32117 |
| MG | 24 | 2486.00000 | 197530.00000 | 1.111 | 2504.25529 | 2454.54264 | 2500.29017 |
| MN | 55 | 248.90000 | 100162.00000 | 1.703 | 248.87587 | 244.64837 | 253.12401 |
| NA | 23 | 2325.00000 | 413883.00000 | 0.549 | 2324.36437 | 2312.80688 | 2338.30043 |
| TI | 47 | 249.10000 | 4204.20000 | 3.864 | 260.08402 | 242.16490 | 245.02536 |
| V | 51 | 244.40000 | 132527.00000 | 2.294 | 249.62519 | 238.47364 | 245.06958 |
| **IN-1** | 115 | 55233.60000 | 0.00000 | 2.498 | 56294.60000 | 55732.80000 | 53673.50000 |
| AG | 107 | 25.75000 | 37042.30000 | 2.957 | 25.96312 | 24.91200 | 26.39212 |
| AS | 75 | 256.50000 | 15201.00000 | 2.917 | 251.86582 | 252.43218 | 265.09673 |
| BA | 137 | 251.50000 | 39069.30000 | 2.887 | 259.79334 | 246.21411 | 248.54722 |
| CD | 111 | 26.30000 | 4625.54000 | 2.862 | 25.60338 | 26.21117 | 27.10010 |
| CO | 59 | 235.00000 | 297395.00000 | 1.838 | 234.86816 | 230.72476 | 239.36262 |
| CU | 63 | 258.50000 | 220895.00000 | 2.544 | 258.75027 | 251.77427 | 264.91813 |
| MO | 98 | 26.21000 | 16297.70000 | 1.709 | 25.77369 | 26.17744 | 26.66808 |
| NI | 60 | 259.10000 | 80899.50000 | 0.973 | 256.29413 | 259.89955 | 261.15071 |
| SB | 121 | 26.12000 | 8816.77000 | 2.938 | 26.97350 | 25.92080 | 25.47987 |
| SN | 120 | 26.12000 | 13581.30000 | 3.222 | 25.43847 | 25.86775 | 27.06267 |
| SR | 88 | 25.57000 | 11222.10000 | 4.157 | 25.96292 | 24.37037 | 26.38675 |
| ZN | 66 | 264.60000 | 29731.90000 | 2.810 | 265.28229 | 256.89980 | 271.72637 |
| **BI-1** | 209 | 143616.00000 | 0.00000 | 2.476 | 147203.00000 | 140091.00000 | 143553.00000 |
| PB | 208 | 24.92000 | 97276.80000 | 1.063 | 25.11536 | 25.02345 | 24.61736 |
| TL | 203 | 25.18000 | 30593.40000 | 1.255 | 25.19981 | 25.48951 | 24.85800 |
| U | 238 | 25.05000 | 114323.00000 | 2.147 | 24.63669 | 25.66112 | 24.86510 |
| *GE-1* | 72 | 113752.00000 | 0.00000 | 1.412 | 115102.00000 | 114177.00000 | 111976.00000 |
| *TB-1* | 159 | 193591.00000 | 0.00000 | 0.145 | 193691.00000 | 193808.00000 | 193273.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:29:00
Tube Number: 56
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51833.90000 | 0.00000 | 3.127 | 53018.10000 | 52496.90000 | 49986.50000 |
| AL | 27 | 2.57000 | 76.66980 | 34.327 | 2.97781 | 1.55738 | 3.17405 |
| CA | 44 | 16.92000 | 480.02900 | 185.757 | -19.35722 | 35.84813 | 34.27708 |
| CR | 52 | 0.56740 | 473.36000 | 14.468 | 0.47357 | 0.62595 | 0.60270 |
| FE | 57 | 1.75600 | 56.67010 | 43.628 | 1.21338 | 2.63209 | 1.42142 |
| K | 39 | -27.48000 | 16984.90000 | -42.431 | -37.85035 | -29.72828 | -14.86375 |
| MG | 24 | 5.10900 | 456.69500 | 8.892 | 4.88300 | 4.81172 | 5.63178 |
| MN | 55 | 0.20210 | 103.33900 | 17.402 | 0.16234 | 0.21507 | 0.22902 |
| NA | 23 | 4.89400 | 14461.80000 | 52.207 | 4.24161 | 2.72864 | 7.71306 |
| TI | 47 | 0.82080 | 13.33380 | 46.808 | 0.59604 | 0.60196 | 1.26438 |
| V | 51 | 0.25100 | 153.34000 | 23.482 | 0.20128 | 0.31610 | 0.23559 |
| **IN-1** | 115 | 55132.20000 | 0.00000 | 1.154 | 55052.60000 | 55804.40000 | 54539.70000 |
| AG | 107 | 0.02559 | 40.00160 | 27.925 | 0.01863 | 0.02523 | 0.03291 |
| AS | 75 | 0.22670 | 44.00040 | 13.017 | 0.19398 | 0.25129 | 0.23491 |
| BA | 137 | 0.12890 | 23.33450 | 57.036 | 0.17263 | 0.17001 | 0.04400 |
| CD | 111 | 0.03025 | 7.33340 | 93.620 | -0.00002 | 0.05612 | 0.03464 |
| CO | 59 | 0.10340 | 220.01100 | 6.675 | 0.09576 | 0.10916 | 0.10533 |
| CU | 63 | 0.18360 | 200.01100 | 32.184 | 0.21954 | 0.21591 | 0.11543 |
| MO | 98 | 0.07519 | 50.00220 | 20.614 | 0.05924 | 0.09020 | 0.07613 |
| NI | 60 | 0.17120 | 73.33610 | 29.766 | 0.12850 | 0.15761 | 0.22764 |
| SB | 121 | 0.05986 | 33.33460 | 56.164 | 0.08007 | 0.07846 | 0.02105 |
| SN | 120 | 0.04529 | 66.66960 | 85.229 | 0.03287 | 0.08857 | 0.01443 |
| SR | 88 | 0.13740 | 70.00300 | 28.719 | 0.09186 | 0.15802 | 0.16221 |
| ZN | 66 | 0.09010 | 33.33540 | 249.390 | 0.32928 | 0.05763 | -0.11661 |
| **BI-1** | 209 | 141480.00000 | 0.00000 | 2.101 | 143247.00000 | 143145.00000 | 138047.00000 |
| PB | 208 | 0.00672 | 143.34000 | 84.099 | 0.00023 | 0.01054 | 0.00940 |
| TL | 203 | 0.03898 | 50.00210 | 2.281 | 0.03845 | 0.03848 | 0.04000 |
| U | 238 | 0.01781 | 90.00460 | 14.711 | 0.01533 | 0.01755 | 0.02056 |
| *GE-1* | 72 | 113536.00000 | 0.00000 | 2.539 | 116527.00000 | 113307.00000 | 110774.00000 |
| *TB-1* | 159 | 192684.00000 | 0.00000 | 3.199 | 197460.00000 | 194866.00000 | 185727.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:31:00
Tube Number: 57 Batch: 172051063901A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 53835.10000 | 0.00000 | 1.347 | 54403.50000 | 53018.70000 | 54083.10000 |
| AL | 27 | 3.29900 | 100.00500 | 57.624 | 2.19459 | 5.49475 | 2.20909 |
| CA | 44 | 8.99200 | 476.69600 | 160.476 | -5.57090 | 23.28100 | 9.26679 |
| CR | 52 | 0.37900 | 360.01900 | 30.343 | 0.26036 | 0.38661 | 0.49000 |
| FE | 57 | 1.83300 | 60.00250 | 193.617 | -0.87797 | 0.52787 | 5.84980 |
| K | 39 | -39.25000 | 17048.40000 | -19.618 | -47.32152 | -38.44829 | -31.98501 |
| MG | 24 | 5.08900 | 473.36400 | 6.475 | 4.73785 | 5.13632 | 5.39169 |
| MN | 55 | 0.07618 | 56.66930 | 146.889 | 0.20534 | 0.01234 | 0.01086 |
| NA | 23 | 4.38300 | 14939.00000 | 31.691 | 5.19175 | 5.17715 | 2.77897 |
| TI | 47 | 0.39740 | 6.66717 | 173.201 | 0.00000 | 1.19211 | 0.00000 |
| V | 51 | 0.06970 | 60.00250 | 25.653 | 0.08665 | 0.07141 | 0.05103 |
| **IN-1** | 115 | 58289.30000 | 0.00000 | 3.344 | 58868.70000 | 59883.30000 | 56115.90000 |
| AG | 107 | 0.00662 | 13.33380 | 116.662 | 0.01075 | -0.00229 | 0.01139 |
| AS | 75 | 0.03647 | 34.66700 | 264.409 | 0.14783 | -0.01931 | -0.01909 |
| BA | 137 | -0.00108 | 3.33347 | -3233.550 | 0.03920 | -0.02122 | -0.02122 |
| CD | 111 | 0.00285 | 2.66669 | 203.469 | -0.00076 | 0.00955 | -0.00023 |
| CO | 59 | -0.04091 | 40.00180 | -16.025 | -0.04107 | -0.03429 | -0.04740 |
| CU | 63 | 0.17520 | 203.34300 | 32.357 | 0.23497 | 0.12222 | 0.16836 |
| MO | 98 | 0.00987 | 10.00040 | 150.294 | -0.00529 | 0.02437 | 0.01054 |
| NI | 60 | 0.01663 | 26.66790 | 374.805 | 0.08595 | -0.03479 | -0.00128 |
| SB | 121 | -0.02050 | 6.66693 | -156.878 | 0.01663 | -0.03908 | -0.03908 |
| SN | 120 | 0.01424 | 53.33570 | 385.815 | -0.04704 | 0.05908 | 0.03067 |
| SR | 88 | 0.08618 | 50.00190 | 45.974 | 0.10584 | 0.04057 | 0.11213 |
| ZN | 66 | 0.24190 | 53.33540 | 84.084 | 0.04386 | 0.45030 | 0.23146 |
| **BI-1** | 209 | 149489.00000 | 0.00000 | 3.328 | 155172.00000 | 147379.00000 | 145917.00000 |
| PB | 208 | -0.00191 | 116.67200 | -169.158 | 0.00023 | -0.00564 | -0.00034 |
| TL | 203 | -0.00282 | 0.00000 | 0.000 | -0.00282 | -0.00282 | -0.00282 |
| U | 238 | 0.00405 | 30.00130 | 47.639 | 0.00587 | 0.00203 | 0.00423 |
| *GE-1* | 72 | 117377.00000 | 0.00000 | 1.586 | 119412.00000 | 115759.00000 | 116958.00000 |
| *TB-1* | 159 | 199696.00000 | 0.00000 | 1.916 | 204076.00000 | 198013.00000 | 196998.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:33:00
Tube Number: 58 Batch: 172051063901A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54682.30000 | 0.00000 | 1.345 | 55520.10000 | 54142.60000 | 54384.20000 |
| AL | 27 | 1985.00000 | 56950.60000 | 0.810 | 1971.43566 | 2002.86879 | 1981.32322 |
| CA | 44 | 4025.00000 | 12146.20000 | 3.158 | 4160.29928 | 3907.89698 | 4007.71004 |
| CR | 52 | 50.48000 | 36027.50000 | 2.044 | 50.65012 | 51.41565 | 49.37358 |
| FE | 57 | 1021.00000 | 15392.90000 | 3.088 | 1056.91296 | 1003.21233 | 1001.41870 |
| K | 39 | 9974.00000 | 538707.00000 | 1.128 | 9864.56030 | 10089.27041 | 9967.57320 |
| MG | 24 | 1992.00000 | 162306.00000 | 0.482 | 1982.80849 | 1992.38457 | 2002.02644 |
| MN | 55 | 50.15000 | 20717.20000 | 0.417 | 50.11252 | 49.96678 | 50.37916 |
| NA | 23 | 9835.00000 | 1748500.00000 | 0.597 | 9777.21970 | 9834.72542 | 9894.63245 |
| TI | 47 | 251.50000 | 4350.89000 | 3.281 | 245.92511 | 247.51400 | 260.94525 |
| V | 51 | 49.22000 | 27386.10000 | 1.138 | 48.99927 | 48.80846 | 49.85967 |
| **IN-1** | 115 | 57834.90000 | 0.00000 | 2.753 | 59672.80000 | 56912.40000 | 56919.50000 |
| AG | 107 | 49.67000 | 74798.80000 | 1.124 | 49.08141 | 49.72476 | 50.19319 |
| AS | 75 | 9.74800 | 635.35400 | 7.381 | 8.96042 | 10.37136 | 9.91083 |
| BA | 137 | 48.90000 | 7942.90000 | 7.585 | 44.64149 | 51.43524 | 50.61630 |
| CD | 111 | 5.14200 | 949.37600 | 4.673 | 5.31565 | 4.86753 | 5.24219 |
| CO | 59 | 228.50000 | 302754.00000 | 1.407 | 225.03761 | 231.41444 | 228.92416 |
| CU | 63 | 50.39000 | 45142.90000 | 0.520 | 50.28012 | 50.69338 | 50.20816 |
| MO | 98 | 50.25000 | 32720.10000 | 2.398 | 49.32190 | 49.82174 | 51.61448 |
| NI | 60 | 50.19000 | 16430.90000 | 1.962 | 51.14724 | 49.17933 | 50.23160 |
| SB | 121 | 6.08400 | 2160.28000 | 7.219 | 6.17197 | 6.47323 | 5.60800 |
| SN | 120 | 51.71000 | 28115.70000 | 1.021 | 51.24510 | 51.59571 | 52.28319 |
| SR | 88 | 38.42000 | 17646.10000 | 2.438 | 37.33857 | 38.99556 | 38.92388 |
| ZN | 66 | 505.60000 | 59457.50000 | 1.585 | 498.14576 | 514.06045 | 504.45916 |
| **BI-1** | 209 | 148870.00000 | 0.00000 | 1.787 | 151303.00000 | 149280.00000 | 146028.00000 |
| PB | 208 | 14.65000 | 59343.30000 | 1.337 | 14.72812 | 14.43154 | 14.80130 |
| TL | 203 | 1.84600 | 2330.33000 | 6.631 | 1.96640 | 1.85055 | 1.72176 |
| U | 238 | 0.00267 | 23.33430 | 117.808 | 0.00608 | -0.00013 | 0.00207 |
| *GE-1* | 72 | 118652.00000 | 0.00000 | 4.613 | 124399.00000 | 118059.00000 | 113499.00000 |
| *TB-1* | 159 | 202632.00000 | 0.00000 | 3.041 | 209443.00000 | 197444.00000 | 201010.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:35:00
Tube Number: 59 Batch: 172051063901A
Sample Number: **9112123** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52807.60000 | 0.00000 | 1.378 | 53530.20000 | 52817.70000 | 52075.00000 |
| AL | 27 | 100.00000 | 2777.07000 | 3.076 | 100.17977 | 96.84240 | 102.98644 |
| CA | 44 | 181200.00000 | 508517.00000 | 1.547 | 182057.57484 | 183520.18683 | 178100.00531 |
| CR | 52 | 3.72600 | 2653.70000 | 1.827 | 3.65420 | 3.73443 | 3.78962 |
| FE | 57 | 163.40000 | 2403.66000 | 11.573 | 147.16263 | 158.81186 | 184.14441 |
| K | 39 | 4811.00000 | 260637.00000 | 1.562 | 4742.58705 | 4891.47974 | 4799.20209 |
| MG | 24 | 29830.00000 | 2345460.00000 | 2.777 | 29014.02336 | 30669.93620 | 29799.80666 |
| MN | 55 | 1.93700 | 796.72100 | 9.530 | 1.79447 | 2.14578 | 1.87185 |
| NA | 23 | 52440.00000 | 8942400.00000 | 1.773 | 51934.37321 | 53509.08453 | 51865.26137 |
| TI | 47 | 6.35900 | 106.67100 | 42.963 | 9.44554 | 5.38477 | 4.24785 |
| V | 51 | 3.80900 | 2066.92000 | 4.631 | 3.89280 | 3.92725 | 3.60596 |
| **IN-1** | 115 | 54821.40000 | 0.00000 | 1.884 | 55120.60000 | 55671.90000 | 53671.60000 |
| AG | 107 | 0.07015 | 103.33800 | 7.735 | 0.06737 | 0.06668 | 0.07641 |
| AS | 75 | 0.66320 | 69.33410 | 18.185 | 0.53176 | 0.68901 | 0.76877 |
| BA | 137 | 48.11000 | 7419.16000 | 3.033 | 47.03796 | 49.76837 | 47.51276 |
| CD | 111 | 0.00383 | 2.66670 | 170.284 | 0.01137 | -0.00014 | 0.00028 |
| CO | 59 | 0.16250 | 293.34800 | 26.203 | 0.13515 | 0.21152 | 0.14071 |
| CU | 63 | 1.77000 | 1543.49000 | 6.525 | 1.73181 | 1.67931 | 1.90035 |
| MO | 98 | 1.13900 | 706.71400 | 1.626 | 1.12260 | 1.15929 | 1.13651 |
| NI | 60 | 0.62330 | 213.34400 | 14.908 | 0.57767 | 0.73023 | 0.56203 |
| SB | 121 | 0.12030 | 53.33540 | 12.577 | 0.10967 | 0.13765 | 0.11368 |
| SN | 120 | 0.34460 | 220.01100 | 16.132 | 0.28397 | 0.35687 | 0.39311 |
| SR | 88 | 1093.00000 | 475981.00000 | 1.462 | 1106.49758 | 1075.66058 | 1098.37049 |
| ZN | 66 | 13.91000 | 1570.15000 | 15.536 | 13.35752 | 12.07451 | 16.29010 |
| **BI-1** | 209 | 134392.00000 | 0.00000 | 1.539 | 134920.00000 | 136144.00000 | 132110.00000 |
| PB | 208 | 0.18870 | 800.04700 | 19.290 | 0.14684 | 0.21289 | 0.20639 |
| TL | 203 | 0.01177 | 16.66740 | 84.350 | 0.00594 | 0.02323 | 0.00613 |
| U | 238 | 3.05400 | 13054.40000 | 1.227 | 3.03843 | 3.09673 | 3.02679 |
| *GE-1* | 72 | 111532.00000 | 0.00000 | 2.661 | 114143.00000 | 112148.00000 | 108305.00000 |
| *TB-1* | 159 | 197513.00000 | 0.00000 | 0.754 | 198982.00000 | 197557.00000 | 196002.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:36:00
Tube Number: 60 Batch: 172051063901A
Sample Number: **9112123** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52151.60000 | 0.00000 | 3.716 | 51672.90000 | 54283.60000 | 50498.30000 |
| AL | 27 | 278.10000 | 7609.13000 | 5.779 | 294.60229 | 262.50049 | 277.28430 |
| CA | 44 | 178100.00000 | 493071.00000 | 3.328 | 180340.58375 | 171369.97047 | 182567.86215 |
| CR | 52 | 7.54700 | 5207.90000 | 5.358 | 7.65713 | 7.09837 | 7.88411 |
| FE | 57 | 343.00000 | 4947.78000 | 5.656 | 343.88498 | 323.23031 | 362.01198 |
| K | 39 | 5133.00000 | 273146.00000 | 3.889 | 5194.39093 | 4909.68878 | 5294.43833 |
| MG | 24 | 29180.00000 | 2263930.00000 | 5.096 | 29231.96694 | 27676.61918 | 30649.28365 |
| MN | 55 | 5.63000 | 2236.93000 | 5.469 | 5.60670 | 5.33407 | 5.94857 |
| NA | 23 | 51600.00000 | 8679920.00000 | 5.202 | 52161.69922 | 48683.40599 | 53963.46829 |
| TI | 47 | 32.33000 | 533.36500 | 4.114 | 31.18998 | 32.01867 | 33.79318 |
| V | 51 | 4.23600 | 2263.60000 | 8.140 | 4.52913 | 3.85634 | 4.32370 |
| **IN-1** | 115 | 53472.20000 | 0.00000 | 1.427 | 54159.40000 | 52651.40000 | 53605.90000 |
| AG | 107 | 0.92440 | 1290.12000 | 16.367 | 1.00453 | 1.01879 | 0.74987 |
| AS | 75 | 4.88500 | 309.34000 | 9.136 | 4.41059 | 5.29630 | 4.94900 |
| BA | 137 | 50.93000 | 7659.37000 | 0.624 | 50.56807 | 51.07039 | 51.15664 |
| CD | 111 | 0.96950 | 166.66900 | 22.114 | 0.73092 | 1.14592 | 1.03156 |
| CO | 59 | 0.94780 | 1246.78000 | 15.710 | 0.94476 | 1.09821 | 0.80052 |
| CU | 63 | 5.86800 | 4901.12000 | 9.898 | 6.53782 | 5.49856 | 5.56864 |
| MO | 98 | 1.99000 | 1200.10000 | 17.292 | 1.97898 | 2.33949 | 1.65153 |
| NI | 60 | 4.62100 | 1416.81000 | 7.715 | 5.03243 | 4.40538 | 4.42485 |
| SB | 121 | 1.97300 | 656.71000 | 10.142 | 2.20150 | 1.89194 | 1.82697 |
| SN | 120 | 4.29500 | 2196.94000 | 4.794 | 4.14595 | 4.53013 | 4.20945 |
| SR | 88 | 1084.00000 | 460288.00000 | 1.538 | 1070.89367 | 1102.88873 | 1078.80085 |
| ZN | 66 | 42.21000 | 4611.00000 | 4.018 | 43.39409 | 42.96037 | 40.26430 |
| **BI-1** | 209 | 134048.00000 | 0.00000 | 1.047 | 135548.00000 | 133830.00000 | 132767.00000 |
| PB | 208 | 2.18000 | 8041.44000 | 5.596 | 2.07039 | 2.15792 | 2.31144 |
| TL | 203 | 0.92550 | 1053.42000 | 10.050 | 1.02641 | 0.90710 | 0.84313 |
| U | 238 | 12.84000 | 54729.00000 | 1.306 | 12.94509 | 12.65089 | 12.93767 |
| *GE-1* | 72 | 108533.00000 | 0.00000 | 0.862 | 107881.00000 | 109604.00000 | 108112.00000 |
| *TB-1* | 159 | 193571.00000 | 0.00000 | 0.943 | 193894.00000 | 195213.00000 | 191605.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:38:00
Tube Number: 61 Batch: 172051063901A
Sample Number: **9112123** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54310.40000 | 0.00000 | 3.364 | 53028.10000 | 56402.50000 | 53500.50000 |
| AL | 27 | 85.67000 | 2450.31000 | 10.963 | 75.24222 | 88.30340 | 93.46351 |
| CA | 44 | 178800.00000 | 515778.00000 | 0.476 | 178866.30495 | 177859.92355 | 179553.12882 |
| CR | 52 | 3.39300 | 2490.34000 | 9.876 | 3.77706 | 3.16151 | 3.23984 |
| FE | 57 | 148.00000 | 2246.94000 | 8.973 | 132.81039 | 153.73271 | 157.43604 |
| K | 39 | 4694.00000 | 261895.00000 | 2.309 | 4747.94397 | 4569.39514 | 4765.07285 |
| MG | 24 | 29540.00000 | 2388750.00000 | 1.700 | 29306.22760 | 29197.16548 | 30116.33566 |
| MN | 55 | 1.86900 | 790.05500 | 12.552 | 2.13702 | 1.69993 | 1.77073 |
| NA | 23 | 51320.00000 | 8999850.00000 | 0.840 | 51740.79798 | 50879.72928 | 51341.41549 |
| TI | 47 | 5.43600 | 93.33810 | 17.101 | 4.76743 | 5.04265 | 6.49738 |
| V | 51 | 3.58300 | 2000.25000 | 2.513 | 3.67033 | 3.58787 | 3.49047 |
| **IN-1** | 115 | 55943.90000 | 0.00000 | 1.339 | 55221.40000 | 56716.80000 | 55893.50000 |
| AG | 107 | 0.00677 | 13.33380 | 152.607 | -0.00229 | 0.01802 | 0.00458 |
| AS | 75 | 0.70450 | 73.33420 | 49.766 | 0.39463 | 0.63386 | 1.08498 |
| BA | 137 | 48.61000 | 7649.31000 | 1.905 | 47.59671 | 49.41628 | 48.80672 |
| CD | 111 | 0.02591 | 6.66672 | 48.784 | 0.01132 | 0.03288 | 0.03353 |
| CO | 59 | 0.02547 | 123.34000 | 45.858 | 0.01621 | 0.02162 | 0.03859 |
| CU | 63 | 1.84400 | 1640.17000 | 2.878 | 1.78708 | 1.85256 | 1.89217 |
| MO | 98 | 1.00600 | 636.70500 | 22.942 | 1.16878 | 1.10651 | 0.74154 |
| NI | 60 | 0.60060 | 210.01100 | 15.291 | 0.67262 | 0.49721 | 0.63210 |
| SB | 121 | 0.08772 | 43.33500 | 83.926 | 0.02031 | 0.07657 | 0.16629 |
| SN | 120 | 0.17780 | 136.67300 | 50.191 | 0.26400 | 0.08581 | 0.18359 |
| SR | 88 | 1090.00000 | 484063.00000 | 0.898 | 1089.61526 | 1099.39938 | 1079.82262 |
| ZN | 66 | 14.10000 | 1626.83000 | 8.454 | 13.60006 | 13.23594 | 15.45831 |
| **BI-1** | 209 | 139440.00000 | 0.00000 | 1.388 | 137744.00000 | 141547.00000 | 139027.00000 |
| PB | 208 | 0.18040 | 800.04800 | 26.835 | 0.12448 | 0.20880 | 0.20784 |
| TL | 203 | 0.00283 | 6.66694 | 172.975 | 0.00577 | 0.00553 | -0.00282 |
| U | 238 | 3.03500 | 13461.60000 | 2.092 | 3.00814 | 3.10753 | 2.98939 |
| *GE-1* | 72 | 112018.00000 | 0.00000 | 2.706 | 110169.00000 | 115516.00000 | 110370.00000 |
| *TB-1* | 159 | 200427.00000 | 0.00000 | 3.179 | 194055.00000 | 206798.00000 | 200427.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:40:00
Tube Number: 62 Batch: 172051063901A
Sample Number: **9112123** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51750.10000 | 0.00000 | 2.926 | 53420.00000 | 51362.10000 | 50468.30000 |
| AL | 27 | 2085.00000 | 56605.20000 | 2.172 | 2063.27622 | 2137.03255 | 2054.60411 |
| CA | 44 | 185200.00000 | 509301.00000 | 1.471 | 184046.78906 | 188359.95054 | 183317.00004 |
| CR | 52 | 51.59000 | 34844.20000 | 0.561 | 51.89596 | 51.53697 | 51.32278 |
| FE | 57 | 1153.00000 | 16447.60000 | 1.925 | 1165.30134 | 1165.33137 | 1126.87520 |
| K | 39 | 14980.00000 | 756323.00000 | 1.491 | 14837.33143 | 15233.37370 | 14856.63646 |
| MG | 24 | 31920.00000 | 2459950.00000 | 1.140 | 31768.46786 | 32335.22291 | 31656.24145 |
| MN | 55 | 51.89000 | 20283.10000 | 0.161 | 51.81138 | 51.97684 | 51.87292 |
| NA | 23 | 63220.00000 | 10563500.00000 | 2.491 | 63117.32345 | 64840.96542 | 61695.88254 |
| TI | 47 | 246.00000 | 4027.42000 | 7.630 | 234.88295 | 267.68144 | 235.46660 |
| V | 51 | 53.11000 | 27974.10000 | 2.056 | 53.67692 | 53.81319 | 51.85692 |
| **IN-1** | 115 | 53365.10000 | 0.00000 | 2.571 | 54663.30000 | 53502.00000 | 51929.90000 |
| AG | 107 | 48.45000 | 67367.60000 | 1.968 | 49.44003 | 48.38387 | 47.53681 |
| AS | 75 | 10.83000 | 649.35500 | 5.606 | 11.39992 | 10.19322 | 10.91287 |
| BA | 137 | 101.00000 | 15153.10000 | 2.110 | 101.49226 | 102.76425 | 98.60569 |
| CD | 111 | 4.56300 | 777.36300 | 1.698 | 4.58557 | 4.62664 | 4.47671 |
| CO | 59 | 225.50000 | 275876.00000 | 1.002 | 226.62754 | 227.02229 | 222.92488 |
| CU | 63 | 51.87000 | 42888.80000 | 2.423 | 52.95915 | 52.14609 | 50.49267 |
| MO | 98 | 52.38000 | 31486.70000 | 2.953 | 52.52301 | 53.84609 | 50.76163 |
| NI | 60 | 50.34000 | 15202.80000 | 3.186 | 49.29417 | 52.18634 | 49.53793 |
| SB | 121 | 5.91100 | 1933.56000 | 9.948 | 5.24099 | 6.15263 | 6.34008 |
| SN | 120 | 52.84000 | 26519.10000 | 1.666 | 53.79977 | 52.63593 | 52.07380 |
| SR | 88 | 1146.00000 | 485668.00000 | 0.921 | 1143.94447 | 1157.47891 | 1136.66991 |
| ZN | 66 | 479.70000 | 52072.70000 | 0.788 | 477.12328 | 484.06428 | 477.99875 |
| **BI-1** | 209 | 131853.00000 | 0.00000 | 3.972 | 136599.00000 | 132726.00000 | 126235.00000 |
| PB | 208 | 15.91000 | 57079.00000 | 2.017 | 16.19797 | 15.95983 | 15.56285 |
| TL | 203 | 2.22600 | 2487.03000 | 9.286 | 2.10913 | 2.46478 | 2.10454 |
| U | 238 | 3.05200 | 12790.80000 | 2.246 | 2.98954 | 3.04123 | 3.12536 |
| *GE-1* | 72 | 107510.00000 | 0.00000 | 4.152 | 112429.00000 | 106387.00000 | 103716.00000 |
| *TB-1* | 159 | 192352.00000 | 0.00000 | 4.226 | 201197.00000 | 190649.00000 | 185209.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:41:00
Tube Number: 63 Batch: 172051063901A
Sample Number: **9112123** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51843.60000 | 0.00000 | 2.012 | 51562.60000 | 52997.90000 | 50970.40000 |
| AL | 27 | 2038.00000 | 55413.30000 | 2.642 | 2050.73340 | 1978.92292 | 2084.30920 |
| CA | 44 | 181800.00000 | 500721.00000 | 1.321 | 184323.11915 | 179542.72190 | 181547.68971 |
| CR | 52 | 52.58000 | 35572.70000 | 2.212 | 53.90492 | 51.71474 | 52.13030 |
| FE | 57 | 1099.00000 | 15716.90000 | 2.339 | 1118.45377 | 1109.38828 | 1070.07838 |
| K | 39 | 14680.00000 | 742982.00000 | 1.457 | 14906.40525 | 14482.15656 | 14646.73609 |
| MG | 24 | 31210.00000 | 2408700.00000 | 2.732 | 31869.83967 | 30245.97451 | 31508.94335 |
| MN | 55 | 49.95000 | 19562.20000 | 0.435 | 49.71576 | 50.14679 | 49.98103 |
| NA | 23 | 61000.00000 | 10209300.00000 | 1.034 | 60911.08524 | 60417.93805 | 61670.23281 |
| TI | 47 | 251.60000 | 4127.49000 | 1.965 | 248.86261 | 248.68335 | 257.33741 |
| V | 51 | 52.46000 | 27670.40000 | 1.105 | 53.05038 | 51.89153 | 52.44856 |
| **IN-1** | 115 | 53762.10000 | 0.00000 | 1.010 | 54389.00000 | 53442.70000 | 53454.70000 |
| AG | 107 | 47.76000 | 66878.40000 | 0.652 | 47.94288 | 47.93952 | 47.40152 |
| AS | 75 | 10.20000 | 617.35400 | 9.529 | 10.36172 | 11.07834 | 9.15504 |
| BA | 137 | 98.82000 | 14939.50000 | 3.327 | 99.64657 | 101.61171 | 95.19413 |
| CD | 111 | 4.98600 | 855.36900 | 0.367 | 4.97839 | 4.97270 | 5.00684 |
| CO | 59 | 220.70000 | 271885.00000 | 1.022 | 219.80635 | 218.95151 | 223.21425 |
| CU | 63 | 50.24000 | 41838.50000 | 1.300 | 50.80579 | 50.38412 | 49.52435 |
| MO | 98 | 51.84000 | 31382.90000 | 2.521 | 50.93775 | 53.33902 | 51.24551 |
| NI | 60 | 50.04000 | 15226.10000 | 2.172 | 49.93346 | 51.18359 | 49.01768 |
| SB | 121 | 6.08200 | 2006.91000 | 4.048 | 6.11198 | 5.82191 | 6.31152 |
| SN | 120 | 52.53000 | 26555.60000 | 2.033 | 53.75797 | 51.87483 | 51.94287 |
| SR | 88 | 1113.00000 | 475389.00000 | 0.271 | 1117.02161 | 1111.63845 | 1111.97552 |
| ZN | 66 | 469.70000 | 51355.90000 | 2.876 | 456.82338 | 483.77057 | 468.50669 |
| **BI-1** | 209 | 131745.00000 | 0.00000 | 1.171 | 132826.00000 | 129978.00000 | 132431.00000 |
| PB | 208 | 15.49000 | 55503.00000 | 2.394 | 15.22561 | 15.91454 | 15.33212 |
| TL | 203 | 2.23500 | 2493.72000 | 1.902 | 2.24037 | 2.18944 | 2.27386 |
| U | 238 | 3.03300 | 12707.40000 | 1.046 | 3.06029 | 3.04014 | 2.99809 |
| *GE-1* | 72 | 107898.00000 | 0.00000 | 2.171 | 110391.00000 | 105744.00000 | 107558.00000 |
| *TB-1* | 159 | 194842.00000 | 0.00000 | 1.239 | 197025.00000 | 192248.00000 | 195253.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:43:00
Tube Number: 64 Batch: 172051063901A
Sample Number: **9112123** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 50578.70000 | 0.00000 | 4.310 | 53058.40000 | 49715.20000 | 48962.40000 |
| AL | 27 | 25.76000 | 690.04700 | 9.425 | 24.89294 | 28.50151 | 23.88205 |
| CA | 44 | 35550.00000 | 95840.60000 | 1.696 | 35357.27233 | 35058.50905 | 36219.86273 |
| CR | 52 | 1.07300 | 796.72200 | 11.864 | 1.11023 | 1.17852 | 0.93196 |
| FE | 57 | 32.09000 | 476.69300 | 9.660 | 30.66458 | 29.95129 | 35.64229 |
| K | 39 | 898.30000 | 61116.10000 | 5.267 | 849.17878 | 902.23366 | 943.55769 |
| MG | 24 | 5783.00000 | 435460.00000 | 1.653 | 5673.37745 | 5847.26434 | 5829.07875 |
| MN | 55 | 0.48600 | 210.01200 | 14.934 | 0.56188 | 0.41725 | 0.47877 |
| NA | 23 | 10970.00000 | 1801550.00000 | 2.264 | 10707.62765 | 11007.72640 | 11200.58646 |
| TI | 47 | 1.65100 | 26.66790 | 54.967 | 2.38240 | 0.63564 | 1.93624 |
| V | 51 | 0.64080 | 350.02200 | 32.413 | 0.68313 | 0.41516 | 0.82399 |
| **IN-1** | 115 | 55321.60000 | 0.00000 | 3.937 | 57812.80000 | 54376.70000 | 53775.30000 |
| AG | 107 | 0.08523 | 126.67200 | 21.002 | 0.10398 | 0.06833 | 0.08340 |
| AS | 75 | 0.03368 | 32.66700 | 170.249 | -0.00145 | 0.09985 | 0.00263 |
| BA | 137 | 9.84800 | 1533.48000 | 5.709 | 9.51638 | 9.53021 | 10.49699 |
| CD | 111 | 0.00375 | 2.66670 | 473.179 | -0.00056 | 0.02323 | -0.01143 |
| CO | 59 | 0.13110 | 256.67900 | 28.680 | 0.16331 | 0.08980 | 0.14030 |
| CU | 63 | 0.46390 | 440.02300 | 4.958 | 0.45258 | 0.44872 | 0.49035 |
| MO | 98 | 0.24190 | 153.34000 | 17.230 | 0.19442 | 0.27237 | 0.25896 |
| NI | 60 | 0.17220 | 73.33640 | 43.246 | 0.08869 | 0.19598 | 0.23179 |
| SB | 121 | 0.07026 | 36.66810 | 53.288 | 0.04601 | 0.05139 | 0.11339 |
| SN | 120 | 0.26550 | 180.00900 | 30.734 | 0.17473 | 0.28899 | 0.33277 |
| SR | 88 | 208.20000 | 91438.20000 | 1.072 | 205.61172 | 209.48710 | 209.46953 |
| ZN | 66 | 3.24800 | 390.01900 | 16.505 | 3.79196 | 3.23052 | 2.72015 |
| **BI-1** | 209 | 137409.00000 | 0.00000 | 4.214 | 144089.00000 | 134309.00000 | 133827.00000 |
| PB | 208 | 0.02810 | 220.01000 | 32.068 | 0.03840 | 0.02422 | 0.02167 |
| TL | 203 | 0.00285 | 6.66694 | 172.501 | 0.00539 | 0.00598 | -0.00282 |
| U | 238 | 0.58640 | 2573.74000 | 4.724 | 0.61807 | 0.57418 | 0.56685 |
| *GE-1* | 72 | 108355.00000 | 0.00000 | 2.771 | 110775.00000 | 109294.00000 | 104996.00000 |
| *TB-1* | 159 | 188760.00000 | 0.00000 | 4.172 | 197815.00000 | 183491.00000 | 184975.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:45:00
Tube Number: 65
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 50231.00000 | 0.00000 | 2.558 | 50779.80000 | 48762.30000 | 51151.00000 |
| AL | 27 | 2473.00000 | 65185.10000 | 1.536 | 2436.50650 | 2471.27383 | 2512.40557 |
| CA | 44 | 2568.00000 | 7272.29000 | 3.253 | 2632.68272 | 2473.71053 | 2597.69273 |
| CR | 52 | 251.20000 | 164337.00000 | 1.100 | 248.64989 | 250.77917 | 254.13309 |
| FE | 57 | 2494.00000 | 34496.70000 | 2.374 | 2531.90817 | 2524.65783 | 2425.90226 |
| K | 39 | 2390.00000 | 132087.00000 | 1.441 | 2389.11874 | 2424.83611 | 2355.96517 |
| MG | 24 | 2508.00000 | 187626.00000 | 1.217 | 2475.64900 | 2536.35676 | 2511.47598 |
| MN | 55 | 250.40000 | 94923.30000 | 0.840 | 248.12883 | 250.81560 | 252.27814 |
| NA | 23 | 2344.00000 | 392801.00000 | 1.738 | 2296.92833 | 2363.25428 | 2371.05702 |
| TI | 47 | 244.00000 | 3877.39000 | 1.819 | 240.24632 | 248.89348 | 242.83161 |
| V | 51 | 246.20000 | 125738.00000 | 1.444 | 250.25553 | 244.05647 | 244.14710 |
| **IN-1** | 115 | 54735.20000 | 0.00000 | 0.951 | 54383.30000 | 54489.30000 | 55332.90000 |
| AG | 107 | 25.01000 | 35654.40000 | 1.168 | 24.68757 | 25.07757 | 25.25888 |
| AS | 75 | 245.50000 | 14431.50000 | 1.638 | 245.23875 | 241.67413 | 249.70107 |
| BA | 137 | 246.80000 | 37992.70000 | 2.548 | 242.54803 | 243.91115 | 254.05697 |
| CD | 111 | 25.44000 | 4434.81000 | 2.684 | 25.93743 | 25.72543 | 24.66311 |
| CO | 59 | 225.20000 | 282579.00000 | 2.540 | 229.67431 | 218.79046 | 227.27989 |
| CU | 63 | 246.40000 | 208757.00000 | 2.961 | 249.04310 | 238.14778 | 252.00237 |
| MO | 98 | 24.28000 | 14969.30000 | 4.456 | 24.60316 | 23.07068 | 25.16117 |
| NI | 60 | 250.20000 | 77418.60000 | 1.631 | 250.64154 | 245.87229 | 253.99203 |
| SB | 121 | 25.25000 | 8439.81000 | 4.483 | 26.47444 | 25.03735 | 24.24019 |
| SN | 120 | 25.74000 | 13271.00000 | 6.049 | 26.31604 | 23.97472 | 26.92294 |
| SR | 88 | 25.03000 | 10888.40000 | 0.667 | 25.16116 | 25.08883 | 24.84254 |
| ZN | 66 | 252.60000 | 28138.30000 | 5.356 | 262.37540 | 237.16550 | 258.31351 |
| **BI-1** | 209 | 140434.00000 | 0.00000 | 0.510 | 140757.00000 | 139613.00000 | 140932.00000 |
| PB | 208 | 25.08000 | 95757.80000 | 1.976 | 25.42673 | 24.51644 | 25.31122 |
| TL | 203 | 24.94000 | 29631.00000 | 3.340 | 24.77099 | 24.20141 | 25.84194 |
| U | 238 | 24.44000 | 109106.00000 | 2.204 | 24.54400 | 23.86074 | 24.92367 |
| *GE-1* | 72 | 109289.00000 | 0.00000 | 2.635 | 107296.00000 | 107981.00000 | 112591.00000 |
| *TB-1* | 159 | 190639.00000 | 0.00000 | 1.890 | 190507.00000 | 187104.00000 | 194307.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:47:00
Tube Number: 66
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 50414.90000 | 0.00000 | 1.306 | 50378.20000 | 49775.80000 | 51090.80000 |
| AL | 27 | 2.13200 | 63.33570 | 36.205 | 2.76896 | 1.27365 | 2.35361 |
| CA | 44 | -22.00000 | 363.35500 | -84.636 | -23.31264 | -2.75945 | -39.94005 |
| CR | 52 | 0.59600 | 480.02700 | 21.074 | 0.45971 | 0.62126 | 0.70705 |
| FE | 57 | 2.11200 | 60.00300 | 2.673 | 2.11439 | 2.16688 | 2.05407 |
| K | 39 | -57.44000 | 15092.50000 | -0.928 | -57.91683 | -56.86688 | -57.56153 |
| MG | 24 | 3.35500 | 313.34900 | 6.781 | 3.44871 | 3.09564 | 3.52069 |
| MN | 55 | 0.07677 | 53.33540 | 117.715 | 0.06889 | -0.00941 | 0.17083 |
| NA | 23 | -3.04600 | 12783.40000 | -48.129 | -4.69168 | -2.57421 | -1.87506 |
| TI | 47 | 0.20910 | 3.33346 | 173.219 | 0.62728 | 0.00000 | 0.00000 |
| V | 51 | 0.20050 | 123.34000 | 23.372 | 0.15534 | 0.19723 | 0.24889 |
| **IN-1** | 115 | 56387.10000 | 0.00000 | 1.745 | 57472.80000 | 56135.30000 | 55553.30000 |
| AG | 107 | 0.04316 | 66.66950 | 10.778 | 0.03780 | 0.04559 | 0.04609 |
| AS | 75 | 0.11050 | 38.00030 | 148.507 | 0.09904 | 0.28001 | -0.04764 |
| BA | 137 | 0.08528 | 16.66730 | 156.426 | -0.02122 | 0.04215 | 0.23491 |
| CD | 111 | 0.02934 | 7.33341 | 57.464 | 0.03229 | 0.04453 | 0.01119 |
| CO | 59 | 0.06624 | 176.67500 | 30.163 | 0.04319 | 0.07700 | 0.07855 |
| CU | 63 | 0.14120 | 166.67300 | 35.907 | 0.08448 | 0.15677 | 0.18221 |
| MO | 98 | 0.04209 | 30.00120 | 38.489 | 0.02562 | 0.05800 | 0.04267 |
| NI | 60 | 0.22900 | 93.33740 | 17.803 | 0.18195 | 0.25086 | 0.25416 |
| SB | 121 | 0.05805 | 33.33490 | 116.606 | 0.01799 | 0.13619 | 0.01996 |
| SN | 120 | 0.01167 | 50.00200 | 336.847 | -0.02763 | 0.01165 | 0.05100 |
| SR | 88 | 0.07431 | 43.33500 | 17.992 | 0.06513 | 0.08965 | 0.06815 |
| ZN | 66 | 0.08446 | 33.33460 | 64.599 | 0.04995 | 0.05607 | 0.14736 |
| **BI-1** | 209 | 142506.00000 | 0.00000 | 0.780 | 143753.00000 | 142144.00000 | 141619.00000 |
| PB | 208 | 0.01677 | 183.34200 | 90.817 | 0.01037 | 0.03416 | 0.00579 |
| TL | 203 | 0.02209 | 30.00120 | 65.369 | 0.01363 | 0.03877 | 0.01388 |
| U | 238 | 0.02942 | 143.34000 | 11.948 | 0.02622 | 0.03318 | 0.02887 |
| *GE-1* | 72 | 110509.00000 | 0.00000 | 2.170 | 113277.00000 | 109120.00000 | 109129.00000 |
| *TB-1* | 159 | 192755.00000 | 0.00000 | 1.304 | 195072.00000 | 193109.00000 | 190083.00000 |

# Instrument Tuning Report (ICPMS #11332)

| | |
|---|---|
| File Name: | default.tun |
| File Path: | C:\elandata\Tuning |
| Sample Date/Time: | 7/25/2017 11:47:00PM |
| Number of Replicates: | 6 |
| Method File: | c:\elandata\Method\dailytune.mth |

**Measured Mass must be within +/- 0.1 amu of the Exact Mass.**

**Measured Peak Width must be > or = to 0.640 AND < or = to 0.660.**

| Analyte | EXACT MASS | MEAS. MASS | Mass DAC | RES. DAC | MEAS. PK. WIDTH |
|---|---|---|---|---|---|
| Ce | 140.000 | 140.000 | 0 | 0 | 0.650 |
| In | 115.000 | 115.000 | 0 | 0 | 0.650 |
| Li | 6.000 | 6.000 | 0 | 0 | 0.700 |
| Mg | 24.000 | 23.950 | 0 | 0 | 0.650 |
| Pb | 208.000 | 207.950 | 0 | 0 | 0.600 |
| Rh | 103.000 | 103.000 | 0 | 0 | 0.650 |
| U | 238.000 | 237.900 | 0 | 0 | 0.550 |

**Summary: Verify that the RSD is less than 5 for the following masses.**

| Mass | Meas. Intens. Mean | Meas. Intens. RSD |
|---|---|---|
| 140.000 | 37057.000 | 1.130 |
| 115.000 | 38296.000 | 0.530 |
| 6.000 | 14588.000 | 1.750 |
| 24.000 | 15436.000 | 1.110 |
| 208.000 | 19032.000 | 2.200 |
| 103.000 | 32330.000 | 1.290 |
| 238.000 | 37563.000 | 1.220 |

# Extraction/Distillation/Digestion Logs

# Metals in Liquid

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 200 10635 01

**Start Time:** 7/20/17 5:35 **End Time:** 7/20/17 9:24 **Hot Block:** Deena1

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17182A | 5.00 |
| 1:1 HNO3 | P17182B | 2.00 |
| ICP Spike 1A | 1710327#15 | 1.00 |
| ICP Spike 1B | 1710340#15 | 1.00 |
| LCS A1 | 1710327#15 | 1.00 |
| LCS B1 | 1710340#15 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9107407 | 07/28/17 09:40 | WW | N8 | | | | 008a | 1703076 | |
| 4) | **9109771U** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 5) | **9109772R** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9109773M** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 7) | **9109774D** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 8) | 9109779 | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/20/2017

v 1.1.0

# Batch# 17 200 1063 501

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/19/17 17:29 | 1184 |
| 2) | Sample Vol | | 7/20/17 5:36 | 1184 |
| 3) | Final Vol | CLEAR | 7/20/17 5:36 | 1184 |
| 4) | Trial | | 7/20/17 5:36 | 1184 |
| 5) | Upload Prep | US19PCC0669 | 7/20/17 9:25 | 1184 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

Analysis: 0635 SW846 Water

Batch# 17 200 1063 501

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9107407 | 07/28/17 | N8 | 18706 | KR187-06* | 50.0000 | 50.0000 | 1 |
| **9109771U** | 07/31/17 | N8 | 18801 | KR188-01BKG | 50.0000 | 50.0000 | 1 |
| **9109772R** | 07/31/17 | N8 | 18801 | KR188-01MS | 50.0000 | 50.0000 | 1 |
| **9109773M** | 07/31/17 | N8 | 18801 | KR188-01MSD | 50.0000 | 50.0000 | 1 |
| **9109774D** | 07/31/17 | N8 | 18801 | KR188-01DUP | 50.0000 | 50.0000 | 1 |
| 9109779 | 07/31/17 | N8 | 18803 | KR188-03 | 50.0000 | 50.0000 | 1 |

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 200 10635 02

**Start Time:** 7/20/17 5:35 **End Time:** 7/20/17 9:24 **Hot Block:** Deena1

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17182A | 5.00 |
| 1:1 HNO3 | P17182B | 2.00 |
| ICP Spike 1A | 1710327#15 | 1.00 |
| ICP Spike 1B | 1710340#15 | 1.00 |
| LCS A1 | 1710327#15 | 1.00 |
| LCS B1 | 1710340#15 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | **9109775U** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 4) | **9109776R** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 5) | **9109777M** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9109778D** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 7) | 9109780 | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/20/2017

v 1.1.0

# Batch# 17 200 1063 502

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/19/17 17:30 | 1184 |
| 2) | Sample Vol | | 7/20/17 5:36 | 1184 |
| 3) | Final Vol | CLEAR | 7/20/17 5:36 | 1184 |
| 4) | Trial | | 7/20/17 5:36 | 1184 |
| 5) | Upload Prep | US19PCC0669 | 7/20/17 9:25 | 1184 |

| | | | | | Original Entry | | | | Data Changed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Analysis | D | Operation | Measurement | Date/Time | Data | Units | Analyst | Date/Time | Analyst | Reason |

Analysis: 0635 SW846 Water

Batch# 17 200 1063 502

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| **9109775U** | 07/31/17 | N8 | 18802 | KR188-02BKG | 50.0000 | 50.0000 | 1 |
| **9109776R** | 07/31/17 | N8 | 18802 | KR188-02MS | 50.0000 | 50.0000 | 1 |
| **9109777M** | 07/31/17 | N8 | 18802 | KR188-02MSD | 50.0000 | 50.0000 | 1 |
| **9109778D** | 07/31/17 | N8 | 18802 | KR188-02DUP | 50.0000 | 50.0000 | 1 |
| 9109780 | 07/31/17 | N8 | 18804 | KR188-04 | 50.0000 | 50.0000 | 1 |

# LLENS Worksheet for 0639 ICP/MS SW846 Water

Batch# 17 200 10639 02

**Start Time:** 7/24/17 22:00 **End Time:** 7/25/17 2:00 **Hot Block:** 15

**Pipette ID:** S/500

**Reflux Cap Lot#:** 1610138-7077QE

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| HNO3 | 152495 | 3.00 |
| ICP/MS Spike | 1715001#6 | 0.50 |
| LCS ICP/MS Spike | 1715001#6 | 0.50 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | **9109771U** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 4) | **9109772R** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 5) | **9109773M** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9109774D** | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 7) | 9109779 | 07/31/17 09:35 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/25/2017

v 1.1.0

# Batch# 17 200 1063 902

## LLENS Batch Chronology and Change Log - ICP/MS SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/19/17 17:30 | 862 |
| 2) | Sample Vol | | 7/24/17 14:05 | 12425 |
| 3) | Final Vol | CLEAR | 7/24/17 14:05 | 12425 |
| 4) | Trial | | 7/24/17 14:05 | 12425 |
| 5) | Upload Prep | US19PCC0669 | 7/25/17 2:14 | 862 |

| | | | | Original Entry | | | | Data Changed | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Analysis | D | Operation | Measurement | Date/Time | Data | Units | Analyst | Date/Time | Analyst Reason |

Analysis: 0639 ICP/MS SW846 Water

Batch# 17 200 1063 902

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| **9109771U** | 07/31/17 | N8 | 18801 | KR188-01BKG | 50.0000 | 50.0000 | 1 |
| **9109772R** | 07/31/17 | N8 | 18801 | KR188-01MS | 50.0000 | 50.0000 | 1 |
| **9109773M** | 07/31/17 | N8 | 18801 | KR188-01MSD | 50.0000 | 50.0000 | 1 |
| **9109774D** | 07/31/17 | N8 | 18801 | KR188-01DUP | 50.0000 | 50.0000 | 1 |
| 9109779 | 07/31/17 | N8 | 18803 | KR188-03 | 50.0000 | 50.0000 | 1 |

# Instrumental Wet Chemistry Data

# Case Narrative/Conformance Summary

# Instrumental Wet Chemistry

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Solid | Comments |
|---|---|---|---|---|
| 9109771 | GW005-173 | X | | |
| 9109779 | GW005-573 | X | | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Method defined actions are taken for any failed matrix QC.

Batch#: 17201972117A (Sample number(s): 9109771, 9109779, UNSPK: 9109771, BKG: 9109771)
The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Bromide

### SAMPLE ANALYSIS:

| Samples | Bromide | Chloride | Sulfate | Total Nitrite/Nitrate Nitrogen |
|---|---|---|---|---|
| 9109771 | UNSPK/BKG/ DF5 | UNSPK/BKG/ DF100 | UNSPK/BKG/ DF100 | UNSPK/BKG/ DF1 |
| 9109779 | DF5 | DF100 | DF100 | DF1 |

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# Quality Control and Calibration Summary Forms

# Instrumental Wet Chemistry

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

**Fraction: Instrumental Wet Chemistry**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | 17207118101A | P20718AB | 07/27/2017 02:26:00 |
| | | P20718AQ | 07/27/2017 02:28:00 |
| | | 9109771 UNSPK/BKG | 07/27/2017 02:30:00 |
| | | 9109771 DUP | 07/27/2017 02:32:00 |
| | | 9109771 MS | 07/27/2017 02:34:00 |
| | | 9109779 | 07/27/2017 02:36:00 |

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

**Fraction: Instrumental Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Bromide | Chloride | Sulfate |
|---|---|---|---|---|---|
| 17201972117A | 9109771 UNSPK/BKG | 07/20/2017 19:31:00 | X | | |
| | 9109771 UNSPK/BKG | 07/20/2017 19:48:00 | | X | X |
| | 9109771 DUP | 07/20/2017 20:05:00 | X | | |
| | 9109771 DUP | 07/20/2017 20:22:00 | | X | X |
| | 9109771 MS | 07/20/2017 20:39:00 | X | | |
| | 9109771 MS | 07/20/2017 20:55:00 | | X | X |
| | 9109779 | 07/20/2017 21:46:00 | X | | |
| | 9109779 | 07/20/2017 22:03:00 | | X | X |
| | P20172QB | 07/20/2017 18:41:00 | X | X | X |
| | P20172QQ | 07/20/2017 18:24:00 | X | X | X |

**Quality Control Summary**
**Method Blank**
**Instrumental Water Quality**
**SDG: KR188**
**Matrix: LIQUID**

**Fraction: Instrumental Wet Chemistry**

| 17201972117A / P20172QB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Bromide | IC | 07/20/17 | N.D. | mg/l | 0.25 | 0.50 | 0.50 |
| Chloride | IC | 07/20/17 | N.D. | mg/l | 0.20 | 0.40 | 0.40 |
| Sulfate | IC | 07/20/17 | N.D. | mg/l | 0.30 | 1.0 | 1.0 |

| 17207118101A / P20718AB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 07/27/17 | N.D. | mg/l | 0.040 | 0.10 | 0.10 |

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| UNSPK: 9109771<br>MS: 9109771 | Batch: **17201972117A** (Sample number(s): 9109771, 9109779 ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Bromide | IC | 25 | 3.38 | 23.93 | NA | 82 * | NA | 90-110 | NA | NA |
| Chloride | IC | 200 | 204.56 | 391.96 | NA | 94 | NA | 90-110 | NA | NA |
| Sulfate | IC | 500 | 395.96 | 856.81 | NA | 92 | NA | 90-110 | NA | NA |

| UNSPK: 9109771<br>MS: 9109771 | Batch: **17207118101A** (Sample number(s): 9109771, 9109779 ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 1.00 | 0.221 | 1.25 | NA | 103 | NA | 90-110 | NA | NA |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| BKG: 9109771<br>DUP: 9109771<br>**Parameter** | Batch: **17201972117A** (Sample number(s): 9109771, 9109779 )<br>**ME** | **Unspiked Conc mg/l** | **DUP Conc mg/l** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|
| Bromide | IC | 3.38 | 3.24 | 4 (1) | 15 |
| Chloride | IC | 204.56 | 202.16 | 1 | 15 |
| Sulfate | IC | 395.96 | 391.97 | 1 (1) | 15 |

| BKG: 9109771<br>DUP: 9109771<br>**Parameter** | Batch: **17207118101A** (Sample number(s): 9109771, 9109779 )<br>**ME** | **Unspiked Conc mg/l** | **DUP Conc mg/l** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 0.22 | 0.2 | 9 (1) | 10 |

Comments:
(1) The sample and/or duplicate result is less than five times the LOQ.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR188**
**Matrix: LIQUID**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| LCS: P20172QQ | Batch: **17201972117A** (Sample number(s): 9109771, 9109779 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Bromide | IC | 7.50 | 7.05 | NA | 94 | NA | 90-110 | NA | NA |
| Chloride | IC | 3.00 | 3.13 | NA | 104 | NA | 90-110 | NA | NA |
| Sulfate | IC | 7.50 | 7.38 | NA | 98 | NA | 90-110 | NA | NA |

| LCS: P20718AQ | Batch: **17207118101A** (Sample number(s): 9109771, 9109779 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 2.50 | 2.55 | NA | 102 | NA | 90-110 | NA | NA |

Quality Control Summary
Initial And Continuing Calibration
Instrumental Analysis/TNO3

SDG: KR188

Instrument ID: 07411
Calibration Date: 07/26/2017

Acceptance Range:
ICV/CCV: +/- 10%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17207118101A
Run Start Dates: 07/26/2017
Run Names: 1720702C05

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | AUTO CAL6 | AUTO CAL7 | CC |
|---|---|---|---|---|---|---|---|---|
| Nitrate/Nitrite Nitrogen | 666318.3000 | 513487.6000 | 180938.9000 | 87779.8000 | 37422.2000 | 18422.6000 | -101.5000 | 0.9995 |

| Sample | Nitrate/Nitrite Nitrogen | | |
|---|---|---|---|
| | True | Result | %Rec |
| ICV | 2.5 | 2.64050 | 106 |
| ICB | 0 | ND | NA |
| CCV2 | 2.5 | 2.63010 | 105 |
| CCB 5 | 0 | ND | NA |
| CCV2 | 2.5 | 2.56500 | 103 |
| CCB 6 | 0 | ND | NA |

* = Out of Specifications

Instrument ID: 24811
Calibration Date: 07/01/2017

Acceptance Range:
ICV/CCV: 90%-110%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17201972117A
Run Start Dates: 07/20/2017
Run Names: 1720101D17

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | $R^2$ | CC |
|---|---|---|---|---|---|---|---|
| Bromide | 0.240023 | 0.977492 | 2.567740 | 5.383661 | 8.440976 | 0.9995 | 0.9998 |
| Chloride | 0.749630 | 1.502955 | 3.922792 | 8.384304 | 13.364936 | 0.9991 | 0.9996 |
| Sulfate | 0.446624 | 0.888903 | 2.288197 | 4.735824 | 7.349477 | 0.9997 | 0.9999 |

| | Chloride | | | Sulfate | | | Bromide | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample | True | Result | %Rec | True | Result | %Rec | True | Result | %Rec |
| ICV | 3 | 3.1765 | 106 | 7.5 | 7.2709 | 97 | 7.5 | 7.4371 | 99 |
| ICB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| Low Chk | 1.5 | 1.4354 | 96 | 3.75 | 3.6526 | 97 | 3.75 | 3.5496 | 95 |
| High Chk | 4.5 | 4.3313 | 96 | 11.25 | 10.9447 | 97 | 11.25 | 10.7896 | 96 |
| CCV2 | 3 | 2.9821 | 99 | 7.5 | 7.3693 | 98 | 7.5 | 7.0572 | 94 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.8812 | 96 | 7.5 | 7.1444 | 95 | 7.5 | 6.7941 | 91 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.9161 | 97 | 7.5 | 7.2059 | 96 | 7.5 | 6.8957 | 92 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |

* = Out of Specifications

# Raw Data

# Instrumental Wet Chemistry

**Fraction: Instrumental Wet Chemistry**

| 01505: Bromide<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bromide | .25 | .5 | 0.50 | mg/l |

| 00224: Chloride<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Chloride | .2 | .4 | 0.40 | mg/l |

| 00228: Sulfate<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Sulfate | .3 | 1 | 1.0 | mg/l |

| 07882: Total Nitrite/Nitrate Nitrogen<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | .04 | .1 | 0.10 | mg/l |

# Instrumental Water Quality Report

Analyte: Nitrate-N
Run Start Date/Time: 7/26/2017 11:58:22PM
Instrument Name: 07411

## Calibration Information

Curve Information Location:
Book # 256879
Page # 5

| Sample Names | Volts | Detected Result | True Result |
|---|---|---|---|
| S1 | 666318.3000 | ~~4.00000~~ 3.9558 | 4 |
| S2 | 513487.6000 | 3.00000 3.0427 | 3 |
| S3 | 180938.9000 | 1.00000 1.0541 | 1 |
| S4 | 87779.8000 | 0.50000 0.4972 | 0.5 |
| S5 | 37422.2000 | 0.20000 0.1967 | 0.2 |
| S6 | 18422.6000 | 0.10000 0.0826 | 0.1 |
| S7 | -101.5000 | ~~0.00000~~ -0.0281 | - |

Number of Calibrants: 7
Correlation Coefficient: 0.99949
Y-Intercept: -0.02753
Slope: 0.00001

## QC Information

| QC Names | Units | True Values | QC Ranges |
|---|---|---|---|
| ICV | mg/L | 2.5 | 2.2375 - 2.76 |
| ICB/CCB | mg/L | 0 | 0 - 0.04 |
| CCV2 | mg/L | 2.5 | 2.2375 - 2.76 |
| PB Waters | mg/L | 0 | 0 - 0.04 |
| LCS Waters | mg/L | 2.5 | 2.25 - 2.75 |

Analyst: [signature] Date: 7/27/17

Verifier: [signature] Date: 7.27.17

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| SYNC | 1 | | | 7/26/2017 11:58:22PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 662272.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| Carryov | 2 | | | 7/27/2017 12:00:12AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 4141.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 3 | | | 7/27/2017 12:02:02AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 623.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S1 | 4 | | | 7/27/2017 12:03:52AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 4.00000 | | 666318.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S2 | 5 | | | 7/27/2017 12:05:42AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.00000 | | 513487.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S3 | 6 | | | 7/27/2017 12:07:32AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.00000 | | 180938.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S4 | 7 | | | 7/27/2017 12:09:22AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.50000 | | 87779.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S5 | 8 | | | 7/27/2017 12:11:12AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.20000 | | 37422.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S6 | 9 | | | 7/27/2017 12:13:02AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.10000 | | 18422.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S7 | 10 | | | 7/27/2017 12:14:52AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | -101.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 11 | | | 7/27/2017 12:16:42AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02720 | | 54.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 12 | | | 7/27/2017 12:18:32AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02380 | | 622.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 13 | | | 7/27/2017 12:20:22AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.09670 | | 355330.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 14 | | | 7/27/2017 12:22:12AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01520 | | 2064.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 15 | | | 7/27/2017 12:24:02AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.11400 | | 358221.60 | 1.0000 | 1.0 | 1 | 101 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 16 | | | 7/27/2017 12:25:52AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01090 | | 2779.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 17 | | | 7/27/2017 12:27:42AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02490 | | 443.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICV | 18 | | | 7/27/2017 12:29:32AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.64050 | | 446295.60 | 1.0000 | 1.0 | 1 | 106 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICB | 19 | | | 7/27/2017 12:31:22AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01510 | | 2083.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 20 | B | 17207106101A | 7/27/2017 12:33:12AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02580 | -0.026 | 289.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 21 | Q | 17207106101A | 7/27/2017 12:35:02AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.58050 | 2.581 | 436265.90 | 1.0000 | 1.0 | 1 | 103 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111714 | 22 | U | 17207106101A | 7/27/2017 12:36:52AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02200 | -0.022 | 926.90 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111714 | 23 | D | 17207106101A | 7/27/2017 12:38:42AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| -0.03410 | -0.034 | -1101.90 | 1.0000 | 1.0 | 1 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111714 | 24 | R | 17207106101A | 7/27/2017 12:40:32AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.08020 | 1.080 | 185300.00 | 1.0000 | 1.0 | 1 | 108 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111722 | 25 | | 17207106101A | 7/27/2017 12:42:22AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.45975 | 2.919 | 248790.60 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111604 | 26 | | 17207106101A | 7/27/2017 12:44:12AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.83120 | 3.662 | 310920.20 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111470 | 27 | | 17207106101A | 7/27/2017 12:46:02AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.07120 | 0.071 | 16513.00 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111642 | 28 | | 17207106101A | 7/27/2017 12:47:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.93946 | 9.697 | 329030.30 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111577 | 29 | | 17207106101A | 7/27/2017 12:49:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.75910 | 2.759 | 466143.80 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 30 | | | 7/27/2017 12:51:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.64360 | | 446811.60 | 1.0000 | 1.0 | 1 | 106 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 1 | 31 | | | 7/27/2017 12:53:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01880 | | 1454.20 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111598 | 32 | | 17207106101A | 7/27/2017 12:55:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.35126 | 6.756 | 230638.60 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111471 | 33 | | 17207106101A | 7/27/2017 12:57:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.30062 | 11.503 | 389444.30 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111585 | 34 | | 17207106101A | 7/27/2017 12:58:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.25390 | 4.508 | 381630.50 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111713 | 35 | | 17207106101A | 7/27/2017 1:00:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.09230 | 4.185 | 354594.60 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111687 | 36 | | 17207106101A | 7/27/2017 1:02:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.59306 | 7.965 | 271087.60 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111677 | 37 | | 17207106101A | 7/27/2017 1:04:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.34350 | 1.343 | 229347.10 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111445 | 38 | | 17207106101A | 7/27/2017 1:06:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.42915 | 2.858 | 243666.40 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111693 | 39 | | 17207106101A | 7/27/2017 1:08:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.14600 | 1.146 | 196300.40 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112116 | 40 | | 17207106101A | 7/27/2017 1:09:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.81896 | 18.190 | 308873.50 | 1.0000 | 1.0 | 10 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112109 | 41 | | 17207106101A | 7/27/2017 1:11:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.40912 | 12.046 | 407595.10 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 42 | | | 7/27/2017 1:13:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.68570 | | 453858.50 | 1.0000 | 1.0 | 1 | 107 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 2 | 43 | | | 7/27/2017 1:15:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01560 | | 2002.50 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9117103 | 44 | | 17207106101A | 7/27/2017 1:17:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 3.04898 | 30.490 | 514627.80 | 1.0000 | 1.0 | 10 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9114349 | 45 | | 17207106101A | 7/27/2017 1:19:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.12020 | 1.120 | 191991.90 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112949 | 46 | U | 17207106101B | 7/27/2017 1:20:53AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.00240 | 0.002 | 5010.20 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112949 | 47 | D | 17207106101B | 7/27/2017 1:22:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD |
|---|---|---|---|---|---|---|
| -0.00450 | -0.005 | 3859.70 | 1.0000 | 1.0 | 1 | 657 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112949 | 48 | R | 17207106101B | 7/27/2017 1:24:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 1.12500 | 1.125 | 192793.60 | 1.0000 | 1.0 | 1 | 113 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112951 | 49 | | 17207106101B | 7/27/2017 1:26:23AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.82750 | 0.828 | 143023.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 50 | B | 17207106102A | 7/27/2017 1:28:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02880 | -0.029 | -219.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 51 | Q | 17207106102A | 7/27/2017 1:30:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.58680 | 2.587 | 437321.40 | 1.0000 | 1.0 | 1 | 103 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112953 | 52 | U | 17207106102A | 7/27/2017 1:31:53AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01370 | -0.014 | 2311.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112953 | 53 | D | 17207106102A | 7/27/2017 1:33:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| -0.02650 | -0.026 | 166.70 | 1.0000 | 1.0 | 1 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 54 | | | 7/27/2017 1:35:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.58360 | | 436786.10 | 1.0000 | 1.0 | 1 | 103 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 3 | 55 | | | 7/27/2017 1:37:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01500 | | 2096.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112953 | 56 | R | 17207106102A | 7/27/2017 1:39:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.03990 | 1.040 | 178553.60 | 1.0000 | 1.0 | 1 | 104 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112955 | 57 | | 17207106102A | 7/27/2017 1:41:03AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01370 | -0.014 | 2305.60 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112957 | 58 | | 17207106102A | 7/27/2017 1:42:53AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.02230 | -0.022 | 880.60 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9115025 | 59 | | 17207106102A | 7/27/2017 1:44:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.44160 | 7.208 | 245752.20 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111528 | 60 | | 17207106102A | 7/27/2017 1:46:33AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.71650 | 3.433 | 291732.20 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111524 | 61 | | 17207106102A | 7/27/2017 1:48:23AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01060 | -0.011 | 2827.10 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111535 | 62 | | 17207106102A | 7/27/2017 1:50:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.16592 | 10.830 | 366912.70 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111525 | 63 | | 17207106102A | 7/27/2017 1:52:03AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01750 | -0.018 | 1669.90 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111529 | 64 | | 17207106102A | 7/27/2017 1:53:53AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.02930 | -0.029 | -290.60 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111526 | 65 | | 17207106102A | 7/27/2017 1:55:43AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02540 | -0.025 | 354.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 66 | | | 7/27/2017 1:57:33AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.54540 | | 430386.10 | 1.0000 | 1.0 | 1 | 102 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 4 | 67 | | | 7/27/2017 1:59:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01480 | | 2136.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112927 | 68 | U | 17207106102B | 7/27/2017 2:01:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.24680 | 2.247 | 380440.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112927 | 69 | D | 17207106102B | 7/27/2017 2:03:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 2.26460 | 2.265 | 383415.80 | 1.0000 | 1.0 | 1 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112927 | 70 | R | 17207106102B | 7/27/2017 2:04:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 3.11980 | 3.120 | 526481.60 | 1.0000 | 1.0 | 1 | 87 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112926 | 71 | | 17207106102B | 7/27/2017 2:06:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01910 | 0.019 | 7798.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111523 | 72 | | 17207106102B | 7/27/2017 2:08:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.04430 | 0.044 | 12021.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112928 | 73 | | 17207106102B | 7/27/2017 2:10:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.04860 | 2.049 | 347289.80 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111887 | 74 | | 17207106102B | 7/27/2017 2:12:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.61624 | 32.325 | 274964.00 | 1.0000 | 1.0 | 20 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112828 | 75 | | 17207106102B | 7/27/2017 2:14:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.11050 | 0.111 | 23096.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112930 | 76 | | 17207106102B | 7/27/2017 2:15:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.51580 | 0.516 | 90879.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112931 | 77 | | 17207106102B | 7/27/2017 2:17:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.08000 | 1.080 | 185263.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 78 | | | 7/27/2017 2:19:33AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.63010 | | 444558.70 | 1.0000 | 1.0 | 1 | 105 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 5 | 79 | | | 7/27/2017 2:21:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01240 | | 2524.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112929 | 80 | | 17207106102B | 7/27/2017 2:23:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.36170 | 1.362 | 232383.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111527 | 81 | | 17207106102B | 7/27/2017 2:25:03AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.00760 | -0.008 | 3330.60 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 82 | B | 17207118101A | 7/27/2017 2:26:53AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.02960 | -0.030 | -349.30 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 83 | Q | 17207118101A | 7/27/2017 2:28:43AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 2.54840 | 2.548 | 430887.00 | 1.0000 | 1.0 | 1 | 102 | 2.5 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9109771 | 84 | U | 17207118101A | 7/27/2017 2:30:33AM | KR188 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.22130 | 0.221 | 41631.90 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9109771 | 85 | D | 17207118101A | 7/27/2017 2:32:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD |
|---|---|---|---|---|---|---|
| 0.20260 | 0.203 | 38499.10 | 1.0000 | 1.0 | 1 | 9 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9109771 | 86 | R | 17207118101A | 7/27/2017 2:34:13AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 1.24910 | 1.249 | 213551.90 | 1.0000 | 1.0 | 1 | 103 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9109779 | 87 | | 17207118101A | 7/27/2017 2:36:03AM | KR188 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.20310 | 0.203 | 38575.10 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9115838 | 88 | | 17207118101A | 7/27/2017 2:37:53AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.61060 | 0.611 | 106748.30 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9117852 | 89 | | 17207118101A | 7/27/2017 2:39:43AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01470 | -0.015 | 2143.50 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 90 | | | 7/27/2017 2:41:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.56500 | | 433675.00 | 1.0000 | 1.0 | 1 | 103 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 6 | 91 | | | 7/27/2017 2:43:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01450 | | 2174.70 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110465 | 92 | | 17207118101A | 7/27/2017 2:45:13AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.90970 | 0.910 | 156769.40 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110464 | 93 | | 17207118101A | 7/27/2017 2:47:03AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.00720 | -0.007 | 3393.70 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110942 | 94 | | 17207118101A | 7/27/2017 2:48:53AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.59050 | 1.591 | 270658.00 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110786 | 95 | | 17207118101A | 7/27/2017 2:50:43AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.45065 | 4.901 | 414541.20 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110941 | 96 | | 17207118101A | 7/27/2017 2:52:33AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.62235 | 3.245 | 275985.50 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110807 | 97 | | 17207118101A | 7/27/2017 2:54:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.35460 | 0.709 | 63921.20 | 1.0000 | 1.0 | 2 |

Verified ☐

Comments: Analyst Decision Over Range see 112

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111760 | 98 | U | 17207118101B | 7/27/2017 2:56:13AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.51314 | 7.566 | 257718.80 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111762 | 99 | M | 17207118101B | 7/27/2017 2:58:03AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 2.49796 | 12.490 | 422453.10 | 1.0000 | 1.0 | 5 | 98 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111763 | 100 | D | 17207118101B | 7/27/2017 2:59:53AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD |
|---|---|---|---|---|---|---|
| 1.51854 | 7.593 | 258621.90 | 1.0000 | 1.0 | 5 | 0 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111765 | 101 | | 17207118101B | 7/27/2017 3:01:43AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.51750 | 7.588 | 258446.70 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 102 | | | 7/27/2017 3:03:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.50650 | | 423884.60 | 1.0000 | 1.0 | 1 | 100 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 7 | 103 | | | 7/27/2017 3:05:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01170 | | 2652.30 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111766 | 104 | | 17207118101B | 7/27/2017 3:07:13AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.57404 | 7.870 | 267904.10 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112123 | 105 | | 17207118101B | 7/27/2017 3:09:04AM | KR189 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.08906 | 5.445 | 186779.10 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110886 | 106 | | 17207118101B | 7/27/2017 3:10:54AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.50450 | 2.504 | 423547.50 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110806 | 107 | | 17207118101B | 7/27/2017 3:12:44AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.61750 | 5.235 | 442451.30 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110884 | 108 | | 17207118101B | 7/27/2017 3:14:34AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.62000 | 3.240 | 275593.50 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110844 | 109 | | 17207118101B | 7/27/2017 3:16:24AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.07840 | 1.078 | 184989.50 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110787 | 110 | | 17207118101B | 7/27/2017 3:18:14AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.84880 | 3.698 | 313863.90 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ~~9111767~~ 9111761-M | 111 | ~~M~~ | 17207118101B | 7/27/2017 3:20:04AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 2.54500 | 12.725 | 430323.70 | 1.0000 | 1.0 | 5 | 103 | 5 |

Verified ☑

Comments: Analyst Decision or failed QC Review

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110807 | 112 | | 17207118101A | 7/27/2017 3:21:54AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.73780 | 0.738 | 128024.20 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 113 | | | 7/27/2017 3:23:44AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.56380 | | 433461.80 | 1.0000 | 1.0 | 1 | 103 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 8 | 114 | | | 7/27/2017 3:25:34AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01140 | | 2701.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 115 | | | 7/27/2017 3:27:24AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.05980 | | 349159.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 116 | | | 7/27/2017 3:29:14AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01760 | | 1661.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 117 | | | 7/27/2017 3:31:04AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.03530 | | 345065.80 | 1.0000 | 1.0 | 1 | 99 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 118 | | | 7/27/2017 3:32:54AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02010 | | 1242.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 119 | | | 7/27/2017 3:34:44AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02610 | | 233.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 120 | | | 7/27/2017 3:36:34AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02540 | | 351.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 121 | | | 7/27/2017 3:38:24AM | | NO3 |

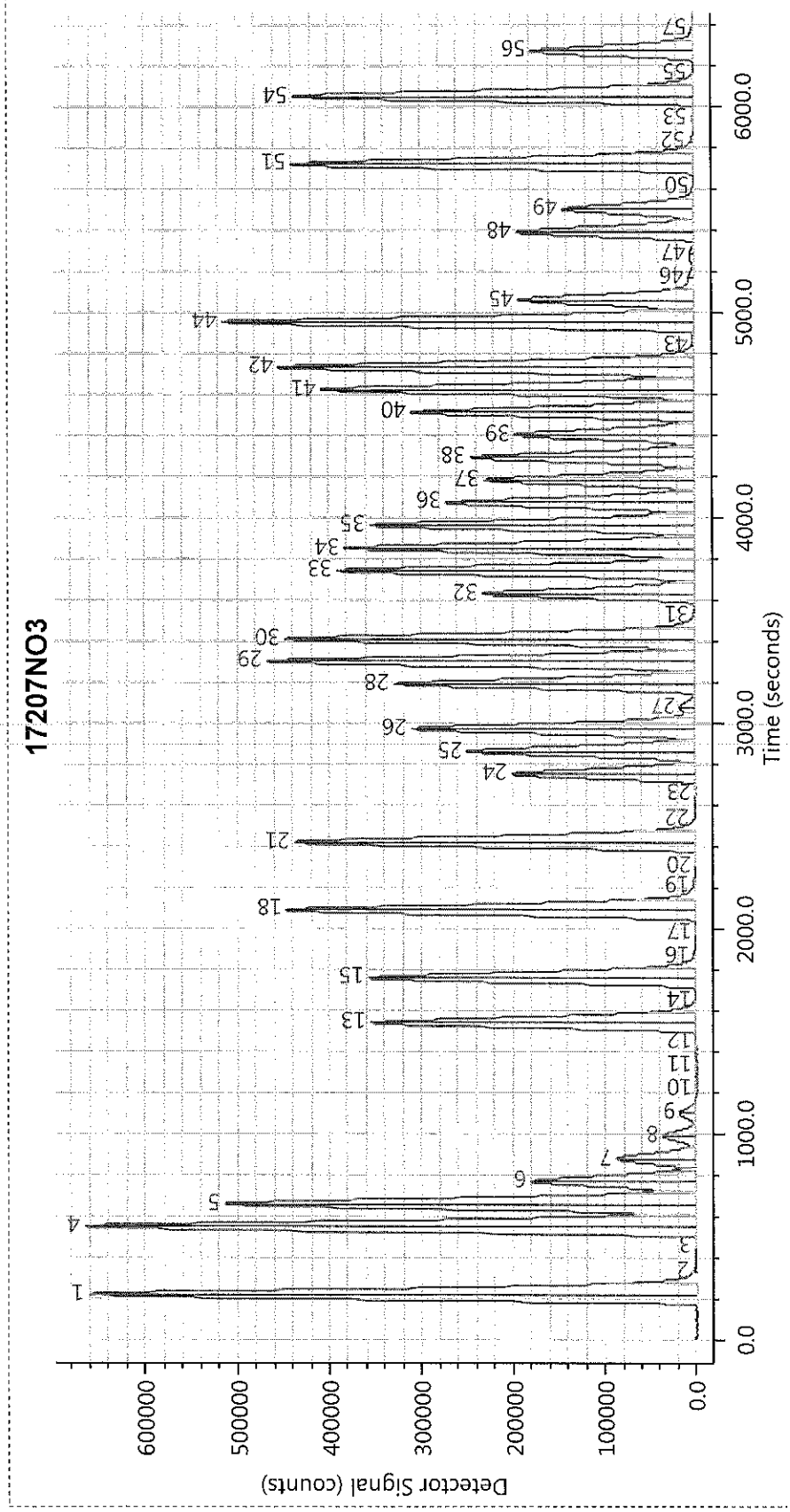
| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.11580 | | 358523.00 | 1.0000 | 1.0 | 1 | ☐ |

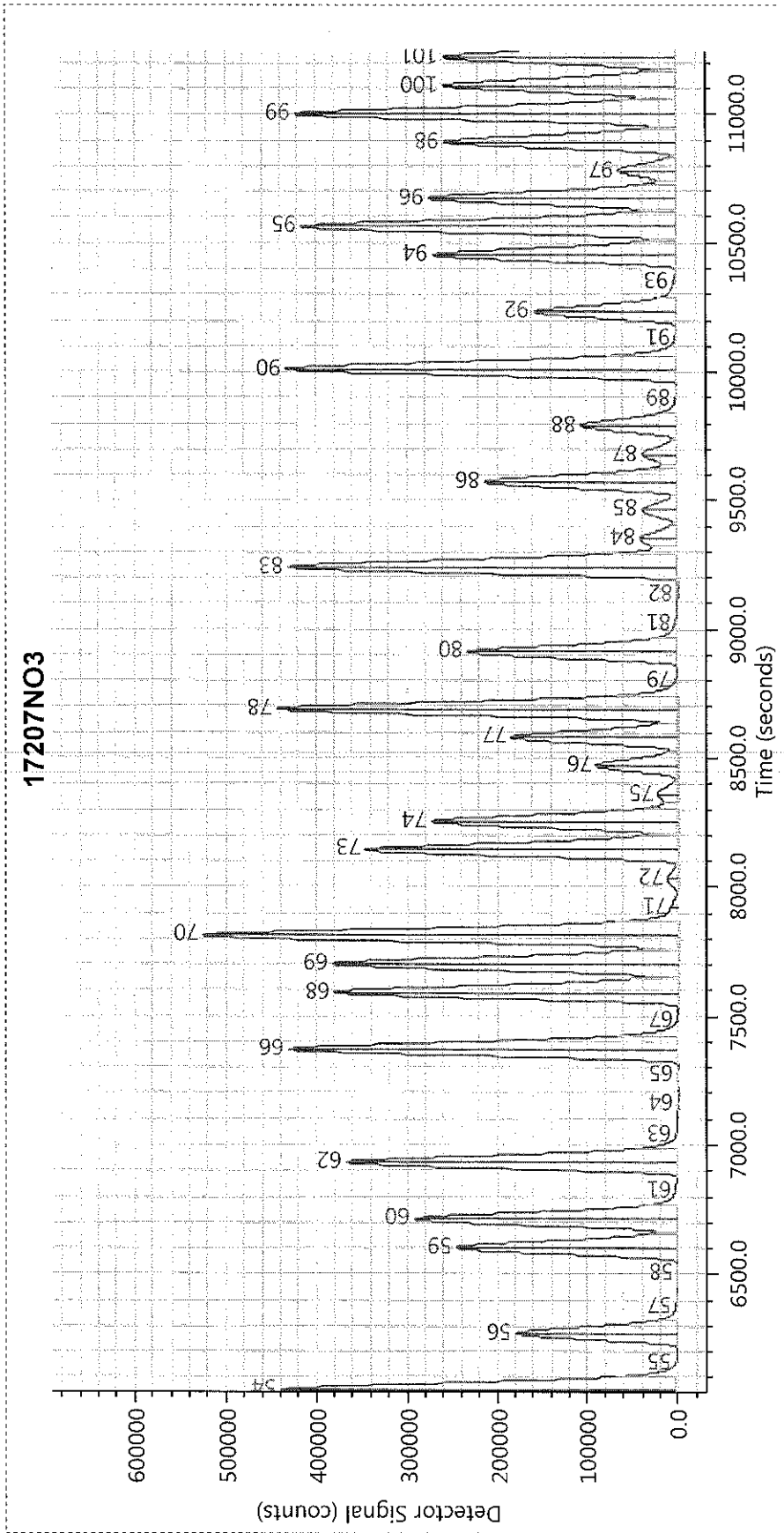
Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 122 | | | 7/27/2017 3:40:14AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.62720 | | 276793.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:


17207NO3
Detector Signal (counts)
0.0
100000
200000
300000
400000
500000
600000
Time (seconds)
0.0
1000.0
2000.0
3000.0
4000.0
5000.0
6000.0


17207NO3
Detector Signal (counts)
600000
500000
400000
300000
200000
100000
0.0
6500.0
7000.0
7500.0
8000.0
8500.0
9000.0
9500.0
10000.0
10500.0
11000.0
Time (seconds)
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
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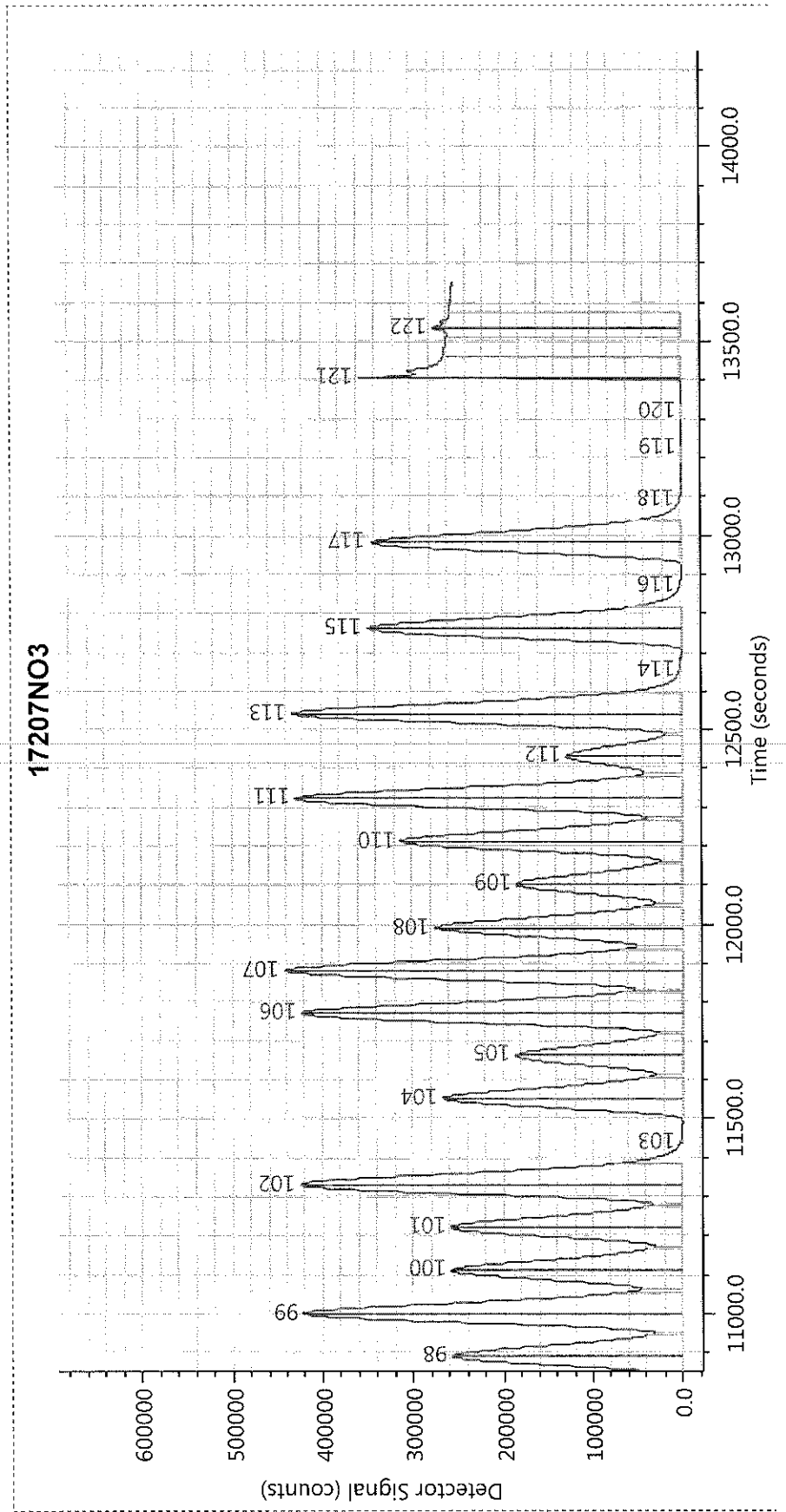
101


17207NO3
Detector Signal (counts)
0.0
100000
200000
300000
400000
500000
600000
Time (seconds)
11000.0
11500.0
12000.0
12500.0
13000.0
13500.0
14000.0
98
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# FlowView - Result

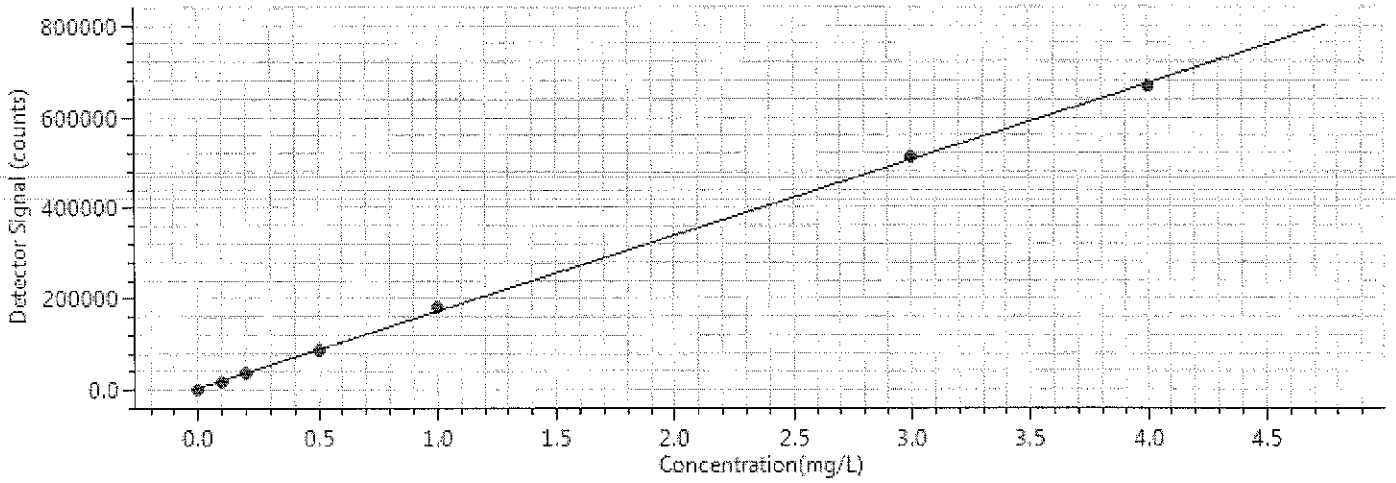
InstrumentID: A452837411
Operator ID: 2373
File Version: 110
Created On: 7/26/2017 11:58:08 PM
Last Modified On: 7/27/2017 3:48:57 AM
Exported on 7/27/2017 3:53:52 AM

Calibration Results - Channel2

## Calibration Summary

| | | | |
|---|---|---|---|
| Curve Fit: = | Linear | | |
| $R^2$: = | 0.99948971 | a: = | n/a |
| RF: = | 5.978135E-006 | b: = | n/a |
| Offset: | -0.02753093 | c: | n/a |
| HLCAVG: | 0.00000000 | LHCAVG: | 0.00000000 |

## Calibration Details




| Name | Type | Std Conc(mg/L) | Avg Height | Calc Avg Conc(mg/L) | %RSD | Flags | Date/Time |
|---|---|---|---|---|---|---|---|
| S1 | STD1 | 4.0000 | 666318.3 | 3.9558 | 0.0 | | 07/27/2017 12:03:52 AM |
| S2 | STD2 | 3.0000 | 513487.6 | 3.0422 | 0.0 | | 07/27/2017 12:05:42 AM |
| S3 | STD3 | 1.0000 | 180938.9 | 1.0541 | 0.0 | | 07/27/2017 12:07:32 AM |
| S4 | STD4 | 0.5000 | 87779.8 | 0.4972 | 0.0 | | 07/27/2017 12:09:22 AM |
| S5 | STD5 | 0.2000 | 37422.2 | 0.1962 | 0.0 | | 07/27/2017 12:11:12 AM |
| S6 | STD6 | 0.1000 | 18422.6 | 0.0826 | 0.0 | | 07/27/2017 12:13:02 AM |
| S7 | STD7 | 0.0000 | -101.5 | -0.0281 | 0.0 | | 07/27/2017 12:14:52 AM |

| eurofins \| Lancaster Laboratories Environmental | Document Title: Nitrite/Nitrate Nitrogen Batch Sheet | | |
|---|---|---|---|
| | Eurofins Document Reference : T-WC-FRM10345 | Revision: 5 | Historical Reference: 1-P-QM-FOR-9008805; Form 6254 |
| | Effective date : 23 Jun 2017 | | Effective |

Batch No. 17207 106 101

Run #: 17207NO3 Date: 07/26/2017 Analyst: 2373 Detector: 07411 Curve Book/Page: 256879 p.5

Sodium Thiosulfate/Ammonium Hydroxide Lot #: 136081

| Cup | Sample # | Dilution | Repeat Reason | See Cup | Comment | Bottle Code | pH to 5-9 | Cl √ +/- | Spike add Conc |
|---|---|---|---|---|---|---|---|---|---|
| 20 | PBW | 1 | | | | | | | |
| 21 | LCSW | 1 | | | | | | | |
| 22 | 9111714-U | 1 | | | | 157A | X | | |
| 23 | 9111714-D | 1 | | | | 157A | X | | |
| 24 | 9111714-R | 1 | | | | 157A | X | | 1 mg/L |
| 25 | 9111722 | 2 | | | | 157A | X | | |
| 26 | 9111604 | 2 | | | | 157A | X | | |
| 27 | 9111470 | 1 | | | | 157A | X | | |
| 28 | 9111642 | 5 | | | | 157A | X | | |
| 29 | 9111577 | 1 | | | | 157A | X | | |
| 32 | 9111598 | 5 | | | | 157A | X | | |
| 33 | 9111471 | 5 | | | | 157A | X | | |
| 34 | 9111585 | 2 | | | | 157A | X | | |
| 35 | 9111713 | 2 | | | | 157A | X | | |
| 36 | 9111687 | 5 | | | | 157A | X | | |
| 37 | 9111677 | 1 | | | | 157A | X | | |
| 38 | 9111445 | 2 | | | | 157A | X | | |
| 39 | 9111693 | 1 | | | | 157A | X | | |
| 40 | 9112116 | 10 | | | | 056A | X | | |
| 41 | 9112109 | 5 | | | | 056A | X | | |
| 44 | 9117103 | 10 | | | | 056A | X | | |
| 45 | 9114349 | 1 | | | | 056A | X | | |
| 46 | 9112949-U | 1 | | | | 056A | X | | |
| 47 | 9112949-D | 1 | | | | 056A | X | | |
| 48 | 9112949-R | 1 | | | | 056A | X | | 1 mg/L |
| 49 | 9112951 | 1 | | | | 056A | X | | |

IDAT Run Name: 17207030505

Verified: [signature] Date: 7.27.17

| eurofins \| Lancaster Laboratories Environmental | Document Title: Nitrite/Nitrate Nitrogen Batch Sheet | | |
|---|---|---|---|
| | Eurofins Document Reference : T-WC-FRM10345 | Revision: 5 | Historical Reference: 1-P-QM-FOR-9008805; Form 6254 |
| | Effective date : 23 Jun 2017 | | Effective |

Batch No. 17207 106 102

Run #: 17207NO3 Date: 07/26/2017 Analyst: 2373 Detector: 07411 Curve Book/Page: 256879 p.5

Sodium Thiosulfate/Ammonium Hydroxide Lot #: 136081

| Cup | Sample # | Dilution | Repeat Reason | See Cup | Comment | Bottle Code | pH to 5-9 | Cl √ +/- | Spike add Conc |
|---|---|---|---|---|---|---|---|---|---|
| 50 | PBW | 1 | | | | | | | |
| 51 | LCSW | 1 | | | | | | | |
| 52 | 9112953-U | 1 | | | | 056A | X | | |
| 53 | 9112953-D | 1 | | | | 056A | X | | |
| 56 | 9112953-R | 1 | | | | 056A | X | | 1 mg/L |
| 57 | 9112955 | 1 | | | | 056A | X | | |
| 58 | 9112957 | 1 | | | | 056A | X | | |
| 59 | 9115025 | 5 | | | | 056A | X | | |
| 60 | 9111528 | 2 | | | | 157A | X | | |
| 61 | 9111524 | 1 | | | | 157A | X | | |
| 62 | 9111535 | 5 | | | | 157A | X | | |
| 63 | 9111525 | 1 | | | | 157A | X | | |
| 64 | 9111529 | 1 | | | | 157A | X | | |
| 65 | 9111526 | 1 | | | | 157A | X | | |
| 68 | 9112927-U | 1 | | | | 157A | X | | |
| 69 | 9112927-D | 1 | | | | 157A | X | | |
| 70 | 9112927-R | 1 | | | | 157A | X | | 1 mg/L |
| 71 | 9112926 | 1 | | | | 157A | X | | |
| 72 | 9111523 | 1 | | | | 157A | X | | |
| 73 | 9112928 | 1 | | | | 157A | X | | |
| 74 | 9111887 | 20 | | | | 157A | X | | |
| 75 | 9112828 | 1 | | | | 157A | X | | |
| 76 | 9112930 | 1 | | | | 157A | X | | |
| 77 | 9112931 | 1 | | | | 157A | X | | |
| 80 | 9112929 | 1 | | | | 157A | X | | |
| 81 | 9111527 | 1 | | | | 157A | X | | |

IDAT Run Name: 17207NO3.05

Verified: [signature] Date: 7.27.17

| eurofins \| Lancaster Laboratories Environmental | Document Title: Nitrite/Nitrate Nitrogen Batch Sheet | | |
|---|---|---|---|
| | Eurofins Document Reference : T-WC-FRM10345 | Revision: 5 | Historical Reference: 1-P-QM-FOR-9008805; Form 6254 |
| | Effective date : 23 Jun 2017 | | Effective |

Batch No. 17207 | 118 | 101 |

Run #: 17207NO3 Date: 07/26/2017 Analyst: 2373 Detector: 07411 Curve Book/Page: 256879 p.5

Sodium Thiosulfate/Ammonium Hydroxide Lot #: 136081

| Cup | Sample # | Dilution | Repeat Reason | See Cup | Comment | Bottle Code | pH to 5-9 | Cl √ +/- | Spike add Conc |
|---|---|---|---|---|---|---|---|---|---|
| 82 | PBW | 1 | | | | | | | |
| 83 | LCSW | 1 | | | | | | | |
| 84 | 9109771-U | 1 | | | | 157A | X | | |
| 85 | 9109771-D | 1 | | | | 157A | X | | |
| 86 | 9109771-R | 1 | | | | 157A | X | | 1 mg/L |
| 87 | 9109779 | 1 | | | | 157A | X | | |
| 88 | 9115838 | 1 | | | | 001A | X | | |
| 89 | 9117852 | 1 | | | | 001A | | | |
| 92 | 9110465 | 1 | | | | 157A | | | |
| 93 | 9110464 | 1 | | | | 157A | | | |
| 94 | 9110942 | 1 | | | | 157A | | | |
| 95 | 9110786 | 2 | | | | 146A | | | |
| 96 | 9110941 | 2 | | | | 157A | | | |
| 97 | 9110807 | 2 | Under Range | 112 | | 157A | | | |
| 98 | 9111760-U | 5 | | | | 157A | | | |
| 99 | 9111762-M | 5 | | | | 157A | | | 5 mg/L |
| 100 | 9111763-D | 5 | | | | 157A | | | |
| 101 | 9111765 | 5 | | | | 157A | | | |
| 104 | 9111766 | 5 | | | | 157A | | | |
| 105 | 9112123 | 5 | | | | 157A | | | |
| 106 | 9110886 | 1 | | | | 157A | | | |
| 107 | 9110806 | 2 | | | | 146A | | | |
| 108 | 9110884 | 2 | | | | 157A | | | |
| 109 | 9110844 | 1 | | | | 158A | | | |
| 110 | 9110787 | 2 | | | | 146A | | | |
| 111 | 9111762-M | 5 | | | | 157A | | | 5 mg/L |

IDAT Run Name: 17207NO3C05

Verified: [signature] Date: 7.27.17

eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-1100 Analyst AML9972

Instrument ID 24811 Run Start Date 7/1/17

IDAT Run Number 171820101 Run Name 17182176

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405/29

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <0.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: ———

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1718217C

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TEST | | G1 | Check Standard | | 07/01/2017 12:05:35 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 2 | TEST | | G8 | Check Standard | | 07/01/2017 12:22:25 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 3 | CAL 0 | | GA1 | Calibration Standard | 01 | 07/01/2017 12:39:15 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 4 | CAL 1 | | GA2 | Calibration Standard | 02 | 07/01/2017 12:56:04 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 5 | CAL 2 | | GA3 | Calibration Standard | 03 | 07/01/2017 13:12:53 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 6 | CAL 3 | | GA4 | Calibration Standard | 04 | 07/01/2017 13:29:42 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 7 | CAL 4 | | GA5 | Calibration Standard | 05 | 07/01/2017 13:46:32 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 8 | CAL 5 | | GA6 | Calibration Standard | 06 | 07/01/2017 14:03:21 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 9 | ICV | | GA7 | Check Standard | | 07/01/2017 14:20:14 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 10 | ICB | | GA8 | Check Standard | | 07/01/2017 14:37:04 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 11 | CRDL | | GA2 | Check Standard | | 07/01/2017 14:53:54 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 12 | QRS | | GA2 | Check Standard | | 07/01/2017 15:10:44 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |

# Calibration Batch Report

Nicole M. Veely
Senior Chemist/Group Leader

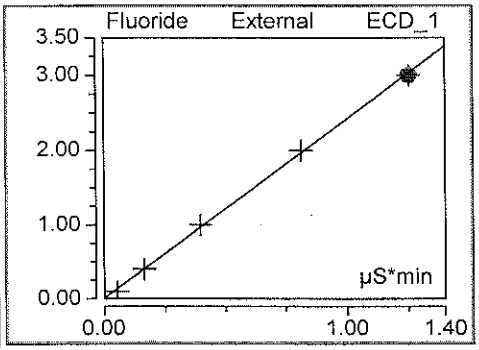
JUL 03 2017

| | | | |
|---|---|---|---|
| *Sequence:* | **1718217C** | *Injection Volu A* | **50.00** |
| *Instrument Method:* | **Anions** | *Channel:* | **ECD_1** |
| *Instrument Number:* | **19052** | *Run Time (min):* | **14.25** |
| *Inj. Date / Time:* | **01-Jul-2017 / 14:03** | *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** |

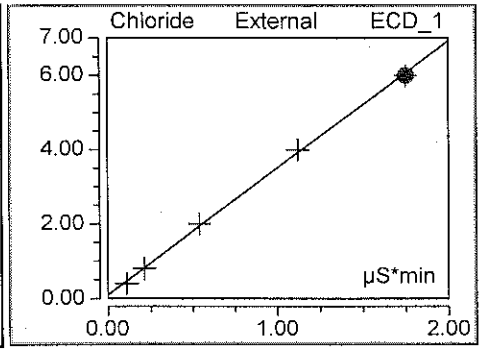
**Calibration Summary**

| Peak Name | Eval.Type | Cal.Type | Points | Offset (C0) | Slope (C1) | Curve (C2) | Coeff.Det. % | R² |
|---|---|---|---|---|---|---|---|---|
| Fluoride | Area | Lin, WithOffset | 5.000 | 0.006 | 2.415 | 0.000 | 99.9227 | 0.99961 |
| Chloride | Area | Lin, WithOffset | 5.000 | 0.086 | 3.417 | 0.000 | 99.9148 | 0.99957 |
| Nitrite | Area | Lin, WithOffset | 5.000 | 0.035 | 1.587 | 0.000 | 99.9658 | 0.99982 |
| Bromide | Area | Lin, WithOffset | 5.000 | 0.177 | 8.160 | 0.000 | 99.9547 | 0.99977 |
| Nitrate | Area | Lin, WithOffset | 5.000 | 0.033 | 1.486 | 0.000 | 99.9660 | 0.99982 |
| Phosphate | Area | Lin, WithOffset | 5.000 | 0.527 | 3.965 | 0.000 | 99.7764 | 0.99888 |
| Sulfate | Area | Lin, WithOffset | 5.000 | 0.173 | 4.871 | 0.000 | 99.9708 | 0.99985 |
| | | **AVERAGE:** | | 0.1481 | 3.7000 | 0.0000 | 99.9244 | |

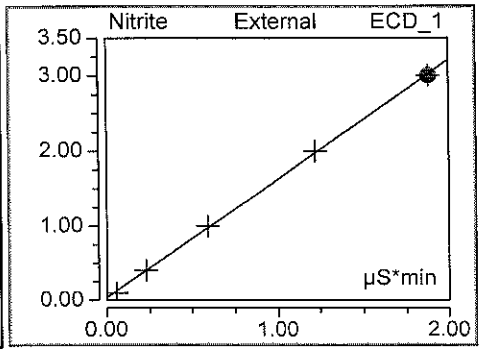
| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Fluoride | Fluoride | Fluoride | Fluoride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 3.050 | 0.0539 | 0.270 | 0.136 |
| CAL 2 | 3.047 | 0.1632 | 1.076 | 0.400 |
| CAL 3 | 3.050 | 0.3976 | 2.858 | 0.966 |
| CAL 4 | 3.050 | 0.8124 | 6.083 | 1.968 |
| CAL 5 | 3.053 | 1.2524 | 9.499 | 3.030 |
| **Average** | 3.050 | | | |
| **Rel. Std. Dev.** | 0.077 % | | | |



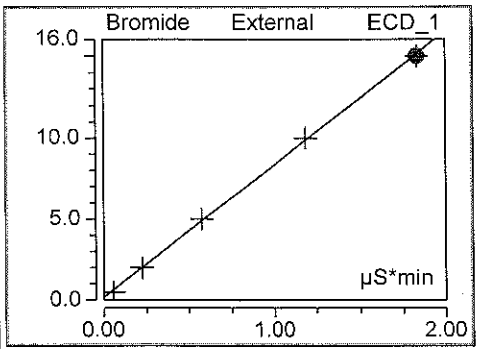

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Chloride | Chloride | Chloride | Chloride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 4.430 | 0.1105 | 0.750 | 0.463 |
| CAL 2 | 4.430 | 0.2133 | 1.503 | 0.815 |
| CAL 3 | 4.437 | 0.5416 | 3.923 | 1.936 |
| CAL 4 | 4.443 | 1.1224 | 8.384 | 3.921 |
| CAL 5 | 4.447 | 1.7499 | 13.365 | 6.065 |
| **Average** | 4.437 | | | |
| **Rel. Std. Dev.** | 0.171 % | | | |



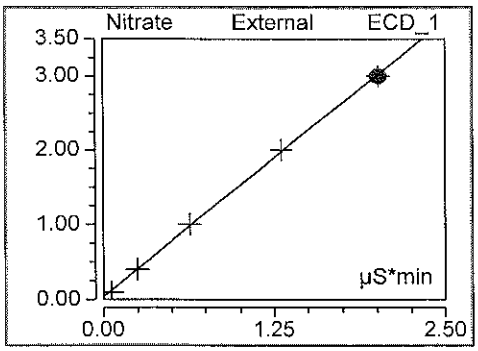
| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrite | Nitrite | Nitrite | Nitrite |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 5.367 | 0.0564 | 0.305 | 0.124 |
| CAL 2 | 5.363 | 0.2292 | 1.246 | 0.399 |
| CAL 3 | 5.367 | 0.5943 | 3.252 | 0.978 |
| CAL 4 | 5.367 | 1.2244 | 6.769 | 1.978 |
| CAL 5 | 5.370 | 1.8808 | 10.471 | 3.020 |
| **Average** | 5.367 | | | |
| **Rel. Std. Dev.** | 0.044 % | | | |



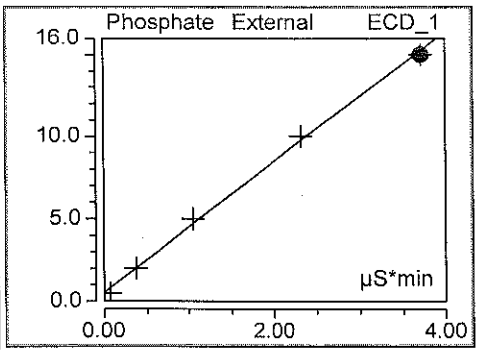

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Bromide | Bromide | Bromide | Bromide |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 6.940 | 0.0561 | 0.240 | 0.634 |
| CAL 2 | 6.930 | 0.2231 | 0.977 | 1.997 |
| CAL 3 | 6.923 | 0.5768 | 2.568 | 4.884 |
| CAL 4 | 6.917 | 1.1872 | 5.384 | 9.864 |
| CAL 5 | 6.900 | 1.8314 | 8.441 | 15.121 |
| **Average** | 6.922 | | | |
| **Rel. Std. Dev.** | 0.217 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrate | Nitrate | Nitrate | Nitrate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 8.177 | 0.0598 | 0.211 | 0.122 |
| CAL 2 | 8.150 | 0.2472 | 0.862 | 0.401 |
| CAL 3 | 8.120 | 0.6367 | 2.245 | 0.979 |
| CAL 4 | 8.090 | 1.3076 | 4.645 | 1.976 |
| CAL 5 | 8.057 | 2.0110 | 7.204 | 3.021 |
| **Average** | 8.119 | | | |
| **Rel. Std. Dev.** | 0.585 % | | | |



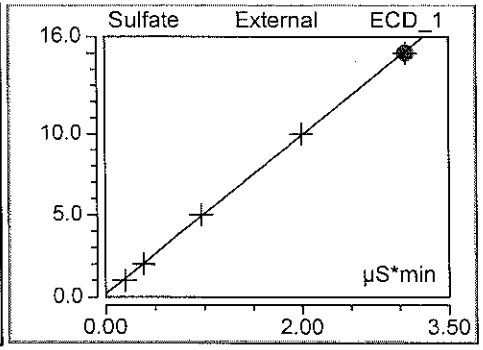

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Phosphate | Phosphate | Phosphate | Phosphate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 10.360 | 0.0725 | 0.164 | 0.814 |
| CAL 2 | 10.320 | 0.3727 | 0.903 | 2.004 |
| CAL 3 | 10.293 | 1.0542 | 2.707 | 4.706 |
| CAL 4 | 10.253 | 2.3210 | 6.182 | 9.728 |
| CAL 5 | 10.237 | 3.7128 | 10.109 | 15.247 |
| **Average** | 10.293 | | | |
| **Rel. Std. Dev.** | 0.485 % | | | |




Nicole M. Yeaty
Senior Chemist/Group Leader

JUL 03 2017

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Sulfate | Sulfate | Sulfate | Sulfate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 12.730 | 0.1887 | 0.447 | 1.092 |
| CAL 2 | 12.723 | 0.3796 | 0.889 | 2.022 |
| CAL 3 | 12.713 | 0.9712 | 2.288 | 4.903 |
| CAL 4 | 12.693 | 1.9944 | 4.736 | 9.887 |
| CAL 5 | 12.690 | 3.0637 | 7.349 | 15.096 |
| **Average** | 12.710 | | | |
| **Rel. Std. Dev.** | 0.140 % | | | |




Nicole M. Veety
Senior Chemist/Group Leader

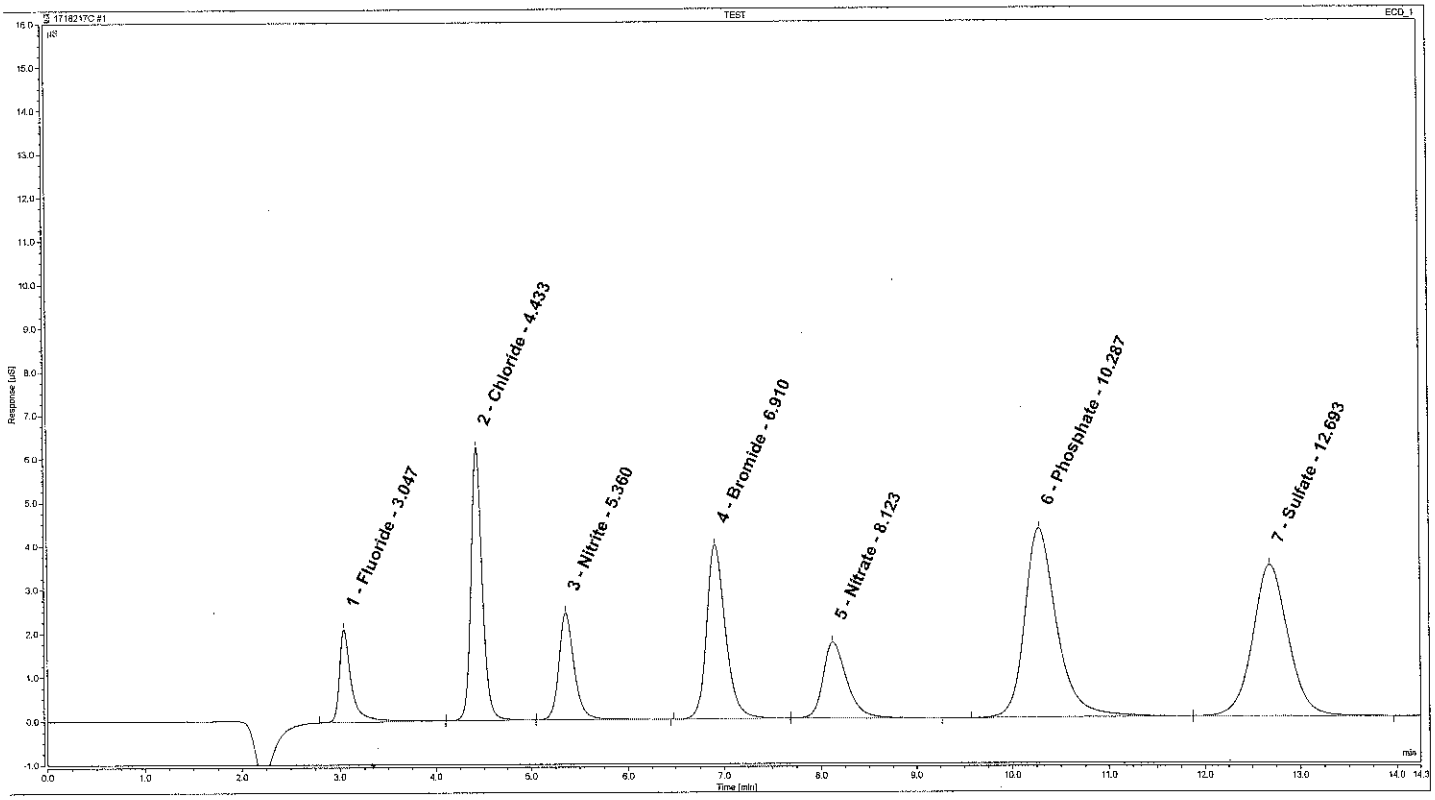
JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **TEST** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 12:05** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **001** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | M | 0.305 | 2.118 | 0.7419 |
| 2 | 4.43 | Chloride | M | 0.860 | 6.258 | 3.0232 |
| 3 | 5.36 | Nitrite | M | 0.449 | 2.442 | 0.7473 |
| 4 | 6.91 | Bromide | BM | 0.894 | 3.993 | 7.4708 |
| 5 | 8.12 | Nitrate | M | 0.492 | 1.730 | 0.7650 |
| 6 | 10.29 | Phosphate | MB | 1.657 | 4.346 | 7.0944 |
| 7 | 12.69 | Sulfate | BM | 1.469 | 3.470 | 7.3266 |
| | | TOTAL: | | 6.12 | 24.36 | 27.17 |




**Analyst:**

**Date:**

**Verifier:** Nicole M. Verity
Senior Chemist/Group Leader

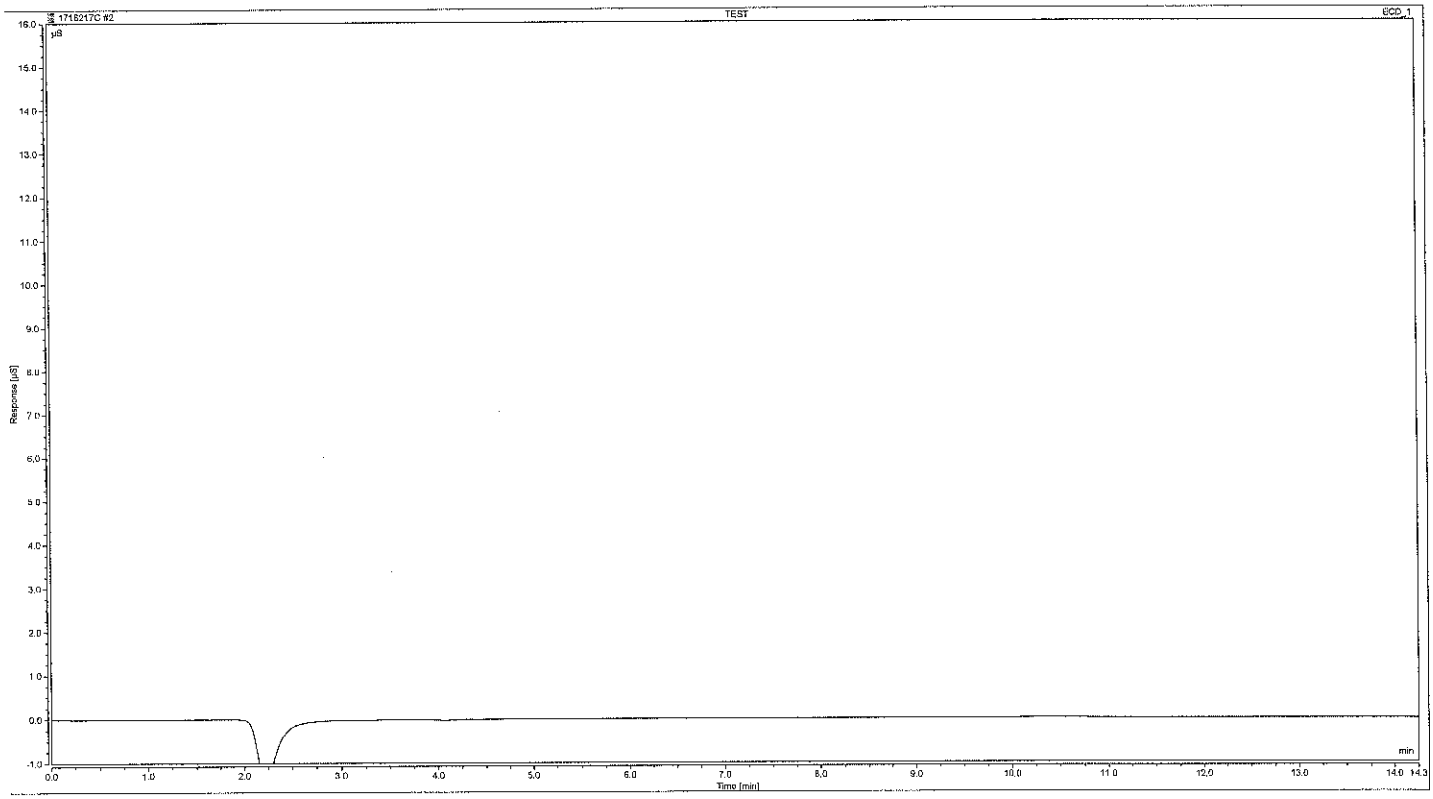
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **TEST** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 12:22** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **002** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:**

**Date:**

**Verifier:**

Nicole M. Peety
Senior Chemist/Group Leader

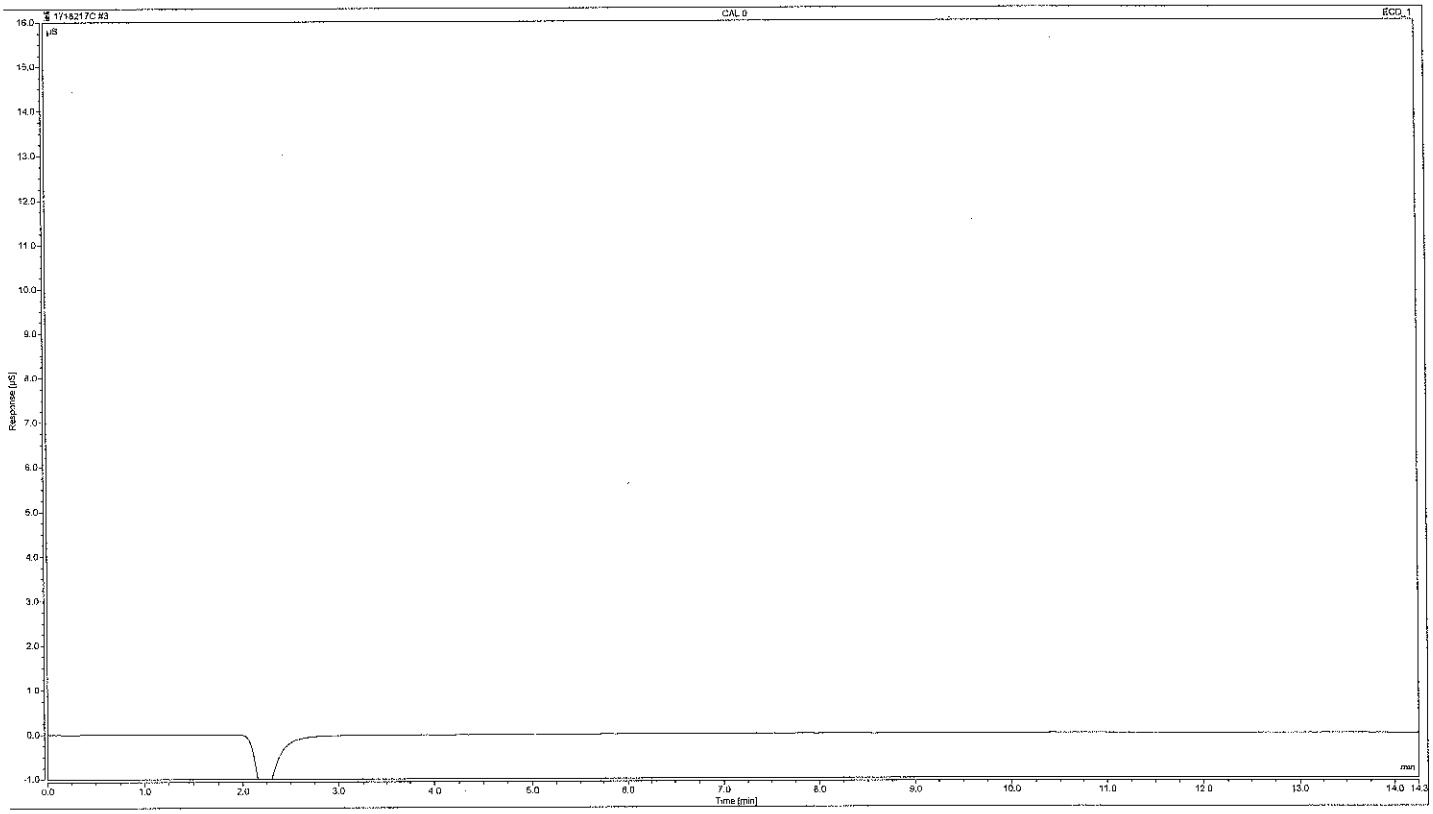
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 0** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 12:39** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **003** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 03 2017

**Verifier:** Nicole M. Veety
Senior Chemist/Group Leader

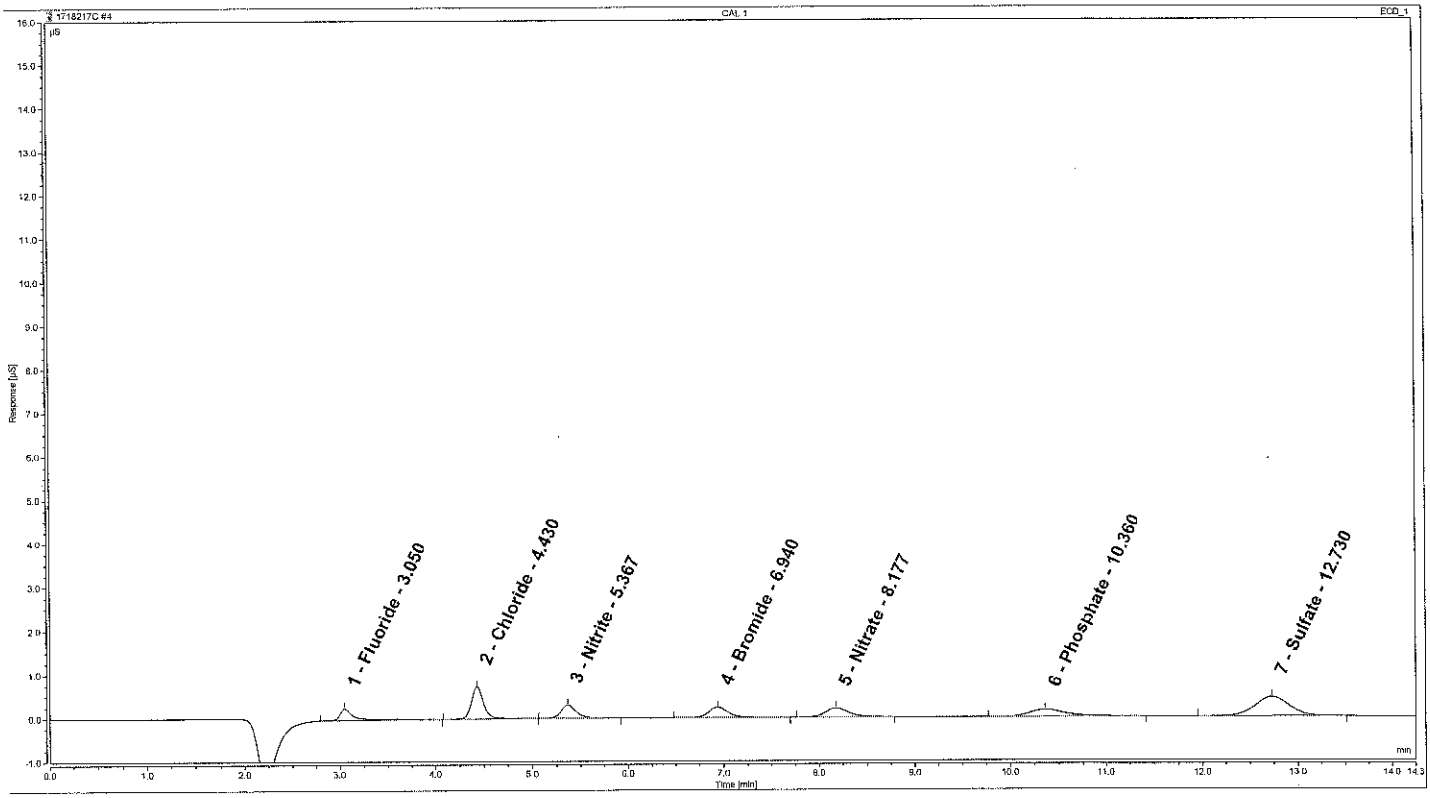
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 1** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 12:56** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **004** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | M | 0.054 | 0.270 | 0.1361 |
| 2 | 4.43 | Chloride | BM | 0.110 | 0.750 | 0.4634 |
| 3 | 5.37 | Nitrite | M | 0.056 | 0.305 | 0.1244 |
| 4 | 6.94 | Bromide | BM | 0.056 | 0.240 | 0.6344 |
| 5 | 8.18 | Nitrate | BM | 0.060 | 0.211 | 0.1224 |
| 6 | 10.36 | Phosphate | M | 0.073 | 0.164 | 0.8145 |
| 7 | 12.73 | Sulfate | M | 0.189 | 0.447 | 1.0920 |
| | | TOTAL: | | 0.60 | 2.39 | 3.39 |




**Analyst:** Hallie A. Burnett
Hallie A. Burnett
Associate Chemi

**Date:** JUL 03 2017

**Verifier:** Nicole M. Veety
Nicole M. Veety
Senior Chemist/Group Leader

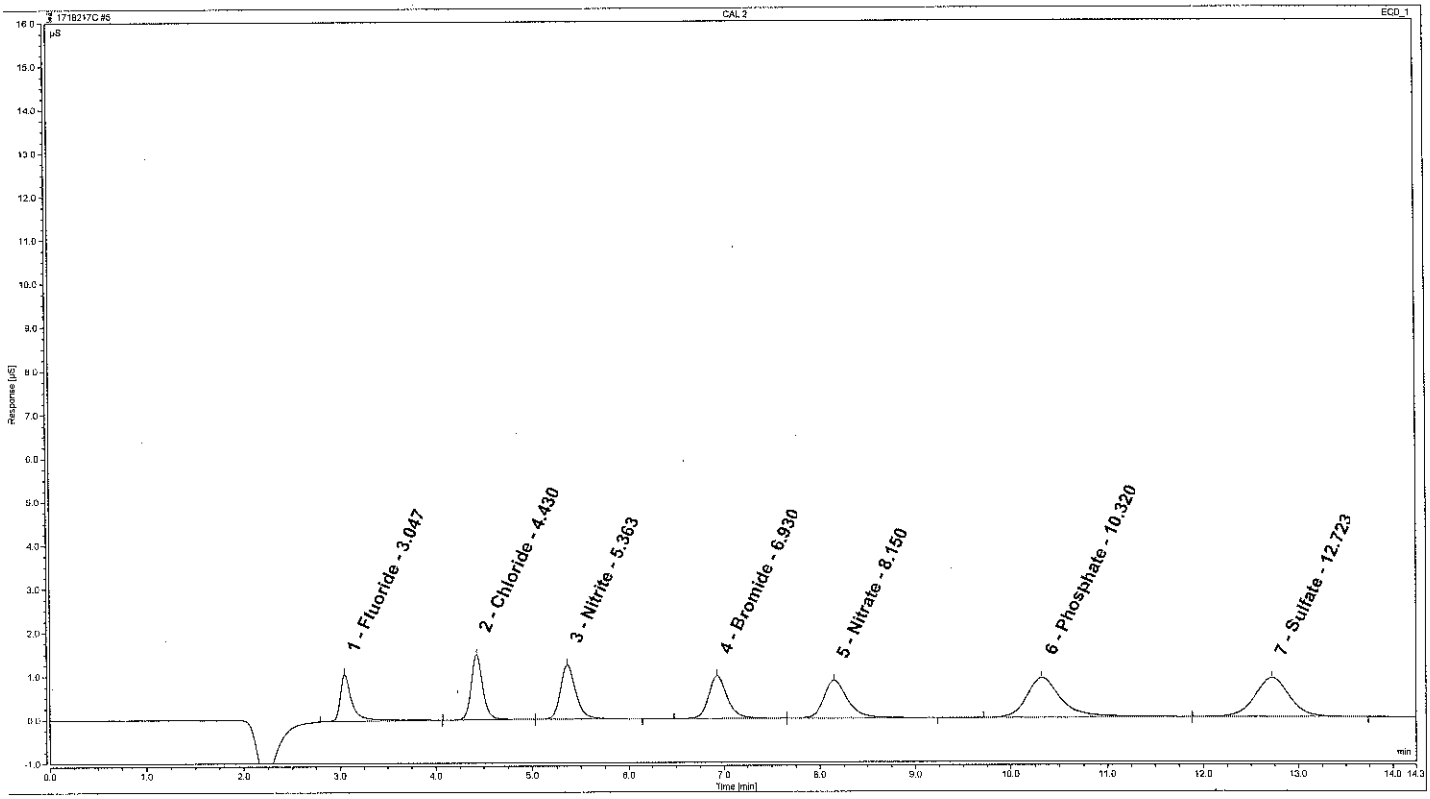
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 2** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 13:12** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **005** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | M | 0.163 | 1.076 | 0.4000 |
| 2 | 4.43 | Chloride | M | 0.213 | 1.503 | 0.8146 |
| 3 | 5.36 | Nitrite | M | 0.229 | 1.246 | 0.3986 |
| 4 | 6.93 | Bromide | BM | 0.223 | 0.977 | 1.9970 |
| 5 | 8.15 | Nitrate | M | 0.247 | 0.862 | 0.4008 |
| 6 | 10.32 | Phosphate | M | 0.373 | 0.903 | 2.0043 |
| 7 | 12.72 | Sulfate | M | 0.380 | 0.889 | 2.0218 |
| | | TOTAL: | | 1.83 | 7.46 | 8.04 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 03 2017

**Verifier:** Nicole M. Veety
Senior Chemist/Group Leader

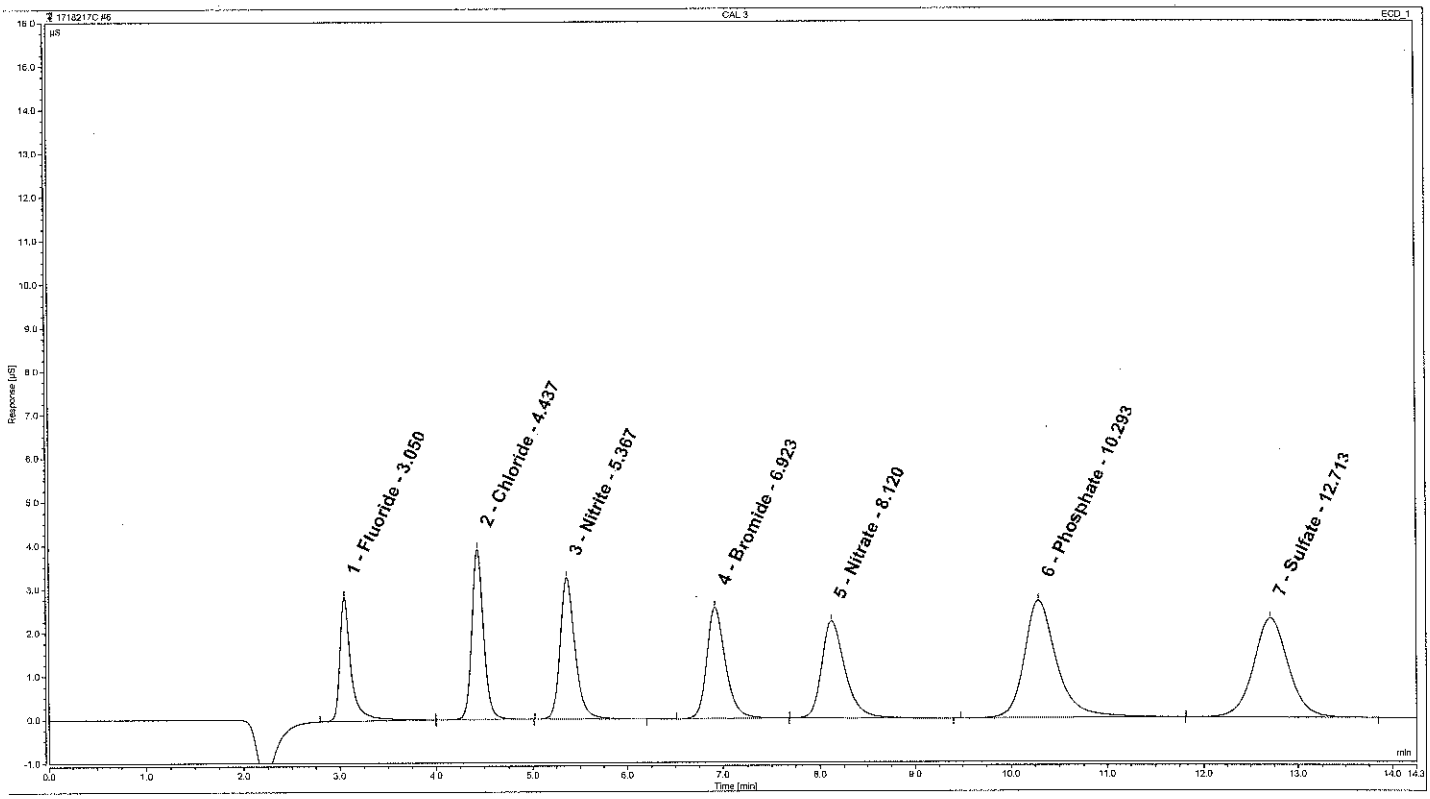
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 3** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 13:29** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **006** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | MB | 0.398 | 2.858 | 0.9659 |
| 2 | 4.44 | Chloride | BM | 0.542 | 3.923 | 1.9364 |
| 3 | 5.37 | Nitrite | MB | 0.594 | 3.252 | 0.9782 |
| 4 | 6.92 | Bromide | M | 0.577 | 2.568 | 4.8836 |
| 5 | 8.12 | Nitrate | M | 0.637 | 2.245 | 0.9794 |
| 6 | 10.29 | Phosphate | BM | 1.054 | 2.707 | 4.7062 |
| 7 | 12.71 | Sulfate | M | 0.971 | 2.288 | 4.9033 |
| | | TOTAL: | | 4.77 | 19.84 | 19.35 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 03 2017

**Verifier:** Nicole M. Feely
Senior Chemist/Group Leader

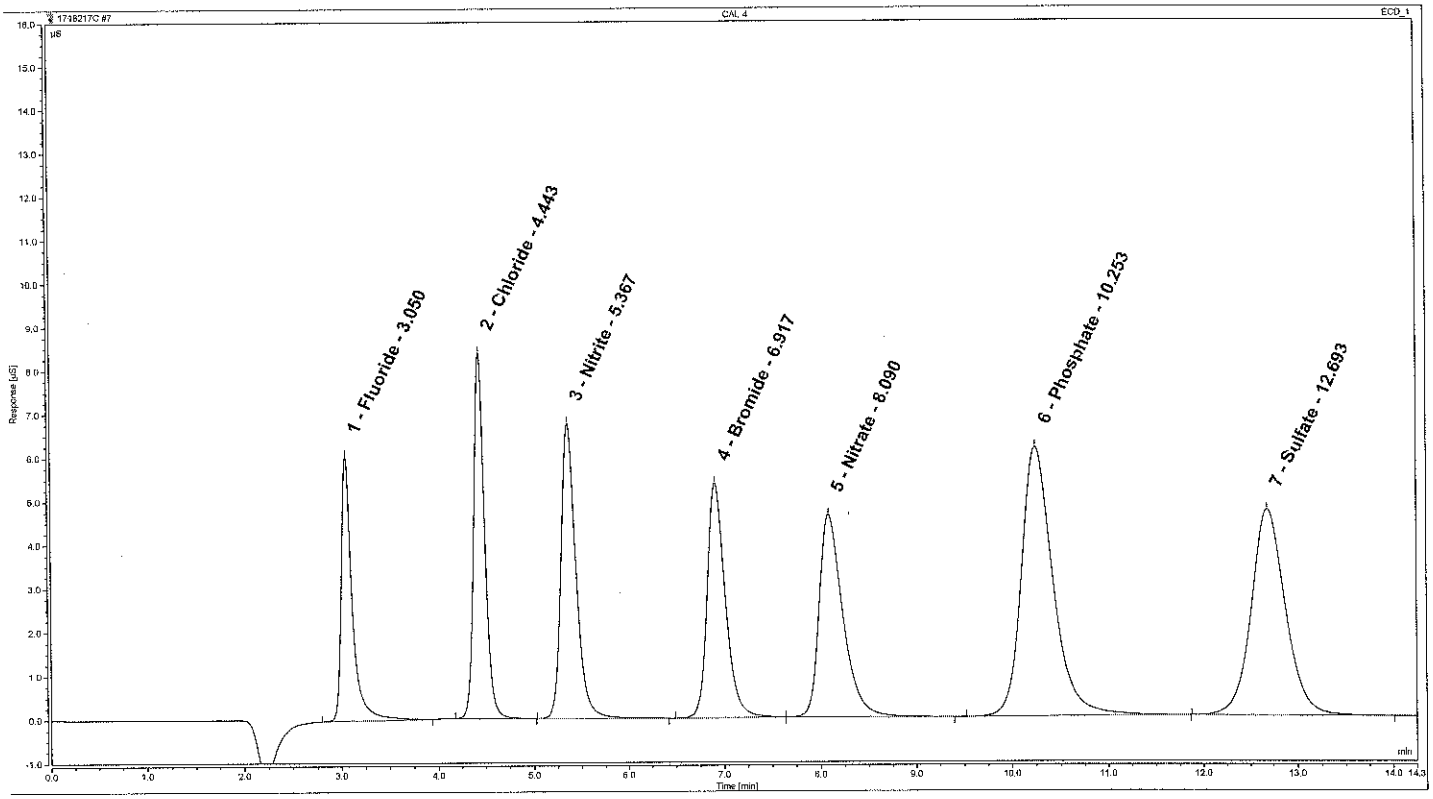
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 4** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 13:46** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **007** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | M | 0.812 | 6.083 | 1.9677 |
| 2 | 4.44 | Chloride | M | 1.122 | 8.384 | 3.9210 |
| 3 | 5.37 | Nitrite | M | 1.224 | 6.769 | 1.9784 |
| 4 | 6.92 | Bromide | MB | 1.187 | 5.384 | 9.8640 |
| 5 | 8.09 | Nitrate | BMB | 1.308 | 4.645 | 1.9762 |
| 6 | 10.25 | Phosphate | BM | 2.321 | 6.182 | 9.7284 |
| 7 | 12.69 | Sulfate | M | 1.994 | 4.736 | 9.8874 |
| | | TOTAL: | | 9.97 | 42.18 | 39.32 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 03 2017

**Verifier:** Nicole M. Veety
Senior Chemist/Group Leader

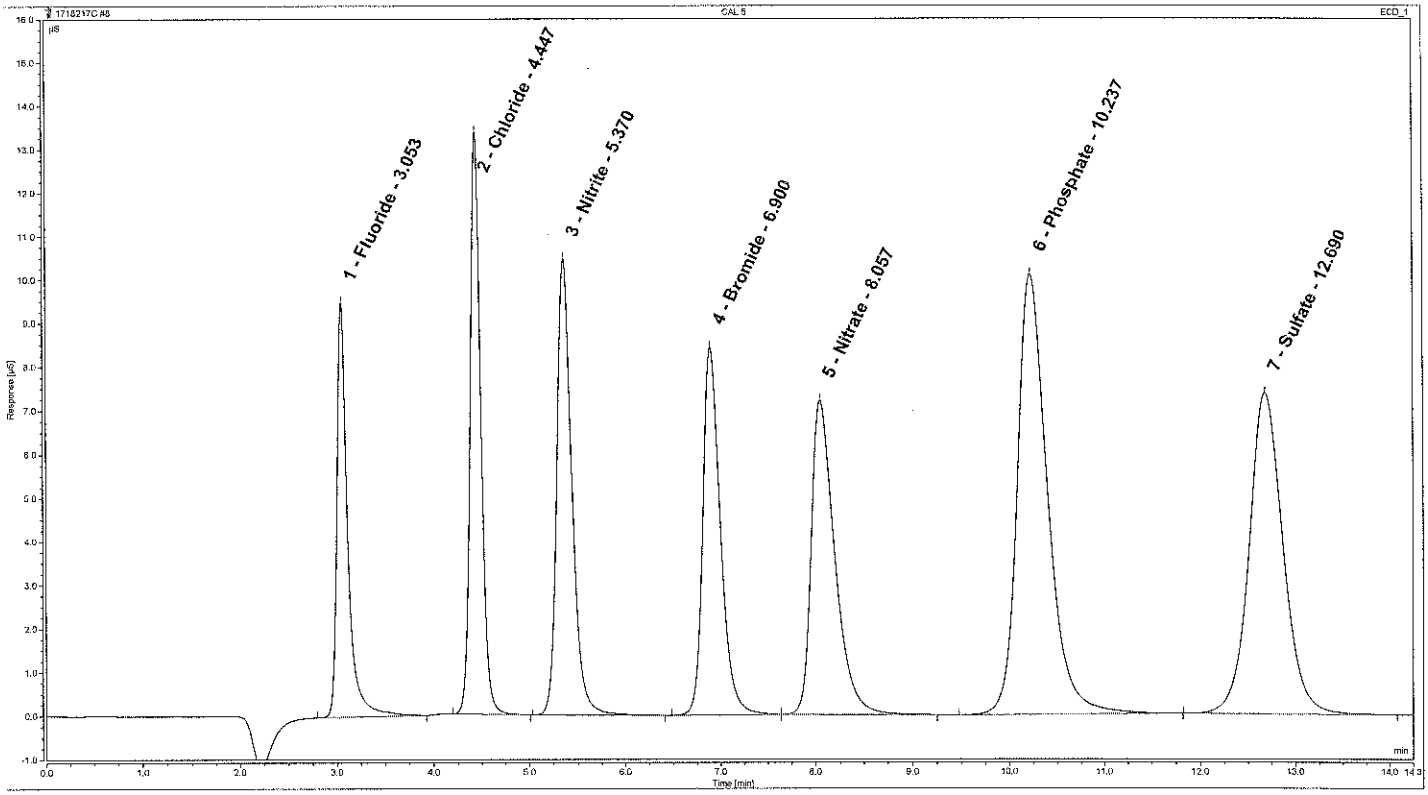
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 5** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 14:03** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **008** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | M | 1.252 | 9.499 | 3.0302 |
| 2 | 4.45 | Chloride | M | 1.750 | 13.365 | 6.0646 |
| 3 | 5.37 | Nitrite | M | 1.881 | 10.471 | 3.0204 |
| 4 | 6.90 | Bromide | BMB | 1.831 | 8.441 | 15.1211 |
| 5 | 8.06 | Nitrate | BM | 2.011 | 7.204 | 3.0213 |
| 6 | 10.24 | Phosphate | BM | 3.713 | 10.109 | 15.2466 |
| 7 | 12.69 | Sulfate | M | 3.064 | 7.349 | 15.0956 |
| | | TOTAL: | | 15.50 | 66.44 | 60.60 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 03 2017

**Verifier:** Nicole M. Veely
Senior Chemist/Group Leader

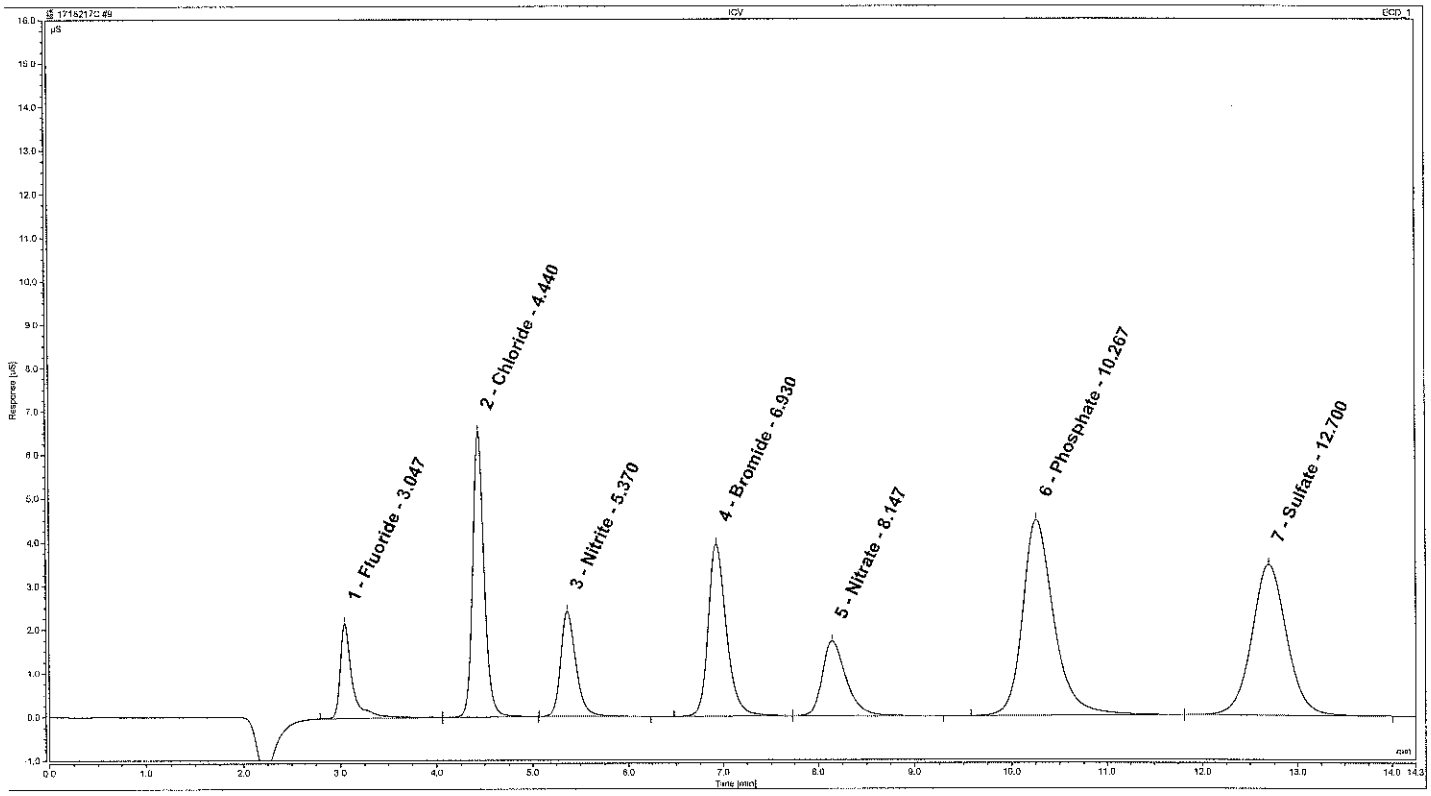
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 14:20** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **009** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | M | 0.319 | 2.175 | 0.7767 |
| 2 | 4.44 | Chloride | M | 0.905 | 6.542 | 3.1765 |
| 3 | 5.37 | Nitrite | MB | 0.443 | 2.407 | 0.7386 |
| 4 | 6.93 | Bromide | BM | 0.890 | 3.946 | 7.4371 |
| 5 | 8.15 | Nitrate | M | 0.491 | 1.715 | 0.7624 |
| 6 | 10.27 | Phosphate | M | 1.701 | 4.467 | 7.2691 |
| 7 | 12.70 | Sulfate | M | 1.457 | 3.440 | 7.2709 |
| | | TOTAL: | | 6.21 | 24.69 | 27.43 |




**Analyst:** HAB 2014

**Date:** 7/3/17

**Verifier:** Nicole M. Veely
Senior Chemist/Group Leader

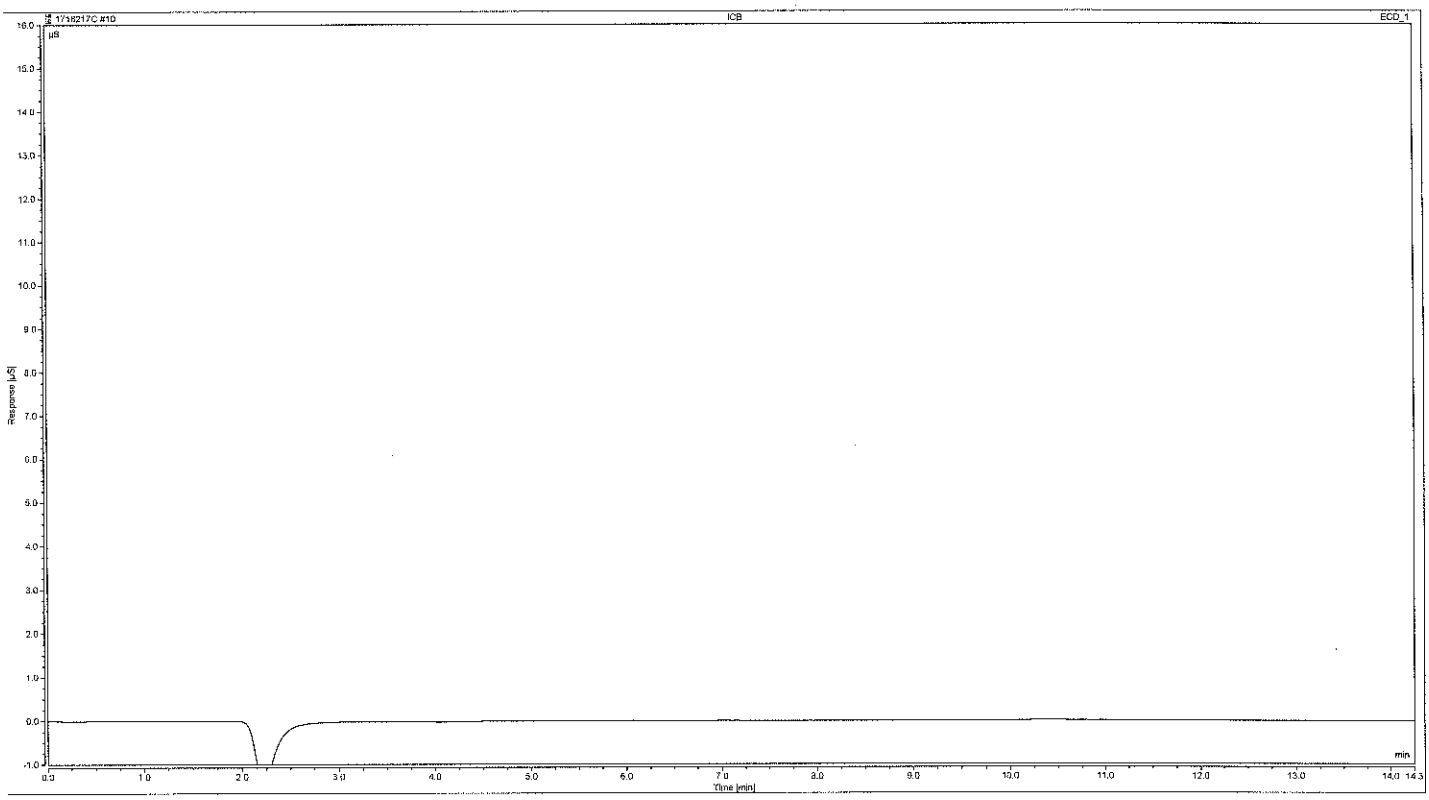
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 14:37** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **010** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** HAB12074

**Date:** 7/3/17

**Verifier:**

**Date:** Nicole M. Veety
Senior Chemist/Group Leader

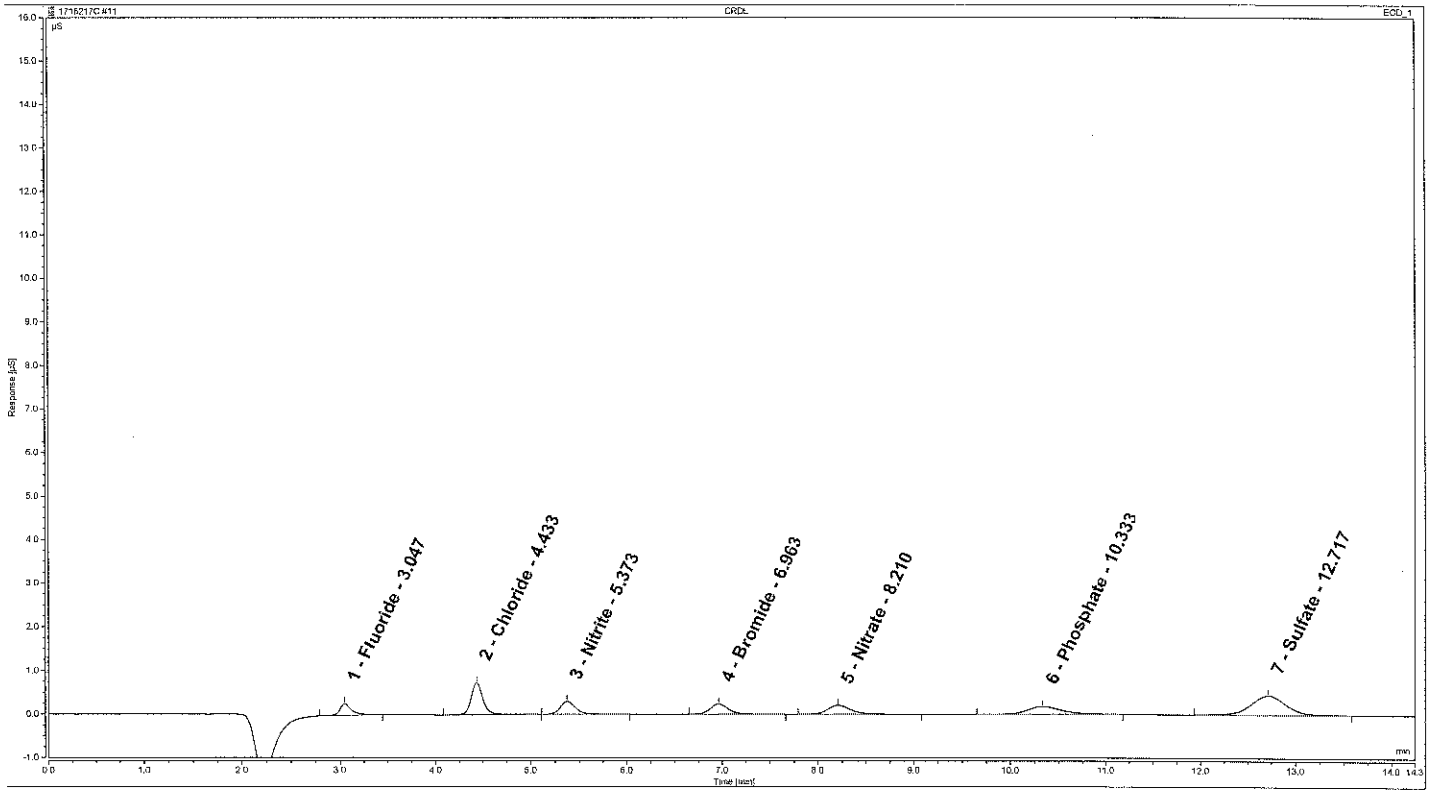
JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CRDL** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 14:53** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **011** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | M | 0.038 | 0.270 | 0.0974 |
| 2 | 4.43 | Chloride | BM | 0.109 | 0.746 | 0.4599 |
| 3 | 5.37 | Nitrite | M | 0.056 | 0.299 | 0.1236 |
| 4 | 6.96 | Bromide | M | 0.054 | 0.235 | 0.6172 |
| 5 | 8.21 | Nitrate | MB | 0.062 | 0.210 | 0.1253 |
| 6 | 10.33 | Phosphate | M | 0.076 | 0.181 | 0.8290 |
| 7 | 12.72 | Sulfate | M | 0.191 | 0.447 | 1.1012 |
| | | TOTAL: | | 0.59 | 2.39 | 3.35 |




**Analyst:** HAB12014

**Date:** 7/3/17

**Verifier:**

Nicole M. Veely
Senior Chemist/Group Leader

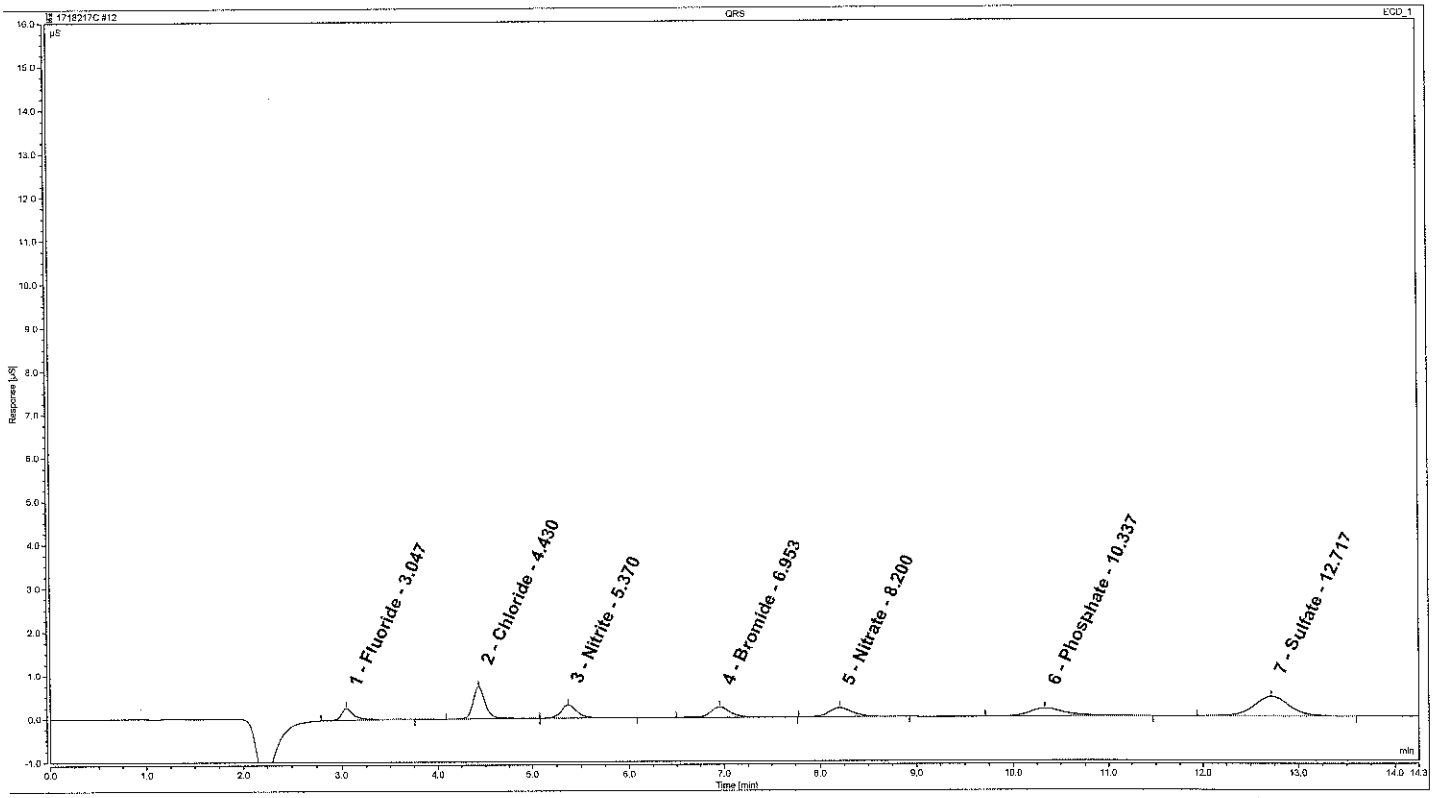
**Date:** JUL 03 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **QRS** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/01/2017 / 15:10** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **012** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718217C** |
| *Column Type-Serial #:* | **AG14-170404395, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.05 | Fluoride | MB | 0.044 | 0.275 | 0.1127 |
| 2 | 4.43 | Chloride | MB | 0.110 | 0.745 | 0.4625 |
| 3 | 5.37 | Nitrite | BM | 0.057 | 0.303 | 0.1253 |
| 4 | 6.95 | Bromide | M | 0.057 | 0.239 | 0.6401 |
| 5 | 8.20 | Nitrate | M | 0.061 | 0.210 | 0.1241 |
| 6 | 10.34 | Phosphate | M | 0.081 | 0.184 | 0.8491 |
| 7 | 12.72 | Sulfate | MB | 0.190 | 0.447 | 1.0995 |
| | | TOTAL: | | 0.60 | 2.40 | 3.41 |




**Analyst:** HAB12074

**Date:** 7/3/17

**Verifier:**

Nicole M. Veety
Senior Chemist/Group Leader

**Date:** JUL 03 2017

eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-1100 Analyst AMW9972

Instrument ID 24811 Run Start Date 7-20-17

IDAT Run Number 172010101D17 Run Name 172017A

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405-47

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <0.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: —

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | P, $SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1720117A

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LOQ | | GE3 | Check Standard | | 07/20/2017 17:00:19 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 2 | LOW | | GE4 | Check Standard | | 07/20/2017 17:17:08 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 3 | HIGH | | GE5 | Check Standard | | 07/20/2017 17:33:58 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 4 | CCV2 | | G1 | Check Standard | | 07/20/2017 17:50:48 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 5 | CCB | | G8 | Check Standard | | 07/20/2017 18:07:39 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 6 | LCSW | 17201972117A-9972 | GE1 | Unknown | | 07/20/2017 18:24:27 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 7 | PBW | 17201972117A-9972 | GE8 | Unknown | | 07/20/2017 18:41:17 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 8 | LCSW | 17201972217A-9972 | GE1 | Unknown | | 07/20/2017 18:58:06 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 9 | PBW | 17201972217A-9972 | GE8 | Unknown | | 07/20/2017 19:14:55 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 10 | 9109771-U | 17201972117A-9972 | RA1 | Unknown | | 07/20/2017 19:31:49 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 11 | 9109771-U | 17201972117A-9972 | RA2 | Unknown | | 07/20/2017 19:48:38 | 50.00 | Anions | Anions | 1.00 | 100 | Finished |
| 12 | 9109771-D | 17201972117A-9972 | RA1 | Unknown | | 07/20/2017 20:05:28 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 13 | 9109771-D | 17201972117A-9972 | RA2 | Unknown | | 07/20/2017 20:22:18 | 50.00 | Anions | Anions | 1.00 | 100 | Finished |
| 14 | 9109771-R | 17201972117A-9972 | RA3 | Unknown | | 07/20/2017 20:39:07 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 15 | 9109771-R | 17201972117A-9972 | RA4 | Unknown | | 07/20/2017 20:55:56 | 50.00 | Anions | Anions | 1.00 | 100 | Finished |
| 16 | CCV2 | | G1 | Check Standard | | 07/20/2017 21:12:45 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 17 | CCB | | G8 | Check Standard | | 07/20/2017 21:29:35 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 18 | 9109779 | 17201972117A-9972 | RA5 | Unknown | | 07/20/2017 21:46:25 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 19 | 9109779 | 17201972117A-9972 | RA6 | Unknown | | 07/20/2017 22:03:15 | 50.00 | Anions | Anions | 1.00 | 100 | Finished |
| 20 | 9109068 | 17201972117A-9972 | RA7 | Unknown | | 07/20/2017 22:20:04 | 50.00 | Anions | Anions | 1.00 | 20 | Finished |
| 21 | 9109068 | 17201972117A-9972 | RA8 | Unknown | | 07/20/2017 22:36:53 | 50.00 | Anions | Anions | 1.00 | 100 | Finished |
| 22 | 9110080 | 17201972117A-9972 | RB1 | Unknown | | 07/20/2017 22:53:43 | 50.00 | Anions | Anions | 1.00 | 20 | Finished |
| 23 | 9110082 | 17201972117A-9972 | RB2 | Unknown | | 07/20/2017 23:10:32 | 50.00 | Anions | Anions | 1.00 | 50 | Finished |
| 24 | 9110084 | 17201972117A-9972 | RB3 | Unknown | | 07/20/2017 23:27:21 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 25 | 9111524-U | 17201972117B-9972 | RB4 | Unknown | | 07/20/2017 23:44:10 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 26 | 9111524-D | 17201972117B-9972 | RB4 | Unknown | | 07/21/2017 00:00:59 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 27 | 9111524-R | 17201972117B-9972 | RB5 | Unknown | | 07/21/2017 00:17:48 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 28 | CCV2 | | G1 | Check Standard | | 07/21/2017 00:34:38 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 29 | CCB | | G8 | Check Standard | | 07/21/2017 00:51:30 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 30 | 9111525 | 17201972117B-9972 | RB6 | Unknown | | 07/21/2017 01:08:19 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 31 | 9111526 | 17201972117B-9972 | RB7 | Unknown | | 07/21/2017 01:25:08 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 32 | 9111527 | 17201972117B-9972 | RB8 | Unknown | | 07/21/2017 01:41:56 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 33 | 9111528 | 17201972117B-9972 | RC1 | Unknown | | 07/21/2017 01:58:46 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 34 | 9111529 | 17201972117B-9972 | RC2 | Unknown | | 07/21/2017 02:15:35 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 35 | 9109972-U | 17201972217A-9972 | RC3 | Unknown | | 07/21/2017 02:32:24 | 50.00 | Anions | Anions | 1.00 | 500 | Finished |
| 36 | 9109972-D | 17201972217A-9972 | RC3 | Unknown | | 07/21/2017 02:49:14 | 50.00 | Anions | Anions | 1.00 | 500 | Finished |
| 37 | 9109972-R | 17201972217A-9972 | RC4 | Unknown | | 07/21/2017 03:06:04 | 50.00 | Anions | Anions | 1.00 | 500 | Finished |
| 38 | 9109974 | 17201972217A-9972 | RC5 | Unknown | | 07/21/2017 03:22:53 | 50.00 | Anions | Anions | 1.00 | 500 | Finished |
| 39 | 9109977 | 17201972217A-9972 | RC6 | Unknown | | 07/21/2017 03:39:42 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 40 | CCV2 | | G1 | Check Standard | | 07/21/2017 03:56:32 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 41 | CCB | | G8 | Check Standard | | 07/21/2017 04:13:22 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |

# Sequence Overview: 1720117A

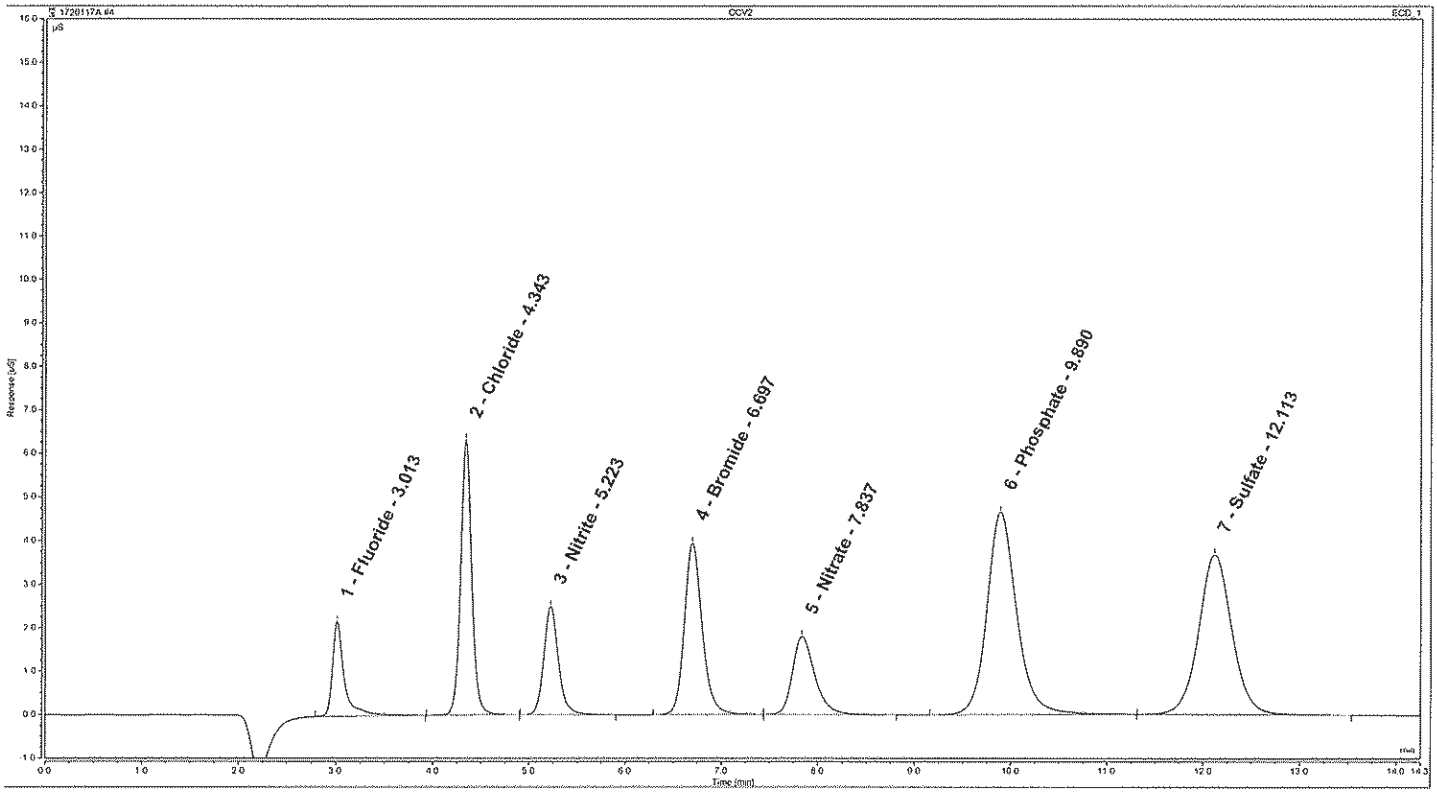
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 9109978 | 17201972217A-9972 | RC7 | Unknown | | 07/21/2017 04:30:12 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 43 | 9109979 | 17201972217A-9972 | RC8 | Unknown | | 07/21/2017 04:47:02 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 44 | 9065476 | 17181120206A | BA8 | Unknown | | 07/21/2017 05:03:56 | 50.00 | Anions | Anions | 1.00 | 50 | Finished |
| 45 | 9065476 | 17181120206A | BB1 | Unknown | | 07/21/2017 05:18:13 | 50.00 | Anions | Anions | 1.00 | 50 | Interrupted |
| 46 | CCV2 | | G1 | Check Standard | | 07/21/2017 05:22:00 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 47 | CCB | | G8 | Check Standard | | 07/21/2017 05:38:51 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 48 | 9065476 | 17181120206A | BA8 | Unknown | | 07/21/2017 08:48:44 | 50.00 | Anions | Anions | 1.00 | 50 | Finished |
| 49 | CCV2 | | G1 | Check Standard | | 07/21/2017 09:05:35 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 50 | CCB | | G8 | Check Standard | | 07/21/2017 09:22:25 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 51 | 9065476 | 17181120206A | BA1 | Unknown | | 07/21/2017 10:38:53 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 52 | 9065476 | 17181120206A | BA1 | Unknown | | 07/21/2017 10:55:42 | 50.00 | Anions | Anions | 1.00 | 5 | Finished |
| 53 | 9111529 | 17201972117B-9972 | BA2 | Unknown | | 07/21/2017 11:12:31 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 54 | CCV2 | | G1 | Check Standard | | 07/21/2017 11:29:22 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |
| 55 | CCB | | G8 | Check Standard | | 07/21/2017 11:46:12 | 50.00 | Anions | Anions | 1.00 | 1 | Finished |

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 17:50** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **004** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.01 | Fluoride | M | 0.313 | 2.199 | 0.7621 |
| 2 | 4.34 | Chloride | M | 0.848 | 6.311 | 2.9821 |
| 3 | 5.22 | Nitrite | M | 0.440 | 2.490 | 0.7330 |
| 4 | 6.70 | Bromide | MB | 0.843 | 3.939 | 7.0572 |
| 5 | 7.84 | Nitrate | BM | 0.482 | 1.797 | 0.7490 |
| 6 | 9.89 | Phosphate | BM | 1.683 | 4.632 | 7.1986 |
| 7 | 12.11 | Sulfate | M | 1.477 | 3.658 | 7.3693 |
| | | TOTAL: | | 6.09 | 25.03 | 26.85 |




**Analyst:** Alexandria M. Lanager, Associate Chemist

**Date:** JUL 21 2017

**Verifier:** James Mattiot, Group Leader

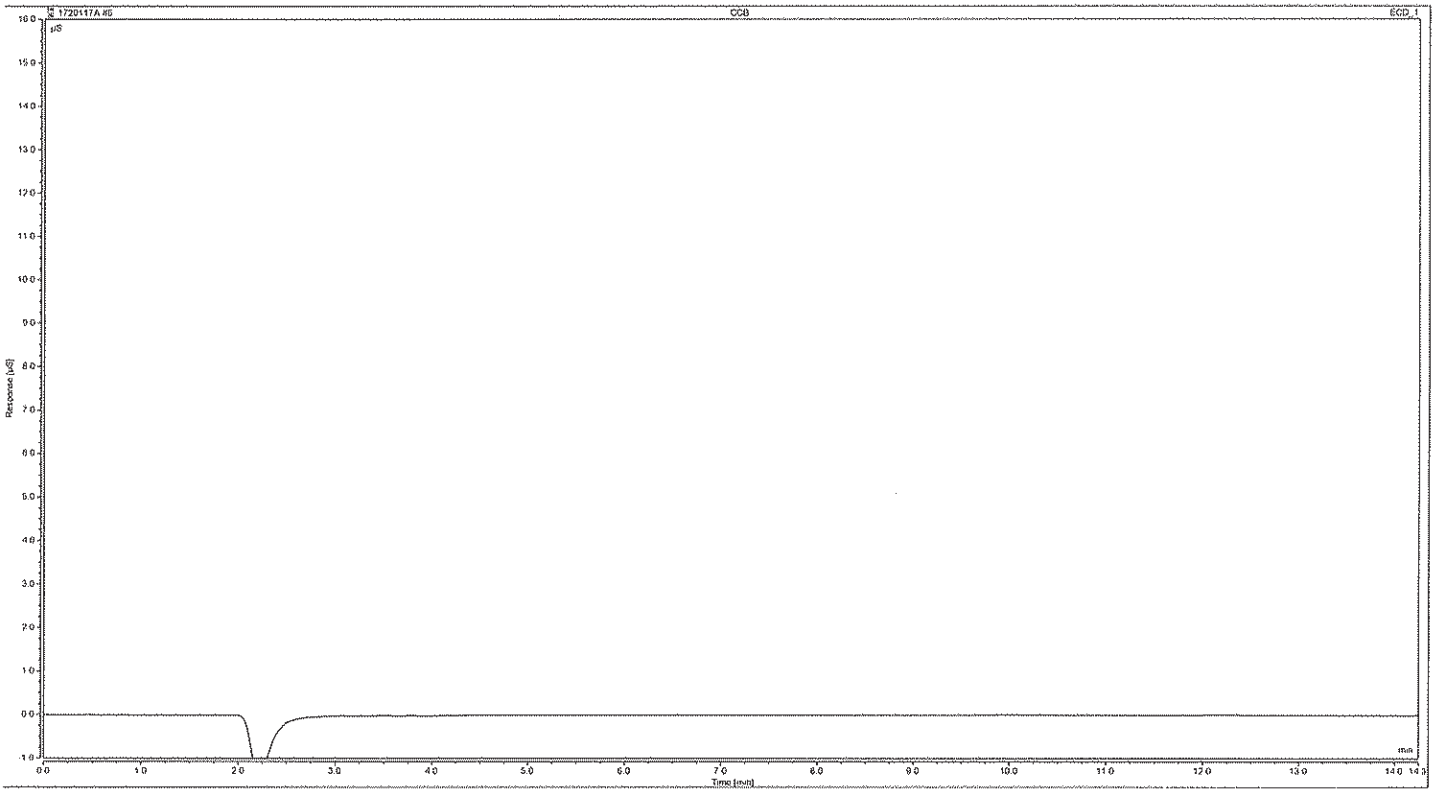
**Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 18:07** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **005** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Cedric M. Lanager, Associate Chemist

**Date:** JUL 21 2017

**Verifier:** James Mathiot, Group Leader

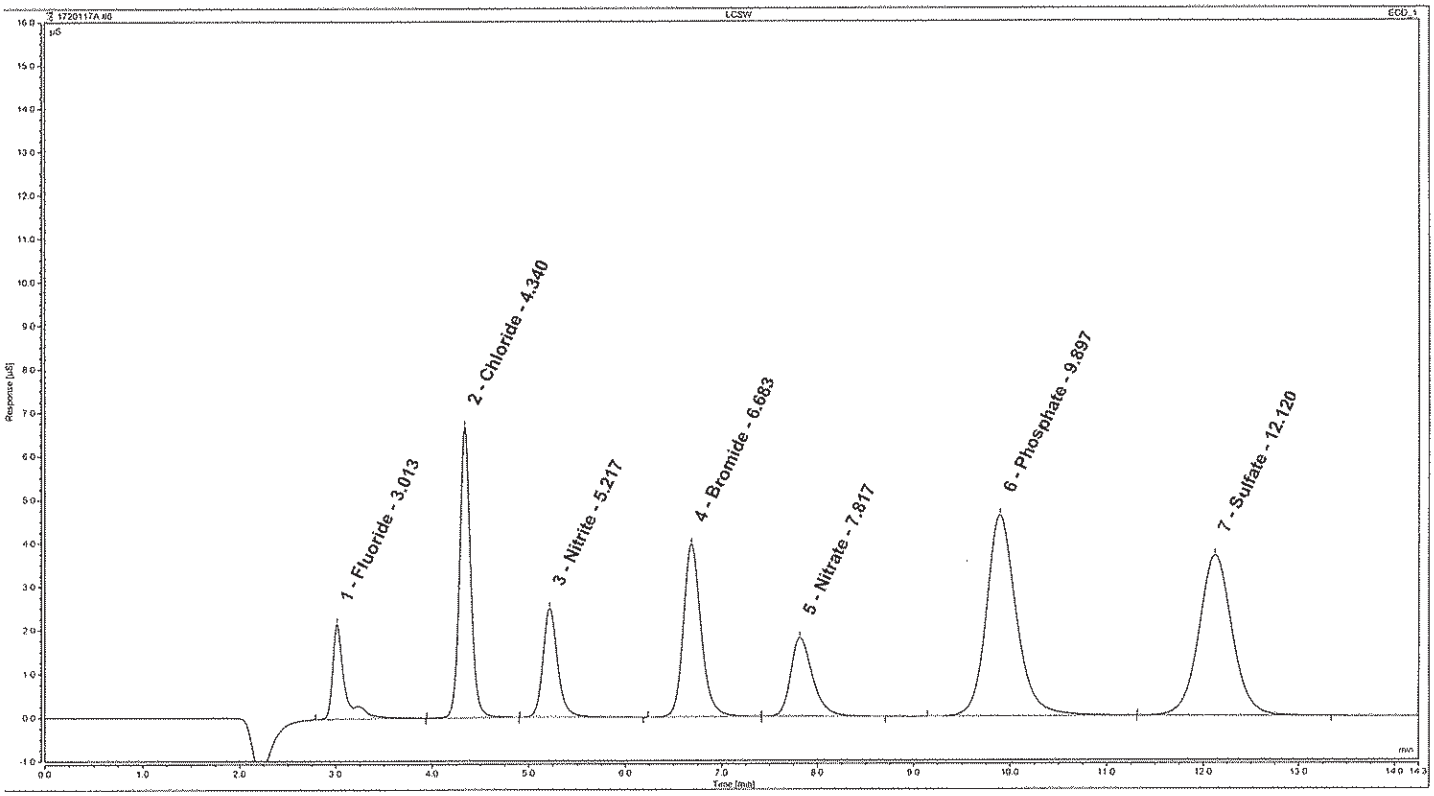
**Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **LCSW** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 18:24** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **006** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.01 | Fluoride | M | 0.329 | 2.183 | 0.8013 |
| 2 | 4.34 | Chloride | M | 0.891 | 6.667 | 3.1318 |
| 3 | 5.22 | Nitrite | M | 0.441 | 2.496 | 0.7352 |
| 4 | 6.68 | Bromide | M | 0.843 | 3.956 | 7.0530 |
| 5 | 7.82 | Nitrate | M | 0.481 | 1.807 | 0.7476 |
| 6 | 9.90 | Phosphate | M | 1.669 | 4.596 | 7.1425 |
| 7 | 12.12 | Sulfate | M | 1.479 | 3.668 | 7.3765 |
| | | TOTAL: | | 6.13 | 25.37 | 26.99 |




**Analyst:** Alexandria M. Lanager, Associate Chemist

**Date:** JUL 21 2017

**Verifier:** James Mathiot, Group Leader

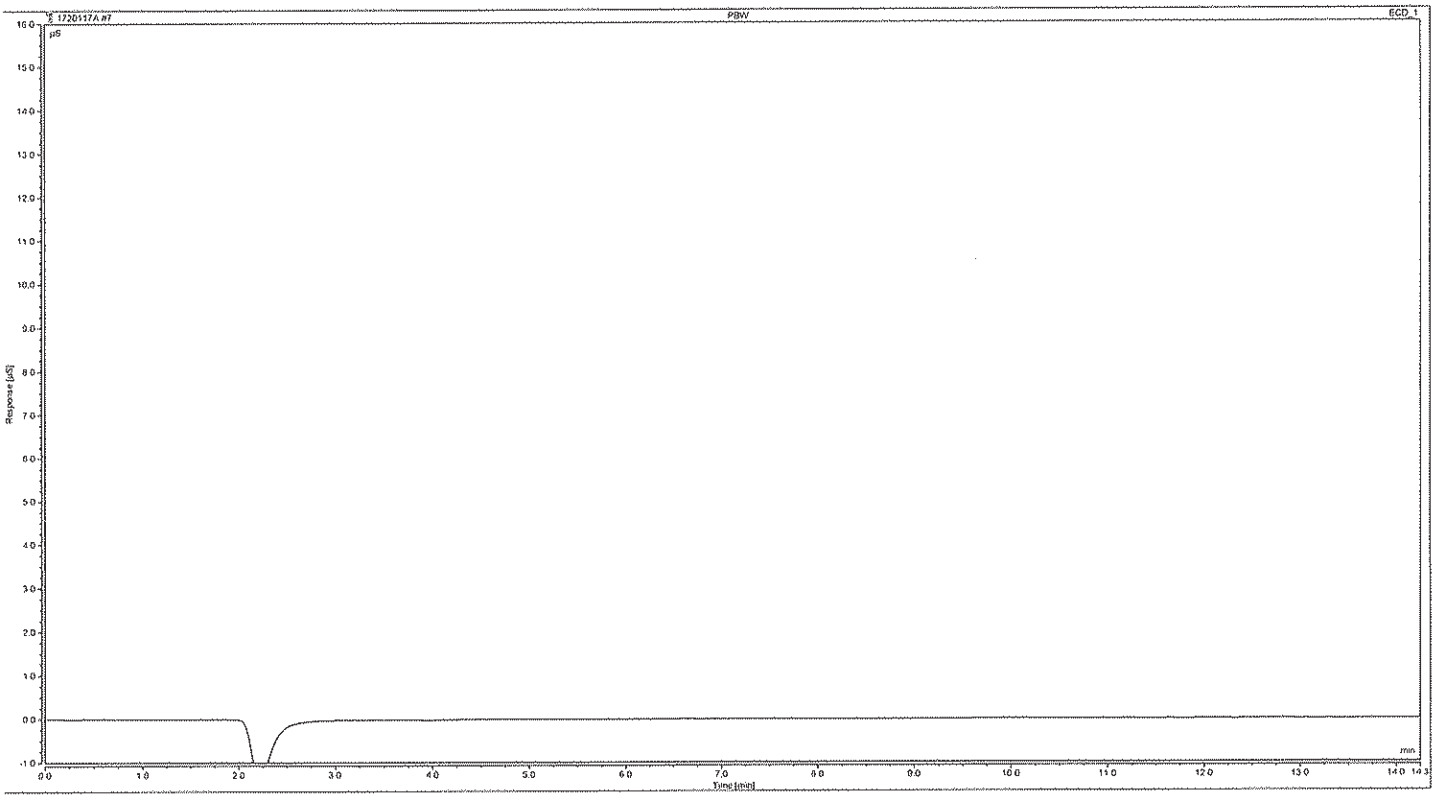
**Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **PBW** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 18:41** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **007** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




Analyst: Alexandria M. Lanagar, Associate Chemist

Date: JUL 21 2017

Verifier: James Mathiot, Group Leader

Date: JUL 25 2017

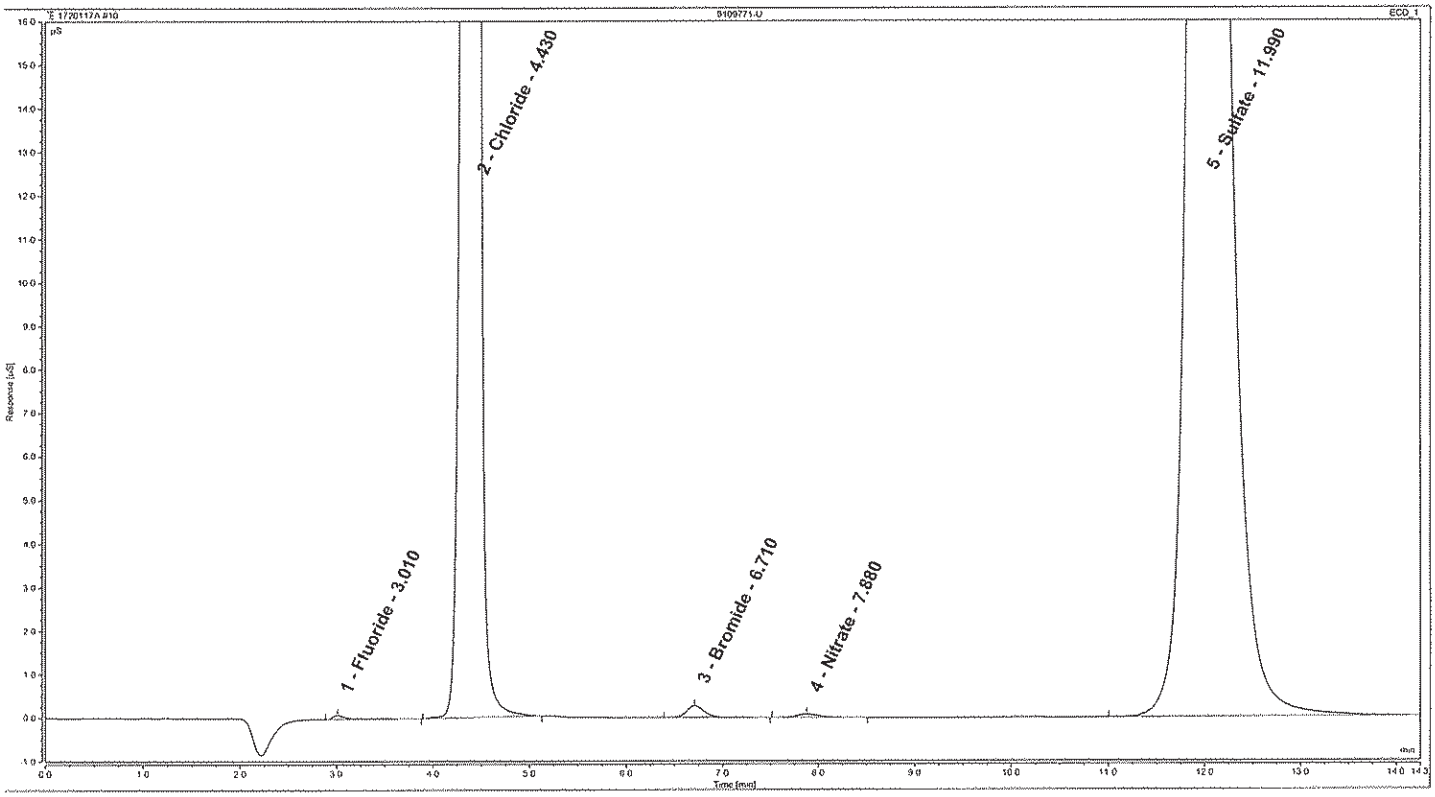
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9109771-U** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 19:31** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **010** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.01 | Fluoride | MB | 0.020 | 0.098 | 0.2763 |
| 2 | 4.43 | Chloride | M | 15.607 | 108.784 | 267.0477 |
| 3 | 6.71 | Bromide | M | 0.061 | 0.277 | 3.3784 |
| 4 | 7.88 | Nitrate | M | 0.022 | 0.080 | 0.3302 |
| 5 | 11.99 | Sulfate | MB | 19.626 | 49.426 | 478.8468 |
| | | TOTAL: | | 35.34 | 158.67 | 749.88 |

BV




**Analyst:** Alexandria M. Lanager, Associate Chemist

**Date:** JUL 21 2017

**Verifier:** James Mathiot, Group Leader

**Date:** JUL 25 2017

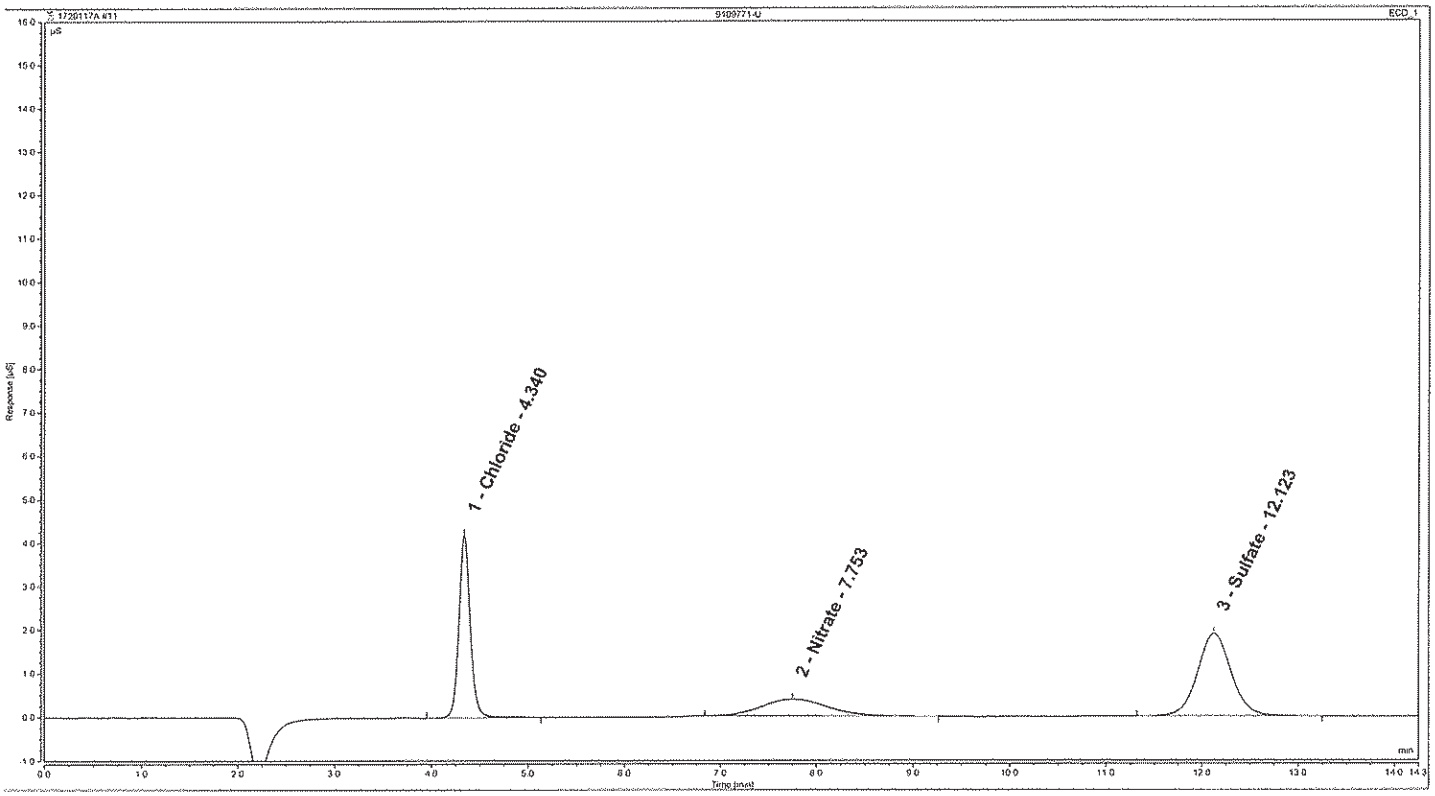
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9109771-U** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 19:48** | *Dilution Factor:* | **100** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **011** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.34 | Chloride | M | 0.574 | 4.209 | 204.5634 |
| 2 | 7.75 | Nitrate | BM | 0.309 | 0.386 | 49.3309 |
| 3 | 12.12 | Sulfate | BM | 0.777 | 1.910 | 395.9587 |
| | | TOTAL: | | 1.66 | 6.50 | 649.85 |

U SUM




**Analyst:** Alexandria M. Lanagar, Associate Chemist

**Date:** JUL 21 2017

**Verifier:** James Mathiot, Group Leader

**Date:** JUL 25 2017

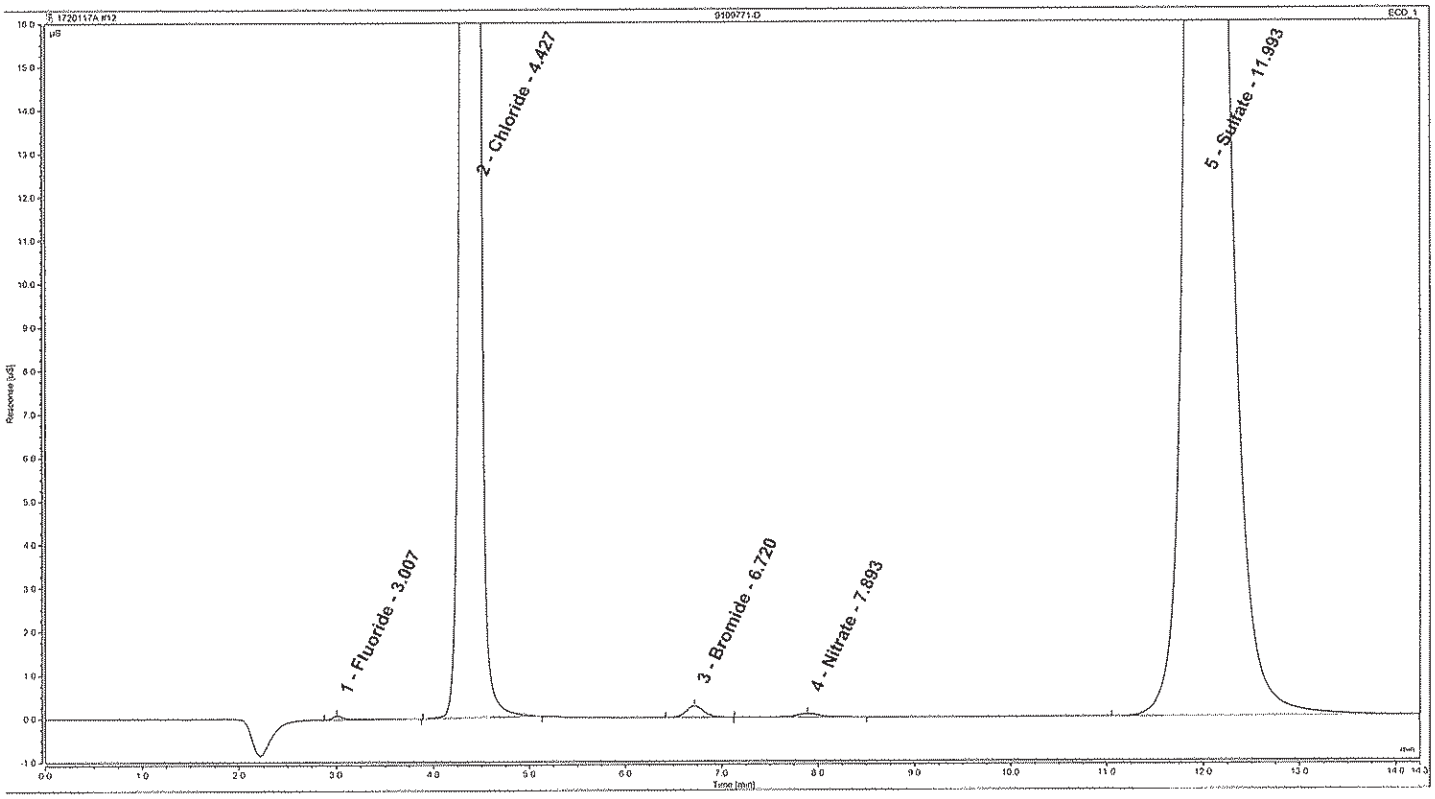
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9109771-D** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 20:05** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **012** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.01 | Fluoride | BMB | 0.020 | 0.095 | 0.2727 |
| 2 | 4.43 | Chloride | M | 15.463 | 107.875 | 264.5884 |
| 3 | 6.72 | Bromide | M | 0.058 | 0.270 | 3.2387 |
| 4 | 7.89 | Nitrate | M | 0.026 | 0.086 | 0.3576 |
| 5 | 11.99 | Sulfate | MB | 19.428 | 48.827 | 474.0246 |
| | | TOTAL: | | 34.99 | 157.15 | 742.48 |

BC




**Analyst:** Alexandria M. Lonager, Associate Chemist

**Date:** JUL 21 2017

**Verifier:** James Mathiot, Group Leader

**Date:** JUL 25 2017

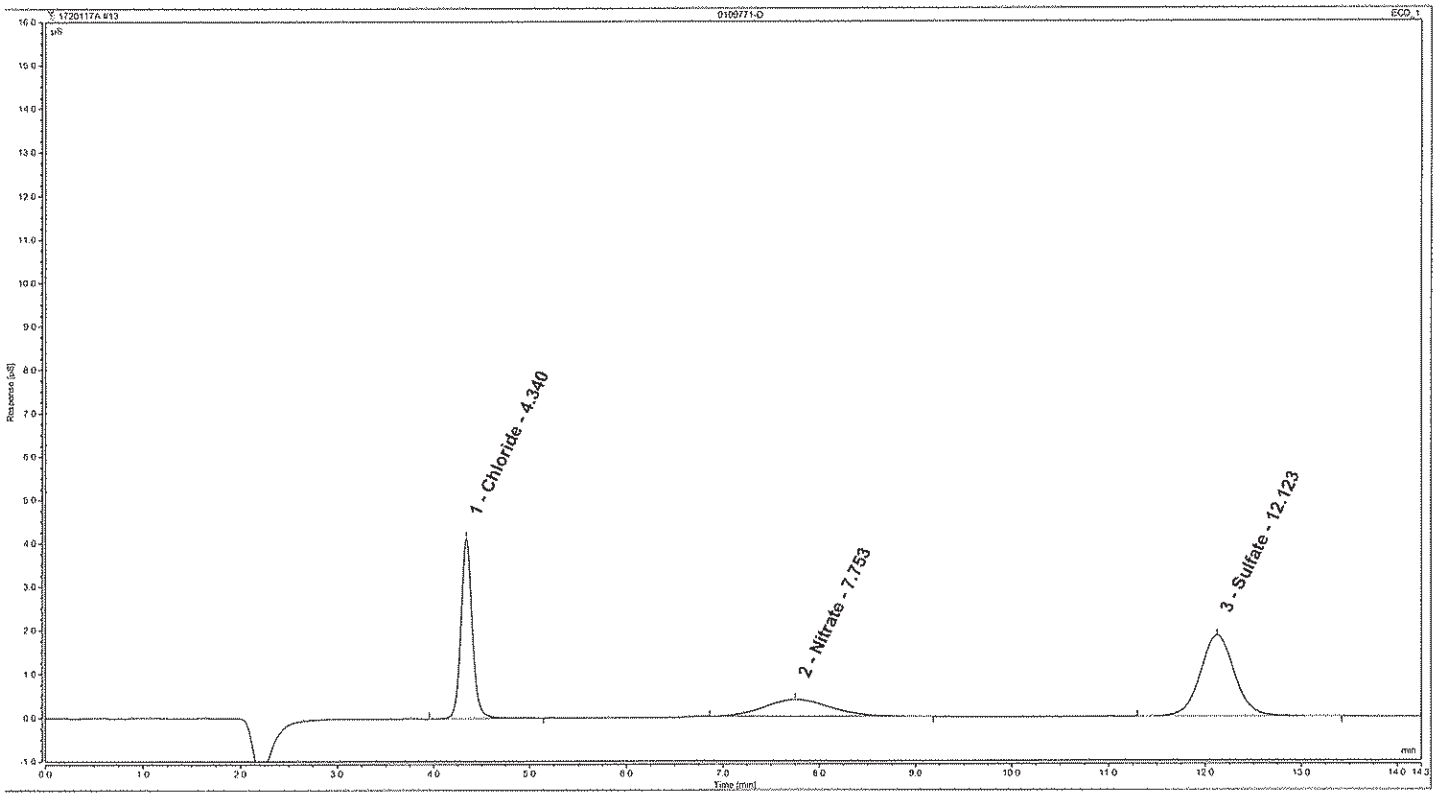
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9109771-D** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 20:22** | *Dilution Factor:* | **100** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **013** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.34 | Chloride | M | 0.567 | 4.152 | 202.1577 |
| 2 | 7.75 | Nitrate | M | 0.306 | 0.384 | 48.8042 |
| 3 | 12.12 | Sulfate | M | 0.769 | 1.881 | 391.9732 |
| | | TOTAL: | | 1.64 | 6.42 | 642.94 |

Cl SO4




**Analyst:** Alexandria M. Lanager, Associate Chemist

**Date:** JUL 21 2017

**Verifier:** James Mathiot, Group Leader

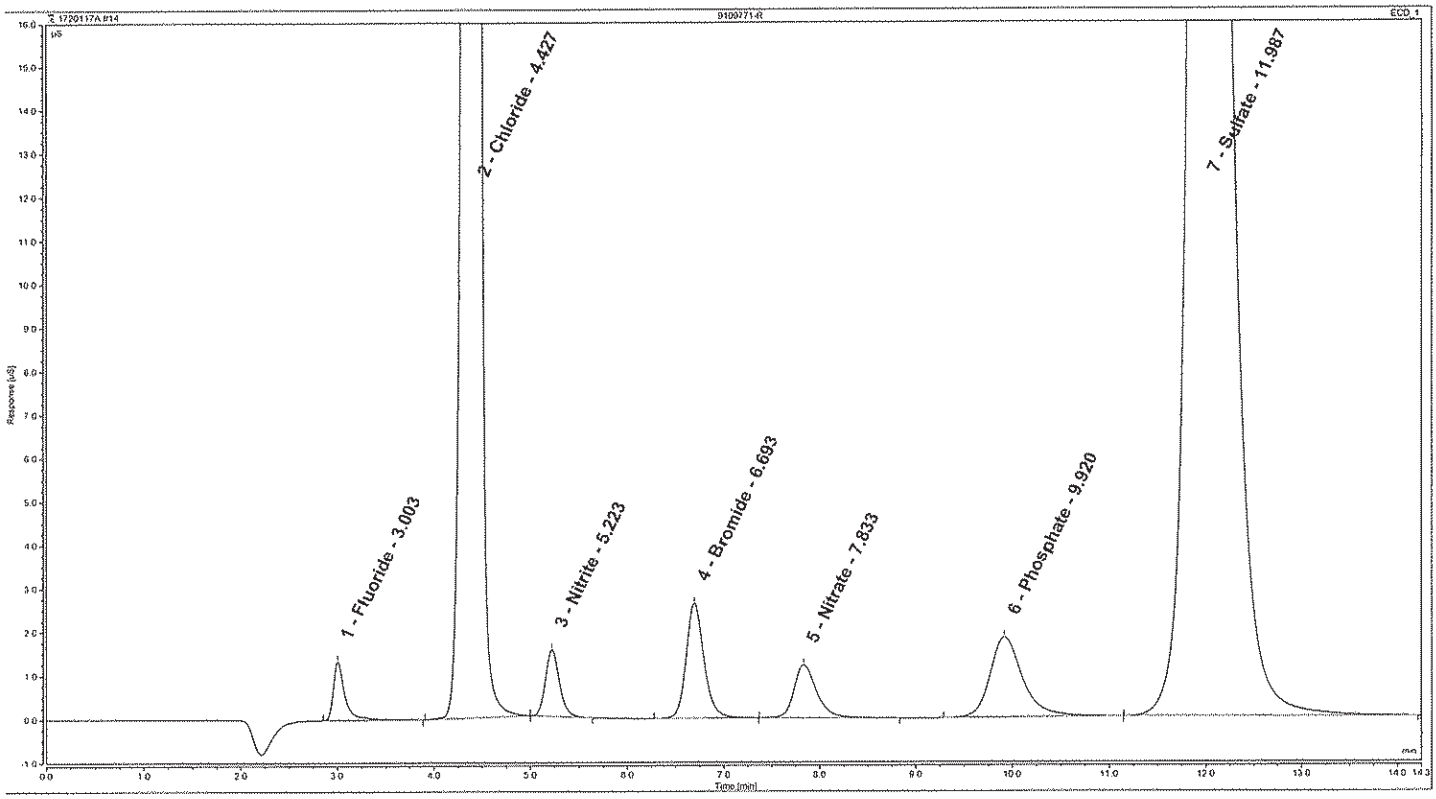
**Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9109771-R** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 20:39** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **014** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.00 | Fluoride | M | 0.194 | 1.358 | 2.3703 |
| 2 | 4.43 | Chloride | MB | 15.811 | 109.831 | 270.5292 |
| 3 | 5.22 | Nitrite | BMB | 0.257 | 1.533 | 2.2158 |
| 4 | 6.69 | Bromide | BM | 0.565 | 2.648 | 23.9327 |
| 5 | 7.83 | Nitrate | M | 0.329 | 1.216 | 2.6124 |
| 6 | 9.92 | Phosphate | M | 0.722 | 1.845 | 16.9536 |
| 7 | 11.99 | Sulfate | M | 20.300 | 51.055 | 495.2421 |
| | | TOTAL: | | 38.18 | 169.49 | 813.86 |




**Analyst:** Alexandria M. Lanager, Associate Chemist

**Date:** JUL 21 2017

**Verifier:** James Mathiot, Group Leader

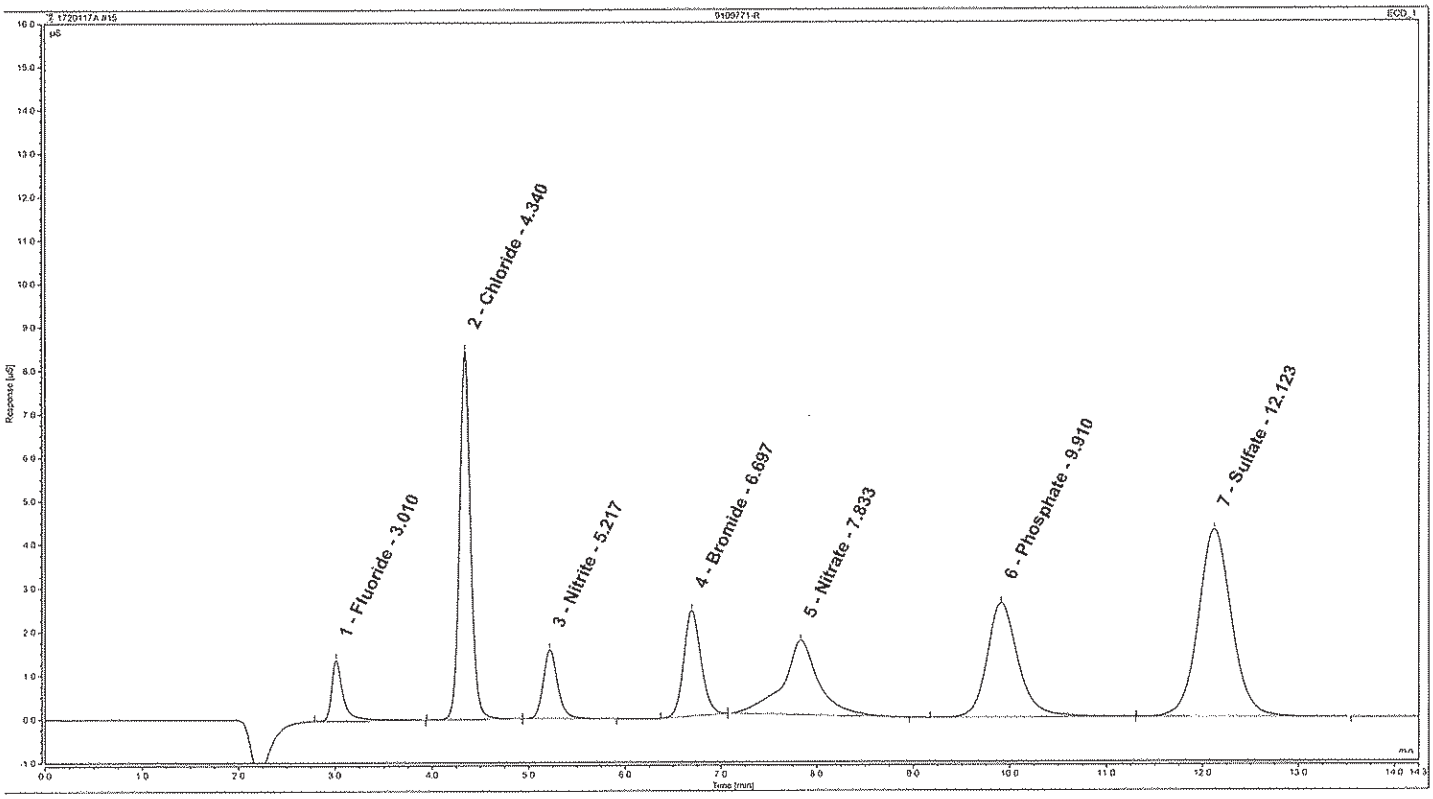
**Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9109771-R** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 20:55** | *Dilution Factor:* | **100** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **015** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.01 | Fluoride | M | 0.200 | 1.401 | 48.9557 |
| 2 | 4.34 | Chloride | M | 1.122 | 8.463 | 391.9587 |
| 3 | 5.22 | Nitrite | M | 0.278 | 1.578 | 47.6813 |
| 4 | 6.70 | Bromide | M | 0.499 | 2.410 | 424.4960 |
| 5 | 7.83 | Nitrate | MB | 0.733 | 1.703 | 112.2864 |
| 6 | 9.91 | Phosphate | M | 0.977 | 2.615 | 440.2202 |
| 7 | 12.12 | Sulfate | M | 1.724 | 4.281 | 856.8138 |
| | | TOTAL: | | 5.53 | 22.45 | 2322.41 |




**Analyst:** Alexandria M. Lanager, Associate Chemist — **Date:** JUL 21 2017

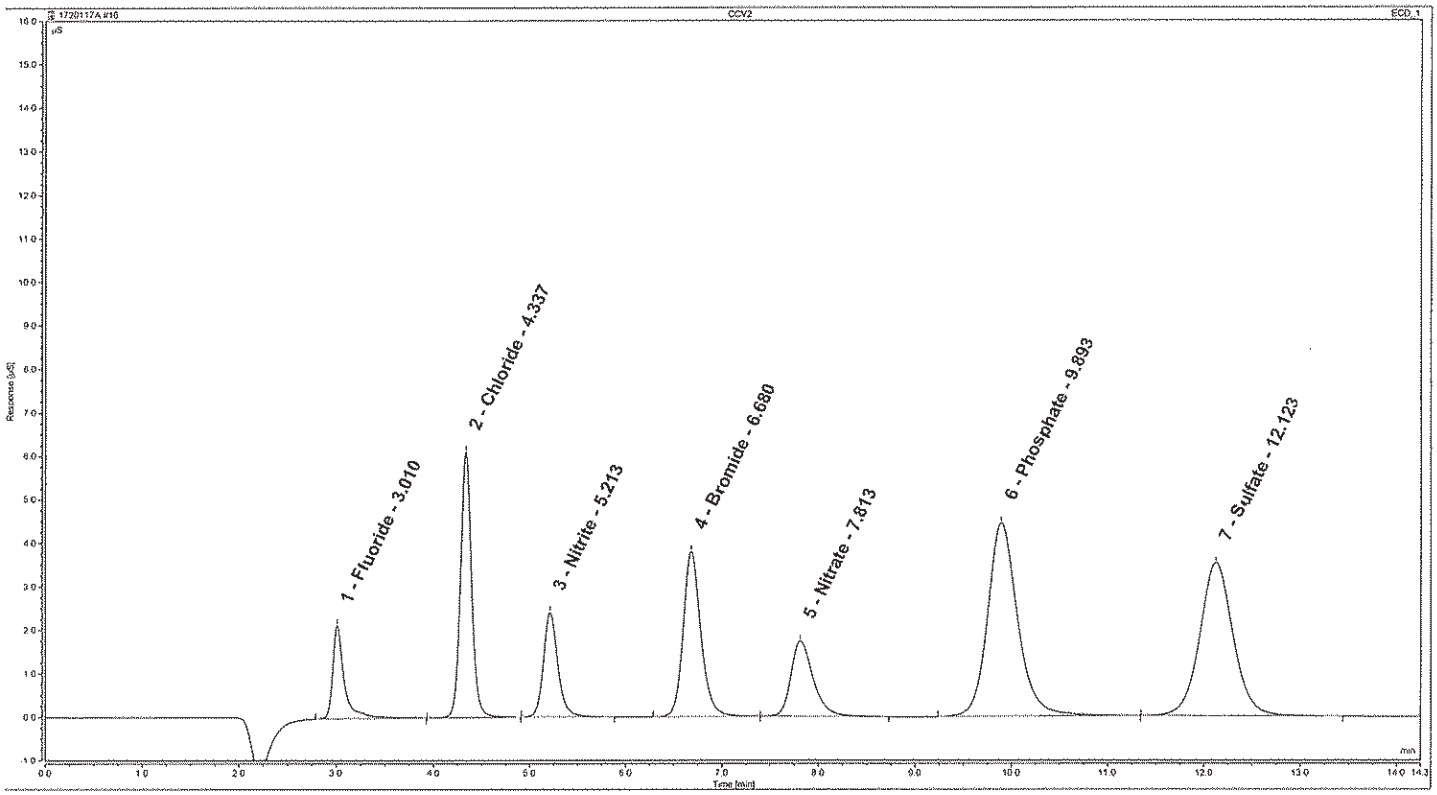
**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 21:12** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **016** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.01 | Fluoride | M | 0.303 | 2.156 | 0.7370 |
| 2 | 4.34 | Chloride | M | 0.818 | 6.112 | 2.8812 |
| 3 | 5.21 | Nitrite | MB | 0.424 | 2.412 | 0.7072 |
| 4 | 6.68 | Bromide | MB | 0.811 | 3.814 | 6.7941 |
| 5 | 7.81 | Nitrate | BM | 0.466 | 1.745 | 0.7258 |
| 6 | 9.89 | Phosphate | BM | 1.626 | 4.468 | 6.9720 |
| 7 | 12.12 | Sulfate | MB | 1.431 | 3.541 | 7.1444 |
| | | TOTAL: | | 5.88 | 24.25 | 25.96 |




**Analyst:** Alexandria M. Lanager, Associate Chemist — **Date:** JUL 21 2017

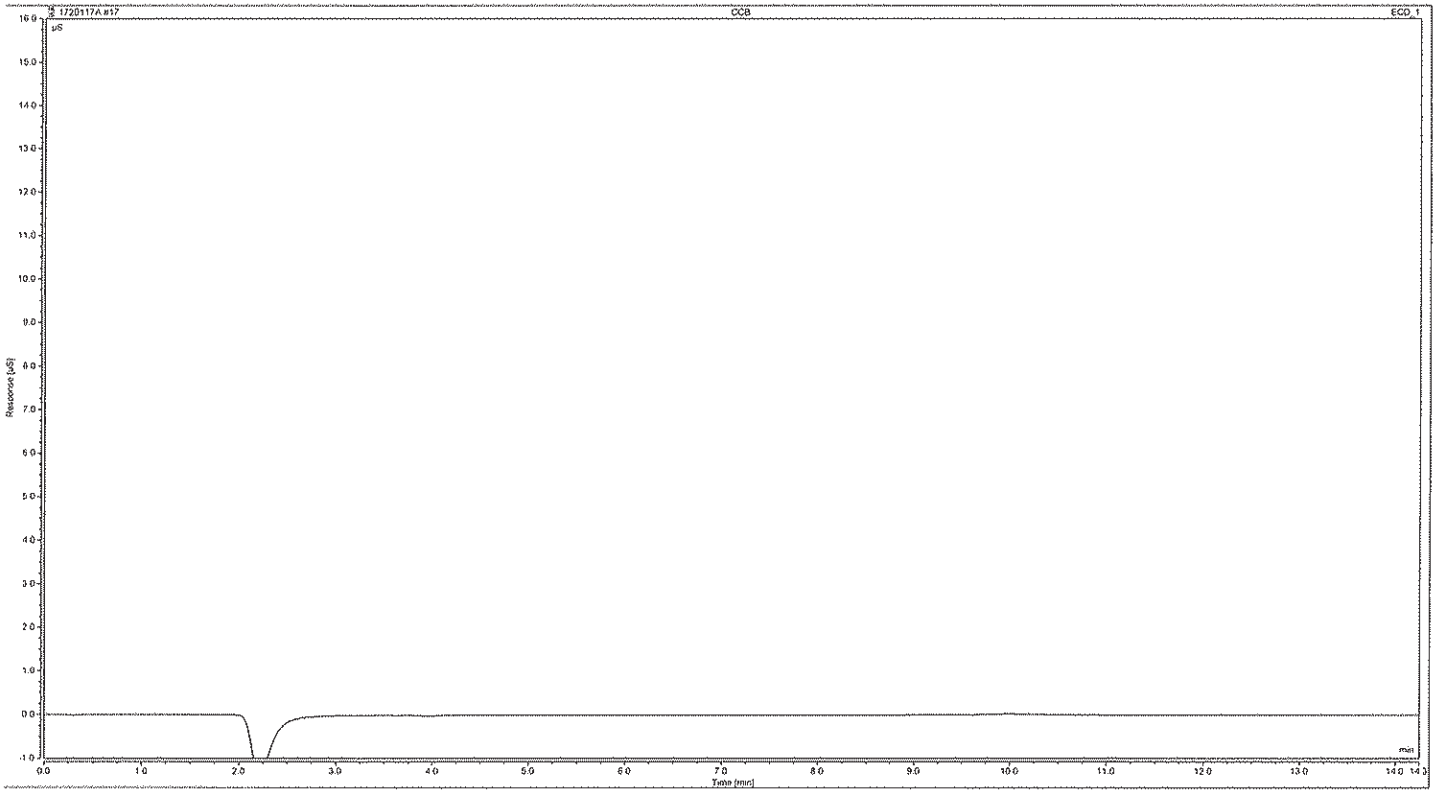
**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 21:29** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **017** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Alexandria M. Lanager, Associate Chemist — **Date:** JUL 21 2017

**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

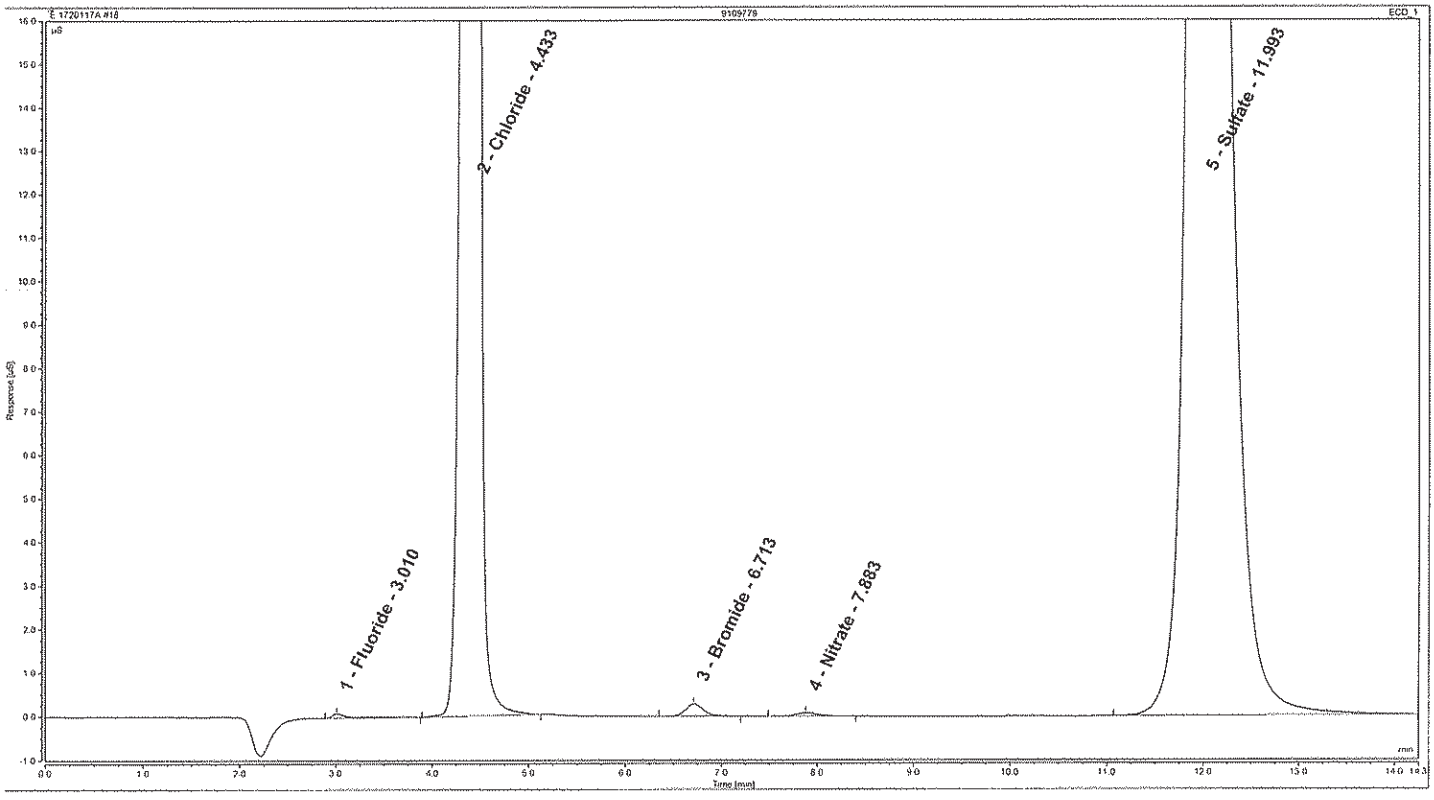
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9109779** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 21:46** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **018** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.01 | Fluoride | MB | 0.022 | 0.102 | 0.2918 |
| 2 | 4.43 | Chloride | M | 16.513 | 113.618 | 282.5256 |
| 3 | 6.71 | Bromide | MB | 0.062 | 0.286 | 3.4030 |
| 4 | 7.88 | Nitrate | MB | 0.021 | 0.079 | 0.3268 |
| 5 | 11.99 | Sulfate | MB | 20.698 | 51.896 | 504.9400 |
| | | TOTAL: | | 37.32 | 165.98 | 791.49 |

BC




**Analyst:** Alexandria M. Lanager, Associate Chemist — **Date:** JUL 21 2017

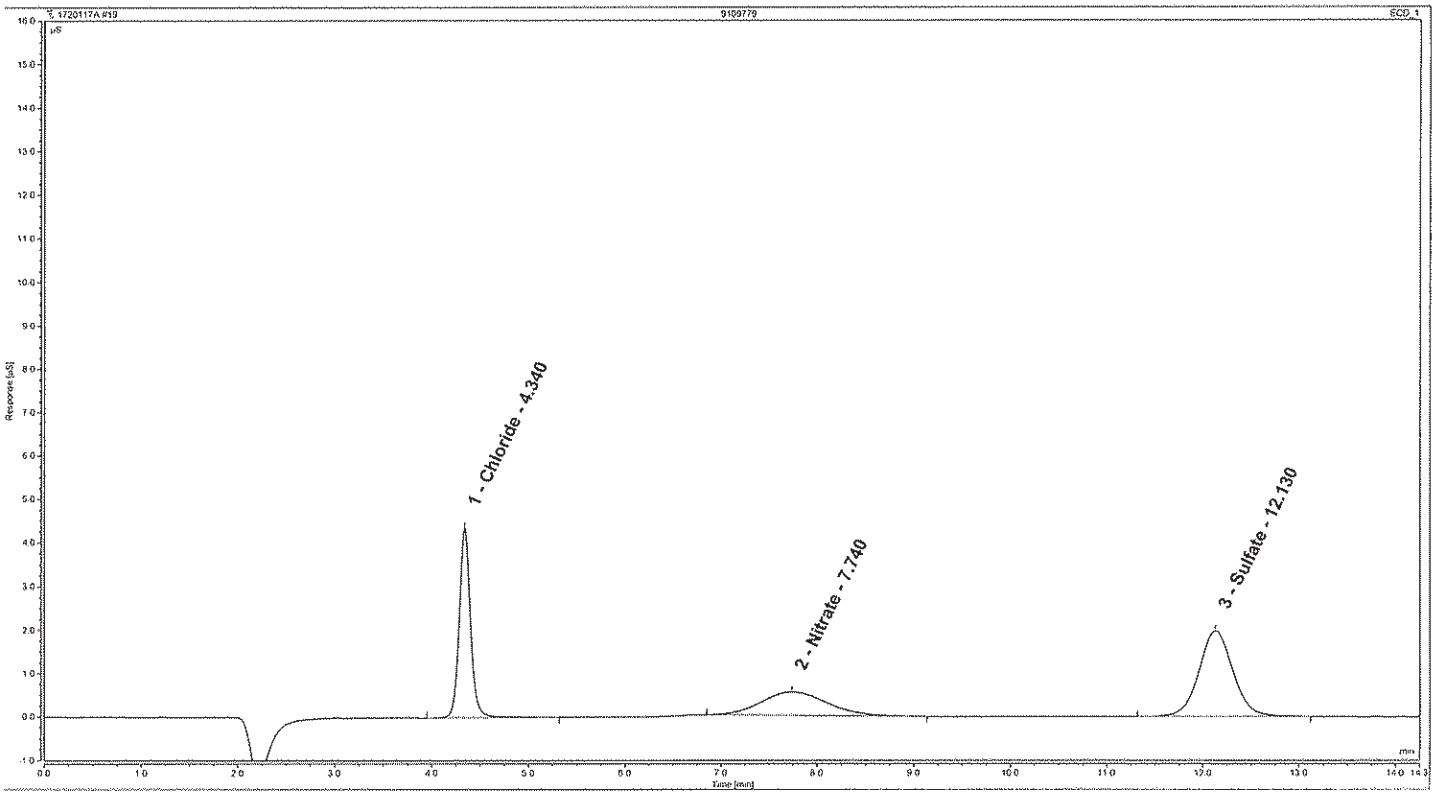
**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9109779** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | **17201972117A-9972** | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/20/2017 / 22:03** | *Dilution Factor:* | **100** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **019** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.34 | Chloride | M | 0.597 | 4.354 | 212.5281 |
| 2 | 7.74 | Nitrate | M | 0.421 | 0.531 | 65.9133 |
| 3 | 12.13 | Sulfate | BMB | 0.793 | 1.948 | 403.5423 |
| | | TOTAL: | | 1.81 | 6.83 | 681.98 |




**Analyst:**

Alexandria M. Lanager
Associate Chemist

**Date:** JUL 21 2017

**Verifier:**

James Mathiot
Group Leader

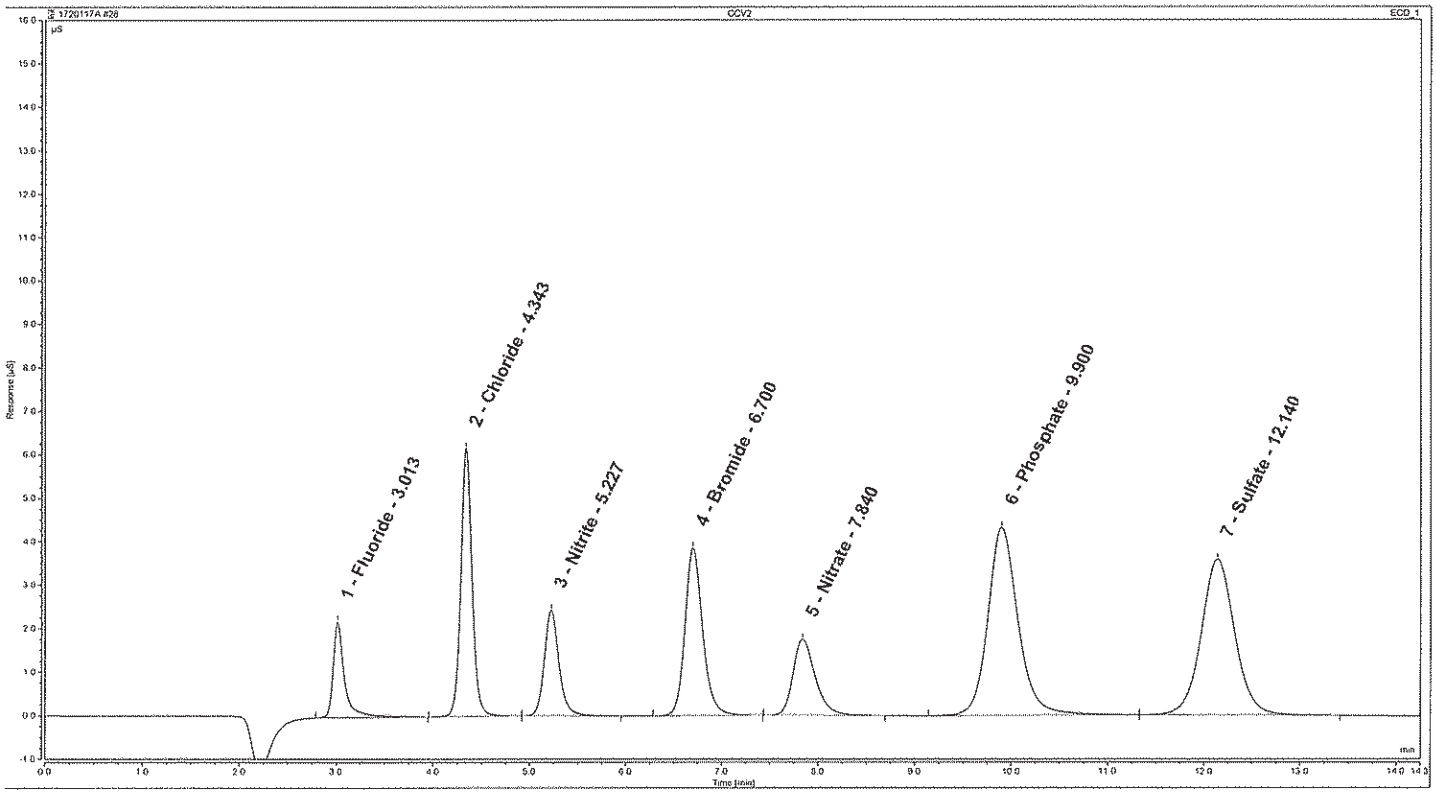
**Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/21/2017 / 00:34** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **028** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.01 | Fluoride | M | 0.308 | 2.200 | 0.7494 |
| 2 | 4.34 | Chloride | BMB | 0.828 | 6.156 | 2.9161 |
| 3 | 5.23 | Nitrite | BM | 0.429 | 2.423 | 0.7152 |
| 4 | 6.70 | Bromide | M | 0.823 | 3.839 | 6.8957 |
| 5 | 7.84 | Nitrate | M | 0.468 | 1.749 | 0.7291 |
| 6 | 9.90 | Phosphate | M | 1.570 | 4.301 | 6.7526 |
| 7 | 12.14 | Sulfate | M | 1.444 | 3.559 | 7.2059 |
| | | TOTAL: | | 5.87 | 24.23 | 25.96 |




Alexandria M. Lanager
Associate Chemist

**Analyst:**

JUL 21 2017

**Date:**

**Verifier:**

James Mathiot
Group Leader

**Date:**

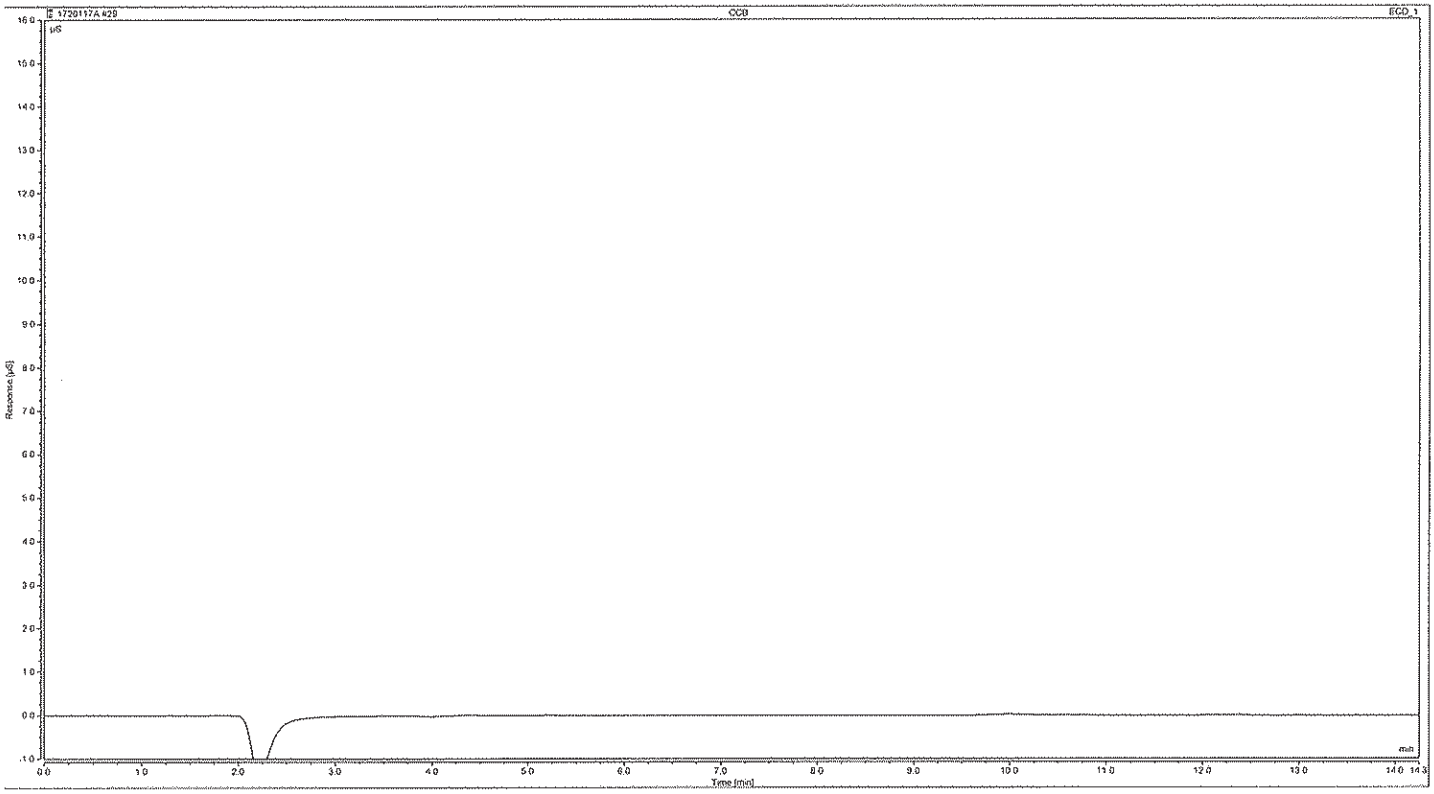
JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **50.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **14.25** |
| *Inj. Date / Time:* | **07/21/2017 / 00:51** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **029** |
| *Instrument Number:* | **24811** | *Calibration Date:* | **7/1/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720117A** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-170113066** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:**

Alexandria M. Lanagor
Associate Chemist

**Date:** JUL 21 2017

**Verifier:**

James Mathiot
Group Leader

**Date:** JUL 25 2017

# Wet Chemistry Data

# Case Narrative/Conformance Summary

# Wet Chemistry

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## Water Quality

**Fraction: Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9109771 | GW005-173 | X | | 1 | |
| 9109779 | GW005-573 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Method defined actions are taken for any failed matrix QC.

Batch#: 17202002102A (Sample number(s): 9109771, 9109779, UNSPK: 9109771, BKG: 9109771)
The recovery(ies) for the following analyte(s) in the MS and MSD were below the acceptance window: Total Alkalinity to pH 4.5

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

## Water Quality

**Fraction: Wet Chemistry**

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# QC Summary

# Wet Chemistry

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# Quality Control Reference List
## Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR188**

**Fraction: Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Bicarbonate Alkalinity | Carbonate Alkalinity | Total Alkalinity to pH 4.5 |
|---|---|---|---|---|---|
| 17202002102A | 9109771 UNSPK/BKG | 07/21/2017 17:56:00 | X | X | X |
| | 9109772 MS | 07/21/2017 18:04:00 | | | X |
| | 9109773 MSD | 07/21/2017 18:12:00 | | | X |
| | 9109774 DUP | 07/21/2017 18:20:00 | | | X |
| | 9109779 | 07/21/2017 18:43:00 | X | X | X |
| | P002102B | 07/21/2017 17:23:00 | | | X |
| | P002102Q | 07/21/2017 17:32:00 | | | X |

**Quality Control Summary**
**Method Blank**
**Water Quality**
**SDG: KR188**
**Matrix: LIQUID**

**Fraction: Wet Chemistry**

| 17202002102A / P002102B Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | TI | 07/21/17 | N.D. | mg/l as CaCO3 | 1.7 | 5.0 | 5.0 |

## Water Quality
**Fraction: Wet Chemistry**

| UNSPK: 9109771<br>MS: 9109772<br>MSD: 9109773<br>**Parameter** | Batch: **17202002102A** (Sample number(s): 9109771, 9109779 )<br>**ME** | **Spike Added mg/l as CaCO3** | **Unspiked Conc mg/l as CaCO3** | **MS Conc mg/l as CaCO3** | **MSD Conc mg/l as CaCO3** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | TI | 188 | 219.92 | 231.32 | 232.74 | 6 * | 7 * | 77-114 | 1 | 10 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

## Water Quality
**Fraction: Wet Chemistry**

| BKG: 9109771<br>DUP: 9109774<br><br>**Parameter** | Batch: **17202002102A** (Sample number(s): 9109771, 9109779 )<br>**ME** | **Unspiked Conc mg/l as CaCO3** | **DUP Conc mg/l as CaCO3** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | TI | 219.92 | 223.77 | 2 | 5 |

Comments:
(1) The sample and/or duplicate result is less than five times the LOQ.
* = Out of Specification

Results are being reported on an as received basis.

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**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR188**
**Matrix: LIQUID**

## Water Quality
**Fraction: Wet Chemistry**

| LCS: P002102Q | Batch: **17202002102A** (Sample number(s): 9109771, 9109779 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l as CaCO3** | **LCS Conc mg/l as CaCO3** | **LCSD Conc mg/l as CaCO3** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Alkalinity to pH 4.5 | TI | 188 | 164.83 | NA | 88 | NA | 77-114 | NA | NA |

# Raw Data

# Wet Chemistry

**Fraction: Wet Chemistry**

| 12149: Bicarbonate Alkalinity<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bicarbonate Alkalinity | 1.7 | 5.0 | 5.0 | mg/l as CaCO3 |

| 12148: Carbonate Alkalinity<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Carbonate Alkalinity | 1.7 | 5.0 | 5.0 | mg/l as CaCO3 |

| 12150: Total Alkalinity to pH 4.5<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | 1.7 | 5 | 5.0 | mg/l as CaCO3 |

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# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Analysis Name | Units |
|---|---|
| Bicarbonate | mg/l as CaCO3 |
| Carbonate | mg/l as CaCO3 |
| Hydroxide | mg/l as CaCO3 |
| Phenolphthalein Alkalinity | mg/l as CaCO3 |
| Temperature of pH | Degrees C |
| Total Alkalinity | mg/l as CaCO3 |
| pH | Std. Units |

| Analysis Name | QC Check | True Value | Acceptance Range |
|---|---|---|---|
| pH | CCVPH2 | 7.00 | 6.27 - 7.73 |
| pH | CCVPH8 | 8.00 | 7.20 - 8.80 |

| Analysis Name | QC Check | Acceptance Range |
|---|---|---|
| Total Alkalinity | CCB | < 5.00 |
| Total Alkalinity | PBW | < 5.00 |

| Analysis Name | LCS | True Value | Acceptance Range | Lot Information |
|---|---|---|---|---|
| Total Alkalinity | LCSAK | 188.00 | 144.76 - 214.32 | 258197/9 |
| pH | LCSPH | 7.00 | 6.62 - 7.38 | G053-09 |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **Tap** | **126805** | | | 1.00 | 07/21/2017 | 13:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 265.34 | 265.34 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.75 | 7.75 | | | | |
| Total Alkalinity | 265.34 | 265.34 | | | | |
| Temperature of pH | 24.34 | 24.34 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126806** | CCV | | 1.00 | 07/21/2017 | 13:05 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.92 | 6.92 | | |
| Temperature of pH | 23.81 | 23.81 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126807** | CCB | | 1.00 | 07/21/2017 | 13:13 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.87 | 1.87 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.71 | 6.71 | | |
| Total Alkalinity | 1.87 | 1.87 | | |
| Temperature of pH | 23.60 | 23.60 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **126808** | B | 17202002101A | 1.00 | 07/21/2017 | 13:19 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.58 | 0.58 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.86 | 5.86 | | | | |
| Total Alkalinity | 0.58 | 0.58 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **126809** | Q | 17202002101A | 1.00 | 07/21/2017 | 13:29 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 27.54 | 27.54 | | | | |
| Carbonate | 132.91 | 132.91 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 66.45 | 66.45 | | | | |
| pH | 10.14 | 10.14 | | Y | | |
| Total Alkalinity | 160.44 | 160.44 | Y | Y | | |
| Temperature of pH | 22.93 | 22.93 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **126810** | Q | 17202002101A | 1.00 | 07/21/2017 | 13:33 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.92 | 6.92 | Y | Y | | |
| Temperature of pH | 23.43 | 23.43 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9112287** | **126811** | U | 17202002101A | 1.00 | 070A | 07/21/2017 | 13:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 381.79 | 381.79 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| pH | 6.44 | 6.44 | Y | Y |
| Total Alkalinity | 381.79 | 381.79 | Y | Y |
| Temperature of pH | 23.27 | 23.27 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112288 | 126812 | R | 17202002101A | 1.00 | 070A | 07/21/2017 | 13:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 507.33 | 507.33 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.69 | 6.69 | Y | | | |
| Total Alkalinity | 507.33 | 507.33 | Y | | | |
| Temperature of pH | 23.49 | 23.49 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112289 | 126813 | M | 17202002101A | 1.00 | 005A | 07/21/2017 | 13:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 514.29 | 514.29 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.72 | 6.72 | Y | | | |
| Total Alkalinity | 514.29 | 514.29 | Y | Y | | |
| Temperature of pH | 23.49 | 23.49 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112290 | 126814 | D | 17202002101A | 1.00 | 070A | 07/21/2017 | 14:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 382.71 | 382.71 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.48 | 6.48 | Y | Y | | |
| Total Alkalinity | 382.71 | 382.71 | Y | | | |
| Temperature of pH | 23.46 | 23.46 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112296 | 126815 | U | 17202002101B | 1.00 | 070A | 07/21/2017 | 14:12 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 117.45 | 117.45 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.94 | 7.94 | | | | |
| Total Alkalinity | 117.45 | 117.45 | Y | Y | | |
| Temperature of pH | 23.49 | 23.49 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112296 | 126816 | D | 17202002101B | 1.00 | 070A | 07/21/2017 | 14:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 117.57 | 117.57 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.08 | 8.08 | | | | |
| Total Alkalinity | 117.57 | 117.57 | Y | Y | | |
| Temperature of pH | 23.44 | 23.44 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9102203 | 126817 | | 17202002101A | 1.00 | 005A | 07/21/2017 | 14:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 65.93 | 65.93 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | | | |
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.55 | 7.55 | Y | Y | |
| Total Alkalinity | 65.93 | 65.93 | Y | Y | |
| Temperature of pH | 23.54 | 23.54 | Y | Y | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 126818 | CCV | | 1.00 | 07/21/2017 | 14:33 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.49 | 23.49 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 126819 | CCB | | 1.00 | 07/21/2017 | 14:40 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.51 | 1.51 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.57 | 6.57 | | |
| Total Alkalinity | 1.51 | 1.51 | | |
| Temperature of pH | 23.39 | 23.39 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112302 | 126820 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 14:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.80 | 1.80 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.06 | 7.06 | | | | |
| Total Alkalinity | 1.80 | 1.80 | Y | Y | | |
| Temperature of pH | 23.60 | 23.60 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112299 | 126821 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 14:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 68.23 | 68.23 | Y | Y | | |
| Hydroxide | 61.77 | 61.77 | | | | |
| Phenolphthalein Alkali | 95.89 | 95.89 | | | | |
| pH | 9.84 | 9.84 | | | | |
| Total Alkalinity | 130.01 | 130.01 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112294 | 126822 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 48.57 | 48.57 | Y | Y | | |
| Hydroxide | 16.17 | 16.17 | | | | |
| Phenolphthalein Alkali | 40.45 | 40.45 | | | | |
| pH | 9.73 | 9.73 | | | | |
| Total Alkalinity | 64.74 | 64.74 | Y | Y | | |
| Temperature of pH | 23.89 | 23.89 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112297 | 126823 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:16 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 123.10 | 123.10 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 7.74 | 7.74 | | |
| Total Alkalinity | 123.10 | 123.10 | Y | Y |
| Temperature of pH | 23.68 | 23.68 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112614 | 126824 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:24 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 499.95 | 499.95 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.52 | 7.52 | Y | Y | | |
| Total Alkalinity | 499.95 | 499.95 | Y | Y | | |
| Temperature of pH | 23.51 | 23.51 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112611 | 126825 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:31 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 344.95 | 344.95 | Y | Y | | |
| Carbonate | 0.52 | 0.52 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.26 | 0.26 | | | | |
| pH | 8.31 | 8.31 | Y | Y | | |
| Total Alkalinity | 345.47 | 345.47 | Y | Y | | |
| Temperature of pH | 23.33 | 23.33 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112298 | 126826 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 123.84 | 123.84 | Y | Y | | |
| Hydroxide | 80.73 | 80.73 | | | | |
| Phenolphthalein Alkali | 142.65 | 142.65 | | | | |
| pH | 10.08 | 10.08 | | | | |
| Total Alkalinity | 204.57 | 204.57 | Y | Y | | |
| Temperature of pH | 23.28 | 23.28 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112612 | 126827 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 250.65 | 250.65 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.86 | 7.86 | Y | Y | | |
| Total Alkalinity | 250.65 | 250.65 | Y | Y | | |
| Temperature of pH | 23.54 | 23.54 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112300 | 126828 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 122.95 | 122.95 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.50 | 6.50 | | | | |
| Total Alkalinity | 122.95 | 122.95 | Y | Y | | |
| Temperature of pH | 23.44 | 23.44 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112291 | 126829 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:05 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Bicarbonate | 1.18 | 1.18 | Y | Y |
| Carbonate | 35.63 | 35.63 | Y | Y |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 17.81 | 17.81 | | |
| pH | 9.25 | 9.25 | | |
| Total Alkalinity | 36.80 | 36.80 | Y | Y |
| Temperature of pH | 23.43 | 23.43 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126830** | CCV | | 1.00 | 07/21/2017 | 16:09 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.95 | 6.95 | | |
| Temperature of pH | 23.51 | 23.51 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126831** | CCB | | 1.00 | 07/21/2017 | 16:17 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.72 | 1.72 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.71 | 6.71 | | |
| Total Alkalinity | 1.72 | 1.72 | | |
| Temperature of pH | 23.46 | 23.46 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112123** | **126832** | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:25 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 108.41 | 108.41 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.54 | 7.54 | | | | |
| Total Alkalinity | 108.41 | 108.41 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112292** | **126833** | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:34 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 943.28 | 943.28 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.77 | 6.77 | | | | |
| Total Alkalinity | 943.28 | 943.28 | Y | Y | | |
| Temperature of pH | 23.60 | 23.60 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112293** | **126834** | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:42 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 49.57 | 49.57 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.39 | 7.39 | | | | |
| Total Alkalinity | 49.57 | 49.57 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112295** | **126835** | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:51 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 48.77 | 48.77 | Y | Y | | |

| | | | | | |
|---|---|---|---|---|---|
| Hydroxide | 0.07 | 0.07 | | | |
| Phenolphthalein Alkali | 24.45 | 24.45 | | | |
| pH | 9.33 | 9.33 | | | |
| Total Alkalinity | 48.83 | 48.83 | Y | Y | |
| Temperature of pH | 23.54 | 23.54 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112301 | 126836 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 17:03 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 61.59 | 61.59 | Y | Y | | |
| Hydroxide | 744.69 | 744.69 | | | | |
| Phenolphthalein Alkali | 775.48 | 775.48 | | | | |
| pH | 11.89 | 11.89 | | | | |
| Total Alkalinity | 806.27 | 806.27 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109974 | 126837 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 17:09 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 41.62 | 41.62 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.30 | 5.30 | | | | |
| Total Alkalinity | 41.62 | 41.62 | Y | Y | | |
| Temperature of pH | 23.56 | 23.56 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109959 | 126838 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 17:16 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 3.29 | 3.29 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.16 | 5.16 | | | | |
| Total Alkalinity | 3.29 | 3.29 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| PBW | 126839 | B | 17202002102A | 1.00 | 07/21/2017 | 17:23 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.45 | 0.45 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.62 | 5.62 | | | | |
| Total Alkalinity | 0.45 | 0.45 | Y | Y | | |
| Temperature of pH | 23.51 | 23.51 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| LCSAK | 126840 | Q | 17202002102A | 1.00 | 07/21/2017 | 17:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 36.28 | 36.28 | | | | |
| Carbonate | 128.56 | 128.56 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 64.28 | 64.28 | | | | |
| pH | 10.14 | 10.14 | | Y | | |
| Total Alkalinity | 164.83 | 164.83 | Y | Y | | |
| Temperature of pH | 23.54 | 23.54 | | | | |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **126841** | Q | 17202002102A | 1.00 | 07/21/2017 | 17:37 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.94 | 6.94 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126842** | CCV | | 1.00 | 07/21/2017 | 17:40 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.93 | 6.93 | | |
| Temperature of pH | 23.59 | 23.59 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126843** | CCB | | 1.00 | 07/21/2017 | 17:48 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.98 | 1.98 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.69 | 6.69 | | |
| Total Alkalinity | 1.98 | 1.98 | | |
| Temperature of pH | 23.54 | 23.54 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109771** | **126844** | U | 17202002102A | 1.00 | 070A | 07/21/2017 | 17:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 219.92 | 219.92 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | Y | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.52 | 7.52 | Y | Y | | |
| Total Alkalinity | 219.92 | 219.92 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109772** | **126845** | R | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 231.32 | 231.32 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | Y | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | | | |
| pH | 7.74 | 7.74 | Y | | | |
| Total Alkalinity | 231.32 | 231.32 | Y | Y | | |
| Temperature of pH | 23.65 | 23.65 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109773** | **126846** | M | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:12 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 232.74 | 232.74 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | Y | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | | | |
| pH | 7.75 | 7.75 | Y | | | |
| Total Alkalinity | 232.74 | 232.74 | Y | Y | | |
| Temperature of pH | 23.73 | 23.73 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109774** | **126847** | D | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 223.77 | 223.77 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | Y | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |

| | | | | |
|---|---|---|---|---|
| pH | 7.62 | 7.62 | Y | Y |
| Total Alkalinity | 223.77 | 223.77 | Y | Y |
| Temperature of pH | 23.67 | 23.67 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109966 | 126848 | U | 17202002102B | 1.00 | 070A | 07/21/2017 | 18:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 8.63 | 8.63 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.51 | 5.51 | | | | |
| Total Alkalinity | 8.63 | 8.63 | Y | Y | | |
| Temperature of pH | 23.64 | 23.64 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109966 | 126849 | D | 17202002102B | 1.00 | 070A | 07/21/2017 | 18:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 5.80 | 5.80 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.33 | 5.33 | | | | |
| Total Alkalinity | 5.80 | 5.80 | Y | Y | | |
| Temperature of pH | 23.64 | 23.64 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109779 | 126850 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:43 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 216.39 | 216.39 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.53 | 7.53 | | | | |
| Total Alkalinity | 216.39 | 216.39 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109972 | 126851 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:49 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 27.70 | 27.70 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.10 | 5.10 | | | | |
| Total Alkalinity | 27.70 | 27.70 | Y | Y | | |
| Temperature of pH | 23.68 | 23.68 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109949 | 126852 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 35.84 | 35.84 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.38 | 5.38 | | | | |
| Total Alkalinity | 35.84 | 35.84 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111956 | 126853 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 23.40 | 23.40 | Y | Y | | |

| | | | | |
|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | Y | Y |
| Hydroxide | 0.00 | 0.00 | Y | Y |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y |
| pH | 6.55 | 6.55 | Y | Y |
| Total Alkalinity | 23.40 | 23.40 | Y | Y |
| Temperature of pH | 23.64 | 23.64 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126854** | CCV | | 1.00 | 07/21/2017 | 19:08 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.64 | 23.64 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126855** | CCB | | 1.00 | 07/21/2017 | 19:16 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.46 | 1.46 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.40 | 6.40 | | |
| Total Alkalinity | 1.46 | 1.46 | | |
| Temperature of pH | 23.47 | 23.47 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111958** | **126856** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:23 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 15.33 | 15.33 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | Y | Y | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.11 | 6.11 | Y | Y | | |
| Total Alkalinity | 15.33 | 15.33 | Y | Y | | |
| Temperature of pH | 23.52 | 23.52 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111962** | **126857** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:31 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 17.43 | 17.43 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | Y | Y | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.43 | 6.43 | Y | Y | | |
| Total Alkalinity | 17.43 | 17.43 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111960** | **126858** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 12.91 | 12.91 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | Y | Y | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.25 | 6.25 | Y | Y | | |
| Total Alkalinity | 12.91 | 12.91 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111827** | **126859** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 253.35 | 253.35 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y |
| pH | 7.34 | 7.34 | | |
| Total Alkalinity | 253.35 | 253.35 | Y | Y |
| Temperature of pH | 23.65 | 23.65 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111823 | 126860 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 172.38 | 172.38 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.06 | 7.06 | | | | |
| Total Alkalinity | 172.38 | 172.38 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111825 | 126861 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:03 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 179.96 | 179.96 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.76 | 6.76 | | | | |
| Total Alkalinity | 179.96 | 179.96 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111829 | 126862 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:11 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 257.08 | 257.08 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.49 | 7.49 | | | | |
| Total Alkalinity | 257.08 | 257.08 | Y | Y | | |
| Temperature of pH | 23.86 | 23.86 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9113399 | 126863 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:18 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 50.63 | 50.63 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.09 | 6.09 | | | | |
| Total Alkalinity | 50.63 | 50.63 | Y | Y | | |
| Temperature of pH | 23.73 | 23.73 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9113397 | 126864 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:25 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 39.40 | 39.40 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.07 | 6.07 | | | | |
| Total Alkalinity | 39.40 | 39.40 | Y | Y | | |
| Temperature of pH | 23.56 | 23.56 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9113203 | 126865 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Bicarbonate | 173.50 | 173.50 | | | |
| Carbonate | 0.00 | 0.00 | | | |
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.79 | 7.79 | | | |
| Total Alkalinity | 173.50 | 173.50 | Y | Y | |
| Temperature of pH | 23.46 | 23.46 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126866** | CCV | | 1.00 | 07/21/2017 | 20:36 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.43 | 23.43 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126867** | CCB | | 1.00 | 07/21/2017 | 20:44 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.58 | 1.58 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.54 | 6.54 | | |
| Total Alkalinity | 1.58 | 1.58 | | |
| Temperature of pH | 23.52 | 23.52 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9113204** | **126868** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:52 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 112.01 | 112.01 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.21 | 7.21 | | | | |
| Total Alkalinity | 112.01 | 112.01 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111761** | **126869** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 21:00 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 76.54 | 76.54 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.64 | 7.64 | | | | |
| Total Alkalinity | 76.54 | 76.54 | Y | | | |
| Temperature of pH | 23.56 | 23.56 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9110825** | **126870** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 21:07 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 158.31 | 158.31 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.94 | 7.94 | | | | |
| Total Alkalinity | 158.31 | 158.31 | Y | Y | | |
| Temperature of pH | 23.43 | 23.43 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9110824** | **126871** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 21:15 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 116.97 | 116.97 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.45 | 7.45 | | | |
| Total Alkalinity | 116.97 | 116.97 | Y | Y | |
| Temperature of pH | 23.59 | 23.59 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **126872** | B | 17202002103A | 1.00 | 07/21/2017 | 21:22 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.08 | 1.08 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.21 | 6.21 | | | | |
| Total Alkalinity | 1.08 | 1.08 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **126873** | Q | 17202002103A | 1.00 | 07/21/2017 | 21:31 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 42.91 | 42.91 | | | | |
| Carbonate | 124.06 | 124.06 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 62.03 | 62.03 | | | | |
| pH | 10.09 | 10.09 | | Y | | |
| Total Alkalinity | 166.96 | 166.96 | Y | Y | | |
| Temperature of pH | 23.68 | 23.68 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **126874** | Q | 17202002103A | 1.00 | 07/21/2017 | 21:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.94 | 6.94 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9113659** | **126875** | U | 17202002103A | 1.00 | 004A | 07/21/2017 | 21:39 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 2.75 | 2.75 | Y | Y | | |
| Total Alkalinity | 0.00 | 0.00 | Y | Y | | |
| Temperature of pH | 23.33 | 23.33 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9113659** | **126876** | R | 17202002103A | 1.00 | 004A | 07/21/2017 | 21:44 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 2.83 | 2.83 | Y | | | |
| Total Alkalinity | 0.00 | 0.00 | Y | Y | | |
| Temperature of pH | 23.47 | 23.47 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9113659** | **126877** | D | 17202002103A | 1.00 | 004A | 07/21/2017 | 21:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| pH | 2.75 | 2.75 | Y | Y |
| Total Alkalinity | 0.00 | 0.00 | Y | Y |
| Temperature of pH | 23.46 | 23.46 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126878** | CCV | | 1.00 | 07/21/2017 | 21:52 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.46 | 23.46 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126879** | CCB | | 1.00 | 07/21/2017 | 22:00 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.94 | 1.94 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.14 | 6.14 | | |
| Total Alkalinity | 1.94 | 1.94 | | |
| Temperature of pH | 23.43 | 23.43 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9110701** | **126880** | U | 17202002103B | 1.00 | 005B | 07/21/2017 | 22:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 137.51 | 137.51 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.04 | 7.04 | | | | |
| Total Alkalinity | 137.51 | 137.51 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9110701** | **126881** | D | 17202002103B | 1.00 | 005B | 07/21/2017 | 22:16 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 140.93 | 140.93 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.17 | 7.17 | | | | |
| Total Alkalinity | 140.93 | 140.93 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9109970** | **126882** | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:23 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 33.08 | 33.08 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.61 | 5.61 | | | | |
| Total Alkalinity | 33.08 | 33.08 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9109963** | **126883** | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:30 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 45.29 | 45.29 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.92 | 5.92 | | | | |
| Total Alkalinity | 45.29 | 45.29 | Y | Y | | |

| | | | |
|---|---|---|---|
| Temperature of pH | 23.88 | 23.88 | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9109968 | 126884 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:37 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 39.46 | 39.46 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.56 | 5.56 | | | | |
| Total Alkalinity | 39.46 | 39.46 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9109954 | 126885 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:44 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 139.20 | 139.20 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.96 | 5.96 | | | | |
| Total Alkalinity | 139.20 | 139.20 | Y | Y | | |
| Temperature of pH | 23.67 | 23.67 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9109956 | 126886 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:49 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 3.98 | 3.98 | | | | |
| Total Alkalinity | 0.00 | 0.00 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9109961 | 126887 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 46.71 | 46.71 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.94 | 5.94 | | | | |
| Total Alkalinity | 46.71 | 46.71 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9113402 | 126888 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 23:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | -0.08 | -0.08 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 4.21 | 4.21 | | | | |
| Total Alkalinity | -0.08 | -0.08 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9110751 | 126889 | | 17202002103A | 1.00 | 005B | 07/21/2017 | 23:09 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 398.53 | 398.53 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 8.26 | 8.26 | Y | Y |
| Total Alkalinity | 398.53 | 398.53 | Y | Y |
| Temperature of pH | 23.67 | 23.67 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126890** | CCV | | 1.00 | 07/21/2017 | 23:14 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.93 | 6.93 | | |
| Temperature of pH | 23.67 | 23.67 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126891** | CCB | | 1.00 | 07/21/2017 | 23:21 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.85 | 1.85 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.51 | 6.51 | | |
| Total Alkalinity | 1.85 | 1.85 | | |
| Temperature of pH | 23.52 | 23.52 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9107679** | **126892** | | 17202002103A | 1.00 | 005A | 07/21/2017 | 23:29 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 166.85 | 166.85 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.14 | 7.14 | | | | |
| Total Alkalinity | 166.85 | 166.85 | Y | Y | | |
| Temperature of pH | 23.97 | 23.97 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9103586** | **126893** | | 17202002103A | 1.00 | 005A | 07/21/2017 | 23:36 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.16 | 1.16 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.54 | 5.54 | | | | |
| Total Alkalinity | 1.16 | 1.16 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9107805** | **126894** | | 17202002103A | 1.00 | 005A | 07/21/2017 | 23:45 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 356.41 | 356.41 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.76 | 7.76 | | | | |
| Total Alkalinity | 356.41 | 356.41 | Y | Y | | |
| Temperature of pH | 23.80 | 23.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9108063** | **126895** | | 17202002103A | 1.00 | 005A | 07/21/2017 | 23:53 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 86.99 | 86.99 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.58 | 7.58 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Total Alkalinity | 86.99 | 86.99 | Y | Y | |
| Temperature of pH | 23.86 | 23.86 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9107680 | 126896 | | 17202002103A | 1.00 | 005B | 07/22/2017 | 0:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 44.15 | 44.15 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.28 | 7.28 | | | | |
| Total Alkalinity | 44.15 | 44.15 | Y | Y | | |
| Temperature of pH | 23.68 | 23.68 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9110702 | 126897 | | 17202002103A | 1.00 | 005B | 07/22/2017 | 0:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 7.53 | 7.53 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.02 | 6.02 | | | | |
| Total Alkalinity | 7.53 | 7.53 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9110704 | 126898 | | 17202002103A | 1.00 | 005B | 07/22/2017 | 0:17 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 10.33 | 10.33 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.08 | 6.08 | | | | |
| Total Alkalinity | 10.33 | 10.33 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9110703 | 126899 | | 17202002103A | 1.00 | 005B | 07/22/2017 | 0:24 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 45.86 | 45.86 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.63 | 6.63 | | | | |
| Total Alkalinity | 45.86 | 45.86 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9106232 | 126900 | | 17202002103A | 1.00 | 005A | 07/22/2017 | 0:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 48.30 | 48.30 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.30 | 7.30 | | | | |
| Total Alkalinity | 48.30 | 48.30 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9098756 | 126901 | | 17202002103A | 1.00 | 005A | 07/22/2017 | 0:39 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 36.72 | 36.72 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.33 | 7.33 | | | |
| Total Alkalinity | 36.72 | 36.72 | Y | Y | |
| Temperature of pH | 23.70 | 23.70 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126902** | CCV | | 1.00 | 07/22/2017 | 0:44 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.93 | 6.93 | | |
| Temperature of pH | 23.96 | 23.96 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126903** | CCB | | 1.00 | 07/22/2017 | 0:51 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.79 | 1.79 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.52 | 6.52 | | |
| Total Alkalinity | 1.79 | 1.79 | | |
| Temperature of pH | 23.80 | 23.80 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **126904** | B | 17202002104A | 1.00 | 07/22/2017 | 0:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.40 | 0.40 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.81 | 5.81 | | | | |
| Total Alkalinity | 0.40 | 0.40 | Y | Y | | |
| Temperature of pH | 23.73 | 23.73 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **126905** | Q | 17202002104A | 1.00 | 07/22/2017 | 1:07 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 55.30 | 55.30 | | | | |
| Carbonate | 109.84 | 109.84 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 54.92 | 54.92 | | | | |
| pH | 9.90 | 9.90 | | | | |
| Total Alkalinity | 165.14 | 165.14 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **126906** | Q | 17202002104A | 1.00 | 07/22/2017 | 1:11 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.93 | 6.93 | | | | |
| Temperature of pH | 23.65 | 23.65 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112108** | **126907** | U | 17202002104A | 1.00 | 070A | 07/22/2017 | 1:19 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 158.30 | 158.30 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.35 | 7.35 | | | | |
| Total Alkalinity | 158.30 | 158.30 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | | | | |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9112108 | 126908 | R | 17202002104A | 1.00 | 070A | 07/22/2017 | 1:27 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 221.77 | 221.77 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.89 | 7.89 | | | | |
| Total Alkalinity | 221.77 | 221.77 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9112108 | 126909 | D | 17202002104A | 1.00 | 070A | 07/22/2017 | 1:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 157.93 | 157.93 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.40 | 7.40 | | | | |
| Total Alkalinity | 157.93 | 157.93 | Y | Y | | |
| Temperature of pH | 23.68 | 23.68 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9108633 | 126910 | U | 17202002104B | 1.00 | 070A | 07/22/2017 | 1:43 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 56.78 | 56.78 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.59 | 7.59 | | | | |
| Total Alkalinity | 56.78 | 56.78 | Y | Y | | |
| Temperature of pH | 23.78 | 23.78 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9108633 | 126911 | D | 17202002104B | 1.00 | 070A | 07/22/2017 | 1:51 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 57.47 | 57.47 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.56 | 7.56 | | | | |
| Total Alkalinity | 57.47 | 57.47 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9111879 | 126912 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 1:59 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 77.11 | 77.11 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.95 | 6.95 | | | | |
| Total Alkalinity | 77.11 | 77.11 | Y | Y | | |
| Temperature of pH | 23.88 | 23.88 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9111908 | 126913 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:07 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 22.87 | 22.87 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| pH | 7.22 | 7.22 | | | |
| Total Alkalinity | 22.87 | 22.87 | Y | Y | |
| Temperature of pH | 23.94 | 23.94 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 126914 | CCV | | 1.00 | 07/22/2017 | 2:11 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.93 | 6.93 | | |
| Temperature of pH | 23.68 | 23.68 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 126915 | CCB | | 1.00 | 07/22/2017 | 2:19 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.48 | 1.48 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.57 | 6.57 | | |
| Total Alkalinity | 1.48 | 1.48 | | |
| Temperature of pH | 23.67 | 23.67 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112829 | 126916 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:27 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 28.28 | 28.28 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.36 | 7.36 | | | | |
| Total Alkalinity | 28.28 | 28.28 | Y | Y | | |
| Temperature of pH | 23.88 | 23.88 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111907 | 126917 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 104.33 | 104.33 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.60 | 7.60 | | | | |
| Total Alkalinity | 104.33 | 104.33 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112451 | 126918 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:42 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.72 | 1.72 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.64 | 5.64 | | | | |
| Total Alkalinity | 1.72 | 1.72 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9106222 | 126919 | | 17202002104A | 1.00 | 005A | 07/22/2017 | 2:50 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 46.98 | 46.98 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.71 | 6.71 | | | | |
| Total Alkalinity | 46.98 | 46.98 | Y | Y | | |

| | | | |
|---|---|---|---|
| Temperature of pH | 23.70 | 23.70 | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9113230** | **126920** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 140.06 | 140.06 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.61 | 7.61 | | | | |
| Total Alkalinity | 140.06 | 140.06 | Y | Y | | |
| Temperature of pH | 23.72 | 23.72 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9110737** | **126921** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:06 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 137.89 | 137.89 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.52 | 7.52 | | | | |
| Total Alkalinity | 137.89 | 137.89 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9112940** | **126922** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:14 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 55.38 | 55.38 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.36 | 7.36 | | | | |
| Total Alkalinity | 55.38 | 55.38 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9113868** | **126923** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:21 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 48.77 | 48.77 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.24 | 7.24 | | | | |
| Total Alkalinity | 48.77 | 48.77 | Y | Y | | |
| Temperature of pH | 23.88 | 23.88 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9112009** | **126924** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:30 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 148.13 | 148.13 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.66 | 7.66 | | | | |
| Total Alkalinity | 148.13 | 148.13 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109534** | **126925** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:38 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 60.84 | 60.84 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.53 | 7.53 | | | |
| Total Alkalinity | 60.84 | 60.84 | Y | Y | |
| Temperature of pH | 23.84 | 23.84 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126926** | CCV | | 1.00 | 07/22/2017 | 3:42 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.80 | 23.80 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126927** | CCB | | 1.00 | 07/22/2017 | 3:50 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.89 | 1.89 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.50 | 6.50 | | |
| Total Alkalinity | 1.89 | 1.89 | | |
| Temperature of pH | 23.57 | 23.57 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9109533** | **126928** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 104.45 | 104.45 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.48 | 7.48 | | | | |
| Total Alkalinity | 104.45 | 104.45 | Y | Y | | |
| Temperature of pH | 23.80 | 23.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9109537** | **126929** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:06 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 104.22 | 104.22 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.58 | 7.58 | | | | |
| Total Alkalinity | 104.22 | 104.22 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9109432** | **126930** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:14 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 45.63 | 45.63 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.45 | 7.45 | | | | |
| Total Alkalinity | 45.63 | 45.63 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9109536** | **126931** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:21 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 35.10 | 35.10 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.66 | 6.66 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Total Alkalinity | 35.10 | 35.10 | Y | Y | |
| Temperature of pH | 23.88 | 23.88 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109538 | 126932 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 32.80 | 32.80 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.71 | 6.71 | | | | |
| Total Alkalinity | 32.80 | 32.80 | Y | Y | | |
| Temperature of pH | 23.80 | 23.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109535 | 126933 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:36 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 97.44 | 97.44 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.61 | 7.61 | | | | |
| Total Alkalinity | 97.44 | 97.44 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| PBW | 126934 | B | 17202002105A | 1.00 | 07/22/2017 | 4:43 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.92 | 0.92 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.97 | 5.97 | | | | |
| Total Alkalinity | 0.92 | 0.92 | Y | Y | | |
| Temperature of pH | 23.97 | 23.97 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| LCSAK | 126935 | Q | 17202002105A | 1.00 | 07/22/2017 | 4:52 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 64.18 | 64.18 | | | | |
| Carbonate | 104.63 | 104.63 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 52.31 | 52.31 | | | | |
| pH | 9.85 | 9.85 | | | | |
| Total Alkalinity | 168.81 | 168.81 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| LCSPH | 126936 | Q | 17202002105A | 1.00 | 07/22/2017 | 4:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.93 | 6.93 | | | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109541 | 126937 | U | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 37.99 | 37.99 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.40 | 7.40 | | | | |
| Total Alkalinity | 37.99 | 37.99 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126938** | CCV | | 1.00 | 07/22/2017 | 5:08 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.83 | 23.83 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126939** | CCB | | 1.00 | 07/22/2017 | 5:16 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 2.09 | 2.09 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.50 | 6.50 | | |
| Total Alkalinity | 2.09 | 2.09 | | |
| Temperature of pH | 23.78 | 23.78 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109541** | **126940** | R | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:25 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 74.03 | 74.03 | | | | |
| Carbonate | 5.95 | 5.95 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 2.98 | 2.98 | | | | |
| pH | 8.55 | 8.55 | | | | |
| Total Alkalinity | 79.98 | 79.98 | Y | Y | | |
| Temperature of pH | 23.80 | 23.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109541** | **126941** | D | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:34 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 38.78 | 38.78 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.52 | 7.52 | | | | |
| Total Alkalinity | 38.78 | 38.78 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109539** | **126942** | | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:41 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 96.01 | 96.01 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.86 | 7.86 | | | | |
| Total Alkalinity | 96.01 | 96.01 | Y | Y | | |
| Temperature of pH | 23.96 | 23.96 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109540** | **126943** | | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:49 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 22.26 | 22.26 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.58 | 6.58 | | | | |
| Total Alkalinity | 22.26 | 22.26 | Y | Y | | |
| Temperature of pH | 23.88 | 23.88 | | | | |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Run_Date: |
|---|---|---|---|---|---|
| **CCVPH2** | **126944** | CCV | | 1.00 | 07/22/2017 5:58 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1344.93 | 1,344.93 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.94 | 6.94 | | |
| Total Alkalinity | 1344.93 | 1,344.93 | | |
| Temperature of pH | 23.83 | 23.83 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: |
|---|---|---|---|---|---|
| **CCB** | **126945** | CCB | | 1.00 | 07/22/2017 6:05 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.30 | 1.30 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.37 | 6.37 | | |
| Total Alkalinity | 1.30 | 1.30 | | |
| Temperature of pH | 24.07 | 24.07 | | |

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# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 07/19/17

# SDG# KR189

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1827722 | 9112123-9112128 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **08/10/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR189
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9112123 | GW012R-173 | 07/19/2017 12:45 | 07/20/2017 09:35 |
| 9112124 | GW012R-173 | 07/19/2017 12:45 | 07/20/2017 09:35 |
| 9112125 | GW097-173 | 07/19/2017 10:45 | 07/20/2017 09:35 |
| 9112126 | GW098-173 | 07/19/2017 08:55 | 07/20/2017 09:35 |
| 9112127 | TB173-25 | 07/19/2017 14:30 | 07/20/2017 09:35 |
| 9112128 | TB173-26 | 07/19/2017 14:30 | 07/20/2017 09:35 |

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# Sample pH Log

**SDG: KR189**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9112123 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/20/2017 3:03:40PM | 12665 |
| 9112123 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:44PM | 895 |
| 9112123 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/20/2017 3:03:23PM | 12665 |
| 9112124 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/20/2017 3:03:56PM | 12665 |
| 9112125 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:44PM | 895 |
| 9112126 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:44PM | 895 |
| 9112127 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:44PM | 895 |
| 9112128 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/24/2017 2:22:44PM | 895 |

| Check Code Key |
|---|
| **PK** = Original container checked - pH is within the correct range. (No preservative was added) |
| **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) |
| **PV** = Volatile container checked |
| **PC** = pH checked (unpreserved container) |
| **SPK** = Subsampled from an original container. Original container checked - pH is within correct range |
| **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. |
| **SPC** = Subsampled from an original container. pH checked (unpreserved container). |
| **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. |
| **UP** = Unable to preserve due to matrix of the sample. |
| **NA** = Not applicable |

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**01163 GC/MS VOA Water Prep**

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

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**11997 VOCs- 5ml Water by 8260C**

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

---

**10635 ICP-WW, 3005A (tot rec) - U4**

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

---

**10639 ICPMS - Water, 3020A - U4**

The sample is digested with nitric and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3020A, July 1992

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**01750 Calcium**
**01754 Iron**
**01757 Magnesium**
**07058 Manganese**
**01762 Potassium**
**01767 Sodium**

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

---

**06025 Arsenic**
**06035 Lead**

The solution resulting from the metals digestion is analyzed by ICP/MS.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6020A, February 2007.

---

**10398 8011 Master Master**

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07786 EDB Extraction (8011)**

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07882 Total Nitrite/Nitrate Nitrogen**

Nitrate ions are reduced to nitrite by passing through a cadmium coil. The nitrite ions then react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dihydrochloride to form a soluble, highly-colored dye. The result is determined colorimetrically.

Reference: Method 353.2, Revision 2.0 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

---

**01505 Bromide**
**00224 Chloride**
**00228 Sulfate**

A small volume of sample is introduced into an ion chromatograph. The anions are then separated and measured by a system consisting of a guard column, separator column, suppressor, and conductivity detector.

Reference: Method 300.0, Revision 2.1 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

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**12150 Total Alkalinity to pH 4.5**

Alkalinity is determined by titrating the sample with standardized sulfuric acid to a pH of 4.5 for the total alkalinity.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

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**12149 Bicarbonate Alkalinity**

Bicarbonate is determined by a calculation based on the Alkalinity results.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

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**12148 Carbonate Alkalinity**

Carbonate is determined by a calculation based on the Alkalinity results.

Reference: Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, Method 2320 B-1997

# Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: July 28, 2017

**Project: Kirtland AFB**

Submittal Date: 07/20/2017
Group Number: 1827722
SDG: KR189
PO Number: 14800
State of Sample Origin: NM

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| GW012R-173 Water | 9112123 |
| GW012R-173 Filtered Water | 9112124 |
| GW097-173 Water | 9112125 |
| GW098-173 Water | 9112126 |
| TB173-25 Water | 9112127 |
| TB173-26 Water | 9112128 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

Respectfully Submitted,

(717) 556-7364

Project Name: Kirtland AFB
LL Group #: 1827722

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

SW-846 8260C, GC/MS Volatiles
Batch #: Y172023AA (Sample number(s): 9112123, 9112125-9112128 UNSPK: P109771)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Benzene

SW-846 6010C, Metals
Batch #: 172051063502 (Sample number(s): 9112123-9112124 UNSPK: 9112124 BKG: 9112124)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Calcium, Magnesium, Sodium

EPA 300.0, Wet Chemistry
Batch #: 17204120115A (Sample number(s): 9112123 UNSPK: P112926 BKG: P112926)

The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Chloride, Sulfate, Bromide

SM 2320 B-1997, Wet Chemistry
Batch #: 17202002101A (Sample number(s): 9112123 UNSPK: P112287 BKG: P112287, P112296)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Total Alkalinity to pH 4.5

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# Analysis Report

**Sample Description: GW012R-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9112123**
**LL Group # 1827722**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/19/2017 12:45 by CM

Submitted: 07/20/2017 09:35
Reported: 07/28/2017 12:39

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18901 SDG#: KR189-01

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.7 | J | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01750 | Calcium | 7440-70-2 | 198 | | 0.0600 | 0.200 | 0.400 | 1 |
| 01757 | Magnesium | 7439-95-4 | 30.1 | | 0.0374 | 0.100 | 0.200 | 1 |
| 01762 | Potassium | 7440-09-7 | 5.10 | | 0.179 | 0.500 | 1.00 | 1 |
| 01767 | Sodium | 7440-23-5 | 57.4 | | 0.321 | 0.500 | 2.00 | 1 |
| | **SW-846 6020A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | Arsenic | 7440-38-2 | 0.0020 | U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00019 | J | 0.00011 | 0.00025 | 0.0020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01505 | Bromide | 24959-67-9 | 2.4 | J | 1.3 | 2.5 | 2.5 | 5 |
| 00224 | Chloride | 16887-00-6 | 156 | | 10.0 | 20.0 | 20.0 | 50 |
| 00228 | Sulfate | 14808-79-8 | 357 | | 15.0 | 50.0 | 50.0 | 50 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 5.4 | | 0.20 | 0.50 | 0.50 | 5 |
| | **SM 2320 B-1997** | | **mg/l as CaCO3** | | **mg/l as CaCO3** | **mg/l as CaCO3** | **mg/l as CaCO3** | |
| 12150 | Total Alkalinity to pH 4.5 | n.a. | 108 | | 1.7 | 5.0 | 5.0 | 1 |
| 12149 | Bicarbonate Alkalinity | n.a. | 108 | | 1.7 | 5.0 | 5.0 | 1 |
| 12148 | Carbonate Alkalinity | n.a. | 5.0 | U | 1.7 | 5.0 | 5.0 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 04:48 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 04:48 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 03:45 | Heather M Miller | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW012R-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9112123**
**LL Group # 1827722**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/19/2017 12:45 by CM

Submitted: 07/20/2017 09:35
Reported: 07/28/2017 12:39

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18901 SDG#: KR189-01

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |
| 01750 | Calcium | SW-846 6010C | 1 | 172051063502 | 07/25/2017 15:43 | Elaine F Stoltzfus | 1 |
| 01757 | Magnesium | SW-846 6010C | 1 | 172051063502 | 07/25/2017 15:43 | Elaine F Stoltzfus | 1 |
| 01762 | Potassium | SW-846 6010C | 1 | 172051063502 | 07/25/2017 15:43 | Elaine F Stoltzfus | 1 |
| 01767 | Sodium | SW-846 6010C | 1 | 172051063502 | 07/25/2017 15:43 | Elaine F Stoltzfus | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172051063901A | 07/26/2017 10:35 | Choon Y Tian | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172051063901A | 07/26/2017 10:35 | Choon Y Tian | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172051063502 | 07/25/2017 06:10 | James L Mertz | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172051063901 | 07/25/2017 06:51 | James L Mertz | 1 |
| 01505 | Bromide | EPA 300.0 | 1 | 17204120115A | 07/24/2017 19:27 | Hallie A Burnett | 5 |
| 00224 | Chloride | EPA 300.0 | 1 | 17204120115A | 07/24/2017 19:43 | Hallie A Burnett | 50 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17204120115A | 07/24/2017 19:43 | Hallie A Burnett | 50 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17207118101B | 07/27/2017 03:09 | Joseph E McKenzie | 5 |
| 12150 | Total Alkalinity to pH 4.5 | SM 2320 B-1997 | 1 | 17202002101A | 07/21/2017 16:25 | Ian D Toomey | 1 |
| 12149 | Bicarbonate Alkalinity | SM 2320 B-1997 | 1 | 17202002101A | 07/21/2017 16:25 | Ian D Toomey | 1 |
| 12148 | Carbonate Alkalinity | SM 2320 B-1997 | 1 | 17202002101A | 07/21/2017 16:25 | Ian D Toomey | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW012R-173 Filtered Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9112124**
**LL Group # 1827722**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/19/2017 12:45 by CM

Submitted: 07/20/2017 09:35
Reported: 07/28/2017 12:39

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18902 SDG#: KR189-02

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172051063502 | 07/25/2017 15:24 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172051063502 | 07/25/2017 15:24 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172051063502 | 07/25/2017 06:10 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW097-173 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9112125**
**LL Group # 1827722**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/19/2017 10:45 by CM

Submitted: 07/20/2017 09:35
Reported: 07/28/2017 12:39

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18903 SDG#: KR189-03

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.6 | J | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 05:10 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 05:10 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 04:01 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GW098-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9112126**
**LL Group # 1827722**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/19/2017 08:55 by CM

Submitted: 07/20/2017 09:35
Reported: 07/28/2017 12:39

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18904 SDG#: KR189-04

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 2 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 05:33 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 05:33 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 04:17 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: TB173-25 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9112127**
**LL Group # 1827722**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/19/2017 14:30

Submitted: 07/20/2017 09:35
Reported: 07/28/2017 12:39

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18905 SDG#: KR189-05TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 00:44 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 00:44 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 04:33 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: TB173-26 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9112128**
**LL Group # 1827722**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/19/2017 14:30

Submitted: 07/20/2017 09:35
Reported: 07/28/2017 12:39

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

18906 SDG#: KR189-06TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | Y172023AA | 07/22/2017 01:06 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | Y172023AA | 07/22/2017 01:06 | Patrick T Herres | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020030A | 07/26/2017 04:49 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020030A | 07/25/2017 10:30 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 12:39

Group Number: 1827722

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Batch number: Y172023AA | Sample number(s): 9112123,9112125-9112128 | | | | |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Ethylbenzene | 1 | U | 0.5 | 1 | 1 |
| Toluene | 1 | U | 0.5 | 1 | 1 |
| Xylene (Total) | 1 | U | 0.5 | 1 | 1 |
| Batch number: 172020030A | Sample number(s): 9112123,9112125-9112128 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| | mg/l | | mg/l | mg/l | mg/l |
| Batch number: 172051063502 | Sample number(s): 9112123-9112124 | | | | |
| Calcium | 0.200 | U | 0.0600 | 0.200 | 0.400 |
| Iron | 0.200 | U | 0.0805 | 0.200 | 0.400 |
| Magnesium | 0.100 | U | 0.0374 | 0.100 | 0.200 |
| Manganese | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 |
| Potassium | 0.500 | U | 0.179 | 0.500 | 1.00 |
| Sodium | 0.500 | U | 0.321 | 0.500 | 2.00 |
| Batch number: 172051063901A | Sample number(s): 9112123 | | | | |
| Arsenic | 0.0020 | U | 0.00072 | 0.0020 | 0.0040 |
| Lead | 0.00025 | U | 0.00011 | 0.00025 | 0.0020 |
| Batch number: 17204120115A | Sample number(s): 9112123 | | | | |
| Bromide | 0.50 | U | 0.25 | 0.50 | 0.50 |
| Chloride | 0.40 | U | 0.20 | 0.40 | 0.40 |
| Sulfate | 1.0 | U | 0.30 | 1.0 | 1.0 |
| Batch number: 17207118101B | Sample number(s): 9112123 | | | | |
| Total Nitrite/Nitrate Nitrogen | 0.10 | U | 0.040 | 0.10 | 0.10 |
| | mg/l as CaCO3 | | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 |
| Batch number: 17202002101A | Sample number(s): 9112123 | | | | |
| Total Alkalinity to pH 4.5 | 5.0 | U | 1.7 | 5.0 | 5.0 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 12:39

Group Number: 1827722

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: Y172023AA | Sample number(s): 9112123,9112125-9112128 | | | | | | | | |
| Benzene | 20 | 21.06 | | | 105 | | 79-120 | | |
| Ethylbenzene | 20 | 20.83 | | | 104 | | 79-121 | | |
| Toluene | 20 | 20.81 | | | 104 | | 80-121 | | |
| Xylene (Total) | 60 | 60.62 | | | 101 | | 79-121 | | |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172020030A | Sample number(s): 9112123,9112125-9112128 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.142 | 0.128 | 0.138 | 111 | 108 | 60-140 | 3 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172051063502 | Sample number(s): 9112123-9112124 | | | | | | | | |
| Calcium | 4.00 | 4.21 | | | 105 | | 87-113 | | |
| Iron | 1.00 | 1.02 | | | 102 | | 87-115 | | |
| Magnesium | 2.00 | 2.12 | | | 106 | | 85-113 | | |
| Manganese | 0.500 | 0.517 | | | 103 | | 90-114 | | |
| Potassium | 10 | 10.64 | | | 106 | | 86-114 | | |
| Sodium | 10 | 10.33 | | | 103 | | 87-115 | | |
| Batch number: 172051063901A | Sample number(s): 9112123 | | | | | | | | |
| Arsenic | 0.0100 | 0.00975 | | | 97 | | 84-116 | | |
| Lead | 0.0150 | 0.0147 | | | 98 | | 88-115 | | |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17204120115A | Sample number(s): 9112123 | | | | | | | | |
| Bromide | 7.50 | 7.13 | | | 95 | | 90-110 | | |
| Chloride | 3.00 | 2.82 | | | 94 | | 90-110 | | |
| Sulfate | 7.50 | 6.92 | | | 92 | | 90-110 | | |
| Batch number: 17207118101B | Sample number(s): 9112123 | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 2.50 | 2.55 | | | 102 | | 90-110 | | |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | | | | | |
| Batch number: 17202002101A | Sample number(s): 9112123 | | | | | | | | |
| Total Alkalinity to pH 4.5 | 188 | 160.44 | | | 85 | | 77-114 | | |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 12:39

Group Number: 1827722

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: Y172023AA | Sample number(s): 9112123,9112125-9112128 UNSPK: P109771 | | | | | | | | | |
| Benzene | 467.52 | 20 | 483.06 | 20 | 482.19 | 78 (2) | 73 (2) | 79-120 | 0 | 20 |
| Ethylbenzene | 54.25 | 20 | 76.01 | 20 | 77.27 | 109 | 115 | 79-121 | 2 | 20 |
| Toluene | 4.31 | 20 | 26.4 | 20 | 26.55 | 110 | 111 | 80-121 | 1 | 20 |
| Xylene (Total) | 113.89 | 60 | 177.91 | 60 | 180.22 | 107 | 111 | 79-121 | 1 | 20 |
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172020030A | Sample number(s): 9112123,9112125-9112128 UNSPK: P109781 | | | | | | | | | |
| Ethylene dibromide | 0.019 U | 0.123 | 0.154 | | | 126 | | 60-140 | | |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172051063502 | Sample number(s): 9112123-9112124 UNSPK: 9112124, P112124 | | | | | | | | | |
| Calcium | 202.92 | 4.00 | 203 | 4.00 | 201.57 | 2 (2) | -34 (2) | 87-113 | 1 | 20 |
| Iron | 0.200 U | 1.00 | 1.02 | 1.00 | 1.01 | 102 | 101 | 87-115 | 1 | 20 |
| Magnesium | 30.89 | 2.00 | 32.65 | 2.00 | 32.23 | 88 (2) | 67 (2) | 85-113 | 1 | 20 |
| Manganese | 0.0050 U | 0.500 | 0.507 | 0.500 | 0.498 | 101 | 100 | 90-114 | 2 | 20 |
| Potassium | 5.20 | 10 | 15.78 | 10 | 15.56 | 106 | 104 | 86-114 | 1 | 20 |
| Sodium | 58.84 | 10 | 68.03 | 10 | 67.28 | 92 (2) | 84 (2) | 87-115 | 1 | 20 |
| Batch number: 172051063901A | Sample number(s): 9112123 UNSPK: 9112123 | | | | | | | | | |
| Arsenic | 0.0020 U | 0.0100 | 0.0108 | 0.0100 | 0.0102 | 108 | 102 | 84-116 | 6 | 20 |
| Lead | 0.000189 | 0.0150 | 0.0159 | 0.0150 | 0.0155 | 105 | 102 | 88-115 | 3 | 20 |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17204120115A | Sample number(s): 9112123 UNSPK: P112926 | | | | | | | | | |
| Bromide | 2.5 U | 25 | 20 | | | 80* | | 90-110 | | |
| Chloride | 44.08 | 20 | 61.2 | | | 86* | | 90-110 | | |
| Sulfate | 3.95 | 25 | 22.54 | | | 74* | | 90-110 | | |
| Batch number: 17207118101B | Sample number(s): 9112123 UNSPK: P111760 | | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 7.57 | 5.00 | 12.73 | 5.00 | 12.49 | 103 | 98 | 90-110 | 2 | 20 |
| | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | mg/l as CaCO3 | | | | | |
| Batch number: 17202002101A | Sample number(s): 9112123 UNSPK: P112287 | | | | | | | | | |
| Total Alkalinity to pH 4.5 | 381.79 | 188 | 507.33 | 188 | 514.29 | 67* | 70* | 77-114 | 1 | 10 |

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 12:39

Group Number: 1827722

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | ug/l | ug/l | | |
| Batch number: 172020030A | Sample number(s): 9112123,9112125-9112128 BKG: P109784 | | | |
| Ethylene dibromide | 0.019 U | 0.019 U | 0 (1) | 30 |
| | mg/l | mg/l | | |
| Batch number: 172051063502 | Sample number(s): 9112123-9112124 BKG: 9112124, P112124 | | | |
| Calcium | 202.92 | 203.81 | 0 | 20 |
| Iron | 0.200 U | 0.200 U | 0 (1) | 20 |
| Magnesium | 30.89 | 31.16 | 1 | 20 |
| Manganese | 0.0050 U | 0.0050 U | 0 (1) | 20 |
| Potassium | 5.20 | 5.23 | 1 | 20 |
| Sodium | 58.84 | 59.23 | 1 | 20 |
| Batch number: 172051063901A | Sample number(s): 9112123 BKG: 9112123 | | | |
| Arsenic | 0.0020 U | 0.0020 U | 0 (1) | 20 |
| Lead | 0.000189 | 0.000180 | 4 (1) | 20 |
| | mg/l | mg/l | | |
| Batch number: 17204120115A | Sample number(s): 9112123 BKG: P112926 | | | |
| Bromide | 2.5 U | 2.5 U | 0 (1) | 15 |
| Chloride | 44.08 | 44.23 | 0 | 15 |
| Sulfate | 3.95 | 3.95 | 0 (1) | 15 |
| Batch number: 17207118101B | Sample number(s): 9112123 BKG: P111760 | | | |
| Total Nitrite/Nitrate Nitrogen | 7.57 | 7.59 | 0 | 10 |
| | mg/l as CaCO3 | mg/l as CaCO3 | | |
| Batch number: 17202002101A | Sample number(s): 9112123 BKG: P112287 | | | |
| Total Alkalinity to pH 4.5 | 381.79 | 382.71 | 0 | 5 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C Water
Batch number: Y172023AA

| | Dibromofluoromethane | | 1,2-Dichloroethane-d4 | | Toluene-d8 | | 4-Bromofluorobenzene | |
|---|---|---|---|---|---|---|---|---|
| | %Rec | LOD (ug/l) | %Rec | LOD (ug/l) | %Rec | LOD (ug/l) | %Rec | LOD (ug/l) |
| 9112123 | 102 | 1 | 100 | 1 | 103 | 1 | 98 | 1 |
| 9112125 | 104 | 1 | 98 | 1 | 104 | 1 | 98 | 1 |
| 9112126 | 101 | 1 | 98 | 1 | 103 | 1 | 98 | 1 |
| 9112127 | 104 | 1 | 98 | 1 | 102 | 1 | 96 | 1 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 07/28/2017 12:39

Group Number: 1827722

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C Water
Batch number: Y172023AA

| | Dibromofluoromethane %Rec | LOD (ug/l) | 1,2-Dichloroethane-d4 %Rec | LOD (ug/l) | Toluene-d8 %Rec | LOD (ug/l) | 4-Bromofluorobenzene %Rec | LOD (ug/l) |
|---|---|---|---|---|---|---|---|---|
| 9112128 | 106 | 1 | 102 | 1 | 103 | 1 | 95 | 1 |
| Blank | 102 | 1 | 101 | 1 | 104 | 1 | 96 | 1 |
| LCS | 99 | 1 | 97 | 1 | 104 | 1 | 103 | 1 |
| MS | 99 | 1 | 97 | 1 | 105 | 1 | 106 | 1 |
| MSD | 98 | 1 | 95 | 1 | 104 | 1 | 106 | 1 |
| Limits: | 80-119 | | 81-118 | | 89-112 | | 85-114 | |

Analysis Name: EDB 8011 Water
Batch number: 172020030A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9112123 | 102 | 0.0067 |
| 9112125 | 107 | 0.0067 |
| 9112126 | 116 | 0.0066 |
| 9112127 | 100 | 0.0066 |
| 9112128 | 95 | 0.0067 |
| Blank | 69 | 0.0070 |
| DUP | 98 | 0.0067 |
| LCS | 75 | 0.0070 |
| LCSD | 71 | 0.0070 |
| MS | 106 | 0.0067 |
| Limits: | 46-136 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 | 1827722 | 9112123-28

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-012R-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW012R-173 | 7-19-17 | 1245 | 11 | — | 3 | — | 2 | 1 | 1* | 2 | 1 | 1 | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB173- 25

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734470

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-19-17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Wendy Walker | 7/20/17 | 93r |

31675 | 1827722 | 9112123-28

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-097-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE:<br>ST106/SS110 | | LAB PO NUMBER:<br>14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | |
| 1 | GW097-173 | 7-13-17 | 1045 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173-~~07~~25 cm

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734470

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-14-17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Wendy Walcley | 7/20/17 | 935 |

31675 | 1827722 | 9112123 - 28

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-098-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW098-173 | 7-19-17 | 0855 | 5 | – | 3 | – | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 26

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156739480

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-19-17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Wendy Wakley | 7/20/17 | 935 |

31675 | 1827722 | 9112/23-28

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 25

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
| 1 | TB173-25 | 7-19-17 | 1430 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106012R and KAFB-106097

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734470

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-19-17 | 1600 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Wendy Walden | 7/20/17 | 935 |

31675 | 1827722 | 9112123-28

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 26

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | | QUARTER: 3 |

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
| 1 | TB173-26 | 7-19-17 | 1430 | 4 | – | 2 | – | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with KAFB-106098

4480

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 811156734~~480~~ 55

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-19-17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Wendy Walkley | 7/20/17 | 935 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 189309

Group Number(s): 1827722

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/20/2017 9:35 |
| Number of Packages: | 2 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 8 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Wendy Wakeley (1669) at 11:30 on 07/20/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT42-01 | 0.4 | DT | Wet | Y | Bagged | N |
| 2 | DT42-01 | 0.6 | DT | Wet | Y | Bagged | N |



2425 New Holland Pike
Lancaster, PA 17601-2422
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | none detected |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

**<** less than

**>** greater than

**ppm** parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

**ppb** parts per billion

**Dry weight basis** Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

*Laboratory Data Qualifiers:*

C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

# Volatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Volatiles by GC/MS

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9112123 | GW012R-173 | X | | 1 | |
| 9112125 | GW097-173 | X | | 1 | |
| 9112126 | GW098-173 | X | | 1 | |
| 9112127 | TB173-25 | X | | 1 | Trip Blank |
| 9112128 | TB173-26 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Volatiles by GC/MS

eurofins | Lancaster Laboratories Environmental

# Quality Control Reference List
## GC/MS Volatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

**Fraction: Volatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| BTEX 8260C Water | Y172023AA | VBLKY06 | 07/21/2017 20:40:00 |
| | | LCSY06 | 07/21/2017 20:17:00 |
| | | 9112123 | 07/22/2017 04:48:00 |
| | | 9112125 | 07/22/2017 05:10:00 |
| | | 9112126 | 07/22/2017 05:33:00 |
| | | 9112127 | 07/22/2017 00:44:00 |
| | | 9112128 | 07/22/2017 01:06:00 |

**Quality Control Summary**
**Method Blank**
**GC/MS Volatiles**
**SDG: KR189**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| Y172023AA / VBLKY06<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Benzene | 07/21/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Toluene | 07/21/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Ethylbenzene | 07/21/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Xylene (Total) | 07/21/17 | N.D. | ug/l | 0.5 | 1 | 1 |

**Quality Control Summary**
**Surrogates**
**GC/MS Volatiles**
**SDG: KR189**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| Y172023AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKY06 | 101 | 81 - 118 | 96 | 85 - 114 | 102 | 80 - 119 | 104 | 89 - 112 |
| LCSY06 | 97 | 81 - 118 | 103 | 85 - 114 | 99 | 80 - 119 | 104 | 89 - 112 |
| 9112123 | 100 | 81 - 118 | 98 | 85 - 114 | 102 | 80 - 119 | 103 | 89 - 112 |
| 9112125 | 98 | 81 - 118 | 98 | 85 - 114 | 104 | 80 - 119 | 104 | 89 - 112 |
| 9112126 | 98 | 81 - 118 | 98 | 85 - 114 | 101 | 80 - 119 | 103 | 89 - 112 |
| 9112127 | 98 | 81 - 118 | 96 | 85 - 114 | 104 | 80 - 119 | 102 | 89 - 112 |
| 9112128 | 102 | 81 - 118 | 95 | 85 - 114 | 106 | 80 - 119 | 103 | 89 - 112 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR189**
**Matrix: LIQUID**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSY06 | Batch: **Y172023AA** (Sample number(s): 9112123, 9112125-9112128 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | 21.06 | NA | 105 | NA | 79-120 | NA | NA |
| Toluene | 20 | 20.81 | NA | 104 | NA | 80-121 | NA | NA |
| Ethylbenzene | 20 | 20.83 | NA | 104 | NA | 79-121 | NA | NA |
| Xylene (Total) | 60 | 60.62 | NA | 101 | NA | 79-121 | NA | NA |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR189___

Lab File ID: yj20t01.d  BFB Injection Date: 01/20/17

Instrument ID: HP09355  BFB Injection Time: 08:37

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 20.15 |
| 75 | 30.0 - 60.0% of mass 95 | 51.21 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.89 |
| 173 | Less than 2.0% of mass 174 | 0.00 ( 0.00)1 |
| 174 | Greater than 50.0% of mass 95 | 86.14 |
| 175 | 5.0 - 9.0% of mass 174 | 6.18 ( 7.17)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 83.46 (96.90)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.58 ( 6.68)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | yj20i01.d | 01/20/17 | 09:18 |
| 02 | VSTD100 | yj20i02.d | 01/20/17 | 09:39 |
| 03 | VSTD50 | yj20i03.d | 01/20/17 | 10:01 |
| 04 | VSTD20 | yj20i04.d | 01/20/17 | 10:23 |
| 05 | VSTD10 | yj20i05.d | 01/20/17 | 10:45 |
| 06 | VSTD4 | yj20i06.d | 01/20/17 | 11:07 |
| 07 | VSTD1 | yj20i07.d | 01/20/17 | 11:29 |
| 08 | MDL0.5 - MDL0.5 | yj20m01.d | 01/20/17 | 11:51 |
| 09 | YLGICV | yj20v01.d | 01/20/17 | 12:13 |
| 10 | VSTD300 | yj20i11.d | 01/20/17 | 13:37 |
| 11 | VSTD100 | yj20i12.d | 01/20/17 | 13:58 |
| 12 | VSTD50 | yj20i13.d | 01/20/17 | 14:20 |
| 13 | VSTD20 | yj20i14.d | 01/20/17 | 14:42 |
| 14 | VSTD10 | yj20i15.d | 01/20/17 | 15:04 |
| 15 | VSTD4 | yj20i16.d | 01/20/17 | 15:26 |
| 16 | MDL001 - MDL001 | yj20m11.d | 01/20/17 | 15:48 |
| 17 | YSMICV | yj20v11.d | 01/20/17 | 16:10 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR189___

Lab File ID: yl21t10.d  BFB Injection Date: 07/21/17

Instrument ID: HP09355  BFB Injection Time: 18:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.36 |
| 75 | 30.0 - 60.0% of mass 95 | 49.74 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.55 |
| 173 | Less than 2.0% of mass 174 | 0.00 ( 0.00)1 |
| 174 | Greater than 50.0% of mass 95 | 70.92 |
| 175 | 5.0 - 9.0% of mass 174 | 5.33 ( 7.52)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 68.88 (97.12)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.62 ( 6.71)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | yl21c05.d | 07/21/17 | 19:30 |
| 02 | LCSY06 | yl21s62.d | 07/21/17 | 20:17 |
| 03 | VBLKY06 | yl21b10.d | 07/21/17 | 20:40 |
| 04 | 9109781 | yl21s67.d | 07/21/17 | 23:16 |
| 05 | 9109784 | yl21s68.d | 07/21/17 | 23:38 |
| 06 | 9109785 | yl21s69.d | 07/22/17 | 00:00 |
| 07 | 9109788 | yl21s70.d | 07/22/17 | 00:22 |
| 08 | 9112127 | yl21s71.d | 07/22/17 | 00:44 |
| 09 | 9112128 | yl21s72.d | 07/22/17 | 01:06 |
| 10 | 9109771 | yl21s73.d | 07/22/17 | 01:28 |
| 11 | 9109772MS | yl21s74.d | 07/22/17 | 01:51 |
| 12 | 9109773MSD | yl21s75.d | 07/22/17 | 02:13 |
| 13 | 9109779 | yl21s76.d | 07/22/17 | 02:35 |
| 14 | 9109779DL | yl21s77.d | 07/22/17 | 02:57 |
| 15 | 9109782 | yl21s78.d | 07/22/17 | 03:19 |
| 16 | 9109783 | yl21s79.d | 07/22/17 | 03:41 |
| 17 | 9109786 | yl21s80.d | 07/22/17 | 04:03 |
| 18 | 9109787 | yl21s81.d | 07/22/17 | 04:26 |
| 19 | 9112123 | yl21s82.d | 07/22/17 | 04:48 |
| 20 | 9112125 | yl21s83.d | 07/22/17 | 05:10 |
| 21 | 9112126 | yl21s84.d | 07/22/17 | 05:33 |
| 22 | SECC050 | yl21c06.d | 07/22/17 | 05:55 |

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09355  Calibration Date(s): 01/20/17  01/20/17

Heated Purge: (Y/N) Y  Calibration Times: 09:18  11:29

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = yj20i07.d  RRF 4 = yj20i06.d  RRF 10= yj20i05.d
RRF 20= yj20i04.d  RRF 50= yj20i03.d  RRF100= yj20i02.d  RRF300= yj20i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | #0.2290 | 0.3327 | 0.3588 | 0.3111 | 0.3417 | 0.3303 | 0.2941 | 0.3139 | 14 | AVG | # |
| Chloromethane | #0.3002 | 0.3601 | 0.3676 | 0.3292 | 0.3532 | 0.3476 | 0.3085 | 0.3381 | 8 | AVG | # |
| 1,3-Butadiene | 0.6623 | 0.4610 | 0.3031 | 0.2823 | 0.2291 | 0.2171 | 0.1989 | 0.3363 | 50 | AVG | |
| Vinyl Chloride | #0.2741 | 0.3402 | 0.3477 | 0.3079 | 0.3355 | 0.3260 | 0.2932 | 0.3178 | 9 | AVG | # |
| Bromomethane | #0.2119 | 0.2409 | 0.2516 | 0.2186 | 0.2347 | 0.2253 | 0.1944 | 0.2253 | 9 | AVG | # |
| Chloroethane | #0.1695 | 0.2009 | 0.2038 | 0.1791 | 0.1918 | 0.1830 | 0.1587 | 0.1838 | 9 | AVG | # |
| Dichlorofluoromethane | 0.4040 | 0.4658 | 0.4098 | 0.4359 | 0.4200 | 0.4209 | 0.3782 | 0.4192 | 6 | AVG | |
| n-Pentane | | 0.5225 | 0.4291 | 0.4137 | 0.4029 | 0.3846 | 0.3565 | 0.4182 | 14 | AVG | |
| Trichlorofluoromethane | #0.2889 | 0.3908 | 0.4162 | 0.3719 | 0.4063 | 0.3885 | 0.3538 | 0.3738 | 11 | AVG | # |
| Ethyl ether | | 0.2341 | 0.2213 | 0.2286 | 0.2377 | 0.2344 | 0.2237 | 0.2300 | 3 | AVG | |
| Freon 123a | | 0.2738 | 0.2486 | 0.2743 | 0.2659 | 0.2656 | 0.2477 | 0.2626 | 5 | AVG | |
| Acrolein | 1.4250 | 1.5360 | 1.4648 | 1.4410 | 1.5260 | 1.5986 | 1.6712 | 1.5232 | 6 | AVG | |
| 1,1-Dichloroethene | #0.1490 | 0.1883 | 0.1920 | 0.1910 | 0.2035 | 0.2028 | 0.1943 | 0.1887 | 10 | AVG | # |
| 1,1-Dichloroethene(2) | #0.0688 | 0.0997 | 0.1015 | 0.1013 | 0.1051 | 0.1041 | 0.0991 | 0.0971 | 13 | AVG | #<- |
| Acetone | #0.5787 | 0.7314 | 0.7297 | 0.7008 | 0.7424 | 0.7690 | 0.8174 | 0.7242 | 10 | AVG | # |
| Freon 113 | # | 0.1791 | 0.1908 | 0.1956 | 0.2036 | 0.2043 | 0.1910 | 0.1941 | 5 | AVG | # |
| 2-Propanol | 0.6443 | 0.5723 | 0.5868 | 0.5536 | 0.5610 | 0.6031 | 0.5210 | 0.5774 | 7 | AVG | |
| Methyl Iodide | 0.2999 | 0.3509 | 0.3591 | 0.3682 | 0.3856 | 0.3835 | 0.3627 | 0.3585 | 8 | AVG | |
| Carbon Disulfide | # | 0.5413 | 0.5590 | 0.5812 | 0.6295 | 0.6397 | 0.6123 | 0.5938 | 7 | AVG | # |
| Allyl Chloride | | 0.4122 | 0.3707 | 0.3899 | 0.4127 | 0.4144 | 0.3944 | 0.3990 | 4 | AVG | |
| Methyl Acetate | # | 0.3739 | 0.3554 | 0.3642 | 0.3736 | 0.3698 | 0.3613 | 0.3663 | 2 | AVG | # |
| Methylene Chloride | #0.2229 | 0.2387 | 0.2384 | 0.2408 | 0.2512 | 0.2468 | 0.2326 | 0.2387 | 4 | AVG | # |
| t-Butyl alcohol | 1.2932 | 1.1414 | 1.1514 | 1.0963 | 1.1277 | 1.1189 | 1.0289 | 1.1368 | 7 | AVG | |
| Acrylonitrile | | 0.1820 | 0.1713 | 0.1757 | 0.1782 | 0.1700 | 0.1778 | 0.1758 | 3 | AVG | |
| trans-1,2-Dichloroethene | #0.1857 | 0.2286 | 0.2298 | 0.2333 | 0.2451 | 0.2407 | 0.2346 | 0.2282 | 9 | AVG | # |
| Methyl Tertiary Butyl Ether | #0.7211 | 0.7833 | 0.7871 | 0.8053 | 0.8225 | 0.8195 | 0.7579 | 0.7852 | 5 | AVG | # |
| n-Hexane | | 0.3473 | 0.3539 | 0.3622 | 0.3705 | 0.3677 | 0.3464 | 0.3580 | 3 | AVG | |
| 1,1-Dichloroethane | #0.3508 | 0.4107 | 0.4190 | 0.4181 | 0.4452 | 0.4322 | 0.4094 | 0.4122 | 7 | AVG | # |
| di-Isopropyl ether | 0.7629 | 0.8184 | 0.8290 | 0.8423 | 0.8684 | 0.8606 | 0.8030 | 0.8264 | 4 | AVG | |
| 2-Chloro-1,3-butadiene | | 0.3624 | 0.3782 | 0.3848 | 0.4092 | 0.4048 | 0.3893 | 0.3881 | 4 | AVG | |
| Ethyl t-butyl ether | 0.7095 | 0.7630 | 0.7781 | 0.7946 | 0.8152 | 0.8103 | 0.7467 | 0.7739 | 5 | AVG | |
| cis-1,2-Dichloroethene | #0.2239 | 0.2572 | 0.2664 | 0.2677 | 0.2780 | 0.2765 | 0.2684 | 0.2626 | 7 | AVG | # |
| 2-Butanone | #0.2827 | 0.2907 | 0.2664 | 0.2733 | 0.2711 | 0.2550 | 0.2728 | 0.2731 | 4 | AVG | # |
| 2,2-Dichloropropane | 0.2470 | 0.3185 | 0.3277 | 0.3304 | 0.3548 | 0.3536 | 0.3335 | 0.3237 | 11 | AVG | |
| Propionitrile | 1.1331 | 1.2789 | 1.2679 | 1.2901 | 1.2656 | 1.3581 | 1.3502 | 1.2777 | 6 | AVG | |
| Methacrylonitrile | 0.1680 | 0.1822 | 0.1830 | 0.1918 | 0.1965 | 0.1947 | 0.1892 | 0.1865 | 5 | AVG | |
| Bromochloromethane | | 0.1311 | 0.1336 | 0.1381 | 0.1433 | 0.1457 | 0.1400 | 0.1386 | 4 | AVG | |
| Tetrahydrofuran | 0.9700 | 1.1407 | 1.1080 | 1.1249 | 1.1688 | 1.2047 | 1.3053 | 1.1460 | 9 | AVG | |
| Chloroform | #0.3501 | 0.4046 | 0.4199 | 0.4249 | 0.4463 | 0.4404 | 0.4201 | 0.4152 | 8 | AVG | # |
| 1,1,1-Trichloroethane | #0.2744 | 0.3480 | 0.3496 | 0.3578 | 0.3733 | 0.3732 | 0.3566 | 0.3476 | 10 | AVG | # |
| Cyclohexane | # | 0.4175 | 0.4241 | 0.4238 | 0.4359 | 0.4340 | 0.4053 | 0.4234 | 3 | AVG | # |
| Cyclohexane(2) | # | 0.3365 | 0.3507 | 0.3463 | 0.3586 | 0.3596 | 0.3349 | 0.3478 | 3 | AVG | # |
| Cyclohexane(3) | # | 0.1232 | 0.1290 | 0.1290 | 0.1326 | 0.1330 | 0.1250 | 0.1286 | 3 | AVG | # |
| 1,1-Dichloropropene | 0.2743 | 0.3399 | 0.3445 | 0.3447 | 0.3572 | 0.3511 | 0.3394 | 0.3359 | 8 | AVG | |
| Carbon Tetrachloride | #0.2089 | 0.2725 | 0.2872 | 0.2950 | 0.3203 | 0.3245 | 0.3179 | 0.2895 | 14 | AVG | # |
| Isobutyl Alcohol | 0.4184 | 0.4127 | 0.4131 | 0.4105 | 0.3901 | 0.4279 | 0.4417 | 0.4163 | 4 | AVG | |
| Benzene | #0.8949 | 1.0011 | 1.0130 | 1.0149 | 1.0559 | 1.0320 | 0.9838 | 0.9994 | 5 | AVG | # |
| 1,2-Dichloroethane | #0.3468 | 0.3719 | 0.3731 | 0.3671 | 0.3756 | 0.3720 | 0.3533 | 0.3657 | 3 | AVG | # |
| 1,2-Dichloroethane(2) | #0.0108 | 0.0300 | 0.0323 | 0.0332 | 0.0344 | 0.0340 | 0.0331 | 0.0297 | 28 | AVG | #<- |
| t-Amyl methyl ether | 0.7027 | 0.7647 | 0.7816 | 0.7960 | 0.8149 | 0.8102 | 0.7516 | 0.7745 | 5 | AVG | |
| n-Heptane | | 0.4273 | 0.4288 | 0.4225 | 0.4249 | 0.4232 | 0.4021 | 0.4215 | 2 | AVG | |
| n-Butanol | 0.2716 | 0.3158 | 0.3209 | 0.3427 | 0.3077 | 0.3725 | 0.3706 | 0.3288 | 11 | AVG | |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09355  Calibration Date(s): 01/20/17  01/20/17

Heated Purge: (Y/N) Y  Calibration Times: 09:18  11:29

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = yj20i07.d  RRF 4 = yj20i06.d  RRF 10= yj20i05.d
RRF 20= yj20i04.d  RRF 50= yj20i03.d  RRF100= yj20i02.d  RRF300= yj20i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | #0.2155 | 0.2600 | 0.2629 | 0.2646 | 0.2764 | 0.2704 | 0.2641 | 0.2591 | 8 | AVG # |
| Methylcyclohexane | # | 0.4553 | 0.4442 | 0.4648 | 0.4725 | 0.4776 | 0.4506 | 0.4608 | 3 | AVG # |
| Methylcyclohexane(2) | # | 0.2102 | 0.1995 | 0.2086 | 0.2121 | 0.2154 | 0.2035 | 0.2082 | 3 | AVG # |
| 1,2-Dichloropropane | #0.2196 | 0.2610 | 0.2629 | 0.2701 | 0.2789 | 0.2780 | 0.2687 | 0.2627 | 8 | AVG # |
| Dibromomethane | 0.1555 | 0.1651 | 0.1700 | 0.1740 | 0.1810 | 0.1820 | 0.1759 | 0.1719 | 5 | AVG |
| 1,4-Dioxane | 0.0809 | 0.0873 | 0.0879 | 0.0886 | 0.0939 | 0.0970 | 0.0954 | 0.0901 | 6 | AVG |
| Methyl Methacrylate | | 0.2691 | 0.2733 | 0.2869 | 0.3016 | 0.3034 | 0.3006 | 0.2891 | 5 | AVG |
| Bromodichloromethane | #0.2284 | 0.2699 | 0.2840 | 0.3020 | 0.3267 | 0.3334 | 0.3312 | 0.2965 | 13 | AVG # |
| 2-Nitropropane | 0.0985 | 0.1009 | 0.1013 | 0.1145 | 0.1274 | 0.1251 | 0.1399 | 0.1154 | 14 | AVG |
| 2-Chloroethyl Vinyl Ether | | 0.2064 | 0.2169 | 0.2211 | 0.2343 | 0.2334 | 0.2384 | 0.2251 | 5 | AVG |
| cis-1,3-Dichloropropene | #0.2845 | 0.3512 | 0.3715 | 0.4001 | 0.4348 | 0.4394 | 0.4319 | 0.3876 | 15 | AVG # |
| 4-Methyl-2-pentanone | #0.4666 | 0.4886 | 0.4677 | 0.4912 | 0.5013 | 0.4819 | 0.5006 | 0.4854 | 3 | AVG # |
| Toluene | #0.7355 | 0.8655 | 0.8755 | 0.8685 | 0.9019 | 0.8800 | 0.8266 | 0.8505 | 7 | AVG # |
| trans-1,3-Dichloropropene | #0.3559 | 0.4075 | 0.4478 | 0.4849 | 0.5279 | 0.5404 | 0.5229 | 0.4696 | 15 | AVG # |
| Ethyl Methacrylate | | 0.5222 | 0.5567 | 0.5910 | 0.6266 | 0.6362 | 0.6035 | 0.5893 | 7 | AVG |
| 1,1,2-Trichloroethane | #0.3068 | 0.3333 | 0.3297 | 0.3414 | 0.3499 | 0.3491 | 0.3286 | 0.3341 | 4 | AVG # |
| Tetrachloroethene | #0.2976 | 0.3904 | 0.3816 | 0.3857 | 0.3973 | 0.3910 | 0.3760 | 0.3742 | 9 | AVG # |
| 1,3-Dichloropropane | 0.5115 | 0.5675 | 0.5740 | 0.5788 | 0.5868 | 0.5823 | 0.5502 | 0.5645 | 5 | AVG |
| 2-Hexanone | #0.4702 | 0.5157 | 0.4926 | 0.5213 | 0.5405 | 0.5050 | 0.5171 | 0.5089 | 4 | AVG # |
| Dibromochloromethane | #0.2235 | 0.2655 | 0.2910 | 0.3179 | 0.3583 | 0.3709 | 0.3697 | 0.3138 | 18 | AVG # |
| 1,2-Dibromoethane | #0.3139 | 0.3459 | 0.3586 | 0.3702 | 0.3846 | 0.3842 | 0.3666 | 0.3606 | 7 | AVG # |
| 1-Chlorohexane | | 0.4715 | 0.4687 | 0.4681 | 0.4900 | 0.4842 | 0.4615 | 0.4740 | 2 | AVG |
| Chlorobenzene | #0.8888 | 0.9880 | 0.9939 | 0.9903 | 1.0242 | 1.0046 | 0.9439 | 0.9762 | 5 | AVG # |
| 1,1,1,2-Tetrachloroethane | 0.2233 | 0.2683 | 0.2907 | 0.3082 | 0.3374 | 0.3433 | 0.3373 | 0.3012 | 15 | AVG |
| Ethylbenzene | #1.3877 | 1.6340 | 1.6817 | 1.6820 | 1.7526 | 1.7183 | 1.5962 | 1.6361 | 7 | AVG # |
| m+p-Xylene | #0.5447 | 0.6485 | 0.6604 | 0.6634 | 0.6980 | 0.6907 | 0.6544 | 0.6514 | 8 | AVG # |
| o-Xylene | #0.5049 | 0.6231 | 0.6516 | 0.6536 | 0.6840 | 0.6793 | 0.6456 | 0.6346 | 10 | AVG # |
| Styrene | # | 0.9618 | 1.0420 | 1.0874 | 1.1643 | 1.1703 | 1.1094 | 1.0892 | 7 | AVG # |
| Bromoform | # | 0.1780 | 0.2041 | 0.2300 | 0.2676 | 0.2877 | 0.2987 | 0.2443 | 20 | AVG # |
| Isopropylbenzene | # | 1.6070 | 1.6537 | 1.6812 | 1.7377 | 1.7053 | 1.5506 | 1.6559 | 4 | AVG # |
| Cyclohexanone | | 0.0621 | 0.0637 | 0.0663 | 0.0696 | 0.0732 | 0.0752 | 0.0683 | 8 | AVG |
| Bromobenzene | | 0.7901 | 0.8092 | 0.8104 | 0.8454 | 0.8496 | 0.8623 | 0.8278 | 3 | AVG |
| 1,1,2,2-Tetrachloroethane | #0.9084 | 0.9877 | 0.9983 | 1.0233 | 1.0610 | 1.0573 | 1.0229 | 1.0084 | 5 | AVG # |
| 1,2,3-Trichloropropane | | 0.3423 | 0.3401 | 0.3410 | 0.3478 | 0.3470 | 0.3379 | 0.3427 | 1 | AVG |
| trans-1,4-Dichloro-2-butene | | 0.2716 | 0.2914 | 0.3224 | 0.3445 | 0.3536 | 0.3343 | 0.3196 | 10 | AVG |
| n-Propylbenzene | | 3.5597 | 3.6273 | 3.6048 | 3.7503 | 3.6211 | 3.3041 | 3.5779 | 4 | AVG |
| 2-Chlorotoluene | | 0.7270 | 0.7365 | 0.7293 | 0.7513 | 0.7498 | 0.7236 | 0.7362 | 2 | AVG |
| 4-Chlorotoluene | | 0.7544 | 0.7712 | 0.7771 | 0.8167 | 0.7971 | 0.7724 | 0.7815 | 3 | AVG |
| 1,3,5-Trimethylbenzene | | 2.5133 | 2.6113 | 2.6200 | 2.7347 | 2.6704 | 2.5041 | 2.6090 | 3 | AVG |
| tert-Butylbenzene | | 0.5314 | 0.5496 | 0.5508 | 0.5789 | 0.5762 | 0.5600 | 0.5578 | 3 | AVG |
| Pentachloroethane | | 0.3451 | 0.3650 | 0.4069 | 0.4463 | 0.4762 | 0.4911 | 0.4218 | 14 | AVG |
| 1,2,4-Trimethylbenzene | | 2.5498 | 2.6834 | 2.6982 | 2.8306 | 2.7890 | 2.6370 | 2.6980 | 4 | AVG |
| sec-Butylbenzene | | 3.2387 | 3.2877 | 3.3184 | 3.4454 | 3.3291 | 3.0579 | 3.2796 | 4 | AVG |
| 1,3-Dichlorobenzene | # | 1.5261 | 1.5485 | 1.5614 | 1.6408 | 1.6195 | 1.5800 | 1.5794 | 3 | AVG # |
| p-Isopropyltoluene | | 2.7400 | 2.8741 | 2.9476 | 3.0673 | 3.0235 | 2.8307 | 2.9139 | 4 | AVG |
| 1,4-Dichlorobenzene | # | 1.5858 | 1.6025 | 1.6030 | 1.6749 | 1.6728 | 1.6149 | 1.6257 | 2 | AVG # |
| 1,2,3-Trimethylbenzene | | 2.6712 | 2.6154 | 2.7354 | 2.7786 | 2.8169 | 2.6429 | 2.7101 | 3 | AVG |
| Benzyl Chloride | | 1.3820 | 1.5960 | 1.8312 | 2.0579 | 2.1635 | 2.1266 | 1.8595 | 17 | AVG |
| 1,3-Diethylbenzene | | 1.6096 | 1.6345 | 1.7130 | 1.7650 | 1.7704 | 1.6890 | 1.6969 | 4 | AVG |
| 1,4-Diethylbenzene | | 1.6918 | 1.6740 | 1.7764 | 1.8393 | 1.8236 | 1.7585 | 1.7606 | 4 | AVG |
| 1,2-Dichlorobenzene | # | 1.4654 | 1.4953 | 1.5089 | 1.5613 | 1.5644 | 1.5072 | 1.5171 | 3 | AVG # |
| n-Butylbenzene | | 1.4366 | 1.4527 | 1.4695 | 1.5318 | 1.4855 | 1.4241 | 1.4667 | 3 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date(s): 01/20/17 01/20/17

Heated Purge: (Y/N) Y Calibration Times: 09:18 11:29

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = yj20i07.d RRF 4 = yj20i06.d RRF 10= yj20i05.d
RRF 20= yj20i04.d RRF 50= yj20i03.d RRF100= yj20i02.d RRF300= yj20i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diethylbenzene | | 1.3845 | 1.3752 | 1.4191 | 1.4610 | 1.4823 | 1.4213 | 1.4239 | 3 | AVG |
| 1,2-Dibromo-3-chloropropane# | | 0.2050 | 0.2247 | 0.2500 | 0.2589 | 0.2656 | 0.2657 | 0.2450 | 10 | AVG # |
| 1,3,5-Trichlorobenzene | | 1.0796 | 1.1127 | 1.1241 | 1.1377 | 1.1117 | 1.1020 | 1.1113 | 2 | AVG |
| 1,2,4-Trichlorobenzene # | | 1.0027 | 0.9853 | 1.0282 | 1.0367 | 1.0122 | 1.0285 | 1.0156 | 2 | AVG # |
| Hexachlorobutadiene | | 0.5097 | 0.4955 | 0.5062 | 0.5096 | 0.4866 | 0.4869 | 0.4991 | 2 | AVG |
| Naphthalene | | 3.0857 | 3.1313 | 3.3725 | 3.3684 | 3.3666 | 3.1768 | 3.2502 | 4 | AVG |
| 1,2,3-Trichlorobenzene | | 0.9231 | 0.9049 | 0.9282 | 0.9303 | 0.9126 | 0.9413 | 0.9234 | 1 | AVG |
| 2-Methylnaphthalene | | 1.6376 | 1.5625 | 1.7598 | 1.8086 | 1.8518 | 1.8822 | 1.7504 | 7 | AVG |
| Dibromofluoromethane | 0.2293 | 0.2308 | 0.2314 | 0.2358 | 0.2343 | 0.2342 | 0.2365 | 0.2332 | 1 | AVG |
| Dibromofluoromethane(2) | | 0.2361 | 0.2372 | 0.2398 | 0.2397 | 0.2393 | 0.2398 | 0.2386 | 1 | AVG |
| 1,2-Dichloroethane-d4 | 0.0615 | 0.0611 | 0.0616 | 0.0615 | 0.0616 | 0.0607 | 0.0599 | 0.0611 | 1 | AVG |
| 1,2-Dichloroethane-d4(2) | | 0.3146 | 0.3119 | 0.3096 | 0.3053 | 0.3035 | 0.3003 | 0.3075 | 2 | AVG |
| 1,2-Dichloroethane-d4(3) | | 0.0383 | 0.0387 | 0.0391 | 0.0393 | 0.0382 | 0.0392 | 0.0388 | 1 | AVG |
| Toluene-d8 | 1.3058 | 1.3095 | 1.3097 | 1.3045 | 1.2877 | 1.2803 | 1.2450 | 1.2918 | 2 | AVG |
| Toluene-d8(2) | | 0.8445 | 0.8435 | 0.8455 | 0.8301 | 0.8322 | 0.8112 | 0.8345 | 2 | AVG |
| 4-Bromofluorobenzene | 0.4825 | 0.4855 | 0.4876 | 0.4901 | 0.4867 | 0.4838 | 0.4752 | 0.4845 | 1 | AVG |
| 4-Bromofluorobenzene(2) | | 0.4162 | 0.4146 | 0.4174 | 0.4150 | 0.4125 | 0.4031 | 0.4131 | 1 | AVG |

Average %RSD 7

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

/chem2/HP09355.i/17jan20i.b/yj20i01.d VSTD300
/chem2/HP09355.i/17jan20i.b/yj20i02.d VSTD100
/chem2/HP09355.i/17jan20i.b/yj20i03.d VSTD050
/chem2/HP09355.i/17jan20i.b/yj20i04.d VSTD020
/chem2/HP09355.i/17jan20i.b/yj20i05.d VSTD010
/chem2/HP09355.i/17jan20i.b/yj20i06.d VSTD004
/chem2/HP09355.i/17jan20i.b/yj20i07.d VSTD001

Area Summary

File ID:

| Internal Standard Name | yj20i01.d | yj20i02.d | yj20i03.d | yj20i04.d | yj20i05.d | yj20i06.d | yj20i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 341463 | 332781 | 365897 | 369809 | 346736 | 344452 | 380396 | 354505 | 5 | Yes |
| Fluorobenzene | 1223002 | 1197583 | 1212862 | 1201221 | 1177225 | 1157072 | 1154548 | 1189073 | 2 | Yes |
| Chlorobenzene-d5 | 963403 | 918852 | 927146 | 910426 | 888999 | 870903 | 874803 | 907790 | 4 | Yes |
| 1,4-Dichlorobenzene-d4 | 524531 | 507846 | 512041 | 505705 | 486712 | 476531 | 479258 | 498946 | 4 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | yj20i01.d | yj20i02.d | yj20i03.d | yj20i04.d | yj20i05.d | yj20i06.d | yj20i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 4.331 | 4.319 | 4.319 | 4.313 | 4.313 | 4.325 | 4.325 | 4.321 |
| Fluorobenzene | 7.866 | 7.866 | 7.860 | 7.860 | 7.860 | 7.866 | 7.859 | 7.862 |
| Chlorobenzene-d5 | 11.321 | 11.315 | 11.315 | 11.315 | 11.315 | 11.315 | 11.315 | 11.316 |
| 1,4-Dichlorobenzene-d4 | 13.201 | 13.201 | 13.195 | 13.195 | 13.195 | 13.201 | 13.201 | 13.198 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 01/20/2017 at 13:02.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 ICV Date: 01/20/17 Time: 12:13

Lab File ID: yj20v01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.3139 | 0.2980 | 18.99 | 20 | -5 | # |
| # | Chloromethane | 0.3381 | 0.3412 | 20.19 | 20 | 1 | # |
| | 1,3-Butadiene | 0.3363 | 0.2884 | 17.15 | 20 | -14 | |
| # | Vinyl Chloride | 0.3178 | 0.3278 | 20.63 | 20 | 3 | # |
| # | Bromomethane | 0.2253 | 0.2275 | 20.19 | 20 | 1 | # |
| # | Chloroethane | 0.1838 | 0.1849 | 20.11 | 20 | 1 | # |
| | Dichlorofluoromethane | 0.4192 | 0.3871 | 18.47 | 20 | -8 | |
| | n-Pentane | 0.4182 | 0.4020 | 19.22 | 20 | -4 | |
| # | Trichlorofluoromethane | 0.3738 | 0.3883 | 20.78 | 20 | 4 | # |
| | Ethyl ether | 0.2300 | 0.2422 | 21.06 | 20 | 5 | |
| | Freon 123a | 0.2626 | 0.2535 | 19.31 | 20 | -3 | |
| | Acrolein | 1.5232 | 1.4433 | 142.13 | 150 | -5 | |
| # | 1,1-Dichloroethene | 0.1887 | 0.1914 | 20.28 | 20 | 1 | # |
| # | Acetone | 0.7242 | 0.8089 | 167.55 | 150 | 12 | # |
| # | Freon 113 | 0.1941 | 0.1861 | 19.17 | 20 | -4 | # |
| | 2-Propanol | 0.5774 | 0.4983 | 129.43 | 150 | -14 | |
| | Methyl Iodide | 0.3585 | 0.3314 | 18.48 | 20 | -8 | |
| # | Carbon Disulfide | 0.5938 | 0.5306 | 17.87 | 20 | -11 | # |
| | Allyl Chloride | 0.3990 | 0.3512 | 17.60 | 20 | -12 | |
| # | Methyl Acetate | 0.3663 | 0.3664 | 20.00 | 20 | 0 | # |
| # | Methylene Chloride | 0.2387 | 0.2252 | 18.87 | 20 | -6 | # |
| | t-Butyl alcohol | 1.1368 | 1.0231 | 179.98 | 200 | -10 | |
| | Acrylonitrile | 0.1758 | 0.1794 | 102.05 | 100 | 2 | |
| # | trans-1,2-Dichloroethene | 0.2282 | 0.2227 | 19.52 | 20 | -2 | # |
| # | Methyl Tertiary Butyl Ether | 0.7852 | 0.7143 | 18.19 | 20 | -9 | # |
| | n-Hexane | 0.3580 | 0.3542 | 19.79 | 20 | -1 | |
| # | 1,1-Dichloroethane | 0.4122 | 0.3949 | 19.16 | 20 | -4 | # |
| | di-Isopropyl ether | 0.8264 | 0.7687 | 18.61 | 20 | -7 | |
| | 2-Chloro-1,3-butadiene | 0.3881 | 0.3559 | 18.34 | 20 | -8 | |
| | Ethyl t-butyl ether | 0.7739 | 0.7033 | 18.18 | 20 | -9 | |
| # | cis-1,2-Dichloroethene | 0.2626 | 0.2461 | 18.75 | 20 | -6 | # |
| # | 2-Butanone | 0.2731 | 0.2840 | 155.94 | 150 | 4 | # |
| | 2,2-Dichloropropane | 0.3237 | 0.3020 | 18.66 | 20 | -7 | |
| | Propionitrile | 1.2777 | 1.2676 | 148.82 | 150 | -1 | |
| | Methacrylonitrile | 0.1865 | 0.1746 | 140.42 | 150 | -6 | |
| | Bromochloromethane | 0.1386 | 0.1276 | 18.41 | 20 | -8 | |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 ICV Date: 01/20/17 Time: 12:13

Lab File ID: yj20v01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.1460 | 1.2884 | 112.42 | 100 | 12 | |
| # | Chloroform | 0.4152 | 0.3915 | 18.86 | 20 | -6 | # |
| # | 1,1,1-Trichloroethane | 0.3476 | 0.3678 | 21.16 | 20 | 6 | # |
| # | Cyclohexane | 0.4234 | 0.4056 | 19.16 | 20 | -4 | # |
| | 1,1-Dichloropropene | 0.3359 | 0.3065 | 18.25 | 20 | -9 | |
| # | Carbon Tetrachloride | 0.2895 | 0.2720 | 18.80 | 20 | -6 | # |
| | Isobutyl Alcohol | 0.4163 | 0.3999 | 480.24 | 500 | -4 | |
| # | Benzene | 0.9994 | 0.9408 | 18.83 | 20 | -6 | # |
| # | 1,2-Dichloroethane | 0.3657 | 0.3410 | 18.65 | 20 | -7 | # |
| | t-Amyl methyl ether | 0.7745 | 0.7025 | 18.14 | 20 | -9 | |
| | n-Heptane | 0.4215 | 0.3857 | 18.30 | 20 | -8 | |
| | n-Butanol | 0.3288 | 0.3210 | 976.27 | 1000 | -2 | |
| # | Trichloroethene | 0.2591 | 0.2482 | 19.16 | 20 | -4 | # |
| # | Methylcyclohexane | 0.4608 | 0.4185 | 18.16 | 20 | -9 | # |
| # | 1,2-Dichloropropane | 0.2627 | 0.2450 | 18.65 | 20 | -7 | # |
| | Dibromomethane | 0.1719 | 0.1584 | 18.43 | 20 | -8 | |
| | 1,4-Dioxane | 0.0901 | 0.0868 | 481.48 | 500 | -4 | |
| | Methyl Methacrylate | 0.2891 | 0.2529 | 17.49 | 20 | -13 | |
| # | Bromodichloromethane | 0.2965 | 0.2659 | 17.93 | 20 | -10 | # |
| | 2-Nitropropane | 0.1154 | 0.1024 | 17.74 | 20 | -11 | |
| | 2-Chloroethyl Vinyl Ether | 0.2251 | 0.2006 | 17.83 | 20 | -11 | |
| # | cis-1,3-Dichloropropene | 0.3876 | 0.3548 | 18.31 | 20 | -8 | # |
| # | 4-Methyl-2-pentanone | 0.4854 | 0.5333 | 109.86 | 100 | 10 | # |
| # | Toluene | 0.8505 | 0.8093 | 19.03 | 20 | -5 | # |
| # | trans-1,3-Dichloropropene | 0.4696 | 0.4346 | 18.51 | 20 | -7 | # |
| | Ethyl Methacrylate | 0.5893 | 0.5318 | 18.05 | 20 | -10 | |
| # | 1,1,2-Trichloroethane | 0.3341 | 0.3110 | 18.62 | 20 | -7 | # |
| # | Tetrachloroethene | 0.3742 | 0.3550 | 18.97 | 20 | -5 | # |
| | 1,3-Dichloropropane | 0.5645 | 0.5201 | 18.43 | 20 | -8 | |
| # | 2-Hexanone | 0.5089 | 0.5656 | 111.13 | 100 | 11 | # |
| # | Dibromochloromethane | 0.3138 | 0.2773 | 17.67 | 20 | -12 | # |
| # | 1,2-Dibromoethane | 0.3606 | 0.3455 | 19.17 | 20 | -4 | # |
| | 1-Chlorohexane | 0.4740 | 0.4305 | 18.17 | 20 | -9 | |
| # | Chlorobenzene | 0.9762 | 0.9101 | 18.65 | 20 | -7 | # |
| | 1,1,1,2-Tetrachloroethane | 0.3012 | 0.2767 | 18.37 | 20 | -8 | |
| # | Ethylbenzene | 1.6361 | 1.5472 | 18.91 | 20 | -5 | # |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 ICV Date: 01/20/17 Time: 12:13

Lab File ID: yj20v01.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | m+p-Xylene | 0.6514 | 0.6141 | 37.70 | 40 | -6 | # |
| # | o-Xylene | 0.6346 | 0.5893 | 18.57 | 20 | -7 | # |
| # | Styrene | 1.0892 | 0.9976 | 18.32 | 20 | -8 | # |
| # | Bromoform | 0.2443 | 0.1976 | 16.17 | 20 | -19 | # |
| # | Isopropylbenzene | 1.6559 | 1.5503 | 18.72 | 20 | -6 | # |
| | Cyclohexanone | 0.0683 | 0.5921 | 4332.19 | 500 | 766 | <- |
| | Bromobenzene | 0.8278 | 0.7464 | 18.03 | 20 | -10 | |
| # | 1,1,2,2-Tetrachloroethane | 1.0084 | 0.9452 | 18.75 | 20 | -6 | # |
| | 1,2,3-Trichloropropane | 0.3427 | 0.3229 | 18.84 | 20 | -6 | |
| | trans-1,4-Dichloro-2-butene | 0.3196 | 0.2991 | 93.59 | 100 | -6 | |
| | n-Propylbenzene | 3.5779 | 3.3475 | 18.71 | 20 | -6 | |
| | 2-Chlorotoluene | 0.7362 | 0.6758 | 18.36 | 20 | -8 | |
| | 4-Chlorotoluene | 0.7815 | 0.7238 | 18.52 | 20 | -7 | |
| | 1,3,5-Trimethylbenzene | 2.6090 | 2.3979 | 18.38 | 20 | -8 | |
| | tert-Butylbenzene | 0.5578 | 0.5196 | 18.63 | 20 | -7 | |
| | Pentachloroethane | 0.4218 | 0.3621 | 17.17 | 20 | -14 | |
| | 1,2,4-Trimethylbenzene | 2.6980 | 2.4766 | 18.36 | 20 | -8 | |
| | sec-Butylbenzene | 3.2796 | 3.0910 | 18.85 | 20 | -6 | |
| # | 1,3-Dichlorobenzene | 1.5794 | 1.4170 | 17.94 | 20 | -10 | # |
| | p-Isopropyltoluene | 2.9139 | 2.6569 | 18.24 | 20 | -9 | |
| # | 1,4-Dichlorobenzene | 1.6257 | 1.4817 | 18.23 | 20 | -9 | # |
| | 1,2,3-Trimethylbenzene | 2.7101 | 2.5327 | 18.69 | 20 | -7 | |
| | Benzyl Chloride | 1.8595 | 1.5543 | 16.72 | 20 | -16 | |
| | 1,3-Diethylbenzene | 1.6969 | 1.5490 | 18.26 | 20 | -9 | |
| | 1,4-Diethylbenzene | 1.7606 | 1.6478 | 18.72 | 20 | -6 | |
| # | 1,2-Dichlorobenzene | 1.5171 | 1.3832 | 18.23 | 20 | -9 | # |
| | n-Butylbenzene | 1.4667 | 1.3463 | 18.36 | 20 | -8 | |
| | 1,2-Diethylbenzene | 1.4239 | 1.3250 | 18.61 | 20 | -7 | |
| # | 1,2-Dibromo-3-chloropropane | 0.2450 | 0.2219 | 18.12 | 20 | -9 | # |
| | 1,3,5-Trichlorobenzene | 1.1113 | 0.9952 | 17.91 | 20 | -10 | |
| # | 1,2,4-Trichlorobenzene | 1.0156 | 0.9092 | 17.91 | 20 | -10 | # |
| | Hexachlorobutadiene | 0.4991 | 0.4356 | 17.45 | 20 | -13 | |
| | Naphthalene | 3.2502 | 3.0181 | 18.57 | 20 | -7 | |
| | 1,2,3-Trichlorobenzene | 0.9234 | 0.8043 | 17.42 | 20 | -13 | |
| | 2-Methylnaphthalene | 1.7504 | 1.3650 | 15.60 | 20 | -22 | |

Average %Drift 15

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

page 3 of 3 FORM VII VOA

# Lancaster Laboratories
## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem2/HP09355.i/17jan20i.b/yj20i07.d
/chem2/HP09355.i/17jan20i.b/yj20i06.d
/chem2/HP09355.i/17jan20i.b/yj20i05.d
/chem2/HP09355.i/17jan20i.b/yj20i04.d
/chem2/HP09355.i/17jan20i.b/yj20i03.d
/chem2/HP09355.i/17jan20i.b/yj20i02.d
/chem2/HP09355.i/17jan20i.b/yj20i01.d

File /chem2/HP09355.i/17jan20i.b/yj20i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP09355.i/17jul21b.b/yl21c05.d

RT Summary

| Internal Standard Name | File ID: yl21c05.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 4.319 | 4.319 | Yes |
| Fluorobenzene | 7.860 | 7.860 | Yes |
| Chlorobenzene-d5 | 11.309 | 11.315 | Yes |
| 1,4-Dichlorobenzene-d4 | 13.189 | 13.195 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: yl21c05.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 166934 | 365897 | 182948 | 731794 | No |
| Fluorobenzene | 1240589 | 1212862 | 606431 | 2425724 | Yes |
| Chlorobenzene-d5 | 950070 | 927146 | 463573 | 1854292 | Yes |
| 1,4-Dichlorobenzene-d4 | 487574 | 512041 | 256020 | 1024082 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 07/21/2017 at 22:42

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/21/17 Time: 19:30

Lab File ID: yl21c05.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Dichlorodifluoromethane | 0.3139 | 0.3461 | 55.11 | 50 | 10 | # |
| # Chloromethane | 0.3381 | 0.3291 | 48.68 | 50 | -3 | # |
| 1,3-Butadiene | 0.3363 | 0.2534 | 37.68 | 50 | -25 | <- |
| # Vinyl Chloride | 0.3178 | 0.3031 | 47.68 | 50 | -5 | # |
| # Bromomethane | 0.2253 | 0.2021 | 44.85 | 50 | -10 | # |
| # Chloroethane | 0.1838 | 0.1763 | 47.95 | 50 | -4 | # |
| n-Pentane | 0.4182 | 0.3958 | 47.32 | 50 | -5 | |
| # Trichlorofluoromethane | 0.3738 | 0.4120 | 55.12 | 50 | 10 | # |
| Freon 123a | 0.2626 | 0.2732 | 52.01 | 50 | 4 | |
| Acrolein | 1.5232 | 2.1292 | 698.90 | 500 | 40 | <- |
| # 1,1-Dichloroethene | 0.1887 | 0.1895 | 50.20 | 50 | 0 | # |
| # 1,1-Dichloroethene(2) | 0.0971 | 0.1034 | 53.24 | 50 | 6 | # |
| # Acetone | 0.7242 | 0.9453 | 130.53 | 100 | 31 | #<- |
| # Freon 113 | 0.1941 | 0.2049 | 52.78 | 50 | 6 | # |
| 2-Propanol | 0.5774 | 0.5237 | 226.72 | 250 | -9 | |
| Methyl Iodide | 0.3585 | 0.3334 | 46.50 | 50 | -7 | |
| # Carbon Disulfide | 0.5938 | 0.6711 | 56.50 | 50 | 13 | # |
| Allyl Chloride | 0.3990 | 0.3642 | 45.64 | 50 | -9 | |
| # Methyl Acetate | 0.3663 | 0.2246 | 30.65 | 50 | -39 | #<- |
| # Methylene Chloride | 0.2387 | 0.2417 | 50.62 | 50 | 1 | # |
| t-Butyl alcohol | 1.1368 | 1.0534 | 231.64 | 250 | -7 | |
| Acrylonitrile | 0.1758 | 0.1079 | 30.67 | 50 | -39 | <- |
| # trans-1,2-Dichloroethene | 0.2282 | 0.2343 | 51.32 | 50 | 3 | # |
| # Methyl Tertiary Butyl Ether | 0.7852 | 0.7048 | 44.88 | 50 | -10 | # |
| n-Hexane | 0.3580 | 0.3770 | 52.65 | 50 | 5 | |
| # 1,1-Dichloroethane | 0.4122 | 0.4494 | 54.52 | 50 | 9 | # |
| di-Isopropyl ether | 0.8264 | 0.7985 | 48.31 | 50 | -3 | |
| 2-Chloro-1,3-butadiene | 0.3881 | 0.3932 | 50.66 | 50 | 1 | |
| Ethyl t-butyl ether | 0.7739 | 0.6944 | 44.86 | 50 | -10 | |
| # cis-1,2-Dichloroethene | 0.2626 | 0.2641 | 50.28 | 50 | 1 | # |
| # 2-Butanone | 0.2731 | 0.1496 | 54.75 | 100 | -45 | #<- |
| 2,2-Dichloropropane | 0.3237 | 0.3459 | 53.44 | 50 | 7 | |
| Propionitrile | 1.2777 | 1.5897 | 311.04 | 250 | 24 | <- |
| Methacrylonitrile | 0.1865 | 0.1304 | 87.39 | 125 | -30 | <- |
| Bromochloromethane | 0.1386 | 0.1331 | 48.00 | 50 | -4 | |
| Tetrahydrofuran | 1.1460 | 1.4655 | 127.87 | 100 | 28 | <- |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/21/17 Time: 19:30

Lab File ID: yl21c05.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Chloroform | 0.4152 | 0.4386 | 52.82 | 50 | 6 | # |
| # 1,1,1-Trichloroethane | 0.3476 | 0.3589 | 51.63 | 50 | 3 | # |
| # Cyclohexane | 0.4234 | 0.4318 | 50.99 | 50 | 2 | # |
| # Cyclohexane(2) | 0.3478 | 0.3515 | 50.54 | 50 | 1 | # |
| # Cyclohexane(3) | 0.1286 | 0.1287 | 50.04 | 50 | 0 | # |
| 1,1-Dichloropropene | 0.3359 | 0.3623 | 53.94 | 50 | 8 | |
| # Carbon Tetrachloride | 0.2895 | 0.3146 | 54.35 | 50 | 9 | # |
| Isobutyl Alcohol | 0.4163 | 0.4360 | 654.48 | 625 | 5 | |
| # Benzene | 0.9994 | 1.0378 | 51.92 | 50 | 4 | # |
| # 1,2-Dichloroethane | 0.3657 | 0.3768 | 51.52 | 50 | 3 | # |
| # 1,2-Dichloroethane(2) | 0.0297 | 0.0316 | 53.29 | 50 | 7 | #<- |
| t-Amyl methyl ether | 0.7745 | 0.6925 | 44.71 | 50 | -11 | |
| n-Heptane | 0.4215 | 0.4335 | 51.43 | 50 | 3 | |
| n-Butanol | 0.3288 | 0.2717 | 1032.79 | 1250 | -17 | |
| # Trichloroethene | 0.2591 | 0.2667 | 51.45 | 50 | 3 | # |
| # Methylcyclohexane | 0.4608 | 0.4545 | 49.31 | 50 | -1 | # |
| # Methylcyclohexane(2) | 0.2082 | 0.2028 | 48.70 | 50 | -3 | # |
| # 1,2-Dichloropropane | 0.2627 | 0.2945 | 56.03 | 50 | 12 | # |
| Dibromomethane | 0.1719 | 0.1741 | 50.62 | 50 | 1 | |
| 1,4-Dioxane | 0.0901 | 0.0635 | 440.44 | 625 | -30 | <- |
| Methyl Methacrylate | 0.2891 | 0.2344 | 40.54 | 50 | -19 | |
| # Bromodichloromethane | 0.2965 | 0.3348 | 56.46 | 50 | 13 | # |
| 2-Nitropropane | 0.1154 | 0.0772 | 66.93 | 100 | -33 | <- |
| 2-Chloroethyl Vinyl Ether | 0.2251 | 0.1494 | 33.18 | 50 | -34 | <- |
| # cis-1,3-Dichloropropene | 0.3876 | 0.4355 | 56.17 | 50 | 12 | # |
| # 4-Methyl-2-pentanone | 0.4854 | 0.3472 | 71.54 | 100 | -28 | #<- |
| # Toluene | 0.8505 | 0.8847 | 52.01 | 50 | 4 | # |
| # trans-1,3-Dichloropropene | 0.4696 | 0.5266 | 56.07 | 50 | 12 | # |
| Ethyl Methacrylate | 0.5893 | 0.5481 | 46.50 | 50 | -7 | |
| # 1,1,2-Trichloroethane | 0.3341 | 0.3370 | 50.44 | 50 | 1 | # |
| # Tetrachloroethene | 0.3742 | 0.3393 | 45.34 | 50 | -9 | # |
| 1,3-Dichloropropane | 0.5645 | 0.5996 | 53.11 | 50 | 6 | |
| # 2-Hexanone | 0.5089 | 0.3521 | 69.19 | 100 | -31 | #<- |
| # Dibromochloromethane | 0.3138 | 0.3355 | 53.46 | 50 | 7 | # |
| # 1,2-Dibromoethane | 0.3606 | 0.3416 | 47.37 | 50 | -5 | # |
| 1-Chlorohexane | 0.4740 | 0.4811 | 50.75 | 50 | 2 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/21/17 Time: 19:30

Lab File ID: yl21c05.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Chlorobenzene | 0.9762 | 1.0289 | 52.70 | 50 | 5 | # |
| 1,1,1,2-Tetrachloroethane | 0.3012 | 0.3289 | 54.60 | 50 | 9 | |
| # Ethylbenzene | 1.6361 | 1.7500 | 53.48 | 50 | 7 | # |
| # m+p-Xylene | 0.6514 | 0.6891 | 105.78 | 100 | 6 | # |
| # o-Xylene | 0.6346 | 0.6483 | 51.08 | 50 | 2 | # |
| # Styrene | 1.0892 | 1.1263 | 51.70 | 50 | 3 | # |
| # Bromoform | 0.2443 | 0.2051 | 41.98 | 50 | -16 | # |
| # Isopropylbenzene | 1.6559 | 1.6462 | 49.71 | 50 | -1 | # |
| Bromobenzene | 0.8278 | 0.8129 | 49.10 | 50 | -2 | |
| # 1,1,2,2-Tetrachloroethane | 1.0084 | 0.9811 | 48.64 | 50 | -3 | # |
| 1,2,3-Trichloropropane | 0.3427 | 0.2820 | 41.15 | 50 | -18 | |
| trans-1,4-Dichloro-2-butene | 0.3196 | 0.2450 | 95.80 | 125 | -23 | <- |
| n-Propylbenzene | 3.5779 | 4.0922 | 57.19 | 50 | 14 | |
| 2-Chlorotoluene | 0.7362 | 0.8014 | 54.42 | 50 | 9 | |
| 4-Chlorotoluene | 0.7815 | 0.8608 | 55.08 | 50 | 10 | |
| 1,3,5-Trimethylbenzene | 2.6090 | 2.8588 | 54.79 | 50 | 10 | |
| tert-Butylbenzene | 0.5578 | 0.5500 | 49.29 | 50 | -1 | |
| Pentachloroethane | 0.4218 | 0.4445 | 52.69 | 50 | 5 | |
| 1,2,4-Trimethylbenzene | 2.6980 | 3.0081 | 55.75 | 50 | 11 | |
| sec-Butylbenzene | 3.2796 | 3.5632 | 54.32 | 50 | 9 | |
| # 1,3-Dichlorobenzene | 1.5794 | 1.6092 | 50.94 | 50 | 2 | # |
| p-Isopropyltoluene | 2.9139 | 3.1054 | 53.29 | 50 | 7 | |
| # 1,4-Dichlorobenzene | 1.6257 | 1.6459 | 50.62 | 50 | 1 | # |
| 1,2,3-Trimethylbenzene | 2.7101 | 3.0448 | 56.18 | 50 | 12 | |
| Benzyl Chloride | 1.8595 | 1.8605 | 50.02 | 50 | 0 | |
| 1,3-Diethylbenzene | 1.6969 | 1.8905 | 55.70 | 50 | 11 | |
| 1,4-Diethylbenzene | 1.7606 | 1.9613 | 55.70 | 50 | 11 | |
| # 1,2-Dichlorobenzene | 1.5171 | 1.5168 | 49.99 | 50 | 0 | # |
| n-Butylbenzene | 1.4667 | 1.6394 | 55.89 | 50 | 12 | |
| 1,2-Diethylbenzene | 1.4239 | 1.5583 | 54.72 | 50 | 9 | |
| # 1,2-Dibromo-3-chloropropane | 0.2450 | 0.1656 | 33.80 | 50 | -32 | #<- |
| 1,3,5-Trichlorobenzene | 1.1113 | 0.9758 | 43.90 | 50 | -12 | |
| # 1,2,4-Trichlorobenzene | 1.0156 | 0.8375 | 41.23 | 50 | -18 | # |
| Hexachlorobutadiene | 0.4991 | 0.3874 | 38.81 | 50 | -22 | <- |
| Naphthalene | 3.2502 | 2.2238 | 34.21 | 50 | -32 | <- |
| 1,2,3-Trichlorobenzene | 0.9234 | 0.7317 | 39.62 | 50 | -21 | <- |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09355 Calibration Date: 07/21/17 Time: 19:30

Lab File ID: yl21c05.d Init. Calib. Date(s): 01/20/17 01/20/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | 1.7504 | 0.6658 | 19.02 | 50 | -62 | <- |
| Dibromofluoromethane | 0.2332 | 0.2343 | 50.24 | 50 | 0 | |
| Dibromofluoromethane(2) | 0.2386 | 0.2381 | 49.88 | 50 | 0 | |
| 1,2-Dichloroethane-d4 | 0.0611 | 0.0592 | 48.44 | 50 | -3 | |
| 1,2-Dichloroethane-d4(2) | 0.3075 | 0.3091 | 50.26 | 50 | 1 | |
| 1,2-Dichloroethane-d4(3) | 0.0388 | 0.0368 | 47.42 | 50 | -5 | |
| Toluene-d8 | 1.2918 | 1.3165 | 50.96 | 50 | 2 | |
| Toluene-d8(2) | 0.8345 | 0.8425 | 50.48 | 50 | 1 | |
| 4-Bromofluorobenzene | 0.4845 | 0.4928 | 50.86 | 50 | 2 | |
| 4-Bromofluorobenzene(2) | 0.4131 | 0.3561 | 43.10 | 50 | -14 | |

Average %Drift 11

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem2/HP09355.i/17jul21b.b/yl21c06.d
Report Date: 07/23/2017 15:29

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09355.i
Client ID: SECC050
Lab Sample ID: SECC050
Sublist used: 17639.sub

Injection Date and Time: 22-JUL-2017 05:55
Initial Calibration Date(s): 20-JAN-2017 20-JAN-2017
Initial Calibration Time(s): 09:18 15:26
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Benzene | 0.99939 | 1.03438 | 0.01 | 3.5 | 50.0 |
| Toluene | 0.85051 | 0.88460 | 0.01 | 4.0 | 50.0 |
| Ethylbenzene | 1.63607 | 1.73674 | 0.01 | 6.2 | 50.0 |
| m+p-Xylene | 0.65143 | 0.68573 | 0.01 | 5.3 | 50.0 |
| o-Xylene | 0.63457 | 0.65804 | 0.01 | 3.7 | 50.0 |
| Xylene (Total) | 0.64581 | 0.67650 | 0.01 | 4.8 | 50.0 |
| **Surrogate Standards** | **ICAL Avg. RRF** | **SECC RRF** | **Min. RRF** | **% Diff.** | **Max. %Diff.** |
| Dibromofluoromethane | 0.23318 | 0.22881 | 0.01 | -1.9 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06114 | 0.05848 | 0.01 | -4.4 | 20.5 |
| Toluene-d8 | 1.29178 | 1.33766 | 0.01 | 3.6 | 20.5 |
| 4-Bromofluorobenzene | 0.48448 | 0.49107 | 0.01 | 1.4 | 20.5 |

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR189___

Lab File ID (Standard): yl21c05.d Date Analyzed: 07/21/17

Instrument ID: HP09355 Time Analyzed: 19:30

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 166934 | 4.319 | 1240589 | 7.860 | 950070 | 11.309 | 487574 | 13.189 |
| UPPER LIMIT | 333868 | 4.819 | 2481178 | 8.360 | 1900140 | 11.809 | 975148 | 13.689 |
| LOWER LIMIT | 83467 | 3.819 | 620294 | 7.360 | 475035 | 10.809 | 243787 | 12.689 |
| LAB SAMPLE ID | | | | | | | | |
| 01 LCSY06 | 194105 | 4.337 | 1357216 | 7.866 | 1026596 | 11.309 | 521011 | 13.195 |
| 02 VBLKY06 | 177313 | 4.319 | 1196141 | 7.853 | 885762 | 11.309 | 427112 | 13.189 |
| 03 9109781 | 162231 | 4.355 | 1124892 | 7.878 | 853020 | 11.321 | 408392 | 13.201 |
| 04 9109784 | 171778 | 4.355 | 1235096 | 7.878 | 923105 | 11.315 | 449402 | 13.201 |
| 05 9109785 | 174234 | 4.356 | 1235406 | 7.878 | 935441 | 11.315 | 450480 | 13.195 |
| 06 9109788 | 159781 | 4.331 | 1109815 | 7.866 | 839112 | 11.315 | 403241 | 13.195 |
| 07 9112127 | 175044 | 4.361 | 1283766 | 7.878 | 959820 | 11.315 | 463383 | 13.195 |
| 08 9112128 | 157676 | 4.343 | 1154824 | 7.866 | 868853 | 11.315 | 419562 | 13.195 |
| 09 9109771 | 137110 | 4.349 | 1250005 | 7.872 | 978064 | 11.315 | 494045 | 13.195 |
| 10 9109772MS | 171402 | 4.331 | 1385841 | 7.860 | 1065334 | 11.309 | 538380 | 13.189 |
| 11 9109773MSD | 196183 | 4.337 | 1600966 | 7.866 | 1216078 | 11.309 | 609375 | 13.195 |
| 12 9109779 | 203768 | 4.349 | 1701286 | 7.866 | 1291327 | 11.315 | 637659 | 13.195 |
| 13 9109779DL | 231019 | 4.331 | 1641495 | 7.866 | 1224682 | 11.309 | 604110 | 13.189 |
| 14 9109782 | 271267 | 4.356 | 1777612 | 7.872 | 1313919 | 11.315 | 639014 | 13.195 |
| 15 9109783 | 249926 | 4.337 | 1653747 | 7.866 | 1234394 | 11.309 | 593798 | 13.195 |
| 16 9109786 | 223288 | 4.331 | 1545679 | 7.866 | 1146428 | 11.309 | 553092 | 13.189 |
| 17 9109787 | 283089 | 4.368 | 1965091 | 7.878 | 1464114 | 11.315 | 700586 | 13.189 |
| 18 9112123 | 218514 | 4.325 | 1471032 | 7.860 | 1107698 | 11.309 | 528505 | 13.189 |
| 19 9112125 | 244544 | 4.349 | 1749326 | 7.872 | 1295568 | 11.309 | 619009 | 13.189 |
| 20 9112126 | 252887 | 4.355 | 1810074 | 7.872 | 1339730 | 11.315 | 641758 | 13.195 |
| 21 SECC050 | 236427 | 4.343 | 1691665 | 7.866 | 1262128 | 11.315 | 630593 | 13.195 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

# Sample Data

# Volatiles by GC/MS

**Fraction: Volatiles by GC/MS**

| 11997: BTEX 8260C Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Benzene | .5 | 1 | 1 | ug/l |
| Toluene | .5 | 1 | 1 | ug/l |
| Ethylbenzene | .5 | 1 | 1 | ug/l |
| Xylene (Total) | .5 | 1 | 1 | ug/l |

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s82.d Injection date and time: **22-JUL-2017 04:48**
Data file Sample Info. Line: 18901;9112123;1;0;;KR189;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 05:04 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.325(-0.006) | 451 | 65 | 218514 ( 31) | 250.00 | |
| 66) Fluorobenzene | 7.860( 0.000) | 1032 | 96 | 1471032 ( 19) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1107698 ( 17) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.189( 0.000) | 1908 | 152 | 528505 ( 8) | 50.00 | |

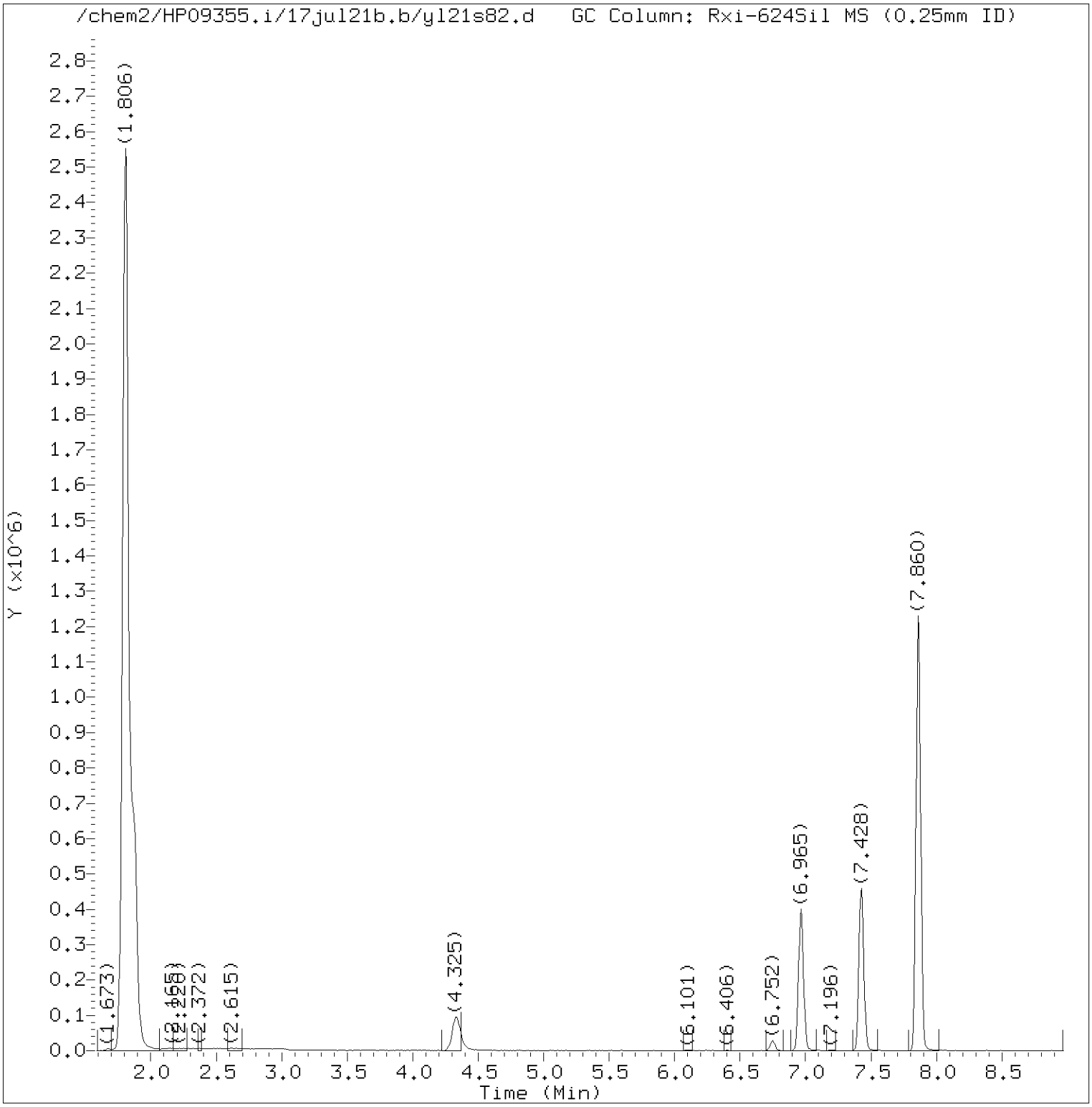
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.965(-0.001) | 113 | 350827 | 51.139 | 102% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428(-0.001) | 102 | 89498 | 49.756 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.861( 0.000) | 98 | 1469396 | 51.345 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 524729 | 48.889 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.934( 0.000) | 92 | 12742 | 0.676 | 0.68 | | J | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:59. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

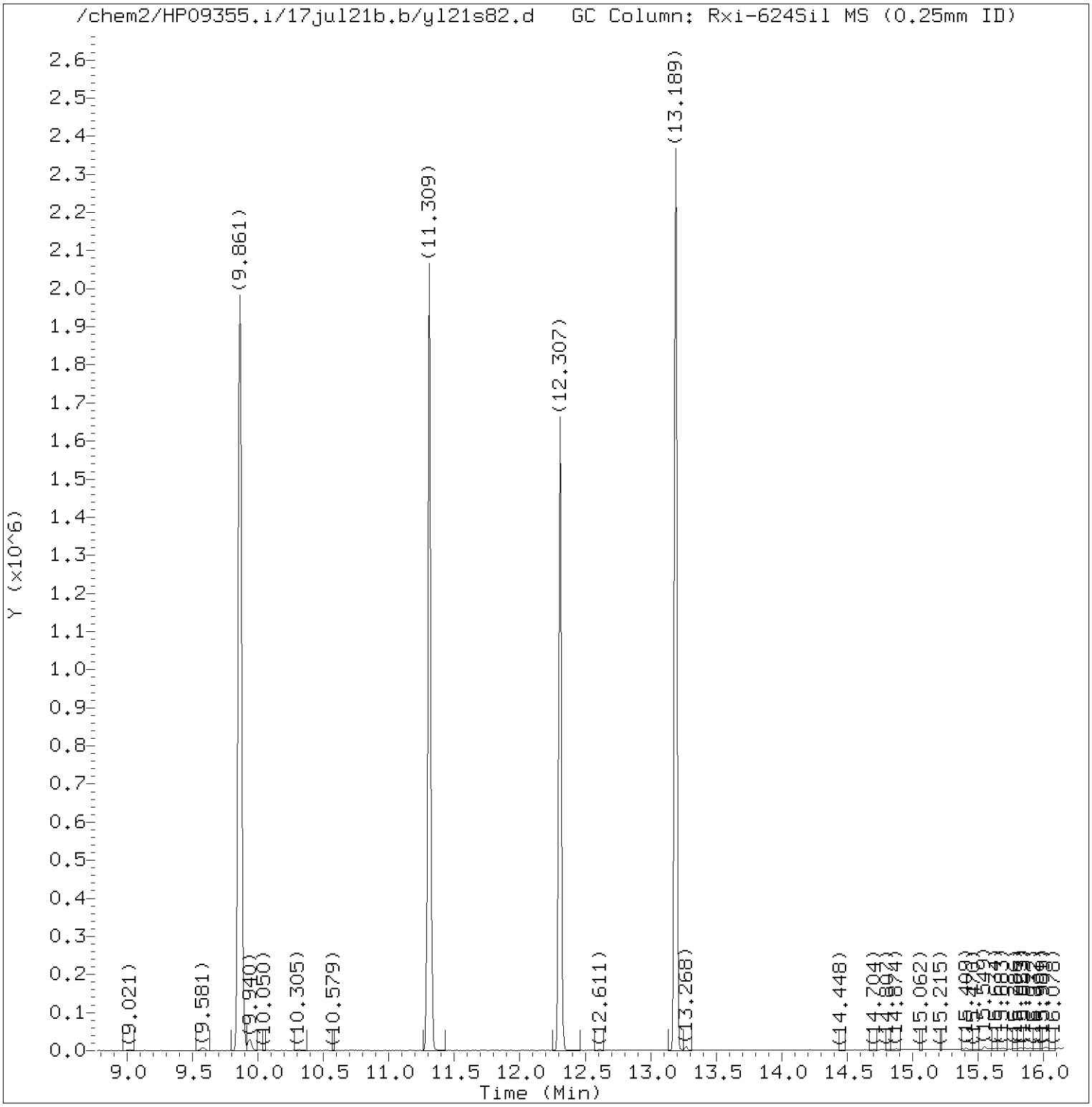
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s82.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:48 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:04 Automation

Sample Name: 18901 Lab Sample ID: 9112123

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s82.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:48 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:04 Automation

Sample Name: 18901 Lab Sample ID: 9112123

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s82.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:48 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:04 Automation

Sample Name: 18901 Lab Sample ID: 9112123

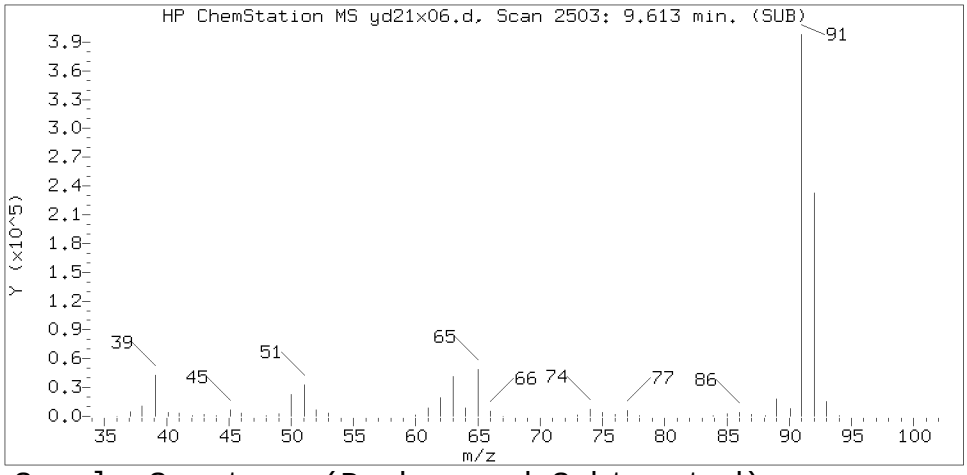
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.325 | 65 | 218514 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 350827 | 51.139 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 89498 | 49.756 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1471032 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.861 | 98 | 1469396 | 51.345 |
| 88) Toluene | (3) | 9.934 | 92 | 12742 | 0.676 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1107698 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 524729 | 48.889 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 528505 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

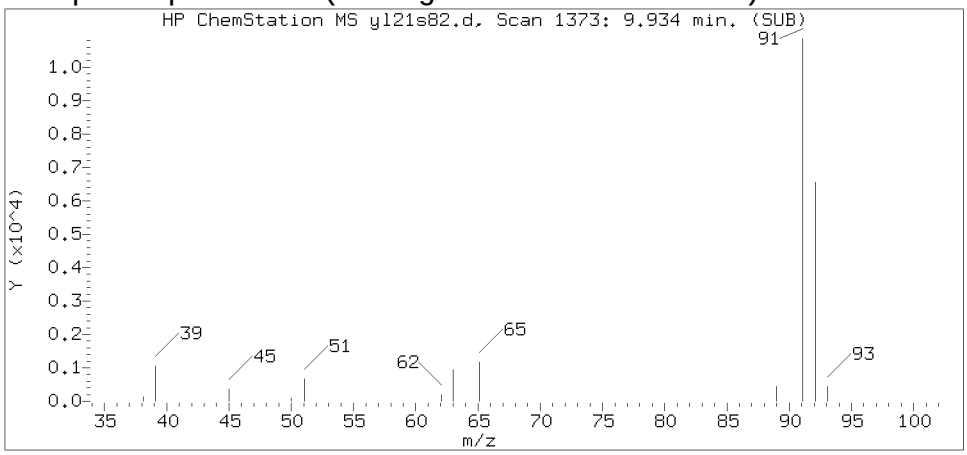


Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

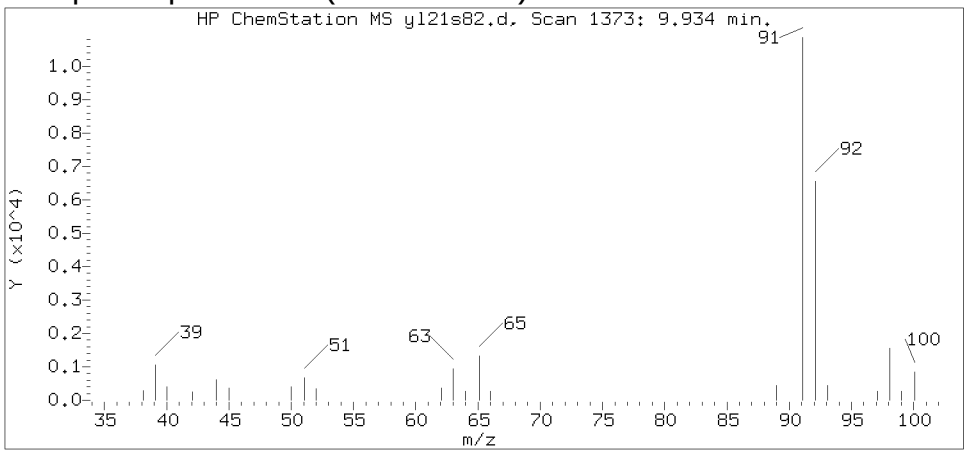
Reference Standard Spectrum for Toluene

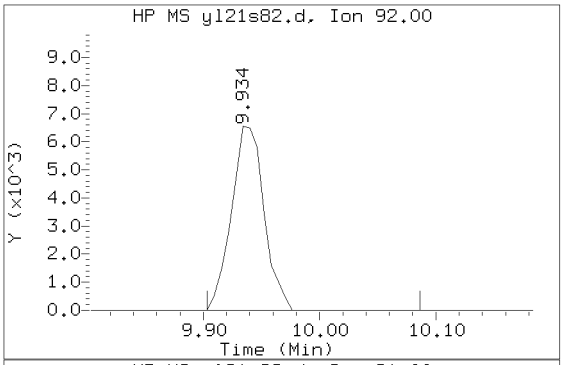


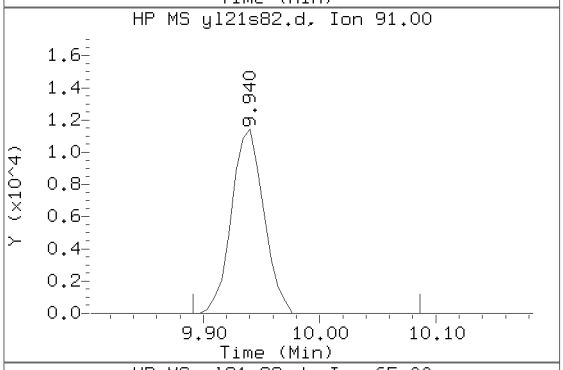

Sample Spectrum (Background Subtracted)

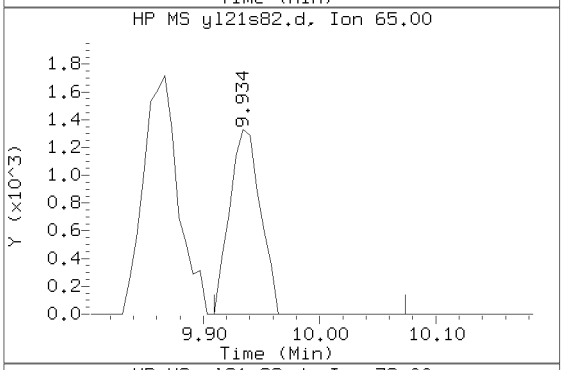


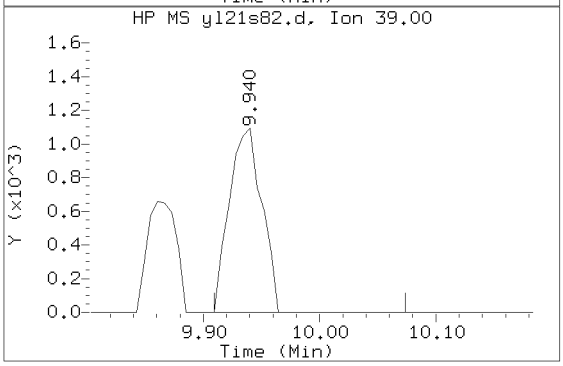

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s82.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 04:48  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:04 Automation

Sample Name: 18901  Lab Sample ID: 9112123

Compound Number : 88
Compound Name : Toluene
Scan Number : 1373
Retention Time (minutes): 9.934
Relative Retention Time : 0.00054
Quant Ion : 92.00
Area (flag) : 12742
On-Column Amount (ng) : 0.6763

Digitally signed by Linda C. Pape on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s83.d Injection date and time: **22-JUL-2017 05:10**
Data file Sample Info. Line: 18903;9112125;1;0;;KR189;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 05:26 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.349(-0.030) | 455 | 65 | 244544 ( 46) | 250.00 | |
| 66) Fluorobenzene | 7.872(-0.012) | 1034 | 96 | 1749326 ( 41) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1295568 ( 36) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.189( 0.000) | 1908 | 152 | 619009 ( 27) | 50.00 | |

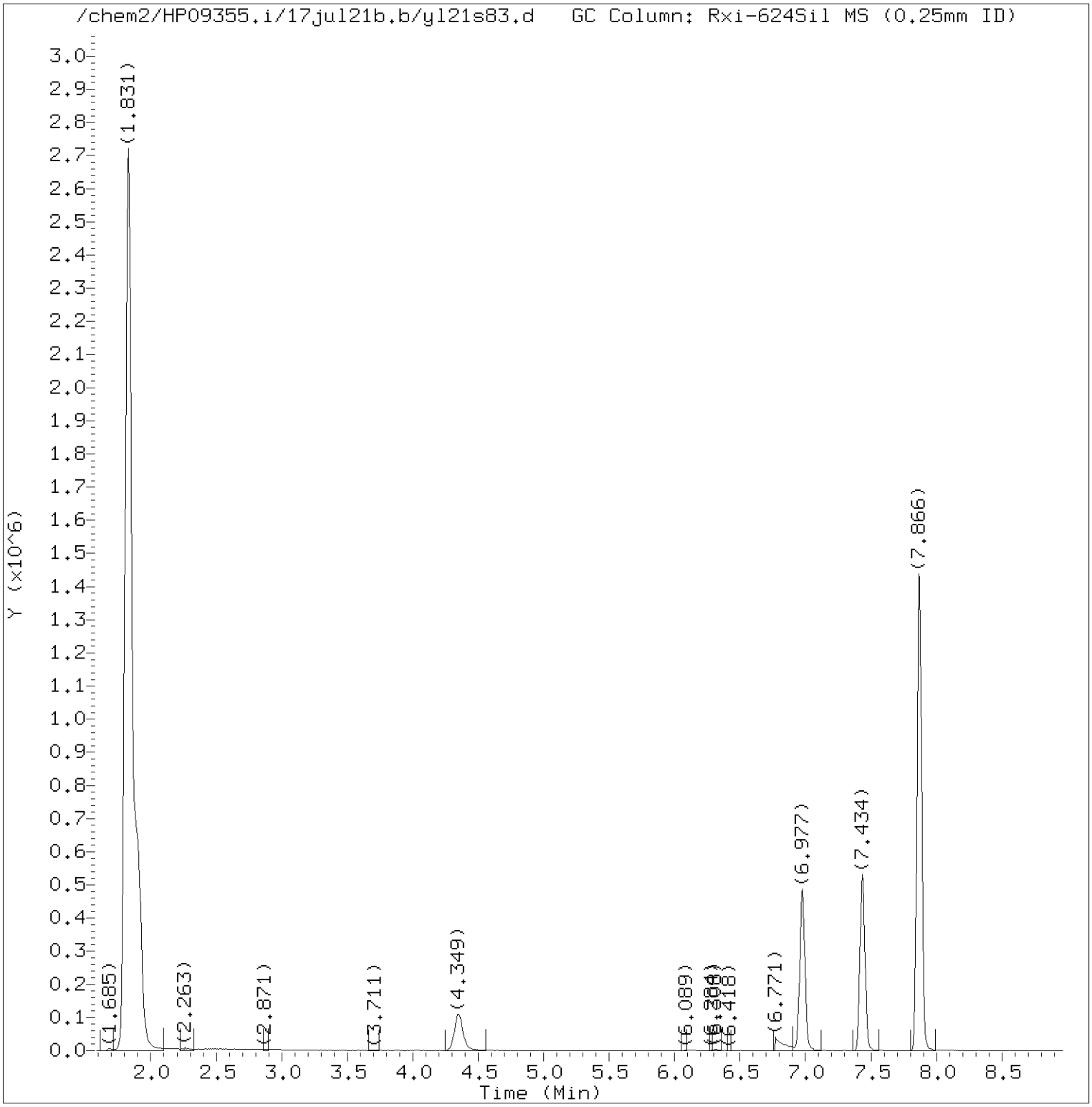
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.977(-0.001) | 113 | 425714 | 52.183 | 104% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.434( 0.000) | 102 | 104358 | 48.787 | 98% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867(-0.001) | 98 | 1736172 | 51.870 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 617029 | 49.152 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.946(-0.000) | 92 | 14071 | 0.639 | 0.64 | | J | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:59. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

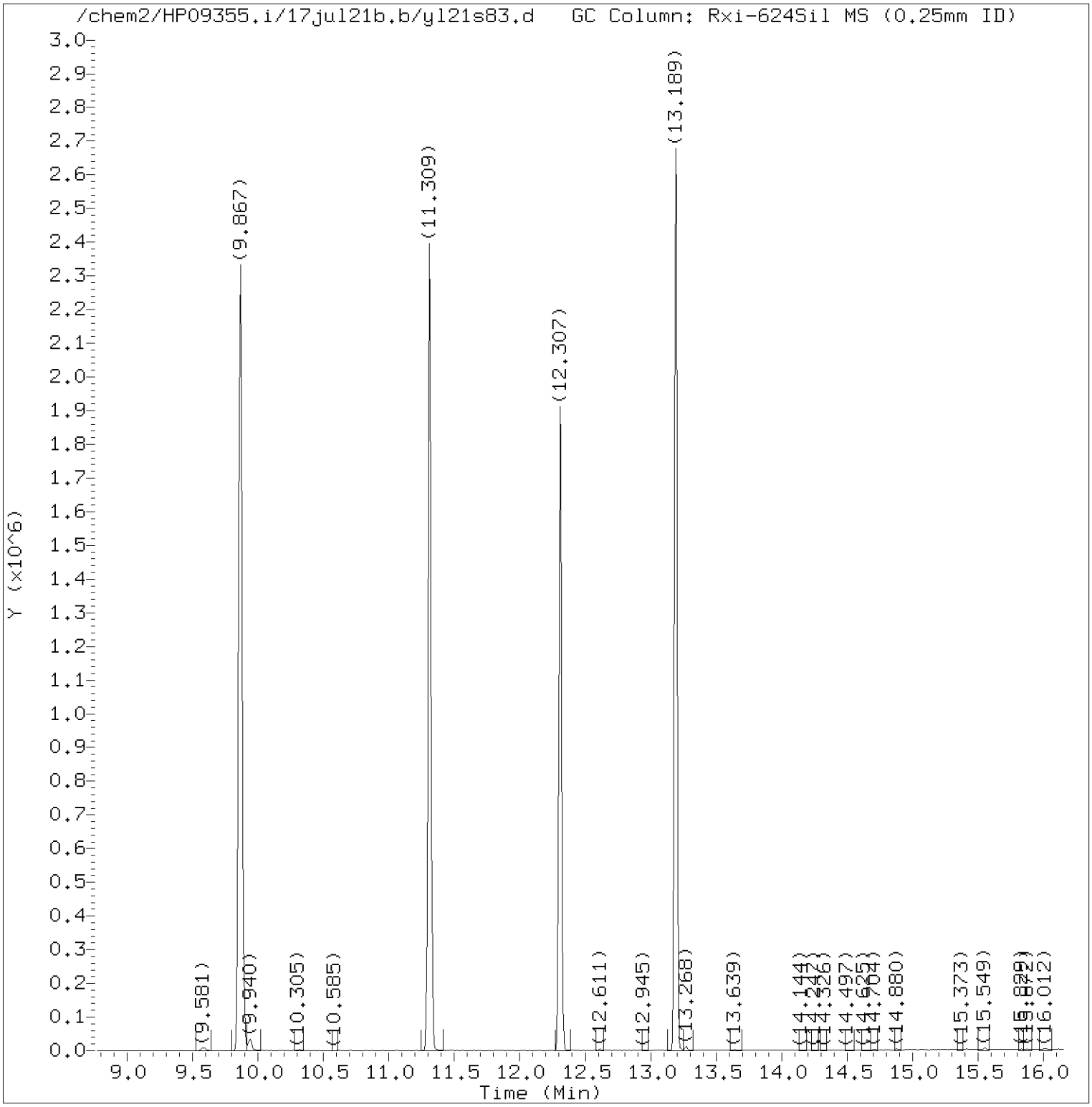
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s83.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:10 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:26 Automation

Sample Name: 18903 Lab Sample ID: 9112125

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s83.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:10 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:26 Automation

Sample Name: 18903 Lab Sample ID: 9112125

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s83.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:10 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:26 Automation

Sample Name: 18903 Lab Sample ID: 9112125

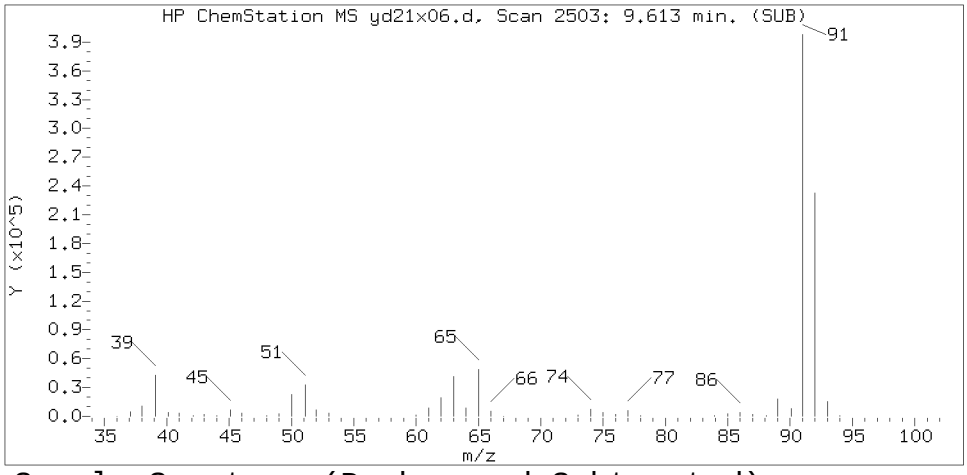
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.349 | 65 | 244544 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.977 | 113 | 425714 | 52.183 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 102 | 104358 | 48.787 |
| 66)*Fluorobenzene | (2) | 7.872 | 96 | 1749326 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1736172 | 51.870 |
| 88) Toluene | (3) | 9.946 | 92 | 14071 | 0.639 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1295568 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 617029 | 49.152 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 619009 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

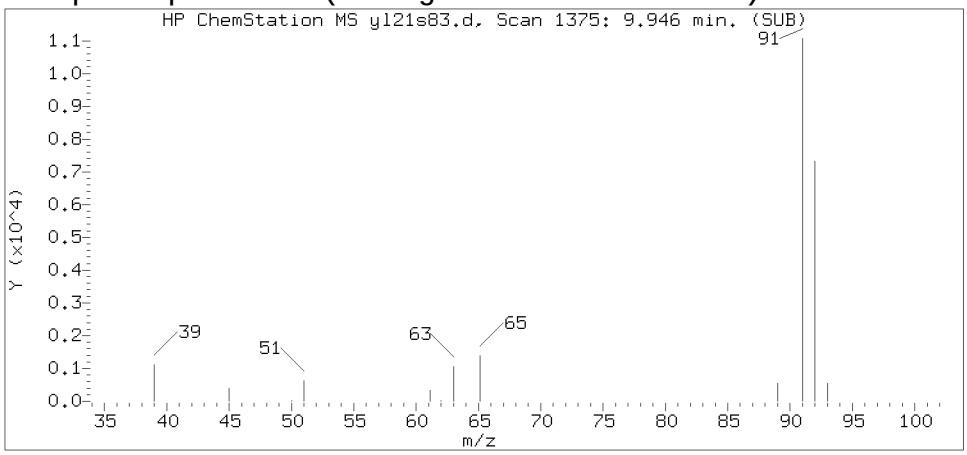


Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

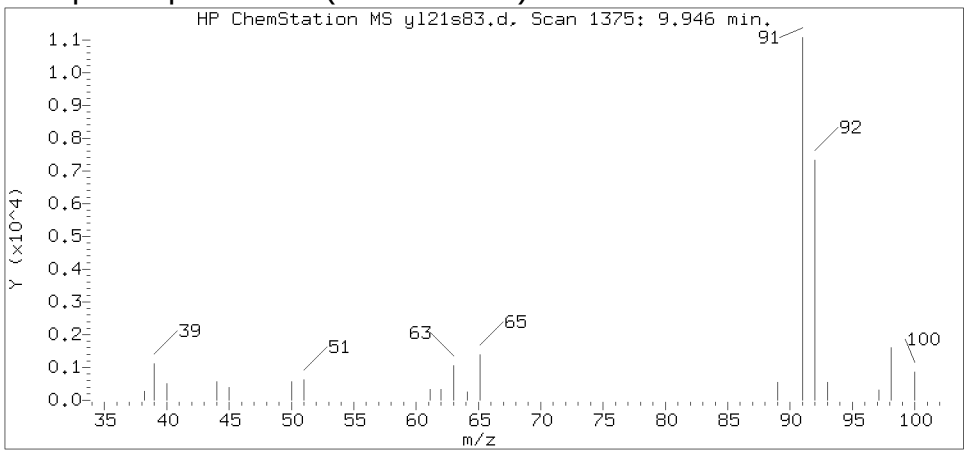
Reference Standard Spectrum for Toluene

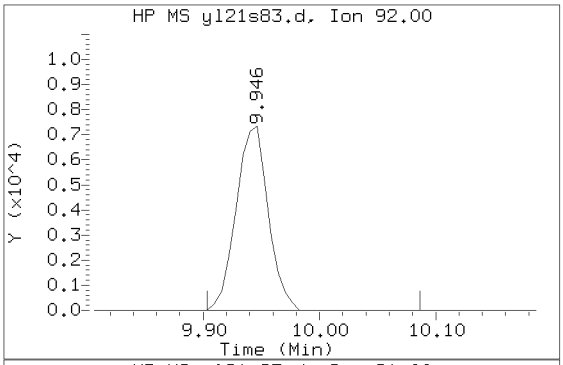


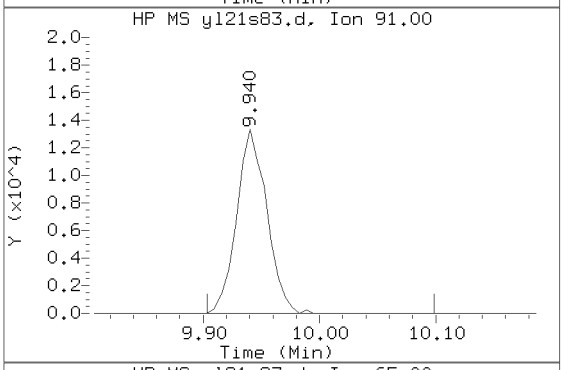

Sample Spectrum (Background Subtracted)

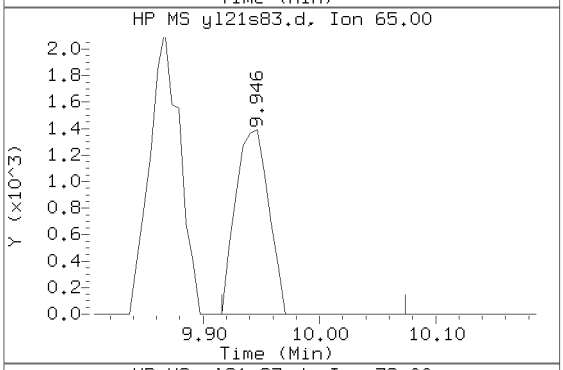


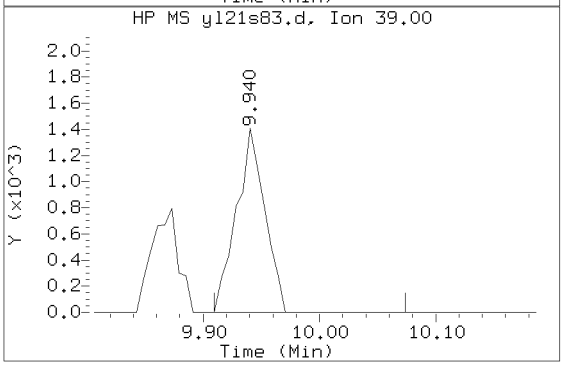

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s83.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:10  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:26 Automation

Sample Name: 18903  Lab Sample ID: 9112125

Compound Number : 88
Compound Name : Toluene
Scan Number : 1375
Retention Time (minutes): 9.946
Relative Retention Time :-0.00054
Quant Ion : 92.00
Area (flag) : 14071
On-Column Amount (ng) : 0.6385

Digitally signed by Linda C. Pape on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s84.d Injection date and time: **22-JUL-2017 05:33**
Data file Sample Info. Line: 18904;9112126;1;0;;KR189;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 05:48 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.355(-0.036) | 456 | 65 | 252887 ( 51) | 250.00 | |
| 66) Fluorobenzene | 7.872(-0.012) | 1034 | 96 | 1810074 ( 46) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 1339730 ( 41) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 641758 ( 32) | 50.00 | |

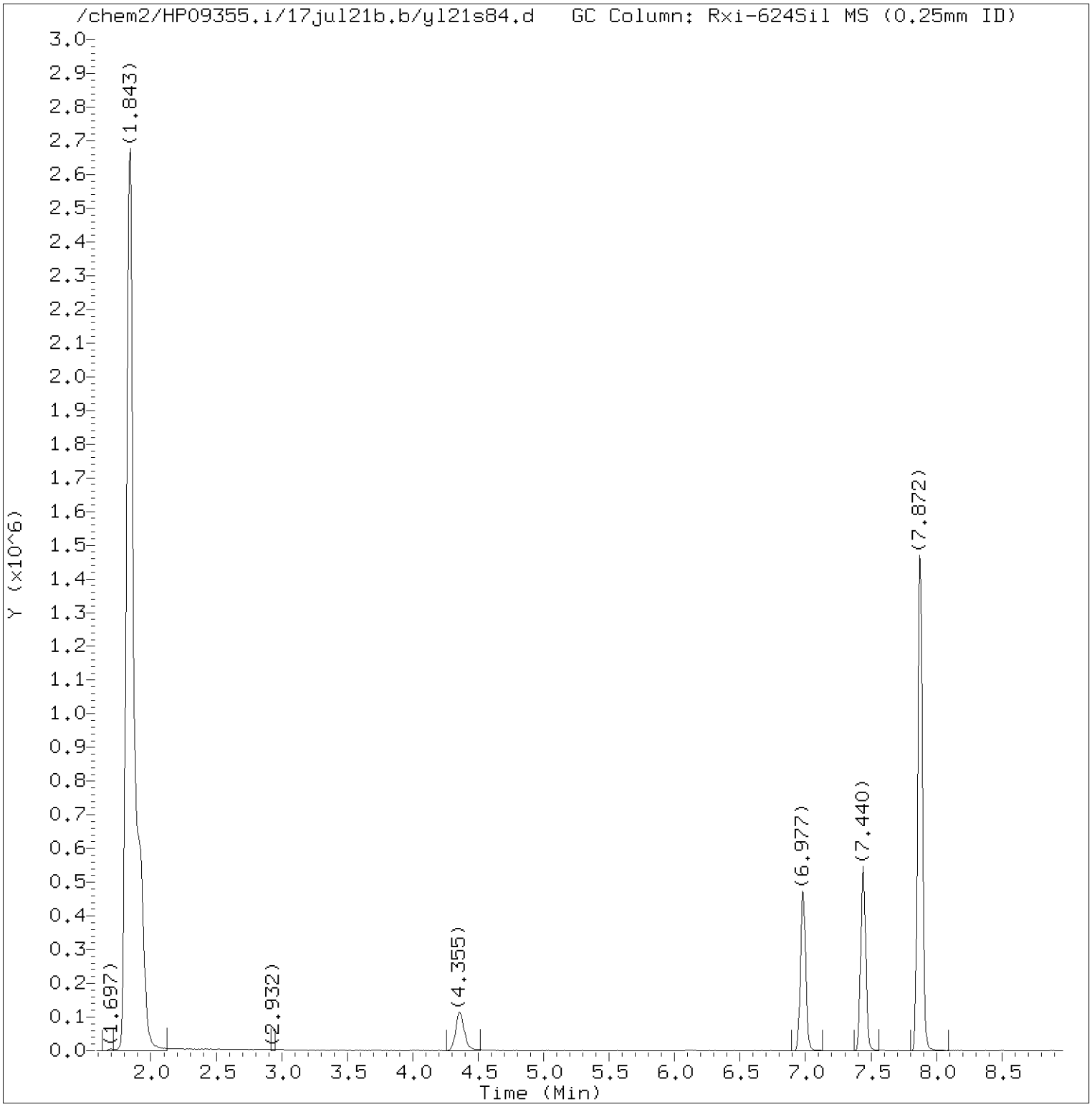
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.977(-0.001) | 113 | 425541 | 50.411 | 101% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.440(-0.001) | 102 | 108736 | 49.128 | 98% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1789242 | 51.693 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 637328 | 49.096 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.946(-0.000) | 92 | 34427 | 1.511 | 1.51 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:59. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

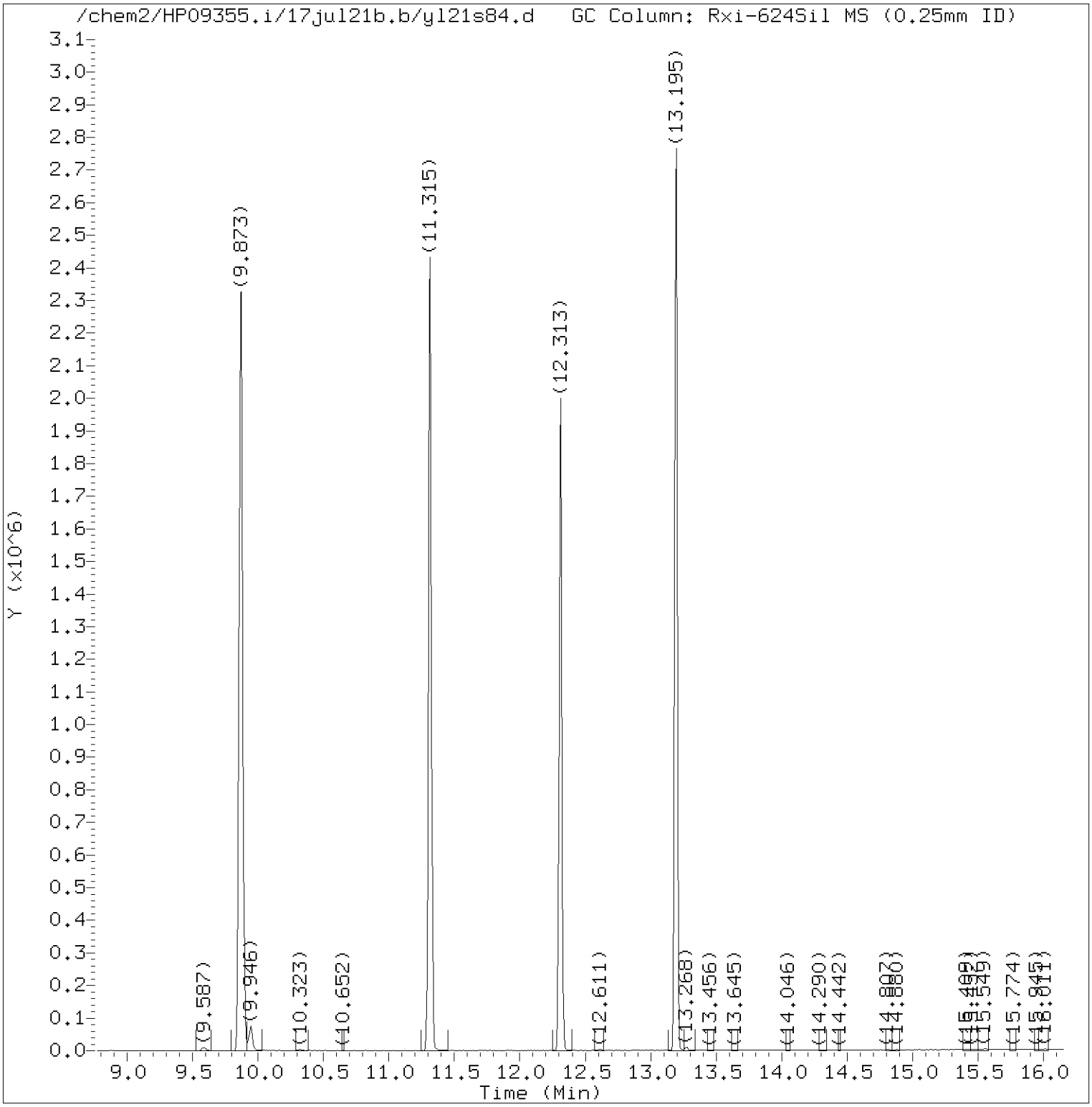
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s84.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:33 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:48 Automation

Sample Name: 18904 Lab Sample ID: 9112126

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s84.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:33 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:48 Automation

Sample Name: 18904 Lab Sample ID: 9112126

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s84.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:33 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:48 Automation

Sample Name: 18904 Lab Sample ID: 9112126

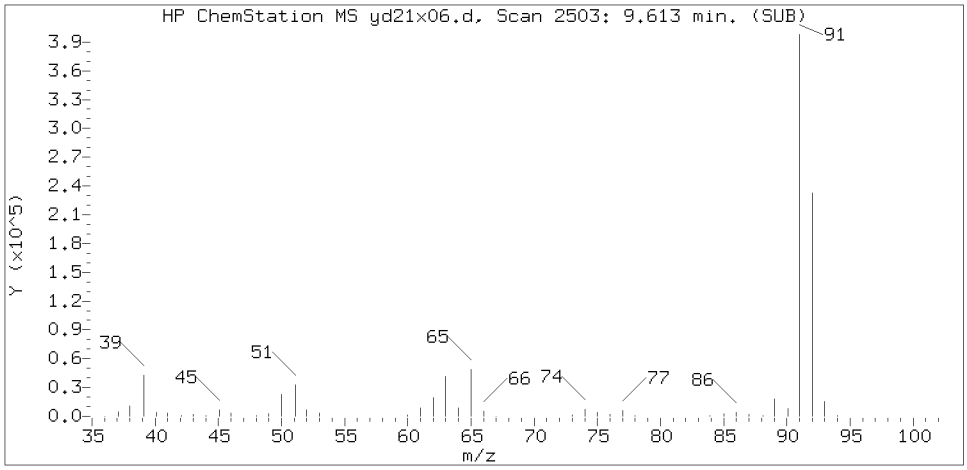
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.355 | 65 | 252887 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.977 | 113 | 425541 | 50.411 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.440 | 102 | 108736 | 49.128 |
| 66)*Fluorobenzene | (2) | 7.872 | 96 | 1810074 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1789242 | 51.693 |
| 88) Toluene | (3) | 9.946 | 92 | 34427 | 1.511 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1339730 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 637328 | 49.096 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 641758 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

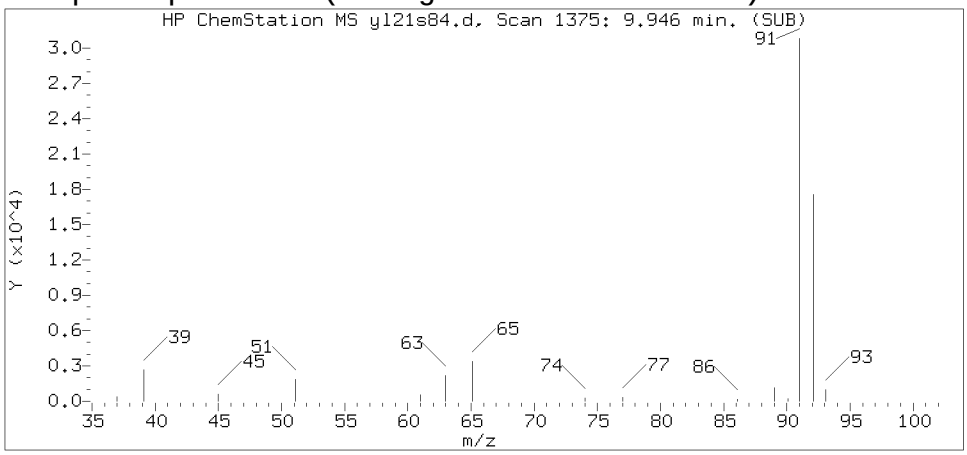


Digitally signed by Linda C. Pape
on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

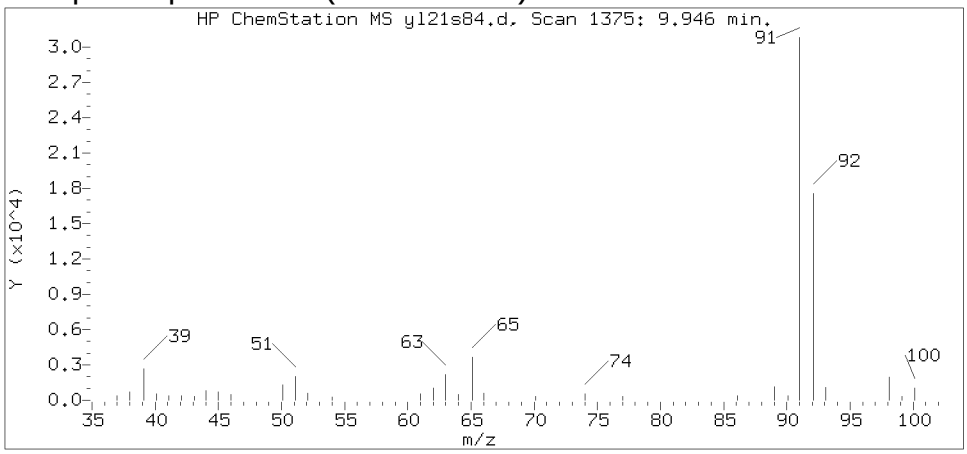
Reference Standard Spectrum for Toluene

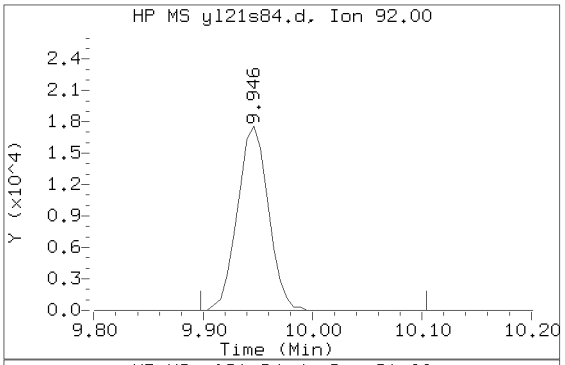


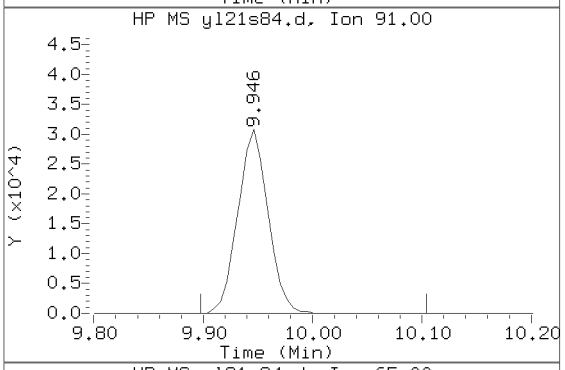

Sample Spectrum (Background Subtracted)

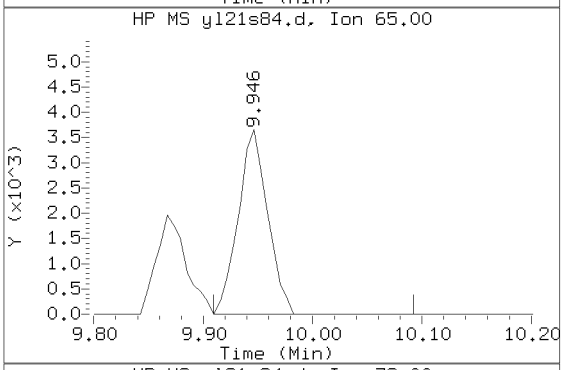


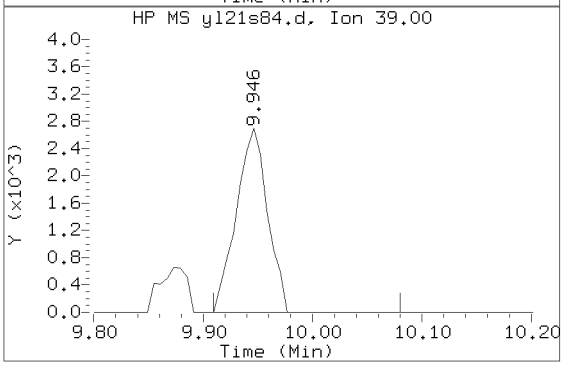

Sample Spectrum (Unaltered)




Data File: /chem2/HP09355.i/17jul21b.b/yl21s84.d  Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:33  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 05:48 Automation

Sample Name: 18904  Lab Sample ID: 9112126

Compound Number : 88
Compound Name : Toluene
Scan Number : 1375
Retention Time (minutes): 9.946
Relative Retention Time :-0.00006
Quant Ion : 92.00
Area (flag) : 34427
On-Column Amount (ng) : 1.5107

Digitally signed by Linda C. Pape on 07/24/2017 at 10:59.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s71.d Injection date and time: **22-JUL-2017 00:44**
Data file Sample Info. Line: 18905;9112127;1;0;;KR189;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 01:00 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.361(-0.043) | 457 | 65 | 175044 ( 5) | 250.00 | |
| 66) Fluorobenzene | 7.878(-0.018) | 1035 | 96 | 1283766 ( 3) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 959820 ( 1) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 463383 ( -5) | 50.00 | |

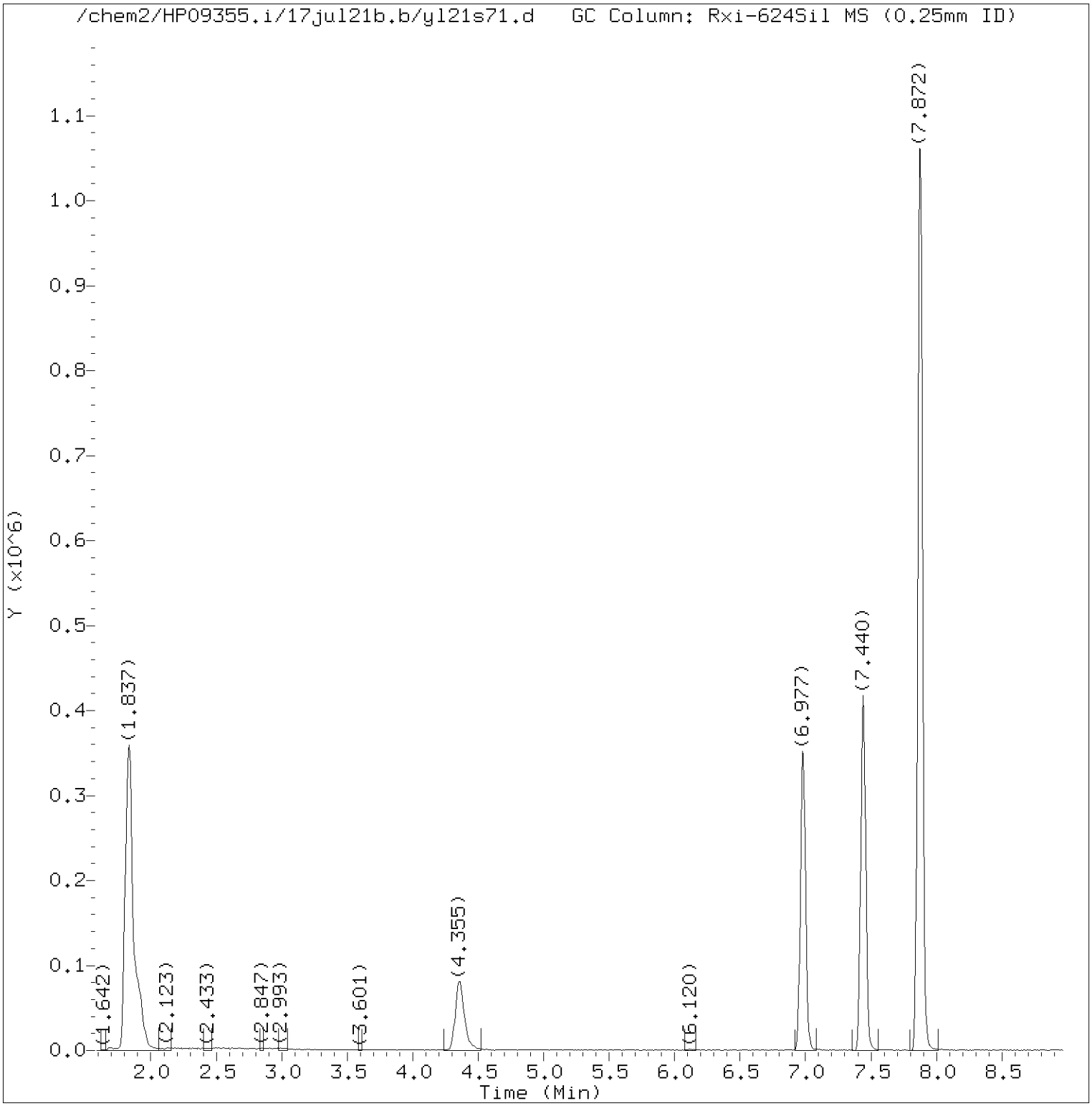
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.977( 0.000) | 113 | 312222 | 52.150 | 104% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.440( 0.000) | 102 | 77085 | 49.106 | 98% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.873(-0.001) | 98 | 1270602 | 51.239 | 102% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 445891 | 47.944 | 96% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:52. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

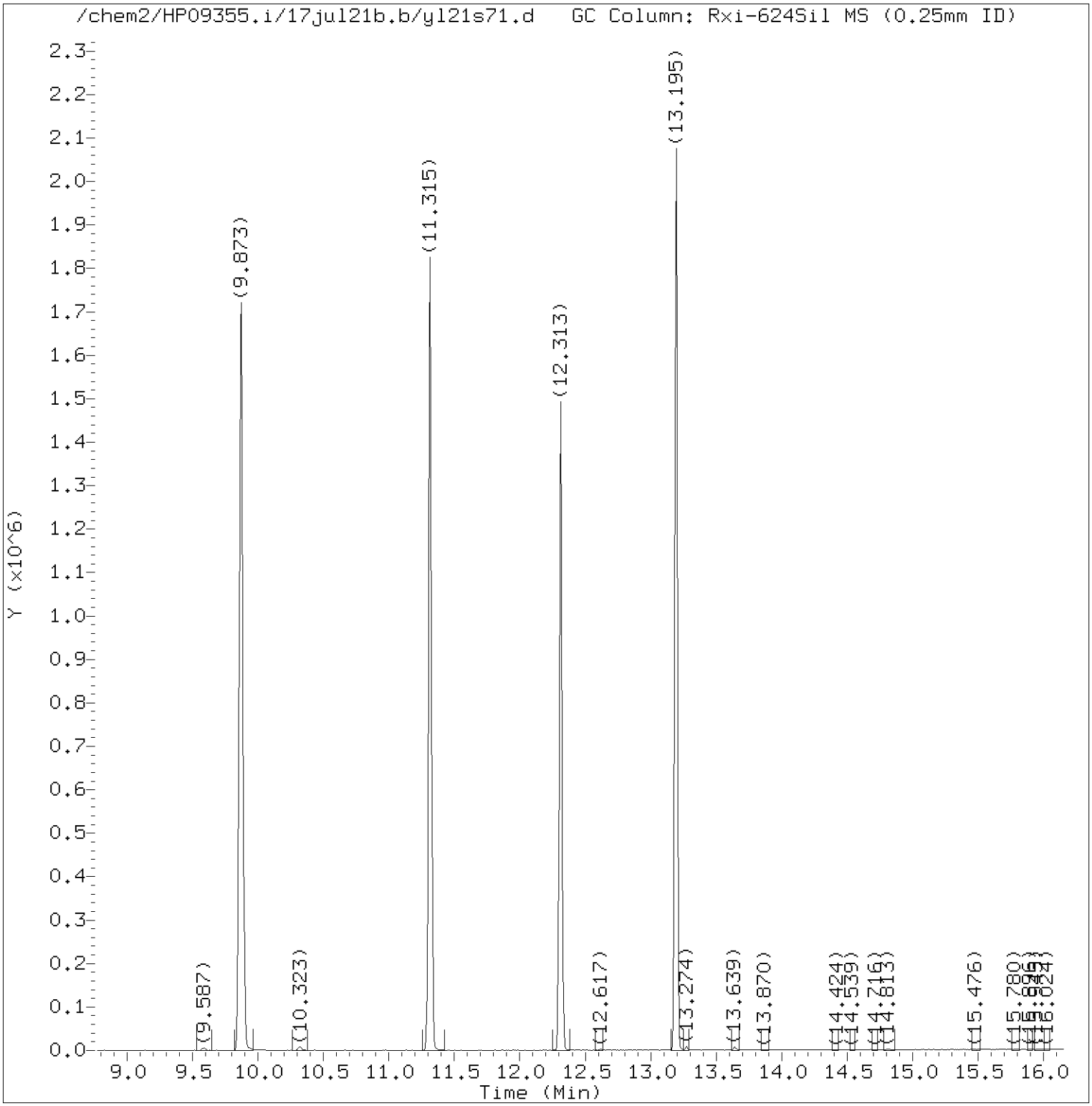
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s71.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:44 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:00 Automation

Sample Name: 18905 Lab Sample ID: 9112127

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:52.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s71.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:44 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:00 Automation

Sample Name: 18905 Lab Sample ID: 9112127

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:52.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s71.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 00:44 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:00 Automation

Sample Name: 18905 Lab Sample ID: 9112127

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.361 | 65 | 175044 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.977 | 113 | 312222 | 52.150 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.440 | 102 | 77085 | 49.106 |
| 66)*Fluorobenzene | (2) | 7.878 | 96 | 1283766 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1270602 | 51.239 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 959820 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 445891 | 47.944 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 463383 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/24/2017 at 10:52.
Target 3.5 esignature user ID: lcp00895

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s72.d Injection date and time: **22-JUL-2017 01:06**
Data file Sample Info. Line: 18906;9112128;1;0;;KR189;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 01:22 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.343(-0.024) | 454 | 65 | 157676 ( -6) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1154824 ( -7) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 868853 ( -9) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 419562 ( -14) | 50.00 | |

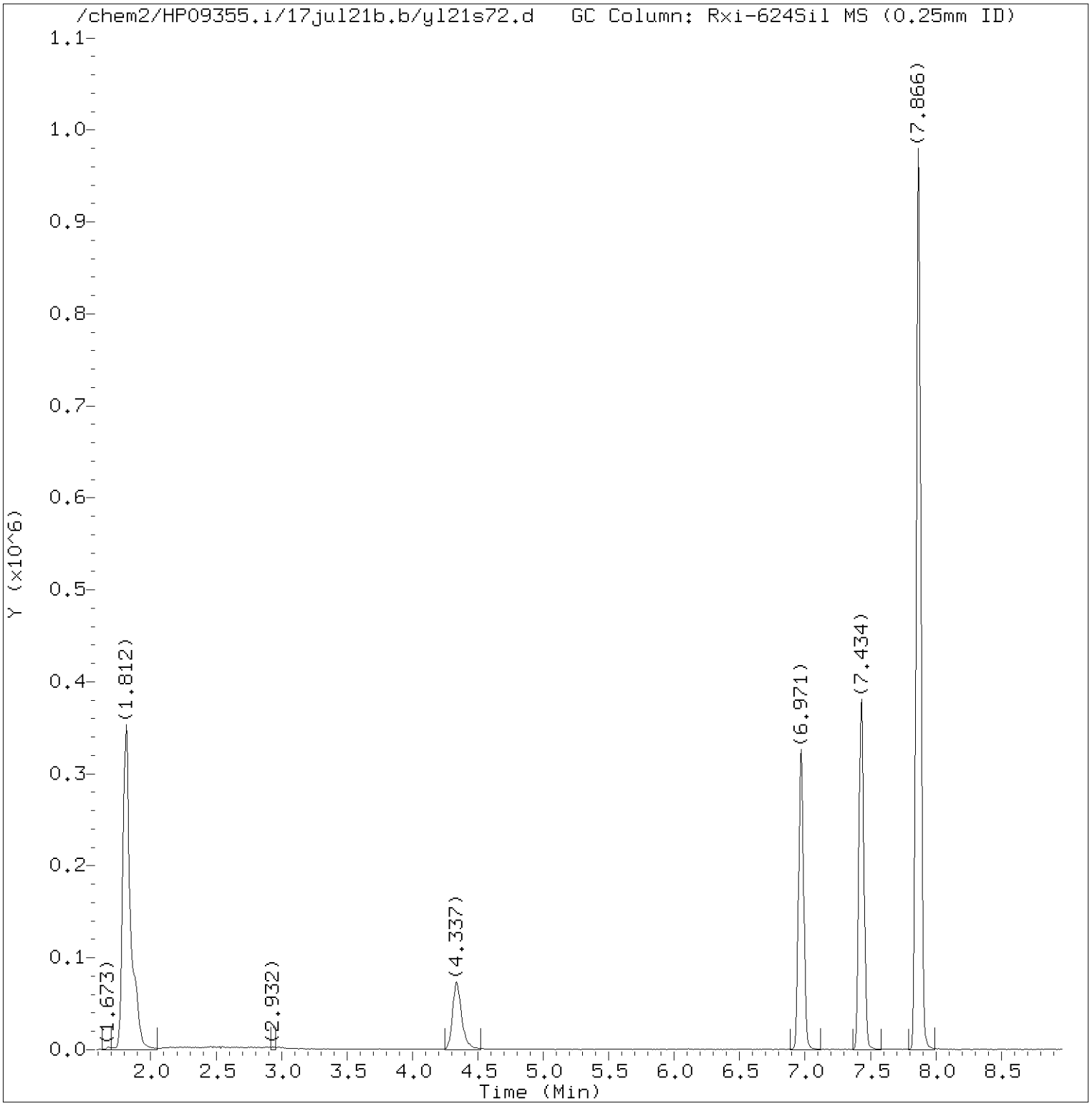
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.971(-0.001) | 113 | 286047 | 53.113 | 106% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.434(-0.001) | 102 | 72084 | 51.048 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1151427 | 51.294 | 103% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.313( 0.000) | 95 | 401264 | 47.663 | 95% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 10:52. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

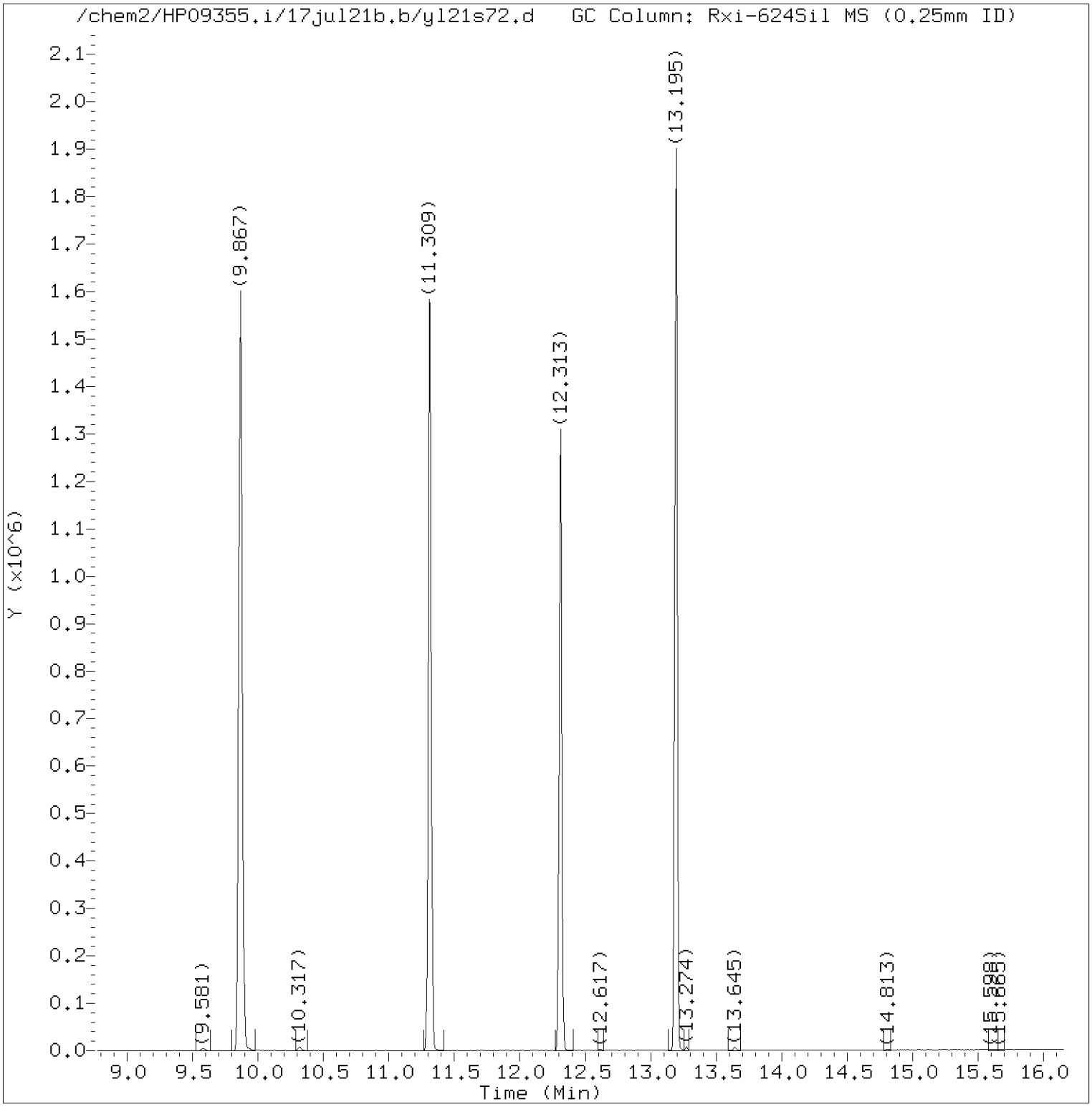
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s72.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:06 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:22 Automation

Sample Name: 18906 Lab Sample ID: 9112128

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:52.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s72.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:06 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:22 Automation

Sample Name: 18906 Lab Sample ID: 9112128

Digitally signed by Linda C. Pape
on 07/24/2017 at 10:52.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s72.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 01:06 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 01:22 Automation

Sample Name: 18906 Lab Sample ID: 9112128

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.343 | 65 | 157676 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 286047 | 53.113 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 102 | 72084 | 51.048 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1154824 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1151427 | 51.294 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 868853 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 401264 | 47.663 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 419562 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/24/2017 at 10:52.
Target 3.5 esignature user ID: lcp00895

# Standards Data

# Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09355 **HP #20**

Data Directory Path is - C:\MSDCHEM\1\DATA\17JAN20I\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| BWK03231 | YJ20T01.D | 50NGBFB | 01/20/2017 | 08:37 | | |
| BWK03231 | YJ20X01.D | CBLK | 01/20/2017 | 08:55 | | |
| BWK03231 | YJ20I01.D | VSTD300 | 01/20/2017 | 09:18 | | |
| BWK03231 | YJ20I02.D | VSTD100 | 01/20/2017 | 09:39 | | |
| BWK03231 | YJ20I03.D | VSTD050 | 01/20/2017 | 10:01 | | |
| BWK03231 | YJ20I04.D | VSTD020 | 01/20/2017 | 10:23 | | |
| BWK03231 | YJ20I05.D | VSTD010 | 01/20/2017 | 10:45 | | |
| BWK03231 | YJ20I06.D | VSTD004 | 01/20/2017 | 11:07 | | |
| BWK03231 | YJ20I07.D | VSTD001 | 01/20/2017 | 11:29 | | |
| BWK03231 | YJ20M01.D | MDL0.5 | 01/20/2017 | 11:51 | | |
| BWK03231 | YJ20V01.D | YLGICV | 01/20/2017 | 12:13 | | |
| BWK03231 | YJ20X11.D | CBLK | 01/20/2017 | 13:15 | | |
| BWK03231 | YJ20I11.D | VSTD300 | 01/20/2017 | 13:37 | | |
| BWK03231 | YJ20I12.D | VSTD100 | 01/20/2017 | 13:58 | | |
| BWK03231 | YJ20I13.D | VSTD050 | 01/20/2017 | 14:20 | | |
| BWK03231 | YJ20I14.D | VSTD020 | 01/20/2017 | 14:42 | | |
| BWK03231 | YJ20I15.D | VSTD010 | 01/20/2017 | 15:04 | | |
| BWK03231 | YJ20I16.D | VSTD004 | 01/20/2017 | 15:26 | | |
| BWK03231 | YJ20M11.D | MDL001 | 01/20/2017 | 15:48 | | |
| BWK03231 | YJ20V11.D | YSMICV | 01/20/2017 | 16:10 | | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09355 **HP #20**

Data Directory Path is - C:\MSDCHEM\1\DATA\17JUL21b\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| pth10165 | YL21T10.D | 50NGBFB | 07/21/2017 | 18:45 | | |
| pth10165 | YL21X10.D | VBLKY05 | 07/21/2017 | 19:07 | Y172023AA | |
| pth10165 | YL21C05.D | VSTD050 | 07/21/2017 | 19:30 | Y172023AA | |
| pth10165 | YL21S61.D | LCSY05 | 07/21/2017 | 19:52 | Y172023AA | |
| pth10165 | YL21S62.D | LCDY05 | 07/21/2017 | 20:17 | Y172023AA | |
| pth10165 | YL21B10.D | VBLKY05 | 07/21/2017 | 20:40 | Y172023AA | |
| pth10165 | YL21S63.D | 9110418 | 07/21/2017 | 21:34 | Y172023AA | |
| pth10165 | YL21S64.D | 9111691 | 07/21/2017 | 21:56 | Y172023AA | |
| pth10165 | YL21S65.D | 9111692 | 07/21/2017 | 22:18 | Y172023AA | |
| pth10165 | YL21S67.D | 9109781 | 07/21/2017 | 23:16 | Y172023AA | |
| pth10165 | YL21S68.D | 9109784 | 07/21/2017 | 23:38 | Y172023AA | |
| pth10165 | YL21S69.D | 9109785 | 07/22/2017 | 00:00 | Y172023AA | |
| pth10165 | YL21S70.D | 9109788 | 07/22/2017 | 00:22 | Y172023AA | |
| pth10165 | YL21S71.D | 9112127 | 07/22/2017 | 00:44 | Y172023AA | |
| pth10165 | YL21S72.D | 9112128 | 07/22/2017 | 01:06 | Y172023AA | |
| pth10165 | YL21S73.D | 9109771 | 07/22/2017 | 01:28 | Y172023AA | |
| pth10165 | YL21S74.D | 9109772MS | 07/22/2017 | 01:51 | Y172023AA | |
| pth10165 | YL21S75.D | 9109773MSD | 07/22/2017 | 02:13 | Y172023AA | |
| pth10165 | YL21S76.D | 9109779 | 07/22/2017 | 02:35 | Y172023AA | |
| pth10165 | YL21S77.D | 9109779DL | 07/22/2017 | 02:57 | Y172023AA | 10 |
| pth10165 | YL21S78.D | 9109782 | 07/22/2017 | 03:19 | Y172023AA | |
| pth10165 | YL21S79.D | 9109783 | 07/22/2017 | 03:41 | Y172023AA | |
| pth10165 | YL21S80.D | 9109786 | 07/22/2017 | 04:03 | Y172023AA | |
| pth10165 | YL21S81.D | 9109787 | 07/22/2017 | 04:26 | Y172023AA | |
| pth10165 | YL21S82.D | 9112123 | 07/22/2017 | 04:48 | Y172023AA | |
| pth10165 | YL21S83.D | 9112125 | 07/22/2017 | 05:10 | Y172023AA | |
| pth10165 | YL21S84.D | 9112126 | 07/22/2017 | 05:33 | Y172023AA | |
| pth10165 | YL21C06.D | SECC050 | 07/22/2017 | 05:55 | Y172023AA | |

Data File: /chem2/HP09355.i/17jan20i.b/yj20t01.d

Page 1

Date : 20-JAN-2017 08:37

Client ID: BFBAUG22-16

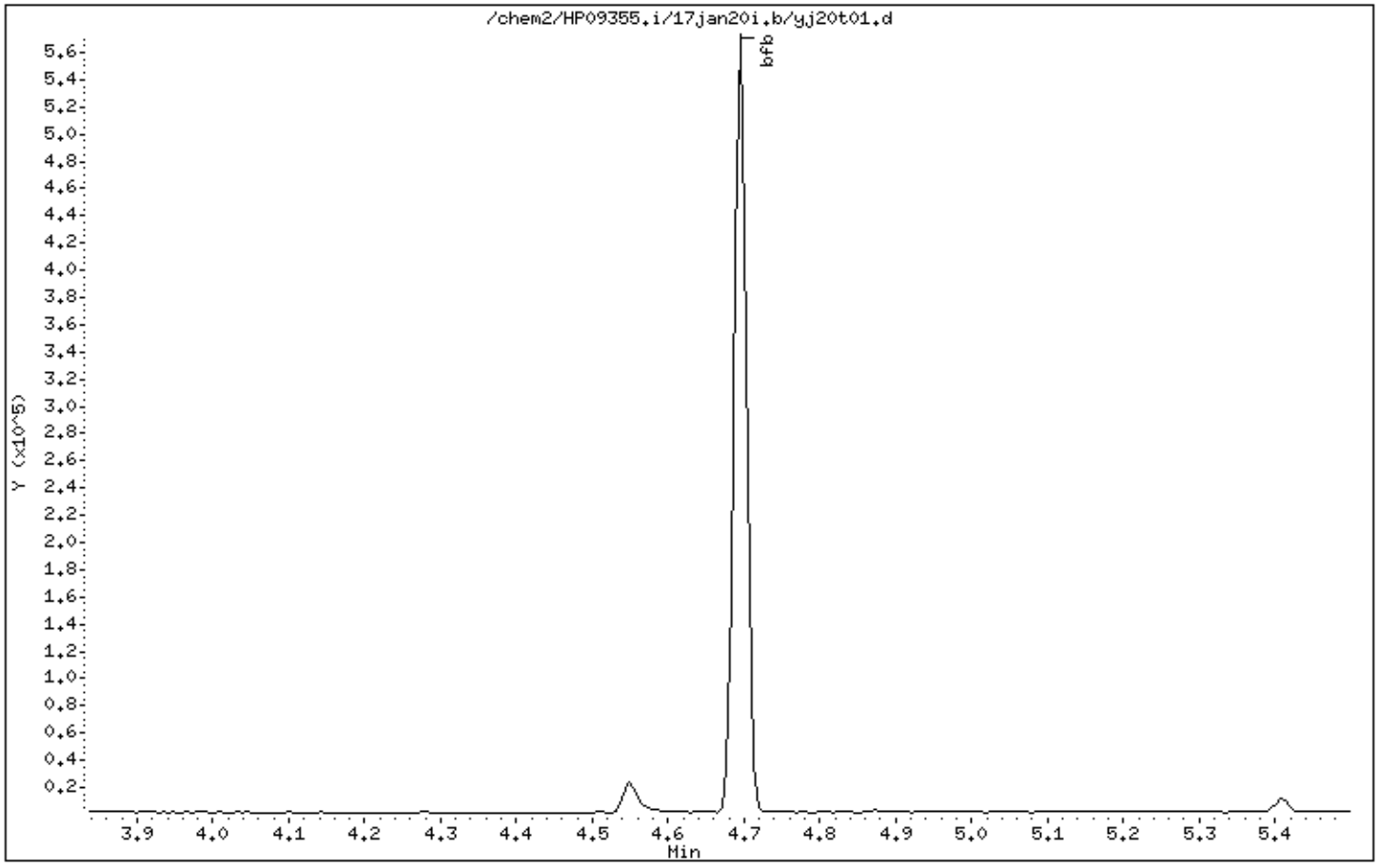
Instrument: HP09355.i

Sample Info: BFBAUG22-16;50NGBFB;1;2;;;;;;

Operator: BWK03231

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Data File: /chem2/HP09355.i/17jan20i.b/yj20t01.d

Date : 20-JAN-2017 08:37

Client ID: BFBAUG22-16

Instrument: HP09355.i

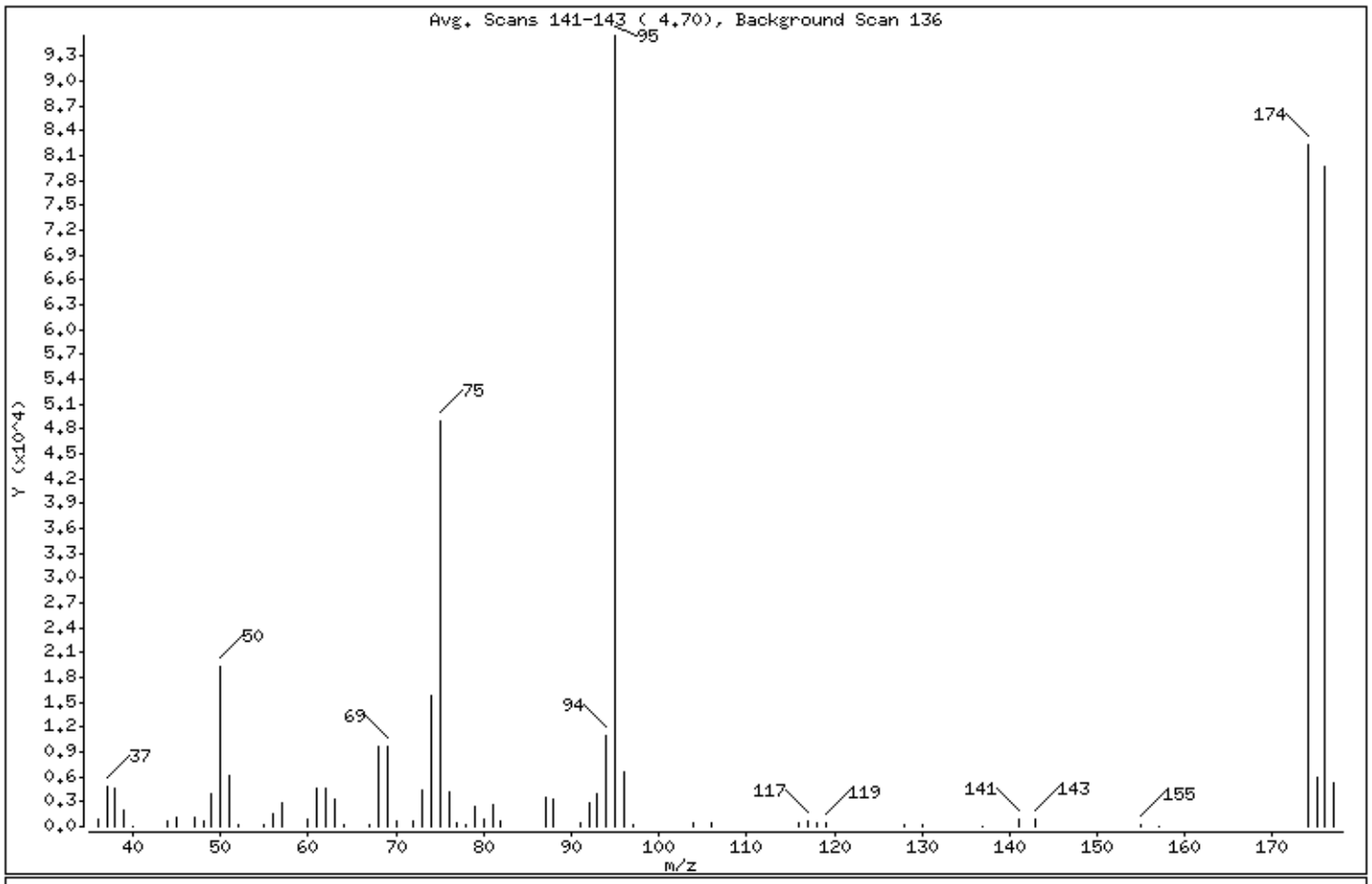
Sample Info: BFBAUG22-16;50NGBFB;1;2;;;;;;

Operator: BWK03231

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 20.15 |
| 75 | 30.00 - 60.00% of mass 95 | 51.21 |
| 96 | 5.00 - 9.00% of mass 95 | 6.89 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 86.14 |
| 175 | 5.00 - 9.00% of mass 174 | 6.18 ( 7.17) |
| 176 | 95.00 - 101.00% of mass 174 | 83.46 ( 96.90) |
| 177 | 5.00 - 9.00% of mass 176 | 5.58 ( 6.68) |

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Target 3.5 esignature user ID: bwk03231

Date : 20-JAN-2017 08:37

Client ID: BFBAUG22-16 Instrument: HP09355.i

Sample Info: BFBAUG22-16;50NGBFB;1;2;;;;;;

Operator: BWK03231

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: yj20t01.d
Spectrum: Avg. Scans 141-143 ( 4.70), Background Scan 136
Location of Maximum: 95.00
Number of points: 62

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 925 | 60.00 | 865 | 79.00 | 2516 | 117.00 | 634 |
| 37.00 | 4932 | 61.00 | 4520 | 80.00 | 806 | 118.00 | 371 |
| 38.00 | 4615 | 62.00 | 4551 | 81.00 | 2727 | 119.00 | 447 |
| 39.00 | 1889 | 63.00 | 3367 | 82.00 | 557 | 128.00 | 325 |
| 40.00 | 83 | 64.00 | 322 | 87.00 | 3482 | 130.00 | 313 |
| 44.00 | 569 | 67.00 | 183 | 88.00 | 3290 | 137.00 | 84 |
| 45.00 | 1034 | 68.00 | 9644 | 91.00 | 376 | 141.00 | 892 |
| 47.00 | 1121 | 69.00 | 9735 | 92.00 | 2782 | 143.00 | 974 |
| 48.00 | 594 | 70.00 | 732 | 93.00 | 3981 | 155.00 | 188 |
| 49.00 | 3993 | 72.00 | 554 | 94.00 | 10965 | 157.00 | 86 |
| 50.00 | 19232 | 73.00 | 4421 | 95.00 | 95456 | 174.00 | 82224 |
| 51.00 | 6117 | 74.00 | 15798 | 96.00 | 6575 | 175.00 | 5899 |
| 52.00 | 262 | 75.00 | 48888 | 97.00 | 181 | 176.00 | 79672 |
| 55.00 | 311 | 76.00 | 4166 | 104.00 | 400 | 177.00 | 5324 |
| 56.00 | 1460 | 77.00 | 545 | 106.00 | 409 | | |
| 57.00 | 2792 | 78.00 | 294 | 116.00 | 395 | | |

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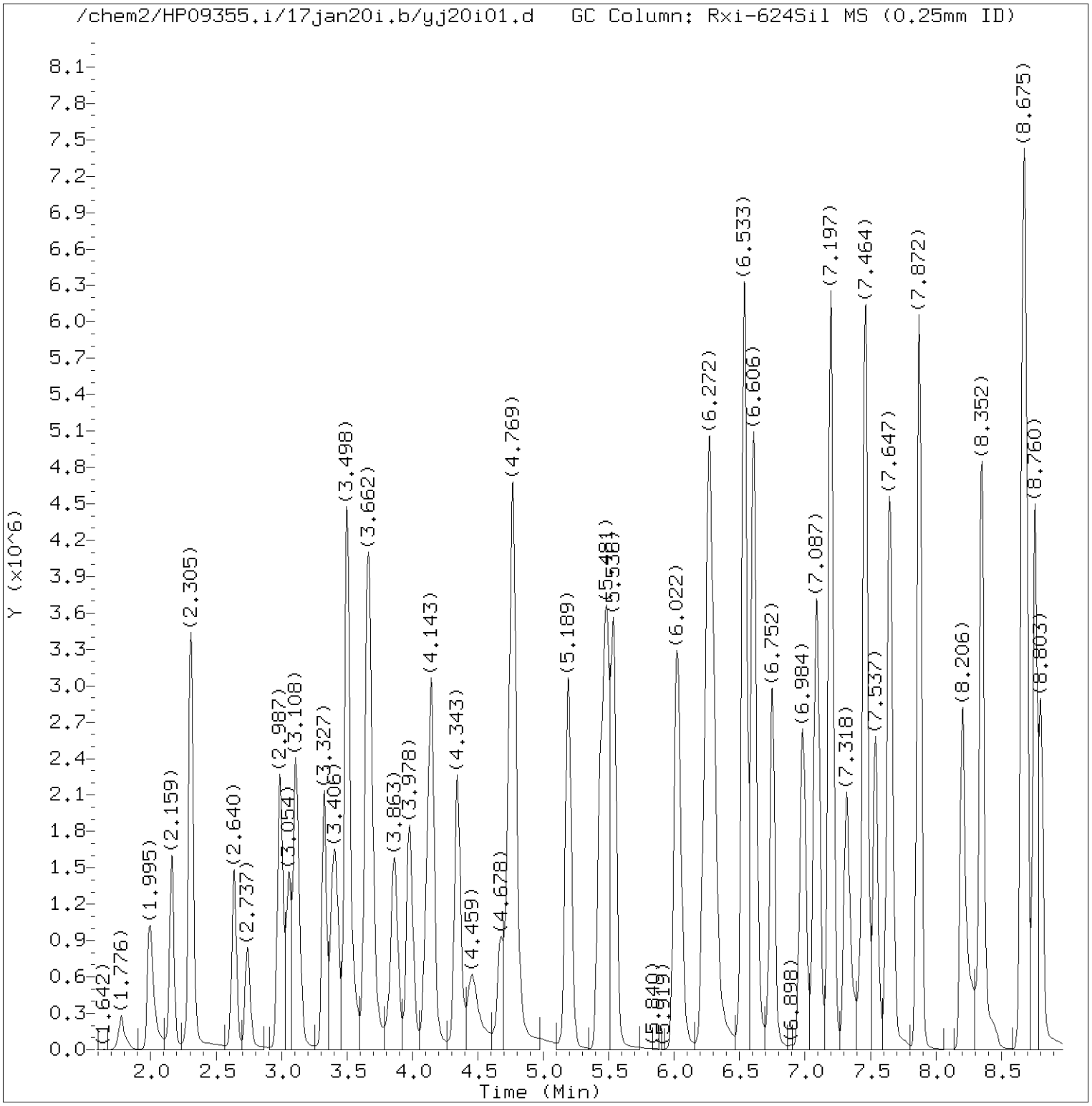
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

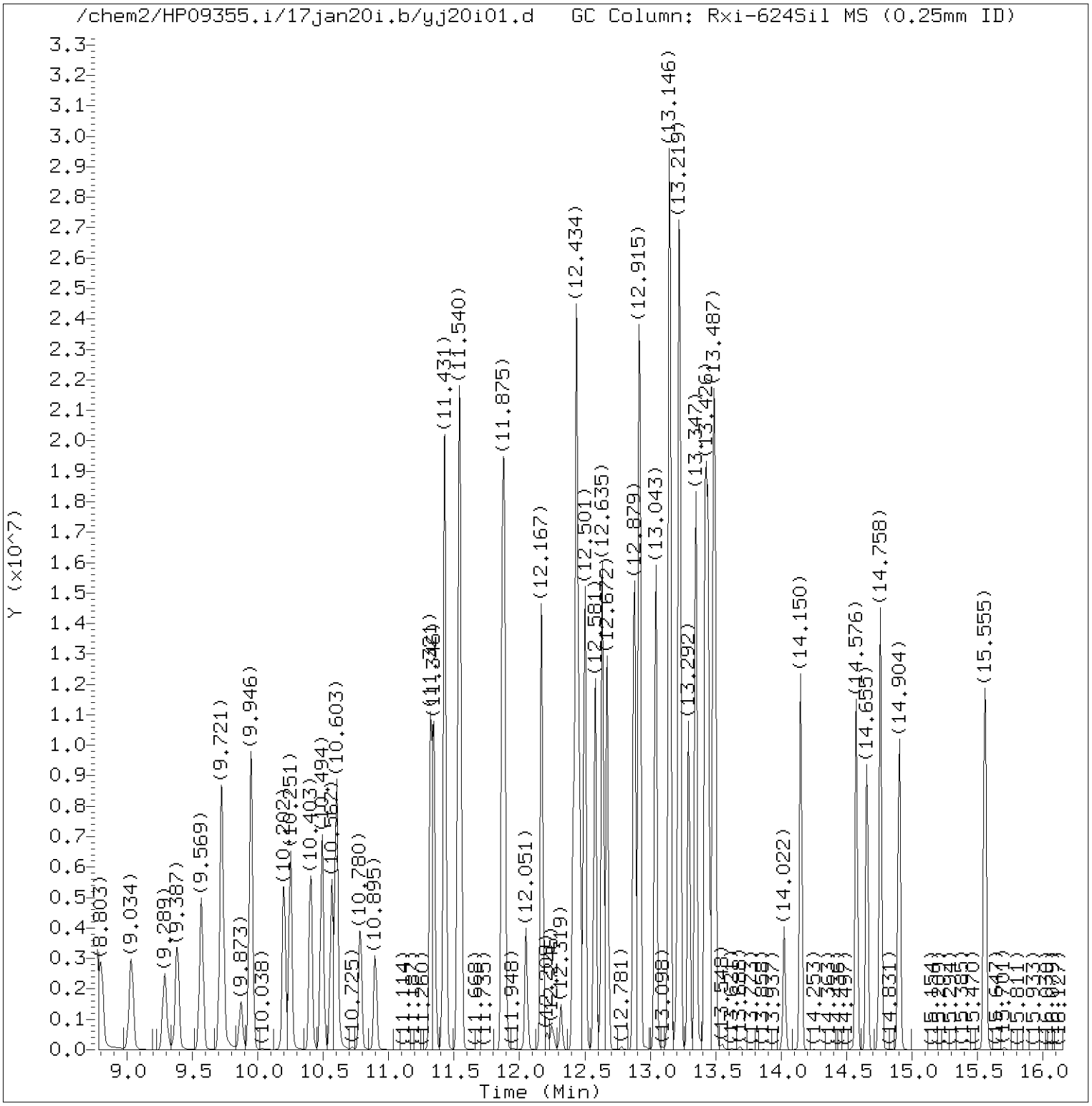
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.995 | 85 | 2157896 | 268.879 |
| 4) Chloromethane | (2) | 2.159 | 50 | 2263833 | 268.759 |
| 6) Vinyl Chloride | (2) | 2.299 | 62 | 2151797 | 270.600 |
| 5) 1,3-Butadiene | (2) | 2.311 | 39 | 1459392 | 211.639 |
| 8) Bromomethane | (2) | 2.640 | 94 | 1426288 | 256.210 |
| 9) Chloroethane | (2) | 2.737 | 64 | 1164277 | 255.620 |
| 10) Dichlorofluoromethane | (2) | 2.987 | 67 | 2775186 | 269.020 |
| 12) Trichlorofluoromethane | (2) | 3.054 | 101 | 2596013 | 273.604 |
| 11) n-Pentane | (2) | 3.108 | 43 | 2616067 | 255.730 |
| 14) Ethyl ether | (2) | 3.327 | 59 | 1641809 | 291.847 |
| 15) Freon 123a | (2) | 3.406 | 67 | 1817487 | 282.905 |
| 16) Acrolein | (1) | 3.498 | 56 | 6847928 | 3256.490 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 1426093 | 298.494 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 63 | 727464 | 292.101 |
| 18) Acetone | (1) | 3.668 | 58 | 669876 | 655.281 |
| 19) Freon 113 | (2) | 3.680 | 101 | 1401440 | 295.225 |
| 21) 2-Propanol | (1) | 3.838 | 45 | 1067460 | 1380.078 |
| 22) Methyl Iodide | (2) | 3.863 | 142 | 2661865 | 295.468 |
| 23) Carbon Disulfide | (2) | 3.978 | 76 | 4493215 | 309.338 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 2651008 | 295.837 |
| 25) Allyl Chloride | (2) | 4.149 | 41 | 2894283 | 296.526 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.331 | 65 | 341463 | 250.000 |
| 28) Methylene Chloride | (2) | 4.343 | 84 | 1706939 | 289.072 |
| 30) t-Butyl alcohol | (1) | 4.459 | 59 | 2107992 | 1389.432 |
| 31) Acrylonitrile | (2) | 4.672 | 53 | 1304779 | 303.385 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.751 | 73 | 5561183 | 285.652 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 1721345 | 299.039 |
| 34) n-Hexane | (2) | 5.189 | 57 | 2541716 | 290.260 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 3003935M | 290.727 |
| 38) di-Isopropyl ether | (2) | 5.481 | 45 | 5892173 | 287.821 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.542 | 53 | 2856393 | 300.895 |
| 40) Ethyl t-butyl ether | (2) | 6.022 | 59 | 5479642 | 285.508 |
| 44) 2-Butanone | (2) | 6.229 | 43 | 4003918 | 602.801 |
| 42) cis-1,2-Dichloroethene | (2) | 6.266 | 96 | 1969591 | 299.288 |
| 45) 2,2-Dichloropropane | (2) | 6.284 | 77 | 2446977 | 297.359 |
| 47) Propionitrile | (1) | 6.314 | 54 | 2766307 | 1555.797 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 3471613 | 748.615 |
| 49) Bromochloromethane | (2) | 6.606 | 128 | 1027467 | 302.996 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.613 | 71 | 1069690 | 666.307 |
| 51) Chloroform | (2) | 6.752 | 83 | 3082498 | 295.797 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 3690936 | 598.328 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 289184 | 50.561 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 111 | 293282 | 50.244 |
| 53) 1,1,1-Trichloroethane | (2) | 6.984 | 97 | 2616912 | 297.388 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 2973996 | 287.148 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 2457605 | 288.916 |
| 54) Cyclohexane | (2) | 7.087 | 69 | 917213 | 291.532 |
| 55) 1,1-Dichloropropene | (2) | 7.197 | 75 | 2490529 | 294.176 |
| 56) Carbon Tetrachloride | (2) | 7.203 | 117 | 2332434 | 314.818 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 2262245M | 3981.531 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 102 | 73297 | 49.056 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 65 | 367275 | 48.824 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 104 | 47887 | 50.476 |
| 60) Benzene | (2) | 7.464 | 78 | 7219445 | 290.272 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 62 | 2592881 | 287.403 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 98 | 242936 | 302.441 |
| 65) t-Amyl methyl ether | (2) | 7.647 | 73 | 5514883 | 286.669 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1223002 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 2950971 | 286.240 |
| 69) n-Butanol | (1) | 8.206 | 56 | 3796317M | 8214.121 |
| 71) Trichloroethene | (2) | 8.352 | 95 | 1937708 | 297.370 |
| 72) Methylcyclohexane | (2) | 8.669 | 83 | 3306586 | 293.356 |
| 72) Methylcyclohexane | (2) | 8.669 | 98 | 1493270 | 293.204 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 1971916 | 298.642 |
| 76) Methyl Methacrylate | (2) | 8.760 | 69 | 2205543 | 311.854 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 488672M | 3901.853 |
| 74) Dibromomethane | (2) | 8.803 | 93 | 1290488 | 302.072 |
| 78) Bromodichloromethane | (2) | 9.034 | 83 | 2430165 | 322.711 |
| 79) 2-Nitropropane | (2) | 9.289 | 41 | 2053788 | 710.426 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.387 | 63 | 1749094 | 317.713 |
| 81) cis-1,3-Dichloropropene | (2) | 9.569 | 75 | 3169502 | 320.095 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 7346859 | 614.812 |
| 83)$Toluene-d8 | (3) | 9.873 | 98 | 1199465 | 48.277 |
| 83)$Toluene-d8 | (3) | 9.873 | 100 | 781515 | 48.604 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 6192195 | 641.190 |
| 88) Toluene | (3) | 9.946 | 92 | 4778111 | 285.144 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.202 | 75 | 3022693 | 321.094 |
| 91) Ethyl Methacrylate | (3) | 10.251 | 69 | 3488343 | 307.189 |
| 92) 1,1,2-Trichloroethane | (3) | 10.403 | 97 | 1899273 | 291.064 |
| 93) Tetrachloroethene | (3) | 10.494 | 166 | 2173308 | 291.455 |
| 94) 1,3-Dichloropropane | (3) | 10.567 | 76 | 3180315 | 287.909 |
| 96) 2-Hexanone | (3) | 10.603 | 43 | 5977950 | 601.994 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 2137005 | 337.236 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 2119139 | 298.571 |
| 100)*Chlorobenzene-d5 | (3) | 11.321 | 117 | 963403A | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 2667427 | 292.077 |
| 102) Chlorobenzene | (3) | 11.346 | 112 | 5455961 | 285.789 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 1949894 | 322.063 |
| 104) Ethylbenzene | (3) | 11.431 | 91 | 9226513 | 285.462 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 7565673 | 586.734 |
| 108) Xylene (Total) | (3) | | 106 | 11297452 | 881.892 |
| 107) o-Xylene | (3) | 11.869 | 106 | 3731779 | 295.158 |
| 109) Styrene | (3) | 11.887 | 104 | 6412739 | 305.562 |
| 110) Bromoform | (3) | 12.051 | 173 | 1726554 | 366.718 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 8963155 | 280.918 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 384974 | 4124.299 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 95 | 457828 | 49.011 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 174 | 388344 | 48.785 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 3219232M | 299.352 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 2713962 | 312.510 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.441 | 53 | 2630328 | 784.473 |
| 117) 1,2,3-Trichloropropane | (4) | 12.465 | 110 | 1063539 | 295.827 |
| 119) n-Propylbenzene | (4) | 12.501 | 91 | 10398694 | 277.046 |
| 120) 2-Chlorotoluene | (4) | 12.581 | 126 | 2277216 | 294.840 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.635 | 105 | 7880866 | 287.941 |
| 121) 4-Chlorotoluene | (4) | 12.672 | 126 | 2430755 | 296.499 |
| 124) tert-Butylbenzene | (4) | 12.879 | 134 | 1762488M | 301.182 |
| 125) Pentachloroethane | (4) | 12.915 | 167 | 1545694 | 349.334 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.921 | 105 | 8299150 | 293.217 |
| 127) sec-Butylbenzene | (4) | 13.043 | 105 | 9623747 | 279.723 |
| 129) 1,3-Dichlorobenzene | (4) | 13.146 | 146 | 4972597 | 300.120 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 8908732 | 291.438 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 524531 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 5082529 | 298.023 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

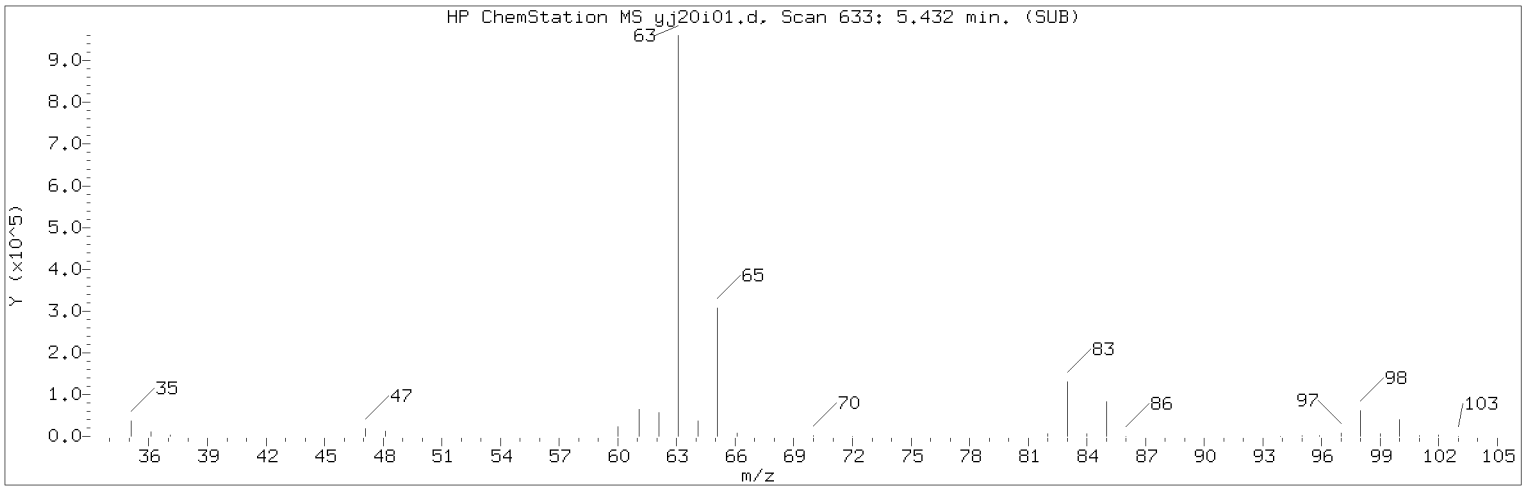
Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 8317827 | 292.569 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 6692719 | 343.081 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 5315608 | 298.602 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 5534315 | 299.642 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 4481888 | 291.285 |
| 138) 1,2-Dichlorobenzene | (4) | 13.481 | 146 | 4743419 | 298.048 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 4472948 | 299.443 |
| 141) Diethylbenzene (total) | (4) | | 100 | 15322871 | 897.686 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 836325 | 325.408 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 3468238 | 297.492 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.576 | 180 | 3236987 | 303.824 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 1532478 | 292.700 |
| 148) Naphthalene | (4) | 14.758 | 128 | 9997980 | 293.223 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 2962598 | 305.828 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 5923784 | 322.595 |

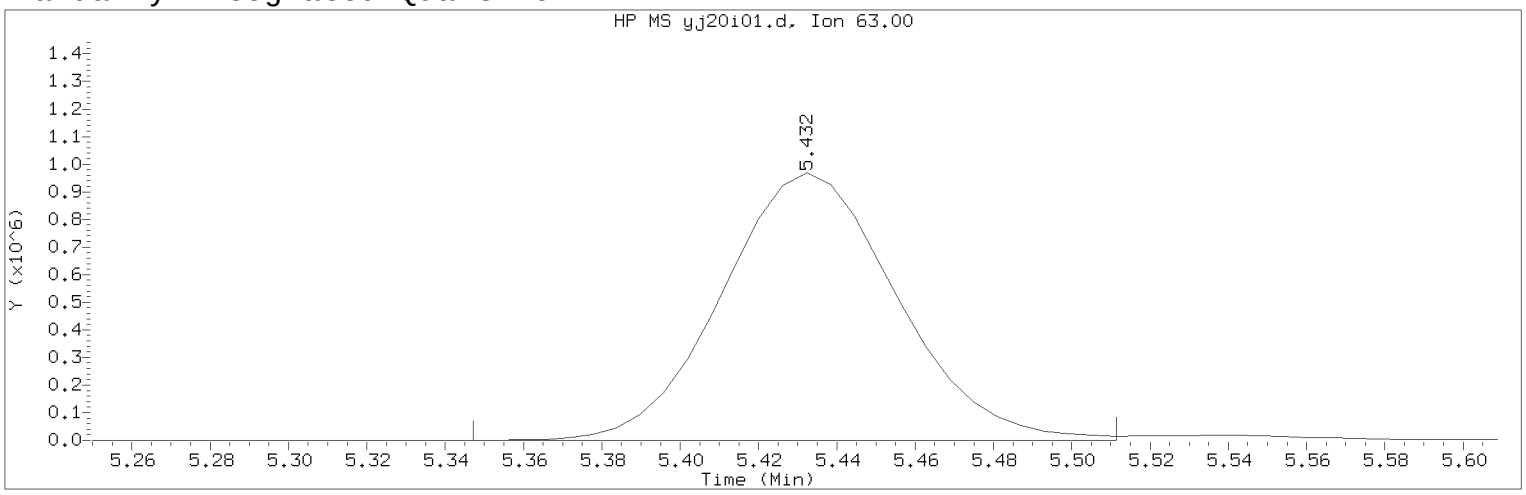


Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

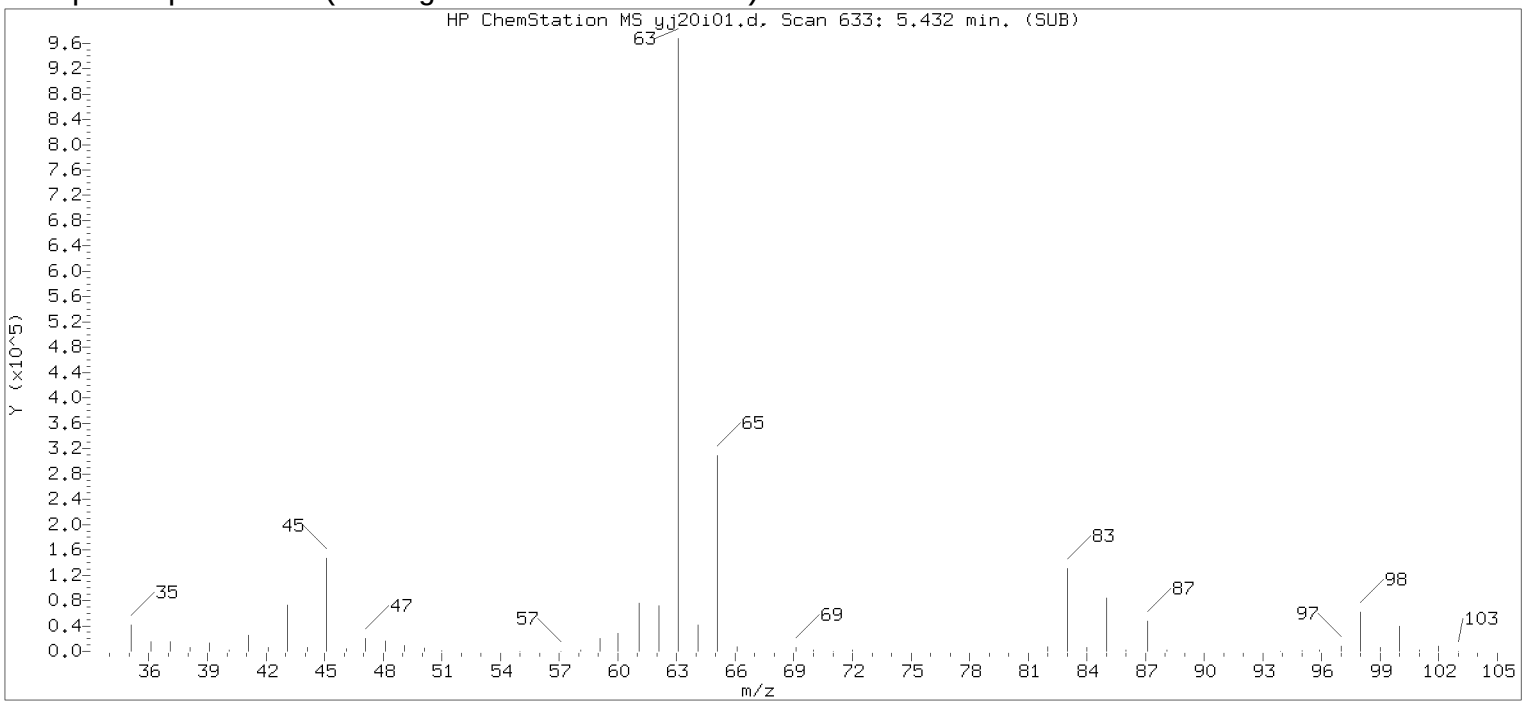
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 633
Retention Time (minutes): 5.432
Quant Ion : 63.00
Area (flag) : 3003935M
On-Column Amount (ng) : 290.7271
Integration start scan : 618 Integration stop scan: 645
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

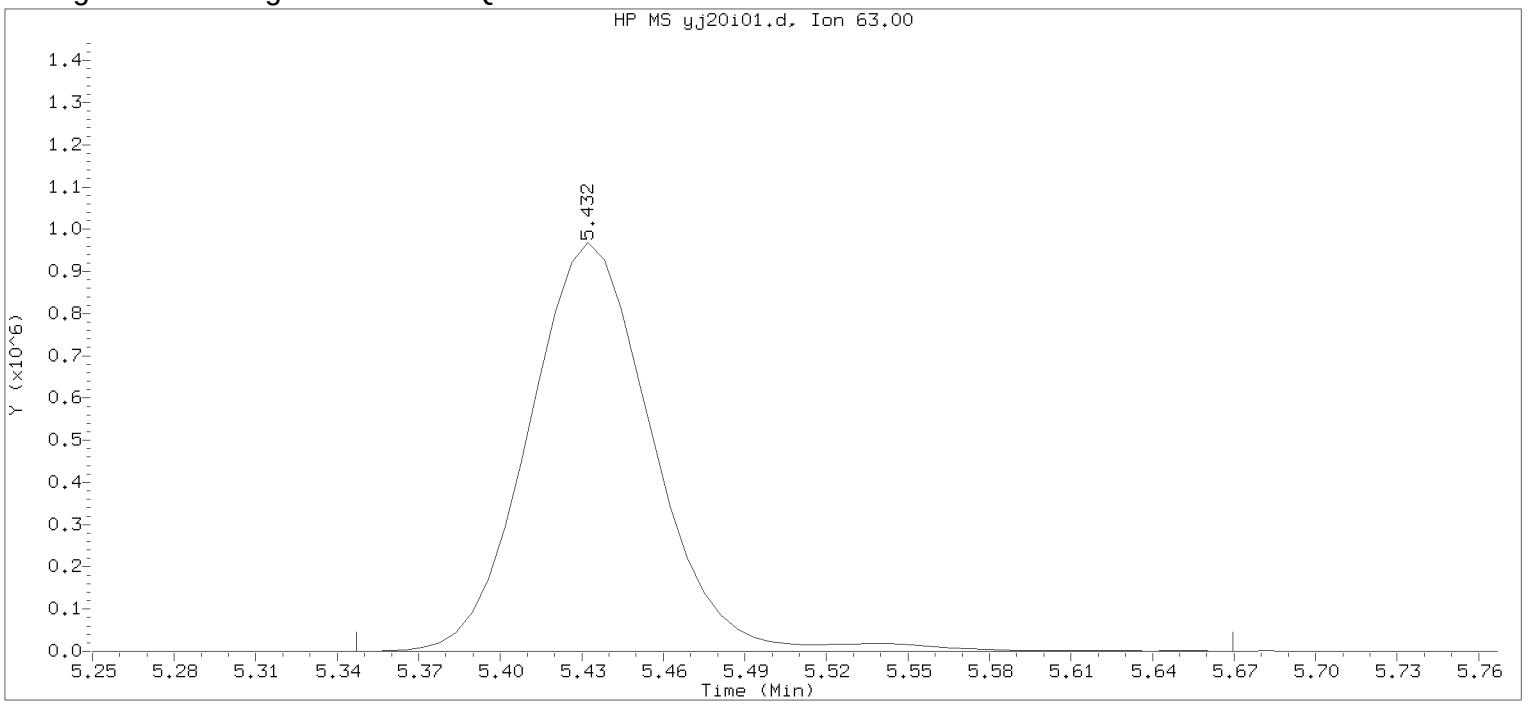
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

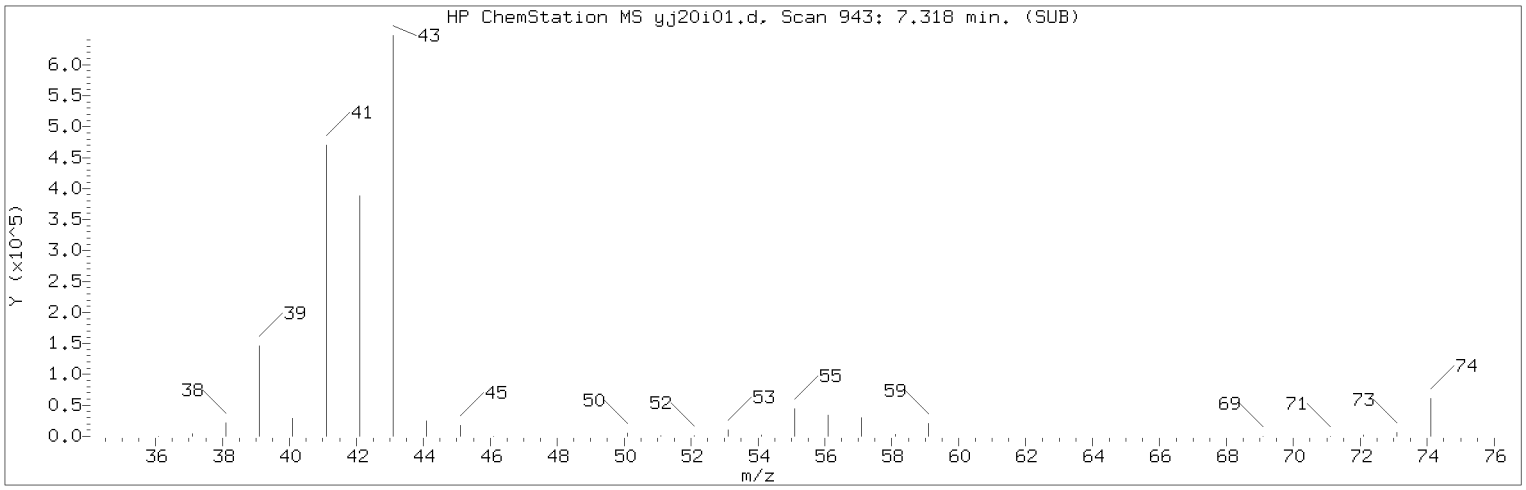
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

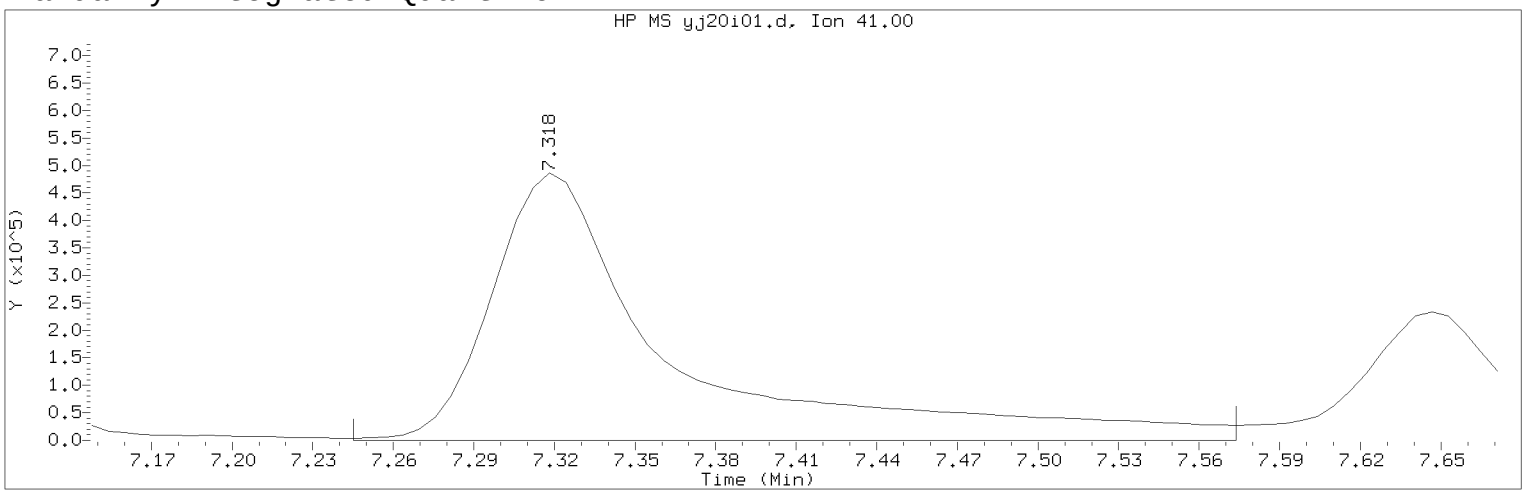
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 633
Retention Time (minutes): 5.432
Quant Ion : 63.00
Area : 3063673
On-column Amount (ng) : 290.9488
Integration start scan : 618 Integration stop scan: 671
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user id: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

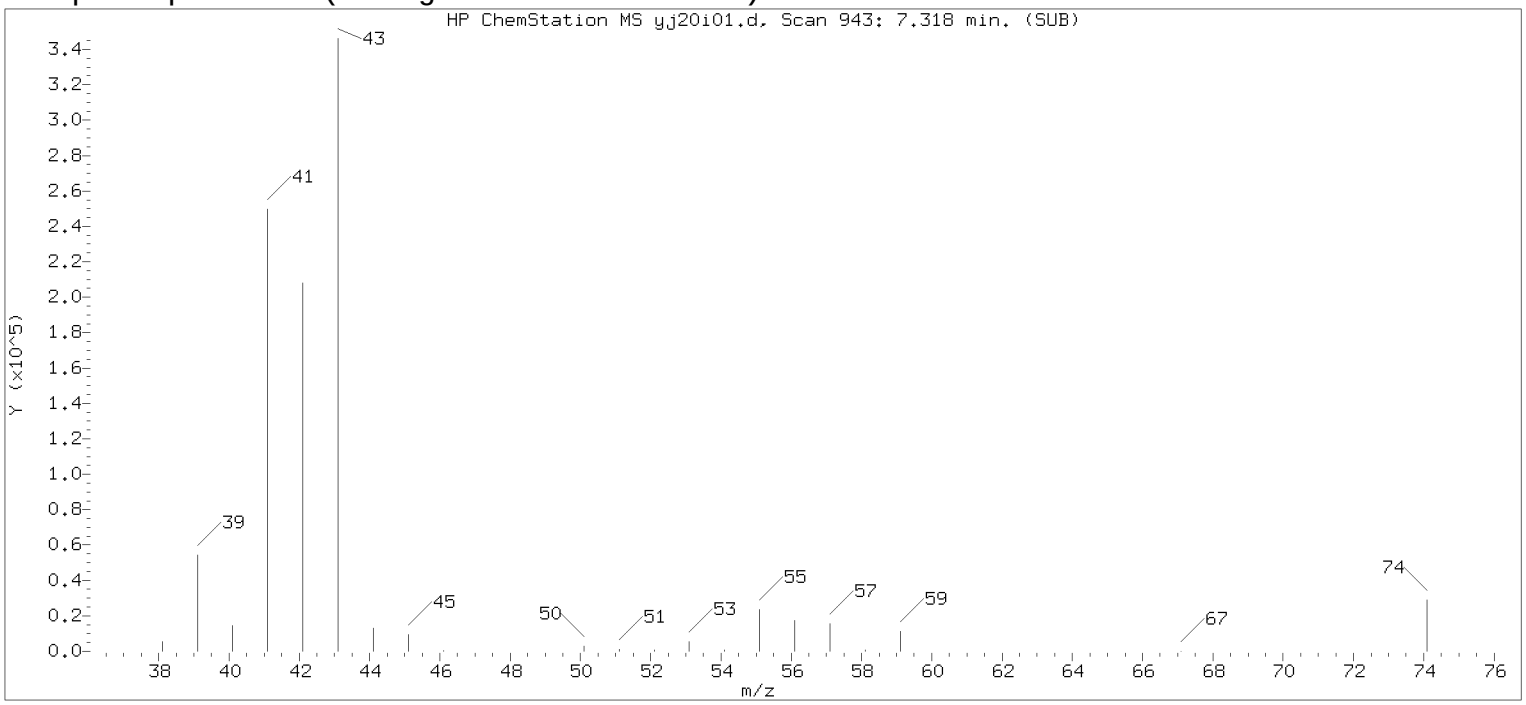
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 943
Retention Time (minutes): 7.318
Quant Ion : 41.00
Area (flag) : 2262245M
On-Column Amount (ng) : 3981.5311
Integration start scan : 930 Integration stop scan: 984
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

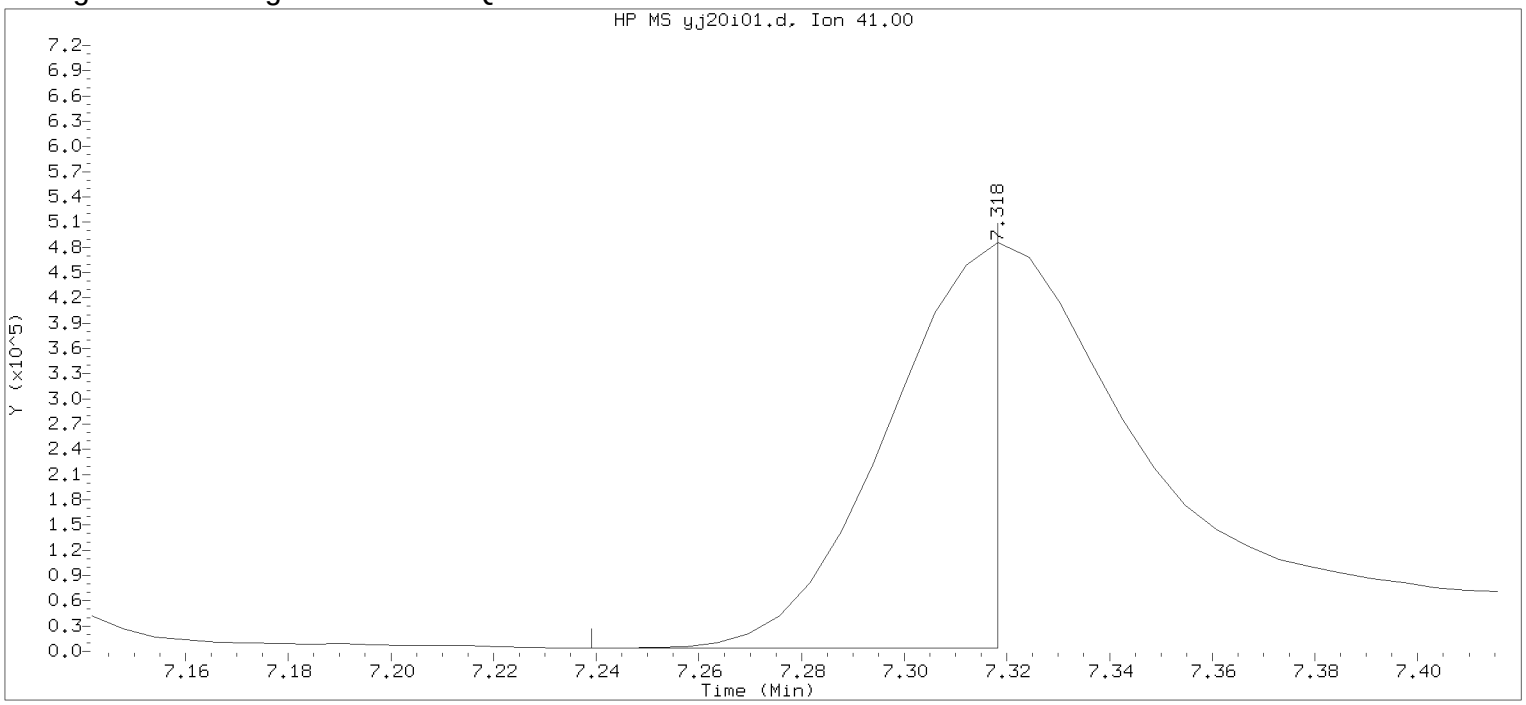
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

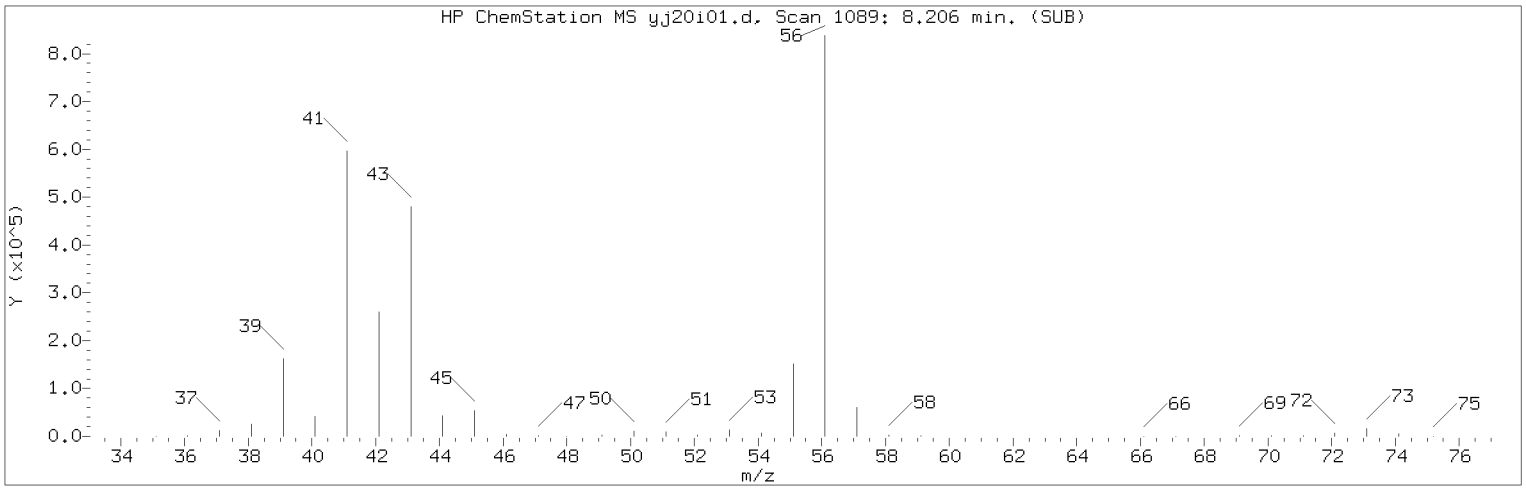
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

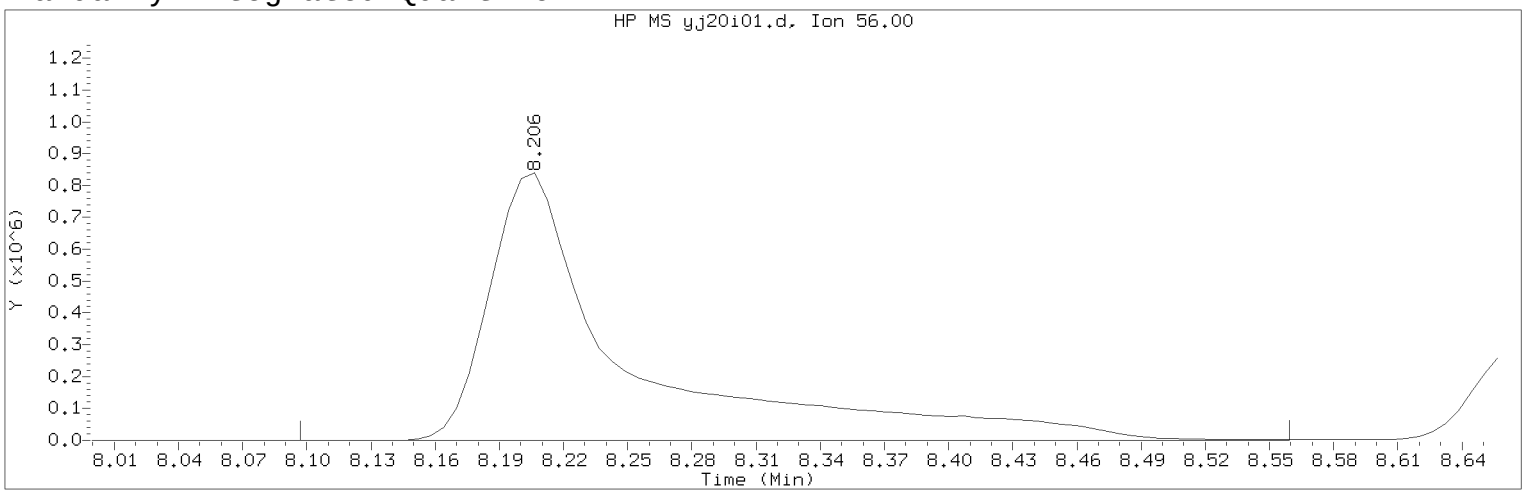
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 943
Retention Time (minutes): 7.318
Quant Ion : 41.00
Area : 694984
On-column Amount (ng) : 1469.7926
Integration start scan : 929 Integration stop scan: 942
Y at integration start : 3767 Y at integration end: 3767

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

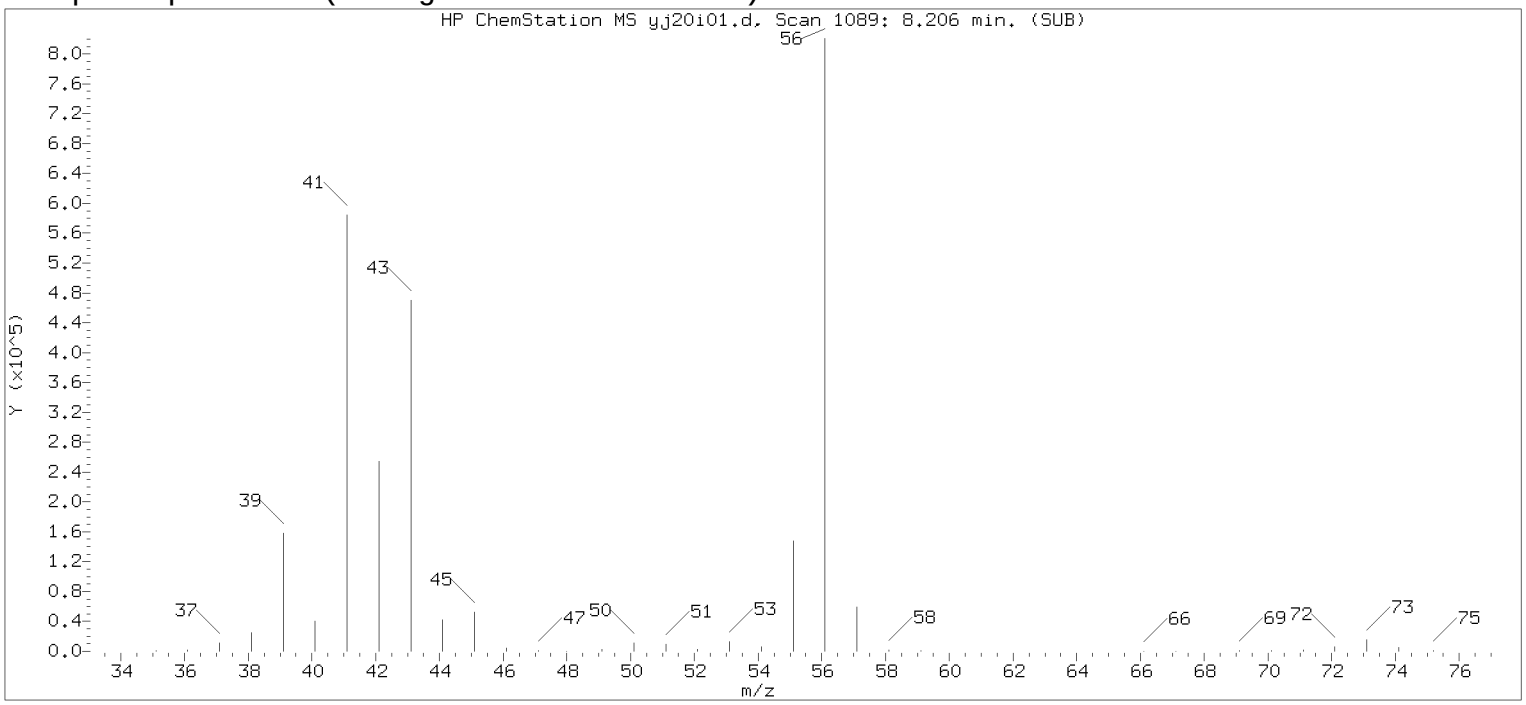
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1089
Retention Time (minutes): 8.206
Quant Ion : 56.00
Area (flag) : 3796317M
On-Column Amount (ng) : 8214.1209
Integration start scan : 1070 Integration stop scan: 1146
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

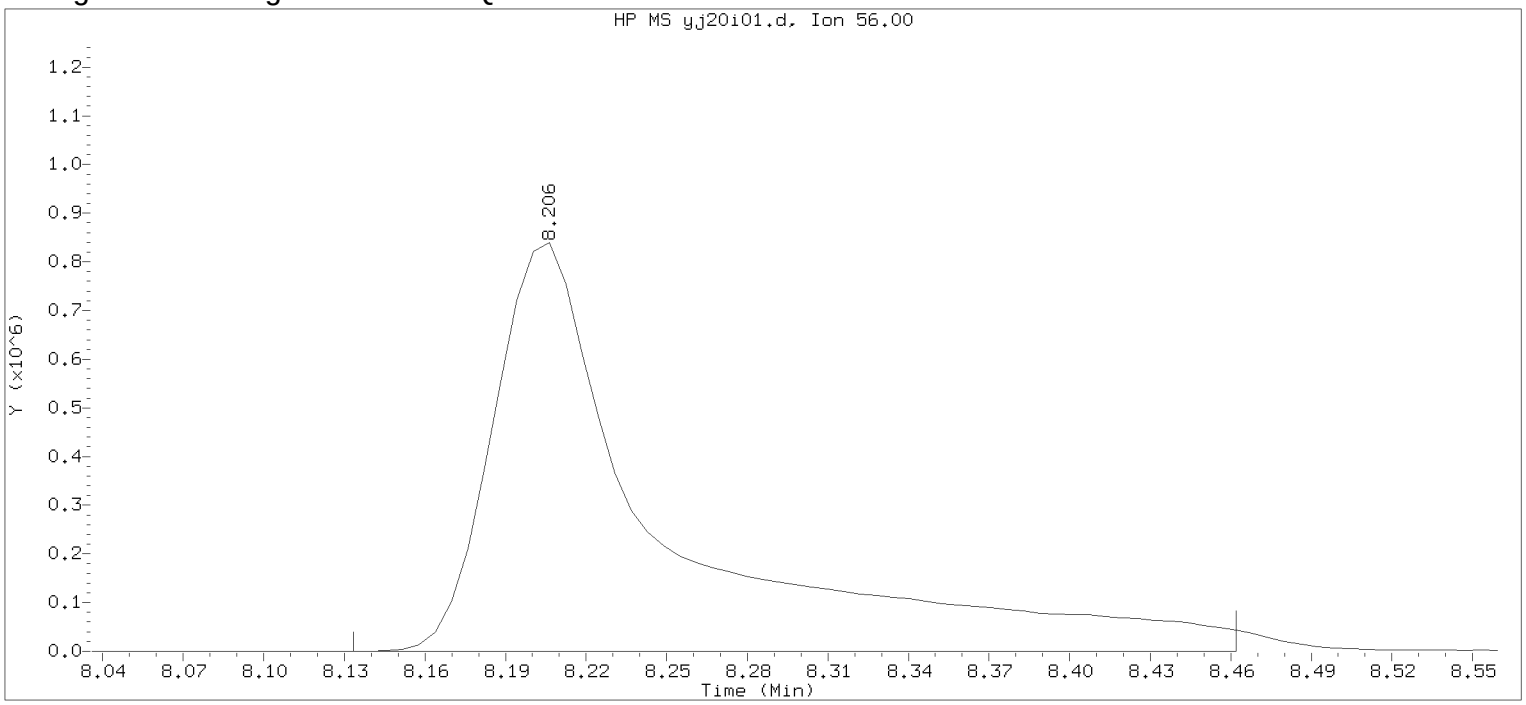
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

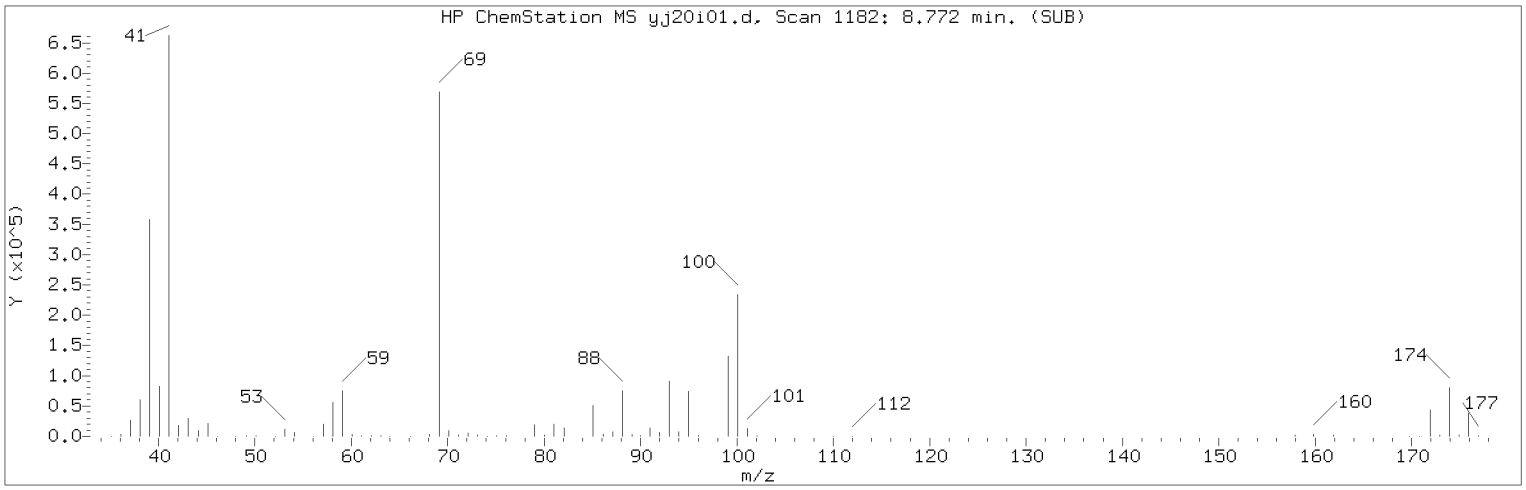
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

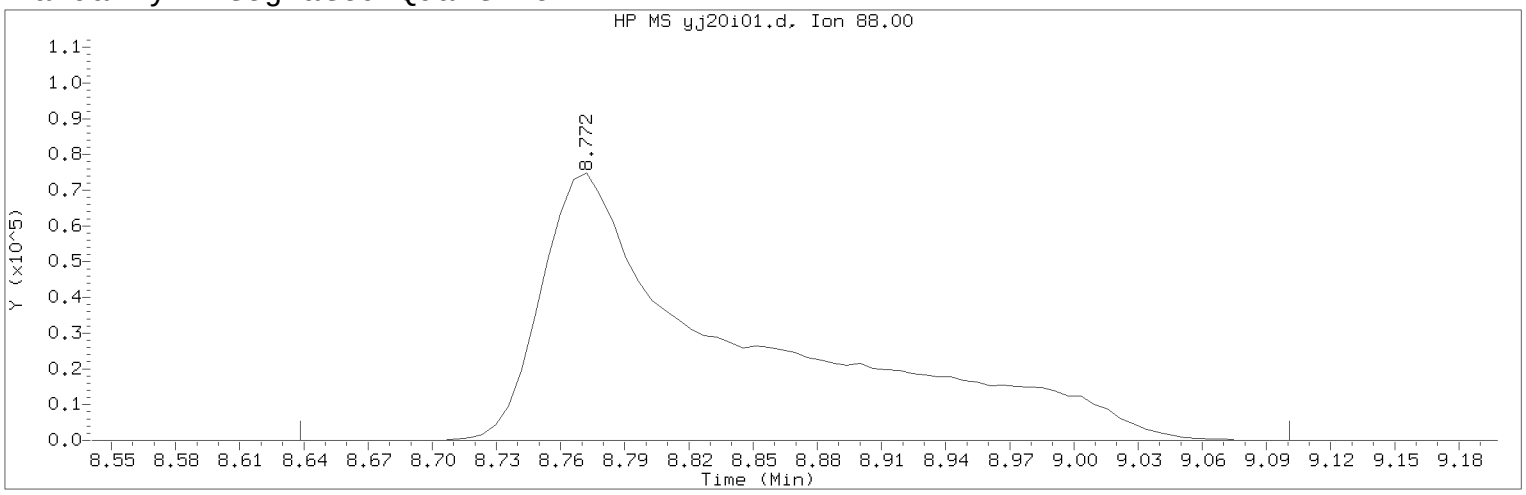
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1089
Retention Time (minutes): 8.206
Quant Ion : 56.00
Area : 3736015
On-column Amount (ng) : 8450.2006
Integration start scan : 1076 Integration stop scan: 1130
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

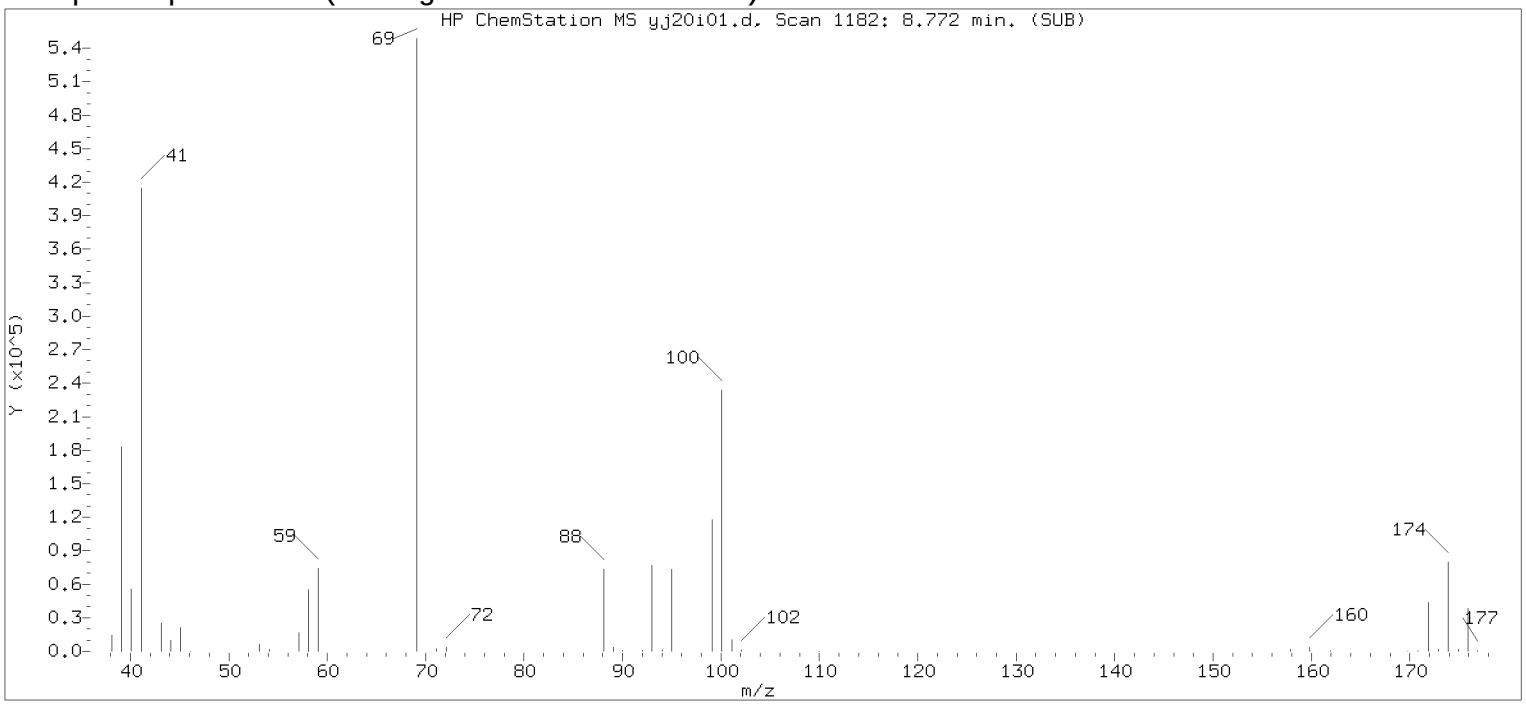
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area (flag) : 488672M
On-Column Amount (ng) : 3901.8525
Integration start scan : 1159 Integration stop scan: 1235
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

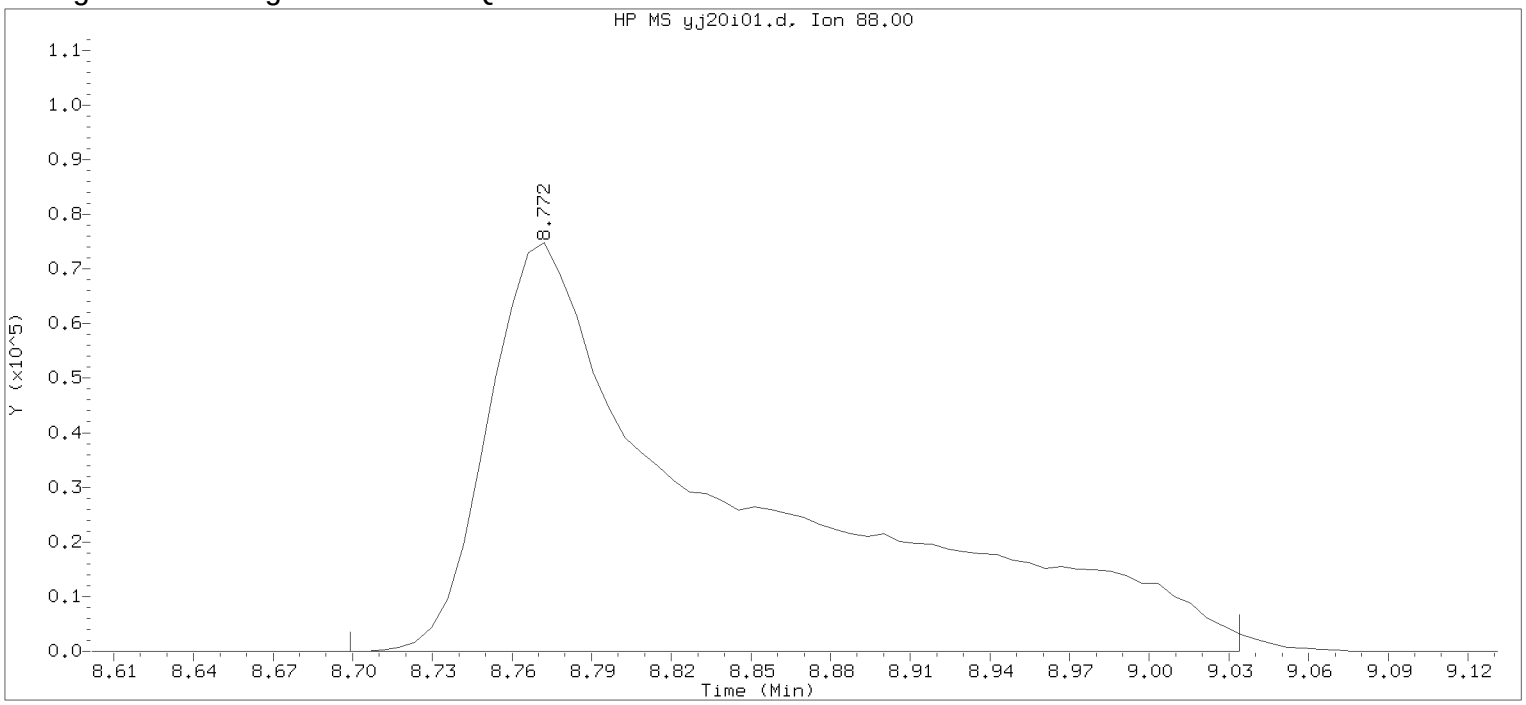
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

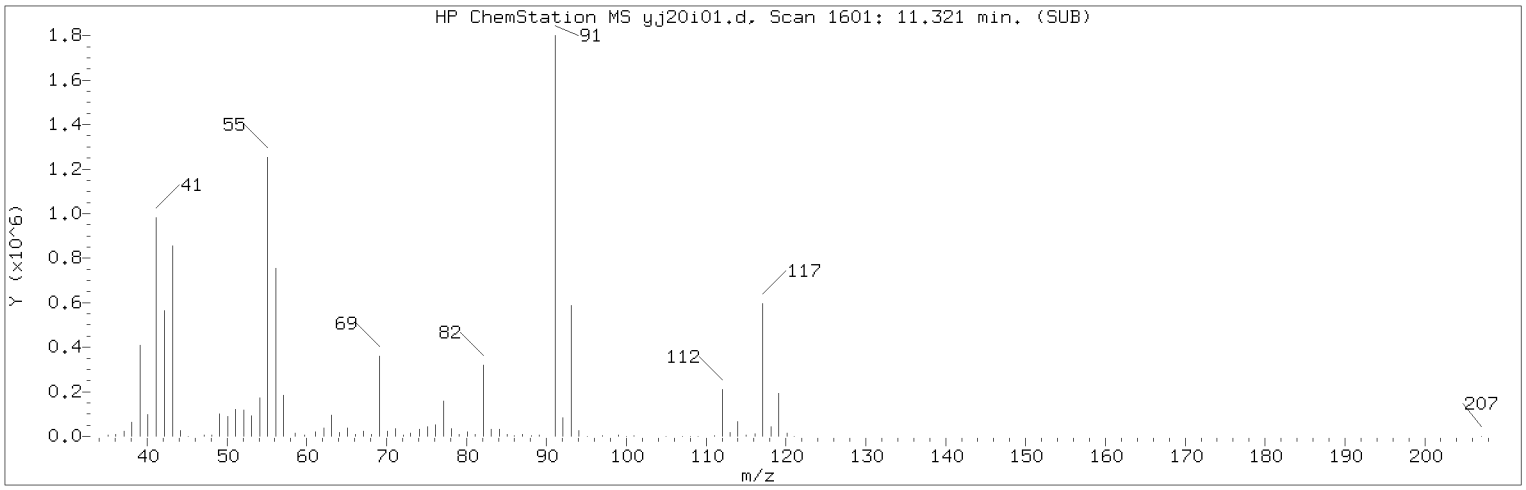
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

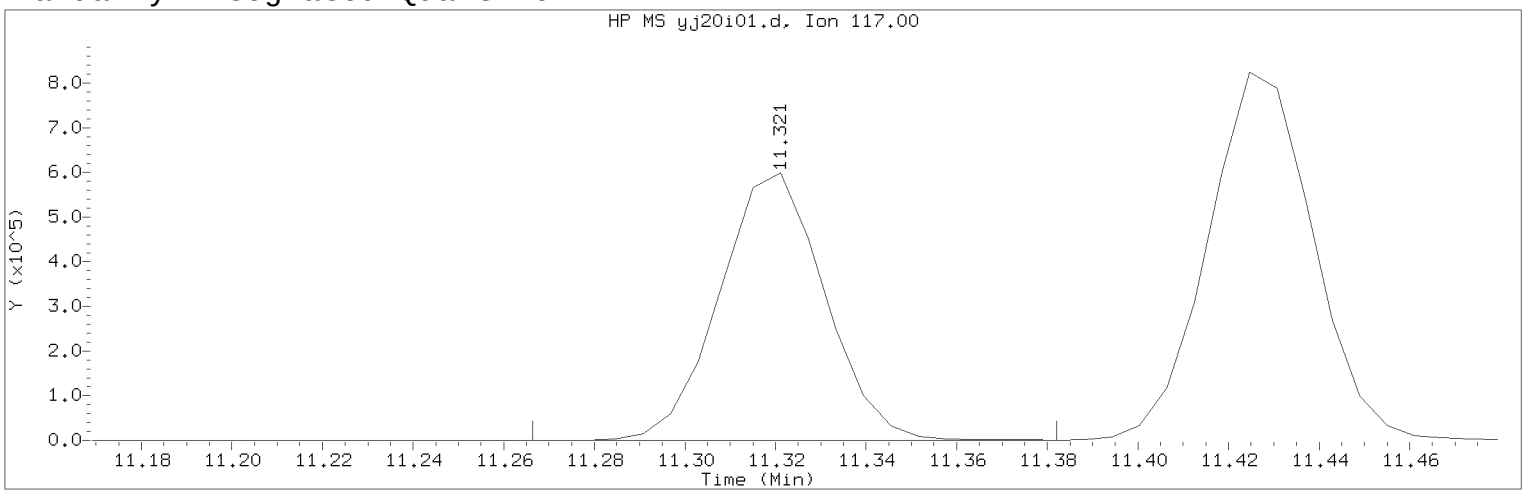
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area : 486090
On-column Amount (ng) : 4693.8314
Integration start scan : 1169 Integration stop scan: 1224
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

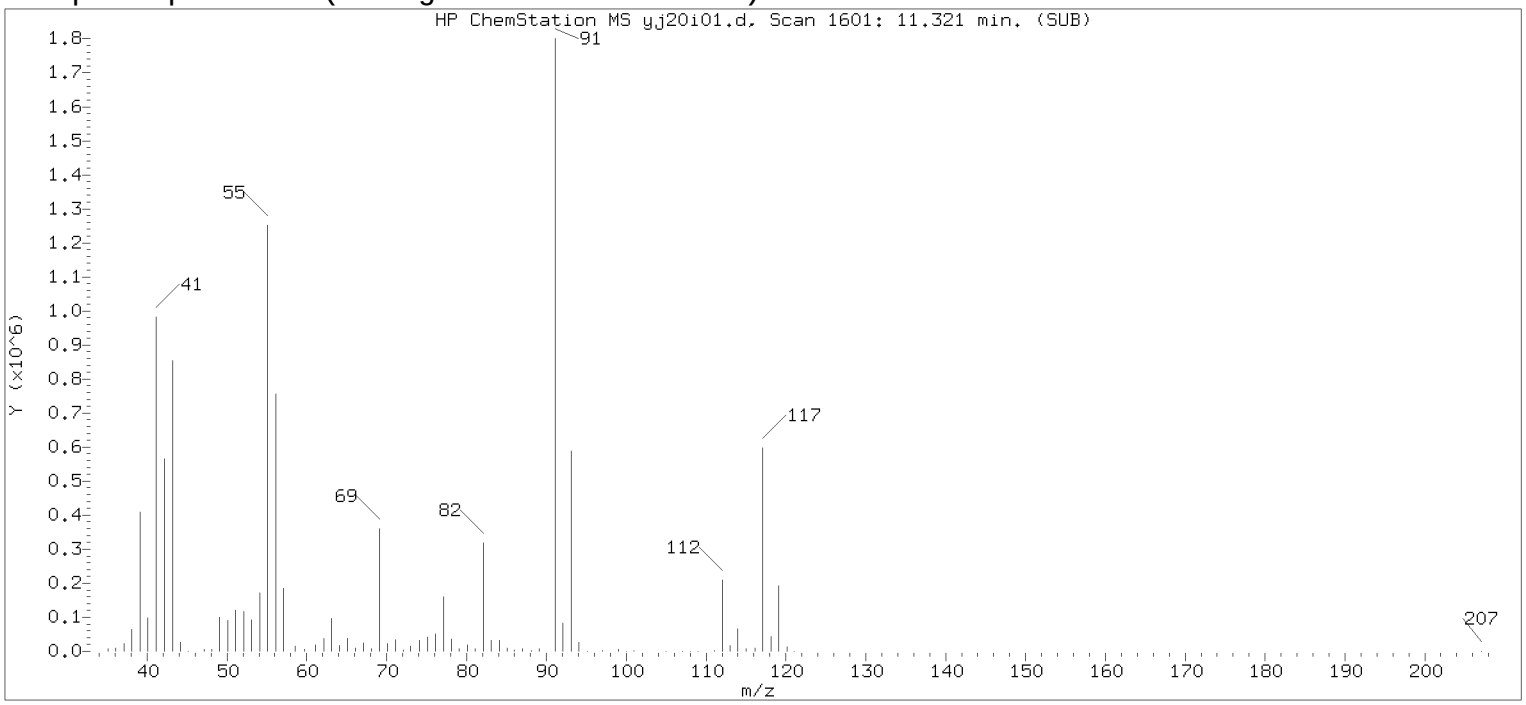
Compound Number : 100
Compound Name : Chlorobenzene-d5
Scan Number : 1601
Retention Time (minutes): 11.321
Quant Ion : 117.00
Area (flag) : 963403A
On-Column Amount (ng) : 50.0000
Integration start scan : 1591 Integration stop scan: 1610
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

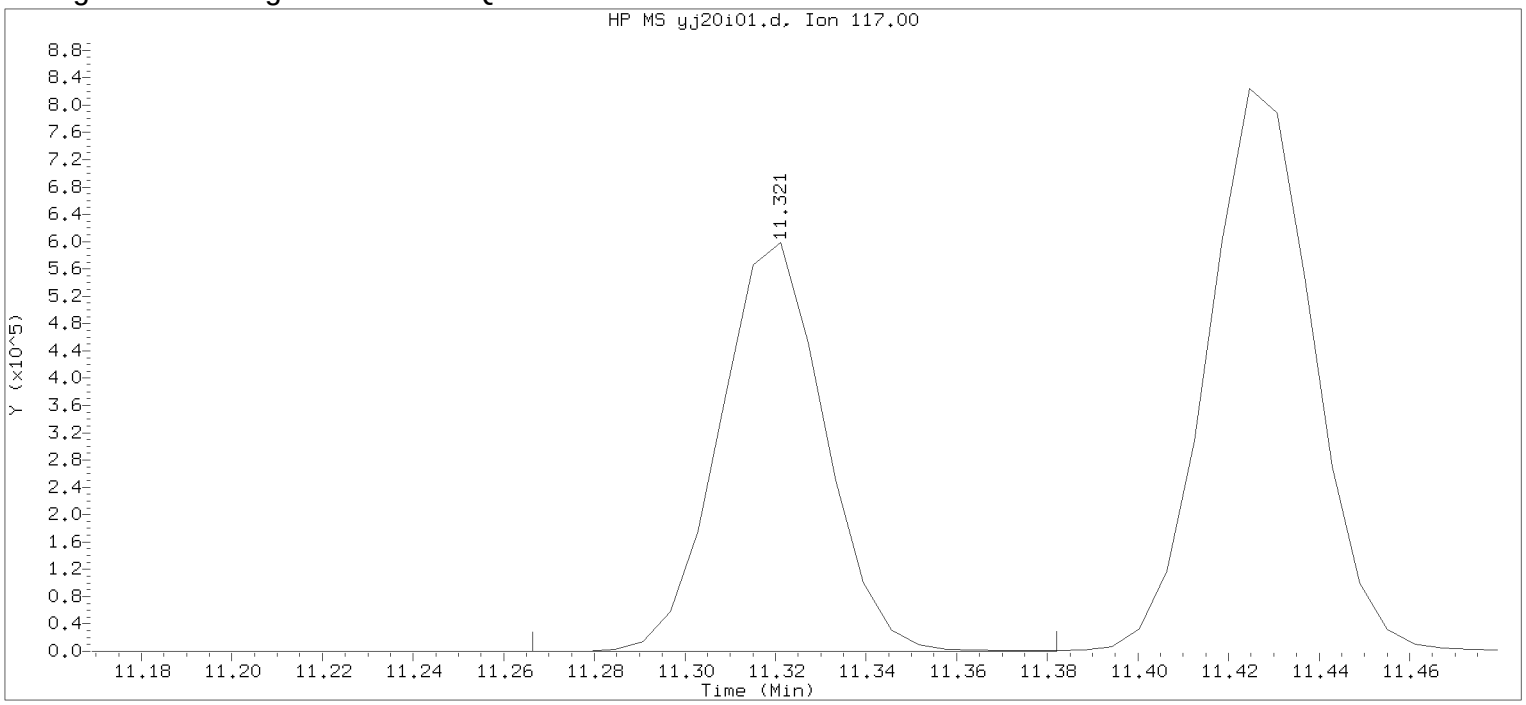
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

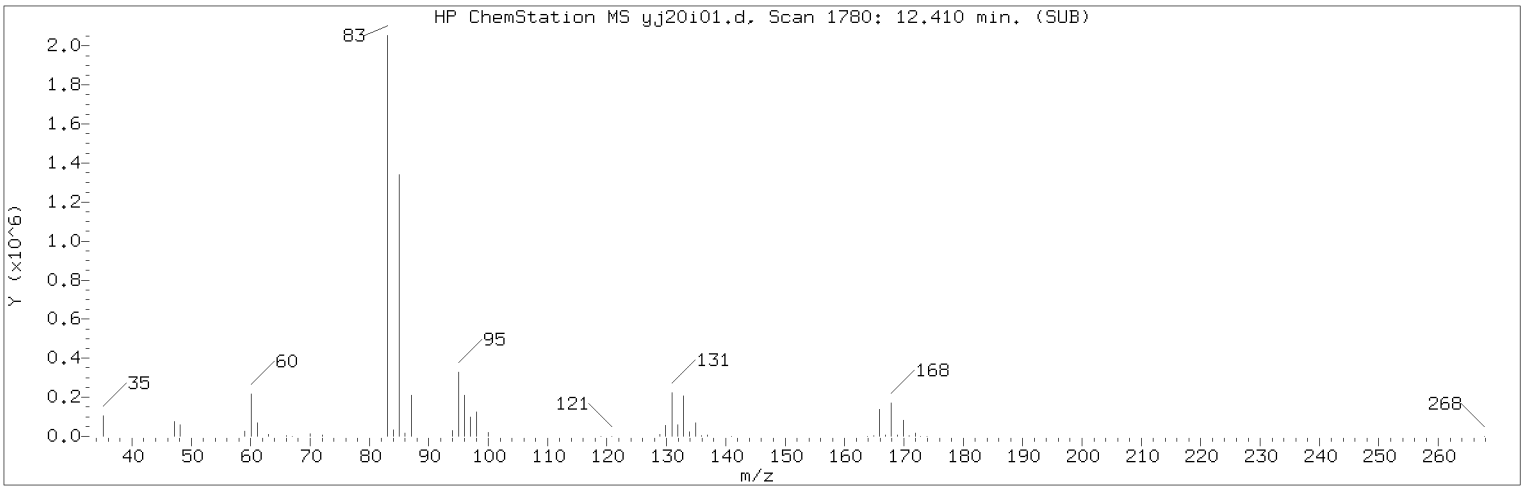
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

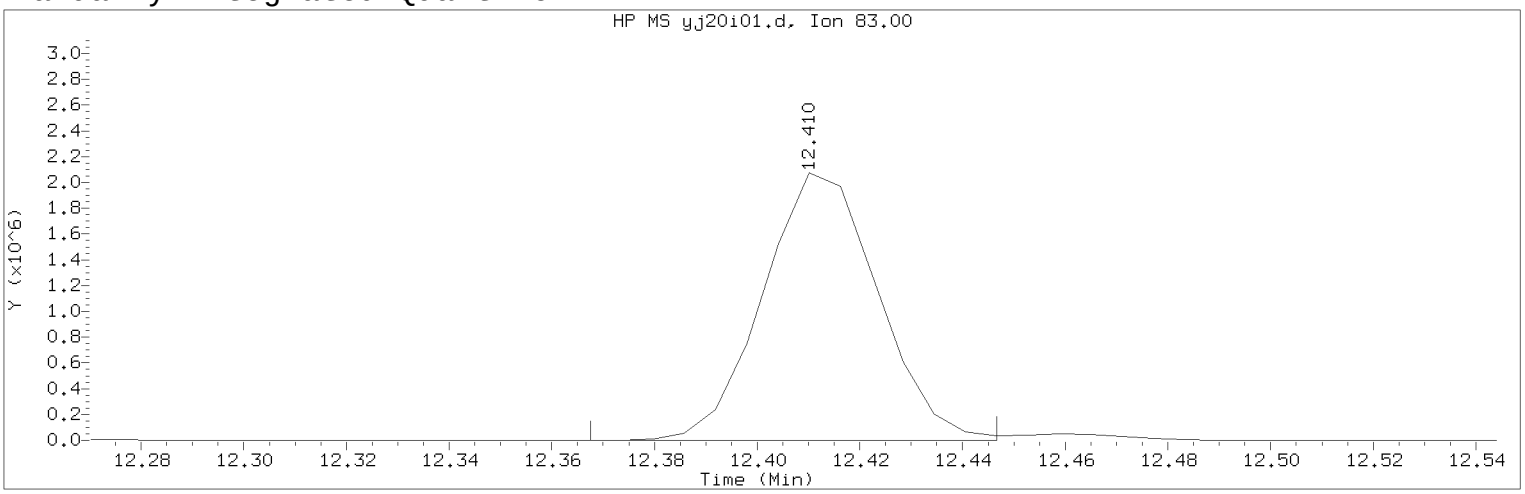
Compound Number : 100
Compound Name : Chlorobenzene-d5
Scan Number : 1601
Retention Time (minutes): 11.321
Quant Ion : 117.00
Area : 963403
On-column Amount (ng) : 50.0000
Integration start scan : 1591 Integration stop scan: 1610
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

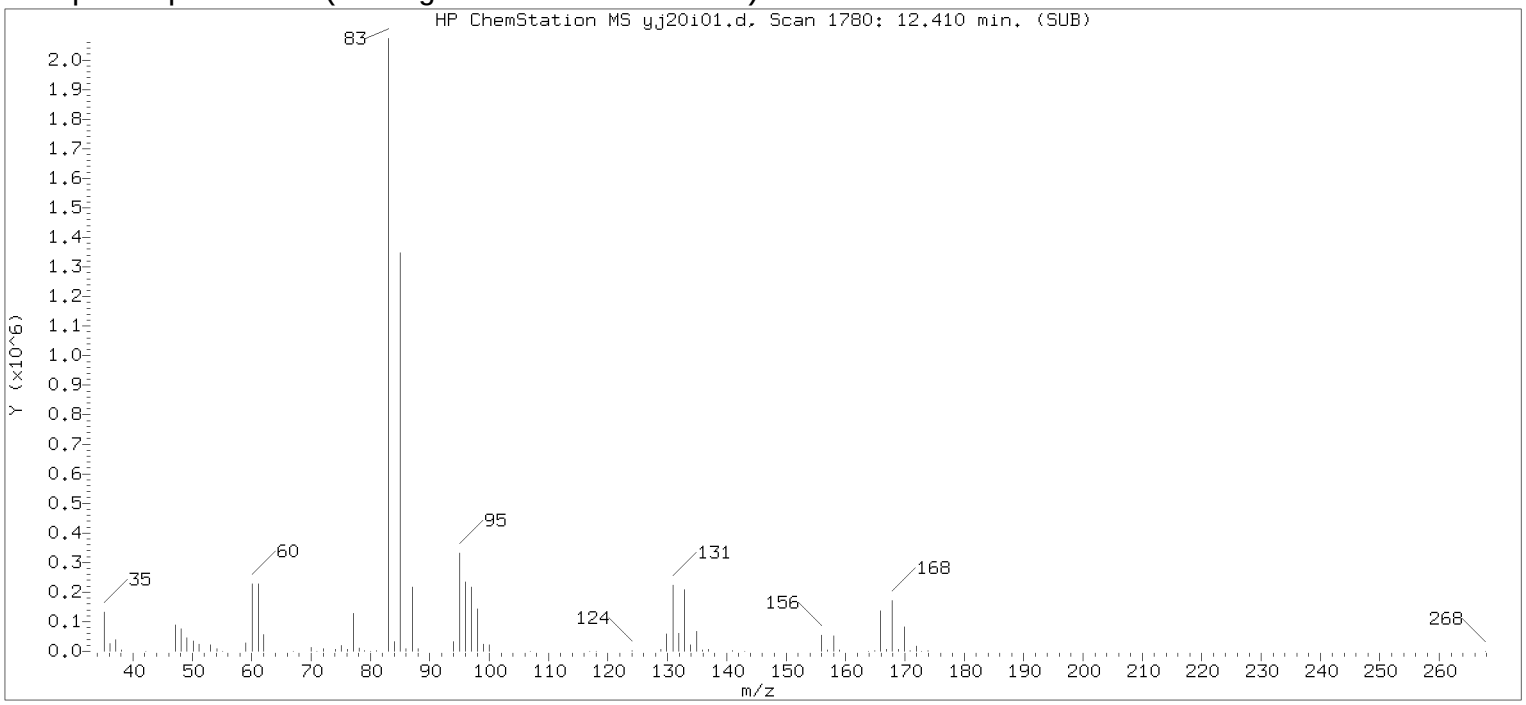
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 3219232M
On-Column Amount (ng) : 299.3521
Integration start scan : 1772 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

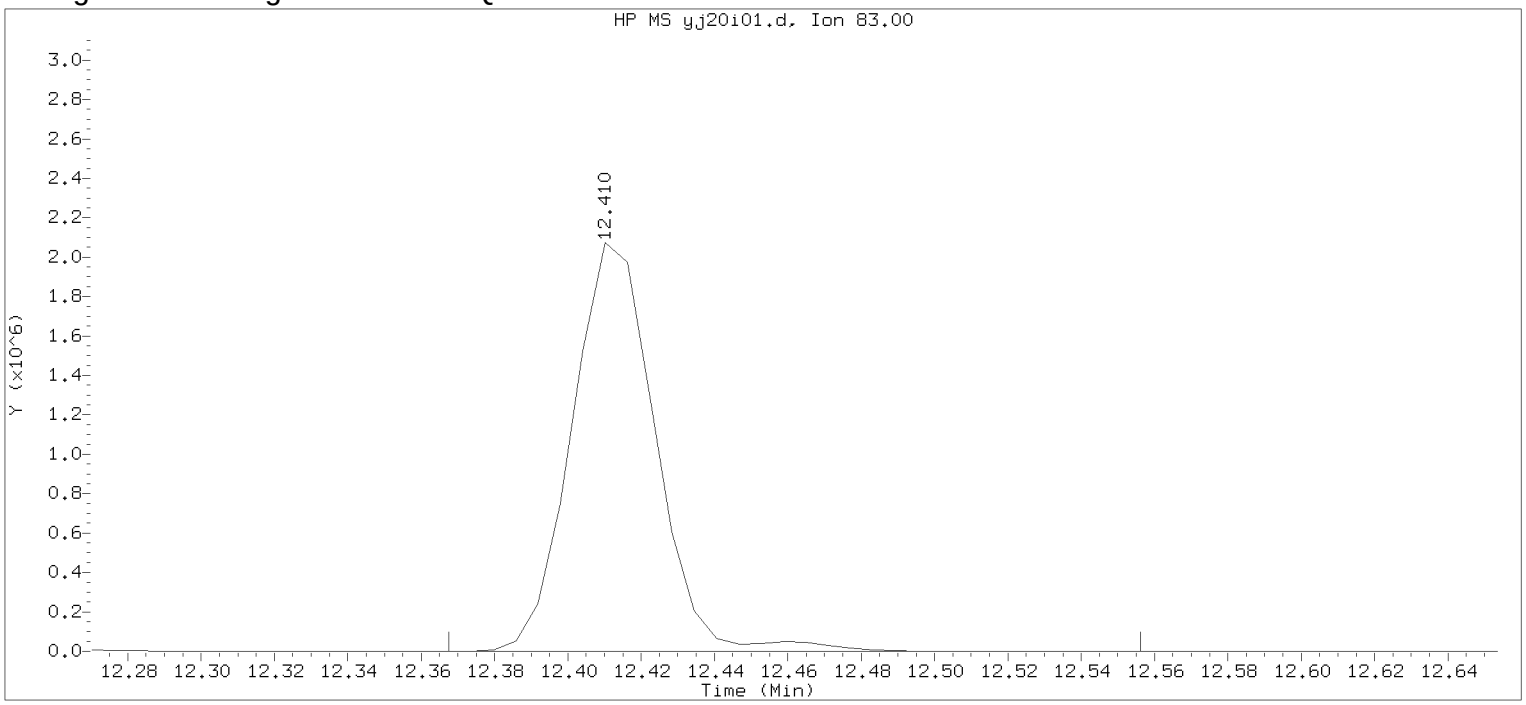
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

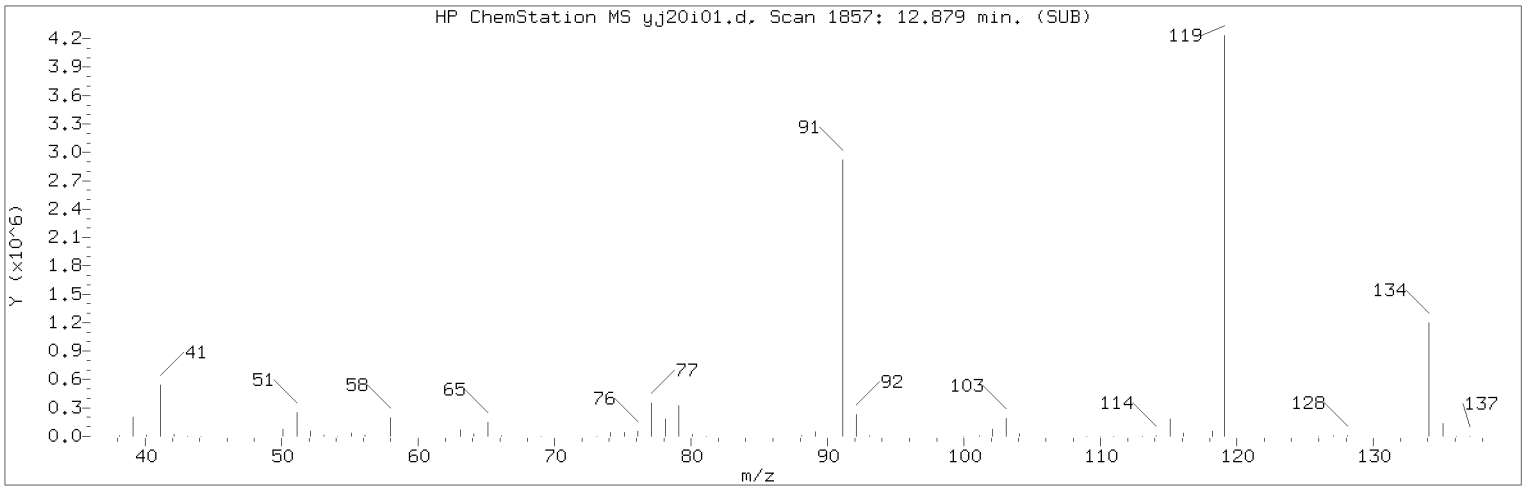
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

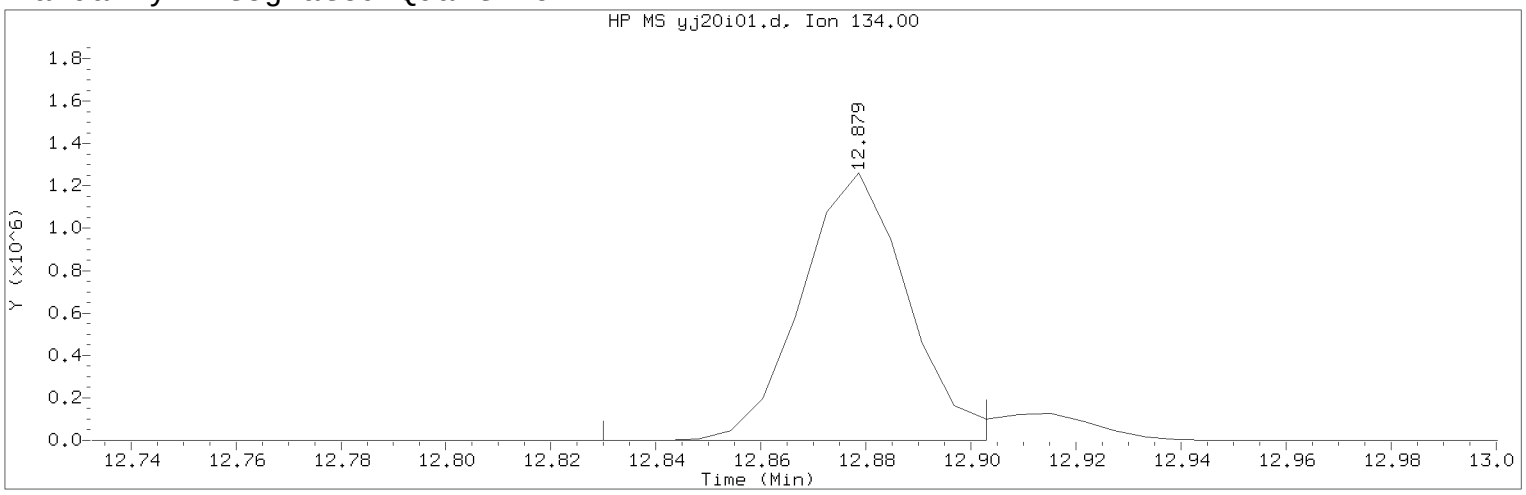
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 3289945
On-column Amount (ng) : 298.5751
Integration start scan : 1772 Integration stop scan: 1803
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

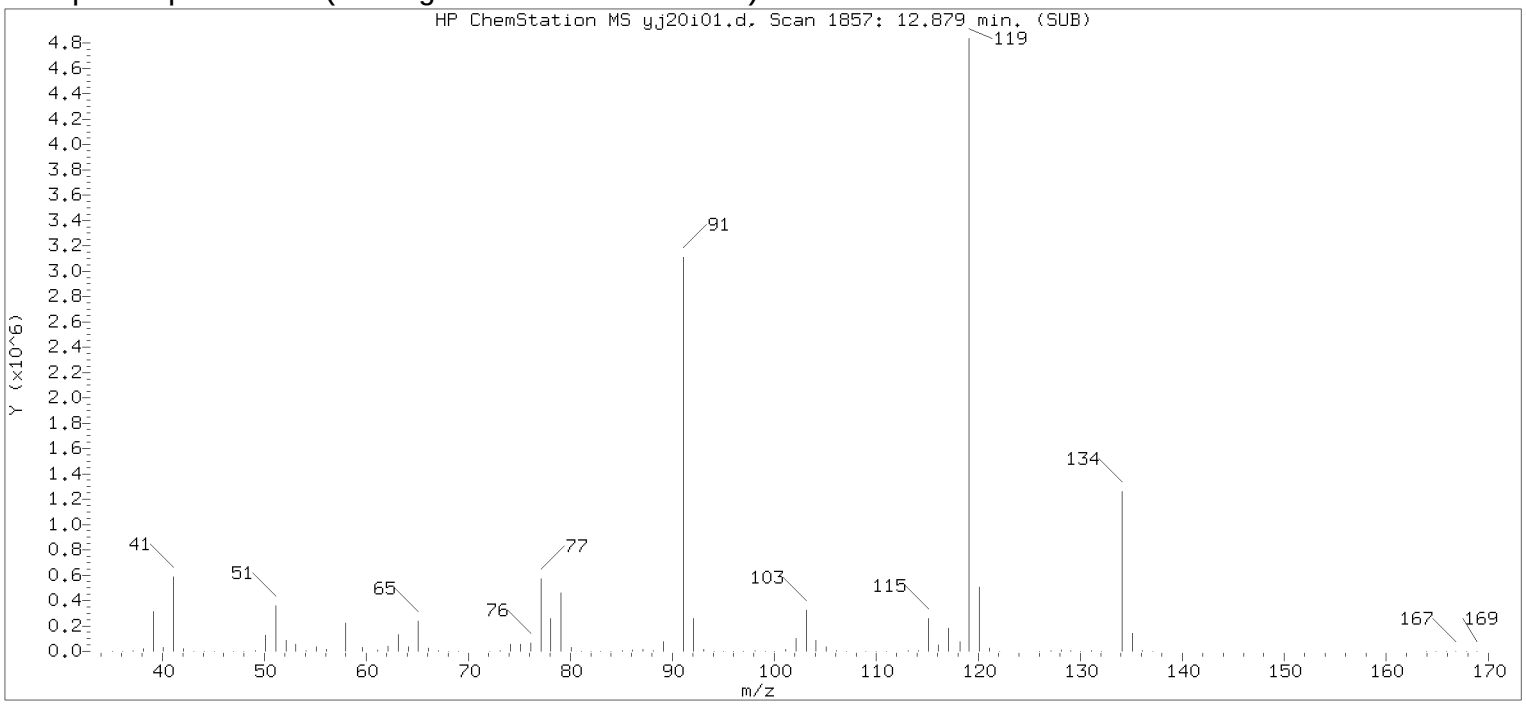
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1857
Retention Time (minutes): 12.879
Quant Ion : 134.00
Area (flag) : 1762488M
On-Column Amount (ng) : 301.1817
Integration start scan : 1848 Integration stop scan: 1860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

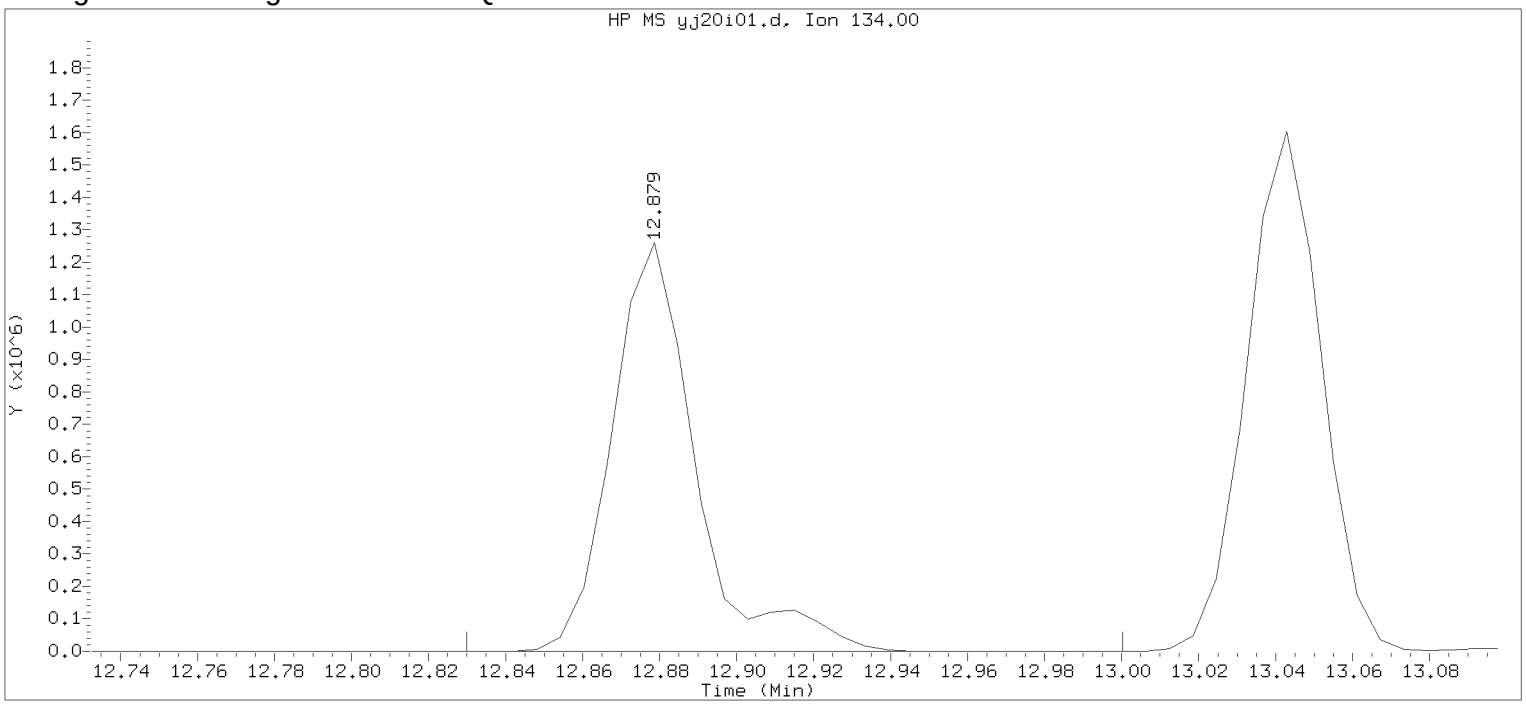
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:51.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



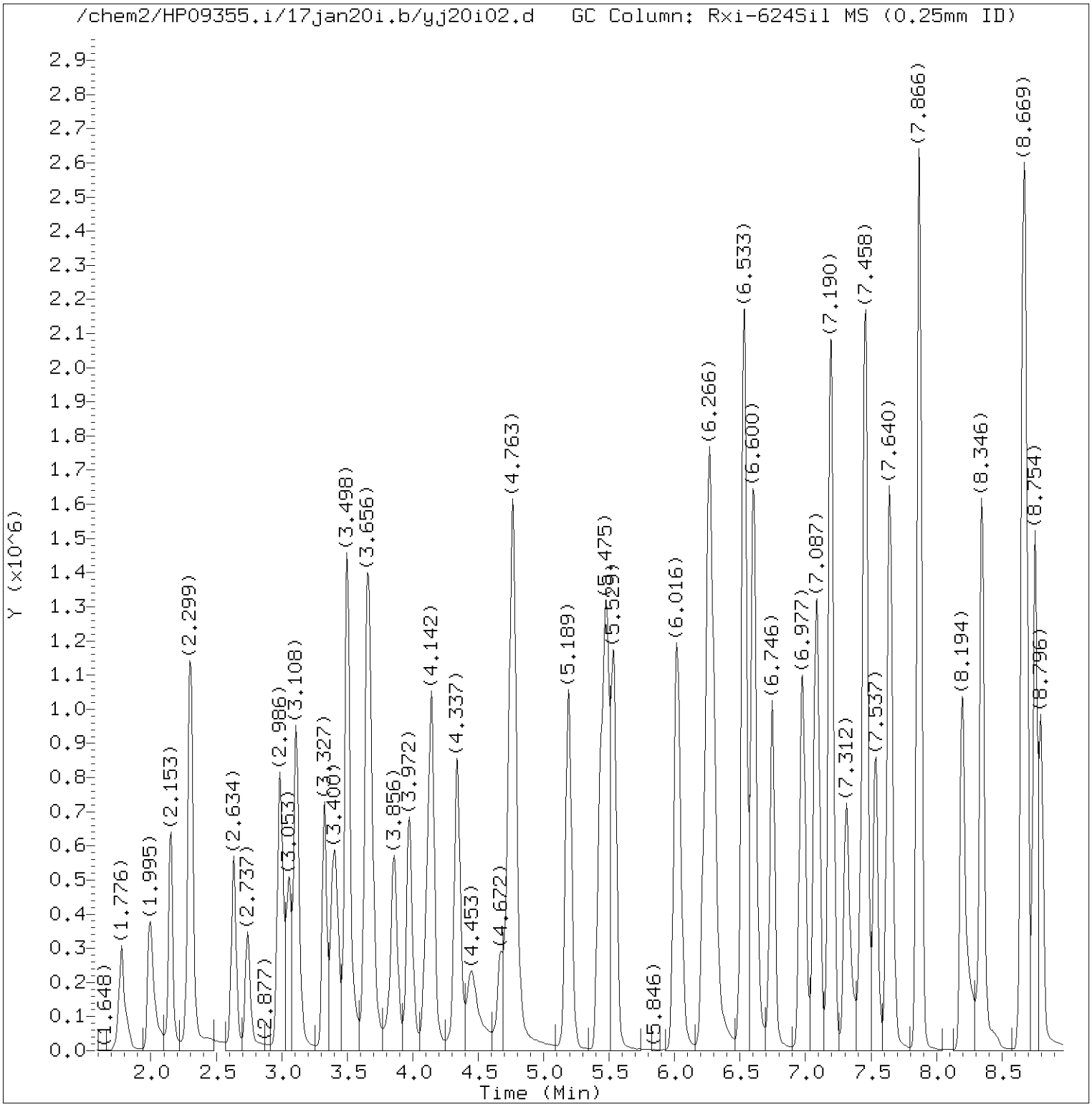

Data File: /chem2/HP09355.i/17jan20i.b/yj20i01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:18 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1857
Retention Time (minutes): 12.879
Quant Ion : 134.00
Area : 1909303
On-column Amount (ng) : 301.4026
Integration start scan : 1848 Integration stop scan: 1876
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231




Total Ion Chromatogram (TIC)

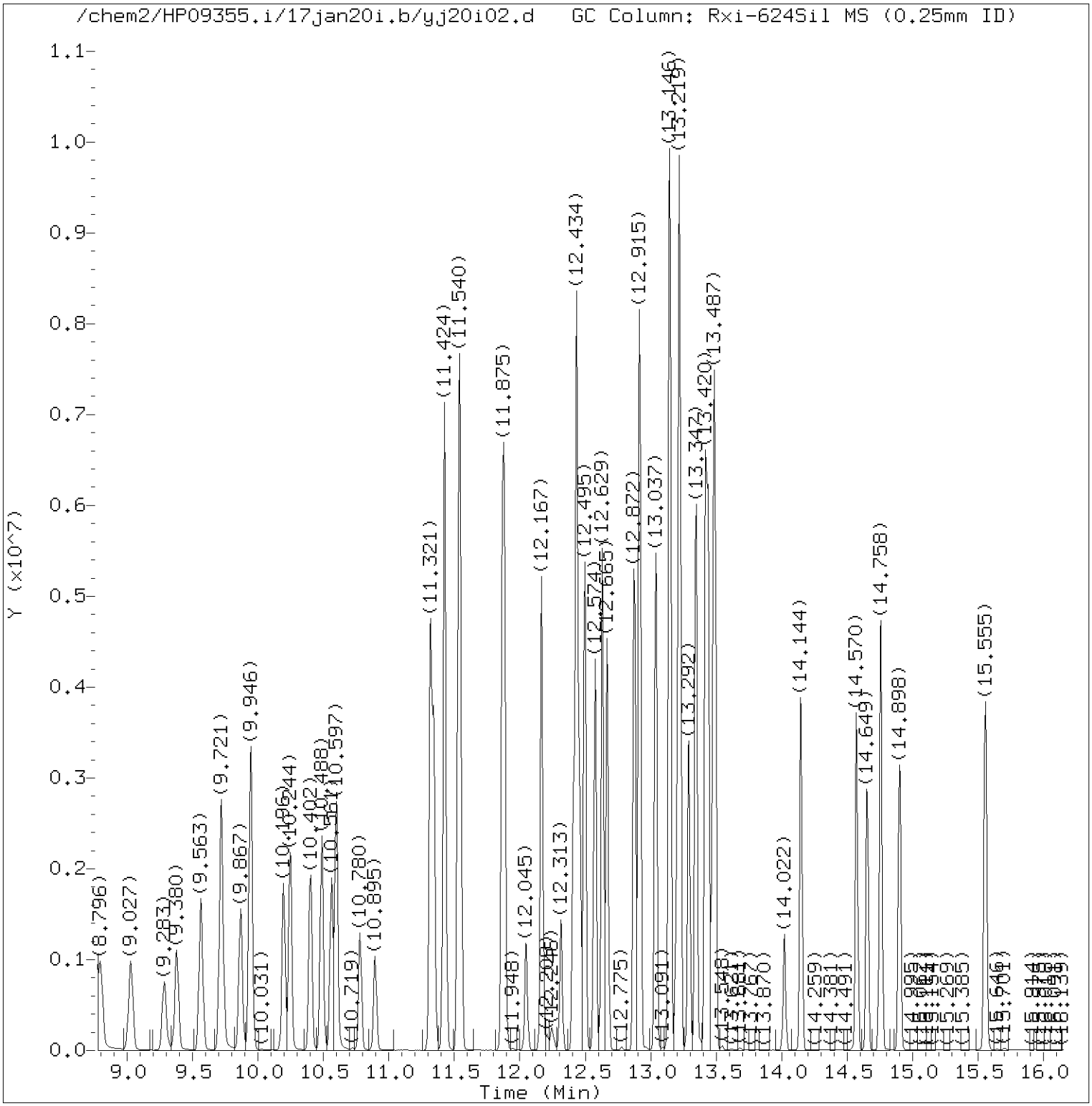
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.995 | 85 | 791153 | 100.672 |
| 4) Chloromethane | (2) | 2.153 | 50 | 832623 | 100.946 |
| 6) Vinyl Chloride | (2) | 2.293 | 62 | 780887 | 100.285 |
| 5) 1,3-Butadiene | (2) | 2.311 | 39 | 520036 | 77.016 |
| 8) Bromomethane | (2) | 2.634 | 94 | 539748 | 99.015 |
| 9) Chloroethane | (2) | 2.737 | 64 | 438357 | 98.285 |
| 10) Dichlorofluoromethane | (2) | 2.980 | 67 | 1008027 | 99.790 |
| 12) Trichlorofluoromethane | (2) | 3.053 | 101 | 930415 | 100.142 |
| 11) n-Pentane | (2) | 3.108 | 43 | 921229 | 91.965 |
| 14) Ethyl ether | (2) | 3.327 | 59 | 561446 | 101.921 |
| 15) Freon 123a | (2) | 3.400 | 67 | 636053 | 101.108 |
| 16) Acrolein | (1) | 3.498 | 56 | 2127939 | 1038.329 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 485820 | 103.845 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 63 | 249291 | 102.223 |
| 18) Acetone | (1) | 3.668 | 58 | 204716 | 205.480 |
| 19) Freon 113 | (2) | 3.674 | 101 | 489251 | 105.252 |
| 21) 2-Propanol | (1) | 3.832 | 45 | 401409M | 532.506 |
| 22) Methyl Iodide | (2) | 3.863 | 142 | 918522 | 104.120 |
| 23) Carbon Disulfide | (2) | 3.972 | 76 | 1532294 | 107.731 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 885678 | 100.934 |
| 25) Allyl Chloride | (2) | 4.142 | 41 | 992591 | 103.852 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 332781 | 250.000 |
| 28) Methylene Chloride | (2) | 4.337 | 84 | 591141 | 102.235 |
| 30) t-Butyl alcohol | (1) | 4.453 | 59 | 744718 | 503.669 |
| 31) Acrylonitrile | (2) | 4.672 | 53 | 407115 | 96.671 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.745 | 73 | 1962763 | 102.958 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 576460 | 102.271 |
| 34) n-Hexane | (2) | 5.189 | 57 | 880769 | 102.717 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 1035079M | 102.303 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 2061394 | 102.832 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.535 | 53 | 969633 | 104.310 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 1940844 | 103.271 |
| 44) 2-Butanone | (2) | 6.223 | 43 | 1221595 | 187.818 |
| 42) cis-1,2-Dichloroethene | (2) | 6.259 | 96 | 662318 | 102.778 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 847027 | 105.116 |
| 47) Propionitrile | (1) | 6.308 | 54 | 903874 | 521.610 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 1165939 | 256.758 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 349068 | 105.124 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 320710 | 204.981 |
| 51) Chloroform | (2) | 6.746 | 83 | 1054912 | 103.378 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 1238778 | 205.049 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 280445 | 50.074 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 111 | 286576 | 50.137 |
| 53) 1,1,1-Trichloroethane | (2) | 6.983 | 97 | 893813 | 103.729 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 1039392 | 102.486 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 861303 | 103.404 |
| 54) Cyclohexane | (2) | 7.087 | 69 | 318656 | 103.433 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 840998 | 101.445 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 777243 | 107.134 |
| 58) Isobutyl Alcohol | (1) | 7.312 | 41 | 712031 | 1285.862 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 72722 | 49.705 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 363458 | 49.343 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 104 | 45696 | 49.189 |
| 60) Benzene | (2) | 7.458 | 78 | 2471862 | 101.496 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 62 | 890969 | 100.854 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 98 | 81432 | 103.530 |
| 65) t-Amyl methyl ether | (2) | 7.640 | 73 | 1940444 | 103.007 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1197583 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 1013713 | 100.416 |
| 69) n-Butanol | (1) | 8.194 | 56 | 1239644M | 2752.205 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 647656 | 101.502 |
| 72) Methylcyclohexane | (2) | 8.662 | 83 | 1143884 | 103.638 |
| 72) Methylcyclohexane | (2) | 8.662 | 98 | 515890 | 103.445 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 665962 | 102.999 |
| 76) Methyl Methacrylate | (2) | 8.754 | 69 | 726640 | 104.924 |
| 75) 1,4-Dioxane | (1) | 8.766 | 88 | 161473M | 1322.935 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 435984 | 104.219 |
| 78) Bromodichloromethane | (2) | 9.027 | 83 | 798466 | 108.282 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 599243 | 211.684 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 559100 | 103.713 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 1052437 | 108.544 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 2308363 | 197.272 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1176411 | 49.645 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 764671 | 49.862 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 2045593 | 219.160 |
| 88) Toluene | (3) | 9.946 | 92 | 1617206 | 101.190 |

M = Compound was manually integrated.
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Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 993156 | 110.616 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 1169093 | 107.944 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 641521 | 103.080 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 718498 | 101.027 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 1070169 | 101.578 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1856002M | 195.966 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 681694 | 112.792 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 706029 | 104.297 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 918852 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 889746 | 102.149 |
| 102) Chlorobenzene | (3) | 11.345 | 112 | 1846111 | 101.390 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424 | 131 | 630921 | 109.262 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 3157711 | 102.434 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 2538643 | 206.423 |
| 108) Xylene (Total) | (3) | | 106 | 3786968 | 309.944 |
| 107) o-Xylene | (3) | 11.869 | 106 | 1248325 | 103.521 |
| 109) Styrene | (3) | 11.881 | 104 | 2150648 | 107.445 |
| 110) Bromoform | (3) | 12.051 | 173 | 528641 | 117.727 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 3133852 | 102.982 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 121822M | 1339.151 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 444561 | 49.898 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 174 | 379057 | 49.927 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 1073938M | 103.145 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 897786 | 276.554 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 862896 | 102.626 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 352495 | 101.269 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 3677906 | 101.208 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 761590 | 101.846 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 2712296 | 102.354 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 809598 | 101.998 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 585206M | 103.288 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 483674 | 112.904 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 2832731 | 103.371 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 3381374 | 101.512 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 1644893 | 102.539 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 3070909 | 103.762 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 507846 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 1699043 | 102.899 |

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Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 2861125 | 103.943 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 2197428 | 116.345 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 1798167 | 104.330 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 1852177 | 103.576 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 1508795 | 101.281 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 1588913 | 103.118 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 1505571 | 104.102 |
| 141) Diethylbenzene (total) | (4) | | 100 | 5155915 | 312.008 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 269727 | 108.397 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 1129153 | 100.036 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 1028044 | 99.663 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 494255 | 97.503 |
| 148) Naphthalene | (4) | 14.758 | 128 | 3419420 | 103.580 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 926945 | 98.832 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 1880900 | 105.794 |



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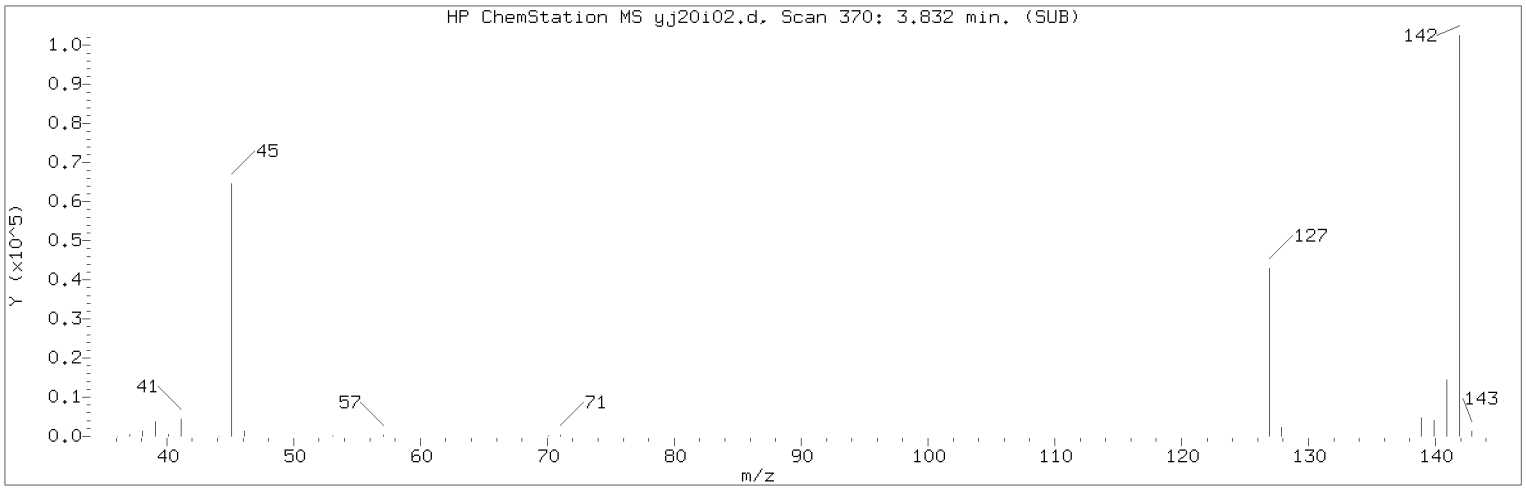
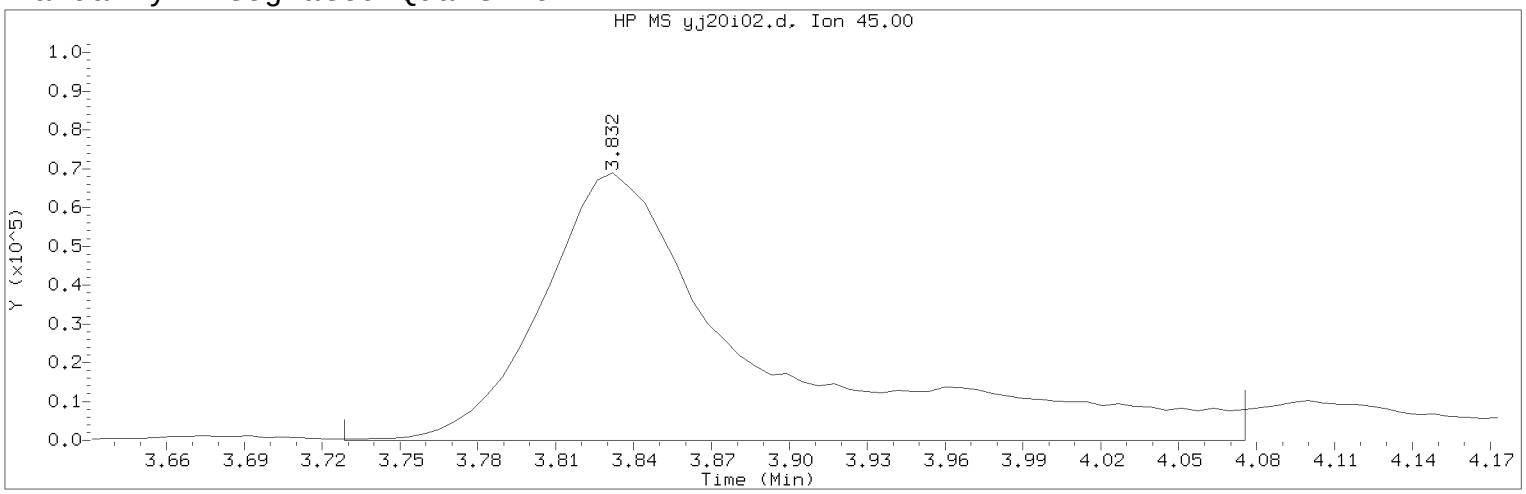
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

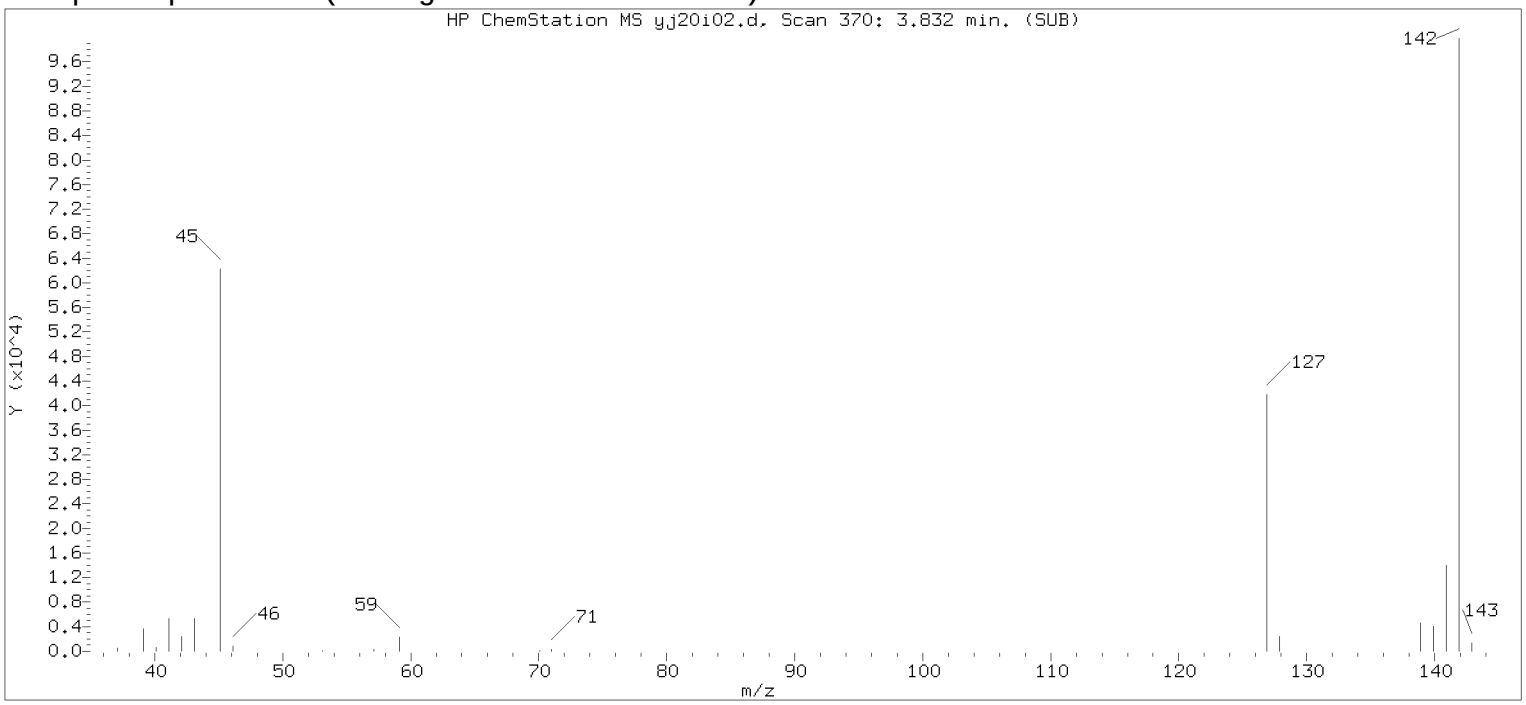
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 370
Retention Time (minutes): 3.832
Quant Ion : 45.00
Area (flag) : 401409M
On-Column Amount (ng) : 532.5056
Integration start scan : 352 Integration stop scan: 409
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

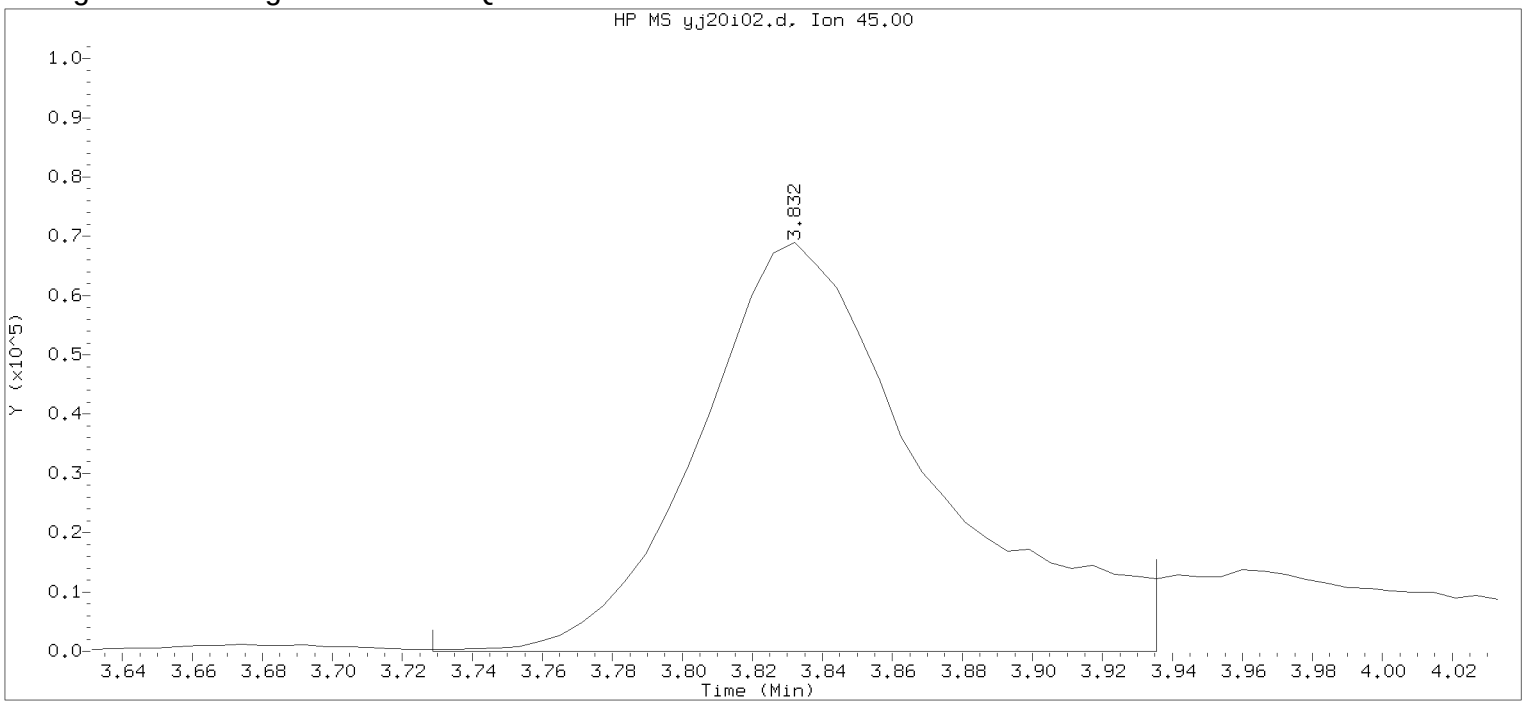
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

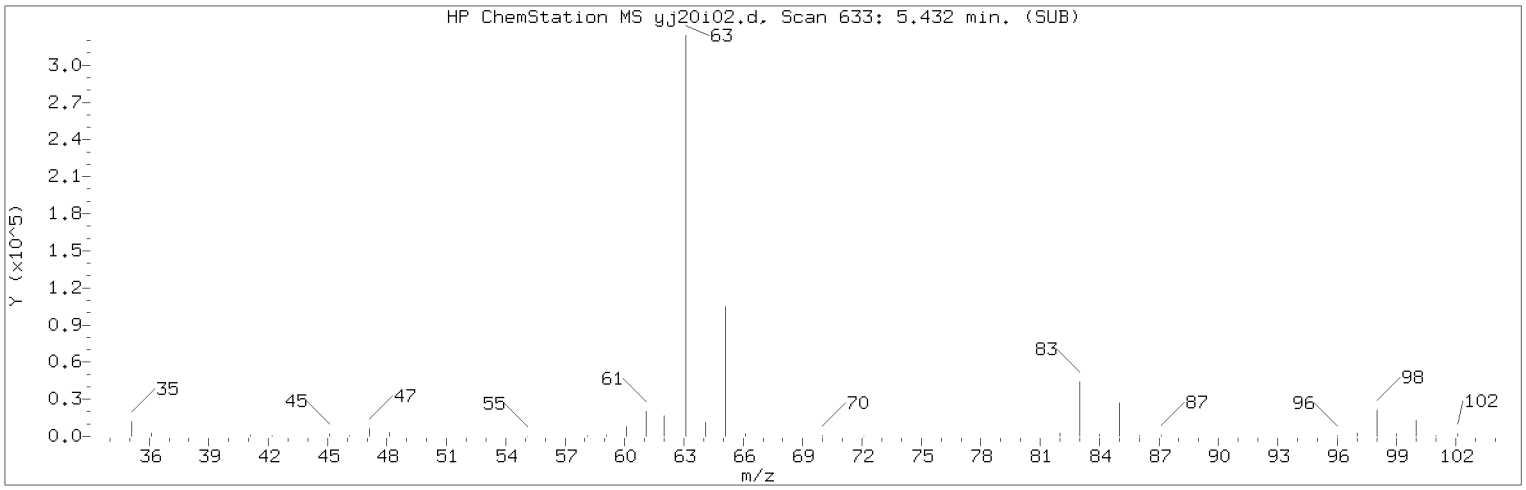
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

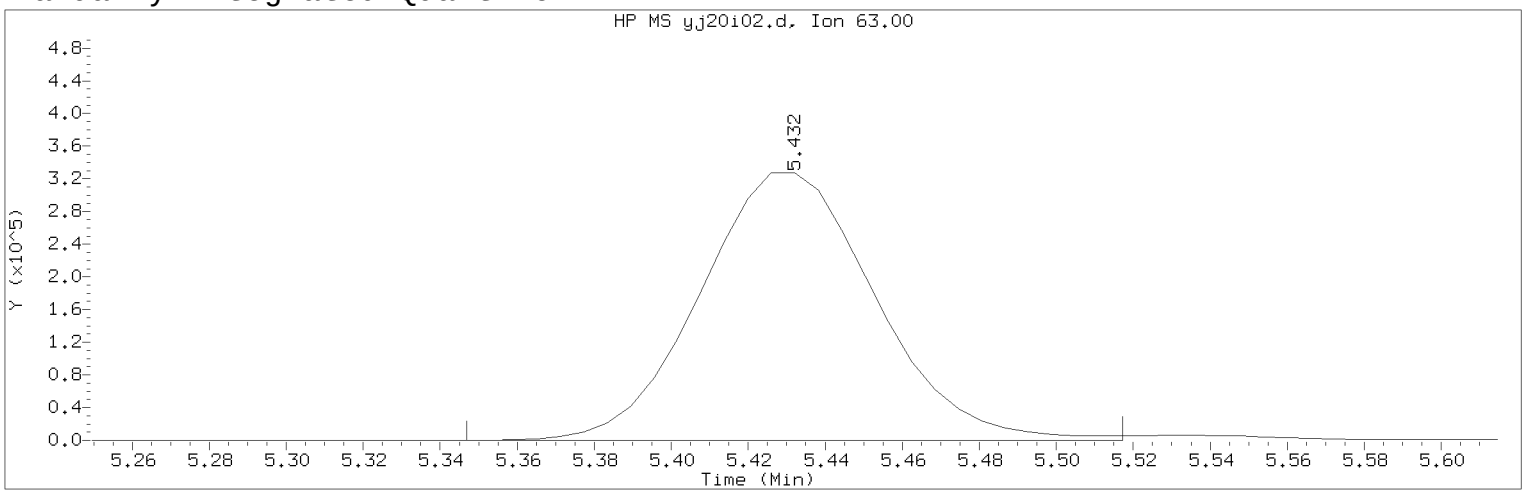
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 370
Retention Time (minutes): 3.832
Quant Ion : 45.00
Area : 312732
On-column Amount (ng) : 459.8650
Integration start scan : 352 Integration stop scan: 386
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
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Sample Name: VSTD100 Lab Sample ID: VSTD100

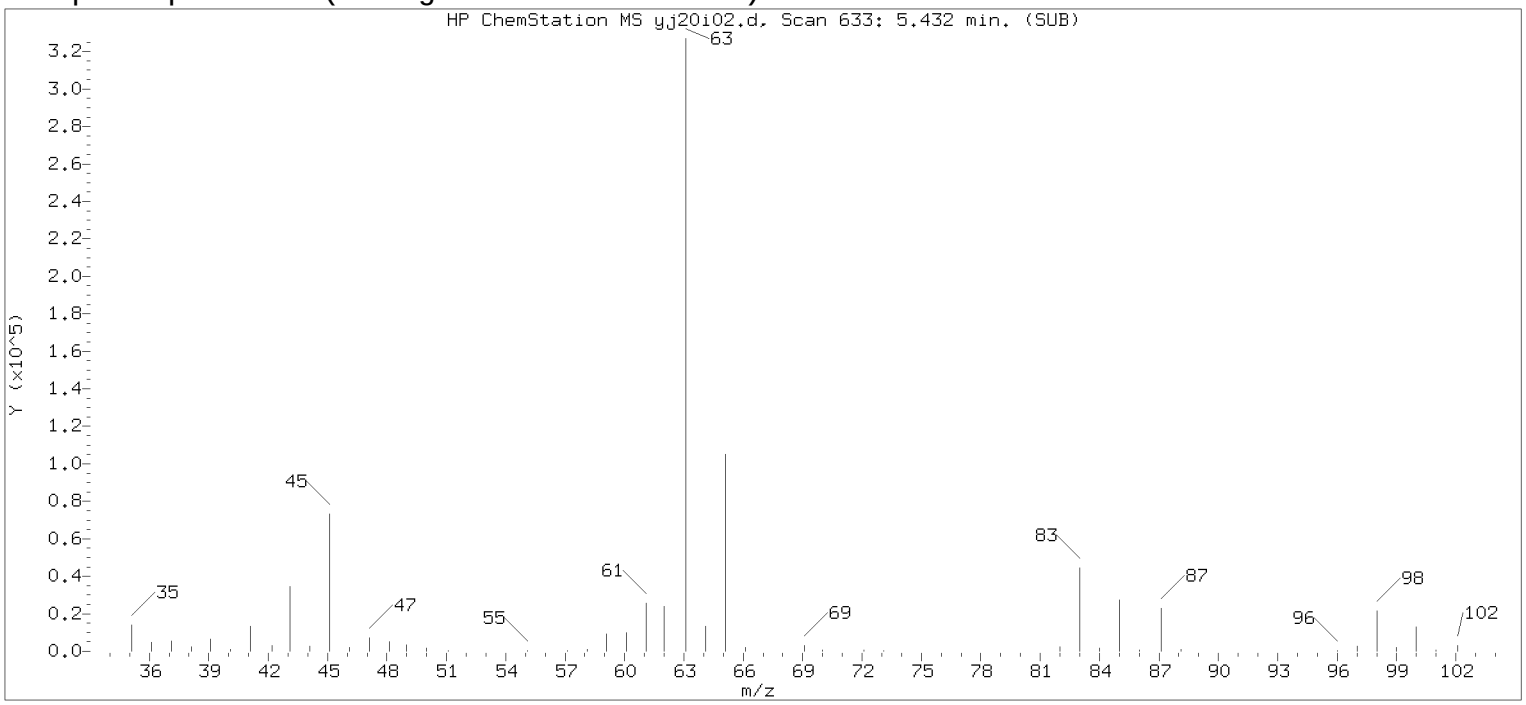
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 633
Retention Time (minutes): 5.432
Quant Ion : 63.00
Area (flag) : 1035079M
On-Column Amount (ng) : 102.3034
Integration start scan : 618 Integration stop scan: 646
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

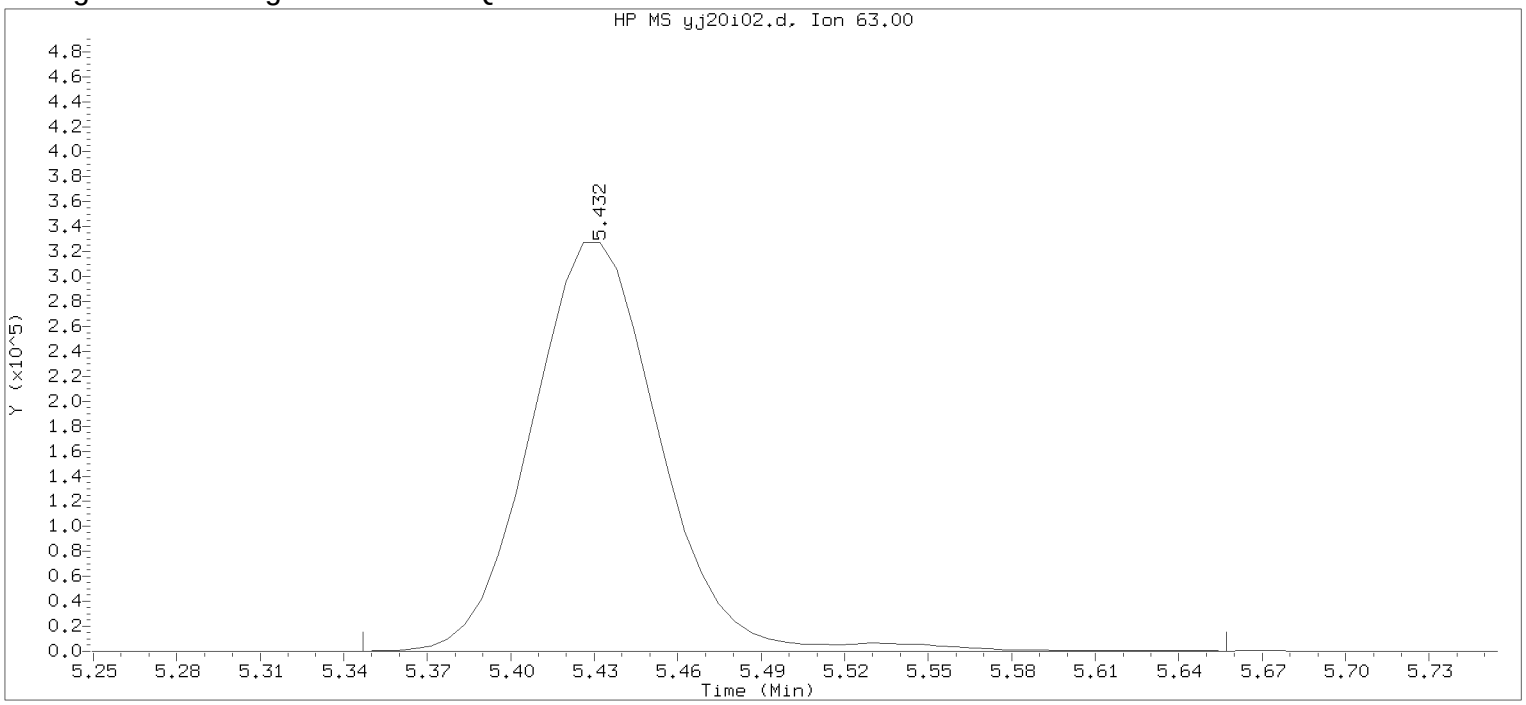
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

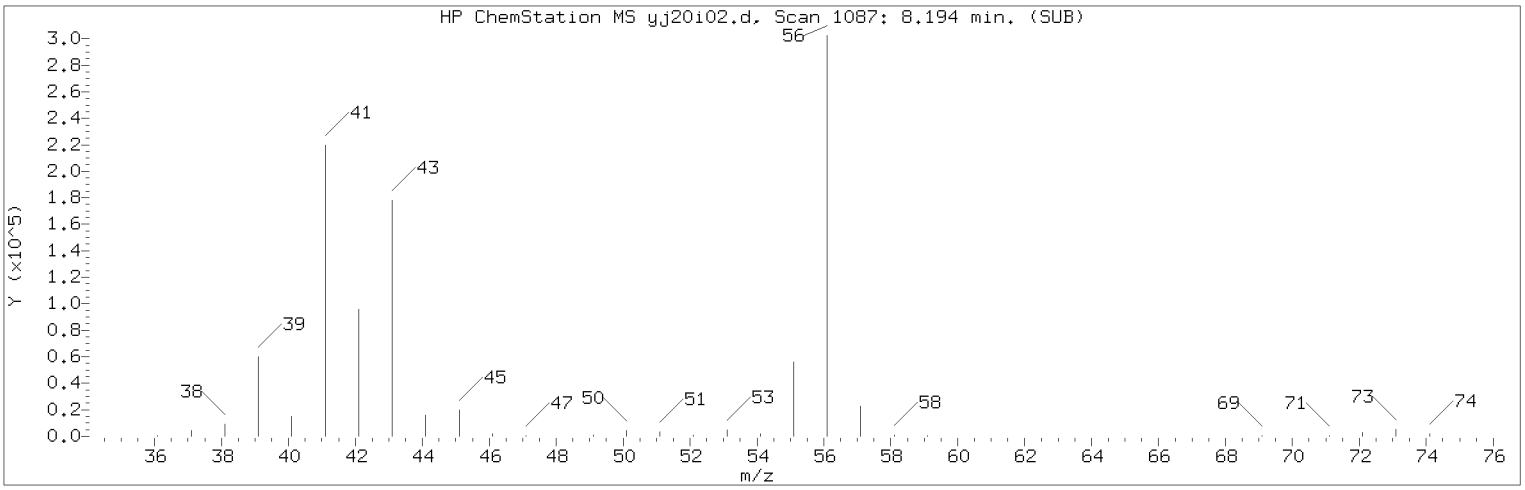
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

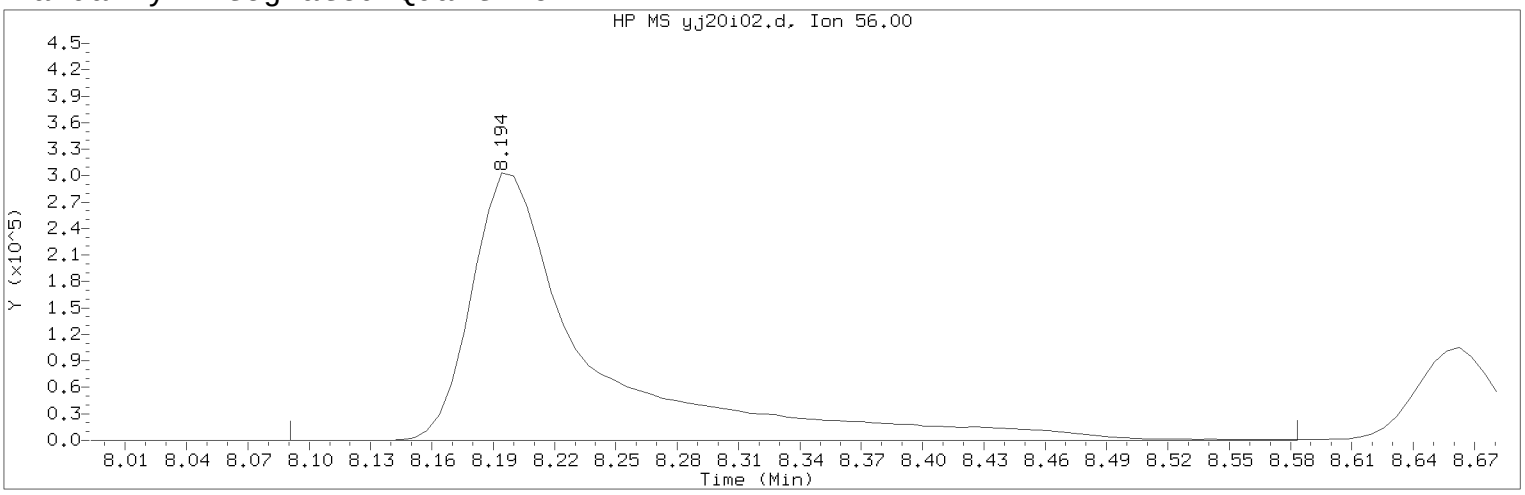
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 633
Retention Time (minutes): 5.432
Quant Ion : 63.00
Area : 1052994
On-column Amount (ng) : 102.1284
Integration start scan : 618 Integration stop scan: 669
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user KENBWK231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

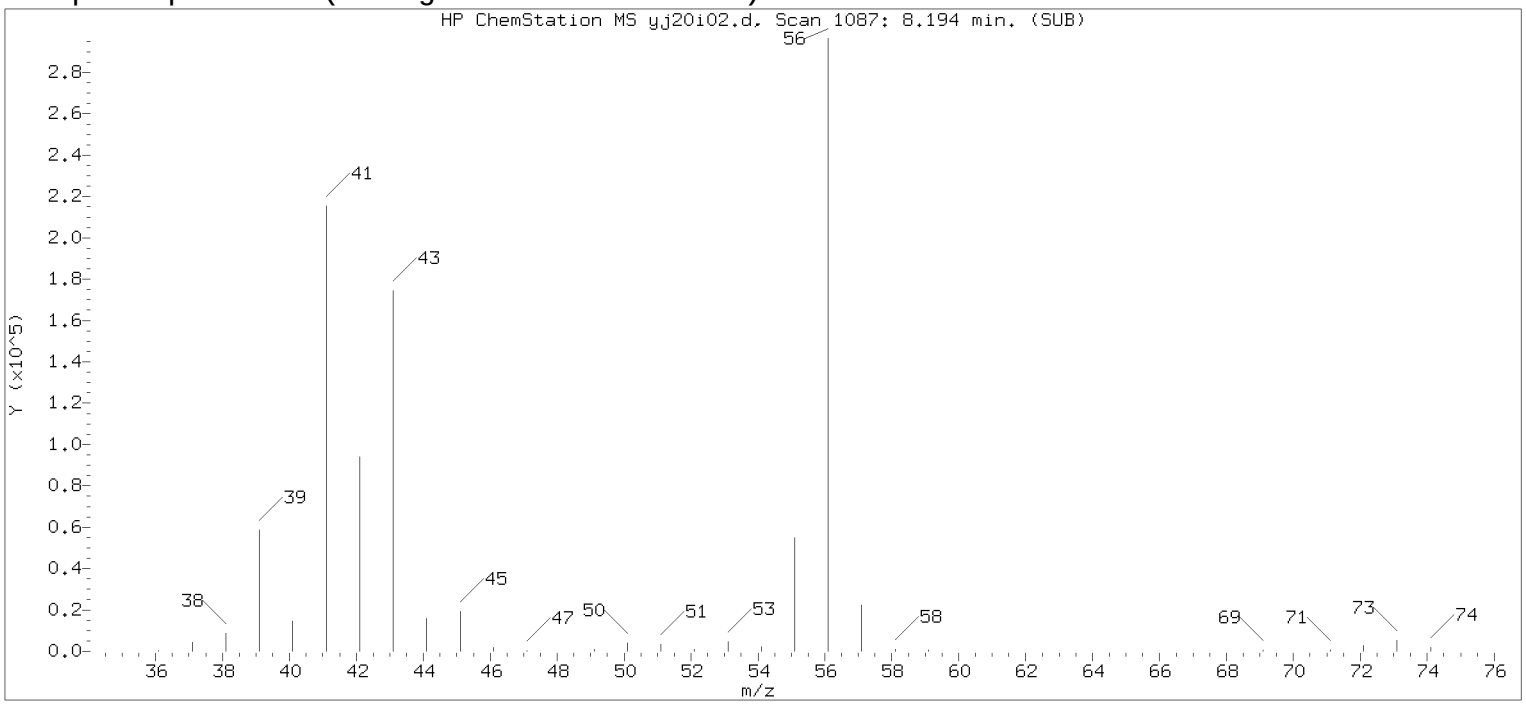
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area (flag) : 1239644M
On-Column Amount (ng) : 2752.2047
Integration start scan : 1069 Integration stop scan: 1150
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

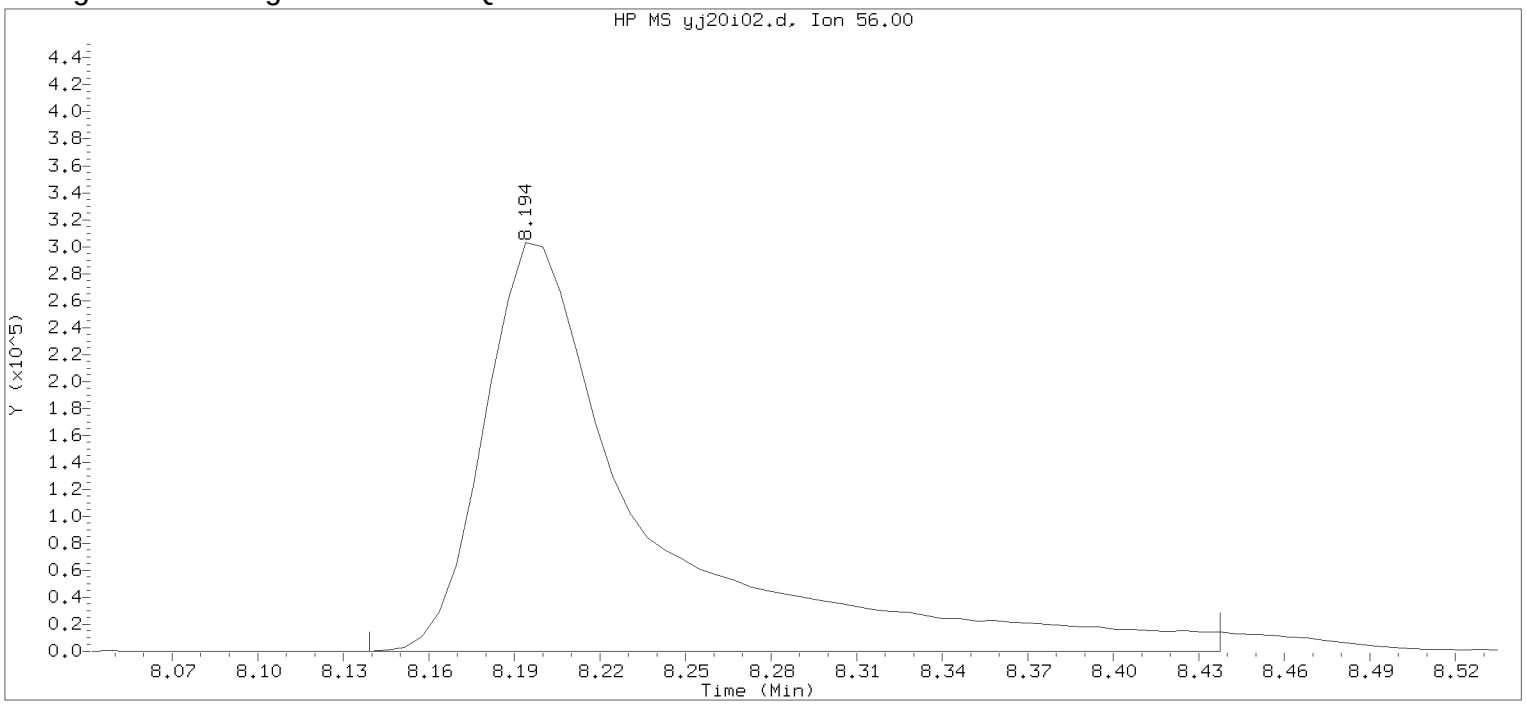
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

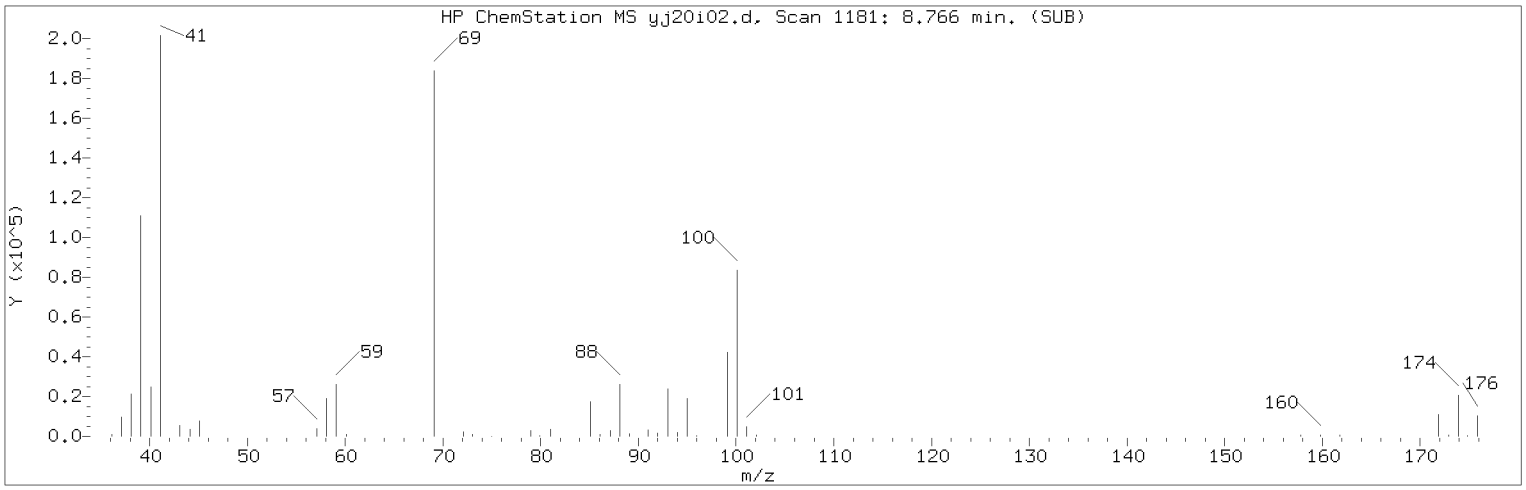
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

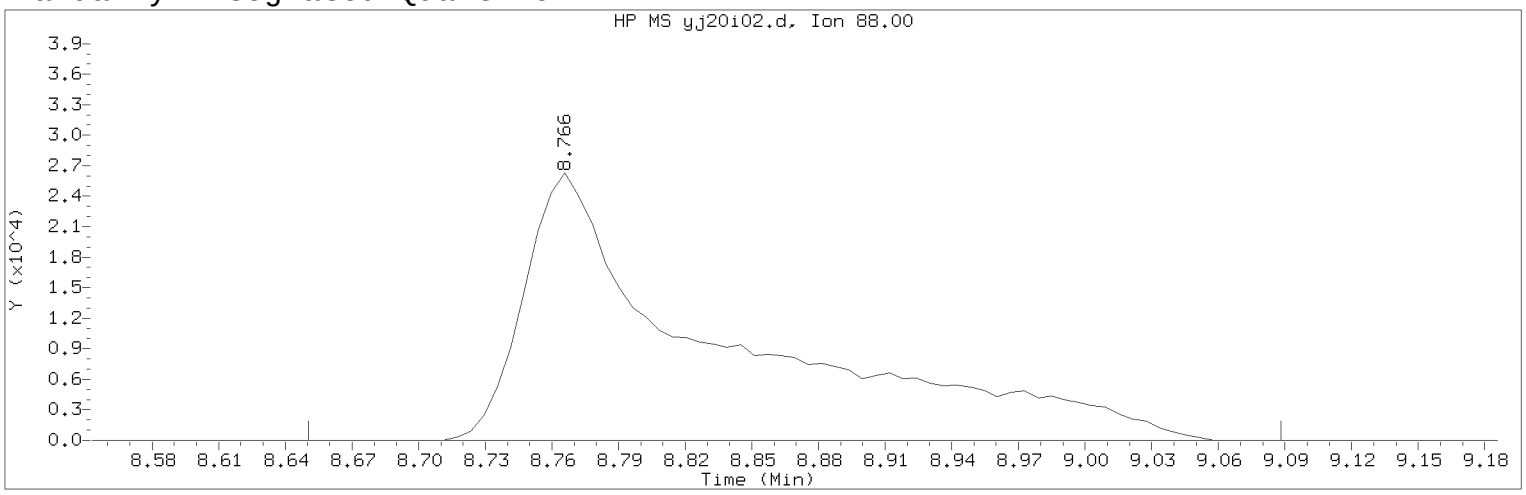
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area : 1200530
On-column Amount (ng) : 2692.5283
Integration start scan : 1077 Integration stop scan: 1126
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

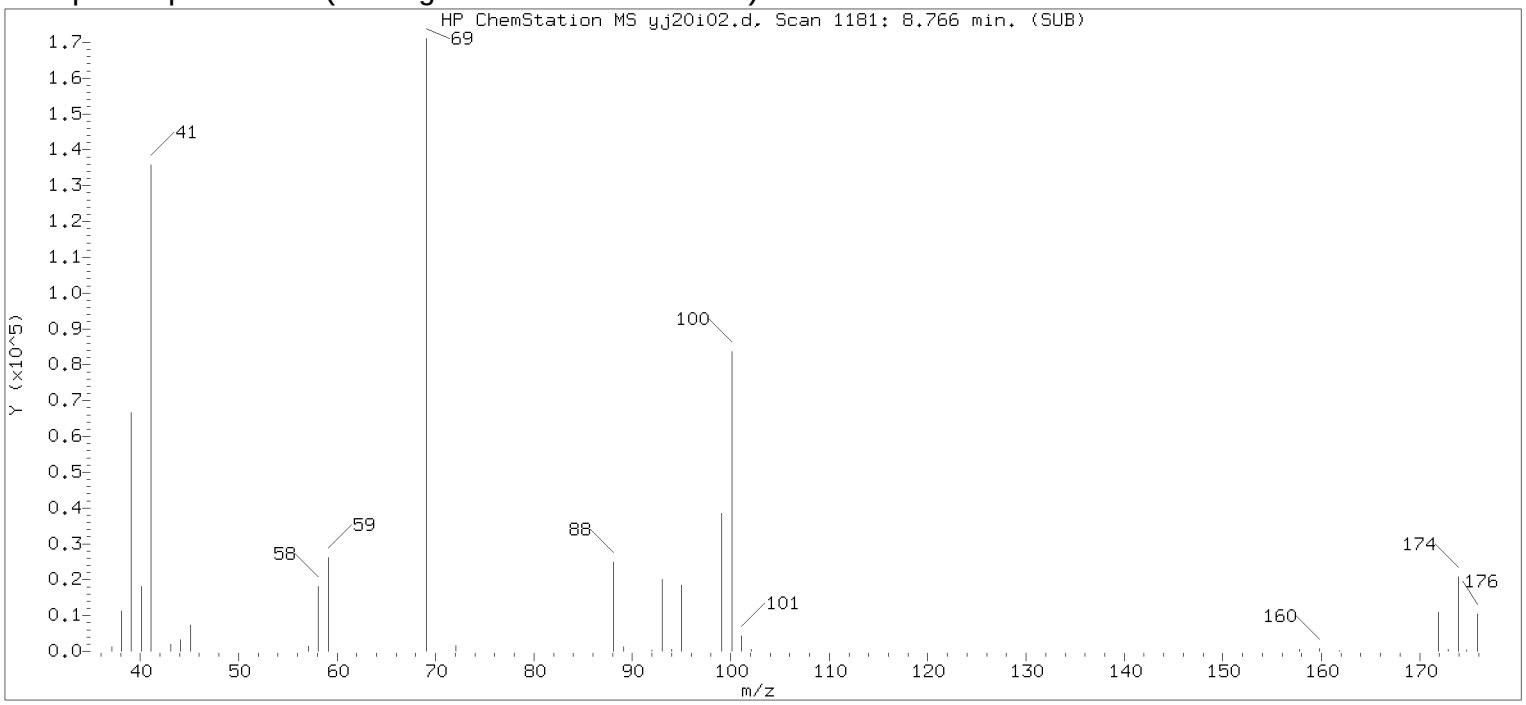
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area (flag) : 161473M
On-Column Amount (ng) : 1322.9348
Integration start scan : 1161 Integration stop scan: 1233
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

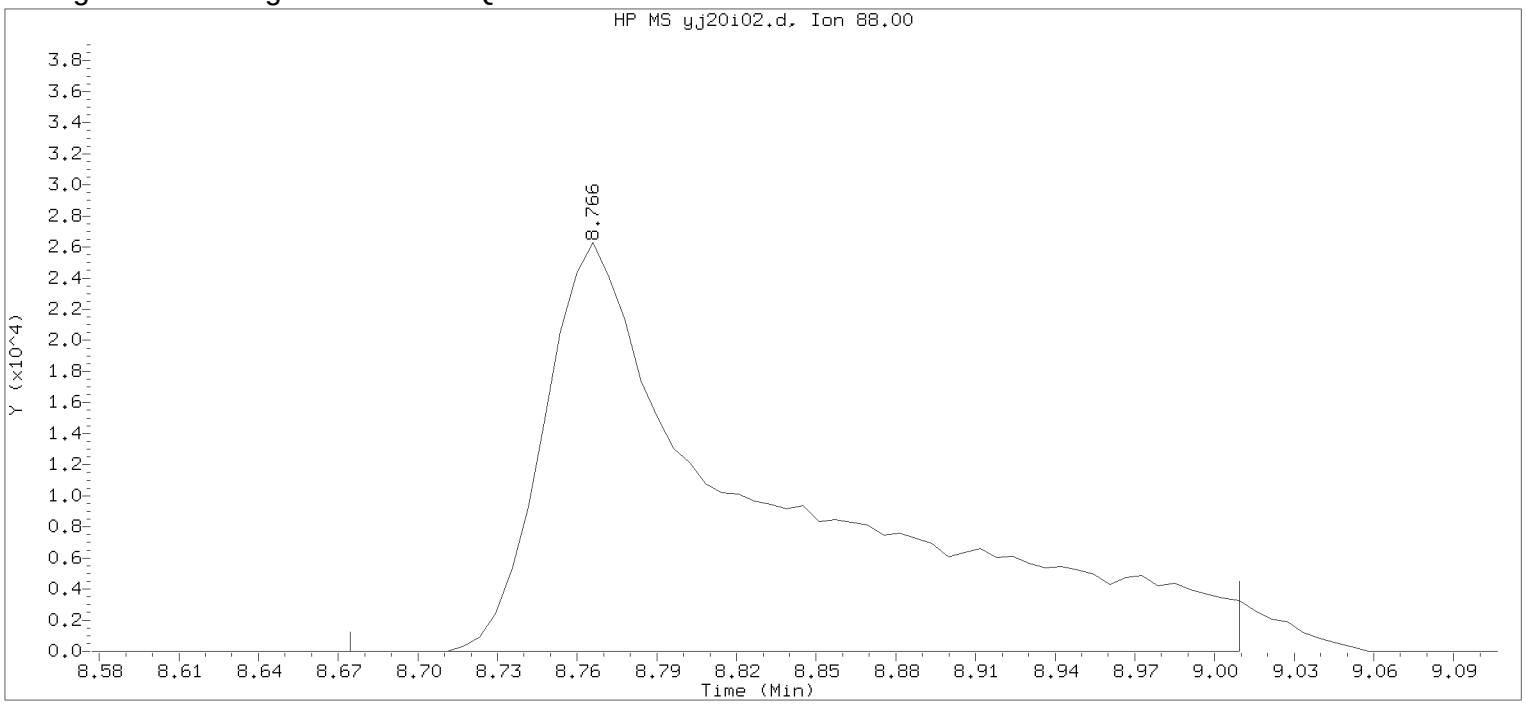
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

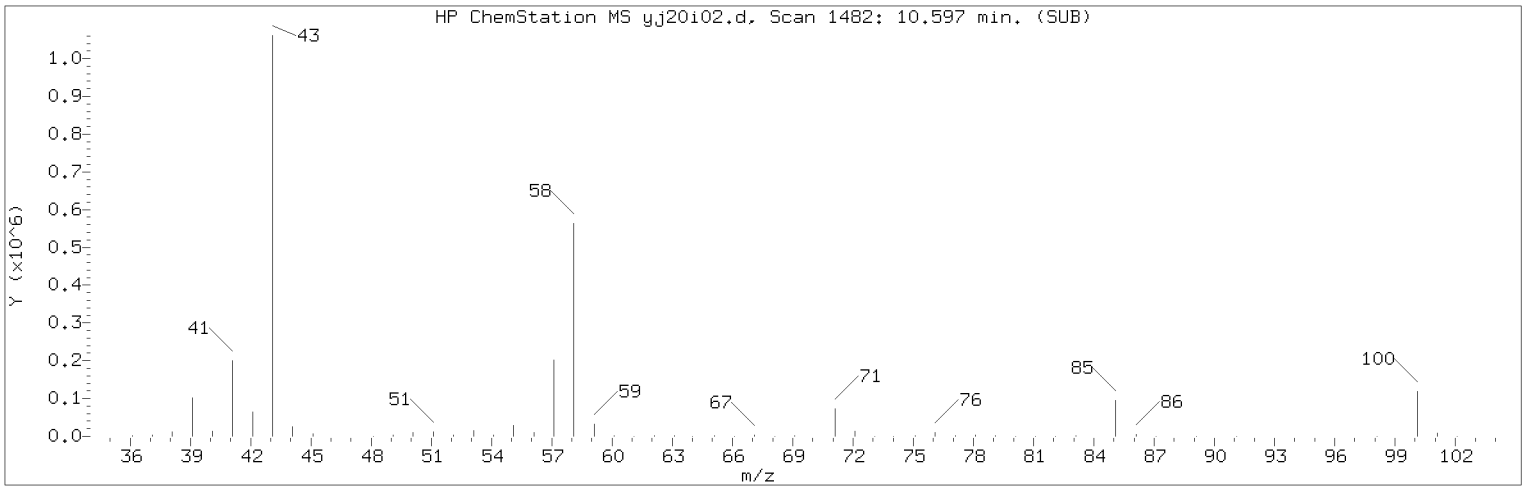
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

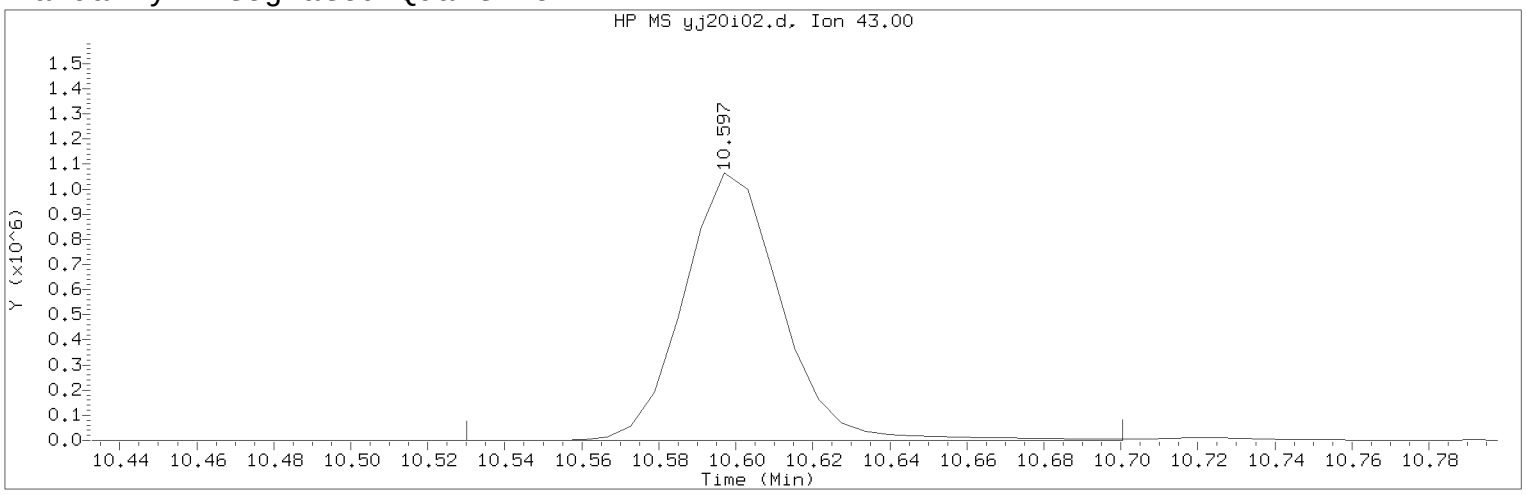
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area : 157456
On-column Amount (ng) : 1301.3557
Integration start scan : 1165 Integration stop scan: 1220
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

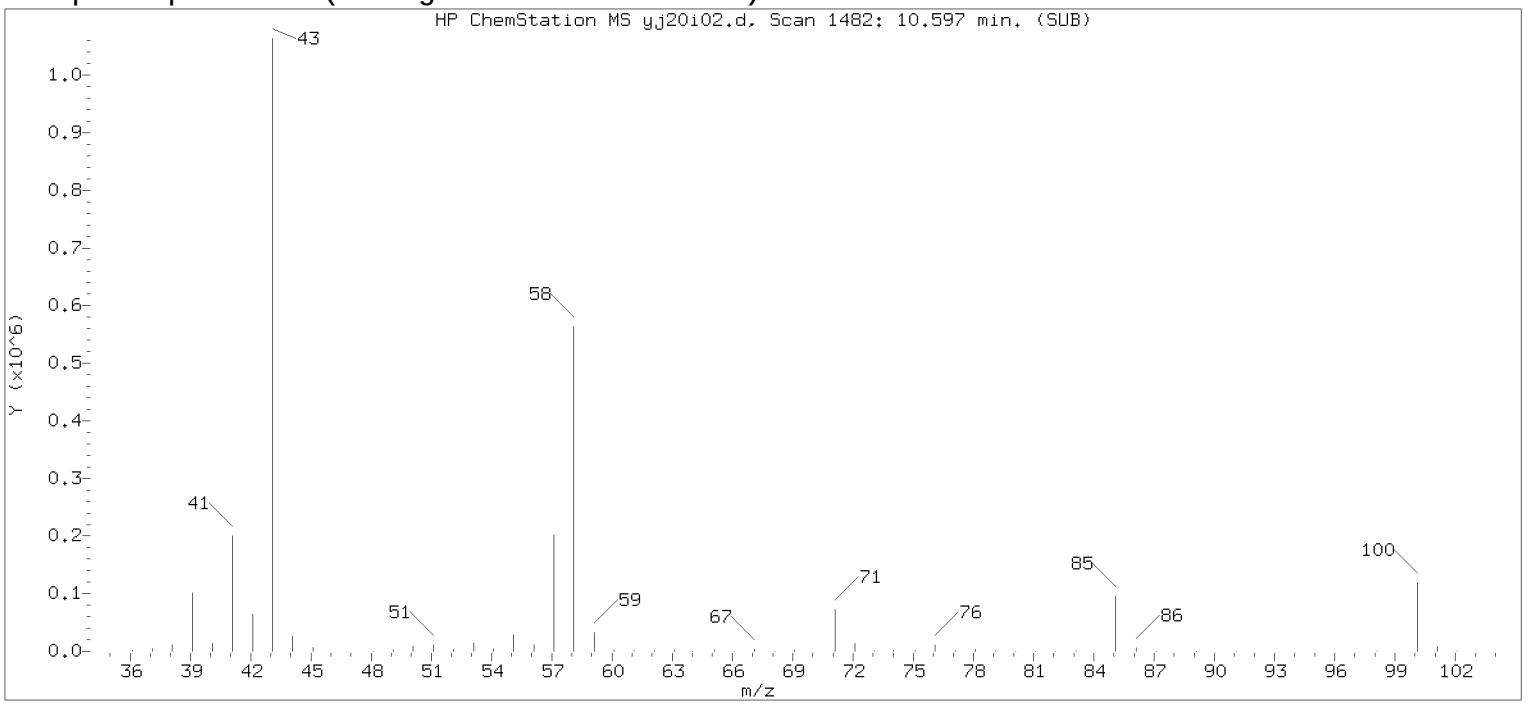
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1482
Retention Time (minutes): 10.597
Quant Ion : 43.00
Area (flag) : 1856002M
On-Column Amount (ng) : 195.9659
Integration start scan : 1470 Integration stop scan: 1498
Y at integration start : 263 Y at integration end: 263

Reason for manual integration: improper integration

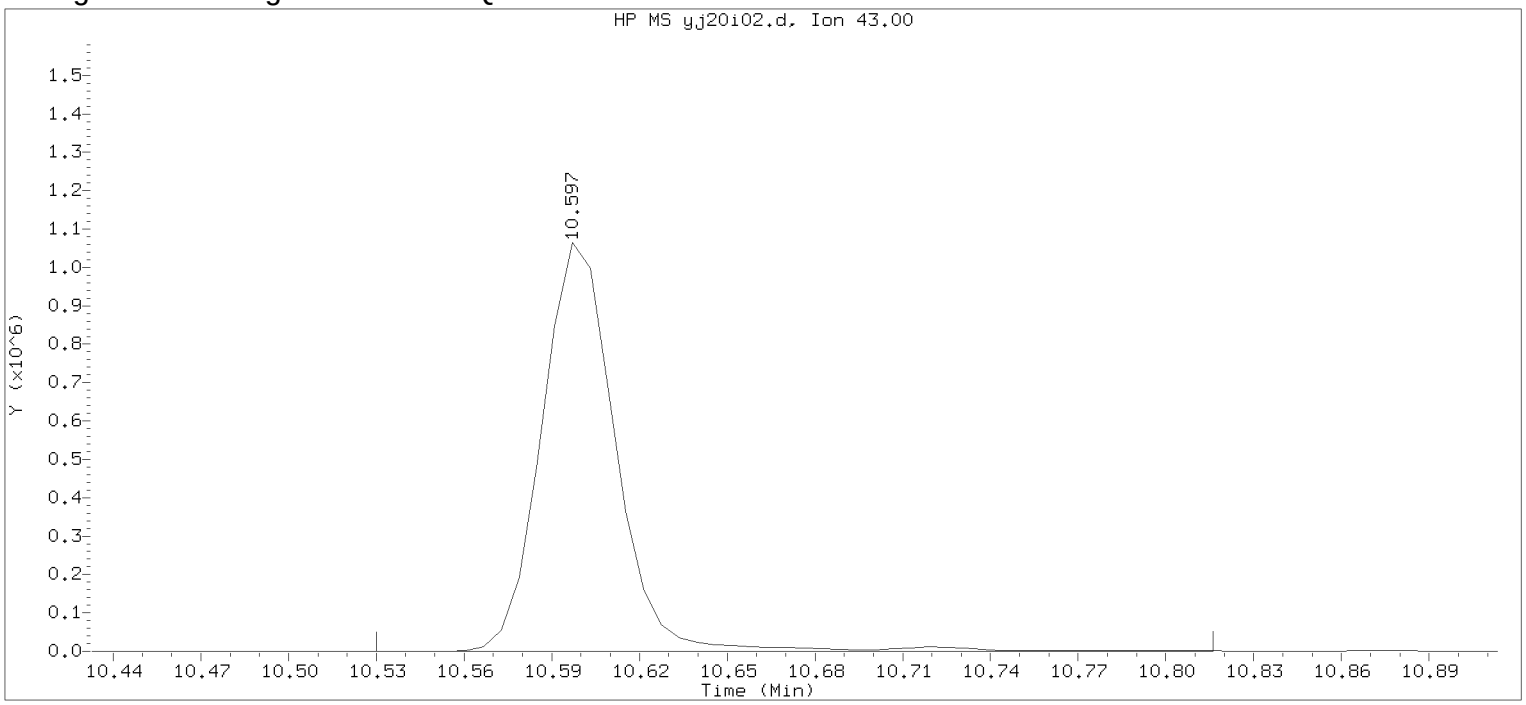
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

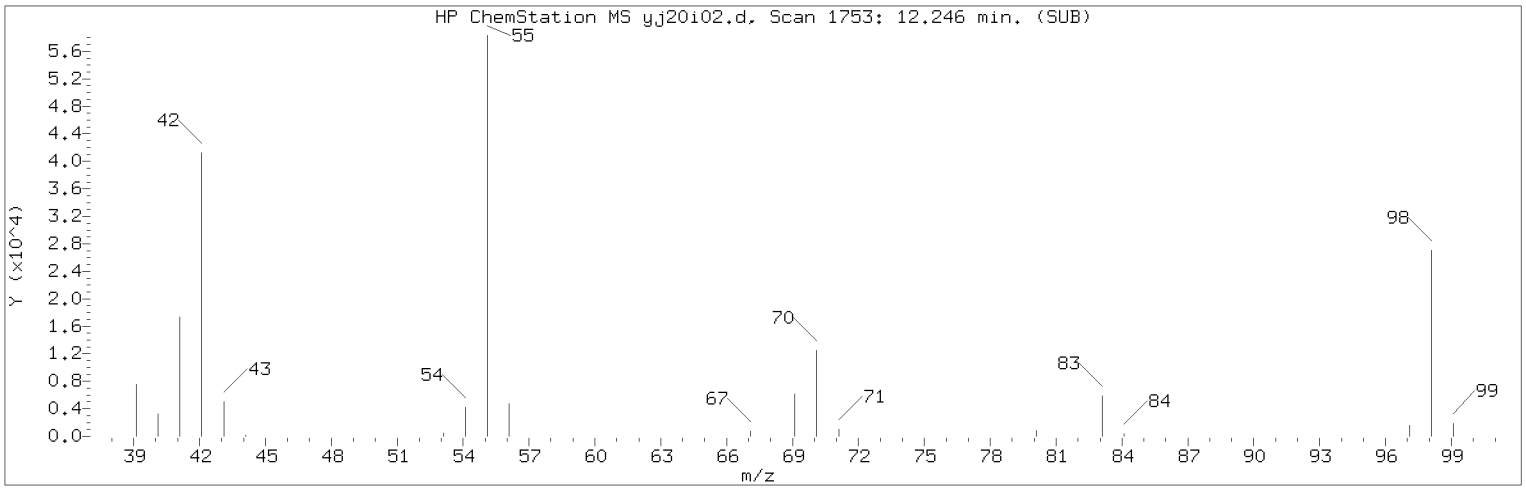
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

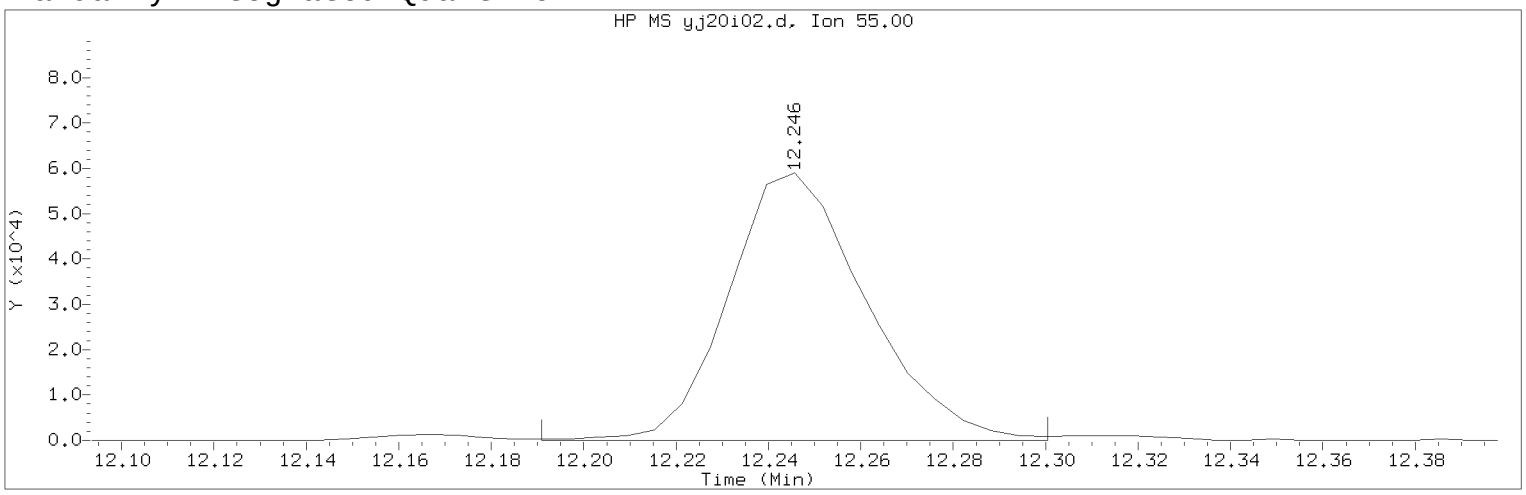
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1482
Retention Time (minutes): 10.597
Quant Ion : 43.00
Area : 1878282
On-column Amount (ng) : 25.5342
Integration start scan : 1470 Integration stop scan: 1517
Y at integration start : 263 Y at integration end: 263

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

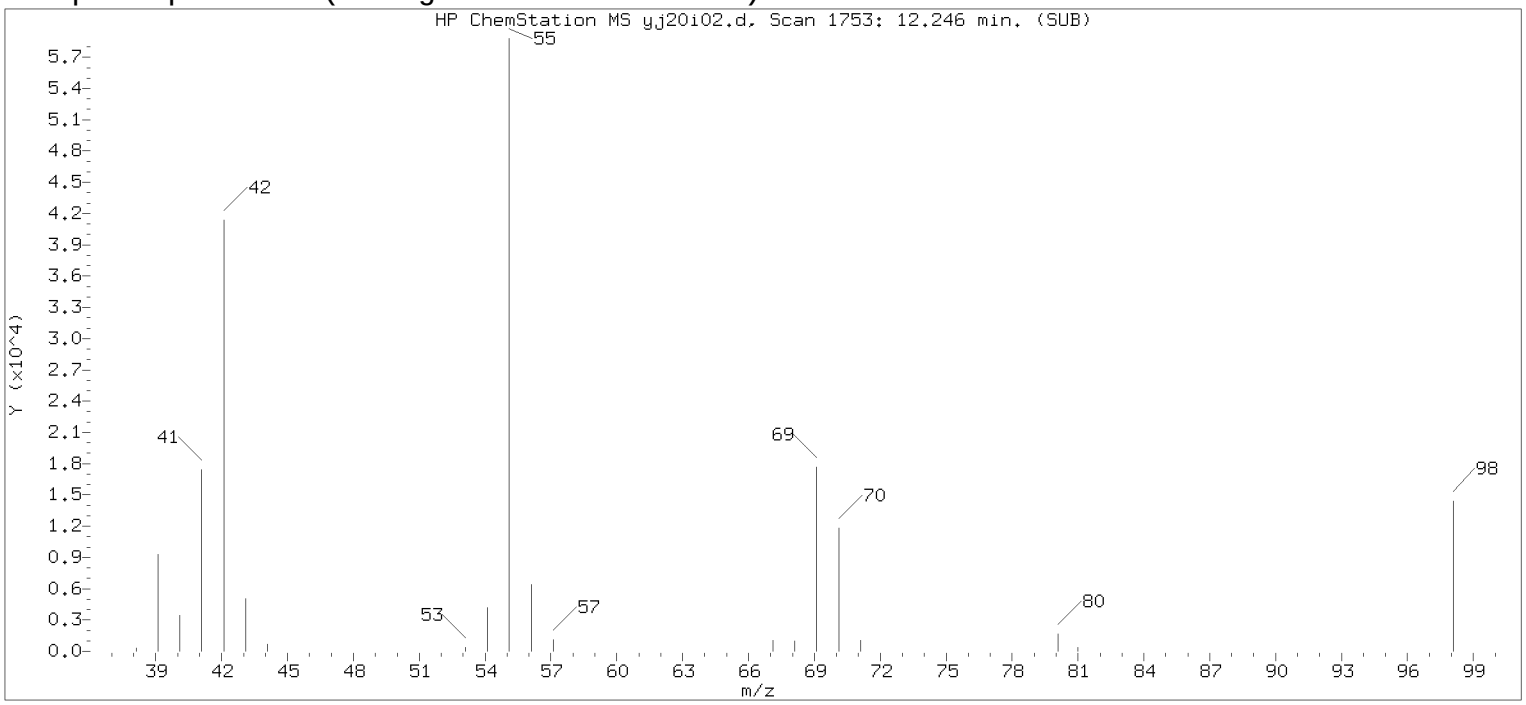
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 121822M
On-Column Amount (ng) : 1339.1510
Integration start scan : 1743 Integration stop scan: 1761
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

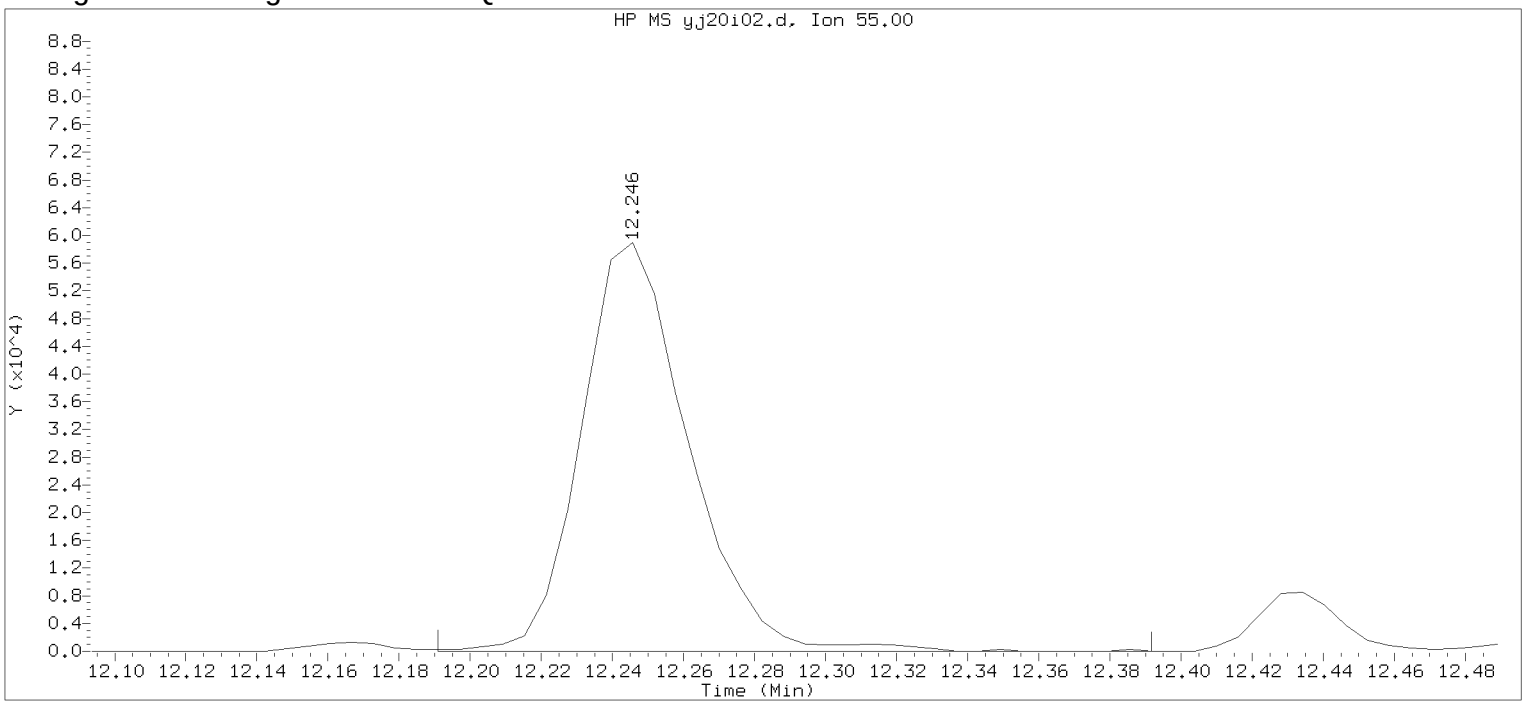
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

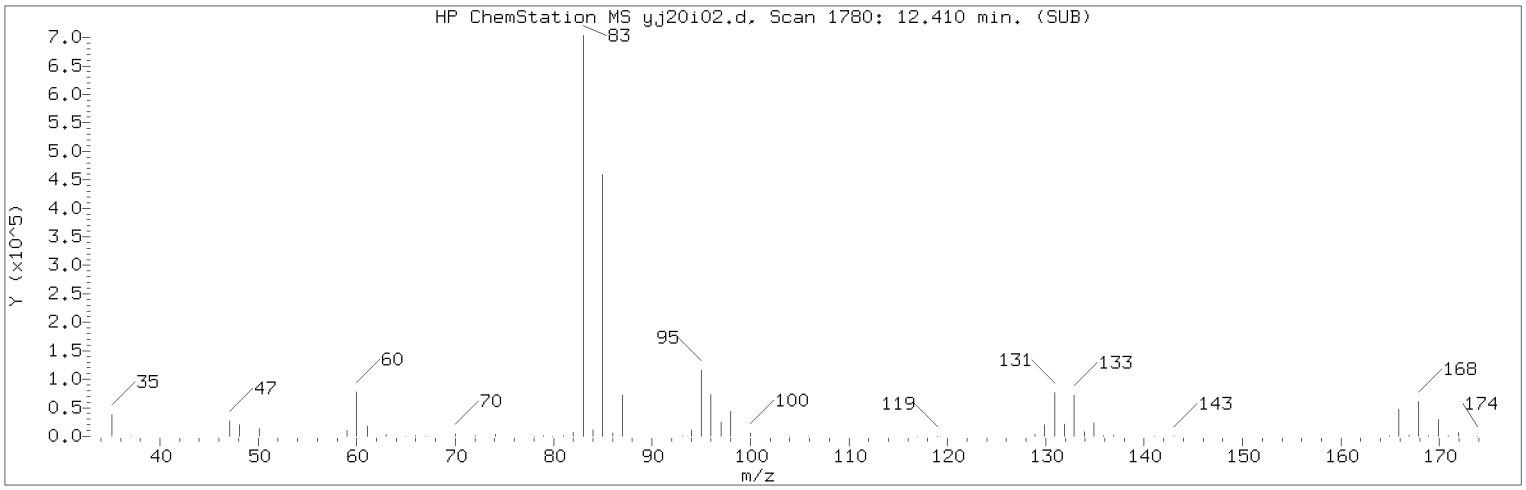
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

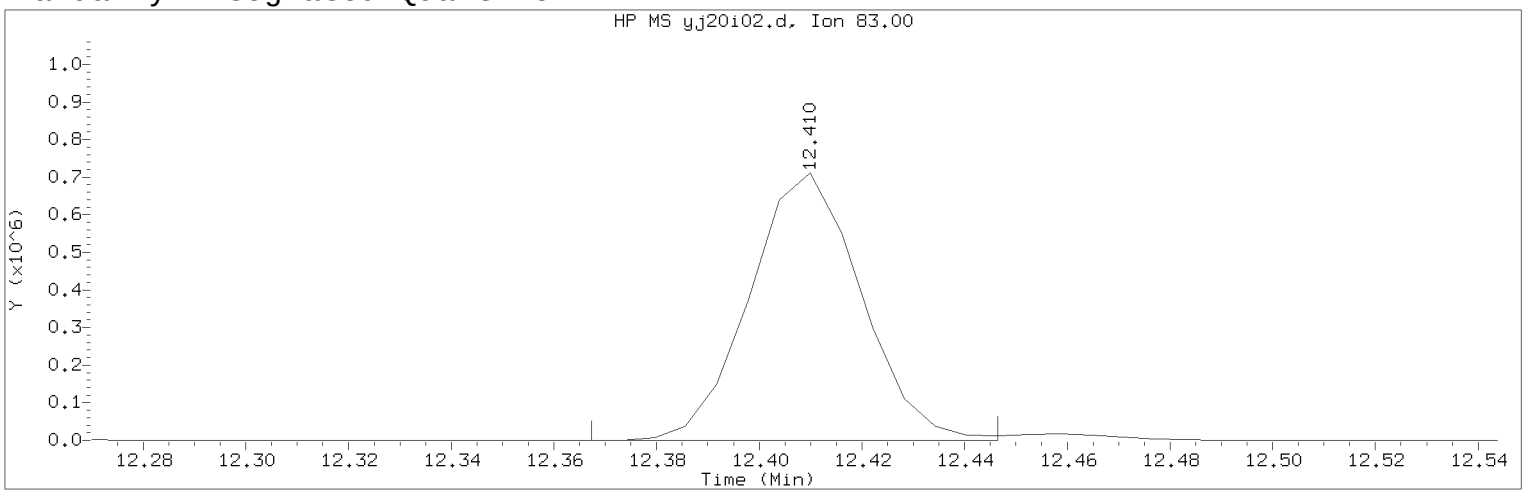
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 123426
On-column Amount (ng) : 1688.3859
Integration start scan : 1743 Integration stop scan: 1776
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

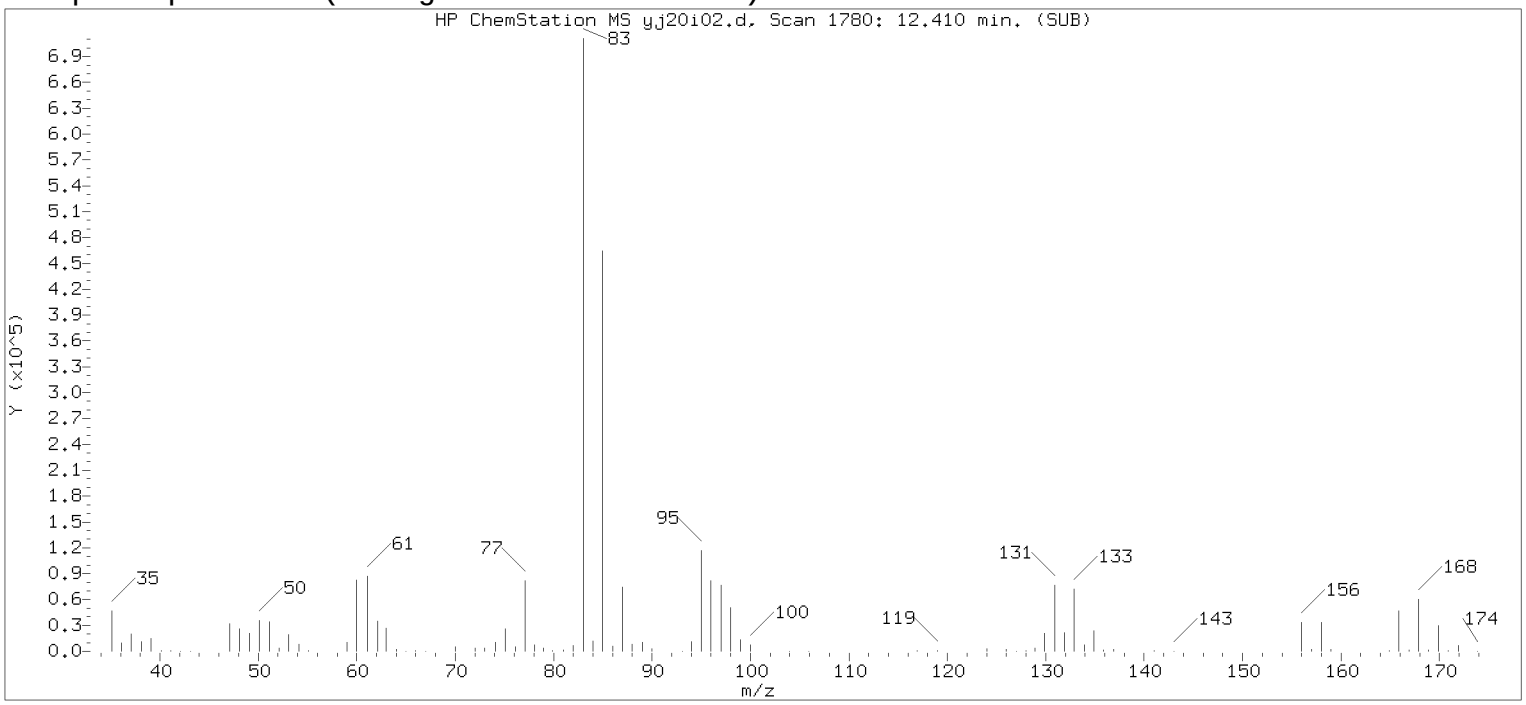
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 1073938M
On-Column Amount (ng) : 103.1450
Integration start scan : 1772 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

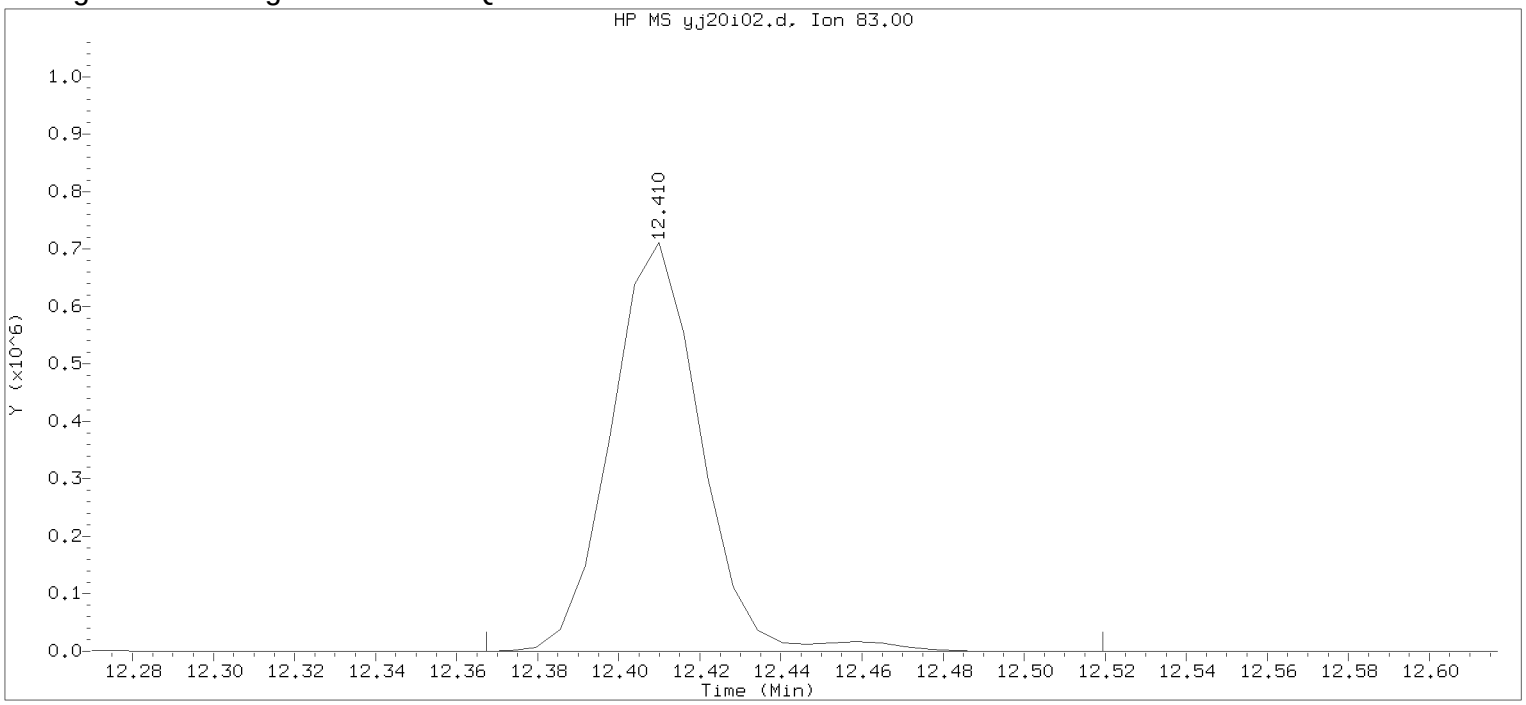
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

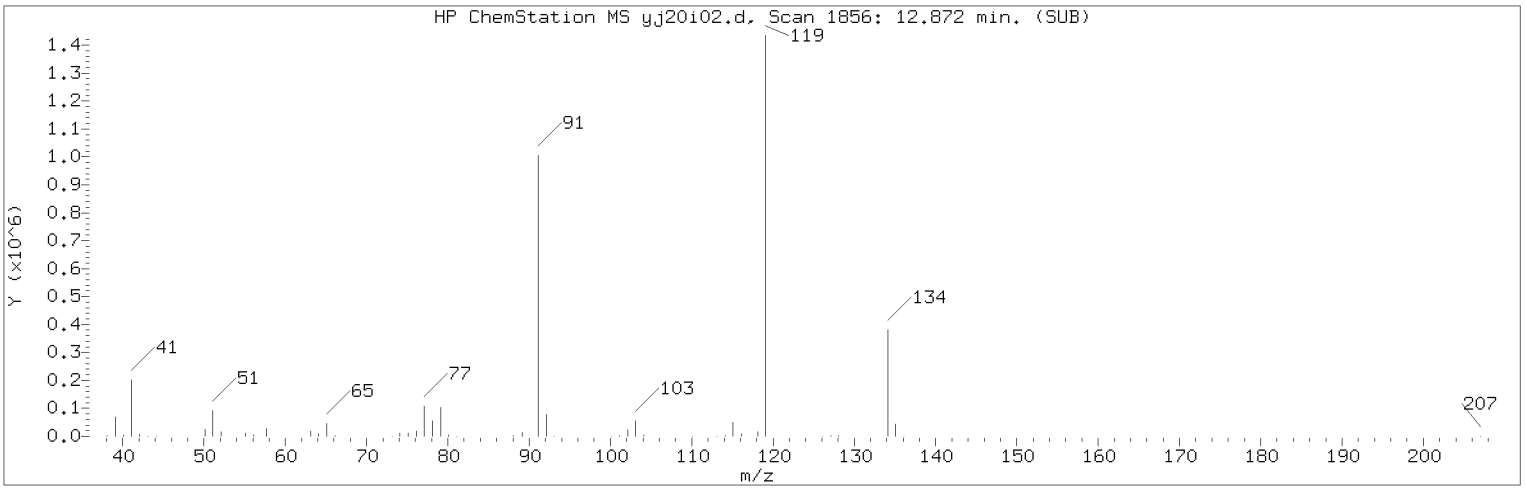
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

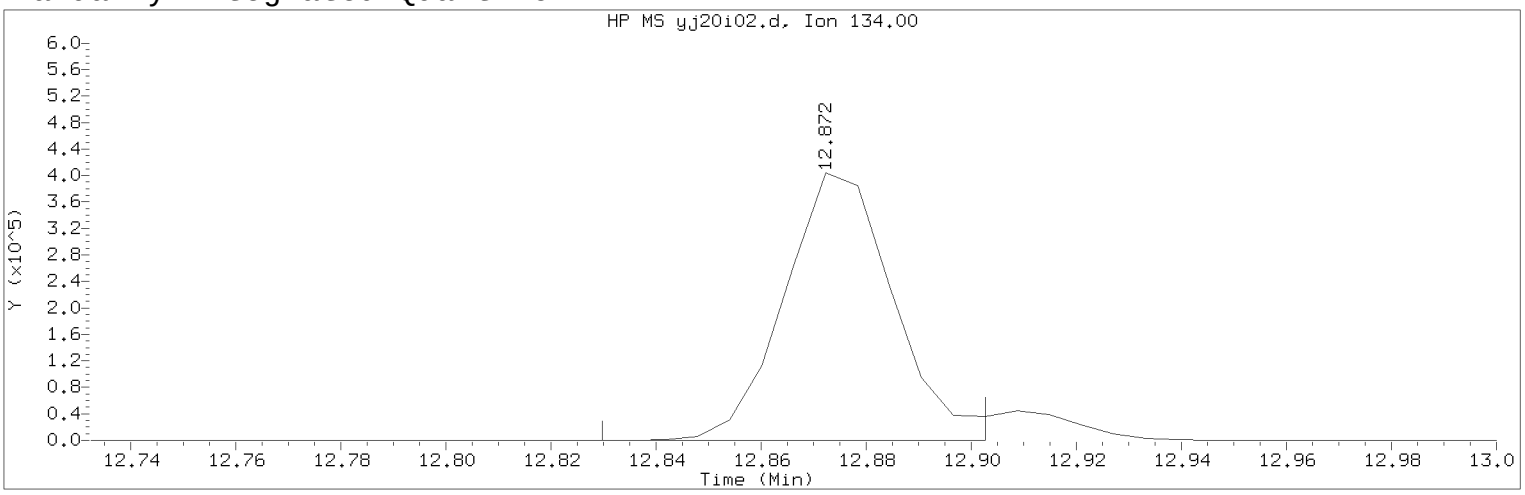
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 1095388
On-column Amount (ng) : 102.6767
Integration start scan : 1772 Integration stop scan: 1797
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

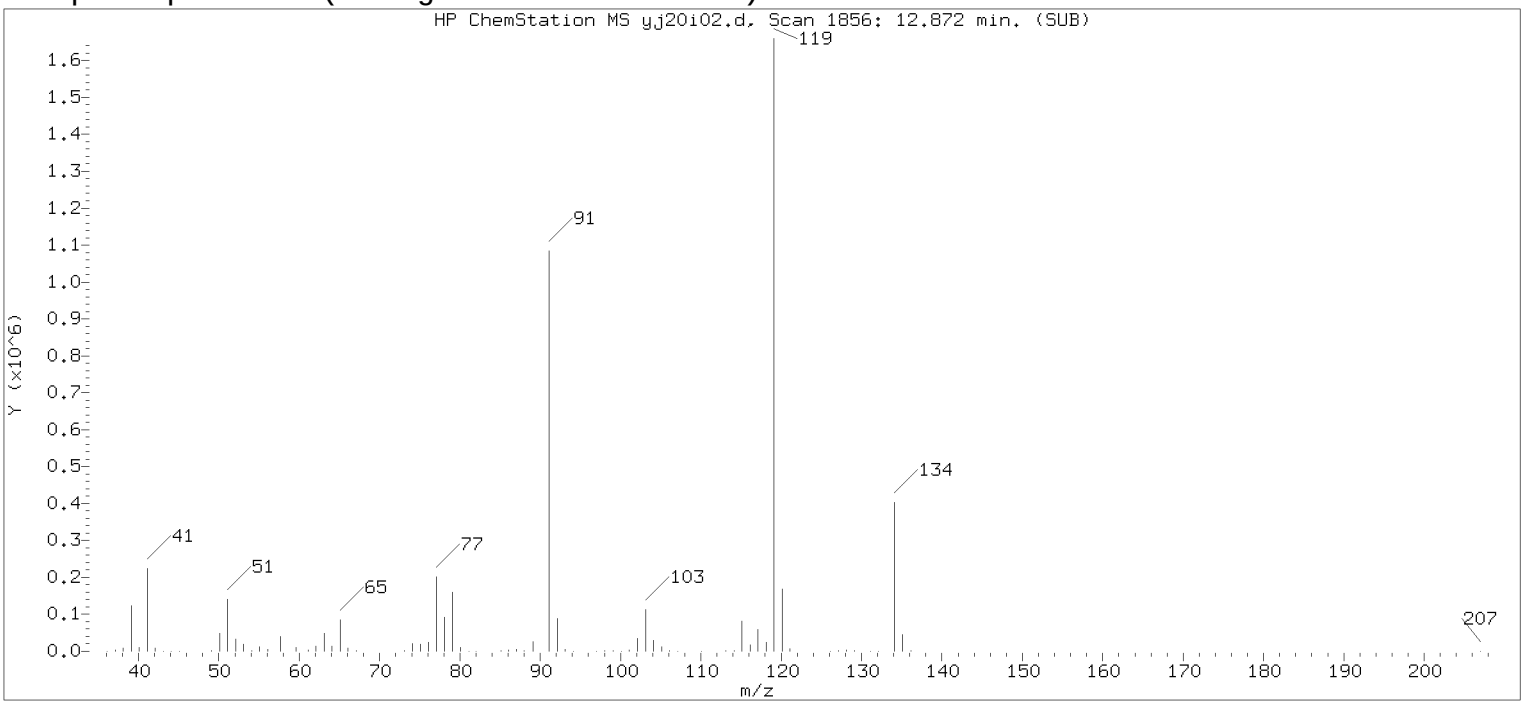
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 585206M
On-Column Amount (ng) : 103.2881
Integration start scan : 1848 Integration stop scan: 1860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

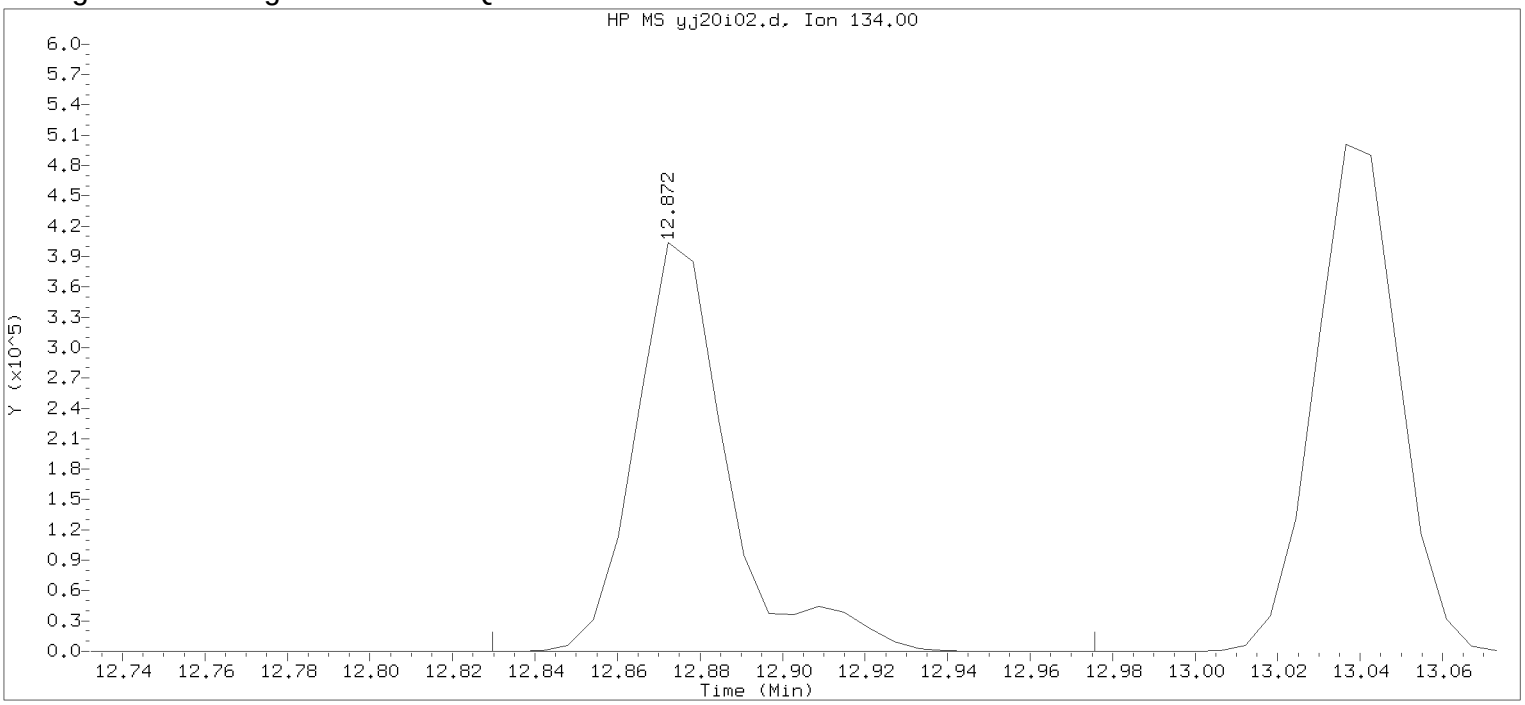
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



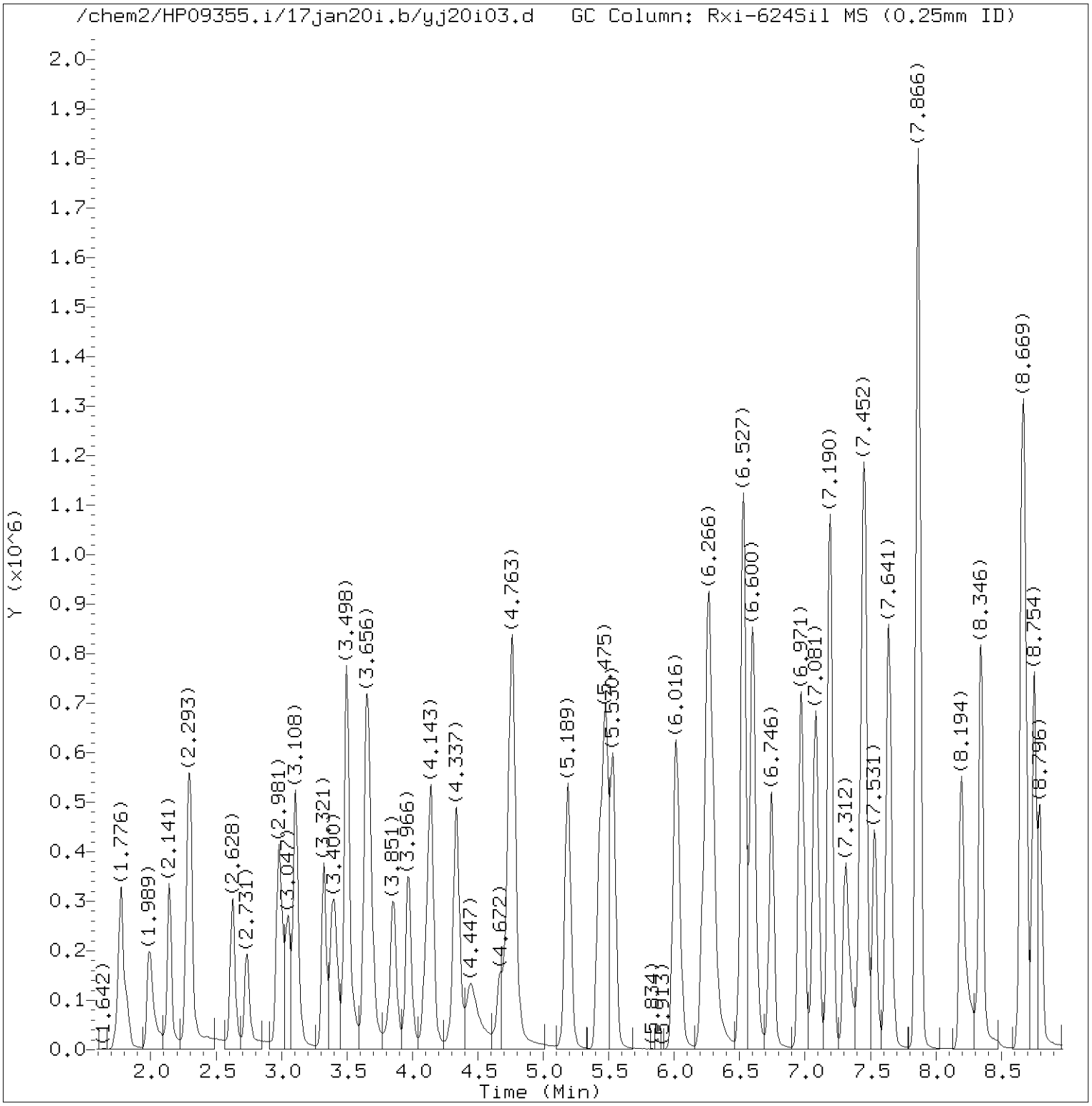

Data File: /chem2/HP09355.i/17jan20i.b/yj20i02.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 09:39 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 628714
On-column Amount (ng) : 102.5096
Integration start scan : 1848 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231




Total Ion Chromatogram (TIC)

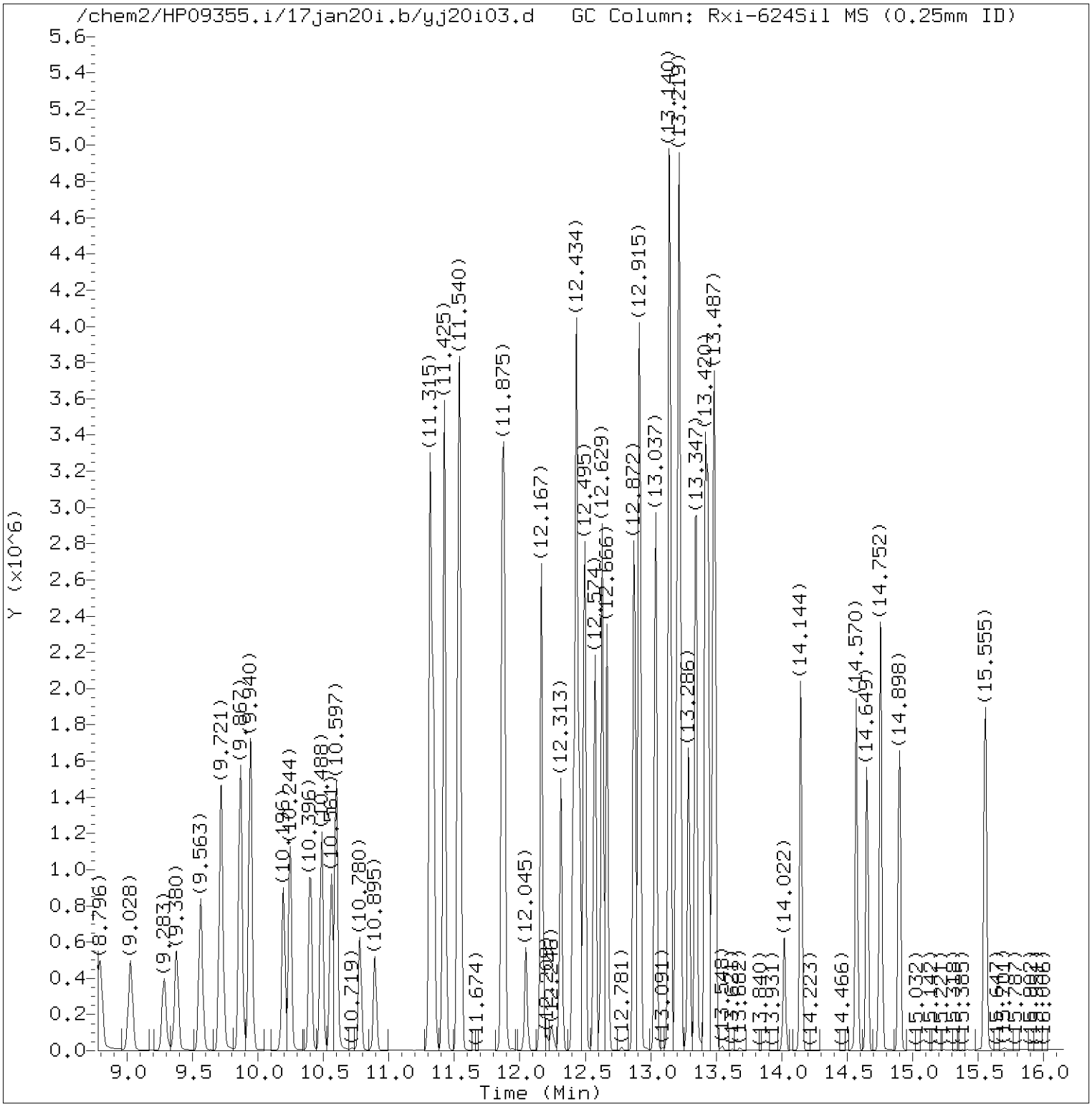
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 414402 | 52.067 |
| 4) Chloromethane | (2) | 2.141 | 50 | 428406 | 51.285 |
| 6) Vinyl Chloride | (2) | 2.281 | 62 | 406968 | 51.606 |
| 5) 1,3-Butadiene | (2) | 2.299 | 39 | 277868 | 40.633 |
| 8) Bromomethane | (2) | 2.628 | 94 | 284697 | 51.569 |
| 9) Chloroethane | (2) | 2.737 | 64 | 232635 | 51.503 |
| 10) Dichlorofluoromethane | (2) | 2.981 | 67 | 509354 | 49.788 |
| 12) Trichlorofluoromethane | (2) | 3.047 | 101 | 492773 | 52.370 |
| 11) n-Pentane | (2) | 3.108 | 43 | 488690 | 48.171 |
| 14) Ethyl ether | (2) | 3.321 | 59 | 288357 | 51.687 |
| 15) Freon 123a | (2) | 3.400 | 67 | 322501 | 50.619 |
| 16) Acrolein | (1) | 3.498 | 56 | 1116682 | 495.570 |
| 17) 1,1-Dichloroethene | (2) | 3.644 | 96 | 246782 | 52.085 |
| 17) 1,1-Dichloroethene | (2) | 3.644 | 63 | 127516 | 51.630 |
| 18) Acetone | (1) | 3.662 | 58 | 108657 | 99.192 |
| 19) Freon 113 | (2) | 3.674 | 101 | 246999 | 52.467 |
| 21) 2-Propanol | (1) | 3.832 | 45 | 205251 | 247.641 |
| 22) Methyl Iodide | (2) | 3.857 | 142 | 467634 | 52.341 |
| 23) Carbon Disulfide | (2) | 3.966 | 76 | 763493 | 53.003 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 453096 | 50.986 |
| 25) Allyl Chloride | (2) | 4.143 | 41 | 500511 | 51.707 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 365897 | 250.000 |
| 28) Methylene Chloride | (2) | 4.337 | 84 | 304675 | 52.028 |
| 30) t-Butyl alcohol | (1) | 4.447 | 59 | 412618 | 253.806 |
| 31) Acrylonitrile | (2) | 4.672 | 53 | 216102 | 50.668 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.745 | 73 | 997588 | 51.670 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 297237 | 52.069 |
| 34) n-Hexane | (2) | 5.189 | 57 | 449382 | 51.748 |
| 36) 1,1-Dichloroethane | (2) | 5.426 | 63 | 540012 | 52.700 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 1053225 | 51.878 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 496246 | 52.712 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 988742 | 51.947 |
| 44) 2-Butanone | (2) | 6.223 | 43 | 657730 | 99.851 |
| 42) cis-1,2-Dichloroethene | (2) | 6.260 | 96 | 337175 | 51.664 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 430363 | 52.735 |
| 47) Propionitrile | (1) | 6.302 | 54 | 463075 | 243.046 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 595816 | 129.555 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 173760 | 51.670 |

* = Compound is an internal standard.



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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 171057 | 99.436 |
| 51) Chloroform | (2) | 6.746 | 83 | 541291 | 52.377 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 634412 | 103.733 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 284192 | 50.104 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 111 | 290750 | 50.226 |
| 53) 1,1,1-Trichloroethane | (2) | 6.978 | 97 | 452772 | 51.884 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 528679 | 51.472 |
| 54) Cyclohexane | (2) | 7.081 | 84 | 434876 | 51.551 |
| 54) Cyclohexane | (2) | 7.081 | 69 | 160776 | 51.529 |
| 56) Carbon Tetrachloride | (2) | 7.190 | 117 | 388464 | 52.871 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 433251 | 51.602 |
| 58) Isobutyl Alcohol | (1) | 7.312 | 41 | 356825 | 586.071 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 74685 | 50.403 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 370284 | 49.636 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 104 | 47721 | 50.722 |
| 60) Benzene | (2) | 7.458 | 78 | 1280716 | 51.924 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 455554 | 50.917 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 98 | 41782 | 52.451 |
| 65) t-Amyl methyl ether | (2) | 7.641 | 73 | 988413 | 51.808 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1212862 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 515377 | 50.409 |
| 69) n-Butanol | (1) | 8.194 | 56 | 562918 | 1136.655 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 335231 | 51.876 |
| 72) Methylcyclohexane | (2) | 8.657 | 83 | 573099 | 51.270 |
| 72) Methylcyclohexane | (2) | 8.663 | 98 | 257266 | 50.937 |
| 73) 1,2-Dichloropropane | (2) | 8.681 | 63 | 338306 | 51.664 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 365855 | 52.163 |
| 75) 1,4-Dioxane | (1) | 8.766 | 88 | 85849M | 639.696 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 219488 | 51.806 |
| 78) Bromodichloromethane | (2) | 9.028 | 83 | 396219 | 53.055 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 308938 | 107.758 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 284187 | 52.053 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 527405 | 53.709 |
| 82) 4-Methyl-2-pentanone | (2) | 9.715 | 43 | 1216011 | 102.611 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1193923 | 49.933 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 769651 | 49.738 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1016884 | 107.739 |
| 88) Toluene | (3) | 9.940 | 92 | 836202 | 51.854 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 489479 | 54.030 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 580940 | 53.159 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 324418A | 51.661 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 368397 | 51.337 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 544080 | 51.181 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1002299 | 104.881 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 332183 | 54.471 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 356551 | 52.200 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 927146A | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 454278A | 51.688 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 949581 | 51.685 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 1624959A | 52.241 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 312854 | 53.695 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 1294212A | 104.294 |
| 108) Xylene (Total) | (3) | | 106 | 1928344 | 156.411 |
| 107) o-Xylene | (3) | 11.869 | 106 | 634132 | 52.117 |
| 109) Styrene | (3) | 11.881 | 104 | 1079446A | 53.446 |
| 110) Bromoform | (3) | 12.045 | 173 | 248127 | 54.763 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 1611094A | 52.469 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 63653MA | 636.389 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 451215A | 50.192 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 174 | 384762A | 50.225 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 543279M | 51.751 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 440992 | 134.730 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 432871 | 51.060 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 178083 | 50.743 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 1920314 | 52.410 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 384700 | 51.024 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 1400286 | 52.410 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 418197 | 52.255 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 296435M | 51.892 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 228543 | 52.912 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 1449388 | 52.457 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 1764190 | 52.529 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 840152 | 51.944 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 1570571 | 52.633 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 512041 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 857626 | 51.515 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

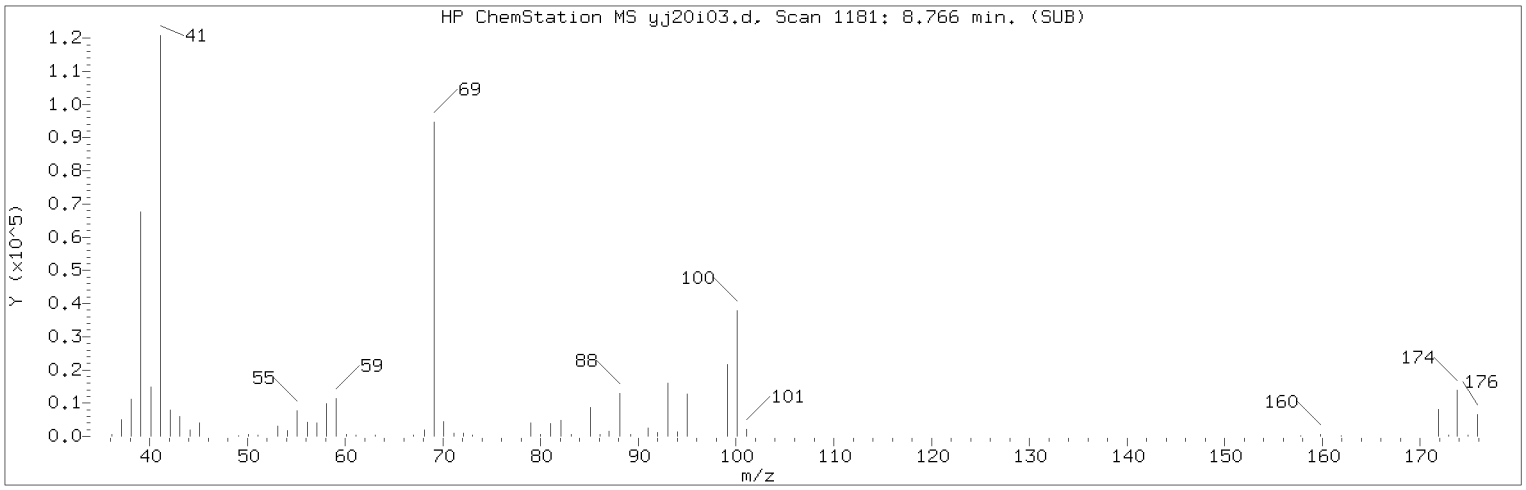
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 1422743 | 51.264 |
| 135) Benzyl Chloride | (4) | 13.286 | 91 | 1053751 | 55.335 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 903734 | 52.005 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 941796 | 52.235 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 784370 | 52.221 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 799451 | 51.458 |
| 140) 1,2-Diethylbenzene | (4) | 13.487 | 119 | 748091M | 51.303 |
| 141) Diethylbenzene (total) | (4) | | 100 | 2593621 | 155.543 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 132577 | 52.843 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 582529 | 51.186 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 530818 | 51.038 |
| 147) Hexachlorobutadiene | (4) | 14.649 | 225 | 260911 | 51.049 |
| 148) Naphthalene | (4) | 14.758 | 128 | 1724779 | 51.819 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 476357 | 50.374 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 926058 | 51.661 |

M = Compound was manually integrated.

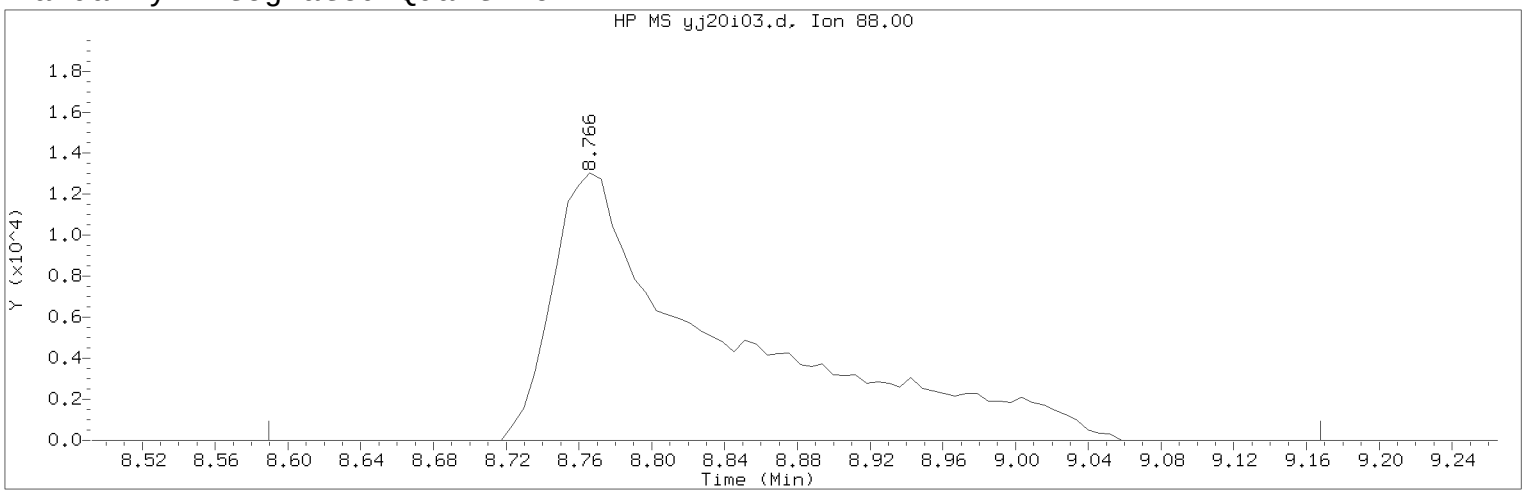


Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

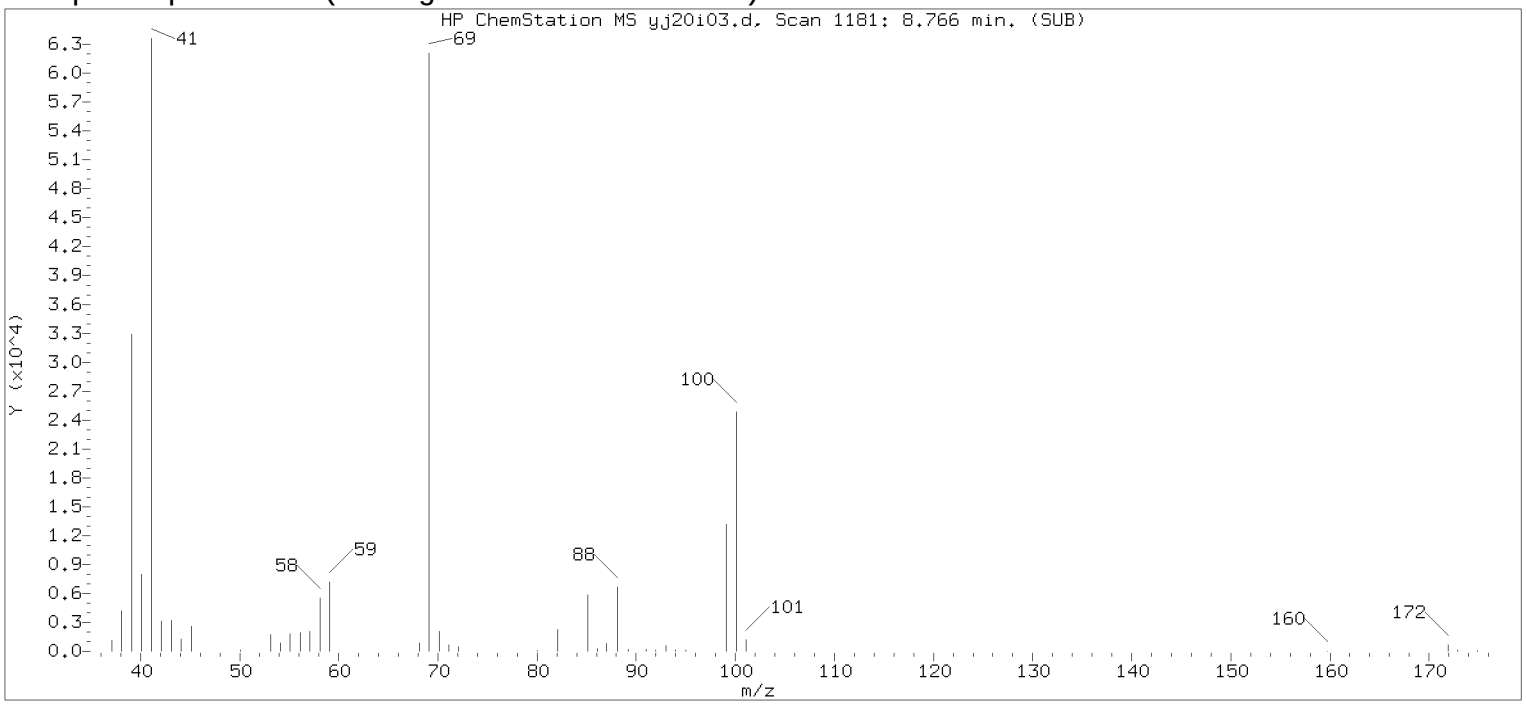
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area (flag) : 85849M
On-Column Amount (ng) : 639.6957
Integration start scan : 1151 Integration stop scan: 1246
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

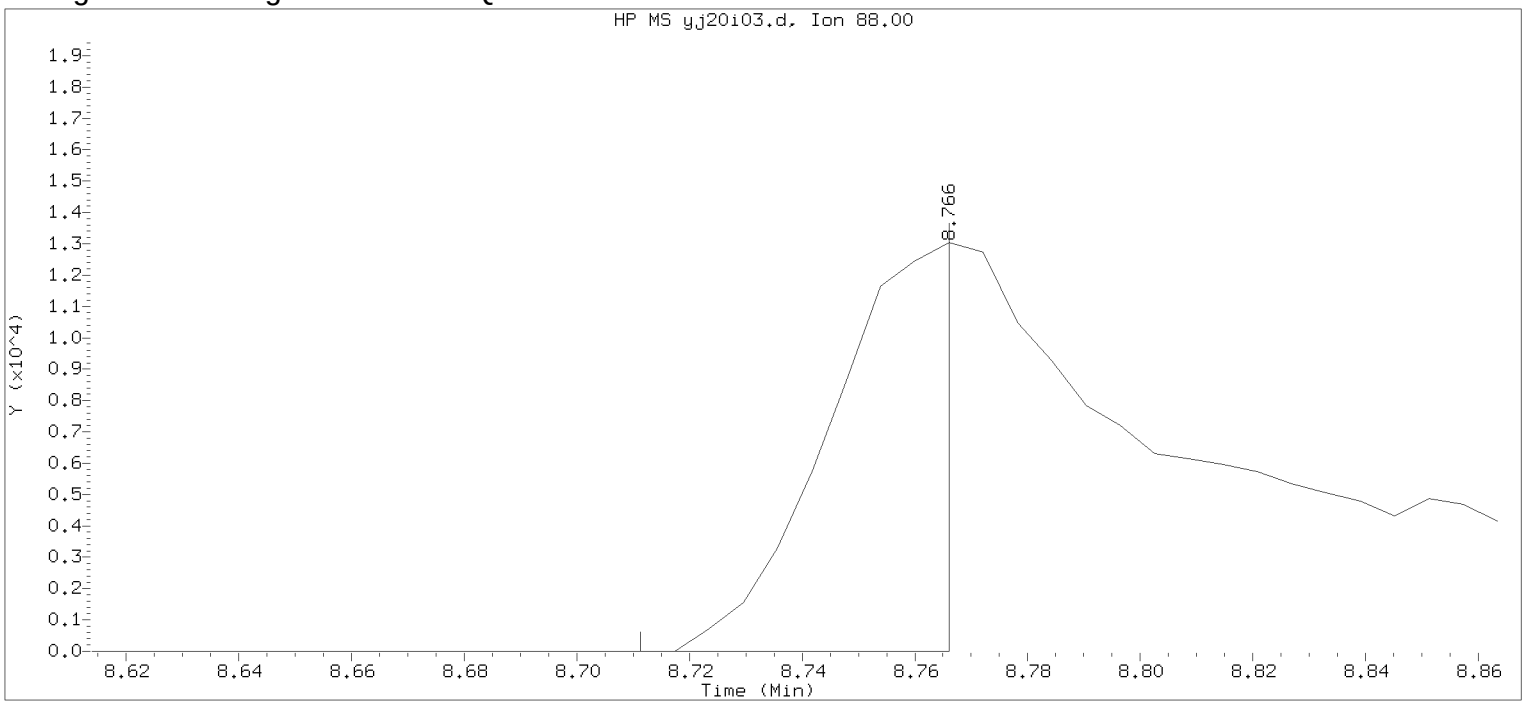
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area : 18440
On-column Amount (ng) : 190.5458
Integration start scan : 1171 Integration stop scan: 1180
Y at integration start : 0 Y at integration end: 0

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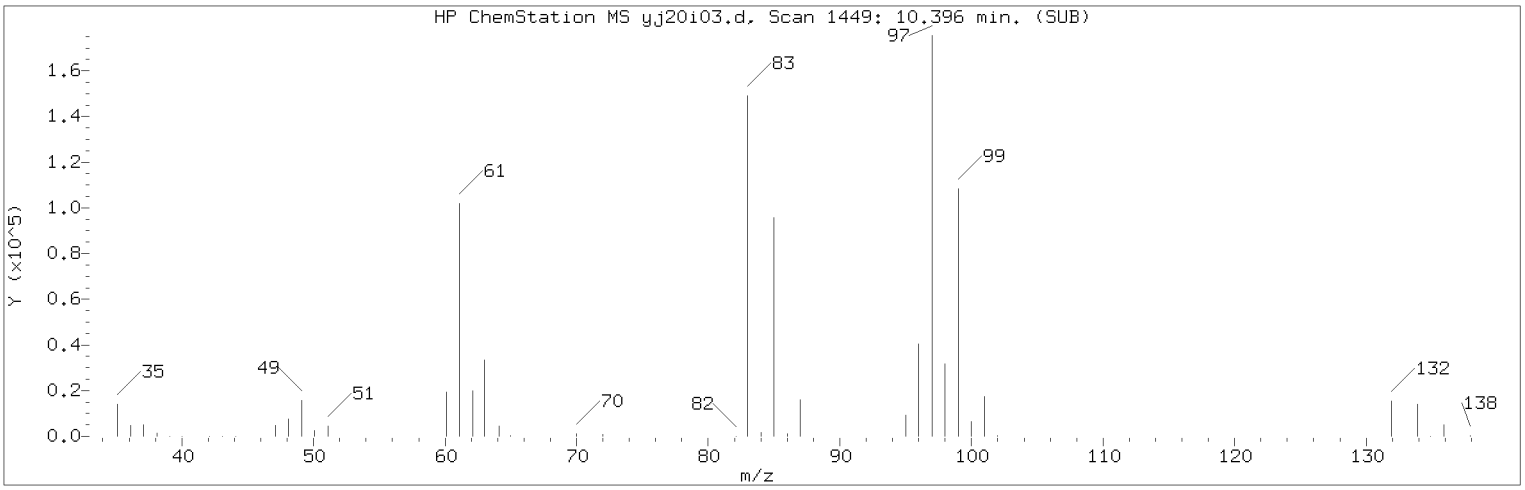
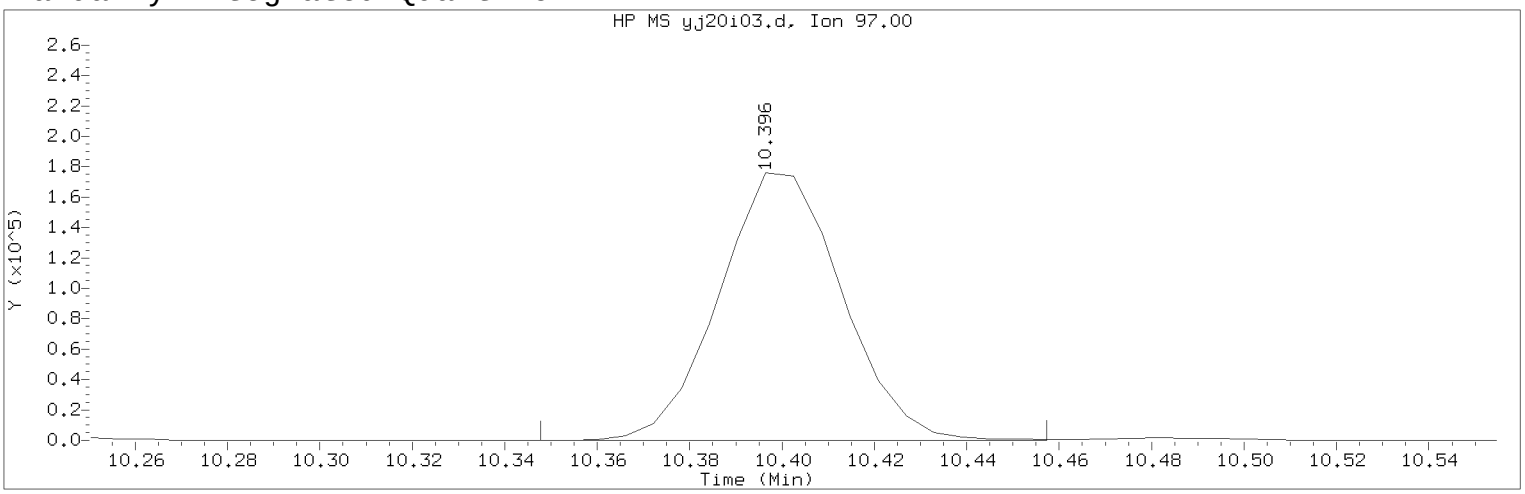
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

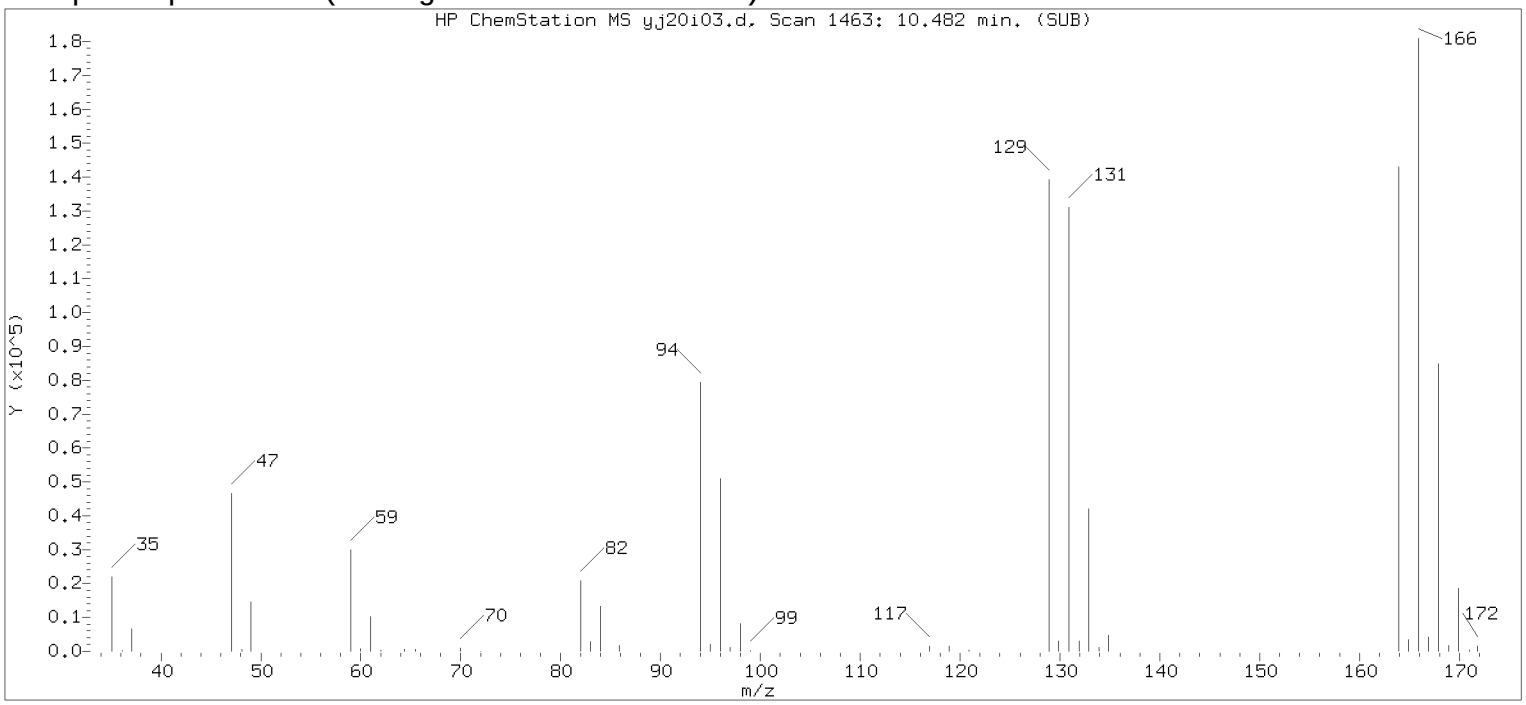
Compound Number : 92
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1449
Retention Time (minutes): 10.396
Quant Ion : 97.00
Area (flag) : 324418A
On-Column Amount (ng) : 51.6614
Integration start scan : 1440 Integration stop scan: 1458
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

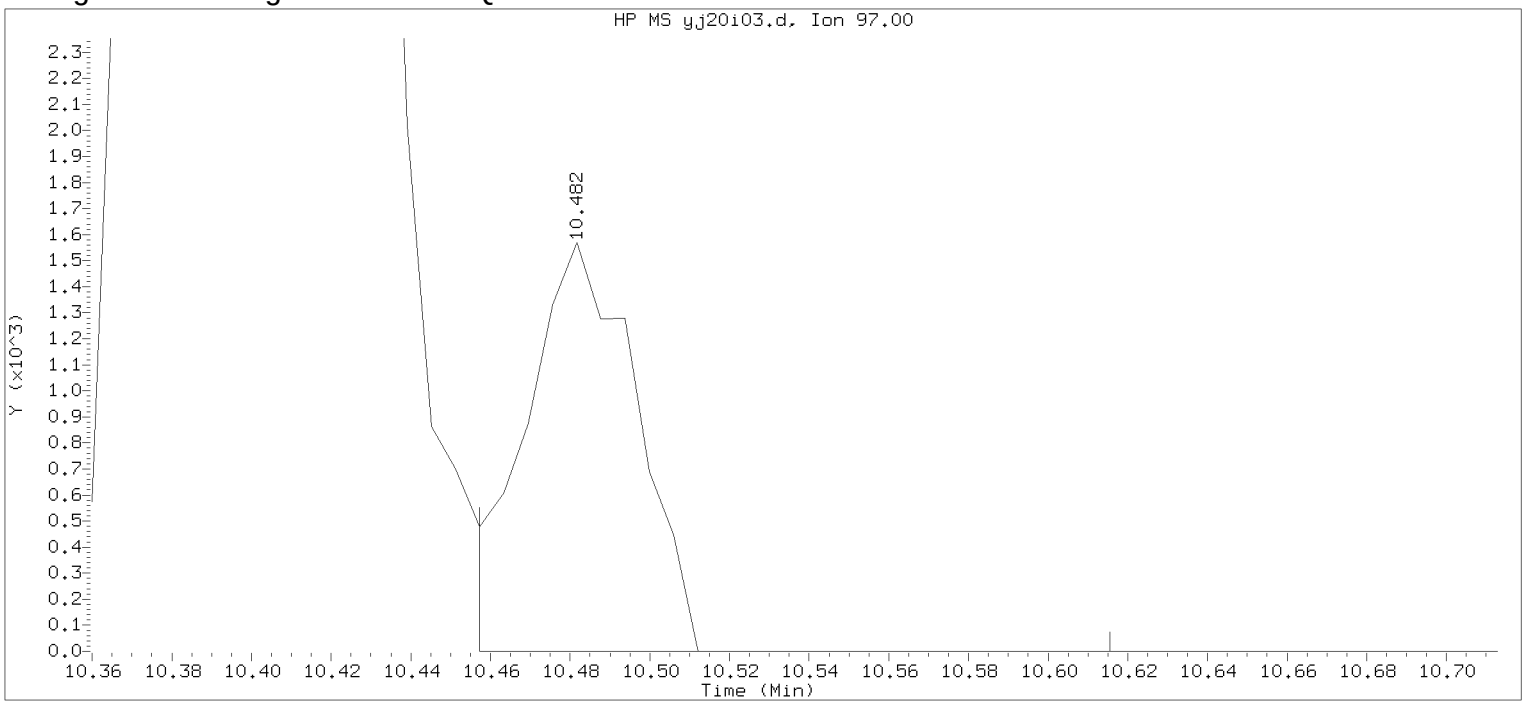
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

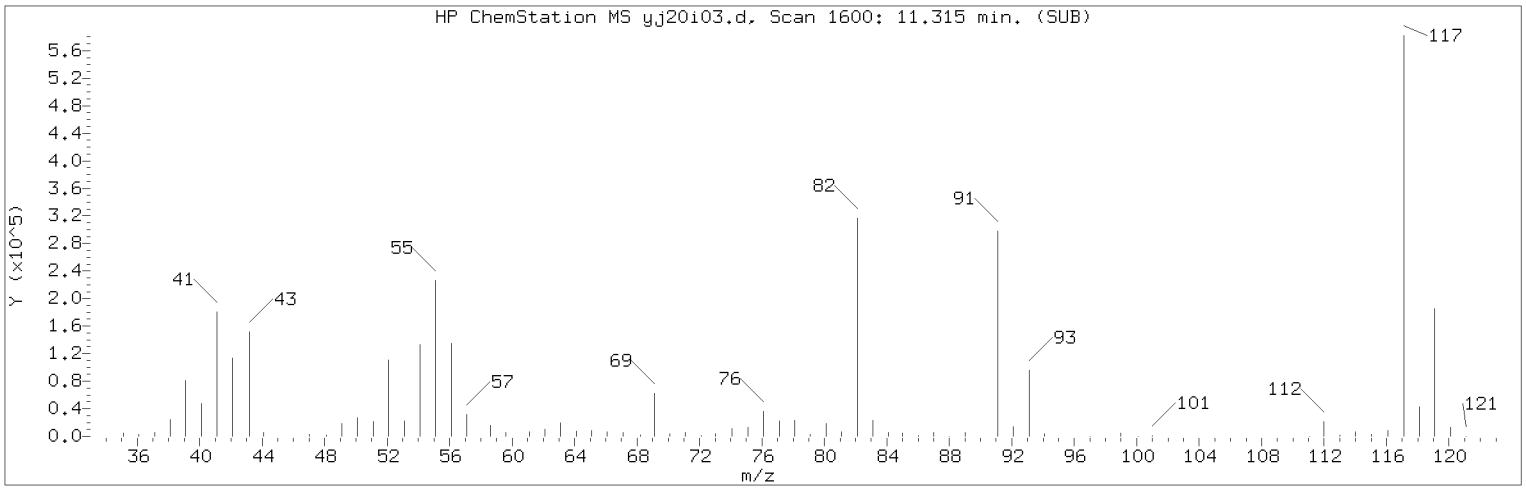
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

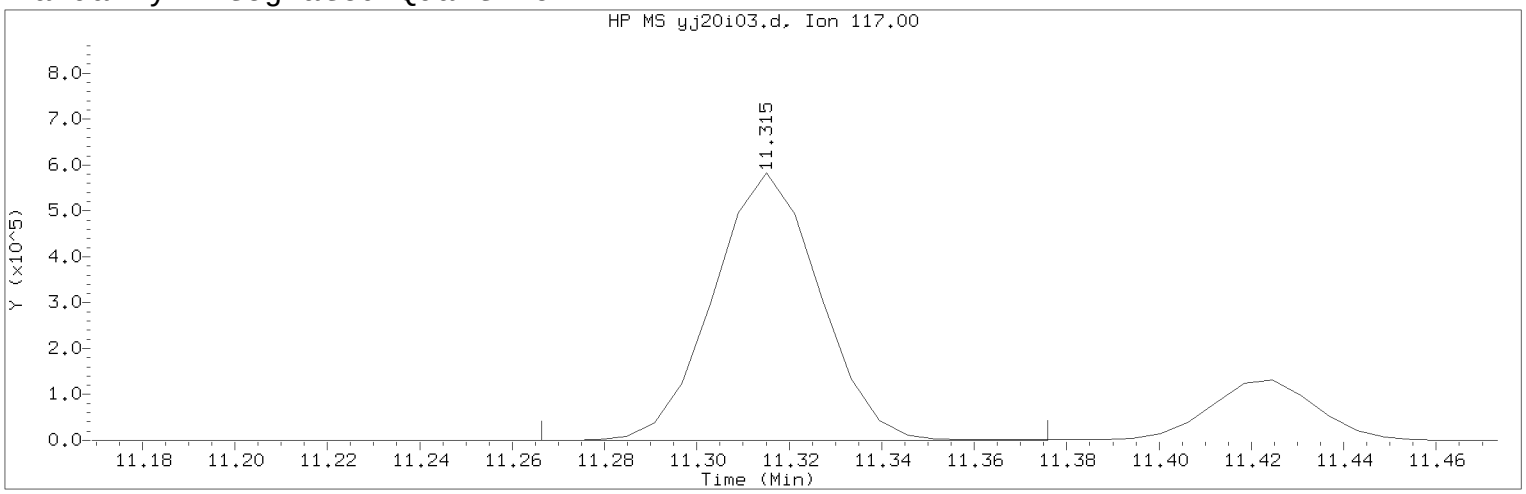
Compound Number : 92
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1463
Retention Time (minutes): 10.482
Quant Ion : 97.00
Area : 3033
On-column Amount (ng) : 3.8295
Integration start scan : 1458 Integration stop scan: 1484
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

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Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

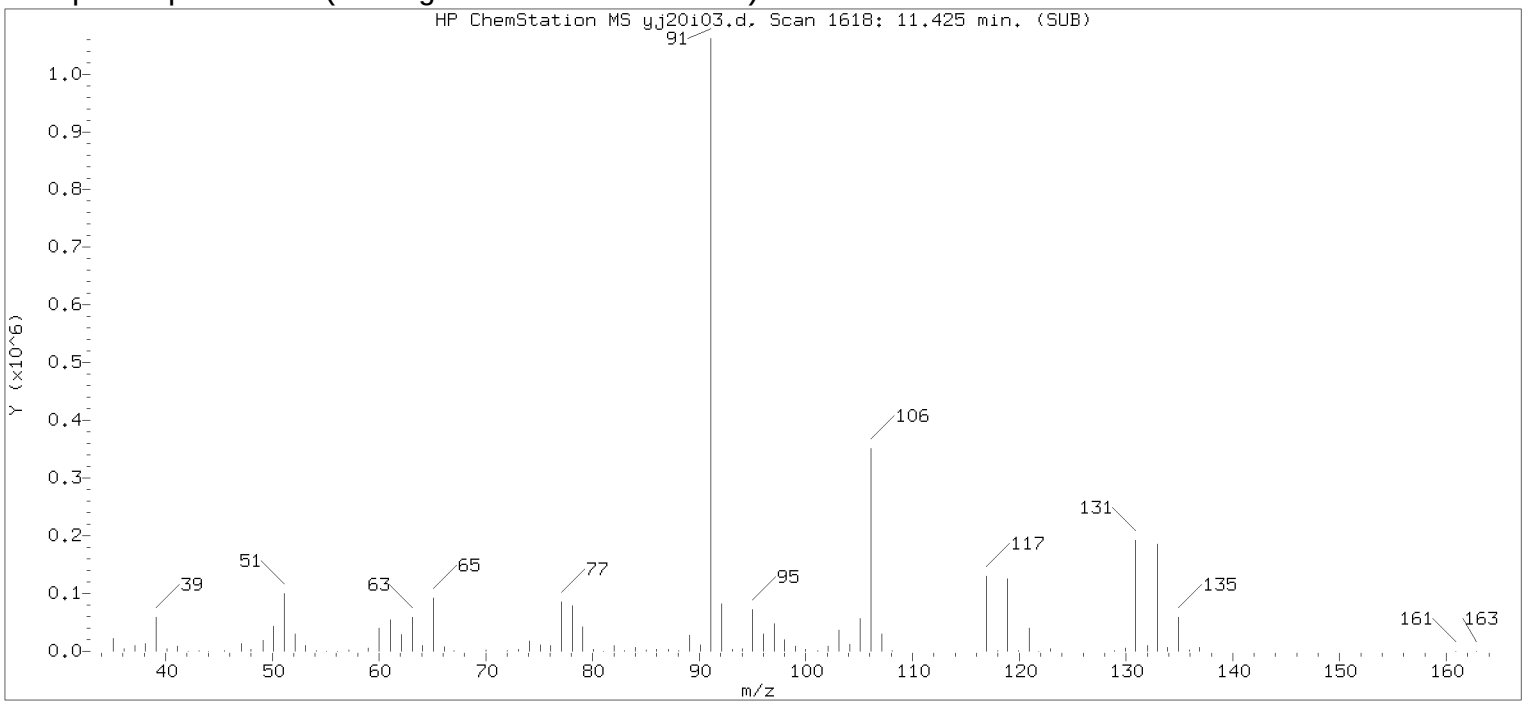
Compound Number : 100
Compound Name : Chlorobenzene-d5
Scan Number : 1600
Retention Time (minutes): 11.315
Quant Ion : 117.00
Area (flag) : 927146A
On-Column Amount (ng) : 50.0000
Integration start scan : 1591 Integration stop scan: 1609
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

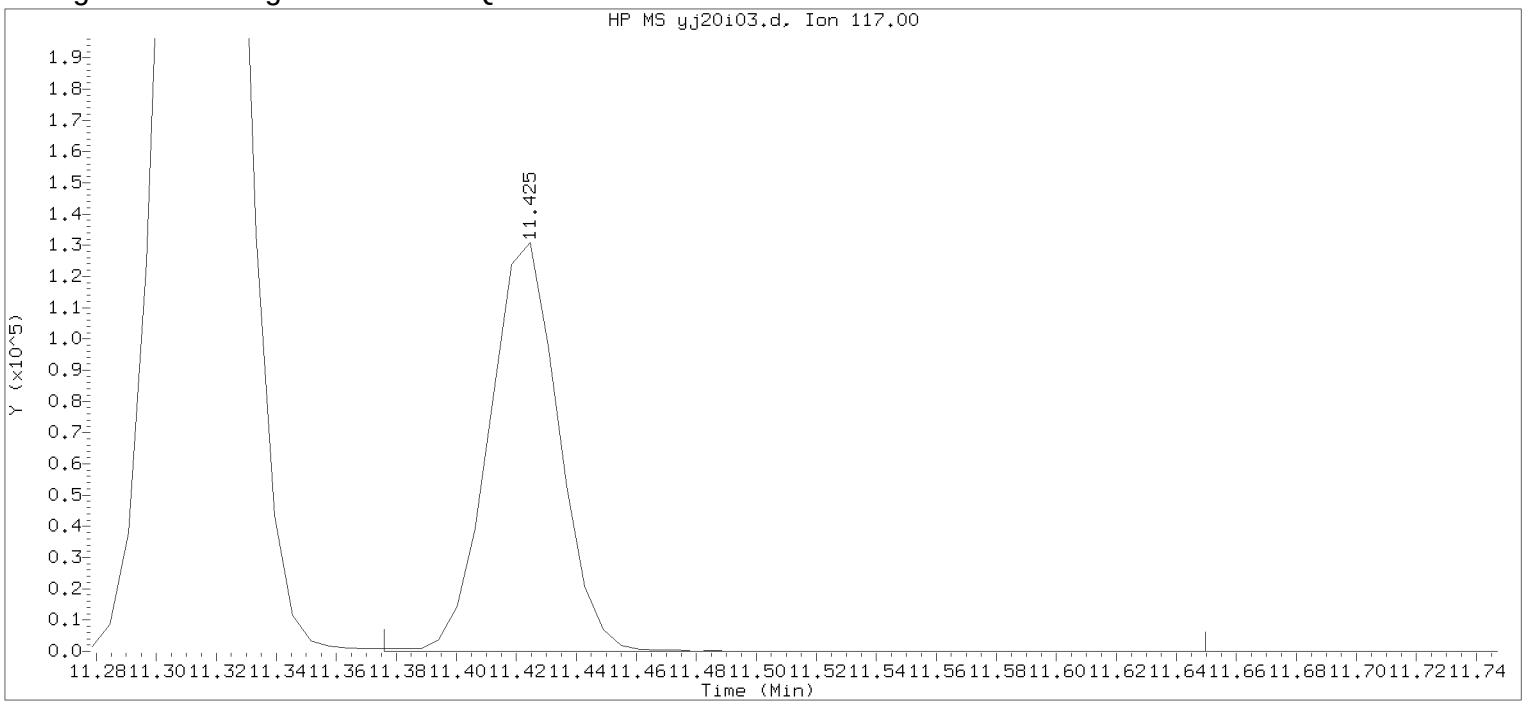
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

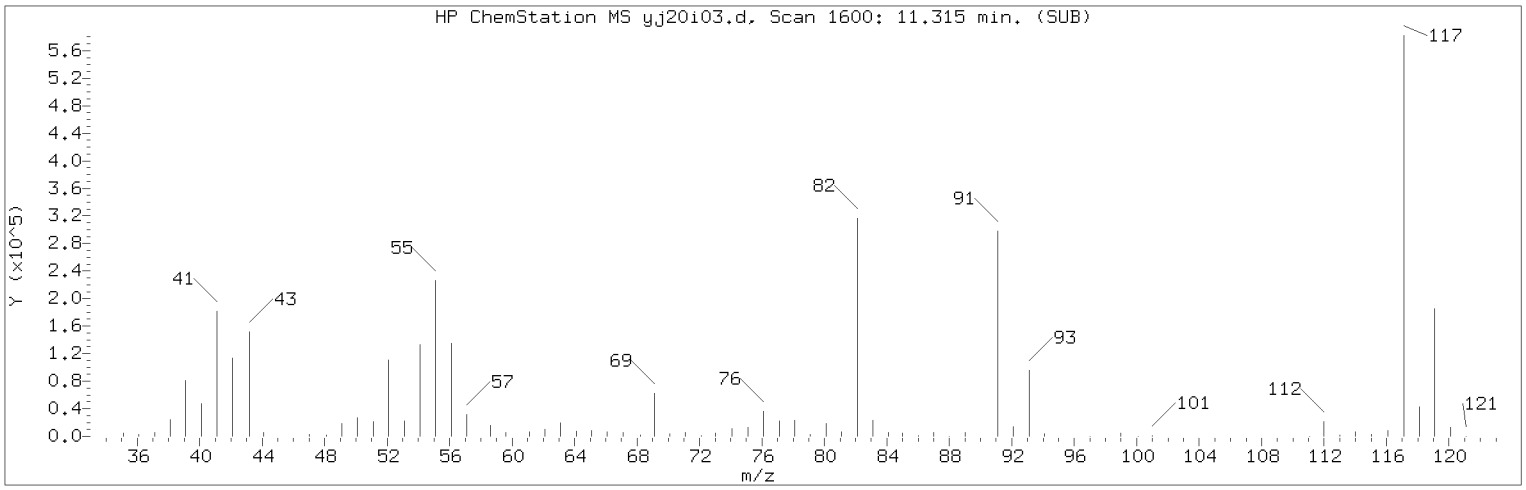
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

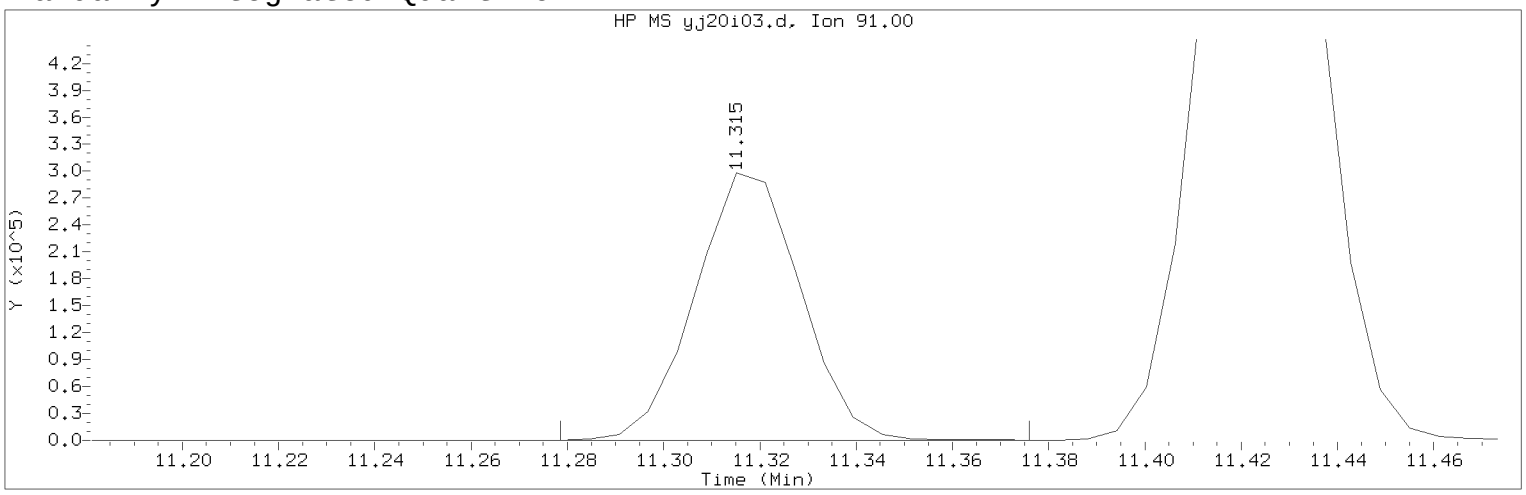
Compound Number : 100
Compound Name : Chlorobenzene-d5
Scan Number : 1618
Retention Time (minutes): 11.425
Quant Ion : 117.00
Area : 211163
On-column Amount (ng) : 50.0000
Integration start scan : 1609 Integration stop scan: 1654
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

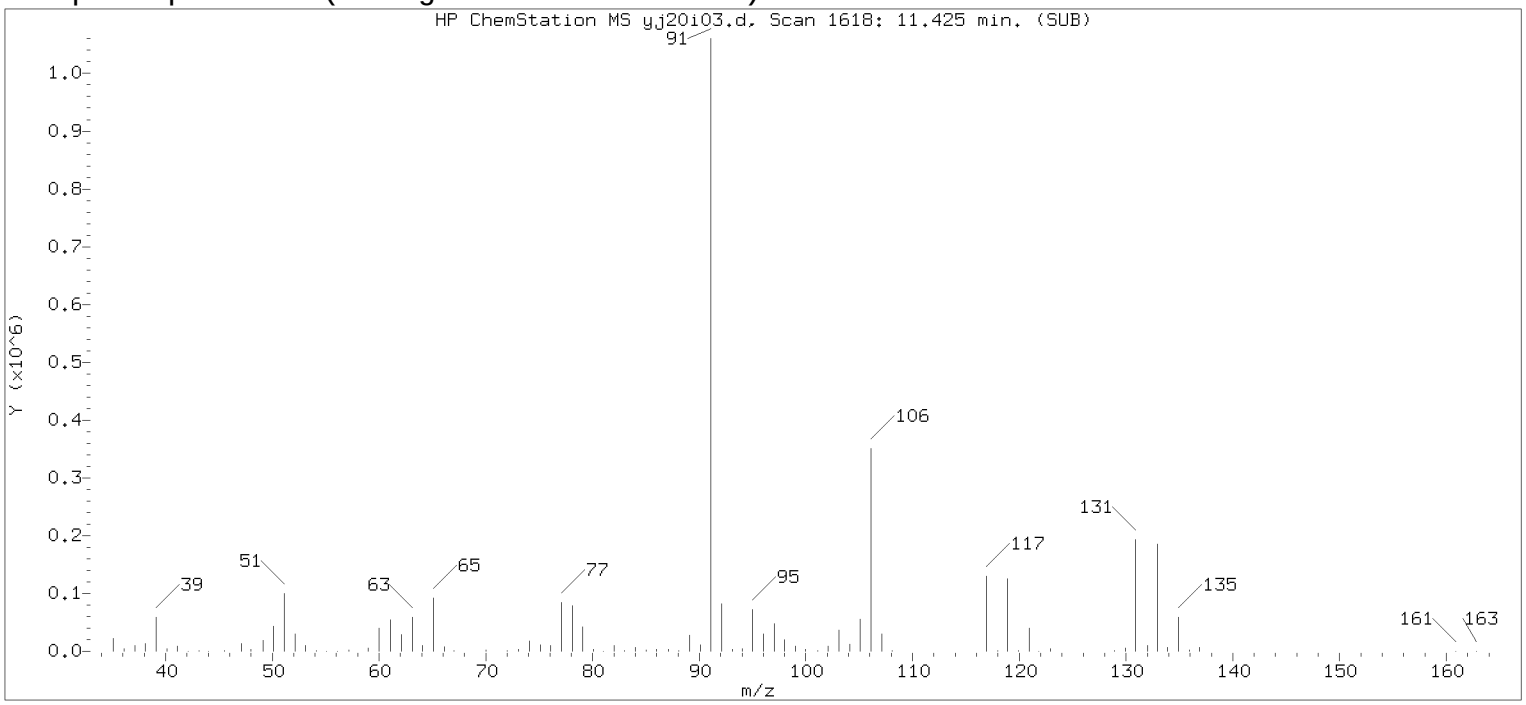
Compound Number : 101
Compound Name : 1-Chlorohexane
Scan Number : 1600
Retention Time (minutes): 11.315
Quant Ion : 91.00
Area (flag) : 454278A
On-Column Amount (ng) : 51.6876
Integration start scan : 1593 Integration stop scan: 1609
Y at integration start : 0 Y at integration end: 298

Reason for manual integration: improper integration

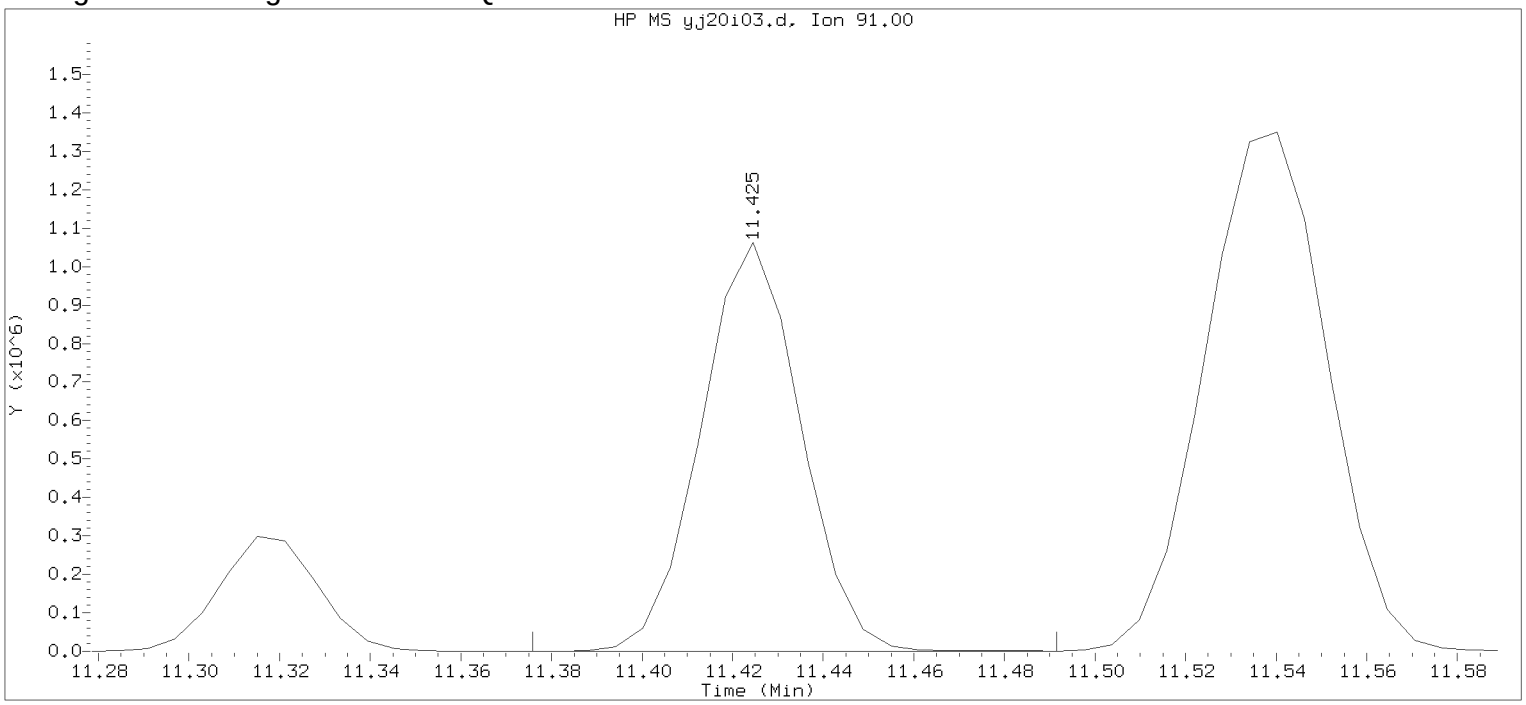
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

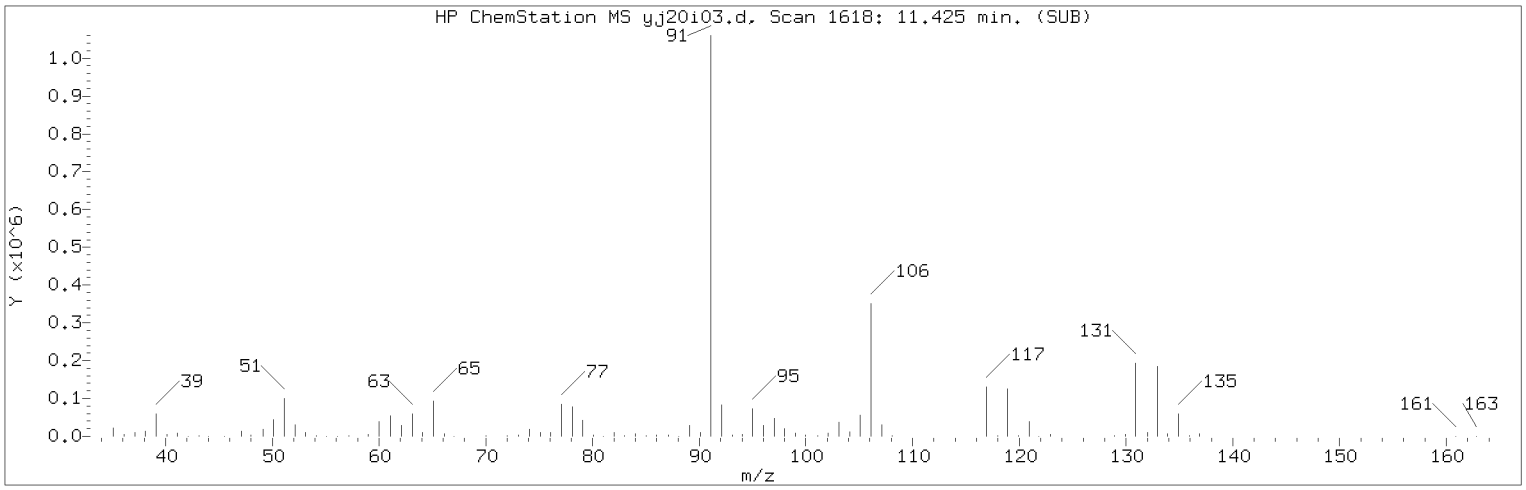
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

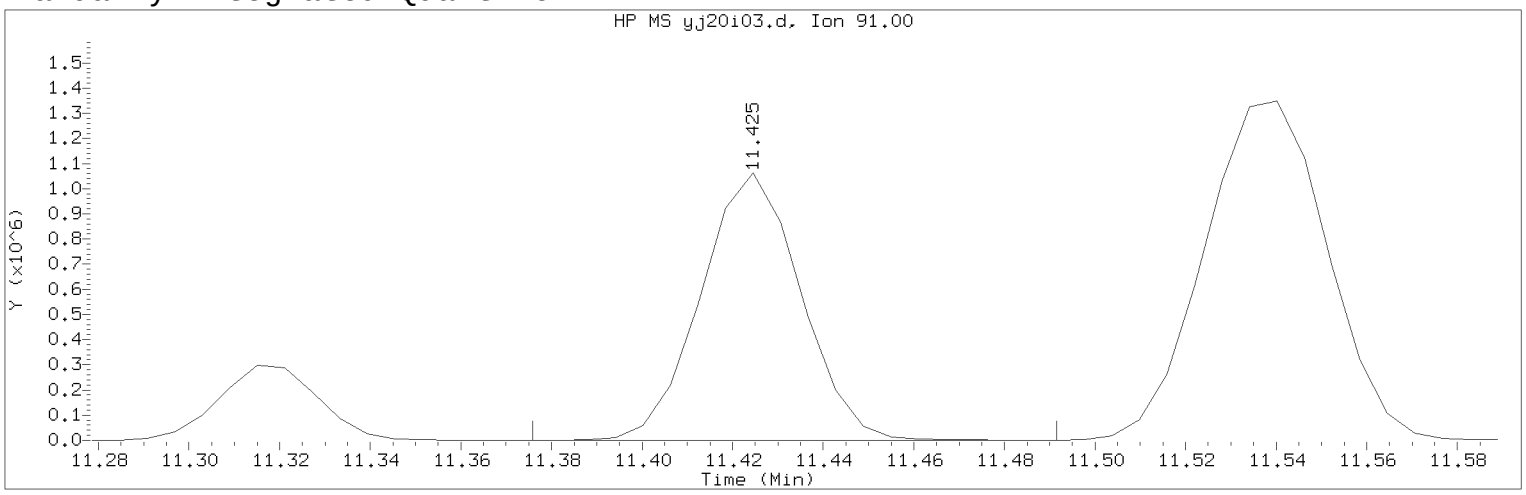
Compound Number : 101
Compound Name : 1-Chlorohexane
Scan Number : 1618
Retention Time (minutes): 11.425
Quant Ion : 91.00
Area : 1622140
On-column Amount (ng) : 165.9614
Integration start scan : 1609 Integration stop scan: 1628
Y at integration start : 298 Y at integration end: 515

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

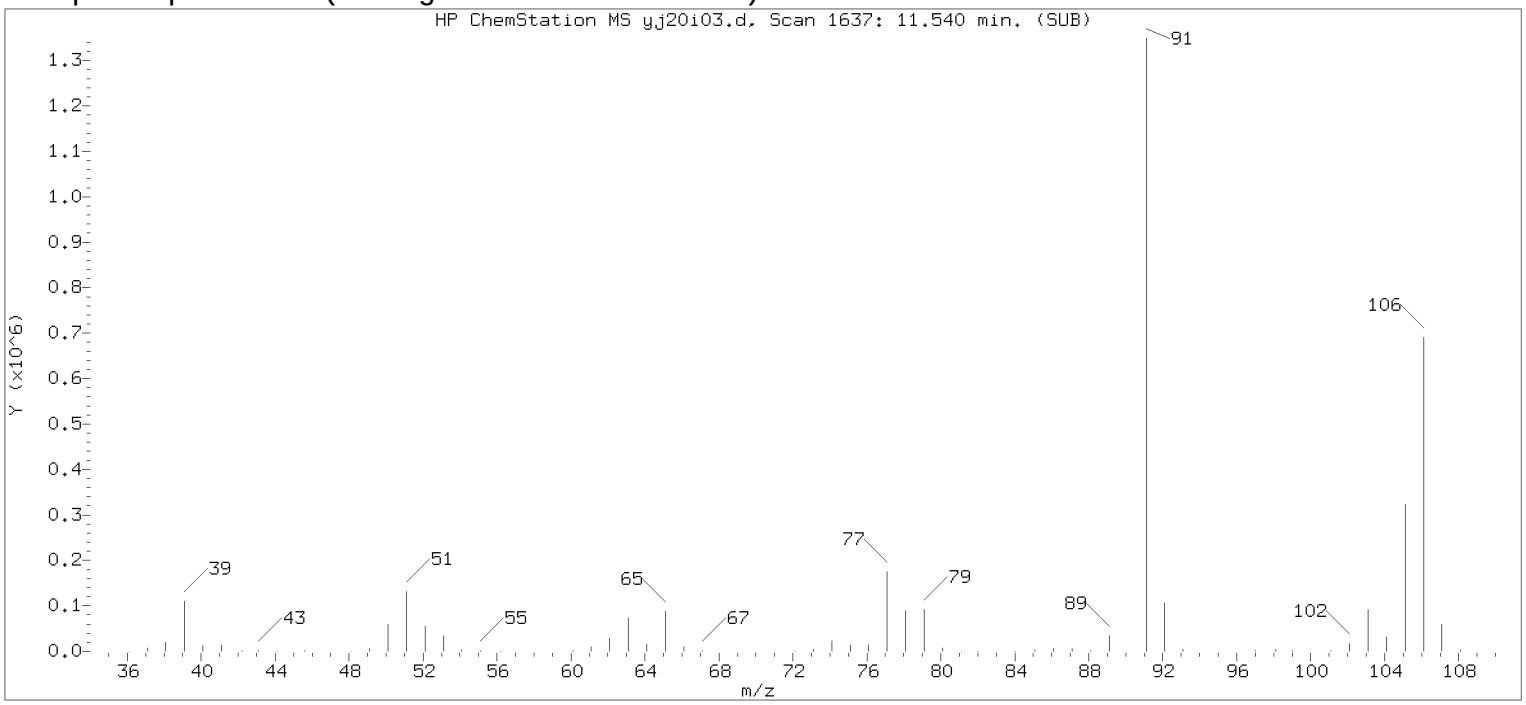
Compound Number : 104
Compound Name : Ethylbenzene
Scan Number : 1618
Retention Time (minutes): 11.425
Quant Ion : 91.00
Area (flag) : 1624959A
On-Column Amount (ng) : 52.2412
Integration start scan : 1609 Integration stop scan: 1628
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

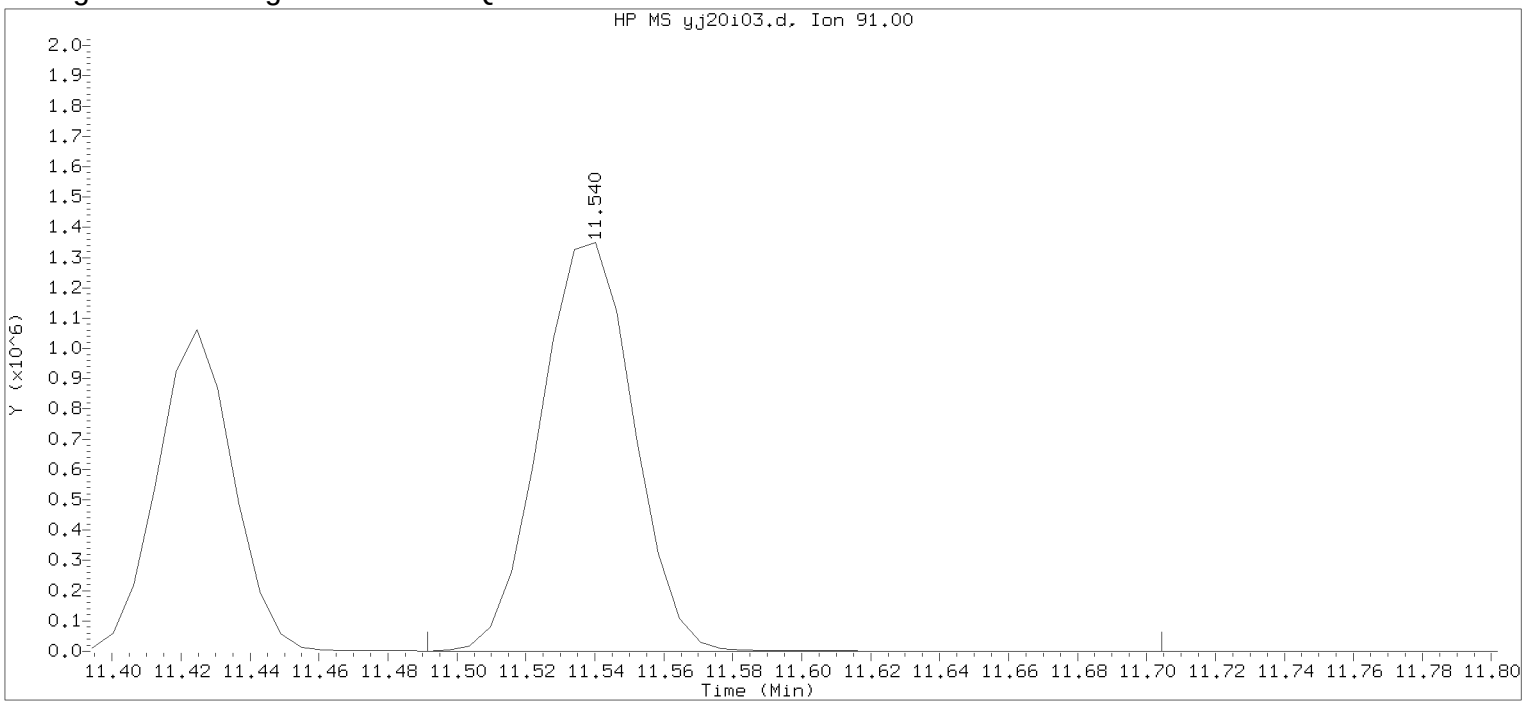
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

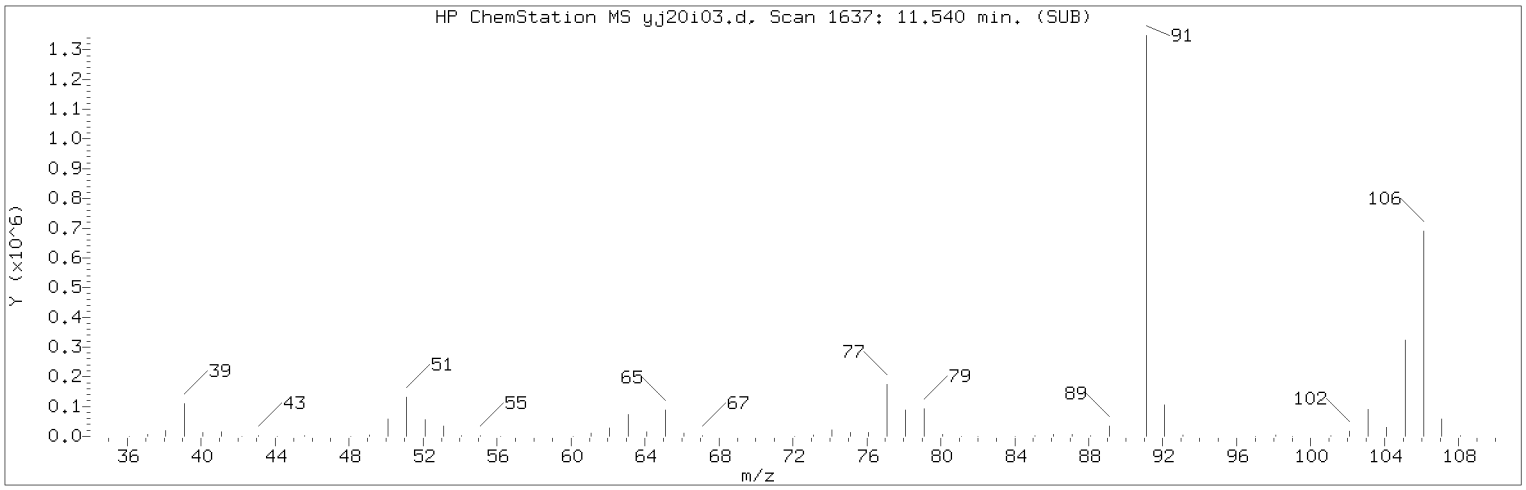
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

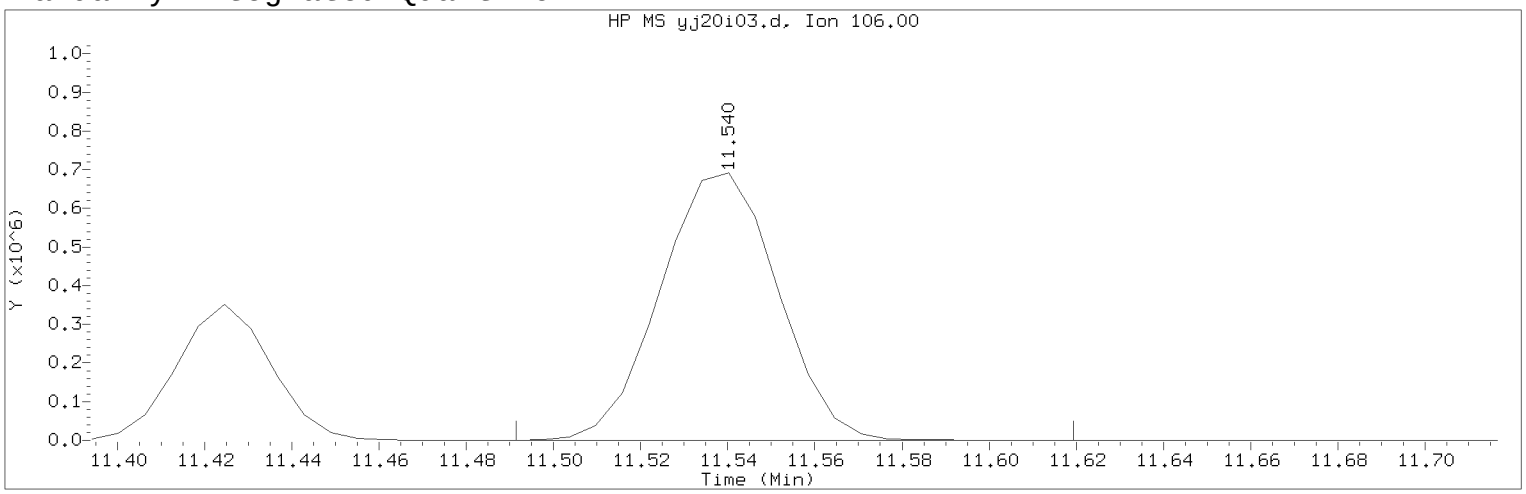
Compound Number : 104
Compound Name : Ethylbenzene
Scan Number : 1637
Retention Time (minutes): 11.540
Quant Ion : 91.00
Area : 2547453
On-column Amount (ng) : 162.2970
Integration start scan : 1628 Integration stop scan: 1663
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

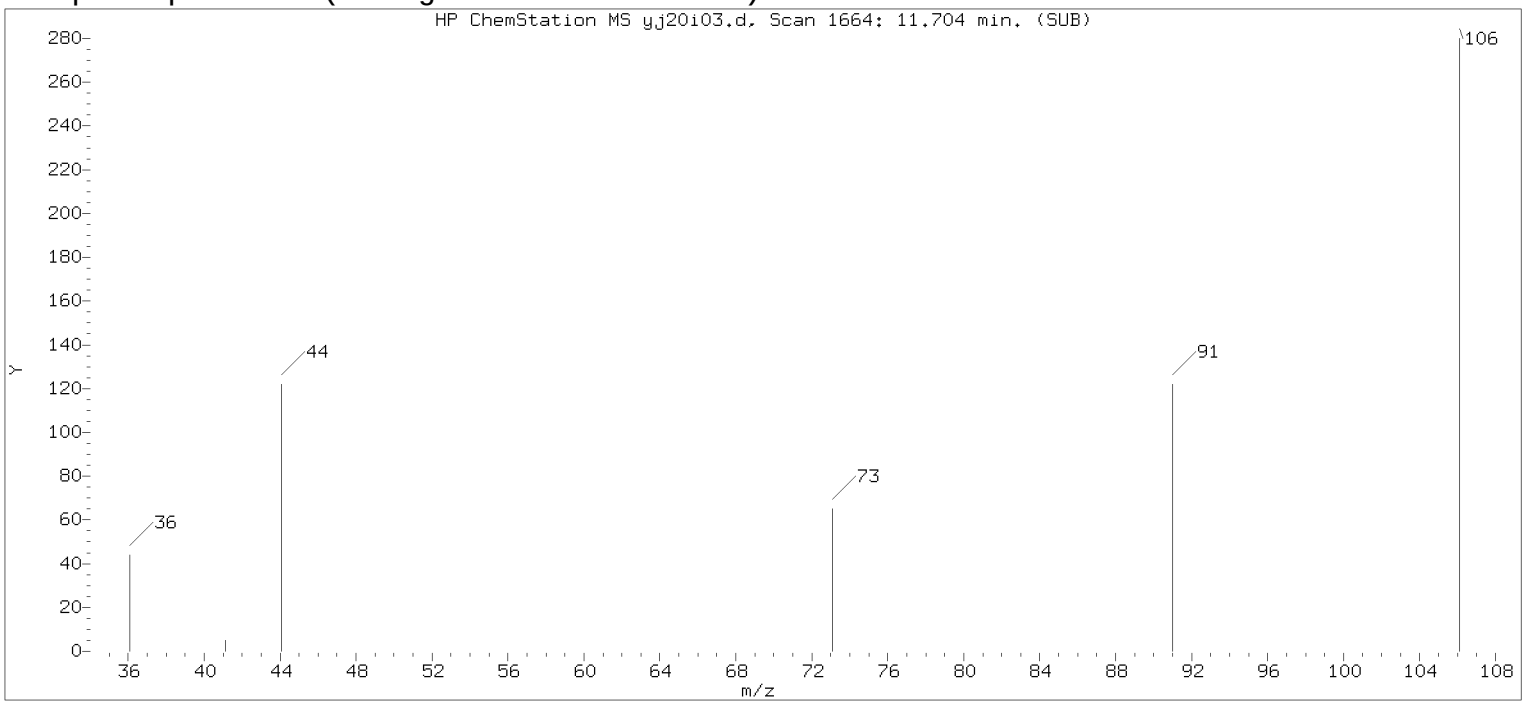
Compound Number : 106
Compound Name : m+p-Xylene
Scan Number : 1637
Retention Time (minutes): 11.540
Quant Ion : 106.00
Area (flag) : 1294212A
On-Column Amount (ng) : 104.2939
Integration start scan : 1628 Integration stop scan: 1649
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

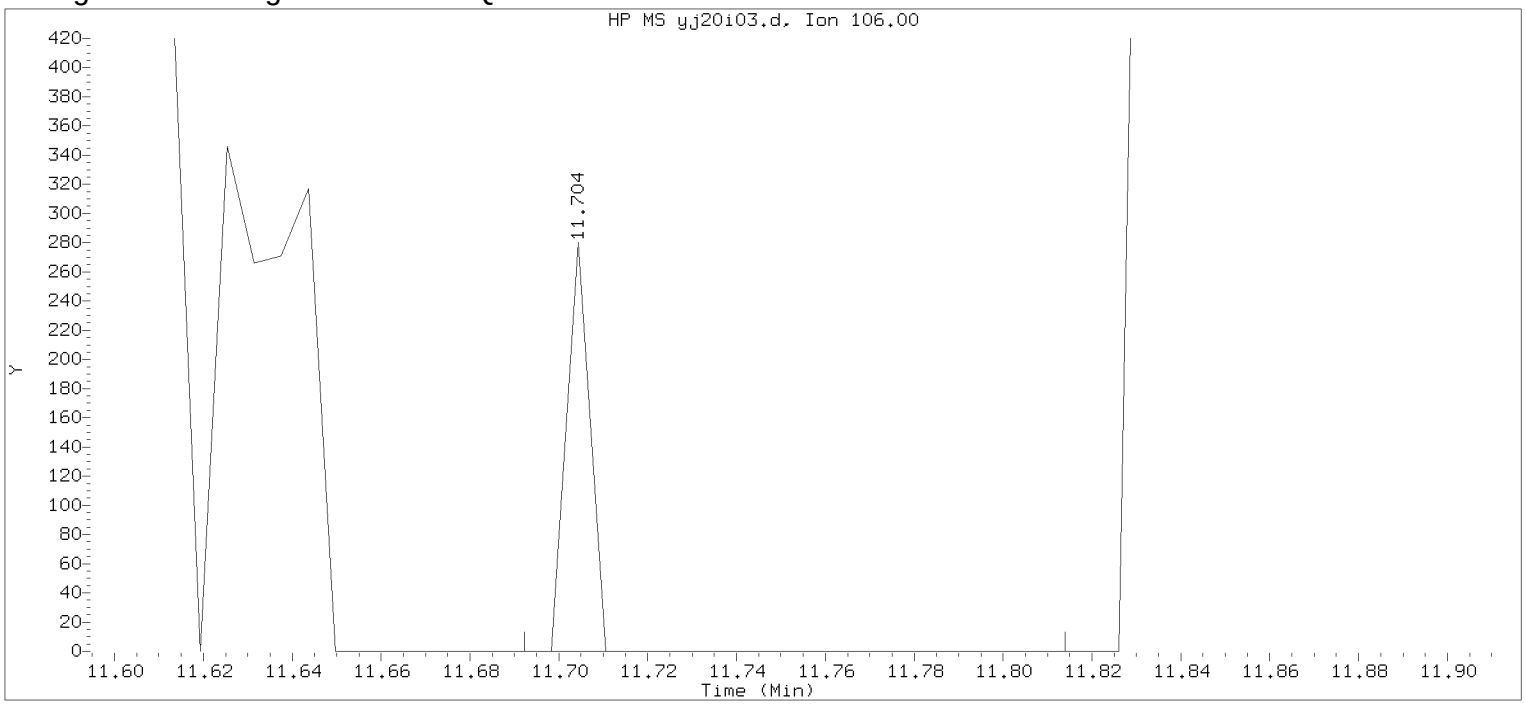
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

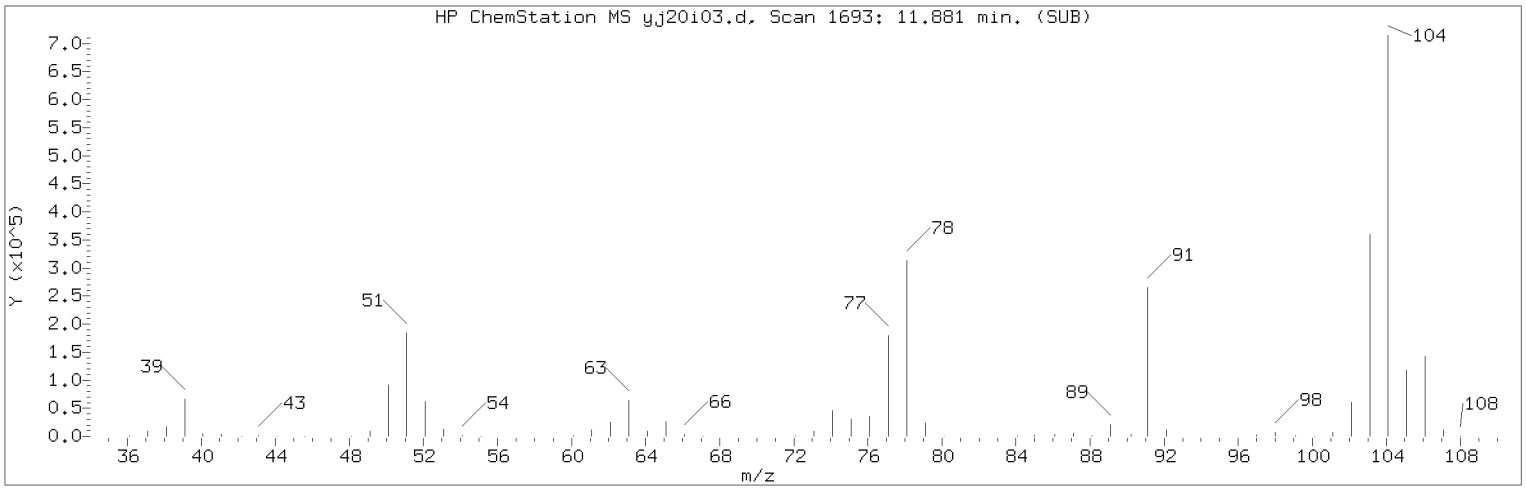
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

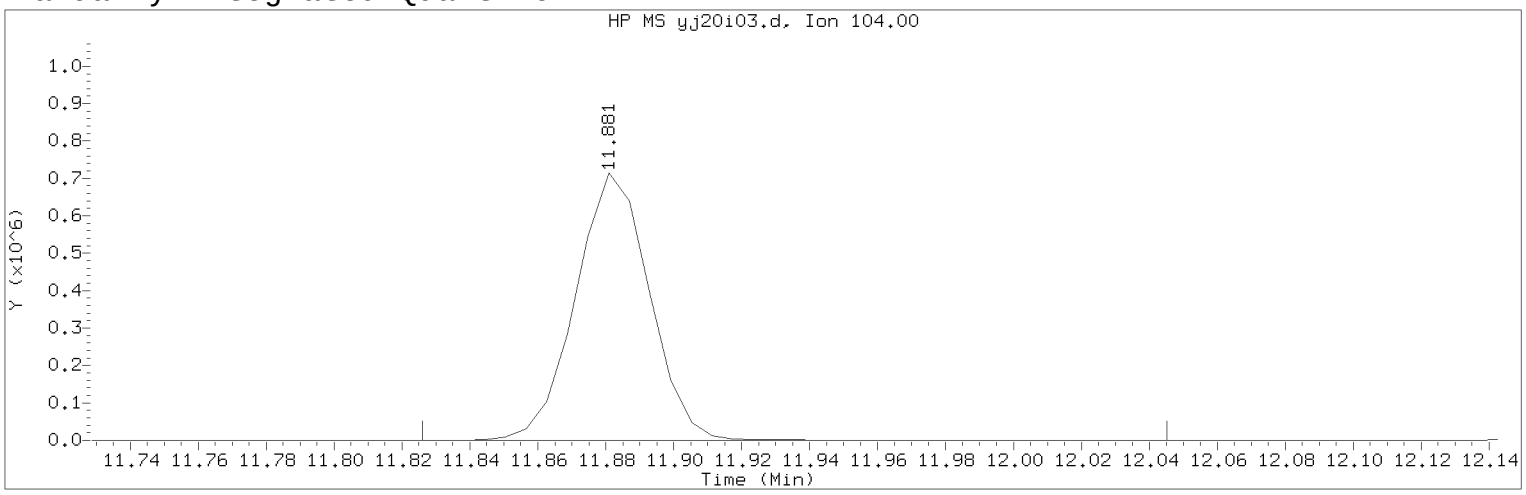
Compound Number : 106
Compound Name : m+p-Xylene
Scan Number : 1664
Retention Time (minutes): 11.704
Quant Ion : 106.00
Area : 102
On-column Amount (ng) : 0.0379
Integration start scan : 1661 Integration stop scan: 1681
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

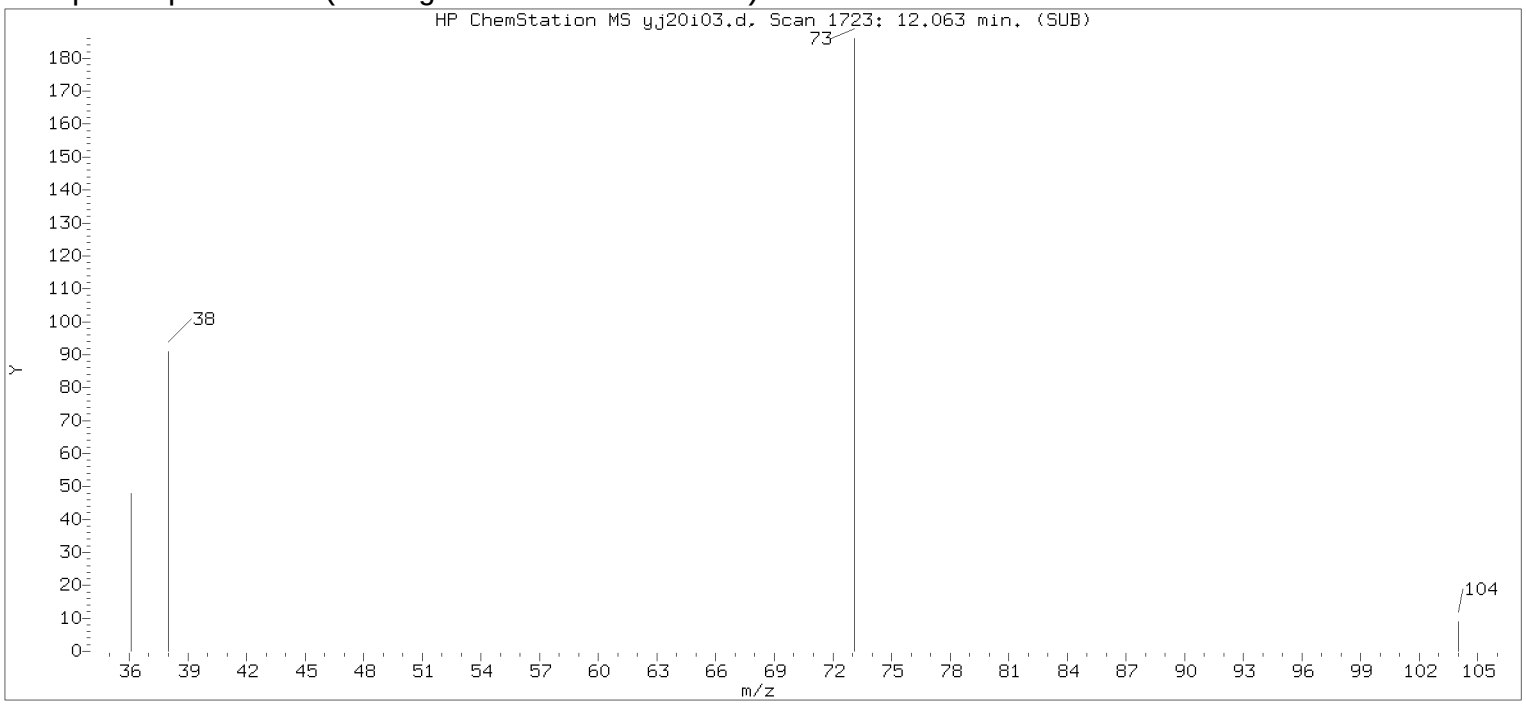
Compound Number : 109
Compound Name : Styrene
Scan Number : 1693
Retention Time (minutes): 11.881
Quant Ion : 104.00
Area (flag) : 1079446A
On-Column Amount (ng) : 53.4461
Integration start scan : 1683 Integration stop scan: 1719
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

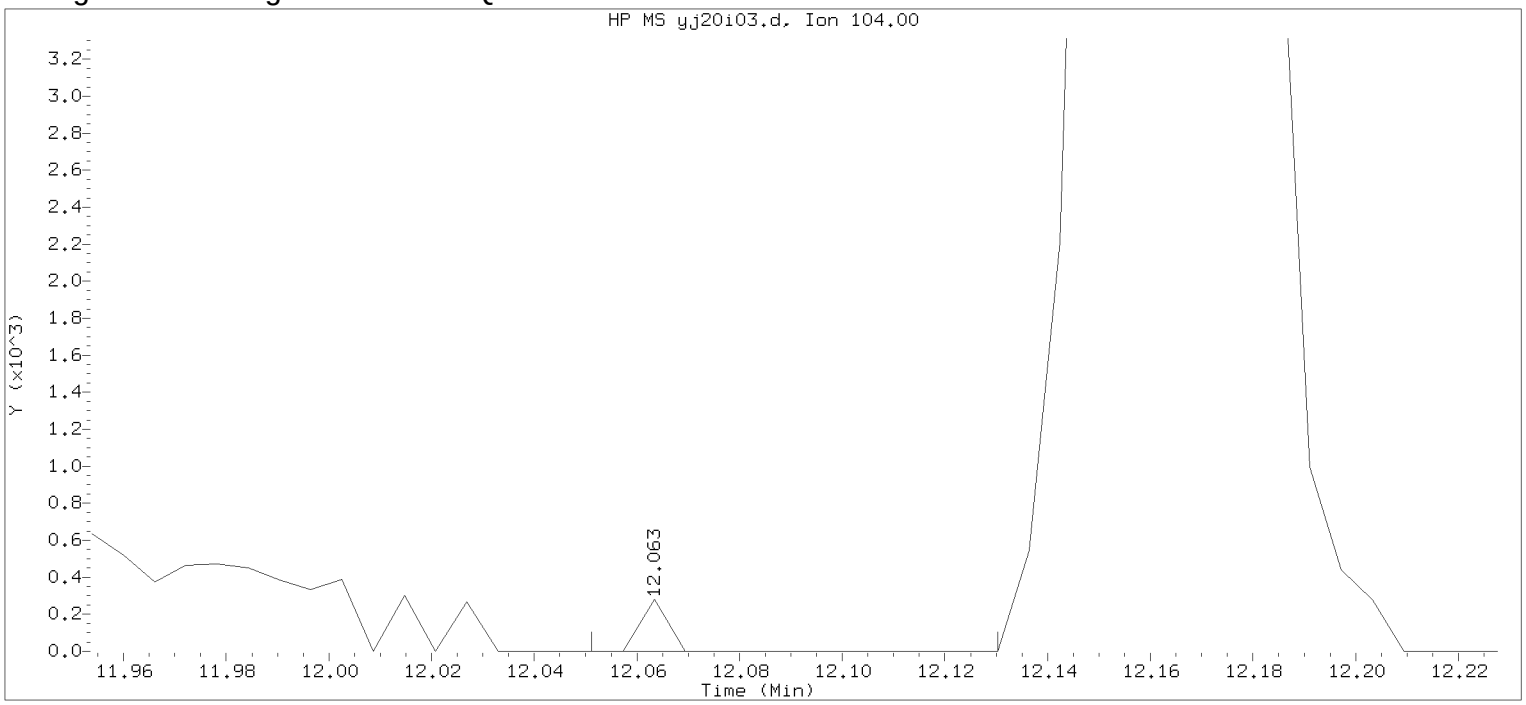
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

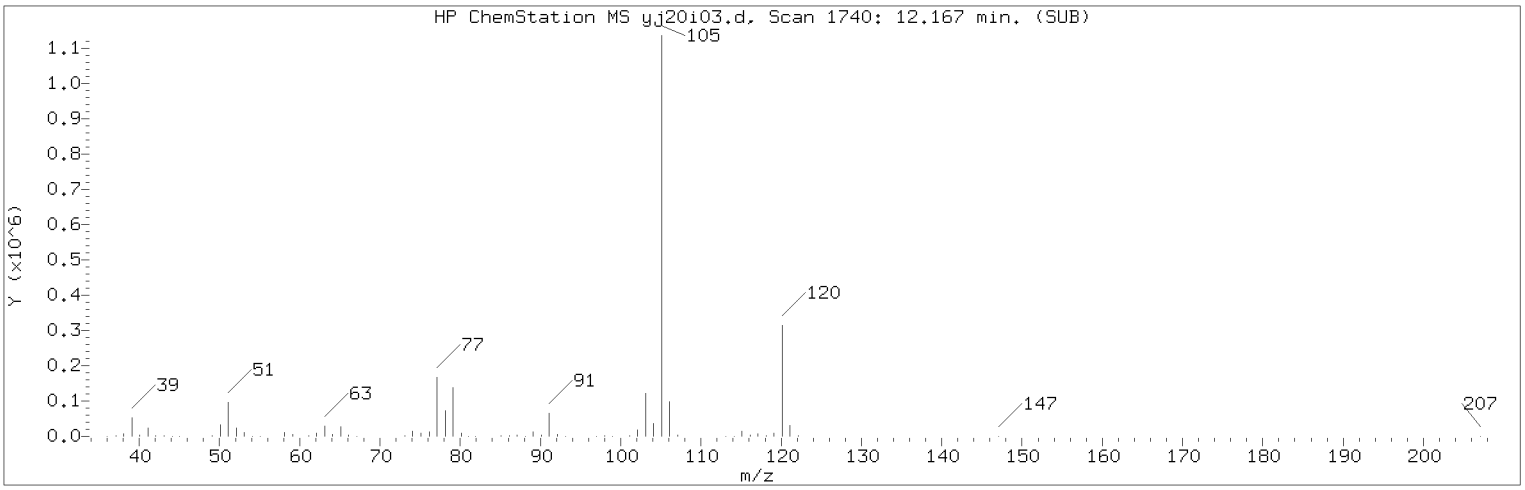
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

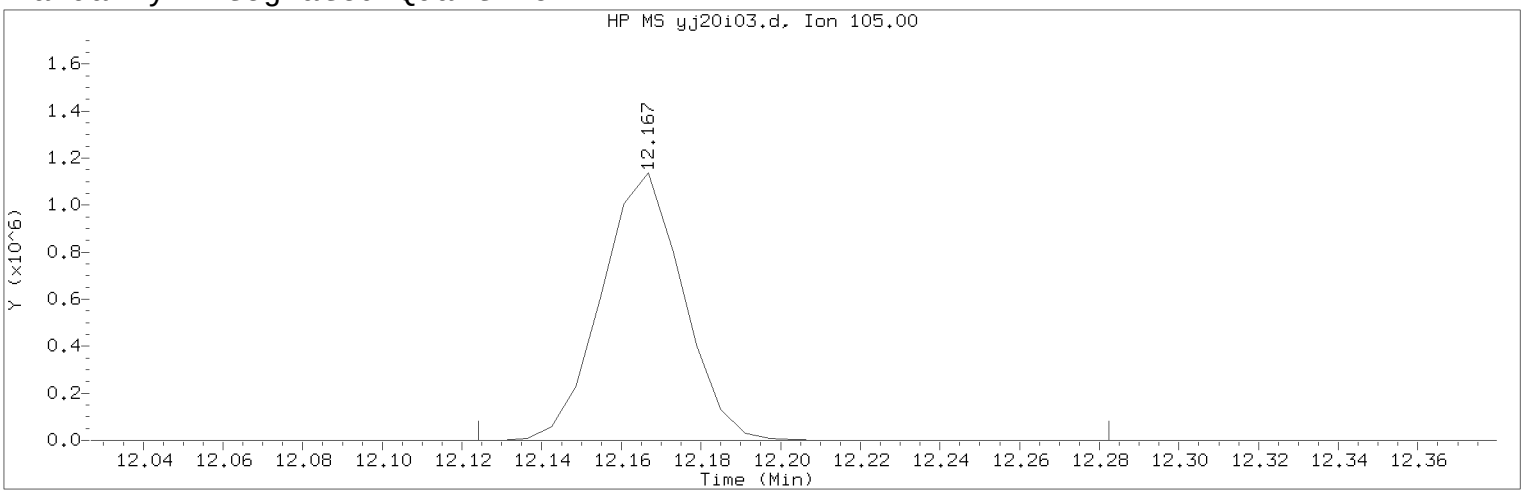
Compound Number : 109
Compound Name : Styrene
Scan Number : 1723
Retention Time (minutes): 12.063
Quant Ion : 104.00
Area : 102
On-column Amount (ng) : 0.0365
Integration start scan : 1720 Integration stop scan: 1733
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

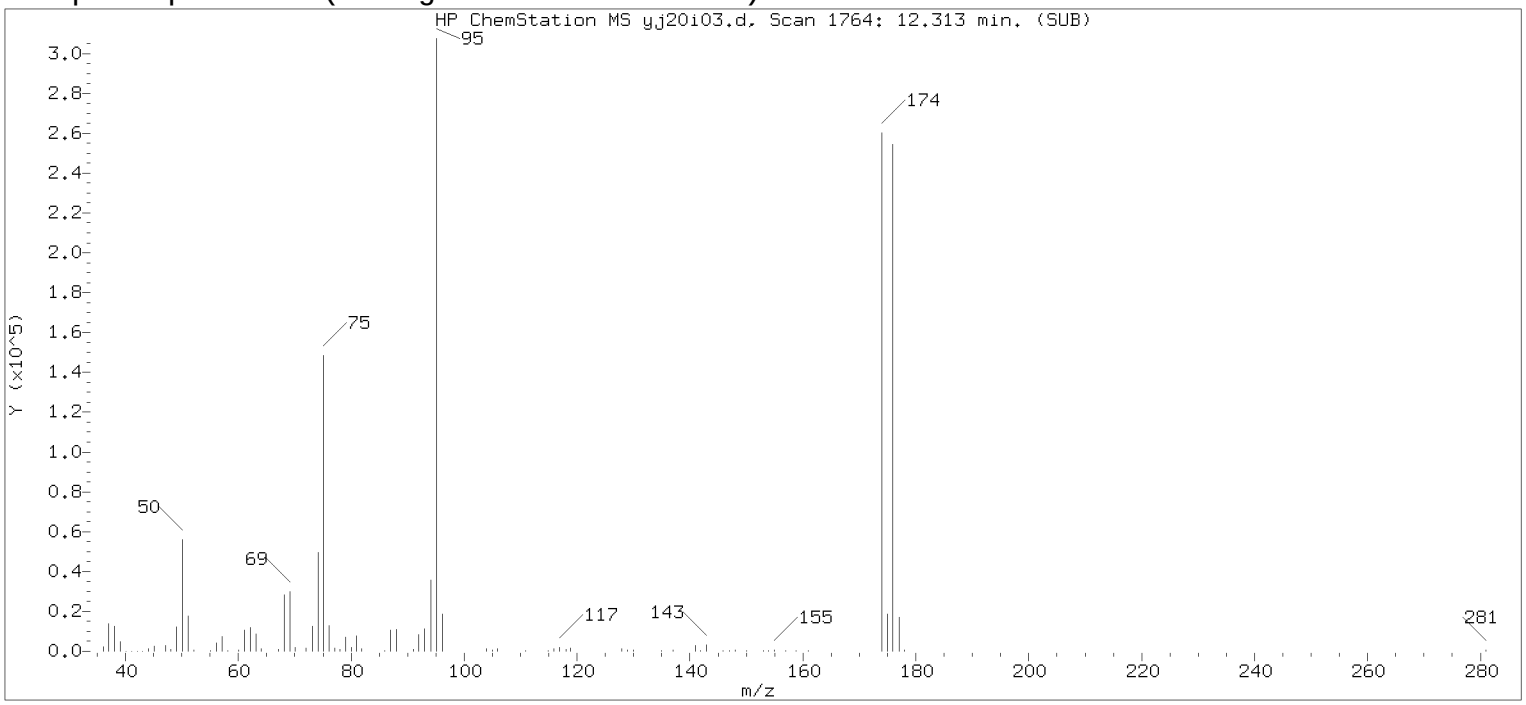
Compound Number : 111
Compound Name : Isopropylbenzene
Scan Number : 1740
Retention Time (minutes): 12.167
Quant Ion : 105.00
Area (flag) : 1611094A
On-Column Amount (ng) : 52.4687
Integration start scan : 1732 Integration stop scan: 1758
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

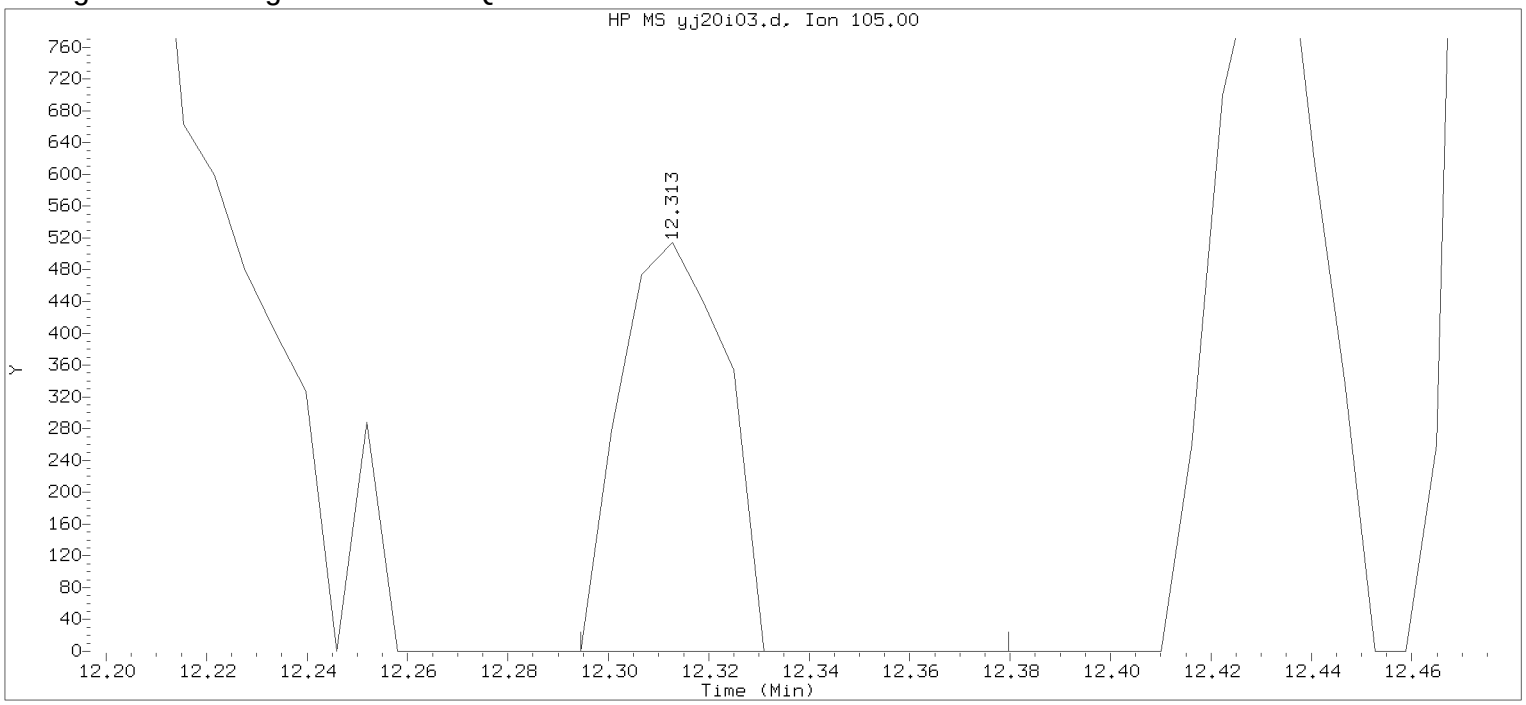
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

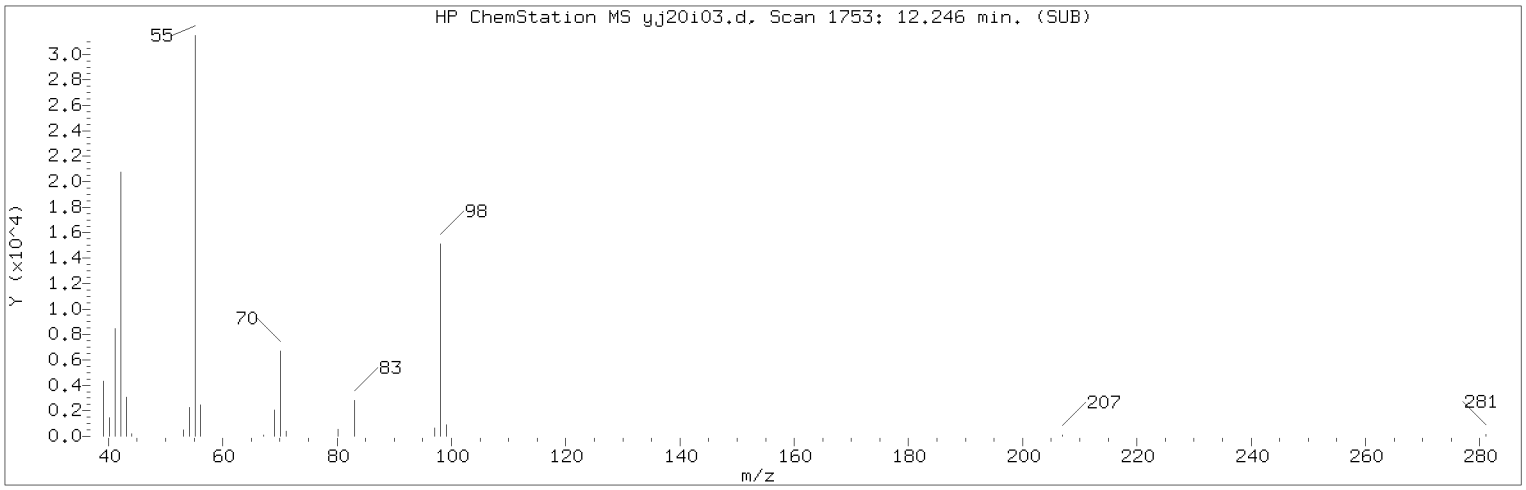
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

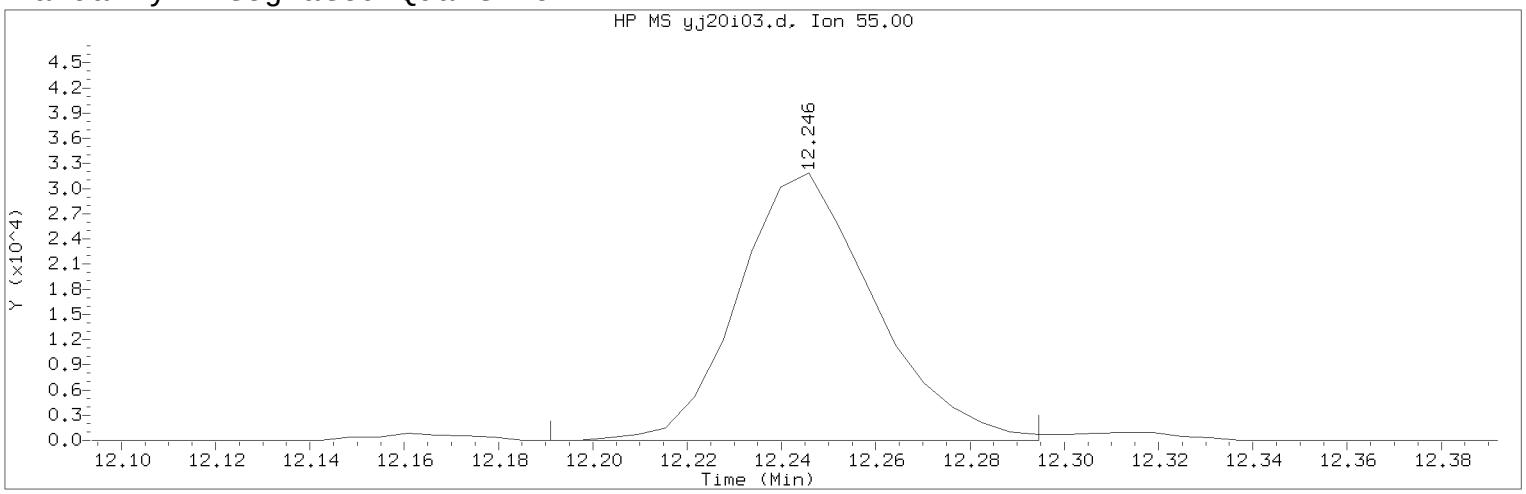
Compound Number : 111
Compound Name : Isopropylbenzene
Scan Number : 1764
Retention Time (minutes): 12.313
Quant Ion : 105.00
Area : 751
On-column Amount (ng) : 0.2183
Integration start scan : 1760 Integration stop scan: 1774
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

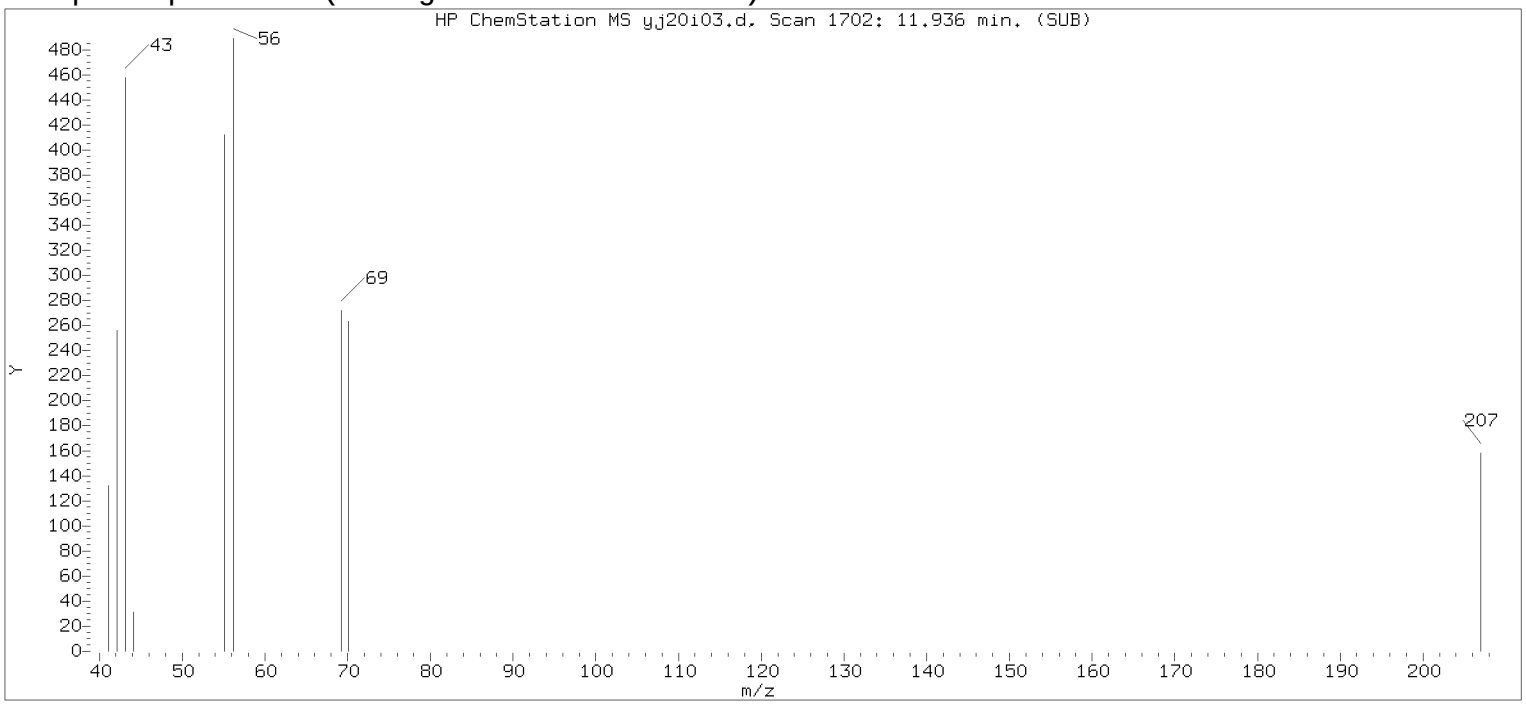
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 63653MA
On-Column Amount (ng) : 636.3886
Integration start scan : 1743 Integration stop scan: 1760
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

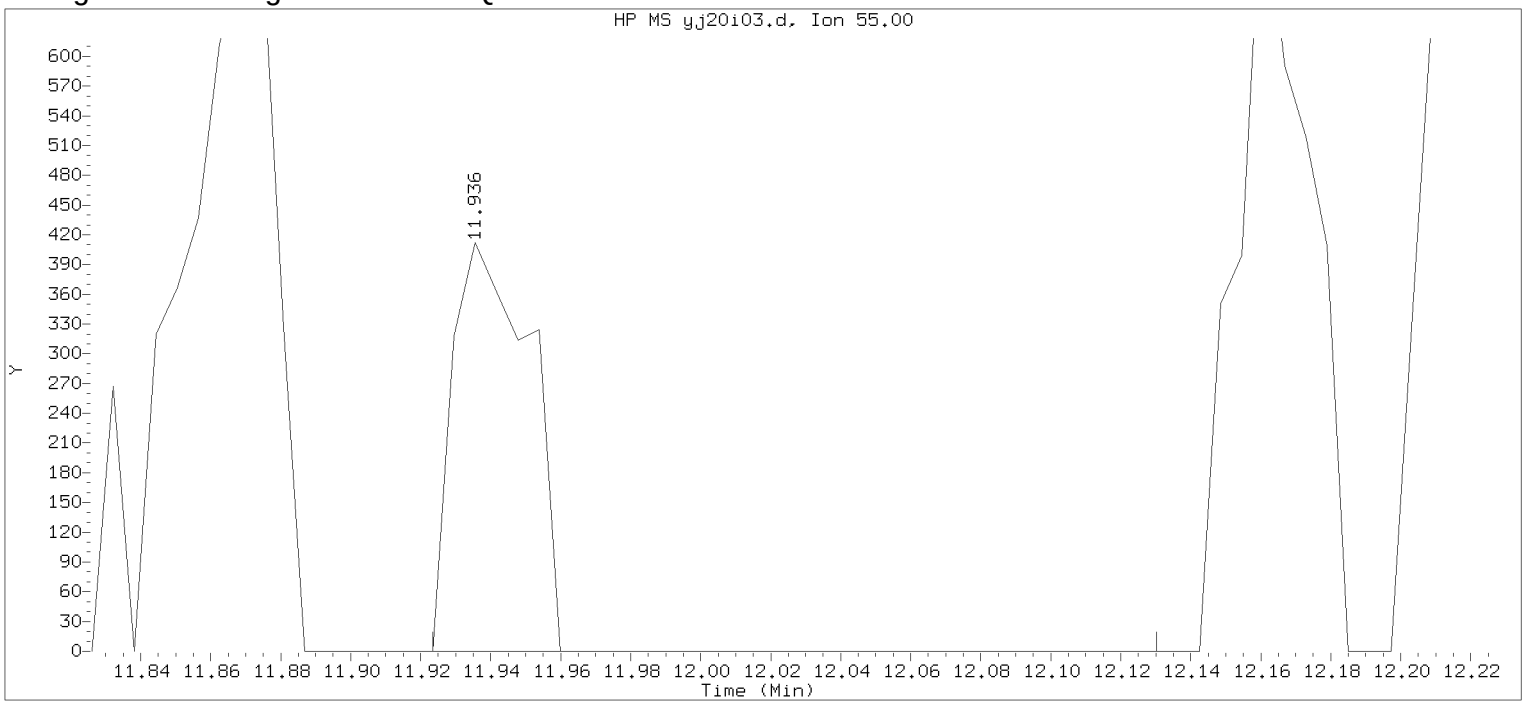
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

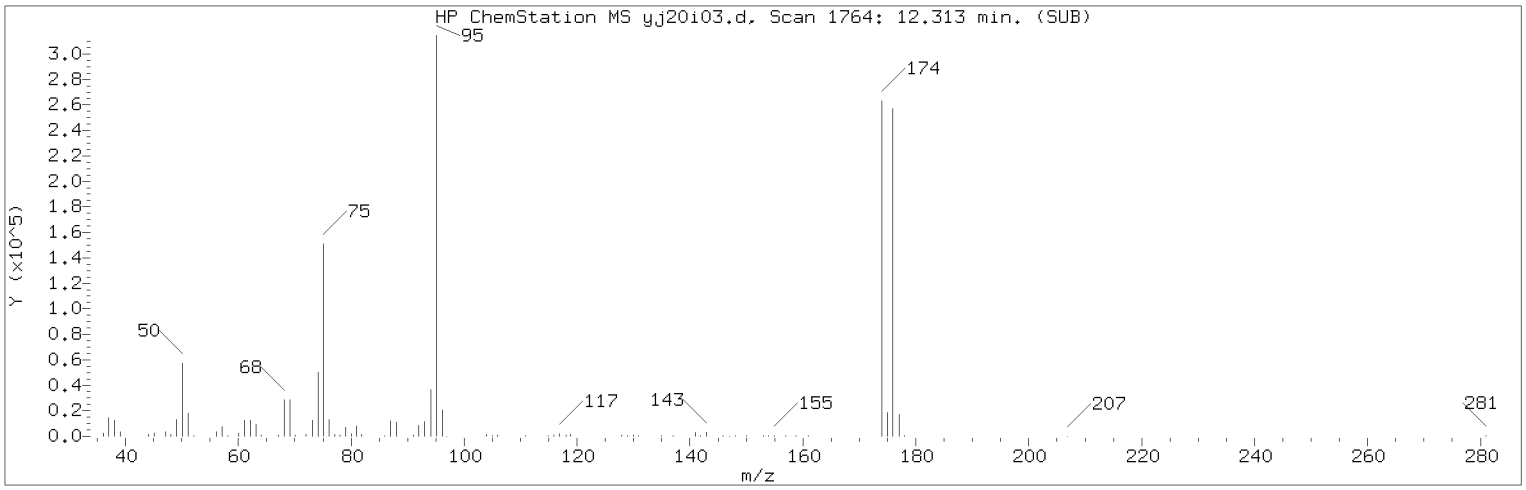
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

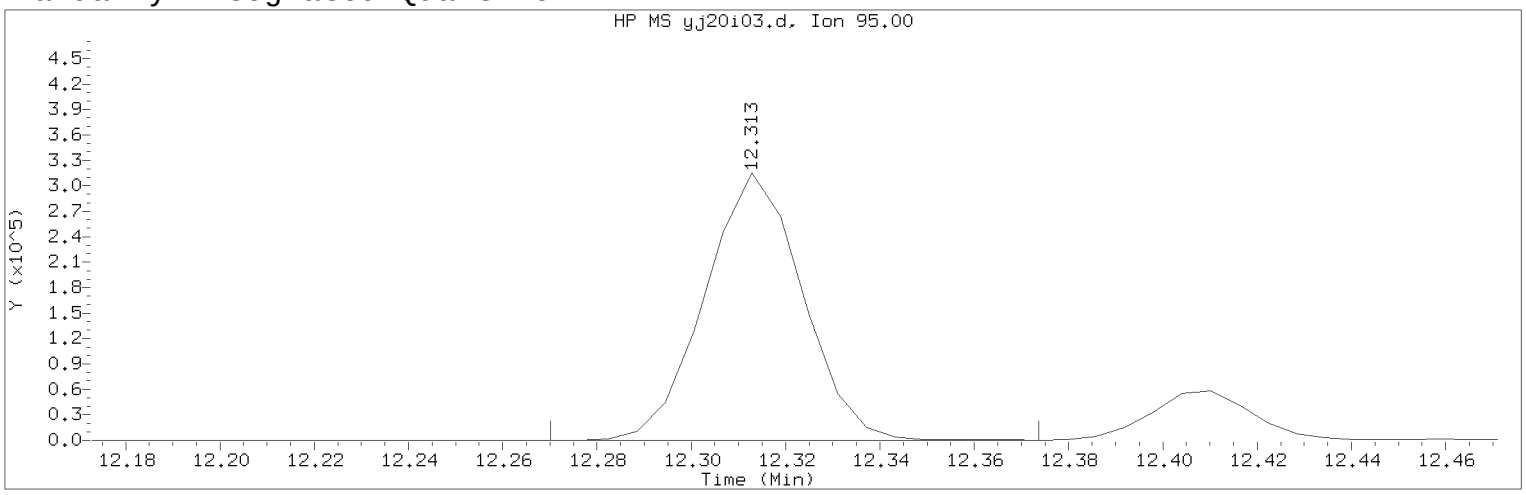
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1702
Retention Time (minutes): 11.936
Quant Ion : 55.00
Area : 631
On-column Amount (ng) : 1.7979
Integration start scan : 1699 Integration stop scan: 1733
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

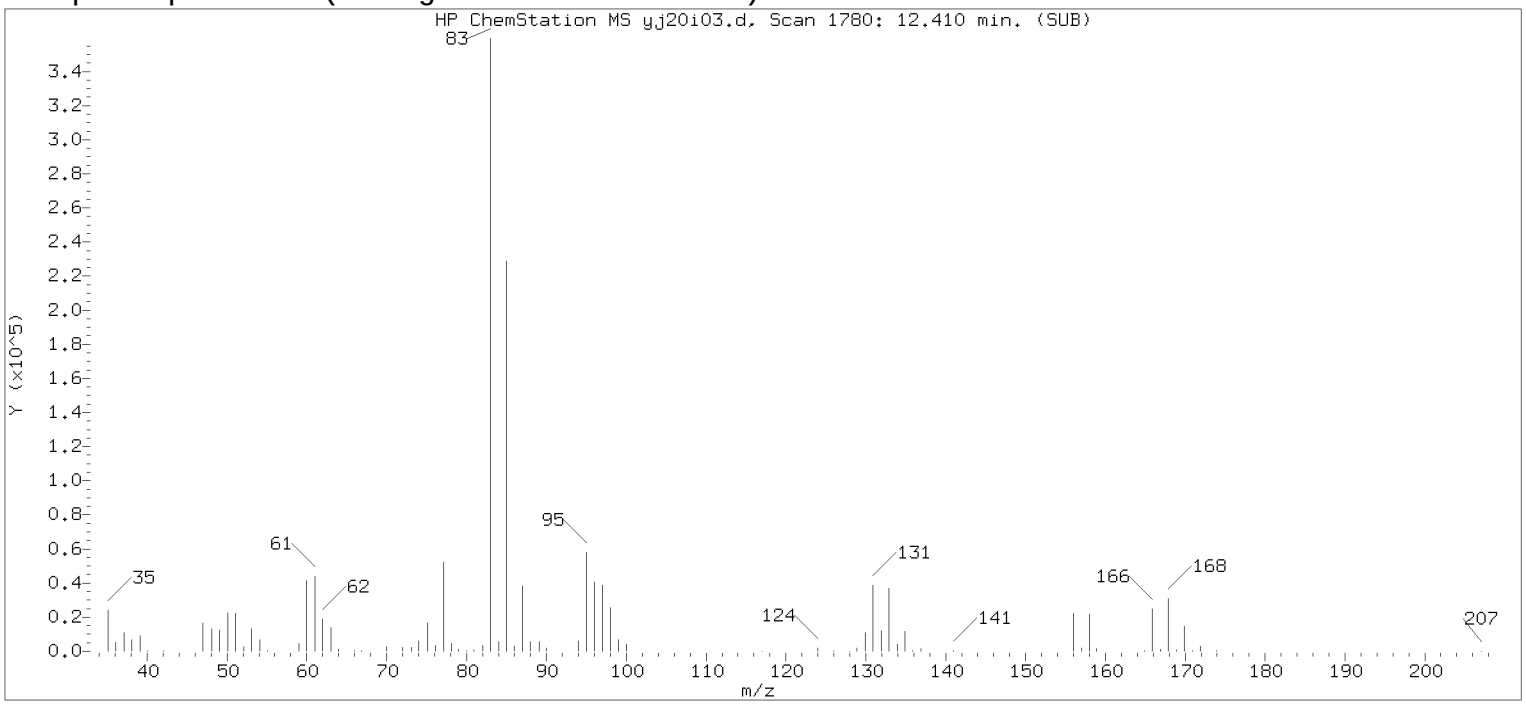
Compound Number : 114
Compound Name : 4-Bromofluorobenzene
Scan Number : 1764
Retention Time (minutes): 12.313
Quant Ion : 95.00
Area (flag) : 451215A
On-Column Amount (ng) : 50.1919
Integration start scan : 1756 Integration stop scan: 1773
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

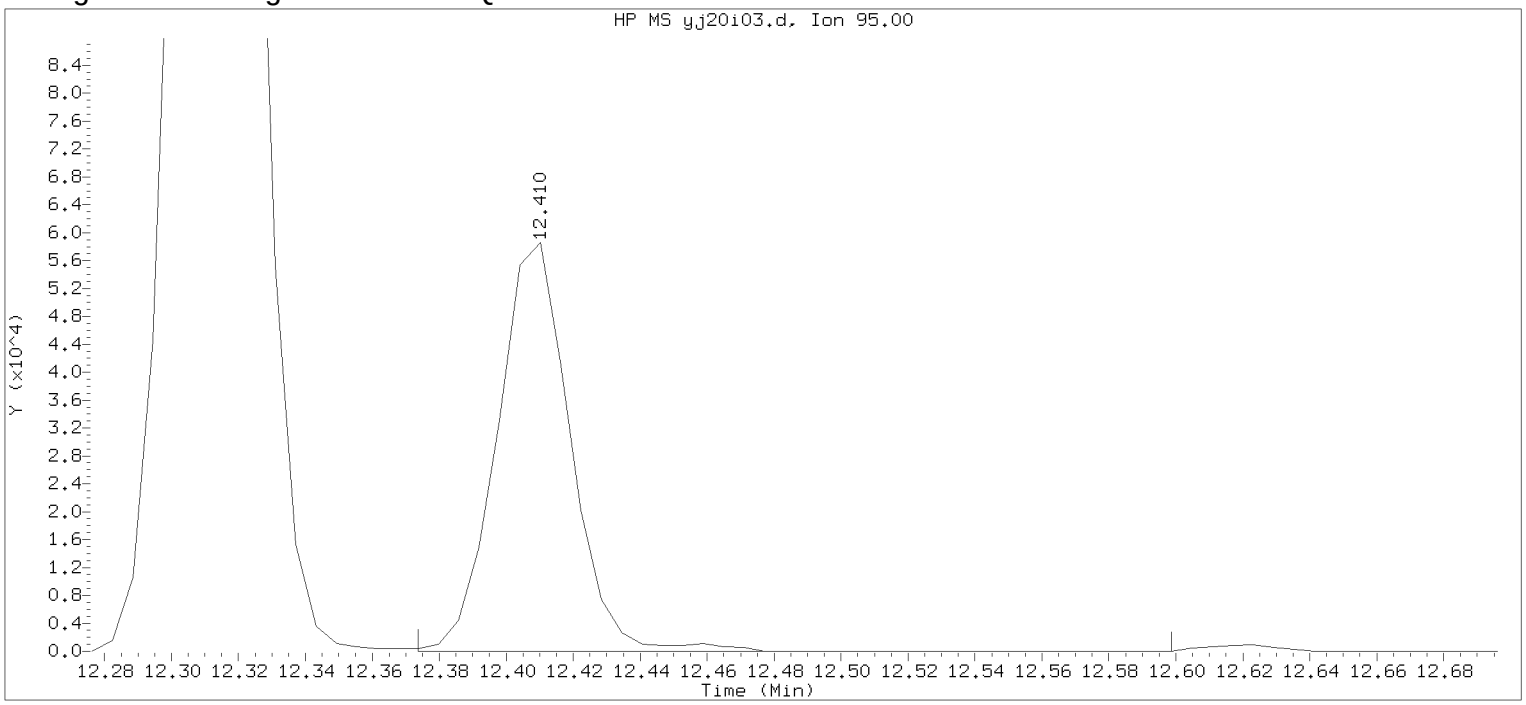
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

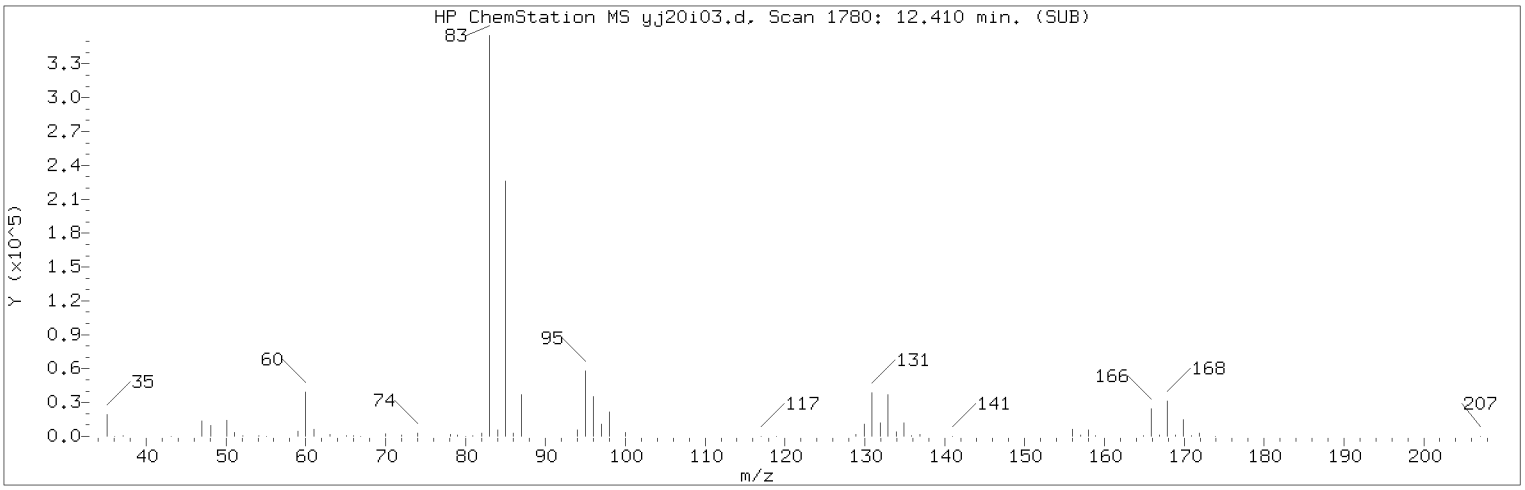
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

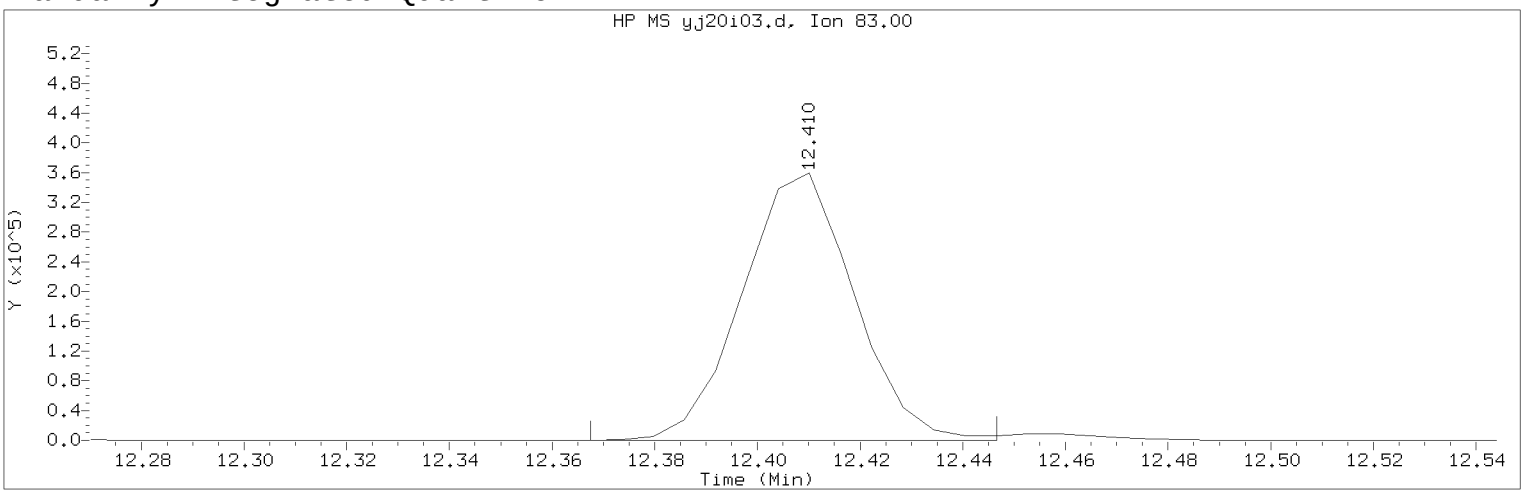
Compound Number : 114
Compound Name : 4-Bromofluorobenzene
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 95.00
Area : 89269
On-column Amount (ng) : 46.0934
Integration start scan : 1773 Integration stop scan: 1810
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

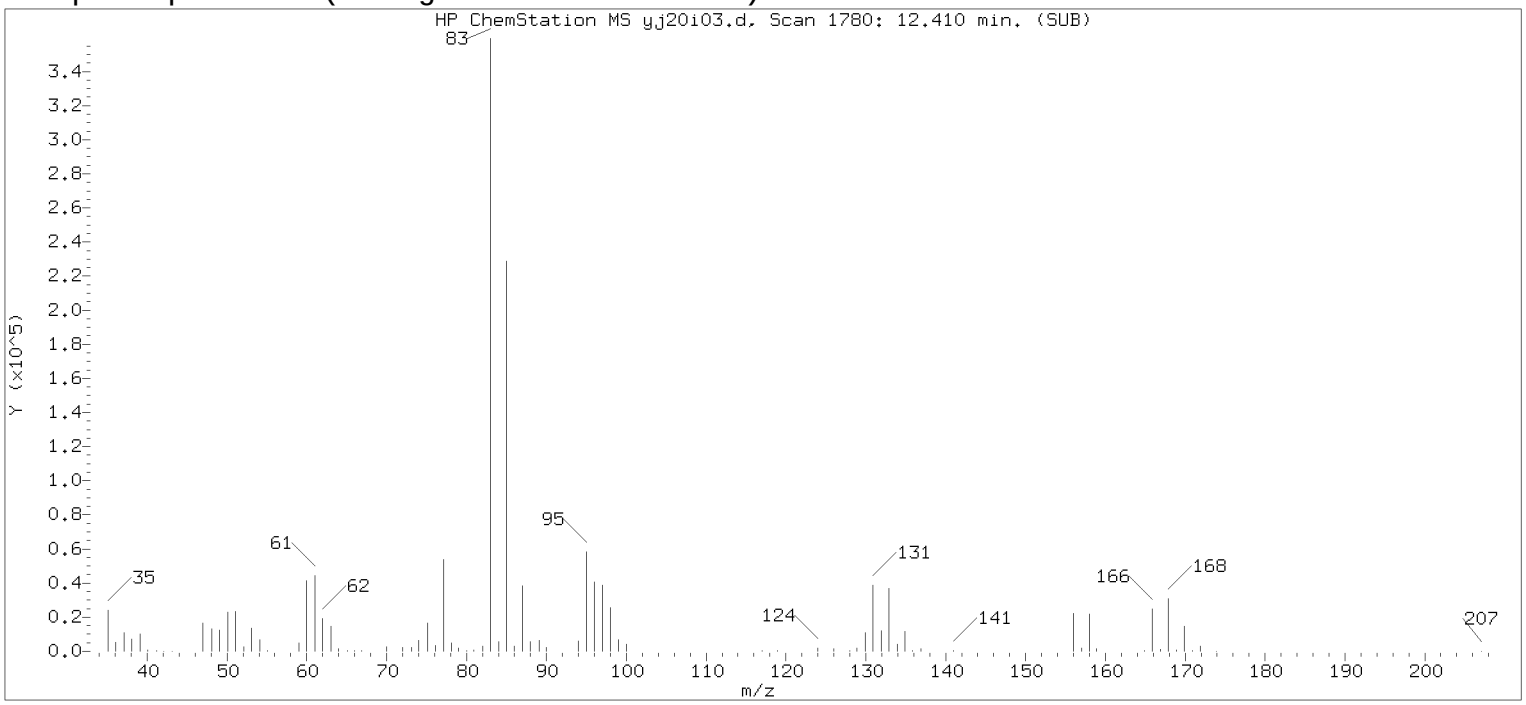
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 543279M
On-Column Amount (ng) : 51.7511
Integration start scan : 1772 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

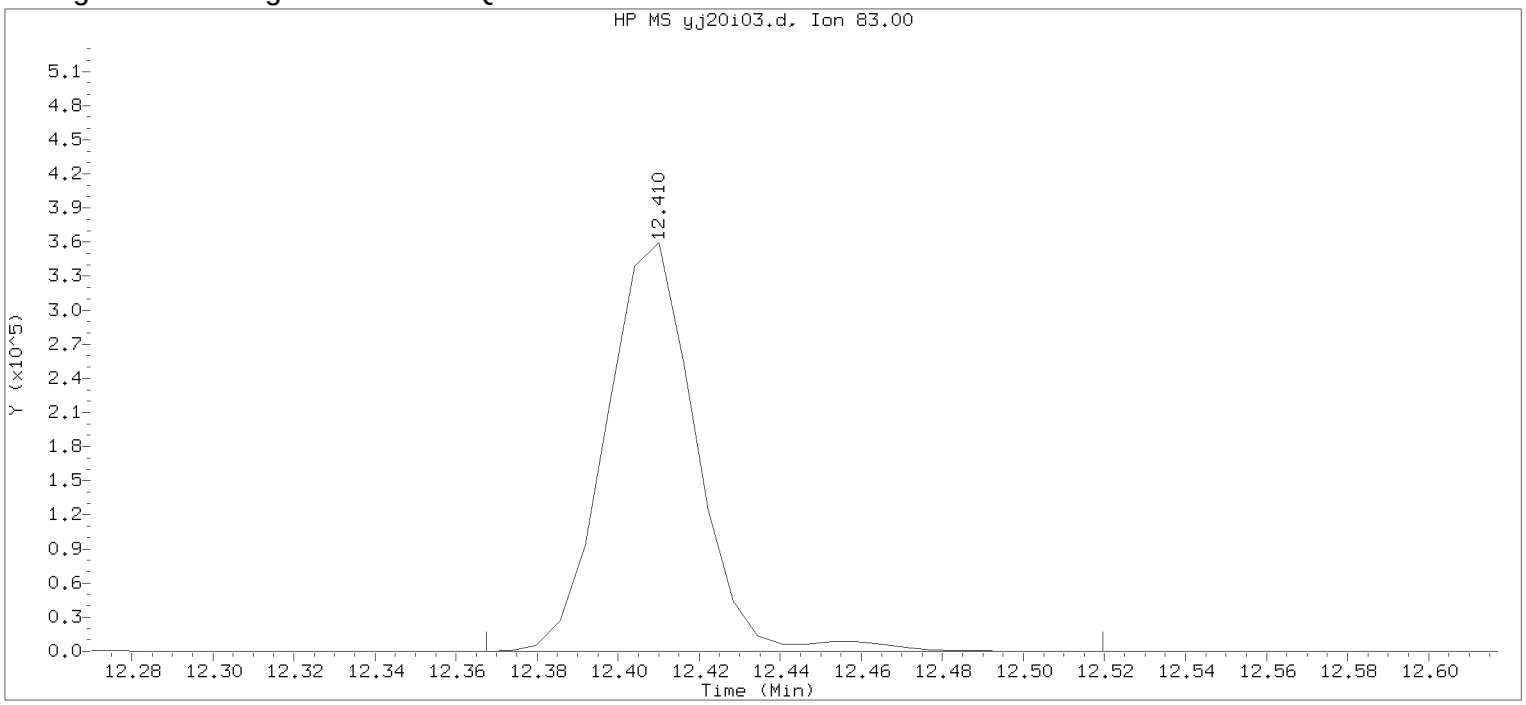
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

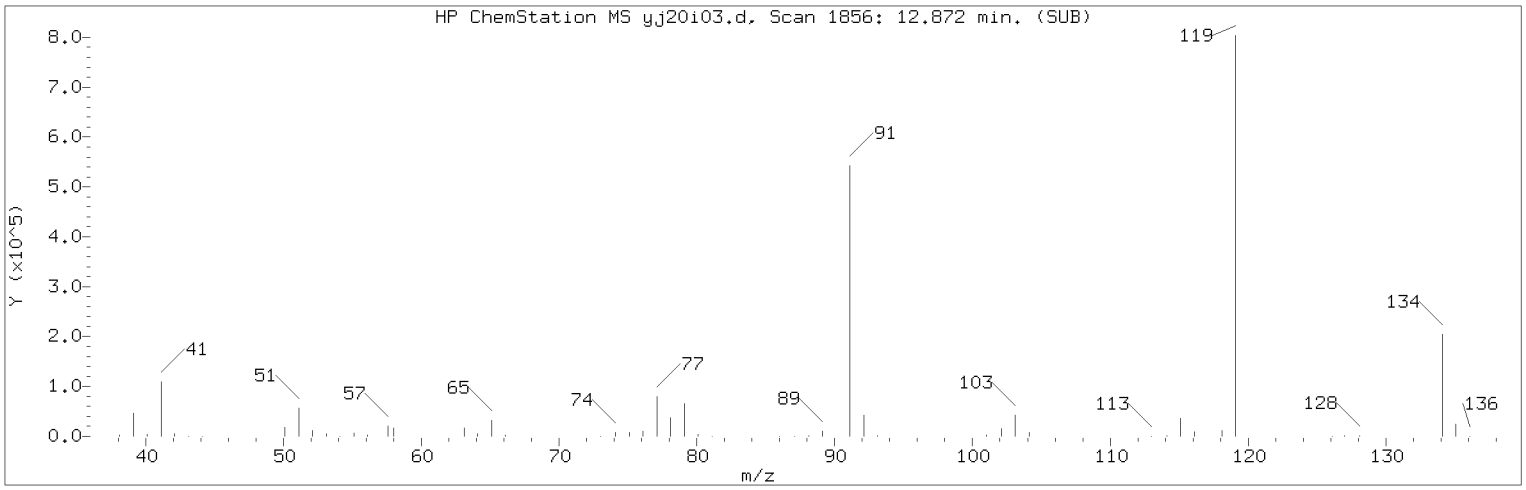
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

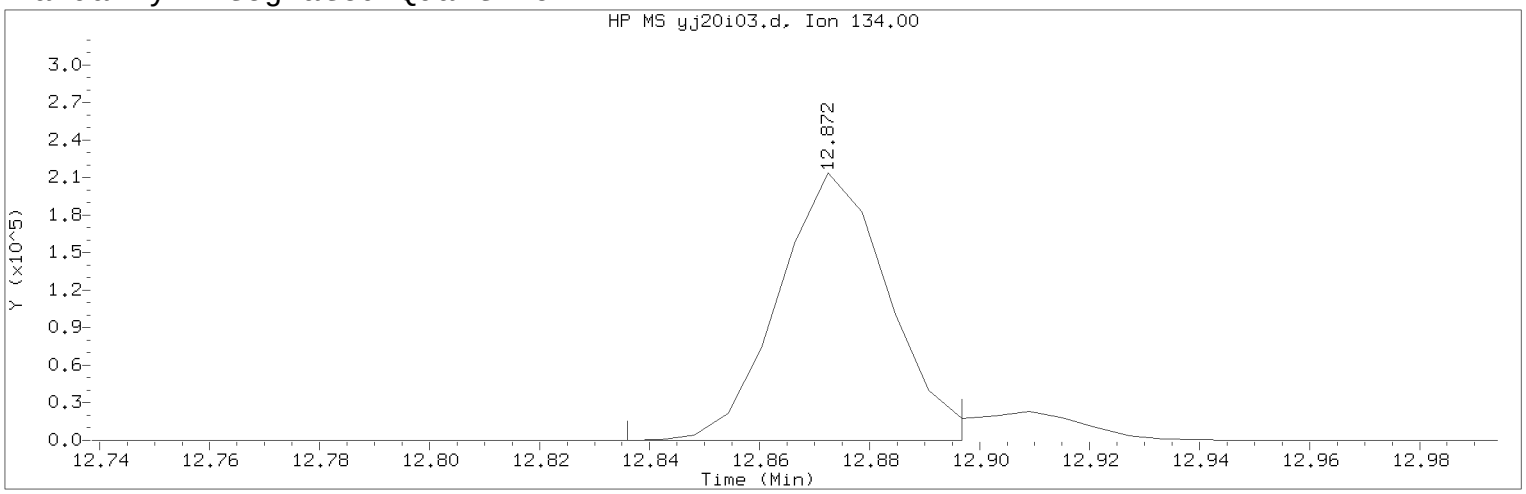
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 553813
On-column Amount (ng) : 52.6731
Integration start scan : 1772 Integration stop scan: 1797
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

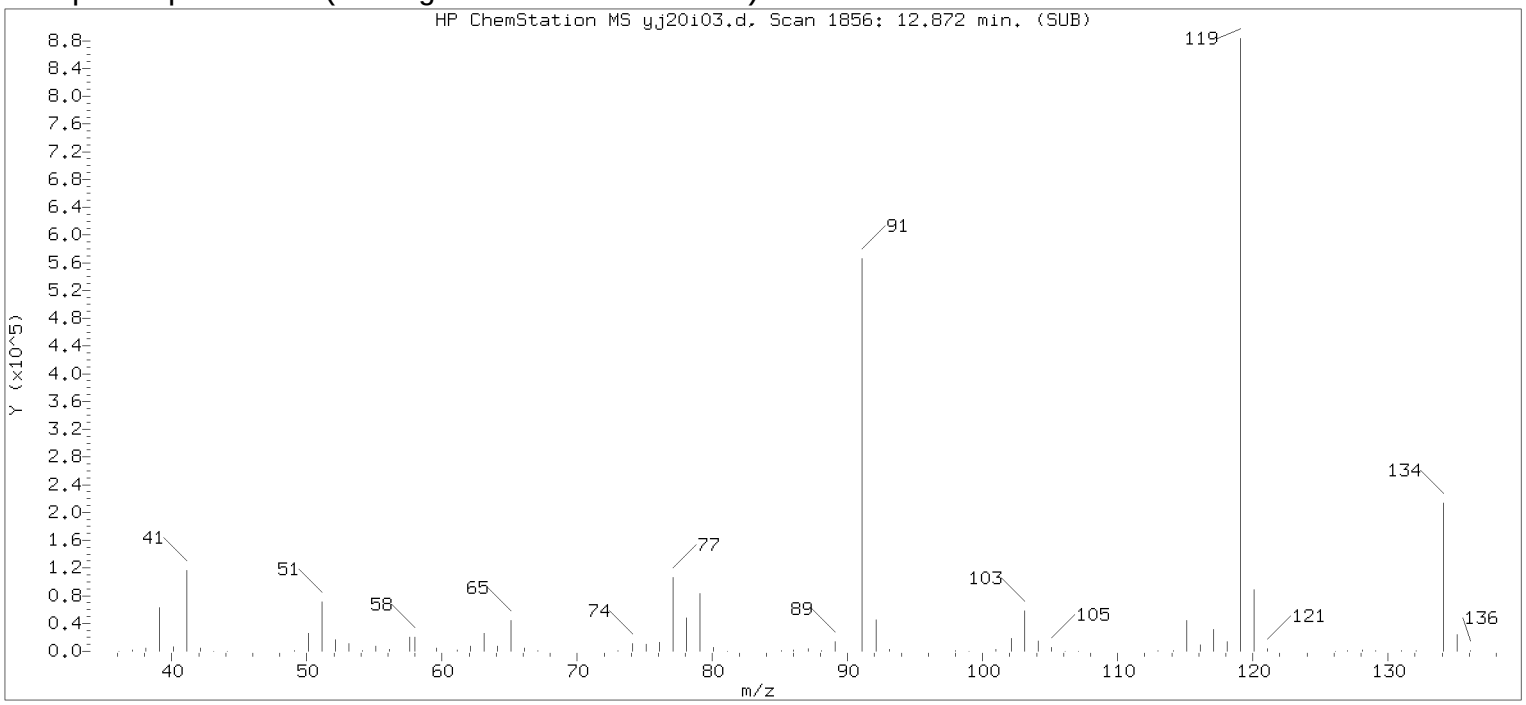
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 296435M
On-Column Amount (ng) : 51.8918
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

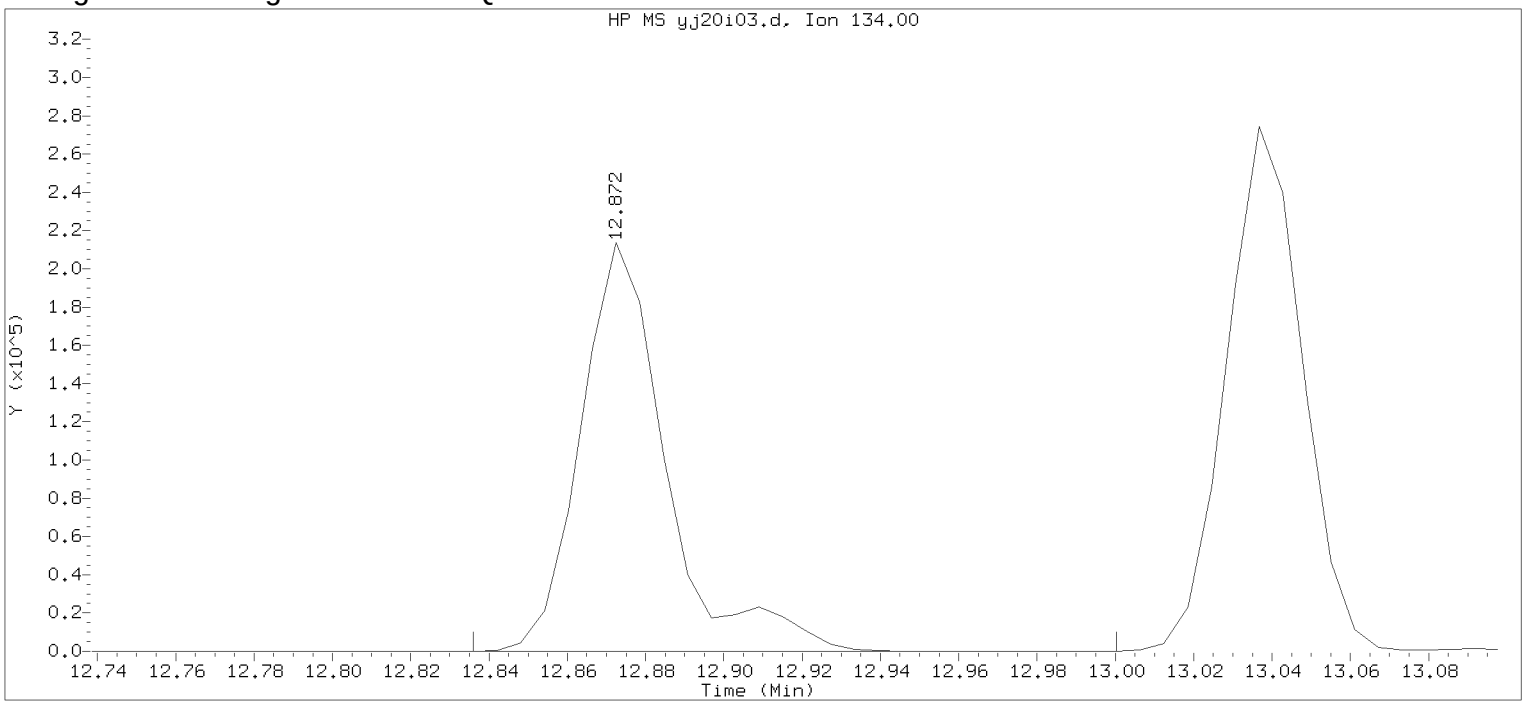
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

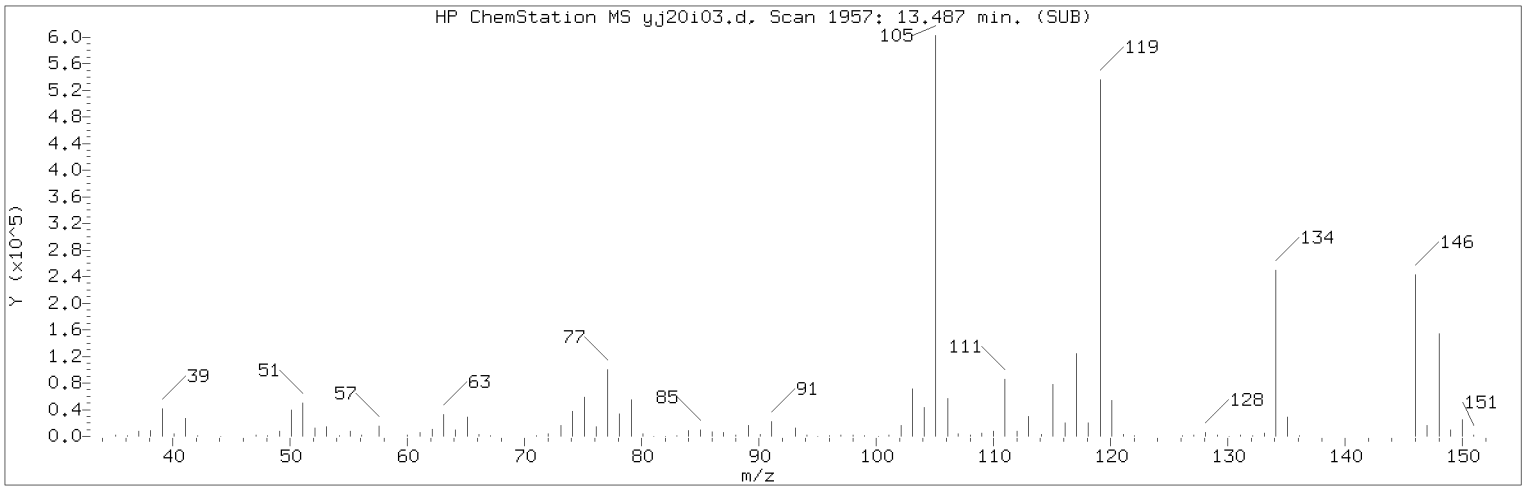
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

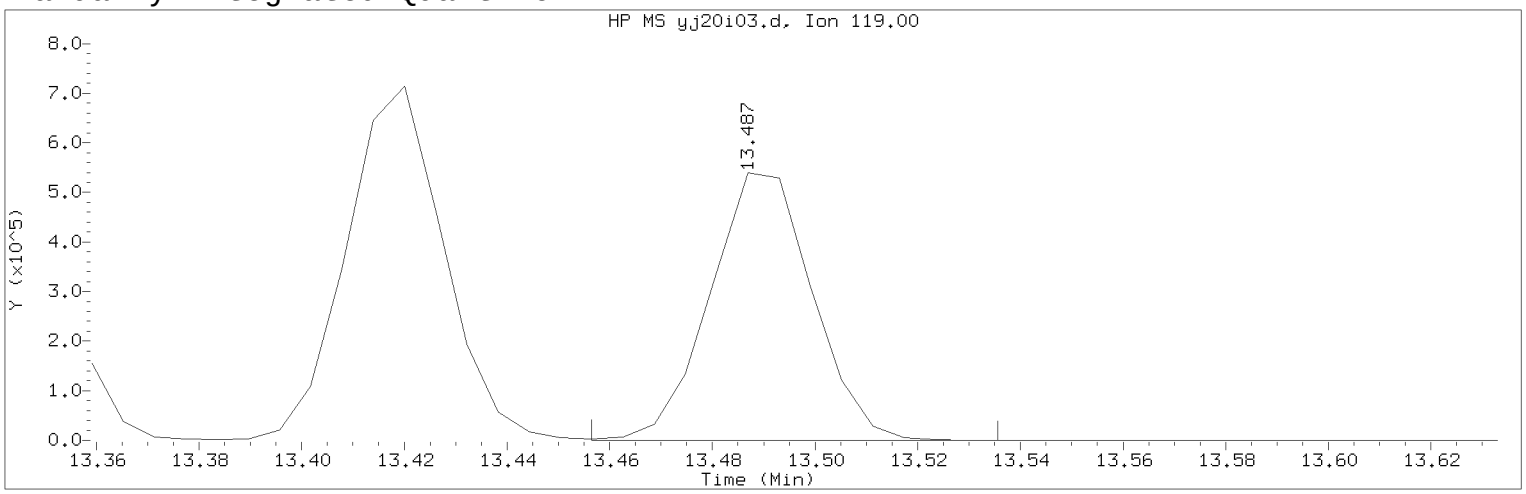
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 324116
On-column Amount (ng) : 54.9701
Integration start scan : 1849 Integration stop scan: 1876
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD050 Lab Sample ID: VSTD050

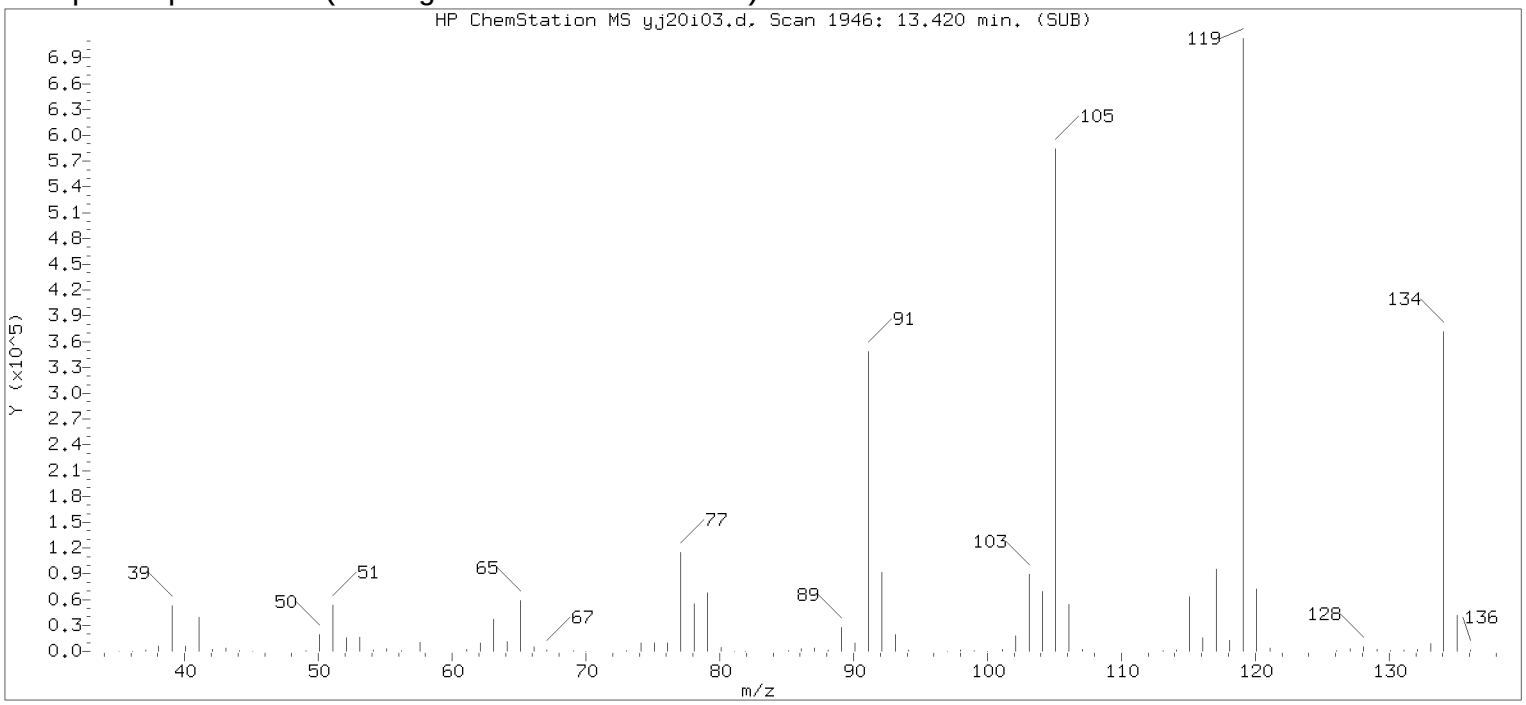
Compound Number : 140
Compound Name : 1,2-Diethylbenzene
Scan Number : 1957
Retention Time (minutes): 13.487
Quant Ion : 119.00
Area (flag) : 748091M
On-Column Amount (ng) : 51.3027
Integration start scan : 1951 Integration stop scan: 1964
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

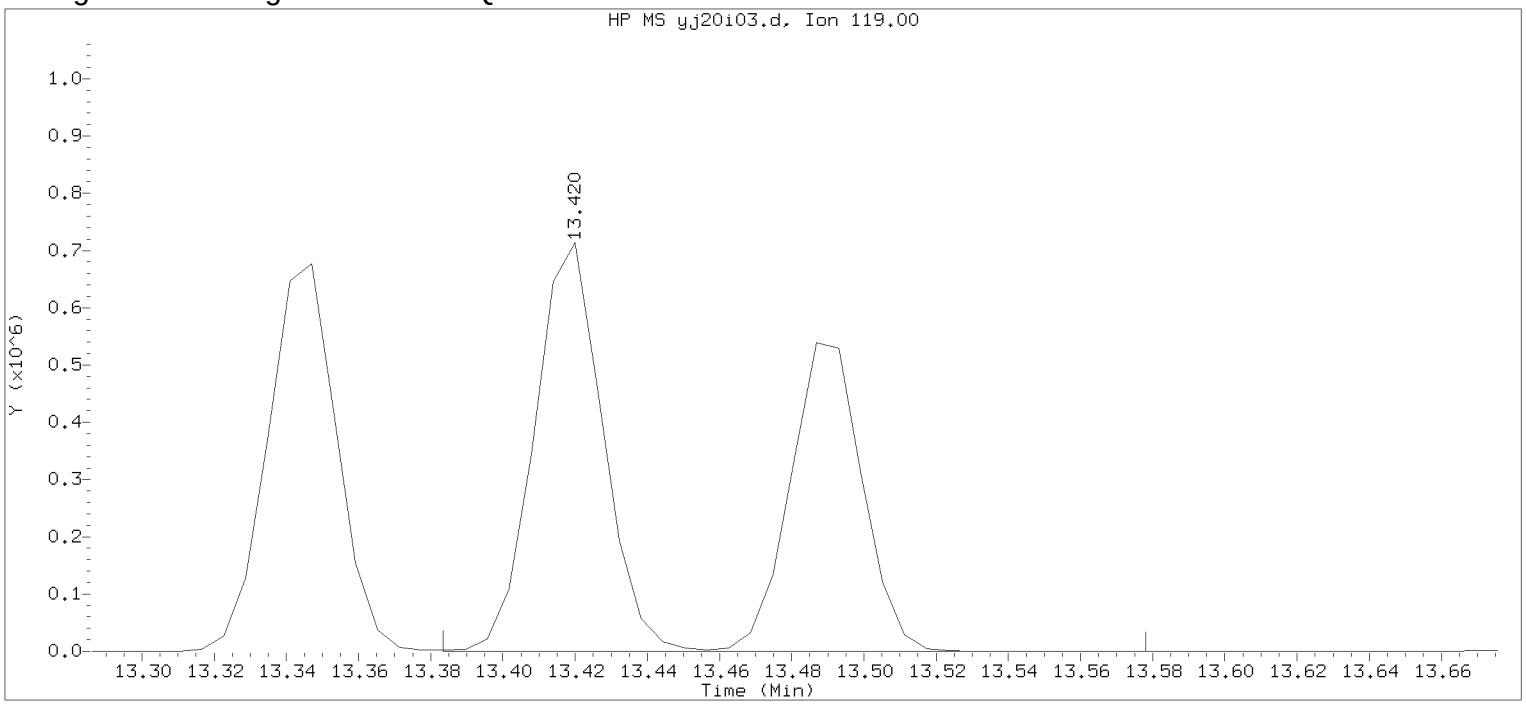
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



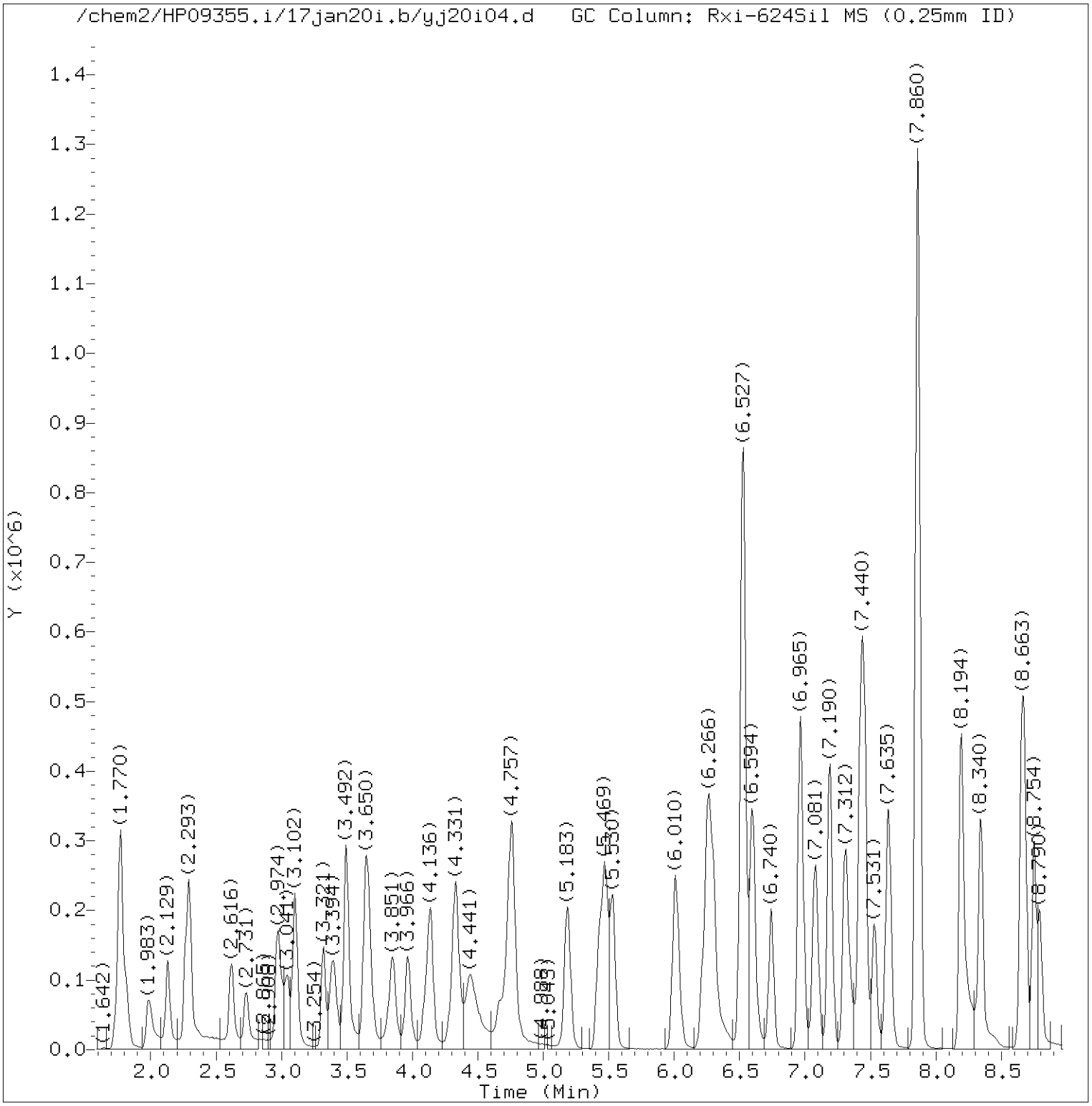

Data File: /chem2/HP09355.i/17jan20i.b/yj20i03.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:01 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 10:17
Date, time and analyst ID of latest file update: 20-Jan-2017 10:17 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 140
Compound Name : 1,2-Diethylbenzene
Scan Number : 1946
Retention Time (minutes): 13.420
Quant Ion : 119.00
Area : 1689671
On-column Amount (ng) : 95.6507
Integration start scan : 1939 Integration stop scan: 1971
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231




Total Ion Chromatogram (TIC)

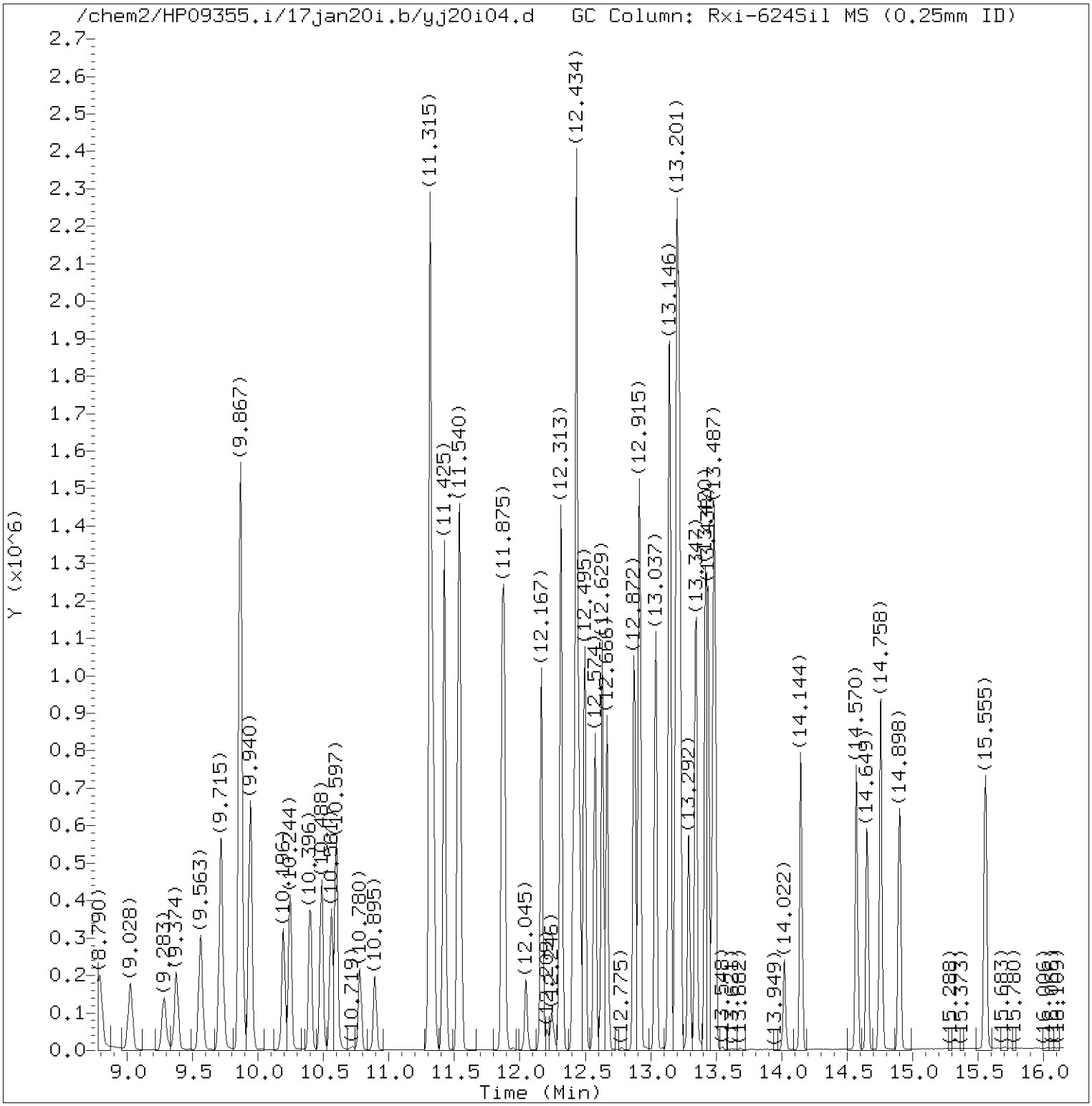
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 149490 | 18.965 |
| 4) Chloromethane | (2) | 2.129 | 50 | 158186 | 19.120 |
| 6) Vinyl Chloride | (2) | 2.269 | 62 | 147919 | 18.939 |
| 5) 1,3-Butadiene | (2) | 2.293 | 39 | 135654 | 20.029 |
| 8) Bromomethane | (2) | 2.616 | 94 | 105045 | 19.212 |
| 9) Chloroethane | (2) | 2.731 | 64 | 86040 | 19.233 |
| 10) Dichlorofluoromethane | (2) | 2.968 | 67 | 209448 | 20.672 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 178713 | 19.177 |
| 11) n-Pentane | (2) | 3.102 | 43 | 198795 | 19.785 |
| 14) Ethyl ether | (2) | 3.321 | 59 | 109853 | 19.881 |
| 15) Freon 123a | (2) | 3.394 | 67 | 131805M | 20.888 |
| 16) Acrolein | (1) | 3.492 | 56 | 426323 | 187.196 |
| 17) 1,1-Dichloroethene | (2) | 3.638 | 96 | 91764 | 19.555 |
| 17) 1,1-Dichloroethene | (2) | 3.644 | 63 | 48680 | 19.901 |
| 18) Acetone | (1) | 3.662 | 58 | 41465 | 37.453 |
| 19) Freon 113 | (2) | 3.662 | 101 | 93994 | 20.160 |
| 21) 2-Propanol | (1) | 3.826 | 45 | 163788M | 195.524 |
| 22) Methyl Iodide | (2) | 3.851 | 142 | 176896 | 19.992 |
| 23) Carbon Disulfide | (2) | 3.966 | 76 | 279252 | 19.574 |
| 27) Methyl Acetate | (2) | 4.100 | 43 | 175012 | 19.884 |
| 25) Allyl Chloride | (2) | 4.136 | 41 | 187337 | 19.541 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.313 | 65 | 369809 | 250.000 |
| 28) Methylene Chloride | (2) | 4.331 | 84 | 115699 | 19.949 |
| 30) t-Butyl alcohol | (1) | 4.441 | 59 | 324348 | 197.399 |
| 31) Acrylonitrile | (2) | 4.666 | 53 | 84419 | 19.985 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.739 | 73 | 386937 | 20.236 |
| 32) trans-1,2-Dichloroethene | (2) | 4.763 | 96 | 112079 | 19.824 |
| 34) n-Hexane | (2) | 5.189 | 57 | 174018 | 20.233 |
| 36) 1,1-Dichloroethane | (2) | 5.426 | 63 | 200878M | 19.794 |
| 38) di-Isopropyl ether | (2) | 5.469 | 45 | 404703 | 20.127 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 184884 | 19.829 |
| 40) Ethyl t-butyl ether | (2) | 6.010 | 59 | 381773 | 20.252 |
| 44) 2-Butanone | (2) | 6.217 | 43 | 262658 | 40.261 |
| 42) cis-1,2-Dichloroethene | (2) | 6.254 | 96 | 128641 | 19.902 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 158775 | 19.644 |
| 47) Propionitrile | (1) | 6.302 | 54 | 381679 | 198.206 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 460824 | 101.173 |
| 49) Bromochloromethane | (2) | 6.594 | 128 | 66353 | 19.922 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 66562 | 38.283 |
| 51) Chloroform | (2) | 6.740 | 83 | 204170 | 19.947 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 240720 | 39.726 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 113 | 283208 | 50.414 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 111 | 288020 | 50.237 |
| 53) 1,1,1-Trichloroethane | (2) | 6.977 | 97 | 171911 | 19.890 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 203636 | 20.018 |
| 54) Cyclohexane | (2) | 7.081 | 84 | 166390 | 19.916 |
| 54) Cyclohexane | (2) | 7.081 | 69 | 61966 | 20.053 |
| 56) Carbon Tetrachloride | (2) | 7.190 | 117 | 141751 | 19.480 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 165604 | 19.915 |
| 58) Isobutyl Alcohol | (1) | 7.312 | 41 | 303613 | 493.398 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 102 | 73918 | 50.369 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 65 | 371957 | 50.343 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 104 | 46911 | 50.344 |
| 60) Benzene | (2) | 7.452 | 78 | 487654 | 19.963 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 176390 | 19.906 |
| 61) 1,2-Dichloroethane | (2) | 7.525 | 98 | 15940 | 20.204 |
| 65) t-Amyl methyl ether | (2) | 7.641 | 73 | 382475 | 20.242 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1201221 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 203020 | 20.050 |
| 69) n-Butanol | (1) | 8.194 | 56 | 506922M | 1012.759 |
| 71) Trichloroethene | (2) | 8.340 | 95 | 127142 | 19.866 |
| 72) Methylcyclohexane | (2) | 8.657 | 83 | 223308 | 20.171 |
| 72) Methylcyclohexane | (2) | 8.663 | 98 | 100237 | 20.038 |
| 73) 1,2-Dichloropropane | (2) | 8.681 | 63 | 129765 | 20.009 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 137828 | 19.842 |
| 75) 1,4-Dioxane | (1) | 8.760 | 88 | 65556M | 483.317 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 83624 | 19.929 |
| 78) Bromodichloromethane | (2) | 9.028 | 83 | 145108 | 19.619 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 110073 | 38.766 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.374 | 63 | 106215M | 19.643 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 192243 | 19.767 |
| 82) 4-Methyl-2-pentanone | (2) | 9.715 | 43 | 472064 | 40.220 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1187650 | 50.583 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 769751 | 50.658 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 368820 | 39.616 |
| 88) Toluene | (3) | 9.940 | 92 | 316277 | 19.973 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 176577 | 19.849 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 215214 | 20.055 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 124310 | 20.159 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 140445 | 19.931 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 210792 | 20.193 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 379668 | 40.458 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 115768 | 19.332 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 134830 | 20.102 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 910426 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 170486 | 19.754 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 360622 | 19.989 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 612519 | 20.054 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 112234 | 19.616 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 483181 | 39.652 |
| 108) Xylene (Total) | (3) | | 106 | 721199 | 59.573 |
| 107) o-Xylene | (3) | 11.869 | 106 | 238018 | 19.921 |
| 109) Styrene | (3) | 11.881 | 104 | 396000 | 19.967 |
| 110) Bromoform | (3) | 12.045 | 173 | 83769 | 18.828 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 612257 | 20.306 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 49041M | 485.114 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 446183 | 50.544 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 174 | 379980 | 50.512 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 207005M | 19.966 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 326064 | 100.866 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 163922 | 19.578 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 68987 | 19.903 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 729186 | 20.150 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 147520 | 19.811 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 529985 | 20.085 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 157198 | 19.889 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 111423M | 19.749 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 82304 | 19.294 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 545805 | 20.002 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 671255 | 20.237 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 315848 | 19.773 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 596245 | 20.232 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 505705 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 324253 | 19.721 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 553331 | 20.187 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 370426 | 19.696 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 346511 | 20.190 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 359343 | 20.180 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 297255 | 20.038 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 305221 | 19.892 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 287060 | 19.933 |
| 141) Diethylbenzene (total) | (4) | | 100 | 992914 | 60.302 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 50571 | 20.409 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 227385 | 20.230 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 207978 | 20.248 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 102391 | 20.285 |
| 148) Naphthalene | (4) | 14.758 | 128 | 682201 | 20.753 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 187767 | 20.105 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 355974 | 20.107 |



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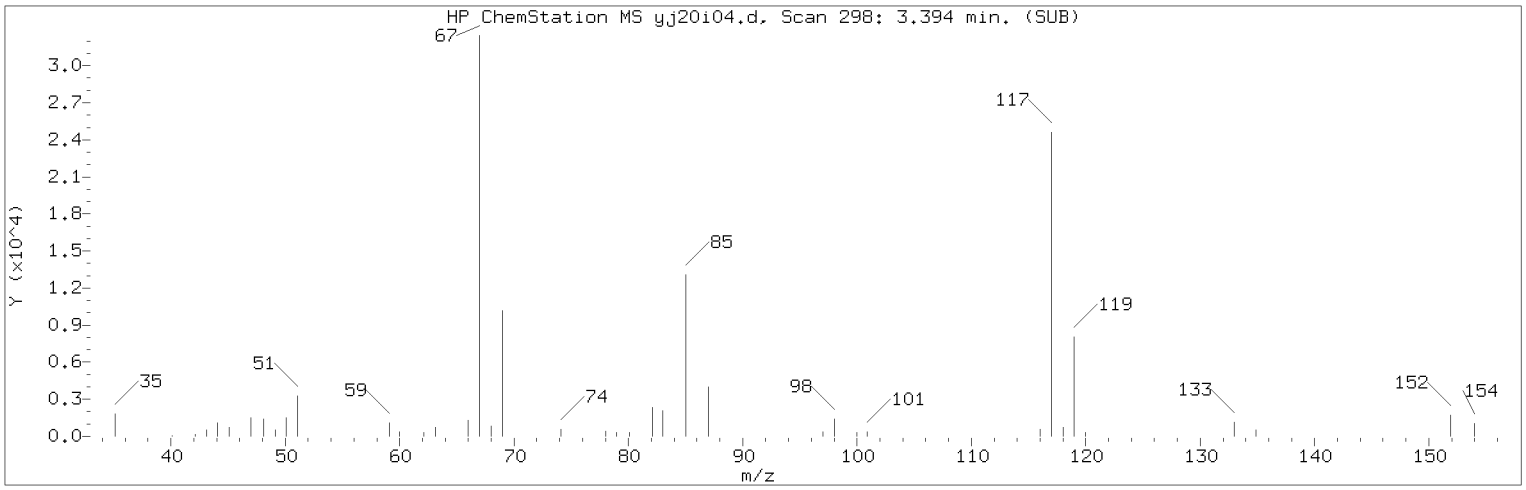
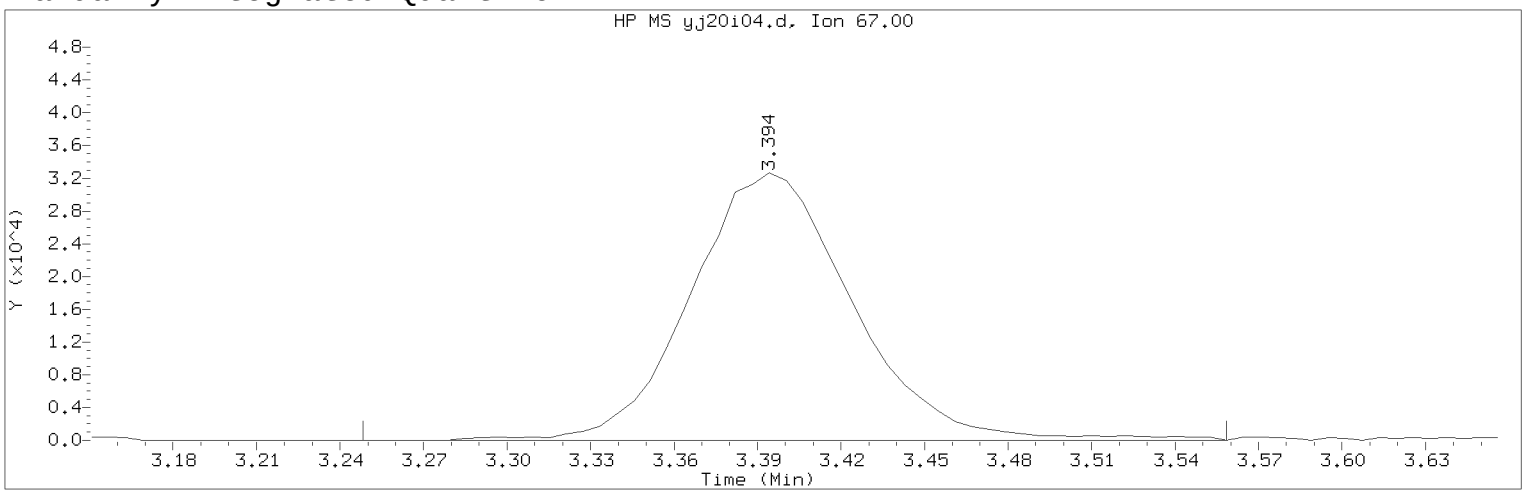
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

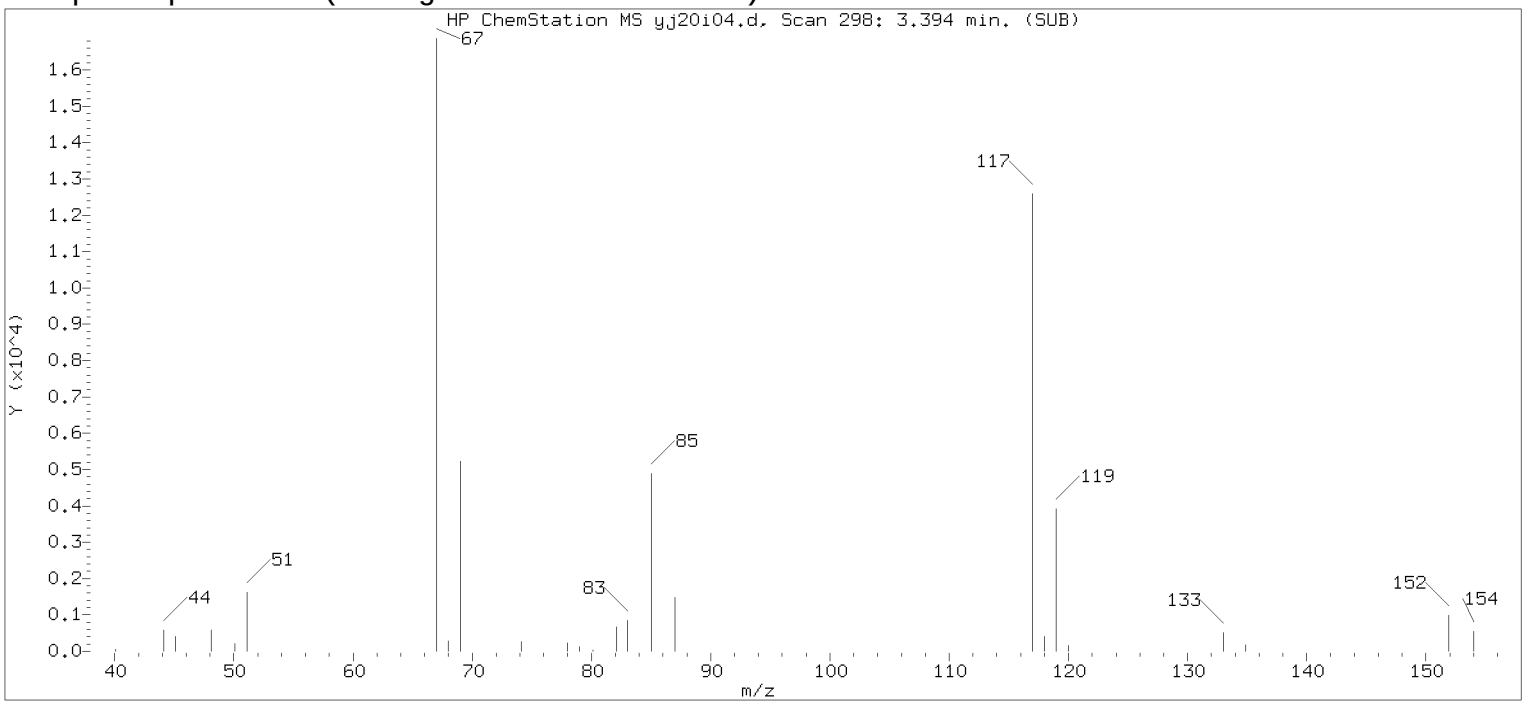
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 298
Retention Time (minutes): 3.394
Quant Ion : 67.00
Area (flag) : 131805M
On-Column Amount (ng) : 20.8884
Integration start scan : 273 Integration stop scan: 324
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

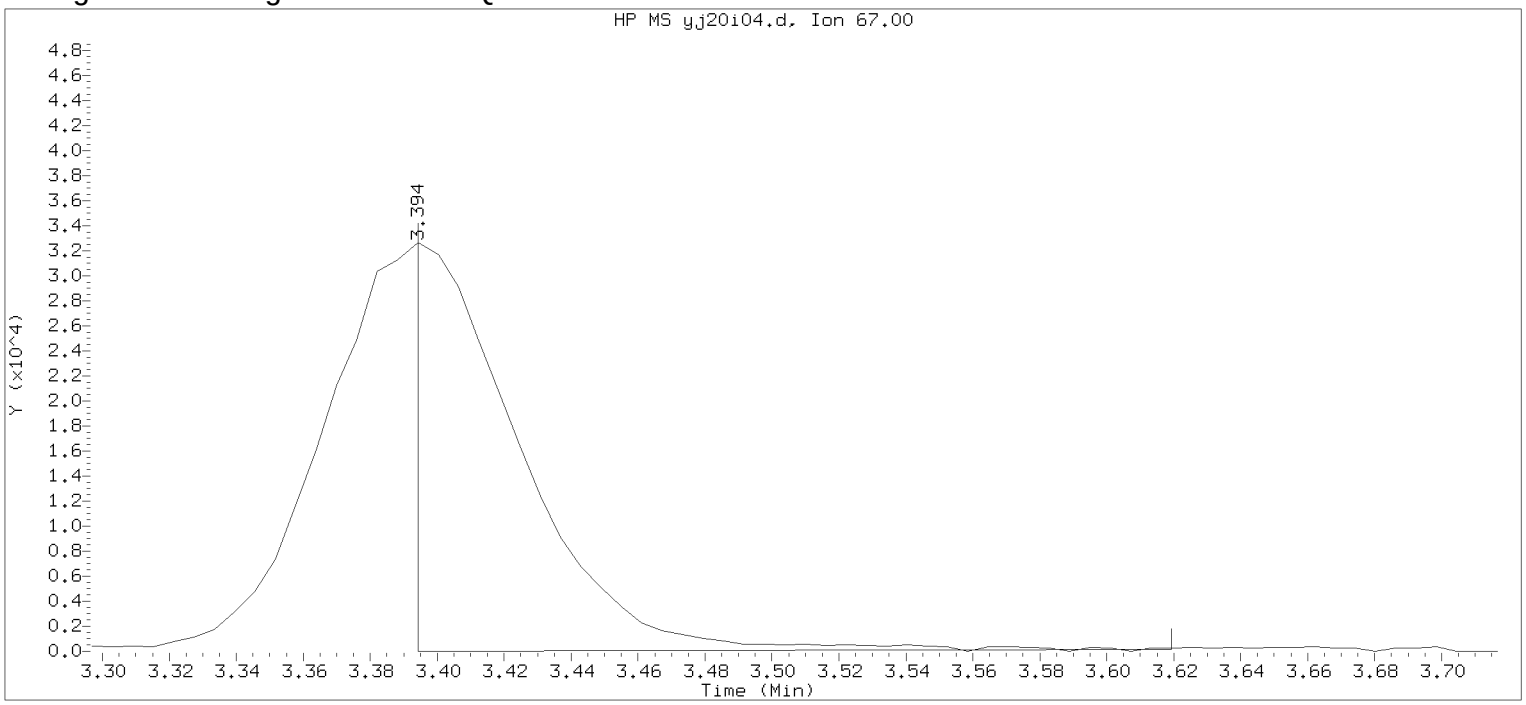
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

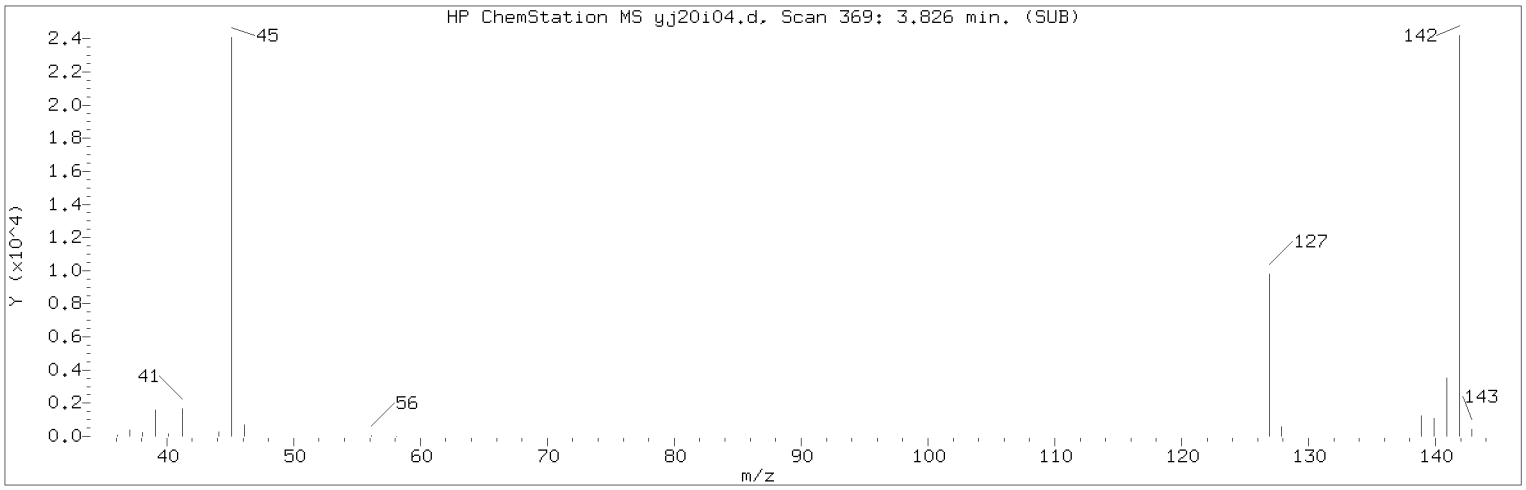
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

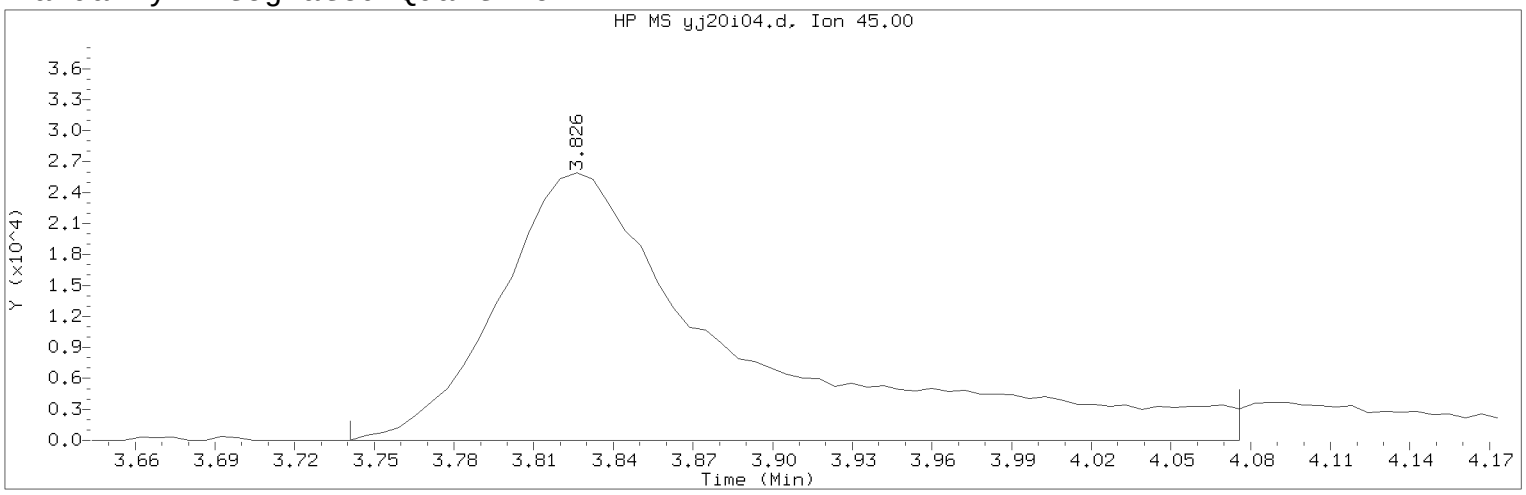
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 298
Retention Time (minutes): 3.394
Quant Ion : 67.00
Area : 68641
On-column Amount (ng) : 12.2038
Integration start scan : 297 Integration stop scan: 334
Y at integration start : 0 Y at integration end: 137

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
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Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

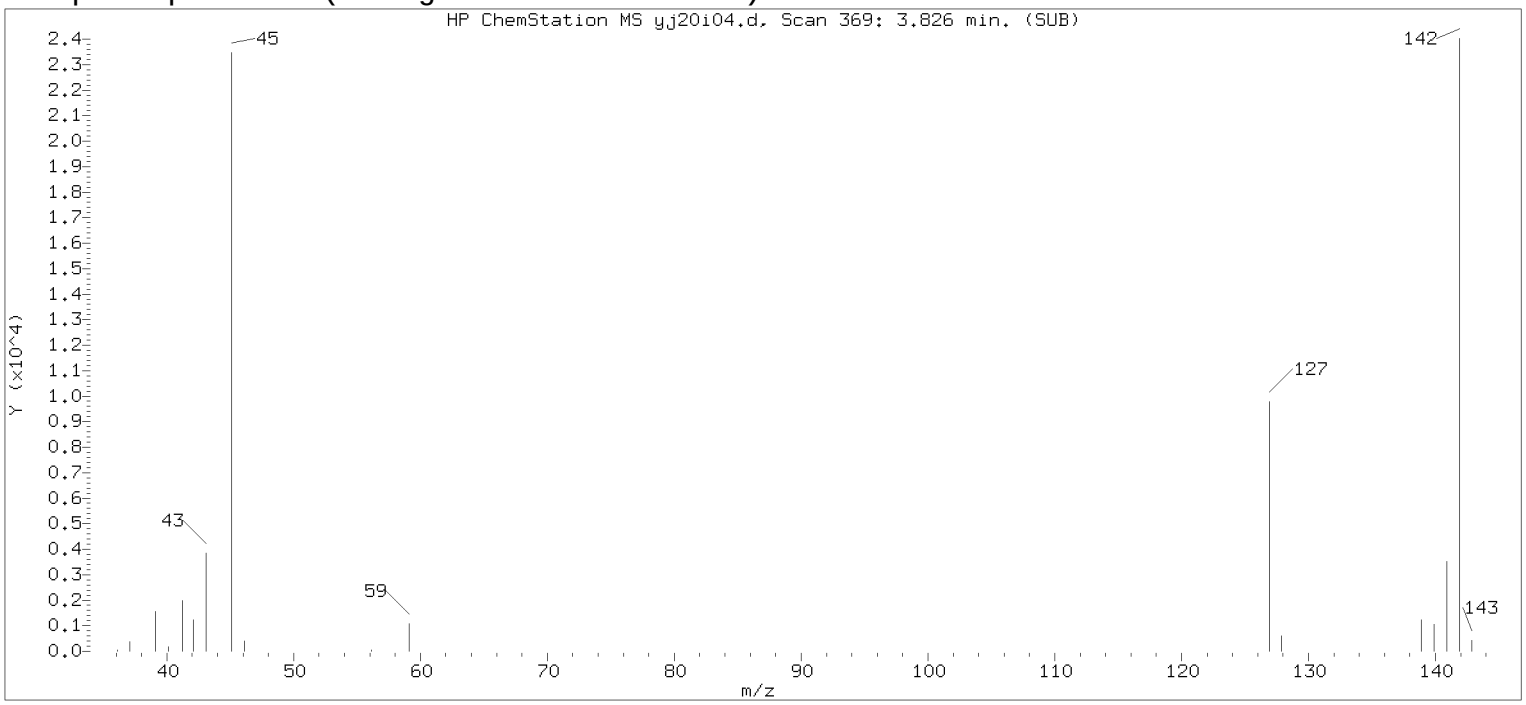
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 369
Retention Time (minutes): 3.826
Quant Ion : 45.00
Area (flag) : 163788M
On-Column Amount (ng) : 195.5241
Integration start scan : 354 Integration stop scan: 409
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

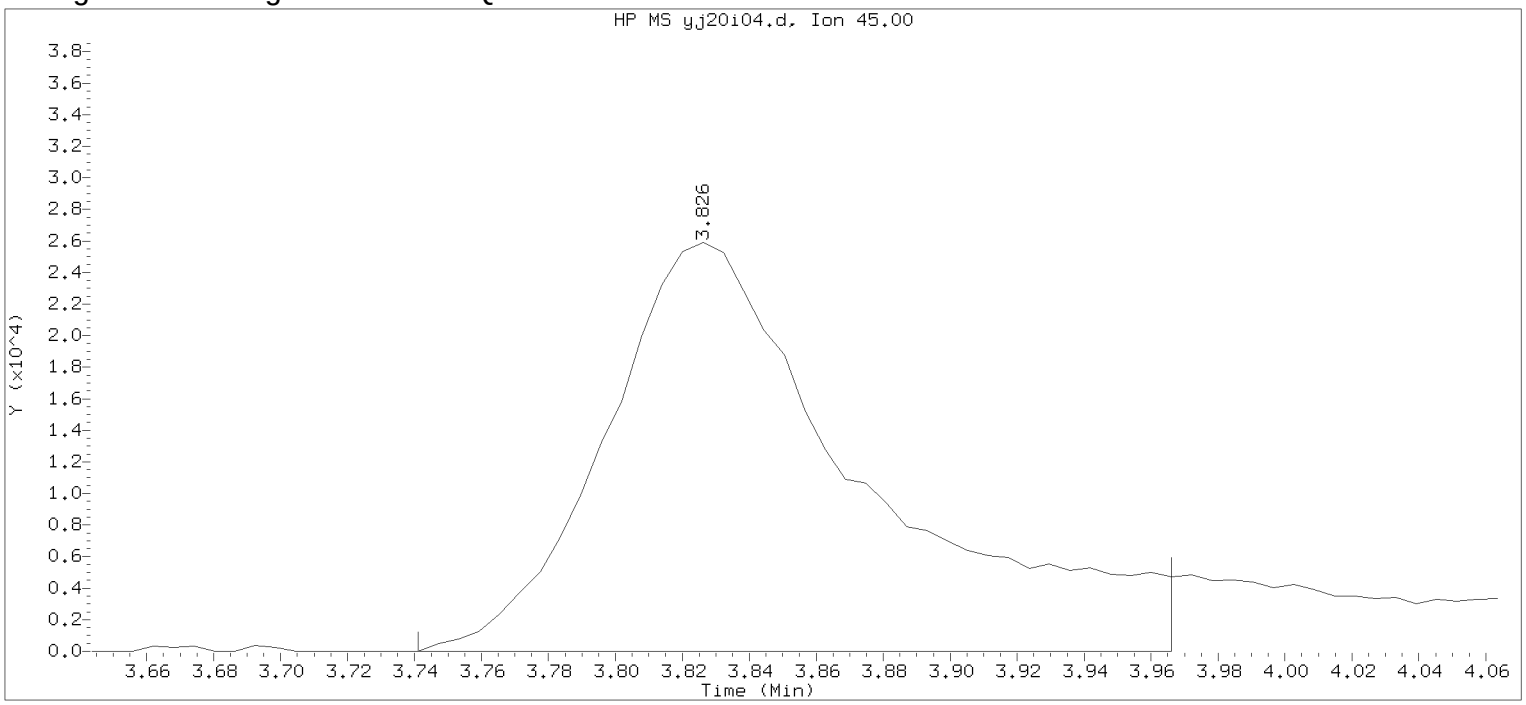
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 369
Retention Time (minutes): 3.826
Quant Ion : 45.00
Area : 138612
On-column Amount (ng) : 183.4164
Integration start scan : 354 Integration stop scan: 391
Y at integration start : 0 Y at integration end: 0

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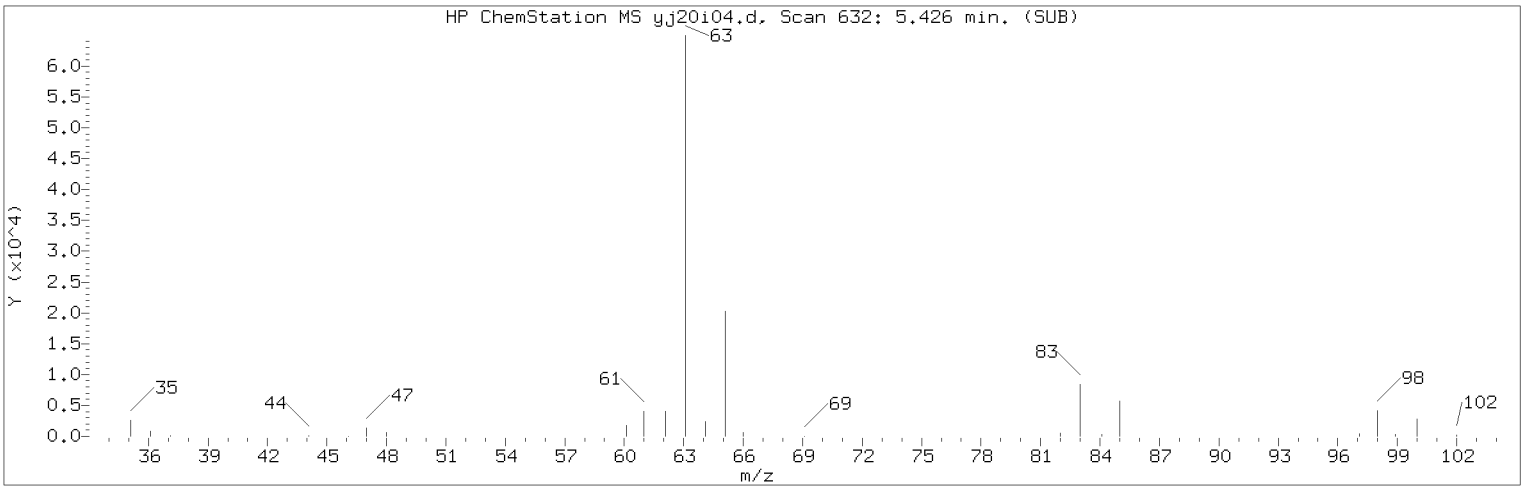
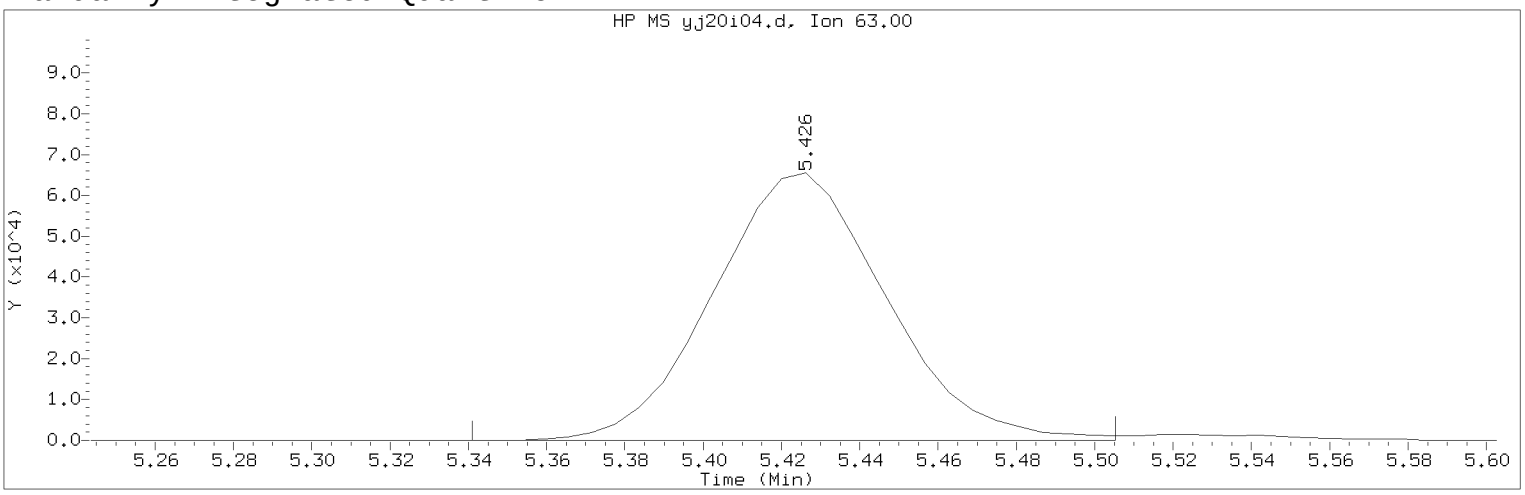
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

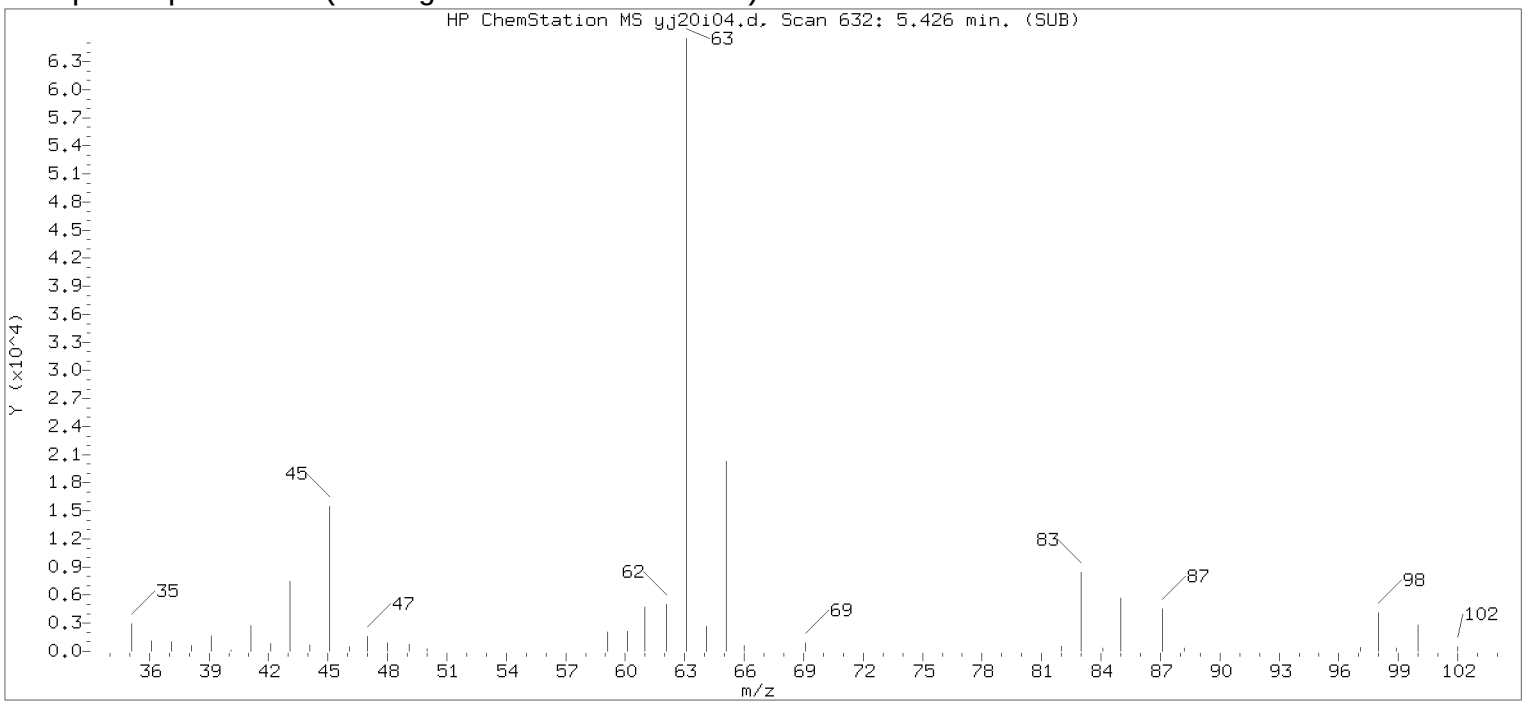
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 632
Retention Time (minutes): 5.426
Quant Ion : 63.00
Area (flag) : 200878M
On-Column Amount (ng) : 19.7939
Integration start scan : 617 Integration stop scan: 644
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

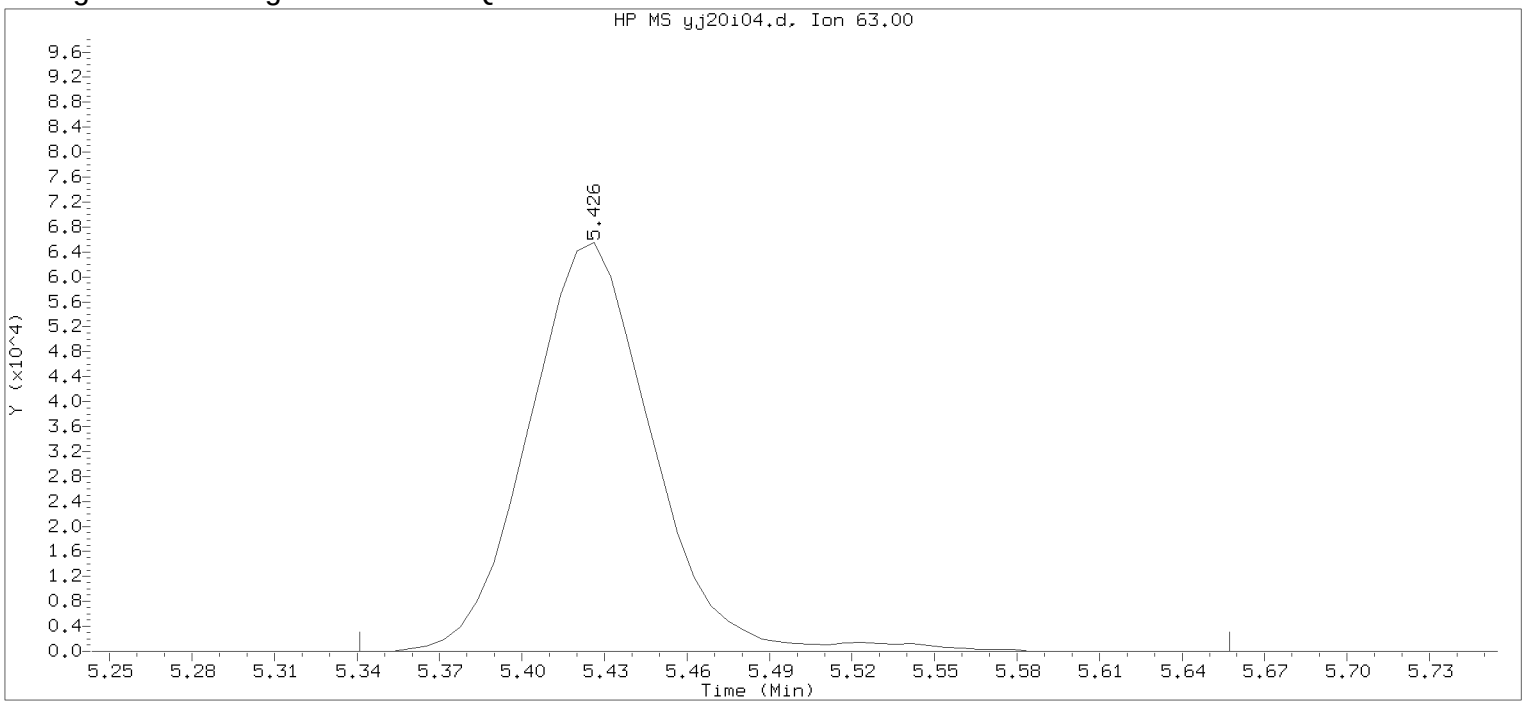
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

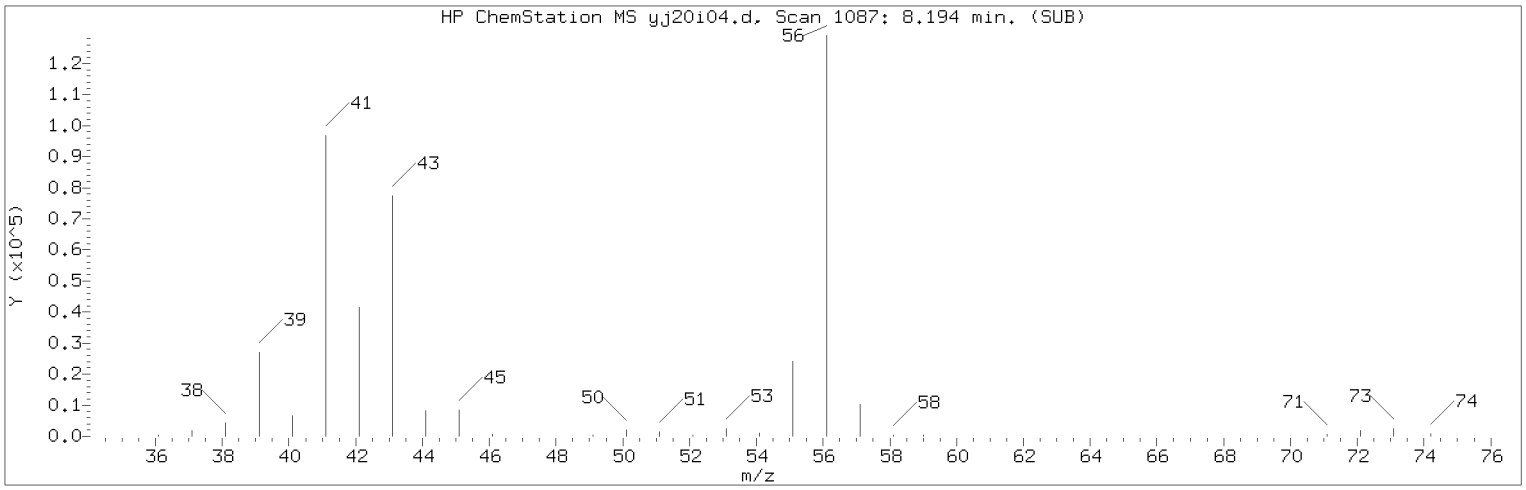
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

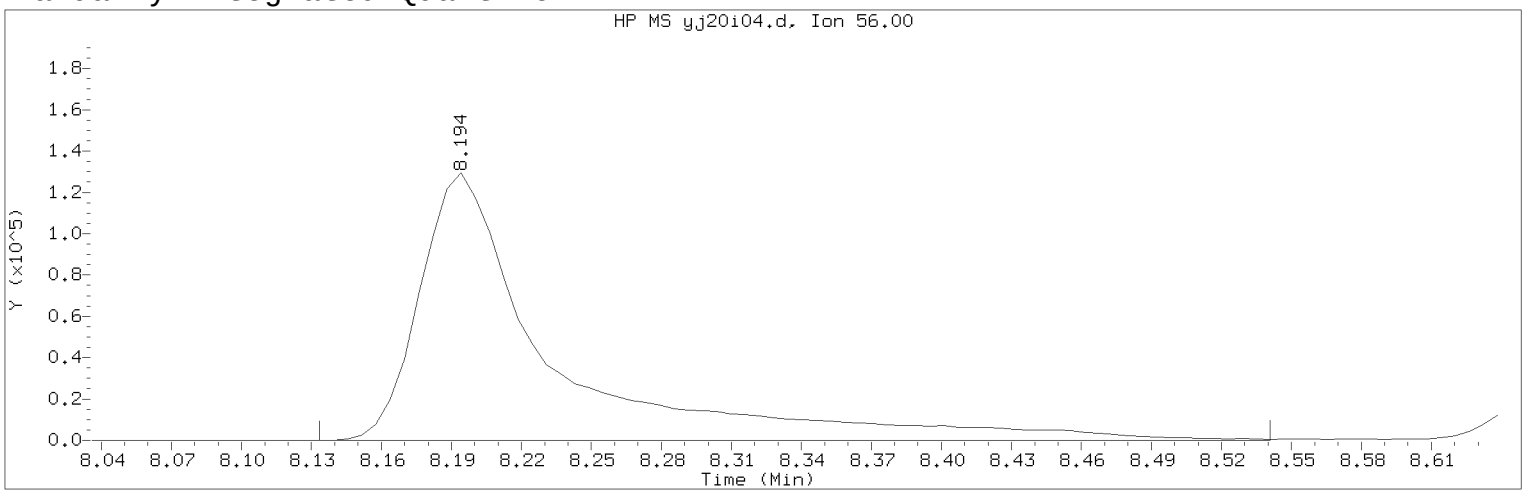
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 632
Retention Time (minutes): 5.426
Quant Ion : 63.00
Area : 204652
On-column Amount (ng) : 19.7887
Integration start scan : 617 Integration stop scan: 669
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
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Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

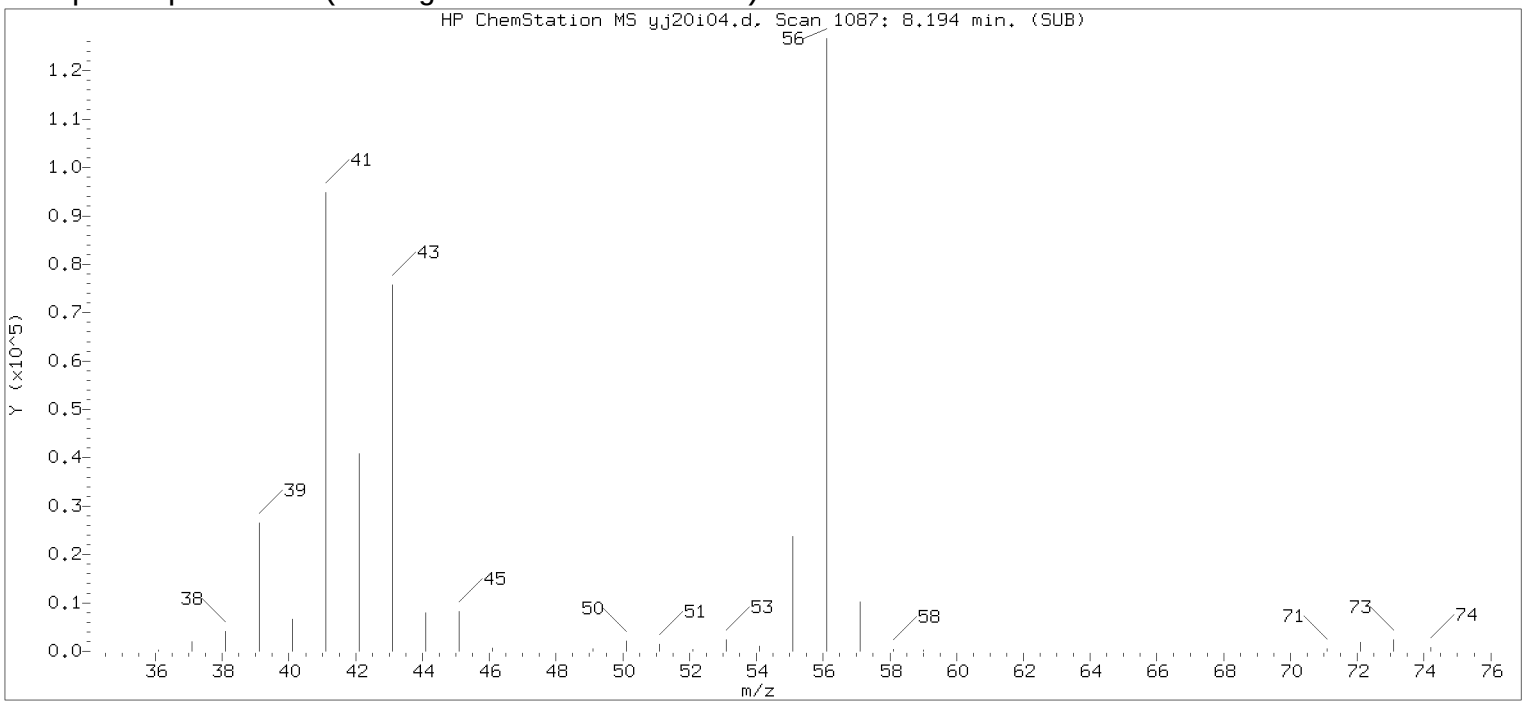
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area (flag) : 506922M
On-Column Amount (ng) : 1012.7586
Integration start scan : 1076 Integration stop scan: 1143
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

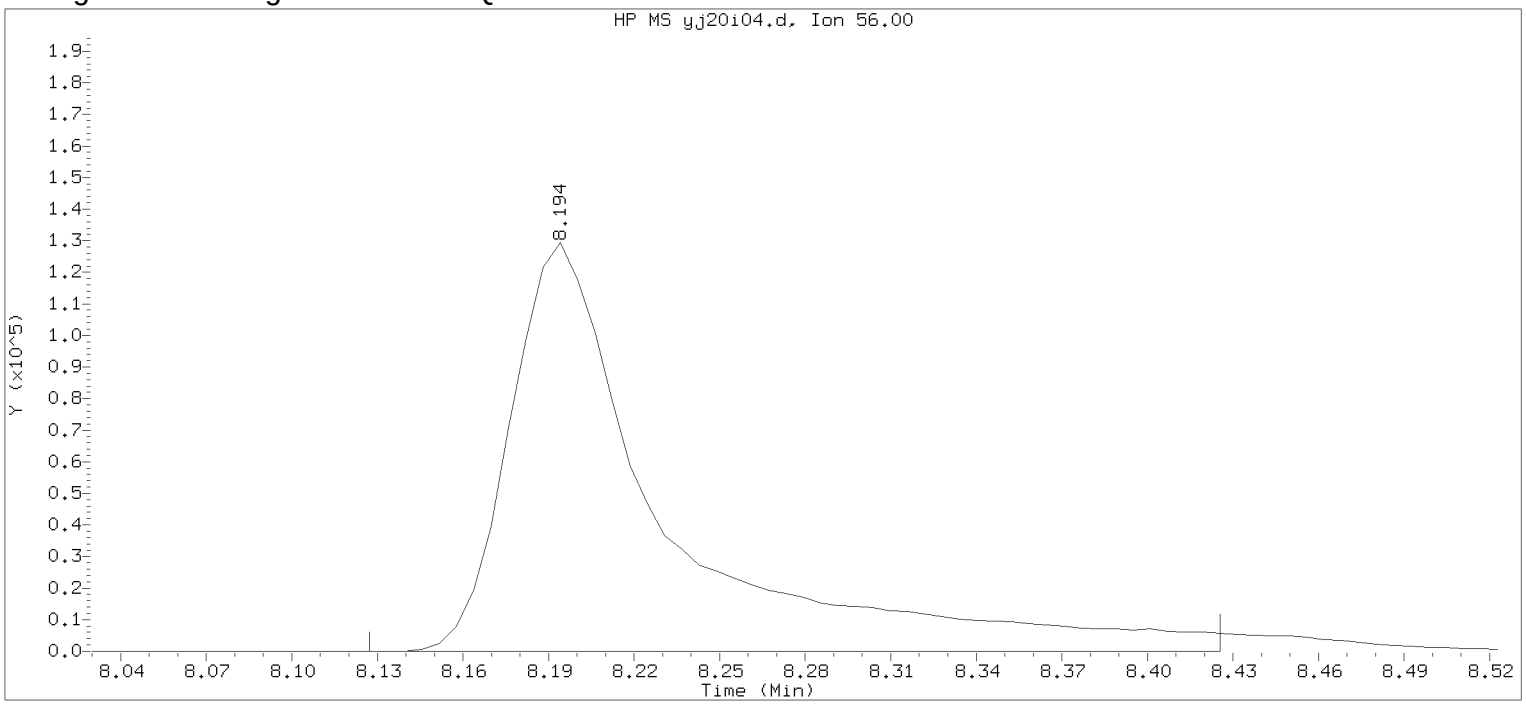
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

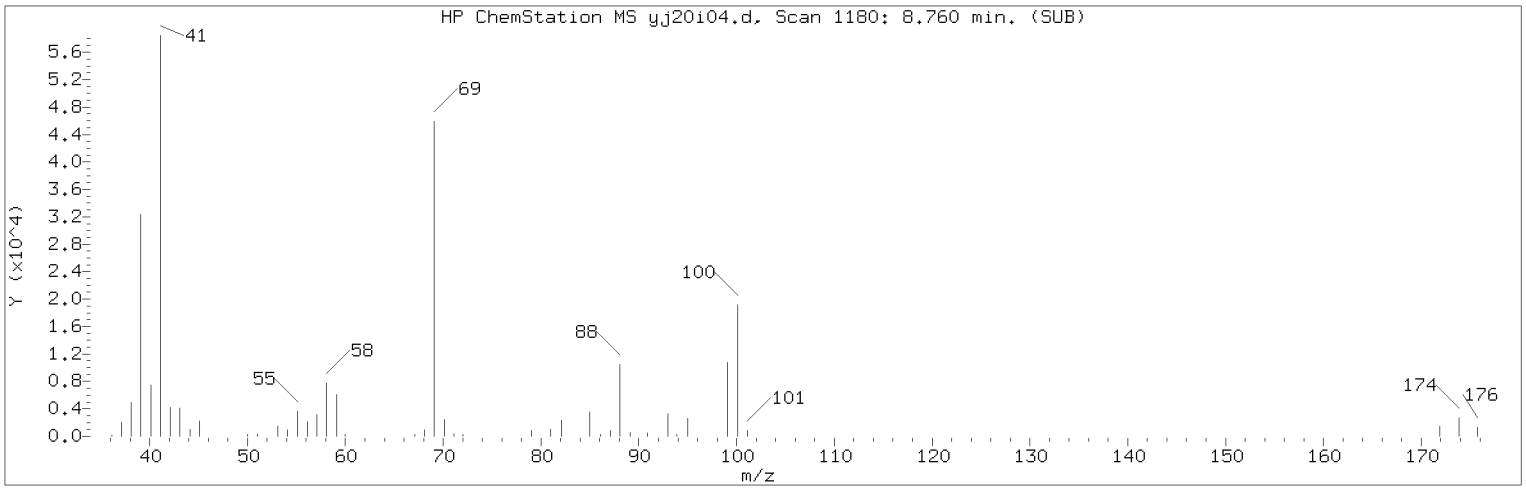
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

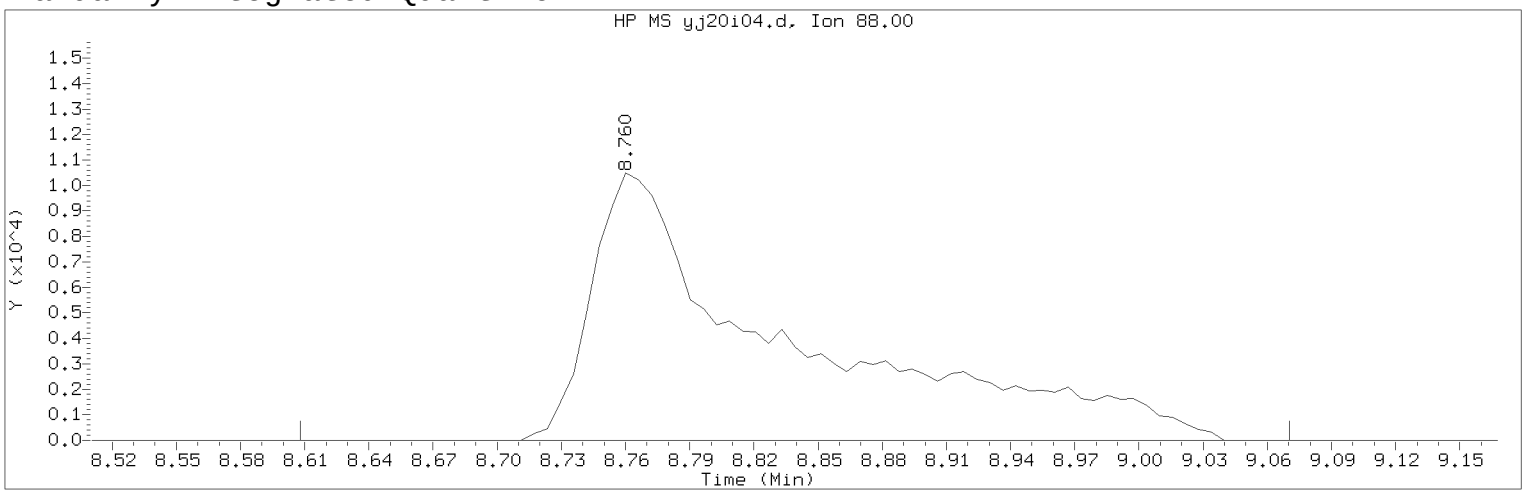
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area : 488846
On-column Amount (ng) : 986.5996
Integration start scan : 1075 Integration stop scan: 1124
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

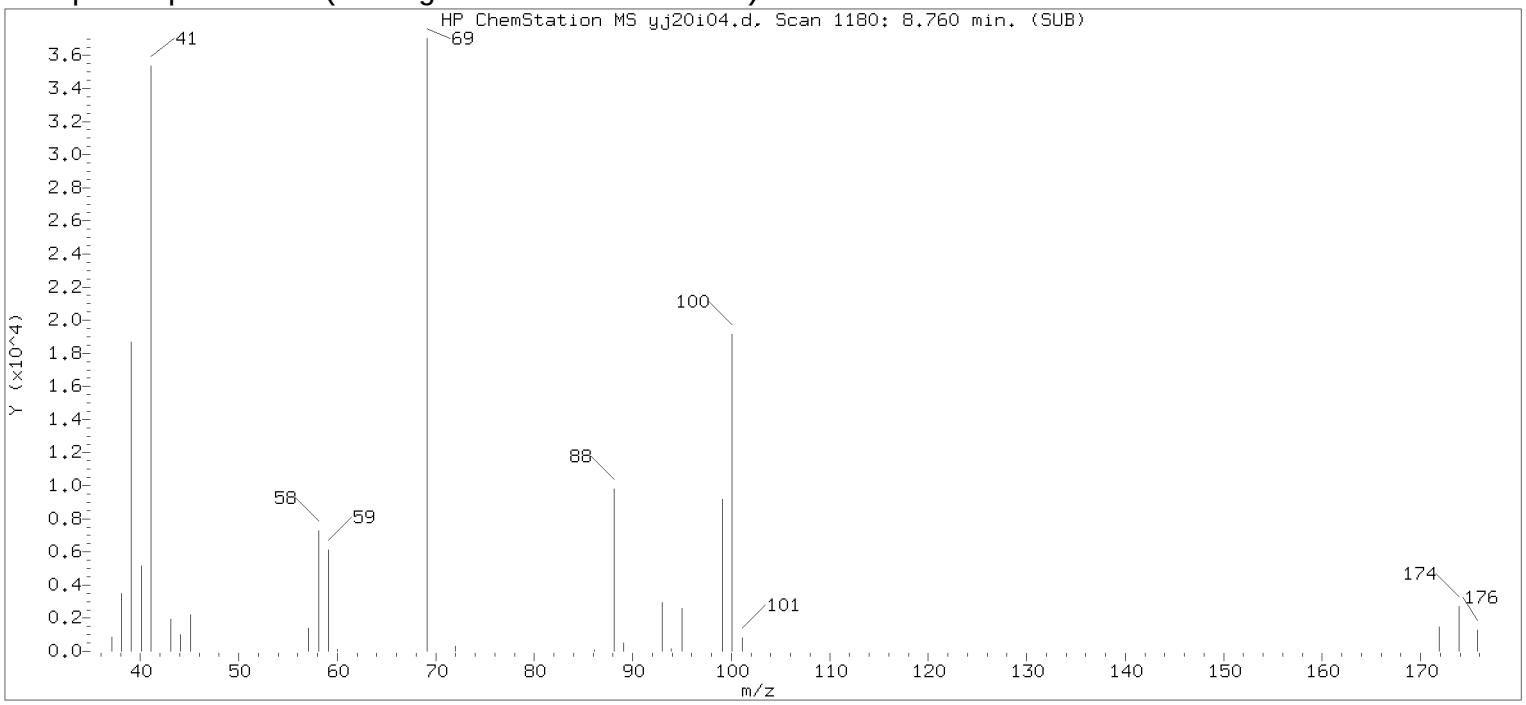
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1180
Retention Time (minutes): 8.760
Quant Ion : 88.00
Area (flag) : 65556M
On-Column Amount (ng) : 483.3169
Integration start scan : 1154 Integration stop scan: 1230
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

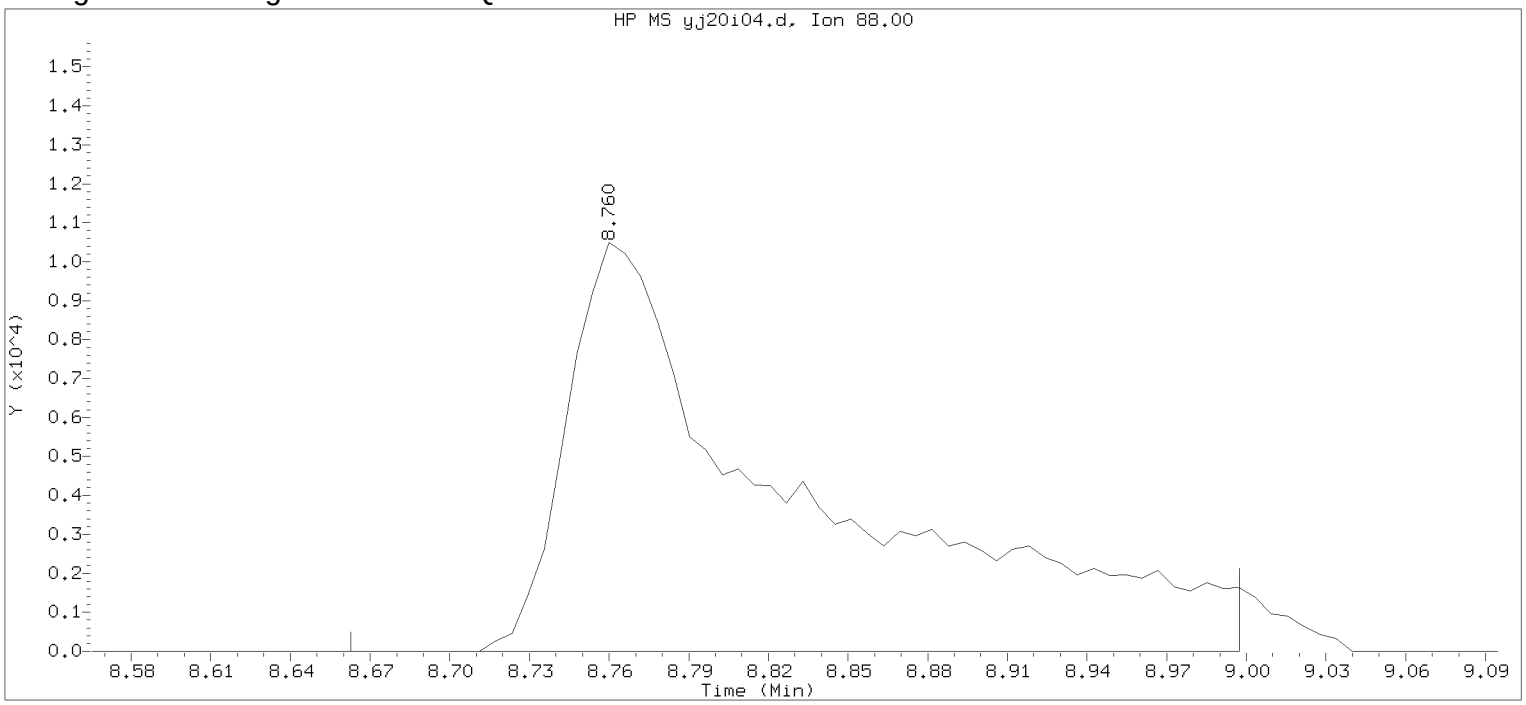
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

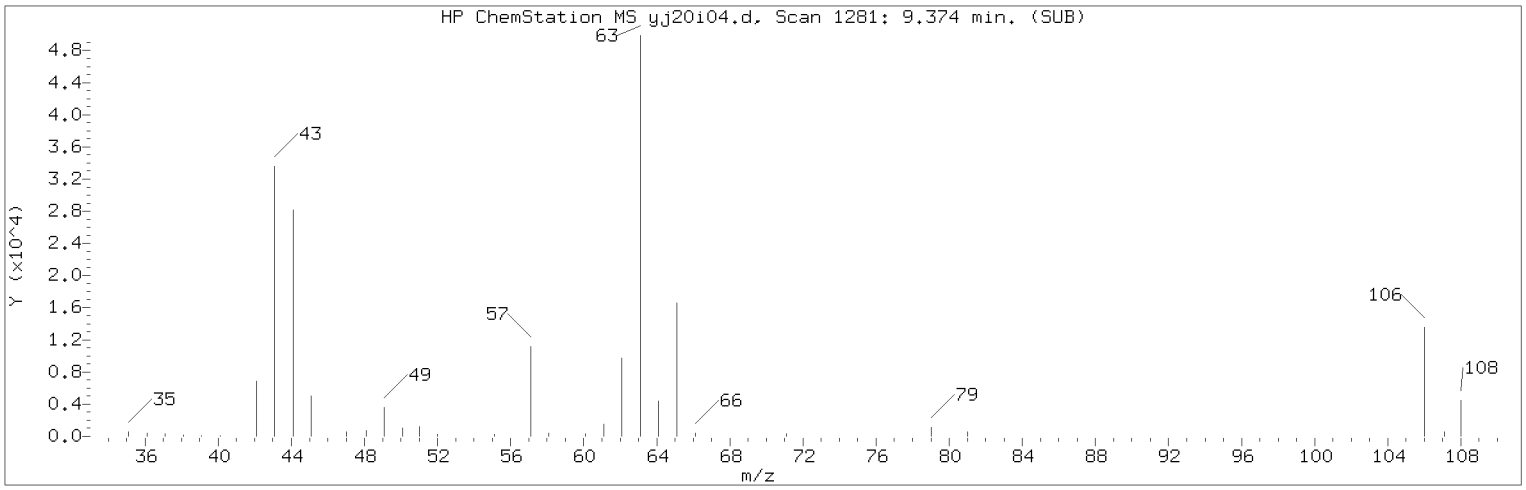
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

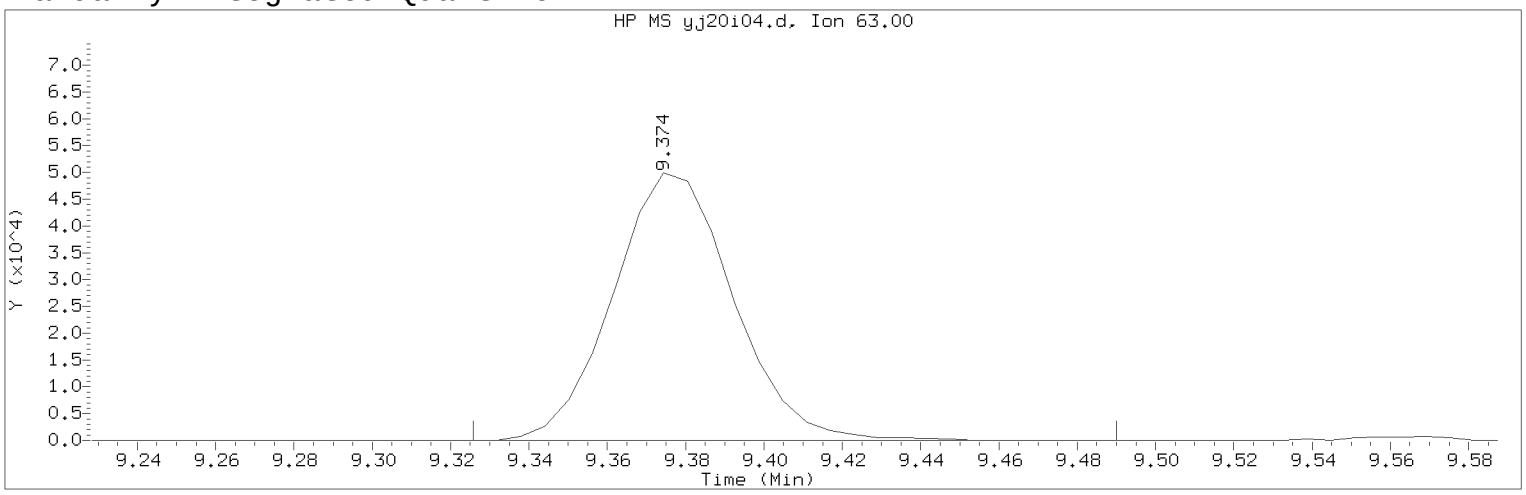
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1180
Retention Time (minutes): 8.760
Quant Ion : 88.00
Area : 63557
On-column Amount (ng) : 472.6999
Integration start scan : 1163 Integration stop scan: 1218
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

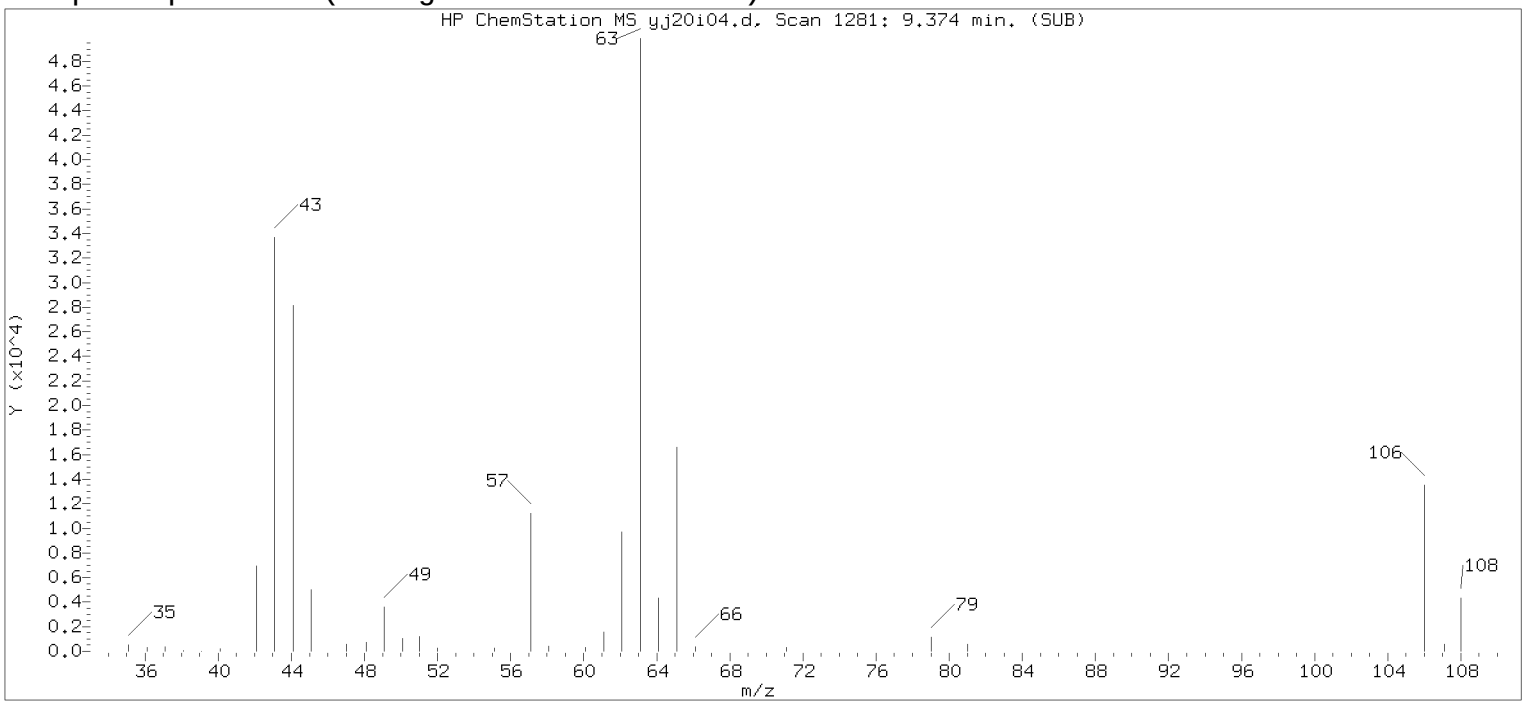
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1281
Retention Time (minutes): 9.374
Quant Ion : 63.00
Area (flag) : 106215M
On-Column Amount (ng) : 19.6432
Integration start scan : 1272 Integration stop scan: 1299
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

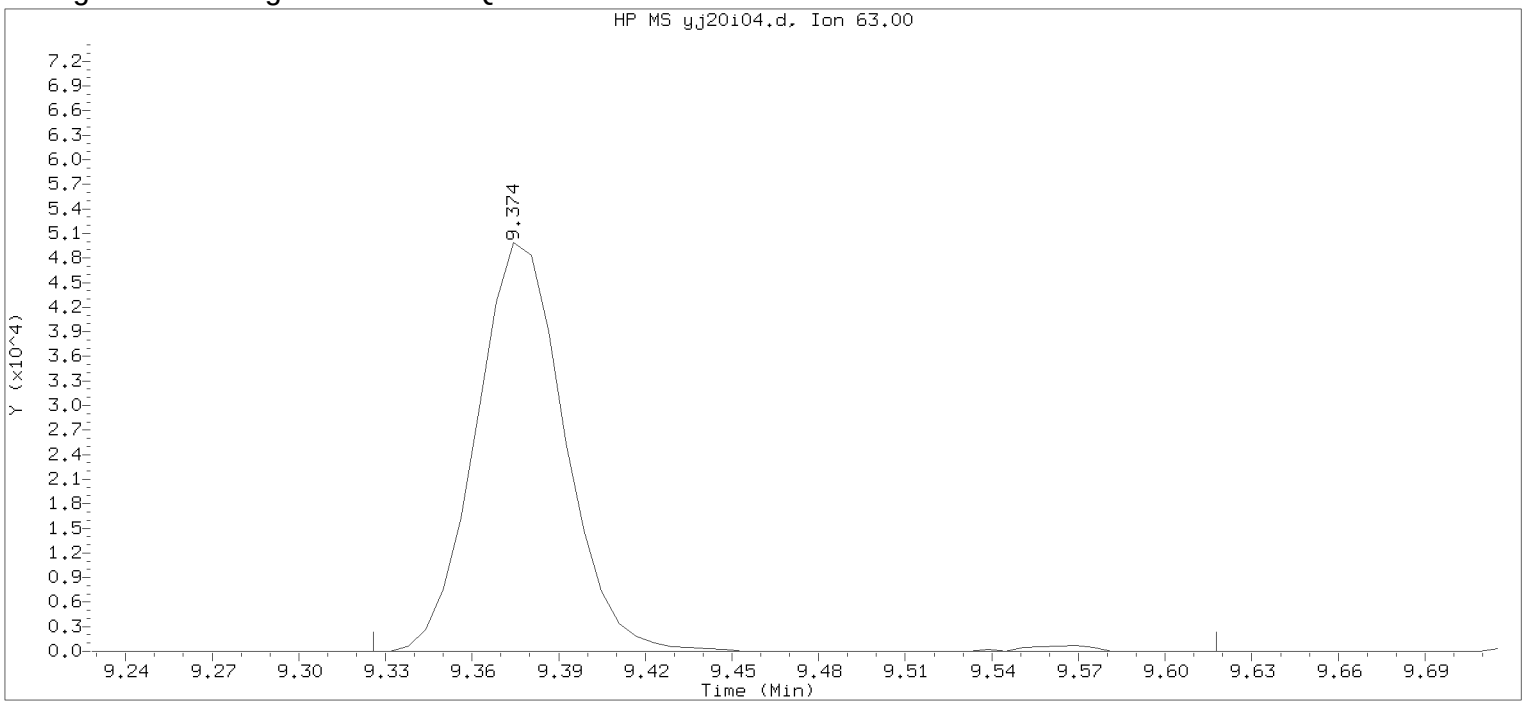
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

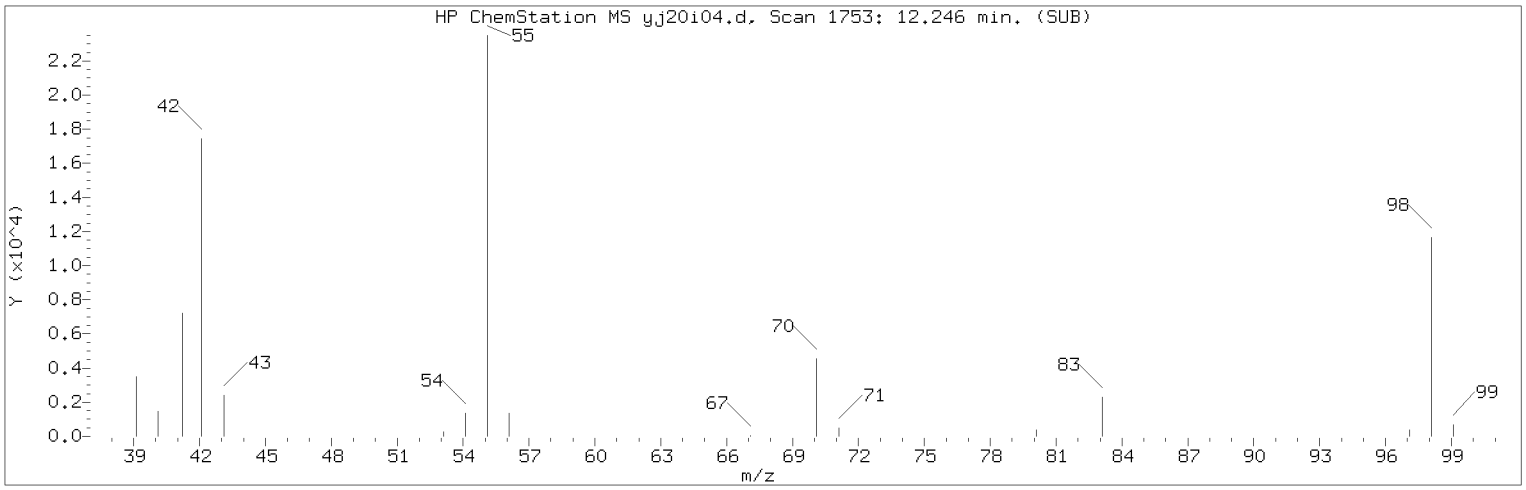
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

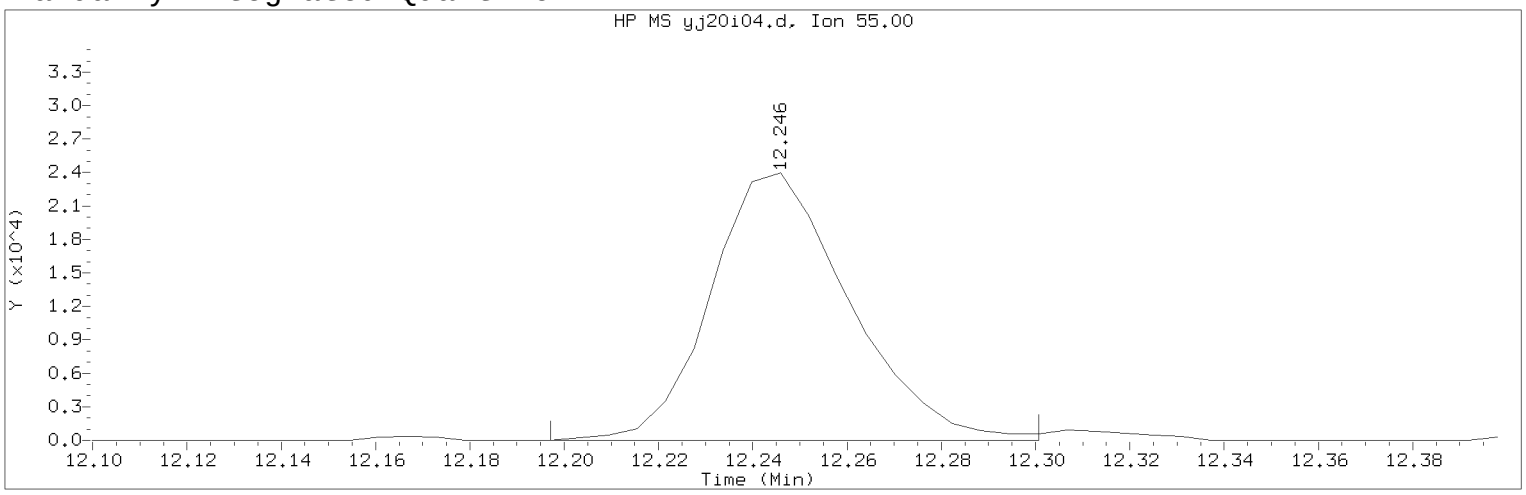
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1281
Retention Time (minutes): 9.374
Quant Ion : 63.00
Area : 107337
On-column Amount (ng) : 19.4472
Integration start scan : 1272 Integration stop scan: 1320
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

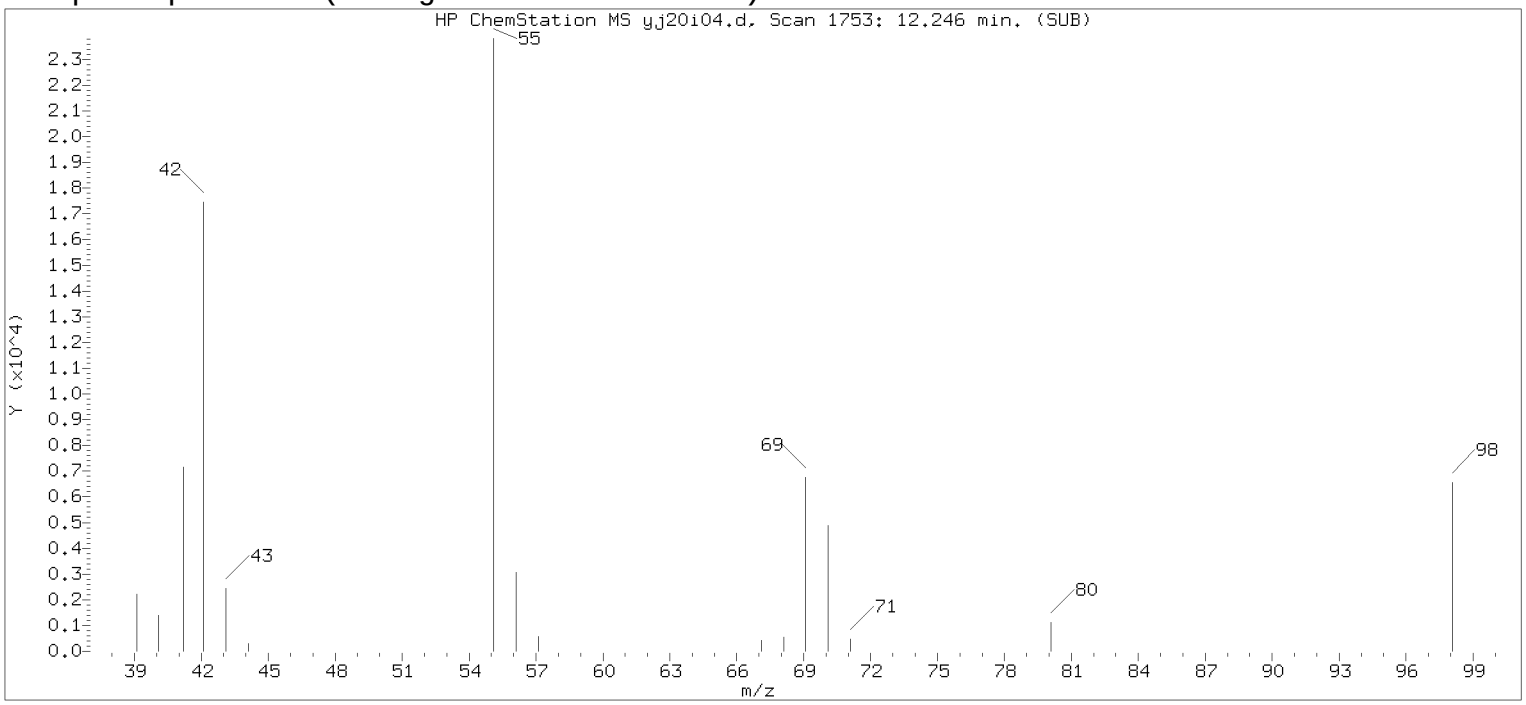
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 49041M
On-Column Amount (ng) : 485.1144
Integration start scan : 1744 Integration stop scan: 1761
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

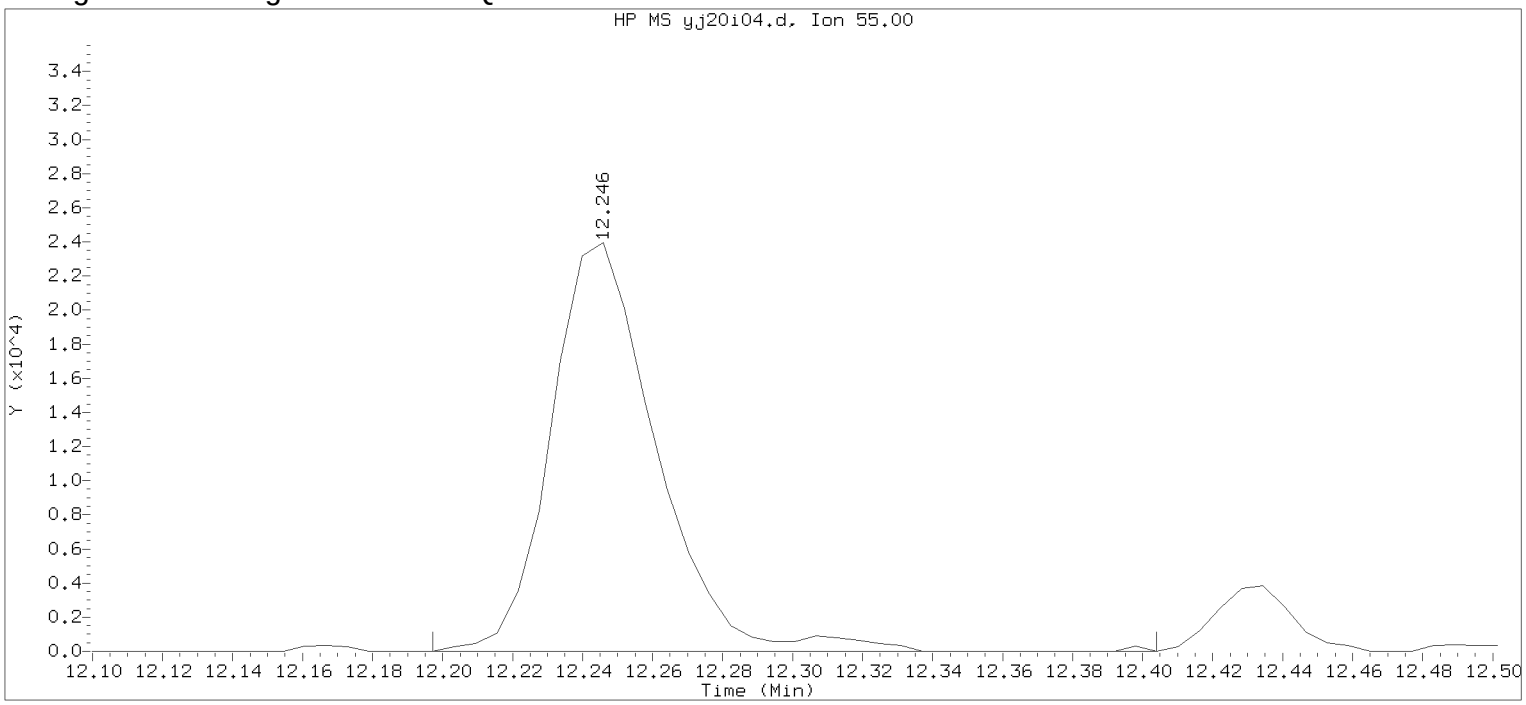
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

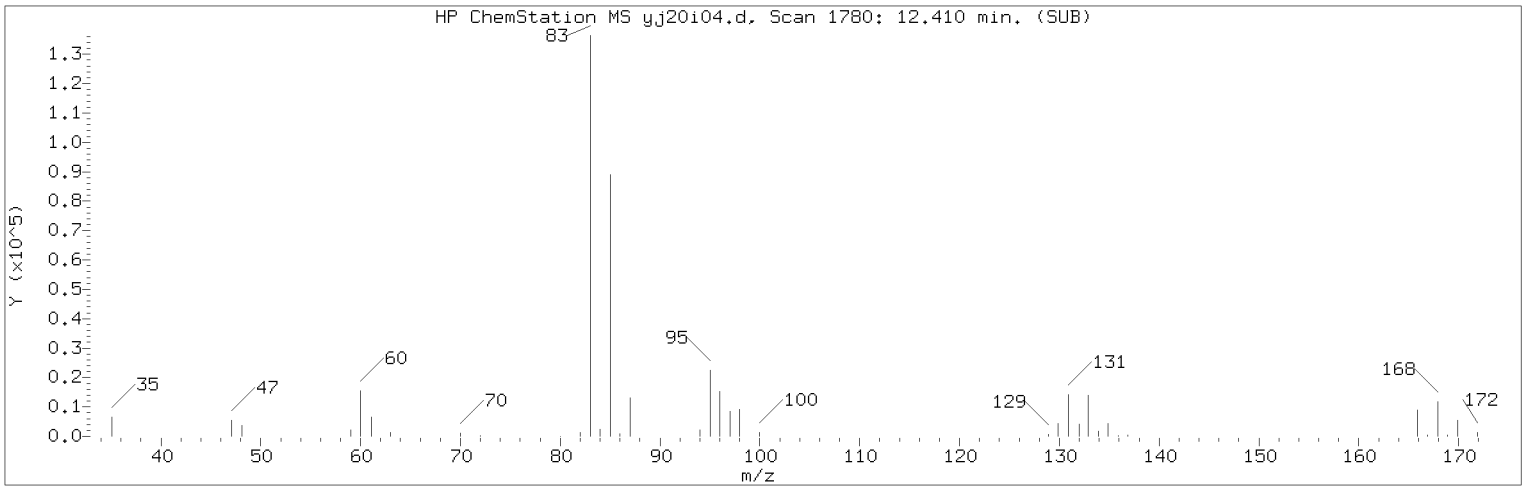
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

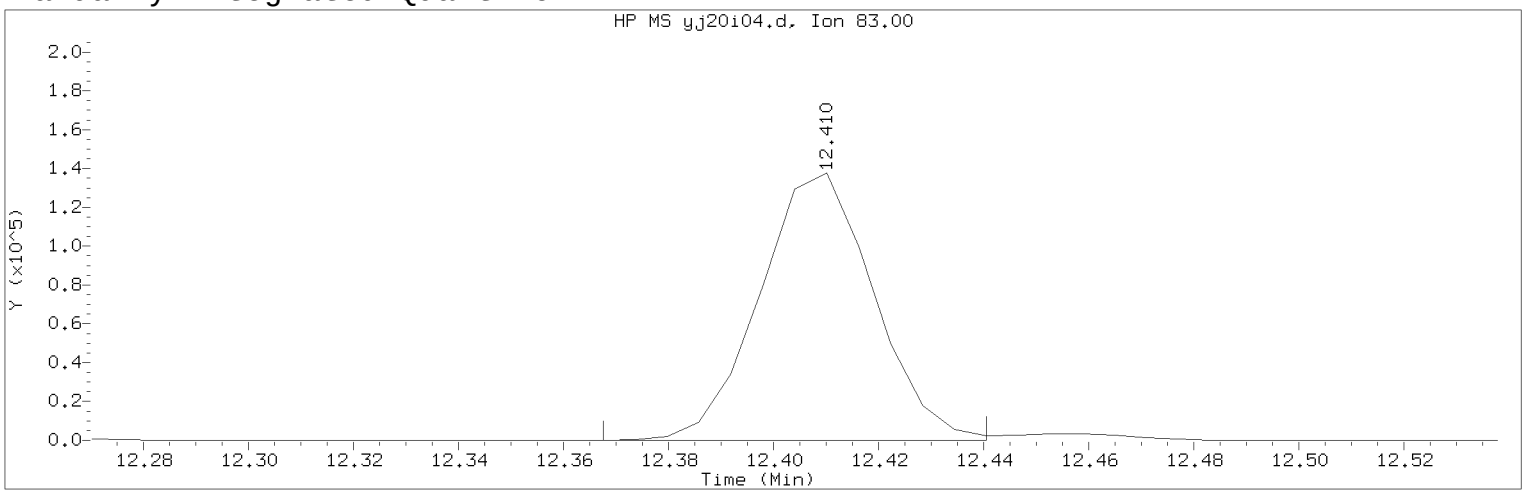
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 50299
On-column Amount (ng) : 474.0312
Integration start scan : 1744 Integration stop scan: 1778
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

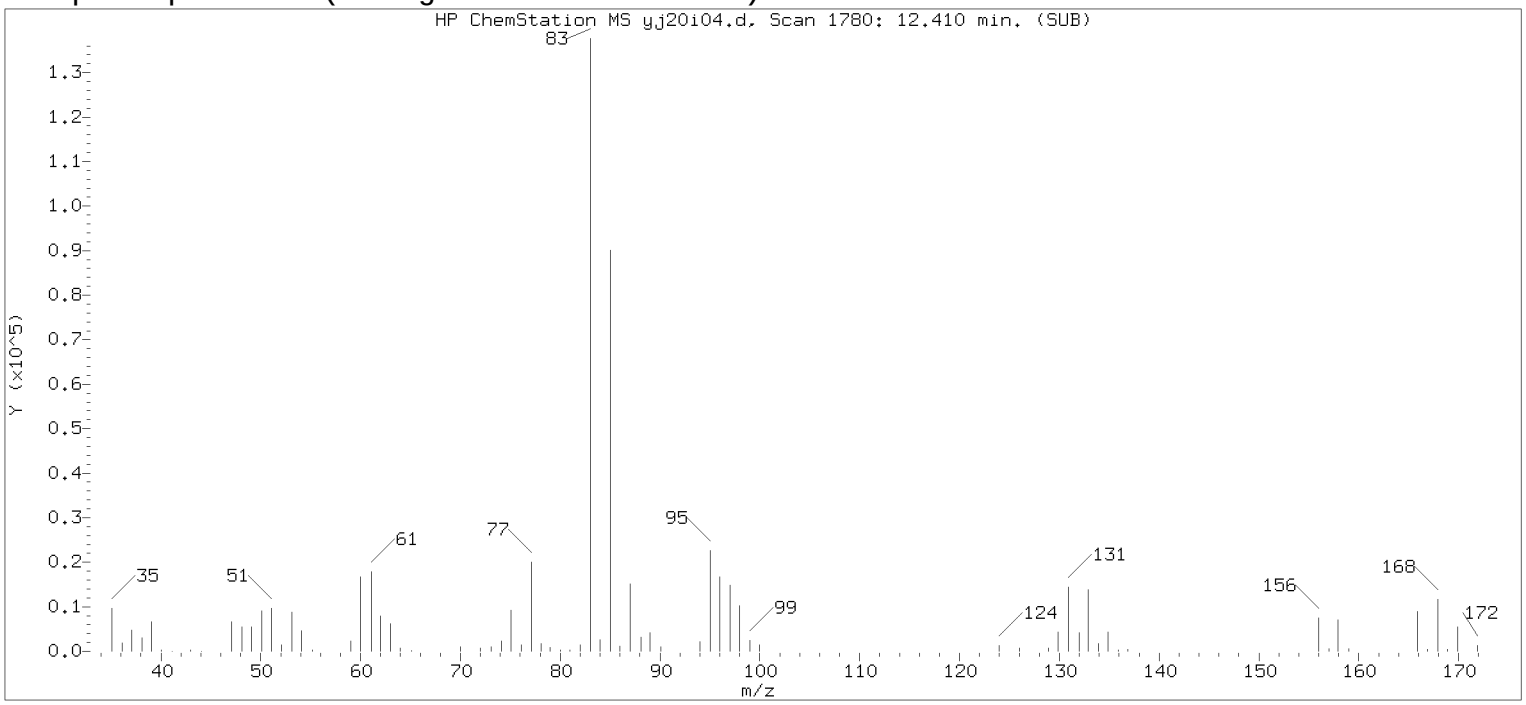
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 207005M
On-Column Amount (ng) : 19.9657
Integration start scan : 1772 Integration stop scan: 1784
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

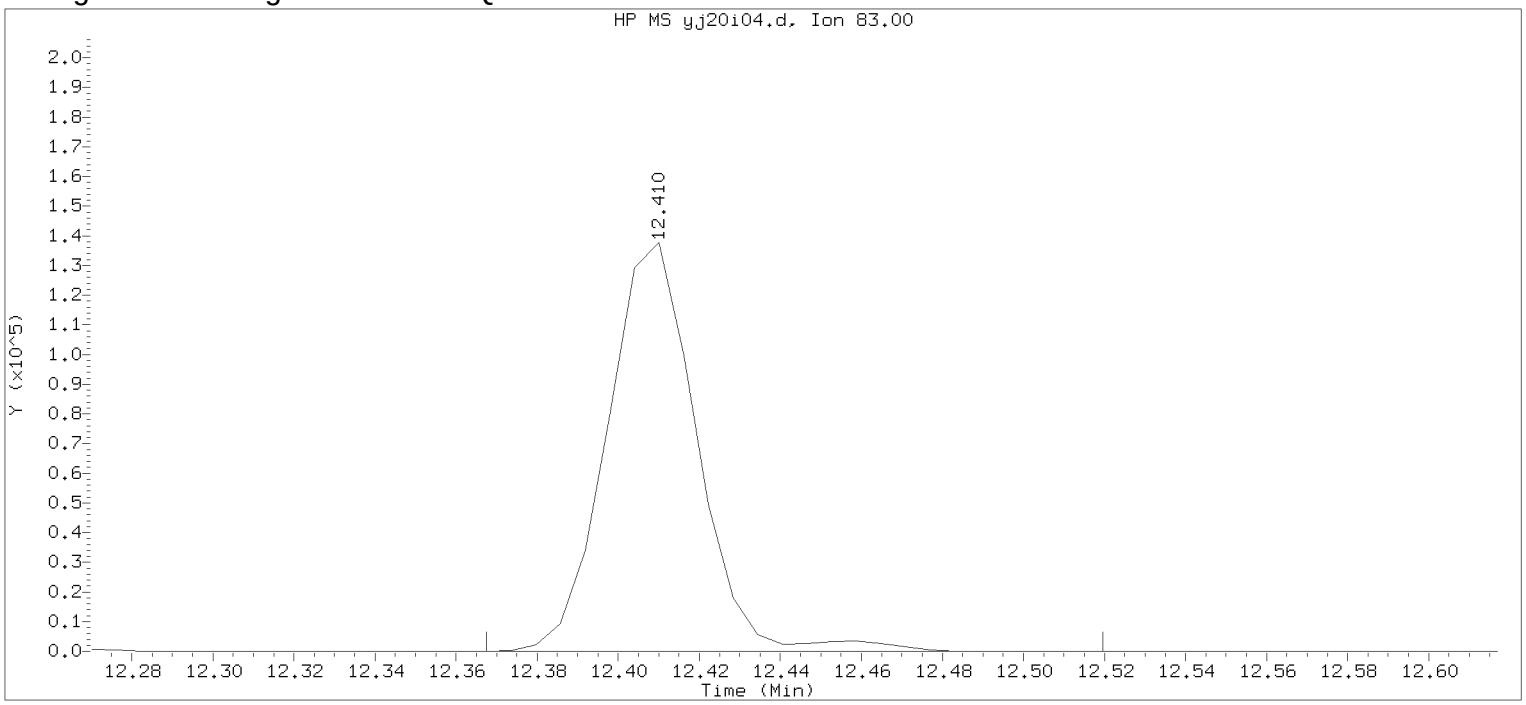
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 212103
On-column Amount (ng) : 19.9658
Integration start scan : 1772 Integration stop scan: 1797
Y at integration start : 0 Y at integration end: 0

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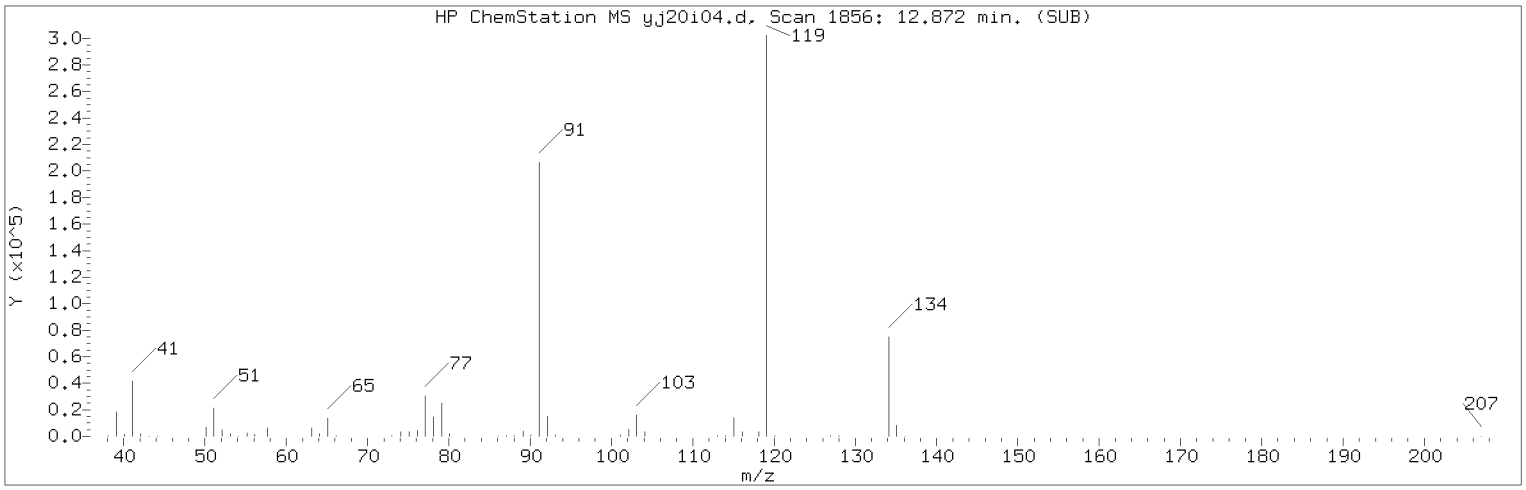
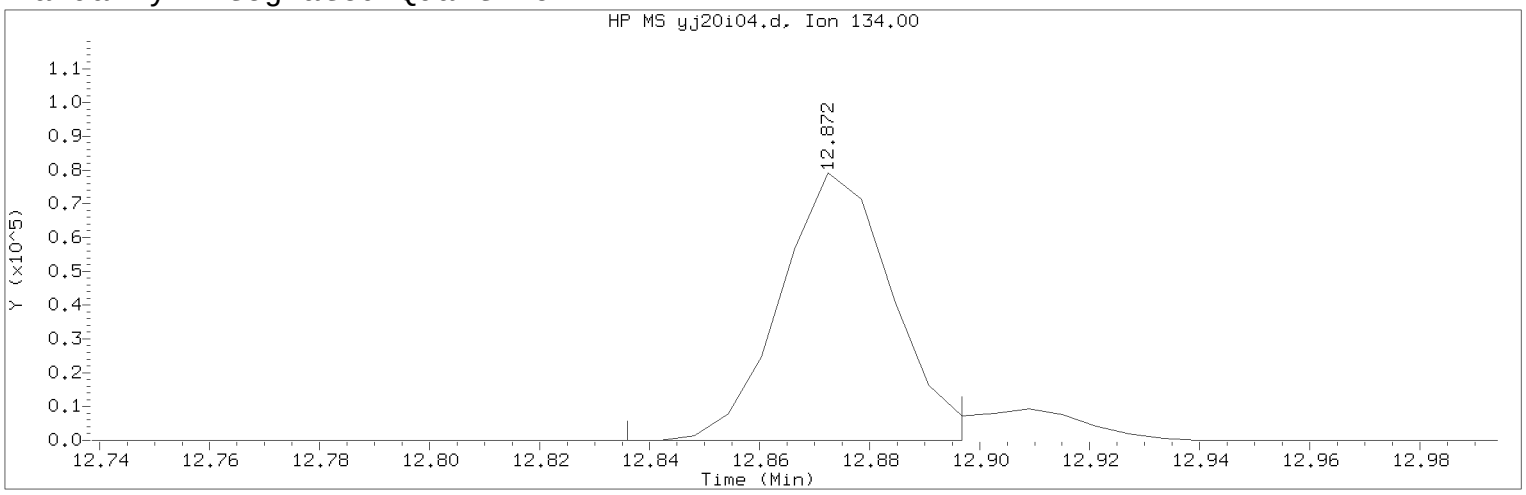
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

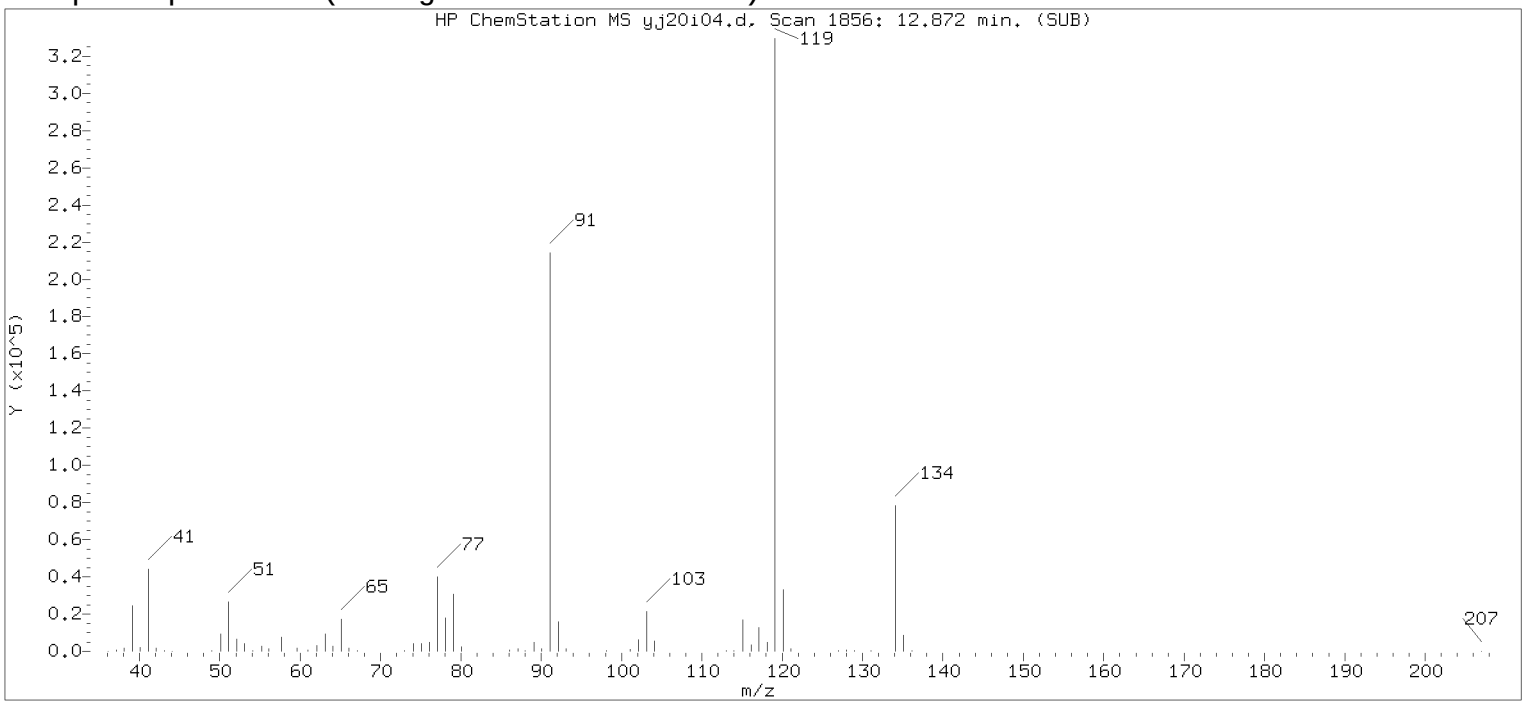
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 111423M
On-Column Amount (ng) : 19.7493
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

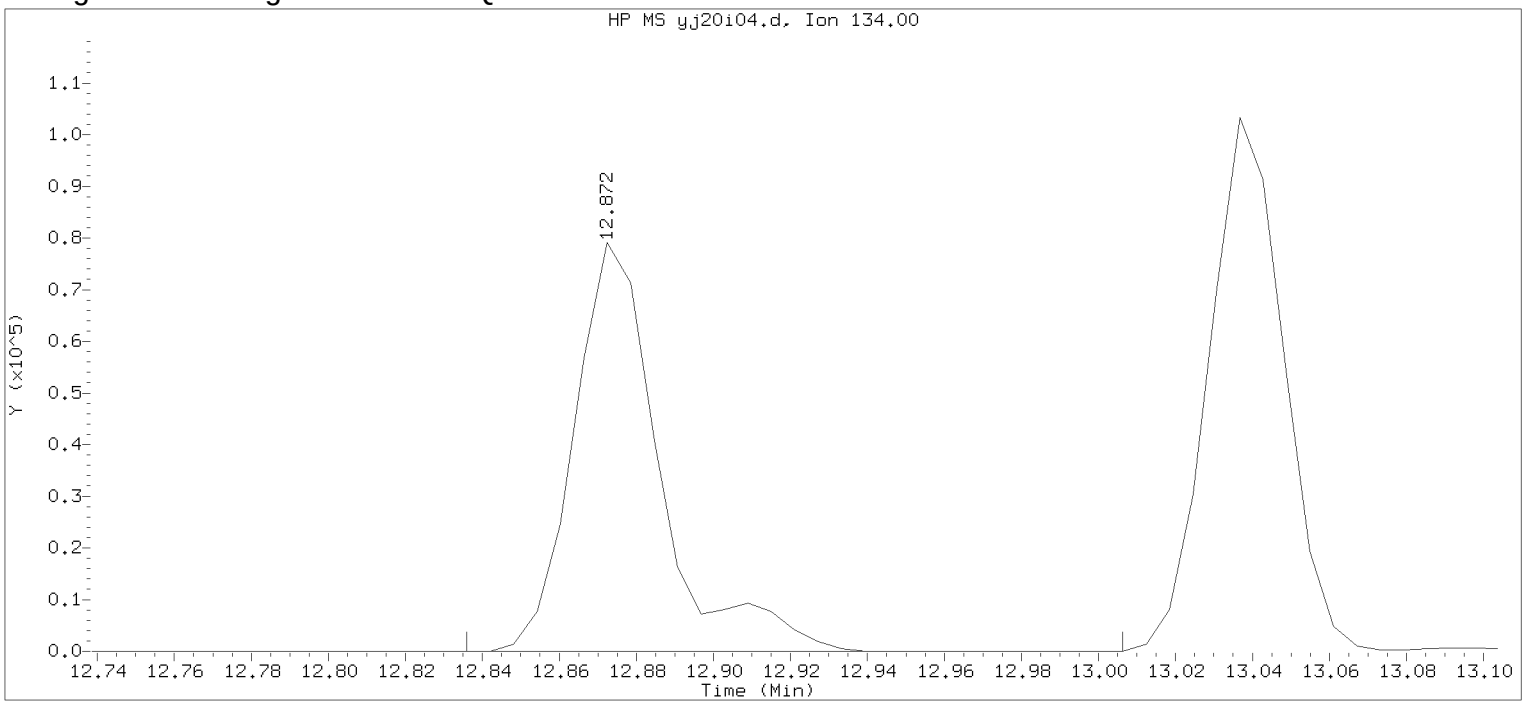
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



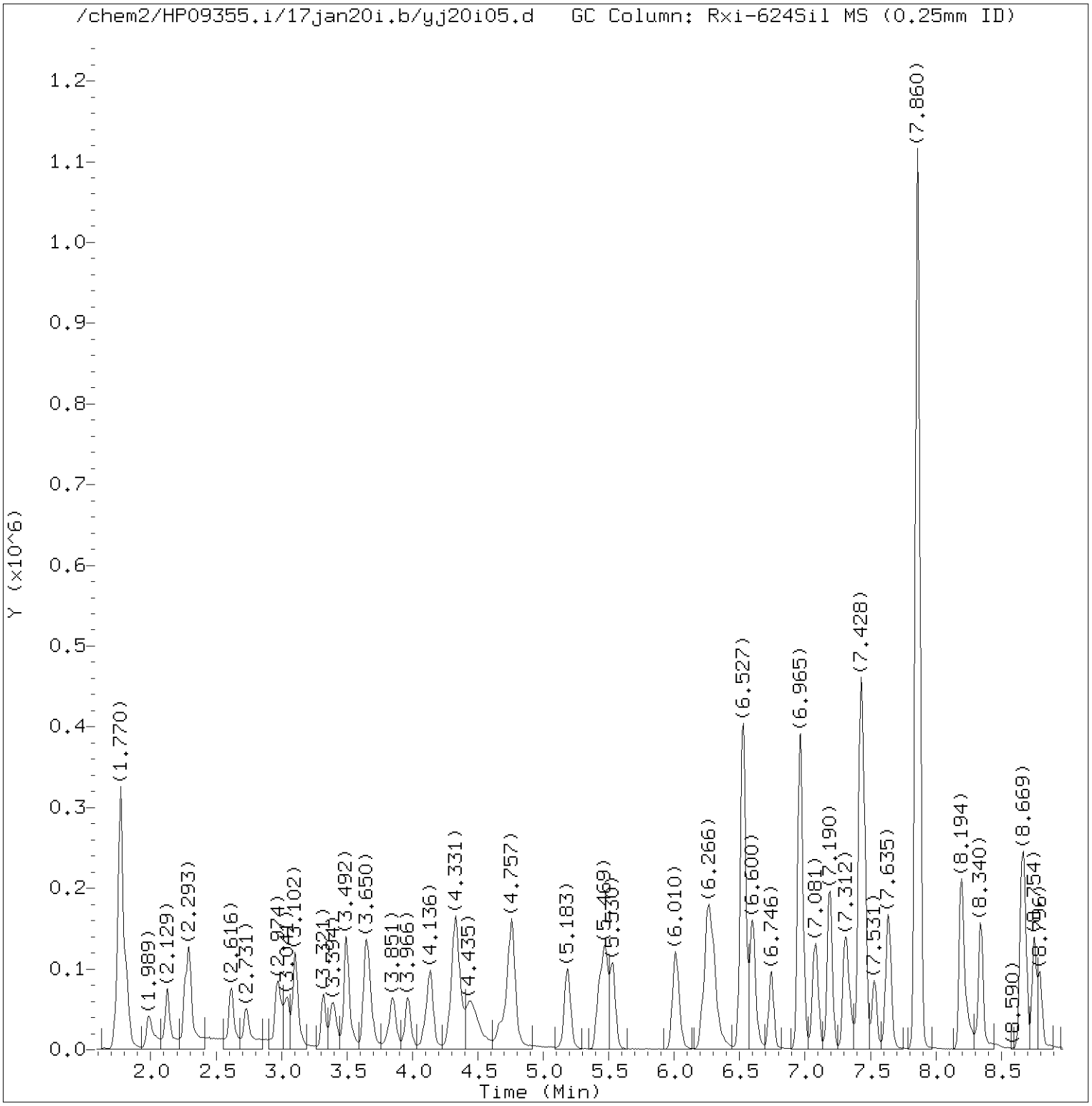

Data File: /chem2/HP09355.i/17jan20i.b/yj20i04.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:23 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 122886
On-column Amount (ng) : 20.1210
Integration start scan : 1849 Integration stop scan: 1877
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231




Total Ion Chromatogram (TIC)

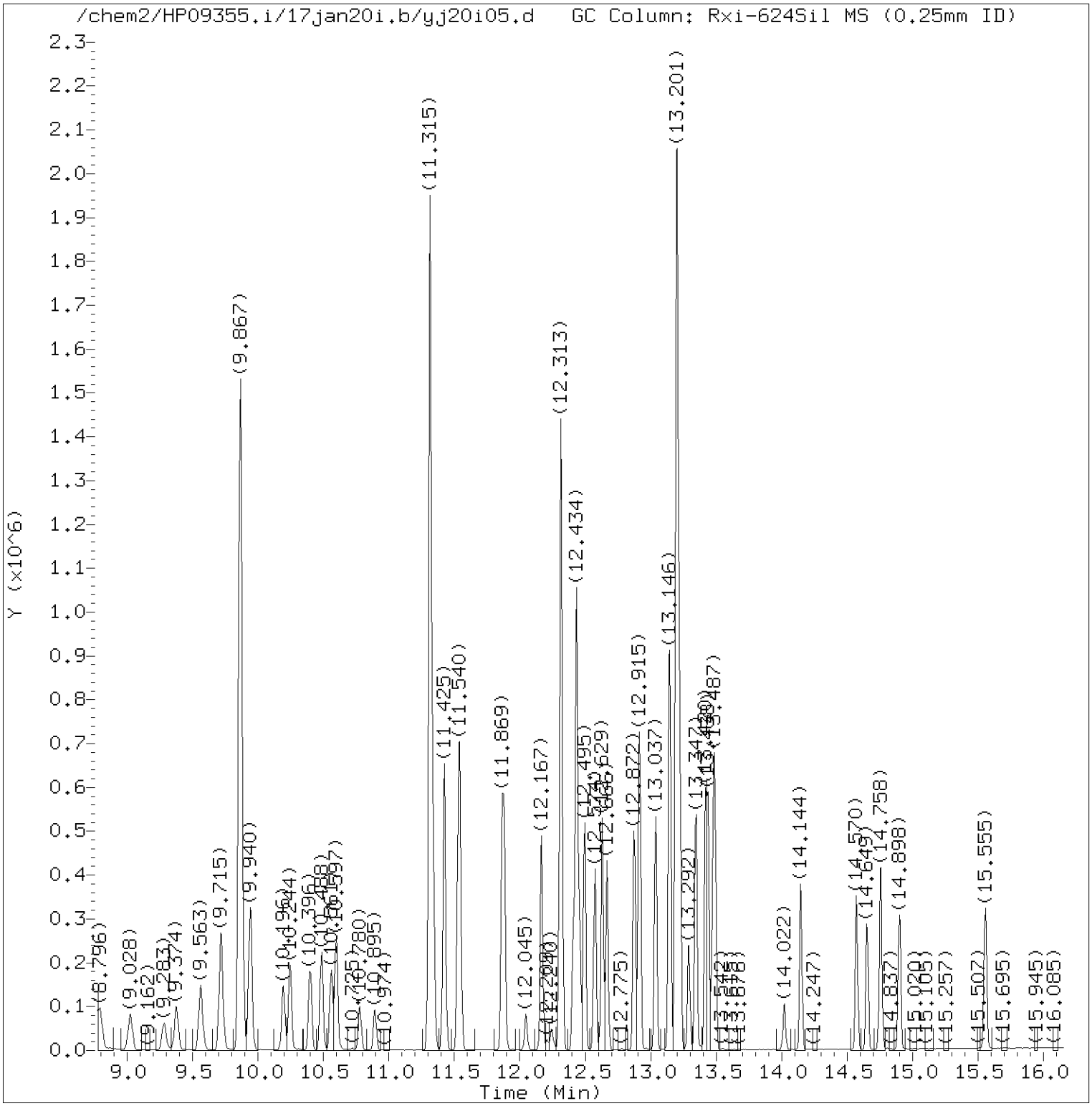
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 84479 | 10.936 |
| 4) Chloromethane | (2) | 2.129 | 50 | 86546 | 10.674 |
| 6) Vinyl Chloride | (2) | 2.263 | 62 | 81873 | 10.696 |
| 5) 1,3-Butadiene | (2) | 2.293 | 39 | 71352 | 10.750 |
| 8) Bromomethane | (2) | 2.616 | 94 | 59239 | 11.055 |
| 9) Chloroethane | (2) | 2.731 | 64 | 47989 | 10.946 |
| 10) Dichlorofluoromethane | (2) | 2.968 | 67 | 96483 | 9.717 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 97981 | 10.728 |
| 11) n-Pentane | (2) | 3.102 | 43 | 101025 | 10.260 |
| 14) Ethyl ether | (2) | 3.321 | 59 | 52115 | 9.624 |
| 15) Freon 123a | (2) | 3.394 | 67 | 58530 | 9.465 |
| 16) Acrolein | (1) | 3.492 | 56 | 203157 | 95.141 |
| 17) 1,1-Dichloroethene | (2) | 3.644 | 96 | 45217 | 9.832 |
| 17) 1,1-Dichloroethene | (2) | 3.638 | 63 | 23903 | 9.971 |
| 19) Freon 113 | (2) | 3.662 | 101 | 44915 | 9.830 |
| 18) Acetone | (1) | 3.668 | 58 | 20242 | 19.500 |
| 21) 2-Propanol | (1) | 3.826 | 45 | 81380 | 103.613 |
| 22) Methyl Iodide | (2) | 3.851 | 142 | 84539 | 9.749 |
| 23) Carbon Disulfide | (2) | 3.966 | 76 | 131618 | 9.414 |
| 27) Methyl Acetate | (2) | 4.100 | 43 | 83672 | 9.700 |
| 25) Allyl Chloride | (2) | 4.136 | 41 | 87269 | 9.289 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.313 | 65 | 346736 | 250.000 |
| 28) Methylene Chloride | (2) | 4.331 | 84 | 56122 | 9.874 |
| 30) t-Butyl alcohol | (1) | 4.447 | 59 | 159696 | 103.659 |
| 31) Acrylonitrile | (2) | 4.666 | 53 | 40339 | 9.744 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.739 | 73 | 185314 | 9.889 |
| 32) trans-1,2-Dichloroethene | (2) | 4.763 | 96 | 54109 | 9.766 |
| 34) n-Hexane | (2) | 5.189 | 57 | 83317 | 9.885 |
| 36) 1,1-Dichloroethane | (2) | 5.420 | 63 | 98646M | 9.918 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 195180 | 9.905 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 89047 | 9.745 |
| 40) Ethyl t-butyl ether | (2) | 6.010 | 59 | 183198 | 9.916 |
| 44) 2-Butanone | (2) | 6.217 | 43 | 125426 | 19.618 |
| 42) cis-1,2-Dichloroethene | (2) | 6.254 | 96 | 62728 | 9.902 |
| 45) 2,2-Dichloropropane | (2) | 6.272 | 77 | 77157 | 9.741 |
| 47) Propionitrile | (1) | 6.302 | 54 | 175848 | 97.395 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 215486 | 48.274 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 31460 | 9.638 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d  Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45  Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 30735 | 18.854 |
| 51) Chloroform | (2) | 6.746 | 83 | 98868 | 9.856 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 116837 | 19.668 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 113 | 272459 | 49.490 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 111 | 279195 | 49.690 |
| 53) 1,1,1-Trichloroethane | (2) | 6.978 | 97 | 82323 | 9.719 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 99861 | 10.017 |
| 54) Cyclohexane | (2) | 7.081 | 84 | 82567 | 10.084 |
| 54) Cyclohexane | (2) | 7.081 | 69 | 30363 | 10.026 |
| 56) Carbon Tetrachloride | (2) | 7.190 | 117 | 67625 | 9.483 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 81102 | 9.952 |
| 58) Isobutyl Alcohol | (1) | 7.306 | 41 | 143233 | 248.255 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 72545 | 50.441 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 367200 | 50.713 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 104 | 45552 | 49.882 |
| 60) Benzene | (2) | 7.452 | 78 | 238512 | 9.963 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 87848 | 10.116 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 98 | 7604 | 9.835 |
| 65) t-Amyl methyl ether | (2) | 7.635 | 73 | 184032 | 9.938 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1177225 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 100952 | 10.173 |
| 69) n-Butanol | (1) | 8.194 | 56 | 222560M | 474.232 |
| 71) Trichloroethene | (2) | 8.340 | 95 | 61907 | 9.870 |
| 72) Methylcyclohexane | (2) | 8.657 | 83 | 104580 | 9.639 |
| 72) Methylcyclohexane | (2) | 8.657 | 98 | 46963 | 9.580 |
| 73) 1,2-Dichloropropane | (2) | 8.681 | 63 | 61904 | 9.740 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 64353 | 9.453 |
| 75) 1,4-Dioxane | (1) | 8.766 | 88 | 30475M | 239.630 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 40017 | 9.731 |
| 78) Bromodichloromethane | (2) | 9.028 | 83 | 66878 | 9.226 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 47711 | 17.145 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.381 | 63 | 51071M | 9.637 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 87456 | 9.176 |
| 82) 4-Methyl-2-pentanone | (2) | 9.715 | 43 | 220224 | 19.146 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1164292 | 50.784 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 749861 | 50.538 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 167066 | 18.340 |
| 88) Toluene | (3) | 9.940 | 92 | 155665 | 10.067 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 79610 | 9.165 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 98985 | 9.446 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 58627 | 9.737 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 67857 | 9.862 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 102064 | 10.013 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 175181M | 19.118 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 51736 | 8.848 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 63767 | 9.736 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 888999 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 83326 | 9.888 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 176720 | 10.032 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 299011 | 10.025 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 51690 | 9.252 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 234830 | 19.736 |
| 108) Xylene (Total) | (3) | | 106 | 350677 | 29.665 |
| 107) o-Xylene | (3) | 11.869 | 106 | 115847 | 9.930 |
| 109) Styrene | (3) | 11.881 | 104 | 185270 | 9.567 |
| 110) Bromoform | (3) | 12.045 | 173 | 36283 | 8.351 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 294033 | 9.987 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 22070M | 232.844 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 433459 | 50.286 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 174 | 368617 | 50.182 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 97180M | 9.739 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 141811 | 45.580 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 78771 | 9.775 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 33108 | 9.925 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 353086 | 10.138 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 71688 | 10.003 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 254188 | 10.009 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 75072 | 9.869 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 53497M | 9.852 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 35528 | 8.653 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 261209 | 9.946 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 320037 | 10.025 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 150735 | 9.804 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 279773 | 9.864 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 486712 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.213 | 146 | 155990 | 9.857 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 254590 | 9.651 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 155359 | 8.583 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 159110 | 9.632 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 162950 | 9.508 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 141411 | 9.905 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 145555 | 9.856 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 133864 | 9.658 |
| 141) Diethylbenzene (total) | (4) | | 100 | 455924 | 28.798 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 21877 | 9.174 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 108314 | 10.013 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 95910 | 9.702 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 48230 | 9.928 |
| 148) Naphthalene | (4) | 14.758 | 128 | 304809 | 9.634 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 88081 | 9.799 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 152093 | 8.926 |



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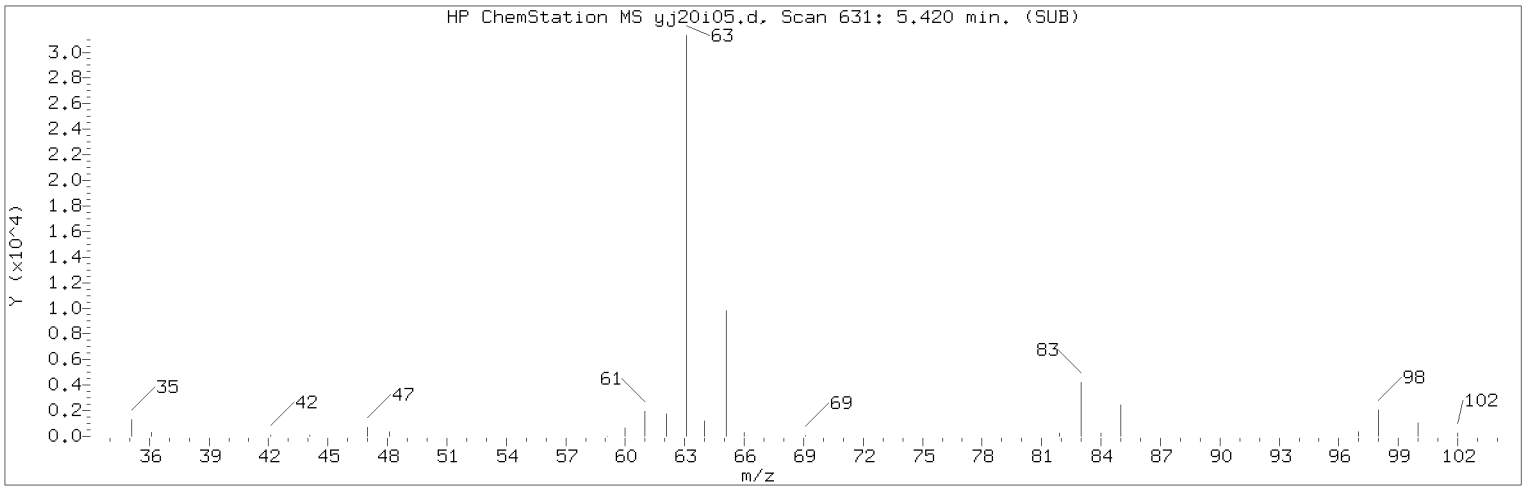
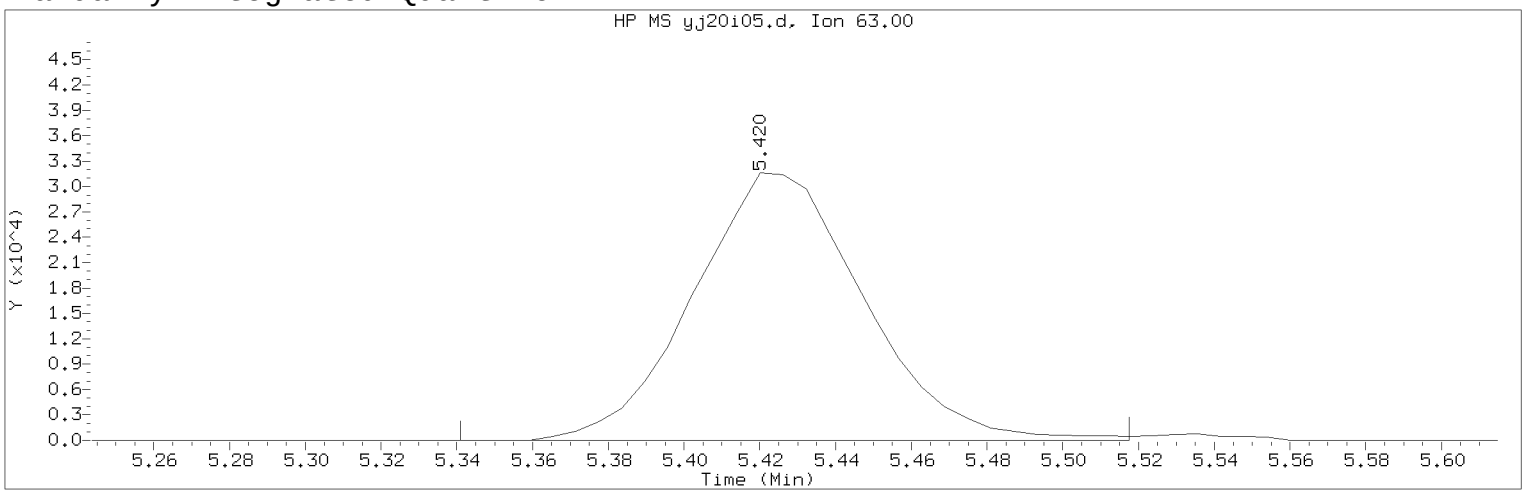
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

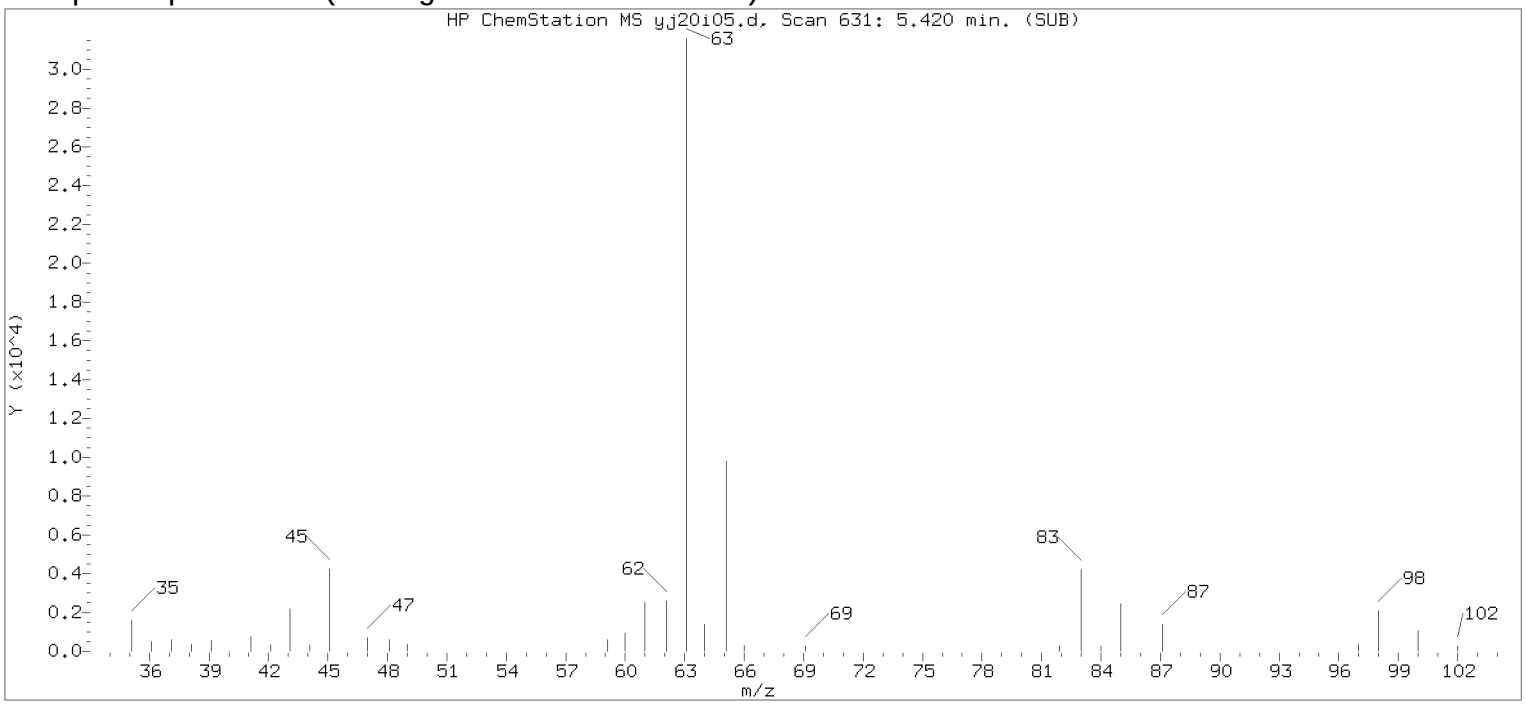
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 631
Retention Time (minutes): 5.420
Quant Ion : 63.00
Area (flag) : 98646M
On-Column Amount (ng) : 9.9184
Integration start scan : 617 Integration stop scan: 646
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

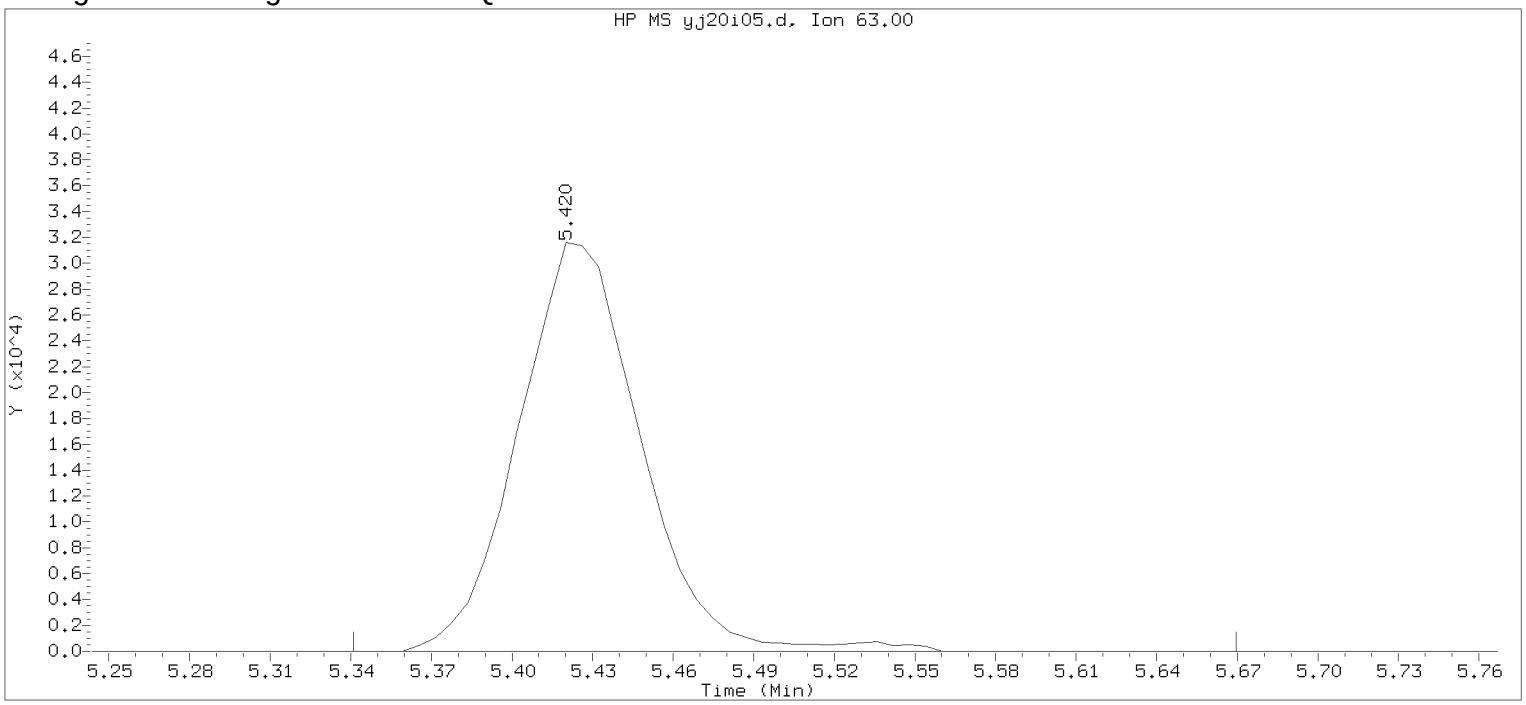
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

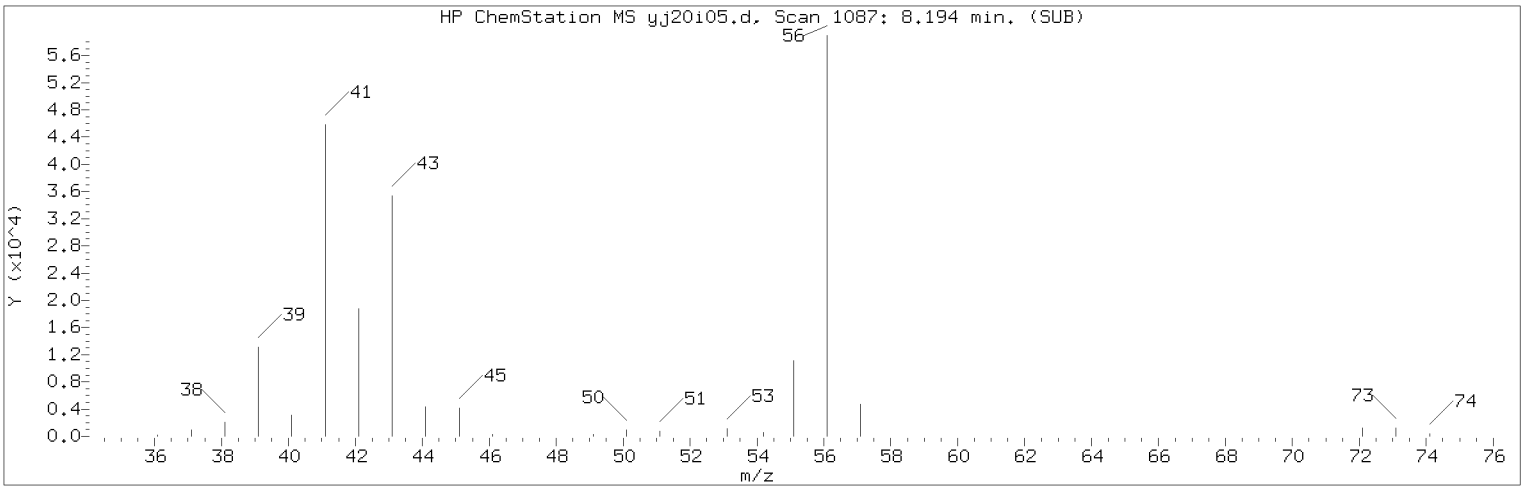
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

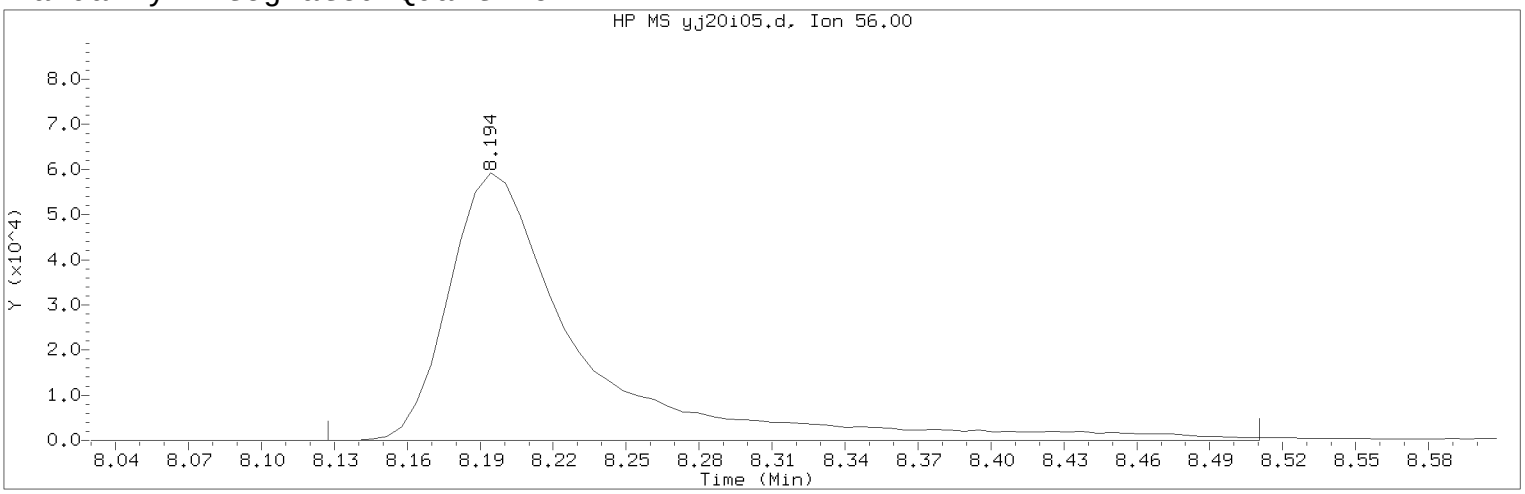
Compound Number : 36
Compound Name : 1,1-Dichloroethane
Scan Number : 631
Retention Time (minutes): 5.420
Quant Ion : 63.00
Area : 99847
On-column Amount (ng) : 9.8514
Integration start scan : 617 Integration stop scan: 671
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

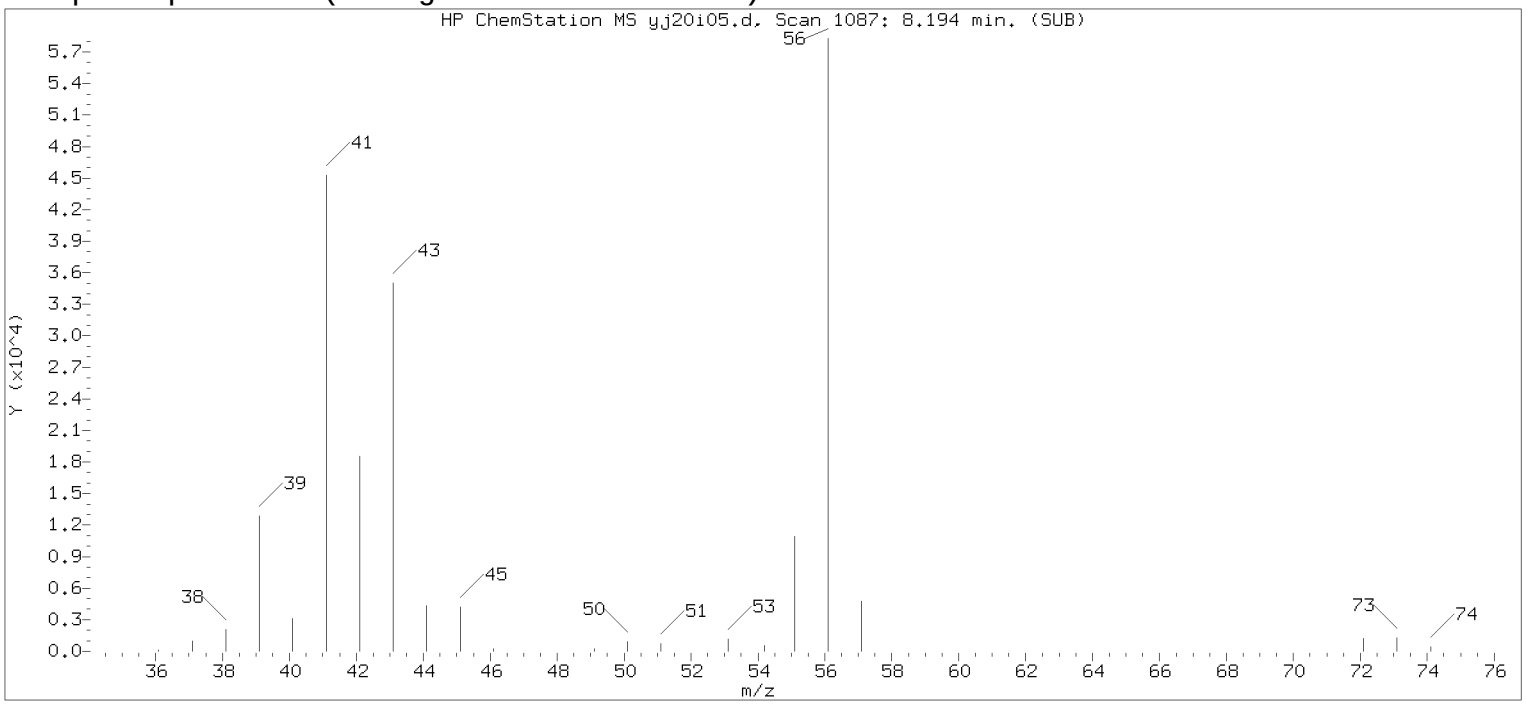
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area (flag) : 222560M
On-Column Amount (ng) : 474.2316
Integration start scan : 1075 Integration stop scan: 1138
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

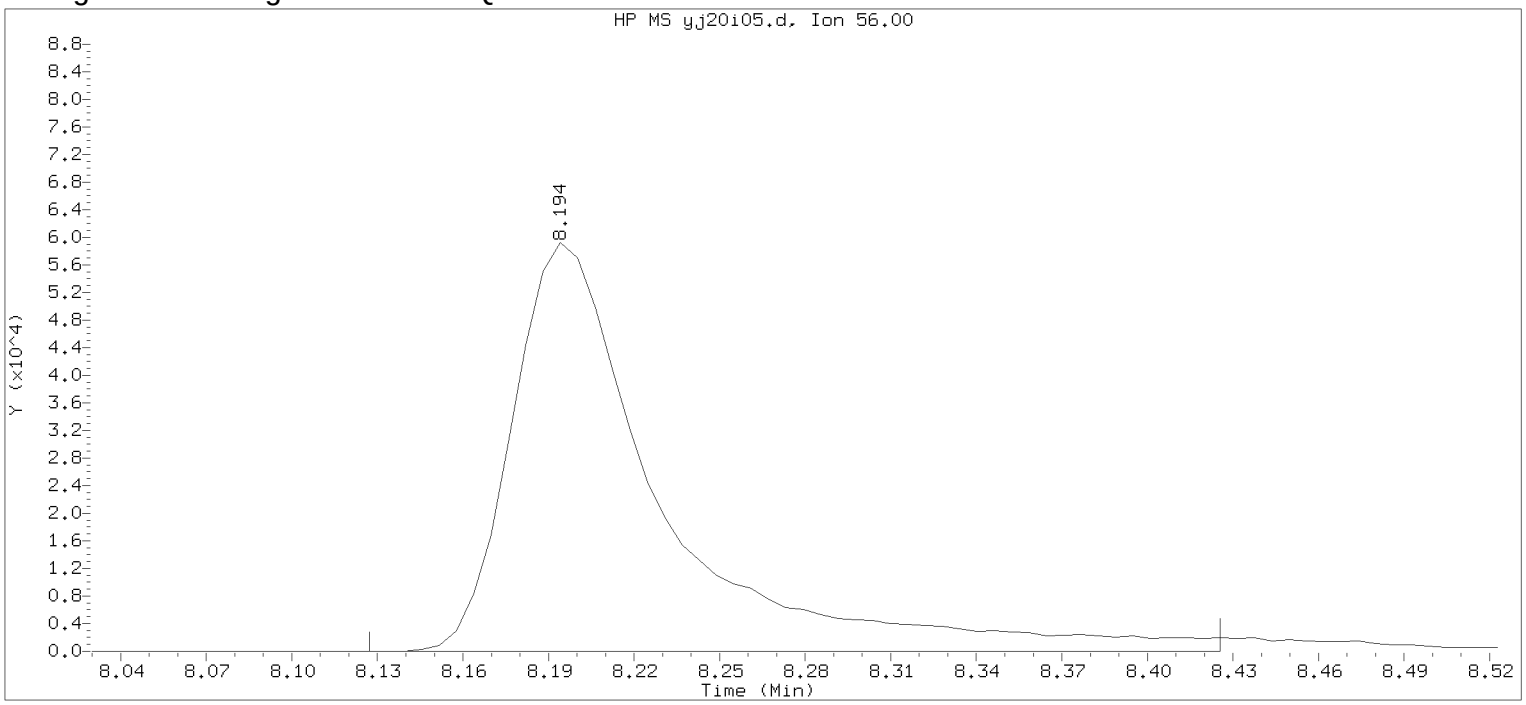
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

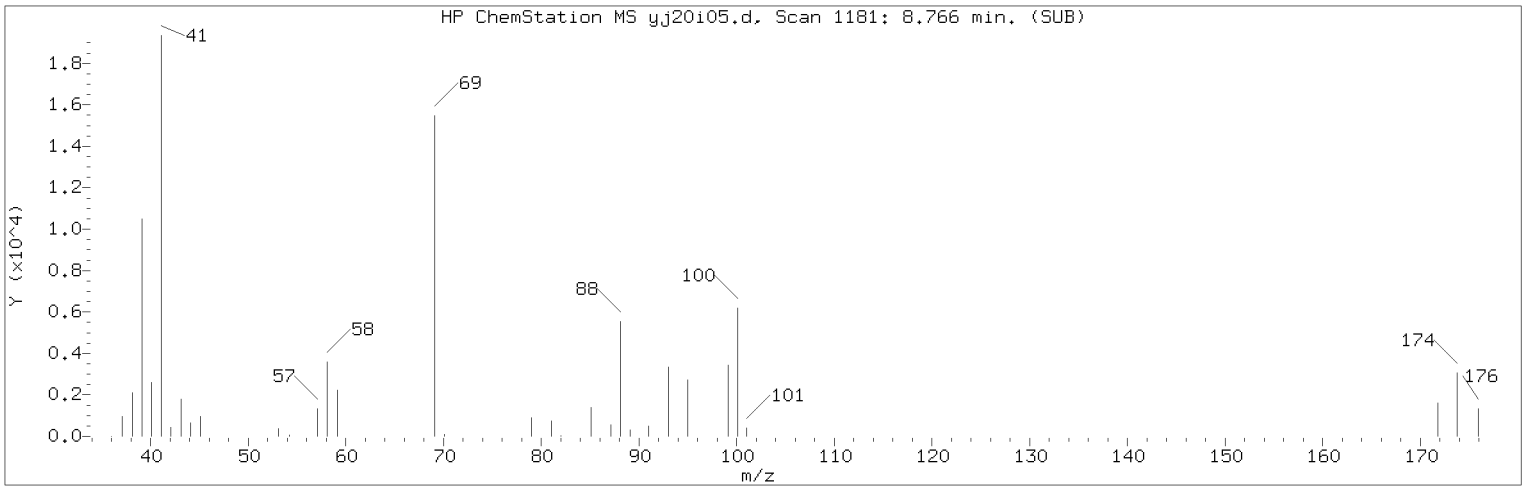
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

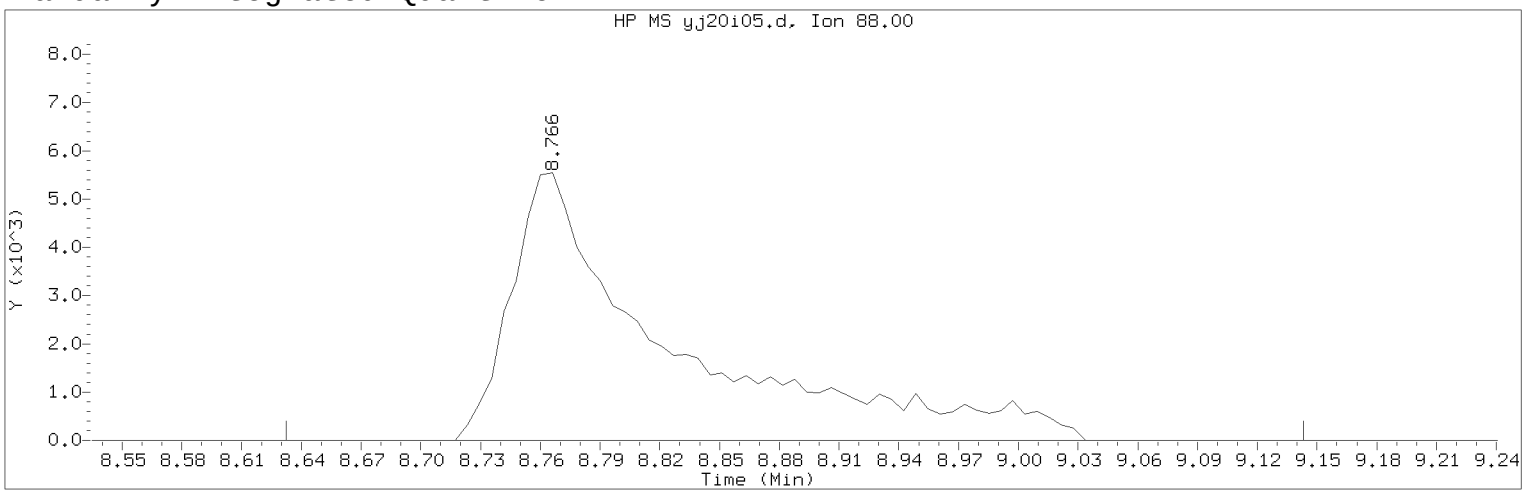
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1087
Retention Time (minutes): 8.194
Quant Ion : 56.00
Area : 215791
On-column Amount (ng) : 464.4943
Integration start scan : 1075 Integration stop scan: 1124
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

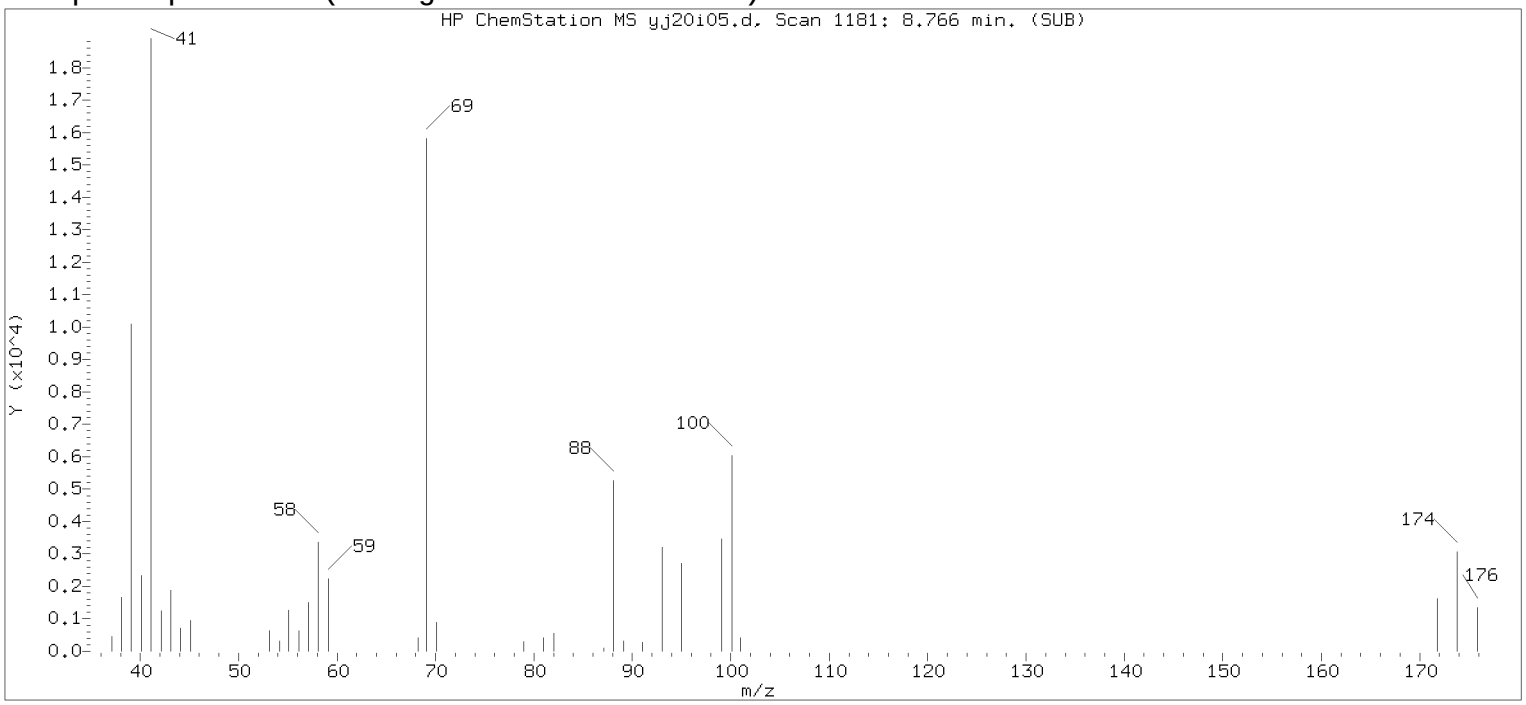
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area (flag) : 30475M
On-Column Amount (ng) : 239.6304
Integration start scan : 1158 Integration stop scan: 1242
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

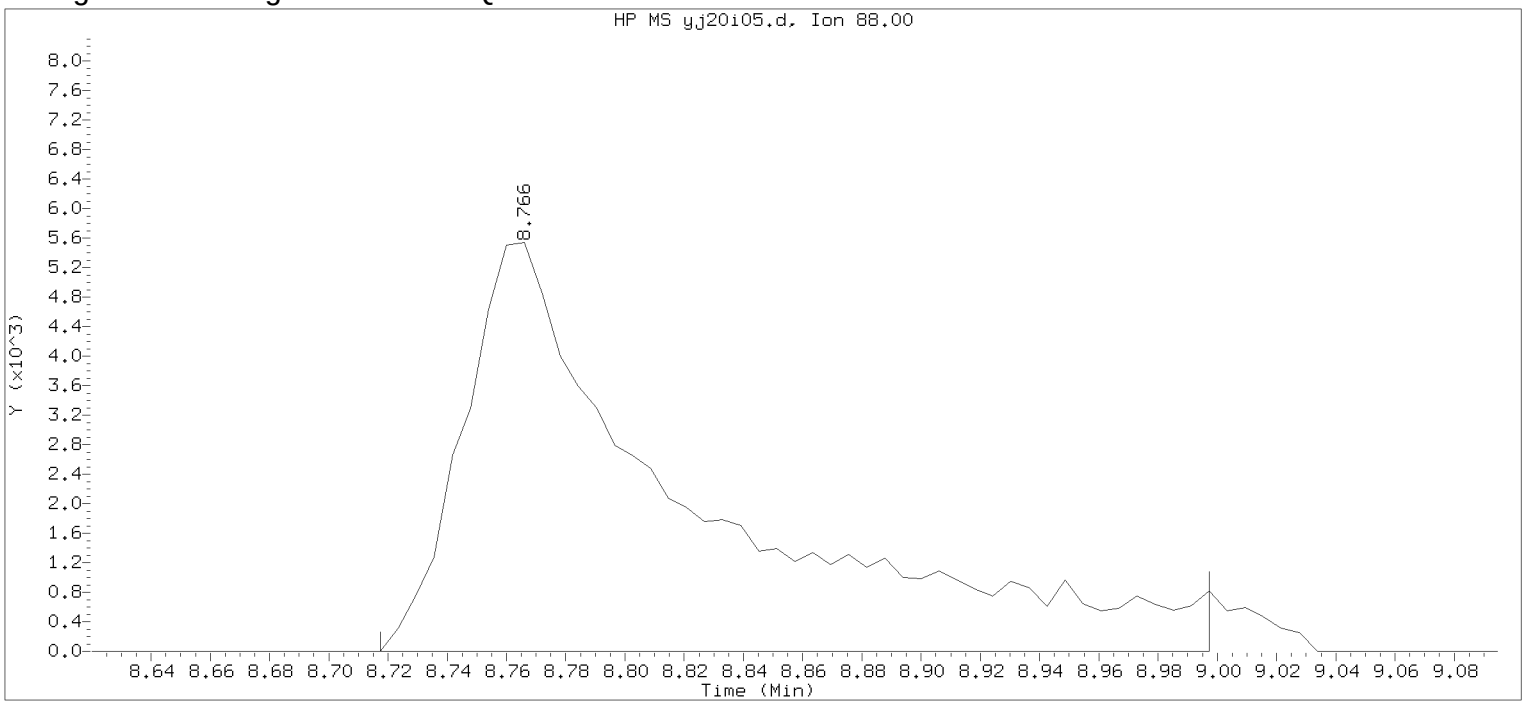
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

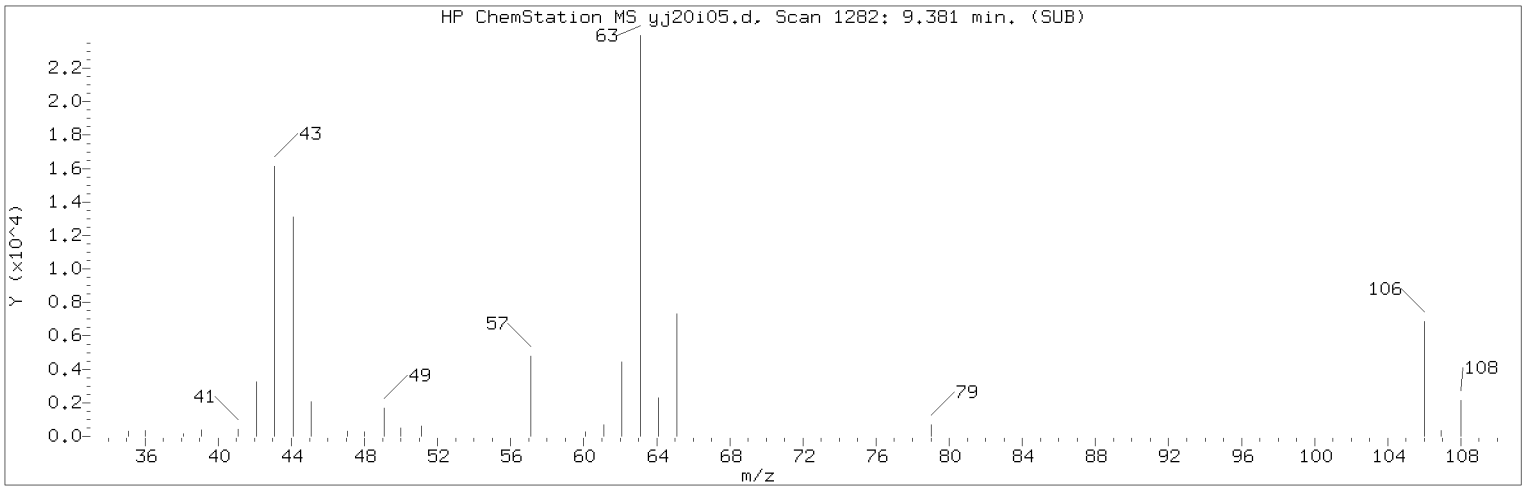
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

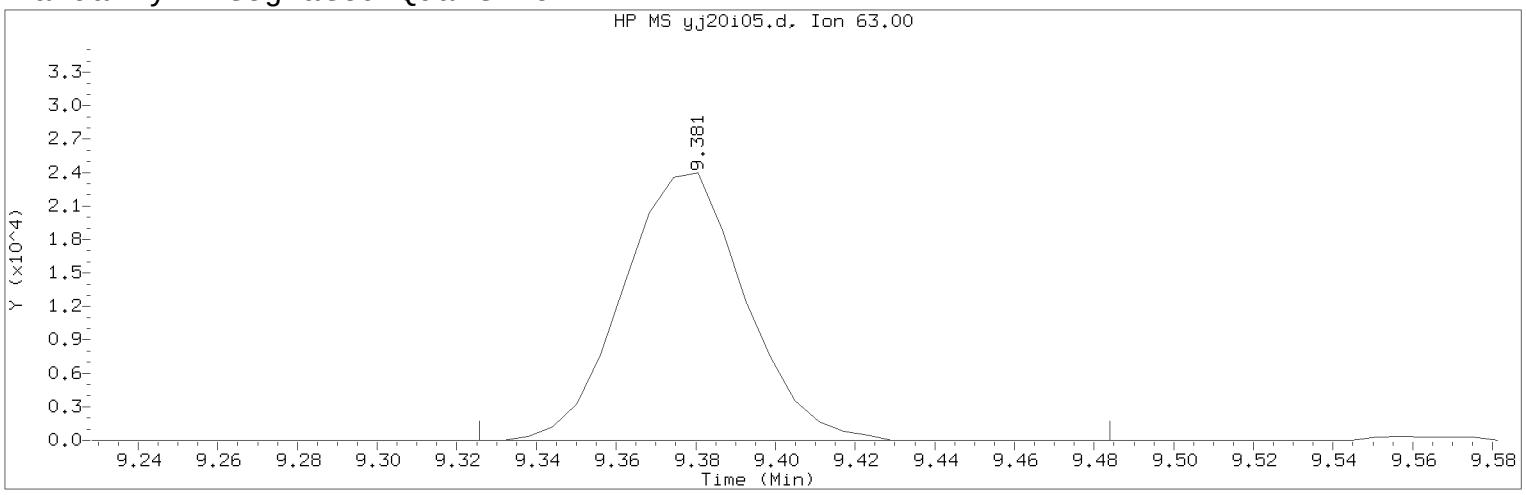
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1181
Retention Time (minutes): 8.766
Quant Ion : 88.00
Area : 29529
On-column Amount (ng) : 234.2327
Integration start scan : 1172 Integration stop scan: 1218
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

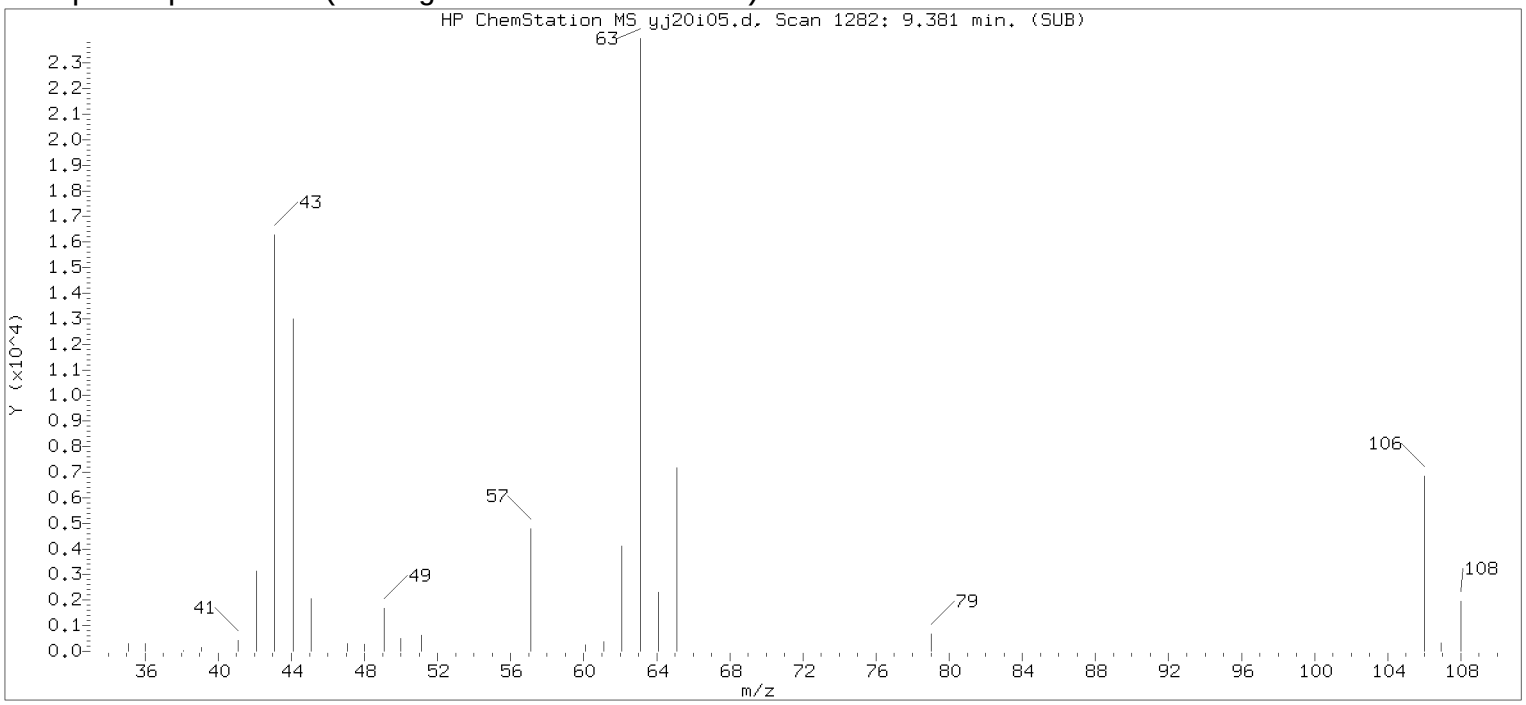
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1282
Retention Time (minutes): 9.381
Quant Ion : 63.00
Area (flag) : 51071M
On-Column Amount (ng) : 9.6375
Integration start scan : 1272 Integration stop scan: 1298
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

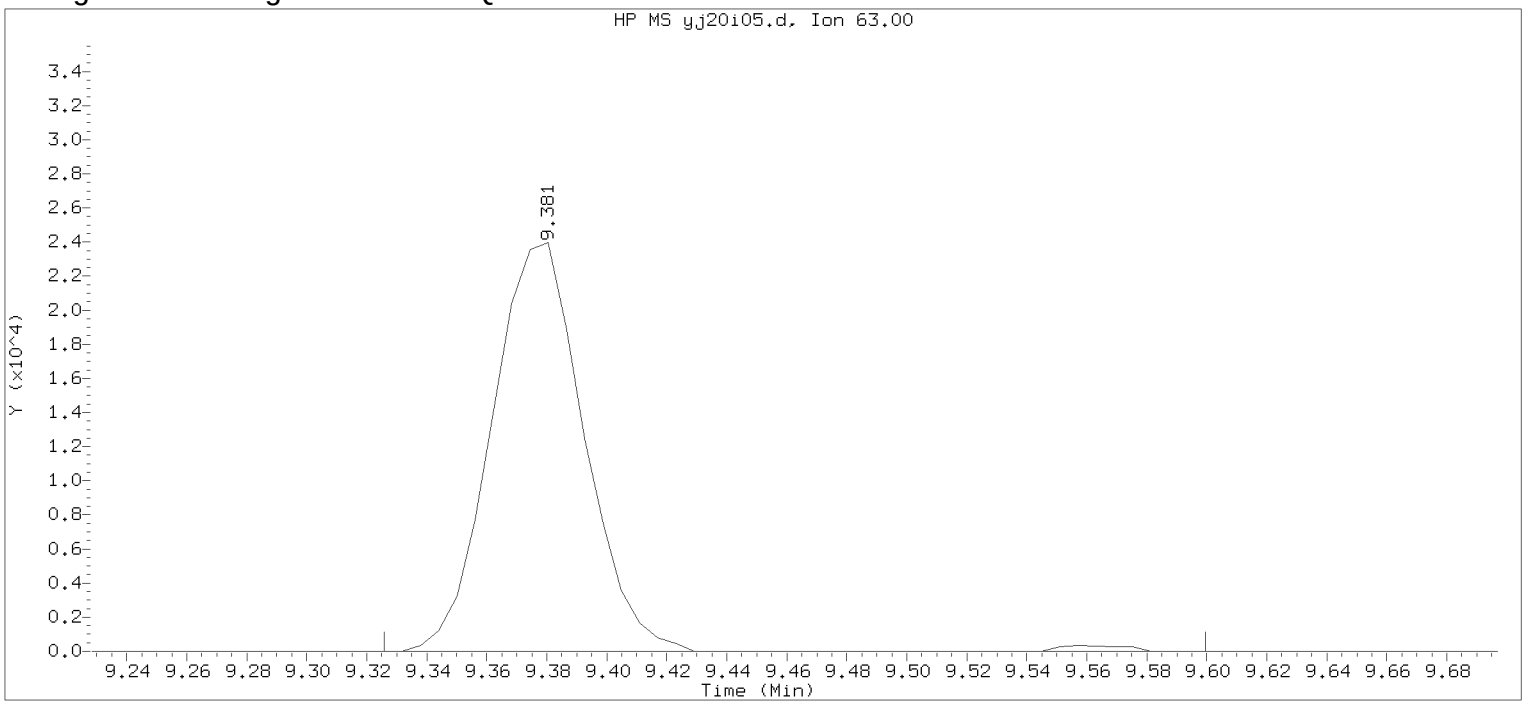
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

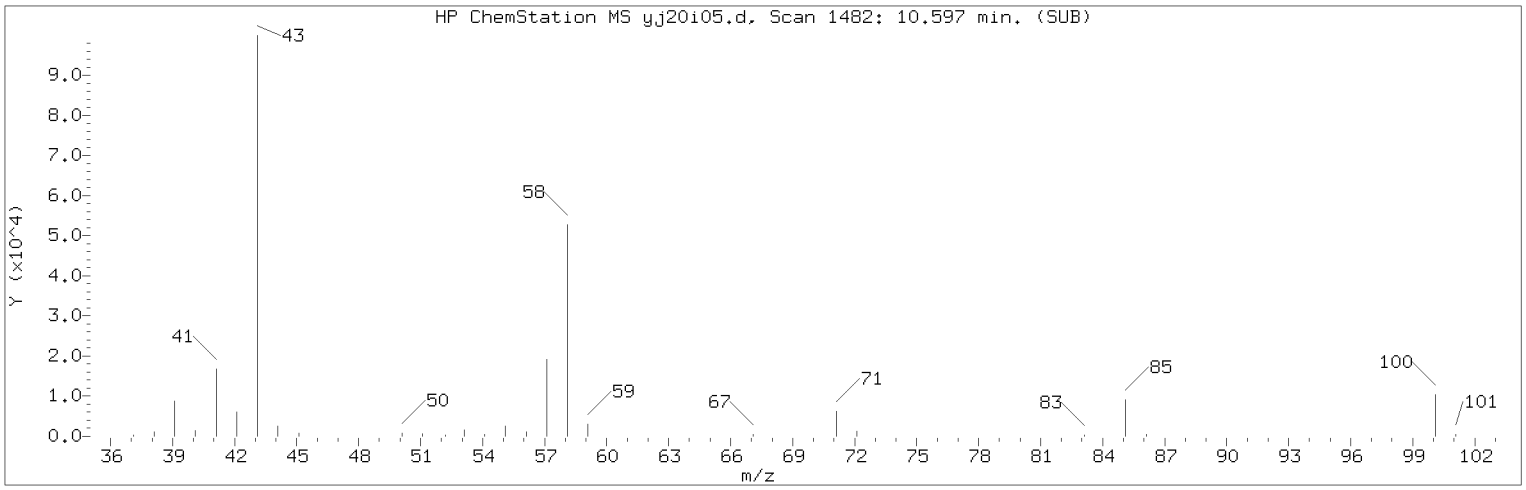
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

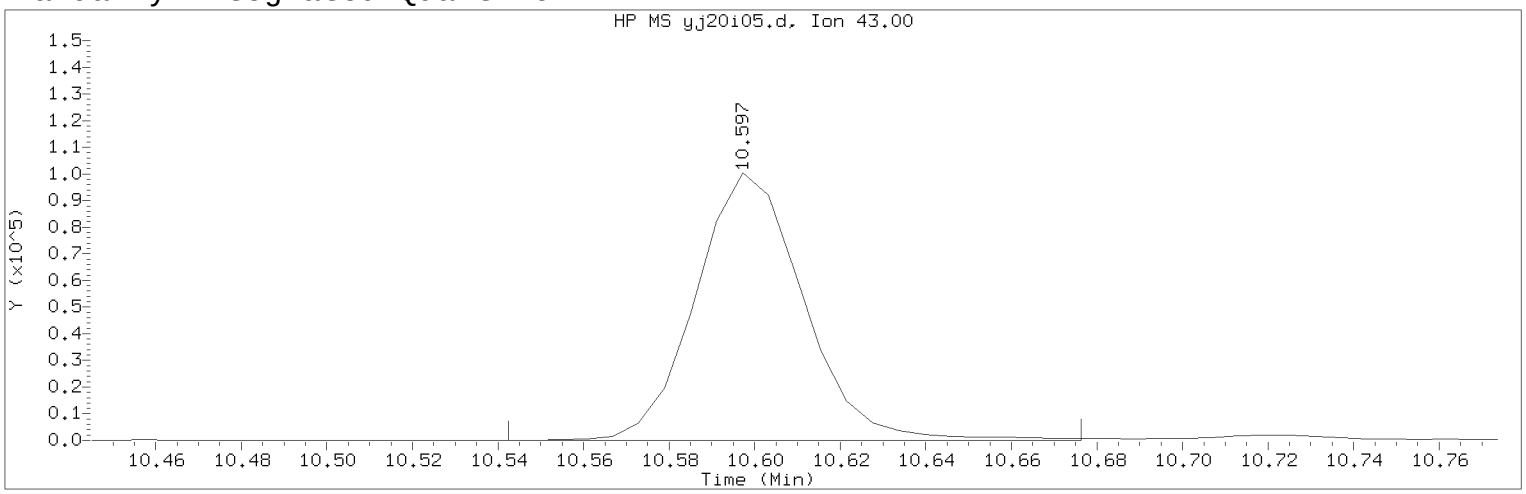
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1282
Retention Time (minutes): 9.381
Quant Ion : 63.00
Area : 51614
On-column Amount (ng) : 9.5421
Integration start scan : 1272 Integration stop scan: 1317
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

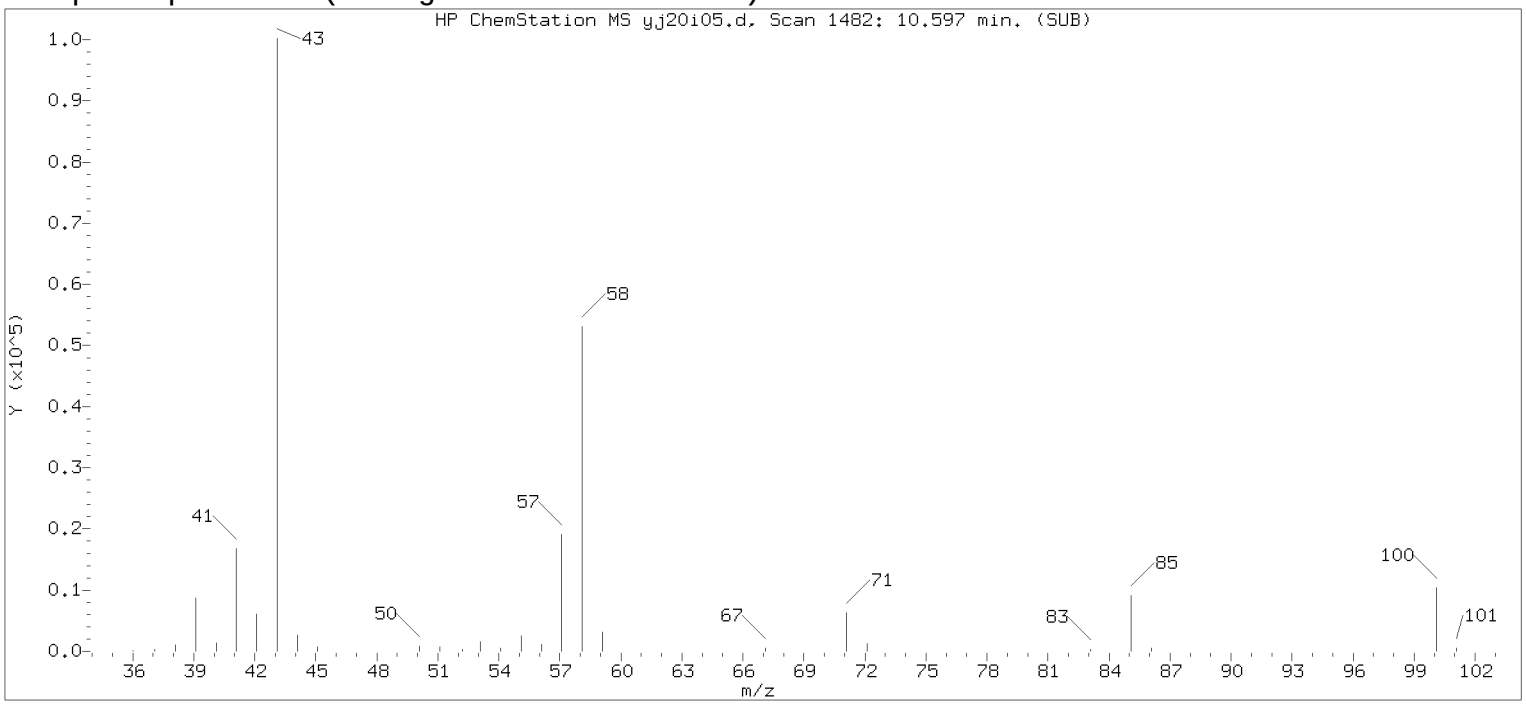
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1482
Retention Time (minutes): 10.597
Quant Ion : 43.00
Area (flag) : 175181M
On-Column Amount (ng) : 19.1176
Integration start scan : 1472 Integration stop scan: 1494
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

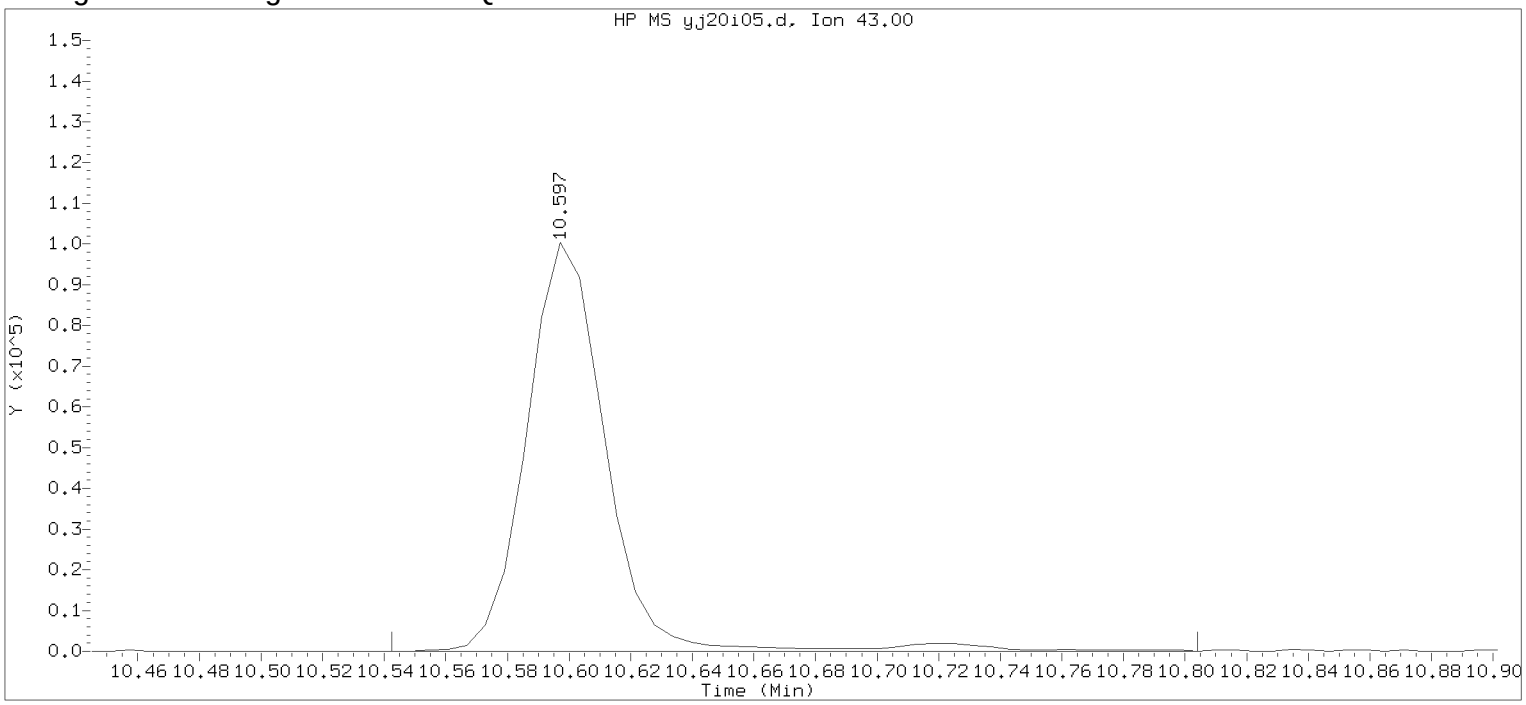
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

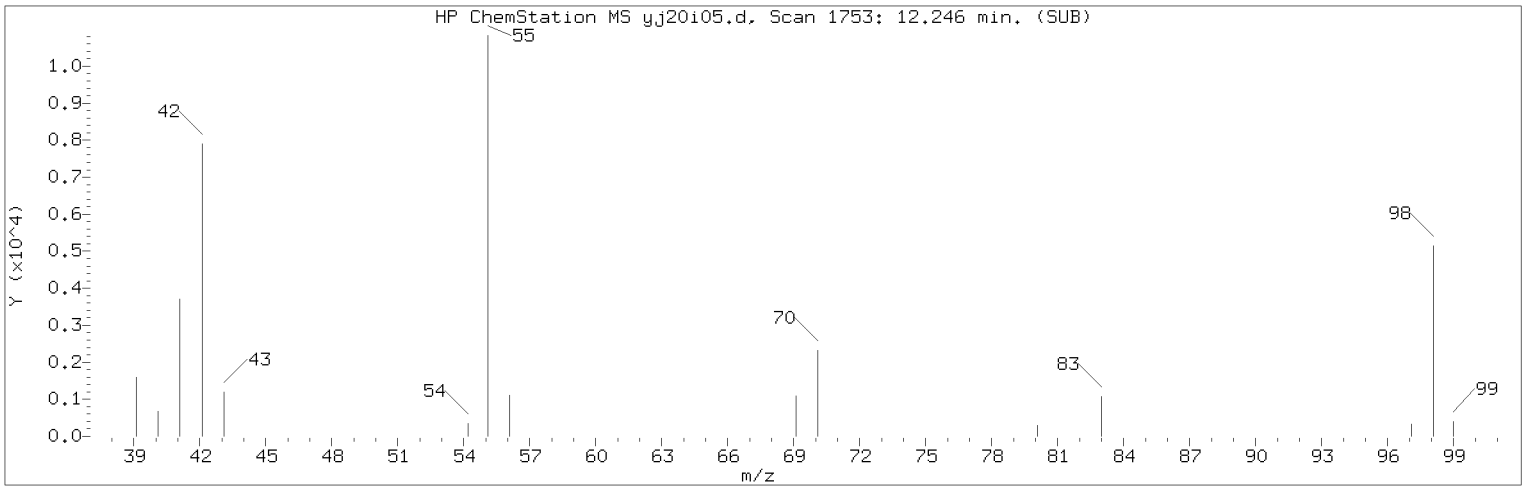
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

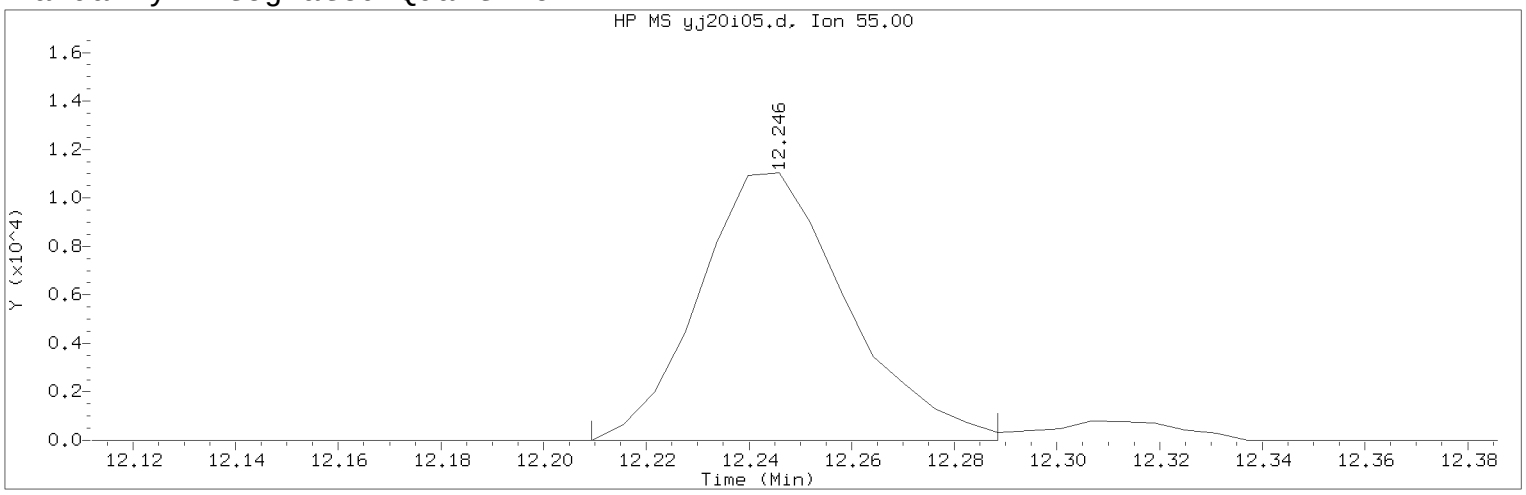
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1482
Retention Time (minutes): 10.597
Quant Ion : 43.00
Area : 180733
On-column Amount (ng) : 19.5617
Integration start scan : 1472 Integration stop scan: 1515
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

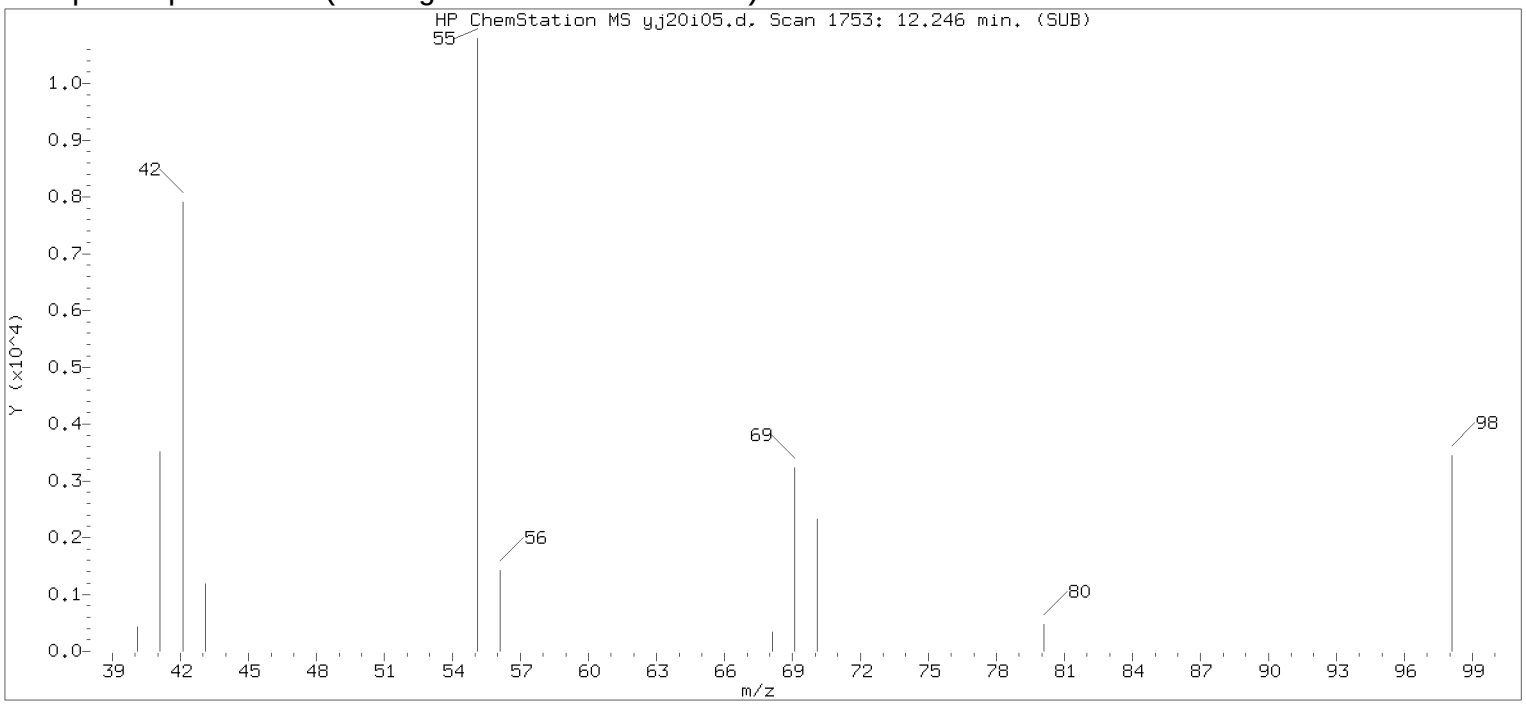
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 22070M
On-Column Amount (ng) : 232.8444
Integration start scan : 1746 Integration stop scan: 1759
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

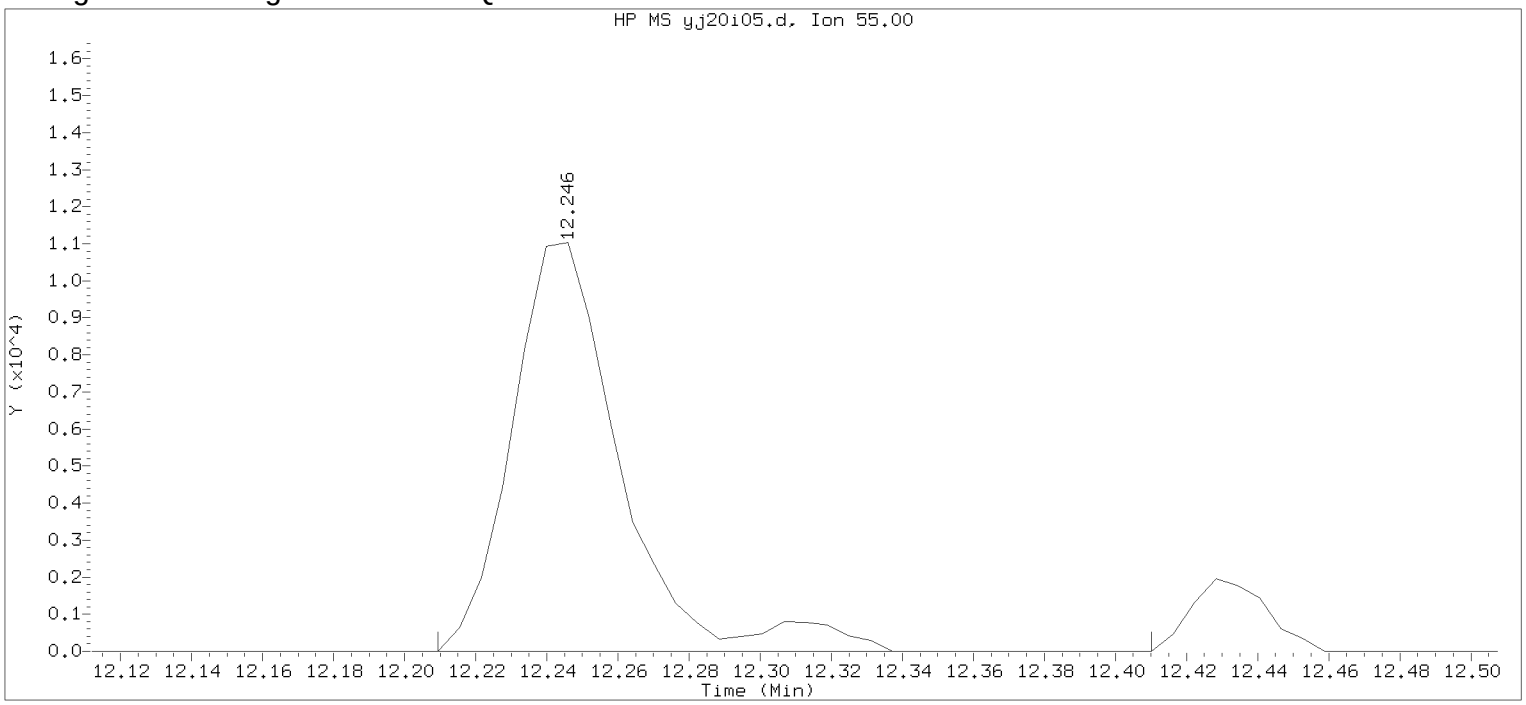
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

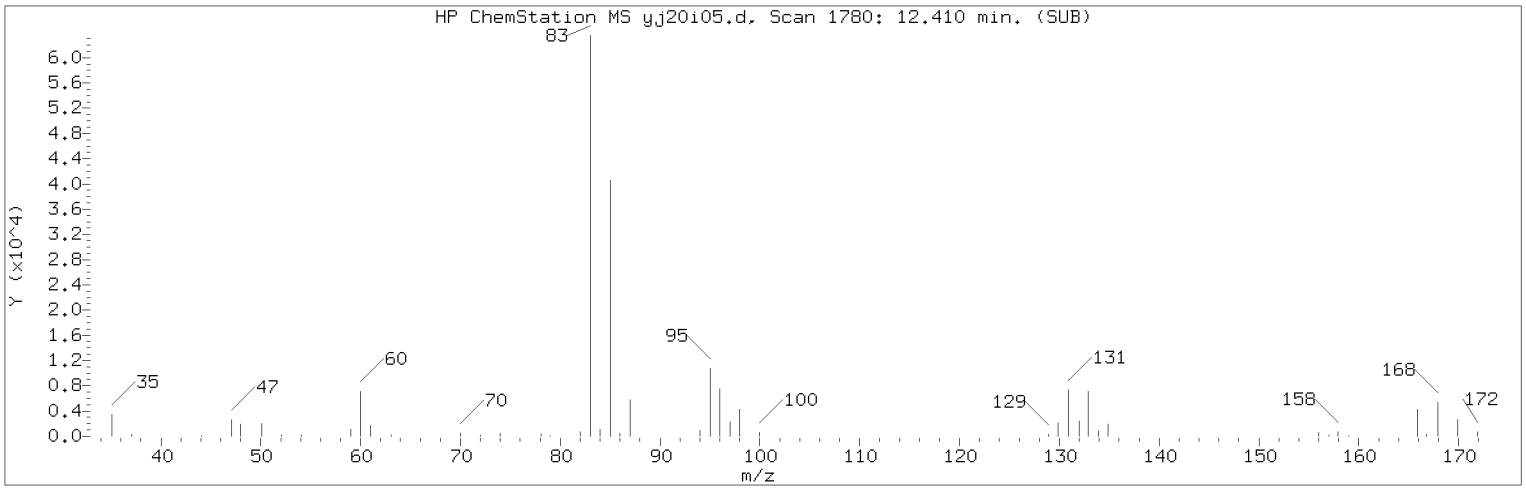
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

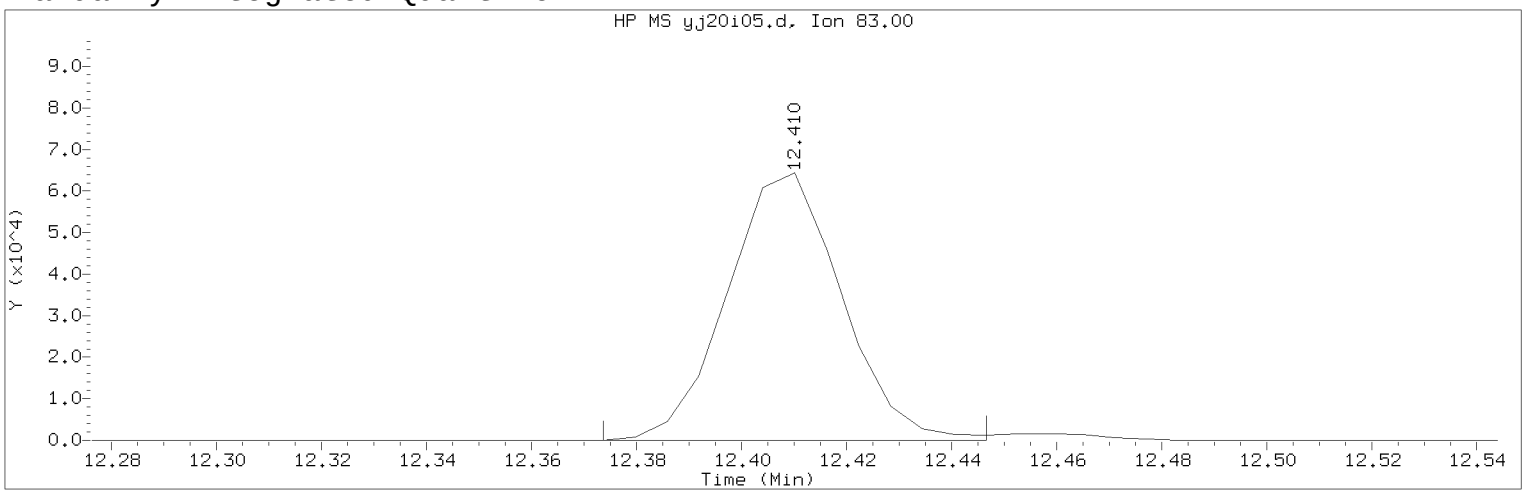
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 23480
On-column Amount (ng) : 238.6802
Integration start scan : 1746 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

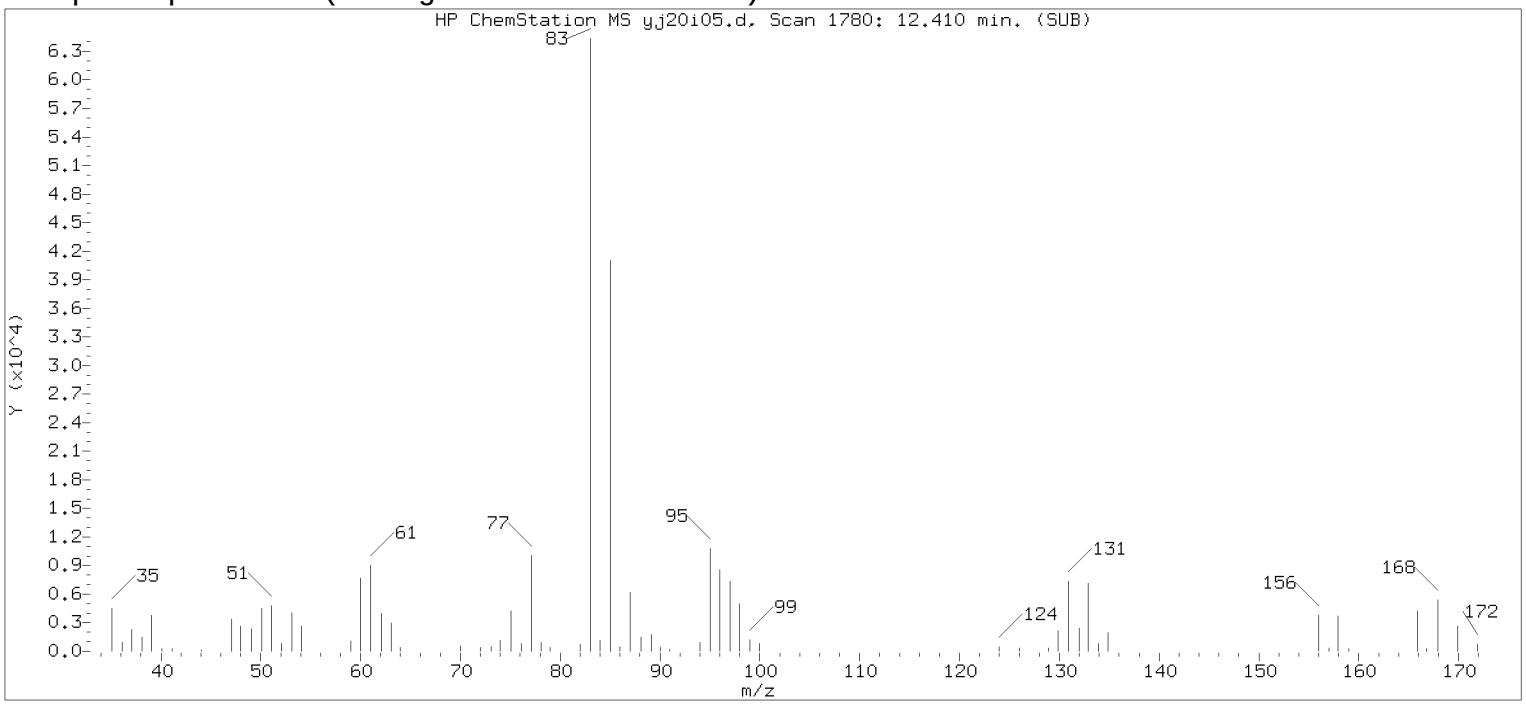
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 97180M
On-Column Amount (ng) : 9.7388
Integration start scan : 1773 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

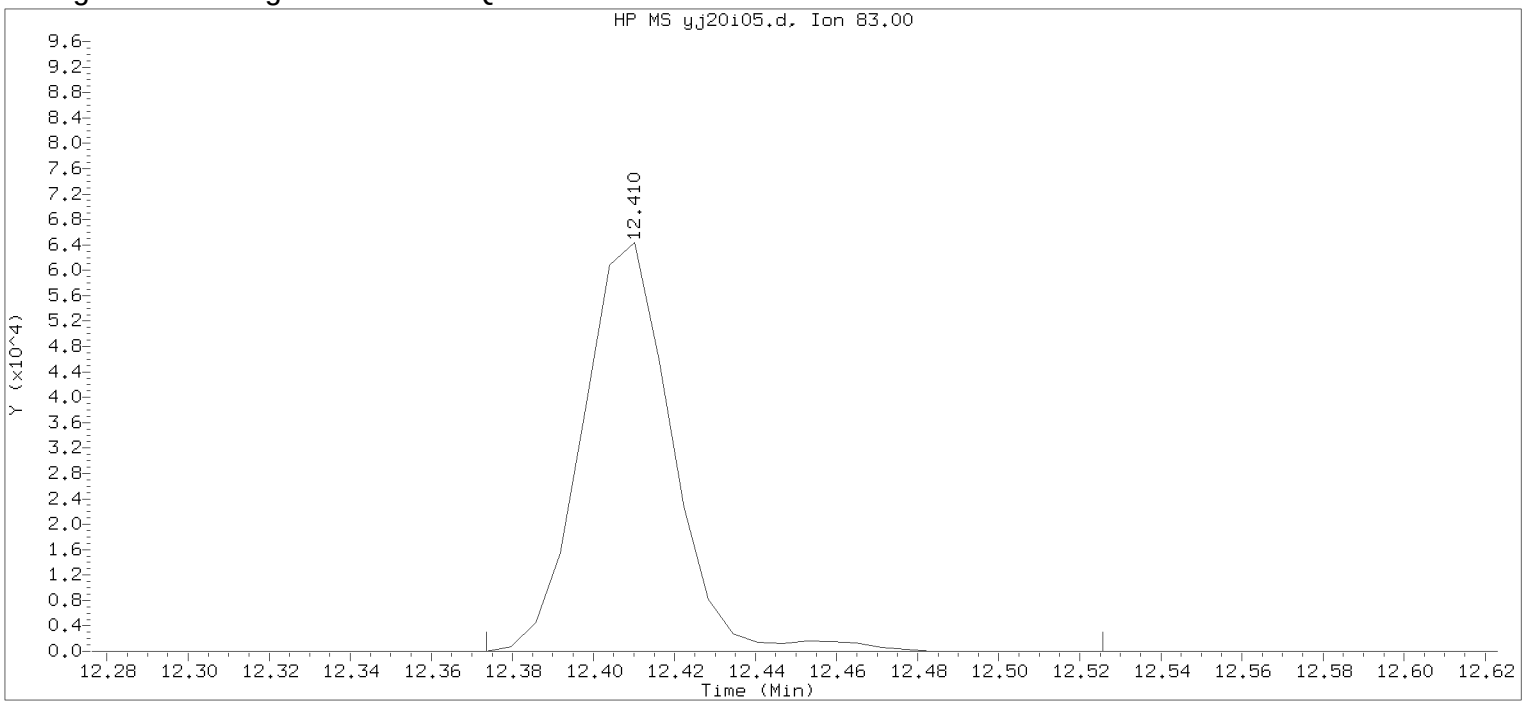
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

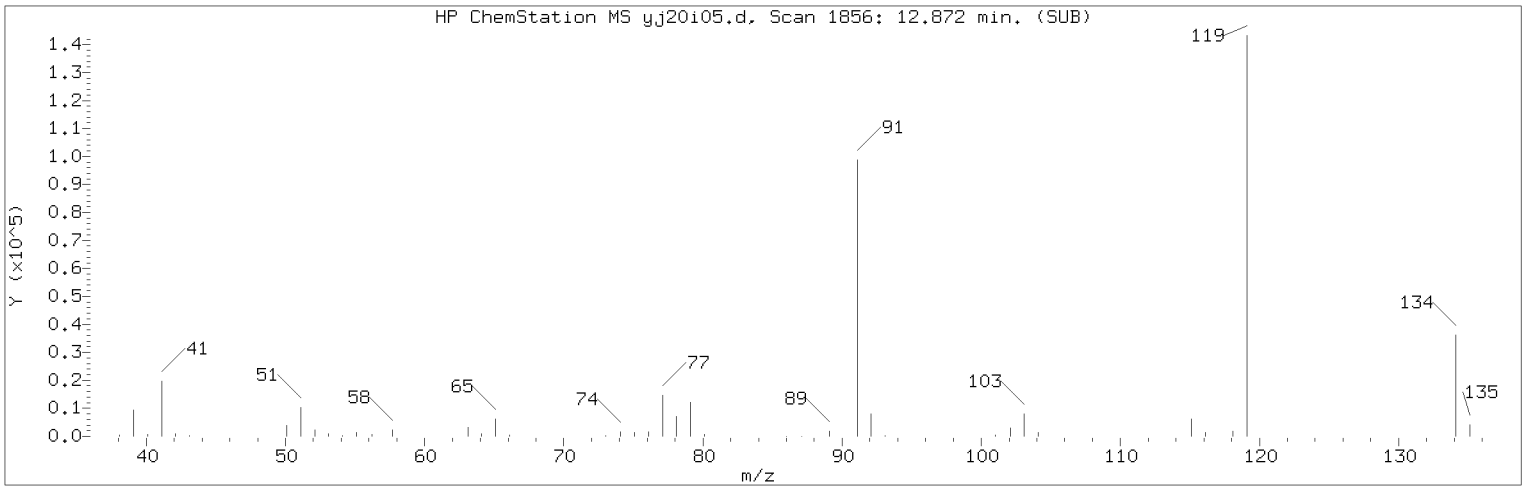
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

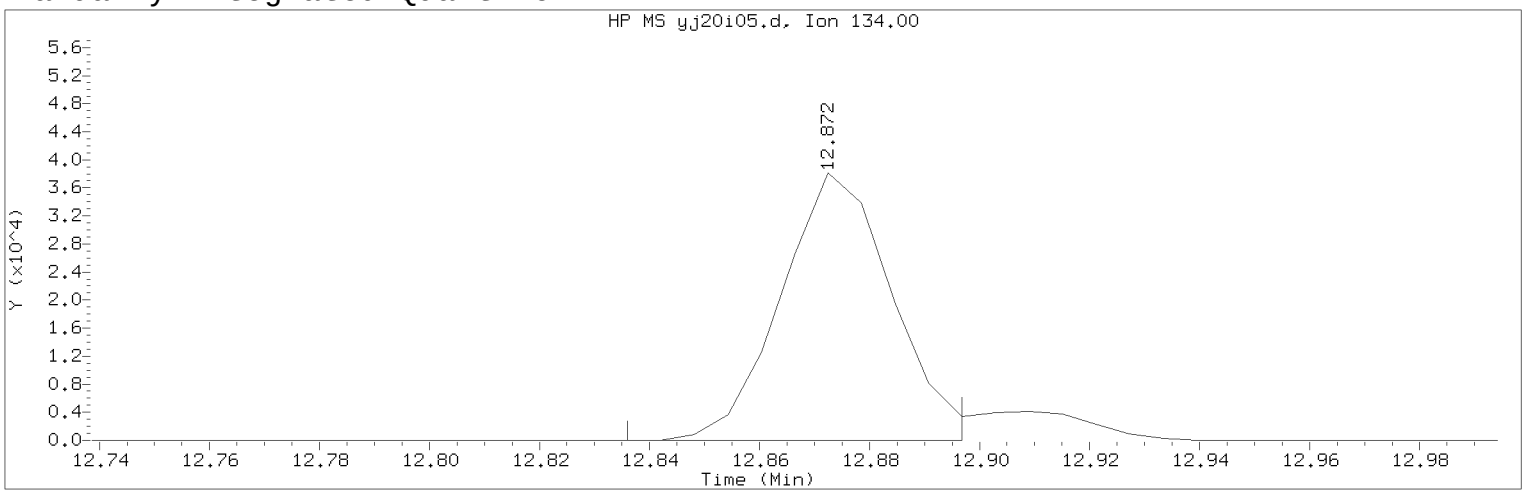
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 99130
On-column Amount (ng) : 9.6955
Integration start scan : 1773 Integration stop scan: 1798
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

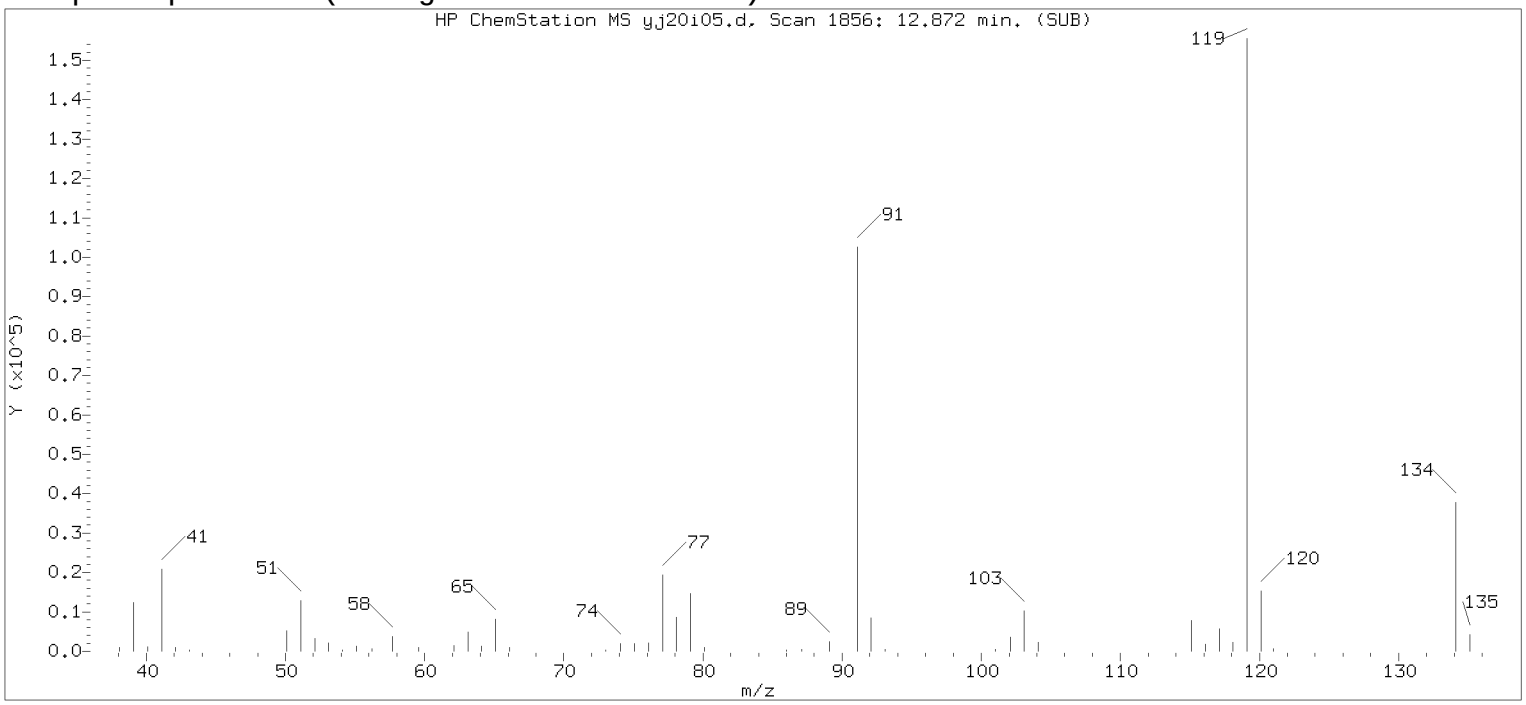
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 53497M
On-Column Amount (ng) : 9.8521
Integration start scan : 1849 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

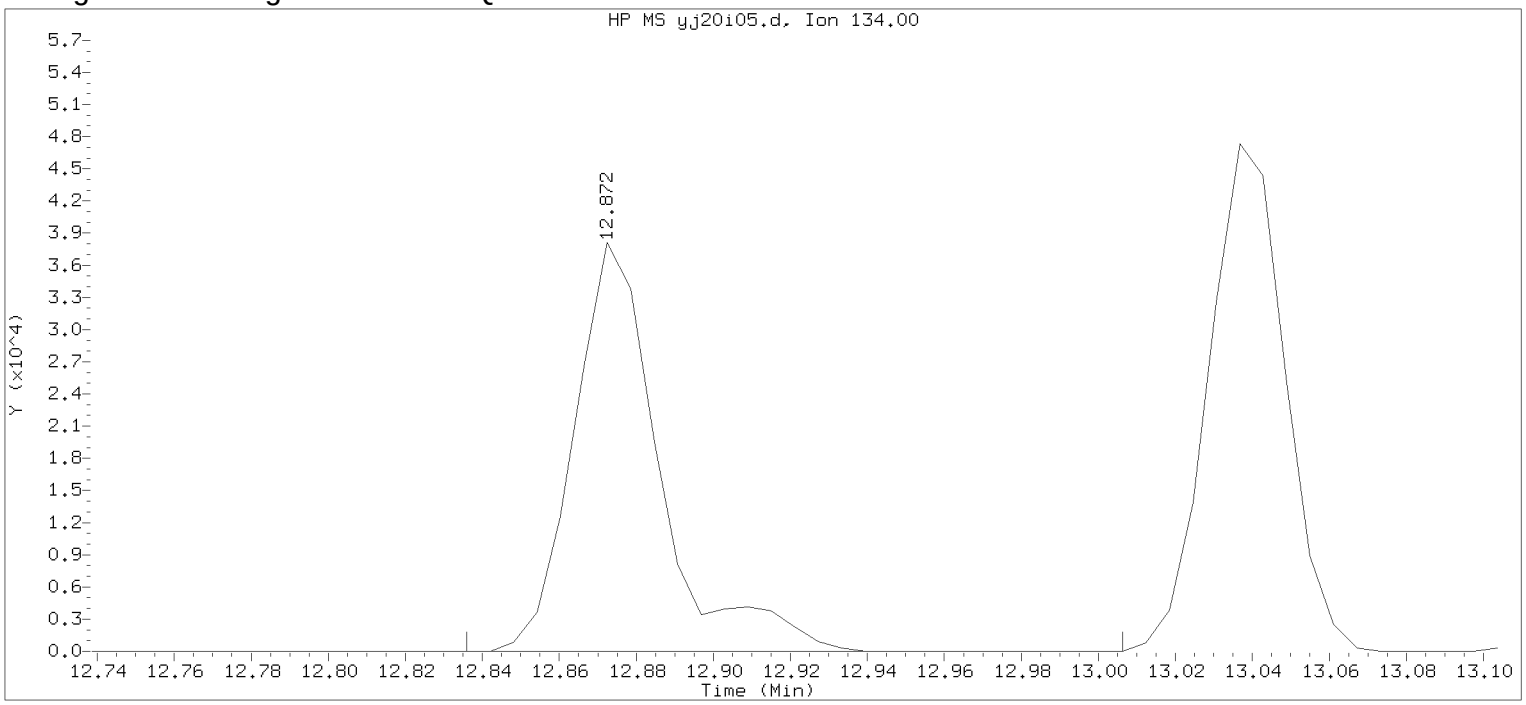
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:04.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



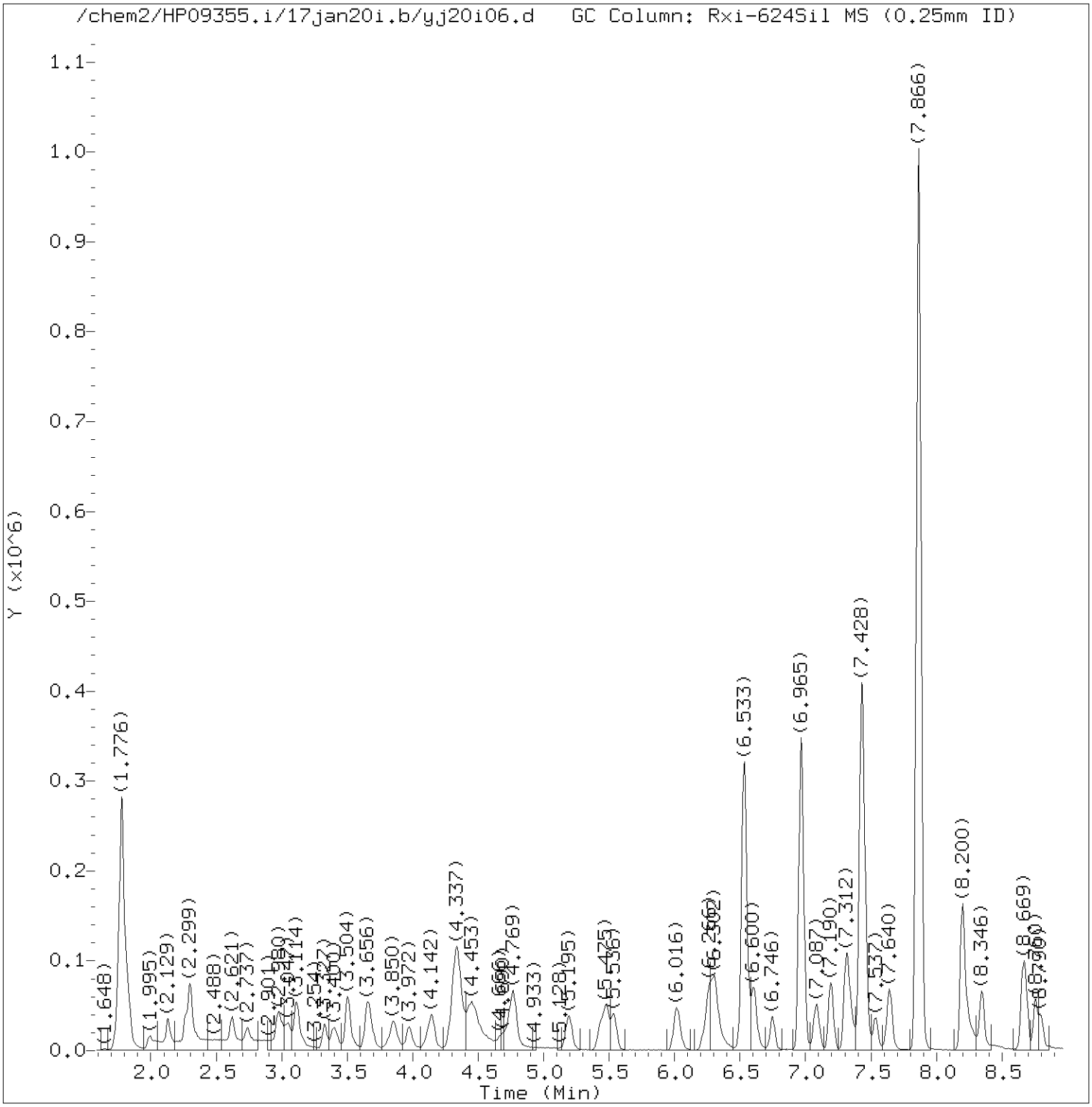

Data File: /chem2/HP09355.i/17jan20i.b/yj20i05.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 10:45 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:18
Date, time and analyst ID of latest file update: 20-Jan-2017 11:18 bwk03231

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 59102
On-column Amount (ng) : 10.0549
Integration start scan : 1849 Integration stop scan: 1877
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:04.
Target 3.5 esignature userKRD89bwk03231




Total Ion Chromatogram (TIC)

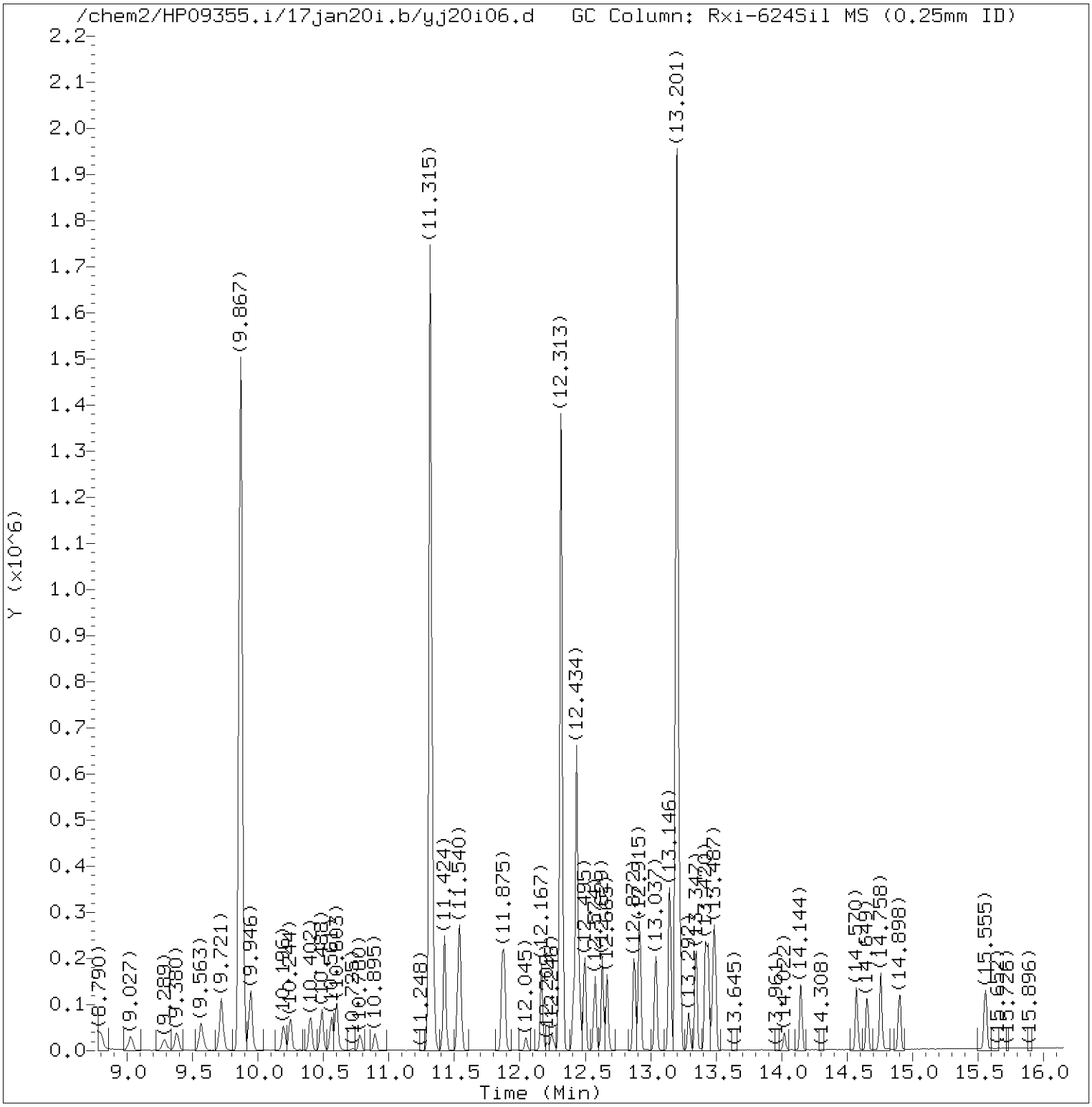
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.995 | 85 | 30793 | 4.056 |
| 4) Chloromethane | (2) | 2.129 | 50 | 33329 | 4.182 |
| 6) Vinyl Chloride | (2) | 2.263 | 62 | 31491 | 4.186 |
| 5) 1,3-Butadiene | (2) | 2.299 | 39 | 42674 | 6.541 |
| 8) Bromomethane | (2) | 2.621 | 94 | 22296 | 4.233 |
| 9) Chloroethane | (2) | 2.737 | 64 | 18595 | 4.315 |
| 10) Dichlorofluoromethane | (2) | 2.974 | 67 | 43114 | 4.418 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 36177 | 4.030 |
| 11) n-Pentane | (2) | 3.114 | 43 | 48364 | 4.997 |
| 14) Ethyl ether | (2) | 3.327 | 59 | 21667 | 4.071 |
| 15) Freon 123a | (2) | 3.400 | 67 | 25348 | 4.170 |
| 16) Acrolein | (1) | 3.504 | 56 | 84651 | 39.906 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 17427 | 3.855 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 63 | 9230 | 3.917 |
| 18) Acetone | (1) | 3.674 | 58 | 8062 | 7.818 |
| 19) Freon 113 | (2) | 3.674 | 101 | 16583 | 3.692 |
| 21) 2-Propanol | (1) | 3.838 | 45 | 63083M | 80.850 |
| 22) Methyl Iodide | (2) | 3.856 | 142 | 32478 | 3.810 |
| 23) Carbon Disulfide | (2) | 3.972 | 76 | 50102 | 3.646 |
| 27) Methyl Acetate | (2) | 4.112 | 43 | 34609 | 4.082 |
| 25) Allyl Chloride | (2) | 4.148 | 41 | 38157 | 4.132 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.325 | 65 | 344452 | 250.000 |
| 28) Methylene Chloride | (2) | 4.343 | 84 | 22093 | 3.955 |
| 30) t-Butyl alcohol | (1) | 4.459 | 59 | 125810 | 82.205 |
| 31) Acrylonitrile | (2) | 4.678 | 53 | 16845 | 4.140 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.745 | 73 | 72511 | 3.937 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 21160 | 3.885 |
| 34) n-Hexane | (2) | 5.195 | 57 | 32152 | 3.881 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 38020 | 3.889 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 75757 | 3.911 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 33544 | 3.735 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 70627 | 3.890 |
| 44) 2-Butanone | (2) | 6.229 | 43 | 53809 | 8.563 |
| 42) cis-1,2-Dichloroethene | (2) | 6.266 | 96 | 23808 | 3.824 |
| 45) 2,2-Dichloropropane | (2) | 6.284 | 77 | 29480 | 3.787 |
| 47) Propionitrile | (1) | 6.308 | 54 | 140968 | 78.594 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 168678 | 38.446 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 12133 | 3.782 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 12573 | 7.764 |
| 51) Chloroform | (2) | 6.746 | 83 | 37453 | 3.799 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 44968 | 7.709 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 267074 | 49.356 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 111 | 273173 | 49.465 |
| 53) 1,1,1-Trichloroethane | (2) | 6.983 | 97 | 32213 | 3.869 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 38644 | 3.944 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 31151 | 3.871 |
| 54) Cyclohexane | (2) | 7.087 | 69 | 11407 | 3.832 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 31460 | 3.928 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 25223M | 3.598 |
| 58) Isobutyl Alcohol | (1) | 7.312 | 41 | 113719 | 198.408 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 70716 | 50.026 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 363960 | 51.141 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 104 | 44327 | 49.386 |
| 60) Benzene | (2) | 7.458 | 78 | 92670 | 3.938 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 62 | 34422 | 4.033 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 98 | 2778 | 3.656 |
| 65) t-Amyl methyl ether | (2) | 7.640 | 73 | 70786 | 3.889 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1157072 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 39551 | 4.055 |
| 69) n-Butanol | (1) | 8.200 | 56 | 174058M | 373.343 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 24066 | 3.904 |
| 72) Methylcyclohexane | (2) | 8.656 | 83 | 42141 | 3.952 |
| 72) Methylcyclohexane | (2) | 8.662 | 98 | 19458 | 4.038 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 24159 | 3.867 |
| 76) Methyl Methacrylate | (2) | 8.754 | 69 | 24907 | 3.722 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 24067M | 190.498 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 15281 | 3.781 |
| 78) Bromodichloromethane | (2) | 9.027 | 83 | 24987 | 3.507 |
| 79) 2-Nitropropane | (2) | 9.289 | 41 | 18676 | 6.828 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 19102 | 3.667 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 32505 | 3.470 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 90449 | 8.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1140440 | 50.777 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 735502 | 50.600 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 60895 | 6.806 |
| 88) Toluene | (3) | 9.946 | 92 | 60301 | 3.981 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 28390 | 3.336 |
| 91) Ethyl Methacrylate | (3) | 10.250 | 69 | 36382 | 3.544 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 23221 | 3.937 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 27200 | 4.035 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 39541 | 3.960 |
| 96) 2-Hexanone | (3) | 10.603 | 43 | 71865 | 8.006 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 18495 | 3.229 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 24101 | 3.756 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 870903 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 32848 | 3.979 |
| 102) Chlorobenzene | (3) | 11.345 | 112 | 68836 | 3.989 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424 | 131 | 18694 | 3.416 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 113841 | 3.896 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 90358 | 7.752 |
| 108) Xylene (Total) | (3) | | 106 | 133771 | 11.550 |
| 107) o-Xylene | (3) | 11.869 | 106 | 43413 | 3.798 |
| 109) Styrene | (3) | 11.881 | 104 | 67012 | 3.532 |
| 110) Bromoform | (3) | 12.045 | 173 | 12403 | 2.914 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 111965 | 3.882 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 17119M | 181.808 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 422813 | 50.070 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 174 | 362466 | 50.370 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 37654M | 3.854 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 103534 | 33.988 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 30120 | 3.818 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 13048 | 3.995 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 135704 | 3.980 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 27714 | 3.950 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 95813 | 3.853 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 28758 | 3.861 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 20259M | 3.811 |
| 125) Pentachloroethane | (4) | 12.909 | 167 | 13157 | 3.273 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 97206 | 3.780 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 123468 | 3.950 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 58178 | 3.865 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 104455 | 3.761 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 476531 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 60456 | 3.902 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.219 | 105 | 101831 | 3.943 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 52685 | 2.973 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 61361 | 3.794 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 64495 | 3.844 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 54765 | 3.918 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 55863 | 3.864 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 52782 | 3.889 |
| 141) Diethylbenzene (total) | (4) | | 100 | 178638 | 11.527 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 7814 | 3.347 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 41158 | 3.886 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.576 | 180 | 38226 | 3.949 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 19432 | 4.085 |
| 148) Naphthalene | (4) | 14.758 | 128 | 117633 | 3.797 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 35190 | 3.999 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 62429 | 3.742 |



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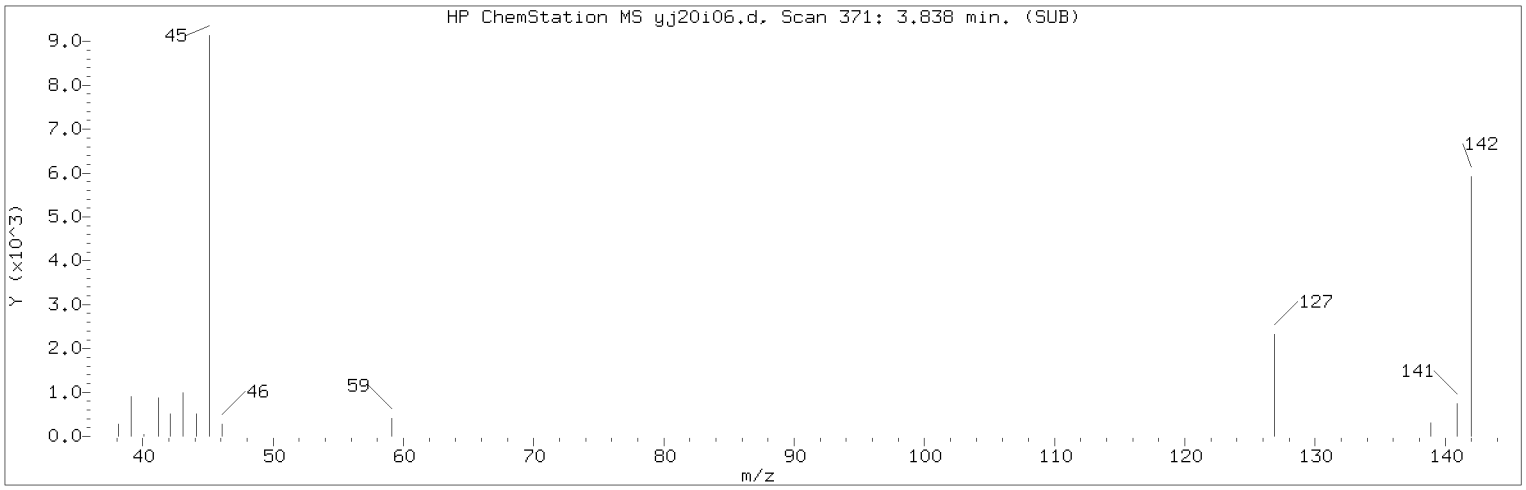
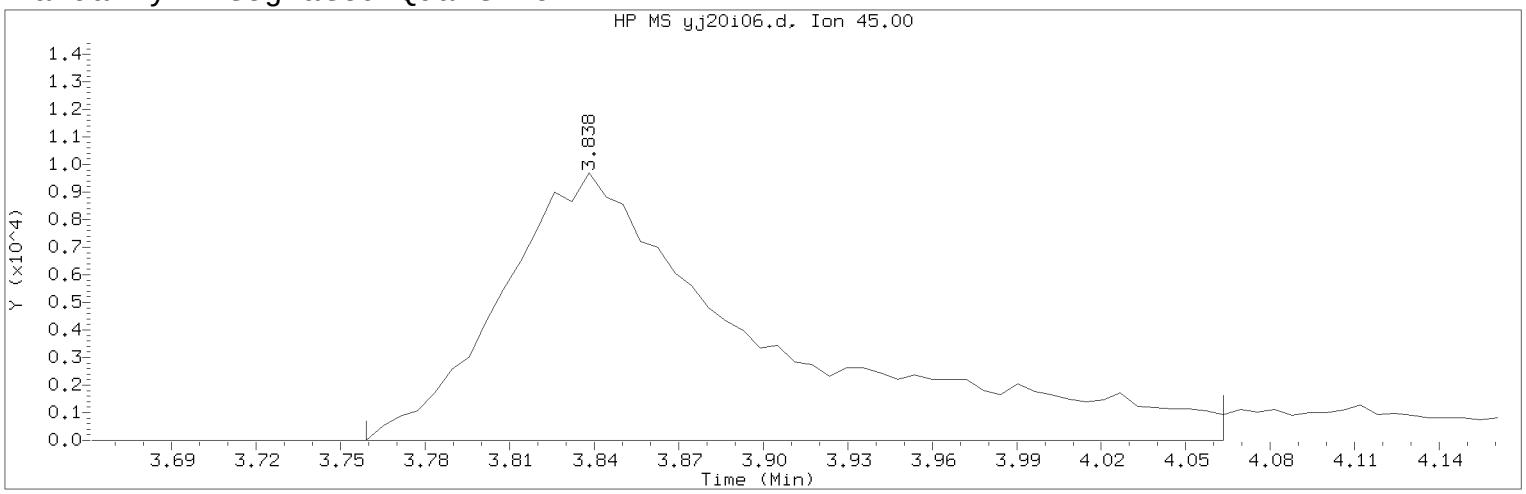
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

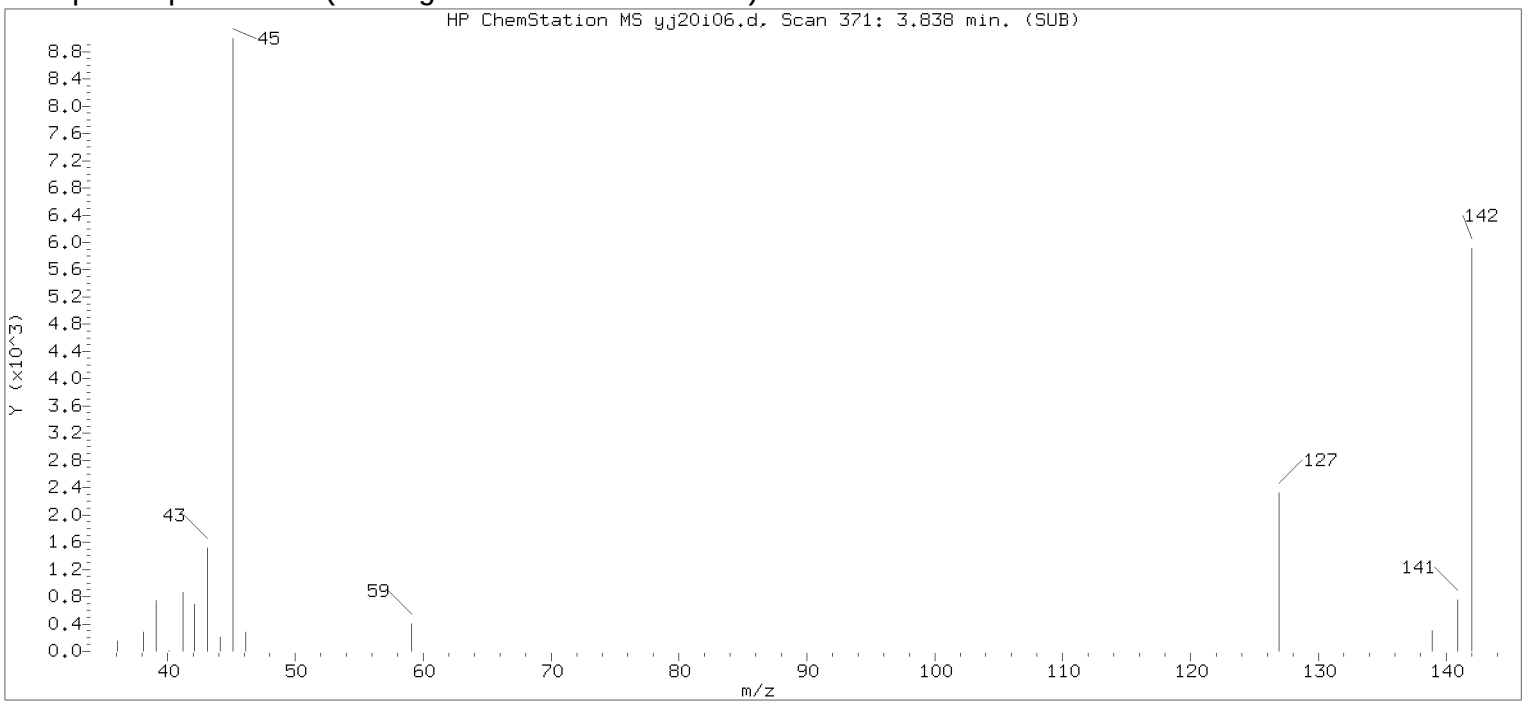
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 371
Retention Time (minutes): 3.838
Quant Ion : 45.00
Area (flag) : 63083M
On-Column Amount (ng) : 80.8499
Integration start scan : 357 Integration stop scan: 407
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

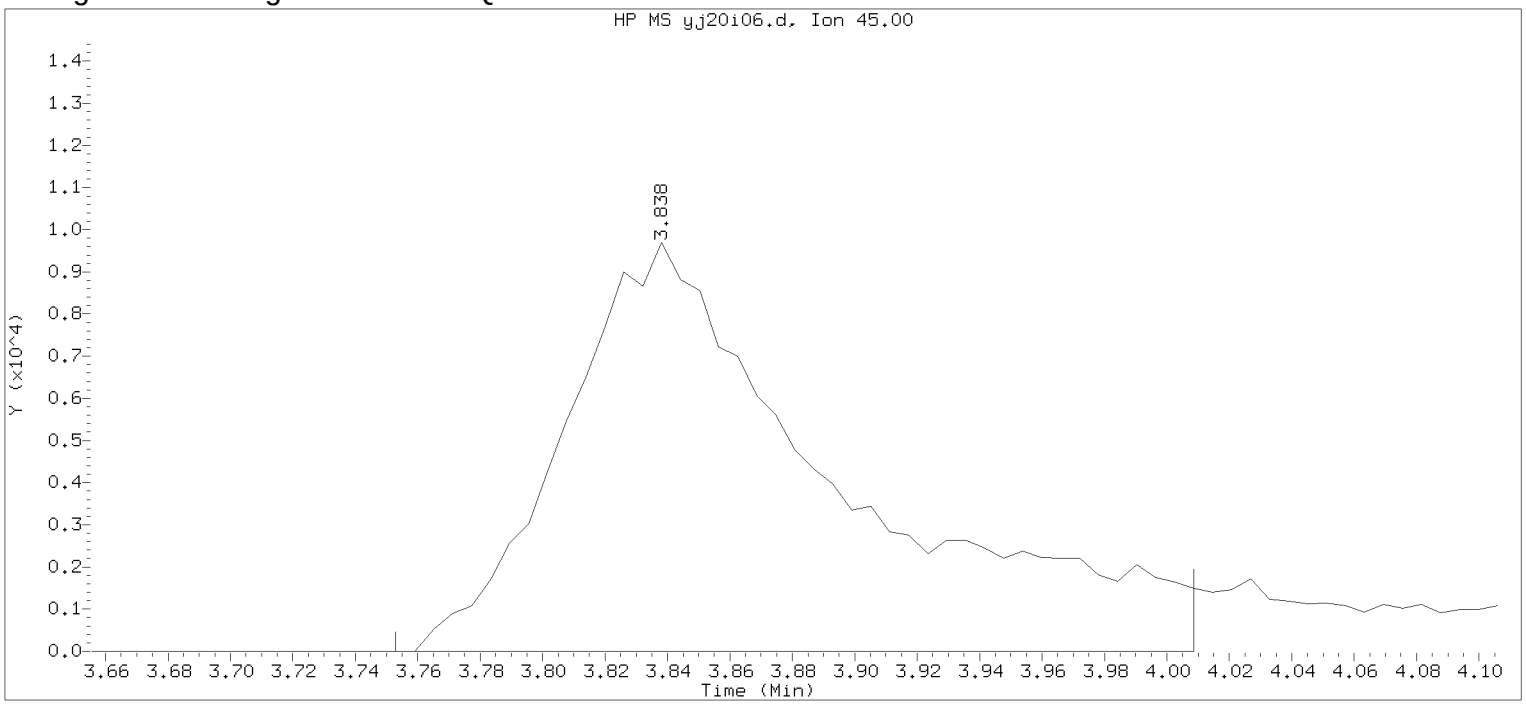
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

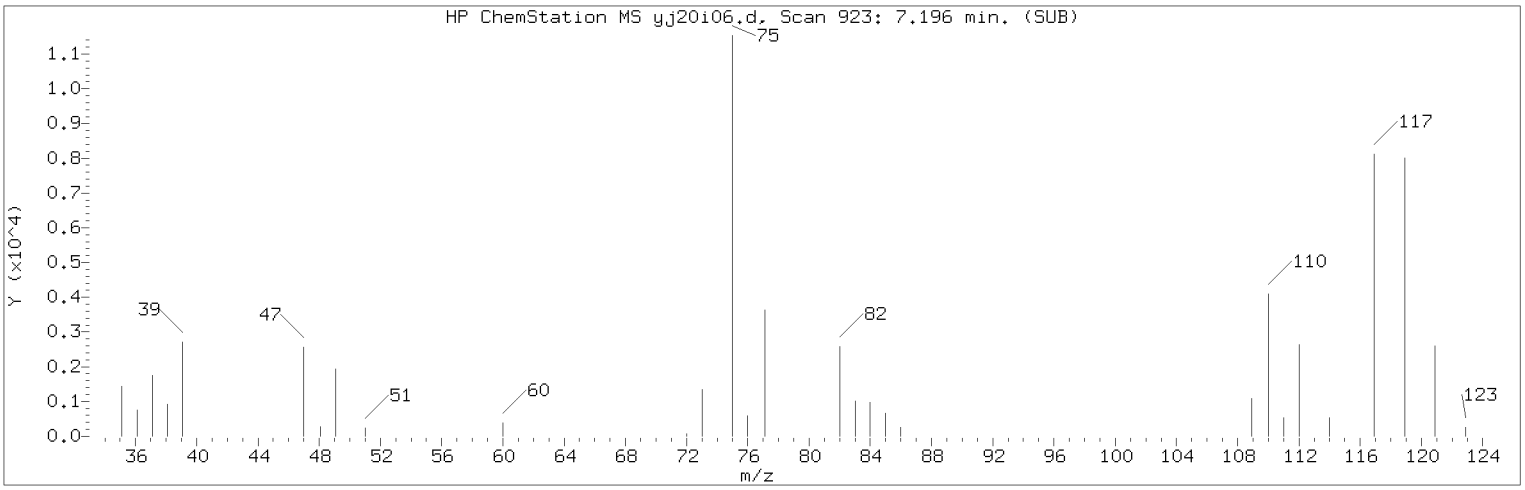
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

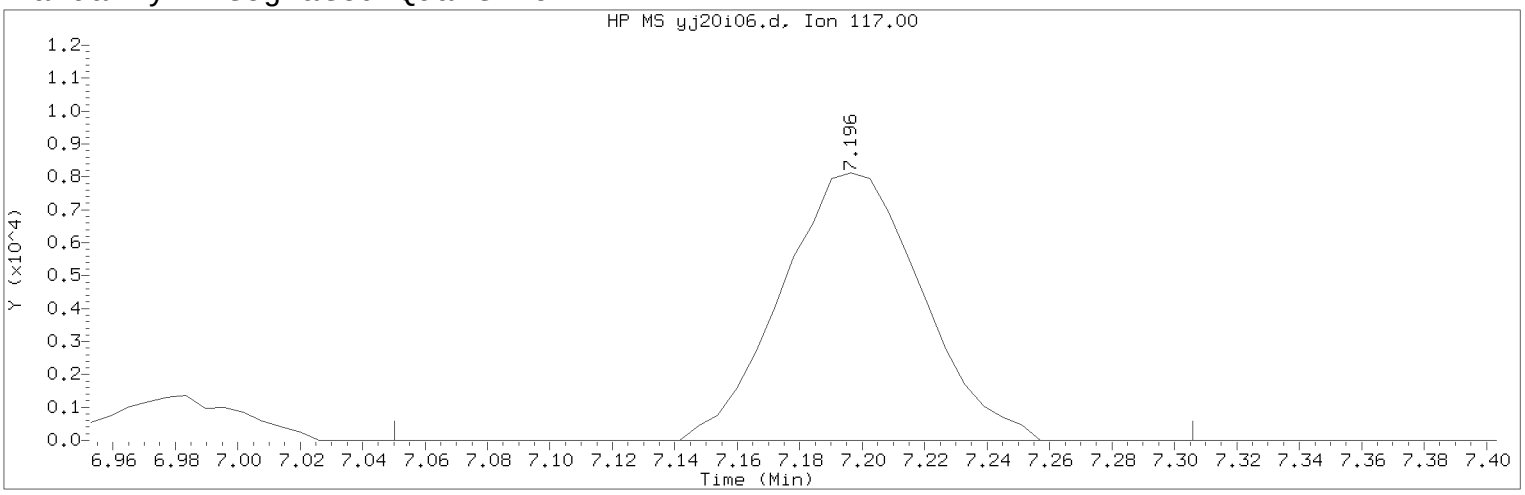
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 371
Retention Time (minutes): 3.838
Quant Ion : 45.00
Area : 58693
On-column Amount (ng) : 81.4095
Integration start scan : 356 Integration stop scan: 398
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

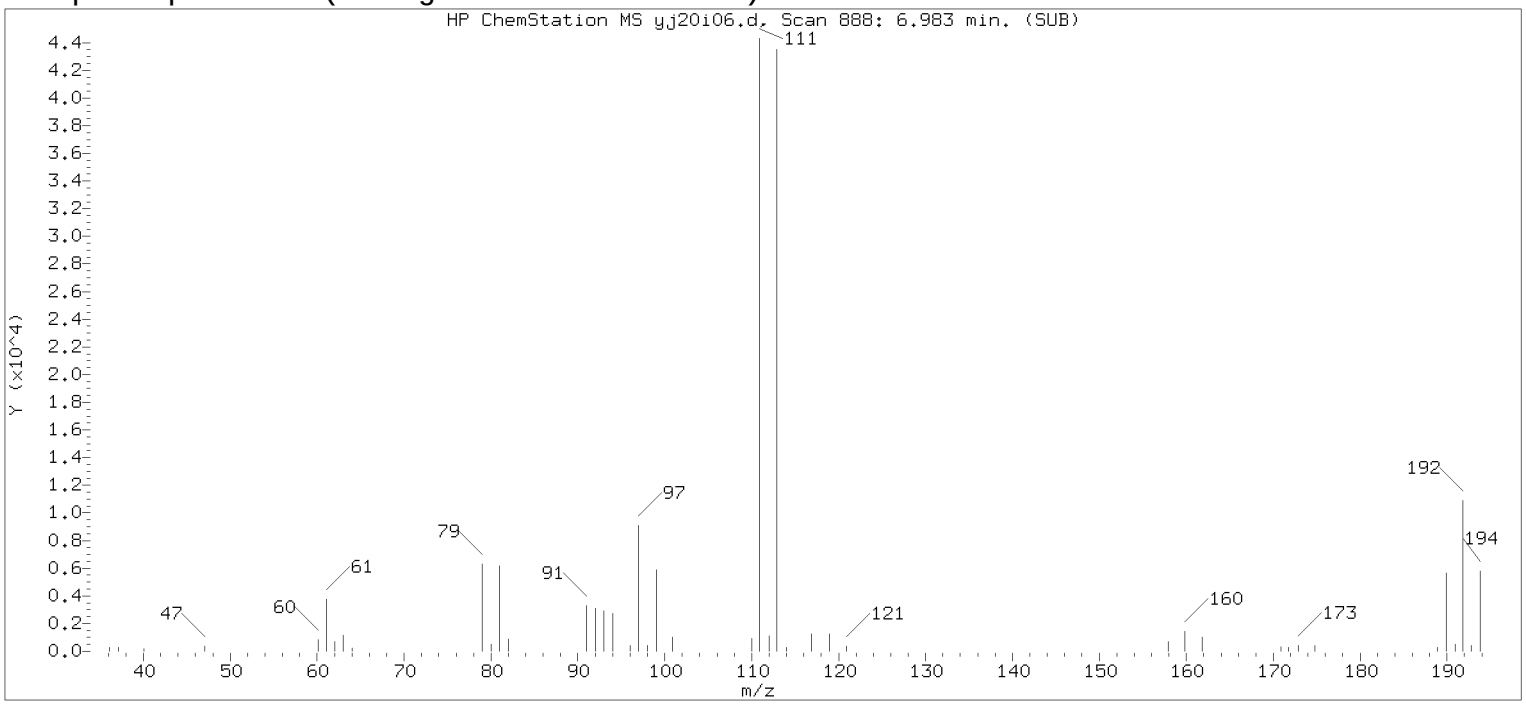
Compound Number : 56
Compound Name : Carbon Tetrachloride
Scan Number : 923
Retention Time (minutes): 7.196
Quant Ion : 117.00
Area (flag) : 25223M
On-Column Amount (ng) : 3.5984
Integration start scan : 898 Integration stop scan: 940
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

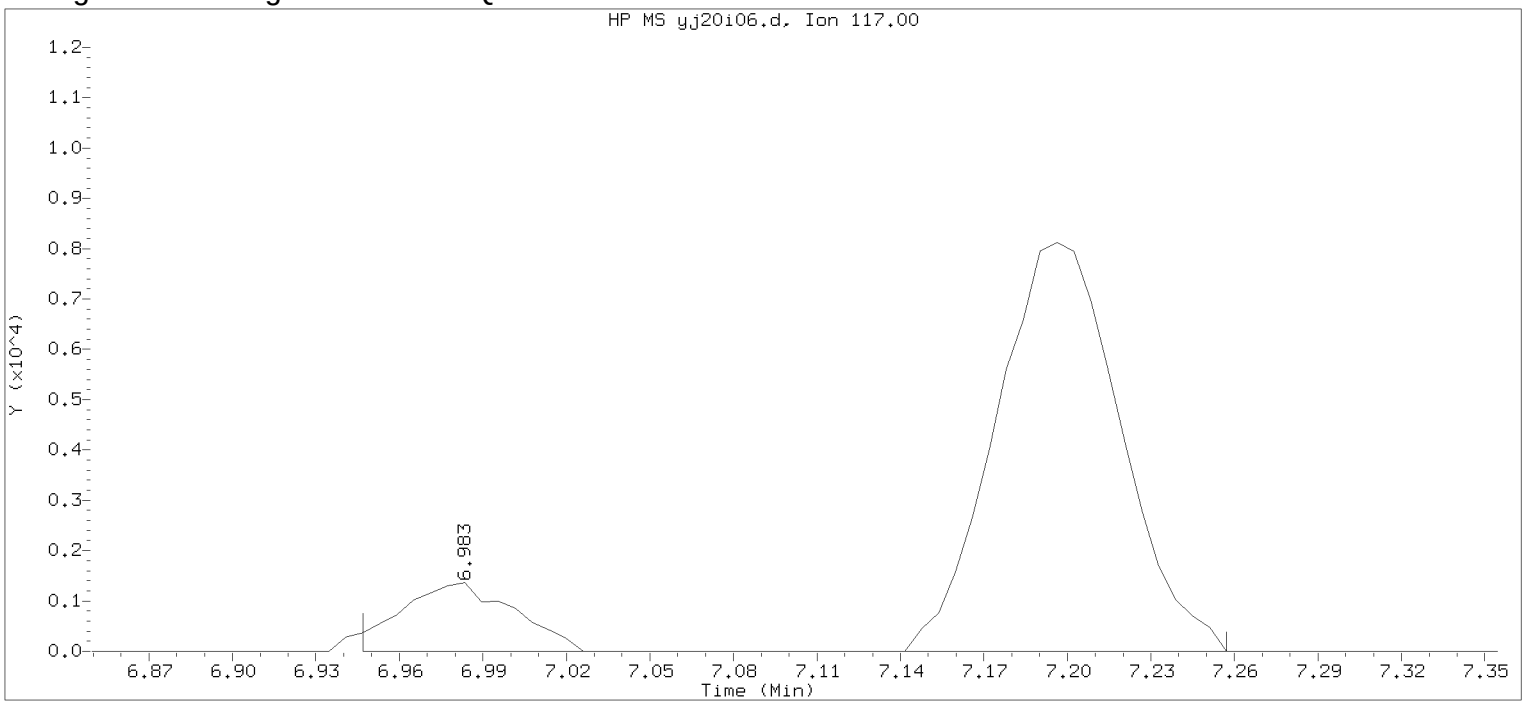
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

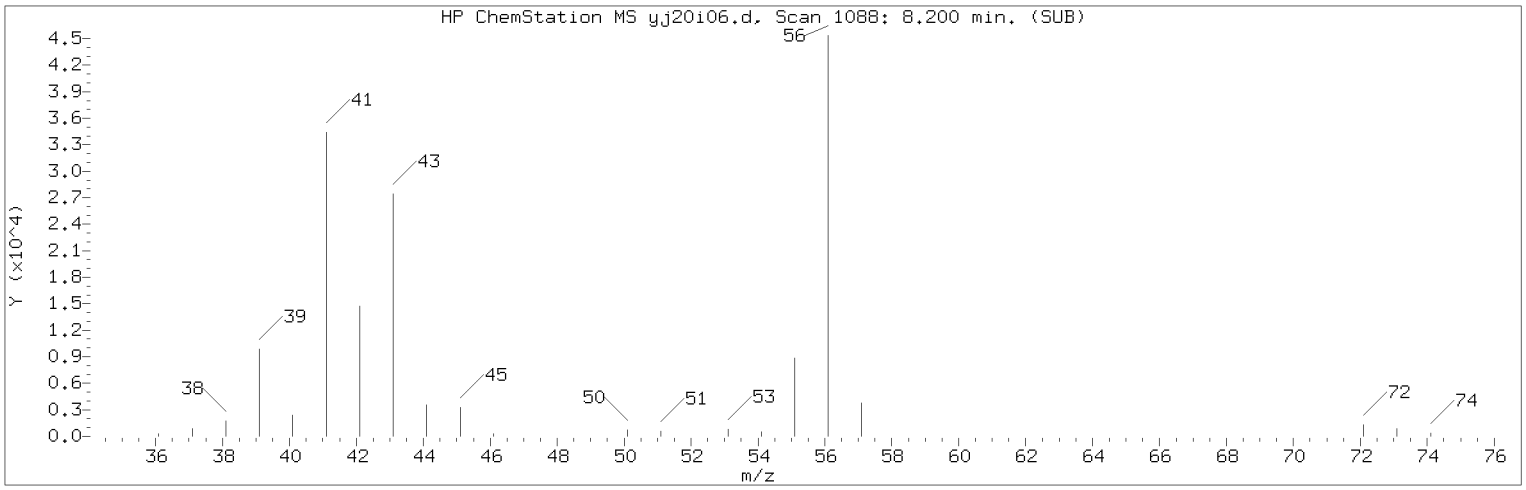
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

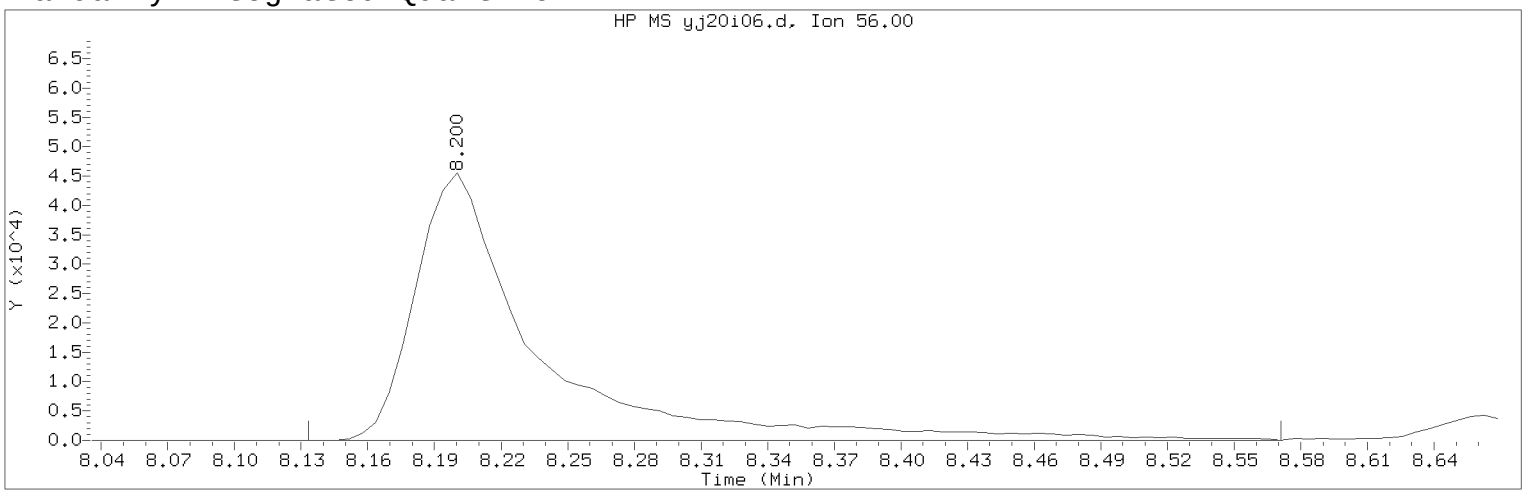
Compound Number : 56
Compound Name : Carbon Tetrachloride
Scan Number : 888
Retention Time (minutes): 6.983
Quant Ion : 117.00
Area : 29019
On-column Amount (ng) : 4.0487
Integration start scan : 881 Integration stop scan: 932
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKB89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

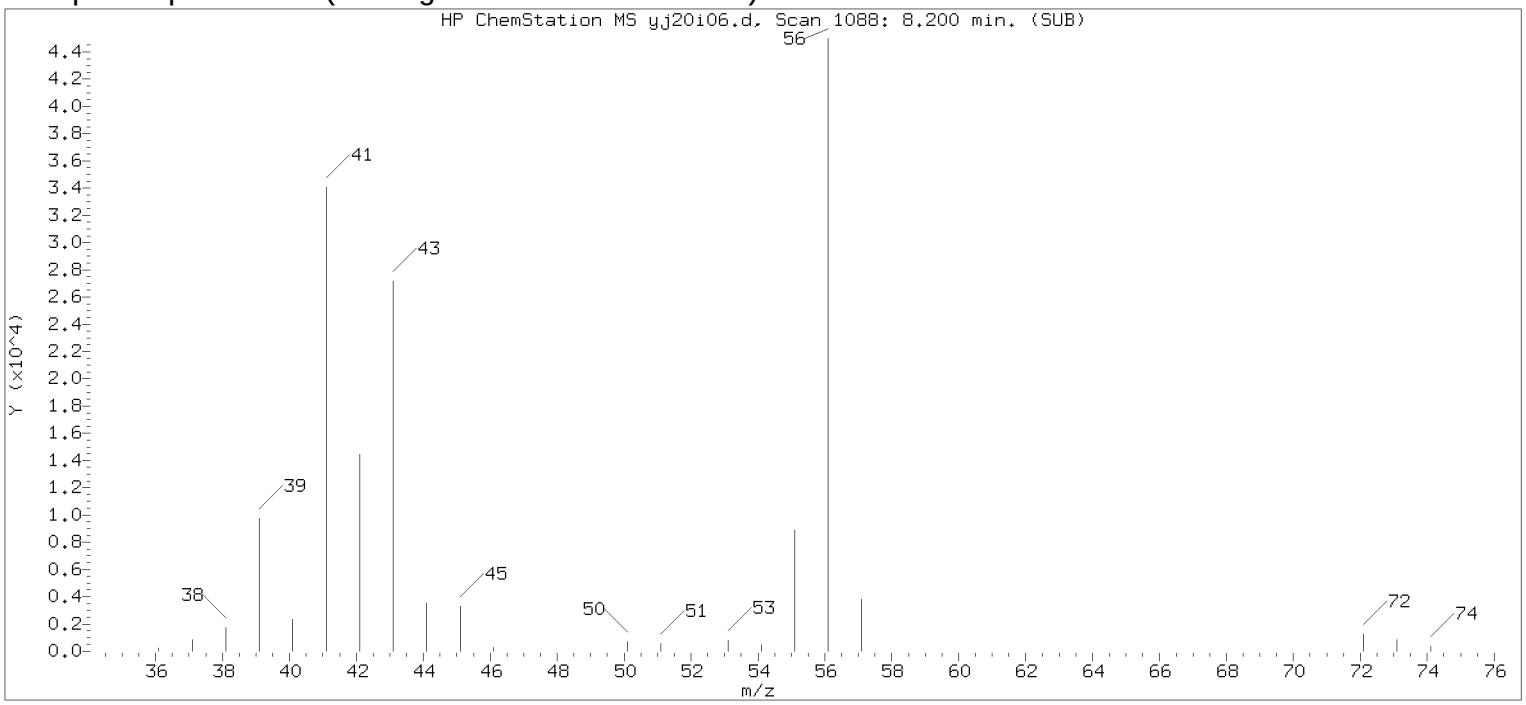
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1088
Retention Time (minutes): 8.200
Quant Ion : 56.00
Area (flag) : 174058M
On-Column Amount (ng) : 373.3426
Integration start scan : 1076 Integration stop scan: 1148
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

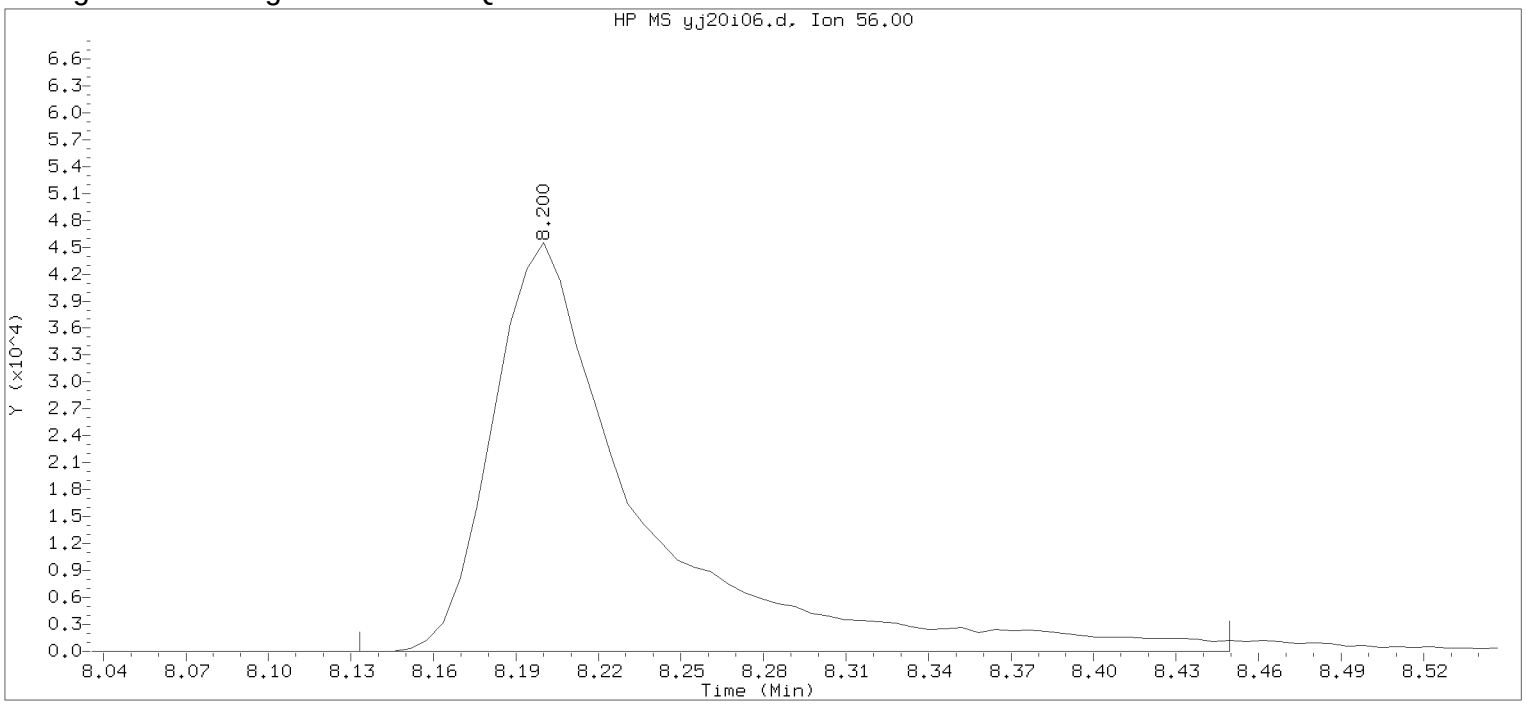
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

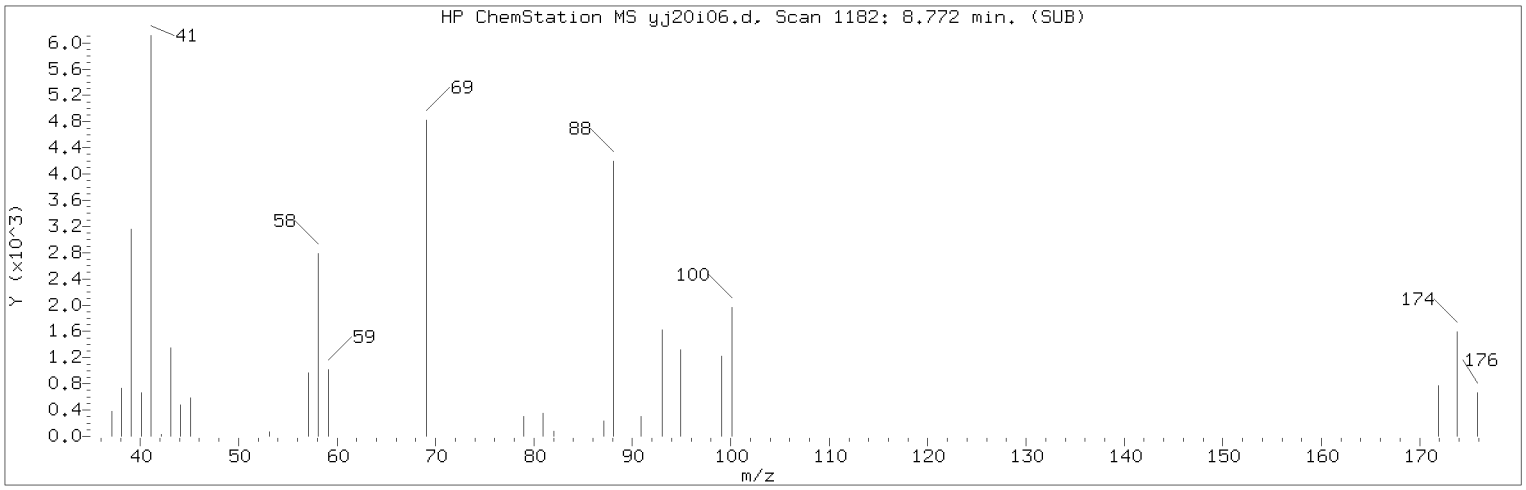
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

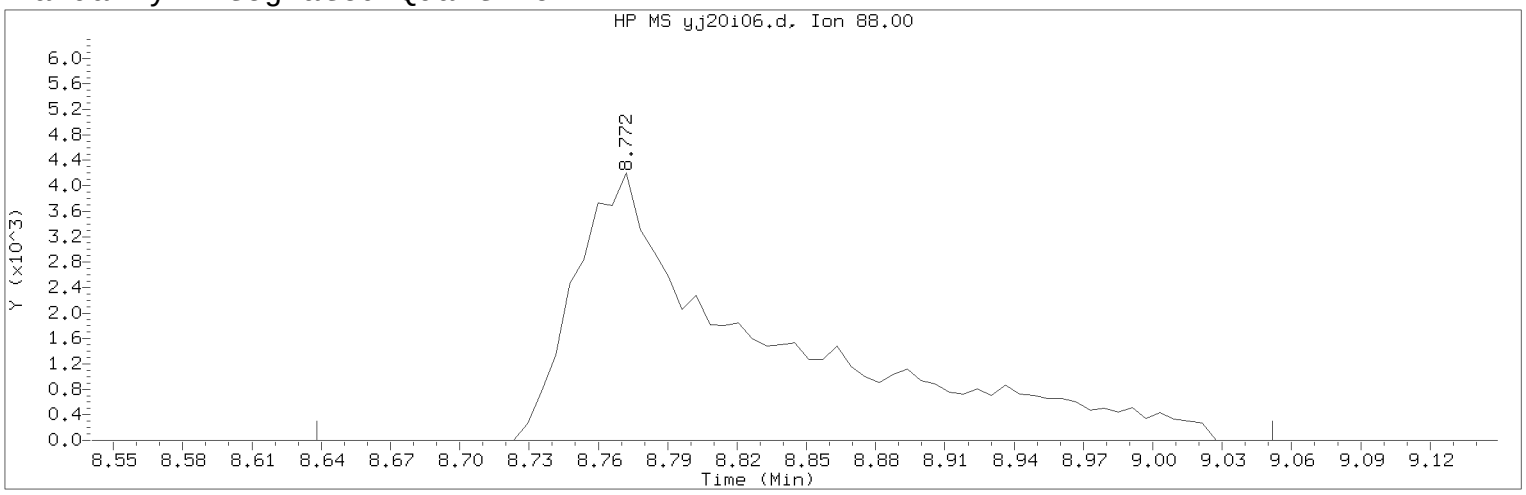
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1088
Retention Time (minutes): 8.200
Quant Ion : 56.00
Area : 169725
On-column Amount (ng) : 371.6645
Integration start scan : 1076 Integration stop scan: 1128
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

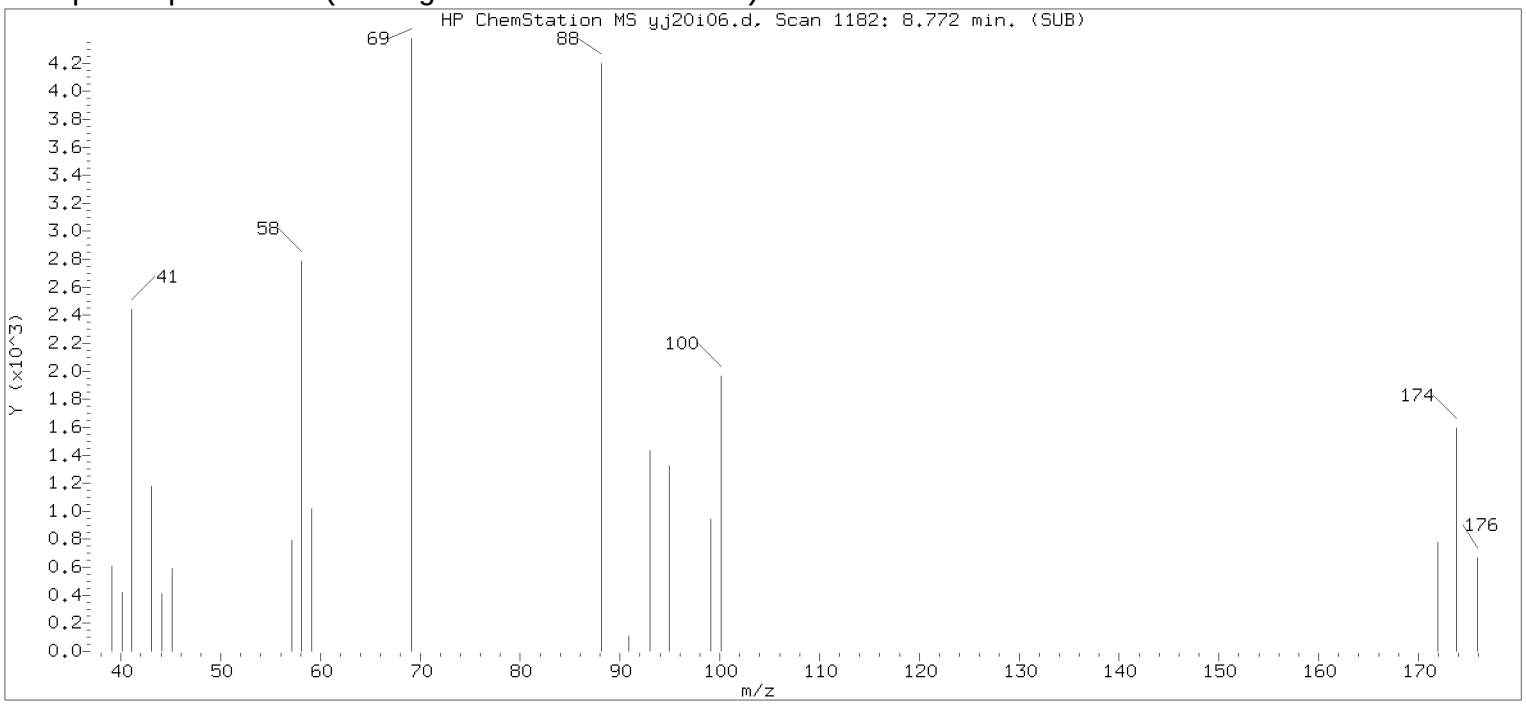
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area (flag) : 24067M
On-Column Amount (ng) : 190.4979
Integration start scan : 1159 Integration stop scan: 1227
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

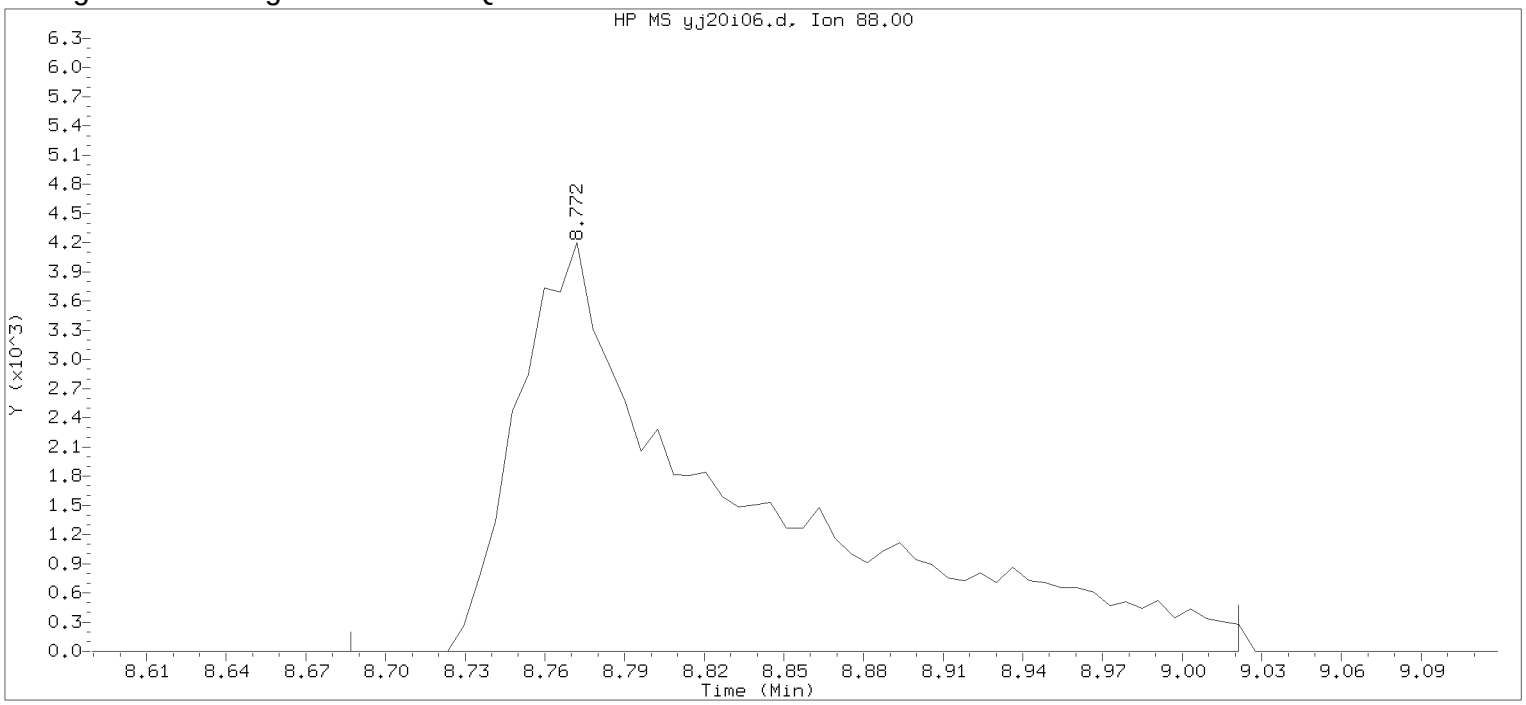
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

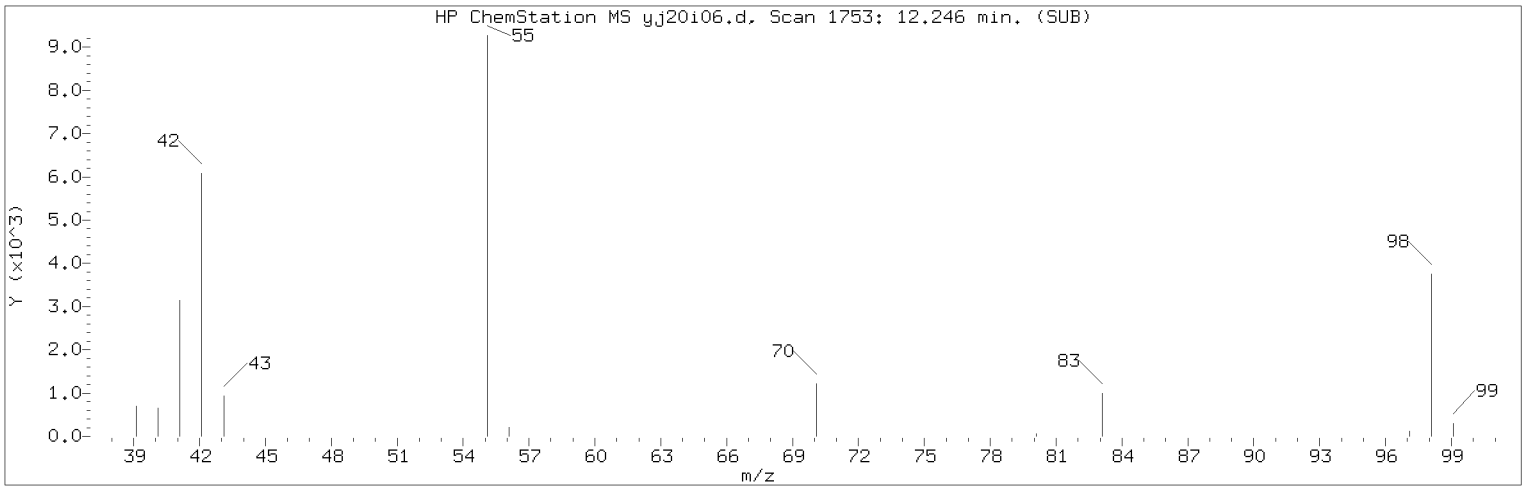
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

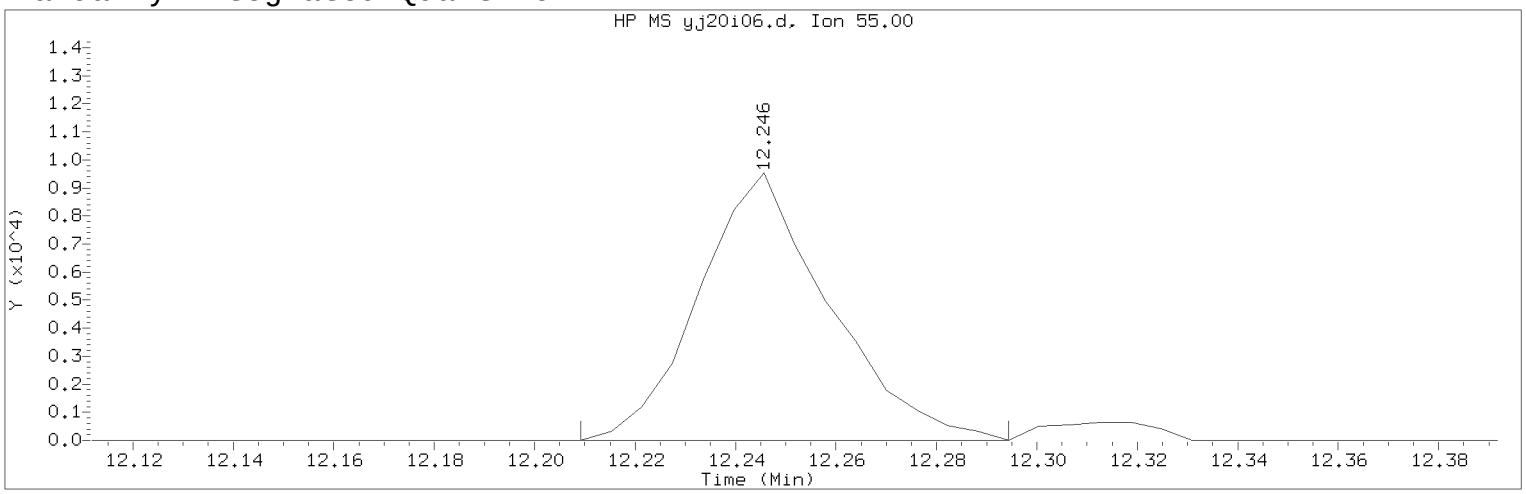
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area : 24016
On-column Amount (ng) : 192.9134
Integration start scan : 1167 Integration stop scan: 1222
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

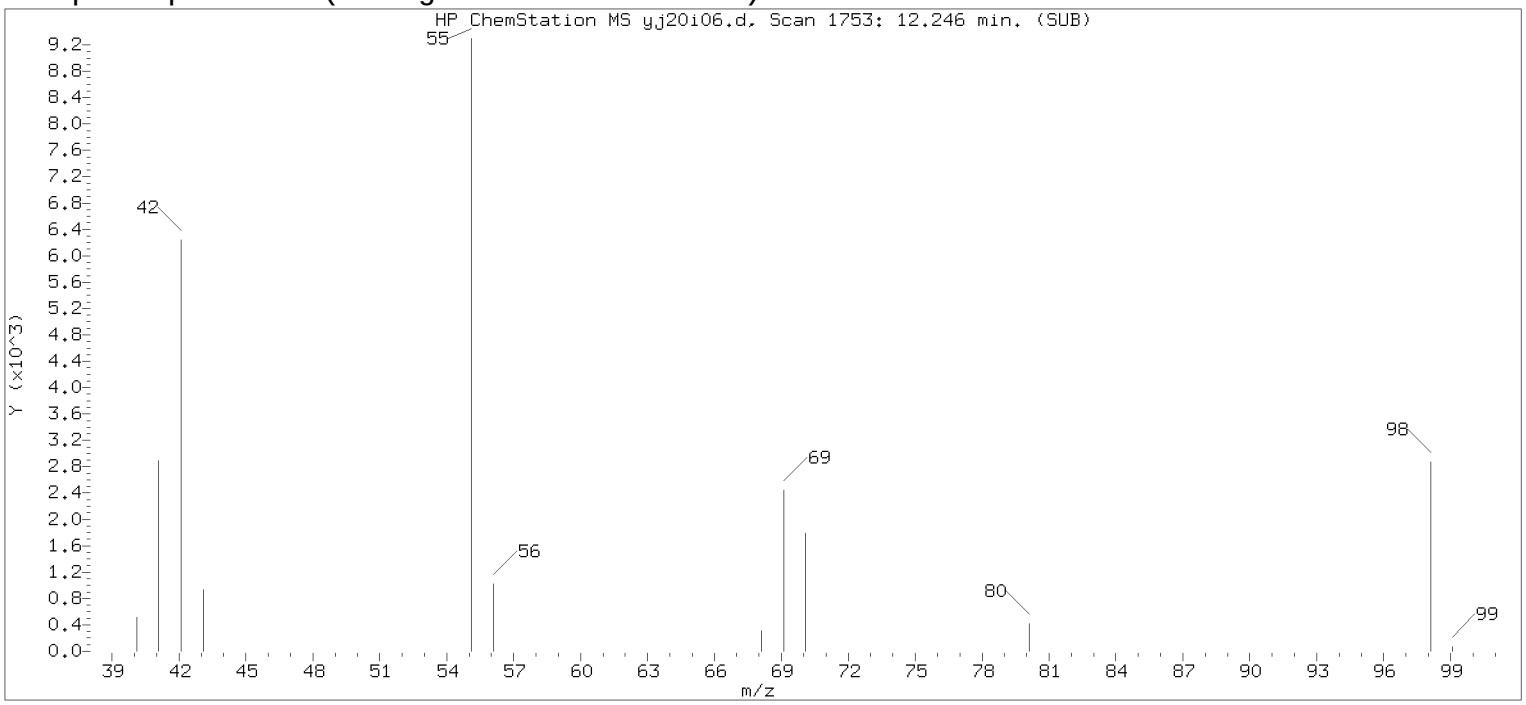
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 17119M
On-Column Amount (ng) : 181.8076
Integration start scan : 1746 Integration stop scan: 1760
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

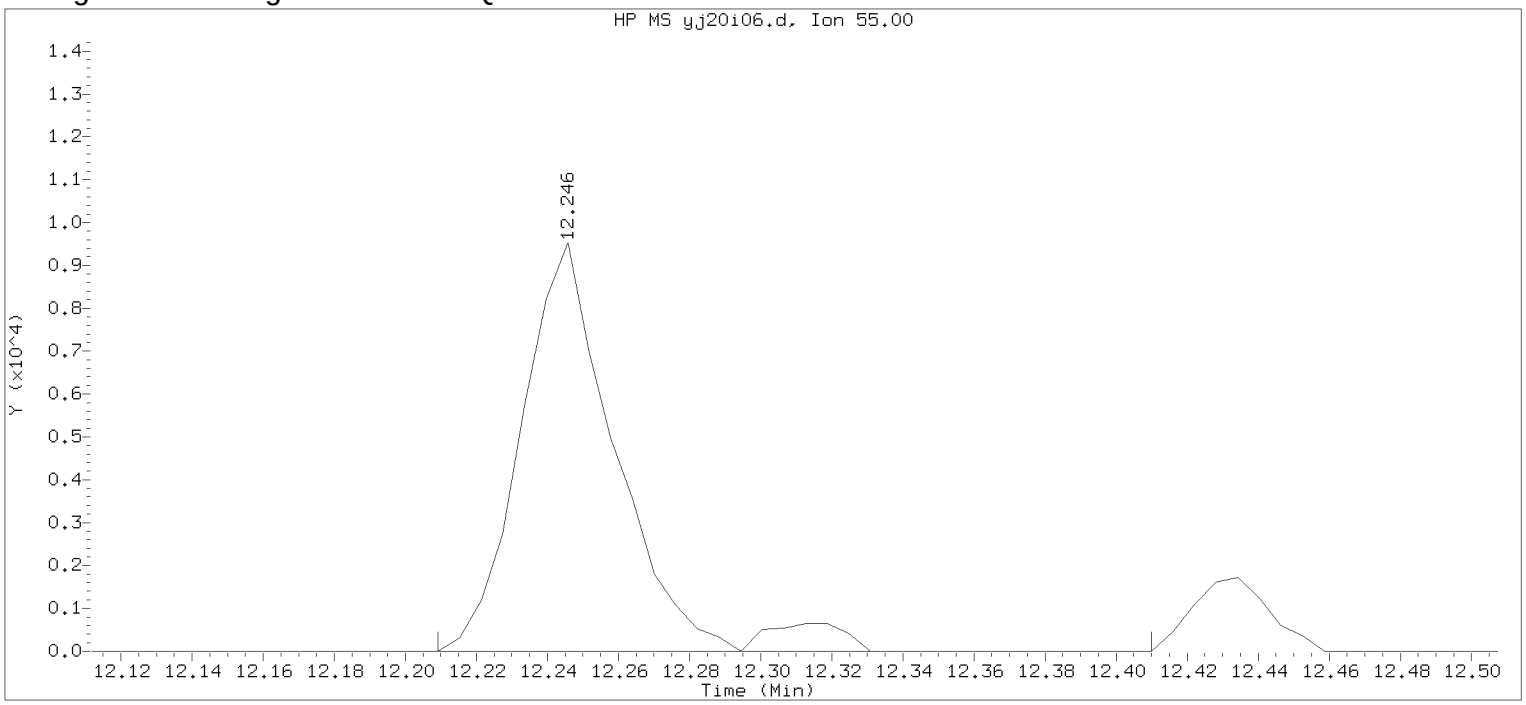
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

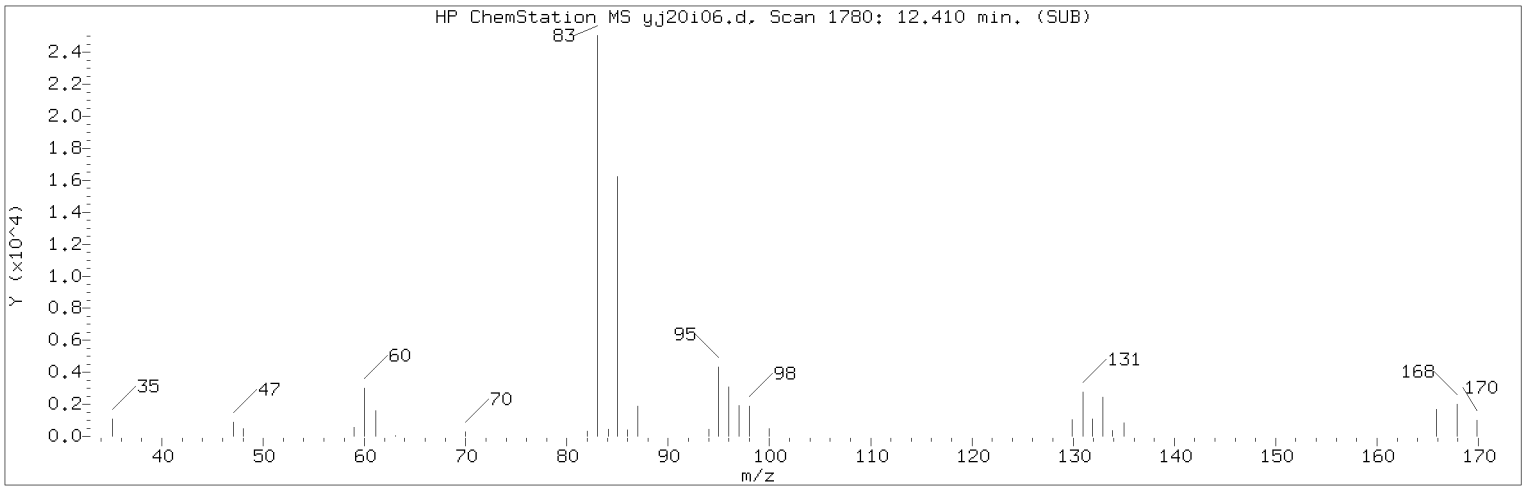
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

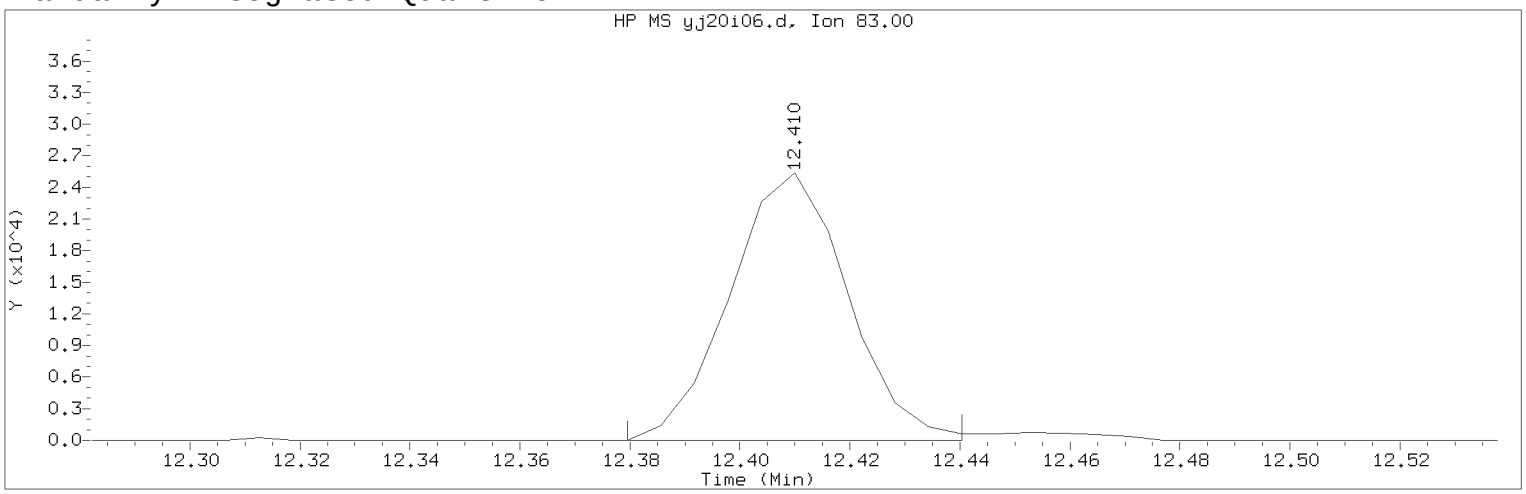
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 18127
On-column Amount (ng) : 187.7575
Integration start scan : 1746 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

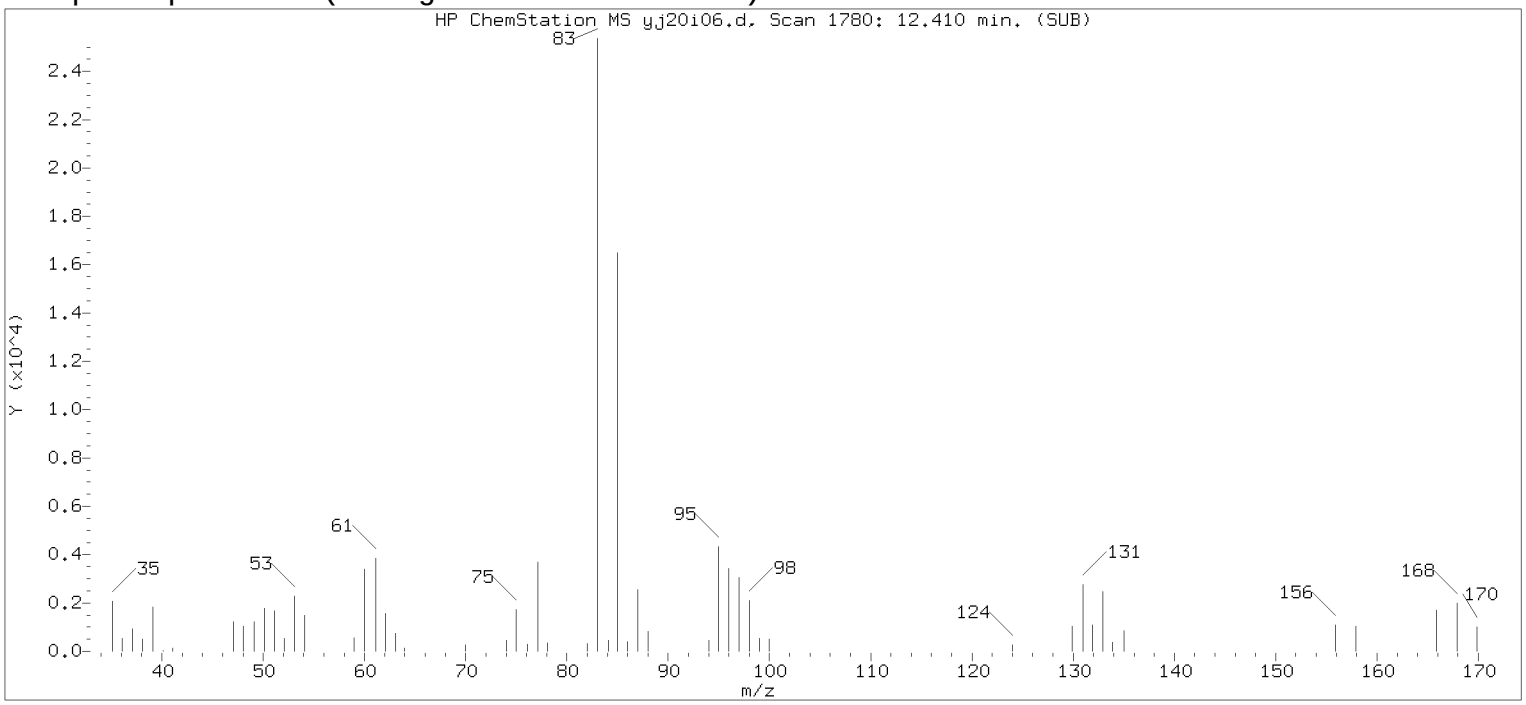
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 37654M
On-Column Amount (ng) : 3.8541
Integration start scan : 1774 Integration stop scan: 1784
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

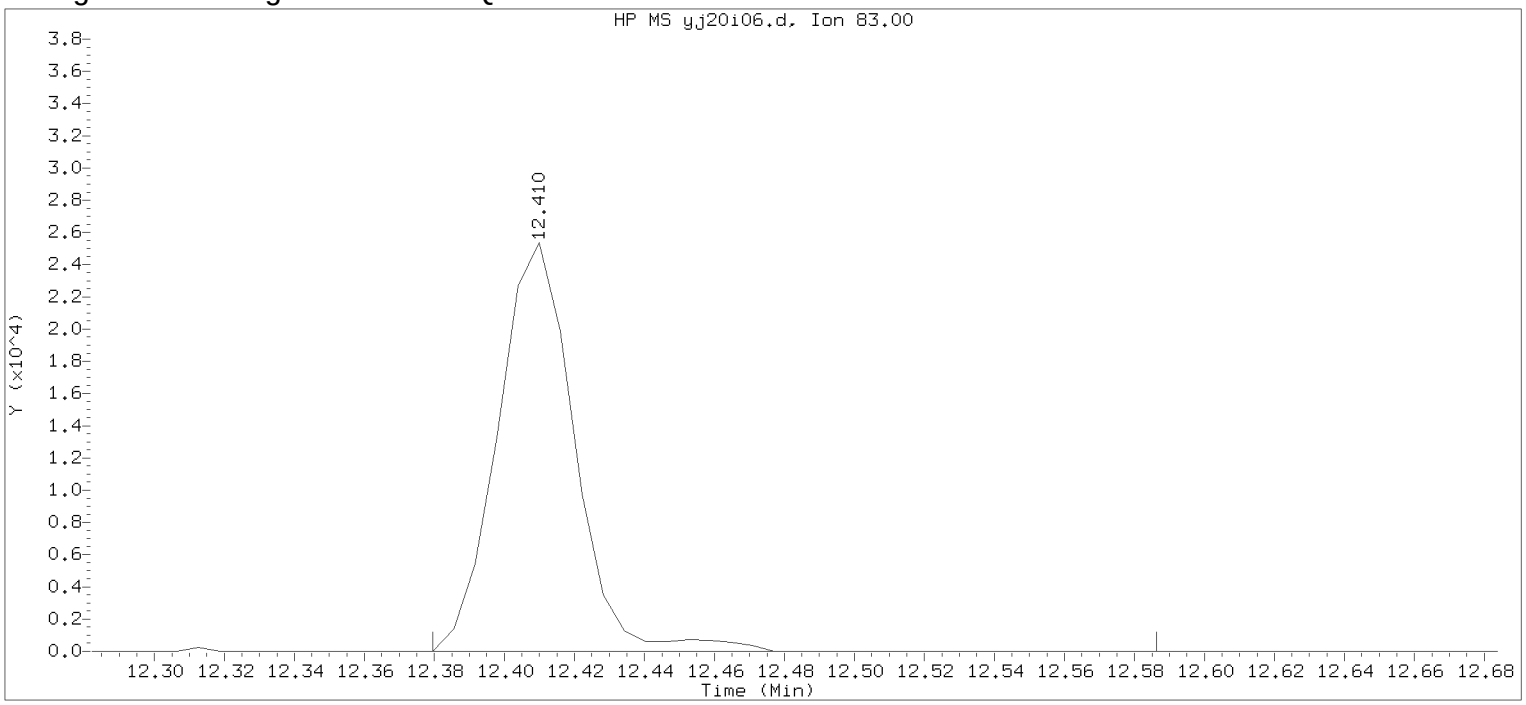
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

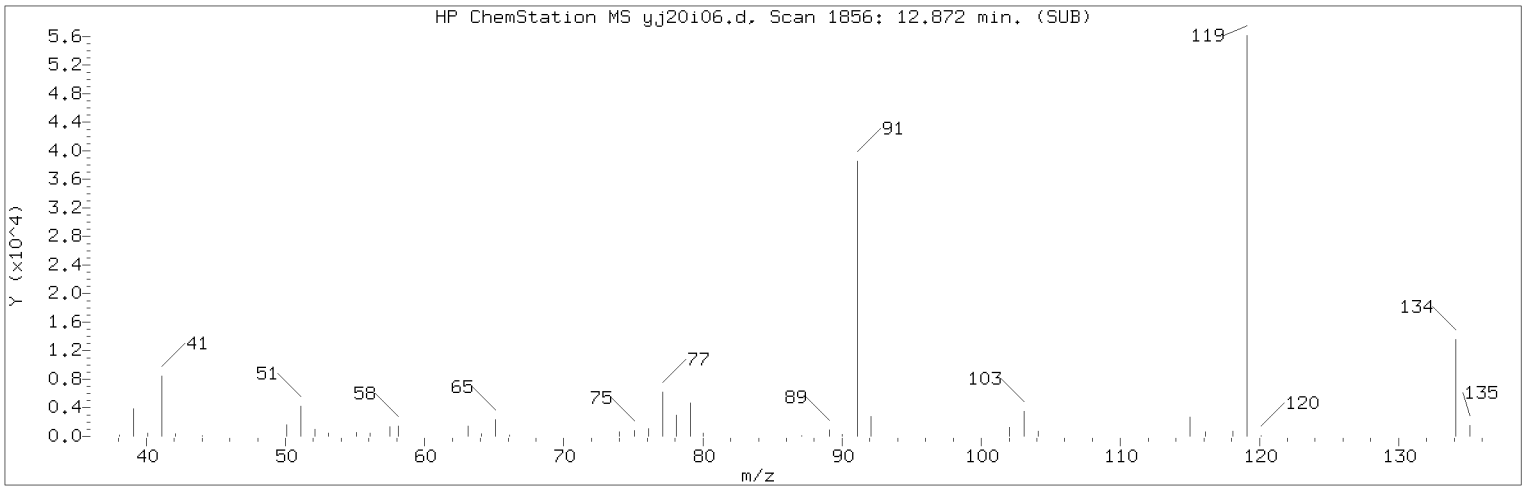
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

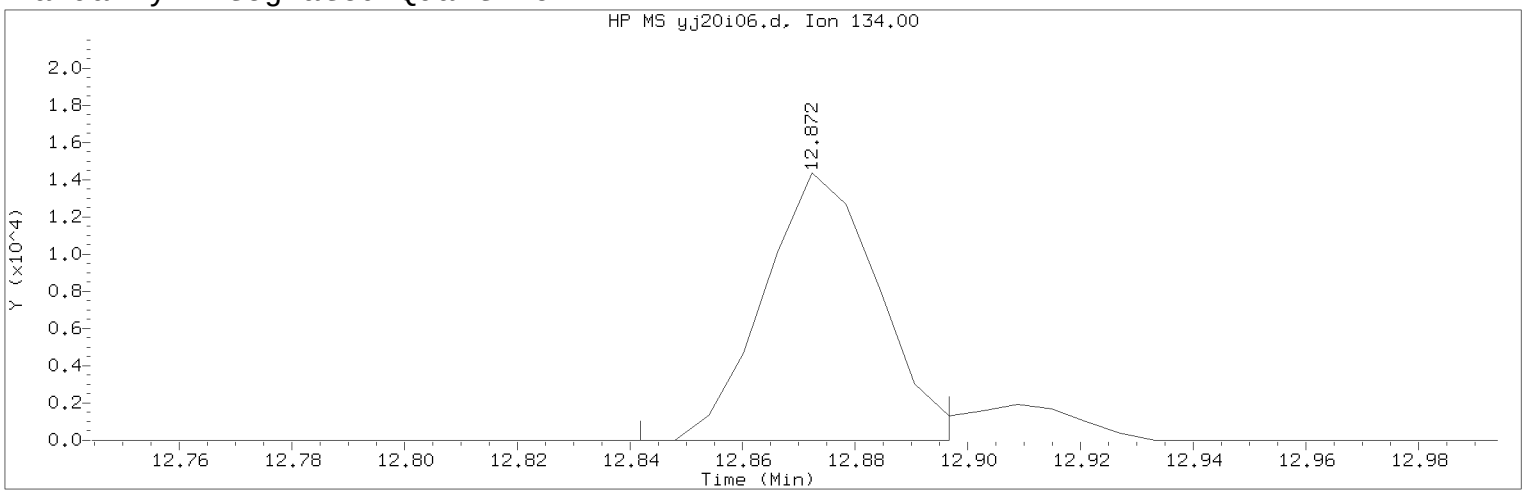
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 38720
On-column Amount (ng) : 3.9034
Integration start scan : 1774 Integration stop scan: 1808
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:30
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD004 Lab Sample ID: VSTD004

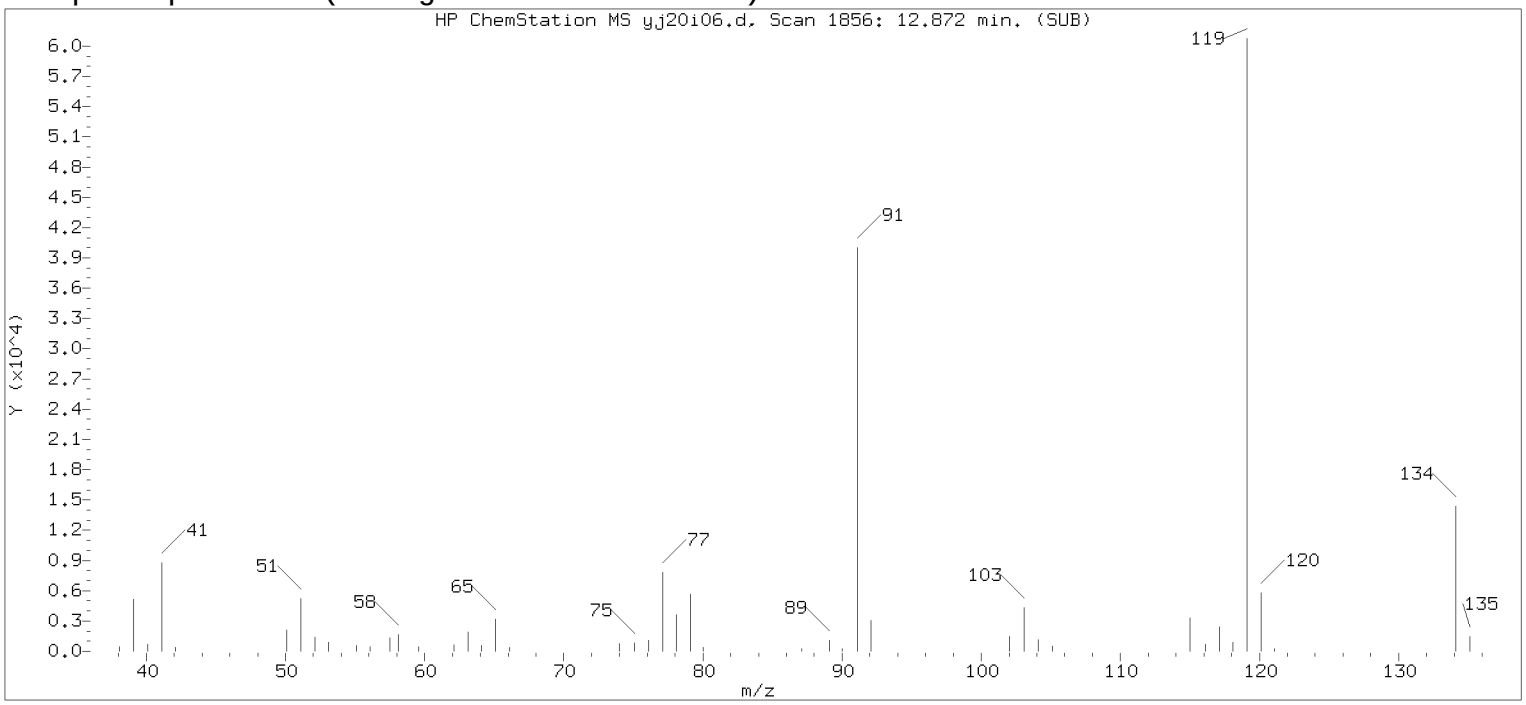
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 20259M
On-Column Amount (ng) : 3.8107
Integration start scan : 1850 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

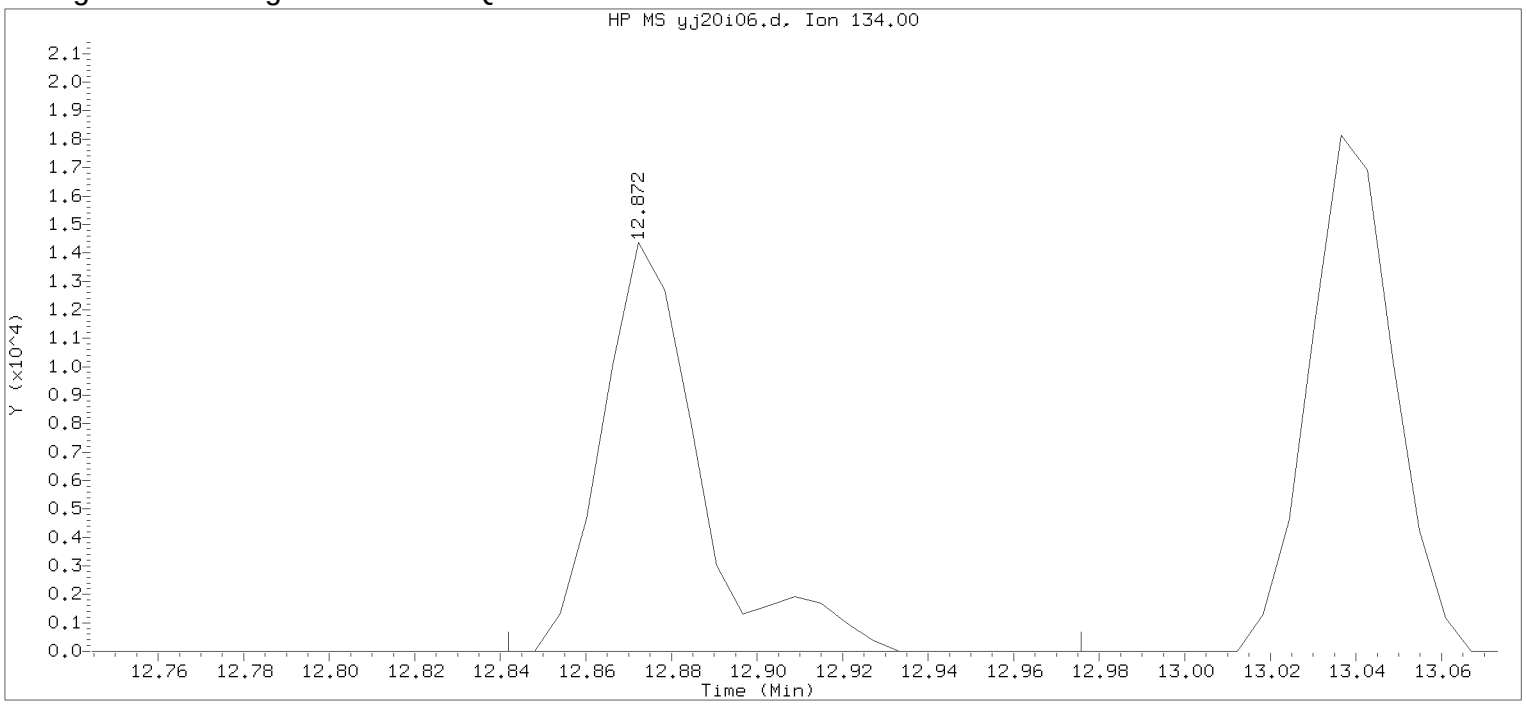
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



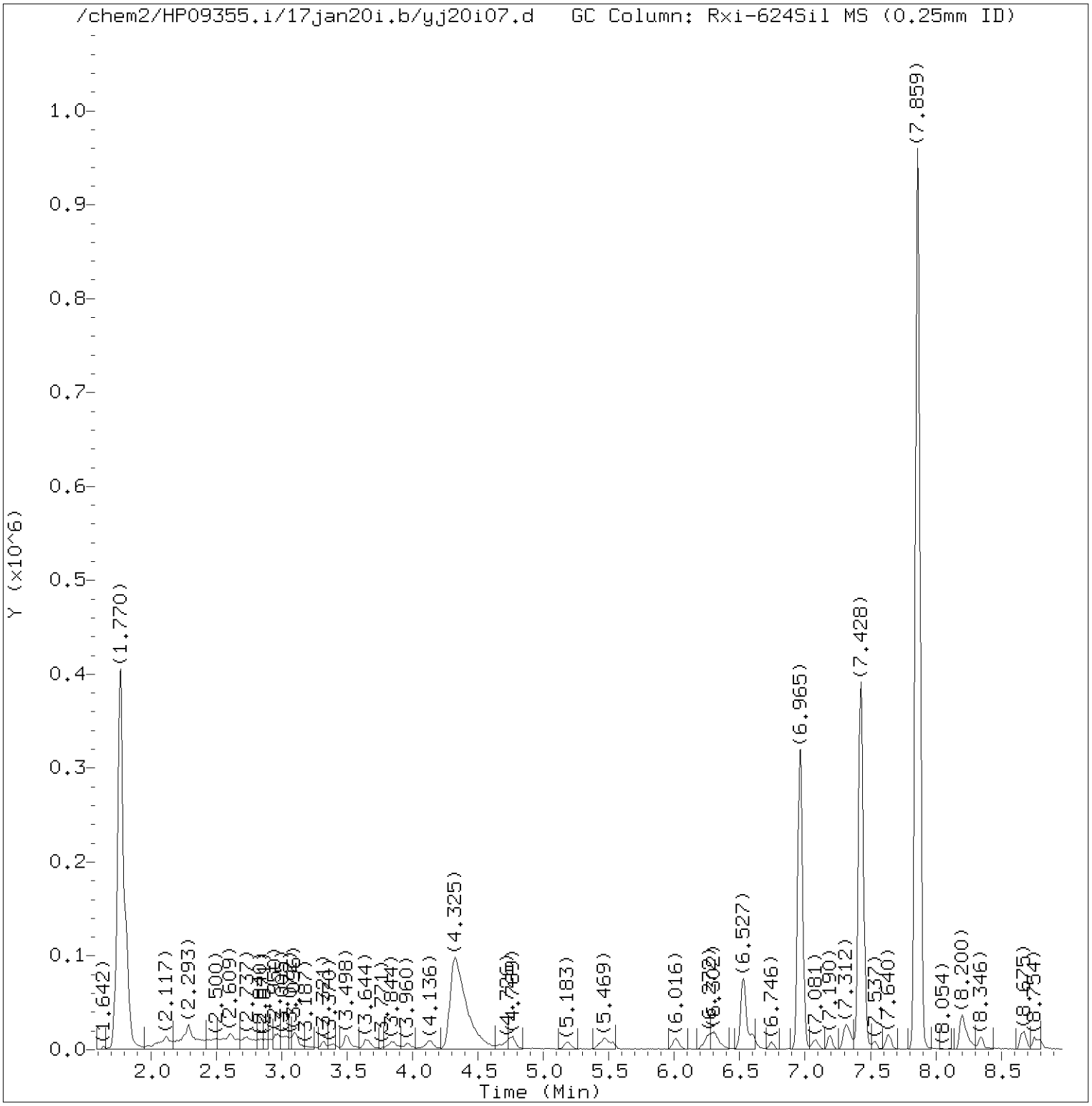

Data File: /chem2/HP09355.i/17jan20i.b/yj20i06.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:07 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:23
Date, time and analyst ID of latest file update: 20-Jan-2017 11:23 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 22665
On-column Amount (ng) : 4.0001
Integration start scan : 1850 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231




Total Ion Chromatogram (TIC)

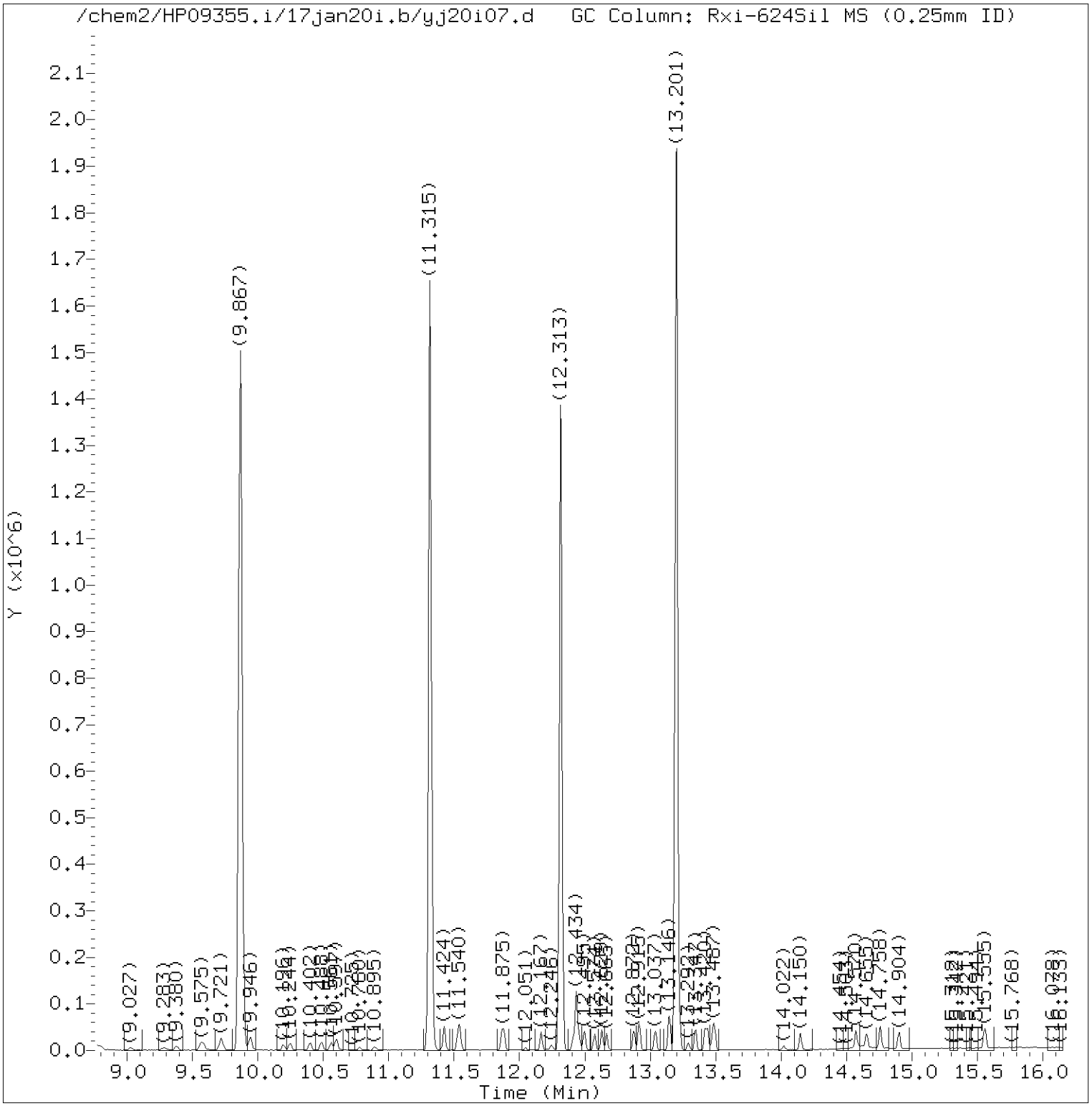
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 5287 | 0.729 |
| 4) Chloromethane | (2) | 2.117 | 50 | 6933 | 0.888 |
| 6) Vinyl Chloride | (2) | 2.256 | 62 | 6330 | 0.863 |
| 5) 1,3-Butadiene | (2) | 2.293 | 39 | 15293 | 1.970 |
| 8) Bromomethane | (2) | 2.609 | 94 | 4892 | 0.940 |
| 9) Chloroethane | (2) | 2.731 | 64 | 3913 | 0.922 |
| 10) Dichlorofluoromethane | (2) | 2.956 | 67 | 9329 | 0.964 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 6671 | 0.773 |
| 11) n-Pentane | (2) | 3.108 | 43 | 12337 | 1.277 |
| 14) Ethyl ether | (2) | 3.315 | 59 | 4843 | 0.912 |
| 15) Freon 123a | (2) | 3.394 | 67 | 4949 | 0.816 |
| 16) Acrolein | (1) | 3.498 | 56 | 21683 | 9.355 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 3441M | 0.790 |
| 17) 1,1-Dichloroethene | (2) | 3.625 | 63 | 1589 | 0.709 |
| 18) Acetone | (1) | 3.668 | 58 | 1761 | 1.598 |
| 19) Freon 113 | (2) | 3.668 | 101 | 2999 | 0.669 |
| 21) 2-Propanol | (1) | 3.838 | 45 | 19608M | 22.317 |
| 22) Methyl Iodide | (2) | 3.856 | 142 | 6925 | 0.836 |
| 23) Carbon Disulfide | (2) | 3.960 | 76 | 10157 | 0.741 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 10469 | 1.238 |
| 25) Allyl Chloride | (2) | 4.136 | 41 | 8820M | 0.957 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.325 | 65 | 380396 | 250.000 |
| 28) Methylene Chloride | (2) | 4.331 | 84 | 5146 | 0.933 |
| 30) t-Butyl alcohol | (1) | 4.440 | 59 | 39355 | 22.751 |
| 31) Acrylonitrile | (2) | 4.678 | 53 | 3563 | 0.878 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.739 | 73 | 16651 | 0.918 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 4287 | 0.813 |
| 34) n-Hexane | (2) | 5.189 | 57 | 6105 | 0.739 |
| 36) 1,1-Dichloroethane | (2) | 5.420 | 63 | 8101 | 0.851 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 17616 | 0.923 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.529 | 53 | 6615 | 0.738 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 16382 | 0.917 |
| 44) 2-Butanone | (2) | 6.223 | 43 | 13056 | 2.070 |
| 42) cis-1,2-Dichloroethene | (2) | 6.253 | 96 | 5170M | 0.853 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 5704 | 0.763 |
| 47) Propionitrile | (1) | 6.302 | 54 | 34481 | 17.736 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 38804 | 9.010 |
| 50) Tetrahydrofuran | (1) | 6.594 | 71 | 2952 | 1.693 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 49) Bromochloromethane | (2) | 6.594 | 128 | 2630 | 0.822 |
| 51) Chloroform | (2) | 6.746 | 83 | 8084 | 0.843 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 9457 | 1.666 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 264722 | 49.165 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 111 | 267810 | 48.600 |
| 53) 1,1,1-Trichloroethane | (2) | 6.983 | 97 | 6337 | 0.790 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 7661 | 0.784 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 6390 | 0.796 |
| 54) Cyclohexane | (2) | 7.075 | 69 | 2106 | 0.709 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 6333 | 0.817 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 4823 | 0.722 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 31831 | 50.247 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.421 | 102 | 70967 | 50.268 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 65 | 366827 | 51.656 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 104 | 44286 | 49.448 |
| 60) Benzene | (2) | 7.458 | 78 | 20663 | 0.895 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 8009 | 0.948 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 98 | 250 | 0.365 |
| 65) t-Amyl methyl ether | (2) | 7.640 | 73 | 16226 | 0.907 |
| 66)*Fluorobenzene | (2) | 7.859 | 96 | 1154548 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 8337 | 0.857 |
| 69) n-Butanol | (1) | 8.200 | 56 | 41321 | 82.585 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 4976 | 0.832 |
| 72) Methylcyclohexane | (2) | 8.656 | 83 | 7944 | 0.747 |
| 72) Methylcyclohexane | (2) | 8.656 | 98 | 3429 | 0.713 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 5071 | 0.836 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 5551 | 0.831 |
| 75) 1,4-Dioxane | (1) | 8.778 | 88 | 6154 | 44.863 |
| 74) Dibromomethane | (2) | 8.790 | 93 | 3590 | 0.904 |
| 78) Bromodichloromethane | (2) | 9.027 | 83 | 5275 | 0.770 |
| 79) 2-Nitropropane | (2) | 9.283 | 41 | 4548 | 1.707 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 4374 | 0.842 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 6569 | 0.734 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 21547 | 1.922 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1142276 | 50.541 |
| 83)$Toluene-d8 | (3) | 9.867 | 100 | 734492 | 50.306 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 12795 | 1.492 |
| 88) Toluene | (3) | 9.946 | 92 | 12869 | 0.865 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 6226 | 0.758 |
| 91) Ethyl Methacrylate | (3) | 10.244 | 69 | 8006 | 0.776 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 5367 | 0.918 |
| 93) Tetrachloroethene | (3) | 10.494 | 166 | 5207 | 0.795 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 8949 | 0.906 |
| 96) 2-Hexanone | (3) | 10.603 | 43 | 16454M | 1.848 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 3910 | 0.712 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 5492 | 0.871 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 874803 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 7889 | 0.951 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 15550 | 0.910 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.418 | 131 | 3907 | 0.741 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 24280 | 0.848 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 19061 | 1.672 |
| 108) Xylene (Total) | (3) | | 106 | 27895 | 2.468 |
| 107) o-Xylene | (3) | 11.868 | 106 | 8834 | 0.796 |
| 109) Styrene | (3) | 11.887 | 104 | 13853 | 0.727 |
| 110) Bromoform | (3) | 12.051 | 173 | 2763 | 0.646 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 23377 | 0.807 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 4491M | 43.189 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 422074 | 49.794 |
| 114)$4-Bromofluorobenzene | (3) | 12.319 | 174 | 361386 | 49.996 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 8707 | 0.901 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 20498 | 6.691 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 6555 | 0.826 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 3167 | 0.964 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 27986 | 0.816 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 5803 | 0.822 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 20071 | 0.803 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 6314 | 0.843 |
| 124) tert-Butylbenzene | (4) | 12.872 | 134 | 4413M | 0.825 |
| 125) Pentachloroethane | (4) | 12.915 | 167 | 2659 | 0.658 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 20488 | 0.792 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 24836 | 0.790 |
| 129) 1,3-Dichlorobenzene | (4) | 13.146 | 146 | 12954 | 0.856 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 21424 | 0.767 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 479258 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 14188 | 0.911 |

M = Compound was manually integrated.
* = Compound is an internal standard.
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Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

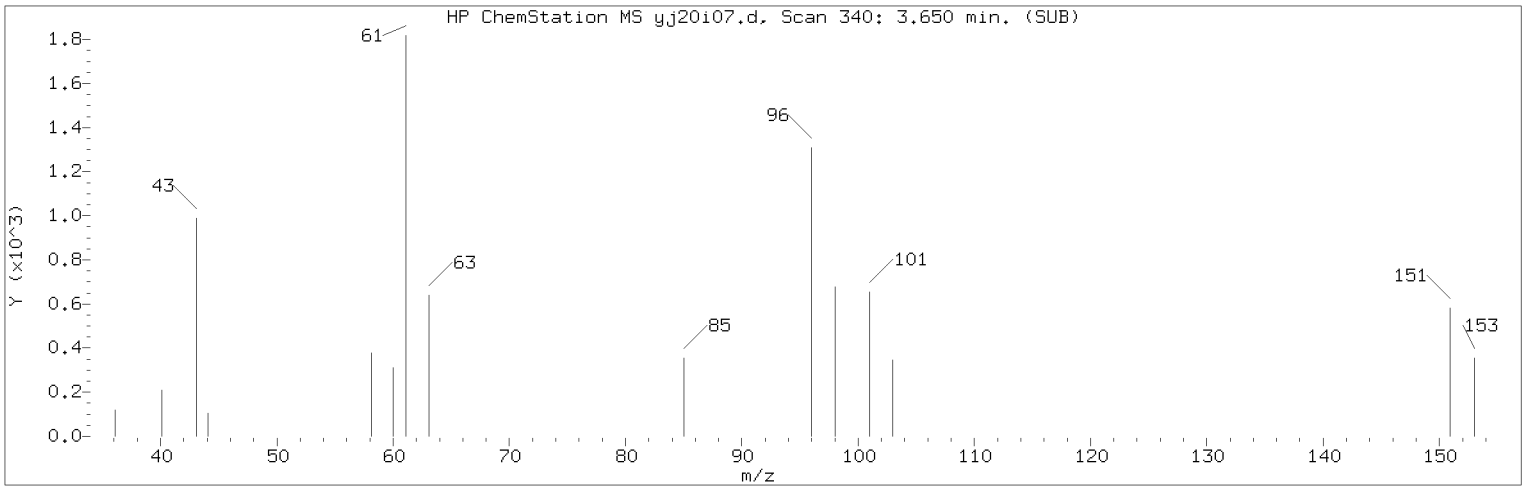
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 22716 | 0.874 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 10548 | 0.592 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 13355 | 0.821 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 13337 | 0.790 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 11264M | 0.801 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 13261 | 0.912 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 11263 | 0.825 |
| 141) Diethylbenzene (total) | (4) | | 100 | 37955 | 2.437 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 1945 | 0.828 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 10444 | 0.980 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.570 | 180 | 10655 | 1.095 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 5102 | 1.067 |
| 148) Naphthalene | (4) | 14.758 | 128 | 33987 | 1.091 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 10533 | 1.190 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 22489 | 1.340 |

M = Compound was manually integrated.

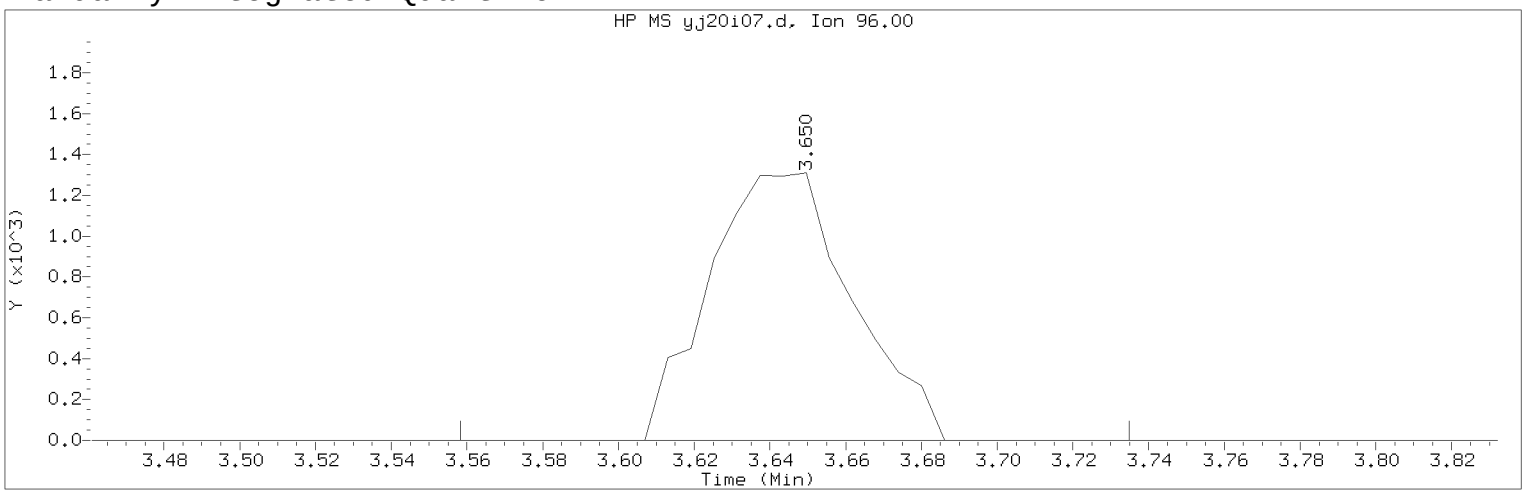


Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

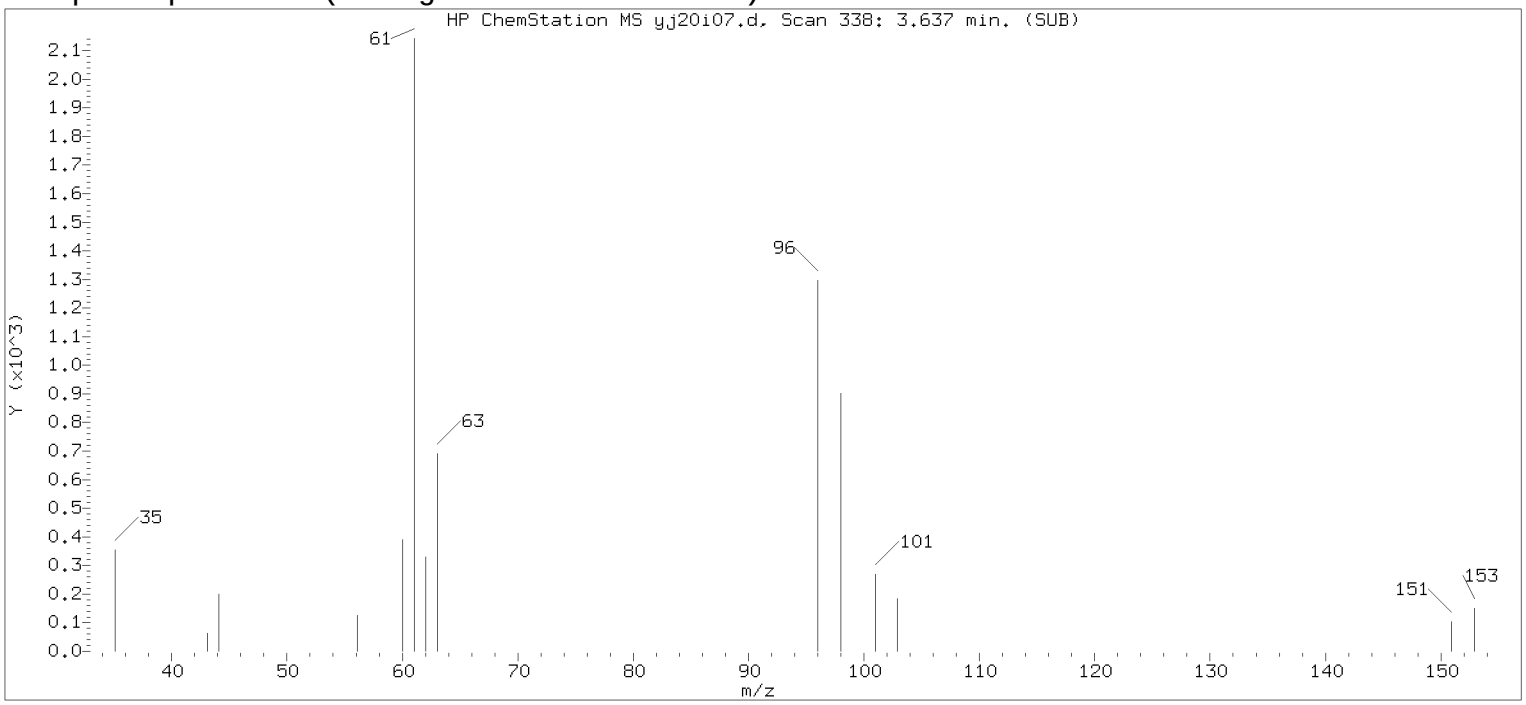
Compound Number : 17
Compound Name : 1,1-Dichloroethene
Scan Number : 340
Retention Time (minutes): 3.650
Quant Ion : 96.00
Area (flag) : 3441M
On-Column Amount (ng) : 0.7897
Integration start scan : 324 Integration stop scan: 353
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

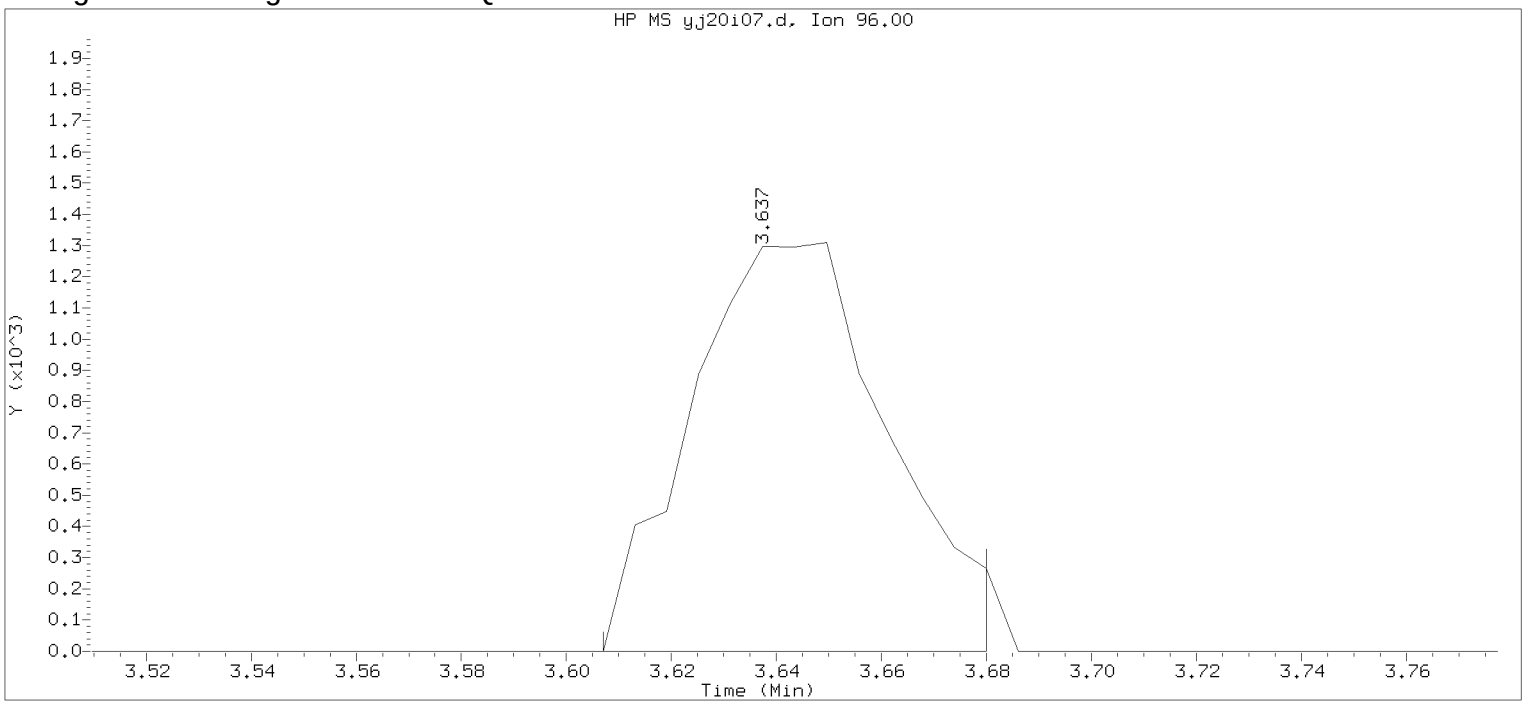
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

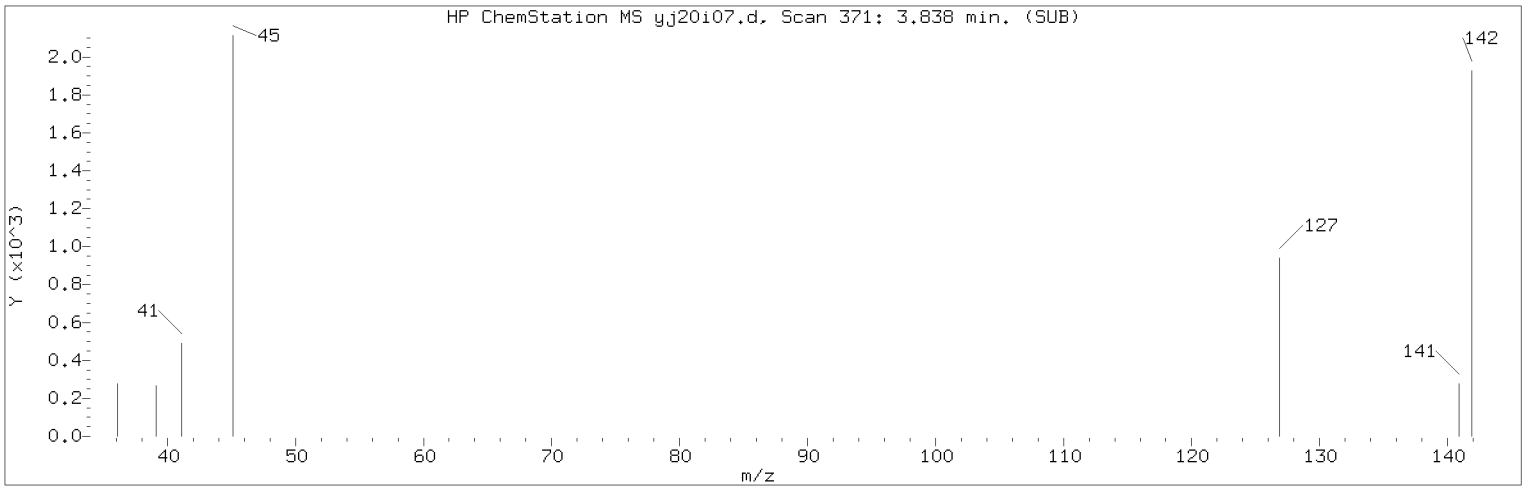
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

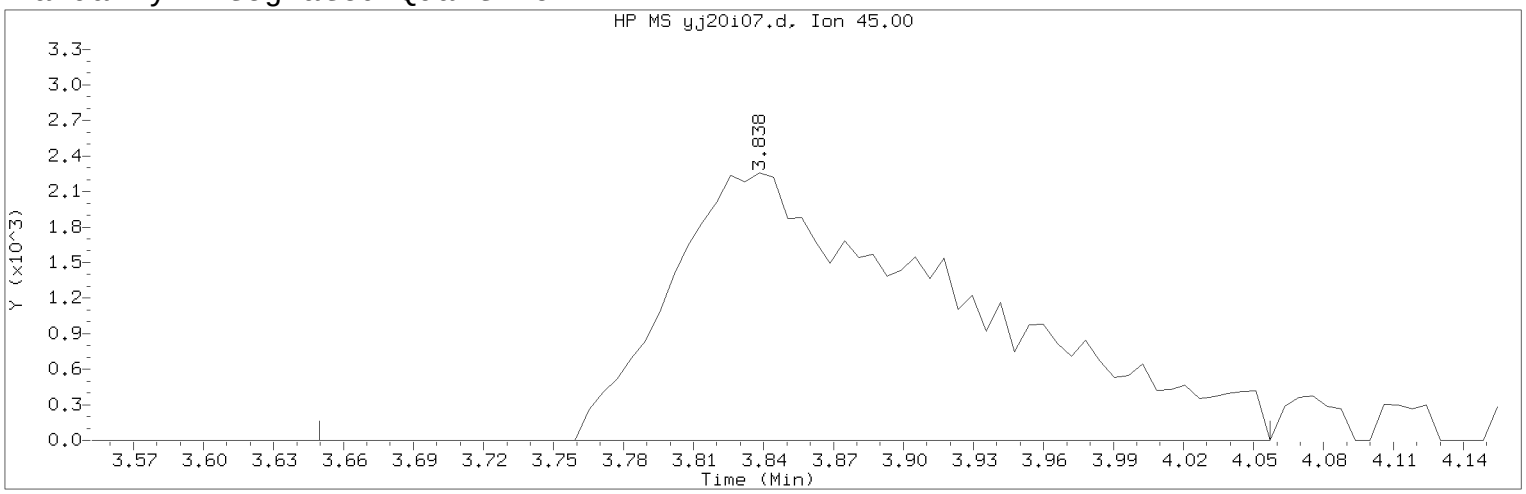
Compound Number : 17
Compound Name : 1,1-Dichloroethene
Scan Number : 338
Retention Time (minutes): 3.637
Quant Ion : 96.00
Area : 3393
On-column Amount (ng) : 0.7799
Integration start scan : 332 Integration stop scan: 344
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

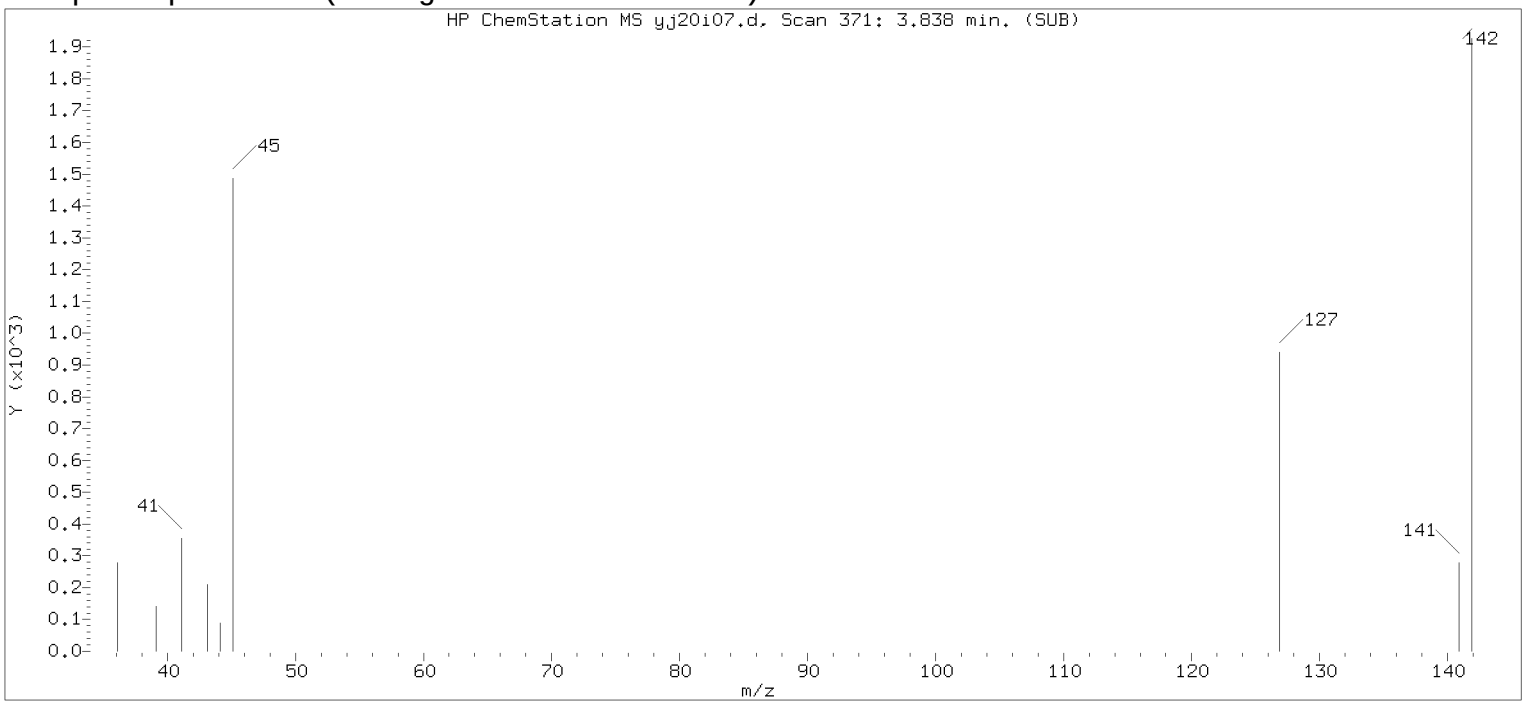
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 371
Retention Time (minutes): 3.838
Quant Ion : 45.00
Area (flag) : 19608M
On-Column Amount (ng) : 22.3166
Integration start scan : 339 Integration stop scan: 406
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

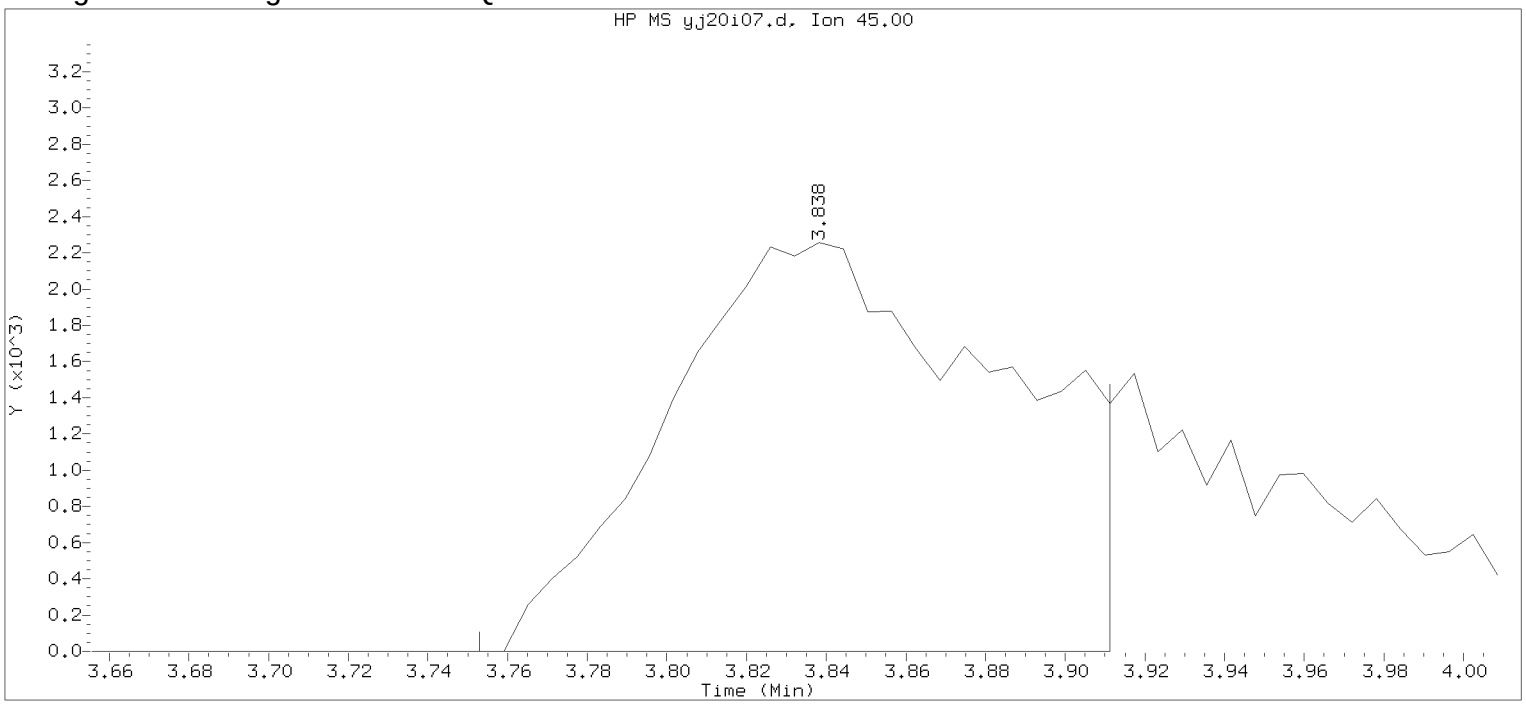
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

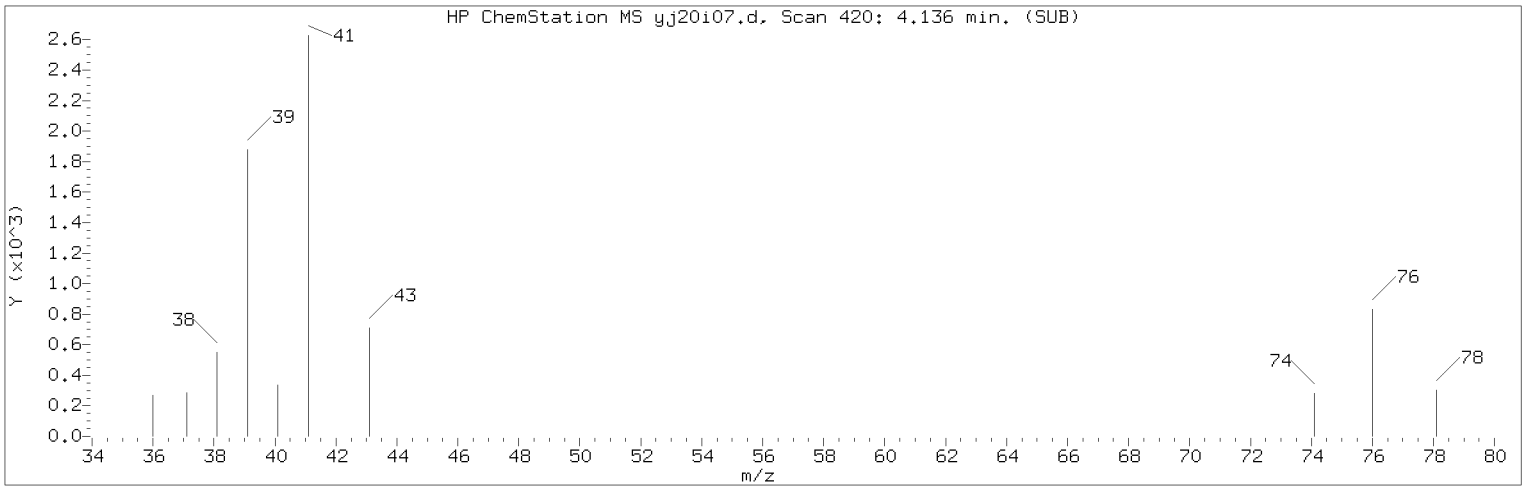
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

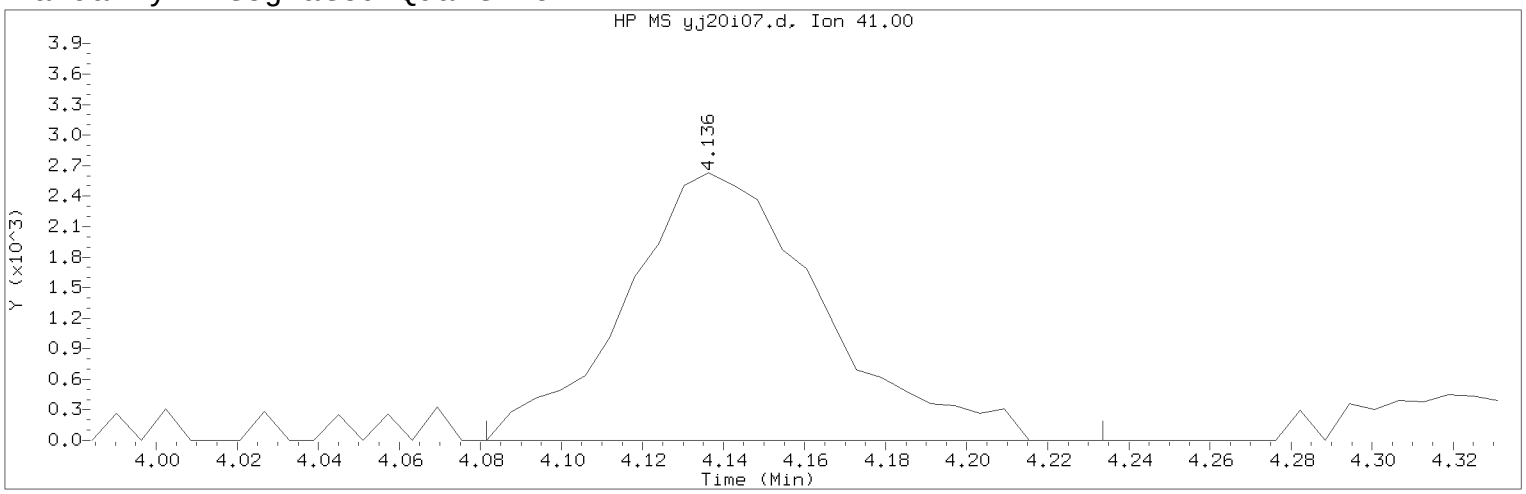
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 371
Retention Time (minutes): 3.838
Quant Ion : 45.00
Area : 13273
On-column Amount (ng) : 15.9273
Integration start scan : 356 Integration stop scan: 382
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk0323

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

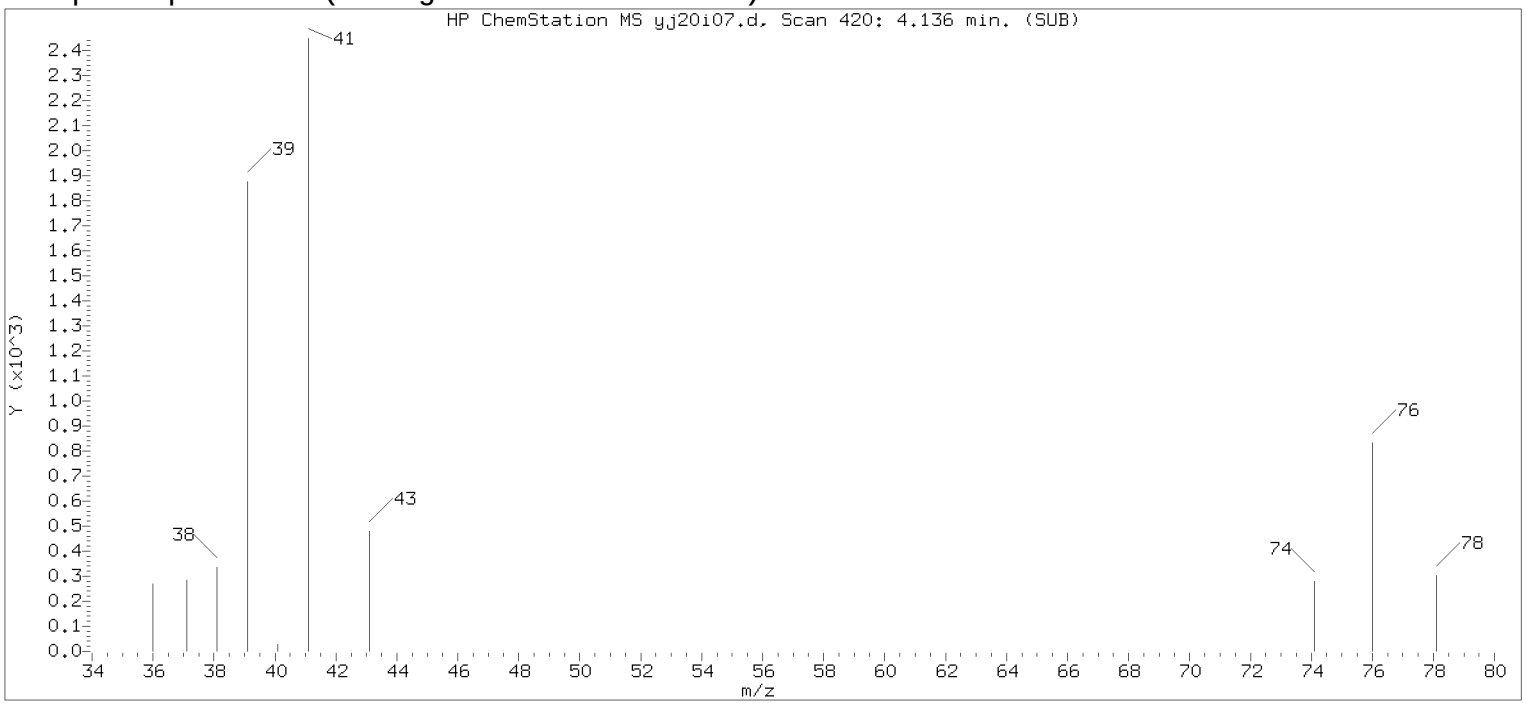
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 420
Retention Time (minutes): 4.136
Quant Ion : 41.00
Area (flag) : 8820M
On-Column Amount (ng) : 0.9572
Integration start scan : 410 Integration stop scan: 435
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

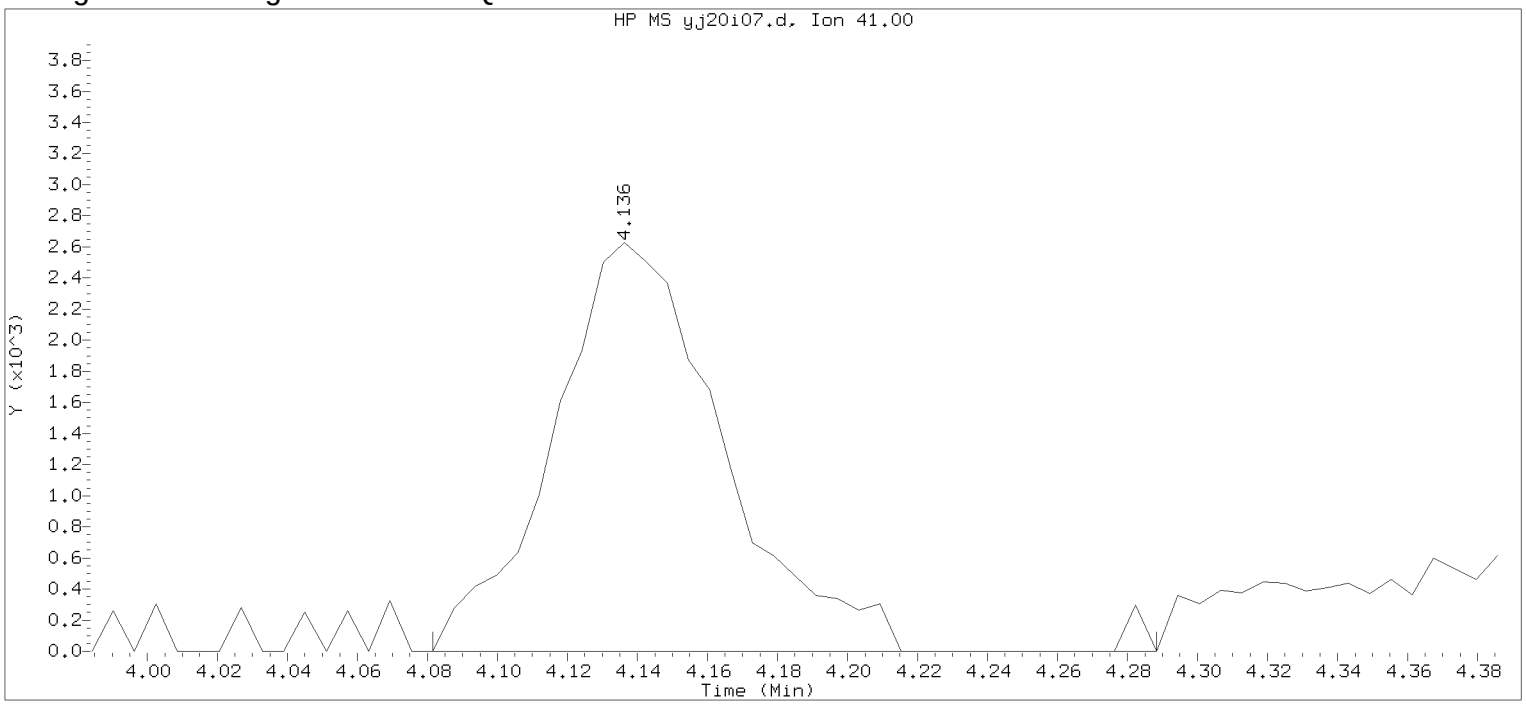
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

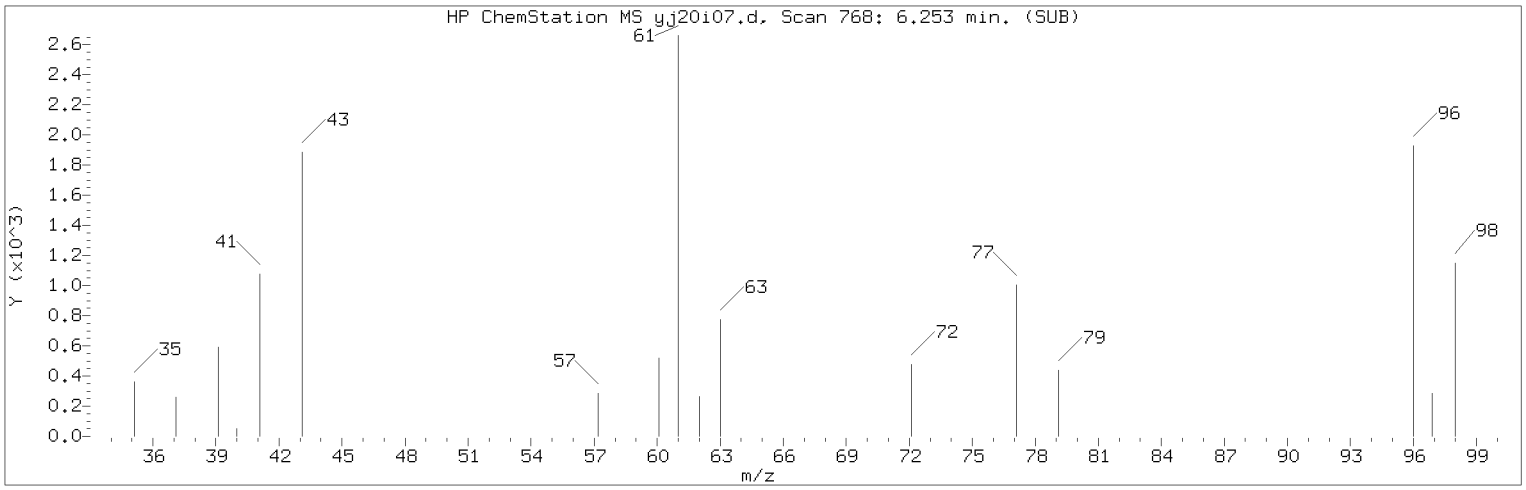
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

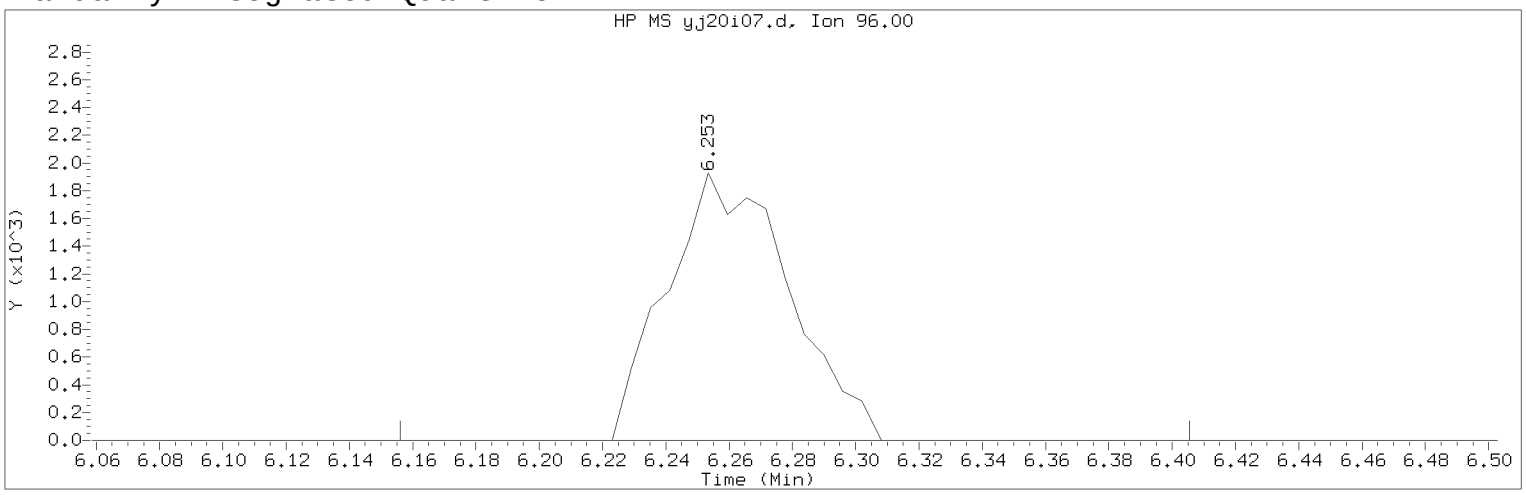
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 420
Retention Time (minutes): 4.136
Quant Ion : 41.00
Area : 8929
On-column Amount (ng) : 0.9691
Integration start scan : 410 Integration stop scan: 444
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

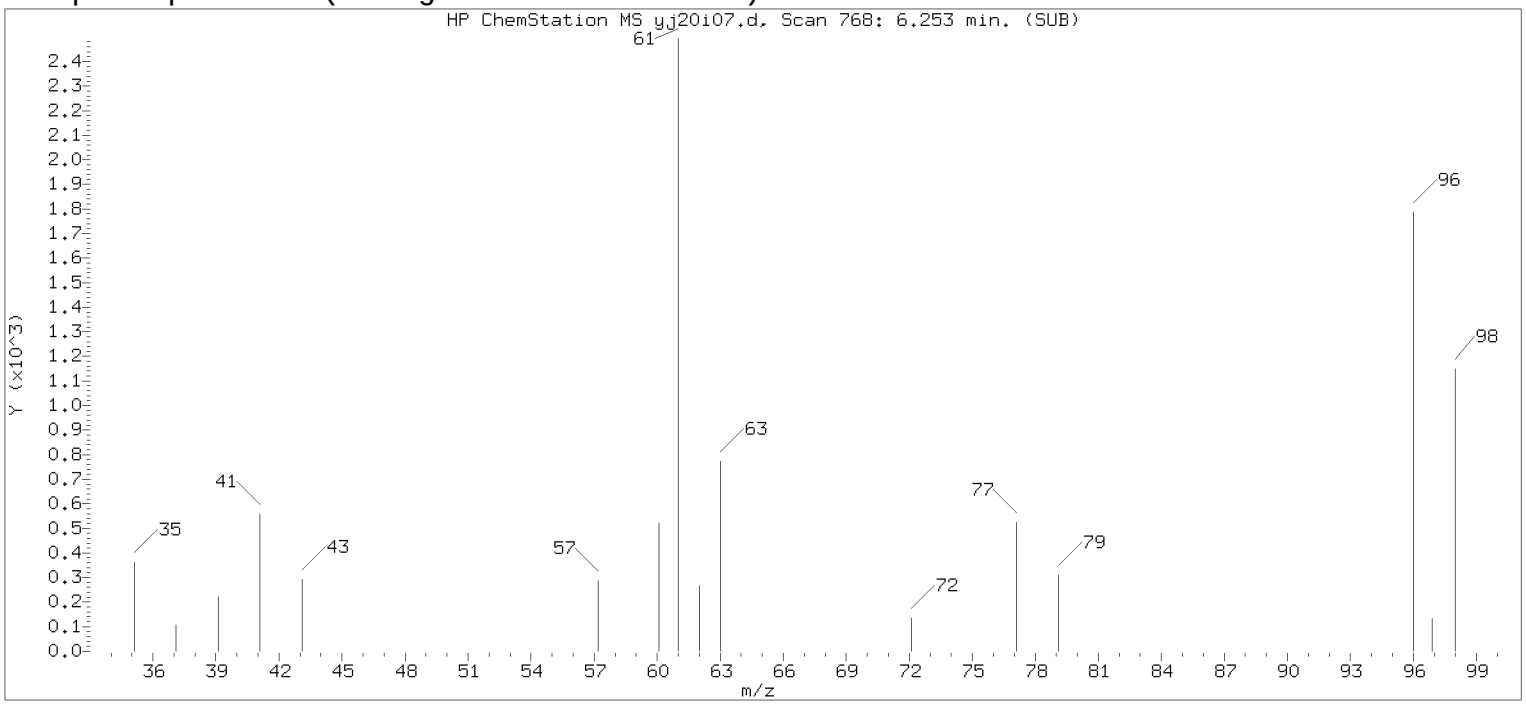
Compound Number : 42
Compound Name : cis-1,2-Dichloroethene
Scan Number : 768
Retention Time (minutes): 6.253
Quant Ion : 96.00
Area (flag) : 5170M
On-Column Amount (ng) : 0.8526
Integration start scan : 751 Integration stop scan: 792
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

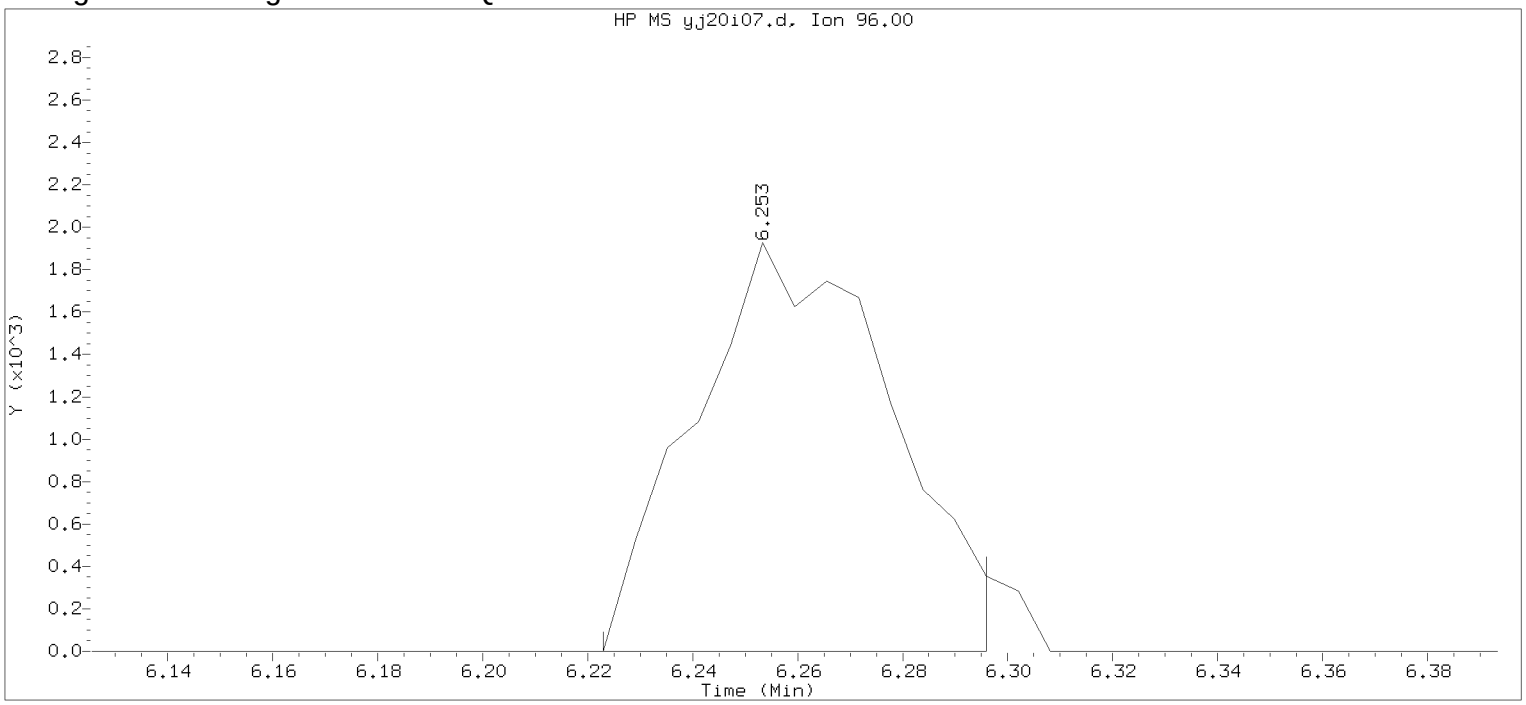
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

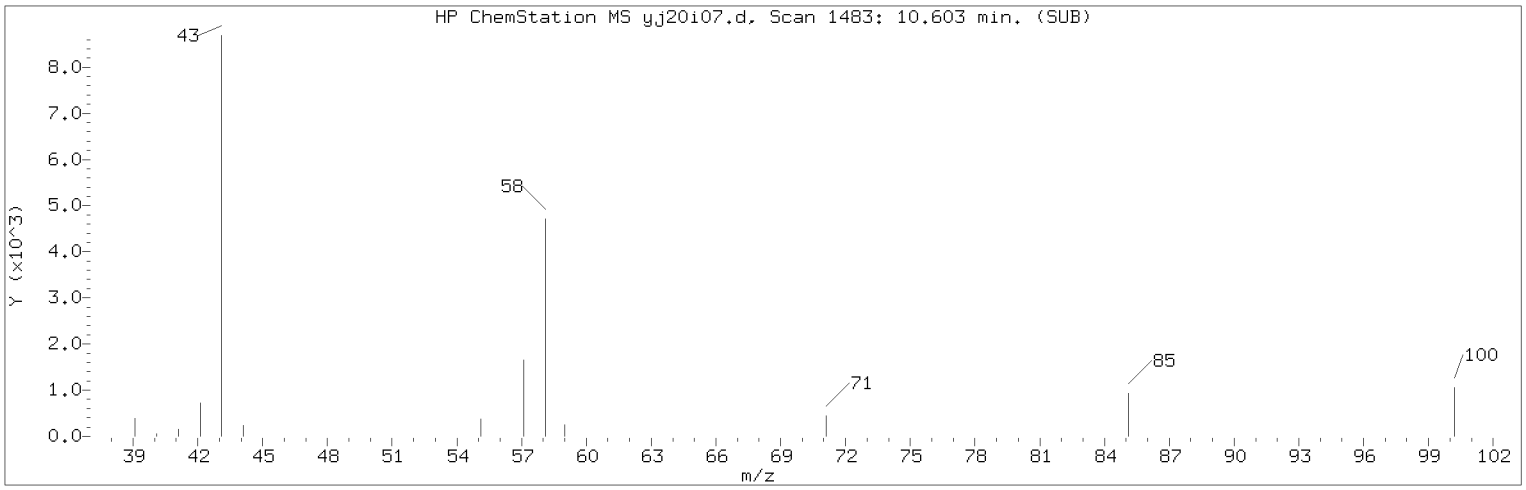
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

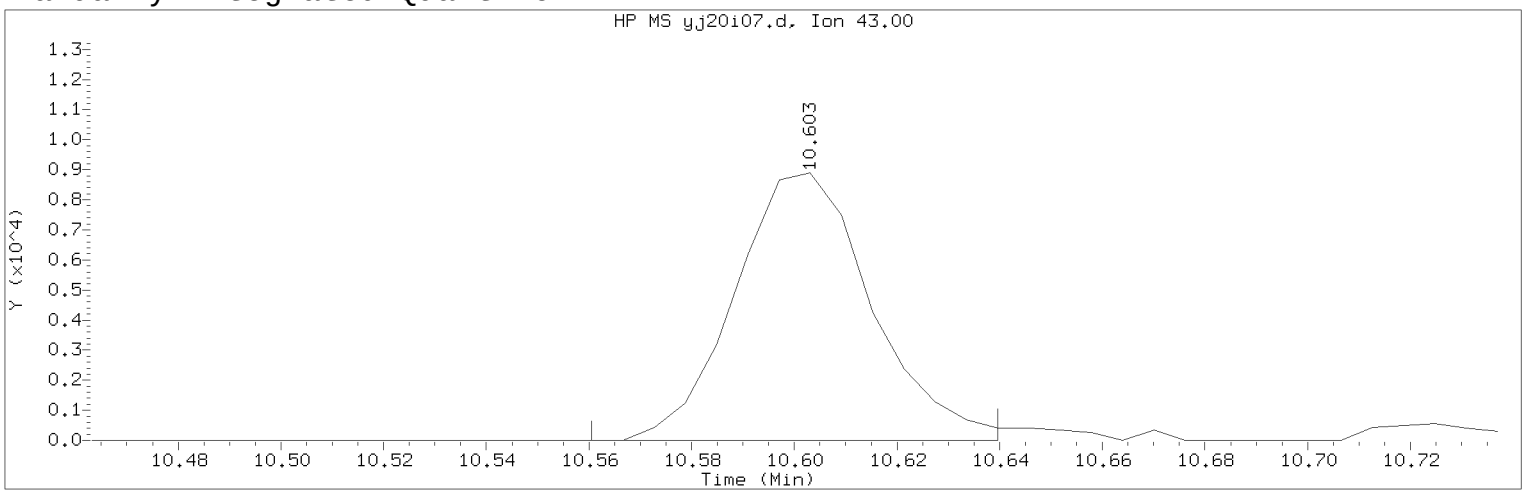
Compound Number : 42
Compound Name : cis-1,2-Dichloroethene
Scan Number : 768
Retention Time (minutes): 6.253
Quant Ion : 96.00
Area : 5002
On-column Amount (ng) : 0.8282
Integration start scan : 762 Integration stop scan: 774
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

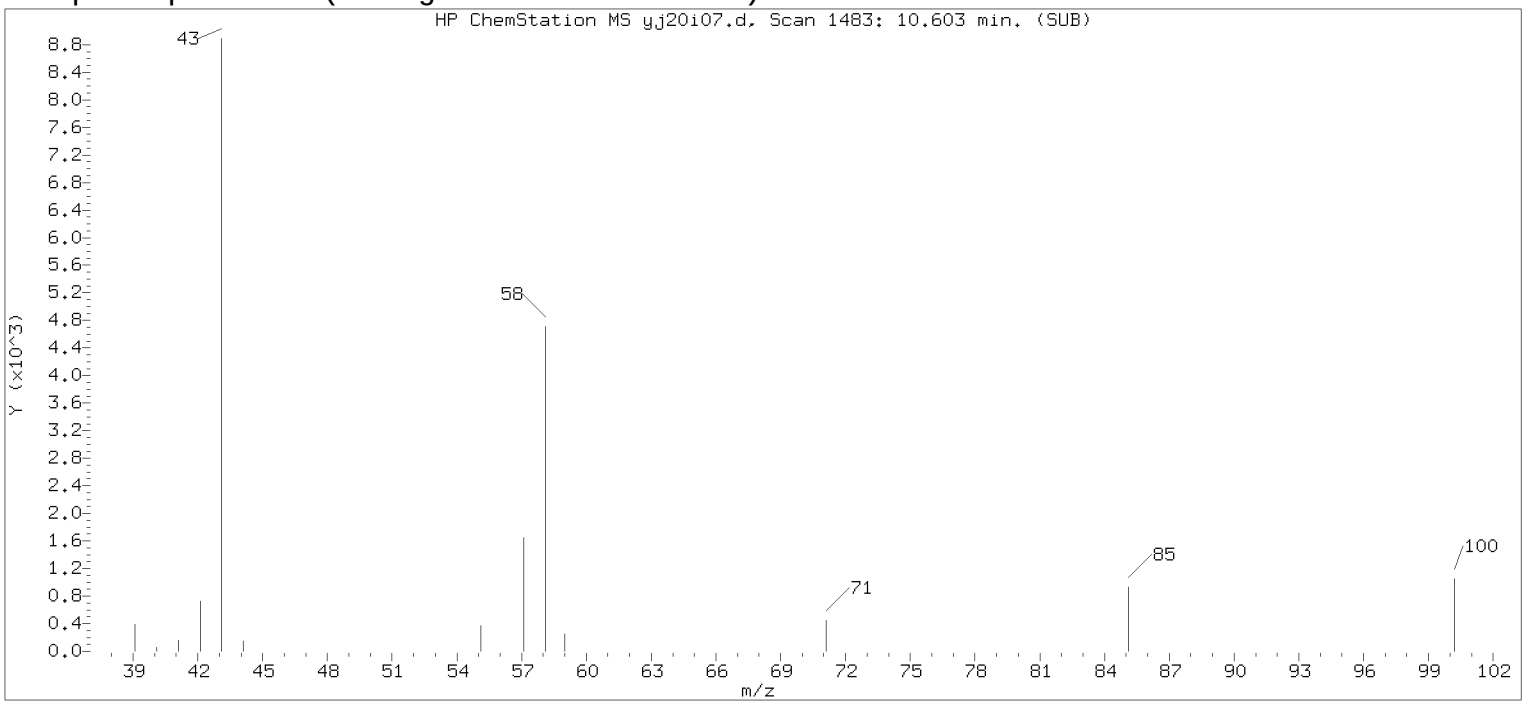
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1483
Retention Time (minutes): 10.603
Quant Ion : 43.00
Area (flag) : 16454M
On-Column Amount (ng) : 1.8479
Integration start scan : 1475 Integration stop scan: 1488
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

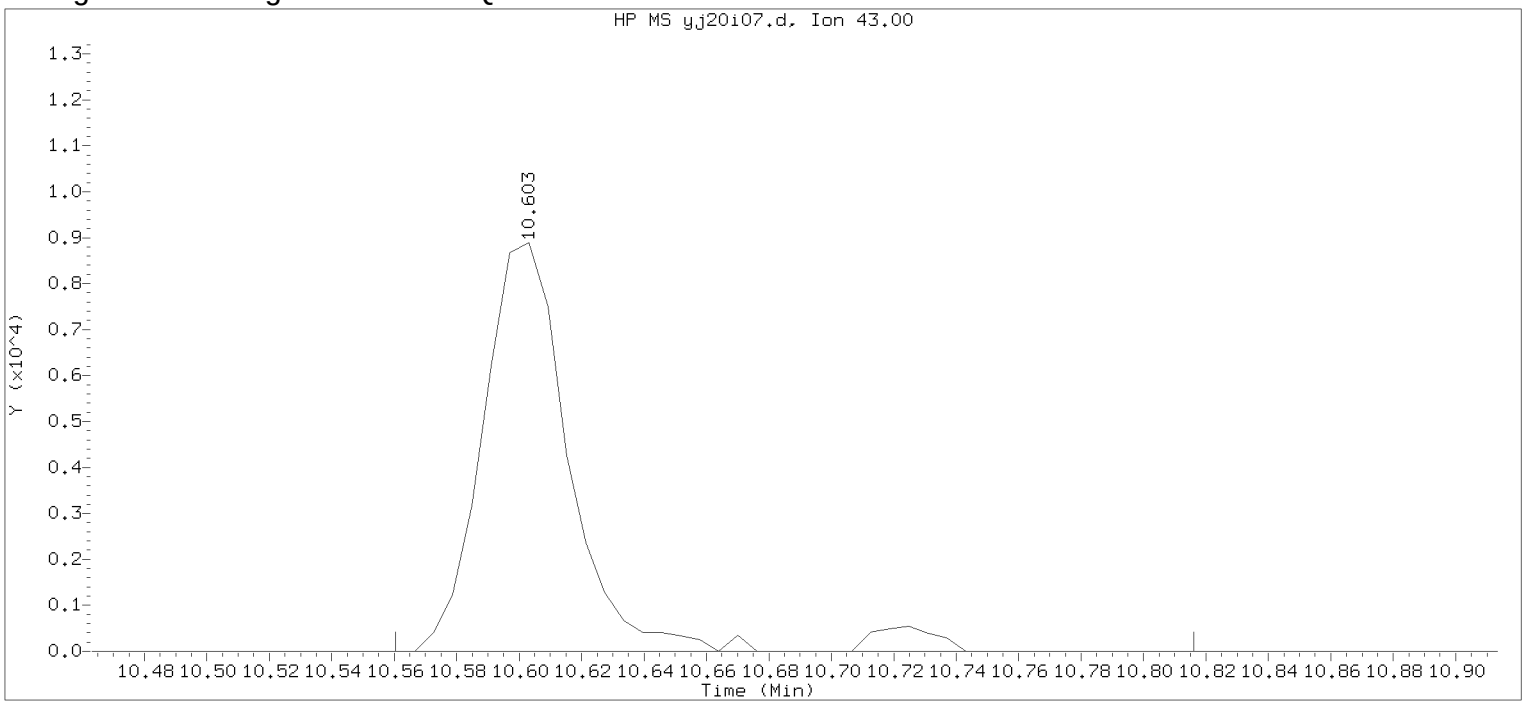
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

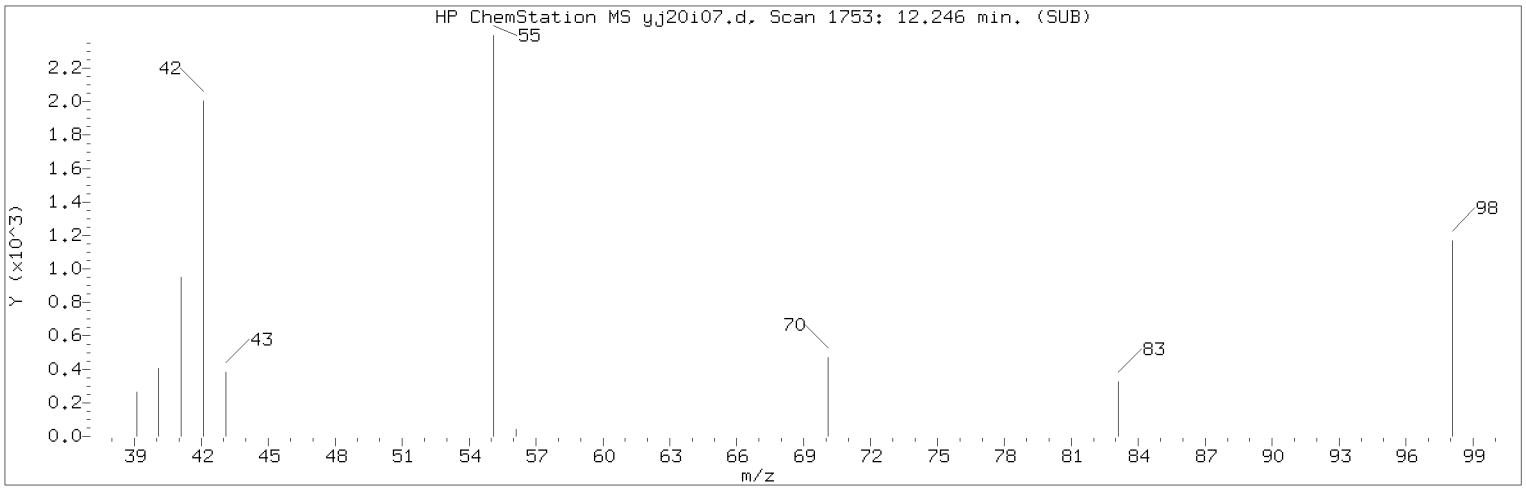
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

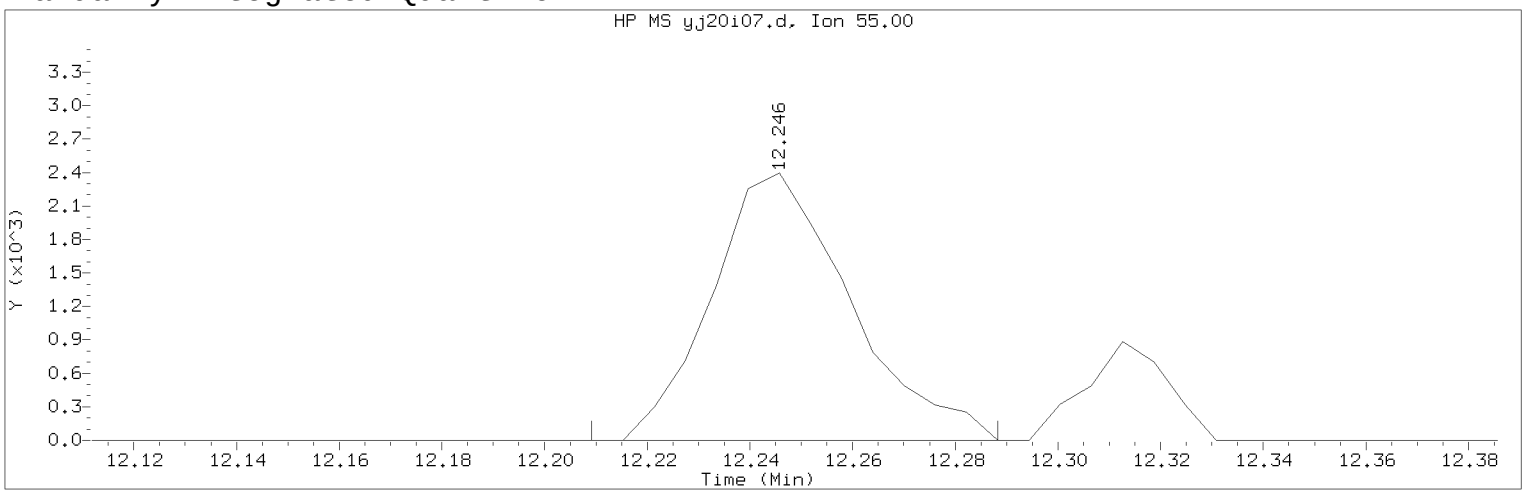
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1483
Retention Time (minutes): 10.603
Quant Ion : 43.00
Area : 17729
On-column Amount (ng) : 1.9710
Integration start scan : 1475 Integration stop scan: 1517
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

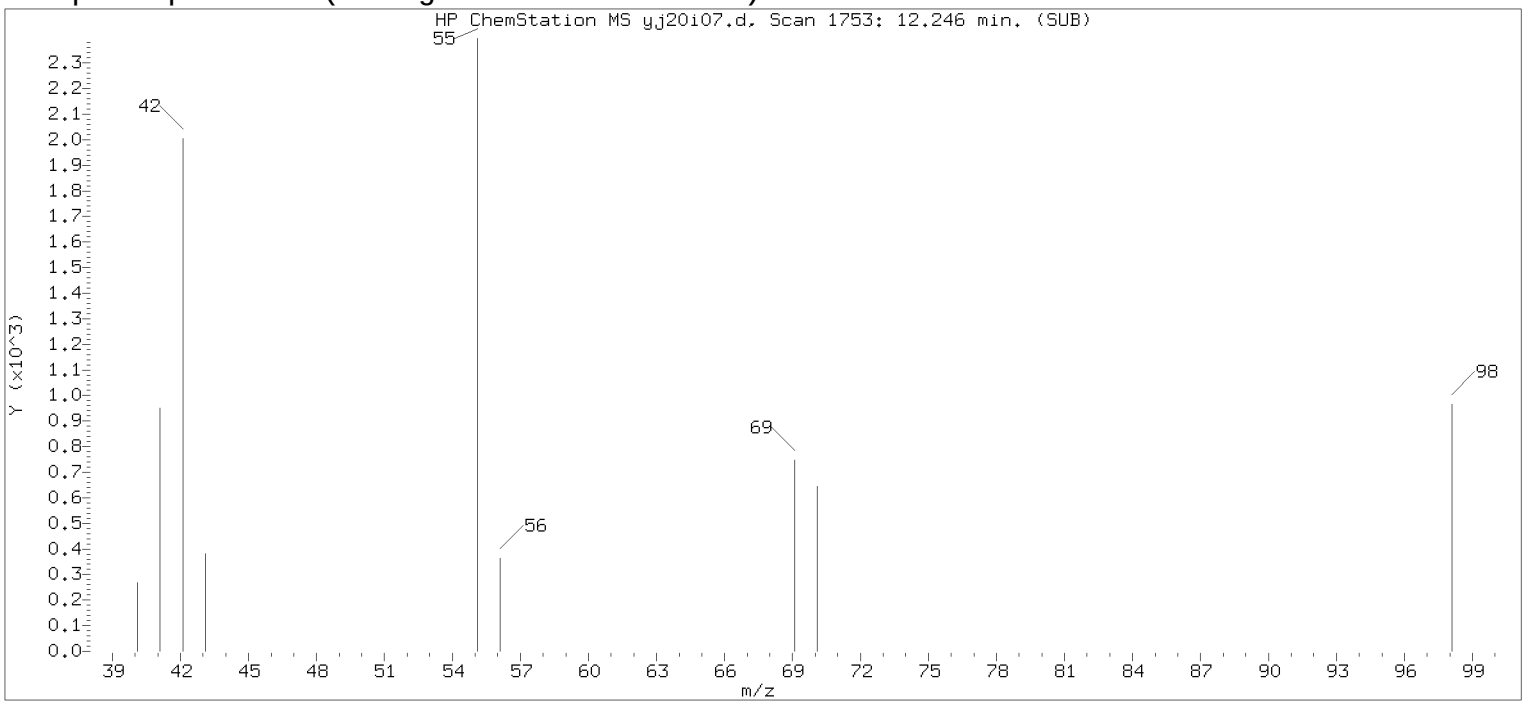
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area (flag) : 4491M
On-Column Amount (ng) : 43.1886
Integration start scan : 1746 Integration stop scan: 1759
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

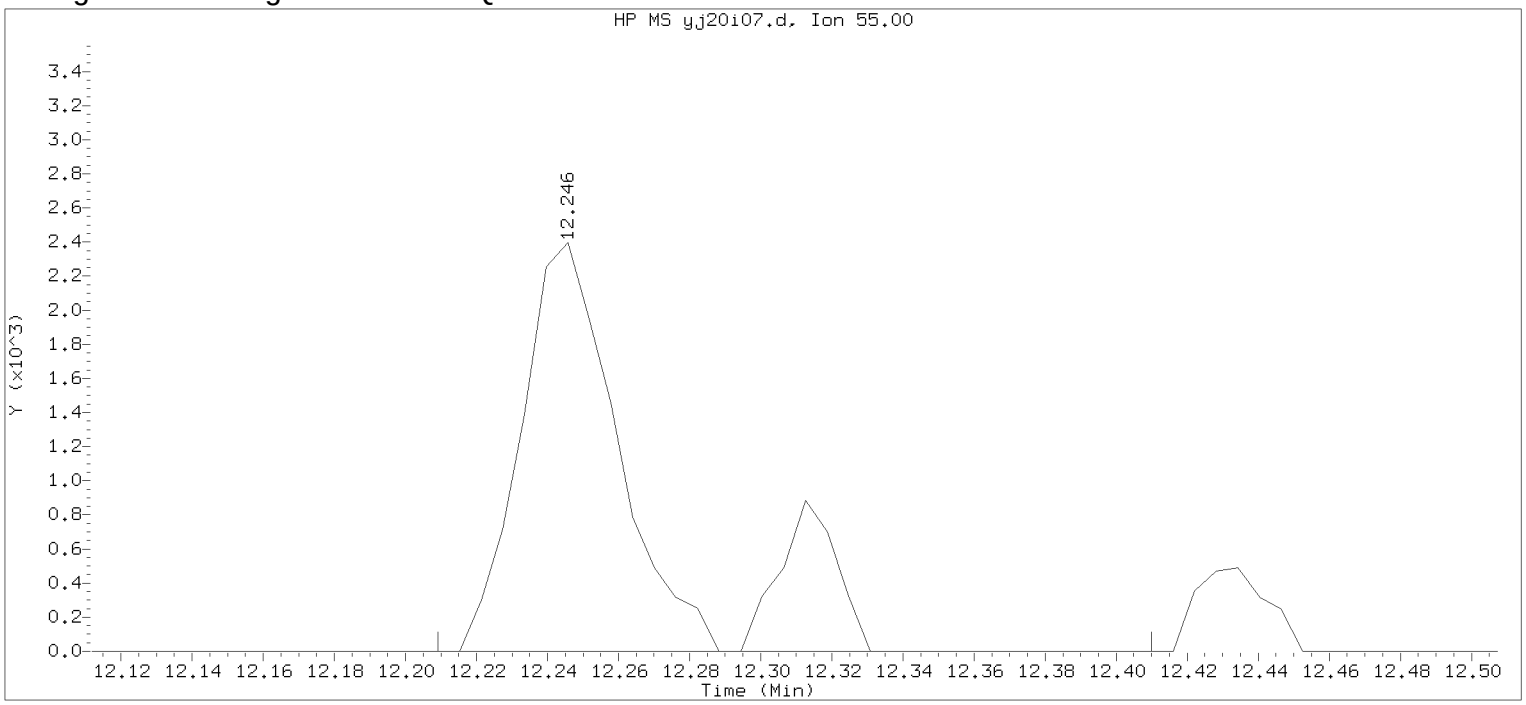
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

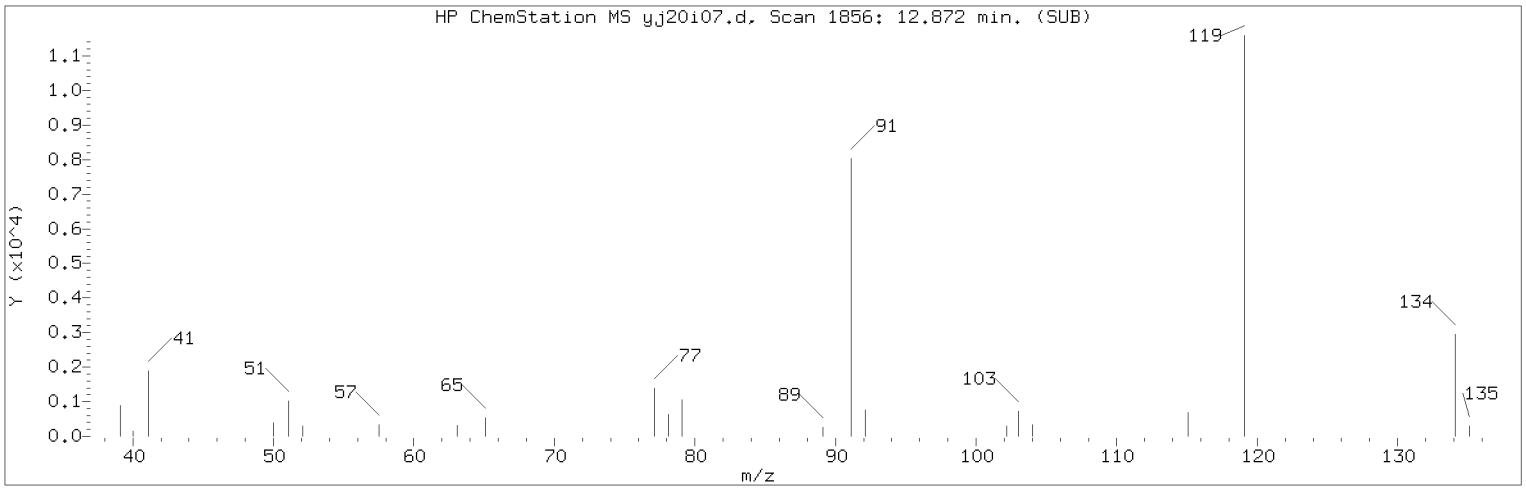
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

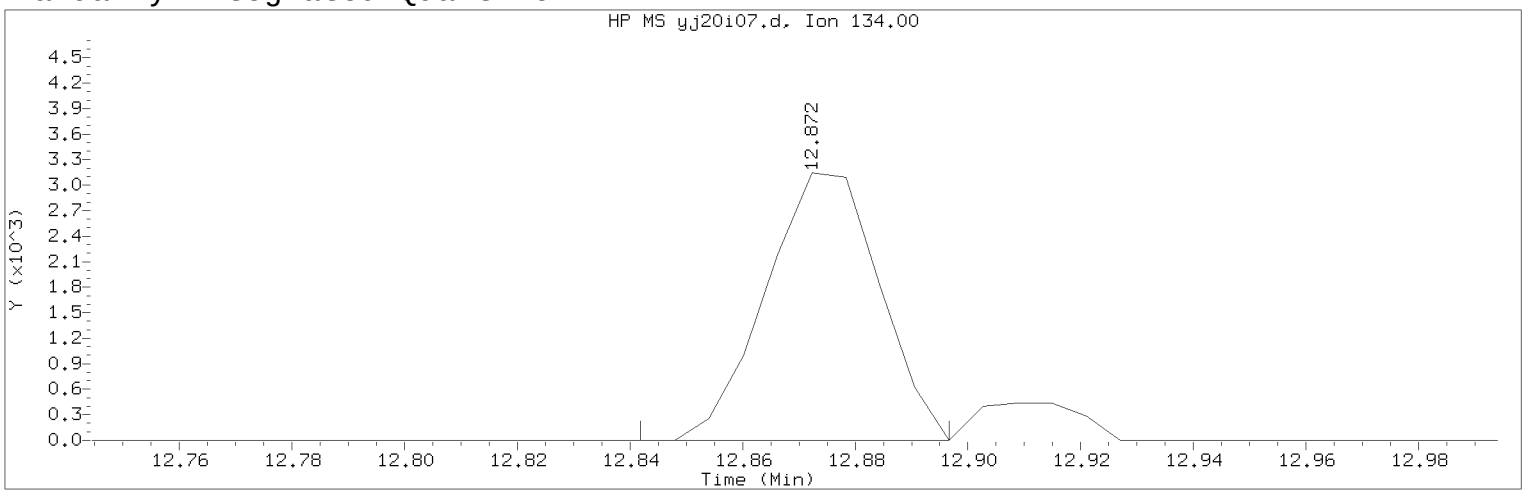
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1753
Retention Time (minutes): 12.246
Quant Ion : 55.00
Area : 5484
On-column Amount (ng) : 52.7409
Integration start scan : 1746 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

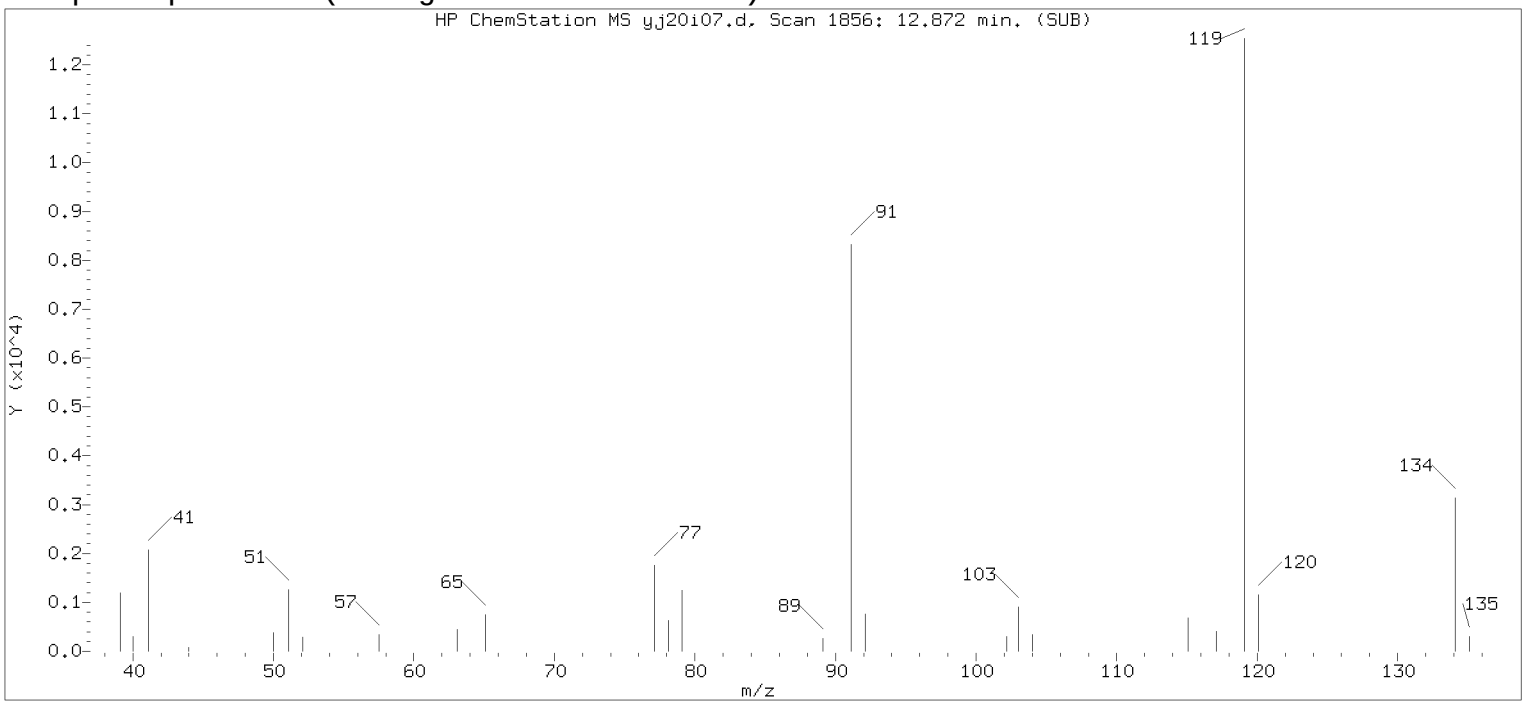
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area (flag) : 4413M
On-Column Amount (ng) : 0.8254
Integration start scan : 1850 Integration stop scan: 1859
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

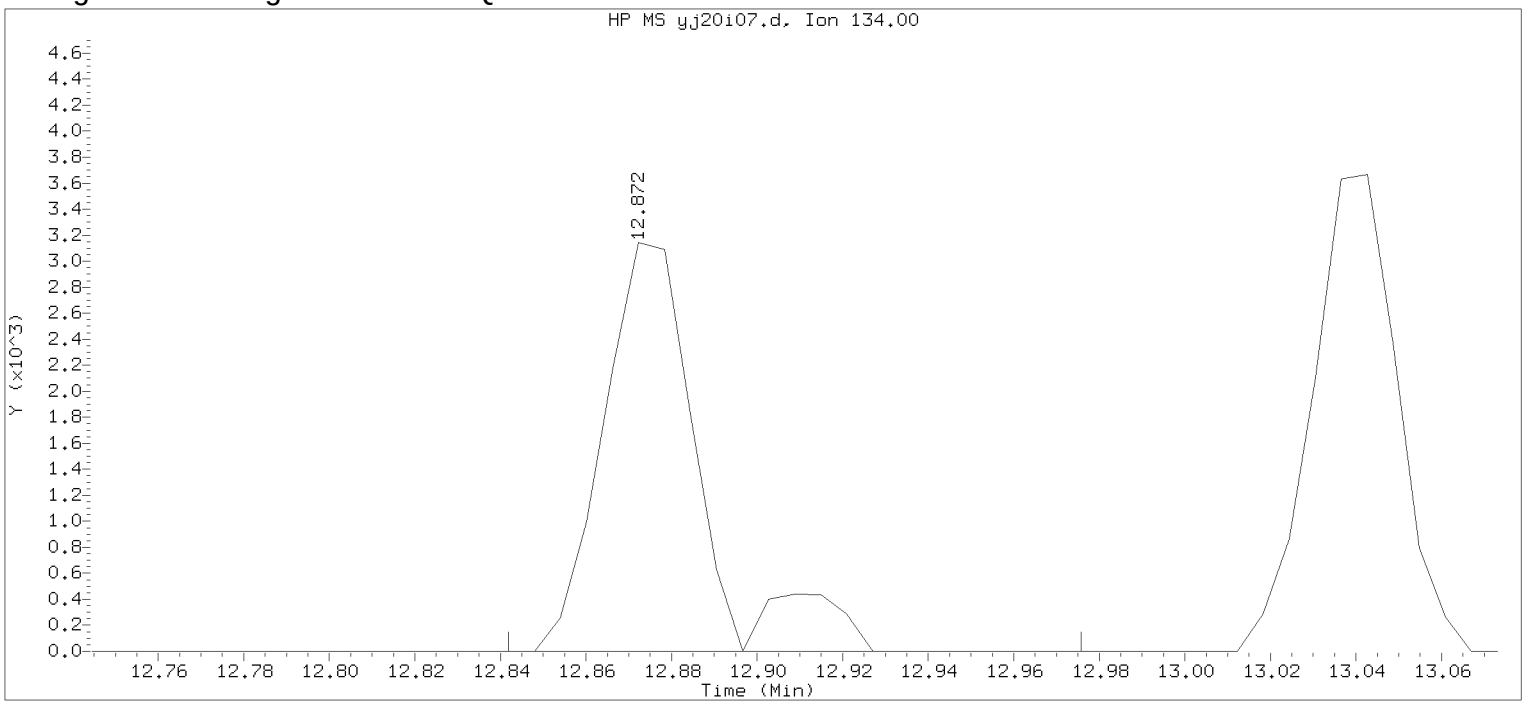
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

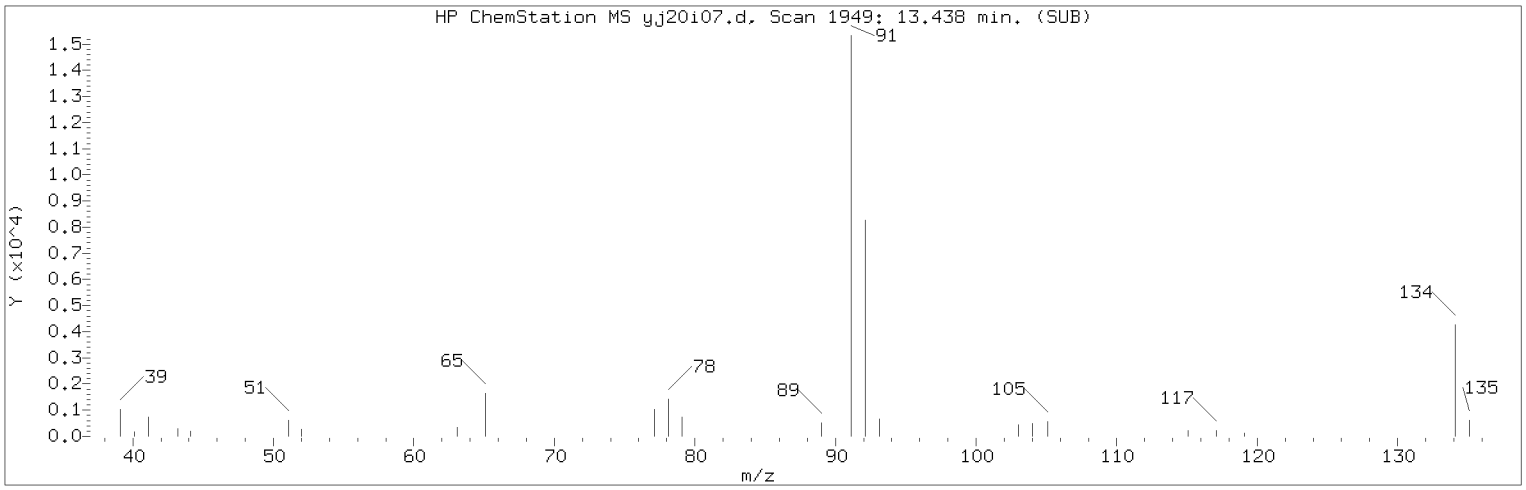
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

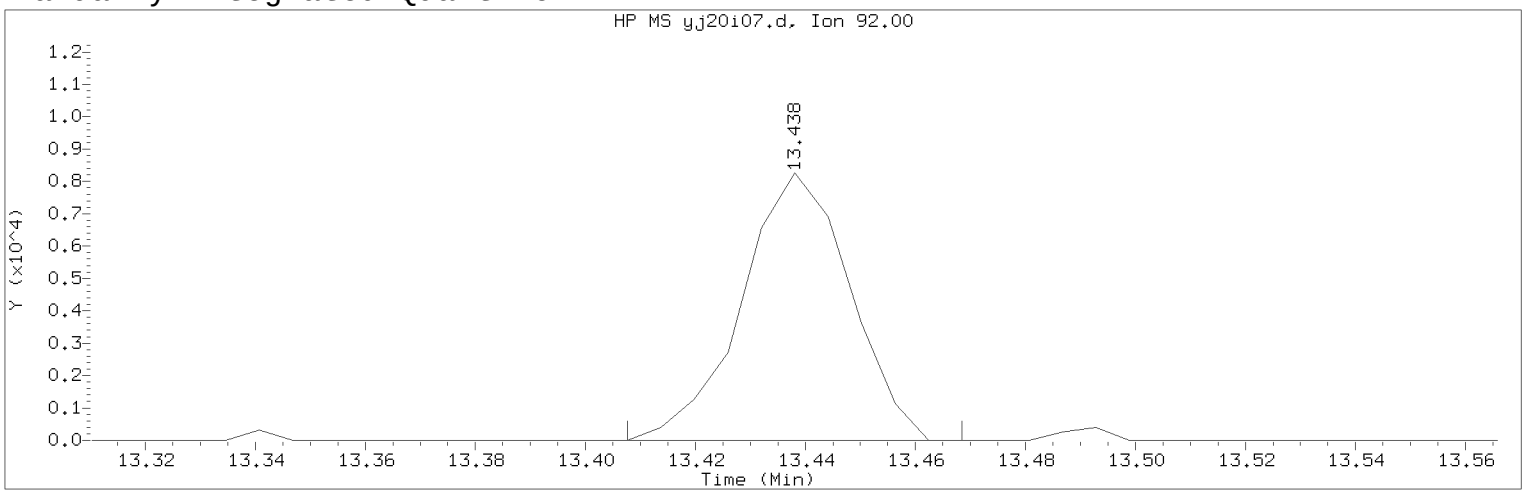
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.872
Quant Ion : 134.00
Area : 4983
On-column Amount (ng) : 0.9321
Integration start scan : 1850 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:47
Date, time and analyst ID of latest file update: 20-Jan-2017 11:49 bwk03231

Sample Name: VSTD001 Lab Sample ID: VSTD001

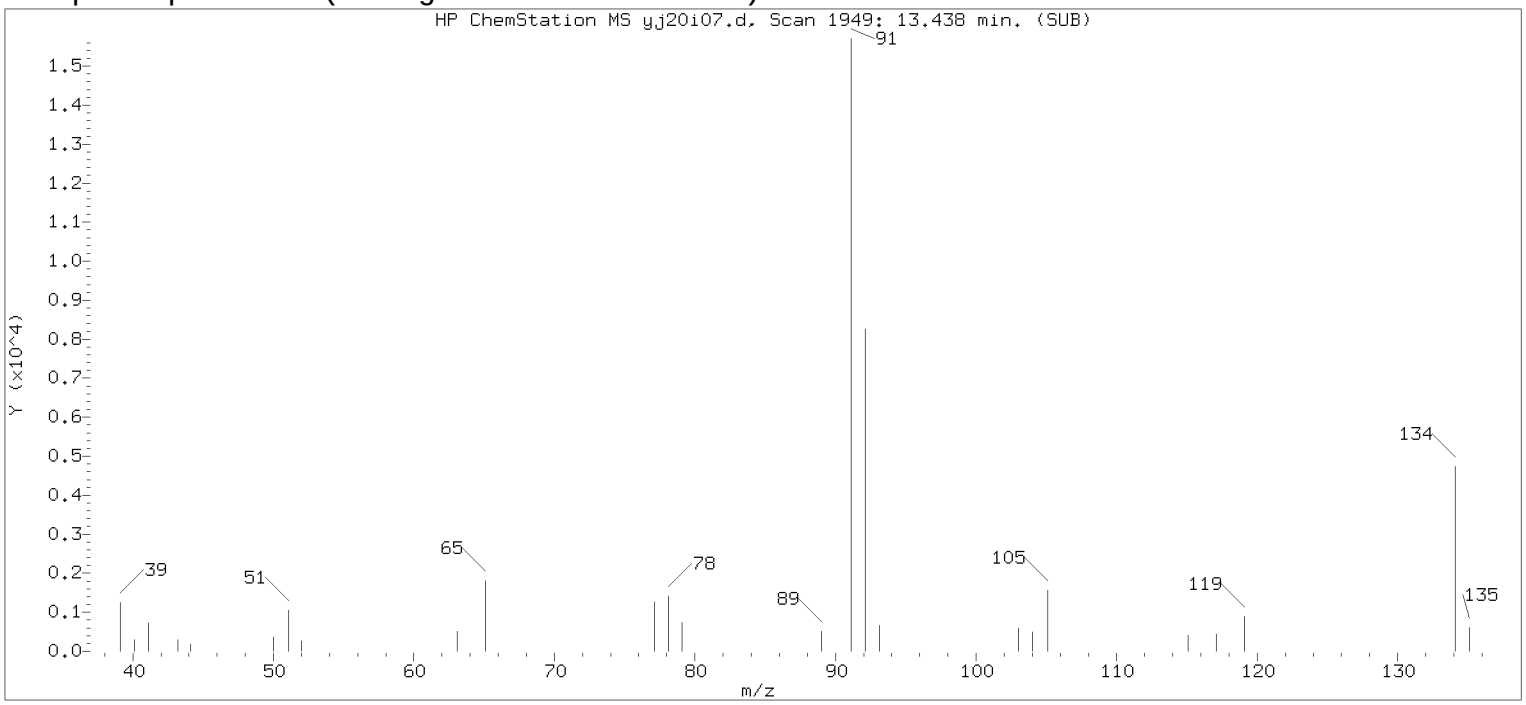
Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 1949
Retention Time (minutes): 13.438
Quant Ion : 92.00
Area (flag) : 11264M
On-Column Amount (ng) : 0.8012
Integration start scan : 1943 Integration stop scan: 1953
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

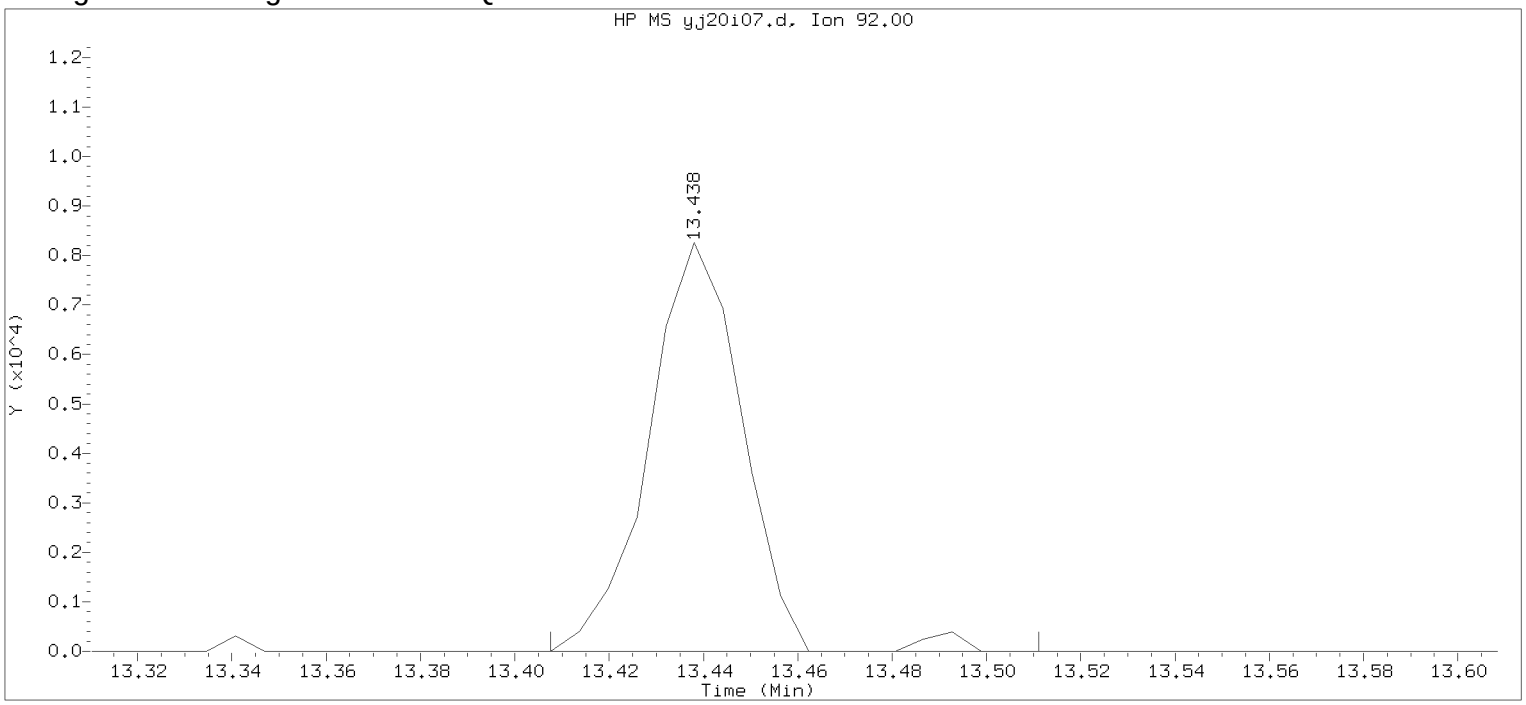
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



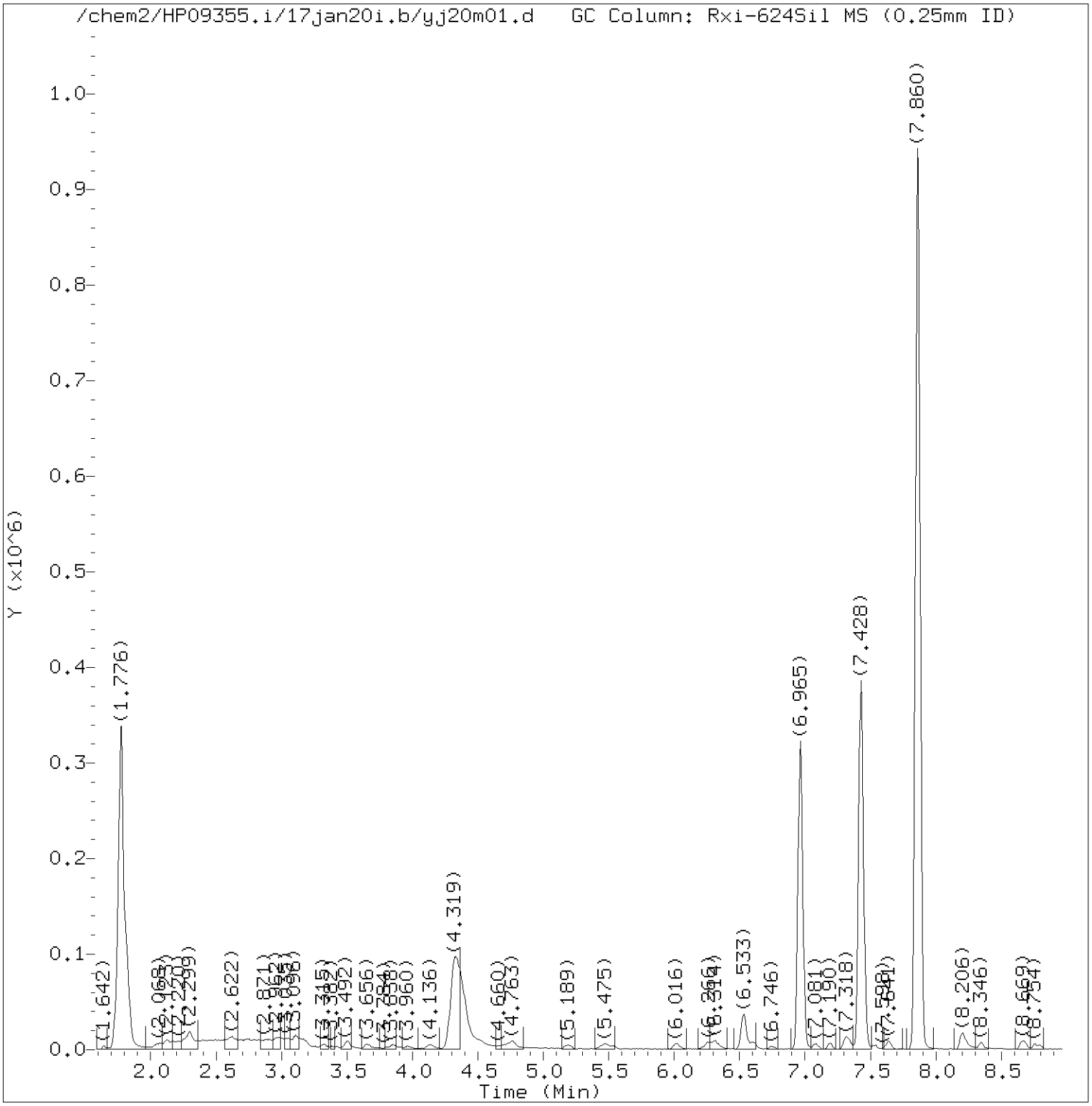

Data File: /chem2/HP09355.i/17jan20i.b/yj20i07.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:29 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:45
Date, time and analyst ID of latest file update: 20-Jan-2017 11:45 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 1949
Retention Time (minutes): 13.438
Quant Ion : 92.00
Area : 11497
On-column Amount (ng) : 0.8178
Integration start scan : 1943 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user: BWK03231




Total Ion Chromatogram (TIC)

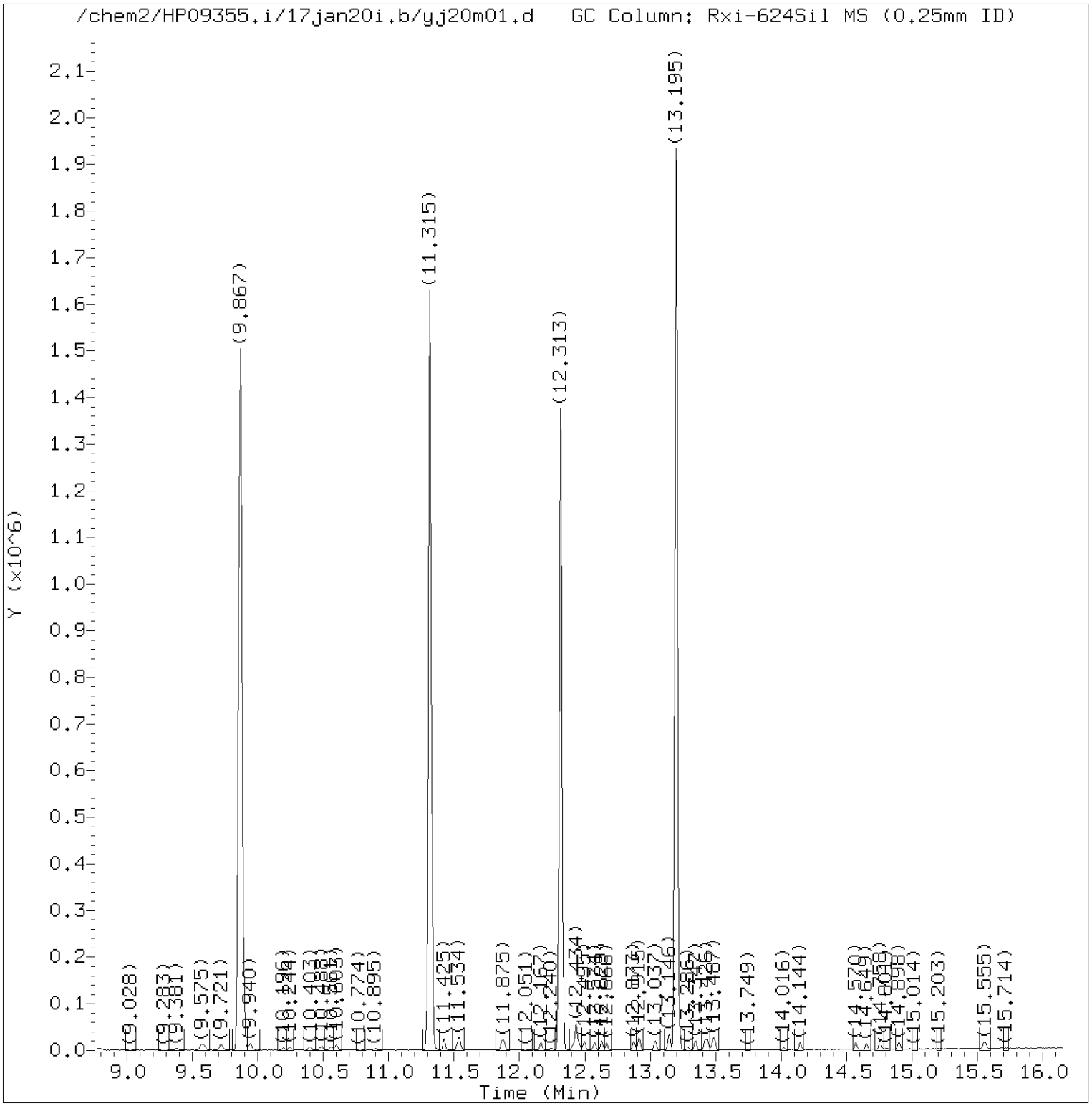
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 2406 | 0.336 |
| 4) Chloromethane | (2) | 2.123 | 50 | 3512 | 0.456 |
| 6) Vinyl Chloride | (2) | 2.257 | 62 | 3082 | 0.425 |
| 5) 1,3-Butadiene | (2) | 2.299 | 39 | 11891M | 1.552 |
| 8) Bromomethane | (2) | 2.610 | 94 | 2602 | 0.507 |
| 9) Chloroethane | (2) | 2.731 | 64 | 2201 | 0.525 |
| 10) Dichlorofluoromethane | (2) | 2.968 | 67 | 4951 | 0.518 |
| 12) Trichlorofluoromethane | (2) | 3.048 | 101 | 3067 | 0.360 |
| 11) n-Pentane | (2) | 3.108 | 43 | 10786 | 1.132 |
| 14) Ethyl ether | (2) | 3.333 | 59 | 2270 | 0.433 |
| 15) Freon 123a | (2) | 3.394 | 67 | 2433 | 0.406 |
| 16) Acrolein | (1) | 3.504 | 56 | 10547 | 4.797 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 1469 | 0.342 |
| 18) Acetone | (1) | 3.662 | 58 | 462 | 0.442 |
| 19) Freon 113 | (2) | 3.680 | 101 | 1288 | 0.291 |
| 21) 2-Propanol | (1) | 3.844 | 45 | 8922 | 10.704 |
| 22) Methyl Iodide | (2) | 3.857 | 142 | 2987 | 0.366 |
| 23) Carbon Disulfide | (2) | 3.972 | 76 | 5100 | 0.377 |
| 27) Methyl Acetate | (2) | 4.106 | 43 | 5232 | 0.627 |
| 25) Allyl Chloride | (2) | 4.136 | 41 | 5133 | 0.564 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 360861 | 250.000 |
| 28) Methylene Chloride | (2) | 4.331 | 84 | 2692 | 0.495 |
| 30) t-Butyl alcohol | (1) | 4.447 | 59 | 19780 | 12.054 |
| 31) Acrylonitrile | (2) | 4.684 | 53 | 1355 | 0.338 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.745 | 73 | 8048 | 0.450 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 2125 | 0.409 |
| 34) n-Hexane | (2) | 5.195 | 57 | 3238 | 0.397 |
| 36) 1,1-Dichloroethane | (2) | 5.426 | 63 | 3766 | 0.401 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 8623 | 0.458 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.536 | 53 | 3214 | 0.363 |
| 40) Ethyl t-butyl ether | (2) | 6.022 | 59 | 7849 | 0.445 |
| 44) 2-Butanone | (2) | 6.229 | 43 | 7050 | 1.132 |
| 42) cis-1,2-Dichloroethene | (2) | 6.260 | 96 | 2508 | 0.419 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 2813 | 0.381 |
| 47) Propionitrile | (1) | 6.308 | 54 | 16711 | 9.061 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 18682 | 4.395 |
| 49) Bromochloromethane | (2) | 6.606 | 128 | 1202 | 0.380 |
| 50) Tetrahydrofuran | (1) | 6.612 | 71 | 1256 | 0.759 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 6.746 | 83 | 3807 | 0.402 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4633 | 0.828 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 260446 | 49.008 |
| 53) 1,1,1-Trichloroethane | (2) | 6.978 | 97 | 3224 | 0.407 |
| 54) Cyclohexane | (2) | 7.081 | 56 | 3962 | 0.411 |
| 56) Carbon Tetrachloride | (2) | 7.184 | 117 | 2238 | 0.339 |
| 55) 1,1-Dichloropropene | (2) | 7.197 | 75 | 3101 | 0.405 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 16305 | 27.132 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 70149 | 50.343 |
| 60) Benzene | (2) | 7.458 | 78 | 10237 | 0.449 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 3787M | 0.454 |
| 65) t-Amyl methyl ether | (2) | 7.641 | 73 | 8233 | 0.466 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1139539 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 4596 | 0.478 |
| 69) n-Butanol | (1) | 8.206 | 56 | 18341 | 38.641 |
| 71) Trichloroethene | (2) | 8.340 | 95 | 2405 | 0.407 |
| 72) Methylcyclohexane | (2) | 8.663 | 83 | 4025 | 0.383 |
| 73) 1,2-Dichloropropane | (2) | 8.681 | 63 | 2582 | 0.431 |
| 76) Methyl Methacrylate | (2) | 8.754 | 69 | 2582 | 0.392 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 1426 | 10.958 |
| 74) Dibromomethane | (2) | 8.790 | 93 | 1668 | 0.426 |
| 78) Bromodichloromethane | (2) | 9.028 | 83 | 2512 | 0.372 |
| 79) 2-Nitropropane | (2) | 9.277 | 41 | 2757 | 1.049 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.374 | 63 | 2181 | 0.425 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 3389 | 0.384 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 10413 | 0.941 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1131866 | 50.890 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 6313 | 0.745 |
| 88) Toluene | (3) | 9.940 | 92 | 6564 | 0.448 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 2924 | 0.362 |
| 91) Ethyl Methacrylate | (3) | 10.250 | 69 | 3761 | 0.371 |
| 92) 1,1,2-Trichloroethane | (3) | 10.396 | 97 | 2716 | 0.472 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 2661 | 0.413 |
| 94) 1,3-Dichloropropane | (3) | 10.567 | 76 | 4506 | 0.464 |
| 96) 2-Hexanone | (3) | 10.603 | 43 | 8033M | 0.917 |
| 97) Dibromochloromethane | (3) | 10.774 | 129 | 1767 | 0.327 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 2668 | 0.430 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 860874 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 11.315 | 91 | 4801 | 0.588 |
| 102) Chlorobenzene | (3) | 11.339 | 112 | 7783 | 0.463 |
| 104) Ethylbenzene | (3) | 11.425 | 91 | 11959 | 0.425 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.425 | 131 | 1888 | 0.364 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 9508 | 0.848 |
| 108) Xylene (Total) | (3) | | 106 | 14047 | 1.263 |
| 107) o-Xylene | (3) | 11.869 | 106 | 4539 | 0.415 |
| 109) Styrene | (3) | 11.887 | 104 | 6589 | 0.351 |
| 110) Bromoform | (3) | 12.051 | 173 | 1176 | 0.280 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 11524 | 0.404 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 1831 | 18.561 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 419496 | 50.290 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 4107 | 0.433 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 9189 | 3.054 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 3539 | 0.454 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 1310 | 0.406 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 13967 | 0.415 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 3006 | 0.434 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 9647 | 0.393 |
| 121) 4-Chlorotoluene | (4) | 12.666 | 126 | 3055 | 0.415 |
| 124) tert-Butylbenzene | (4) | 12.873 | 134 | 1851M | 0.352 |
| 125) Pentachloroethane | (4) | 12.915 | 167 | 1018 | 0.256 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 10376 | 0.408 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 12537 | 0.406 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 6729 | 0.453 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 9870 | 0.360 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 470763 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 7190 | 0.470 |
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 11339 | 0.444 |
| 135) Benzyl Chloride | (4) | 13.286 | 91 | 5081 | 0.290 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 6054 | 0.379 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 6595 | 0.398 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 5639M | 0.408 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 6638 | 0.465 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 5430 | 0.405 |
| 141) Diethylbenzene (total) | (4) | | 100 | 18079 | 1.182 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.016 | 75 | 773 | 0.335 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.144 | 180 | 5247 | 0.501 |

M = Compound was manually integrated.
* = Compound is an internal standard.
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Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

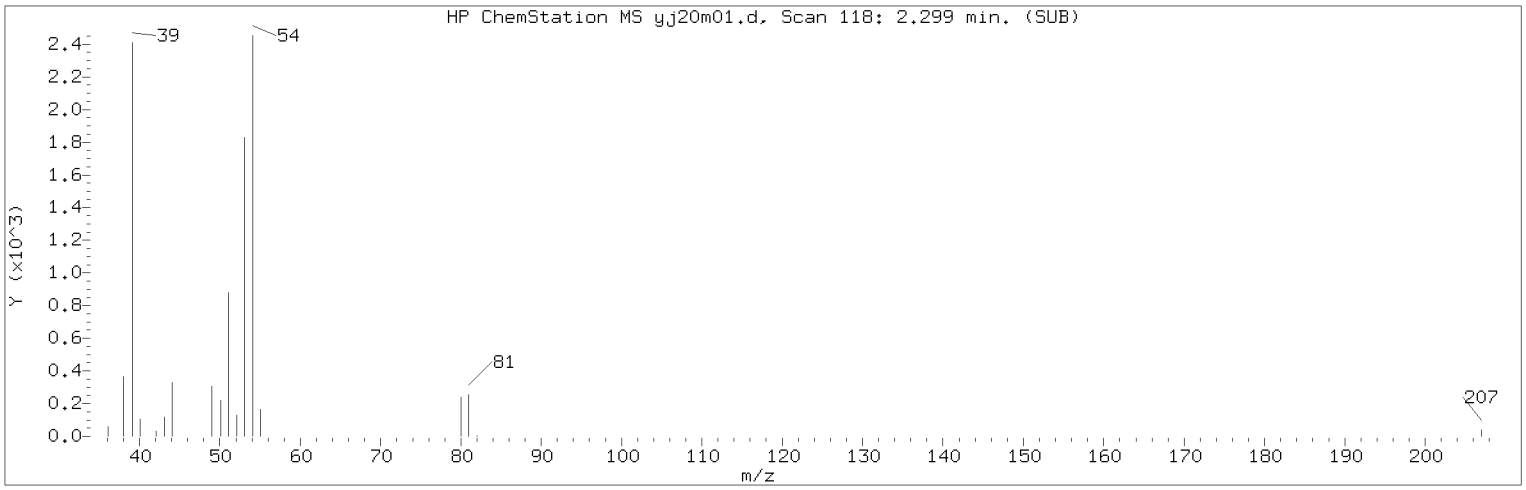
Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.576 | 180 | 5166 | 0.540 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 2444 | 0.520 |
| 148) Naphthalene | (4) | 14.758 | 128 | 15860 | 0.518 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.898 | 180 | 5420 | 0.623 |
| 150) 2-Methylnaphthalene | (4) | 15.561 | 142 | 8810 | 0.535 |

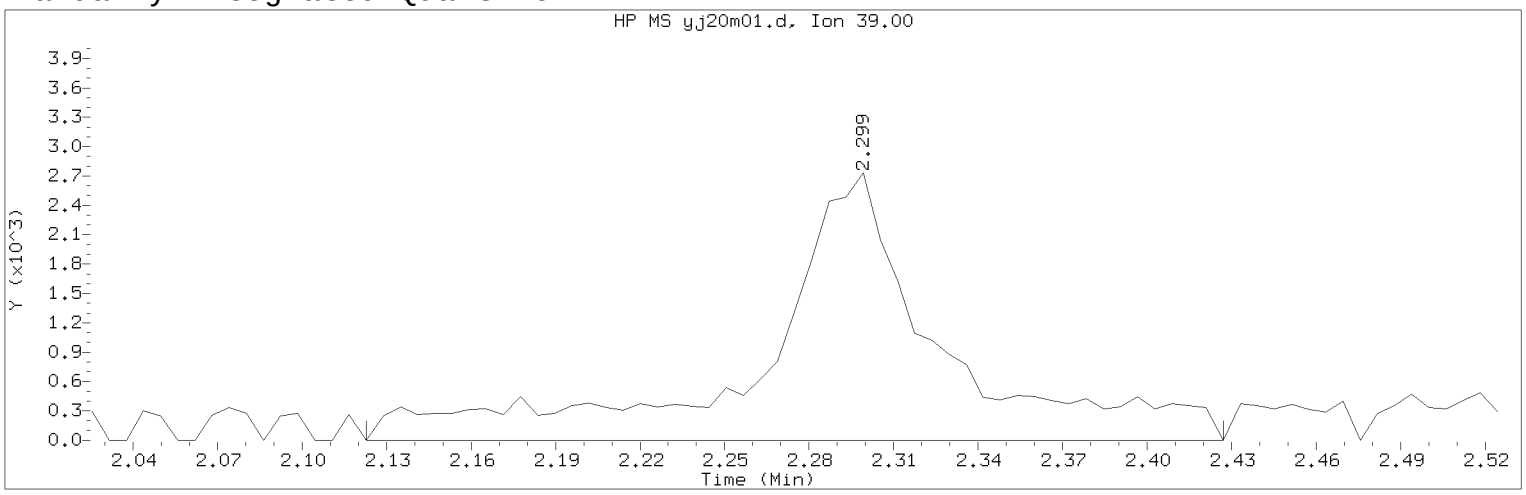


Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

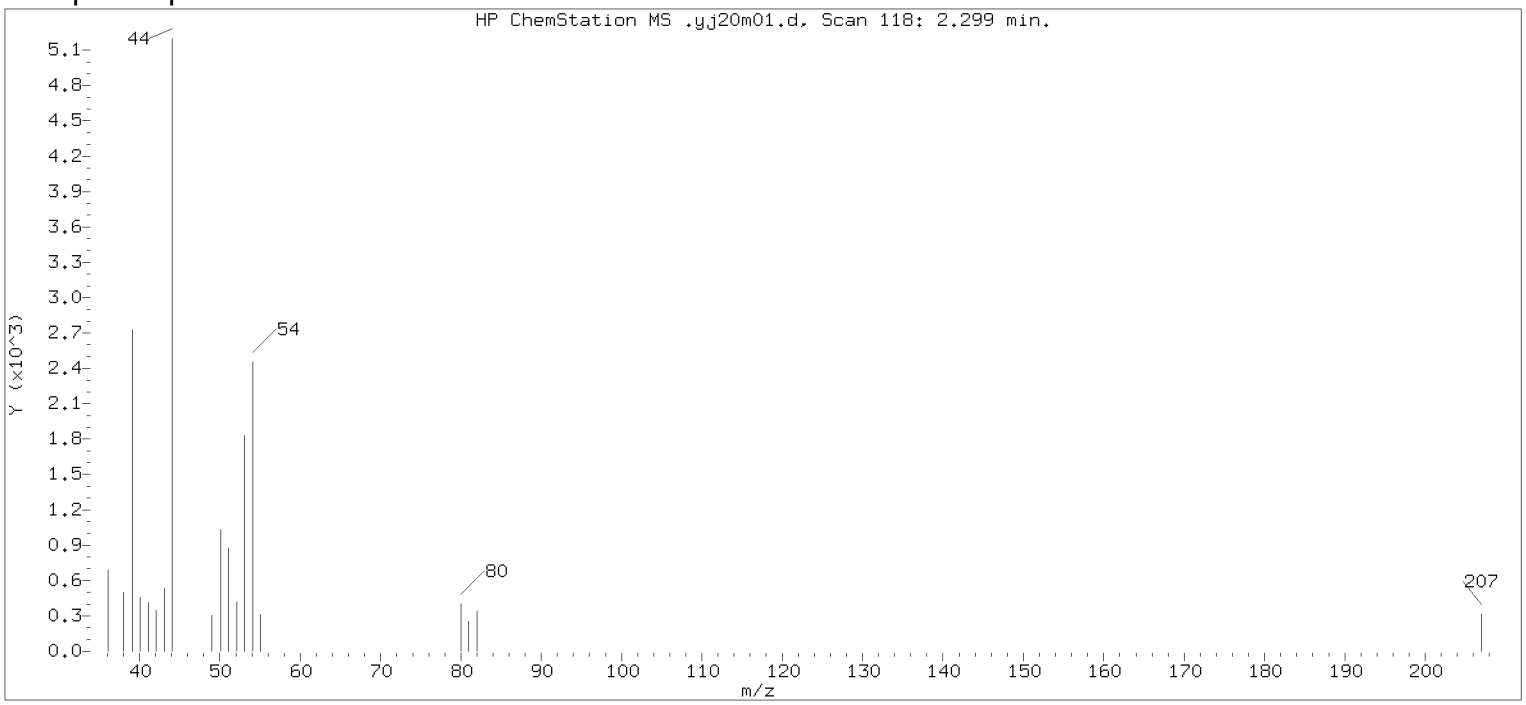
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 118
Retention Time (minutes): 2.299
Quant Ion : 39.00
Area (flag) : 11891M
On-Column Amount (ng) : 1.5516
Integration start scan : 88 Integration stop scan: 138
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

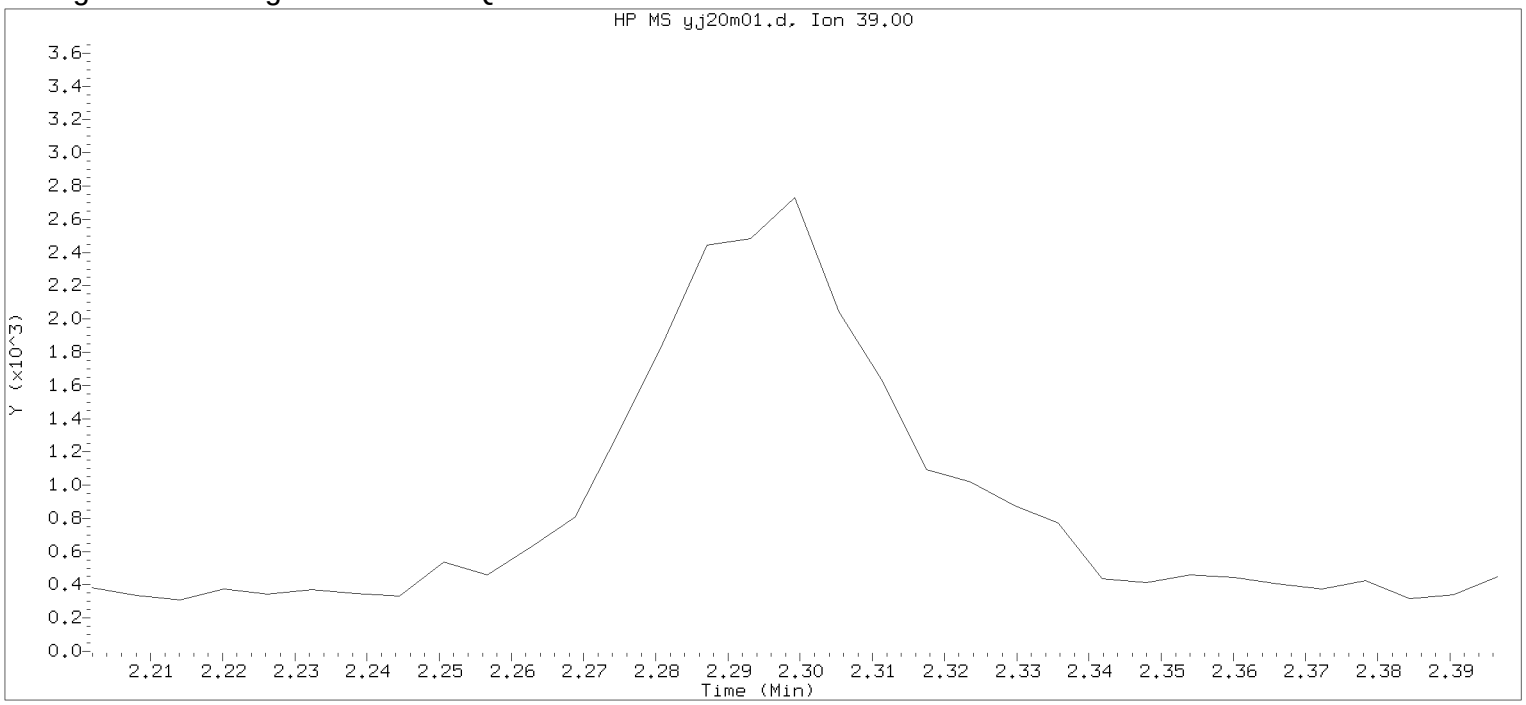
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

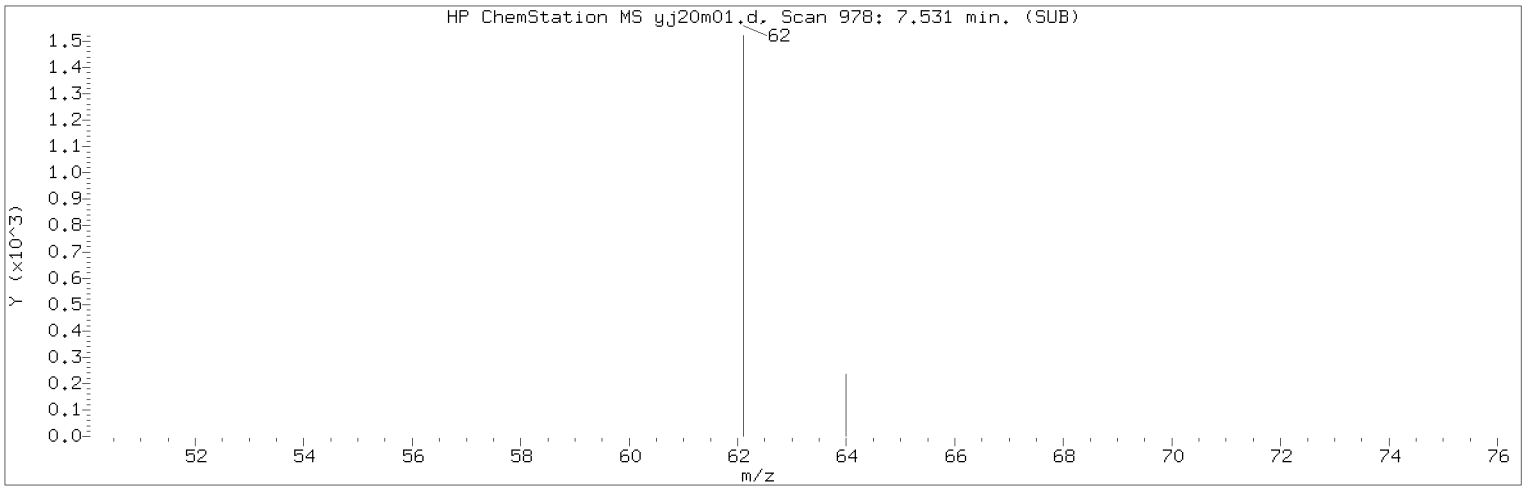
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

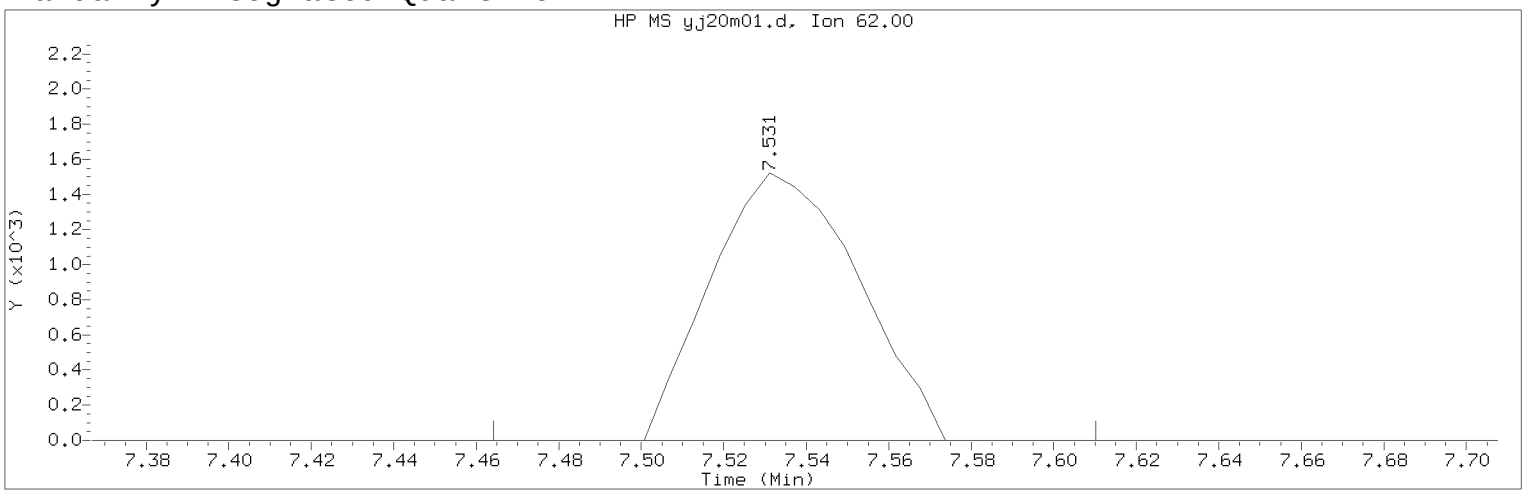
Compound Number : 5
Compound Name : 1,3-Butadiene
Expected RT (minutes) : 2.299
Quant Ion : 39.00

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

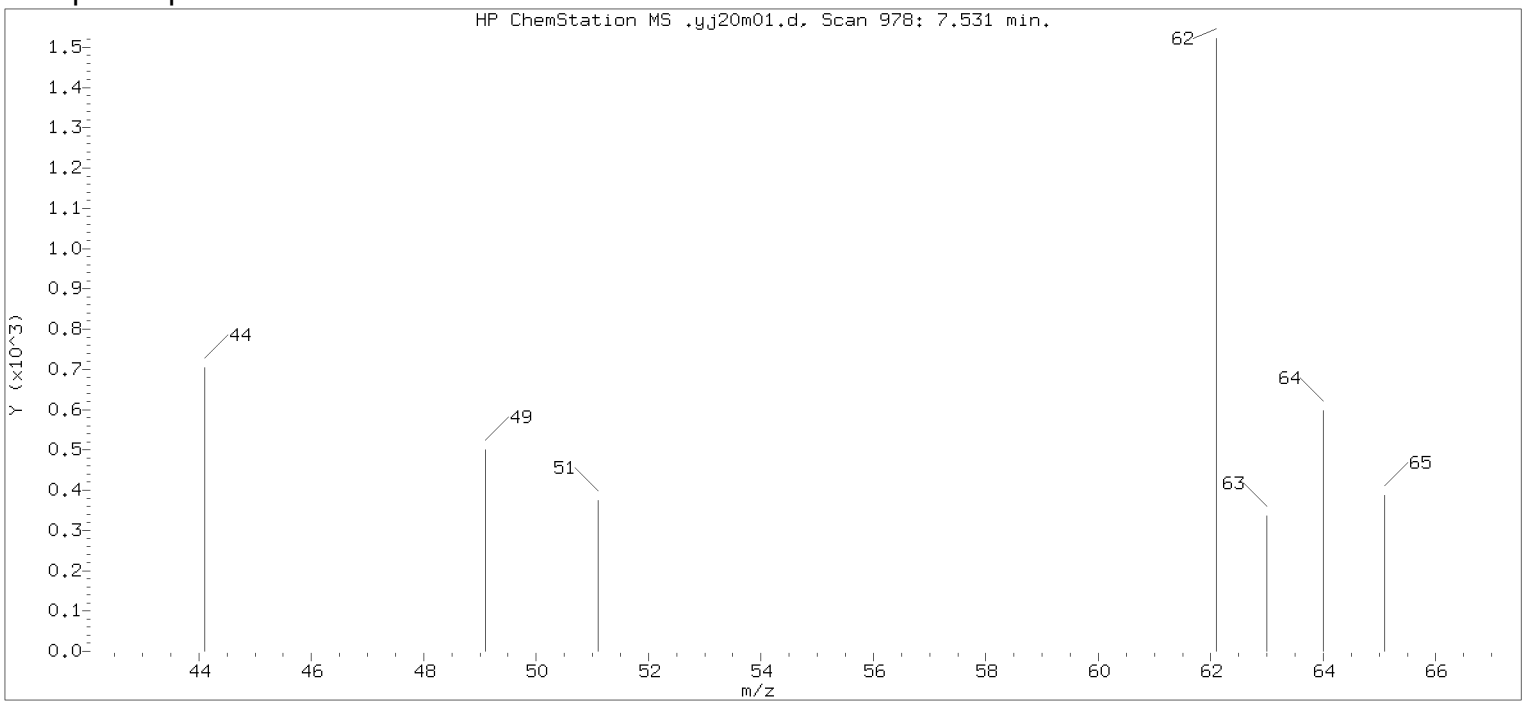
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 978
Retention Time (minutes): 7.531
Quant Ion : 62.00
Area (flag) : 3787M
On-Column Amount (ng) : 0.4544
Integration start scan : 966 Integration stop scan: 990
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

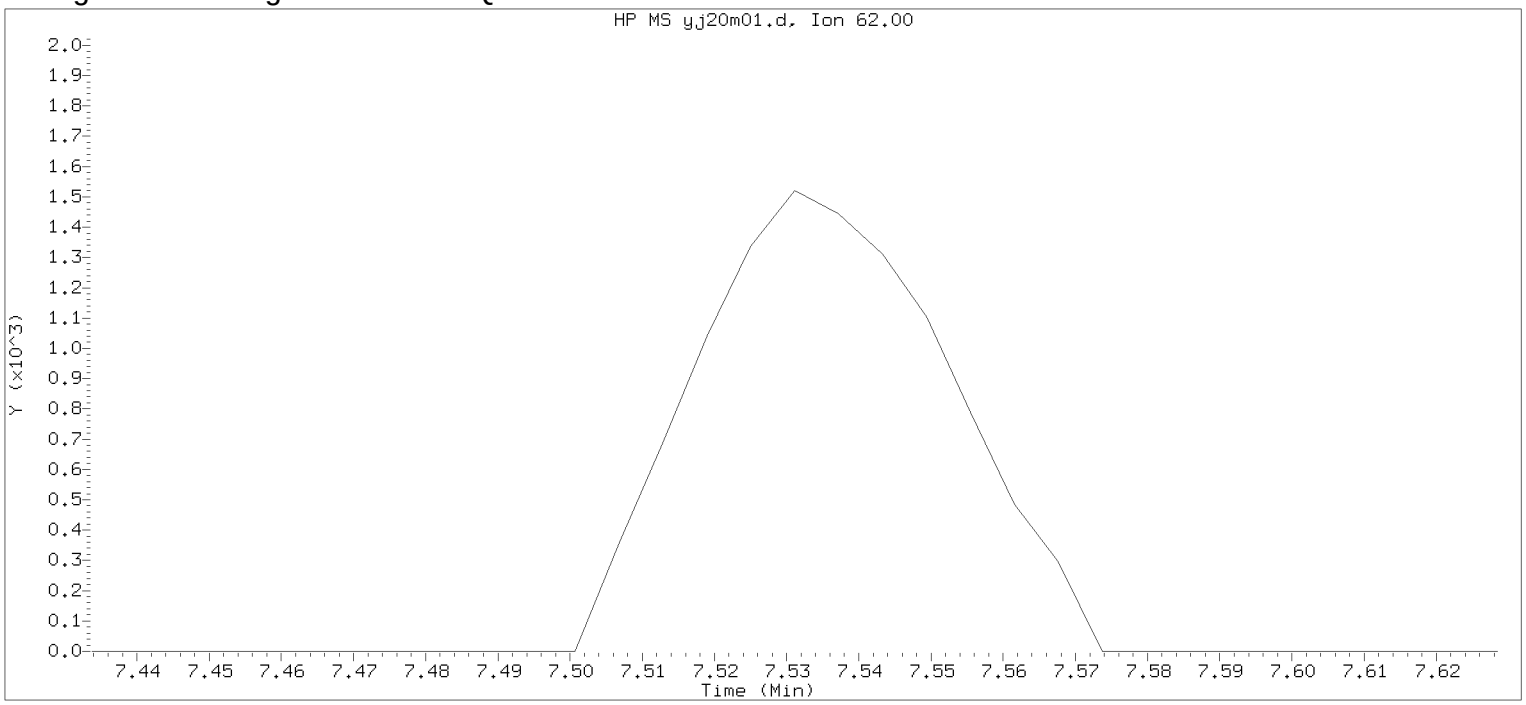
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

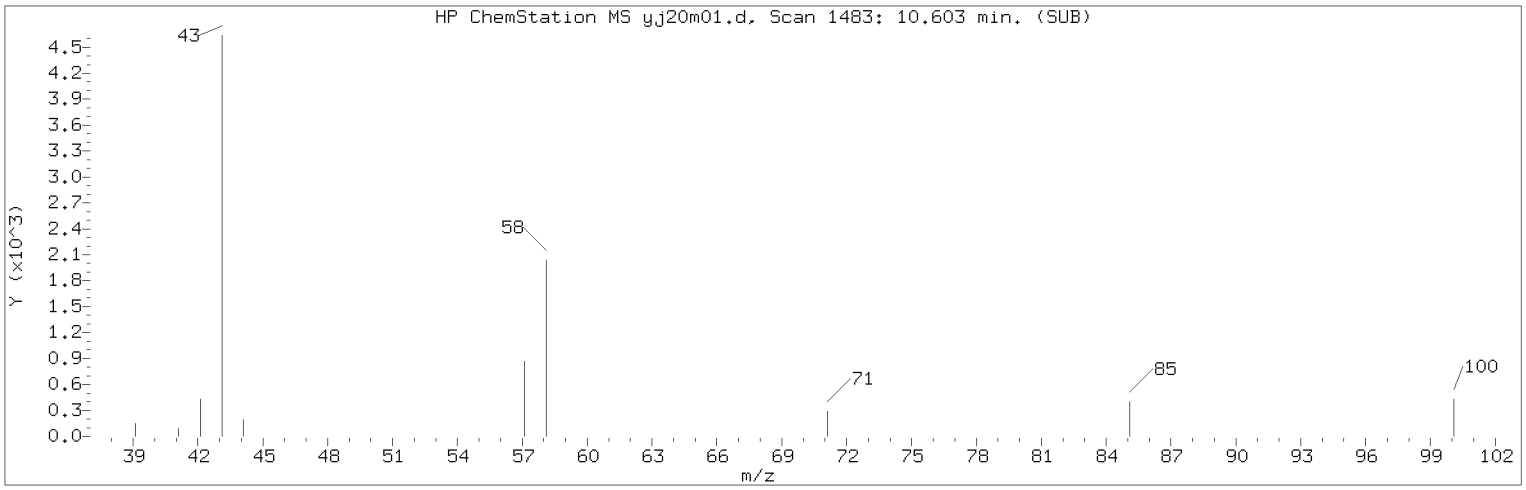
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

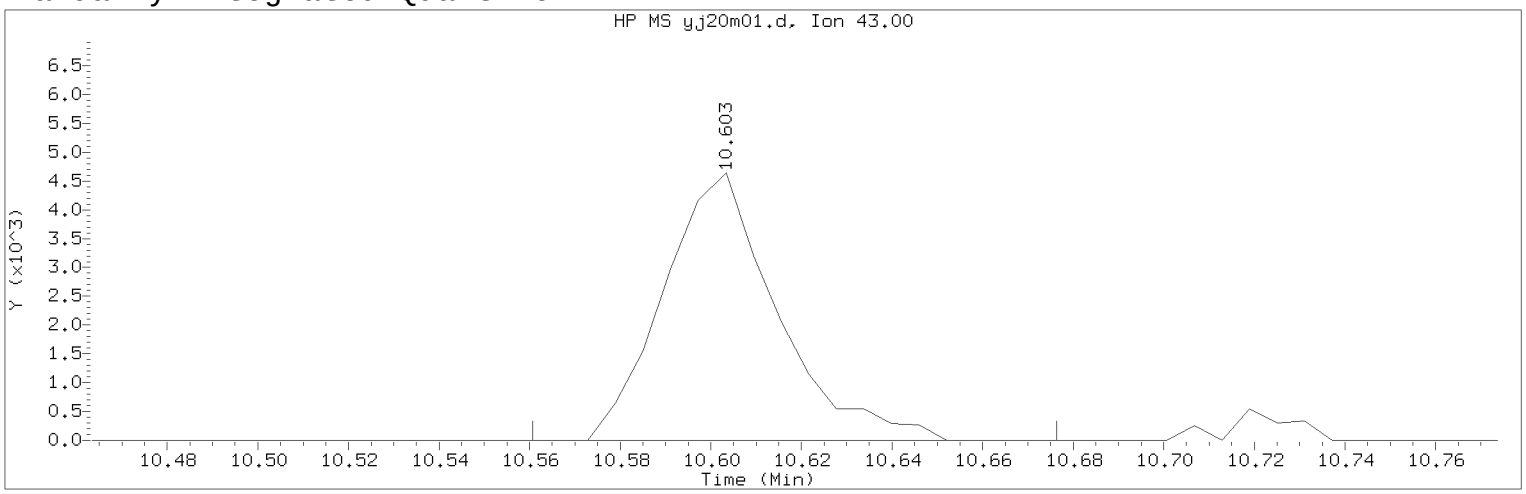
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Expected RT (minutes) : 7.531
Quant Ion : 62.00

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

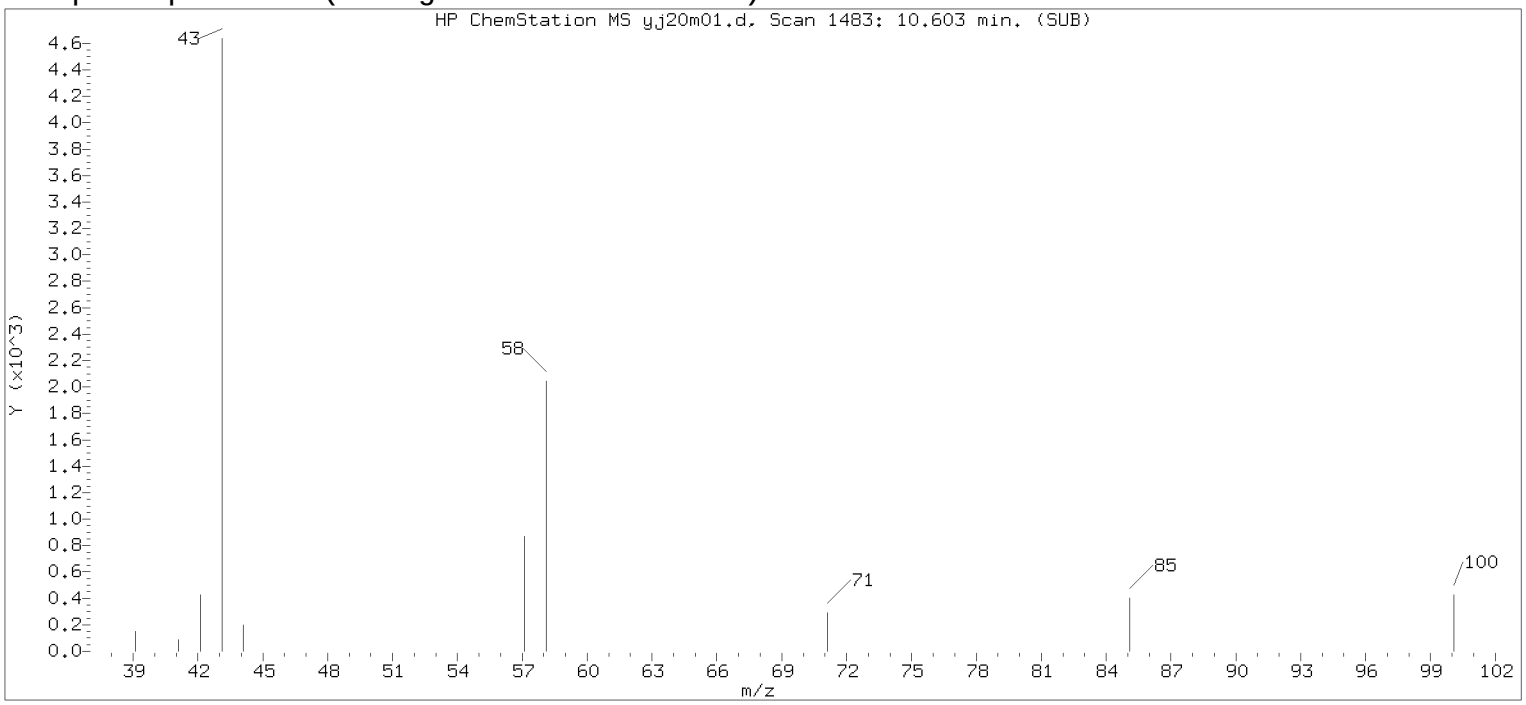
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1483
Retention Time (minutes): 10.603
Quant Ion : 43.00
Area (flag) : 8033M
On-Column Amount (ng) : 0.9168
Integration start scan : 1475 Integration stop scan: 1494
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

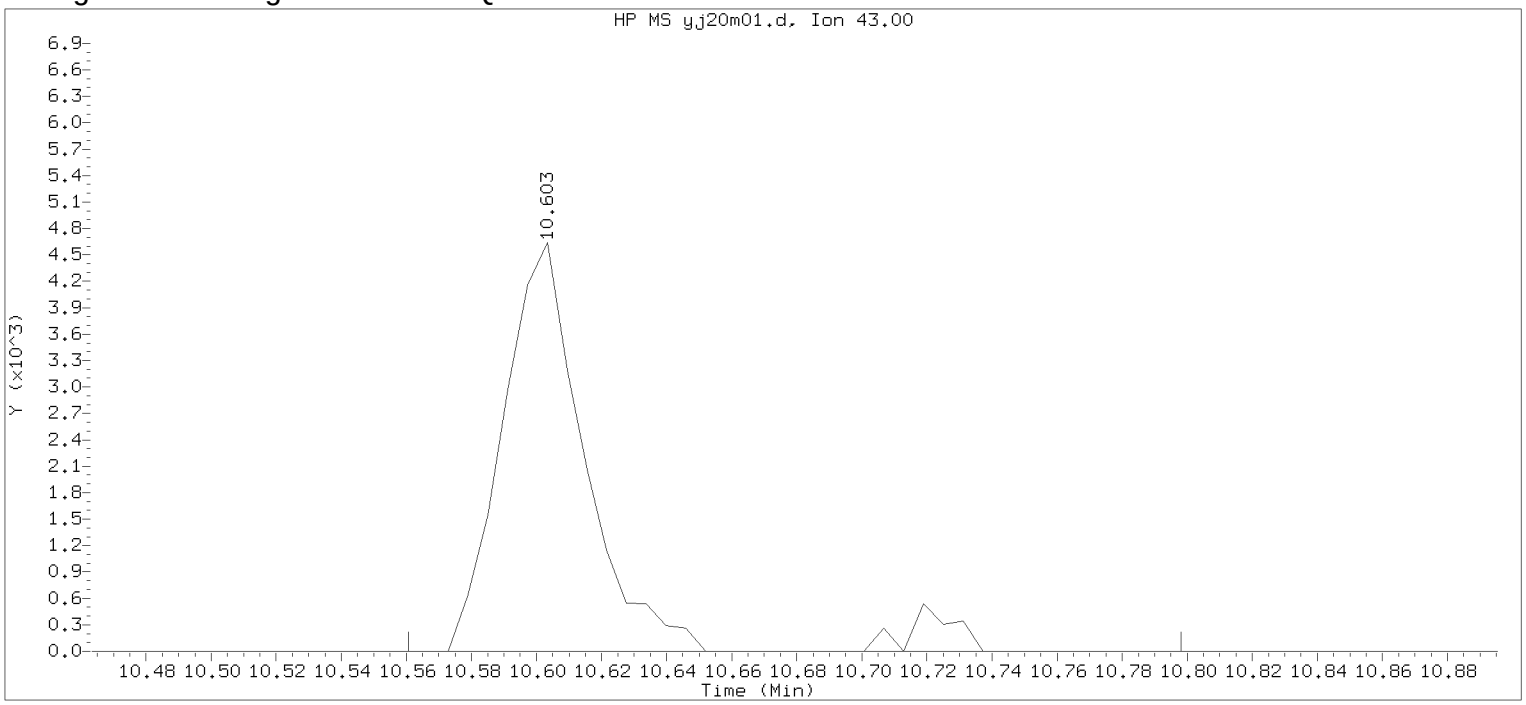
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

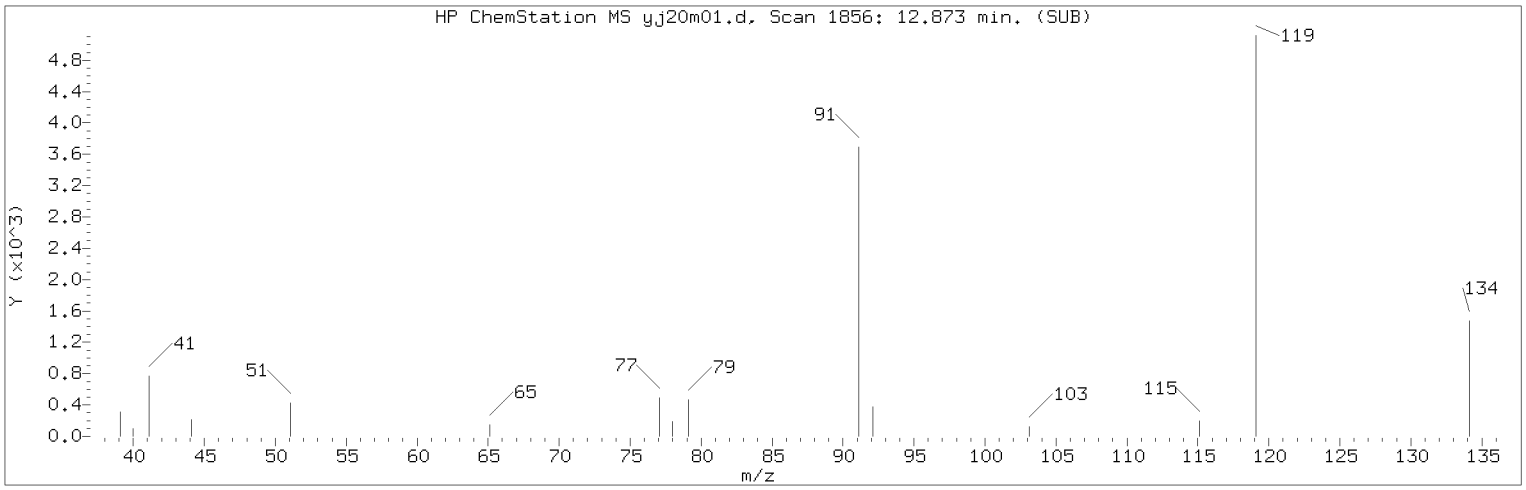
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

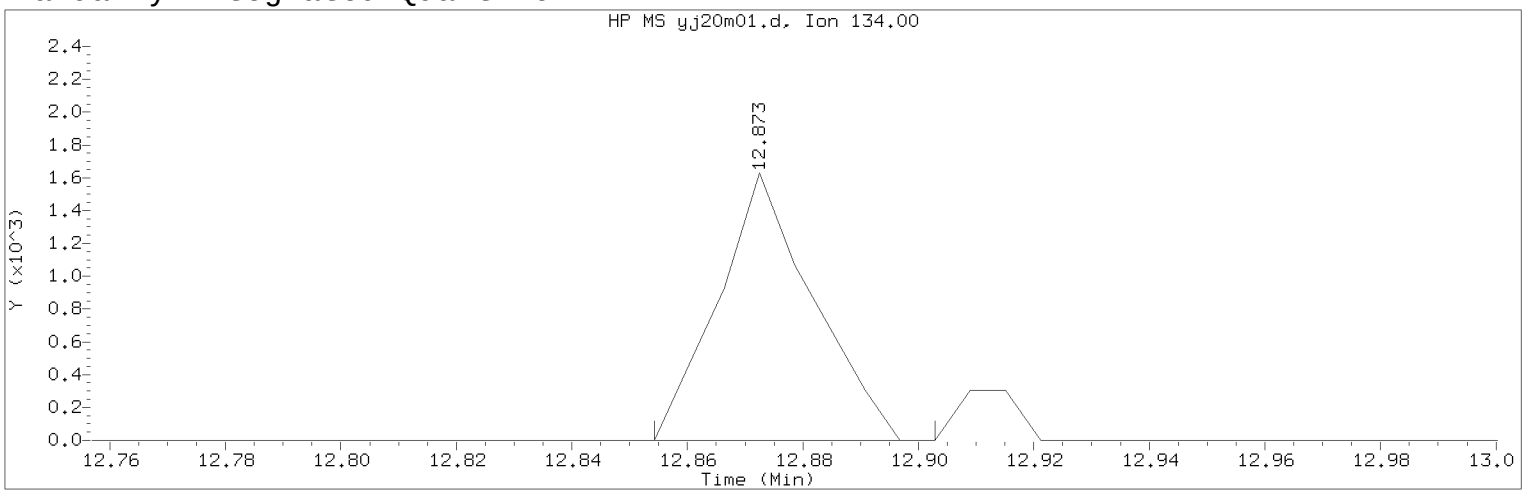
Compound Number : 96
Compound Name : 2-Hexanone
Scan Number : 1483
Retention Time (minutes): 10.603
Quant Ion : 43.00
Area : 8561
On-column Amount (ng) : 0.9771
Integration start scan : 1475 Integration stop scan: 1514
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user KRD89 bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

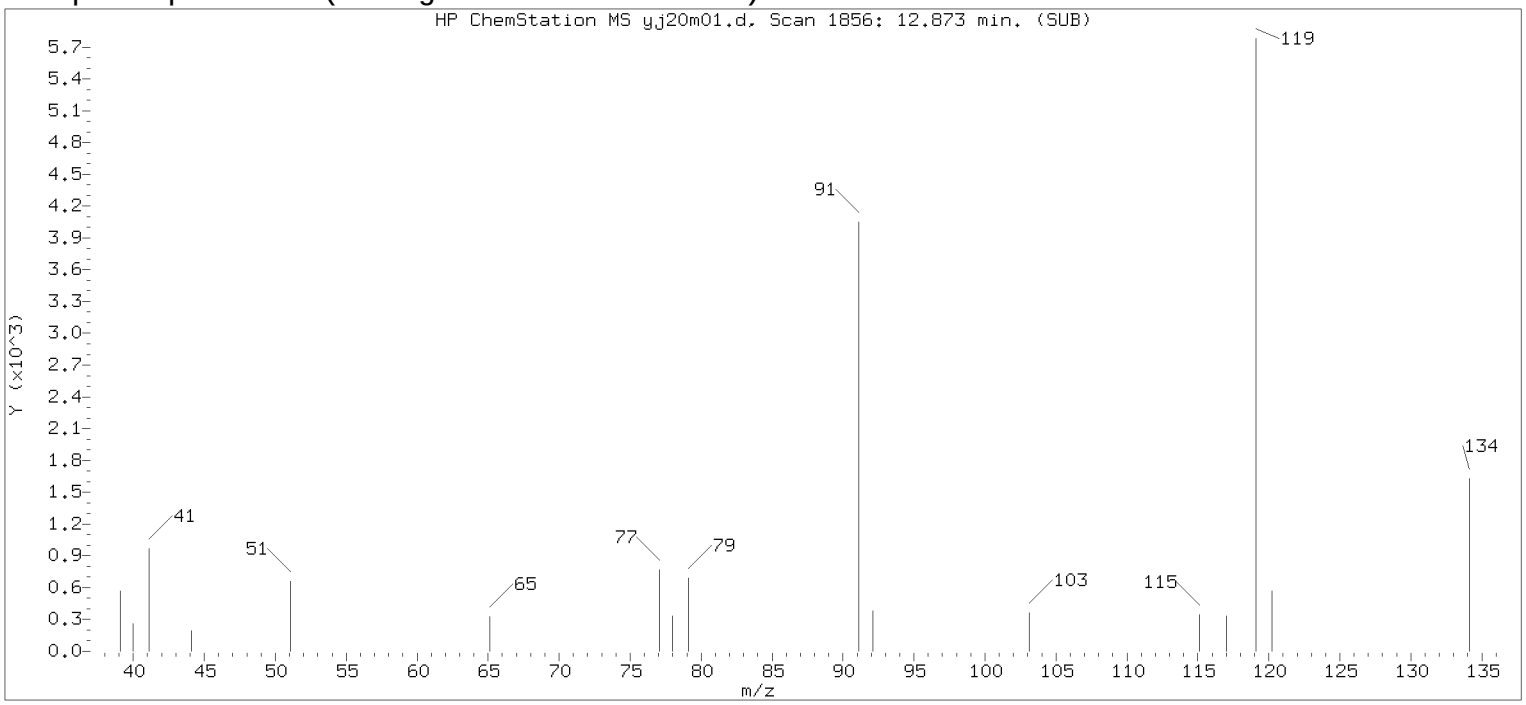
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.873
Quant Ion : 134.00
Area (flag) : 1851M
On-Column Amount (ng) : 0.3524
Integration start scan : 1852 Integration stop scan: 1860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

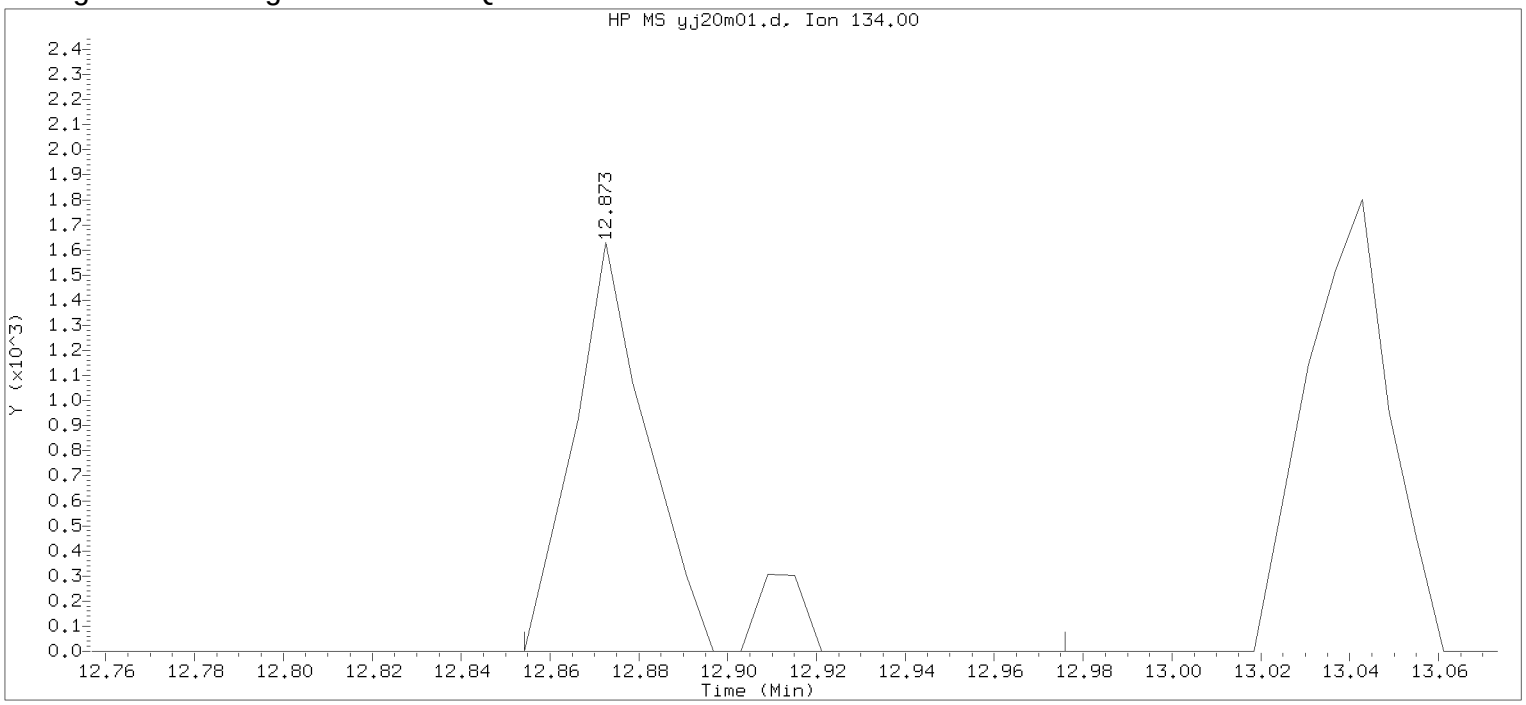
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1856
Retention Time (minutes): 12.873
Quant Ion : 134.00
Area : 2073
On-column Amount (ng) : 0.3949
Integration start scan : 1852 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

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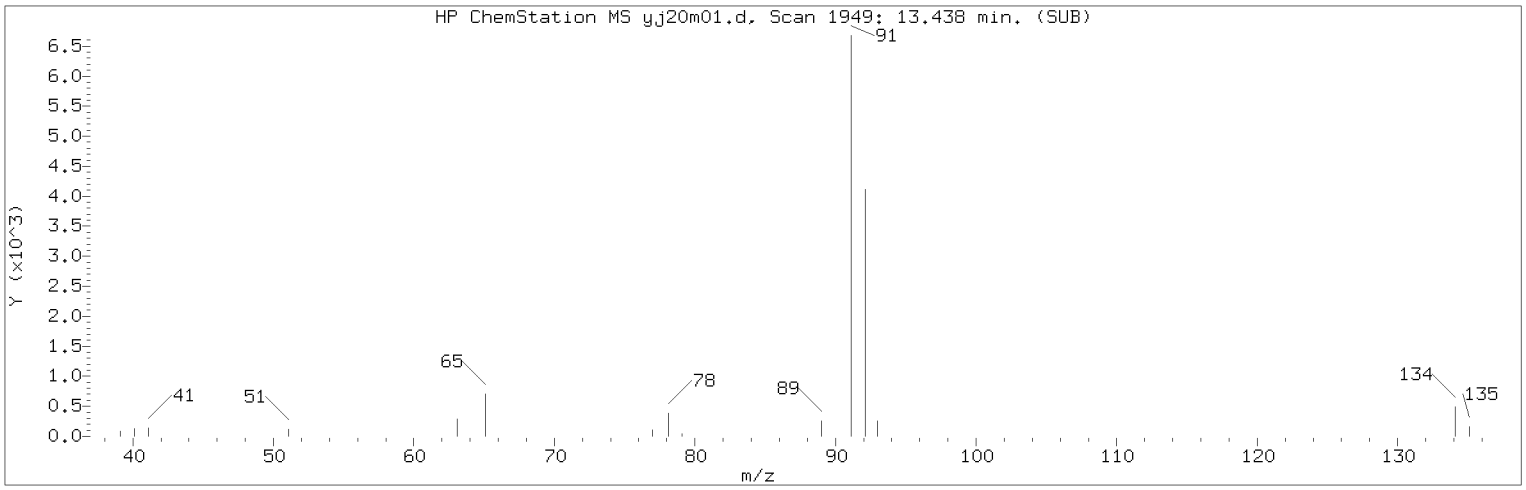
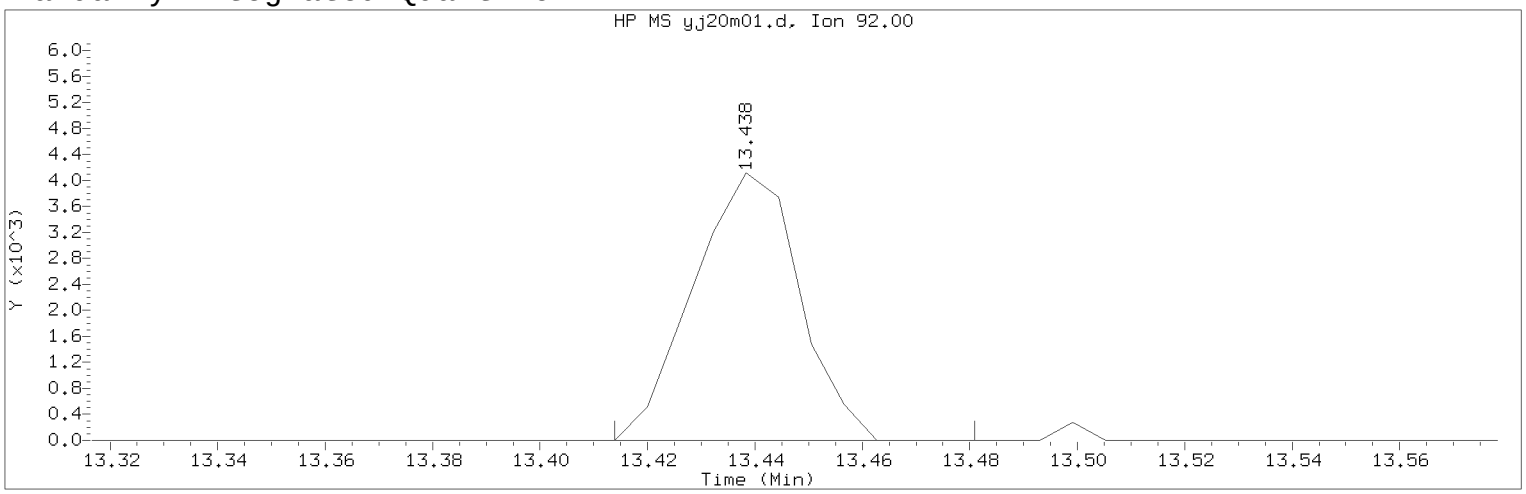
Target 3.5 esignature userKB89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:11 bwk03231

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

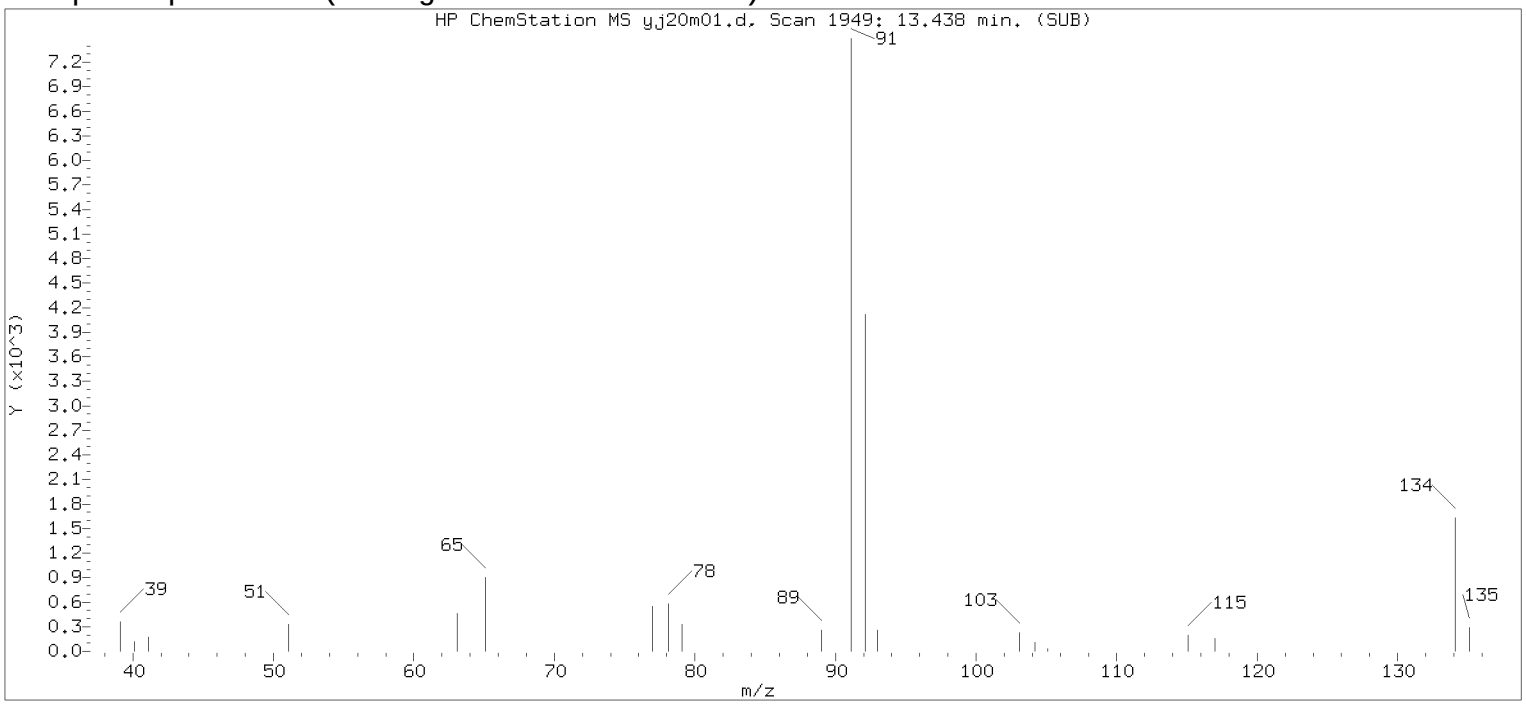
Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 1949
Retention Time (minutes): 13.438
Quant Ion : 92.00
Area (flag) : 5639M
On-Column Amount (ng) : 0.4083
Integration start scan : 1944 Integration stop scan: 1955
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

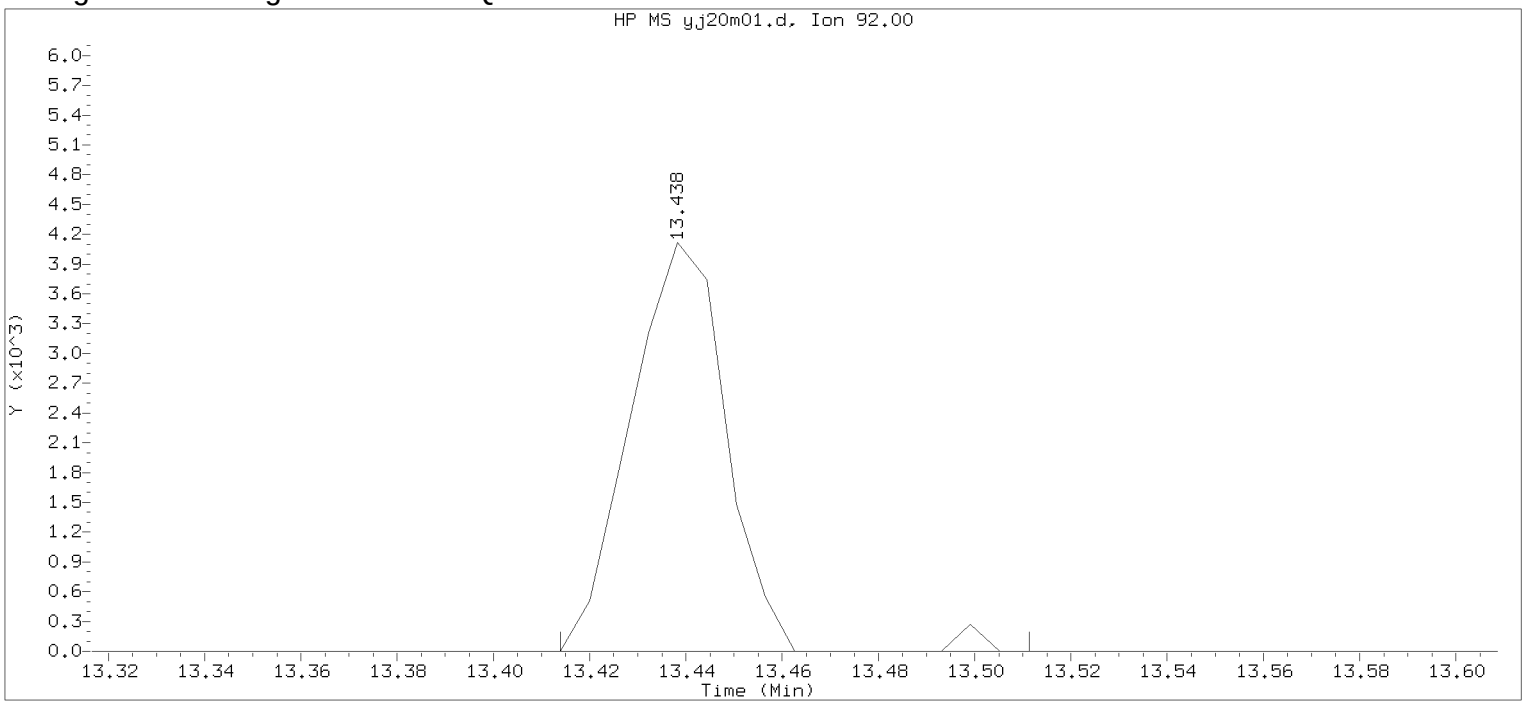
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20m01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 11:51 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 11:52
Date, time and analyst ID of latest file update: 20-Jan-2017 12:07 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 1949
Retention Time (minutes): 13.438
Quant Ion : 92.00
Area : 5739
On-column Amount (ng) : 0.4156
Integration start scan : 1944 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

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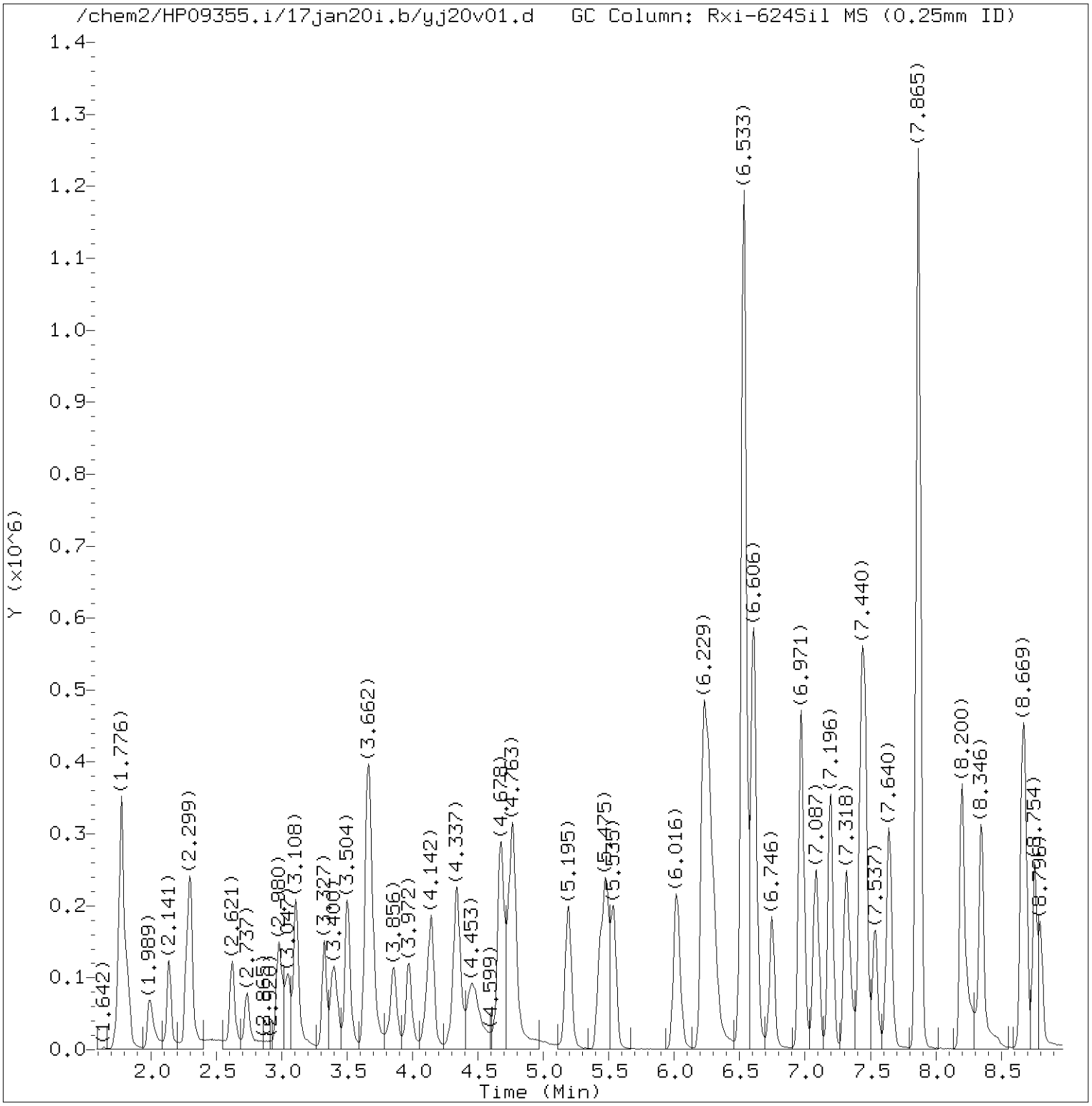
Target 3.5 esignature userKRD89bwk03231




Total Ion Chromatogram (TIC)

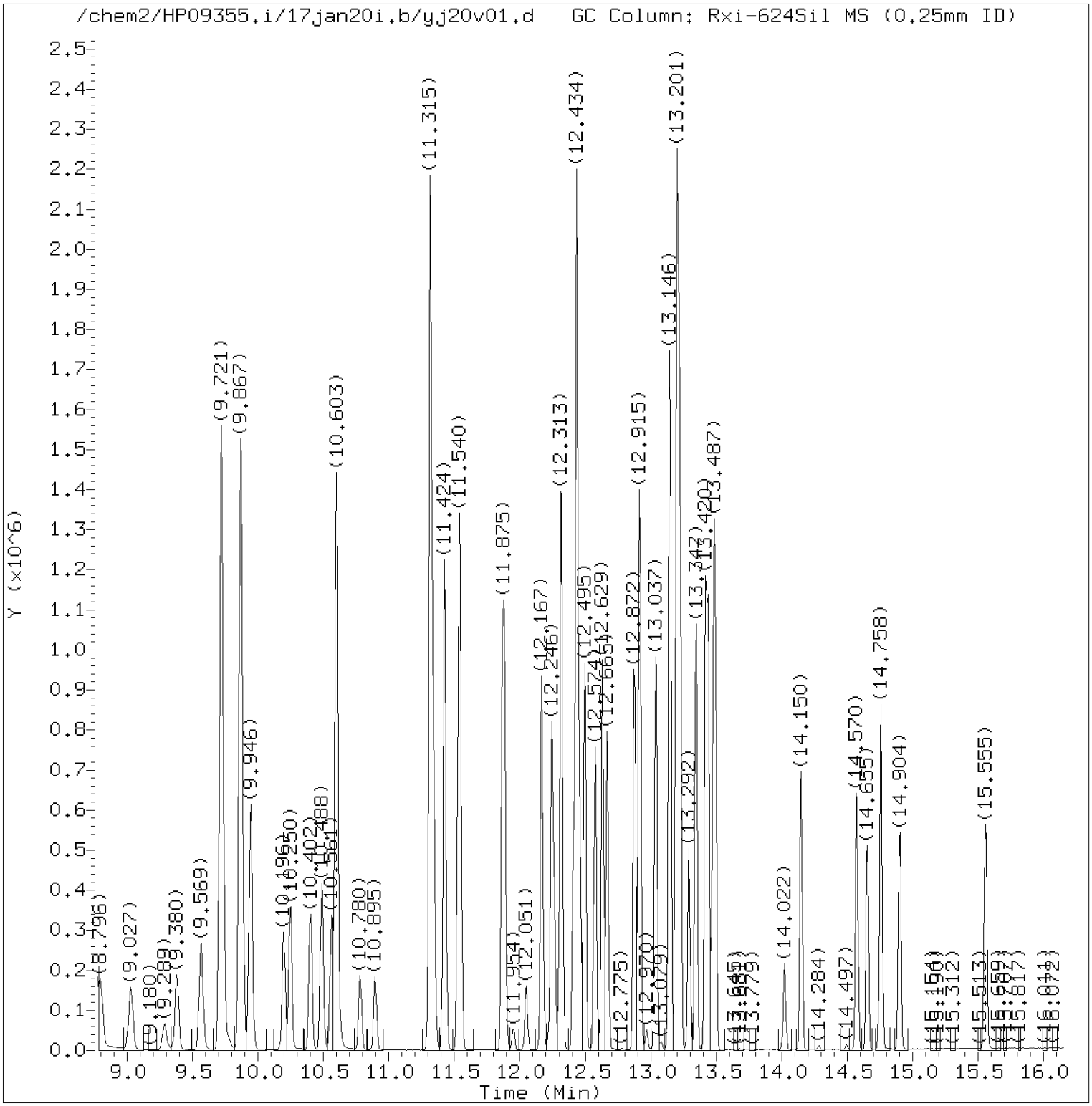
Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.989 | 85 | 139747 | 18.986 |
| 4) Chloromethane | (2) | 2.141 | 50 | 160004 | 20.187 |
| 6) Vinyl Chloride | (2) | 2.275 | 62 | 153730 | 20.631 |
| 5) 1,3-Butadiene | (2) | 2.299 | 39 | 135232 | 17.154 |
| 8) Bromomethane | (2) | 2.621 | 94 | 106690 | 20.194 |
| 9) Chloroethane | (2) | 2.737 | 64 | 86679 | 20.113 |
| 10) Dichlorofluoromethane | (2) | 2.980 | 67 | 181493 | 18.466 |
| 12) Trichlorofluoromethane | (2) | 3.047 | 101 | 182082 | 20.779 |
| 11) n-Pentane | (2) | 3.108 | 43 | 188477 | 19.222 |
| 14) Ethyl ether | (2) | 3.327 | 59 | 113576 | 21.063 |
| 15) Freon 123a | (2) | 3.406 | 67 | 118878 | 19.305 |
| 16) Acrolein | (1) | 3.504 | 56 | 291736 | 142.128 |
| 17) 1,1-Dichloroethene | (2) | 3.650 | 96 | 89746 | 20.285 |
| 18) Acetone | (1) | 3.674 | 58 | 163513 | 167.552 |
| 19) Freon 113 | (2) | 3.674 | 101 | 87244 | 19.174 |
| 21) 2-Propanol | (1) | 3.838 | 45 | 100717 | 129.433 |
| 22) Methyl Iodide | (2) | 3.856 | 142 | 155384 | 18.485 |
| 23) Carbon Disulfide | (2) | 3.972 | 76 | 248778 | 17.869 |
| 27) Methyl Acetate | (2) | 4.112 | 43 | 171797 | 20.001 |
| 25) Allyl Chloride | (2) | 4.148 | 41 | 164668 | 17.601 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.331 | 65 | 336889 | 250.000 |
| 28) Methylene Chloride | (2) | 4.337 | 84 | 105604 | 18.865 |
| 30) t-Butyl alcohol | (1) | 4.453 | 59 | 275728 | 179.984 |
| 31) Acrylonitrile | (2) | 4.678 | 53 | 420663 | 102.045 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.751 | 73 | 334950 | 18.194 |
| 32) trans-1,2-Dichloroethene | (2) | 4.769 | 96 | 104440 | 19.518 |
| 34) n-Hexane | (2) | 5.195 | 57 | 166089 | 19.788 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 185156 | 19.159 |
| 38) di-Isopropyl ether | (2) | 5.475 | 45 | 360462 | 18.605 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.542 | 53 | 166891 | 18.341 |
| 40) Ethyl t-butyl ether | (2) | 6.016 | 59 | 329801 | 18.176 |
| 44) 2-Butanone | (2) | 6.223 | 43 | 998616 | 155.937 |
| 42) cis-1,2-Dichloroethene | (2) | 6.266 | 96 | 115407 | 18.745 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 141606 | 18.661 |
| 47) Propionitrile | (1) | 6.308 | 54 | 256234 | 148.821 |
| 48) Methacrylonitrile | (2) | 6.533 | 67 | 614049 | 140.424 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 59836 | 18.409 |
| 50) Tetrahydrofuran | (1) | 6.612 | 71 | 173621 | 112.422 |

* = Compound is an internal standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 6.746 | 83 | 183573 | 18.858 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 219847 | 38.263 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 272217 | 49.793 |
| 53) 1,1,1-Trichloroethane | (2) | 6.977 | 97 | 172461 | 21.164 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 190208 | 19.160 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 127554 | 18.795 |
| 55) 1,1-Dichloropropene | (2) | 7.196 | 75 | 143701 | 18.250 |
| 58) Isobutyl Alcohol | (1) | 7.318 | 41 | 269431 | 480.239 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.427 | 102 | 71302 | 49.742 |
| 60) Benzene | (2) | 7.458 | 78 | 441151 | 18.828 |
| 61) 1,2-Dichloroethane | (2) | 7.537 | 62 | 159876 | 18.647 |
| 65) t-Amyl methyl ether | (2) | 7.640 | 73 | 329427 | 18.141 |
| 66)*Fluorobenzene | (2) | 7.865 | 96 | 1172261 | 50.000 |
| 67) n-Heptane | (2) | 7.872 | 43 | 180873 | 18.304 |
| 69) n-Butanol | (1) | 8.200 | 56 | 432602M | 976.272 |
| 71) Trichloroethene | (2) | 8.346 | 95 | 116386 | 19.157 |
| 72) Methylcyclohexane | (2) | 8.662 | 83 | 196227 | 18.163 |
| 73) 1,2-Dichloropropane | (2) | 8.687 | 63 | 114895 | 18.651 |
| 76) Methyl Methacrylate | (2) | 8.754 | 69 | 118568 | 17.491 |
| 75) 1,4-Dioxane | (1) | 8.772 | 88 | 58492M | 481.483 |
| 74) Dibromomethane | (2) | 8.796 | 93 | 74291 | 18.432 |
| 78) Bromodichloromethane | (2) | 9.027 | 83 | 124670 | 17.933 |
| 79) 2-Nitropropane | (2) | 9.289 | 41 | 47995 | 17.743 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.380 | 63 | 94075M | 17.828 |
| 81) cis-1,3-Dichloropropene | (2) | 9.563 | 75 | 166383 | 18.308 |
| 82) 4-Methyl-2-pentanone | (2) | 9.721 | 43 | 1250294 | 109.864 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1164533 | 50.425 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 321760 | 36.815 |
| 88) Toluene | (3) | 9.946 | 92 | 289363 | 19.030 |
| 89) trans-1,3-Dichloropropene | (3) | 10.196 | 75 | 155377 | 18.507 |
| 91) Ethyl Methacrylate | (3) | 10.250 | 69 | 190143 | 18.046 |
| 92) 1,1,2-Trichloroethane | (3) | 10.402 | 97 | 111214 | 18.619 |
| 93) Tetrachloroethene | (3) | 10.488 | 166 | 126922 | 18.971 |
| 94) 1,3-Dichloropropane | (3) | 10.561 | 76 | 185954 | 18.427 |
| 96) 2-Hexanone | (3) | 10.597 | 43 | 1011121 | 111.131 |
| 97) Dibromochloromethane | (3) | 10.780 | 129 | 99158 | 17.674 |
| 99) 1,2-Dibromoethane | (3) | 10.895 | 107 | 123553 | 19.166 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 893893 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 11.321 | 91 | 153937 | 18.166 |
| 102) Chlorobenzene | (3) | 11.345 | 112 | 325422 | 18.646 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.424 | 131 | 98943 | 18.373 |
| 104) Ethylbenzene | (3) | 11.424 | 91 | 553197 | 18.913 |
| 106) m+p-Xylene | (3) | 11.540 | 106 | 439120 | 37.705 |
| 108) Xylene (Total) | (3) | | 106 | 649836 | 56.279 |
| 107) o-Xylene | (3) | 11.868 | 106 | 210716 | 18.574 |
| 109) Styrene | (3) | 11.887 | 104 | 356711 | 18.319 |
| 110) Bromoform | (3) | 12.051 | 173 | 70655 | 16.174 |
| 111) Isopropylbenzene | (3) | 12.167 | 105 | 554328 | 18.724 |
| 112) Cyclohexanone | (1) | 12.246 | 55 | 398962 | 4332.186 |
| 114)$4-Bromofluorobenzene | (3) | 12.313 | 95 | 439588 | 50.752 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.410 | 83 | 188544M | 18.746 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.434 | 53 | 298344 | 93.591 |
| 115) Bromobenzene | (4) | 12.434 | 156 | 148877 | 18.032 |
| 117) 1,2,3-Trichloropropane | (4) | 12.459 | 110 | 64405 | 18.843 |
| 119) n-Propylbenzene | (4) | 12.495 | 91 | 667740 | 18.712 |
| 120) 2-Chlorotoluene | (4) | 12.574 | 126 | 134798 | 18.358 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.629 | 105 | 478317 | 18.382 |
| 121) 4-Chlorotoluene | (4) | 12.665 | 126 | 144371 | 18.523 |
| 124) tert-Butylbenzene | (4) | 12.878 | 134 | 103654M | 18.631 |
| 125) Pentachloroethane | (4) | 12.915 | 167 | 72227 | 17.170 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.915 | 105 | 494011 | 18.359 |
| 127) sec-Butylbenzene | (4) | 13.037 | 105 | 616577 | 18.850 |
| 129) 1,3-Dichlorobenzene | (4) | 13.140 | 146 | 282648 | 17.943 |
| 130) p-Isopropyltoluene | (4) | 13.146 | 119 | 529971 | 18.236 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.201 | 152 | 498682 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.219 | 146 | 295550 | 18.228 |
| 134) 1,2,3-Trimethylbenzene | (4) | 13.225 | 105 | 505209 | 18.691 |
| 135) Benzyl Chloride | (4) | 13.292 | 91 | 310049 | 16.718 |
| 136) 1,3-Diethylbenzene | (4) | 13.347 | 119 | 308986 | 18.257 |
| 137) 1,4-Diethylbenzene | (4) | 13.420 | 119 | 328686 | 18.718 |
| 139) n-Butylbenzene | (4) | 13.438 | 92 | 268546 | 18.358 |
| 138) 1,2-Dichlorobenzene | (4) | 13.475 | 146 | 275901 | 18.235 |
| 140) 1,2-Diethylbenzene | (4) | 13.493 | 119 | 264302 | 18.611 |
| 141) Diethylbenzene (total) | (4) | | 100 | 901974 | 55.586 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.022 | 75 | 44270 | 18.118 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.150 | 180 | 198509 | 17.910 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

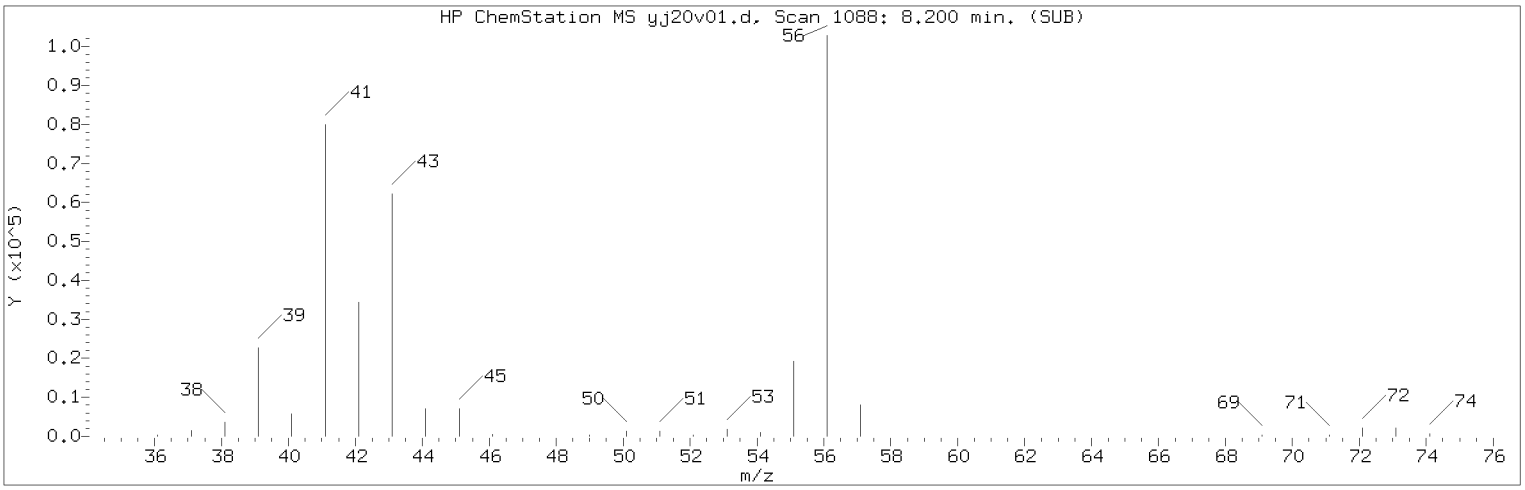
Sample Name: YLGICV Lab Sample ID: YLGICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.576 | 180 | 181367 | 17.906 |
| 147) Hexachlorobutadiene | (4) | 14.655 | 225 | 86884 | 17.455 |
| 148) Naphthalene | (4) | 14.758 | 128 | 602035 | 18.572 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.904 | 180 | 160442 | 17.421 |
| 150) 2-Methylnaphthalene | (4) | 15.555 | 142 | 272271 | 15.596 |

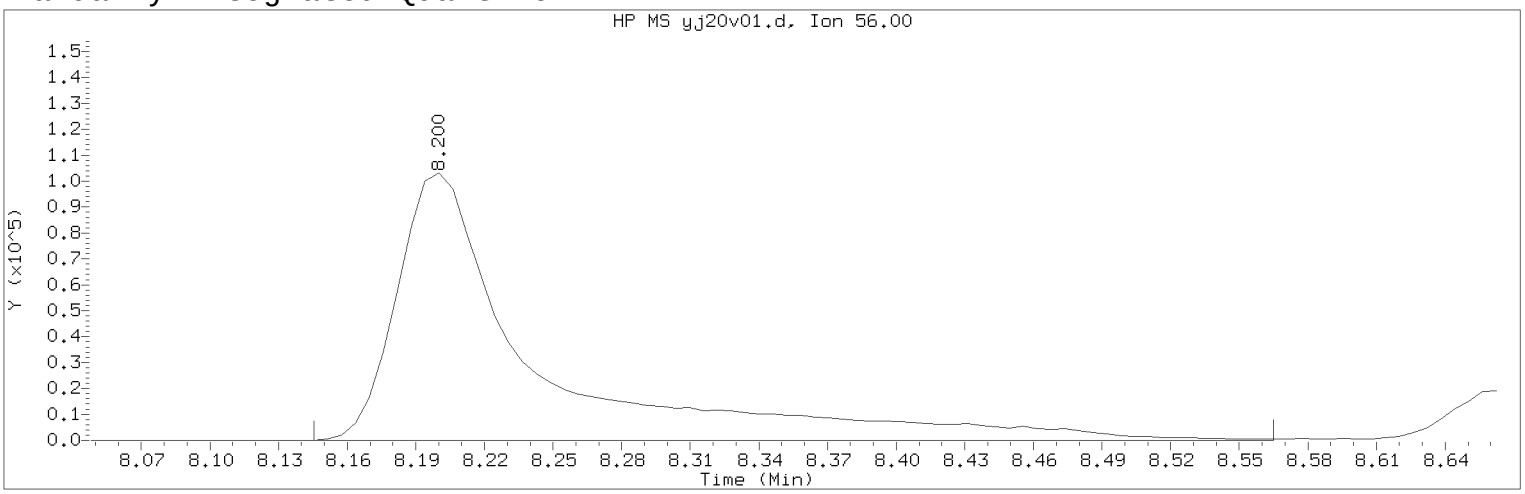


Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

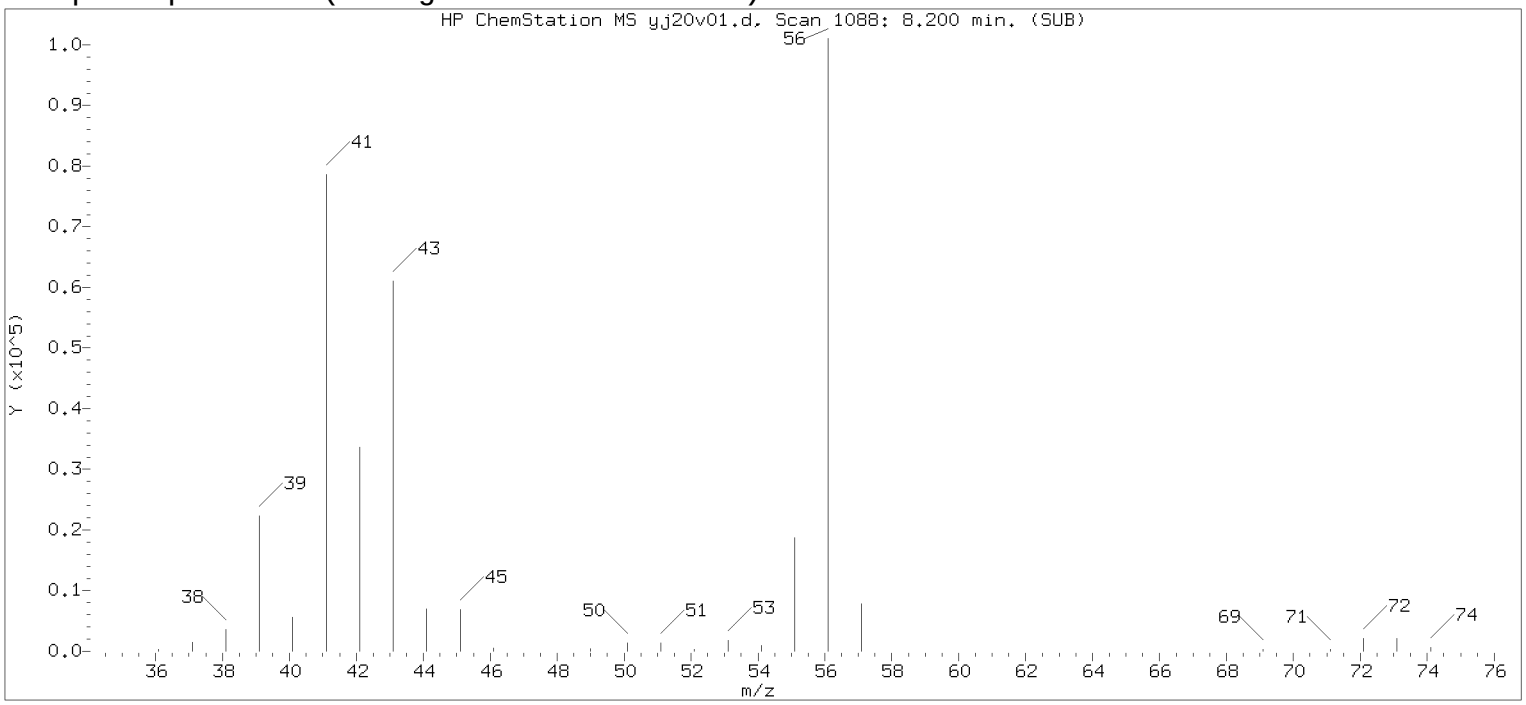
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1088
Retention Time (minutes): 8.200
Quant Ion : 56.00
Area (flag) : 432602M
On-Column Amount (ng) : 976.2715
Integration start scan : 1078 Integration stop scan: 1147
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

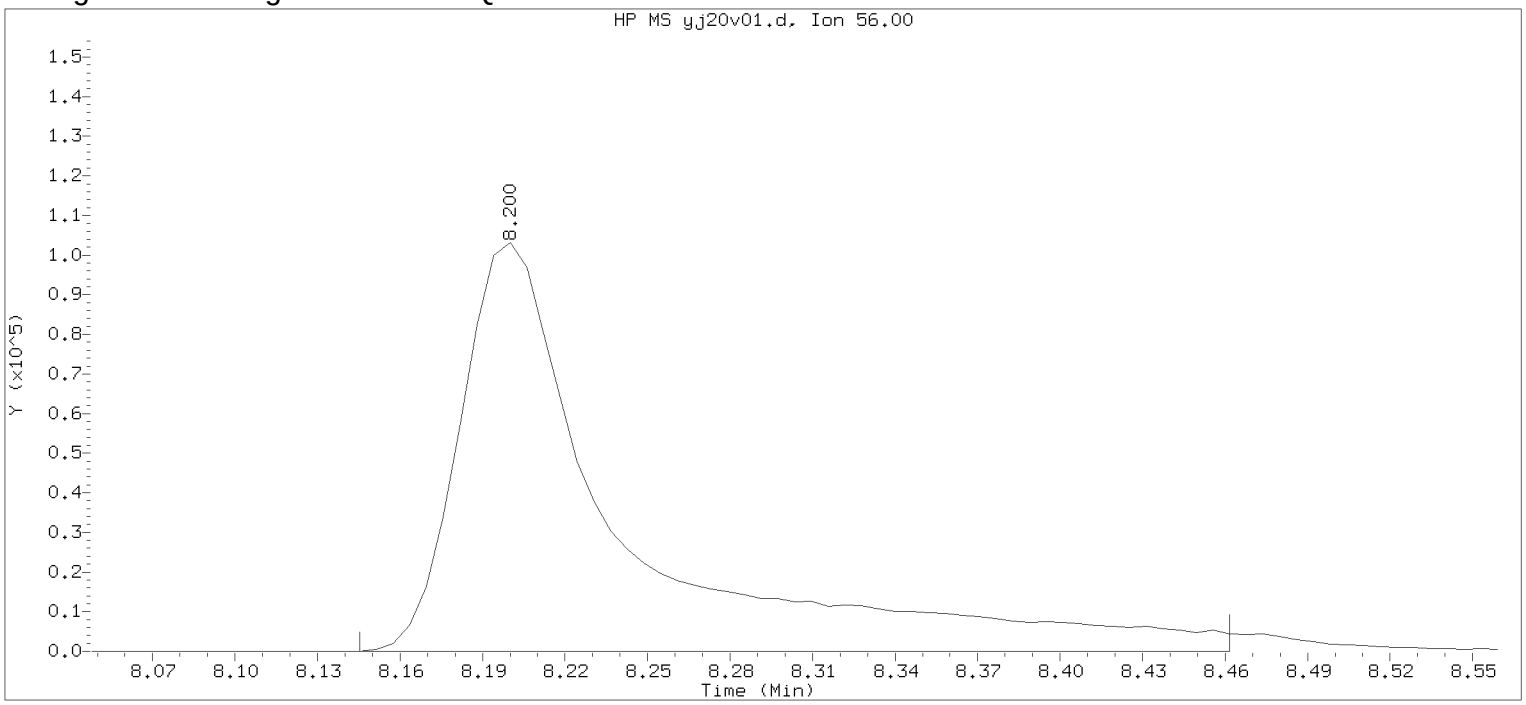
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

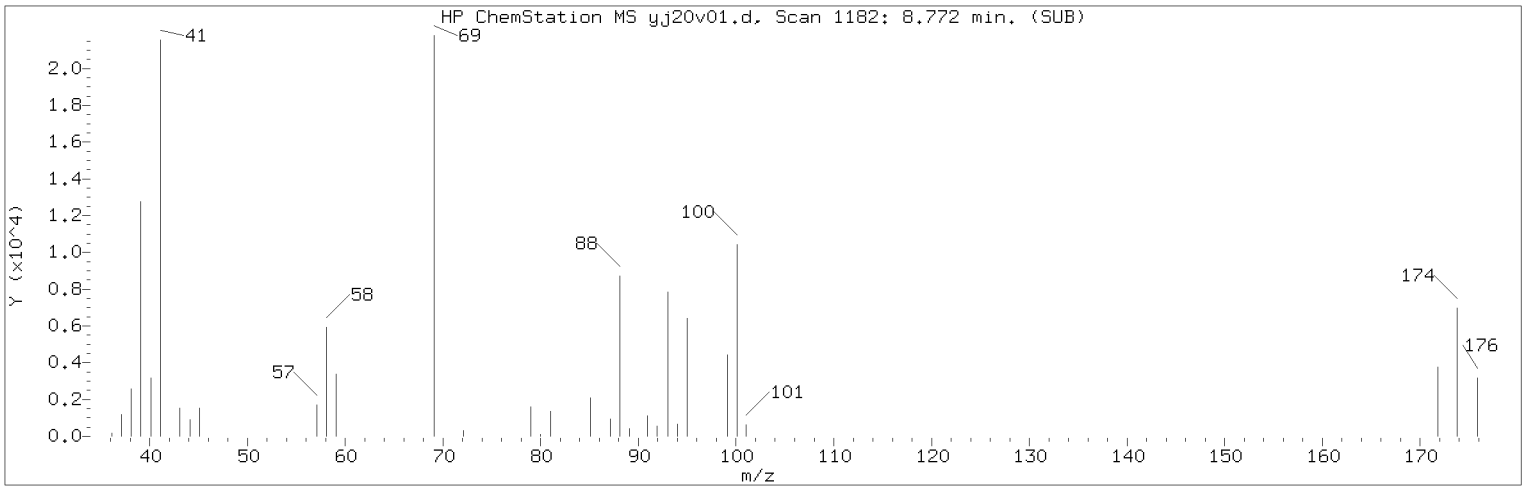
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

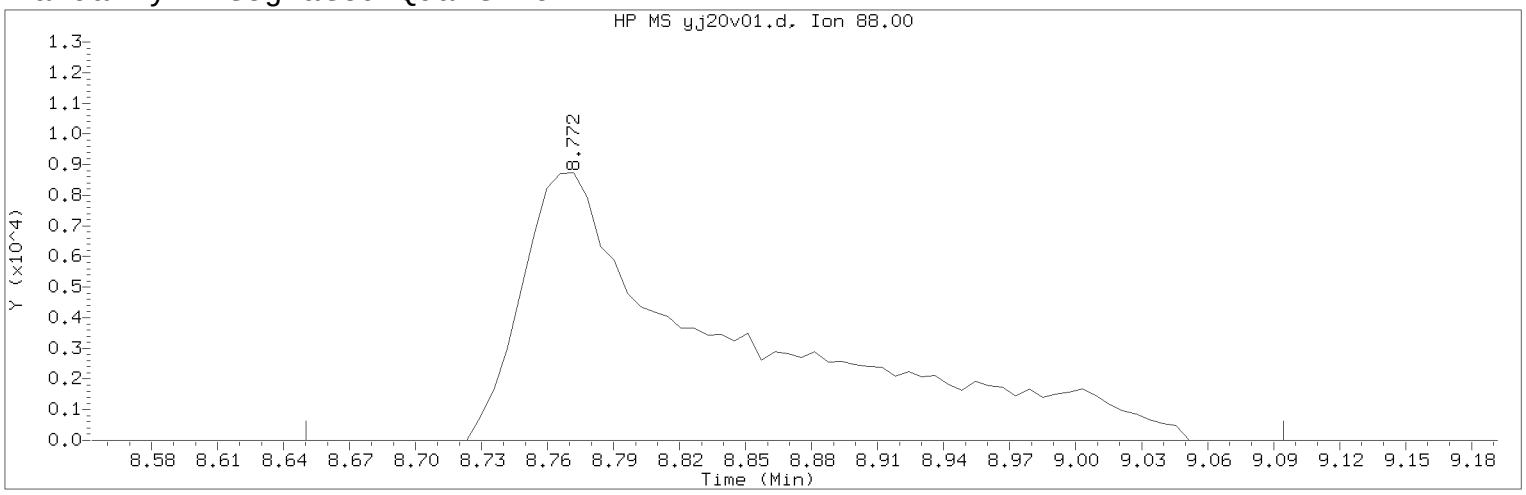
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1088
Retention Time (minutes): 8.200
Quant Ion : 56.00
Area : 421146
On-column Amount (ng) : 950.4147
Integration start scan : 1078 Integration stop scan: 1130
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

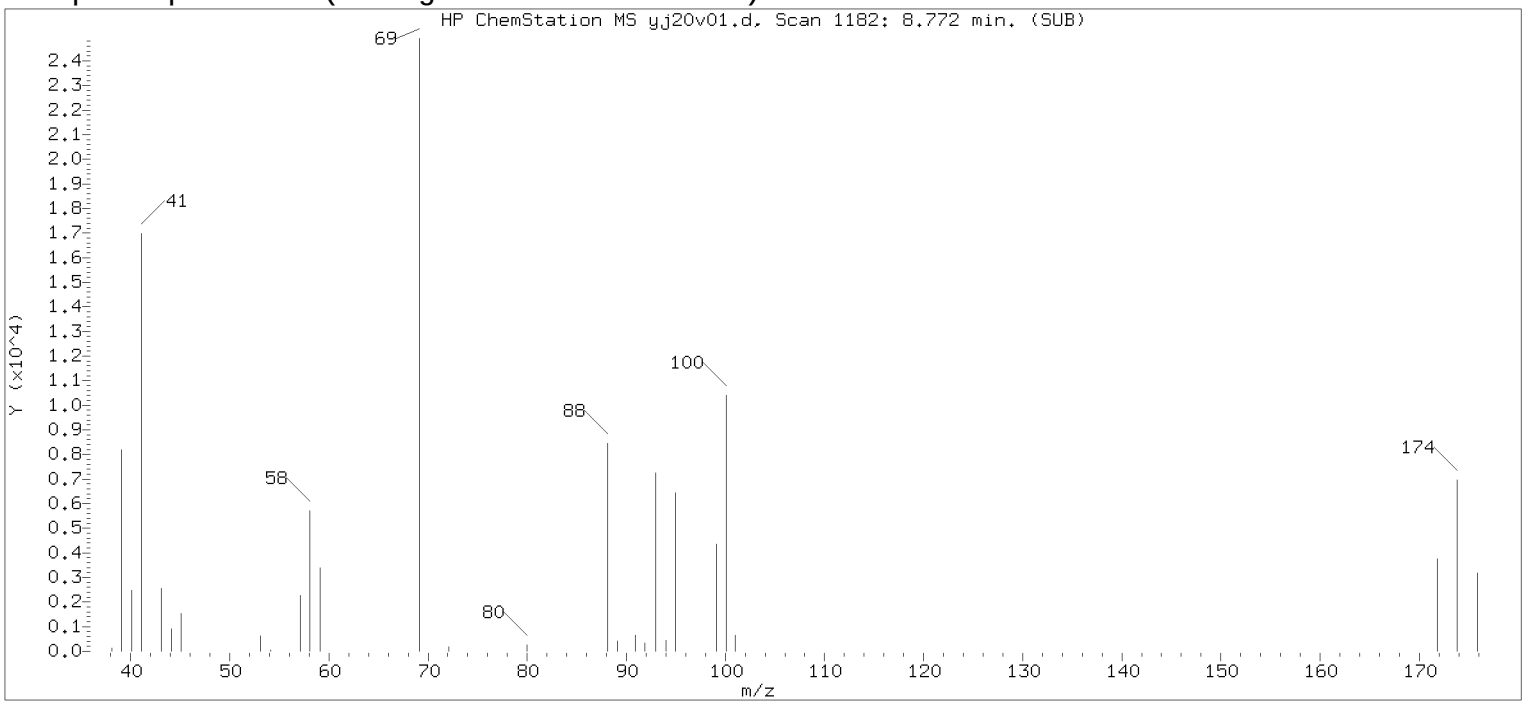
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area (flag) : 58492M
On-Column Amount (ng) : 481.4826
Integration start scan : 1161 Integration stop scan: 1234
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

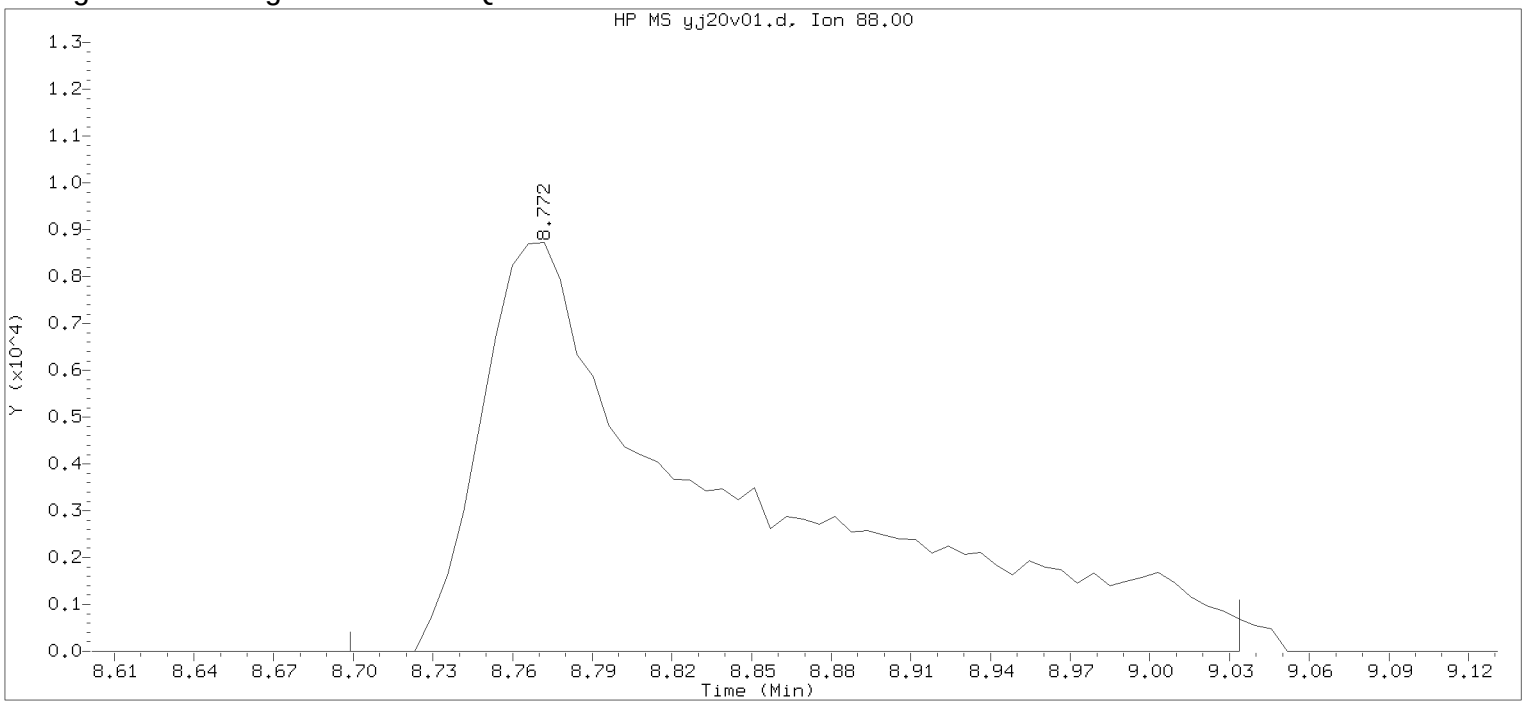
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

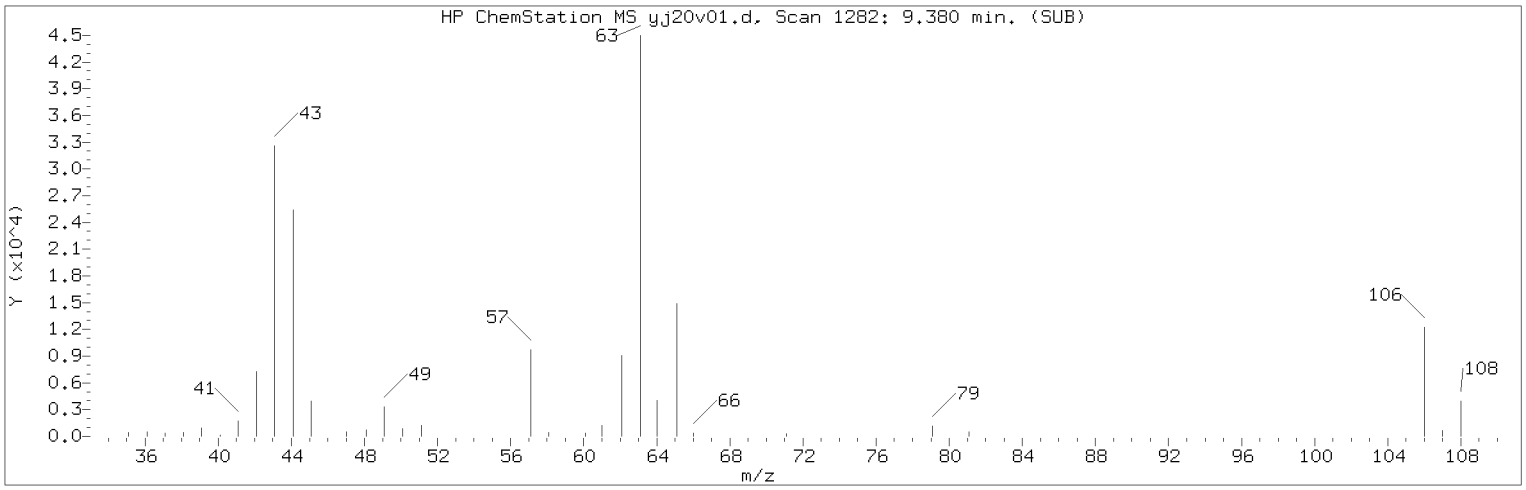
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

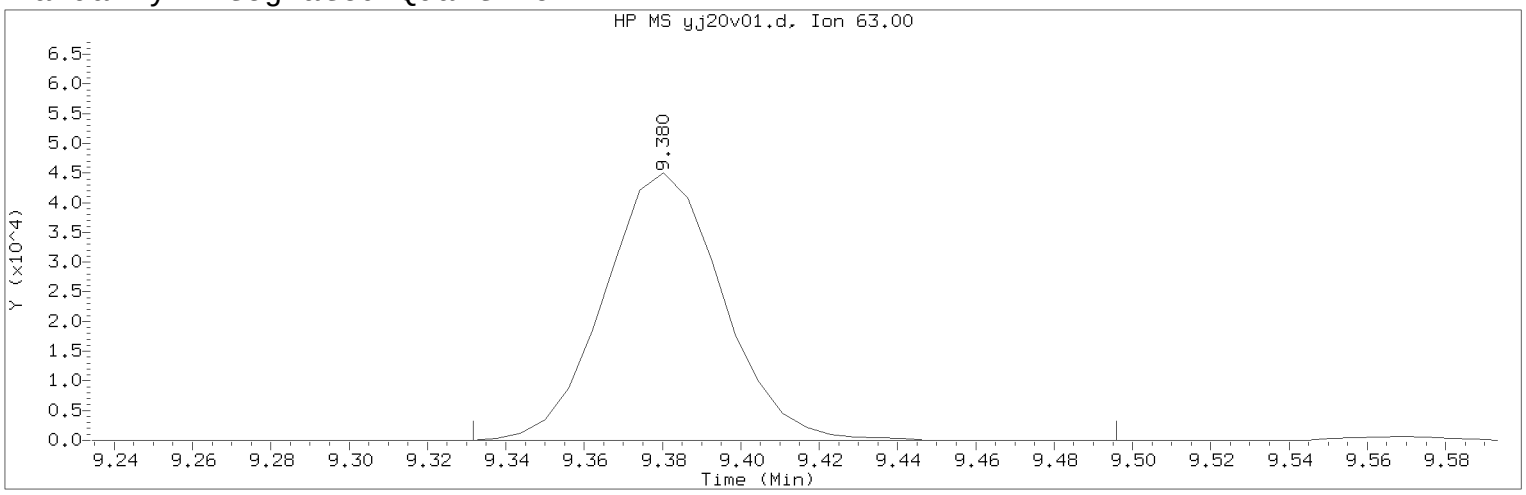
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1182
Retention Time (minutes): 8.772
Quant Ion : 88.00
Area : 57997
On-column Amount (ng) : 477.4119
Integration start scan : 1169 Integration stop scan: 1224
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

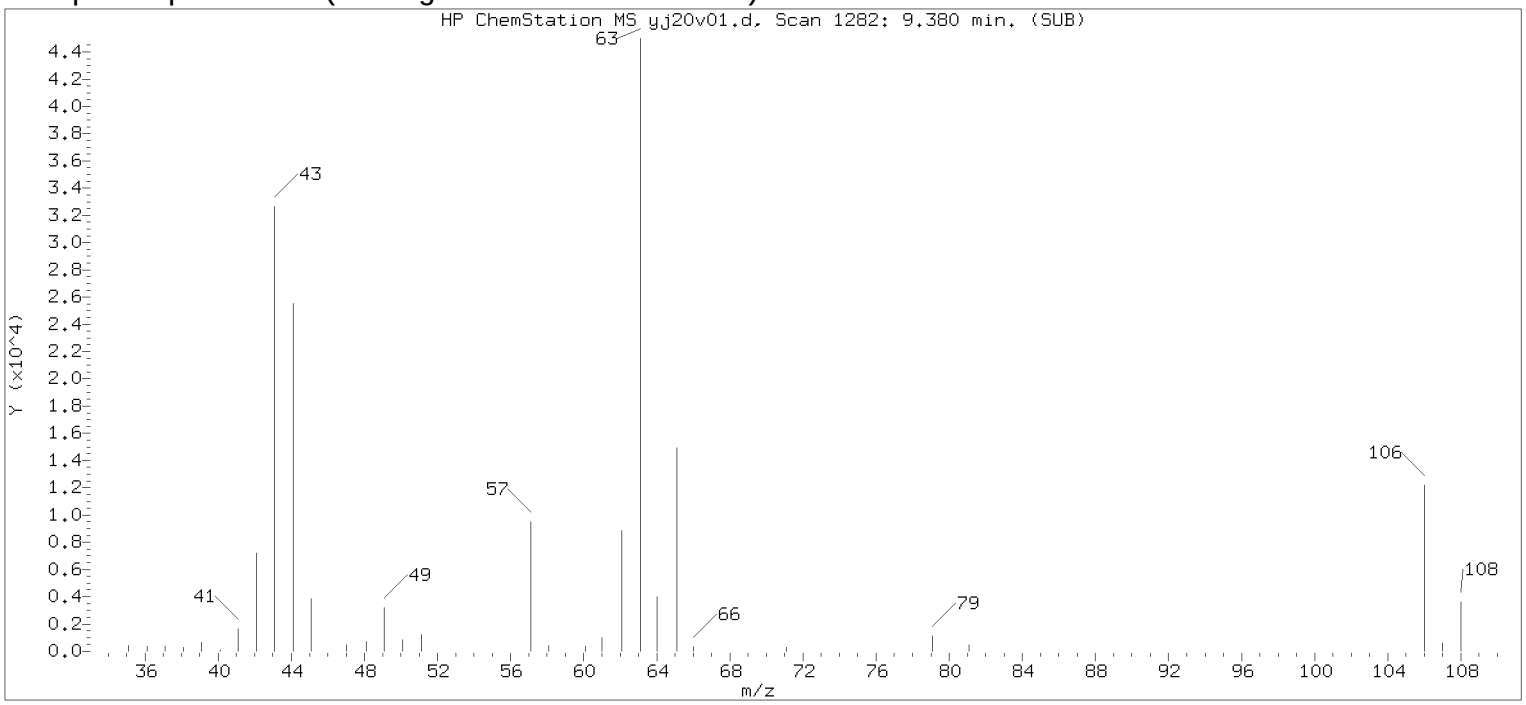
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1282
Retention Time (minutes): 9.380
Quant Ion : 63.00
Area (flag) : 94075M
On-Column Amount (ng) : 17.8278
Integration start scan : 1273 Integration stop scan: 1300
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

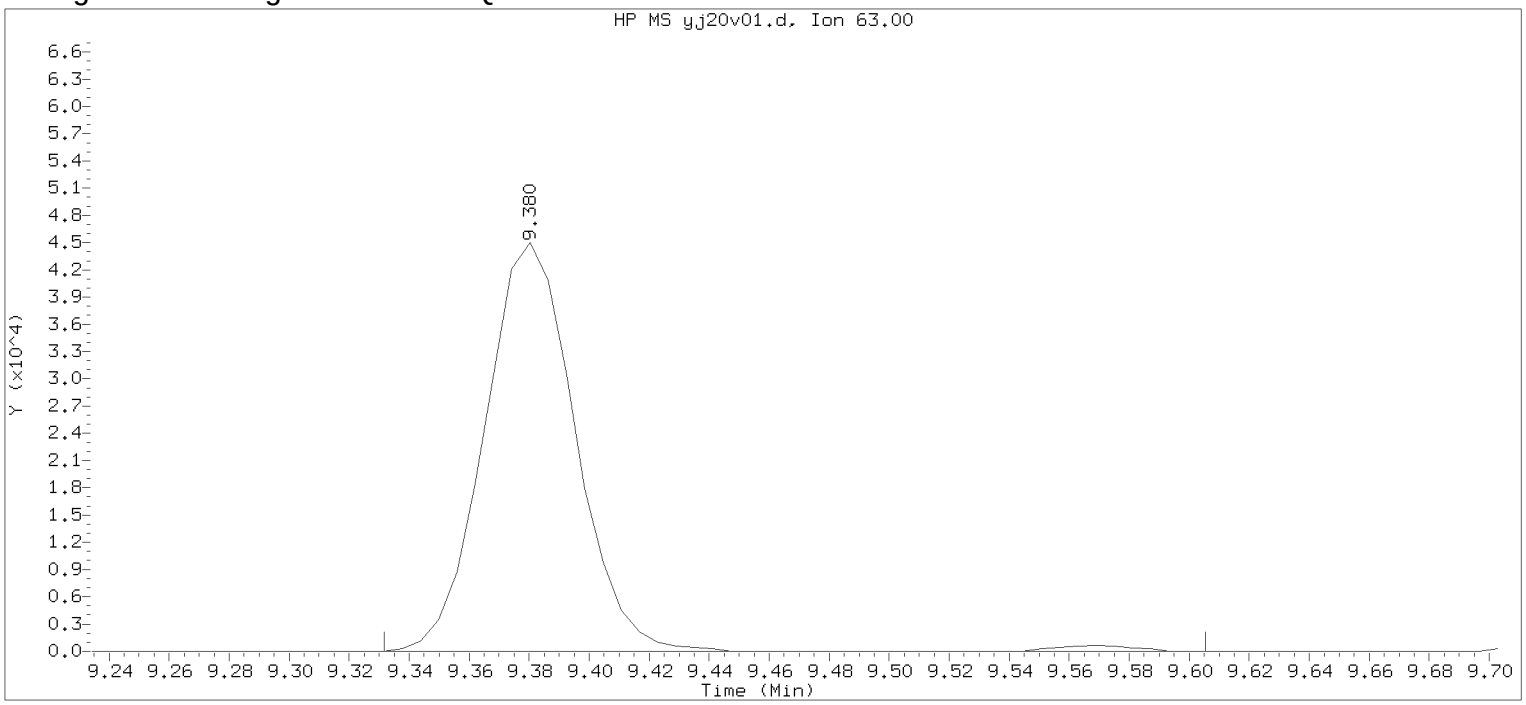
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

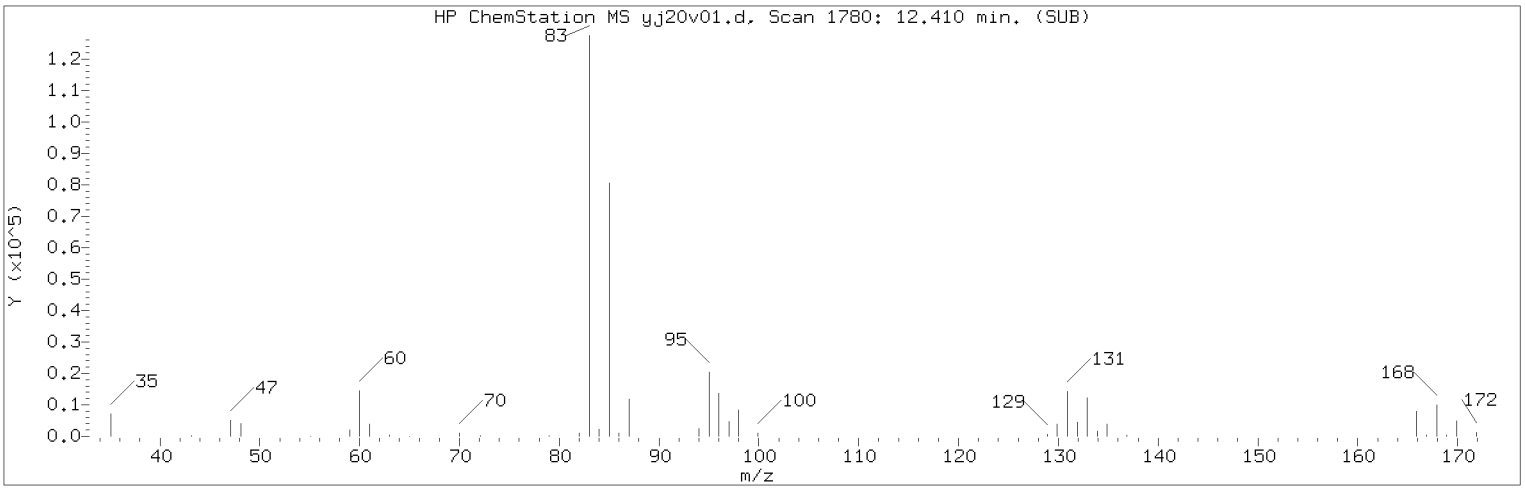
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

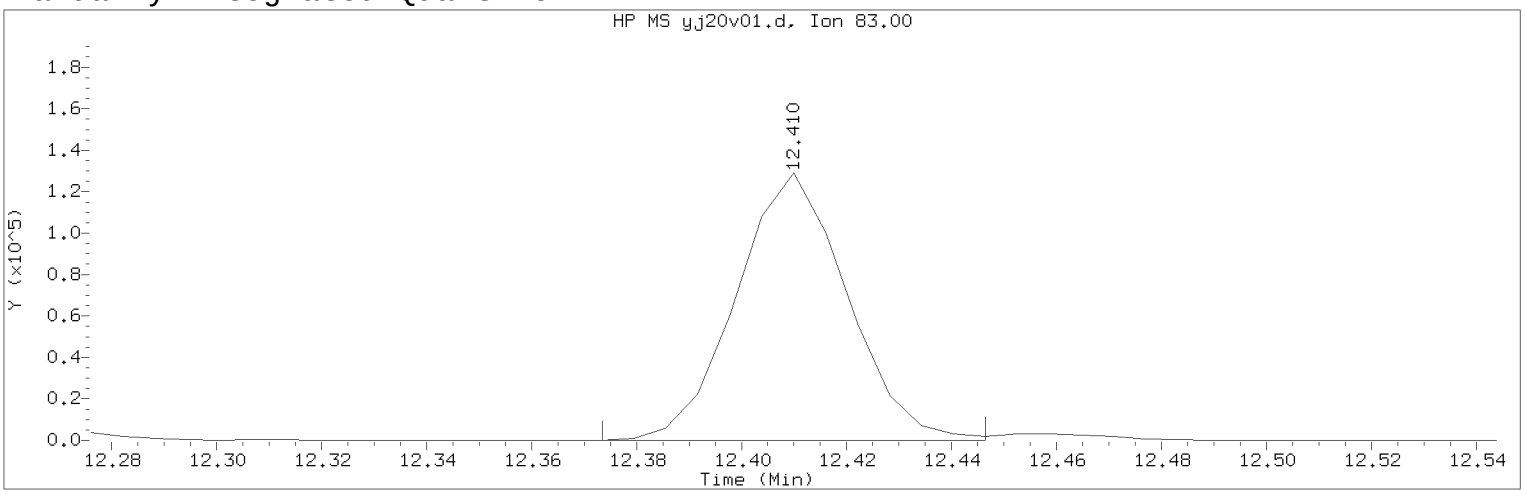
Compound Number : 80
Compound Name : 2-Chloroethyl Vinyl Ether
Scan Number : 1282
Retention Time (minutes): 9.380
Quant Ion : 63.00
Area : 95184
On-column Amount (ng) : 18.0381
Integration start scan : 1273 Integration stop scan: 1318
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

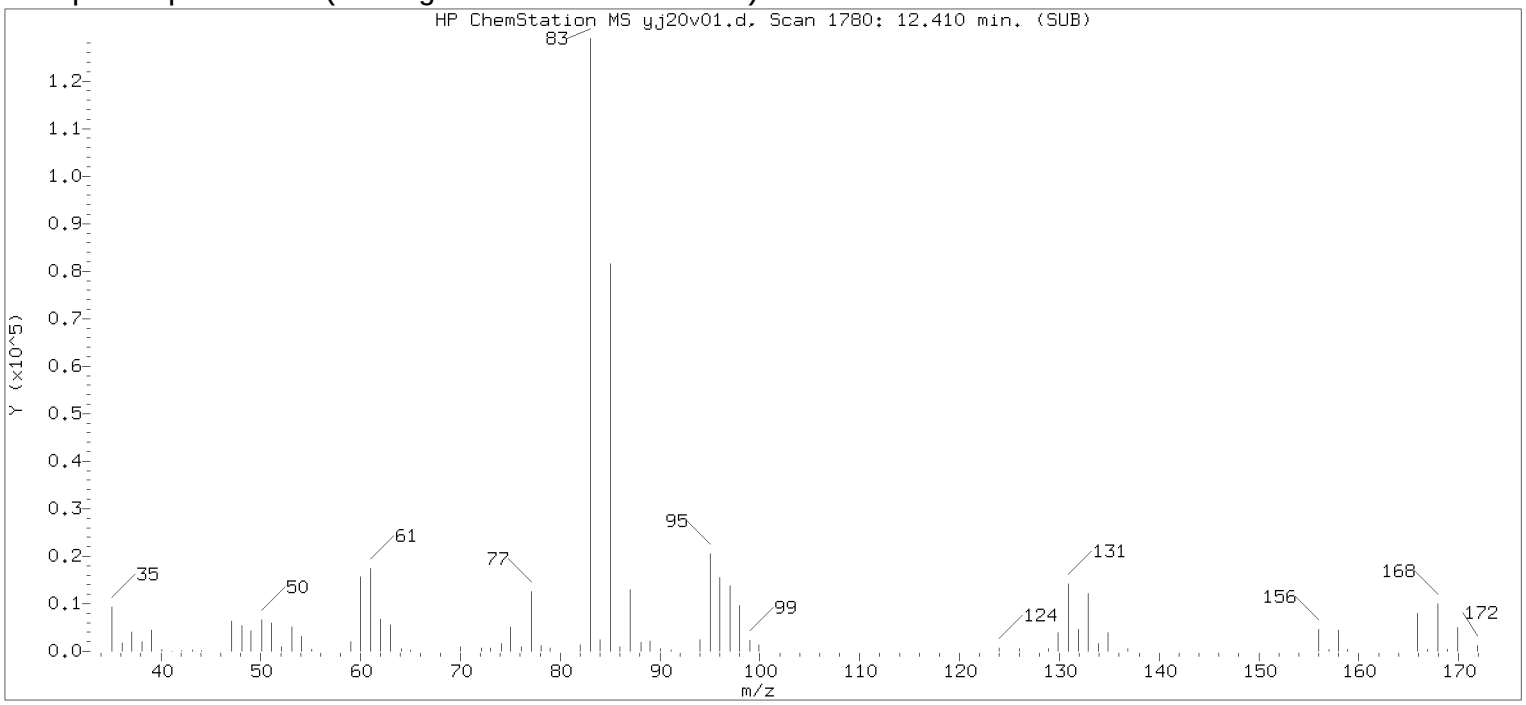
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area (flag) : 188544M
On-Column Amount (ng) : 18.7462
Integration start scan : 1773 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

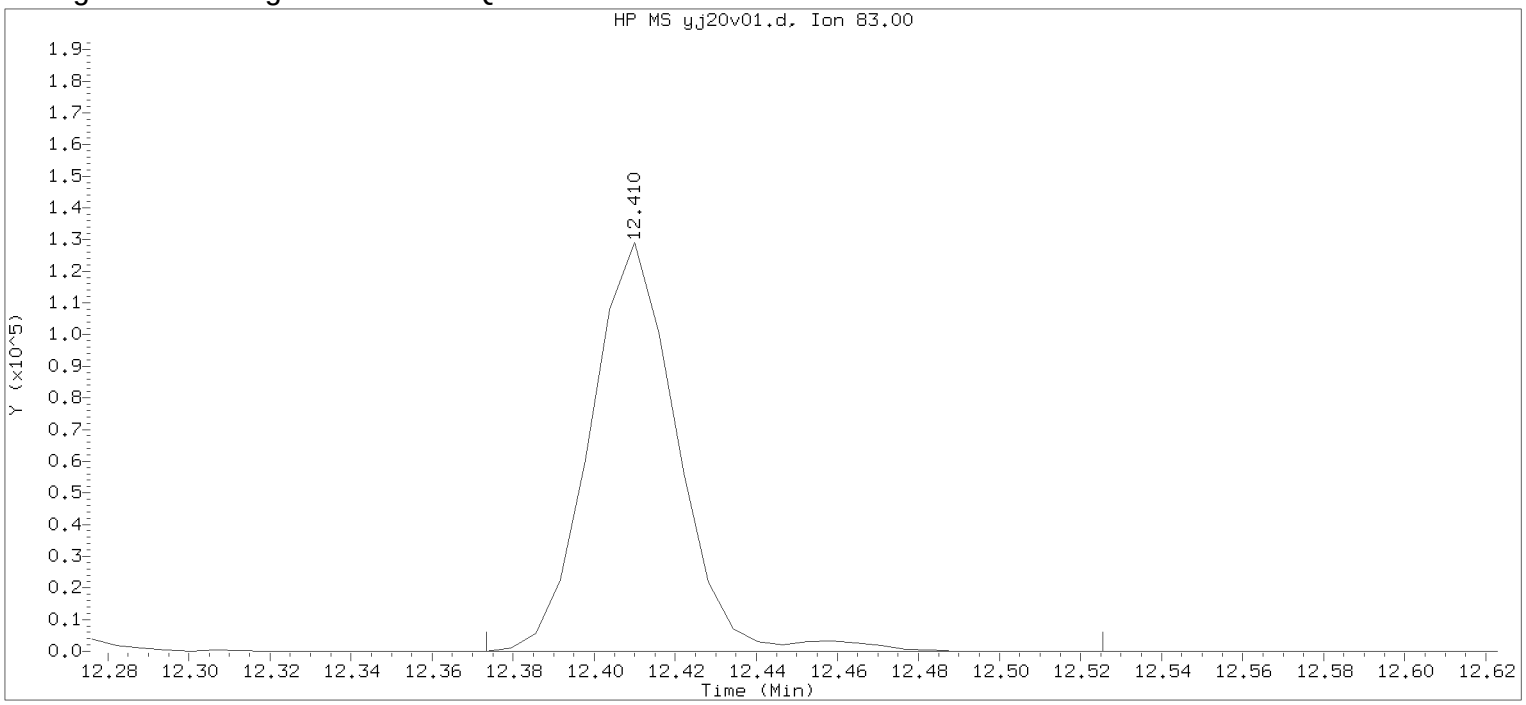
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

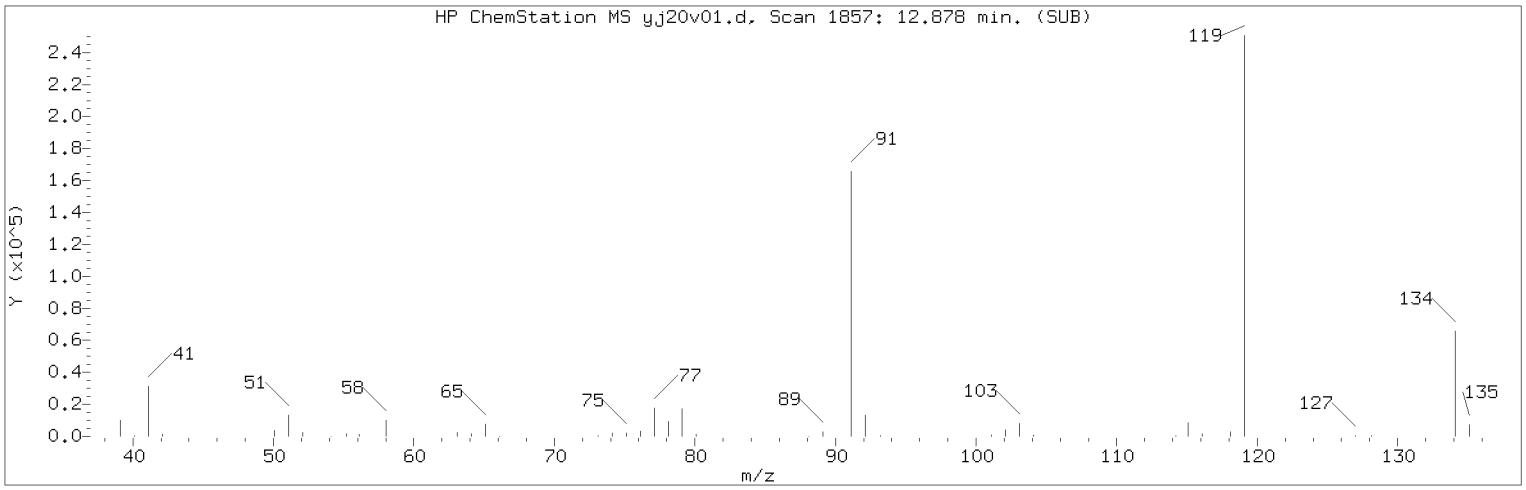
Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

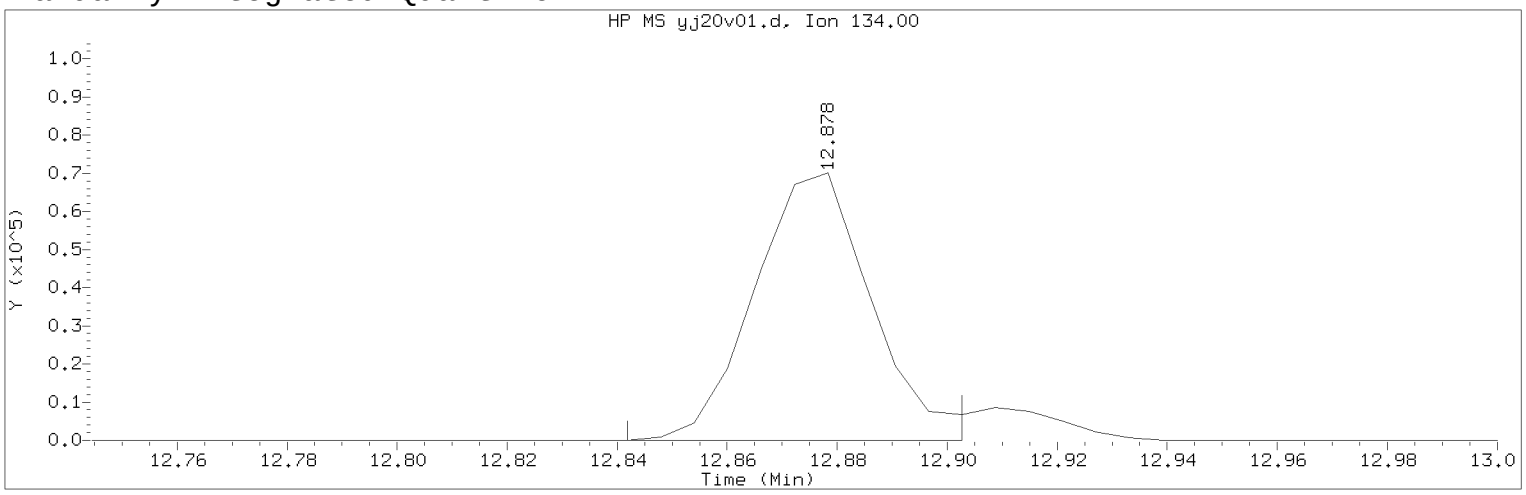
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1780
Retention Time (minutes): 12.410
Quant Ion : 83.00
Area : 192700
On-column Amount (ng) : 19.1595
Integration start scan : 1773 Integration stop scan: 1798
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature user: BWK03231

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:42 bwk03231

Sample Name: YLGICV Lab Sample ID: YLGICV

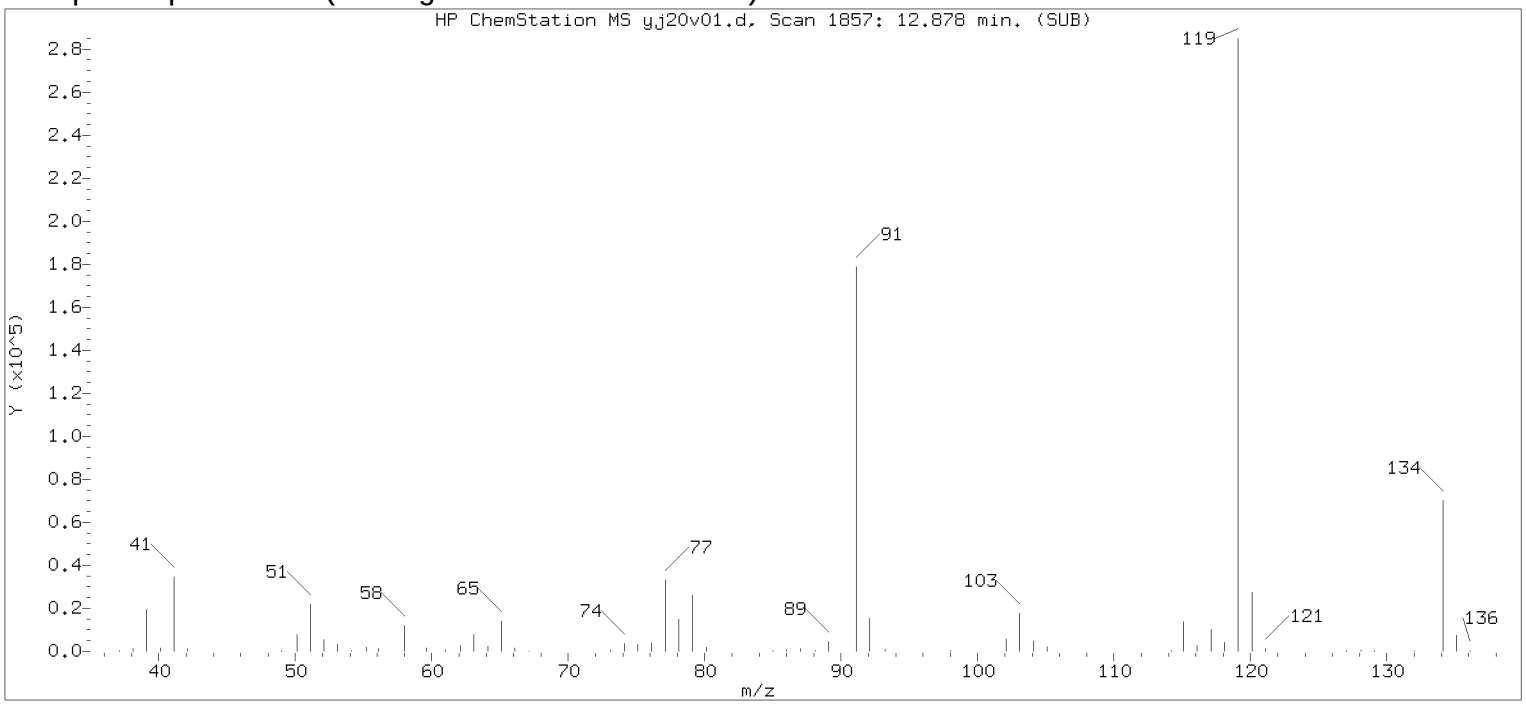
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1857
Retention Time (minutes): 12.878
Quant Ion : 134.00
Area (flag) : 103654M
On-Column Amount (ng) : 18.6311
Integration start scan : 1850 Integration stop scan: 1860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

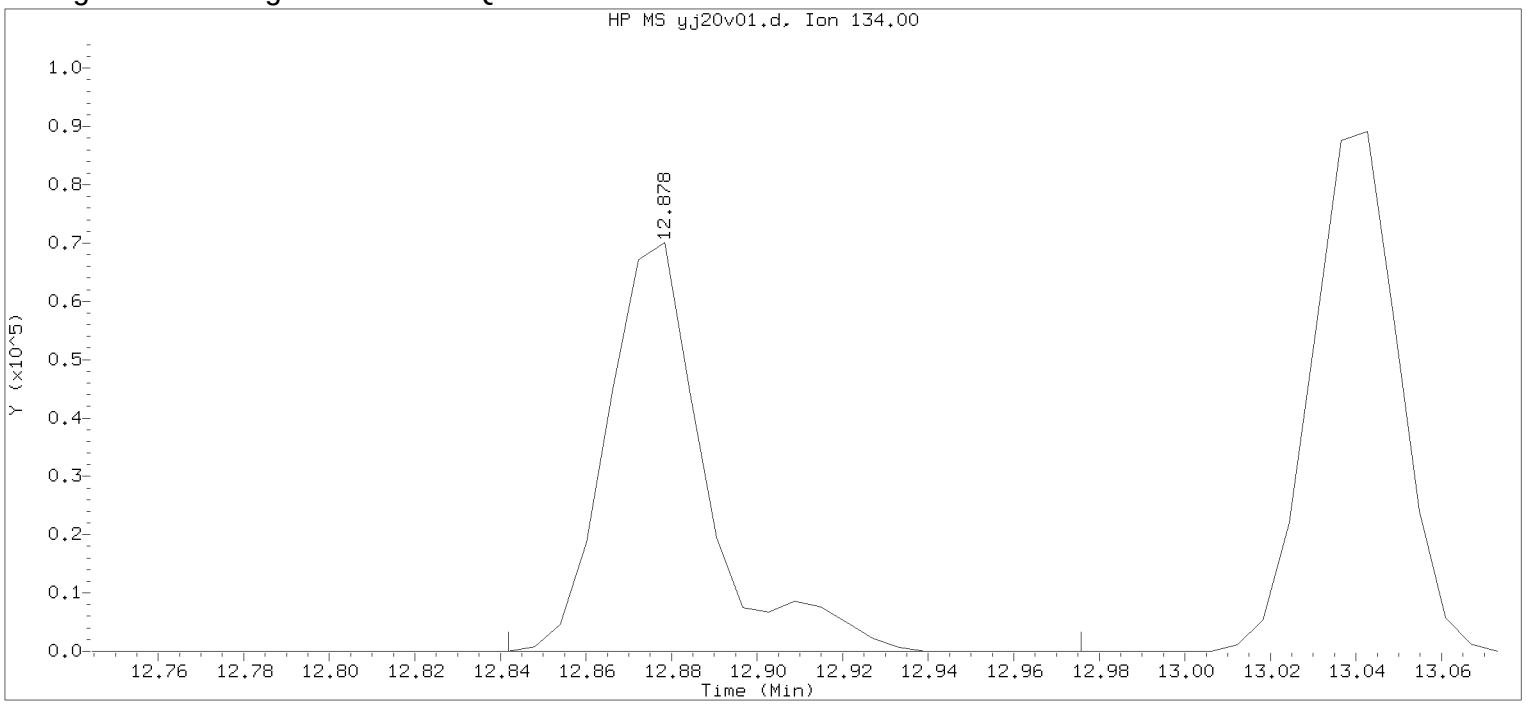
Analyst responsible for change: Digitally signed by Brett W. Kenyon
on 01/20/2017 at 13:03.
Target 3.5 esignature user ID: bwk03231

Secondary review performed and digitally signed by Chad A. Moline on 01/23/2017 at 10:52.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jan20i.b/yj20v01.d Instrument ID: HP09355.i
Injection date and time: 20-JAN-2017 12:13 Analyst ID: BWK03231

Method used: /chem2/HP09355.i/17jan20i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 20-JAN-2017 12:11
Date, time and analyst ID of latest file update: 20-Jan-2017 12:29 Automation

Sample Name: YLGICV Lab Sample ID: YLGICV

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1857
Retention Time (minutes): 12.878
Quant Ion : 134.00
Area : 112416
On-column Amount (ng) : 20.2059
Integration start scan : 1850 Integration stop scan: 1872
Y at integration start : 0 Y at integration end: 0

Digitally signed by Brett W. Kenyon on 01/20/2017 at 13:03.
Target 3.5 esignature userKRD89bwk03231

Data File: /chem2/HP09355.i/17jul21b.b/yl21t10.d



Date : 21-JUL-2017 18:45

Client ID: BFBFEB20-2017

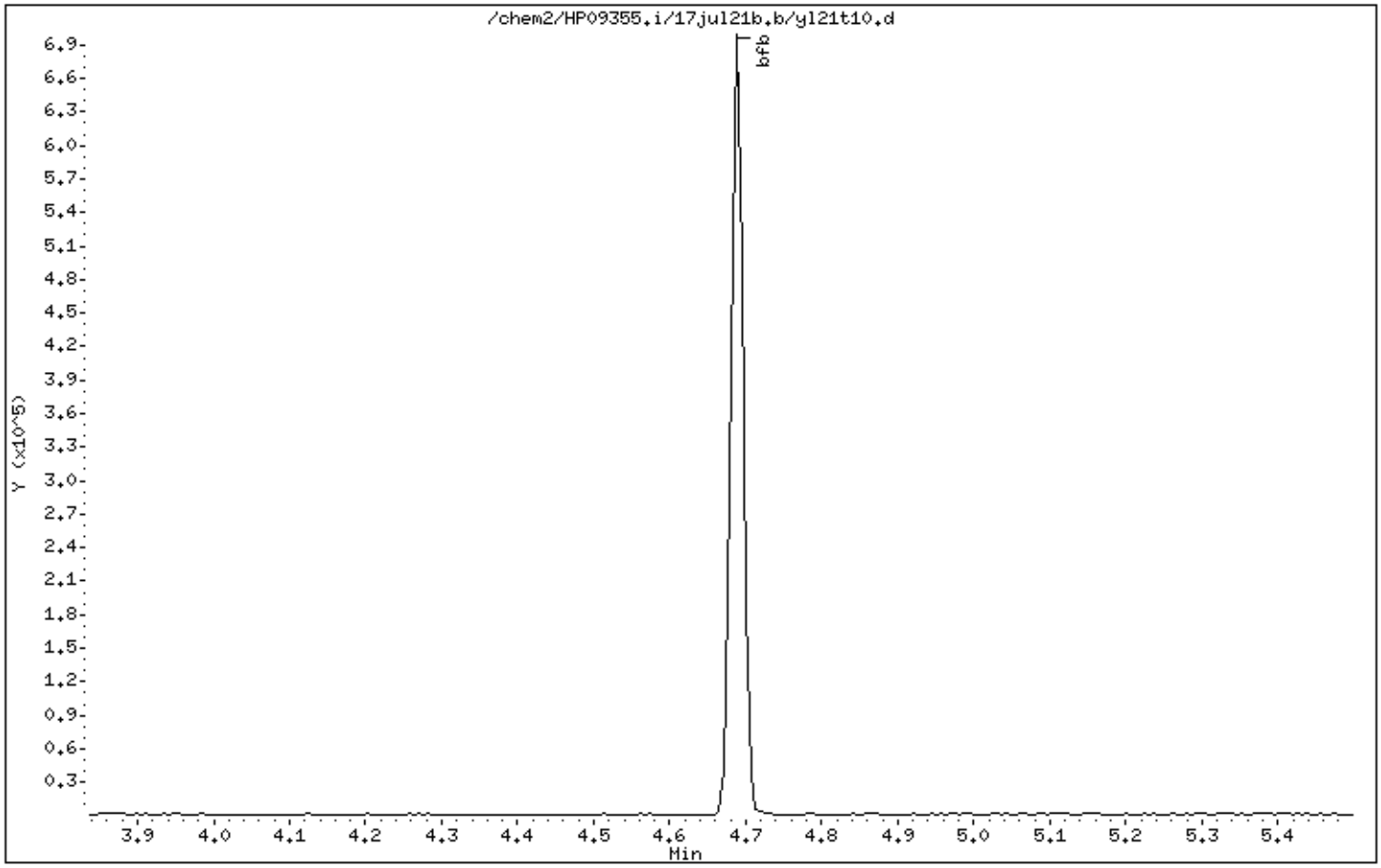
Instrument: HP09355.i

Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

Operator: pth10165

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Patrick T. Herres on 07/21/2017 at 20:07.
Target 3.5 esignature user ID: pth10165

Data File: /chem2/HP09355.i/17jul21b.b/yl21t10.d

Date : 21-JUL-2017 18:45

Client ID: BFBFEB20-2017

Instrument: HP09355.i

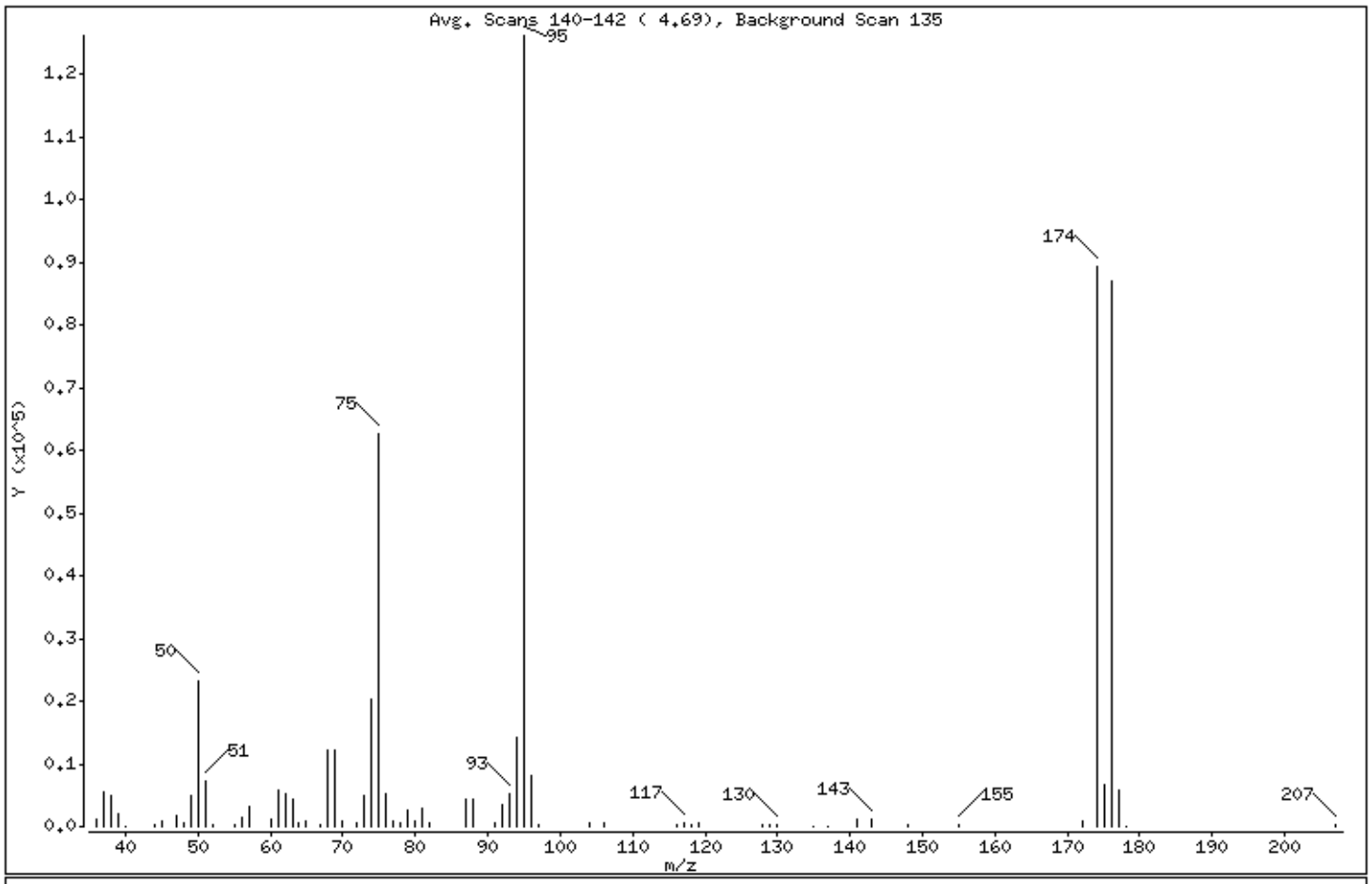
Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

Operator: pth10165

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.36 |
| 75 | 30.00 - 60.00% of mass 95 | 49.74 |
| 96 | 5.00 - 9.00% of mass 95 | 6.55 |
| 173 | Less than 2.00% of mass 174 | 0.00 ( 0.00) |
| 174 | 50.00 - 100.00% of mass 95 | 70.92 |
| 175 | 5.00 - 9.00% of mass 174 | 5.33 ( 7.52) |
| 176 | 95.00 - 101.00% of mass 174 | 68.88 ( 97.12) |
| 177 | 5.00 - 9.00% of mass 176 | 4.62 ( 6.71) |

Digitally signed by Patrick T. Herres on 07/21/2017 at 20:07.
Target 3.5 esignature user ID: pth10165

Date : 21-JUL-2017 18:45

Client ID: BFBFEB20-2017 Instrument: HP09355.i

Sample Info: BFBFEB20-2017;50NGBFB;1;2;;;;;;

Operator: pth10165

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: yl21t10.d
Spectrum: Avg. Scans 140-142 ( 4.69), Background Scan 135
Location of Maximum: 95.00
Number of points: 68

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 1082 | 62.00 | 5346 | 82.00 | 637 | 130.00 | 408 |
| 37.00 | 5437 | 63.00 | 4306 | 87.00 | 4444 | 135.00 | 111 |
| 38.00 | 4853 | 64.00 | 483 | 88.00 | 4483 | 137.00 | 87 |
| 39.00 | 2144 | 65.00 | 736 | 91.00 | 469 | 141.00 | 1119 |
| 40.00 | 140 | 67.00 | 215 | 92.00 | 3381 | 143.00 | 1124 |
| 44.00 | 289 | 68.00 | 12107 | 93.00 | 5136 | 148.00 | 189 |
| 45.00 | 943 | 69.00 | 12057 | 94.00 | 14280 | 155.00 | 216 |
| 47.00 | 1617 | 70.00 | 943 | 95.00 | 126208 | 172.00 | 941 |
| 48.00 | 668 | 72.00 | 583 | 96.00 | 8265 | 174.00 | 89504 |
| 49.00 | 4888 | 73.00 | 5042 | 97.00 | 233 | 175.00 | 6730 |
| 50.00 | 23168 | 74.00 | 20440 | 104.00 | 463 | 176.00 | 86928 |
| 51.00 | 7251 | 75.00 | 62768 | 106.00 | 472 | 177.00 | 5837 |
| 52.00 | 283 | 76.00 | 5270 | 116.00 | 373 | 178.00 | 85 |
| 55.00 | 339 | 77.00 | 801 | 117.00 | 714 | 207.00 | 210 |
| 56.00 | 1429 | 78.00 | 491 | 118.00 | 390 | | |
| 57.00 | 3203 | 79.00 | 2599 | 119.00 | 677 | | |
| 60.00 | 1019 | 80.00 | 867 | 128.00 | 398 | | |
| 61.00 | 5706 | 81.00 | 2872 | 129.00 | 226 | | |

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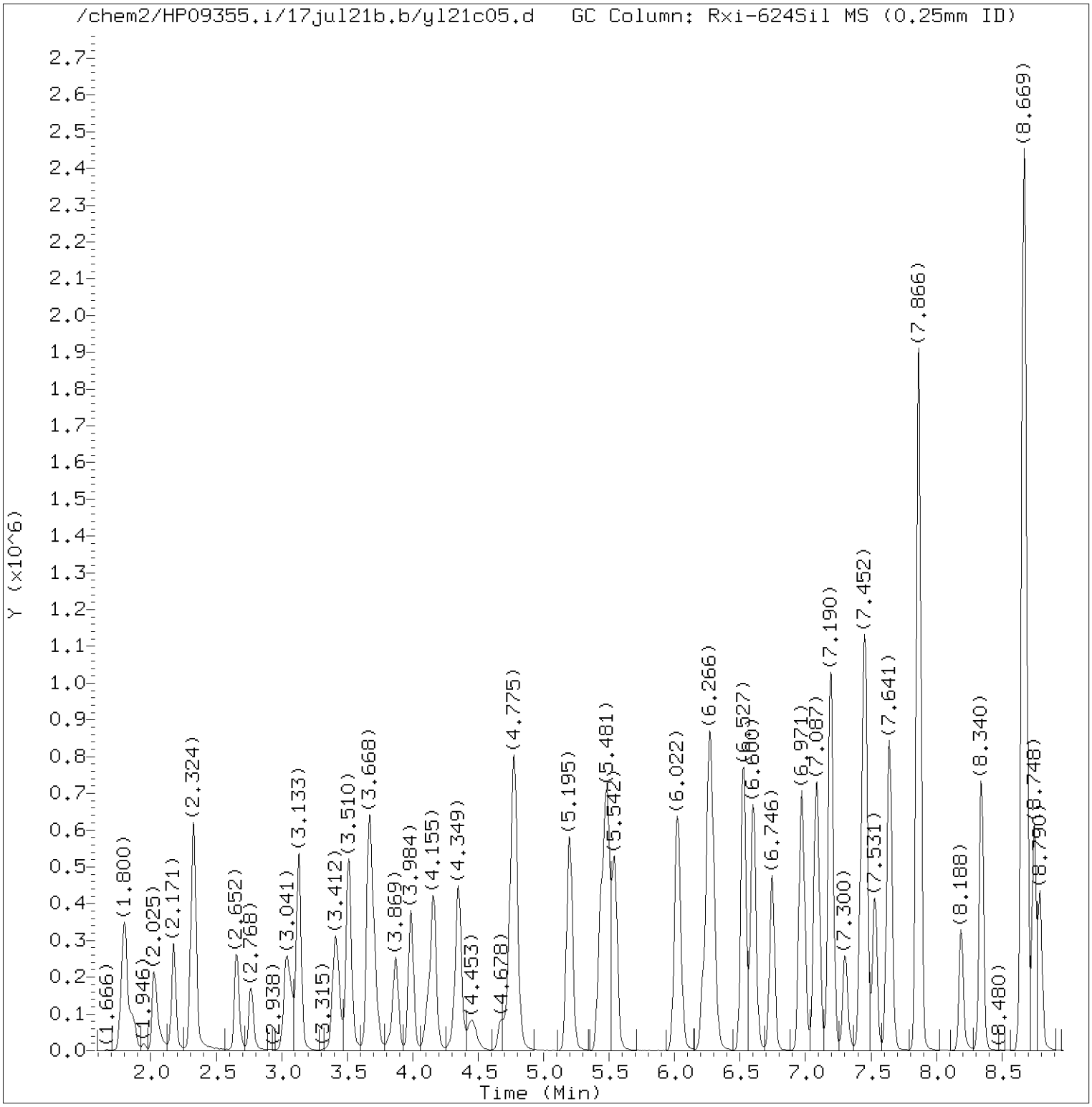
Target 3.5 esignature user ID: pth10165




Total Ion Chromatogram (TIC)

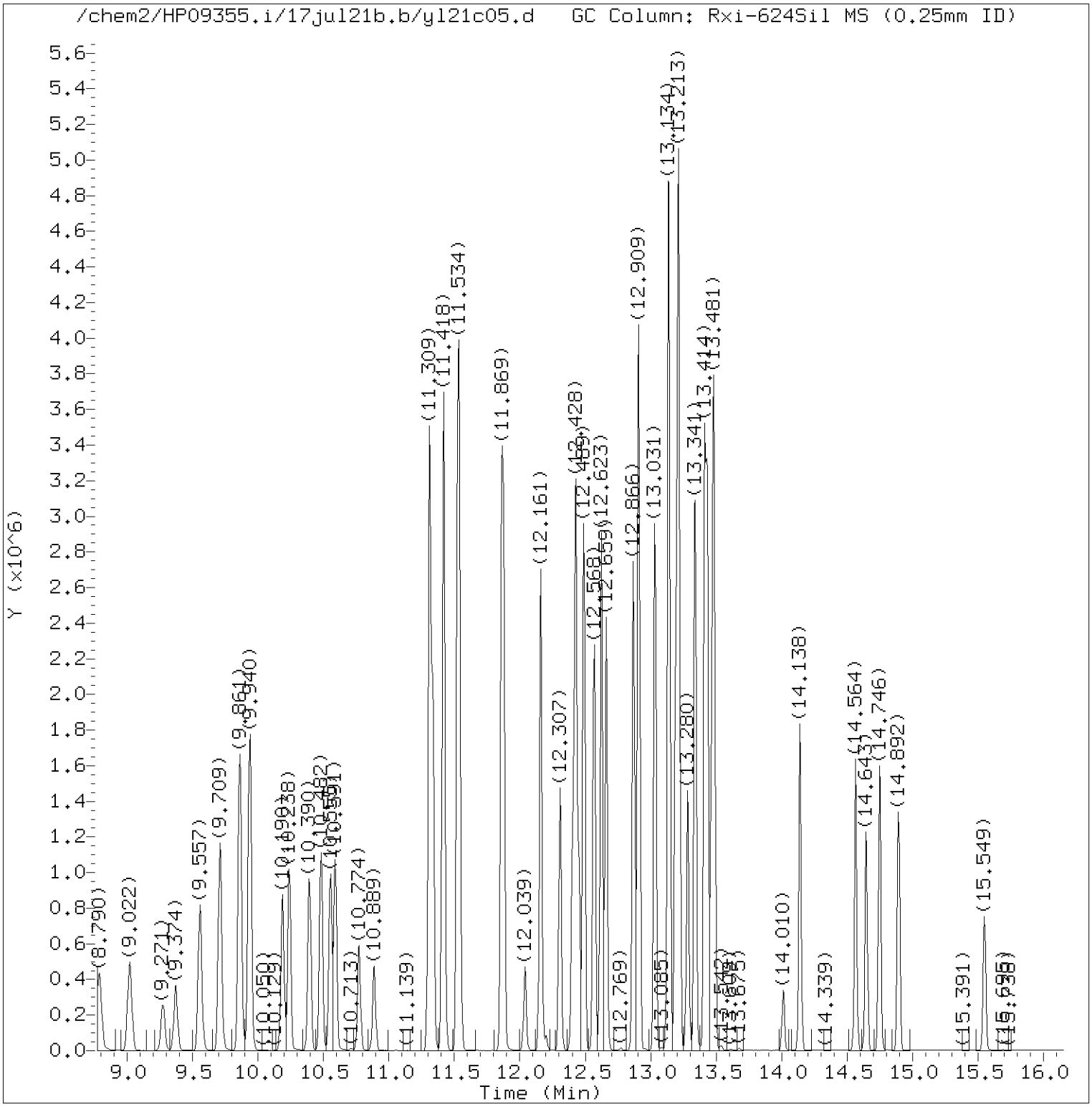
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Patrick T. Herres
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Patrick T. Herres
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 2.025 | 85 | 429310 | 55.114 |
| 4) Chloromethane | (2) | 2.171 | 50 | 408324 | 48.679 |
| 6) Vinyl Chloride | (2) | 2.311 | 62 | 375960 | 47.676 |
| 5) 1,3-Butadiene | (2) | 2.330 | 39 | 314380 | 37.682 |
| 8) Bromomethane | (2) | 2.652 | 94 | 250756 | 44.849 |
| 9) Chloroethane | (2) | 2.768 | 64 | 218673 | 47.946 |
| 12) Trichlorofluoromethane | (2) | 3.041 | 101 | 511181 | 55.121 |
| 11) n-Pentane | (2) | 3.133 | 43 | 491075 | 47.324 |
| 15) Freon 123a | (2) | 3.406 | 67 | 338950 | 52.012 |
| 16) Acrolein | (1) | 3.510 | 56 | 710857 | 698.897 |
| 17) 1,1-Dichloroethene | (2) | 3.662 | 96 | 235042 | 50.199 |
| 17) 1,1-Dichloroethene | (2) | 3.668 | 63 | 128263 | 53.237 |
| 18) Acetone | (1) | 3.674 | 58 | 63119 | 130.527 |
| 19) Freon 113 | (2) | 3.698 | 101 | 254142 | 52.778 |
| 21) 2-Propanol | (1) | 3.832 | 45 | 87418 | 226.718 |
| 22) Methyl Iodide | (2) | 3.869 | 142 | 413670 | 46.500 |
| 23) Carbon Disulfide | (2) | 3.984 | 76 | 832519 | 56.503 |
| 27) Methyl Acetate | (2) | 4.118 | 43 | 278631 | 30.653 |
| 25) Allyl Chloride | (2) | 4.161 | 41 | 451865 | 45.638 |
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 166934 | 250.000 |
| 28) Methylene Chloride | (2) | 4.349 | 84 | 299879 | 50.621 |
| 30) t-Butyl alcohol | (1) | 4.453 | 59 | 175844 | 231.645 |
| 31) Acrylonitrile | (2) | 4.678 | 53 | 133813 | 30.673 |
| 33) Methyl Tertiary Butyl Ether | (2) | 4.757 | 73 | 874348 | 44.877 |
| 32) trans-1,2-Dichloroethene | (2) | 4.781 | 96 | 290626 | 51.321 |
| 34) n-Hexane | (2) | 5.195 | 57 | 467689 | 52.652 |
| 36) 1,1-Dichloroethane | (2) | 5.432 | 63 | 557543 | 54.515 |
| 38) di-Isopropyl ether | (2) | 5.481 | 45 | 990585 | 48.313 |
| 39) 2-Chloro-1,3-butadiene | (2) | 5.542 | 53 | 487815 | 50.658 |
| 40) Ethyl t-butyl ether | (2) | 6.022 | 59 | 861422 | 44.861 |
| 44) 2-Butanone | (2) | 6.217 | 43 | 371080 | 54.754 |
| 42) cis-1,2-Dichloroethene | (2) | 6.260 | 96 | 327587 | 50.278 |
| 45) 2,2-Dichloropropane | (2) | 6.278 | 77 | 429172 | 53.443 |
| 47) Propionitrile | (1) | 6.296 | 54 | 265370 | 311.043 |
| 48) Methacrylonitrile | (2) | 6.527 | 67 | 404433 | 87.394 |
| 49) Bromochloromethane | (2) | 6.600 | 128 | 165120 | 48.003 |
| 50) Tetrahydrofuran | (1) | 6.606 | 71 | 97855 | 127.872 |
| 51) Chloroform | (2) | 6.746 | 83 | 544148 | 52.821 |

* = Compound is an internal standard.



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Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 618213 | 101.599 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 113 | 290647 | 50.236 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 111 | 295367 | 49.884 |
| 53) 1,1,1-Trichloroethane | (2) | 6.977 | 97 | 445261 | 51.632 |
| 54) Cyclohexane | (2) | 7.087 | 56 | 535703 | 50.990 |
| 54) Cyclohexane | (2) | 7.087 | 84 | 436070 | 50.538 |
| 54) Cyclohexane | (2) | 7.081 | 69 | 159689 | 50.037 |
| 55) 1,1-Dichloropropene | (2) | 7.190 | 75 | 449450 | 53.935 |
| 56) Carbon Tetrachloride | (2) | 7.196 | 117 | 390311 | 54.345 |
| 58) Isobutyl Alcohol | (1) | 7.300 | 41 | 181947 | 654.480 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 102 | 73484 | 48.441 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 65 | 383525 | 50.262 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 104 | 45633 | 47.419 |
| 60) Benzene | (2) | 7.458 | 78 | 1287452 | 51.920 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 62 | 467433 | 51.516 |
| 61) 1,2-Dichloroethane | (2) | 7.531 | 98 | 39260 | 53.286 |
| 65) t-Amyl methyl ether | (2) | 7.641 | 73 | 859151 | 44.707 |
| 66)*Fluorobenzene | (2) | 7.860 | 96 | 1240589 | 50.000 |
| 67) n-Heptane | (2) | 7.866 | 43 | 537814 | 51.428 |
| 69) n-Butanol | (1) | 8.188 | 56 | 226772 | 1032.791 |
| 71) Trichloroethene | (2) | 8.340 | 95 | 330822 | 51.454 |
| 72) Methylcyclohexane | (2) | 8.656 | 83 | 563823 | 49.313 |
| 72) Methylcyclohexane | (2) | 8.656 | 98 | 251608 | 48.703 |
| 73) 1,2-Dichloropropane | (2) | 8.675 | 63 | 365309 | 56.034 |
| 76) Methyl Methacrylate | (2) | 8.748 | 69 | 290842 | 40.541 |
| 75) 1,4-Dioxane | (1) | 8.760 | 88 | 26513M | 440.438 |
| 74) Dibromomethane | (2) | 8.790 | 93 | 215928 | 50.621 |
| 78) Bromodichloromethane | (2) | 9.022 | 83 | 415372 | 56.458 |
| 79) 2-Nitropropane | (2) | 9.271 | 41 | 191593 | 66.929 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 9.374 | 63 | 185284 | 33.179 |
| 81) cis-1,3-Dichloropropene | (2) | 9.557 | 75 | 540252 | 56.173 |
| 82) 4-Methyl-2-pentanone | (2) | 9.709 | 43 | 861581 | 71.538 |
| 83)$Toluene-d8 | (3) | 9.861 | 98 | 1250735 | 50.955 |
| 83)$Toluene-d8 | (3) | 9.861 | 100 | 800459 | 50.481 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1040535 | 112.239 |
| 88) Toluene | (3) | 9.940 | 92 | 840563 | 52.012 |
| 89) trans-1,3-Dichloropropene | (3) | 10.190 | 75 | 500283 | 56.065 |
| 91) Ethyl Methacrylate | (3) | 10.238 | 69 | 520764 | 46.503 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 10.390 | 97 | 320205 | 50.439 |
| 93) Tetrachloroethene | (3) | 10.482 | 166 | 322380 | 45.336 |
| 94) 1,3-Dichloropropane | (3) | 10.555 | 76 | 569685 | 53.115 |
| 96) 2-Hexanone | (3) | 10.591 | 43 | 669037 | 69.185 |
| 97) Dibromochloromethane | (3) | 10.774 | 129 | 318793 | 53.462 |
| 99) 1,2-Dibromoethane | (3) | 10.889 | 107 | 324524 | 47.365 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 950070 | 50.000 |
| 101) 1-Chlorohexane | (3) | 11.309 | 91 | 457084 | 50.752 |
| 102) Chlorobenzene | (3) | 11.333 | 112 | 977502 | 52.696 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 1662626 | 53.482 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 11.418 | 131 | 312500 | 54.596 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 1309392 | 105.782 |
| 108) Xylene (Total) | (3) | | 106 | 1925347 | 156.866 |
| 107) o-Xylene | (3) | 11.863 | 106 | 615955 | 51.084 |
| 109) Styrene | (3) | 11.875 | 104 | 1070063 | 51.703 |
| 110) Bromoform | (3) | 12.039 | 173 | 194904 | 41.978 |
| 111) Isopropylbenzene | (3) | 12.161 | 105 | 1564007 | 49.706 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 468219 | 50.862 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 174 | 338320 | 43.097 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 12.398 | 83 | 478335 | 48.642 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 12.428 | 53 | 298597 | 95.804 |
| 115) Bromobenzene | (4) | 12.428 | 156 | 396336 | 49.097 |
| 117) 1,2,3-Trichloropropane | (4) | 12.453 | 110 | 137517M | 41.150 |
| 119) n-Propylbenzene | (4) | 12.489 | 91 | 1995237 | 57.187 |
| 120) 2-Chlorotoluene | (4) | 12.568 | 126 | 390722 | 54.423 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.623 | 105 | 1393884 | 54.788 |
| 121) 4-Chlorotoluene | (4) | 12.659 | 126 | 419715 | 55.077 |
| 124) tert-Butylbenzene | (4) | 12.866 | 134 | 268143M | 49.295 |
| 125) Pentachloroethane | (4) | 12.903 | 167 | 216711 | 52.690 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.909 | 105 | 1466671 | 55.747 |
| 127) sec-Butylbenzene | (4) | 13.031 | 105 | 1737325 | 54.325 |
| 129) 1,3-Dichlorobenzene | (4) | 13.134 | 146 | 784594 | 50.943 |
| 130) p-Isopropyltoluene | (4) | 13.140 | 119 | 1514116 | 53.287 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 487574 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 13.207 | 146 | 802498 | 50.623 |
| 134) 1,2,3-Trimethylbenzene | (4) | 13.213 | 105 | 1484564 | 56.176 |
| 135) Benzyl Chloride | (4) | 13.280 | 91 | 907108 | 50.025 |
| 136) 1,3-Diethylbenzene | (4) | 13.341 | 119 | 921773 | 55.705 |

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on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 137) 1,4-Diethylbenzene | (4) | 13.414 | 119 | 956292 | 55.701 |
| 139) n-Butylbenzene | (4) | 13.432 | 92 | 799307 | 55.886 |
| 138) 1,2-Dichlorobenzene | (4) | 13.469 | 146 | 739559 | 49.992 |
| 140) 1,2-Diethylbenzene | (4) | 13.481 | 119 | 759794M | 54.720 |
| 141) Diethylbenzene (total) | (4) | | 100 | 2637859 | 166.126 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 14.010 | 75 | 80745 | 33.799 |
| 144) 1,3,5-Trichlorobenzene | (4) | 14.138 | 180 | 475754 | 43.902 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.564 | 180 | 408323 | 41.230 |
| 147) Hexachlorobutadiene | (4) | 14.643 | 225 | 188881 | 38.810 |
| 148) Naphthalene | (4) | 14.746 | 128 | 1084256 | 34.210 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.892 | 180 | 356758 | 39.619 |
| 150) 2-Methylnaphthalene | (4) | 15.549 | 142 | 324636 | 19.019 |

M = Compound was manually integrated.



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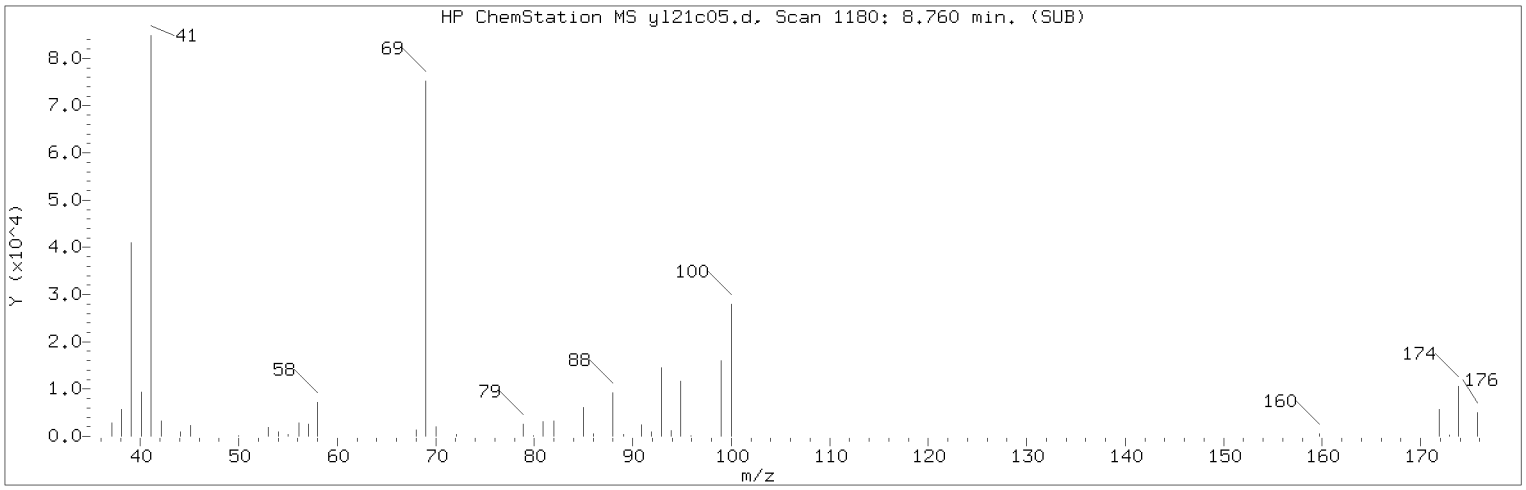
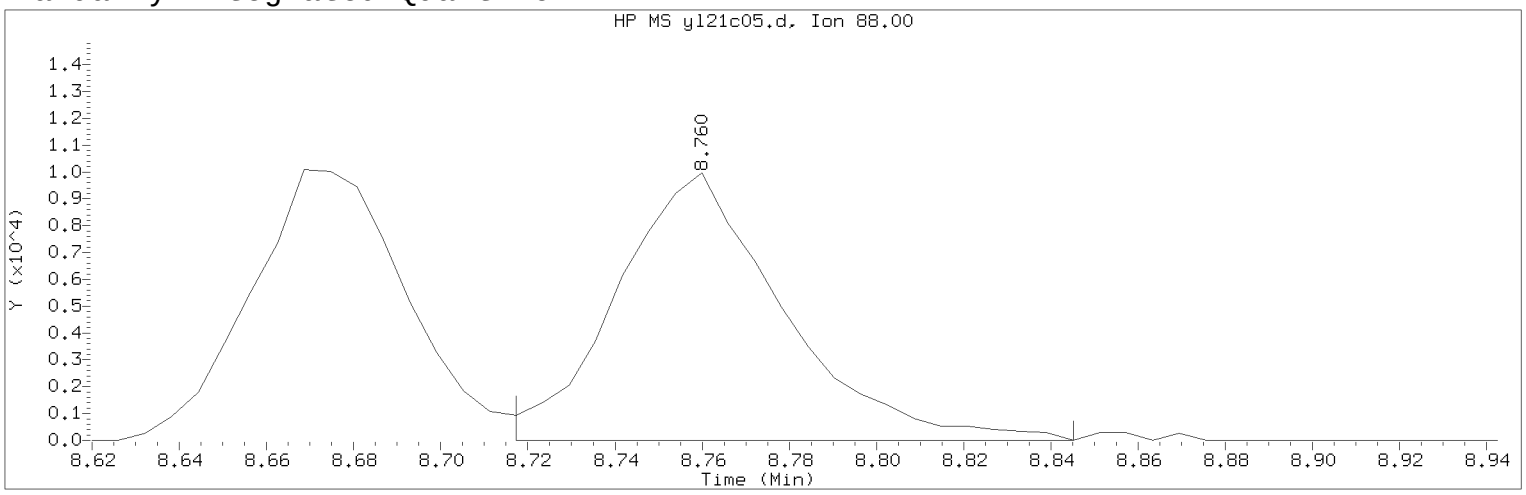
on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

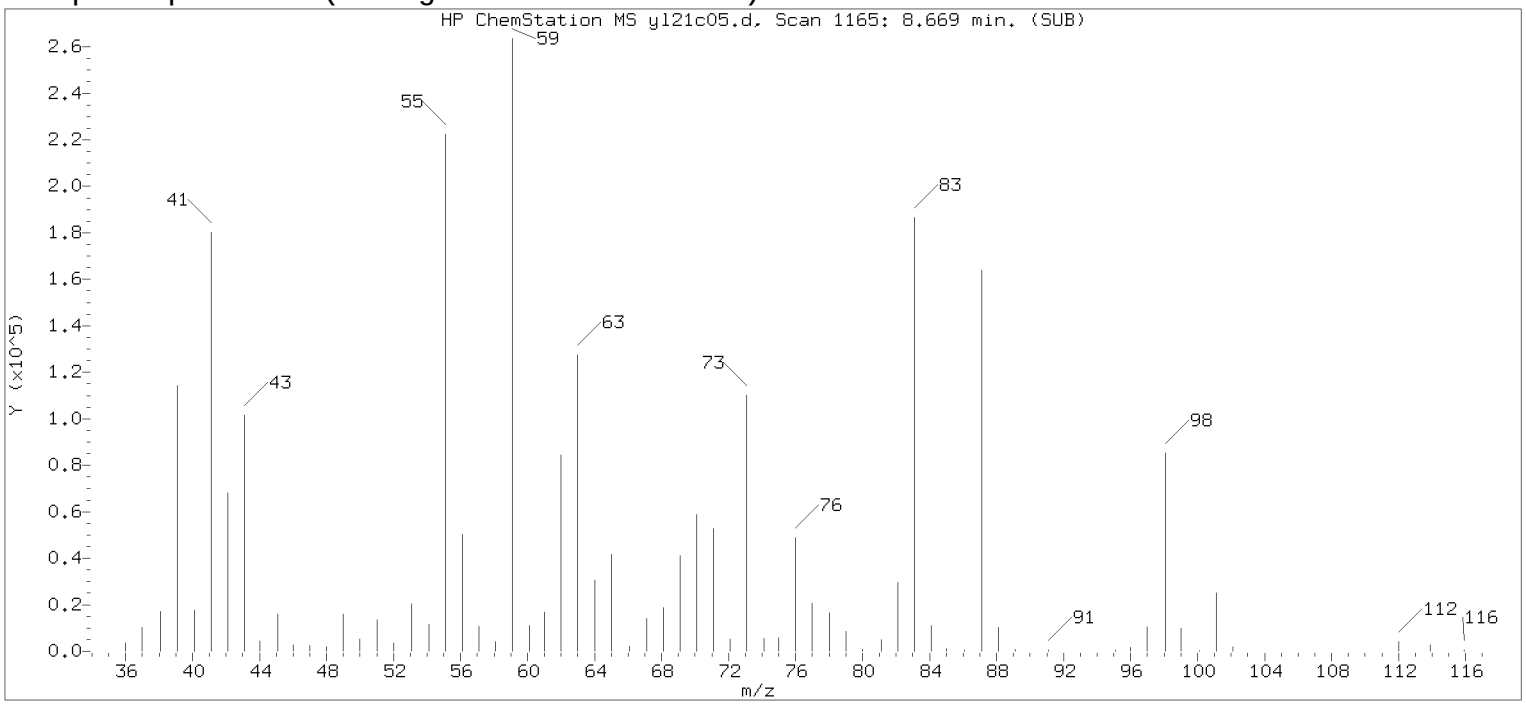
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1180
Retention Time (minutes): 8.760
Quant Ion : 88.00
Area (flag) : 26513M
On-Column Amount (ng) : 440.4380
Integration start scan : 1172 Integration stop scan: 1193
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

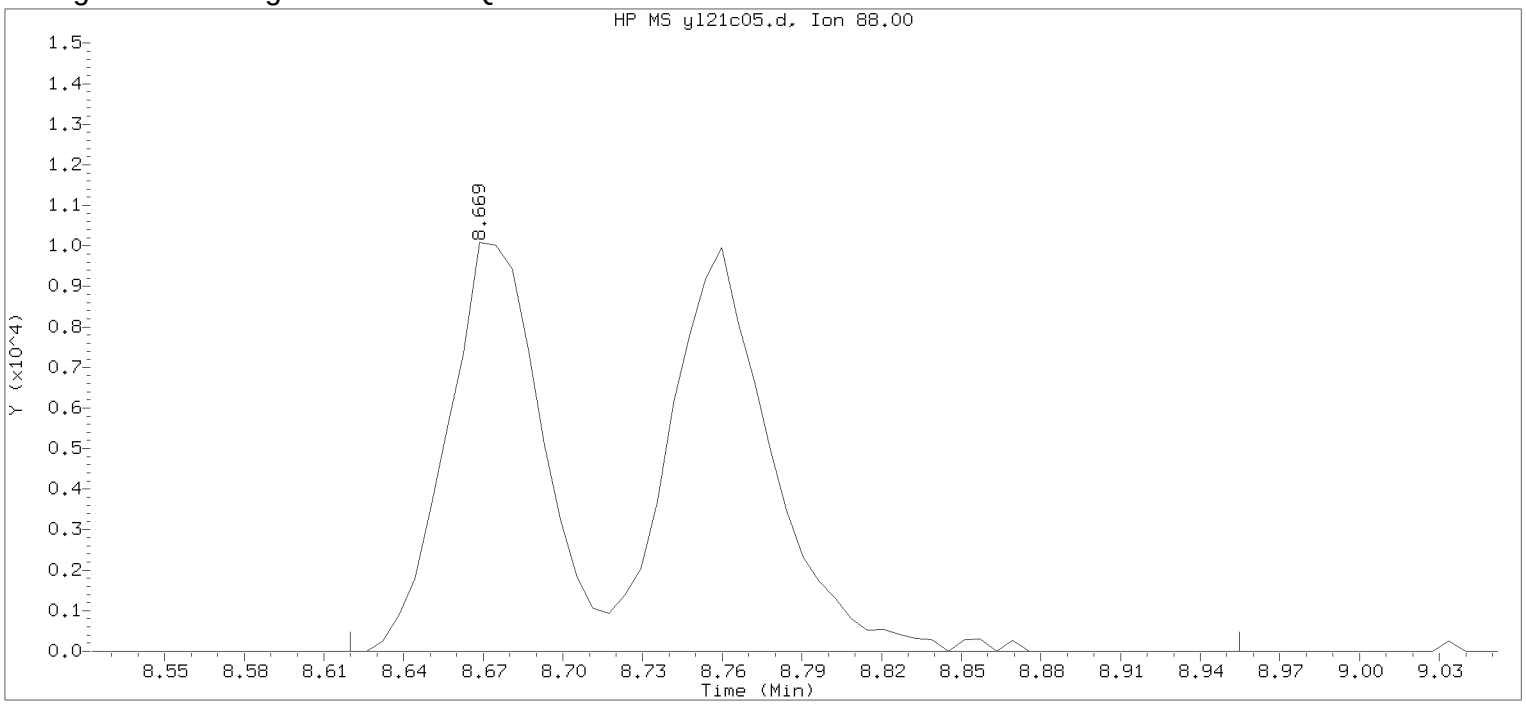
Analyst responsible for change: Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

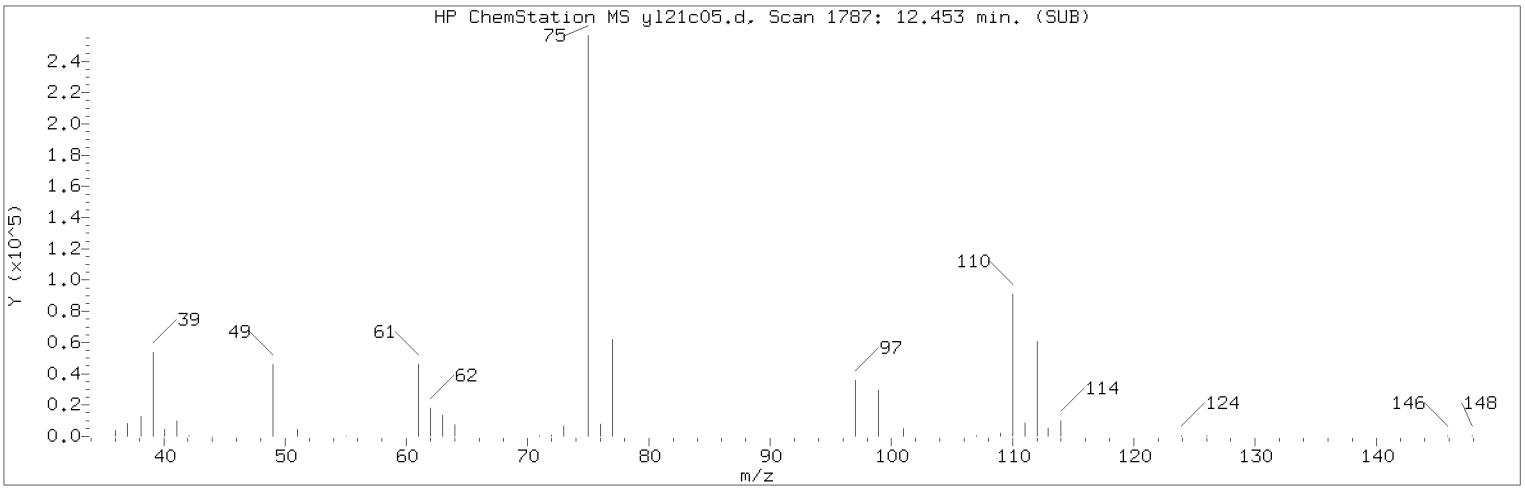
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:34 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

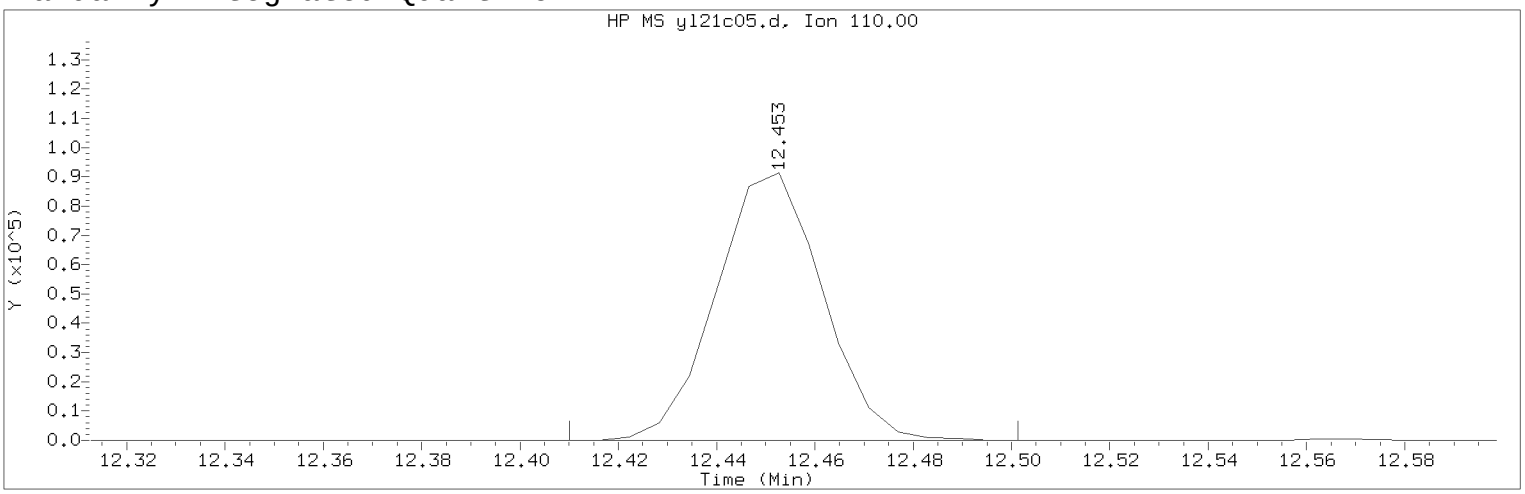
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1165
Retention Time (minutes): 8.669
Quant Ion : 88.00
Area : 51550
On-column Amount (ng) : 856.3541
Integration start scan : 1156 Integration stop scan: 1211
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature userKRD89pth10165

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

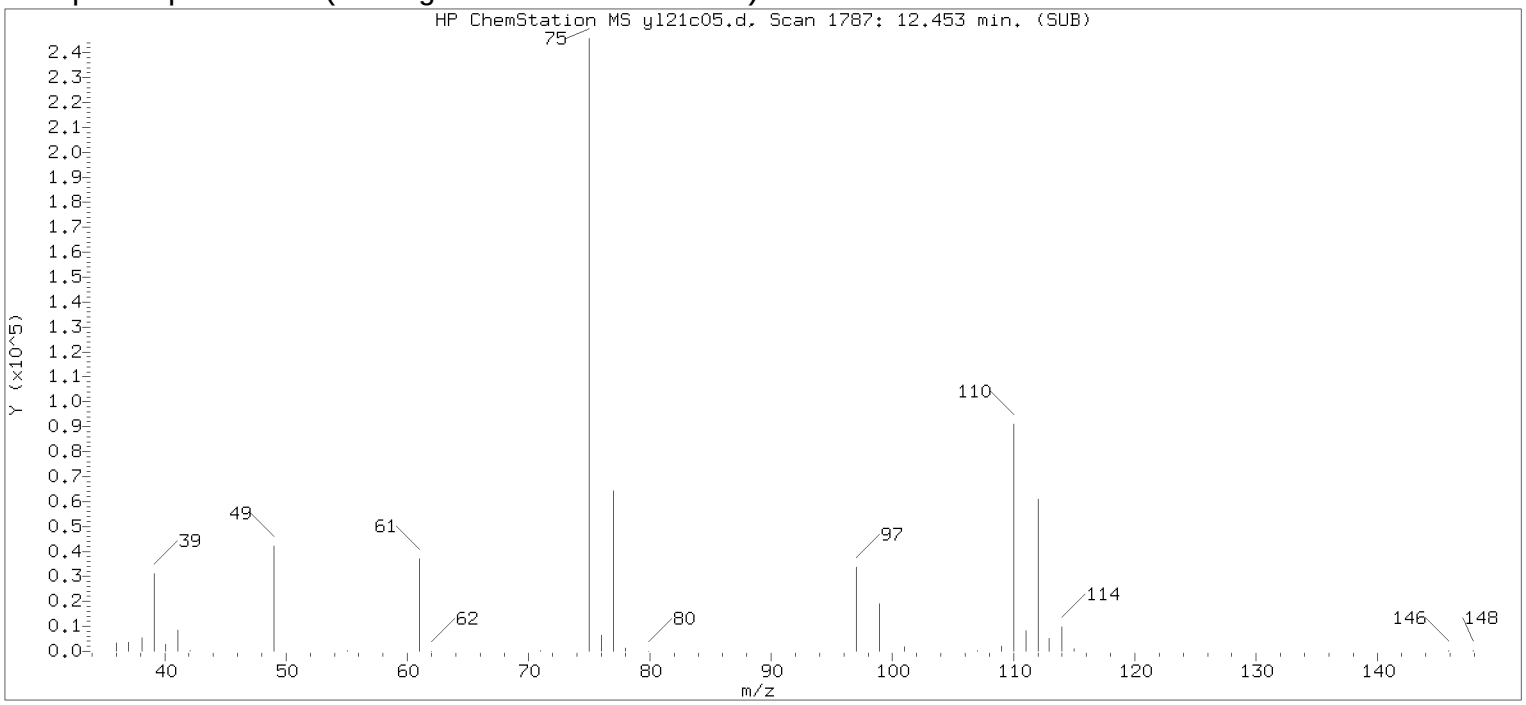
Compound Number : 117
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1787
Retention Time (minutes): 12.453
Quant Ion : 110.00
Area (flag) : 137517M
On-Column Amount (ng) : 41.1502
Integration start scan : 1779 Integration stop scan: 1794
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

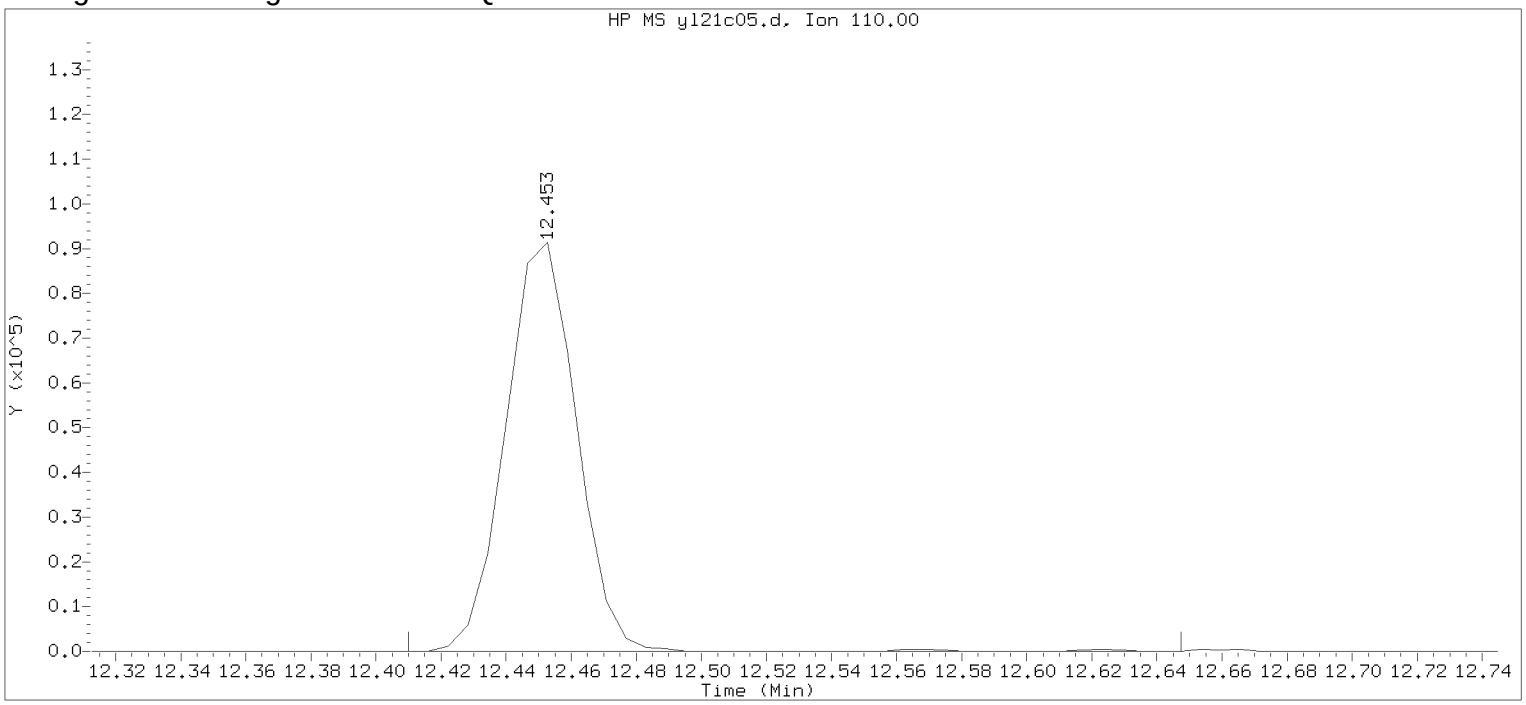
Analyst responsible for change: Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

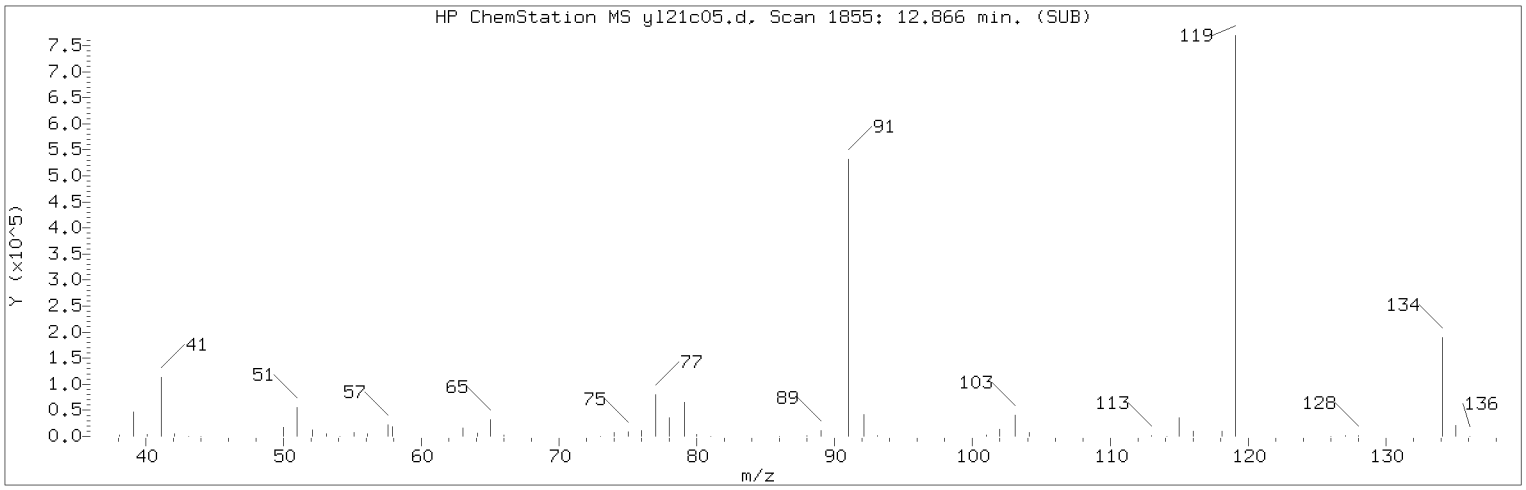
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:34 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

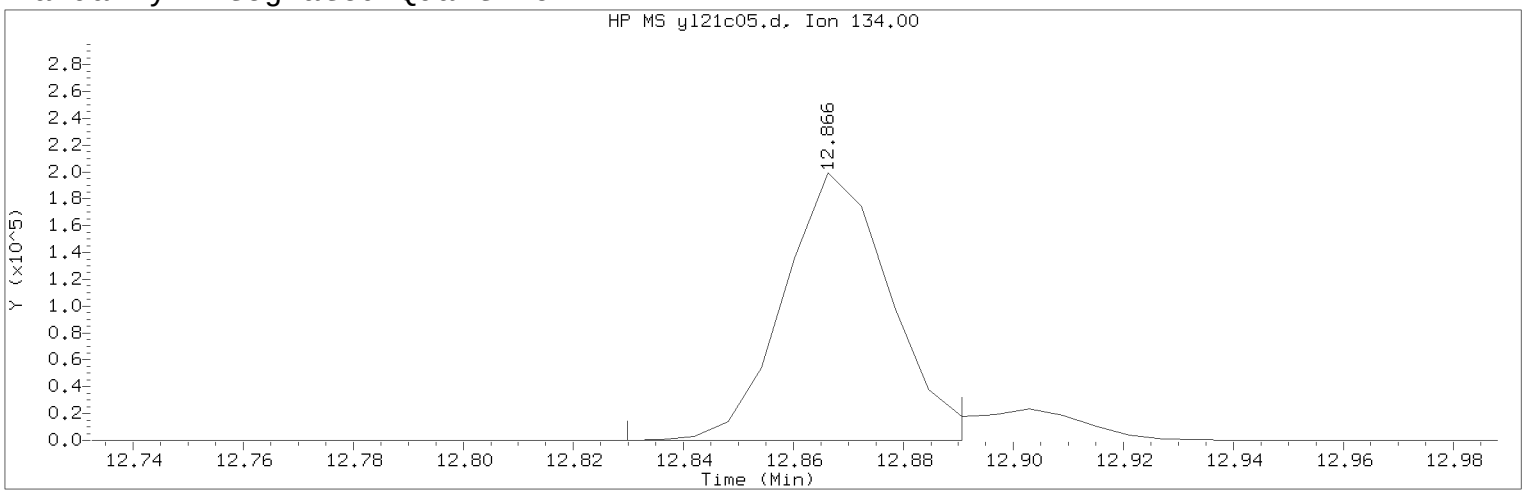
Compound Number : 117
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1787
Retention Time (minutes): 12.453
Quant Ion : 110.00
Area : 138259
On-column Amount (ng) : 41.3722
Integration start scan : 1779 Integration stop scan: 1818
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature userKRD89pth10165

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

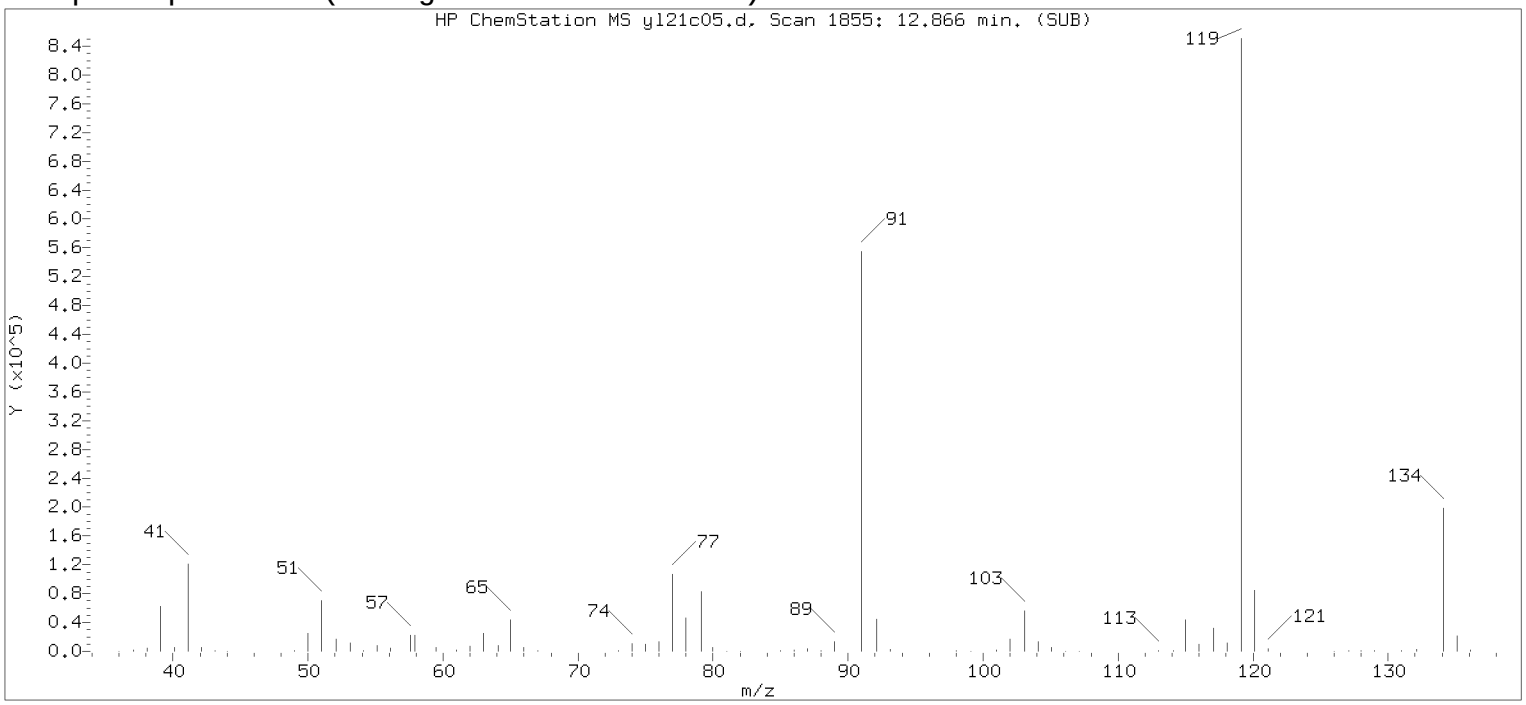
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1855
Retention Time (minutes): 12.866
Quant Ion : 134.00
Area (flag) : 268143M
On-Column Amount (ng) : 49.2948
Integration start scan : 1848 Integration stop scan: 1858
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

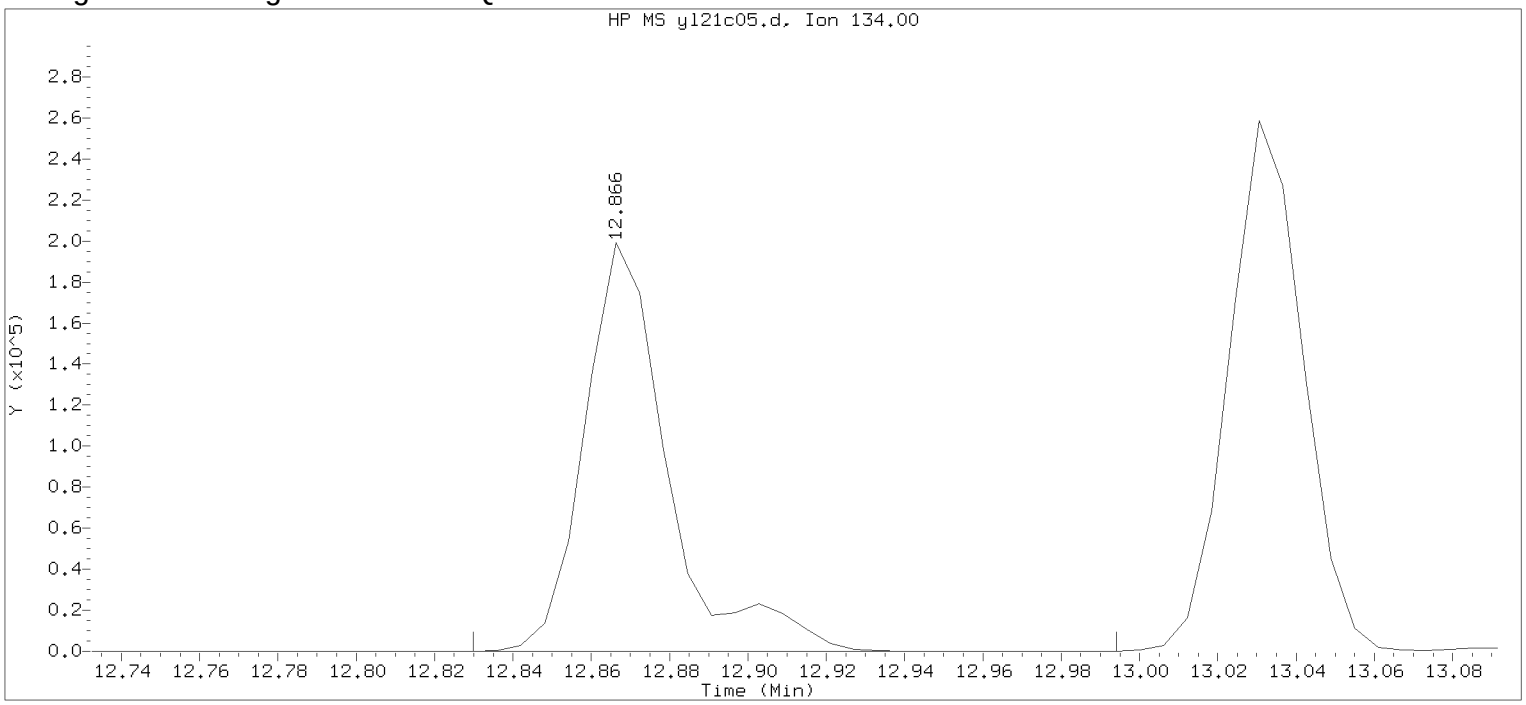
Analyst responsible for change: Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

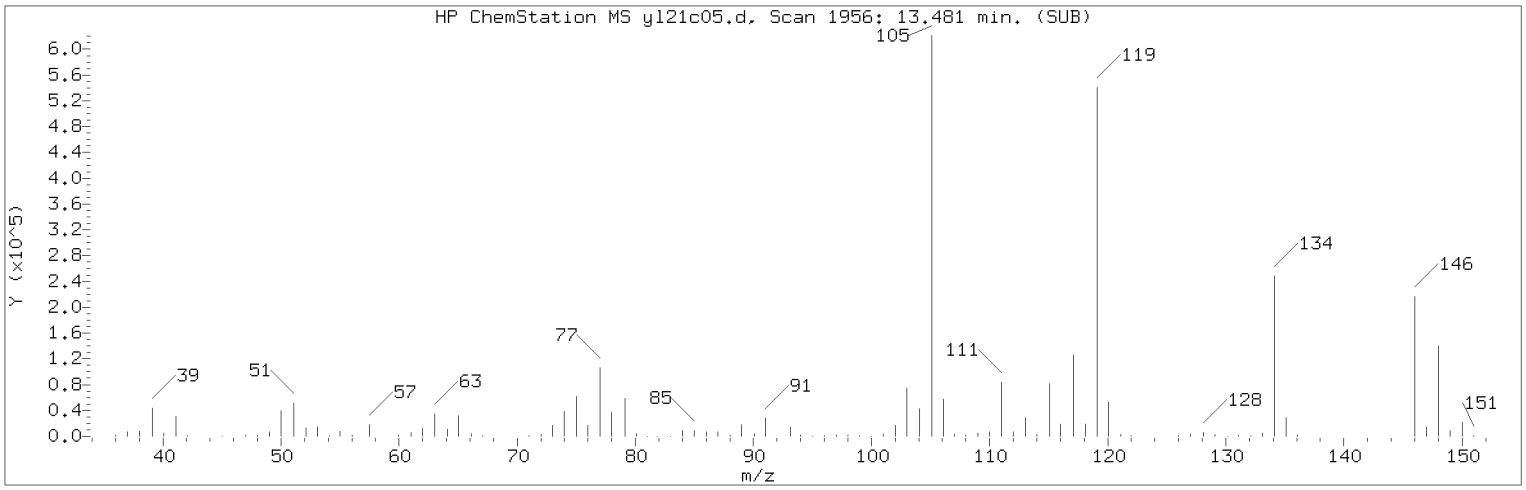
Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:34 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

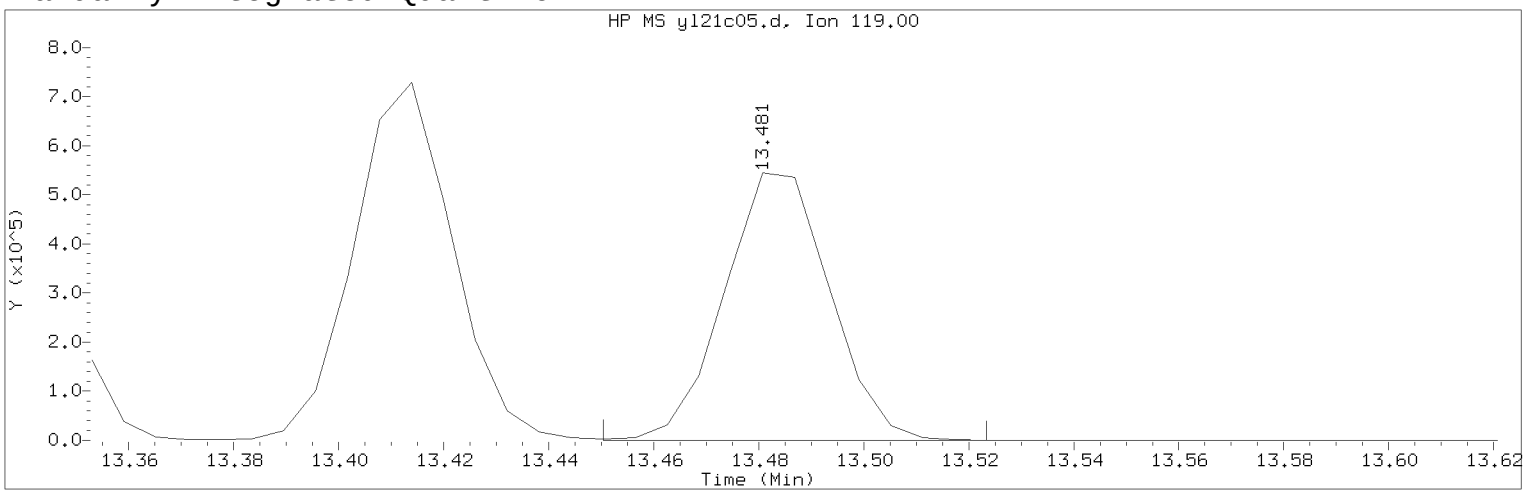
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 1855
Retention Time (minutes): 12.866
Quant Ion : 134.00
Area : 295889
On-column Amount (ng) : 54.3955
Integration start scan : 1848 Integration stop scan: 1875
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature userKRD89pth10165

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:37 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

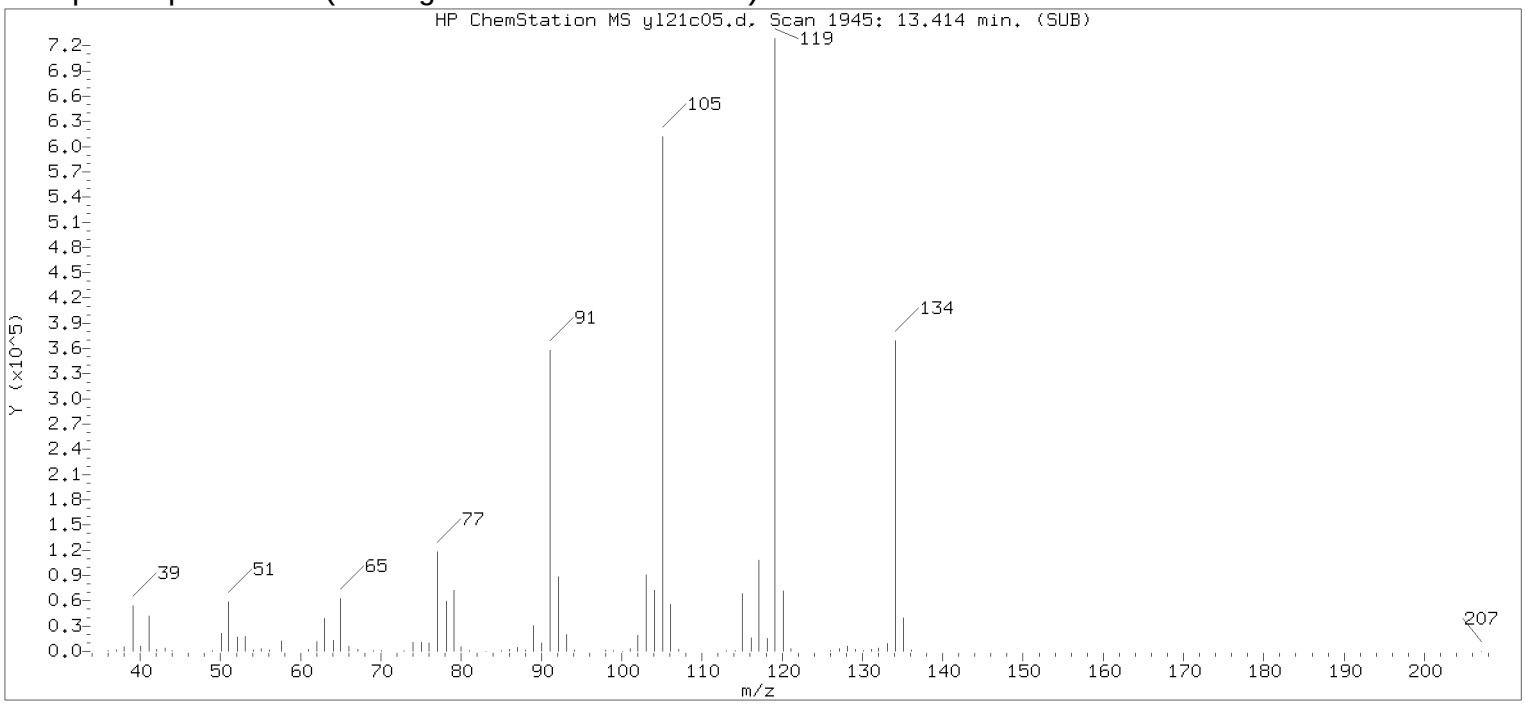
Compound Number : 140
Compound Name : 1,2-Diethylbenzene
Scan Number : 1956
Retention Time (minutes): 13.481
Quant Ion : 119.00
Area (flag) : 759794M
On-Column Amount (ng) : 54.7200
Integration start scan : 1950 Integration stop scan: 1962
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

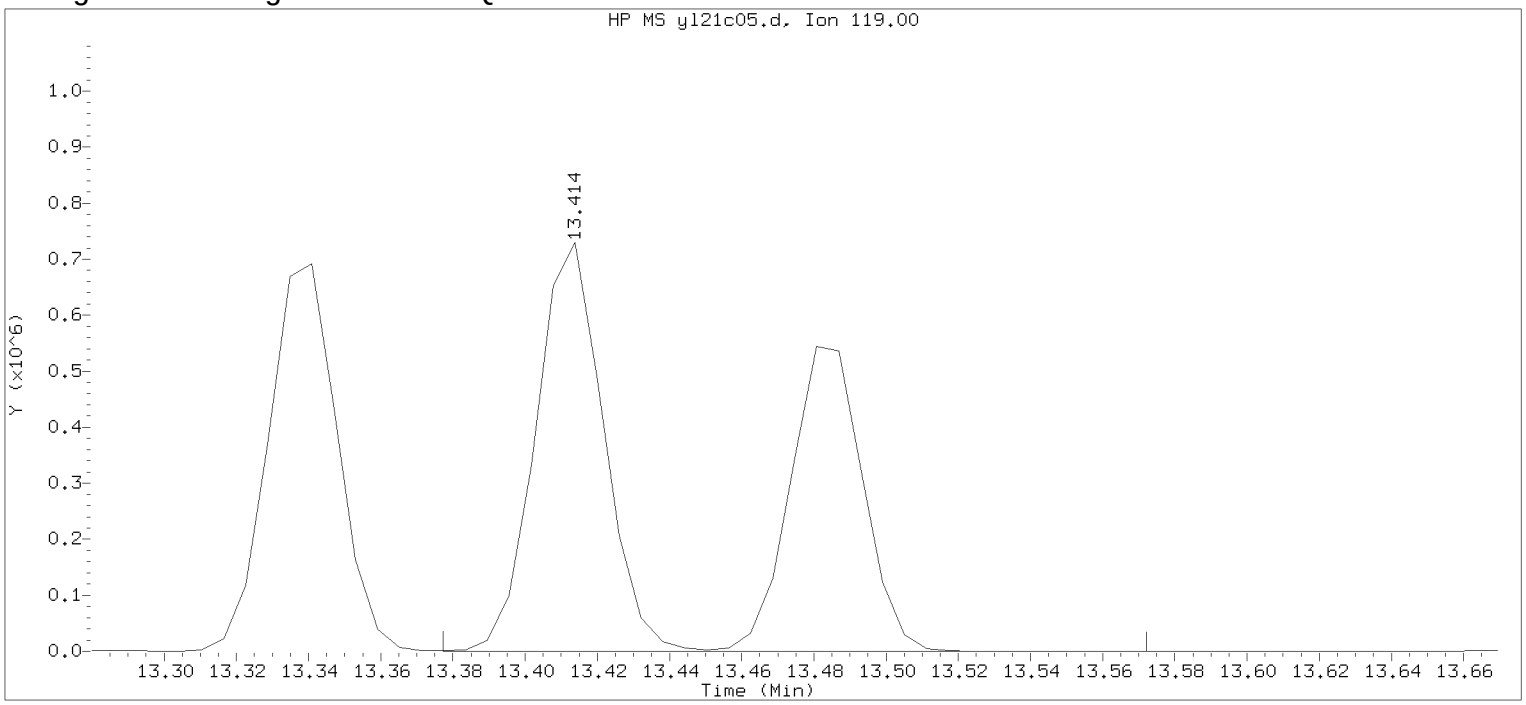
Analyst responsible for change: Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem2/HP09355.i/17jul21b.b/yl21c05.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 19:30 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 8260W-1
Calibration date and time: 21-JUL-2017 22:34
Date, time and analyst ID of latest file update: 21-Jul-2017 22:34 pth10165

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 140
Compound Name : 1,2-Diethylbenzene
Scan Number : 1945
Retention Time (minutes): 13.414
Quant Ion : 119.00
Area : 1715874
On-column Amount (ng) : 123.5765
Integration start scan : 1938 Integration stop scan: 1970
Y at integration start : 0 Y at integration end: 0

Digitally signed by Patrick T. Herres on 07/21/2017 at 22:37.
Target 3.5 esignature userID: pth10165

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21c06.d Injection date and time: **22-JUL-2017 05:55**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 22-Jul-2017 06:10 Automation

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.343(-0.024) | 454 | 65 | 236427 ( 42) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1691665 ( 36) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.315(-0.006) | 1600 | 117 | 1262128 ( 33) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 630593 ( 29) | 50.00 | |

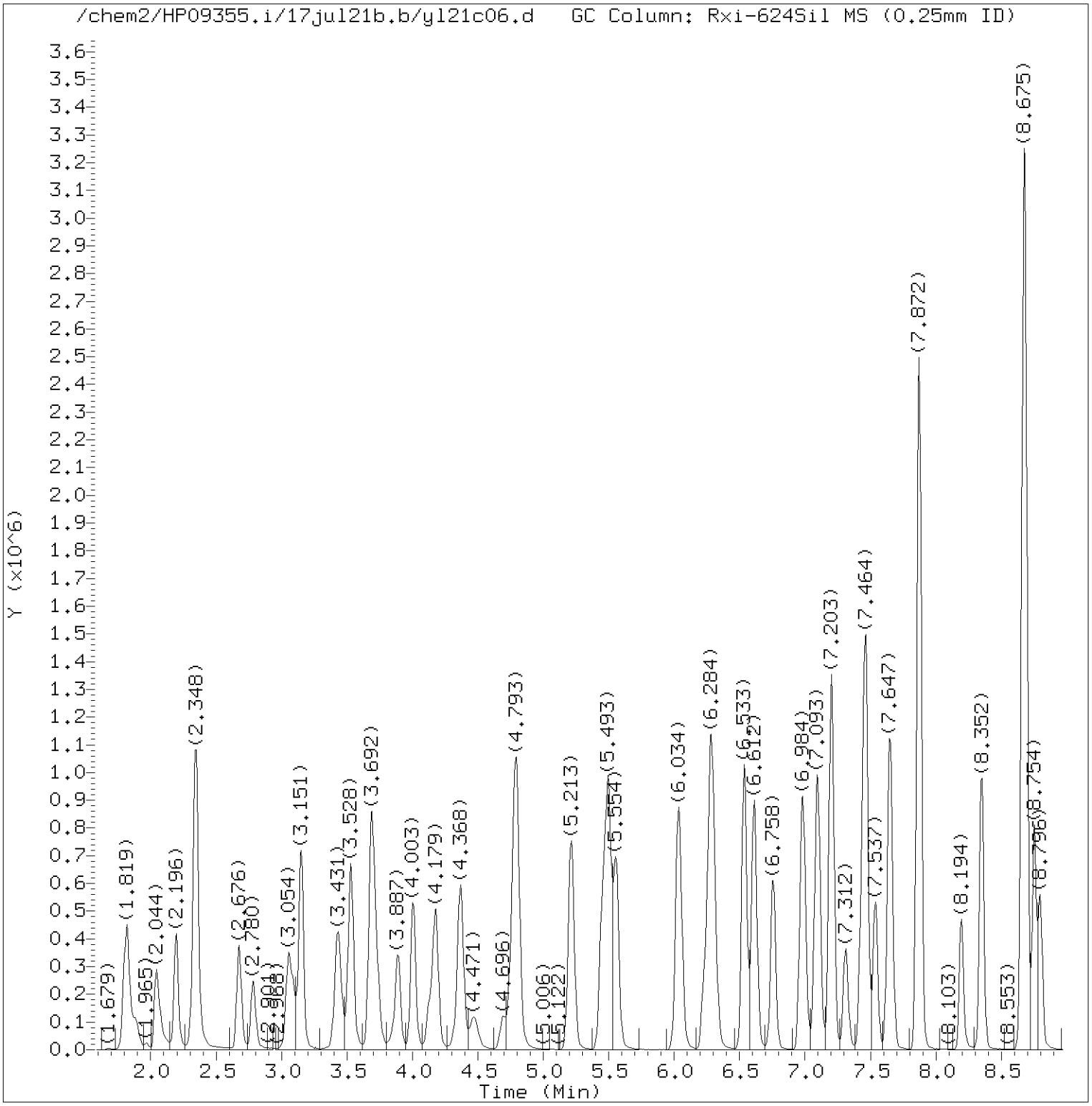
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.971(-0.001) | 113 | 387074 | 49.064 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.434(-0.001) | 102 | 98927 | 47.824 | 96% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867( 0.000) | 98 | 1688297 | 51.776 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.001) | 95 | 619799 | 50.681 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.464(-0.000) | 78 | 1749831 | 51.751 | 51.75 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.940( 0.000) | 92 | 1116484 | 52.005 | 52.00 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.418( 0.000) | 91 | 2191987 | 53.077 | 53.08 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.534( 0.000) | 106 | 1730955 | 105.265 | 105.26 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.862( 0.000) | 106 | 830534 | 51.849 | 51.85 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 2561489 | 157.114 | 157.11 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 07/24/2017 at 12:03. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 14:05. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

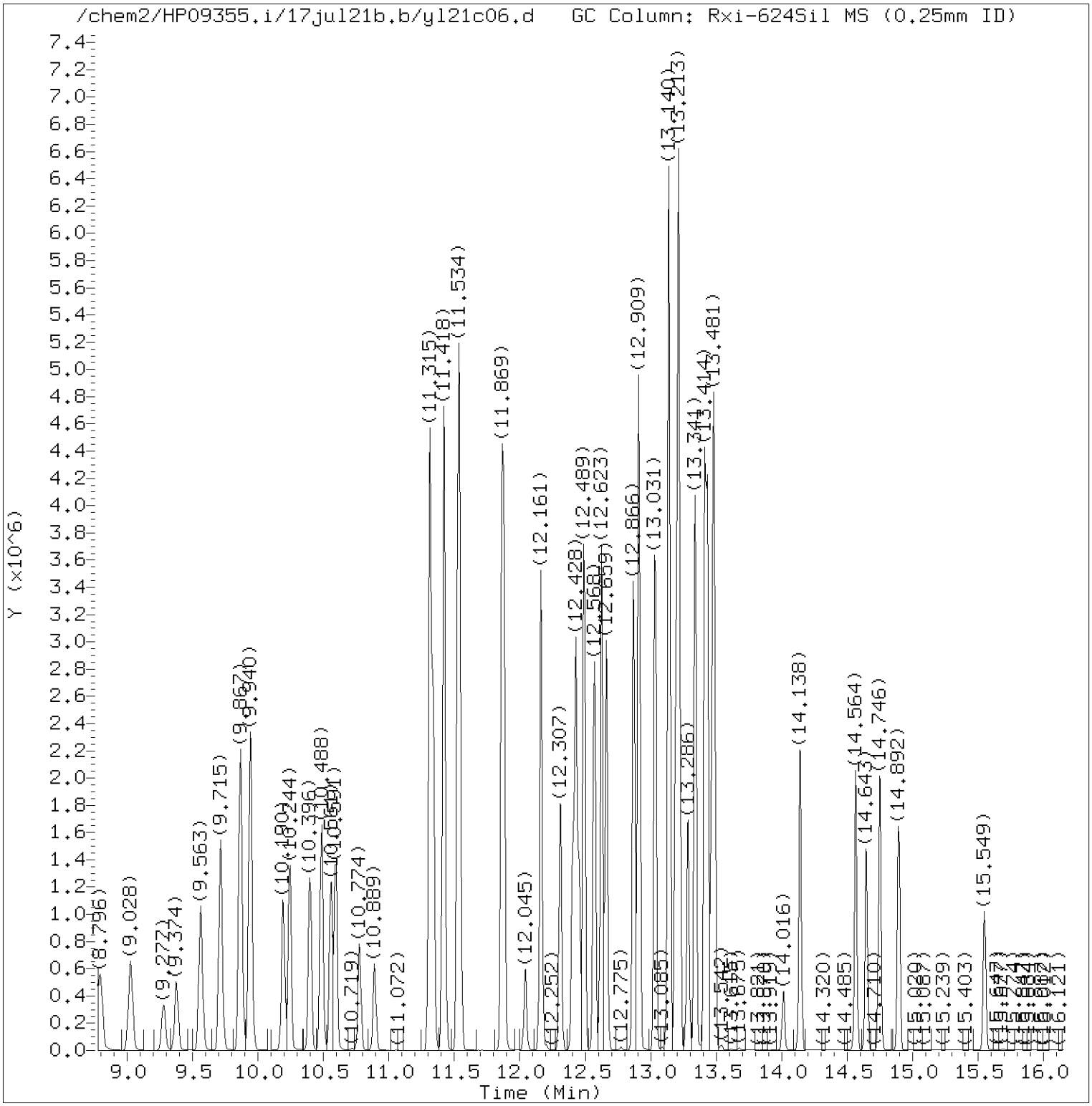
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c06.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:55 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 06:10 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Linda C. Pape
on 07/24/2017 at 12:03.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c06.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:55 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 06:10 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Linda C. Pape
on 07/24/2017 at 12:03.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21c06.d Instrument ID: HP09355.i
Injection date and time: 22-JUL-2017 05:55 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 22-Jul-2017 06:10 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.343 | 65 | 236427 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.971 | 113 | 387074 | 49.064 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.434 | 102 | 98927 | 47.824 |
| 60) Benzene | (2) | 7.464 | 78 | 1749831 | 51.751 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1691665 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1688297 | 51.776 |
| 88) Toluene | (3) | 9.940 | 92 | 1116484 | 52.005 |
| 100)*Chlorobenzene-d5 | (3) | 11.315 | 117 | 1262128 | 50.000 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 2191987 | 53.077 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 1730955 | 105.265 |
| 108) Xylene (Total) | (3) | | 106 | 2561489 | 157.114 |
| 107) o-Xylene | (3) | 11.863 | 106 | 830534 | 51.849 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 619799 | 50.681 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 630593 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 07/24/2017 at 12:03.
Target 3.5 esignature user ID: lcp00895

# Raw QC Data

# Volatiles by GC/MS

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21b10.d Injection date and time: **21-JUL-2017 20:40**
Data file Sample Info. Line: VBLKY06;VBLKY06;1;3;;;DODWW;;; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.319( 0.000) | 450 | 65 | 177313 ( 6) | 250.00 | |
| 66) Fluorobenzene | 7.853( 0.006) | 1031 | 96 | 1196141 ( -4) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 885762 ( -7) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.189( 0.000) | 1908 | 152 | 427112 ( -12) | 50.00 | |

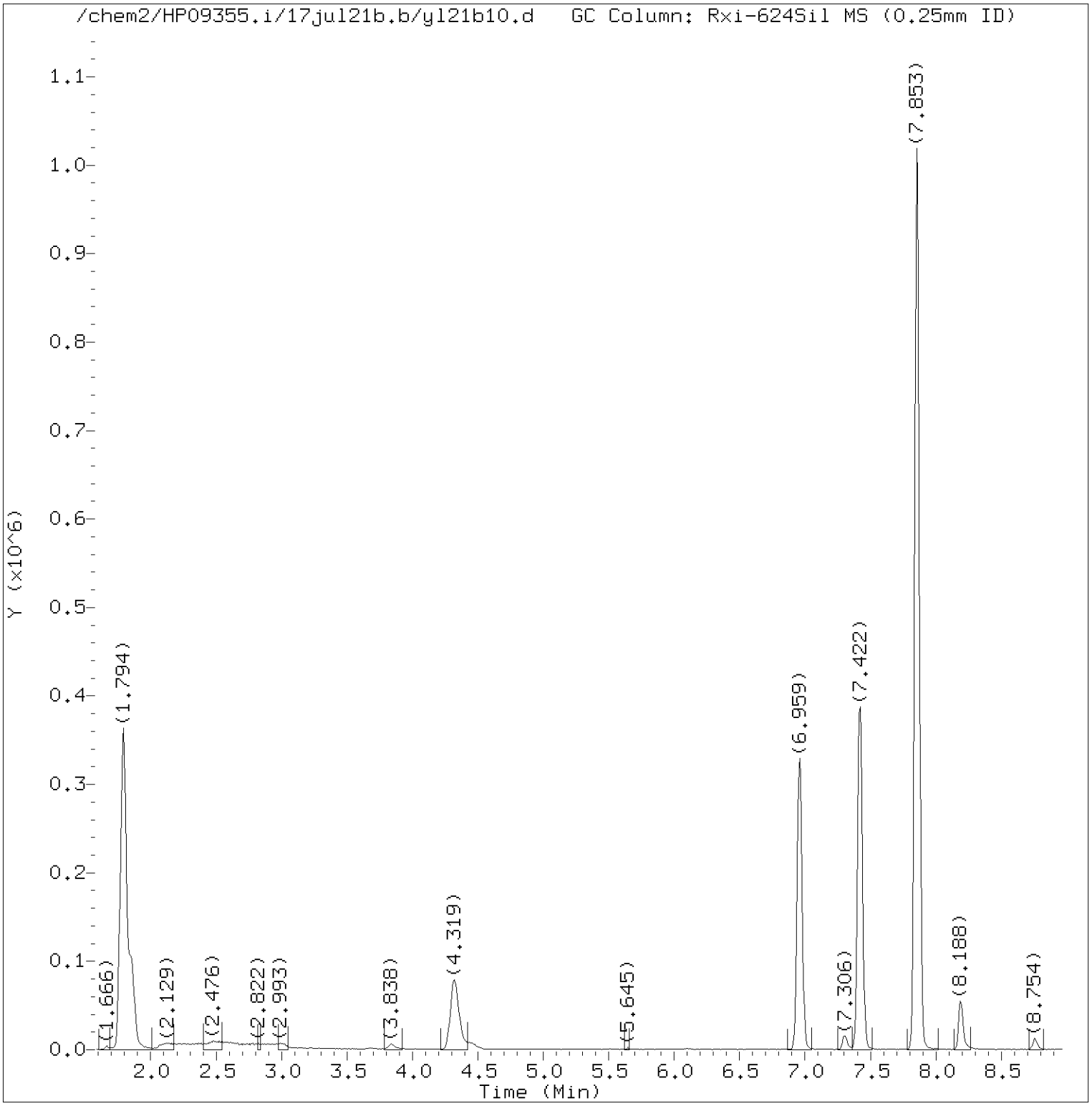
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.959(-0.001) | 113 | 285395 | 51.162 | 102% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.422(-0.001) | 102 | 73704 | 50.392 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.861( 0.000) | 98 | 1193646 | 52.160 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 410049 | 47.777 | 96% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Patrick T. Herres on 07/21/2017 at 23:04. Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

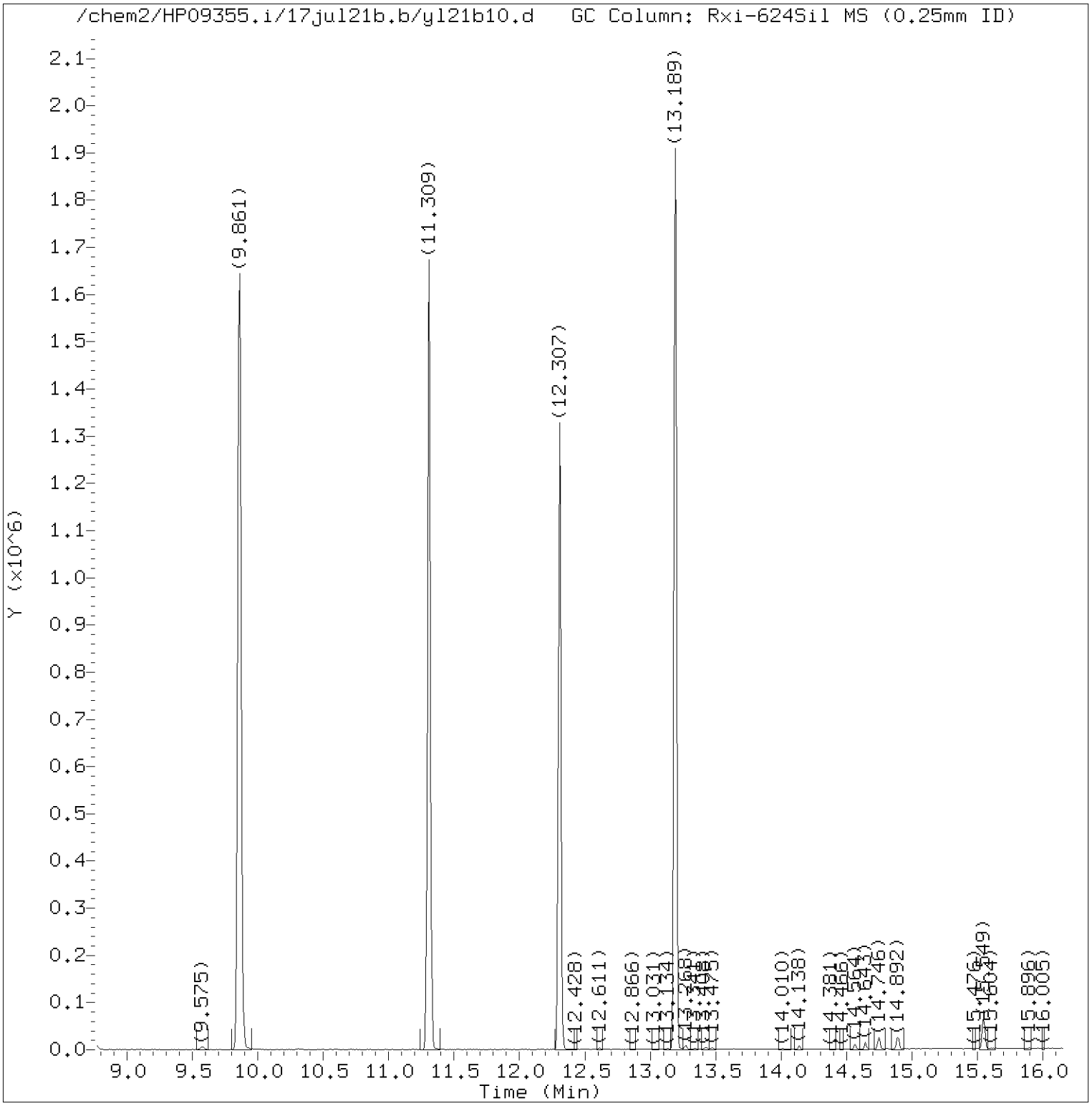
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21b10.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:40 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: VBLKY06 Lab Sample ID: VBLKY06

Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:04.
Target 3.5 esignature user ID: pth10165




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21b10.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:40 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: VBLKY06 Lab Sample ID: VBLKY06

Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:04.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21b10.d  Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:40  Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: VBLKY06  Lab Sample ID: VBLKY06

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.319 | 65 | 177313 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.959 | 113 | 285395 | 51.162 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.422 | 102 | 73704 | 50.392 |
| 66)*Fluorobenzene | (2) | 7.853 | 96 | 1196141 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.861 | 98 | 1193646 | 52.160 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 885762 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 410049 | 47.777 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.189 | 152 | 427112 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:04.
Target 3.5 esignature user ID: pth10165

# Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP09355.i/17jul21b.b/yl21s62.d Injection date and time: **21-JUL-2017 20:17**
Data file Sample Info. Line: LCSY06;LCSY06;1;3;LCS;;DODWW;;yl21b10; Instrument ID: **HP09355.i** Batch: **Y172023AA**
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Blank Data file reference: **/chem2/HP09355.i/17jul21b.b/yl21b10.d**

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 21-JUL-2017 22:42
Mid Level Daily Calibration Standard Reference: **/chem2/HP09355.i/17jul21b.b/yl21c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 4.337(-0.018) | 453 | 65 | 194105 ( 16) | 250.00 | |
| 66) Fluorobenzene | 7.866(-0.006) | 1033 | 96 | 1357216 ( 9) | 50.00 | |
| 100) Chlorobenzene-d5 | 11.309( 0.000) | 1599 | 117 | 1026596 ( 8) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 13.195(-0.006) | 1909 | 152 | 521011 ( 7) | 50.00 | |

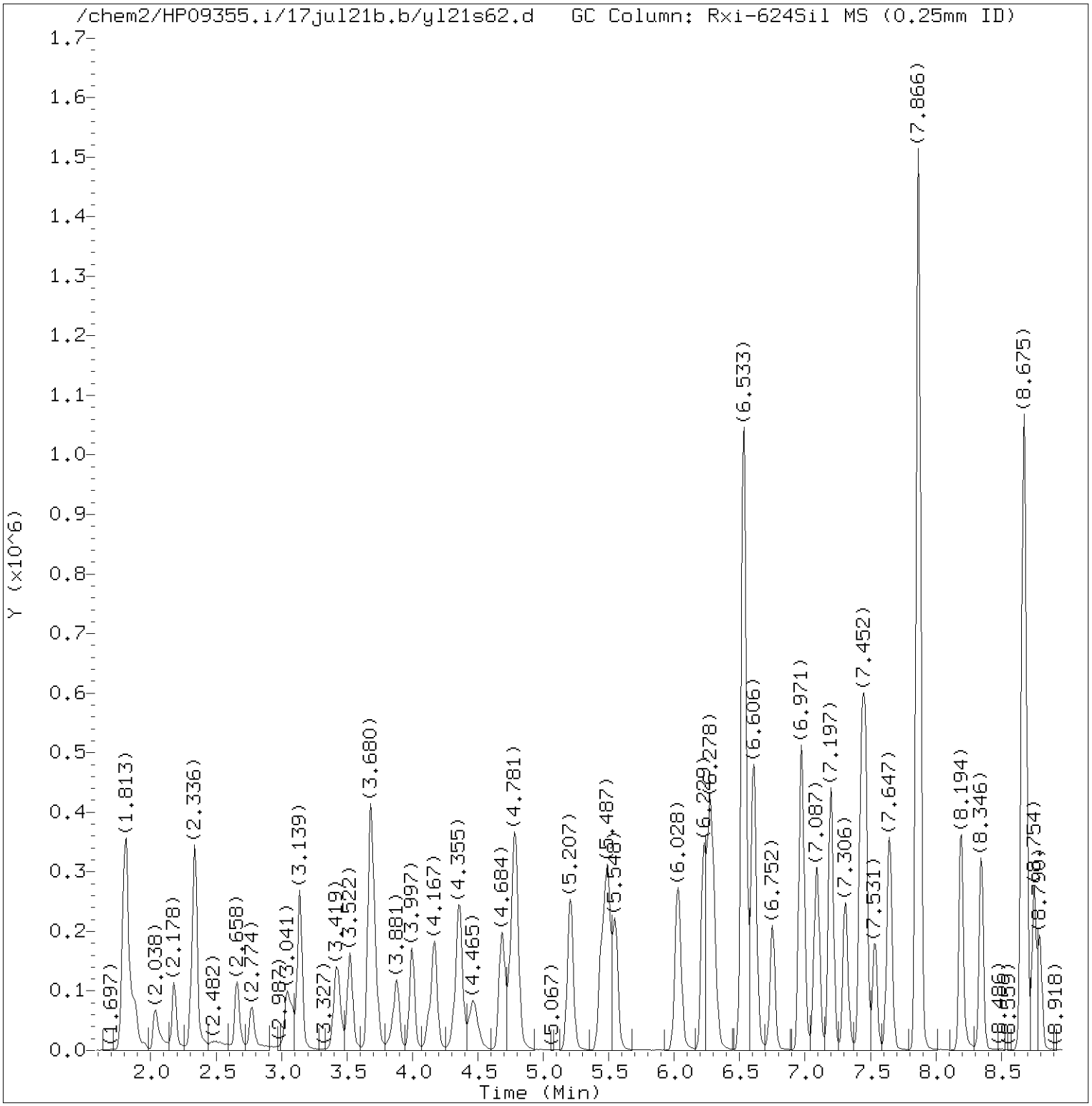
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.965( 0.000) | 113 | 313514 | 49.532 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 7.428( 0.000) | 102 | 80172 | 48.308 | 97% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.867(-0.001) | 98 | 1382735 | 52.134 | 104% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 12.307( 0.000) | 95 | 510071 | 51.278 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 7.458( 0.000) | 78 | 571194 | 21.056 | 21.06 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.940( 0.000) | 92 | 363408 | 20.811 | 20.81 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 11.418( 0.000) | 91 | 699741 | 20.831 | 20.83 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 11.534( 0.000) | 106 | 555181 | 41.508 | 41.51 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.863( 0.000) | 106 | 248986 | 19.110 | 19.11 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 804167 | 60.618 | 60.62 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Patrick T. Herres on 07/21/2017 at 23:05. Target 3.5 esignature user ID: pth10165

Secondary review performed and digitally signed by Chelsea B. Riehl on 07/25/2017 at 13:56. PARALLAX ID: cbs01947




Total Ion Chromatogram (TIC)

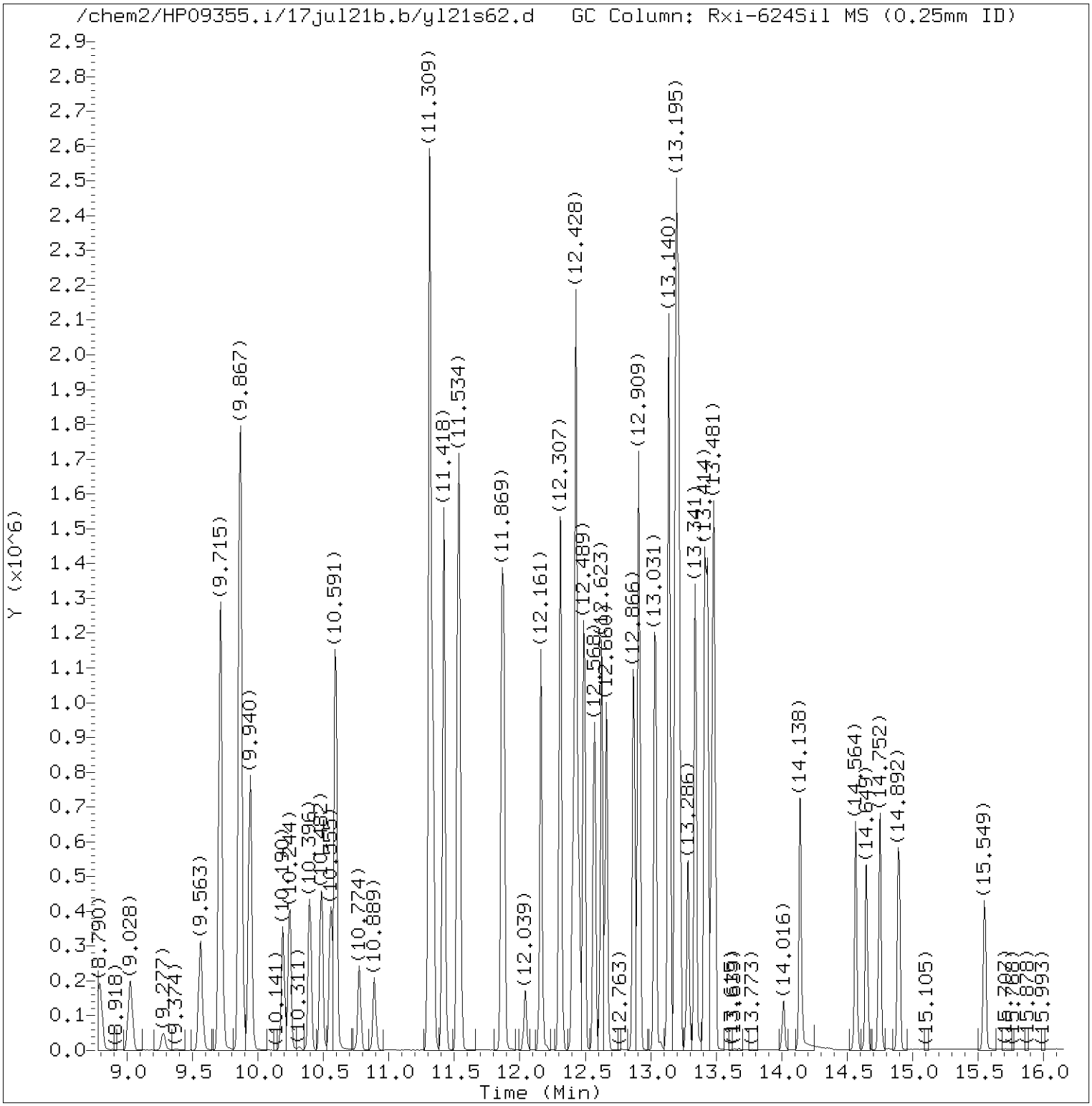
Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s62.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:17 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: LCSY06 Lab Sample ID: LCSY06

Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:04.
Target 3.5 esignature user ID: pth10165




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s62.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:17 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: LCSY06 Lab Sample ID: LCSY06

Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:05.
Target 3.5 esignature user ID: pth10165

Quant Report

Target Revision 3.5

Data File: /chem2/HP09355.i/17jul21b.b/yl21s62.d Instrument ID: HP09355.i
Injection date and time: 21-JUL-2017 20:17 Analyst ID: pth10165

Method used: /chem2/HP09355.i/17jul21b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 21-JUL-2017 22:42
Date, time and analyst ID of latest file update: 21-Jul-2017 23:04 pth10165

Sample Name: LCSY06 Lab Sample ID: LCSY06

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 4.337 | 65 | 194105 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.965 | 113 | 313514 | 49.532 |
| 57)$1,2-Dichloroethane-d4 | (2) | 7.428 | 102 | 80172 | 48.308 |
| 60) Benzene | (2) | 7.458 | 78 | 571194 | 21.056 |
| 66)*Fluorobenzene | (2) | 7.866 | 96 | 1357216 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.867 | 98 | 1382735 | 52.134 |
| 88) Toluene | (3) | 9.940 | 92 | 363408 | 20.811 |
| 100)*Chlorobenzene-d5 | (3) | 11.309 | 117 | 1026596 | 50.000 |
| 104) Ethylbenzene | (3) | 11.418 | 91 | 699741 | 20.831 |
| 106) m+p-Xylene | (3) | 11.534 | 106 | 555181 | 41.508 |
| 108) Xylene (Total) | (3) | | 106 | 804167 | 60.618 |
| 107) o-Xylene | (3) | 11.863 | 106 | 248986 | 19.110 |
| 114)$4-Bromofluorobenzene | (3) | 12.307 | 95 | 510071 | 51.278 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 13.195 | 152 | 521011 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Patrick T. Herres
on 07/21/2017 at 23:05.
Target 3.5 esignature user ID: pth10165

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9112123 | GW012R-173 | X | | 1 | |
| 9112125 | GW097-173 | X | | 1 | |
| 9112126 | GW098-173 | X | | 1 | |
| 9112127 | TB173-25 | X | | 1 | Trip Blank |
| 9112128 | TB173-26 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9112123, 9112125-9112128: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

#### MS/MSD

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172020030A | PBLK30202 | 07/25/2017 23:47:00 |
| | | LCS30202 | 07/26/2017 00:03:00 |
| | | LCSD30202 | 07/26/2017 00:19:00 |
| | | 9112123 | 07/26/2017 03:45:00 |
| | | 9112125 | 07/26/2017 04:01:00 |
| | | 9112126 | 07/26/2017 04:17:00 |
| | | 9112127 | 07/26/2017 04:33:00 |
| | | 9112128 | 07/26/2017 04:49:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR189**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172020030A / PBLK30202<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/25/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR189**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172020030A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK30202 | 69 | 46 - 136 |
| LCS30202 | 75 | 46 - 136 |
| LCSD30202 | 71 | 46 - 136 |
| 9112123 | 102 | 46 - 136 |
| 9112125 | 107 | 46 - 136 |
| 9112126 | 116 | 46 - 136 |
| 9112127 | 100 | 46 - 136 |
| 9112128 | 95 | 46 - 136 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR189**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS30202<br>LCSD: LCSD30202<br><br>**Analyte** | Batch: **172020030A** (Sample number(s): 9112123, 9112125-9112128 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 0.128 | 0.142 | 0.138 | 111 | 108 | 60-140 | 3 | 20 |

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1720501

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.85 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 | 3.81 | 3.87 |
| 1,1,2,2-TETRACHLOROETHANE | 5.33 | 5.32 | 5.33 | 5.32 | 5.32 | 5.32 | 5.32 | 5.29 | 5.35 |
| 1,2,3-Trichloropropane | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.37 | 5.43 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.65 | 7.71 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1720501

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.26E+04 | 1.18E+04 | 1.05E+04 | 1.02E+04 | 9.22E+03 | 8.88E+03 | 1.05E+04 | 14 |
| 1,1,2,2-TETRACHLOROETHANE | 1.39E+04 | 1.33E+04 | 1.28E+04 | 1.18E+04 | 1.11E+04 | 1.11E+04 | 1.23E+04 | 9 |
| 1,2,3-Trichloropropane | 1.94E+03 | 1.81E+03 | 1.74E+03 | 1.57E+03 | 1.48E+03 | 1.48E+03 | 1.67E+03 | 11 |
| 1,2-DIBROMO-3-CHLOROPROPA | 2.46E+04 | 2.33E+04 | 2.31E+04 | 2.09E+04 | 2.10E+04 | 2.13E+04 | 2.23E+04 | 7 |

linear linear

Average % RSD: 10

4/25/17

File Name: V:\CP18\18EDBS1720501.CAL
Version: 8

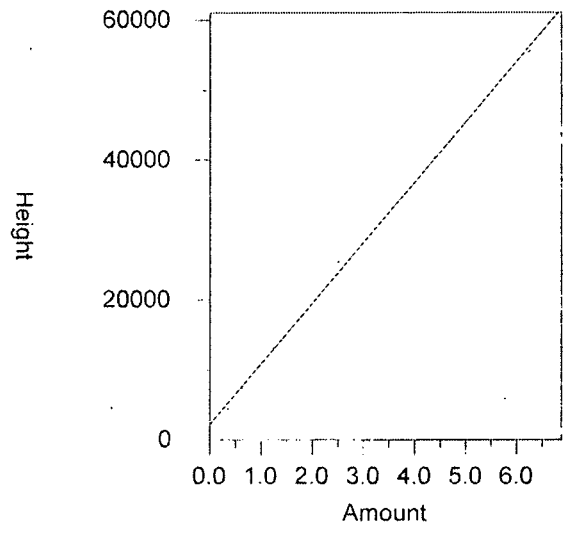
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.843 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

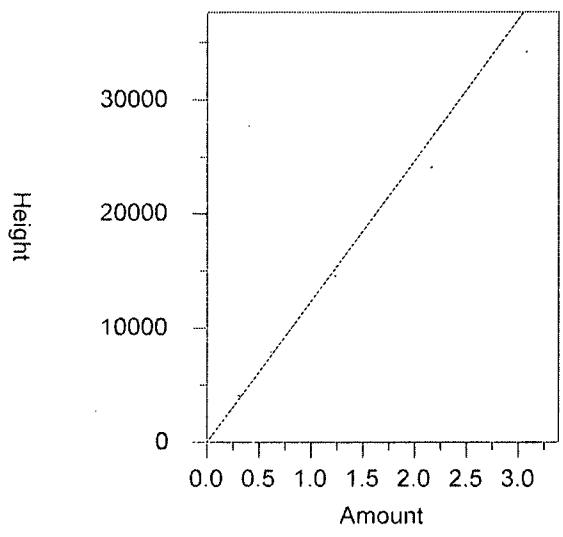
Single peak quantification by height

Y = 8638.205 X + 2245.084

Linear fit with equal weighting
Coefficient of determination: 0.9981241
Average error: 4.751%
Average CF: 10517.59
RSD: 13.769%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 4411.598 | 12604.57 | -16.264 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.006.BN |
| 2 | 0.63 | 7425.705 | 11786.83 | -3.401 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.007.BN |
| 3 | 1.25 | 13085.5 | 10468.4 | 0.327 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.008.BN |
| 4 | 2.5 | 25380.56 | 10152.22 | 6.459 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.009.BN |
| 5 | 4.38 | 40367.42 | 9216.306 | 0.716 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.010.BN |
| 6 | 6.25 | 55482.57 | 8877.211 | -1.336 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.011.BN |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.324 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

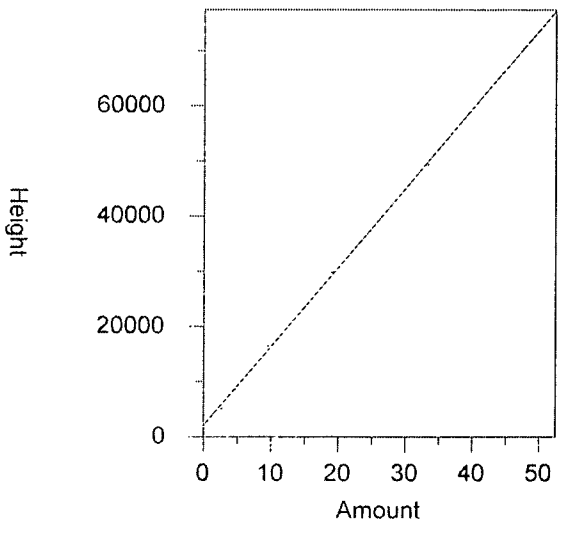
Y = 12331.18 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9723406 |
| Average error: | 7.996% |
| Average CF: | 12331.18 |
| RSD: | 9.455% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 2407.838 | 13918.14 | 12.869 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 0.308 | 4086.132 | 13266.66 | 7.586 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 0.616 | 7864.292 | 12766.71 | 3.532 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 1.23 | 14501.67 | 11789.98 | -4.389 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 2.16 | 24060.62 | 11139.17 | -9.667 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |
| 6 | 3.08 | 34207.75 | 11106.41 | -9.932 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.398 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

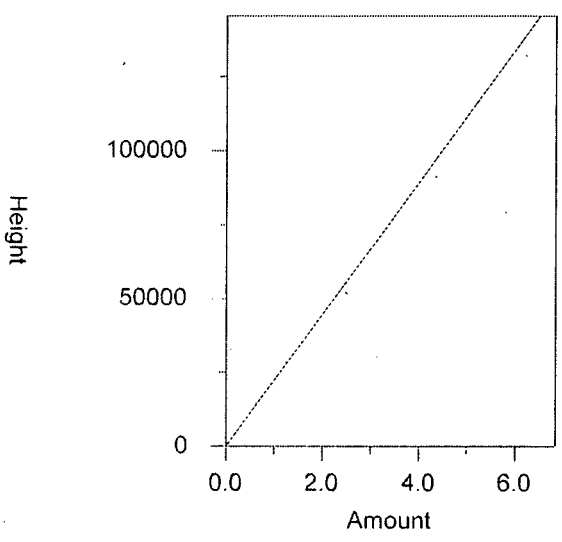
Y = 1435.139 X + 2038.979

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9994225 |
| Average error: | 3.883% |
| Average CF: | 1670.156 |
| RSD: | 11.343% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 5183.897 | 1941.534 | -11.700 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 4.76 | 8598.273 | 1806.36 | -3.066 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 9.52 | 16579.96 | 1741.592 | 5.595 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 19.05 | 29943.89 | 1571.858 | 1.925 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 33.34 | 49389.79 | 1481.397 | -0.996 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |
| 6 | 47.63 | 70406.27 | 1478.192 | 0.017 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.679 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 22348.63 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9918822 |
| Average error: | 5.849% |
| Average CF: | 22348.63 |
| RSD: | 6.828% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 8603.578 | 24581.65 | 9.992 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 0.62 | 14448.06 | 23303.32 | 4.272 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 1.24 | 28621.88 | 23082.16 | 3.282 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 2.49 | 51969.48 | 20871.28 | -6.610 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 4.35 | 91292.15 | 20986.7 | -6.094 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |
| 6 | 6.22 | 132278.8 | 21266.69 | -4.841 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1720501B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.79 | 2.79 | 2.78 | 2.79 | 2.79 | 2.79 | 2.76 | 2.82 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.01 | 4.07 |
| 1,2,3-Trichloropropane | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.13 | 4.19 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.41 | 6.47 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1720501B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.68E+04 | 1.68E+04 | 1.47E+04 | 1.45E+04 | 1.31E+04 | 1.26E+04 | 1.47E+04 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 2.00E+04 | 1.93E+04 | 1.74E+04 | 1.57E+04 | 1.55E+04 | 1.51E+04 | 1.72E+04 | 12 |
| 1,2,3-Trichloropropane | 2.48E+03 | 2.44E+03 | 2.28E+03 | 2.08E+03 | 1.97E+03 | 1.91E+03 | 2.19E+03 | 11 |
| 1,2-DIBROMO-3-CHLOROPROPA | 2.87E+04 | 2.73E+04 | 2.57E+04 | 2.28E+04 | 2.16E+04 | 2.06E+04 | 2.44E+04 | 13 |

Average % RSD: 12

linear linear linear linear

HWW 7/26/17 7/25/17

File Name: V:\CP18\18EDBS1720501b.CAL
Version: 8

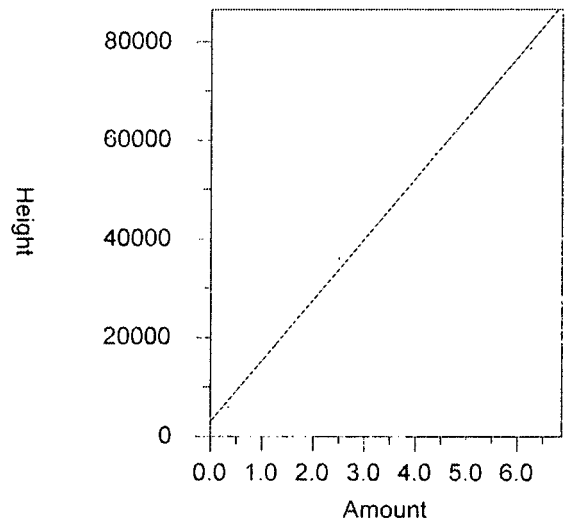
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 2.785 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

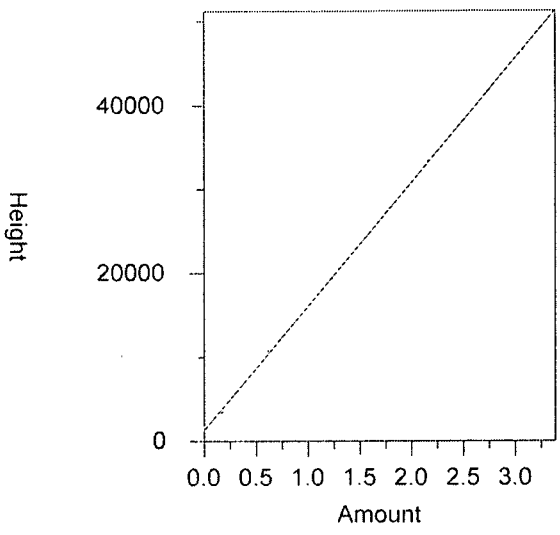
Single peak quantification by height

Y = 12288.05 X + 3051.388

Linear fit with equal weighting
Coefficient of determination: 0.9976688
Average error: 5.239%
Average CF: 14746.95
RSD: 12.137%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5879.512 | 16798.61 | -20.031 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.006.B |
| 2 | 0.63 | 10602.94 | 16830.06 | -1.760 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.007.B |
| 3 | 1.25 | 18381.3 | 14705.04 | -0.164 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.008.B |
| 4 | 2.5 | 36156.34 | 14462.54 | 7.062 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.009.B |
| 5 | 4.38 | 57388.45 | 13102.39 | 0.906 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.010.B |
| 6 | 6.25 | 78644.2 | 12583.07 | -1.512 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.011.B |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.04 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

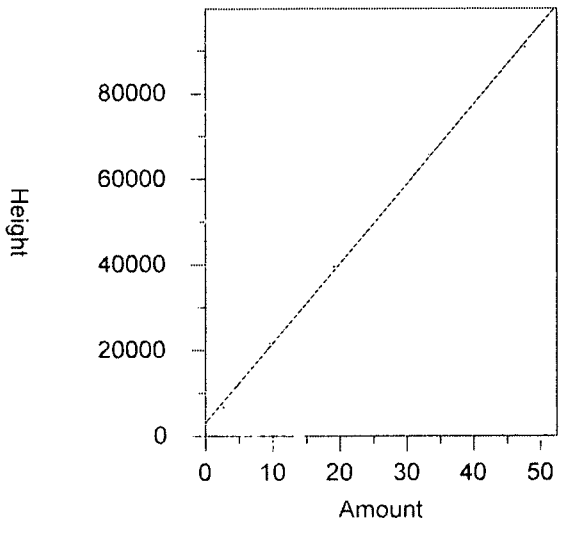
Single peak quantification by height

Y = 14761.19 X + 1285.783

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9997328 |
| Average error: | 2.747% |
| Average CF: | 17160.96 |
| RSD: | 12.182% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 3465.057 | 20029.23 | -9.752 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 0.308 | 5937.518 | 19277.66 | 1.805 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 0.616 | 10688.68 | 17351.75 | 2.987 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 1.23 | 19317.39 | 15705.2 | -0.641 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 2.16 | 33456.21 | 15488.99 | 0.863 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 3.08 | 46547.8 | 15112.92 | -0.433 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.158 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

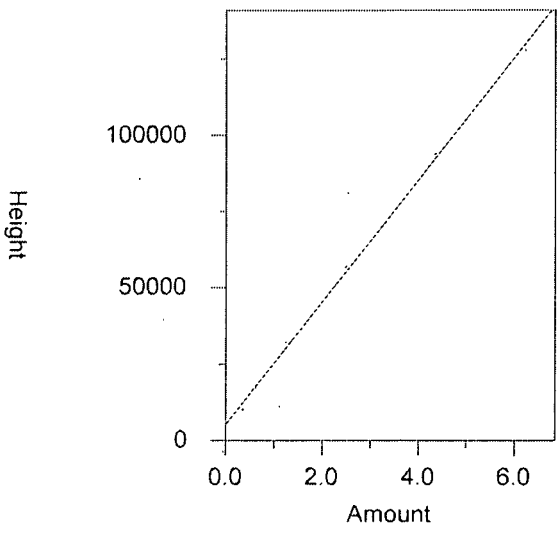
Single peak quantification by height

Y = 1862.06 X + 3028.528

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9990299 |
| Average error: | 4.822% |
| Average CF: | 2191.157 |
| RSD: | 11.050% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 6622.405 | 2480.301 | -17.222 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 4.76 | 11596.27 | 2436.191 | -2.486 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 9.53 | 21683.32 | 2275.27 | 4.377 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 19.05 | 39566.1 | 2076.961 | 2.767 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 33.34 | 65776.43 | 1972.898 | 1.024 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 47.63 | 90750.45 | 1905.321 | -1.055 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.436 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 20014.06 X + 5310.747

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9984107 |
| Average error: | 5.782% |
| Average CF: | 24448.19 |
| RSD: | 13.424% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 10051.81 | 28719.46 | -18.382 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 0.62 | 16928.15 | 27303.47 | -4.466 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 1.24 | 31855.28 | 25689.74 | 5.732 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 2.49 | 56857.13 | 22834.19 | 3.103 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 4.35 | 93834.88 | 21571.24 | 1.584 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 6.22 | 127951.9 | 20571.04 | -1.422 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/25/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 23:15

Lab File ID: 18EDBS17205002.045.RAW Initial Calibration: 18EDBS1720501

Lab Standard ID: EDB_5LX Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 4.23 | 4.38 | -3 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 1.96 | 2.16 | -9 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 31.27 | 33.34 | -6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 3.82 | 4.35 | -12 |

Compounds 4 Average of %D: 8

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/25/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 23:15

Lab File ID: 18EDBS17205002B.045.RAW Initial Calibration: 18EDBS1720501B

Lab Standard ID: EDB_5LX Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 4.19 | 4.38 | -4 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 2.15 | 2.16 | -1 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 32.39 | 33.34 | -3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 4.64 | 4.35 | 7 |

Compounds 4 Average of %D: 4

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKUX Sample ID: UX **Batchnumber: 1720599999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 23:31:11
Instrument : CP18--19846A
Result file : 18EDBS17205002.046.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.064459

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13910 | 0.064459 |
| **1,2,3-TCP** | 5.37 | 5.41 | 5.43 | 297 | -0.069366 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 385 | 0.000983 |

## Analysis Report (B)

Injected on : Jul 25, 2017 23:31:11
Instrument : CP18--19846B
Result file : 18EDBS17205002B.046.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.069858

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19332 | 0.069858 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1012 | -0.061871 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064459 | | | | 8.04 | |
| ☑ 1,2,3-TCP | A | -0.069366 | | | | 11.42 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist Verified by:

Date: JUL 26 2017 Date:

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/26/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 2:26

Lab File ID: 18EDBS17205002.057.RAW Initial Calibration: 18EDBS1720501

Lab Standard ID: EDB_3PO Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 1.37 | 1.25 | 10 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 0.65 | 0.62 | 5 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 10.34 | 9.53 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 1.30 | 1.24 | 4 |

Compounds 4 Average of %D: 7

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/26/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 2:26

Lab File ID: 18EDBS17205002B.057.RAW Initial Calibration: 18EDBS1720501B

Lab Standard ID: EDB_3PO Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 1.40 | 1.25 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 0.73 | 0.62 | 19 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 10.88 | 9.53 | 14 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 1.54 | 1.24 | 24 |

Compounds 4 Average of %D: 17

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKUY Sample ID: UY **Batchnumber: 1720599999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 02:42:11
Instrument : CP18--19846A
Result file : 18EDBS17205002.058.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 93% (46-136) Conc.: 0.063146

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 13627 | 0.063146 |
| **1,2,3-TCP** | 5.37 | 5.37 | 5.43 | 309 | -0.068874 |

## Analysis Report (B)

Injected on : Jul 26, 2017 02:42:11
Instrument : CP18--19846B
Result file : 18EDBS17205002B.058.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 104% (46-136) Conc.: 0.070562

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19513 | 0.070562 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 726 | -0.070656 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.063146 | | | | 11.09 | |
| ☑ 1,2,3-TCP | A | -0.068874 | | | | 2.55 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: JUL 26 2017

Verified by:
Date:

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/26/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 5:05

Lab File ID: 18EDBS17205002.067.RAW Initial Calibration: 18EDBS1720501

Lab Standard ID: EDB_4QP Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 2.73 | 2.50 | 9 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 1.21 | 1.23 | -2 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 19.17 | 19.05 | 1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 2.33 | 2.49 | -6 |

Compounds 4 Average of %D: 5

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/26/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 5:05

Lab File ID: 18EDBS17205002B.067.RAW Initial Calibration: 18EDBS1720501B

Lab Standard ID: EDB_4QP Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 2.71 | 2.50 | 9 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 1.32 | 1.23 | 7 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 20.11 | 19.05 | 6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 2.88 | 2.49 | 16 |

Compounds 4 Average of %D: 10

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKUZ Sample ID: UZ **Batchnumber: 1720599999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 05:21:13
Instrument : CP18--19846A
Result file : 18EDBS17205002.068.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 98% (46-136) Conc.: 0.0665

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14350 | 0.066500 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 409 | -0.064907 |

## Analysis Report (B)

Injected on : Jul 26, 2017 05:21:13
Instrument : CP18--19846B
Result file : 18EDBS17205002B.068.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.072039

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19895 | 0.072039 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 813 | -0.067983 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.066500 | | | | 8.00 | |
| ☑ 1,2,3-TCP | A | -0.064907 | | | | 4.63 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 26 2017

Verified by: _____
Date: _____

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 18EDBS17205001
Instrument CP18--19846A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17205001.001 | CONDITIONER | | 7/24/17 15:01 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.002 | CONDITIONER | | 7/24/17 15:17 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.003 | CONDITIONER | | 7/24/17 15:32 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.004 | CONDITIONER | | 7/24/17 15:48 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.005 | EIBKX1724C | PIBLKAA | 7/24/17 16:04 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.006 | EDB_11724DT | EDB_1AA | 7/24/17 16:20 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.007 | EDB_21724DT | EDB_2AA | 7/24/17 16:36 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.008 | EDB_31724DT | EDB_3AA | 7/24/17 16:52 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.009 | EDB_41724DT | EDB_4AA | 7/24/17 17:08 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.010 | EDB_51724DT | EDB_5AA | 7/24/17 17:24 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.011 | EDB_61724DT | EDB_6AA | 7/24/17 17:40 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.012 | MDEDX1724DT | MDEDXAA | 7/24/17 17:57 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.013 | EDB_31724DT | EDB_3AA | 7/24/17 18:13 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.014 | EIBKX1724C | PIBLKAA | 7/24/17 18:28 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.015 | BLANKA 7/23/17 | PBLK52202 | 7/24/17 18:44 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.016 | LCSA 7/23/17 | LCS52202 | 7/24/17 19:01 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.017 | LCSDA 7/23/17 | LCSD52202 | 7/24/17 19:17 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.018 | 9112697 | 12201 | 7/24/17 19:33 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.019 | 9112698 | 12202 | 7/24/17 19:48 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.020 | 9112699 | 12203 | 7/24/17 20:04 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.021 | 9112700 | 12204 | 7/24/17 20:20 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.022 | 9112701 | 12205 | 7/24/17 20:36 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.023 | EDB_51724DT | EDB_5LV | 7/24/17 20:52 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.024 | EIBKX1724C | PIBLKTO | 7/24/17 21:08 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.025 | 9114466 | C22-1 | 7/24/17 21:24 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.026 | 9114467MS | C22-1 | 7/24/17 21:40 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.027 | 9114468MSD | C22-1 | 7/24/17 21:56 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.028 | 9114469 | C22-2 | 7/24/17 22:12 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.029 | 9114470 | C22-3 | 7/24/17 22:28 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.030 | 9114471 | C22-4 | 7/24/17 22:44 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.031 | 9114472 | C22-5 | 7/24/17 23:00 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.032 | 9114473 | C22-6 | 7/24/17 23:16 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.033 | 9114474 | C22-7 | 7/24/17 23:32 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.034 | EDB_41724DT | EDB_4QM | 7/24/17 23:48 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.035 | EIBKX1724C | PIBLKTP | 7/25/17 0:04 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.036 | BLANKA 7/23/17 | PBLK53202 | 7/25/17 0:20 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.037 | LCSA 7/23/17 | LCS53202 | 7/25/17 0:36 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.038 | LCSDA 7/23/17 | LCSD53202 | 7/25/17 0:52 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.039 | 9114605 | 19001 | 7/25/17 1:08 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.040 | 9114606 | 19002 | 7/25/17 1:24 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.041 | 9114607 | 19003 | 7/25/17 1:40 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.042 | 9114608 | 19004DUP | 7/25/17 1:56 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.043 | 9114608 | 19004 | 7/25/17 2:12 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.044 | 9114609 | 19005 | 7/25/17 2:28 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.045 | 9114609MS | 19005MS | 7/25/17 2:44 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.046 | EDB_31724DT | EDB_3PI | 7/25/17 3:00 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.047 | EIBKX1724C | PIBLKTQ | 7/25/17 3:15 | 1720499999 | 2.00 |

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 18EDBS17205002
Instrument CP18--19846A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17205002.001 | CONDITIONER | | 7/25/17 11:25 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.002 | CONDITIONER | | 7/25/17 11:40 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.003 | CONDITIONER | | 7/25/17 11:56 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.004 | EDB_41724DT | EDB_4QN | 7/25/17 12:12 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.005 | EIBKX1724C | PIBLKUQ | 7/25/17 12:28 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.006 | BLANKA 7/25/17 | PBLK29202 | 7/25/17 12:44 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.007 | LCSA 7/25/17 | LCS29202 | 7/25/17 13:00 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.008 | LCSDA 7/25/17 | LCSD29202 | 7/25/17 13:16 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.009 | 9102850 | GCL09 | 7/25/17 13:32 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.010 | 9102851MS | GCL09 | 7/25/17 13:47 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.011 | 9102852MSD | GCL09 | 7/25/17 14:03 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.012 | 9102854 | GCLTB | 7/25/17 14:19 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.013 | 9109581 | CG371 | 7/25/17 14:35 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.014 | 9109582 | CG372 | 7/25/17 14:51 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.015 | 9109583 | CG373 | 7/25/17 15:07 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.016 | EDB_51724DT | EDB_5LW | 7/25/17 15:23 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.017 | EIBKX1724C | PIBLKUR | 7/25/17 15:39 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.018 | 9109584 | CG374 | 7/25/17 15:55 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.019 | 9112789 | TMQG1 | 7/25/17 16:10 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.020 | 9112790 | TMQGD | 7/25/17 16:26 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.021 | 9112791 | TMQT1 | 7/25/17 16:42 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.022 | 9112792 | TMQT2 | 7/25/17 16:58 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.023 | 9112793 | TMQT3 | 7/25/17 17:14 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.024 | 9112794 | TMQE1 | 7/25/17 17:41 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.025 | 9112795 | TMQE2 | 7/25/17 17:56 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.026 | 9112796 | TMQE3 | 7/25/17 18:12 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.027 | 9112797 | TMQE4 | 7/25/17 18:28 | 172020029A | 2.00 |
| 7848 | 18EDBS17205002.028 | EDB_31724DT | EDB_3PL | 7/25/17 18:44 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.029 | EIBKX1724C | PIBLKUS | 7/25/17 19:00 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.030 | BLANKA 7/25/17 | PBLK21205 | 7/25/17 19:16 | 172050021A | 2.00 |
| 7848 | 18EDBS17205002.031 | LCSA 7/25/17 | LCS21205 | 7/25/17 19:32 | 172050021A | 2.00 |
| 7848 | 18EDBS17205002.032 | LCSDA 7/25/17 | LCSD21205 | 7/25/17 19:48 | 172050021A | 2.00 |
| 7848 | 18EDBS17205002.033 | 9107261 | EDS5R | 7/25/17 20:04 | 172050021A | 2.00 |
| 7848 | 18EDBS17205002.034 | EDB_41724DT | EDB_4QO | 7/25/17 20:20 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.035 | EIBKX1724C | PIBLKUW | 7/25/17 20:36 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.036 | BLANKA 7/25/17 | PBLK31202 | 7/25/17 20:51 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.037 | LCSA 7/25/17 | LCS31202 | 7/25/17 21:07 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.038 | LCSDA 7/25/17 | LCSD31202 | 7/25/17 21:23 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.039 | 9109585 | CG375 | 7/25/17 21:39 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.040 | 9109586MS | CG375 | 7/25/17 21:55 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.041 | 9109587MSD | CG375 | 7/25/17 22:11 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.042 | 9109588 | CG376 | 7/25/17 22:27 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.043 | 9109589 | CG377 | 7/25/17 22:43 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.044 | 9109590 | CG378 | 7/25/17 22:59 | 172020031A | 2.00 |
| 7848 | 18EDBS17205002.045 | EDB_51724DT | EDB_5LX | 7/25/17 23:15 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.046 | EIBKX1724C | PIBLKUX | 7/25/17 23:31 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.047 | BLANKA 7/25/17 | PBLK30202 | 7/25/17 23:47 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.048 | LCSA 7/25/17 | LCS30202 | 7/26/17 0:03 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.049 | LCSDA 7/25/17 | LCSD30202 | 7/26/17 0:19 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.050 | 9109781 | 18805 | 7/26/17 0:34 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.051 | 9109781MS | 18805MS | 7/26/17 0:50 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.052 | 9109782 | 18806 | 7/26/17 1:06 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.053 | 9109783 | 18807 | 7/26/17 1:22 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.054 | 9109784 | 18808 | 7/26/17 1:38 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.055 | 9109784 | 18808DUP | 7/26/17 1:54 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.056 | 9109785 | 18809 | 7/26/17 2:10 | 172020030A | 2.00 |

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17205002.057 | EDB_31724DT | EDB_3PO | 7/26/17 2:26 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.058 | EIBKX1724C | PIBLKUY | 7/26/17 2:42 | 1720599999 | 2.00 |
| 7848 | 18EDBS17205002.059 | 9109786 | 18810 | 7/26/17 2:58 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.060 | 9109787 | 18811 | 7/26/17 3:13 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.061 | 9109788 | 18812 | 7/26/17 3:29 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.062 | 9112123 | 18901 | 7/26/17 3:45 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.063 | 9112125 | 18903 | 7/26/17 4:01 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.064 | 9112126 | 18904 | 7/26/17 4:17 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.065 | 9112127 | 18905 | 7/26/17 4:33 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.066 | 9112128 | 18906 | 7/26/17 4:49 | 172020030A | 2.00 |
| 7848 | 18EDBS17205002.067 | EDB_41724DT | EDB_4QP | 7/26/17 5:05 | 1720599999 | 1.00 |
| 7848 | 18EDBS17205002.068 | EIBKX1724C | PIBLKUZ | 7/26/17 5:21 | 1720599999 | 2.00 |

# Sample Data

# EDB/DBCP

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

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# Data Summary

**Sample Name: 9112123** 18901 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.51 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 03:45:47 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.062.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.068935

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 03:45:47 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.062.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.074355

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15518 | 0.068935 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 560 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21322 | 0.074355 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 595 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.068935 | 0.0034 | 0.0067 | 0.0067 | | 7.57 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2588 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:11

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9112123** 18901 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.51 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 03:45:47
Instrument : CP18--19846A
Result file : 18EDBS17205002.062.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.068935

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15518 | 0.068935 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 560 | -0.056458 |

## Analysis Report (B)

Injected on : Jul 26, 2017 03:45:47
Instrument : CP18--19846B
Result file : 18EDBS17205002B.062.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.074355

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21322 | 0.074355 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 595 | -0.071598 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.068935 | | | | 7.57 | |
| ☐ 1,2,3-TCP | | | <0.2588 | <0.0959 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

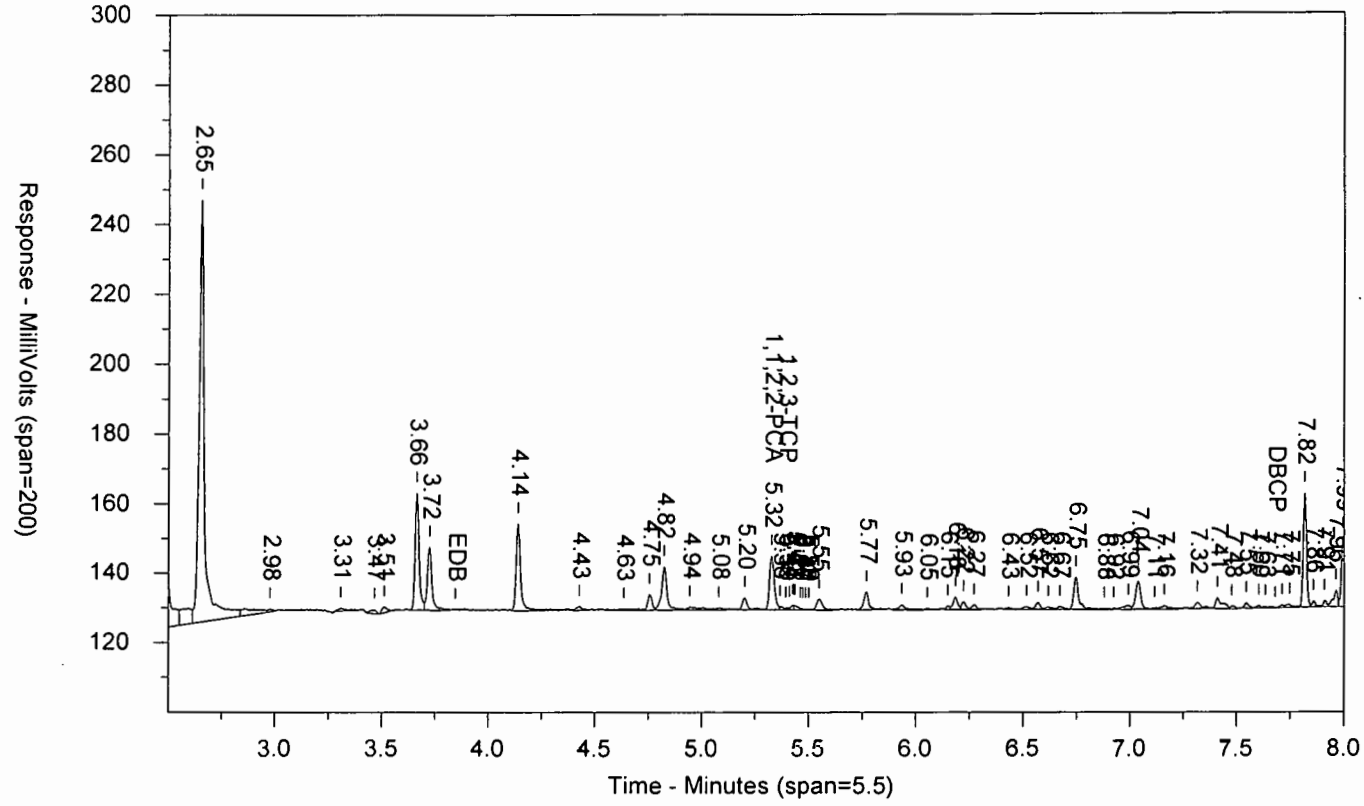
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9112123 AA18901 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.062.RAW

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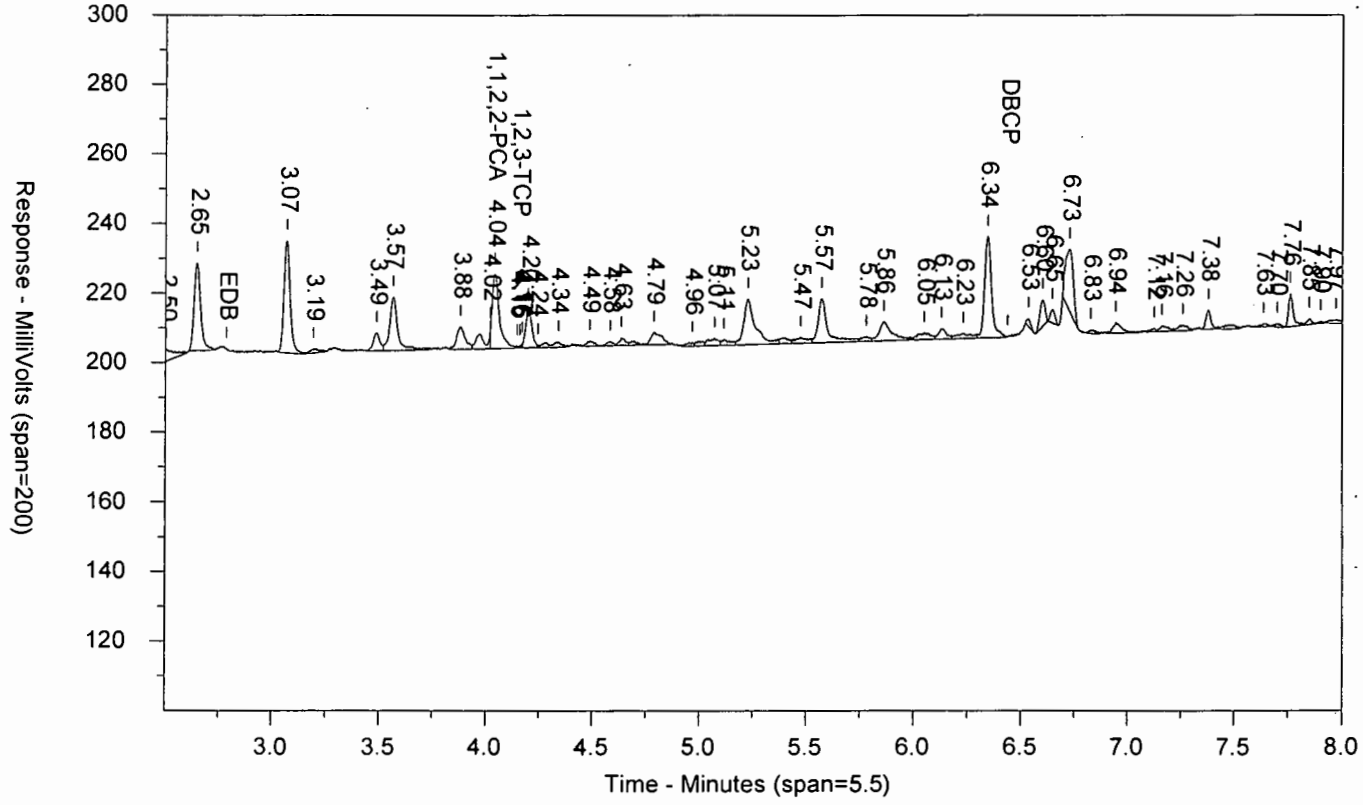

LANCASTER LABORATORIES

Sample Number: 9112123 AA18901 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 3:45:47 AM Sample Weight: 36.51
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 15518 | .069 | 1,1,2,2-PCA | 4.041 | 21322 | .074 | 1,1,2,2-PCA |
| 5.393 | 560 | -.056 | 1,2,3-TCP | 4.157 | 595 | -.072 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.062.RAW
Area File: 18EDBS17205002B.062.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 3:54:21 AM
File Reported On: 7/26/2017 at 10:15:24 AM

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# Data Summary

**Sample Name: 9112125** 18903 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.53 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 04:01:42 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.063.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.072037

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 04:01:42 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.063.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 115% ( 46 - 136 ) Conc: 0.077784

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 16225 | 0.072037 |
| 1,2,3-Trichloropropane | 5.37 | 5.41 | 5.43 | 498 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 22257 | 0.077784 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 497 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.072037 | 0.0034 | 0.0067 | 0.0067 | | 7.67 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2587 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0192 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:14

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9112125** 18903 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.53 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 04:01:42
Instrument : CP18--19846A
Result file : 18EDBS17205002.063.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.072037

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 16225 | 0.072037 |
| **1,2,3-TCP** | 5.37 | 5.41 | 5.43 | 498 | -0.058790 |

## Analysis Report (B)

Injected on : Jul 26, 2017 04:01:42
Instrument : CP18--19846B
Result file : 18EDBS17205002B.063.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 115% (46-136) Conc.: 0.077784

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 22257 | 0.077784 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 497 | -0.074435 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.072037 | | | | 7.67 | |
| ☐ 1,2,3-TCP | | | <0.2587 | <0.0958 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

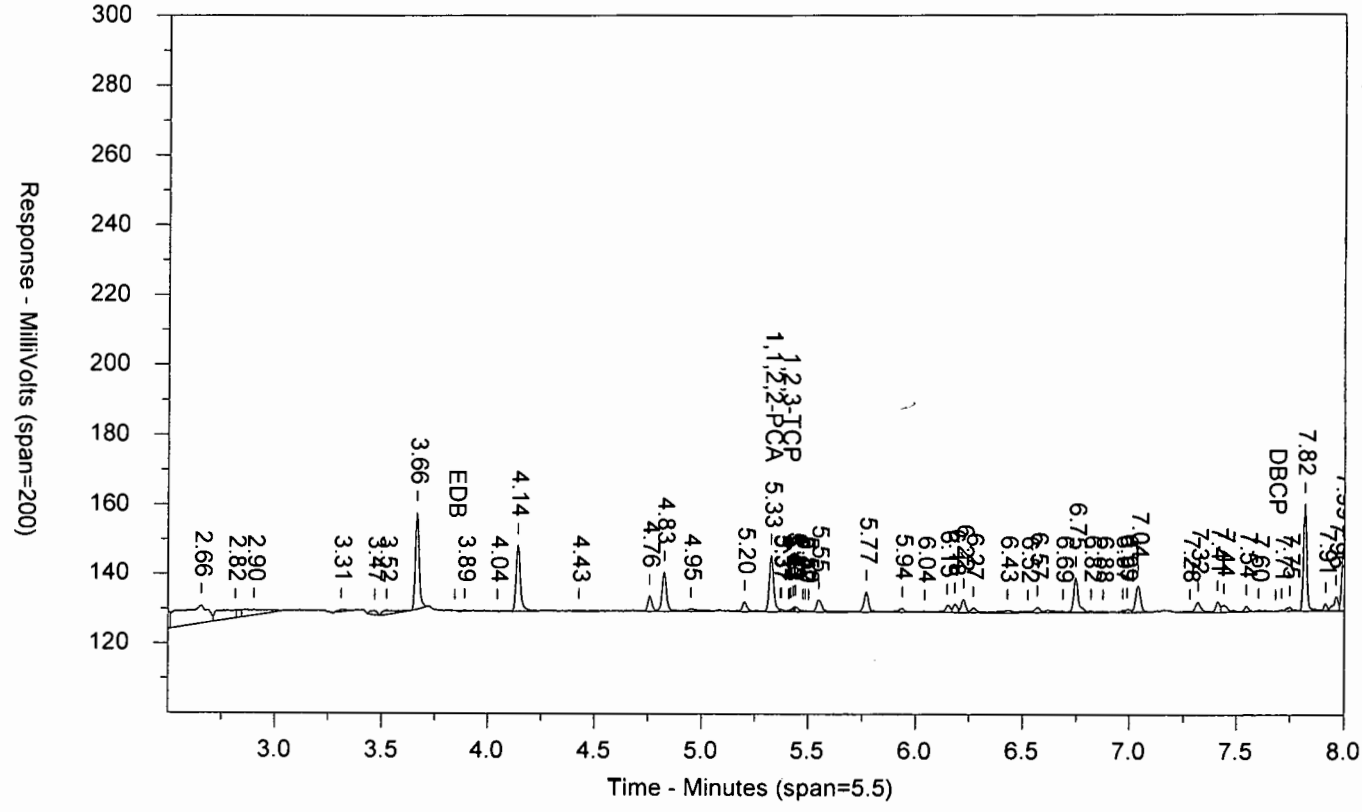
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9112125 AA18903 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.063.RAW

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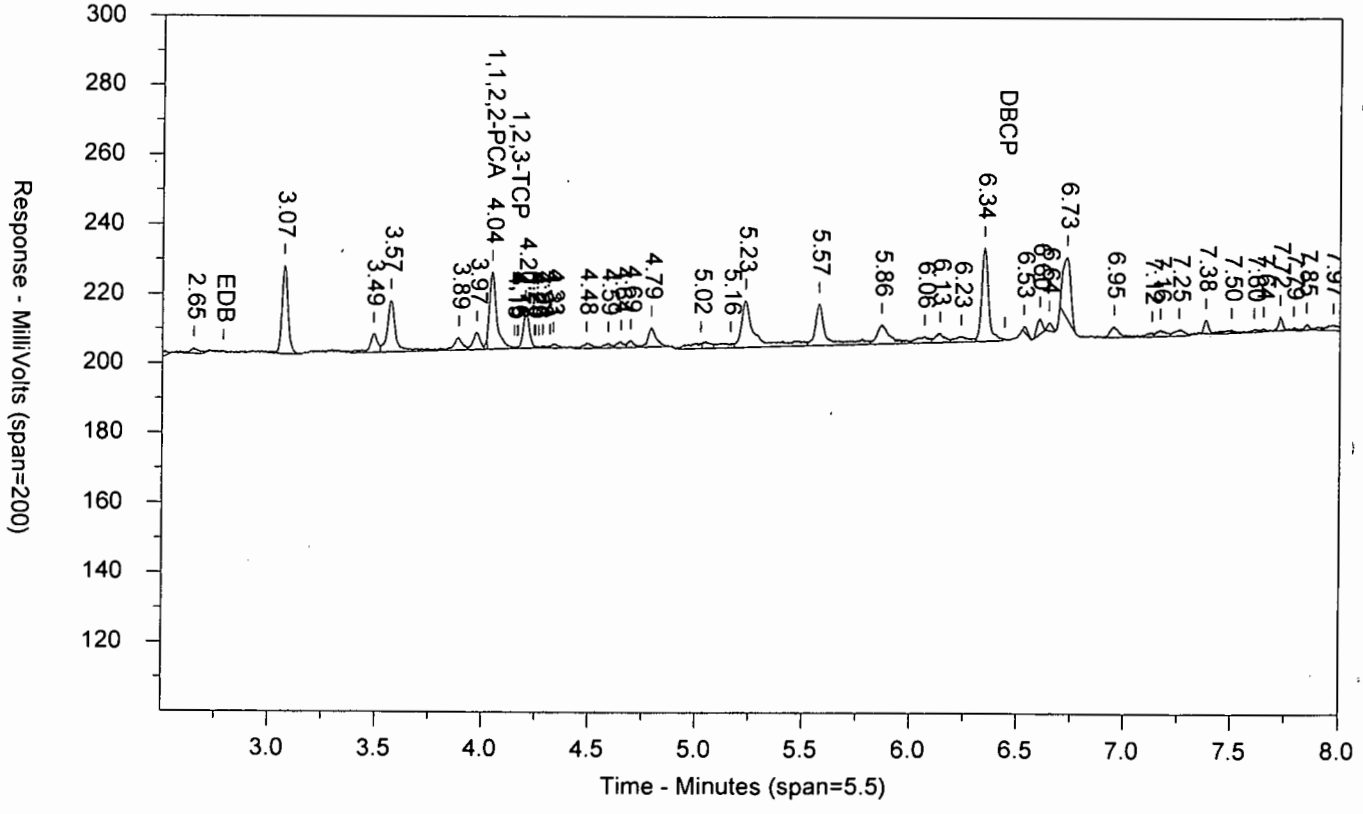


LANCASTER LABORATORIES

Sample Number: 9112125 AA18903 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 4:01:42 AM Sample Weight: 36.53
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 16225 | .072 | 1,1,2,2-PCA | 4.043 | 22257 | .078 | 1,1,2,2-PCA |
| 5.408 | 498 | -.059 | 1,2,3-TCP | 4.159 | 497 | -.074 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.063.RAW
Area File: 18EDBS17205002B.063.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 4:10:14 AM
File Reported On: 7/26/2017 at 10:15:40 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9112126** 18904 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.87 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 04:17:36 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.064.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 116% ( 46 - 136 ) Conc: 0.077606

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 04:17:36 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.064.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 127% ( 46 - 136 ) Conc: 0.08475

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 17642 | 0.077606 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 520 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.77 | 2.82 | 940 | 0 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 24348 | 0.08475 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 854 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.077606 | 0.0033 | 0.0066 | 0.0066 | | 8.80 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2563 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:17

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9112126** 18904 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.87 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 04:17:36
Instrument : CP18--19846A
Result file : 18EDBS17205002.064.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 116% (46-136) Conc.: 0.077606

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 17642 | 0.077606 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 520 | -0.057399 |

## Analysis Report (B)

Injected on : Jul 26, 2017 04:17:36
Instrument : CP18--19846B
Result file : 18EDBS17205002B.064.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 127% (46-136) Conc.: 0.08475

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.77 | 2.82 | 940 | -0.009319 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 24348 | 0.084750 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 854 | -0.063347 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.077606 | | | | 8.80 | |
| ☐ 1,2,3-TCP | | | <0.2563 | <0.0949 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

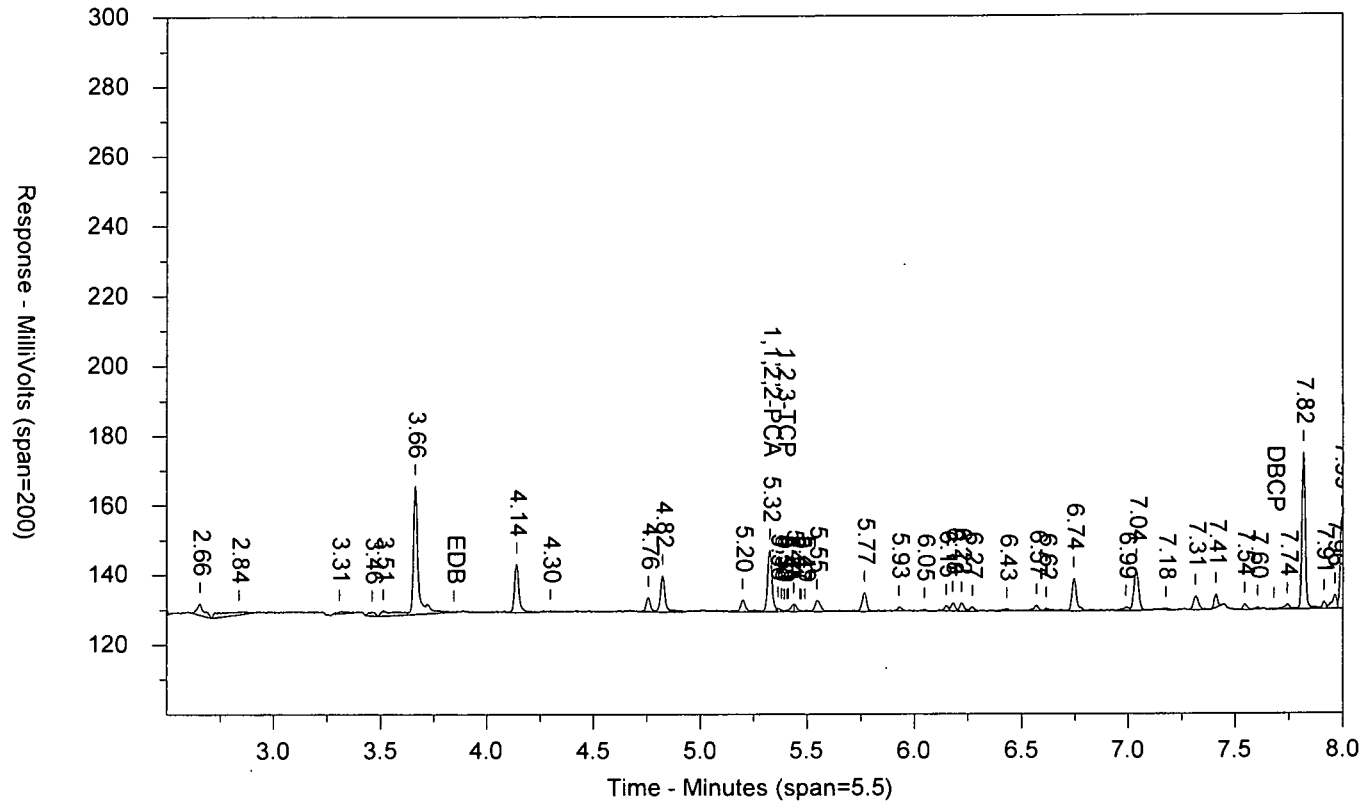
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9112126 AA18904 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.064.RAW

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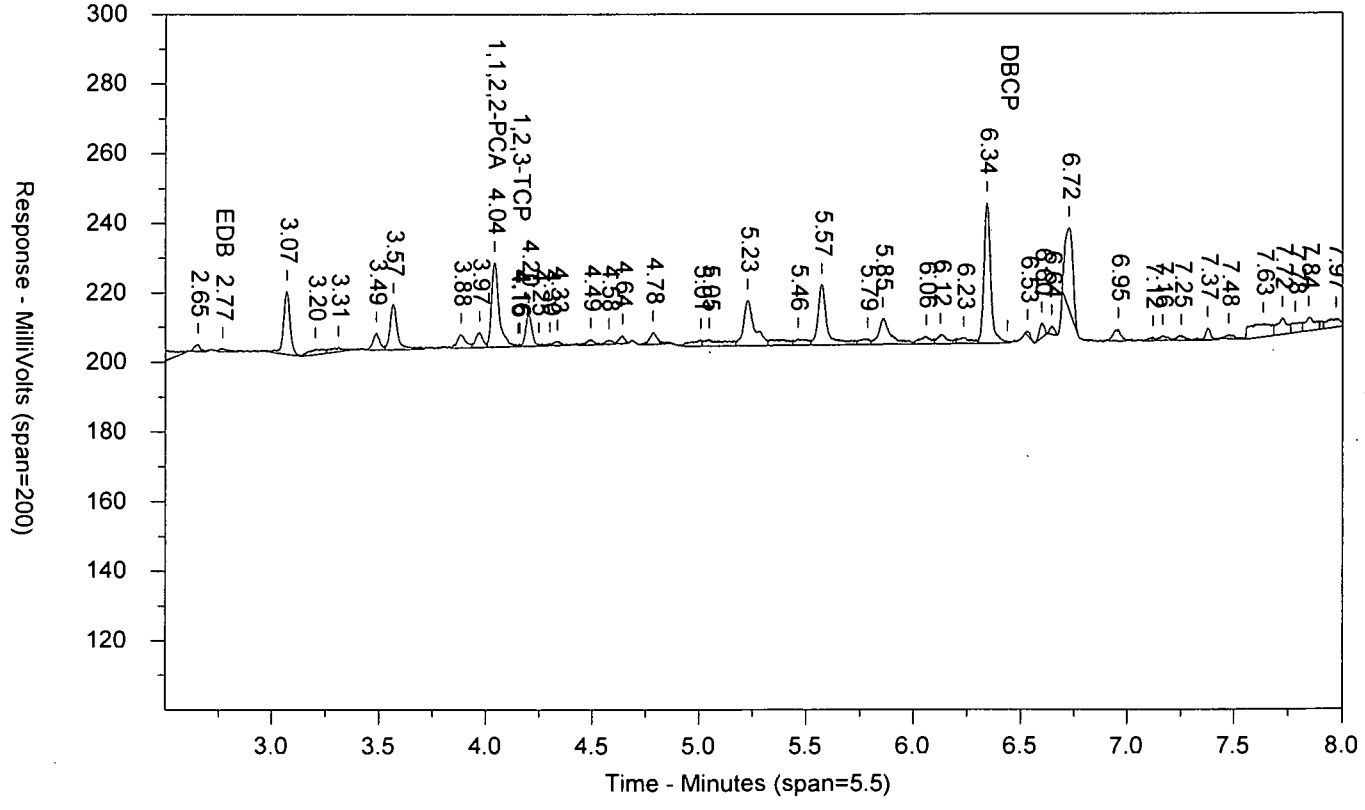

LANCASTER LABORATORIES

Sample Number: 9112126 AA18904 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 4:17:36 AM Sample Weight: 36.87
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 2.767 | 940 | -.009 | EDB |
| 5.325 | 17642 | .078 | 1,1,2,2-PCA | 4.04 | 24348 | .085 | 1,1,2,2-PCA |
| 5.392 | 520 | -.057 | 1,2,3-TCP | 4.156 | 854 | -.063 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.064.RAW
Area File: 18EDBS17205002B.064.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 4:26:10 AM
File Reported On: 7/26/2017 at 10:15:56 AM

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# Data Summary

**Sample Name: 9112127** 18905 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.86 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 04:33:33 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.065.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.066773

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 04:33:33 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.065.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.071279

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15175 | 0.066773 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 406 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.69 | 7.71 | 404 | 0.000982 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20677 | 0.071279 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 623 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.066773 | 0.0033 | 0.0066 | 0.0066 | | 6.53 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2564 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:20

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9112127** 18905 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.86 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 04:33:33
Instrument : CP18--19846A
Result file : 18EDBS17205002.065.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.066773

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15175 | 0.066773 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 406 | -0.061738 |
| **DBCP** | 7.65 | 7.69 | 7.71 | 404 | 0.000982 |

## Analysis Report (B)

Injected on : Jul 26, 2017 04:33:33
Instrument : CP18--19846B
Result file : 18EDBS17205002B.065.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.071279

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20677 | 0.071279 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 623 | -0.070085 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.066773 | | | | 6.53 | |
| ☐ 1,2,3-TCP | | | <0.2564 | <0.095 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: JUL 26 2017

Verified by: Susan M. Goshert Manager
Date: JUL 28 2017

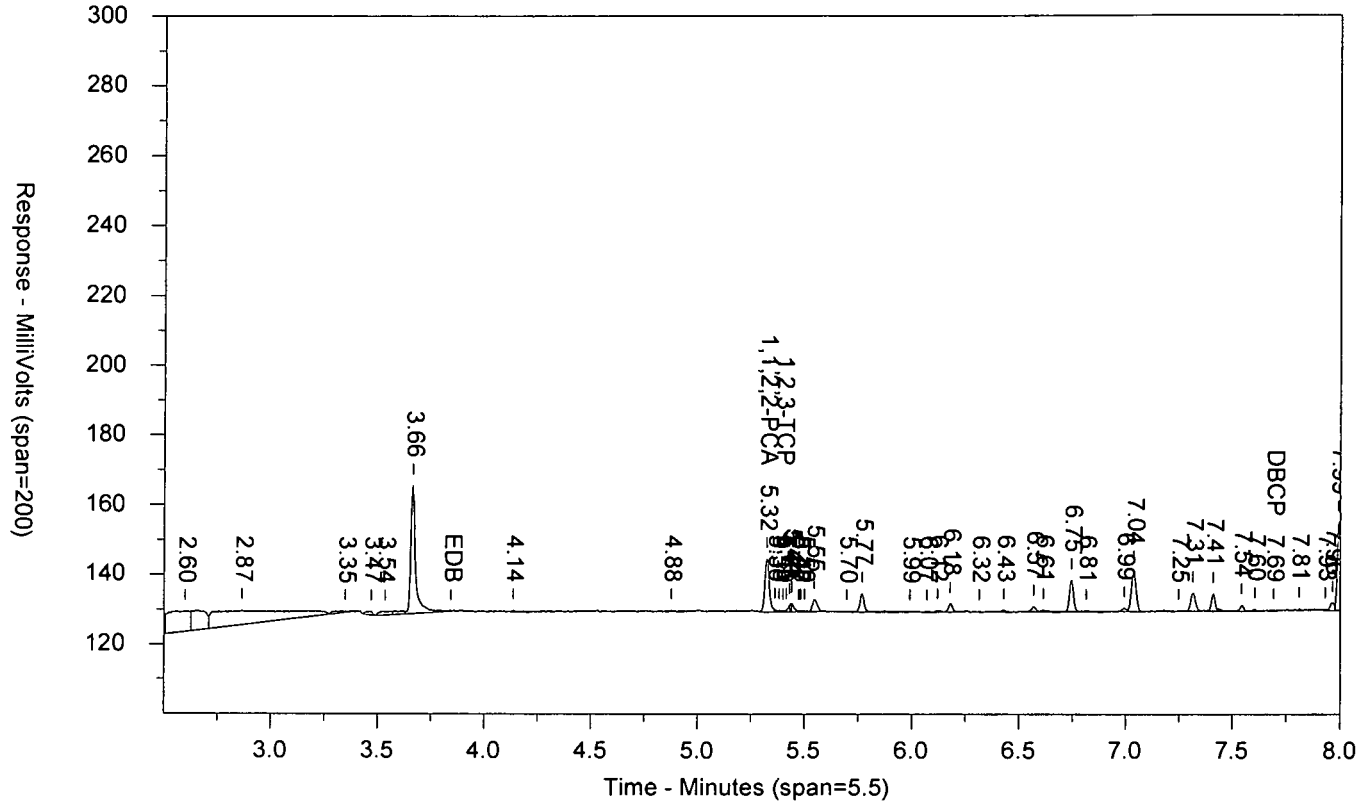
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 7/26/2017 10:23:29

9112127 AA18905 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.065.RAW

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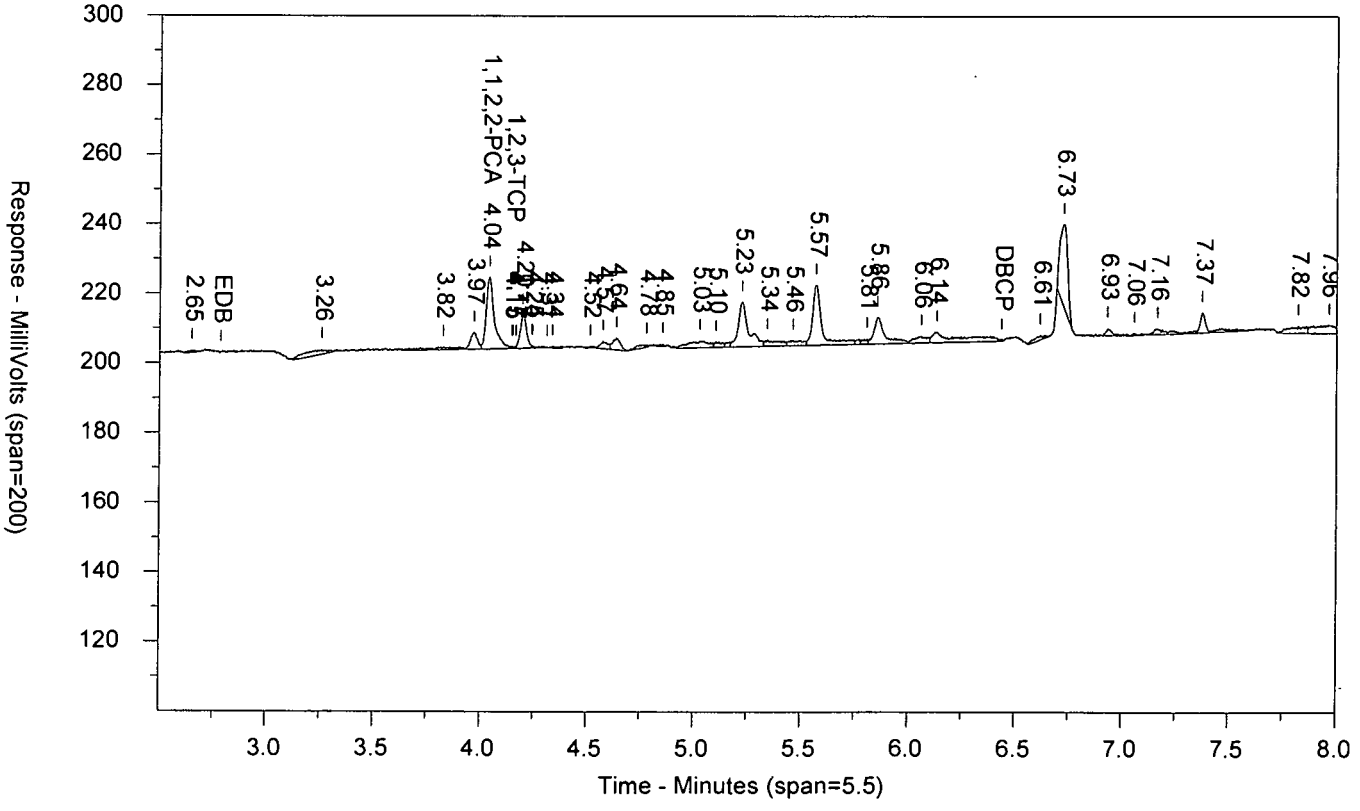


LANCASTER LABORATORIES

Sample Number: 9112127 AA18905 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 4:33:33 AM Sample Weight: 36.86
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 15175 | .067 | 1,1,2,2-PCA | 4.042 | 20677 | .071 | 1,1,2,2-PCA |
| 5.4 | 406 | -.062 | 1,2,3-TCP | 4.153 | 623 | -.07 | 1,2,3-TCP |
| 7.691 | 404 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17205002.065.RAW
Area File: 18EDBS17205002B.065.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 4:42:03 AM
File Reported On: 7/26/2017 at 10:16:10 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9112128** 18906 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.3 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 04:49:23 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.066.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.064776

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 04:49:23 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.066.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 105% ( 46 - 136 ) Conc: 0.071085

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14498 | 0.064776 |
| 1,2,3-Trichloropropane | 5.37 | 5.41 | 5.43 | 441 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20331 | 0.071085 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1198 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.064776 | 0.0034 | 0.0067 | 0.0067 | | 9.29 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2603 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:41:23

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9112128** 18906 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 36.3 mL Total Volume: 2 ml Analyst: 7848 SDG: KR189 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 04:49:23
Instrument : CP18--19846A
Result file : 18EDBS17205002.066.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.064776

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14498 | 0.064776 |
| **1,2,3-TCP** | 5.37 | 5.41 | 5.43 | 441 | -0.061336 |

## Analysis Report (B)

Injected on : Jul 26, 2017 04:49:23
Instrument : CP18--19846B
Result file : 18EDBS17205002B.066.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 105% (46-136) Conc.: 0.071085

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20331 | 0.071085 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1198 | -0.054178 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.064776 | | | | 9.29 | |
| ☐ 1,2,3-TCP | | | <0.2603 | <0.0964 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

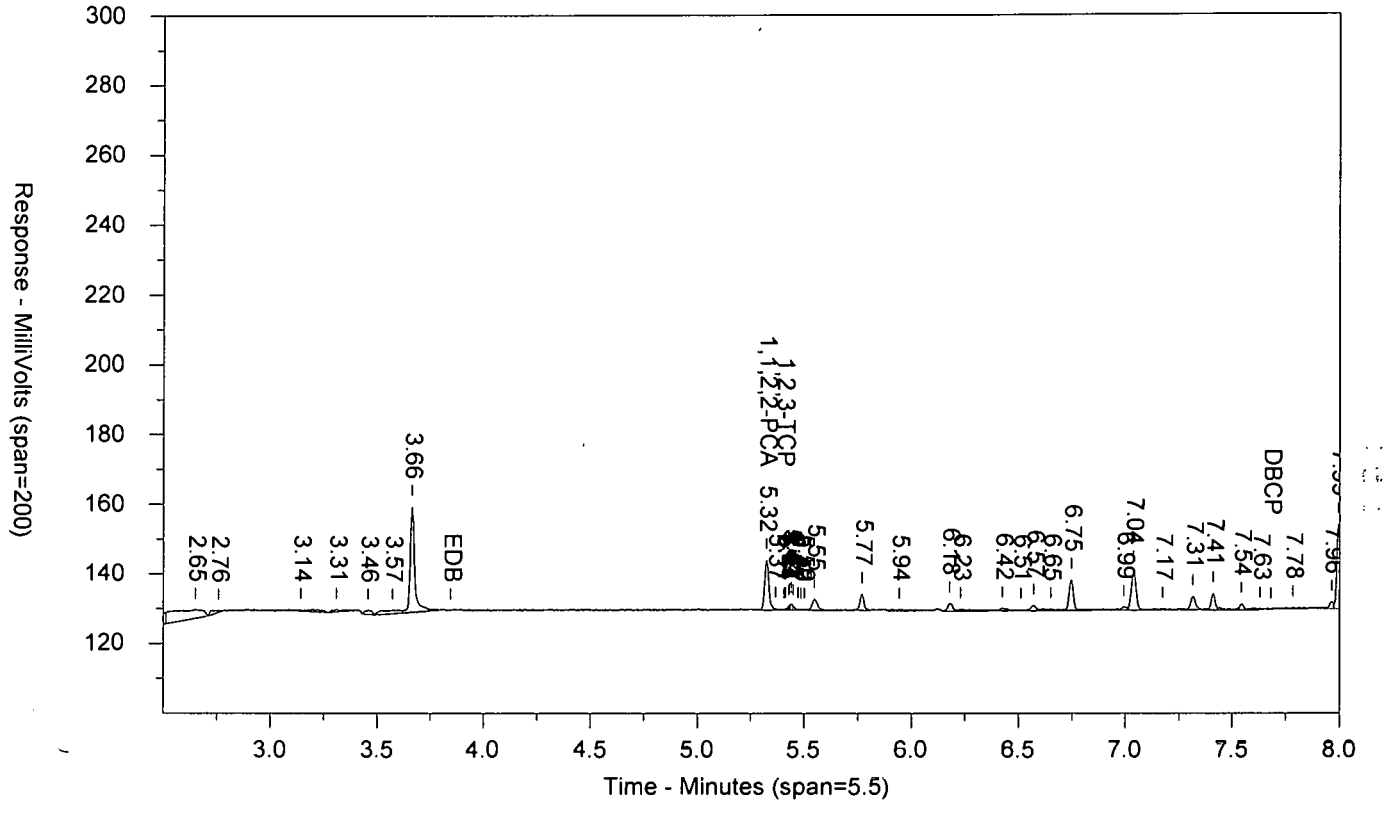
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9112128 AA18906 T 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.066.RAW

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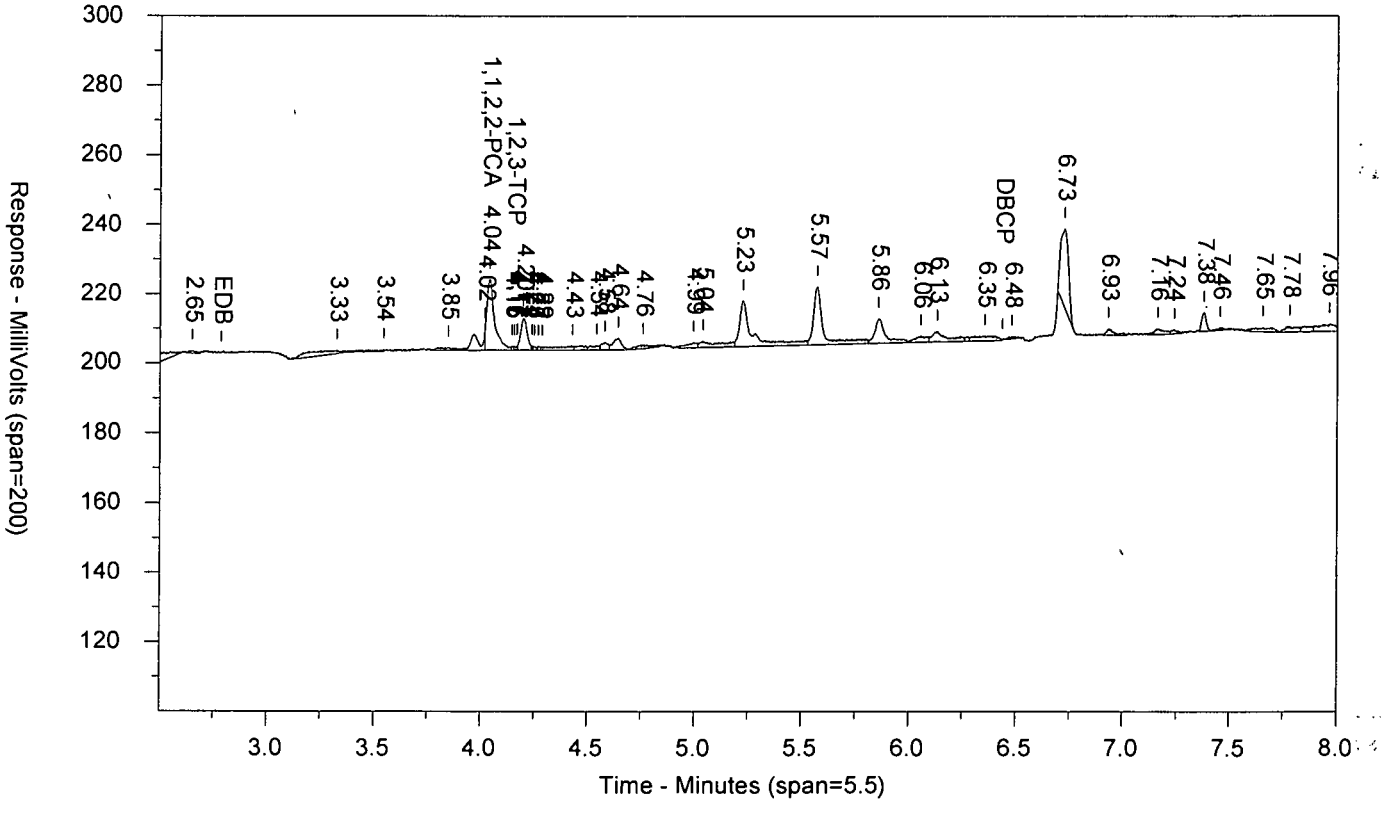

LANCASTER LABORATORIES

Sample Number: 9112128 AA18906 T 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 4:49:23 AM Sample Weight: 36.3
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14498 | .065 | 1,1,2,2-PCA | 4.042 | 20331 | .071 | 1,1,2,2-PCA |
| 5.406 | 441 | -.061 | 1,2,3-TCP | 4.157 | 1198 | -.054 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.066.RAW
Area File: 18EDBS17205002B.066.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 4:57:56 AM
File Reported On: 7/26/2017 at 10:16:26 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17205001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 47

| | Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 2 | CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 3 | CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 4 | CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 5 | EIBKX1724C | 5 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 6 | EDB_11724DT | 6 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 1 | 1720499999 | 10398 |
| 7 | EDB_21724DT | 7 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 2 | 1720499999 | 10398 |
| 8 | EDB_31724DT | 8 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 3 | 1720499999 | 10398 |
| 9 | EDB_41724DT | 9 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 4 | 1720499999 | 10398 |
| 10 | EDB_51724DT | 10 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 5 | 1720499999 | 10398 |
| 11 | EDB_61724DT | 11 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 6 | 1720499999 | 10398 |
| 12 | MDEDX1724DT | 12 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 13 | EDB_31724DT | 13 | CCAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 14 | EIBKX1724C | 14 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 15 | BLANKA 7/23/17 | 15 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 16 | LCSA 7/23/17 | 16 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 17 | LCSDA 7/23/17 | 17 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 18 | 9112697 | 18 | T | AA | 18EDBS.MET | 37.35 | 2 | 1 | 0 | 172020052A | 10398 |
| 19 | 9112698 | 19 | T | AA | 18EDBS.MET | 37.1 | 2 | 1 | 0 | 172020052A | 10398 |
| 20 | 9112699 | 20 | T | AA | 18EDBS.MET | 36.83 | 2 | 1 | 0 | 172020052A | 10398 |
| 21 | 9112700 | 21 | T | AA | 18EDBS.MET | 37.07 | 2 | 1 | 0 | 172020052A | 10398 |
| 22 | 9112701 | 22 | T | AA | 18EDBS.MET | 37.02 | 2 | 1 | 0 | 172020052A | 10398 |
| 23 | EDB_51724DT | 23 | CCAL | LV | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 24 | EIBKX1724C | 24 | PIBLK | TO | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 25 | 9114466 | 25 | T | AA | 18EDBS.MET | 37.26 | 2 | 1 | 0 | 172020052A | 10398 |
| 26 | 9114467MS | 26 | MS | AA | 18EDBS.MET | 37.25 | 2 | 1 | 0 | 172020052A | 10398 |
| 27 | 9114468MSD | 27 | MSD | AA | 18EDBS.MET | 37.35 | 2 | 1 | 0 | 172020052A | 10398 |
| 28 | 9114469 | 28 | T | AA | 18EDBS.MET | 37.47 | 2 | 1 | 0 | 172020052A | 10398 |
| 29 | 9114470 | 29 | T | AA | 18EDBS.MET | 37.23 | 2 | 1 | 0 | 172020052A | 10398 |
| 30 | 9114471 | 30 | T | AA | 18EDBS.MET | 37.43 | 2 | 1 | 0 | 172020052A | 10398 |
| 31 | 9114472 | 31 | T | AA | 18EDBS.MET | 37.29 | 2 | 1 | 0 | 172020052A | 10398 |
| 32 | 9114473 | 32 | T | AA | 18EDBS.MET | 36.94 | 2 | 1 | 0 | 172020052A | 10398 |
| 33 | 9114474 | 33 | T | AA | 18EDBS.MET | 37.12 | 2 | 1 | 0 | 172020052A | 10398 |
| 34 | EDB_41724DT | 34 | CCAL | QM | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 35 | EIBKX1724C | 35 | PIBLK | TP | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 36 | BLANKA 7/23/17 | 36 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 37 | LCSA 7/23/17 | 37 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 38 | LCSDA 7/23/17 | 38 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 39 | 9114605 | 39 | T | AA | 18EDBS.MET | 37.17 | 2 | 1 | 0 | 172020053A | 10398 |
| 40 | 9114606 | 40 | T | AA | 18EDBS.MET | 37.02 | 2 | 1 | 0 | 172020053A | 10398 |
| 41 | 9114607 | 41 | T | AA | 18EDBS.MET | 37.31 | 2 | 1 | 0 | 172020053A | 10398 |
| 42 | 9114608 | 42 | DUP | AA | 18EDBS.MET | 37.22 | 2 | 1 | 0 | 172020053A | 10398 |
| 43 | 9114608 | 43 | T | AA | 18EDBS.MET | 37.39 | 2 | 1 | 0 | 172020053A | 10398 |
| 44 | 9114609 | 44 | T | AA | 18EDBS.MET | 37.15 | 2 | 1 | 0 | 172020053A | 10398 |
| 45 | 9114609MS | 45 | MS | AA | 18EDBS.MET | 37.14 | 2 | 1 | 0 | 172020053A | 10398 |
| 46 | EDB_31724DT | 46 | CCAL | PI | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 47 | EIBKX1724C | 47 | PIBLK | TQ | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |

DD12669 7/25/17

Heather Miller
Heather M. Miller
Chemist

Set-up by: _____ Date: JUL 24 2017

7/24/2017

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17205002.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 68

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | |
| 4 EDB_41724DT | 4 | CCAL | QN | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 5 EIBKX1724C | 5 | PIBLK | UQ | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 6 BLANKA 7/25/17 | 6 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020029A | 10398 |
| 7 LCSA 7/25/17 | 7 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020029A | 10398 |
| 8 LCSDA 7/25/17 | 8 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020029A | 10398 |
| 9 9102850 | 9 | T | AA | 18EDBS.MET | 35.67 | 2 | 1 | 0 | 172020029A | 10398 |
| 10 9102851MS | 10 | MS | AA | 18EDBS.MET | 35.86 | 2 | 1 | 0 | 172020029A | 10398 |
| 11 9102852MSD | 11 | MSD | AA | 18EDBS.MET | 35.62 | 2 | 1 | 0 | 172020029A | 10398 |
| 12 9102854 | 12 | T | AA | 18EDBS.MET | 36.83 | 2 | 1 | 0 | 172020029A | 10398 |
| 13 9109581 | 13 | T | AA | 18EDBS.MET | 37.02 | 2 | 1 | 0 | 172020029A | 10398 |
| 14 9109582 | 14 | T | AA | 18EDBS.MET | 36.86 | 2 | 1 | 0 | 172020029A | 10398 |
| 15 9109583 | 15 | T | AA | 18EDBS.MET | 36.87 | 2 | 1 | 0 | 172020029A | 10398 |
| 16 EDB_51724DT | 16 | CCAL | LW | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 17 EIBKX1724C | 17 | PIBLK | UR | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 18 9109584 | 18 | T | AA | 18EDBS.MET | 36.82 | 2 | 1 | 0 | 172020029A | 10398 |
| 19 9112789 | 19 | T | AA | 18EDBS.MET | 36.63 | 2 | 1 | 0 | 172020029A | 10398 |
| 20 9112790 | 20 | T | AA | 18EDBS.MET | 36.79 | 2 | 1 | 0 | 172020029A | 10398 |
| 21 9112791 | 21 | T | AA | 18EDBS.MET | 36.71 | 2 | 1 | 0 | 172020029A | 10398 |
| 22 9112792 | 22 | T | AA | 18EDBS.MET | 36.38 | 2 | 1 | 0 | 172020029A | 10398 |
| 23 9112793 | 23 | T | AA | 18EDBS.MET | 36.7 | 2 | 1 | 0 | 172020029A | 10398 |
| 24 9112794 | 24 | T | AA | 18EDBS.MET | 36.69 | 2 | 1 | 0 | 172020029A | 10398 |
| 25 9112795 | 25 | T | AA | 18EDBS.MET | 36.5 | 2 | 1 | 0 | 172020029A | 10398 |
| 26 9112796 | 26 | T | AA | 18EDBS.MET | 36.54 | 2 | 1 | 0 | 172020029A | 10398 |
| 27 9112797 | 27 | T | AA | 18EDBS.MET | 36.67 | 2 | 1 | 0 | 172020029A | 10398 |
| 28 EDB_31724DT | 28 | CCAL | PL | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 29 EIBKX1724C | 29 | PIBLK | US | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 30 BLANKA 7/25/17 | 30 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172050021A | 10398 |
| 31 LCSA 7/25/17 | 31 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172050021A | 10398 |
| 32 LCSDA 7/25/17 | 32 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172050021A | 10398 |
| 33 9107261 | 33 | T | AA | 18EDBS.MET | 36.11 | 2 | 1 | 0 | 172050021A | 10398 |
| 34 EDB_41724DT | 34 | CCAL | QO | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 35 EIBKX1724C | 35 | PIBLK | UW | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 36 BLANKA 7/25/17 | 36 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020031A | 10398 |
| 37 LCSA 7/25/17 | 37 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020031A | 10398 |
| 38 LCSDA 7/25/17 | 38 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020031A | 10398 |
| 39 9109585 | 39 | T | AA | 18EDBS.MET | 36.13 | 2 | 1 | 0 | 172020031A | 10398 |
| 40 9109586MS | 40 | MS | AA | 18EDBS.MET | 36.38 | 2 | 1 | 0 | 172020031A | 10398 |
| 41 9109587MSD | 41 | MSD | AA | 18EDBS.MET | 36.66 | 2 | 1 | 0 | 172020031A | 10398 |
| 42 9109588 | 42 | T | AA | 18EDBS.MET | 36.25 | 2 | 1 | 0 | 172020031A | 10398 |
| 43 9109589 | 43 | T | AA | 18EDBS.MET | 36.61 | 2 | 1 | 0 | 172020031A | 10398 |
| 44 9109590 | 44 | T | AA | 18EDBS.MET | 36.63 | 2 | 1 | 0 | 172020031A | 10398 |
| 45 EDB_51724DT | 45 | CCAL | LX | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 46 EIBKX1724C | 46 | PIBLK | UX | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 47 BLANKA 7/25/17 | 47 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020030A | 10398 |
| 48 LCSA 7/25/17 | 48 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020030A | 10398 |
| 49 LCSDA 7/25/17 | 49 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020030A | 10398 |
| 50 9109781 | 50 | T | AA | 18EDBS.MET | 36.33 | 2 | 1 | 0 | 172020030A | 10398 |

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17205002.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 68

| | Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 9109781MS | 51 | MS | AA | | 18EDBS.MET | 36.56 | 2 | 1 | 0 | 172020030A | 10398 |
| 52 | 9109782 | 52 | T | AA | | 18EDBS.MET | 36.59 | 2 | 1 | 0 | 172020030A | 10398 |
| 53 | 9109783 | 53 | T | AA | | 18EDBS.MET | 36.29 | 2 | 1 | 0 | 172020030A | 10398 |
| 54 | 9109784 | 54 | T | AA | | 18EDBS.MET | 36.59 | 2 | 1 | 0 | 172020030A | 10398 |
| 55 | 9109784 | 55 | DUP | AA | | 18EDBS.MET | 36.56 | 2 | 1 | 0 | 172020030A | 10398 |
| 56 | 9109785 | 56 | T | AA | | 18EDBS.MET | 36.33 | 2 | 1 | 0 | 172020030A | 10398 |
| 57 | EDB_31724DT | 57 | CCAL | PO | | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 58 | EIBKX1724C | 58 | PIBLK | UY | | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |
| 59 | 9109786 | 59 | T | AA | | 18EDBS.MET | 36.25 | 2 | 1 | 0 | 172020030A | 10398 |
| 60 | 9109787 | 60 | T | AA | | 18EDBS.MET | 36.51 | 2 | 1 | 0 | 172020030A | 10398 |
| 61 | 9109788 | 61 | T | AA | | 18EDBS.MET | 36.45 | 2 | 1 | 0 | 172020030A | 10398 |
| 62 | 9112123 | 62 | T | AA | | 18EDBS.MET | 36.51 | 2 | 1 | 0 | 172020030A | 10398 |
| 63 | 9112125 | 63 | T | AA | | 18EDBS.MET | 36.53 | 2 | 1 | 0 | 172020030A | 10398 |
| 64 | 9112126 | 64 | T | AA | | 18EDBS.MET | 36.87 | 2 | 1 | 0 | 172020030A | 10398 |
| 65 | 9112127 | 65 | T | AA | | 18EDBS.MET | 36.86 | 2 | 1 | 0 | 172020030A | 10398 |
| 66 | 9112128 | 66 | T | AA | | 18EDBS.MET | 36.3 | 2 | 1 | 0 | 172020030A | 10398 |
| 67 | EDB_41724DT | 67 | CCAL | QP | | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720599999 | 10398 |
| 68 | EIBKX1724C | 68 | PIBLK | UZ | | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720599999 | 10398 |

Heather Miller
Heather M. Miller
Chemist

Set-up by: JUL 25 2017 Date:

7/25/2017

EIBKX1724C AAPIBLKAA PIBLK1720499999 10398 SW-846 8011...

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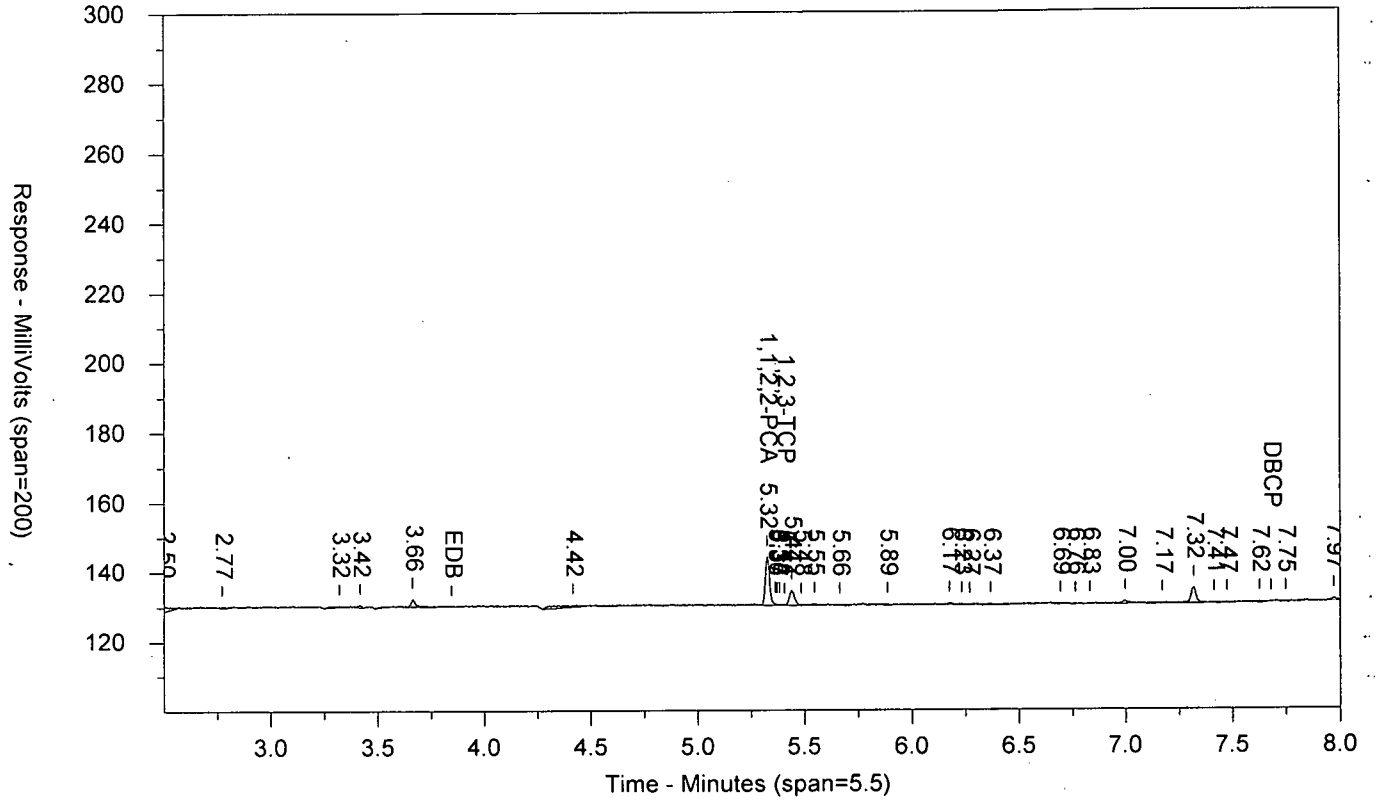


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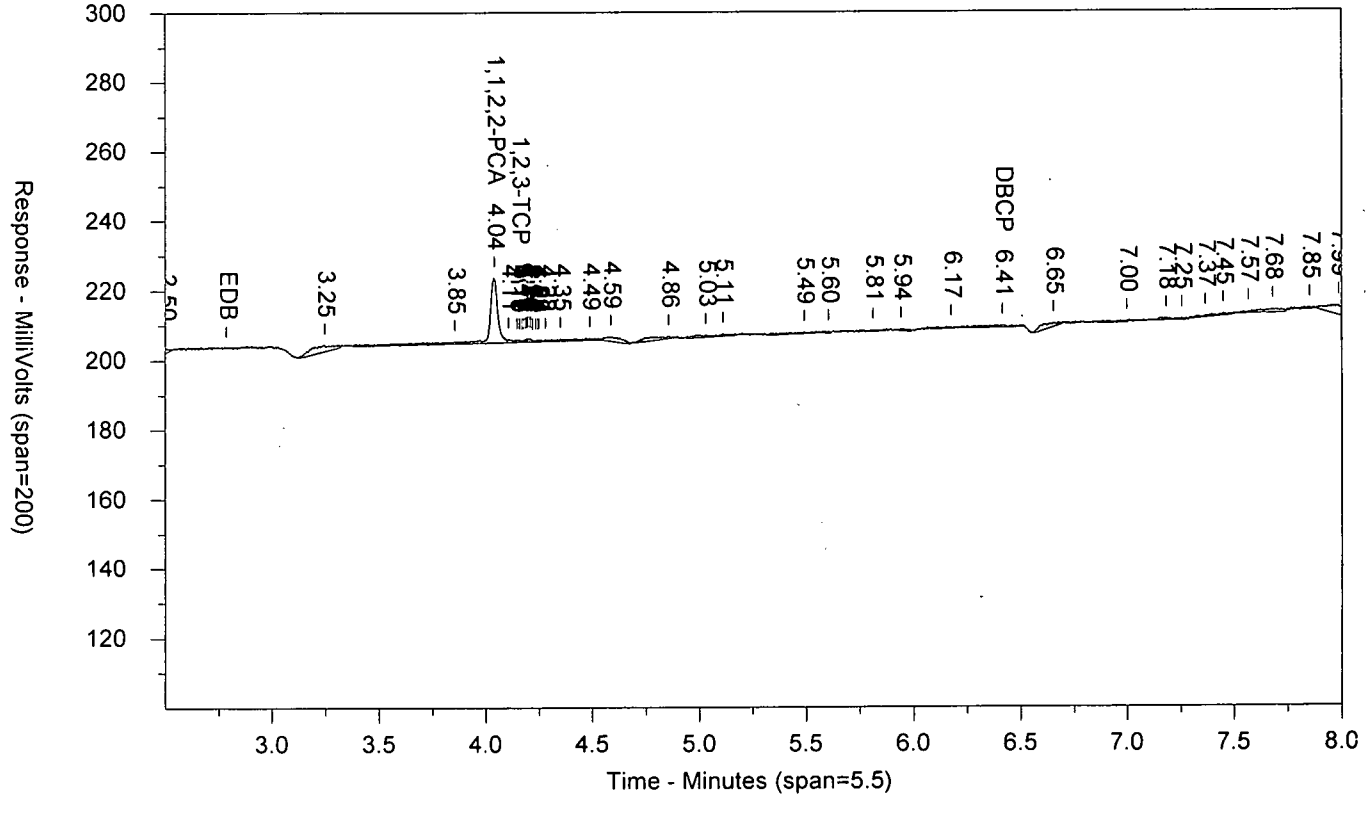

LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:04:58 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 13844 | .068 | 1,1,2,2-PCA | 4.04 | 18692 | .067 | 1,1,2,2-PCA |
| 5.406 | 297 | .01 | 1,2,3-TCP | 4.157 | 753 | .02 | 1,2,3-TCP |
| | 0 | | DBCP | 6.415 | 765 | -.017 | DBCP |

Files:
Area File: 18EDBS17205001.005.RAW
Area File: 18EDBS17205001B.005.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:13:33 PM
File Reported On: 7/25/2017 at 10:02:39 AM

EDB_11724DT AAEDB_1AA ICAL 1720499999 10398 SW-846 8011

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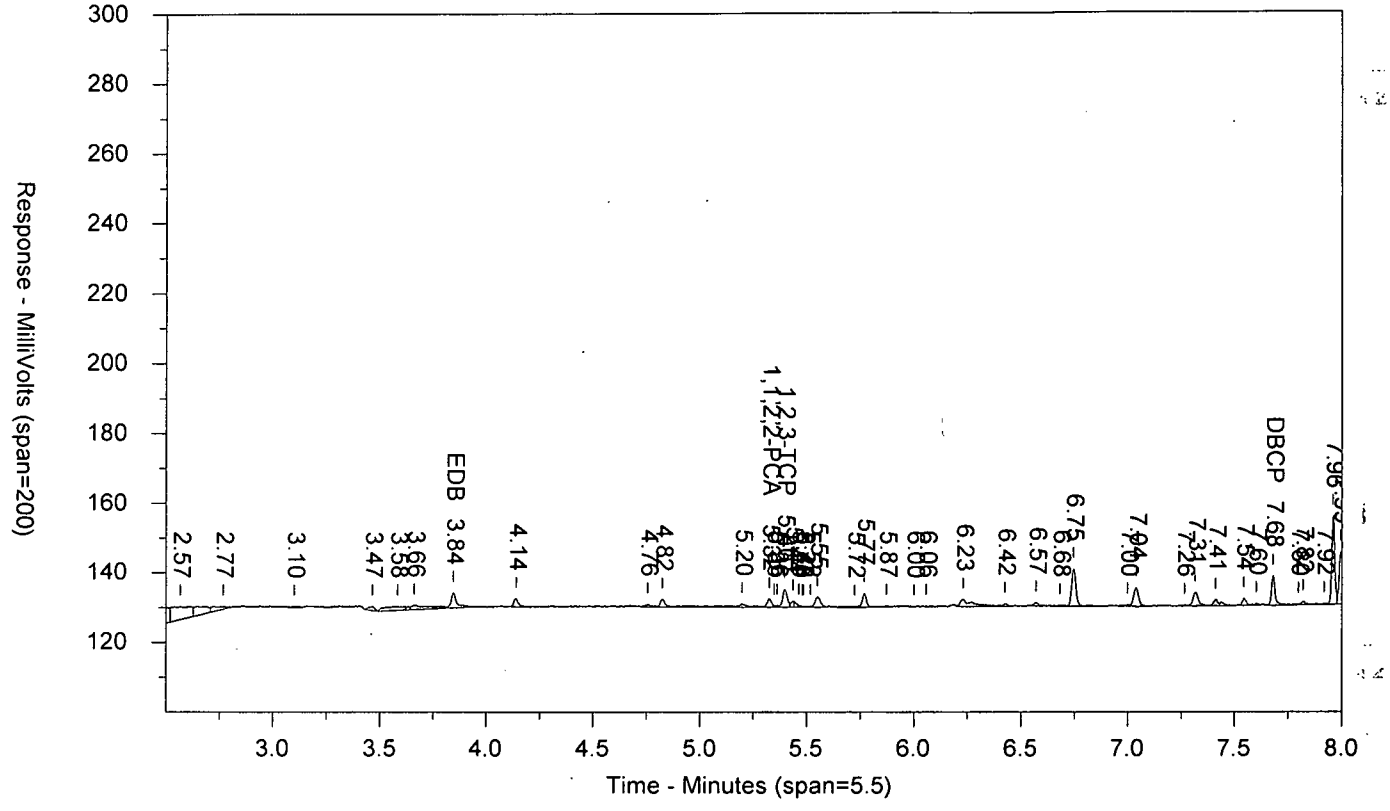


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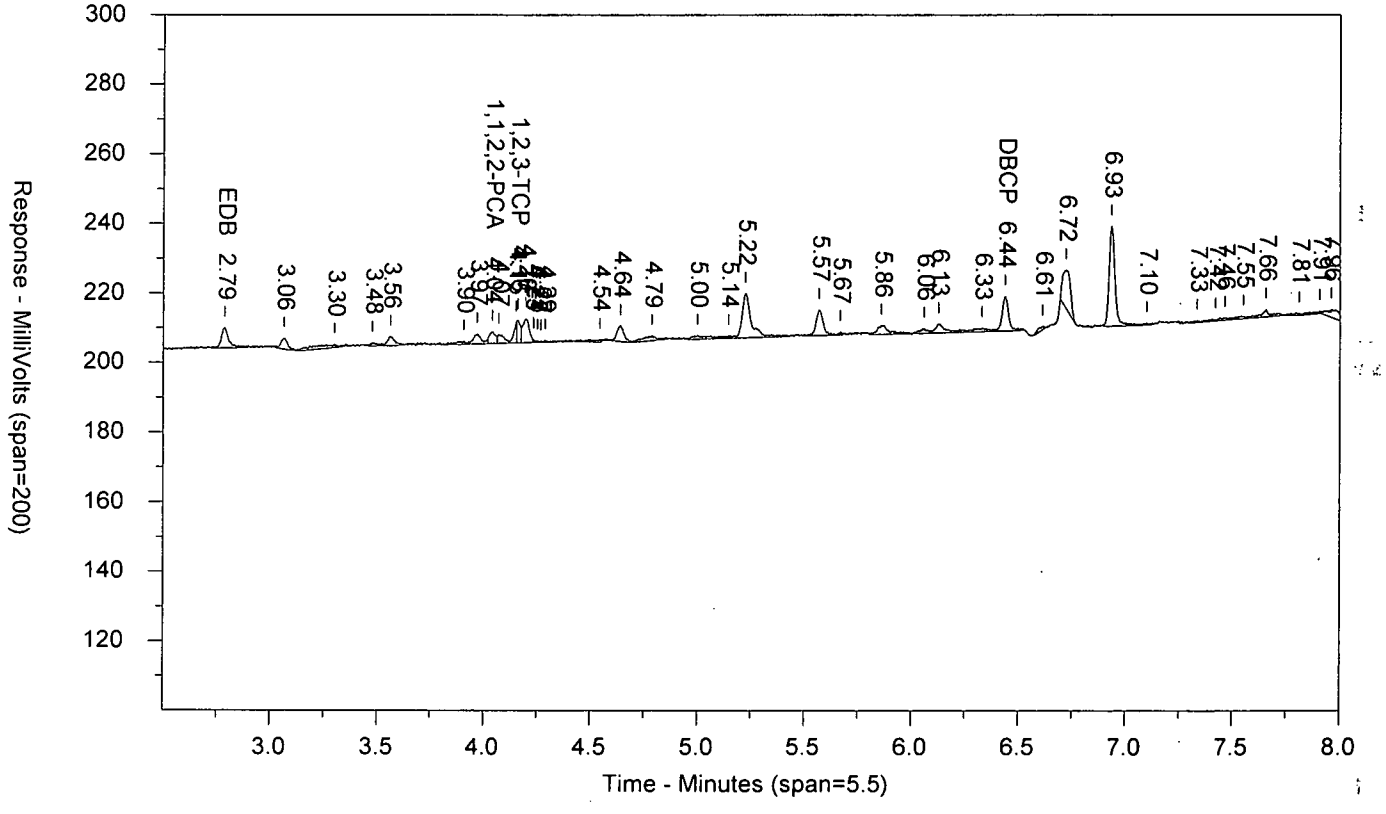


LANCASTER LABORATORIES

Sample Number: EDB_11724DT AAEDB_1AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:20:58 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

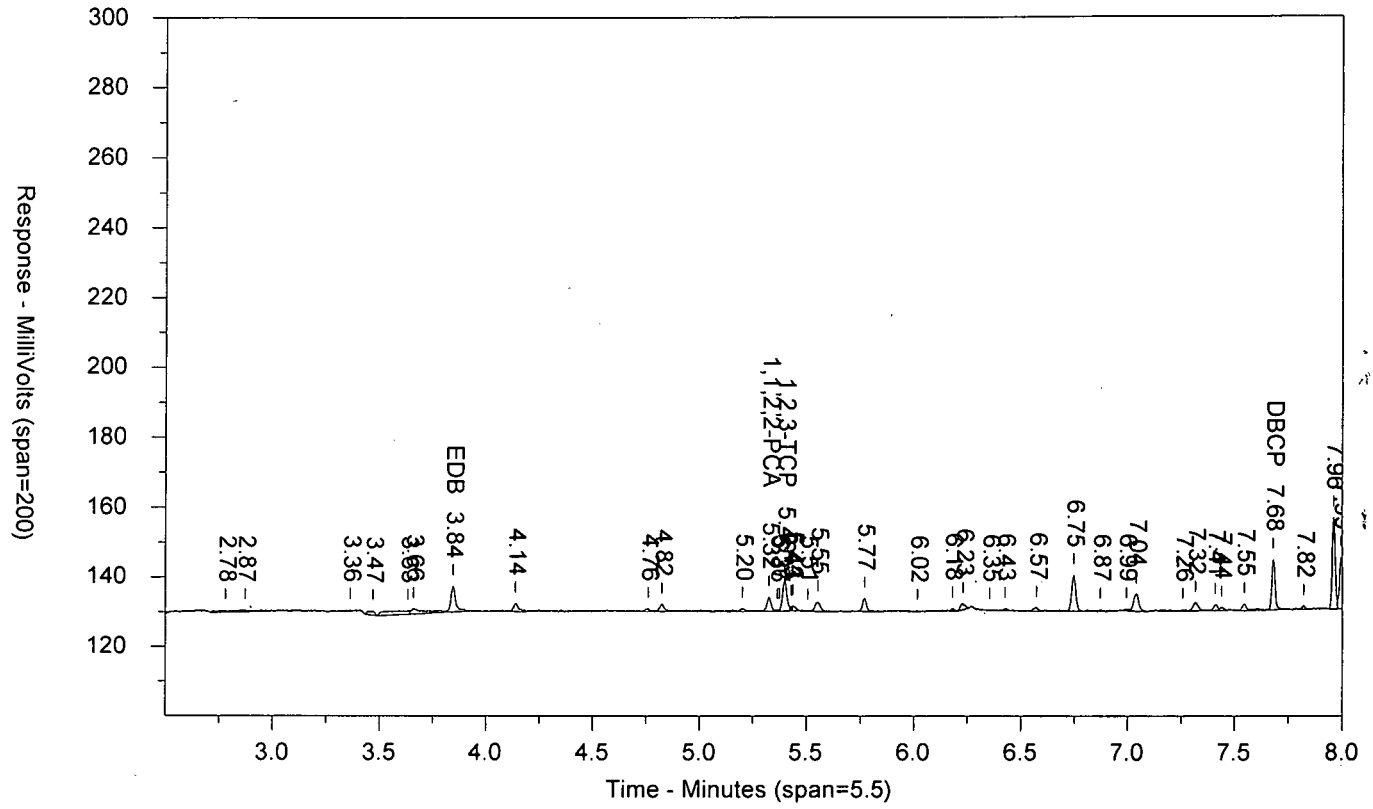
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 4412 | .436 | EDB | 2.787 | 5880 | .323 | EDB |
| 5.325 | 2408 | .207 | 1,1,2,2-PCA | 4.041 | 3465 | .218 | 1,1,2,2-PCA |
| 5.397 | 5184 | 3.153 | 1,2,3-TCP | 4.161 | 6622 | 3.131 | 1,2,3-TCP |
| 7.679 | 8604 | .36 | DBCP | 6.436 | 10052 | .117 | DBCP |

Files:
Area File: 18EDBS17205001.006.RAW
Area File: 18EDBS17205001B.006.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:29:32 PM
File Reported On: 7/25/2017 at 10:02:55 AM

EDB_21724DT AAEDB_2AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.007.RAW

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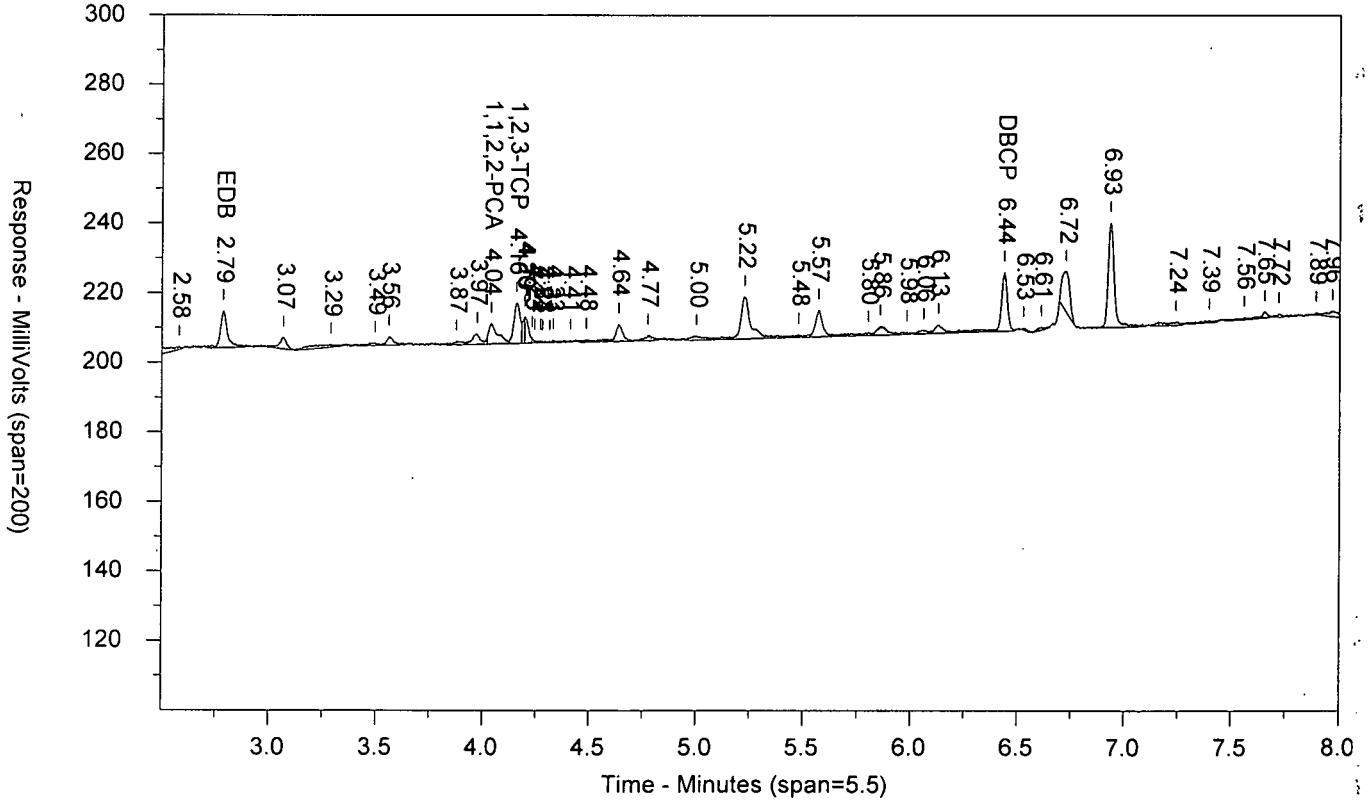


LANCASTER LABORATORIES

Sample Number: EDB_21724DT AAEDB_2AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:36:56 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

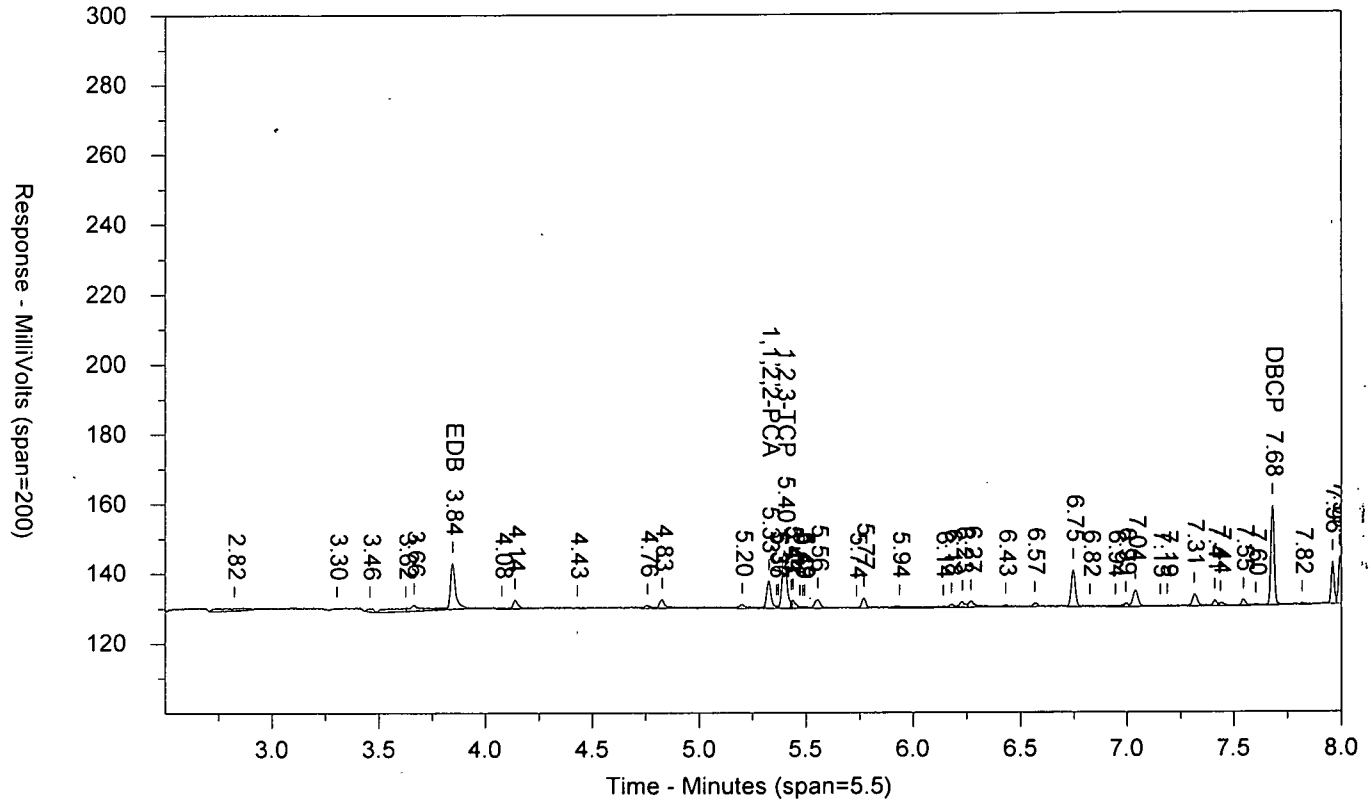
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.845 | 7426 | .701 | EDB | 2.786 | 10603 | .654 | EDB |
| 5.324 | 4086 | .346 | 1,1,2,2-PCA | 4.039 | 5938 | .366 | 1,1,2,2-PCA |
| 5.397 | 8598 | 5.171 | 1,2,3-TCP | 4.158 | 11596 | 5.404 | 1,2,3-TCP |
| 7.679 | 14448 | .609 | DBCP | 6.437 | 16928 | .441 | DBCP |

Files:
Area File: 18EDBS17205001.007.RAW
Area File: 18EDBS17205001B.007.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:45:31 PM
File Reported On: 7/25/2017 at 10:03:09 AM

EDB_31724DT AAEDB_3AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.008.RAW

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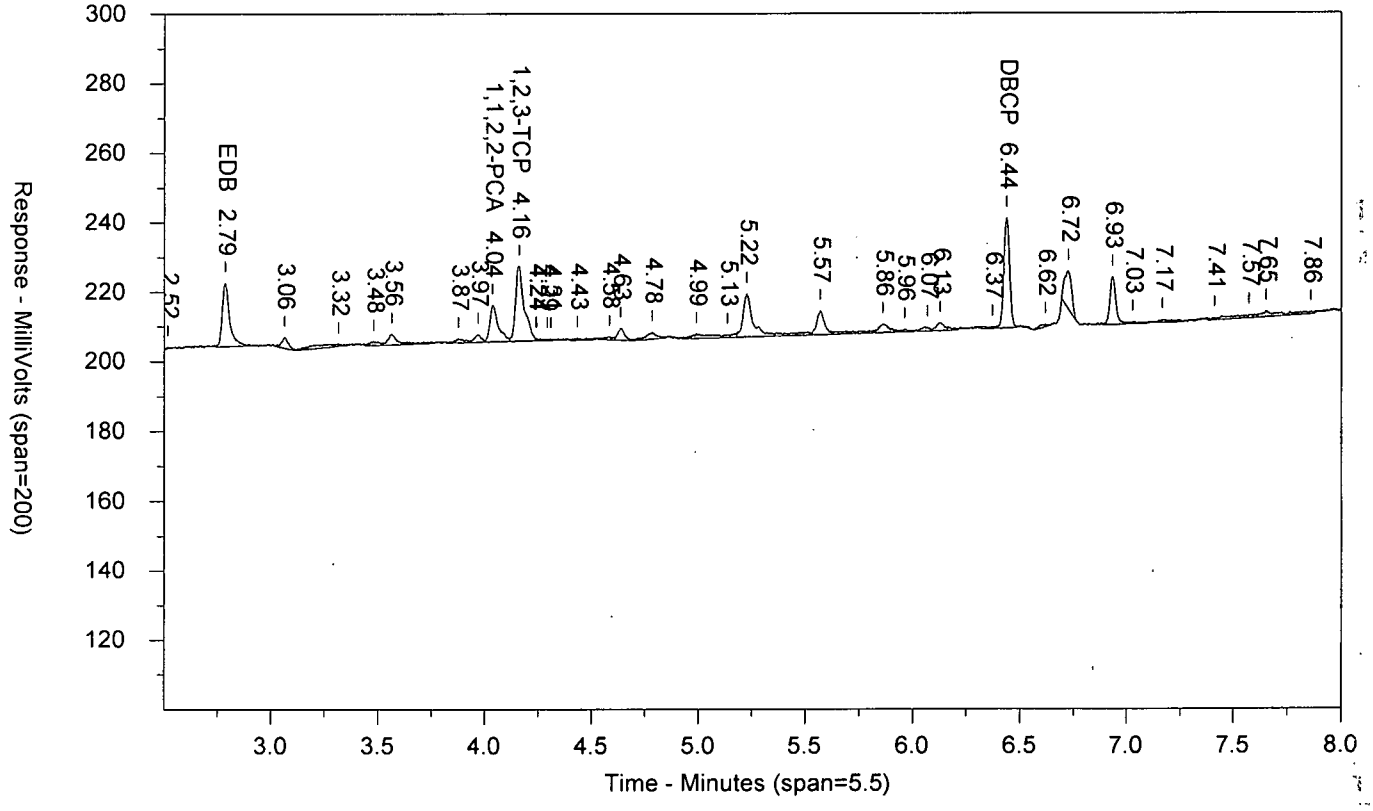


LANCASTER LABORATORIES

Sample Number: EDB_31724DT AAEDB_3AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:52:58 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

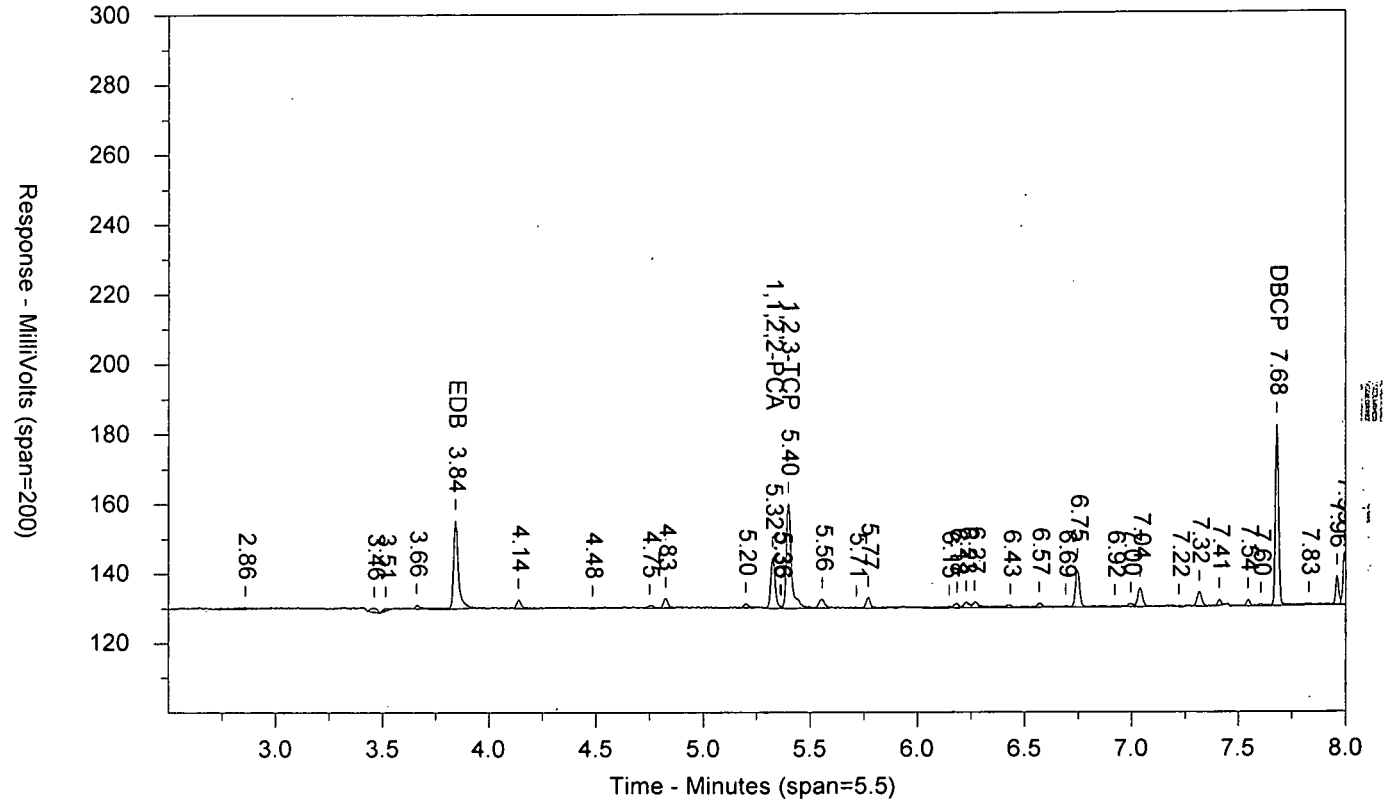
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 13086 | 1.227 | EDB | 2.786 | 18381 | 1.271 | EDB |
| 5.326 | 7864 | .657 | 1,1,2,2-PCA | 4.037 | 10689 | .642 | 1,1,2,2-PCA |
| 5.399 | 16580 | 9.939 | 1,2,3-TCP | 4.16 | 21683 | 9.962 | 1,2,3-TCP |
| 7.679 | 28622 | 1.224 | DBCP | 6.436 | 31855 | 1.133 | DBCP |

Files:
Area File: 18EDBS17205001.008.RAW
Area File: 18EDBS17205001B.008.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:01:32 PM
File Reported On: 7/25/2017 at 10:03:25 AM

EDB_41724DT AAEDB_4AA ICAL 1720499999 10398 SW-846 801

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.009.RAW

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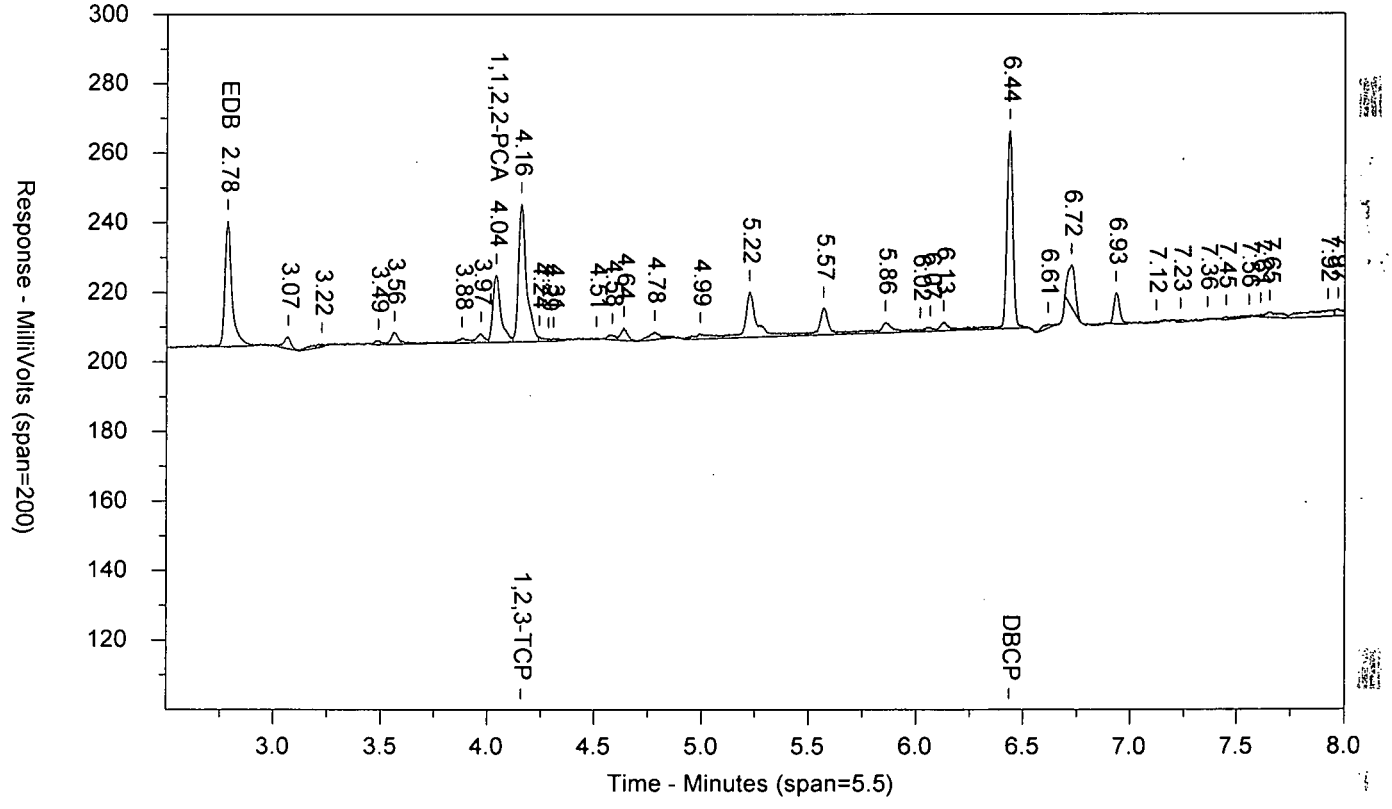


LANCASTER LABORATORIES

Sample Number: EDB_41724DT AAEDB_4AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:08:59 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

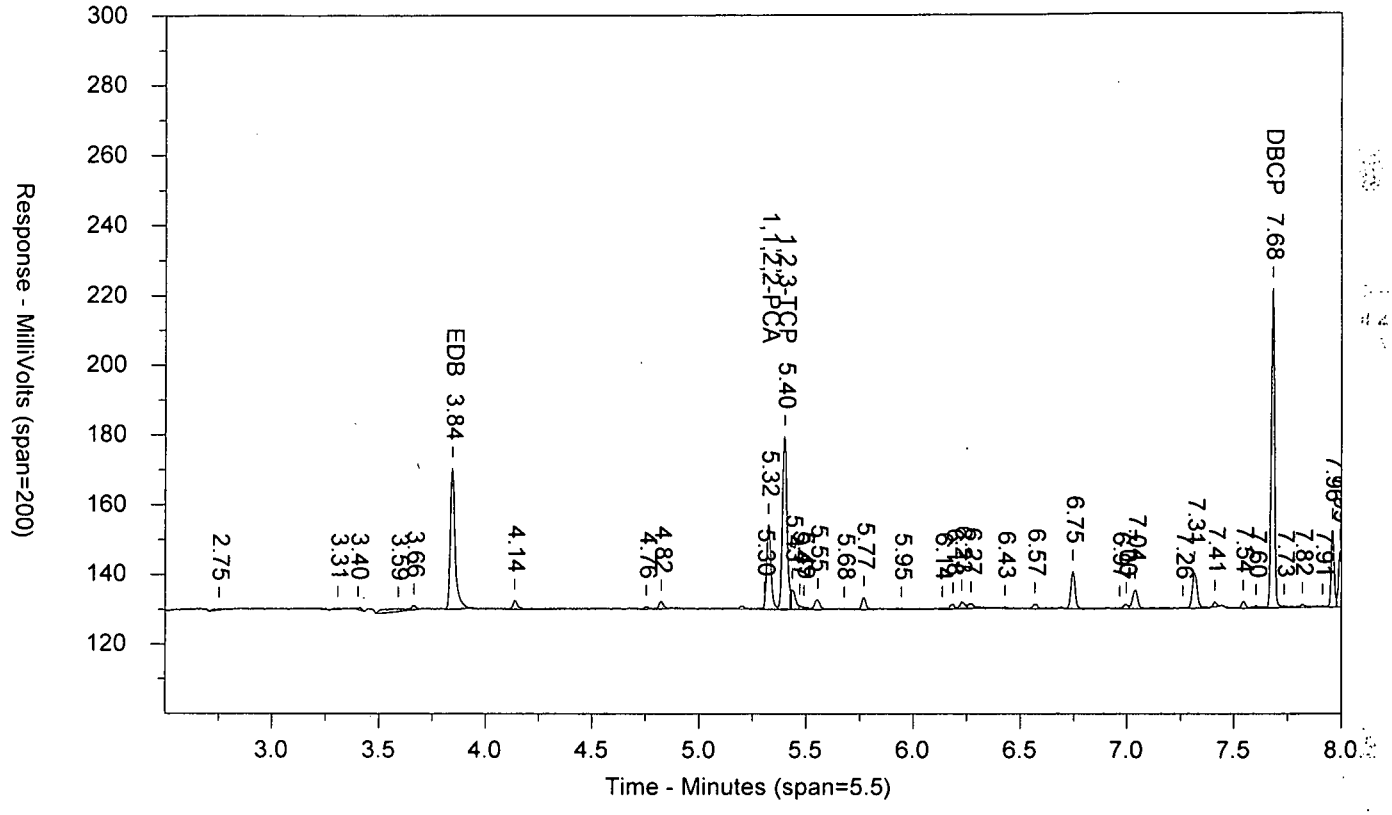
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 25381 | 2.381 | EDB | 2.784 | 36156 | 2.742 | EDB |
| 5.324 | 14502 | 1.188 | 1,1,2,2-PCA | 4.041 | 19317 | 1.147 | 1,1,2,2-PCA |
| 5.397 | 29944 | 17.845 | 1,2,3-TCP | 4.158 | 39566 | 18.1 | 1,2,3-TCP |
| 7.679 | 51969 | 2.25 | DBCP | 6.437 | 56857 | 2.265 | DBCP |

Files:
Area File: 18EDBS17205001.009.RAW
Area File: 18EDBS17205001B.009.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:17:32 PM
File Reported On: 7/25/2017 at 10:03:39 AM

EDB_51724DT AAEDB_5AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.010.RAW

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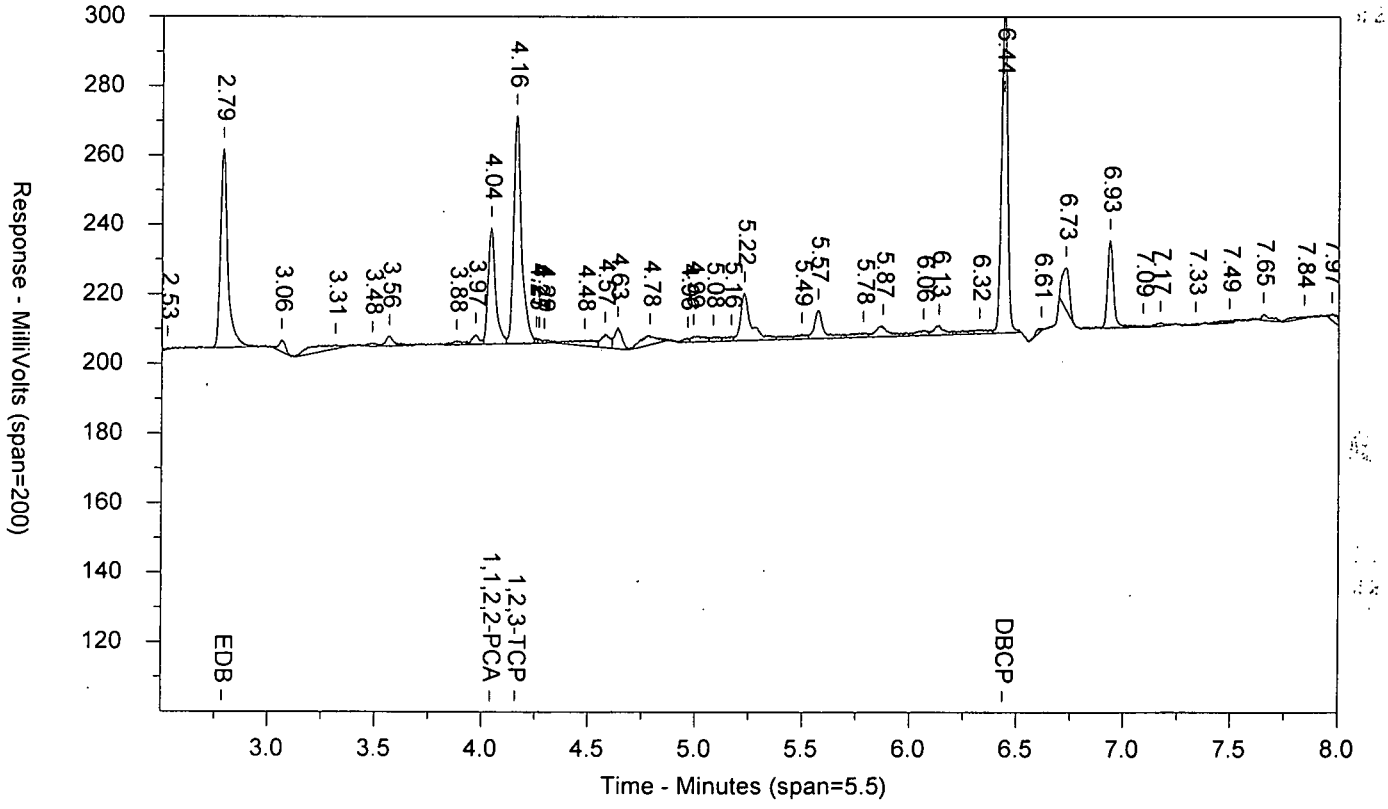


LANCASTER LABORATORIES

Sample Number: EDB_51724DT AAEDB_5AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:24:57 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

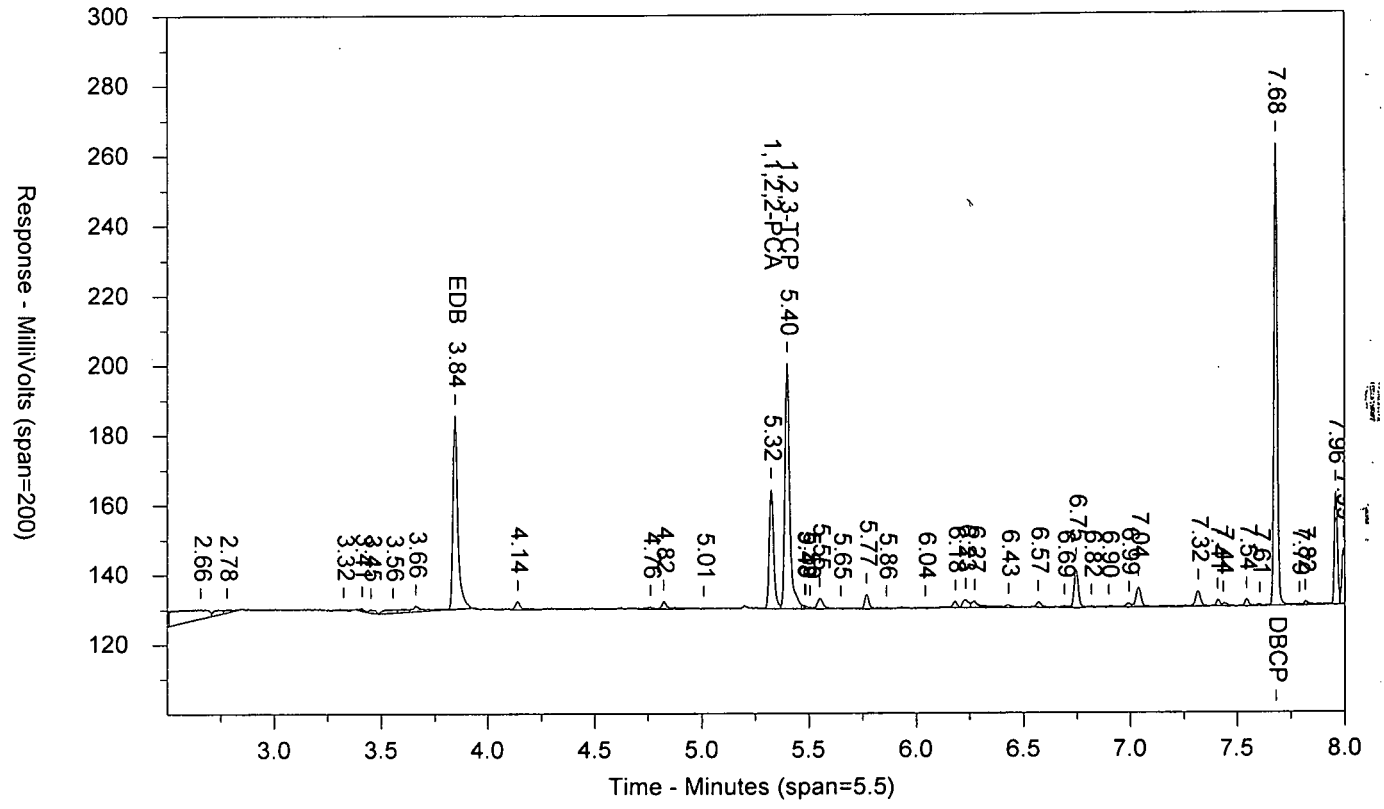
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 40367 | 3.828 | EDB | 2.786 | 57388 | 4.498 | EDB |
| 5.324 | 24061 | 1.974 | 1,1,2,2-PCA | 4.039 | 33456 | 1.99 | 1,1,2,2-PCA |
| 5.397 | 49390 | 29.707 | 1,2,3-TCP | 4.158 | 65776 | 30.242 | 1,2,3-TCP |
| 7.679 | 91292 | 4.031 | DBCP | 6.435 | 93835 | 3.954 | DBCP |

Files:
Area File: 18EDBS17205001.010.RAW
Area File: 18EDBS17205001B.010.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:33:28 PM
File Reported On: 7/25/2017 at 10:03:53 AM

EDB_61724DT AAEDB_6AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.011.RAW

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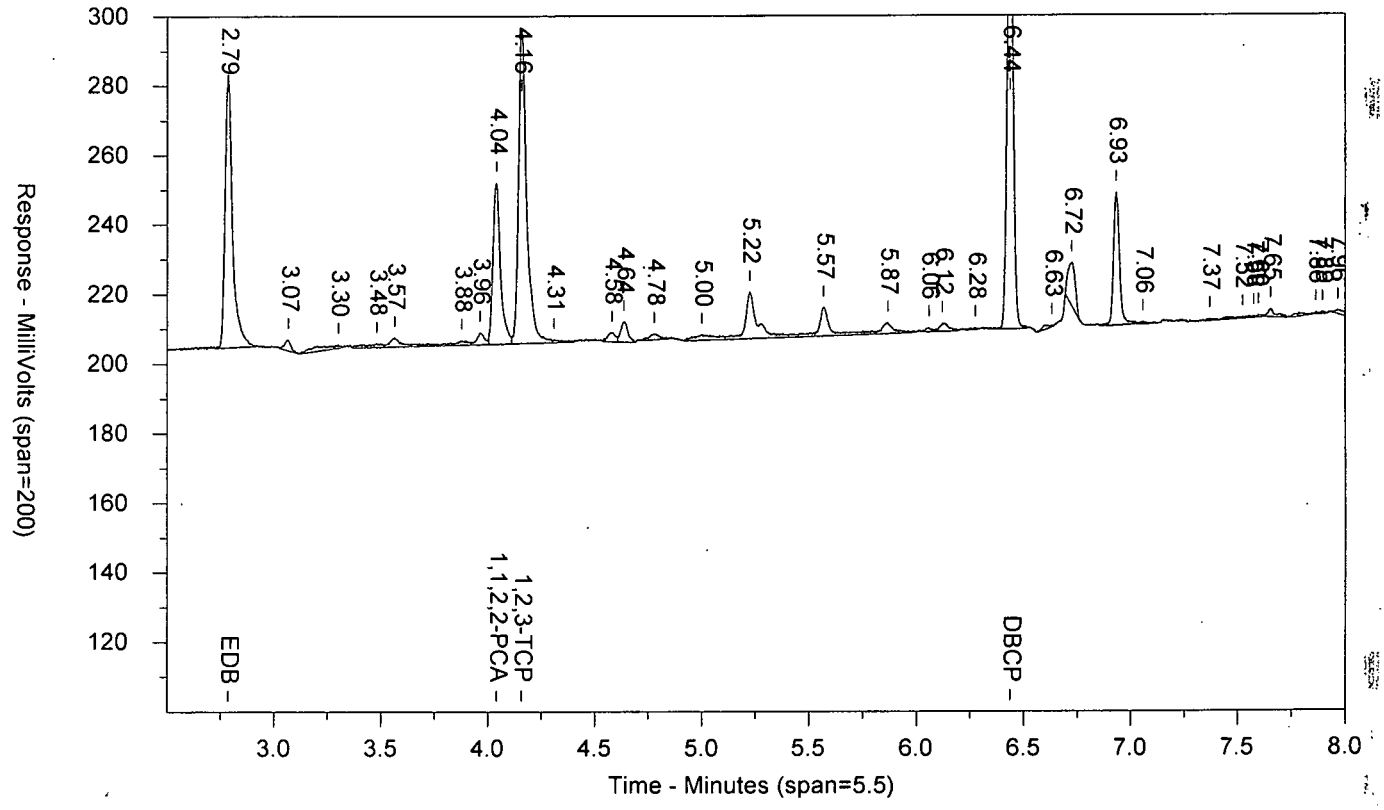


LANCASTER LABORATORIES

Sample Number: EDB_61724DT AAEDB_6AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:40:57 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

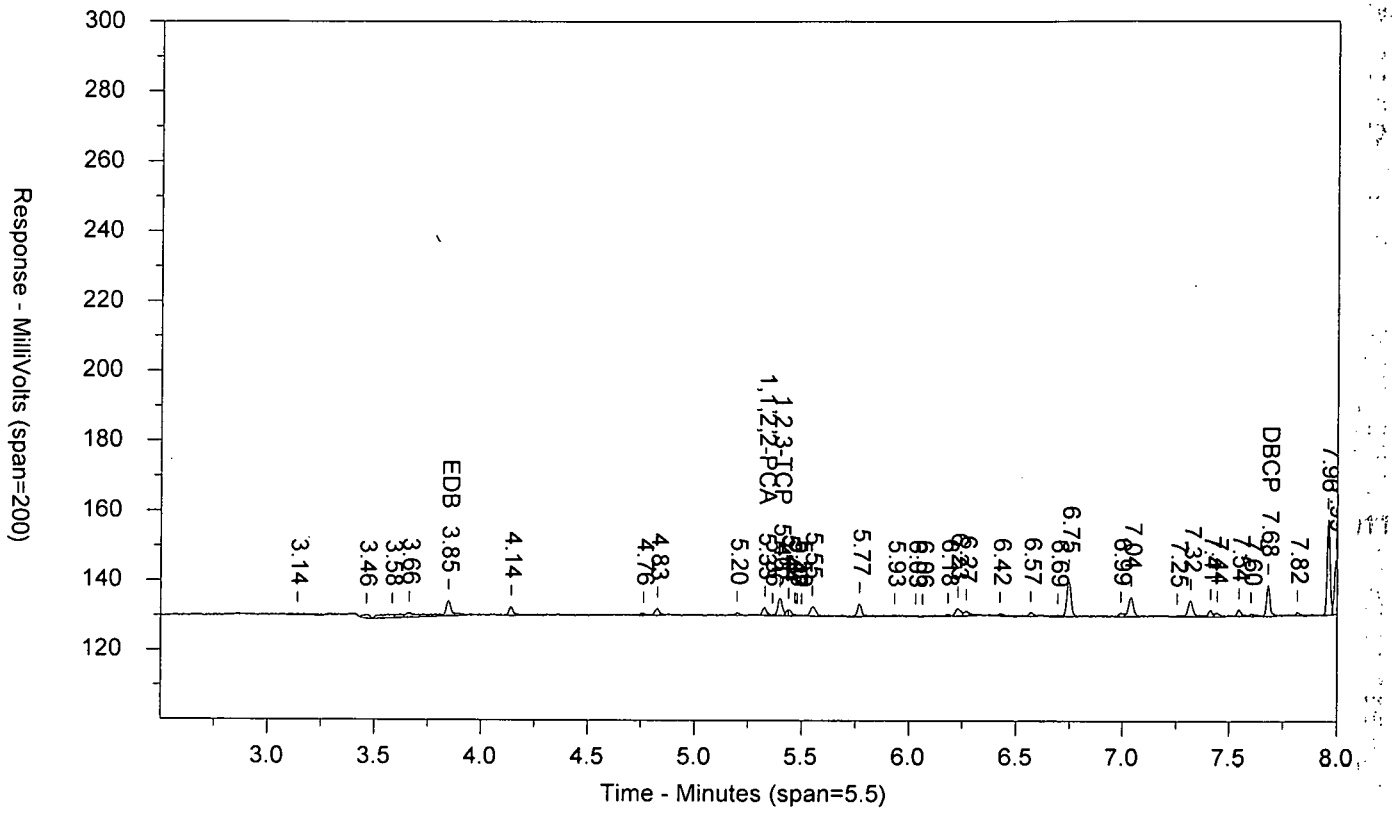
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 55483 | 5.274 | EDB | 2.785 | 78644 | 6.218 | EDB |
| 5.324 | 34208 | 2.799 | 1,1,2,2-PCA | 4.04 | 46548 | 2.742 | 1,1,2,2-PCA |
| 5.398 | 70406 | 42.327 | 1,2,3-TCP | 4.158 | 90750 | 41.603 | 1,2,3-TCP |
| 7.679 | 132279 | 5.889 | DBCP | 6.436 | 127952 | 5.662 | DBCP |

Files:
Area File: 18EDBS17205001.011.RAW
Area File: 18EDBS17205001B.011.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:49:32 PM
File Reported On: 7/25/2017 at 10:04:07 AM

MDEDX1724DT AAMDEDXAA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.012.RAW

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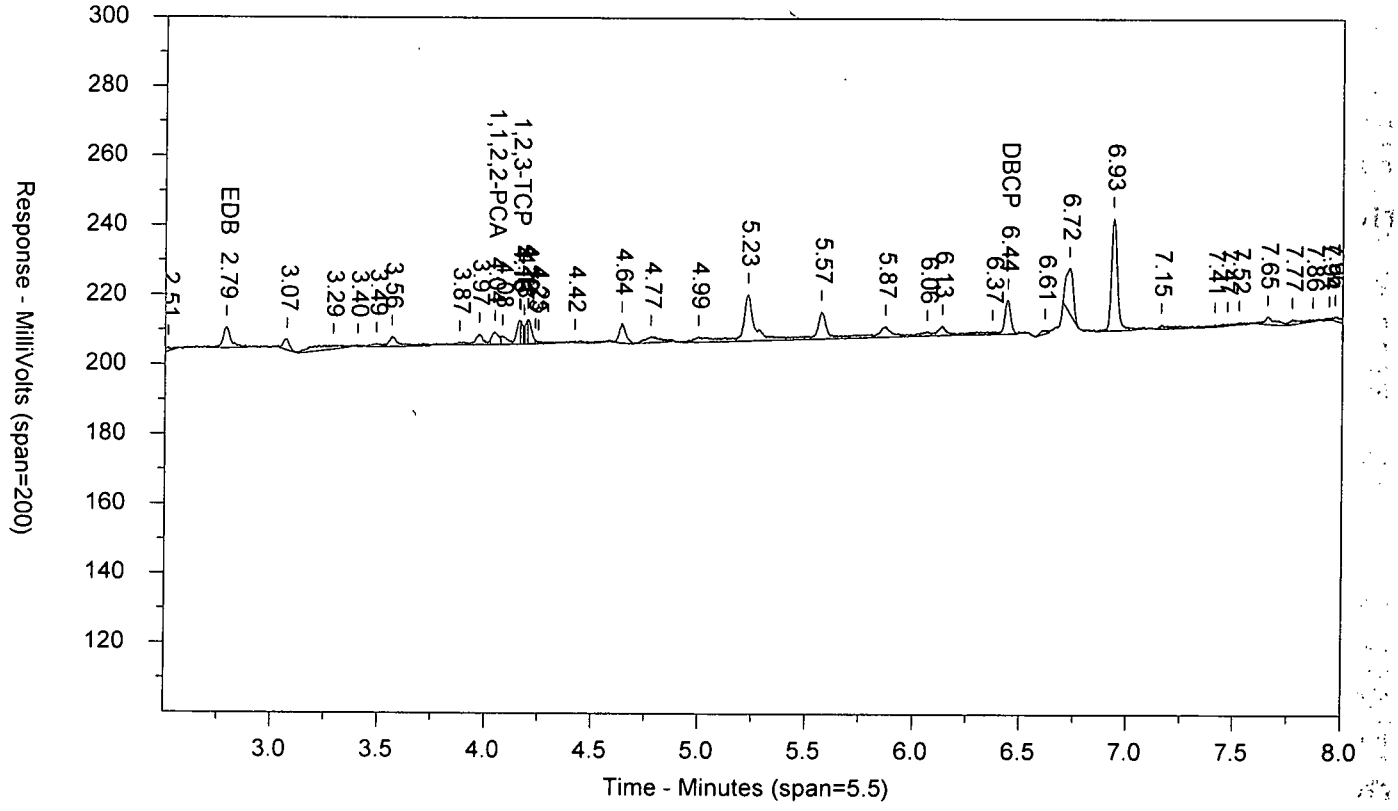


LANCASTER LABORATORIES

Sample Number: MDEDX1724DT AAMDEDXAA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:57:00 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

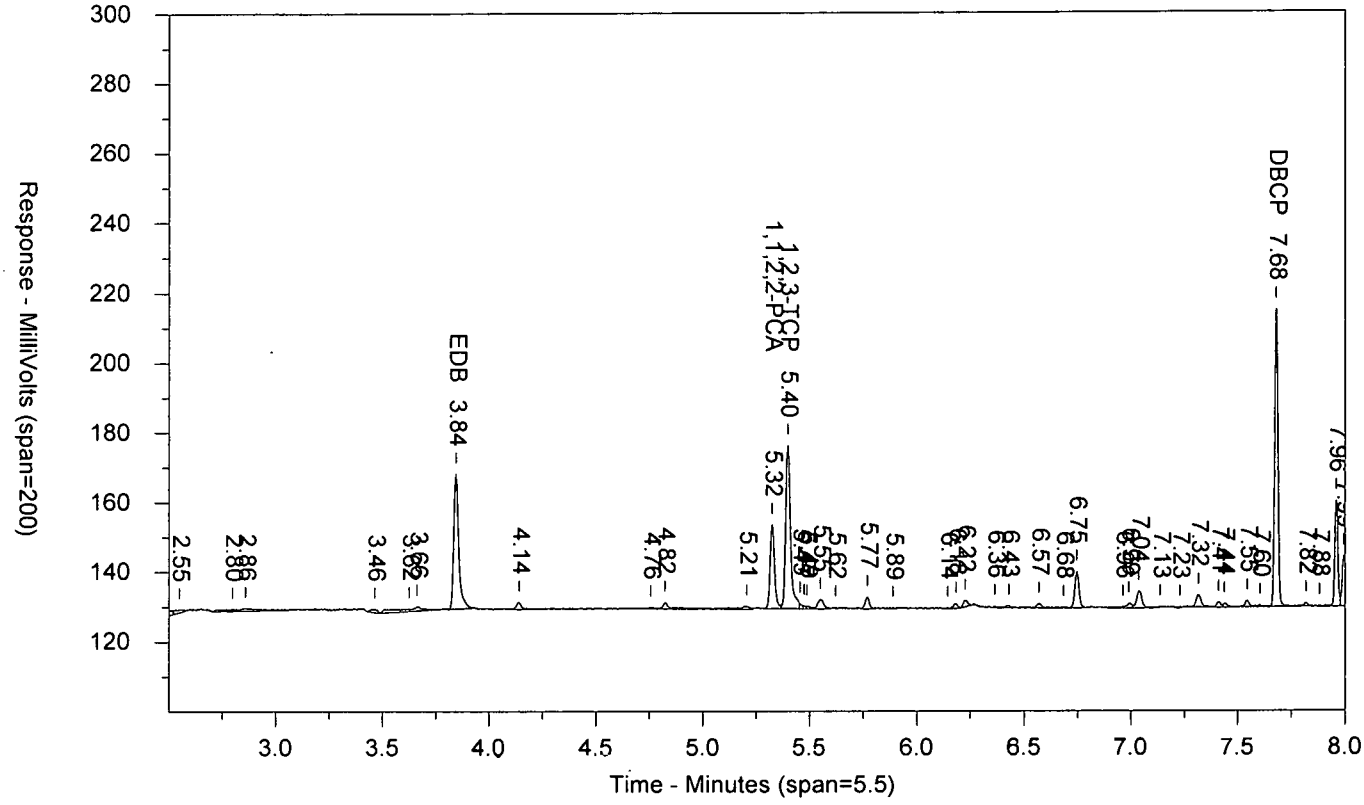
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.845 | 4372 | .246 | EDB | 2.788 | 6007 | .241 | EDB |
| 5.327 | 2294 | .186 | 1,1,2,2-PCA | 4.042 | 3608 | .157 | 1,1,2,2-PCA |
| 5.398 | 5036 | 2.088 | 1,2,3-TCP | 4.158 | 6848 | 2.051 | 1,2,3-TCP |
| 7.679 | 8811 | .394 | DBCP | 6.437 | 9817 | .225 | DBCP |

Files:
Area File: 18EDBS17205001.012.RAW
Area File: 18EDBS17205001B.012.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 6:05:32 PM
File Reported On: 7/25/2017 at 10:13:09 AM

EDB_51724DT LXEDB_5LX CCAL 1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.045.RAW

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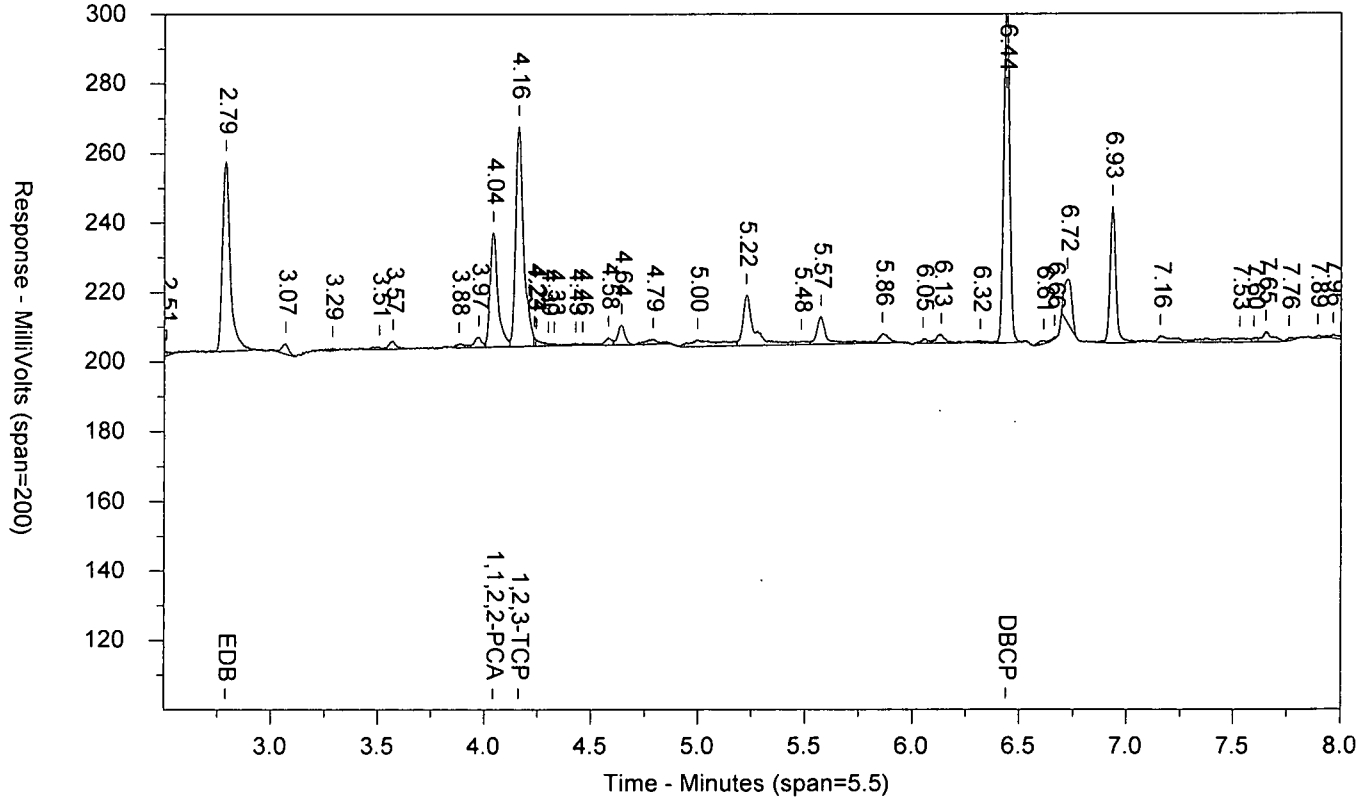


LANCASTER LABORATORIES

Sample Number: EDB_51724DT LXEDB_5LX CCAL 1720599999 10398 SW-846 8011
Injected On: 7/25/2017 11:15:14 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

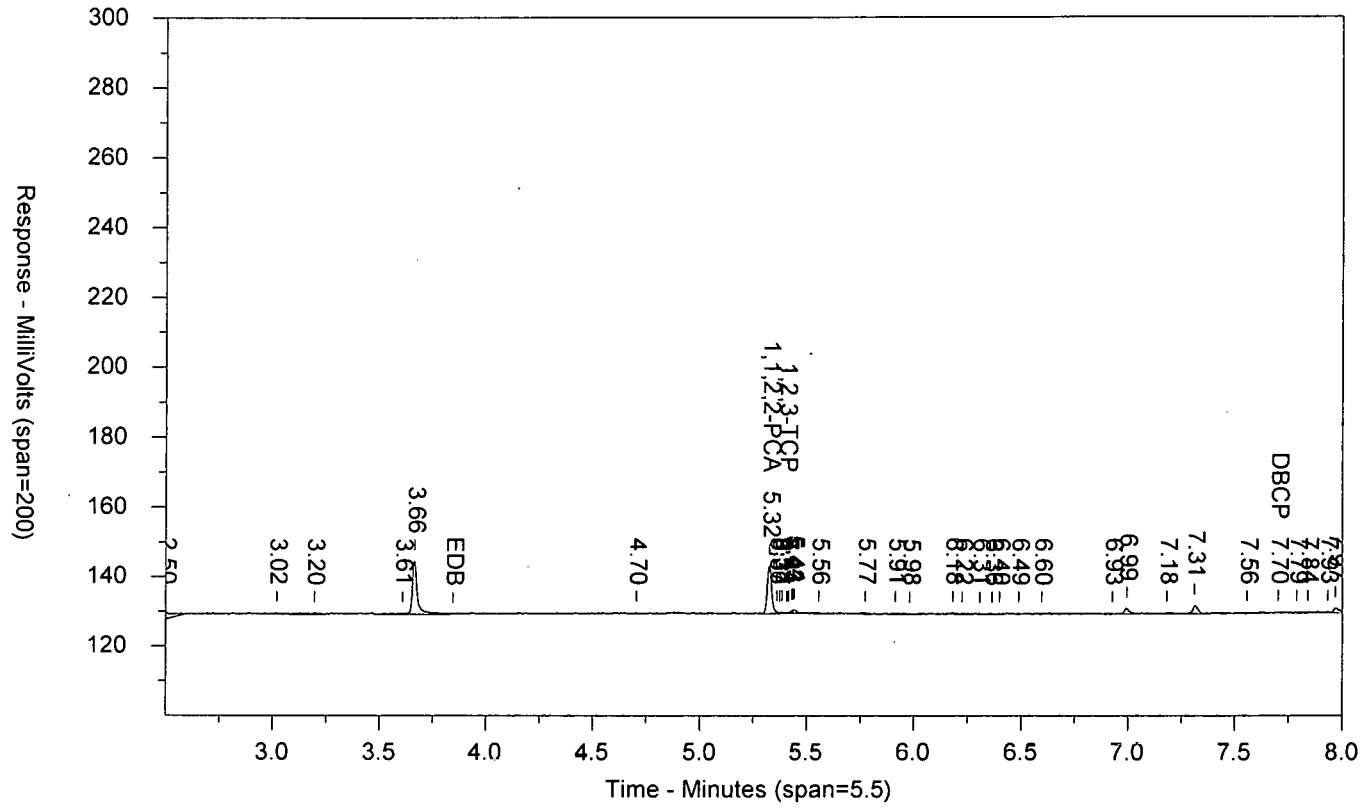
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 38811 | 4.233 | EDB | 2.788 | 54579 | 4.193 | EDB |
| 5.324 | 24128 | 1.957 | 1,1,2,2-PCA | 4.041 | 32963 | 2.146 | 1,1,2,2-PCA |
| 5.397 | 46912 | 31.267 | 1,2,3-TCP | 4.16 | 63333 | 32.386 | 1,2,3-TCP |
| 7.678 | 85437 | 3.823 | DBCP | 6.437 | 98241 | 4.643 | DBCP |

Files:
Area File: 18EDBS17205002.045.RAW
Area File: 18EDBS17205002B.045.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 11:23:46 PM
File Reported On: 7/26/2017 at 10:10:58 AM

EIBKX1724C UXPIBLKUX PIBLK1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.046.RAW

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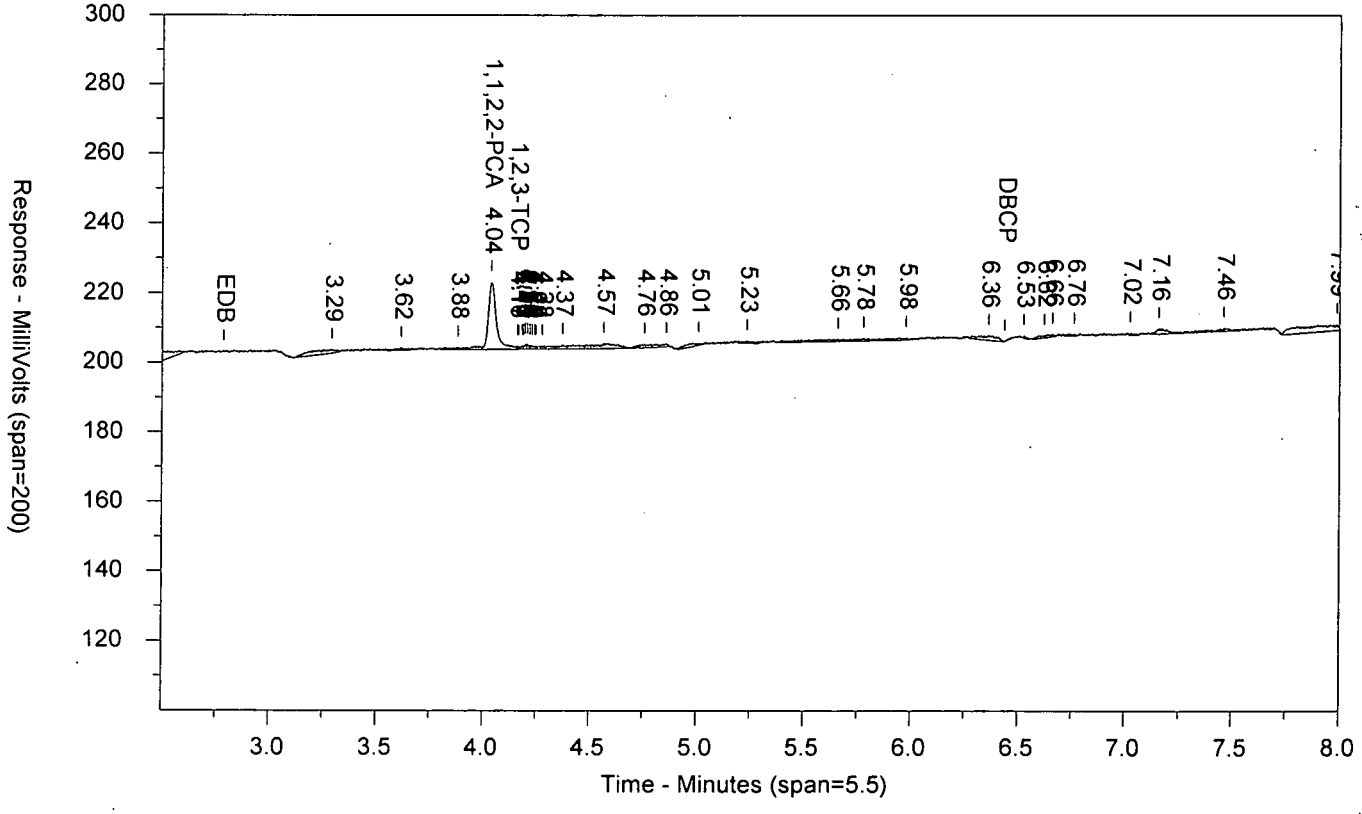


LANCASTER LABORATORIES

Sample Number: EIBKX1724C UXPIBLKUX PIBLK1720599999 10398 SW-846 8011
Injected On: 7/25/2017 11:31:11 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

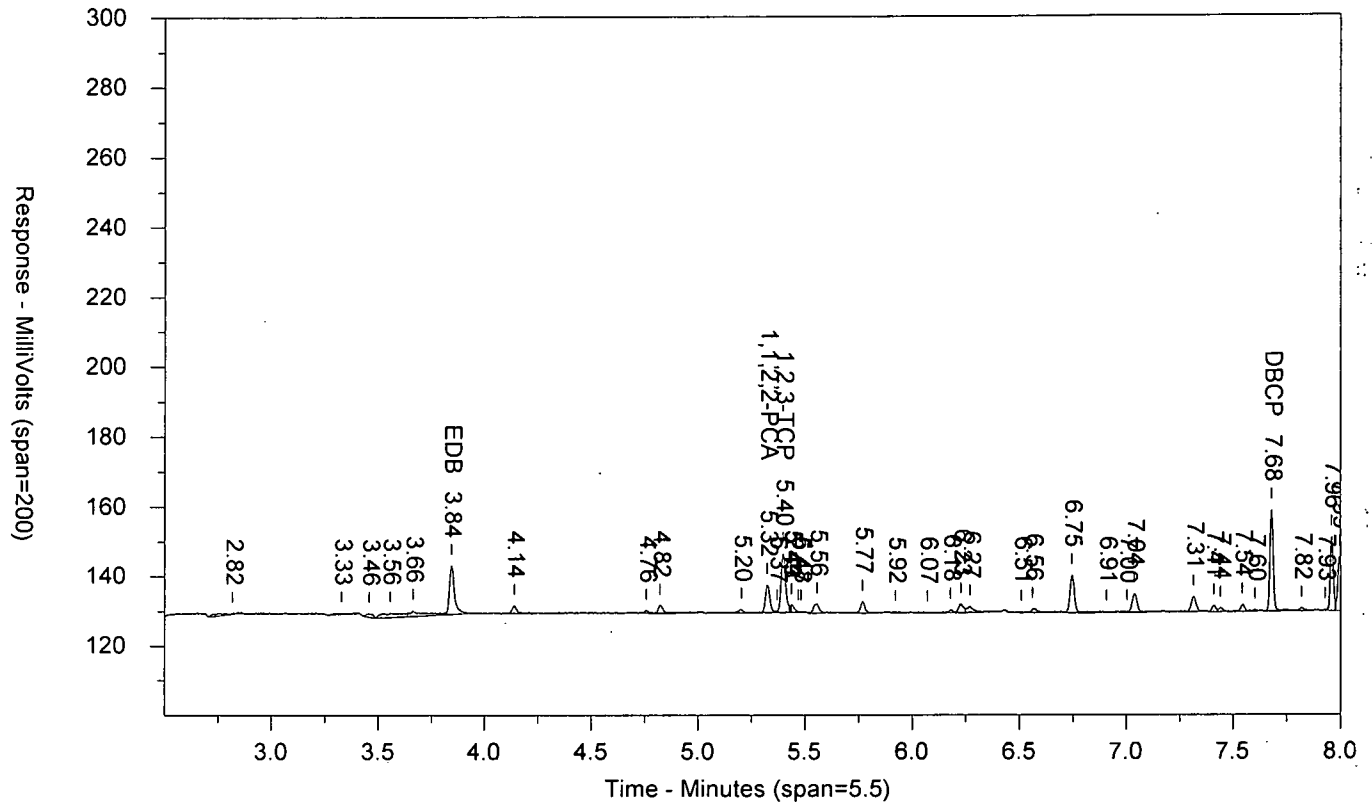
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 13910 | .064 | 1,1,2,2-PCA | 4.04 | 19332 | .07 | 1,1,2,2-PCA |
| 5.406 | 297 | -.069 | 1,2,3-TCP | 4.161 | 1012 | -.062 | 1,2,3-TCP |
| 7.7 | 385 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17205002.046.RAW
Area File: 18EDBS17205002B.046.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 11:39:45 PM
File Reported On: 7/26/2017 at 10:11:14 AM

EDB_31724DT POEDB_3PO CCAL 1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.057.RAW

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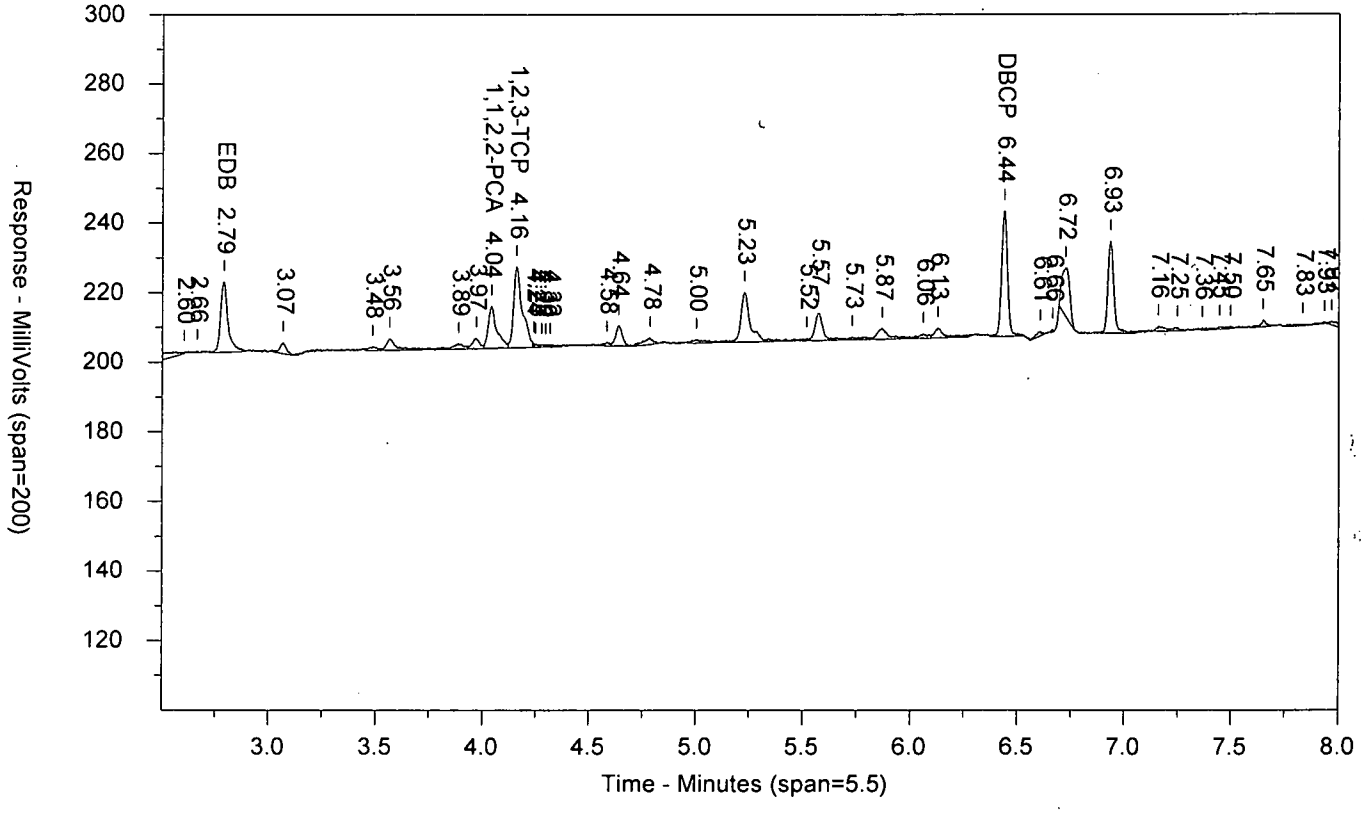


LANCASTER LABORATORIES

Sample Number: EDB_31724DT POEDB_3PO CCAL 1720599999 10398 SW-846 8011
Injected On: 7/26/2017 2:26:19 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

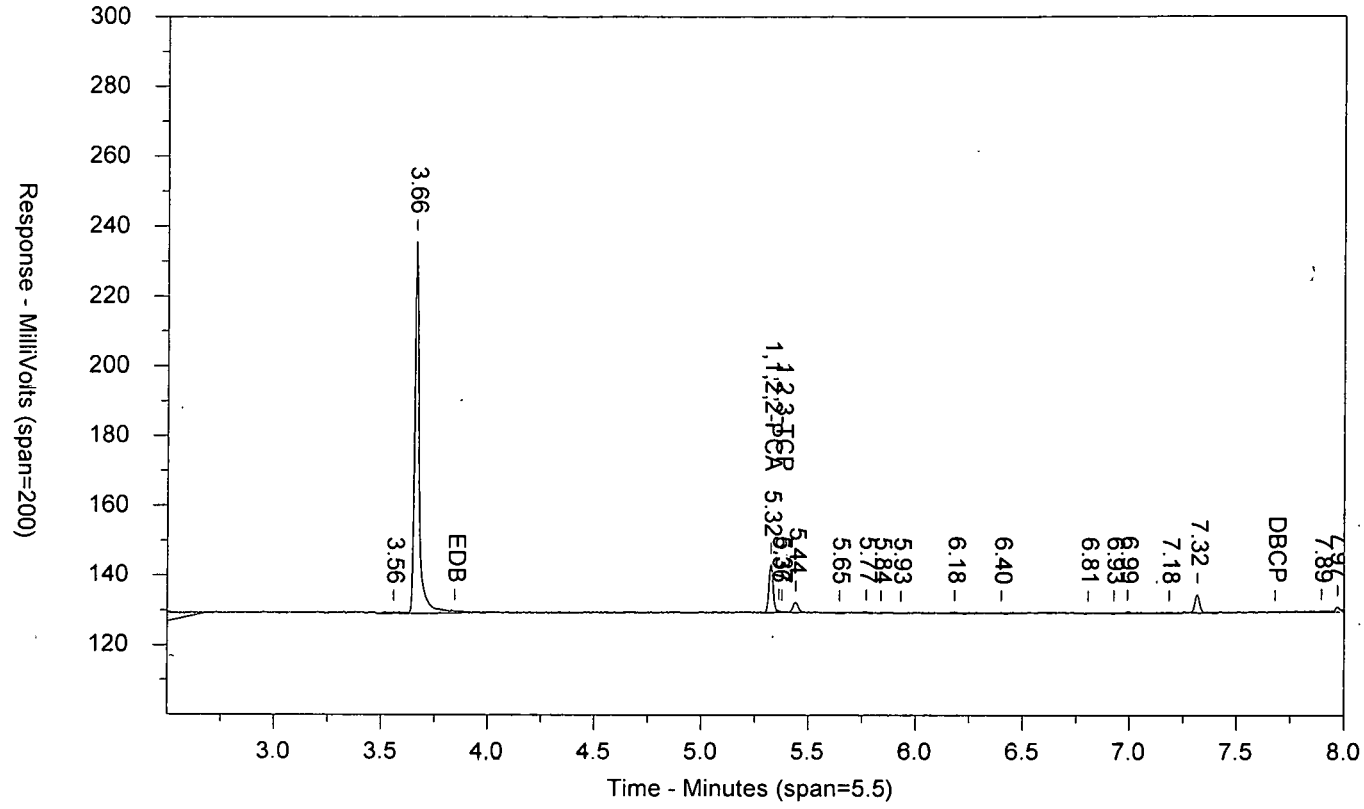
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 14072 | 1.369 | EDB | 2.788 | 20226 | 1.398 | EDB |
| 5.323 | 7999 | .649 | 1,1,2,2-PCA | 4.042 | 12110 | .733 | 1,1,2,2-PCA |
| 5.397 | 16879 | 10.34 | 1,2,3-TCP | 4.16 | 23294 | 10.883 | 1,2,3-TCP |
| 7.679 | 28946 | 1.295 | DBCP | 6.437 | 36079 | 1.537 | DBCP |

Files:
Area File: 18EDBS17205002.057.RAW
Area File: 18EDBS17205002B.057.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 2:34:55 AM
File Reported On: 7/26/2017 at 10:14:07 AM

EIBKX1724C UYPIBLKUY PIBLK1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.058.RAW

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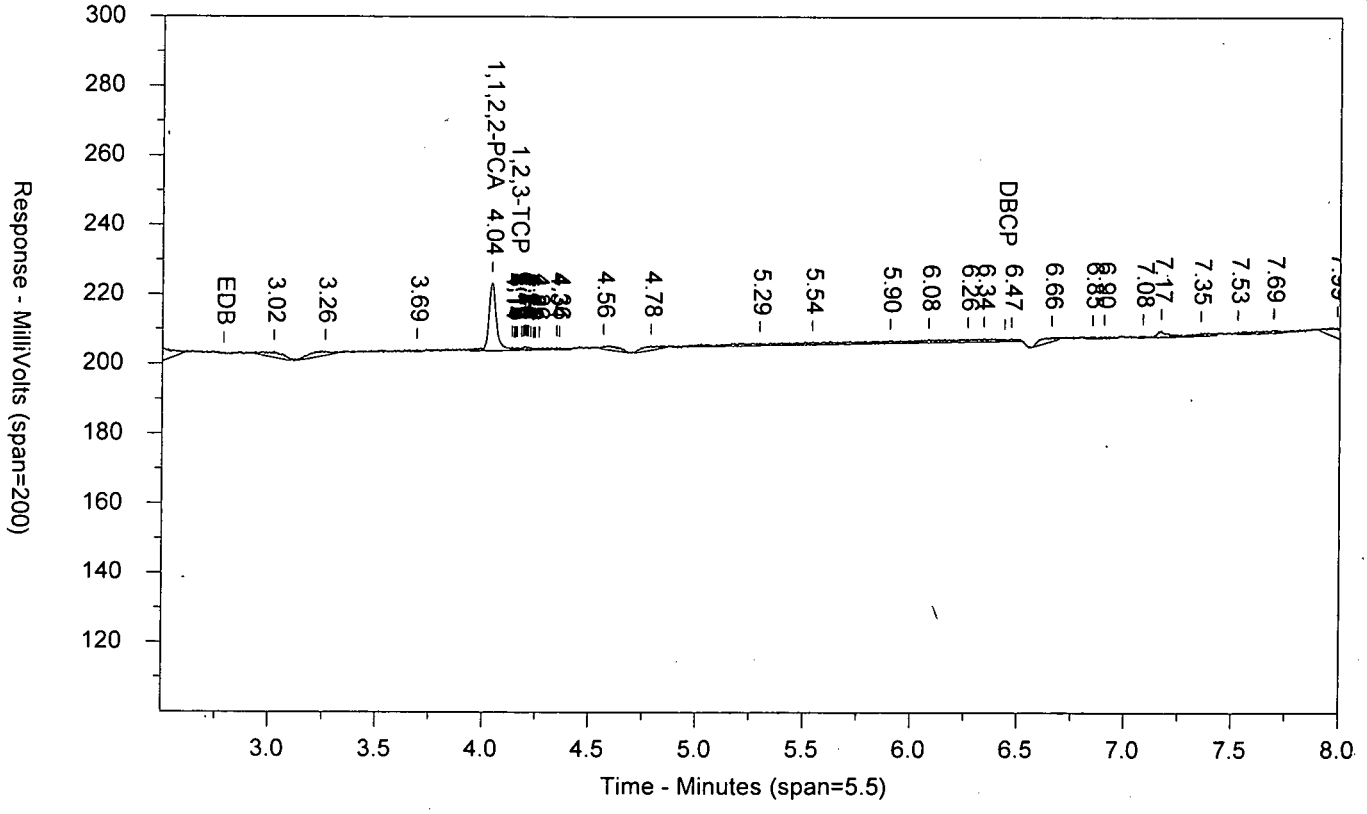


LANCASTER LABORATORIES

Sample Number: EIBKX1724C UYPIBLKUY PIBLK1720599999 10398 SW-846 8011
Injected On: 7/26/2017 2:42:11 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

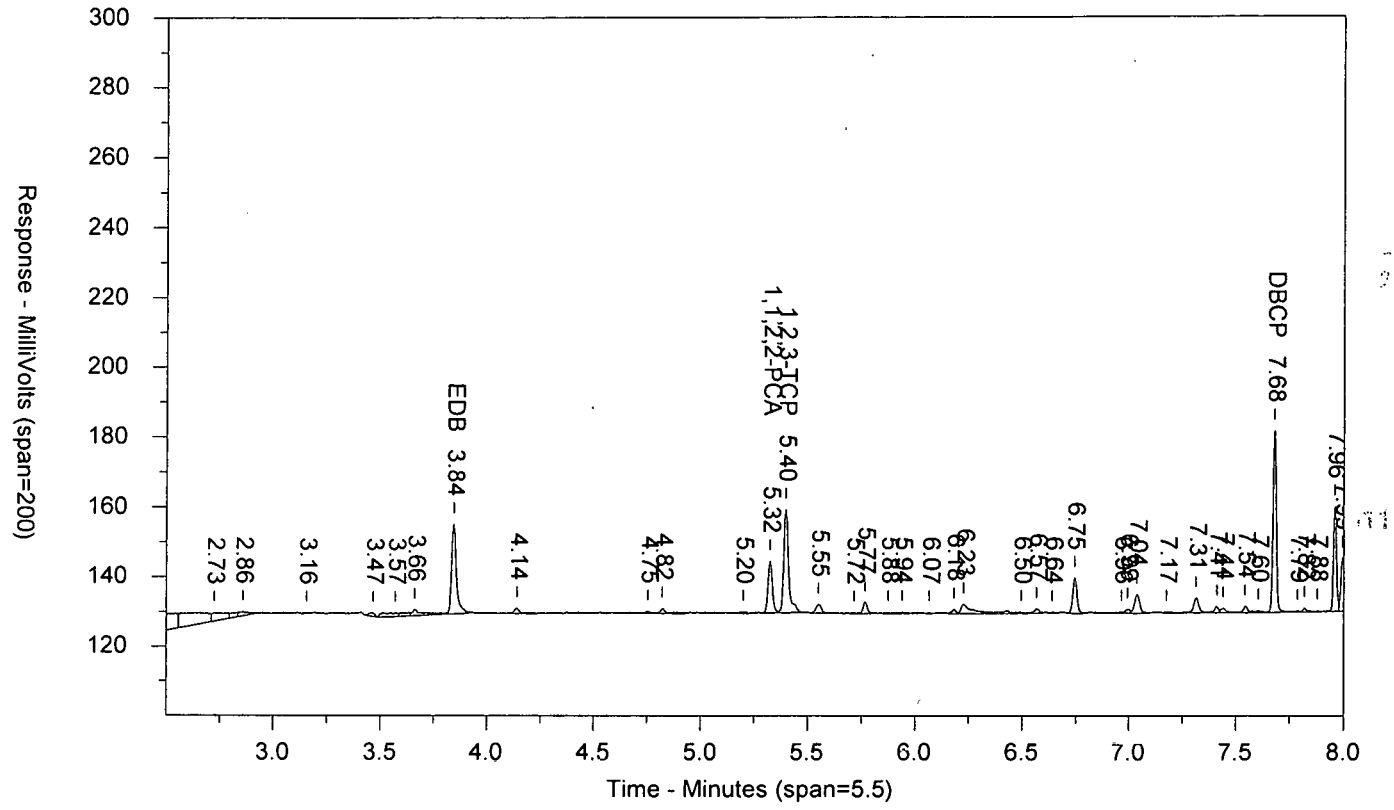
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 13627 | .063 | 1,1,2,2-PCA | 4.041 | 19513 | .071 | 1,1,2,2-PCA |
| 5.375 | 309 | -.069 | 1,2,3-TCP | 4.16 | 726 | -.071 | 1,2,3-TCP |

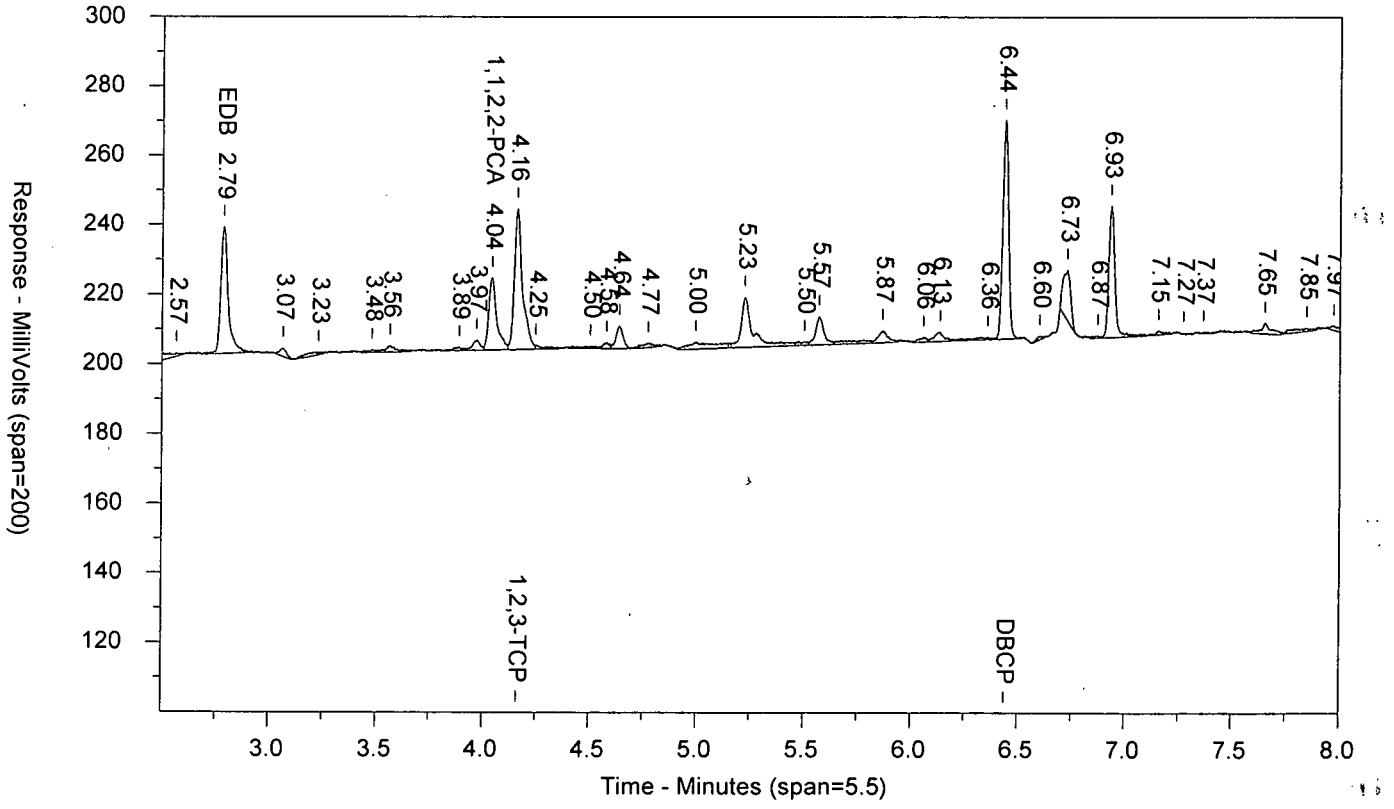
Files:
Area File: 18EDBS17205002.058.RAW
Area File: 18EDBS17205002B.058.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 2:50:46 AM
File Reported On: 7/26/2017 at 10:14:21 AM

EDB_41724DT QPEDB_4QP CCAL 1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.067.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002B.067.RAW



LANCASTER LABORATORIES

Sample Number: EDB_41724DT QPEDB_4QP CCAL 1720599999 10398 SW-846 8011
Injected On: 7/26/2017 5:05:13 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

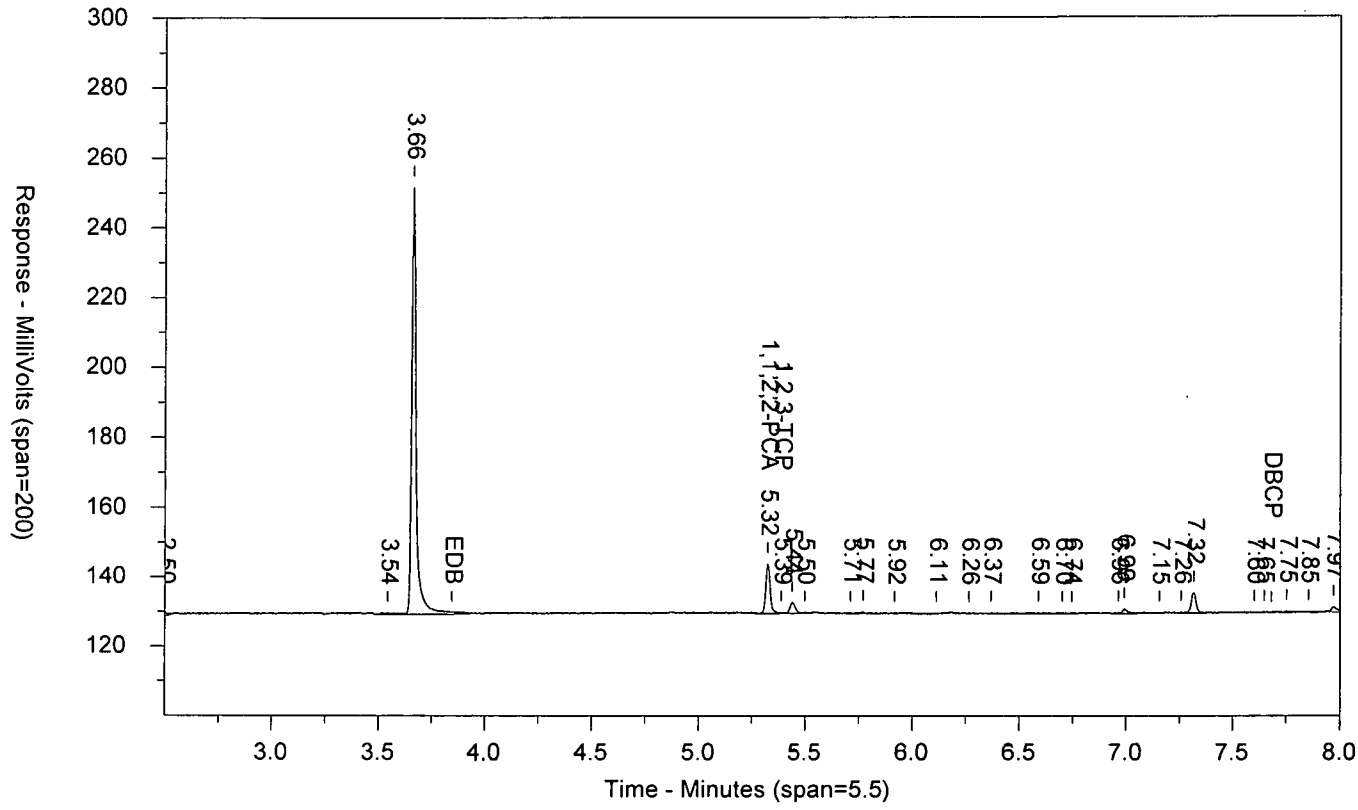
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 25801 | 2.727 | EDB | 2.787 | 36387 | 2.713 | EDB |
| 5.324 | 14874 | 1.206 | 1,1,2,2-PCA | 4.043 | 20753 | 1.319 | 1,1,2,2-PCA |
| 5.396 | 29550 | 19.17 | 1,2,3-TCP | 4.161 | 40482 | 20.114 | 1,2,3-TCP |
| 7.679 | 52020 | 2.328 | DBCP | 6.438 | 62965 | 2.881 | DBCP |

Files:
Area File: 18EDBS17205002.067.RAW
Area File: 18EDBS17205002B.067.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 5:13:47 AM
File Reported On: 7/26/2017 at 10:16:44 AM

EIBKX1724C UZPIBLKUZ PIBLK1720599999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.068.RAW

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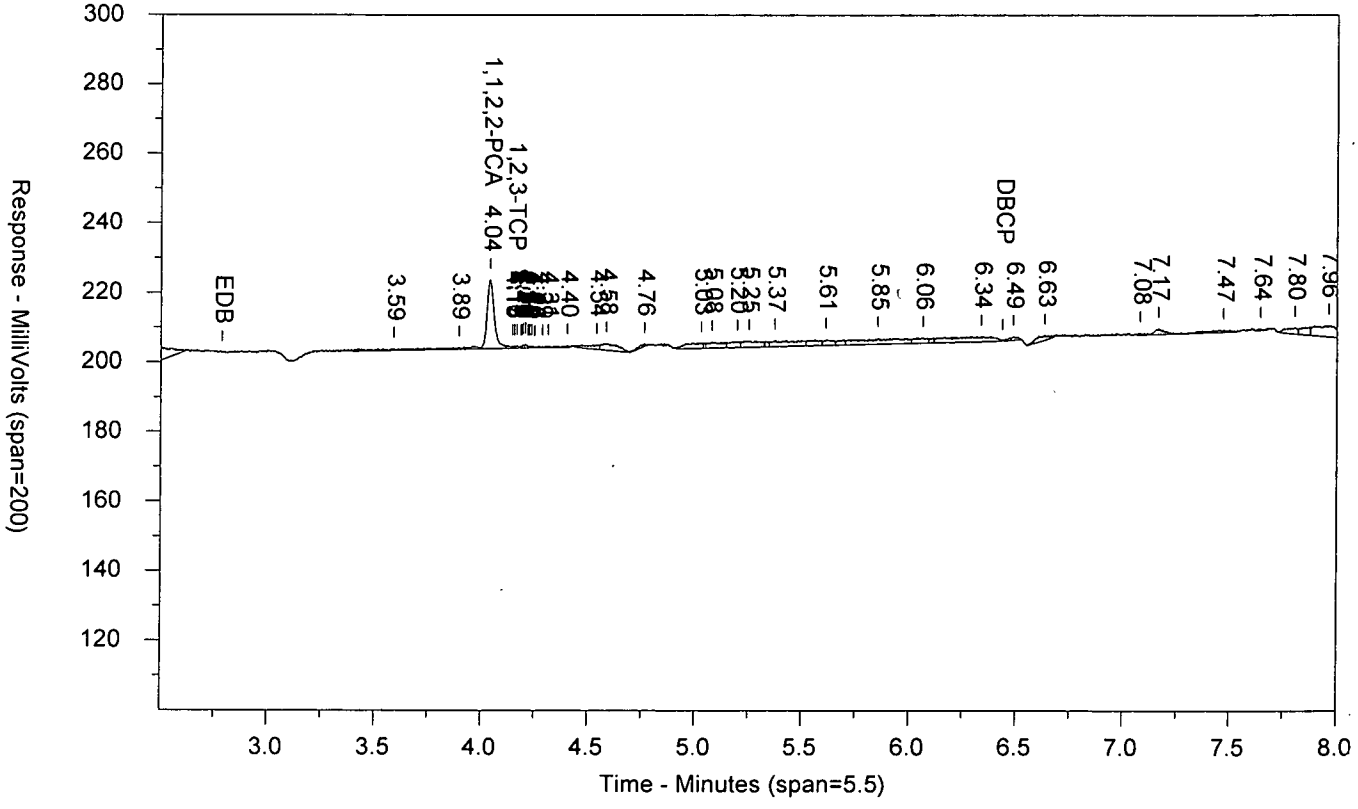

LANCASTER LABORATORIES

Sample Number: EIBKX1724C UZPIBLKUZ PIBLK1720599999 10398 SW-846 8011
Injected On: 7/26/2017 5:21:13 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.323 | 14350 | .066 | 1,1,2,2-PCA | 4.041 | 19895 | .072 | 1,1,2,2-PCA |
| 5.385 | 409 | -.065 | 1,2,3-TCP | 4.158 | 813 | -.068 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.068.RAW
Area File: 18EDBS17205002B.068.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 5:29:45 AM
File Reported On: 7/26/2017 at 10:16:58 AM

# Raw QC Data

# EDB/DBCP

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# Data Summary

**Sample Name: BLANKA** 7/25/17 PBLK30202 BLK Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 23:47:05 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.047.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 69% ( 46 - 136 ) Conc: 0.048302

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 23:47:05 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.047.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.052846

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10423 | 0.048302 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 413 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 14937 | 0.052846 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 984 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.048302 | 0.0035 | 0.007 | 0.007 | | 8.98 | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:34

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **BLANKA** 7/25/17 PBLK30202Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 23:47:05
Instrument : CP18--19846A
Result file : 18EDBS17205002.047.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 69% (46-136) Conc.: 0.048302

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.29 | 5.32 | 5.35 | 10423 | 0.048302 |
| 1,2,3-TCP | 5.37 | 5.40 | 5.43 | 413 | -0.064733 |

## Analysis Report (B)

Injected on : Jul 25, 2017 23:47:05
Instrument : CP18--19846B
Result file : 18EDBS17205002B.047.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.052846

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.01 | 4.04 | 4.07 | 14937 | 0.052846 |
| 1,2,3-TCP | 4.13 | 4.16 | 4.19 | 984 | -0.062748 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.048302 | | | | 8.98 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

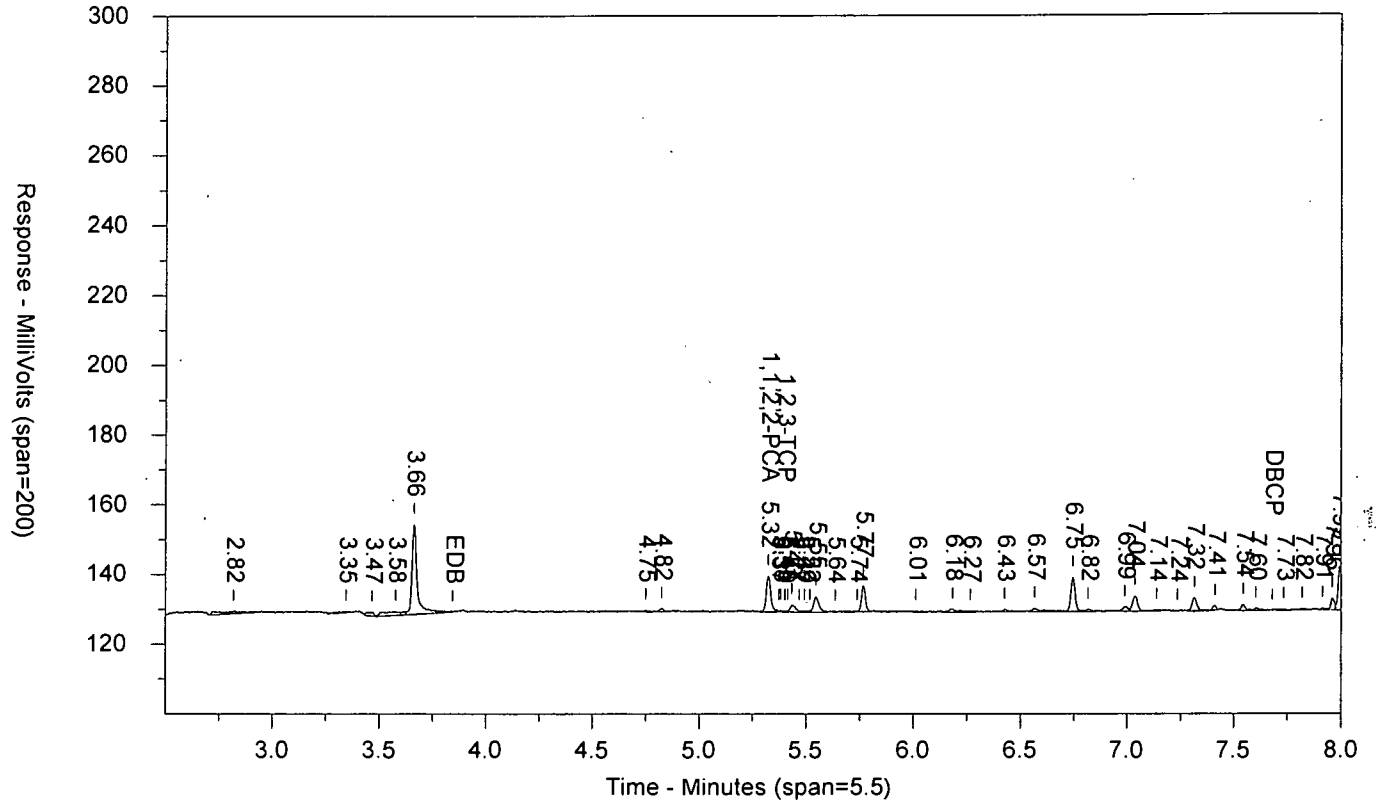
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

BLANKA 7/25/17 AAPBLK30202 BLK 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.047.RAW

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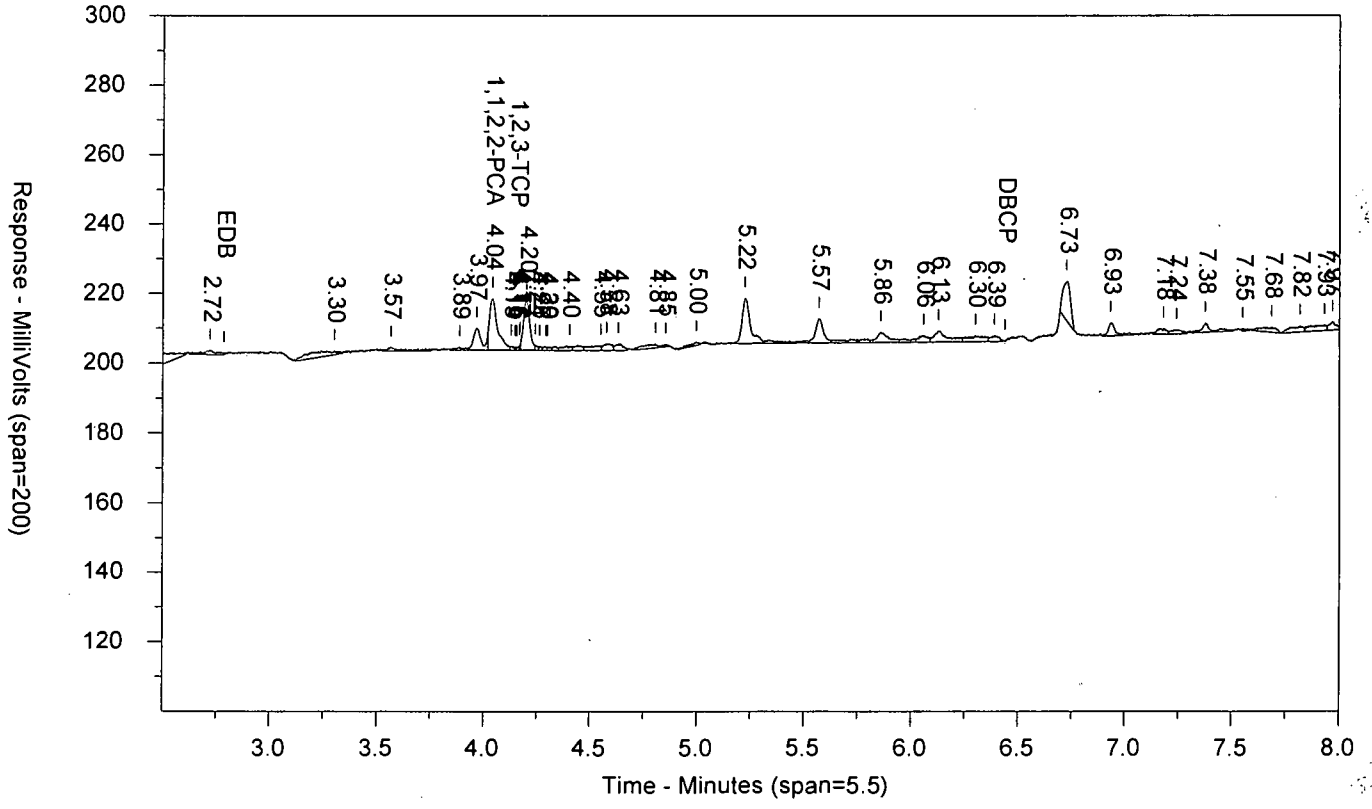

LANCASTER LABORATORIES

Sample Number: BLANKA 7/25/17 AAPBLK30202 BLK 172020030A 10398 SW-846 8011
Injected On: 7/25/2017 11:47:05 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 10423 | .048 | 1,1,2,2-PCA | 4.042 | 14937 | .053 | 1,1,2,2-PCA |
| 5.399 | 413 | -.065 | 1,2,3-TCP | 4.157 | 984 | -.063 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205002.047.RAW
Area File: 18EDBS17205002B.047.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 11:55:40 PM
File Reported On: 7/26/2017 at 10:11:30 AM

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# Data Summary

**Sample Name: LCSA** 7/25/17 LCS30202 LCS Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:03:07 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.048.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.052476

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:03:07 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.048.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.05927

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 23709 | 0.141989 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 11324 | 0.052476 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 31924 | 1.18993 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 50662 | 0.129537 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 33257 | 0.140466 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 16596 | 0.05927 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 44705 | 1.278972 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 60798 | 0.158425 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | A | 0.141989 | 0.01 | 0.02 | 0.03 | | 1.08 | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.052476 | 0.0035 | 0.007 | 0.007 | | 12.16 | |
| ☐ 1,2,3-Trichloropropane | A | 1.18993 | | | 0.27 | | 7.21 | |
| ☐ 1,2-Dibromo-3-chloroprop | A | 0.129537 | 0.01 | 0.02 | 0.03 | | 20.06 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:37

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/25/17 LCS30202 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 00:03:07
Instrument : CP18--19846A
Result file : 18EDBS17205002.048.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.052476

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 23709 | 0.141989 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 11324 | 0.052476 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 31924 | 1.189930 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 50662 | 0.129537 |

## Analysis Report (B)

Injected on : Jul 26, 2017 00:03:07
Instrument : CP18--19846B
Result file : 18EDBS17205002B.048.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.05927

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 33257 | 0.140466 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 16596 | 0.059270 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 44705 | 1.278972 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 60798 | 0.158425 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.141989 | 0.03 | 0.01 | | 1.08 | |
| ☐ 1,1,2,2-PCA | A | 0.052476 | | | | 12.16 | |
| ☑ 1,2,3-TCP | A | 1.189930 | 0.27 | 0.1 | | 7.21 | |
| ☑ DBCP | A | 0.129537 | 0.03 | 0.01 | | 20.06 | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 26 2017

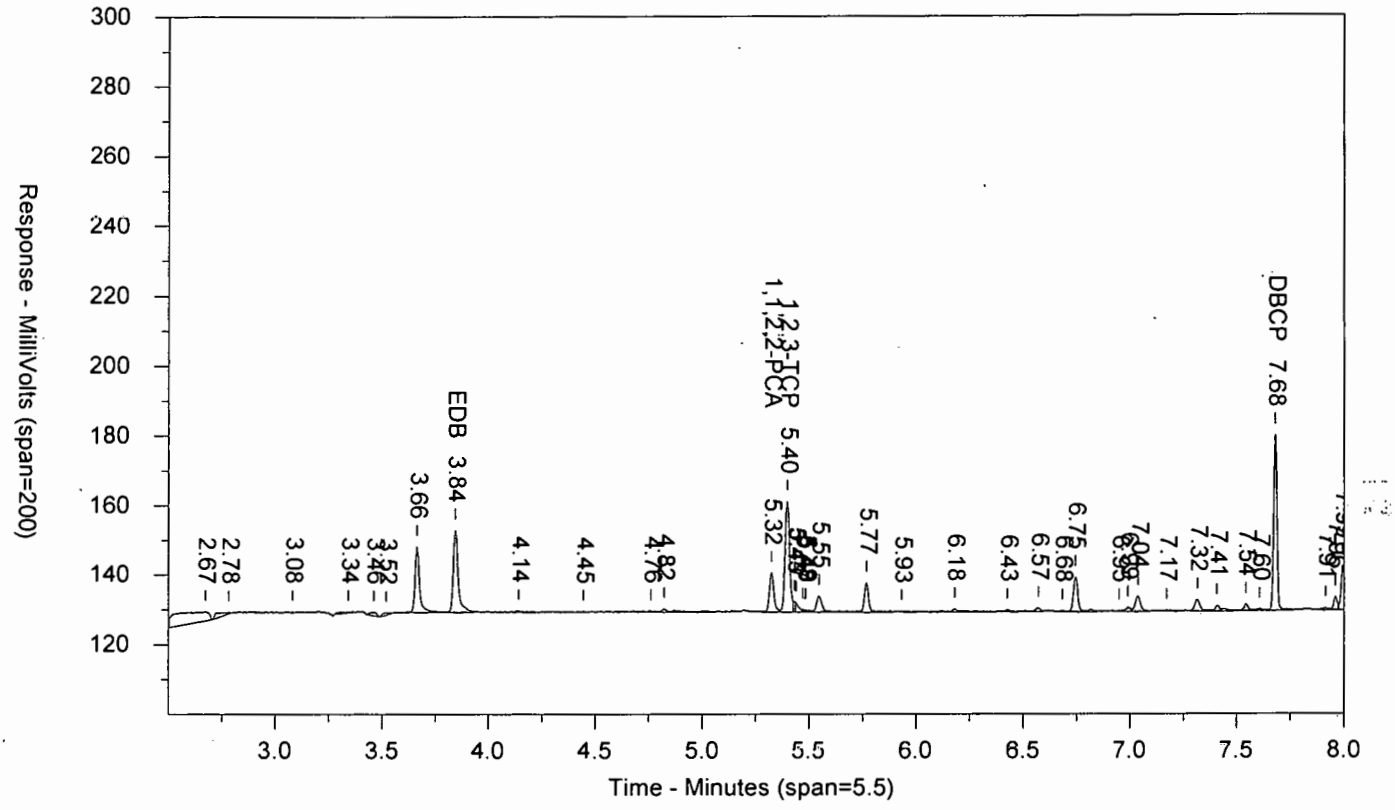
Verified by: Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSA 7/25/17 AALCS30202 LCS 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.048.RAW

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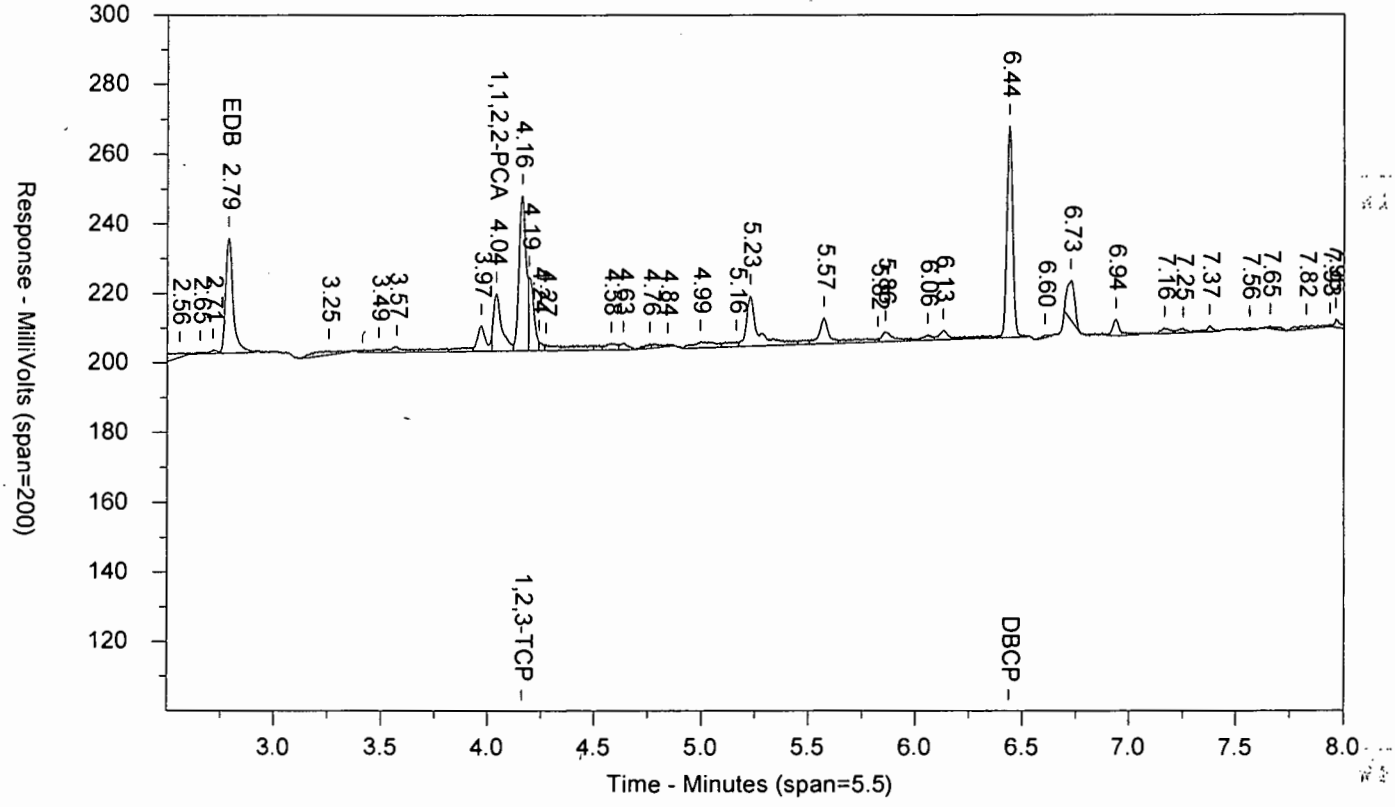


LANCASTER LABORATORIES

Sample Number: LCSA 7/25/17 AALCS30202 LCS 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 12:03:07 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 23709 | .142 | EDB | 2.787 | 33257 | .14 | EDB |
| 5.324 | 11324 | .052 | 1,1,2,2-PCA | 4.041 | 16596 | .059 | 1,1,2,2-PCA |
| 5.397 | 31924 | 1.19 | 1,2,3-TCP | 4.16 | 44705 | 1.279 | 1,2,3-TCP |
| 7.678 | 50662 | .13 | DBCP | 6.437 | 60798 | .158 | DBCP |

Files:
Area File: 18EDBS17205002.048.RAW
Area File: 18EDBS17205002B.048.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 12:11:38 AM
File Reported On: 7/26/2017 at 10:11:46 AM

# Data Summary

**Sample Name: LCSDA** 7/25/17 LCSD30202 LCSD Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:19:02 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205002.049.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 71% ( 46 - 136 ) Conc: 0.050252

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 26, 2017 00:19:02 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205002B.049.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 76% ( 46 - 136 ) Conc: 0.053853

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 23139 | 0.138217 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 10844 | 0.050252 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 32455 | 1.211081 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 50118 | 0.128145 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 32372 | 0.136347 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 15197 | 0.053853 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 43626 | 1.245853 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 60681 | 0.158091 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.138217 | 0.01 | 0.02 | 0.03 | | 1.36 | |
| 1,1,2,2-TETRACHLOROE | A | 0.050252 | 0.0035 | 0.007 | 0.007 | | 6.92 | |
| 1,2,3-Trichloropropane | A | 1.211081 | | | 0.27 | | 2.83 | |
| 1,2-Dibromo-3-chloroprop | A | 0.128145 | 0.01 | 0.02 | 0.03 | | 20.92 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/26/2017 15:40:40

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/25/17 LCSD30202 Sample ID: AA **Batchnumber: 172020030A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 26, 2017 00:19:02
Instrument : CP18--19846A
Result file : 18EDBS17205002.049.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 71% (46-136) Conc.: 0.050252

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 23139 | 0.138217 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 10844 | 0.050252 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 32455 | 1.211081 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 50118 | 0.128145 |

## Analysis Report (B)

Injected on : Jul 26, 2017 00:19:02
Instrument : CP18--19846B
Result file : 18EDBS17205002B.049.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 76% (46-136) Conc.: 0.053853

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 32372 | 0.136347 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 15197 | 0.053853 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 43626 | 1.245853 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 60681 | 0.158091 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.138217 | 0.03 | 0.01 | | 1.36 | |
| ☐ 1,1,2,2-PCA | A | 0.050252 | | | | 6.92 | |
| ☑ 1,2,3-TCP | A | 1.211081 | 0.27 | 0.1 | | 2.83 | |
| ☑ DBCP | A | 0.128145 | 0.03 | 0.01 | | 20.92 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 26 2017

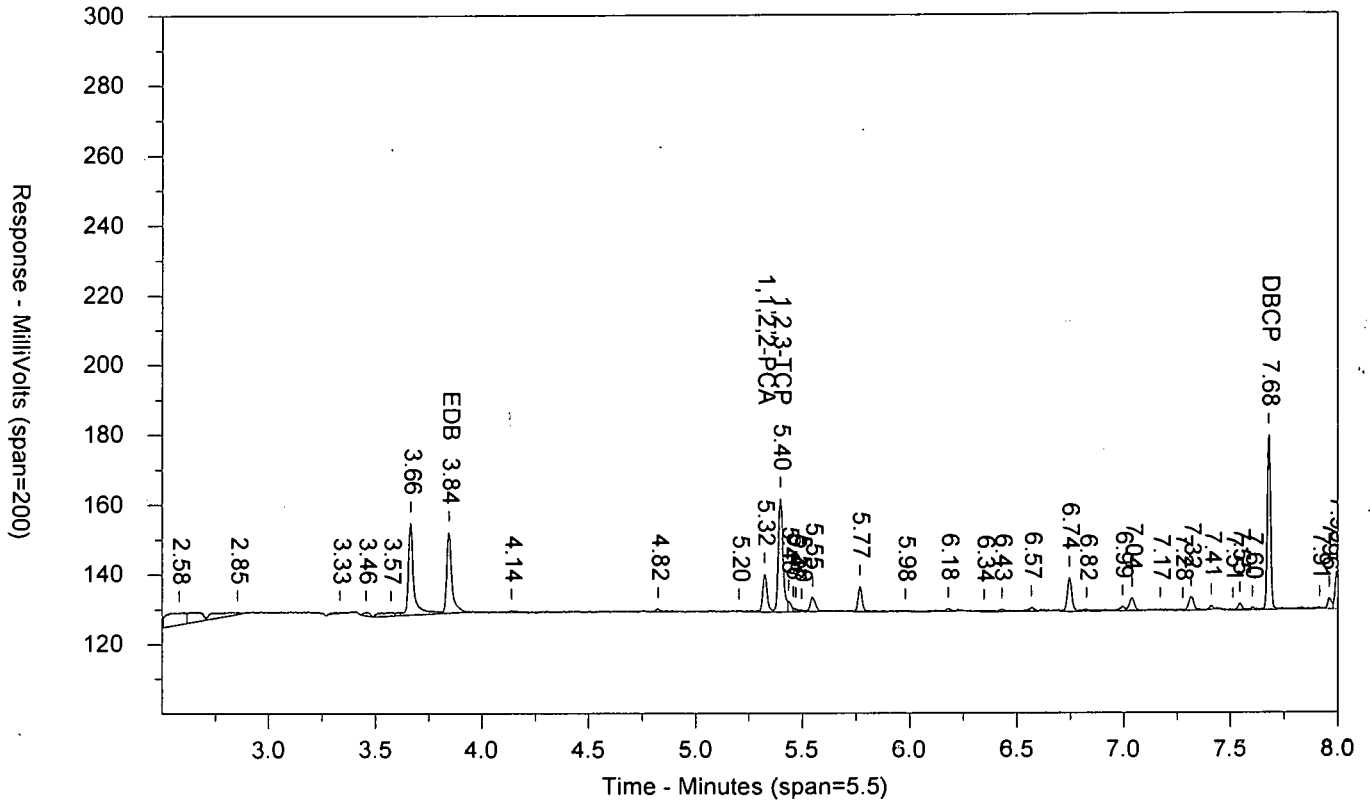
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

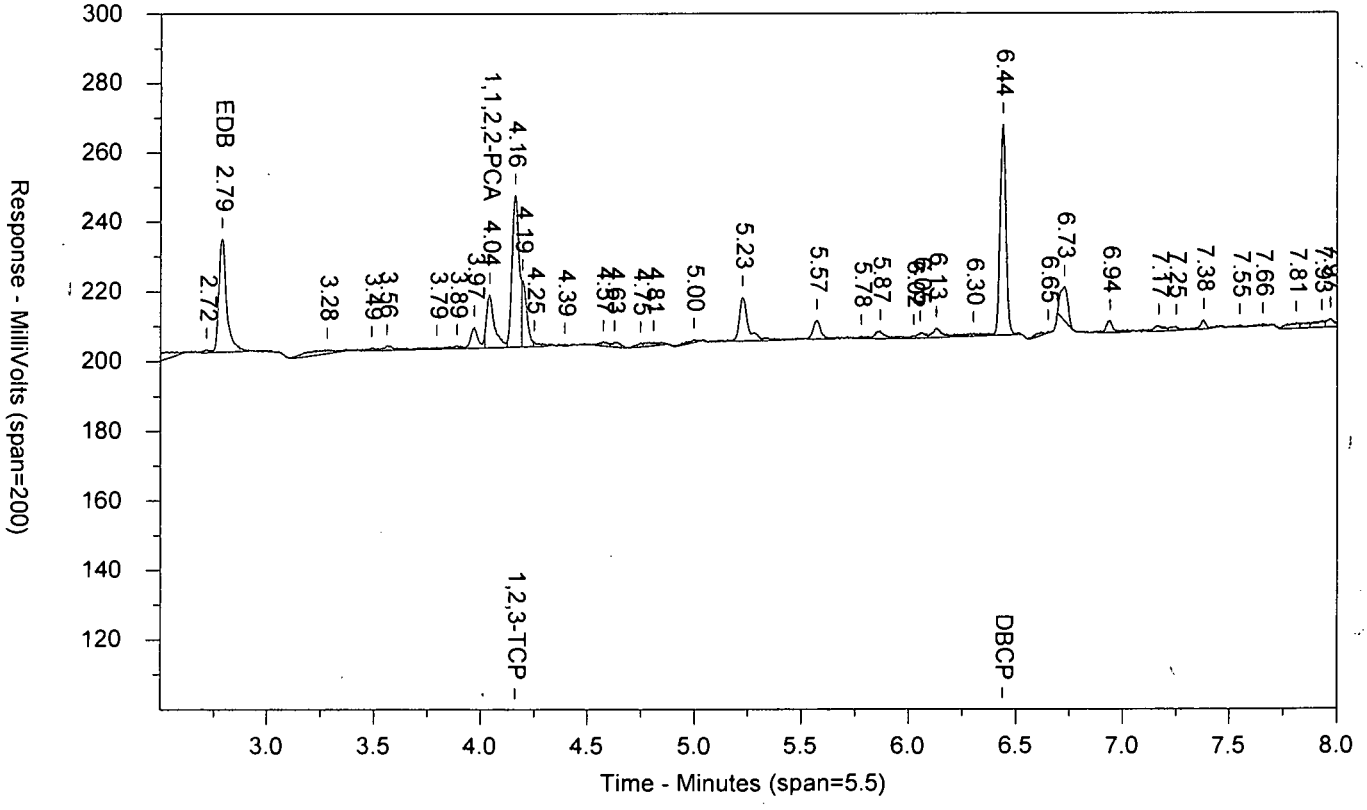
* Recovery outside QC Limits

LCSDA 7/25/17 AALCSD30202 LCSD 172020030A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002.049.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205002B.049.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 7/25/17 AALCSD30202 LCSD 172020030A 10398 SW-846 8011
Injected On: 7/26/2017 12:19:02 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 23139 | .138 | EDB | 2.788 | 32372 | .136 | EDB |
| 5.324 | 10844 | .05 | 1,1,2,2-PCA | 4.042 | 15197 | .054 | 1,1,2,2-PCA |
| 5.397 | 32455 | 1.211 | 1,2,3-TCP | 4.161 | 43626 | 1.246 | 1,2,3-TCP |
| 7.679 | 50118 | .128 | DBCP | 6.438 | 60681 | .158 | DBCP |

Files:
Area File: 18EDBS17205002.049.RAW
Area File: 18EDBS17205002B.049.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/26/2017 12:27:33 AM
File Reported On: 7/26/2017 at 10:12:00 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 898 Olivia Arosemena Reviewed by: 898 Start Date: 07/25/2017 Start Time: 10:30

**172020030A**

Tech 1: _____ Tech 2: _____

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9109781MS | 18805MS | 36.56 | SS1718724B | .1 | MS1718124B | .07 | 2 | ZN | 8 Z<2 | 057a | clear;slightly dirty |
| 9109784DUP | 18808DUP | 36.56 | SS1718724B | .1 | | | 2 | ZN | Z<2 | 057a | clear;slightly dirty |
| BLANKA | PBLK30202 | 35 | SS1718724B | .1 | | | 2 | Z | Z | | DI H2O |
| LCSA | LCS30202 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | Z | Z | | DI H2O |
| LCSDA | LCSD30202 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | Z | Z | | DI H2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391F |
| Vial Preservative Lot# | 2391 |
| | |

(8) 898 7-25-17 Notchlorine For Sample <2 pH for all Samples

Spike Solutions: Witness: _____

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9109781 | 18805 | 36.33 | SS1718724B | 0.10 | 2.00 | 8 Z N | 8 Z <2 | 057b | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 2 9109782 | 18806 | 36.59 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty; | 10398 | 17641 | 07/31/2017 | N |
| 3 9109783 | 18807 | 36.29 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 4 9109784 | 18808 | 36.59 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057b | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 5 9109785 | 18809 | 36.33 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty; | 10398 | 17641 | 07/31/2017 | N |
| 6 9109786 | 18810 | 36.25 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 7 9109787 | 18811 | 36.51 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 8 9109788 | 18812 | 36.45 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 07/31/2017 | N |
| 9 9112123 | 18901 | 36.51 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |
| 10 9112125 | 18903 | 36.53 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |
| 11 9112126 | 18904 | 36.87 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |
| 12 9112127 | 18905 | 36.86 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |
| 13 9112128 | 18906 | 36.30 | SS1718724B | 0.10 | 2.00 | Z | Z <2 | 057a | clear;slightly dirty | 10398 | 17641 | 08/01/2017 | N |

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| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172020030A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

# Metals in Liquid Data

# Case Narrative/Conformance Summary

# Metals in Liquid

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## ICP Metals

**Fraction: Metals in Liquid**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9112123 | GW012R-173 | X | | 1 | |
| 9112124 | GW012R-173 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## ICP Metals

**Fraction: Metals in Liquid**

**Abbreviation Key**

| | |
|---|---|
| BKG – Background | AF - Cold Vapor Atomic Fluorescence |
| DUP – Duplicate | U - Below MDL |
| MS - Matrix Spike | B - Below LOQ |
| MSD - Matrix Spike Dup | N - Matrix Spike out of specifications |
| B – Blank | * - Duplicate out of specifications |
| Q - Laboratory Control Sample | E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution |
| Y - Laboratory Control Sample Duplicate | A - Post Digestion Spike |
| P - ICP Atomic Emission Spectrometer | L - Serial Dilution |
| MS - ICP Mass Spectrometry | R - Internal Standard Relative Intensity OOS |
| CV - Cold Vapor | NR - Not Required |

# Sample Data

# Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR189
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9112123, 9112123BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/20/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7440-70-2 | Calcium | 198000 | | | P |
| 7439-92-1 | Lead | 0.19 | B | | MS |
| 7439-95-4 | Magnesium | 30100 | | | P |
| 7440-09-7 | Potassium | 5100 | | | P |
| 7440-23-5 | Sodium | 57400 | | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR189
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9112124BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/20/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

# Quality Control and Calibration Summary Forms

# Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR189
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Calcium | 172051063502 | 9112123 |
| Iron | | 9112124BKG |
| Magnesium | | 9112124MS |
| Manganese | | 9112124MSD |
| Potassium | | 9112124DUP |
| Sodium | | P20563BB |
| | | P20563BQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR189
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Arsenic | 172051063901 | 9112123BKG |
| Lead | | 9112123MS |
| | | 9112123MSD |
| | | 9112123DUP |
| | | P20563AB |
| | | P20563AQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR189

Method: P
Run Name: 1720606T71
Calibration Date(s): 07/25/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Calcium | | 30000.0 | 30792.71 | 102.6 | 25000.0 | 25304.86 | 101.2 | 25000.0 | 25026.04 | 100.1 |
| Iron | | 30000.0 | 30037.87 | 100.1 | 25000.0 | 24770.23 | 99.1 | 25000.0 | 24840.55 | 99.4 |
| Magnesium | | 30000.0 | 30465.42 | 101.6 | 25000.0 | 25023.97 | 100.1 | 25000.0 | 24930.93 | 99.7 |
| Manganese | | 600.0 | 596.58 | 99.4 | 500.0 | 494.02 | 98.8 | 500.0 | 486.82 | 97.4 |
| Potassium | | 30000.0 | 30438.71 | 101.5 | 25000.0 | 25172.41 | 100.7 | 25000.0 | 25321.90 | 101.3 |
| Sodium | | 30000.0 | 30134.36 | 100.4 | 25000.0 | 25483.17 | 101.9 | 25000.0 | 25193.56 | 100.8 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR189

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Arsenic | 75 | 500.0 | 509.20 | 101.8 | 250.0 | 263.50 | 105.4 | 250.0 | 253.60 | 101.4 |
| Lead | 208 | 50.0 | 50.78 | 101.6 | 25.0 | 25.65 | 102.6 | 25.0 | 25.11 | 100.4 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR189

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | | | 250.0 | 252.10 | 100.8 | 250.0 | 252.50 | 101.0 |
| Lead | 208 | | | | 25.0 | 24.94 | 99.8 | 25.0 | 25.12 | 100.5 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR189

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | | | 250.0 | 256.50 | 102.6 | 250.0 | 245.50 | 98.2 |
| Lead | 208 | | | | 25.0 | 24.92 | 99.7 | 25.0 | 25.08 | 100.3 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Run Name: 1720606T71
Calibration Date(s): 07/25/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Calcium | | 400.0 | 416.11 | 104.0 | | |
| Iron | | 400.0 | 408.64 | 102.2 | | |
| Magnesium | | 200.0 | 213.63 | 106.8 | | |
| Manganese | | 10.0 | 10.67 | 106.7 | | |
| Potassium | | 1000.0 | 1076.58 | 107.7 | | |
| Sodium | | 2000.0 | 2054.96 | 102.7 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR189

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Arsenic | 75 | 4.0 | 4.05 | 101.3 | 3.65 | 91.3 |
| Lead | 208 | 2.0 | 1.99 | 99.5 | 1.99 | 99.5 |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Run Name: 1720606T71
Calibration Date(s): 07/25/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Calcium | | 33.4 | U | 33.4 | U | 33.4 | U | | | | 60.000 | U | 172051063502 |
| Iron | | 33.4 | U | 33.4 | U | 33.4 | U | | | | 80.500 | U | 172051063502 |
| Magnesium | | 16.7 | U | 16.7 | U | 16.7 | U | | | | 37.400 | U | 172051063502 |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | | | | 1.600 | U | 172051063502 |
| Potassium | | 127 | U | 127 | U | 127 | U | | | | 179.000 | U | 172051063502 |
| Sodium | | 167 | U | 167 | U | 167 | U | | | | 321.000 | U | 172051063502 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Arsenic | 75 | 0.49 | B | 0.40 | U | 0.40 | U | 0.40 | U | 75 | 0.720 | U | 172051063901A |
| Lead | 208 | 0.038 | U | 0.038 | U | 0.038 | U | 0.038 | U | 208 | 0.110 | U | 172051063901A |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR189

Method: MS
Run Name: 1720704E03
Calibration Date(s): 07/26/2017

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Arsenic | 75 | | | 0.40 | U | 0.40 | U | 0.40 | U | | | | |
| Lead | 208 | | | 0.038 | U | 0.038 | U | 0.038 | U | | | | |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence | U= Below IDL/MDL<br>B= Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR189

Instrument ID: 16315
Run Name: 1720606T71
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 523946 | 104.8 | 522955.2 | 104.6 | | | | |
| Calcium | 500000 | 500000 | 522383 | 104.5 | 523195.8 | 104.6 | | | | |
| Iron | 200000 | 200000 | 207499 | 103.7 | 206636.6 | 103.3 | | | | |
| Magnesium | 500000 | 500000 | 506075 | 101.2 | 512164.1 | 102.4 | | | | |
| Manganese | 0 | 500 | 1 | | 482.5 | 96.5 | | | | |
| Potassium | 0 | 0 | 108 | | 85.6 | | | | | |
| Sodium | 0 | 0 | 32 | | 28.9 | | | | | |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR189

Instrument ID: 11332
Run Name: 1720704E03
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 109200 | 109.2 | 106200.0 | 106.2 |
| Arsenic | 75 | 0 | 100 | 1 | | 100.7 | 100.7 |
| Calcium | 44 | 300000 | 300000 | 307800 | 102.6 | 298700.0 | 99.6 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Iron | 57 | 250000 | 250000 | 265000 | 106.0 | 257800.0 | 103.1 |
| Lead | 208 | 0 | 0 | 0 | | 0.3 | |
| Magnesium | 24 | 100000 | 100000 | 106500 | 106.5 | 103800.0 | 103.8 |
| Molybdenum | 98 | 2000 | 2000 | 2260 | 113.0 | 2284.0 | 114.2 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 115000 | 115.0 | 112200.0 | 112.2 |
| Sodium | 23 | 250000 | 250000 | 258300 | 103.3 | 251800.0 | 100.7 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Titanium | 47 | 2000 | 2000 | 2242 | 112.1 | 2204.0 | 110.2 |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR189

Instrument ID: 11332
Run Name: 1720704E03
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 106500 | 106.5 | 106500.0 | 106.5 |
| Arsenic | 75 | 0 | 100 | 1 | | 100.4 | 100.4 |
| Calcium | 44 | 300000 | 300000 | 306700 | 102.2 | 299800.0 | 99.9 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Iron | 57 | 250000 | 250000 | 260600 | 104.2 | 258200.0 | 103.3 |
| Lead | 208 | 0 | 0 | 0 | | 0.3 | |
| Magnesium | 24 | 100000 | 100000 | 105000 | 105.0 | 104600.0 | 104.6 |
| Molybdenum | 98 | 2000 | 2000 | 2231 | 111.6 | 2299.0 | 115.0 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 113900 | 113.9 | 113400.0 | 113.4 |
| Sodium | 23 | 250000 | 250000 | 254200 | 101.7 | 254900.0 | 102.0 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Titanium | 47 | 2000 | 2000 | 2195 | 109.8 | 2216.0 | 110.8 |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR189
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9112123BKG Matrix Spike Lab Sample ID: 9112123MS Matrix Spike Duplicate Lab Sample ID: 9112123MSD
Batch Number(s): 172051063901

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Arsenic | 75 | 0.7230 | U | 10.8300 | | 10.2000 | | 10.0000 | 10.0000 | UG/L | 108 | | 102 | | 6 | | 84 - 116 | 20 | MS |
| Lead | 208 | 0.1887 | B | 15.9100 | | 15.4900 | | 15.0000 | 15.0000 | UG/L | 105 | | 102 | | 3 | | 88 - 115 | 20 | MS |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR189
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9112124BKG Matrix Spike Lab Sample ID: 9112124MS Matrix Spike Duplicate Lab Sample ID: 9112124MSD
Batch Number(s): 172051063502

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Calcium | | 202916.6700 | | 202996.6100 | | 201570.7500 | | 4000.0000 | 4000.0000 | UG/L | 2 | | -34 | | 1 | | | 20 | P |
| Iron | | 80.5000 | U | 1015.8100 | | 1005.5500 | | 1000.0000 | 1000.0000 | UG/L | 102 | | 101 | | 1 | | 87 - 115 | 20 | P |
| Magnesium | | 30888.4700 | | 32646.0100 | | 32232.1300 | | 2000.0000 | 2000.0000 | UG/L | 88 | | 67 | | 1 | | | 20 | P |
| Manganese | | 1.6000 | U | 506.7900 | | 497.9200 | | 500.0000 | 500.0000 | UG/L | 101 | | 100 | | 2 | | 90 - 114 | 20 | P |
| Potassium | | 5196.2800 | | 15784.7700 | | 15555.7900 | | 10000.0000 | 10000.0000 | UG/L | 106 | | 104 | | 1 | | 86 - 114 | 20 | P |
| Sodium | | 58840.4700 | | 68030.7500 | | 67280.1300 | | 10000.0000 | 10000.0000 | UG/L | 92 | | 84 | | 1 | | | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR189
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9112123BKG Duplicate Lab Sample ID: 9112123DUP
Batch Number(s): 172051063901
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | | 0.7230 | U | 0.7230 | U | | | MS |
| Lead | 208 | | 0.1887 | B | 0.1804 | B | 4 | | MS |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR189
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9112124BKG Duplicate Lab Sample ID: 9112124DUP
Batch Number(s): 172051063502
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | | | 202916.6700 | | 203809.8100 | | 0 | | P |
| Iron | | | 80.5000 | U | 80.5000 | U | | | P |
| Magnesium | | | 30888.4700 | | 31160.2900 | | 1 | | P |
| Manganese | | | 1.6000 | U | 1.6000 | U | | | P |
| Potassium | | | 5196.2800 | | 5234.5700 | | 1 | | P |
| Sodium | | | 58840.4700 | | 59230.8000 | | 1 | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR189
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 172051063901 | UG/L | 10.000 | 9.748 | | 84 - 116 | 97 | MS | Yes |
| Calcium | | 172051063502 | UG/L | 4000.000 | 4212.510 | | 87 - 113 | 105 | P | Yes |
| Iron | | 172051063502 | UG/L | 1000.000 | 1017.760 | | 87 - 115 | 102 | P | Yes |
| Lead | 208 | 172051063901 | UG/L | 15.000 | 14.650 | | 88 - 115 | 98 | MS | Yes |
| Magnesium | | 172051063502 | UG/L | 2000.000 | 2117.240 | | 85 - 113 | 106 | P | Yes |
| Manganese | | 172051063502 | UG/L | 500.000 | 516.940 | | 90 - 114 | 103 | P | Yes |
| Potassium | | 172051063502 | UG/L | 10000.000 | 10636.790 | | 86 - 114 | 106 | P | Yes |
| Sodium | | 172051063502 | UG/L | 10000.000 | 10328.630 | | 87 - 115 | 103 | P | Yes |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR189
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9112123BKG Serial Dilution Lab Sample ID: 9112123L
Batch Number(s): 172051063901
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 75 | 0.7230 | U | 3.6150 | U | | | MS |
| Lead | 208 | 0.1887 | B | 0.5550 | U | 100 | | MS |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR189
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9112124BKG Serial Dilution Lab Sample ID: 9112124L
Batch Number(s): 172051063502
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Calcium | | 202916.6700 | | 196025.8500 | | 3 | | P |
| Iron | | 80.5000 | U | 402.5000 | U | | | P |
| Magnesium | | 30888.4700 | | 31046.2500 | | 1 | | P |
| Manganese | | 1.6000 | U | 8.0000 | U | | | P |
| Potassium | | 5196.2800 | | 4790.0000 | B | 8 | | P |
| Sodium | | 58840.4700 | | 58171.8500 | | 1 | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Calcium | 317.93 | | 33.4 |
| Iron | 261.19 | | 33.4 |
| Magnesium | 285.21 | | 16.7 |
| Manganese | 257.61 | | 0.83 |
| Potassium | 766.49 | | 127 |
| Sodium | 589.59 | | 167 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS (QUARTERLY)
SDG No.: KR189

Method: MS
Instrument ID: 11332
Date: 07/2017

| Analyte | MASS (amu) | Background | IDL (UG/L) |
|---|---|---|---|
| Arsenic | 75 | | 0.40 |
| Lead | 208 | | 0.038 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR189
Matrix: WATER

Method: P
Date: 06/2017

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Calcium | 317.93 | | 400 | 60.0 |
| Iron | 261.19 | | 400 | 80.5 |
| Magnesium | 285.21 | | 200 | 37.4 |
| Manganese | 257.61 | | 10.0 | 1.6 |
| Potassium | 766.49 | | 1000 | 179 |
| Sodium | 589.59 | | 2000 | 321 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR189
Matrix: WATER

Method: MS
Date: 06/2017

| Analyte | Mass | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Arsenic | 75 | | 4.0 | 0.72 |
| Lead | 208 | | 2.0 | 0.11 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 11
ICP INTERELEMENT CORRECTION FACTORS (BIANNUALLY)
SDG No.: KR189

Instrument ID: 16315
Date: 05/2017

| Analyte | Wavelength (nm) | Interelement Correction Factor for: AL | CA | FE | MG | -- |
|---|---|---|---|---|---|---|
| Magnesium | 285.21 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | |
| Manganese | 257.61 | 0.0000000 | 0.0000000 | 0.0000180 | 0.0000000 | |
| Potassium | 766.49 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | |

Comments:
_____
_____
_____
_____

QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR189

Method: P
Instrument ID: 16315
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Calcium | 317.93 | 10.00 | 600000.0 |
| Iron | 261.19 | 10.00 | 300000.0 |
| Magnesium | 285.21 | 10.00 | 600000.0 |
| Manganese | 257.61 | 10.00 | 20000.0 |
| Potassium | 766.49 | 10.00 | 500000.0 |
| Sodium | 589.59 | 10.00 | 500000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Batch Number: 172051063502

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9112123 | 07/25/2017 | 50.00 | 50 |
| 9112124BKG | 07/25/2017 | 50.00 | 50 |
| 9112124DUP | 07/25/2017 | 50.00 | 50 |
| 9112124MSD | 07/25/2017 | 50.00 | 50 |
| 9112124MS | 07/25/2017 | 50.00 | 50 |
| P20563BB | 07/25/2017 | 50.00 | 50 |
| P20563BQ | 07/25/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: MS
Batch Number: 172051063901

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9112123BKG | 07/25/2017 | 50.00 | 50 |
| 9112123DUP | 07/25/2017 | 50.00 | 50 |
| 9112123MSD | 07/25/2017 | 50.00 | 50 |
| 9112123MS | 07/25/2017 | 50.00 | 50 |
| P20563AB | 07/25/2017 | 50.00 | 50 |
| P20563AQ | 07/25/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR189

Method: P
Instrument ID: 16315
Run Name: 1720606T71

Run Start Date: 07/25/2017
Run End Date: 07/25/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 14:44 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 14:47 | | X | X | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 14:50 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 14:54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 14:57 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 14:59 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 15:03 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 15:06 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 15:09 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 15:12 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 15:15 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| P20563BB | 1.00 | 15:18 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| P20563BQ | 1.00 | 15:21 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9112124BKG | 1.00 | 15:24 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9112124A | 1.00 | 15:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9112124DUP | 1.00 | 15:31 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9112124MS | 1.00 | 15:34 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9112124MSD | 1.00 | 15:37 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9112124L | 5.00 | 15:40 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| 9112123 | 1.00 | 15:43 | | X | | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 15:47 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 15:49 | | X | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR189

Method: MS
Instrument ID: 11332
Run Name: 1720704E03

Run Start Date: 07/26/2017
Run End Date: 07/26/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 08:56 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 08:57 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 08:59 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 09:01 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 09:03 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 09:04 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 09:06 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 09:08 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 09:09 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 09:13 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 09:15 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 09:28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 09:33 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 09:35 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 09:54 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 09:55 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 09:57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 10.00 | 09:59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR189

Method: MS
Instrument ID: 11332
Run Name: 1720704E03

Run Start Date: 07/26/2017
Run End Date: 07/26/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AS | CA | FE | PB | MG | MN | K | NA | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 10:01 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 10:02 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 10:04 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:07 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:09 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 10:23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 10.00 | 10:26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:28 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:29 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P20563AB | 1.00 | 10:31 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P20563AQ | 1.00 | 10:33 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9112123BKG | 1.00 | 10:35 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9112123A | 1.00 | 10:36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9112123DUP | 1.00 | 10:38 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9112123MS | 1.00 | 10:40 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9112123MSD | 1.00 | 10:41 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9112123L | 5.00 | 10:43 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:45 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:47 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
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LEGEND:
BKG = Background
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MS = Matrix Spike
MSD = Matrix Spike Duplicate
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L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 15
ICP-MS TUNE
SDG No.: KR189
Matrix: WATER

Instrument ID: 11332
Date: 07/25/2017

| Analyte | Mass | Avg. Measured Mass (amu) | Avg. Peak Width at 5% Peak Height (amu) | %RSD |
|---|---|---|---|---|
| Lithium | 6.000 | 6.00 | 0.70 | 1.8 |
| Magnesium | 24.000 | 23.95 | 0.65 | 1.1 |
| Rhodium | 103.000 | 103.00 | 0.65 | 1.3 |
| Indium | 115.000 | 115.00 | 0.65 | 0.5 |
| Cerium | 140.000 | 140.00 | 0.65 | 1.1 |
| Lead | 208.000 | 207.95 | 0.60 | 2.2 |
| Uranium | 238.000 | 237.90 | 0.55 | 1.2 |

Comments:

_____
_____
_____
_____

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR189

Instrument ID: 11332
Run Name: 1720704E03

Start Date: 07/26/2017
End Date: 07/26/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| BI-1-209 | PB | IN-1-115 | AS |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element BI-1-209 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S0 | 08:56 | 100 | | 100 | | | | | | | | | | | |
| S | 08:57 | 94 | | 93 | | | | | | | | | | | |
| CCS | 08:59 | 94 | | 96 | | | | | | | | | | | |
| CCS | 09:01 | 95 | | 96 | | | | | | | | | | | |
| ICV | 09:03 | 95 | | 96 | | | | | | | | | | | |
| ICB | 09:04 | 97 | | 100 | | | | | | | | | | | |
| LLC | 09:06 | 99 | | 101 | | | | | | | | | | | |
| ICSA | 09:08 | 89 | | 83 | | | | | | | | | | | |
| ICSAB | 09:09 | 94 | | 87 | | | | | | | | | | | |
| ZZZZZZ | 09:11 | | | | | | | | | | | | | | |
| CCV | 09:13 | 97 | | 100 | | | | | | | | | | | |
| CCB | 09:15 | 100 | | 101 | | | | | | | | | | | |
| ZZZZZZ | 09:16 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:18 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:20 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:21 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:23 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:25 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:27 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:28 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:30 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:32 | | | | | | | | | | | | | | |
| CCV | 09:33 | 99 | | 101 | | | | | | | | | | | |
| CCB | 09:35 | 101 | | 102 | | | | | | | | | | | |
| ZZZZZZ | 09:37 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:38 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:40 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:42 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:43 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:45 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:47 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:49 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:50 | | | | | | | | | | | | | | |

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike

FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR189

Instrument ID: 11332
Run Name: 1720704E03

Start Date: 07/26/2017
End Date: 07/26/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| BI-1-209 | PB | IN-1-115 | AS |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element BI-1-209 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZZZZZZ | 09:52 | | | | | | | | | | | | | | |
| CCV | 09:54 | 100 | | 102 | | | | | | | | | | | |
| CCB | 09:55 | 100 | | 102 | | | | | | | | | | | |
| ZZZZZZ | 09:57 | | | | | | | | | | | | | | |
| ZZZZZZ | 09:59 | | | | | | | | | | | | | | |
| LLC | 10:01 | 102 | | 100 | | | | | | | | | | | |
| ICSA | 10:02 | 94 | | 86 | | | | | | | | | | | |
| ICSAB | 10:04 | 93 | | 86 | | | | | | | | | | | |
| ZZZZZZ | 10:06 | | | | | | | | | | | | | | |
| CCV | 10:07 | 103 | | 104 | | | | | | | | | | | |
| CCB | 10:09 | 100 | | 102 | | | | | | | | | | | |
| ZZZZZZ | 10:11 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:12 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:14 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:16 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:18 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:19 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:21 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:23 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:24 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:26 | | | | | | | | | | | | | | |
| CCV | 10:28 | 100 | | 102 | | | | | | | | | | | |
| CCB | 10:29 | 99 | | 101 | | | | | | | | | | | |
| P20563AB | 10:31 | 105 | | 106 | | | | | | | | | | | |
| P20563AQ | 10:33 | 104 | | 106 | | | | | | | | | | | |
| 9112123BKG | 10:35 | 99 | | 96 | | | | | | | | | | | |
| 9112123A | 10:36 | 96 | | 95 | | | | | | | | | | | |
| 9112123DUP | 10:38 | 101 | | 99 | | | | | | | | | | | |
| 9112123MS | 10:40 | 96 | | 94 | | | | | | | | | | | |
| 9112123MSD | 10:41 | 97 | | 94 | | | | | | | | | | | |
| 9112123L | 10:43 | 100 | | 98 | | | | | | | | | | | |
| CCV | 10:45 | 99 | | 100 | | | | | | | | | | | |
| CCB | 10:47 | 102 | | 101 | | | | | | | | | | | |

LEGEND:
BKG = Background
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Q = Laboratory Control Sample
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MSD = Matrix Spike Duplicate
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R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

# Raw Data

# Metals in Liquid

# ICP Data

# Metals in Liquid

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# ICP-AES Run Data Report

Reviewed By
Elaine F Stoltzfus

Reviewed Date
07/25/2017 6:02PM

Data File Name 1720606T71.TXT
Run Name: 1720606T71

Method Reference Name(s):

Verified By:
Parker D Lindstrom

Verified Date
07/26/2017 7:17PM

Analyst Employee: 463

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 1 Date/Time: 07/25/2017 14:44

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -12.69802 | 61.588 | -0.01012 | -0.00210 | -0.00812 |
| AL | 0.000 | 31.58333 | 4.698 | 0.26537 | 0.28644 | 0.26341 |
| AS | 0.000 | 0.24667 | 135.128 | -0.00234 | 0.00963 | 0.00650 |
| B | 0.000 | -1.36095 | 257.657 | -0.00002 | 0.00003 | -0.00005 |
| BA | 0.000 | -198.94349 | 11.254 | -0.00206 | -0.00238 | -0.00192 |
| BE | 0.000 | -72.48443 | 6.854 | -0.03677 | -0.03742 | -0.04164 |
| CA | 0.000 | 33.06667 | 5.961 | 0.00544 | 0.00608 | 0.00556 |
| CD | 0.000 | -3.87667 | 17.187 | -0.06163 | -0.08577 | -0.06884 |
| CO | 0.000 | 1.62000 | 45.991 | 0.04590 | 0.02408 | 0.02026 |
| CR | 0.000 | -4.14180 | 6.878 | -0.00004 | -0.00005 | -0.00004 |
| CU | 0.000 | -34.67153 | 23.395 | -0.01959 | -0.01370 | -0.02213 |
| FE | 0.000 | 1.38333 | 116.959 | 0.00056 | 0.00005 | 0.00011 |
| K | 0.000 | 63.58333 | 32.809 | 0.50155 | 0.39839 | 0.74933 |
| LI | 0.000 | 23.03333 | 20.513 | 0.00310 | 0.00471 | 0.00407 |
| MG | 0.000 | -5.03333 | 57.795 | -0.00105 | -0.00030 | -0.00127 |
| MN | 0.000 | 2.62235 | 176.735 | 0.00392 | -0.00106 | 0.00137 |
| MO | 0.000 | -1.00533 | 40.072 | -0.01288 | -0.02714 | -0.01604 |
| NA | 0.000 | -102.53333 | 6.299 | -0.01874 | -0.01768 | -0.01652 |
| NI | 0.000 | 9.40333 | 8.523 | 0.15769 | 0.18339 | 0.18364 |
| P | 0.000 | 0.88333 | 59.615 | 0.00011 | 0.00039 | 0.00049 |
| PB | 0.000 | -4.57222 | 54.435 | -0.12555 | -0.03458 | -0.09504 |
| S | 0.000 | 1.52000 | 34.046 | 0.00057 | 0.00076 | 0.00037 |
| SB | 0.000 | -0.51333 | 229.739 | -0.00059 | 0.00028 | -0.00026 |
| SE | 0.000 | 0.72222 | 50.438 | 0.01296 | 0.02038 | 0.00688 |
| SI | 0.000 | 1.21667 | 201.601 | 0.00013 | -0.00017 | 0.00069 |
| SN | 0.000 | -0.49333 | 114.561 | -0.01333 | 0.00278 | -0.01707 |
| SR | 0.000 | -35.13880 | 51.508 | -0.00015 | -0.00048 | -0.00049 |
| TI | 0.000 | 22.34168 | 56.203 | 0.01970 | 0.00823 | 0.00791 |
| TL | 0.000 | -0.12667 | 383.676 | -0.01222 | 0.00019 | 0.00506 |
| V | 0.000 | -1.66108 | 146.564 | -0.00239 | -0.00035 | 0.00005 |
| Y1 | 0.000 | 2688.77500 | 0.747 | 2701.48500 | 2699.23000 | 2665.61000 |
| Y2A | 0.000 | 93834.25514 | 0.990 | 92795.05380 | 94121.80064 | 94585.91100 |
| Y2R | 0.000 | 5808.18333 | 2.012 | 5822.00000 | 5917.50000 | 5685.05000 |
| ZN | 0.000 | 1.30000 | 128.010 | -0.00759 | 0.05427 | 0.02589 |
| ZR | 0.000 | 6.78333 | 73.044 | 0.00070 | 0.00067 | 0.00217 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 2 Date/Time: 07/25/2017 14:47

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 3064.66434 | 1.151 | 27.66886 | 28.04320 | 27.40863 |
| CA | 50.000 | 26506.25363 | 0.951 | 4.77327 | 4.84494 | 4.76028 |
| FE | 50.000 | 6150.01147 | 0.872 | 1.11107 | 1.12213 | 1.10282 |
| K | 50.000 | 10705.03129 | 0.707 | 96.33573 | 97.57129 | 96.44337 |
| MG | 50.000 | 40889.22521 | 0.842 | 7.36933 | 7.46416 | 7.34693 |
| NA | 50.000 | 37772.51308 | 0.873 | 6.79406 | 6.89888 | 6.79717 |
| S | 50.000 | 2095.82667 | 0.325 | 0.80725 | 0.80628 | 0.81124 |
| SI | 50.000 | 4994.30617 | 1.010 | 0.89794 | 0.91361 | 0.89769 |
| Y1 | 50.000 | 2593.00667 | 0.301 | 2592.56000 | 2585.44000 | 2601.02000 |
| Y2R | 50.000 | 5530.71320 | 1.669 | 5635.37717 | 5460.92659 | 5495.83583 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 3 Date/Time: 07/25/2017 14:50

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 5941.14172 | 1.037 | 3.27699 | 3.27639 | 3.33590 |
| AS | 1.000 | 69.60889 | 1.719 | 1.32227 | 1.33339 | 1.28988 |
| B | 1.000 | 3954.31076 | 1.167 | 0.04349 | 0.04369 | 0.04446 |
| BA | 1.000 | 325750.99338 | 7.351 | 3.34703 | 3.87858 | 3.64186 |
| BE | 1.000 | 238024.83782 | 0.770 | 131.31413 | 131.68566 | 133.23102 |
| CD | 1.000 | 4186.32000 | 1.133 | 79.85640 | 79.32109 | 78.10786 |
| CO | 1.000 | 1852.88667 | 1.213 | 35.39284 | 35.07913 | 34.55264 |
| CU | 1.000 | 5657.35701 | 1.845 | 3.09033 | 3.12411 | 3.20316 |
| LI | 1.000 | 3473.58179 | 0.677 | 0.61090 | 0.60271 | 0.60736 |
| MN | 1.000 | 25411.62401 | 0.739 | 14.05360 | 14.02651 | 14.21897 |
| NI | 1.000 | 1188.51667 | 0.794 | 22.59337 | 22.51722 | 22.25381 |
| P | 1.000 | 120.12667 | 2.174 | 0.04644 | 0.04527 | 0.04448 |
| PB | 1.000 | 385.91111 | 1.253 | 7.34713 | 7.34087 | 7.18584 |
| SE | 1.000 | 67.90556 | 2.147 | 1.30970 | 1.28494 | 1.25468 |
| SR | 1.000 | 352514.89715 | 5.682 | 3.66069 | 4.06276 | 4.02714 |
| TL | 1.000 | 91.33000 | 1.470 | 1.75109 | 1.72541 | 1.70035 |
| Y1 | 1.000 | 2646.63833 | 1.323 | 2610.65500 | 2648.64000 | 2680.62000 |
| Y2A | 1.000 | 90104.58039 | 4.488 | 93033.81005 | 85490.48236 | 91789.44876 |
| Y2R | 1.000 | 5722.84543 | 0.736 | 5690.30857 | 5770.44229 | 5707.78542 |
| ZN | 1.000 | 2654.13000 | 1.183 | 50.68096 | 50.25107 | 49.50795 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 4 Date/Time: 07/25/2017 14:54

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 4859.84295 | 0.961 | 0.05352 | 0.05441 | 0.05350 |
| MO | 1.000 | 617.94400 | 0.337 | 11.52773 | 11.45023 | 11.48790 |
| SB | 1.000 | 136.14667 | 0.874 | 0.05089 | 0.05012 | 0.05087 |
| SN | 1.000 | 231.04333 | 0.670 | 4.30272 | 4.26367 | 4.31985 |
| TI | 1.000 | 22143.42601 | 0.661 | 12.19875 | 12.34979 | 12.22355 |
| V | 1.000 | 6843.13931 | 0.859 | 3.79337 | 3.81754 | 3.75316 |
| Y1 | 1.000 | 2689.51667 | 2.566 | 2610.21000 | 2735.90500 | 2722.43500 |
| Y2A | 1.000 | 90350.25130 | 5.911 | 93378.84385 | 84183.91005 | 93488.00000 |
| Y2R | 1.000 | 5472.23333 | 5.000 | 5689.07500 | 5562.77500 | 5164.85000 |
| ZR | 1.000 | 947.55000 | 0.666 | 0.17207 | 0.17436 | 0.17305 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 5 Date/Time: 07/25/2017 14:57

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.60065 | 3,449.91 | 1.420 | 0.60946 | 0.59243 | 0.60004 |
| ____ AL | 30.68802 | 1,887.43 | 0.442 | 30.65087 | 30.83839 | 30.57481 |
| ____ AS | 0.59734 | 41.97 | 1.567 | 0.58847 | 0.59642 | 0.60712 |
| ____ B | 0.58568 | 2,408.61 | 1.465 | 0.59555 | 0.58156 | 0.57994 |
| ____ BA | 0.61500 | 194,786.59 | 0.665 | 0.61789 | 0.61032 | 0.61678 |
| ____ BE | 0.57951 | 133,523.10 | 1.776 | 0.59091 | 0.57090 | 0.57672 |
| ____ CA | 30.79271 | 16,310.30 | 0.588 | 30.92004 | 30.87250 | 30.58558 |
| ____ CD | 0.58287 | 2,460.96 | 1.267 | 0.57441 | 0.58617 | 0.58803 |
| ____ CO | 0.57582 | 1,075.80 | 1.137 | 0.56895 | 0.57653 | 0.58198 |
| ____ CR | 0.59141 | 2,775.80 | 1.873 | 0.60408 | 0.58352 | 0.58665 |
| ____ CU | 0.59663 | 3,256.26 | 1.178 | 0.60470 | 0.59332 | 0.59186 |
| ____ FE | 30.03787 | 3,713.03 | 0.879 | 30.33350 | 29.95412 | 29.82599 |
| ____ K | 30.43871 | 6,512.36 | 0.241 | 30.51731 | 30.42677 | 30.37204 |
| ____ LI | 0.60569 | 2,034.01 | 2.219 | 0.60625 | 0.61884 | 0.59198 |
| ____ MG | 30.46542 | 24,928.47 | 0.707 | 30.67002 | 30.48556 | 30.24068 |
| ____ MN | 0.59658 | 14,688.70 | 1.668 | 0.60676 | 0.58687 | 0.59610 |
| ____ MO | 0.59613 | 364.36 | 1.014 | 0.58919 | 0.59900 | 0.60020 |
| ____ NA | 30.13436 | 22,653.73 | 0.868 | 30.33592 | 30.22838 | 29.83879 |
| ____ NI | 0.58193 | 699.14 | 0.860 | 0.57624 | 0.58387 | 0.58567 |
| ____ P | 0.58883 | 71.55 | 1.761 | 0.57843 | 0.58888 | 0.59916 |
| ____ PB | 0.57958 | 226.90 | 1.708 | 0.56847 | 0.58283 | 0.58745 |
| ____ S | 30.55648 | 1,316.18 | 1.295 | 30.10599 | 30.71637 | 30.84707 |
| ____ SB | 0.60328 | 81.11 | 1.630 | 0.59200 | 0.60781 | 0.61004 |
| ____ SE | 0.56856 | 39.11 | 4.371 | 0.54080 | 0.57613 | 0.58874 |
| ____ SI | 31.08956 | 3,093.24 | 0.800 | 31.33468 | 31.09663 | 30.83737 |
| ____ SN | 0.58343 | 133.29 | 1.649 | 0.57404 | 0.58299 | 0.59326 |
| ____ SR | 0.60670 | 207,401.26 | 0.872 | 0.61135 | 0.60094 | 0.60780 |
| ____ TI | 0.61754 | 13,247.34 | 0.965 | 0.62326 | 0.61136 | 0.61799 |
| ____ TL | 0.60190 | 52.40 | 2.884 | 0.59813 | 0.58674 | 0.62084 |
| ____ V | 0.60859 | 4,019.50 | 1.452 | 0.61856 | 0.60544 | 0.60176 |
| ____ Y1 | 2663.74167 | 2,663.74 | 1.432 | 2705.92000 | 2653.62000 | 2631.68500 |
| ____ Y2A | 87314.25403 | 87,314.25 | 8.611 | 78632.71266 | 91671.13006 | 91638.91938 |
| ____ Y2R | 5506.52659 | 5,506.53 | 1.378 | 5439.11025 | 5491.75824 | 5588.71129 |
| ____ ZN | 0.58156 | 1,561.15 | 1.079 | 0.57444 | 0.58391 | 0.58631 |
| ____ ZR | 0.62141 | 594.98 | 1.326 | 0.61562 | 0.63084 | 0.61775 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 6 Date/Time: 07/25/2017 14:59

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00162 | -13.06 | 65.481 | 0.00113 | 0.00089 | 0.00284 |
| ____ AL | -0.00444 | 29.70 | 1955.266 | 0.05669 | 0.03385 | -0.10387 |
| ____ AS | 0.00804 | 0.83 | 122.575 | 0.01922 | 0.00429 | 0.00061 |
| ____ B | 0.00073 | 1.68 | 176.935 | 0.00148 | -0.00076 | 0.00147 |
| ____ BA | -0.00312 | -188.11 | 2.498 | -0.00304 | -0.00319 | -0.00313 |
| ____ BE | -0.00020 | -65.60 | 9.788 | -0.00018 | -0.00022 | -0.00019 |
| ____ CA | 0.00982 | 37.65 | 310.871 | 0.00382 | -0.01726 | 0.04290 |
| ____ CD | 0.00027 | -4.61 | 55.047 | 0.00024 | 0.00013 | 0.00042 |
| ____ CO | 0.00042 | 2.43 | 145.441 | 0.00034 | -0.00015 | 0.00106 |
| ____ CR | -0.00049 | -2.14 | 204.337 | 0.00065 | -0.00087 | -0.00126 |
| ____ CU | -0.00148 | -34.66 | 142.591 | 0.00025 | -0.00383 | -0.00085 |
| ____ FE | 0.00685 | 2.32 | 355.066 | -0.00693 | -0.00745 | 0.03494 |
| ____ K | 0.08730 | 79.12 | 62.340 | 0.06607 | 0.14914 | 0.04670 |
| ____ LI | 0.00526 | 38.93 | 79.022 | 0.00634 | 0.00878 | 0.00067 |
| ____ MG | 0.01344 | 11.13 | 180.366 | -0.00079 | -0.00032 | 0.04144 |
| ____ MN | 0.00051 | 10.26 | 34.345 | 0.00058 | 0.00031 | 0.00064 |
| ____ MO | 0.00054 | -0.85 | 87.216 | 0.00037 | 0.00018 | 0.00107 |
| ____ NA | -0.02803 | -48.45 | 177.191 | -0.04252 | -0.06882 | 0.02727 |
| ____ NI | 0.00049 | 10.17 | 26.065 | 0.00063 | 0.00038 | 0.00046 |
| ____ P | -0.00331 | 0.49 | 54.886 | -0.00231 | -0.00541 | -0.00221 |
| ____ PB | 0.00084 | -5.54 | 609.964 | 0.00448 | 0.00307 | -0.00503 |
| ____ S | 0.00940 | 1.95 | 166.996 | 0.02104 | -0.00845 | 0.01560 |
| ____ SB | 0.00378 | 0.00 | 118.459 | 0.00003 | 0.00873 | 0.00256 |
| ____ SE | -0.01573 | -0.36 | 42.354 | -0.02152 | -0.00845 | -0.01722 |
| ____ SI | 0.01832 | 3.16 | 135.652 | 0.02420 | -0.00894 | 0.03971 |
| ____ SN | 0.00220 | 0.04 | 273.436 | 0.00670 | 0.00454 | -0.00464 |
| ____ SR | 0.00002 | -14.11 | 79.548 | 0.00003 | 0.00003 | 0.00000 |
| ____ TI | 0.00003 | 23.14 | 1284.944 | -0.00008 | 0.00051 | -0.00033 |
| ____ TL | 0.00687 | -0.02 | 22.336 | 0.00728 | 0.00815 | 0.00517 |
| ____ V | 0.00005 | -11.29 | 1323.020 | 0.00077 | -0.00032 | -0.00030 |
| ____ Y1 | 2738.15000 | 2,738.15 | 2.700 | 2753.04000 | 2803.50000 | 2657.91000 |
| ____ Y2A | 93229.40905 | 93,229.41 | 1.303 | 94506.84897 | 93092.48150 | 92088.89666 |
| ____ Y2R | 5551.20000 | 5,551.20 | 7.659 | 5595.25000 | 5105.72500 | 5952.62500 |
| ____ ZN | 0.00012 | 1.66 | 255.016 | 0.00047 | -0.00002 | -0.00009 |
| ____ ZR | 0.00077 | 7.45 | 471.880 | 0.00068 | -0.00281 | 0.00443 |

LANCASTER LABORATORIES

Run Name: 1720606T71

Instrument ID: 16315

Tube: 7

Date/Time: 07/25/2017 15:03

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01252 | 55.45 | 3.693 | 0.01211 | 0.01243 | 0.01302 |
| ____ AL | 0.46443 | 57.15 | 14.484 | 0.38800 | 0.49064 | 0.51464 |
| ____ AS | 0.04323 | 3.32 | 10.517 | 0.04824 | 0.03937 | 0.04209 |
| ____ B | 0.09187 | 375.24 | 2.553 | 0.08927 | 0.09382 | 0.09252 |
| ____ BA | 0.00732 | 3,312.45 | 0.990 | 0.00724 | 0.00736 | 0.00736 |
| ____ BE | 0.00977 | 2,376.61 | 1.030 | 0.00967 | 0.00987 | 0.00975 |
| ____ CA | 0.41611 | 248.45 | 2.143 | 0.42078 | 0.40583 | 0.42171 |
| ____ CD | 0.01066 | 40.16 | 5.381 | 0.01131 | 0.01027 | 0.01038 |
| ____ CO | 0.01060 | 21.79 | 3.163 | 0.01098 | 0.01038 | 0.01043 |
| ____ CR | 0.02965 | 148.29 | 1.934 | 0.02983 | 0.03010 | 0.02900 |
| ____ CU | 0.01826 | 80.80 | 6.322 | 0.01859 | 0.01922 | 0.01698 |
| ____ FE | 0.40864 | 51.68 | 2.795 | 0.40487 | 0.39959 | 0.42147 |
| ____ K | 1.07658 | 284.32 | 0.866 | 1.06657 | 1.07816 | 1.08502 |
| ____ LI | 0.03791 | 145.55 | 5.390 | 0.03901 | 0.03916 | 0.03555 |
| ____ MG | 0.21363 | 172.58 | 1.814 | 0.21150 | 0.21129 | 0.21810 |
| ____ MN | 0.01067 | 276.19 | 0.990 | 0.01055 | 0.01070 | 0.01075 |
| ____ MO | 0.02047 | 11.59 | 3.015 | 0.02060 | 0.01979 | 0.02101 |
| ____ NA | 2.05496 | 1,494.77 | 1.353 | 2.04305 | 2.03509 | 2.08673 |
| ____ NI | 0.02017 | 33.84 | 6.675 | 0.02149 | 0.02022 | 0.01880 |
| ____ P | 0.19986 | 25.31 | 2.412 | 0.19995 | 0.19499 | 0.20463 |
| ____ PB | 0.03236 | 7.18 | 5.366 | 0.03426 | 0.03087 | 0.03194 |
| ____ S | 1.03418 | 46.80 | 1.183 | 1.02603 | 1.04825 | 1.02827 |
| ____ SB | 0.04812 | 6.05 | 20.234 | 0.04517 | 0.05899 | 0.04020 |
| ____ SE | 0.03856 | 3.39 | 41.901 | 0.03237 | 0.02642 | 0.05690 |
| ____ SI | 0.11069 | 12.03 | 12.152 | 0.09973 | 0.12570 | 0.10663 |
| ____ SN | 0.04163 | 9.21 | 10.072 | 0.04613 | 0.04096 | 0.03782 |
| ____ SR | 0.01046 | 3,779.80 | 0.806 | 0.01041 | 0.01056 | 0.01041 |
| ____ TI | 0.02062 | 491.51 | 1.227 | 0.02044 | 0.02051 | 0.02091 |
| ____ TL | 0.07078 | 5.93 | 13.926 | 0.07711 | 0.07581 | 0.05942 |
| ____ V | 0.01092 | 64.35 | 3.174 | 0.01127 | 0.01058 | 0.01091 |
| ____ Y1 | 2709.92833 | 2,709.93 | 1.546 | 2722.48500 | 2663.19000 | 2744.11000 |
| ____ Y2A | 92796.98580 | 92,796.99 | 1.618 | 93709.15570 | 91063.69617 | 93618.10552 |
| ____ Y2R | 5422.69167 | 5,422.69 | 2.439 | 5551.25000 | 5429.80000 | 5287.02500 |
| ____ ZN | 0.04077 | 111.79 | 1.324 | 0.04086 | 0.04126 | 0.04019 |
| ____ ZR | 0.10175 | 101.32 | 6.654 | 0.10014 | 0.10917 | 0.09592 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 8 Date/Time: 07/25/2017 15:06

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00000 | -56.97 | 7175.080 | -0.00183 | -0.00002 | 0.00184 |
| ____ AL | 523.94638 | 29,581.73 | 0.327 | 525.54038 | 524.16533 | 522.13343 |
| ____ AS | 0.01434 | 1.29 | 41.410 | 0.02051 | 0.00866 | 0.01386 |
| ____ B | 0.07264 | 1,366.17 | 11.145 | 0.07864 | 0.07585 | 0.06343 |
| ____ BA | -0.00260 | -11.70 | 2.445 | -0.00266 | -0.00260 | -0.00254 |
| ____ BE | -0.00059 | -144.52 | 25.065 | -0.00068 | -0.00066 | -0.00042 |
| ____ CA | 522.38343 | 245,093.56 | 0.238 | 523.71110 | 522.19051 | 521.24868 |
| ____ CD | -0.00115 | 37.32 | 63.655 | -0.00121 | -0.00039 | -0.00185 |
| ____ CO | 0.00045 | 2.20 | 100.622 | 0.00064 | 0.00076 | -0.00007 |
| ____ CR | -0.00050 | -1.93 | 239.712 | -0.00169 | 0.00069 | -0.00048 |
| ____ CU | 0.00122 | 24.34 | 39.067 | 0.00137 | 0.00069 | 0.00160 |
| ____ FE | 207.49929 | 22,505.20 | 0.116 | 207.60478 | 207.66834 | 207.22474 |
| ____ K | 0.10803 | 79.84 | 75.093 | 0.20157 | 0.06544 | 0.05706 |
| ____ LI | -0.00234 | 33.20 | 247.257 | 0.00191 | 0.00000 | -0.00892 |
| ____ MG | 506.07456 | 346,931.87 | 9.278 | 516.39177 | 547.01351 | 454.81840 |
| ____ MN | 0.00091 | 107.53 | 22.546 | 0.00099 | 0.00068 | 0.00107 |
| ____ MO | -0.00200 | -2.16 | 30.196 | -0.00239 | -0.00131 | -0.00232 |
| ____ NA | 0.03221 | -4.25 | 13.322 | 0.03607 | 0.02759 | 0.03297 |
| ____ NI | -0.00392 | 4.21 | 14.255 | -0.00427 | -0.00422 | -0.00328 |
| ____ P | 0.01888 | 2.84 | 26.802 | 0.02096 | 0.01311 | 0.02257 |
| ____ PB | -0.00525 | 45.03 | 183.568 | -0.00745 | 0.00530 | -0.01360 |
| ____ S | -0.02664 | 0.32 | 42.588 | -0.01836 | -0.02200 | -0.03958 |
| ____ SB | 0.00485 | 0.13 | 277.262 | 0.01082 | -0.01055 | 0.01427 |
| ____ SE | -0.01616 | -0.67 | 66.942 | -0.02693 | -0.01626 | -0.00529 |
| ____ SI | 0.00073 | 1.26 | 3164.347 | -0.00255 | -0.02046 | 0.02519 |
| ____ SN | 0.00152 | -0.13 | 83.961 | 0.00022 | 0.00277 | 0.00156 |
| ____ SR | 0.01756 | 5,716.51 | 0.749 | 0.01771 | 0.01752 | 0.01746 |
| ____ TI | 0.00199 | 60.66 | 14.477 | 0.00168 | 0.00226 | 0.00204 |
| ____ TL | -0.01706 | -1.19 | 36.007 | -0.02359 | -0.01139 | -0.01621 |
| ____ V | 0.00069 | -5.73 | 48.848 | 0.00105 | 0.00038 | 0.00065 |
| ____ Y1 | 2407.46333 | 2,407.46 | 0.725 | 2425.53000 | 2390.70500 | 2406.15500 |
| ____ Y2A | 83397.58134 | 83,397.58 | 1.832 | 81836.32914 | 83466.90148 | 84889.51339 |
| ____ Y2R | 5263.43361 | 5,263.43 | 4.041 | 5318.28403 | 5028.68279 | 5443.33400 |
| ____ ZN | 0.00633 | 60.67 | 6.333 | 0.00627 | 0.00676 | 0.00596 |
| ____ ZR | 0.00239 | 8.34 | 218.670 | -0.00363 | 0.00505 | 0.00574 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 9 Date/Time: 07/25/2017 15:09

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21007 | 1,101.89 | 1.227 | 0.20905 | 0.20815 | 0.21300 |
| ____ AL | 522.95516 | 30,927.09 | 2.508 | 537.72671 | 518.46511 | 512.67366 |
| ____ AS | 0.09547 | 6.39 | 10.386 | 0.09158 | 0.10674 | 0.08809 |
| ____ B | 0.07359 | 1,364.76 | 12.411 | 0.06578 | 0.07136 | 0.08364 |
| ____ BA | 0.52681 | 159,438.96 | 1.244 | 0.52624 | 0.52057 | 0.53363 |
| ____ BE | 0.49908 | 109,882.66 | 1.173 | 0.49912 | 0.49320 | 0.50491 |
| ____ CA | 523.19575 | 257,060.21 | 2.676 | 538.94479 | 518.48700 | 512.15546 |
| ____ CD | 0.92005 | 3,540.01 | 0.852 | 0.92566 | 0.91109 | 0.92340 |
| ____ CO | 0.45567 | 766.69 | 0.995 | 0.45700 | 0.45062 | 0.45940 |
| ____ CR | 0.48656 | 2,182.65 | 0.677 | 0.49034 | 0.48437 | 0.48495 |
| ____ CU | 0.52334 | 2,769.14 | 0.615 | 0.52640 | 0.51998 | 0.52363 |
| ____ FE | 206.63660 | 23,483.13 | 2.619 | 212.54992 | 205.42667 | 201.93322 |
| ____ K | 0.08564 | 78.97 | 77.525 | 0.01615 | 0.14842 | 0.09235 |
| ____ LI | 0.00375 | 55.17 | 131.470 | 0.00903 | 0.00297 | -0.00074 |
| ____ MG | 512.16405 | 368,079.70 | 2.963 | 529.36438 | 506.47411 | 500.65367 |
| ____ MN | 0.48247 | 11,427.78 | 1.316 | 0.48445 | 0.47537 | 0.48760 |
| ____ MO | -0.00170 | -1.98 | 66.355 | -0.00228 | -0.00040 | -0.00241 |
| ____ NA | 0.02894 | -7.06 | 26.464 | 0.03746 | 0.02671 | 0.02264 |
| ____ NI | 0.89946 | 970.82 | 1.251 | 0.90457 | 0.88656 | 0.90724 |
| ____ P | 0.01785 | 2.72 | 27.055 | 0.02261 | 0.01295 | 0.01799 |
| ____ PB | 0.51001 | 227.87 | 2.299 | 0.52339 | 0.50154 | 0.50510 |
| ____ S | -0.04496 | -0.39 | 41.345 | -0.06595 | -0.03060 | -0.03832 |
| ____ SB | 0.60433 | 73.22 | 1.278 | 0.60741 | 0.61005 | 0.59555 |
| ____ SE | 0.53186 | 32.74 | 2.617 | 0.54215 | 0.51603 | 0.53741 |
| ____ SI | -0.01234 | -0.02 | 106.737 | -0.02604 | -0.01118 | 0.00022 |
| ____ SN | -0.00186 | -0.82 | 175.848 | -0.00038 | 0.00041 | -0.00560 |
| ____ SR | 0.01752 | 5,699.20 | 1.293 | 0.01753 | 0.01728 | 0.01774 |
| ____ TI | 0.00171 | 63.92 | 21.714 | 0.00214 | 0.00145 | 0.00155 |
| ____ TL | 0.09871 | 6.39 | 8.907 | 0.09580 | 0.10858 | 0.09173 |
| ____ V | 0.51798 | 3,316.33 | 0.676 | 0.51950 | 0.51397 | 0.52046 |
| ____ Y1 | 2400.73167 | 2,400.73 | 0.756 | 2395.96000 | 2420.78000 | 2385.45500 |
| ____ Y2A | 83363.62335 | 83,363.62 | 1.213 | 82991.17295 | 84508.13373 | 82591.56337 |
| ____ Y2R | 5514.47465 | 5,514.47 | 1.967 | 5389.86608 | 5565.78553 | 5587.77234 |
| ____ ZN | 0.97675 | 2,394.63 | 0.827 | 0.97862 | 0.96791 | 0.98373 |
| ____ ZR | 0.00423 | 10.49 | 27.903 | 0.00555 | 0.00327 | 0.00386 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 10 Date/Time: 07/25/2017 15:12

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49377 | 2,893.58 | 0.729 | 0.49656 | 0.49505 | 0.48971 |
| ____ AL | 25.24201 | 1,562.09 | 1.230 | 25.48339 | 25.35103 | 24.89162 |
| ____ AS | 0.49089 | 34.61 | 1.625 | 0.49441 | 0.49650 | 0.48176 |
| ____ B | 0.48678 | 2,044.39 | 0.704 | 0.48590 | 0.49056 | 0.48388 |
| ____ BA | 0.50805 | 164,485.64 | 0.301 | 0.50768 | 0.50973 | 0.50674 |
| ____ BE | 0.48197 | 113,484.60 | 0.491 | 0.48398 | 0.48256 | 0.47937 |
| ____ CA | 25.30486 | 13,453.67 | 1.155 | 25.51122 | 25.43309 | 24.97027 |
| ____ CD | 0.48659 | 2,057.69 | 1.333 | 0.47917 | 0.49118 | 0.48941 |
| ____ CO | 0.48591 | 909.93 | 1.415 | 0.47816 | 0.49127 | 0.48831 |
| ____ CR | 0.49593 | 2,379.29 | 0.326 | 0.49536 | 0.49775 | 0.49467 |
| ____ CU | 0.50018 | 2,785.12 | 0.188 | 0.50093 | 0.50048 | 0.49912 |
| ____ FE | 24.77023 | 3,077.27 | 1.302 | 25.01585 | 24.88997 | 24.40488 |
| ____ K | 25.17241 | 5,409.81 | 1.061 | 25.39663 | 25.24383 | 24.87676 |
| ____ LI | 0.50587 | 1,706.60 | 2.062 | 0.51595 | 0.50657 | 0.49511 |
| ____ MG | 25.02397 | 20,554.84 | 1.415 | 25.27823 | 25.17409 | 24.61958 |
| ____ MN | 0.49402 | 12,428.38 | 0.480 | 0.49652 | 0.49375 | 0.49180 |
| ____ MO | 0.50238 | 307.50 | 1.621 | 0.49320 | 0.50874 | 0.50519 |
| ____ NA | 25.48317 | 19,202.06 | 1.161 | 25.74085 | 25.54856 | 25.16012 |
| ____ NI | 0.48590 | 586.50 | 1.492 | 0.47766 | 0.49129 | 0.48875 |
| ____ P | 0.49338 | 60.22 | 2.765 | 0.47955 | 0.50682 | 0.49378 |
| ____ PB | 0.49149 | 191.82 | 2.199 | 0.47951 | 0.50050 | 0.49447 |
| ____ S | 24.87998 | 1,074.16 | 1.526 | 24.44802 | 25.16143 | 25.03050 |
| ____ SB | 0.49973 | 67.26 | 1.117 | 0.49572 | 0.49736 | 0.50610 |
| ____ SE | 0.47408 | 32.80 | 2.667 | 0.46109 | 0.48634 | 0.47481 |
| ____ SI | 25.36225 | 2,529.95 | 1.315 | 25.59243 | 25.51443 | 24.97990 |
| ____ SN | 0.48721 | 111.46 | 2.068 | 0.47578 | 0.49102 | 0.49482 |
| ____ SR | 0.50947 | 177,895.54 | 0.395 | 0.50971 | 0.51136 | 0.50735 |
| ____ TI | 0.51025 | 11,183.96 | 0.426 | 0.51242 | 0.51025 | 0.50807 |
| ____ TL | 0.50728 | 44.18 | 2.160 | 0.50410 | 0.51948 | 0.49826 |
| ____ V | 0.50601 | 3,412.71 | 0.532 | 0.50515 | 0.50902 | 0.50385 |
| ____ Y1 | 2669.17500 | 2,669.18 | 1.241 | 2694.91000 | 2631.80000 | 2680.81500 |
| ____ Y2A | 89153.21740 | 89,153.22 | 3.900 | 85148.29409 | 90908.59141 | 91402.76670 |
| ____ Y2R | 5521.82725 | 5,521.83 | 4.229 | 5438.44962 | 5341.46402 | 5785.56809 |
| ____ ZN | 0.48948 | 1,316.68 | 1.490 | 0.48116 | 0.49477 | 0.49251 |
| ____ ZR | 0.50936 | 490.12 | 0.800 | 0.51073 | 0.51259 | 0.50478 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 11 Date/Time: 07/25/2017 15:15

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00109 | -16.03 | 169.537 | 0.00181 | -0.00101 | 0.00247 |
| ____ AL | -0.04809 | 26.47 | 40.667 | -0.02908 | -0.06815 | -0.04705 |
| ____ AS | -0.00056 | 0.21 | 1341.485 | -0.00057 | 0.00692 | -0.00802 |
| ____ B | 0.00047 | 0.58 | 391.442 | 0.00257 | -0.00091 | -0.00024 |
| ____ BA | -0.00312 | -186.65 | 3.454 | -0.00323 | -0.00301 | -0.00313 |
| ____ BE | -0.00020 | -65.90 | 5.039 | -0.00019 | -0.00019 | -0.00021 |
| ____ CA | -0.00467 | 28.22 | 63.946 | -0.00557 | -0.00134 | -0.00710 |
| ____ CD | 0.00021 | -4.80 | 151.214 | 0.00025 | 0.00050 | -0.00013 |
| ____ CO | 0.00034 | 2.28 | 49.614 | 0.00047 | 0.00015 | 0.00041 |
| ____ CR | -0.00136 | -6.46 | 48.679 | -0.00199 | -0.00143 | -0.00067 |
| ____ CU | -0.00056 | -28.95 | 441.692 | -0.00308 | 0.00182 | -0.00041 |
| ____ FE | -0.00249 | 0.93 | 980.359 | -0.02127 | 0.02505 | -0.01124 |
| ____ K | -0.00688 | 58.28 | 885.334 | -0.03459 | -0.04894 | 0.06291 |
| ____ LI | 0.00401 | 34.55 | 133.602 | 0.00912 | -0.00156 | 0.00447 |
| ____ MG | -0.00029 | -1.05 | 586.019 | -0.00178 | -0.00068 | 0.00158 |
| ____ MN | 0.00025 | 3.36 | 33.698 | 0.00027 | 0.00016 | 0.00032 |
| ____ MO | 0.00119 | -0.44 | 53.019 | 0.00188 | 0.00103 | 0.00065 |
| ____ NA | -0.07358 | -82.17 | 29.117 | -0.05725 | -0.09784 | -0.06566 |
| ____ NI | 0.00110 | 10.82 | 58.931 | 0.00109 | 0.00045 | 0.00175 |
| ____ P | -0.00223 | 0.62 | 102.435 | 0.00006 | -0.00223 | -0.00452 |
| ____ PB | 0.00155 | -5.26 | 202.923 | 0.00340 | -0.00208 | 0.00334 |
| ____ S | -0.02388 | 0.48 | 90.864 | -0.00310 | -0.02215 | -0.04639 |
| ____ SB | 0.00528 | 0.20 | 46.535 | 0.00735 | 0.00594 | 0.00256 |
| ____ SE | -0.00300 | 0.52 | 345.388 | 0.00877 | -0.00698 | -0.01080 |
| ____ SI | 0.00715 | 1.83 | 281.779 | 0.02995 | -0.00021 | -0.00828 |
| ____ SN | 0.00078 | -0.32 | 513.952 | 0.00010 | -0.00283 | 0.00506 |
| ____ SR | -0.00003 | -32.14 | 95.087 | -0.00003 | -0.00005 | 0.00000 |
| ____ TI | 0.00041 | 31.31 | 43.079 | 0.00037 | 0.00061 | 0.00026 |
| ____ TL | 0.00960 | 0.23 | 17.984 | 0.01115 | 0.00990 | 0.00774 |
| ____ V | 0.00027 | -9.72 | 357.899 | 0.00069 | 0.00093 | -0.00082 |
| ____ Y1 | 2714.75333 | 2,714.75 | 1.400 | 2682.52000 | 2756.64500 | 2705.09500 |
| ____ Y2A | 92035.95078 | 92,035.95 | 0.586 | 92355.37458 | 91413.27751 | 92339.20024 |
| ____ Y2R | 5393.05000 | 5,393.05 | 4.911 | 5287.92500 | 5196.92500 | 5694.30000 |
| ____ ZN | 0.00001 | 1.36 | 4269.966 | 0.00063 | -0.00013 | -0.00046 |
| ____ ZR | 0.00040 | 6.58 | 1280.733 | 0.00453 | 0.00193 | -0.00527 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 12 Date/Time: 07/25/2017 15:18

Sample Number: **PBW** Class: **** Batch: 172051063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00106 | -16.84 | 77.865 | 0.00070 | 0.00047 | 0.00199 |
| ____ AL | 0.04858 | 31.87 | 195.477 | -0.03643 | 0.03110 | 0.15105 |
| ____ AS | 0.00137 | 0.35 | 833.220 | 0.00836 | -0.01176 | 0.00750 |
| ____ B | -0.00001 | -1.41 | 7579.354 | -0.00044 | -0.00015 | 0.00057 |
| ____ BA | -0.00295 | -131.22 | 2.800 | -0.00298 | -0.00285 | -0.00300 |
| ____ BE | -0.00022 | -72.70 | 10.382 | -0.00023 | -0.00023 | -0.00019 |
| ____ CA | 0.03740 | 49.90 | 2.645 | 0.03627 | 0.03788 | 0.03806 |
| ____ CD | 0.00029 | -4.44 | 142.400 | 0.00075 | 0.00012 | -0.00001 |
| ____ CO | 0.00059 | 2.73 | 87.320 | 0.00013 | 0.00115 | 0.00050 |
| ____ CR | 0.00038 | 2.18 | 293.135 | -0.00054 | 0.00006 | 0.00164 |
| ____ CU | 0.00120 | -19.23 | 44.096 | 0.00063 | 0.00131 | 0.00167 |
| ____ FE | 0.00178 | 1.52 | 288.531 | 0.00712 | 0.00137 | -0.00314 |
| ____ K | 0.05007 | 69.60 | 83.902 | 0.09837 | 0.02199 | 0.02986 |
| ____ LI | 0.00046 | 22.73 | 262.347 | 0.00102 | -0.00092 | 0.00126 |
| ____ MG | 0.00385 | 2.35 | 112.366 | 0.00688 | 0.00577 | -0.00110 |
| ____ MN | 0.00049 | 9.82 | 21.406 | 0.00057 | 0.00052 | 0.00037 |
| ____ MO | -0.00008 | -1.22 | 1453.938 | 0.00022 | -0.00136 | 0.00090 |
| ____ NA | -0.07639 | -83.93 | 27.185 | -0.05717 | -0.09842 | -0.07358 |
| ____ NI | 0.00049 | 10.01 | 153.386 | 0.00017 | 0.00135 | -0.00005 |
| ____ P | 0.00339 | 1.30 | 224.753 | -0.00167 | 0.01215 | -0.00031 |
| ____ PB | -0.00273 | -6.92 | 215.817 | -0.00318 | 0.00337 | -0.00840 |
| ____ S | -0.00080 | 1.48 | 4436.435 | 0.03995 | -0.01716 | -0.02519 |
| ____ SB | 0.00278 | -0.14 | 61.414 | 0.00464 | 0.00239 | 0.00130 |
| ____ SE | -0.00736 | 0.21 | 280.704 | -0.00982 | 0.01442 | -0.02668 |
| ____ SI | 0.06247 | 7.20 | 12.267 | 0.05457 | 0.06987 | 0.06298 |
| ____ SN | 0.00528 | 0.73 | 20.393 | 0.00556 | 0.00409 | 0.00618 |
| ____ SR | 0.00009 | 12.09 | 30.146 | 0.00009 | 0.00007 | 0.00012 |
| ____ TI | 0.00018 | 26.69 | 178.955 | 0.00019 | -0.00015 | 0.00049 |
| ____ TL | -0.00208 | -0.86 | 492.340 | 0.00636 | -0.01348 | 0.00087 |
| ____ V | -0.00020 | -13.13 | 331.875 | -0.00047 | 0.00054 | -0.00065 |
| ____ Y1 | 2695.34833 | 2,695.35 | 1.035 | 2678.12000 | 2680.37500 | 2727.55000 |
| ____ Y2A | 94511.09956 | 94,511.10 | 1.880 | 95455.04583 | 95616.26921 | 92461.98364 |
| ____ Y2R | 5368.80000 | 5,368.80 | 4.855 | 5621.77500 | 5383.57500 | 5101.05000 |
| ____ ZN | 0.00178 | 6.08 | 21.727 | 0.00222 | 0.00156 | 0.00155 |
| ____ ZR | -0.00216 | 4.37 | 67.173 | -0.00049 | -0.00313 | -0.00286 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 13 Date/Time: 07/25/2017 15:21

Sample Number: **LCSW** Class: **** Batch: 172051063502

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05797 | 347.15 | 0.909 | 0.05855 | 0.05784 | 0.05751 |
| ____ AL | 2.12766 | 170.34 | 0.401 | 2.13727 | 2.12099 | 2.12472 |
| ____ AS | 0.16399 | 11.86 | 5.223 | 0.16103 | 0.15729 | 0.17364 |
| ____ B | 1.84267 | 7,472.24 | 1.170 | 1.85824 | 1.81806 | 1.85171 |
| ____ BA | 2.04104 | 681,262.75 | 5.299 | 2.10703 | 1.91622 | 2.09987 |
| ____ BE | 0.04942 | 12,035.86 | 1.077 | 0.05003 | 0.04903 | 0.04921 |
| ____ CA | 4.21251 | 2,388.88 | 0.419 | 4.20853 | 4.19719 | 4.23179 |
| ____ CD | 0.05112 | 213.38 | 0.133 | 0.05105 | 0.05117 | 0.05116 |
| ____ CO | 0.51653 | 981.25 | 0.555 | 0.51970 | 0.51411 | 0.51579 |
| ____ CR | 0.20062 | 996.85 | 1.681 | 0.20183 | 0.19681 | 0.20322 |
| ____ CU | 0.26253 | 1,494.52 | 0.146 | 0.26284 | 0.26210 | 0.26264 |
| ____ FE | 1.01776 | 135.68 | 2.326 | 1.03446 | 0.99067 | 1.02814 |
| ____ K | 10.63679 | 2,439.38 | 0.909 | 10.55650 | 10.60974 | 10.74413 |
| ____ LI | 1.04916 | 3,694.10 | 0.915 | 1.05265 | 1.03831 | 1.05653 |
| ____ MG | 2.11724 | 1,838.05 | 0.192 | 2.12006 | 2.11259 | 2.11906 |
| ____ MN | 0.51694 | 13,456.86 | 0.925 | 0.52171 | 0.51215 | 0.51696 |
| ____ MO | 2.10538 | 1,308.28 | 0.219 | 2.10832 | 2.10006 | 2.10775 |
| ____ NA | 10.32863 | 8,162.47 | 0.554 | 10.33326 | 10.26926 | 10.38337 |
| ____ NI | 0.52681 | 643.62 | 0.392 | 0.52916 | 0.52528 | 0.52598 |
| ____ P | 0.98959 | 121.38 | 0.577 | 0.99565 | 0.98431 | 0.98882 |
| ____ PB | 0.15912 | 58.06 | 2.486 | 0.15688 | 0.15680 | 0.16369 |
| ____ S | 1.05232 | 47.45 | 1.138 | 1.06592 | 1.04768 | 1.04336 |
| ____ SB | 0.52219 | 70.10 | 1.008 | 0.52569 | 0.51613 | 0.52475 |
| ____ SE | 0.14086 | 10.39 | 7.520 | 0.13549 | 0.15307 | 0.13404 |
| ____ SI | 1.11509 | 120.70 | 1.864 | 1.13888 | 1.10045 | 1.10594 |
| ____ SN | 4.02321 | 935.23 | 0.668 | 4.05343 | 4.00197 | 4.01425 |
| ____ SR | 1.03070 | 372,769.88 | 1.319 | 1.02888 | 1.01811 | 1.04511 |
| ____ TI | 1.03825 | 23,501.69 | 0.507 | 1.04365 | 1.03314 | 1.03796 |
| ____ TL | 0.17678 | 13.63 | 3.645 | 0.17869 | 0.18206 | 0.16960 |
| ____ V | 0.50879 | 3,377.79 | 1.116 | 0.51277 | 0.50229 | 0.51132 |
| ____ Y1 | 2701.79833 | 2,701.80 | 2.144 | 2638.44500 | 2752.07500 | 2714.87500 |
| ____ Y2A | 92338.24396 | 92,338.24 | 3.357 | 88842.54640 | 94752.54440 | 93419.64107 |
| ____ Y2R | 5802.67968 | 5,802.68 | 2.151 | 5891.90942 | 5856.06287 | 5660.06675 |
| ____ ZN | 0.50813 | 1,378.01 | 0.412 | 0.51020 | 0.50601 | 0.50816 |
| ____ ZR | 1.04699 | 1,051.60 | 0.676 | 1.04007 | 1.04670 | 1.05421 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 14 Date/Time: 07/25/2017 15:24

Sample Number: **9112124** Class: U*** Batch: 172051063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00058 | -18.76 | 254.767 | -0.00106 | 0.00101 | 0.00177 |
| ____ AL | -0.00137 | 30.95 | 3249.720 | 0.04179 | -0.04740 | 0.00149 |
| ____ AS | 0.00438 | 0.53 | 333.762 | 0.01065 | 0.01480 | -0.01232 |
| ____ B | 0.09028 | 355.97 | 2.398 | 0.09246 | 0.08813 | 0.09023 |
| ____ BA | 0.04587 | 15,781.12 | 0.497 | 0.04586 | 0.04565 | 0.04610 |
| ____ BE | -0.00038 | -106.15 | 9.382 | -0.00041 | -0.00034 | -0.00037 |
| ____ CA | 202.91667 | 108,438.15 | 0.726 | 202.62455 | 201.61134 | 204.51412 |
| ____ CD | 0.00031 | -4.17 | 52.790 | 0.00029 | 0.00015 | 0.00047 |
| ____ CO | 0.00003 | 1.23 | 2174.690 | 0.00054 | 0.00023 | -0.00069 |
| ____ CR | 0.00188 | 9.36 | 46.980 | 0.00272 | 0.00096 | 0.00196 |
| ____ CU | 0.00163 | 1.44 | 51.307 | 0.00070 | 0.00233 | 0.00186 |
| ____ FE | -0.00106 | 1.22 | 741.593 | 0.00091 | -0.00970 | 0.00561 |
| ____ K | 5.19628 | 1,204.53 | 0.648 | 5.23506 | 5.17480 | 5.17899 |
| ____ LI | 0.03196 | 141.00 | 19.111 | 0.03523 | 0.02492 | 0.03575 |
| ____ MG | 30.88847 | 26,195.50 | 0.847 | 30.75878 | 30.71713 | 31.18949 |
| ____ MN | 0.00079 | 17.11 | 20.918 | 0.00075 | 0.00097 | 0.00065 |
| ____ MO | 0.00284 | 0.57 | 15.223 | 0.00273 | 0.00247 | 0.00331 |
| ____ NA | 58.84047 | 45,880.74 | 0.636 | 58.75876 | 58.51373 | 59.24891 |
| ____ NI | 0.00121 | 9.97 | 82.311 | 0.00187 | 0.00006 | 0.00170 |
| ____ P | 0.01759 | 2.90 | 28.977 | 0.01173 | 0.02101 | 0.02002 |
| ____ PB | -0.00138 | -5.65 | 219.813 | 0.00098 | -0.00031 | -0.00482 |
| ____ S | 129.46380 | 5,404.62 | 0.299 | 129.22240 | 129.91026 | 129.25873 |
| ____ SB | 0.00365 | -0.02 | 103.372 | 0.00038 | 0.00280 | 0.00777 |
| ____ SE | 0.00369 | 0.93 | 338.413 | 0.01430 | 0.00681 | -0.01005 |
| ____ SI | 17.61923 | 1,817.22 | 0.076 | 17.60619 | 17.61869 | 17.63280 |
| ____ SN | 0.00592 | 0.84 | 57.275 | 0.00694 | 0.00869 | 0.00214 |
| ____ SR | 1.15858 | 409,245.36 | 0.612 | 1.15948 | 1.15109 | 1.16517 |
| ____ TI | 0.00497 | 131.34 | 8.716 | 0.00541 | 0.00496 | 0.00455 |
| ____ TL | 0.00614 | -0.11 | 76.099 | 0.01135 | 0.00476 | 0.00231 |
| ____ V | 0.00376 | 14.64 | 12.535 | 0.00398 | 0.00409 | 0.00322 |
| ____ Y1 | 2583.61573 | 2,583.62 | 0.499 | 2585.09491 | 2570.03800 | 2595.71429 |
| ____ Y2A | 90184.33028 | 90,184.33 | 1.881 | 88371.10701 | 91732.21757 | 90449.66627 |
| ____ Y2R | 5707.92307 | 5,707.92 | 1.694 | 5781.76782 | 5743.50520 | 5598.49620 |
| ____ ZN | 0.01475 | 39.23 | 1.759 | 0.01505 | 0.01457 | 0.01464 |
| ____ ZR | -0.00098 | 5.79 | 531.238 | -0.00304 | 0.00493 | -0.00483 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 15 Date/Time: 07/25/2017 15:27

Sample Number: **9112124** Class: UP** Batch: 172051063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.02817 | 160.16 | 2.542 | 0.02872 | 0.02736 | 0.02842 |
| ____ AL | 1.04154 | 97.84 | 3.035 | 1.07255 | 1.04268 | 1.00937 |
| ____ AS | 0.50788 | 34.89 | 2.530 | 0.52187 | 0.49660 | 0.50519 |
| ____ B | 0.27774 | 1,094.85 | 1.333 | 0.27356 | 0.27905 | 0.28061 |
| ____ BA | 0.09586 | 31,896.40 | 0.206 | 0.09598 | 0.09563 | 0.09597 |
| ____ BE | 0.01933 | 4,561.50 | 0.906 | 0.01924 | 0.01921 | 0.01953 |
| ____ CA | 200.57545 | 108,425.82 | 0.703 | 201.82349 | 200.85611 | 199.04674 |
| ____ CD | 0.04868 | 195.39 | 0.405 | 0.04845 | 0.04879 | 0.04880 |
| ____ CO | 0.09663 | 177.47 | 0.263 | 0.09691 | 0.09656 | 0.09642 |
| ____ CR | 0.19757 | 953.70 | 0.446 | 0.19779 | 0.19660 | 0.19832 |
| ____ CU | 0.49781 | 2,806.53 | 0.584 | 0.49501 | 0.49759 | 0.50082 |
| ____ FE | 0.49641 | 66.55 | 0.453 | 0.49411 | 0.49653 | 0.49860 |
| ____ K | 7.09666 | 1,640.04 | 1.139 | 7.18492 | 7.07878 | 7.02628 |
| ____ LI | 1.02745 | 3,607.32 | 0.531 | 1.03294 | 1.02203 | 1.02737 |
| ____ MG | 31.23695 | 26,786.66 | 0.374 | 31.35744 | 31.22912 | 31.12430 |
| ____ MN | 0.06117 | 1,544.33 | 0.791 | 0.06072 | 0.06112 | 0.06168 |
| ____ MO | 0.20790 | 123.45 | 0.832 | 0.20980 | 0.20746 | 0.20643 |
| ____ NA | 59.76332 | 47,122.71 | 0.609 | 60.07373 | 59.85355 | 59.36269 |
| ____ NI | 0.14460 | 176.38 | 1.867 | 0.14178 | 0.14488 | 0.14716 |
| ____ P | 1.05672 | 124.83 | 1.012 | 1.04716 | 1.05472 | 1.06828 |
| ____ PB | 0.48994 | 183.69 | 2.142 | 0.49544 | 0.47784 | 0.49654 |
| ____ S | 128.50907 | 5,405.10 | 0.772 | 129.45741 | 127.47773 | 128.59208 |
| ____ SB | 0.40366 | 52.39 | 0.936 | 0.40708 | 0.40430 | 0.39961 |
| ____ SE | 0.76717 | 51.42 | 3.119 | 0.74073 | 0.78734 | 0.77343 |
| ____ SI | 18.34868 | 1,913.88 | 0.361 | 18.33063 | 18.29333 | 18.42208 |
| ____ SN | 0.59582 | 133.05 | 0.836 | 0.59432 | 0.60137 | 0.59176 |
| ____ SR | 1.16130 | 407,903.53 | 0.978 | 1.15370 | 1.15585 | 1.17436 |
| ____ TI | 0.10921 | 2,420.85 | 1.607 | 0.10772 | 0.10876 | 0.11114 |
| ____ TL | 0.97085 | 86.58 | 1.301 | 0.98039 | 0.95652 | 0.97563 |
| ____ V | 0.10421 | 686.82 | 1.055 | 0.10330 | 0.10391 | 0.10543 |
| ____ Y1 | 2603.11252 | 2,603.11 | 0.801 | 2590.27972 | 2627.16284 | 2591.89500 |
| ____ Y2A | 89693.17559 | 89,693.18 | 3.165 | 91641.12420 | 91002.54796 | 86435.85461 |
| ____ Y2R | 5771.75721 | 5,771.76 | 1.132 | 5714.20716 | 5758.29514 | 5842.76934 |
| ____ ZN | 0.13101 | 343.47 | 0.331 | 0.13058 | 0.13100 | 0.13145 |
| ____ ZR | 1.02555 | 1,024.83 | 0.262 | 1.02372 | 1.02429 | 1.02864 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 16 Date/Time: 07/25/2017 15:31

Sample Number: **9112124** Class: D*** Batch: 172051063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00067 | -18.05 | 97.242 | 0.00140 | 0.00049 | 0.00013 |
| ____ AL | 0.04124 | 31.52 | 277.250 | -0.01768 | 0.17300 | -0.03161 |
| ____ AS | -0.01136 | -0.54 | 108.055 | -0.02472 | -0.00061 | -0.00874 |
| ____ B | 0.08784 | 343.10 | 0.625 | 0.08725 | 0.08834 | 0.08793 |
| ____ BA | 0.04578 | 15,601.77 | 0.375 | 0.04562 | 0.04576 | 0.04596 |
| ____ BE | -0.00037 | -103.90 | 4.130 | -0.00035 | -0.00037 | -0.00038 |
| ____ CA | 203.80981 | 102,092.95 | 0.929 | 203.82255 | 201.91018 | 205.69669 |
| ____ CD | 0.00029 | -4.30 | 168.289 | 0.00024 | 0.00081 | -0.00017 |
| ____ CO | 0.00058 | 2.25 | 187.999 | -0.00047 | 0.00051 | 0.00169 |
| ____ CR | 0.00181 | 8.92 | 35.591 | 0.00184 | 0.00244 | 0.00115 |
| ____ CU | 0.00338 | 11.33 | 11.402 | 0.00375 | 0.00298 | 0.00340 |
| ____ FE | -0.00333 | 0.87 | 418.483 | -0.00467 | 0.01123 | -0.01656 |
| ____ K | 5.23457 | 1,136.94 | 1.330 | 5.28022 | 5.15445 | 5.26904 |
| ____ LI | 0.03001 | 126.00 | 8.132 | 0.02874 | 0.03283 | 0.02847 |
| ____ MG | 31.16029 | 24,773.02 | 0.929 | 31.14058 | 30.88124 | 31.45906 |
| ____ MN | 0.00075 | 15.80 | 24.468 | 0.00082 | 0.00089 | 0.00054 |
| ____ MO | 0.00339 | 0.91 | 17.064 | 0.00374 | 0.00370 | 0.00272 |
| ____ NA | 59.23080 | 43,298.25 | 0.876 | 59.12662 | 58.77206 | 59.79372 |
| ____ NI | 0.00127 | 10.19 | 114.009 | 0.00031 | 0.00056 | 0.00293 |
| ____ P | 0.01440 | 2.57 | 7.964 | 0.01560 | 0.01430 | 0.01331 |
| ____ PB | -0.00051 | -5.39 | 366.838 | -0.00008 | -0.00255 | 0.00111 |
| ____ S | 129.28024 | 5,487.49 | 0.296 | 129.72246 | 129.05936 | 129.05890 |
| ____ SB | 0.00769 | 0.51 | 126.062 | -0.00260 | 0.00901 | 0.01664 |
| ____ SE | -0.00707 | 0.23 | 393.667 | -0.03006 | 0.02389 | -0.01506 |
| ____ SI | 17.80034 | 1,721.05 | 0.980 | 17.74295 | 17.66183 | 17.99623 |
| ____ SN | 0.00593 | 0.86 | 15.274 | 0.00493 | 0.00669 | 0.00616 |
| ____ SR | 1.16081 | 406,020.57 | 2.314 | 1.13283 | 1.18639 | 1.16321 |
| ____ TI | 0.00509 | 132.56 | 5.232 | 0.00478 | 0.00529 | 0.00518 |
| ____ TL | 0.00625 | -0.10 | 90.609 | 0.01000 | 0.00900 | -0.00026 |
| ____ V | 0.00337 | 11.86 | 36.743 | 0.00456 | 0.00209 | 0.00346 |
| ____ Y1 | 2626.93333 | 2,626.93 | 0.080 | 2625.43000 | 2629.33000 | 2626.04000 |
| ____ Y2A | 89324.30791 | 89,324.31 | 3.314 | 89814.60870 | 86149.25634 | 92009.05869 |
| ____ Y2R | 5350.65262 | 5,350.65 | 0.960 | 5293.87103 | 5364.18365 | 5393.90317 |
| ____ ZN | 0.01455 | 39.36 | 1.392 | 0.01465 | 0.01468 | 0.01431 |
| ____ ZR | 0.00212 | 8.28 | 208.826 | -0.00208 | 0.00170 | 0.00673 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 17 Date/Time: 07/25/2017 15:34

Sample Number: **9112124** Class: R*** Batch: 172051063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05751 | 333.61 | 4.806 | 0.05442 | 0.05836 | 0.05975 |
| ____ AL | 2.17186 | 159.43 | 1.087 | 2.19653 | 2.14949 | 2.16956 |
| ____ AS | 0.17556 | 12.21 | 1.841 | 0.17928 | 0.17346 | 0.17394 |
| ____ B | 2.02785 | 7,960.42 | 0.454 | 2.01812 | 2.03643 | 2.02899 |
| ____ BA | 2.12153 | 685,912.13 | 0.476 | 2.11711 | 2.11439 | 2.13308 |
| ____ BE | 0.04965 | 11,705.21 | 0.280 | 0.04949 | 0.04976 | 0.04969 |
| ____ CA | 202.99661 | 101,483.94 | 0.584 | 201.70432 | 204.03474 | 203.25077 |
| ____ CD | 0.05002 | 200.93 | 1.152 | 0.04964 | 0.05069 | 0.04974 |
| ____ CO | 0.49285 | 901.52 | 0.827 | 0.49710 | 0.48897 | 0.49248 |
| ____ CR | 0.20214 | 972.27 | 0.671 | 0.20231 | 0.20340 | 0.20071 |
| ____ CU | 0.26178 | 1,458.90 | 0.867 | 0.26166 | 0.26411 | 0.25958 |
| ____ FE | 1.01581 | 124.62 | 1.473 | 1.00549 | 1.00897 | 1.03297 |
| ____ K | 15.78477 | 3,302.95 | 0.876 | 15.62567 | 15.87505 | 15.85360 |
| ____ LI | 1.06053 | 3,444.02 | 0.240 | 1.06066 | 1.05793 | 1.06301 |
| ____ MG | 32.64601 | 25,889.22 | 0.756 | 32.37079 | 32.84742 | 32.71981 |
| ____ MN | 0.50679 | 12,771.58 | 0.362 | 0.50492 | 0.50858 | 0.50688 |
| ____ MO | 2.15988 | 1,292.41 | 0.618 | 2.17457 | 2.14849 | 2.15657 |
| ____ NA | 68.03075 | 49,629.83 | 0.605 | 67.58999 | 68.40467 | 68.09758 |
| ____ NI | 0.49890 | 586.97 | 0.643 | 0.50190 | 0.49928 | 0.49552 |
| ____ P | 1.05885 | 125.00 | 0.128 | 1.05955 | 1.05728 | 1.05971 |
| ____ PB | 0.14950 | 52.66 | 2.163 | 0.14700 | 0.15315 | 0.14834 |
| ____ S | 126.73366 | 5,327.45 | 0.193 | 126.54945 | 126.63988 | 127.01166 |
| ____ SB | 0.53826 | 69.60 | 0.742 | 0.54158 | 0.53936 | 0.53383 |
| ____ SE | 0.14993 | 10.60 | 12.581 | 0.15846 | 0.12831 | 0.16302 |
| ____ SI | 18.40002 | 1,777.74 | 0.757 | 18.32700 | 18.31251 | 18.56055 |
| ____ SN | 4.09933 | 917.66 | 0.319 | 4.11213 | 4.08603 | 4.09981 |
| ____ SR | 2.12718 | 744,702.71 | 0.606 | 2.11256 | 2.13691 | 2.13205 |
| ____ TI | 1.06471 | 23,328.77 | 0.320 | 1.06084 | 1.06606 | 1.06724 |
| ____ TL | 0.16674 | 12.13 | 8.101 | 0.15225 | 0.16898 | 0.17899 |
| ____ V | 0.52731 | 3,391.72 | 0.196 | 0.52615 | 0.52814 | 0.52764 |
| ____ Y1 | 2601.56145 | 2,601.56 | 0.399 | 2605.49390 | 2609.38810 | 2589.80234 |
| ____ Y2A | 89369.11346 | 89,369.11 | 2.295 | 87000.82319 | 90538.26735 | 90568.24985 |
| ____ Y2R | 5339.75052 | 5,339.75 | 1.406 | 5419.75155 | 5270.77500 | 5328.72500 |
| ____ ZN | 0.51268 | 1,338.29 | 0.398 | 0.51489 | 0.51087 | 0.51227 |
| ____ ZR | 1.04956 | 970.07 | 0.992 | 1.03756 | 1.05626 | 1.05485 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 18 Date/Time: 07/25/2017 15:37

Sample Number: **9112124** Class: M*** Batch: 172051063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05725 | 337.24 | 2.067 | 0.05816 | 0.05591 | 0.05767 |
| ____ AL | 2.05572 | 157.97 | 2.267 | 2.04908 | 2.01278 | 2.10529 |
| ____ AS | 0.16418 | 11.47 | 5.798 | 0.16619 | 0.15381 | 0.17252 |
| ____ B | 1.97364 | 7,875.38 | 1.024 | 1.96495 | 1.95922 | 1.99674 |
| ____ BA | 2.04190 | 670,591.57 | 6.147 | 2.04354 | 2.16659 | 1.91556 |
| ____ BE | 0.04862 | 11,650.62 | 0.897 | 0.04812 | 0.04889 | 0.04886 |
| ____ CA | 201.57075 | 104,403.52 | 0.670 | 201.71090 | 202.84628 | 200.15507 |
| ____ CD | 0.04907 | 197.49 | 0.370 | 0.04886 | 0.04917 | 0.04917 |
| ____ CO | 0.48403 | 887.71 | 0.792 | 0.47988 | 0.48475 | 0.48744 |
| ____ CR | 0.19817 | 969.06 | 1.402 | 0.19780 | 0.19560 | 0.20112 |
| ____ CU | 0.25492 | 1,443.97 | 1.723 | 0.25462 | 0.25068 | 0.25945 |
| ____ FE | 1.00555 | 127.82 | 2.473 | 1.01498 | 1.02431 | 0.97735 |
| ____ K | 15.55579 | 3,372.50 | 1.311 | 15.47804 | 15.78710 | 15.40223 |
| ____ LI | 1.04245 | 3,507.00 | 0.770 | 1.04950 | 1.04415 | 1.03372 |
| ____ MG | 32.23213 | 26,479.78 | 0.751 | 32.22347 | 32.47856 | 31.99436 |
| ____ MN | 0.49792 | 12,753.35 | 0.818 | 0.49343 | 0.49896 | 0.50137 |
| ____ MO | 2.12075 | 1,272.31 | 0.659 | 2.10537 | 2.12423 | 2.13264 |
| ____ NA | 67.28013 | 50,839.14 | 0.662 | 67.15380 | 67.77499 | 66.91160 |
| ____ NI | 0.49076 | 579.03 | 1.210 | 0.48444 | 0.49160 | 0.49622 |
| ____ P | 1.03905 | 123.01 | 0.400 | 1.03497 | 1.03891 | 1.04328 |
| ____ PB | 0.14721 | 51.91 | 3.743 | 0.15355 | 0.14353 | 0.14456 |
| ____ S | 124.68456 | 5,254.75 | 1.350 | 122.87346 | 126.20246 | 124.97776 |
| ____ SB | 0.52334 | 67.82 | 1.876 | 0.51238 | 0.53132 | 0.52633 |
| ____ SE | 0.15605 | 11.03 | 8.799 | 0.14198 | 0.15675 | 0.16941 |
| ____ SI | 18.11212 | 1,812.58 | 0.719 | 18.17388 | 18.19999 | 17.96251 |
| ____ SN | 4.03367 | 905.34 | 0.719 | 4.00540 | 4.03224 | 4.06337 |
| ____ SR | 2.02247 | 719,299.61 | 5.026 | 2.04098 | 2.11359 | 1.91283 |
| ____ TI | 1.04066 | 23,175.76 | 0.920 | 1.03068 | 1.04152 | 1.04976 |
| ____ TL | 0.15951 | 11.59 | 2.803 | 0.16077 | 0.16322 | 0.15455 |
| ____ V | 0.50977 | 3,329.36 | 1.430 | 0.50817 | 0.50341 | 0.51773 |
| ____ Y1 | 2608.51467 | 2,608.51 | 1.315 | 2646.09578 | 2578.89322 | 2600.55500 |
| ____ Y2A | 90841.90631 | 90,841.91 | 2.396 | 92587.75745 | 88402.66414 | 91535.29735 |
| ____ Y2R | 5530.55971 | 5,530.56 | 1.780 | 5636.99860 | 5511.89408 | 5442.78644 |
| ____ ZN | 0.50270 | 1,315.73 | 0.646 | 0.49909 | 0.50359 | 0.50540 |
| ____ ZR | 1.03879 | 994.61 | 0.942 | 1.03833 | 1.04879 | 1.02924 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 19 Date/Time: 07/25/2017 15:40

Sample Number: **9112124** Class: UL** Batch: 172051063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00112 | -15.85 | 174.668 | 0.00251 | 0.00195 | -0.00111 |
| ____ AL | -0.01343 | 30.67 | 319.062 | -0.04200 | 0.03584 | -0.03414 |
| ____ AS | 0.00583 | 0.65 | 115.890 | 0.00155 | 0.01362 | 0.00233 |
| ____ B | 0.02501 | 98.35 | 2.337 | 0.02434 | 0.02524 | 0.02544 |
| ____ BA | 0.00679 | 3,063.14 | 2.635 | 0.00661 | 0.00696 | 0.00679 |
| ____ BE | -0.00030 | -89.46 | 5.255 | -0.00029 | -0.00032 | -0.00029 |
| ____ CA | 39.20517 | 21,817.06 | 2.433 | 38.56131 | 38.75329 | 40.30090 |
| ____ CD | 0.00035 | -4.14 | 73.303 | 0.00042 | 0.00006 | 0.00055 |
| ____ CO | 0.00088 | 3.17 | 89.291 | 0.00117 | -0.00001 | 0.00147 |
| ____ CR | -0.00076 | -3.40 | 90.474 | -0.00081 | -0.00141 | -0.00005 |
| ____ CU | 0.00058 | -18.58 | 162.081 | -0.00008 | 0.00167 | 0.00017 |
| ____ FE | 0.01622 | 3.51 | 25.958 | 0.01566 | 0.01232 | 0.02068 |
| ____ K | 0.95800 | 277.34 | 4.965 | 0.95272 | 0.91330 | 1.00799 |
| ____ LI | 0.01125 | 63.78 | 31.142 | 0.01200 | 0.00743 | 0.01432 |
| ____ MG | 6.20925 | 5,378.90 | 2.480 | 6.10413 | 6.13760 | 6.38603 |
| ____ MN | 0.00042 | 7.53 | 20.059 | 0.00051 | 0.00035 | 0.00039 |
| ____ MO | 0.00182 | -0.04 | 30.490 | 0.00217 | 0.00118 | 0.00211 |
| ____ NA | 11.63437 | 9,186.67 | 1.901 | 11.48470 | 11.53008 | 11.88834 |
| ____ NI | -0.00030 | 8.88 | 249.336 | -0.00109 | -0.00021 | 0.00040 |
| ____ P | 0.00018 | 0.90 | 2410.762 | -0.00464 | 0.00382 | 0.00137 |
| ____ PB | 0.00280 | -4.57 | 53.347 | 0.00409 | 0.00316 | 0.00116 |
| ____ S | 25.58260 | 1,103.62 | 0.764 | 25.74172 | 25.36441 | 25.64168 |
| ____ SB | 0.00679 | 0.40 | 21.139 | 0.00659 | 0.00832 | 0.00547 |
| ____ SE | -0.02370 | -0.89 | 38.496 | -0.02212 | -0.01547 | -0.03350 |
| ____ SI | 3.41235 | 358.25 | 2.921 | 3.31718 | 3.40390 | 3.51599 |
| ____ SN | 0.00375 | 0.37 | 104.516 | 0.00815 | 0.00062 | 0.00249 |
| ____ SR | 0.23395 | 83,083.88 | 0.777 | 0.23193 | 0.23447 | 0.23546 |
| ____ TI | 0.00334 | 95.87 | 7.273 | 0.00308 | 0.00356 | 0.00337 |
| ____ TL | 0.01085 | 0.34 | 80.308 | 0.00087 | 0.01472 | 0.01694 |
| ____ V | 0.00057 | -7.65 | 288.634 | 0.00216 | 0.00069 | -0.00113 |
| ____ Y1 | 2666.92833 | 2,666.93 | 0.258 | 2667.65500 | 2673.40500 | 2659.72500 |
| ____ Y2A | 90674.64122 | 90,674.64 | 2.489 | 88083.08338 | 91731.35855 | 92209.48173 |
| ____ Y2R | 5797.69905 | 5,797.70 | 3.590 | 5958.34165 | 5872.15569 | 5562.59980 |
| ____ ZN | 0.00340 | 10.32 | 9.878 | 0.00371 | 0.00304 | 0.00344 |
| ____ ZR | -0.00100 | 5.80 | 247.896 | -0.00379 | 0.00100 | -0.00023 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 20 Date/Time: 07/25/2017 15:43

Sample Number: **9112123** Class: **** Batch: 172051063502

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00206 | -10.10 | 51.063 | 0.00327 | 0.00144 | 0.00146 |
| ____ AL | 0.08785 | 37.70 | 18.059 | 0.10602 | 0.07669 | 0.08085 |
| ____ AS | 0.00074 | 0.29 | 805.303 | 0.00130 | 0.00638 | -0.00547 |
| ____ B | 0.08996 | 359.47 | 1.522 | 0.08853 | 0.09007 | 0.09126 |
| ____ BA | 0.04770 | 16,561.66 | 0.783 | 0.04764 | 0.04736 | 0.04810 |
| ____ BE | -0.00038 | -109.24 | 6.434 | -0.00041 | -0.00036 | -0.00037 |
| ____ CA | 197.85256 | 109,165.07 | 0.214 | 198.18182 | 197.37398 | 198.00188 |
| ____ CD | 0.00028 | -4.25 | 82.875 | 0.00032 | 0.00003 | 0.00050 |
| ____ CO | -0.00041 | 0.45 | 99.315 | -0.00035 | -0.00004 | -0.00085 |
| ____ CR | 0.00398 | 19.83 | 40.401 | 0.00490 | 0.00490 | 0.00212 |
| ____ CU | 0.00297 | 8.57 | 62.502 | 0.00143 | 0.00245 | 0.00503 |
| ____ FE | 0.11547 | 16.87 | 13.073 | 0.11742 | 0.09949 | 0.12949 |
| ____ K | 5.09978 | 1,220.60 | 2.946 | 5.26028 | 4.96257 | 5.07648 |
| ____ LI | 0.02864 | 133.52 | 18.655 | 0.03199 | 0.03145 | 0.02248 |
| ____ MG | 30.11896 | 26,357.74 | 0.434 | 30.25130 | 29.99023 | 30.11536 |
| ____ MN | 0.00979 | 248.87 | 1.675 | 0.00965 | 0.00975 | 0.00997 |
| ____ MO | 0.00290 | 0.61 | 40.099 | 0.00209 | 0.00238 | 0.00423 |
| ____ NA | 57.39374 | 46,169.15 | 0.434 | 57.60905 | 57.12104 | 57.45113 |
| ____ NI | 0.00077 | 9.50 | 187.270 | 0.00066 | -0.00062 | 0.00225 |
| ____ P | 0.01554 | 2.67 | 9.185 | 0.01394 | 0.01600 | 0.01668 |
| ____ PB | -0.00297 | -6.27 | 214.643 | -0.00768 | 0.00427 | -0.00548 |
| ____ S | 128.40175 | 5,383.36 | 0.409 | 128.94741 | 127.90008 | 128.35776 |
| ____ SB | 0.00826 | 0.59 | 29.606 | 0.00859 | 0.00567 | 0.01053 |
| ____ SE | -0.00568 | 0.32 | 235.901 | -0.02069 | 0.00510 | -0.00146 |
| ____ SI | 17.60091 | 1,872.74 | 0.333 | 17.58319 | 17.55325 | 17.66628 |
| ____ SN | 0.00397 | 0.41 | 114.663 | 0.00236 | 0.00044 | 0.00911 |
| ____ SR | 1.14718 | 409,808.05 | 0.275 | 1.14413 | 1.14701 | 1.15042 |
| ____ TI | 0.00908 | 224.65 | 7.567 | 0.00897 | 0.00981 | 0.00845 |
| ____ TL | 0.01099 | 0.33 | 105.275 | 0.01442 | -0.00191 | 0.02046 |
| ____ V | 0.00376 | 14.75 | 22.186 | 0.00329 | 0.00327 | 0.00472 |
| ____ Y1 | 2594.72070 | 2,594.72 | 0.198 | 2588.85946 | 2596.88218 | 2598.42047 |
| ____ Y2A | 91203.12724 | 91,203.13 | 0.608 | 91613.91711 | 91423.09225 | 90572.37236 |
| ____ Y2R | 5888.38377 | 5,888.38 | 0.382 | 5866.29068 | 5911.22102 | 5887.63961 |
| ____ ZN | 0.01642 | 43.72 | 2.268 | 0.01681 | 0.01638 | 0.01607 |
| ____ ZR | 0.00080 | 7.76 | 1264.824 | 0.00225 | 0.01010 | -0.00995 |

LANCASTER LABORATORIES

Run Name: 1720606T71

Instrument ID: 16315

Tube: 21

Date/Time: 07/25/2017 15:47

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.48402 | 2,868.54 | 0.556 | 0.48363 | 0.48154 | 0.48688 |
| ____ AL | 24.97289 | 1,570.09 | 0.586 | 25.05059 | 24.80403 | 25.06405 |
| ____ AS | 0.48775 | 34.54 | 1.205 | 0.49450 | 0.48376 | 0.48498 |
| ____ B | 0.47754 | 2,031.16 | 1.141 | 0.48160 | 0.47135 | 0.47967 |
| ____ BA | 0.49587 | 162,381.84 | 0.638 | 0.49537 | 0.49298 | 0.49925 |
| ____ BE | 0.46754 | 111,332.65 | 1.086 | 0.46890 | 0.46191 | 0.47179 |
| ____ CA | 25.02604 | 13,515.79 | 0.503 | 25.16462 | 24.91862 | 24.99488 |
| ____ CD | 0.48606 | 2,064.60 | 0.377 | 0.48668 | 0.48750 | 0.48400 |
| ____ CO | 0.48725 | 916.48 | 0.263 | 0.48838 | 0.48751 | 0.48586 |
| ____ CR | 0.48208 | 2,338.51 | 1.688 | 0.48875 | 0.47301 | 0.48447 |
| ____ CU | 0.48608 | 2,736.36 | 1.054 | 0.48834 | 0.48021 | 0.48968 |
| ____ FE | 24.84055 | 3,134.37 | 1.171 | 24.86521 | 24.53805 | 25.11839 |
| ____ K | 25.32190 | 5,526.61 | 1.356 | 25.41425 | 24.94192 | 25.60953 |
| ____ LI | 0.49688 | 1,703.30 | 0.128 | 0.49632 | 0.49757 | 0.49675 |
| ____ MG | 24.93093 | 20,802.42 | 0.769 | 25.11341 | 24.73112 | 24.94826 |
| ____ MN | 0.48682 | 12,385.80 | 1.225 | 0.48889 | 0.48009 | 0.49146 |
| ____ MO | 0.50559 | 310.86 | 0.553 | 0.50311 | 0.50862 | 0.50505 |
| ____ NA | 25.19356 | 19,281.68 | 0.481 | 25.30435 | 25.06403 | 25.21231 |
| ____ NI | 0.48746 | 590.98 | 0.530 | 0.48780 | 0.48985 | 0.48472 |
| ____ P | 0.48376 | 59.33 | 0.257 | 0.48310 | 0.48519 | 0.48300 |
| ____ PB | 0.48798 | 191.26 | 1.458 | 0.48407 | 0.49619 | 0.48367 |
| ____ S | 24.78648 | 1,074.90 | 0.421 | 24.78536 | 24.89146 | 24.68261 |
| ____ SB | 0.49205 | 66.49 | 0.485 | 0.49473 | 0.49015 | 0.49127 |
| ____ SE | 0.47696 | 33.14 | 3.093 | 0.49249 | 0.47525 | 0.46314 |
| ____ SI | 25.17370 | 2,550.66 | 0.986 | 25.21972 | 24.90561 | 25.39577 |
| ____ SN | 0.49202 | 113.06 | 0.370 | 0.49398 | 0.49170 | 0.49039 |
| ____ SR | 0.49674 | 175,415.86 | 0.694 | 0.49648 | 0.49342 | 0.50030 |
| ____ TI | 0.50636 | 11,224.70 | 0.939 | 0.50841 | 0.50092 | 0.50975 |
| ____ TL | 0.50855 | 44.54 | 0.945 | 0.51244 | 0.51003 | 0.50317 |
| ____ V | 0.49685 | 3,387.00 | 1.069 | 0.50099 | 0.49086 | 0.49869 |
| ____ Y1 | 2680.80167 | 2,680.80 | 0.235 | 2674.04500 | 2686.53000 | 2681.83000 |
| ____ Y2A | 90176.97938 | 90,176.98 | 3.505 | 88842.16313 | 93786.52500 | 87902.25000 |
| ____ Y2R | 5607.02657 | 5,607.03 | 0.924 | 5630.28626 | 5643.14234 | 5547.65111 |
| ____ ZN | 0.48875 | 1,320.64 | 0.632 | 0.48898 | 0.49172 | 0.48555 |
| ____ ZR | 0.50158 | 490.27 | 0.456 | 0.50194 | 0.49913 | 0.50366 |

LANCASTER LABORATORIES

Run Name: 1720606T71 Instrument ID: 16315

Tube: 22 Date/Time: 07/25/2017 15:49

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00035 | -20.35 | 416.302 | 0.00064 | 0.00163 | -0.00123 |
| ____ AL | -0.05878 | 26.98 | 94.409 | 0.00530 | -0.09056 | -0.09107 |
| ____ AS | -0.00327 | 0.02 | 296.243 | 0.00690 | -0.00434 | -0.01235 |
| ____ B | 0.00385 | 13.68 | 31.286 | 0.00376 | 0.00509 | 0.00269 |
| ____ BA | -0.00313 | -183.71 | 1.005 | -0.00314 | -0.00315 | -0.00309 |
| ____ BE | -0.00023 | -72.40 | 7.306 | -0.00024 | -0.00021 | -0.00024 |
| ____ CA | -0.00015 | 32.17 | 6339.793 | -0.00862 | -0.00236 | 0.01052 |
| ____ CD | 0.00023 | -4.66 | 45.712 | 0.00028 | 0.00031 | 0.00011 |
| ____ CO | 0.00097 | 3.44 | 64.890 | 0.00046 | 0.00077 | 0.00167 |
| ____ CR | -0.00036 | -1.43 | 46.434 | -0.00033 | -0.00054 | -0.00021 |
| ____ CU | 0.00054 | -22.03 | 101.105 | 0.00098 | 0.00073 | -0.00008 |
| ____ FE | -0.00756 | 0.35 | 251.556 | -0.02083 | 0.01422 | -0.01605 |
| ____ K | 0.01767 | 65.78 | 213.123 | 0.06101 | -0.00090 | -0.00710 |
| ____ LI | 0.00039 | 23.32 | 1076.100 | 0.00266 | 0.00292 | -0.00442 |
| ____ MG | -0.00332 | -3.72 | 141.053 | -0.00742 | 0.00178 | -0.00432 |
| ____ MN | 0.00029 | 4.05 | 97.075 | 0.00043 | 0.00047 | -0.00003 |
| ____ MO | -0.00020 | -1.29 | 430.979 | 0.00071 | -0.00029 | -0.00102 |
| ____ NA | -0.02540 | -49.17 | 30.618 | -0.01643 | -0.02938 | -0.03037 |
| ____ NI | -0.00010 | 9.30 | 1785.625 | -0.00133 | -0.00093 | 0.00196 |
| ____ P | 0.00010 | 0.90 | 5813.595 | 0.00668 | -0.00277 | -0.00362 |
| ____ PB | 0.00117 | -5.39 | 444.677 | 0.00289 | -0.00468 | 0.00531 |
| ____ S | 0.01467 | 2.15 | 136.807 | 0.00294 | 0.00322 | 0.03784 |
| ____ SB | 0.00576 | 0.25 | 141.375 | 0.00618 | -0.00258 | 0.01369 |
| ____ SE | 0.00299 | 0.92 | 479.804 | -0.00402 | -0.00649 | 0.01947 |
| ____ SI | 0.02876 | 4.12 | 39.872 | 0.03752 | 0.03298 | 0.01578 |
| ____ SN | 0.00413 | 0.47 | 79.193 | 0.00771 | 0.00337 | 0.00130 |
| ____ SR | 0.00000 | -21.12 | 3748.500 | 0.00002 | -0.00001 | 0.00000 |
| ____ TI | 0.00004 | 22.30 | 309.797 | 0.00014 | 0.00007 | -0.00010 |
| ____ TL | 0.01082 | 0.34 | 48.139 | 0.01611 | 0.00569 | 0.01066 |
| ____ V | 0.00068 | -6.41 | 22.293 | 0.00078 | 0.00051 | 0.00076 |
| ____ Y1 | 2699.49500 | 2,699.50 | 1.818 | 2712.42500 | 2740.82500 | 2645.23500 |
| ____ Y2A | 89793.71335 | 89,793.71 | 4.667 | 90828.55219 | 85182.52699 | 93370.06087 |
| ____ Y2R | 5644.88333 | 5,644.88 | 3.900 | 5515.72500 | 5519.85000 | 5899.07500 |
| ____ ZN | 0.00019 | 1.82 | 30.834 | 0.00026 | 0.00017 | 0.00015 |
| ____ ZR | 0.00002 | 6.58 | 2654.057 | 0.00216 | 0.00168 | -0.00380 |

# ICP-MS Data

# Metals in Liquid

eurofins | Lancaster Laboratories Environmental

# ICP-MS Run Data Report

Method Reference Name(s):

Date File Name: 17G26F00.E03

Run Name: 1720704E03

Analyst: 1242

Reviewed By: Choon Y Tian

Reviewed Date: 07/26/2017 11:09

Verified By: Robert Strocko

Verified Date: 07/27/2017 15:11

Instrument Parameters:

Rinse Time (sec): 25.00

| INTERNAL STD. | ELEMENT | MASS |
|---|---|---|
| **SC-1** | | 45 |
| | NA | 23 |
| | MG | 24 |
| | AL | 27 |
| | K | 39 |
| | CA | 44 |
| | TI | 47 |
| | V | 51 |
| | CR | 52 |
| | MN | 55 |
| | FE | 57 |
| **IN-1** | | 115 |
| | CO | 59 |
| | NI | 60 |
| | CU | 63 |
| | ZN | 66 |
| | AS | 75 |
| | SR | 88 |
| | MO | 98 |
| | AG | 107 |
| | CD | 111 |
| | SN | 120 |
| | SB | 121 |
| | BA | 137 |
| **BI-1** | | 209 |
| | TL | 203 |
| | PB | 208 |
| | U | 238 |

Run Name: 1720704E03 Date/Time: 07/26/2017 8:56:00
Tube Number: 1
Sample Number: **S0**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| *NA* | 23 | 0.00000 | 12983.60000 | 25584700 | 1.00838 | -0.70781 | -0.30103 |
| *MG* | 24 | 0.00000 | 60.00270 | 127453000000 | 0.00152 | -0.27095 | 0.26944 |
| *AL* | 27 | 0.00000 | 6.66691 | -17294200000 | -0.25829 | 0.51659 | -0.25829 |
| *K* | 39 | 0.00003 | 17455.50000 | 16964500 | -3.63960 | -2.55860 | 6.19648 |
| *CA* | 44 | 0.00000 | 413.35800 | 1919860000 | 21.90844 | -31.58600 | 9.67803 |
| *SC-1* | 45 | 49297.10000 | 0.00000 | 0.278 | 49233.50000 | 49203.40000 | 49454.40000 |
| *TI* | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *V* | 51 | 0.00000 | 20.00070 | 1227750000 | -0.01993 | 0.02006 | -0.00013 |
| *CR* | 52 | 0.00000 | 86.67040 | -14081600000 | -0.05702 | 0.03671 | 0.02031 |
| *MN* | 55 | 0.00000 | 23.33450 | 1656530000 | -0.00882 | -0.03573 | 0.04455 |
| *FE* | 57 | 0.00000 | 30.00110 | 938462000 | 0.73867 | 0.74048 | -1.47915 |
| *CO* | 59 | 0.00000 | 90.00500 | 1387310000 | -0.01470 | -0.03174 | 0.04645 |
| *NI* | 60 | 0.00000 | 20.00080 | -2459270000 | 0.06545 | -0.00112 | -0.06434 |
| *CU* | 63 | 0.00000 | 43.33520 | -4367040000 | -0.00305 | 0.01881 | -0.01576 |
| *ZN* | 66 | 0.00000 | 23.33420 | 9896680000 | -0.02640 | -0.11893 | 0.14532 |
| *GE-1* | 72 | 113045.00000 | 0.00000 | 1.132 | 111714.00000 | 114267.00000 | 113155.00000 |
| *AS* | 75 | 0.00000 | 30.66690 | 2182070000 | 0.23504 | -0.11788 | -0.11716 |
| *SR* | 88 | 0.00000 | 10.00040 | -4913890000 | -0.02253 | -0.00003 | 0.02255 |
| *MO* | 98 | 0.00000 | 3.33346 | 3385070000 | -0.00529 | 0.01058 | -0.00529 |
| *AG* | 107 | 0.00000 | 3.33346 | -19113700000 | -0.00229 | -0.00229 | 0.00458 |
| *CD* | 111 | 0.00000 | 2.00002 | -15971200000 | 0.01161 | -0.01143 | -0.00018 |
| *IN-1* | 115 | 55459.90000 | 0.00000 | 1.455 | 54529.70000 | 55975.30000 | 55874.70000 |
| *SN* | 120 | 0.00000 | 43.33500 | 8581140000 | -0.00509 | -0.06420 | 0.06929 |
| *SB* | 121 | 0.00000 | 13.33410 | 31888800000 | -0.03908 | 0.04881 | -0.00973 |
| *BA* | 137 | 0.00000 | 3.33347 | 4894150000 | -0.02122 | -0.02122 | 0.04244 |
| *TB-1* | 159 | 187398.00000 | 0.00000 | 0.732 | 187259.00000 | 188833.00000 | 186102.00000 |
| *TL* | 203 | 0.00000 | 3.33347 | -4510170000 | 0.00564 | -0.00282 | -0.00282 |
| *PB* | 208 | 0.00000 | 116.67200 | -452645000 | 0.00361 | -0.00986 | 0.00625 |
| *BI-1* | 209 | 140529.00000 | 0.00000 | 0.840 | 139858.00000 | 141892.00000 | 139836.00000 |
| *U* | 238 | 0.00000 | 10.00040 | -23157800 | 0.00001 | -0.00002 | 0.00001 |

Run Name: 1720704E03 Date/Time: 07/26/2017 8:57:00
Tube Number: 2
Sample Number: **S1**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 48501.00000 | 0.00000 | 3.561 | 46794.70000 | 48460.90000 | 50247.50000 |
| AL | 27 | 10000.00000 | 254240.00000 | 3.467 | 10244.26476 | 10152.59754 | 9603.12834 |
| CA | 44 | 10000.00000 | 26136.90000 | 2.840 | 10198.64145 | 10126.71584 | 9674.65703 |
| CR | 52 | 1000.00000 | 630811.00000 | 4.161 | 1036.00094 | 1009.56901 | 954.43767 |
| FE | 57 | 10000.00000 | 133353.00000 | 4.388 | 10478.54522 | 9904.76614 | 9616.66596 |
| K | 39 | 10000.00000 | 478737.00000 | 3.001 | 10277.71412 | 10040.63531 | 9681.65364 |
| MG | 24 | 10000.00000 | 721720.00000 | 3.610 | 10391.23880 | 9929.01212 | 9679.78587 |
| MN | 55 | 1000.00000 | 365686.00000 | 3.103 | 1033.18638 | 995.10906 | 971.70292 |
| NA | 23 | 10000.00000 | 1575340.00000 | 3.494 | 10356.60831 | 9985.10777 | 9658.21911 |
| TI | 47 | 1000.00000 | 15322.90000 | 7.404 | 1083.19803 | 975.42753 | 941.37411 |
| V | 51 | 1000.00000 | 492696.00000 | 3.535 | 1036.22127 | 998.17073 | 965.60096 |
| **IN-1** | 115 | 51900.40000 | 0.00000 | 2.025 | 51567.50000 | 51055.70000 | 53078.00000 |
| AG | 107 | 100.00000 | 135137.00000 | 1.946 | 100.03505 | 101.92830 | 98.03746 |
| AS | 75 | 1000.00000 | 55620.60000 | 2.305 | 1011.65349 | 1014.89720 | 973.45747 |
| BA | 137 | 1000.00000 | 145873.00000 | 2.163 | 998.36624 | 1022.39888 | 979.23559 |
| CD | 111 | 100.00000 | 16520.80000 | 2.129 | 100.60437 | 101.76124 | 97.63452 |
| CO | 59 | 1000.00000 | 1189100.00000 | 0.766 | 1000.77615 | 1007.24422 | 991.97952 |
| CU | 63 | 1000.00000 | 802981.00000 | 2.029 | 1019.79714 | 1000.95215 | 979.24289 |
| MO | 98 | 100.00000 | 58415.10000 | 3.658 | 101.39168 | 102.75774 | 95.85046 |
| NI | 60 | 1000.00000 | 293297.00000 | 1.865 | 1016.11471 | 1004.32012 | 979.56273 |
| SB | 121 | 100.00000 | 31657.50000 | 2.264 | 98.59570 | 102.61177 | 98.79247 |
| SN | 120 | 100.00000 | 48755.70000 | 1.211 | 100.35998 | 100.99006 | 98.64989 |
| SR | 88 | 100.00000 | 41217.60000 | 1.416 | 101.61806 | 99.39379 | 98.98798 |
| ZN | 66 | 1000.00000 | 105520.00000 | 2.640 | 1027.96834 | 996.49462 | 975.53299 |
| **BI-1** | 209 | 131392.00000 | 0.00000 | 2.446 | 134921.00000 | 128633.00000 | 130622.00000 |
| PB | 208 | 100.00000 | 356695.00000 | 1.964 | 97.77720 | 101.50140 | 100.72155 |
| TL | 203 | 100.00000 | 111139.00000 | 1.723 | 98.87845 | 99.13717 | 101.98438 |
| U | 238 | 100.00000 | 417442.00000 | 2.161 | 98.19327 | 102.39358 | 99.41310 |
| *GE-1* | 72 | 104043.00000 | 0.00000 | 1.424 | 104069.00000 | 102548.00000 | 105511.00000 |
| *TB-1* | 159 | 181199.00000 | 0.00000 | 1.102 | 179838.00000 | 180269.00000 | 183491.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 8:59:00
Tube Number: 3
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 48333.90000 | 0.00000 | 2.650 | 49123.50000 | 46855.40000 | 49022.90000 |
| AL | 27 | 5.98100 | 156.67300 | 57.298 | 4.39855 | 9.91319 | 3.63040 |
| CA | 44 | -3.59000 | 396.69000 | -505.014 | -4.53448 | -21.23195 | 14.99452 |
| CR | 52 | 0.91280 | 660.04400 | 10.766 | 1.02231 | 0.83236 | 0.88362 |
| FE | 57 | 14.83000 | 226.67700 | 5.113 | 14.06217 | 14.85027 | 15.57843 |
| K | 39 | 2.11700 | 17208.60000 | 177.421 | 1.03887 | 6.29482 | -0.98272 |
| MG | 24 | 10.33000 | 803.39600 | 16.854 | 9.16279 | 9.50264 | 12.33422 |
| MN | 55 | 0.54020 | 220.01000 | 30.692 | 0.39604 | 0.50311 | 0.72145 |
| NA | 23 | 29.21000 | 17271.90000 | 19.743 | 30.96510 | 33.90009 | 22.77206 |
| TI | 47 | 0.65370 | 10.00040 | 98.440 | 1.28660 | 0.67444 | 0.00000 |
| V | 51 | 0.34770 | 190.00900 | 42.565 | 0.18035 | 0.40095 | 0.46172 |
| **IN-1** | 115 | 52388.40000 | 0.00000 | 6.286 | 55492.30000 | 48934.70000 | 52738.20000 |
| AG | 107 | 0.07850 | 110.00600 | 25.006 | 0.08766 | 0.09187 | 0.05596 |
| AS | 75 | 1.17800 | 94.66770 | 18.990 | 0.99565 | 1.42738 | 1.11010 |
| BA | 137 | 0.32890 | 50.00250 | 79.964 | 0.04288 | 0.56032 | 0.38348 |
| CD | 111 | 0.02822 | 6.66672 | 58.186 | 0.04517 | 0.02708 | 0.01240 |
| CO | 59 | 0.32190 | 470.02600 | 13.302 | 0.27535 | 0.33065 | 0.35964 |
| CU | 63 | 0.42560 | 386.68800 | 7.481 | 0.46198 | 0.41178 | 0.40295 |
| MO | 98 | 0.08966 | 56.66890 | 32.612 | 0.12275 | 0.06731 | 0.07891 |
| NI | 60 | 0.47130 | 160.00800 | 45.916 | 0.70091 | 0.44187 | 0.27117 |
| SB | 121 | 0.67800 | 230.01300 | 10.397 | 0.72925 | 0.59762 | 0.70717 |
| SN | 120 | 0.45370 | 260.01400 | 48.160 | 0.20472 | 0.61338 | 0.54295 |
| SR | 88 | 0.14110 | 66.66950 | 60.354 | 0.04556 | 0.20911 | 0.16852 |
| ZN | 66 | 0.43140 | 66.67000 | 73.714 | 0.23638 | 0.79837 | 0.25953 |
| **BI-1** | 209 | 134291.00000 | 0.00000 | 2.976 | 137517.00000 | 129819.00000 | 135537.00000 |
| PB | 208 | 0.02165 | 190.00900 | 48.730 | 0.00955 | 0.02896 | 0.02645 |
| TL | 203 | 0.03857 | 46.66860 | 54.421 | 0.01438 | 0.05182 | 0.04952 |
| U | 238 | 0.03925 | 176.67500 | 27.592 | 0.02751 | 0.04139 | 0.04884 |
| *GE-1* | 72 | 108332.00000 | 0.00000 | 5.937 | 114224.00000 | 101471.00000 | 109302.00000 |
| *TB-1* | 159 | 181342.00000 | 0.00000 | 2.217 | 185078.00000 | 177088.00000 | 181860.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:01:00
Tube Number: 4
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 48815.60000 | 0.00000 | 1.863 | 48018.80000 | 49806.50000 | 48621.50000 |
| AL | 27 | 3.51100 | 96.67350 | 38.678 | 2.12373 | 3.56948 | 4.83877 |
| CA | 44 | 40.47000 | 513.36500 | 61.329 | 65.69019 | 16.05908 | 39.67017 |
| CR | 52 | 0.52100 | 416.69000 | 8.528 | 0.56893 | 0.51281 | 0.48120 |
| FE | 57 | 13.18000 | 206.67700 | 9.302 | 14.43684 | 13.10953 | 11.98797 |
| K | 39 | 1.53800 | 17348.80000 | 862.809 | 9.17894 | -13.78460 | 9.21626 |
| MG | 24 | 6.10900 | 503.36000 | 31.282 | 4.77712 | 5.25052 | 8.29888 |
| MN | 55 | 0.12830 | 70.00320 | 76.041 | 0.24098 | 0.07040 | 0.07364 |
| NA | 23 | 18.96000 | 15843.50000 | 6.414 | 17.58306 | 19.88145 | 19.41942 |
| TI | 47 | 0.43870 | 6.66692 | 173.216 | 1.31619 | 0.00000 | 0.00000 |
| V | 51 | 0.08094 | 60.00330 | 42.847 | 0.10348 | 0.09834 | 0.04101 |
| **IN-1** | 115 | 52805.00000 | 0.00000 | 1.668 | 52400.50000 | 53815.40000 | 52199.00000 |
| AG | 107 | 0.01218 | 20.00080 | 57.693 | 0.01237 | 0.01911 | 0.00507 |
| AS | 75 | 0.58990 | 62.66730 | 10.595 | 0.55063 | 0.55722 | 0.66203 |
| BA | 137 | 0.04692 | 10.00040 | 251.492 | -0.02122 | -0.02122 | 0.18322 |
| CD | 111 | 0.02418 | 6.00006 | 84.657 | 0.00056 | 0.03527 | 0.03671 |
| CO | 59 | 0.04506 | 140.00600 | 49.911 | 0.07087 | 0.03471 | 0.02961 |
| CU | 63 | 0.10050 | 123.34100 | 43.144 | 0.14688 | 0.09365 | 0.06097 |
| MO | 98 | 0.11860 | 73.33640 | 44.528 | 0.16420 | 0.06072 | 0.13082 |
| NI | 60 | 0.06904 | 40.00200 | 93.801 | 0.07073 | 0.13294 | 0.00346 |
| SB | 121 | 0.08422 | 40.00210 | 108.003 | 0.08610 | 0.17422 | -0.00766 |
| SN | 120 | 0.08499 | 83.33690 | 15.943 | 0.07940 | 0.07513 | 0.10044 |
| SR | 88 | 0.07268 | 40.00150 | 30.930 | 0.04958 | 0.09449 | 0.07398 |
| ZN | 66 | 0.29130 | 53.33540 | 39.375 | 0.35640 | 0.15880 | 0.35857 |
| **BI-1** | 209 | 135434.00000 | 0.00000 | 0.533 | 134647.00000 | 136065.00000 | 135590.00000 |
| PB | 208 | -0.00069 | 110.00500 | -1826.110 | 0.01041 | 0.00186 | -0.01433 |
| TL | 203 | 0.00591 | 10.00040 | 0.788 | 0.00596 | 0.00587 | 0.00590 |
| U | 238 | 0.00553 | 33.33470 | 106.696 | 0.01178 | 0.00007 | 0.00472 |
| *GE-1* | 72 | 106822.00000 | 0.00000 | 0.189 | 107044.00000 | 106771.00000 | 106650.00000 |
| *TB-1* | 159 | 181925.00000 | 0.00000 | 0.215 | 181493.00000 | 182023.00000 | 182258.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:03:00
Tube Number: 5
Sample Number: **ICV**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 49237.00000 | 0.00000 | 1.984 | 48571.00000 | 48781.70000 | 50358.20000 |
| AL | 27 | 5234.00000 | 135163.00000 | 2.407 | 5333.62304 | 5276.93889 | 5092.69171 |
| CA | 44 | 5080.00000 | 13684.30000 | 6.110 | 5434.18996 | 4857.19722 | 4947.38645 |
| CR | 52 | 514.10000 | 329475.00000 | 2.587 | 527.74900 | 513.33491 | 501.18706 |
| FE | 57 | 5179.00000 | 70176.80000 | 3.192 | 5345.80474 | 5177.45589 | 5015.22318 |
| K | 39 | 5155.00000 | 259075.00000 | 2.625 | 5273.81352 | 5183.71117 | 5007.81089 |
| MG | 24 | 5229.00000 | 383371.00000 | 1.928 | 5312.16377 | 5258.00905 | 5116.95340 |
| MN | 55 | 518.20000 | 192479.00000 | 1.963 | 528.01290 | 518.88234 | 507.71349 |
| NA | 23 | 4801.00000 | 774909.00000 | 2.649 | 4908.84927 | 4833.52727 | 4660.68450 |
| TI | 47 | 518.10000 | 8072.78000 | 1.439 | 509.57858 | 523.59020 | 521.00885 |
| V | 51 | 505.90000 | 253187.00000 | 2.560 | 508.73898 | 517.21402 | 491.77245 |
| **IN-1** | 115 | 52702.40000 | 0.00000 | 2.861 | 52480.70000 | 51317.40000 | 54309.30000 |
| AG | 107 | 51.42000 | 70534.60000 | 3.790 | 52.15065 | 52.90393 | 49.21431 |
| AS | 75 | 509.20000 | 28769.40000 | 2.769 | 517.79368 | 516.89220 | 492.93526 |
| BA | 137 | 513.10000 | 75980.00000 | 3.660 | 521.93371 | 525.88751 | 491.57010 |
| CD | 111 | 51.96000 | 8714.38000 | 3.543 | 51.33359 | 54.02878 | 50.50765 |
| CO | 59 | 468.30000 | 565250.00000 | 3.150 | 472.74830 | 480.34347 | 451.86351 |
| CU | 63 | 515.50000 | 420160.00000 | 3.680 | 524.49597 | 528.30200 | 493.70708 |
| MO | 98 | 50.47000 | 29932.80000 | 3.719 | 50.58502 | 52.28684 | 48.53759 |
| NI | 60 | 522.30000 | 155469.00000 | 4.656 | 520.68298 | 547.41638 | 498.86535 |
| SB | 121 | 54.47000 | 17509.50000 | 3.059 | 53.77174 | 56.36714 | 53.26032 |
| SN | 120 | 53.25000 | 26368.60000 | 4.299 | 54.71915 | 54.42188 | 50.61326 |
| SR | 88 | 49.63000 | 20754.30000 | 6.135 | 50.24557 | 52.31935 | 46.32344 |
| ZN | 66 | 507.60000 | 54381.90000 | 2.723 | 514.09917 | 516.90090 | 491.69003 |
| **BI-1** | 209 | 134662.00000 | 0.00000 | 3.021 | 134083.00000 | 130916.00000 | 138989.00000 |
| PB | 208 | 50.78000 | 185657.00000 | 2.802 | 50.76627 | 52.21260 | 49.36761 |
| TL | 203 | 50.55000 | 57546.40000 | 2.930 | 50.89625 | 51.81936 | 48.92092 |
| U | 238 | 51.22000 | 219052.00000 | 3.536 | 52.18670 | 52.33637 | 49.12813 |
| *GE-1* | 72 | 108856.00000 | 0.00000 | 4.090 | 109544.00000 | 104101.00000 | 112924.00000 |
| *TB-1* | 159 | 185298.00000 | 0.00000 | 2.526 | 184864.00000 | 180850.00000 | 190182.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:04:00
Tube Number: 6
Sample Number: **ICB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 50635.60000 | 0.00000 | 2.830 | 52024.50000 | 49163.10000 | 50719.10000 |
| AL | 27 | 4.49400 | 126.67200 | 24.989 | 4.87178 | 3.23157 | 5.37967 |
| CA | 44 | 22.15000 | 483.36100 | 98.465 | 19.50359 | 45.15595 | 1.78285 |
| CR | 52 | 0.67550 | 533.36200 | 10.598 | 0.61810 | 0.75570 | 0.65263 |
| FE | 57 | 2.83200 | 70.00270 | 47.599 | 1.27884 | 3.69983 | 3.51840 |
| K | 39 | -12.58000 | 17308.70000 | -124.324 | -30.05742 | 0.09352 | -7.79000 |
| MG | 24 | 6.93600 | 583.37000 | 30.666 | 4.86278 | 6.83259 | 9.11359 |
| MN | 55 | 0.33800 | 153.34000 | 14.950 | 0.39594 | 0.31479 | 0.30321 |
| NA | 23 | 31.38000 | 18440.20000 | 19.293 | 25.16171 | 37.25524 | 31.70833 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.39520 | 223.34300 | 24.539 | 0.37605 | 0.50031 | 0.30918 |
| **IN-1** | 115 | 54069.90000 | 0.00000 | 0.739 | 53975.40000 | 53726.20000 | 54508.20000 |
| AG | 107 | 0.06162 | 90.00380 | 11.353 | 0.06885 | 0.05489 | 0.06111 |
| AS | 75 | 0.49410 | 58.66720 | 25.278 | 0.55403 | 0.35054 | 0.57779 |
| BA | 137 | 0.32990 | 53.33630 | 30.828 | 0.44012 | 0.30982 | 0.23982 |
| CD | 111 | 0.05036 | 10.66670 | 73.014 | 0.03513 | 0.02365 | 0.09230 |
| CO | 59 | 0.21150 | 350.02100 | 41.210 | 0.12335 | 0.21362 | 0.29762 |
| CU | 63 | 0.34810 | 333.35100 | 20.980 | 0.27283 | 0.41868 | 0.35267 |
| MO | 98 | 0.08773 | 56.66910 | 28.155 | 0.06053 | 0.09390 | 0.10876 |
| NI | 60 | 0.25150 | 96.67060 | 44.811 | 0.26347 | 0.13326 | 0.35765 |
| SB | 121 | 0.22390 | 86.67110 | 28.812 | 0.17359 | 0.29666 | 0.20160 |
| SN | 120 | 0.25150 | 170.00800 | 47.396 | 0.11413 | 0.31332 | 0.32718 |
| SR | 88 | 0.14020 | 70.00300 | 65.685 | 0.04747 | 0.14156 | 0.23163 |
| ZN | 66 | 0.09560 | 33.33460 | 236.820 | -0.11567 | 0.06785 | 0.33462 |
| **BI-1** | 209 | 140624.00000 | 0.00000 | 2.347 | 142742.00000 | 142309.00000 | 136820.00000 |
| PB | 208 | 0.01392 | 170.00800 | 7.615 | 0.01324 | 0.01338 | 0.01514 |
| TL | 203 | 0.02519 | 33.33470 | 50.099 | 0.01375 | 0.03872 | 0.02310 |
| U | 238 | 0.03297 | 156.67400 | 30.121 | 0.02421 | 0.03093 | 0.04376 |
| *GE-1* | 72 | 112365.00000 | 0.00000 | 1.157 | 113427.00000 | 112752.00000 | 110915.00000 |
| *TB-1* | 159 | 189479.00000 | 0.00000 | 1.705 | 192246.00000 | 190264.00000 | 185928.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:06:00
Tube Number: 7
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51194.40000 | 0.00000 | 0.898 | 50769.80000 | 51130.70000 | 51682.60000 |
| AL | 27 | 211.30000 | 5681.47000 | 3.718 | 215.32180 | 202.23405 | 216.30888 |
| CA | 44 | 401.10000 | 1520.15000 | 20.763 | 394.97912 | 321.06782 | 487.28644 |
| CR | 52 | 4.44600 | 3053.83000 | 5.668 | 4.23863 | 4.37311 | 4.72647 |
| FE | 57 | 203.70000 | 2900.43000 | 7.830 | 221.86980 | 191.84999 | 197.51531 |
| K | 39 | 379.90000 | 36648.70000 | 1.616 | 383.98331 | 382.96139 | 372.87184 |
| MG | 24 | 203.50000 | 15573.00000 | 1.804 | 206.04276 | 205.10931 | 199.26837 |
| MN | 55 | 3.98700 | 1563.50000 | 7.928 | 4.34986 | 3.77421 | 3.83580 |
| NA | 23 | 371.40000 | 74789.30000 | 2.959 | 379.62385 | 358.92257 | 375.64638 |
| TI | 47 | 31.65000 | 513.36500 | 26.692 | 31.12232 | 23.48629 | 40.35634 |
| V | 51 | 1.02400 | 553.36700 | 12.705 | 1.16135 | 0.90277 | 1.00690 |
| **IN-1** | 115 | 54796.50000 | 0.00000 | 2.057 | 53744.80000 | 54658.60000 | 55986.10000 |
| AG | 107 | 1.07200 | 1533.49000 | 7.938 | 1.11235 | 0.97426 | 1.12944 |
| AS | 75 | 4.04500 | 268.00500 | 8.336 | 4.10130 | 3.68257 | 4.34982 |
| BA | 137 | 4.32900 | 670.04700 | 1.979 | 4.34717 | 4.40435 | 4.23587 |
| CD | 111 | 0.96270 | 170.00200 | 2.706 | 0.93535 | 0.96549 | 0.98721 |
| CO | 59 | 0.87120 | 1183.43000 | 13.430 | 0.89574 | 0.74382 | 0.97399 |
| CU | 63 | 4.43100 | 3797.37000 | 5.024 | 4.57980 | 4.53786 | 4.17499 |
| MO | 98 | 0.83960 | 520.03000 | 17.758 | 0.96970 | 0.87214 | 0.67684 |
| NI | 60 | 4.01100 | 1260.11000 | 12.431 | 4.38029 | 4.20887 | 3.44381 |
| SB | 121 | 2.21600 | 753.39200 | 13.885 | 2.03576 | 2.57110 | 2.04055 |
| SN | 120 | 3.94200 | 2070.26000 | 11.147 | 4.27768 | 3.44458 | 4.10309 |
| SR | 88 | 2.22200 | 976.74800 | 7.556 | 2.32089 | 2.02827 | 2.31708 |
| ZN | 66 | 32.42000 | 3630.66000 | 8.307 | 35.21626 | 32.19391 | 29.84344 |
| **BI-1** | 209 | 141308.00000 | 0.00000 | 0.617 | 140354.00000 | 142065.00000 | 141504.00000 |
| PB | 208 | 1.99300 | 7764.65000 | 4.003 | 1.90916 | 2.00253 | 2.06787 |
| TL | 203 | 0.93680 | 1123.44000 | 6.104 | 0.88166 | 0.99583 | 0.93294 |
| U | 238 | 1.03200 | 4644.43000 | 3.523 | 0.99116 | 1.06118 | 1.04315 |
| *GE-1* | 72 | 113616.00000 | 0.00000 | 1.690 | 114285.00000 | 115112.00000 | 111451.00000 |
| *TB-1* | 159 | 190546.00000 | 0.00000 | 0.440 | 190847.00000 | 189598.00000 | 191194.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:08:00
Tube Number: 8
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 44724.50000 | 0.00000 | 1.645 | 43905.50000 | 45329.80000 | 44938.30000 |
| AL | 27 | 109200.00000 | 2562300.00000 | 1.382 | 110649.55114 | 107644.68133 | 109386.75699 |
| CA | 44 | 307800.00000 | 731023.00000 | 1.170 | 311371.76056 | 307786.95195 | 304170.49062 |
| CR | 52 | 1.76100 | 1103.42000 | 6.848 | 1.89480 | 1.72932 | 1.66008 |
| FE | 57 | 265000.00000 | 3260670.00000 | 1.422 | 265187.63650 | 261085.79942 | 268610.45903 |
| K | 39 | 115000.00000 | 4914210.00000 | 0.967 | 115275.36027 | 113790.16185 | 115967.31676 |
| MG | 24 | 106500.00000 | 7092580.00000 | 0.302 | 106792.68362 | 106530.87504 | 106152.36227 |
| MN | 55 | 93.62000 | 31609.20000 | 0.728 | 94.17930 | 92.86023 | 93.81606 |
| NA | 23 | 258300.00000 | 37265700.00000 | 1.550 | 259674.02356 | 253859.01858 | 261535.17367 |
| TI | 47 | 2242.00000 | 31722.70000 | 3.457 | 2299.51293 | 2153.88273 | 2272.72399 |
| V | 51 | 0.07112 | 50.00190 | 138.498 | 0.18413 | 0.00349 | 0.02576 |
| **IN-1** | 115 | 49196.10000 | 0.00000 | 3.748 | 47268.70000 | 49376.80000 | 50943.00000 |
| AG | 107 | 0.36450 | 470.02900 | 9.646 | 0.37952 | 0.32434 | 0.38967 |
| AS | 75 | 0.60450 | 59.33400 | 25.807 | 0.42971 | 0.72948 | 0.65449 |
| BA | 137 | 1.35600 | 190.01000 | 24.535 | 1.63439 | 0.98736 | 1.44516 |
| CD | 111 | 0.46880 | 75.33420 | 9.480 | 0.45372 | 0.43386 | 0.51882 |
| CO | 59 | 0.88560 | 1076.76000 | 14.510 | 0.99121 | 0.74256 | 0.92318 |
| CU | 63 | 1.10500 | 880.06500 | 5.937 | 1.05702 | 1.17991 | 1.07865 |
| MO | 98 | 2260.00000 | 1251020.00000 | 3.059 | 2330.94503 | 2256.37349 | 2192.80816 |
| NI | 60 | 1.07100 | 316.68300 | 11.223 | 0.94634 | 1.08237 | 1.18604 |
| SB | 121 | 1.06100 | 330.01800 | 0.816 | 1.07106 | 1.05687 | 1.05536 |
| SN | 120 | 0.12540 | 96.67070 | 20.423 | 0.09706 | 0.13251 | 0.14679 |
| SR | 88 | 10.56000 | 4134.18000 | 1.923 | 10.55670 | 10.76852 | 10.36237 |
| ZN | 66 | 2.55700 | 276.68000 | 21.236 | 2.18653 | 3.18014 | 2.30358 |
| **BI-1** | 209 | 116840.00000 | 0.00000 | 2.444 | 113568.00000 | 118831.00000 | 118121.00000 |
| PB | 208 | 0.20090 | 733.37400 | 27.417 | 0.21589 | 0.13987 | 0.24693 |
| TL | 203 | 0.11870 | 120.00500 | 30.817 | 0.13251 | 0.14641 | 0.07725 |
| U | 238 | 0.06966 | 266.68100 | 25.352 | 0.07257 | 0.05072 | 0.08567 |
| *GE-1* | 72 | 99531.30000 | 0.00000 | 1.901 | 97832.20000 | 101571.00000 | 99191.00000 |
| *TB-1* | 159 | 159677.00000 | 0.00000 | 1.336 | 157466.00000 | 161721.00000 | 159843.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:09:00
Tube Number: 9
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 48547.90000 | 0.00000 | 3.629 | 49383.90000 | 46523.80000 | 49735.90000 |
| AL | 27 | 106200.00000 | 2702780.00000 | 2.467 | 106065.50243 | 108862.68815 | 103627.64046 |
| CA | 44 | 298700.00000 | 769976.00000 | 2.009 | 295974.09110 | 305646.85398 | 294658.49667 |
| CR | 52 | 212.60000 | 134305.00000 | 3.196 | 210.52400 | 220.13070 | 207.00501 |
| FE | 57 | 257800.00000 | 3442800.00000 | 1.728 | 256779.47120 | 262706.63921 | 253977.88836 |
| K | 39 | 112200.00000 | 5203250.00000 | 2.339 | 110963.61508 | 115252.22251 | 110486.64026 |
| MG | 24 | 103800.00000 | 7500720.00000 | 1.789 | 102532.42406 | 105924.63129 | 102920.63288 |
| MN | 55 | 299.60000 | 109712.00000 | 2.724 | 300.97588 | 307.03850 | 290.88253 |
| NA | 23 | 251800.00000 | 39419400.00000 | 1.367 | 249592.91337 | 255786.55965 | 250086.30460 |
| TI | 47 | 2204.00000 | 33827.90000 | 3.955 | 2176.55182 | 2301.52104 | 2133.75754 |
| V | 51 | 219.80000 | 108437.00000 | 2.605 | 216.54899 | 226.40939 | 216.43607 |
| **IN-1** | 115 | 52081.00000 | 0.00000 | 4.051 | 53512.80000 | 49657.70000 | 53072.60000 |
| AG | 107 | 47.23000 | 64013.10000 | 2.778 | 46.47682 | 48.74143 | 46.46253 |
| AS | 75 | 100.70000 | 5649.27000 | 0.338 | 100.45343 | 101.10970 | 100.62231 |
| BA | 137 | 0.98460 | 146.67400 | 35.426 | 1.17531 | 1.19656 | 0.58200 |
| CD | 111 | 93.99000 | 15568.30000 | 4.243 | 92.05743 | 98.57190 | 91.32790 |
| CO | 59 | 184.90000 | 220642.00000 | 1.947 | 182.21021 | 189.01261 | 183.56832 |
| CU | 63 | 196.10000 | 157975.00000 | 3.224 | 194.71269 | 203.03692 | 190.63310 |
| MO | 98 | 2284.00000 | 1338310.00000 | 2.755 | 2261.36134 | 2354.74162 | 2234.97115 |
| NI | 60 | 194.40000 | 57227.20000 | 1.001 | 195.52323 | 195.45891 | 192.12158 |
| SB | 121 | 1.15600 | 380.02100 | 5.831 | 1.21731 | 1.08369 | 1.16595 |
| SN | 120 | 0.10780 | 93.33750 | 28.590 | 0.07602 | 0.10984 | 0.13756 |
| SR | 88 | 10.89000 | 4510.98000 | 2.367 | 10.59366 | 11.06245 | 11.01400 |
| ZN | 66 | 92.22000 | 9767.36000 | 7.686 | 89.90389 | 100.17052 | 86.57104 |
| **BI-1** | 209 | 122939.00000 | 0.00000 | 2.874 | 125095.00000 | 118861.00000 | 124859.00000 |
| PB | 208 | 0.29310 | 1080.06000 | 4.306 | 0.27857 | 0.30099 | 0.29981 |
| TL | 203 | 0.16750 | 176.67600 | 15.021 | 0.15784 | 0.19611 | 0.14868 |
| U | 238 | 0.09924 | 396.68800 | 13.150 | 0.08832 | 0.09572 | 0.11369 |
| *GE-1* | 72 | 105363.00000 | 0.00000 | 1.613 | 106973.00000 | 103586.00000 | 105532.00000 |
| *TB-1* | 159 | 167666.00000 | 0.00000 | 1.791 | 169524.00000 | 164202.00000 | 169272.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:11:00
Tube Number: 10
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51907.30000 | 0.00000 | 0.815 | 51793.50000 | 52375.80000 | 51552.60000 |
| AL | 27 | 52.14000 | 1426.80000 | 18.792 | 40.96689 | 56.16105 | 59.28096 |
| CA | 44 | 131.30000 | 796.72200 | 47.845 | 71.21695 | 126.22320 | 196.54078 |
| CR | 52 | 0.53640 | 453.35800 | 20.078 | 0.63629 | 0.42235 | 0.55048 |
| FE | 57 | 146.20000 | 2120.27000 | 14.692 | 124.09859 | 147.67955 | 166.99661 |
| K | 39 | 28.24000 | 19775.70000 | 36.119 | 16.53757 | 32.90411 | 35.28058 |
| MG | 24 | 45.58000 | 3587.31000 | 22.137 | 33.93452 | 51.75963 | 51.03518 |
| MN | 55 | 0.32030 | 150.00800 | 27.446 | 0.21884 | 0.36756 | 0.37443 |
| NA | 23 | 108.90000 | 31909.60000 | 11.322 | 100.08648 | 122.99701 | 103.64906 |
| TI | 47 | 1.62200 | 26.66770 | 21.159 | 1.83040 | 1.81005 | 1.22597 |
| V | 51 | 0.16230 | 106.67200 | 29.704 | 0.11202 | 0.16668 | 0.20814 |
| **IN-1** | 115 | 56825.80000 | 0.00000 | 3.335 | 57070.60000 | 58586.60000 | 54820.30000 |
| AG | 107 | 0.01551 | 26.66800 | 63.346 | 0.01789 | 0.02393 | 0.00471 |
| AS | 75 | 0.17910 | 42.66710 | 109.715 | 0.07068 | 0.40593 | 0.06080 |
| BA | 137 | -0.00098 | 3.33347 | -3568.520 | -0.02122 | 0.03950 | -0.02122 |
| CD | 111 | 0.03288 | 8.00007 | 58.972 | 0.01059 | 0.04219 | 0.04587 |
| CO | 59 | 0.06001 | 170.00800 | 16.764 | 0.06693 | 0.04847 | 0.06462 |
| CU | 63 | 0.24050 | 256.68100 | 22.349 | 0.21000 | 0.30254 | 0.20890 |
| MO | 98 | 2.17000 | 1386.80000 | 27.650 | 1.58207 | 2.14743 | 2.78137 |
| NI | 60 | 0.04832 | 36.66810 | 177.007 | -0.00233 | 0.14707 | 0.00021 |
| SB | 121 | 0.06533 | 36.66810 | 121.338 | 0.01839 | 0.15685 | 0.02075 |
| SN | 120 | 0.03407 | 63.33630 | 258.409 | -0.02723 | 0.13496 | -0.00550 |
| SR | 88 | 0.11090 | 60.00260 | 23.012 | 0.08781 | 0.10645 | 0.13829 |
| ZN | 66 | 0.39650 | 70.00290 | 33.846 | 0.48269 | 0.46484 | 0.24182 |
| **BI-1** | 209 | 144222.00000 | 0.00000 | 3.251 | 141496.00000 | 149635.00000 | 141535.00000 |
| PB | 208 | 0.00689 | 146.67400 | 84.698 | 0.00321 | 0.00384 | 0.01362 |
| TL | 203 | -0.00003 | 3.33347 | -14445.800 | -0.00282 | -0.00282 | 0.00554 |
| U | 238 | 0.00497 | 33.33470 | 61.738 | 0.00221 | 0.00828 | 0.00443 |
| *GE-1* | 72 | 114703.00000 | 0.00000 | 2.515 | 115255.00000 | 117271.00000 | 111581.00000 |
| *TB-1* | 159 | 193994.00000 | 0.00000 | 2.383 | 192868.00000 | 199075.00000 | 190039.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:13:00
Tube Number: 11
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 50264.30000 | 0.00000 | 2.988 | 48561.00000 | 50829.90000 | 51402.10000 |
| AL | 27 | 2555.00000 | 67358.80000 | 3.064 | 2631.05396 | 2474.73545 | 2560.53232 |
| CA | 44 | 2458.00000 | 6972.12000 | 5.797 | 2581.66636 | 2489.00482 | 2301.88979 |
| CR | 52 | 262.20000 | 171558.00000 | 2.728 | 269.89026 | 255.75143 | 260.92863 |
| FE | 57 | 2642.00000 | 36549.20000 | 4.712 | 2759.53852 | 2511.50773 | 2655.08733 |
| K | 39 | 2572.00000 | 140872.00000 | 2.049 | 2628.16371 | 2523.65051 | 2564.12287 |
| MG | 24 | 2554.00000 | 191109.00000 | 2.432 | 2625.16930 | 2520.75425 | 2514.68408 |
| MN | 55 | 261.20000 | 99056.50000 | 1.824 | 266.72313 | 258.20937 | 258.76300 |
| NA | 23 | 2441.00000 | 408617.00000 | 2.595 | 2508.22846 | 2431.51918 | 2382.56396 |
| TI | 47 | 262.50000 | 4174.17000 | 7.135 | 269.45277 | 241.25598 | 276.70001 |
| V | 51 | 258.50000 | 132038.00000 | 2.460 | 265.80560 | 255.03043 | 254.56767 |
| **IN-1** | 115 | 53951.10000 | 0.00000 | 0.772 | 53781.80000 | 53645.90000 | 54425.50000 |
| AG | 107 | 26.43000 | 37142.50000 | 1.143 | 26.71108 | 26.11103 | 26.47281 |
| AS | 75 | 263.50000 | 15260.40000 | 0.777 | 264.38832 | 261.12231 | 264.89414 |
| BA | 137 | 258.60000 | 39226.30000 | 0.319 | 257.99715 | 258.25493 | 259.53611 |
| CD | 111 | 27.00000 | 4639.55000 | 1.432 | 27.30259 | 26.56356 | 27.12971 |
| CO | 59 | 238.40000 | 294769.00000 | 0.841 | 237.64451 | 236.84979 | 240.65102 |
| CU | 63 | 264.00000 | 220420.00000 | 0.280 | 263.97121 | 264.72196 | 263.24593 |
| MO | 98 | 25.84000 | 15697.00000 | 4.009 | 25.67232 | 26.94717 | 24.89477 |
| NI | 60 | 266.60000 | 81311.80000 | 0.589 | 268.40333 | 265.59735 | 265.78467 |
| SB | 121 | 27.44000 | 9040.29000 | 3.305 | 28.47983 | 27.02240 | 26.81575 |
| SN | 120 | 27.90000 | 14171.80000 | 1.682 | 27.93949 | 28.34824 | 27.41195 |
| SR | 88 | 25.49000 | 10928.50000 | 1.228 | 25.46623 | 25.81298 | 25.18791 |
| ZN | 66 | 265.90000 | 29190.50000 | 0.918 | 263.11180 | 267.63507 | 266.96956 |
| **BI-1** | 209 | 140001.00000 | 0.00000 | 0.199 | 140200.00000 | 139683.00000 | 140119.00000 |
| PB | 208 | 25.65000 | 97594.50000 | 0.724 | 25.84166 | 25.47171 | 25.62829 |
| TL | 203 | 24.93000 | 29527.30000 | 1.667 | 25.35122 | 24.52020 | 24.91762 |
| U | 238 | 25.20000 | 112135.00000 | 1.702 | 25.61401 | 24.75796 | 25.22954 |
| *GE-1* | 72 | 111737.00000 | 0.00000 | 0.858 | 110685.00000 | 111966.00000 | 112559.00000 |
| *TB-1* | 159 | 188837.00000 | 0.00000 | 1.375 | 186603.00000 | 188224.00000 | 191685.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:15:00
Tube Number: 12
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51191.20000 | 0.00000 | 2.030 | 50097.30000 | 51311.60000 | 52164.80000 |
| AL | 27 | 8.96900 | 246.68100 | 33.973 | 12.29939 | 8.28697 | 6.31986 |
| CA | 44 | -9.61500 | 403.35700 | -177.223 | -11.27547 | -25.76228 | 8.19083 |
| CR | 52 | 0.58470 | 480.02900 | 14.372 | 0.57039 | 0.50878 | 0.67500 |
| FE | 57 | 12.25000 | 203.34300 | 20.914 | 15.19692 | 10.53508 | 11.02330 |
| K | 39 | -2.37500 | 18006.20000 | -358.484 | 6.58988 | -10.35205 | -3.36486 |
| MG | 24 | 8.43900 | 703.38300 | 44.472 | 12.18611 | 4.67995 | 8.45224 |
| MN | 55 | 0.22130 | 110.00500 | 28.676 | 0.14900 | 0.24732 | 0.26766 |
| NA | 23 | 38.24000 | 19779.00000 | 19.004 | 46.44739 | 35.66530 | 32.61458 |
| TI | 47 | 0.61250 | 10.00040 | 100.555 | 0.00000 | 1.23173 | 0.60579 |
| V | 51 | 0.17740 | 113.33900 | 20.265 | 0.13680 | 0.19013 | 0.20523 |
| **IN-1** | 115 | 55550.10000 | 0.00000 | 1.957 | 55272.60000 | 54629.10000 | 56748.50000 |
| AG | 107 | 0.04597 | 70.00300 | 39.026 | 0.06023 | 0.02583 | 0.05184 |
| AS | 75 | 0.33290 | 50.66720 | 18.949 | 0.39378 | 0.26784 | 0.33717 |
| BA | 137 | 0.06484 | 13.33390 | 151.481 | 0.17185 | 0.04389 | -0.02122 |
| CD | 111 | 0.03751 | 8.66673 | 14.823 | 0.03403 | 0.03457 | 0.04392 |
| CO | 59 | 0.16500 | 300.01600 | 13.842 | 0.18986 | 0.14500 | 0.16001 |
| CU | 63 | 0.19020 | 206.67600 | 11.304 | 0.20677 | 0.19798 | 0.16592 |
| MO | 98 | 0.17020 | 110.00500 | 23.302 | 0.18753 | 0.12477 | 0.19816 |
| NI | 60 | 0.20020 | 83.33700 | 33.911 | 0.15975 | 0.16238 | 0.27863 |
| SB | 121 | 0.16680 | 70.00300 | 51.091 | 0.07959 | 0.17104 | 0.24988 |
| SN | 120 | 0.01275 | 50.00220 | 157.176 | -0.00614 | 0.03377 | 0.01063 |
| SR | 88 | 0.04588 | 30.00140 | 88.470 | 0.02304 | 0.09274 | 0.02186 |
| ZN | 66 | 0.41160 | 70.00290 | 40.792 | 0.23815 | 0.42346 | 0.57327 |
| **BI-1** | 209 | 142384.00000 | 0.00000 | 1.163 | 141302.00000 | 141558.00000 | 144290.00000 |
| PB | 208 | 0.00822 | 150.00700 | 67.750 | 0.01369 | 0.00840 | 0.00256 |
| TL | 203 | 0.04994 | 63.33620 | 82.779 | 0.03065 | 0.09740 | 0.02176 |
| U | 238 | 0.02425 | 120.00600 | 14.425 | 0.02226 | 0.02221 | 0.02829 |
| *GE-1* | 72 | 113116.00000 | 0.00000 | 1.213 | 113318.00000 | 111653.00000 | 114376.00000 |
| *TB-1* | 159 | 189228.00000 | 0.00000 | 1.535 | 192580.00000 | 187471.00000 | 187634.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:16:00
Tube Number: 13 Batch: 172021063903A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 53232.40000 | 0.00000 | 2.991 | 54614.40000 | 53591.00000 | 51491.90000 |
| AL | 27 | 4.88300 | 143.34000 | 44.706 | 2.88320 | 7.21196 | 4.55463 |
| CA | 44 | -7.27400 | 426.69100 | -343.827 | 21.43693 | -24.35168 | -18.90969 |
| CR | 52 | 0.52370 | 456.69200 | 3.216 | 0.54018 | 0.52441 | 0.50653 |
| FE | 57 | 6.62500 | 130.00700 | 55.759 | 5.77136 | 10.67122 | 3.43242 |
| K | 39 | -7.12700 | 18467.10000 | -282.166 | -22.00518 | -15.12935 | 15.75124 |
| MG | 24 | 5.33500 | 486.69900 | 25.792 | 3.85564 | 6.57659 | 5.57366 |
| MN | 55 | 0.13770 | 80.00380 | 58.039 | 0.13149 | 0.06100 | 0.22050 |
| NA | 23 | 20.06000 | 17455.50000 | 15.155 | 16.56910 | 22.15490 | 21.44179 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.07790 | 63.33700 | 64.146 | 0.06815 | 0.03351 | 0.13202 |
| **IN-1** | 115 | 57602.50000 | 0.00000 | 1.828 | 58487.40000 | 57882.80000 | 56437.40000 |
| AG | 107 | 0.00219 | 6.66693 | 177.331 | -0.00229 | 0.00434 | 0.00451 |
| AS | 75 | -0.01195 | 31.33360 | -1341.420 | 0.02451 | 0.12692 | -0.18731 |
| BA | 137 | 0.02006 | 6.66693 | 178.315 | 0.03960 | -0.02122 | 0.04181 |
| CD | 111 | 0.04692 | 10.66670 | 37.745 | 0.04228 | 0.03198 | 0.06649 |
| CO | 59 | -0.02501 | 60.00230 | -84.166 | -0.04088 | -0.03303 | -0.00113 |
| CU | 63 | 0.08766 | 123.33800 | 23.945 | 0.10424 | 0.09469 | 0.06405 |
| MO | 98 | 0.07200 | 50.00250 | 23.403 | 0.05545 | 0.07143 | 0.08913 |
| NI | 60 | 0.09957 | 53.33540 | 47.093 | 0.05667 | 0.14964 | 0.09242 |
| SB | 121 | 0.01709 | 20.00080 | 433.704 | 0.10111 | -0.01075 | -0.03908 |
| SN | 120 | 0.04049 | 66.66960 | 100.988 | 0.02605 | 0.00879 | 0.08664 |
| SR | 88 | 0.04282 | 30.00140 | 48.459 | 0.06361 | 0.04275 | 0.02210 |
| ZN | 66 | 0.47750 | 80.00410 | 20.509 | 0.38189 | 0.47301 | 0.57759 |
| **BI-1** | 209 | 146215.00000 | 0.00000 | 0.376 | 146728.00000 | 145635.00000 | 146282.00000 |
| PB | 208 | 0.00713 | 150.00700 | 184.967 | 0.02209 | -0.00281 | 0.00211 |
| TL | 203 | 0.00526 | 10.00040 | 153.175 | 0.01330 | 0.00530 | -0.00282 |
| U | 238 | 0.00278 | 23.33460 | 117.711 | 0.00634 | 0.00208 | -0.00009 |
| *GE-1* | 72 | 115876.00000 | 0.00000 | 2.971 | 119653.00000 | 115062.00000 | 112913.00000 |
| *TB-1* | 159 | 195711.00000 | 0.00000 | 1.783 | 197318.00000 | 198106.00000 | 191707.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:18:00
Tube Number: 14 Batch: 172021063903A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 52580.00000 | 0.00000 | 1.862 | 53209.30000 | 51451.90000 | 53078.60000 |
| AL | 27 | 1986.00000 | 54768.20000 | 1.463 | 1952.04325 | 2003.46567 | 2001.17222 |
| CA | 44 | 3846.00000 | 11171.90000 | 3.996 | 3670.95398 | 3959.24231 | 3907.66457 |
| CR | 52 | 49.76000 | 34145.50000 | 2.685 | 50.40800 | 50.65291 | 48.22598 |
| FE | 57 | 1010.00000 | 14638.70000 | 4.171 | 988.70603 | 1058.60977 | 982.92996 |
| K | 39 | 9959.00000 | 517207.00000 | 1.476 | 9841.16789 | 10123.67637 | 9911.97533 |
| MG | 24 | 1981.00000 | 155108.00000 | 2.858 | 1972.53625 | 2040.99559 | 1928.65015 |
| MN | 55 | 49.41000 | 19622.10000 | 2.973 | 49.87133 | 50.59645 | 47.76863 |
| NA | 23 | 9664.00000 | 1651890.00000 | 2.238 | 9654.10552 | 9885.19642 | 9453.00723 |
| TI | 47 | 251.90000 | 4190.85000 | 3.906 | 241.75538 | 252.47192 | 261.40807 |
| V | 51 | 48.86000 | 26137.10000 | 3.668 | 49.81390 | 49.98409 | 46.79820 |
| **IN-1** | 115 | 55003.80000 | 0.00000 | 1.953 | 56215.40000 | 54625.80000 | 54170.30000 |
| AG | 107 | 49.67000 | 71111.40000 | 4.377 | 47.25728 | 50.26524 | 51.47925 |
| AS | 75 | 9.66400 | 599.35200 | 10.606 | 8.71320 | 9.52859 | 10.75027 |
| BA | 137 | 50.44000 | 7799.42000 | 6.471 | 49.35103 | 47.85511 | 54.10544 |
| CD | 111 | 5.10300 | 895.37200 | 2.644 | 4.97273 | 5.09477 | 5.24208 |
| CO | 59 | 232.40000 | 292888.00000 | 1.606 | 228.49963 | 235.94518 | 232.67493 |
| CU | 63 | 51.11000 | 43541.00000 | 1.913 | 50.75741 | 52.21189 | 50.35341 |
| MO | 98 | 50.51000 | 31286.10000 | 2.797 | 49.85311 | 52.13523 | 49.54924 |
| NI | 60 | 51.92000 | 16160.60000 | 1.820 | 52.24828 | 50.85164 | 52.65320 |
| SB | 121 | 5.93200 | 2000.24000 | 14.181 | 5.06604 | 6.74580 | 5.98537 |
| SN | 120 | 51.70000 | 26739.40000 | 1.763 | 51.66706 | 52.62522 | 50.80313 |
| SR | 88 | 39.25000 | 17148.80000 | 2.935 | 37.95373 | 40.14400 | 39.66689 |
| ZN | 66 | 506.00000 | 56587.70000 | 2.802 | 490.03816 | 517.22659 | 510.63840 |
| **BI-1** | 209 | 137595.00000 | 0.00000 | 3.724 | 143268.00000 | 133303.00000 | 136215.00000 |
| PB | 208 | 15.08000 | 56378.30000 | 3.587 | 14.45092 | 15.36766 | 15.40671 |
| TL | 203 | 1.92700 | 2246.98000 | 2.376 | 1.97783 | 1.91298 | 1.88943 |
| U | 238 | 0.00155 | 16.66740 | 80.155 | 0.00215 | 0.00012 | 0.00238 |
| *GE-1* | 72 | 112501.00000 | 0.00000 | 2.846 | 116022.00000 | 109766.00000 | 111714.00000 |
| *TB-1* | 159 | 192128.00000 | 0.00000 | 2.759 | 196065.00000 | 186100.00000 | 194217.00000 |

Run Name: 1720704E03
Tube Number: 15
Sample Number: **9112058**

Date/Time: 07/26/2017 9:20:00
Batch: 172021063903A
Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53644.30000 | 0.00000 | 4.321 | 54875.70000 | 55086.70000 | 50970.40000 |
| AL | 27 | 267.20000 | 7525.72000 | 0.993 | 264.18235 | 268.36227 | 269.10183 |
| CA | 44 | 44200.00000 | 126277.00000 | 1.512 | 43447.74124 | 44419.47514 | 44728.32008 |
| CR | 52 | 6.83500 | 4861.11000 | 5.469 | 6.44617 | 6.86734 | 7.19161 |
| FE | 57 | 152200.00000 | 2244570.00000 | 2.638 | 148158.89227 | 152117.03747 | 156189.00793 |
| K | 39 | 6675.00000 | 359961.00000 | 1.408 | 6567.03830 | 6736.53039 | 6722.25911 |
| MG | 24 | 32230.00000 | 2572970.00000 | 2.527 | 31495.59109 | 32085.14282 | 33105.29980 |
| MN | 55 | 6994.00000 | 2829170.00000 | 2.534 | 6807.96382 | 7013.75928 | 7160.69351 |
| NA | 23 | 22680.00000 | 3937100.00000 | 1.160 | 22386.03258 | 22888.70116 | 22771.41811 |
| TI | 47 | 8.03500 | 136.67300 | 12.330 | 7.48630 | 9.17859 | 7.43987 |
| V | 51 | 7.82300 | 4290.87000 | 4.733 | 7.56155 | 8.24693 | 7.66135 |
| **IN-1** | 115 | 55814.20000 | 0.00000 | 2.648 | 56376.40000 | 56928.90000 | 54137.40000 |
| AG | 107 | 0.03435 | 53.33540 | 29.228 | 0.02495 | 0.04492 | 0.03317 |
| AS | 75 | 15.89000 | 981.37900 | 4.889 | 15.11062 | 16.66409 | 15.89490 |
| BA | 137 | 238.00000 | 37347.00000 | 0.887 | 236.31190 | 240.34831 | 237.25685 |
| CD | 111 | 0.03354 | 8.00007 | 65.593 | 0.01086 | 0.05478 | 0.03499 |
| CO | 59 | 10.25000 | 13197.20000 | 0.447 | 10.23150 | 10.30034 | 10.21369 |
| CU | 63 | 0.18470 | 203.34400 | 51.911 | 0.08710 | 0.27876 | 0.18830 |
| MO | 98 | 0.23730 | 153.34000 | 34.737 | 0.27827 | 0.29112 | 0.14236 |
| NI | 60 | 13.06000 | 4144.17000 | 7.096 | 13.71596 | 13.45781 | 11.99739 |
| SB | 121 | 0.08720 | 43.33530 | 67.110 | 0.10636 | 0.13375 | 0.02150 |
| SN | 120 | 0.26810 | 183.34200 | 59.642 | 0.08683 | 0.32843 | 0.38902 |
| SR | 88 | 529.40000 | 234654.00000 | 0.762 | 527.36520 | 534.03551 | 526.76810 |
| ZN | 66 | 7.31000 | 856.73000 | 25.992 | 7.47120 | 9.12470 | 5.33548 |
| **BI-1** | 209 | 136405.00000 | 0.00000 | 2.515 | 136559.00000 | 139755.00000 | 132900.00000 |
| PB | 208 | 0.04788 | 290.01500 | 24.206 | 0.05030 | 0.03527 | 0.05807 |
| TL | 203 | 0.00015 | 3.33347 | 3482.030 | -0.00282 | -0.00282 | 0.00608 |
| U | 238 | 0.07702 | 343.35400 | 33.056 | 0.10607 | 0.05856 | 0.06643 |
| *GE-1* | 72 | 112306.00000 | 0.00000 | 3.068 | 112287.00000 | 115760.00000 | 108871.00000 |
| *TB-1* | 159 | 195458.00000 | 0.00000 | 2.535 | 193259.00000 | 201131.00000 | 191984.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:21:00
Tube Number: 16 Batch: 172021063903A
Sample Number: **9112058** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54273.90000 | 0.00000 | 1.548 | 54344.10000 | 53401.00000 | 55076.50000 |
| AL | 27 | 445.20000 | 12683.20000 | 0.935 | 440.54359 | 446.54360 | 448.54025 |
| CA | 44 | 42930.00000 | 124111.00000 | 2.409 | 42145.59186 | 44099.86166 | 42539.36845 |
| CR | 52 | 10.44000 | 7469.08000 | 5.313 | 10.39988 | 11.01787 | 9.91091 |
| FE | 57 | 146100.00000 | 2181400.00000 | 2.953 | 142544.41841 | 150896.85236 | 144848.72099 |
| K | 39 | 6779.00000 | 369550.00000 | 2.146 | 6831.71261 | 6891.46616 | 6614.97050 |
| MG | 24 | 30870.00000 | 2495200.00000 | 0.592 | 30693.20117 | 31058.22544 | 30866.00039 |
| MN | 55 | 6616.00000 | 2708890.00000 | 1.675 | 6504.98770 | 6726.62308 | 6616.27546 |
| NA | 23 | 22130.00000 | 3885520.00000 | 4.063 | 21447.36764 | 23147.79315 | 21791.01994 |
| TI | 47 | 39.97000 | 686.71500 | 3.260 | 40.70597 | 38.46608 | 40.73887 |
| V | 51 | 8.42300 | 4671.00000 | 3.031 | 8.32390 | 8.23210 | 8.71300 |
| **IN-1** | 115 | 55822.90000 | 0.00000 | 0.896 | 56265.10000 | 55923.60000 | 55279.90000 |
| AG | 107 | 0.92230 | 1343.45000 | 12.545 | 0.78939 | 1.00023 | 0.97717 |
| AS | 75 | 18.80000 | 1155.40000 | 6.957 | 18.92385 | 17.44025 | 20.04715 |
| BA | 137 | 232.50000 | 36478.10000 | 3.535 | 226.50948 | 229.04278 | 241.84067 |
| CD | 111 | 1.04300 | 187.33600 | 2.244 | 1.03809 | 1.02203 | 1.06816 |
| CO | 59 | 10.64000 | 13704.50000 | 2.486 | 10.51594 | 10.94786 | 10.46751 |
| CU | 63 | 4.34200 | 3794.04000 | 3.125 | 4.18855 | 4.44561 | 4.39271 |
| MO | 98 | 1.34100 | 846.73300 | 5.978 | 1.33645 | 1.42405 | 1.26396 |
| NI | 60 | 17.55000 | 5558.07000 | 2.316 | 17.42399 | 18.00554 | 17.22297 |
| SB | 121 | 1.67400 | 583.36700 | 6.989 | 1.62219 | 1.80825 | 1.59246 |
| SN | 120 | 4.02000 | 2150.26000 | 5.744 | 4.21490 | 3.76486 | 4.07942 |
| SR | 88 | 519.80000 | 230406.00000 | 0.376 | 518.62496 | 518.68894 | 522.04078 |
| ZN | 66 | 37.78000 | 4310.88000 | 4.304 | 36.86506 | 36.82715 | 39.66183 |
| **BI-1** | 209 | 137075.00000 | 0.00000 | 0.739 | 135995.00000 | 137226.00000 | 138005.00000 |
| PB | 208 | 2.00800 | 7587.96000 | 1.832 | 2.00388 | 2.04737 | 1.97423 |
| TL | 203 | 1.16200 | 1350.14000 | 1.412 | 1.14473 | 1.17753 | 1.16232 |
| U | 238 | 10.11000 | 44054.30000 | 1.794 | 10.24662 | 10.18236 | 9.90527 |
| *GE-1* | 72 | 115042.00000 | 0.00000 | 2.637 | 111550.00000 | 116536.00000 | 117039.00000 |
| *TB-1* | 159 | 195261.00000 | 0.00000 | 0.568 | 194039.00000 | 195543.00000 | 196202.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:23:00
Tube Number: 17 Batch: 172021063903A
Sample Number: **9112058** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53443.50000 | 0.00000 | 1.752 | 52867.60000 | 54524.10000 | 52938.80000 |
| AL | 27 | 258.70000 | 7255.61000 | 4.302 | 259.79654 | 247.00112 | 269.17389 |
| CA | 44 | 43610.00000 | 124139.00000 | 2.330 | 43477.42418 | 42664.10902 | 44683.05105 |
| CR | 52 | 6.87500 | 4877.78000 | 7.721 | 7.33578 | 6.99598 | 6.29494 |
| FE | 57 | 148900.00000 | 2188910.00000 | 2.099 | 150012.71416 | 145343.79216 | 151280.02454 |
| K | 39 | 6583.00000 | 353874.00000 | 2.633 | 6651.98163 | 6385.88103 | 6711.32362 |
| MG | 24 | 31170.00000 | 2480210.00000 | 3.545 | 31228.44254 | 30043.07708 | 32250.17607 |
| MN | 55 | 6771.00000 | 2729070.00000 | 4.069 | 6844.33132 | 6466.49639 | 7002.74775 |
| NA | 23 | 22390.00000 | 3871510.00000 | 2.838 | 22690.93759 | 21662.57474 | 22823.58343 |
| TI | 47 | 9.09500 | 153.34100 | 39.351 | 13.15045 | 6.37535 | 7.76021 |
| V | 51 | 7.45000 | 4067.45000 | 5.027 | 7.75725 | 7.03307 | 7.56084 |
| **IN-1** | 115 | 55840.60000 | 0.00000 | 0.992 | 55201.70000 | 56134.80000 | 56185.40000 |
| AG | 107 | 0.01378 | 23.33450 | 103.701 | 0.01858 | -0.00229 | 0.02505 |
| AS | 75 | 14.81000 | 916.70500 | 11.519 | 16.55922 | 13.14931 | 14.73180 |
| BA | 137 | 225.20000 | 35364.80000 | 0.777 | 224.66937 | 223.85878 | 227.21383 |
| CD | 111 | 0.01879 | 5.33337 | 175.412 | 0.05685 | -0.00024 | -0.00025 |
| CO | 59 | 10.01000 | 12890.10000 | 2.955 | 10.34779 | 9.83989 | 9.83097 |
| CU | 63 | 0.14250 | 166.67400 | 5.526 | 0.14857 | 0.14526 | 0.13358 |
| MO | 98 | 0.23300 | 150.00700 | 34.914 | 0.18778 | 0.32696 | 0.18439 |
| NI | 60 | 14.87000 | 4714.42000 | 4.176 | 15.09931 | 15.35196 | 14.17249 |
| SB | 121 | 0.10810 | 50.00220 | 72.748 | 0.16886 | 0.13619 | 0.01929 |
| SN | 120 | 0.17090 | 133.34000 | 21.902 | 0.12904 | 0.18245 | 0.20117 |
| SR | 88 | 521.20000 | 231110.00000 | 0.900 | 523.31647 | 515.83323 | 524.47117 |
| ZN | 66 | 6.69300 | 783.38300 | 3.290 | 6.74339 | 6.45260 | 6.88442 |
| **BI-1** | 209 | 135665.00000 | 0.00000 | 1.328 | 135131.00000 | 134191.00000 | 137673.00000 |
| PB | 208 | 0.03181 | 230.01100 | 6.052 | 0.03207 | 0.02976 | 0.03359 |
| TL | 203 | 0.00582 | 10.00040 | 147.484 | 0.00593 | -0.00282 | 0.01436 |
| U | 238 | 0.06822 | 303.34800 | 26.766 | 0.05598 | 0.08922 | 0.05947 |
| *GE-1* | 72 | 112976.00000 | 0.00000 | 0.752 | 113779.00000 | 113064.00000 | 112086.00000 |
| *TB-1* | 159 | 196211.00000 | 0.00000 | 0.487 | 195537.00000 | 195789.00000 | 197305.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:25:00
Tube Number: 18 Batch: 172021063903A
Sample Number: **9112058** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52895.00000 | 0.00000 | 2.093 | 52004.20000 | 54133.80000 | 52547.00000 |
| AL | 27 | 2246.00000 | 62324.10000 | 3.124 | 2292.51994 | 2279.45951 | 2164.96997 |
| CA | 44 | 47900.00000 | 134935.00000 | 1.246 | 48525.20572 | 47334.54512 | 47856.33432 |
| CR | 52 | 55.59000 | 38361.00000 | 2.790 | 57.37327 | 54.86853 | 54.53508 |
| FE | 57 | 152000.00000 | 2212940.00000 | 0.456 | 151232.88330 | 152486.04510 | 152374.12400 |
| K | 39 | 16770.00000 | 863495.00000 | 1.453 | 17052.47666 | 16652.36804 | 16611.64744 |
| MG | 24 | 33320.00000 | 2624190.00000 | 0.871 | 33647.40596 | 33103.70359 | 33199.89292 |
| MN | 55 | 7029.00000 | 2804790.00000 | 0.999 | 7109.07673 | 6997.46568 | 6979.41747 |
| NA | 23 | 31820.00000 | 5440270.00000 | 1.115 | 31993.33059 | 31412.70182 | 32056.02567 |
| TI | 47 | 260.20000 | 4354.22000 | 6.122 | 278.35934 | 253.97532 | 248.41062 |
| V | 51 | 57.84000 | 31117.90000 | 3.817 | 60.33354 | 57.06614 | 56.12638 |
| **IN-1** | 115 | 55171.40000 | 0.00000 | 2.905 | 53655.50000 | 56849.60000 | 55009.10000 |
| AG | 107 | 48.55000 | 69729.70000 | 2.550 | 49.95779 | 47.63964 | 48.04759 |
| AS | 75 | 25.16000 | 1518.10000 | 4.189 | 25.64513 | 25.88287 | 23.94924 |
| BA | 137 | 281.00000 | 43594.50000 | 1.179 | 283.14975 | 282.74936 | 277.22222 |
| CD | 111 | 4.94600 | 870.70300 | 0.534 | 4.97635 | 4.92818 | 4.93356 |
| CO | 59 | 239.50000 | 302877.00000 | 1.288 | 242.34854 | 240.05766 | 236.24135 |
| CU | 63 | 49.32000 | 42146.40000 | 2.012 | 50.01523 | 49.75716 | 48.18201 |
| MO | 98 | 51.49000 | 31988.00000 | 2.061 | 52.28184 | 51.89697 | 50.28277 |
| NI | 60 | 62.38000 | 19455.10000 | 4.529 | 65.54178 | 60.11067 | 61.47977 |
| SB | 121 | 6.23700 | 2113.59000 | 12.333 | 6.44055 | 6.88423 | 5.38671 |
| SN | 120 | 50.91000 | 26398.50000 | 2.536 | 51.84803 | 49.43655 | 51.44291 |
| SR | 88 | 573.00000 | 250930.00000 | 2.749 | 591.14705 | 564.94121 | 562.90748 |
| ZN | 66 | 492.60000 | 55249.00000 | 2.418 | 505.13733 | 481.44499 | 491.08853 |
| **BI-1** | 209 | 135159.00000 | 0.00000 | 1.506 | 134071.00000 | 137509.00000 | 133899.00000 |
| PB | 208 | 15.29000 | 56197.70000 | 1.271 | 15.49395 | 15.10835 | 15.25761 |
| TL | 203 | 2.24900 | 2573.72000 | 5.385 | 2.37829 | 2.13817 | 2.23119 |
| U | 238 | 0.07534 | 333.35100 | 8.251 | 0.07991 | 0.07786 | 0.06826 |
| *GE-1* | 72 | 113865.00000 | 0.00000 | 1.348 | 112155.00000 | 115124.00000 | 114317.00000 |
| *TB-1* | 159 | 195225.00000 | 0.00000 | 2.539 | 191088.00000 | 200717.00000 | 193869.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:27:00
Tube Number: 19 Batch: 172021063903A
Sample Number: **9112058** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51539.50000 | 0.00000 | 1.197 | 51322.20000 | 52235.70000 | 51060.60000 |
| AL | 27 | 2239.00000 | 60549.10000 | 2.531 | 2181.19717 | 2294.44908 | 2241.13106 |
| CA | 44 | 48230.00000 | 132383.00000 | 1.176 | 47789.08107 | 48033.56518 | 48870.73230 |
| CR | 52 | 57.07000 | 38387.60000 | 2.740 | 55.49475 | 58.62204 | 57.10737 |
| FE | 57 | 154400.00000 | 2189940.00000 | 3.273 | 150120.54531 | 153182.72636 | 159992.75122 |
| K | 39 | 17020.00000 | 853809.00000 | 1.781 | 16673.39114 | 17179.53398 | 17215.79893 |
| MG | 24 | 34040.00000 | 2612710.00000 | 1.652 | 33437.45453 | 34552.03922 | 34122.85183 |
| MN | 55 | 7106.00000 | 2763190.00000 | 2.626 | 6902.70597 | 7145.74977 | 7269.44852 |
| NA | 23 | 32440.00000 | 5404520.00000 | 3.801 | 31251.09899 | 32363.32782 | 33712.90743 |
| TI | 47 | 245.70000 | 4007.44000 | 6.443 | 229.08790 | 247.47125 | 260.59478 |
| V | 51 | 58.21000 | 30519.90000 | 0.413 | 58.46550 | 57.98975 | 58.16710 |
| **IN-1** | 115 | 54564.10000 | 0.00000 | 3.502 | 54890.90000 | 56290.50000 | 52511.00000 |
| AG | 107 | 48.72000 | 69241.20000 | 2.048 | 47.58200 | 49.43063 | 49.15729 |
| AS | 75 | 24.77000 | 1476.76000 | 5.188 | 23.76388 | 24.32093 | 26.21537 |
| BA | 137 | 285.30000 | 43725.10000 | 4.339 | 275.27900 | 281.37601 | 299.11388 |
| CD | 111 | 4.98400 | 868.70200 | 4.809 | 4.93276 | 5.24509 | 4.77398 |
| CO | 59 | 237.00000 | 296121.00000 | 4.141 | 228.30354 | 234.97056 | 247.62386 |
| CU | 63 | 49.17000 | 41540.80000 | 2.390 | 48.14365 | 48.91530 | 50.45208 |
| MO | 98 | 51.28000 | 31480.10000 | 4.688 | 49.49975 | 50.32427 | 54.01440 |
| NI | 60 | 63.35000 | 19548.80000 | 3.615 | 60.93509 | 63.63651 | 65.48783 |
| SB | 121 | 6.59300 | 2206.95000 | 1.988 | 6.44408 | 6.69088 | 6.64427 |
| SN | 120 | 50.21000 | 25747.30000 | 2.545 | 49.37613 | 49.56885 | 51.67878 |
| SR | 88 | 565.90000 | 245033.00000 | 3.557 | 547.86911 | 562.13384 | 587.61317 |
| ZN | 66 | 491.60000 | 54505.40000 | 4.103 | 487.10444 | 474.01986 | 513.61507 |
| **BI-1** | 209 | 132601.00000 | 0.00000 | 1.822 | 134129.00000 | 133860.00000 | 129815.00000 |
| PB | 208 | 15.28000 | 55125.60000 | 2.527 | 14.87663 | 15.64508 | 15.32889 |
| TL | 203 | 1.98200 | 2223.63000 | 10.964 | 1.75133 | 2.01102 | 2.18305 |
| U | 238 | 0.07282 | 316.68500 | 25.405 | 0.06110 | 0.09415 | 0.06321 |
| *GE-1* | 72 | 111061.00000 | 0.00000 | 0.794 | 110139.00000 | 111148.00000 | 111895.00000 |
| *TB-1* | 159 | 191530.00000 | 0.00000 | 1.997 | 189066.00000 | 195935.00000 | 189588.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:28:00
Tube Number: 20 Batch: 172021063903A
Sample Number: **9112058** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 52683.80000 | 0.00000 | 3.358 | 53550.40000 | 53851.90000 | 50649.00000 |
| AL | 27 | 55.04000 | 1526.81000 | 5.463 | 55.63547 | 51.78235 | 57.70821 |
| CA | 44 | 8404.00000 | 23942.60000 | 1.025 | 8476.08282 | 8308.45826 | 8426.72792 |
| CR | 52 | 1.74300 | 1290.11000 | 9.501 | 1.77314 | 1.89084 | 1.56387 |
| FE | 57 | 28730.00000 | 416315.00000 | 3.105 | 28710.53130 | 27853.54227 | 29637.01784 |
| K | 39 | 1265.00000 | 82076.60000 | 2.138 | 1273.73297 | 1234.09987 | 1285.77559 |
| MG | 24 | 5941.00000 | 465955.00000 | 2.005 | 5936.60824 | 5823.73572 | 6061.80298 |
| MN | 55 | 1314.00000 | 521919.00000 | 2.697 | 1316.55489 | 1276.88478 | 1347.59176 |
| NA | 23 | 4219.00000 | 729960.00000 | 3.631 | 4170.78412 | 4095.39185 | 4390.23419 |
| TI | 47 | 1.59400 | 26.66770 | 41.706 | 2.36046 | 1.17363 | 1.24784 |
| V | 51 | 1.61900 | 890.06800 | 9.481 | 1.76029 | 1.64062 | 1.45555 |
| **IN-1** | 115 | 55053.60000 | 0.00000 | 2.792 | 55432.80000 | 56365.30000 | 53362.80000 |
| AG | 107 | 0.07007 | 103.33800 | 27.701 | 0.05313 | 0.06584 | 0.09125 |
| AS | 75 | 3.03800 | 209.33700 | 13.884 | 3.08509 | 2.59496 | 3.43475 |
| BA | 137 | 44.97000 | 6962.19000 | 3.493 | 46.38746 | 43.28341 | 45.25305 |
| CD | 111 | 0.02282 | 6.00005 | 4.231 | 0.02257 | 0.02201 | 0.02389 |
| CO | 59 | 2.03900 | 2660.37000 | 1.429 | 2.02393 | 2.02027 | 2.07245 |
| CU | 63 | 0.09486 | 123.33900 | 38.604 | 0.11276 | 0.05273 | 0.11909 |
| MO | 98 | 0.17230 | 110.00500 | 49.344 | 0.07482 | 0.23106 | 0.21107 |
| NI | 60 | 2.90400 | 923.40200 | 2.531 | 2.96807 | 2.82373 | 2.91993 |
| SB | 121 | 0.01960 | 20.00080 | 259.286 | 0.04967 | 0.04820 | -0.03908 |
| SN | 120 | 0.28160 | 186.67500 | 71.981 | 0.16659 | 0.16246 | 0.51565 |
| SR | 88 | 97.45000 | 42585.30000 | 3.577 | 97.99374 | 93.72878 | 100.63713 |
| ZN | 66 | 2.15200 | 263.34700 | 16.589 | 2.01151 | 1.88755 | 2.55847 |
| **BI-1** | 209 | 139031.00000 | 0.00000 | 3.725 | 143336.00000 | 140473.00000 | 133283.00000 |
| PB | 208 | 0.01122 | 156.67300 | 125.045 | 0.00278 | 0.00346 | 0.02741 |
| TL | 203 | 0.00294 | 6.66694 | 169.667 | -0.00282 | 0.00560 | 0.00605 |
| U | 238 | 0.01055 | 56.66900 | 21.346 | 0.01313 | 0.00896 | 0.00957 |
| *GE-1* | 72 | 113423.00000 | 0.00000 | 3.088 | 116304.00000 | 114440.00000 | 109526.00000 |
| *TB-1* | 159 | 191197.00000 | 0.00000 | 1.957 | 192808.00000 | 193863.00000 | 186921.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:30:00
Tube Number: 21 Batch: 172021063903A
Sample Number: **9112028** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 53617.40000 | 0.00000 | 1.288 | 53861.40000 | 52837.70000 | 54153.20000 |
| AL | 27 | 6.98600 | 203.34300 | 26.582 | 5.75859 | 9.12242 | 6.07829 |
| CA | 44 | 41130.00000 | 117511.00000 | 2.499 | 41680.41780 | 41774.75306 | 39949.07105 |
| CR | 52 | 0.62900 | 533.36400 | 10.677 | 0.70652 | 0.59197 | 0.58850 |
| FE | 57 | 639.00000 | 9460.46000 | 0.697 | 643.75977 | 634.93351 | 638.26237 |
| K | 39 | 866.90000 | 63242.80000 | 2.268 | 866.81222 | 886.63032 | 847.31128 |
| MG | 24 | 21810.00000 | 1740970.00000 | 1.733 | 21809.36687 | 22182.99725 | 21426.85225 |
| MN | 55 | 320.40000 | 129593.00000 | 2.914 | 323.41199 | 327.78271 | 309.87672 |
| NA | 23 | 12040.00000 | 2096090.00000 | 2.794 | 12386.01310 | 12029.86427 | 11713.54188 |
| TI | 47 | 0.58460 | 10.00060 | 99.829 | 0.58671 | 0.00000 | 1.16714 |
| V | 51 | 0.59100 | 343.35300 | 19.695 | 0.54451 | 0.72338 | 0.50502 |
| **IN-1** | 115 | 57762.90000 | 0.00000 | 1.297 | 56898.50000 | 58165.00000 | 58225.20000 |
| AG | 107 | 0.00661 | 13.33380 | 116.644 | 0.01121 | 0.01091 | -0.00229 |
| AS | 75 | 0.98900 | 93.33450 | 11.790 | 0.85983 | 1.08656 | 1.02079 |
| BA | 137 | 18.83000 | 3060.52000 | 5.157 | 19.92476 | 18.51150 | 18.06458 |
| CD | 111 | 0.01401 | 4.66670 | 161.313 | 0.02169 | 0.03177 | -0.01143 |
| CO | 59 | 1.45300 | 2016.91000 | 2.288 | 1.44825 | 1.42268 | 1.48862 |
| CU | 63 | 0.29660 | 310.01700 | 13.901 | 0.32437 | 0.31621 | 0.24923 |
| MO | 98 | 1.13200 | 740.05400 | 7.039 | 1.05615 | 1.12465 | 1.21501 |
| NI | 60 | 2.19900 | 740.04900 | 17.249 | 1.77042 | 2.49100 | 2.33639 |
| SB | 121 | 0.53000 | 200.01000 | 31.302 | 0.71025 | 0.38381 | 0.49603 |
| SN | 120 | 0.07085 | 83.33660 | 68.497 | 0.12271 | 0.06328 | 0.02654 |
| SR | 88 | 174.20000 | 79910.20000 | 1.520 | 176.86957 | 174.21716 | 171.57496 |
| ZN | 66 | 0.50080 | 83.33750 | 58.426 | 0.22543 | 0.80799 | 0.46902 |
| **BI-1** | 209 | 143641.00000 | 0.00000 | 1.371 | 143013.00000 | 142060.00000 | 145848.00000 |
| PB | 208 | 0.02067 | 200.00900 | 45.172 | 0.01058 | 0.02901 | 0.02241 |
| TL | 203 | 0.00824 | 13.33390 | 116.224 | 0.01372 | 0.01383 | -0.00282 |
| U | 238 | 0.06276 | 296.68300 | 23.375 | 0.07917 | 0.05092 | 0.05817 |
| *GE-1* | 72 | 117362.00000 | 0.00000 | 0.975 | 118007.00000 | 116041.00000 | 118037.00000 |
| *TB-1* | 159 | 200392.00000 | 0.00000 | 0.758 | 199560.00000 | 199471.00000 | 202146.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:32:00
Tube Number: 22 Batch: 172021063903A
Sample Number: **9112031** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51730.10000 | 0.00000 | 1.063 | 51261.40000 | 52335.70000 | 51593.20000 |
| AL | 27 | 52.06000 | 1420.13000 | 7.512 | 48.08927 | 52.19691 | 55.90878 |
| CA | 44 | 47190.00000 | 130010.00000 | 1.393 | 46900.03524 | 46723.43057 | 47939.96588 |
| CR | 52 | 0.87440 | 680.04400 | 9.527 | 0.85412 | 0.96595 | 0.80309 |
| FE | 57 | 5451.00000 | 77626.10000 | 1.186 | 5378.13353 | 5473.06441 | 5501.61056 |
| K | 39 | 2497.00000 | 141321.00000 | 0.895 | 2485.67606 | 2482.35634 | 2522.59731 |
| MG | 24 | 16960.00000 | 1306250.00000 | 1.216 | 16856.96357 | 16818.22066 | 17193.15879 |
| MN | 55 | 405.40000 | 158252.00000 | 0.332 | 404.30912 | 406.90352 | 404.98403 |
| NA | 23 | 27540.00000 | 4608050.00000 | 1.540 | 27153.67698 | 27484.09461 | 27995.25889 |
| TI | 47 | 1.62400 | 26.66770 | 42.174 | 1.23294 | 2.41525 | 1.22501 |
| V | 51 | 0.53020 | 300.01600 | 11.665 | 0.45900 | 0.56154 | 0.57019 |
| **IN-1** | 115 | 54749.80000 | 0.00000 | 0.478 | 54749.80000 | 55011.70000 | 54487.90000 |
| AG | 107 | 0.00473 | 10.00040 | 148.859 | -0.00229 | 0.00469 | 0.01180 |
| AS | 75 | 11.35000 | 696.02500 | 0.558 | 11.27883 | 11.35839 | 11.40405 |
| BA | 137 | 180.40000 | 27771.90000 | 3.268 | 175.52742 | 178.77167 | 186.96827 |
| CD | 111 | 0.00006 | 2.00002 | 17823.500 | -0.01143 | -0.00001 | 0.01163 |
| CO | 59 | 0.30150 | 466.69800 | 16.723 | 0.31195 | 0.24664 | 0.34582 |
| CU | 63 | 0.13450 | 156.67400 | 33.167 | 0.18562 | 0.11401 | 0.10373 |
| MO | 98 | 2.60100 | 1606.83000 | 5.709 | 2.47673 | 2.56181 | 2.76579 |
| NI | 60 | 1.09900 | 360.02100 | 38.489 | 1.58388 | 0.80408 | 0.90985 |
| SB | 121 | 0.34020 | 126.67200 | 9.683 | 0.32034 | 0.37824 | 0.32206 |
| SN | 120 | 0.09176 | 90.00430 | 55.569 | 0.13079 | 0.11041 | 0.03407 |
| SR | 88 | 426.50000 | 185442.00000 | 2.067 | 416.90355 | 428.53521 | 434.19431 |
| ZN | 66 | 3.26500 | 386.68800 | 21.075 | 3.83600 | 3.45912 | 2.50134 |
| **BI-1** | 209 | 137820.00000 | 0.00000 | 0.878 | 136490.00000 | 138855.00000 | 138116.00000 |
| PB | 208 | 0.03961 | 263.34600 | 66.448 | 0.01525 | 0.06753 | 0.03605 |
| TL | 203 | -0.00282 | 0.00000 | 0.000 | -0.00282 | -0.00282 | -0.00282 |
| U | 238 | 0.01450 | 73.33640 | 8.331 | 0.01390 | 0.01589 | 0.01371 |
| *GE-1* | 72 | 112533.00000 | 0.00000 | 0.849 | 111431.00000 | 113054.00000 | 113114.00000 |
| *TB-1* | 159 | 192566.00000 | 0.00000 | 0.079 | 192741.00000 | 192488.00000 | 192468.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:33:00
Tube Number: 23
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51285.10000 | 0.00000 | 3.705 | 52637.40000 | 52104.90000 | 49113.10000 |
| AL | 27 | 2491.00000 | 66990.50000 | 2.385 | 2472.04635 | 2443.62017 | 2557.77373 |
| CA | 44 | 2485.00000 | 7182.24000 | 8.527 | 2272.81435 | 2485.75041 | 2696.68082 |
| CR | 52 | 254.10000 | 169580.00000 | 3.007 | 252.31649 | 247.43315 | 262.41717 |
| FE | 57 | 2612.00000 | 36886.60000 | 0.962 | 2614.89468 | 2585.66902 | 2635.70939 |
| K | 39 | 2487.00000 | 139539.00000 | 3.729 | 2438.56763 | 2429.42205 | 2594.43990 |
| MG | 24 | 2528.00000 | 193000.00000 | 2.513 | 2505.05902 | 2478.65388 | 2599.49157 |
| MN | 55 | 254.10000 | 98288.30000 | 3.000 | 255.20184 | 245.97042 | 261.09176 |
| NA | 23 | 2378.00000 | 406458.00000 | 2.984 | 2374.72010 | 2308.30343 | 2450.11057 |
| TI | 47 | 250.50000 | 4057.46000 | 7.301 | 239.57639 | 240.20662 | 271.57358 |
| V | 51 | 251.40000 | 130927.00000 | 4.920 | 247.06582 | 241.69659 | 265.30054 |
| **IN-1** | 115 | 54877.30000 | 0.00000 | 3.814 | 57268.60000 | 53987.70000 | 53375.70000 |
| AG | 107 | 26.25000 | 37489.90000 | 2.772 | 25.44763 | 26.42350 | 26.87051 |
| AS | 75 | 253.60000 | 14934.70000 | 2.634 | 246.69334 | 260.02077 | 254.14980 |
| BA | 137 | 253.80000 | 39176.20000 | 1.475 | 257.30556 | 254.30586 | 249.86476 |
| CD | 111 | 25.88000 | 4519.50000 | 3.129 | 24.98120 | 26.09266 | 26.55674 |
| CO | 59 | 235.30000 | 295749.00000 | 1.967 | 230.08515 | 239.01526 | 236.66313 |
| CU | 63 | 259.90000 | 220641.00000 | 2.045 | 254.38932 | 260.34638 | 264.99321 |
| MO | 98 | 25.11000 | 15513.30000 | 3.159 | 24.48111 | 26.00241 | 24.85108 |
| NI | 60 | 261.70000 | 81188.30000 | 1.435 | 259.33305 | 266.06233 | 259.80778 |
| SB | 121 | 27.83000 | 9317.12000 | 4.646 | 26.39938 | 28.18865 | 28.91155 |
| SN | 120 | 26.42000 | 13637.90000 | 4.633 | 25.06021 | 26.76578 | 27.43325 |
| SR | 88 | 24.83000 | 10821.70000 | 2.760 | 24.04607 | 25.32214 | 25.11678 |
| ZN | 66 | 260.00000 | 29030.10000 | 1.650 | 256.02961 | 264.56916 | 259.57529 |
| **BI-1** | 209 | 142448.00000 | 0.00000 | 2.583 | 146226.00000 | 138875.00000 | 142243.00000 |
| PB | 208 | 25.11000 | 97246.10000 | 0.429 | 25.07192 | 25.03713 | 25.23881 |
| TL | 203 | 24.67000 | 29717.80000 | 2.097 | 24.47647 | 25.25185 | 24.27050 |
| U | 238 | 24.57000 | 111196.00000 | 2.042 | 24.28894 | 25.14696 | 24.26766 |
| *GE-1* | 72 | 113378.00000 | 0.00000 | 2.831 | 117000.00000 | 110885.00000 | 112248.00000 |
| *TB-1* | 159 | 194623.00000 | 0.00000 | 1.879 | 198797.00000 | 191993.00000 | 193078.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:35:00
Tube Number: 24
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51465.60000 | 0.00000 | 1.920 | 52546.50000 | 51241.80000 | 50608.60000 |
| AL | 27 | 3.08100 | 90.00430 | 37.196 | 3.00688 | 1.97388 | 4.26197 |
| CA | 44 | -26.12000 | 360.02200 | -75.345 | -21.69706 | -47.64218 | -9.03378 |
| CR | 52 | 0.59940 | 493.36900 | 26.577 | 0.77146 | 0.56965 | 0.45701 |
| FE | 57 | 4.63600 | 96.67060 | 40.984 | 2.62741 | 4.87850 | 6.40342 |
| K | 39 | -15.84000 | 17432.20000 | -144.003 | -39.25949 | -14.58108 | 6.30667 |
| MG | 24 | 2.97500 | 290.01500 | 21.324 | 2.25033 | 3.24580 | 3.42932 |
| MN | 55 | 0.35040 | 160.00700 | 21.515 | 0.26526 | 0.37708 | 0.40877 |
| NA | 23 | 2.25700 | 13927.90000 | 50.953 | 1.17165 | 3.46283 | 2.13572 |
| TI | 47 | 0.20810 | 3.33346 | 173.234 | 0.00000 | 0.00000 | 0.62442 |
| V | 51 | 0.19640 | 123.34000 | 50.825 | 0.10985 | 0.30563 | 0.17389 |
| **IN-1** | 115 | 55801.80000 | 0.00000 | 2.208 | 56879.30000 | 56066.90000 | 54459.30000 |
| AG | 107 | 0.02994 | 46.66850 | 29.138 | 0.02471 | 0.02510 | 0.04001 |
| AS | 75 | 0.16030 | 40.66710 | 94.635 | 0.33521 | 0.08122 | 0.06464 |
| BA | 137 | 0.15050 | 26.66770 | 91.429 | 0.10386 | 0.04222 | 0.30537 |
| CD | 111 | 0.02241 | 6.00006 | 50.781 | 0.01066 | 0.03339 | 0.02318 |
| CO | 59 | 0.11970 | 243.34400 | 10.911 | 0.10576 | 0.13167 | 0.12162 |
| CU | 63 | 0.16900 | 190.00900 | 33.142 | 0.23359 | 0.13397 | 0.13941 |
| MO | 98 | 0.05304 | 36.66840 | 45.155 | 0.07278 | 0.02639 | 0.05994 |
| NI | 60 | 0.07306 | 43.33500 | 24.473 | 0.06009 | 0.09345 | 0.06562 |
| SB | 121 | 0.03032 | 23.33420 | 205.409 | -0.03908 | 0.04866 | 0.08136 |
| SN | 120 | 0.04438 | 66.66930 | 109.757 | -0.00832 | 0.08777 | 0.05369 |
| SR | 88 | 0.03012 | 23.33450 | 154.681 | 0.06604 | -0.02253 | 0.04685 |
| ZN | 66 | 0.23370 | 50.00190 | 36.166 | 0.31205 | 0.14411 | 0.24479 |
| **BI-1** | 209 | 143298.00000 | 0.00000 | 3.161 | 147822.00000 | 143308.00000 | 138765.00000 |
| PB | 208 | 0.01832 | 190.01000 | 66.594 | 0.00675 | 0.03106 | 0.01715 |
| TL | 203 | 0.04955 | 63.33600 | 12.787 | 0.04517 | 0.04668 | 0.05682 |
| U | 238 | 0.02255 | 113.33800 | 41.446 | 0.03182 | 0.01313 | 0.02271 |
| *GE-1* | 72 | 115482.00000 | 0.00000 | 0.957 | 115445.00000 | 116606.00000 | 114396.00000 |
| *TB-1* | 159 | 190909.00000 | 0.00000 | 2.129 | 195545.00000 | 187961.00000 | 189220.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:37:00
Tube Number: 25 Batch: 172021063903A
Sample Number: **9112034** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51579.40000 | 0.00000 | 0.732 | 51863.30000 | 51150.90000 | 51723.90000 |
| AL | 27 | 10.09000 | 280.01300 | 9.035 | 10.40141 | 9.05902 | 10.79862 |
| CA | 44 | 113300.00000 | 310581.00000 | 1.581 | 114033.31011 | 114567.09802 | 111231.86981 |
| CR | 52 | 0.96680 | 740.05300 | 14.098 | 1.12411 | 0.88631 | 0.88985 |
| FE | 57 | 13450.00000 | 191005.00000 | 1.856 | 13706.99055 | 13451.03400 | 13207.84891 |
| K | 39 | 9925.00000 | 505797.00000 | 1.631 | 10073.64675 | 9949.44128 | 9752.47640 |
| MG | 24 | 21850.00000 | 1678650.00000 | 0.518 | 21900.08970 | 21723.83926 | 21934.96675 |
| MN | 55 | 2804.00000 | 1091160.00000 | 1.133 | 2795.15663 | 2839.26921 | 2777.60315 |
| NA | 23 | 17710.00000 | 2958390.00000 | 1.982 | 17770.63918 | 18022.97448 | 17329.41803 |
| TI | 47 | 0.40670 | 6.66692 | 86.624 | 0.60931 | 0.00000 | 0.61096 |
| V | 51 | 3.20200 | 1700.18000 | 4.491 | 3.31736 | 3.24870 | 3.04108 |
| **IN-1** | 115 | 53165.60000 | 0.00000 | 1.681 | 52700.70000 | 52600.10000 | 54196.00000 |
| AG | 107 | 0.00250 | 6.66693 | 166.000 | 0.00500 | -0.00229 | 0.00479 |
| AS | 75 | 37.51000 | 2166.86000 | 2.074 | 37.77373 | 36.64022 | 38.12971 |
| BA | 137 | 128.60000 | 19212.20000 | 5.757 | 135.28423 | 129.85381 | 120.63966 |
| CD | 111 | 0.00038 | 2.00002 | 3115.530 | 0.01241 | -0.01143 | 0.00016 |
| CO | 59 | 0.93080 | 1220.10000 | 0.591 | 0.93144 | 0.92505 | 0.93601 |
| CU | 63 | 0.42390 | 390.02100 | 19.420 | 0.35422 | 0.51473 | 0.40269 |
| MO | 98 | 1.25900 | 756.72000 | 15.910 | 1.09013 | 1.48060 | 1.20739 |
| NI | 60 | 1.58800 | 496.69500 | 6.074 | 1.48008 | 1.61760 | 1.66601 |
| SB | 121 | 0.06353 | 33.33460 | 54.950 | 0.08538 | 0.02327 | 0.08195 |
| SN | 120 | 0.06379 | 73.33650 | 20.207 | 0.07848 | 0.05853 | 0.05436 |
| SR | 88 | 665.60000 | 280906.00000 | 2.468 | 674.67269 | 675.41240 | 646.59989 |
| ZN | 66 | 1.76500 | 213.34300 | 18.753 | 1.93984 | 1.38288 | 1.97138 |
| **BI-1** | 209 | 134197.00000 | 0.00000 | 1.736 | 136782.00000 | 132260.00000 | 133549.00000 |
| PB | 208 | 0.03614 | 243.34600 | 34.588 | 0.04209 | 0.04457 | 0.02178 |
| TL | 203 | -0.00282 | 0.00000 | 0.000 | -0.00282 | -0.00282 | -0.00282 |
| U | 238 | 0.18690 | 806.73100 | 6.244 | 0.18871 | 0.19762 | 0.17449 |
| *GE-1* | 72 | 109632.00000 | 0.00000 | 1.385 | 110482.00000 | 107879.00000 | 110533.00000 |
| *TB-1* | 159 | 193698.00000 | 0.00000 | 1.429 | 196846.00000 | 191645.00000 | 192602.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:38:00
Tube Number: 26 Batch: 172021063903A
Sample Number: **9112037** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 49494.80000 | 0.00000 | 1.481 | 48912.80000 | 50317.90000 | 49253.60000 |
| AL | 27 | 6.28500 | 170.00800 | 31.535 | 7.53663 | 7.31900 | 3.99929 |
| CA | 44 | 94860.00000 | 249582.00000 | 2.408 | 96204.02493 | 92219.31599 | 96145.01127 |
| CR | 52 | 0.58570 | 463.36300 | 27.147 | 0.72884 | 0.41461 | 0.61369 |
| FE | 57 | 2354.00000 | 32087.20000 | 2.437 | 2420.04198 | 2314.78757 | 2327.84432 |
| K | 39 | 4247.00000 | 217680.00000 | 2.494 | 4315.30099 | 4125.35862 | 4301.56661 |
| MG | 24 | 60220.00000 | 4438270.00000 | 1.029 | 60455.55608 | 59517.08707 | 60687.70630 |
| MN | 55 | 979.30000 | 365640.00000 | 2.078 | 998.33363 | 957.83927 | 981.67320 |
| NA | 23 | 21550.00000 | 3451720.00000 | 1.713 | 21955.30852 | 21232.81494 | 21462.48934 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 1.02000 | 533.36600 | 22.323 | 0.80474 | 0.99619 | 1.25825 |
| **IN-1** | 115 | 51957.80000 | 0.00000 | 3.285 | 53193.10000 | 52670.70000 | 50009.70000 |
| AG | 107 | -0.00229 | 0.00000 | 0.000 | -0.00229 | -0.00229 | -0.00229 |
| AS | 75 | 3.19800 | 206.67000 | 5.610 | 3.13152 | 3.06140 | 3.40116 |
| BA | 137 | 49.34000 | 7205.74000 | 2.566 | 48.81046 | 48.41658 | 50.77964 |
| CD | 111 | 0.02931 | 6.66672 | 68.441 | 0.01219 | 0.02435 | 0.05138 |
| CO | 59 | 4.03800 | 4884.45000 | 6.429 | 3.89321 | 3.88281 | 4.33766 |
| CU | 63 | 0.43740 | 393.35500 | 15.108 | 0.45983 | 0.48943 | 0.36308 |
| MO | 98 | 0.28530 | 170.00800 | 15.338 | 0.24515 | 0.33195 | 0.27885 |
| NI | 60 | 11.55000 | 3410.56000 | 1.891 | 11.51265 | 11.35868 | 11.78960 |
| SB | 121 | 0.12890 | 53.33540 | 76.897 | 0.05340 | 0.24112 | 0.09208 |
| SN | 120 | 0.03938 | 60.00240 | 82.961 | 0.07698 | 0.01789 | 0.02327 |
| SR | 88 | 813.10000 | 335281.00000 | 3.009 | 806.75271 | 792.46544 | 840.14338 |
| ZN | 66 | 2.97600 | 336.68500 | 15.571 | 3.49197 | 2.59480 | 2.84221 |
| **BI-1** | 209 | 128314.00000 | 0.00000 | 1.235 | 126489.00000 | 129337.00000 | 129117.00000 |
| PB | 208 | 0.00859 | 136.67300 | 67.377 | 0.00723 | 0.01494 | 0.00361 |
| TL | 203 | 0.01873 | 23.33430 | 57.395 | 0.02522 | 0.00632 | 0.02465 |
| U | 238 | 4.01000 | 16358.80000 | 2.374 | 4.06567 | 4.06372 | 3.89984 |
| *GE-1* | 72 | 105742.00000 | 0.00000 | 0.404 | 105621.00000 | 106217.00000 | 105388.00000 |
| *TB-1* | 159 | 182401.00000 | 0.00000 | 1.212 | 179854.00000 | 183522.00000 | 183827.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:40:00
Tube Number: 27 Batch: 172021063903A
Sample Number: **9112040** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 48247.40000 | 0.00000 | 8.554 | 50056.20000 | 51161.10000 | 43524.80000 |
| AL | 27 | 82.32000 | 2063.58000 | 23.895 | 66.77439 | 75.76144 | 104.43103 |
| CA | 44 | 35050.00000 | 89636.60000 | 10.856 | 32325.41267 | 33425.20020 | 39395.81908 |
| CR | 52 | 2.39800 | 1573.49000 | 22.439 | 1.93706 | 2.26772 | 2.98942 |
| FE | 57 | 17800.00000 | 234694.00000 | 11.933 | 16665.20965 | 16477.29522 | 20246.70720 |
| K | 39 | 4281.00000 | 212575.00000 | 10.815 | 4037.24905 | 3990.79515 | 4814.87320 |
| MG | 24 | 28260.00000 | 2016230.00000 | 12.718 | 25845.17755 | 26546.11562 | 32390.59148 |
| MN | 55 | 2412.00000 | 871803.00000 | 12.405 | 2238.18435 | 2239.89547 | 2757.32908 |
| NA | 23 | 10190.00000 | 1587150.00000 | 12.355 | 9382.05964 | 9549.09307 | 11641.80457 |
| TI | 47 | 1.24000 | 20.00070 | 131.613 | 0.63131 | 3.08838 | 0.00000 |
| V | 51 | 1.99100 | 983.41500 | 24.942 | 1.98423 | 1.49826 | 2.49139 |
| **IN-1** | 115 | 49693.40000 | 0.00000 | 7.444 | 51717.30000 | 51938.60000 | 45424.30000 |
| AG | 107 | 0.00266 | 6.66693 | 322.414 | 0.01256 | -0.00229 | -0.00229 |
| AS | 75 | 4.88300 | 285.33900 | 17.207 | 4.35458 | 4.44164 | 5.85151 |
| BA | 137 | 136.80000 | 19035.30000 | 8.918 | 133.38028 | 126.70643 | 150.37131 |
| CD | 111 | 0.01800 | 4.66670 | 35.078 | 0.02501 | 0.01276 | 0.01623 |
| CO | 59 | 3.96700 | 4587.67000 | 5.377 | 4.00636 | 3.73677 | 4.15784 |
| CU | 63 | 0.26230 | 240.01100 | 17.545 | 0.29943 | 0.21084 | 0.27678 |
| MO | 98 | 0.10730 | 63.33610 | 49.618 | 0.16644 | 0.06311 | 0.09247 |
| NI | 60 | 8.46300 | 2386.99000 | 6.820 | 8.14746 | 8.11230 | 9.12915 |
| SB | 121 | 0.05742 | 30.00120 | 143.330 | 0.15116 | 0.02407 | -0.00298 |
| SN | 120 | 0.06152 | 66.66960 | 60.338 | 0.04036 | 0.03983 | 0.10438 |
| SR | 88 | 352.30000 | 138320.00000 | 10.335 | 329.01470 | 333.65999 | 394.27498 |
| ZN | 66 | 6.44100 | 670.04400 | 8.874 | 5.78501 | 6.70660 | 6.83177 |
| **BI-1** | 209 | 128198.00000 | 0.00000 | 8.456 | 135588.00000 | 133252.00000 | 115754.00000 |
| PB | 208 | 0.02362 | 190.00900 | 31.863 | 0.03186 | 0.02190 | 0.01711 |
| TL | 203 | -0.00282 | 0.00000 | 0.000 | -0.00282 | -0.00282 | -0.00282 |
| U | 238 | 0.01414 | 66.67000 | 17.567 | 0.01169 | 0.01665 | 0.01407 |
| *GE-1* | 72 | 103715.00000 | 0.00000 | 8.570 | 107810.00000 | 109817.00000 | 93517.80000 |
| *TB-1* | 159 | 177321.00000 | 0.00000 | 7.805 | 186131.00000 | 184468.00000 | 161363.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:42:00
Tube Number: 28 Batch: 172021063903A
Sample Number: **9112043** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51174.60000 | 0.00000 | 2.910 | 49474.80000 | 51802.90000 | 52246.10000 |
| AL | 27 | 6.09800 | 170.00700 | 19.482 | 7.44809 | 5.62973 | 5.21489 |
| CA | 44 | 40710.00000 | 110959.00000 | 3.046 | 42132.93504 | 40151.59028 | 39849.66979 |
| CR | 52 | 0.61750 | 500.03000 | 16.972 | 0.73455 | 0.53234 | 0.58550 |
| FE | 57 | 539.50000 | 7619.19000 | 7.255 | 576.80515 | 543.06136 | 498.76596 |
| K | 39 | 912.20000 | 62566.40000 | 1.097 | 922.91389 | 910.55220 | 903.10083 |
| MG | 24 | 21500.00000 | 1637380.00000 | 2.966 | 22230.71547 | 21184.80137 | 21075.90438 |
| MN | 55 | 310.00000 | 119661.00000 | 3.217 | 321.25187 | 306.76546 | 302.13823 |
| NA | 23 | 12010.00000 | 1994390.00000 | 3.071 | 12430.92066 | 11869.84275 | 11735.86970 |
| TI | 47 | 0.61960 | 10.00040 | 98.483 | 0.63873 | 1.22005 | 0.00000 |
| V | 51 | 0.59670 | 333.35300 | 35.814 | 0.35773 | 0.66267 | 0.76967 |
| **IN-1** | 115 | 55382.70000 | 0.00000 | 2.508 | 53885.40000 | 55633.60000 | 56629.00000 |
| AG | 107 | -0.00229 | 0.00000 | 0.000 | -0.00229 | -0.00229 | -0.00229 |
| AS | 75 | 0.90690 | 84.66770 | 18.315 | 0.83295 | 0.79050 | 1.09713 |
| BA | 137 | 18.23000 | 2840.44000 | 2.708 | 18.79459 | 17.88390 | 18.00886 |
| CD | 111 | 0.04505 | 10.00010 | 98.335 | 0.04686 | -0.00014 | 0.08841 |
| CO | 59 | 1.39000 | 1853.53000 | 1.254 | 1.39547 | 1.40431 | 1.37069 |
| CU | 63 | 0.35380 | 346.68500 | 9.910 | 0.32134 | 0.39098 | 0.34898 |
| MO | 98 | 1.29200 | 806.72100 | 17.469 | 1.54403 | 1.22395 | 1.10824 |
| NI | 60 | 2.39900 | 770.05700 | 14.481 | 2.72679 | 2.03478 | 2.43534 |
| SB | 121 | 0.54480 | 196.67600 | 18.465 | 0.66085 | 0.49148 | 0.48215 |
| SN | 120 | 0.05817 | 73.33670 | 42.685 | 0.07492 | 0.06995 | 0.02964 |
| SR | 88 | 173.70000 | 76343.00000 | 3.802 | 180.60158 | 173.01407 | 167.44395 |
| ZN | 66 | 0.82650 | 116.67200 | 28.300 | 0.70601 | 0.67733 | 1.09606 |
| **BI-1** | 209 | 138539.00000 | 0.00000 | 1.714 | 135902.00000 | 139211.00000 | 140505.00000 |
| PB | 208 | 0.03663 | 253.34500 | 38.193 | 0.02358 | 0.05140 | 0.03491 |
| TL | 203 | -0.00001 | 3.33347 | -37426.800 | -0.00282 | -0.00282 | 0.00560 |
| U | 238 | 0.06684 | 303.34800 | 23.938 | 0.08343 | 0.06557 | 0.05151 |
| *GE-1* | 72 | 110805.00000 | 0.00000 | 2.412 | 107850.00000 | 113054.00000 | 111512.00000 |
| *TB-1* | 159 | 194221.00000 | 0.00000 | 1.155 | 191692.00000 | 195973.00000 | 194997.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:43:00
Tube Number: 29 Batch: 172021063903A
Sample Number: **9112046** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51653.50000 | 0.00000 | 4.728 | 54334.40000 | 51070.70000 | 49555.50000 |
| AL | 27 | 9.10700 | 253.35200 | 10.155 | 8.86402 | 8.32747 | 10.12868 |
| CA | 44 | 14210.00000 | 39360.50000 | 5.353 | 13989.25719 | 13583.55445 | 15056.27771 |
| CR | 52 | 3.08600 | 2163.58000 | 4.666 | 2.94760 | 3.23486 | 3.07428 |
| FE | 57 | 6.62300 | 126.67300 | 43.726 | 9.82594 | 4.19056 | 5.85313 |
| K | 39 | 2300.00000 | 131282.00000 | 5.161 | 2197.71331 | 2273.26142 | 2430.31249 |
| MG | 24 | 15020.00000 | 1153950.00000 | 4.377 | 14453.84252 | 14864.77800 | 15740.86725 |
| MN | 55 | 0.74970 | 316.68200 | 13.041 | 0.79116 | 0.63810 | 0.82000 |
| NA | 23 | 8720.00000 | 1464600.00000 | 4.155 | 8512.52449 | 8510.15831 | 9138.91352 |
| TI | 47 | 0.40010 | 6.66692 | 86.728 | 0.58160 | 0.61877 | 0.00000 |
| V | 51 | 5.90000 | 3117.16000 | 4.476 | 5.82640 | 5.68111 | 6.19358 |
| **IN-1** | 115 | 55721.00000 | 0.00000 | 1.462 | 56428.00000 | 54829.90000 | 55905.10000 |
| AG | 107 | 0.00000 | 3.33346 | -319067.000 | -0.00229 | -0.00229 | 0.00458 |
| AS | 75 | 1.89700 | 144.00200 | 15.609 | 1.56599 | 2.13741 | 1.98617 |
| BA | 137 | 2.06400 | 326.68400 | 25.014 | 1.68084 | 1.86022 | 2.65124 |
| CD | 111 | 0.00356 | 2.66669 | 177.156 | 0.01084 | 0.00003 | -0.00019 |
| CO | 59 | -0.05771 | 16.66730 | -7.586 | -0.05526 | -0.06277 | -0.05512 |
| CU | 63 | 0.32100 | 320.01900 | 13.903 | 0.27023 | 0.33851 | 0.35415 |
| MO | 98 | 0.29720 | 190.00800 | 12.867 | 0.34097 | 0.27007 | 0.28066 |
| NI | 60 | 0.72960 | 250.01400 | 1.600 | 0.71958 | 0.74243 | 0.72691 |
| SB | 121 | -0.00984 | 10.00070 | -298.190 | -0.01002 | -0.03908 | 0.01959 |
| SN | 120 | 0.06931 | 80.00370 | 69.932 | 0.12443 | 0.03334 | 0.05015 |
| SR | 88 | 100.30000 | 44381.60000 | 2.191 | 99.69290 | 98.42701 | 102.70637 |
| ZN | 66 | 1.20700 | 160.00700 | 16.346 | 1.01354 | 1.40794 | 1.20093 |
| **BI-1** | 209 | 141467.00000 | 0.00000 | 4.031 | 147915.00000 | 137094.00000 | 139390.00000 |
| PB | 208 | 0.00585 | 140.00600 | 46.811 | 0.00424 | 0.00430 | 0.00901 |
| TL | 203 | 0.00581 | 10.00040 | 257.320 | -0.00282 | 0.02305 | -0.00282 |
| U | 238 | 0.06443 | 300.01600 | 9.932 | 0.06584 | 0.05744 | 0.07000 |
| *GE-1* | 72 | 113207.00000 | 0.00000 | 2.722 | 116758.00000 | 111623.00000 | 111239.00000 |
| *TB-1* | 159 | 194128.00000 | 0.00000 | 3.245 | 200980.00000 | 188589.00000 | 192817.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:45:00
Tube Number: 30 Batch: 172021063903A
Sample Number: **9112049** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 50258.00000 | 0.00000 | 3.727 | 48541.30000 | 49977.10000 | 52255.70000 |
| AL | 27 | 63.78000 | 1690.19000 | 9.715 | 65.33159 | 56.96218 | 69.06117 |
| CA | 44 | 8079.00000 | 21969.10000 | 1.316 | 8165.62765 | 8111.53453 | 7960.57414 |
| CR | 52 | 1.75800 | 1236.78000 | 9.647 | 1.93840 | 1.60211 | 1.73218 |
| FE | 57 | 48100.00000 | 664640.00000 | 4.522 | 50595.51201 | 47136.50801 | 46581.89759 |
| K | 39 | 600.30000 | 46473.00000 | 9.152 | 663.69995 | 569.19376 | 567.89675 |
| MG | 24 | 3884.00000 | 290458.00000 | 3.800 | 4045.36127 | 3849.01038 | 3756.22470 |
| MN | 55 | 1426.00000 | 540176.00000 | 3.670 | 1485.19695 | 1404.85156 | 1386.92773 |
| NA | 23 | 4394.00000 | 724777.00000 | 3.457 | 4562.82569 | 4352.43742 | 4267.80562 |
| TI | 47 | 1.45100 | 23.33420 | 62.205 | 1.30203 | 0.63231 | 2.41895 |
| V | 51 | 2.42400 | 1256.78000 | 11.300 | 2.73644 | 2.22361 | 2.31318 |
| **IN-1** | 115 | 55499.80000 | 0.00000 | 0.632 | 55904.70000 | 55292.50000 | 55302.30000 |
| AG | 107 | 0.00002 | 3.33346 | 16621.100 | -0.00229 | 0.00465 | -0.00229 |
| AS | 75 | 3.14700 | 218.00400 | 5.748 | 3.35519 | 3.06049 | 3.02608 |
| BA | 137 | 97.41000 | 15203.30000 | 4.419 | 100.44954 | 92.48034 | 99.28955 |
| CD | 111 | 0.03764 | 8.66677 | 106.084 | 0.03352 | 0.07946 | -0.00007 |
| CO | 59 | 2.14200 | 2813.75000 | 4.598 | 2.23272 | 2.03713 | 2.15520 |
| CU | 63 | 0.61310 | 570.03300 | 9.633 | 0.65473 | 0.63916 | 0.54554 |
| MO | 98 | 0.11740 | 76.66990 | 16.116 | 0.10592 | 0.13927 | 0.10713 |
| NI | 60 | 3.65300 | 1166.77000 | 12.310 | 4.14527 | 3.55184 | 3.26320 |
| SB | 121 | 0.04956 | 30.00120 | 1.126 | 0.04892 | 0.04989 | 0.04988 |
| SN | 120 | -0.00638 | 40.00180 | -800.940 | -0.02607 | 0.05163 | -0.04471 |
| SR | 88 | 85.00000 | 37469.40000 | 0.358 | 84.66997 | 85.26649 | 85.06875 |
| ZN | 66 | 1.80000 | 226.67700 | 24.078 | 2.25674 | 1.39443 | 1.74991 |
| **BI-1** | 209 | 138686.00000 | 0.00000 | 1.025 | 138531.00000 | 137348.00000 | 140179.00000 |
| PB | 208 | 0.01539 | 173.34100 | 34.211 | 0.01989 | 0.00960 | 0.01667 |
| TL | 203 | 0.00286 | 6.66694 | 171.848 | -0.00282 | 0.00579 | 0.00562 |
| U | 238 | 0.02267 | 110.00600 | 33.467 | 0.01820 | 0.01838 | 0.03143 |
| *GE-1* | 72 | 111011.00000 | 0.00000 | 1.520 | 111138.00000 | 109264.00000 | 112630.00000 |
| *TB-1* | 159 | 191937.00000 | 0.00000 | 1.045 | 192974.00000 | 189625.00000 | 193212.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:47:00
Tube Number: 31 Batch: 172021063903A
Sample Number: **9112052** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52753.90000 | 0.00000 | 1.372 | 53580.60000 | 52445.90000 | 52235.10000 |
| AL | 27 | 5.52100 | 160.00900 | 10.572 | 5.79023 | 5.92120 | 4.85110 |
| CA | 44 | 25680.00000 | 72350.10000 | 2.415 | 24999.60216 | 25840.19585 | 26210.00253 |
| CR | 52 | 0.53990 | 463.36000 | 9.226 | 0.51019 | 0.59740 | 0.51211 |
| FE | 57 | 109.60000 | 1623.49000 | 5.926 | 115.81539 | 110.05174 | 102.85176 |
| K | 39 | 969.70000 | 67386.10000 | 2.248 | 946.97296 | 971.67735 | 990.43104 |
| MG | 24 | 27200.00000 | 2136350.00000 | 2.036 | 26561.52481 | 27463.22861 | 27569.30597 |
| MN | 55 | 183.90000 | 73216.90000 | 2.442 | 179.26228 | 184.31193 | 188.21939 |
| NA | 23 | 6741.00000 | 1160350.00000 | 1.998 | 6635.56487 | 6694.44184 | 6892.66399 |
| TI | 47 | 0.40250 | 6.66692 | 86.609 | 0.00000 | 0.60255 | 0.60498 |
| V | 51 | 2.39900 | 1306.78000 | 12.572 | 2.05302 | 2.60476 | 2.54009 |
| **IN-1** | 115 | 56176.00000 | 0.00000 | 0.526 | 56356.60000 | 56336.50000 | 55835.00000 |
| AG | 107 | 0.00227 | 6.66693 | 173.835 | -0.00229 | 0.00453 | 0.00459 |
| AS | 75 | 2.08700 | 156.66900 | 25.208 | 1.73426 | 1.83446 | 2.69139 |
| BA | 137 | 7.38500 | 1170.11000 | 13.337 | 8.31089 | 7.49306 | 6.34995 |
| CD | 111 | 0.04820 | 10.66680 | 13.079 | 0.04431 | 0.05548 | 0.04483 |
| CO | 59 | 0.32040 | 503.36200 | 9.597 | 0.28553 | 0.33215 | 0.34359 |
| CU | 63 | 0.63610 | 596.70600 | 9.420 | 0.56879 | 0.68375 | 0.65562 |
| MO | 98 | 0.55360 | 353.35200 | 20.954 | 0.42021 | 0.60954 | 0.63096 |
| NI | 60 | 7.14200 | 2286.95000 | 13.367 | 6.68628 | 6.50022 | 8.23902 |
| SB | 121 | 0.12660 | 56.66890 | 67.457 | 0.07731 | 0.07735 | 0.22524 |
| SN | 120 | 0.08762 | 90.00410 | 94.887 | -0.00762 | 0.12477 | 0.14571 |
| SR | 88 | 165.80000 | 73951.40000 | 1.693 | 164.67731 | 163.67916 | 168.96199 |
| ZN | 66 | 4.08100 | 490.02800 | 23.146 | 5.02996 | 4.07139 | 3.14074 |
| **BI-1** | 209 | 142690.00000 | 0.00000 | 2.049 | 145109.00000 | 139441.00000 | 143520.00000 |
| PB | 208 | 0.03396 | 250.01200 | 11.475 | 0.03030 | 0.03806 | 0.03354 |
| TL | 203 | 0.01373 | 20.00080 | 59.068 | 0.02162 | 0.01414 | 0.00542 |
| U | 238 | 0.30280 | 1383.48000 | 1.805 | 0.29921 | 0.30017 | 0.30912 |
| *GE-1* | 72 | 115808.00000 | 0.00000 | 1.575 | 117898.00000 | 114536.00000 | 114990.00000 |
| *TB-1* | 159 | 197804.00000 | 0.00000 | 0.727 | 199436.00000 | 196725.00000 | 197251.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:49:00
Tube Number: 32 Batch: 172021063903A
Sample Number: **9112055** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51424.80000 | 0.00000 | 0.664 | 51772.70000 | 51411.50000 | 51090.20000 |
| AL | 27 | 9.25100 | 256.68000 | 15.674 | 10.05190 | 10.12423 | 7.57765 |
| CA | 44 | 8297.00000 | 23077.80000 | 3.857 | 8105.41050 | 8119.53281 | 8666.52120 |
| CR | 52 | 1.12500 | 843.39800 | 6.436 | 1.11148 | 1.06046 | 1.20334 |
| FE | 57 | 17.35000 | 276.68100 | 52.663 | 9.71952 | 27.47647 | 14.85848 |
| K | 39 | 442.60000 | 39881.30000 | 5.300 | 416.11516 | 451.15398 | 460.65790 |
| MG | 24 | 7444.00000 | 570180.00000 | 0.279 | 7461.60124 | 7450.64231 | 7421.46775 |
| MN | 55 | 7.10500 | 2780.42000 | 4.743 | 6.72252 | 7.23434 | 7.35811 |
| NA | 23 | 12170.00000 | 2032110.00000 | 1.164 | 12010.69886 | 12255.21410 | 12257.04094 |
| TI | 47 | 0.61310 | 10.00040 | 99.560 | 1.22076 | 0.00000 | 0.61853 |
| V | 51 | 0.61050 | 340.01800 | 0.707 | 0.60608 | 0.61062 | 0.61471 |
| **IN-1** | 115 | 55740.90000 | 0.00000 | 0.579 | 56106.30000 | 55623.20000 | 55493.20000 |
| AG | 107 | -0.00229 | 0.00000 | 0.000 | -0.00229 | -0.00229 | -0.00229 |
| AS | 75 | 0.28520 | 48.00050 | 101.718 | 0.48004 | -0.04823 | 0.42379 |
| BA | 137 | 6.38300 | 1003.41000 | 2.655 | 6.19226 | 6.43809 | 6.51732 |
| CD | 111 | 0.00361 | 2.66669 | 181.342 | -0.00023 | 0.01116 | -0.00011 |
| CO | 59 | -0.01860 | 66.67000 | -146.452 | 0.00706 | -0.04719 | -0.01567 |
| CU | 63 | 0.57950 | 543.36400 | 5.619 | 0.59460 | 0.54211 | 0.60172 |
| MO | 98 | 0.24970 | 160.00800 | 19.335 | 0.24798 | 0.20228 | 0.29879 |
| NI | 60 | 2.02000 | 656.71100 | 5.752 | 2.14326 | 2.00335 | 1.91253 |
| SB | 121 | 0.03952 | 26.66800 | 114.347 | -0.00985 | 0.07885 | 0.04957 |
| SN | 120 | 0.09504 | 93.33810 | 81.176 | 0.10663 | 0.16574 | 0.01275 |
| SR | 88 | 69.64000 | 30834.60000 | 2.464 | 71.19925 | 69.91145 | 67.79975 |
| ZN | 66 | 13.91000 | 1600.16000 | 4.676 | 14.60976 | 13.32347 | 13.79833 |
| **BI-1** | 209 | 141236.00000 | 0.00000 | 1.502 | 143075.00000 | 138916.00000 | 141718.00000 |
| PB | 208 | 0.02247 | 203.34400 | 36.044 | 0.01314 | 0.02771 | 0.02656 |
| TL | 203 | 0.01101 | 16.66740 | 114.805 | 0.02197 | -0.00282 | 0.01387 |
| U | 238 | 0.02375 | 116.67200 | 23.166 | 0.02855 | 0.02494 | 0.01774 |
| *GE-1* | 72 | 112218.00000 | 0.00000 | 1.853 | 111844.00000 | 114457.00000 | 110351.00000 |
| *TB-1* | 159 | 189762.00000 | 0.00000 | 1.025 | 190369.00000 | 191331.00000 | 187586.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:50:00
Tube Number: 33 Batch: 172021063903A
Sample Number: **9112061** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 55987.40000 | 0.00000 | 3.176 | 58039.40000 | 54906.90000 | 55015.90000 |
| AL | 27 | 197.80000 | 5821.54000 | 6.618 | 204.41816 | 182.75245 | 206.30875 |
| CA | 44 | 14710.00000 | 44175.60000 | 1.430 | 14551.43782 | 14626.46158 | 14947.55760 |
| CR | 52 | 18.03000 | 13227.20000 | 3.296 | 17.34626 | 18.44180 | 18.29301 |
| FE | 57 | 12860.00000 | 198141.00000 | 0.621 | 12768.93577 | 12899.60523 | 12913.94167 |
| K | 39 | 656.30000 | 54785.30000 | 4.646 | 623.01315 | 682.83791 | 663.11642 |
| MG | 24 | 7178.00000 | 598401.00000 | 1.089 | 7114.90770 | 7265.13878 | 7152.64550 |
| MN | 55 | 166.90000 | 70515.80000 | 2.025 | 163.16933 | 167.96614 | 169.69041 |
| NA | 23 | 11660.00000 | 2117110.00000 | 3.762 | 11154.65300 | 11836.48008 | 11973.81012 |
| TI | 47 | 7.33300 | 130.00600 | 19.992 | 7.62273 | 8.63313 | 5.74398 |
| V | 51 | 12.38000 | 7065.49000 | 2.556 | 12.03030 | 12.64717 | 12.46115 |
| **IN-1** | 115 | 59129.40000 | 0.00000 | 2.916 | 61118.90000 | 58084.60000 | 58184.70000 |
| AG | 107 | 0.00421 | 10.00040 | 4.428 | 0.00399 | 0.00432 | 0.00431 |
| AS | 75 | 5.89700 | 406.01000 | 5.591 | 5.52919 | 6.16649 | 5.99457 |
| BA | 137 | 27.49000 | 4574.36000 | 0.685 | 27.68751 | 27.48100 | 27.31148 |
| CD | 111 | 0.02046 | 6.00005 | 52.884 | 0.01941 | 0.01020 | 0.03176 |
| CO | 59 | 3.72700 | 5144.56000 | 1.530 | 3.68634 | 3.79248 | 3.70325 |
| CU | 63 | 0.21590 | 243.34500 | 10.560 | 0.19274 | 0.21658 | 0.23833 |
| MO | 98 | 0.08996 | 63.33580 | 26.534 | 0.08190 | 0.07116 | 0.11682 |
| NI | 60 | 18.59000 | 6235.11000 | 1.069 | 18.58393 | 18.79589 | 18.39873 |
| SB | 121 | 0.01735 | 20.00080 | 325.418 | -0.03908 | 0.07385 | 0.01729 |
| SN | 120 | 0.01791 | 56.66890 | 288.107 | 0.07363 | -0.02821 | 0.00831 |
| SR | 88 | 218.80000 | 102673.00000 | 3.302 | 210.82806 | 224.92803 | 220.61260 |
| ZN | 66 | 2.19900 | 290.01600 | 17.899 | 2.60995 | 1.82555 | 2.16022 |
| **BI-1** | 209 | 146490.00000 | 0.00000 | 3.795 | 152874.00000 | 142711.00000 | 143885.00000 |
| PB | 208 | 0.03229 | 250.01100 | 10.130 | 0.02961 | 0.03132 | 0.03593 |
| TL | 203 | -0.00008 | 3.33347 | -6015.720 | -0.00282 | -0.00282 | 0.00540 |
| U | 238 | 0.07387 | 353.35500 | 19.345 | 0.06569 | 0.09037 | 0.06556 |
| *GE-1* | 72 | 119438.00000 | 0.00000 | 3.804 | 124670.00000 | 116484.00000 | 117160.00000 |
| *TB-1* | 159 | 207156.00000 | 0.00000 | 4.433 | 217680.00000 | 203018.00000 | 200770.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:52:00
Tube Number: 34 Batch: 172021063903A
Sample Number: **9112064** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54340.70000 | 0.00000 | 0.260 | 54333.90000 | 54485.10000 | 54203.10000 |
| AL | 27 | 3.71600 | 113.34000 | 23.474 | 3.60120 | 4.64017 | 2.90707 |
| CA | 44 | 76180.00000 | 220210.00000 | 0.405 | 76517.43063 | 76114.83696 | 75910.40675 |
| CR | 52 | 0.58590 | 510.02900 | 27.701 | 0.74163 | 0.59819 | 0.41774 |
| FE | 57 | 2162.00000 | 32361.30000 | 2.437 | 2219.98720 | 2148.91465 | 2117.08886 |
| K | 39 | 9257.00000 | 498319.00000 | 1.320 | 9367.62397 | 9278.44316 | 9125.99348 |
| MG | 24 | 26160.00000 | 2116930.00000 | 0.790 | 26030.11899 | 26397.00905 | 26048.83137 |
| MN | 55 | 738.50000 | 302815.00000 | 1.720 | 753.18031 | 731.84547 | 730.56958 |
| NA | 23 | 37440.00000 | 6574670.00000 | 0.851 | 37790.91885 | 37367.11645 | 37166.80485 |
| TI | 47 | 0.19390 | 3.33346 | 173.182 | 0.58161 | 0.00000 | 0.00000 |
| V | 51 | 1.95200 | 1100.10000 | 9.862 | 2.06021 | 1.72943 | 2.06532 |
| **IN-1** | 115 | 55894.60000 | 0.00000 | 2.229 | 56448.20000 | 54468.20000 | 56767.50000 |
| AG | 107 | 0.00447 | 10.00040 | 262.017 | -0.00229 | -0.00229 | 0.01800 |
| AS | 75 | 5.74000 | 374.67500 | 3.789 | 5.50046 | 5.92487 | 5.79544 |
| BA | 137 | 103.80000 | 16308.00000 | 2.557 | 101.87860 | 106.82621 | 102.68708 |
| CD | 111 | 0.07527 | 15.33350 | 48.585 | 0.06647 | 0.11544 | 0.04390 |
| CO | 59 | 0.55420 | 800.05800 | 3.991 | 0.56333 | 0.57036 | 0.52901 |
| CU | 63 | 2.22500 | 1970.22000 | 9.987 | 2.45703 | 2.01424 | 2.20384 |
| MO | 98 | 9.39600 | 5914.94000 | 2.672 | 9.16933 | 9.66596 | 9.35259 |
| NI | 60 | 7.52400 | 2396.98000 | 3.686 | 7.20833 | 7.63515 | 7.72852 |
| SB | 121 | 0.40240 | 150.00700 | 28.305 | 0.42572 | 0.50283 | 0.27867 |
| SN | 120 | 0.01858 | 53.33570 | 123.358 | -0.00775 | 0.03411 | 0.02936 |
| SR | 88 | 467.30000 | 207316.00000 | 4.314 | 470.83881 | 485.51374 | 445.65967 |
| ZN | 66 | 1.00500 | 136.67300 | 67.930 | 0.49029 | 1.77987 | 0.74631 |
| **BI-1** | 209 | 137057.00000 | 0.00000 | 1.493 | 138967.00000 | 134898.00000 | 137306.00000 |
| PB | 208 | 0.02583 | 210.01100 | 100.155 | 0.00648 | 0.01579 | 0.05522 |
| TL | 203 | 0.00865 | 13.33390 | 55.616 | 0.01420 | 0.00595 | 0.00579 |
| U | 238 | 0.92850 | 4054.21000 | 1.866 | 0.94445 | 0.93100 | 0.91005 |
| *GE-1* | 72 | 113532.00000 | 0.00000 | 0.972 | 114797.00000 | 112772.00000 | 113026.00000 |
| *TB-1* | 159 | 196085.00000 | 0.00000 | 1.286 | 198818.00000 | 193850.00000 | 195588.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:54:00
Tube Number: 35
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52747.40000 | 0.00000 | 0.685 | 53138.60000 | 52677.50000 | 52426.10000 |
| AL | 27 | 2418.00000 | 66920.00000 | 0.529 | 2411.21830 | 2410.50546 | 2433.02873 |
| CA | 44 | 2639.00000 | 7832.61000 | 1.823 | 2657.77892 | 2675.29130 | 2584.60528 |
| CR | 52 | 249.50000 | 171398.00000 | 0.792 | 251.59649 | 247.68216 | 249.18264 |
| FE | 57 | 2511.00000 | 36482.40000 | 1.479 | 2473.61875 | 2547.87362 | 2512.82613 |
| K | 39 | 2413.00000 | 139875.00000 | 1.642 | 2416.64487 | 2371.34496 | 2450.29523 |
| MG | 24 | 2498.00000 | 196284.00000 | 1.187 | 2481.85341 | 2480.14208 | 2532.34808 |
| MN | 55 | 248.00000 | 98720.60000 | 1.404 | 251.93867 | 246.63770 | 245.37571 |
| NA | 23 | 2325.00000 | 409418.00000 | 1.548 | 2341.33780 | 2284.35566 | 2350.96014 |
| TI | 47 | 253.10000 | 4224.19000 | 6.306 | 252.18934 | 237.59680 | 269.48538 |
| V | 51 | 246.10000 | 132000.00000 | 1.069 | 246.69723 | 243.23661 | 248.39948 |
| **IN-1** | 115 | 55462.80000 | 0.00000 | 1.548 | 56189.50000 | 54515.50000 | 55683.30000 |
| AG | 107 | 26.13000 | 37747.50000 | 1.185 | 26.48456 | 25.92797 | 25.97125 |
| AS | 75 | 252.10000 | 15011.50000 | 2.789 | 252.93752 | 258.73098 | 244.73741 |
| BA | 137 | 253.80000 | 39574.30000 | 2.302 | 254.69147 | 259.17416 | 247.58667 |
| CD | 111 | 25.84000 | 4564.19000 | 2.227 | 25.18162 | 26.09350 | 26.24576 |
| CO | 59 | 233.30000 | 296598.00000 | 2.249 | 236.62576 | 236.10727 | 227.28989 |
| CU | 63 | 255.80000 | 219527.00000 | 1.474 | 256.09337 | 259.35926 | 251.83797 |
| MO | 98 | 25.54000 | 15954.00000 | 0.875 | 25.61645 | 25.71787 | 25.29036 |
| NI | 60 | 257.50000 | 80738.50000 | 0.674 | 255.53459 | 258.78503 | 258.21213 |
| SB | 121 | 26.09000 | 8836.74000 | 2.411 | 26.29371 | 26.59073 | 25.38375 |
| SN | 120 | 26.33000 | 13748.00000 | 3.809 | 25.84678 | 27.48380 | 25.66107 |
| SR | 88 | 25.97000 | 11445.50000 | 2.901 | 25.65248 | 26.83405 | 25.43332 |
| ZN | 66 | 264.20000 | 29825.30000 | 3.732 | 260.77722 | 256.58159 | 275.36742 |
| **BI-1** | 209 | 143885.00000 | 0.00000 | 1.692 | 146577.00000 | 141841.00000 | 143237.00000 |
| PB | 208 | 24.94000 | 97544.90000 | 0.960 | 24.74978 | 25.21137 | 24.87055 |
| TL | 203 | 25.16000 | 30623.40000 | 1.155 | 24.95951 | 25.02447 | 25.49231 |
| U | 238 | 24.22000 | 110776.00000 | 2.095 | 24.80073 | 23.98039 | 23.87275 |
| *GE-1* | 72 | 113404.00000 | 0.00000 | 0.728 | 114345.00000 | 112801.00000 | 113065.00000 |
| *TB-1* | 159 | 194260.00000 | 0.00000 | 1.138 | 196664.00000 | 192314.00000 | 193802.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:55:00
Tube Number: 36
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51218.10000 | 0.00000 | 1.466 | 50539.00000 | 51091.00000 | 52024.10000 |
| AL | 27 | 2.22700 | 66.66940 | 20.732 | 2.75933 | 1.98050 | 1.94031 |
| CA | 44 | -9.50000 | 403.35800 | -329.895 | -23.74060 | 26.43426 | -31.19493 |
| CR | 52 | 0.46920 | 403.35900 | 24.318 | 0.45782 | 0.36119 | 0.58857 |
| FE | 57 | 2.97700 | 73.33690 | 47.498 | 1.38151 | 3.47673 | 4.07329 |
| K | 39 | -25.89000 | 16871.40000 | -27.717 | -29.37672 | -17.64135 | -30.66233 |
| MG | 24 | 2.93600 | 286.68000 | 21.250 | 2.23927 | 3.12633 | 3.44285 |
| MN | 55 | 0.17010 | 90.00440 | 78.954 | 0.25206 | 0.01517 | 0.24308 |
| NA | 23 | -1.44400 | 13250.50000 | -42.403 | -0.75885 | -1.93729 | -1.63700 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.12610 | 86.66990 | 44.726 | 0.11579 | 0.07561 | 0.18698 |
| **IN-1** | 115 | 55202.30000 | 0.00000 | 1.700 | 54217.10000 | 56086.30000 | 55303.60000 |
| AG | 107 | 0.02781 | 43.33500 | 37.648 | 0.01896 | 0.02509 | 0.03937 |
| AS | 75 | 0.28120 | 47.33380 | 70.626 | 0.10167 | 0.24743 | 0.49453 |
| BA | 137 | 0.06553 | 13.33390 | 153.365 | 0.17561 | 0.04220 | -0.02122 |
| CD | 111 | 0.02269 | 6.00006 | 86.558 | 0.01175 | 0.01097 | 0.04537 |
| CO | 59 | 0.03979 | 140.00600 | 49.284 | 0.01782 | 0.04600 | 0.05554 |
| CU | 63 | 0.12550 | 150.00600 | 26.749 | 0.15218 | 0.08781 | 0.13651 |
| MO | 98 | 0.02172 | 16.66730 | 88.260 | 0.04385 | 0.01055 | 0.01077 |
| NI | 60 | 0.09662 | 50.00220 | 88.915 | 0.13147 | -0.00124 | 0.15962 |
| SB | 121 | 0.06988 | 36.66810 | 24.957 | 0.08190 | 0.07787 | 0.04987 |
| SN | 120 | -0.00637 | 40.00160 | -510.435 | -0.04393 | 0.01173 | 0.01308 |
| SR | 88 | 0.03804 | 26.66770 | 90.536 | 0.00070 | 0.04484 | 0.06856 |
| ZN | 66 | 0.03133 | 26.66790 | 173.604 | 0.06537 | -0.03140 | 0.06003 |
| **BI-1** | 209 | 142766.00000 | 0.00000 | 1.998 | 142811.00000 | 139890.00000 | 145596.00000 |
| PB | 208 | 0.00127 | 123.33900 | 750.432 | -0.00742 | 0.01150 | -0.00027 |
| TL | 203 | 0.02479 | 33.33470 | 19.334 | 0.03030 | 0.02254 | 0.02154 |
| U | 238 | 0.01684 | 86.67060 | 61.639 | 0.02861 | 0.00901 | 0.01289 |
| *GE-1* | 72 | 112382.00000 | 0.00000 | 1.188 | 111320.00000 | 111945.00000 | 113881.00000 |
| *TB-1* | 159 | 192818.00000 | 0.00000 | 3.267 | 186405.00000 | 193053.00000 | 198997.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:57:00
Tube Number: 37 Batch: 172021063903A
Sample Number: **9112067** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 52519.70000 | 0.00000 | 1.625 | 51542.50000 | 52897.70000 | 53118.90000 |
| AL | 27 | 4.45300 | 130.00600 | 41.545 | 3.44030 | 6.58905 | 3.33054 |
| CA | 44 | 63970.00000 | 178716.00000 | 3.792 | 66738.80211 | 62214.80932 | 62956.21613 |
| CR | 52 | 0.57360 | 483.36300 | 26.325 | 0.74439 | 0.51853 | 0.45795 |
| FE | 57 | 8781.00000 | 126896.00000 | 3.101 | 9058.76437 | 8514.58612 | 8769.40711 |
| K | 39 | 9758.00000 | 506616.00000 | 0.461 | 9807.82871 | 9720.96552 | 9744.25023 |
| MG | 24 | 18270.00000 | 1428310.00000 | 2.232 | 18706.50079 | 18188.51486 | 17902.03378 |
| MN | 55 | 720.30000 | 285368.00000 | 2.697 | 742.74937 | 708.57754 | 709.62639 |
| NA | 23 | 30520.00000 | 5181810.00000 | 0.624 | 30725.64454 | 30483.39782 | 30350.16209 |
| TI | 47 | 0.81140 | 13.33380 | 115.677 | 1.83931 | 0.00000 | 0.59491 |
| V | 51 | 1.62800 | 890.06700 | 5.766 | 1.73499 | 1.55934 | 1.58973 |
| **IN-1** | 115 | 54395.00000 | 0.00000 | 3.857 | 54167.10000 | 52420.30000 | 56597.60000 |
| AG | 107 | 0.00470 | 10.00040 | 150.969 | 0.01189 | -0.00229 | 0.00449 |
| AS | 75 | 9.96400 | 610.01900 | 6.314 | 9.88937 | 10.62789 | 9.37647 |
| BA | 137 | 70.56000 | 10791.80000 | 1.184 | 69.81691 | 71.46421 | 70.40201 |
| CD | 111 | 0.81590 | 142.66900 | 21.179 | 0.95116 | 0.87538 | 0.62124 |
| CO | 59 | 5.51700 | 6962.12000 | 1.093 | 5.49872 | 5.58432 | 5.46790 |
| CU | 63 | 8.98900 | 7599.15000 | 6.604 | 8.56610 | 9.66744 | 8.73305 |
| MO | 98 | 27.87000 | 17042.10000 | 6.896 | 28.18193 | 29.61320 | 25.80876 |
| NI | 60 | 7.14600 | 2213.61000 | 6.301 | 7.41654 | 7.39574 | 6.62637 |
| SB | 121 | 1.41100 | 480.03100 | 10.829 | 1.32324 | 1.58763 | 1.32269 |
| SN | 120 | 0.11690 | 103.33900 | 88.110 | 0.17243 | -0.00195 | 0.18028 |
| SR | 88 | 415.90000 | 179464.00000 | 3.849 | 417.22228 | 431.18858 | 399.25537 |
| ZN | 66 | 491.70000 | 54338.80000 | 4.354 | 494.25985 | 511.68178 | 469.09860 |
| **BI-1** | 209 | 136401.00000 | 0.00000 | 1.589 | 137836.00000 | 133908.00000 | 137458.00000 |
| PB | 208 | 0.20540 | 873.38400 | 10.905 | 0.20990 | 0.22521 | 0.18108 |
| TL | 203 | 0.02024 | 26.66780 | 48.162 | 0.03149 | 0.01484 | 0.01438 |
| U | 238 | 0.72190 | 3137.23000 | 5.692 | 0.70558 | 0.76865 | 0.69149 |
| *GE-1* | 72 | 112090.00000 | 0.00000 | 0.496 | 112471.00000 | 112348.00000 | 111452.00000 |
| *TB-1* | 159 | 191552.00000 | 0.00000 | 0.299 | 191169.00000 | 191277.00000 | 192210.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 9:59:00
Tube Number: 38 Batch: 172021063903A
Sample Number: **9112067** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 10.00 Protocol: BOEING EVERETT

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52064.80000 | 0.00000 | 4.345 | 49565.00000 | 52657.90000 | 53971.60000 |
| AL | 27 | 3.48400 | 103.33800 | 43.025 | 2.04939 | 3.36196 | 5.03991 |
| CA | 44 | 6836.00000 | 19294.90000 | 6.416 | 7339.01402 | 6633.58813 | 6534.76961 |
| CR | 52 | 0.51410 | 440.02500 | 6.221 | 0.50047 | 0.55069 | 0.49128 |
| FE | 57 | 946.80000 | 13574.30000 | 6.327 | 1014.58731 | 900.99206 | 924.84217 |
| K | 39 | 1028.00000 | 69283.40000 | 8.335 | 1120.25335 | 1012.79698 | 950.93100 |
| MG | 24 | 1877.00000 | 145356.00000 | 5.292 | 1991.17061 | 1813.95331 | 1824.74917 |
| MN | 55 | 79.32000 | 31114.60000 | 7.537 | 85.88422 | 77.88459 | 74.18943 |
| NA | 23 | 3168.00000 | 544606.00000 | 5.713 | 3366.86214 | 3122.84615 | 3013.21266 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.24850 | 153.34100 | 18.459 | 0.19824 | 0.25898 | 0.28815 |
| **IN-1** | 115 | 56229.90000 | 0.00000 | 6.425 | 52058.50000 | 58245.50000 | 58385.80000 |
| AG | 107 | 0.03660 | 56.66910 | 29.727 | 0.04197 | 0.02408 | 0.04375 |
| AS | 75 | 0.96140 | 88.66760 | 21.146 | 1.16722 | 0.95615 | 0.76078 |
| BA | 137 | 8.57100 | 1360.13000 | 4.666 | 8.24708 | 9.01798 | 8.44795 |
| CD | 111 | 0.08091 | 16.66680 | 39.402 | 0.06098 | 0.06407 | 0.11769 |
| CO | 59 | 0.64280 | 913.40800 | 20.395 | 0.76774 | 0.50630 | 0.65444 |
| CU | 63 | 1.04600 | 950.07100 | 13.776 | 1.17862 | 0.89269 | 1.06754 |
| MO | 98 | 2.98900 | 1893.55000 | 3.857 | 3.09985 | 2.99875 | 2.86985 |
| NI | 60 | 0.72860 | 253.34600 | 14.137 | 0.61542 | 0.81663 | 0.75390 |
| SB | 121 | 0.15510 | 66.66980 | 18.214 | 0.14992 | 0.12984 | 0.18561 |
| SN | 120 | 0.07026 | 80.00400 | 81.853 | 0.12140 | 0.08137 | 0.00799 |
| SR | 88 | 43.45000 | 19338.70000 | 8.670 | 47.72102 | 42.02211 | 40.60295 |
| ZN | 66 | 52.10000 | 5948.26000 | 15.741 | 59.33181 | 53.76761 | 43.18745 |
| **BI-1** | 209 | 142358.00000 | 0.00000 | 4.526 | 134973.00000 | 146830.00000 | 145271.00000 |
| PB | 208 | 0.01353 | 170.00900 | 91.205 | 0.01850 | -0.00052 | 0.02262 |
| TL | 203 | -0.00013 | 3.33347 | -3477.190 | -0.00282 | 0.00523 | -0.00282 |
| U | 238 | 0.07924 | 366.69100 | 25.972 | 0.09335 | 0.05563 | 0.08874 |
| *GE-1* | 72 | 114780.00000 | 0.00000 | 5.195 | 108265.00000 | 116109.00000 | 119966.00000 |
| *TB-1* | 159 | 191324.00000 | 0.00000 | 6.894 | 176409.00000 | 201438.00000 | 196126.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:01:00
Tube Number: 39
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 50793.00000 | 0.00000 | 1.607 | 51111.10000 | 51402.00000 | 49865.80000 |
| AL | 27 | 211.70000 | 5648.06000 | 2.910 | 206.78879 | 218.60367 | 209.66303 |
| CA | 44 | 356.00000 | 1386.80000 | 20.565 | 302.81570 | 439.49004 | 325.65903 |
| CR | 52 | 4.75100 | 3230.51000 | 7.640 | 5.14157 | 4.42399 | 4.68775 |
| FE | 57 | 199.40000 | 2820.42000 | 8.551 | 190.50092 | 219.11730 | 188.75378 |
| K | 39 | 405.70000 | 37604.70000 | 2.679 | 413.76152 | 393.31635 | 409.92336 |
| MG | 24 | 209.40000 | 15903.40000 | 1.716 | 208.21402 | 213.44150 | 206.55689 |
| MN | 55 | 4.18200 | 1626.84000 | 4.983 | 3.98314 | 4.39875 | 4.16394 |
| NA | 23 | 372.60000 | 74414.40000 | 2.450 | 372.21398 | 381.90664 | 363.66189 |
| TI | 47 | 31.15000 | 500.02900 | 19.952 | 34.62453 | 23.97690 | 34.85507 |
| V | 51 | 1.10300 | 590.03800 | 4.035 | 1.15334 | 1.07003 | 1.08449 |
| **IN-1** | 115 | 56456.50000 | 0.00000 | 0.458 | 56749.10000 | 56257.70000 | 56362.80000 |
| AG | 107 | 1.07500 | 1583.50000 | 5.998 | 1.10069 | 1.00112 | 1.12189 |
| AS | 75 | 3.64700 | 252.00500 | 10.779 | 4.08702 | 3.33089 | 3.52242 |
| BA | 137 | 4.07400 | 650.04700 | 12.059 | 4.42937 | 4.27858 | 3.51313 |
| CD | 111 | 1.06800 | 194.00300 | 11.779 | 1.11770 | 1.16106 | 0.92481 |
| CO | 59 | 0.90350 | 1260.12000 | 2.947 | 0.87535 | 0.90688 | 0.92829 |
| CU | 63 | 3.75900 | 3327.22000 | 14.371 | 3.35499 | 4.37295 | 3.55039 |
| MO | 98 | 1.14300 | 730.05300 | 19.878 | 1.19981 | 1.33662 | 0.89288 |
| NI | 60 | 3.91500 | 1270.11000 | 7.719 | 4.17617 | 3.58415 | 3.98546 |
| SB | 121 | 1.89700 | 666.71200 | 13.400 | 1.95478 | 2.11795 | 1.61931 |
| SN | 120 | 4.20700 | 2273.62000 | 2.852 | 4.23457 | 4.31012 | 4.07508 |
| SR | 88 | 1.73200 | 786.72300 | 7.379 | 1.86391 | 1.72369 | 1.60869 |
| ZN | 66 | 30.29000 | 3500.61000 | 8.300 | 29.78618 | 33.02174 | 28.07133 |
| **BI-1** | 209 | 139975.00000 | 0.00000 | 1.735 | 141952.00000 | 140708.00000 | 137265.00000 |
| PB | 208 | 1.98500 | 7664.65000 | 5.068 | 2.10017 | 1.94358 | 1.91259 |
| TL | 203 | 1.05900 | 1256.79000 | 2.472 | 1.02994 | 1.08111 | 1.06521 |
| U | 238 | 1.00100 | 4464.38000 | 0.791 | 1.00215 | 0.99315 | 1.00892 |
| *GE-1* | 72 | 113953.00000 | 0.00000 | 3.118 | 117938.00000 | 112804.00000 | 111117.00000 |
| *TB-1* | 159 | 189877.00000 | 0.00000 | 2.735 | 193301.00000 | 192428.00000 | 183901.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:02:00
Tube Number: 40
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 47611.10000 | 0.00000 | 3.524 | 48229.90000 | 48892.20000 | 45711.10000 |
| AL | 27 | 106500.00000 | 2657880.00000 | 3.116 | 104540.60082 | 104613.86802 | 110326.09448 |
| CA | 44 | 306700.00000 | 774867.00000 | 4.294 | 301924.61646 | 296650.47988 | 321639.53625 |
| CR | 52 | 1.72500 | 1150.09000 | 16.875 | 1.88803 | 1.38921 | 1.89867 |
| FE | 57 | 260600.00000 | 3411420.00000 | 3.856 | 254301.87646 | 255348.05867 | 272211.91375 |
| K | 39 | 113900.00000 | 5176060.00000 | 3.570 | 111985.51230 | 111107.81340 | 118547.91127 |
| MG | 24 | 105000.00000 | 7437390.00000 | 3.286 | 102530.26294 | 103469.08886 | 108920.52981 |
| MN | 55 | 92.96000 | 33390.40000 | 3.865 | 89.66825 | 92.42205 | 96.79313 |
| NA | 23 | 254200.00000 | 39004700.00000 | 3.575 | 248773.18521 | 249140.26297 | 264694.16023 |
| TI | 47 | 2195.00000 | 33056.10000 | 3.549 | 2119.59353 | 2191.31215 | 2275.22547 |
| V | 51 | 0.11860 | 76.67060 | 26.669 | 0.08246 | 0.14116 | 0.13224 |
| **IN-1** | 115 | 51990.80000 | 0.00000 | 3.593 | 51977.60000 | 53865.30000 | 50129.50000 |
| AG | 107 | 0.34680 | 473.36100 | 6.840 | 0.35970 | 0.36128 | 0.31943 |
| AS | 75 | 0.59550 | 62.00060 | 16.217 | 0.48750 | 0.62553 | 0.67351 |
| BA | 137 | 1.19100 | 176.67500 | 12.326 | 1.21065 | 1.03540 | 1.32701 |
| CD | 111 | 0.54580 | 92.00100 | 20.319 | 0.65330 | 0.43174 | 0.55249 |
| CO | 59 | 0.80420 | 1043.42000 | 5.308 | 0.78583 | 0.85306 | 0.77386 |
| CU | 63 | 0.99640 | 840.06800 | 12.776 | 1.06863 | 0.84941 | 1.07119 |
| MO | 98 | 2231.00000 | 1304870.00000 | 4.223 | 2212.22483 | 2147.80488 | 2333.35912 |
| NI | 60 | 1.24000 | 383.35500 | 6.660 | 1.33135 | 1.21676 | 1.17104 |
| SB | 121 | 1.00800 | 333.35000 | 29.375 | 0.74963 | 1.33087 | 0.94227 |
| SN | 120 | 0.05199 | 66.67010 | 160.858 | 0.12171 | 0.07498 | -0.04073 |
| SR | 88 | 10.02000 | 4147.50000 | 5.429 | 10.61628 | 9.89251 | 9.55088 |
| ZN | 66 | 3.20400 | 360.02000 | 6.779 | 3.19993 | 2.98923 | 3.42367 |
| **BI-1** | 209 | 120743.00000 | 0.00000 | 0.967 | 120699.00000 | 121931.00000 | 119599.00000 |
| PB | 208 | 0.21730 | 813.38000 | 11.574 | 0.21964 | 0.24128 | 0.19114 |
| TL | 203 | 0.10830 | 113.33900 | 34.848 | 0.13431 | 0.06505 | 0.12569 |
| U | 238 | 0.07158 | 283.34800 | 4.568 | 0.07076 | 0.07518 | 0.06880 |
| *GE-1* | 72 | 102971.00000 | 0.00000 | 1.459 | 103172.00000 | 104363.00000 | 101378.00000 |
| *TB-1* | 159 | 169124.00000 | 0.00000 | 0.590 | 168234.00000 | 170203.00000 | 168935.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:04:00
Tube Number: 41
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 48340.10000 | 0.00000 | 1.996 | 47226.30000 | 48912.40000 | 48881.70000 |
| AL | 27 | 106500.00000 | 2698910.00000 | 3.066 | 110210.53594 | 104173.52731 | 105035.28575 |
| CA | 44 | 299800.00000 | 769486.00000 | 1.500 | 304953.59346 | 297401.00794 | 296948.16042 |
| CR | 52 | 213.70000 | 134500.00000 | 3.183 | 221.54396 | 209.35220 | 210.21456 |
| FE | 57 | 258200.00000 | 3432750.00000 | 3.111 | 265903.00180 | 249865.56350 | 258705.35637 |
| K | 39 | 113400.00000 | 5237620.00000 | 1.939 | 115277.48088 | 110993.72046 | 113996.32245 |
| MG | 24 | 104600.00000 | 7529780.00000 | 2.100 | 106967.68274 | 104297.86426 | 102609.09483 |
| MN | 55 | 300.40000 | 109534.00000 | 2.871 | 310.30896 | 294.74852 | 296.08064 |
| NA | 23 | 254900.00000 | 39736400.00000 | 0.680 | 256681.81801 | 253223.44552 | 254726.32931 |
| TI | 47 | 2216.00000 | 33891.50000 | 3.491 | 2280.01872 | 2130.17610 | 2238.45683 |
| V | 51 | 222.40000 | 109287.00000 | 2.607 | 227.42931 | 223.68839 | 216.05565 |
| **IN-1** | 115 | 51546.00000 | 0.00000 | 2.402 | 52570.00000 | 50169.90000 | 51898.00000 |
| AG | 107 | 47.70000 | 64023.30000 | 2.052 | 46.86966 | 48.78205 | 47.46275 |
| AS | 75 | 100.40000 | 5573.90000 | 1.373 | 99.31608 | 101.96985 | 99.99680 |
| BA | 137 | 1.56800 | 230.01100 | 27.200 | 1.80576 | 1.82226 | 1.07545 |
| CD | 111 | 94.13000 | 15444.20000 | 3.968 | 94.89282 | 97.42770 | 90.07433 |
| CO | 59 | 185.90000 | 219515.00000 | 1.843 | 184.12765 | 189.79645 | 183.62815 |
| CU | 63 | 198.60000 | 158430.00000 | 2.745 | 196.73781 | 204.80727 | 194.41960 |
| MO | 98 | 2299.00000 | 1333710.00000 | 2.494 | 2294.70364 | 2357.66070 | 2243.18549 |
| NI | 60 | 199.40000 | 58107.90000 | 2.157 | 202.51163 | 201.18636 | 194.48613 |
| SB | 121 | 1.00900 | 330.01700 | 10.238 | 1.11508 | 0.90880 | 1.00362 |
| SN | 120 | 0.07612 | 76.67050 | 88.282 | 0.05861 | 0.15034 | 0.01940 |
| SR | 88 | 10.86000 | 4450.94000 | 10.479 | 11.31114 | 11.70274 | 9.56440 |
| ZN | 66 | 91.01000 | 9550.56000 | 7.572 | 90.20926 | 98.26342 | 84.55163 |
| **BI-1** | 209 | 121441.00000 | 0.00000 | 1.860 | 123792.00000 | 119288.00000 | 121244.00000 |
| PB | 208 | 0.25550 | 943.38900 | 1.244 | 0.25802 | 0.25657 | 0.25193 |
| TL | 203 | 0.12060 | 126.67300 | 17.388 | 0.10223 | 0.11611 | 0.14345 |
| U | 238 | 0.09698 | 383.35900 | 16.859 | 0.09944 | 0.07954 | 0.11196 |
| *GE-1* | 72 | 105369.00000 | 0.00000 | 1.475 | 106933.00000 | 103826.00000 | 105348.00000 |
| *TB-1* | 159 | 169409.00000 | 0.00000 | 0.766 | 170904.00000 | 168581.00000 | 168742.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:06:00
Tube Number: 42
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54210.20000 | 0.00000 | 1.561 | 55187.60000 | 53721.80000 | 53721.20000 |
| AL | 27 | 35.61000 | 1020.09000 | 2.678 | 36.01358 | 36.29357 | 34.51954 |
| CA | 44 | 102.40000 | 750.05400 | 57.061 | 135.64215 | 34.93663 | 136.64327 |
| CR | 52 | 0.42700 | 396.68900 | 3.787 | 0.43573 | 0.40839 | 0.43700 |
| FE | 57 | 99.59000 | 1516.81000 | 12.772 | 86.69268 | 99.94349 | 112.12270 |
| K | 39 | 20.15000 | 20243.10000 | 76.427 | 37.05563 | 6.90641 | 16.50204 |
| MG | 24 | 37.13000 | 3063.80000 | 3.711 | 37.03063 | 35.81309 | 38.56386 |
| MN | 55 | 0.28770 | 143.33900 | 25.898 | 0.29760 | 0.35678 | 0.20874 |
| NA | 23 | 87.61000 | 29604.10000 | 9.454 | 95.15938 | 88.93379 | 78.75140 |
| TI | 47 | 2.53300 | 43.33500 | 54.165 | 1.71783 | 4.11763 | 1.76472 |
| V | 51 | 0.04489 | 46.66840 | 48.407 | 0.03138 | 0.03333 | 0.06995 |
| **IN-1** | 115 | 57934.90000 | 0.00000 | 2.720 | 59191.00000 | 56166.70000 | 58446.90000 |
| AG | 107 | 0.02435 | 40.00160 | 30.255 | 0.01717 | 0.03189 | 0.02399 |
| AS | 75 | 0.20190 | 44.66710 | 26.256 | 0.14420 | 0.21309 | 0.24845 |
| BA | 137 | 0.03913 | 10.00070 | 153.591 | 0.09898 | -0.02122 | 0.03964 |
| CD | 111 | 0.05787 | 12.66680 | 64.265 | 0.04164 | 0.10042 | 0.03156 |
| CO | 59 | 0.09721 | 223.34500 | 37.465 | 0.08412 | 0.06915 | 0.13837 |
| CU | 63 | 0.11960 | 153.34000 | 50.426 | 0.13515 | 0.05310 | 0.17069 |
| MO | 98 | 1.80100 | 1176.77000 | 13.309 | 1.52521 | 1.92388 | 1.95501 |
| NI | 60 | 0.08882 | 50.00220 | 102.770 | -0.00455 | 0.09317 | 0.17785 |
| SB | 121 | 0.00794 | 16.66730 | 405.086 | -0.01137 | -0.00988 | 0.04509 |
| SN | 120 | 0.02804 | 60.00240 | 186.662 | -0.01124 | 0.08746 | 0.00790 |
| SR | 88 | 0.15980 | 83.33730 | 44.337 | 0.08386 | 0.22413 | 0.17141 |
| ZN | 66 | 0.33280 | 63.33630 | 54.658 | 0.12560 | 0.40621 | 0.46645 |
| **BI-1** | 209 | 148511.00000 | 0.00000 | 1.309 | 150373.00000 | 146495.00000 | 148664.00000 |
| PB | 208 | -0.00174 | 116.67200 | -337.428 | 0.00367 | -0.00800 | -0.00090 |
| TL | 203 | 0.01321 | 20.00080 | 106.510 | 0.00504 | 0.02946 | 0.00513 |
| U | 238 | 0.00690 | 43.33540 | 75.515 | 0.01241 | 0.00206 | 0.00623 |
| *GE-1* | 72 | 117733.00000 | 0.00000 | 1.085 | 119200.00000 | 116868.00000 | 117132.00000 |
| *TB-1* | 159 | 199667.00000 | 0.00000 | 1.913 | 203953.00000 | 198423.00000 | 196626.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:07:00
Tube Number: 43
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53276.10000 | 0.00000 | 1.824 | 54123.10000 | 53489.90000 | 52215.10000 |
| AL | 27 | 2479.00000 | 69298.80000 | 0.484 | 2489.15141 | 2465.94035 | 2482.84887 |
| CA | 44 | 2512.00000 | 7552.44000 | 2.084 | 2571.76221 | 2473.67125 | 2490.98337 |
| CR | 52 | 252.70000 | 175324.00000 | 0.691 | 250.68240 | 253.57683 | 253.82417 |
| FE | 57 | 2510.00000 | 36829.90000 | 1.166 | 2510.07857 | 2481.18539 | 2539.70721 |
| K | 39 | 2516.00000 | 146520.00000 | 0.711 | 2498.29748 | 2534.07904 | 2516.03691 |
| MG | 24 | 2500.00000 | 198421.00000 | 1.263 | 2525.20582 | 2464.68201 | 2510.53626 |
| MN | 55 | 254.30000 | 102254.00000 | 1.354 | 258.23768 | 251.85213 | 252.81300 |
| NA | 23 | 2359.00000 | 419223.00000 | 1.603 | 2343.69497 | 2331.50653 | 2402.26072 |
| TI | 47 | 245.80000 | 4144.17000 | 5.008 | 238.25749 | 259.99056 | 239.09448 |
| V | 51 | 253.50000 | 137356.00000 | 0.712 | 255.61758 | 252.60328 | 252.39108 |
| **IN-1** | 115 | 57193.30000 | 0.00000 | 3.906 | 59676.90000 | 56556.50000 | 55346.60000 |
| AG | 107 | 25.63000 | 38148.70000 | 3.297 | 24.70452 | 25.82930 | 26.35917 |
| AS | 75 | 252.50000 | 15492.70000 | 3.115 | 243.41847 | 257.27492 | 256.79751 |
| BA | 137 | 252.90000 | 40651.10000 | 2.102 | 248.23705 | 251.84113 | 258.70043 |
| CD | 111 | 26.19000 | 4770.27000 | 1.216 | 25.84708 | 26.47376 | 26.25794 |
| CO | 59 | 232.60000 | 304893.00000 | 0.939 | 230.30697 | 233.03937 | 234.62211 |
| CU | 63 | 259.20000 | 229355.00000 | 2.420 | 252.54084 | 264.97908 | 260.17880 |
| MO | 98 | 25.86000 | 16641.50000 | 3.485 | 24.81949 | 26.44070 | 26.31184 |
| NI | 60 | 256.90000 | 83008.80000 | 2.369 | 249.84980 | 260.39424 | 260.39073 |
| SB | 121 | 25.69000 | 8970.24000 | 2.303 | 25.27765 | 25.42668 | 26.36882 |
| SN | 120 | 27.02000 | 14552.30000 | 1.054 | 26.99411 | 26.75302 | 27.32062 |
| SR | 88 | 25.06000 | 11392.30000 | 1.380 | 24.87064 | 25.46382 | 24.85937 |
| ZN | 66 | 258.00000 | 30005.90000 | 2.503 | 251.88685 | 257.34176 | 264.75276 |
| **BI-1** | 209 | 145533.00000 | 0.00000 | 3.122 | 150559.00000 | 144320.00000 | 141719.00000 |
| PB | 208 | 25.12000 | 99340.00000 | 2.112 | 24.51106 | 25.42867 | 25.43142 |
| TL | 203 | 25.00000 | 30777.30000 | 1.148 | 24.79562 | 24.88209 | 25.33046 |
| U | 238 | 24.29000 | 112294.00000 | 2.022 | 23.72696 | 24.49289 | 24.64249 |
| *GE-1* | 72 | 116832.00000 | 0.00000 | 1.505 | 118858.00000 | 115708.00000 | 115930.00000 |
| *TB-1* | 159 | 201176.00000 | 0.00000 | 1.652 | 204900.00000 | 200116.00000 | 198512.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:09:00
Tube Number: 44
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51011.20000 | 0.00000 | 3.337 | 52878.60000 | 49545.20000 | 50609.90000 |
| AL | 27 | 4.46700 | 126.67200 | 9.705 | 4.78896 | 3.97416 | 4.63847 |
| CA | 44 | 31.31000 | 513.36700 | 143.724 | 62.95389 | 51.19822 | -20.20715 |
| CR | 52 | 0.69870 | 553.37000 | 15.787 | 0.72218 | 0.79535 | 0.57843 |
| FE | 57 | 6.59100 | 123.34000 | 18.905 | 5.34636 | 6.58838 | 7.83942 |
| K | 39 | -4.91900 | 17795.90000 | -510.470 | -31.60376 | 18.23700 | -1.39225 |
| MG | 24 | 5.50000 | 480.02900 | 16.204 | 5.27904 | 4.74038 | 6.48117 |
| MN | 55 | 0.22560 | 110.00500 | 50.044 | 0.11280 | 0.33863 | 0.22543 |
| NA | 23 | 11.64000 | 15342.80000 | 27.827 | 10.57501 | 15.27665 | 9.06616 |
| TI | 47 | 1.03200 | 16.66730 | 34.409 | 1.19523 | 1.27564 | 0.62440 |
| V | 51 | 0.21910 | 133.33900 | 44.185 | 0.10891 | 0.25789 | 0.29050 |
| **IN-1** | 115 | 55637.40000 | 0.00000 | 3.906 | 57874.60000 | 55503.60000 | 53534.00000 |
| AG | 107 | 0.03242 | 50.00220 | 45.620 | 0.03088 | 0.01846 | 0.04792 |
| AS | 75 | 0.21010 | 43.33370 | 38.610 | 0.12701 | 0.28909 | 0.21418 |
| BA | 137 | 0.10500 | 20.00110 | 117.238 | 0.22464 | -0.02122 | 0.11167 |
| CD | 111 | 0.03363 | 8.00007 | 30.598 | 0.04284 | 0.02253 | 0.03551 |
| CO | 59 | 0.18190 | 320.01600 | 38.895 | 0.14044 | 0.14159 | 0.26355 |
| CU | 63 | 0.16580 | 186.67600 | 12.732 | 0.18405 | 0.17077 | 0.14269 |
| MO | 98 | 0.12830 | 83.33660 | 17.779 | 0.10213 | 0.13872 | 0.14402 |
| NI | 60 | 0.28530 | 110.00500 | 28.735 | 0.33311 | 0.19069 | 0.33228 |
| SB | 121 | 0.07853 | 40.00180 | 34.203 | 0.10259 | 0.04955 | 0.08345 |
| SN | 120 | 0.06490 | 76.67050 | 127.442 | 0.04561 | -0.00646 | 0.15556 |
| SR | 88 | 0.03671 | 26.66770 | 120.676 | 0.08628 | 0.02286 | 0.00100 |
| ZN | 66 | -0.05826 | 16.66730 | -238.757 | -0.03682 | -0.20680 | 0.06884 |
| **BI-1** | 209 | 143143.00000 | 0.00000 | 2.241 | 146537.00000 | 142732.00000 | 140161.00000 |
| PB | 208 | 0.01563 | 180.00800 | 26.334 | 0.01965 | 0.01583 | 0.01142 |
| TL | 203 | 0.05502 | 70.00340 | 2.346 | 0.05366 | 0.05516 | 0.05623 |
| U | 238 | 0.02272 | 113.33900 | 13.319 | 0.01923 | 0.02422 | 0.02470 |
| *GE-1* | 72 | 114205.00000 | 0.00000 | 3.393 | 118444.00000 | 113326.00000 | 110844.00000 |
| *TB-1* | 159 | 192067.00000 | 0.00000 | 2.434 | 196837.00000 | 191870.00000 | 187495.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:11:00
Tube Number: 45 Batch: 172001063902A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 53782.10000 | 0.00000 | 0.913 | 54003.10000 | 53219.50000 | 54123.70000 |
| AL | 27 | 7.41900 | 216.67800 | 6.490 | 7.86097 | 6.90591 | 7.49060 |
| CA | 44 | -3.78200 | 440.02600 | -128.080 | -4.44120 | 1.35781 | -8.26376 |
| CR | 52 | 0.48920 | 436.69000 | 17.774 | 0.41979 | 0.58675 | 0.46114 |
| FE | 57 | 6.78700 | 133.33900 | 24.031 | 6.53477 | 5.29780 | 8.52977 |
| K | 39 | -8.99400 | 18583.80000 | -77.885 | -1.30401 | -15.00923 | -10.67182 |
| MG | 24 | 4.84400 | 453.35800 | 7.987 | 4.40595 | 4.98765 | 5.13877 |
| MN | 55 | 0.16710 | 93.33740 | 46.733 | 0.25642 | 0.11168 | 0.13325 |
| NA | 23 | 6.08400 | 15222.60000 | 49.244 | 8.88365 | 2.92343 | 6.44365 |
| TI | 47 | 0.19790 | 3.33346 | 173.219 | 0.00000 | 0.59379 | 0.00000 |
| V | 51 | 0.02103 | 33.33460 | 49.120 | 0.03295 | 0.01554 | 0.01461 |
| **IN-1** | 115 | 59123.80000 | 0.00000 | 0.925 | 59743.00000 | 58708.10000 | 58920.30000 |
| AG | 107 | 0.00421 | 10.00040 | 155.294 | 0.00414 | 0.01079 | -0.00229 |
| AS | 75 | 0.11260 | 40.00040 | 144.583 | 0.23182 | -0.07292 | 0.17893 |
| BA | 137 | 0.05872 | 13.33390 | 117.916 | 0.09786 | -0.02122 | 0.09952 |
| CD | 111 | 0.00633 | 3.33336 | 196.178 | -0.00091 | 0.02067 | -0.00077 |
| CO | 59 | -0.03376 | 50.00190 | -38.685 | -0.04151 | -0.01869 | -0.04110 |
| CU | 63 | 0.09541 | 133.34000 | 29.724 | 0.06853 | 0.09265 | 0.12504 |
| MO | 98 | 0.08980 | 63.33630 | 8.653 | 0.09877 | 0.08548 | 0.08515 |
| NI | 60 | 0.05551 | 40.00180 | 55.233 | 0.02451 | 0.05622 | 0.08581 |
| SB | 121 | -0.02061 | 6.66693 | -77.584 | -0.01163 | -0.01115 | -0.03908 |
| SN | 120 | 0.00073 | 46.66850 | 2732.260 | 0.02375 | -0.01065 | -0.01091 |
| SR | 88 | 0.29740 | 150.00800 | 26.685 | 0.23044 | 0.38507 | 0.27674 |
| ZN | 66 | 0.31950 | 63.33630 | 53.365 | 0.45185 | 0.37968 | 0.12712 |
| **BI-1** | 209 | 145282.00000 | 0.00000 | 2.366 | 148894.00000 | 144900.00000 | 142052.00000 |
| PB | 208 | 0.00652 | 146.67400 | 92.806 | 0.00648 | 0.01259 | 0.00049 |
| TL | 203 | 0.01100 | 16.66740 | 157.727 | -0.00282 | 0.00534 | 0.03047 |
| U | 238 | 0.00560 | 36.66820 | 141.790 | 0.01467 | -0.00007 | 0.00219 |
| *GE-1* | 72 | 118863.00000 | 0.00000 | 0.725 | 118757.00000 | 118059.00000 | 119773.00000 |
| *TB-1* | 159 | 196619.00000 | 0.00000 | 2.385 | 201600.00000 | 195967.00000 | 192289.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:12:00
Tube Number: 46 Batch: 172001063902A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 56268.60000 | 0.00000 | 0.920 | 55870.40000 | 56853.90000 | 56081.40000 |
| AL | 27 | 1939.00000 | 57234.60000 | 0.717 | 1953.25261 | 1925.52146 | 1937.69048 |
| CA | 44 | 3764.00000 | 11712.40000 | 5.157 | 3977.88915 | 3714.00188 | 3599.25004 |
| CR | 52 | 49.55000 | 36381.80000 | 3.578 | 51.29711 | 47.75128 | 49.59212 |
| FE | 57 | 963.00000 | 14945.80000 | 2.915 | 985.14813 | 972.54888 | 931.47136 |
| K | 39 | 9765.00000 | 543090.00000 | 2.978 | 10088.55511 | 9526.39710 | 9678.71240 |
| MG | 24 | 1946.00000 | 163095.00000 | 0.936 | 1965.87629 | 1930.50853 | 1940.57591 |
| MN | 55 | 47.78000 | 20306.60000 | 2.526 | 48.20563 | 46.41343 | 48.71130 |
| NA | 23 | 9351.00000 | 1711240.00000 | 2.343 | 9595.61489 | 9172.15301 | 9286.18288 |
| TI | 47 | 247.80000 | 4410.94000 | 6.812 | 259.66318 | 228.48262 | 255.30320 |
| V | 51 | 47.91000 | 27433.00000 | 2.100 | 48.49727 | 48.49049 | 46.75105 |
| **IN-1** | 115 | 59204.50000 | 0.00000 | 0.733 | 59586.70000 | 58732.70000 | 59294.20000 |
| AG | 107 | 49.69000 | 76626.70000 | 1.933 | 50.54576 | 48.65101 | 49.87058 |
| AS | 75 | 9.30800 | 623.35300 | 4.323 | 9.22473 | 8.95320 | 9.74502 |
| BA | 137 | 47.87000 | 7972.88000 | 4.510 | 48.46961 | 45.47648 | 49.66829 |
| CD | 111 | 4.99000 | 942.71000 | 4.397 | 4.80672 | 4.93026 | 5.23311 |
| CO | 59 | 223.90000 | 303881.00000 | 2.712 | 230.57293 | 218.67035 | 222.52366 |
| CU | 63 | 51.06000 | 46822.60000 | 0.486 | 51.34413 | 50.90936 | 50.91952 |
| MO | 98 | 49.38000 | 32930.40000 | 4.947 | 52.09811 | 47.36718 | 48.67589 |
| NI | 60 | 50.74000 | 16998.40000 | 4.062 | 52.11320 | 51.72595 | 48.36647 |
| SB | 121 | 5.60200 | 2036.93000 | 5.682 | 5.85073 | 5.71293 | 5.24354 |
| SN | 120 | 50.39000 | 28052.40000 | 0.787 | 50.15496 | 50.84863 | 50.16816 |
| SR | 88 | 38.15000 | 17943.30000 | 3.048 | 37.03263 | 39.35392 | 38.06626 |
| ZN | 66 | 499.90000 | 60197.50000 | 0.550 | 502.26166 | 496.86900 | 500.49083 |
| **BI-1** | 209 | 149612.00000 | 0.00000 | 0.731 | 148398.00000 | 150516.00000 | 149922.00000 |
| PB | 208 | 14.31000 | 58261.50000 | 2.407 | 14.57451 | 14.44503 | 13.92389 |
| TL | 203 | 1.90200 | 2410.34000 | 1.871 | 1.90138 | 1.93743 | 1.86624 |
| U | 238 | 0.00338 | 26.66780 | 95.981 | 0.00624 | -0.00015 | 0.00406 |
| *GE-1* | 72 | 120213.00000 | 0.00000 | 0.397 | 120109.00000 | 119796.00000 | 120734.00000 |
| *TB-1* | 159 | 203318.00000 | 0.00000 | 1.283 | 205813.00000 | 203531.00000 | 200610.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:14:00
Tube Number: 47 Batch: 172001063902A
Sample Number: **9109771** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54240.20000 | 0.00000 | 1.810 | 53520.50000 | 55358.30000 | 53841.80000 |
| AL | 27 | 21.91000 | 630.03900 | 16.869 | 21.11373 | 18.68212 | 25.94301 |
| CA | 44 | 229900.00000 | 662317.00000 | 0.336 | 230130.82421 | 229010.38501 | 230491.26599 |
| CR | 52 | 2.41500 | 1800.19000 | 1.363 | 2.43457 | 2.37705 | 2.43351 |
| FE | 57 | 462.00000 | 6928.75000 | 1.254 | 467.81005 | 462.05916 | 456.22384 |
| K | 39 | 5345.00000 | 295218.00000 | 1.779 | 5412.87789 | 5235.97322 | 5384.85227 |
| MG | 24 | 39060.00000 | 3155250.00000 | 2.247 | 38114.95222 | 39211.33583 | 39850.20271 |
| MN | 55 | 234.10000 | 95825.60000 | 2.311 | 233.12315 | 229.31268 | 239.98741 |
| NA | 23 | 77570.00000 | 13581700.00000 | 0.944 | 76750.71564 | 77809.61339 | 78157.35801 |
| TI | 47 | 1.93400 | 33.33480 | 61.634 | 2.36183 | 2.85422 | 0.58692 |
| V | 51 | 1.09000 | 623.37100 | 6.717 | 1.00771 | 1.11509 | 1.14762 |
| **IN-1** | 115 | 55689.10000 | 0.00000 | 1.316 | 55072.80000 | 56499.40000 | 55495.20000 |
| AG | 107 | 0.06183 | 93.33910 | 51.706 | 0.02560 | 0.08606 | 0.07382 |
| AS | 75 | 0.53400 | 62.66740 | 51.948 | 0.56656 | 0.24183 | 0.79376 |
| BA | 137 | 109.60000 | 17159.20000 | 3.228 | 111.08503 | 105.56996 | 112.16608 |
| CD | 111 | 0.04479 | 10.00010 | 48.694 | 0.02279 | 0.06640 | 0.04517 |
| CO | 59 | 0.26380 | 426.69200 | 3.327 | 0.27007 | 0.25373 | 0.26747 |
| CU | 63 | 0.83870 | 766.71600 | 11.880 | 0.72406 | 0.88752 | 0.90450 |
| MO | 98 | 1.13800 | 716.72200 | 9.104 | 1.25262 | 1.11081 | 1.05097 |
| NI | 60 | 2.90200 | 933.40600 | 10.992 | 3.24497 | 2.84819 | 2.61393 |
| SB | 121 | 0.45250 | 166.67500 | 33.481 | 0.43733 | 0.30921 | 0.61100 |
| SN | 120 | 1.52400 | 840.06000 | 7.966 | 1.44489 | 1.46286 | 1.66361 |
| SR | 88 | 1483.00000 | 655932.00000 | 0.466 | 1484.76804 | 1475.86634 | 1489.45852 |
| ZN | 66 | 6.68200 | 780.05300 | 1.057 | 6.67040 | 6.75791 | 6.61809 |
| **BI-1** | 209 | 134695.00000 | 0.00000 | 0.439 | 134028.00000 | 134900.00000 | 135156.00000 |
| PB | 208 | 0.17090 | 736.70800 | 11.527 | 0.17551 | 0.18783 | 0.14926 |
| TL | 203 | 0.02354 | 30.00120 | 37.783 | 0.03247 | 0.02347 | 0.01468 |
| U | 238 | 2.63100 | 11272.60000 | 4.964 | 2.52050 | 2.77505 | 2.59732 |
| *GE-1* | 72 | 114857.00000 | 0.00000 | 1.767 | 113195.00000 | 117119.00000 | 114256.00000 |
| *TB-1* | 159 | 199675.00000 | 0.00000 | 1.283 | 197526.00000 | 202508.00000 | 198990.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:16:00
Tube Number: 48 Batch: 172001063902A
Sample Number: **9109771** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54554.60000 | 0.00000 | 2.489 | 55408.10000 | 55267.50000 | 52988.10000 |
| AL | 27 | 211.50000 | 6058.34000 | 5.844 | 197.27525 | 219.17059 | 218.17404 |
| CA | 44 | 222300.00000 | 644239.00000 | 1.508 | 223969.13524 | 218473.87567 | 224548.71447 |
| CR | 52 | 6.37600 | 4627.69000 | 8.805 | 7.02098 | 6.10743 | 5.99891 |
| FE | 57 | 627.10000 | 9447.15000 | 3.813 | 650.01715 | 602.31685 | 629.01273 |
| K | 39 | 5622.00000 | 311347.00000 | 1.778 | 5650.11622 | 5511.10312 | 5704.97651 |
| MG | 24 | 38690.00000 | 3142730.00000 | 0.702 | 38563.45906 | 38499.84722 | 38998.87984 |
| MN | 55 | 233.20000 | 96000.40000 | 2.069 | 235.61210 | 227.66041 | 236.37359 |
| NA | 23 | 76660.00000 | 13494300.00000 | 2.399 | 76348.67056 | 74996.56148 | 78634.75424 |
| TI | 47 | 31.68000 | 546.70100 | 12.825 | 27.37668 | 35.45132 | 32.20513 |
| V | 51 | 1.82600 | 1036.75000 | 11.035 | 1.93072 | 1.95357 | 1.59375 |
| **IN-1** | 115 | 56276.40000 | 0.00000 | 2.774 | 57778.70000 | 56388.00000 | 54662.50000 |
| AG | 107 | 0.85930 | 1263.45000 | 4.407 | 0.90159 | 0.82853 | 0.84774 |
| AS | 75 | 4.22100 | 285.33900 | 8.628 | 3.84341 | 4.24892 | 4.57014 |
| BA | 137 | 108.40000 | 17149.20000 | 4.369 | 107.36228 | 104.32644 | 113.61479 |
| CD | 111 | 0.99520 | 180.66900 | 10.591 | 1.05409 | 1.05808 | 0.87349 |
| CO | 59 | 0.93920 | 1300.11000 | 9.256 | 0.85848 | 0.92784 | 1.03123 |
| CU | 63 | 4.77500 | 4200.84000 | 6.356 | 4.51383 | 5.10796 | 4.70308 |
| MO | 98 | 1.75100 | 1113.43000 | 3.517 | 1.76246 | 1.80608 | 1.68450 |
| NI | 60 | 5.95500 | 1913.55000 | 9.740 | 6.15264 | 5.30168 | 6.40995 |
| SB | 121 | 2.25800 | 786.72500 | 13.432 | 2.14631 | 2.02571 | 2.60093 |
| SN | 120 | 5.80200 | 3107.18000 | 5.757 | 5.43007 | 6.07616 | 5.90024 |
| SR | 88 | 1424.00000 | 636171.00000 | 0.888 | 1421.02777 | 1412.72954 | 1437.57381 |
| ZN | 66 | 33.78000 | 3884.09000 | 7.043 | 31.04012 | 34.95209 | 35.34174 |
| **BI-1** | 209 | 134089.00000 | 0.00000 | 2.356 | 136924.00000 | 134658.00000 | 130683.00000 |
| PB | 208 | 2.16800 | 7998.06000 | 4.912 | 2.17036 | 2.05964 | 2.27263 |
| TL | 203 | 1.03200 | 1173.44000 | 0.265 | 1.03333 | 1.03320 | 1.02854 |
| U | 238 | 13.08000 | 55757.60000 | 1.027 | 12.95606 | 13.07308 | 13.22401 |
| *GE-1* | 72 | 113592.00000 | 0.00000 | 1.251 | 115204.00000 | 113053.00000 | 112520.00000 |
| *TB-1* | 159 | 200042.00000 | 0.00000 | 1.759 | 203526.00000 | 200110.00000 | 196491.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:18:00
Tube Number: 49 Batch: 172001063902A
Sample Number: **9109774** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 56519.80000 | 0.00000 | 2.505 | 56472.90000 | 57959.10000 | 55127.50000 |
| AL | 27 | 13.47000 | 406.70100 | 8.849 | 12.23206 | 13.55730 | 14.61165 |
| CA | 44 | 217200.00000 | 652161.00000 | 1.470 | 216336.40156 | 214626.76184 | 220809.44744 |
| CR | 52 | 2.15400 | 1683.51000 | 2.659 | 2.20500 | 2.09195 | 2.16454 |
| FE | 57 | 404.50000 | 6325.10000 | 2.868 | 391.08682 | 411.11063 | 411.23570 |
| K | 39 | 5103.00000 | 294593.00000 | 1.794 | 5098.10877 | 5013.72142 | 5196.65068 |
| MG | 24 | 37770.00000 | 3177840.00000 | 2.341 | 37720.62935 | 36910.93647 | 38677.52990 |
| MN | 55 | 222.10000 | 94740.80000 | 1.710 | 218.94594 | 221.16107 | 226.34848 |
| NA | 23 | 74260.00000 | 13546600.00000 | 1.943 | 72920.09381 | 74086.44438 | 75789.18999 |
| TI | 47 | 1.11400 | 20.00070 | 48.366 | 0.55958 | 1.63568 | 1.14647 |
| V | 51 | 0.96540 | 576.70600 | 26.932 | 0.69167 | 0.99537 | 1.20916 |
| **IN-1** | 115 | 57632.60000 | 0.00000 | 1.966 | 56380.70000 | 58589.10000 | 57928.00000 |
| AG | 107 | 0.01319 | 23.33420 | 76.270 | 0.00452 | 0.01082 | 0.02422 |
| AS | 75 | 0.54340 | 65.33400 | 58.171 | 0.77316 | 0.18287 | 0.67422 |
| BA | 137 | 104.30000 | 16902.20000 | 0.560 | 104.97210 | 104.05198 | 103.88820 |
| CD | 111 | 0.02136 | 6.00005 | 101.873 | 0.02200 | -0.00071 | 0.04279 |
| CO | 59 | 0.11650 | 246.67900 | 35.562 | 0.16152 | 0.10806 | 0.07996 |
| CU | 63 | 0.77540 | 736.71900 | 7.265 | 0.77487 | 0.83202 | 0.71936 |
| MO | 98 | 0.83240 | 543.36700 | 3.826 | 0.86110 | 0.79812 | 0.83796 |
| NI | 60 | 2.89200 | 963.40900 | 4.696 | 2.79157 | 3.04636 | 2.83745 |
| SB | 121 | 0.32200 | 126.67200 | 23.801 | 0.39719 | 0.32477 | 0.24400 |
| SN | 120 | 1.63600 | 930.07600 | 1.483 | 1.65508 | 1.64412 | 1.60864 |
| SR | 88 | 1412.00000 | 646149.00000 | 1.161 | 1430.93156 | 1404.46503 | 1400.94707 |
| ZN | 66 | 6.13300 | 743.38400 | 10.266 | 5.90017 | 6.84535 | 5.65212 |
| **BI-1** | 209 | 136996.00000 | 0.00000 | 0.750 | 137073.00000 | 137984.00000 | 135931.00000 |
| PB | 208 | 0.14960 | 670.03700 | 21.952 | 0.12255 | 0.14023 | 0.18617 |
| TL | 203 | 0.00006 | 3.33347 | 8698.460 | 0.00581 | -0.00282 | -0.00282 |
| U | 238 | 2.58000 | 11245.90000 | 4.403 | 2.54946 | 2.70611 | 2.48518 |
| *GE-1* | 72 | 116276.00000 | 0.00000 | 1.452 | 115435.00000 | 118219.00000 | 115174.00000 |
| *TB-1* | 159 | 202949.00000 | 0.00000 | 0.885 | 204679.00000 | 201092.00000 | 203077.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:19:00
Tube Number: 50 Batch: 172001063902A
Sample Number: **9109772** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 53995.90000 | 0.00000 | 0.587 | 54012.70000 | 54304.10000 | 53671.00000 |
| AL | 27 | 1953.00000 | 55323.20000 | 2.767 | 1971.50740 | 1892.22188 | 1995.48328 |
| CA | 44 | 229100.00000 | 657033.00000 | 1.140 | 231628.78545 | 226410.24738 | 229174.44079 |
| CR | 52 | 50.54000 | 35619.70000 | 1.022 | 50.31346 | 50.18422 | 51.13648 |
| FE | 57 | 1365.00000 | 20306.60000 | 1.177 | 1346.56195 | 1369.48621 | 1377.52098 |
| K | 39 | 15060.00000 | 793698.00000 | 1.556 | 15268.51534 | 14808.08621 | 15114.63051 |
| MG | 24 | 40870.00000 | 3286240.00000 | 2.152 | 40493.68027 | 40243.24348 | 41876.40983 |
| MN | 55 | 275.50000 | 112253.00000 | 0.720 | 276.80676 | 273.20738 | 276.45061 |
| NA | 23 | 87100.00000 | 15177600.00000 | 1.051 | 87397.19510 | 86069.96670 | 87825.85281 |
| TI | 47 | 248.60000 | 4247.49000 | 4.533 | 244.01046 | 240.37172 | 261.46541 |
| V | 51 | 48.73000 | 26771.60000 | 4.127 | 50.91583 | 46.95676 | 48.31934 |
| **IN-1** | 115 | 55924.40000 | 0.00000 | 2.328 | 56837.00000 | 54433.20000 | 56503.00000 |
| AG | 107 | 45.07000 | 65628.20000 | 1.509 | 44.47843 | 45.81196 | 44.91234 |
| AS | 75 | 10.69000 | 672.02300 | 7.614 | 10.84559 | 9.80418 | 11.40836 |
| BA | 137 | 154.30000 | 24261.20000 | 2.542 | 157.72641 | 155.13570 | 150.01736 |
| CD | 111 | 4.45600 | 794.69700 | 6.636 | 4.17764 | 4.76659 | 4.42478 |
| CO | 59 | 219.60000 | 281357.00000 | 1.810 | 220.16762 | 223.18547 | 215.30847 |
| CU | 63 | 48.40000 | 41929.20000 | 0.180 | 48.45631 | 48.29993 | 48.44453 |
| MO | 98 | 50.85000 | 32024.70000 | 1.899 | 51.79816 | 50.88040 | 49.86731 |
| NI | 60 | 49.90000 | 15790.20000 | 3.064 | 50.55427 | 50.99962 | 48.15679 |
| SB | 121 | 6.13000 | 2103.60000 | 3.113 | 6.22213 | 6.25761 | 5.91087 |
| SN | 120 | 51.92000 | 27293.90000 | 2.631 | 52.13393 | 53.16514 | 50.45896 |
| SR | 88 | 1467.00000 | 651015.00000 | 2.757 | 1450.12945 | 1512.68825 | 1436.99261 |
| ZN | 66 | 449.20000 | 51081.70000 | 2.901 | 445.22650 | 463.80195 | 438.67689 |
| **BI-1** | 209 | 133191.00000 | 0.00000 | 2.083 | 136287.00000 | 130926.00000 | 132362.00000 |
| PB | 208 | 15.23000 | 55169.00000 | 0.624 | 15.29044 | 15.27165 | 15.11727 |
| TL | 203 | 2.02100 | 2280.32000 | 3.772 | 2.00118 | 1.95680 | 2.10530 |
| U | 238 | 2.64400 | 11205.80000 | 2.736 | 2.70287 | 2.56342 | 2.66643 |
| *GE-1* | 72 | 112371.00000 | 0.00000 | 1.664 | 111591.00000 | 114506.00000 | 111017.00000 |
| *TB-1* | 159 | 198830.00000 | 0.00000 | 1.741 | 202821.00000 | 196630.00000 | 197038.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:21:00
Tube Number: 51 Batch: 172001063902A
Sample Number: **9109773** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54273.80000 | 0.00000 | 2.832 | 53028.60000 | 53801.30000 | 55991.40000 |
| AL | 27 | 1939.00000 | 55166.00000 | 3.968 | 2021.83139 | 1924.12680 | 1870.04811 |
| CA | 44 | 233300.00000 | 672302.00000 | 2.985 | 241280.55546 | 230132.67970 | 228472.13765 |
| CR | 52 | 49.80000 | 35258.60000 | 3.299 | 51.67038 | 49.12220 | 48.59911 |
| FE | 57 | 1399.00000 | 20927.50000 | 1.701 | 1425.81494 | 1393.11307 | 1379.50337 |
| K | 39 | 15190.00000 | 803970.00000 | 2.604 | 15632.36969 | 15063.52078 | 14871.92235 |
| MG | 24 | 41520.00000 | 3353730.00000 | 3.822 | 43335.86388 | 40797.82699 | 40417.61134 |
| MN | 55 | 285.00000 | 116664.00000 | 2.962 | 294.60207 | 281.47173 | 278.84174 |
| NA | 23 | 88250.00000 | 15453200.00000 | 2.158 | 90353.49073 | 87769.16951 | 86639.33448 |
| TI | 47 | 241.70000 | 4154.16000 | 2.828 | 236.61898 | 239.09465 | 249.50157 |
| V | 51 | 51.19000 | 28258.10000 | 2.368 | 52.58617 | 50.43760 | 50.54014 |
| **IN-1** | 115 | 54525.70000 | 0.00000 | 1.008 | 54850.70000 | 53891.00000 | 54835.50000 |
| AG | 107 | 46.31000 | 65762.10000 | 1.591 | 47.09584 | 46.18676 | 45.63724 |
| AS | 75 | 10.99000 | 672.69000 | 2.750 | 10.91678 | 10.73941 | 11.32846 |
| BA | 137 | 164.20000 | 25166.40000 | 2.758 | 168.57301 | 164.36707 | 159.52278 |
| CD | 111 | 4.78200 | 832.03400 | 3.628 | 4.93638 | 4.81467 | 4.59406 |
| CO | 59 | 226.50000 | 283044.00000 | 1.936 | 231.00844 | 226.21725 | 222.24798 |
| CU | 63 | 49.38000 | 41704.80000 | 0.461 | 49.62167 | 49.17084 | 49.33974 |
| MO | 98 | 52.54000 | 32265.20000 | 0.818 | 52.99231 | 52.13574 | 52.50365 |
| NI | 60 | 51.07000 | 15760.10000 | 2.755 | 50.86900 | 49.77071 | 52.56318 |
| SB | 121 | 5.95500 | 1993.58000 | 5.034 | 5.79112 | 5.77315 | 6.30118 |
| SN | 120 | 52.78000 | 27063.40000 | 3.393 | 54.70593 | 51.16549 | 52.46270 |
| SR | 88 | 1541.00000 | 667049.00000 | 1.080 | 1559.58176 | 1533.67044 | 1528.54574 |
| ZN | 66 | 461.90000 | 51222.80000 | 2.265 | 466.75862 | 469.02527 | 449.87209 |
| **BI-1** | 209 | 132438.00000 | 0.00000 | 1.142 | 133767.00000 | 130792.00000 | 132755.00000 |
| PB | 208 | 15.40000 | 55479.20000 | 1.656 | 15.66958 | 15.16358 | 15.36135 |
| TL | 203 | 2.09700 | 2353.66000 | 5.756 | 2.20689 | 1.96784 | 2.11684 |
| U | 238 | 2.64000 | 11122.50000 | 4.428 | 2.74440 | 2.66240 | 2.51385 |
| *GE-1* | 72 | 111800.00000 | 0.00000 | 0.658 | 110956.00000 | 112307.00000 | 112138.00000 |
| *TB-1* | 159 | 198274.00000 | 0.00000 | 2.844 | 200648.00000 | 191838.00000 | 202337.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:23:00
Tube Number: 52 Batch: 172001063902A
Sample Number: **9109771** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54946.90000 | 0.00000 | 4.748 | 57889.30000 | 54033.60000 | 52917.60000 |
| AL | 27 | 9.45700 | 280.01500 | 22.238 | 9.95048 | 7.15077 | 11.26974 |
| CA | 44 | 47150.00000 | 137869.00000 | 3.236 | 45398.00586 | 48141.84764 | 47926.25483 |
| CR | 52 | 0.84020 | 696.71600 | 4.948 | 0.79397 | 0.87448 | 0.85221 |
| FE | 57 | 89.64000 | 1390.14000 | 9.230 | 90.70638 | 97.33694 | 80.89120 |
| K | 39 | 1034.00000 | 73442.20000 | 6.040 | 966.26294 | 1045.13611 | 1089.58139 |
| MG | 24 | 8160.00000 | 667091.00000 | 3.234 | 7874.97477 | 8209.37127 | 8395.72916 |
| MN | 55 | 49.18000 | 20383.50000 | 5.132 | 46.27018 | 50.60907 | 50.67407 |
| NA | 23 | 16500.00000 | 2933670.00000 | 4.044 | 15765.23652 | 16657.89176 | 17070.58170 |
| TI | 47 | 0.19900 | 3.33346 | 173.266 | 0.00000 | 0.00000 | 0.59717 |
| V | 51 | 0.27690 | 176.67700 | 11.690 | 0.26595 | 0.25136 | 0.31328 |
| **IN-1** | 115 | 58120.00000 | 0.00000 | 1.500 | 58805.40000 | 58415.40000 | 57139.00000 |
| AG | 107 | 0.02648 | 43.33530 | 64.577 | 0.02383 | 0.01086 | 0.04475 |
| AS | 75 | 0.10290 | 38.66710 | 94.888 | 0.18029 | -0.00678 | 0.13532 |
| BA | 137 | 22.19000 | 3630.67000 | 5.002 | 23.45261 | 21.35560 | 21.77100 |
| CD | 111 | 0.01739 | 5.33337 | 94.250 | 0.03130 | -0.00067 | 0.02155 |
| CO | 59 | 0.09211 | 216.67700 | 14.863 | 0.07772 | 0.09365 | 0.10496 |
| CU | 63 | 0.24240 | 263.35000 | 2.711 | 0.23529 | 0.24825 | 0.24362 |
| MO | 98 | 0.24440 | 163.34100 | 7.815 | 0.25146 | 0.22277 | 0.25895 |
| NI | 60 | 0.78750 | 280.01500 | 10.516 | 0.77816 | 0.87464 | 0.70982 |
| SB | 121 | 0.09211 | 46.66850 | 61.839 | 0.15612 | 0.07321 | 0.04702 |
| SN | 120 | 0.52170 | 330.01900 | 1.751 | 0.51456 | 0.51856 | 0.53201 |
| SR | 88 | 292.90000 | 135186.00000 | 1.378 | 294.93949 | 295.44276 | 288.21267 |
| ZN | 66 | 2.19300 | 283.34700 | 28.258 | 2.55344 | 1.47725 | 2.54784 |
| **BI-1** | 209 | 146037.00000 | 0.00000 | 3.086 | 151092.00000 | 144582.00000 | 142439.00000 |
| PB | 208 | 0.05817 | 353.35200 | 33.385 | 0.07908 | 0.04071 | 0.05471 |
| TL | 203 | 0.00777 | 13.33390 | 153.094 | 0.02066 | -0.00282 | 0.00548 |
| U | 238 | 0.50790 | 2370.34000 | 5.349 | 0.53932 | 0.49186 | 0.49267 |
| *GE-1* | 72 | 118924.00000 | 0.00000 | 2.449 | 122096.00000 | 118302.00000 | 116374.00000 |
| *TB-1* | 159 | 202277.00000 | 0.00000 | 3.122 | 209384.00000 | 200141.00000 | 197306.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:24:00
Tube Number: 53 Batch: 172001063902A
Sample Number: **9109779** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 55034.10000 | 0.00000 | 4.966 | 56071.90000 | 51933.80000 | 57096.50000 |
| AL | 27 | 16.61000 | 486.69500 | 8.200 | 15.04121 | 17.36145 | 17.43784 |
| CA | 44 | 221900.00000 | 648353.00000 | 1.349 | 219557.75267 | 225244.46998 | 220784.97610 |
| CR | 52 | 2.38600 | 1806.87000 | 1.494 | 2.38617 | 2.35035 | 2.42167 |
| FE | 57 | 425.20000 | 6468.53000 | 2.516 | 430.21069 | 432.46103 | 412.90276 |
| K | 39 | 5134.00000 | 288342.00000 | 2.491 | 5070.40937 | 5281.27244 | 5050.32123 |
| MG | 24 | 38070.00000 | 3119570.00000 | 1.239 | 37581.05982 | 38521.25631 | 38120.50107 |
| MN | 55 | 225.90000 | 93757.50000 | 2.151 | 223.93874 | 231.43372 | 222.32930 |
| NA | 23 | 76250.00000 | 13531400.00000 | 3.424 | 74423.93183 | 79244.43508 | 75096.14950 |
| TI | 47 | 0.38730 | 6.66692 | 86.884 | 0.00000 | 0.60849 | 0.55347 |
| V | 51 | 1.31200 | 756.71800 | 15.450 | 1.53897 | 1.24810 | 1.14884 |
| **IN-1** | 115 | 55806.40000 | 0.00000 | 1.638 | 55995.50000 | 54812.70000 | 56610.90000 |
| AG | 107 | 0.07567 | 113.33800 | 4.073 | 0.07314 | 0.07477 | 0.07910 |
| AS | 75 | 0.74150 | 75.33420 | 4.131 | 0.74870 | 0.70793 | 0.76790 |
| BA | 137 | 104.60000 | 16418.20000 | 0.823 | 105.43900 | 104.72505 | 103.72582 |
| CD | 111 | 0.04474 | 10.00010 | 65.936 | 0.07832 | 0.02295 | 0.03296 |
| CO | 59 | 0.09126 | 206.67600 | 70.020 | 0.14752 | 0.10445 | 0.02179 |
| CU | 63 | 0.63640 | 593.37200 | 4.698 | 0.63051 | 0.60982 | 0.66877 |
| MO | 98 | 0.72590 | 460.02600 | 13.900 | 0.67672 | 0.65904 | 0.84189 |
| NI | 60 | 2.92100 | 940.07400 | 16.477 | 3.00082 | 3.35751 | 2.40485 |
| SB | 121 | 0.36130 | 136.67300 | 31.442 | 0.42948 | 0.23017 | 0.42438 |
| SN | 120 | 1.66200 | 913.40900 | 13.610 | 1.76216 | 1.82143 | 1.40338 |
| SR | 88 | 1440.00000 | 638082.00000 | 2.021 | 1472.74097 | 1417.59046 | 1429.06368 |
| ZN | 66 | 6.33100 | 740.05600 | 22.793 | 6.11788 | 7.86969 | 5.00652 |
| **BI-1** | 209 | 133751.00000 | 0.00000 | 2.894 | 135992.00000 | 129281.00000 | 135980.00000 |
| PB | 208 | 0.14330 | 630.03300 | 15.673 | 0.12106 | 0.16598 | 0.14275 |
| TL | 203 | 0.00892 | 13.33390 | 54.841 | 0.01457 | 0.00633 | 0.00588 |
| U | 238 | 2.62100 | 11145.70000 | 4.296 | 2.49098 | 2.68378 | 2.68810 |
| *GE-1* | 72 | 113116.00000 | 0.00000 | 1.631 | 114559.00000 | 111037.00000 | 113750.00000 |
| *TB-1* | 159 | 197616.00000 | 0.00000 | 1.256 | 199420.00000 | 194786.00000 | 198643.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:26:00
Tube Number: 54 Batch: 172001063902A
Sample Number: **9109779** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 10.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 54307.30000 | 0.00000 | 1.214 | 54414.00000 | 54906.90000 | 53601.00000 |
| AL | 27 | 3.95400 | 120.00500 | 1.298 | 3.94578 | 3.90804 | 4.00958 |
| CA | 44 | 23700.00000 | 68778.00000 | 1.474 | 23886.82786 | 23298.96612 | 23919.86845 |
| CR | 52 | 0.72840 | 610.04200 | 22.529 | 0.54268 | 0.78845 | 0.85396 |
| FE | 57 | 42.77000 | 673.37700 | 23.135 | 43.87212 | 52.06319 | 32.36636 |
| K | 39 | 505.10000 | 45345.80000 | 3.455 | 505.25179 | 487.60214 | 522.49616 |
| MG | 24 | 4134.00000 | 334344.00000 | 1.788 | 4122.35678 | 4066.53328 | 4212.95815 |
| MN | 55 | 24.20000 | 9937.47000 | 3.764 | 24.74435 | 23.14484 | 24.70000 |
| NA | 23 | 8595.00000 | 1519190.00000 | 2.050 | 8506.10793 | 8481.82793 | 8798.37326 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.16540 | 113.33800 | 16.983 | 0.19509 | 0.13924 | 0.16196 |
| **IN-1** | 115 | 57561.80000 | 0.00000 | 1.906 | 58234.50000 | 58154.90000 | 56296.00000 |
| AG | 107 | 0.02015 | 33.33490 | 85.906 | 0.01749 | 0.00431 | 0.03863 |
| AS | 75 | 0.02345 | 33.33360 | 580.810 | -0.13341 | 0.09180 | 0.11194 |
| BA | 137 | 10.60000 | 1716.86000 | 9.896 | 10.18035 | 9.82738 | 11.79569 |
| CD | 111 | 0.01425 | 4.66670 | 121.333 | -0.00064 | 0.01018 | 0.03321 |
| CO | 59 | -0.01946 | 66.66950 | -290.031 | -0.05574 | -0.04822 | 0.04557 |
| CU | 63 | 0.11810 | 150.00700 | 11.998 | 0.11601 | 0.10512 | 0.13322 |
| MO | 98 | 0.10850 | 73.33640 | 52.148 | 0.05571 | 0.10161 | 0.16825 |
| NI | 60 | 0.39720 | 150.00700 | 28.323 | 0.26988 | 0.48332 | 0.43854 |
| SB | 121 | 0.03736 | 26.66770 | 177.248 | -0.03908 | 0.07371 | 0.07743 |
| SN | 120 | 0.16450 | 133.33900 | 50.140 | 0.09969 | 0.13658 | 0.25737 |
| SR | 88 | 149.00000 | 68085.90000 | 1.400 | 149.58119 | 146.63013 | 150.65990 |
| ZN | 66 | 1.13500 | 156.67400 | 28.432 | 1.14462 | 0.80815 | 1.45328 |
| **BI-1** | 209 | 145322.00000 | 0.00000 | 0.842 | 145778.00000 | 146253.00000 | 143935.00000 |
| PB | 208 | 0.01335 | 173.34100 | 69.206 | 0.00475 | 0.01219 | 0.02311 |
| TL | 203 | 0.00262 | 6.66694 | 179.642 | 0.00529 | -0.00282 | 0.00540 |
| U | 238 | 0.23660 | 1103.44000 | 13.969 | 0.20284 | 0.26887 | 0.23826 |
| *GE-1* | 72 | 116686.00000 | 0.00000 | 1.761 | 118895.00000 | 116333.00000 | 114831.00000 |
| *TB-1* | 159 | 201146.00000 | 0.00000 | 1.766 | 204475.00000 | 201558.00000 | 197404.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:28:00
Tube Number: 55
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53333.40000 | 0.00000 | 0.976 | 53470.80000 | 53771.50000 | 52757.90000 |
| AL | 27 | 2462.00000 | 68900.20000 | 0.981 | 2487.94790 | 2439.89020 | 2459.48742 |
| CA | 44 | 2482.00000 | 7475.76000 | 2.918 | 2545.11782 | 2498.46482 | 2403.03259 |
| CR | 52 | 247.10000 | 171661.00000 | 1.724 | 252.03965 | 244.73754 | 244.59026 |
| FE | 57 | 2508.00000 | 36840.00000 | 1.009 | 2535.93494 | 2486.50223 | 2501.83753 |
| K | 39 | 2414.00000 | 141493.00000 | 1.456 | 2452.73606 | 2404.56318 | 2384.32117 |
| MG | 24 | 2486.00000 | 197530.00000 | 1.111 | 2504.25529 | 2454.54264 | 2500.29017 |
| MN | 55 | 248.90000 | 100162.00000 | 1.703 | 248.87587 | 244.64837 | 253.12401 |
| NA | 23 | 2325.00000 | 413883.00000 | 0.549 | 2324.36437 | 2312.80688 | 2338.30043 |
| TI | 47 | 249.10000 | 4204.20000 | 3.864 | 260.08402 | 242.16490 | 245.02536 |
| V | 51 | 244.40000 | 132527.00000 | 2.294 | 249.62519 | 238.47364 | 245.06958 |
| **IN-1** | 115 | 55233.60000 | 0.00000 | 2.498 | 56294.60000 | 55732.80000 | 53673.50000 |
| AG | 107 | 25.75000 | 37042.30000 | 2.957 | 25.96312 | 24.91200 | 26.39212 |
| AS | 75 | 256.50000 | 15201.00000 | 2.917 | 251.86582 | 252.43218 | 265.09673 |
| BA | 137 | 251.50000 | 39069.30000 | 2.887 | 259.79334 | 246.21411 | 248.54722 |
| CD | 111 | 26.30000 | 4625.54000 | 2.862 | 25.60338 | 26.21117 | 27.10010 |
| CO | 59 | 235.00000 | 297395.00000 | 1.838 | 234.86816 | 230.72476 | 239.36262 |
| CU | 63 | 258.50000 | 220895.00000 | 2.544 | 258.75027 | 251.77427 | 264.91813 |
| MO | 98 | 26.21000 | 16297.70000 | 1.709 | 25.77369 | 26.17744 | 26.66808 |
| NI | 60 | 259.10000 | 80899.50000 | 0.973 | 256.29413 | 259.89955 | 261.15071 |
| SB | 121 | 26.12000 | 8816.77000 | 2.938 | 26.97350 | 25.92080 | 25.47987 |
| SN | 120 | 26.12000 | 13581.30000 | 3.222 | 25.43847 | 25.86775 | 27.06267 |
| SR | 88 | 25.57000 | 11222.10000 | 4.157 | 25.96292 | 24.37037 | 26.38675 |
| ZN | 66 | 264.60000 | 29731.90000 | 2.810 | 265.28229 | 256.89980 | 271.72637 |
| **BI-1** | 209 | 143616.00000 | 0.00000 | 2.476 | 147203.00000 | 140091.00000 | 143553.00000 |
| PB | 208 | 24.92000 | 97276.80000 | 1.063 | 25.11536 | 25.02345 | 24.61736 |
| TL | 203 | 25.18000 | 30593.40000 | 1.255 | 25.19981 | 25.48951 | 24.85800 |
| U | 238 | 25.05000 | 114323.00000 | 2.147 | 24.63669 | 25.66112 | 24.86510 |
| *GE-1* | 72 | 113752.00000 | 0.00000 | 1.412 | 115102.00000 | 114177.00000 | 111976.00000 |
| *TB-1* | 159 | 193591.00000 | 0.00000 | 0.145 | 193691.00000 | 193808.00000 | 193273.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:29:00
Tube Number: 56
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 51833.90000 | 0.00000 | 3.127 | 53018.10000 | 52496.90000 | 49986.50000 |
| AL | 27 | 2.57000 | 76.66980 | 34.327 | 2.97781 | 1.55738 | 3.17405 |
| CA | 44 | 16.92000 | 480.02900 | 185.757 | -19.35722 | 35.84813 | 34.27708 |
| CR | 52 | 0.56740 | 473.36000 | 14.468 | 0.47357 | 0.62595 | 0.60270 |
| FE | 57 | 1.75600 | 56.67010 | 43.628 | 1.21338 | 2.63209 | 1.42142 |
| K | 39 | -27.48000 | 16984.90000 | -42.431 | -37.85035 | -29.72828 | -14.86375 |
| MG | 24 | 5.10900 | 456.69500 | 8.892 | 4.88300 | 4.81172 | 5.63178 |
| MN | 55 | 0.20210 | 103.33900 | 17.402 | 0.16234 | 0.21507 | 0.22902 |
| NA | 23 | 4.89400 | 14461.80000 | 52.207 | 4.24161 | 2.72864 | 7.71306 |
| TI | 47 | 0.82080 | 13.33380 | 46.808 | 0.59604 | 0.60196 | 1.26438 |
| V | 51 | 0.25100 | 153.34000 | 23.482 | 0.20128 | 0.31610 | 0.23559 |
| **IN-1** | 115 | 55132.20000 | 0.00000 | 1.154 | 55052.60000 | 55804.40000 | 54539.70000 |
| AG | 107 | 0.02559 | 40.00160 | 27.925 | 0.01863 | 0.02523 | 0.03291 |
| AS | 75 | 0.22670 | 44.00040 | 13.017 | 0.19398 | 0.25129 | 0.23491 |
| BA | 137 | 0.12890 | 23.33450 | 57.036 | 0.17263 | 0.17001 | 0.04400 |
| CD | 111 | 0.03025 | 7.33340 | 93.620 | -0.00002 | 0.05612 | 0.03464 |
| CO | 59 | 0.10340 | 220.01100 | 6.675 | 0.09576 | 0.10916 | 0.10533 |
| CU | 63 | 0.18360 | 200.01100 | 32.184 | 0.21954 | 0.21591 | 0.11543 |
| MO | 98 | 0.07519 | 50.00220 | 20.614 | 0.05924 | 0.09020 | 0.07613 |
| NI | 60 | 0.17120 | 73.33610 | 29.766 | 0.12850 | 0.15761 | 0.22764 |
| SB | 121 | 0.05986 | 33.33460 | 56.164 | 0.08007 | 0.07846 | 0.02105 |
| SN | 120 | 0.04529 | 66.66960 | 85.229 | 0.03287 | 0.08857 | 0.01443 |
| SR | 88 | 0.13740 | 70.00300 | 28.719 | 0.09186 | 0.15802 | 0.16221 |
| ZN | 66 | 0.09010 | 33.33540 | 249.390 | 0.32928 | 0.05763 | -0.11661 |
| **BI-1** | 209 | 141480.00000 | 0.00000 | 2.101 | 143247.00000 | 143145.00000 | 138047.00000 |
| PB | 208 | 0.00672 | 143.34000 | 84.099 | 0.00023 | 0.01054 | 0.00940 |
| TL | 203 | 0.03898 | 50.00210 | 2.281 | 0.03845 | 0.03848 | 0.04000 |
| U | 238 | 0.01781 | 90.00460 | 14.711 | 0.01533 | 0.01755 | 0.02056 |
| *GE-1* | 72 | 113536.00000 | 0.00000 | 2.539 | 116527.00000 | 113307.00000 | 110774.00000 |
| *TB-1* | 159 | 192684.00000 | 0.00000 | 3.199 | 197460.00000 | 194866.00000 | 185727.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:31:00
Tube Number: 57 Batch: 172051063901A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 53835.10000 | 0.00000 | 1.347 | 54403.50000 | 53018.70000 | 54083.10000 |
| AL | 27 | 3.29900 | 100.00500 | 57.624 | 2.19459 | 5.49475 | 2.20909 |
| CA | 44 | 8.99200 | 476.69600 | 160.476 | -5.57090 | 23.28100 | 9.26679 |
| CR | 52 | 0.37900 | 360.01900 | 30.343 | 0.26036 | 0.38661 | 0.49000 |
| FE | 57 | 1.83300 | 60.00250 | 193.617 | -0.87797 | 0.52787 | 5.84980 |
| K | 39 | -39.25000 | 17048.40000 | -19.618 | -47.32152 | -38.44829 | -31.98501 |
| MG | 24 | 5.08900 | 473.36400 | 6.475 | 4.73785 | 5.13632 | 5.39169 |
| MN | 55 | 0.07618 | 56.66930 | 146.889 | 0.20534 | 0.01234 | 0.01086 |
| NA | 23 | 4.38300 | 14939.00000 | 31.691 | 5.19175 | 5.17715 | 2.77897 |
| TI | 47 | 0.39740 | 6.66717 | 173.201 | 0.00000 | 1.19211 | 0.00000 |
| V | 51 | 0.06970 | 60.00250 | 25.653 | 0.08665 | 0.07141 | 0.05103 |
| **IN-1** | 115 | 58289.30000 | 0.00000 | 3.344 | 58868.70000 | 59883.30000 | 56115.90000 |
| AG | 107 | 0.00662 | 13.33380 | 116.662 | 0.01075 | -0.00229 | 0.01139 |
| AS | 75 | 0.03647 | 34.66700 | 264.409 | 0.14783 | -0.01931 | -0.01909 |
| BA | 137 | -0.00108 | 3.33347 | -3233.550 | 0.03920 | -0.02122 | -0.02122 |
| CD | 111 | 0.00285 | 2.66669 | 203.469 | -0.00076 | 0.00955 | -0.00023 |
| CO | 59 | -0.04091 | 40.00180 | -16.025 | -0.04107 | -0.03429 | -0.04740 |
| CU | 63 | 0.17520 | 203.34300 | 32.357 | 0.23497 | 0.12222 | 0.16836 |
| MO | 98 | 0.00987 | 10.00040 | 150.294 | -0.00529 | 0.02437 | 0.01054 |
| NI | 60 | 0.01663 | 26.66790 | 374.805 | 0.08595 | -0.03479 | -0.00128 |
| SB | 121 | -0.02050 | 6.66693 | -156.878 | 0.01663 | -0.03908 | -0.03908 |
| SN | 120 | 0.01424 | 53.33570 | 385.815 | -0.04704 | 0.05908 | 0.03067 |
| SR | 88 | 0.08618 | 50.00190 | 45.974 | 0.10584 | 0.04057 | 0.11213 |
| ZN | 66 | 0.24190 | 53.33540 | 84.084 | 0.04386 | 0.45030 | 0.23146 |
| **BI-1** | 209 | 149489.00000 | 0.00000 | 3.328 | 155172.00000 | 147379.00000 | 145917.00000 |
| PB | 208 | -0.00191 | 116.67200 | -169.158 | 0.00023 | -0.00564 | -0.00034 |
| TL | 203 | -0.00282 | 0.00000 | 0.000 | -0.00282 | -0.00282 | -0.00282 |
| U | 238 | 0.00405 | 30.00130 | 47.639 | 0.00587 | 0.00203 | 0.00423 |
| *GE-1* | 72 | 117377.00000 | 0.00000 | 1.586 | 119412.00000 | 115759.00000 | 116958.00000 |
| *TB-1* | 159 | 199696.00000 | 0.00000 | 1.916 | 204076.00000 | 198013.00000 | 196998.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:33:00
Tube Number: 58 Batch: 172051063901A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54682.30000 | 0.00000 | 1.345 | 55520.10000 | 54142.60000 | 54384.20000 |
| AL | 27 | 1985.00000 | 56950.60000 | 0.810 | 1971.43566 | 2002.86879 | 1981.32322 |
| CA | 44 | 4025.00000 | 12146.20000 | 3.158 | 4160.29928 | 3907.89698 | 4007.71004 |
| CR | 52 | 50.48000 | 36027.50000 | 2.044 | 50.65012 | 51.41565 | 49.37358 |
| FE | 57 | 1021.00000 | 15392.90000 | 3.088 | 1056.91296 | 1003.21233 | 1001.41870 |
| K | 39 | 9974.00000 | 538707.00000 | 1.128 | 9864.56030 | 10089.27041 | 9967.57320 |
| MG | 24 | 1992.00000 | 162306.00000 | 0.482 | 1982.80849 | 1992.38457 | 2002.02644 |
| MN | 55 | 50.15000 | 20717.20000 | 0.417 | 50.11252 | 49.96678 | 50.37916 |
| NA | 23 | 9835.00000 | 1748500.00000 | 0.597 | 9777.21970 | 9834.72542 | 9894.63245 |
| TI | 47 | 251.50000 | 4350.89000 | 3.281 | 245.92511 | 247.51400 | 260.94525 |
| V | 51 | 49.22000 | 27386.10000 | 1.138 | 48.99927 | 48.80846 | 49.85967 |
| **IN-1** | 115 | 57834.90000 | 0.00000 | 2.753 | 59672.80000 | 56912.40000 | 56919.50000 |
| AG | 107 | 49.67000 | 74798.80000 | 1.124 | 49.08141 | 49.72476 | 50.19319 |
| AS | 75 | 9.74800 | 635.35400 | 7.381 | 8.96042 | 10.37136 | 9.91083 |
| BA | 137 | 48.90000 | 7942.90000 | 7.585 | 44.64149 | 51.43524 | 50.61630 |
| CD | 111 | 5.14200 | 949.37600 | 4.673 | 5.31565 | 4.86753 | 5.24219 |
| CO | 59 | 228.50000 | 302754.00000 | 1.407 | 225.03761 | 231.41444 | 228.92416 |
| CU | 63 | 50.39000 | 45142.90000 | 0.520 | 50.28012 | 50.69338 | 50.20816 |
| MO | 98 | 50.25000 | 32720.10000 | 2.398 | 49.32190 | 49.82174 | 51.61448 |
| NI | 60 | 50.19000 | 16430.90000 | 1.962 | 51.14724 | 49.17933 | 50.23160 |
| SB | 121 | 6.08400 | 2160.28000 | 7.219 | 6.17197 | 6.47323 | 5.60800 |
| SN | 120 | 51.71000 | 28115.70000 | 1.021 | 51.24510 | 51.59571 | 52.28319 |
| SR | 88 | 38.42000 | 17646.10000 | 2.438 | 37.33857 | 38.99556 | 38.92388 |
| ZN | 66 | 505.60000 | 59457.50000 | 1.585 | 498.14576 | 514.06045 | 504.45916 |
| **BI-1** | 209 | 148870.00000 | 0.00000 | 1.787 | 151303.00000 | 149280.00000 | 146028.00000 |
| PB | 208 | 14.65000 | 59343.30000 | 1.337 | 14.72812 | 14.43154 | 14.80130 |
| TL | 203 | 1.84600 | 2330.33000 | 6.631 | 1.96640 | 1.85055 | 1.72176 |
| U | 238 | 0.00267 | 23.33430 | 117.808 | 0.00608 | -0.00013 | 0.00207 |
| *GE-1* | 72 | 118652.00000 | 0.00000 | 4.613 | 124399.00000 | 118059.00000 | 113499.00000 |
| *TB-1* | 159 | 202632.00000 | 0.00000 | 3.041 | 209443.00000 | 197444.00000 | 201010.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:35:00
Tube Number: 59 Batch: 172051063901A
Sample Number: **9112123** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52807.60000 | 0.00000 | 1.378 | 53530.20000 | 52817.70000 | 52075.00000 |
| AL | 27 | 100.00000 | 2777.07000 | 3.076 | 100.17977 | 96.84240 | 102.98644 |
| CA | 44 | 181200.00000 | 508517.00000 | 1.547 | 182057.57484 | 183520.18683 | 178100.00531 |
| CR | 52 | 3.72600 | 2653.70000 | 1.827 | 3.65420 | 3.73443 | 3.78962 |
| FE | 57 | 163.40000 | 2403.66000 | 11.573 | 147.16263 | 158.81186 | 184.14441 |
| K | 39 | 4811.00000 | 260637.00000 | 1.562 | 4742.58705 | 4891.47974 | 4799.20209 |
| MG | 24 | 29830.00000 | 2345460.00000 | 2.777 | 29014.02336 | 30669.93620 | 29799.80666 |
| MN | 55 | 1.93700 | 796.72100 | 9.530 | 1.79447 | 2.14578 | 1.87185 |
| NA | 23 | 52440.00000 | 8942400.00000 | 1.773 | 51934.37321 | 53509.08453 | 51865.26137 |
| TI | 47 | 6.35900 | 106.67100 | 42.963 | 9.44554 | 5.38477 | 4.24785 |
| V | 51 | 3.80900 | 2066.92000 | 4.631 | 3.89280 | 3.92725 | 3.60596 |
| **IN-1** | 115 | 54821.40000 | 0.00000 | 1.884 | 55120.60000 | 55671.90000 | 53671.60000 |
| AG | 107 | 0.07015 | 103.33800 | 7.735 | 0.06737 | 0.06668 | 0.07641 |
| AS | 75 | 0.66320 | 69.33410 | 18.185 | 0.53176 | 0.68901 | 0.76877 |
| BA | 137 | 48.11000 | 7419.16000 | 3.033 | 47.03796 | 49.76837 | 47.51276 |
| CD | 111 | 0.00383 | 2.66670 | 170.284 | 0.01137 | -0.00014 | 0.00028 |
| CO | 59 | 0.16250 | 293.34800 | 26.203 | 0.13515 | 0.21152 | 0.14071 |
| CU | 63 | 1.77000 | 1543.49000 | 6.525 | 1.73181 | 1.67931 | 1.90035 |
| MO | 98 | 1.13900 | 706.71400 | 1.626 | 1.12260 | 1.15929 | 1.13651 |
| NI | 60 | 0.62330 | 213.34400 | 14.908 | 0.57767 | 0.73023 | 0.56203 |
| SB | 121 | 0.12030 | 53.33540 | 12.577 | 0.10967 | 0.13765 | 0.11368 |
| SN | 120 | 0.34460 | 220.01100 | 16.132 | 0.28397 | 0.35687 | 0.39311 |
| SR | 88 | 1093.00000 | 475981.00000 | 1.462 | 1106.49758 | 1075.66058 | 1098.37049 |
| ZN | 66 | 13.91000 | 1570.15000 | 15.536 | 13.35752 | 12.07451 | 16.29010 |
| **BI-1** | 209 | 134392.00000 | 0.00000 | 1.539 | 134920.00000 | 136144.00000 | 132110.00000 |
| PB | 208 | 0.18870 | 800.04700 | 19.290 | 0.14684 | 0.21289 | 0.20639 |
| TL | 203 | 0.01177 | 16.66740 | 84.350 | 0.00594 | 0.02323 | 0.00613 |
| U | 238 | 3.05400 | 13054.40000 | 1.227 | 3.03843 | 3.09673 | 3.02679 |
| *GE-1* | 72 | 111532.00000 | 0.00000 | 2.661 | 114143.00000 | 112148.00000 | 108305.00000 |
| *TB-1* | 159 | 197513.00000 | 0.00000 | 0.754 | 198982.00000 | 197557.00000 | 196002.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:36:00
Tube Number: 60 Batch: 172051063901A
Sample Number: **9112123** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 52151.60000 | 0.00000 | 3.716 | 51672.90000 | 54283.60000 | 50498.30000 |
| AL | 27 | 278.10000 | 7609.13000 | 5.779 | 294.60229 | 262.50049 | 277.28430 |
| CA | 44 | 178100.00000 | 493071.00000 | 3.328 | 180340.58375 | 171369.97047 | 182567.86215 |
| CR | 52 | 7.54700 | 5207.90000 | 5.358 | 7.65713 | 7.09837 | 7.88411 |
| FE | 57 | 343.00000 | 4947.78000 | 5.656 | 343.88498 | 323.23031 | 362.01198 |
| K | 39 | 5133.00000 | 273146.00000 | 3.889 | 5194.39093 | 4909.68878 | 5294.43833 |
| MG | 24 | 29180.00000 | 2263930.00000 | 5.096 | 29231.96694 | 27676.61918 | 30649.28365 |
| MN | 55 | 5.63000 | 2236.93000 | 5.469 | 5.60670 | 5.33407 | 5.94857 |
| NA | 23 | 51600.00000 | 8679920.00000 | 5.202 | 52161.69922 | 48683.40599 | 53963.46829 |
| TI | 47 | 32.33000 | 533.36500 | 4.114 | 31.18998 | 32.01867 | 33.79318 |
| V | 51 | 4.23600 | 2263.60000 | 8.140 | 4.52913 | 3.85634 | 4.32370 |
| **IN-1** | 115 | 53472.20000 | 0.00000 | 1.427 | 54159.40000 | 52651.40000 | 53605.90000 |
| AG | 107 | 0.92440 | 1290.12000 | 16.367 | 1.00453 | 1.01879 | 0.74987 |
| AS | 75 | 4.88500 | 309.34000 | 9.136 | 4.41059 | 5.29630 | 4.94900 |
| BA | 137 | 50.93000 | 7659.37000 | 0.624 | 50.56807 | 51.07039 | 51.15664 |
| CD | 111 | 0.96950 | 166.66900 | 22.114 | 0.73092 | 1.14592 | 1.03156 |
| CO | 59 | 0.94780 | 1246.78000 | 15.710 | 0.94476 | 1.09821 | 0.80052 |
| CU | 63 | 5.86800 | 4901.12000 | 9.898 | 6.53782 | 5.49856 | 5.56864 |
| MO | 98 | 1.99000 | 1200.10000 | 17.292 | 1.97898 | 2.33949 | 1.65153 |
| NI | 60 | 4.62100 | 1416.81000 | 7.715 | 5.03243 | 4.40538 | 4.42485 |
| SB | 121 | 1.97300 | 656.71000 | 10.142 | 2.20150 | 1.89194 | 1.82697 |
| SN | 120 | 4.29500 | 2196.94000 | 4.794 | 4.14595 | 4.53013 | 4.20945 |
| SR | 88 | 1084.00000 | 460288.00000 | 1.538 | 1070.89367 | 1102.88873 | 1078.80085 |
| ZN | 66 | 42.21000 | 4611.00000 | 4.018 | 43.39409 | 42.96037 | 40.26430 |
| **BI-1** | 209 | 134048.00000 | 0.00000 | 1.047 | 135548.00000 | 133830.00000 | 132767.00000 |
| PB | 208 | 2.18000 | 8041.44000 | 5.596 | 2.07039 | 2.15792 | 2.31144 |
| TL | 203 | 0.92550 | 1053.42000 | 10.050 | 1.02641 | 0.90710 | 0.84313 |
| U | 238 | 12.84000 | 54729.00000 | 1.306 | 12.94509 | 12.65089 | 12.93767 |
| *GE-1* | 72 | 108533.00000 | 0.00000 | 0.862 | 107881.00000 | 109604.00000 | 108112.00000 |
| *TB-1* | 159 | 193571.00000 | 0.00000 | 0.943 | 193894.00000 | 195213.00000 | 191605.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:38:00
Tube Number: 61 Batch: 172051063901A
Sample Number: **9112123** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 54310.40000 | 0.00000 | 3.364 | 53028.10000 | 56402.50000 | 53500.50000 |
| AL | 27 | 85.67000 | 2450.31000 | 10.963 | 75.24222 | 88.30340 | 93.46351 |
| CA | 44 | 178800.00000 | 515778.00000 | 0.476 | 178866.30495 | 177859.92355 | 179553.12882 |
| CR | 52 | 3.39300 | 2490.34000 | 9.876 | 3.77706 | 3.16151 | 3.23984 |
| FE | 57 | 148.00000 | 2246.94000 | 8.973 | 132.81039 | 153.73271 | 157.43604 |
| K | 39 | 4694.00000 | 261895.00000 | 2.309 | 4747.94397 | 4569.39514 | 4765.07285 |
| MG | 24 | 29540.00000 | 2388750.00000 | 1.700 | 29306.22760 | 29197.16548 | 30116.33566 |
| MN | 55 | 1.86900 | 790.05500 | 12.552 | 2.13702 | 1.69993 | 1.77073 |
| NA | 23 | 51320.00000 | 8999850.00000 | 0.840 | 51740.79798 | 50879.72928 | 51341.41549 |
| TI | 47 | 5.43600 | 93.33810 | 17.101 | 4.76743 | 5.04265 | 6.49738 |
| V | 51 | 3.58300 | 2000.25000 | 2.513 | 3.67033 | 3.58787 | 3.49047 |
| **IN-1** | 115 | 55943.90000 | 0.00000 | 1.339 | 55221.40000 | 56716.80000 | 55893.50000 |
| AG | 107 | 0.00677 | 13.33380 | 152.607 | -0.00229 | 0.01802 | 0.00458 |
| AS | 75 | 0.70450 | 73.33420 | 49.766 | 0.39463 | 0.63386 | 1.08498 |
| BA | 137 | 48.61000 | 7649.31000 | 1.905 | 47.59671 | 49.41628 | 48.80672 |
| CD | 111 | 0.02591 | 6.66672 | 48.784 | 0.01132 | 0.03288 | 0.03353 |
| CO | 59 | 0.02547 | 123.34000 | 45.858 | 0.01621 | 0.02162 | 0.03859 |
| CU | 63 | 1.84400 | 1640.17000 | 2.878 | 1.78708 | 1.85256 | 1.89217 |
| MO | 98 | 1.00600 | 636.70500 | 22.942 | 1.16878 | 1.10651 | 0.74154 |
| NI | 60 | 0.60060 | 210.01100 | 15.291 | 0.67262 | 0.49721 | 0.63210 |
| SB | 121 | 0.08772 | 43.33500 | 83.926 | 0.02031 | 0.07657 | 0.16629 |
| SN | 120 | 0.17780 | 136.67300 | 50.191 | 0.26400 | 0.08581 | 0.18359 |
| SR | 88 | 1090.00000 | 484063.00000 | 0.898 | 1089.61526 | 1099.39938 | 1079.82262 |
| ZN | 66 | 14.10000 | 1626.83000 | 8.454 | 13.60006 | 13.23594 | 15.45831 |
| **BI-1** | 209 | 139440.00000 | 0.00000 | 1.388 | 137744.00000 | 141547.00000 | 139027.00000 |
| PB | 208 | 0.18040 | 800.04800 | 26.835 | 0.12448 | 0.20880 | 0.20784 |
| TL | 203 | 0.00283 | 6.66694 | 172.975 | 0.00577 | 0.00553 | -0.00282 |
| U | 238 | 3.03500 | 13461.60000 | 2.092 | 3.00814 | 3.10753 | 2.98939 |
| *GE-1* | 72 | 112018.00000 | 0.00000 | 2.706 | 110169.00000 | 115516.00000 | 110370.00000 |
| *TB-1* | 159 | 200427.00000 | 0.00000 | 3.179 | 194055.00000 | 206798.00000 | 200427.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:40:00
Tube Number: 62 Batch: 172051063901A
Sample Number: **9112123** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51750.10000 | 0.00000 | 2.926 | 53420.00000 | 51362.10000 | 50468.30000 |
| AL | 27 | 2085.00000 | 56605.20000 | 2.172 | 2063.27622 | 2137.03255 | 2054.60411 |
| CA | 44 | 185200.00000 | 509301.00000 | 1.471 | 184046.78906 | 188359.95054 | 183317.00004 |
| CR | 52 | 51.59000 | 34844.20000 | 0.561 | 51.89596 | 51.53697 | 51.32278 |
| FE | 57 | 1153.00000 | 16447.60000 | 1.925 | 1165.30134 | 1165.33137 | 1126.87520 |
| K | 39 | 14980.00000 | 756323.00000 | 1.491 | 14837.33143 | 15233.37370 | 14856.63646 |
| MG | 24 | 31920.00000 | 2459950.00000 | 1.140 | 31768.46786 | 32335.22291 | 31656.24145 |
| MN | 55 | 51.89000 | 20283.10000 | 0.161 | 51.81138 | 51.97684 | 51.87292 |
| NA | 23 | 63220.00000 | 10563500.00000 | 2.491 | 63117.32345 | 64840.96542 | 61695.88254 |
| TI | 47 | 246.00000 | 4027.42000 | 7.630 | 234.88295 | 267.68144 | 235.46660 |
| V | 51 | 53.11000 | 27974.10000 | 2.056 | 53.67692 | 53.81319 | 51.85692 |
| **IN-1** | 115 | 53365.10000 | 0.00000 | 2.571 | 54663.30000 | 53502.00000 | 51929.90000 |
| AG | 107 | 48.45000 | 67367.60000 | 1.968 | 49.44003 | 48.38387 | 47.53681 |
| AS | 75 | 10.83000 | 649.35500 | 5.606 | 11.39992 | 10.19322 | 10.91287 |
| BA | 137 | 101.00000 | 15153.10000 | 2.110 | 101.49226 | 102.76425 | 98.60569 |
| CD | 111 | 4.56300 | 777.36300 | 1.698 | 4.58557 | 4.62664 | 4.47671 |
| CO | 59 | 225.50000 | 275876.00000 | 1.002 | 226.62754 | 227.02229 | 222.92488 |
| CU | 63 | 51.87000 | 42888.80000 | 2.423 | 52.95915 | 52.14609 | 50.49267 |
| MO | 98 | 52.38000 | 31486.70000 | 2.953 | 52.52301 | 53.84609 | 50.76163 |
| NI | 60 | 50.34000 | 15202.80000 | 3.186 | 49.29417 | 52.18634 | 49.53793 |
| SB | 121 | 5.91100 | 1933.56000 | 9.948 | 5.24099 | 6.15263 | 6.34008 |
| SN | 120 | 52.84000 | 26519.10000 | 1.666 | 53.79977 | 52.63593 | 52.07380 |
| SR | 88 | 1146.00000 | 485668.00000 | 0.921 | 1143.94447 | 1157.47891 | 1136.66991 |
| ZN | 66 | 479.70000 | 52072.70000 | 0.788 | 477.12328 | 484.06428 | 477.99875 |
| **BI-1** | 209 | 131853.00000 | 0.00000 | 3.972 | 136599.00000 | 132726.00000 | 126235.00000 |
| PB | 208 | 15.91000 | 57079.00000 | 2.017 | 16.19797 | 15.95983 | 15.56285 |
| TL | 203 | 2.22600 | 2487.03000 | 9.286 | 2.10913 | 2.46478 | 2.10454 |
| U | 238 | 3.05200 | 12790.80000 | 2.246 | 2.98954 | 3.04123 | 3.12536 |
| *GE-1* | 72 | 107510.00000 | 0.00000 | 4.152 | 112429.00000 | 106387.00000 | 103716.00000 |
| *TB-1* | 159 | 192352.00000 | 0.00000 | 4.226 | 201197.00000 | 190649.00000 | 185209.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:41:00
Tube Number: 63 Batch: 172051063901A
Sample Number: **9112123** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 51843.60000 | 0.00000 | 2.012 | 51562.60000 | 52997.90000 | 50970.40000 |
| AL | 27 | 2038.00000 | 55413.30000 | 2.642 | 2050.73340 | 1978.92292 | 2084.30920 |
| CA | 44 | 181800.00000 | 500721.00000 | 1.321 | 184323.11915 | 179542.72190 | 181547.68971 |
| CR | 52 | 52.58000 | 35572.70000 | 2.212 | 53.90492 | 51.71474 | 52.13030 |
| FE | 57 | 1099.00000 | 15716.90000 | 2.339 | 1118.45377 | 1109.38828 | 1070.07838 |
| K | 39 | 14680.00000 | 742982.00000 | 1.457 | 14906.40525 | 14482.15656 | 14646.73609 |
| MG | 24 | 31210.00000 | 2408700.00000 | 2.732 | 31869.83967 | 30245.97451 | 31508.94335 |
| MN | 55 | 49.95000 | 19562.20000 | 0.435 | 49.71576 | 50.14679 | 49.98103 |
| NA | 23 | 61000.00000 | 10209300.00000 | 1.034 | 60911.08524 | 60417.93805 | 61670.23281 |
| TI | 47 | 251.60000 | 4127.49000 | 1.965 | 248.86261 | 248.68335 | 257.33741 |
| V | 51 | 52.46000 | 27670.40000 | 1.105 | 53.05038 | 51.89153 | 52.44856 |
| **IN-1** | 115 | 53762.10000 | 0.00000 | 1.010 | 54389.00000 | 53442.70000 | 53454.70000 |
| AG | 107 | 47.76000 | 66878.40000 | 0.652 | 47.94288 | 47.93952 | 47.40152 |
| AS | 75 | 10.20000 | 617.35400 | 9.529 | 10.36172 | 11.07834 | 9.15504 |
| BA | 137 | 98.82000 | 14939.50000 | 3.327 | 99.64657 | 101.61171 | 95.19413 |
| CD | 111 | 4.98600 | 855.36900 | 0.367 | 4.97839 | 4.97270 | 5.00684 |
| CO | 59 | 220.70000 | 271885.00000 | 1.022 | 219.80635 | 218.95151 | 223.21425 |
| CU | 63 | 50.24000 | 41838.50000 | 1.300 | 50.80579 | 50.38412 | 49.52435 |
| MO | 98 | 51.84000 | 31382.90000 | 2.521 | 50.93775 | 53.33902 | 51.24551 |
| NI | 60 | 50.04000 | 15226.10000 | 2.172 | 49.93346 | 51.18359 | 49.01768 |
| SB | 121 | 6.08200 | 2006.91000 | 4.048 | 6.11198 | 5.82191 | 6.31152 |
| SN | 120 | 52.53000 | 26555.60000 | 2.033 | 53.75797 | 51.87483 | 51.94287 |
| SR | 88 | 1113.00000 | 475389.00000 | 0.271 | 1117.02161 | 1111.63845 | 1111.97552 |
| ZN | 66 | 469.70000 | 51355.90000 | 2.876 | 456.82338 | 483.77057 | 468.50669 |
| **BI-1** | 209 | 131745.00000 | 0.00000 | 1.171 | 132826.00000 | 129978.00000 | 132431.00000 |
| PB | 208 | 15.49000 | 55503.00000 | 2.394 | 15.22561 | 15.91454 | 15.33212 |
| TL | 203 | 2.23500 | 2493.72000 | 1.902 | 2.24037 | 2.18944 | 2.27386 |
| U | 238 | 3.03300 | 12707.40000 | 1.046 | 3.06029 | 3.04014 | 2.99809 |
| *GE-1* | 72 | 107898.00000 | 0.00000 | 2.171 | 110391.00000 | 105744.00000 | 107558.00000 |
| *TB-1* | 159 | 194842.00000 | 0.00000 | 1.239 | 197025.00000 | 192248.00000 | 195253.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:43:00
Tube Number: 64 Batch: 172051063901A
Sample Number: **9112123** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 50578.70000 | 0.00000 | 4.310 | 53058.40000 | 49715.20000 | 48962.40000 |
| AL | 27 | 25.76000 | 690.04700 | 9.425 | 24.89294 | 28.50151 | 23.88205 |
| CA | 44 | 35550.00000 | 95840.60000 | 1.696 | 35357.27233 | 35058.50905 | 36219.86273 |
| CR | 52 | 1.07300 | 796.72200 | 11.864 | 1.11023 | 1.17852 | 0.93196 |
| FE | 57 | 32.09000 | 476.69300 | 9.660 | 30.66458 | 29.95129 | 35.64229 |
| K | 39 | 898.30000 | 61116.10000 | 5.267 | 849.17878 | 902.23366 | 943.55769 |
| MG | 24 | 5783.00000 | 435460.00000 | 1.653 | 5673.37745 | 5847.26434 | 5829.07875 |
| MN | 55 | 0.48600 | 210.01200 | 14.934 | 0.56188 | 0.41725 | 0.47877 |
| NA | 23 | 10970.00000 | 1801550.00000 | 2.264 | 10707.62765 | 11007.72640 | 11200.58646 |
| TI | 47 | 1.65100 | 26.66790 | 54.967 | 2.38240 | 0.63564 | 1.93624 |
| V | 51 | 0.64080 | 350.02200 | 32.413 | 0.68313 | 0.41516 | 0.82399 |
| **IN-1** | 115 | 55321.60000 | 0.00000 | 3.937 | 57812.80000 | 54376.70000 | 53775.30000 |
| AG | 107 | 0.08523 | 126.67200 | 21.002 | 0.10398 | 0.06833 | 0.08340 |
| AS | 75 | 0.03368 | 32.66700 | 170.249 | -0.00145 | 0.09985 | 0.00263 |
| BA | 137 | 9.84800 | 1533.48000 | 5.709 | 9.51638 | 9.53021 | 10.49699 |
| CD | 111 | 0.00375 | 2.66670 | 473.179 | -0.00056 | 0.02323 | -0.01143 |
| CO | 59 | 0.13110 | 256.67900 | 28.680 | 0.16331 | 0.08980 | 0.14030 |
| CU | 63 | 0.46390 | 440.02300 | 4.958 | 0.45258 | 0.44872 | 0.49035 |
| MO | 98 | 0.24190 | 153.34000 | 17.230 | 0.19442 | 0.27237 | 0.25896 |
| NI | 60 | 0.17220 | 73.33640 | 43.246 | 0.08869 | 0.19598 | 0.23179 |
| SB | 121 | 0.07026 | 36.66810 | 53.288 | 0.04601 | 0.05139 | 0.11339 |
| SN | 120 | 0.26550 | 180.00900 | 30.734 | 0.17473 | 0.28899 | 0.33277 |
| SR | 88 | 208.20000 | 91438.20000 | 1.072 | 205.61172 | 209.48710 | 209.46953 |
| ZN | 66 | 3.24800 | 390.01900 | 16.505 | 3.79196 | 3.23052 | 2.72015 |
| **BI-1** | 209 | 137409.00000 | 0.00000 | 4.214 | 144089.00000 | 134309.00000 | 133827.00000 |
| PB | 208 | 0.02810 | 220.01000 | 32.068 | 0.03840 | 0.02422 | 0.02167 |
| TL | 203 | 0.00285 | 6.66694 | 172.501 | 0.00539 | 0.00598 | -0.00282 |
| U | 238 | 0.58640 | 2573.74000 | 4.724 | 0.61807 | 0.57418 | 0.56685 |
| *GE-1* | 72 | 108355.00000 | 0.00000 | 2.771 | 110775.00000 | 109294.00000 | 104996.00000 |
| *TB-1* | 159 | 188760.00000 | 0.00000 | 4.172 | 197815.00000 | 183491.00000 | 184975.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:45:00
Tube Number: 65
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 50231.00000 | 0.00000 | 2.558 | 50779.80000 | 48762.30000 | 51151.00000 |
| AL | 27 | 2473.00000 | 65185.10000 | 1.536 | 2436.50650 | 2471.27383 | 2512.40557 |
| CA | 44 | 2568.00000 | 7272.29000 | 3.253 | 2632.68272 | 2473.71053 | 2597.69273 |
| CR | 52 | 251.20000 | 164337.00000 | 1.100 | 248.64989 | 250.77917 | 254.13309 |
| FE | 57 | 2494.00000 | 34496.70000 | 2.374 | 2531.90817 | 2524.65783 | 2425.90226 |
| K | 39 | 2390.00000 | 132087.00000 | 1.441 | 2389.11874 | 2424.83611 | 2355.96517 |
| MG | 24 | 2508.00000 | 187626.00000 | 1.217 | 2475.64900 | 2536.35676 | 2511.47598 |
| MN | 55 | 250.40000 | 94923.30000 | 0.840 | 248.12883 | 250.81560 | 252.27814 |
| NA | 23 | 2344.00000 | 392801.00000 | 1.738 | 2296.92833 | 2363.25428 | 2371.05702 |
| TI | 47 | 244.00000 | 3877.39000 | 1.819 | 240.24632 | 248.89348 | 242.83161 |
| V | 51 | 246.20000 | 125738.00000 | 1.444 | 250.25553 | 244.05647 | 244.14710 |
| **IN-1** | 115 | 54735.20000 | 0.00000 | 0.951 | 54383.30000 | 54489.30000 | 55332.90000 |
| AG | 107 | 25.01000 | 35654.40000 | 1.168 | 24.68757 | 25.07757 | 25.25888 |
| AS | 75 | 245.50000 | 14431.50000 | 1.638 | 245.23875 | 241.67413 | 249.70107 |
| BA | 137 | 246.80000 | 37992.70000 | 2.548 | 242.54803 | 243.91115 | 254.05697 |
| CD | 111 | 25.44000 | 4434.81000 | 2.684 | 25.93743 | 25.72543 | 24.66311 |
| CO | 59 | 225.20000 | 282579.00000 | 2.540 | 229.67431 | 218.79046 | 227.27989 |
| CU | 63 | 246.40000 | 208757.00000 | 2.961 | 249.04310 | 238.14778 | 252.00237 |
| MO | 98 | 24.28000 | 14969.30000 | 4.456 | 24.60316 | 23.07068 | 25.16117 |
| NI | 60 | 250.20000 | 77418.60000 | 1.631 | 250.64154 | 245.87229 | 253.99203 |
| SB | 121 | 25.25000 | 8439.81000 | 4.483 | 26.47444 | 25.03735 | 24.24019 |
| SN | 120 | 25.74000 | 13271.00000 | 6.049 | 26.31604 | 23.97472 | 26.92294 |
| SR | 88 | 25.03000 | 10888.40000 | 0.667 | 25.16116 | 25.08883 | 24.84254 |
| ZN | 66 | 252.60000 | 28138.30000 | 5.356 | 262.37540 | 237.16550 | 258.31351 |
| **BI-1** | 209 | 140434.00000 | 0.00000 | 0.510 | 140757.00000 | 139613.00000 | 140932.00000 |
| PB | 208 | 25.08000 | 95757.80000 | 1.976 | 25.42673 | 24.51644 | 25.31122 |
| TL | 203 | 24.94000 | 29631.00000 | 3.340 | 24.77099 | 24.20141 | 25.84194 |
| U | 238 | 24.44000 | 109106.00000 | 2.204 | 24.54400 | 23.86074 | 24.92367 |
| *GE-1* | 72 | 109289.00000 | 0.00000 | 2.635 | 107296.00000 | 107981.00000 | 112591.00000 |
| *TB-1* | 159 | 190639.00000 | 0.00000 | 1.890 | 190507.00000 | 187104.00000 | 194307.00000 |

Run Name: 1720704E03 Date/Time: 07/26/2017 10:47:00
Tube Number: 66
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards.

| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|---|
| **SC-1** | 45 | 50414.90000 | 0.00000 | 1.306 | 50378.20000 | 49775.80000 | 51090.80000 |
| AL | 27 | 2.13200 | 63.33570 | 36.205 | 2.76896 | 1.27365 | 2.35361 |
| CA | 44 | -22.00000 | 363.35500 | -84.636 | -23.31264 | -2.75945 | -39.94005 |
| CR | 52 | 0.59600 | 480.02700 | 21.074 | 0.45971 | 0.62126 | 0.70705 |
| FE | 57 | 2.11200 | 60.00300 | 2.673 | 2.11439 | 2.16688 | 2.05407 |
| K | 39 | -57.44000 | 15092.50000 | -0.928 | -57.91683 | -56.86688 | -57.56153 |
| MG | 24 | 3.35500 | 313.34900 | 6.781 | 3.44871 | 3.09564 | 3.52069 |
| MN | 55 | 0.07677 | 53.33540 | 117.715 | 0.06889 | -0.00941 | 0.17083 |
| NA | 23 | -3.04600 | 12783.40000 | -48.129 | -4.69168 | -2.57421 | -1.87506 |
| TI | 47 | 0.20910 | 3.33346 | 173.219 | 0.62728 | 0.00000 | 0.00000 |
| V | 51 | 0.20050 | 123.34000 | 23.372 | 0.15534 | 0.19723 | 0.24889 |
| **IN-1** | 115 | 56387.10000 | 0.00000 | 1.745 | 57472.80000 | 56135.30000 | 55553.30000 |
| AG | 107 | 0.04316 | 66.66950 | 10.778 | 0.03780 | 0.04559 | 0.04609 |
| AS | 75 | 0.11050 | 38.00030 | 148.507 | 0.09904 | 0.28001 | -0.04764 |
| BA | 137 | 0.08528 | 16.66730 | 156.426 | -0.02122 | 0.04215 | 0.23491 |
| CD | 111 | 0.02934 | 7.33341 | 57.464 | 0.03229 | 0.04453 | 0.01119 |
| CO | 59 | 0.06624 | 176.67500 | 30.163 | 0.04319 | 0.07700 | 0.07855 |
| CU | 63 | 0.14120 | 166.67300 | 35.907 | 0.08448 | 0.15677 | 0.18221 |
| MO | 98 | 0.04209 | 30.00120 | 38.489 | 0.02562 | 0.05800 | 0.04267 |
| NI | 60 | 0.22900 | 93.33740 | 17.803 | 0.18195 | 0.25086 | 0.25416 |
| SB | 121 | 0.05805 | 33.33490 | 116.606 | 0.01799 | 0.13619 | 0.01996 |
| SN | 120 | 0.01167 | 50.00200 | 336.847 | -0.02763 | 0.01165 | 0.05100 |
| SR | 88 | 0.07431 | 43.33500 | 17.992 | 0.06513 | 0.08965 | 0.06815 |
| ZN | 66 | 0.08446 | 33.33460 | 64.599 | 0.04995 | 0.05607 | 0.14736 |
| **BI-1** | 209 | 142506.00000 | 0.00000 | 0.780 | 143753.00000 | 142144.00000 | 141619.00000 |
| PB | 208 | 0.01677 | 183.34200 | 90.817 | 0.01037 | 0.03416 | 0.00579 |
| TL | 203 | 0.02209 | 30.00120 | 65.369 | 0.01363 | 0.03877 | 0.01388 |
| U | 238 | 0.02942 | 143.34000 | 11.948 | 0.02622 | 0.03318 | 0.02887 |
| *GE-1* | 72 | 110509.00000 | 0.00000 | 2.170 | 113277.00000 | 109120.00000 | 109129.00000 |
| *TB-1* | 159 | 192755.00000 | 0.00000 | 1.304 | 195072.00000 | 193109.00000 | 190083.00000 |

# Instrument Tuning Report (ICPMS #11332)

| | |
|---|---|
| File Name: | default.tun |
| File Path: | C:\elandata\Tuning |
| Sample Date/Time: | 7/25/2017 11:47:00PM |
| Number of Replicates: | 6 |
| Method File: | c:\elandata\Method\dailytune.mth |

**Measured Mass must be within +/- 0.1 amu of the Exact Mass.**

**Measured Peak Width must be > or = to 0.640 AND < or = to 0.660.**

| Analyte | EXACT MASS | MEAS. MASS | Mass DAC | RES. DAC | MEAS. PK. WIDTH |
|---|---|---|---|---|---|
| Ce | 140.000 | 140.000 | 0 | 0 | 0.650 |
| In | 115.000 | 115.000 | 0 | 0 | 0.650 |
| Li | 6.000 | 6.000 | 0 | 0 | 0.700 |
| Mg | 24.000 | 23.950 | 0 | 0 | 0.650 |
| Pb | 208.000 | 207.950 | 0 | 0 | 0.600 |
| Rh | 103.000 | 103.000 | 0 | 0 | 0.650 |
| U | 238.000 | 237.900 | 0 | 0 | 0.550 |

**Summary: Verify that the RSD is less than 5 for the following masses.**

| Mass | Meas. Intens. Mean | Meas. Intens. RSD |
|---|---|---|
| 140.000 | 37057.000 | 1.130 |
| 115.000 | 38296.000 | 0.530 |
| 6.000 | 14588.000 | 1.750 |
| 24.000 | 15436.000 | 1.110 |
| 208.000 | 19032.000 | 2.200 |
| 103.000 | 32330.000 | 1.290 |
| 238.000 | 37563.000 | 1.220 |

# Extraction/Distillation/Digestion Logs

# Metals in Liquid

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 205 10635 02

**Start Time:** 7/25/17 6:10 **End Time:** 7/25/17 10:10 **Hot Block:** Deena2

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17182B | 5.00 |
| 1:1 HNO3 | P17182A | 2.00 |
| ICP Spike 1A | 1714623#1 | 1.00 |
| ICP Spike 1B | 1714629#1 | 1.00 |
| LCS A1 | 1714623#1 | 1.00 |
| LCS B1 | 1714629#1 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9112123 | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 4) | **9112124U** | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 5) | **9112124D** | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9112124R** | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 7) | **9112124M** | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/25/2017

v 1.1.0

# Batch# 17 205 1063 502

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/24/17 12:11 | 1184 |
| 2) | Sample Vol | | 7/25/17 6:10 | 1184 |
| 3) | Final Vol | CLEAR | 7/25/17 6:10 | 1184 |
| 4) | Trial | | 7/25/17 6:10 | 1184 |
| 5) | Upload Prep | US19PCC0669 | 7/25/17 10:10 | 1184 |

| | | | | | Original Entry | | | | Data Changed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Analysis | D | Operation | Measurement | Date/Time | Data | Units | Analyst | Date/Time | Analyst | Reason |

Analysis: 0635 SW846 Water

Batch# 17 205 1063 502

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9112123 | 08/01/17 | N8 | 18901 | KR189-01 | 50.0000 | 50.0000 | 1 |
| **9112124U** | 08/01/17 | N8 | 18902 | KR189-02 | 50.0000 | 50.0000 | 1 |
| **9112124D** | 08/01/17 | N8 | 18902 | KR189-02 | 50.0000 | 50.0000 | 1 |
| **9112124R** | 08/01/17 | N8 | 18902 | KR189-02 | 50.0000 | 50.0000 | 1 |
| **9112124M** | 08/01/17 | N8 | 18902 | KR189-02 | 50.0000 | 50.0000 | 1 |

# LLENS Worksheet for 0639 ICP/MS SW846 Water

Batch# 17 205 10639 01

**Start Time:** 7/25/17 6:51 **End Time:** 7/25/17 10:48 **Hot Block:** 12

**Pipette ID:** JU06758
**Reflux Cap Lot#:** 16101387076NQ

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| HNO3 | 152495 | 3.00 |
| ICP/MS Spike | 1715001#6 | 0.50 |
| LCS | 1715001#6 | 0.50 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | **9112123U** | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 4) | **9112123D** | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 5) | **9112123R** | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9112123M** | 08/01/17 09:35 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/25/2017

v 1.1.0

# Batch# 17 205 1063 901

## LLENS Batch Chronology and Change Log - ICP/MS SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/24/17 12:11 | 1184 |
| 2) | Sample Vol | | 7/25/17 6:51 | 1184 |
| 3) | Final Vol | CLEAR | 7/25/17 6:51 | 1184 |
| 4) | Trial | | 7/25/17 6:51 | 1184 |
| 5) | Upload Prep | US19PCC0669 | 7/25/17 10:48 | 1184 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

Analysis: 0639 ICP/MS SW846 Water

Batch# 17 205 1063 901

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| **9112123U** | 08/01/17 | N8 | 18901 | KR189-01 | 50.0000 | 50.0000 | 1 |
| **9112123D** | 08/01/17 | N8 | 18901 | KR189-01 | 50.0000 | 50.0000 | 1 |
| **9112123R** | 08/01/17 | N8 | 18901 | KR189-01 | 50.0000 | 50.0000 | 1 |
| **9112123M** | 08/01/17 | N8 | 18901 | KR189-01 | 50.0000 | 50.0000 | 1 |

# Instrumental Wet Chemistry Data

# Case Narrative/Conformance Summary

# Instrumental Wet Chemistry

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Solid | Comments |
|---|---|---|---|---|
| 9112123 | GW012R-173 | X | | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

| Samples | Bromide | Chloride | Sulfate | Total Nitrite/Nitrate Nitrogen |
|---|---|---|---|---|
| 9112123 | DF5 | DF50 | DF50 | DF5 |

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# Quality Control and Calibration Summary Forms

# Instrumental Wet Chemistry

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

**Fraction: Instrumental Wet Chemistry**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | 17207118101A | P20718AB | 07/27/2017 02:26:00 |
| | | P20718AQ | 07/27/2017 02:28:00 |
| Total Nitrite/Nitrate Nitrogen | 17207118101B | 9112123 | 07/27/2017 03:09:00 |

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

**Fraction: Instrumental Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Bromide | Chloride | Sulfate |
|---|---|---|---|---|---|
| 17204120115A | 9112123 | 07/24/2017 19:27:00 | X | | |
| | 9112123 | 07/24/2017 19:43:00 | | X | X |
| | P20420OB | 07/25/2017 05:10:00 | X | X | X |
| | P20420OQ | 07/25/2017 04:54:00 | X | X | X |

**Quality Control Summary**
**Method Blank**
**Instrumental Water Quality**
**SDG: KR189**
**Matrix: LIQUID**

**Fraction: Instrumental Wet Chemistry**

| 17204120115A / P20420OB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Bromide | IC | 07/25/17 | N.D. | mg/l | 0.25 | 0.50 | 0.50 |
| Chloride | IC | 07/25/17 | N.D. | mg/l | 0.20 | 0.40 | 0.40 |
| Sulfate | IC | 07/25/17 | N.D. | mg/l | 0.30 | 1.0 | 1.0 |

| 17207118101A / P20718AB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 07/27/17 | N.D. | mg/l | 0.040 | 0.10 | 0.10 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR189**
**Matrix: LIQUID**

## Instrumental Water Quality
**Fraction: Instrumental Wet Chemistry**

| LCS: P20420OQ | Batch: **17204120115A** (Sample number(s): 9112123 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Bromide | IC | 7.50 | 7.13 | NA | 95 | NA | 90-110 | NA | NA |
| Chloride | IC | 3.00 | 2.82 | NA | 94 | NA | 90-110 | NA | NA |
| Sulfate | IC | 7.50 | 6.92 | NA | 92 | NA | 90-110 | NA | NA |

| LCS: P20718AQ | Batch: **17207118101B** (Sample number(s): 9112123 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 2.50 | 2.55 | NA | 102 | NA | 90-110 | NA | NA |

Instrument ID: 07411
Calibration Date: 07/26/2017

Acceptance Range:
ICV/CCV: +/- 10%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17207118101B
Run Start Dates: 07/26/2017
Run Names: 1720702C05

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | AUTO CAL6 | AUTO CAL7 | CC |
|---|---|---|---|---|---|---|---|---|
| Nitrate/Nitrite Nitrogen | 666318.3000 | 513487.6000 | 180938.9000 | 87779.8000 | 37422.2000 | 18422.6000 | -101.5000 | 0.9995 |

| Sample | Nitrate/Nitrite Nitrogen | | |
|---|---|---|---|
| | True | Result | %Rec |
| ICV | 2.5 | 2.64050 | 106 |
| ICB | 0 | ND | NA |
| CCV2 | 2.5 | 2.63010 | 105 |
| CCB 5 | 0 | ND | NA |
| CCV2 | 2.5 | 2.56500 | 103 |
| CCB 6 | 0 | ND | NA |
| CCV2 | 2.5 | 2.50650 | 100 |
| CCB 7 | 0 | ND | NA |
| CCV2 | 2.5 | 2.56380 | 103 |
| CCB 8 | 0 | ND | NA |

* = Out of Specifications

Instrument ID: 12115
Calibration Date: 07/07/2017

Acceptance Range:
ICV/CCV: 90%-110%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17204120115A
Run Start Dates: 07/24/2017
Run Names: 1720501D15

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | $R^2$ | CC |
|---|---|---|---|---|---|---|---|
| Bromide | 0.315489 | 1.356408 | 3.617506 | 7.695615 | 12.009107 | 0.9997 | 0.9999 |
| Chloride | 1.045200 | 2.310405 | 5.678044 | 12.269198 | 19.157873 | 0.9992 | 0.9996 |
| Sulfate | 0.663420 | 1.359771 | 3.529348 | 7.415997 | 11.392968 | 0.9997 | 0.9999 |

| | Chloride | | | Sulfate | | | Bromide | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample | True | Result | %Rec | True | Result | %Rec | True | Result | %Rec |
| ICV | 3 | 2.7491 | 92 | 7.5 | 7.0390 | 94 | 7.5 | 7.1737 | 96 |
| ICB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| Low Chk | 1.5 | 1.1113 | 74 | 3.75 | 2.6608 | 71 | 3.75 | 2.7946 | 75 |
| High Chk | 4.5 | 3.9841 | 89 | 11.25 | 9.8199 | 87 | 11.25 | 9.9005 | 88 |
| CCV2 | 3 | 2.8520 | 95 | 7.5 | 7.0036 | 93 | 7.5 | 7.1557 | 95 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.9064 | 97 | 7.5 | 7.1469 | 95 | 7.5 | 7.3089 | 97 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.9760 | 99 | 7.5 | 7.2692 | 97 | 7.5 | 7.4815 | 100 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 3.0088 | 100 | 7.5 | 7.3517 | 98 | 7.5 | 7.5513 | 101 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |

* = Out of Specifications

# Raw Data

# Instrumental Wet Chemistry

**Fraction: Instrumental Wet Chemistry**

| 01505: Bromide<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bromide | .25 | .5 | 0.50 | mg/l |

| 00224: Chloride<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Chloride | .2 | .4 | 0.40 | mg/l |

| 00228: Sulfate<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Sulfate | .3 | 1 | 1.0 | mg/l |

| 07882: Total Nitrite/Nitrate Nitrogen<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | .04 | .1 | 0.10 | mg/l |

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# Inorganic Anions by Ion Chromatography

System Name ICS-2000 Analyst CW7987

Instrument ID 12115 Run Start Date 7-7-17

IDAT Run Number 171880 1015 Run Name 171881SC (ICAL)

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405 | 34

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: ———

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | < 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1718815C

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TEST | | 93 | Check Standard | | 07/07/2017 10:03:35 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 2 | CAL 0 | | 1 | Calibration Standard | 01 | 07/07/2017 10:19:48 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 3 | CAL 1 | | 2 | Calibration Standard | 02 | 07/07/2017 10:36:00 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 4 | CAL 2 | | 3 | Calibration Standard | 03 | 07/07/2017 10:52:12 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 5 | CAL 3 | | 4 | Calibration Standard | 04 | 07/07/2017 11:08:24 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 6 | CAL 4 | | 5 | Calibration Standard | 05 | 07/07/2017 11:24:36 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 7 | CAL 5 | | 6 | Calibration Standard | 06 | 07/07/2017 11:40:49 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 8 | ICV | | 7 | Check Standard | | 07/07/2017 11:57:02 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 9 | ICB | | 8 | Check Standard | | 07/07/2017 12:13:14 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 10 | QRS | | 2 | Check Standard | | 07/07/2017 12:29:27 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 11 | CRDL | | 2 | Check Standard | | 07/07/2017 12:45:39 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

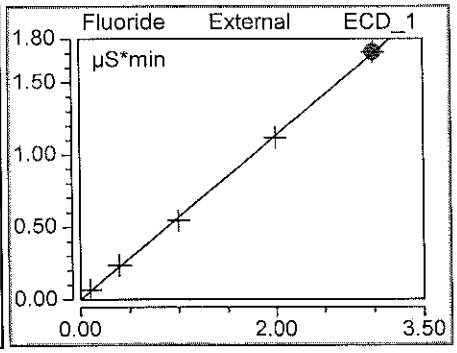
# Calibration Batch Report

| | | | |
|---|---|---|---|
| *Sequence:* | **1718815C** | *Injection Volu A* | **75.00** |
| *Instrument Method:* | **AnionsAS** | *Channel:* | **ECD_1** |
| *Instrument Number:* | **12115** | *Run Time (min):* | **15** |
| *Inj. Date / Time:* | **07-Jul-2017 / 11:40** | *Column Type-Serial #:* | AG14-170304242, AS14-160520235 |

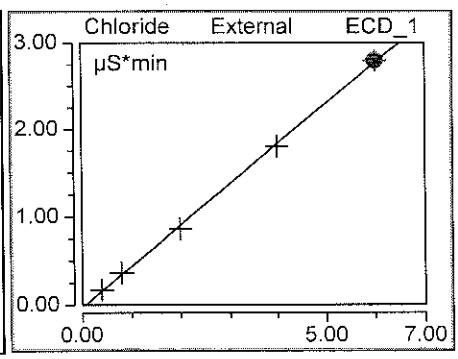
**Calibration Summary**

| Peak Name | Eval.Type | Cal.Type | Points | Offset (C0) | Slope (C1) | Curve (C2) | R-Squared % | r= |
|---|---|---|---|---|---|---|---|---|
| Fluoride | Area | Lin, WithOffset | 5.000 | -0.002 | 0.566 | 0.000 | 99.9510479 | 0.999755 |
| Chloride | Area | Lin, WithOffset | 5.000 | -0.034 | 0.467 | 0.000 | 99.9224708 | 0.999612 |
| Nitrite | Area | Lin, WithOffset | 5.000 | -0.035 | 0.967 | 0.000 | 99.9780968 | 0.999895 |
| Bromide | Area | Lin, WithOffset | 5.000 | -0.039 | 0.194 | 0.000 | 99.9723145 | 0.999861 |
| Nitrate | Area | Lin, WithOffset | 5.000 | -0.039 | 1.052 | 0.000 | 99.9716811 | 0.999858 |
| Phosphate | Area | Lin, WithOffset | 4.000 | -0.516 | 0.342 | 0.000 | 99.5751782 | 0.997873 |
| Sulfate | Area | Lin, WithOffset | 5.000 | -0.067 | 0.329 | 0.000 | 99.9740265 | 0.999870 |
| | | **AVERAGE:** | | -0.1045 | 0.5595 | 0.0000 | 99.9064 | |

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Fluoride | Fluoride | Fluoride | Fluoride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 3.160 | 0.0664 | 0.241 | 0.120 |
| CAL 2 | 3.157 | 0.2324 | 0.991 | 0.413 |
| CAL 3 | 3.157 | 0.5437 | 2.699 | 0.963 |
| CAL 4 | 3.160 | 1.1204 | 5.811 | 1.981 |
| CAL 5 | 3.163 | 1.7099 | 9.004 | 3.022 |
| **Average** | 3.159 | | | |
| **Rel. Std. Dev.** | 0.088 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Chloride | Chloride | Chloride | Chloride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 4.560 | 0.1689 | 1.045 | 0.434 |
| CAL 2 | 4.560 | 0.3618 | 2.310 | 0.848 |
| CAL 3 | 4.567 | 0.8631 | 5.678 | 1.922 |
| CAL 4 | 4.577 | 1.8037 | 12.269 | 3.937 |
| CAL 5 | 4.583 | 2.7940 | 19.158 | 6.059 |
| **Average** | 4.569 | | | |
| **Rel. Std. Dev.** | 0.227 % | | | |

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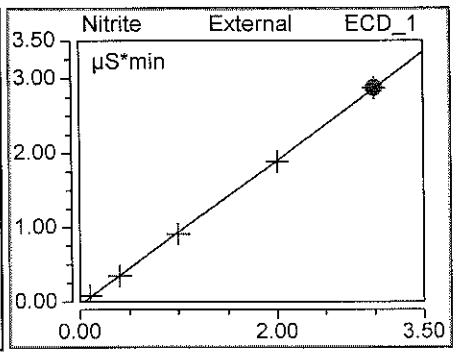
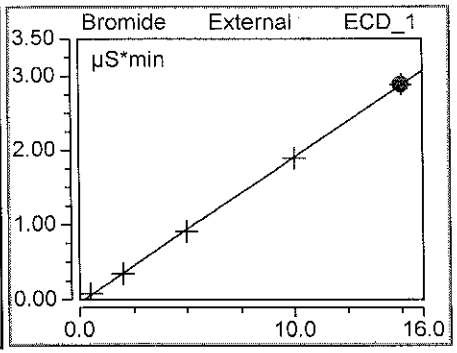
JUL 11 2017

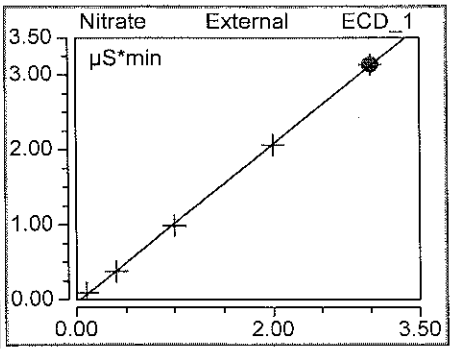
| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrite | Nitrite | Nitrite | Nitrite |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 5.540 | 0.0828 | 0.411 | 0.122 |
| CAL 2 | 5.537 | 0.3477 | 1.723 | 0.396 |
| CAL 3 | 5.533 | 0.9094 | 4.545 | 0.977 |
| CAL 4 | 5.537 | 1.8899 | 9.537 | 1.992 |
| CAL 5 | 5.537 | 2.8769 | 14.561 | 3.013 |
| **Average** | 5.537 | | | |
| **Rel. Std. Dev.** | 0.043 % | | | |



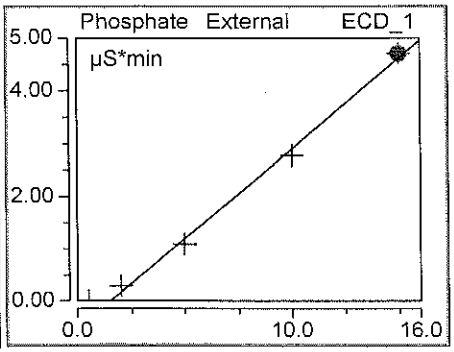

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Bromide | Bromide | Bromide | Bromide |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 7.173 | 0.0814 | 0.315 | 0.619 |
| CAL 2 | 7.157 | 0.3470 | 1.356 | 1.988 |
| CAL 3 | 7.137 | 0.9051 | 3.618 | 4.864 |
| CAL 4 | 7.123 | 1.8939 | 7.696 | 9.959 |
| CAL 5 | 7.103 | 2.8859 | 12.009 | 15.070 |
| **Average** | 7.139 | | | |
| **Rel. Std. Dev.** | 0.384 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrate | Nitrate | Nitrate | Nitrate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 8.500 | 0.0908 | 0.277 | 0.123 |
| CAL 2 | 8.447 | 0.3815 | 1.178 | 0.399 |
| CAL 3 | 8.393 | 0.9841 | 3.097 | 0.972 |
| CAL 4 | 8.353 | 2.0564 | 6.480 | 1.991 |
| CAL 5 | 8.310 | 3.1337 | 9.987 | 3.015 |
| **Average** | 8.401 | | | |
| **Rel. Std. Dev.** | 0.893 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Phosphate | Phosphate | Phosphate | Phosphate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | n.a. | n.a. | n.a. | n.a. |
| CAL 2 | 10.643 | 0.2904 | 0.449 | 2.362 |
| CAL 3 | 10.537 | 1.0903 | 2.090 | 4.703 |
| CAL 4 | 10.467 | 2.7815 | 6.025 | 9.654 |
| CAL 5 | 10.430 | 4.7040 | 10.736 | 15.282 |
| **Average** | 10.519 | | | |
| **Rel. Std. Dev.** | 0.892 % | | | |

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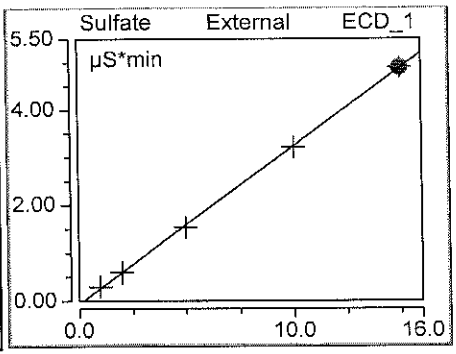
| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Sulfate | Sulfate | Sulfate | Sulfate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 12.680 | 0.2951 | 0.663 | 1.101 |
| CAL 2 | 12.677 | 0.5953 | 1.360 | 2.014 |
| CAL 3 | 12.670 | 1.5338 | 3.529 | 4.867 |
| CAL 4 | 12.650 | 3.2047 | 7.416 | 9.948 |
| CAL 5 | 12.643 | 4.8893 | 11.393 | 15.070 |
| **Average** | 12.664 | | | |
| **Rel. Std. Dev.** | 0.129 % | | | |

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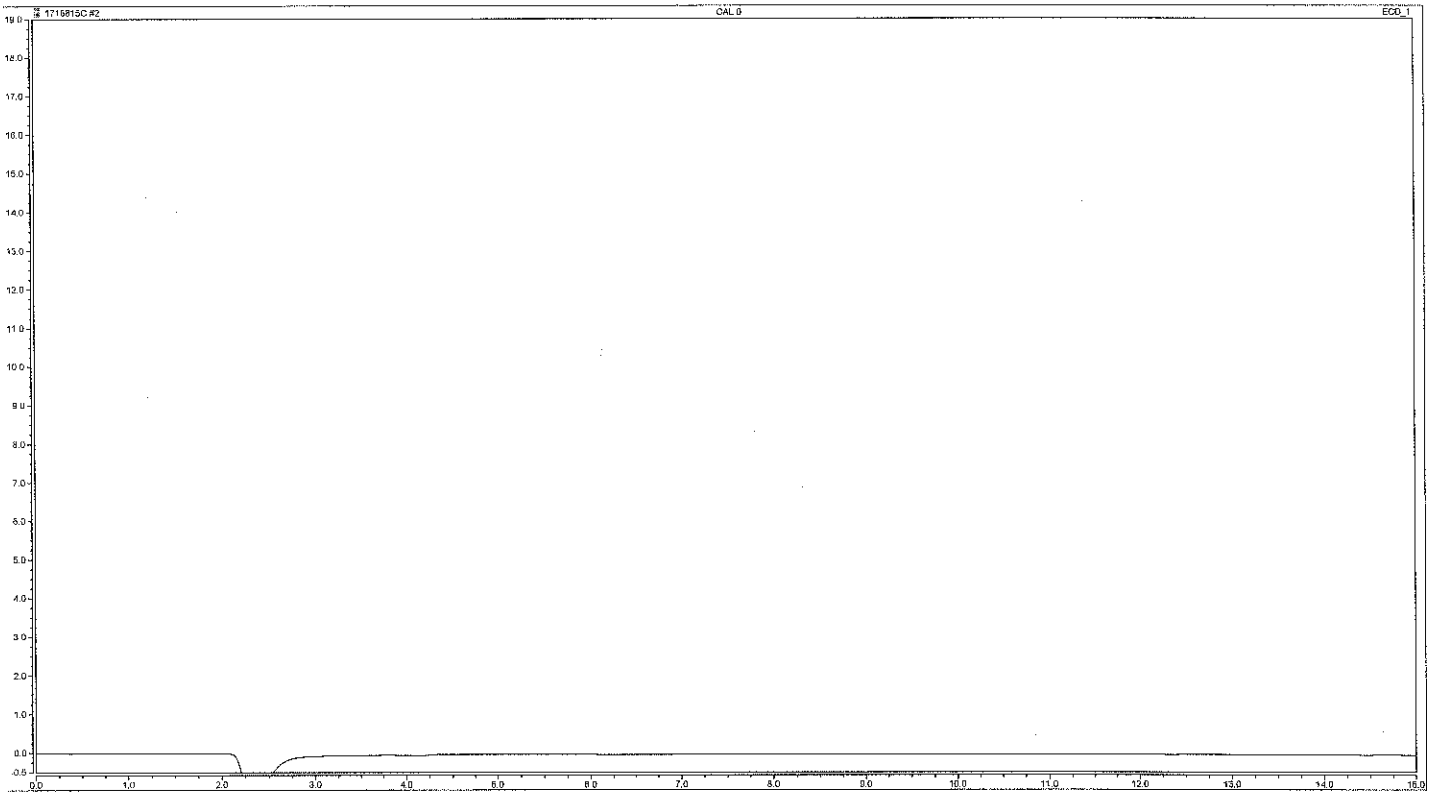
JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 0** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:19** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **002** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:**

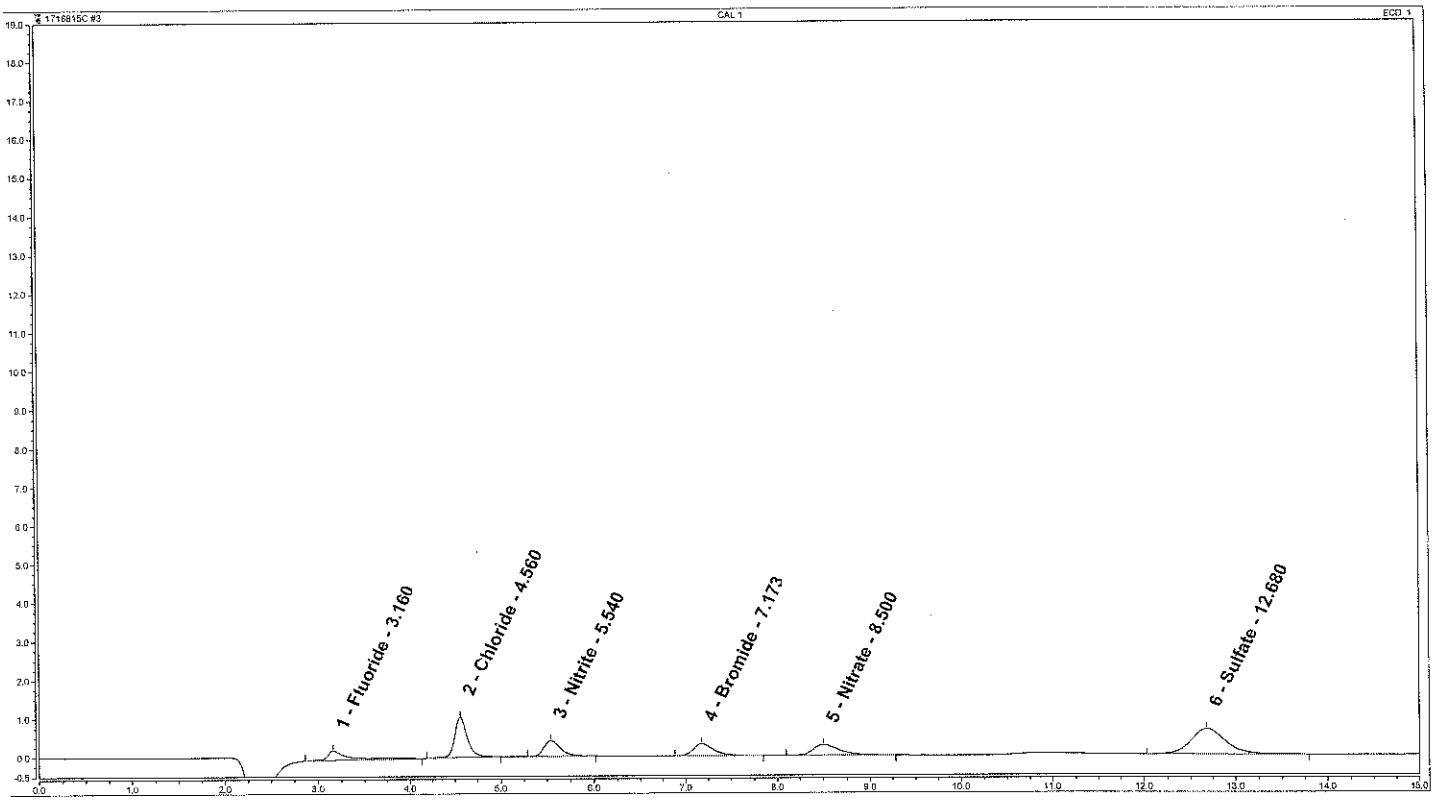
**Date:** Sandra J. Miller, Chemist — JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 1** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:36** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **003** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.066 | 0.241 | 0.1201 |
| 2 | 4.56 | Chloride | M | 0.169 | 1.045 | 0.4342 |
| 3 | 5.54 | Nitrite | M | 0.083 | 0.411 | 0.1220 |
| 4 | 7.17 | Bromide | M | 0.081 | 0.315 | 0.6192 |
| 5 | 8.50 | Nitrate | M | 0.091 | 0.277 | 0.1231 |
| 6 | 12.68 | Sulfate | M | 0.295 | 0.663 | 1.1008 |
| | | TOTAL: | | 0.79 | 2.95 | 2.52 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist

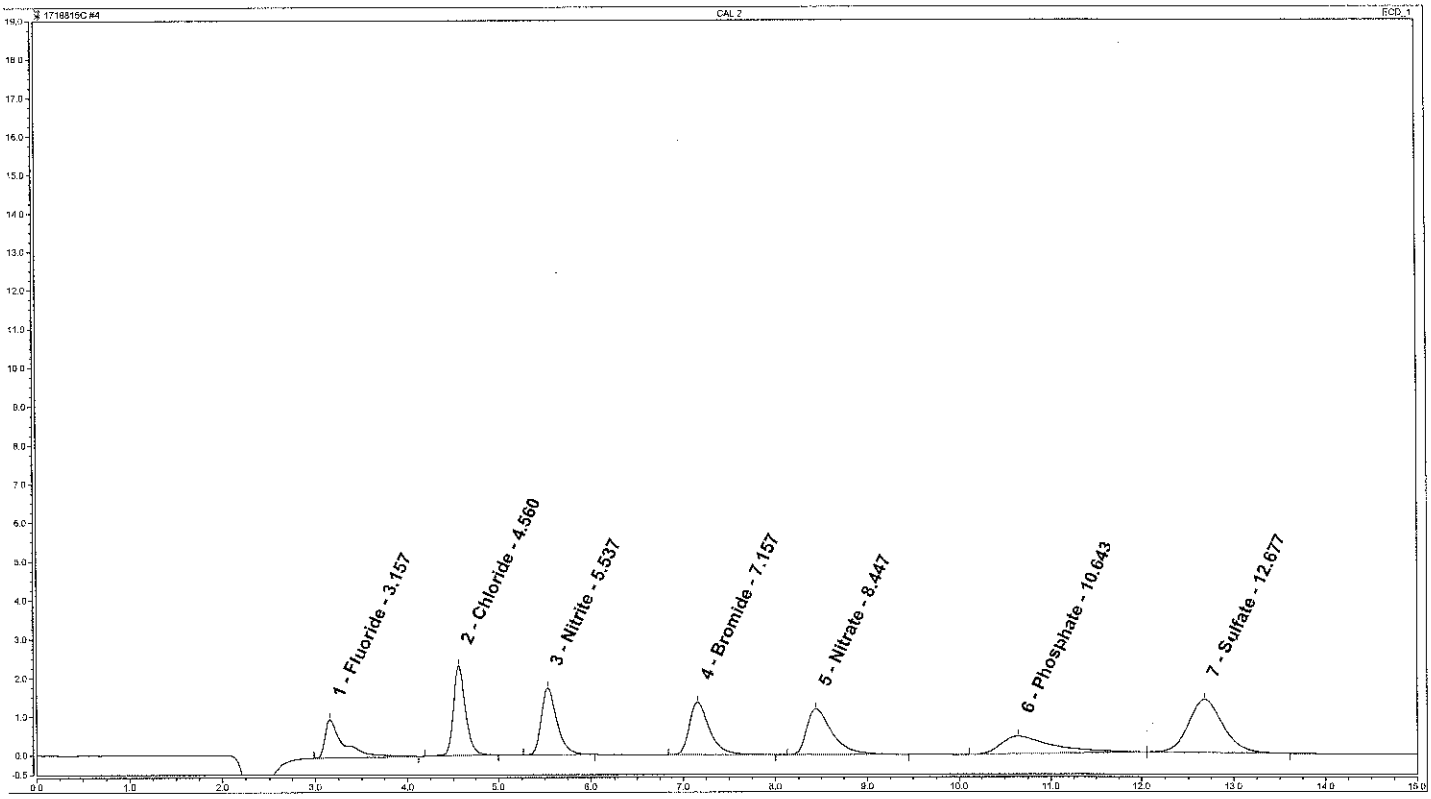
**Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:52** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **004** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.232 | 0.991 | 0.4132 |
| 2 | 4.56 | Chloride | M | 0.362 | 2.310 | 0.8476 |
| 3 | 5.54 | Nitrite | M | 0.348 | 1.723 | 0.3961 |
| 4 | 7.16 | Bromide | M | 0.347 | 1.356 | 1.9877 |
| 5 | 8.45 | Nitrate | M | 0.382 | 1.178 | 0.3993 |
| 6 | 10.64 | Phosphate | M | 0.290 | 0.449 | 2.3616 |
| 7 | 12.68 | Sulfate | M | 0.595 | 1.360 | 2.0137 |
| | | TOTAL: | | 2.56 | 9.37 | 8.42 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 10 2017

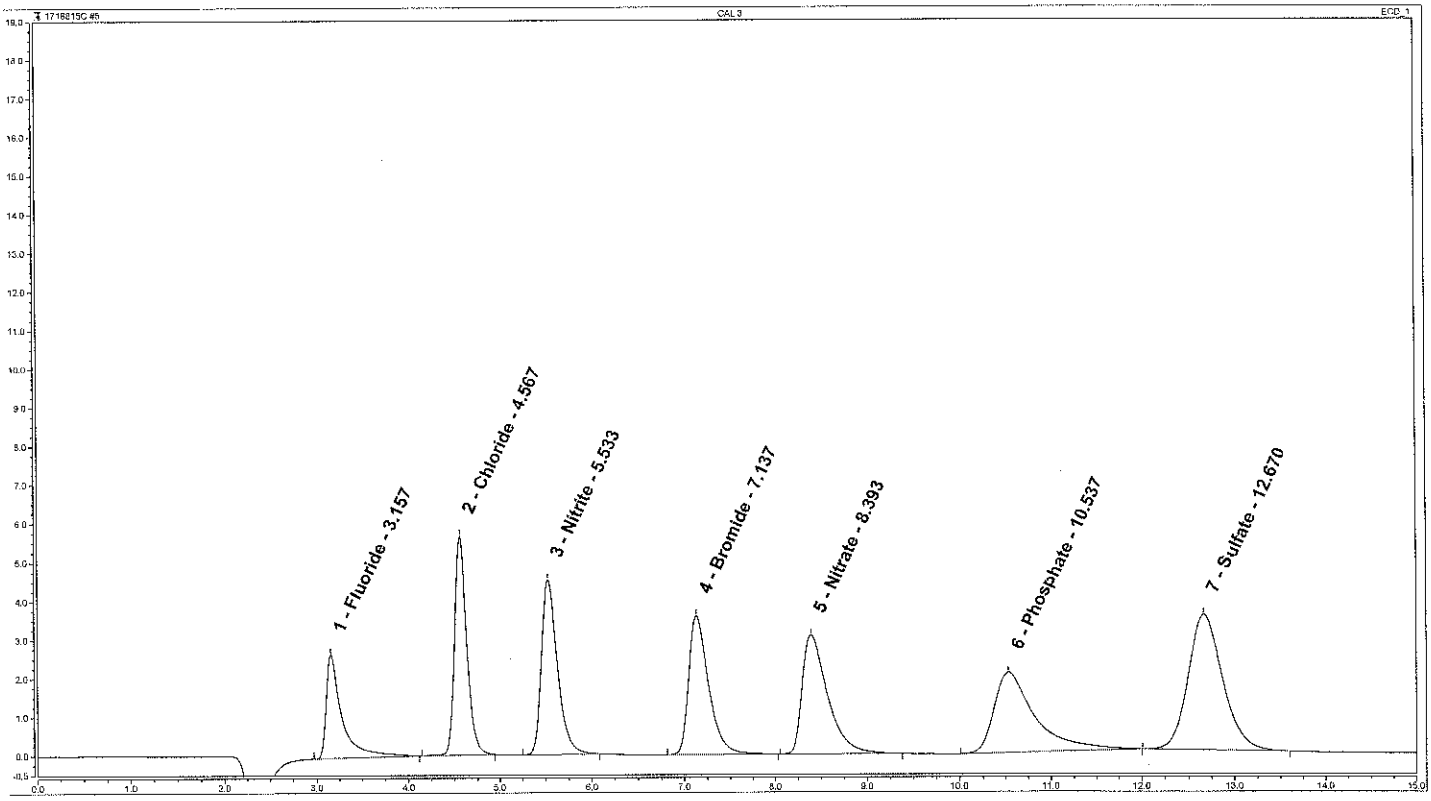
**Verifier:** Sandra J. Miller, Chemist — **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 3** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:08** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **005** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.544 | 2.699 | 0.9630 |
| 2 | 4.57 | Chloride | M | 0.863 | 5.678 | 1.9217 |
| 3 | 5.53 | Nitrite | M | 0.909 | 4.545 | 0.9773 |
| 4 | 7.14 | Bromide | M | 0.905 | 3.618 | 4.8636 |
| 5 | 8.39 | Nitrate | M | 0.984 | 3.097 | 0.9719 |
| 6 | 10.54 | Phosphate | M | 1.090 | 2.090 | 4.7031 |
| 7 | 12.67 | Sulfate | M | 1.534 | 3.529 | 4.8672 |
| | | TOTAL: | | 6.83 | 25.26 | 19.27 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

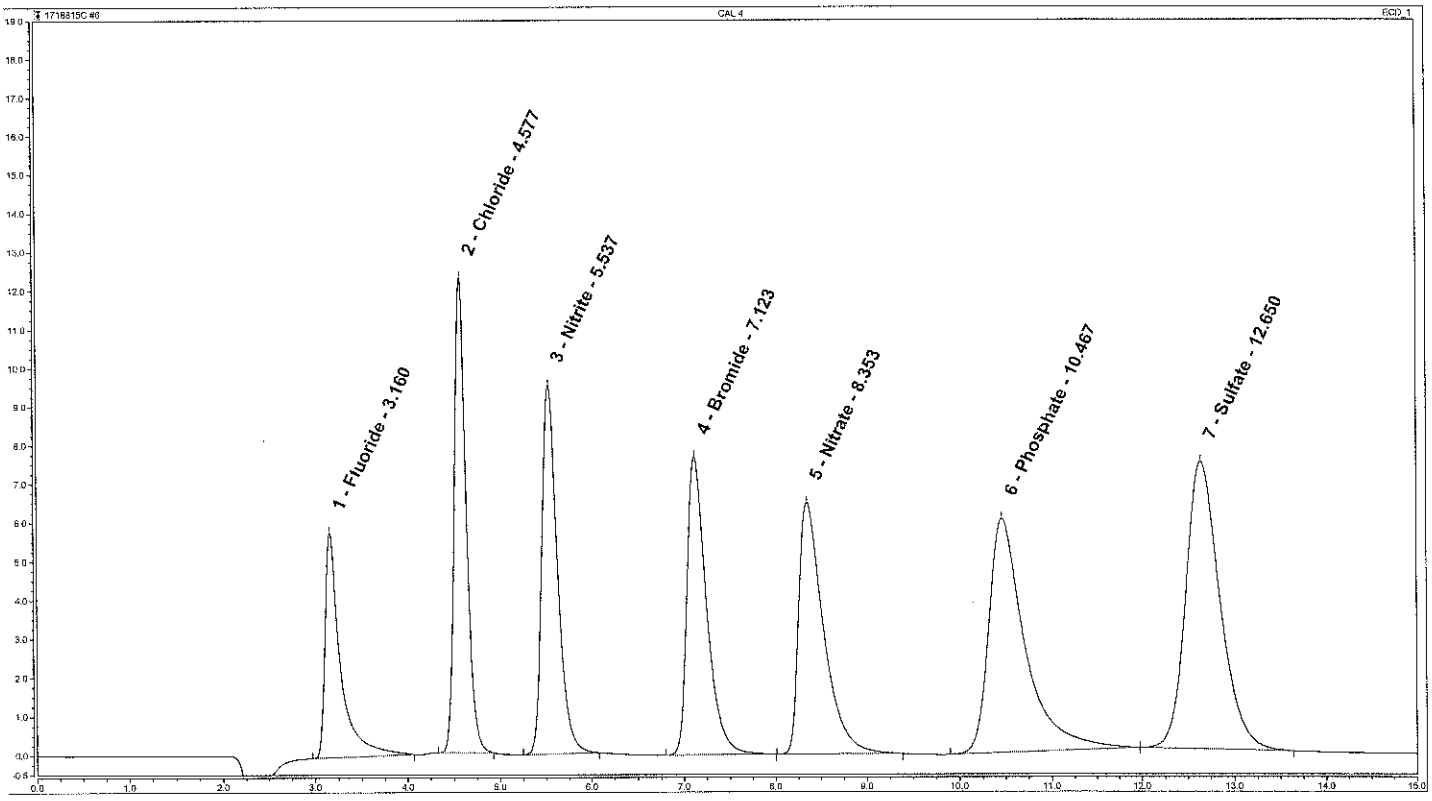
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 4** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:24** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **006** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 1.120 | 5.811 | 1.9813 |
| 2 | 4.58 | Chloride | M | 1.804 | 12.269 | 3.9372 |
| 3 | 5.54 | Nitrite | M | 1.890 | 9.537 | 1.9917 |
| 4 | 7.12 | Bromide | M | 1.894 | 7.696 | 9.9590 |
| 5 | 8.35 | Nitrate | M | 2.056 | 6.480 | 1.9909 |
| 6 | 10.47 | Phosphate | M | 2.781 | 6.025 | 9.6537 |
| 7 | 12.65 | Sulfate | M | 3.205 | 7.416 | 9.9480 |
| | | TOTAL: | | 14.75 | 55.23 | 39.46 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

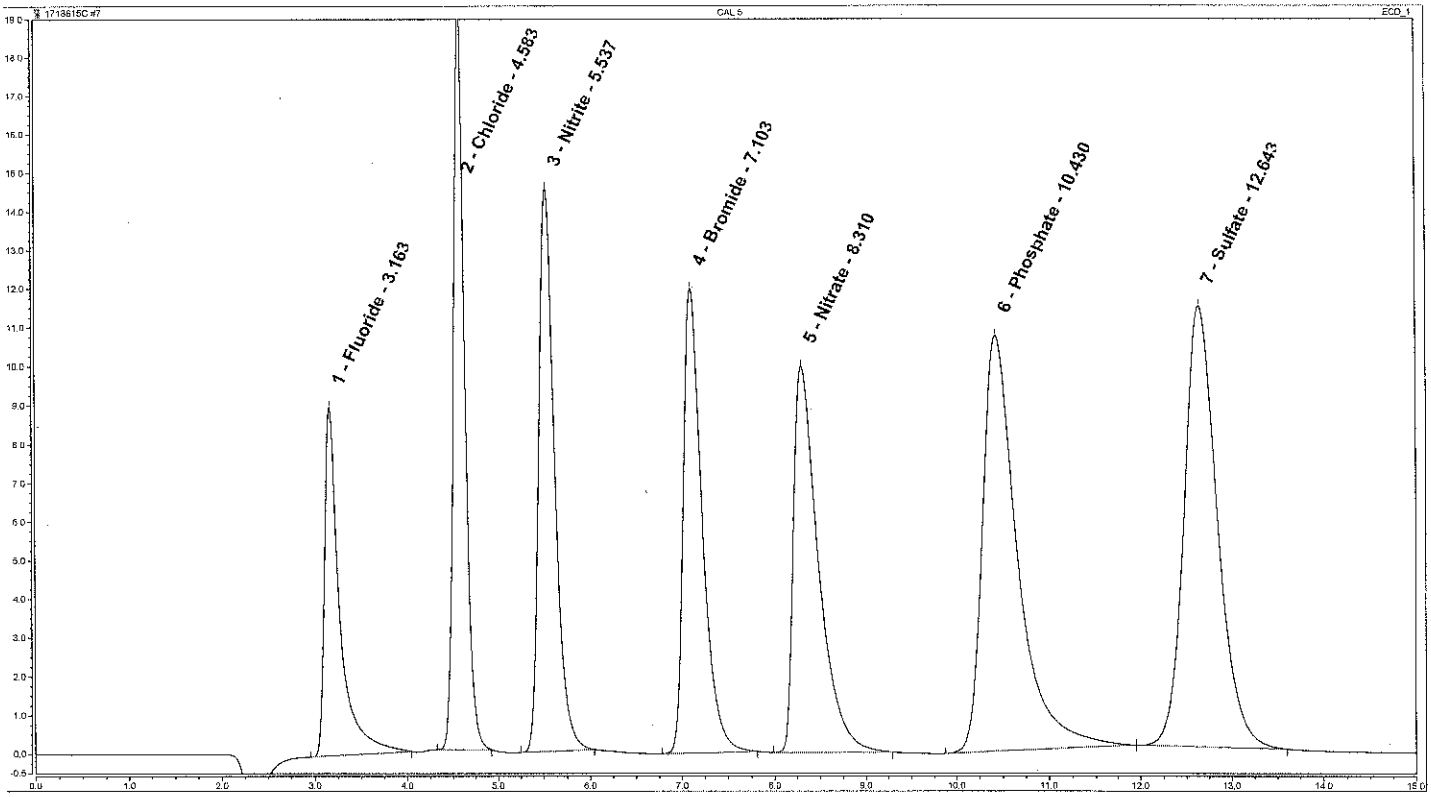
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 5** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:40** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **007** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 1.710 | 9.004 | 3.0224 |
| 2 | 4.58 | Chloride | M | 2.794 | 19.158 | 6.0593 |
| 3 | 5.54 | Nitrite | M | 2.877 | 14.561 | 3.0129 |
| 4 | 7.10 | Bromide | M | 2.886 | 12.009 | 15.0705 |
| 5 | 8.31 | Nitrate | M | 3.134 | 9.987 | 3.0147 |
| 6 | 10.43 | Phosphate | M | 4.704 | 10.736 | 15.2816 |
| 7 | 12.64 | Sulfate | M | 4.889 | 11.393 | 15.0704 |
| | | TOTAL: | | 22.99 | 86.85 | 60.53 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist

**Date:** JUL 11 2017

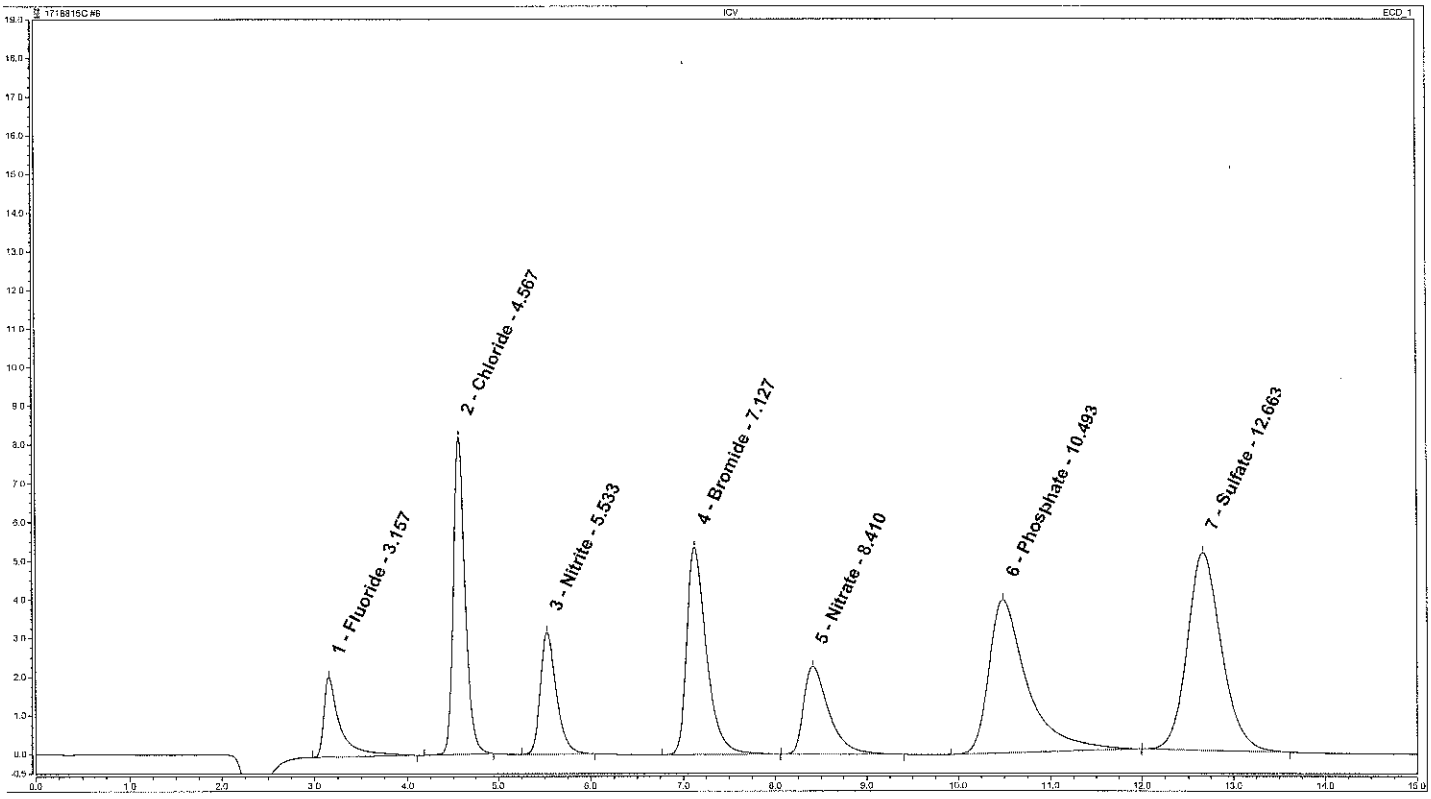
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:57** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **008** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.418 | 2.068 | 0.7411 |
| 2 | 4.57 | Chloride | M | 1.249 | 8.207 | 2.7491 |
| 3 | 5.53 | Nitrite | M | 0.640 | 3.158 | 0.6988 |
| 4 | 7.13 | Bromide | M | 1.353 | 5.379 | 7.1737 |
| 5 | 8.41 | Nitrate | M | 0.736 | 2.285 | 0.7359 |
| 6 | 10.49 | Phosphate | M | 1.922 | 3.980 | 7.1372 |
| 7 | 12.66 | Sulfate | M | 2.248 | 5.134 | 7.0390 |
| | | TOTAL: | | 8.57 | 30.21 | 26.27 |

Cl, $NO_2$ SGW
OS SW




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

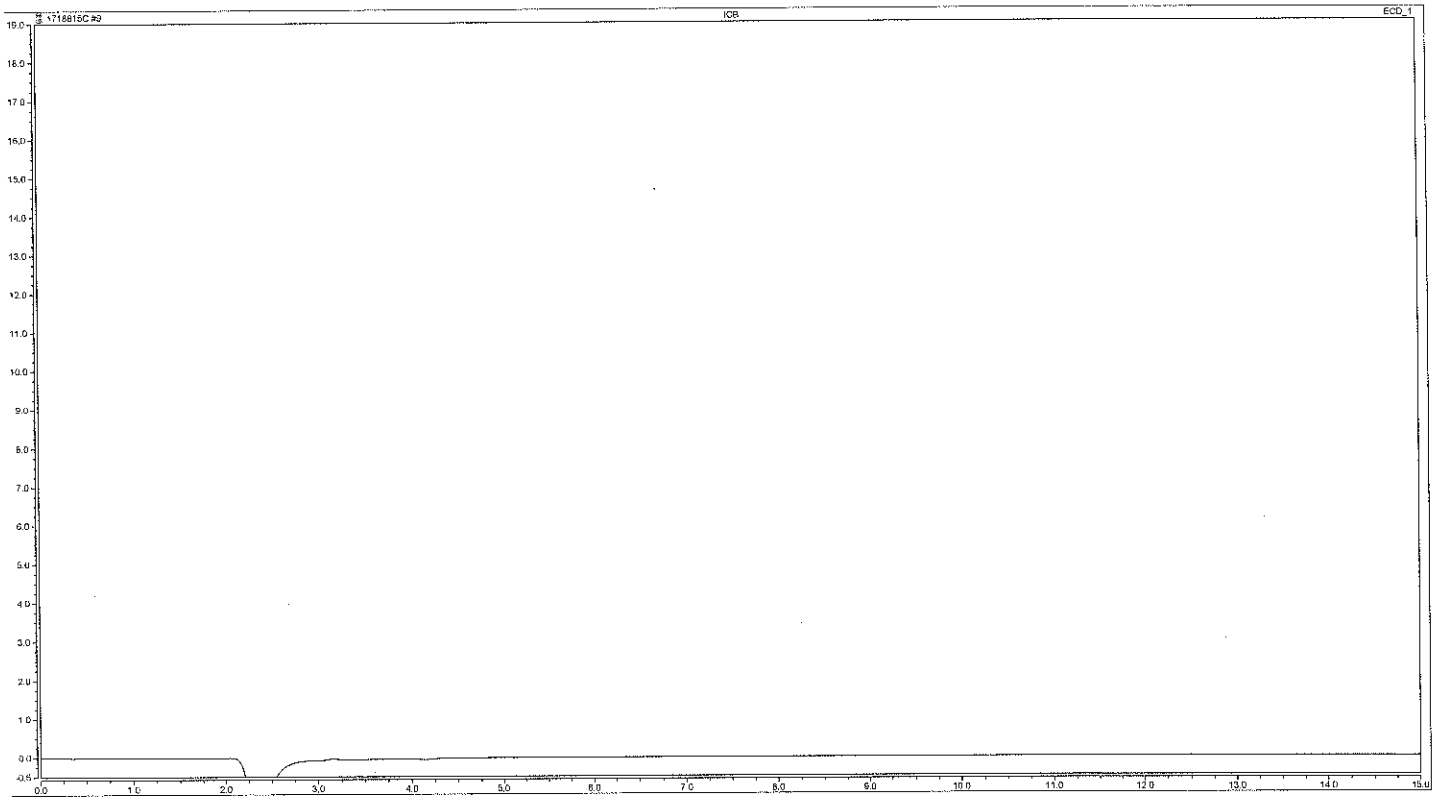
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 12:13** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **009** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist — JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist — JUL 11 2017

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# Inorganic Anions by Ion Chromatography

System Name ICS-2000 Analyst HAB12524

Instrument ID 12115 Run Start Date 7/24/17

IDAT Run Number 172050D15 Run Name 172015

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405/50

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: _____

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | < 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1720515

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TEST | | 91 | Check Standard | | 07/24/2017 12:13:09 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 2 | LOW | | 89 | Check Standard | | 07/24/2017 12:29:22 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 3 | HIGH | | 90 | Check Standard | | 07/24/2017 12:45:33 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 4 | TEST | | 91 | Check Standard | | 07/24/2017 13:01:45 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 5 | TEST | | 92 | Check Standard | | 07/24/2017 13:17:58 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 6 | TEST | | 91 | Check Standard | | 07/24/2017 13:45:29 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 7 | TEST | | 92 | Check Standard | | 07/24/2017 14:01:41 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 8 | CCV2 | | 91 | Check Standard | | 07/24/2017 14:52:07 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 9 | CCB | | 92 | Check Standard | | 07/24/2017 15:08:19 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 10 | 9112926-U | 17204120115A-12074 | 1 | Unknown | | 07/24/2017 15:24:30 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 11 | 9112926-D | 17204120115A-12074 | 1 | Unknown | | 07/24/2017 15:40:41 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 12 | 9112926-R | 17204120115A-12074 | 2 | Unknown | | 07/24/2017 15:56:53 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 13 | 9112927 | 17204120115A-12074 | 3 | Unknown | | 07/24/2017 16:13:04 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 14 | 9112927 | 17204120115A-12074 | 4 | Unknown | | 07/24/2017 16:29:17 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 15 | 9112928 | 17204120115A-12074 | 5 | Unknown | | 07/24/2017 16:45:30 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 16 | 9112928 | 17204120115A-12074 | 6 | Unknown | | 07/24/2017 17:01:42 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 17 | 9112929 | 17204120115A-12074 | 7 | Unknown | | 07/24/2017 17:17:54 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 18 | 9112929 | 17204120115A-12074 | 8 | Unknown | | 07/24/2017 17:34:07 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 19 | 9112930 | 17204120115A-12074 | 9 | Unknown | | 07/24/2017 17:50:19 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 20 | CCV2 | | 91 | Check Standard | | 07/24/2017 18:06:32 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 21 | CCB | | 92 | Check Standard | | 07/24/2017 18:22:44 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 22 | 9112930 | 17204120115A-12074 | 10 | Unknown | | 07/24/2017 18:38:57 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 23 | 9112931 | 17204120115A-12074 | 11 | Unknown | | 07/24/2017 18:55:08 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 24 | 9112931 | 17204120115A-12074 | 12 | Unknown | | 07/24/2017 19:11:20 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 25 | 9112123 | 17204120115A-12074 | 13 | Unknown | | 07/24/2017 19:27:32 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 26 | 9112123 | 17204120115A-12074 | 14 | Unknown | | 07/24/2017 19:43:43 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 27 | 9114349 | 17204120115A-12074 | 15 | Unknown | | 07/24/2017 19:59:54 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 28 | 9114349 | 17204120115A-12074 | 16 | Unknown | | 07/24/2017 20:16:06 | 75.00 | AnionsAS | Anions | 1.00 | 100 | Finished |
| 29 | 9112614 | 17204120115A-12074 | 17 | Unknown | | 07/24/2017 20:32:18 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 30 | 9112614 | 17204120115A-12074 | 18 | Unknown | | 07/24/2017 20:48:30 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 31 | 9112611 | 17204120115A-12074 | 19 | Unknown | | 07/24/2017 21:04:42 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 32 | CCV2 | | 91 | Check Standard | | 07/24/2017 21:20:54 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 33 | CCB | | 92 | Check Standard | | 07/24/2017 21:37:07 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 34 | 9112611 | 17204120115A-12074 | 20 | Unknown | | 07/24/2017 21:53:19 | 75.00 | AnionsAS | Anions | 1.00 | 100 | Finished |
| 35 | 9114868-U | 17204120115B-12074 | 21 | Unknown | | 07/24/2017 22:09:30 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 36 | 9114868-U | 17204120115B-12074 | 22 | Unknown | | 07/24/2017 22:25:43 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 37 | 9114868-D | 17204120115B-12074 | 21 | Unknown | | 07/24/2017 22:41:54 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 38 | 9114868-D | 17204120115B-12074 | 22 | Unknown | | 07/24/2017 22:58:06 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 39 | 9114868-R | 17204120115B-12074 | 23 | Unknown | | 07/24/2017 23:14:18 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 40 | 9114868-R | 17204120115B-12074 | 24 | Unknown | | 07/24/2017 23:30:30 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 41 | 9114870 | 17204120115B-12074 | 25 | Unknown | | 07/24/2017 23:46:42 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |

# Sequence Overview: 1720515

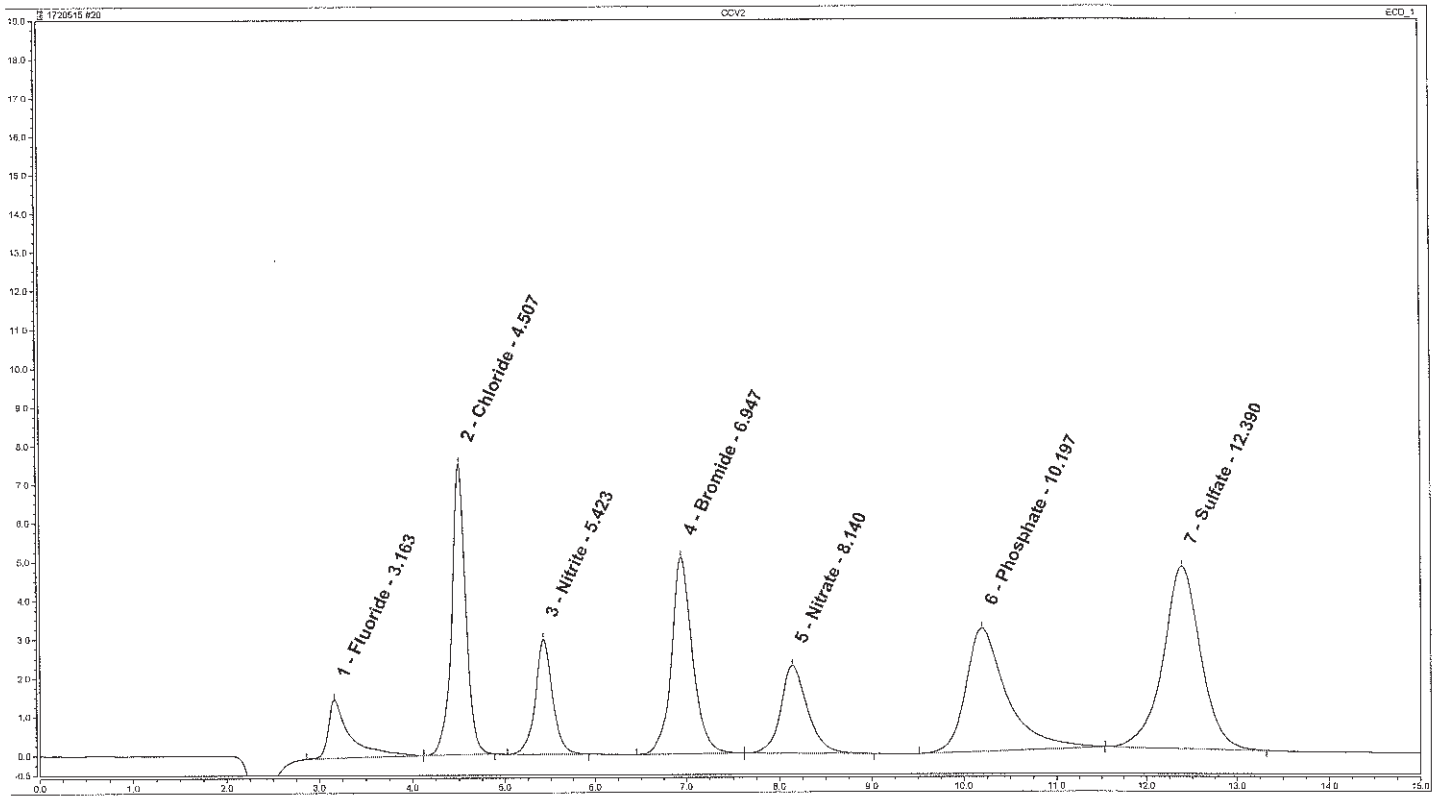
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 9114870 | 17204120115B-12074 | 26 | Unknown | | 07/25/2017 00:02:54 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 43 | 9114872 | 17204120115B-12074 | 27 | Unknown | | 07/25/2017 00:19:06 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 44 | CCV2 | | 91 | Check Standard | | 07/25/2017 00:35:18 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 45 | CCB | | 92 | Check Standard | | 07/25/2017 00:51:30 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 46 | 9114872 | 17204120115B-12074 | 28 | Unknown | | 07/25/2017 01:07:42 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 47 | 9114875 | 17204120115B-12074 | 29 | Unknown | | 07/25/2017 01:23:54 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 48 | 9114875 | 17204120115B-12074 | 30 | Unknown | | 07/25/2017 01:40:05 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 49 | 9114876 | 17204120115B-12074 | 31 | Unknown | | 07/25/2017 01:56:18 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 50 | 9114876 | 17204120115B-12074 | 32 | Unknown | | 07/25/2017 02:12:30 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 51 | 9114878 | 17204120115B-12074 | 33 | Unknown | | 07/25/2017 02:28:43 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 52 | 9114878 | 17204120115B-12074 | 34 | Unknown | | 07/25/2017 02:44:55 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 53 | 9114882 | 17204120115B-12074 | 35 | Unknown | | 07/25/2017 03:01:07 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 54 | 9114883 | 17204120115B-12074 | 36 | Unknown | | 07/25/2017 03:17:19 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 55 | 9114884 | 17204120115B-12074 | 37 | Unknown | | 07/25/2017 03:33:31 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 56 | CCV2 | | 91 | Check Standard | | 07/25/2017 03:49:43 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 57 | CCB | | 92 | Check Standard | | 07/25/2017 04:05:55 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 58 | 9112612 | 17204120115B-12074 | 38 | Unknown | | 07/25/2017 04:22:07 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 59 | 9112612 | 17204120115B-12074 | 39 | Unknown | | 07/25/2017 04:38:18 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 60 | LCSW | 17204120115A-12074 | 93 | Unknown | | 07/25/2017 04:54:31 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 61 | PBW | 17204120115A-12074 | 94 | Unknown | | 07/25/2017 05:10:42 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 62 | CCV2 | | 91 | Check Standard | | 07/25/2017 05:26:55 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 63 | CCB | | 92 | Check Standard | | 07/25/2017 05:43:07 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 18:06** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **020** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.414 | 1.499 | 0.7334 |
| 2 | 4.51 | Chloride | M | 1.297 | 7.521 | 2.8520 |
| 3 | 5.42 | Nitrite | M | 0.653 | 2.957 | 0.7116 |
| 4 | 6.95 | Bromide | M | 1.350 | 5.067 | 7.1557 |
| 5 | 8.14 | Nitrate | M | 0.744 | 2.255 | 0.7438 |
| 6 | 10.20 | Phosphate | M | 1.612 | 3.165 | 6.2289 |
| 7 | 12.39 | Sulfate | M | 2.236 | 4.690 | 7.0036 |
| | | TOTAL: | | 8.31 | 27.15 | 25.43 |




**Analyst:** Hallie A. Burnett, Associate Chemi — **Date:** JUL 25 2017

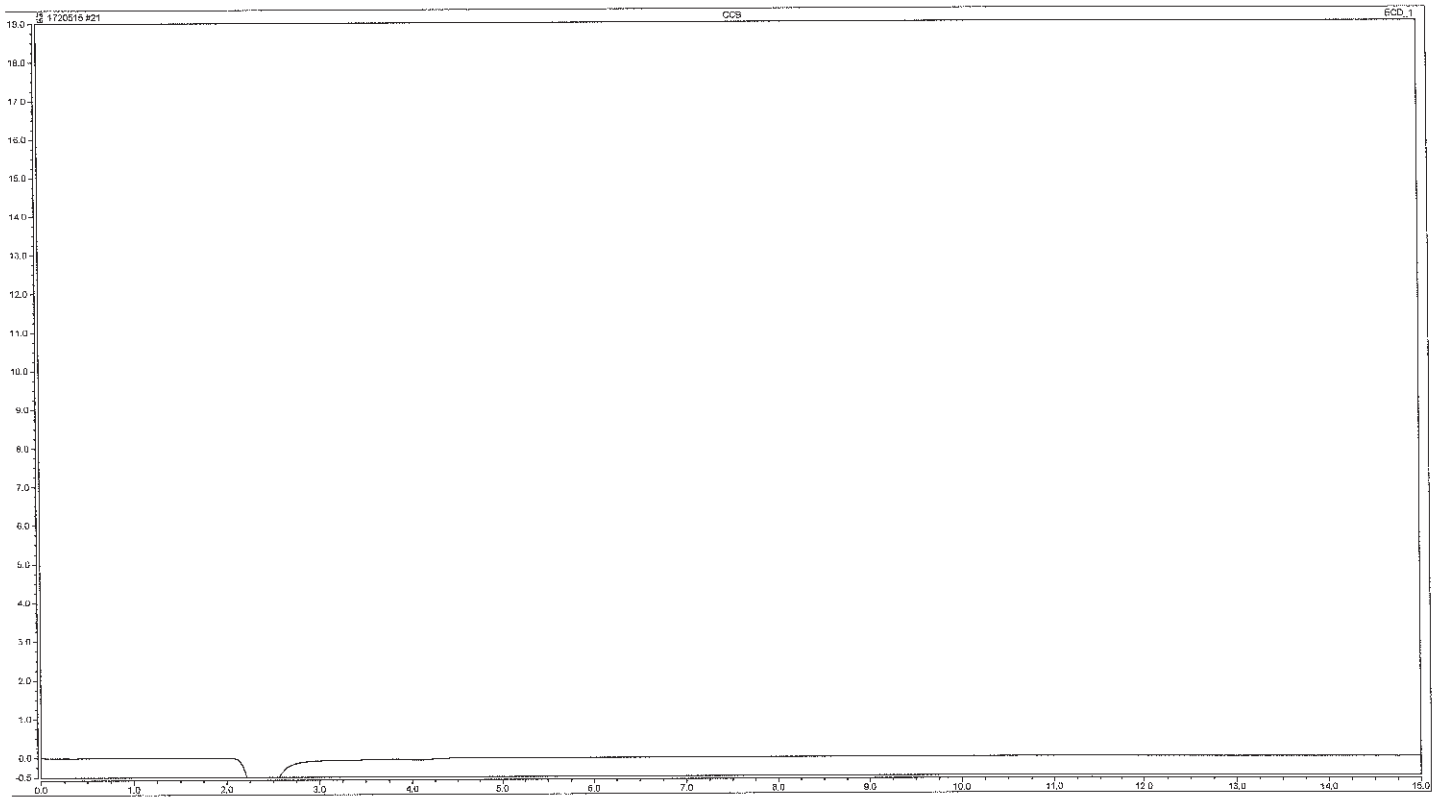
**Verifier:** Erik J. Frederiksen, Manager — **Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 18:22** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **021** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 25 2017

**Verifier:** Erik J. Frederiksen
Manager

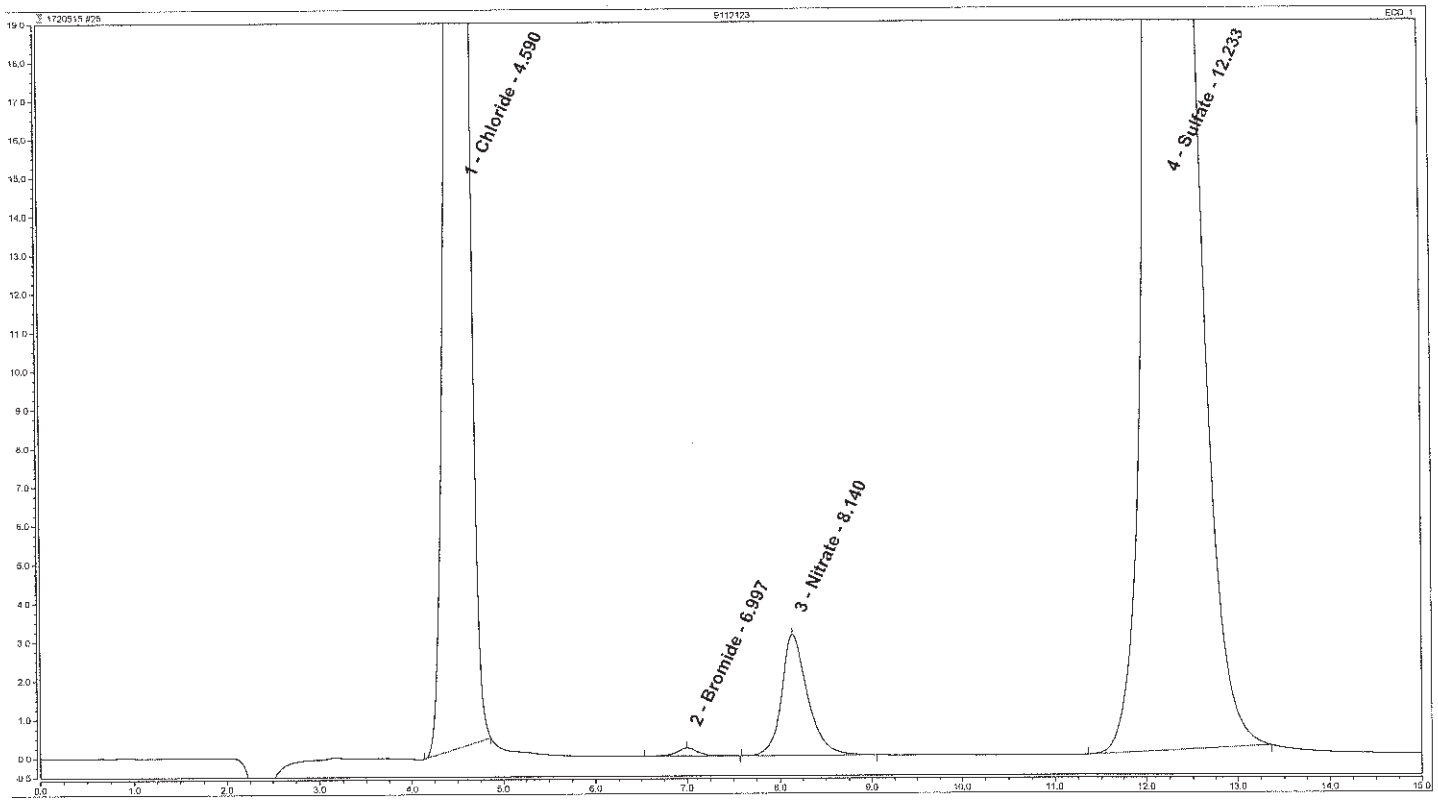
**Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9112123** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17204120115A-12074** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 19:27** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **025** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.59 | Chloride | M | 18.639 | 105.488 | 200.0666 |
| 2 | 7.00 | Bromide | M | 0.056 | 0.208 | 2.4308 |
| 3 | 8.14 | Nitrate | M | 1.033 | 3.144 | 5.0915 |
| 4 | 12.23 | Sulfate | M | 28.931 | 62.117 | 440.8772 |
| | | TOTAL: | | 48.66 | 170.96 | 648.47 |




**Analyst:** Hallie A. Burnett
Associate Chemist

**Date:** JUL 25 2017

**Verifier:** Erik J. Frederiksen
Manager

**Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9112123** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17204120115A-12074** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 19:43** | *Dilution Factor:* | **50** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **026** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

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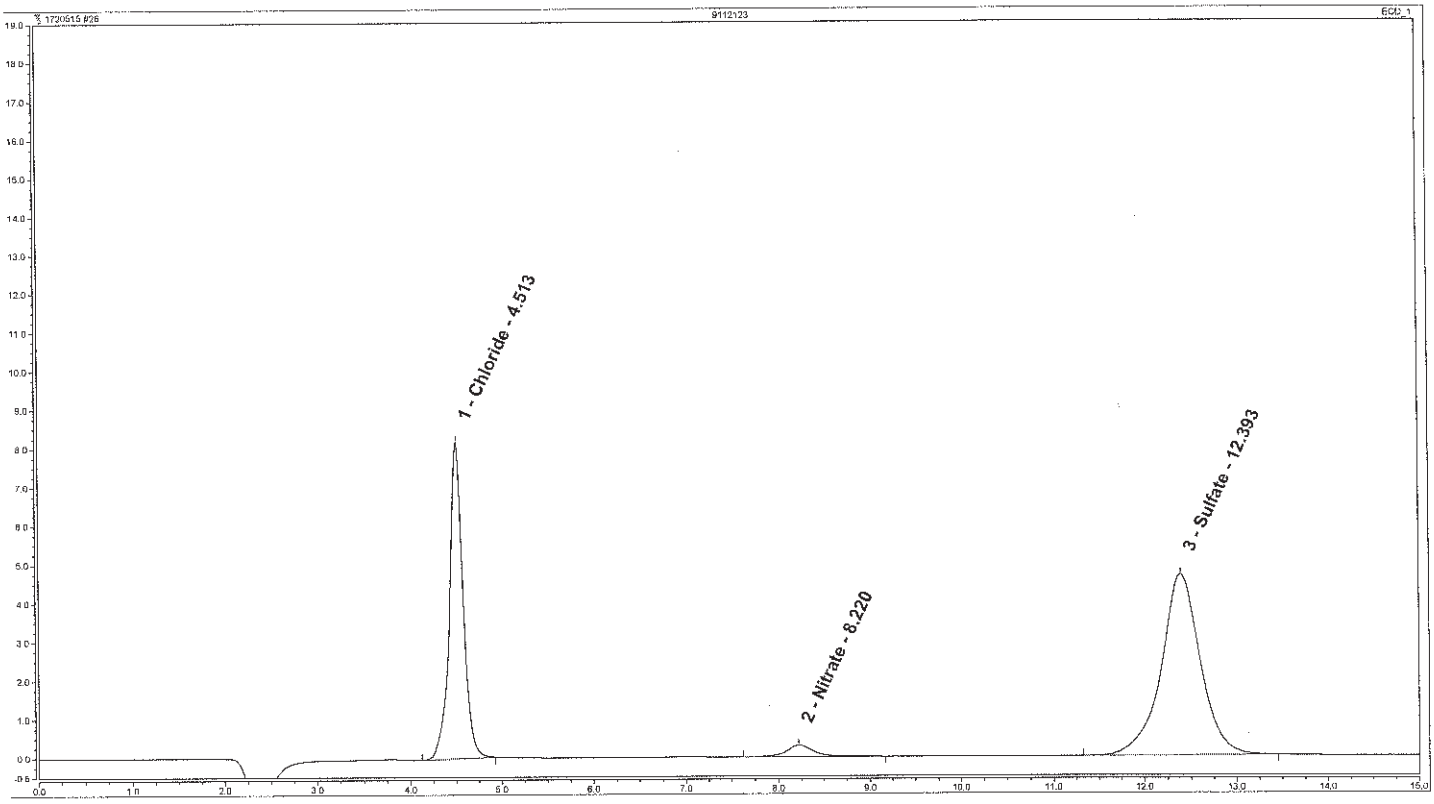
**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.51 | Chloride | M | 1.418 | 8.180 | 155.5106 |
| 2 | 8.22 | Nitrate | M | 0.102 | 0.295 | 6.6779 |
| 3 | 12.39 | Sulfate | M | 2.279 | 4.670 | 356.6460 |
| | | TOTAL: | | 3.80 | 13.15 | 518.83 |




**Analyst:** Hallie A. Burnett
Associate Chemist

**Date:** JUL 25 2017

**Verifier:** Erik J. Frederiksen
Manager

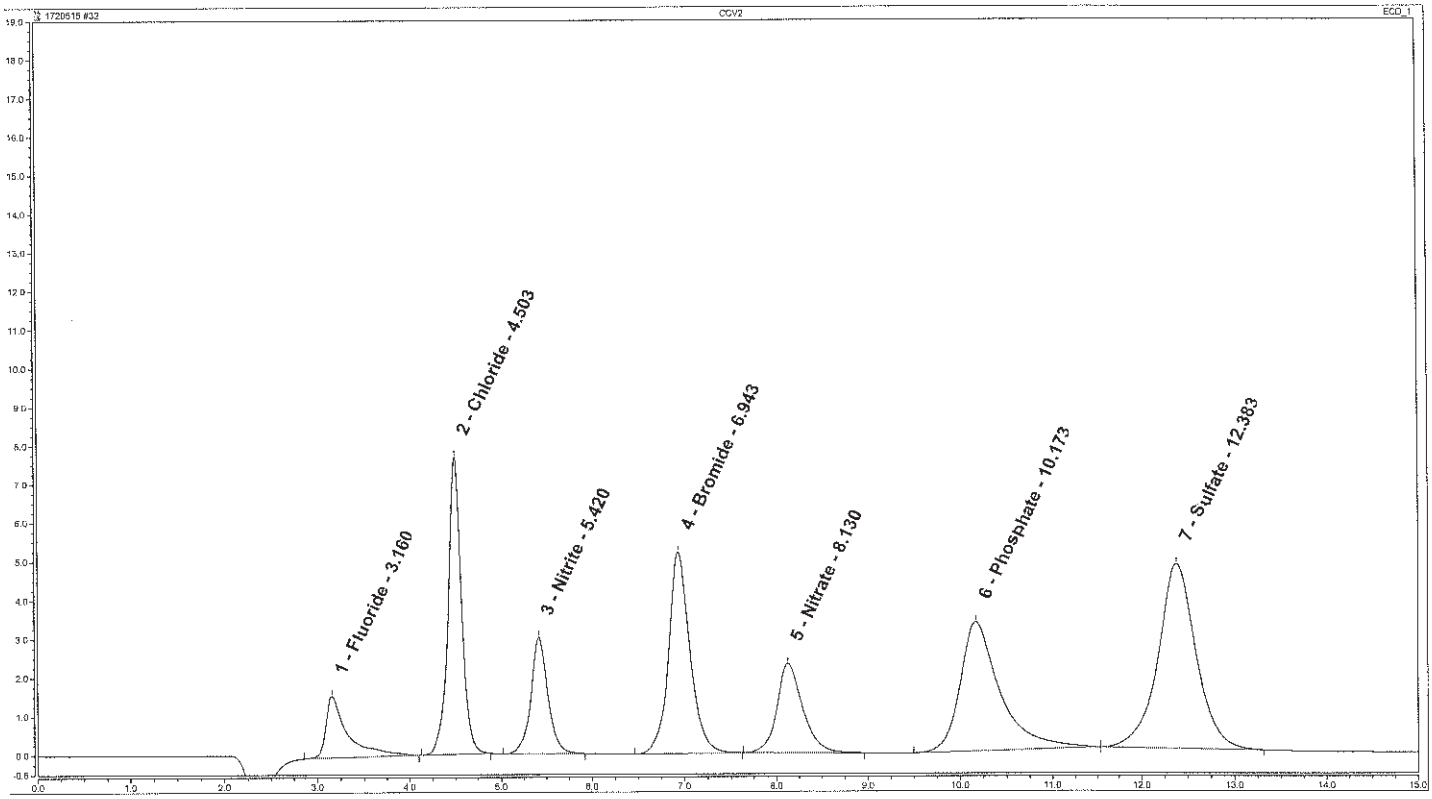
**Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 21:20** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **032** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.431 | 1.590 | 0.7646 |
| 2 | 4.50 | Chloride | M | 1.323 | 7.687 | 2.9064 |
| 3 | 5.42 | Nitrite | M | 0.665 | 3.019 | 0.7239 |
| 4 | 6.94 | Bromide | M | 1.380 | 5.209 | 7.3089 |
| 5 | 8.13 | Nitrate | M | 0.759 | 2.319 | 0.7577 |
| 6 | 10.17 | Phosphate | M | 1.669 | 3.355 | 6.3962 |
| 7 | 12.38 | Sulfate | M | 2.283 | 4.799 | 7.1469 |
| | | TOTAL: | | 8.51 | 27.98 | 26.00 |




**Analyst:** Hallie A. Burnett
Associate Chemist

**Date:** JUL 25 2017

**Verifier:** Erik J. Frederiksen
Manager

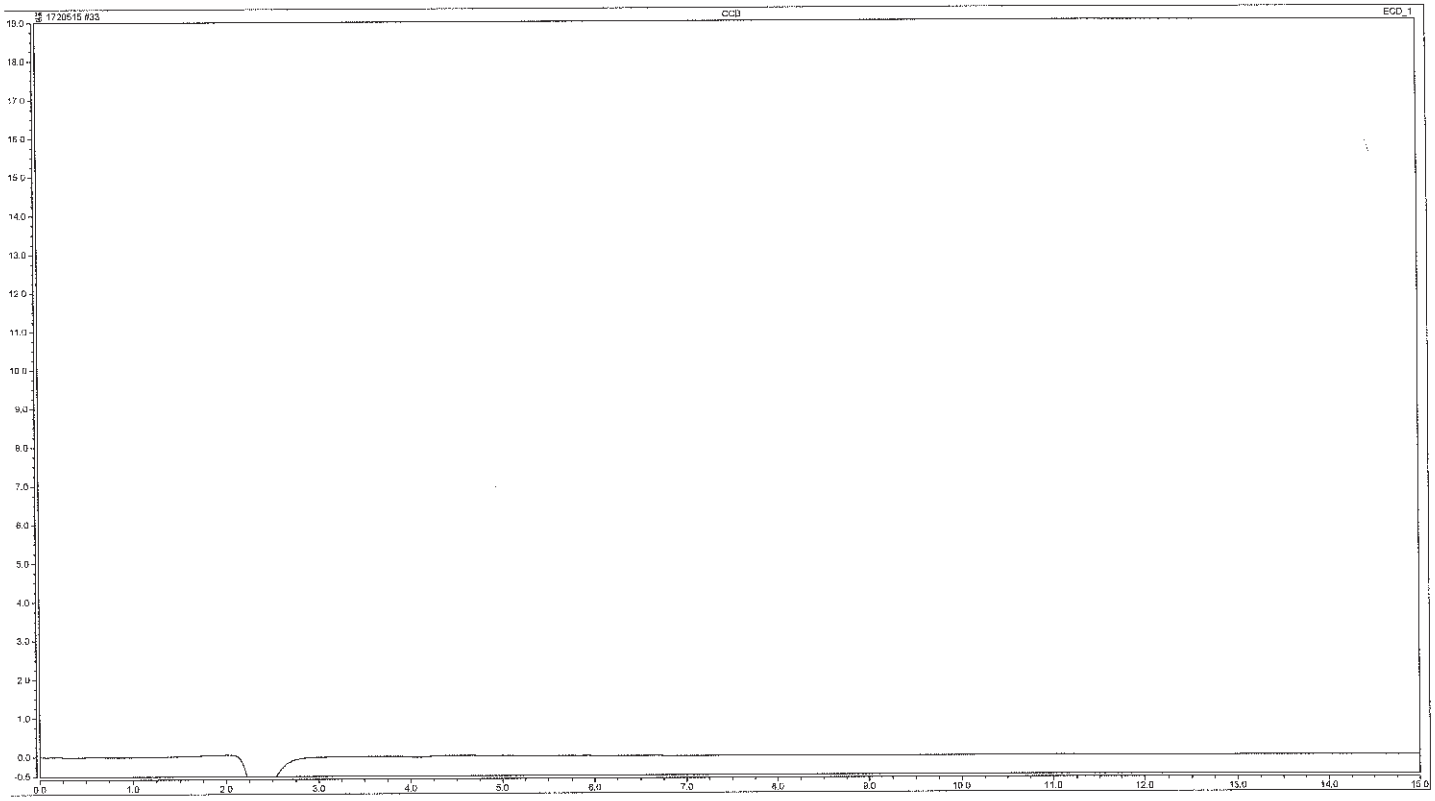
**Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 21:37** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **033** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:**

**Date:** JUL 25 2017

Hallie A. Burnett
Associate Chemi

**Verifier:**

**Date:** JUL 28 2017

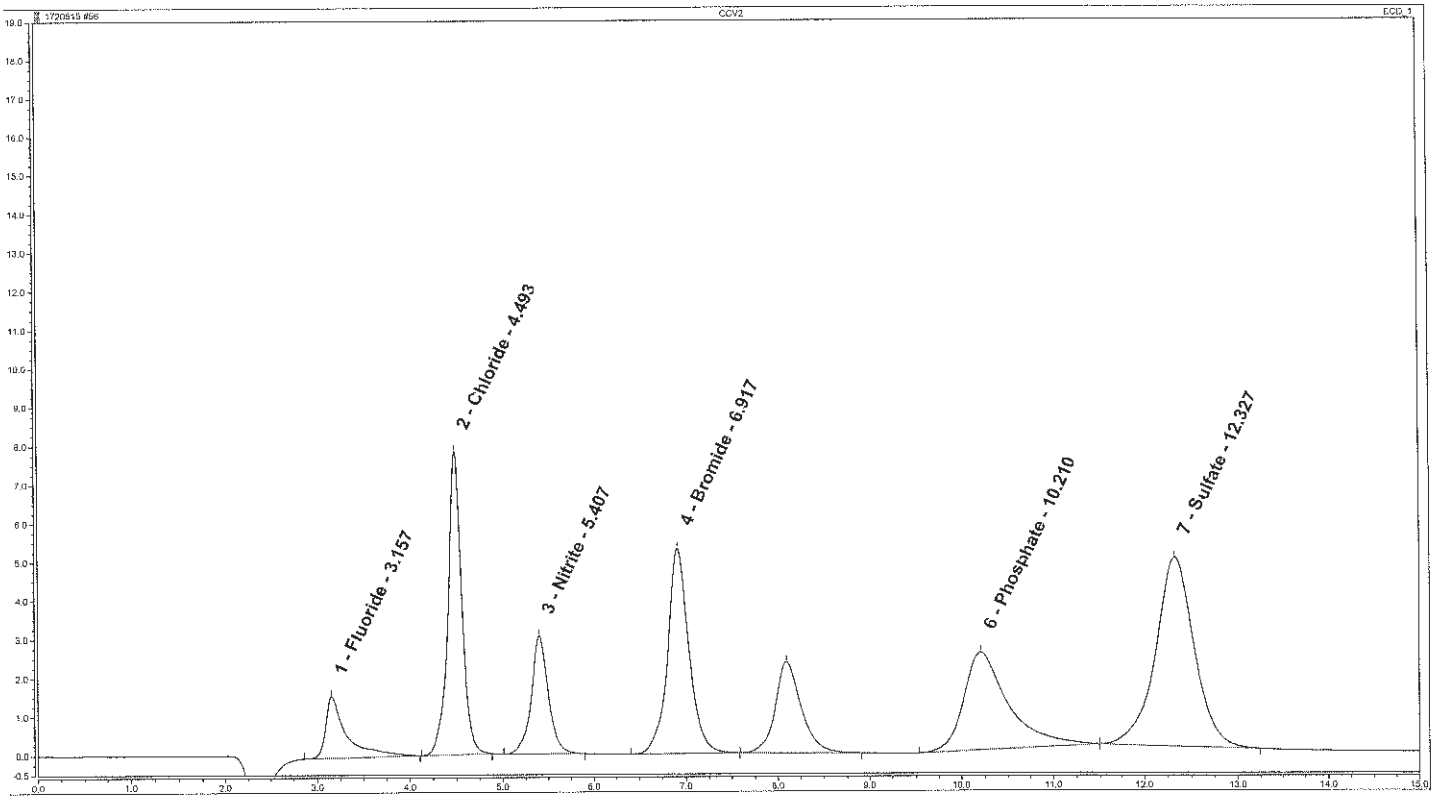
Erik J. Frederiksen
Manager

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/25/2017 / 03:49** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **056** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.425 | 1.598 | 0.7533 |
| 2 | 4.49 | Chloride | M | 1.355 | 7.838 | 2.9760 |
| 3 | 5.41 | Nitrite | M | 0.675 | 3.061 | 0.7344 |
| 4 | 6.92 | Bromide | M | 1.413 | 5.317 | 7.4815 |
| 6 | 10.21 | Phosphate | M | 1.408 | 2.537 | 5.6345 |
| 7 | 12.33 | Sulfate | M | 2.324 | 4.891 | 7.2692 |
| | | TOTAL: | | 7.60 | 25.24 | 24.85 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 25 2017

**Verifier:** Erik J. Frederiksen
Manager

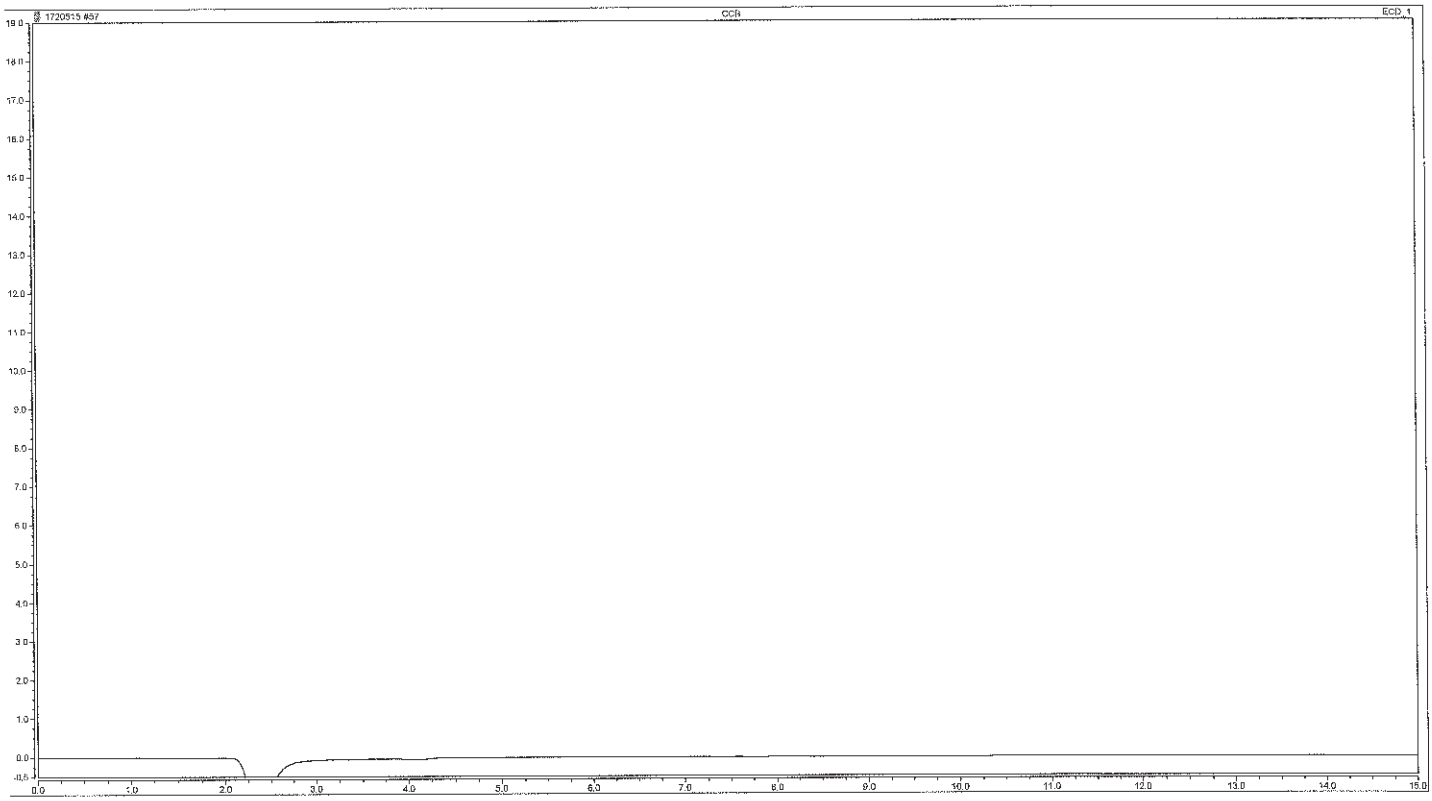
**Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/25/2017 / 04:05** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **057** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 25 2017

**Verifier:** Erik J. Frederiksen
Manager

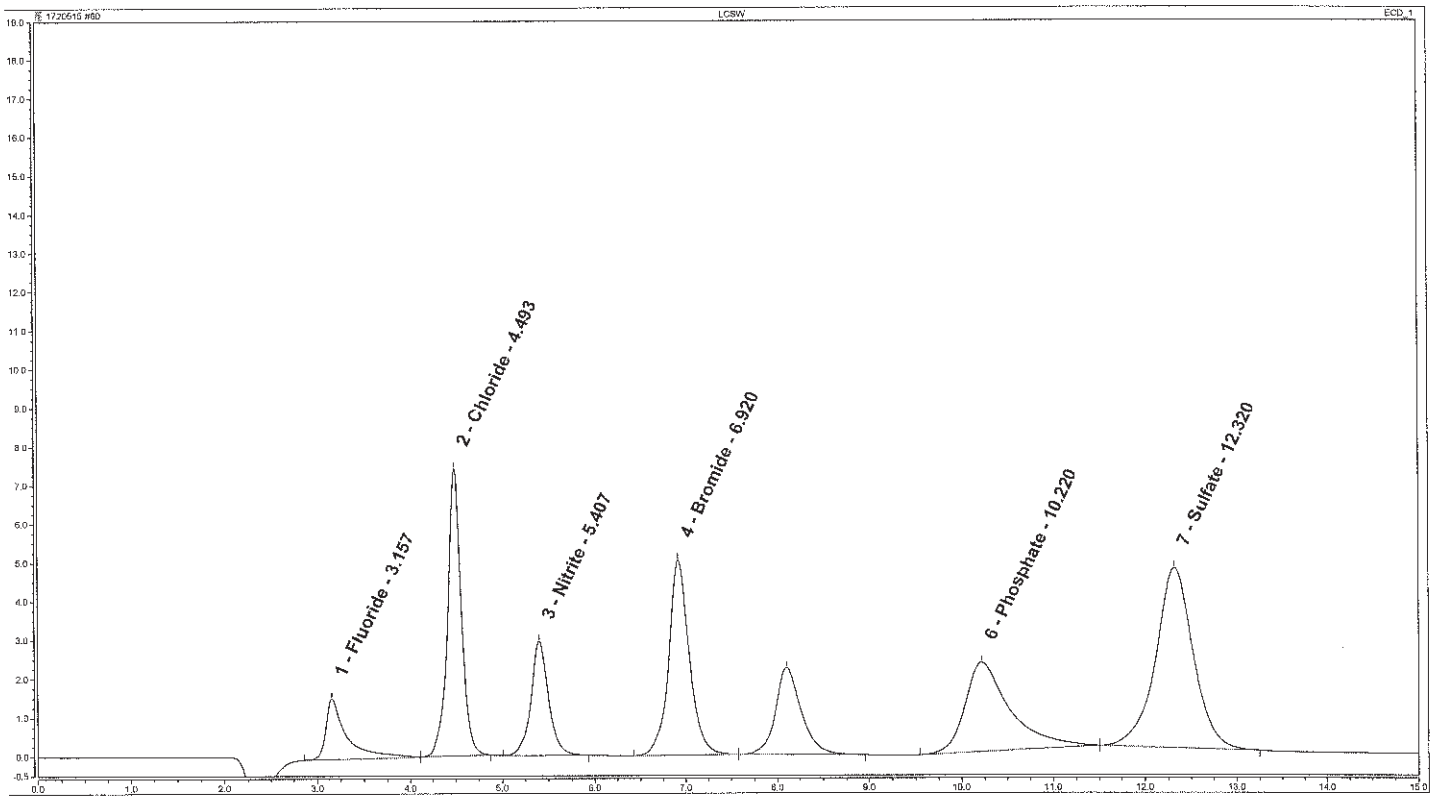
**Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **LCSW** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17204120115A-12074** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/25/2017 / 04:54** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **060** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.405 | 1.561 | 0.7175 |
| 2 | 4.49 | Chloride | M | 1.284 | 7.433 | 2.8227 |
| 3 | 5.41 | Nitrite | M | 0.649 | 2.944 | 0.7083 |
| 4 | 6.92 | Bromide | M | 1.345 | 5.055 | 7.1318 |
| 6 | 10.22 | Phosphate | M | 1.304 | 2.296 | 5.3300 |
| 7 | 12.32 | Sulfate | M | 2.209 | 4.668 | 6.9205 |
| | | TOTAL: | | 7.20 | 23.96 | 23.63 |




**Analyst:** Hallie A. Burnett, Associate Chemist — **Date:** JUL 25 2017

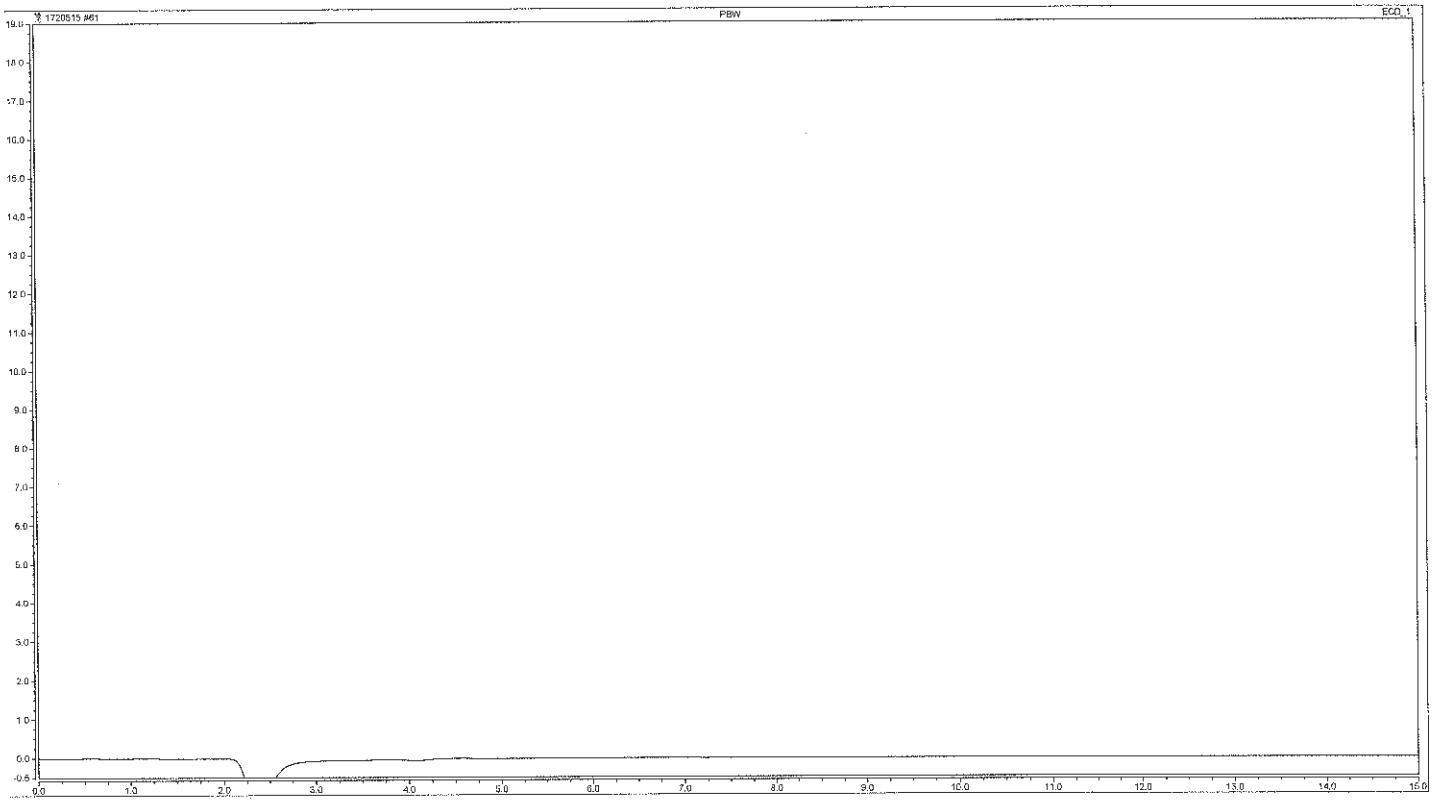
**Verifier:** Erik J. Frederiksen, Manager — **Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **PBW** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17204120115A-12074** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/25/2017 / 05:10** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **061** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Halie A. Burnett, Associate Chemist — Date: JUL 25 2017

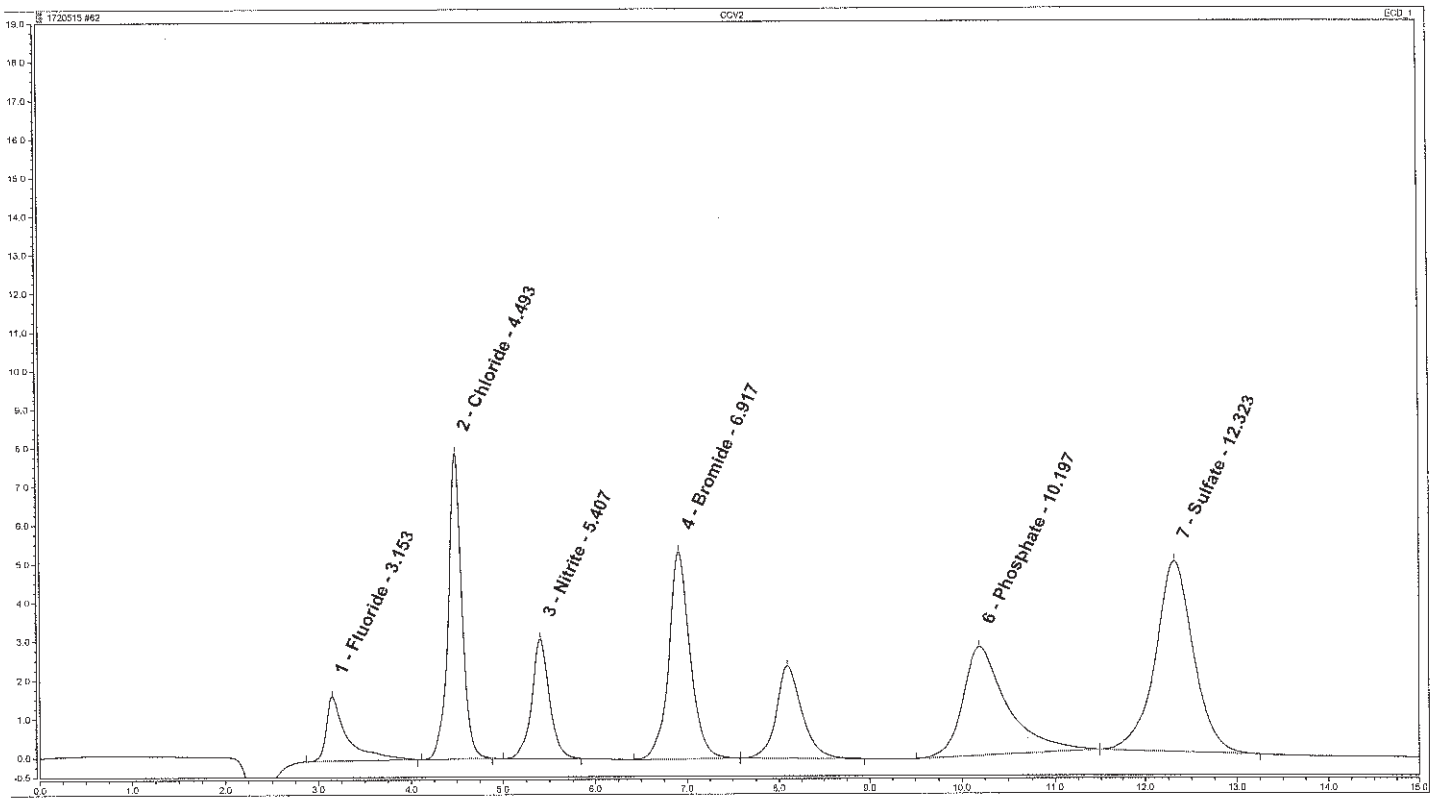
**Verifier:** Erik J. Frederiksen, Manager — Date: JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/25/2017 / 05:26** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **062** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.434 | 1.661 | 0.7686 |
| 2 | 4.49 | Chloride | M | 1.370 | 7.890 | 3.0088 |
| 3 | 5.41 | Nitrite | M | 0.679 | 3.080 | 0.7392 |
| 4 | 6.92 | Bromide | M | 1.427 | 5.354 | 7.5513 |
| 6 | 10.20 | Phosphate | M | 1.542 | 2.802 | 6.0261 |
| 7 | 12.32 | Sulfate | M | 2.351 | 4.937 | 7.3517 |
| | | TOTAL: | | 7.80 | 25.72 | 25.45 |




**Analyst:** Hallie A. Burnett, Associate Chemi

**Date:** JUL 25 2017

**Verifier:** Erik J. Frederiksen, Manager

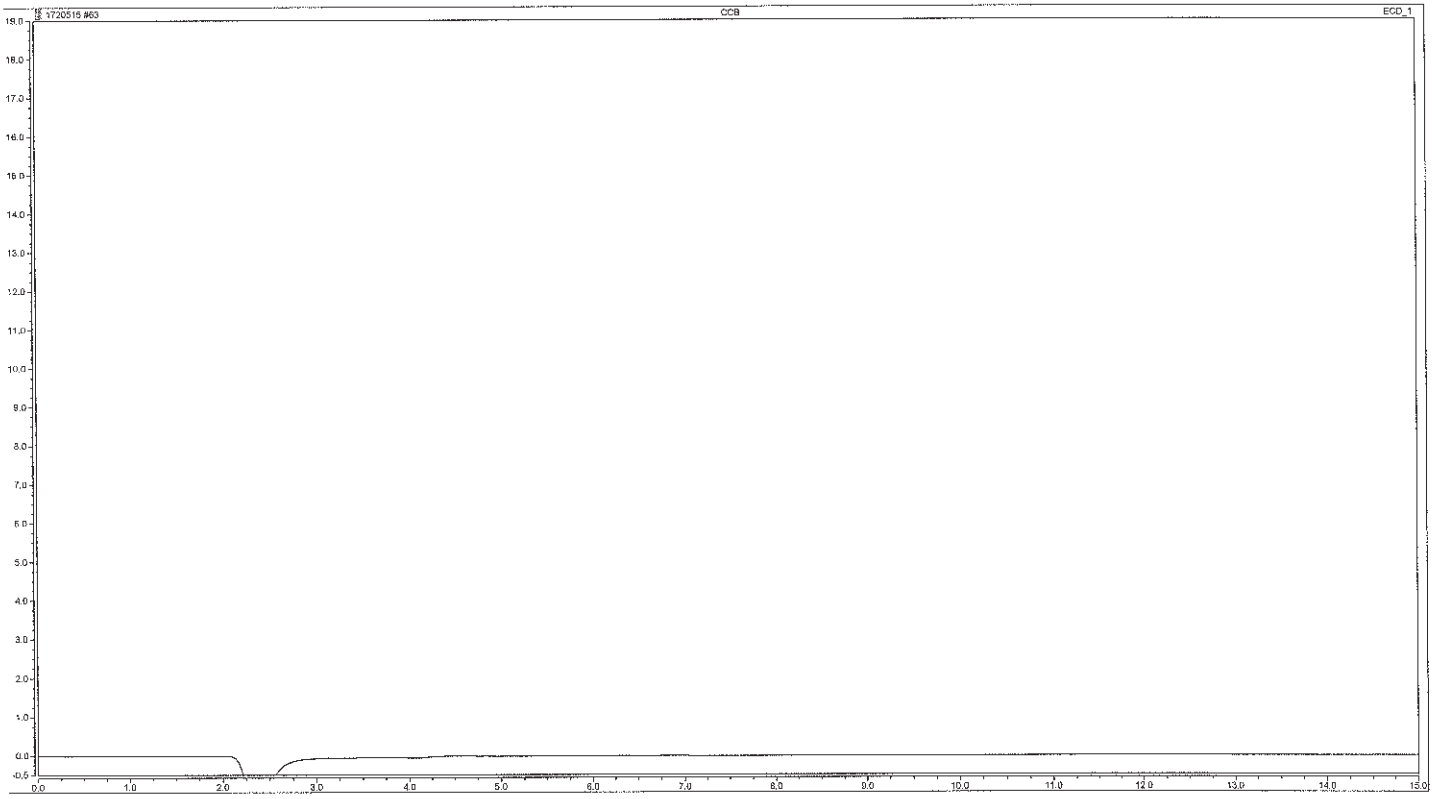
**Date:** JUL 28 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/25/2017 / 05:43** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **063** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720515** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Hallie A. Burnett
Associate Chemi

**Date:** JUL 25 2017

**Verifier:** Erik J. Frederiksen
Manager

**Date:** JUL 28 2017

# Instrumental Water Quality Report

Analyte: Nitrate-N
Run Start Date/Time: 7/26/2017 11:58:22PM
Instrument Name: 07411

## Calibration Information

Curve Information Location:
Book # 256879
Page # 5

| Sample Names | Volts | Detected Result | True Result |
|---|---|---|---|
| S1 | 666318.3000 | ~~4.00000~~ 3.9558 | 4 |
| S2 | 513487.6000 | 3.00000 3.0427 | 3 |
| S3 | 180938.9000 | 1.00000 1.0541 | 1 |
| S4 | 87779.8000 | 0.50000 0.4972 | 0.5 |
| S5 | 37422.2000 | 0.20000 0.1967 | 0.2 |
| S6 | 18422.6000 | 0.10000 0.0826 | 0.1 |
| S7 | -101.5000 | ~~0.00000~~ -0.0381 | - |

Number of Calibrants: 7
Correlation Coefficient: 0.99949
Y-Intercept: -0.02753
Slope: 0.00001

## QC Information

| QC Names | Units | True Values | QC Ranges |
|---|---|---|---|
| ICV | mg/L | 2.5 | 2.2375 - 2.76 |
| ICB/CCB | mg/L | 0 | 0 - 0.04 |
| CCV2 | mg/L | 2.5 | 2.2375 - 2.76 |
| PB Waters | mg/L | 0 | 0 - 0.04 |
| LCS Waters | mg/L | 2.5 | 2.25 - 2.75 |

Analyst: [signature] Date: 7/27/17

Verifier: [signature] Date: 7.27.17

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| SYNC | 1 | | | 7/26/2017 11:58:22PM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 662272.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| Carryov | 2 | | | 7/27/2017 12:00:12AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 4141.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 3 | | | 7/27/2017 12:02:02AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 623.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S1 | 4 | | | 7/27/2017 12:03:52AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 4.00000 | | 666318.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S2 | 5 | | | 7/27/2017 12:05:42AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.00000 | | 513487.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S3 | 6 | | | 7/27/2017 12:07:32AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.00000 | | 180938.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S4 | 7 | | | 7/27/2017 12:09:22AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.50000 | | 87779.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S5 | 8 | | | 7/27/2017 12:11:12AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.20000 | | 37422.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S6 | 9 | | | 7/27/2017 12:13:02AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.10000 | | 18422.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S7 | 10 | | | 7/27/2017 12:14:52AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | -101.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 11 | | | 7/27/2017 12:16:42AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02720 | | 54.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 12 | | | 7/27/2017 12:18:32AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02380 | | 622.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 13 | | | 7/27/2017 12:20:22AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.09670 | | 355330.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 14 | | | 7/27/2017 12:22:12AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01520 | | 2064.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 15 | | | 7/27/2017 12:24:02AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.11400 | | 358221.60 | 1.0000 | 1.0 | 1 | 101 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 16 | | | 7/27/2017 12:25:52AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01090 | | 2779.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 17 | | | 7/27/2017 12:27:42AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02490 | | 443.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICV | 18 | | | 7/27/2017 12:29:32AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.64050 | | 446295.60 | 1.0000 | 1.0 | 1 | 106 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICB | 19 | | | 7/27/2017 12:31:22AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01510 | | 2083.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 20 | B | 17207106101A | 7/27/2017 12:33:12AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02580 | -0.026 | 289.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 21 | Q | 17207106101A | 7/27/2017 12:35:02AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.58050 | 2.581 | 436265.90 | 1.0000 | 1.0 | 1 | 103 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111714 | 22 | U | 17207106101A | 7/27/2017 12:36:52AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02200 | -0.022 | 926.90 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111714 | 23 | D | 17207106101A | 7/27/2017 12:38:42AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| -0.03410 | -0.034 | -1101.90 | 1.0000 | 1.0 | 1 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111714 | 24 | R | 17207106101A | 7/27/2017 12:40:32AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.08020 | 1.080 | 185300.00 | 1.0000 | 1.0 | 1 | 108 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111722 | 25 | | 17207106101A | 7/27/2017 12:42:22AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.45975 | 2.919 | 248790.60 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111604 | 26 | | 17207106101A | 7/27/2017 12:44:12AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.83120 | 3.662 | 310920.20 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111470 | 27 | | 17207106101A | 7/27/2017 12:46:02AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.07120 | 0.071 | 16513.00 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111642 | 28 | | 17207106101A | 7/27/2017 12:47:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.93946 | 9.697 | 329030.30 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111577 | 29 | | 17207106101A | 7/27/2017 12:49:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.75910 | 2.759 | 466143.80 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 30 | | | 7/27/2017 12:51:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.64360 | | 446811.60 | 1.0000 | 1.0 | 1 | 106 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 1 | 31 | | | 7/27/2017 12:53:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01880 | | 1454.20 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111598 | 32 | | 17207106101A | 7/27/2017 12:55:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.35126 | 6.756 | 230638.60 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111471 | 33 | | 17207106101A | 7/27/2017 12:57:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.30062 | 11.503 | 389444.30 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111585 | 34 | | 17207106101A | 7/27/2017 12:58:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.25390 | 4.508 | 381630.50 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111713 | 35 | | 17207106101A | 7/27/2017 1:00:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.09230 | 4.185 | 354594.60 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111687 | 36 | | 17207106101A | 7/27/2017 1:02:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.59306 | 7.965 | 271087.60 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111677 | 37 | | 17207106101A | 7/27/2017 1:04:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.34350 | 1.343 | 229347.10 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111445 | 38 | | 17207106101A | 7/27/2017 1:06:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.42915 | 2.858 | 243666.40 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111693 | 39 | | 17207106101A | 7/27/2017 1:08:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.14600 | 1.146 | 196300.40 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112116 | 40 | | 17207106101A | 7/27/2017 1:09:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.81896 | 18.190 | 308873.50 | 1.0000 | 1.0 | 10 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112109 | 41 | | 17207106101A | 7/27/2017 1:11:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.40912 | 12.046 | 407595.10 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 42 | | | 7/27/2017 1:13:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.68570 | | 453858.50 | 1.0000 | 1.0 | 1 | 107 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 2 | 43 | | | 7/27/2017 1:15:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01560 | | 2002.50 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9117103 | 44 | | 17207106101A | 7/27/2017 1:17:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 3.04898 | 30.490 | 514627.80 | 1.0000 | 1.0 | 10 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9114349 | 45 | | 17207106101A | 7/27/2017 1:19:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.12020 | 1.120 | 191991.90 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112949 | 46 | U | 17207106101B | 7/27/2017 1:20:53AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.00240 | 0.002 | 5010.20 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112949 | 47 | D | 17207106101B | 7/27/2017 1:22:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD |
|---|---|---|---|---|---|---|
| -0.00450 | -0.005 | 3859.70 | 1.0000 | 1.0 | 1 | 657 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112949 | 48 | R | 17207106101B | 7/27/2017 1:24:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 1.12500 | 1.125 | 192793.60 | 1.0000 | 1.0 | 1 | 113 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112951 | 49 | | 17207106101B | 7/27/2017 1:26:23AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.82750 | 0.828 | 143023.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 50 | B | 17207106102A | 7/27/2017 1:28:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02880 | -0.029 | -219.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 51 | Q | 17207106102A | 7/27/2017 1:30:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.58680 | 2.587 | 437321.40 | 1.0000 | 1.0 | 1 | 103 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112953 | 52 | U | 17207106102A | 7/27/2017 1:31:53AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01370 | -0.014 | 2311.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112953 | 53 | D | 17207106102A | 7/27/2017 1:33:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| -0.02650 | -0.026 | 166.70 | 1.0000 | 1.0 | 1 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 54 | | | 7/27/2017 1:35:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.58360 | | 436786.10 | 1.0000 | 1.0 | 1 | 103 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 3 | 55 | | | 7/27/2017 1:37:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01500 | | 2096.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112953 | 56 | R | 17207106102A | 7/27/2017 1:39:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.03990 | 1.040 | 178553.60 | 1.0000 | 1.0 | 1 | 104 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112955 | 57 | | 17207106102A | 7/27/2017 1:41:03AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01370 | -0.014 | 2305.60 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112957 | 58 | | 17207106102A | 7/27/2017 1:42:53AM | ACS80 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.02230 | -0.022 | 880.60 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9115025 | 59 | | 17207106102A | 7/27/2017 1:44:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.44160 | 7.208 | 245752.20 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111528 | 60 | | 17207106102A | 7/27/2017 1:46:33AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.71650 | 3.433 | 291732.20 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111524 | 61 | | 17207106102A | 7/27/2017 1:48:23AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01060 | -0.011 | 2827.10 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111535 | 62 | | 17207106102A | 7/27/2017 1:50:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.16592 | 10.830 | 366912.70 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111525 | 63 | | 17207106102A | 7/27/2017 1:52:03AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01750 | -0.018 | 1669.90 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111529 | 64 | | 17207106102A | 7/27/2017 1:53:53AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.02930 | -0.029 | -290.60 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111526 | 65 | | 17207106102A | 7/27/2017 1:55:43AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02540 | -0.025 | 354.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 66 | | | 7/27/2017 1:57:33AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.54540 | | 430386.10 | 1.0000 | 1.0 | 1 | 102 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 4 | 67 | | | 7/27/2017 1:59:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01480 | | 2136.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112927 | 68 | U | 17207106102B | 7/27/2017 2:01:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.24680 | 2.247 | 380440.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112927 | 69 | D | 17207106102B | 7/27/2017 2:03:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 2.26460 | 2.265 | 383415.80 | 1.0000 | 1.0 | 1 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112927 | 70 | R | 17207106102B | 7/27/2017 2:04:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 3.11980 | 3.120 | 526481.60 | 1.0000 | 1.0 | 1 | 87 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112926 | 71 | | 17207106102B | 7/27/2017 2:06:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01910 | 0.019 | 7798.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111523 | 72 | | 17207106102B | 7/27/2017 2:08:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.04430 | 0.044 | 12021.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112928 | 73 | | 17207106102B | 7/27/2017 2:10:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.04860 | 2.049 | 347289.80 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111887 | 74 | | 17207106102B | 7/27/2017 2:12:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.61624 | 32.325 | 274964.00 | 1.0000 | 1.0 | 20 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112828 | 75 | | 17207106102B | 7/27/2017 2:14:03AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.11050 | 0.111 | 23096.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112930 | 76 | | 17207106102B | 7/27/2017 2:15:53AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.51580 | 0.516 | 90879.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112931 | 77 | | 17207106102B | 7/27/2017 2:17:43AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.08000 | 1.080 | 185263.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 78 | | | 7/27/2017 2:19:33AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.63010 | | 444558.70 | 1.0000 | 1.0 | 1 | 105 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 5 | 79 | | | 7/27/2017 2:21:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01240 | | 2524.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112929 | 80 | | 17207106102B | 7/27/2017 2:23:13AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.36170 | 1.362 | 232383.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111527 | 81 | | 17207106102B | 7/27/2017 2:25:03AM | DRN06 | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.00760 | -0.008 | 3330.60 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 82 | B | 17207118101A | 7/27/2017 2:26:53AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.02960 | -0.030 | -349.30 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 83 | Q | 17207118101A | 7/27/2017 2:28:43AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 2.54840 | 2.548 | 430887.00 | 1.0000 | 1.0 | 1 | 102 | 2.5 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9109771 | 84 | U | 17207118101A | 7/27/2017 2:30:33AM | KR188 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.22130 | 0.221 | 41631.90 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9109771 | 85 | D | 17207118101A | 7/27/2017 2:32:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD |
|---|---|---|---|---|---|---|
| 0.20260 | 0.203 | 38499.10 | 1.0000 | 1.0 | 1 | 9 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9109771 | 86 | R | 17207118101A | 7/27/2017 2:34:13AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 1.24910 | 1.249 | 213551.90 | 1.0000 | 1.0 | 1 | 103 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9109779 | 87 | | 17207118101A | 7/27/2017 2:36:03AM | KR188 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.20310 | 0.203 | 38575.10 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9115838 | 88 | | 17207118101A | 7/27/2017 2:37:53AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.61060 | 0.611 | 106748.30 | 1.0000 | 1.0 | 1 |

Verified

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9117852 | 89 | | 17207118101A | 7/27/2017 2:39:43AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01470 | -0.015 | 2143.50 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 90 | | | 7/27/2017 2:41:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.56500 | | 433675.00 | 1.0000 | 1.0 | 1 | 103 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 6 | 91 | | | 7/27/2017 2:43:23AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01450 | | 2174.70 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110465 | 92 | | 17207118101A | 7/27/2017 2:45:13AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.90970 | 0.910 | 156769.40 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110464 | 93 | | 17207118101A | 7/27/2017 2:47:03AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.00720 | -0.007 | 3393.70 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110942 | 94 | | 17207118101A | 7/27/2017 2:48:53AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.59050 | 1.591 | 270658.00 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110786 | 95 | | 17207118101A | 7/27/2017 2:50:43AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.45065 | 4.901 | 414541.20 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110941 | 96 | | 17207118101A | 7/27/2017 2:52:33AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.62235 | 3.245 | 275985.50 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110807 | 97 | | 17207118101A | 7/27/2017 2:54:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.35460 | 0.709 | 63921.20 | 1.0000 | 1.0 | 2 |

Verified ☐

Comments: Analyst Decision Over Range see 112

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111760 | 98 | U | 17207118101B | 7/27/2017 2:56:13AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.51314 | 7.566 | 257718.80 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111762 | 99 | M | 17207118101B | 7/27/2017 2:58:03AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 2.49796 | 12.490 | 422453.10 | 1.0000 | 1.0 | 5 | 98 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111763 | 100 | D | 17207118101B | 7/27/2017 2:59:53AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD |
|---|---|---|---|---|---|---|
| 1.51854 | 7.593 | 258621.90 | 1.0000 | 1.0 | 5 | 0 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111765 | 101 | | 17207118101B | 7/27/2017 3:01:43AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.51750 | 7.588 | 258446.70 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 102 | | | 7/27/2017 3:03:33AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.50650 | | 423884.60 | 1.0000 | 1.0 | 1 | 100 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 7 | 103 | | | 7/27/2017 3:05:23AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01170 | | 2652.30 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9111766 | 104 | | 17207118101B | 7/27/2017 3:07:13AM | WS169 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.57404 | 7.870 | 267904.10 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9112123 | 105 | | 17207118101B | 7/27/2017 3:09:04AM | KR189 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.08906 | 5.445 | 186779.10 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110886 | 106 | | 17207118101B | 7/27/2017 3:10:54AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.50450 | 2.504 | 423547.50 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110806 | 107 | | 17207118101B | 7/27/2017 3:12:44AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.61750 | 5.235 | 442451.30 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110884 | 108 | | 17207118101B | 7/27/2017 3:14:34AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.62000 | 3.240 | 275593.50 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110844 | 109 | | 17207118101B | 7/27/2017 3:16:24AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.07840 | 1.078 | 184989.50 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110787 | 110 | | 17207118101B | 7/27/2017 3:18:14AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.84880 | 3.698 | 313863.90 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ~~9111767~~ 9111761-M | 111 | ~~M~~ | 17207118101B | 7/27/2017 3:20:04AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 2.54500 | 12.725 | 430323.70 | 1.0000 | 1.0 | 5 | 103 | 5 |

Verified ☑

Comments: Analyst Decision or failed QC Review

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9110807 | 112 | | 17207118101A | 7/27/2017 3:21:54AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.73780 | 0.738 | 128024.20 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 113 | | | 7/27/2017 3:23:44AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.56380 | | 433461.80 | 1.0000 | 1.0 | 1 | 103 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 8 | 114 | | | 7/27/2017 3:25:34AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01140 | | 2701.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 115 | | | 7/27/2017 3:27:24AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.05980 | | 349159.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 116 | | | 7/27/2017 3:29:14AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01760 | | 1661.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 117 | | | 7/27/2017 3:31:04AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.03530 | | 345065.80 | 1.0000 | 1.0 | 1 | 99 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 118 | | | 7/27/2017 3:32:54AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02010 | | 1242.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 119 | | | 7/27/2017 3:34:44AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02610 | | 233.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 120 | | | 7/27/2017 3:36:34AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02540 | | 351.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 121 | | | 7/27/2017 3:38:24AM | | NO3 |

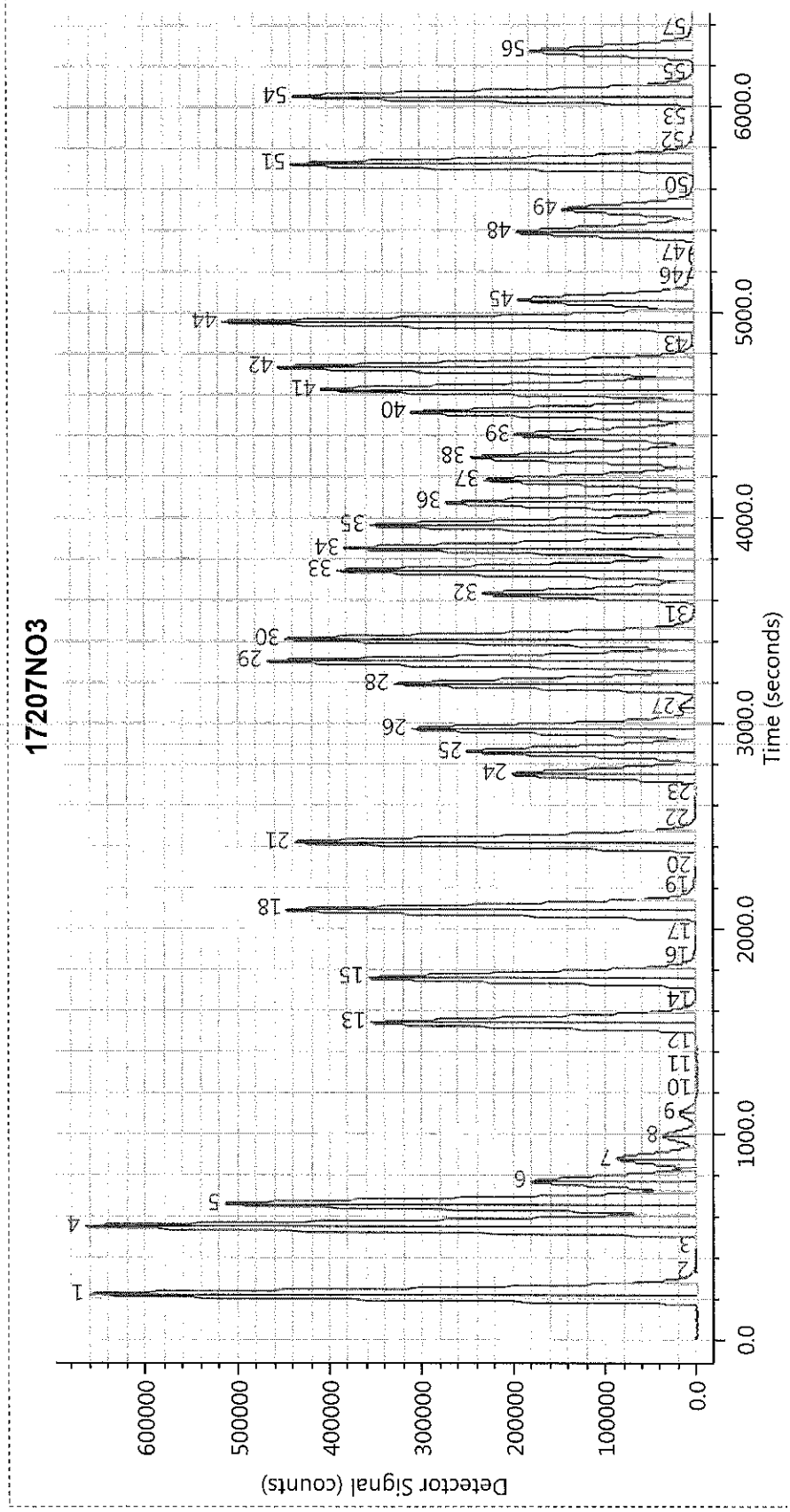
| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.11580 | | 358523.00 | 1.0000 | 1.0 | 1 | ☐ |

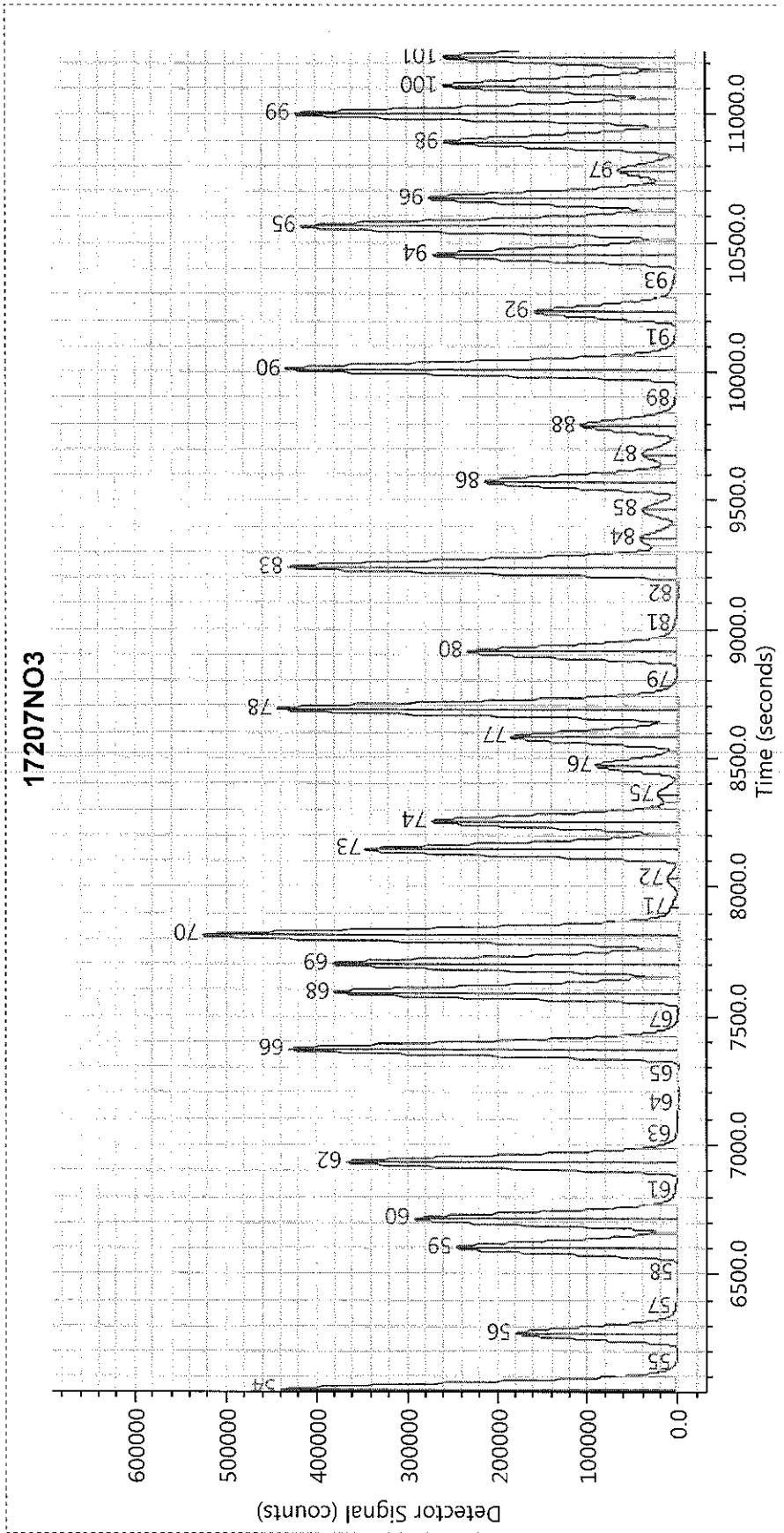
Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 122 | | | 7/27/2017 3:40:14AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.62720 | | 276793.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:


17207NO3
Detector Signal (counts)
0.0
100000
200000
300000
400000
500000
600000
Time (seconds)
0.0
1000.0
2000.0
3000.0
4000.0
5000.0
6000.0


17207NO3
Detector Signal (counts)
600000
500000
400000
300000
200000
100000
0.0
6500.0
7000.0
7500.0
8000.0
8500.0
9000.0
9500.0
10000.0
10500.0
11000.0
Time (seconds)
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
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80
81
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91
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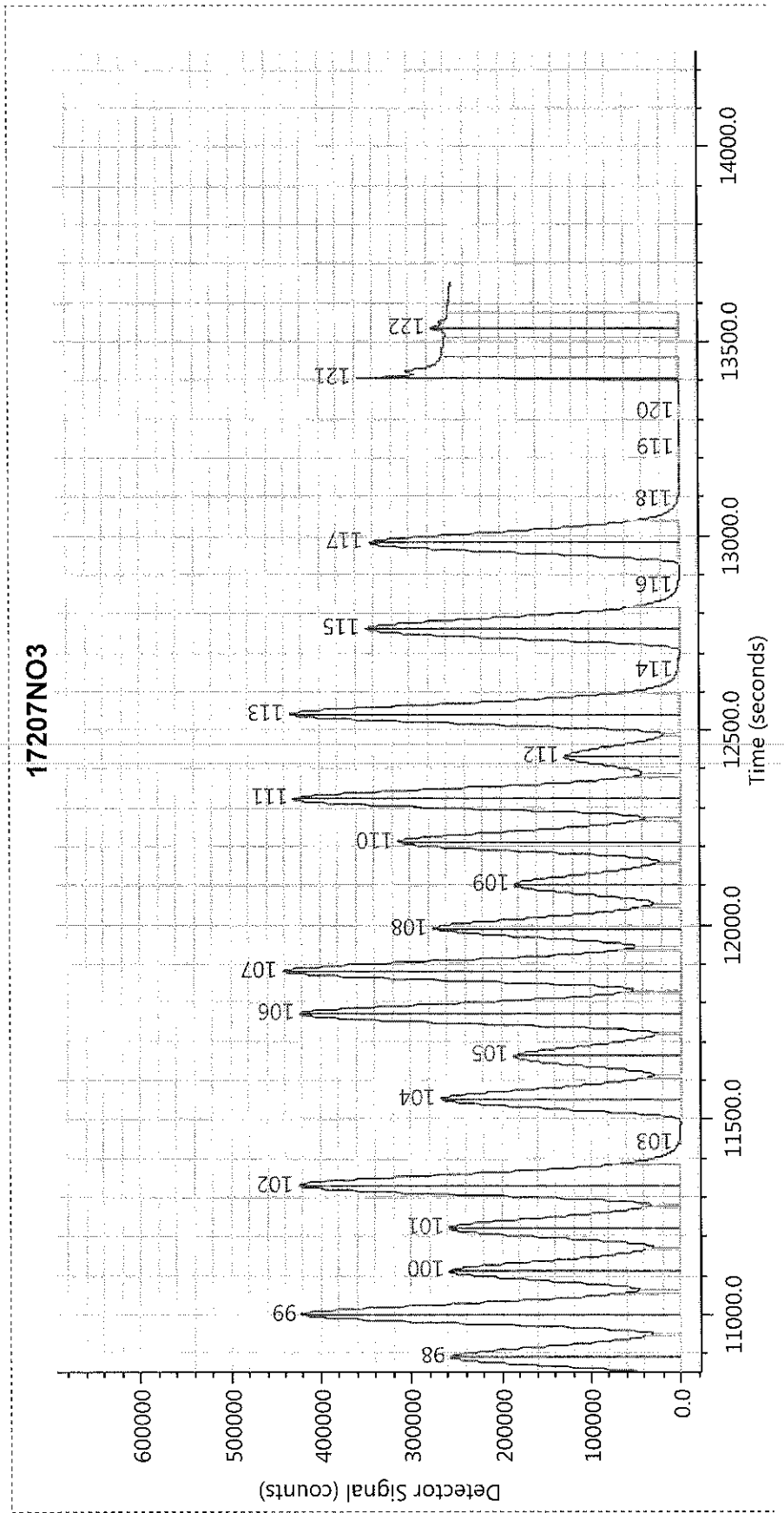
100
101


17207NO3
Detector Signal (counts)
600000
500000
400000
300000
200000
100000
0.0
11000.0
11500.0
12000.0
12500.0
13000.0
13500.0
14000.0
Time (seconds)
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122

# FlowView - Result

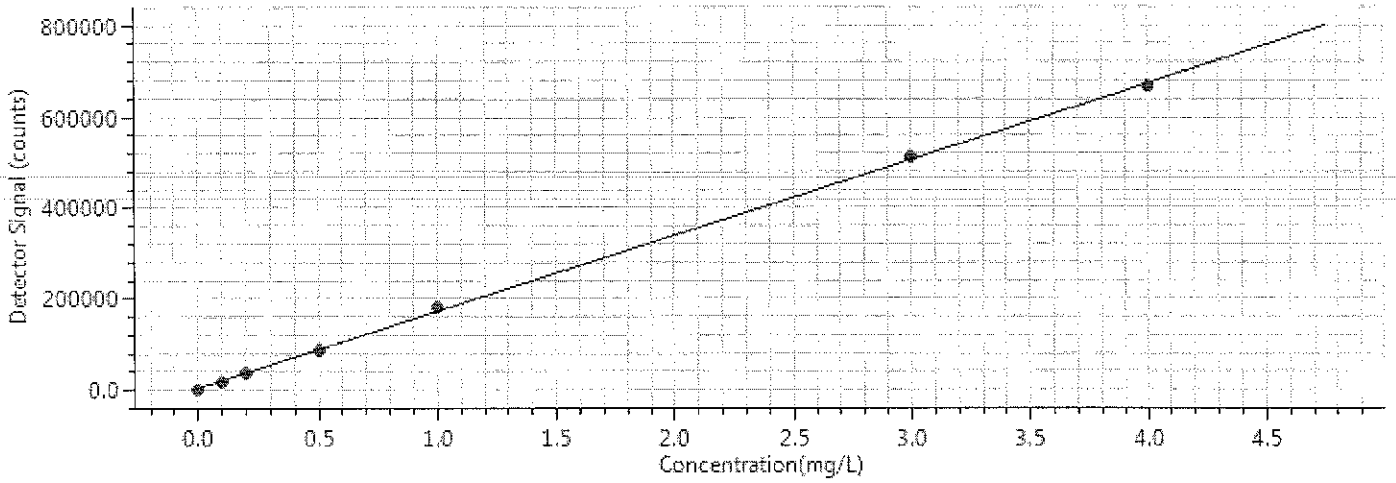
InstrumentID: A452837411
Operator ID: 2373
File Version: 110
Created On: 7/26/2017 11:58:08 PM
Last Modified On: 7/27/2017 3:48:57 AM
Exported on 7/27/2017 3:53:52 AM

Calibration Results - Channel2

## Calibration Summary

| | | | |
|---|---|---|---|
| Curve Fit: = | Linear | | |
| $R^2$: = | 0.99948971 | a: = | n/a |
| RF: = | 5.978135E-006 | b: = | n/a |
| Offset: | -0.02753093 | c: | n/a |
| HLCAVG: | 0.00000000 | LHCAVG: | 0.00000000 |

## Calibration Details




| Name | Type | Std Conc(mg/L) | Avg Height | Calc Avg Conc(mg/L) | %RSD | Flags | Date/Time |
|---|---|---|---|---|---|---|---|
| S1 | STD1 | 4.0000 | 666318.3 | 3.9558 | 0.0 | | 07/27/2017 12:03:52 AM |
| S2 | STD2 | 3.0000 | 513487.6 | 3.0422 | 0.0 | | 07/27/2017 12:05:42 AM |
| S3 | STD3 | 1.0000 | 180938.9 | 1.0541 | 0.0 | | 07/27/2017 12:07:32 AM |
| S4 | STD4 | 0.5000 | 87779.8 | 0.4972 | 0.0 | | 07/27/2017 12:09:22 AM |
| S5 | STD5 | 0.2000 | 37422.2 | 0.1962 | 0.0 | | 07/27/2017 12:11:12 AM |
| S6 | STD6 | 0.1000 | 18422.6 | 0.0826 | 0.0 | | 07/27/2017 12:13:02 AM |
| S7 | STD7 | 0.0000 | -101.5 | -0.0281 | 0.0 | | 07/27/2017 12:14:52 AM |

# Wet Chemistry Data

# Case Narrative/Conformance Summary

# Wet Chemistry

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## Water Quality

**Fraction: Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9112123 | GW012R-173 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

## Water Quality

**Fraction: Wet Chemistry**

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# QC Summary

# Wet Chemistry

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# Quality Control Reference List
## Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR189**

**Fraction: Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Bicarbonate Alkalinity | Carbonate Alkalinity | Total Alkalinity to pH 4.5 |
|---|---|---|---|---|---|
| 17202002101A | 9112123 | 07/21/2017 16:25:00 | X | X | X |
| | P002101B | 07/21/2017 13:19:00 | | | X |
| | P002101Q | 07/21/2017 13:29:00 | | | X |

**Quality Control Summary**
**Method Blank**
**Water Quality**
**SDG: KR189**
**Matrix: LIQUID**

**Fraction: Wet Chemistry**

| 17202002101A / P002101B<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | TI | 07/21/17 | N.D. | mg/l as CaCO3 | 1.7 | 5.0 | 5.0 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR189**
**Matrix: LIQUID**

## Water Quality
**Fraction: Wet Chemistry**

| LCS: P002101Q | Batch: **17202002101A** (Sample number(s): 9112123 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l as CaCO3** | **LCS Conc mg/l as CaCO3** | **LCSD Conc mg/l as CaCO3** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Alkalinity to pH 4.5 | TI | 188 | 160.44 | NA | 85 | NA | 77-114 | NA | NA |

# Raw Data

# Wet Chemistry

**Fraction: Wet Chemistry**

| 12149: Bicarbonate Alkalinity<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Bicarbonate Alkalinity | 1.7 | 5.0 | 5.0 | mg/l as CaCO3 |

| 12148: Carbonate Alkalinity<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Carbonate Alkalinity | 1.7 | 5.0 | 5.0 | mg/l as CaCO3 |

| 12150: Total Alkalinity to pH 4.5<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Alkalinity to pH 4.5 | 1.7 | 5 | 5.0 | mg/l as CaCO3 |

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# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Analysis Name | Units |
|---|---|
| Bicarbonate | mg/l as CaCO3 |
| Carbonate | mg/l as CaCO3 |
| Hydroxide | mg/l as CaCO3 |
| Phenolphthalein Alkalinity | mg/l as CaCO3 |
| Temperature of pH | Degrees C |
| Total Alkalinity | mg/l as CaCO3 |
| pH | Std. Units |

| Analysis Name | QC Check | True Value | Acceptance Range |
|---|---|---|---|
| pH | CCVPH2 | 7.00 | 6.27 - 7.73 |
| pH | CCVPH8 | 8.00 | 7.20 - 8.80 |

| Analysis Name | QC Check | Acceptance Range |
|---|---|---|
| Total Alkalinity | CCB | < 5.00 |
| Total Alkalinity | PBW | < 5.00 |

| Analysis Name | LCS | True Value | Acceptance Range | Lot Information |
|---|---|---|---|---|
| Total Alkalinity | LCSAK | 188.00 | 144.76 - 214.32 | 258197/9 |
| pH | LCSPH | 7.00 | 6.62 - 7.38 | G053-09 |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **Tap** | **126805** | | | 1.00 | 07/21/2017 | 13:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 265.34 | 265.34 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.75 | 7.75 | | | | |
| Total Alkalinity | 265.34 | 265.34 | | | | |
| Temperature of pH | 24.34 | 24.34 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126806** | CCV | | 1.00 | 07/21/2017 | 13:05 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.92 | 6.92 | | |
| Temperature of pH | 23.81 | 23.81 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126807** | CCB | | 1.00 | 07/21/2017 | 13:13 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.87 | 1.87 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.71 | 6.71 | | |
| Total Alkalinity | 1.87 | 1.87 | | |
| Temperature of pH | 23.60 | 23.60 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **126808** | B | 17202002101A | 1.00 | 07/21/2017 | 13:19 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.58 | 0.58 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.86 | 5.86 | | | | |
| Total Alkalinity | 0.58 | 0.58 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **126809** | Q | 17202002101A | 1.00 | 07/21/2017 | 13:29 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 27.54 | 27.54 | | | | |
| Carbonate | 132.91 | 132.91 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 66.45 | 66.45 | | | | |
| pH | 10.14 | 10.14 | | Y | | |
| Total Alkalinity | 160.44 | 160.44 | Y | Y | | |
| Temperature of pH | 22.93 | 22.93 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **126810** | Q | 17202002101A | 1.00 | 07/21/2017 | 13:33 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.92 | 6.92 | Y | Y | | |
| Temperature of pH | 23.43 | 23.43 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9112287** | **126811** | U | 17202002101A | 1.00 | 070A | 07/21/2017 | 13:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 381.79 | 381.79 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| pH | 6.44 | 6.44 | Y | Y |
| Total Alkalinity | 381.79 | 381.79 | Y | Y |
| Temperature of pH | 23.27 | 23.27 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112288 | 126812 | R | 17202002101A | 1.00 | 070A | 07/21/2017 | 13:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 507.33 | 507.33 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.69 | 6.69 | Y | | | |
| Total Alkalinity | 507.33 | 507.33 | Y | | | |
| Temperature of pH | 23.49 | 23.49 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112289 | 126813 | M | 17202002101A | 1.00 | 005A | 07/21/2017 | 13:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 514.29 | 514.29 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.72 | 6.72 | Y | | | |
| Total Alkalinity | 514.29 | 514.29 | Y | Y | | |
| Temperature of pH | 23.49 | 23.49 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112290 | 126814 | D | 17202002101A | 1.00 | 070A | 07/21/2017 | 14:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 382.71 | 382.71 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.48 | 6.48 | Y | Y | | |
| Total Alkalinity | 382.71 | 382.71 | Y | | | |
| Temperature of pH | 23.46 | 23.46 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112296 | 126815 | U | 17202002101B | 1.00 | 070A | 07/21/2017 | 14:12 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 117.45 | 117.45 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.94 | 7.94 | | | | |
| Total Alkalinity | 117.45 | 117.45 | Y | Y | | |
| Temperature of pH | 23.49 | 23.49 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112296 | 126816 | D | 17202002101B | 1.00 | 070A | 07/21/2017 | 14:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 117.57 | 117.57 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 8.08 | 8.08 | | | | |
| Total Alkalinity | 117.57 | 117.57 | Y | Y | | |
| Temperature of pH | 23.44 | 23.44 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9102203 | 126817 | | 17202002101A | 1.00 | 005A | 07/21/2017 | 14:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 65.93 | 65.93 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | | | |
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.55 | 7.55 | Y | Y | |
| Total Alkalinity | 65.93 | 65.93 | Y | Y | |
| Temperature of pH | 23.54 | 23.54 | Y | Y | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 126818 | CCV | | 1.00 | 07/21/2017 | 14:33 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.49 | 23.49 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 126819 | CCB | | 1.00 | 07/21/2017 | 14:40 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.51 | 1.51 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.57 | 6.57 | | |
| Total Alkalinity | 1.51 | 1.51 | | |
| Temperature of pH | 23.39 | 23.39 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112302 | 126820 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 14:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.80 | 1.80 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.06 | 7.06 | | | | |
| Total Alkalinity | 1.80 | 1.80 | Y | Y | | |
| Temperature of pH | 23.60 | 23.60 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112299 | 126821 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 14:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 68.23 | 68.23 | Y | Y | | |
| Hydroxide | 61.77 | 61.77 | | | | |
| Phenolphthalein Alkali | 95.89 | 95.89 | | | | |
| pH | 9.84 | 9.84 | | | | |
| Total Alkalinity | 130.01 | 130.01 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112294 | 126822 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 48.57 | 48.57 | Y | Y | | |
| Hydroxide | 16.17 | 16.17 | | | | |
| Phenolphthalein Alkali | 40.45 | 40.45 | | | | |
| pH | 9.73 | 9.73 | | | | |
| Total Alkalinity | 64.74 | 64.74 | Y | Y | | |
| Temperature of pH | 23.89 | 23.89 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112297 | 126823 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:16 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 123.10 | 123.10 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 7.74 | 7.74 | | |
| Total Alkalinity | 123.10 | 123.10 | Y | Y |
| Temperature of pH | 23.68 | 23.68 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112614 | 126824 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:24 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 499.95 | 499.95 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.52 | 7.52 | Y | Y | | |
| Total Alkalinity | 499.95 | 499.95 | Y | Y | | |
| Temperature of pH | 23.51 | 23.51 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112611 | 126825 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:31 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 344.95 | 344.95 | Y | Y | | |
| Carbonate | 0.52 | 0.52 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.26 | 0.26 | | | | |
| pH | 8.31 | 8.31 | Y | Y | | |
| Total Alkalinity | 345.47 | 345.47 | Y | Y | | |
| Temperature of pH | 23.33 | 23.33 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112298 | 126826 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 123.84 | 123.84 | Y | Y | | |
| Hydroxide | 80.73 | 80.73 | | | | |
| Phenolphthalein Alkali | 142.65 | 142.65 | | | | |
| pH | 10.08 | 10.08 | | | | |
| Total Alkalinity | 204.57 | 204.57 | Y | Y | | |
| Temperature of pH | 23.28 | 23.28 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112612 | 126827 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 250.65 | 250.65 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.86 | 7.86 | Y | Y | | |
| Total Alkalinity | 250.65 | 250.65 | Y | Y | | |
| Temperature of pH | 23.54 | 23.54 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112300 | 126828 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 15:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 122.95 | 122.95 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.50 | 6.50 | | | | |
| Total Alkalinity | 122.95 | 122.95 | Y | Y | | |
| Temperature of pH | 23.44 | 23.44 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112291 | 126829 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:05 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Bicarbonate | 1.18 | 1.18 | Y | Y |
| Carbonate | 35.63 | 35.63 | Y | Y |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 17.81 | 17.81 | | |
| pH | 9.25 | 9.25 | | |
| Total Alkalinity | 36.80 | 36.80 | Y | Y |
| Temperature of pH | 23.43 | 23.43 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126830** | CCV | | 1.00 | 07/21/2017 | 16:09 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.95 | 6.95 | | |
| Temperature of pH | 23.51 | 23.51 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126831** | CCB | | 1.00 | 07/21/2017 | 16:17 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.72 | 1.72 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.71 | 6.71 | | |
| Total Alkalinity | 1.72 | 1.72 | | |
| Temperature of pH | 23.46 | 23.46 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112123** | **126832** | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:25 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 108.41 | 108.41 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.54 | 7.54 | | | | |
| Total Alkalinity | 108.41 | 108.41 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112292** | **126833** | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:34 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 943.28 | 943.28 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.77 | 6.77 | | | | |
| Total Alkalinity | 943.28 | 943.28 | Y | Y | | |
| Temperature of pH | 23.60 | 23.60 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112293** | **126834** | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:42 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 49.57 | 49.57 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.39 | 7.39 | | | | |
| Total Alkalinity | 49.57 | 49.57 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112295** | **126835** | | 17202002101A | 1.00 | 070A | 07/21/2017 | 16:51 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 48.77 | 48.77 | Y | Y | | |

| | | | | | |
|---|---|---|---|---|---|
| Hydroxide | 0.07 | 0.07 | | | |
| Phenolphthalein Alkali | 24.45 | 24.45 | | | |
| pH | 9.33 | 9.33 | | | |
| Total Alkalinity | 48.83 | 48.83 | Y | Y | |
| Temperature of pH | 23.54 | 23.54 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9112301 | 126836 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 17:03 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | Y | Y | | |
| Carbonate | 61.59 | 61.59 | Y | Y | | |
| Hydroxide | 744.69 | 744.69 | | | | |
| Phenolphthalein Alkali | 775.48 | 775.48 | | | | |
| pH | 11.89 | 11.89 | | | | |
| Total Alkalinity | 806.27 | 806.27 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109974 | 126837 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 17:09 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 41.62 | 41.62 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.30 | 5.30 | | | | |
| Total Alkalinity | 41.62 | 41.62 | Y | Y | | |
| Temperature of pH | 23.56 | 23.56 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109959 | 126838 | | 17202002101A | 1.00 | 070A | 07/21/2017 | 17:16 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 3.29 | 3.29 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.16 | 5.16 | | | | |
| Total Alkalinity | 3.29 | 3.29 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| PBW | 126839 | B | 17202002102A | 1.00 | 07/21/2017 | 17:23 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.45 | 0.45 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.62 | 5.62 | | | | |
| Total Alkalinity | 0.45 | 0.45 | Y | Y | | |
| Temperature of pH | 23.51 | 23.51 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| LCSAK | 126840 | Q | 17202002102A | 1.00 | 07/21/2017 | 17:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 36.28 | 36.28 | | | | |
| Carbonate | 128.56 | 128.56 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 64.28 | 64.28 | | | | |
| pH | 10.14 | 10.14 | | Y | | |
| Total Alkalinity | 164.83 | 164.83 | Y | Y | | |
| Temperature of pH | 23.54 | 23.54 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **126841** | Q | 17202002102A | 1.00 | 07/21/2017 | 17:37 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.94 | 6.94 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126842** | CCV | | 1.00 | 07/21/2017 | 17:40 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.93 | 6.93 | | |
| Temperature of pH | 23.59 | 23.59 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126843** | CCB | | 1.00 | 07/21/2017 | 17:48 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.98 | 1.98 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.69 | 6.69 | | |
| Total Alkalinity | 1.98 | 1.98 | | |
| Temperature of pH | 23.54 | 23.54 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109771** | **126844** | U | 17202002102A | 1.00 | 070A | 07/21/2017 | 17:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 219.92 | 219.92 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | Y | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.52 | 7.52 | Y | Y | | |
| Total Alkalinity | 219.92 | 219.92 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109772** | **126845** | R | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 231.32 | 231.32 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | Y | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | | | |
| pH | 7.74 | 7.74 | Y | | | |
| Total Alkalinity | 231.32 | 231.32 | Y | Y | | |
| Temperature of pH | 23.65 | 23.65 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109773** | **126846** | M | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:12 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 232.74 | 232.74 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | Y | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | | | |
| pH | 7.75 | 7.75 | Y | | | |
| Total Alkalinity | 232.74 | 232.74 | Y | Y | | |
| Temperature of pH | 23.73 | 23.73 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109774** | **126847** | D | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:20 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 223.77 | 223.77 | Y | | | |
| Carbonate | 0.00 | 0.00 | Y | | | |
| Hydroxide | 0.00 | 0.00 | Y | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |

| | | | | |
|---|---|---|---|---|
| pH | 7.62 | 7.62 | Y | Y |
| Total Alkalinity | 223.77 | 223.77 | Y | Y |
| Temperature of pH | 23.67 | 23.67 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109966 | 126848 | U | 17202002102B | 1.00 | 070A | 07/21/2017 | 18:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 8.63 | 8.63 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.51 | 5.51 | | | | |
| Total Alkalinity | 8.63 | 8.63 | Y | Y | | |
| Temperature of pH | 23.64 | 23.64 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109966 | 126849 | D | 17202002102B | 1.00 | 070A | 07/21/2017 | 18:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 5.80 | 5.80 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.33 | 5.33 | | | | |
| Total Alkalinity | 5.80 | 5.80 | Y | Y | | |
| Temperature of pH | 23.64 | 23.64 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109779 | 126850 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:43 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 216.39 | 216.39 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.53 | 7.53 | | | | |
| Total Alkalinity | 216.39 | 216.39 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109972 | 126851 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:49 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 27.70 | 27.70 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.10 | 5.10 | | | | |
| Total Alkalinity | 27.70 | 27.70 | Y | Y | | |
| Temperature of pH | 23.68 | 23.68 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109949 | 126852 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 18:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 35.84 | 35.84 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.38 | 5.38 | | | | |
| Total Alkalinity | 35.84 | 35.84 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111956 | 126853 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 23.40 | 23.40 | Y | Y | | |

| | | | | |
|---|---|---|---|---|
| Carbonate | 0.00 | 0.00 | Y | Y |
| Hydroxide | 0.00 | 0.00 | Y | Y |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y |
| pH | 6.55 | 6.55 | Y | Y |
| Total Alkalinity | 23.40 | 23.40 | Y | Y |
| Temperature of pH | 23.64 | 23.64 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126854** | CCV | | 1.00 | 07/21/2017 | 19:08 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.64 | 23.64 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126855** | CCB | | 1.00 | 07/21/2017 | 19:16 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.46 | 1.46 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.40 | 6.40 | | |
| Total Alkalinity | 1.46 | 1.46 | | |
| Temperature of pH | 23.47 | 23.47 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111958** | **126856** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:23 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 15.33 | 15.33 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | Y | Y | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.11 | 6.11 | Y | Y | | |
| Total Alkalinity | 15.33 | 15.33 | Y | Y | | |
| Temperature of pH | 23.52 | 23.52 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111962** | **126857** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:31 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 17.43 | 17.43 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | Y | Y | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.43 | 6.43 | Y | Y | | |
| Total Alkalinity | 17.43 | 17.43 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111960** | **126858** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:40 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 12.91 | 12.91 | Y | Y | | |
| Carbonate | 0.00 | 0.00 | Y | Y | | |
| Hydroxide | 0.00 | 0.00 | Y | Y | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.25 | 6.25 | Y | Y | | |
| Total Alkalinity | 12.91 | 12.91 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111827** | **126859** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 253.35 | 253.35 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y |
| pH | 7.34 | 7.34 | | |
| Total Alkalinity | 253.35 | 253.35 | Y | Y |
| Temperature of pH | 23.65 | 23.65 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111823 | 126860 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 19:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 172.38 | 172.38 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.06 | 7.06 | | | | |
| Total Alkalinity | 172.38 | 172.38 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111825 | 126861 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:03 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 179.96 | 179.96 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 6.76 | 6.76 | | | | |
| Total Alkalinity | 179.96 | 179.96 | Y | Y | | |
| Temperature of pH | 23.57 | 23.57 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9111829 | 126862 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:11 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 257.08 | 257.08 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | Y | Y | | |
| pH | 7.49 | 7.49 | | | | |
| Total Alkalinity | 257.08 | 257.08 | Y | Y | | |
| Temperature of pH | 23.86 | 23.86 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9113399 | 126863 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:18 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 50.63 | 50.63 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.09 | 6.09 | | | | |
| Total Alkalinity | 50.63 | 50.63 | Y | Y | | |
| Temperature of pH | 23.73 | 23.73 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9113397 | 126864 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:25 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 39.40 | 39.40 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.07 | 6.07 | | | | |
| Total Alkalinity | 39.40 | 39.40 | Y | Y | | |
| Temperature of pH | 23.56 | 23.56 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9113203 | 126865 | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Bicarbonate | 173.50 | 173.50 | | | |
| Carbonate | 0.00 | 0.00 | | | |
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.79 | 7.79 | | | |
| Total Alkalinity | 173.50 | 173.50 | Y | Y | |
| Temperature of pH | 23.46 | 23.46 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126866** | CCV | | 1.00 | 07/21/2017 | 20:36 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.43 | 23.43 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126867** | CCB | | 1.00 | 07/21/2017 | 20:44 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.58 | 1.58 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.54 | 6.54 | | |
| Total Alkalinity | 1.58 | 1.58 | | |
| Temperature of pH | 23.52 | 23.52 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9113204** | **126868** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 20:52 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 112.01 | 112.01 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.21 | 7.21 | | | | |
| Total Alkalinity | 112.01 | 112.01 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111761** | **126869** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 21:00 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 76.54 | 76.54 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.64 | 7.64 | | | | |
| Total Alkalinity | 76.54 | 76.54 | Y | | | |
| Temperature of pH | 23.56 | 23.56 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9110825** | **126870** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 21:07 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 158.31 | 158.31 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.94 | 7.94 | | | | |
| Total Alkalinity | 158.31 | 158.31 | Y | Y | | |
| Temperature of pH | 23.43 | 23.43 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9110824** | **126871** | | 17202002102A | 1.00 | 070A | 07/21/2017 | 21:15 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 116.97 | 116.97 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.45 | 7.45 | | | |
| Total Alkalinity | 116.97 | 116.97 | Y | Y | |
| Temperature of pH | 23.59 | 23.59 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **126872** | B | 17202002103A | 1.00 | 07/21/2017 | 21:22 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.08 | 1.08 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.21 | 6.21 | | | | |
| Total Alkalinity | 1.08 | 1.08 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **126873** | Q | 17202002103A | 1.00 | 07/21/2017 | 21:31 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 42.91 | 42.91 | | | | |
| Carbonate | 124.06 | 124.06 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 62.03 | 62.03 | | | | |
| pH | 10.09 | 10.09 | | Y | | |
| Total Alkalinity | 166.96 | 166.96 | Y | Y | | |
| Temperature of pH | 23.68 | 23.68 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **126874** | Q | 17202002103A | 1.00 | 07/21/2017 | 21:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.94 | 6.94 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9113659** | **126875** | U | 17202002103A | 1.00 | 004A | 07/21/2017 | 21:39 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 2.75 | 2.75 | Y | Y | | |
| Total Alkalinity | 0.00 | 0.00 | Y | Y | | |
| Temperature of pH | 23.33 | 23.33 | Y | Y | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9113659** | **126876** | R | 17202002103A | 1.00 | 004A | 07/21/2017 | 21:44 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 2.83 | 2.83 | Y | | | |
| Total Alkalinity | 0.00 | 0.00 | Y | Y | | |
| Temperature of pH | 23.47 | 23.47 | Y | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9113659** | **126877** | D | 17202002103A | 1.00 | 004A | 07/21/2017 | 21:48 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| pH | 2.75 | 2.75 | Y | Y |
| Total Alkalinity | 0.00 | 0.00 | Y | Y |
| Temperature of pH | 23.46 | 23.46 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126878** | CCV | | 1.00 | 07/21/2017 | 21:52 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.46 | 23.46 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126879** | CCB | | 1.00 | 07/21/2017 | 22:00 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.94 | 1.94 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.14 | 6.14 | | |
| Total Alkalinity | 1.94 | 1.94 | | |
| Temperature of pH | 23.43 | 23.43 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9110701** | **126880** | U | 17202002103B | 1.00 | 005B | 07/21/2017 | 22:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 137.51 | 137.51 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.04 | 7.04 | | | | |
| Total Alkalinity | 137.51 | 137.51 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9110701** | **126881** | D | 17202002103B | 1.00 | 005B | 07/21/2017 | 22:16 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 140.93 | 140.93 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.17 | 7.17 | | | | |
| Total Alkalinity | 140.93 | 140.93 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9109970** | **126882** | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:23 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 33.08 | 33.08 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.61 | 5.61 | | | | |
| Total Alkalinity | 33.08 | 33.08 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9109963** | **126883** | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:30 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 45.29 | 45.29 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.92 | 5.92 | | | | |
| Total Alkalinity | 45.29 | 45.29 | Y | Y | | |

| | | | |
|---|---|---|---|
| Temperature of pH | 23.88 | 23.88 | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9109968 | 126884 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:37 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 39.46 | 39.46 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.56 | 5.56 | | | | |
| Total Alkalinity | 39.46 | 39.46 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9109954 | 126885 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:44 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 139.20 | 139.20 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.96 | 5.96 | | | | |
| Total Alkalinity | 139.20 | 139.20 | Y | Y | | |
| Temperature of pH | 23.67 | 23.67 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9109956 | 126886 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:49 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.00 | 0.00 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 3.98 | 3.98 | | | | |
| Total Alkalinity | 0.00 | 0.00 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9109961 | 126887 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 22:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 46.71 | 46.71 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.94 | 5.94 | | | | |
| Total Alkalinity | 46.71 | 46.71 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9113402 | 126888 | | 17202002103A | 1.00 | 070A | 07/21/2017 | 23:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | -0.08 | -0.08 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 4.21 | 4.21 | | | | |
| Total Alkalinity | -0.08 | -0.08 | Y | Y | | |
| Temperature of pH | 23.62 | 23.62 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9110751 | 126889 | | 17202002103A | 1.00 | 005B | 07/21/2017 | 23:09 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 398.53 | 398.53 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | |
|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 8.26 | 8.26 | Y | Y |
| Total Alkalinity | 398.53 | 398.53 | Y | Y |
| Temperature of pH | 23.67 | 23.67 | Y | Y |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126890** | CCV | | 1.00 | 07/21/2017 | 23:14 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.93 | 6.93 | | |
| Temperature of pH | 23.67 | 23.67 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126891** | CCB | | 1.00 | 07/21/2017 | 23:21 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.85 | 1.85 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.51 | 6.51 | | |
| Total Alkalinity | 1.85 | 1.85 | | |
| Temperature of pH | 23.52 | 23.52 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9107679** | **126892** | | 17202002103A | 1.00 | 005A | 07/21/2017 | 23:29 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 166.85 | 166.85 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.14 | 7.14 | | | | |
| Total Alkalinity | 166.85 | 166.85 | Y | Y | | |
| Temperature of pH | 23.97 | 23.97 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9103586** | **126893** | | 17202002103A | 1.00 | 005A | 07/21/2017 | 23:36 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.16 | 1.16 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.54 | 5.54 | | | | |
| Total Alkalinity | 1.16 | 1.16 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9107805** | **126894** | | 17202002103A | 1.00 | 005A | 07/21/2017 | 23:45 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 356.41 | 356.41 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.76 | 7.76 | | | | |
| Total Alkalinity | 356.41 | 356.41 | Y | Y | | |
| Temperature of pH | 23.80 | 23.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9108063** | **126895** | | 17202002103A | 1.00 | 005A | 07/21/2017 | 23:53 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 86.99 | 86.99 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.58 | 7.58 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Total Alkalinity | 86.99 | 86.99 | Y | Y | |
| Temperature of pH | 23.86 | 23.86 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9107680 | 126896 | | 17202002103A | 1.00 | 005B | 07/22/2017 | 0:01 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 44.15 | 44.15 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.28 | 7.28 | | | | |
| Total Alkalinity | 44.15 | 44.15 | Y | Y | | |
| Temperature of pH | 23.68 | 23.68 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9110702 | 126897 | | 17202002103A | 1.00 | 005B | 07/22/2017 | 0:08 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 7.53 | 7.53 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.02 | 6.02 | | | | |
| Total Alkalinity | 7.53 | 7.53 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9110704 | 126898 | | 17202002103A | 1.00 | 005B | 07/22/2017 | 0:17 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 10.33 | 10.33 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.08 | 6.08 | | | | |
| Total Alkalinity | 10.33 | 10.33 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9110703 | 126899 | | 17202002103A | 1.00 | 005B | 07/22/2017 | 0:24 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 45.86 | 45.86 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.63 | 6.63 | | | | |
| Total Alkalinity | 45.86 | 45.86 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9106232 | 126900 | | 17202002103A | 1.00 | 005A | 07/22/2017 | 0:32 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 48.30 | 48.30 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.30 | 7.30 | | | | |
| Total Alkalinity | 48.30 | 48.30 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9098756 | 126901 | | 17202002103A | 1.00 | 005A | 07/22/2017 | 0:39 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 36.72 | 36.72 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Hydroxide | 0.00 | 0.00 | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.33 | 7.33 | | | |
| Total Alkalinity | 36.72 | 36.72 | Y | Y | |
| Temperature of pH | 23.70 | 23.70 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126902** | CCV | | 1.00 | 07/22/2017 | 0:44 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.93 | 6.93 | | |
| Temperature of pH | 23.96 | 23.96 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126903** | CCB | | 1.00 | 07/22/2017 | 0:51 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.79 | 1.79 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.52 | 6.52 | | |
| Total Alkalinity | 1.79 | 1.79 | | |
| Temperature of pH | 23.80 | 23.80 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **PBW** | **126904** | B | 17202002104A | 1.00 | 07/22/2017 | 0:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.40 | 0.40 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.81 | 5.81 | | | | |
| Total Alkalinity | 0.40 | 0.40 | Y | Y | | |
| Temperature of pH | 23.73 | 23.73 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSAK** | **126905** | Q | 17202002104A | 1.00 | 07/22/2017 | 1:07 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 55.30 | 55.30 | | | | |
| Carbonate | 109.84 | 109.84 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 54.92 | 54.92 | | | | |
| pH | 9.90 | 9.90 | | | | |
| Total Alkalinity | 165.14 | 165.14 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **LCSPH** | **126906** | Q | 17202002104A | 1.00 | 07/22/2017 | 1:11 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.93 | 6.93 | | | | |
| Temperature of pH | 23.65 | 23.65 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112108** | **126907** | U | 17202002104A | 1.00 | 070A | 07/22/2017 | 1:19 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 158.30 | 158.30 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.35 | 7.35 | | | | |
| Total Alkalinity | 158.30 | 158.30 | Y | Y | | |
| Temperature of pH | 23.59 | 23.59 | | | | |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9112108 | 126908 | R | 17202002104A | 1.00 | 070A | 07/22/2017 | 1:27 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 221.77 | 221.77 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.89 | 7.89 | | | | |
| Total Alkalinity | 221.77 | 221.77 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9112108 | 126909 | D | 17202002104A | 1.00 | 070A | 07/22/2017 | 1:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 157.93 | 157.93 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.40 | 7.40 | | | | |
| Total Alkalinity | 157.93 | 157.93 | Y | Y | | |
| Temperature of pH | 23.68 | 23.68 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9108633 | 126910 | U | 17202002104B | 1.00 | 070A | 07/22/2017 | 1:43 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 56.78 | 56.78 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.59 | 7.59 | | | | |
| Total Alkalinity | 56.78 | 56.78 | Y | Y | | |
| Temperature of pH | 23.78 | 23.78 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9108633 | 126911 | D | 17202002104B | 1.00 | 070A | 07/22/2017 | 1:51 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 57.47 | 57.47 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.56 | 7.56 | | | | |
| Total Alkalinity | 57.47 | 57.47 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9111879 | 126912 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 1:59 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 77.11 | 77.11 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.95 | 6.95 | | | | |
| Total Alkalinity | 77.11 | 77.11 | Y | Y | | |
| Temperature of pH | 23.88 | 23.88 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| 9111908 | 126913 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:07 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 22.87 | 22.87 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| pH | 7.22 | 7.22 | | | |
| Total Alkalinity | 22.87 | 22.87 | Y | Y | |
| Temperature of pH | 23.94 | 23.94 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126914** | CCV | | 1.00 | 07/22/2017 | 2:11 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.93 | 6.93 | | |
| Temperature of pH | 23.68 | 23.68 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126915** | CCB | | 1.00 | 07/22/2017 | 2:19 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.48 | 1.48 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.57 | 6.57 | | |
| Total Alkalinity | 1.48 | 1.48 | | |
| Temperature of pH | 23.67 | 23.67 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112829** | **126916** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:27 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 28.28 | 28.28 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.36 | 7.36 | | | | |
| Total Alkalinity | 28.28 | 28.28 | Y | Y | | |
| Temperature of pH | 23.88 | 23.88 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9111907** | **126917** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:35 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 104.33 | 104.33 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.60 | 7.60 | | | | |
| Total Alkalinity | 104.33 | 104.33 | Y | Y | | |
| Temperature of pH | 23.70 | 23.70 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9112451** | **126918** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:42 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 1.72 | 1.72 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.64 | 5.64 | | | | |
| Total Alkalinity | 1.72 | 1.72 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| **9106222** | **126919** | | 17202002104A | 1.00 | 005A | 07/22/2017 | 2:50 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 46.98 | 46.98 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.71 | 6.71 | | | | |
| Total Alkalinity | 46.98 | 46.98 | Y | Y | | |

| | | | |
|---|---|---|---|
| Temperature of pH | 23.70 | 23.70 | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9113230** | **126920** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 2:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 140.06 | 140.06 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.61 | 7.61 | | | | |
| Total Alkalinity | 140.06 | 140.06 | Y | Y | | |
| Temperature of pH | 23.72 | 23.72 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9110737** | **126921** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:06 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 137.89 | 137.89 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.52 | 7.52 | | | | |
| Total Alkalinity | 137.89 | 137.89 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9112940** | **126922** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:14 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 55.38 | 55.38 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.36 | 7.36 | | | | |
| Total Alkalinity | 55.38 | 55.38 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9113868** | **126923** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:21 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 48.77 | 48.77 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.24 | 7.24 | | | | |
| Total Alkalinity | 48.77 | 48.77 | Y | Y | | |
| Temperature of pH | 23.88 | 23.88 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9112009** | **126924** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:30 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 148.13 | 148.13 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.66 | 7.66 | | | | |
| Total Alkalinity | 148.13 | 148.13 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109534** | **126925** | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:38 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 60.84 | 60.84 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Phenolphthalein Alkali | 0.00 | 0.00 | | | |
| pH | 7.53 | 7.53 | | | |
| Total Alkalinity | 60.84 | 60.84 | Y | Y | |
| Temperature of pH | 23.84 | 23.84 | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCVPH2 | 126926 | CCV | | 1.00 | 07/22/2017 | 3:42 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.80 | 23.80 | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| CCB | 126927 | CCB | | 1.00 | 07/22/2017 | 3:50 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.89 | 1.89 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.50 | 6.50 | | |
| Total Alkalinity | 1.89 | 1.89 | | |
| Temperature of pH | 23.57 | 23.57 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109533 | 126928 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 3:58 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 104.45 | 104.45 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.48 | 7.48 | | | | |
| Total Alkalinity | 104.45 | 104.45 | Y | Y | | |
| Temperature of pH | 23.80 | 23.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109537 | 126929 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:06 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 104.22 | 104.22 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.58 | 7.58 | | | | |
| Total Alkalinity | 104.22 | 104.22 | Y | Y | | |
| Temperature of pH | 23.83 | 23.83 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109432 | 126930 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:14 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 45.63 | 45.63 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.45 | 7.45 | | | | |
| Total Alkalinity | 45.63 | 45.63 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109536 | 126931 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:21 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 35.10 | 35.10 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.66 | 6.66 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Total Alkalinity | 35.10 | 35.10 | Y | Y | |
| Temperature of pH | 23.88 | 23.88 | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109538 | 126932 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:28 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 32.80 | 32.80 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.71 | 6.71 | | | | |
| Total Alkalinity | 32.80 | 32.80 | Y | Y | | |
| Temperature of pH | 23.80 | 23.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109535 | 126933 | | 17202002104A | 1.00 | 070A | 07/22/2017 | 4:36 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 97.44 | 97.44 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.61 | 7.61 | | | | |
| Total Alkalinity | 97.44 | 97.44 | Y | Y | | |
| Temperature of pH | 23.84 | 23.84 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| PBW | 126934 | B | 17202002105A | 1.00 | 07/22/2017 | 4:43 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 0.92 | 0.92 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 5.97 | 5.97 | | | | |
| Total Alkalinity | 0.92 | 0.92 | Y | Y | | |
| Temperature of pH | 23.97 | 23.97 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| LCSAK | 126935 | Q | 17202002105A | 1.00 | 07/22/2017 | 4:52 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 64.18 | 64.18 | | | | |
| Carbonate | 104.63 | 104.63 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 52.31 | 52.31 | | | | |
| pH | 9.85 | 9.85 | | | | |
| Total Alkalinity | 168.81 | 168.81 | Y | Y | | |
| Temperature of pH | 23.76 | 23.76 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Run Date: | |
|---|---|---|---|---|---|---|
| LCSPH | 126936 | Q | 17202002105A | 1.00 | 07/22/2017 | 4:56 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| pH | 6.93 | 6.93 | | | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run Date: | |
|---|---|---|---|---|---|---|---|
| 9109541 | 126937 | U | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:04 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 37.99 | 37.99 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.40 | 7.40 | | | | |
| Total Alkalinity | 37.99 | 37.99 | Y | Y | | |
| Temperature of pH | 23.81 | 23.81 | | | | |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCVPH2** | **126938** | CCV | | 1.00 | 07/22/2017 | 5:08 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| pH | 6.94 | 6.94 | | |
| Temperature of pH | 23.83 | 23.83 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: | |
|---|---|---|---|---|---|---|
| **CCB** | **126939** | CCB | | 1.00 | 07/22/2017 | 5:16 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 2.09 | 2.09 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.50 | 6.50 | | |
| Total Alkalinity | 2.09 | 2.09 | | |
| Temperature of pH | 23.78 | 23.78 | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109541** | **126940** | R | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:25 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 74.03 | 74.03 | | | | |
| Carbonate | 5.95 | 5.95 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 2.98 | 2.98 | | | | |
| pH | 8.55 | 8.55 | | | | |
| Total Alkalinity | 79.98 | 79.98 | Y | Y | | |
| Temperature of pH | 23.80 | 23.80 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109541** | **126941** | D | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:34 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 38.78 | 38.78 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.52 | 7.52 | | | | |
| Total Alkalinity | 38.78 | 38.78 | Y | Y | | |
| Temperature of pH | 23.75 | 23.75 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109539** | **126942** | | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:41 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 96.01 | 96.01 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 7.86 | 7.86 | | | | |
| Total Alkalinity | 96.01 | 96.01 | Y | Y | | |
| Temperature of pH | 23.96 | 23.96 | | | | |

| Sample | Index | QC Type | Batch | Dilution | Bottle | Run_Date: | |
|---|---|---|---|---|---|---|---|
| **9109540** | **126943** | | 17202002105A | 1.00 | 070A | 07/22/2017 | 5:49 |

| Analysis Name | Raw Result | CalcResult | Uploaded? | Verified | QC Review Notes | Selection Reason |
|---|---|---|---|---|---|---|
| Bicarbonate | 22.26 | 22.26 | | | | |
| Carbonate | 0.00 | 0.00 | | | | |
| Hydroxide | 0.00 | 0.00 | | | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | | | |
| pH | 6.58 | 6.58 | | | | |
| Total Alkalinity | 22.26 | 22.26 | Y | Y | | |
| Temperature of pH | 23.88 | 23.88 | | | | |

# Water Quality Run Report

**Run Name: 20170721-21** **Instrument: 19074**

Analyst : 24931 - Ian D. Toomey Verifier : 665 - Erik J. Frederiksen

| Sample | Index | QC Type | Batch | Dilution | Run_Date: |
|---|---|---|---|---|---|
| **CCVPH2** | **126944** | CCV | | 1.00 | 07/22/2017 5:58 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1344.93 | 1,344.93 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.94 | 6.94 | | |
| Total Alkalinity | 1344.93 | 1,344.93 | | |
| Temperature of pH | 23.83 | 23.83 | | |

| Sample | Index | QC Type | Batch | Dilution | Run_Date: |
|---|---|---|---|---|---|
| **CCB** | **126945** | CCB | | 1.00 | 07/22/2017 6:05 |

| Analysis Name | Raw Result | CalcResult | Verified | QC Review Notes |
|---|---|---|---|---|
| Bicarbonate | 1.30 | 1.30 | | |
| Carbonate | 0.00 | 0.00 | | |
| Hydroxide | 0.00 | 0.00 | | |
| Phenolphthalein Alkali | 0.00 | 0.00 | | |
| pH | 6.37 | 6.37 | | |
| Total Alkalinity | 1.30 | 1.30 | | |
| Temperature of pH | 24.07 | 24.07 | | |

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2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 07/20/17

# SDG# KR190

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1828359 | 9114605-9114609 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **08/08/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR190
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9114605 | GW004-173 | 07/20/2017 08:40 | 07/21/2017 09:30 |
| 9114606 | GW099-173 | 07/20/2017 12:05 | 07/21/2017 09:30 |
| 9114607 | GW100-173 | 07/20/2017 10:25 | 07/21/2017 09:30 |
| 9114608 | TB173-27 | 07/20/2017 12:15 | 07/21/2017 09:30 |
| 9114609 | TB173-28 | 07/20/2017 12:15 | 07/21/2017 09:30 |

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# Sample pH Log

**SDG: KR190**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9114605 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/27/2017 3:00:56PM | 2035 |
| 9114606 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/27/2017 3:00:52PM | 2035 |
| 9114607 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/27/2017 3:00:52PM | 2035 |
| 9114608 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/27/2017 3:00:52PM | 2035 |
| 9114609 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/27/2017 3:00:52PM | 2035 |

| Check Code Key |
|---|
| **PK** = Original container checked - pH is within the correct range. (No preservative was added) |
| **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) |
| **PV** = Volatile container checked |
| **PC** = pH checked (unpreserved container) |
| **SPK** = Subsampled from an original container. Original container checked - pH is within correct range |
| **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. |
| **SPC** = Subsampled from an original container. pH checked (unpreserved container). |
| **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. |
| **UP** = Unable to preserve due to matrix of the sample. |
| **NA** = Not applicable |

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### 01163 GC/MS VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

---

### 11997 VOCs- 5ml Water by 8260C

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

---

### 10398 8011 Master Master

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

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### 07786 EDB Extraction (8011)

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

# Analysis Reports / Field Chain of Custody

REVISED

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: August 07, 2017

**Project: Kirtland AFB**

Submittal Date: 07/21/2017
Group Number: 1828359
SDG: KR190
PO Number: 14800
State of Sample Origin: NM

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| GW004-173 Water | 9114605 |
| GW099-173 Water | 9114606 |
| GW100-173 Water | 9114607 |
| TB173-27 Water | 9114608 |
| TB173-28 Water | 9114609 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

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REVISED

Respectfully Submitted,

(717) 556-7364

Project Name: Kirtland AFB
LL Group #: 1828359

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

No additional comments are necessary.

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# Analysis Report

REVISED

**Sample Description: GW004-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9114605**
**LL Group # 1828359**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/20/2017 08:40 by CM

Submitted: 07/21/2017 09:30
Reported: 08/07/2017 14:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

19001 SDG#: KR190-01

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0094 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172072AA | 07/27/2017 00:51 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172072AA | 07/27/2017 00:51 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020053A | 07/25/2017 01:08 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020053A | 07/23/2017 16:30 | Edwin Ortiz | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

REVISED

**Sample Description: GW099-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9114606**
**LL Group # 1828359**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/20/2017 12:05 by CM

Submitted: 07/21/2017 09:30
Reported: 08/07/2017 14:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

19002 SDG#: KR190-02

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.6 | J | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172072AA | 07/27/2017 01:13 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172072AA | 07/27/2017 01:13 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020053A | 07/25/2017 01:24 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020053A | 07/23/2017 16:30 | Edwin Ortiz | 1 |

*=This limit was used in the evaluation of the final result

REVISED

**Sample Description: GW100-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9114607**
**LL Group # 1828359**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/20/2017 10:25 by CM

Submitted: 07/21/2017 09:30
Reported: 08/07/2017 14:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

19003 SDG#: KR190-03

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.6 | J | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0094 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172072AA | 07/27/2017 01:35 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172072AA | 07/27/2017 01:35 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020053A | 07/25/2017 01:40 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020053A | 07/23/2017 16:30 | Edwin Ortiz | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

REVISED

**Sample Description: TB173-27 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9114608**
**LL Group # 1828359**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/20/2017 12:15

Submitted: 07/21/2017 09:30
Reported: 08/07/2017 14:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

19004 SDG#: KR190-04TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0094 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172072AA | 07/26/2017 21:57 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172072AA | 07/26/2017 21:57 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020053A | 07/25/2017 02:12 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020053A | 07/23/2017 16:30 | Edwin Ortiz | 1 |

*=This limit was used in the evaluation of the final result

REVISED

**Sample Description: TB173-28 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9114609**
**LL Group # 1828359**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/20/2017 12:15

Submitted: 07/21/2017 09:30
Reported: 08/07/2017 14:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

19005 SDG#: KR190-05TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0094 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172072AA | 07/26/2017 22:18 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172072AA | 07/26/2017 22:18 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172020053A | 07/25/2017 02:28 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172020053A | 07/23/2017 16:30 | Edwin Ortiz | 1 |

*=This limit was used in the evaluation of the final result

REVISED

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 14:13

Group Number: 1828359

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Batch number: L172072AA | Sample number(s): 9114605-9114609 | | | | |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Ethylbenzene | 1 | U | 0.5 | 1 | 1 |
| Toluene | 1 | U | 0.5 | 1 | 1 |
| Xylene (Total) | 1 | U | 0.5 | 1 | 1 |
| Batch number: 172020053A | Sample number(s): 9114605-9114609 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L172072AA | Sample number(s): 9114605-9114609 | | | | | | | | |
| Benzene | 20 | 21.31 | | | 107 | | 79-120 | | |
| Ethylbenzene | 20 | 21.87 | | | 109 | | 79-121 | | |
| Toluene | 20 | 21.59 | | | 108 | | 80-121 | | |
| Xylene (Total) | 60 | 64.41 | | | 107 | | 79-121 | | |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172020053A | Sample number(s): 9114605-9114609 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.137 | 0.128 | 0.137 | 107 | 107 | 60-140 | 0 | 20 |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L172072AA | Sample number(s): 9114605-9114609 UNSPK: P116346 | | | | | | | | | | |
| Benzene | 1 | U | 20 | 21.66 | 20 | 21.71 | 108 | 109 | 79-120 | 0 | 20 |
| Ethylbenzene | 2.23 | | 20 | 24.57 | 20 | 24.14 | 112 | 110 | 79-121 | 2 | 20 |
| Toluene | 1 | U | 20 | 21.37 | 20 | 21.15 | 107 | 106 | 80-121 | 1 | 20 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 14:13

Group Number: 1828359

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Xylene (Total) | 23.36 | 60 | 89.87 | 60 | 87.24 | 111 | 106 | 79-121 | 3 | 20 |
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172020053A | Sample number(s): 9114605-9114609 UNSPK: 9114609 | | | | | | | | | |
| Ethylene dibromide | 0.019 U | 0.121 | 0.129 | | | 106 | | 60-140 | | |

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc ug/l | DUP Conc ug/l | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| Batch number: 172020053A | Sample number(s): 9114605-9114609 BKG: 9114608 | | | |
| Ethylene dibromide | 0.019 U | 0.019 U | 0 (1) | 30 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: BTEX 8260C Water
Batch number: L172072AA

| | Dibromofluoromethane %Rec | LOD (ug/l) | 1,2-Dichloroethane-d4 %Rec | LOD (ug/l) | Toluene-d8 %Rec | LOD (ug/l) | 4-Bromofluorobenzene %Rec | LOD (ug/l) |
|---|---|---|---|---|---|---|---|---|
| 9114605 | 106 | 1 | 102 | 1 | 98 | 1 | 101 | 1 |
| 9114606 | 108 | 1 | 100 | 1 | 99 | 1 | 102 | 1 |
| 9114607 | 110 | 1 | 104 | 1 | 98 | 1 | 101 | 1 |
| 9114608 | 109 | 1 | 106 | 1 | 98 | 1 | 100 | 1 |
| 9114609 | 110 | 1 | 104 | 1 | 98 | 1 | 101 | 1 |
| Blank | 109 | 1 | 105 | 1 | 98 | 1 | 101 | 1 |
| LCS | 106 | 1 | 100 | 1 | 101 | 1 | 107 | 1 |
| MS | 106 | 1 | 101 | 1 | 98 | 1 | 104 | 1 |
| MSD | 106 | 1 | 101 | 1 | 99 | 1 | 103 | 1 |
| Limits: | 80-119 | | 81-118 | | 89-112 | | 85-114 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Group Number: 1828359
Reported: 08/07/2017 14:13

## Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: EDB 8011 Water
Batch number: 172020053A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9114605 | 108 | 0.0066 |
| 9114606 | 105 | 0.0066 |
| 9114607 | 111 | 0.0066 |
| 9114608 | 96 | 0.0066 |
| 9114609 | 97 | 0.0066 |
| Blank | 100 | 0.0070 |
| DUP | 99 | 0.0066 |
| LCS | 99 | 0.0070 |
| LCSD | 94 | 0.0070 |
| MS | 100 | 0.0066 |
| Limits: | 46-136 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 | 1828359 | 9114605-09

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Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-004-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: **Kirtland AFB Bulk Fuels Facility** | PROJECT NUMBER: **62599DM01** | LABORATORY NAME AND CONTACT: **Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW004-173 | 7-20-17 | 0840 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 27

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 810487647802

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-20-17 | 1430 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Evelyn Shank | 7/21/17 | 0930 |

31675 | 1828359 | 9114605-09

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-099-173

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW099-173 | 7-20-17 | 1205 | 5 | - | 3 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 27

SAMPLER(S): Carlos Montoya

COURIER AND SHIPPING NUMBER: FedEx 810487647802

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: Carlos Montoya | 7-20-17 | 1430 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Evelyn Shank | 7/21/17 | 0930 |

31675 / 1828359 / 9114605-09

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-100-173

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
|---|---|---|---|---|
| **Kirtland AFB Bulk Fuels Facility** | **62599DM01** | **Eurofins Lancaster Laboratories**<br>**2425 New Holland Pike Lancaster PA 17601** | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: 3 (Jul-Sep) |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total (As,Pb,Ca,K,Na,Mg) | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW100-173 | 7-20-17 | 1025 | 5 | – | 3 | – | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS:

TB173- 28

SAMPLER(S): C. Montoya

COURIER AND SHIPPING NUMBER: FedEx 810487647813

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-20-17 | 1430 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | EVELYN SHANK | 7/21/17 | 0930 |

31675 | 1828359 | 9114605-09

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 27

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017; QUARTER: 3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB173- 27 | 7/20/17 | 1215 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | SS | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with

GW 004-173 and GW 099-173

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 810487647802

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin Sultana | 7/20/17 | 1430 | Carlos Montoya | 7-20-17 | 1430 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-20-17 | 1430 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Evelyn Spank | 7/21/17 | 0930 |

31675 / 1828359 / 9114605-09

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB173- 28

| PROJECT NAME: | PROJECT NUMBER: | LABORATORY NAME AND CONTACT: | FAX AND MAIL REPORTS/EDD TO: | YEAR: |
|---|---|---|---|---|
| Kirtland AFB Bulk Fuels Facility | 62599DM01 | Eurofins Lancaster Laboratories<br>2425 New Holland Pike Lancaster PA 17601 | Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | 2017 |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | | QUARTER: 3 |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B) | |
| 1 | TB173- 28 | 7/20/17 | 1215 | 4 | - | 2 | - | 2 | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | SS | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Associated with

GW 100-173

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: FedEx 810487647813

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA | 7/20/17 | 1430 | Carlos Montoya | 7-20-17 | 1430 |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Carlos Montoya | 7-20-17 | 1430 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | Evelyn Shank | 7/21/17 | 0930 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 189458

Group Number(s): 1828359

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/21/2017 9:30 |
| Number of Packages: | 2 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | N/A |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 8 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Ruth Shank (12390) at 11:40 on 07/21/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT42-02 | 0.8 | DT | Wet | Y | Bagged | N |
| 2 | DT42-02 | 0.8 | DT | Wet | Y | Bagged | N |



2425 New Holland Pike
Lancaster, PA 17601-2422
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | non-detect |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| D1 | Indicates for dual column analyses that the result is reported from column 1 |
| D2 | Indicates for dual column analyses that the result is reported from column 2 |
| E | Concentration exceeds the calibration range |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# Volatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Volatiles by GC/MS

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR190**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9114605 | GW004-173 | X | | 1 | |
| 9114606 | GW099-173 | X | | 1 | |
| 9114607 | GW100-173 | X | | 1 | |
| 9114608 | TB173-27 | X | | 1 | Trip Blank |
| 9114609 | TB173-28 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR190**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Volatiles by GC/MS

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# Quality Control Reference List
## GC/MS Volatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR190**

**Fraction: Volatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| BTEX 8260C Water | L172072AA | VBLKL83 | 07/26/2017 21:18:00 |
| | | LCSL83 | 07/26/2017 20:56:00 |
| | | 9114605 | 07/27/2017 00:51:00 |
| | | 9114606 | 07/27/2017 01:13:00 |
| | | 9114607 | 07/27/2017 01:35:00 |
| | | 9114608 | 07/26/2017 21:57:00 |
| | | 9114609 | 07/26/2017 22:18:00 |

**Quality Control Summary**
**Method Blank**
**GC/MS Volatiles**
**SDG: KR190**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172072AA / VBLKL83<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Benzene | 07/26/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Toluene | 07/26/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Ethylbenzene | 07/26/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Xylene (Total) | 07/26/17 | N.D. | ug/l | 0.5 | 1 | 1 |

**Quality Control Summary**
**Surrogates**
**GC/MS Volatiles**
**SDG: KR190**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172072AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKL83 | 105 | 81 - 118 | 101 | 85 - 114 | 109 | 80 - 119 | 98 | 89 - 112 |
| LCSL83 | 100 | 81 - 118 | 107 | 85 - 114 | 106 | 80 - 119 | 101 | 89 - 112 |
| 9114605 | 102 | 81 - 118 | 101 | 85 - 114 | 106 | 80 - 119 | 98 | 89 - 112 |
| 9114606 | 100 | 81 - 118 | 102 | 85 - 114 | 108 | 80 - 119 | 99 | 89 - 112 |
| 9114607 | 104 | 81 - 118 | 101 | 85 - 114 | 110 | 80 - 119 | 98 | 89 - 112 |
| 9114608 | 106 | 81 - 118 | 100 | 85 - 114 | 109 | 80 - 119 | 98 | 89 - 112 |
| 9114609 | 104 | 81 - 118 | 101 | 85 - 114 | 110 | 80 - 119 | 98 | 89 - 112 |

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR190**
**Matrix: LIQUID**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSL83 | Batch: **L172072AA** (Sample number(s): 9114605-9114609 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | 21.31 | NA | 107 | NA | 79-120 | NA | NA |
| Toluene | 20 | 21.59 | NA | 108 | NA | 80-121 | NA | NA |
| Ethylbenzene | 20 | 21.87 | NA | 109 | NA | 79-121 | NA | NA |
| Xylene (Total) | 60 | 64.41 | NA | 107 | NA | 79-121 | NA | NA |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR190___

Lab File ID: la26t01.d  BFB Injection Date: 04/26/17

Instrument ID: HP09915  BFB Injection Time: 12:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.10 |
| 75 | 30.0 - 60.0% of mass 95 | 44.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.79 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.54)1 |
| 174 | Greater than 50.0% of mass 95 | 90.09 |
| 175 | 5.0 - 9.0% of mass 174 | 6.12 ( 6.79)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 86.74 (96.29)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.56 ( 6.41)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | la26i01.d | 04/26/17 | 13:20 |
| 02 | VSTD100 | la26i02.d | 04/26/17 | 13:42 |
| 03 | VSTD50 | la26i03.d | 04/26/17 | 14:04 |
| 04 | VSTD20 | la26i04.d | 04/26/17 | 14:26 |
| 05 | VSTD10 | la26i05.d | 04/26/17 | 14:48 |
| 06 | VSTD4 | la26i06.d | 04/26/17 | 15:10 |
| 07 | VSTD1 | la26i07.d | 04/26/17 | 15:32 |
| 08 | MDL0.5 - MDL0.5 | la26m01.d | 04/26/17 | 15:54 |
| 09 | VBLKL48 | la26b31.d | 04/26/17 | 17:03 |
| 10 | LCSL46 | la26s01.d | 04/26/17 | 17:25 |
| 11 | LCSL48 | la26s31.d | 04/26/17 | 17:25 |
| 12 | ACRICV | la26s01a.d | 04/26/17 | 18:34 |
| 13 | 8944378 | la26s32.d | 04/26/17 | 19:15 |
| 14 | 8944379 | la26s33.d | 04/26/17 | 19:37 |
| 15 | 8947184 | la26s34.d | 04/26/17 | 19:59 |
| 16 | 8944352 | la26s35.d | 04/26/17 | 20:21 |
| 17 | 8944353MS | la26s36.d | 04/26/17 | 20:43 |
| 18 | 8944354MSD | la26s37.d | 04/26/17 | 21:05 |
| 19 | 8944360 | la26s38.d | 04/26/17 | 21:27 |
| 20 | 8944366 | la26s39.d | 04/26/17 | 21:49 |
| 21 | 8944368 | la26s40.d | 04/26/17 | 22:11 |
| 22 | 8944370 | la26s41.d | 04/26/17 | 22:33 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR190___

Lab File ID: la26t01.d  BFB Injection Date: 04/26/17

Instrument ID: HP09915  BFB Injection Time: 12:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.10 |
| 75 | 30.0 - 60.0% of mass 95 | 44.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.79 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.54)1 |
| 174 | Greater than 50.0% of mass 95 | 90.09 |
| 175 | 5.0 - 9.0% of mass 174 | 6.12 ( 6.79)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 86.74 (96.29)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.56 ( 6.41)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 8947174 | la26s42.d | 04/26/17 | 22:55 |
| 24 | 8947180 | la26s43.d | 04/26/17 | 23:17 |
| 25 | SECC050 | la26ec1.d | 04/26/17 | 23:38 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR190___

Lab File ID: l126t05.d  BFB Injection Date: 07/26/17

Instrument ID: HP09915  BFB Injection Time: 19:52

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 20.90 |
| 75 | 30.0 - 60.0% of mass 95 | 49.92 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 7.27 |
| 173 | Less than 2.0% of mass 174 | 0.98 ( 1.10)1 |
| 174 | Greater than 50.0% of mass 95 | 89.67 |
| 175 | 5.0 - 9.0% of mass 174 | 6.78 ( 7.56)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.20 (99.47)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.45 ( 6.11)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | l126c05.d | 07/26/17 | 20:34 |
| 02 | LCSL83 | l126s31.d | 07/26/17 | 20:56 |
| 03 | VBLKL83 | l126b05.d | 07/26/17 | 21:18 |
| 04 | 9114608 | l126s32.d | 07/26/17 | 21:57 |
| 05 | 9114609 | l126s33.d | 07/26/17 | 22:18 |
| 06 | 9116351 | l126s34.d | 07/26/17 | 22:40 |
| 07 | 9116352 | l126s35.d | 07/26/17 | 23:02 |
| 08 | 9116356 | l126s36.d | 07/26/17 | 23:24 |
| 09 | 9116346 | l126s37.d | 07/26/17 | 23:46 |
| 10 | 9116347MS | l126s38.d | 07/27/17 | 00:07 |
| 11 | 9116348MSD | l126s39.d | 07/27/17 | 00:29 |
| 12 | 9114605 | l126s40.d | 07/27/17 | 00:51 |
| 13 | 9114606 | l126s41.d | 07/27/17 | 01:13 |
| 14 | 9114607 | l126s42.d | 07/27/17 | 01:35 |
| 15 | 9116344 | l126s43.d | 07/27/17 | 01:56 |
| 16 | 9116353 | l126s44.d | 07/27/17 | 02:18 |
| 17 | 9116354 | l126s45.d | 07/27/17 | 02:40 |
| 18 | 9116343 | l126s46.d | 07/27/17 | 03:02 |
| 19 | 9116343DL | l126s47.d | 07/27/17 | 03:24 |
| 20 | 9116345 | l126s48.d | 07/27/17 | 03:45 |
| 21 | 9116345DL | l126s49.d | 07/27/17 | 04:07 |
| 22 | 9116349 | l126s50.d | 07/27/17 | 04:29 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR190___

Lab File ID: l126t05.d  BFB Injection Date: 07/26/17

Instrument ID: HP09915  BFB Injection Time: 19:52

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 20.90 |
| 75 | 30.0 - 60.0% of mass 95 | 49.92 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 7.27 |
| 173 | Less than 2.0% of mass 174 | 0.98 ( 1.10)1 |
| 174 | Greater than 50.0% of mass 95 | 89.67 |
| 175 | 5.0 - 9.0% of mass 174 | 6.78 ( 7.56)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 89.20 (99.47)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.45 ( 6.11)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 9116349DL | l126s51.d | 07/27/17 | 04:51 |
| 24 | 9116350 | l126s52.d | 07/27/17 | 05:13 |
| 25 | 9116350DL | l126s53.d | 07/27/17 | 05:35 |
| 26 | 9116355 | l126s54.d | 07/27/17 | 05:56 |
| 27 | 9116355DL | l126s55.d | 07/27/17 | 06:18 |
| 28 | SECC050 | l126ec5.d | 07/27/17 | 06:40 |

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 04/26/17 04/26/17

Heated Purge: (Y/N) Y Calibration Times: 13:20 15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d RRF 4 = la26i06.d RRF 10= la26i05.d
RRF 20= la26i04.d RRF 50= la26i03.d RRF100= la26i02.d RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | #0.2475 | 0.3109 | 0.2816 | 0.2855 | 0.3296 | 0.3182 | 0.3116 | 0.2979 | 9 | AVG | # |
| Chloromethane | #0.2728 | 0.3009 | 0.2971 | 0.3105 | 0.3299 | 0.3276 | 0.3031 | 0.3060 | 6 | AVG | # |
| 1,3-Butadiene | 0.1870 | 0.2029 | 0.1572 | 0.1857 | 0.1788 | 0.1756 | 0.1743 | 0.1802 | 8 | AVG | |
| Vinyl Chloride | #0.2596 | 0.2956 | 0.2812 | 0.2907 | 0.3269 | 0.3169 | 0.2974 | 0.2955 | 8 | AVG | # |
| Bromomethane | #0.1784 | 0.1942 | 0.1974 | 0.1985 | 0.2158 | 0.2102 | 0.1966 | 0.1987 | 6 | AVG | # |
| Chloroethane | #0.1512 | 0.1679 | 0.1637 | 0.1665 | 0.1796 | 0.1749 | 0.1619 | 0.1665 | 6 | AVG | # |
| Dichlorofluoromethane | 0.3565 | 0.4027 | 0.3929 | 0.4138 | 0.4398 | 0.4365 | 0.4009 | 0.4062 | 7 | AVG | |
| n-Pentane | 0.2779 | 0.3107 | 0.2558 | 0.2941 | 0.2818 | 0.2797 | 0.2725 | 0.2818 | 6 | AVG | |
| Trichlorofluoromethane | #0.2818 | 0.3506 | 0.3242 | 0.3264 | 0.3829 | 0.3708 | 0.3584 | 0.3422 | 10 | AVG | # |
| Ethyl ether | 0.1717 | 0.1900 | 0.1802 | 0.1983 | 0.2030 | 0.1997 | 0.1904 | 0.1905 | 6 | AVG | |
| Freon 123a | 0.2093 | 0.2464 | 0.2048 | 0.2441 | 0.2326 | 0.2304 | 0.2276 | 0.2279 | 7 | AVG | |
| Acrolein | 1.6997 | 1.7547 | 2.0438 | 2.0158 | 2.1800 | 2.3475 | 2.2840 | 2.0465 | 12 | AVG | |
| 1,1-Dichloroethene | #0.1731 | 0.1915 | 0.1632 | 0.1881 | 0.1862 | 0.1822 | 0.1833 | 0.1811 | 5 | AVG | # |
| 1,1-Dichloroethene(2) | #0.0849 | 0.0966 | 0.0823 | 0.0976 | 0.0939 | 0.0935 | 0.0931 | 0.0917 | 6 | AVG | #<- |
| Acetone | #0.7871 | 0.8113 | 0.9514 | 0.8091 | 0.9410 | 0.9228 | 0.9949 | 0.8882 | 9 | AVG | # |
| Freon 113 | #0.1559 | 0.1939 | 0.1621 | 0.1954 | 0.1881 | 0.1902 | 0.1903 | 0.1823 | 9 | AVG | # |
| 2-Propanol | 0.6182 | 0.6115 | 0.5764 | 0.6050 | 0.5447 | 0.5811 | 0.5848 | 0.5888 | 4 | AVG | |
| Methyl Iodide | 0.3218 | 0.3593 | 0.3218 | 0.3715 | 0.3659 | 0.3574 | 0.3612 | 0.3513 | 6 | AVG | |
| Carbon Disulfide | #0.5351 | 0.6016 | 0.5236 | 0.6223 | 0.6181 | 0.6105 | 0.6139 | 0.5893 | 7 | AVG | # |
| Allyl Chloride | 0.3475 | 0.3734 | 0.3447 | 0.3759 | 0.3727 | 0.3634 | 0.3616 | 0.3627 | 3 | AVG | |
| Methyl Acetate | #0.2908 | 0.2561 | 0.2535 | 0.2717 | 0.2645 | 0.2509 | 0.2524 | 0.2628 | 5 | AVG | # |
| Methylene Chloride | #0.2903 | 0.2500 | 0.2150 | 0.2388 | 0.2329 | 0.2250 | 0.2226 | 0.2392 | 11 | AVG | # |
| t-Butyl alcohol | 1.0273 | 0.9259 | 0.9637 | 0.9834 | 0.9700 | 0.9707 | 0.9301 | 0.9673 | 4 | AVG | |
| Acrylonitrile | 0.1150 | 0.1324 | 0.1390 | 0.1386 | 0.1542 | 0.1476 | 0.1394 | 0.1380 | 9 | AVG | |
| trans-1,2-Dichloroethene | #0.1880 | 0.2213 | 0.1984 | 0.2258 | 0.2203 | 0.2168 | 0.2167 | 0.2125 | 7 | AVG | # |
| Methyl Tertiary Butyl Ether | #0.6379 | 0.6679 | 0.6247 | 0.7026 | 0.6961 | 0.6730 | 0.6419 | 0.6634 | 4 | AVG | # |
| n-Hexane | 0.2805 | 0.3406 | 0.3182 | 0.3412 | 0.3308 | 0.3375 | 0.3312 | 0.3257 | 7 | AVG | |
| 1,1-Dichloroethane | #0.3662 | 0.4103 | 0.3686 | 0.4216 | 0.4181 | 0.4088 | 0.4012 | 0.3993 | 6 | AVG | # |
| di-Isopropyl ether | 0.7192 | 0.7694 | 0.7224 | 0.8149 | 0.8086 | 0.7840 | 0.7457 | 0.7663 | 5 | AVG | |
| 2-Chloro-1,3-butadiene | 0.2922 | 0.3422 | 0.3064 | 0.3592 | 0.3555 | 0.3527 | 0.3492 | 0.3368 | 8 | AVG | |
| Ethyl t-butyl ether | 0.6073 | 0.6490 | 0.6229 | 0.7065 | 0.7083 | 0.6819 | 0.6404 | 0.6595 | 6 | AVG | |
| cis-1,2-Dichloroethene | #0.2327 | 0.2468 | 0.2228 | 0.2546 | 0.2536 | 0.2482 | 0.2457 | 0.2435 | 5 | AVG | # |
| 2-Butanone | #0.1686 | 0.1714 | 0.1875 | 0.1858 | 0.2021 | 0.1923 | 0.1859 | 0.1848 | 6 | AVG | # |
| 2,2-Dichloropropane | 0.2099 | 0.2545 | 0.2401 | 0.2836 | 0.2893 | 0.2940 | 0.2945 | 0.2666 | 12 | AVG | |
| Propionitrile | 1.3266 | 1.3235 | 1.3715 | 1.3990 | 1.4565 | 1.5001 | 1.5052 | 1.4118 | 5 | AVG | |
| Methacrylonitrile | 0.1279 | 0.1312 | 0.1333 | 0.1469 | 0.1449 | 0.1412 | 0.1379 | 0.1376 | 5 | AVG | |
| Bromochloromethane | 0.1202 | 0.1246 | 0.1239 | 0.1349 | 0.1321 | 0.1301 | 0.1324 | 0.1283 | 4 | AVG | |
| Tetrahydrofuran | 1.0421 | 1.0386 | 1.2419 | 1.1297 | 1.3657 | 1.4221 | 1.4886 | 1.2470 | 15 | AVG | |
| Chloroform | #0.3575 | 0.3896 | 0.3506 | 0.4000 | 0.3966 | 0.3873 | 0.3822 | 0.3805 | 5 | AVG | # |
| 1,1,1-Trichloroethane | #0.3319 | 0.3922 | 0.3194 | 0.3655 | 0.3422 | 0.3419 | 0.3412 | 0.3478 | 7 | AVG | # |
| Cyclohexane | #0.3470 | 0.4113 | 0.3645 | 0.4180 | 0.4101 | 0.4134 | 0.4075 | 0.3959 | 7 | AVG | # |
| Cyclohexane(2) | #0.2687 | 0.3423 | 0.2971 | 0.3432 | 0.3342 | 0.3422 | 0.3382 | 0.3237 | 9 | AVG | # |
| Cyclohexane(3) | #0.0964 | 0.1208 | 0.1042 | 0.1221 | 0.1184 | 0.1210 | 0.1205 | 0.1148 | 9 | AVG | # |
| 1,1-Dichloropropene | 0.2765 | 0.3166 | 0.2837 | 0.3287 | 0.3218 | 0.3200 | 0.3194 | 0.3095 | 7 | AVG | |
| Carbon Tetrachloride | #0.2046 | 0.2490 | 0.2225 | 0.2690 | 0.2712 | 0.2774 | 0.2834 | 0.2539 | 12 | AVG | # |
| Isobutyl Alcohol | 0.3182 | 0.3284 | 0.3287 | 0.3597 | 0.3519 | 0.3476 | 0.3429 | 0.3396 | 4 | AVG | |
| Benzene | #0.8572 | 0.9361 | 0.8525 | 0.9667 | 0.9477 | 0.9252 | 0.9015 | 0.9124 | 5 | AVG | # |
| 1,2-Dichloroethane | #0.2889 | 0.3116 | 0.2915 | 0.3214 | 0.3232 | 0.3161 | 0.3080 | 0.3087 | 4 | AVG | # |
| 1,2-Dichloroethane(2) | #0.0134 | 0.0275 | 0.0279 | 0.0320 | 0.0308 | 0.0302 | 0.0298 | 0.0274 | 23 | AVG | #<- |
| t-Amyl methyl ether | 0.5956 | 0.6302 | 0.6087 | 0.7002 | 0.7074 | 0.6895 | 0.6501 | 0.6545 | 7 | AVG | |
| n-Heptane | 0.3402 | 0.4010 | 0.3501 | 0.3663 | 0.3616 | 0.3739 | 0.3594 | 0.3647 | 5 | AVG | |
| n-Butanol | 0.2321 | 0.2408 | 0.2553 | 0.2948 | 0.2885 | 0.3038 | 0.3010 | 0.2738 | 11 | AVG | |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 04/26/17  04/26/17

Heated Purge: (Y/N) Y  Calibration Times: 13:20  15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d  RRF 4 = la26i06.d  RRF 10= la26i05.d
RRF 20= la26i04.d  RRF 50= la26i03.d  RRF100= la26i02.d  RRF300= la01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | #0.2291 | 0.2376 | 0.2171 | 0.2444 | 0.2420 | 0.2413 | 0.2390 | 0.2358 | 4 | AVG # |
| Methylcyclohexane | #0.3425 | 0.4354 | 0.3756 | 0.4391 | 0.4392 | 0.4349 | 0.4416 | 0.4155 | 10 | AVG # |
| Methylcyclohexane(2) | #0.1527 | 0.1938 | 0.1685 | 0.1974 | 0.1996 | 0.1987 | 0.2016 | 0.1875 | 10 | AVG # |
| 1,2-Dichloropropane | #0.2227 | 0.2483 | 0.2358 | 0.2634 | 0.2654 | 0.2596 | 0.2533 | 0.2498 | 6 | AVG # |
| Dibromomethane | 0.1469 | 0.1540 | 0.1453 | 0.1634 | 0.1659 | 0.1621 | 0.1620 | 0.1571 | 5 | AVG |
| 1,4-Dioxane | 0.0843 | 0.0764 | 0.0797 | 0.1053 | 0.0898 | 0.0835 | 0.0793 | 0.0855 | 11 | AVG |
| Methyl Methacrylate | 0.1770 | 0.2008 | 0.1983 | 0.2262 | 0.2326 | 0.2311 | 0.2307 | 0.2138 | 10 | AVG |
| Bromodichloromethane | #0.2481 | 0.2673 | 0.2555 | 0.2955 | 0.3066 | 0.3052 | 0.3061 | 0.2835 | 9 | AVG # |
| 2-Nitropropane | 0.0655 | 0.0668 | 0.0740 | 0.0780 | 0.0927 | 0.0915 | 0.0942 | 0.0804 | 15 | AVG |
| 2-Chloroethyl Vinyl Ether | 0.1508 | 0.1784 | 0.1836 | 0.2048 | 0.2093 | 0.2102 | 0.2070 | 0.1920 | 12 | AVG |
| cis-1,3-Dichloropropene | #0.2930 | 0.3410 | 0.3372 | 0.3925 | 0.4071 | 0.4071 | 0.4084 | 0.3695 | 12 | AVG # |
| 4-Methyl-2-pentanone | #0.3194 | 0.3294 | 0.3796 | 0.3953 | 0.4247 | 0.4132 | 0.4041 | 0.3808 | 11 | AVG # |
| Toluene | #0.6827 | 0.7517 | 0.7064 | 0.7999 | 0.7677 | 0.7520 | 0.7330 | 0.7419 | 5 | AVG # |
| trans-1,3-Dichloropropene | #0.3059 | 0.3663 | 0.3795 | 0.4472 | 0.4726 | 0.4689 | 0.4716 | 0.4160 | 16 | AVG # |
| Ethyl Methacrylate | 0.3763 | 0.4210 | 0.4425 | 0.5116 | 0.5217 | 0.5113 | 0.4957 | 0.4686 | 12 | AVG |
| 1,1,2-Trichloroethane | #0.2665 | 0.2762 | 0.2728 | 0.3034 | 0.3049 | 0.2920 | 0.2854 | 0.2859 | 5 | AVG # |
| Tetrachloroethene | #0.2930 | 0.3299 | 0.3192 | 0.3548 | 0.3312 | 0.3339 | 0.3351 | 0.3281 | 6 | AVG # |
| 1,3-Dichloropropane | 0.4716 | 0.4813 | 0.4656 | 0.5287 | 0.5239 | 0.5079 | 0.4934 | 0.4961 | 5 | AVG |
| 2-Hexanone | #0.2828 | 0.3057 | 0.3608 | 0.3898 | 0.3977 | 0.3931 | 0.3768 | 0.3581 | 13 | AVG # |
| Dibromochloromethane | #0.2375 | 0.2630 | 0.2641 | 0.3102 | 0.3298 | 0.3308 | 0.3374 | 0.2961 | 14 | AVG # |
| 1,2-Dibromoethane | #0.2767 | 0.2967 | 0.2975 | 0.3352 | 0.3339 | 0.3278 | 0.3230 | 0.3130 | 7 | AVG # |
| 1-Chlorohexane | 0.4536 | 0.4352 | 0.4043 | 0.4273 | 0.4181 | 0.4234 | 0.4205 | 0.4261 | 4 | AVG |
| Chlorobenzene | #0.7867 | 0.8528 | 0.8140 | 0.9180 | 0.8874 | 0.8733 | 0.8605 | 0.8561 | 5 | AVG # |
| 1,1,1,2-Tetrachloroethane | 0.2410 | 0.2658 | 0.2572 | 0.3009 | 0.3047 | 0.3045 | 0.3048 | 0.2827 | 10 | AVG |
| Ethylbenzene | #1.3005 | 1.4333 | 1.3909 | 1.5359 | 1.4779 | 1.4625 | 1.4167 | 1.4311 | 5 | AVG # |
| m+p-Xylene | #0.4994 | 0.5538 | 0.5367 | 0.5978 | 0.5772 | 0.5732 | 0.5619 | 0.5571 | 6 | AVG # |
| o-Xylene | #0.4903 | 0.5421 | 0.5360 | 0.5924 | 0.5812 | 0.5730 | 0.5635 | 0.5541 | 6 | AVG # |
| Styrene | #0.7531 | 0.8692 | 0.8880 | 1.0054 | 0.9833 | 0.9681 | 0.9446 | 0.9159 | 10 | AVG # |
| Bromoform | #0.1549 | 0.1771 | 0.1880 | 0.2267 | 0.2449 | 0.2513 | 0.2622 | 0.2150 | 19 | AVG # |
| Isopropylbenzene | #1.2079 | 1.4227 | 1.4232 | 1.5063 | 1.4687 | 1.4666 | 1.4168 | 1.4160 | 7 | AVG # |
| Cyclohexanone | 0.2990 | 0.2968 | 0.3246 | 0.3566 | 0.3401 | 0.3292 | 0.3106 | 0.3224 | 7 | AVG |
| Bromobenzene | 0.6537 | 0.7071 | 0.6780 | 0.7611 | 0.7396 | 0.7364 | 0.7270 | 0.7147 | 5 | AVG |
| 1,1,2,2-Tetrachloroethane | #0.8142 | 0.8692 | 0.8499 | 0.9481 | 0.9471 | 0.9256 | 0.8583 | 0.8875 | 6 | AVG # |
| 1,2,3-Trichloropropane | 0.2342 | 0.2517 | 0.2412 | 0.2638 | 0.2643 | 0.2577 | 0.2432 | 0.2509 | 5 | AVG |
| trans-1,4-Dichloro-2-butene | 0.2210 | 0.2407 | 0.2456 | 0.2735 | 0.2756 | 0.2705 | 0.2534 | 0.2543 | 8 | AVG |
| n-Propylbenzene | 2.8221 | 3.2015 | 3.2581 | 3.3397 | 3.2365 | 3.2414 | 3.0068 | 3.1580 | 6 | AVG |
| 2-Chlorotoluene | 0.5895 | 0.6545 | 0.6517 | 0.6887 | 0.6778 | 0.6784 | 0.6601 | 0.6573 | 5 | AVG |
| 4-Chlorotoluene | 0.6274 | 0.6695 | 0.6724 | 0.7240 | 0.7029 | 0.7028 | 0.6895 | 0.6841 | 5 | AVG |
| 1,3,5-Trimethylbenzene | 1.8650 | 2.2247 | 2.2970 | 2.3886 | 2.3617 | 2.3625 | 2.2642 | 2.2520 | 8 | AVG |
| tert-Butylbenzene | 0.4332 | 0.4662 | 0.4786 | 0.4996 | 0.5085 | 0.5149 | 0.5065 | 0.4868 | 6 | AVG |
| Pentachloroethane | 0.3051 | 0.3420 | 0.3506 | 0.4009 | 0.4186 | 0.4307 | 0.4424 | 0.3843 | 14 | AVG |
| 1,2,4-Trimethylbenzene | 1.9827 | 2.2719 | 2.3523 | 2.4469 | 2.4266 | 2.4253 | 2.3321 | 2.3197 | 7 | AVG |
| sec-Butylbenzene | 2.4903 | 2.8982 | 2.9677 | 2.9884 | 2.9562 | 2.9854 | 2.8220 | 2.8726 | 6 | AVG |
| 1,3-Dichlorobenzene | #1.3064 | 1.3716 | 1.3473 | 1.4172 | 1.3858 | 1.3710 | 1.3255 | 1.3607 | 3 | AVG # |
| p-Isopropyltoluene | 2.1849 | 2.5019 | 2.5974 | 2.6342 | 2.6235 | 2.6717 | 2.5408 | 2.5364 | 7 | AVG |
| 1,4-Dichlorobenzene | #1.4027 | 1.4149 | 1.3899 | 1.4733 | 1.4246 | 1.4029 | 1.3406 | 1.4070 | 3 | AVG # |
| 1,2,3-Trimethylbenzene | 2.2649 | 2.4023 | 2.4235 | 2.6015 | 2.4902 | 2.4528 | 2.3775 | 2.4304 | 4 | AVG |
| Benzyl Chloride |  | 1.0778 | 1.2005 | 1.5200 | 1.6375 | 1.7029 | 1.6917 | 1.4717 | 18 | AVG |
| 1,3-Diethylbenzene | 1.3296 | 1.4969 | 1.5112 | 1.6363 | 1.5648 | 1.5488 | 1.5197 | 1.5153 | 6 | AVG |
| 1,4-Diethylbenzene | 1.4533 | 1.6043 | 1.5938 | 1.6958 | 1.6245 | 1.6050 | 1.5624 | 1.5913 | 5 | AVG |
| 1,2-Dichlorobenzene | #1.2897 | 1.3533 | 1.3092 | 1.4015 | 1.3684 | 1.3483 | 1.2923 | 1.3375 | 3 | AVG # |
| n-Butylbenzene | 1.2065 | 1.3017 | 1.3115 | 1.2971 | 1.2671 | 1.2809 | 1.2043 | 1.2670 | 4 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 04/26/17 04/26/17

Heated Purge: (Y/N) Y Calibration Times: 13:20 15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d RRF 4 = la26i06.d RRF 10= la26i05.d
RRF 20= la26i04.d RRF 50= la26i03.d RRF100= la26i02.d RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diethylbenzene | 1.1319 | 1.2774 | 1.2787 | 1.3659 | 1.3106 | 1.2945 | 1.2676 | 1.2752 | 6 | AVG |
| 1,2-Dibromo-3-chloropropane# | 0.1623 | 0.1719 | 0.1751 | 0.2007 | 0.2065 | 0.2045 | 0.1928 | 0.1877 | 9 | AVG # |
| 1,3,5-Trichlorobenzene | | 1.1060 | 1.0957 | 1.0943 | 1.0851 | 1.0959 | 1.0293 | 1.0844 | 3 | AVG |
| 1,2,4-Trichlorobenzene # | | 1.0544 | 1.0590 | 1.0780 | 1.0666 | 1.0670 | 0.9865 | 1.0519 | 3 | AVG # |
| Hexachlorobutadiene | | 0.4890 | 0.4549 | 0.4629 | 0.4481 | 0.4651 | 0.4211 | 0.4568 | 5 | AVG |
| Naphthalene | 3.0754 | 3.0911 | 3.1332 | 3.3963 | 3.3573 | 3.2808 | 2.8858 | 3.1742 | 6 | AVG |
| 1,2,3-Trichlorobenzene | | 1.0198 | 1.0312 | 1.0550 | 1.0298 | 1.0226 | 0.9306 | 1.0148 | 4 | AVG |
| 2-Methylnaphthalene | | 1.9258 | 2.0069 | 2.2473 | 2.1829 | 2.1335 | 1.8189 | 2.0525 | 8 | AVG |
| Dibromofluoromethane | 0.2444 | 0.2422 | 0.2443 | 0.2417 | 0.2460 | 0.2463 | 0.2442 | 0.2441 | 1 | AVG |
| Dibromofluoromethane(2) | 0.2484 | 0.2493 | 0.2512 | 0.2479 | 0.2518 | 0.2517 | 0.2511 | 0.2502 | 1 | AVG |
| 1,2-Dichloroethane-d4 | 0.0609 | 0.0612 | 0.0603 | 0.0600 | 0.0609 | 0.0616 | 0.0602 | 0.0607 | 1 | AVG |
| 1,2-Dichloroethane-d4(2) | 0.2880 | 0.2902 | 0.2913 | 0.2865 | 0.2857 | 0.2879 | 0.2807 | 0.2872 | 1 | AVG |
| 1,2-Dichloroethane-d4(3) | 0.0378 | 0.0385 | 0.0394 | 0.0383 | 0.0385 | 0.0387 | 0.0385 | 0.0385 | 1 | AVG |
| Toluene-d8 | 1.2792 | 1.2789 | 1.2799 | 1.2875 | 1.2795 | 1.2720 | 1.2596 | 1.2766 | 1 | AVG |
| Toluene-d8(2) | 0.8411 | 0.8411 | 0.8400 | 0.8460 | 0.8426 | 0.8383 | 0.8385 | 0.8411 | 0 | AVG |
| 4-Bromofluorobenzene | 0.4774 | 0.4787 | 0.4758 | 0.4766 | 0.4724 | 0.4722 | 0.4686 | 0.4745 | 1 | AVG |
| 4-Bromofluorobenzene(2) | 0.4208 | 0.4208 | 0.4169 | 0.4148 | 0.4132 | 0.4117 | 0.4155 | 0.4162 | 1 | AVG |

Average %RSD 7

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

| | |
|---|---|
| /chem/HP09915.i/17apr26a.b/la26i01.d | VSTD300 |
| /chem/HP09915.i/17apr26a.b/la26i02.d | VSTD100 |
| /chem/HP09915.i/17apr26a.b/la26i03.d | VSTD050 |
| /chem/HP09915.i/17apr26a.b/la26i04.d | VSTD020 |
| /chem/HP09915.i/17apr26a.b/la26i05.d | VSTD010 |
| /chem/HP09915.i/17apr26a.b/la26i06.d | VSTD004 |
| /chem/HP09915.i/17apr26a.b/la26i07.d | VSTD001 |

Area Summary

File ID:

| Internal Standard Name | la26i01.d | la26i02.d | la26i03.d | la26i04.d | la26i05.d | la26i06.d | la26i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 169188 | 183612 | 194134 | 210810 | 194850 | 205105 | 204400 | 194586 | 7 | Yes |
| Fluorobenzene | 1047200 | 1062919 | 1036296 | 1038230 | 1049965 | 1046774 | 1036977 | 1045480 | 1 | Yes |
| Chlorobenzene-d5 | 832450 | 834937 | 803001 | 793538 | 806654 | 805037 | 790373 | 809427 | 2 | Yes |
| 1,4-Dichlorobenzene-d4 | 451513 | 443338 | 430663 | 425437 | 429808 | 433758 | 428650 | 434738 | 2 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | la26i01.d | la26i02.d | la26i03.d | la26i04.d | la26i05.d | la26i06.d | la26i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 3.578 | 3.584 | 3.565 | 3.578 | 3.565 | 3.574 | 3.581 | 3.575 |
| Fluorobenzene | 7.057 | 7.057 | 7.053 | 7.053 | 7.050 | 7.053 | 7.050 | 7.053 |
| Chlorobenzene-d5 | 10.712 | 10.713 | 10.712 | 10.709 | 10.709 | 10.709 | 10.709 | 10.711 |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 04/26/2017 at 16:04.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.2979 | 0.2605 | 17.49 | 20 | -13 | # |
| # | Chloromethane | 0.3060 | 0.2823 | 18.45 | 20 | -8 | # |
| \| | 1,3-Butadiene | 0.1802 | 0.2800 | 31.07 | 20 | 55 | \|<- |
| # | Vinyl Chloride | 0.2955 | 0.2777 | 18.80 | 20 | -6 | # |
| # | Bromomethane | 0.1987 | 0.1876 | 18.88 | 20 | -6 | # |
| # | Chloroethane | 0.1665 | 0.1559 | 18.73 | 20 | -6 | # |
| \| | Dichlorofluoromethane | 0.4062 | 0.4016 | 19.77 | 20 | -1 | \| |
| \| | n-Pentane | 0.2818 | 0.3710 | 26.34 | 20 | 32 | \|<- |
| # | Trichlorofluoromethane | 0.3422 | 0.3370 | 19.70 | 20 | -1 | # |
| \| | Ethyl ether | 0.1905 | 0.1869 | 19.62 | 20 | -2 | \| |
| \| | Freon 123a | 0.2279 | 0.2357 | 20.69 | 20 | 3 | \| |
| \| | Acrolein | 2.0465 | 1.2690 | 93.01 | 150 | -38 | \|<- |
| # | 1,1-Dichloroethene | 0.1811 | 0.2024 | 22.36 | 20 | 12 | # |
| # | Acetone | 0.8882 | 0.8195 | 138.39 | 150 | -8 | # |
| # | Freon 113 | 0.1823 | 0.2076 | 22.78 | 20 | 14 | # |
| \| | 2-Propanol | 0.5888 | 0.5195 | 132.34 | 150 | -12 | \| |
| \| | Methyl Iodide | 0.3513 | 0.3762 | 21.42 | 20 | 7 | \| |
| # | Carbon Disulfide | 0.5893 | 0.6570 | 22.30 | 20 | 11 | # |
| \| | Allyl Chloride | 0.3627 | 0.3572 | 19.69 | 20 | -2 | \| |
| # | Methyl Acetate | 0.2628 | 0.2584 | 19.66 | 20 | -2 | # |
| # | Methylene Chloride | 0.2392 | 0.2381 | 19.90 | 20 | 0 | # |
| \| | t-Butyl alcohol | 0.9673 | 0.8975 | 185.56 | 200 | -7 | \| |
| \| | Acrylonitrile | 0.1380 | 0.1313 | 95.14 | 100 | -5 | \| |
| # | trans-1,2-Dichloroethene | 0.2125 | 0.2299 | 21.64 | 20 | 8 | # |
| # | Methyl Tertiary Butyl Ether | 0.6634 | 0.6558 | 19.77 | 20 | -1 | # |
| \| | n-Hexane | 0.3257 | 0.3535 | 21.71 | 20 | 9 | \| |
| # | 1,1-Dichloroethane | 0.3993 | 0.4121 | 20.64 | 20 | 3 | # |
| \| | di-Isopropyl ether | 0.7663 | 0.7768 | 20.28 | 20 | 1 | \| |
| \| | 2-Chloro-1,3-butadiene | 0.3368 | 0.3399 | 20.18 | 20 | 1 | \| |
| \| | Ethyl t-butyl ether | 0.6595 | 0.6369 | 19.32 | 20 | -3 | \| |
| # | cis-1,2-Dichloroethene | 0.2435 | 0.2490 | 20.45 | 20 | 2 | # |
| # | 2-Butanone | 0.1848 | 0.1714 | 139.09 | 150 | -7 | # |
| \| | 2,2-Dichloropropane | 0.2666 | 0.2562 | 19.23 | 20 | -4 | \| |
| \| | Propionitrile | 1.4118 | 1.3352 | 141.87 | 150 | -5 | \| |
| \| | Methacrylonitrile | 0.1376 | 0.1355 | 147.71 | 150 | -2 | \| |
| \| | Bromochloromethane | 0.1283 | 0.1260 | 19.64 | 20 | -2 | \| |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.2470 | 1.1660 | 93.51 | 100 | -6 | |
| # | Chloroform | 0.3805 | 0.3823 | 20.09 | 20 | 0 | # |
| # | 1,1,1-Trichloroethane | 0.3478 | 0.3382 | 19.45 | 20 | -3 | # |
| # | Cyclohexane | 0.3959 | 0.3959 | 20.00 | 20 | 0 | # |
| | 1,1-Dichloropropene | 0.3095 | 0.2993 | 19.34 | 20 | -3 | |
| # | Carbon Tetrachloride | 0.2539 | 0.2483 | 19.57 | 20 | -2 | # |
| | Isobutyl Alcohol | 0.3396 | 0.3237 | 476.51 | 500 | -5 | |
| # | Benzene | 0.9124 | 0.9212 | 20.19 | 20 | 1 | # |
| # | 1,2-Dichloroethane | 0.3087 | 0.3133 | 20.30 | 20 | 2 | # |
| | t-Amyl methyl ether | 0.6545 | 0.6265 | 19.14 | 20 | -4 | |
| | n-Heptane | 0.3647 | 0.3640 | 19.96 | 20 | 0 | |
| | n-Butanol | 0.2738 | 0.2575 | 940.39 | 1000 | -6 | |
| # | Trichloroethene | 0.2358 | 0.2353 | 19.96 | 20 | 0 | # |
| # | Methylcyclohexane | 0.4155 | 0.4168 | 20.06 | 20 | 0 | # |
| # | 1,2-Dichloropropane | 0.2498 | 0.2524 | 20.21 | 20 | 1 | # |
| | Dibromomethane | 0.1571 | 0.1582 | 20.14 | 20 | 1 | |
| | 1,4-Dioxane | 0.0855 | 0.0944 | 552.41 | 500 | 10 | |
| | Methyl Methacrylate | 0.2138 | 0.2084 | 19.49 | 20 | -3 | |
| # | Bromodichloromethane | 0.2835 | 0.2745 | 19.37 | 20 | -3 | # |
| | 2-Nitropropane | 0.0804 | 0.0666 | 16.57 | 20 | -17 | |
| | 2-Chloroethyl Vinyl Ether | 0.1920 | 0.1805 | 18.80 | 20 | -6 | |
| # | cis-1,3-Dichloropropene | 0.3695 | 0.3611 | 19.55 | 20 | -2 | # |
| # | 4-Methyl-2-pentanone | 0.3808 | 0.3600 | 94.52 | 100 | -5 | # |
| # | Toluene | 0.7419 | 0.7452 | 20.09 | 20 | 0 | # |
| # | trans-1,3-Dichloropropene | 0.4160 | 0.4154 | 19.97 | 20 | 0 | # |
| | Ethyl Methacrylate | 0.4686 | 0.4750 | 20.27 | 20 | 1 | |
| # | 1,1,2-Trichloroethane | 0.2859 | 0.2905 | 20.32 | 20 | 2 | # |
| # | Tetrachloroethene | 0.3281 | 0.3228 | 19.68 | 20 | -2 | # |
| | 1,3-Dichloropropane | 0.4961 | 0.4971 | 20.04 | 20 | 0 | |
| # | 2-Hexanone | 0.3581 | 0.3396 | 94.83 | 100 | -5 | # |
| # | Dibromochloromethane | 0.2961 | 0.2792 | 18.86 | 20 | -6 | # |
| # | 1,2-Dibromoethane | 0.3130 | 0.3224 | 20.60 | 20 | 3 | # |
| | 1-Chlorohexane | 0.4261 | 0.4012 | 18.83 | 20 | -6 | |
| # | Chlorobenzene | 0.8561 | 0.8413 | 19.65 | 20 | -2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2827 | 0.2699 | 19.10 | 20 | -5 | |
| # | Ethylbenzene | 1.4311 | 1.4100 | 19.70 | 20 | -1 | # |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | m+p-Xylene | 0.5571 | 0.5494 | 39.45 | 40 | -1 | # |
| # | o-Xylene | 0.5541 | 0.5404 | 19.51 | 20 | -2 | # |
| # | Styrene | 0.9159 | 0.9324 | 20.36 | 20 | 2 | # |
| # | Bromoform | 0.2150 | 0.1947 | 18.11 | 20 | -9 | # |
| # | Isopropylbenzene | 1.4160 | 1.4202 | 20.06 | 20 | 0 | # |
| | Cyclohexanone | 0.3224 | 0.3366 | 522.07 | 500 | 4 | |
| | Bromobenzene | 0.7147 | 0.6986 | 19.55 | 20 | -2 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8875 | 0.8909 | 20.08 | 20 | 0 | # |
| | 1,2,3-Trichloropropane | 0.2509 | 0.2569 | 20.48 | 20 | 2 | |
| | trans-1,4-Dichloro-2-butene | 0.2543 | 0.2468 | 97.04 | 100 | -3 | |
| | n-Propylbenzene | 3.1580 | 3.0963 | 19.61 | 20 | -2 | |
| | 2-Chlorotoluene | 0.6573 | 0.6330 | 19.26 | 20 | -4 | |
| | 4-Chlorotoluene | 0.6841 | 0.6691 | 19.56 | 20 | -2 | |
| | 1,3,5-Trimethylbenzene | 2.2520 | 2.1982 | 19.52 | 20 | -2 | |
| | tert-Butylbenzene | 0.4868 | 0.4796 | 19.70 | 20 | -1 | |
| | Pentachloroethane | 0.3843 | 0.3671 | 19.10 | 20 | -4 | |
| | 1,2,4-Trimethylbenzene | 2.3197 | 2.2673 | 19.55 | 20 | -2 | |
| | sec-Butylbenzene | 2.8726 | 2.8359 | 19.74 | 20 | -1 | |
| # | 1,3-Dichlorobenzene | 1.3607 | 1.2946 | 19.03 | 20 | -5 | # |
| | p-Isopropyltoluene | 2.5364 | 2.4766 | 19.53 | 20 | -2 | |
| # | 1,4-Dichlorobenzene | 1.4070 | 1.3571 | 19.29 | 20 | -4 | # |
| | 1,2,3-Trimethylbenzene | 2.4304 | 2.4322 | 20.02 | 20 | 0 | |
| | Benzyl Chloride | 1.4717 | 1.2688 | 17.24 | 20 | -14 | |
| | 1,3-Diethylbenzene | 1.5153 | 1.4812 | 19.55 | 20 | -2 | |
| | 1,4-Diethylbenzene | 1.5913 | 1.5419 | 19.38 | 20 | -3 | |
| # | 1,2-Dichlorobenzene | 1.3375 | 1.2970 | 19.39 | 20 | -3 | # |
| | n-Butylbenzene | 1.2670 | 1.2177 | 19.22 | 20 | -4 | |
| | 1,2-Diethylbenzene | 1.2752 | 1.2547 | 19.68 | 20 | -2 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1877 | 0.1770 | 18.86 | 20 | -6 | # |
| | 1,3,5-Trichlorobenzene | 1.0844 | 1.0144 | 18.71 | 20 | -6 | |
| # | 1,2,4-Trichlorobenzene | 1.0519 | 0.9806 | 18.64 | 20 | -7 | # |
| | Hexachlorobutadiene | 0.4568 | 0.3983 | 17.44 | 20 | -13 | |
| | Naphthalene | 3.1742 | 3.1214 | 19.67 | 20 | -2 | |
| | 1,2,3-Trichlorobenzene | 1.0148 | 0.9259 | 18.25 | 20 | -9 | |
| | 2-Methylnaphthalene | 2.0525 | 1.8562 | 18.09 | 20 | -10 | |

Average %Drift 5

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 18:34

Lab File ID: la26s01a.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Acrolein | 2.0465 | 1.8187 | 133.30 | 150 | -11 |

Average %Drift 11

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

# Lancaster Laboratories

## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09915.i/17apr26a.b/la26i07.d
/chem/HP09915.i/17apr26a.b/la26i06.d
/chem/HP09915.i/17apr26a.b/la26i05.d
/chem/HP09915.i/17apr26a.b/la26i04.d
/chem/HP09915.i/17apr26a.b/la26i03.d
/chem/HP09915.i/17apr26a.b/la26i02.d
/chem/HP09915.i/17apr26a.b/la26i01.d

File /chem/HP09915.i/17apr26a.b/la26i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP09915.i/17jul26b.b/ll26c05.d

RT Summary

| Internal Standard Name | File ID: ll26c05.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 3.581 | 3.565 | Yes |
| Fluorobenzene | 7.054 | 7.053 | Yes |
| Chlorobenzene-d5 | 10.709 | 10.712 | Yes |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: ll26c05.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 131306 | 194134 | 97067 | 388268 | Yes |
| Fluorobenzene | 701792 | 1036296 | 518148 | 2072592 | Yes |
| Chlorobenzene-d5 | 568008 | 803001 | 401500 | 1606002 | Yes |
| 1,4-Dichlorobenzene-d4 | 334534 | 430663 | 215332 | 861326 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments:

report generated on 07/26/2017 at 21:03

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/26/17 Time: 20:34

Lab File ID: l126c05.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Dichlorodifluoromethane | 0.2979 | 0.3122 | 52.40 | 50 | 5 | # |
| # Chloromethane | 0.3060 | 0.2983 | 48.75 | 50 | -3 | # |
| 1,3-Butadiene | 0.1802 | 0.2347 | 65.12 | 50 | 30 | <- |
| # Vinyl Chloride | 0.2955 | 0.2862 | 48.43 | 50 | -3 | # |
| # Bromomethane | 0.1987 | 0.2081 | 52.36 | 50 | 5 | # |
| # Chloroethane | 0.1665 | 0.1640 | 49.23 | 50 | -2 | # |
| n-Pentane | 0.2818 | 0.2621 | 46.50 | 50 | -7 | |
| # Trichlorofluoromethane | 0.3422 | 0.3903 | 57.04 | 50 | 14 | # |
| Ethyl ether | 0.1905 | 0.0628 | 16.47 | 50 | -67 | <- |
| Freon 123a | 0.2279 | 0.2384 | 52.30 | 50 | 5 | |
| Acrolein | 2.0465 | 1.7730 | 433.18 | 500 | -13 | |
| # 1,1-Dichloroethene | 0.1811 | 0.1746 | 48.22 | 50 | -4 | # |
| # 1,1-Dichloroethene(2) | 0.0917 | 0.0938 | 51.18 | 50 | 2 | #<- |
| # Acetone | 0.8882 | 0.8175 | 92.03 | 100 | -8 | # |
| # Freon 113 | 0.1823 | 0.1843 | 50.57 | 50 | 1 | # |
| 2-Propanol | 0.5888 | 0.5970 | 253.47 | 250 | 1 | |
| Methyl Iodide | 0.3513 | 0.3815 | 54.30 | 50 | 9 | |
| # Carbon Disulfide | 0.5893 | 0.6273 | 53.22 | 50 | 6 | # |
| Allyl Chloride | 0.3627 | 0.3240 | 44.66 | 50 | -11 | |
| # Methyl Acetate | 0.2628 | 0.2345 | 44.60 | 50 | -11 | # |
| # Methylene Chloride | 0.2392 | 0.2180 | 45.56 | 50 | -9 | # |
| t-Butyl alcohol | 0.9673 | 1.0681 | 276.07 | 250 | 10 | |
| Acrylonitrile | 0.1380 | 0.1261 | 45.68 | 50 | -9 | |
| # trans-1,2-Dichloroethene | 0.2125 | 0.2154 | 50.70 | 50 | 1 | # |
| # Methyl Tertiary Butyl Ether | 0.6634 | 0.6892 | 51.94 | 50 | 4 | # |
| n-Hexane | 0.3257 | 0.2470 | 37.92 | 50 | -24 | <- |
| # 1,1-Dichloroethane | 0.3993 | 0.3913 | 49.01 | 50 | -2 | # |
| di-Isopropyl ether | 0.7663 | 0.6618 | 43.18 | 50 | -14 | |
| 2-Chloro-1,3-butadiene | 0.3368 | 0.3670 | 54.49 | 50 | 9 | |
| Ethyl t-butyl ether | 0.6595 | 0.6507 | 49.33 | 50 | -1 | |
| # cis-1,2-Dichloroethene | 0.2435 | 0.2434 | 49.98 | 50 | 0 | # |
| # 2-Butanone | 0.1848 | 0.1698 | 91.89 | 100 | -8 | # |
| 2,2-Dichloropropane | 0.2666 | 0.3270 | 61.33 | 50 | 23 | <- |
| Propionitrile | 1.4118 | 1.2929 | 228.94 | 250 | -8 | |
| Methacrylonitrile | 0.1376 | 0.1282 | 116.48 | 125 | -7 | |
| Bromochloromethane | 0.1283 | 0.1388 | 54.10 | 50 | 8 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/26/17 Time: 20:34

Lab File ID: l126c05.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.2470 | 1.1762 | 94.33 | 100 | -6 | |
| # | Chloroform | 0.3805 | 0.4186 | 55.00 | 50 | 10 | # |
| # | 1,1,1-Trichloroethane | 0.3478 | 0.3793 | 54.53 | 50 | 9 | # |
| # | Cyclohexane | 0.3959 | 0.3269 | 41.28 | 50 | -17 | # |
| # | Cyclohexane(2) | 0.3237 | 0.2854 | 44.08 | 50 | -12 | # |
| # | Cyclohexane(3) | 0.1148 | 0.1019 | 44.38 | 50 | -11 | # |
| | 1,1-Dichloropropene | 0.3095 | 0.3154 | 50.95 | 50 | 2 | |
| # | Carbon Tetrachloride | 0.2539 | 0.3136 | 61.77 | 50 | 24 | #<- |
| | Isobutyl Alcohol | 0.3396 | 0.3991 | 734.40 | 625 | 18 | |
| # | Benzene | 0.9124 | 0.8904 | 48.79 | 50 | -2 | # |
| # | 1,2-Dichloroethane | 0.3087 | 0.3751 | 60.77 | 50 | 22 | #<- |
| # | 1,2-Dichloroethane(2) | 0.0274 | 0.0302 | 55.24 | 50 | 10 | #<- |
| | t-Amyl methyl ether | 0.6545 | 0.6567 | 50.17 | 50 | 0 | |
| | n-Heptane | 0.3647 | 0.2703 | 37.06 | 50 | -26 | <- |
| | n-Butanol | 0.2738 | 0.3082 | 1407.12 | 1250 | 13 | |
| # | Trichloroethene | 0.2358 | 0.2444 | 51.82 | 50 | 4 | # |
| # | Methylcyclohexane | 0.4155 | 0.3603 | 43.36 | 50 | -13 | # |
| # | Methylcyclohexane(2) | 0.1875 | 0.1659 | 44.26 | 50 | -11 | # |
| # | 1,2-Dichloropropane | 0.2498 | 0.2309 | 46.23 | 50 | -8 | # |
| | Dibromomethane | 0.1571 | 0.1702 | 54.17 | 50 | 8 | |
| | 1,4-Dioxane | 0.0855 | 0.1036 | 757.94 | 625 | 21 | <- |
| | Methyl Methacrylate | 0.2138 | 0.2099 | 49.08 | 50 | -2 | |
| # | Bromodichloromethane | 0.2835 | 0.3207 | 56.56 | 50 | 13 | # |
| | 2-Nitropropane | 0.0804 | 0.1016 | 126.36 | 100 | 26 | <- |
| | 2-Chloroethyl Vinyl Ether | 0.1920 | 0.1850 | 48.16 | 50 | -4 | |
| # | cis-1,3-Dichloropropene | 0.3695 | 0.3793 | 51.33 | 50 | 3 | # |
| # | 4-Methyl-2-pentanone | 0.3808 | 0.3626 | 95.21 | 100 | -5 | # |
| # | Toluene | 0.7419 | 0.7186 | 48.43 | 50 | -3 | # |
| # | trans-1,3-Dichloropropene | 0.4160 | 0.4420 | 53.12 | 50 | 6 | # |
| | Ethyl Methacrylate | 0.4686 | 0.4580 | 48.88 | 50 | -2 | |
| # | 1,1,2-Trichloroethane | 0.2859 | 0.2851 | 49.86 | 50 | 0 | # |
| # | Tetrachloroethene | 0.3281 | 0.3528 | 53.76 | 50 | 8 | # |
| | 1,3-Dichloropropane | 0.4961 | 0.4808 | 48.46 | 50 | -3 | |
| # | 2-Hexanone | 0.3581 | 0.3295 | 92.02 | 100 | -8 | # |
| # | Dibromochloromethane | 0.2961 | 0.3231 | 54.56 | 50 | 9 | # |
| # | 1,2-Dibromoethane | 0.3130 | 0.3150 | 50.33 | 50 | 1 | # |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/26/17 Time: 20:34

Lab File ID: l126c05.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1-Chlorohexane | 0.4261 | 0.3794 | 44.52 | 50 | -11 | |
| # | Chlorobenzene | 0.8561 | 0.8613 | 50.30 | 50 | 1 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2827 | 0.3149 | 55.70 | 50 | 11 | |
| # | Ethylbenzene | 1.4311 | 1.4509 | 50.69 | 50 | 1 | # |
| # | m+p-Xylene | 0.5571 | 0.5632 | 101.09 | 100 | 1 | # |
| # | o-Xylene | 0.5541 | 0.5660 | 51.08 | 50 | 2 | # |
| # | Styrene | 0.9159 | 0.9603 | 52.42 | 50 | 5 | # |
| # | Bromoform | 0.2150 | 0.2488 | 57.85 | 50 | 16 | # |
| # | Isopropylbenzene | 1.4160 | 1.5002 | 52.97 | 50 | 6 | # |
| | Cyclohexanone | 0.3224 | 0.3838 | 744.02 | 625 | 19 | |
| | Bromobenzene | 0.7147 | 0.7017 | 49.09 | 50 | -2 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8875 | 0.8221 | 46.32 | 50 | -7 | # |
| | 1,2,3-Trichloropropane | 0.2509 | 0.2526 | 50.35 | 50 | 1 | |
| | trans-1,4-Dichloro-2-butene | 0.2543 | 0.2253 | 110.74 | 125 | -11 | |
| | n-Propylbenzene | 3.1580 | 3.0309 | 47.99 | 50 | -4 | |
| | 2-Chlorotoluene | 0.6573 | 0.6255 | 47.59 | 50 | -5 | |
| | 4-Chlorotoluene | 0.6841 | 0.6504 | 47.54 | 50 | -5 | |
| | 1,3,5-Trimethylbenzene | 2.2520 | 2.2905 | 50.86 | 50 | 2 | |
| | tert-Butylbenzene | 0.4868 | 0.5152 | 52.92 | 50 | 6 | |
| | Pentachloroethane | 0.3843 | 0.4444 | 57.82 | 50 | 16 | |
| | 1,2,4-Trimethylbenzene | 2.3197 | 2.3600 | 50.87 | 50 | 2 | |
| | sec-Butylbenzene | 2.8726 | 2.8278 | 49.22 | 50 | -2 | |
| # | 1,3-Dichlorobenzene | 1.3607 | 1.3414 | 49.29 | 50 | -1 | # |
| | p-Isopropyltoluene | 2.5364 | 2.5395 | 50.06 | 50 | 0 | |
| # | 1,4-Dichlorobenzene | 1.4070 | 1.3805 | 49.06 | 50 | -2 | # |
| | 1,2,3-Trimethylbenzene | 2.4304 | 2.6230 | 53.96 | 50 | 8 | |
| | Benzyl Chloride | 1.4717 | 1.6041 | 54.50 | 50 | 9 | |
| | 1,3-Diethylbenzene | 1.5153 | 1.6021 | 52.86 | 50 | 6 | |
| | 1,4-Diethylbenzene | 1.5913 | 1.6731 | 52.57 | 50 | 5 | |
| # | 1,2-Dichlorobenzene | 1.3375 | 1.3372 | 49.99 | 50 | 0 | # |
| | n-Butylbenzene | 1.2670 | 1.2213 | 48.19 | 50 | -4 | |
| | 1,2-Diethylbenzene | 1.2752 | 1.3539 | 53.09 | 50 | 6 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1877 | 0.1977 | 52.67 | 50 | 5 | # |
| | 1,3,5-Trichlorobenzene | 1.0844 | 1.0656 | 49.14 | 50 | -2 | |
| # | 1,2,4-Trichlorobenzene | 1.0519 | 1.0209 | 48.53 | 50 | -3 | # |
| | Hexachlorobutadiene | 0.4568 | 0.4638 | 50.76 | 50 | 2 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/26/17 Time: 20:34

Lab File ID: l126c05.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Naphthalene | 3.1742 | 3.0657 | 48.29 | 50 | -3 |
| 1,2,3-Trichlorobenzene | 1.0148 | 0.9861 | 48.58 | 50 | -3 |
| 2-Methylnaphthalene | 2.0525 | 1.9725 | 48.05 | 50 | -4 |
| Dibromofluoromethane | 0.2441 | 0.2599 | 53.22 | 50 | 6 |
| Dibromofluoromethane(2) | 0.2502 | 0.2672 | 53.39 | 50 | 7 |
| 1,2-Dichloroethane-d4 | 0.0607 | 0.0621 | 51.18 | 50 | 2 |
| 1,2-Dichloroethane-d4(2) | 0.2872 | 0.3490 | 60.76 | 50 | 22 |
| 1,2-Dichloroethane-d4(3) | 0.0385 | 0.0391 | 50.73 | 50 | 1 |
| Toluene-d8 | 1.2766 | 1.2629 | 49.46 | 50 | -1 |
| Toluene-d8(2) | 0.8411 | 0.8154 | 48.47 | 50 | -3 |
| 4-Bromofluorobenzene | 0.4745 | 0.5060 | 53.32 | 50 | 7 |
| 4-Bromofluorobenzene(2) | 0.4162 | 0.4596 | 55.21 | 50 | 10 |

Average %Drift 8

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem/HP09915.i/17jul26b.b/l126ec5.d
Report Date: 07/27/2017 07:39

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i
Client ID: SECC050
Lab Sample ID: SECC050
Sublist used: 22961.sub

Injection Date and Time: 27-JUL-2017 06:40
Initial Calibration Date(s): 13-FEB-2017 28-APR-2017
Initial Calibration Time(s): 13:59 12:18
Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.29785 | 0.28654 | 0.01 | -3.8 | 50.0 |
| Chloromethane | 0.30599 | 0.32054 | 0.01 | 4.8 | 50.0 |
| Vinyl Chloride | 0.29547 | 0.30138 | 0.01 | 2.0 | 50.0 |
| Bromomethane | 0.19873 | 0.20654 | 0.01 | 3.9 | 50.0 |
| Chloroethane | 0.16651 | 0.16770 | 0.01 | 0.7 | 50.0 |
| Trichlorofluoromethane | 0.34216 | 0.34765 | 0.01 | 1.6 | 50.0 |
| 1,1-Dichloroethene | 0.18109 | 0.18522 | 0.01 | 2.3 | 50.0 |
| Acetone | 0.88823 | 0.86347 | 0.01 | -2.8 | 50.0 |
| Freon 113 | 0.18228 | 0.17672 | 0.01 | -3.0 | 50.0 |
| Carbon Disulfide | 0.58931 | 0.66798 | 0.01 | 13.3 | 50.0 |
| Methyl Acetate | 0.26284 | 0.26559 | 0.01 | 1.0 | 50.0 |
| Methylene Chloride | 0.23923 | 0.22750 | 0.01 | -4.9 | 50.0 |
| trans-1,2-Dichloroethene | 0.21247 | 0.21863 | 0.01 | 2.9 | 50.0 |
| Methyl Tertiary Butyl Ether | 0.66341 | 0.73373 | 0.01 | 10.6 | 50.0 |
| 1,1-Dichloroethane | 0.39926 | 0.40733 | 0.01 | 2.0 | 50.0 |
| cis-1,2-Dichloroethene | 0.24347 | 0.24676 | 0.01 | 1.4 | 50.0 |
| 2-Butanone | 0.18481 | 0.18809 | 0.01 | 1.8 | 50.0 |
| Bromochloromethane | 0.12832 | 0.13804 | 0.01 | 7.6 | 50.0 |
| Chloroform | 0.38056 | 0.40285 | 0.01 | 5.9 | 50.0 |
| 1,1,1-Trichloroethane | 0.34775 | 0.35521 | 0.01 | 2.1 | 50.0 |
| Cyclohexane | 0.39595 | 0.35615 | 0.01 | -10.1 | 50.0 |
| Carbon Tetrachloride | 0.25385 | 0.28356 | 0.01 | 11.7 | 50.0 |
| Benzene | 0.91241 | 0.91832 | 0.01 | 0.6 | 50.0 |
| 1,2-Dichloroethane | 0.30868 | 0.34632 | 0.01 | 12.2 | 50.0 |
| Trichloroethene | 0.23579 | 0.24085 | 0.01 | 2.1 | 50.0 |
| Methylcyclohexane | 0.41546 | 0.37627 | 0.01 | -9.4 | 50.0 |
| 1,2-Dichloropropane | 0.24977 | 0.24314 | 0.01 | -2.7 | 50.0 |
| Bromodichloromethane | 0.28347 | 0.30671 | 0.01 | 8.2 | 50.0 |
| cis-1,3-Dichloropropene | 0.36947 | 0.38623 | 0.01 | 4.5 | 50.0 |
| 4-Methyl-2-pentanone | 0.38084 | 0.39033 | 0.01 | 2.5 | 50.0 |
| Toluene | 0.74189 | 0.74889 | 0.01 | 0.9 | 50.0 |
| trans-1,3-Dichloropropene | 0.41600 | 0.45031 | 0.01 | 8.2 | 50.0 |
| 1,1,2-Trichloroethane | 0.28588 | 0.29238 | 0.01 | 2.3 | 50.0 |
| Tetrachloroethene | 0.32814 | 0.35787 | 0.01 | 9.1 | 50.0 |
| 2-Hexanone | 0.35811 | 0.36416 | 0.01 | 1.7 | 50.0 |
| Dibromochloromethane | 0.29611 | 0.31617 | 0.01 | 6.8 | 50.0 |
| 1,2-Dibromoethane | 0.31297 | 0.32188 | 0.01 | 2.8 | 50.0 |
| Chlorobenzene | 0.85607 | 0.86005 | 0.01 | 0.5 | 50.0 |
| Ethylbenzene | 1.43108 | 1.46479 | 0.01 | 2.4 | 50.0 |
| m+p-Xylene | 0.55713 | 0.56496 | 0.01 | 1.4 | 50.0 |
| o-Xylene | 0.55407 | 0.56860 | 0.01 | 2.6 | 50.0 |
| Xylene (Total) | 0.55611 | 0.56618 | 0.01 | 1.8 | 50.0 |
| Styrene | 0.91593 | 0.96901 | 0.01 | 5.8 | 50.0 |
| Bromoform | 0.21501 | 0.24442 | 0.01 | 13.7 | 50.0 |
| Isopropylbenzene | 1.41603 | 1.47813 | 0.01 | 4.4 | 50.0 |
| 1,1,2,2-Tetrachloroethane | 0.88749 | 0.85070 | 0.01 | -4.1 | 50.0 |
| 1,3,5-Trimethylbenzene | 2.25196 | 2.33199 | 0.01 | 3.6 | 50.0 |
| 1,2,4-Trimethylbenzene | 2.31969 | 2.40078 | 0.01 | 3.5 | 50.0 |

Data File: /chem/HP09915.i/17jul26b.b/l126ec5.d
Report Date: 07/27/2017 07:39

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i
Client ID: SECC050
Lab Sample ID: SECC050
Sublist used: 22961.sub

Injection Date and Time: 27-JUL-2017 06:40
Initial Calibration Date(s): 13-FEB-2017 28-APR-2017
Initial Calibration Time(s): 13:59 12:18
Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | 1.36070 | 1.34430 | 0.01 | -1.2 | 50.0 |
| 1,4-Dichlorobenzene | 1.40698 | 1.37547 | 0.01 | -2.2 | 50.0 |
| 1,2-Dichlorobenzene | 1.33751 | 1.33898 | 0.01 | 0.1 | 50.0 |
| 1,2-Dibromo-3-chloropropane | 0.18768 | 0.19805 | 0.01 | 5.5 | 50.0 |
| 1,2,4-Trichlorobenzene | 1.05192 | 1.02248 | 0.01 | -2.8 | 50.0 |
| Naphthalene | 3.17425 | 3.09211 | 0.01 | -2.6 | 50.0 |
| 1,2,3-Trichlorobenzene | 1.01482 | 0.98286 | 0.01 | -3.1 | 50.0 |
| **Surrogate Standards** | **ICAL Avg. RRF** | **SECC RRF** | **Min. RRF** | **% Diff.** | **Max. %Diff.** |
| Dibromofluoromethane | 0.24416 | 0.25125 | 0.01 | 2.9 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06071 | 0.05943 | 0.01 | -2.1 | 20.5 |
| Toluene-d8 | 1.27666 | 1.28014 | 0.01 | 0.3 | 20.5 |
| 4-Bromofluorobenzene | 0.47452 | 0.48314 | 0.01 | 1.8 | 20.5 |

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR190___

Lab File ID (Standard): ll26c05.d Date Analyzed: 07/26/17

Instrument ID: HP09915 Time Analyzed: 20:34

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 131306 | 3.581 | 701792 | 7.054 | 568008 | 10.709 | 334534 | 12.642 |
| UPPER LIMIT | 262612 | 4.081 | 1403584 | 7.554 | 1136016 | 11.209 | 669068 | 13.142 |
| LOWER LIMIT | 65653 | 3.081 | 350896 | 6.554 | 284004 | 10.209 | 167267 | 12.142 |
| LAB SAMPLE ID | | | | | | | | |
| 01 LCSL83 | 137498 | 3.581 | 730953 | 7.054 | 590196 | 10.709 | 339833 | 12.638 |
| 02 VBLKL83 | 139095 | 3.568 | 710360 | 7.047 | 568293 | 10.709 | 318479 | 12.638 |
| 03 9114608 | 145372 | 3.565 | 718691 | 7.044 | 574913 | 10.709 | 318140 | 12.642 |
| 04 9114609 | 119790 | 3.584 | 637791 | 7.054 | 504849 | 10.709 | 283399 | 12.642 |
| 05 9116351 | 120606 | 3.578 | 645716 | 7.050 | 520650 | 10.709 | 294722 | 12.642 |
| 06 9116352 | 115892 | 3.571 | 637079 | 7.054 | 514826 | 10.709 | 290785 | 12.638 |
| 07 9116356 | 115783 | 3.565 | 639979 | 7.050 | 519087 | 10.709 | 290895 | 12.642 |
| 08 9116346 | 112033 | 3.568 | 630147 | 7.050 | 515030 | 10.709 | 309526 | 12.638 |
| 09 9116347MS | 138201 | 3.578 | 715183 | 7.047 | 578350 | 10.709 | 327869 | 12.642 |
| 10 9116348MSD | 147626 | 3.578 | 753591 | 7.047 | 611444 | 10.709 | 344738 | 12.642 |
| 11 9114605 | 166590 | 3.565 | 771524 | 7.050 | 620545 | 10.709 | 343054 | 12.638 |
| 12 9114606 | 163933 | 3.581 | 802825 | 7.054 | 630961 | 10.709 | 350646 | 12.642 |
| 13 9114607 | 158233 | 3.574 | 769262 | 7.047 | 615756 | 10.709 | 345003 | 12.642 |
| 14 9116344 | 151835 | 3.578 | 771467 | 7.050 | 627997 | 10.709 | 362781 | 12.642 |
| 15 9116353 | 154023 | 3.571 | 785151 | 7.050 | 646265 | 10.709 | 397543 | 12.641 |
| 16 9116354 | 184038 | 3.574 | 866297 | 7.050 | 692312 | 10.709 | 400828 | 12.642 |
| 17 9116343 | 182130 | 3.578 | 865729 | 7.050 | 698483 | 10.709 | 403987 | 12.638 |
| 18 9116343DL | 170429 | 3.578 | 835923 | 7.050 | 646675 | 10.709 | 369784 | 12.638 |
| 19 9116345 | 144954 | 3.565 | 837679 | 7.047 | 681589 | 10.709 | 386500 | 12.642 |
| 20 9116345DL | 176040 | 3.568 | 867275 | 7.050 | 686151 | 10.709 | 389454 | 12.642 |
| 21 9116349 | 150548 | 3.568 | 852452 | 7.047 | 690118 | 10.709 | 400368 | 12.642 |
| 22 9116349DL | 186216 | 3.578 | 868977 | 7.050 | 690538 | 10.709 | 398987 | 12.638 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR190___

Lab File ID (Standard): ll26c05.d Date Analyzed: 07/26/17

Instrument ID: HP09915 Time Analyzed: 20:34

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 131306 | 3.581 | 701792 | 7.054 | 568008 | 10.709 | 334534 | 12.642 |
| UPPER LIMIT | 262612 | 4.081 | 1403584 | 7.554 | 1136016 | 11.209 | 669068 | 13.142 |
| LOWER LIMIT | 65653 | 3.081 | 350896 | 6.554 | 284004 | 10.209 | 167267 | 12.142 |
| LAB SAMPLE ID | | | | | | | | |
| 23 9116350 | 151816 | 3.562 | 953403 | 7.047 | 771205 | 10.709 | 444260 | 12.642 |
| 24 9116350DL | 194037 | 3.581 | 890067 | 7.054 | 724905 | 10.709 | 427761 | 12.642 |
| 25 9116355 | 190690 | 3.578 | 959723 | 7.050 | 779404 | 10.709 | 440894 | 12.642 |
| 26 9116355DL | 194688 | 3.568 | 895143 | 7.047 | 713507 | 10.709 | 401509 | 12.642 |
| 27 SECC050 | 184282 | 3.568 | 911234 | 7.050 | 712764 | 10.709 | 396053 | 12.638 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

# Sample Data

# Volatiles by GC/MS

**Fraction: Volatiles by GC/MS**

| 11997: BTEX 8260C Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Benzene | .5 | 1 | 1 | ug/l |
| Toluene | .5 | 1 | 1 | ug/l |
| Ethylbenzene | .5 | 1 | 1 | ug/l |
| Xylene (Total) | .5 | 1 | 1 | ug/l |

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26s40.d Injection date and time: **27-JUL-2017 00:51**
Data file Sample Info. Line: 19001;9114605;1;0;;KR190;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 01:09 Automation

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.565( 0.016) | 648 | 65 | 166590 ( 27) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.003) | 1732 | 96 | 771524 ( 10) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 620545 ( 9) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.003) | 3470 | 152 | 343054 ( 3) | 50.00 | |

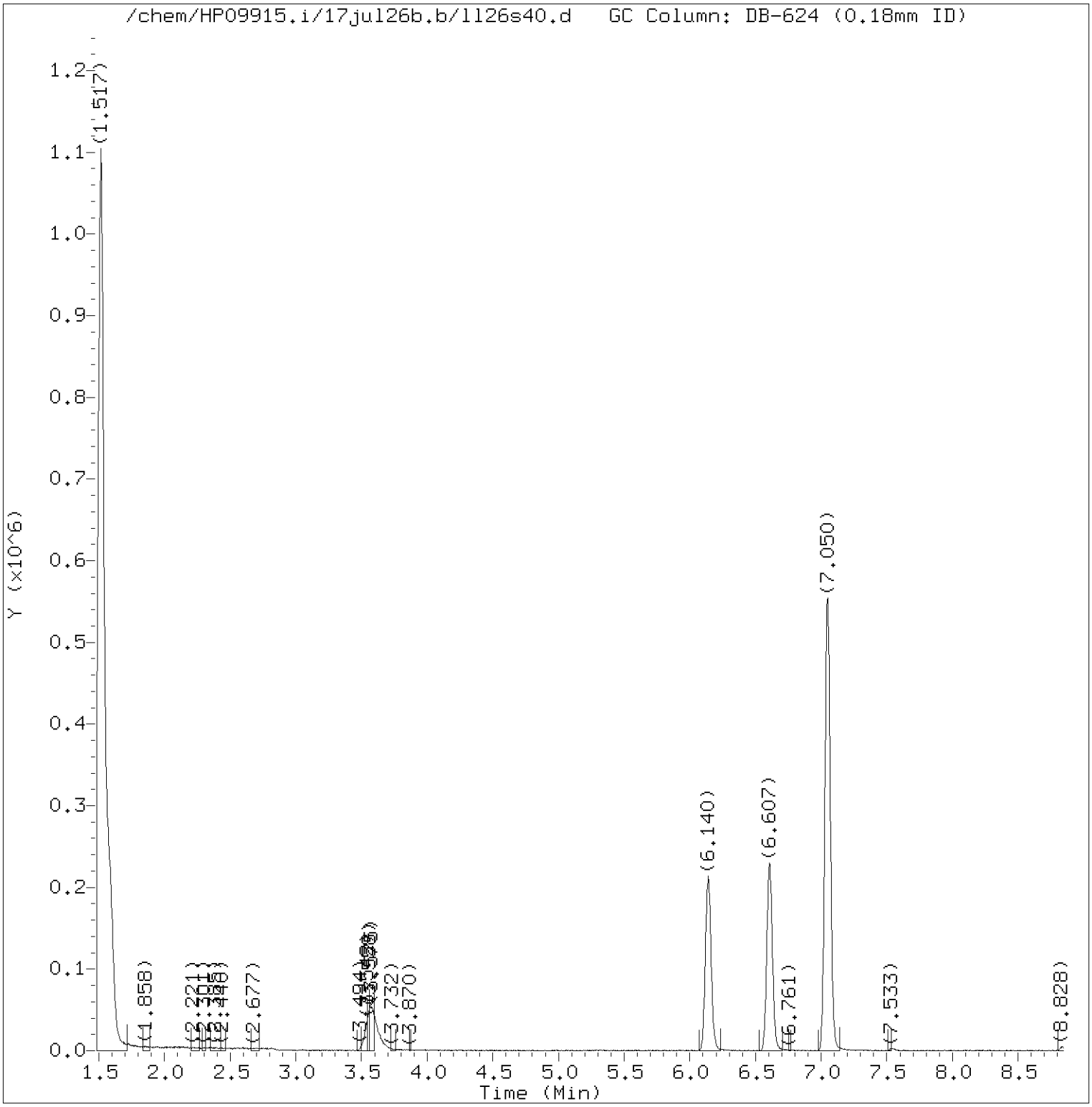
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.001) | 113 | 200545 | 53.230 | 106% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 47799 | 51.021 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 776894 | 49.032 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 297886 | 50.582 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.224( 0.000) | 92 | 11555 | 1.255 | 1.26 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Daniel H. Heller on 07/27/2017 at 14:31. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:58. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

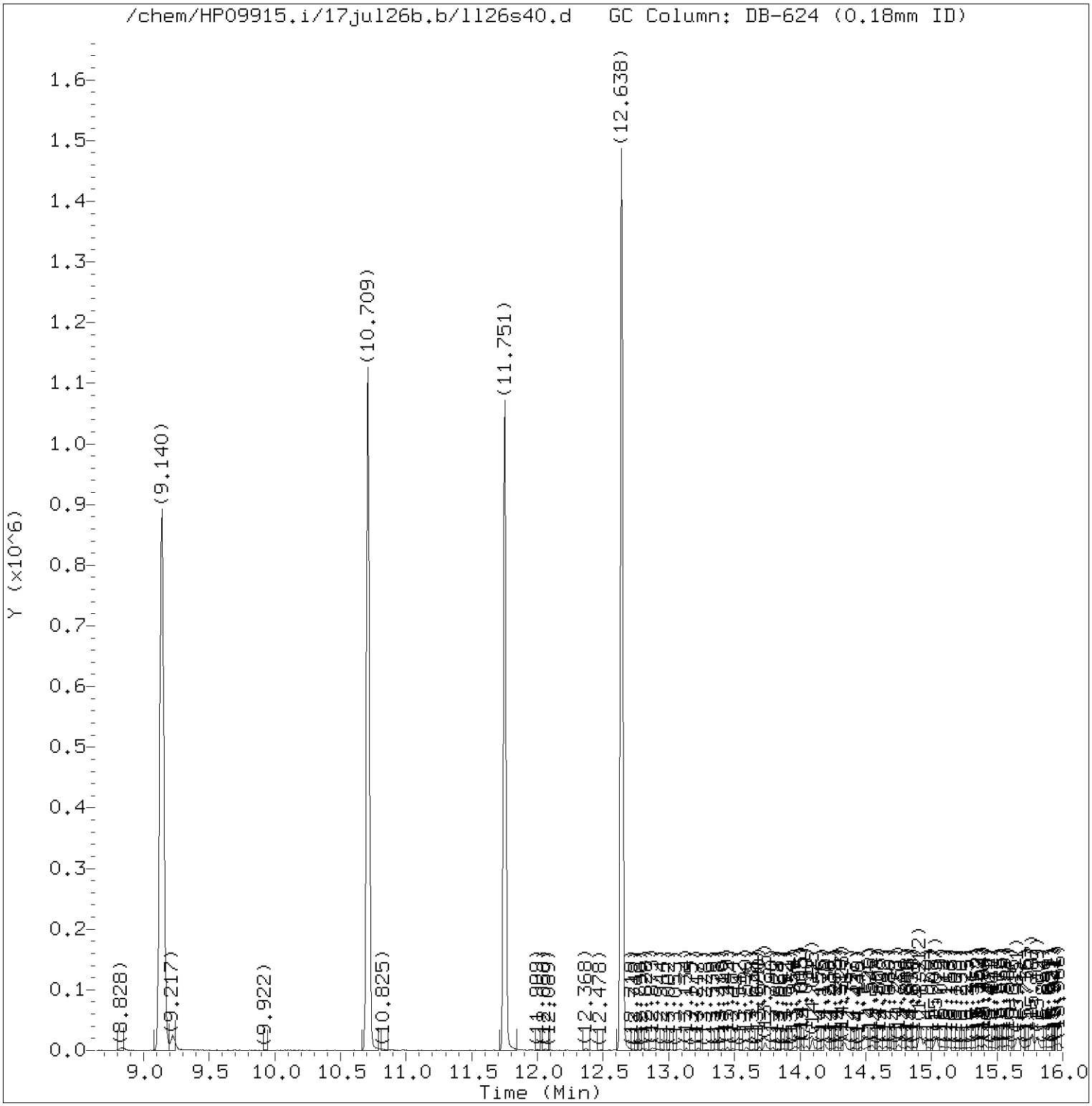
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s40.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 00:51 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:09 Automation

Sample Name: 19001 Lab Sample ID: 9114605

Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:31.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s40.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 00:51 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:09 Automation

Sample Name: 19001 Lab Sample ID: 9114605

Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:31.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s40.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 00:51 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:09 Automation

Sample Name: 19001 Lab Sample ID: 9114605

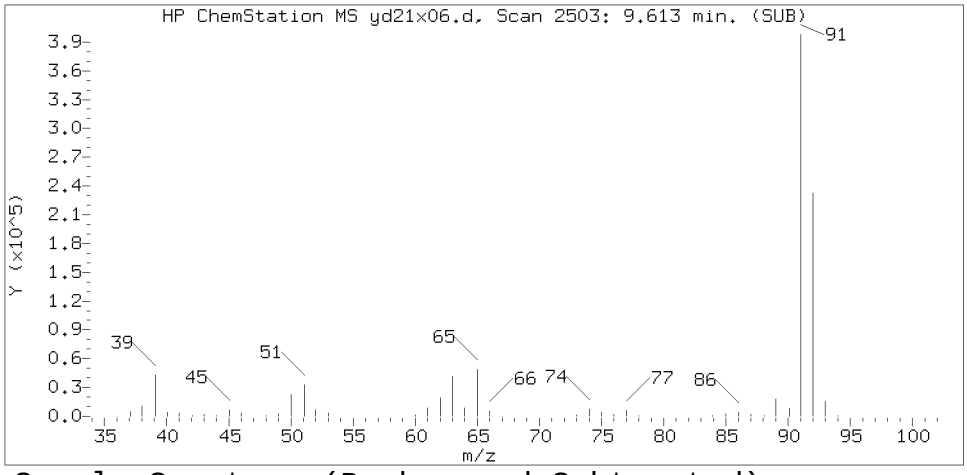
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 166590 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 200545 | 53.230 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 47799 | 51.021 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 771524 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 776894 | 49.032 |
| 88) Toluene | (3) | 9.224 | 92 | 11555 | 1.255 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 620545 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 297886 | 50.582 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 343054 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

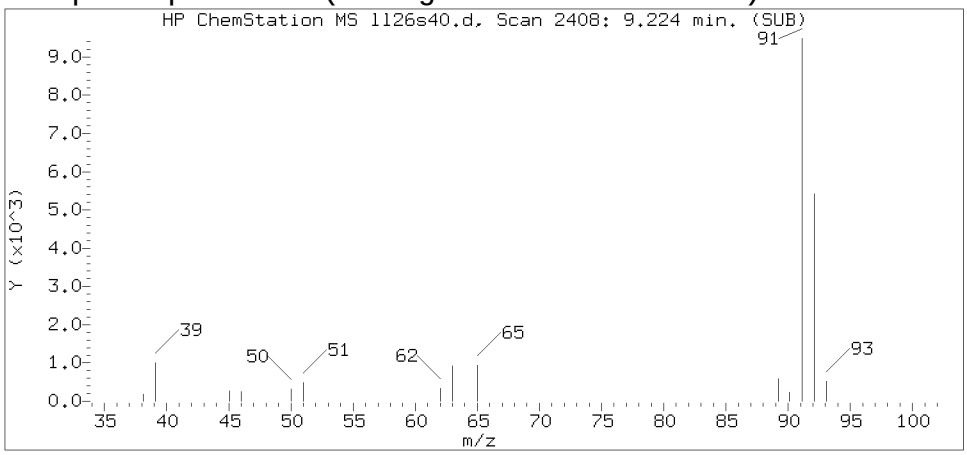


Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:31.
Target 3.5 esignature user ID: dhh02035

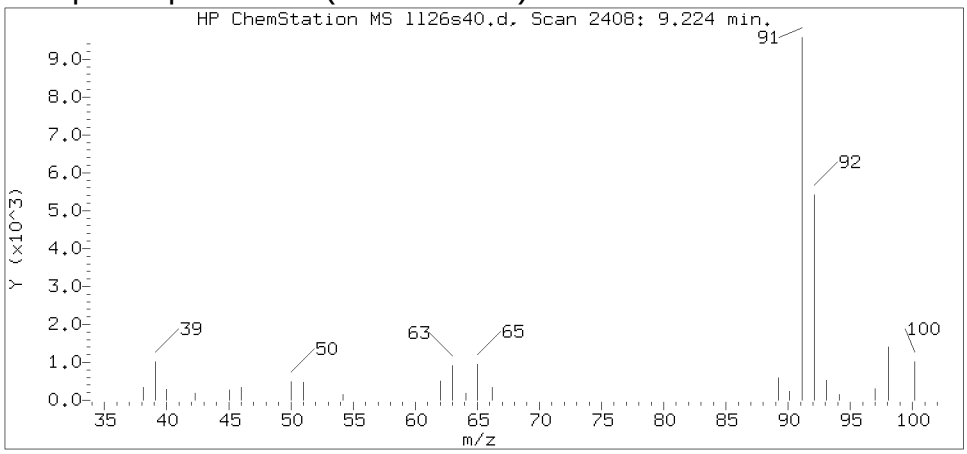
Reference Standard Spectrum for Toluene

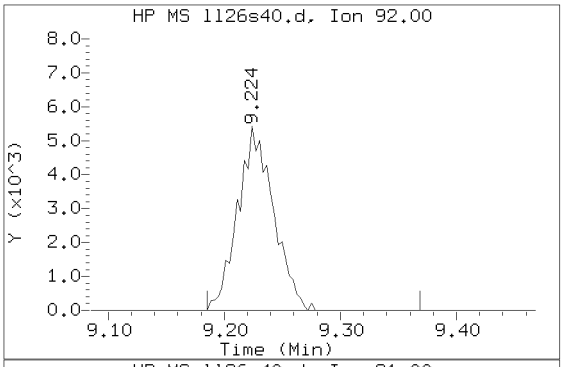


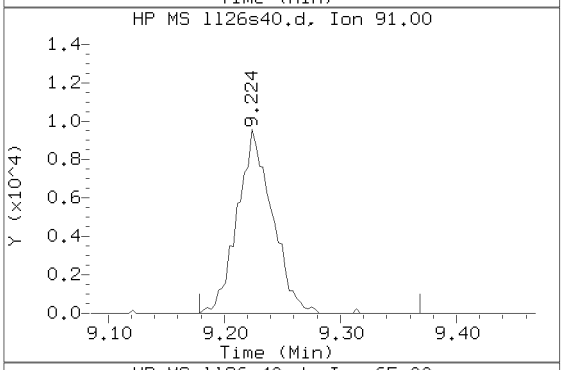

Sample Spectrum (Background Subtracted)

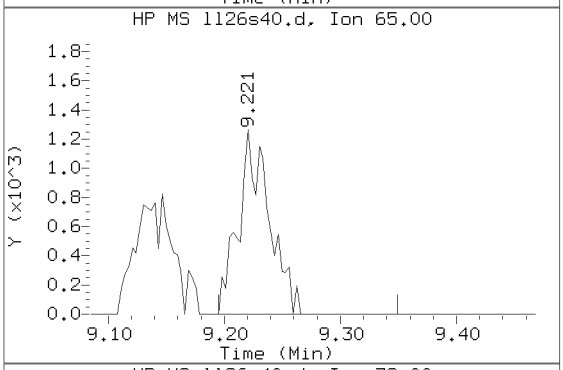


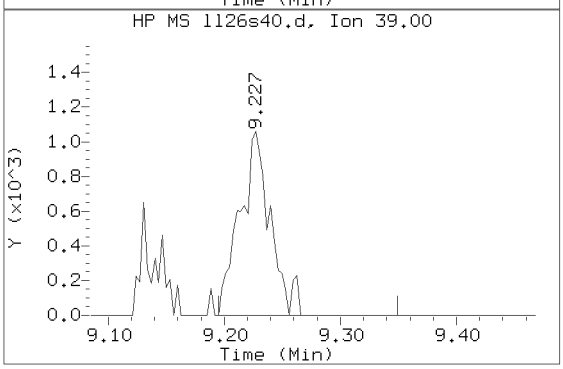

Sample Spectrum (Unaltered)




Data File: /chem/HP09915.i/17jul26b.b/ll26s40.d  Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 00:51  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:09 Automation

Sample Name: 19001  Lab Sample ID: 9114605

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 2408 |
| Retention Time (minutes) | : 9.224 |
| Relative Retention Time | : 0.00030 |
| Quant Ion | : 92.00 |
| Area (flag) | : 11555 |
| On-Column Amount (ng) | : 1.2550 |

Digitally signed by Daniel H. Heller on 07/27/2017 at 14:31.
Target 3.5 esignature user ID: dhh02035

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26s41.d Injection date and time: **27-JUL-2017 01:13**
Data file Sample Info. Line: 19002;9114606;1;0;;KR190;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 01:31 Automation

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.000) | 653 | 65 | 163933 ( 25) | 250.00 | |
| 66) Fluorobenzene | 7.054( 0.000) | 1733 | 96 | 802825 ( 14) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 630961 ( 11) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 350646 ( 5) | 50.00 | |

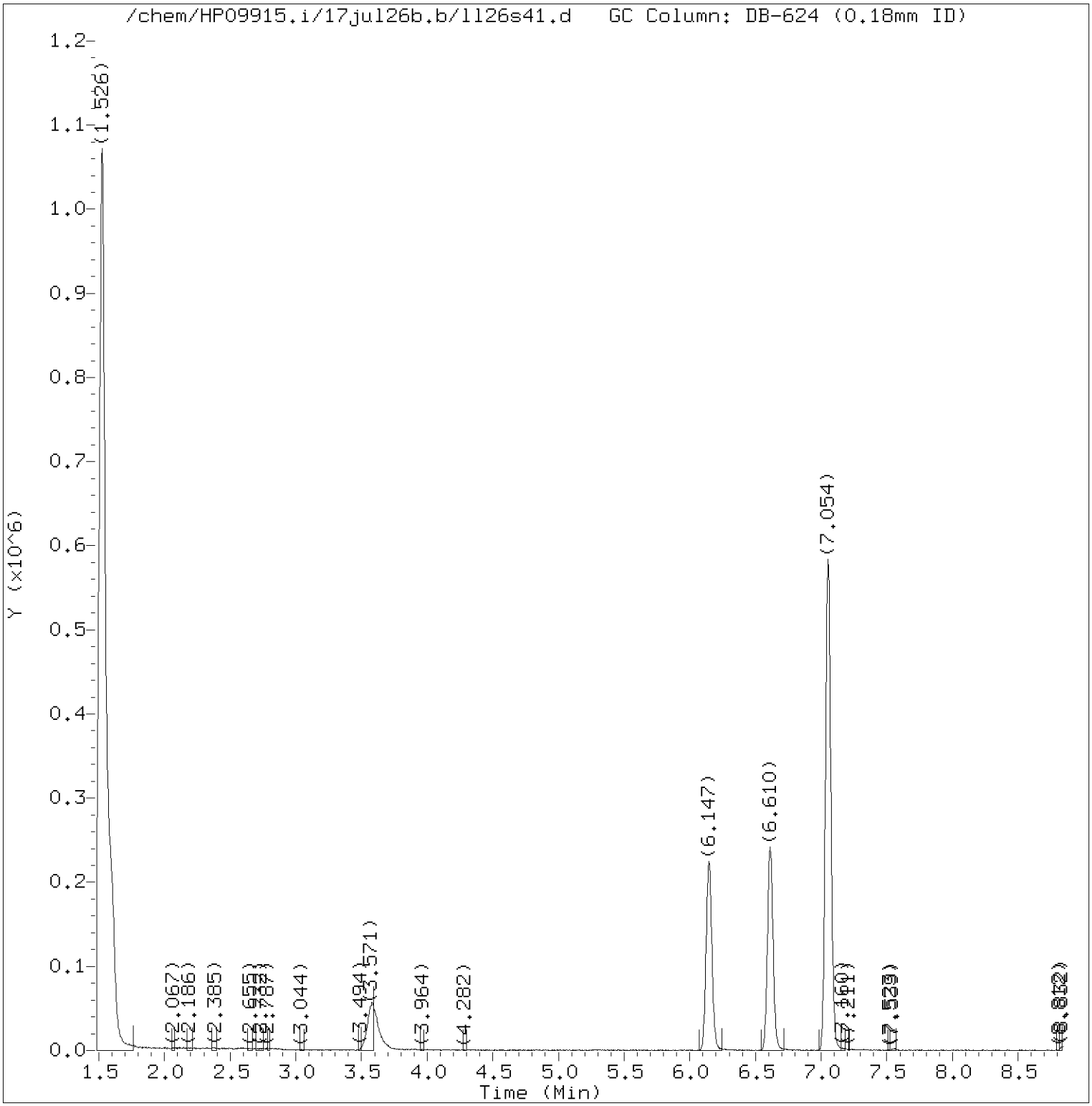
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 212316 | 54.158 | 108% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.001) | 102 | 48893 | 50.155 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 793527 | 49.255 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 304481 | 50.848 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.224( 0.000) | 92 | 5742 | 0.613 | 0.61 | | J | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Daniel H. Heller on 07/27/2017 at 14:34. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:58. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

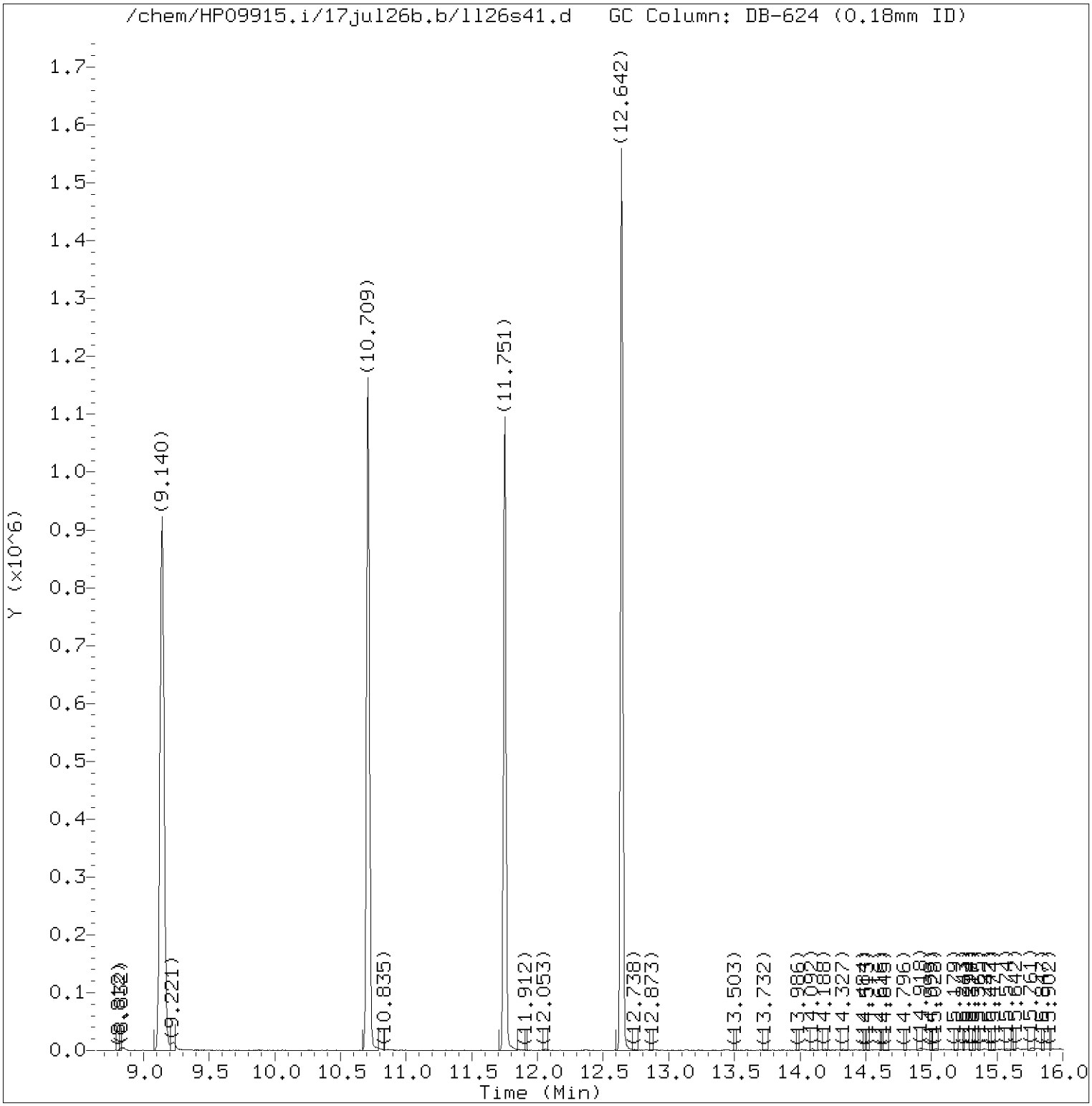
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s41.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 01:13 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:31 Automation

Sample Name: 19002 Lab Sample ID: 9114606

Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:34.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s41.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 01:13 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:31 Automation

Sample Name: 19002 Lab Sample ID: 9114606

Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:34.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s41.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 01:13 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:31 Automation

Sample Name: 19002 Lab Sample ID: 9114606

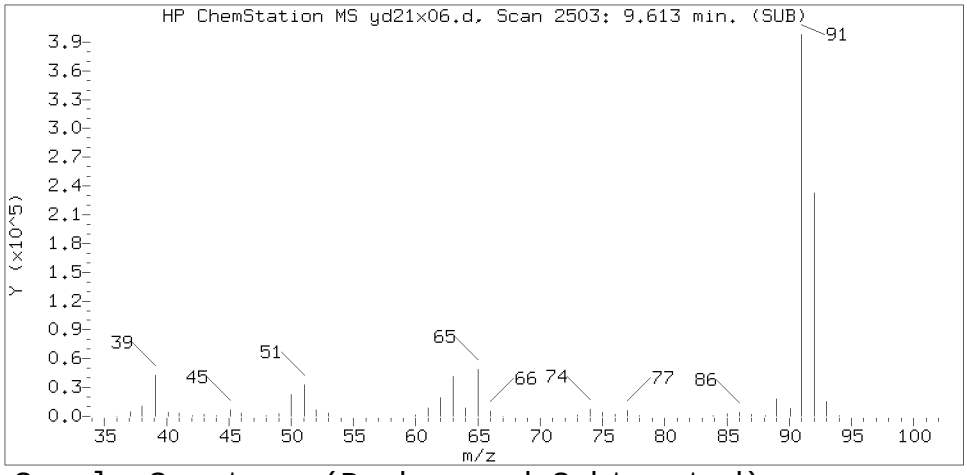
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 163933 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 212316 | 54.158 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 48893 | 50.155 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 802825 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 793527 | 49.255 |
| 88) Toluene | (3) | 9.224 | 92 | 5742 | 0.613 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 630961 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 304481 | 50.848 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 350646 | 50.000 |

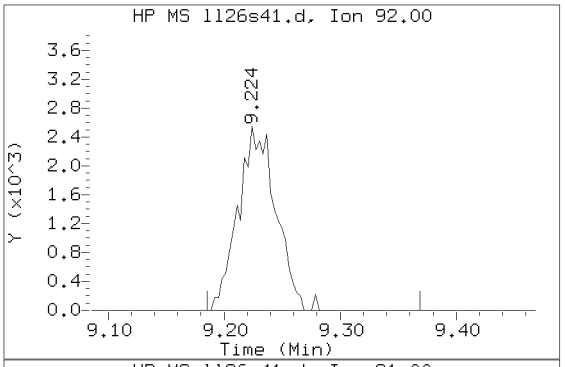
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



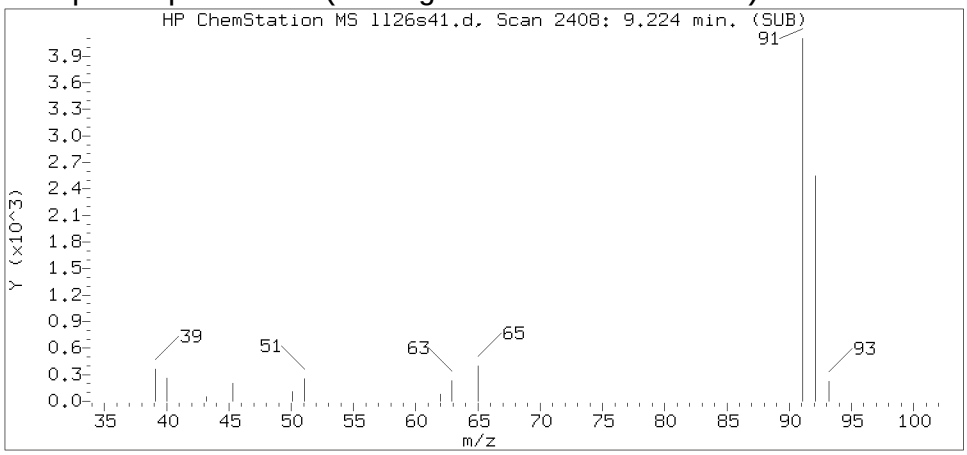
Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:34.
Target 3.5 esignature user ID: dhh02035

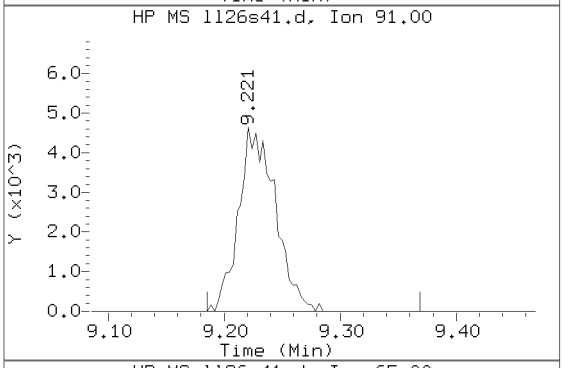
Reference Standard Spectrum for Toluene

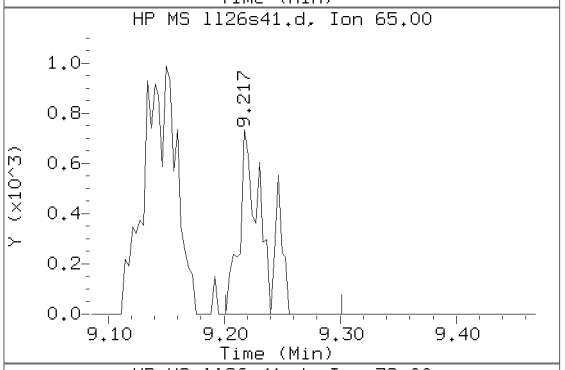


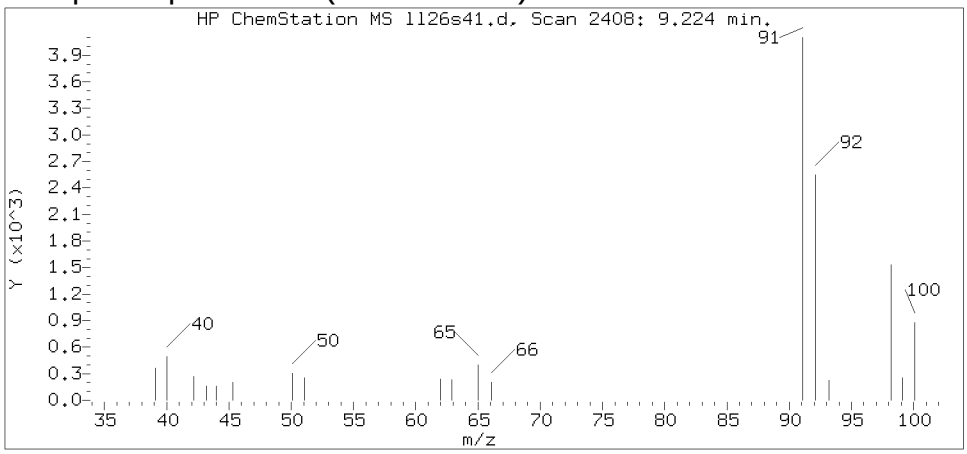

Sample Spectrum (Background Subtracted)

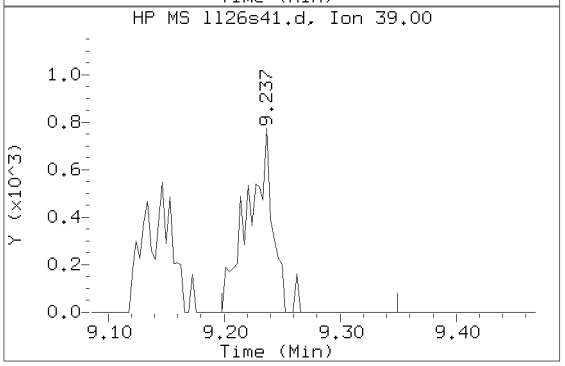



Sample Spectrum (Unaltered)




Data File: /chem/HP09915.i/17jul26b.b/ll26s41.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 01:13 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:31 Automation

Sample Name: 19002 Lab Sample ID: 9114606

Compound Number : 88
Compound Name : Toluene
Scan Number : 2408
Retention Time (minutes): 9.224
Relative Retention Time : 0.00030
Quant Ion : 92.00
Area (flag) : 5742
On-Column Amount (ng) : 0.6134

Digitally signed by Daniel H. Heller on 07/27/2017 at 14:34.
Target 3.5 esignature user ID: dhh02035

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26s42.d Injection date and time: **27-JUL-2017 01:35**
Data file Sample Info. Line: 19003;9114607;1;0;;KR190;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 01:52 Automation

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.575( 0.006) | 651 | 65 | 158233 ( 21) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.006) | 1731 | 96 | 769262 ( 10) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 615756 ( 8) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 345003 ( 3) | 50.00 | |

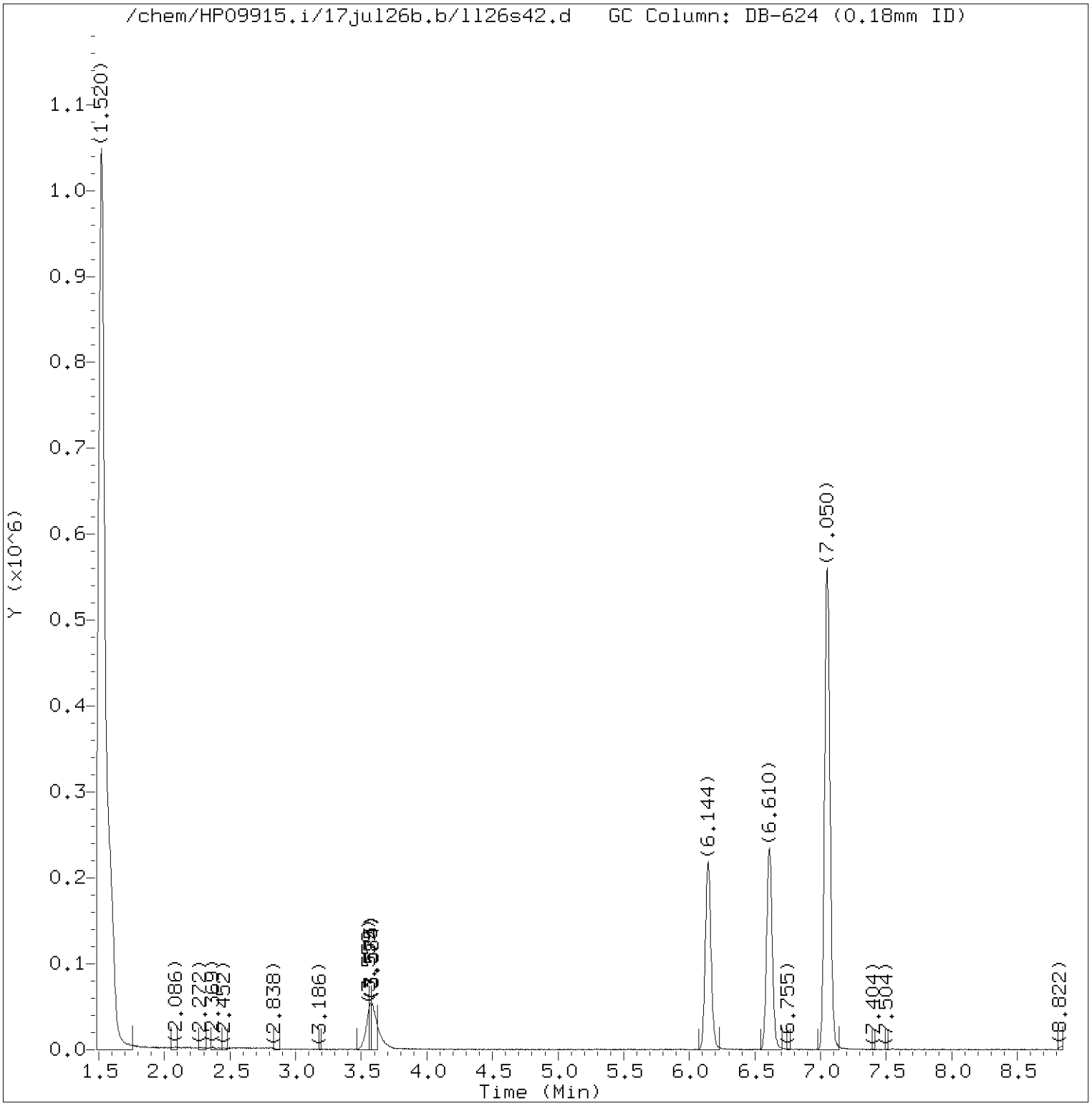
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 206088 | 54.862 | 110% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.616(-0.001) | 102 | 48591 | 52.020 | 104% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 768202 | 48.861 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 294176 | 50.340 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.234(-0.000) | 92 | 5596 | 0.613 | 0.61 | | J | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Daniel H. Heller on 07/27/2017 at 14:34. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:58. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

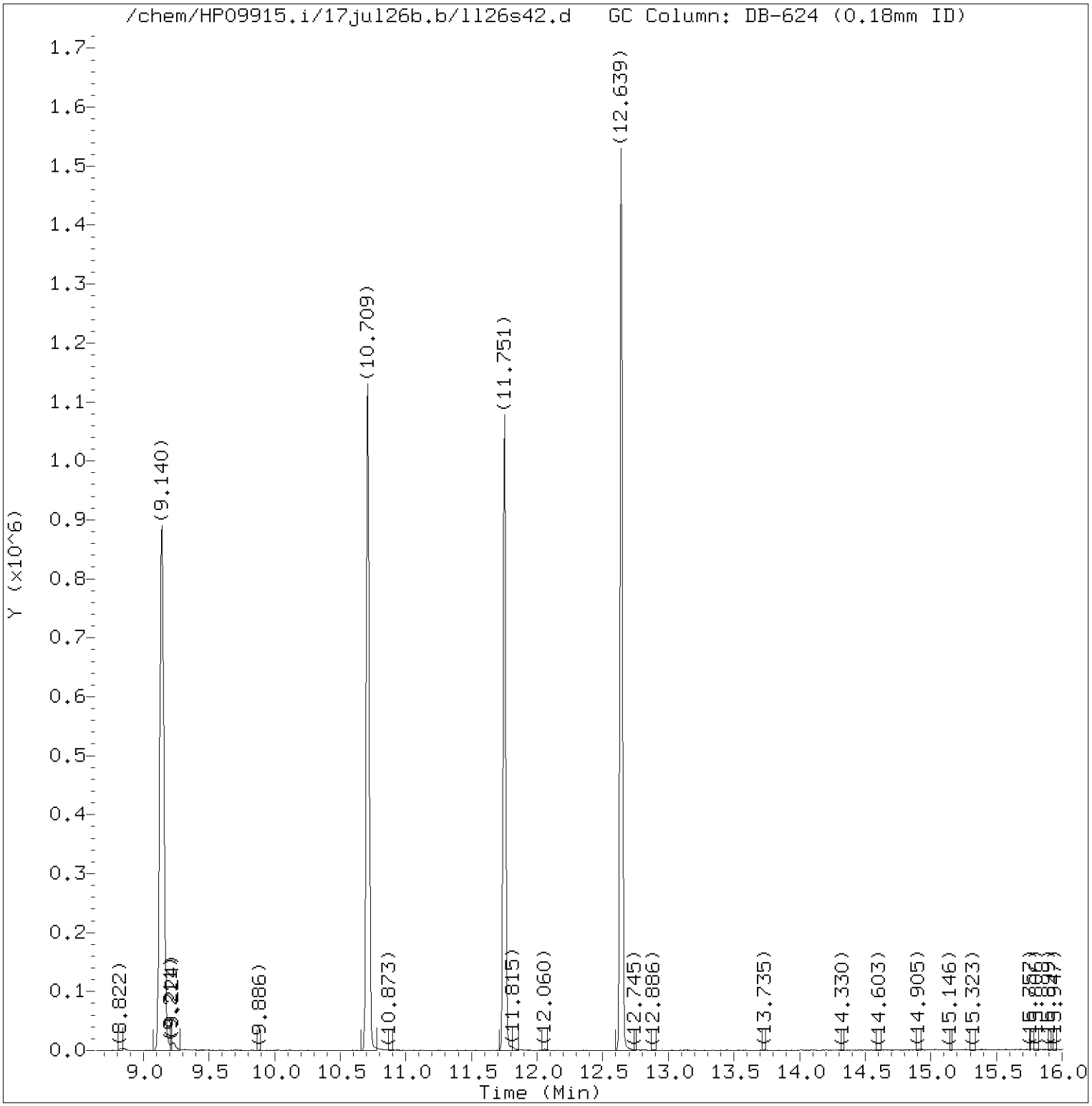
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s42.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 01:35 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:52 Automation

Sample Name: 19003 Lab Sample ID: 9114607

Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:34.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s42.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 01:35 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:52 Automation

Sample Name: 19003 Lab Sample ID: 9114607

Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:34.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s42.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 01:35 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:52 Automation

Sample Name: 19003 Lab Sample ID: 9114607

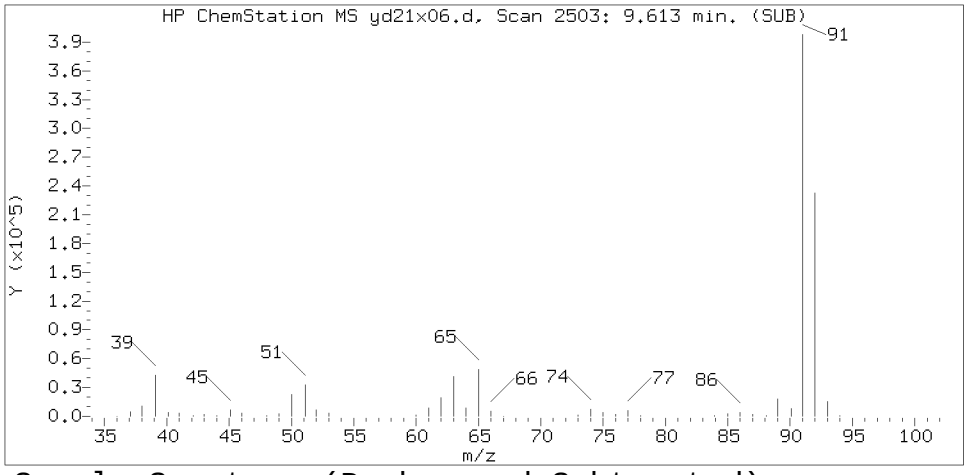
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 158233 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 206088 | 54.862 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 48591 | 52.020 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 769262 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 768202 | 48.861 |
| 88) Toluene | (3) | 9.234 | 92 | 5596 | 0.613 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 615756 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 294176 | 50.340 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 345003 | 50.000 |

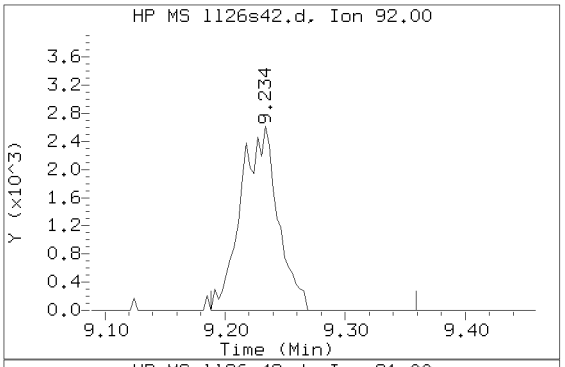
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



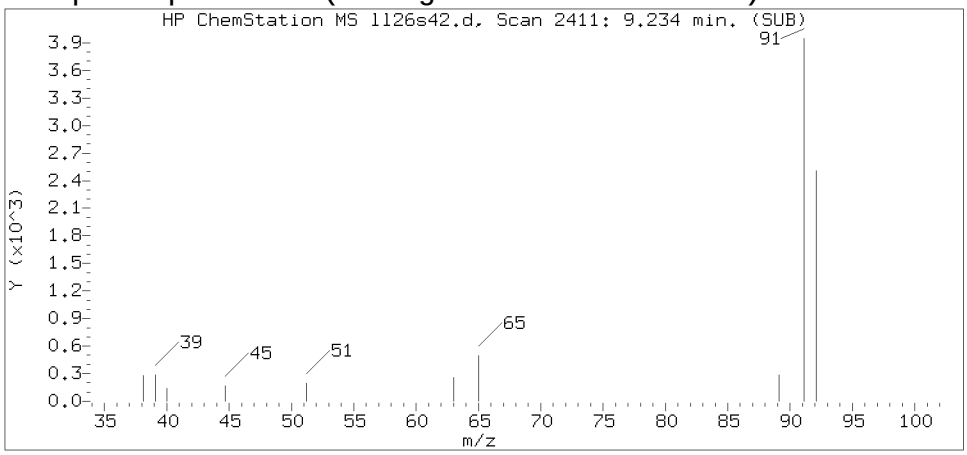
Digitally signed by Daniel H. Heller
on 07/27/2017 at 14:34.
Target 3.5 esignature user ID: dhh02035

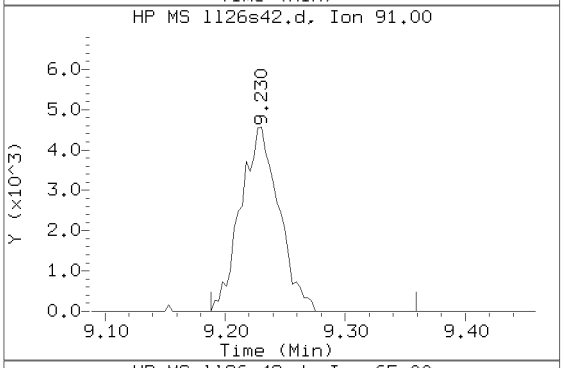
Reference Standard Spectrum for Toluene



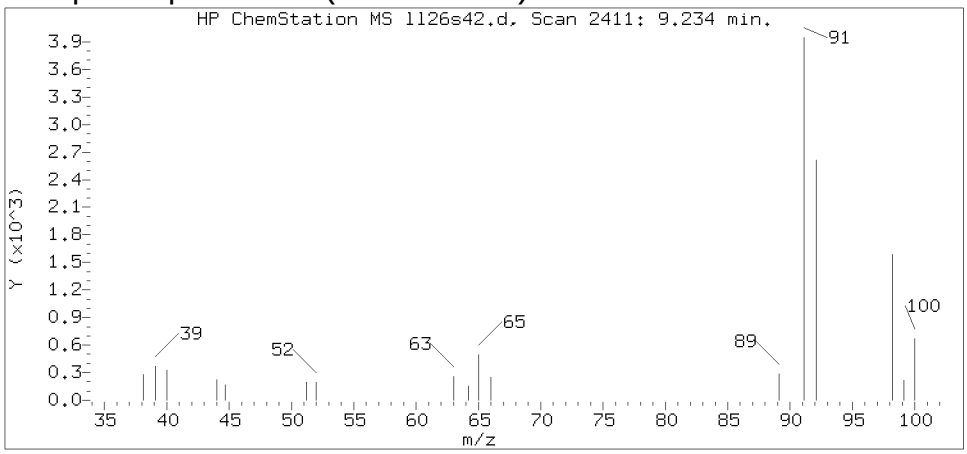



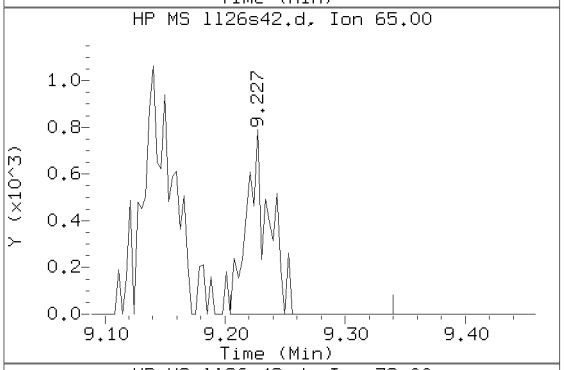

Sample Spectrum (Background Subtracted)

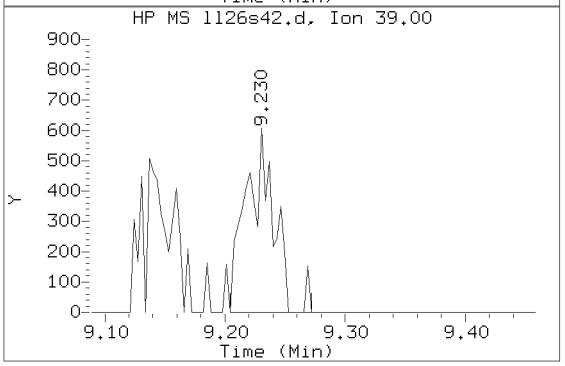



Sample Spectrum (Unaltered)




Data File: /chem/HP09915.i/17jul26b.b/ll26s42.d  Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 01:35  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 01:52 Automation

Sample Name: 19003  Lab Sample ID: 9114607

| | |
|---|---|
| Compound Number | : 88 |
| Compound Name | : Toluene |
| Scan Number | : 2411 |
| Retention Time (minutes) | : 9.234 |
| Relative Retention Time | :-0.00060 |
| Quant Ion | : 92.00 |
| Area (flag) | : 5596 |
| On-Column Amount (ng) | : 0.6125 |

Digitally signed by Daniel H. Heller on 07/27/2017 at 14:34.
Target 3.5 esignature user ID: dhh02035

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26s32.d Injection date and time: **26-JUL-2017 21:57**
Data file Sample Info. Line: 19004;9114608;1;0;;KR190;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 26-Jul-2017 22:14 Automation

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.565( 0.016) | 648 | 65 | 145372 ( 11) | 250.00 | |
| 66) Fluorobenzene | 7.044( 0.010) | 1730 | 96 | 718691 ( 2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 574913 ( 1) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 318140 ( -5) | 50.00 | |

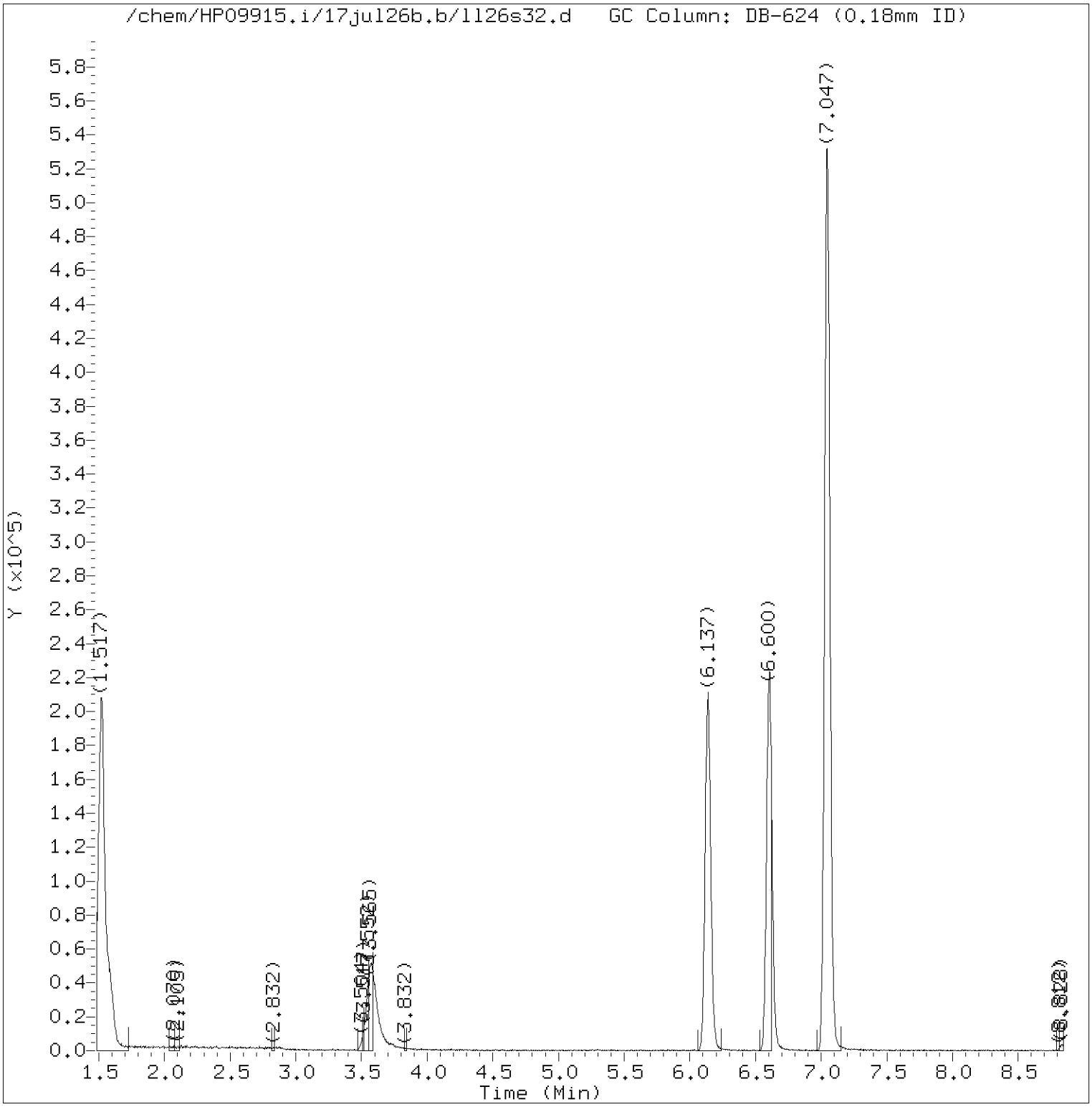
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140(-0.001) | 113 | 190515 | 54.286 | 109% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 46381 | 53.147 | 106% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 720941 | 49.113 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 271740 | 49.804 | 100% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Kevin Kelly on 07/26/2017 at 22:33. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:51. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

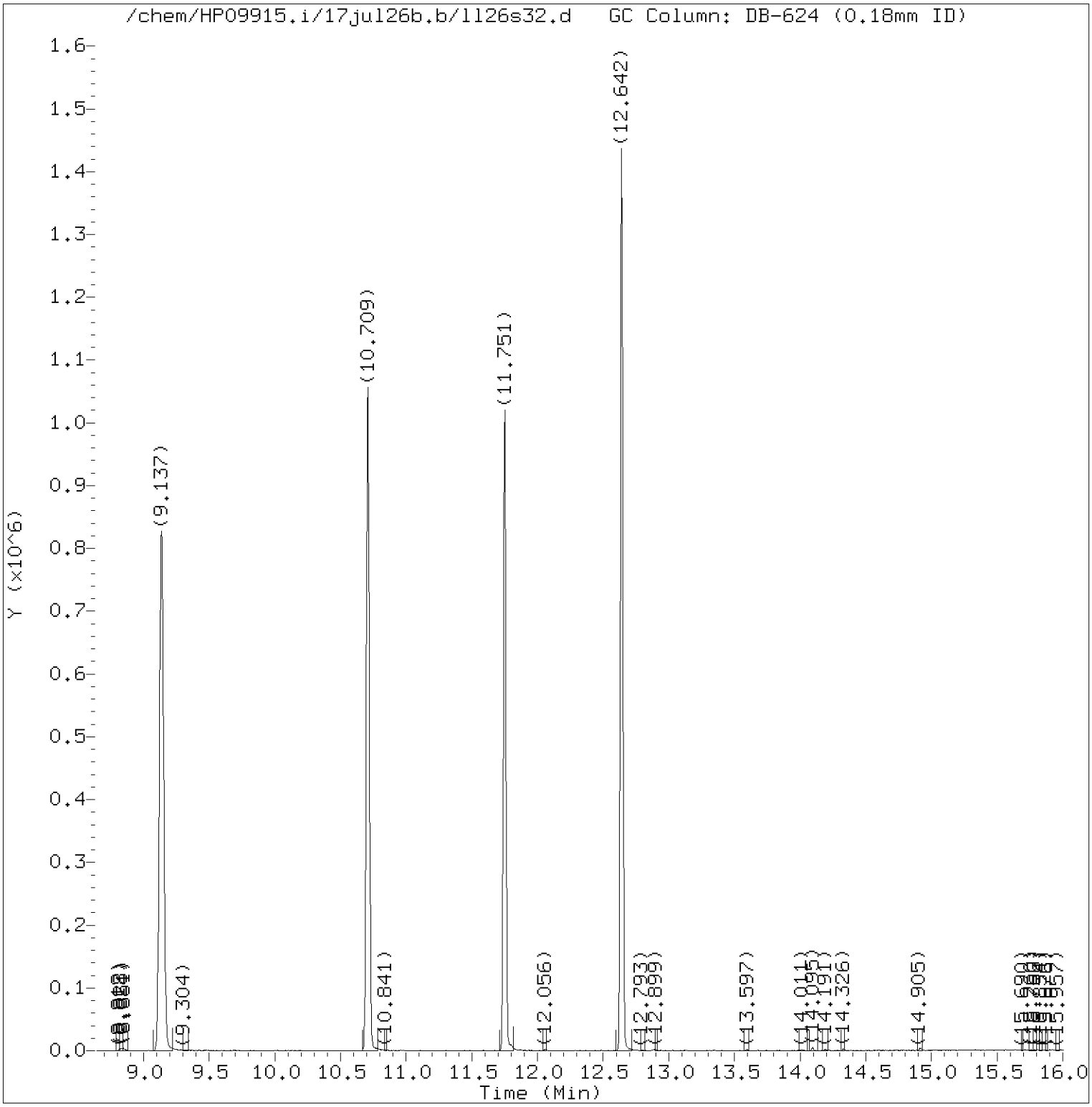
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s32.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 21:57 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 22:14 Automation

Sample Name: 19004 Lab Sample ID: 9114608

Digitally signed by Kevin Kelly
on 07/26/2017 at 22:33.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s32.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 21:57 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 22:14 Automation

Sample Name: 19004 Lab Sample ID: 9114608

Digitally signed by Kevin Kelly
on 07/26/2017 at 22:33.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s32.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 21:57 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 22:14 Automation

Sample Name: 19004 Lab Sample ID: 9114608

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 145372 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 190515 | 54.286 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 46381 | 53.147 |
| 66)*Fluorobenzene | (2) | 7.044 | 96 | 718691 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 720941 | 49.113 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 574913 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 271740 | 49.804 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 318140 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/26/2017 at 22:33.
Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26s33.d Injection date and time: **26-JUL-2017 22:18**
Data file Sample Info. Line: 19005;9114609;1;0;;KR190;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 26-Jul-2017 22:36 Automation

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.584(-0.003) | 654 | 65 | 119790 ( -9) | 250.00 | |
| 66) Fluorobenzene | 7.054( 0.000) | 1733 | 96 | 637791 ( -9) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 504849 ( -11) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 283399 ( -15) | 50.00 | |

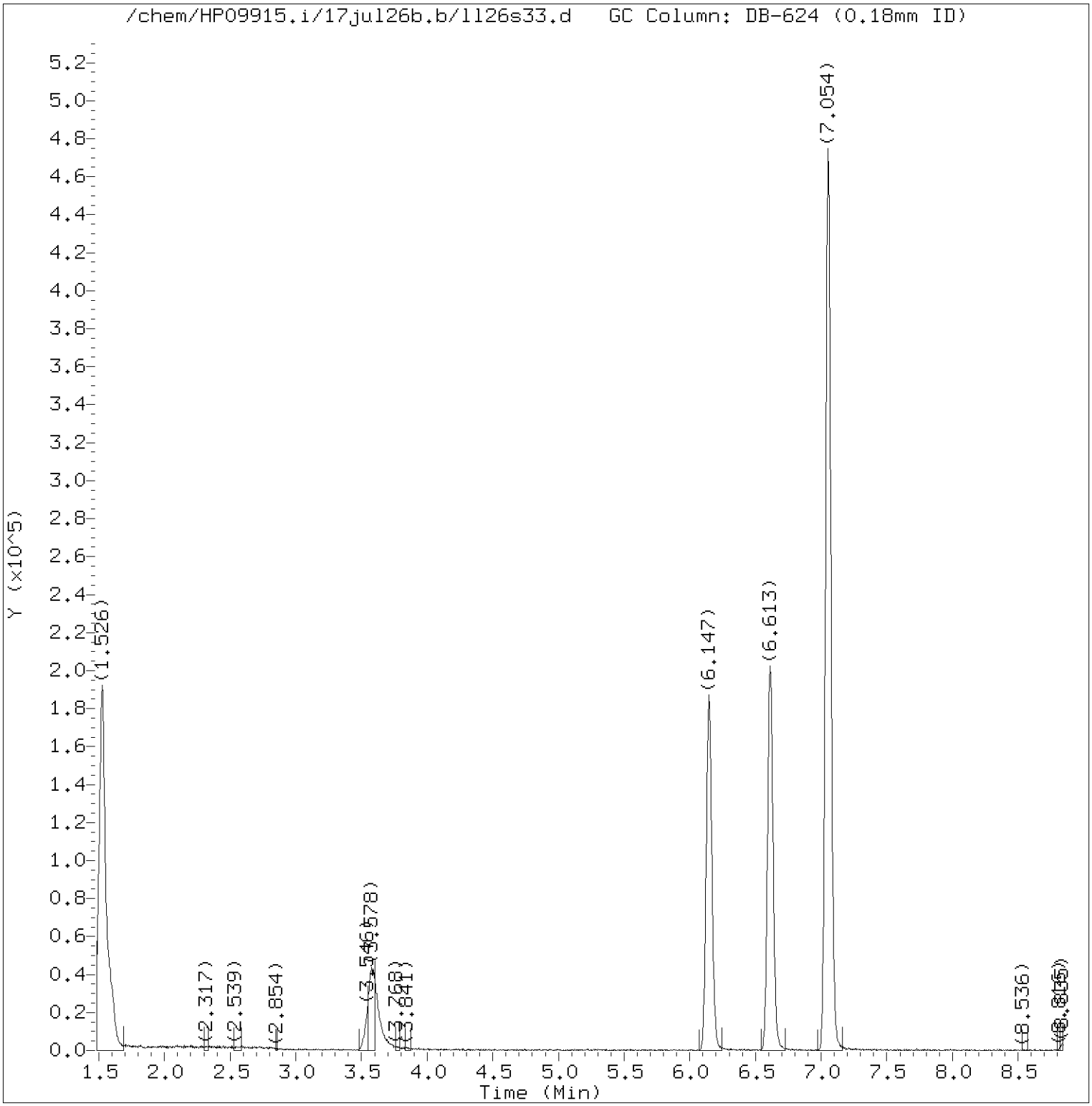
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 170740 | 54.822 | 110% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613( 0.000) | 102 | 40330 | 52.076 | 104% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 630568 | 48.918 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 241683 | 50.443 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Kevin Kelly on 07/26/2017 at 22:40. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:51. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

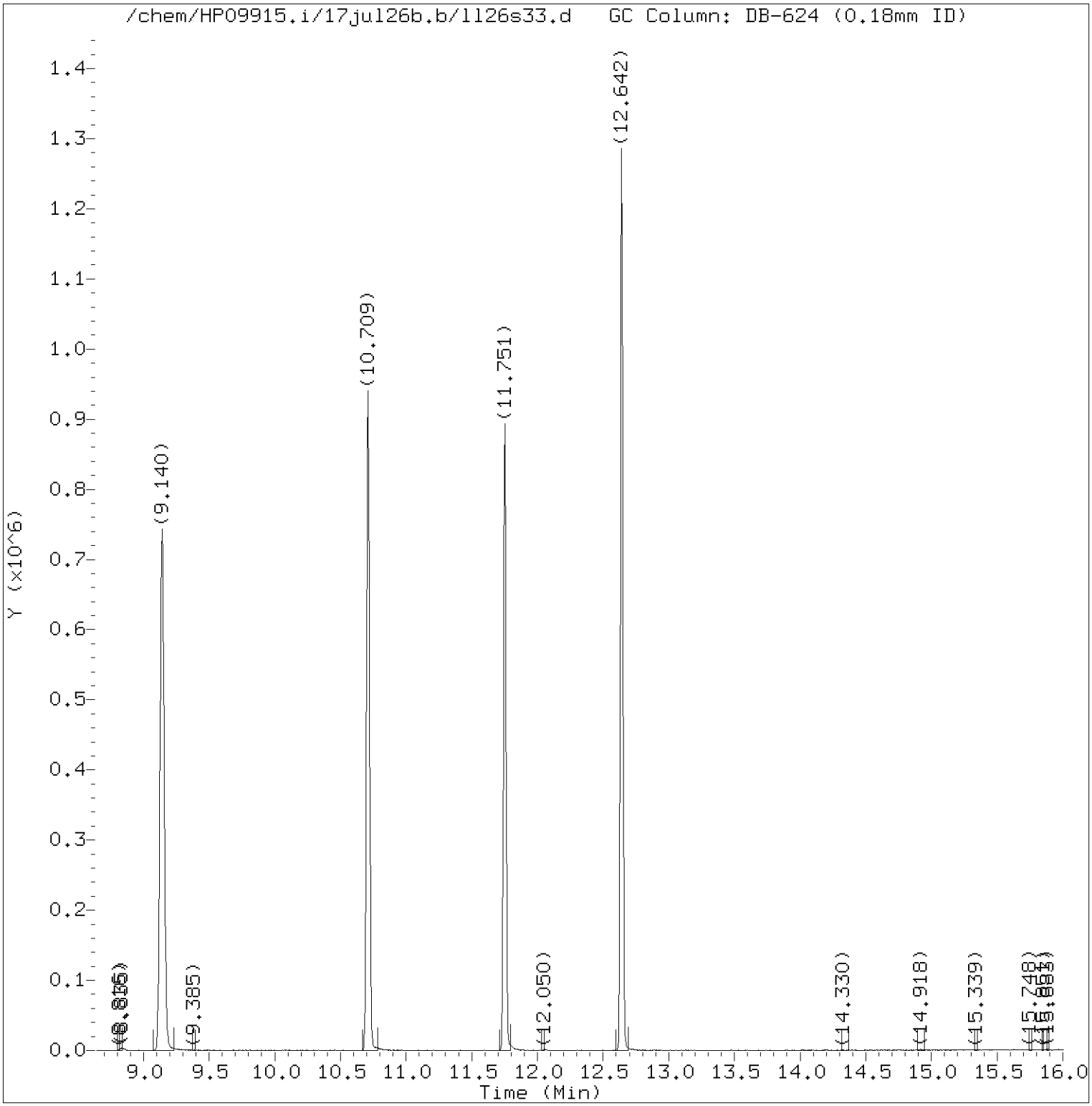
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s33.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 22:18 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 22:36 Automation

Sample Name: 19005 Lab Sample ID: 9114609

Digitally signed by Kevin Kelly
on 07/26/2017 at 22:40.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s33.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 22:18 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 22:36 Automation

Sample Name: 19005 Lab Sample ID: 9114609

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on 07/26/2017 at 22:40.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s33.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 22:18 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 22:36 Automation

Sample Name: 19005 Lab Sample ID: 9114609

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 119790 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 170740 | 54.822 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 40330 | 52.076 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 637791 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 630568 | 48.918 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 504849 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 241683 | 50.443 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 283399 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 07/26/2017 at 22:40.
Target 3.5 esignature user ID: kk10002

# Standards Data

# Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17APR26A\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| KAS02648 | LA26T01.D | 50NG BFB | 04/26/2017 | 12:45 | | |
| KAS02648 | LA26X01.D | BLK | 04/26/2017 | 12:58 | | |
| KAS02648 | LA26I01.D | VSTD300 | 04/26/2017 | 13:20 | | |
| KAS02648 | LA26I02.D | VSTD100 | 04/26/2017 | 13:42 | | |
| KAS02648 | LA26I03.D | VSTD050 | 04/26/2017 | 14:04 | | |
| KAS02648 | LA26I04.D | VSTD020 | 04/26/2017 | 14:26 | | |
| KAS02648 | LA26I05.D | VSTD010 | 04/26/2017 | 14:48 | | |
| KAS02648 | LA26I06.D | VSTD004 | 04/26/2017 | 15:10 | | |
| KAS02648 | LA26I07.D | VSTD001 | 04/26/2017 | 15:32 | | |
| KAS02648 | LA26M01.D | MDL0.5 | 04/26/2017 | 15:54 | | |
| KAS02648 | LA26C01.D | VSTD050 | 04/26/2017 | 16:41 | L171161AA | |
| KAS02648 | LA26B01.D | VBLKL46 | 04/26/2017 | 17:03 | L171161AA | |
| KAS02648 | LA26S01.D | LCSL46 | 04/26/2017 | 17:25 | L171161AA | |
| KAS02648 | LA26S02.D | LCSL47 | 04/26/2017 | 17:47 | L171161AA | |
| KAS02648 | LA26M02.D | MDL001 | 04/26/2017 | 18:09 | L171161AA | |
| KAS02648 | LA26S01A.D | LCSL46 | 04/26/2017 | 18:34 | L171161AA | |
| KAS02648 | LA26S32.D | 8944378 | 04/26/2017 | 19:15 | L171162AA | |
| KAS02648 | LA26S33.D | 8944379 | 04/26/2017 | 19:37 | L171162AA | |
| KAS02648 | LA26S34.D | 8947184 | 04/26/2017 | 19:59 | L171162AA | |
| KAS02648 | LA26S35.D | 8944352 | 04/26/2017 | 20:21 | L171162AA | |
| KAS02648 | LA26S36.D | 8944353MS | 04/26/2017 | 20:43 | L171162AA | |
| KAS02648 | LA26S37.D | 8944354MSD | 04/26/2017 | 21:05 | L171162AA | |
| KAS02648 | LA26S38.D | 8944360 | 04/26/2017 | 21:27 | L171162AA | |
| KAS02648 | LA26S39.D | 8944366 | 04/26/2017 | 21:49 | L171162AA | |
| KAS02648 | LA26S40.D | 8944368 | 04/26/2017 | 22:11 | L171162AA | |
| KAS02648 | LA26S41.D | 8944370 | 04/26/2017 | 22:33 | L171162AA | |
| KAS02648 | LA26S42.D | 8947174 | 04/26/2017 | 22:55 | L171162AA | |
| KAS02648 | LA26S43.D | 8947180 | 04/26/2017 | 23:17 | L171162AA | |
| KAS02648 | LA26EC1.D | SECC050 | 04/26/2017 | 23:38 | L171162AA | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17jul26b\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| kk10002 | LL26T05.D | 50NGBFB | 07/26/2017 | 19:52 | L172072AA | |
| kk10002 | LL26X05.D | CBLKL83 | 07/26/2017 | 20:12 | L172072AA | |
| kk10002 | LL26C05.D | VSTD050 | 07/26/2017 | 20:34 | L172072AA | |
| kk10002 | LL26S31.D | LCSL83 | 07/26/2017 | 20:56 | L172072AA | |
| kk10002 | LL26B05.D | VBLKL83 | 07/26/2017 | 21:18 | L172072AA | |
| kk10002 | LL26S32.D | 9114608 | 07/26/2017 | 21:57 | L172072AA | |
| kk10002 | LL26S33.D | 9114609 | 07/26/2017 | 22:18 | L172072AA | |
| kk10002 | LL26S34.D | 9116351 | 07/26/2017 | 22:40 | L172072AA | |
| kk10002 | LL26S35.D | 9116352 | 07/26/2017 | 23:02 | L172072AA | |
| kk10002 | LL26S36.D | 9116356 | 07/26/2017 | 23:24 | L172072AA | |
| kk10002 | LL26S37.D | 9116346 | 07/26/2017 | 23:46 | L172072AA | |
| kk10002 | LL26S38.D | 9116347MS | 07/27/2017 | 00:07 | L172072AA | |
| kk10002 | LL26S39.D | 9116348MSD | 07/27/2017 | 00:29 | L172072AA | |
| kk10002 | LL26S40.D | 9114605 | 07/27/2017 | 00:51 | L172072AA | |
| kk10002 | LL26S41.D | 9114606 | 07/27/2017 | 01:13 | L172072AA | |
| kk10002 | LL26S42.D | 9114607 | 07/27/2017 | 01:35 | L172072AA | |
| kk10002 | LL26S43.D | 9116344 | 07/27/2017 | 01:56 | L172072AA | |
| kk10002 | LL26S44.D | 9116353 | 07/27/2017 | 02:18 | L172072AA | |
| kk10002 | LL26S45.D | 9116354 | 07/27/2017 | 02:40 | L172072AA | |
| kk10002 | LL26S46.D | 9116343 | 07/27/2017 | 03:02 | L172072AA | |
| kk10002 | LL26S47.D | 9116343DL | 07/27/2017 | 03:24 | L172072AA | 10 |
| kk10002 | LL26S48.D | 9116345 | 07/27/2017 | 03:45 | L172072AA | |
| kk10002 | LL26S49.D | 9116345DL | 07/27/2017 | 04:07 | L172072AA | 10 |
| kk10002 | LL26S50.D | 9116349 | 07/27/2017 | 04:29 | L172072AA | |
| kk10002 | LL26S51.D | 9116349DL | 07/27/2017 | 04:51 | L172072AA | 10 |
| kk10002 | LL26S52.D | 9116350 | 07/27/2017 | 05:13 | L172072AA | |
| kk10002 | LL26S53.D | 9116350DL | 07/27/2017 | 05:35 | L172072AA | 10 |
| kk10002 | LL26S54.D | 9116355 | 07/27/2017 | 05:56 | L172072AA | |
| kk10002 | LL26S55.D | 9116355DL | 07/27/2017 | 06:18 | L172072AA | 10 |
| kk10002 | LL26EC5.D | SECC050 | 07/27/2017 | 06:40 | L172072AA | |

Data File: /chem/HP09915.i/17apr26a.b/la26t01.d



Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017

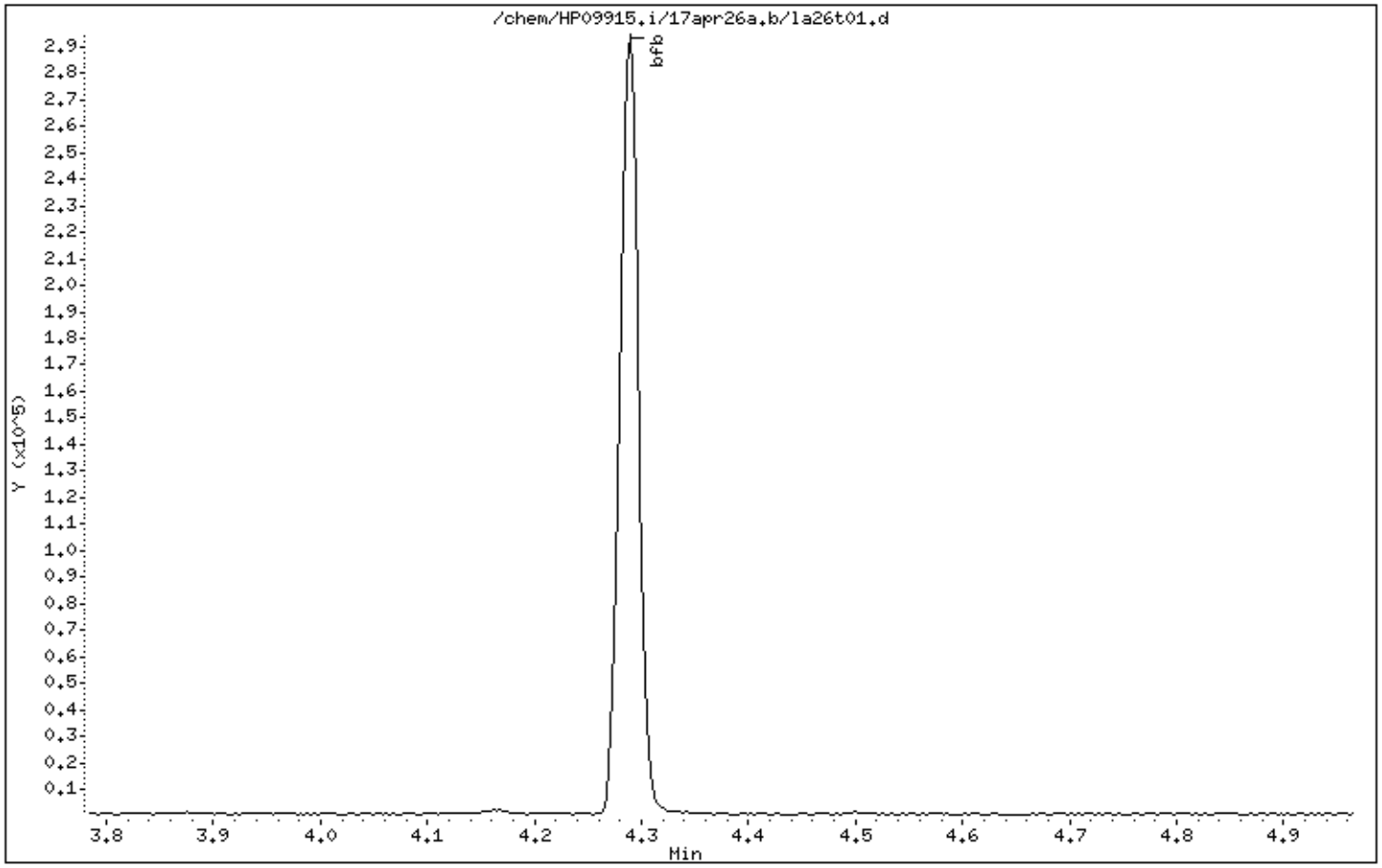
Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17apr26a.b/la26t01.d



Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017

Instrument: HP09915.i

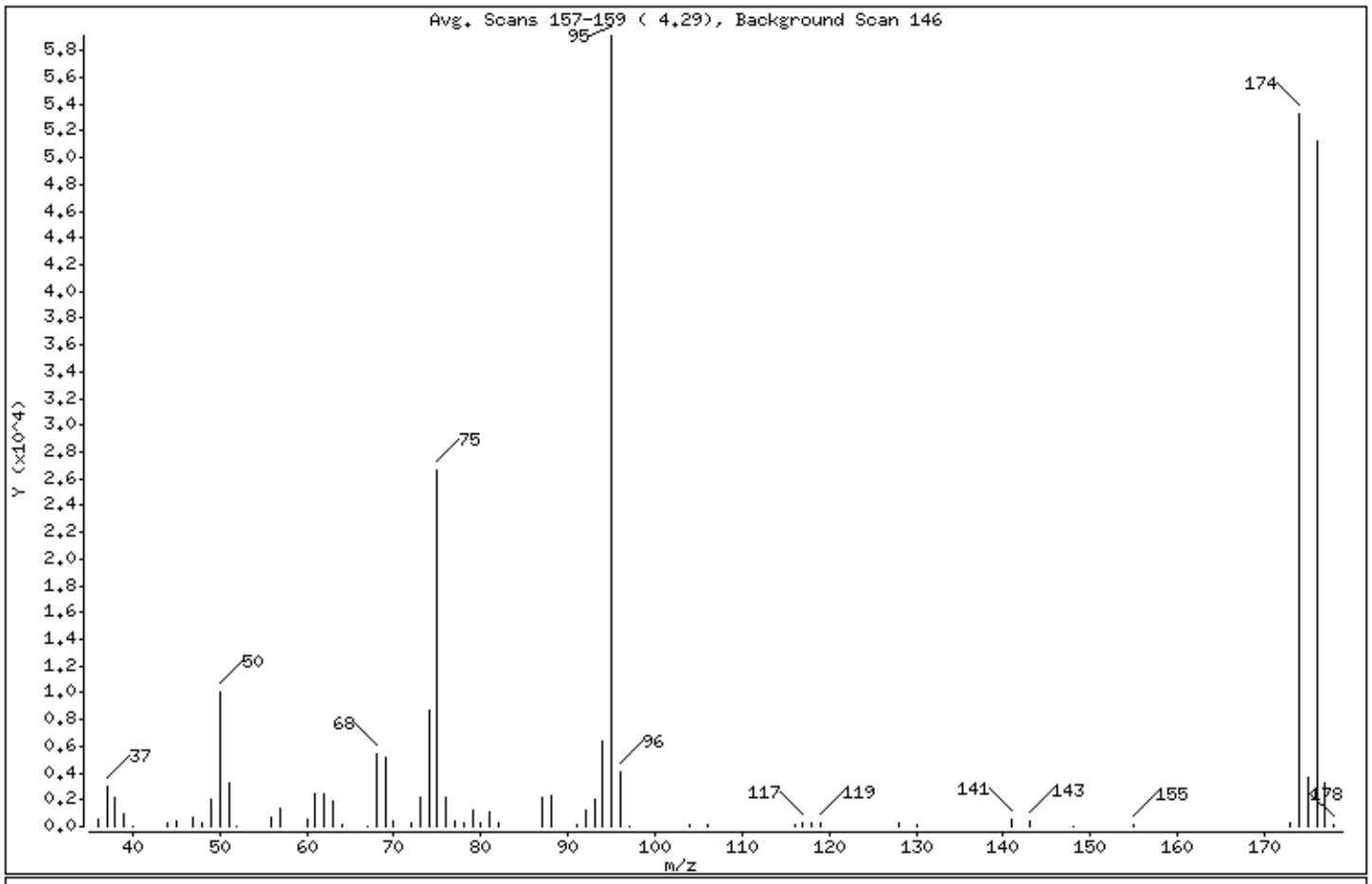
Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.10 |
| 75 | 30.00 - 60.00% of mass 95 | 44.97 |
| 96 | 5.00 - 9.00% of mass 95 | 6.79 |
| 173 | Less than 2.00% of mass 174 | 0.49 ( 0.54) |
| 174 | 50.00 - 100.00% of mass 95 | 90.09 |
| 175 | 5.00 - 9.00% of mass 174 | 6.12 ( 6.79) |
| 176 | 95.00 - 101.00% of mass 174 | 86.74 ( 96.29) |
| 177 | 5.00 - 9.00% of mass 176 | 5.56 ( 6.41) |

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Target 3.5 esignature user ID: kas02648

Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017 Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: la26t01.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 146
Location of Maximum: 95.00
Number of points: 62

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 581 | 61.00 | 2433 | 80.00 | 261 | 118.00 | 213 |
| 37.00 | 2955 | 62.00 | 2451 | 81.00 | 1135 | 119.00 | 269 |
| 38.00 | 2227 | 63.00 | 1939 | 82.00 | 248 | 128.00 | 225 |
| 39.00 | 905 | 64.00 | 156 | 87.00 | 2238 | 130.00 | 116 |
| 40.00 | 18 | 67.00 | 61 | 88.00 | 2301 | 141.00 | 493 |
| 44.00 | 266 | 68.00 | 5493 | 91.00 | 177 | 143.00 | 436 |
| 45.00 | 425 | 69.00 | 5219 | 92.00 | 1262 | 148.00 | 51 |
| 47.00 | 688 | 70.00 | 432 | 93.00 | 2027 | 155.00 | 68 |
| 48.00 | 283 | 72.00 | 236 | 94.00 | 6417 | 173.00 | 287 |
| 49.00 | 2054 | 73.00 | 2174 | 95.00 | 59120 | 174.00 | 53256 |
| 50.00 | 10110 | 74.00 | 8666 | 96.00 | 4015 | 175.00 | 3618 |
| 51.00 | 3256 | 75.00 | 26584 | 97.00 | 51 | 176.00 | 51280 |
| 52.00 | 55 | 76.00 | 2212 | 104.00 | 202 | 177.00 | 3288 |
| 56.00 | 714 | 77.00 | 371 | 106.00 | 68 | 178.00 | 74 |
| 57.00 | 1411 | 78.00 | 215 | 116.00 | 182 | | |
| 60.00 | 513 | 79.00 | 1182 | 117.00 | 318 | | |

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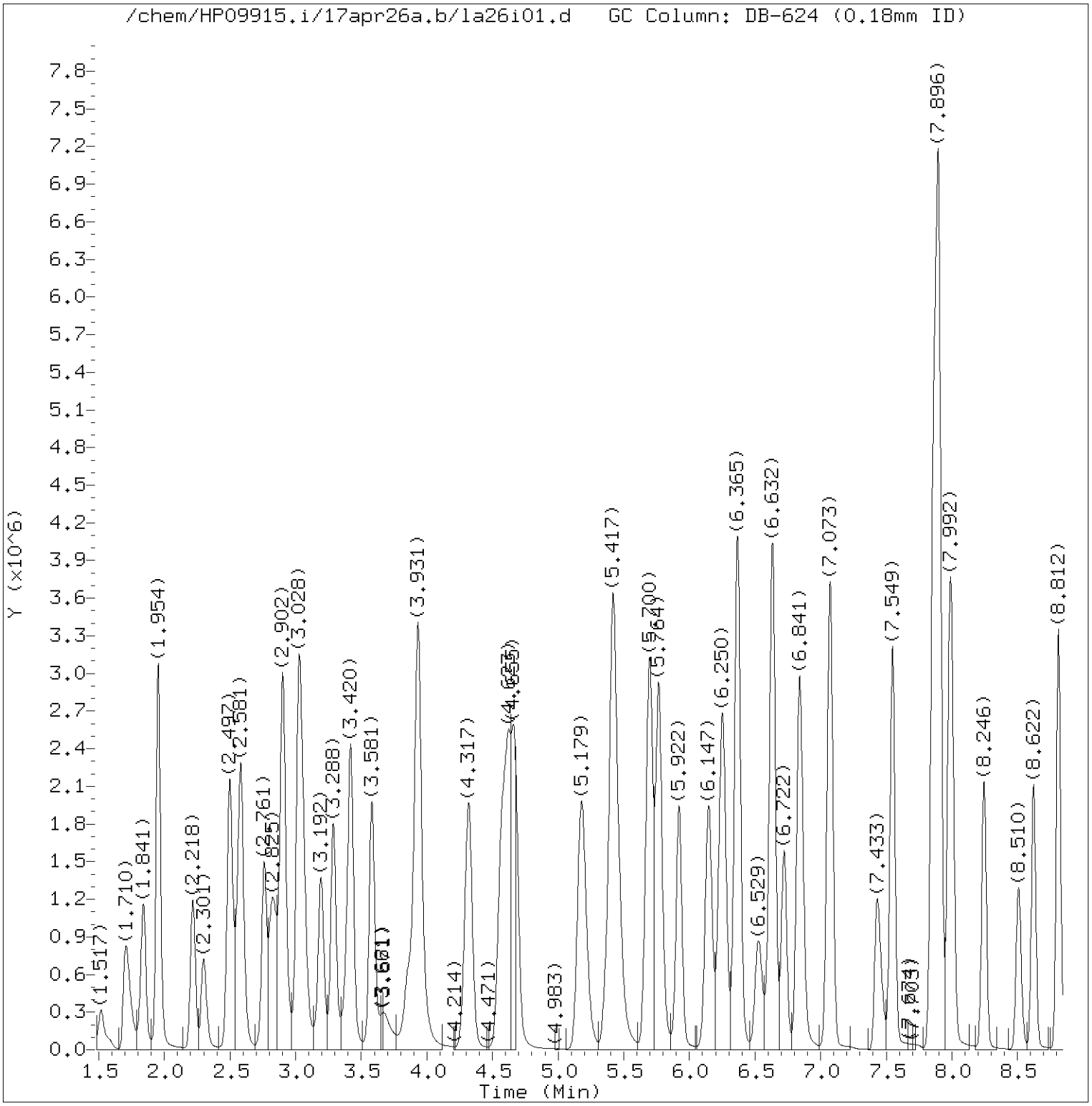
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

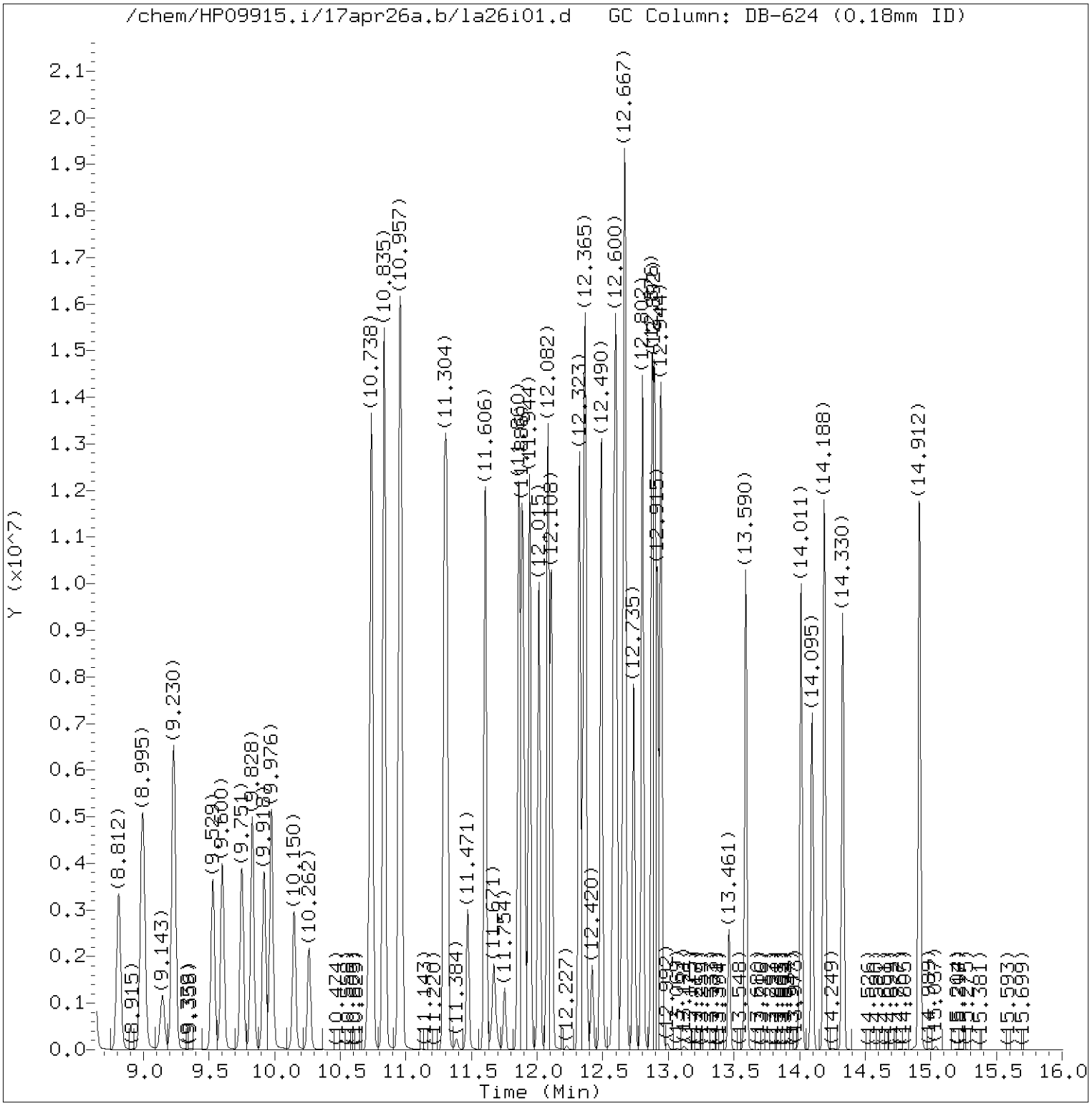
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 1958047 | 313.882 |
| 4) Chloromethane | (2) | 1.841 | 50 | 1904237 | 297.140 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 1095441 | 290.215 |
| 6) Vinyl Chloride | (2) | 1.954 | 62 | 1868685 | 301.966 |
| 8) Bromomethane | (2) | 2.218 | 94 | 1235545 | 296.846 |
| 9) Chloroethane | (2) | 2.301 | 64 | 1017254 | 291.687 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 2518637 | 296.081 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 2251585 | 314.196 |
| 11) n-Pentane | (2) | 2.587 | 43 | 1712208 | 290.122 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 1196266 | 299.857 |
| 15) Freon 123a | (2) | 2.822 | 67 | 1429955 | 299.625 |
| 16) Acrolein | (1) | 2.902 | 56 | 4637155 | 3348.162 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 1151917 | 303.712 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 63 | 584950 | 304.648 |
| 18) Acetone | (1) | 3.037 | 58 | 403999 | 672.085 |
| 19) Freon 113 | (2) | 3.054 | 101 | 1196009 | 313.286 |
| 21) 2-Propanol | (1) | 3.173 | 45 | 593623 | 1489.698 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 2269414 | 308.478 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 3857476 | 312.534 |
| 27) Methyl Acetate | (2) | 3.391 | 43 | 1585782 | 288.068 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 2271974 | 299.058 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 169188M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 1398327 | 279.081 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 944135 | 1442.270 |
| 31) Acrylonitrile | (2) | 3.851 | 53 | 875676 | 302.918 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 4032886 | 290.250 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 1361677 | 305.995 |
| 34) n-Hexane | (2) | 4.317 | 57 | 2081106 | 305.081 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 2520546 | 301.428 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 4685474 | 291.938 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 2194166 | 311.075 |
| 40) Ethyl t-butyl ether | (2) | 5.182 | 59 | 4023920 | 291.328 |
| 44) 2-Butanone | (2) | 5.385 | 43 | 2335957 | 603.500 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 1543601 | 302.715 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 1850165 | 331.391 |
| 47) Propionitrile | (1) | 5.468 | 54 | 1527979 | 1599.274 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 2165702 | 751.439 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 831794 | 309.503 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 604452 | 716.270 |
| 51) Chloroform | (2) | 5.922 | 83 | 2401549 | 301.309 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 255745 | 50.012 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 111 | 262971 | 50.184 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 2144080 | 294.382 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 2905278 | 608.709 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 2560169 | 308.719 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 2125161 | 309.600 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 756981 | 314.913 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 1780485 | 334.890 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2006976 | 309.593 |
| 58) Isobutyl Alcohol | (1) | 6.529 | 41 | 870124 | 3785.822 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 63036 | 49.572 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 293986 | 48.877 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 104 | 40289 | 49.952 |
| 60) Benzene | (2) | 6.635 | 78 | 5664323 | 296.413 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 1935203 | 299.340 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 98 | 187547 | 329.010 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 4084653 | 297.970 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1047200 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 2258430 | 295.708 |
| 69) n-Butanol | (1) | 7.433 | 56 | 1528004M | 8247.101 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 1501811 | 304.105 |
| 72) Methylcyclohexane | (2) | 7.860 | 83 | 2774376 | 318.844 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 1266884 | 322.636 |
| 73) 1,2-Dichloropropane | (2) | 7.893 | 63 | 1591407 | 304.211 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 201278M | 3479.803 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 1449583 | 323.724 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 1017942 | 309.424 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 1923473 | 323.978 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 1184003 | 703.267 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.622 | 63 | 1300550 | 323.419 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 2566038 | 331.609 |
| 82) 4-Methyl-2-pentanone | (2) | 8.995 | 43 | 5077972 | 636.634 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1048562 | 49.332 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 698016 | 49.847 |
| 88) Toluene | (3) | 9.230 | 92 | 3661123 | 296.405 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 2355530 | 340.103 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 2475882 | 317.369 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 1425551 | 299.507 |
| 93) Tetrachloroethene | (3) | 9.831 | 166 | 1673578 | 306.339 |
| 94) 1,3-Dichloropropane | (3) | 9.921 | 76 | 2464344 | 298.391 |
| 96) 2-Hexanone | (3) | 9.976 | 43 | 3763816 | 631.277 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 4921568 | 671.712 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 1685181 | 341.825 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 1613118 | 309.581 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 832450 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 2100198 | 296.072 |
| 102) Chlorobenzene | (3) | 10.741 | 112 | 4297711 | 301.535 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 1522321 | 323.444 |
| 104) Ethylbenzene | (3) | 10.838 | 91 | 7075752 | 296.976 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 5612991 | 605.130 |
| 107) o-Xylene | (3) | 11.294 | 106 | 2814653 | 305.123 |
| 109) Styrene | (3) | 11.314 | 104 | 4717754 | 309.374 |
| 110) Bromoform | (3) | 11.471 | 173 | 1309455 | 365.799 |
| 111) Isopropylbenzene | (3) | 11.606 | 105 | 7076637 | 300.169 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 788204 | 3612.463 |
| 114)$4-Bromofluorobenzene | (3) | 11.754 | 95 | 390072 | 49.374 |
| 114)$4-Bromofluorobenzene | (3) | 11.754 | 174 | 345842 | 49.906 |
| 108) Xylene (Total) | (3) | | 106 | 8427644 | 910.253 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.860 | 83 | 2325327 | 290.148 |
| 115) Bromobenzene | (4) | 11.863 | 156 | 1969582 | 305.174 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 1716308 | 747.363 |
| 117) 1,2,3-Trichloropropane | (4) | 11.905 | 110 | 658906 | 290.845 |
| 119) n-Propylbenzene | (4) | 11.944 | 91 | 8145618 | 285.633 |
| 120) 2-Chlorotoluene | (4) | 12.015 | 126 | 1788274 | 301.293 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 6133887 | 301.630 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 1867872 | 302.377 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 1372178M | 312.149 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1198514 | 345.326 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 6317724 | 301.599 |
| 127) sec-Butylbenzene | (4) | 12.490 | 105 | 7645015 | 294.717 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 3590968 | 292.247 |
| 130) p-Isopropyltoluene | (4) | 12.603 | 119 | 6883297 | 300.529 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 451513 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 3631810 | 285.849 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 6440778 | 293.471 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 4582840 | 364.666 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 4116951 | 300.860 |
| 137) 1,4-Diethylbenzene | (4) | 12.876 | 119 | 4232692 | 294.554 |
| 139) n-Butylbenzene | (4) | 12.896 | 92 | 3262571 | 285.151 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 3500895 | 289.855 |
| 140) 1,2-Diethylbenzene | (4) | 12.944 | 119 | 3434155 | 298.215 |
| 141) Diethylbenzene (total) | (4) | | 100 | 11783798 | 893.629 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.461 | 75 | 522343 | 308.197 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 2788456 | 284.760 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 2672501 | 281.341 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 1140885 | 276.553 |
| 148) Naphthalene | (4) | 14.188 | 128 | 7817799 | 272.736 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 2521047 | 275.101 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 4927545 | 265.852 |



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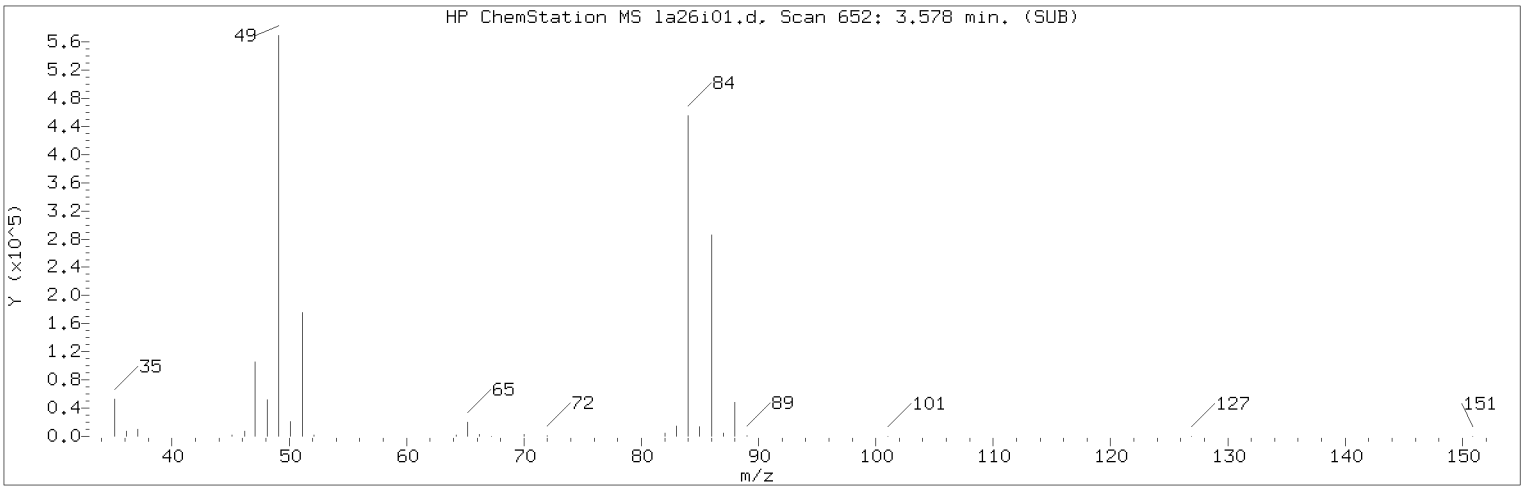
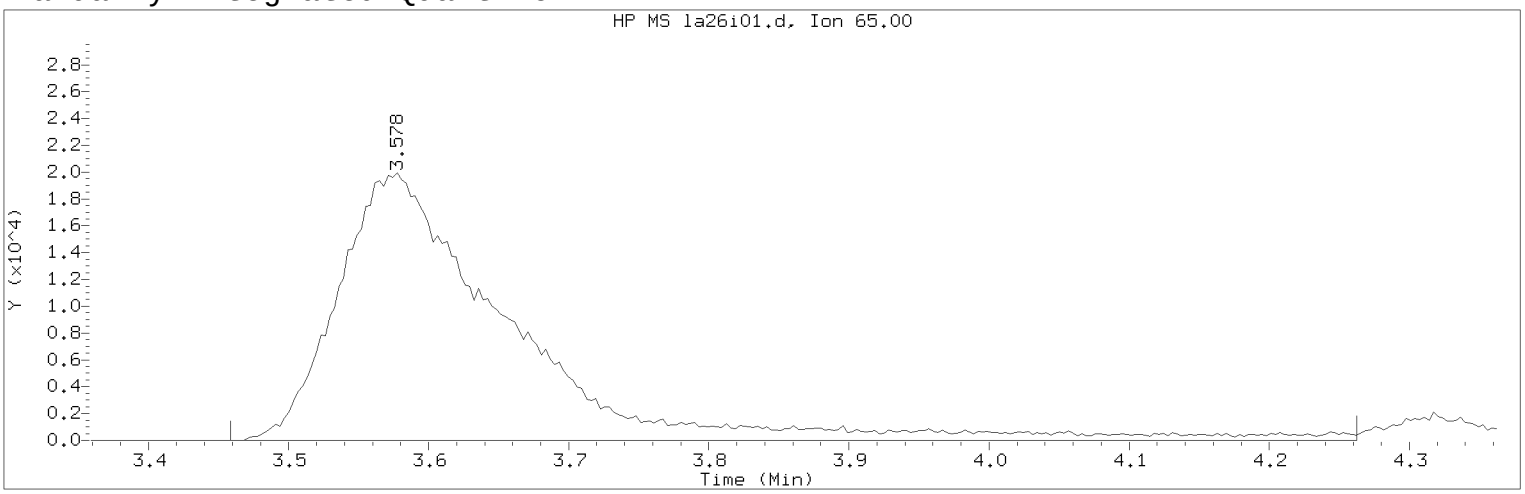
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

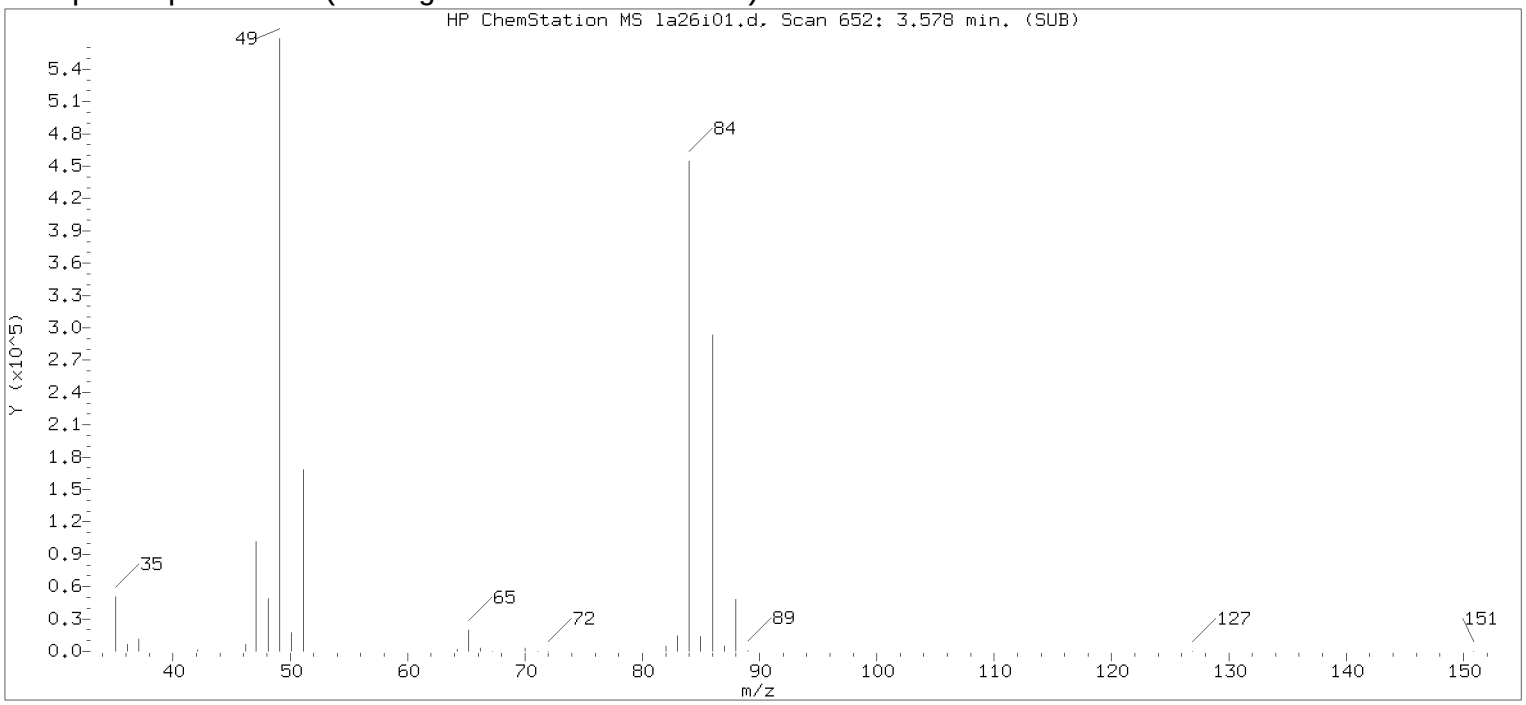
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area (flag) : 169188M
On-Column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 864
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

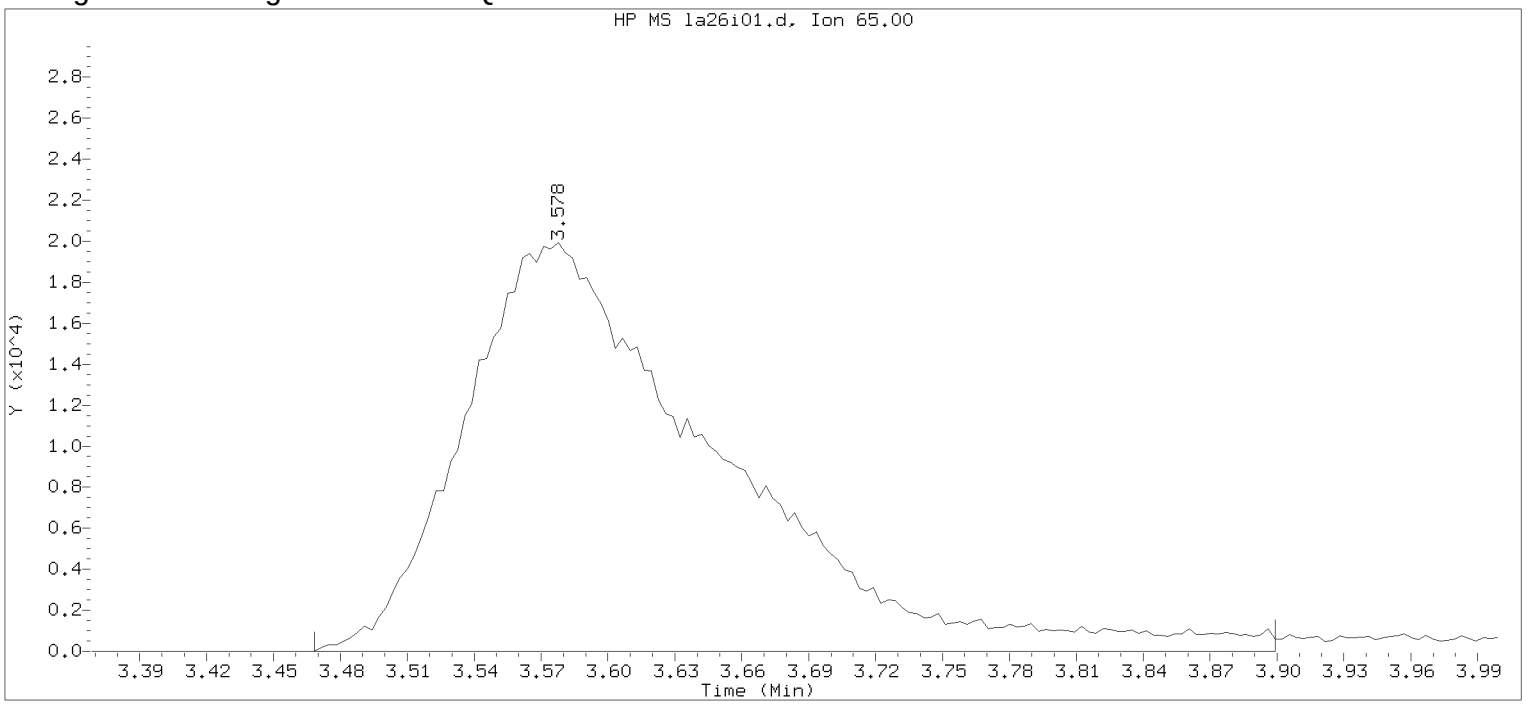
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

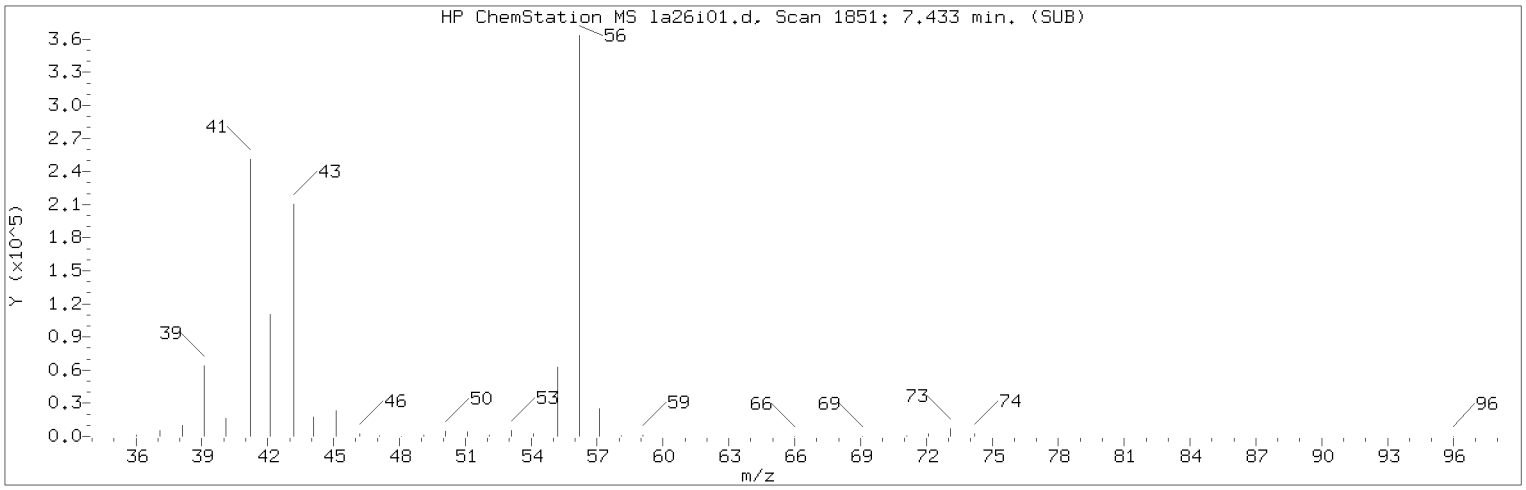
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

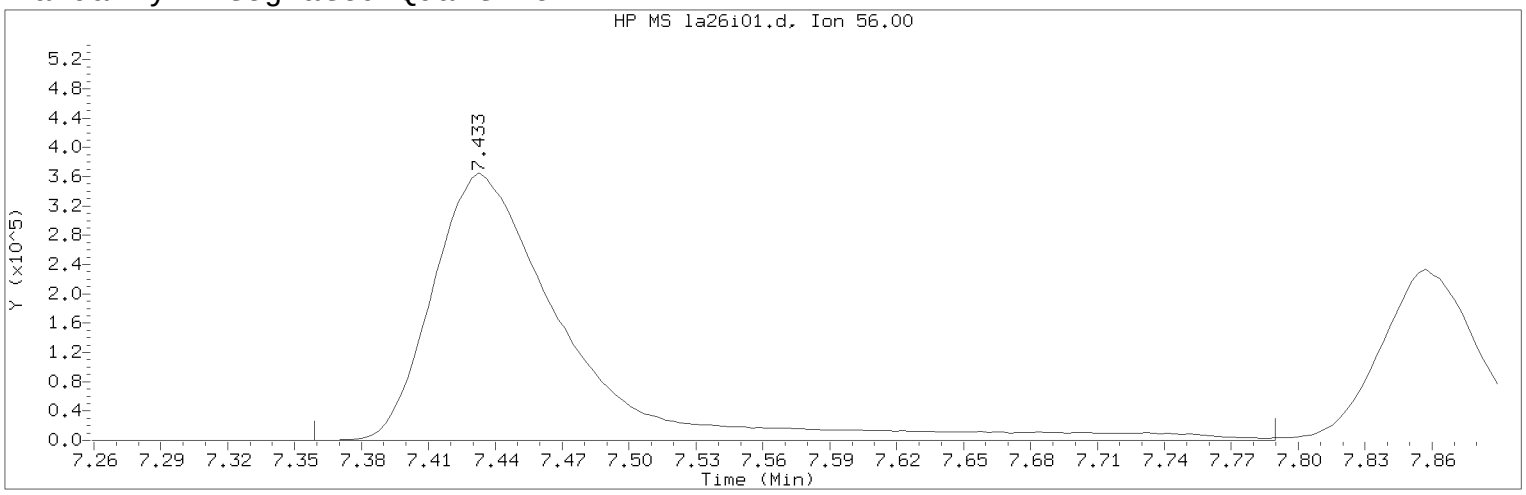
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 158080
On-column Amount (ng) : 250.0000
Integration start scan : 617 Integration stop scan: 751
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

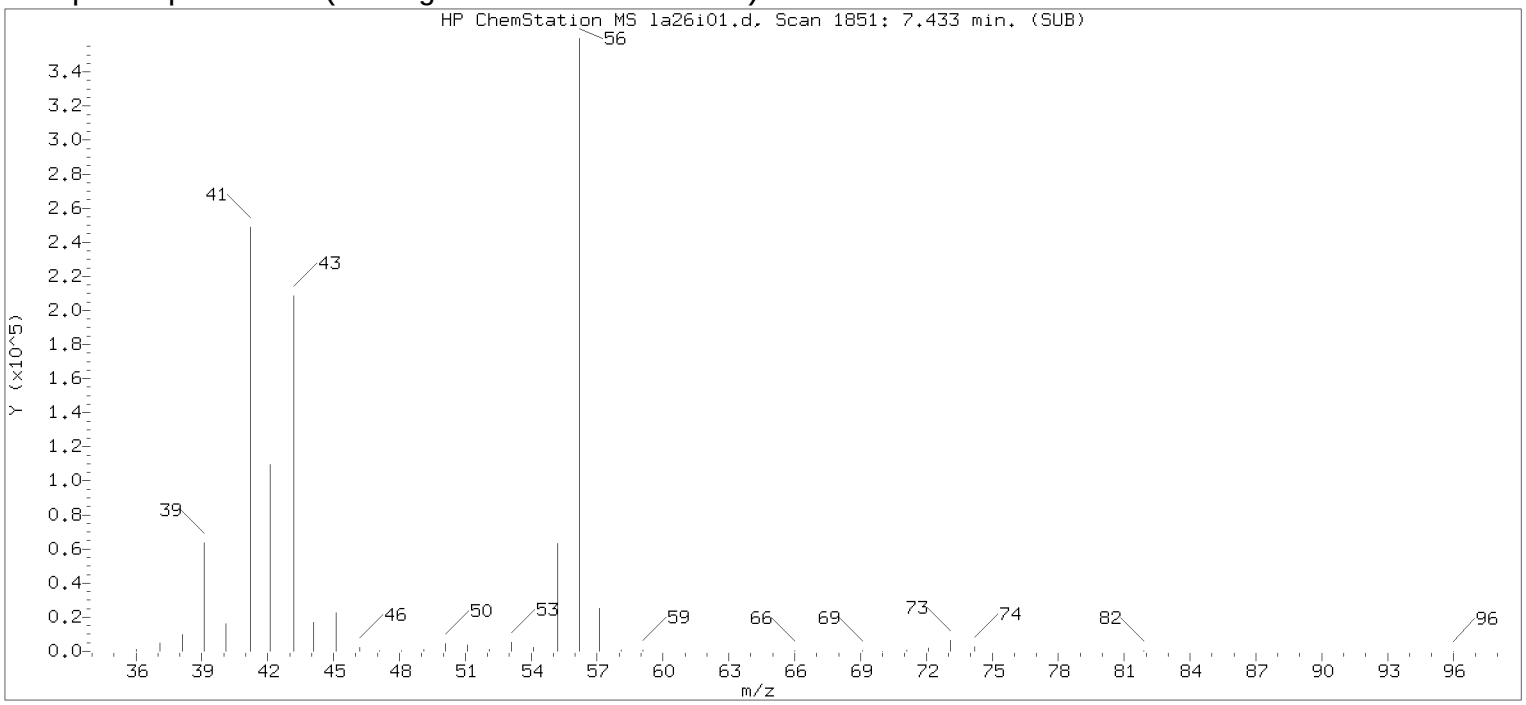
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1851
Retention Time (minutes): 7.433
Quant Ion : 56.00
Area (flag) : 1528004M
On-Column Amount (ng) : 8247.1010
Integration start scan : 1827 Integration stop scan: 1961
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

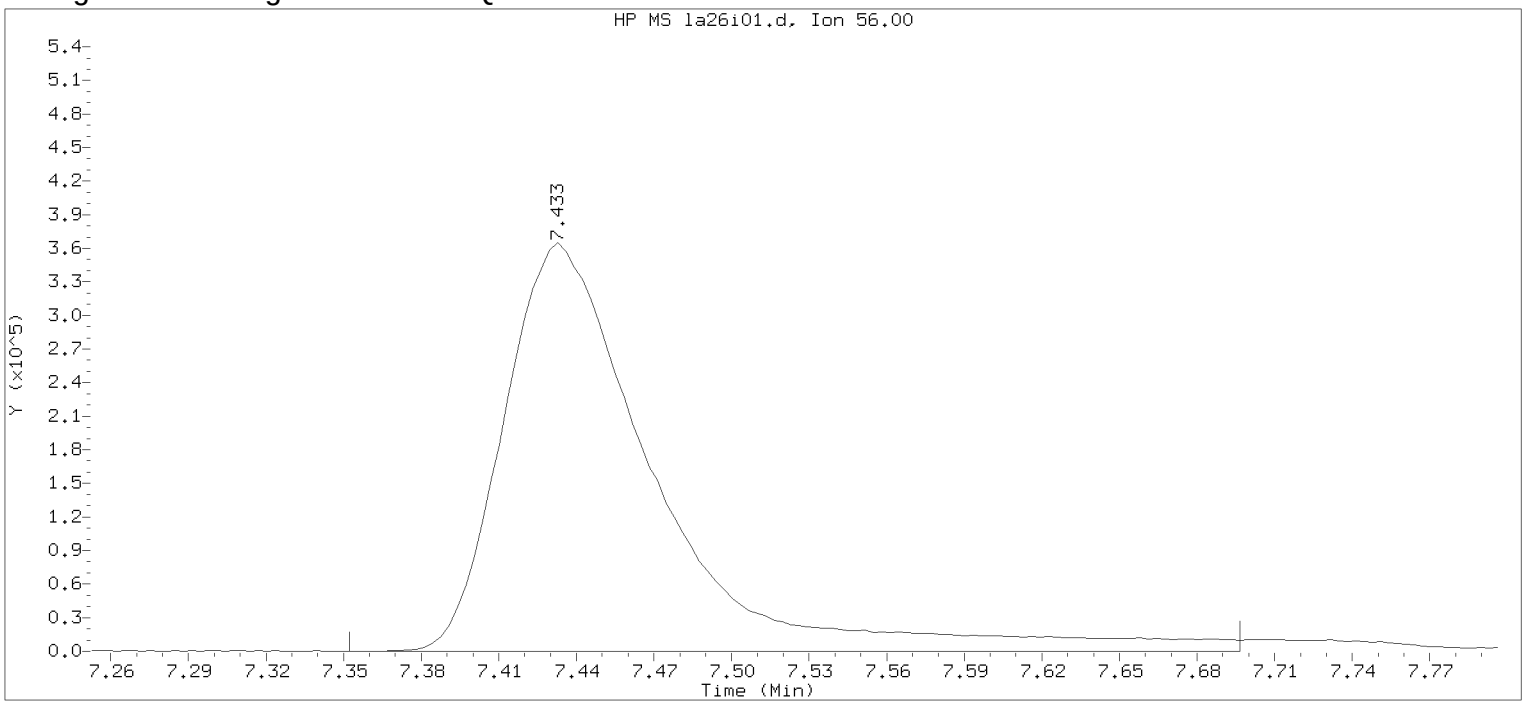
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1851
Retention Time (minutes): 7.433
Quant Ion : 56.00
Area : 1485088
On-column Amount (ng) : 7806.8912
Integration start scan : 1825 Integration stop scan: 1932
Y at integration start : 0 Y at integration end: 0

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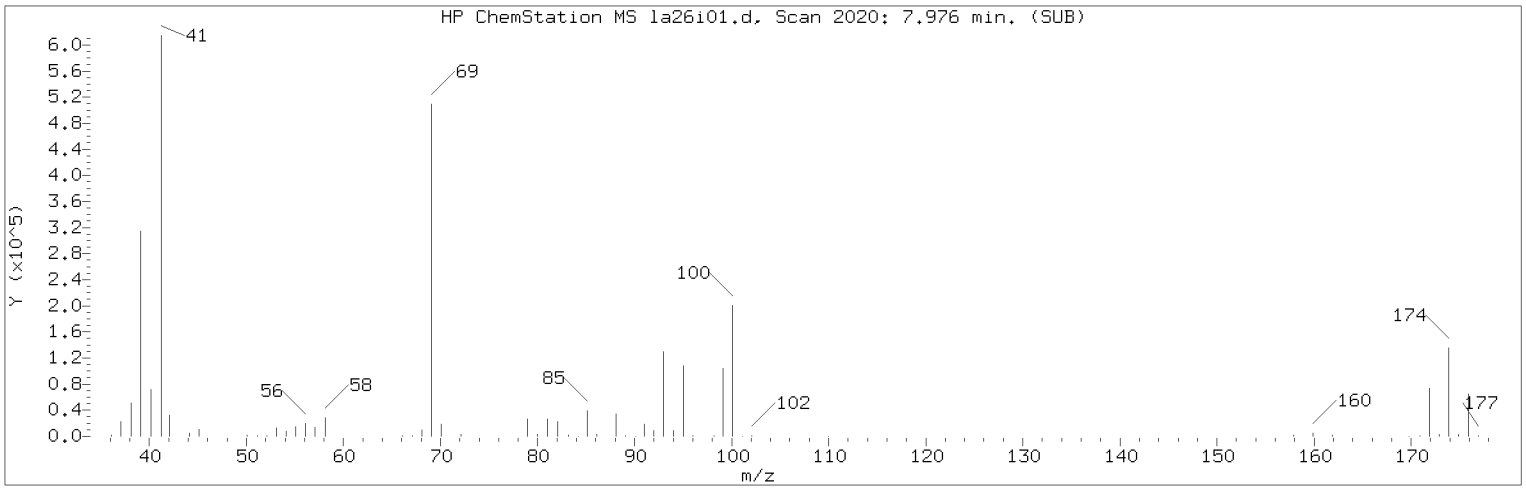
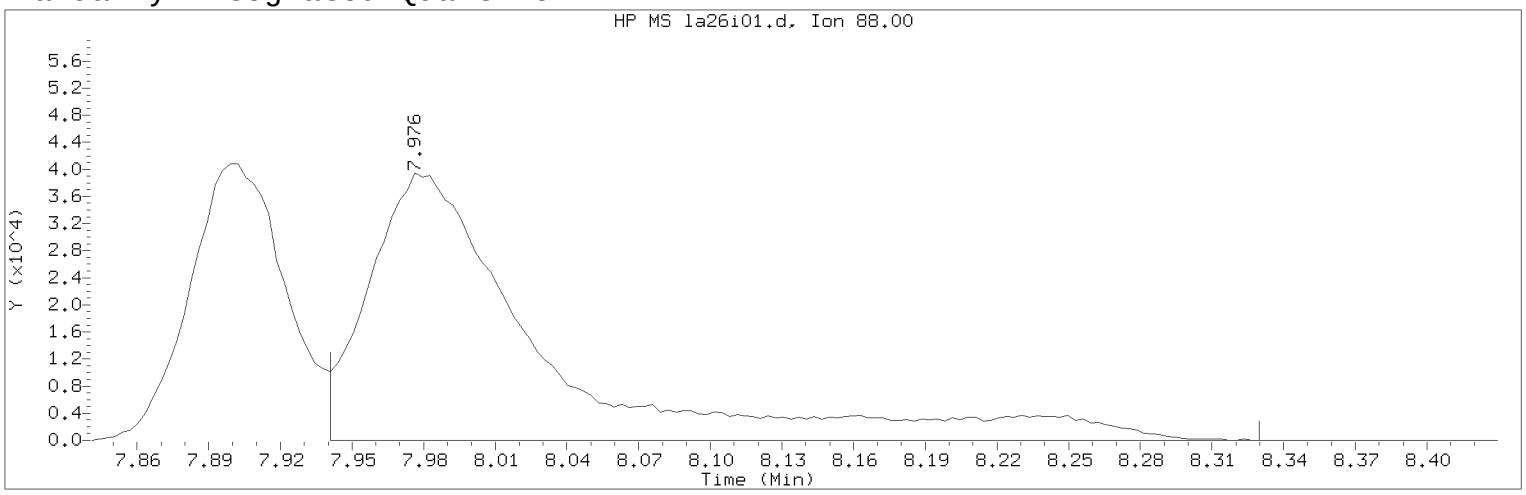
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

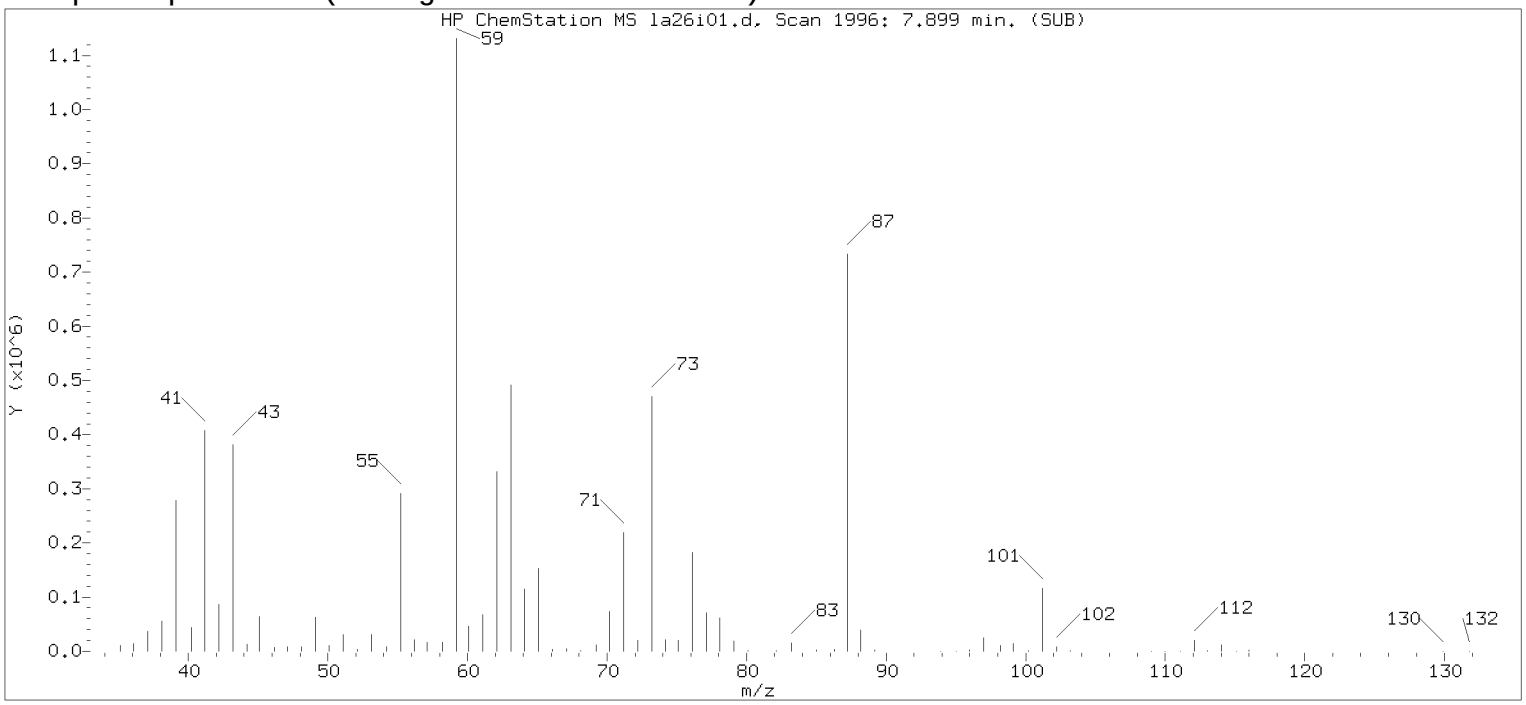
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 201278M
On-Column Amount (ng) : 3479.8034
Integration start scan : 2008 Integration stop scan: 2129
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

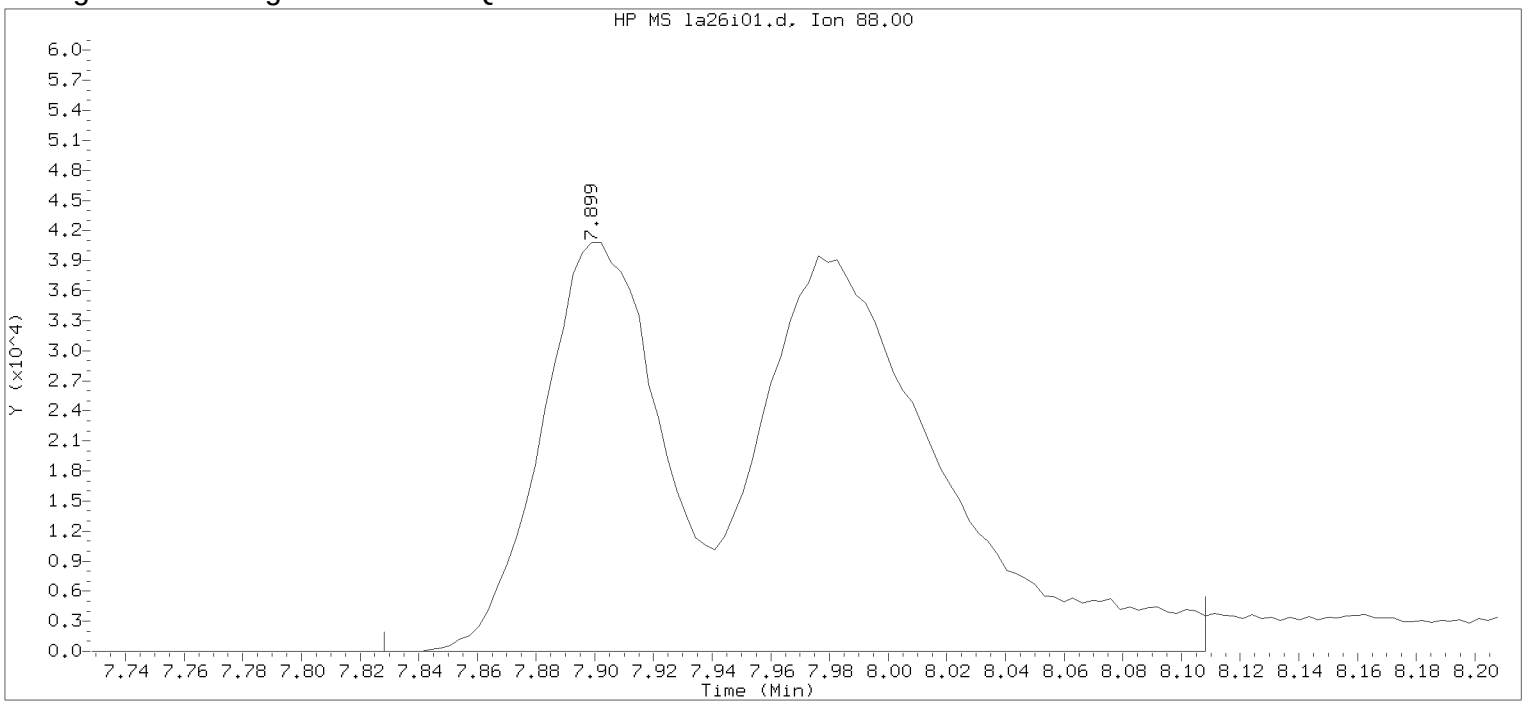
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1996
Retention Time (minutes): 7.899
Quant Ion : 88.00
Area : 279960
On-column Amount (ng) : 4259.9914
Integration start scan : 1973 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

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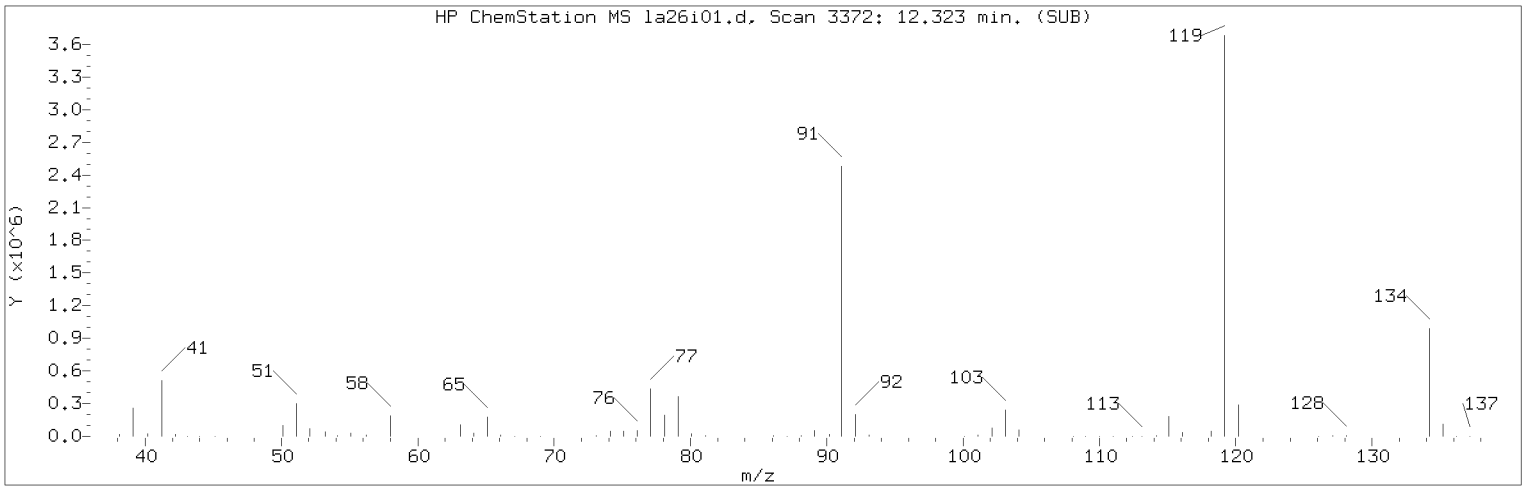
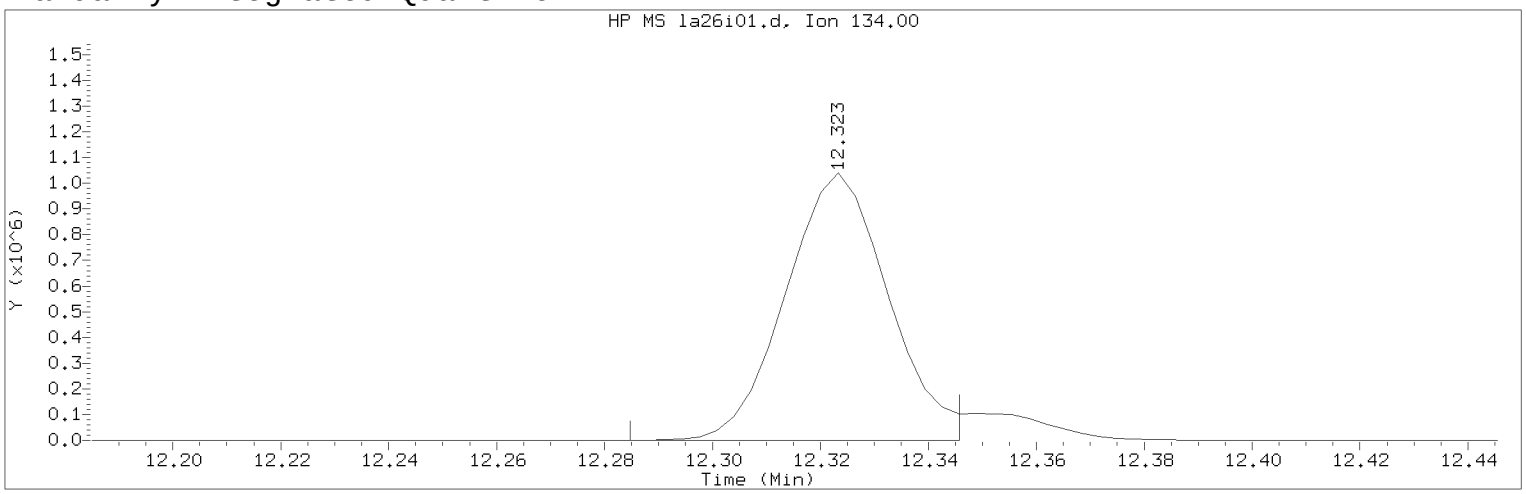
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

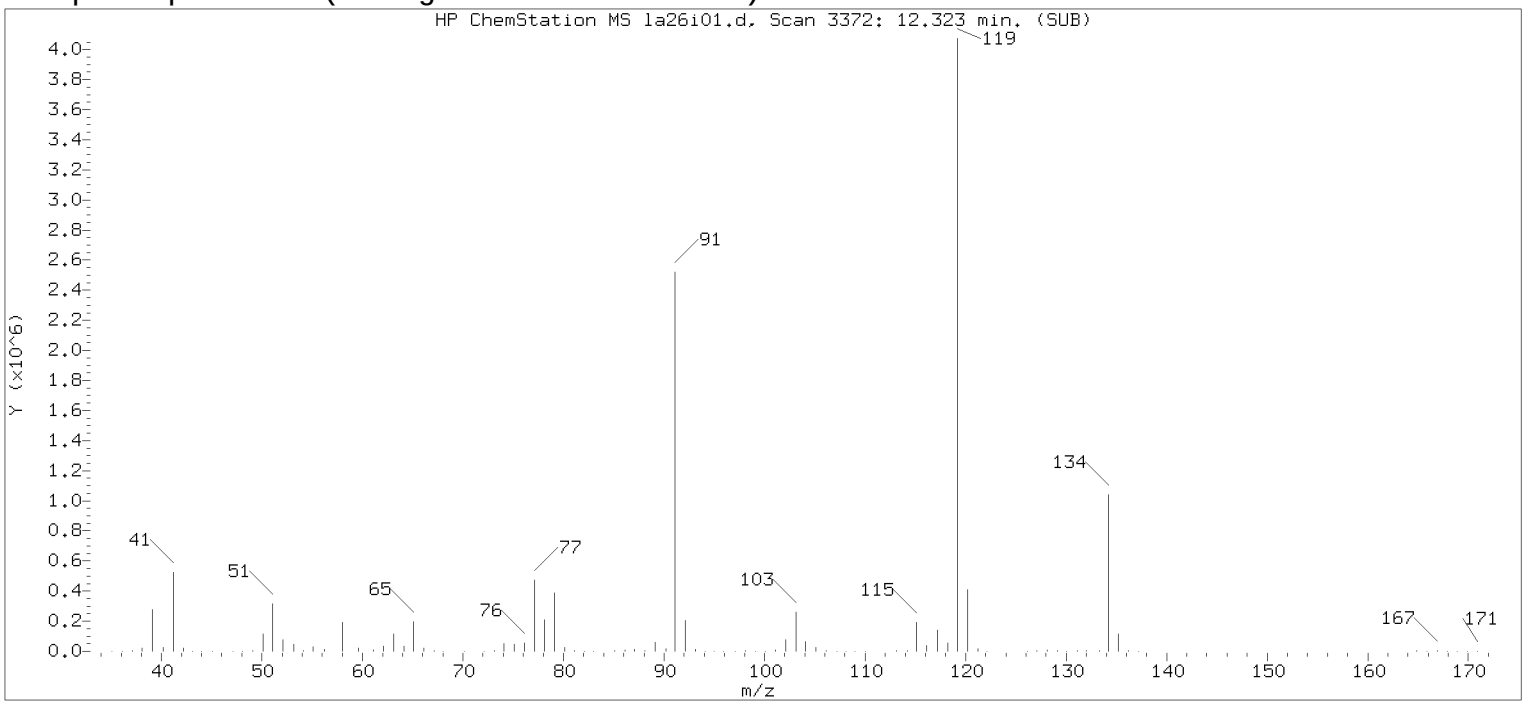
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area (flag) : 1372178M
On-Column Amount (ng) : 312.1487
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

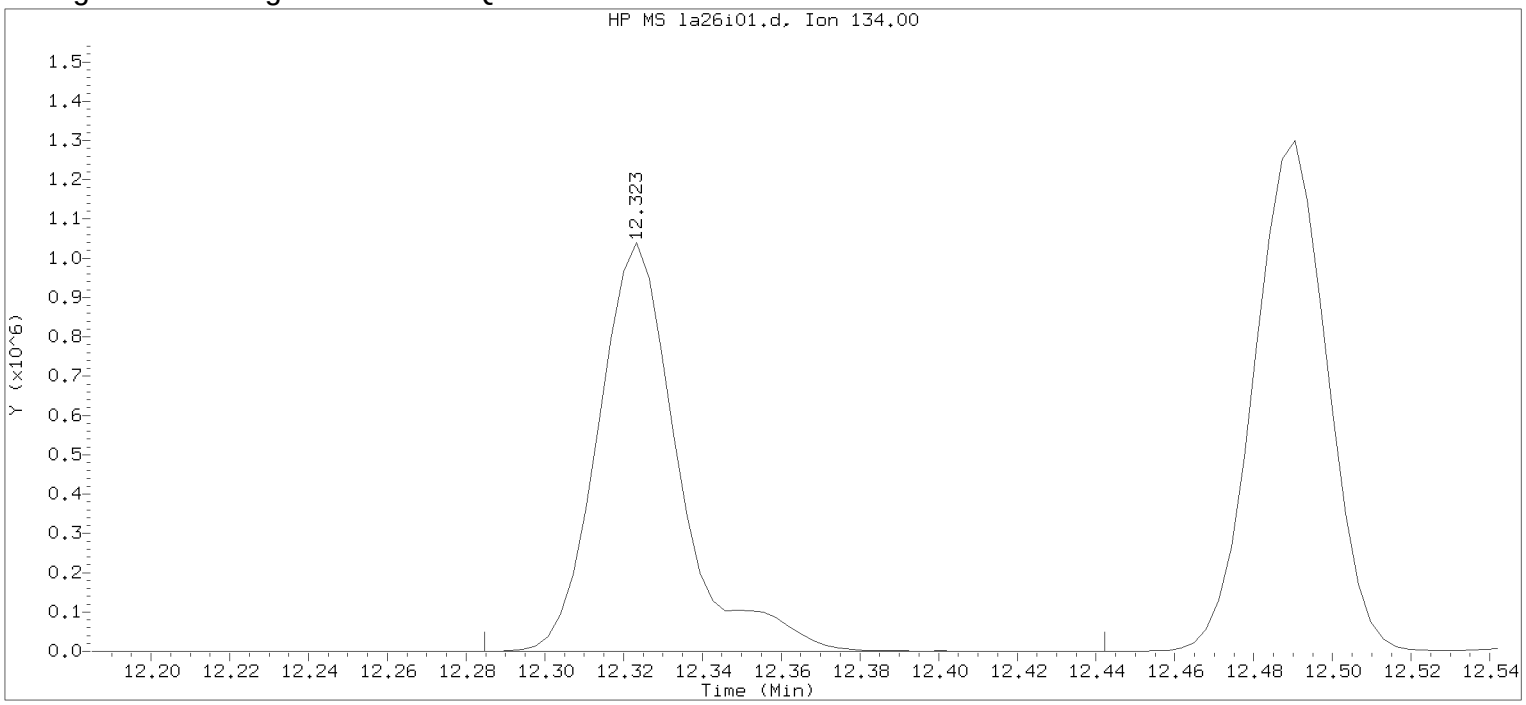
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area : 1481292
On-column Amount (ng) : 310.8715
Integration start scan : 3359 Integration stop scan: 3408
Y at integration start : 0 Y at integration end: 0

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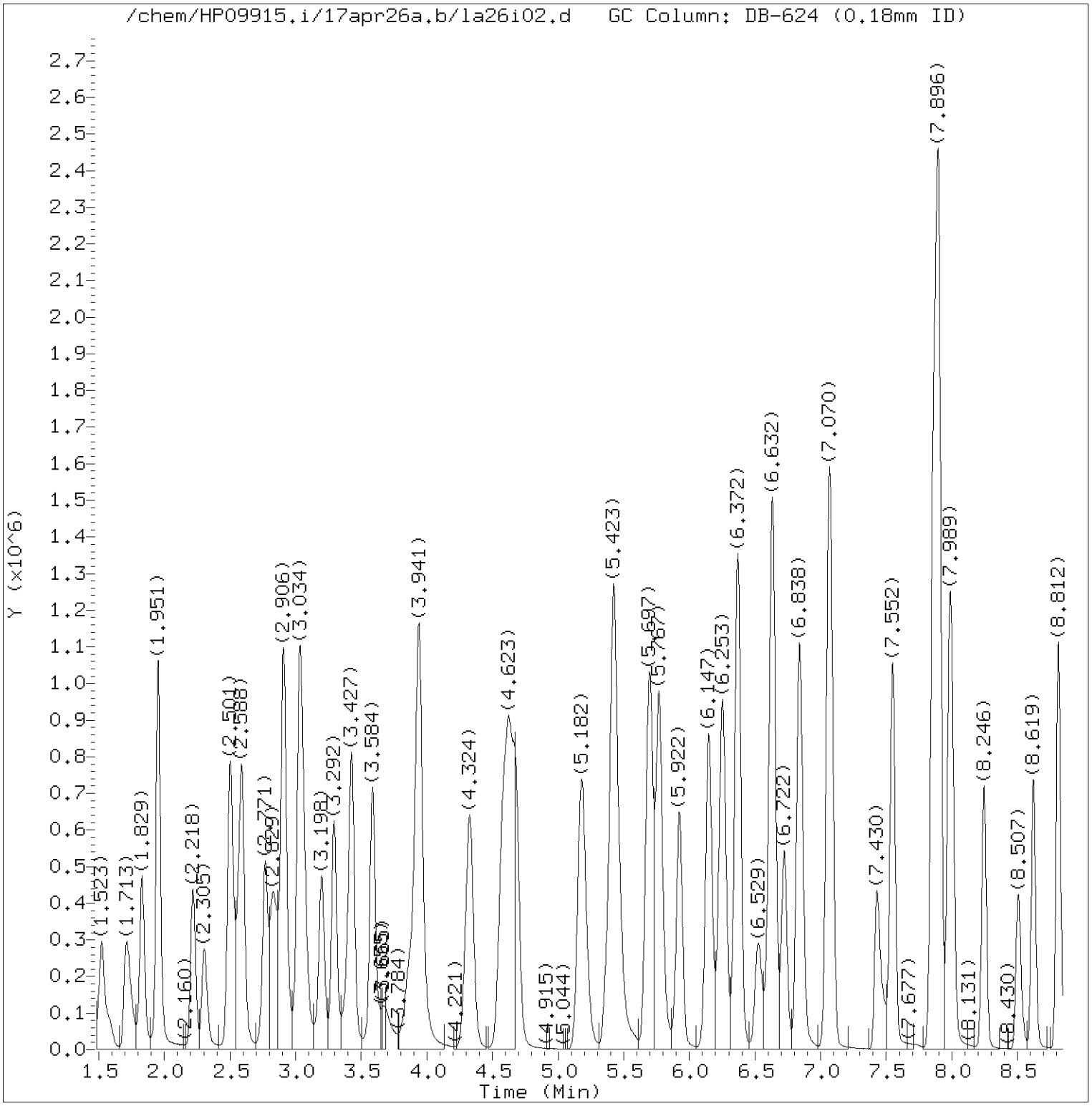
Target 3.5 esignature userKAS02648 Page 141 of 420




Total Ion Chromatogram (TIC)

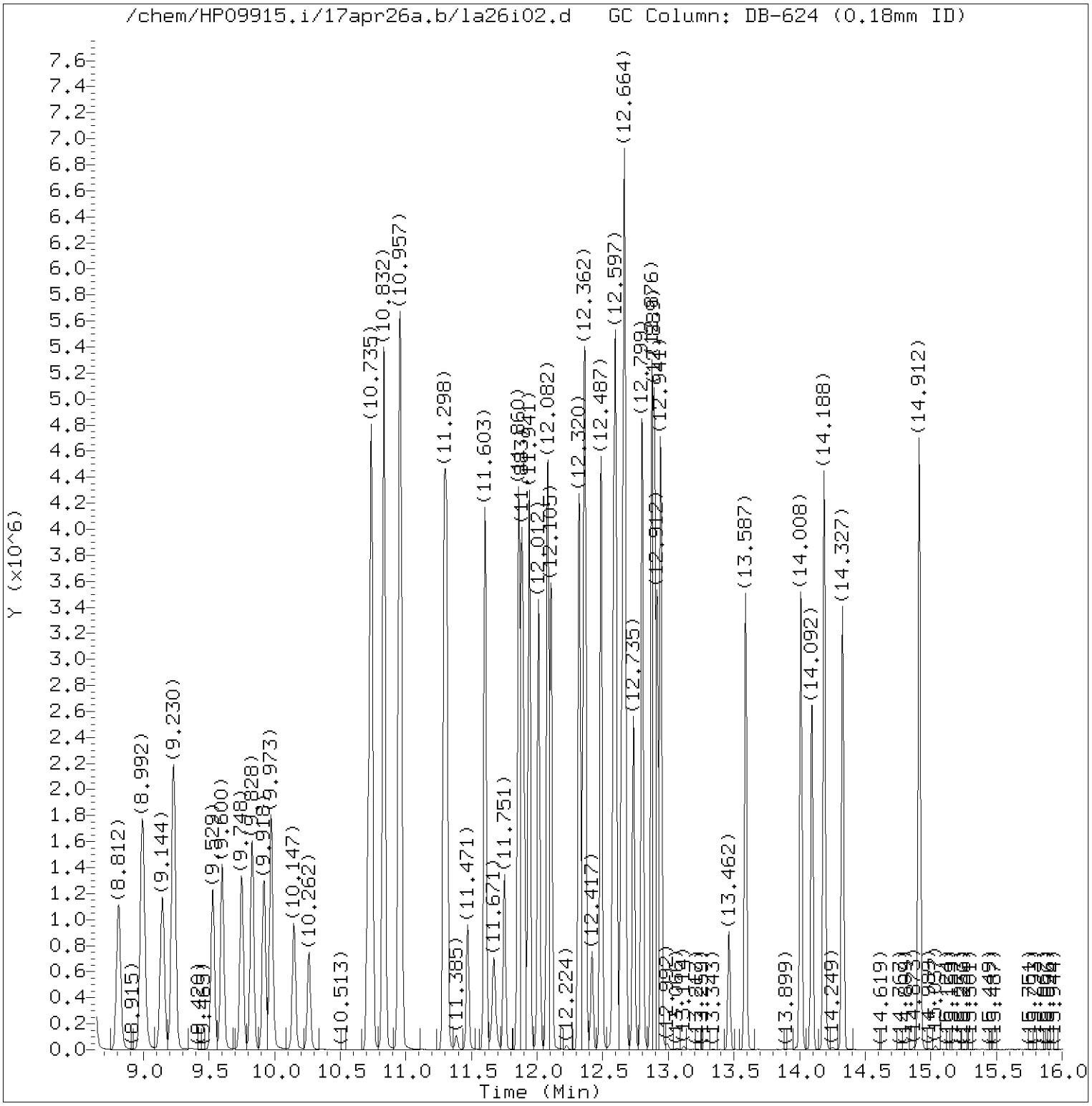
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 676369 | 106.821 |
| 4) Chloromethane | (2) | 1.832 | 50 | 696329 | 107.049 |
| 6) Vinyl Chloride | (2) | 1.948 | 62 | 673578 | 107.236 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 373286 | 97.432 |
| 8) Bromomethane | (2) | 2.221 | 94 | 446773M | 105.752 |
| 9) Chloroethane | (2) | 2.305 | 64 | 371704 | 105.006 |
| 10) Dichlorofluoromethane | (2) | 2.498 | 67 | 927938 | 107.471 |
| 12) Trichlorofluoromethane | (2) | 2.568 | 101 | 788292 | 108.375 |
| 11) n-Pentane | (2) | 2.591 | 43 | 594640 | 99.268 |
| 14) Ethyl ether | (2) | 2.771 | 59 | 424582 | 104.852 |
| 15) Freon 123a | (2) | 2.829 | 67 | 489753 | 101.103 |
| 16) Acrolein | (1) | 2.906 | 56 | 1724138 | 1147.084 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 387264 | 100.595 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 198662 | 101.935 |
| 18) Acetone | (1) | 3.047 | 58 | 135546M | 207.778 |
| 19) Freon 113 | (2) | 3.057 | 101 | 404388 | 104.360 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 213396M | 493.449 |
| 22) Methyl Iodide | (2) | 3.198 | 142 | 759847 | 101.758 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 1297816 | 103.594 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 533323 | 95.449 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 772442 | 100.172 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 183612M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 478418 | 94.072 |
| 30) t-Butyl alcohol | (1) | 3.674 | 59 | 356471M | 501.770 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 313741 | 106.926 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 1430590 | 101.438 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 460884 | 102.038 |
| 34) n-Hexane | (2) | 4.324 | 57 | 717390 | 103.611 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 868994 | 102.385 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 1666588 | 102.304 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.681 | 53 | 749751 | 104.723 |
| 40) Ethyl t-butyl ether | (2) | 5.179 | 59 | 1449530 | 103.393 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 817585 | 208.101 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 527726 | 101.961 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 625083 | 110.306 |
| 47) Propionitrile | (1) | 5.465 | 54 | 550872 | 531.282 |
| 48) Methacrylonitrile | (2) | 5.700 | 67 | 750559 | 256.572 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 276608 | 101.401 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 208895 | 228.093 |
| 51) Chloroform | (2) | 5.922 | 83 | 823317 | 101.769 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 261749 | 50.429 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 267507 | 50.295 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 726792 | 98.313 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 988610 | 203.999 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 878754 | 104.398 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 727430 | 104.407 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 257243 | 105.433 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 680358 | 103.399 |
| 56) Carbon Tetrachloride | (2) | 6.372 | 117 | 589658 | 109.268 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 319107 | 1279.334 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 65444 | 50.705 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 306047 | 50.130 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 41083 | 50.183 |
| 60) Benzene | (2) | 6.639 | 78 | 1966914 | 101.406 |
| 61) 1,2-Dichloroethane | (2) | 6.726 | 62 | 672041 | 102.415 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 64097 | 110.781 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 1465784 | 105.346 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1062919 | 50.000 |
| 67) n-Heptane | (2) | 7.079 | 43 | 794949 | 102.548 |
| 69) n-Butanol | (1) | 7.430 | 56 | 557797M | 2774.096 |
| 71) Trichloroethene | (2) | 7.552 | 95 | 513037 | 102.350 |
| 72) Methylcyclohexane | (2) | 7.861 | 83 | 924633 | 104.692 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 422409 | 105.983 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 551772 | 103.916 |
| 75) 1,4-Dioxane | (1) | 7.980 | 88 | 76692M | 1221.735 |
| 76) Methyl Methacrylate | (2) | 7.980 | 69 | 491230 | 108.080 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 344598 | 103.199 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 648848 | 107.672 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 389115 | 227.706 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 446824 | 109.472 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 865511 | 110.196 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 1756835 | 217.000 |
| 83)$Toluene-d8 | (3) | 9.144 | 98 | 1062057 | 49.818 |
| 83)$Toluene-d8 | (3) | 9.144 | 100 | 699948 | 49.836 |
| 88) Toluene | (3) | 9.230 | 92 | 1255687 | 101.358 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 782955 | 112.710 |

M = Compound was manually integrated.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 853753 | 109.112 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 487635 | 102.147 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 557539 | 101.750 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 848064 | 102.380 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 1313009 | 219.565 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1648466 | 222.906 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 552445 | 111.725 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 547365 | 104.734 |
| 100)*Chlorobenzene-d5 | (3) | 10.713 | 117 | 834937 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 707076 | 99.382 |
| 102) Chlorobenzene | (3) | 10.742 | 112 | 1458292 | 102.011 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 508422 | 107.701 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 2442108 | 102.192 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 1914407 | 205.775 |
| 107) o-Xylene | (3) | 11.291 | 106 | 956788 | 103.412 |
| 109) Styrene | (3) | 11.311 | 104 | 1616649 | 105.698 |
| 110) Bromoform | (3) | 11.471 | 173 | 419593 | 116.865 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 2449038 | 103.571 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 302205 | 1276.247 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 394235 | 49.753 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 343734 | 49.454 |
| 108) Xylene (Total) | (3) | | 106 | 2871195 | 309.187 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 820749 | 104.299 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 652939 | 103.034 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 599531 | 265.878 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 228521 | 102.730 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 2874087 | 102.641 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 601559 | 103.221 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 2094753 | 104.908 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 623137 | 102.736 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 456579M | 105.780 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 381883 | 112.060 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 2150464 | 104.553 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 2647066 | 103.927 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 1215672 | 100.760 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 2368950 | 105.337 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 443338 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 1243887 | 99.708 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.668 | 105 | 2174826 | 100.922 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 1509958 | 122.366 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 1373318 | 102.211 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 1423124 | 100.862 |
| 139) n-Butylbenzene | (4) | 12.893 | 92 | 1135761 | 101.097 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 1195487 | 100.805 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 1147775 | 101.508 |
| 141) Diethylbenzene (total) | (4) | | 100 | 3944217 | 304.580 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 181306 | 108.948 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 971739 | 101.065 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 946069 | 101.432 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 412377 | 101.804 |
| 148) Naphthalene | (4) | 14.188 | 128 | 2908962 | 103.355 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 906692 | 100.764 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 1891682 | 103.943 |



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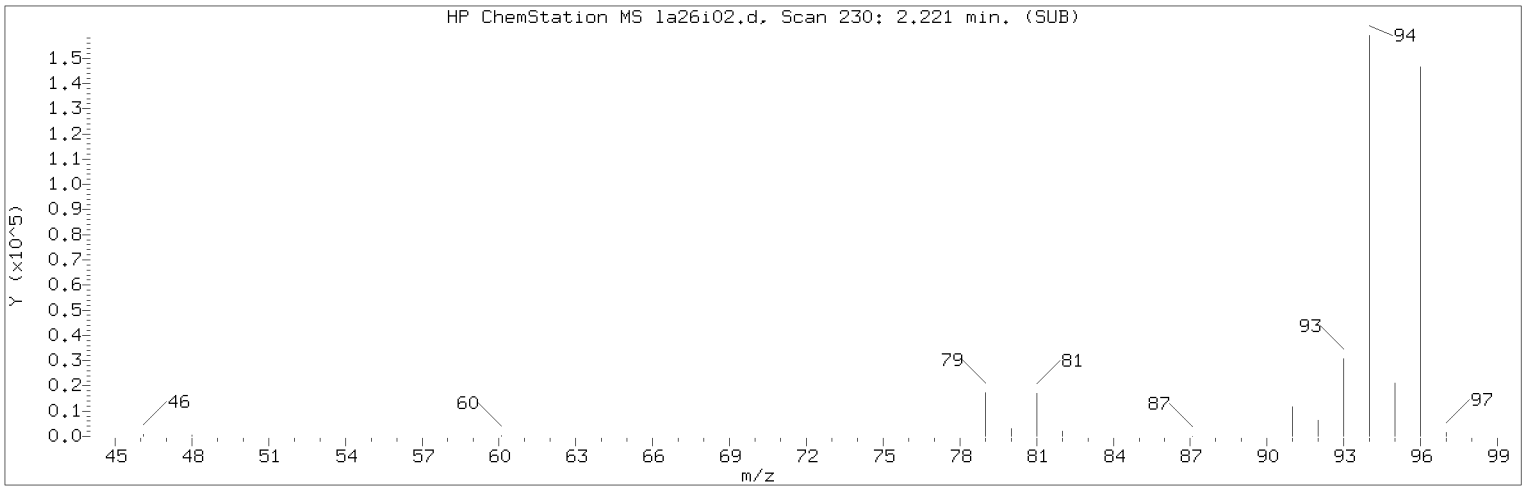
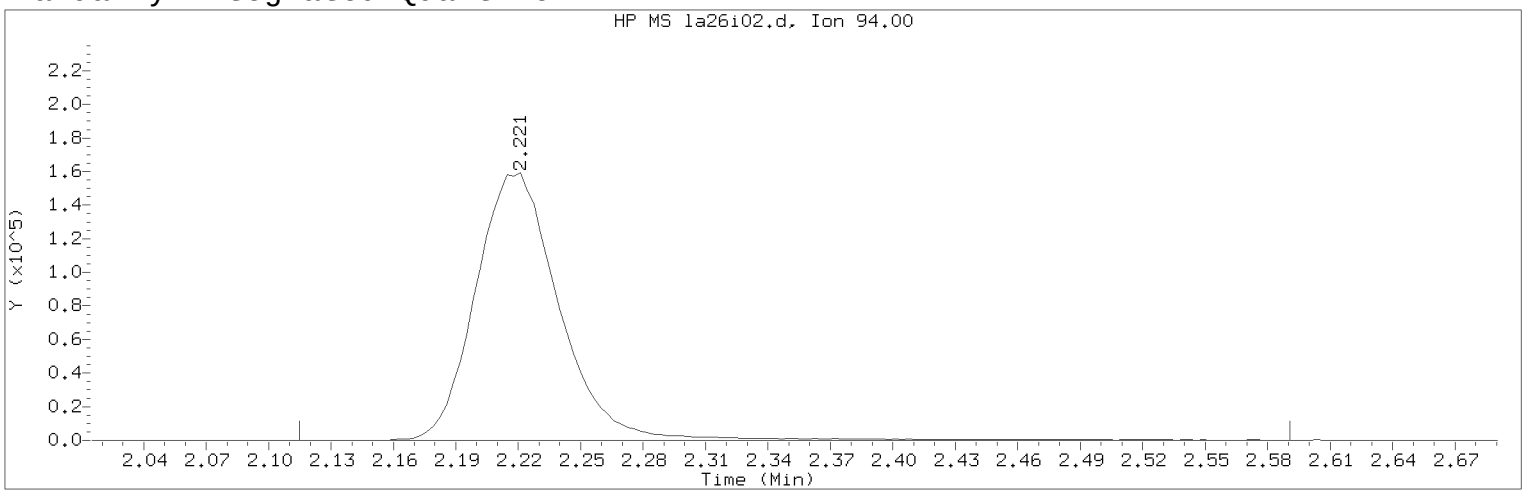
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

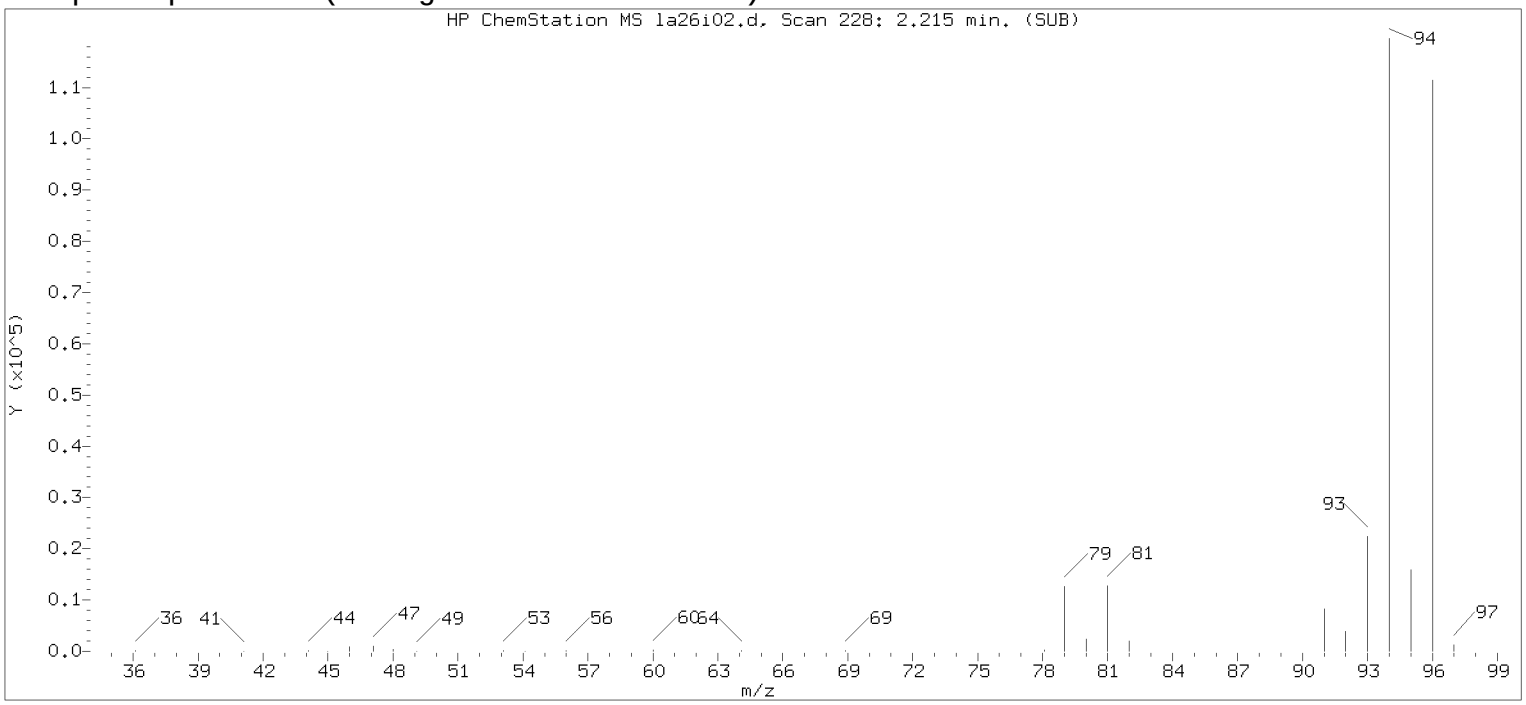
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 230
Retention Time (minutes): 2.221
Quant Ion : 94.00
Area (flag) : 446773M
On-Column Amount (ng) : 105.7521
Integration start scan : 196 Integration stop scan: 344
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

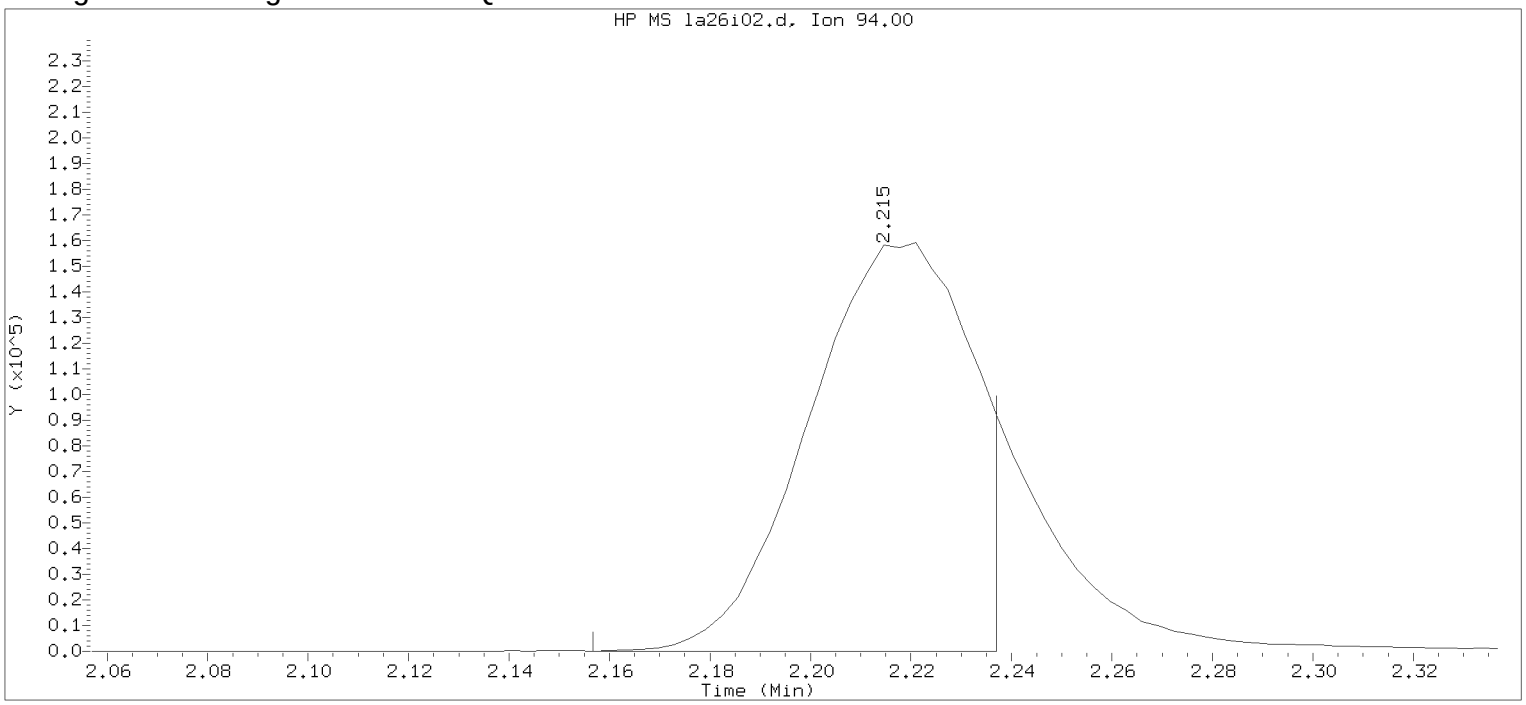
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

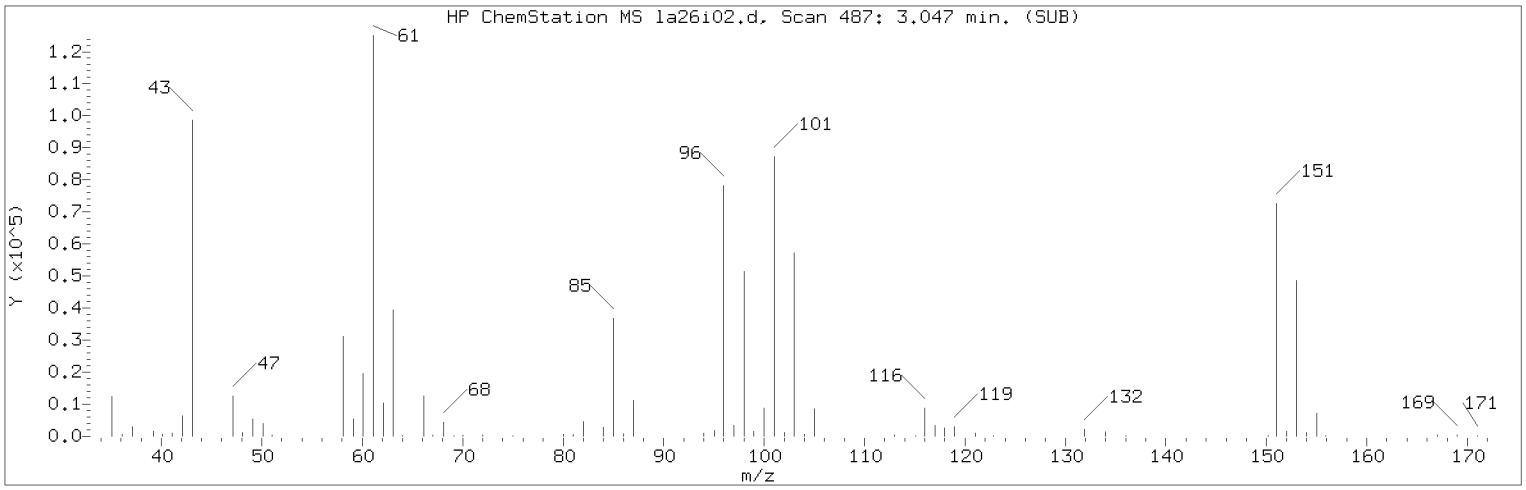
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

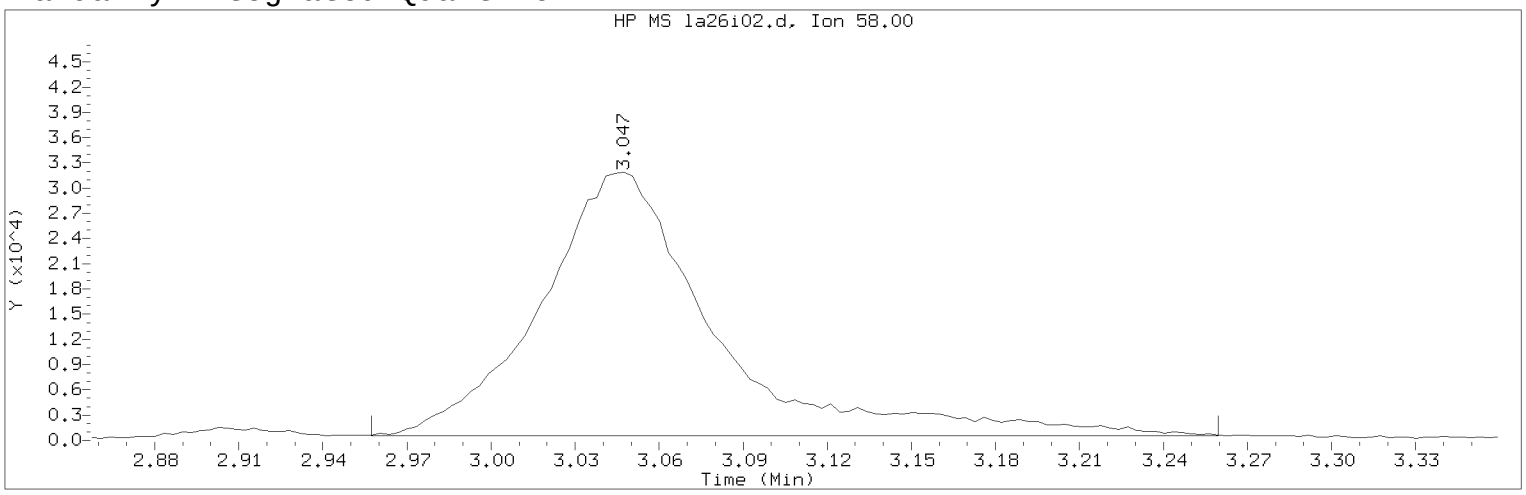
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 228
Retention Time (minutes): 2.215
Quant Ion : 94.00
Area : 353561
On-column Amount (ng) : 86.2140
Integration start scan : 209 Integration stop scan: 234
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 R0190

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

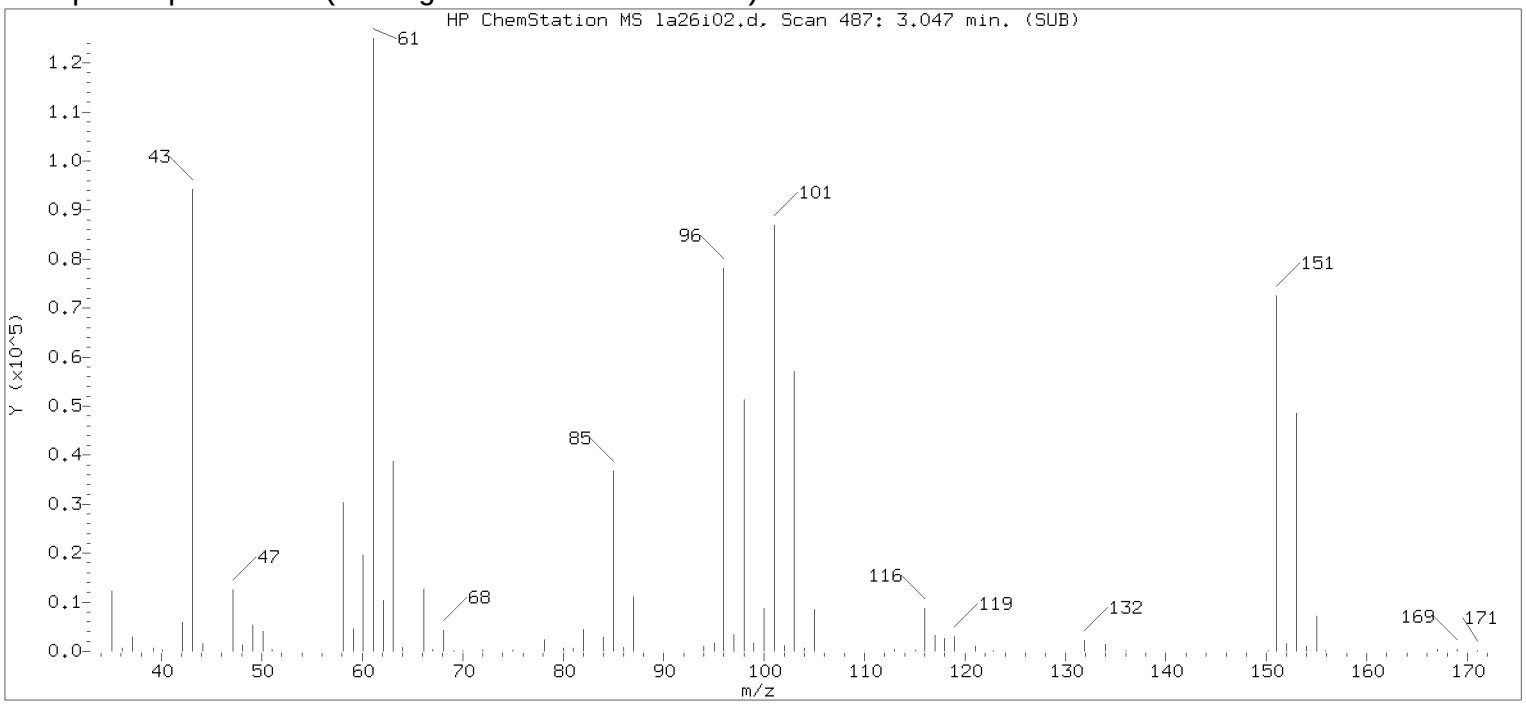
Compound Number : 18
Compound Name : Acetone
Scan Number : 487
Retention Time (minutes): 3.047
Quant Ion : 58.00
Area (flag) : 135546M
On-Column Amount (ng) : 207.7778
Integration start scan : 458 Integration stop scan: 552
Y at integration start : 496 Y at integration end: 496

Reason for manual integration: improper integration

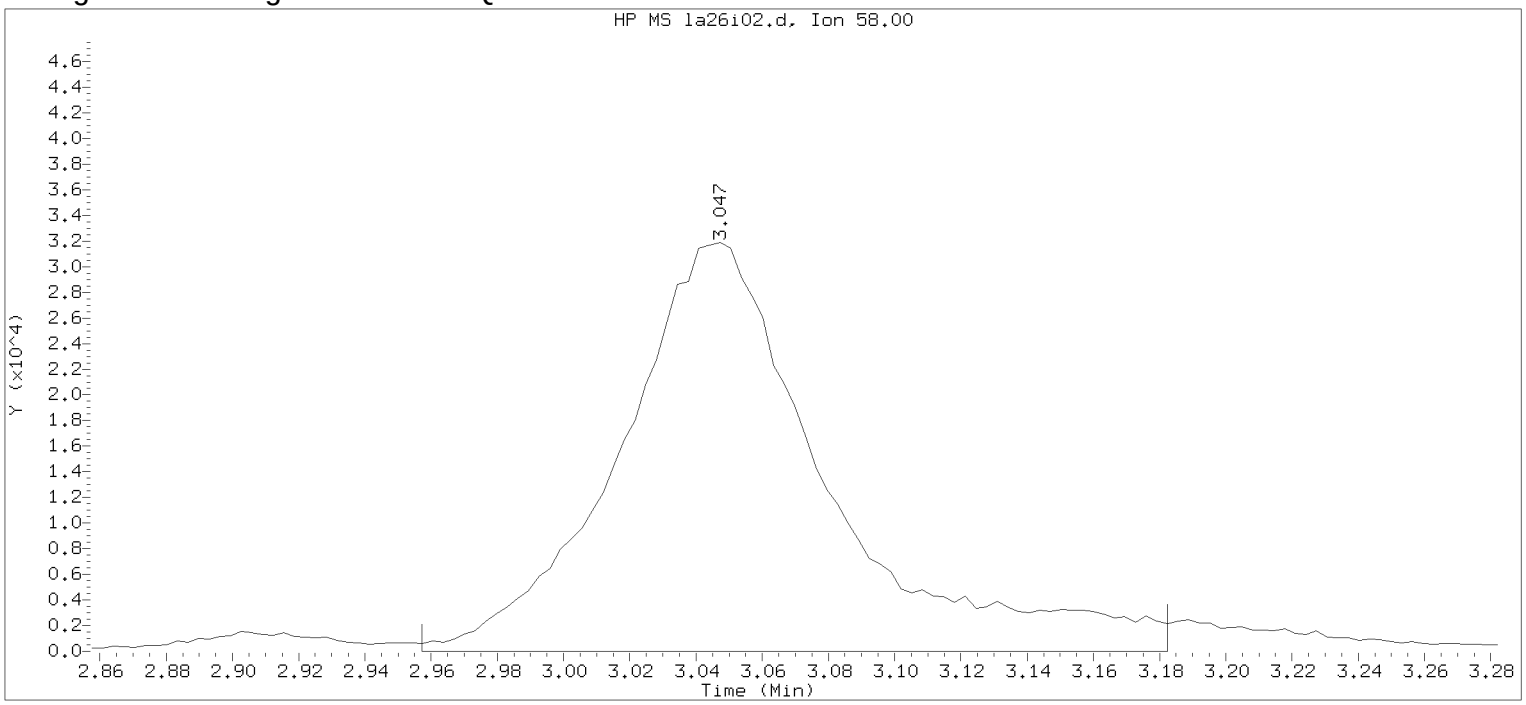
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 18
Compound Name : Acetone
Scan Number : 487
Retention Time (minutes): 3.047
Quant Ion : 58.00
Area : 137735
On-column Amount (ng) : 199.5156
Integration start scan : 458 Integration stop scan: 528
Y at integration start : 0 Y at integration end: 0

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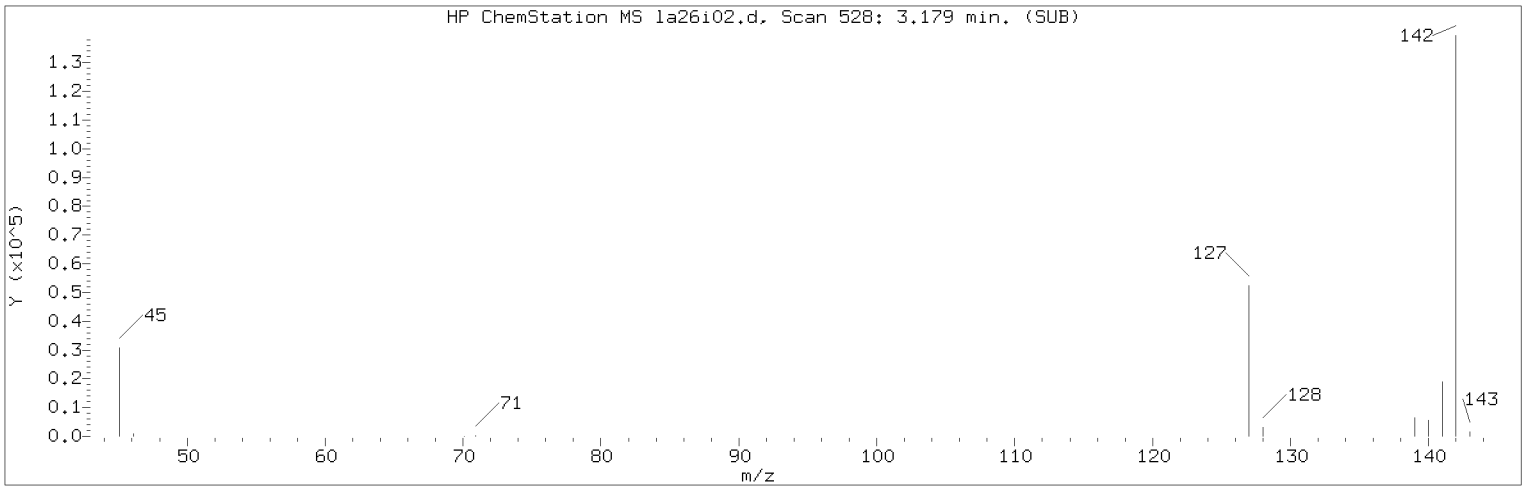
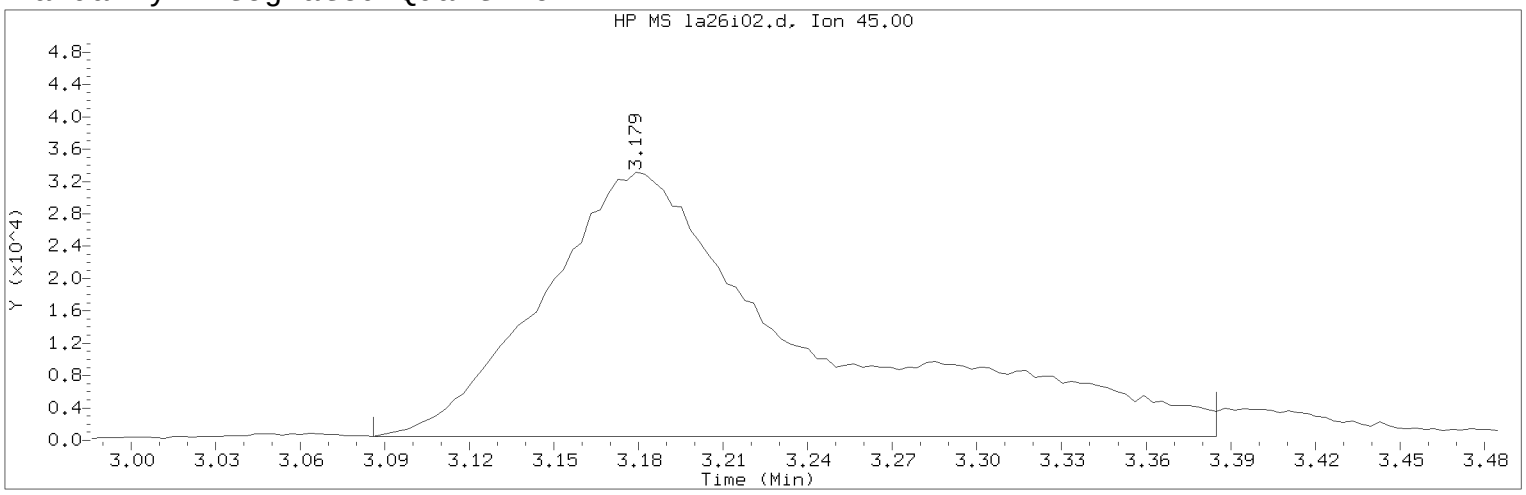
Target 3.5 esignature userKAS02648 RD90

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

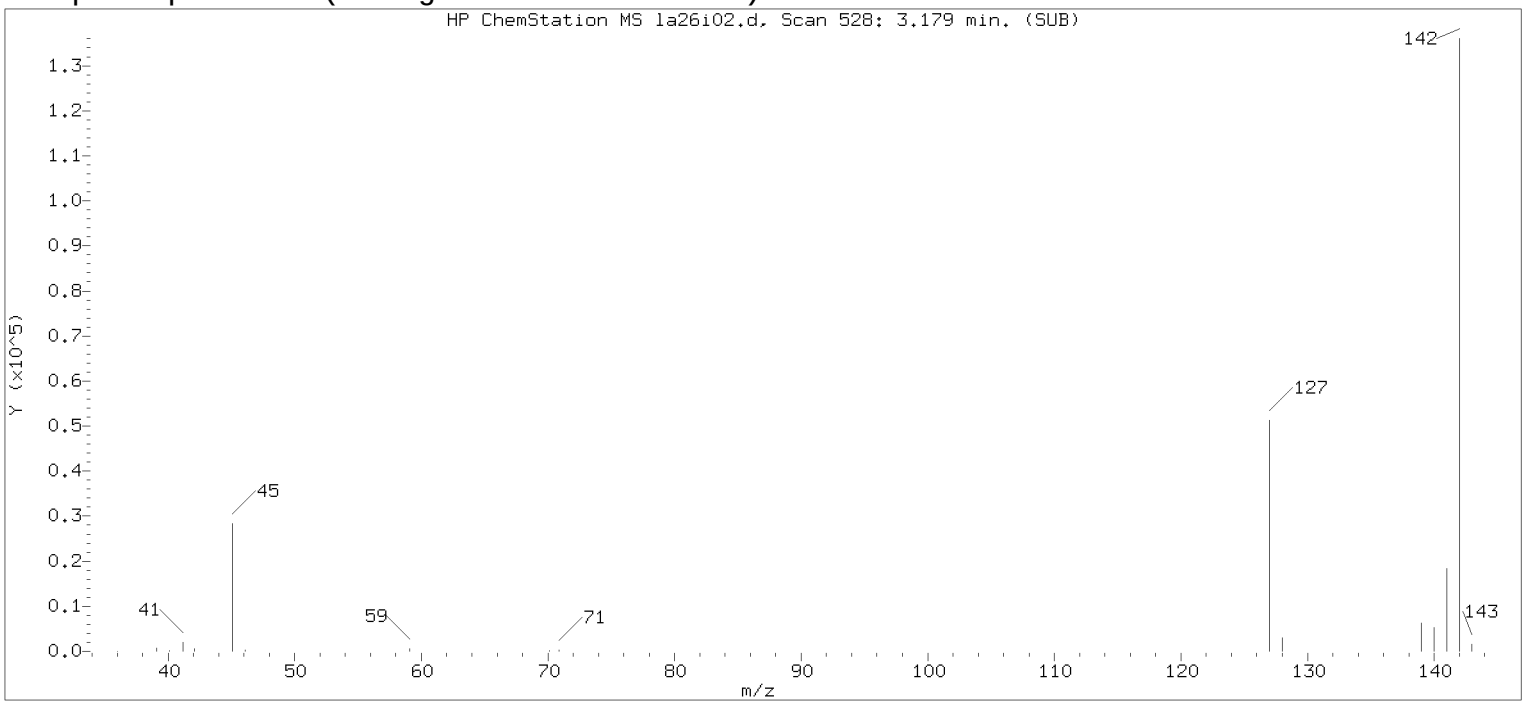
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 528
Retention Time (minutes): 3.179
Quant Ion : 45.00
Area (flag) : 213396M
On-Column Amount (ng) : 493.4490
Integration start scan : 498 Integration stop scan: 591
Y at integration start : 488 Y at integration end: 488

Reason for manual integration: improper integration

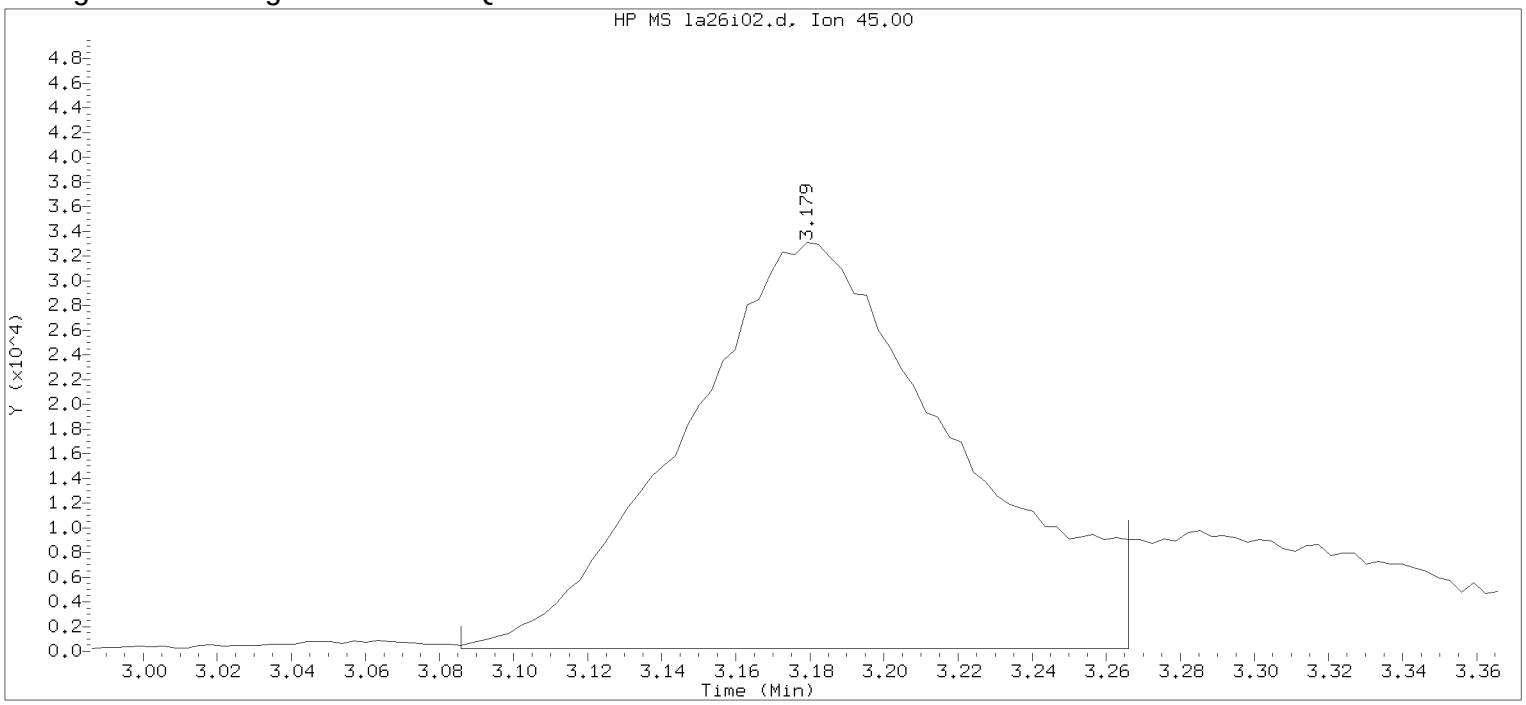
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 528
Retention Time (minutes): 3.179
Quant Ion : 45.00
Area : 167823
On-column Amount (ng) : 440.7134
Integration start scan : 498 Integration stop scan: 554
Y at integration start : 223 Y at integration end: 223

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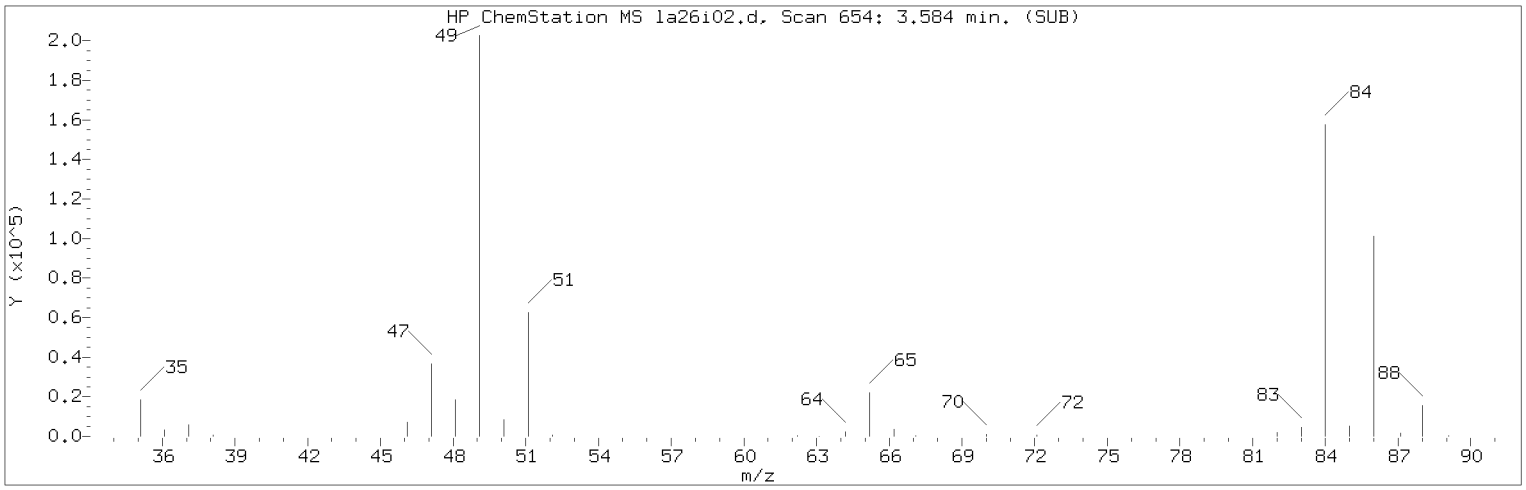
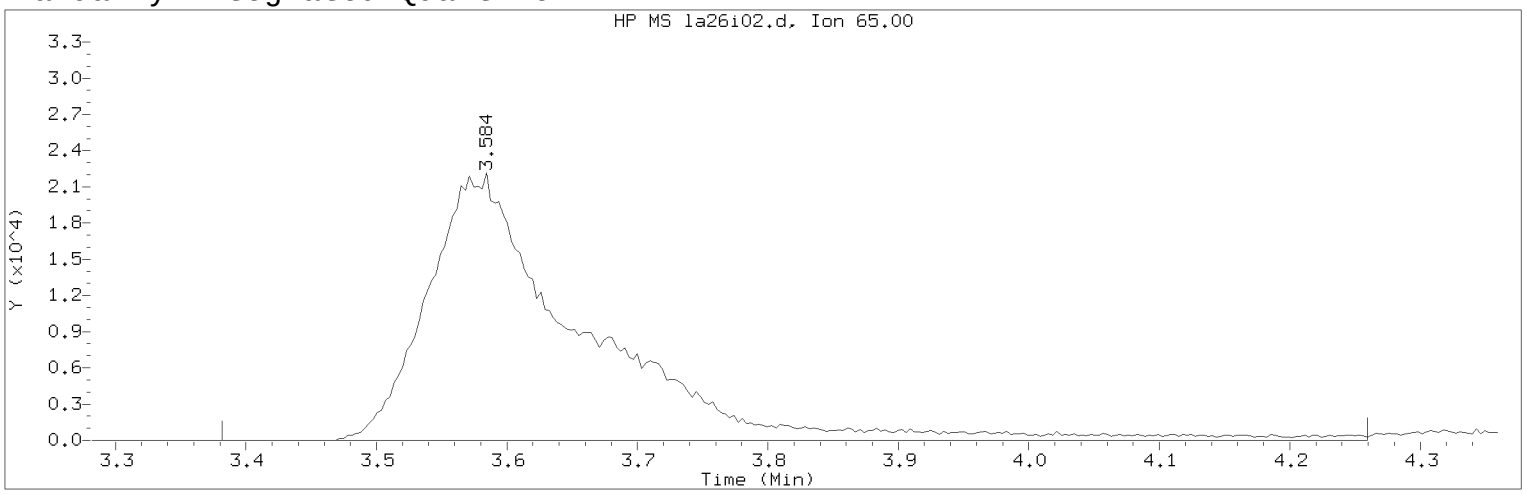
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

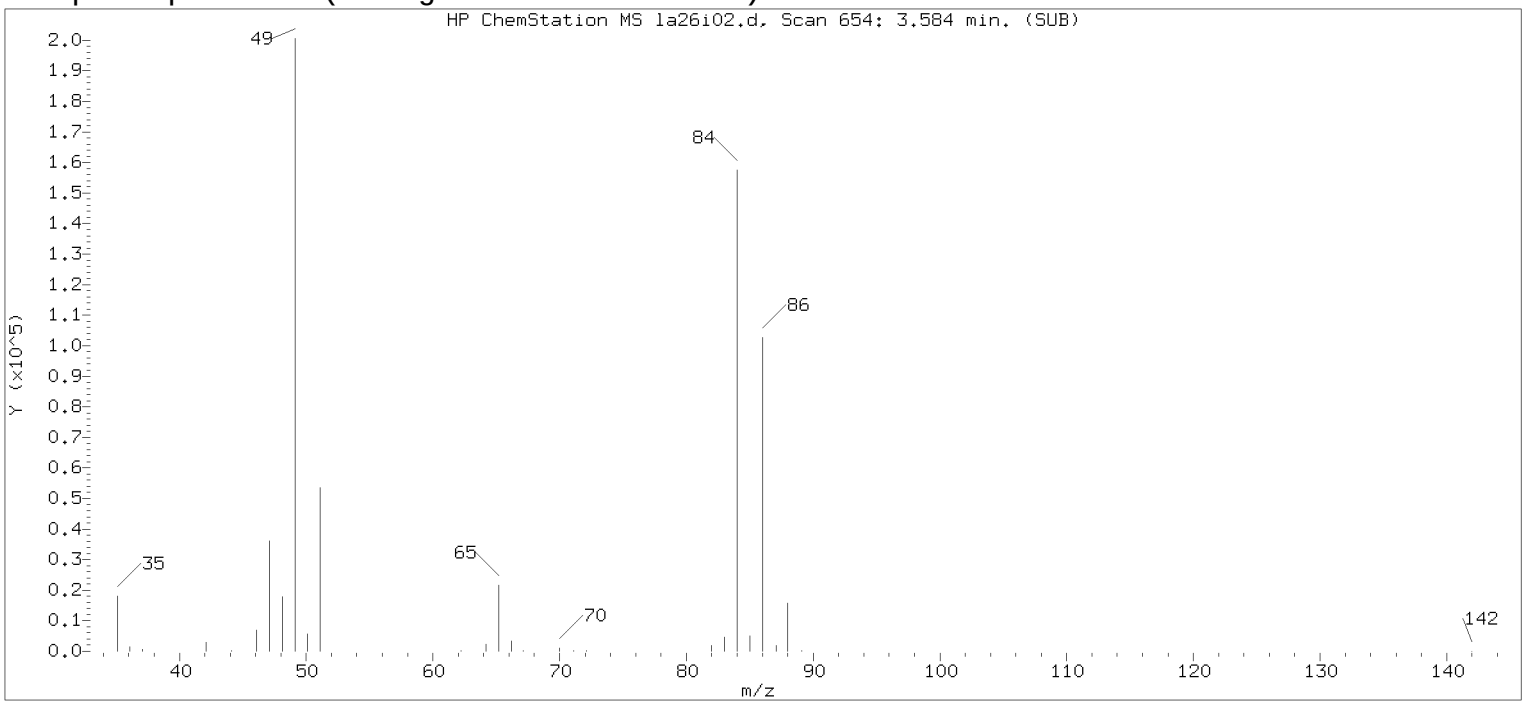
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 654
Retention Time (minutes): 3.584
Quant Ion : 65.00
Area (flag) : 183612M
On-Column Amount (ng) : 250.0000
Integration start scan : 590 Integration stop scan: 863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

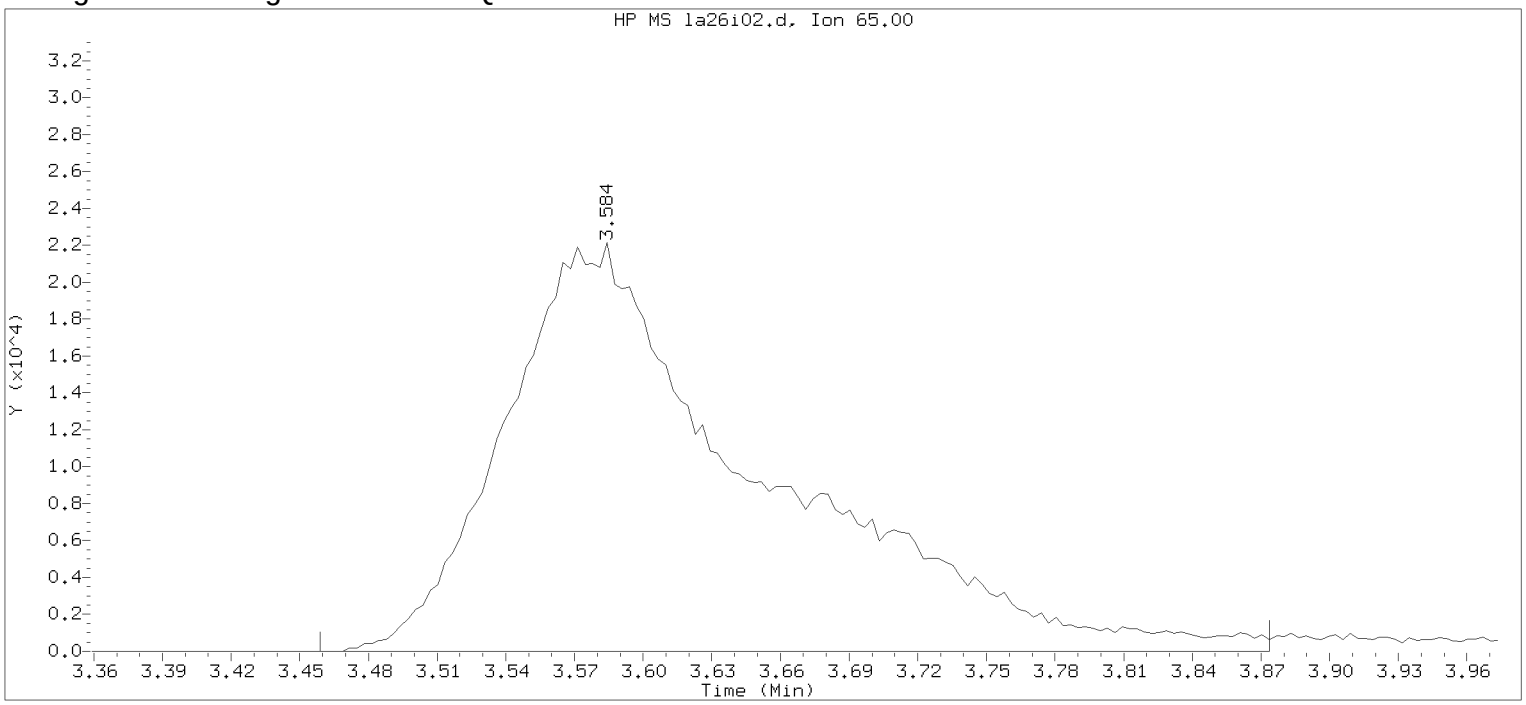
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

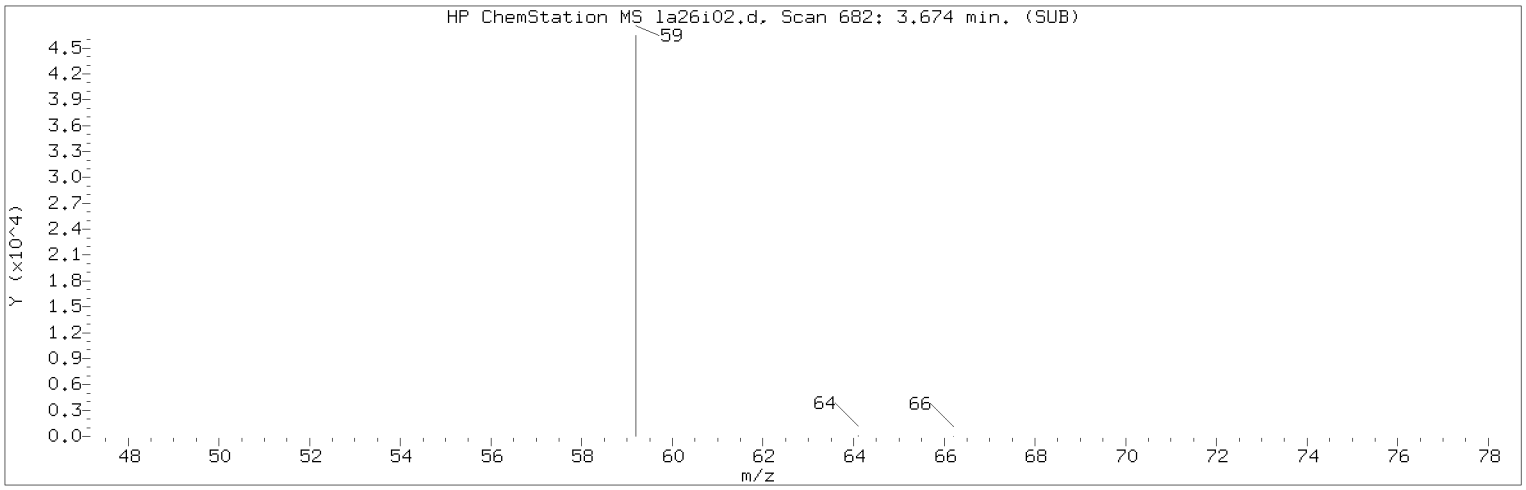
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

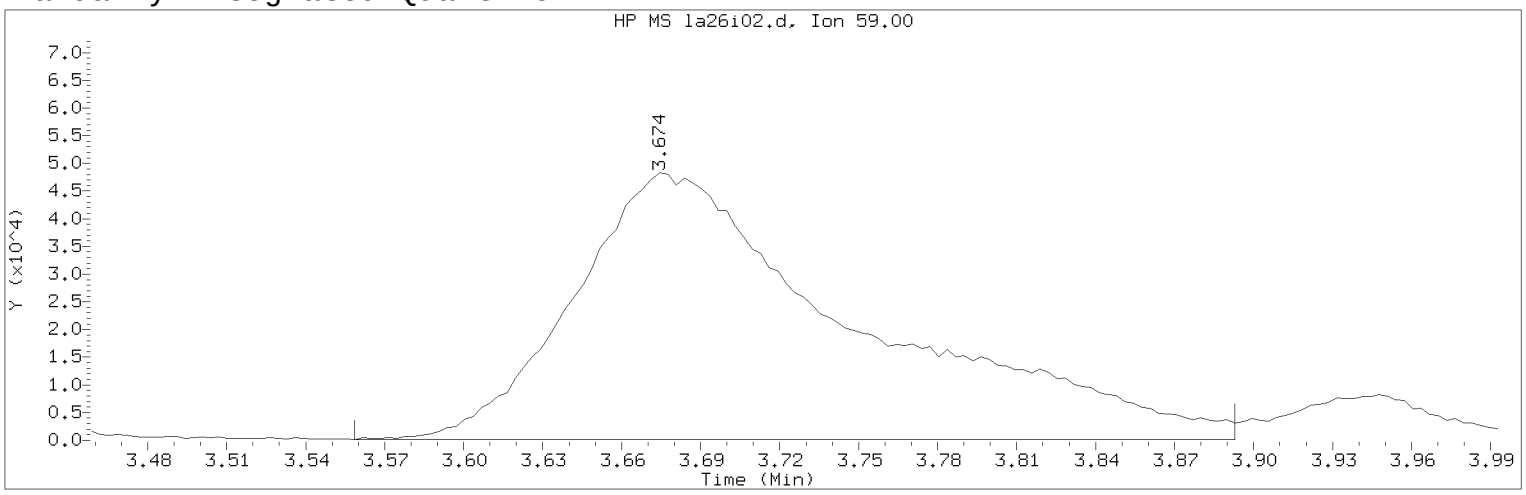
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 654
Retention Time (minutes): 3.584
Quant Ion : 65.00
Area : 172293
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 743
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 148 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

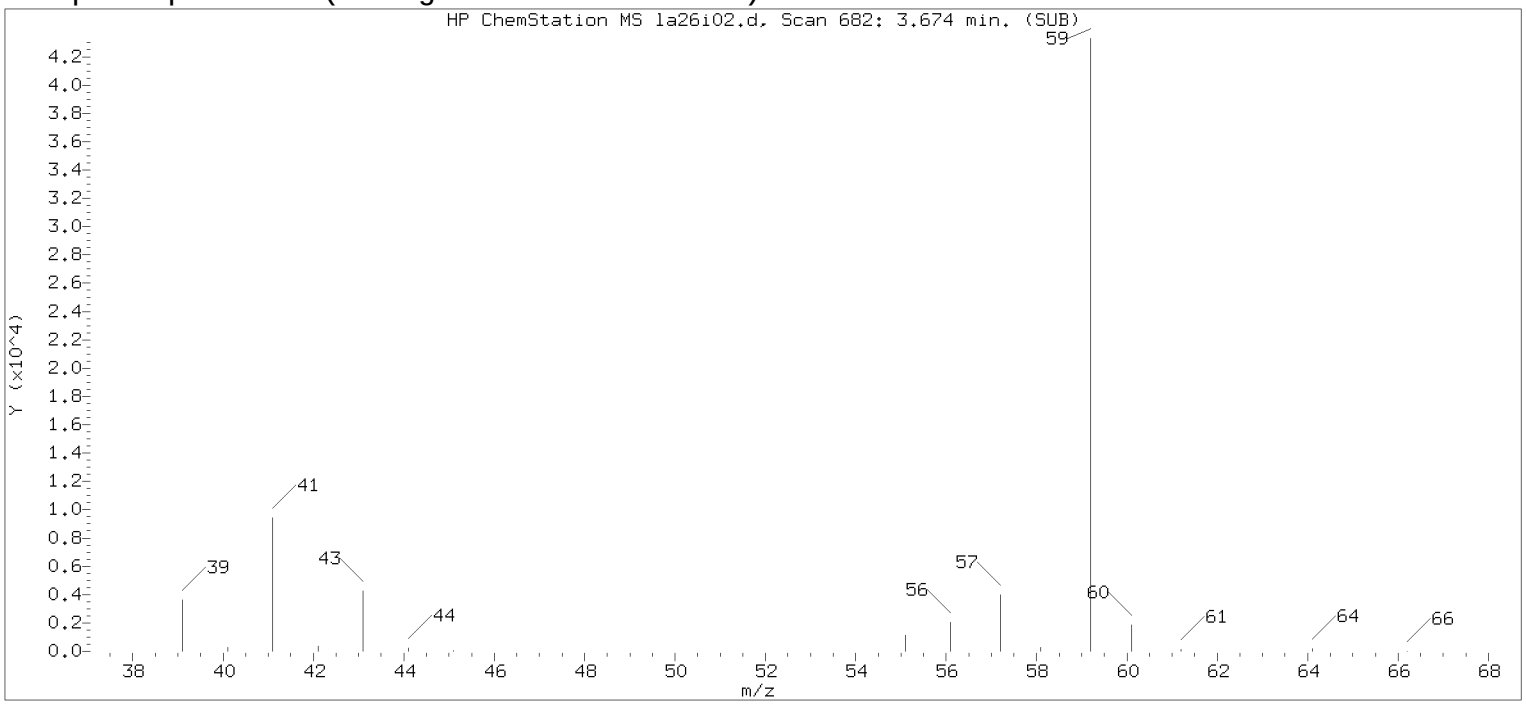
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 682
Retention Time (minutes): 3.674
Quant Ion : 59.00
Area (flag) : 356471M
On-Column Amount (ng) : 501.7705
Integration start scan : 645 Integration stop scan: 749
Y at integration start : 168 Y at integration end: 168

Reason for manual integration: improper integration

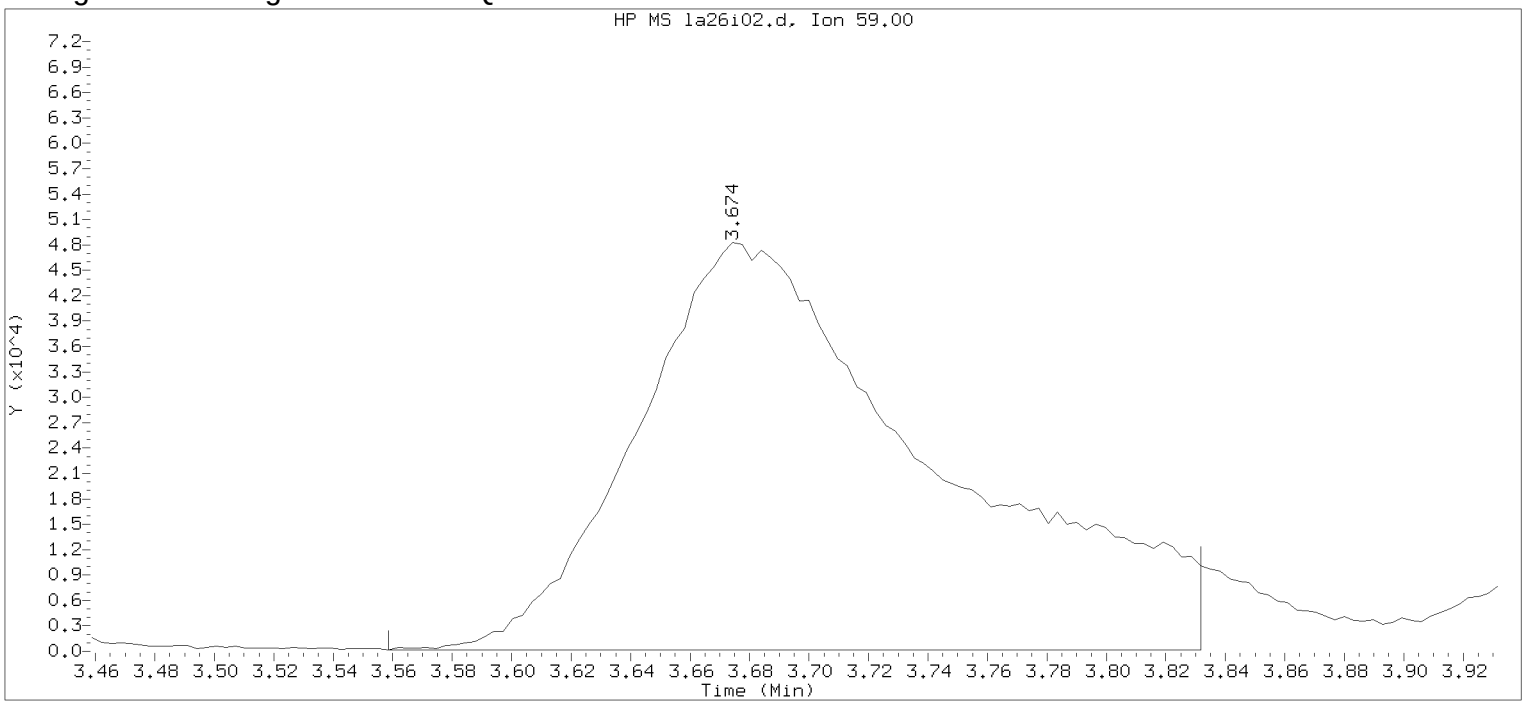
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 682
Retention Time (minutes): 3.674
Quant Ion : 59.00
Area : 335006
On-column Amount (ng) : 496.4294
Integration start scan : 645 Integration stop scan: 730
Y at integration start : 169 Y at integration end: 169

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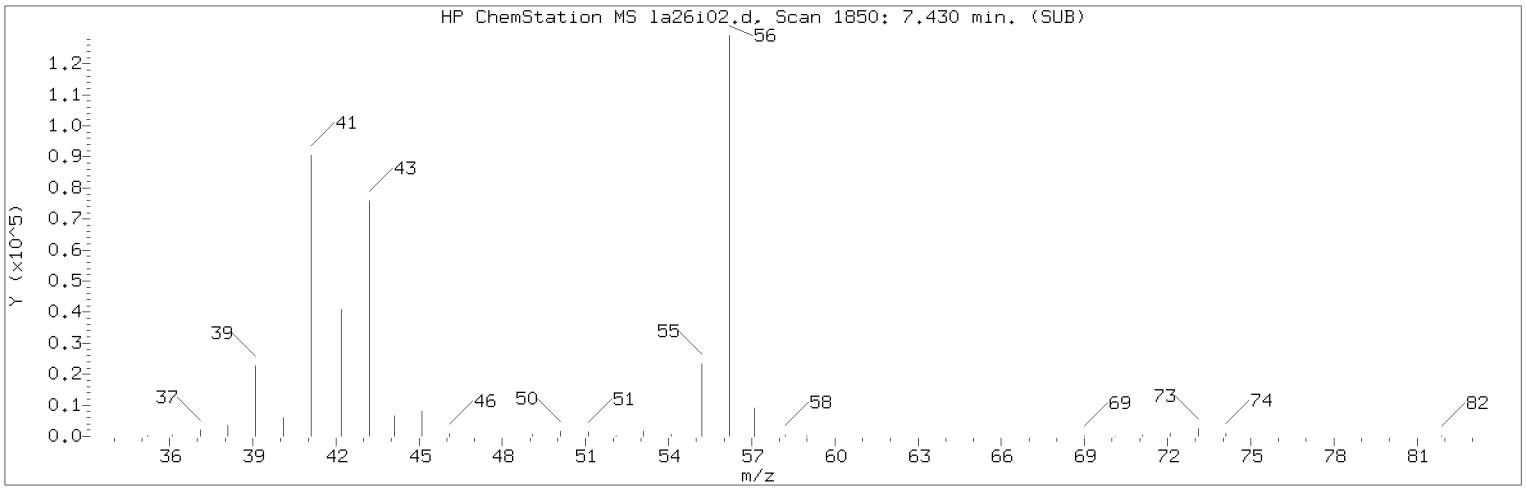
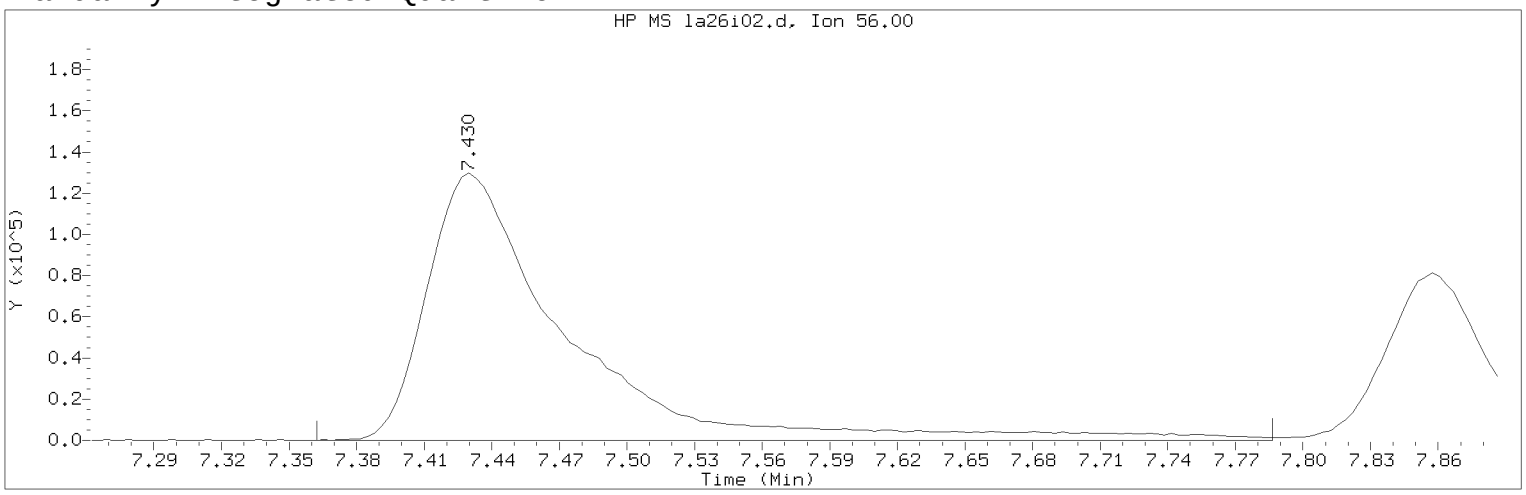
Target 3.5 esignature userKAS02648 Page 148

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

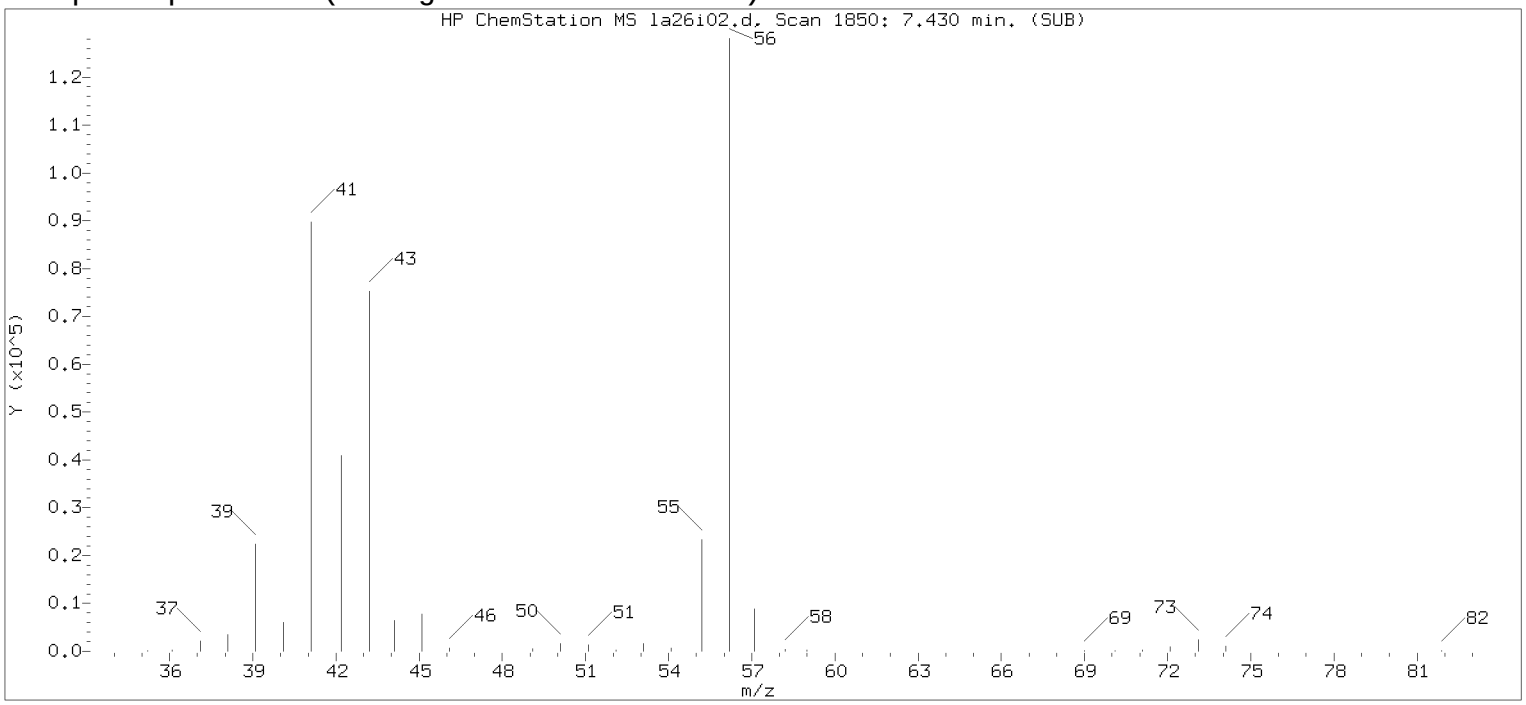
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1850
Retention Time (minutes): 7.430
Quant Ion : 56.00
Area (flag) : 557797M
On-Column Amount (ng) : 2774.0960
Integration start scan : 1828 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

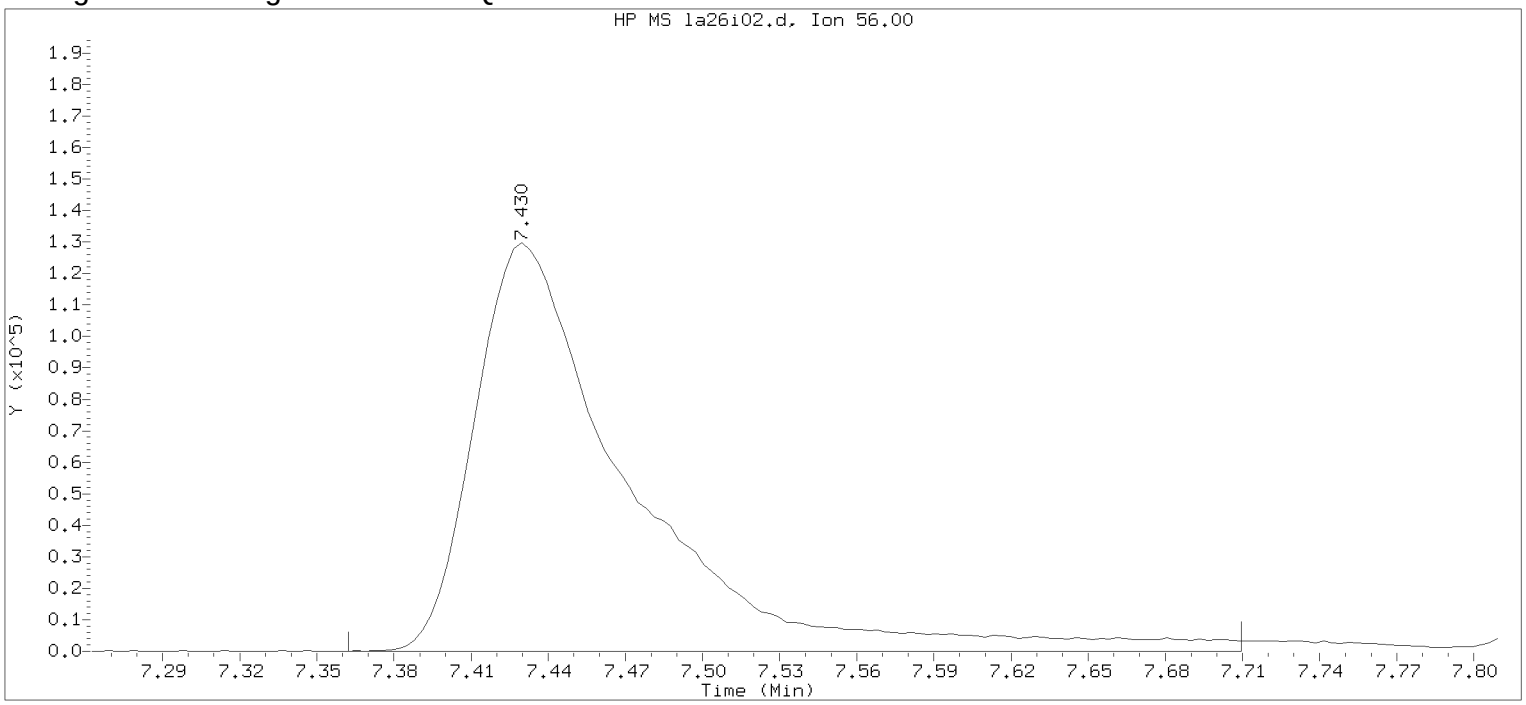
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1850
Retention Time (minutes): 7.430
Quant Ion : 56.00
Area : 545706
On-column Amount (ng) : 2586.5087
Integration start scan : 1828 Integration stop scan: 1936
Y at integration start : 0 Y at integration end: 0

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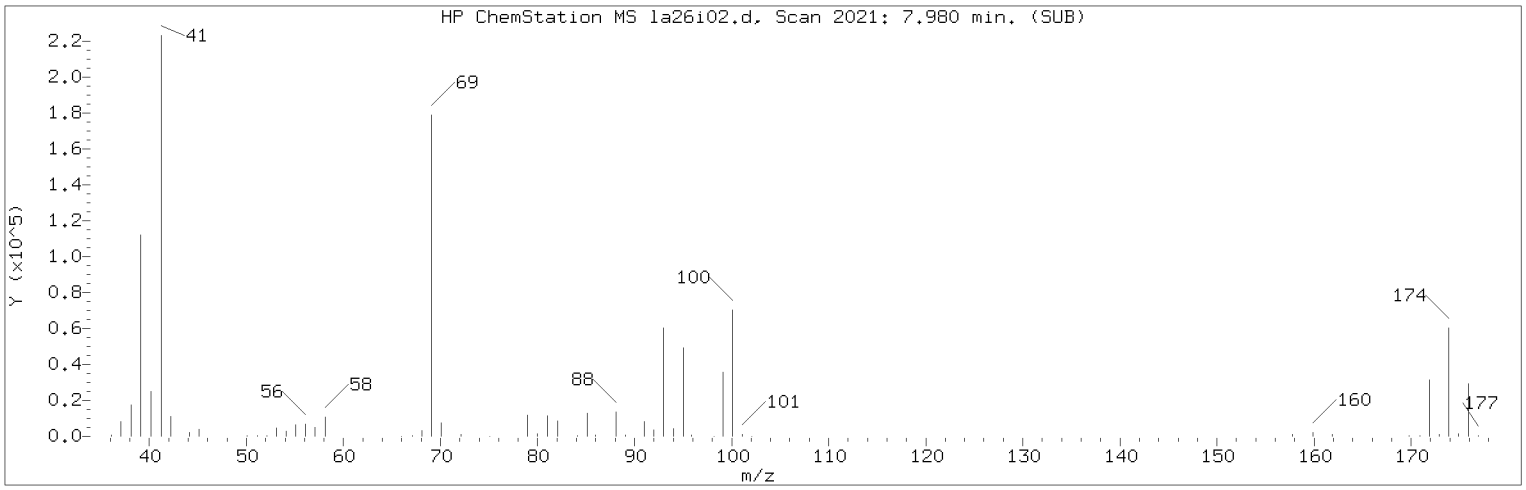
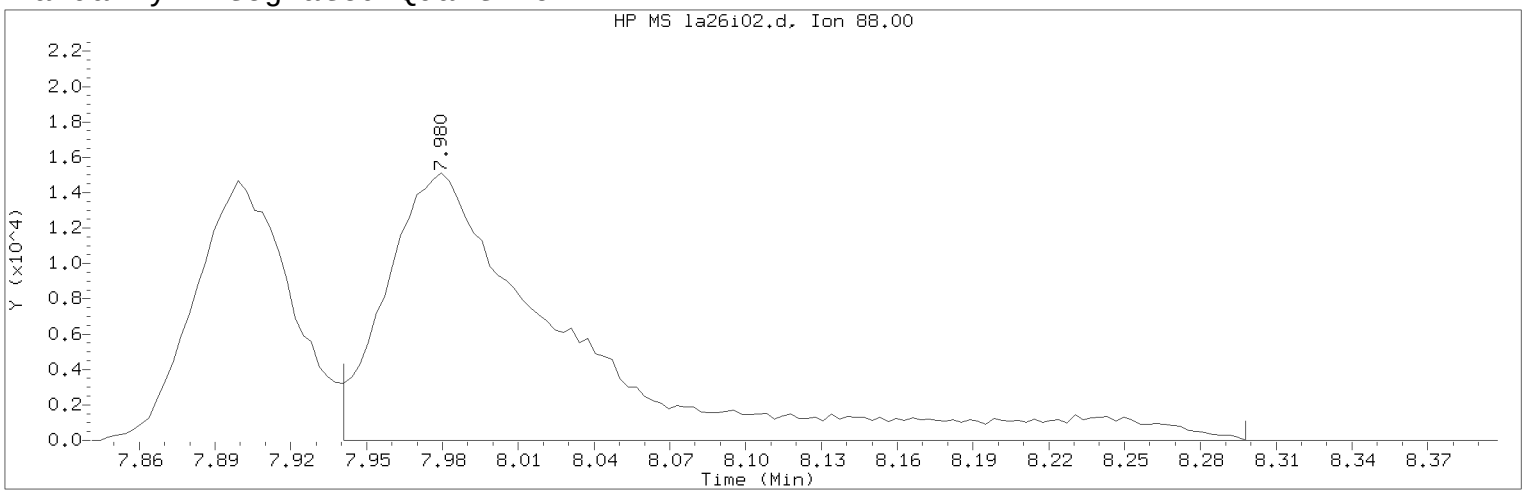
Target 3.5 esignature userKAS02648 Page 149 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

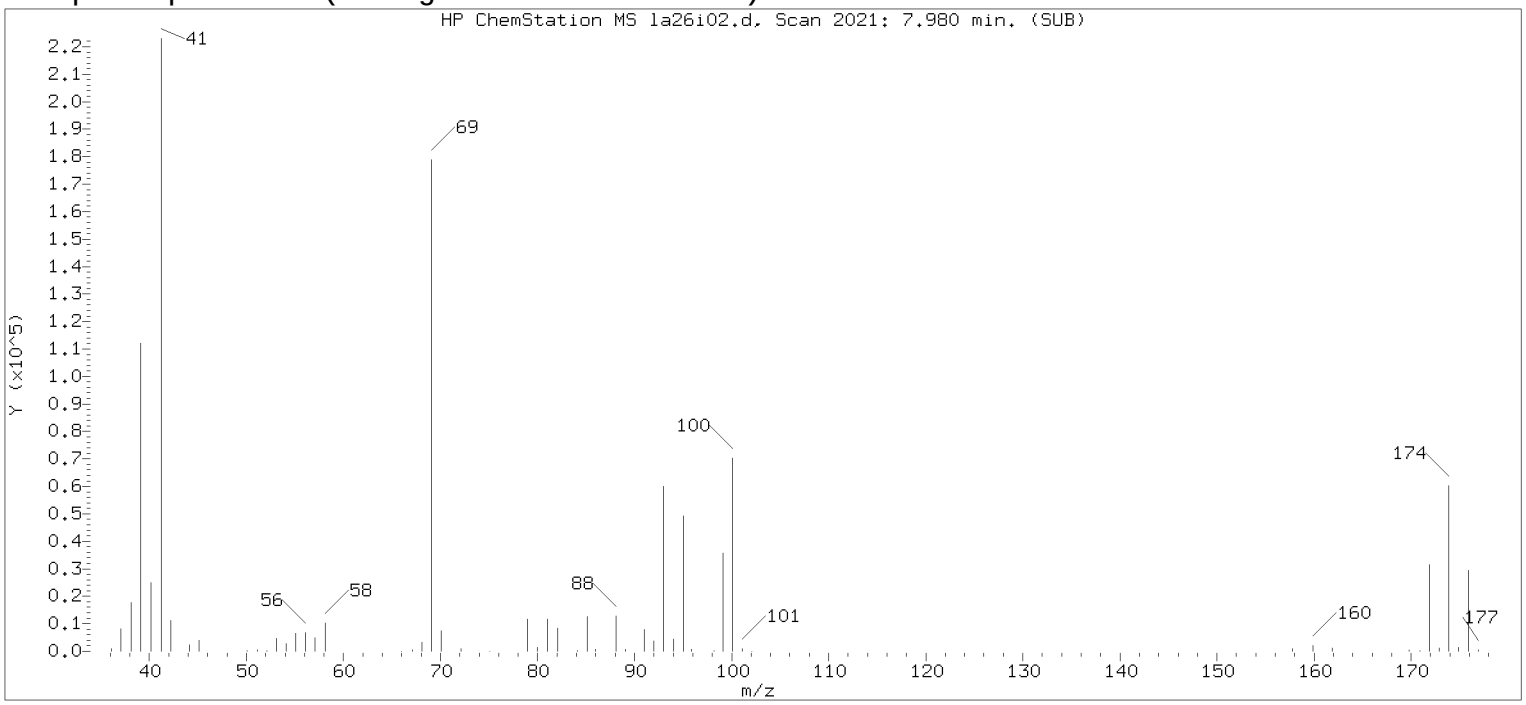
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 88.00
Area (flag) : 76692M
On-Column Amount (ng) : 1221.7348
Integration start scan : 2008 Integration stop scan: 2119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

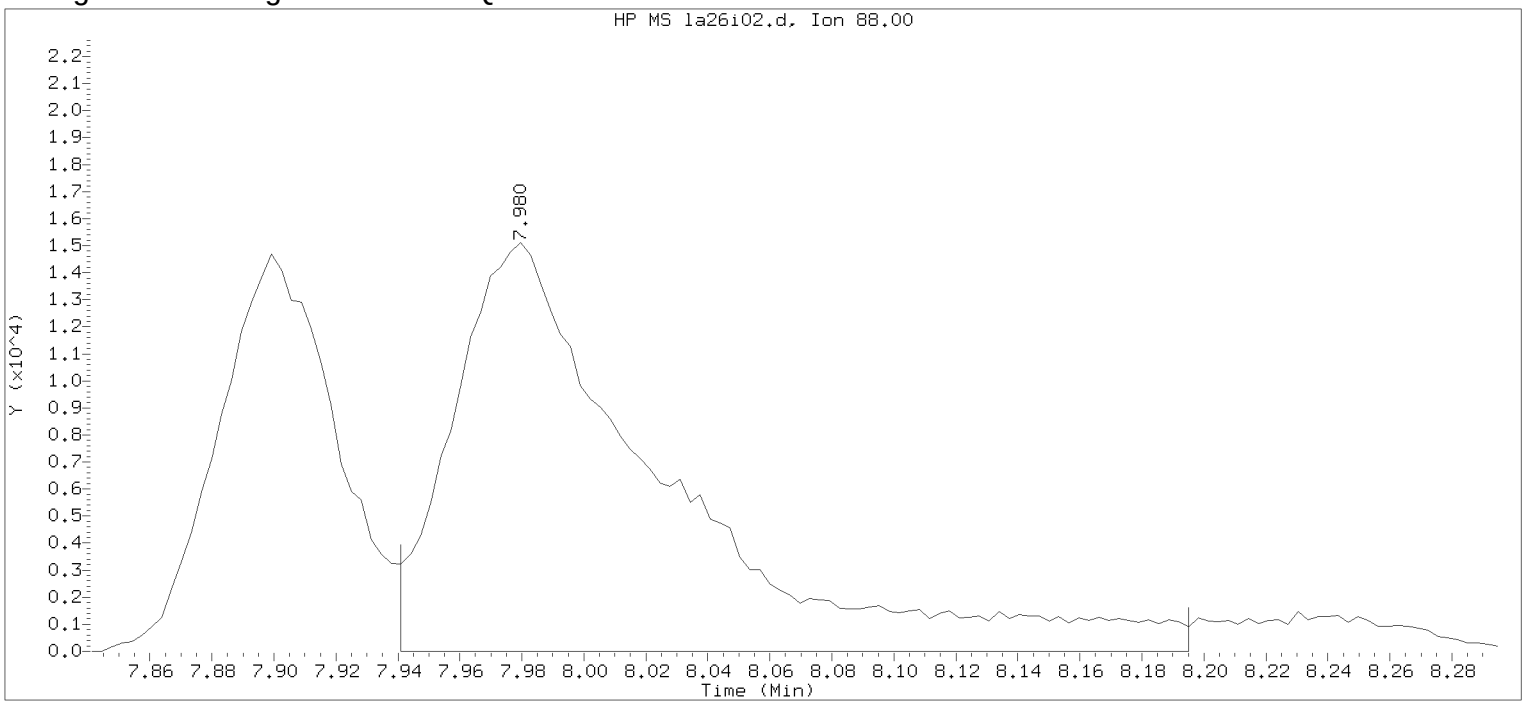
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

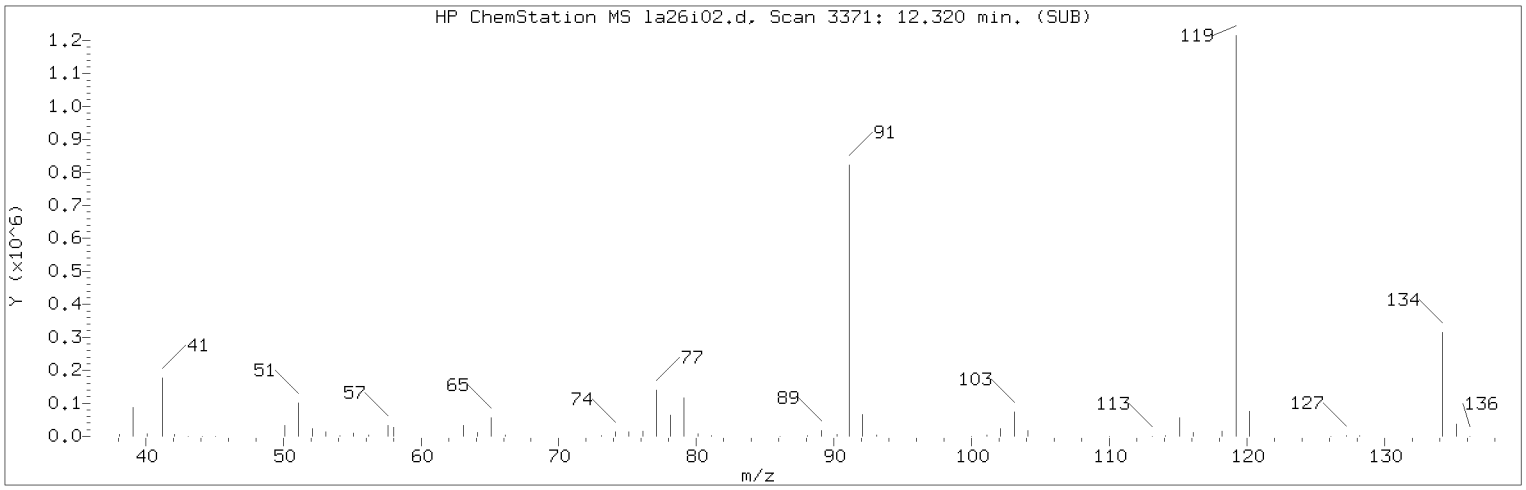
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

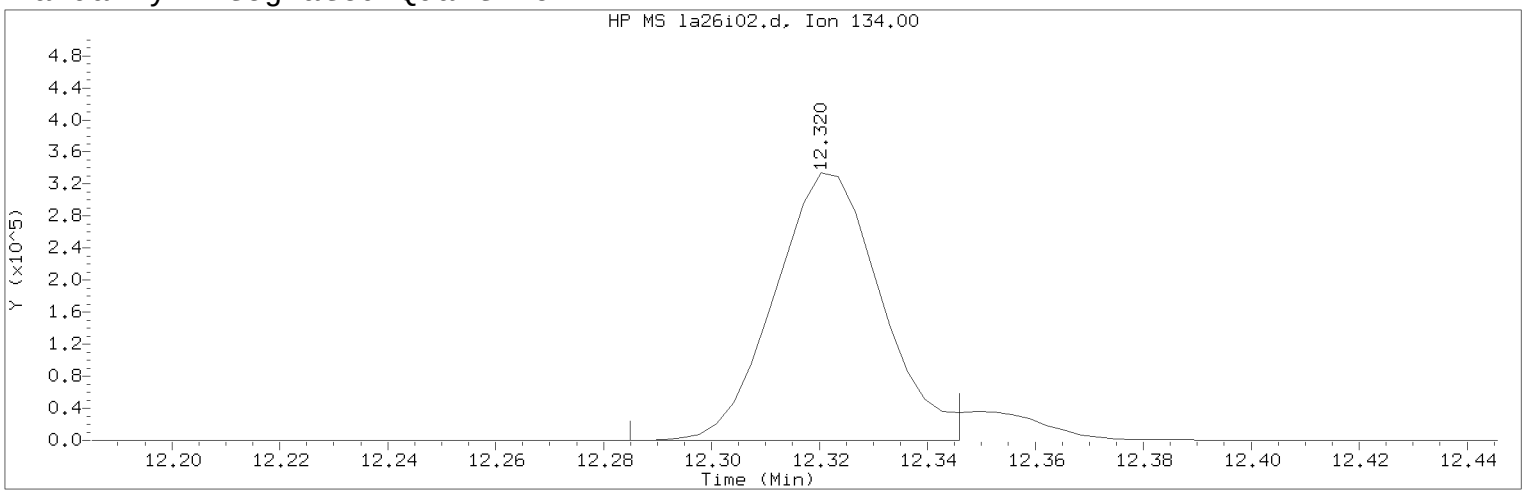
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 88.00
Area : 70705
On-column Amount (ng) : 1061.5410
Integration start scan : 2008 Integration stop scan: 2087
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 121 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

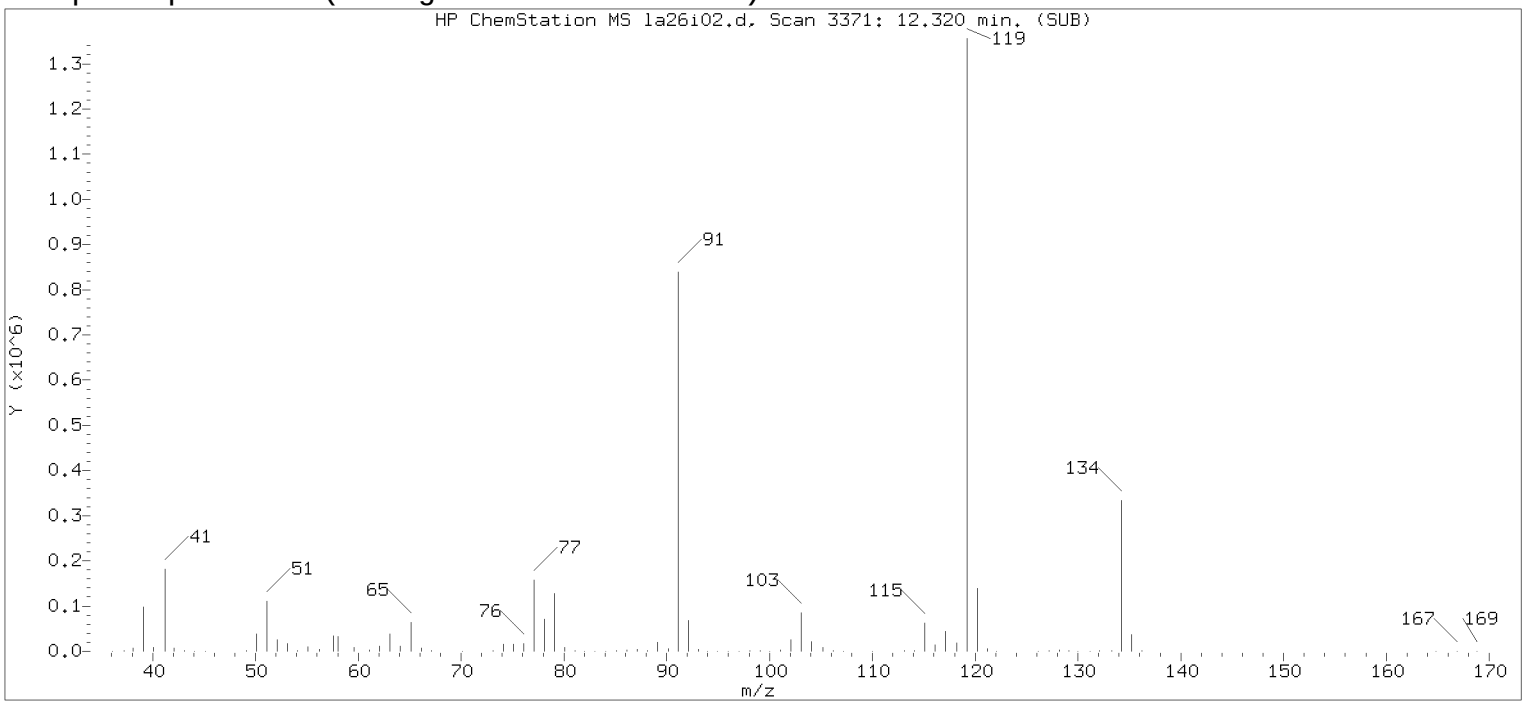
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 456579M
On-Column Amount (ng) : 105.7797
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

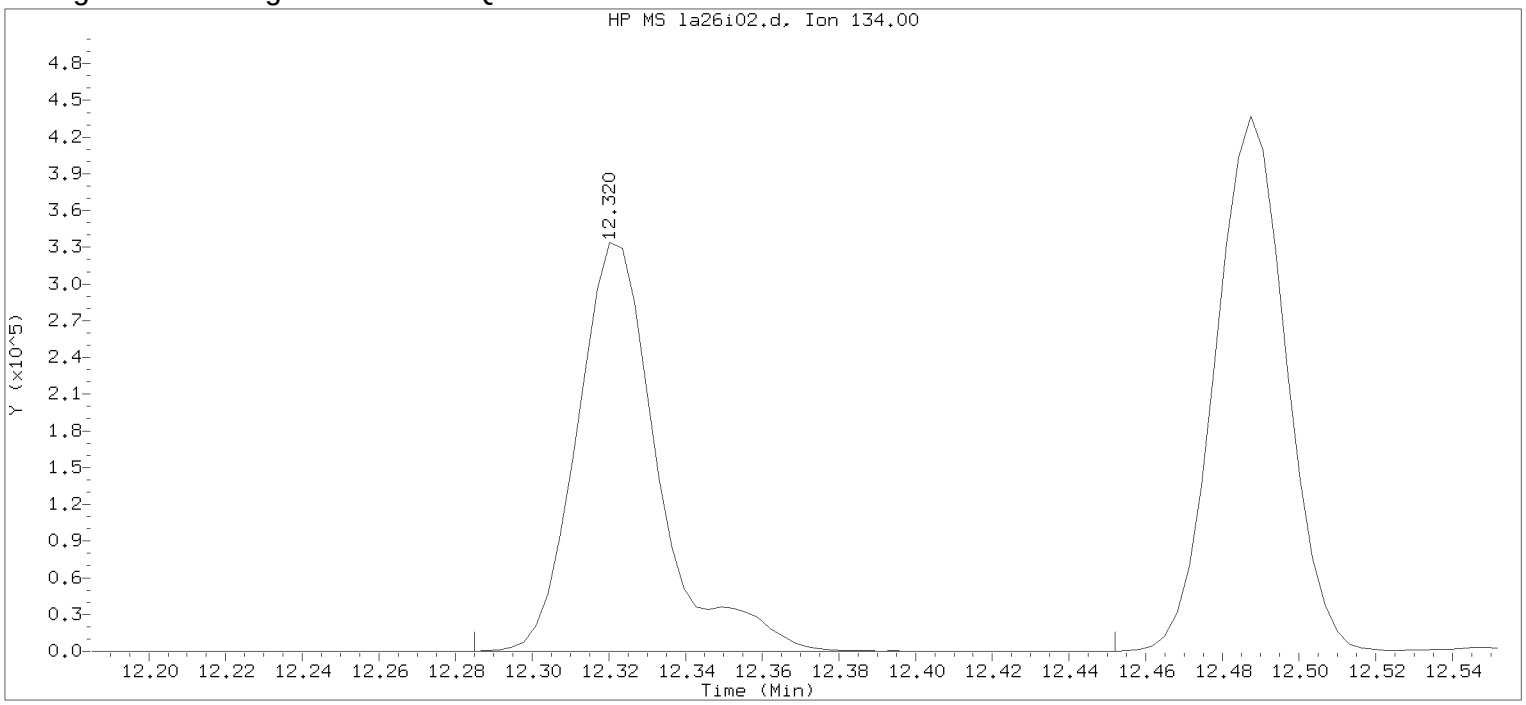
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



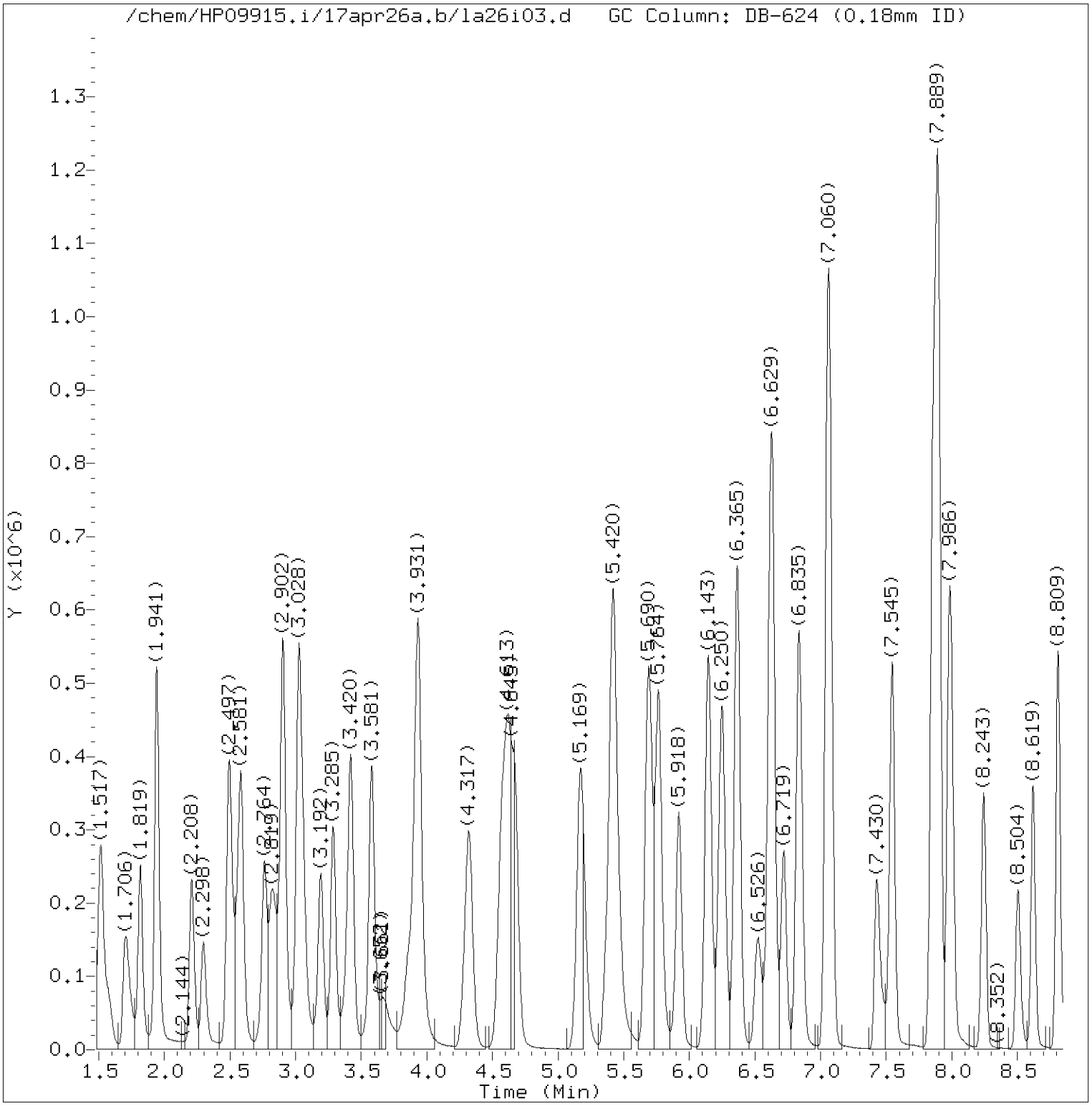

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 491130
On-column Amount (ng) : 103.2605
Integration start scan : 3359 Integration stop scan: 3411
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 128 of 420




Total Ion Chromatogram (TIC)

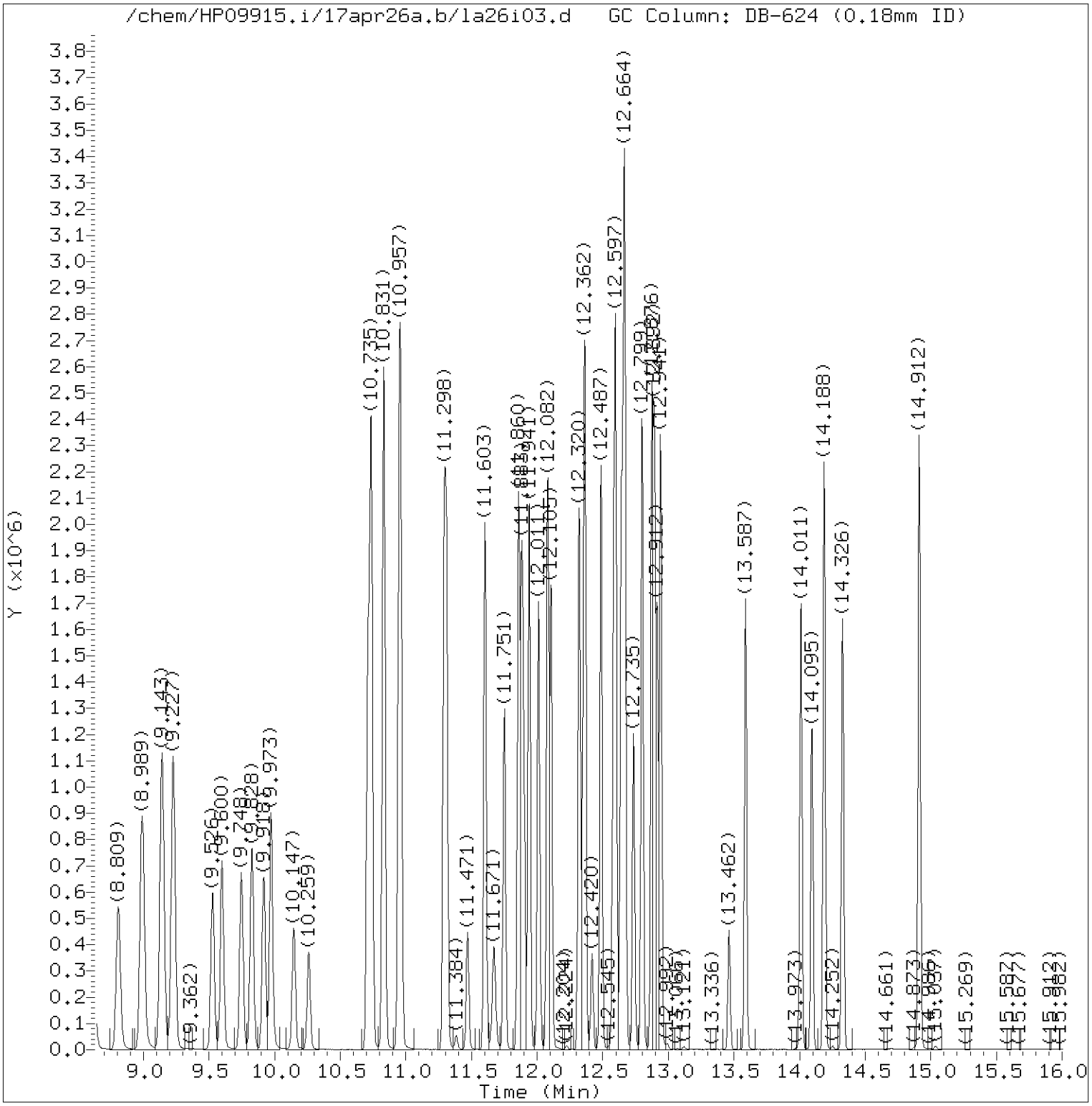
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 341531 | 55.325 |
| 4) Chloromethane | (2) | 1.819 | 50 | 341915 | 53.914 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 338740 | 55.314 |
| 5) 1,3-Butadiene | (2) | 1.948 | 39 | 185287 | 49.605 |
| 8) Bromomethane | (2) | 2.211 | 94 | 223606 | 54.288 |
| 9) Chloroethane | (2) | 2.301 | 64 | 186081 | 53.918 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 455798 | 54.146 |
| 12) Trichlorofluoromethane | (2) | 2.562 | 101 | 396809 | 55.955 |
| 11) n-Pentane | (2) | 2.584 | 43 | 292021 | 50.002 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 210376 | 53.288 |
| 15) Freon 123a | (2) | 2.819 | 67 | 241023 | 51.034 |
| 16) Acrolein | (1) | 2.902 | 56 | 846420 | 532.609 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 192923 | 51.401 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 97269 | 51.192 |
| 18) Acetone | (1) | 3.041 | 58 | 73070M | 105.938 |
| 19) Freon 113 | (2) | 3.047 | 101 | 194876 | 51.583 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 105752 | 231.283 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 379144 | 52.079 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 640566 | 52.445 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 274054 | 50.308 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 386191 | 51.369 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 194134M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 241364 | 48.679 |
| 30) t-Butyl alcohol | (1) | 3.677 | 59 | 188301 | 250.688 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 159848 | 55.877 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 721326 | 52.461 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 228348 | 51.854 |
| 34) n-Hexane | (2) | 4.320 | 57 | 342791 | 50.780 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 433276 | 52.360 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 837918 | 52.757 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 368443 | 52.785 |
| 40) Ethyl t-butyl ether | (2) | 5.172 | 59 | 734026 | 53.702 |
| 44) 2-Butanone | (2) | 5.378 | 43 | 418947 | 109.375 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 262755 | 52.071 |
| 45) 2,2-Dichloropropane | (2) | 5.433 | 77 | 299786 | 54.261 |
| 47) Propionitrile | (1) | 5.462 | 54 | 282765 | 257.928 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 375487 | 131.654 |
| 49) Bromochloromethane | (2) | 5.758 | 128 | 136891 | 51.472 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 106051 | 109.521 |
| 51) Chloroform | (2) | 5.918 | 83 | 411040 | 52.113 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 254980 | 50.387 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 111 | 260921 | 50.317 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 354588 | 49.197 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 491103 | 103.925 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 424936 | 51.780 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 346297 | 50.980 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 122692 | 51.578 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 281006 | 53.410 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 333440 | 51.977 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 170793 | 647.615 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 63118 | 50.159 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 296089 | 49.745 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 39897 | 49.986 |
| 60) Benzene | (2) | 6.629 | 78 | 982091 | 51.933 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 334956 | 52.357 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 31873 | 56.503 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 733093 | 54.041 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1036296 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 374695 | 49.577 |
| 69) n-Butanol | (1) | 7.430 | 56 | 280068 | 1317.372 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 250765 | 51.312 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 455106 | 52.853 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 206857 | 53.234 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 275068 | 53.135 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 43582M | 656.649 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 241048 | 54.398 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 171942 | 52.815 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 317704 | 54.075 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 192161 | 115.340 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 216850 | 54.493 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 421854 | 55.090 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 880332 | 111.530 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1027431 | 50.111 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 676600 | 50.089 |
| 88) Toluene | (3) | 9.227 | 92 | 616434 | 51.737 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 379484 | 56.801 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 418944 | 55.671 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 244835 | 53.326 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 265915 | 50.459 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 420710 | 52.809 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 638735 | 111.059 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 801338 | 111.891 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 264807 | 55.684 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 268109 | 53.341 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 803001 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 335726 | 49.064 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 712548 | 51.827 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 244656 | 53.888 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1186726 | 51.635 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 926946 | 103.598 |
| 107) o-Xylene | (3) | 11.291 | 106 | 466673 | 52.445 |
| 109) Styrene | (3) | 11.310 | 104 | 789557 | 53.675 |
| 110) Bromoform | (3) | 11.471 | 173 | 196645 | 56.948 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 1179385 | 51.860 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 165040 | 659.207 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379333 | 49.776 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 331825 | 49.640 |
| 108) Xylene (Total) | (3) | | 106 | 1393619 | 156.043 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 407876 | 53.358 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 318530 | 51.744 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 296713 | 135.458 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 113804 | 52.666 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 1393854 | 51.243 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 291915 | 51.564 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 1017107 | 52.437 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 302722 | 51.378 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 219011M | 52.234 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 180272 | 54.456 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 1045061 | 52.305 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 1273140 | 51.456 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 596808 | 50.922 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1129862 | 51.719 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 430663 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 613522 | 50.626 |

M = Compound was manually integrated.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 1072423 | 51.230 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 705215 | 58.832 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 673907 | 51.632 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 699626 | 51.044 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 545695 | 50.003 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 589322 | 51.155 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 564439 | 51.388 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1937972 | 154.064 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 88925 | 55.008 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 467325 | 50.034 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 459337 | 50.697 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 192963 | 49.039 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1445873 | 52.884 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 443490 | 50.737 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 940076 | 53.175 |



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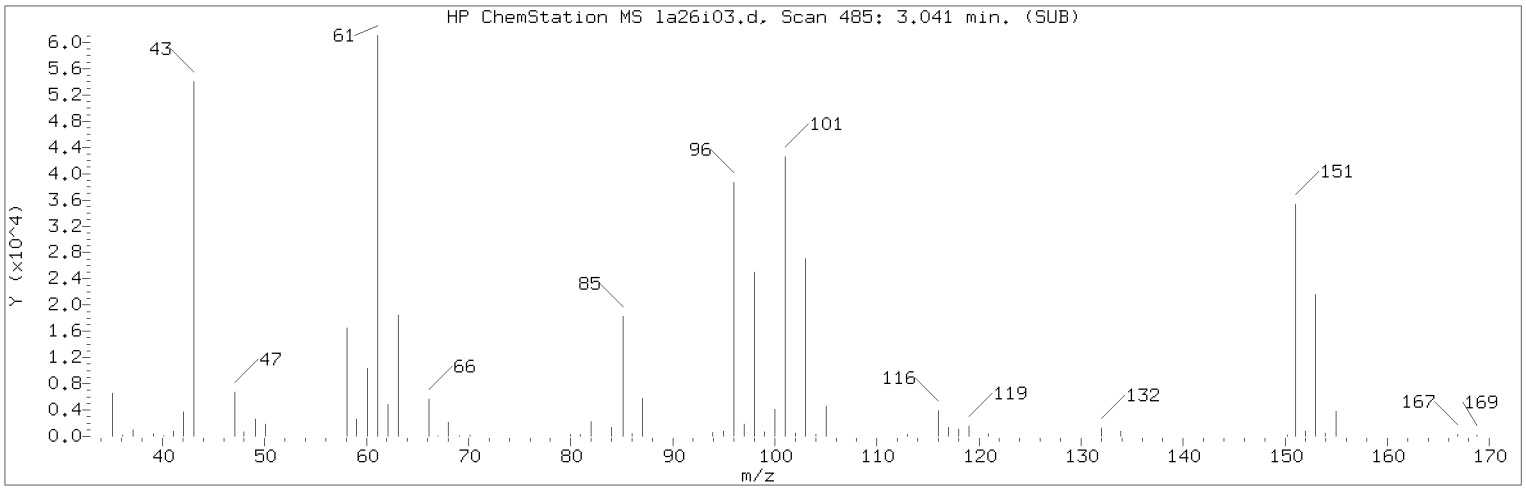
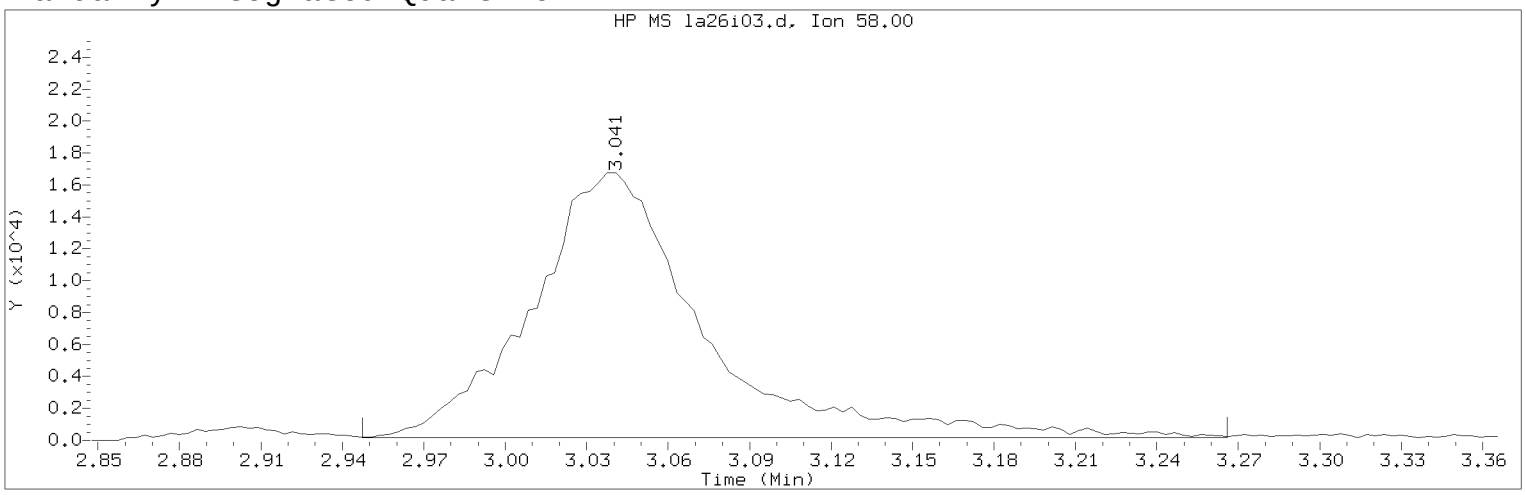
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

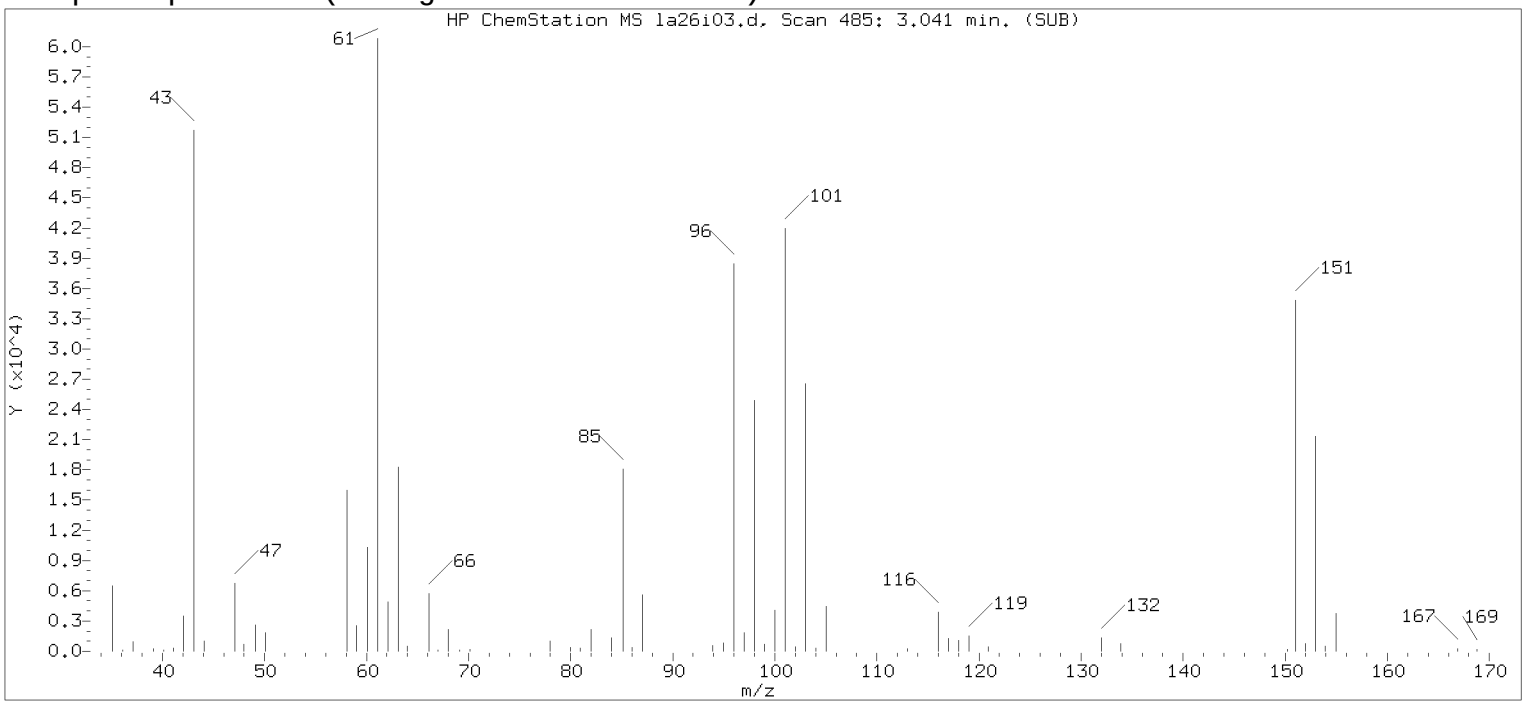
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area (flag) : 73070M
On-Column Amount (ng) : 105.9378
Integration start scan : 455 Integration stop scan: 554
Y at integration start : 159 Y at integration end: 159

Reason for manual integration: improper integration

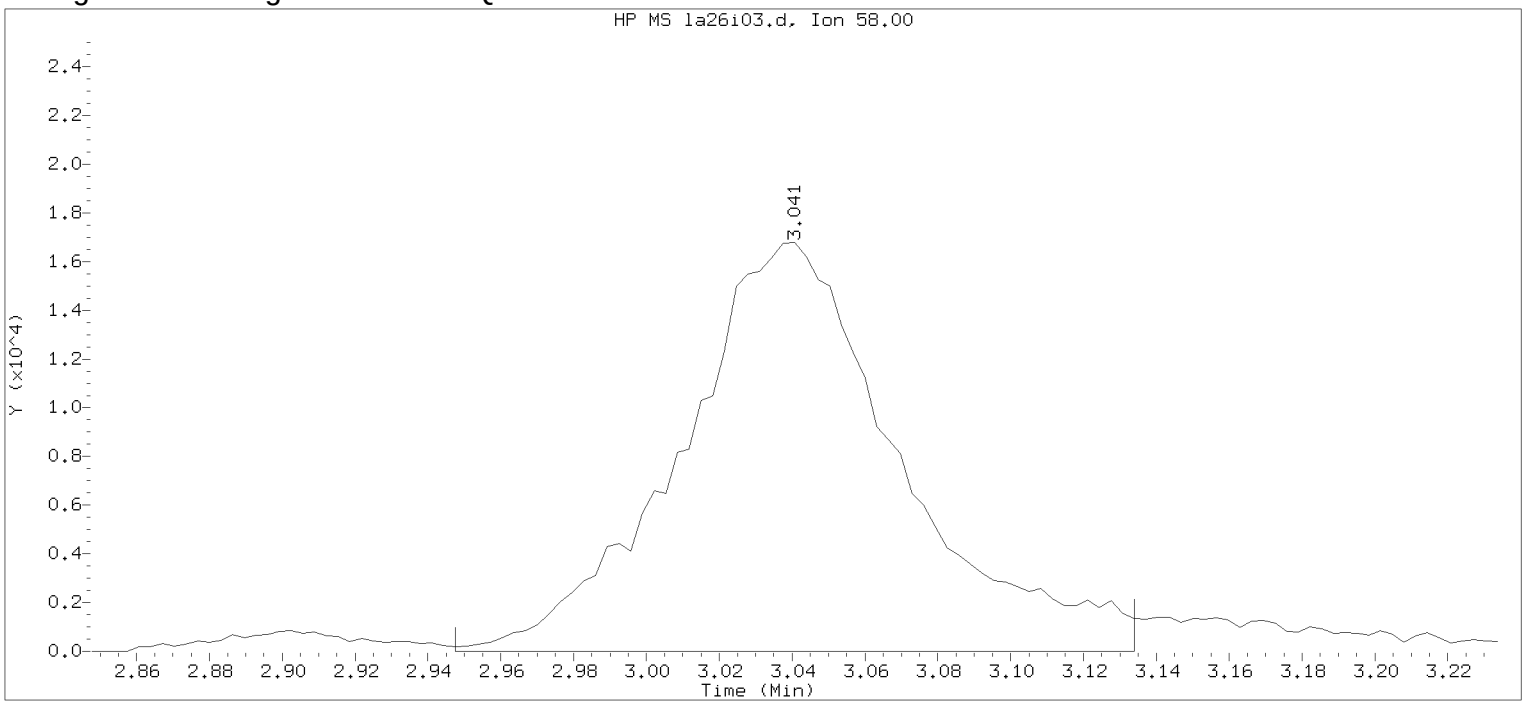
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area : 69964
On-column Amount (ng) : 100.7133
Integration start scan : 455 Integration stop scan: 513
Y at integration start : 0 Y at integration end: 0

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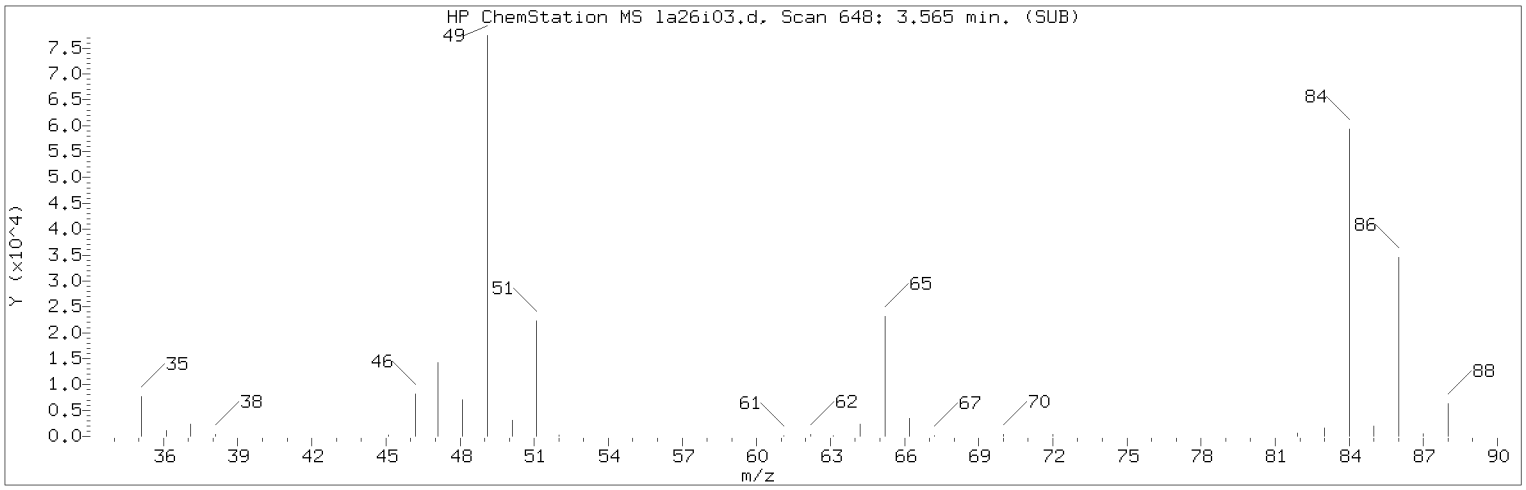
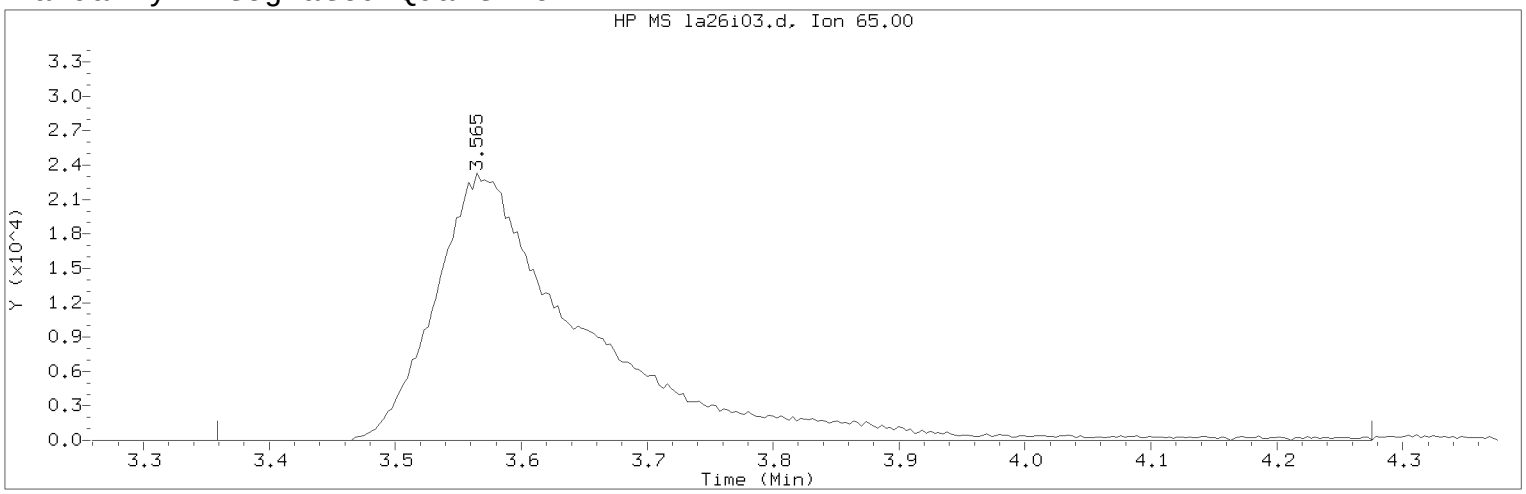
Target 3.5 esignature userKAS02648 Page 131 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

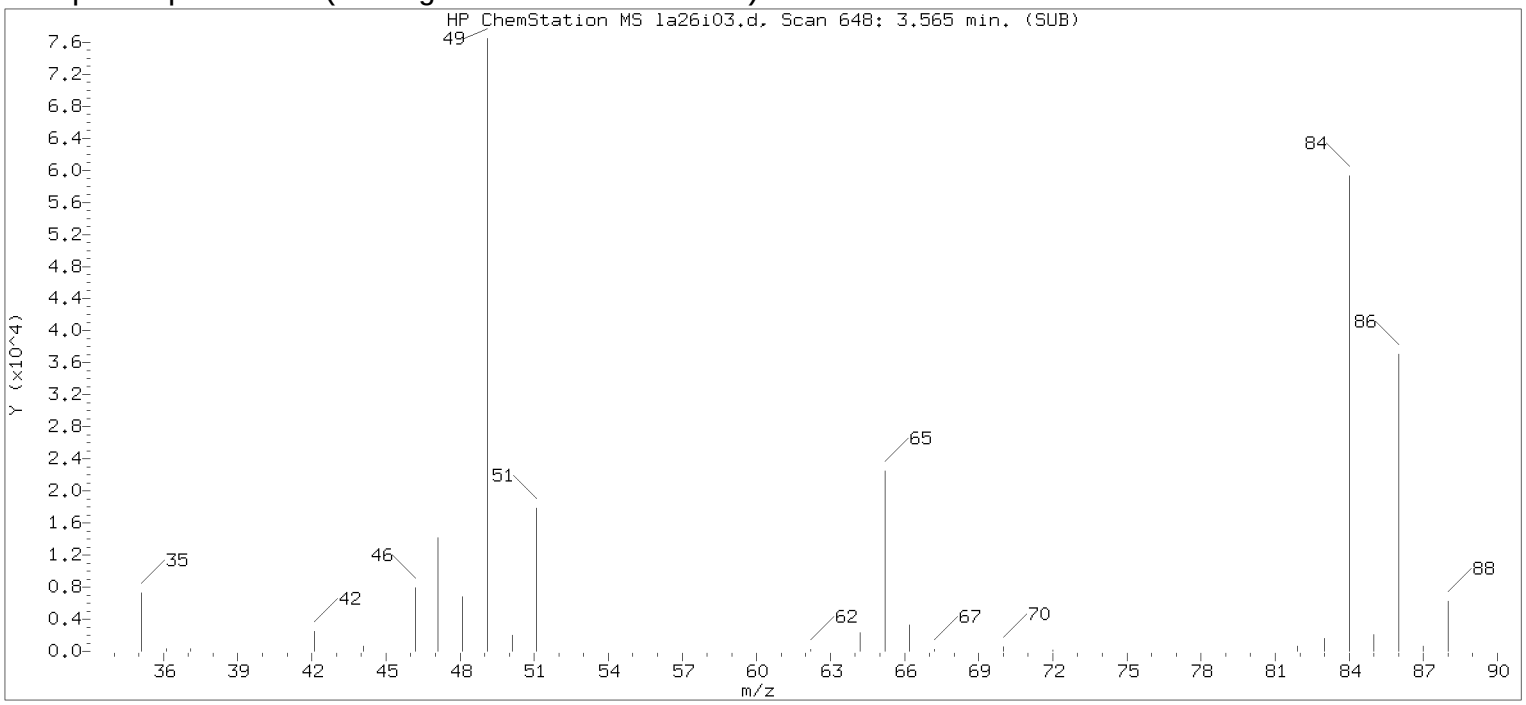
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area (flag) : 194134M
On-Column Amount (ng) : 250.0000
Integration start scan : 583 Integration stop scan: 868
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

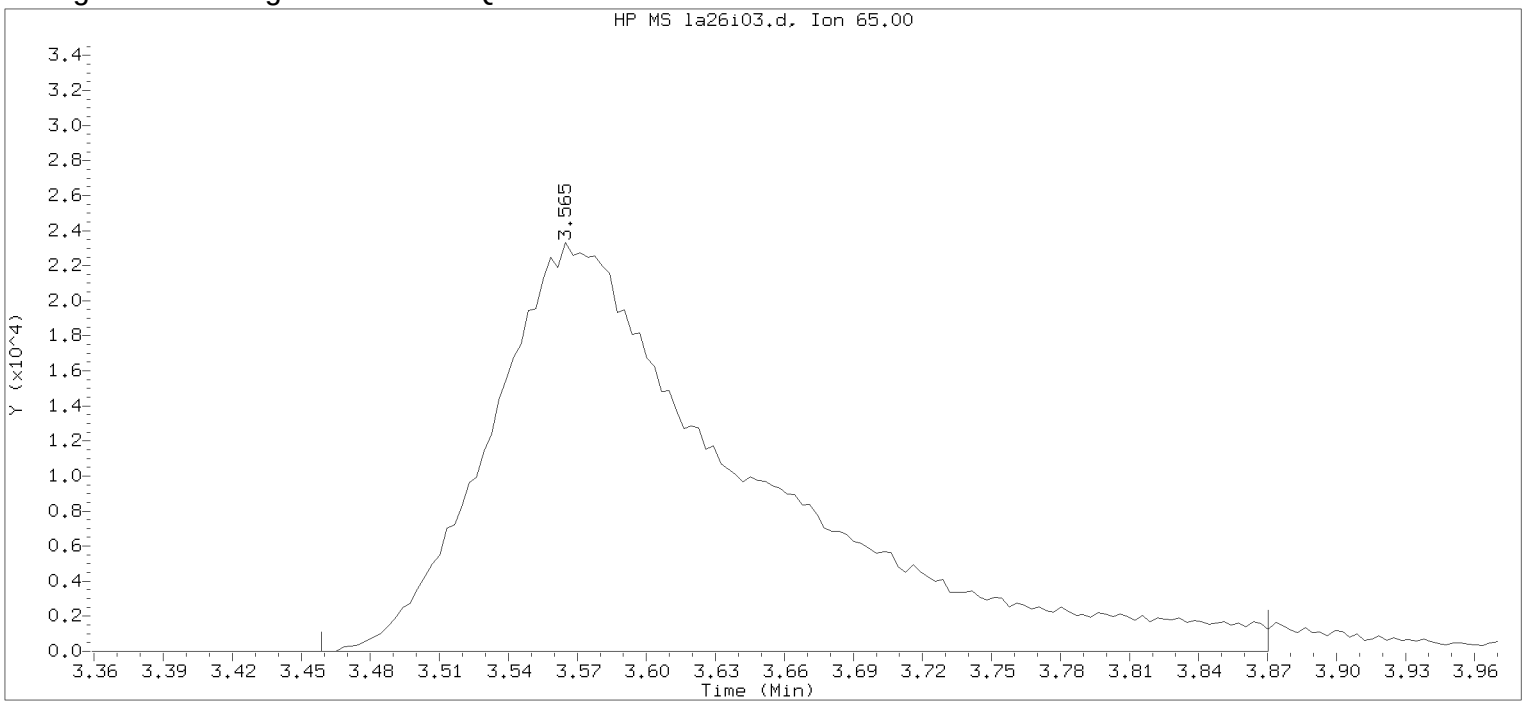
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area : 184407
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 742
Y at integration start : 0 Y at integration end: 0

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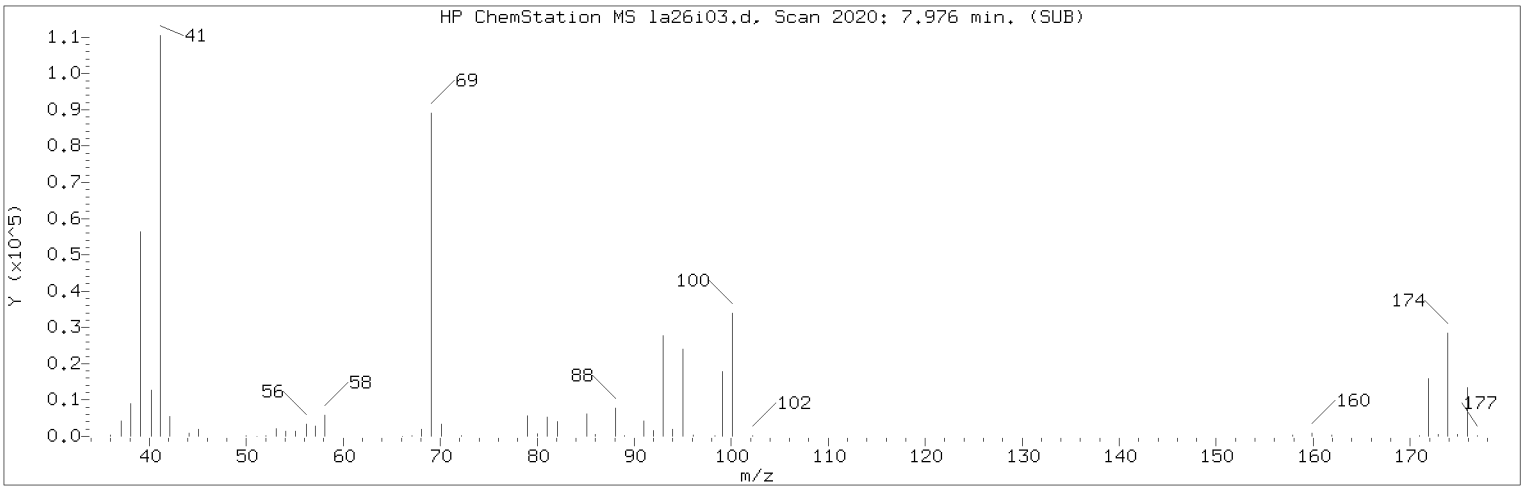
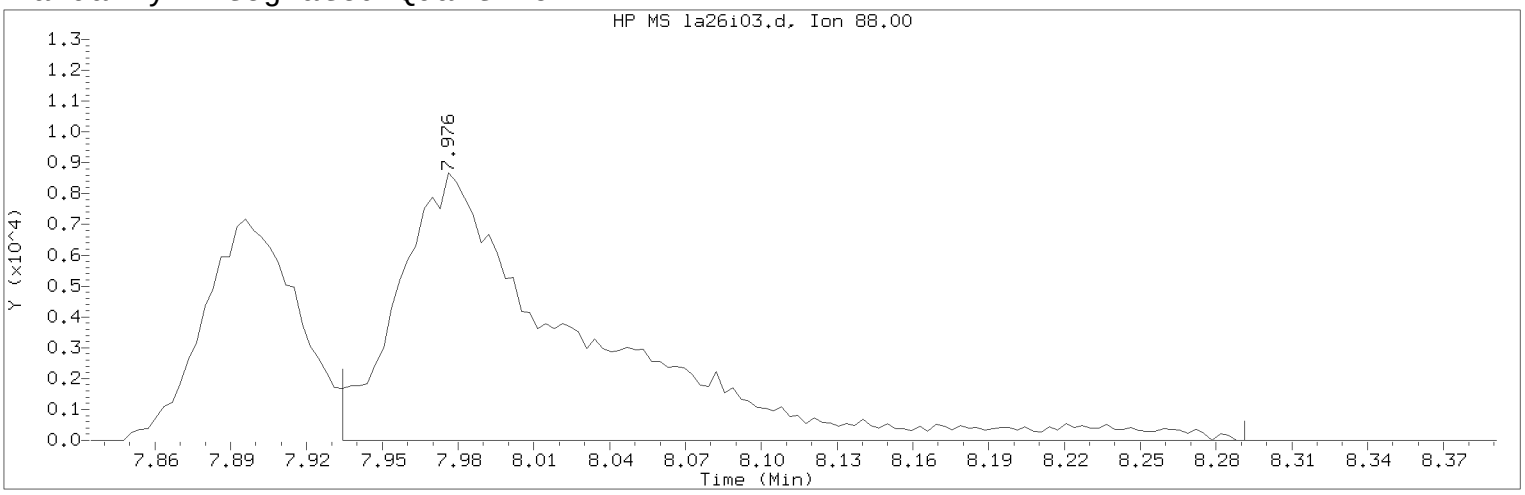
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

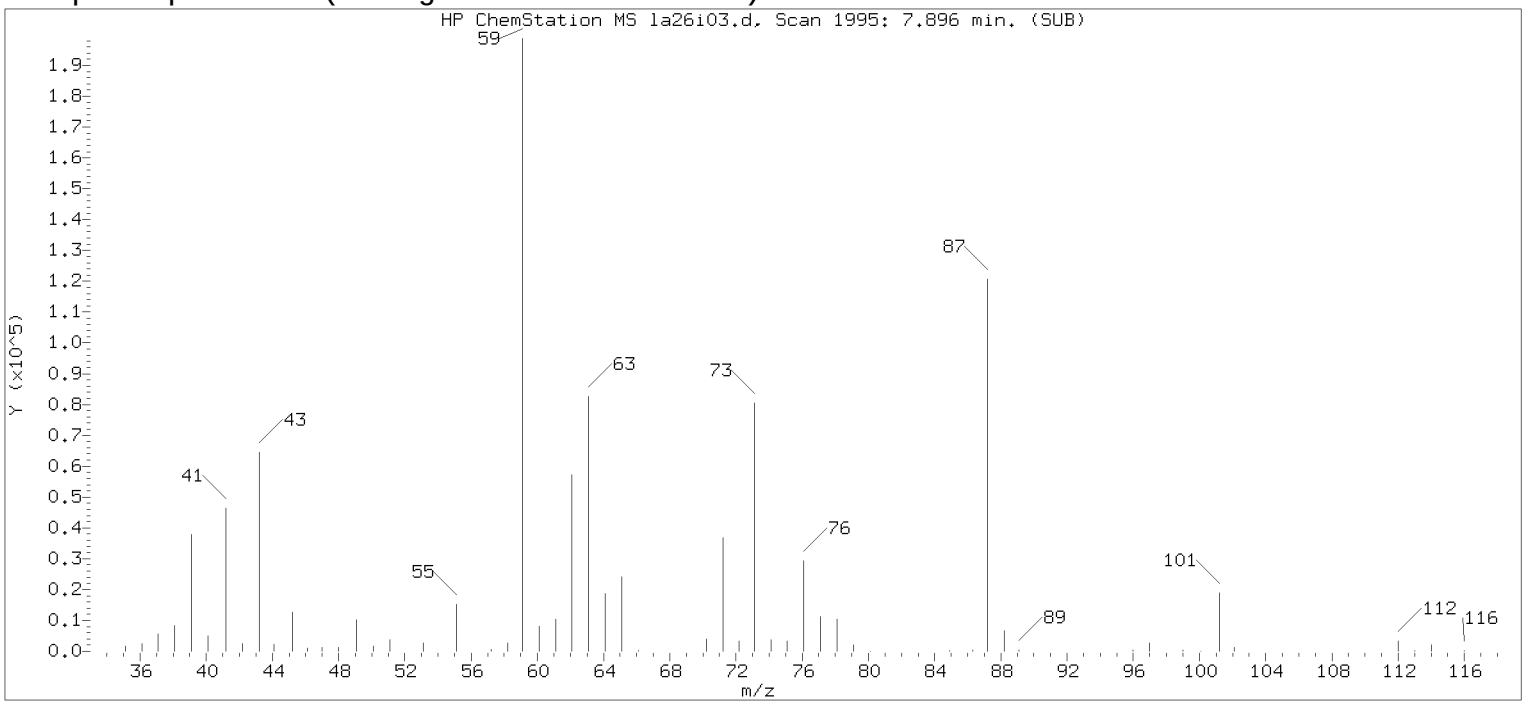
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 43582M
On-Column Amount (ng) : 656.6493
Integration start scan : 2006 Integration stop scan: 2117
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

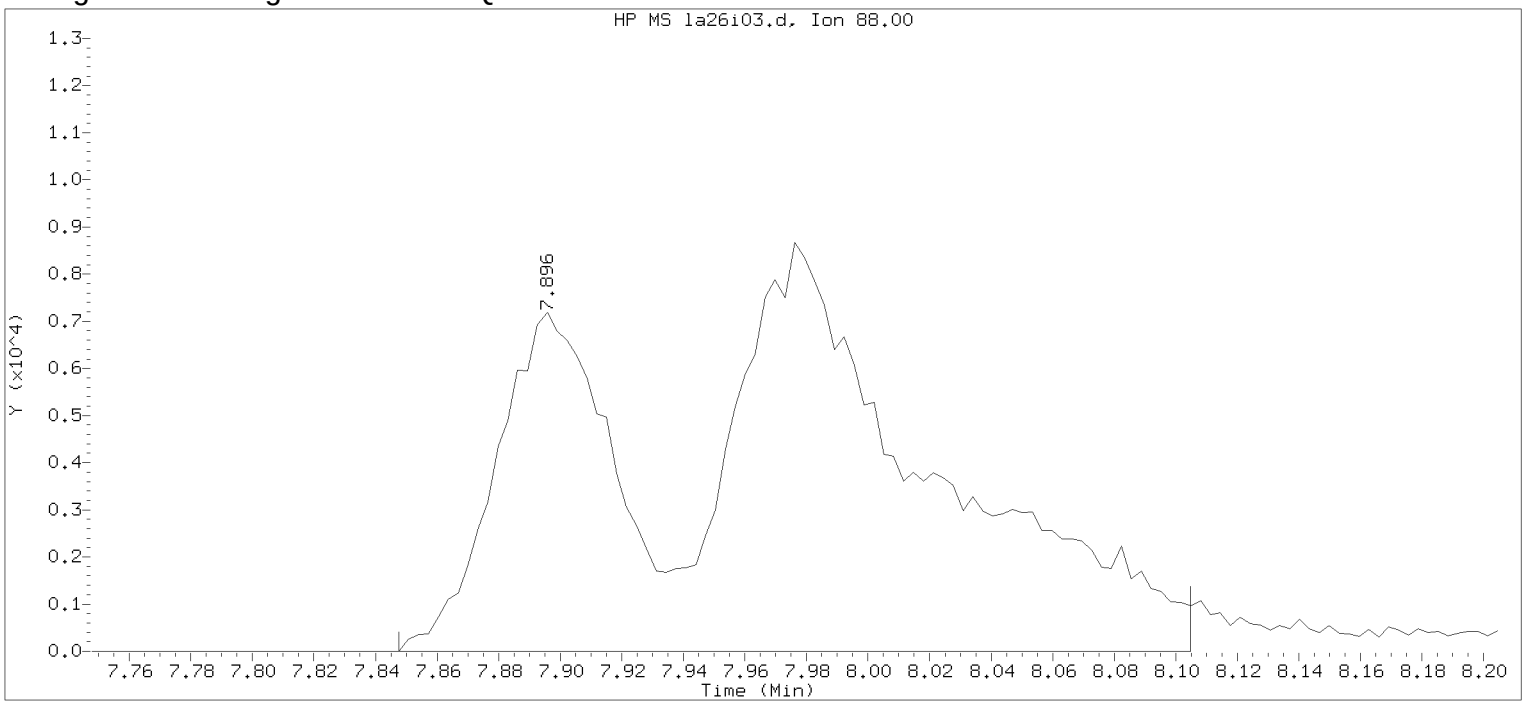
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

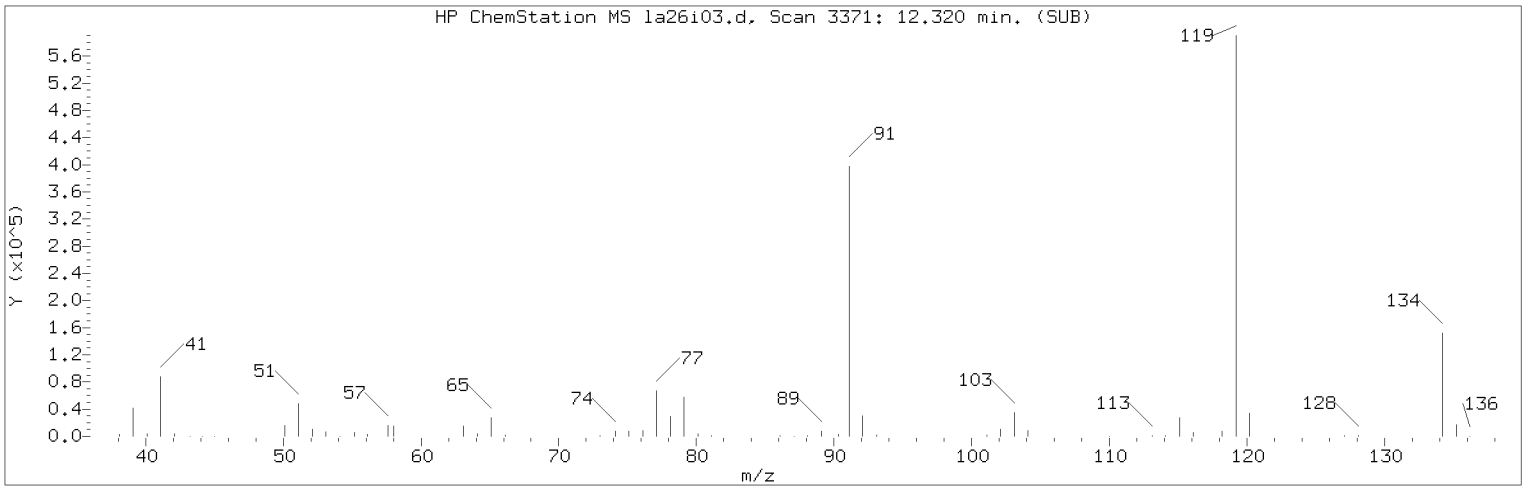
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

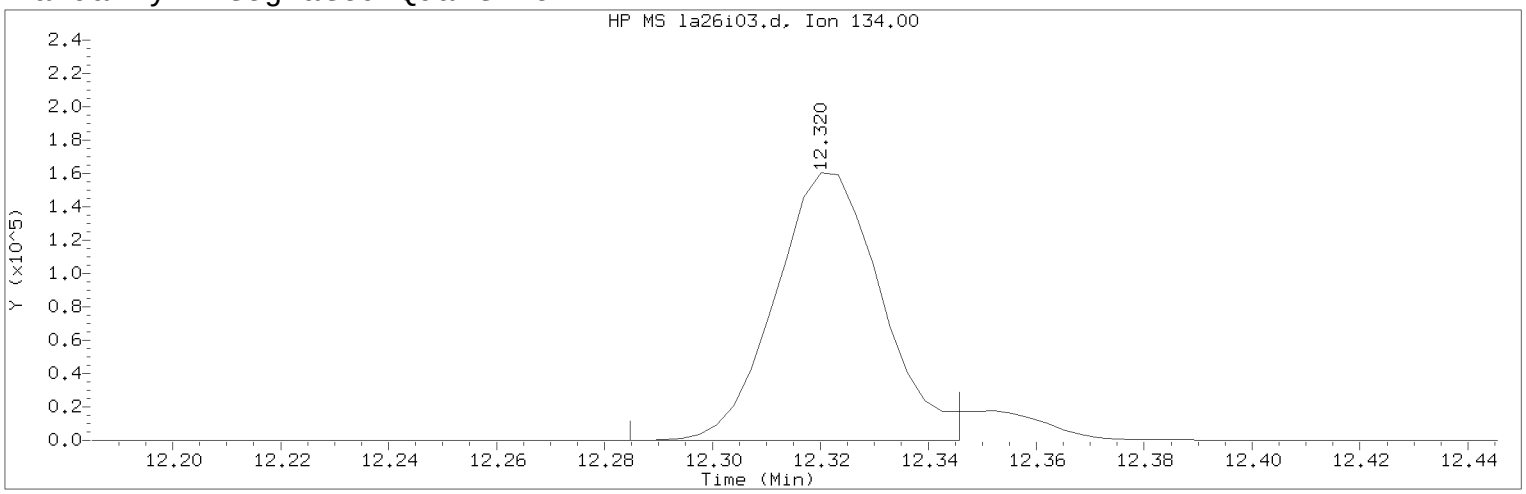
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 57387
On-column Amount (ng) : 846.7526
Integration start scan : 1979 Integration stop scan: 2059
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

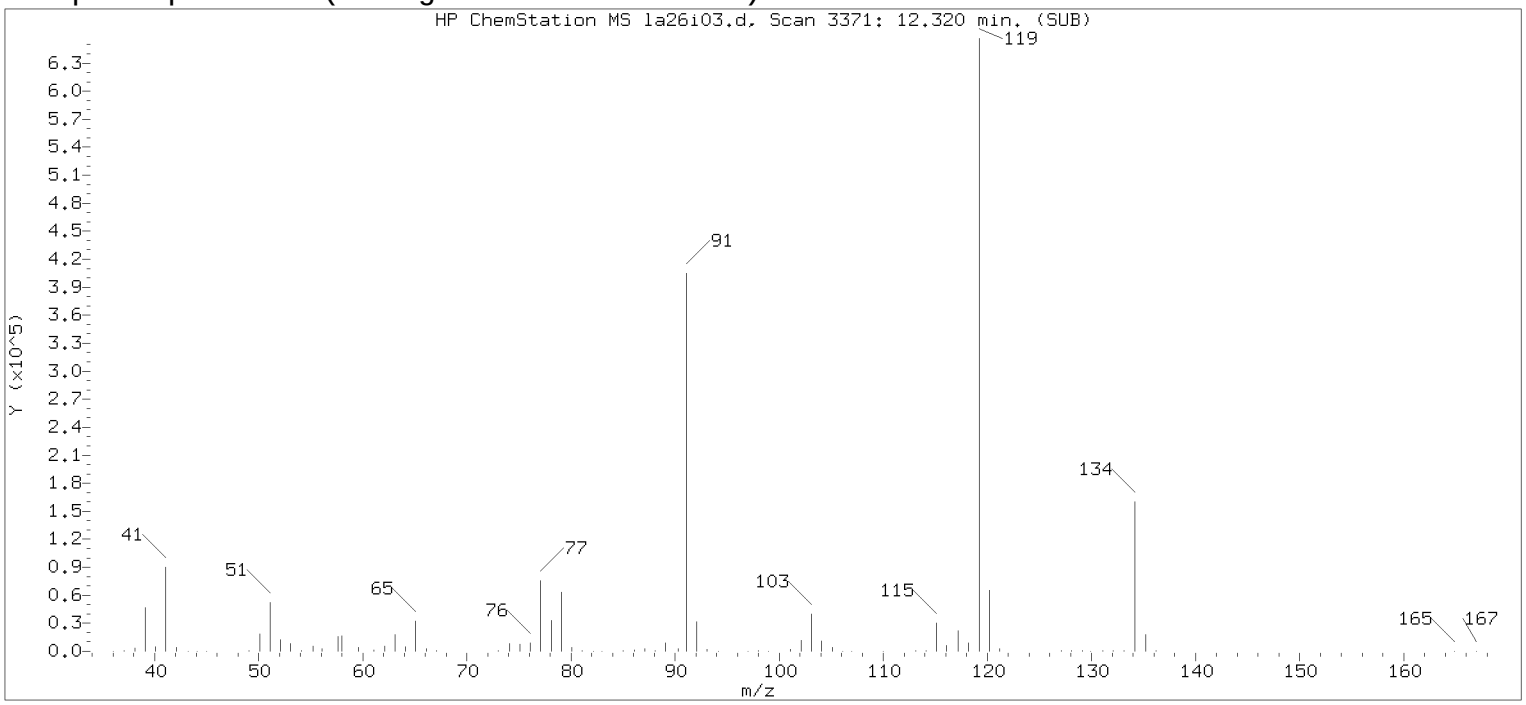
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 219011M
On-Column Amount (ng) : 52.2336
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

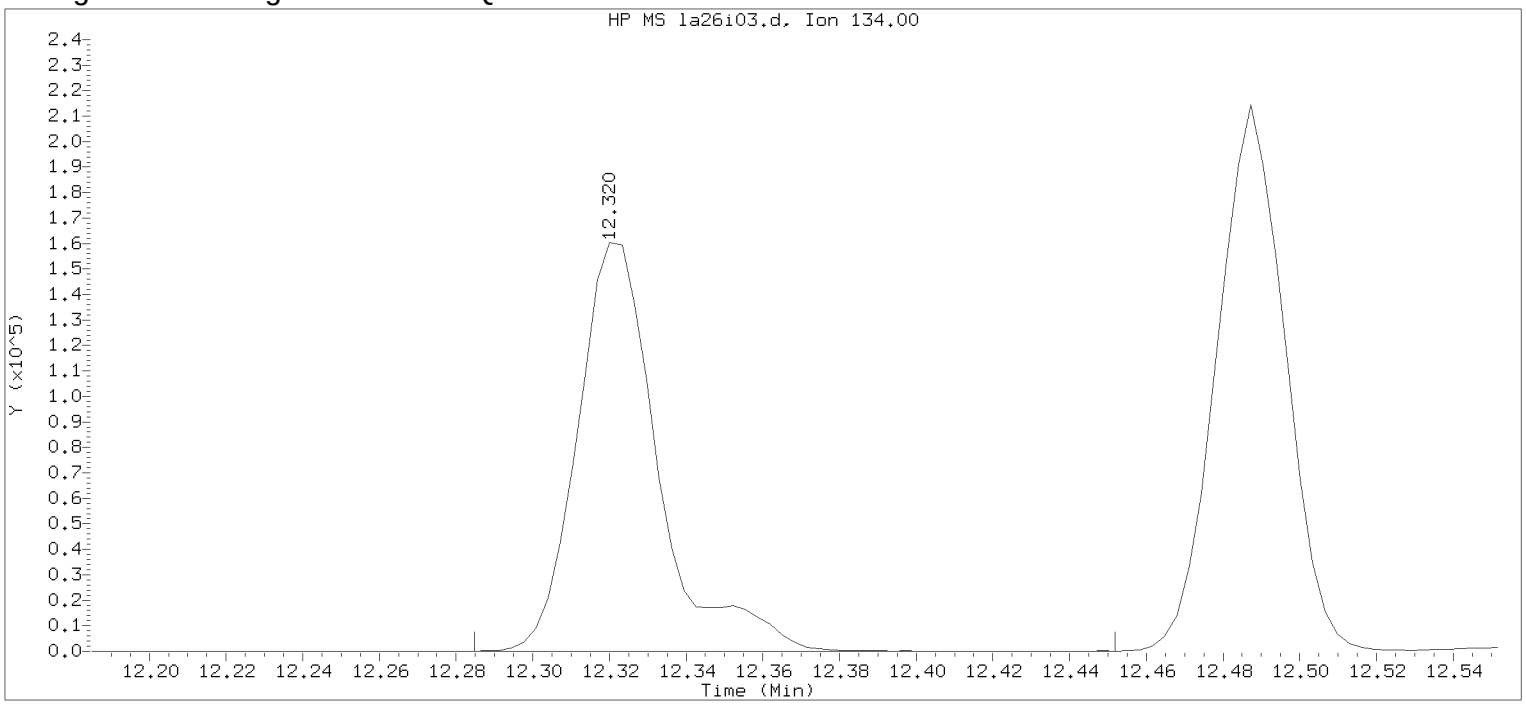
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 236254
On-column Amount (ng) : 52.1386
Integration start scan : 3359 Integration stop scan: 3411
Y at integration start : 0 Y at integration end: 0

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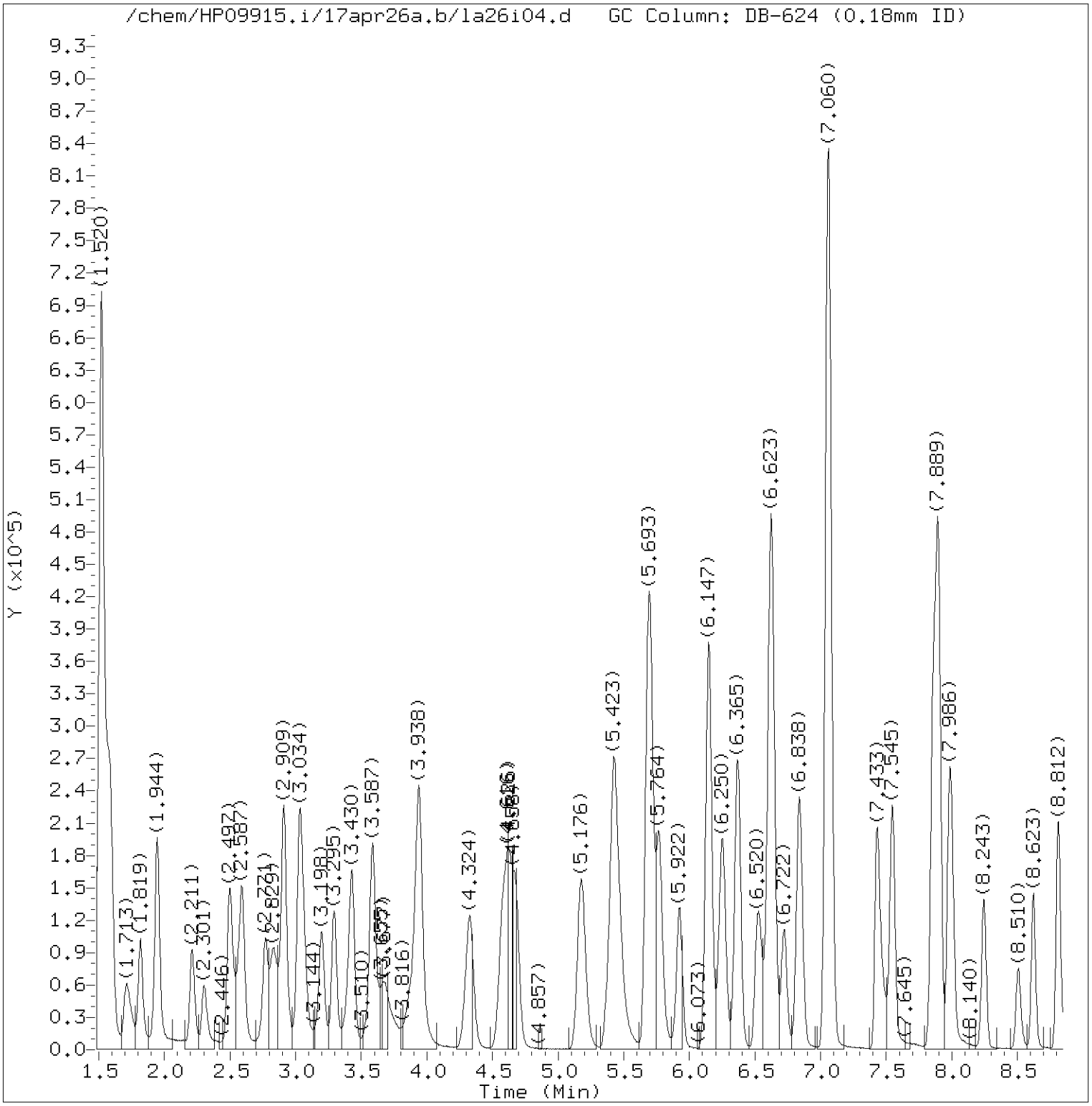
Target 3.5 esignature userKAS02648 Page 138 of 420




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

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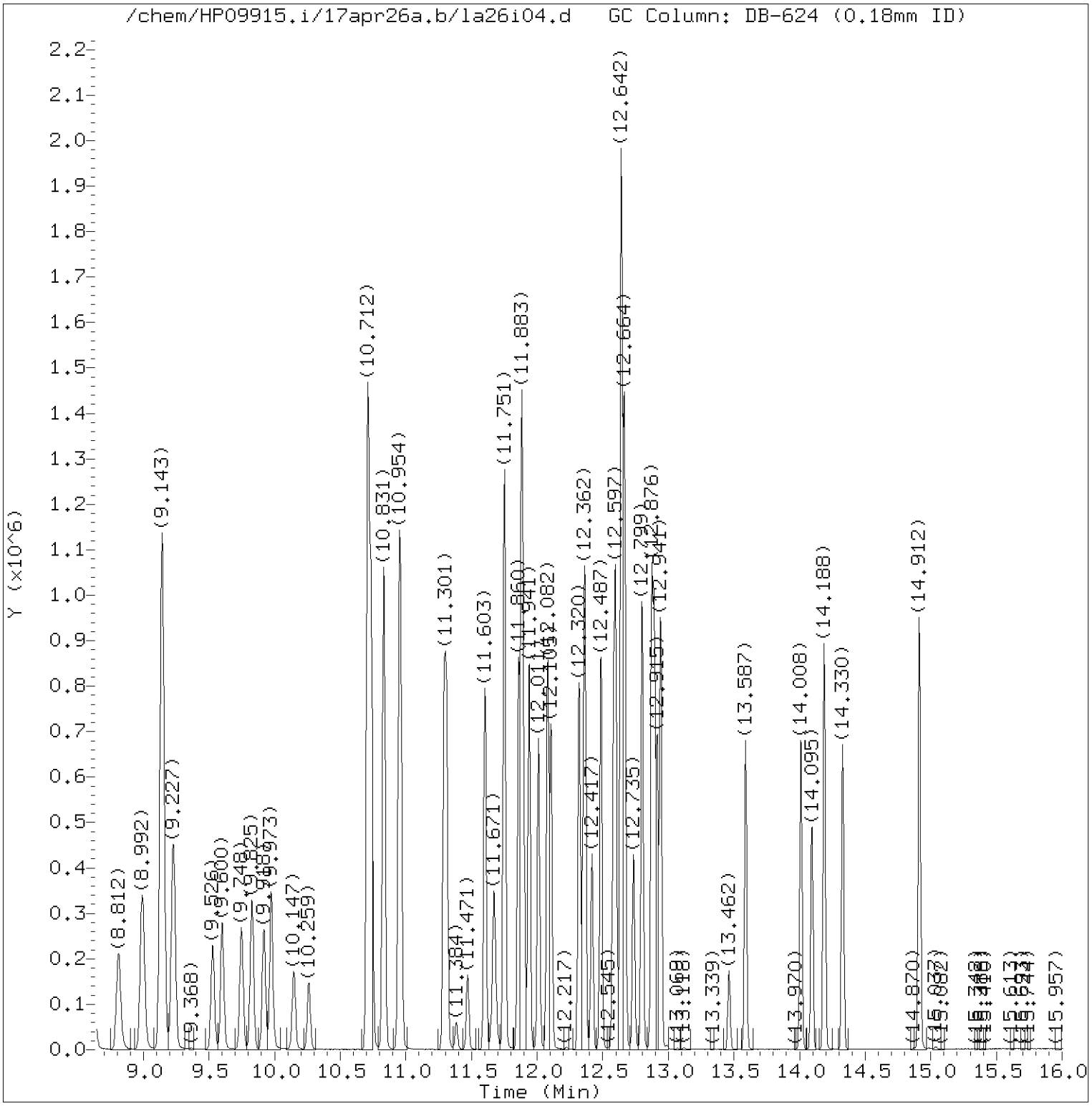
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 118583 | 19.173 |
| 4) Chloromethane | (2) | 1.819 | 50 | 128941 | 20.294 |
| 6) Vinyl Chloride | (2) | 1.935 | 62 | 120731 | 19.678 |
| 5) 1,3-Butadiene | (2) | 1.951 | 39 | 77112 | 20.606 |
| 8) Bromomethane | (2) | 2.208 | 94 | 82440 | 19.978 |
| 9) Chloroethane | (2) | 2.304 | 64 | 69158 | 20.002 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 171864 | 20.378 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 135555 | 19.079 |
| 11) n-Pentane | (2) | 2.594 | 43 | 122151 | 20.876 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 82347 | 20.820 |
| 15) Freon 123a | (2) | 2.829 | 67 | 101357 | 21.421 |
| 16) Acrolein | (1) | 2.909 | 56 | 339968 | 197.002 |
| 17) 1,1-Dichloroethene | (2) | 3.031 | 96 | 78125 | 20.776 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 40512 | 21.281 |
| 18) Acetone | (1) | 3.047 | 58 | 27291 | 36.437 |
| 19) Freon 113 | (2) | 3.060 | 101 | 81156 | 21.442 |
| 21) 2-Propanol | (1) | 3.185 | 45 | 102028M | 205.487 |
| 22) Methyl Iodide | (2) | 3.202 | 142 | 154277 | 21.152 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 258440 | 21.120 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 112854 | 20.678 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 156101 | 20.725 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 210810M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 99182 | 19.966 |
| 30) t-Butyl alcohol | (1) | 3.684 | 59 | 165846 | 203.327 |
| 31) Acrylonitrile | (2) | 3.864 | 53 | 57543 | 20.078 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.928 | 73 | 291785 | 21.181 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 93758 | 21.251 |
| 34) n-Hexane | (2) | 4.324 | 57 | 141702 | 20.952 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 175099 | 21.121 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 338404 | 21.267 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 149170 | 21.331 |
| 40) Ethyl t-butyl ether | (2) | 5.173 | 59 | 293404 | 21.426 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 154336 | 40.218 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 105715 | 20.911 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 117791 | 21.280 |
| 47) Propionitrile | (1) | 5.472 | 54 | 235941 | 198.193 |
| 48) Methacrylonitrile | (2) | 5.697 | 67 | 304947 | 106.722 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 56020 | 21.025 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 38105 | 36.239 |
| 51) Chloroform | (2) | 5.928 | 83 | 166128 | 21.023 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 250917 | 49.492 |
| 52)$Dibromofluoromethane | (2) | 6.150 | 111 | 257391 | 49.544 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 151774 | 21.019 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 199473 | 42.162 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 173572 | 21.111 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 142535 | 20.944 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 50722 | 21.283 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 111699 | 21.191 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 136486 | 21.236 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 151646 | 529.527 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 62253 | 49.379 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 297412 | 49.874 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.619 | 104 | 39719 | 49.671 |
| 60) Benzene | (2) | 6.632 | 78 | 401463 | 21.190 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 62 | 133462 | 20.822 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 13310 | 23.551 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 290768 | 21.394 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1038230 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 152105 | 20.088 |
| 69) n-Butanol | (1) | 7.433 | 56 | 248560 | 1076.679 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 101480 | 20.726 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 182363 | 21.139 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 81992 | 21.061 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 109388 | 21.091 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 44394M | 615.972 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 93921 | 21.156 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 67846 | 20.801 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 122710 | 20.847 |
| 79) 2-Nitropropane | (2) | 8.510 | 41 | 64758 | 38.797 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 85040 | 21.330 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 163005 | 21.247 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 328366 | 41.523 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1021680 | 50.425 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 671346 | 50.293 |
| 88) Toluene | (3) | 9.230 | 92 | 253889 | 21.563 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 141943 | 21.499 |

M = Compound was manually integrated.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 162375 | 21.835 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 96297 | 21.224 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 112611 | 21.624 |
| 94) 1,3-Dichloropropane | (3) | 9.922 | 76 | 167817 | 21.316 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 247487 | 43.545 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 304948 | 42.746 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 98456 | 20.950 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 106400 | 21.421 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 793538 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 135630 | 20.058 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 291376 | 21.446 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 95498 | 21.285 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 487509 | 21.465 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 379488 | 42.918 |
| 107) o-Xylene | (3) | 11.291 | 106 | 188046 | 21.385 |
| 109) Styrene | (3) | 11.311 | 104 | 319117 | 21.953 |
| 110) Bromoform | (3) | 11.471 | 173 | 71969 | 21.091 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 478133 | 21.275 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 150358 | 553.057 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 378161 | 50.214 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 329178 | 49.831 |
| 108) Xylene (Total) | (3) | | 106 | 567534 | 64.303 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 161347 | 21.366 |
| 115) Bromobenzene | (4) | 11.864 | 156 | 129515 | 21.297 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 232678 | 107.529 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 44888 | 21.028 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 568331 | 21.150 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 117207 | 20.958 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 406477 | 21.213 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 123204 | 21.167 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 85014M | 20.525 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 68219 | 20.861 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 416404 | 21.097 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 508544 | 20.806 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 241164 | 20.830 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 448274 | 20.772 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 425437 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 250724 | 20.943 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 442708 | 21.408 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 258669 | 21.844 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 278453 | 21.596 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 288580 | 21.313 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 220740 | 20.475 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 238492 | 20.956 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 232437 | 21.421 |
| 141) Diethylbenzene (total) | (4) | | 100 | 799470 | 64.331 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 34158 | 21.389 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 186215 | 20.182 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 183451 | 20.496 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 78778 | 20.266 |
| 148) Naphthalene | (4) | 14.188 | 128 | 577965 | 21.399 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 179538 | 20.792 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 382427 | 21.897 |



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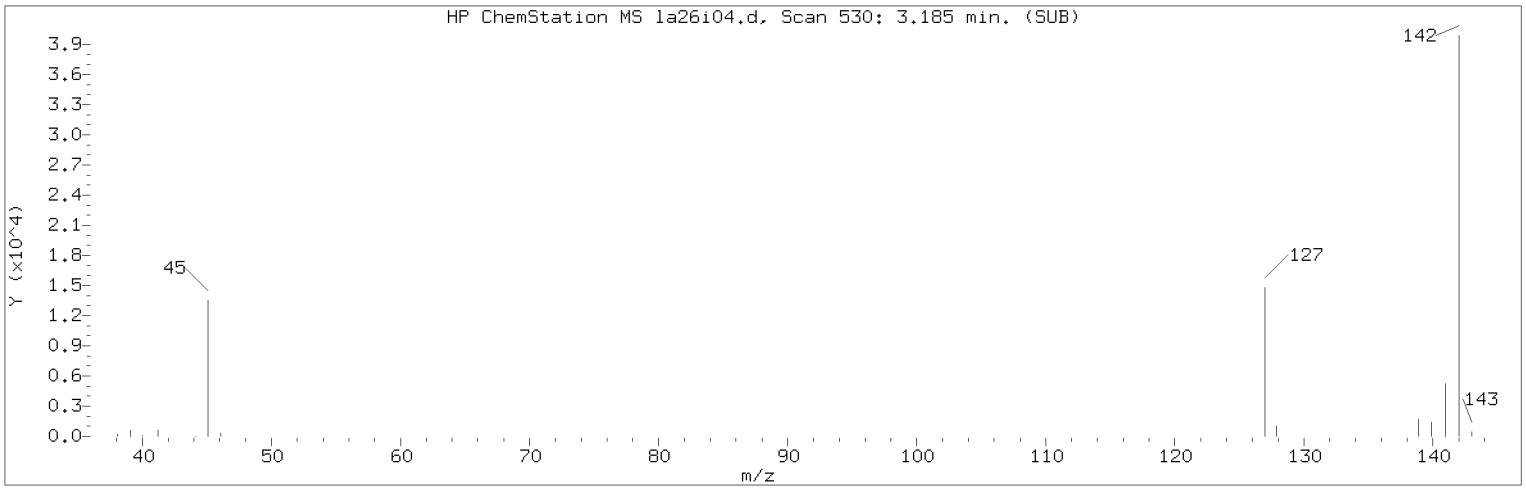
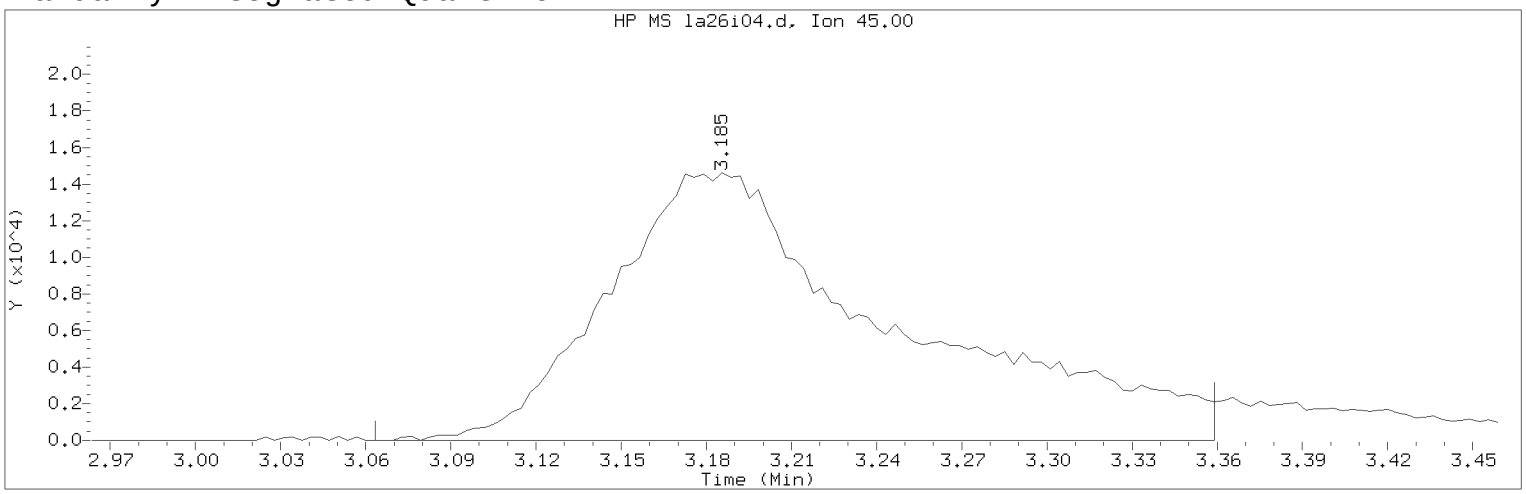
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

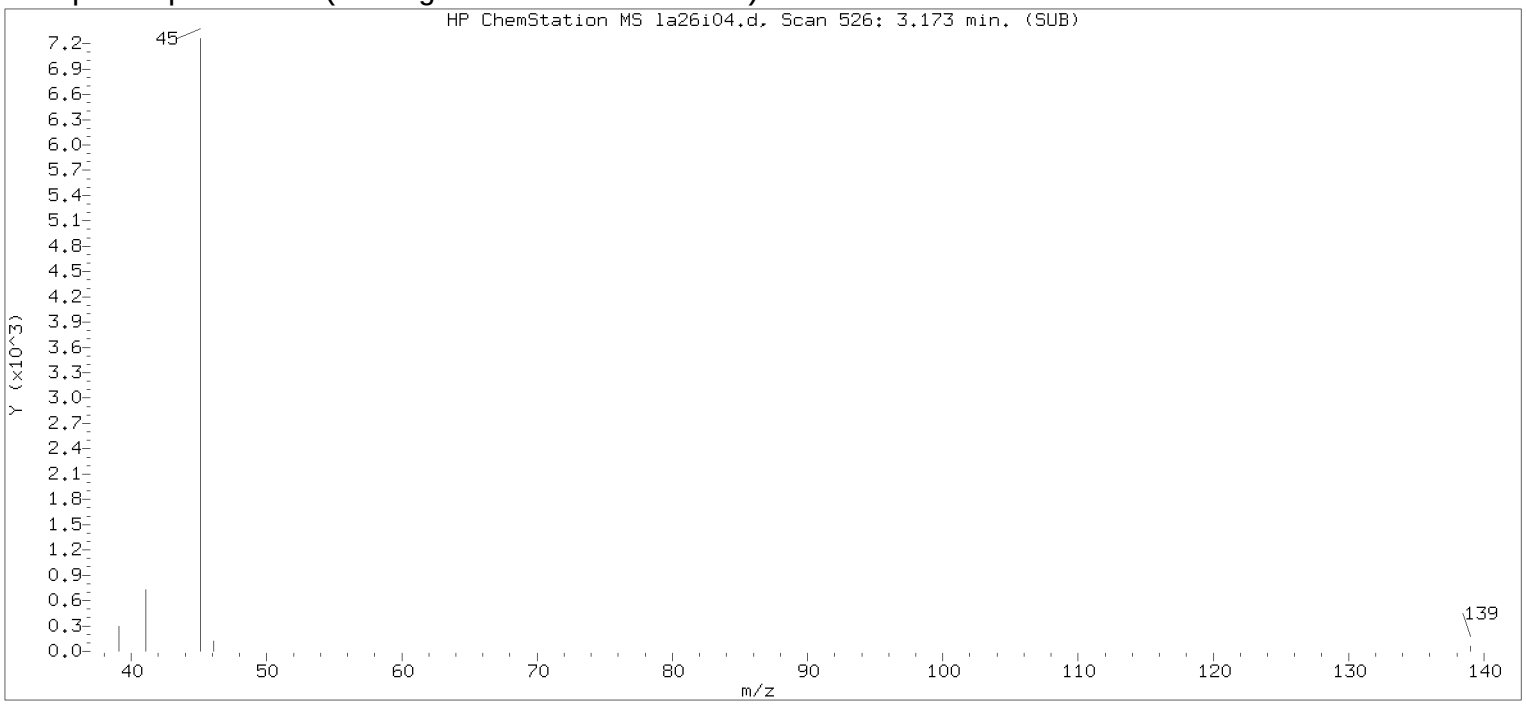
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 530
Retention Time (minutes): 3.185
Quant Ion : 45.00
Area (flag) : 102028M
On-Column Amount (ng) : 205.4874
Integration start scan : 491 Integration stop scan: 583
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

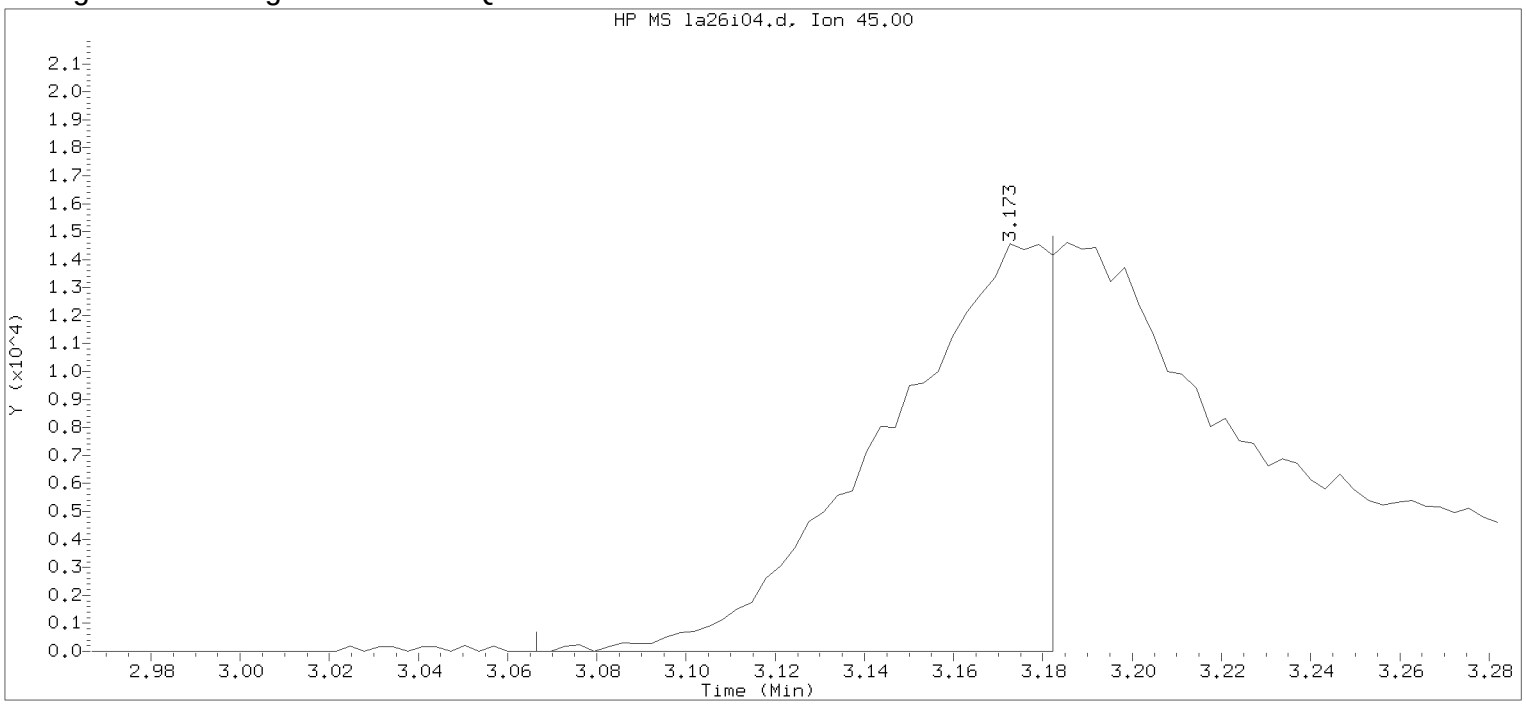
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 526
Retention Time (minutes): 3.173
Quant Ion : 45.00
Area : 36897
On-column Amount (ng) : 95.5026
Integration start scan : 492 Integration stop scan: 528
Y at integration start : 0 Y at integration end: 0

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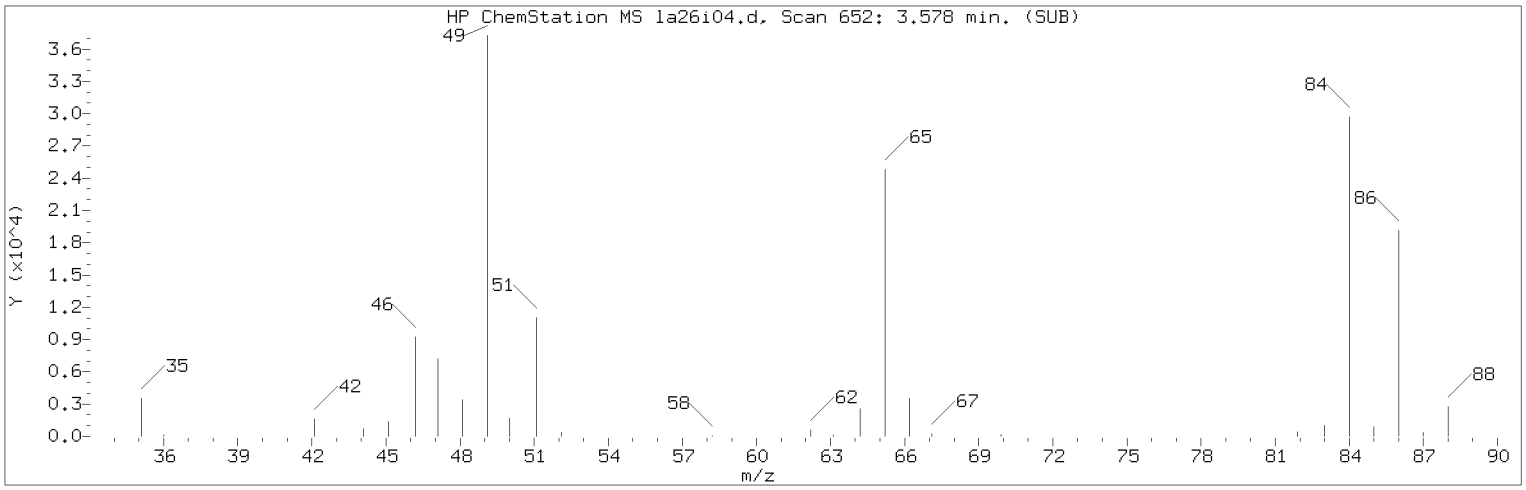
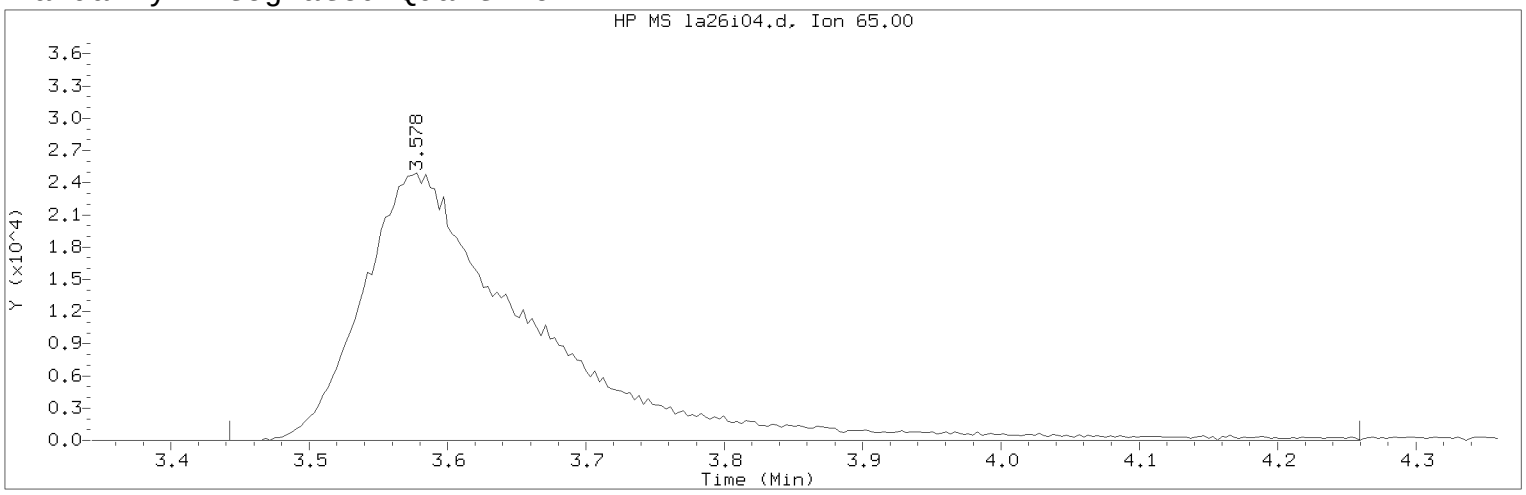
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020  Lab Sample ID: VSTD020

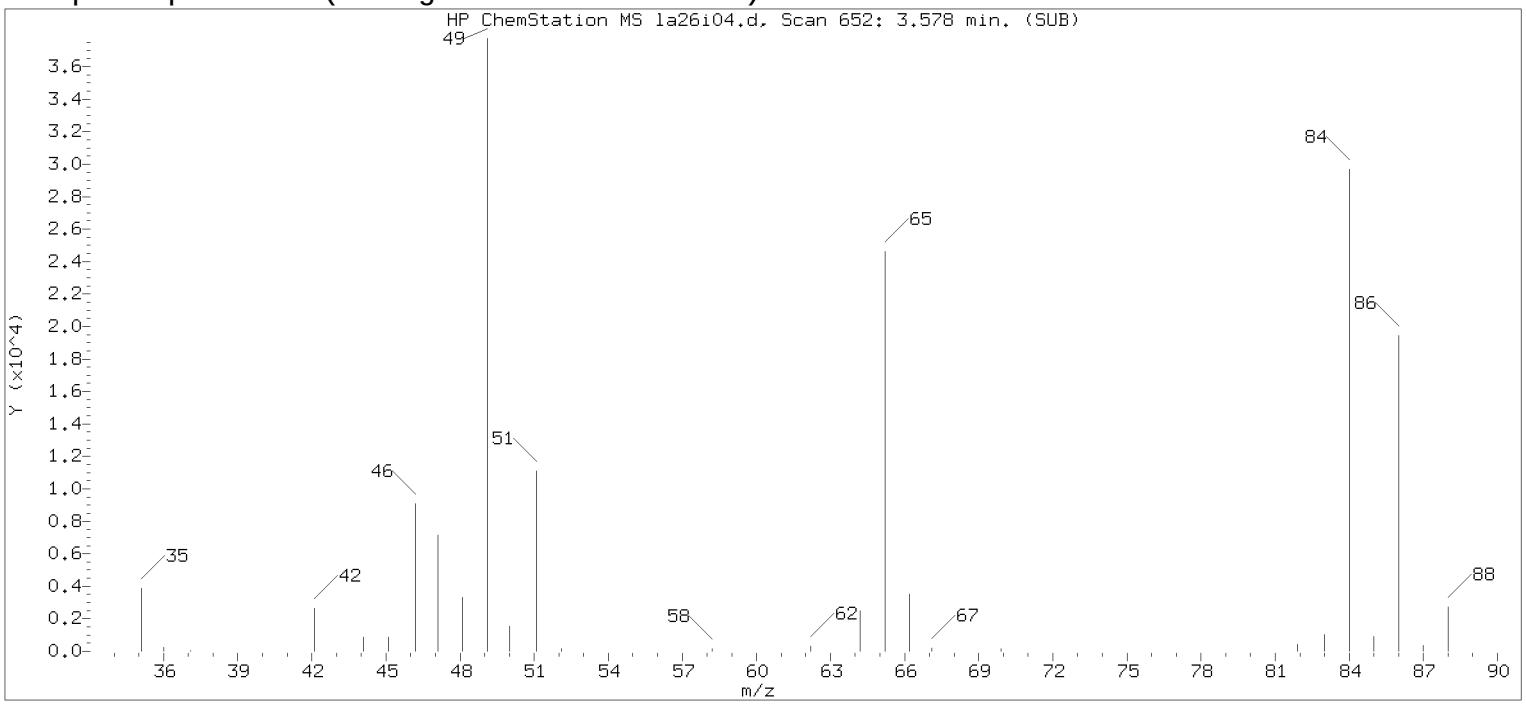
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area (flag) : 210810M
On-Column Amount (ng) : 250.0000
Integration start scan : 609  Integration stop scan: 863
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

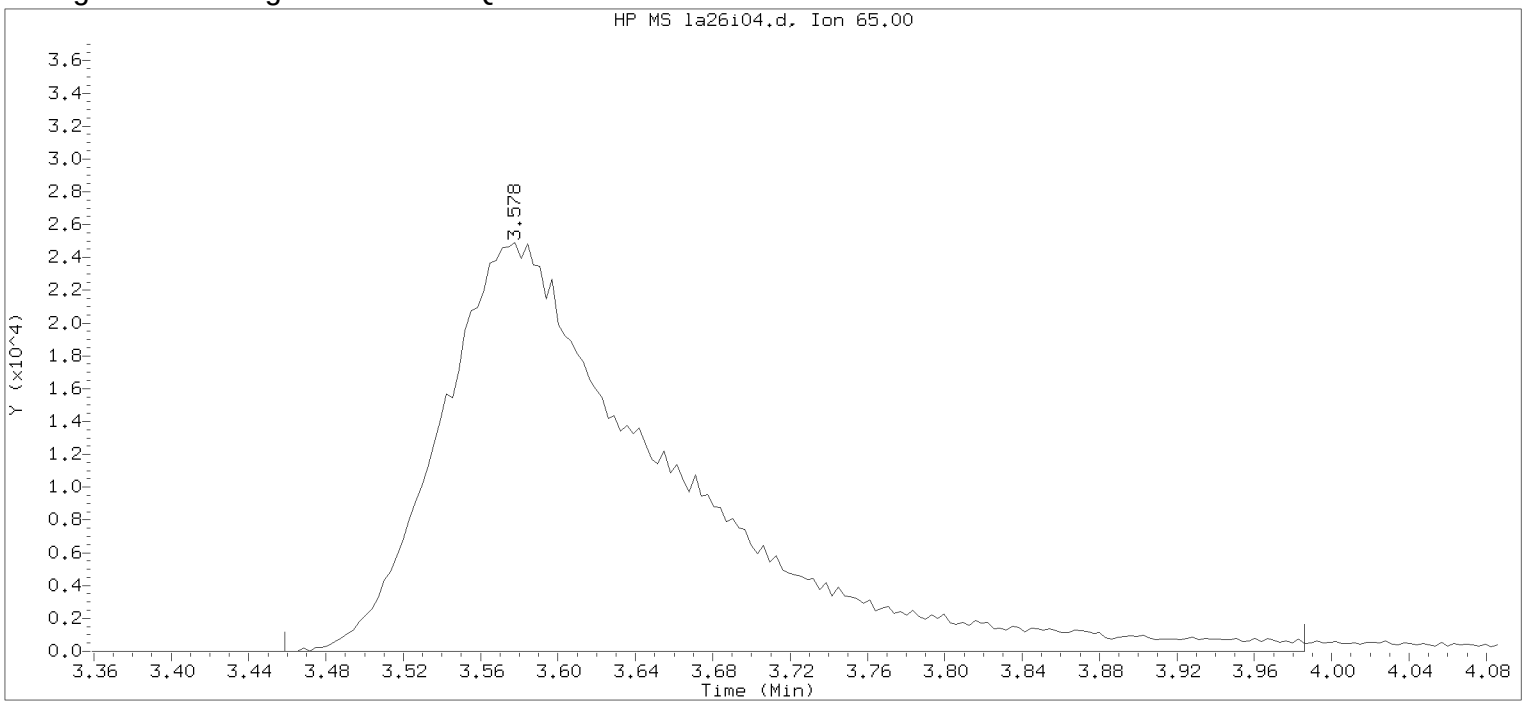
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

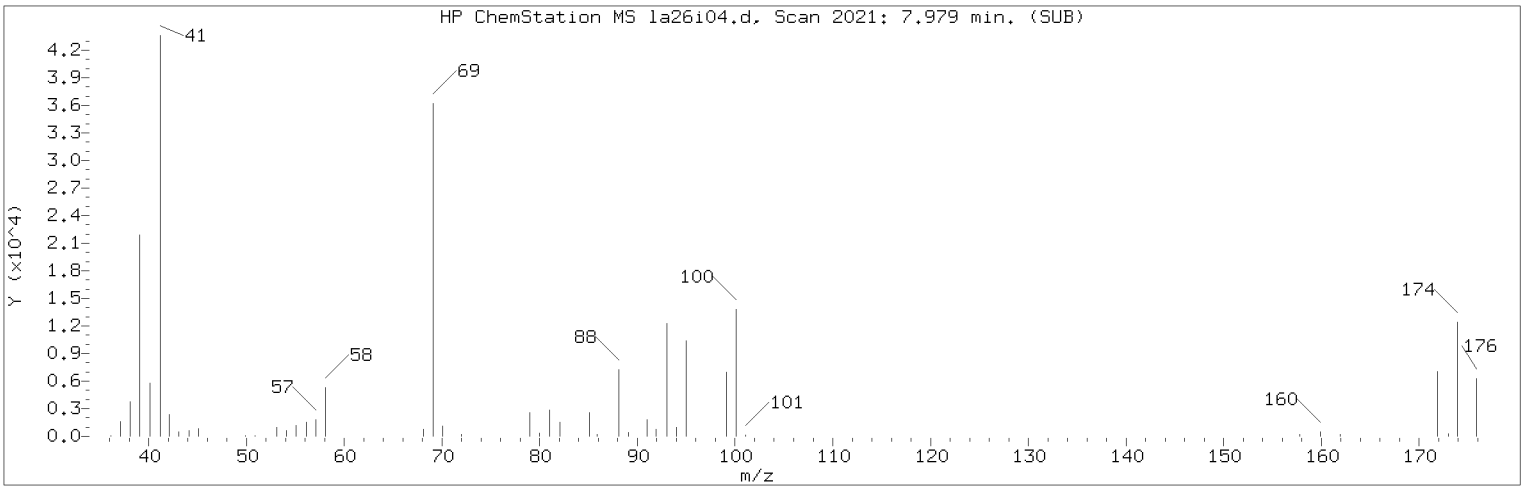
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

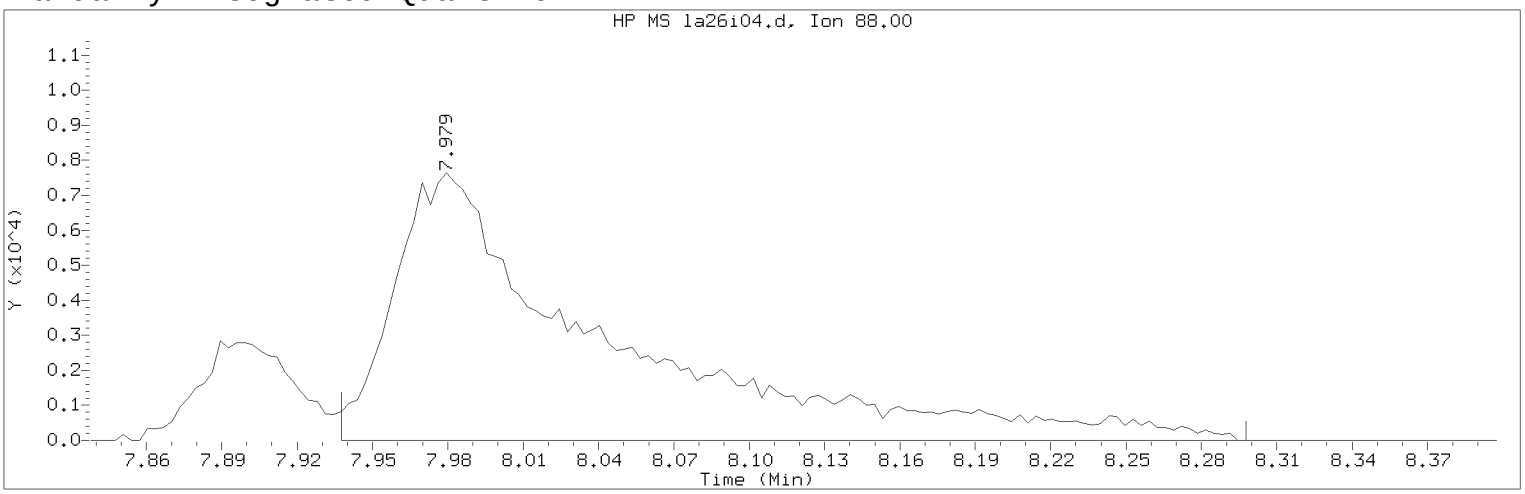
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 205251
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 778
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

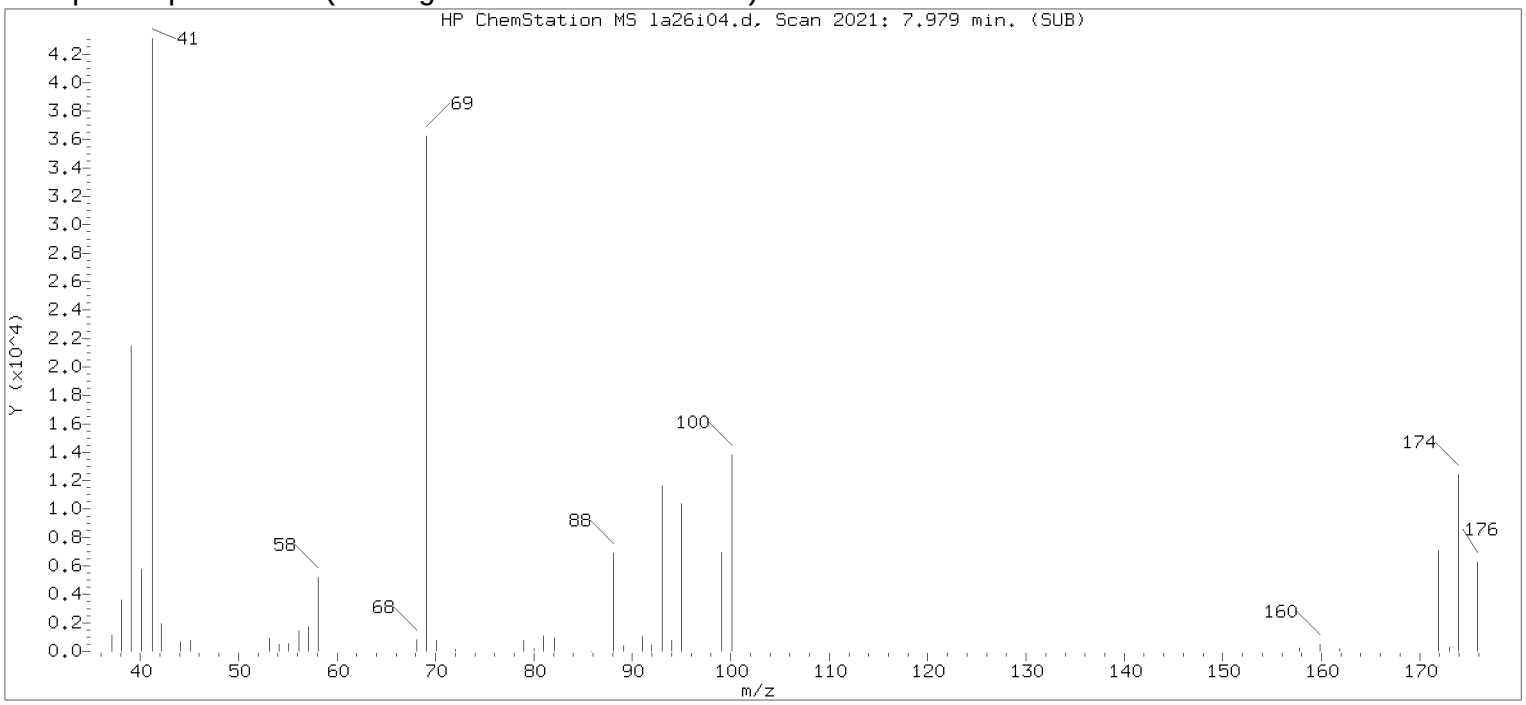
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area (flag) : 44394M
On-Column Amount (ng) : 615.9721
Integration start scan : 2007 Integration stop scan: 2119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

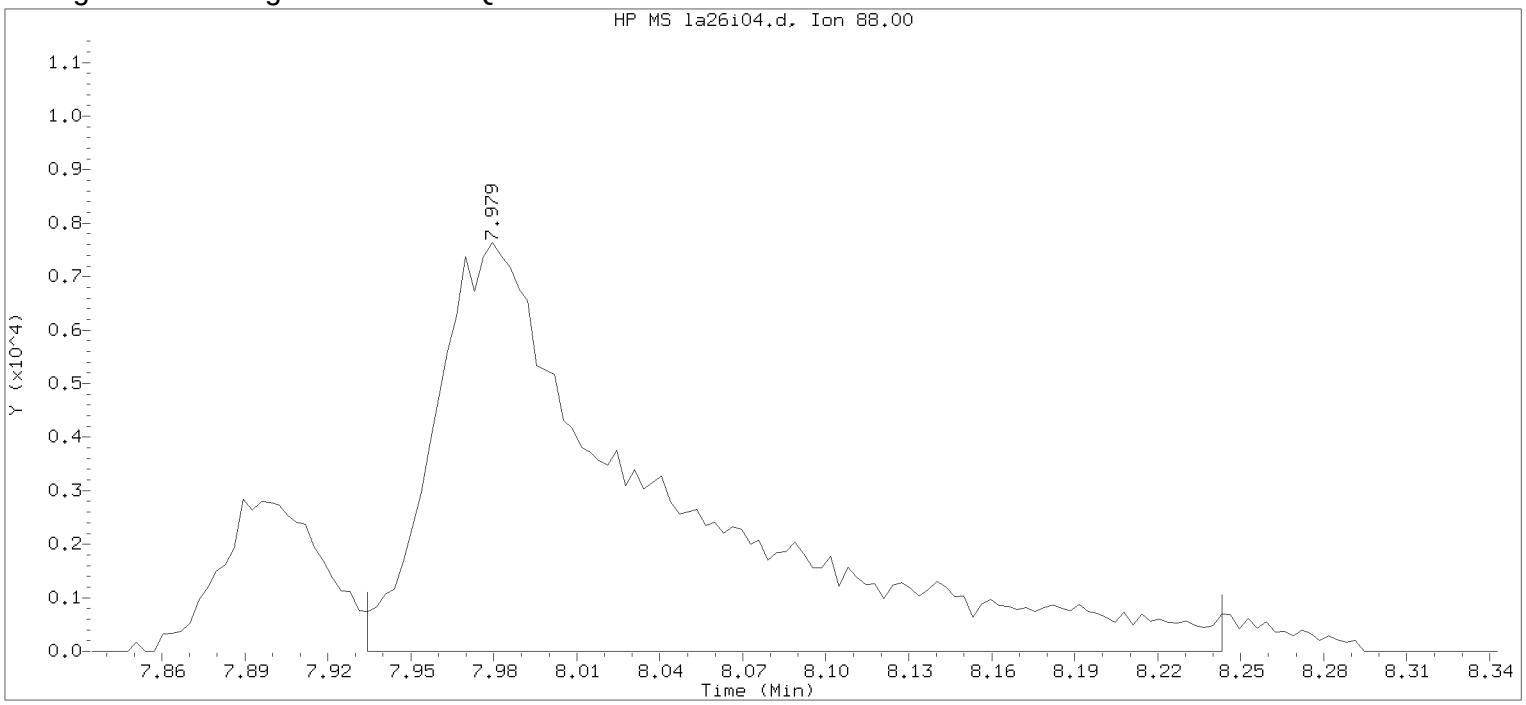
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area : 43334
On-column Amount (ng) : 533.8251
Integration start scan : 2006 Integration stop scan: 2102
Y at integration start : 0 Y at integration end: 0

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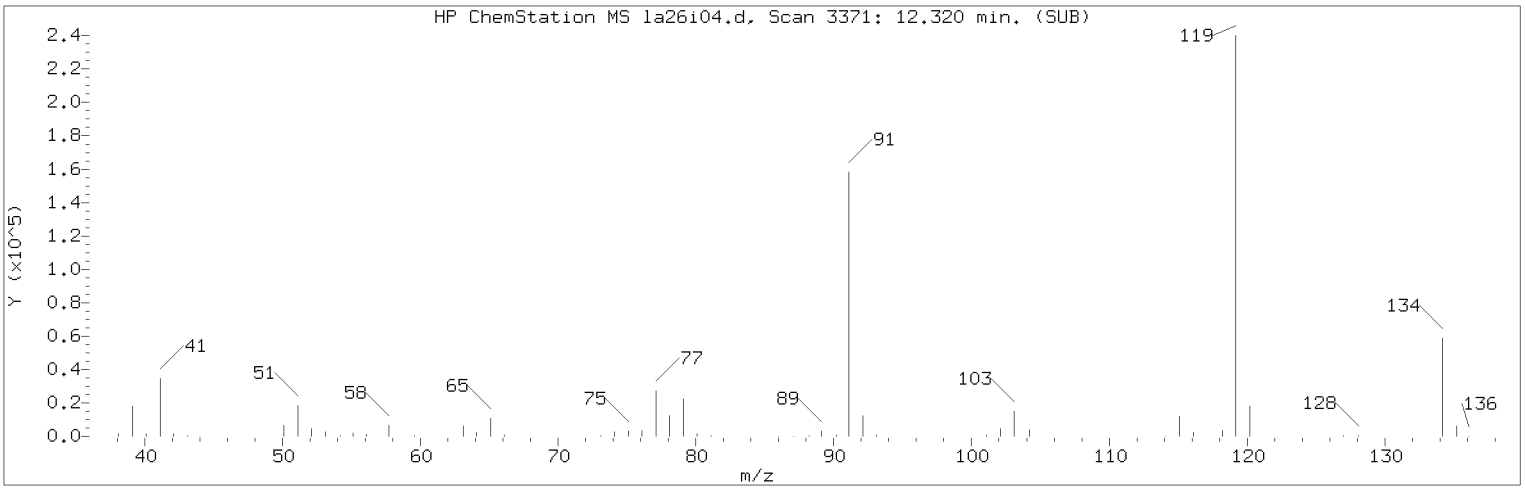
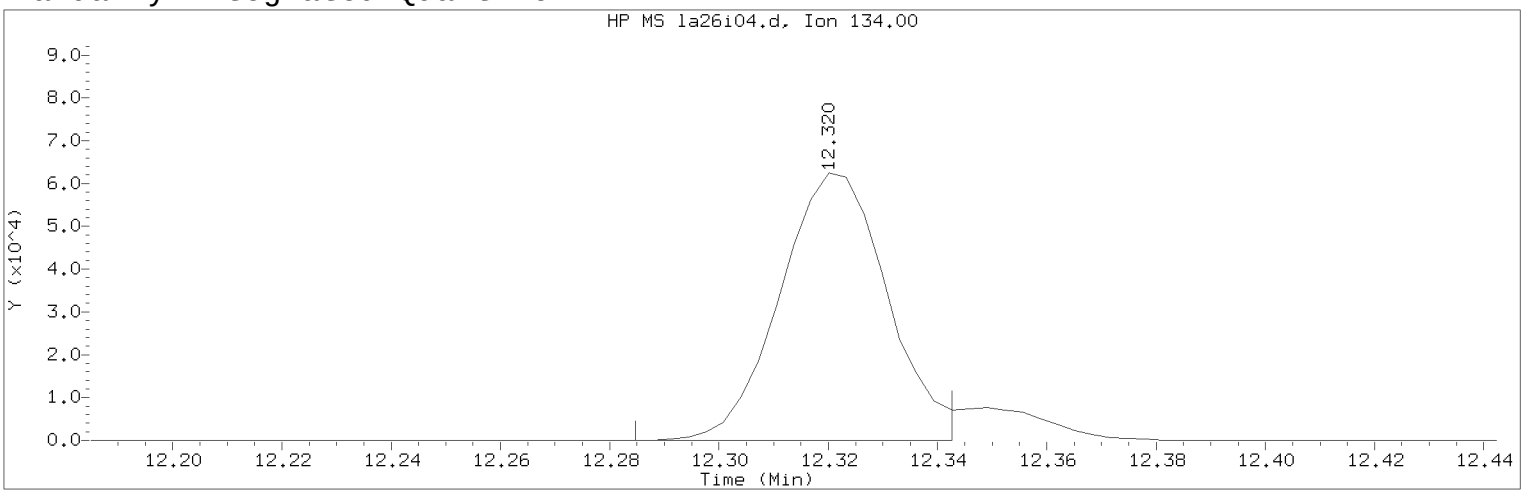
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

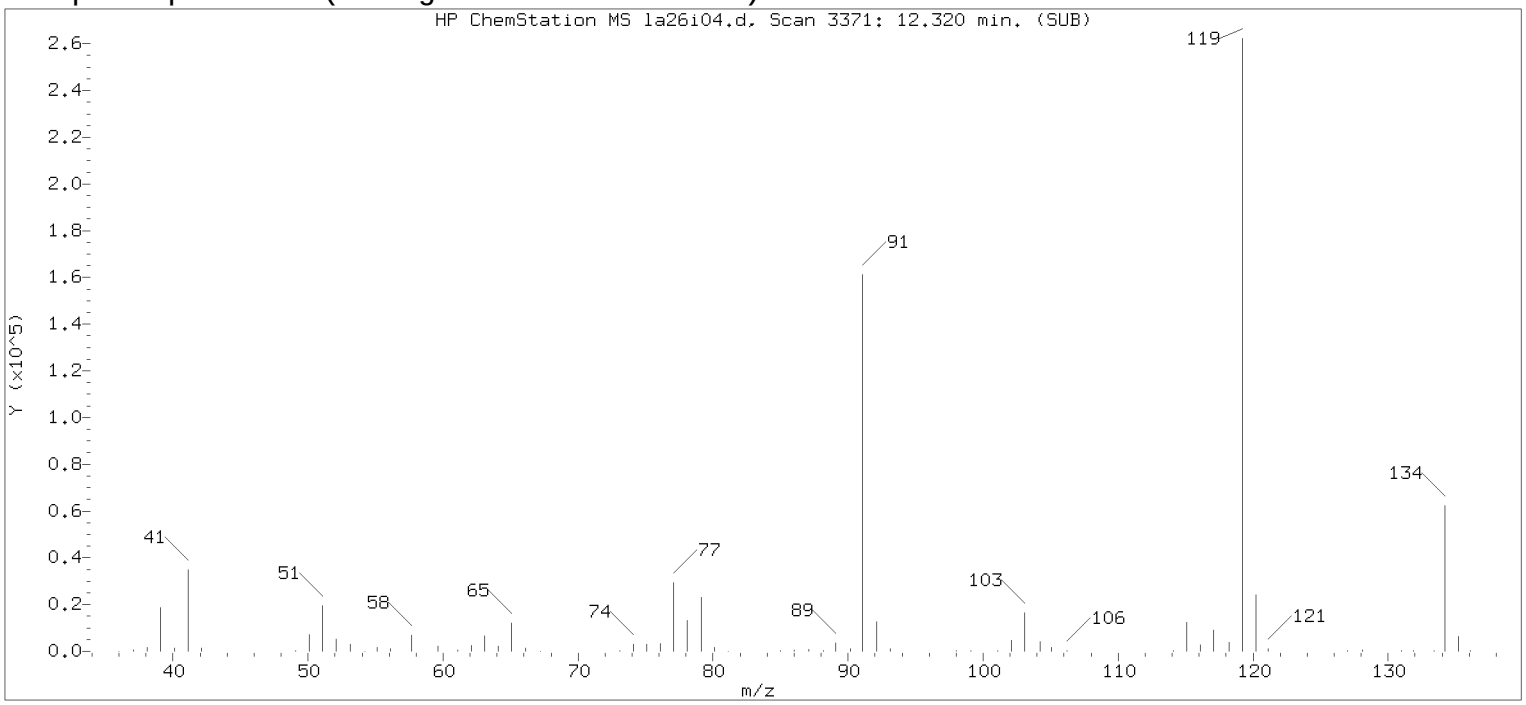
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 85014M
On-Column Amount (ng) : 20.5247
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

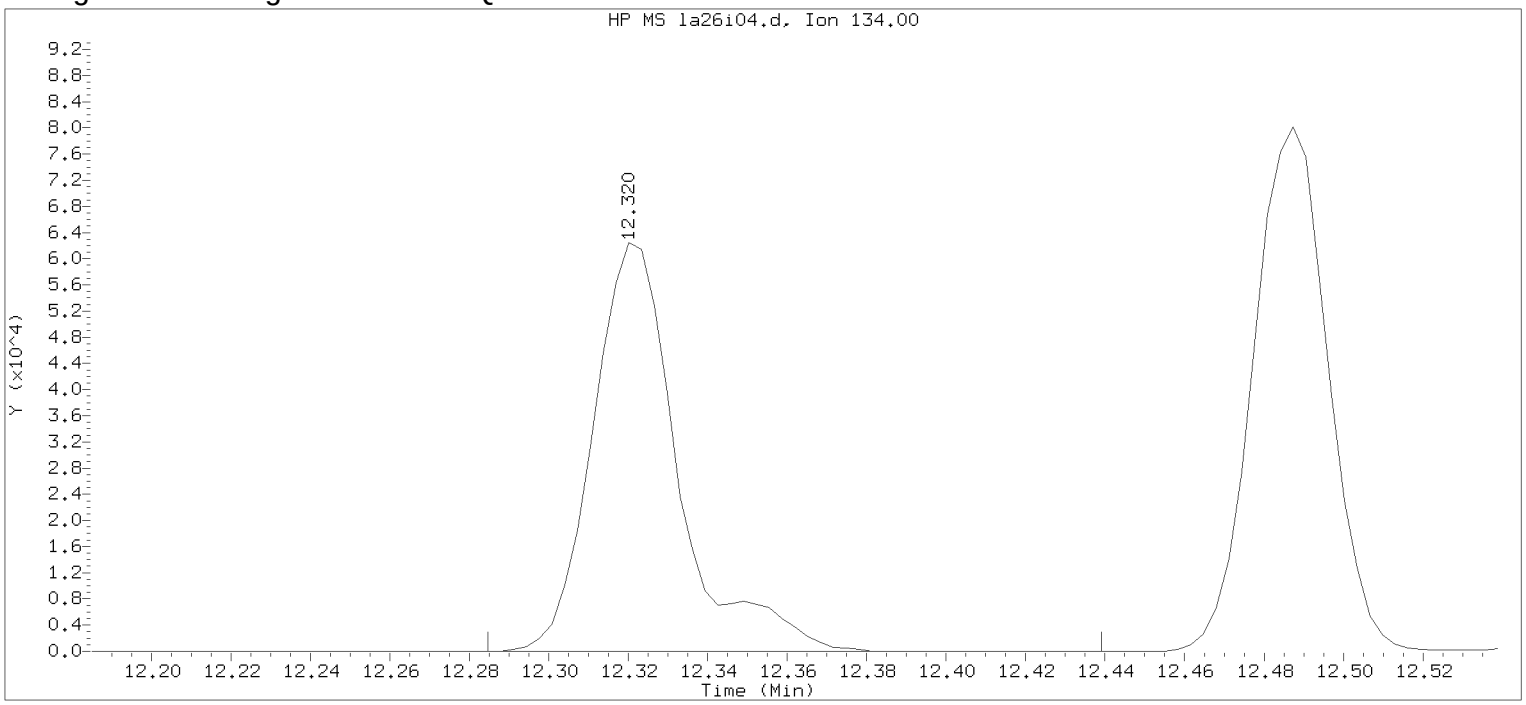
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 93218
On-column Amount (ng) : 20.3163
Integration start scan : 3359 Integration stop scan: 3407
Y at integration start : 0 Y at integration end: 0

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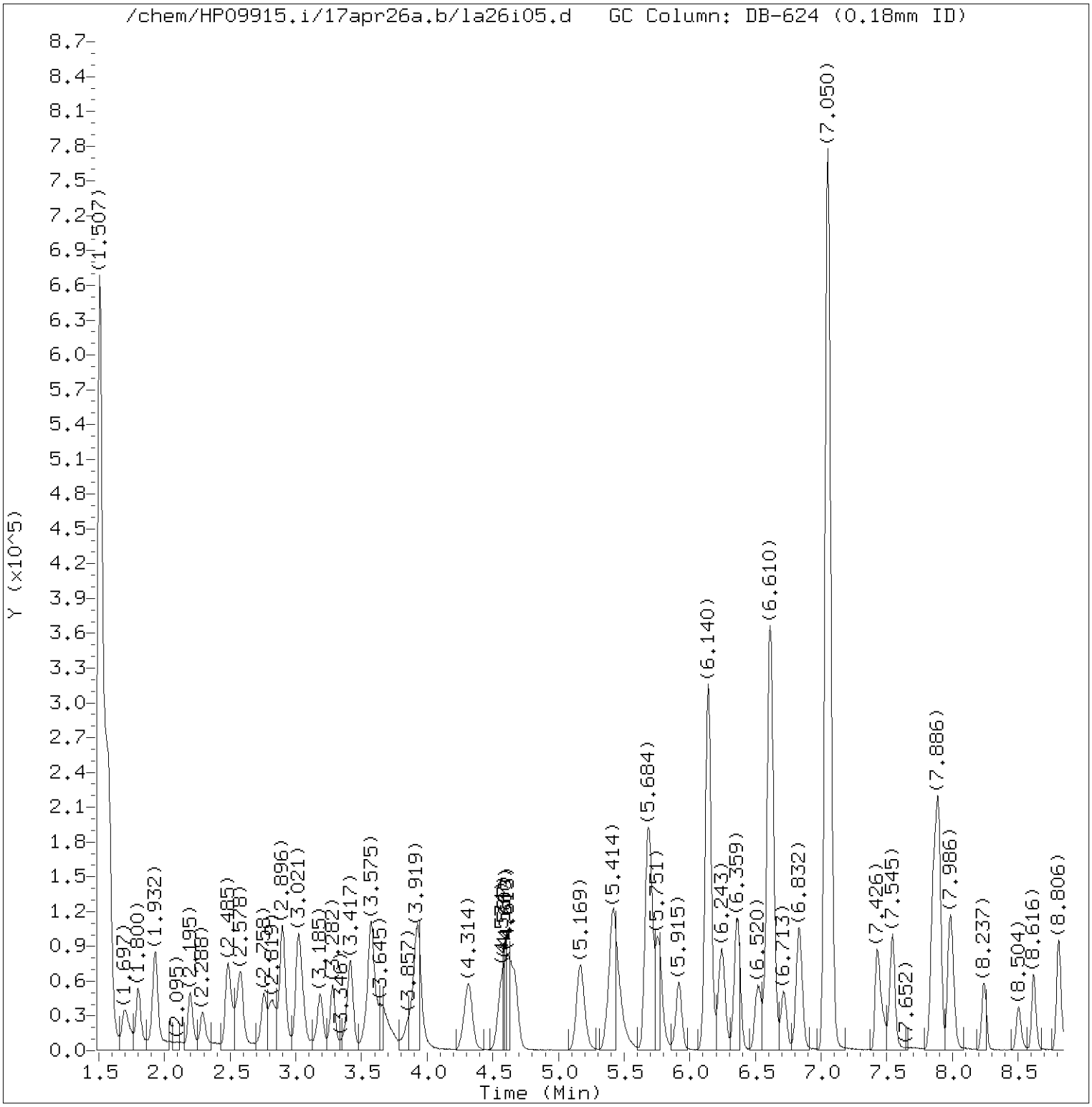
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

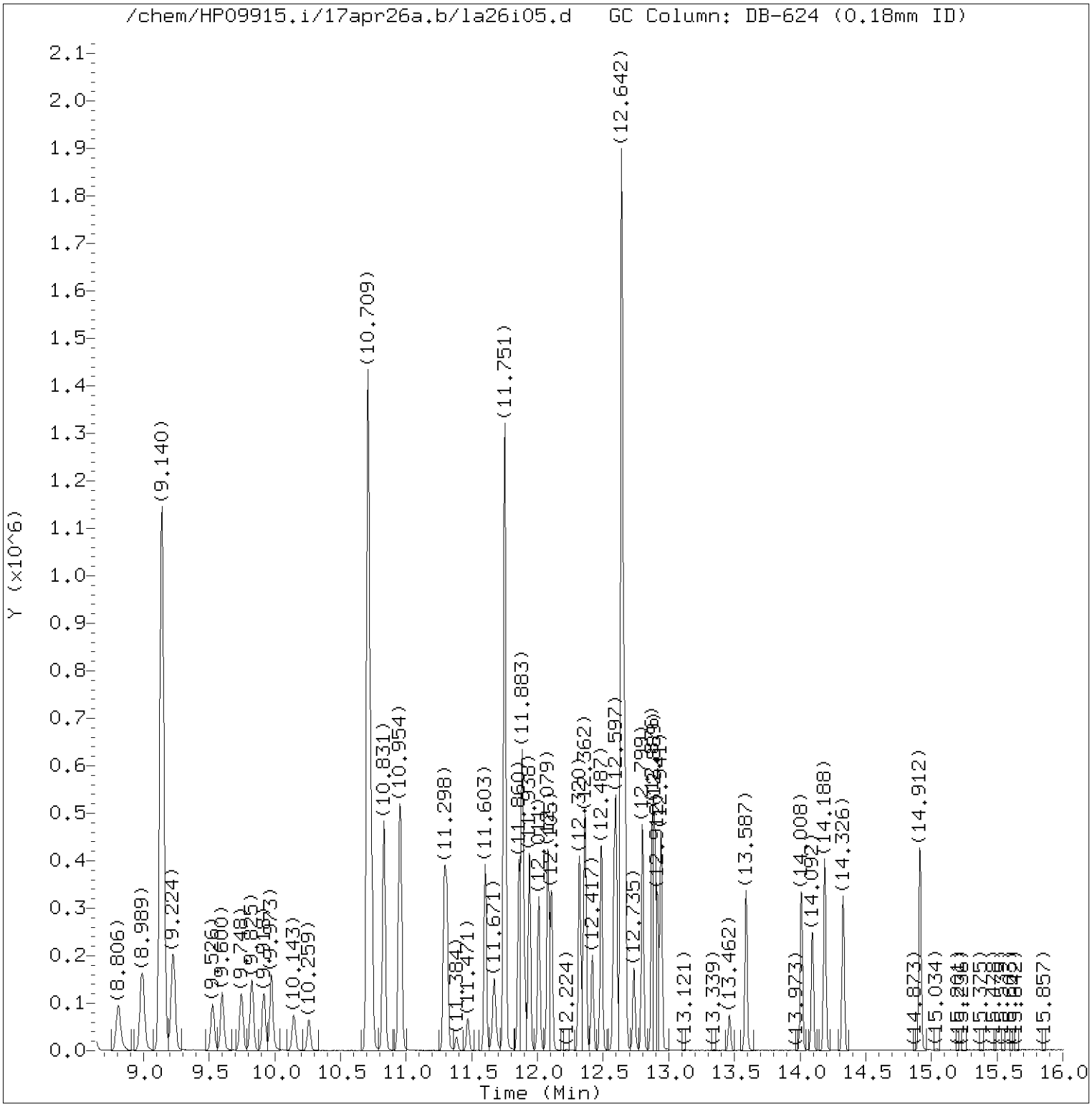
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.694 | 85 | 59129 | 9.454 |
| 4) Chloromethane | (2) | 1.800 | 50 | 62392 | 9.710 |
| 6) Vinyl Chloride | (2) | 1.915 | 62 | 59051 | 9.517 |
| 5) 1,3-Butadiene | (2) | 1.935 | 39 | 33003 | 8.720 |
| 8) Bromomethane | (2) | 2.195 | 94 | 41463M | 9.935 |
| 9) Chloroethane | (2) | 2.288 | 64 | 34369 | 9.829 |
| 10) Dichlorofluoromethane | (2) | 2.485 | 67 | 82511 | 9.674 |
| 12) Trichlorofluoromethane | (2) | 2.536 | 101 | 68090 | 9.477 |
| 11) n-Pentane | (2) | 2.584 | 43 | 53715 | 9.078 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 37841 | 9.460 |
| 15) Freon 123a | (2) | 2.812 | 67 | 43016 | 8.990 |
| 16) Acrolein | (1) | 2.896 | 56 | 159296 | 99.869 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 96 | 34274 | 9.013 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 17277 | 8.974 |
| 18) Acetone | (1) | 3.038 | 58 | 14831M | 21.423 |
| 19) Freon 113 | (2) | 3.044 | 101 | 34042 | 8.894 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 44925M | 97.891 |
| 22) Methyl Iodide | (2) | 3.185 | 142 | 67573 | 9.161 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 109946 | 8.884 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 53241 | 9.646 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 72375 | 9.502 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 194850M | 250.000 |
| 28) Methylene Chloride | (2) | 3.575 | 84 | 45146 | 8.987 |
| 30) t-Butyl alcohol | (1) | 3.665 | 59 | 75108M | 99.625 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 29199 | 10.074 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.909 | 73 | 131184 | 9.417 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 41659 | 9.337 |
| 34) n-Hexane | (2) | 4.314 | 57 | 66816 | 9.769 |
| 36) 1,1-Dichloroethane | (2) | 4.555 | 63 | 77409 | 9.233 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 151698 | 9.427 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.668 | 53 | 64336 | 9.097 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 130812 | 9.446 |
| 44) 2-Butanone | (2) | 5.382 | 43 | 78761 | 20.295 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 46779 | 9.150 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 50428 | 9.009 |
| 47) Propionitrile | (1) | 5.459 | 54 | 106892 | 97.145 |
| 48) Methacrylonitrile | (2) | 5.681 | 67 | 139926 | 48.423 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 26022 | 9.657 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 19359 | 19.919 |
| 51) Chloroform | (2) | 5.915 | 83 | 73627 | 9.213 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 256526 | 50.033 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 111 | 263734 | 50.197 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 67074 | 9.185 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 88438 | 18.487 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 76539 | 9.205 |
| 54) Cyclohexane | (2) | 6.246 | 84 | 62394 | 9.066 |
| 54) Cyclohexane | (2) | 6.243 | 69 | 21874 | 9.076 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 46720 | 8.764 |
| 55) 1,1-Dichloropropene | (2) | 6.359 | 75 | 59578 | 9.166 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 64054 | 241.988 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63277 | 49.631 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 65 | 305872 | 50.719 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 41354 | 51.137 |
| 60) Benzene | (2) | 6.632 | 78 | 179018 | 9.343 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 61212 | 9.443 |
| 61) 1,2-Dichloroethane | (2) | 6.709 | 98 | 5860 | 10.253 |
| 65) t-Amyl methyl ether | (2) | 6.828 | 73 | 127821 | 9.300 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1049965 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 73529 | 9.602 |
| 69) n-Butanol | (1) | 7.426 | 56 | 99502 | 466.313 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 45597 | 9.209 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 78864 | 9.040 |
| 72) Methylcyclohexane | (2) | 7.851 | 98 | 35389 | 8.989 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 49507 | 9.439 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 15525M | 233.055 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 41640M | 9.275 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 30502 | 9.247 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 53652 | 9.013 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 31065 | 18.403 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 38546 | 9.560 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 70800 | 9.125 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 159436 | 19.936 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1032472 | 50.129 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 677627 | 49.938 |
| 88) Toluene | (3) | 9.224 | 92 | 113958 | 9.521 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 61223 | 9.122 |

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 71393 | 9.444 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 44018 | 9.544 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 51504 | 9.729 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 75121 | 9.387 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 116413 | 20.149 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 132023 | 18.248 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 42605 | 8.918 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 48002 | 9.507 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 806654 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 65231 | 9.490 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 131328 | 9.509 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 41501 | 9.100 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 224396 | 9.719 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 173163 | 19.266 |
| 107) o-Xylene | (3) | 11.291 | 106 | 86473 | 9.674 |
| 109) Styrene | (3) | 11.311 | 104 | 143254 | 9.695 |
| 110) Bromoform | (3) | 11.471 | 173 | 30332 | 8.744 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 229604 | 10.051 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 63246 | 251.691 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 383820 | 50.137 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 336286 | 50.079 |
| 108) Xylene (Total) | (3) | | 106 | 259636 | 28.939 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 73056 | 9.576 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 58282 | 9.486 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 105547 | 48.281 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 20738 | 9.616 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 280075 | 10.317 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 56022 | 9.915 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 197456 | 10.200 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 57797 | 9.829 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 41143M | 9.832 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 30142 | 9.123 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 202204 | 10.140 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 255110 | 10.331 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 115818 | 9.902 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 223274 | 10.241 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 429808 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 119475 | 9.878 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

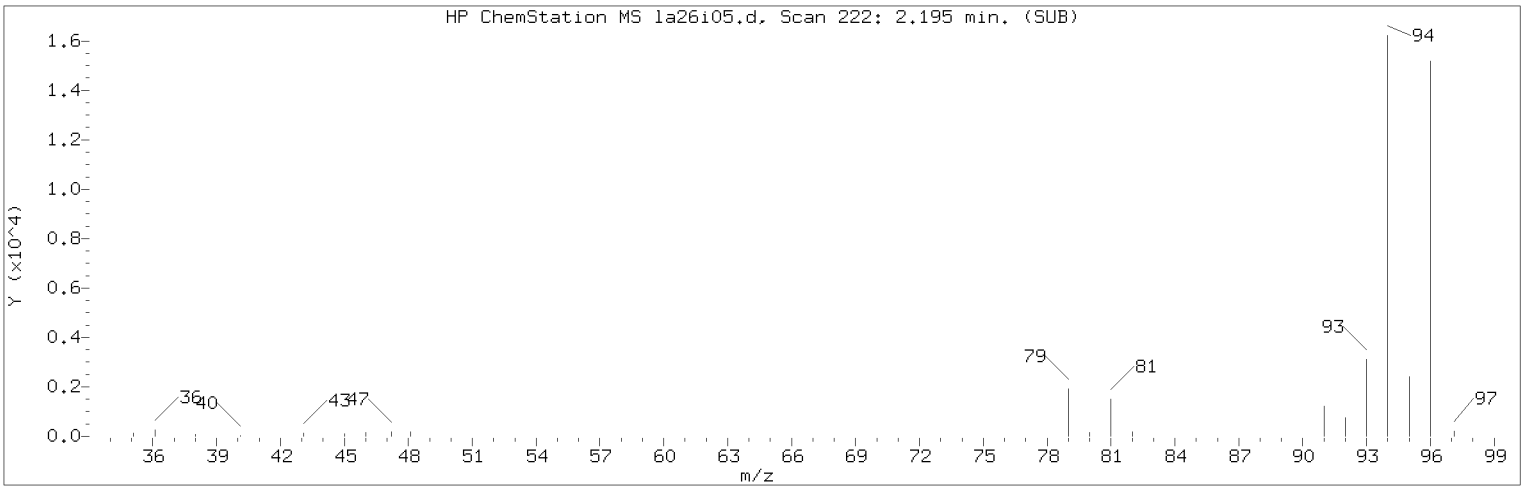
Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 208329 | 9.972 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 103198 | 8.626 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 129904 | 9.973 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 137007 | 10.016 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 112742 | 10.351 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 112538 | 9.788 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 109919 | 10.027 |
| 141) Diethylbenzene (total) | (4) | | 100 | 376830 | 30.016 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 15055 | 9.331 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 94185 | 10.104 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 91035 | 10.067 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 39102 | 9.957 |
| 148) Naphthalene | (4) | 14.188 | 128 | 269332 | 9.871 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 88643 | 10.161 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 172519 | 9.778 |

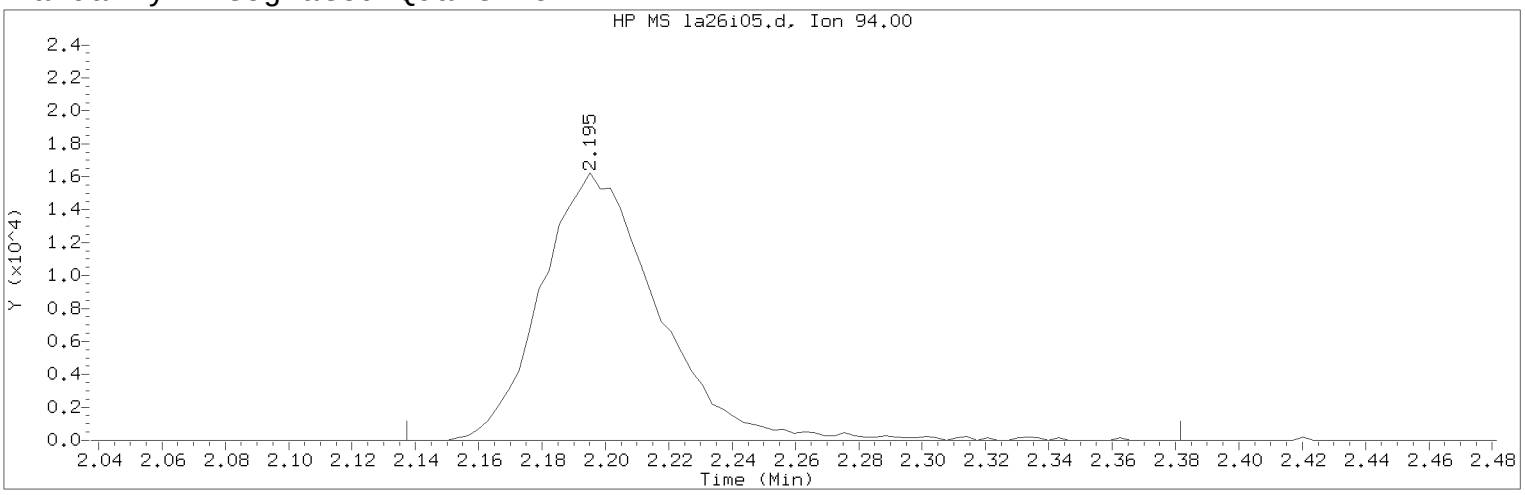


Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

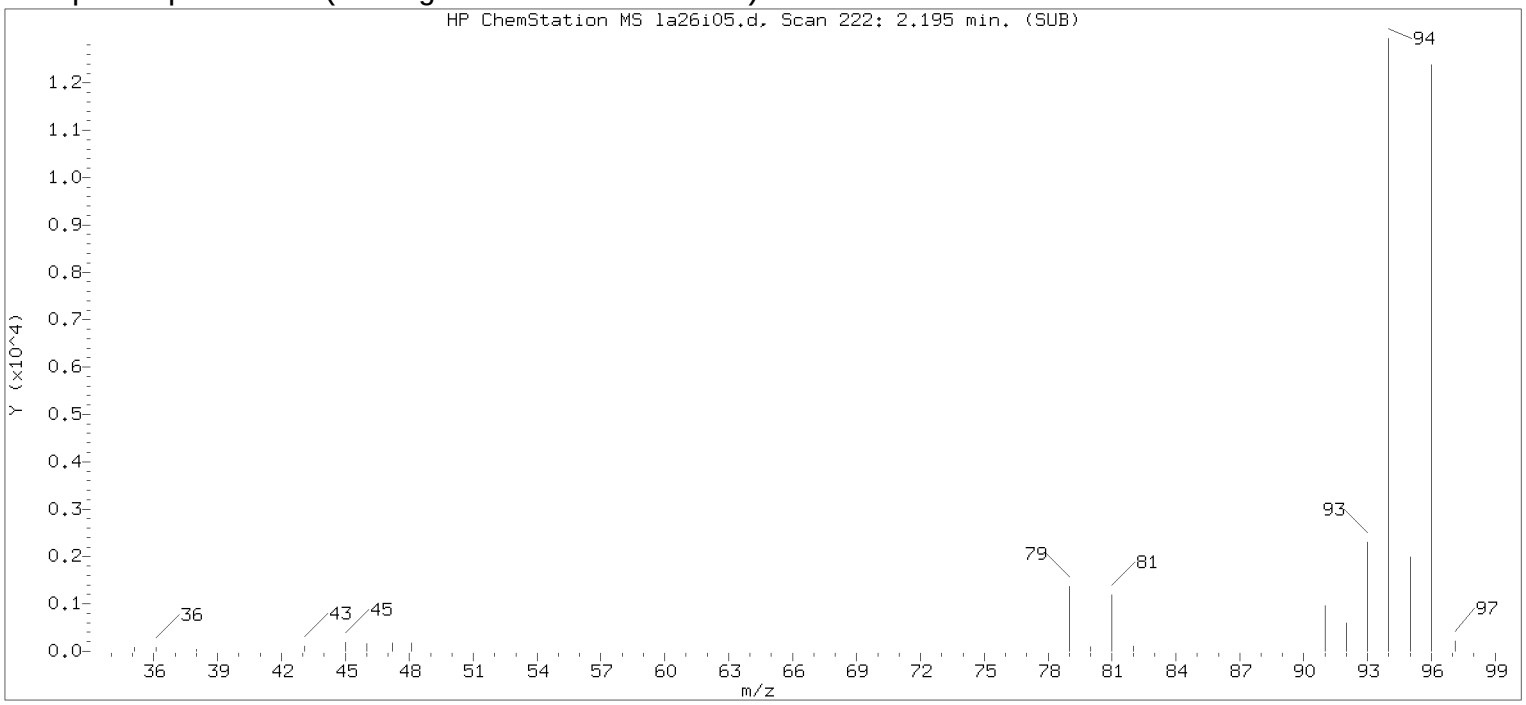
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area (flag) : 41463M
On-Column Amount (ng) : 9.9355
Integration start scan : 203 Integration stop scan: 279
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

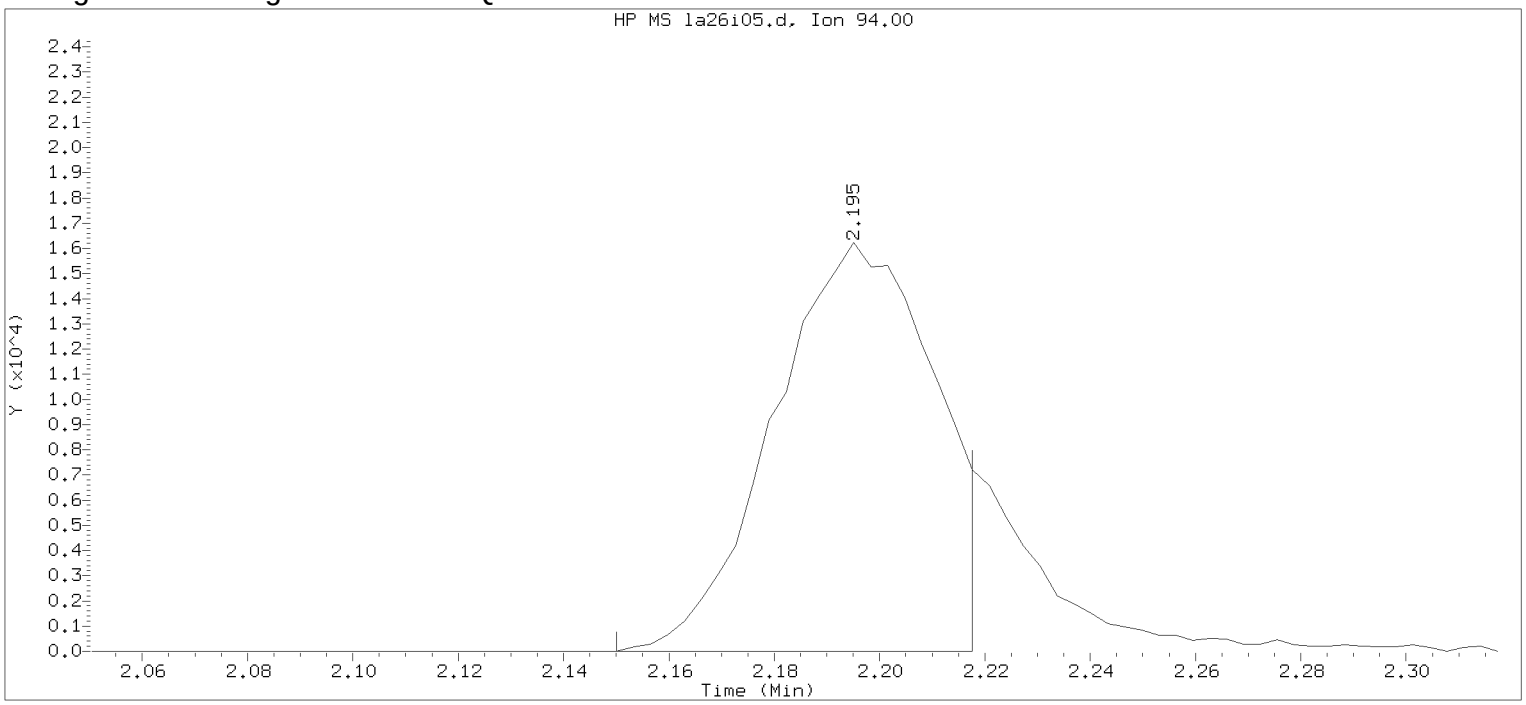
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 34035
On-column Amount (ng) : 8.6274
Integration start scan : 207 Integration stop scan: 228
Y at integration start : 0 Y at integration end: 0

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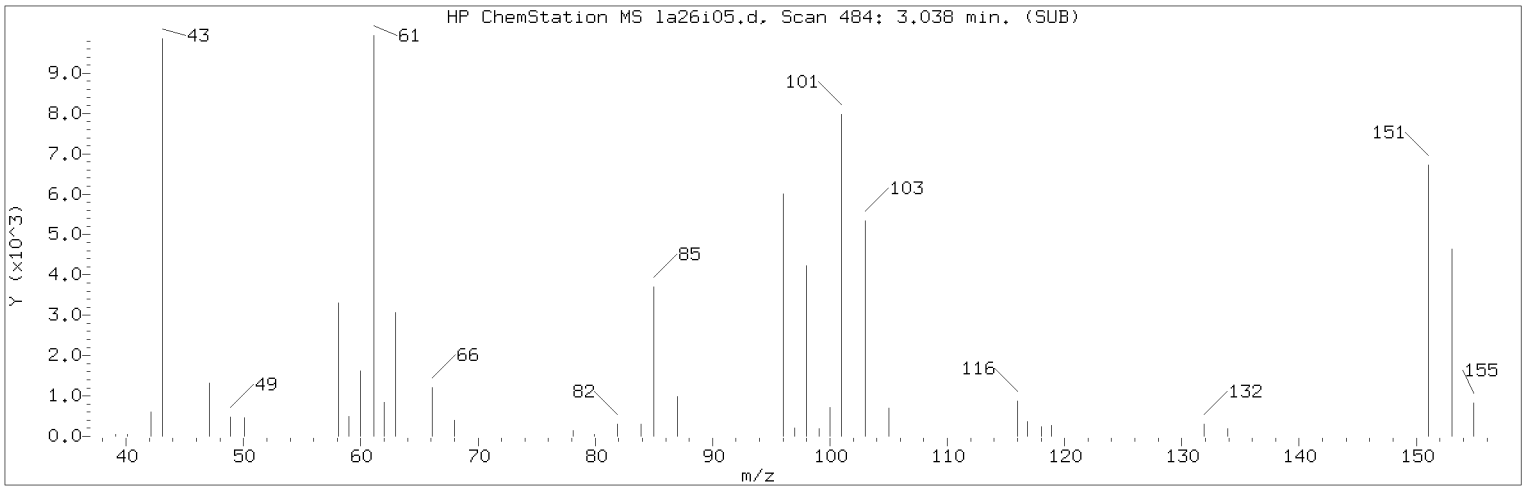
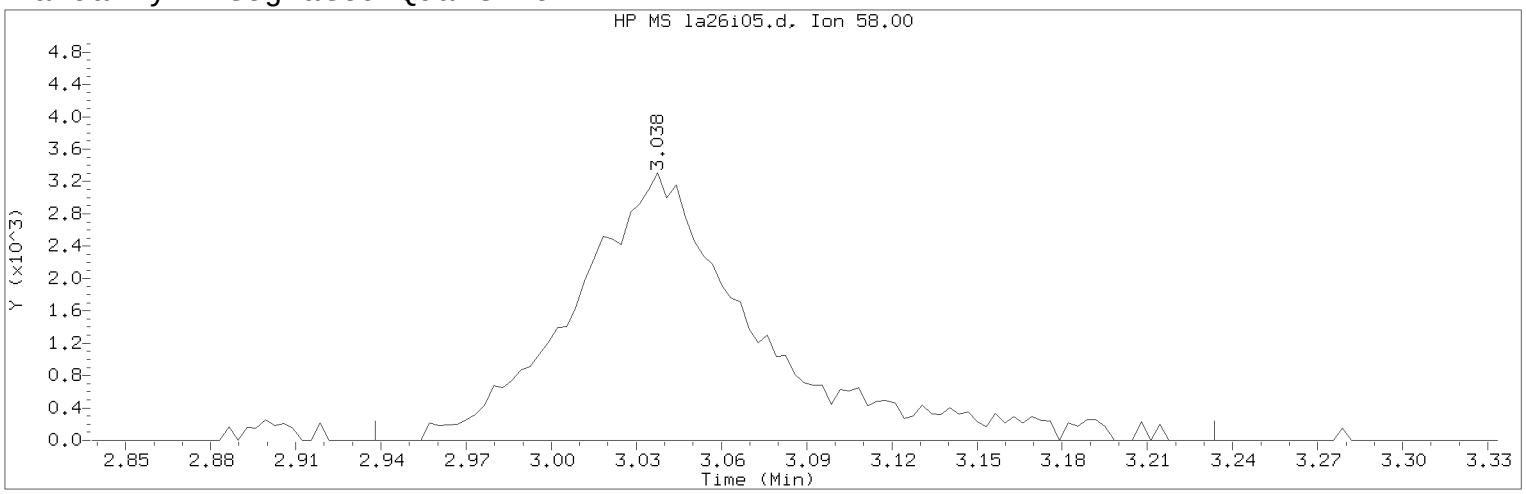
Target 3.5 esignature userKAS02648 Page 159

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

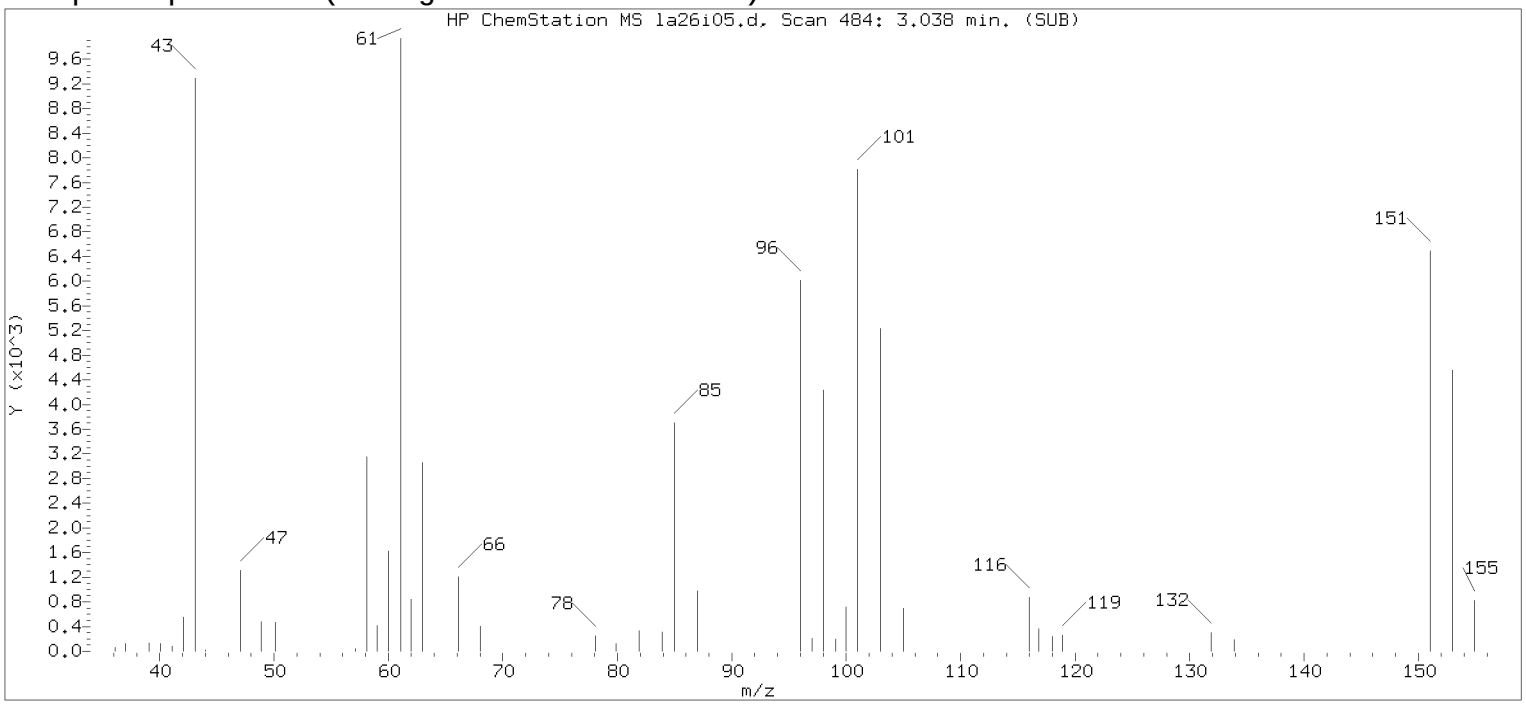
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area (flag) : 14831M
On-Column Amount (ng) : 21.4232
Integration start scan : 452 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

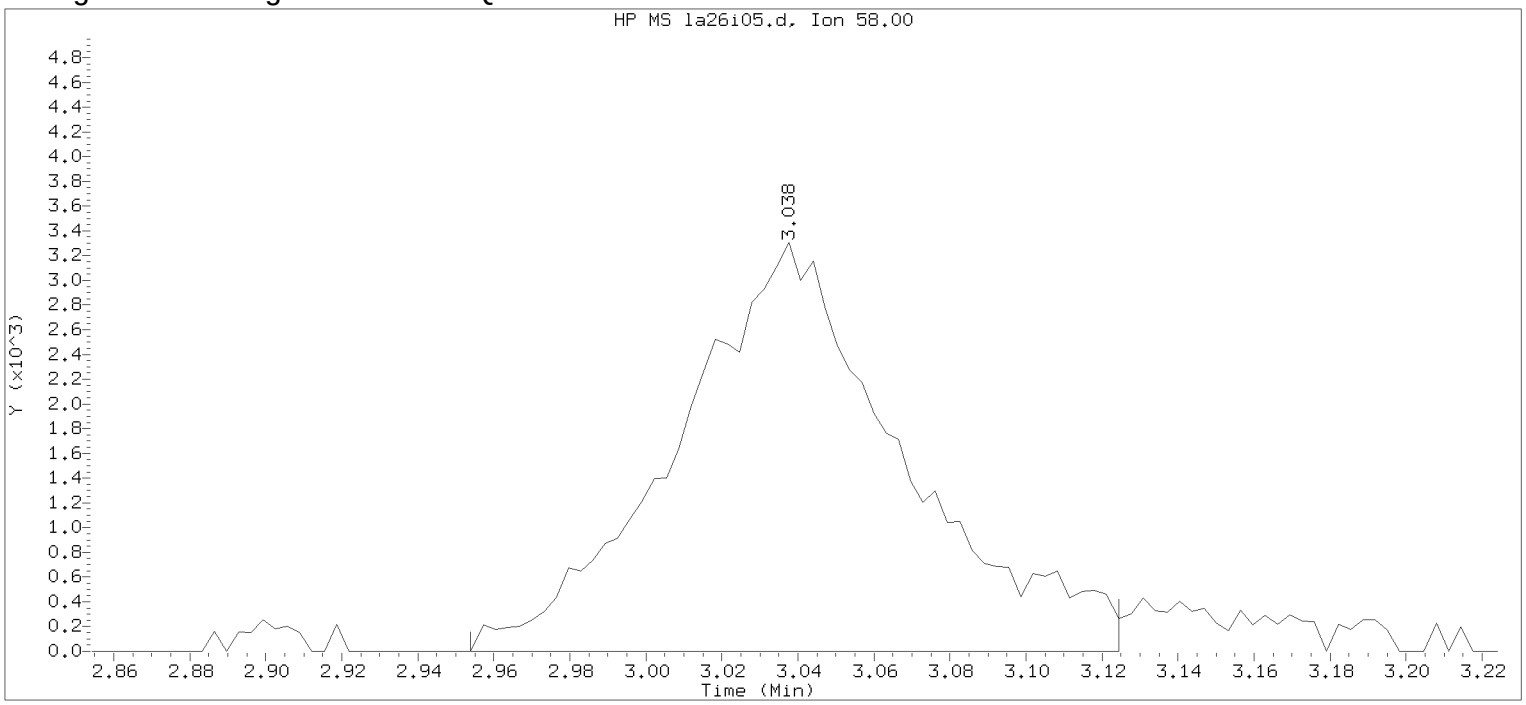
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area : 13613
On-column Amount (ng) : 19.2845
Integration start scan : 457 Integration stop scan: 510
Y at integration start : 0 Y at integration end: 0

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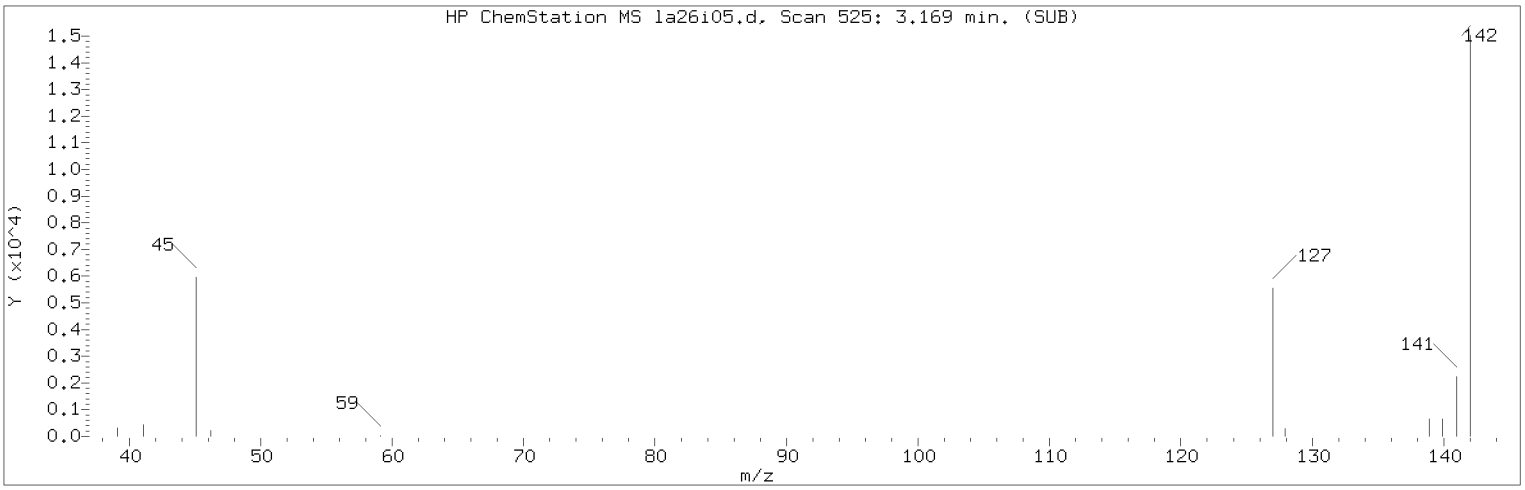
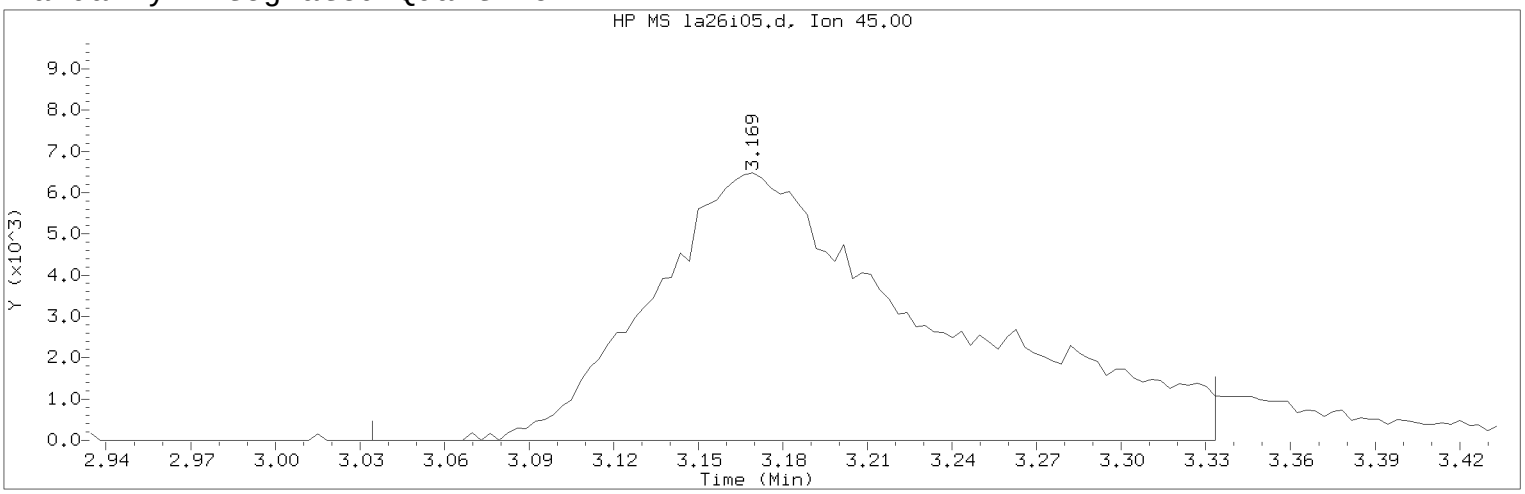
Target 3.5 esignature userKAS02648 Page 161 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

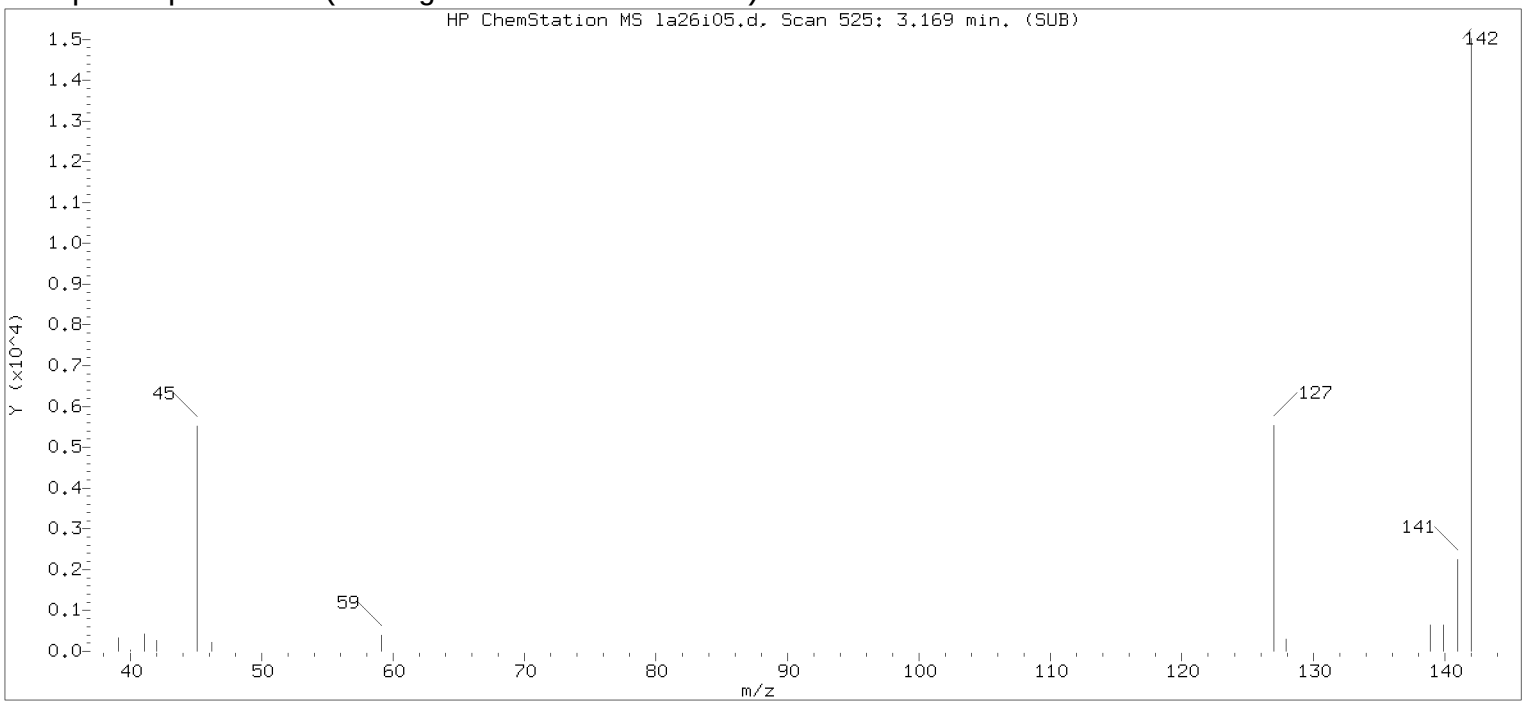
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area (flag) : 44925M
On-Column Amount (ng) : 97.8914
Integration start scan : 482 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

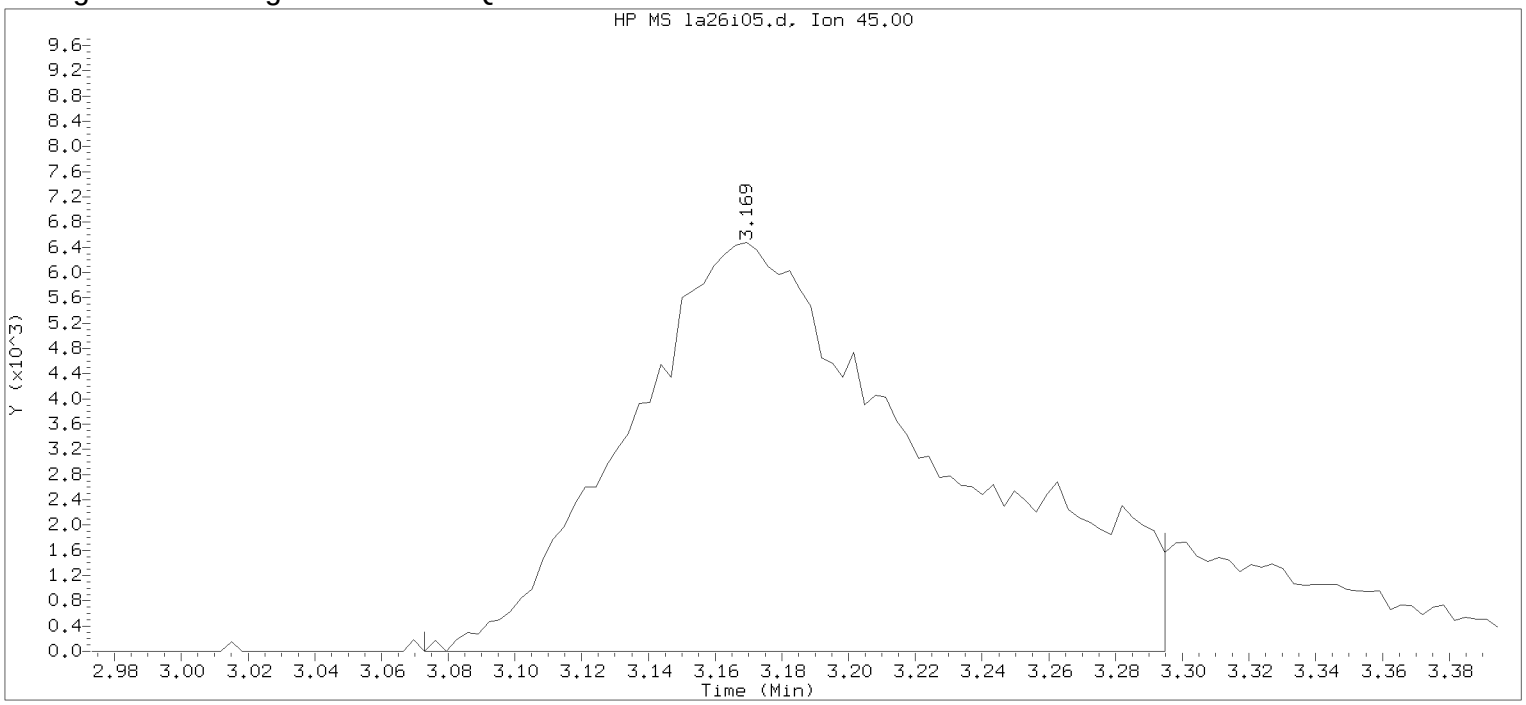
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area : 41457
On-column Amount (ng) : 114.3657
Integration start scan : 494 Integration stop scan: 563
Y at integration start : 0 Y at integration end: 0

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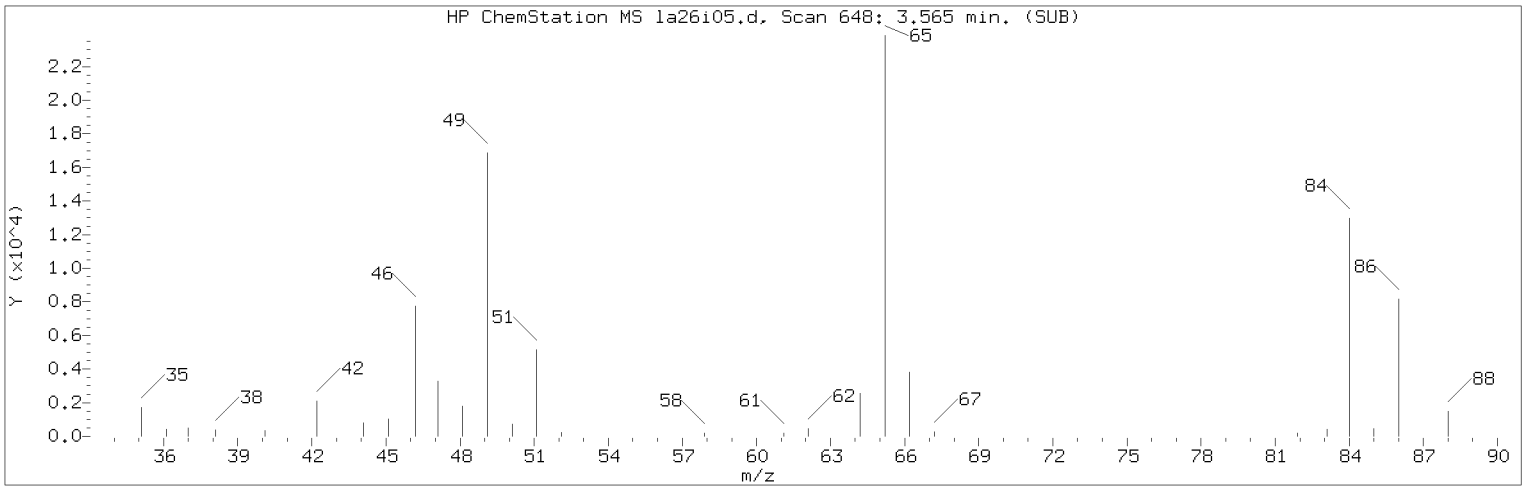
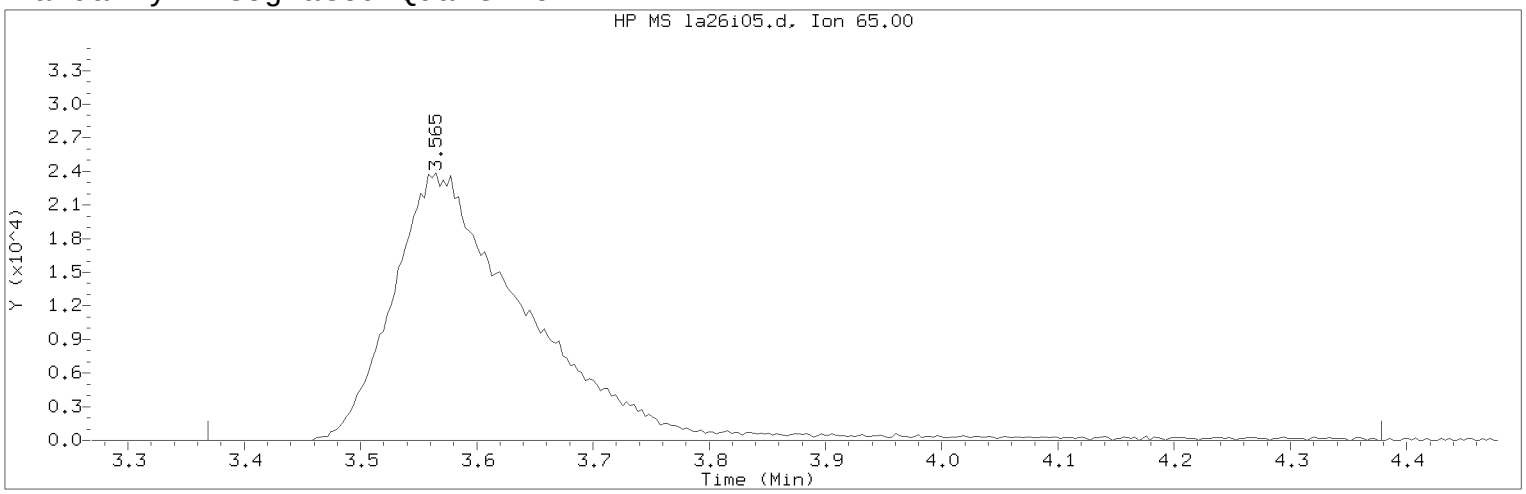
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

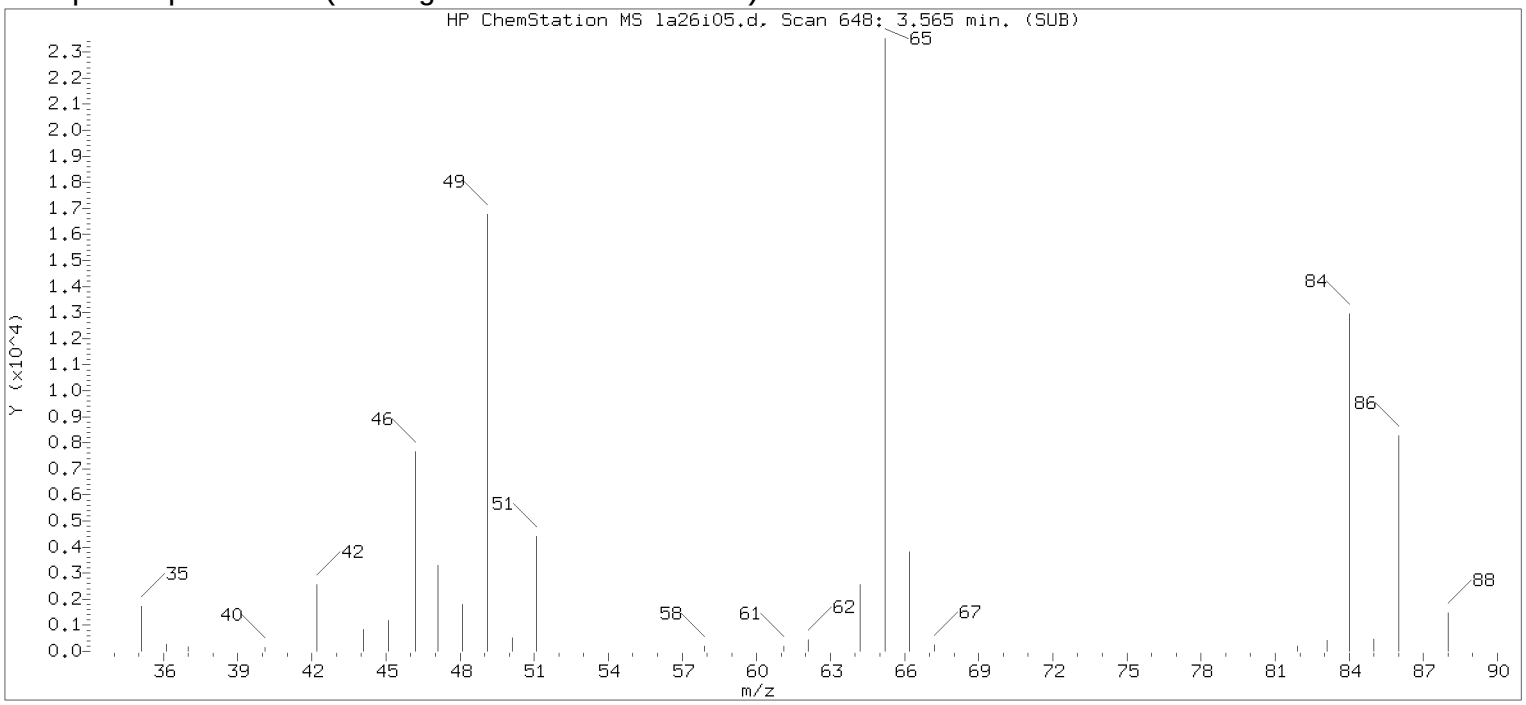
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area (flag) : 194850M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 900
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

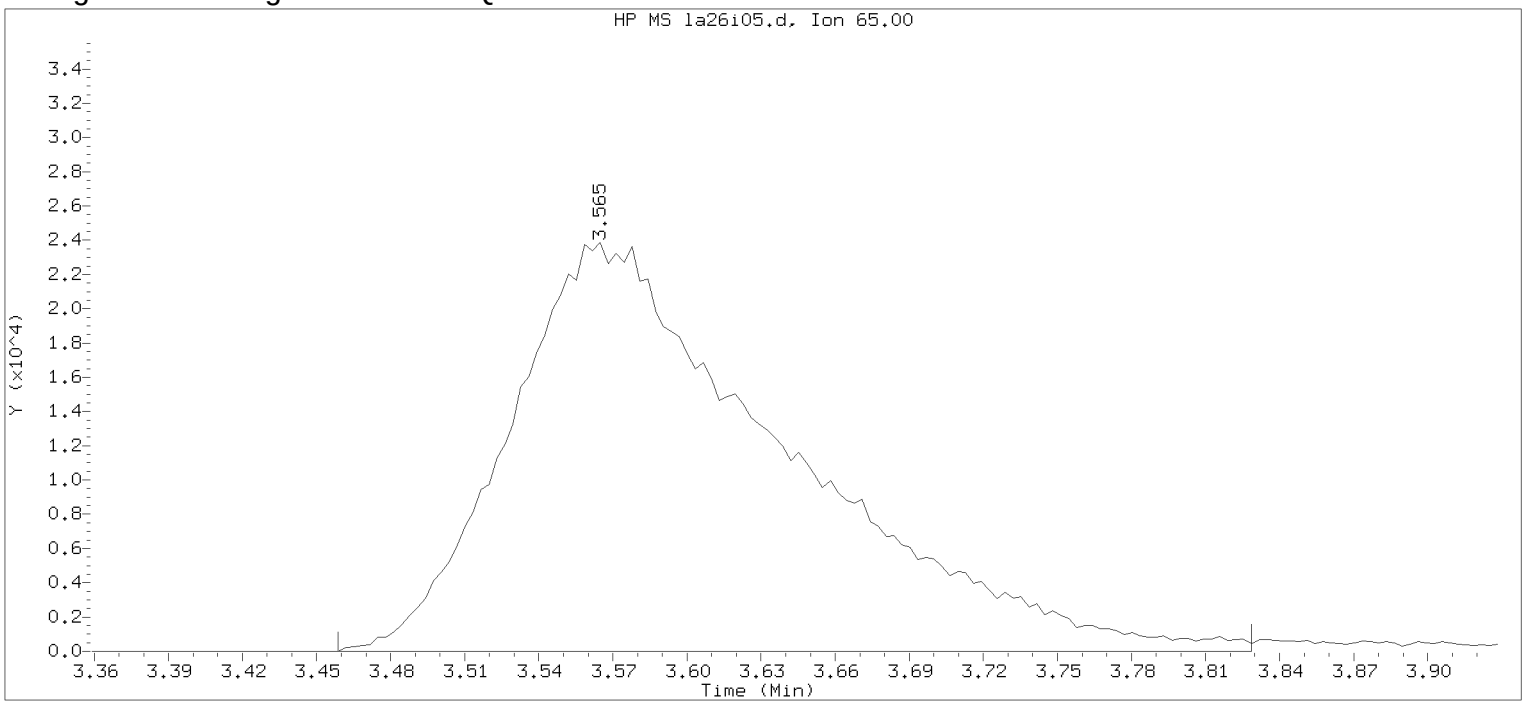
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

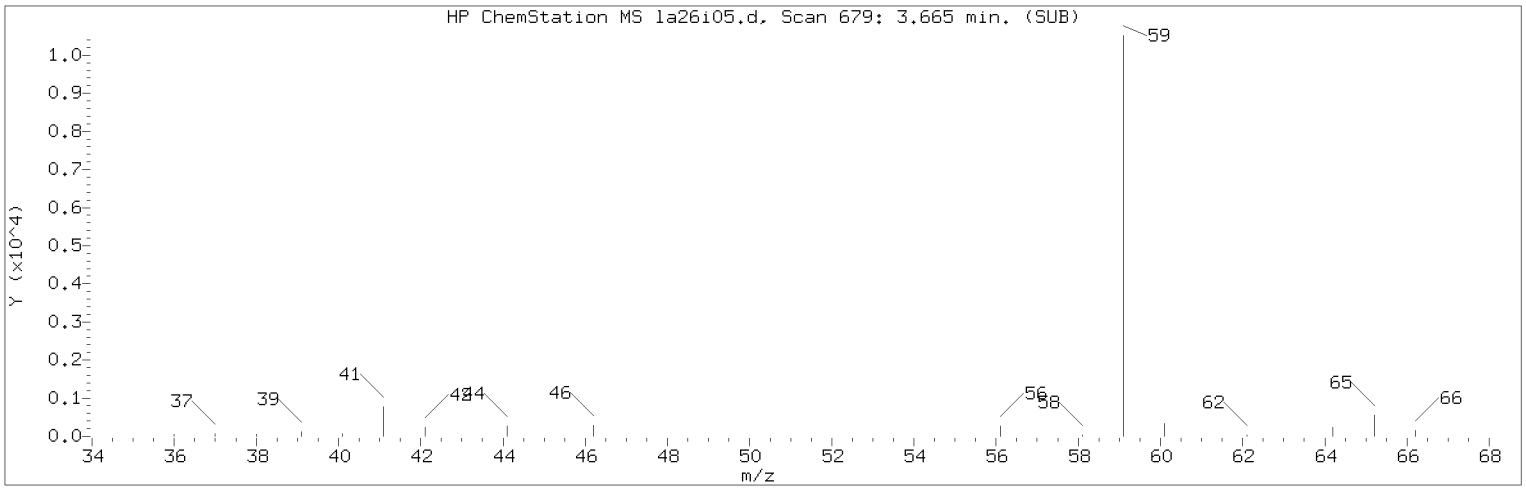
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

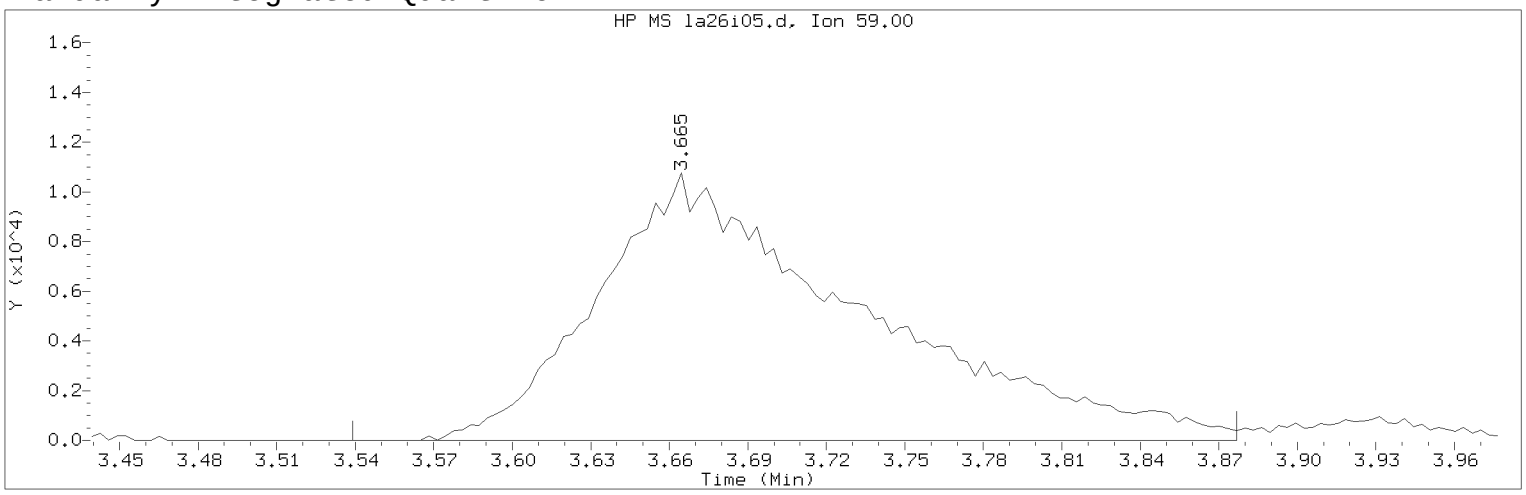
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area : 185663
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 729
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 RD90

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010  Lab Sample ID: VSTD010

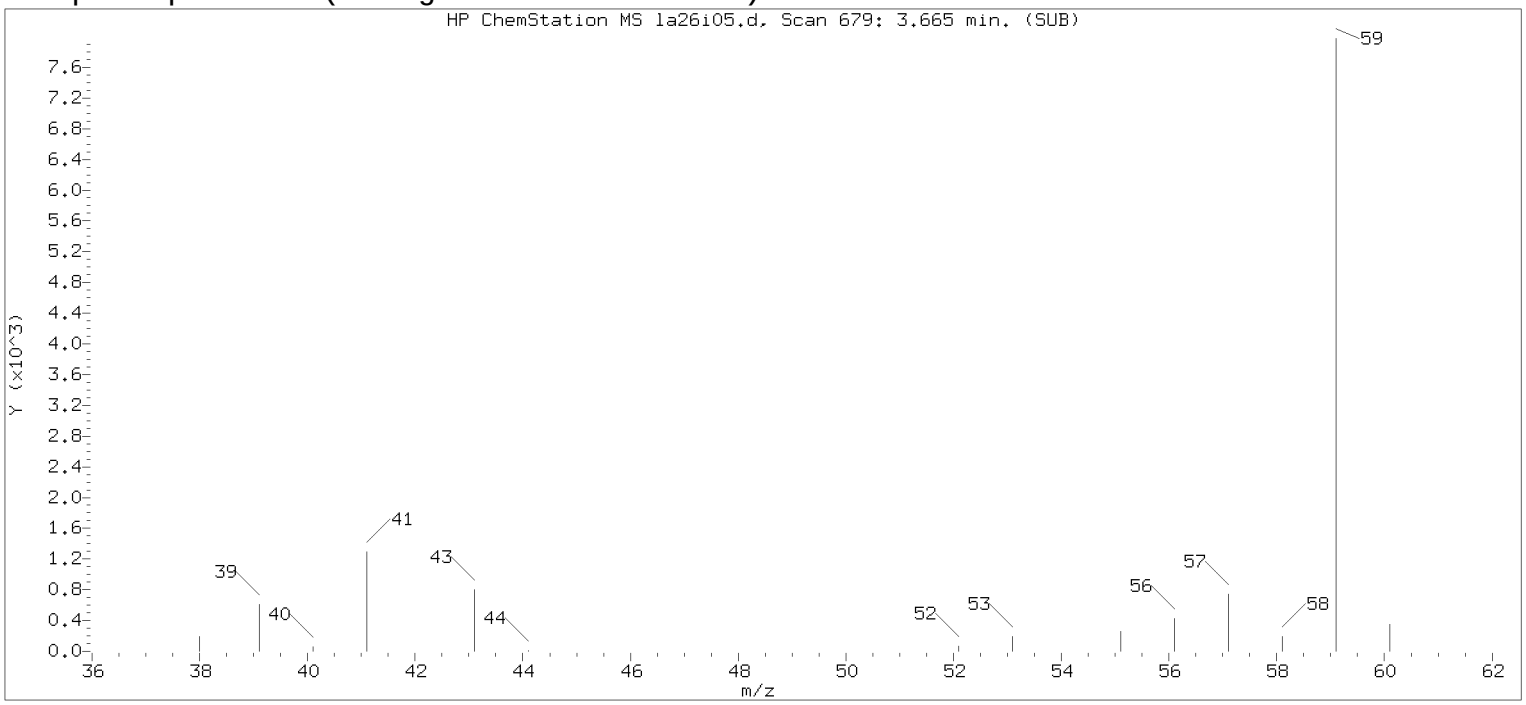
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 679
Retention Time (minutes): 3.665
Quant Ion : 59.00
Area (flag) : 75108M
On-Column Amount (ng) : 99.6249
Integration start scan : 639  Integration stop scan: 744
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

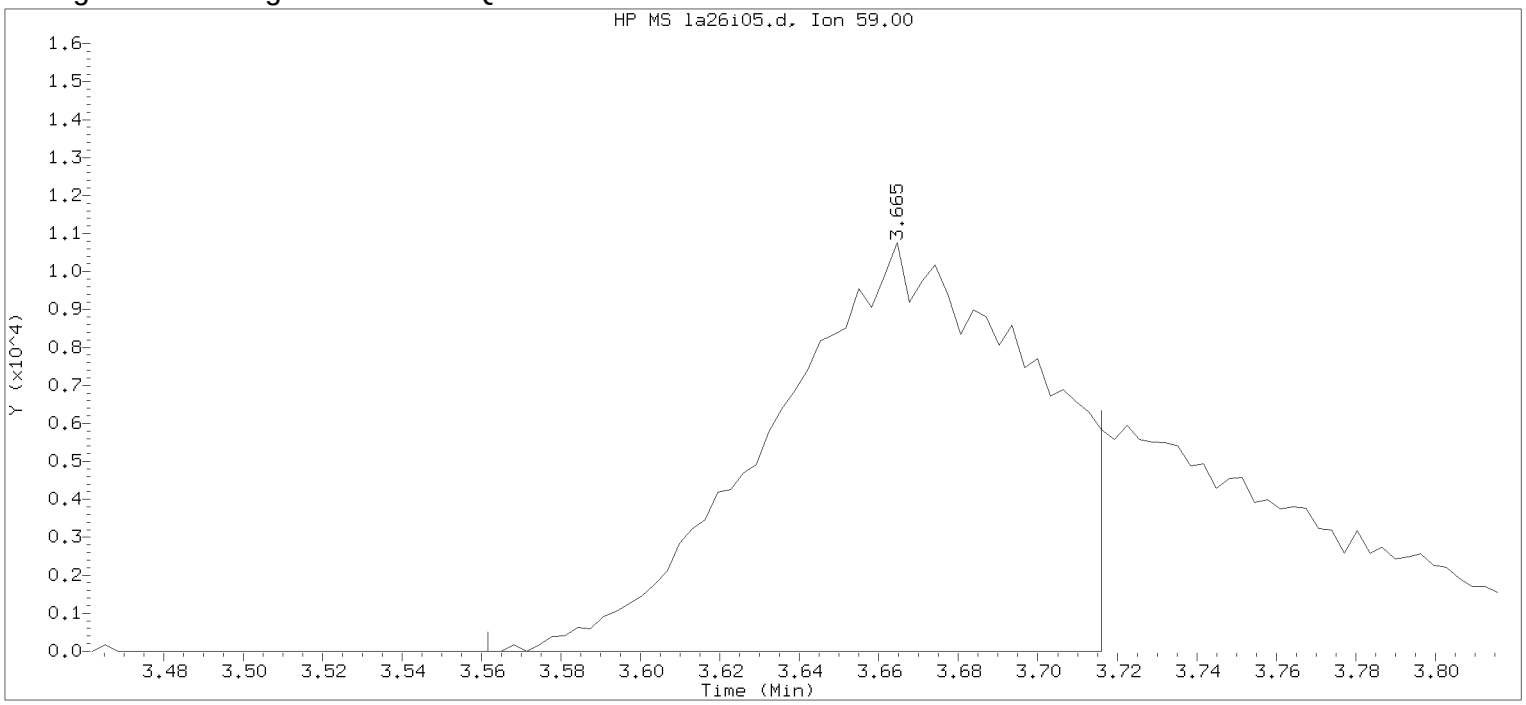
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

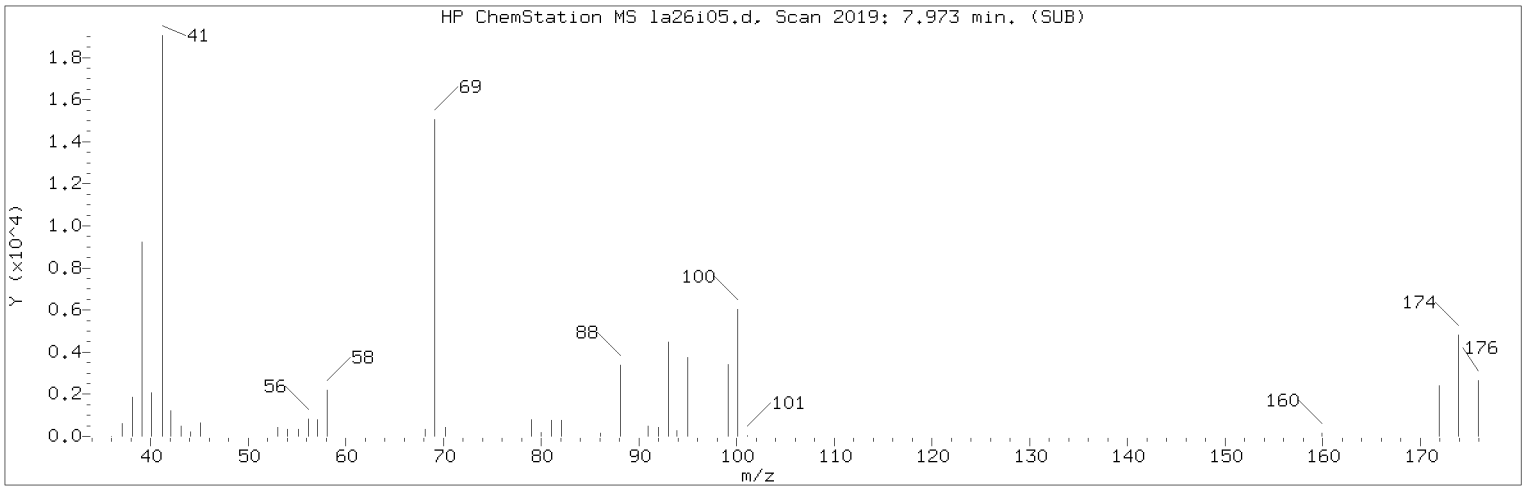
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

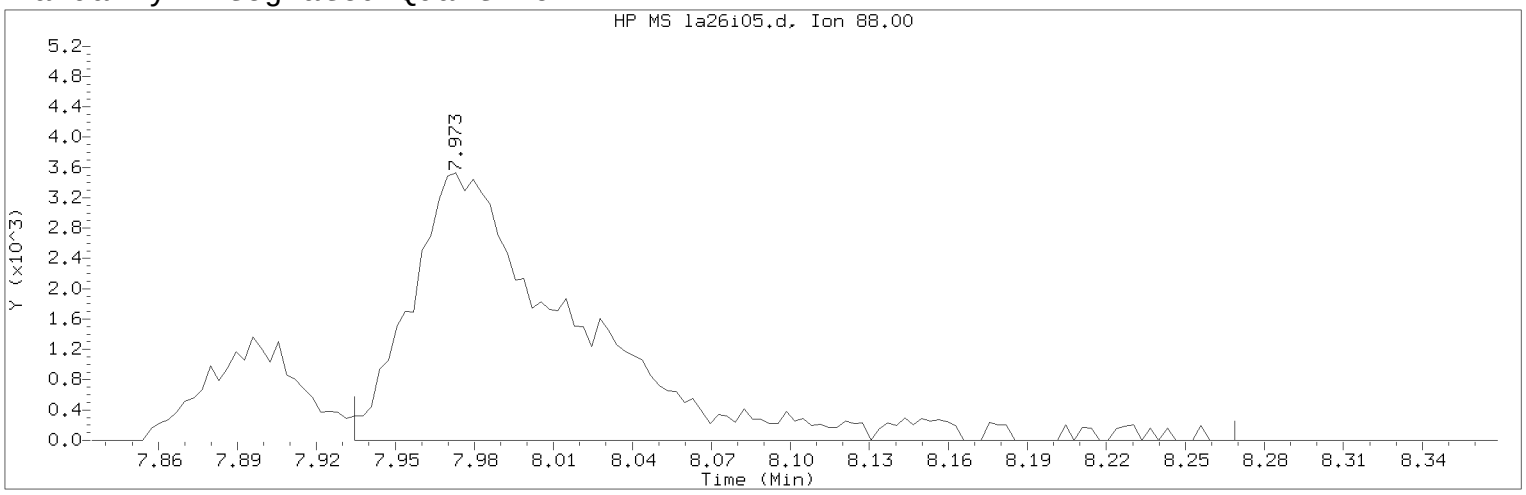
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 679
Retention Time (minutes): 3.665
Quant Ion : 59.00
Area : 49216
On-column Amount (ng) : 71.8732
Integration start scan : 646 Integration stop scan: 694
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

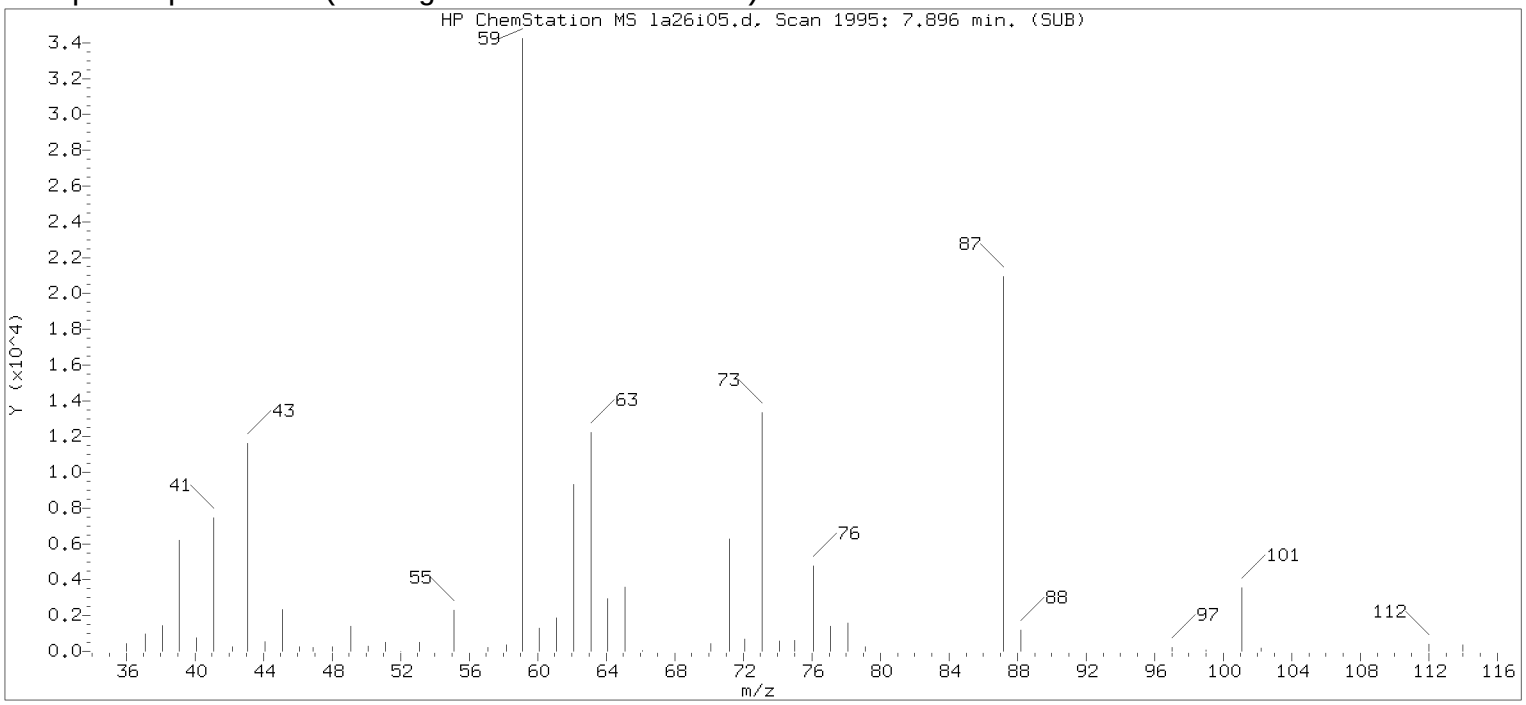
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 15525M
On-Column Amount (ng) : 233.0554
Integration start scan : 2006 Integration stop scan: 2110
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

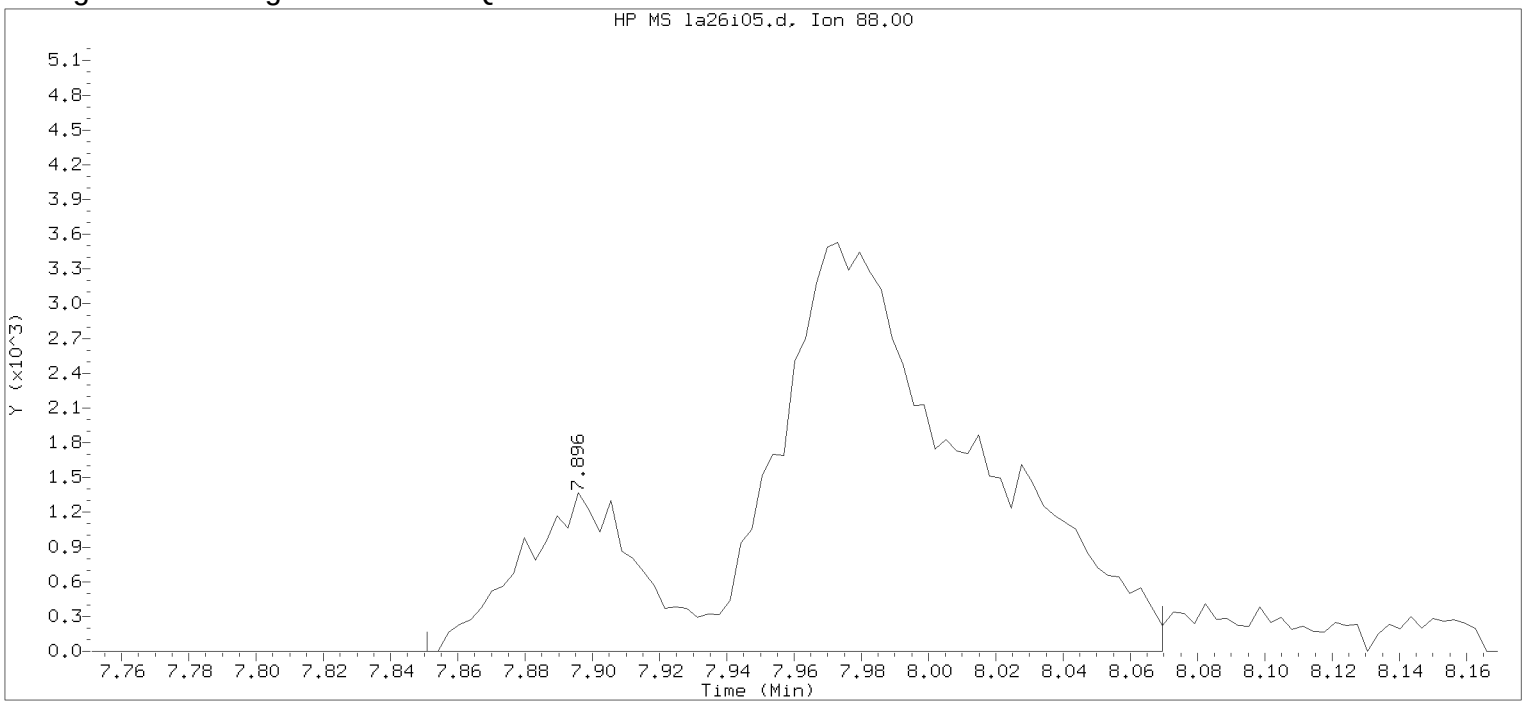
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

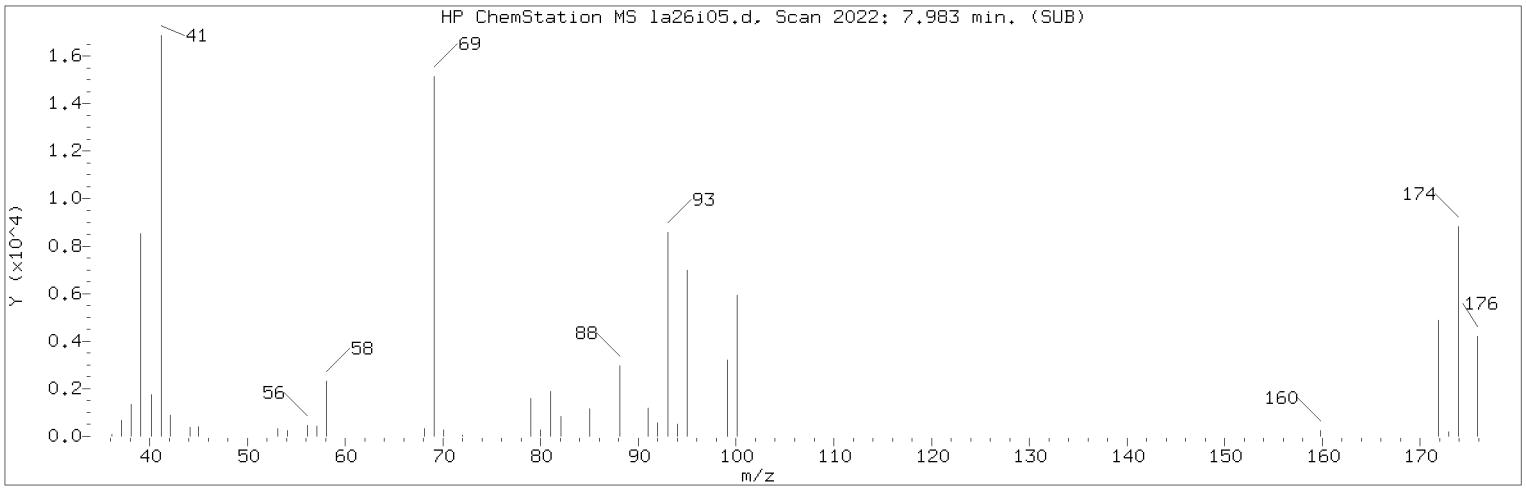
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

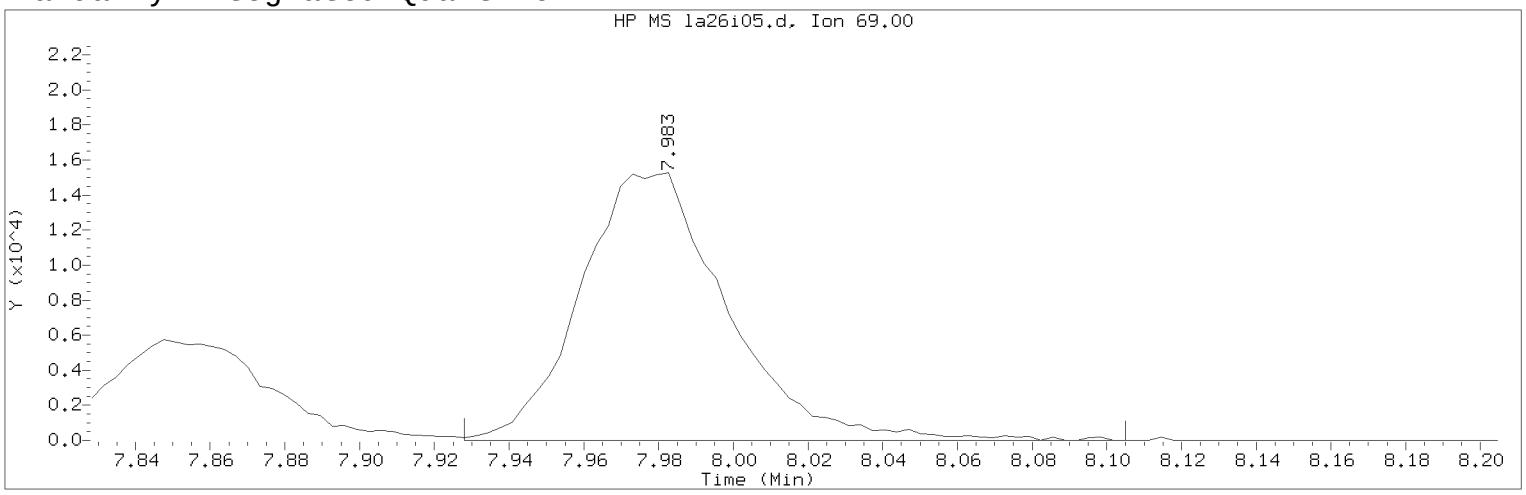
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 16999
On-column Amount (ng) : 234.9759
Integration start scan : 1980 Integration stop scan: 2048
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 RD90

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

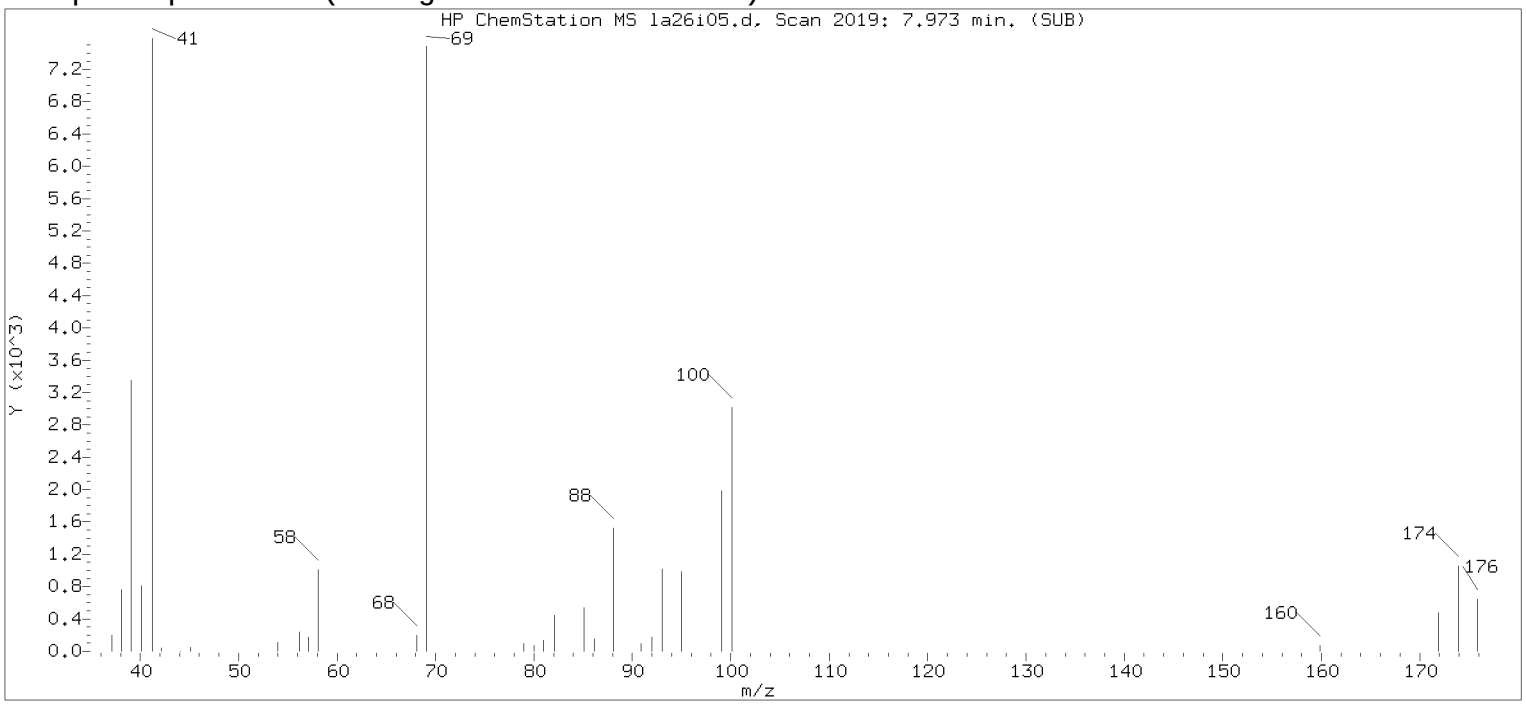
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 41640M
On-Column Amount (ng) : 9.2747
Integration start scan : 2004 Integration stop scan: 2059
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

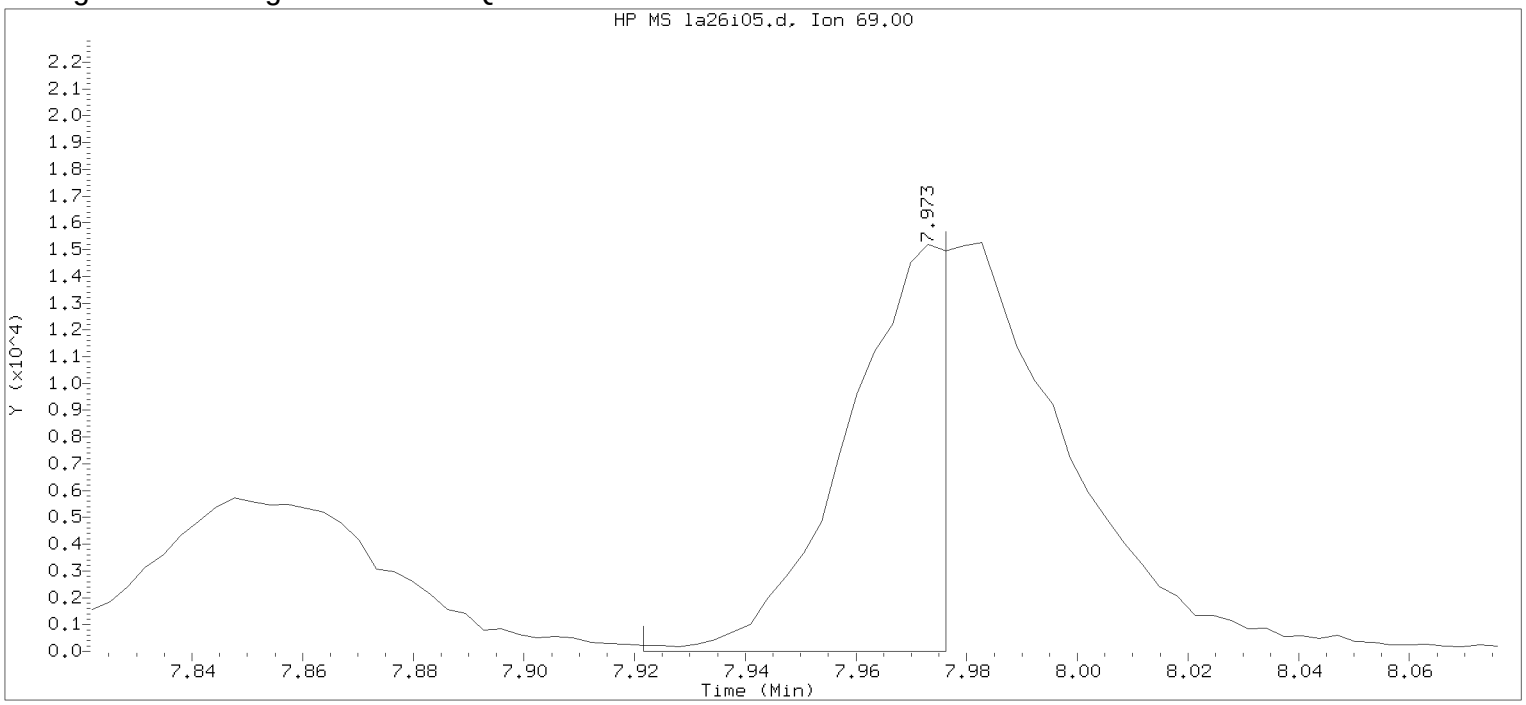
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area : 18069
On-column Amount (ng) : 4.2742
Integration start scan : 2002 Integration stop scan: 2019
Y at integration start : 0 Y at integration end: 0

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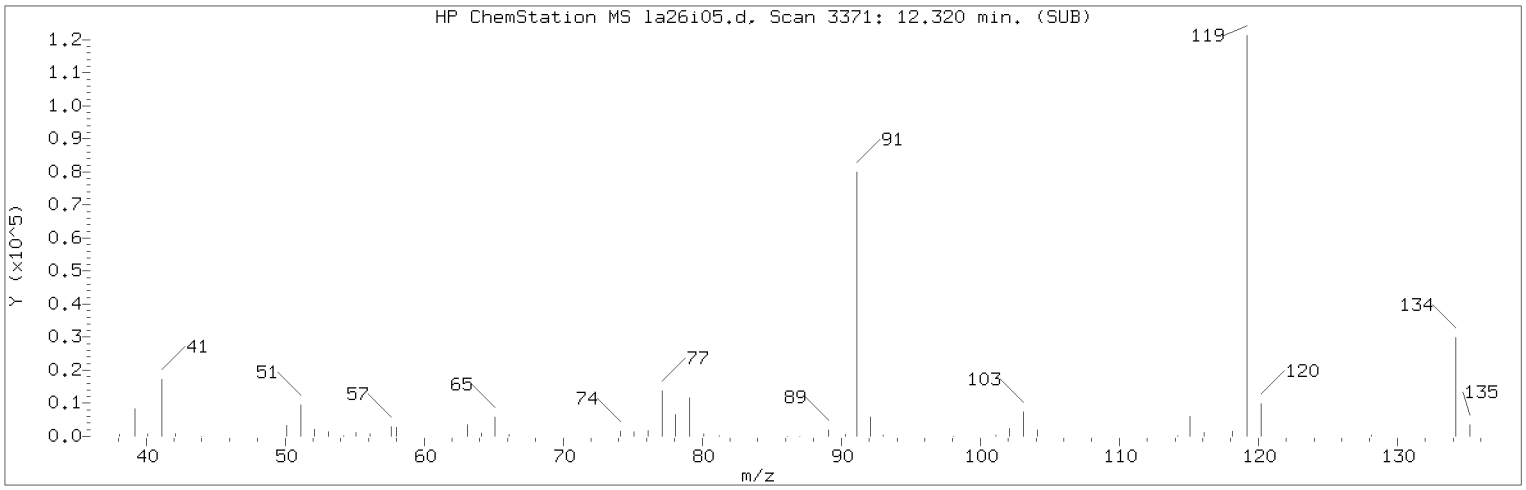
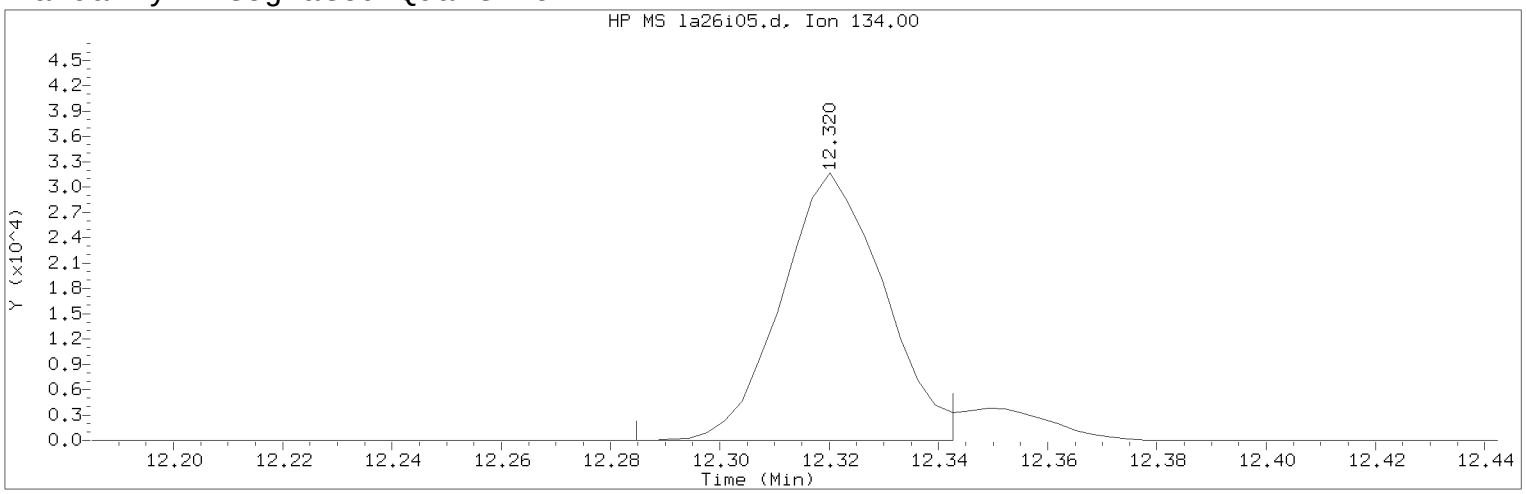
Target 3.5 esignature userKAS02648 Page 141 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

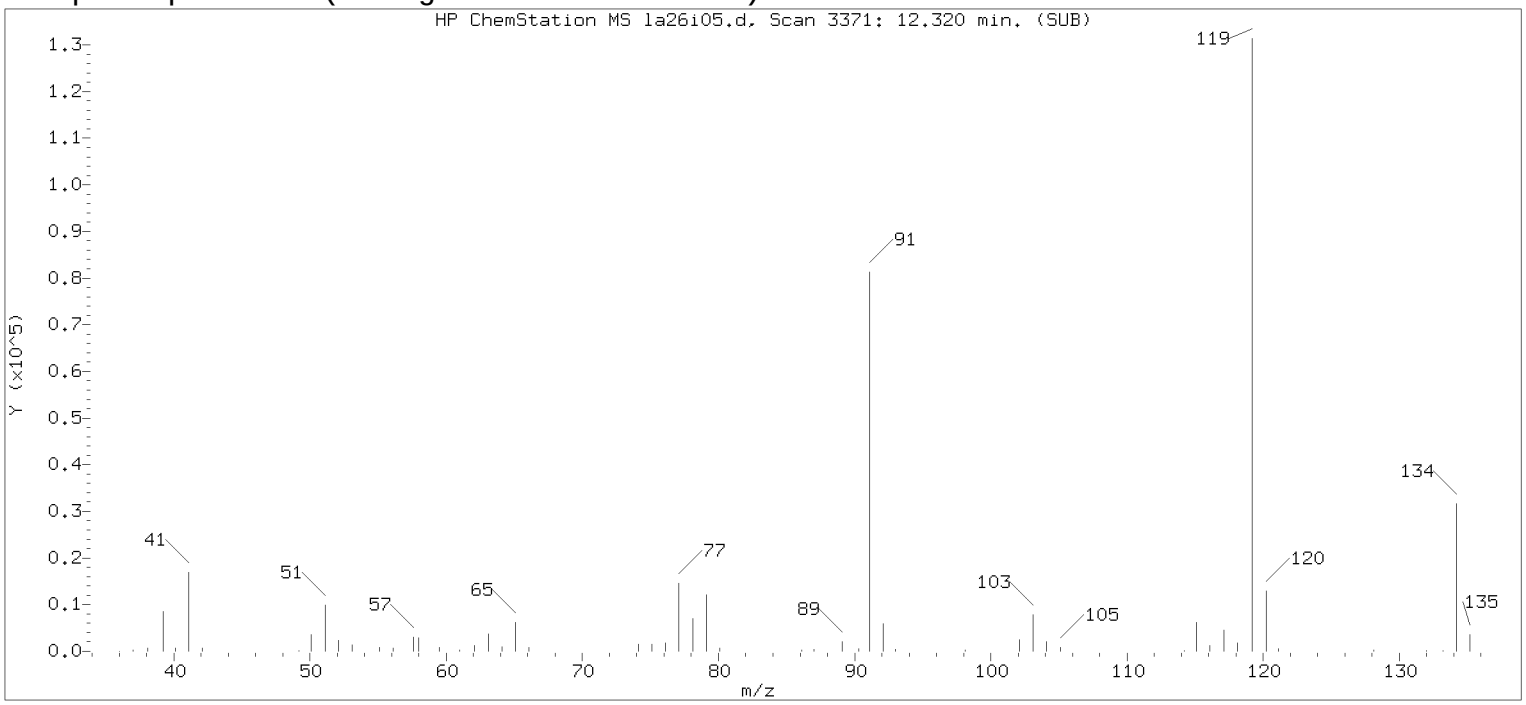
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 41143M
On-Column Amount (ng) : 9.8320
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

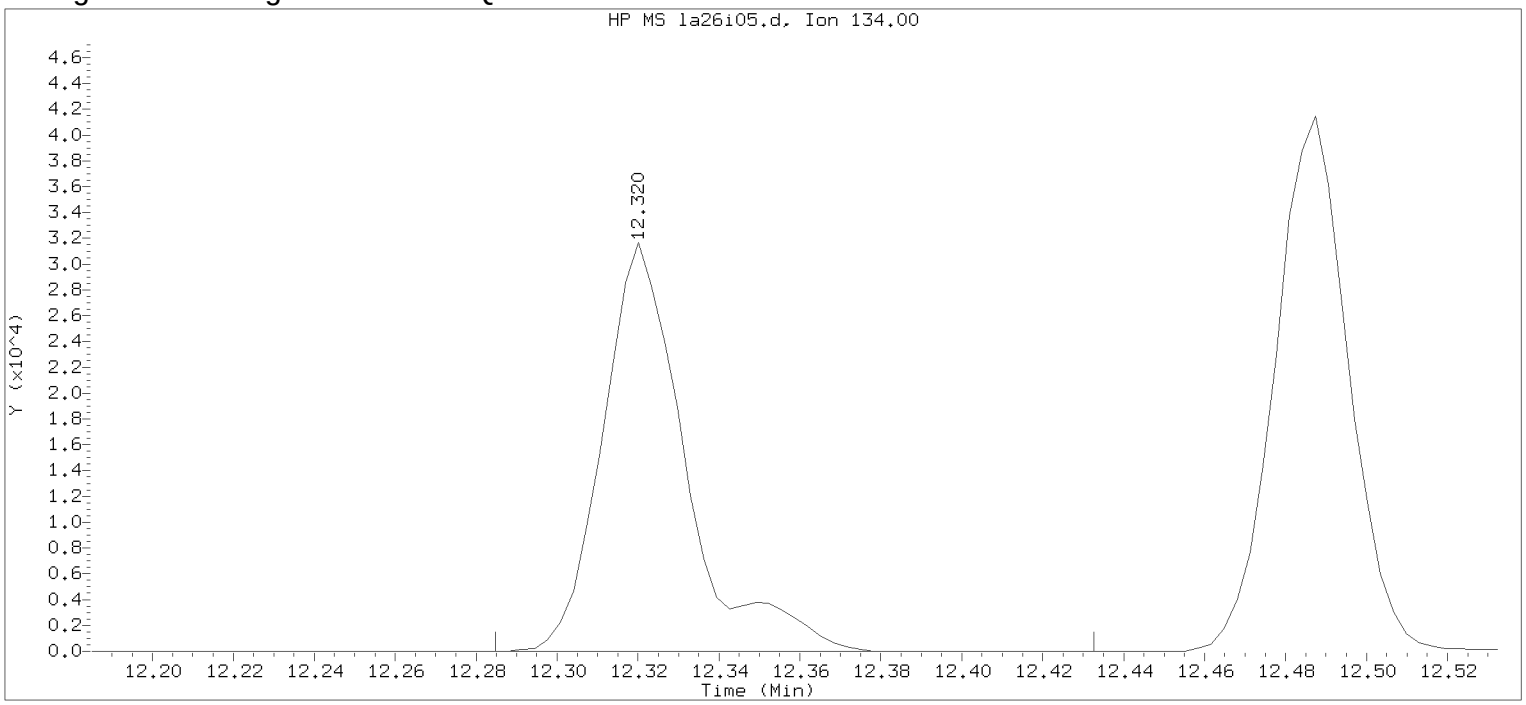
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 45210
On-column Amount (ng) : 9.8016
Integration start scan : 3359 Integration stop scan: 3405
Y at integration start : 0 Y at integration end: 0

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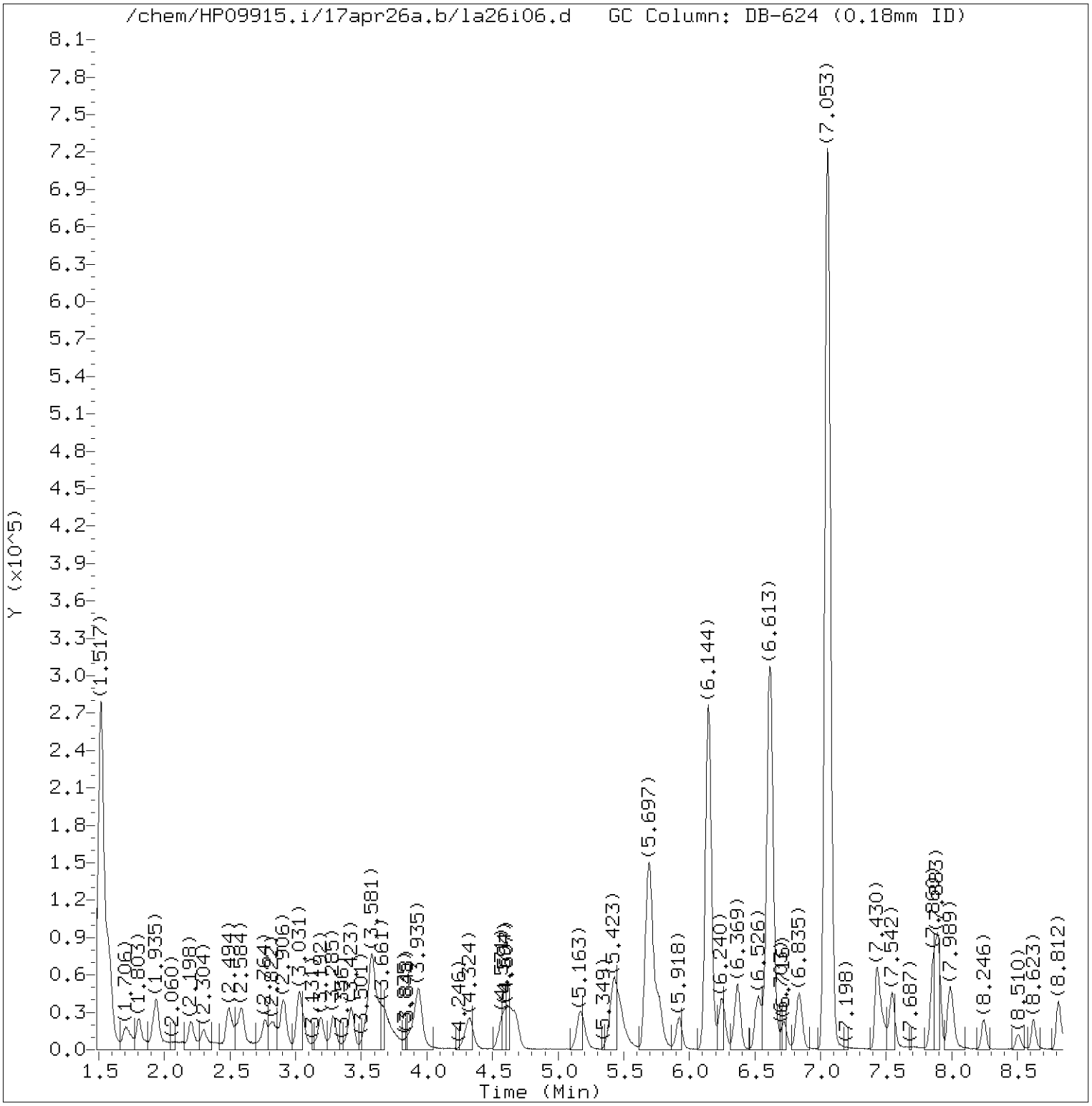
Target 3.5 esignature userKAS02648 Page 148 of 420




Total Ion Chromatogram (TIC)

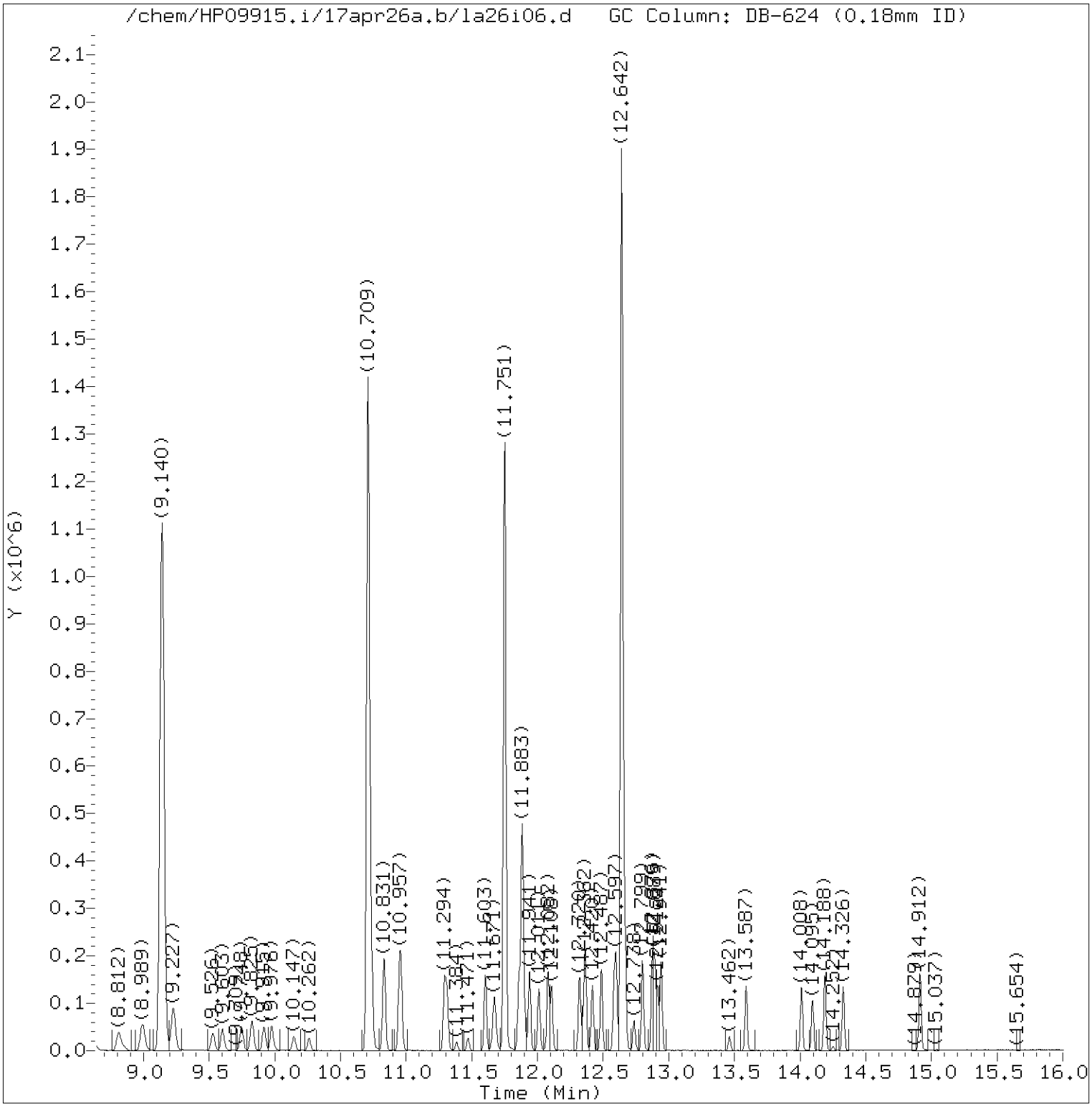
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 26037 | 4.176 |
| 4) Chloromethane | (2) | 1.803 | 50 | 25200 | 3.934 |
| 6) Vinyl Chloride | (2) | 1.915 | 62 | 24755 | 4.002 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 16995 | 4.504 |
| 8) Bromomethane | (2) | 2.205 | 94 | 16261M | 3.908 |
| 9) Chloroethane | (2) | 2.295 | 64 | 14059 | 4.033 |
| 10) Dichlorofluoromethane | (2) | 2.484 | 67 | 33722 | 3.966 |
| 12) Trichlorofluoromethane | (2) | 2.542 | 101 | 29360 | 4.099 |
| 11) n-Pentane | (2) | 2.591 | 43 | 26016 | 4.410 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 15912 | 3.990 |
| 15) Freon 123a | (2) | 2.816 | 67 | 20631 | 4.325 |
| 16) Acrolein | (1) | 2.906 | 56 | 57583 | 34.296 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 16036 | 4.230 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 63 | 8089 | 4.215 |
| 18) Acetone | (1) | 3.041 | 58 | 5325M | 7.307 |
| 19) Freon 113 | (2) | 3.044 | 101 | 16238 | 4.255 |
| 21) 2-Propanol | (1) | 3.189 | 45 | 40137M | 83.086 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 30085 | 4.091 |
| 23) Carbon Disulfide | (2) | 3.282 | 76 | 50383 | 4.084 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 21444 | 3.897 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 31272 | 4.118 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 205105M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 20934 | 4.180 |
| 30) t-Butyl alcohol | (1) | 3.687 | 59 | 60772M | 76.579 |
| 31) Acrylonitrile | (2) | 3.870 | 53 | 11085 | 3.836 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 55927 | 4.027 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 18531 | 4.166 |
| 34) n-Hexane | (2) | 4.324 | 57 | 28520 | 4.183 |
| 36) 1,1-Dichloroethane | (2) | 4.562 | 63 | 34363 | 4.111 |
| 38) di-Isopropyl ether | (2) | 4.619 | 45 | 64435 | 4.016 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 28657 | 4.064 |
| 40) Ethyl t-butyl ether | (2) | 5.176 | 59 | 54352 | 3.937 |
| 44) 2-Butanone | (2) | 5.381 | 43 | 28701 | 7.418 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 21315M | 3.819 |
| 42) cis-1,2-Dichloroethene | (2) | 5.423 | 96 | 20667 | 4.055 |
| 47) Propionitrile | (1) | 5.465 | 54 | 86867 | 74.999 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 109898 | 38.147 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 10436 | 3.885 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 6817 | 6.663 |
| 51) Chloroform | (2) | 5.925 | 83 | 32628 | 4.095 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 32845 | 4.511 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 253557 | 49.604 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 111 | 260923 | 49.814 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 39198 | 8.221 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 34447 | 4.155 |
| 54) Cyclohexane | (2) | 6.240 | 84 | 28669 | 4.230 |
| 54) Cyclohexane | (2) | 6.243 | 69 | 10119 | 4.211 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 20852 | 3.924 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 26512 | 4.091 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 53887 | 193.400 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 64045 | 50.386 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 303739 | 50.519 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 104 | 40296 | 49.981 |
| 60) Benzene | (2) | 6.629 | 78 | 78391 | 4.104 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 26098 | 4.039 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 2305M | 4.022 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 52770 | 3.851 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1046774 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 33581 | 4.399 |
| 69) n-Butanol | (1) | 7.433 | 56 | 79036 | 351.880 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 19901 | 4.031 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 36459 | 4.192 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 16232 | 4.135 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 20791 | 3.976 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 12532 | 178.720 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 16816M | 3.757 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 12893M | 3.921 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 22387 | 3.772 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 11184 | 6.646 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 14941 | 3.717 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 28555 | 3.692 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 55176 | 6.920 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1029529 | 50.086 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 677093 | 49.999 |
| 88) Toluene | (3) | 9.227 | 92 | 48414 | 4.053 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 23592 | 3.522 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.603 | 69 | 27111 | 3.594 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 17786 | 3.864 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 21245 | 4.021 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 30994 | 3.881 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 39380 | 6.830 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 52147 | 7.214 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 16936 | 3.552 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 19109 | 3.792 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 805037 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 28026 | 4.085 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 54921 | 3.985 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 17119 | 3.761 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 92312 | 4.006 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 71336 | 7.953 |
| 107) o-Xylene | (3) | 11.291 | 106 | 34913 | 3.914 |
| 109) Styrene | (3) | 11.310 | 104 | 55976 | 3.796 |
| 110) Bromoform | (3) | 11.471 | 173 | 11404 | 3.294 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 91623 | 4.019 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 48698 | 184.107 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 385379 | 50.441 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 338738 | 50.546 |
| 108) Xylene (Total) | (3) | | 106 | 106249 | 11.866 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 30161 | 3.917 |
| 115) Bromobenzene | (4) | 11.864 | 156 | 24538 | 3.958 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 83531 | 37.862 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 8734 | 4.013 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 111094 | 4.055 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 22713 | 3.983 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 77197 | 3.952 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 23232 | 3.915 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 16177M | 3.831 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 11868 | 3.559 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 78838 | 3.918 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 100568 | 4.036 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 47596 | 4.032 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 86819 | 3.946 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 433758 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 49098 | 4.023 |

M = Compound was manually integrated.
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Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 83360 | 3.954 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 37399 | 3.098 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 51945 | 3.951 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 55669 | 4.033 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 45170 | 4.109 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 46959 | 4.047 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 44327 | 4.007 |
| 141) Diethylbenzene (total) | (4) | | 100 | 151941 | 11.991 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 5965 | 3.664 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 38380 | 4.080 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 36590 | 4.010 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 16967 | 4.281 |
| 148) Naphthalene | (4) | 14.188 | 128 | 107263 | 3.895 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 35386 | 4.019 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 66826 | 3.753 |



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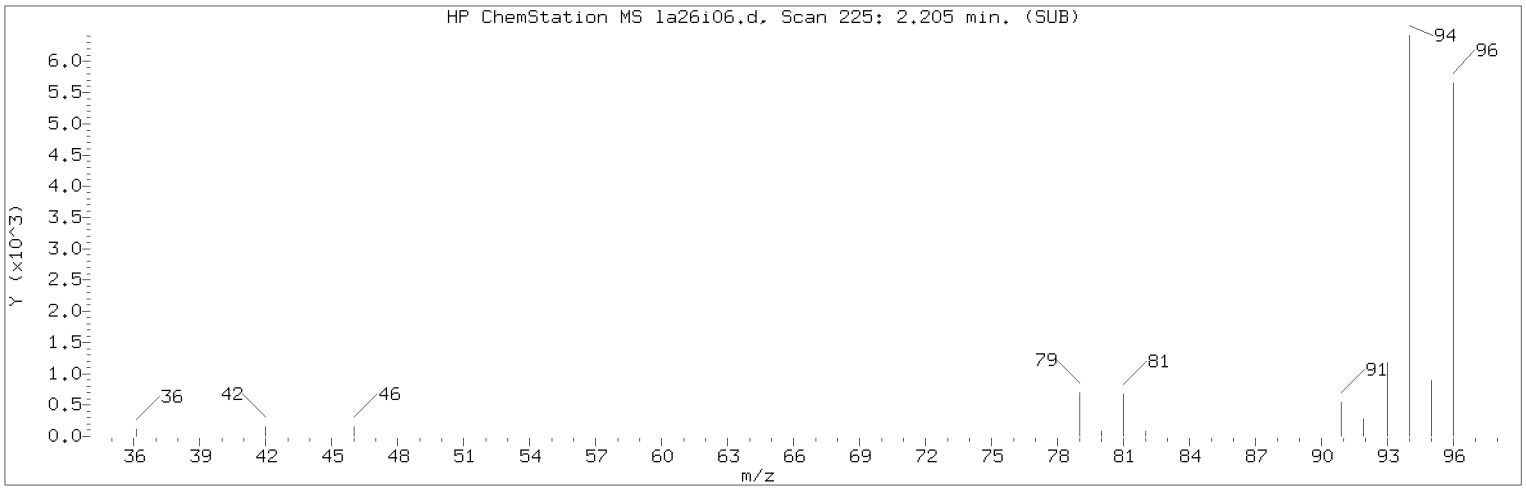
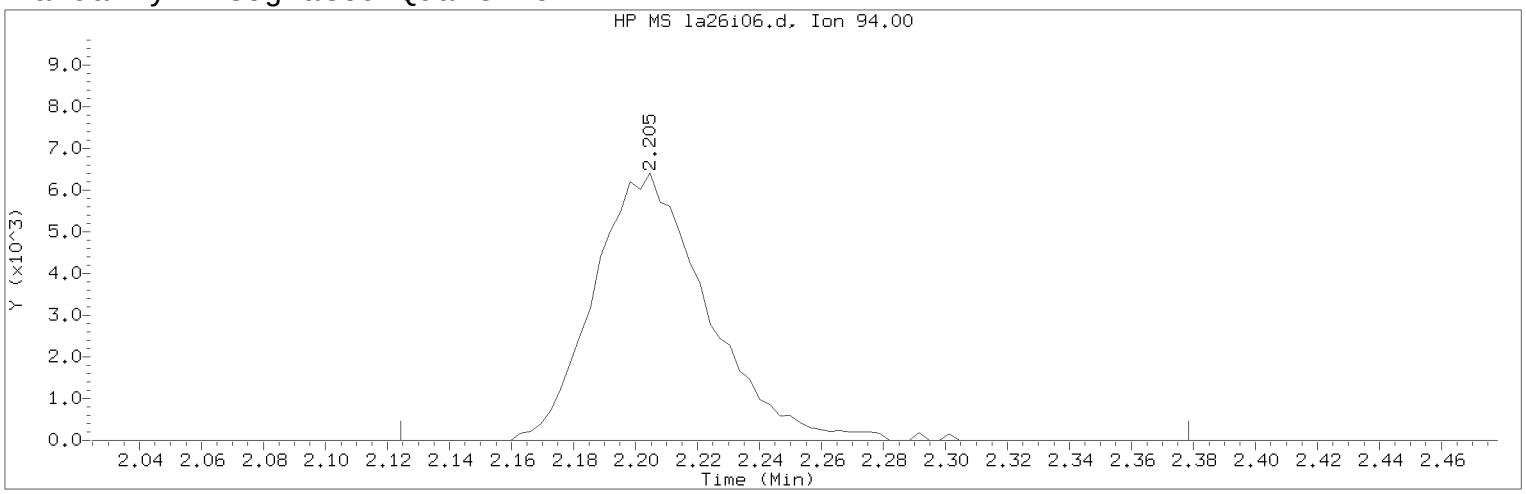
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

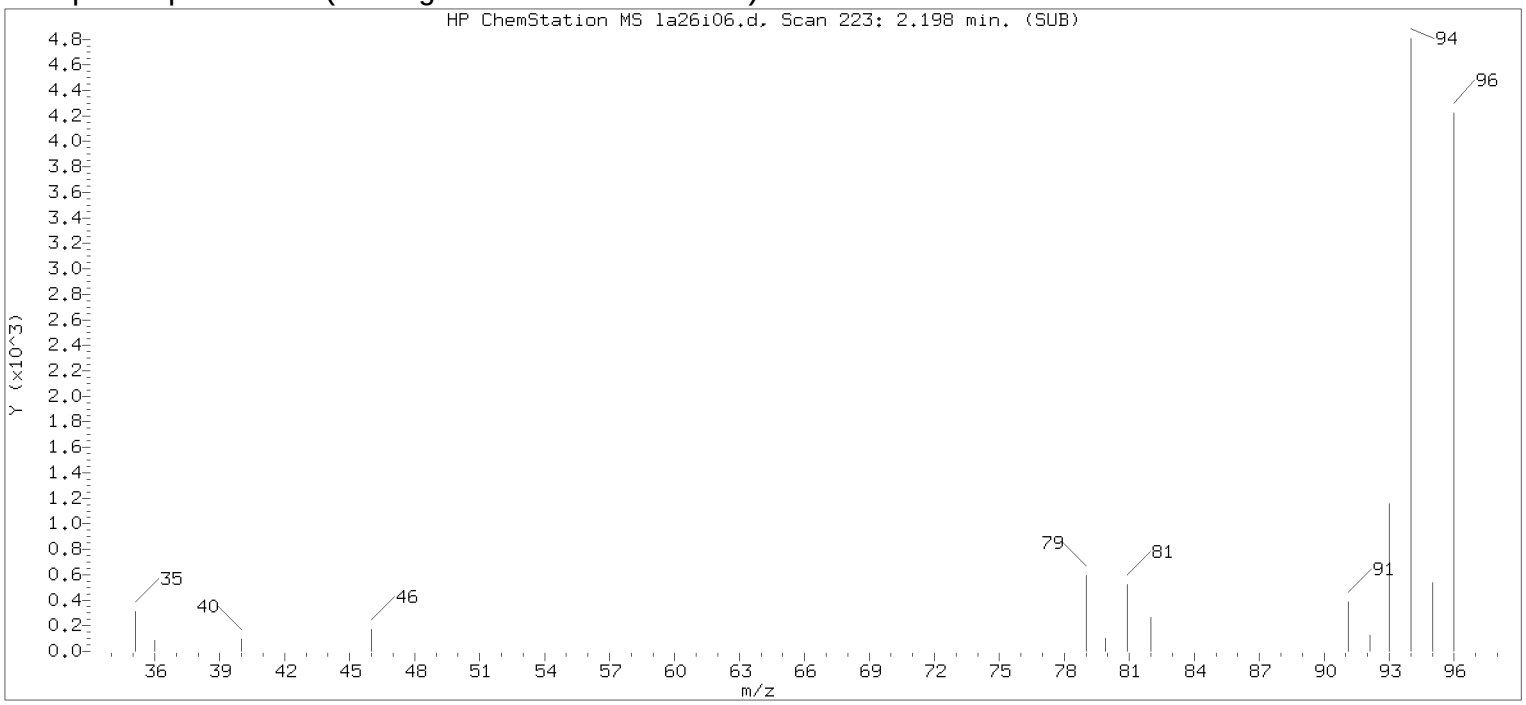
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 225
Retention Time (minutes): 2.205
Quant Ion : 94.00
Area (flag) : 16261M
On-Column Amount (ng) : 3.9084
Integration start scan : 199 Integration stop scan: 278
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

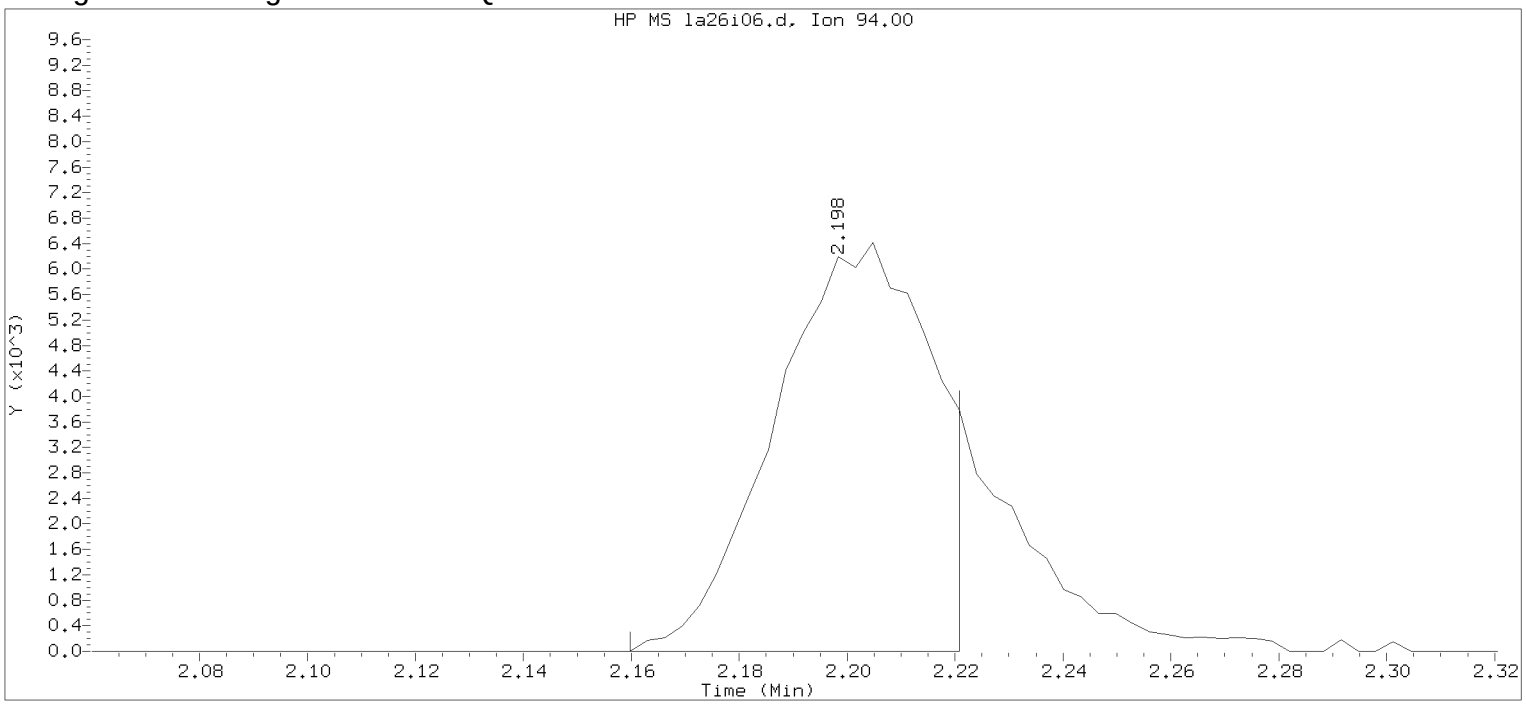
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

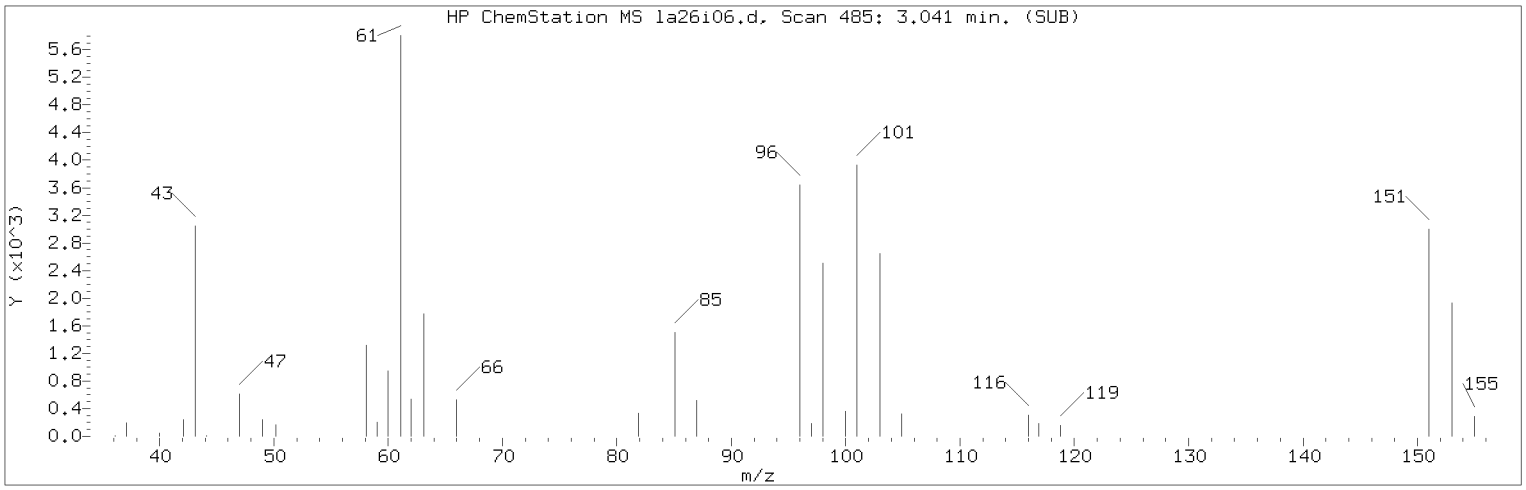
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

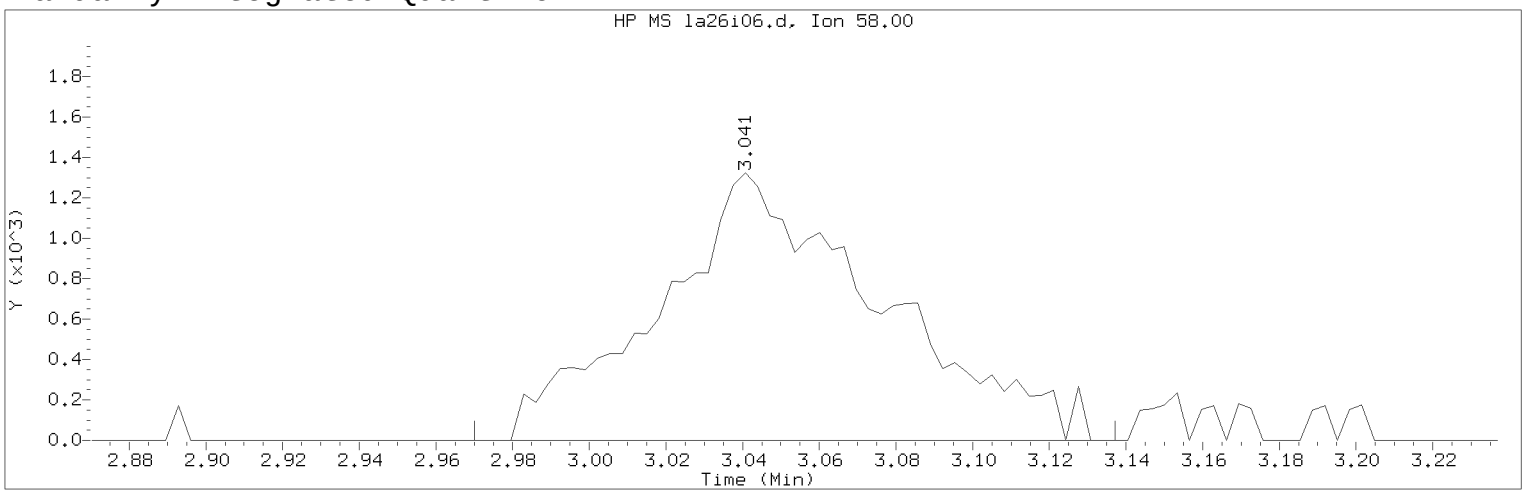
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area : 12778
On-column Amount (ng) : 3.1270
Integration start scan : 210 Integration stop scan: 229
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 181 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

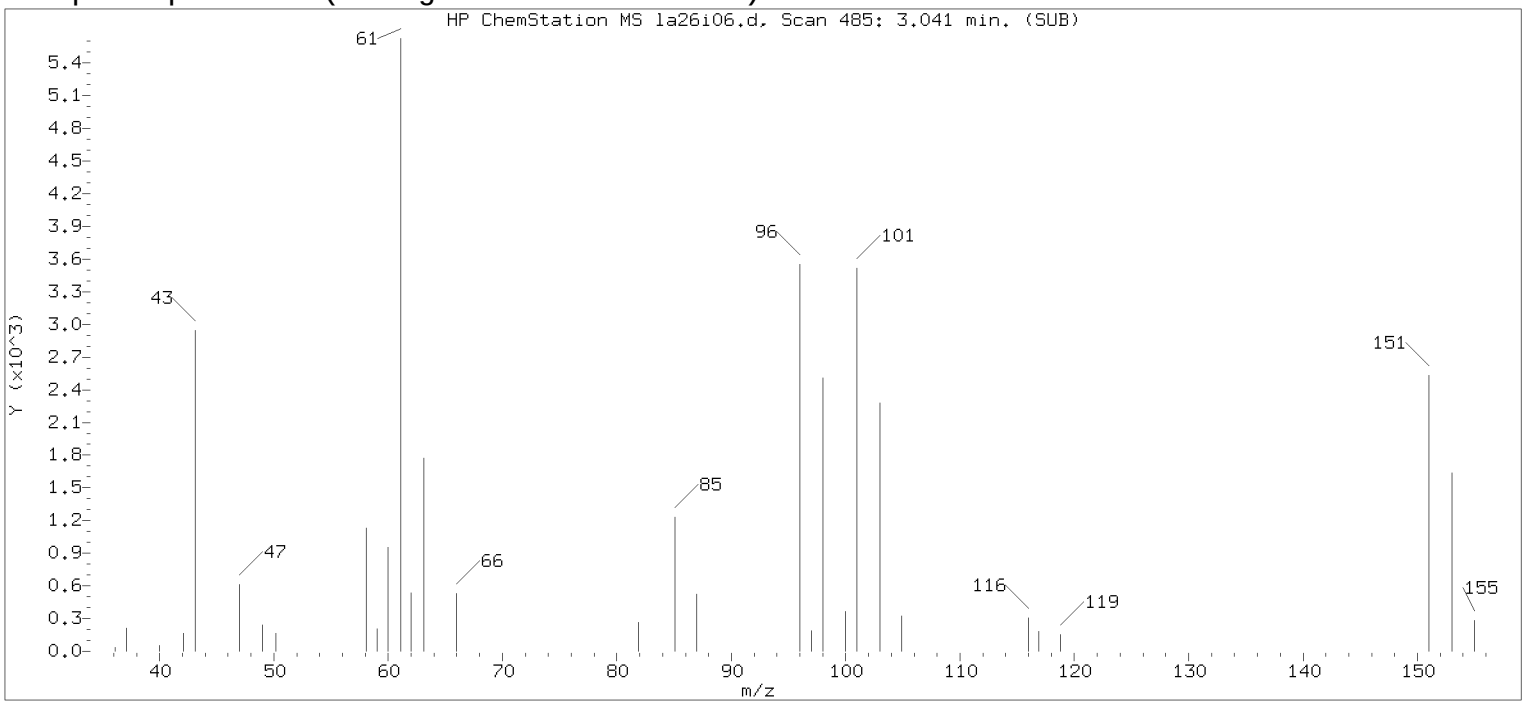
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area (flag) : 5325M
On-Column Amount (ng) : 7.3073
Integration start scan : 462 Integration stop scan: 514
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

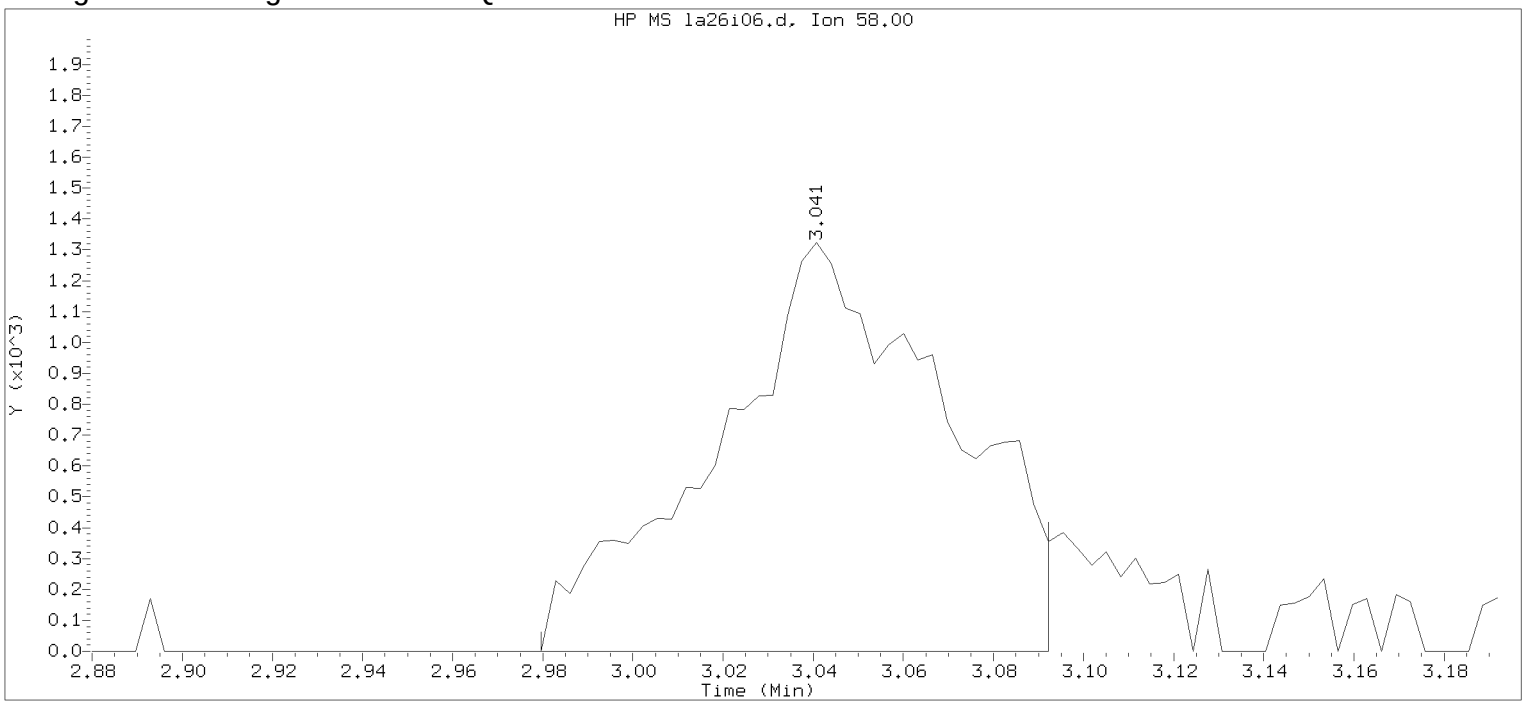
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

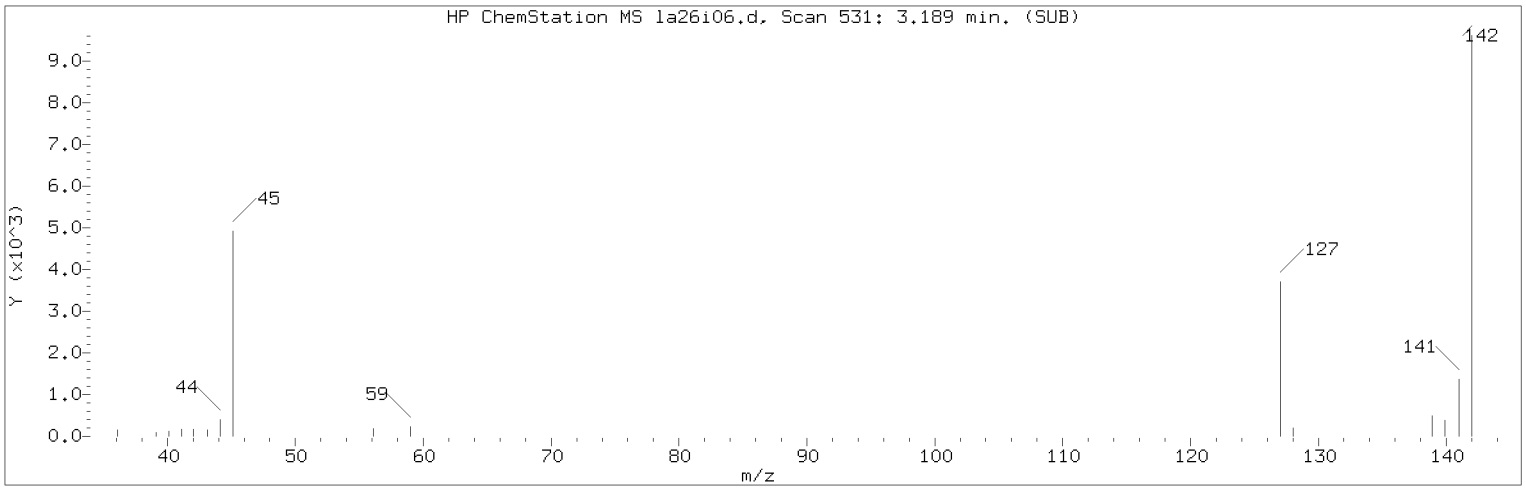
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

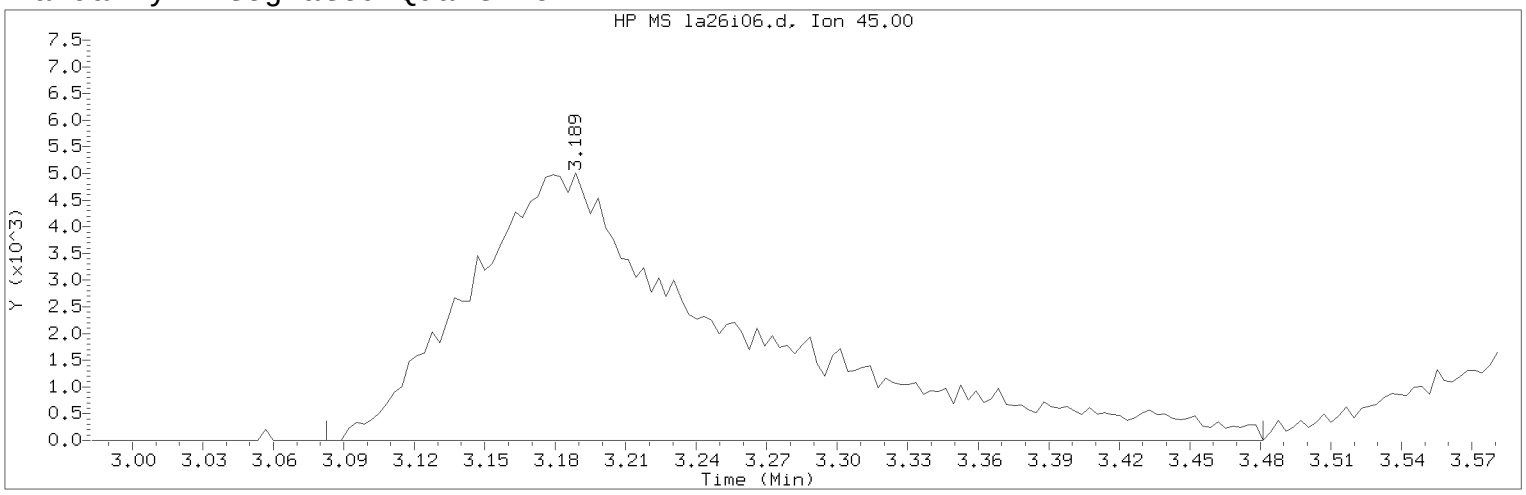
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area : 4747
On-column Amount (ng) : 6.6314
Integration start scan : 465 Integration stop scan: 500
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

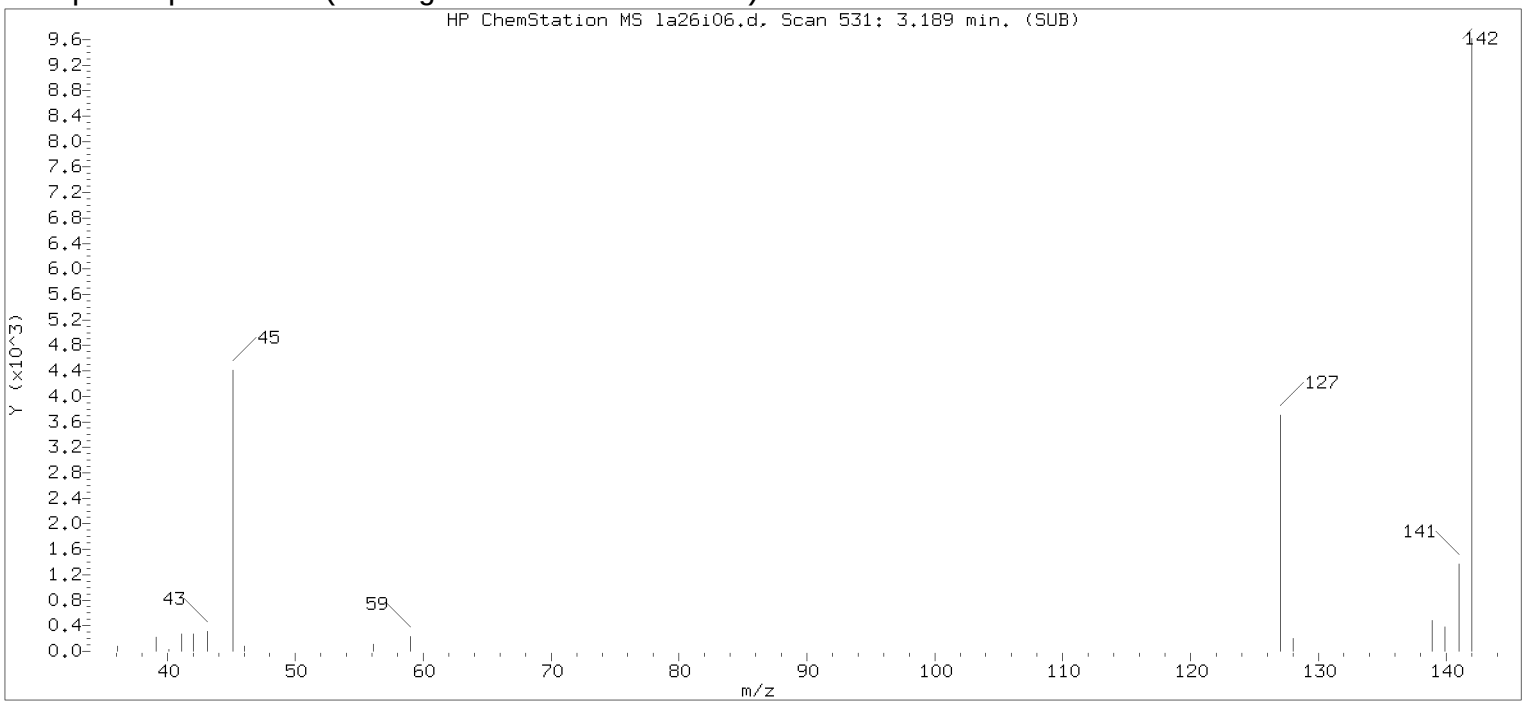
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area (flag) : 40137M
On-Column Amount (ng) : 83.0856
Integration start scan : 497 Integration stop scan: 621
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

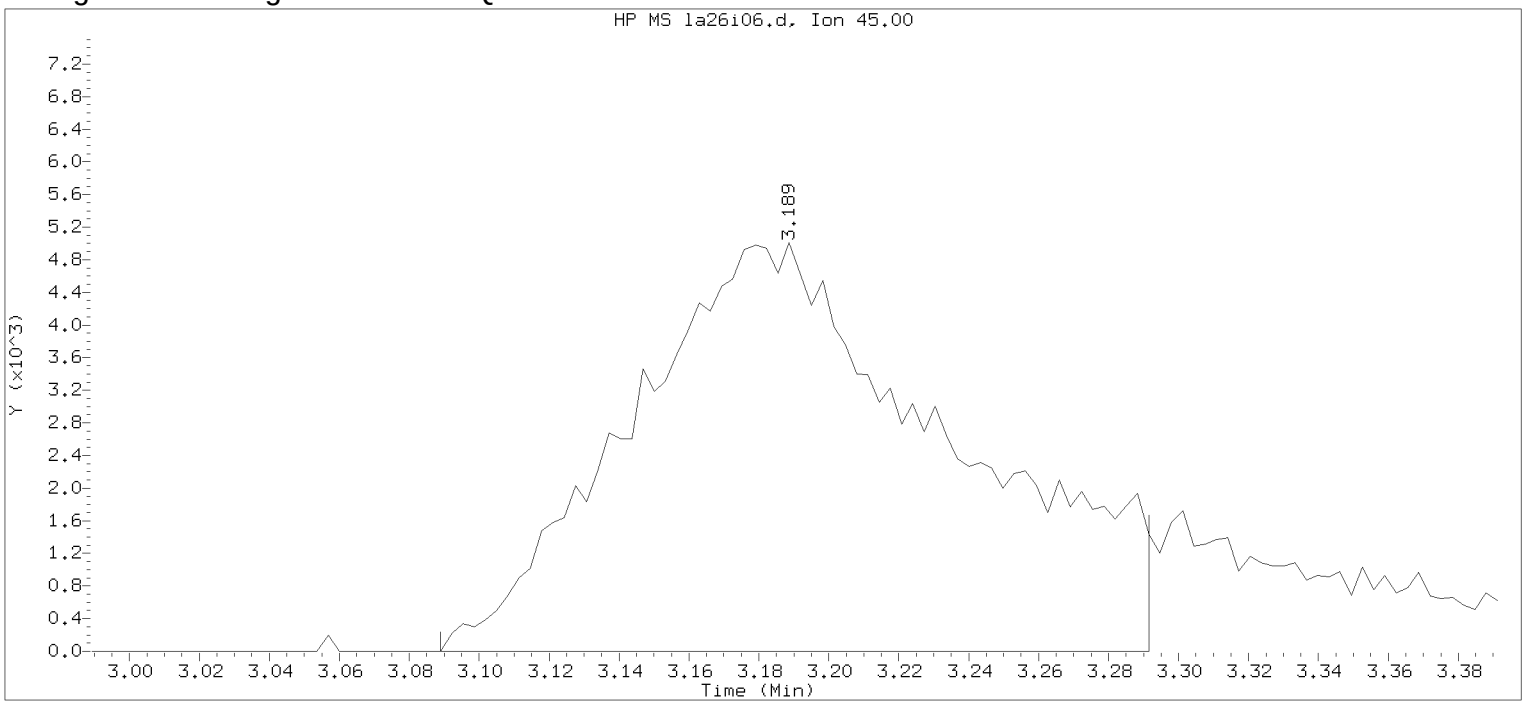
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area : 31951
On-column Amount (ng) : 64.3252
Integration start scan : 499 Integration stop scan: 562
Y at integration start : 0 Y at integration end: 0

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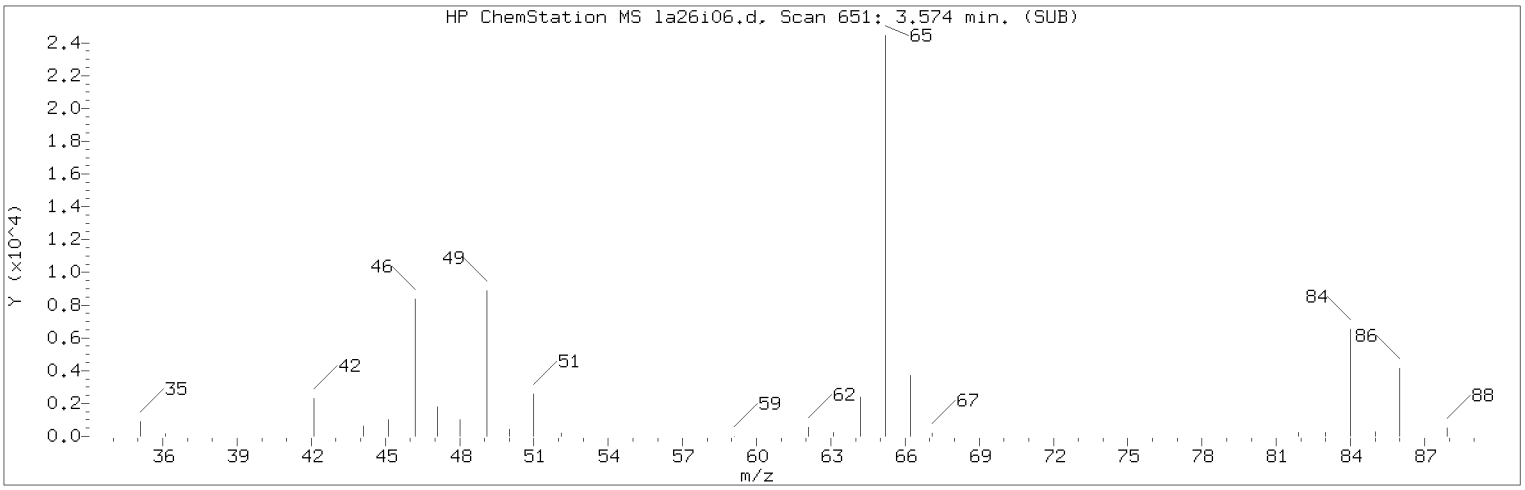
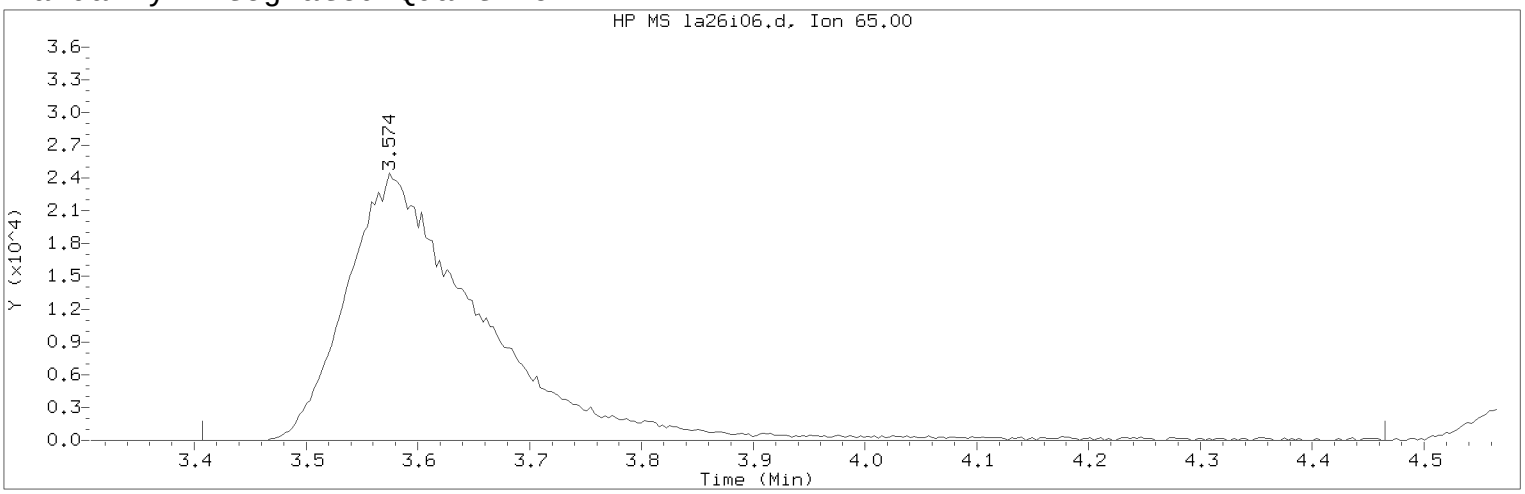
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

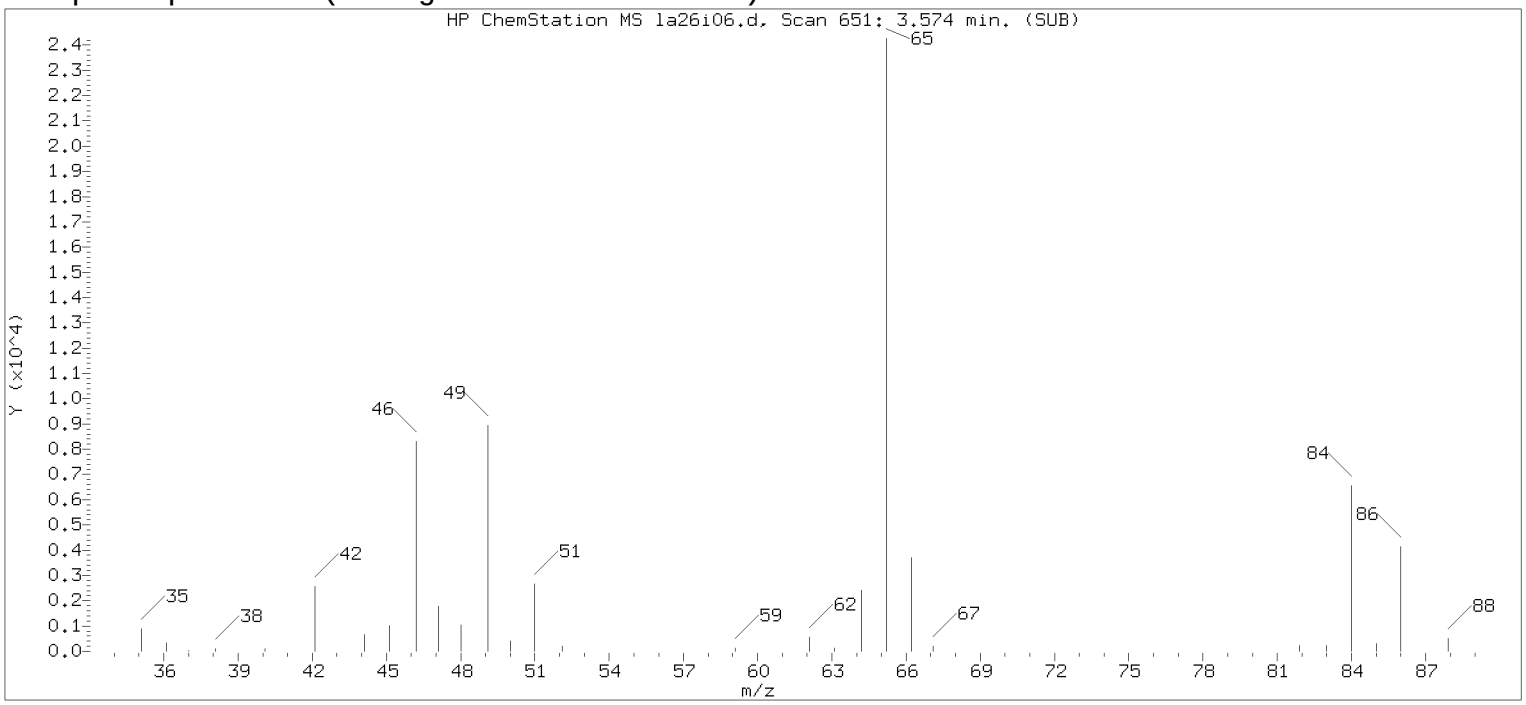
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 205105M
On-Column Amount (ng) : 250.0000
Integration start scan : 598 Integration stop scan: 927
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

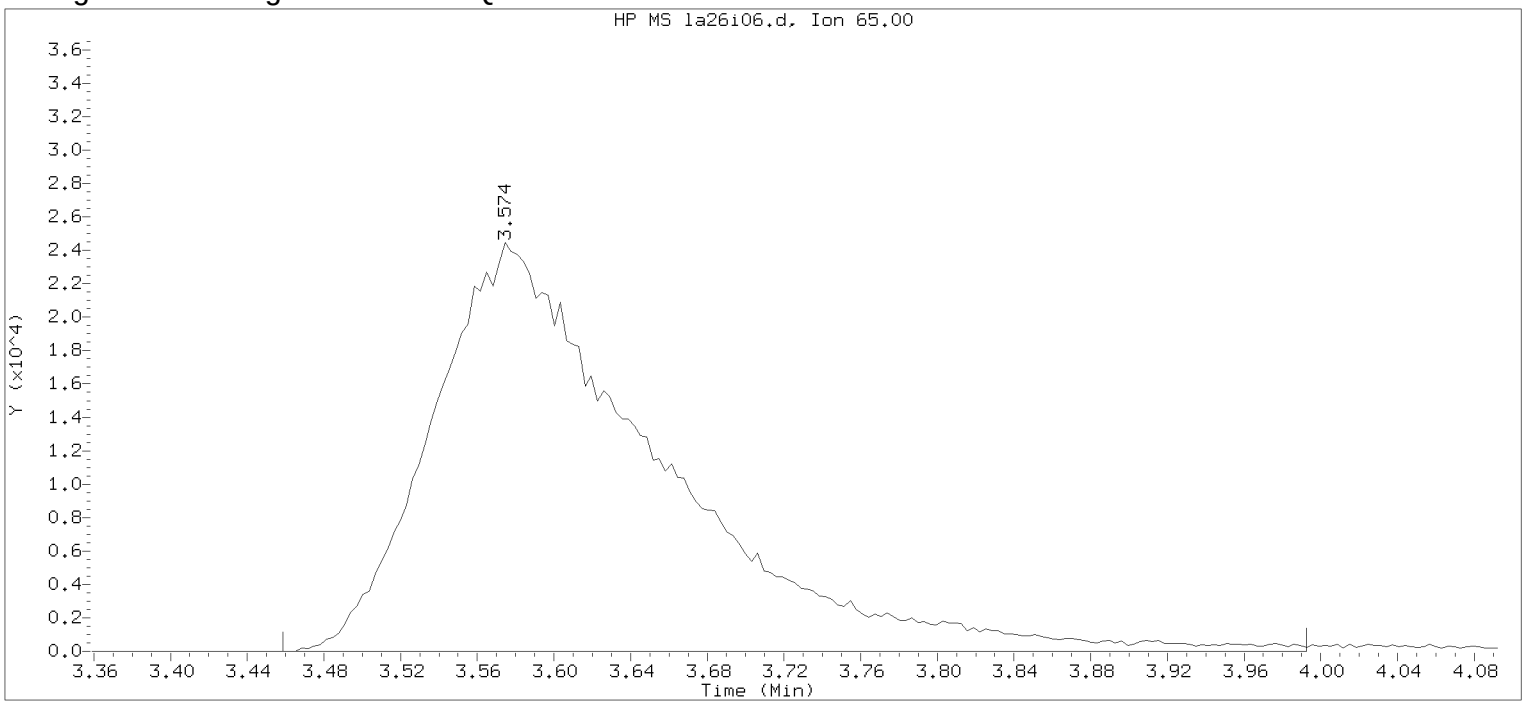
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

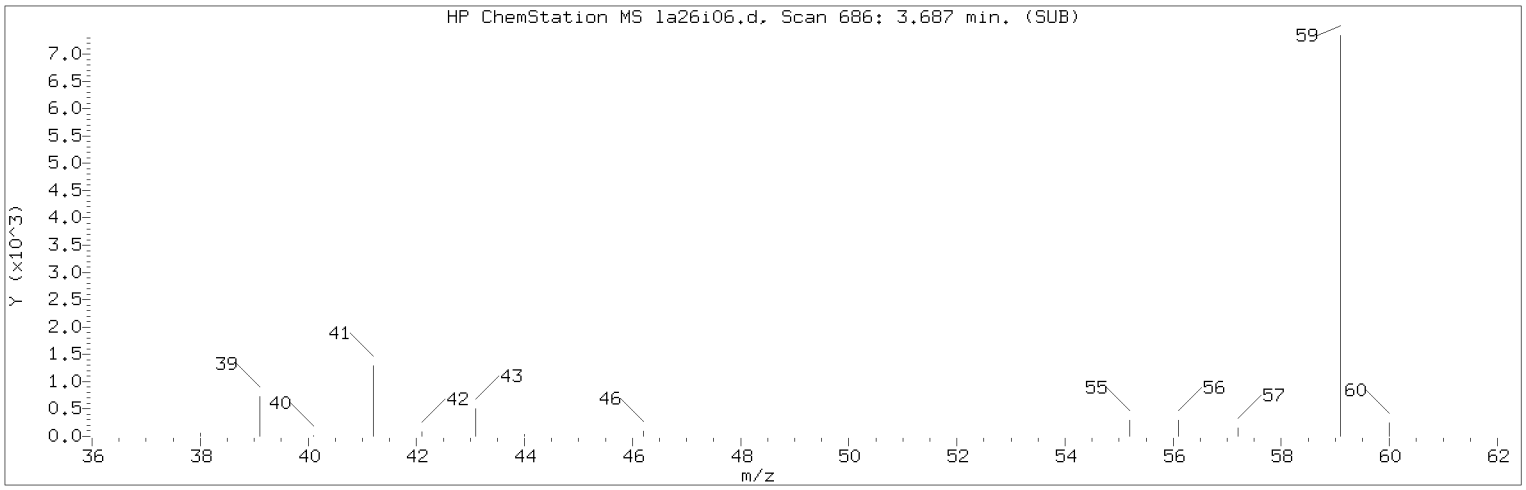
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

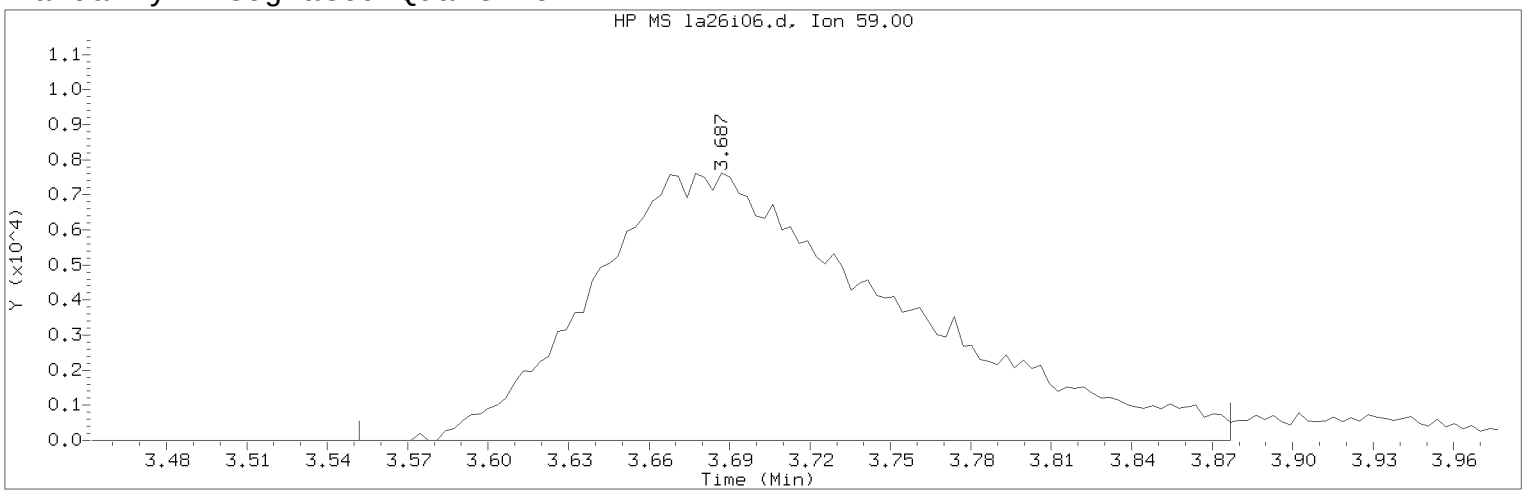
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area : 200349
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 780
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

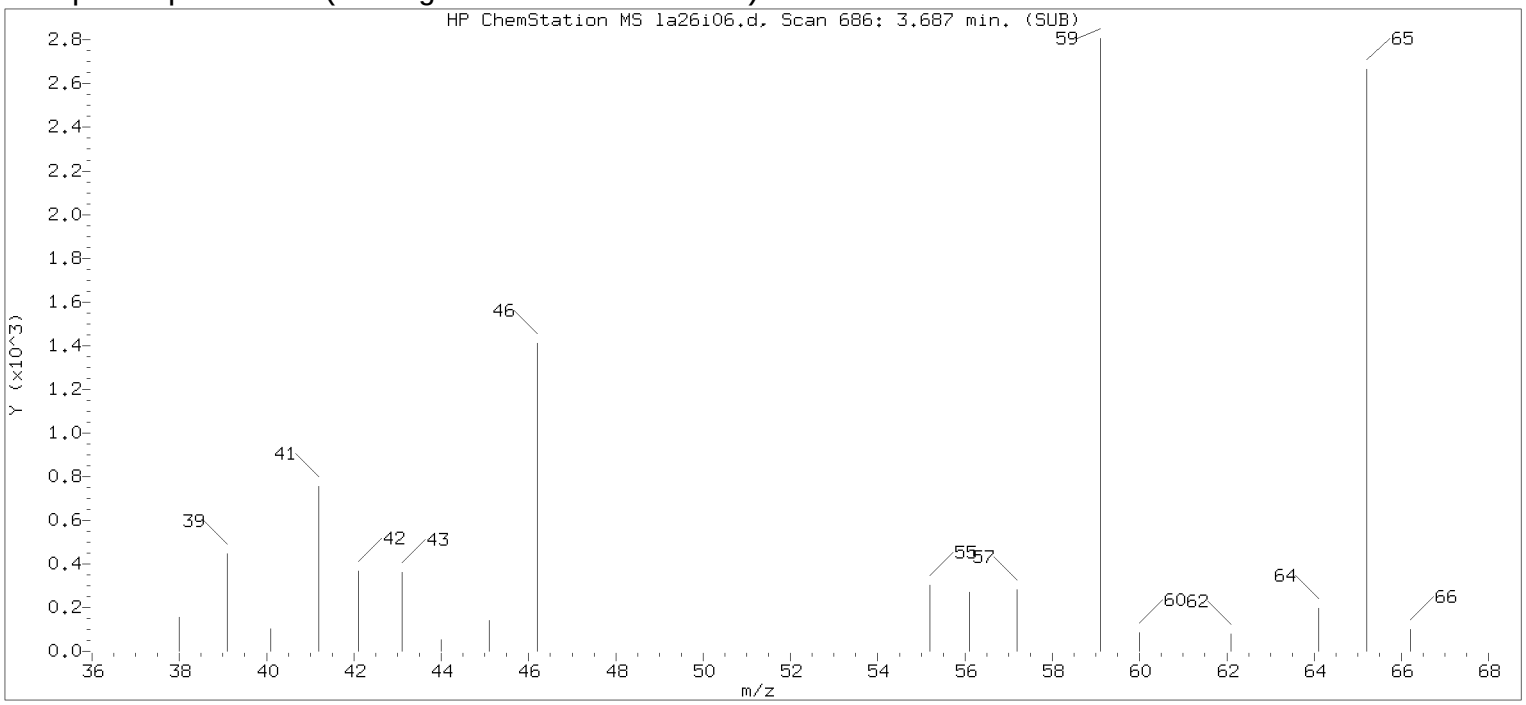
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area (flag) : 60772M
On-Column Amount (ng) : 76.5789
Integration start scan : 643 Integration stop scan: 744
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

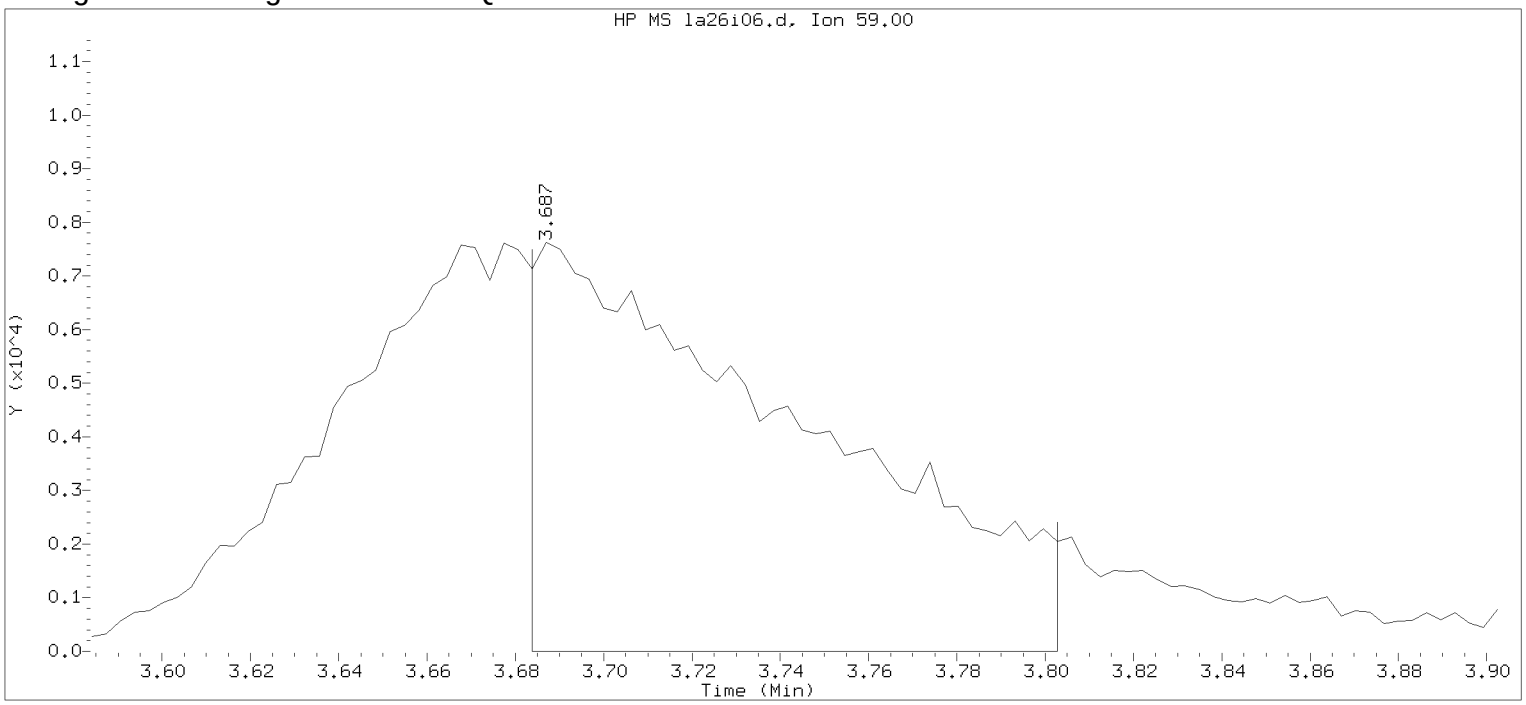
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

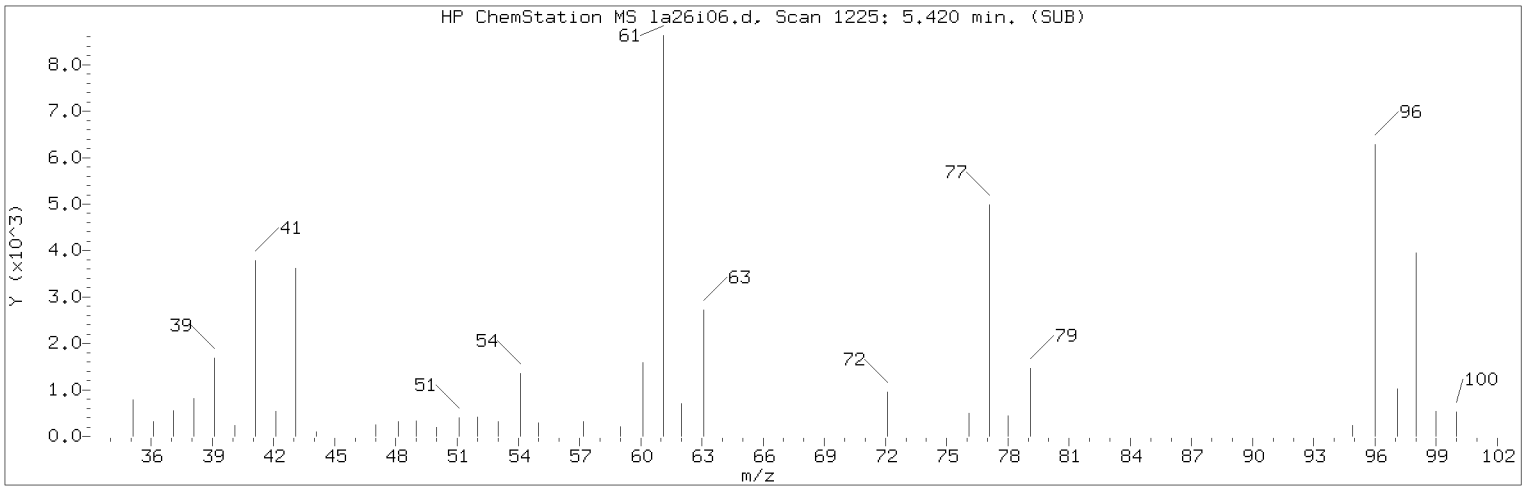
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

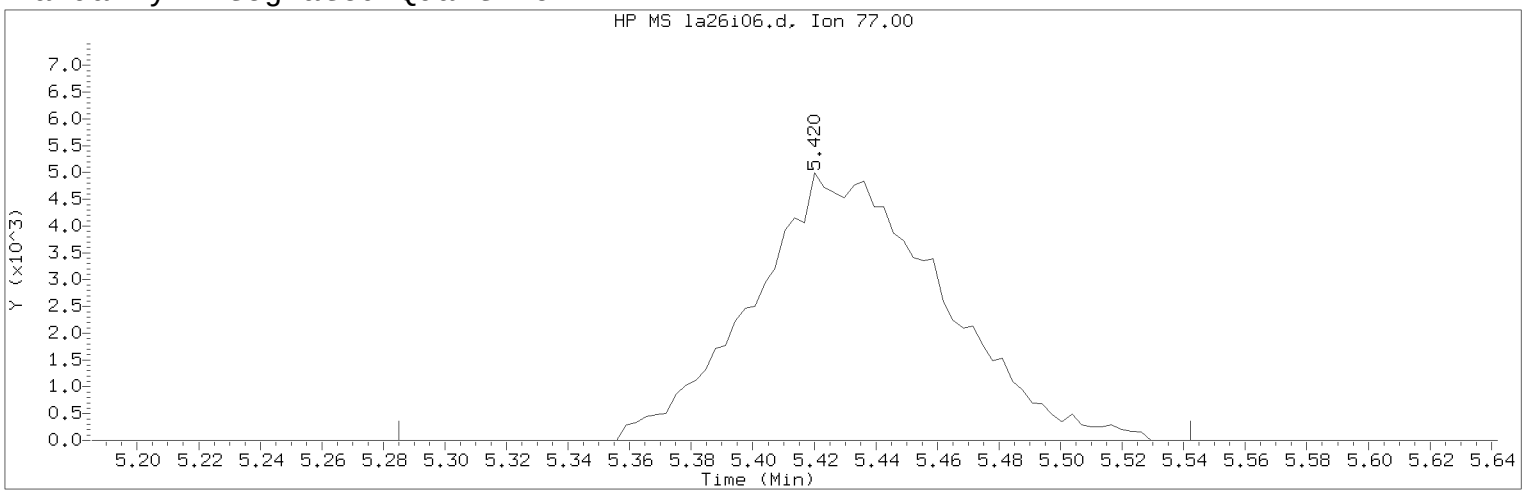
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area : 31960
On-column Amount (ng) : 48.0104
Integration start scan : 684 Integration stop scan: 721
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

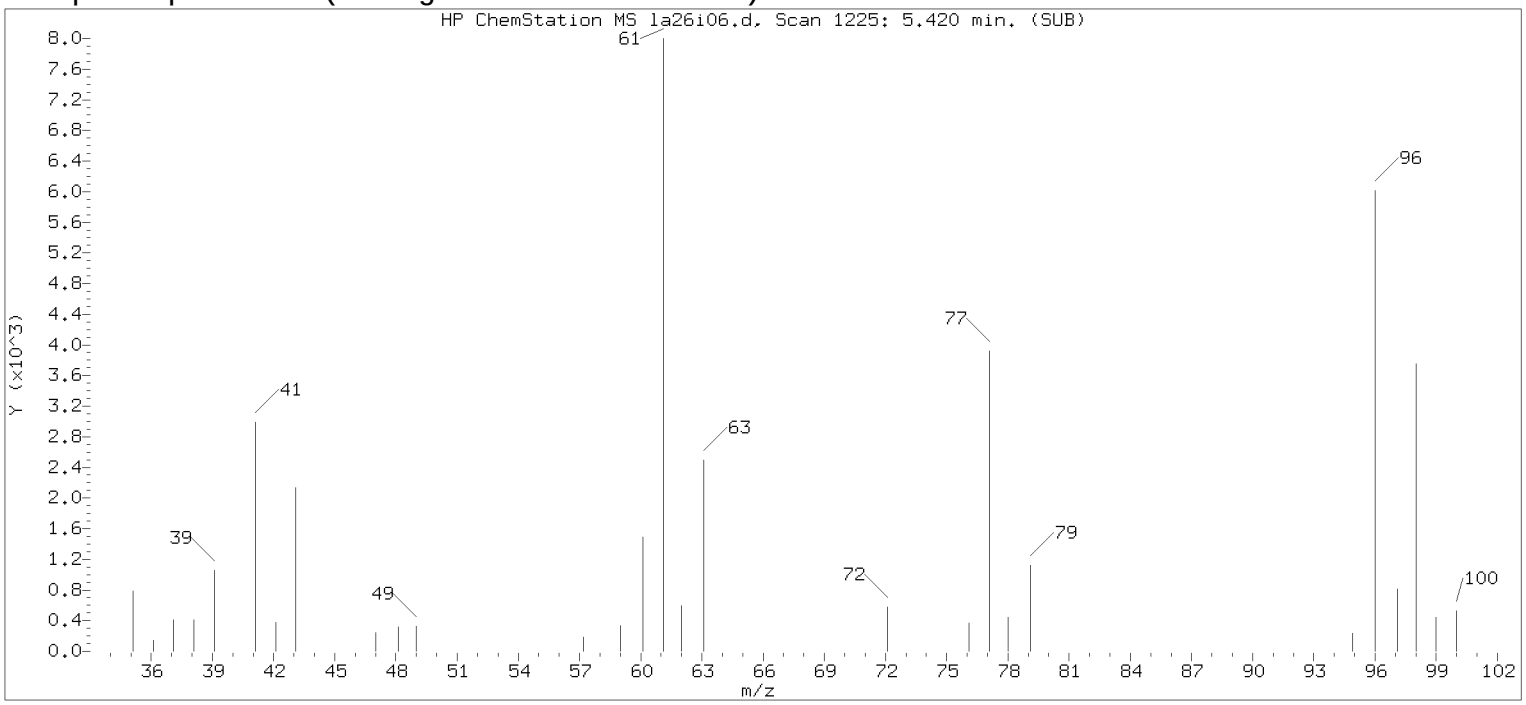
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1225
Retention Time (minutes): 5.420
Quant Ion : 77.00
Area (flag) : 21315M
On-Column Amount (ng) : 3.8194
Integration start scan : 1182 Integration stop scan: 1262
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

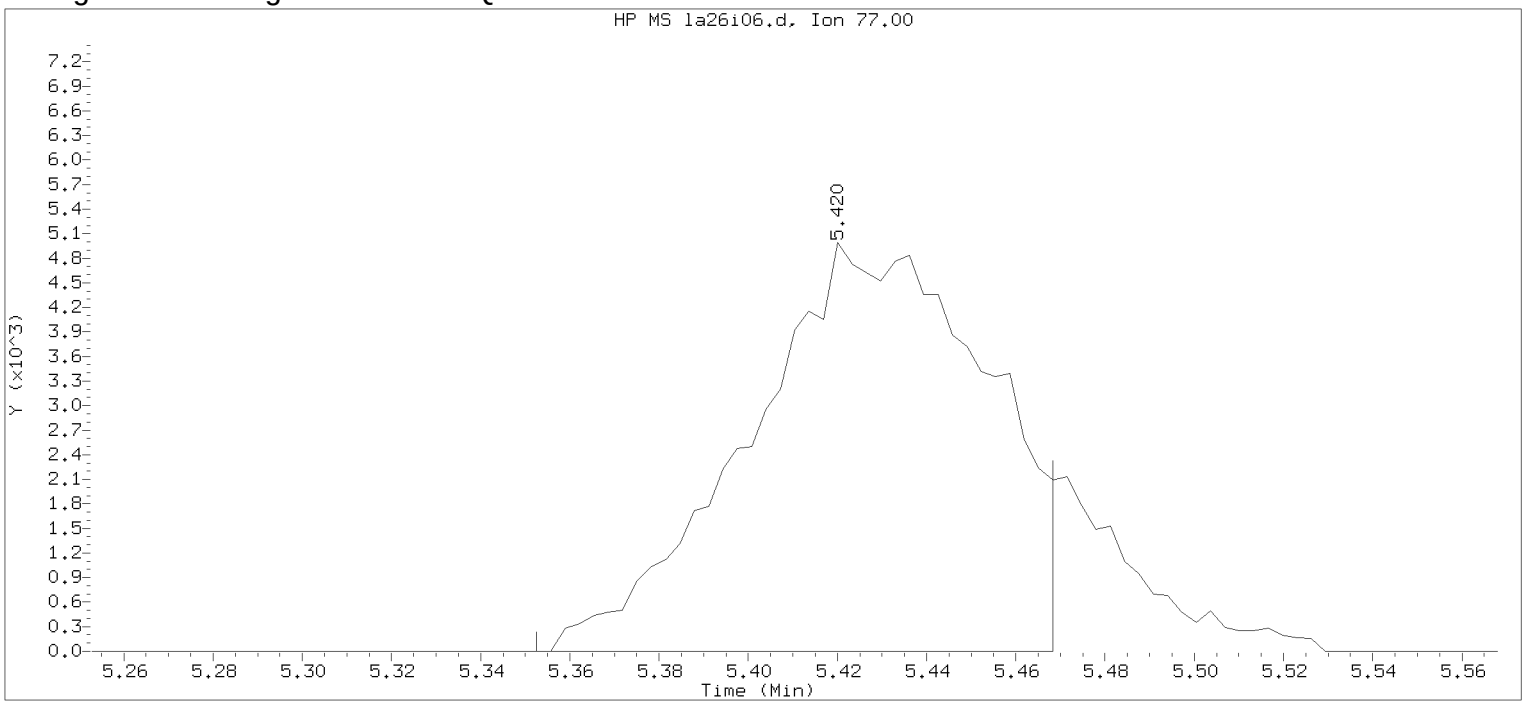
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

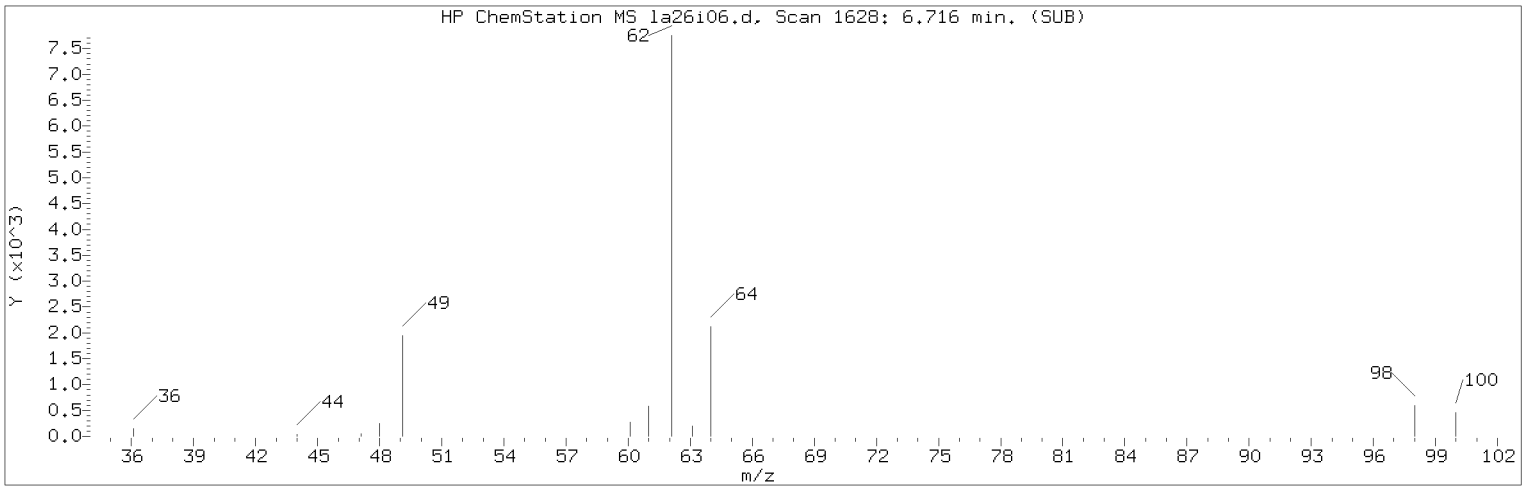
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

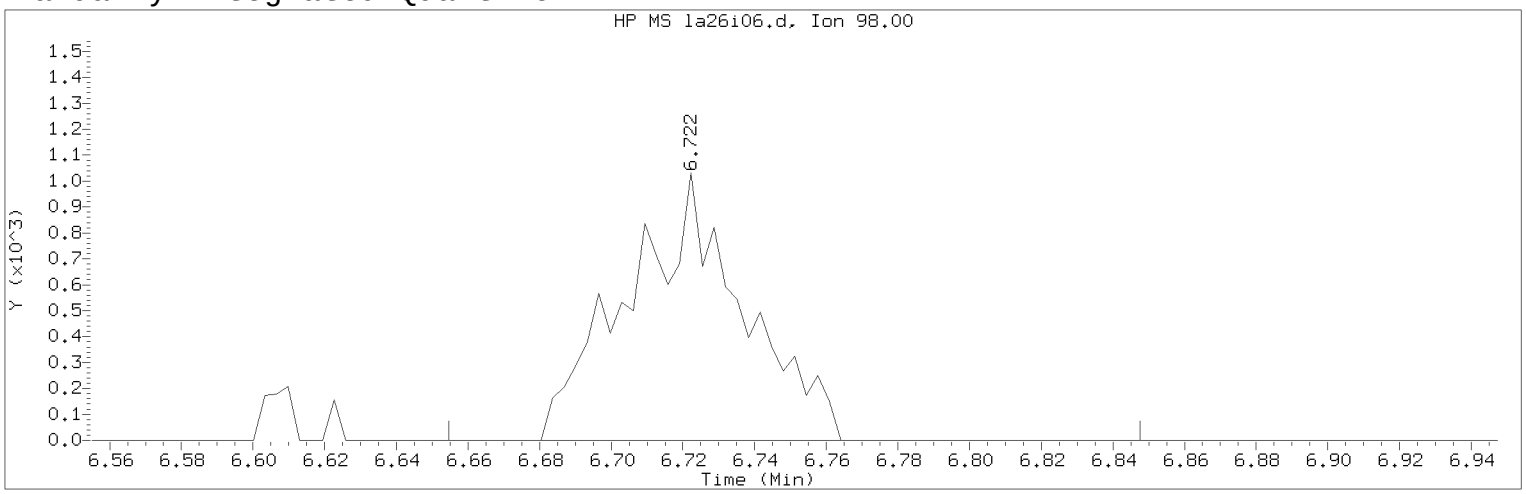
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1225
Retention Time (minutes): 5.420
Quant Ion : 77.00
Area : 18551
On-column Amount (ng) : 3.2757
Integration start scan : 1203 Integration stop scan: 1239
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 141 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

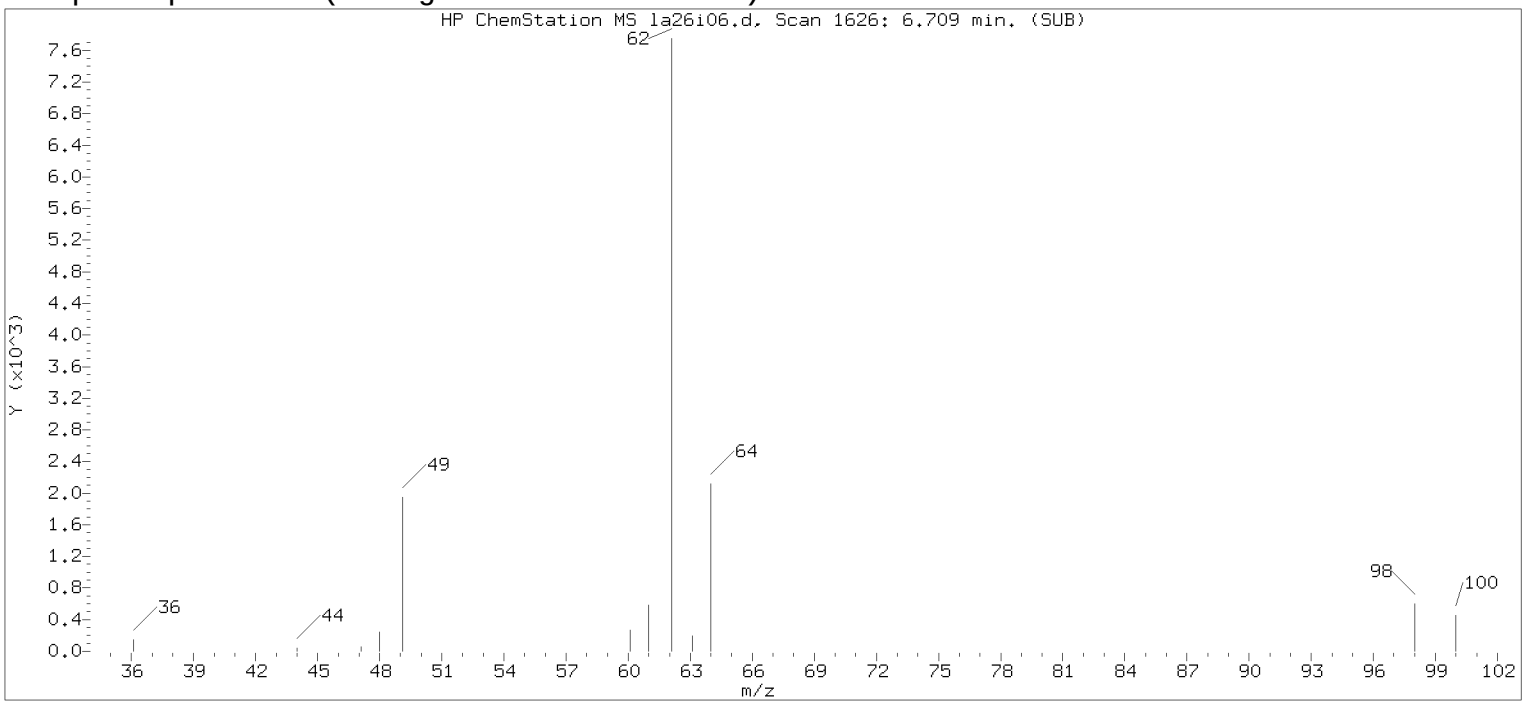
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1630
Retention Time (minutes): 6.722
Quant Ion : 98.00
Area (flag) : 2305M
On-Column Amount (ng) : 4.0222
Integration start scan : 1608 Integration stop scan: 1668
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

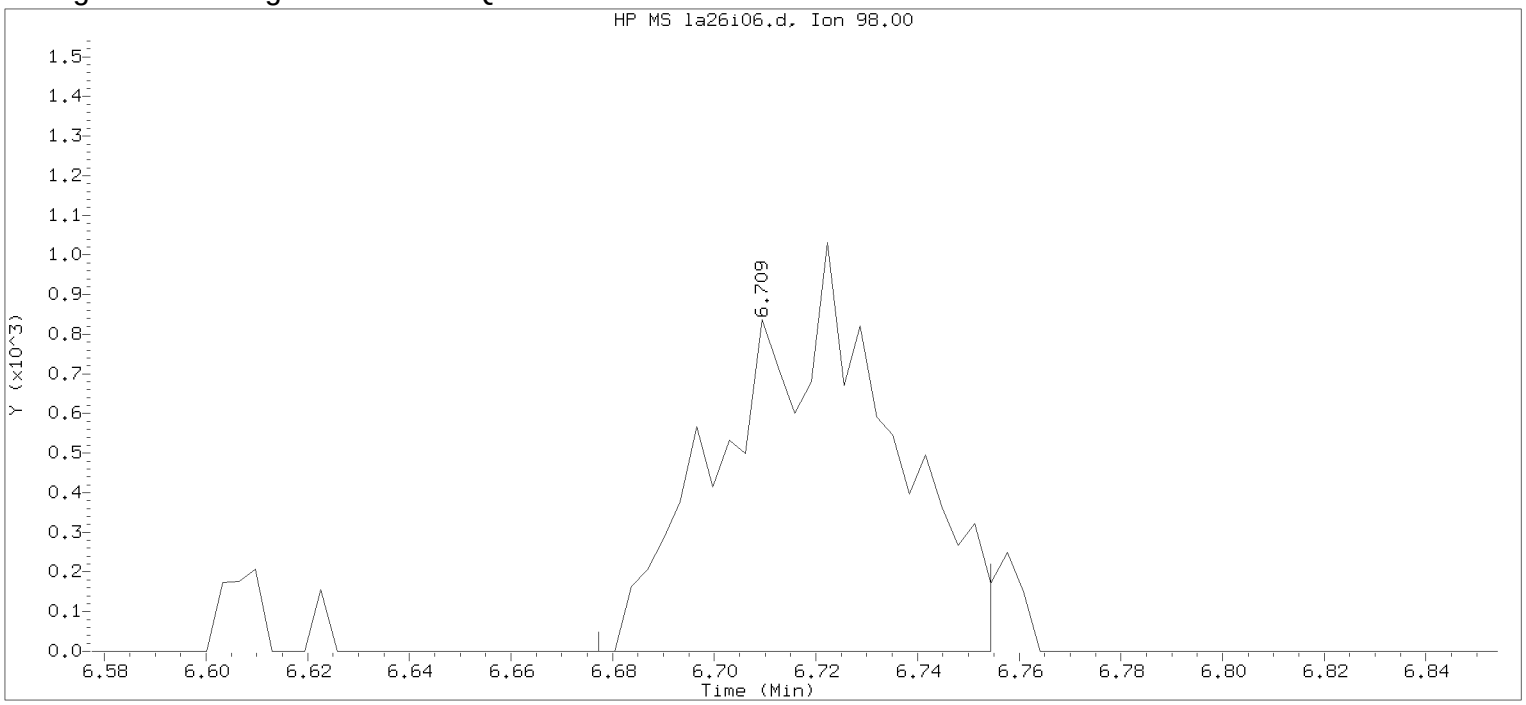
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

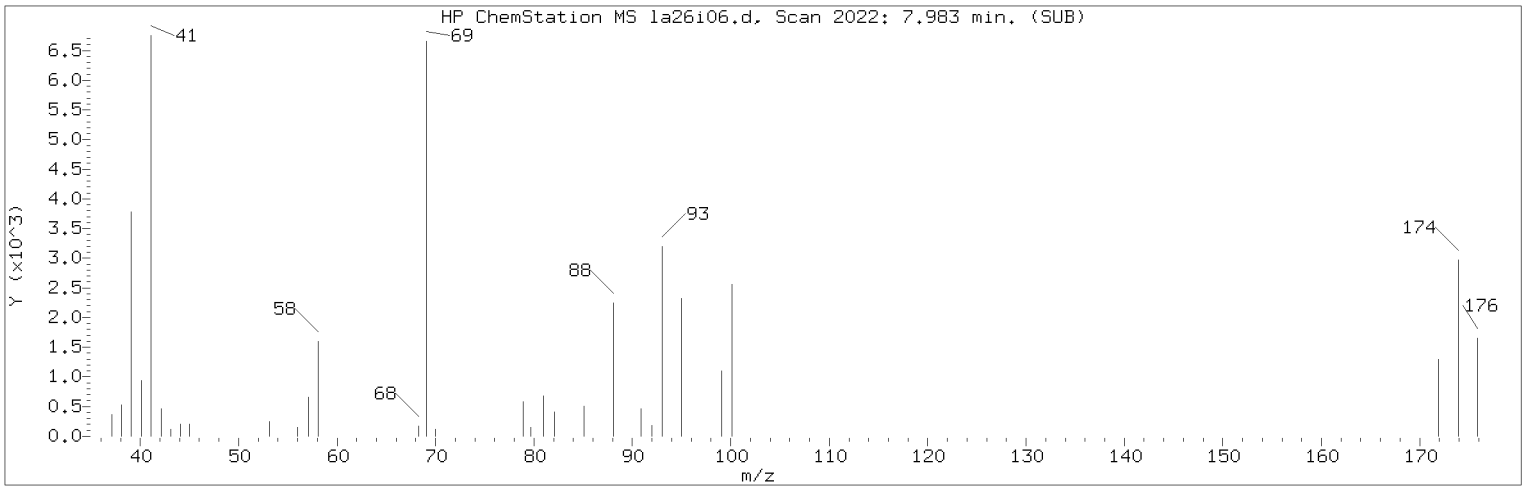
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

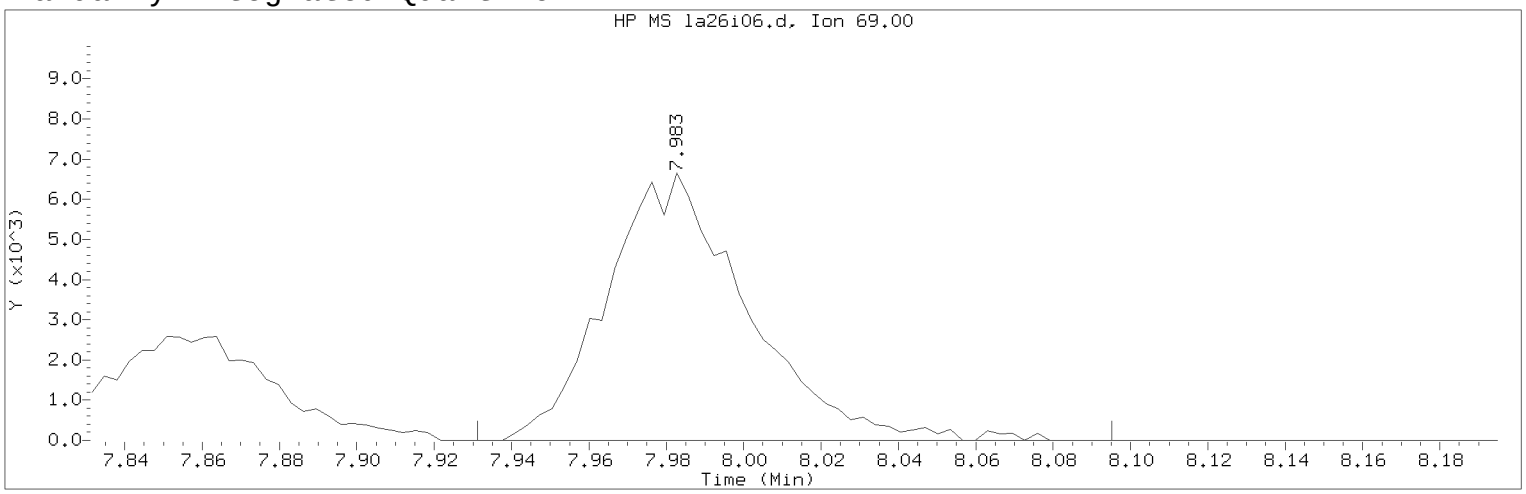
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1626
Retention Time (minutes): 6.709
Quant Ion : 98.00
Area : 2211
On-column Amount (ng) : 3.5785
Integration start scan : 1615 Integration stop scan: 1639
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

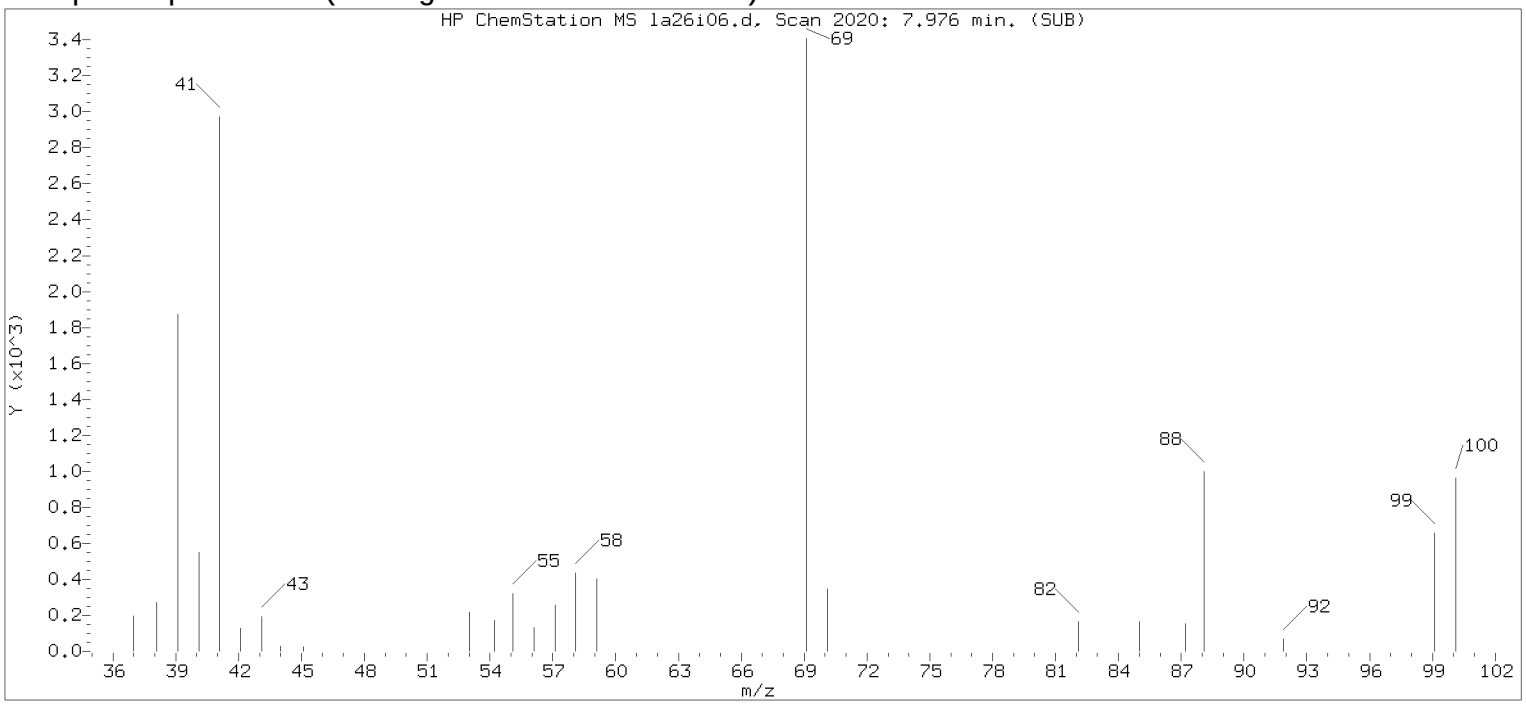
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 16816M
On-Column Amount (ng) : 3.7569
Integration start scan : 2005 Integration stop scan: 2056
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

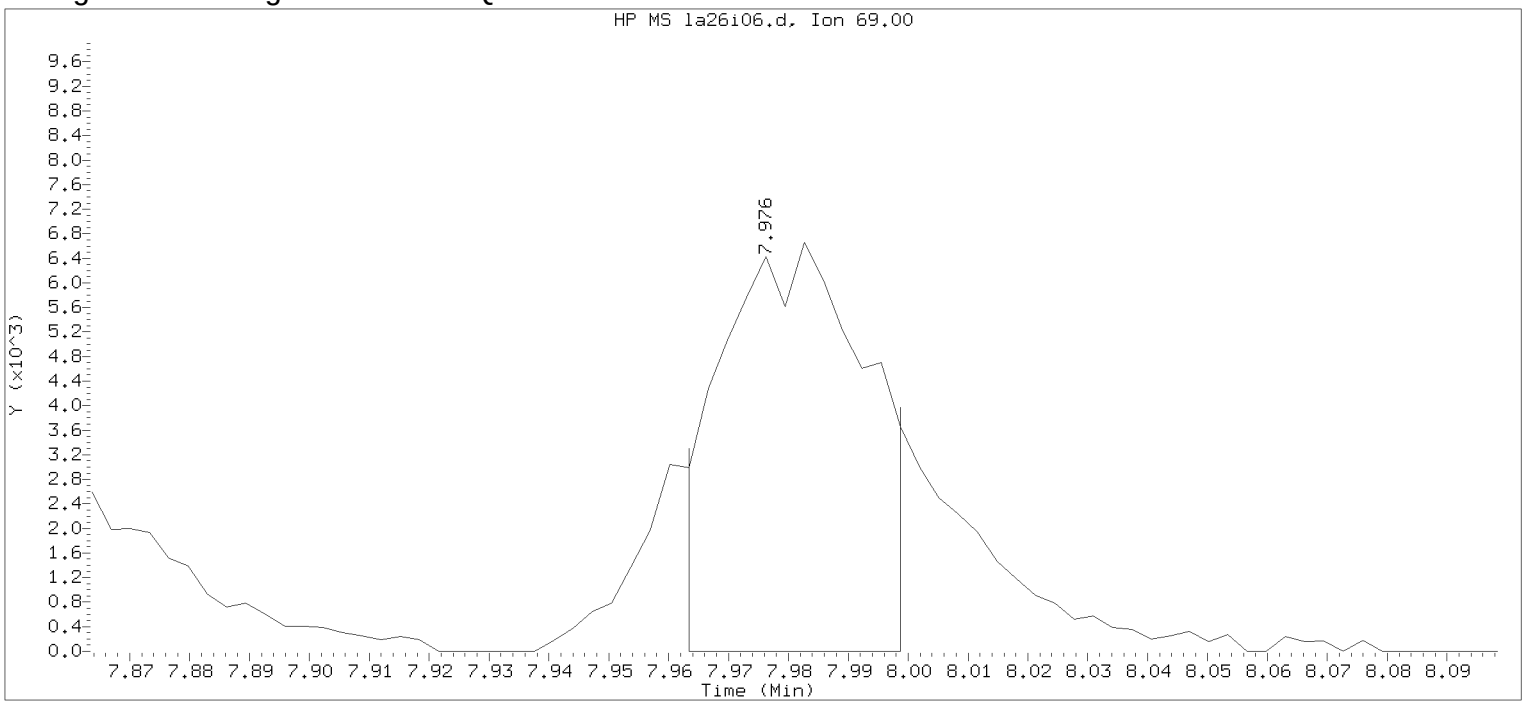
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

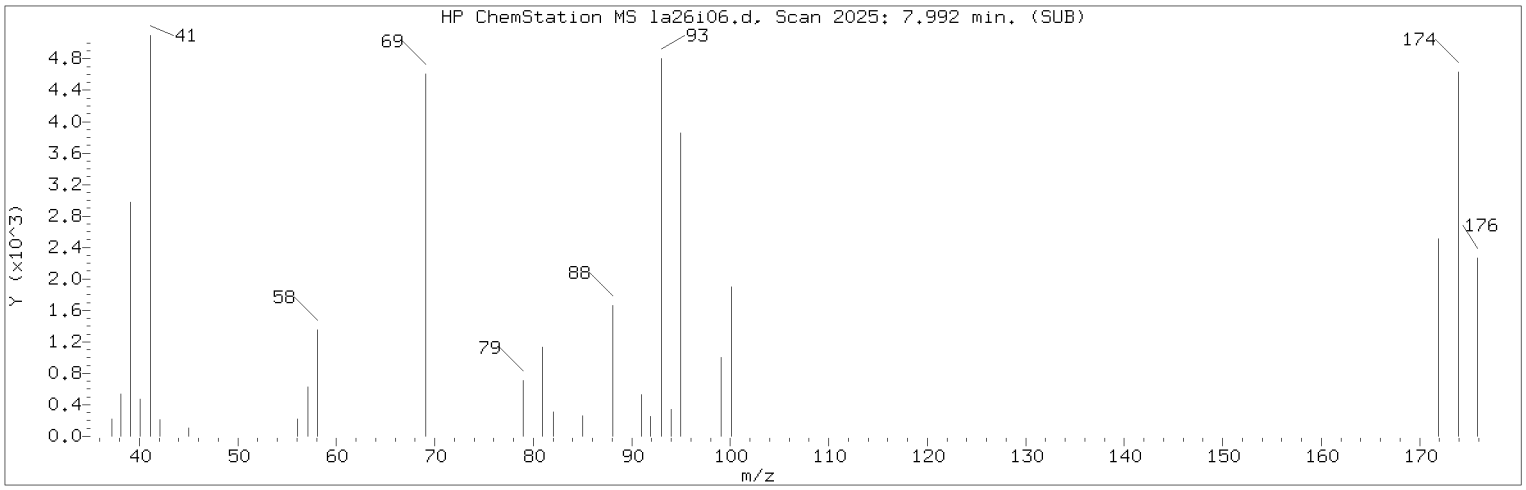
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

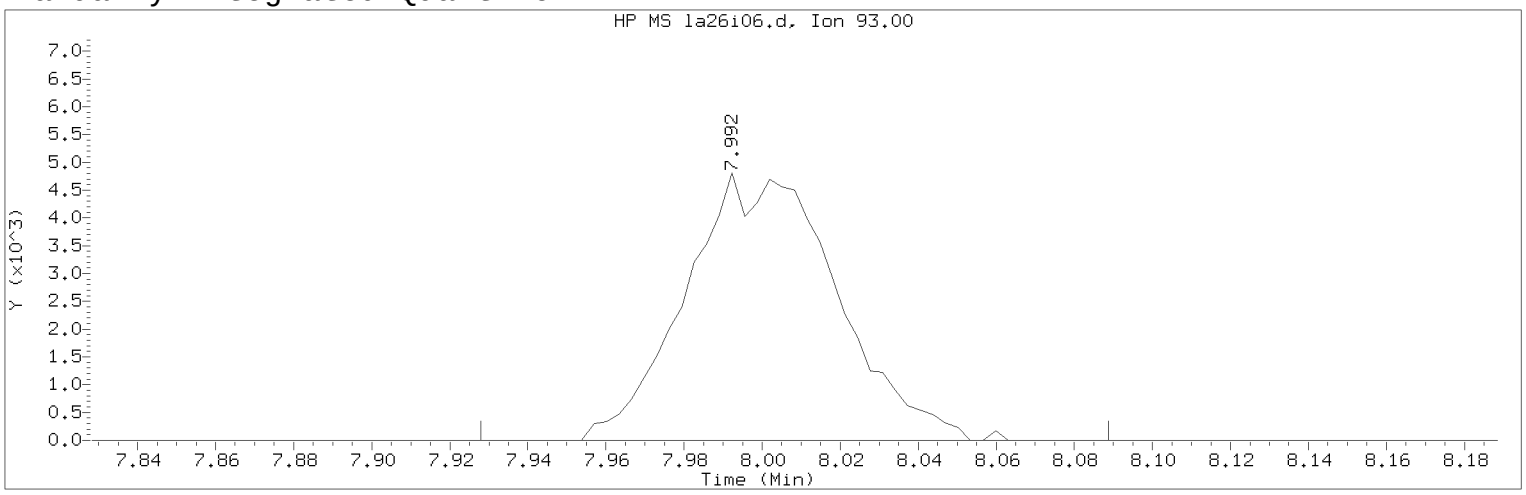
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 69.00
Area : 11128
On-column Amount (ng) : 2.7989
Integration start scan : 2015 Integration stop scan: 2026
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

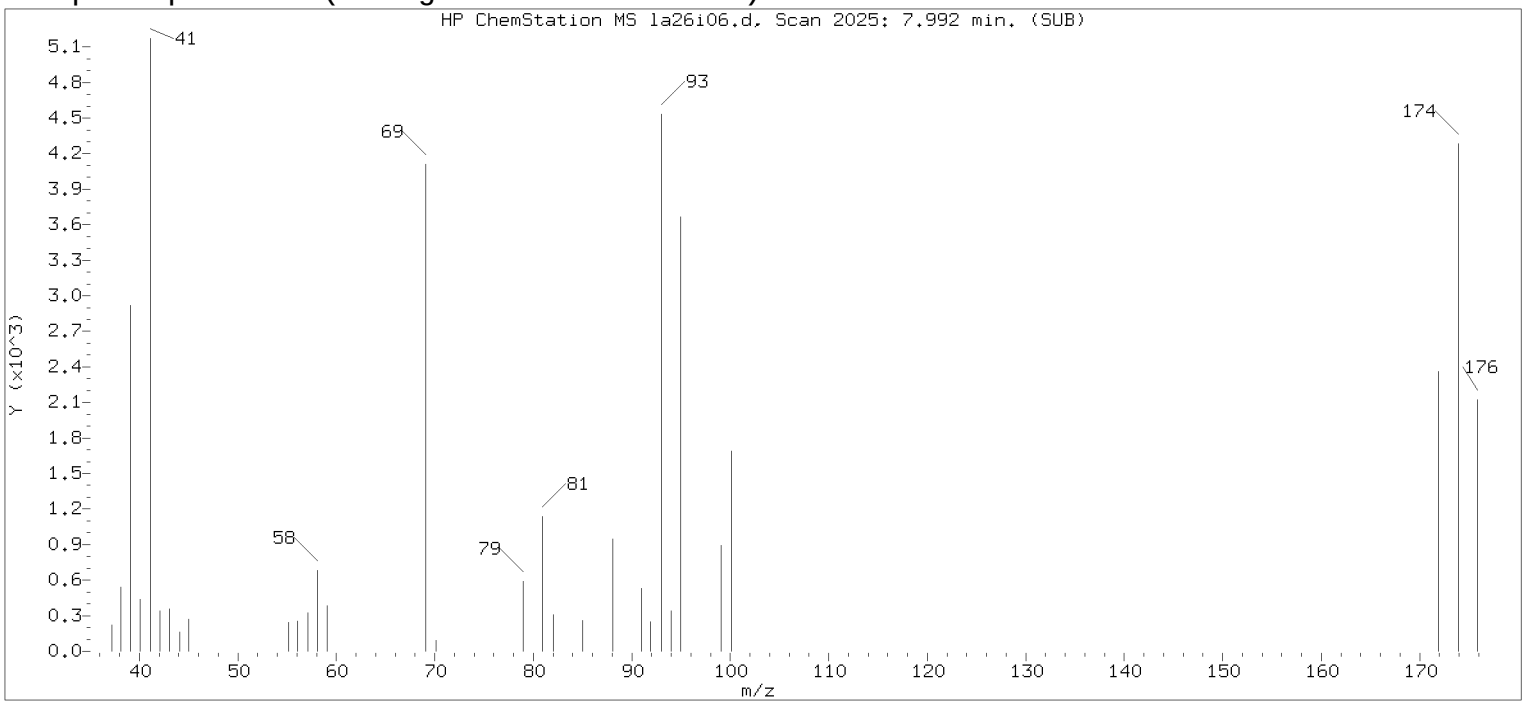
Compound Number : 74
Compound Name : Dibromomethane
Scan Number : 2025
Retention Time (minutes): 7.992
Quant Ion : 93.00
Area (flag) : 12893M
On-Column Amount (ng) : 3.9207
Integration start scan : 2004 Integration stop scan: 2054
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

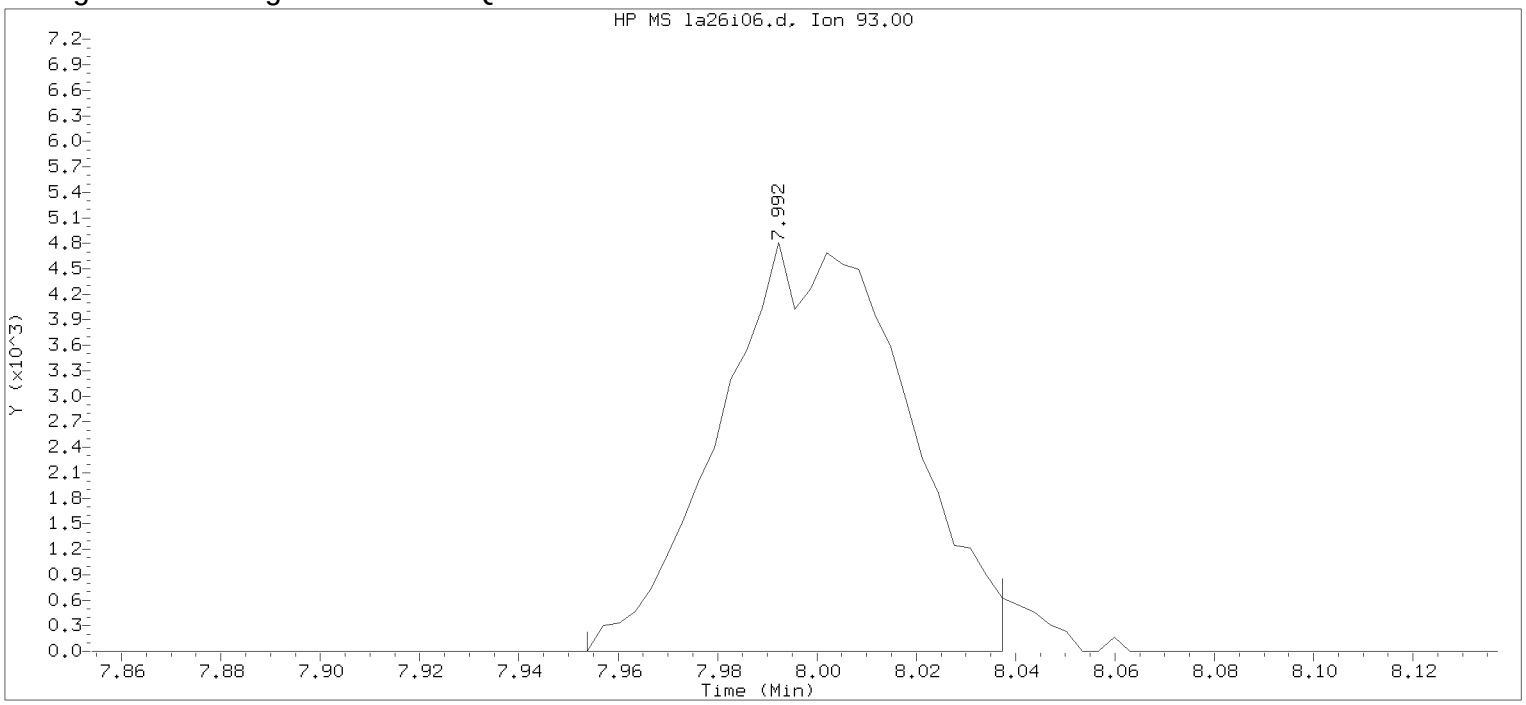
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

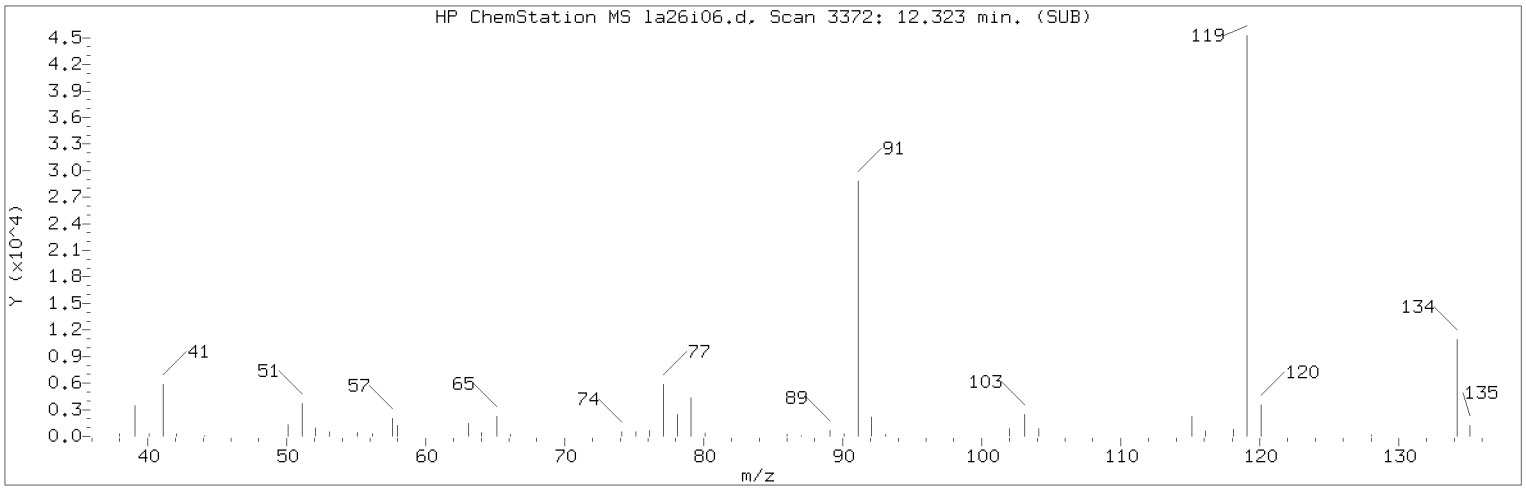
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

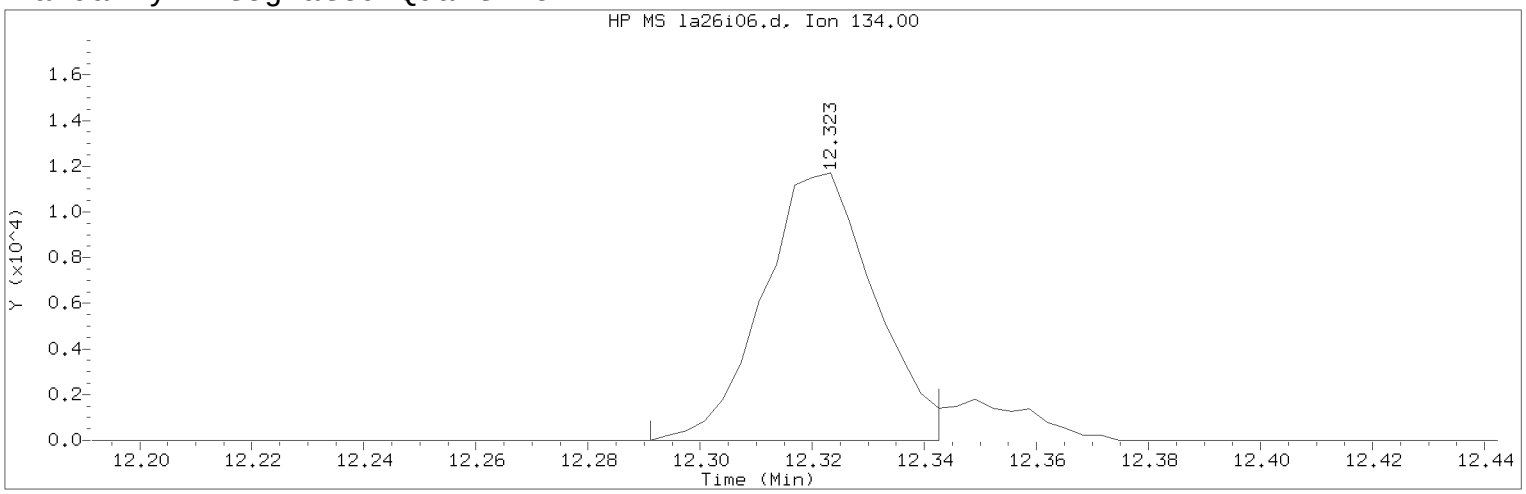
Compound Number : 74
Compound Name : Dibromomethane
Scan Number : 2025
Retention Time (minutes): 7.992
Quant Ion : 93.00
Area : 12501
On-column Amount (ng) : 3.7797
Integration start scan : 2012 Integration stop scan: 2038
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

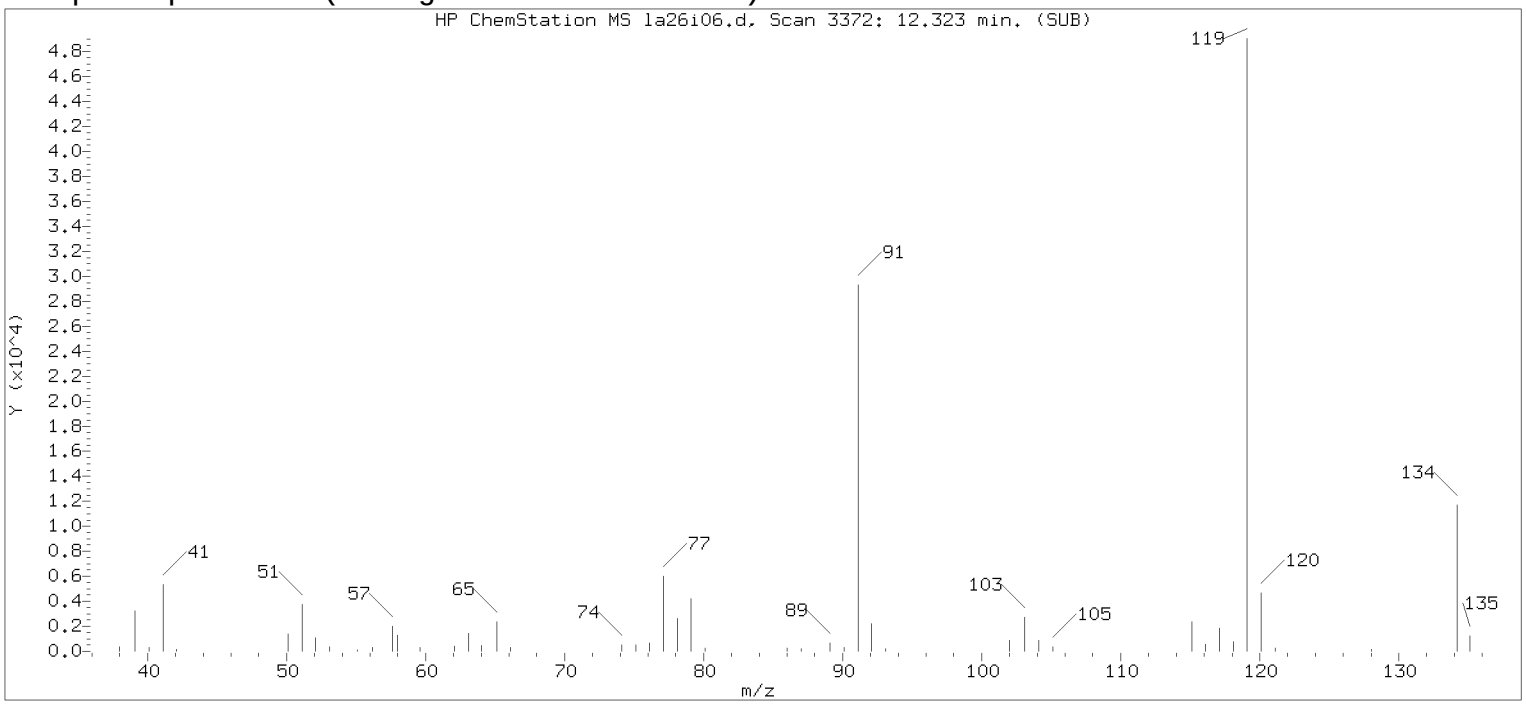
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area (flag) : 16177M
On-Column Amount (ng) : 3.8306
Integration start scan : 3361 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

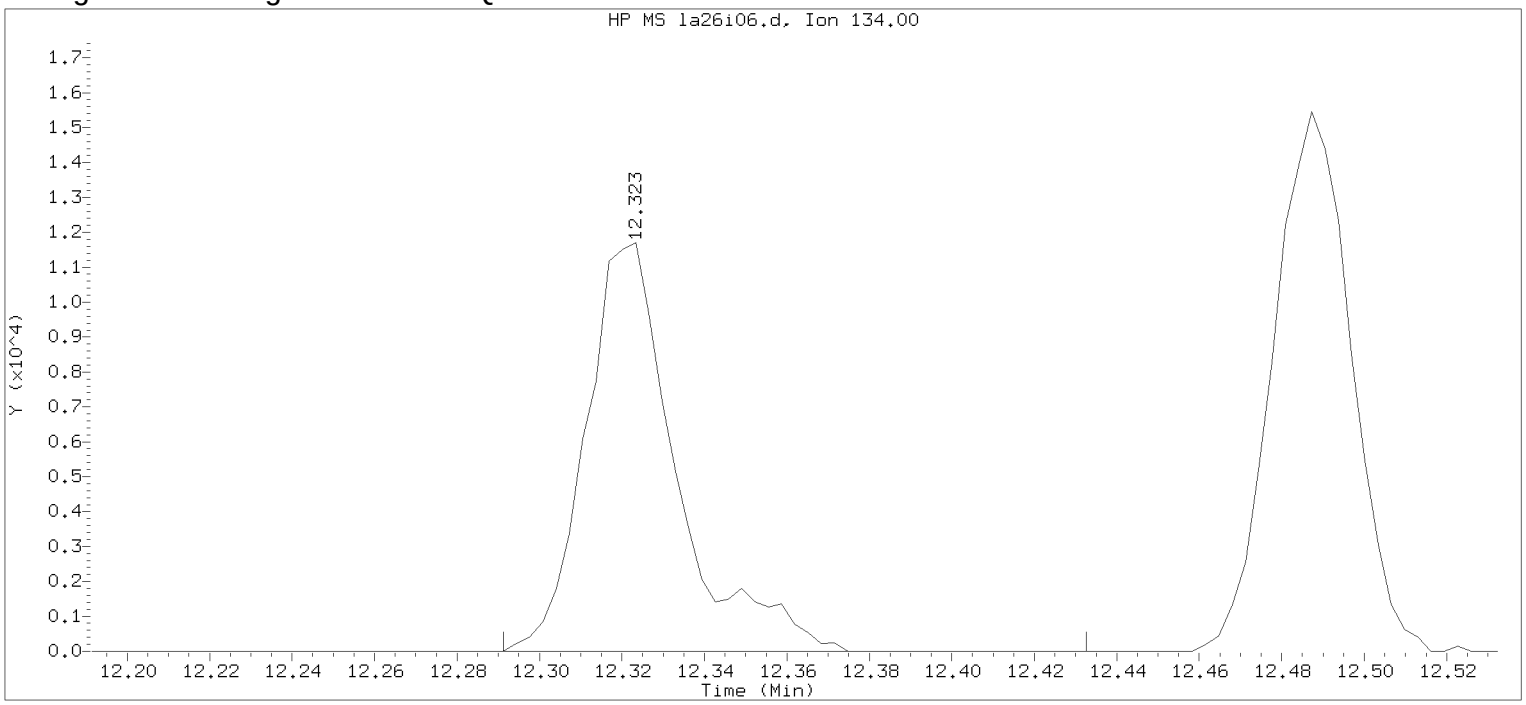
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area : 17933
On-column Amount (ng) : 4.0372
Integration start scan : 3361 Integration stop scan: 3405
Y at integration start : 0 Y at integration end: 0

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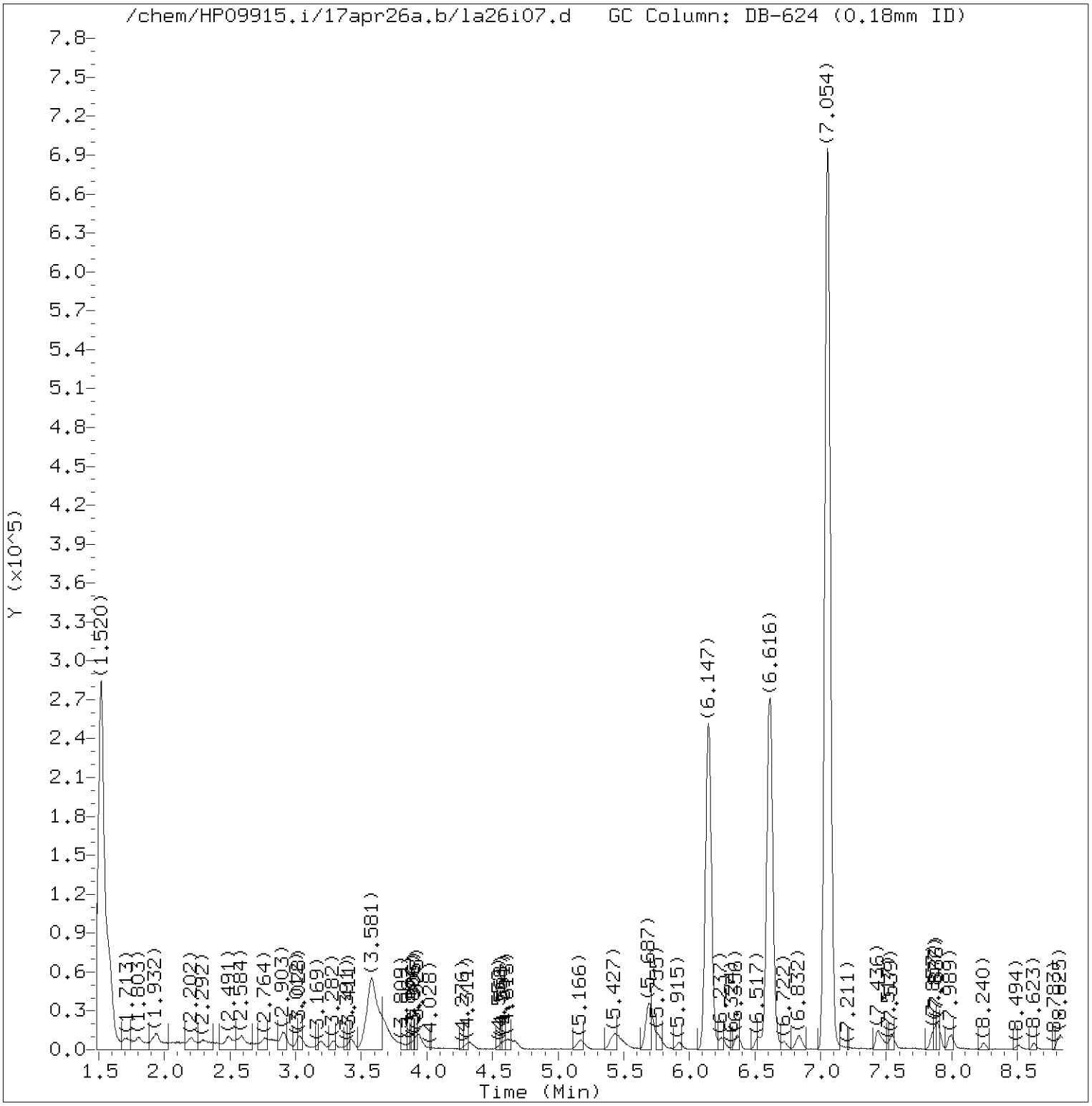
Target 3.5 esignature userKAS02648 Page 149 of 420




Total Ion Chromatogram (TIC)

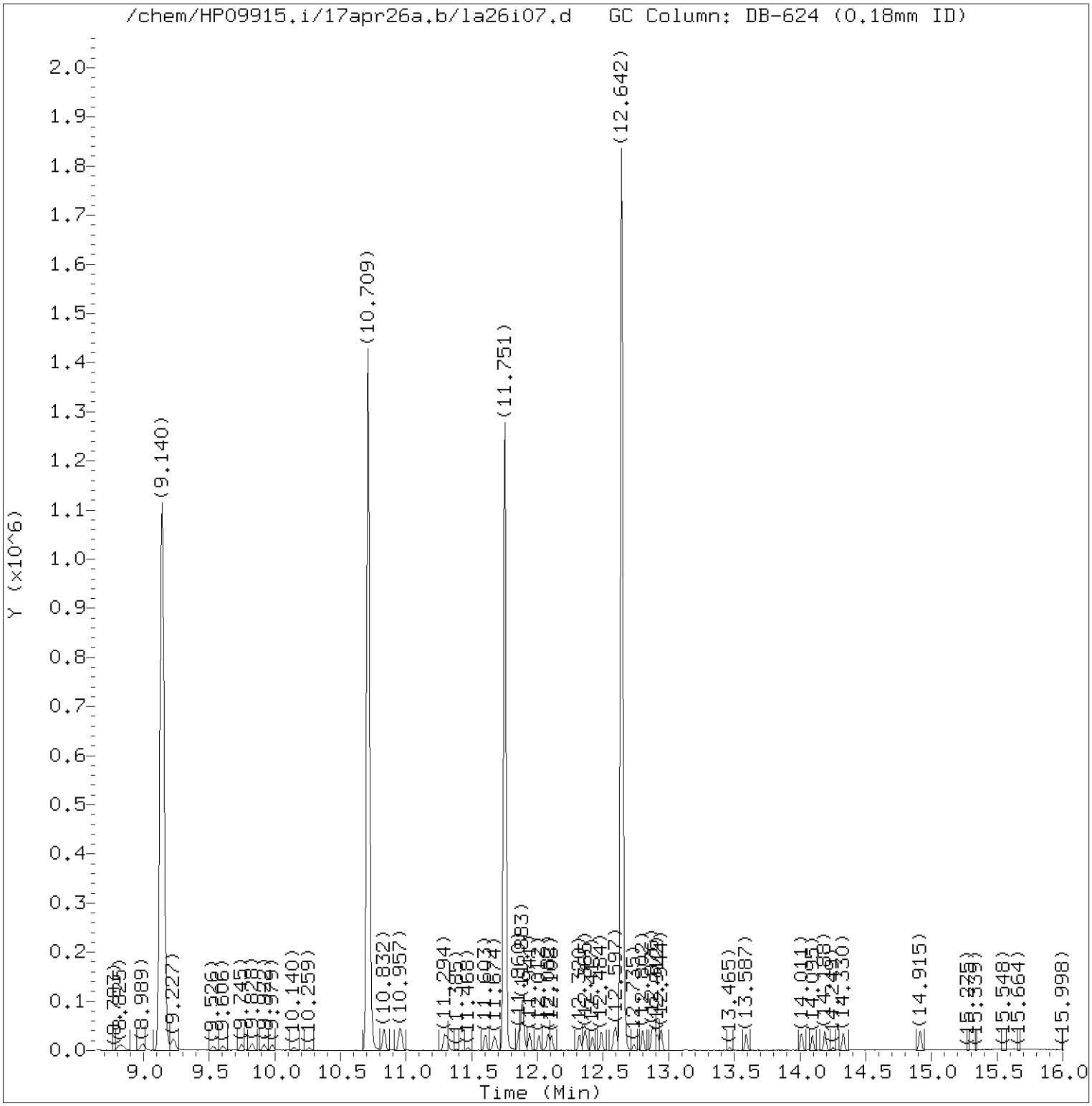
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 5134 | 0.831 |
| 4) Chloromethane | (2) | 1.806 | 50 | 5658 | 0.892 |
| 6) Vinyl Chloride | (2) | 1.922 | 62 | 5385 | 0.879 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 3879M | 1.038 |
| 8) Bromomethane | (2) | 2.205 | 94 | 3700 | 0.898 |
| 9) Chloroethane | (2) | 2.292 | 64 | 3136 | 0.908 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 7393 | 0.878 |
| 12) Trichlorofluoromethane | (2) | 2.549 | 101 | 5844 | 0.824 |
| 11) n-Pentane | (2) | 2.587 | 43 | 5763M | 0.986 |
| 14) Ethyl ether | (2) | 2.771 | 59 | 3562 | 0.902 |
| 15) Freon 123a | (2) | 2.816 | 67 | 4340M | 0.918 |
| 16) Acrolein | (1) | 2.903 | 56 | 13897 | 8.305 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 3591 | 0.956 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 63 | 1761 | 0.926 |
| 18) Acetone | (1) | 3.038 | 58 | 1287M | 1.772 |
| 19) Freon 113 | (2) | 3.060 | 101 | 3233 | 0.855 |
| 21) 2-Propanol | (1) | 3.192 | 45 | 10109M | 20.998 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 6674 | 0.916 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 11098M | 0.908 |
| 27) Methyl Acetate | (2) | 3.411 | 43 | 6031M | 1.106 |
| 25) Allyl Chloride | (2) | 3.433 | 41 | 7208M | 0.958 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 204400M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 6021 | 1.214 |
| 30) t-Butyl alcohol | (1) | 3.690 | 59 | 16799M | 21.241 |
| 31) Acrylonitrile | (2) | 3.874 | 53 | 2385 | 0.833 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 13229 | 0.961 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 3899 | 0.885 |
| 34) n-Hexane | (2) | 4.317 | 57 | 5817M | 0.861 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 7594 | 0.917 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 14916 | 0.939 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 6061 | 0.868 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 12596 | 0.921 |
| 44) 2-Butanone | (2) | 5.404 | 43 | 6995 | 1.825 |
| 42) cis-1,2-Dichloroethene | (2) | 5.427 | 96 | 4826 | 0.956 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 4353 | 0.787 |
| 47) Propionitrile | (1) | 5.481 | 54 | 21692 | 18.793 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 26519 | 9.292 |
| 49) Bromochloromethane | (2) | 5.771 | 128 | 2493 | 0.937 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001  Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 1704 | 1.671 |
| 51) Chloroform | (2) | 5.925 | 83 | 7414 | 0.939 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 6883 | 0.954 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 253408 | 50.043 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 257623 | 49.648 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 8725 | 1.841 |
| 54) Cyclohexane | (2) | 6.240 | 56 | 7197 | 0.876 |
| 54) Cyclohexane | (2) | 6.256 | 84 | 5572M | 0.830 |
| 54) Cyclohexane | (2) | 6.259 | 69 | 1999 | 0.840 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 4243 | 0.806 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 5734 | 0.893 |
| 58) Isobutyl Alcohol | (1) | 6.536 | 41 | 13006 | 46.839 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 63172 | 50.169 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 298618 | 50.137 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 104 | 39207 | 49.090 |
| 60) Benzene | (2) | 6.639 | 78 | 17777 | 0.939 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 5991 | 0.936 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 278 | 0.492 |
| 65) t-Amyl methyl ether | (2) | 6.832 | 73 | 12353 | 0.910 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1036977 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 7056M | 0.933 |
| 69) n-Butanol | (1) | 7.436 | 56 | 18978 | 84.784 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 4751 | 0.972 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 7103 | 0.824 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 3166 | 0.814 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 4619 | 0.892 |
| 75) 1,4-Dioxane | (1) | 7.983 | 88 | 3446 | 49.313 |
| 76) Methyl Methacrylate | (2) | 7.989 | 69 | 3670M | 0.828 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 3047 | 0.935 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 5145 | 0.875 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 2718 | 1.630 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.626 | 63 | 3128 | 0.786 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 6077 | 0.793 |
| 82) 4-Methyl-2-pentanone | (2) | 8.996 | 43 | 13249 | 1.677 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1011031 | 50.099 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 664751 | 49.998 |
| 88) Toluene | (3) | 9.230 | 92 | 10791 | 0.920 |
| 89) trans-1,3-Dichloropropene | (3) | 9.533 | 75 | 4836 | 0.735 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.606 | 69 | 5948 | 0.803 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 4212 | 0.932 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 4631 | 0.893 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 7455 | 0.951 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 8940 | 1.579 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 10913 | 1.528 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 3755 | 0.802 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 4374 | 0.884 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 790373 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.729 | 91 | 7171 | 1.065 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 12435 | 0.919 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 3810 | 0.853 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 20557 | 0.909 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 15787 | 1.793 |
| 107) o-Xylene | (3) | 11.294 | 106 | 7750 | 0.885 |
| 109) Styrene | (3) | 11.311 | 104 | 11905 | 0.822 |
| 110) Bromoform | (3) | 11.468 | 173 | 2449 | 0.721 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 19094 | 0.853 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 12225A | 46.377 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 377337 | 50.305 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 332561 | 50.545 |
| 108) Xylene (Total) | (3) | | 106 | 23537 | 2.677 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 6980 | 0.917 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 5604 | 0.915 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 18943 | 8.689 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 2008 | 0.934 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 24194 | 0.894 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 5054 | 0.897 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 15989 | 0.828 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 5379 | 0.917 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 3714 | 0.890 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 2616 | 0.794 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 16998 | 0.855 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 21349 | 0.867 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 11200 | 0.960 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 18731 | 0.861 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 428650 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 12025 | 0.997 |

A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 19417 | 0.932 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 7813 | 0.655 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 11399 | 0.877 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 12459 | 0.913 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 10343 | 0.952 |
| 138) 1,2-Dichlorobenzene | (4) | 12.918 | 146 | 11057 | 0.964 |
| 140) 1,2-Diethylbenzene | (4) | 12.944 | 119 | 9704 | 0.888 |
| 141) Diethylbenzene (total) | (4) | | 100 | 33562 | 2.678 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.465 | 75 | 1391 | 0.865 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 9757 | 1.050 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 10012 | 1.110 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 4846 | 1.237 |
| 148) Naphthalene | (4) | 14.188 | 128 | 26365 | 0.969 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 10045 | 1.155 |
| 150) 2-Methylnaphthalene | (4) | 14.915 | 142 | 17518 | 0.996 |



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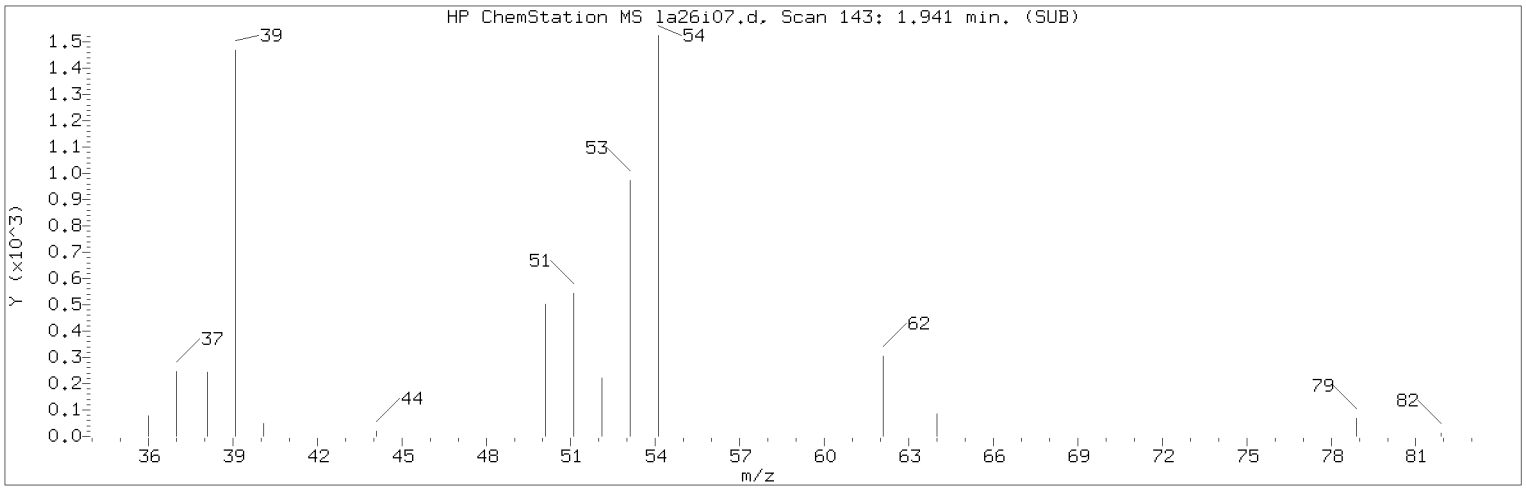
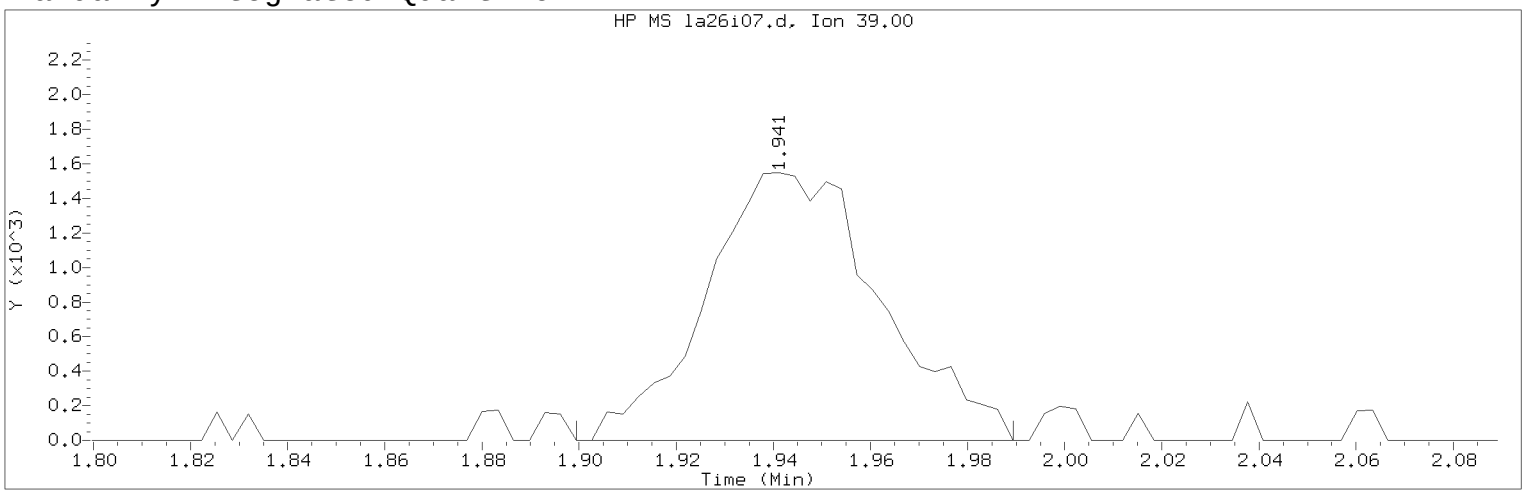
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

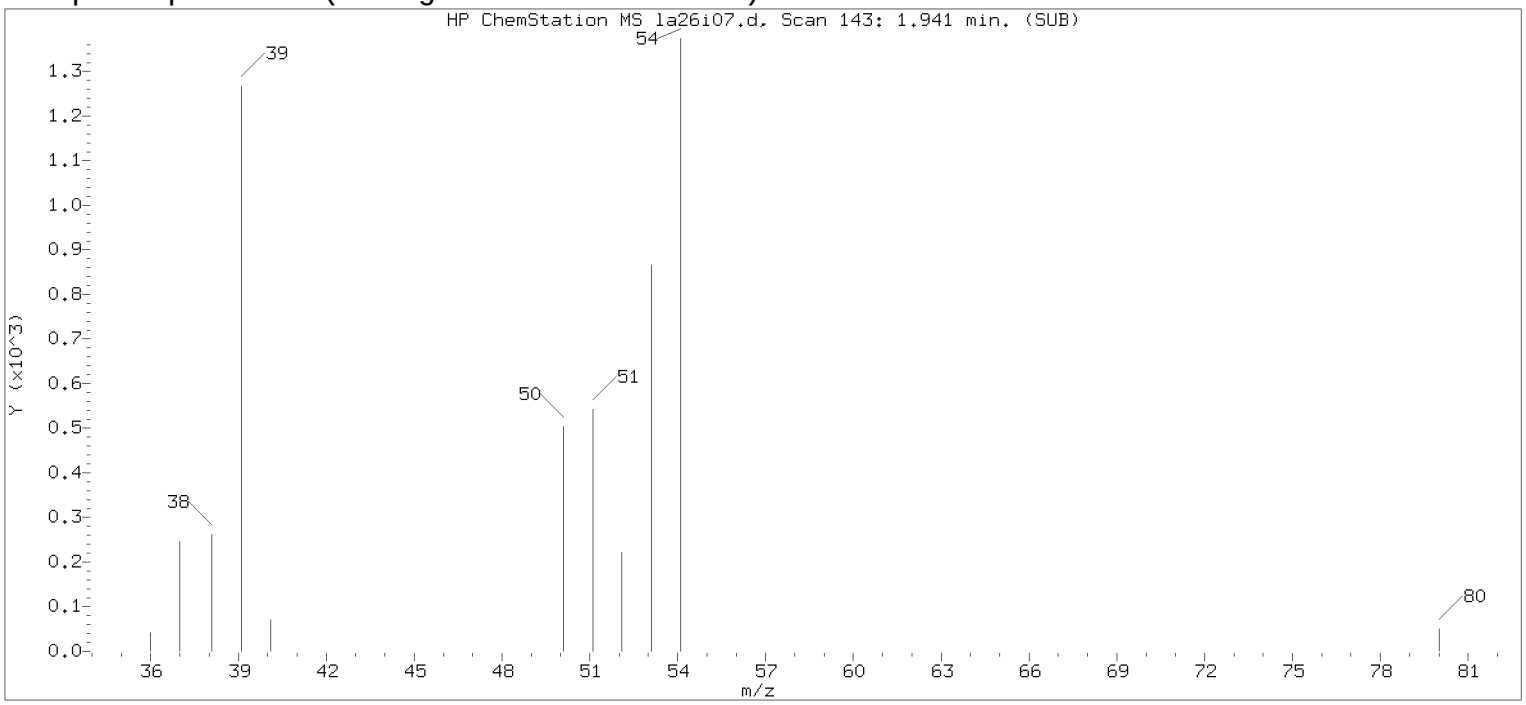
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 3879M
On-Column Amount (ng) : 1.0378
Integration start scan : 129 Integration stop scan: 157
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

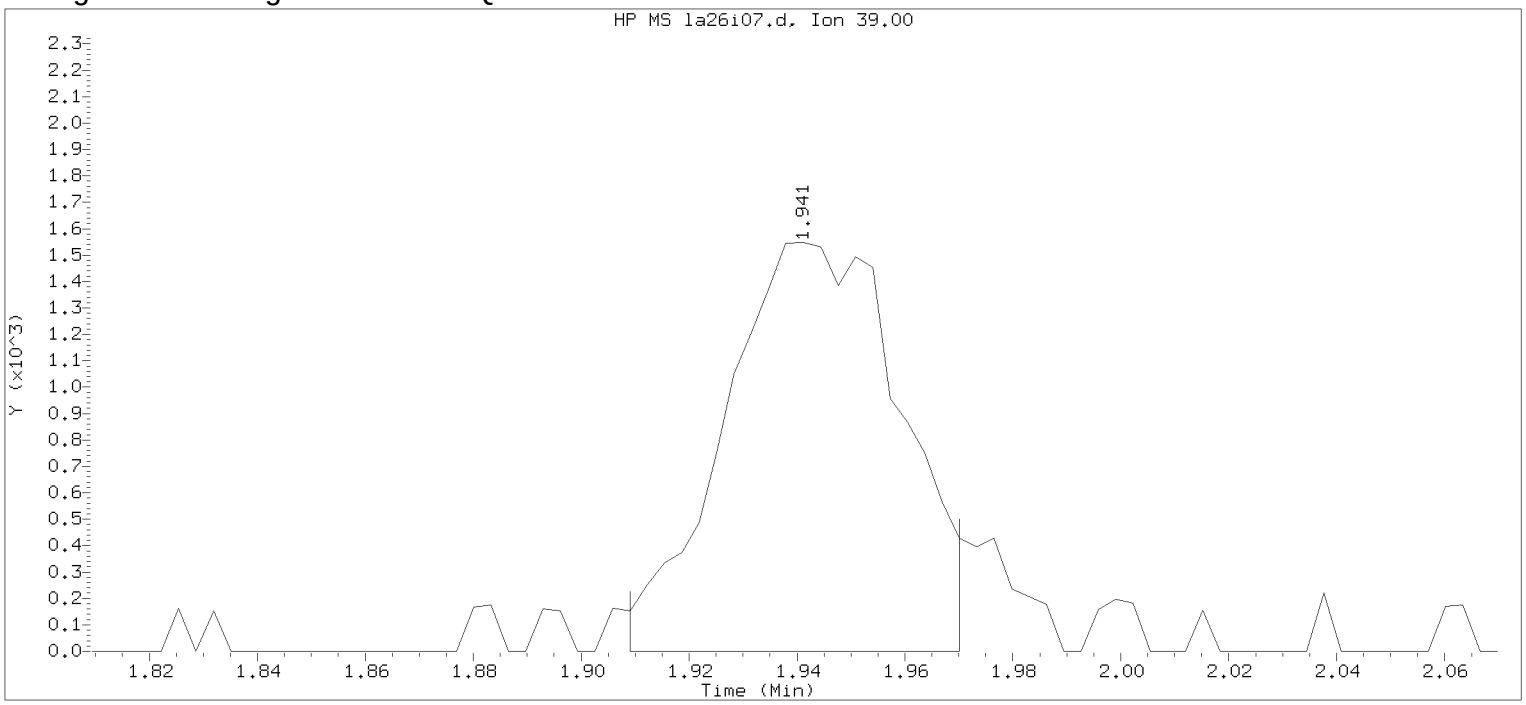
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 3513
On-column Amount (ng) : 0.9533
Integration start scan : 132 Integration stop scan: 151
Y at integration start : 0 Y at integration end: 0

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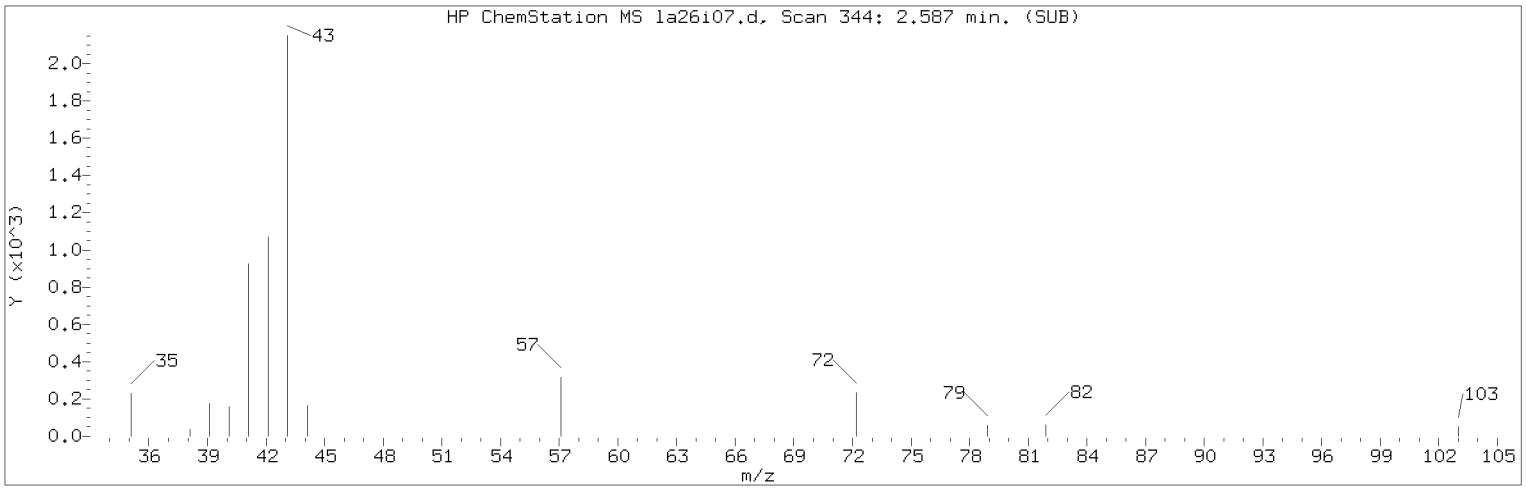
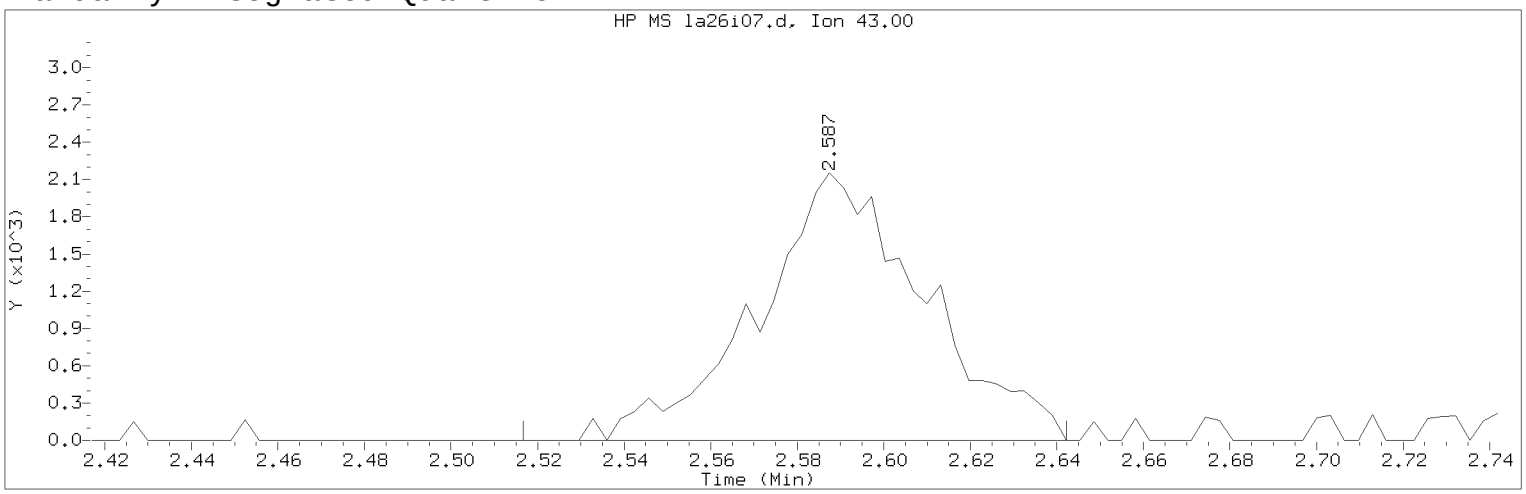
Target 3.5 esignature userKAS02648 R0190

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

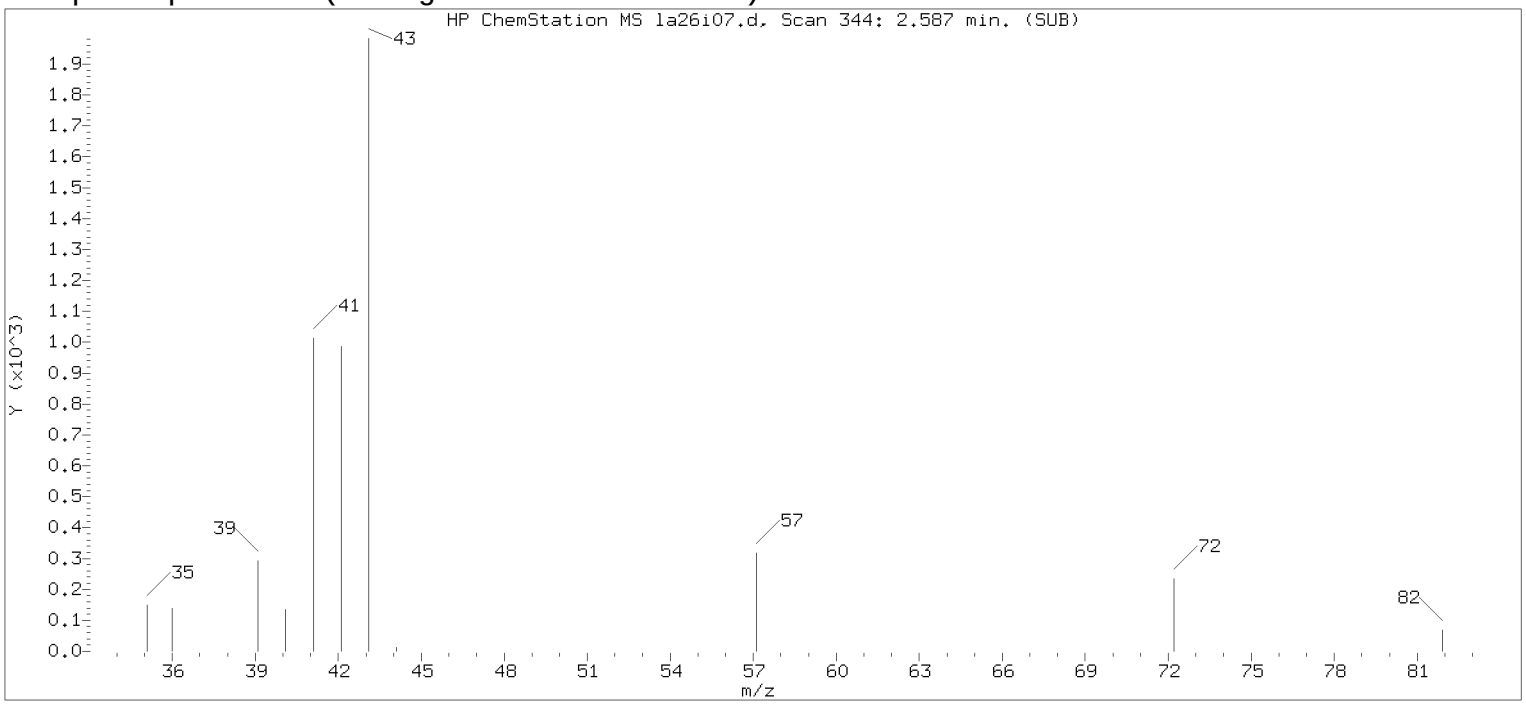
Compound Number : 11
Compound Name : n-Pentane
Scan Number : 344
Retention Time (minutes): 2.587
Quant Ion : 43.00
Area (flag) : 5763M
On-Column Amount (ng) : 0.9861
Integration start scan : 321 Integration stop scan: 360
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

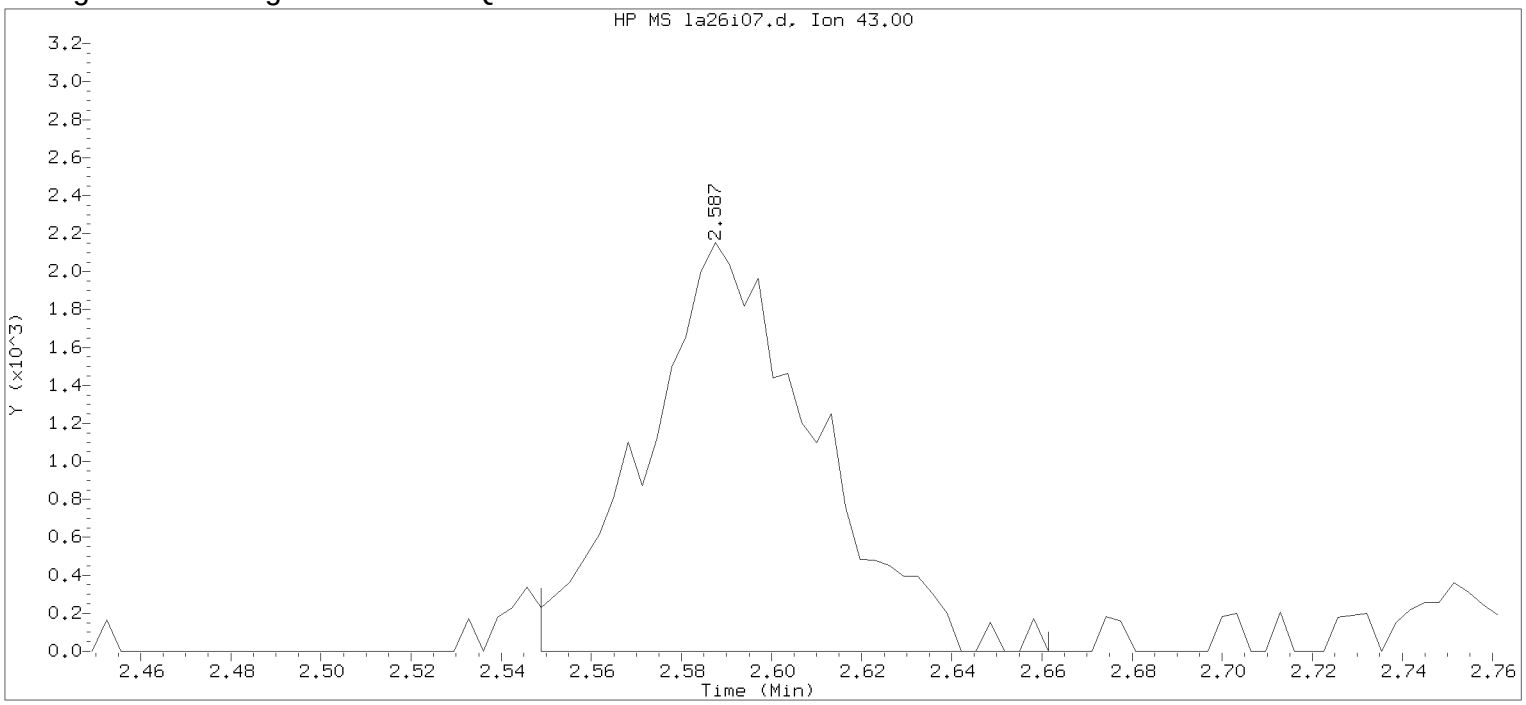
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 11
Compound Name : n-Pentane
Scan Number : 344
Retention Time (minutes): 2.587
Quant Ion : 43.00
Area : 5626
On-column Amount (ng) : 0.9660
Integration start scan : 331 Integration stop scan: 366
Y at integration start : 0 Y at integration end: 0

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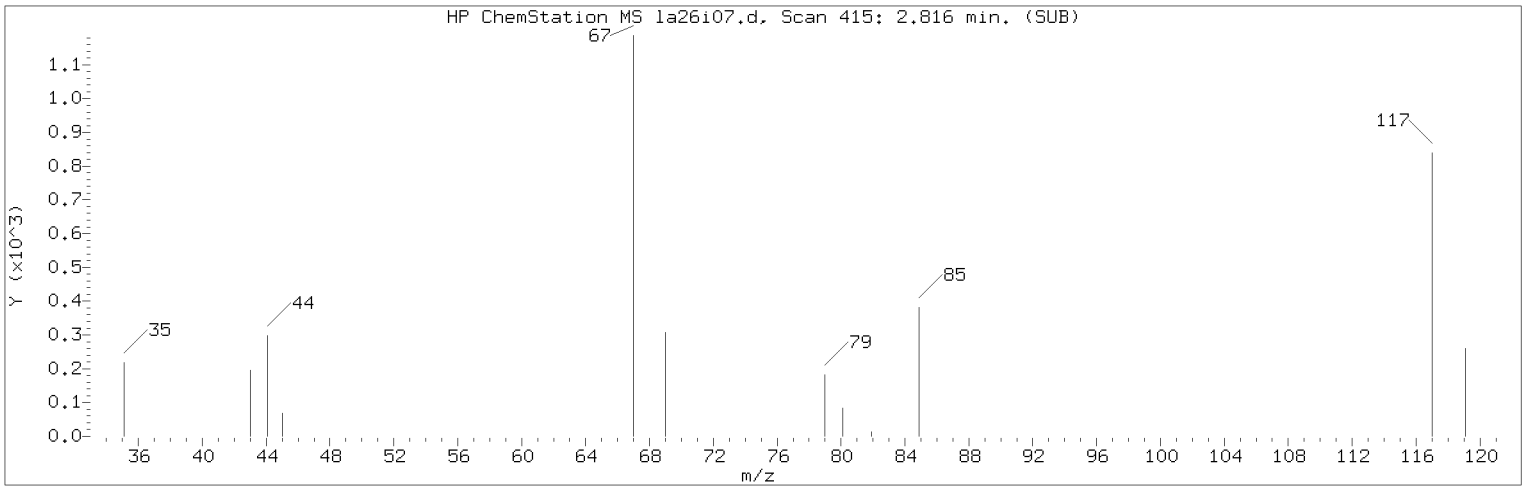
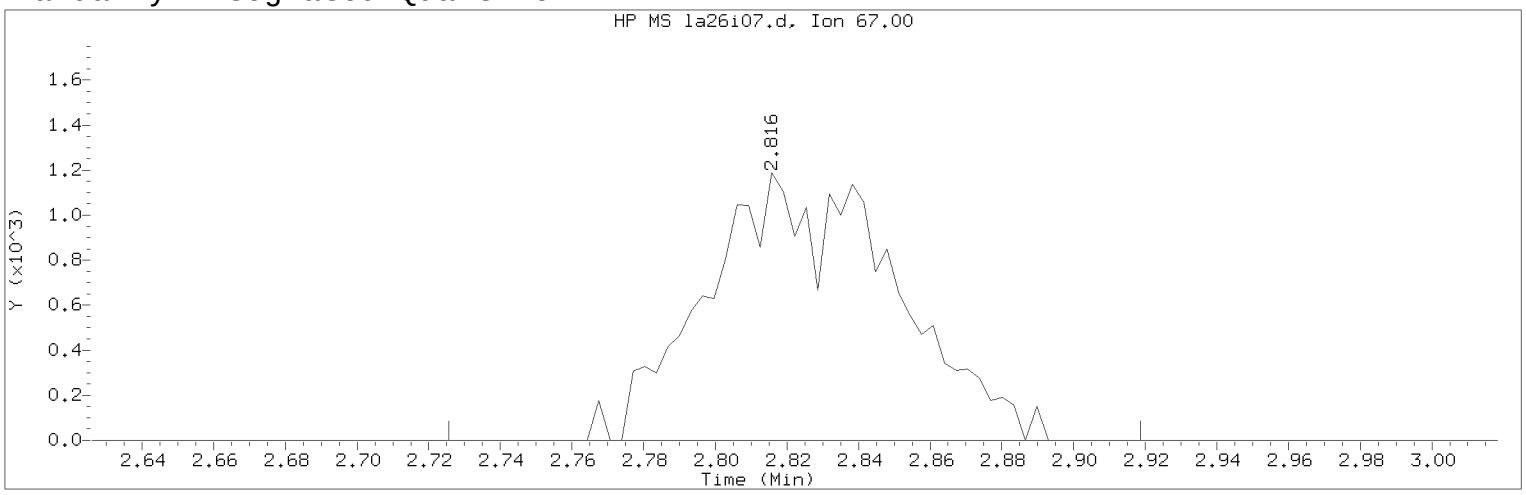
Target 3.5 esignature userKAS02648 Page 249 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion

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Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

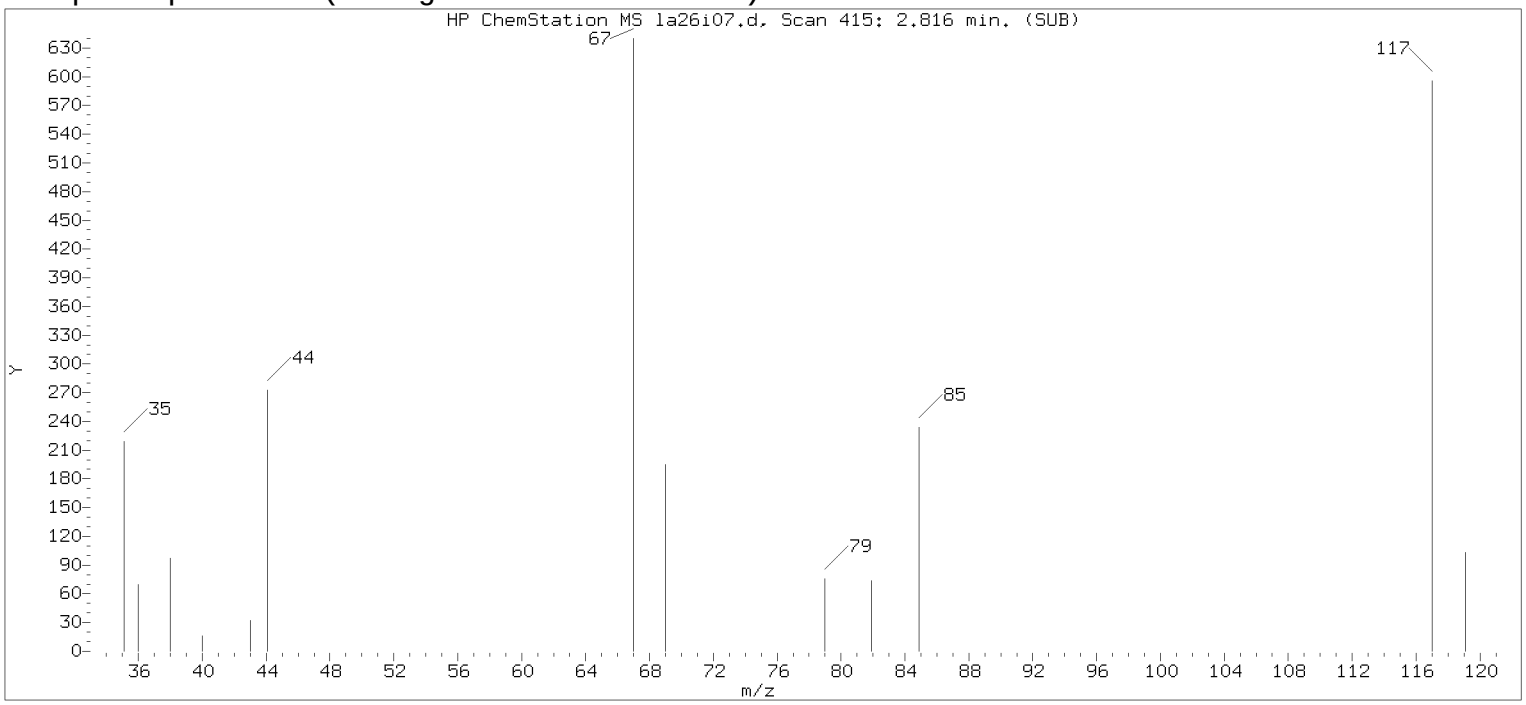
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 415
Retention Time (minutes): 2.816
Quant Ion : 67.00
Area (flag) : 4340M
On-Column Amount (ng) : 0.9183
Integration start scan : 386 Integration stop scan: 446
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

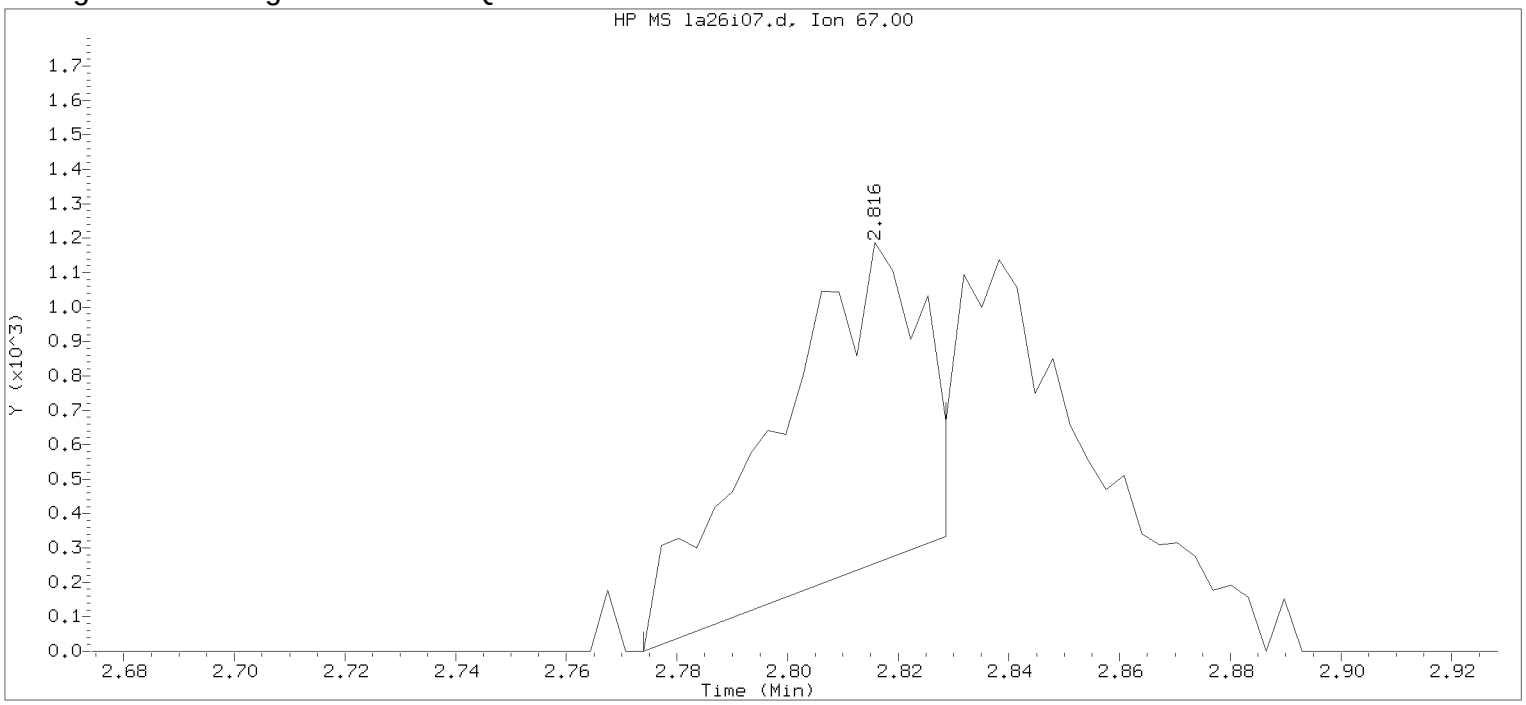
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 15
Compound Name : Freon 123a
Scan Number : 415
Retention Time (minutes): 2.816
Quant Ion : 67.00
Area : 1764
On-column Amount (ng) : 0.4048
Integration start scan : 401 Integration stop scan: 418
Y at integration start : 0 Y at integration end: 334

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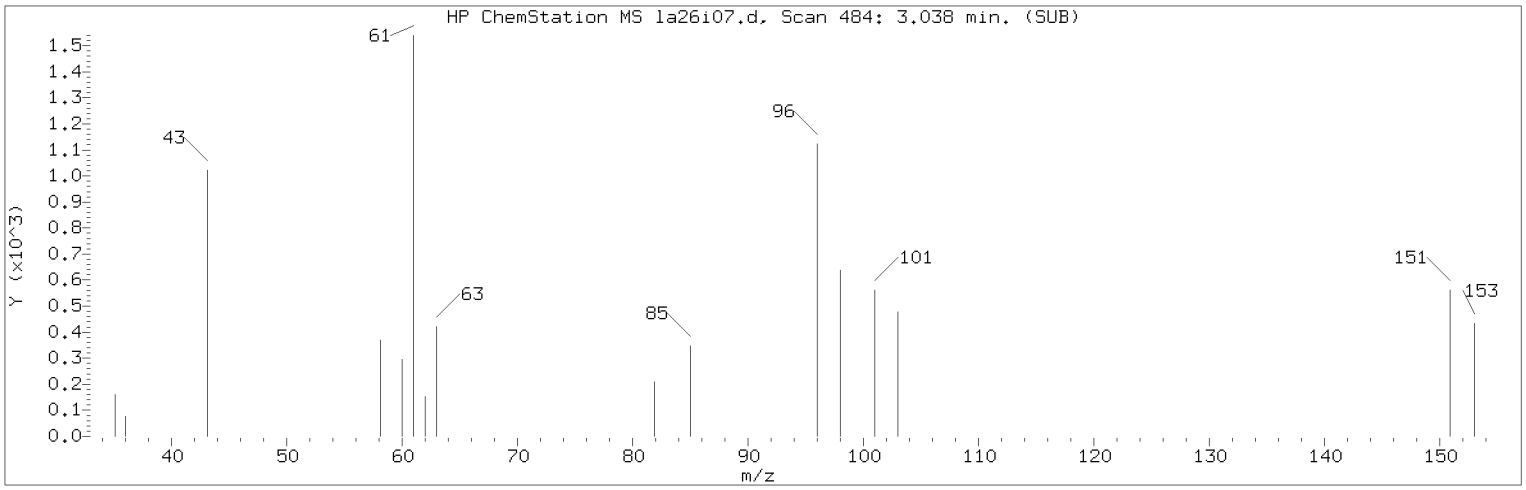
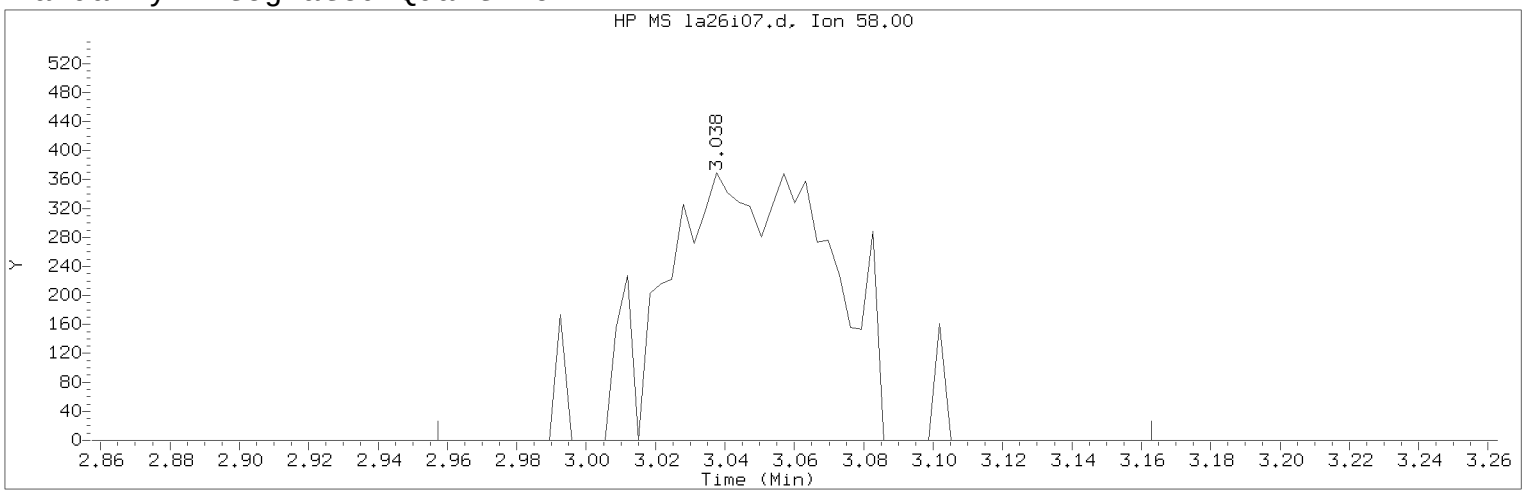
Target 3.5 esignature userKAS02648 Page 241 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

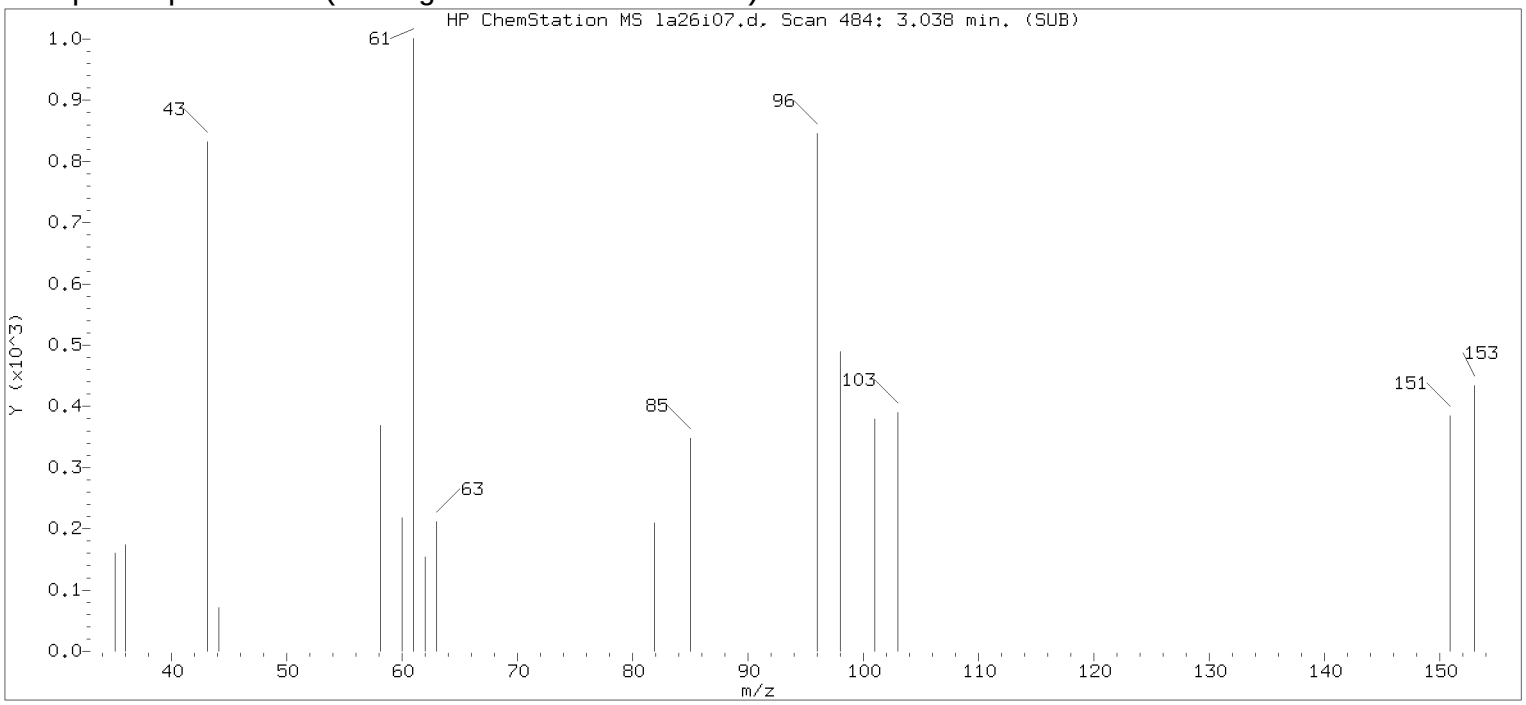
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area (flag) : 1287M
On-Column Amount (ng) : 1.7722
Integration start scan : 458 Integration stop scan: 522
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

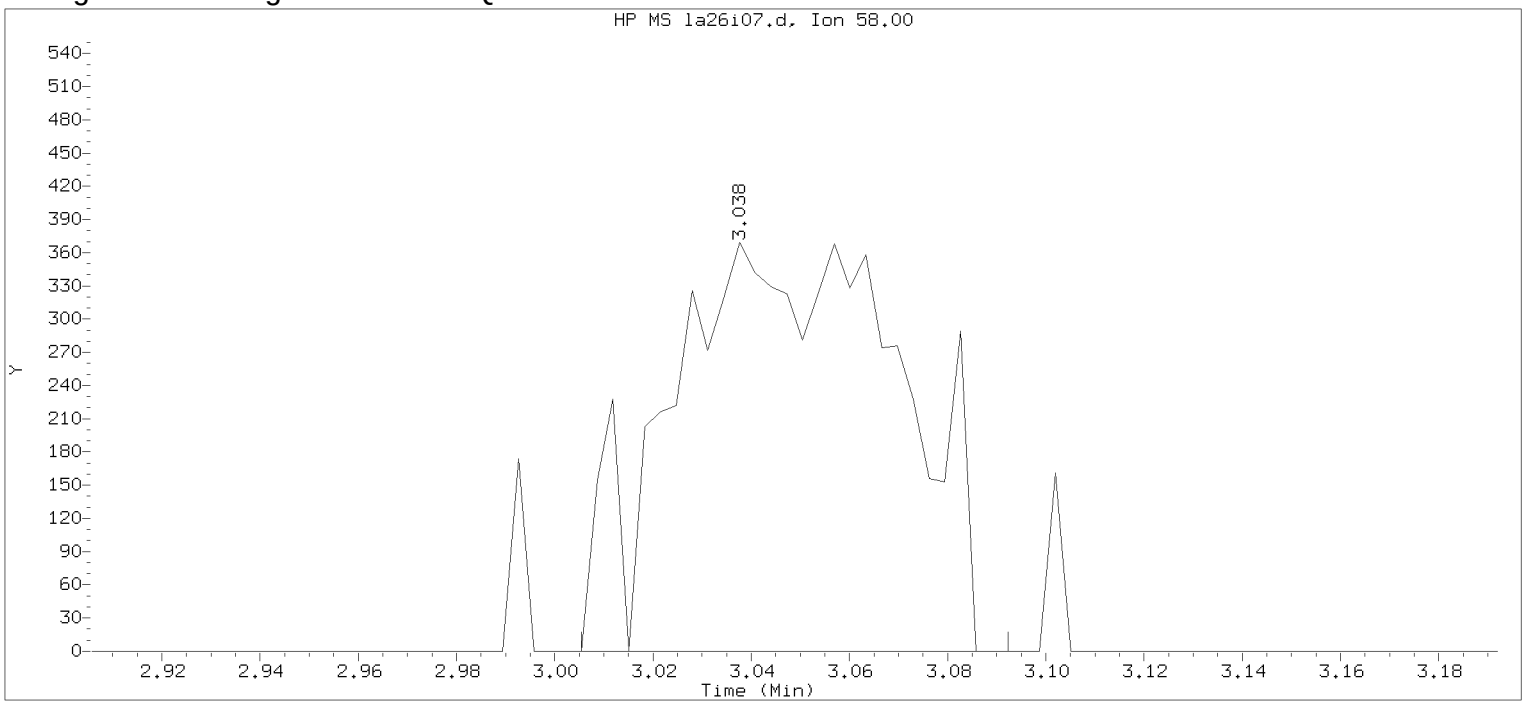
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

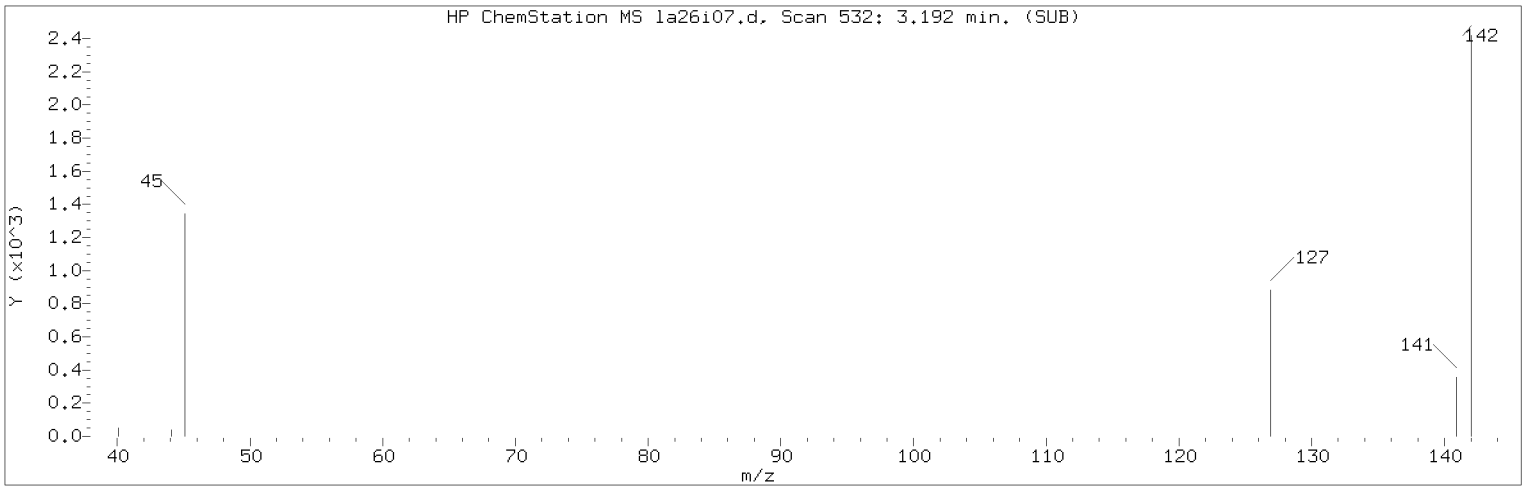
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

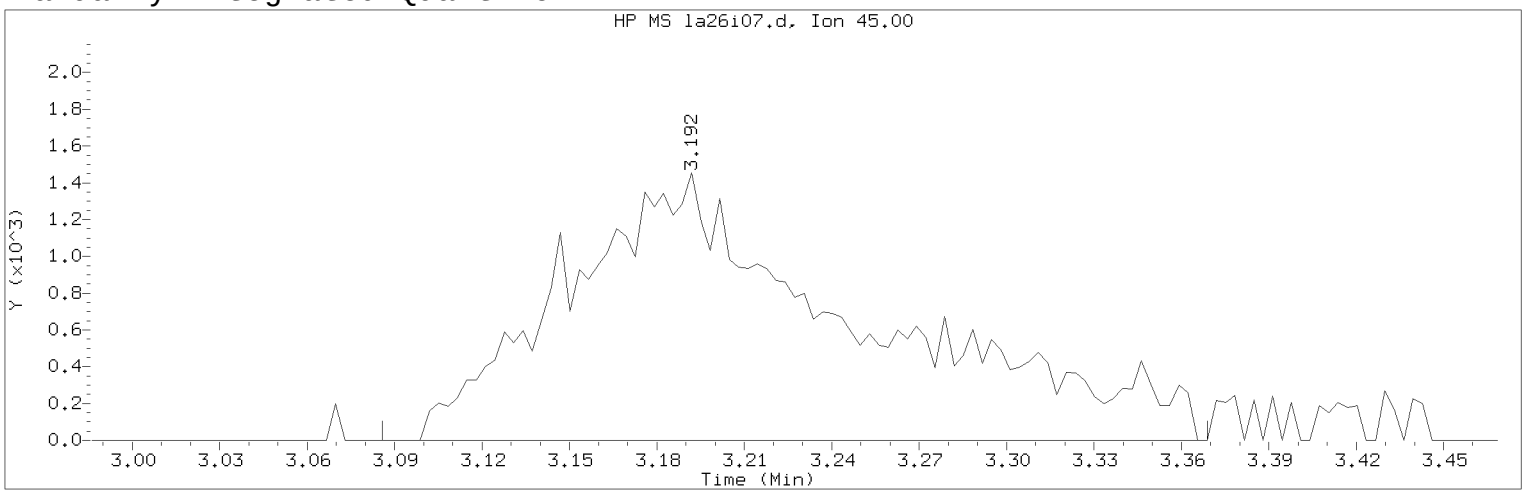
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area : 1222
On-column Amount (ng) : 1.7234
Integration start scan : 473 Integration stop scan: 500
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion

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Sample Name: VSTD001 Lab Sample ID: VSTD001

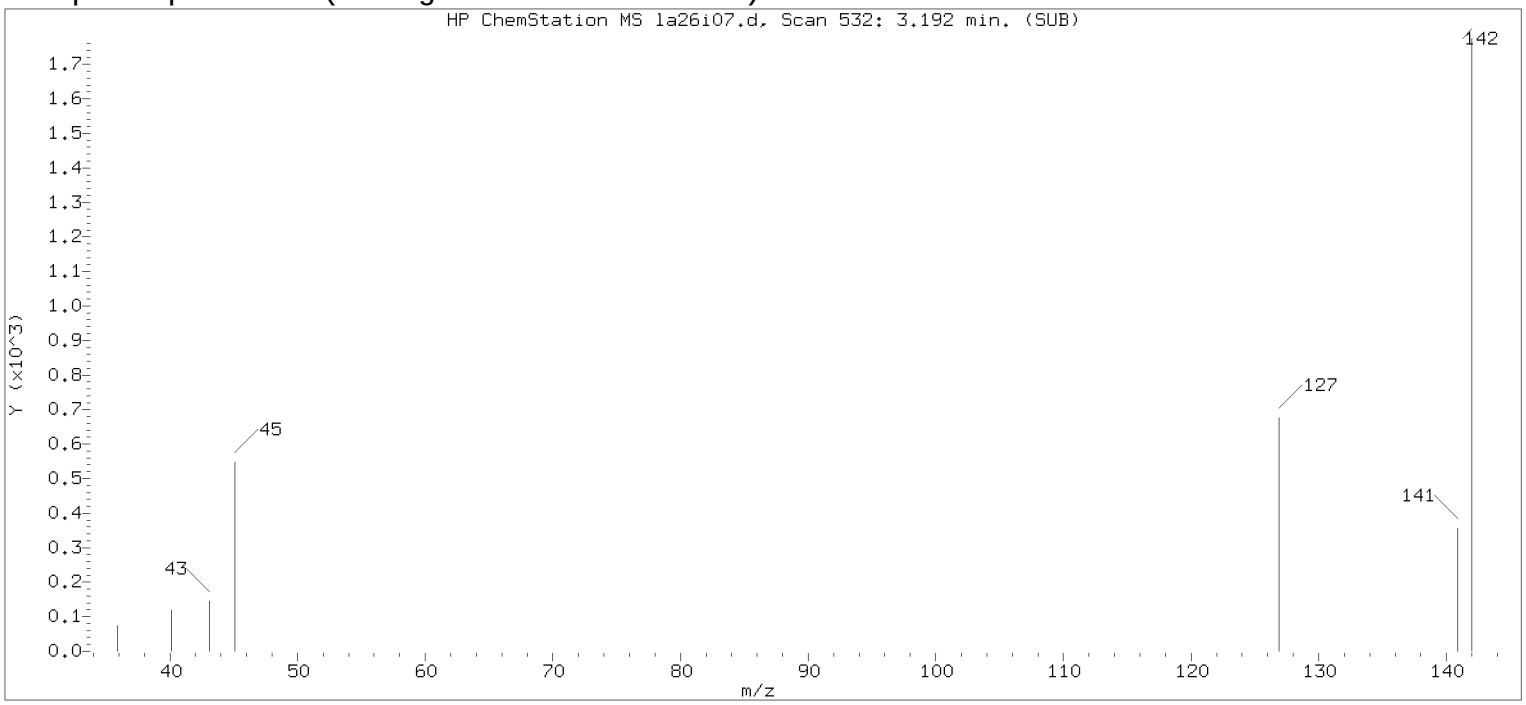
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 532
Retention Time (minutes): 3.192
Quant Ion : 45.00
Area (flag) : 10109M
On-Column Amount (ng) : 20.9983
Integration start scan : 498 Integration stop scan: 586
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

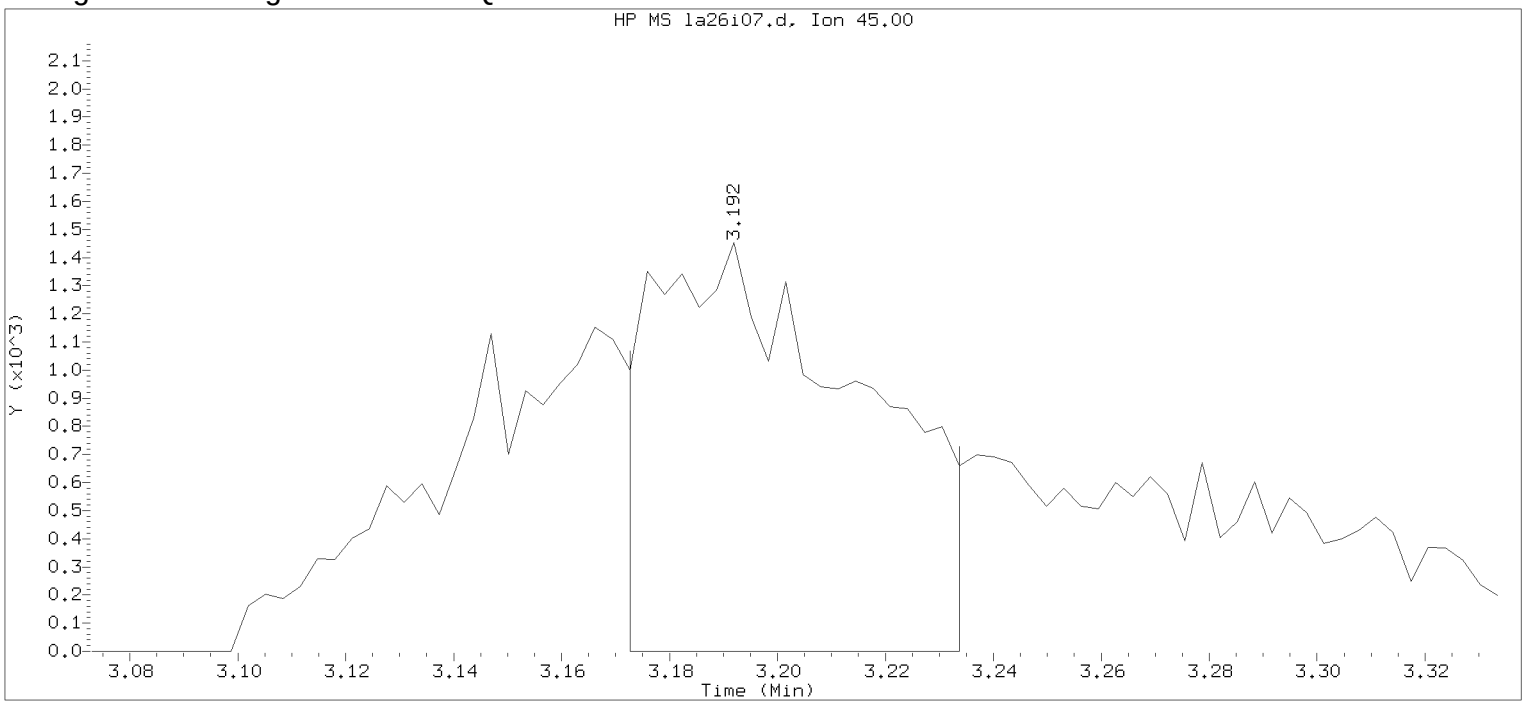
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
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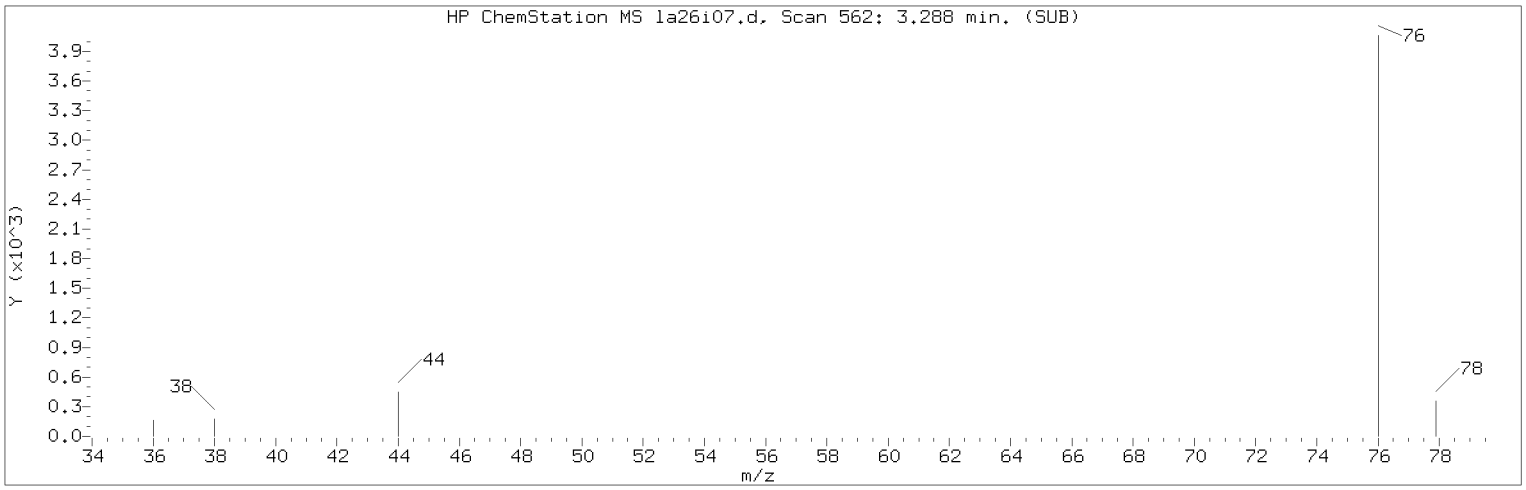
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

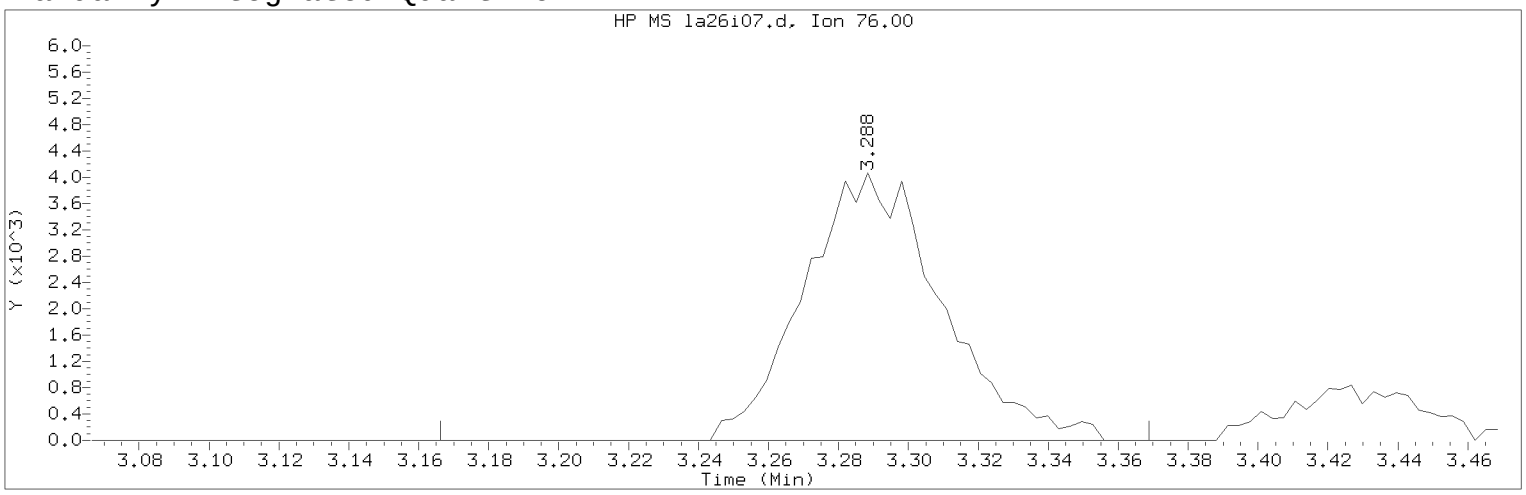
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 532
Retention Time (minutes): 3.192
Quant Ion : 45.00
Area : 3925
On-column Amount (ng) : 9.1397
Integration start scan : 525 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion

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Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

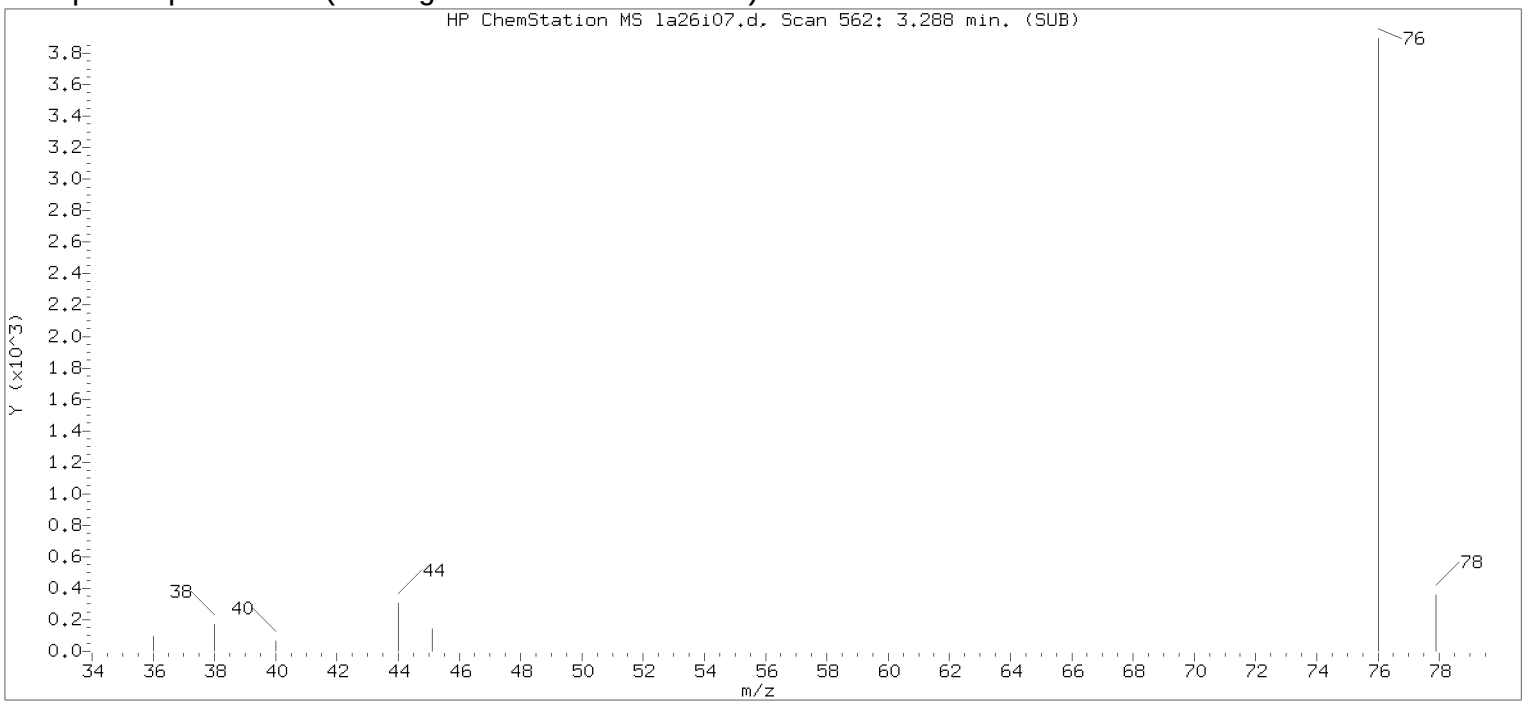
Compound Number : 23
Compound Name : Carbon Disulfide
Scan Number : 562
Retention Time (minutes): 3.288
Quant Ion : 76.00
Area (flag) : 11098M
On-Column Amount (ng) : 0.9080
Integration start scan : 523 Integration stop scan: 586
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

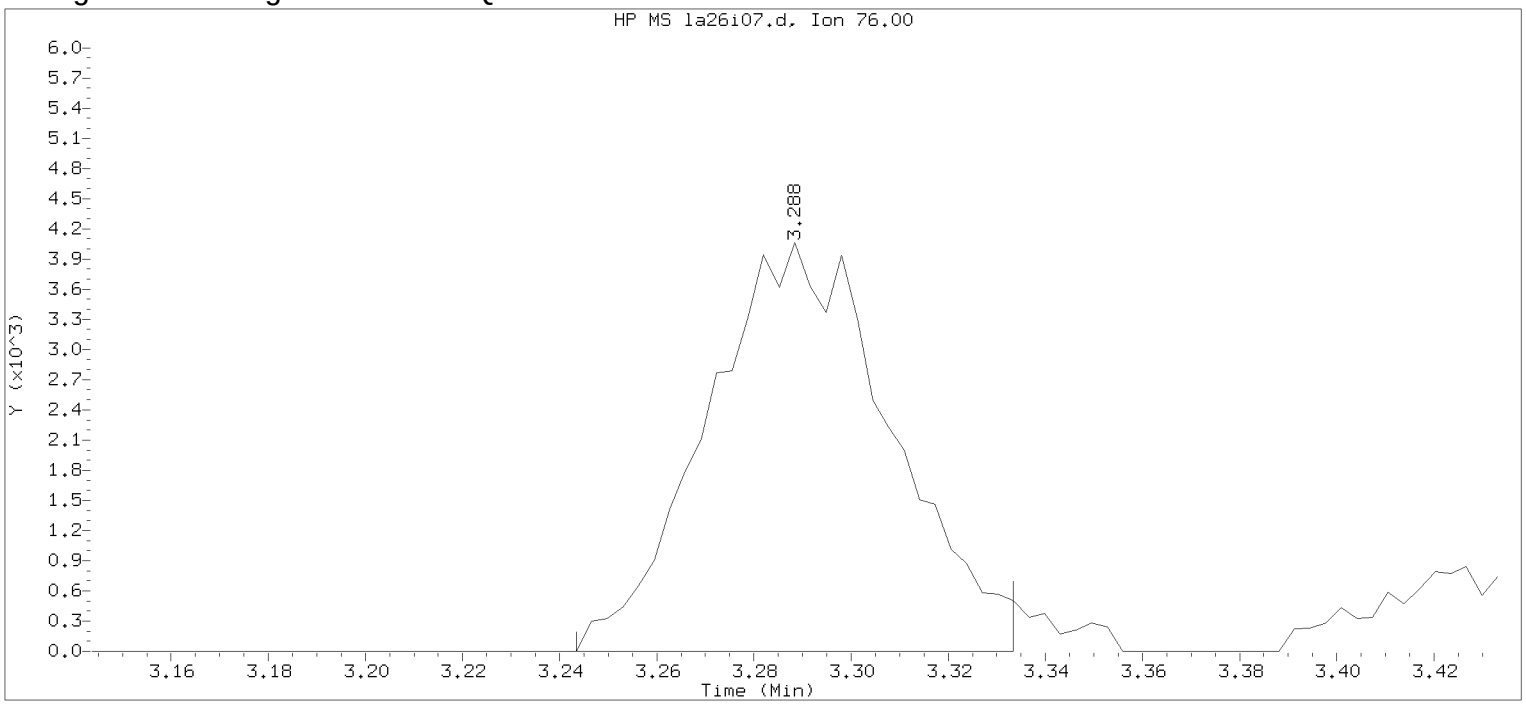
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
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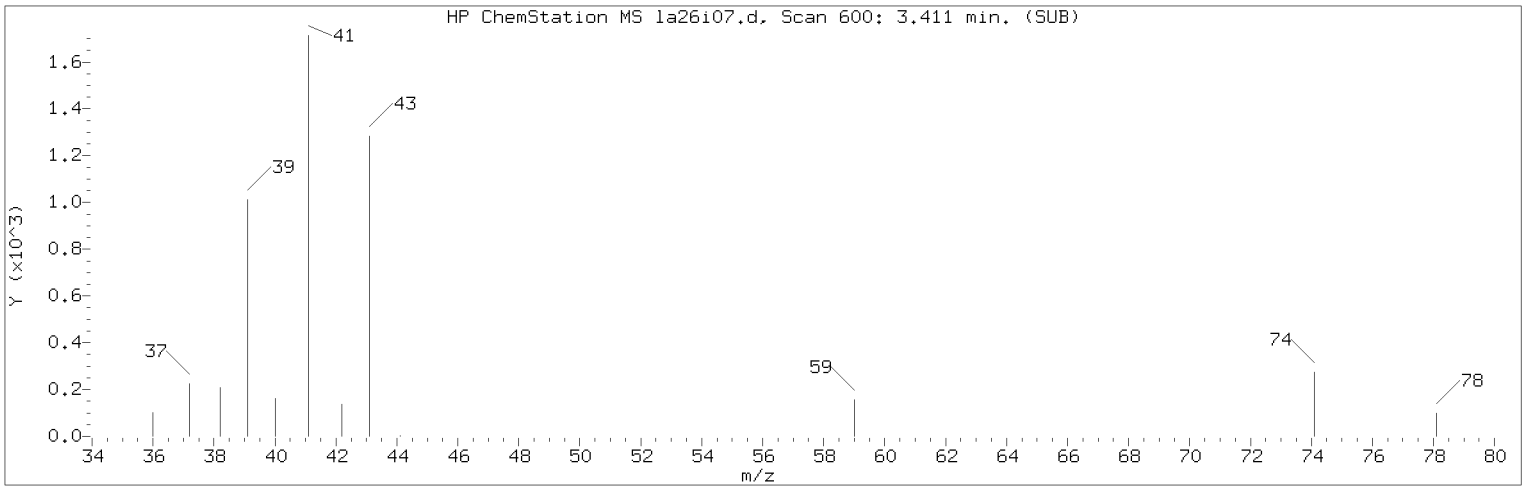
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

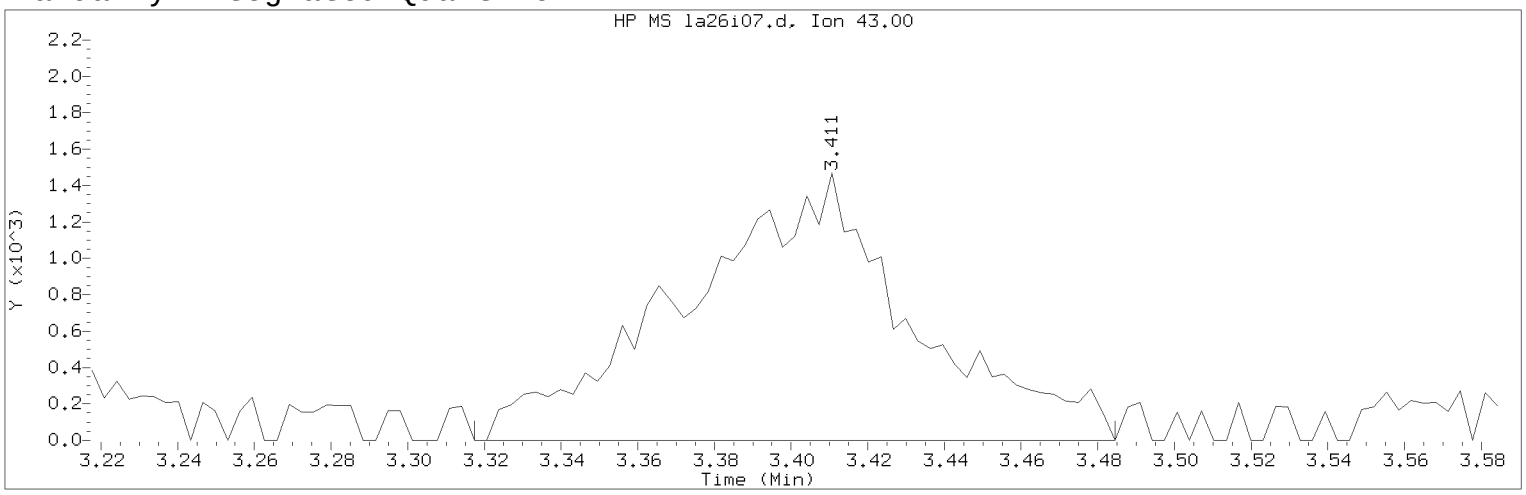
Compound Number : 23
Compound Name : Carbon Disulfide
Scan Number : 562
Retention Time (minutes): 3.288
Quant Ion : 76.00
Area : 10736
On-column Amount (ng) : 0.8822
Integration start scan : 547 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

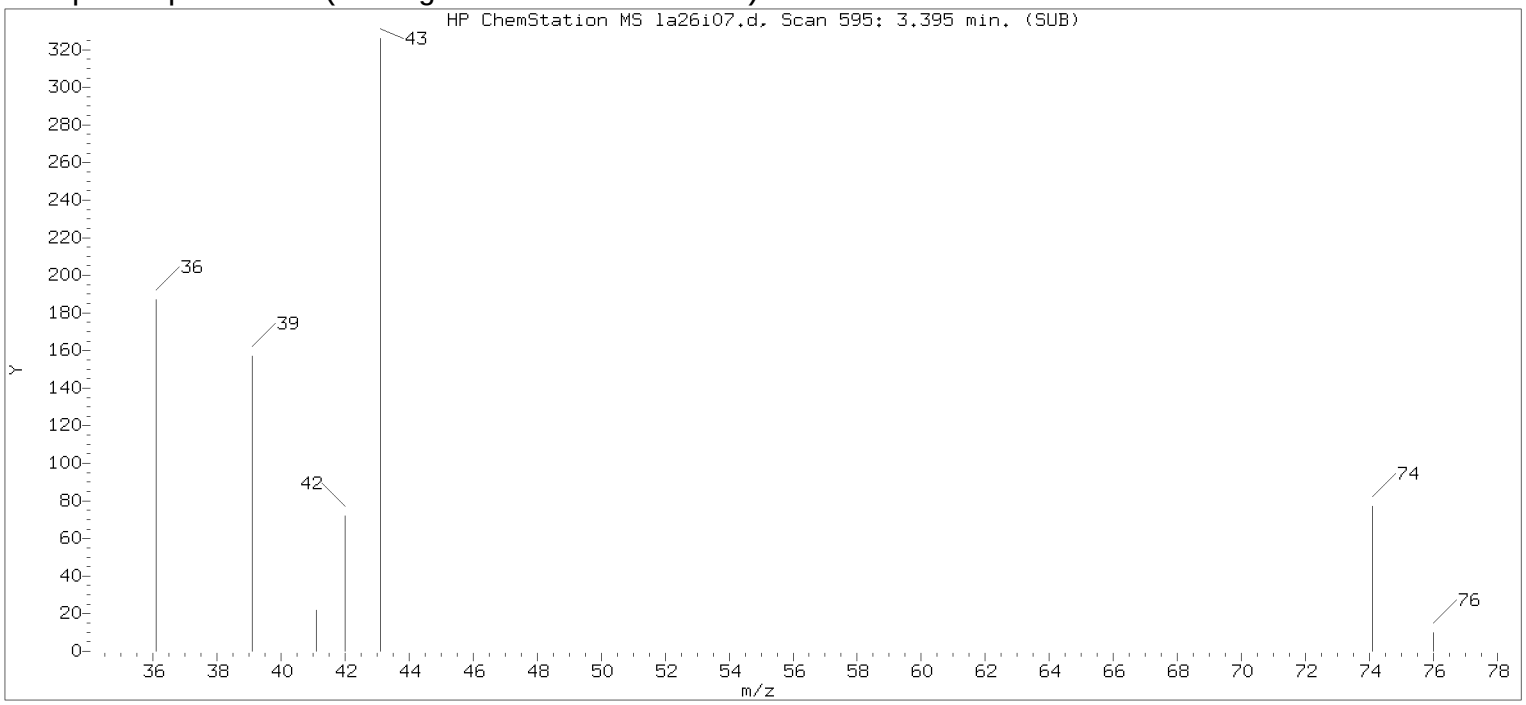
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 600
Retention Time (minutes): 3.411
Quant Ion : 43.00
Area (flag) : 6031M
On-Column Amount (ng) : 1.1064
Integration start scan : 570 Integration stop scan: 622
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

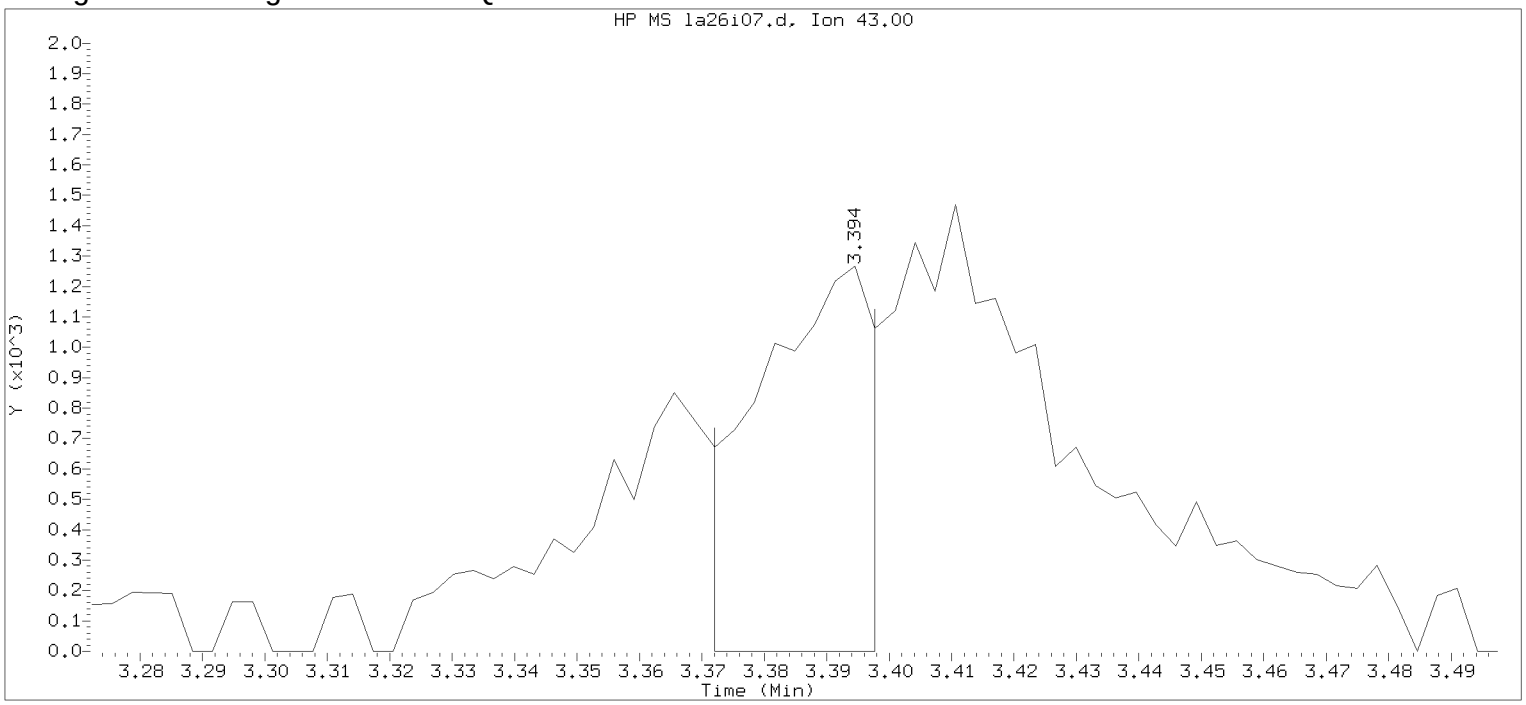
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

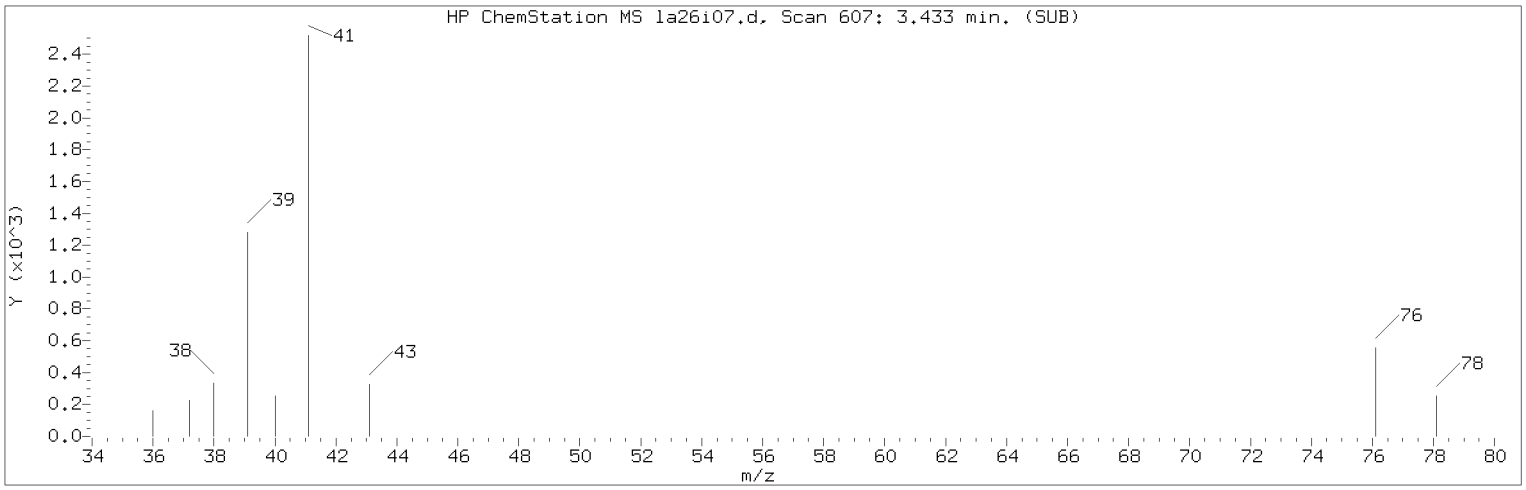
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

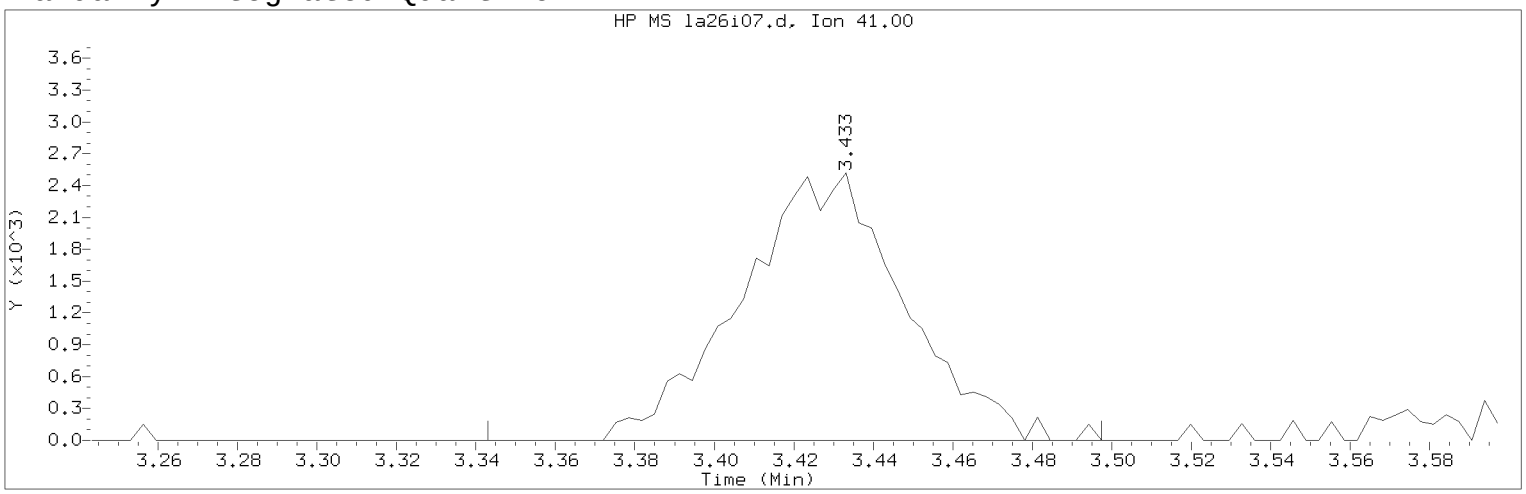
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 595
Retention Time (minutes): 3.394
Quant Ion : 43.00
Area : 1538
On-column Amount (ng) : 0.3199
Integration start scan : 587 Integration stop scan: 595
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 249

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

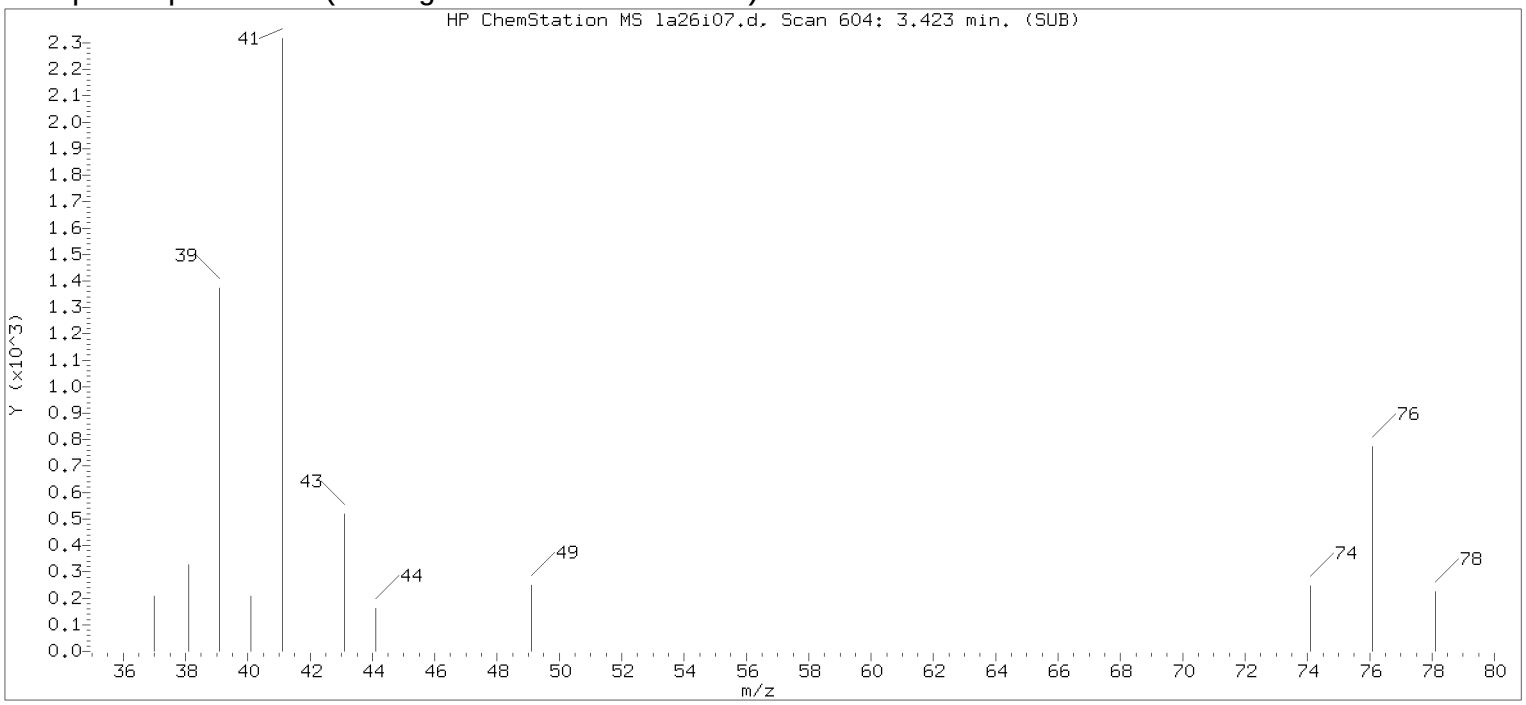
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 607
Retention Time (minutes): 3.433
Quant Ion : 41.00
Area (flag) : 7208M
On-Column Amount (ng) : 0.9581
Integration start scan : 578 Integration stop scan: 626
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

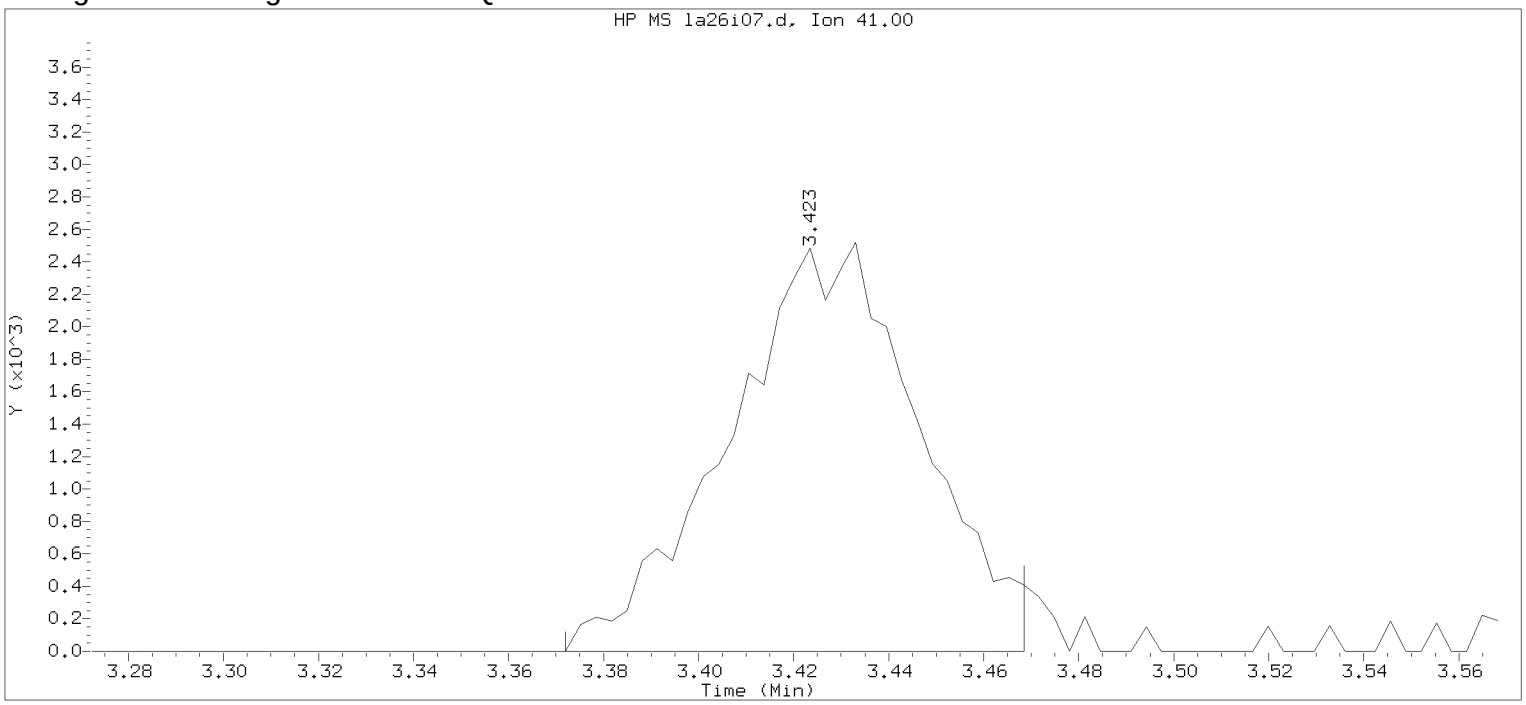
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

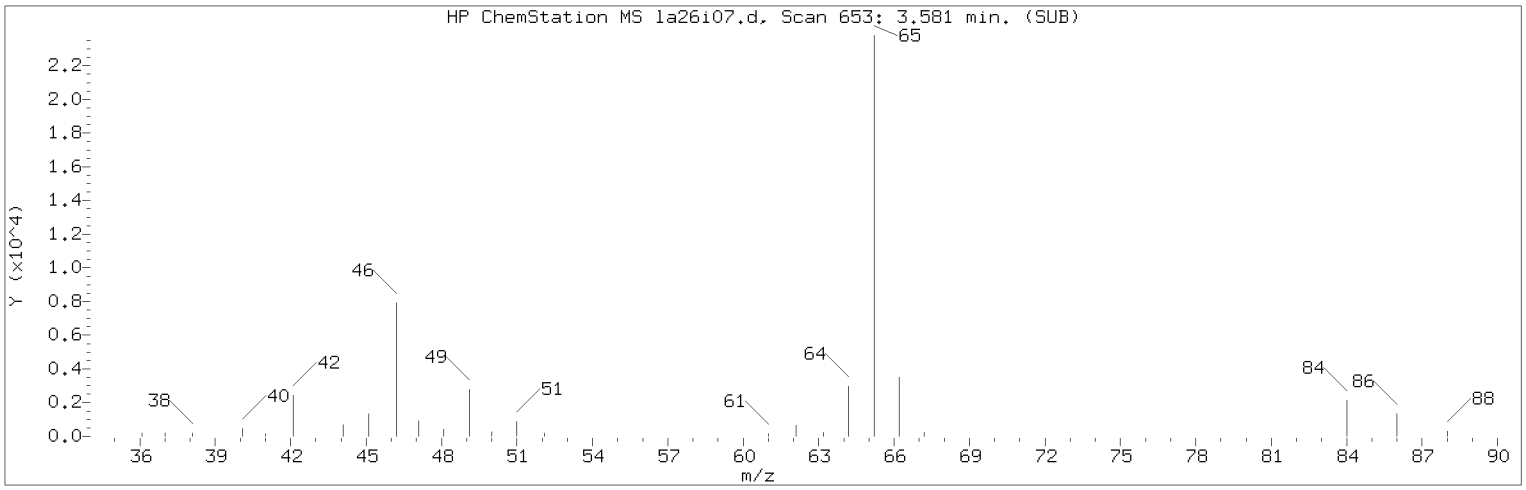
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

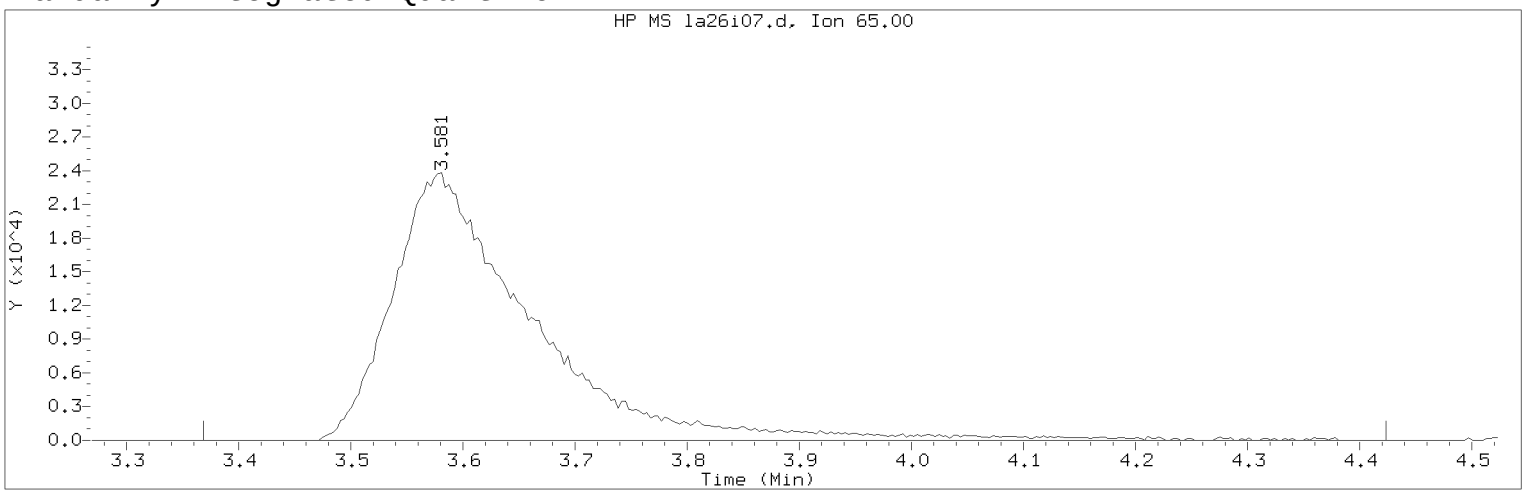
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 604
Retention Time (minutes): 3.423
Quant Ion : 41.00
Area : 6993
On-column Amount (ng) : 0.9334
Integration start scan : 587 Integration stop scan: 617
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 421 of 420

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

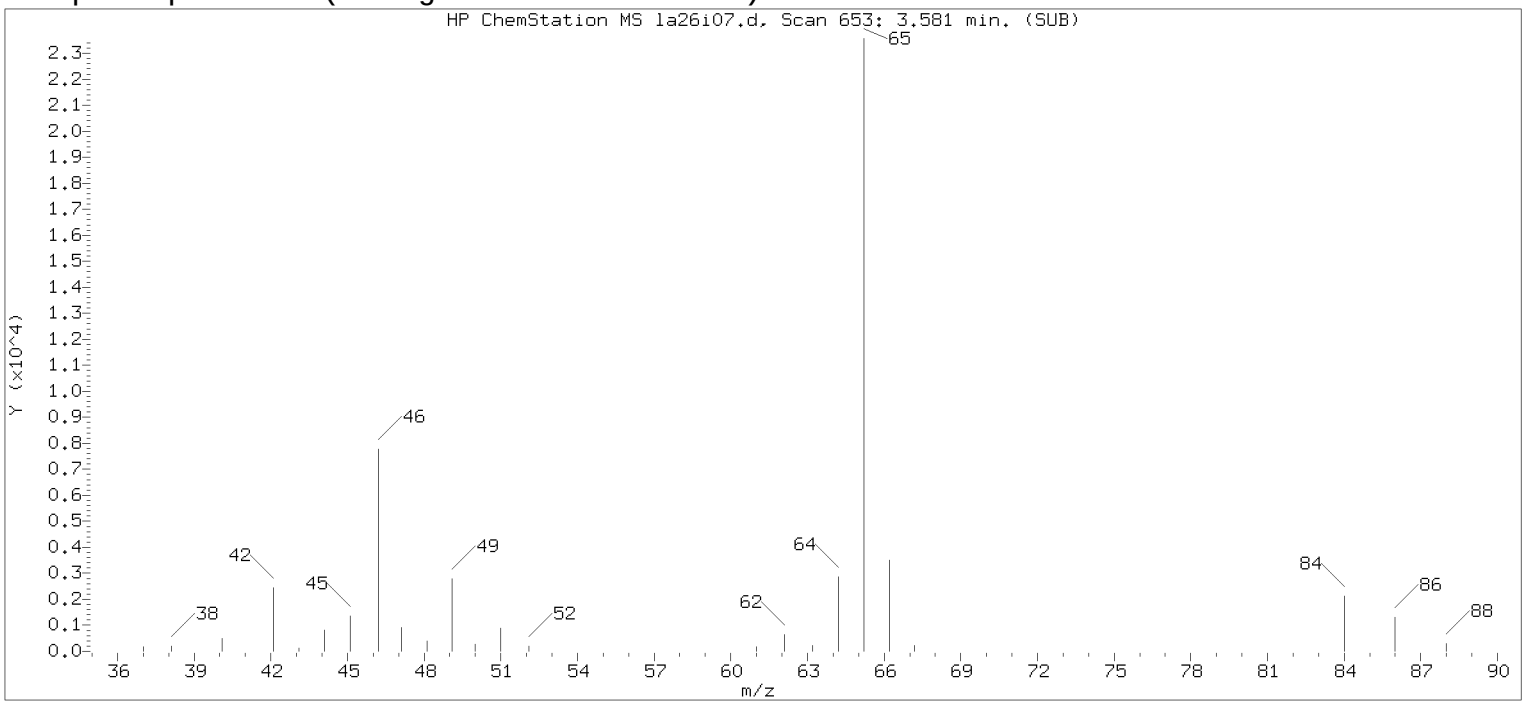
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 204400M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 914
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

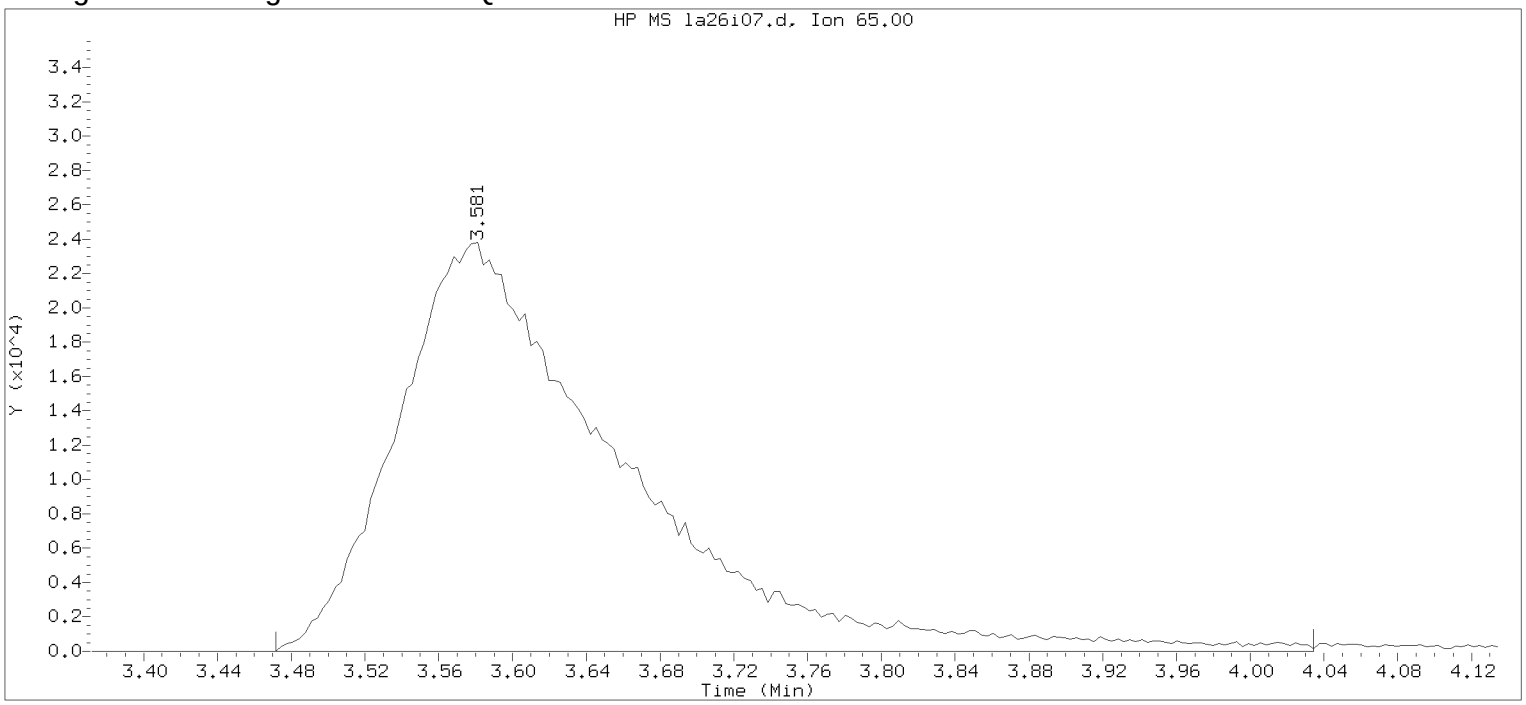
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

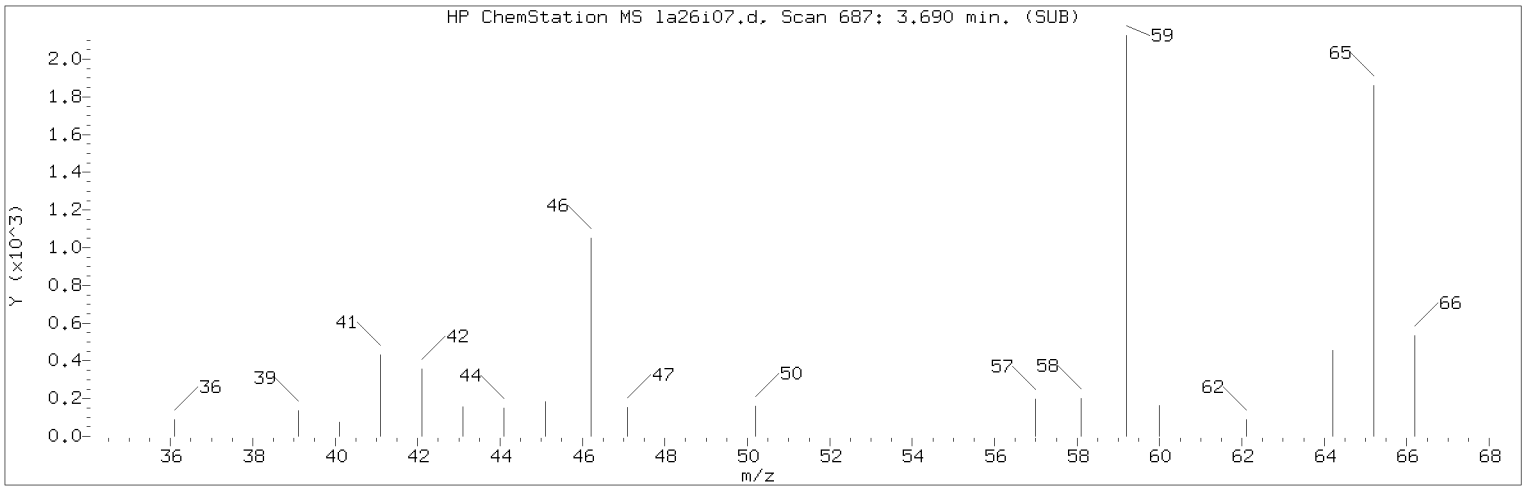
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

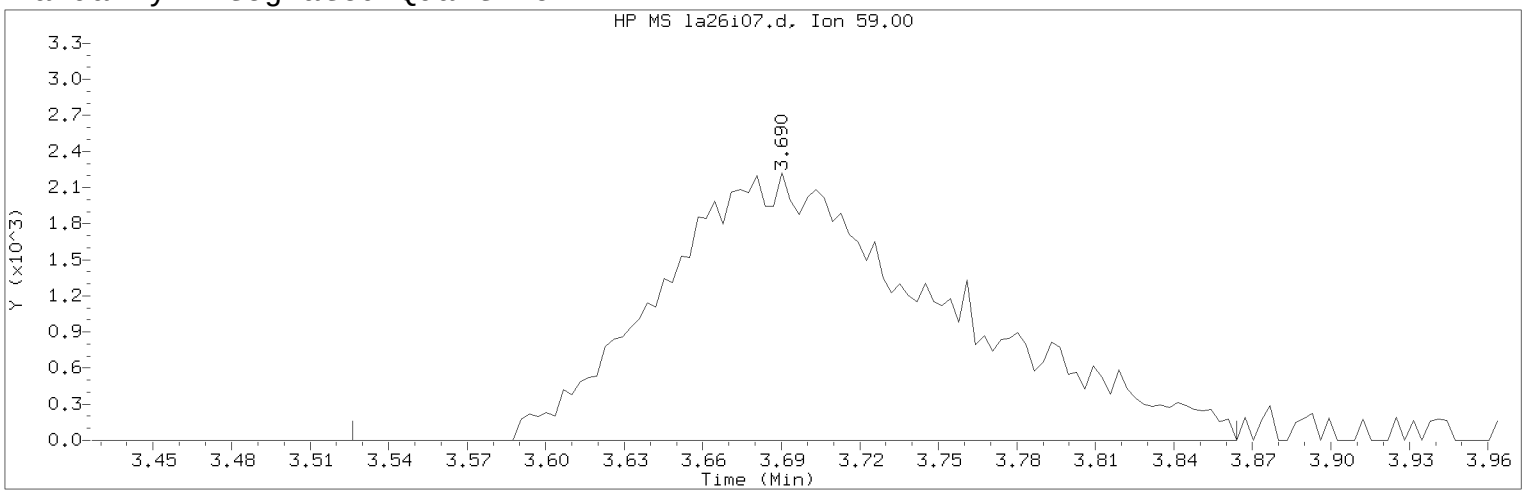
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 200515
On-column Amount (ng) : 250.0000
Integration start scan : 618 Integration stop scan: 793
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

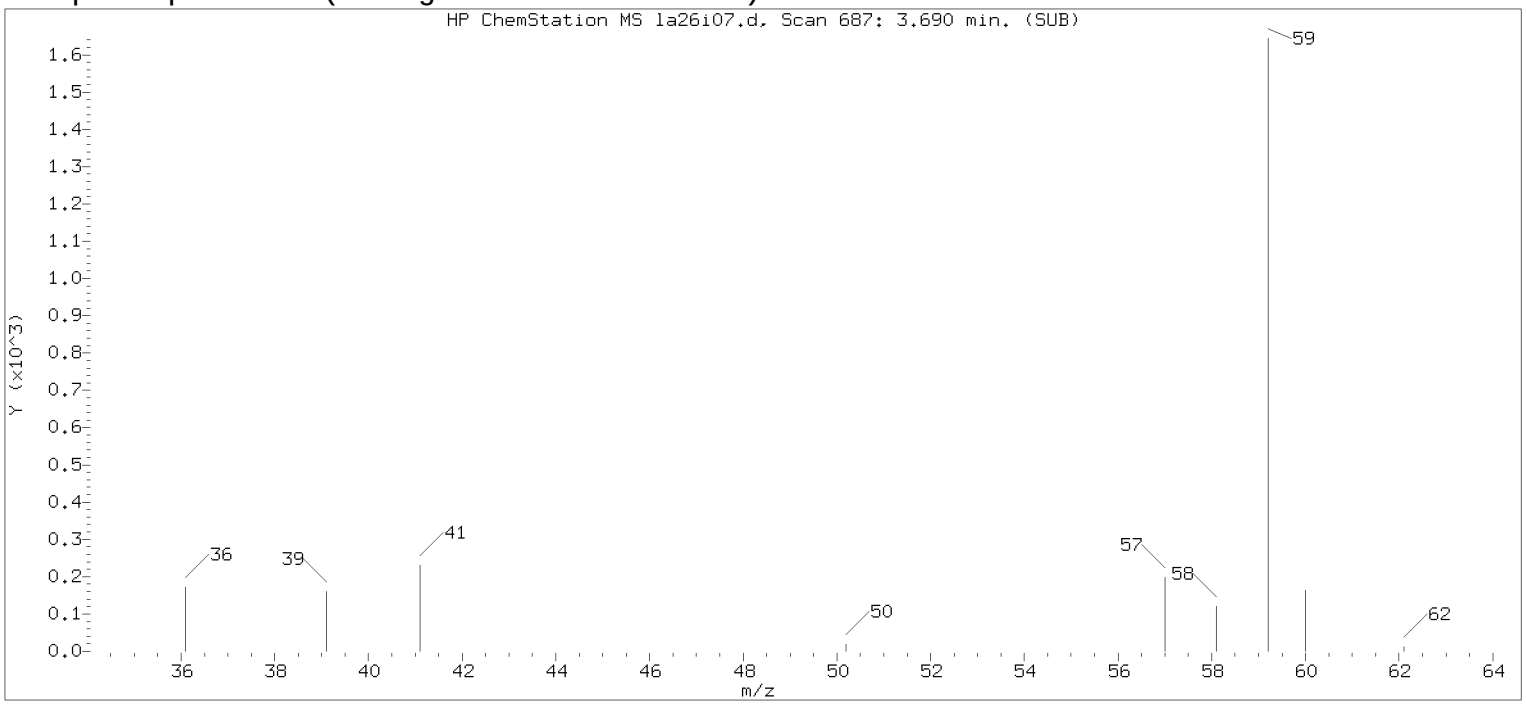
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 687
Retention Time (minutes): 3.690
Quant Ion : 59.00
Area (flag) : 16799M
On-Column Amount (ng) : 21.2415
Integration start scan : 635 Integration stop scan: 740
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

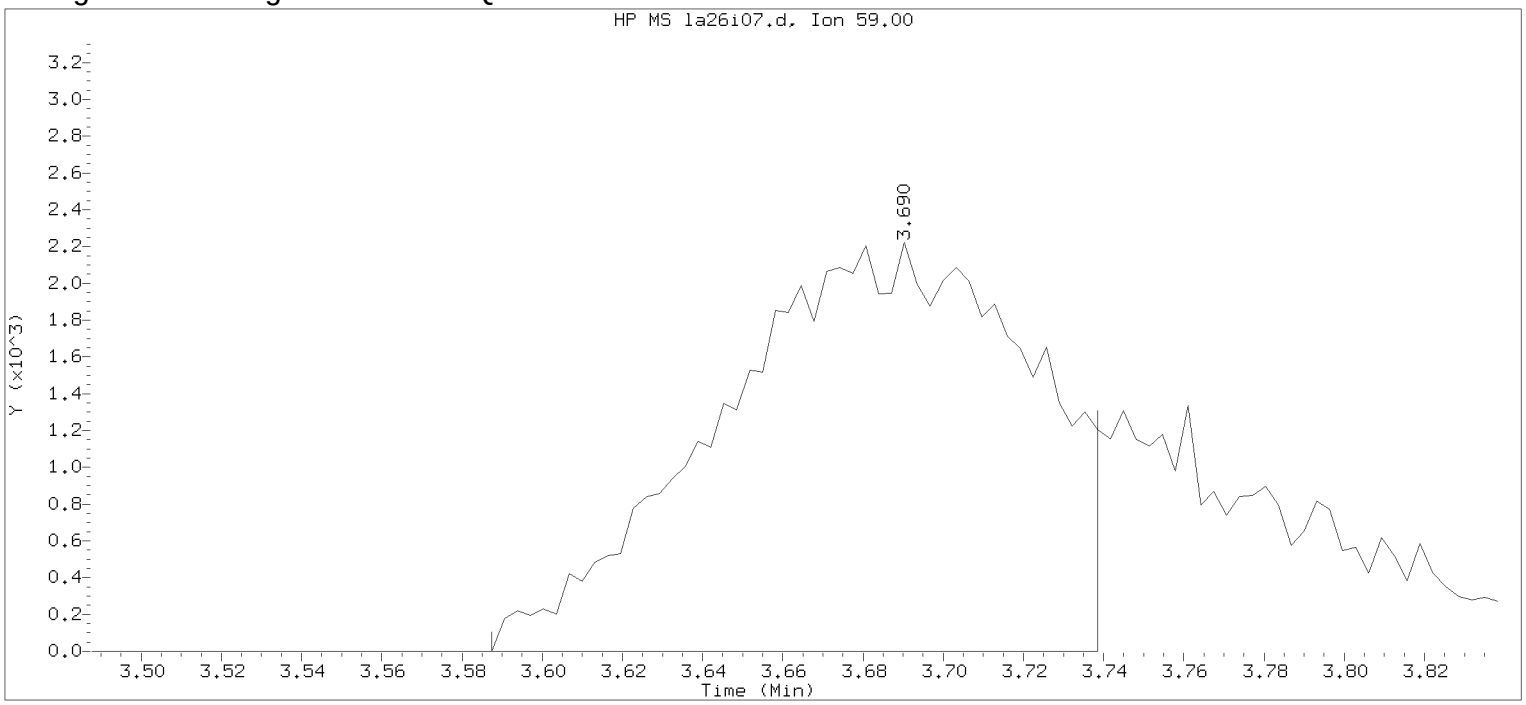
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

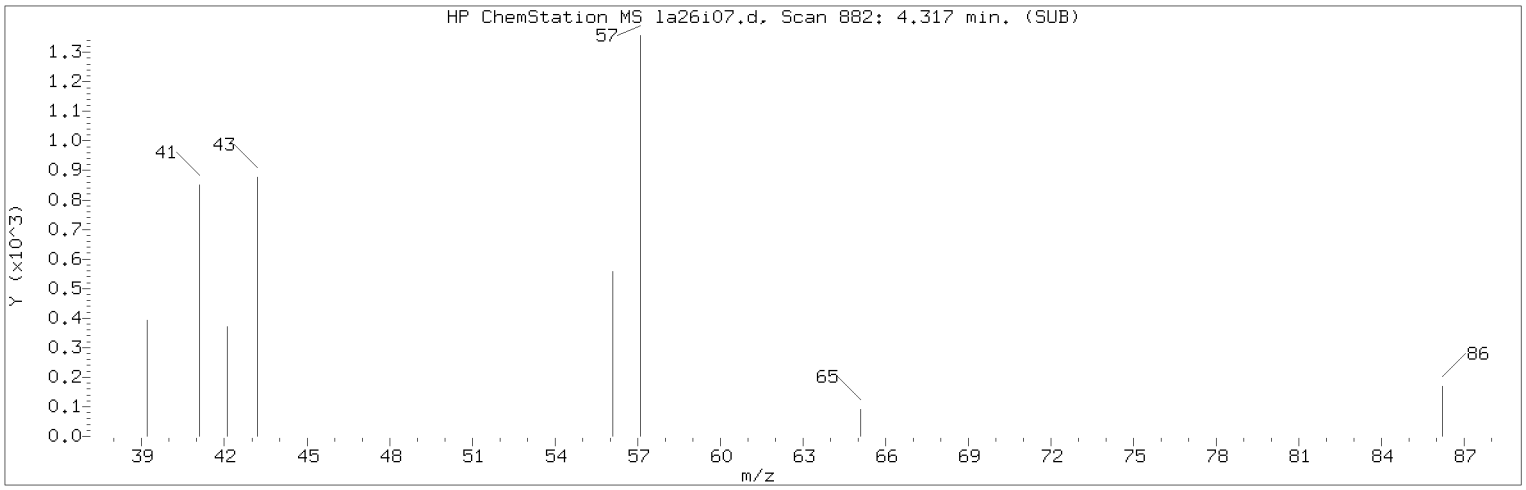
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

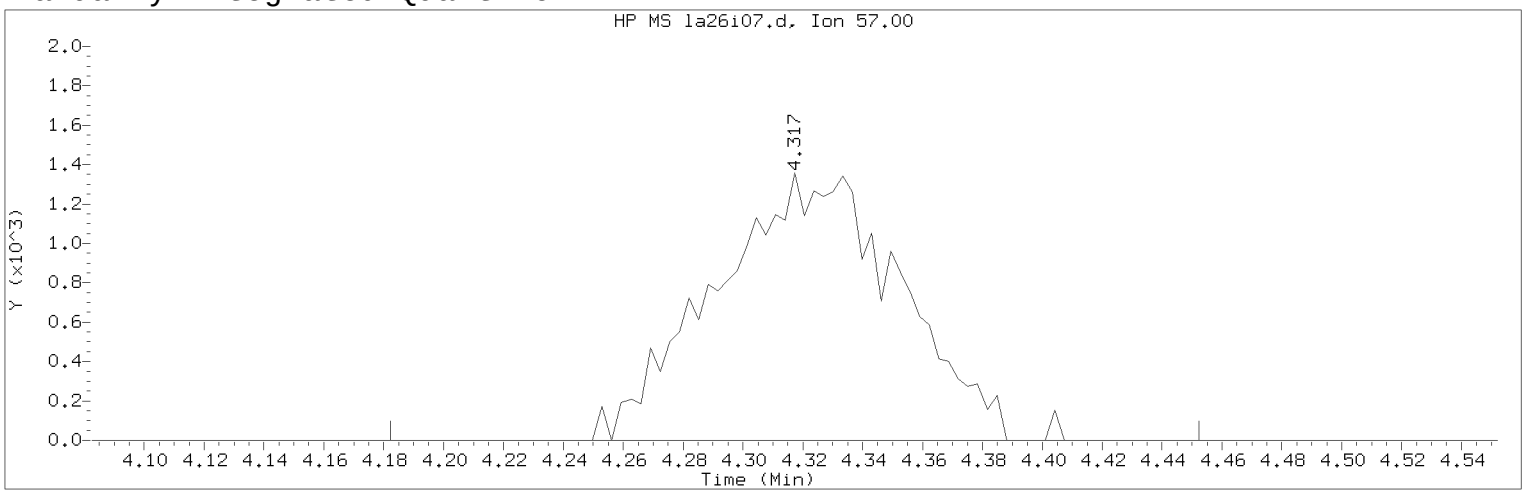
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 687
Retention Time (minutes): 3.690
Quant Ion : 59.00
Area : 12039
On-column Amount (ng) : 16.1792
Integration start scan : 654 Integration stop scan: 701
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

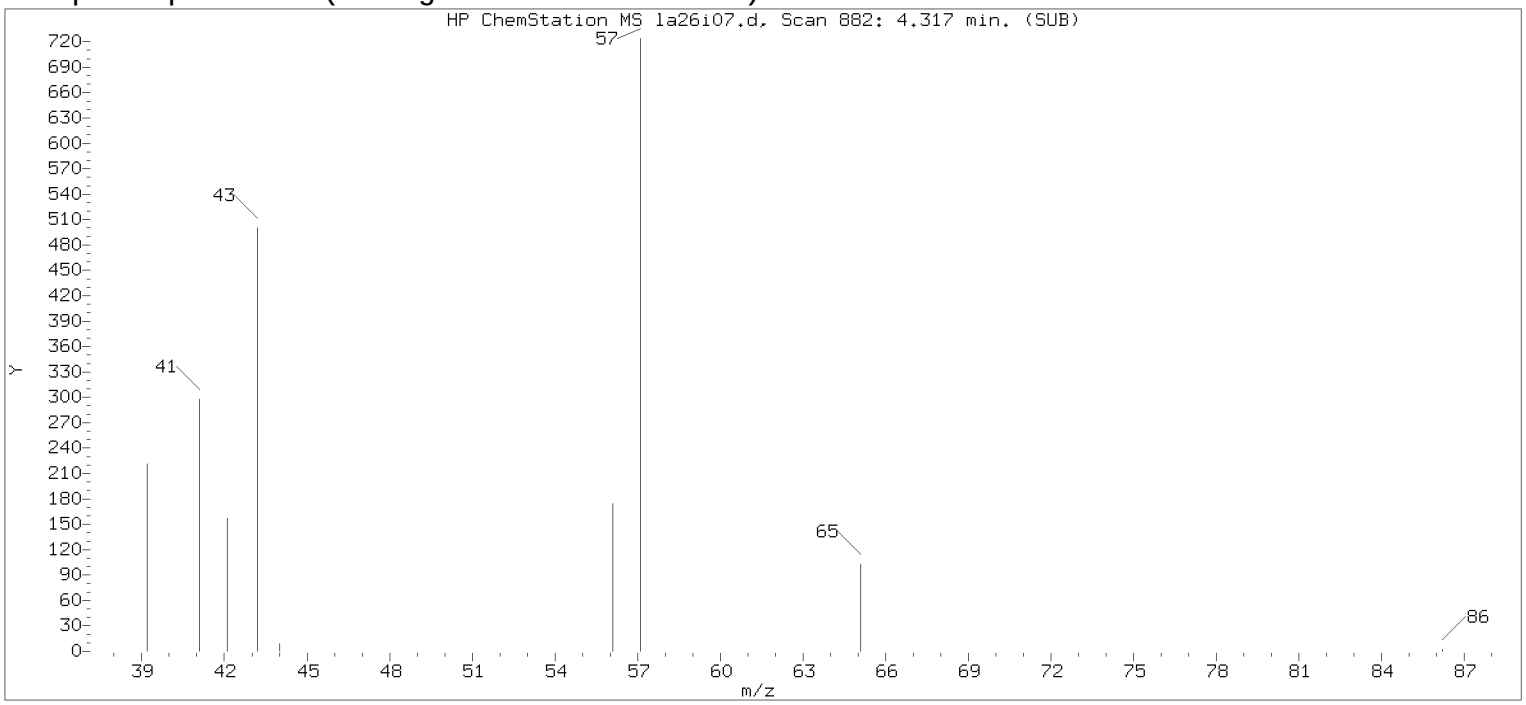
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area (flag) : 5817M
On-Column Amount (ng) : 0.8612
Integration start scan : 839 Integration stop scan: 923
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

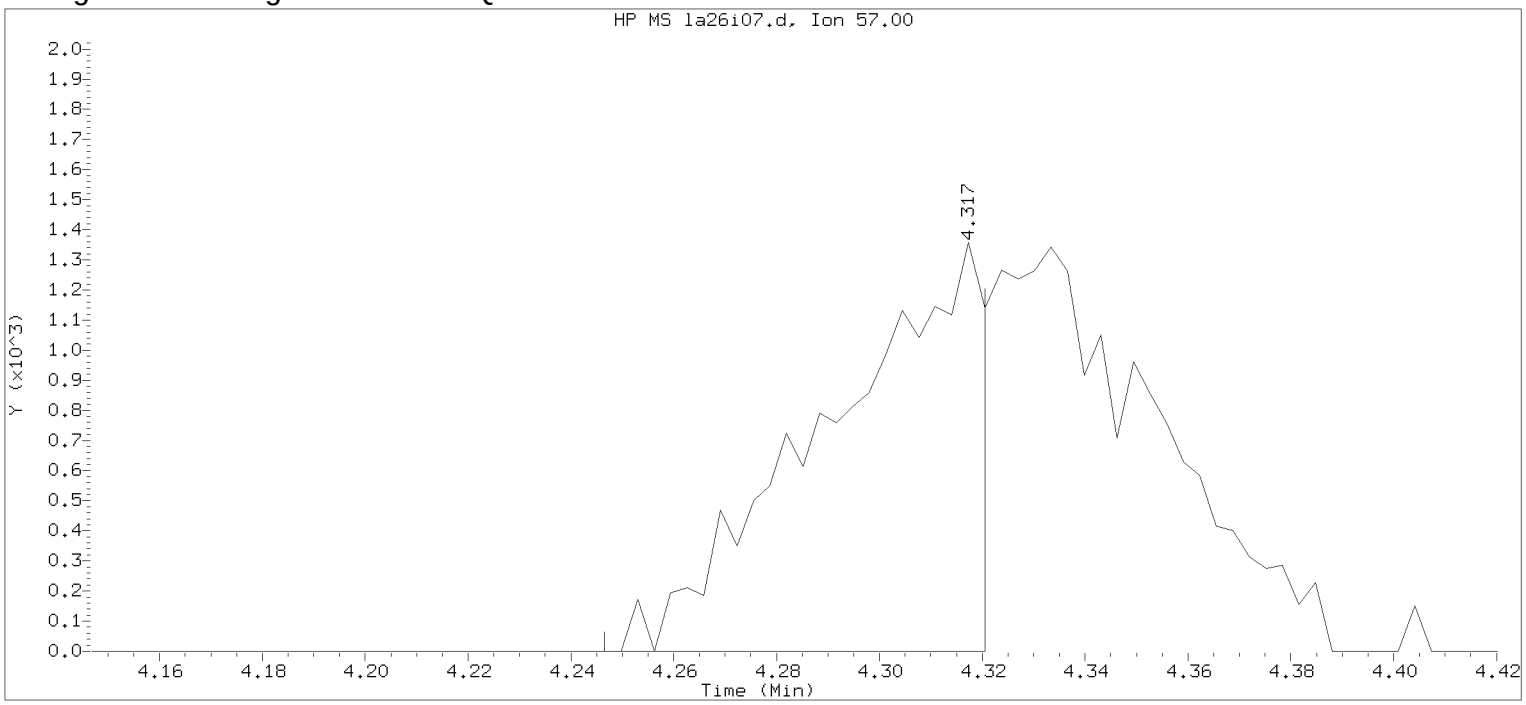
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

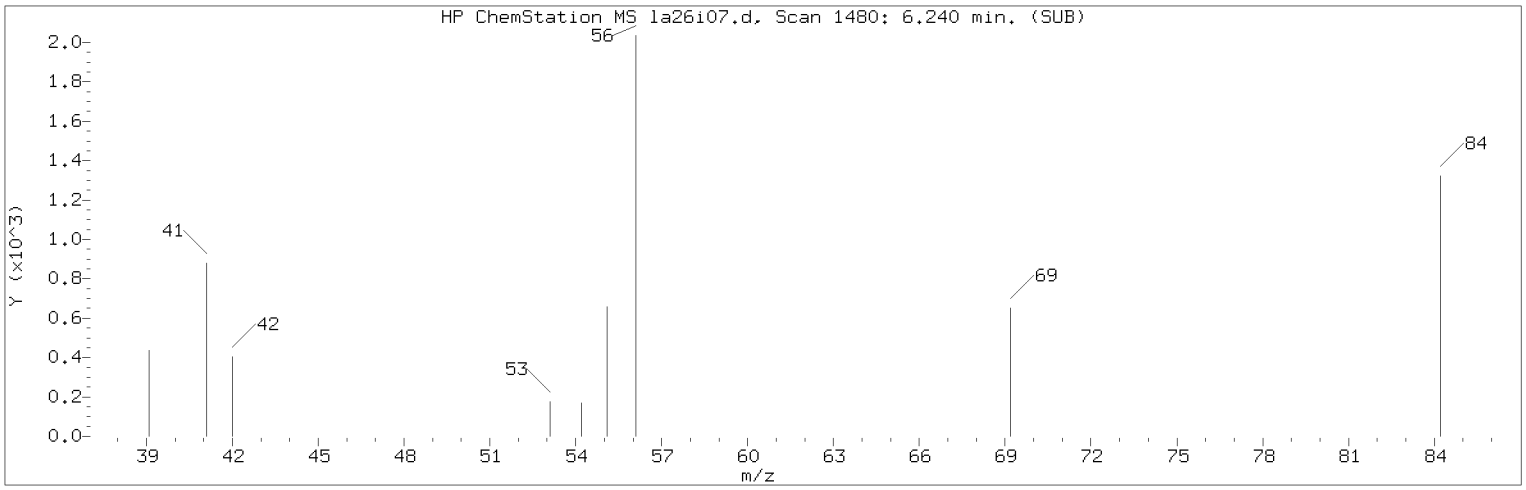
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

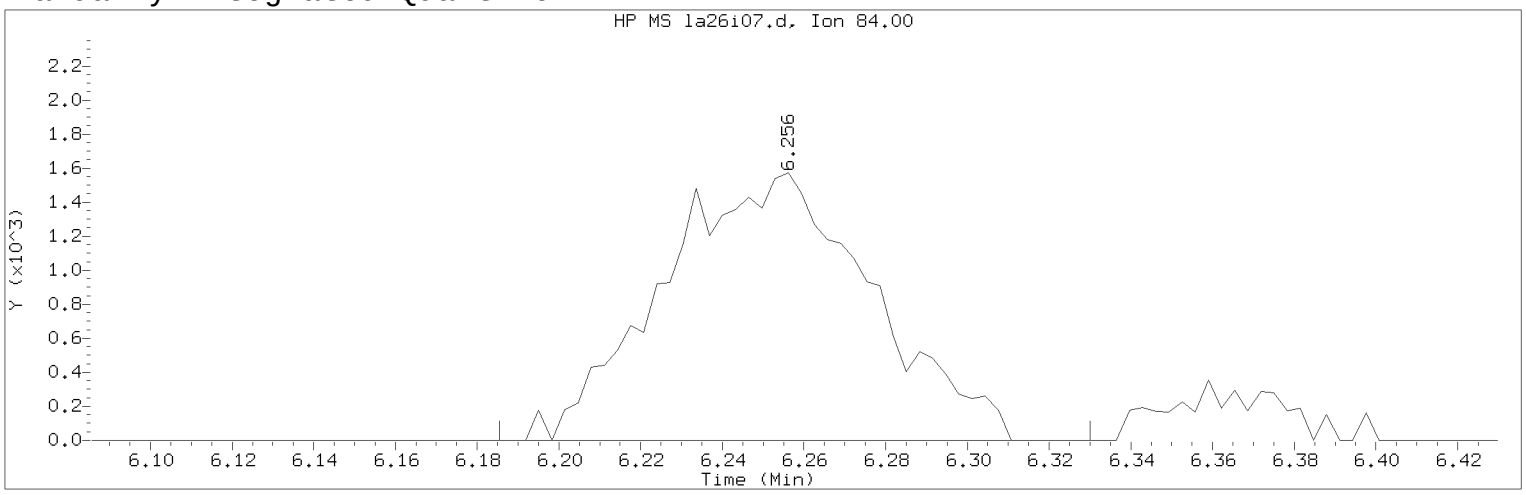
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area : 2803
On-column Amount (ng) : 0.4433
Integration start scan : 859 Integration stop scan: 882
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 RD90kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

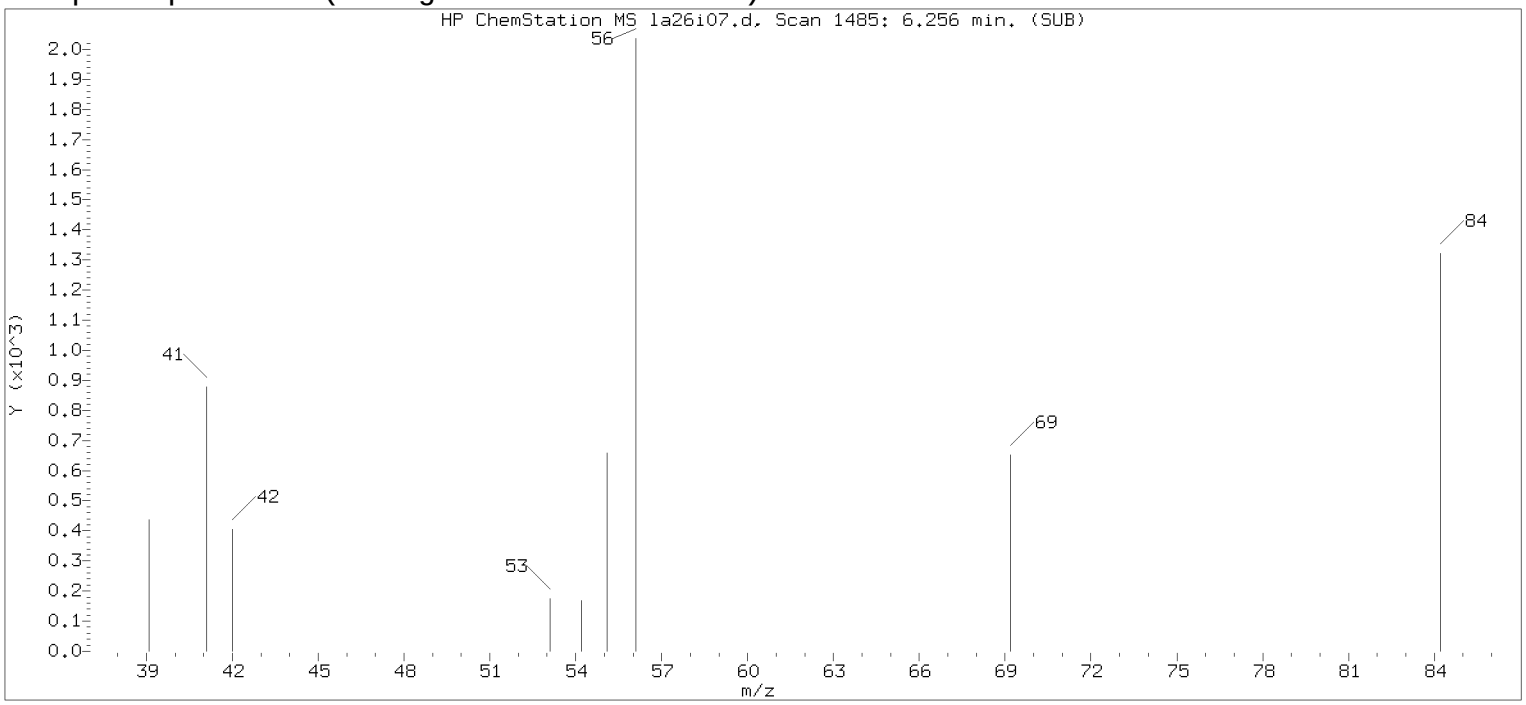
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 1485
Retention Time (minutes): 6.256
Quant Ion : 84.00
Area (flag) : 5572M
On-Column Amount (ng) : 0.8301
Integration start scan : 1462 Integration stop scan: 1507
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

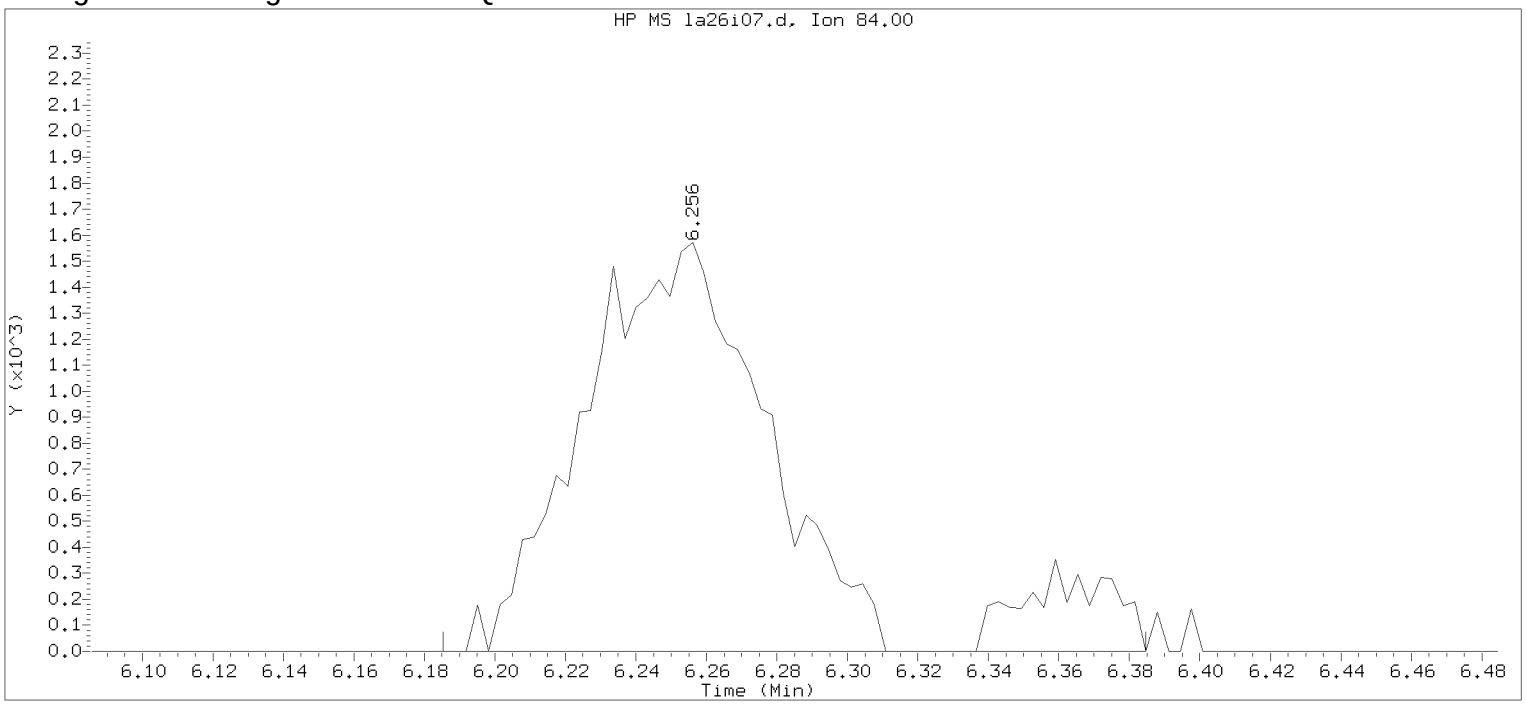
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

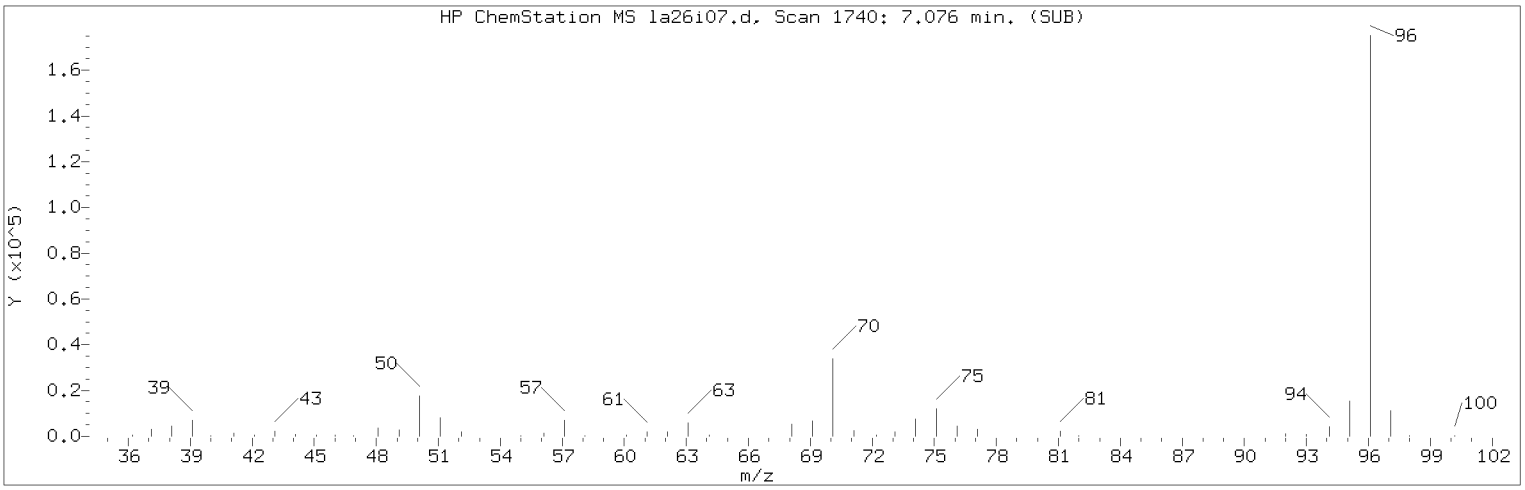
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

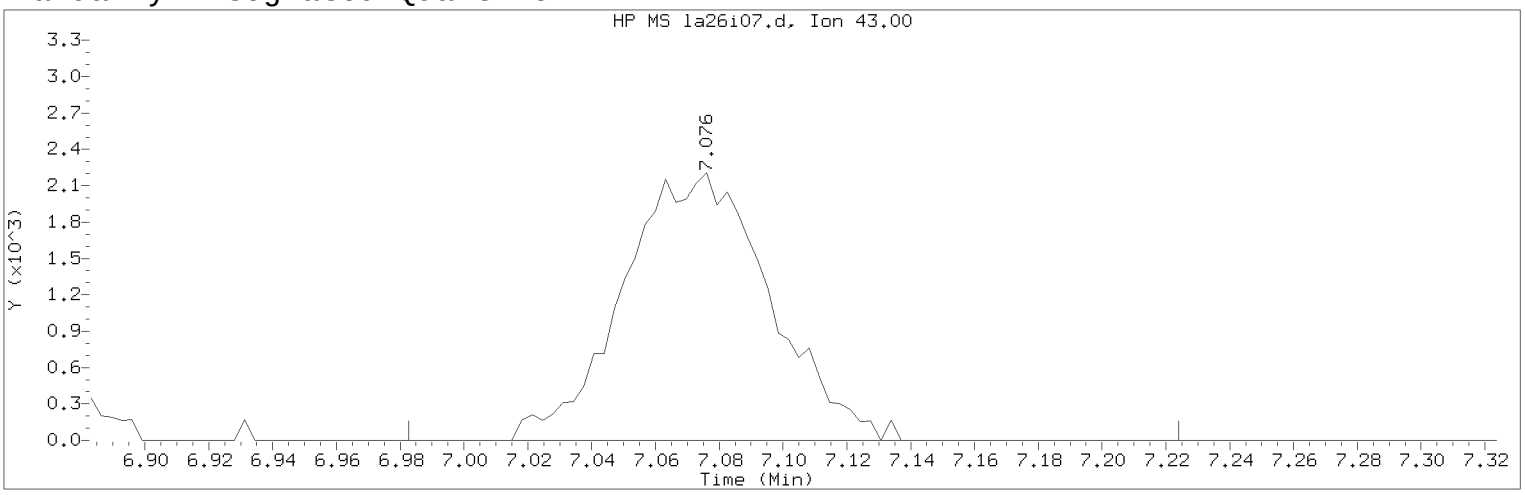
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 1485
Retention Time (minutes): 6.256
Quant Ion : 84.00
Area : 6158
On-column Amount (ng) : 0.9060
Integration start scan : 1462 Integration stop scan: 1524
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature userKAS02648 Page 229

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

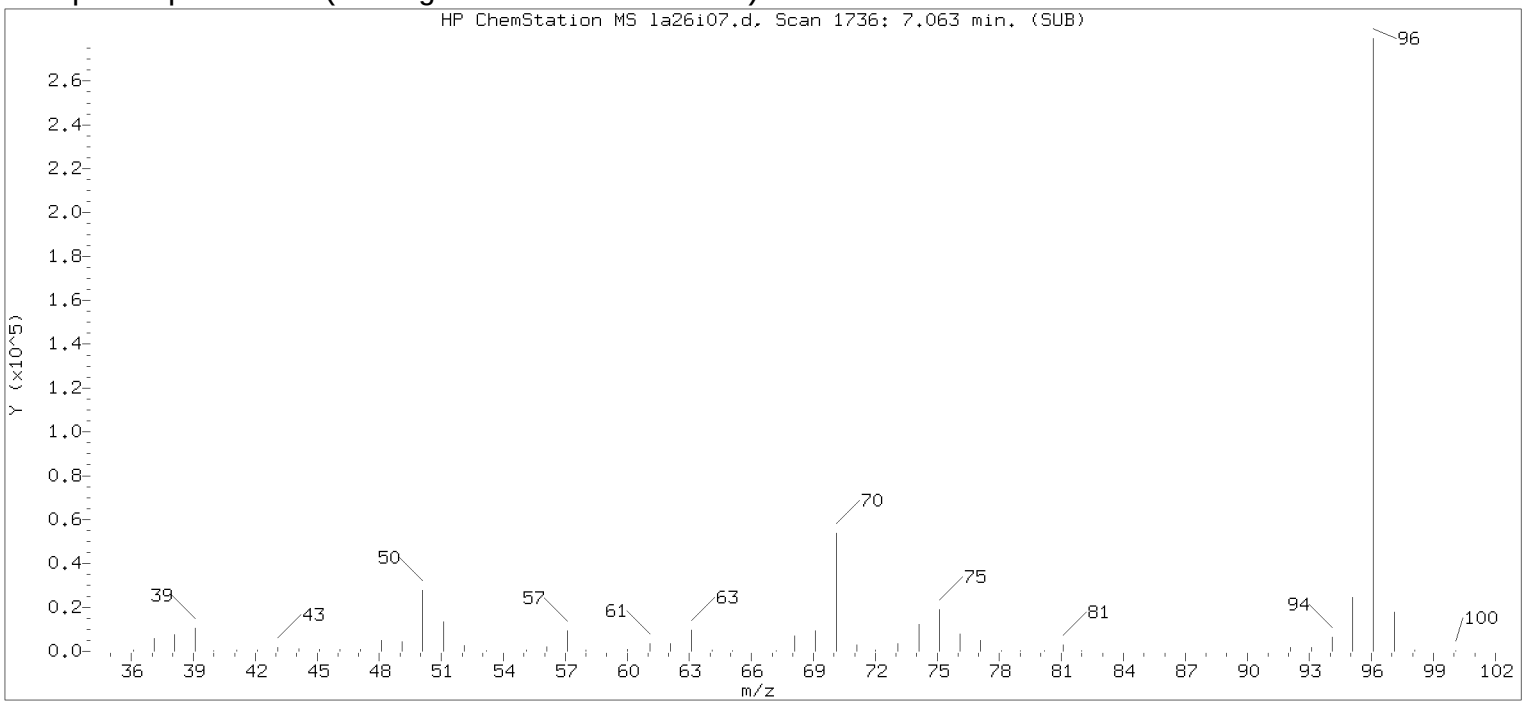
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1740
Retention Time (minutes): 7.076
Quant Ion : 43.00
Area (flag) : 7056M
On-Column Amount (ng) : 0.9330
Integration start scan : 1710 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

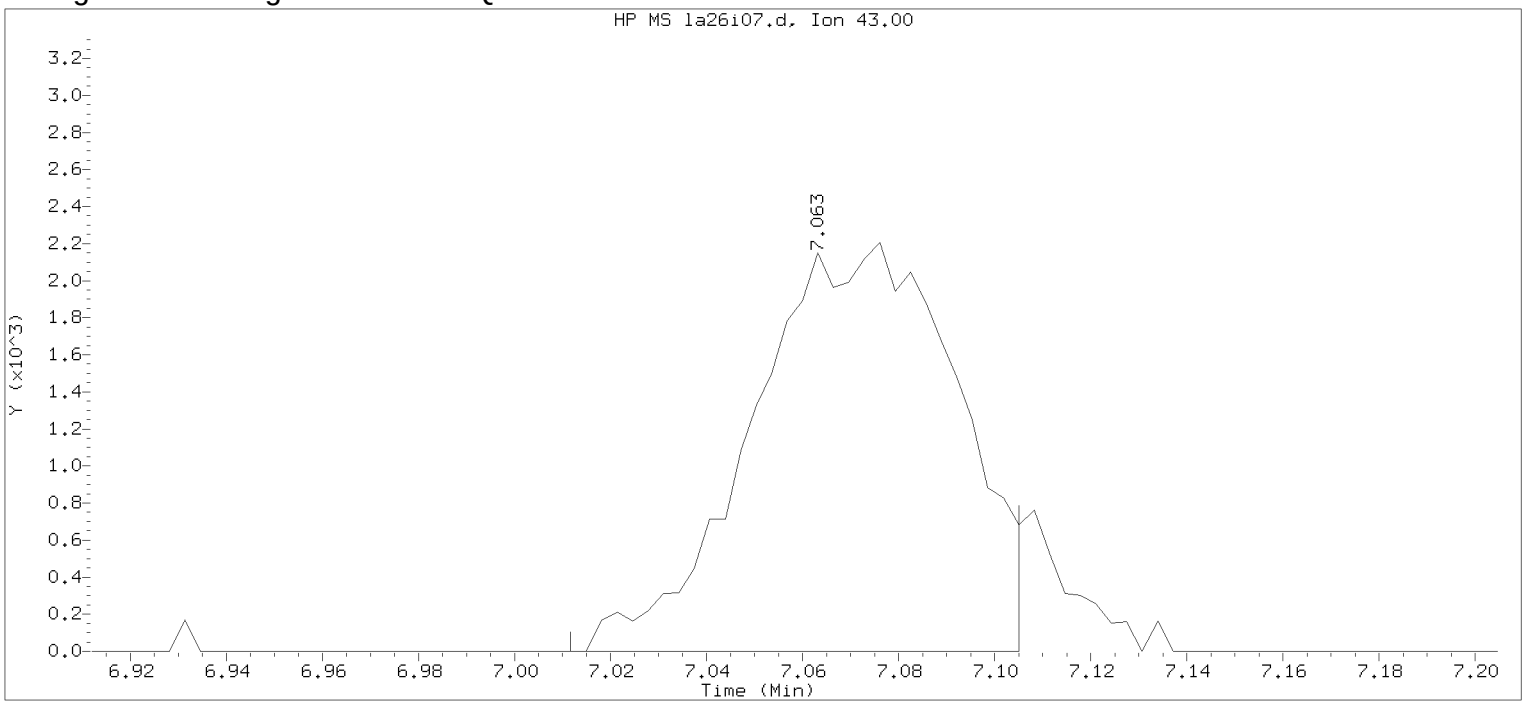
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1736
Retention Time (minutes): 7.063
Quant Ion : 43.00
Area : 6483
On-column Amount (ng) : 0.8667
Integration start scan : 1719 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

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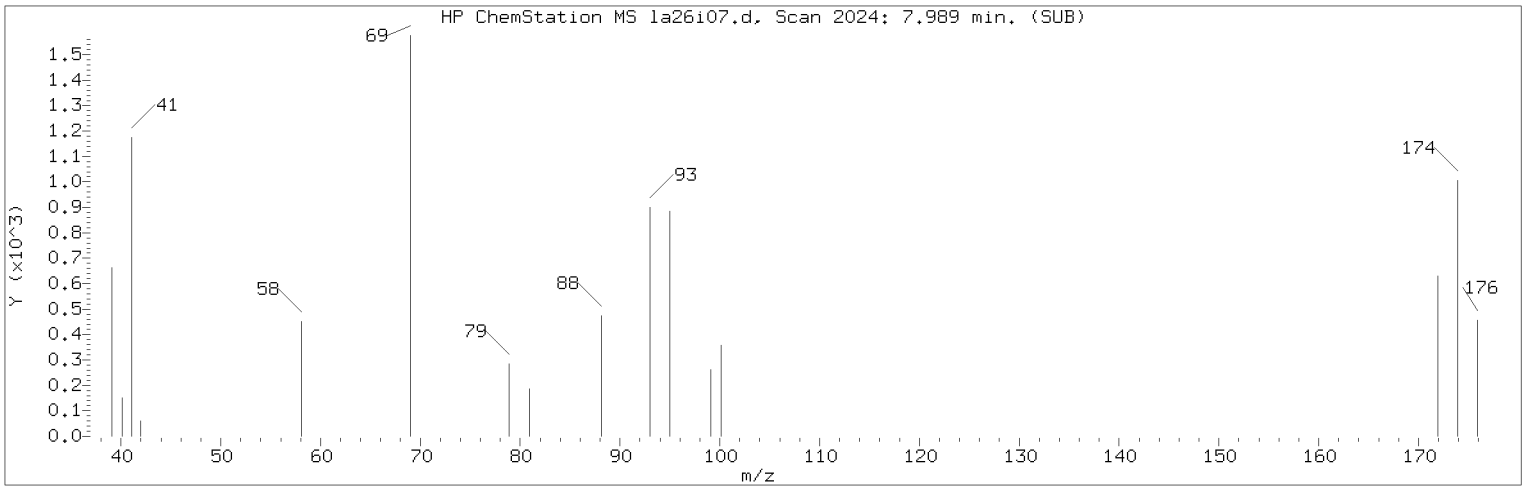
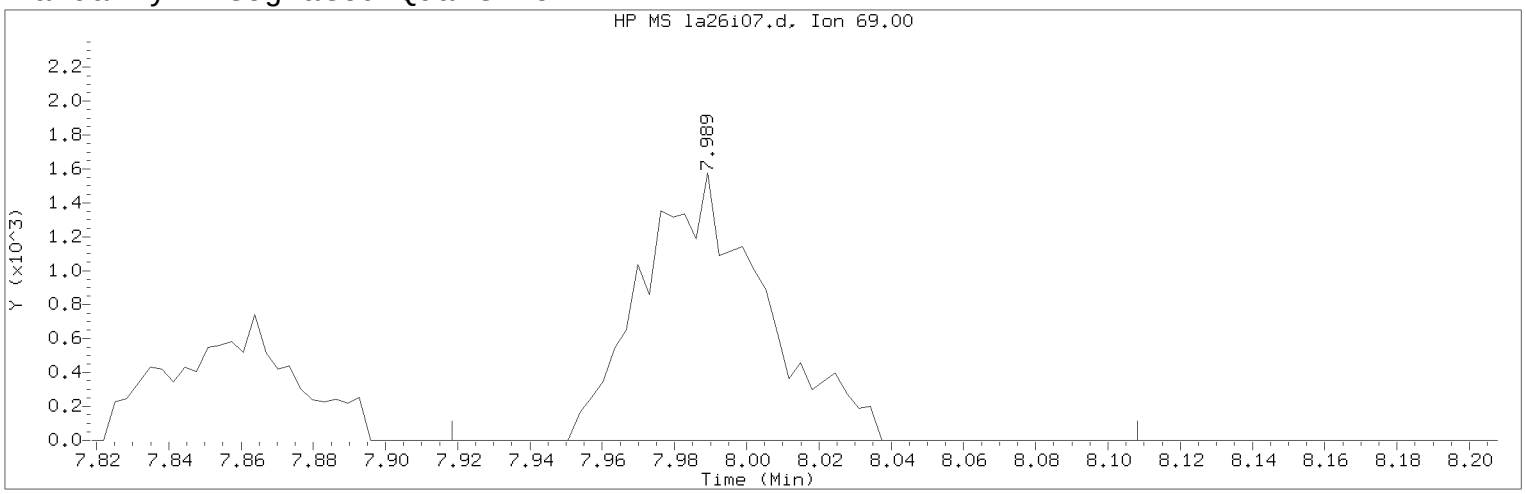
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

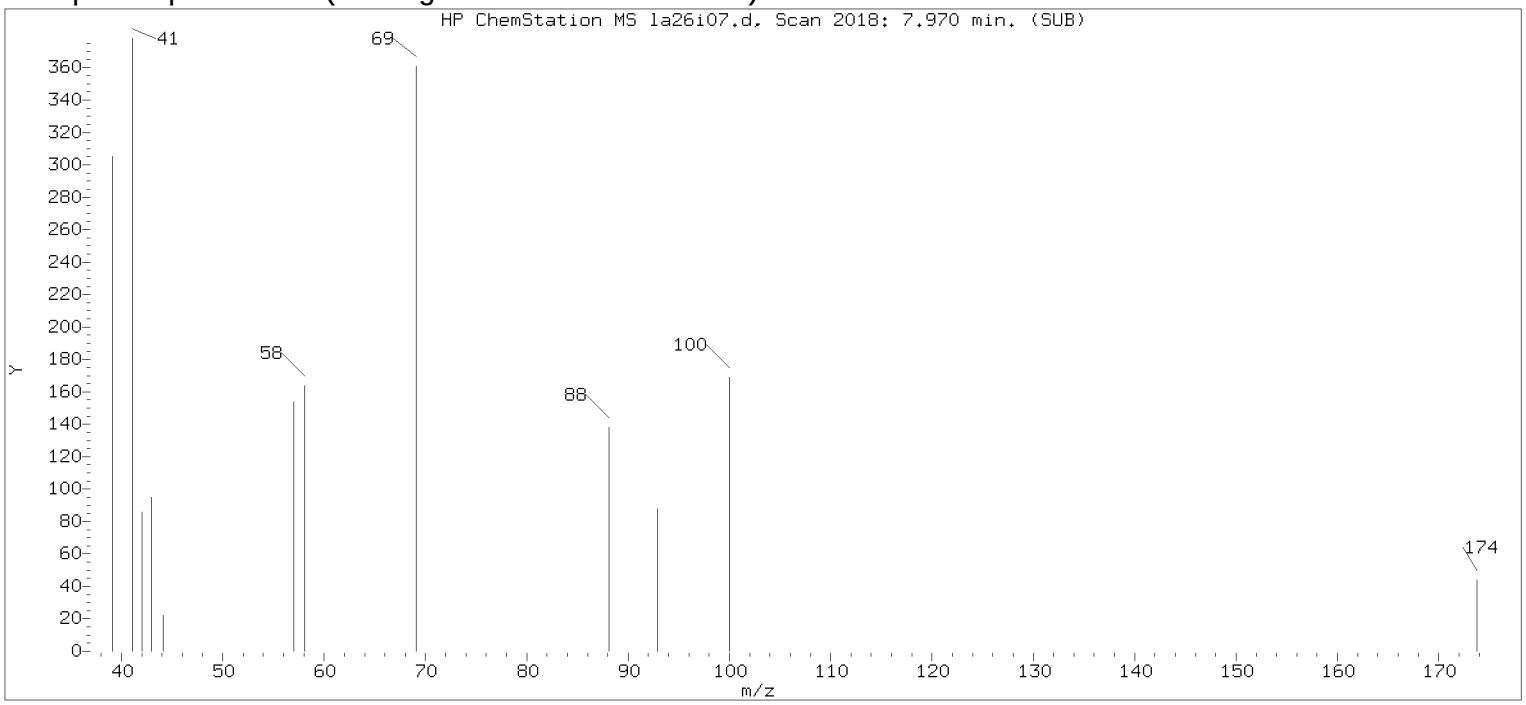
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2024
Retention Time (minutes): 7.989
Quant Ion : 69.00
Area (flag) : 3670M
On-Column Amount (ng) : 0.8277
Integration start scan : 2001 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

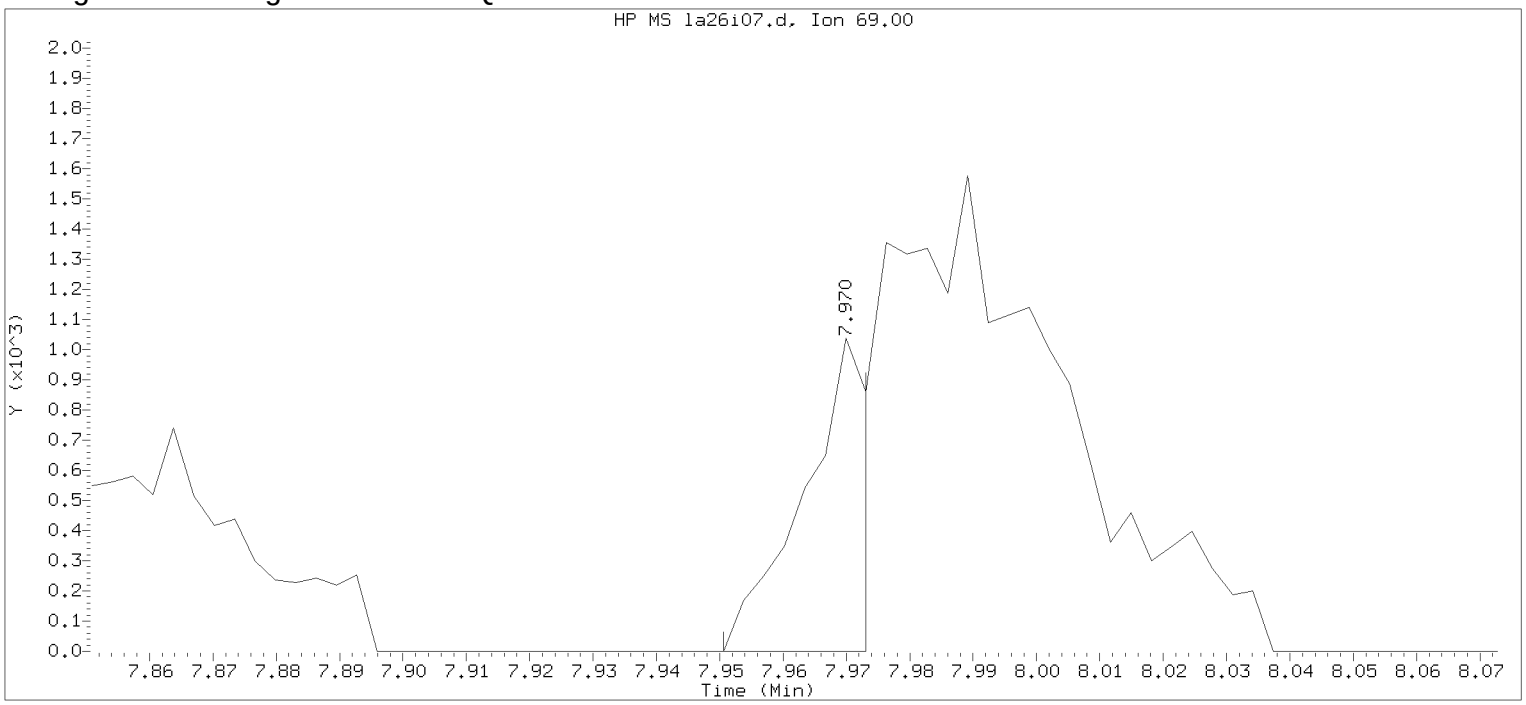
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2018
Retention Time (minutes): 7.970
Quant Ion : 69.00
Area : 661
On-column Amount (ng) : 0.1652
Integration start scan : 2011 Integration stop scan: 2018
Y at integration start : 0 Y at integration end: 0

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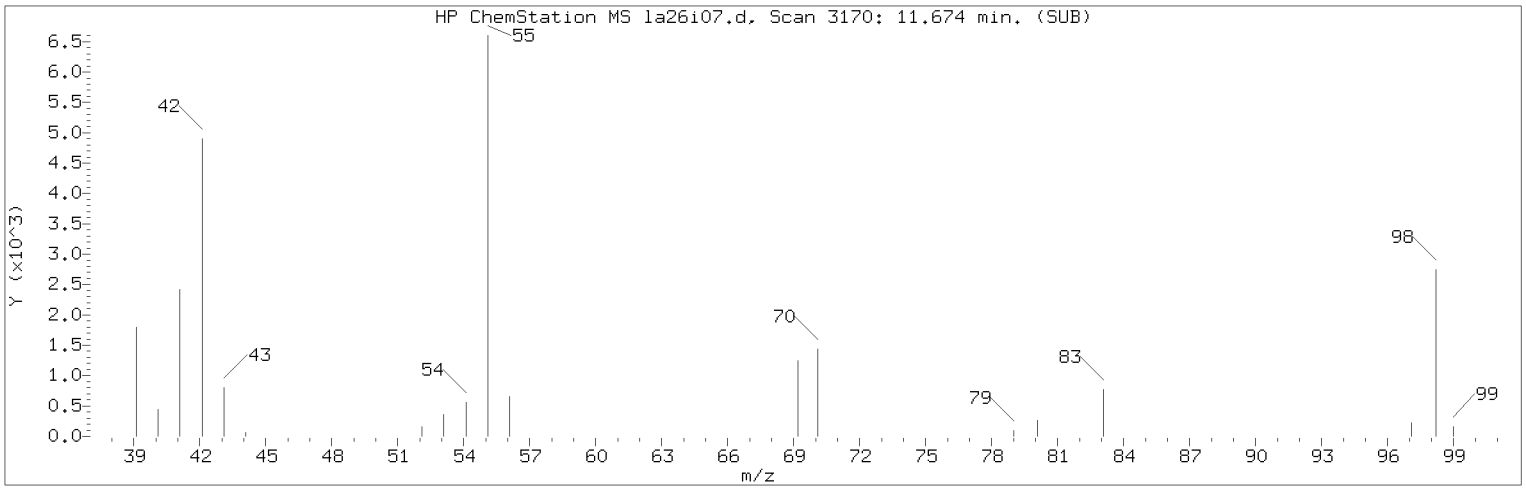
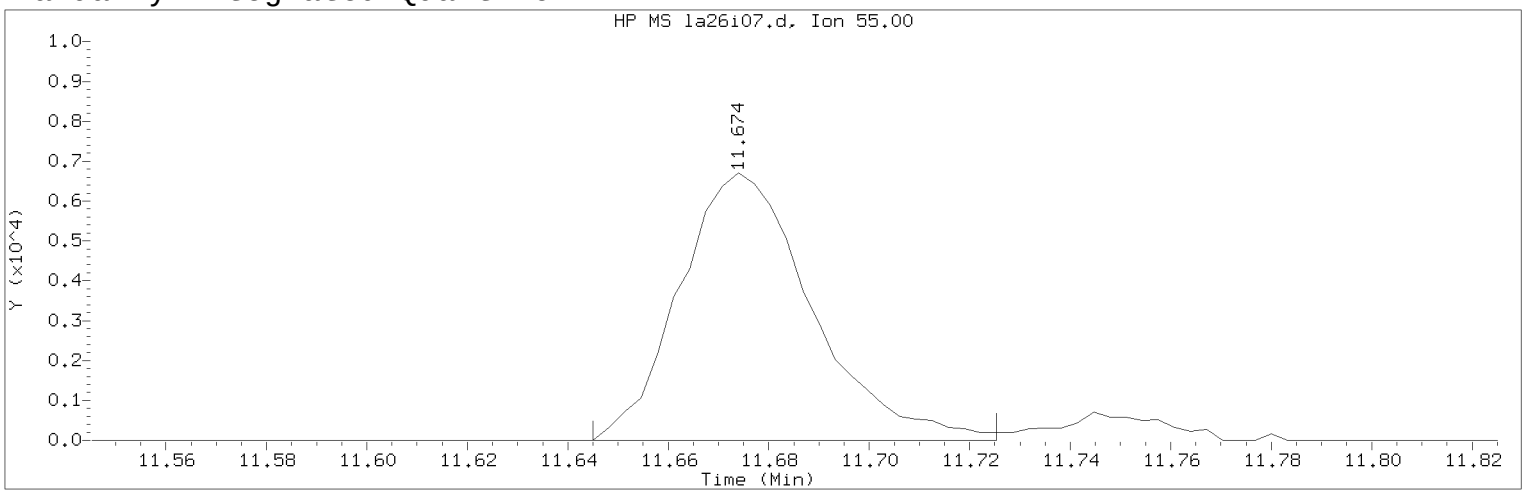
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

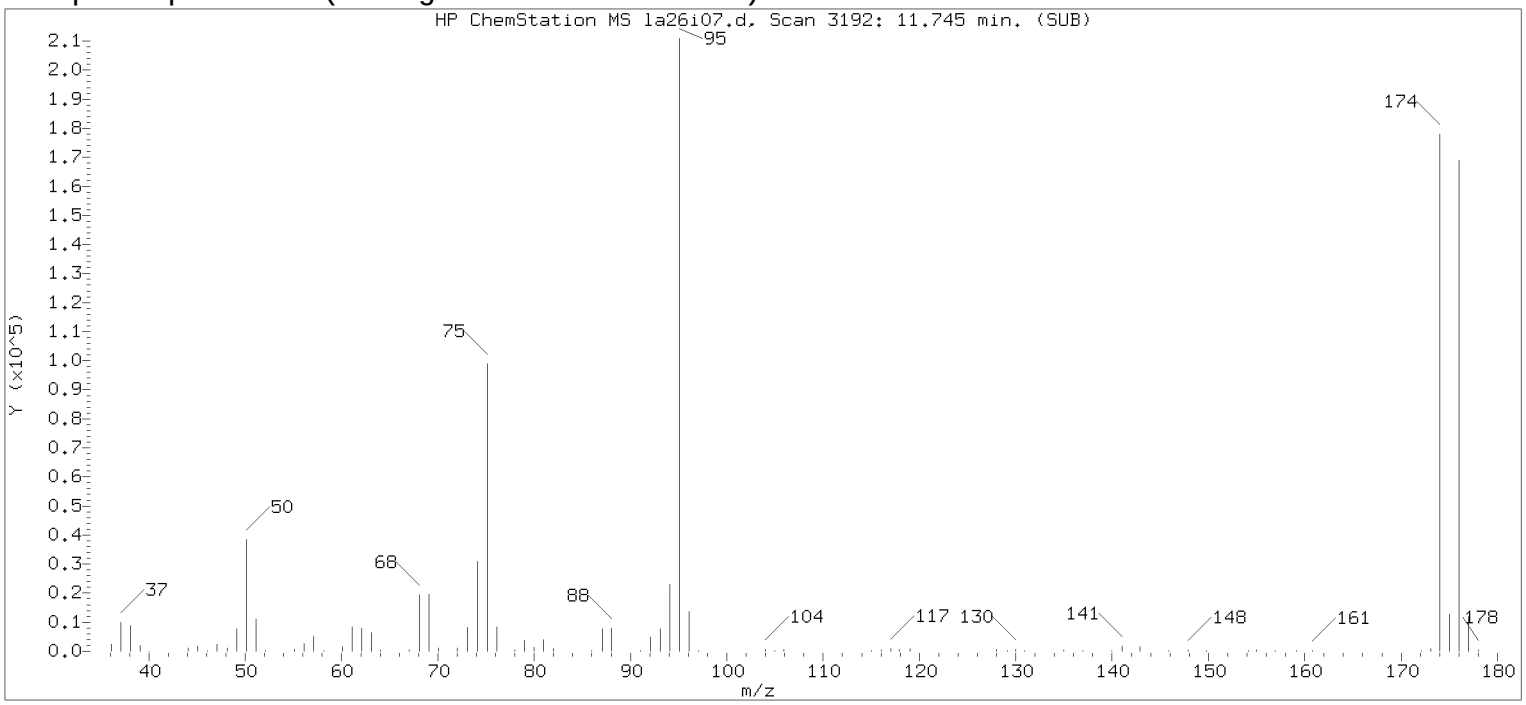
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3170
Retention Time (minutes): 11.674
Quant Ion : 55.00
Area (flag) : 12225A
On-Column Amount (ng) : 46.3770
Integration start scan : 3160 Integration stop scan: 3185
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

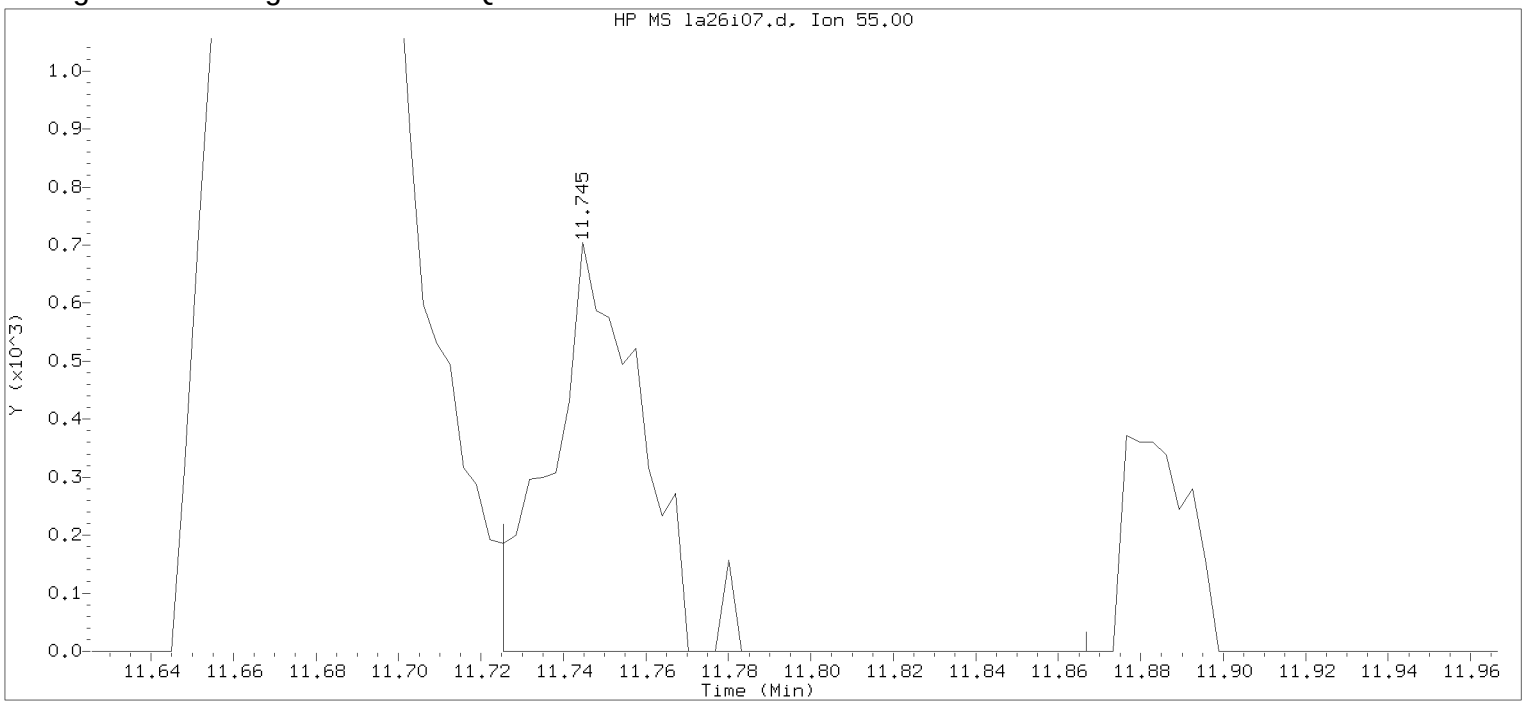
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3192
Retention Time (minutes): 11.745
Quant Ion : 55.00
Area : 1058
On-column Amount (ng) : 4.6543
Integration start scan : 3185 Integration stop scan: 3229
Y at integration start : 0 Y at integration end: 0

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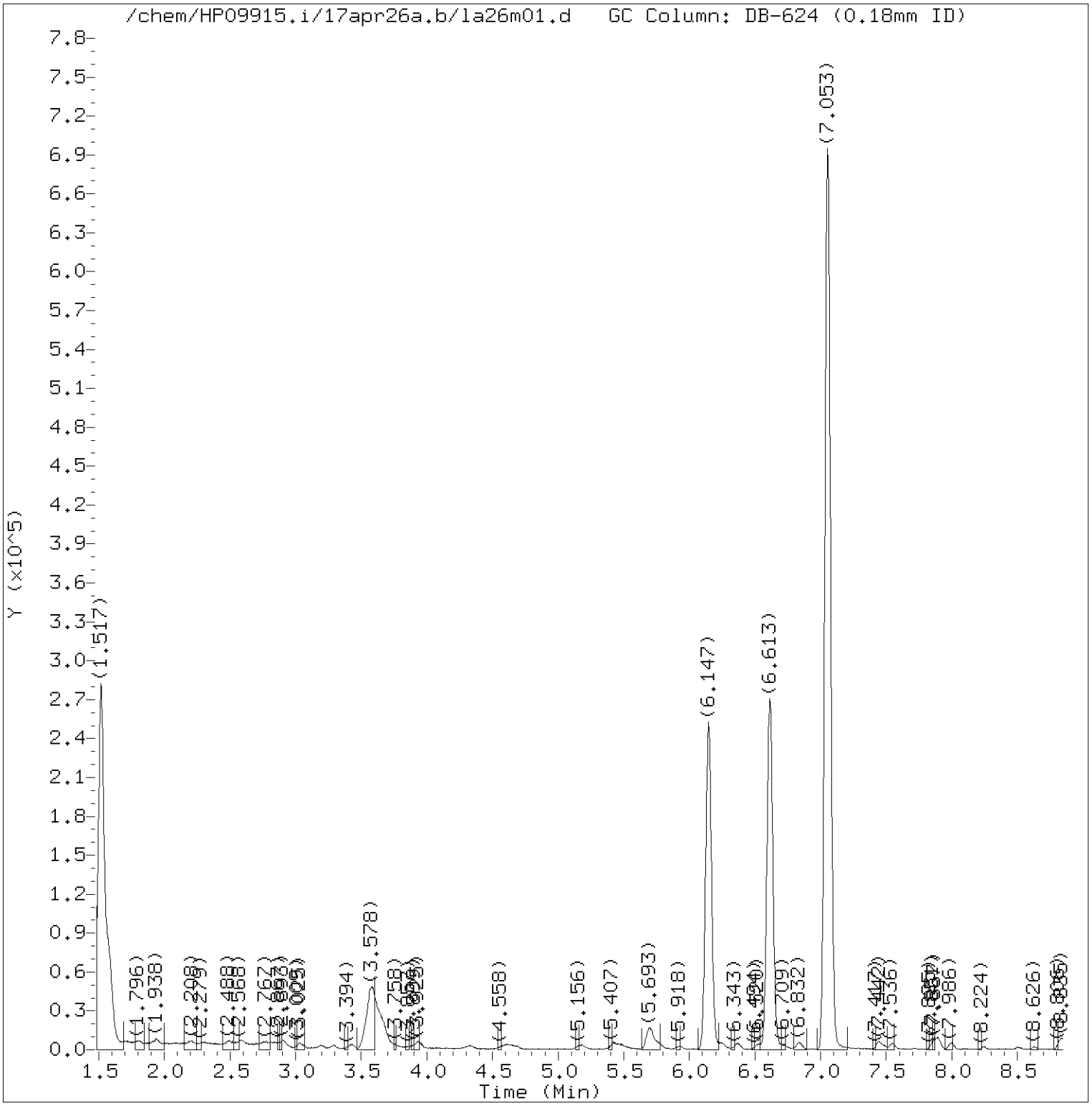
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

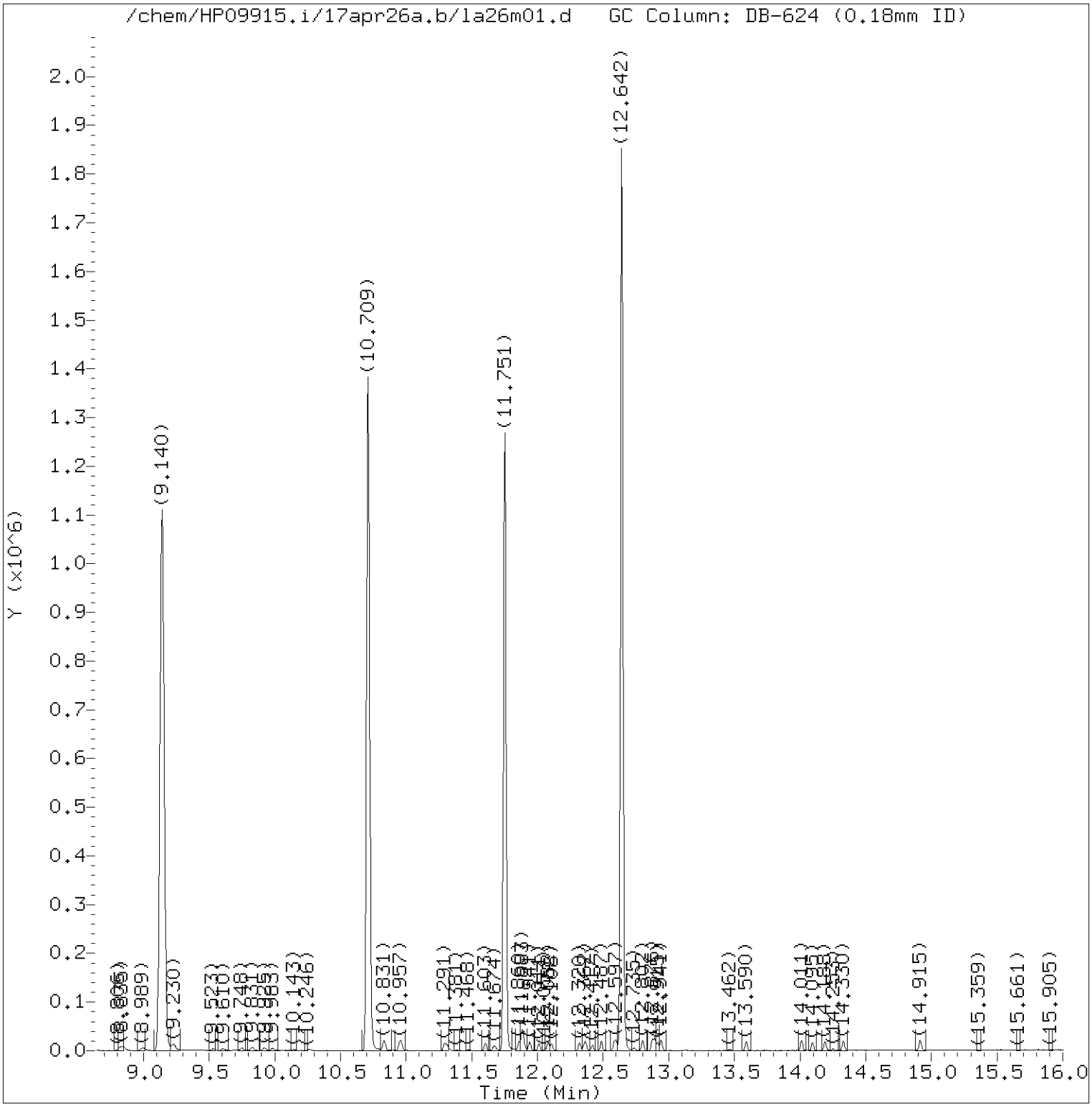
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.722 | 85 | 2339 | 0.380 |
| 4) Chloromethane | (2) | 1.809 | 50 | 2857 | 0.452 |
| 6) Vinyl Chloride | (2) | 1.912 | 62 | 2381 | 0.390 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 1925M | 0.517 |
| 8) Bromomethane | (2) | 2.208 | 94 | 1847M | 0.450 |
| 9) Chloroethane | (2) | 2.301 | 64 | 1571 | 0.456 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 3590 | 0.428 |
| 12) Trichlorofluoromethane | (2) | 2.520 | 101 | 2884 | 0.408 |
| 11) n-Pentane | (2) | 2.591 | 43 | 3057 | 0.525 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 1634 | 0.415 |
| 15) Freon 123a | (2) | 2.809 | 67 | 1902 | 0.404 |
| 16) Acrolein | (1) | 2.912 | 56 | 6871 | 4.797 |
| 18) Acetone | (1) | 3.009 | 58 | 319 | 0.513 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 1569 | 0.419 |
| 19) Freon 113 | (2) | 3.038 | 101 | 1321 | 0.351 |
| 21) 2-Propanol | (1) | 3.182 | 45 | 4366M | 10.594 |
| 22) Methyl Iodide | (2) | 3.189 | 142 | 3071 | 0.423 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 5057 | 0.415 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 2680M | 0.493 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 3325 | 0.443 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 174972 | 250.000 |
| 28) Methylene Chloride | (2) | 3.591 | 84 | 3930 | 0.795 |
| 30) t-Butyl alcohol | (1) | 3.693 | 59 | 7505M | 11.087 |
| 31) Acrylonitrile | (2) | 3.857 | 53 | 696 | 0.244 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 6241 | 0.455 |
| 32) trans-1,2-Dichloroethene | (2) | 3.941 | 96 | 1892 | 0.431 |
| 34) n-Hexane | (2) | 4.314 | 57 | 2680M | 0.398 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 3427 | 0.415 |
| 38) di-Isopropyl ether | (2) | 4.610 | 45 | 7417 | 0.468 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.690 | 53 | 2753 | 0.395 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 5835 | 0.428 |
| 44) 2-Butanone | (2) | 5.407 | 43 | 3021 | 0.791 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 2175 | 0.432 |
| 45) 2,2-Dichloropropane | (2) | 5.423 | 77 | 1812 | 0.329 |
| 47) Propionitrile | (1) | 5.484 | 54 | 9583 | 9.699 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 12206 | 4.290 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 1031 | 0.389 |
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 517M | 0.593 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.931 | 83 | 3387 | 0.430 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 3253M | 0.453 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 251275 | 49.779 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4067 | 0.863 |
| 54) Cyclohexane | (2) | 6.240 | 56 | 3352 | 0.409 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 2006 | 0.382 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2672 | 0.418 |
| 58) Isobutyl Alcohol | (1) | 6.539 | 41 | 5623M | 23.658 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 62764 | 50.002 |
| 60) Benzene | (2) | 6.629 | 78 | 8895 | 0.472 |
| 61) 1,2-Dichloroethane | (2) | 6.706 | 62 | 2708 | 0.424 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 5953 | 0.440 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1033706 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 3401M | 0.451 |
| 69) n-Butanol | (1) | 7.446 | 56 | 7231 | 37.738 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 1999 | 0.410 |
| 72) Methylcyclohexane | (2) | 7.851 | 83 | 3533 | 0.411 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 2149 | 0.416 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 845 | 14.126 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 1518M | 0.343 |
| 74) Dibromomethane | (2) | 7.996 | 93 | 1393 | 0.429 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 2298 | 0.392 |
| 79) 2-Nitropropane | (2) | 8.510 | 41 | 1240 | 0.746 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.632 | 63 | 1335 | 0.336 |
| 81) cis-1,3-Dichloropropene | (2) | 8.815 | 75 | 2761 | 0.361 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 5828 | 0.740 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1012343 | 50.270 |
| 88) Toluene | (3) | 9.230 | 92 | 5535 | 0.473 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 2362 | 0.360 |
| 91) Ethyl Methacrylate | (3) | 9.610 | 69 | 2755 | 0.373 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 2117 | 0.469 |
| 93) Tetrachloroethene | (3) | 9.831 | 166 | 2288 | 0.442 |
| 94) 1,3-Dichloropropane | (3) | 9.925 | 76 | 3487 | 0.446 |
| 96) 2-Hexanone | (3) | 9.983 | 43 | 3976 | 0.704 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 5123 | 0.721 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 1597 | 0.342 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 2039 | 0.413 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 788712 | 50.000 |

M = Compound was manually integrated.
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on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 4267 | 0.635 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 6446 | 0.477 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 1648 | 0.370 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 9923 | 0.440 |
| 106) m+p-Xylene | (3) | 10.960 | 106 | 7187 | 0.818 |
| 107) o-Xylene | (3) | 11.291 | 106 | 3699 | 0.423 |
| 109) Styrene | (3) | 11.311 | 104 | 5315 | 0.368 |
| 110) Bromoform | (3) | 11.468 | 173 | 1137 | 0.335 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 9437 | 0.422 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 4553M | 20.180 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379187 | 50.658 |
| 108) Xylene (Total) | (3) | | 106 | 10886 | 1.241 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 3396 | 0.450 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 2630 | 0.432 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 8626 | 3.986 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 993 | 0.465 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 12373 | 0.460 |
| 120) 2-Chlorotoluene | (4) | 12.015 | 126 | 2680M | 0.479 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 8325 | 0.434 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 2713 | 0.466 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 1768 | 0.427 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1190 | 0.364 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 8421 | 0.427 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 11053 | 0.452 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 6155 | 0.532 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 10017 | 0.464 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 425430 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 6850 | 0.572 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 9695 | 0.469 |
| 135) Benzyl Chloride | (4) | 12.738 | 91 | 3470 | 0.277 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 5811 | 0.451 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 6562 | 0.485 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 5769 | 0.535 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 5976 | 0.525 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 4851 | 0.447 |
| 141) Diethylbenzene (total) | (4) | | 100 | 17224 | 1.382 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.468 | 75 | 594 | 0.372 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.593 | 180 | 5802 | 0.629 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 6179 | 0.690 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 2914 | 0.750 |
| 148) Naphthalene | (4) | 14.188 | 128 | 13901 | 0.515 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 6003 | 0.695 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 9582 | 0.549 |



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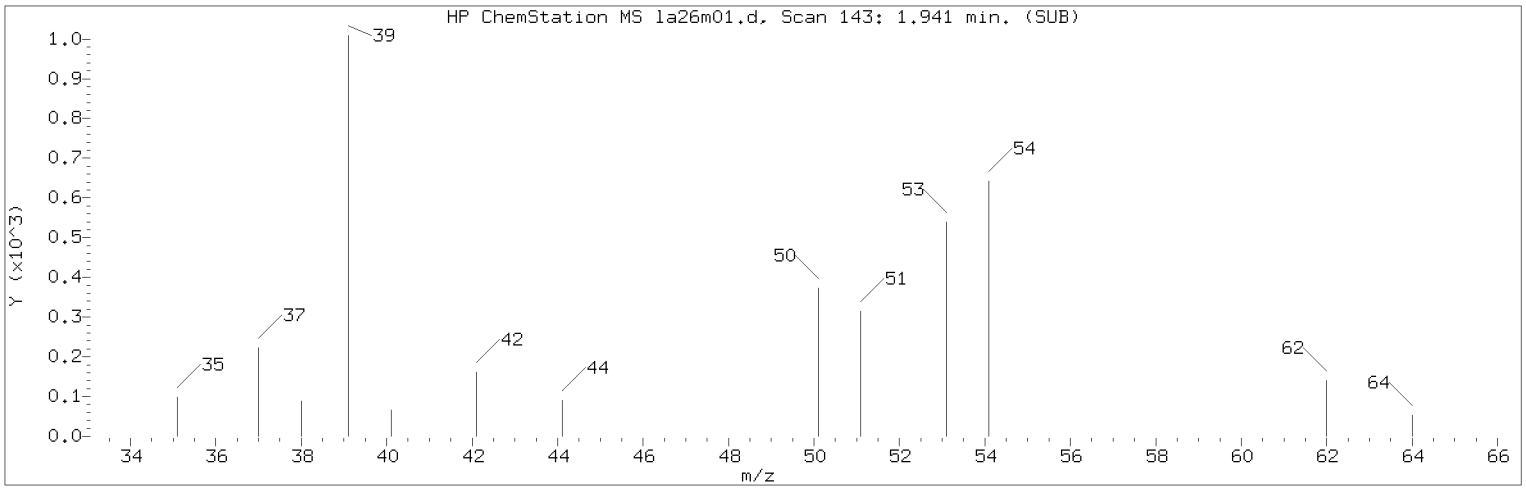
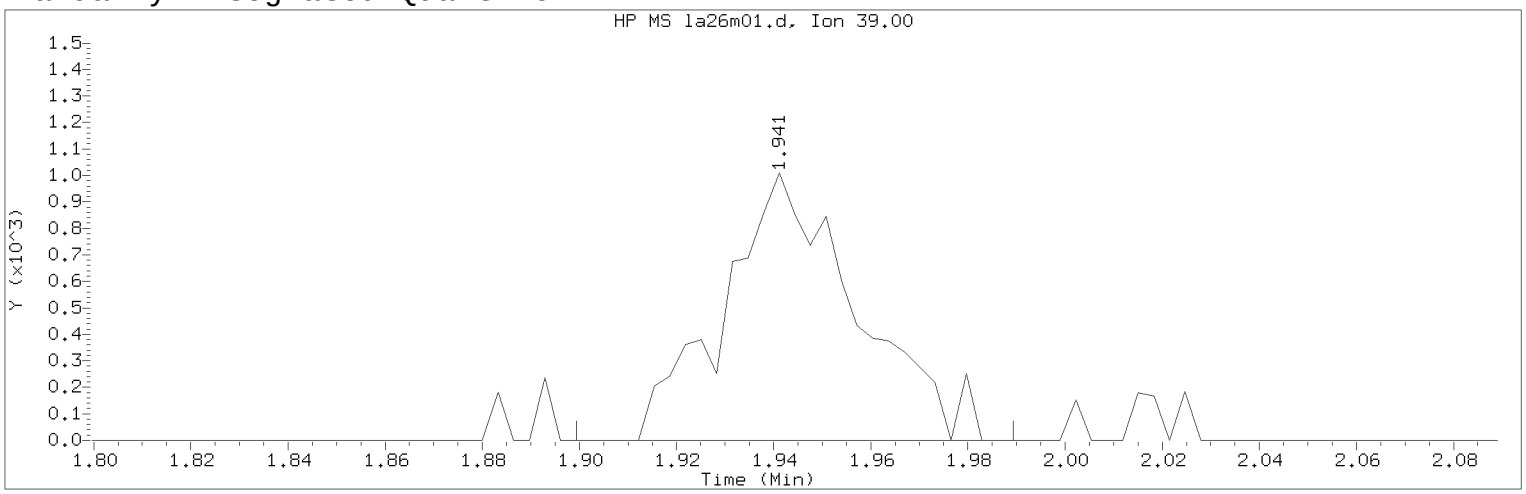
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

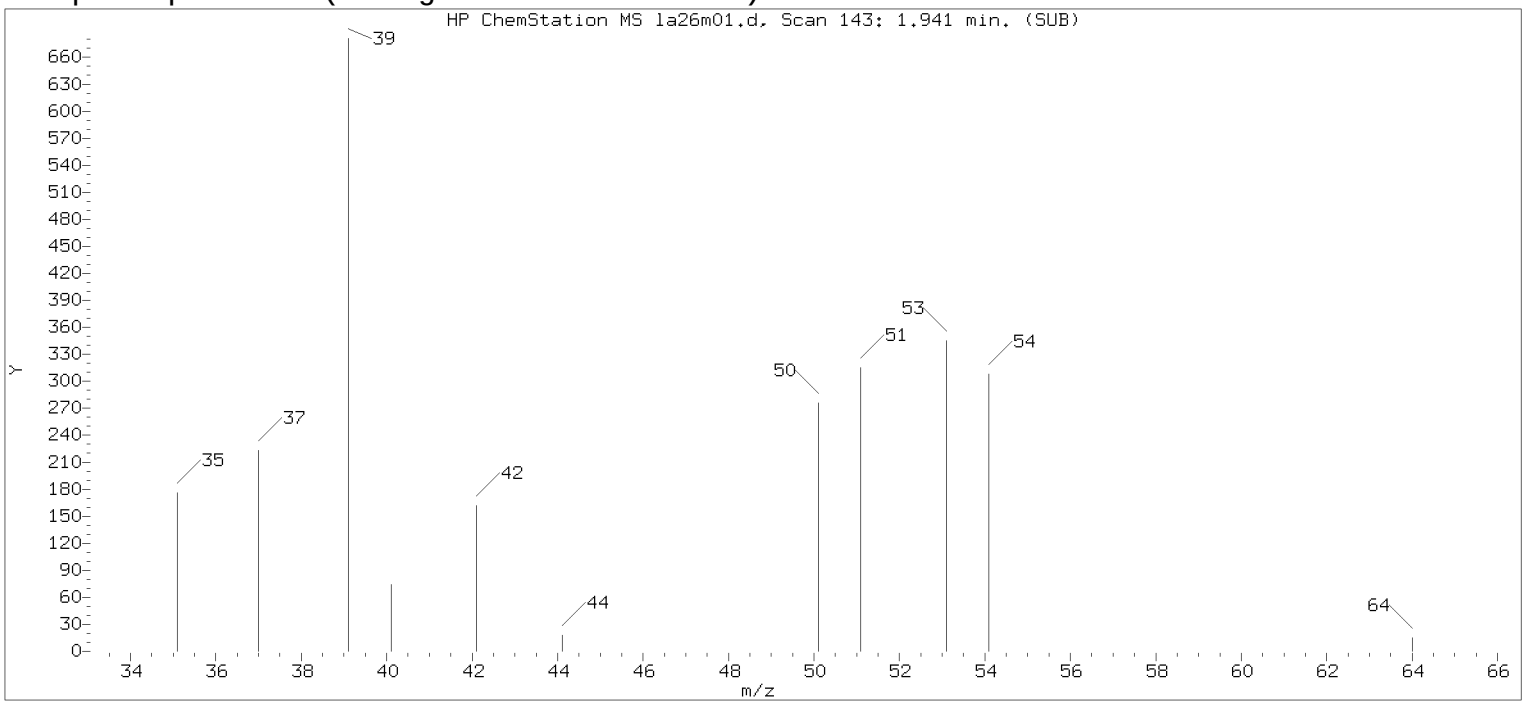
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 1925M
On-Column Amount (ng) : 0.5167
Integration start scan : 129  Integration stop scan: 157
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

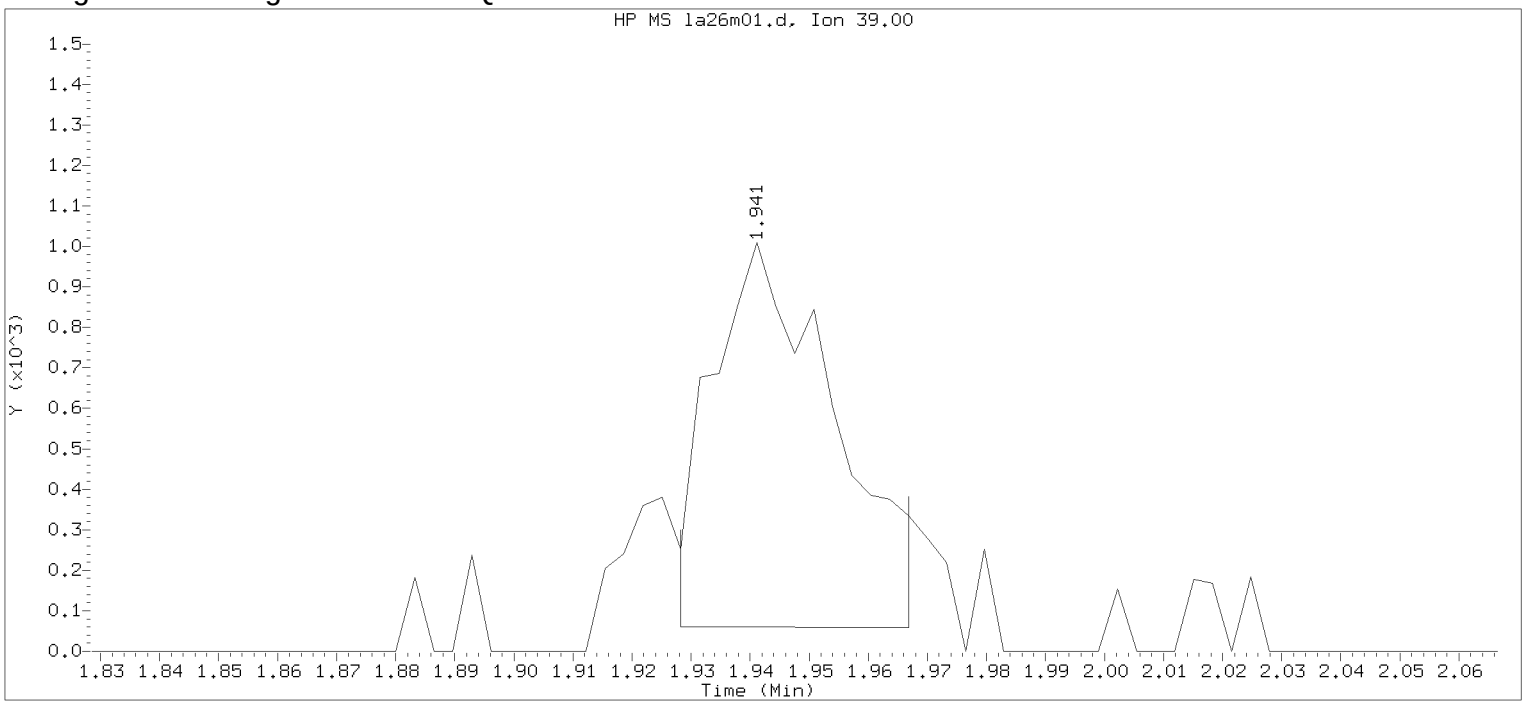
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

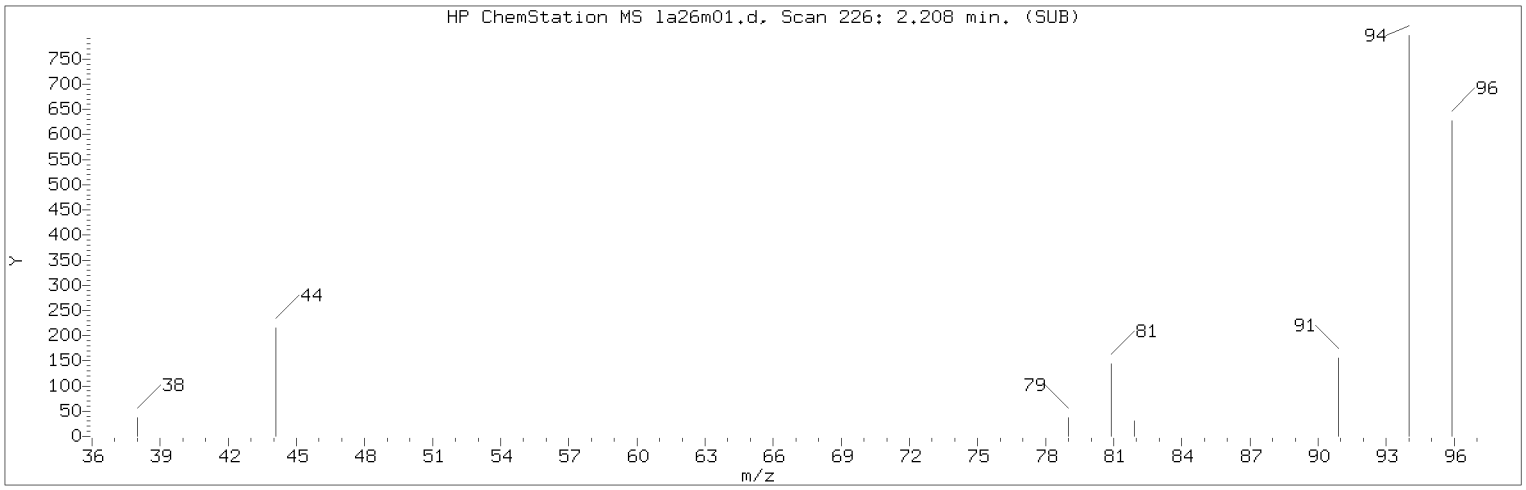
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

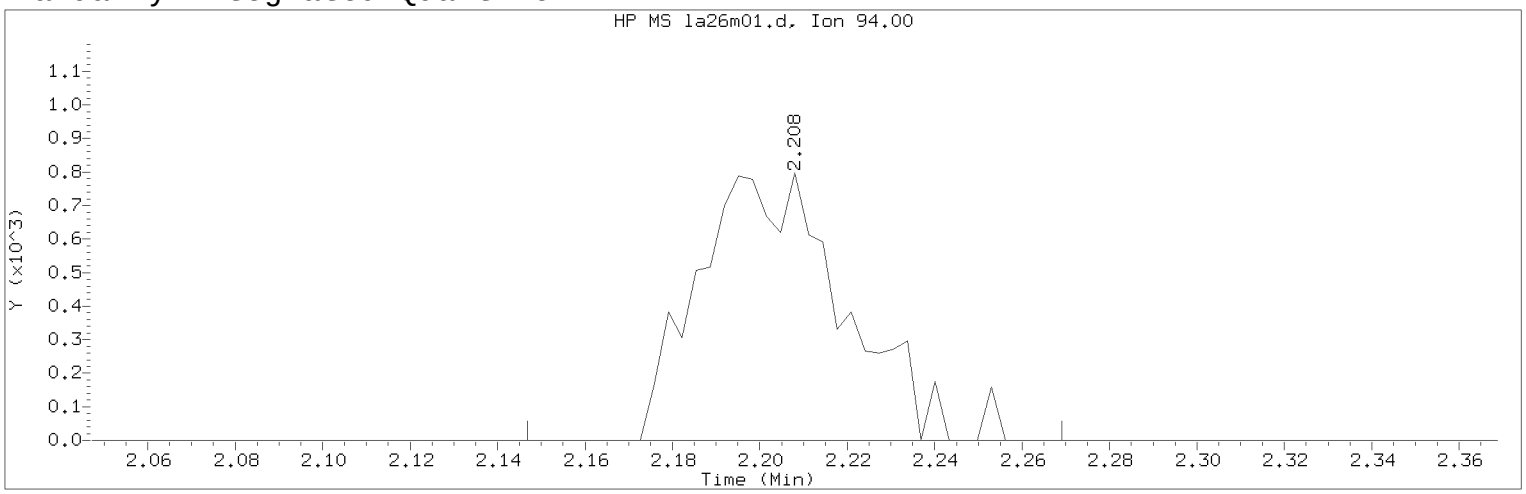
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 1358
On-column Amount (ng) : 0.3645
Integration start scan : 138 Integration stop scan: 150
Y at integration start : 61 Y at integration end: 58

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

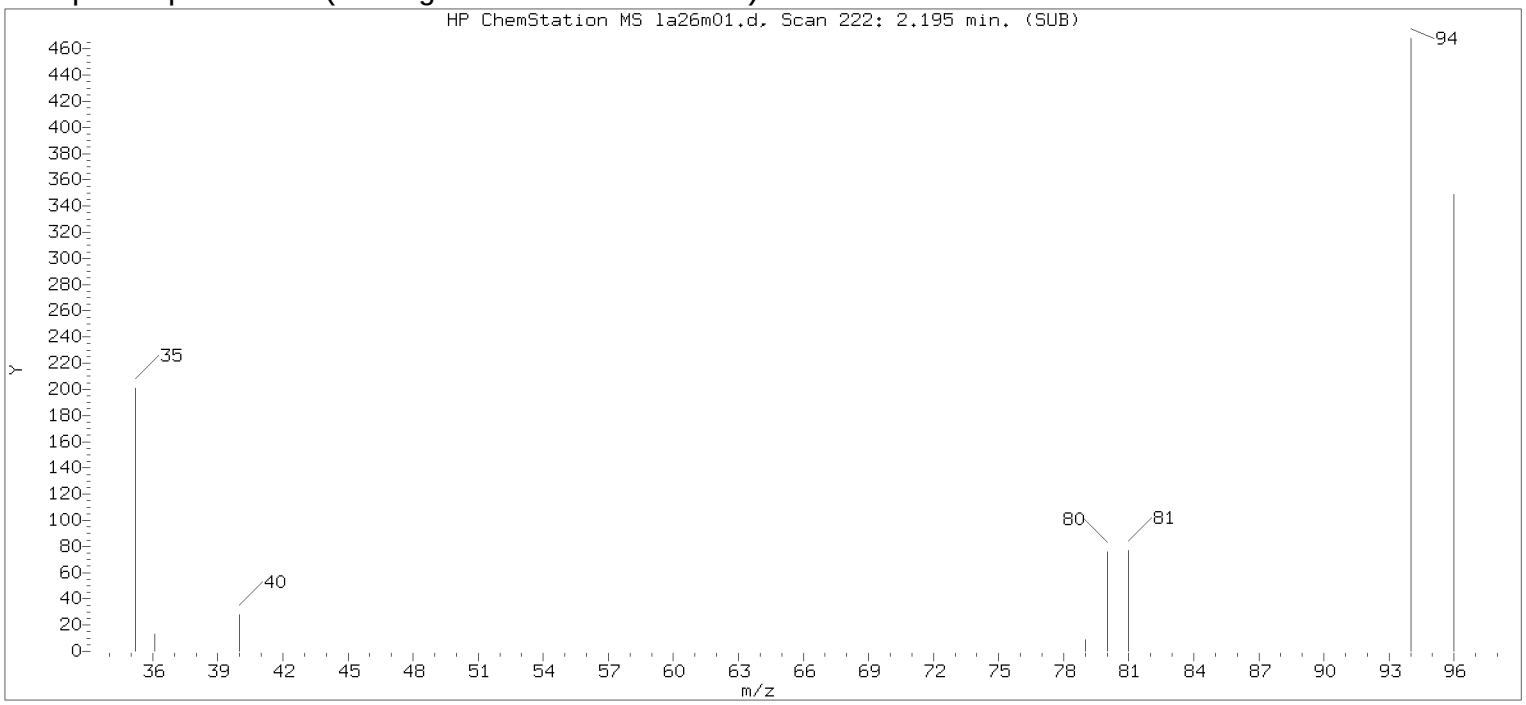
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 226
Retention Time (minutes): 2.208
Quant Ion : 94.00
Area (flag) : 1847M
On-Column Amount (ng) : 0.4496
Integration start scan : 206 Integration stop scan: 244
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

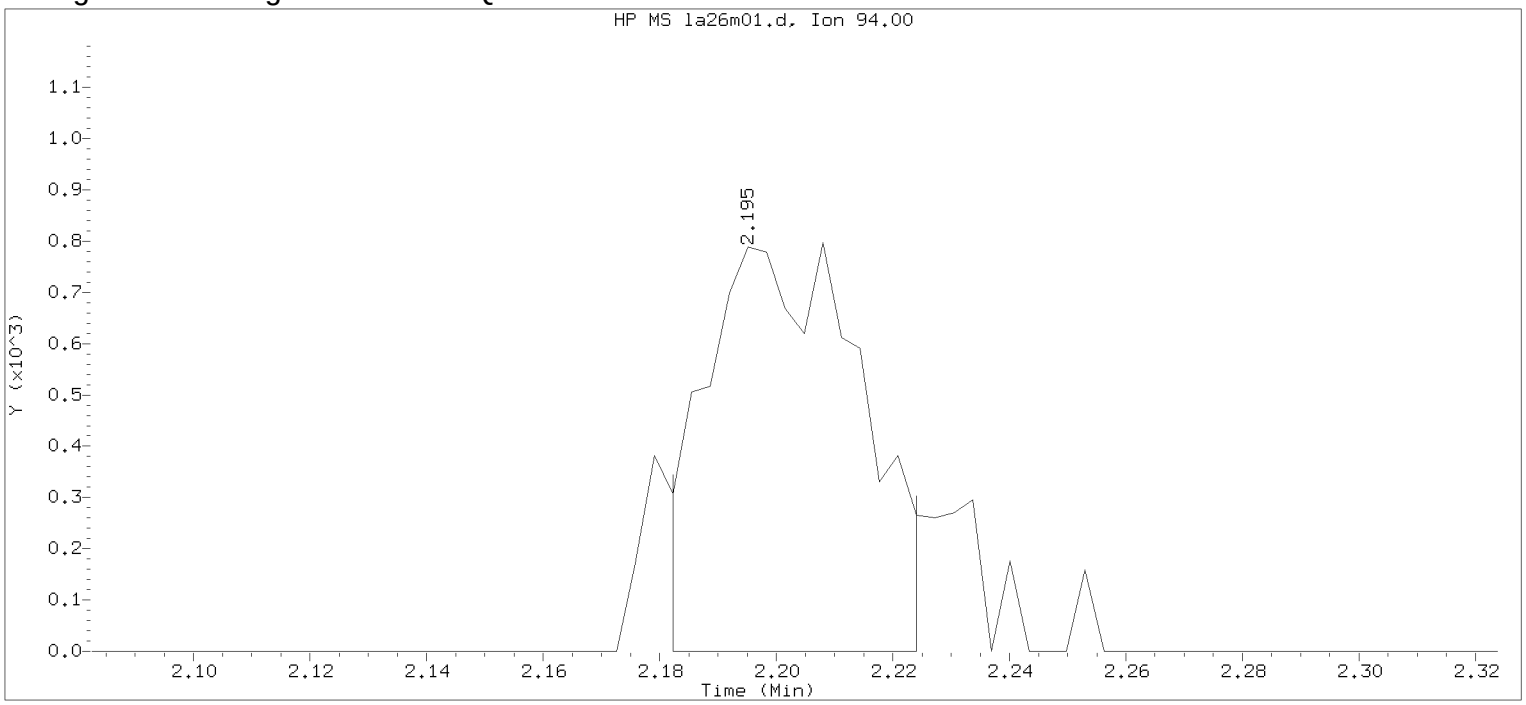
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

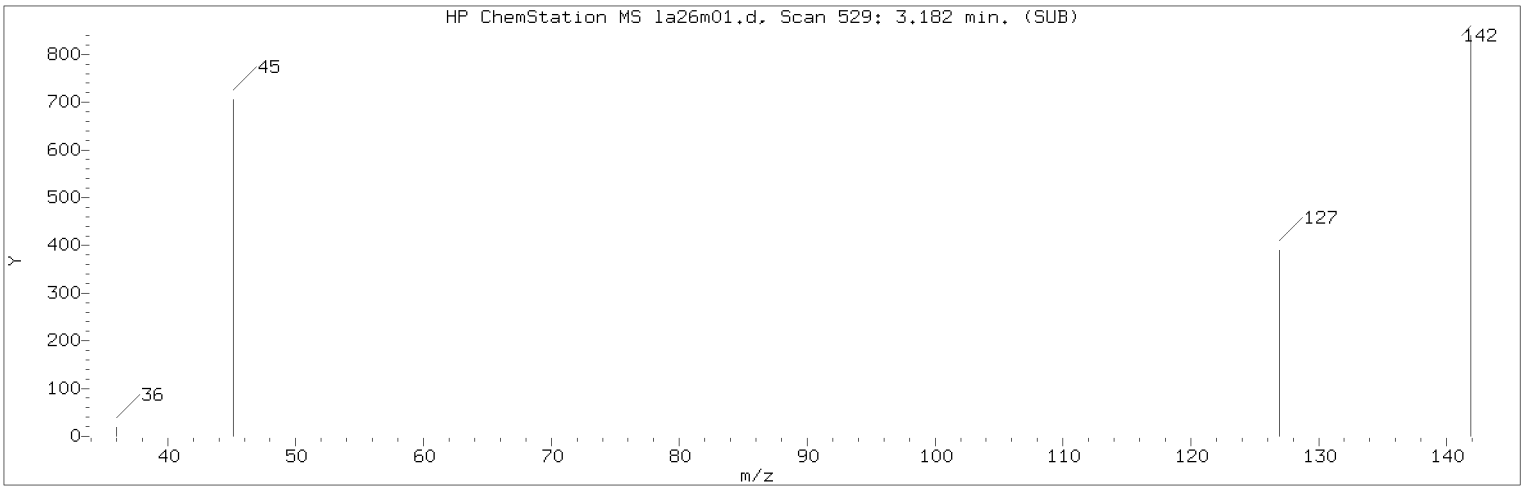
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

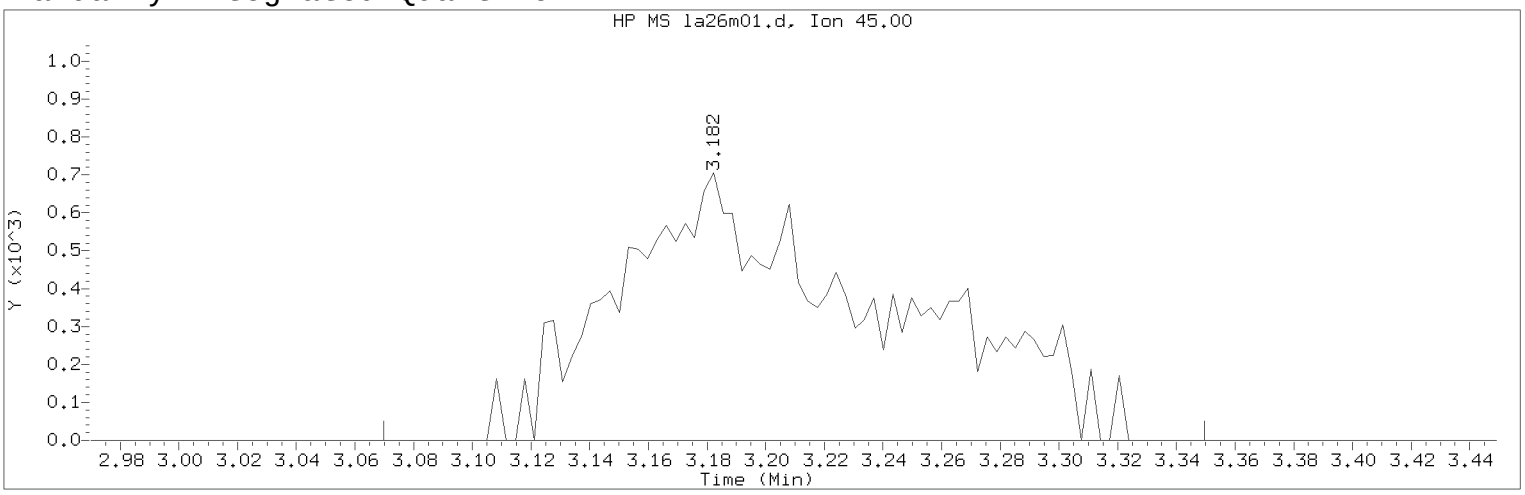
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 1461
On-column Amount (ng) : 0.3557
Integration start scan : 217 Integration stop scan: 230
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

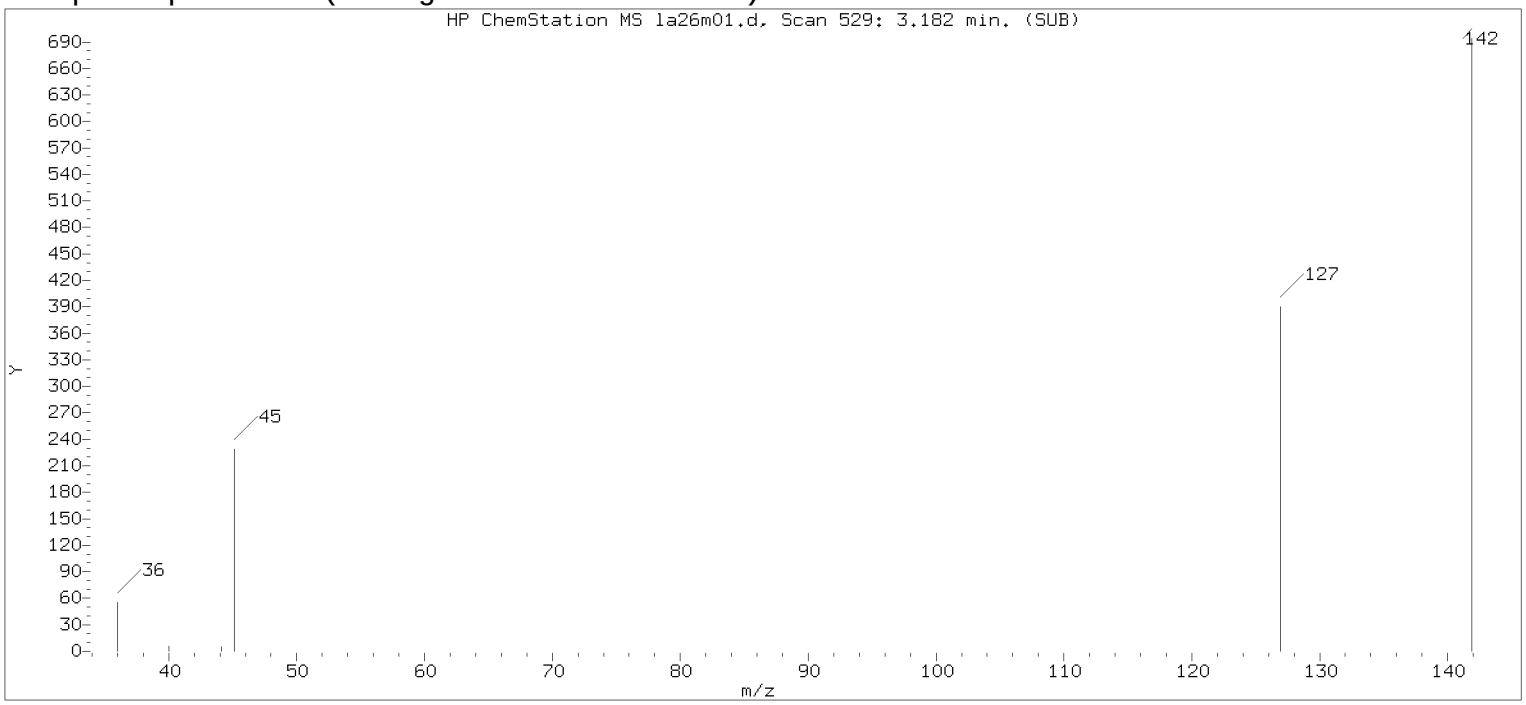
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area (flag) : 4366M
On-Column Amount (ng) : 10.5945
Integration start scan : 493 Integration stop scan: 580
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

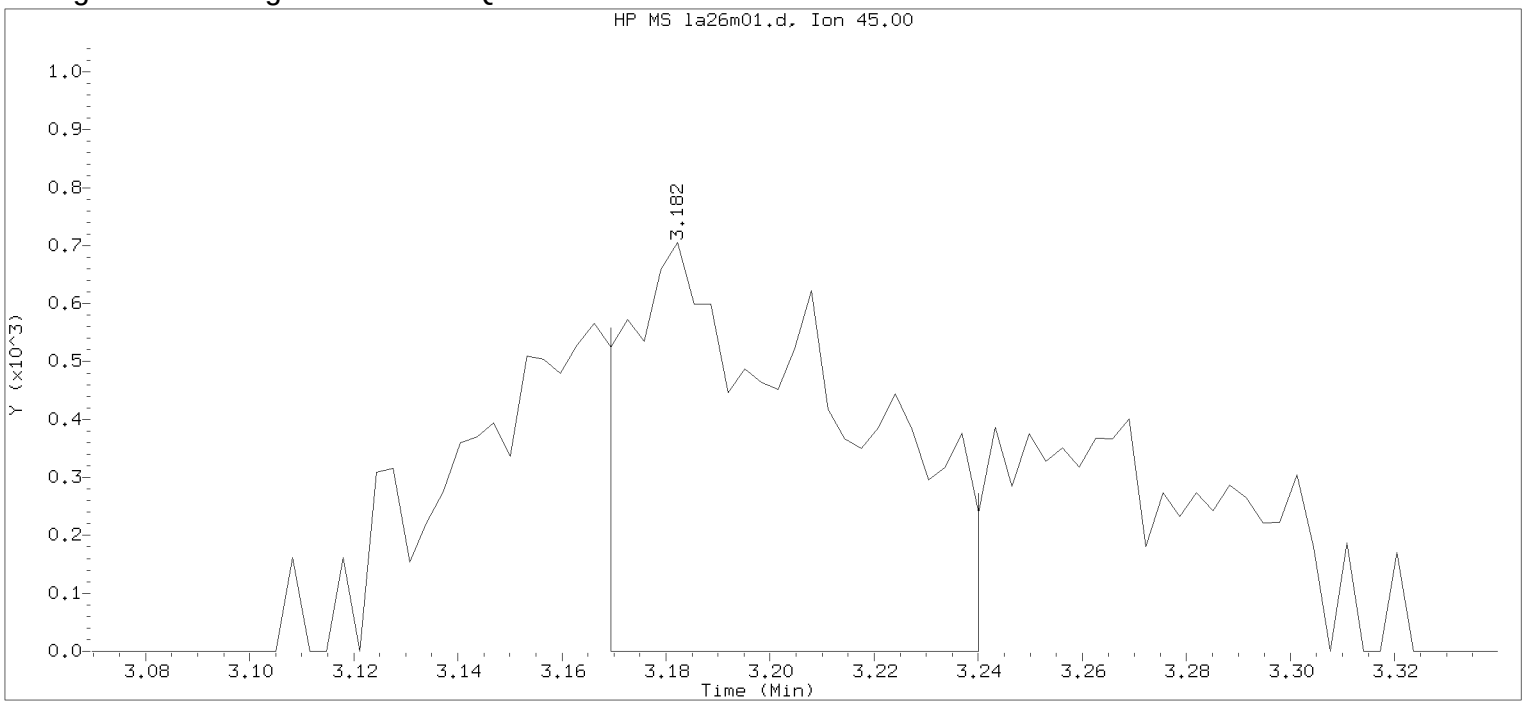
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

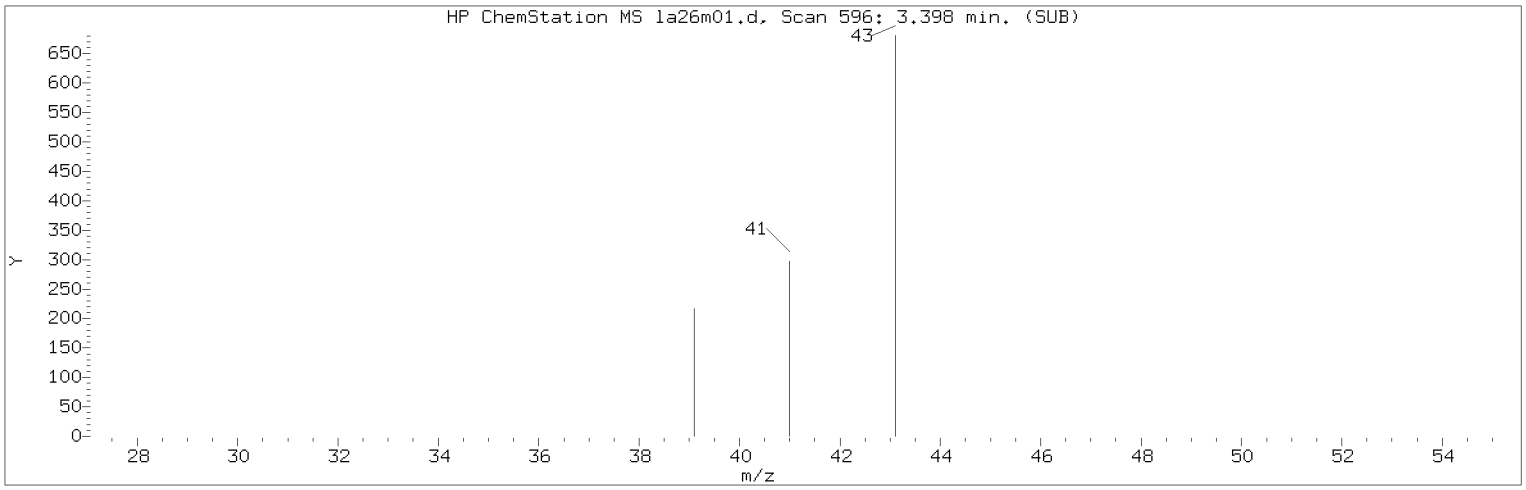
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

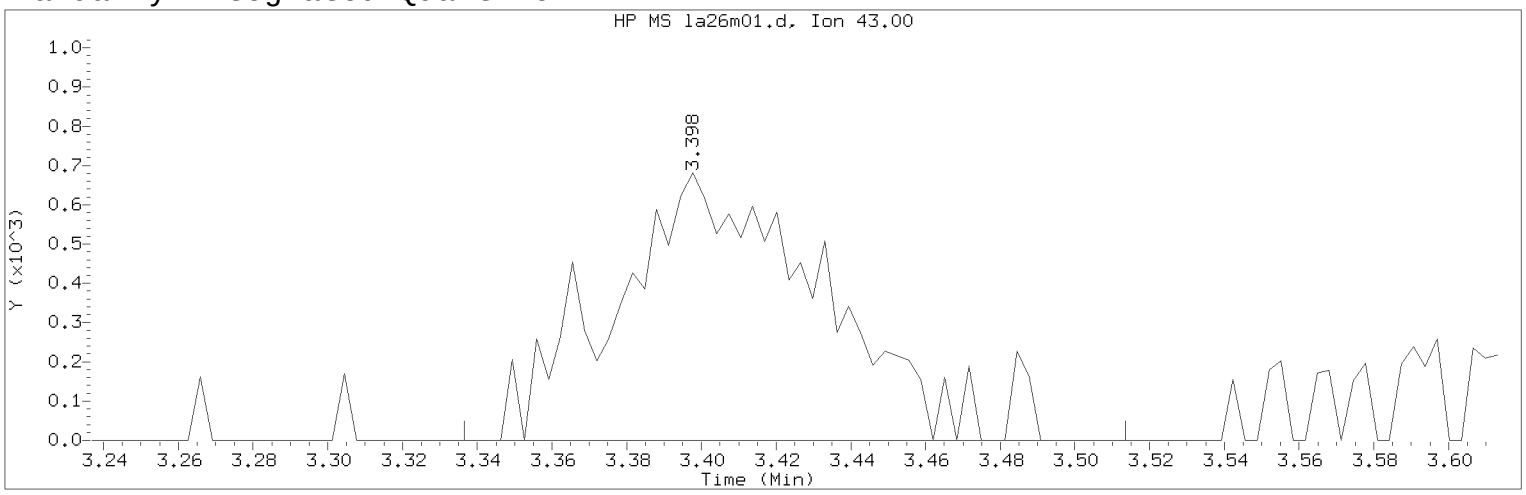
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area : 2003
On-column Amount (ng) : 4.8605
Integration start scan : 524 Integration stop scan: 546
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

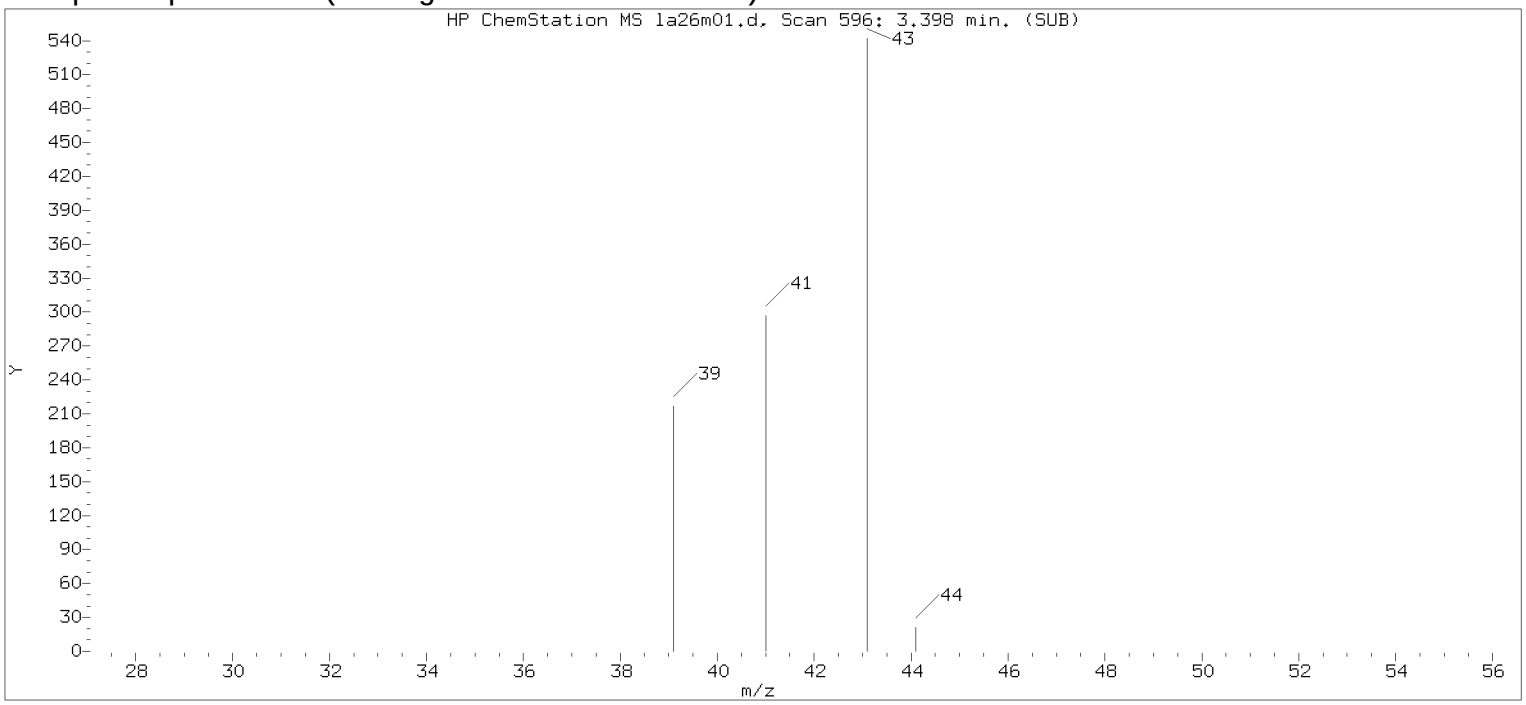
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 596
Retention Time (minutes): 3.398
Quant Ion : 43.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.4933
Integration start scan : 576 Integration stop scan: 631
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

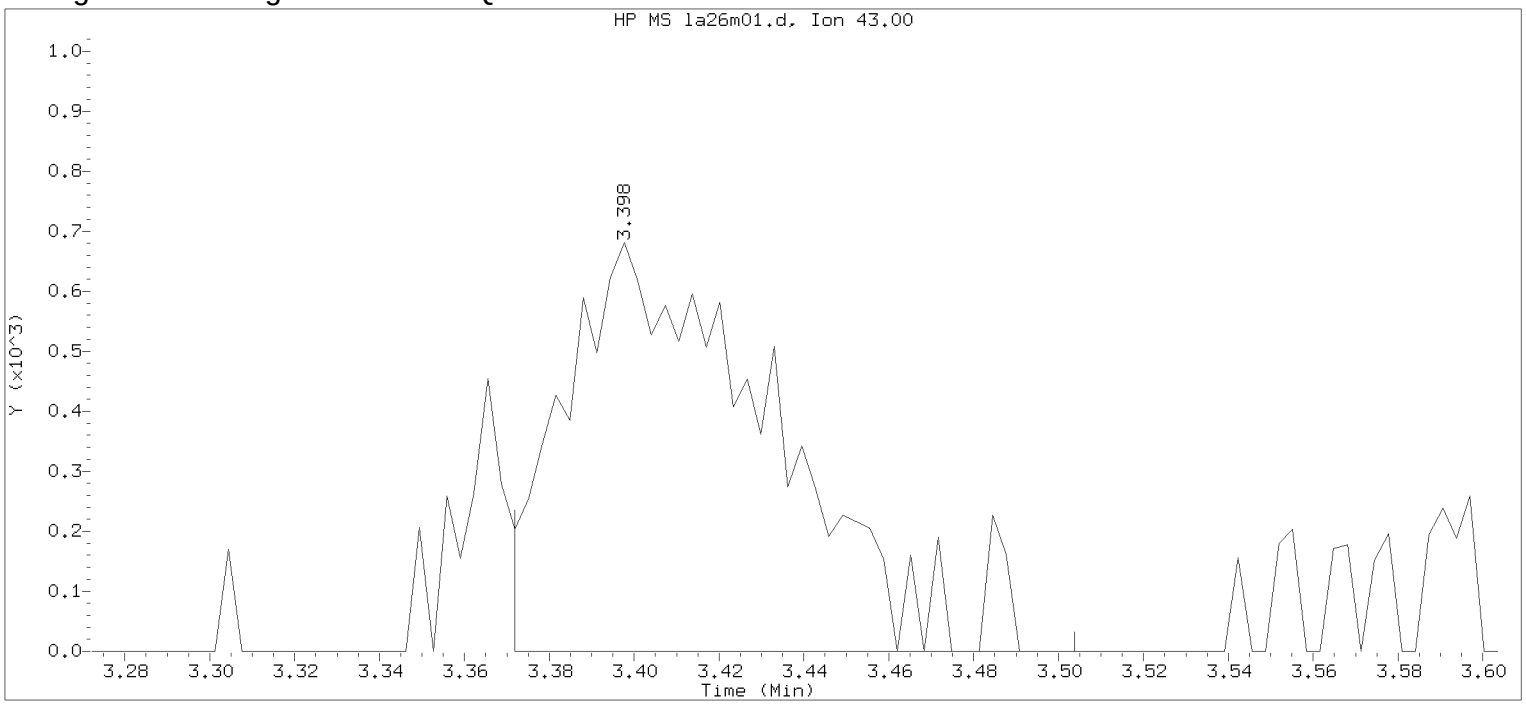
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

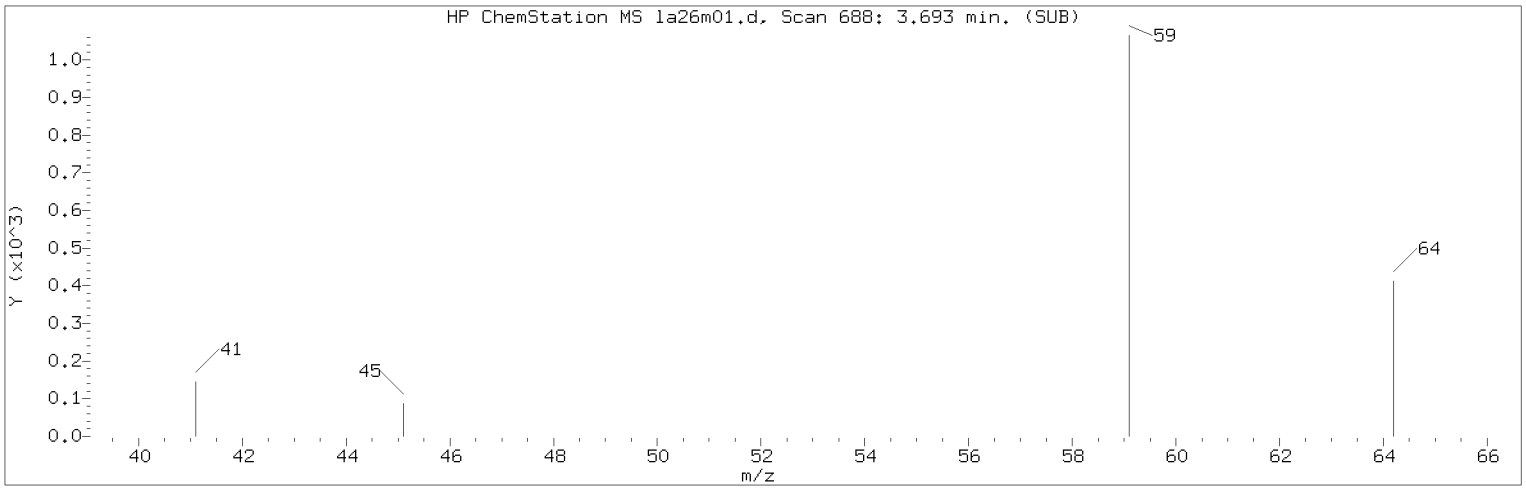
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

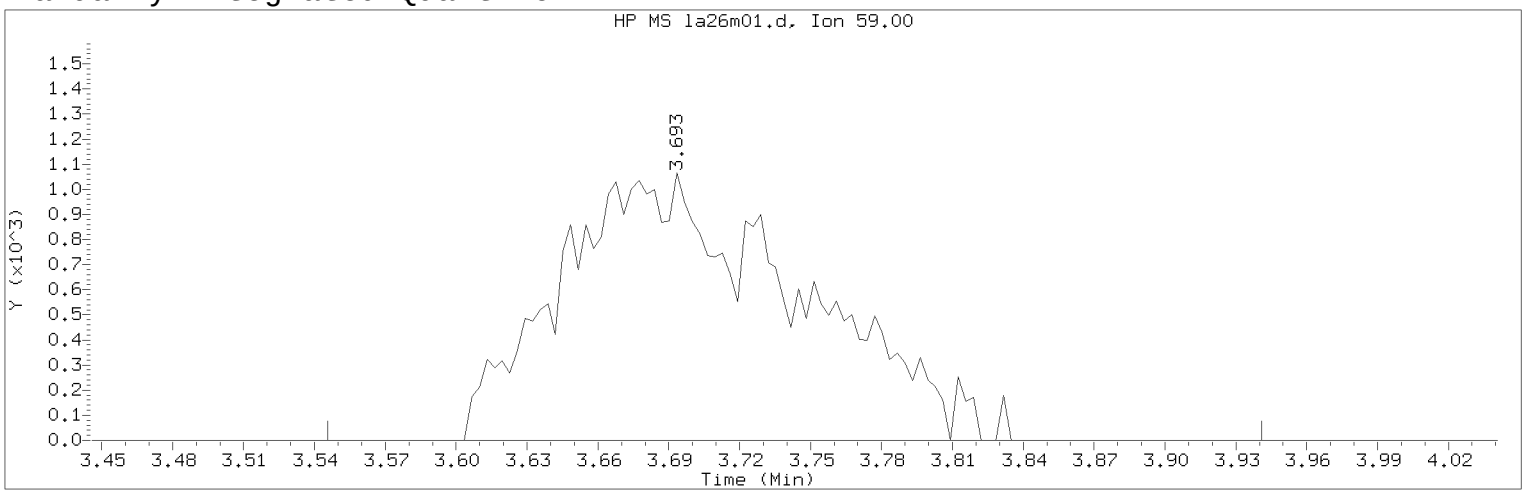
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 596
Retention Time (minutes): 3.398
Quant Ion : 43.00
Area : 2349
On-column Amount (ng) : 0.4323
Integration start scan : 587 Integration stop scan: 628
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

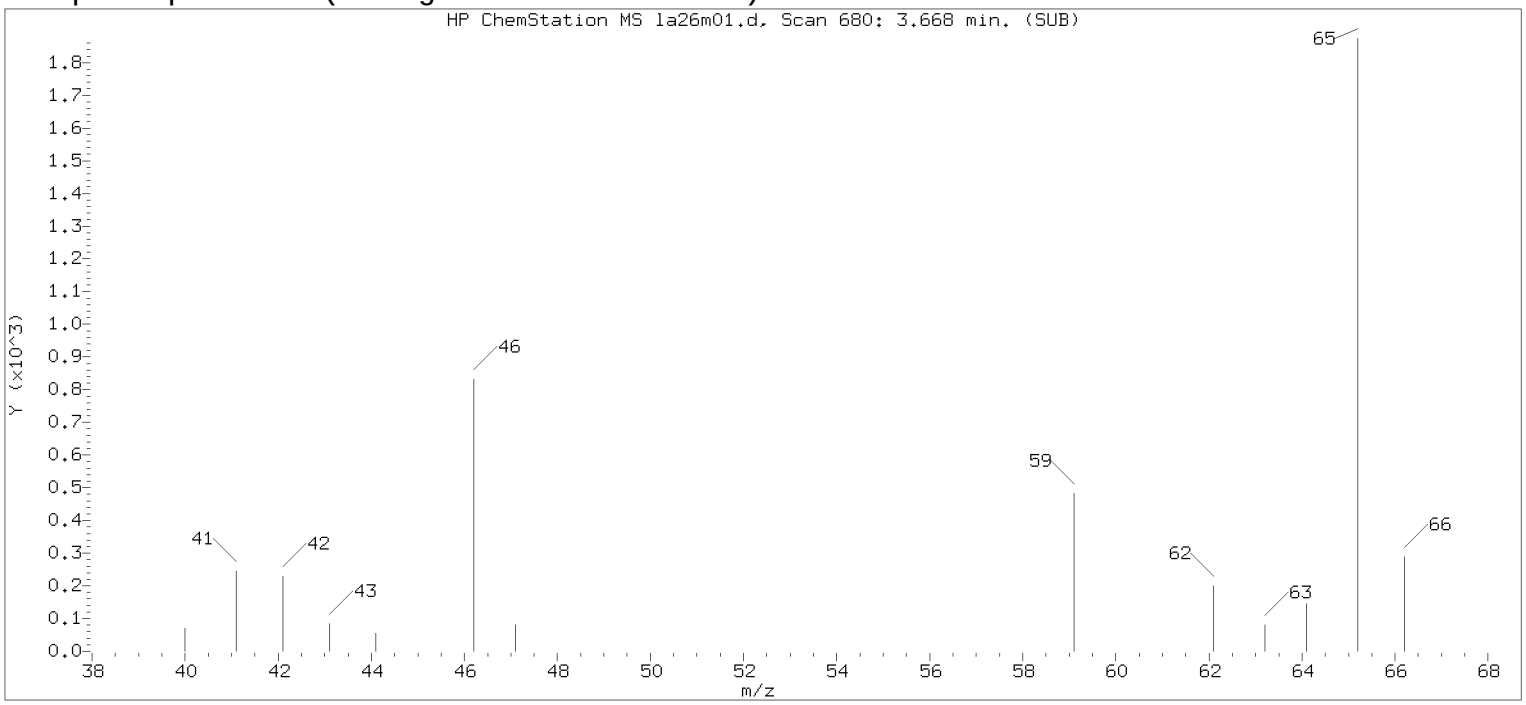
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 688
Retention Time (minutes): 3.693
Quant Ion : 59.00
Area (flag) : 7505M
On-Column Amount (ng) : 11.0871
Integration start scan : 641 Integration stop scan: 764
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

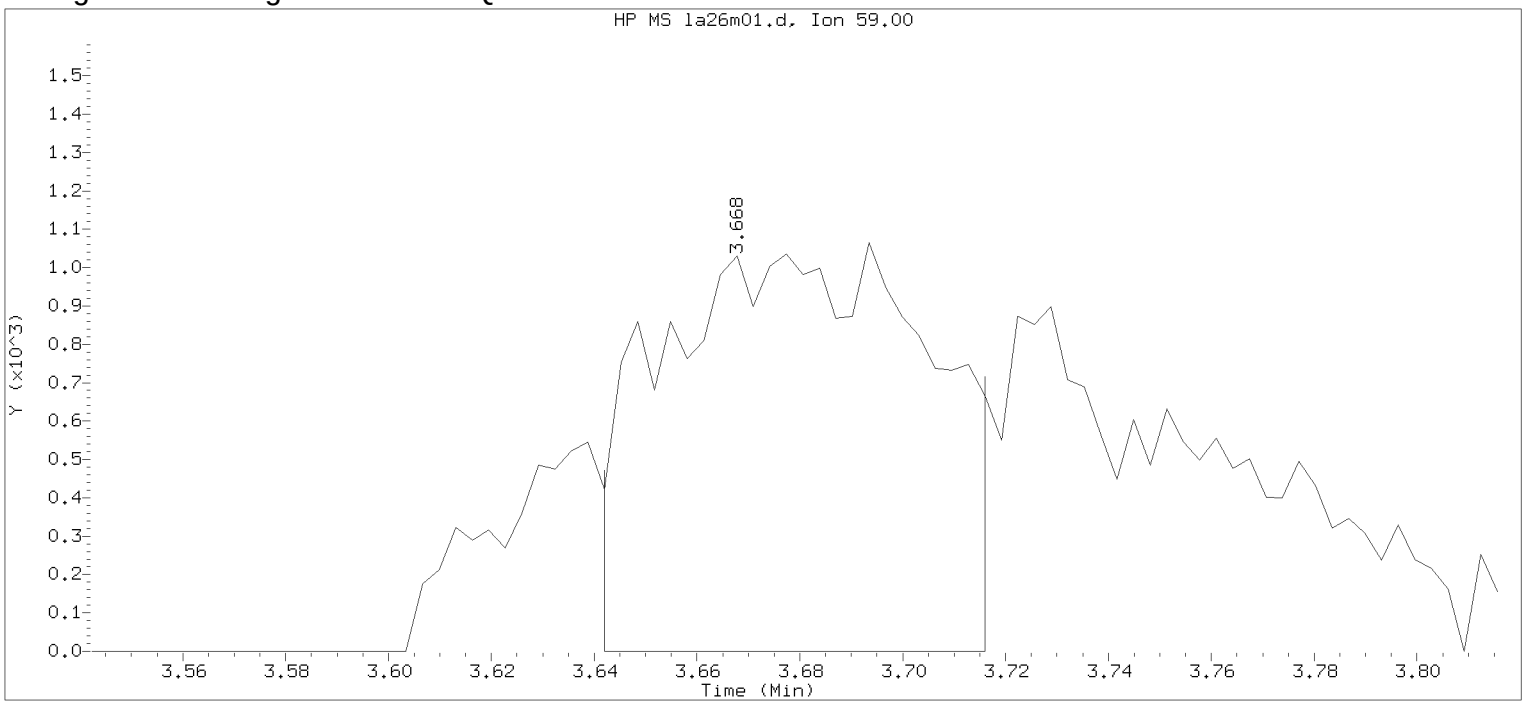
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

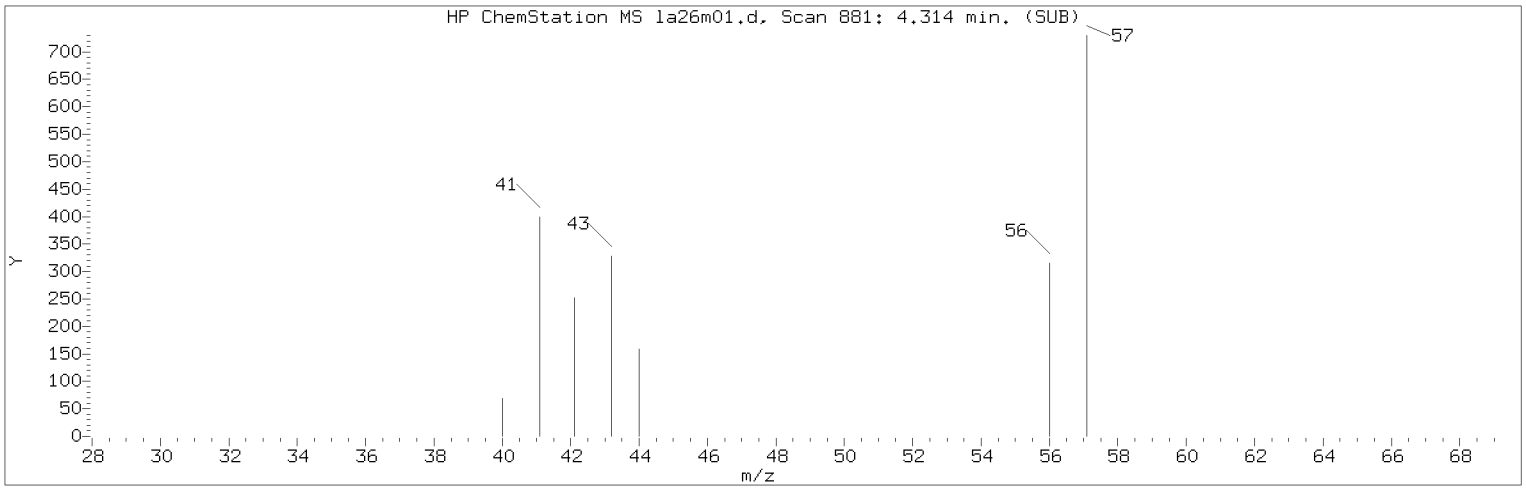
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

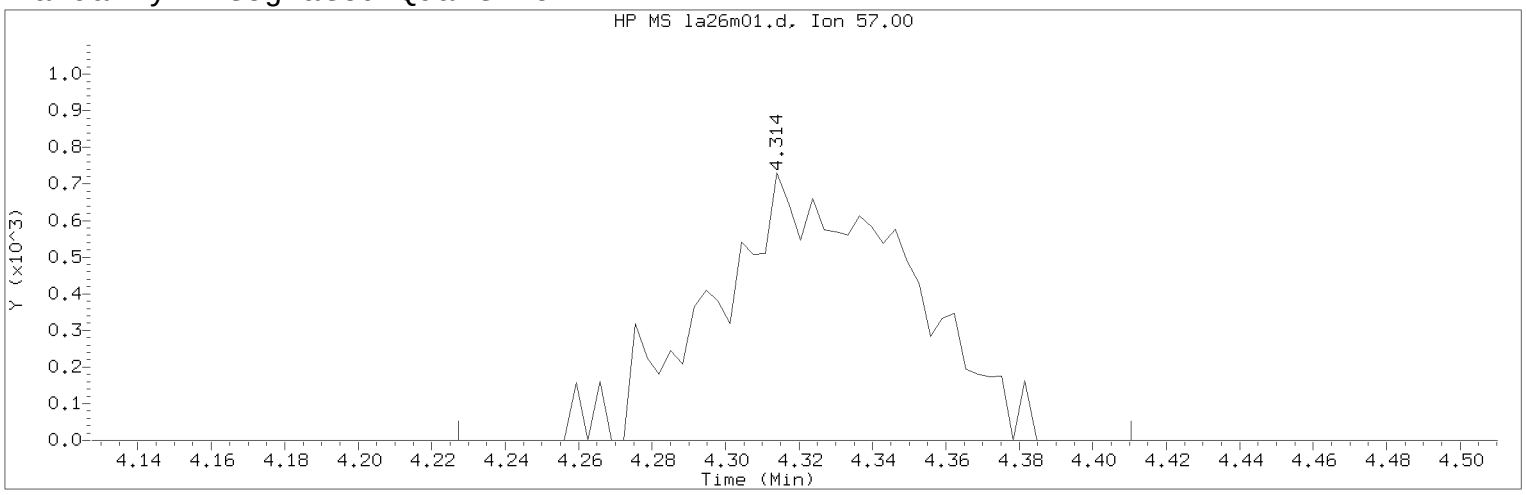
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 680
Retention Time (minutes): 3.668
Quant Ion : 59.00
Area : 3832
On-column Amount (ng) : 5.6607
Integration start scan : 671 Integration stop scan: 694
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

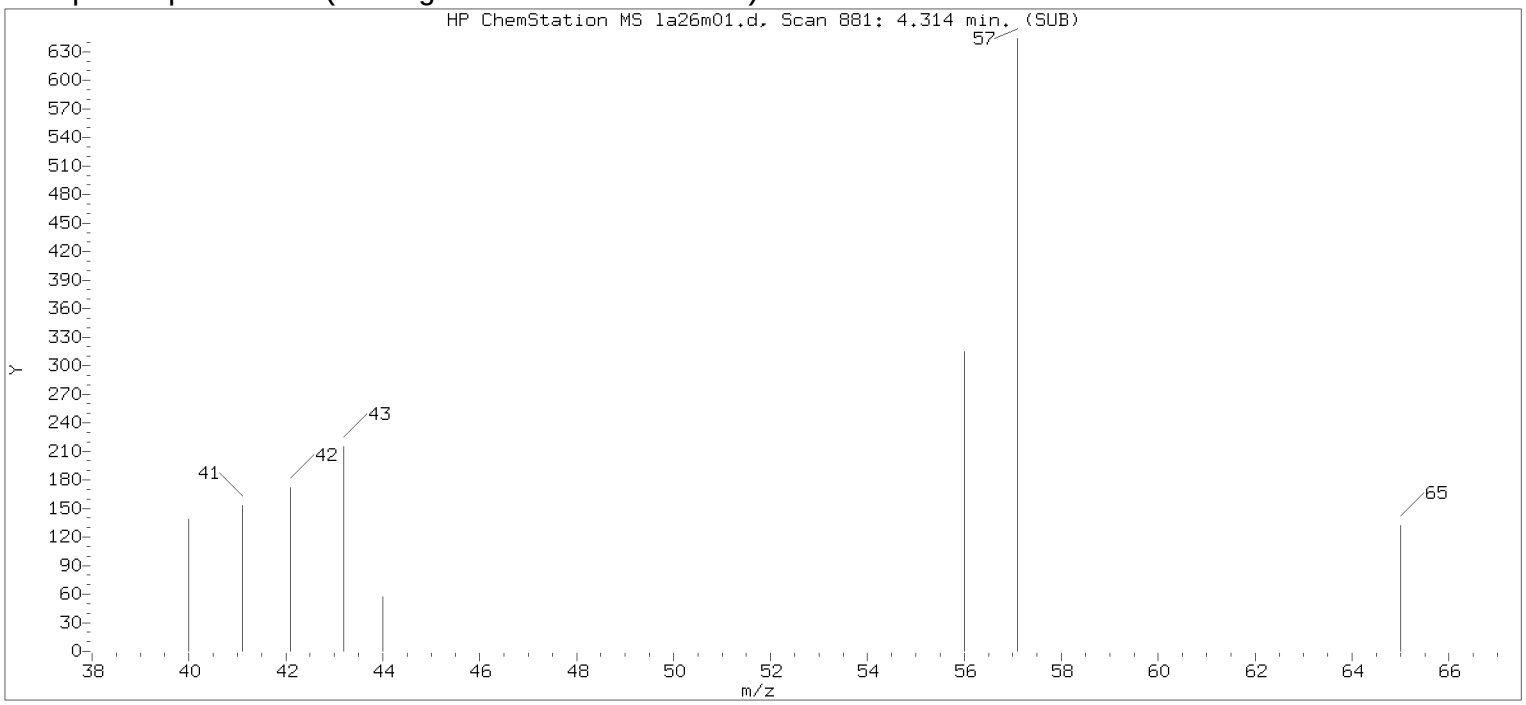
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 881
Retention Time (minutes): 4.314
Quant Ion : 57.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.3981
Integration start scan : 853 Integration stop scan: 910
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

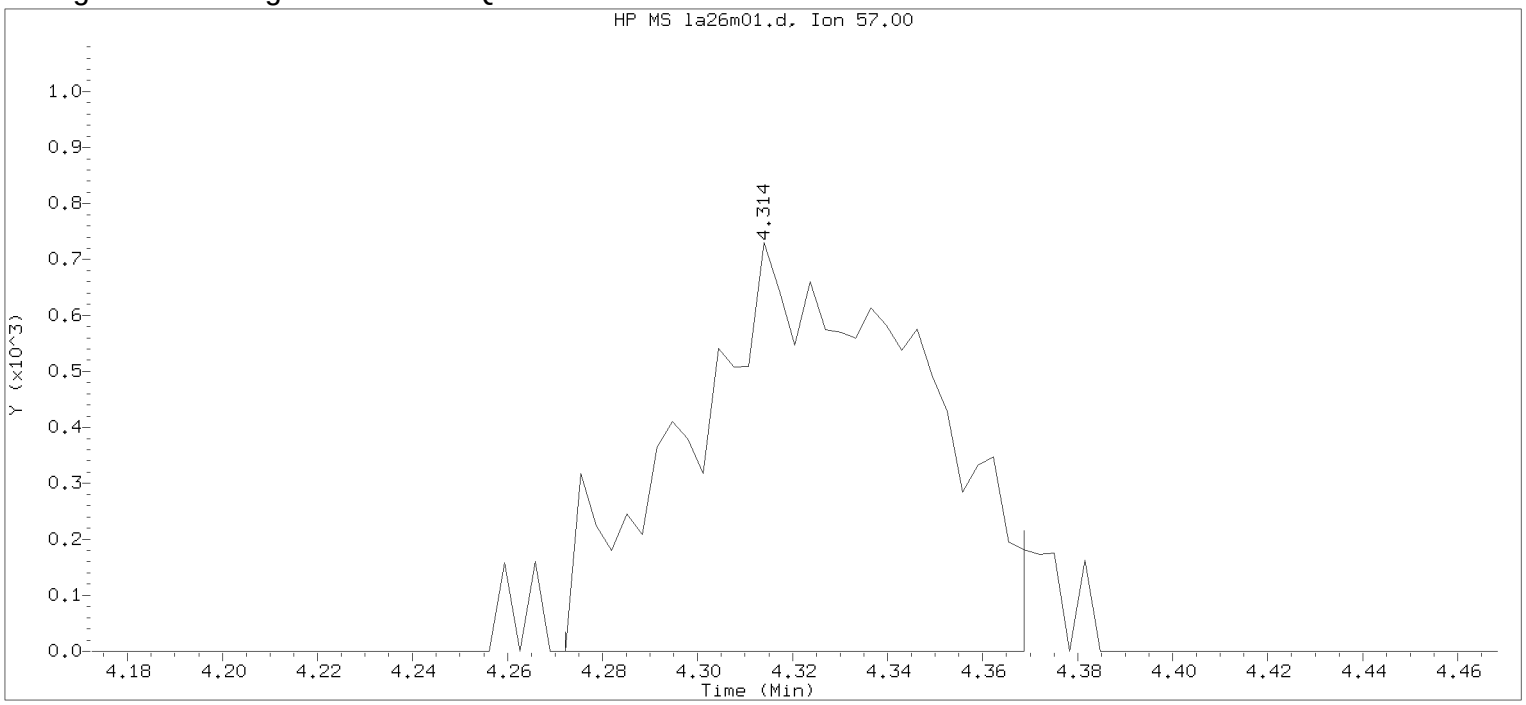
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

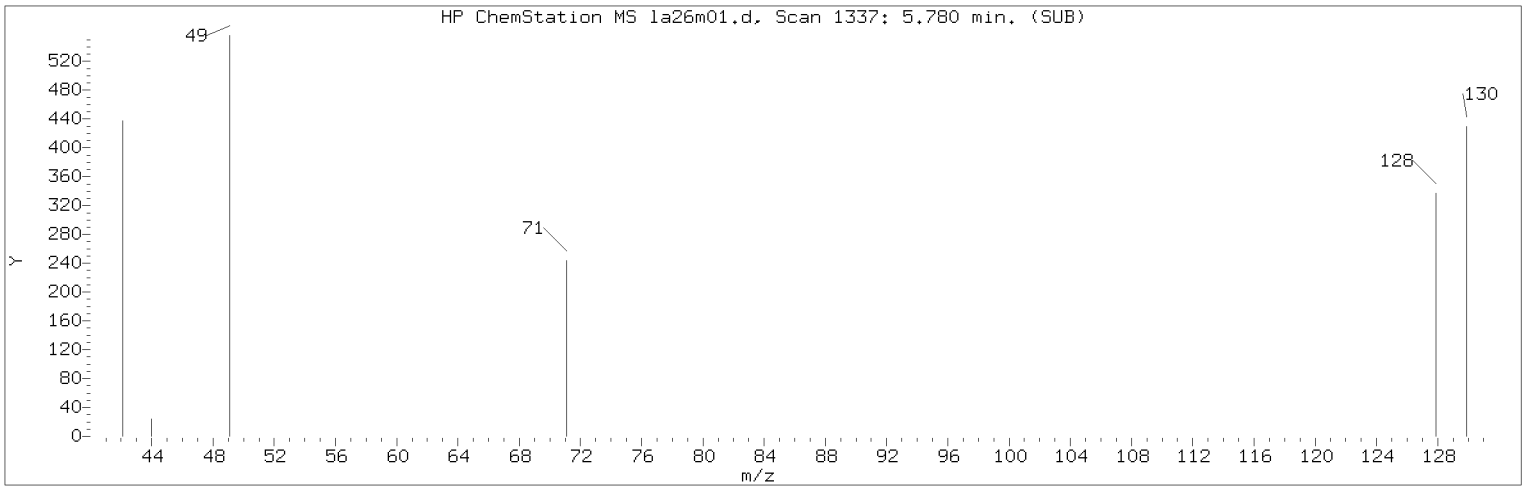
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

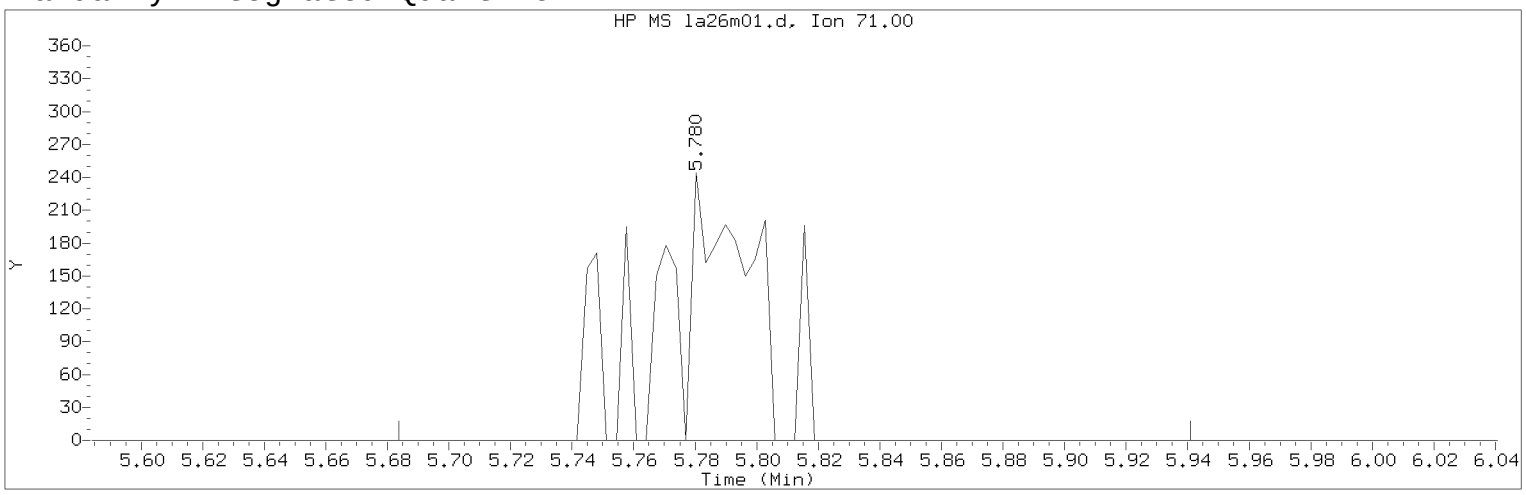
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 881
Retention Time (minutes): 4.314
Quant Ion : 57.00
Area : 2502
On-column Amount (ng) : 0.3717
Integration start scan : 867 Integration stop scan: 897
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

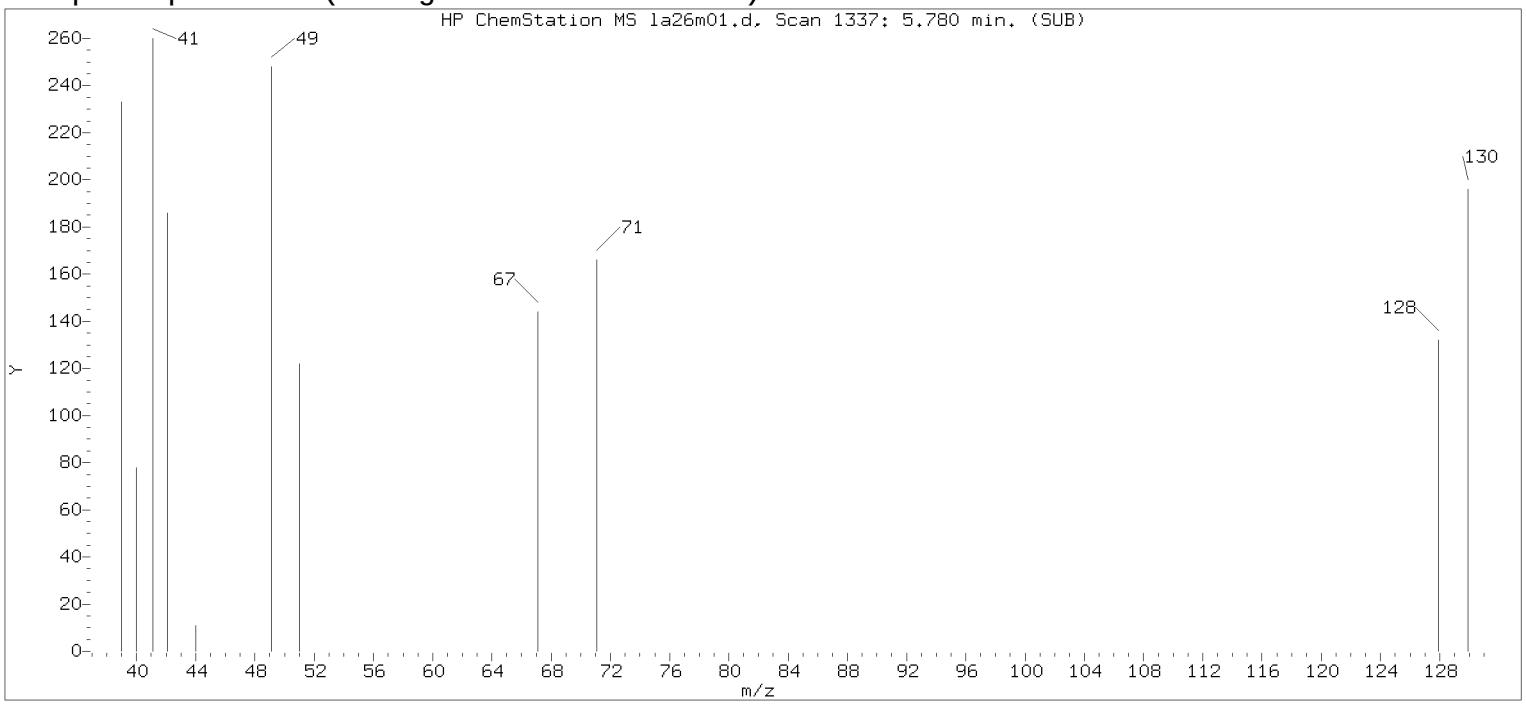
Compound Number : 50
Compound Name : Tetrahydrofuran
Scan Number : 1337
Retention Time (minutes): 5.780
Quant Ion : 71.00
Area (flag) : 517M
On-Column Amount (ng) : 0.5933
Integration start scan : 1306 Integration stop scan: 1386
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

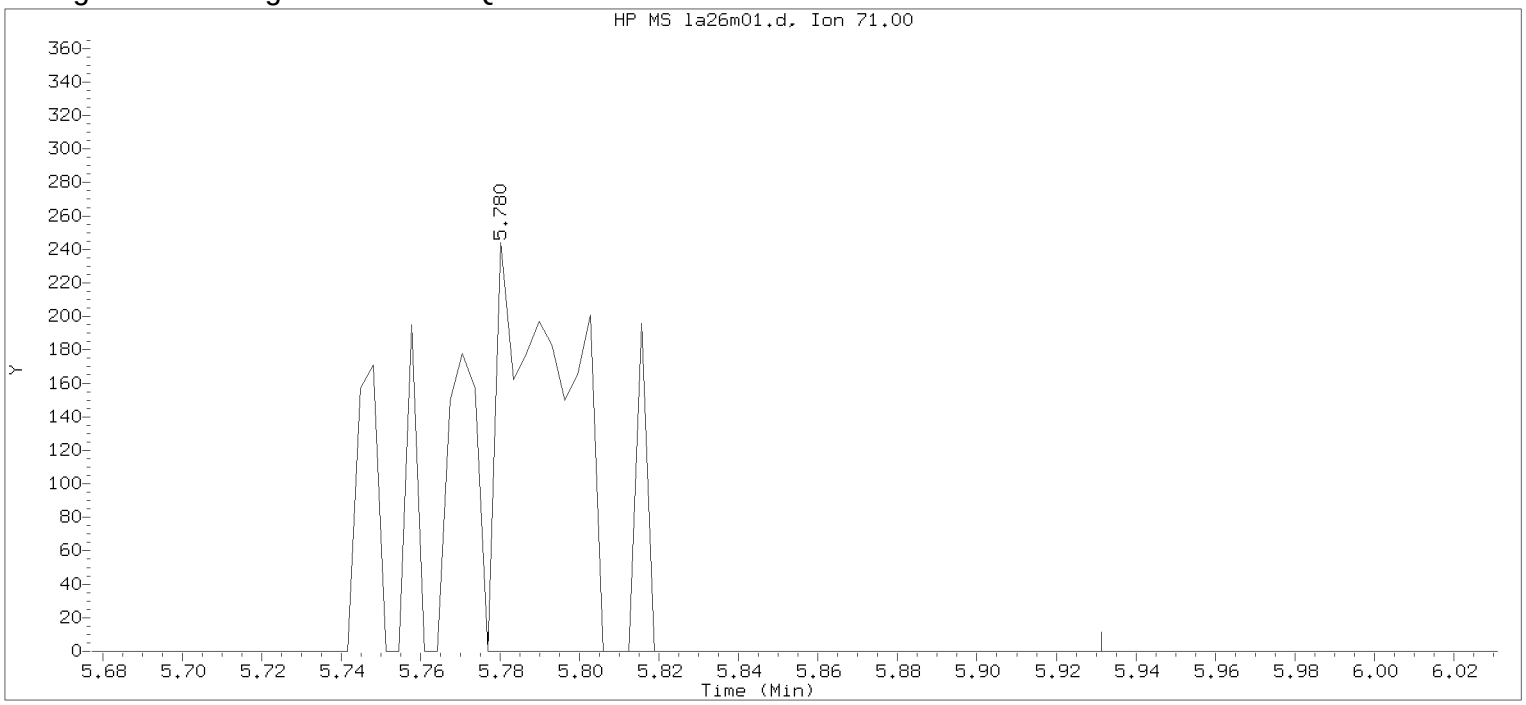
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

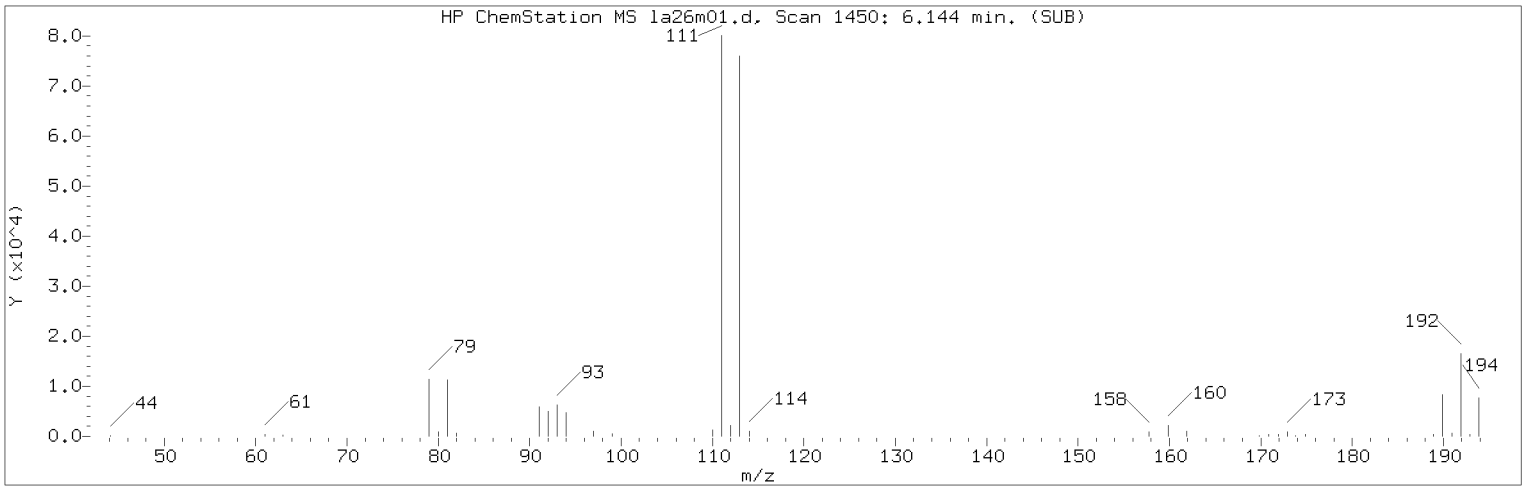
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

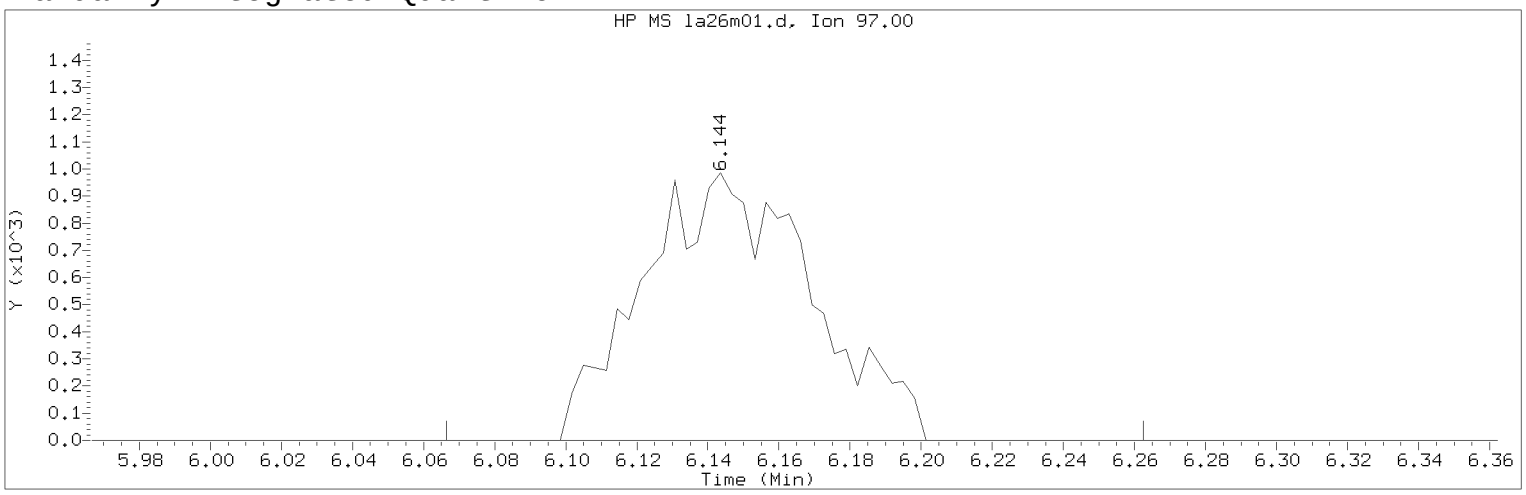
Compound Number : 50
Compound Name : Tetrahydrofuran
Scan Number : 1337
Retention Time (minutes): 5.780
Quant Ion : 71.00
Area : 323
On-column Amount (ng) : 0.3705
Integration start scan : 1335 Integration stop scan: 1383
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKR190kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

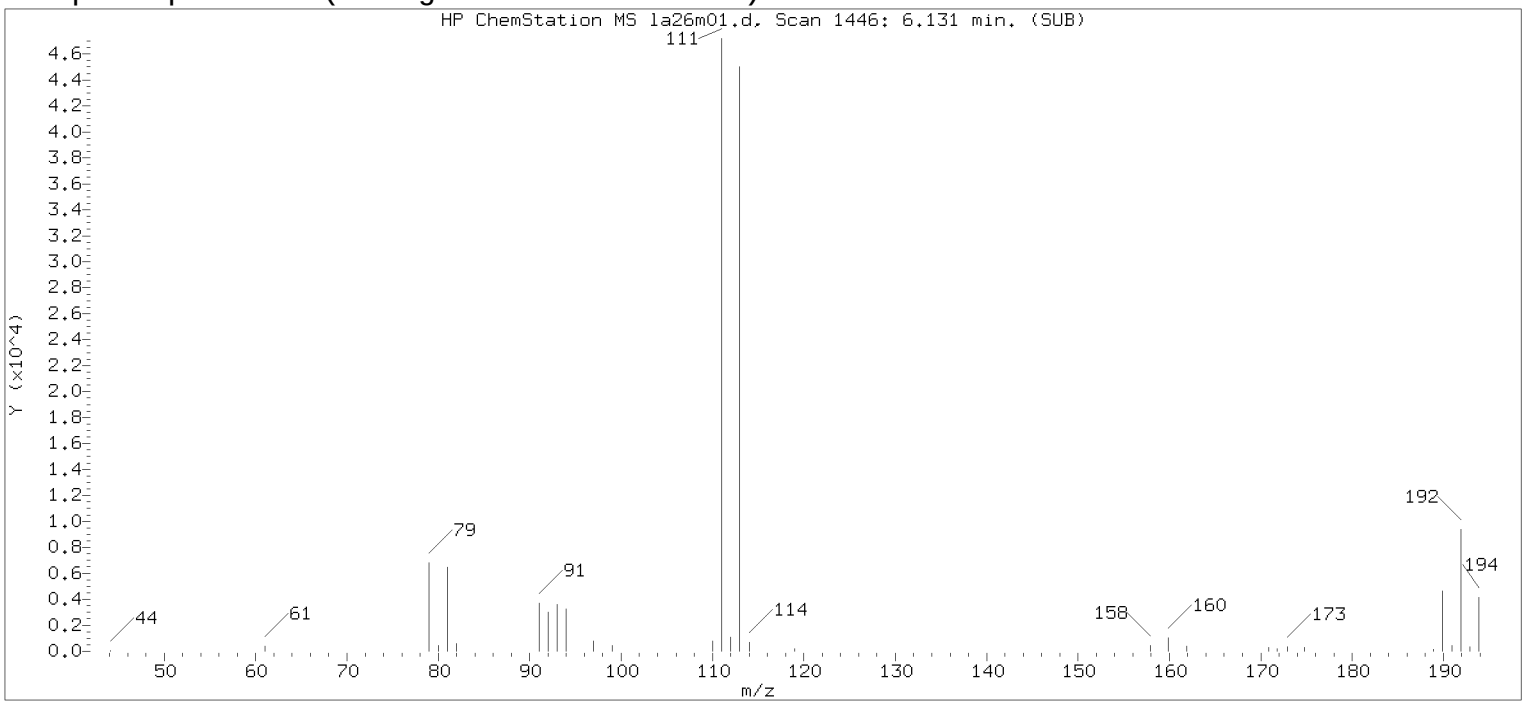
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1450
Retention Time (minutes): 6.144
Quant Ion : 97.00
Area (flag) : 3253M
On-Column Amount (ng) : 0.4525
Integration start scan : 1425 Integration stop scan: 1486
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

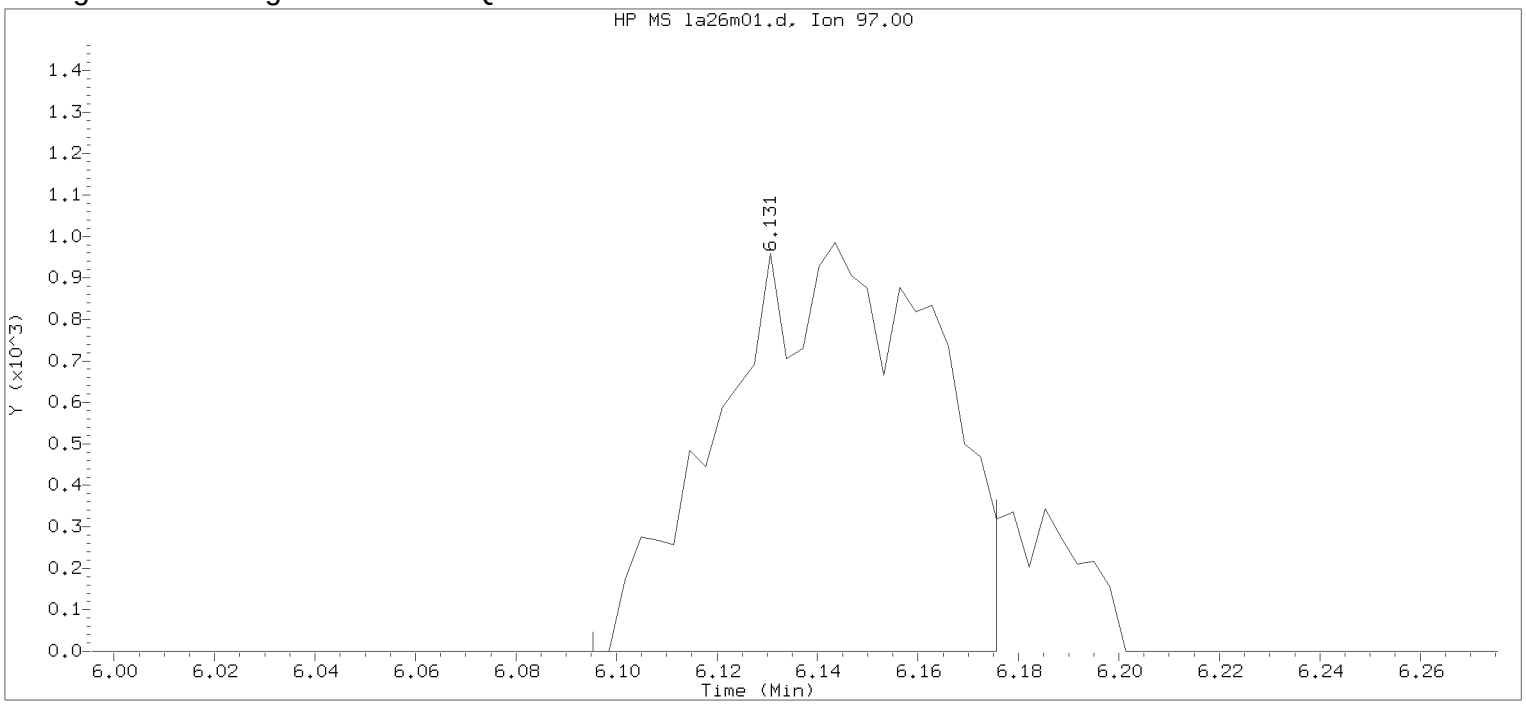
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

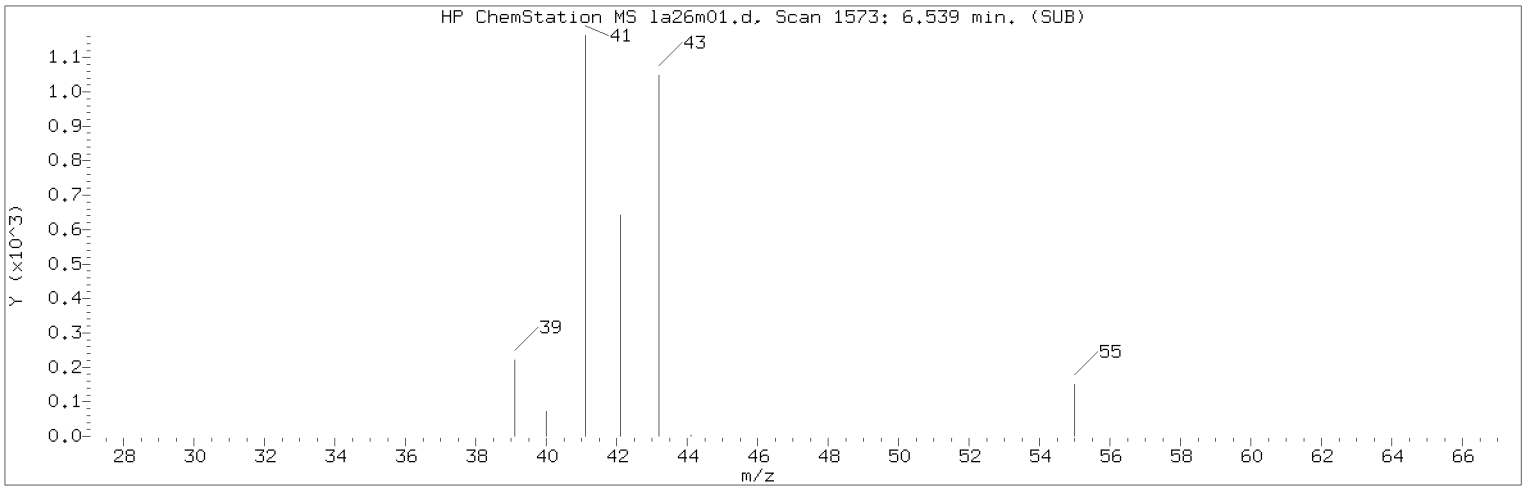
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

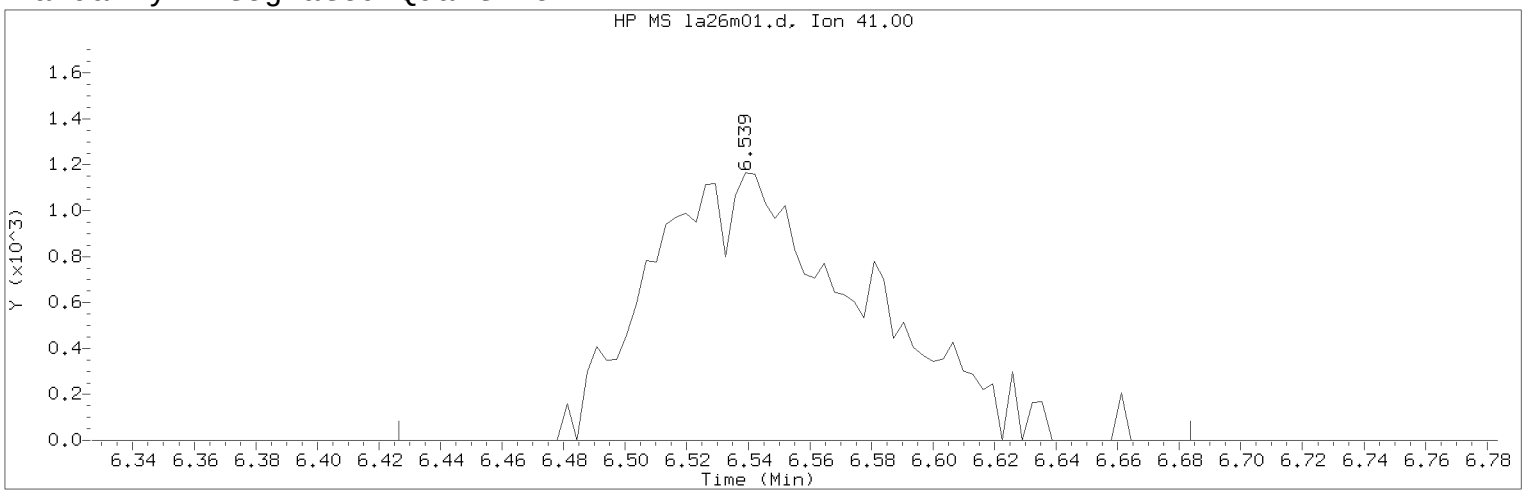
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1446
Retention Time (minutes): 6.131
Quant Ion : 97.00
Area : 2887
On-column Amount (ng) : 0.4017
Integration start scan : 1434 Integration stop scan: 1459
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKRD90kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

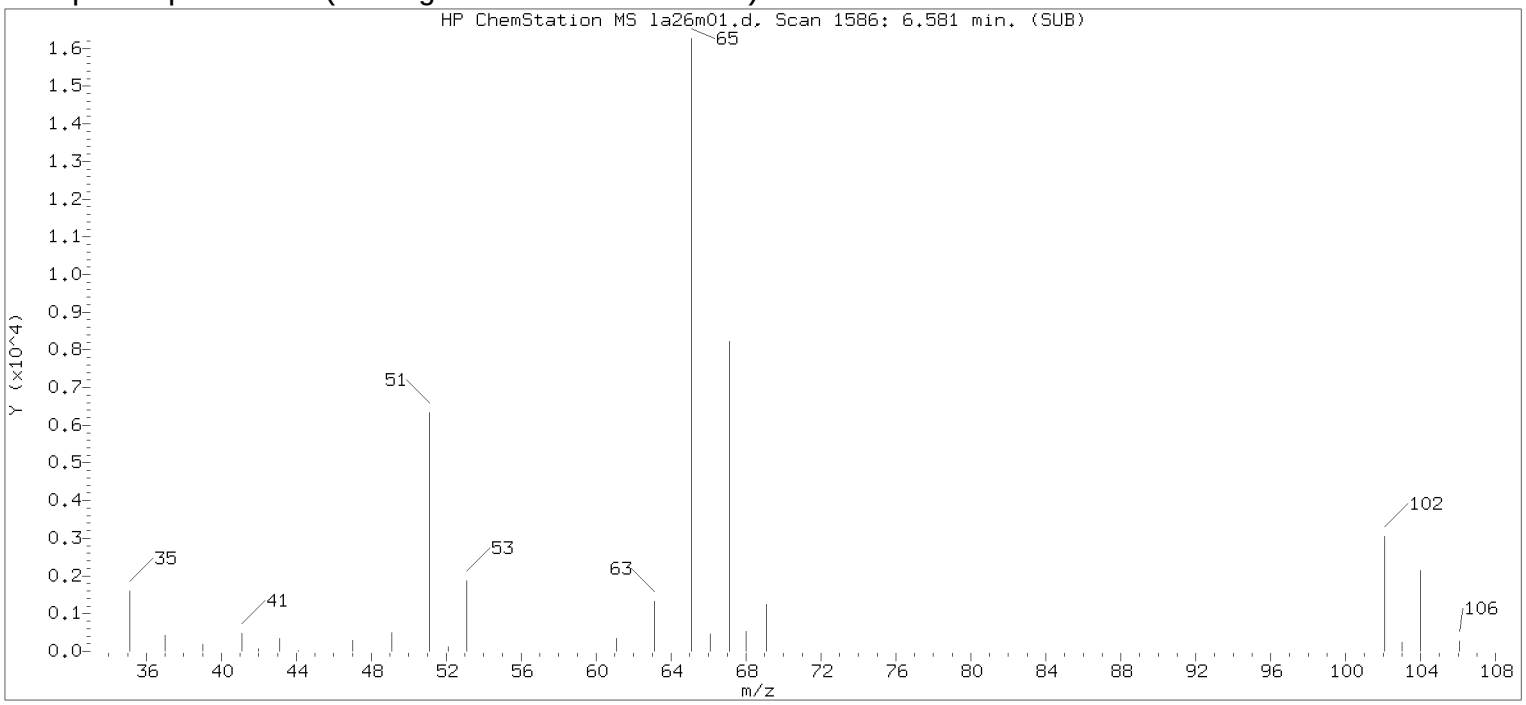
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 1573
Retention Time (minutes): 6.539
Quant Ion : 41.00
Area (flag) : 5623M
On-Column Amount (ng) : 23.6581
Integration start scan : 1537  Integration stop scan: 1617
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

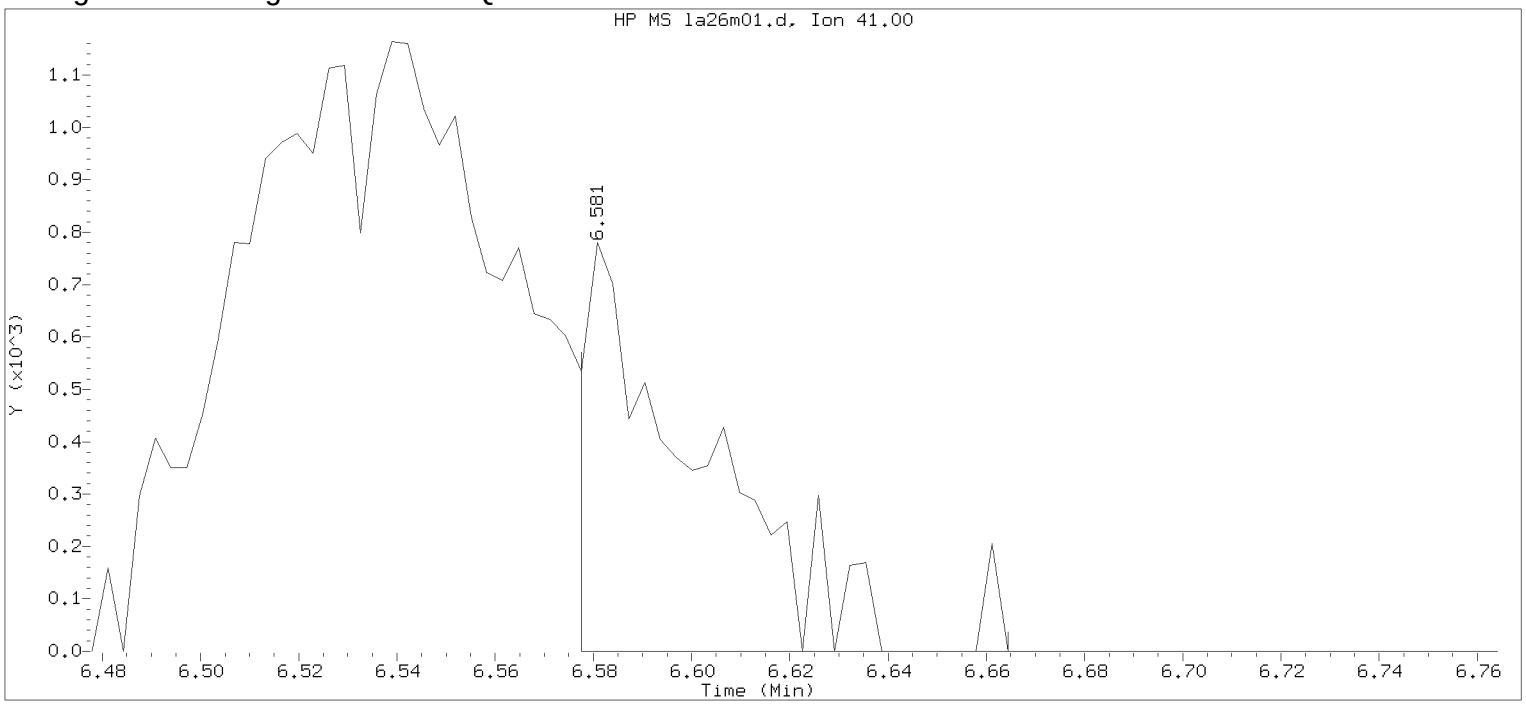
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

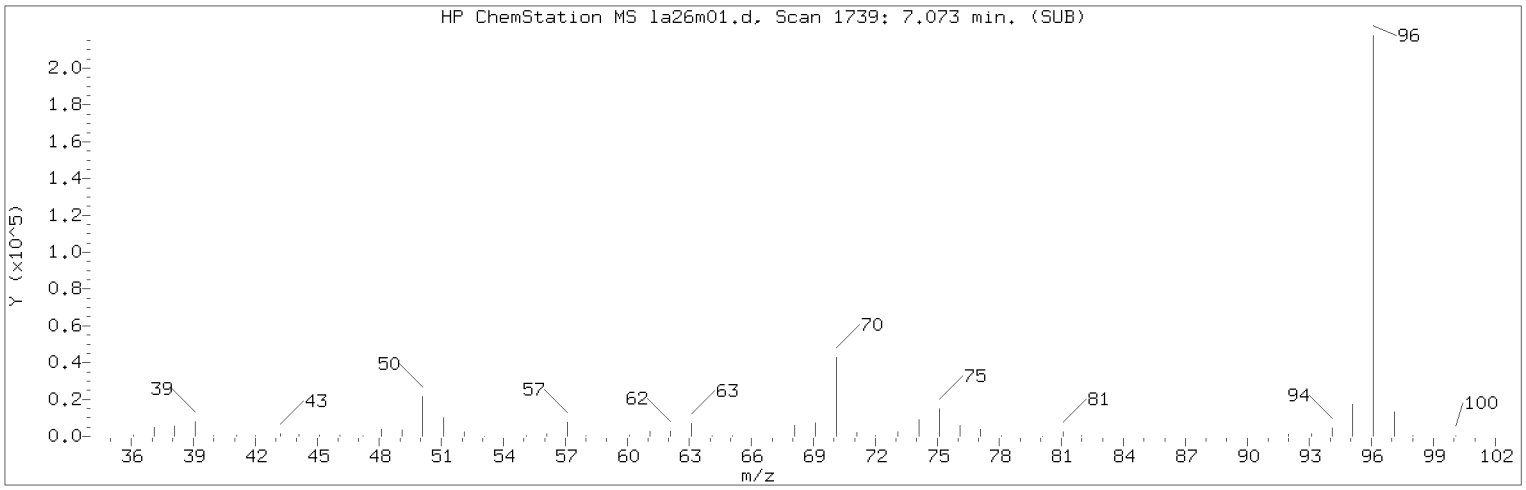
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

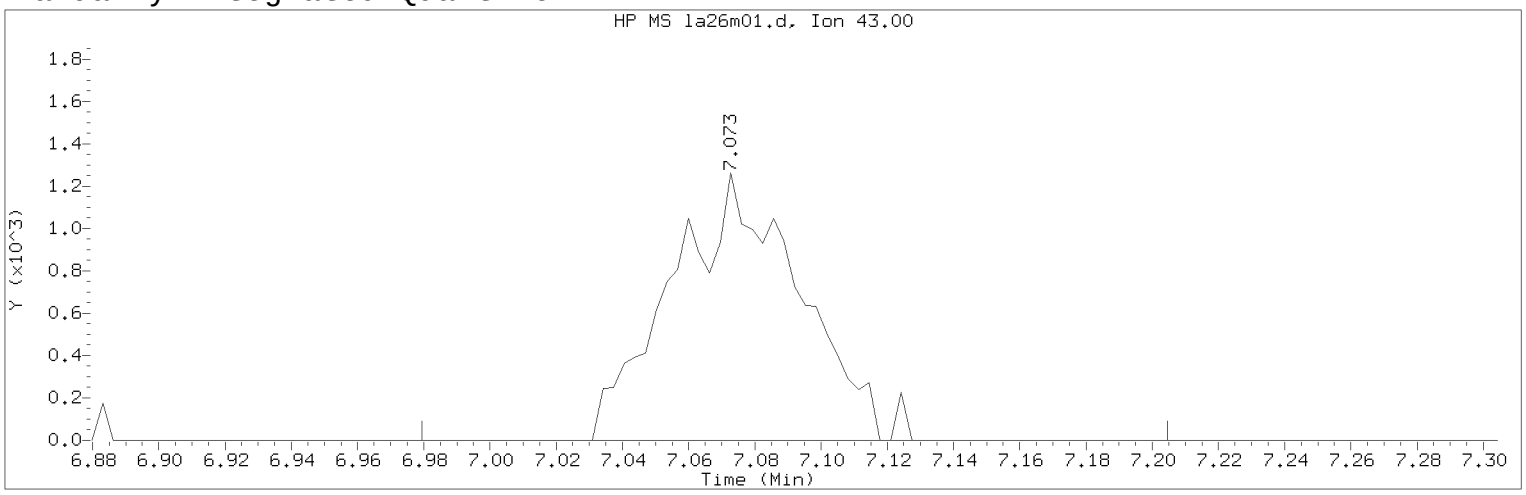
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 1586
Retention Time (minutes): 6.581
Quant Ion : 41.00
Area : 1254
On-column Amount (ng) : 5.2771
Integration start scan : 1584 Integration stop scan: 1611
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

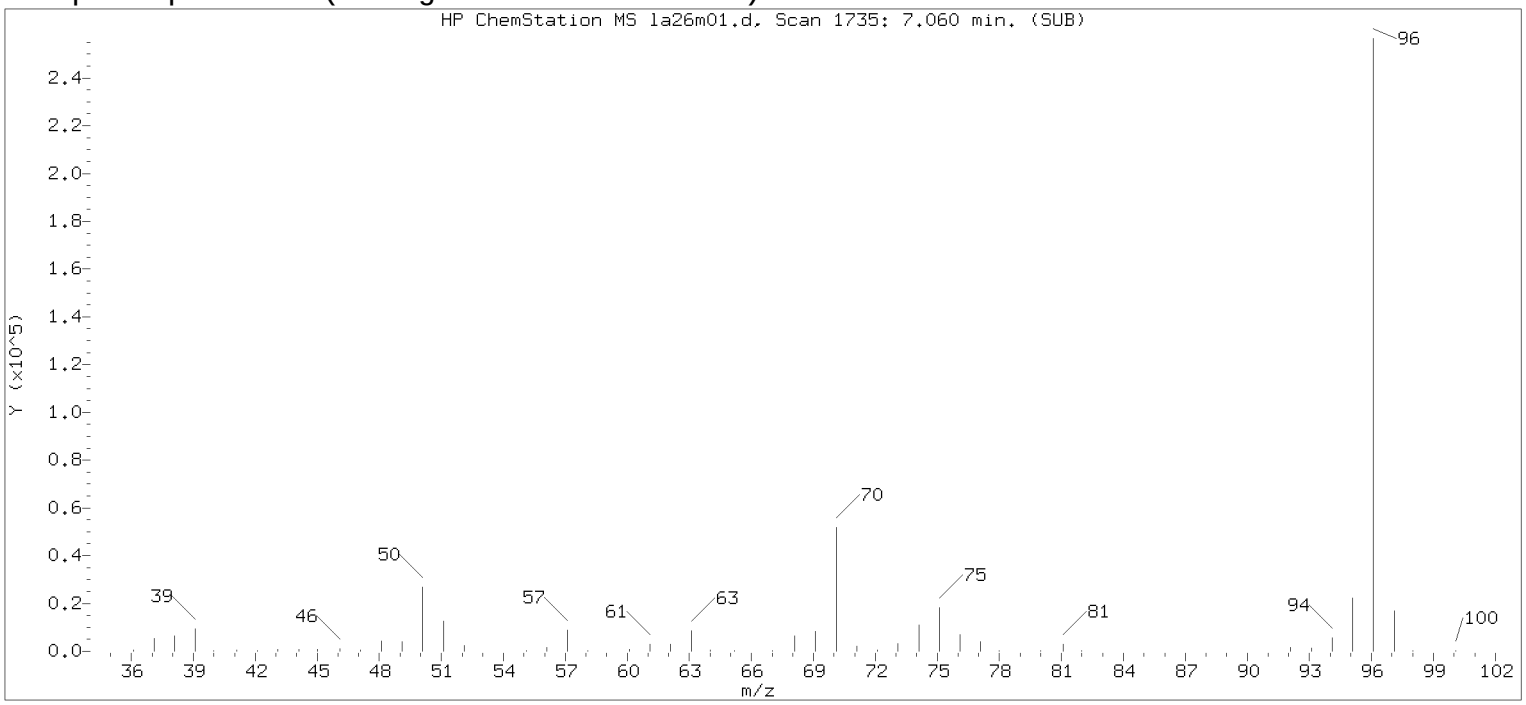
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1739
Retention Time (minutes): 7.073
Quant Ion : 43.00
Area (flag) : 3401M
On-Column Amount (ng) : 0.4512
Integration start scan : 1709 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

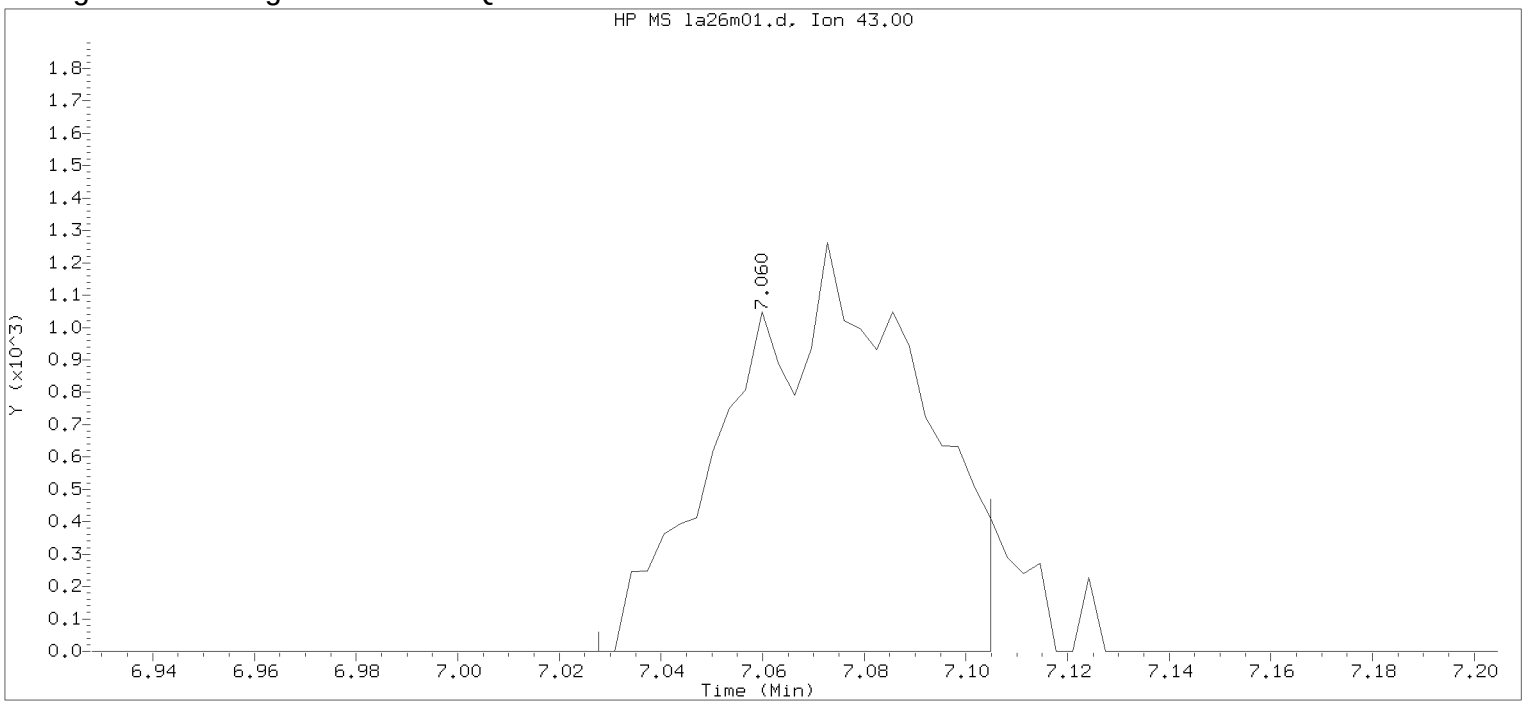
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

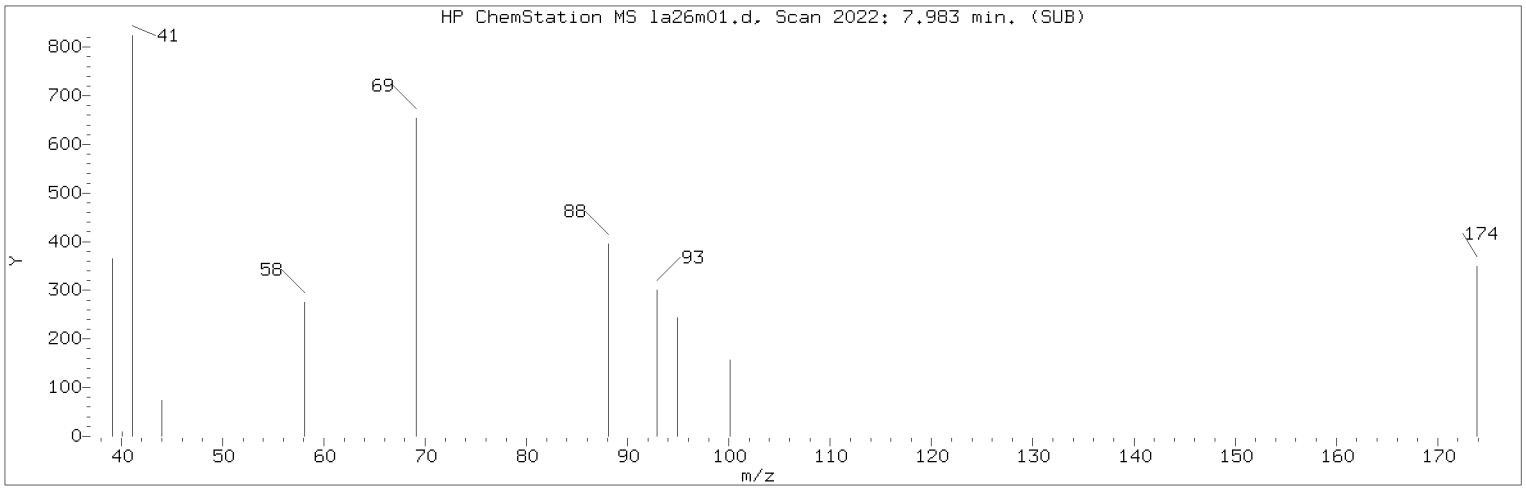
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

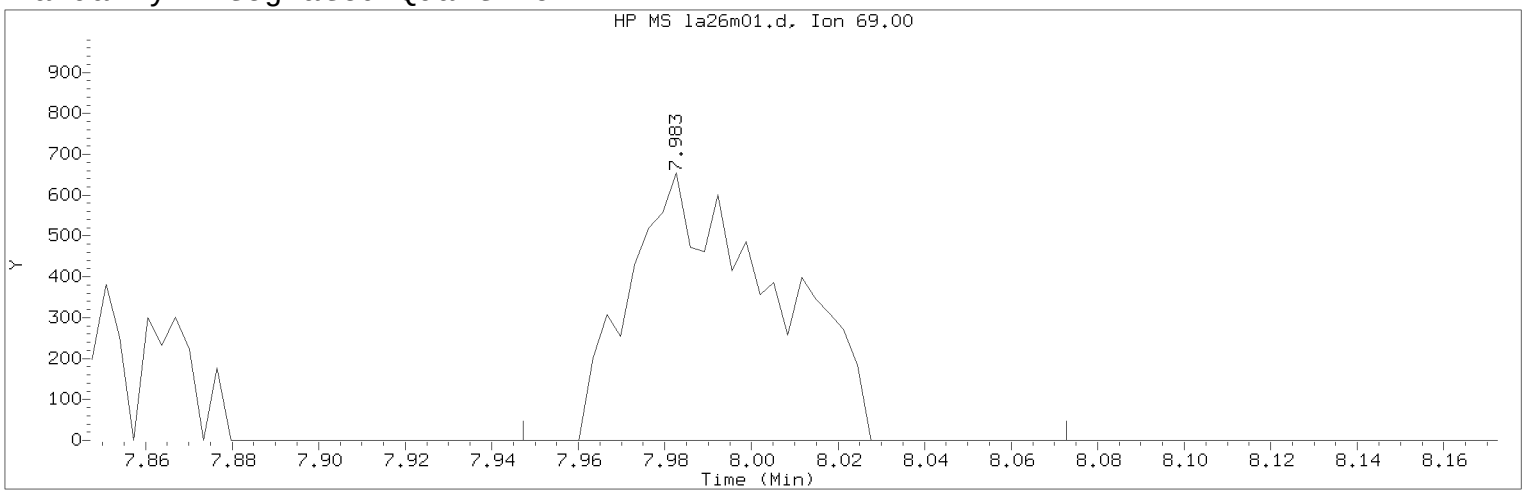
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1735
Retention Time (minutes): 7.060
Quant Ion : 43.00
Area : 3163
On-column Amount (ng) : 0.4196
Integration start scan : 1724 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

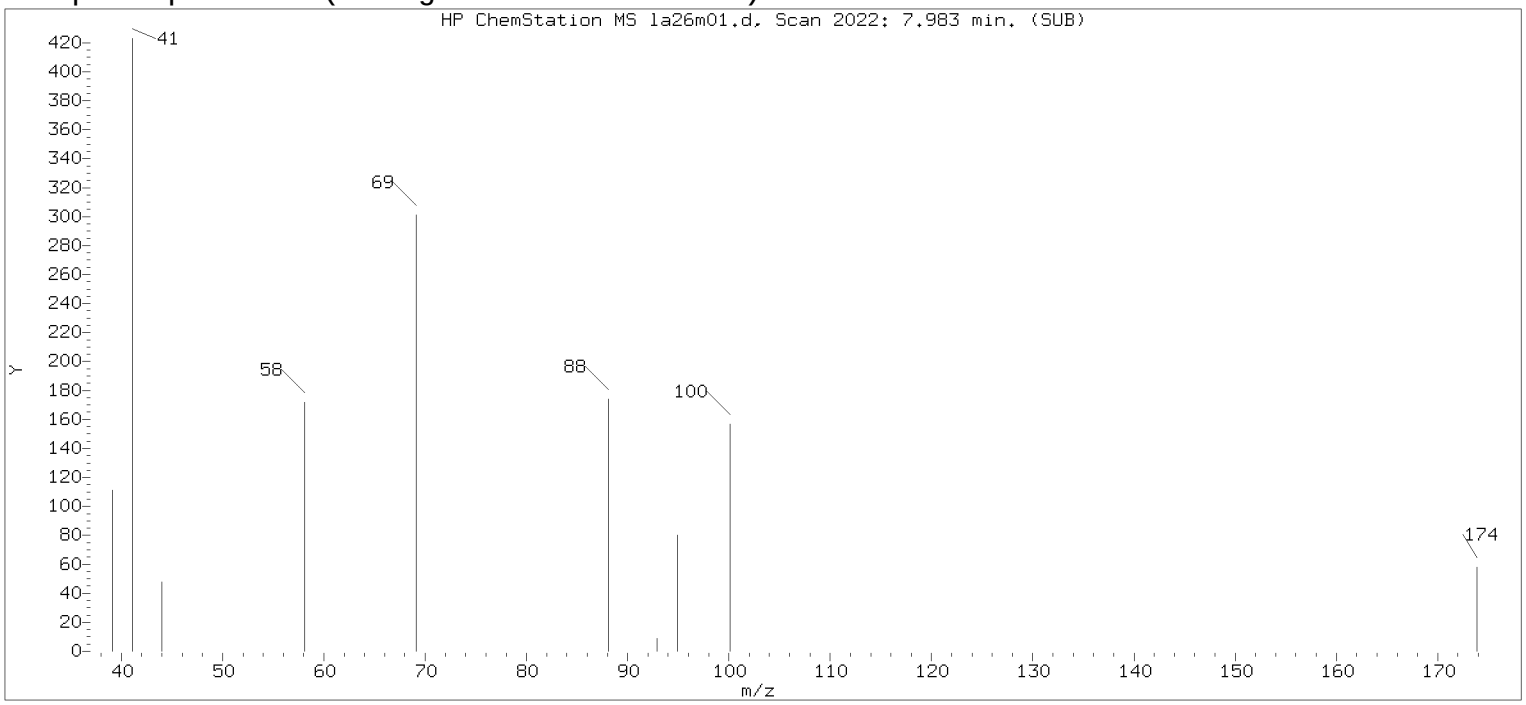
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 1518M
On-Column Amount (ng) : 0.3435
Integration start scan : 2010 Integration stop scan: 2049
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

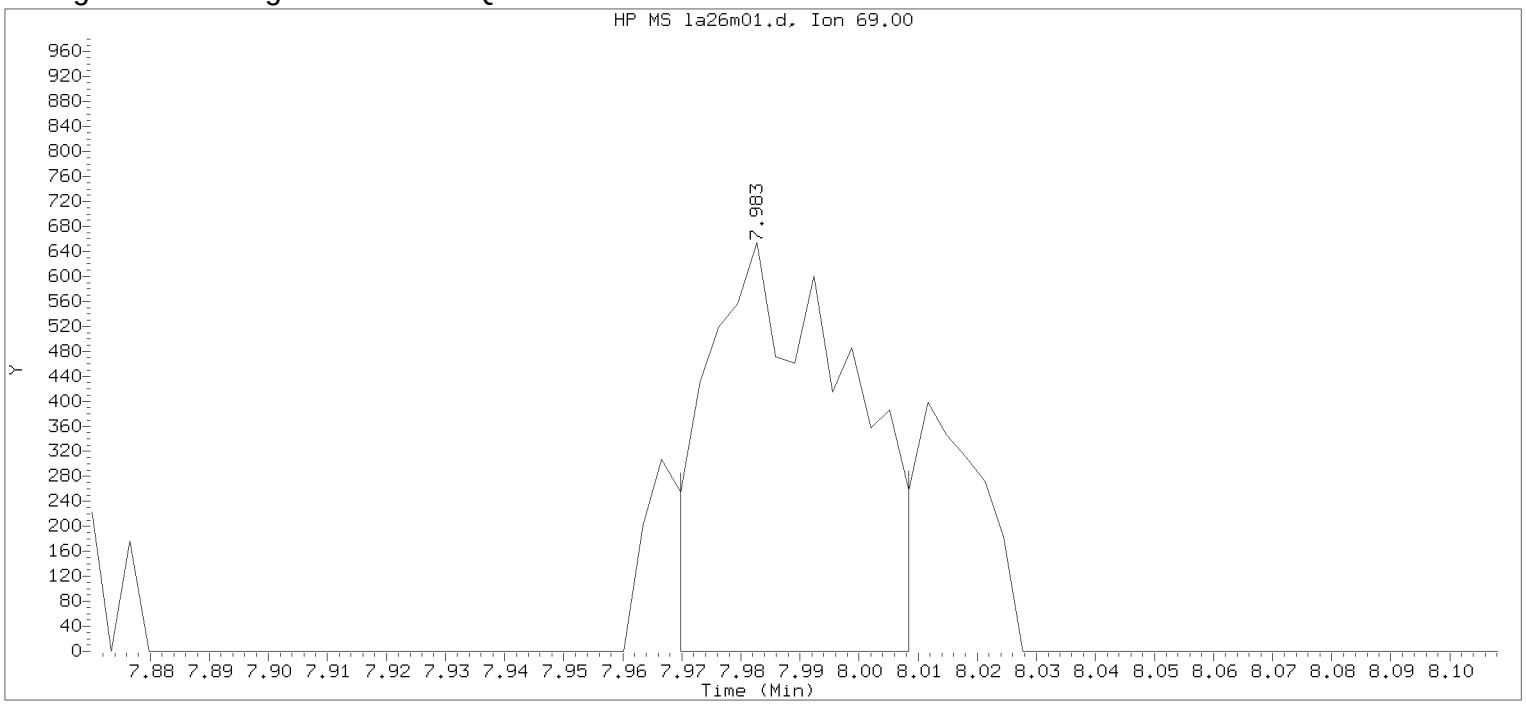
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

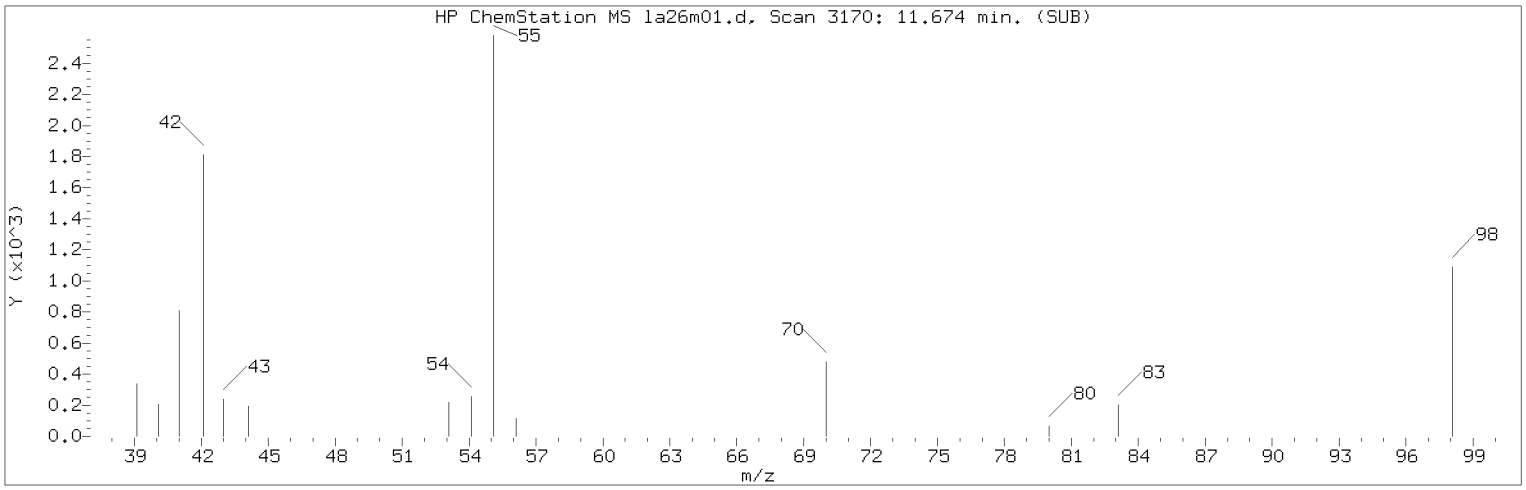
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

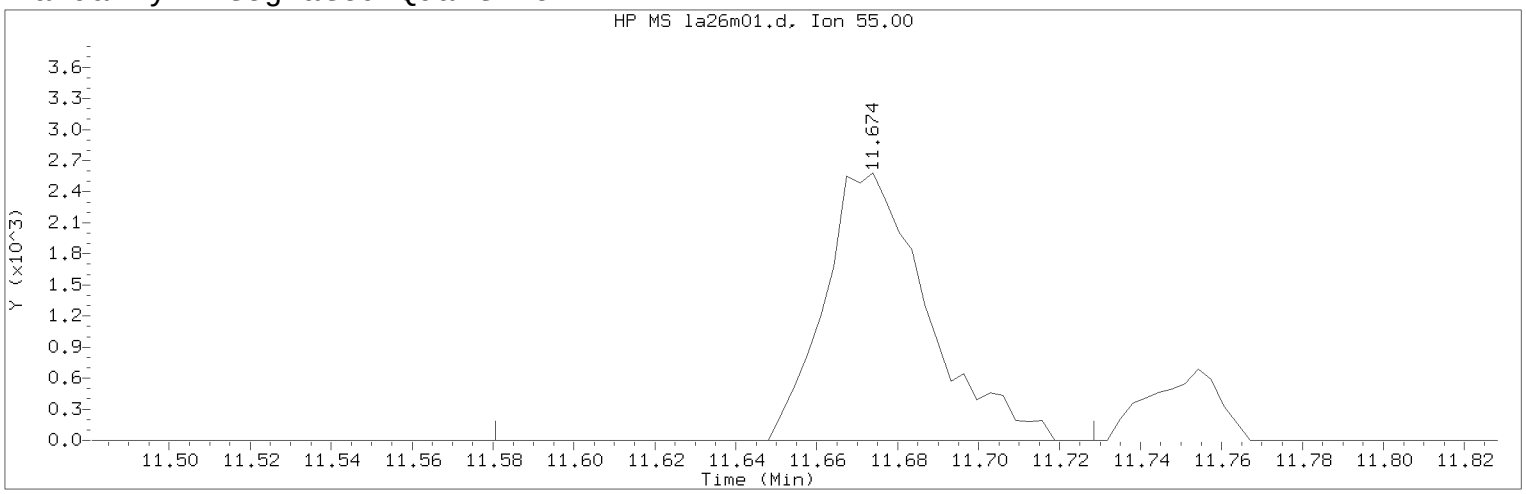
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area : 1079
On-column Amount (ng) : 0.2442
Integration start scan : 2017 Integration stop scan: 2029
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

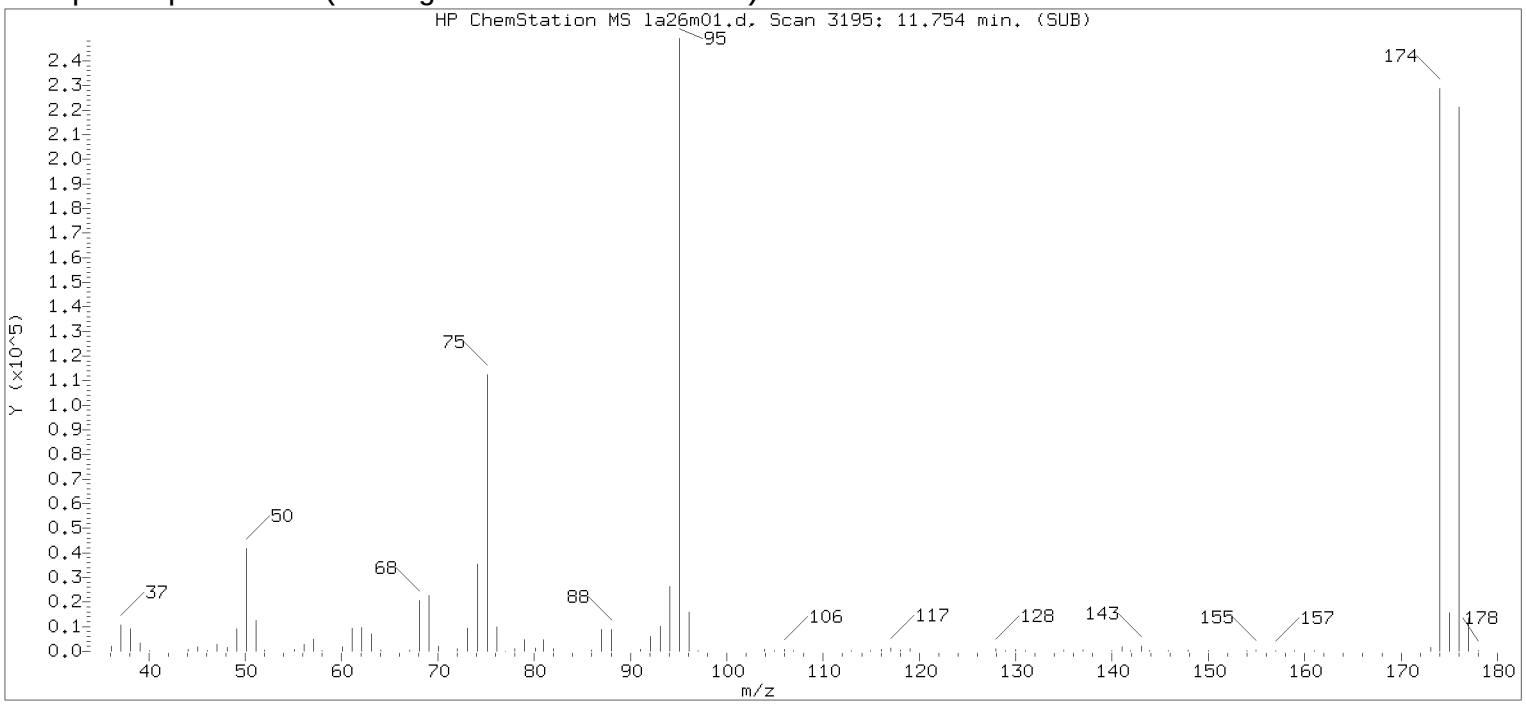
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3170
Retention Time (minutes): 11.674
Quant Ion : 55.00
Area (flag) : 4553M
On-Column Amount (ng) : 20.1799
Integration start scan : 3140  Integration stop scan: 3186
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

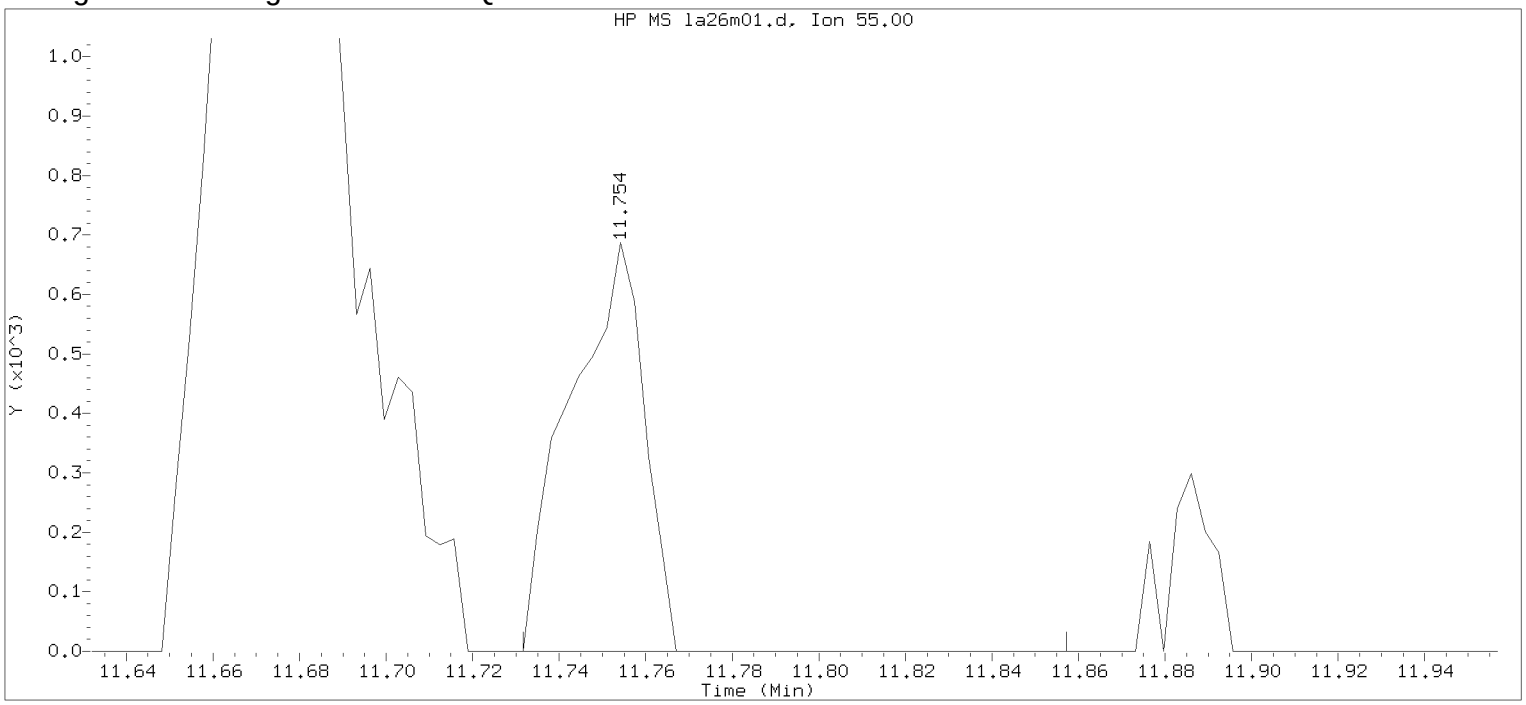
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

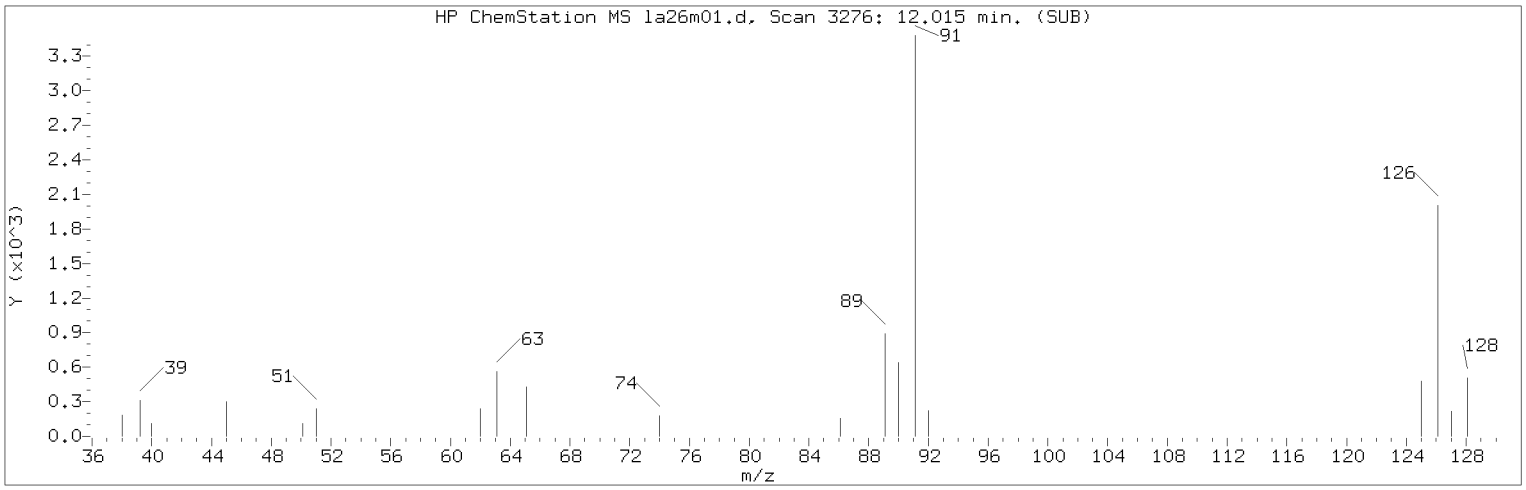
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

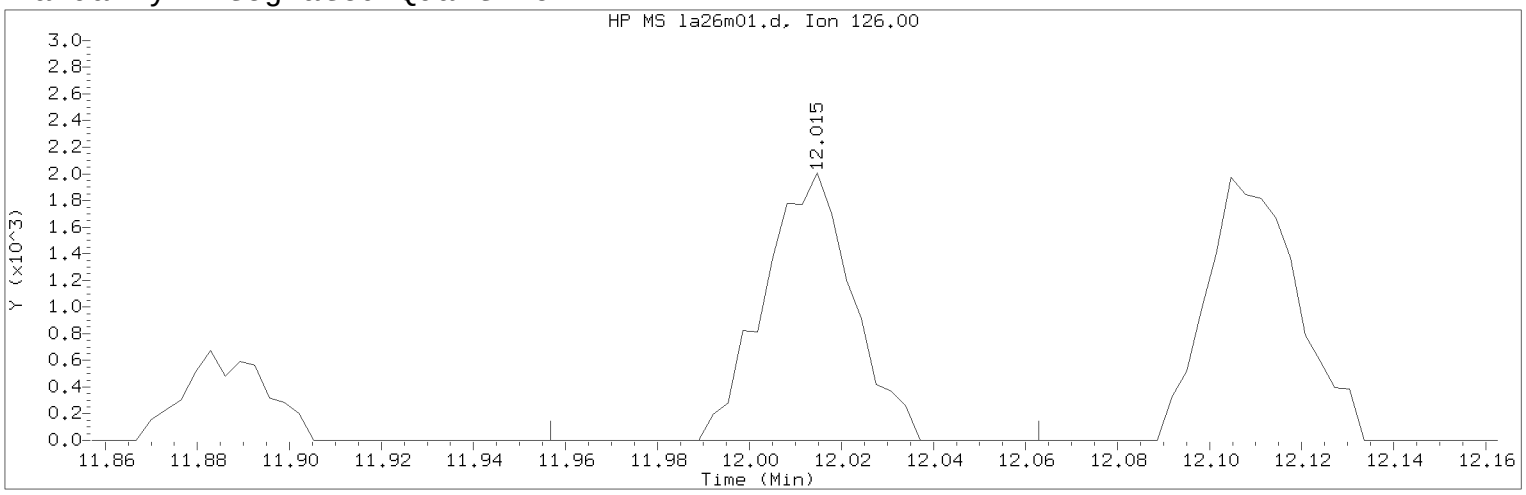
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3195
Retention Time (minutes): 11.754
Quant Ion : 55.00
Area : 817
On-column Amount (ng) : 3.6224
Integration start scan : 3187 Integration stop scan: 3226
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

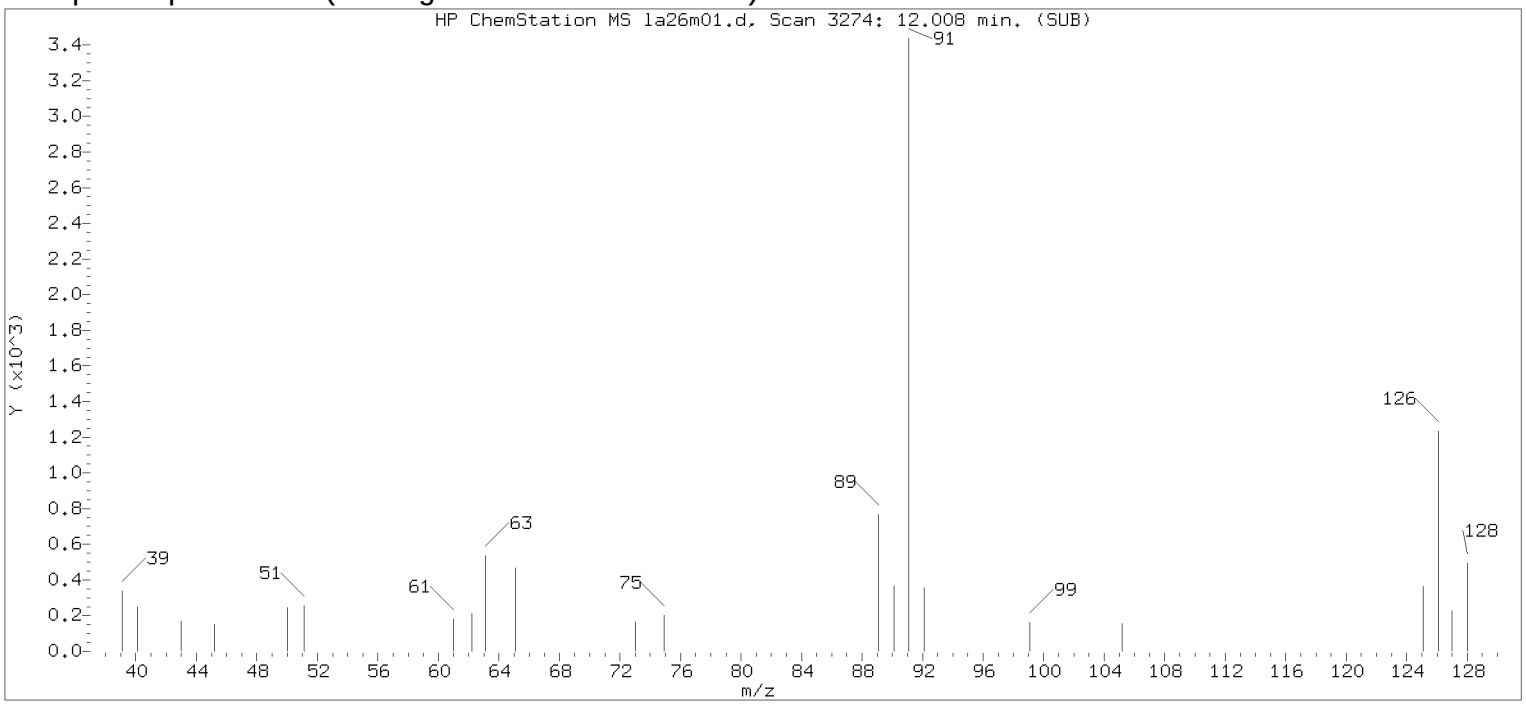
Compound Number : 120
Compound Name : 2-Chlorotoluene
Scan Number : 3276
Retention Time (minutes): 12.015
Quant Ion : 126.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.4793
Integration start scan : 3257 Integration stop scan: 3290
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

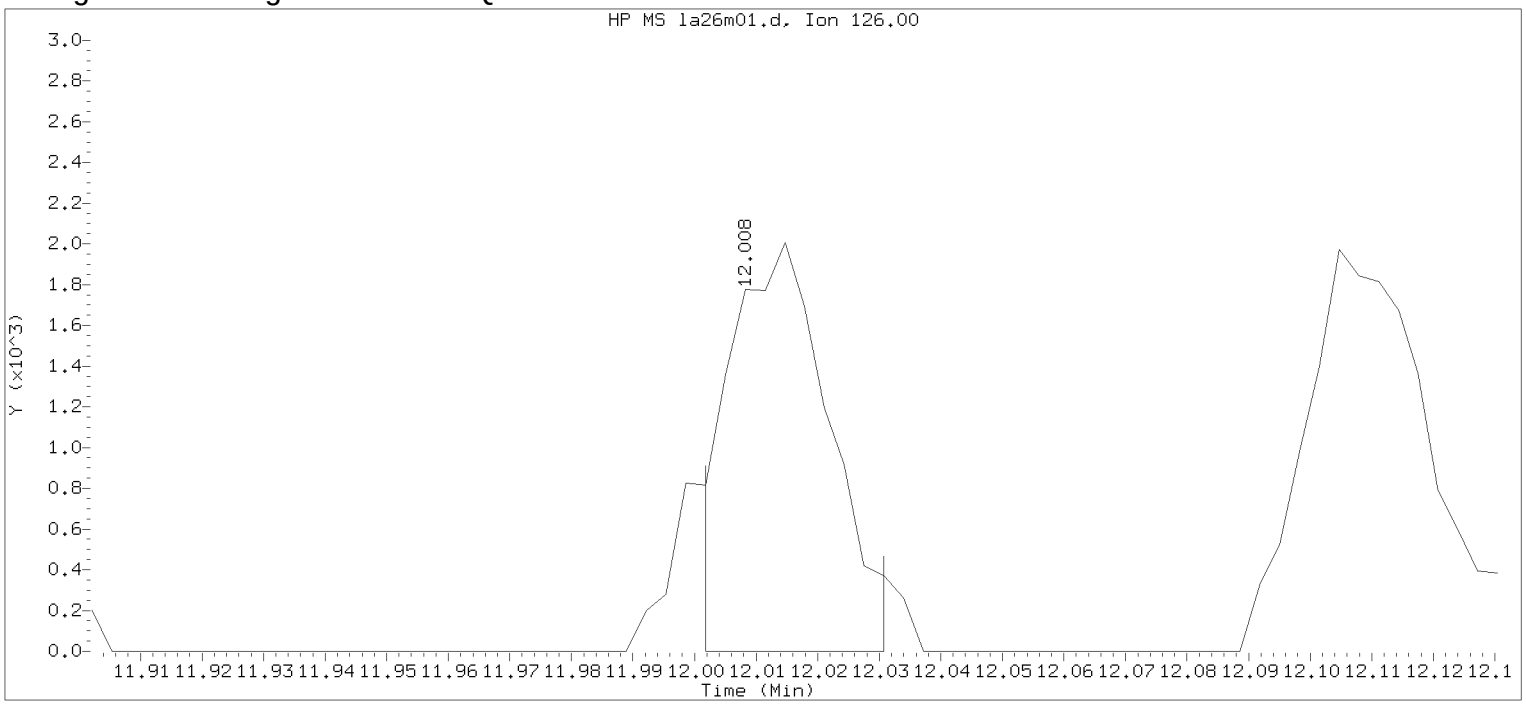
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



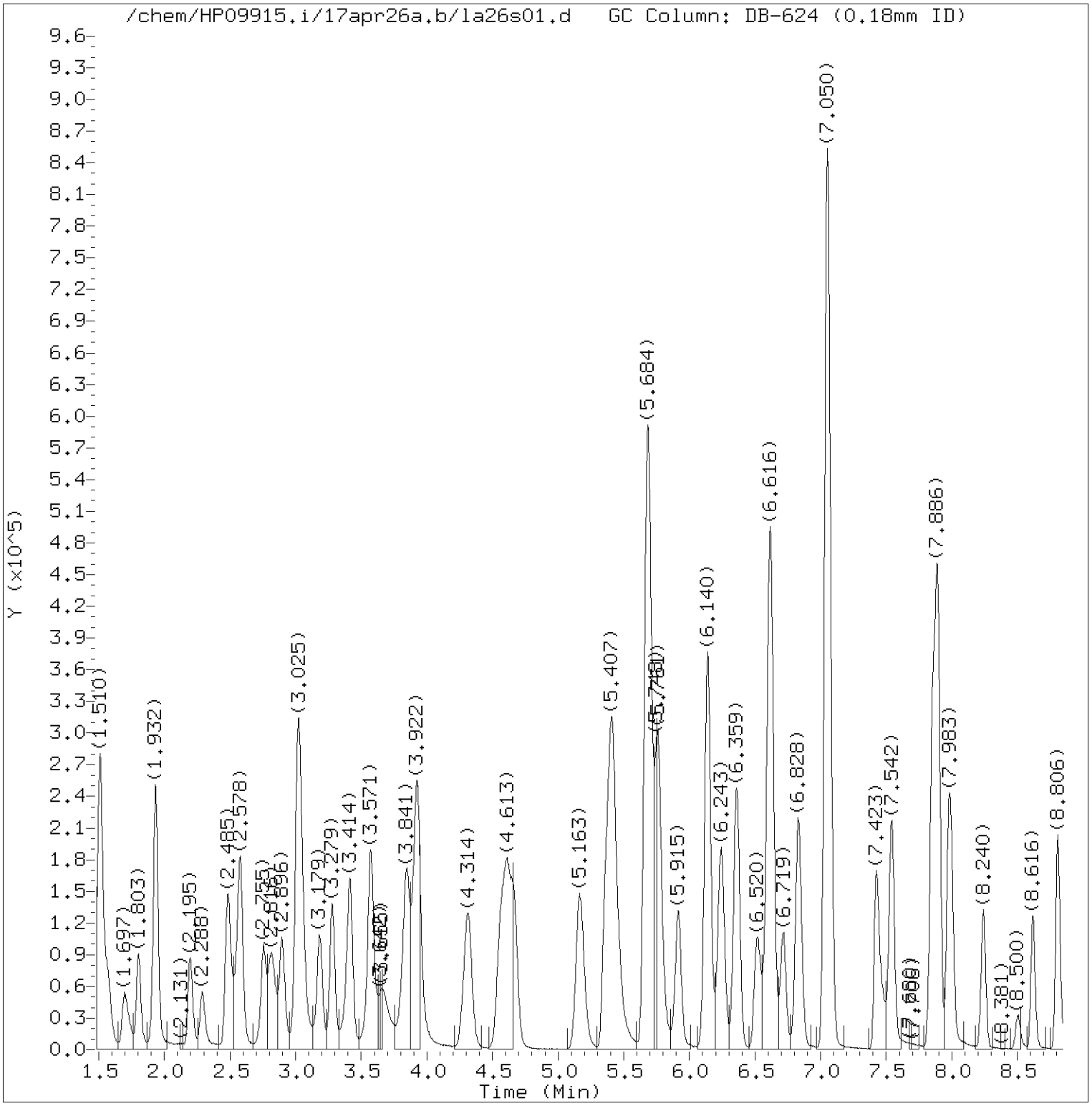

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 120
Compound Name : 2-Chlorotoluene
Scan Number : 3274
Retention Time (minutes): 12.008
Quant Ion : 126.00
Area : 2264
On-column Amount (ng) : 0.4049
Integration start scan : 3271 Integration stop scan: 3280
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

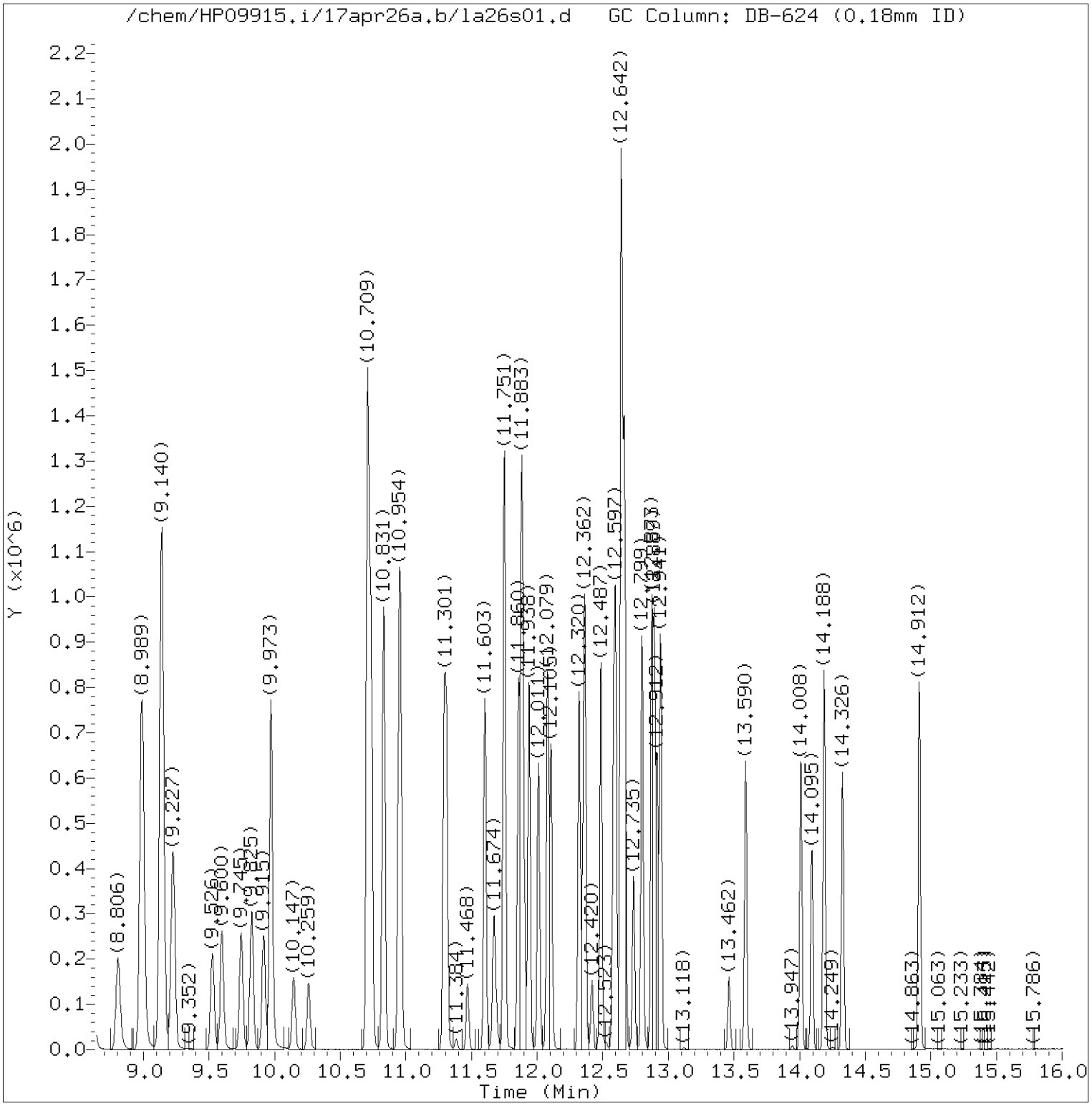
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.697 | 85 | 109499 | 17.491 |
| 4) Chloromethane | (2) | 1.803 | 50 | 118648 | 18.449 |
| 6) Vinyl Chloride | (2) | 1.919 | 62 | 116746 | 18.799 |
| 5) 1,3-Butadiene | (2) | 1.938 | 39 | 117706 | 31.074 |
| 8) Bromomethane | (2) | 2.195 | 94 | 78860 | 18.880 |
| 9) Chloroethane | (2) | 2.288 | 64 | 65535 | 18.726 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 168800 | 19.774 |
| 12) Trichlorofluoromethane | (2) | 2.546 | 101 | 141676 | 19.701 |
| 11) n-Pentane | (2) | 2.581 | 43 | 155972 | 26.336 |
| 14) Ethyl ether | (2) | 2.755 | 59 | 78549 | 19.620 |
| 15) Freon 123a | (2) | 2.816 | 67 | 99077 | 20.687 |
| 16) Acrolein | (1) | 2.899 | 56 | 152765 | 93.014 |
| 17) 1,1-Dichloroethene | (2) | 3.012 | 96 | 85092 | 22.356 |
| 18) Acetone | (1) | 3.031 | 58 | 98646M | 138.386 |
| 19) Freon 113 | (2) | 3.034 | 101 | 87279 | 22.782 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 62534M | 132.335 |
| 22) Methyl Iodide | (2) | 3.179 | 142 | 158156 | 21.423 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 276153 | 22.295 |
| 27) Methyl Acetate | (2) | 3.385 | 43 | 108608 | 19.660 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 150132 | 19.692 |
| 28) Methylene Chloride | (2) | 3.571 | 84 | 100067 | 19.902 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 200632M | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 144050 | 185.564 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 276003 | 95.141 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.912 | 73 | 275653 | 19.769 |
| 32) trans-1,2-Dichloroethene | (2) | 3.925 | 96 | 96639 | 21.640 |
| 34) n-Hexane | (2) | 4.314 | 57 | 148593 | 21.707 |
| 36) 1,1-Dichloroethane | (2) | 4.558 | 63 | 173220 | 20.642 |
| 38) di-Isopropyl ether | (2) | 4.607 | 45 | 326552 | 20.275 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.661 | 53 | 142863 | 20.183 |
| 40) Ethyl t-butyl ether | (2) | 5.163 | 59 | 267730 | 19.315 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 540273 | 139.091 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 104661 | 20.453 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 107714 | 19.225 |
| 47) Propionitrile | (1) | 5.459 | 54 | 160735 | 141.868 |
| 48) Methacrylonitrile | (2) | 5.684 | 67 | 427221 | 147.714 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 52961 | 19.637 |
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 93578 | 93.510 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.918 | 83 | 160721 | 20.094 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 254549 | 49.603 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 142170 | 19.451 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 201300 | 42.093 |
| 54) Cyclohexane | (2) | 6.243 | 56 | 166429 | 19.998 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 104390 | 19.566 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 125804 | 19.338 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 129876 | 476.515 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63935 | 50.103 |
| 60) Benzene | (2) | 6.629 | 78 | 387251 | 20.194 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 131704 | 20.301 |
| 65) t-Amyl methyl ether | (2) | 6.828 | 73 | 263343 | 19.143 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1050887 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 153007 | 19.964 |
| 69) n-Butanol | (1) | 7.423 | 56 | 206615 | 940.388 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 98914 | 19.959 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 175190 | 20.063 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 106099 | 20.211 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 87598 | 19.494 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 37891M | 552.412 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 66490 | 20.140 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 115395 | 19.368 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 27997 | 16.571 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 75861 | 18.799 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 151800 | 19.548 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 756555 | 94.518 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1039935 | 50.132 |
| 88) Toluene | (3) | 9.227 | 92 | 242182 | 20.090 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 134989 | 19.971 |
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 154350 | 20.273 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 94409 | 20.324 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 104916 | 19.678 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 161543 | 20.042 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 551770 | 94.825 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 286789 | 39.519 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 90734 | 18.858 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 104756 | 20.600 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 812425 | 50.000 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 130363 | 18.831 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 273397 | 19.655 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 87717 | 19.096 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 458197 | 19.705 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 357105 | 39.448 |
| 107) o-Xylene | (3) | 11.291 | 106 | 175615 | 19.507 |
| 109) Styrene | (3) | 11.311 | 104 | 302990 | 20.359 |
| 110) Bromoform | (3) | 11.471 | 173 | 63277 | 18.112 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 461508 | 20.058 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 135081 | 522.068 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 384984 | 49.931 |
| 108) Xylene (Total) | (3) | | 106 | 532720 | 58.955 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 156503 | 20.076 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 122720 | 19.548 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 216768 | 97.039 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 45126 | 20.478 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 543948 | 19.609 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 111198 | 19.261 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 386164 | 19.522 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 117549 | 19.563 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 84253M | 19.704 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 64493 | 19.104 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 398317 | 19.549 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 498192 | 19.744 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 227433 | 19.029 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 435084 | 19.529 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 439191 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 238412 | 19.291 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 427280 | 20.015 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 222904 | 17.243 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 260216 | 19.550 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 270880 | 19.379 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 213925 | 19.222 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 227861 | 19.395 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 220414 | 19.677 |
| 141) Diethylbenzene (total) | (4) | | 100 | 751510 | 58.606 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 31087 | 18.857 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 178208 | 18.709 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 172270 | 18.644 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 69967 | 17.436 |
| 148) Naphthalene | (4) | 14.188 | 128 | 548363 | 19.667 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 162660 | 18.248 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 326087 | 18.087 |



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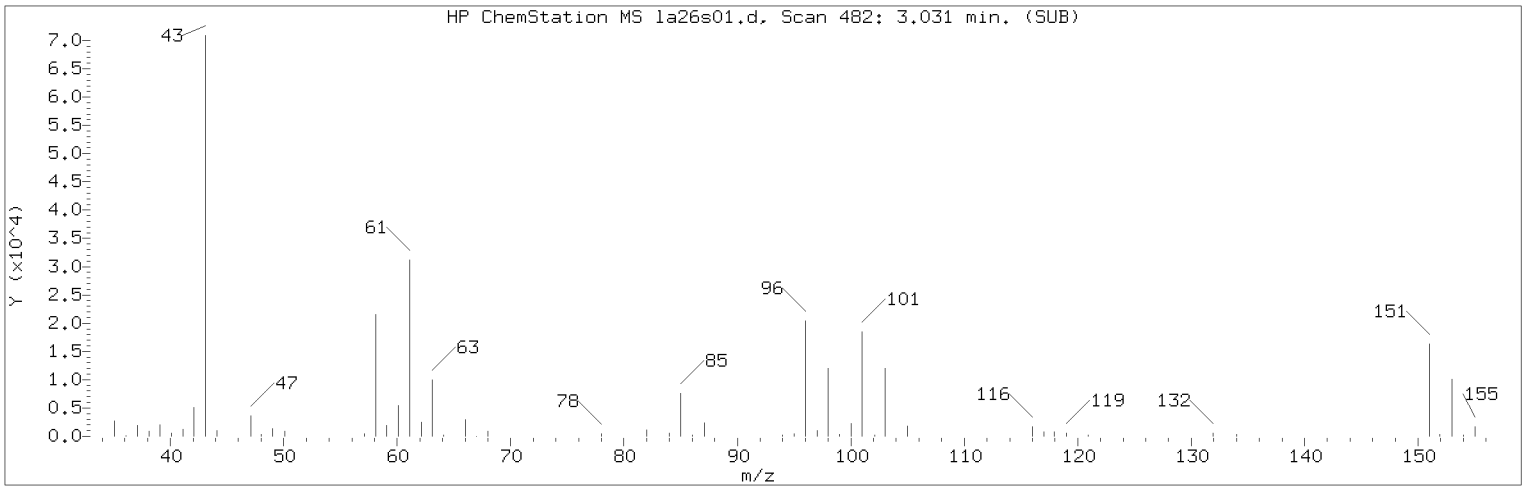
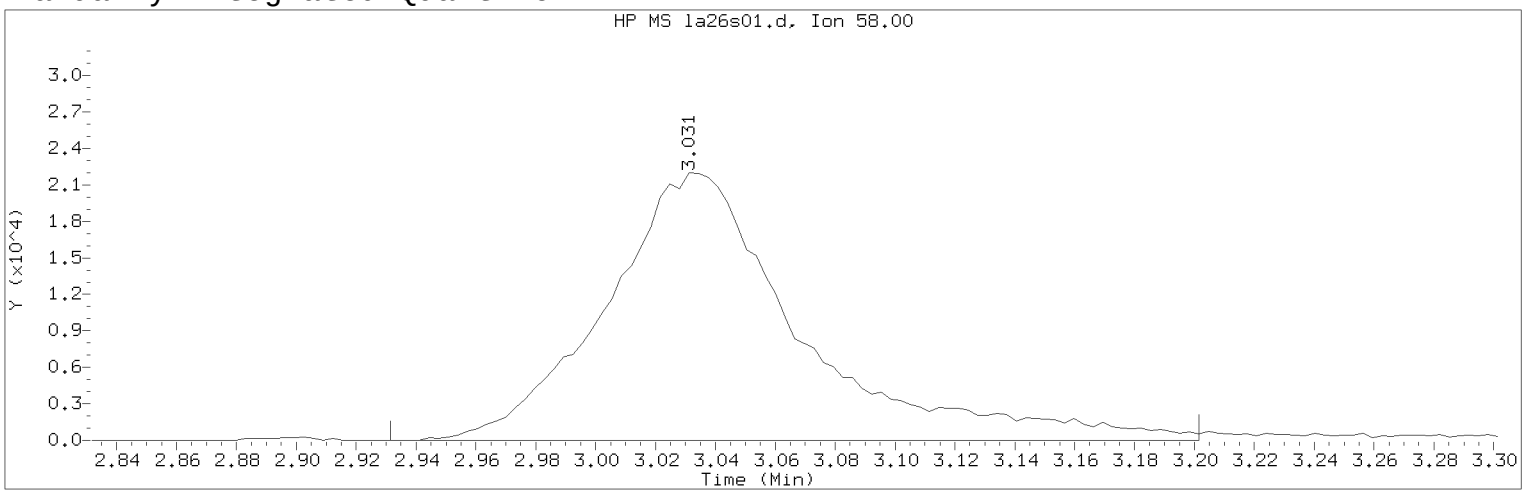
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

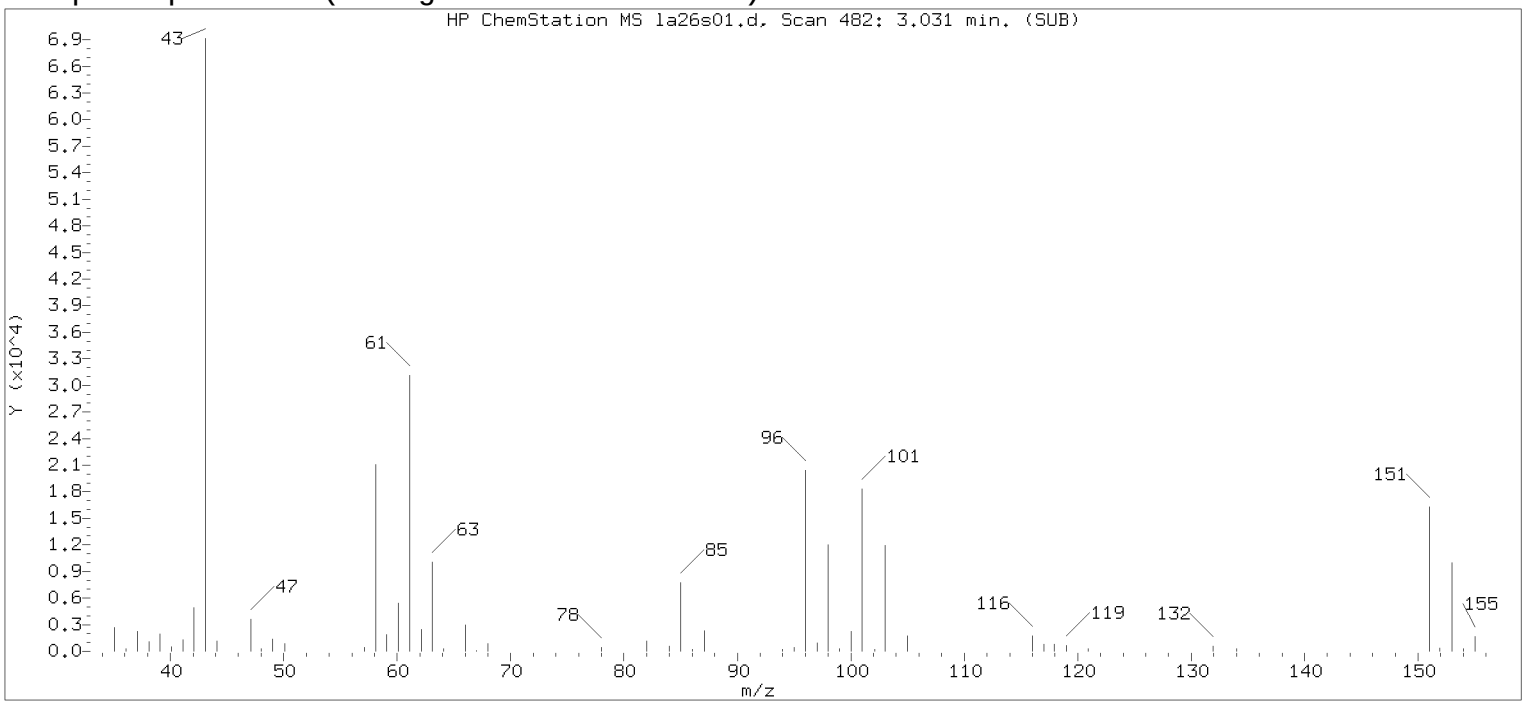
Compound Number : 18
Compound Name : Acetone
Scan Number : 482
Retention Time (minutes): 3.031
Quant Ion : 58.00
Area (flag) : 98646M
On-Column Amount (ng) : 138.3860
Integration start scan : 450 Integration stop scan: 534
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

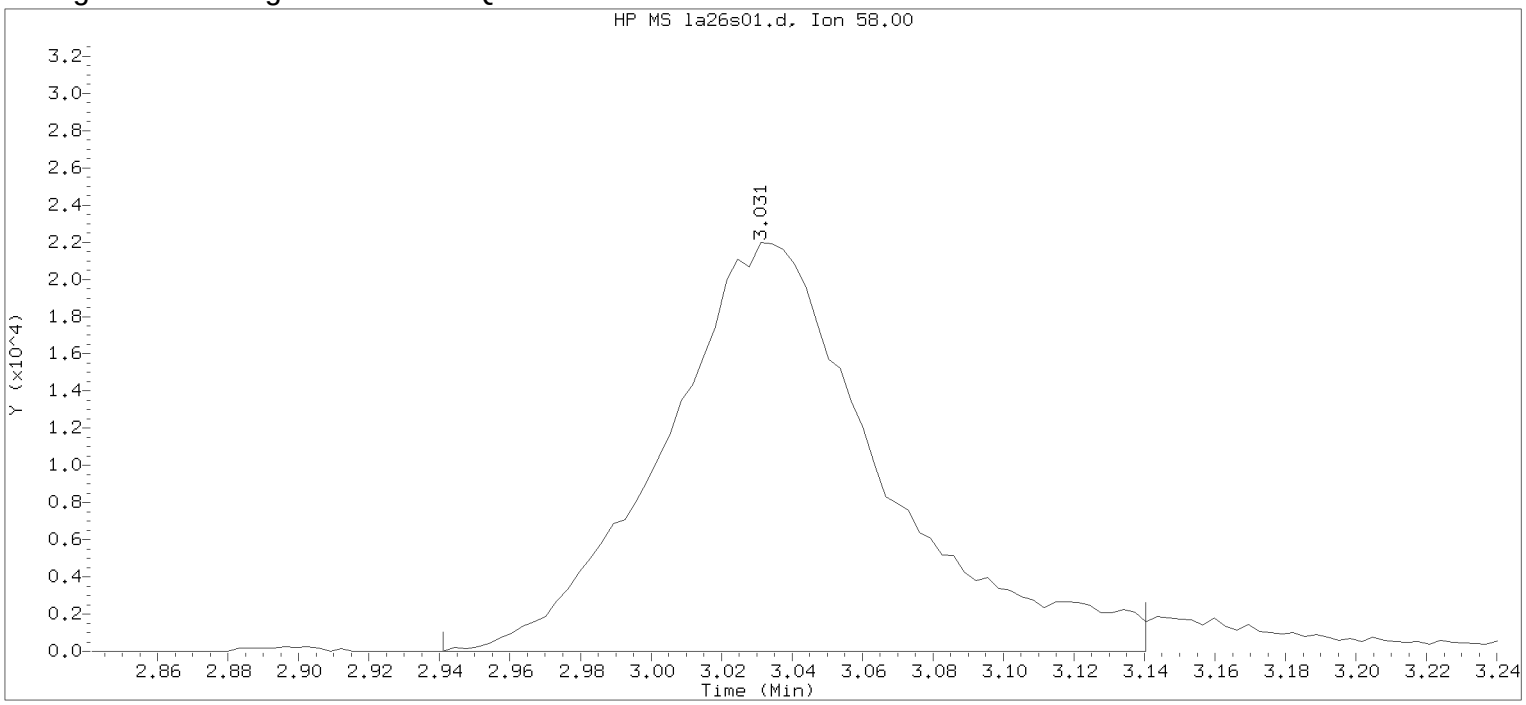
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

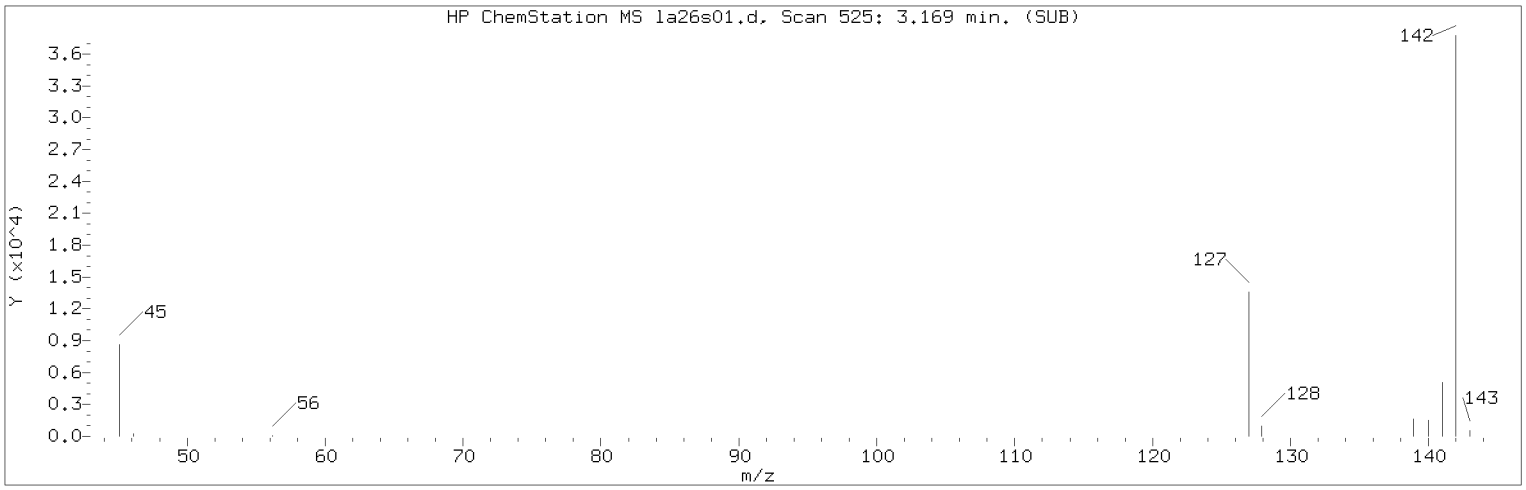
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

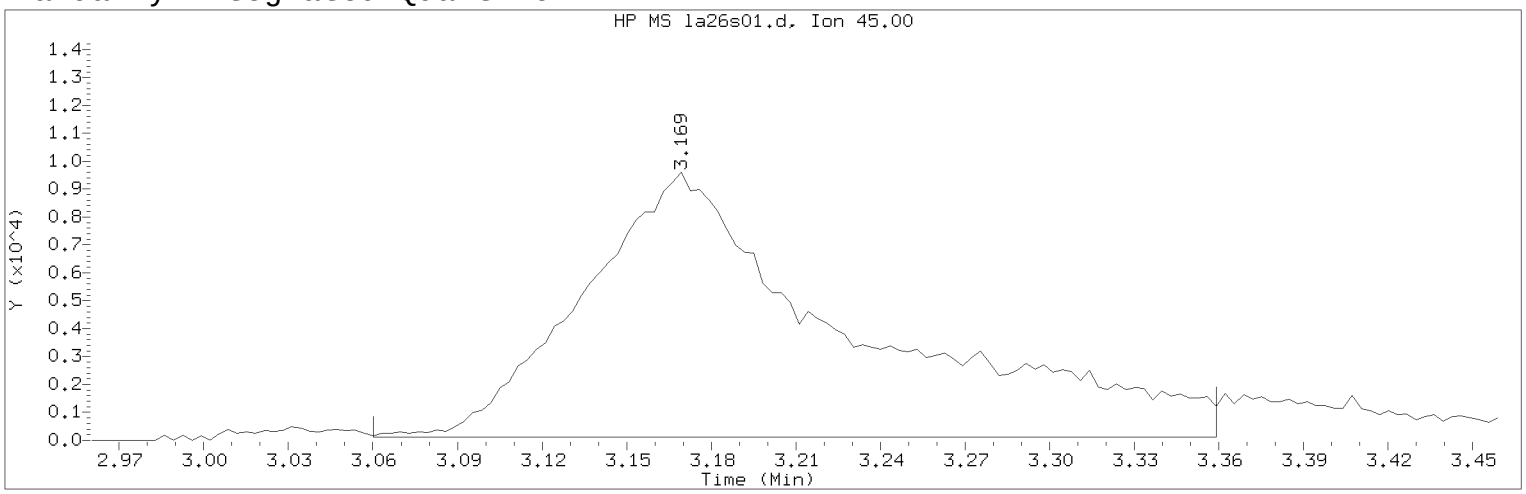
Compound Number : 18
Compound Name : Acetone
Scan Number : 482
Retention Time (minutes): 3.031
Quant Ion : 58.00
Area : 94153
On-column Amount (ng) : 140.9555
Integration start scan : 453 Integration stop scan: 515
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648 RD90kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

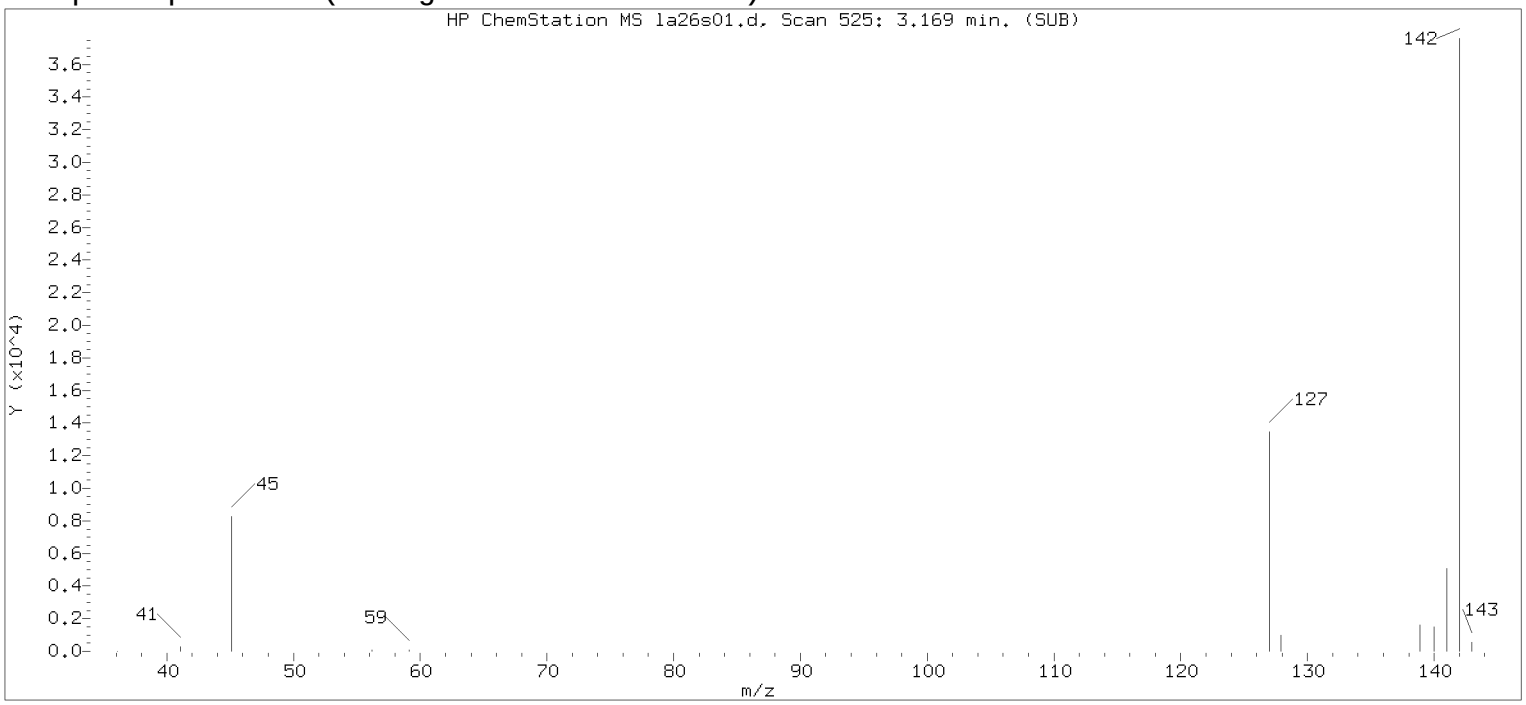
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area (flag) : 62534M
On-Column Amount (ng) : 132.3351
Integration start scan : 490 Integration stop scan: 583
Y at integration start : 121 Y at integration end: 121

Reason for manual integration: improper integration

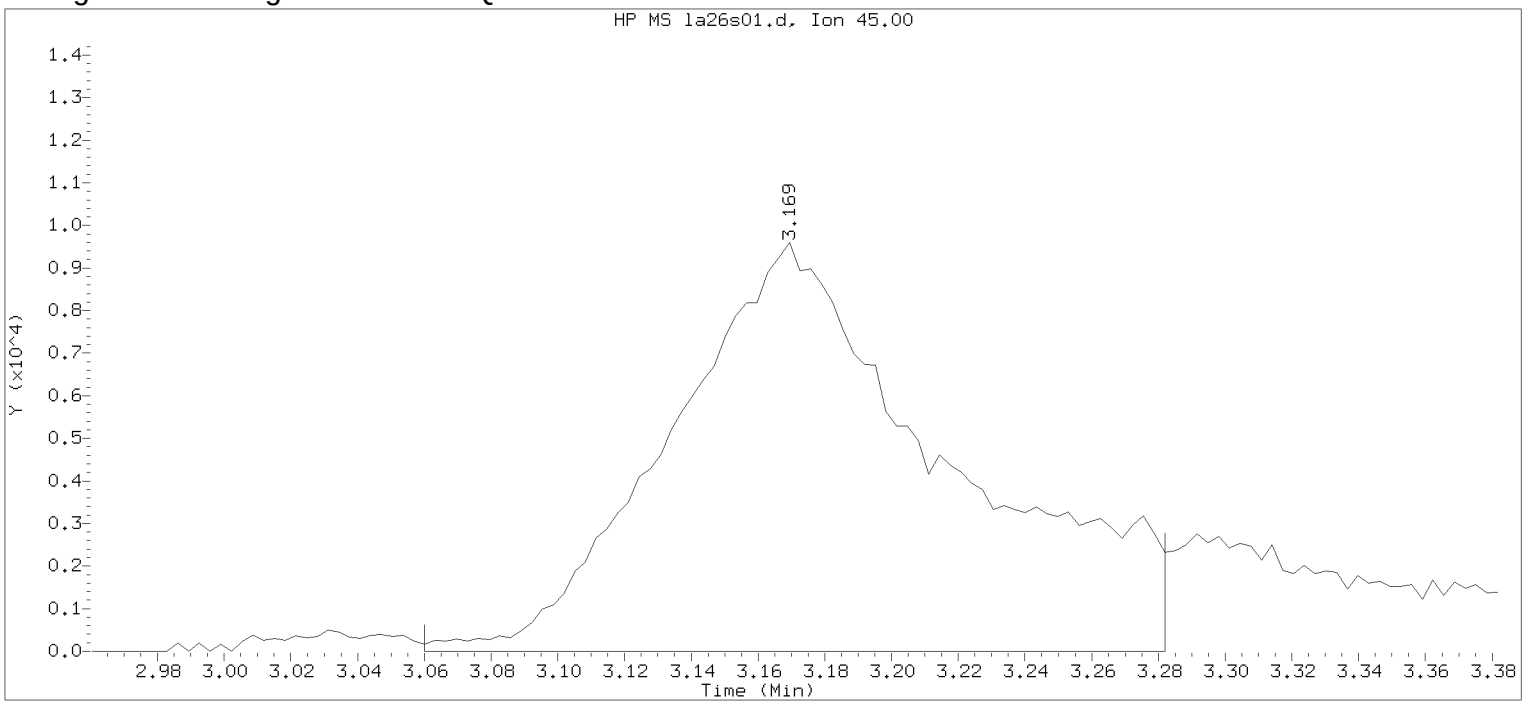
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area : 55120
On-column Amount (ng) : 124.4820
Integration start scan : 490 Integration stop scan: 559
Y at integration start : 0 Y at integration end: 0

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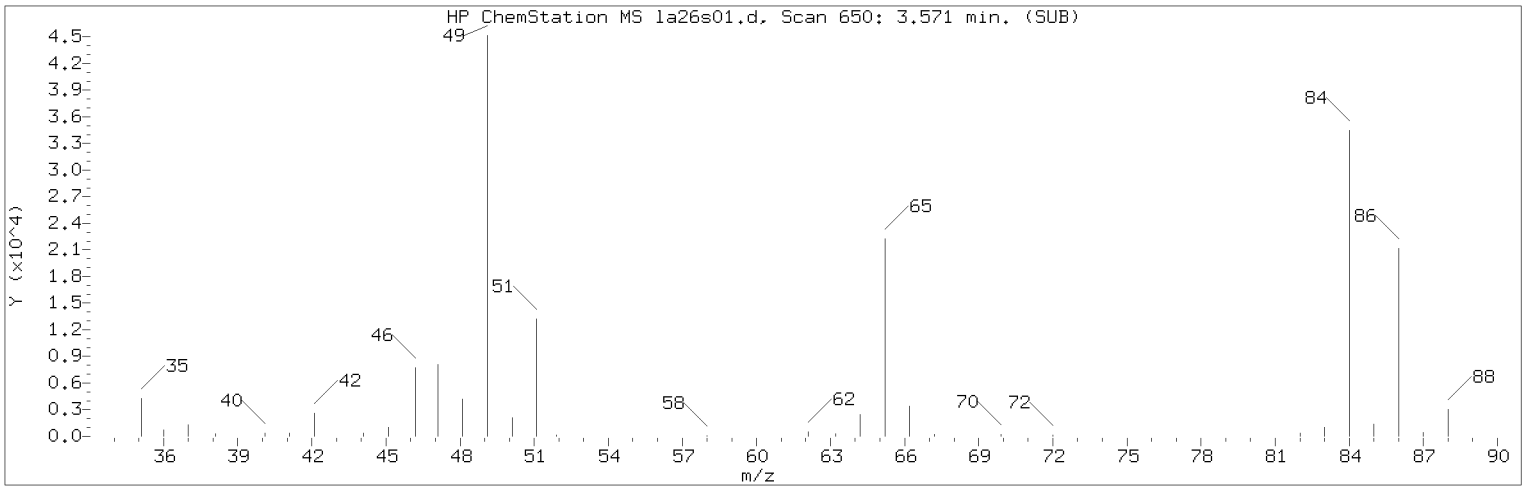
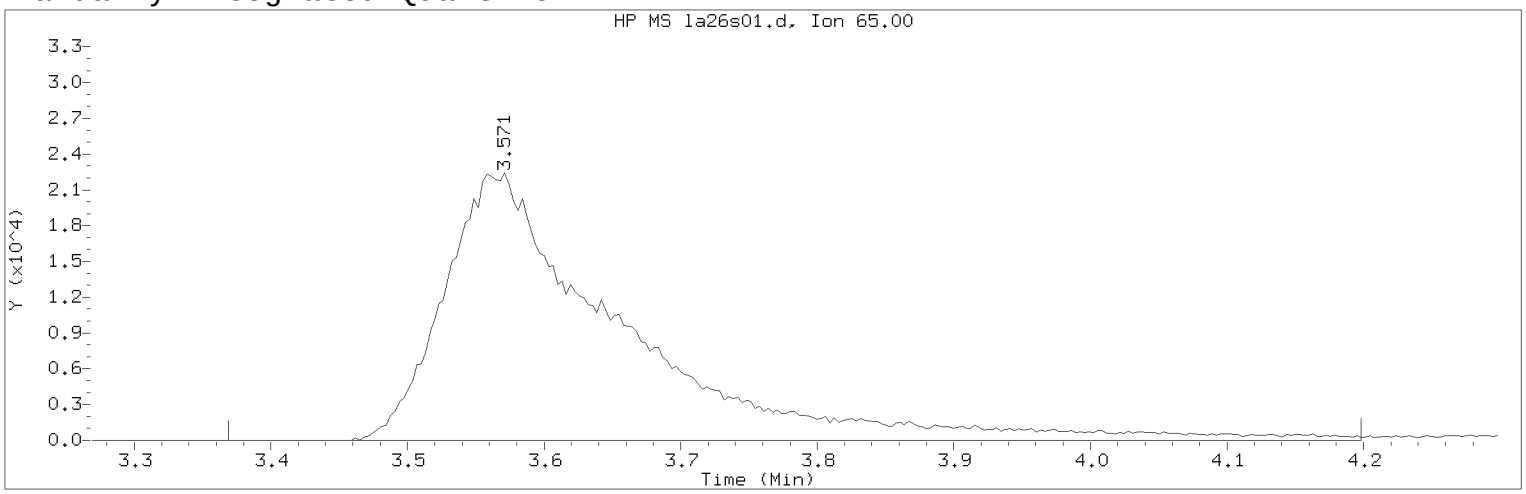
Target 3.5 esignature userKAS02648 RD90

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

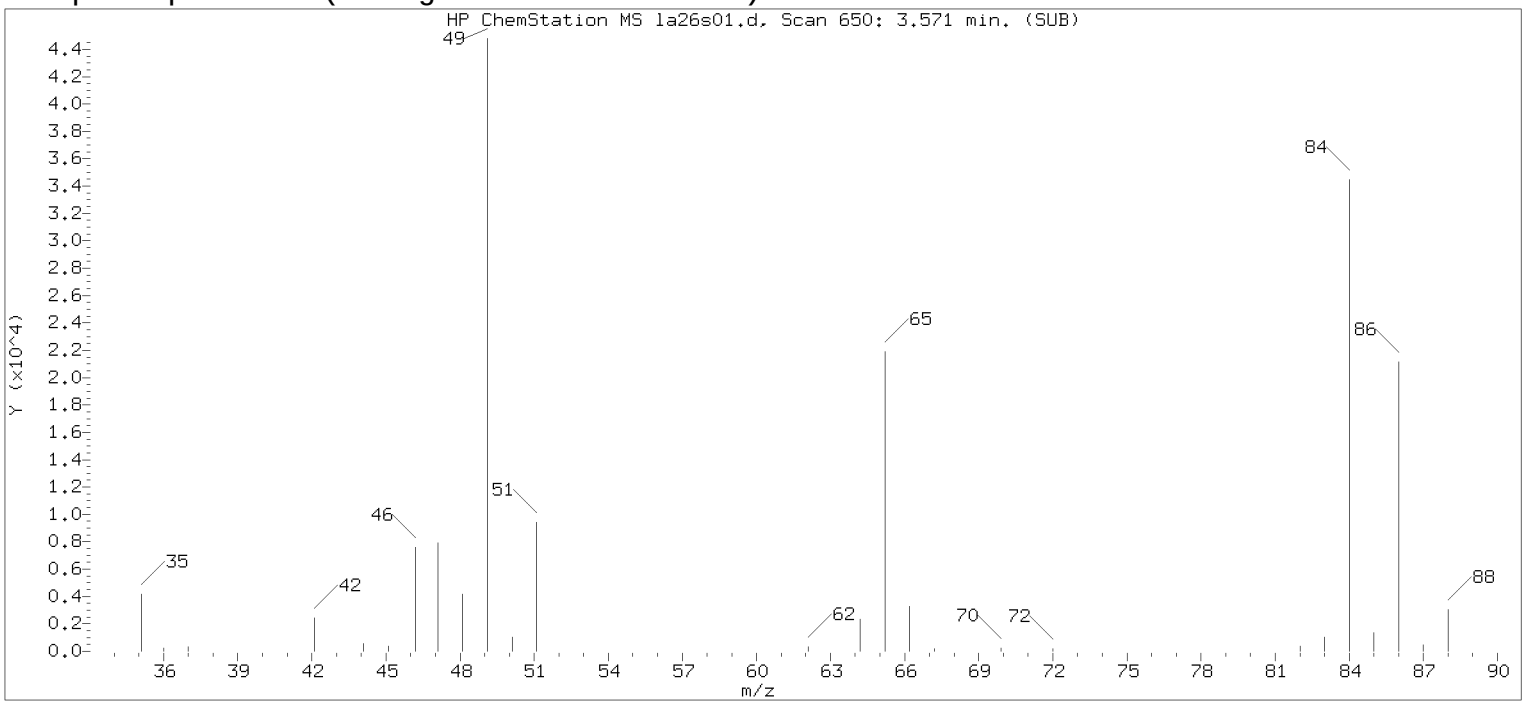
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area (flag) : 200632M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 844
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

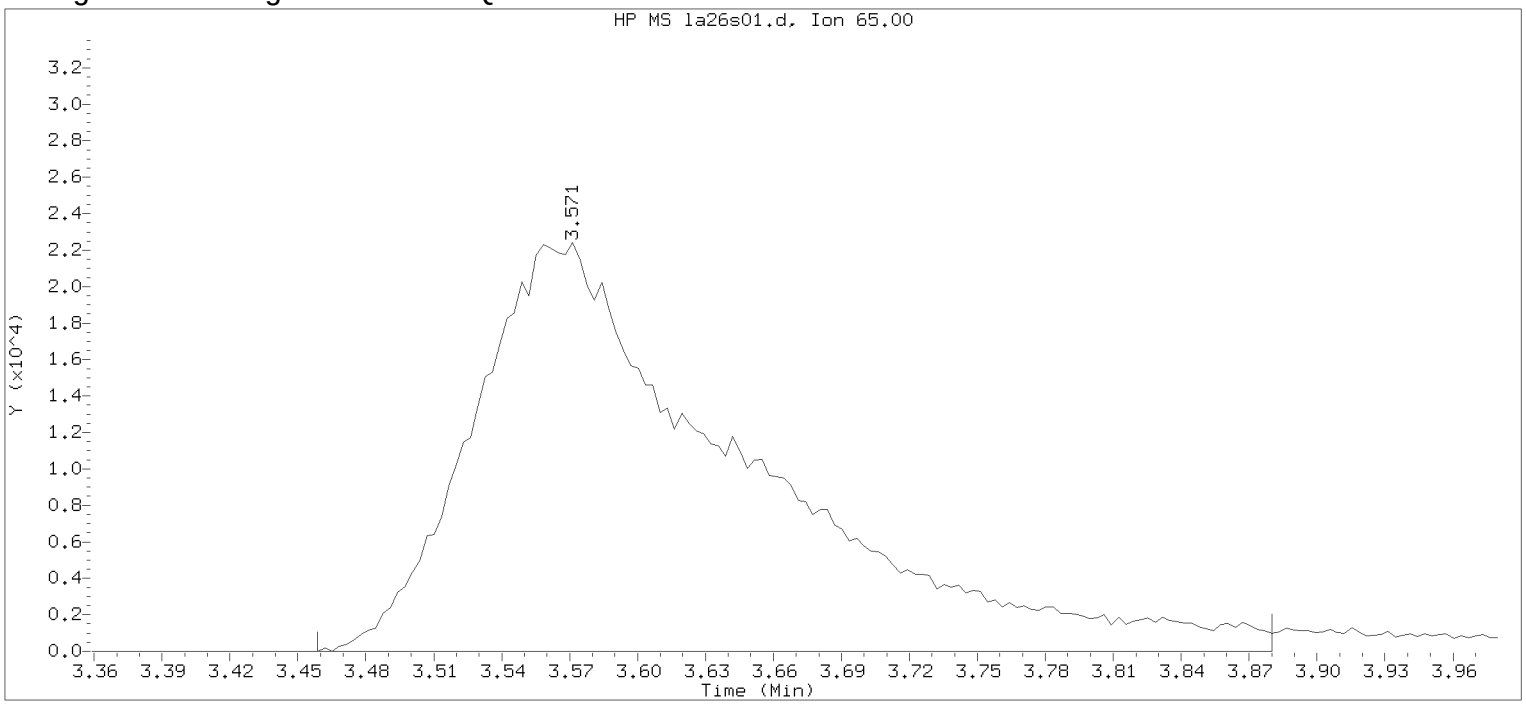
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

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Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area : 188003
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 745
Y at integration start : 0 Y at integration end: 0

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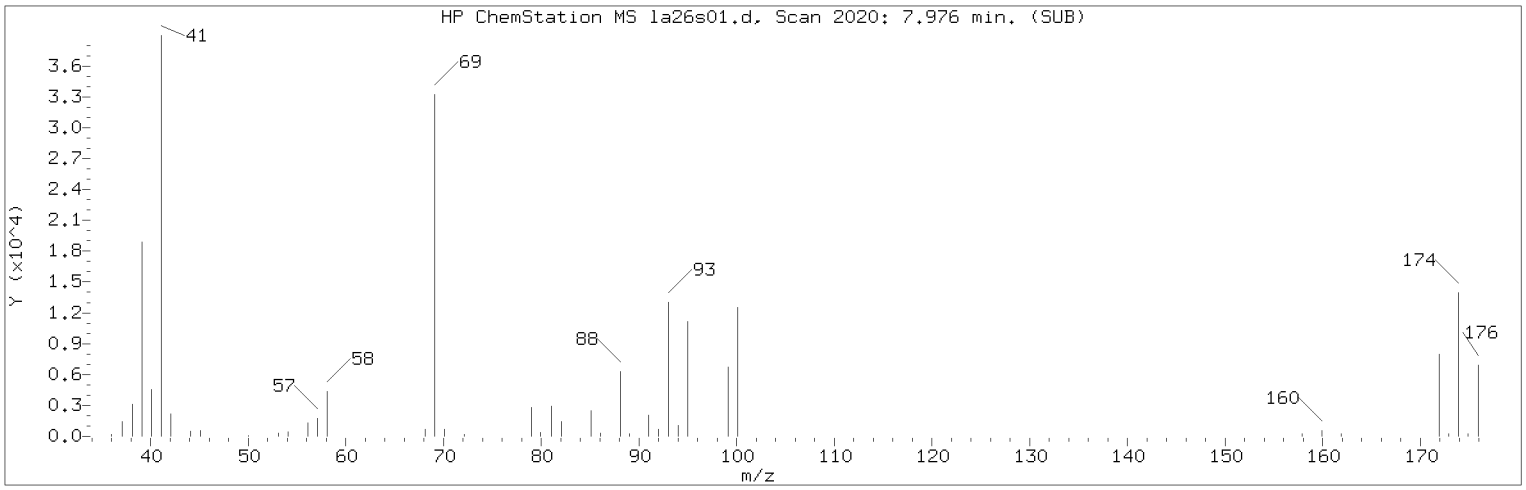
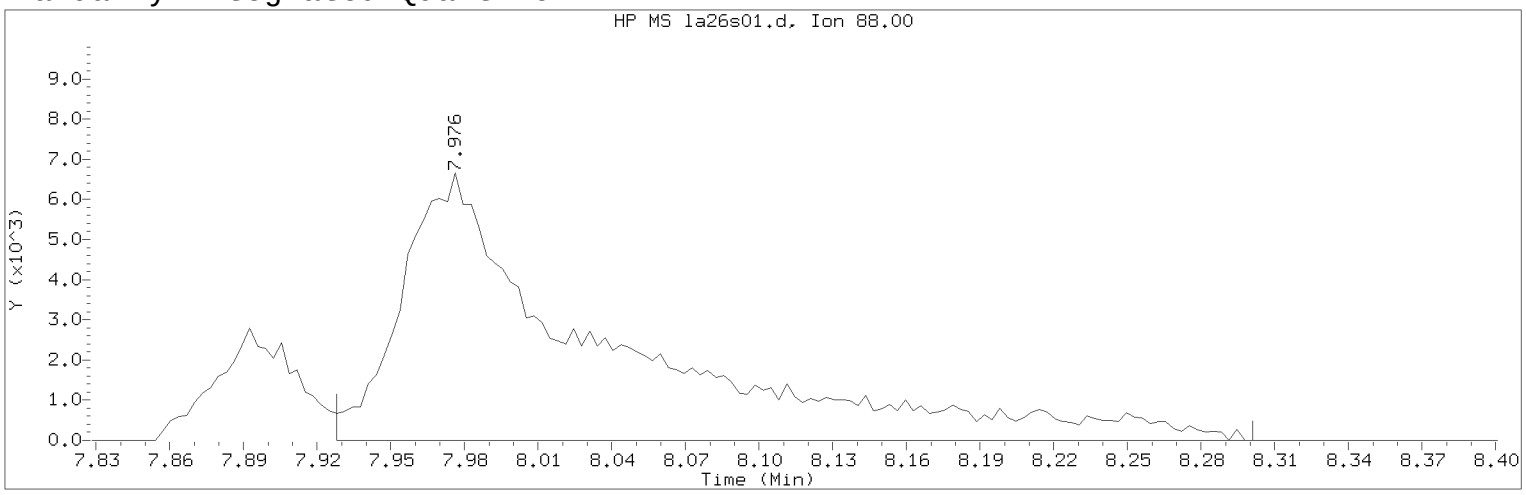
Target 3.5 esignature userKAS02648 R0190

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

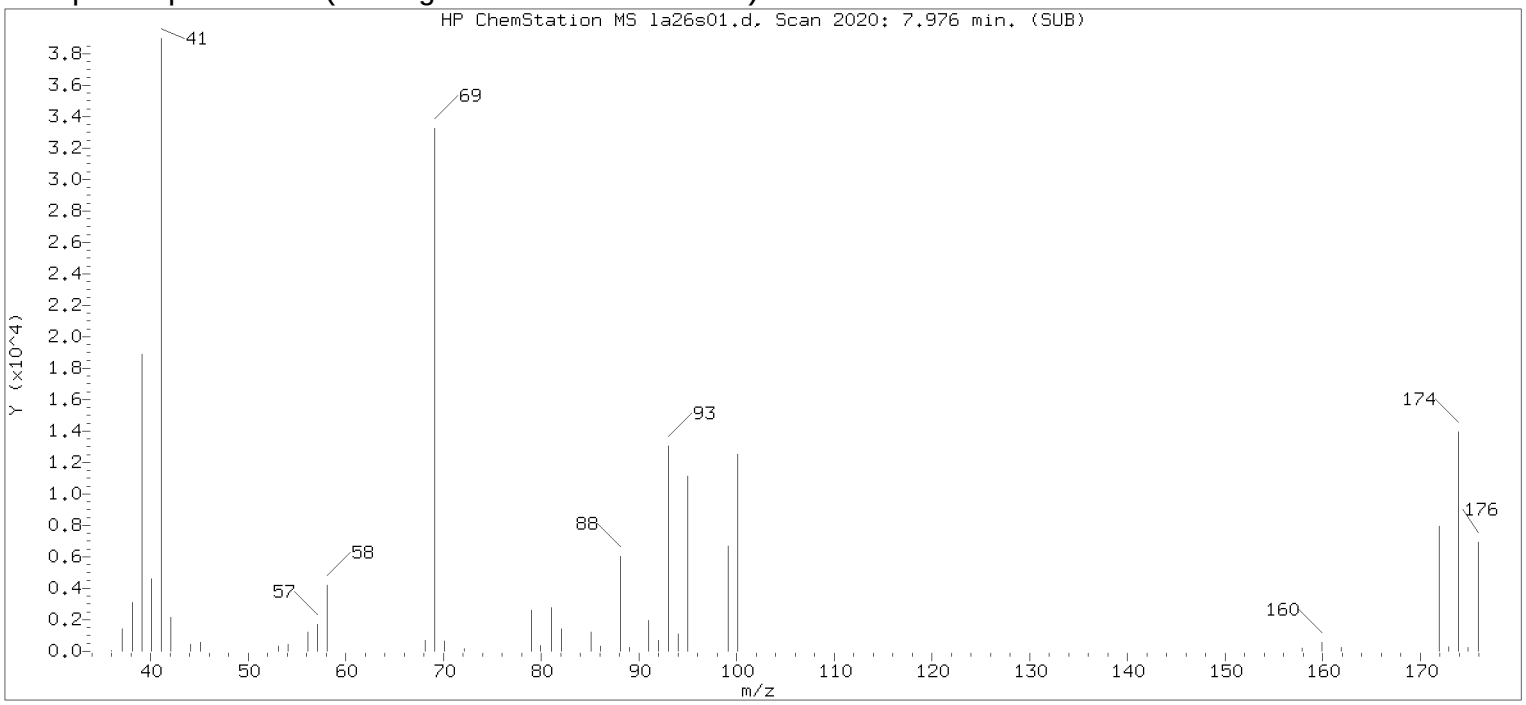
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 37891M
On-Column Amount (ng) : 552.4123
Integration start scan : 2004 Integration stop scan: 2120
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

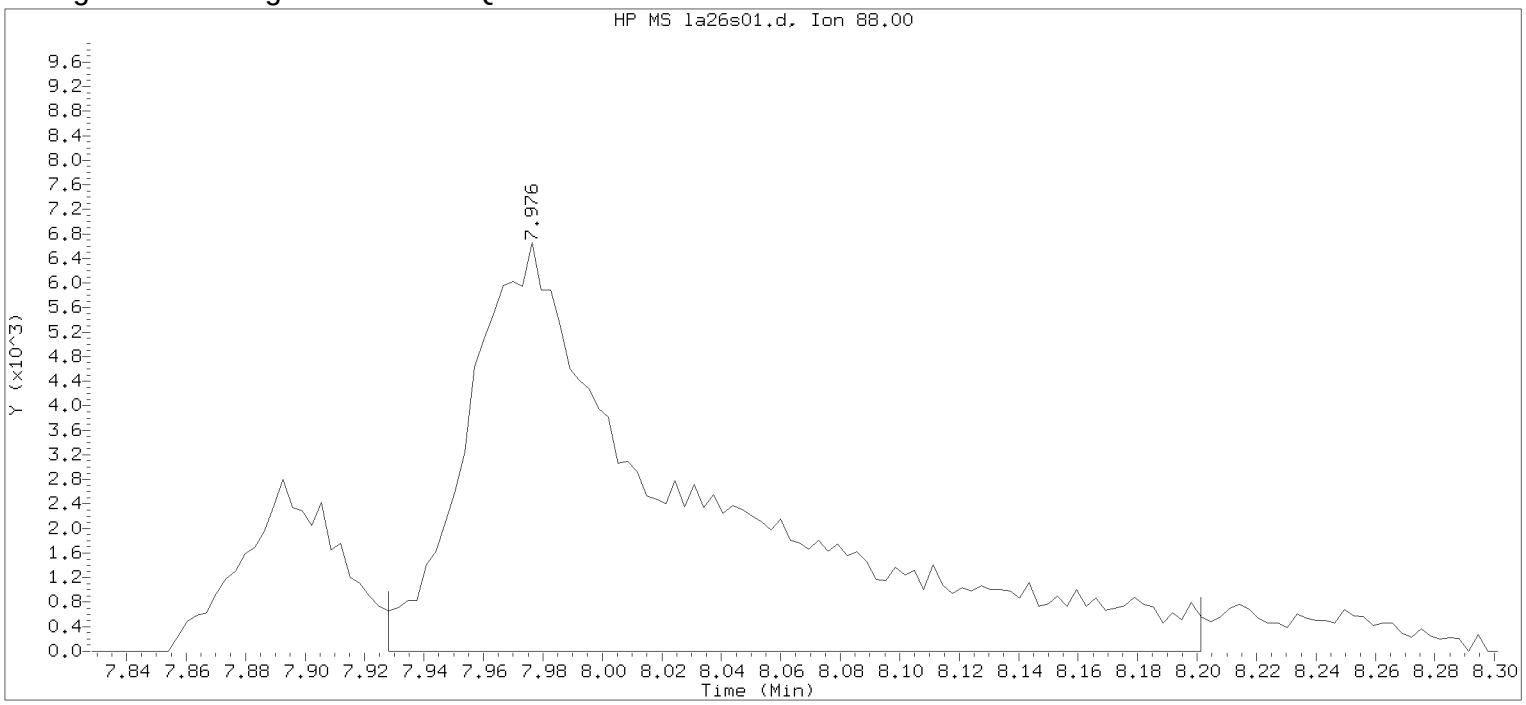
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

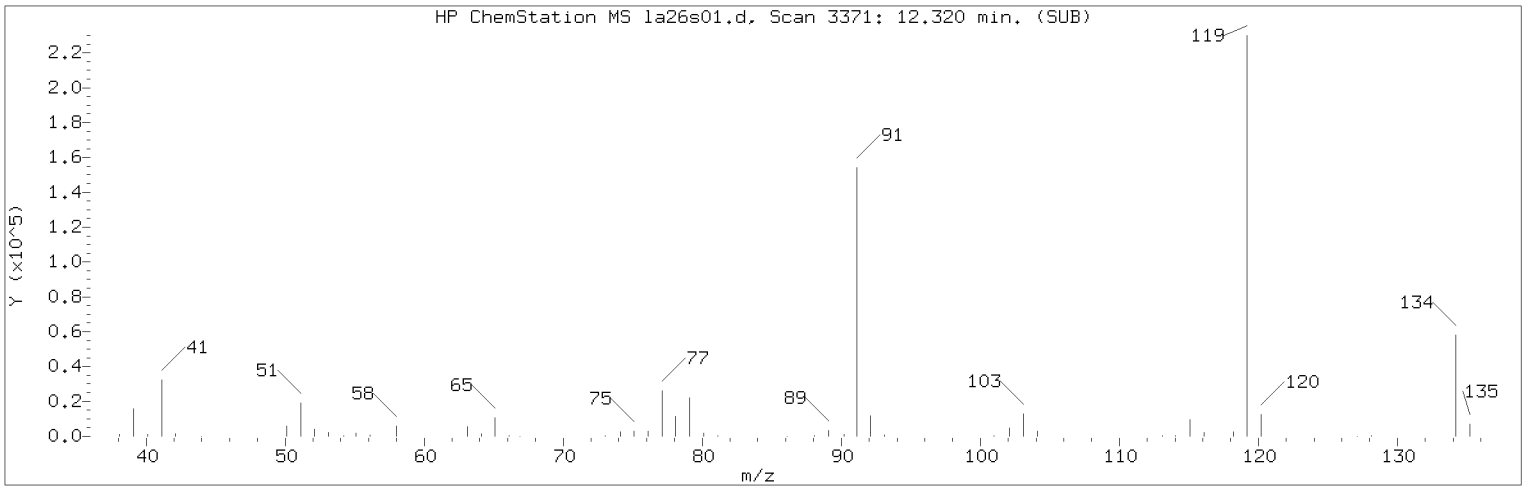
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

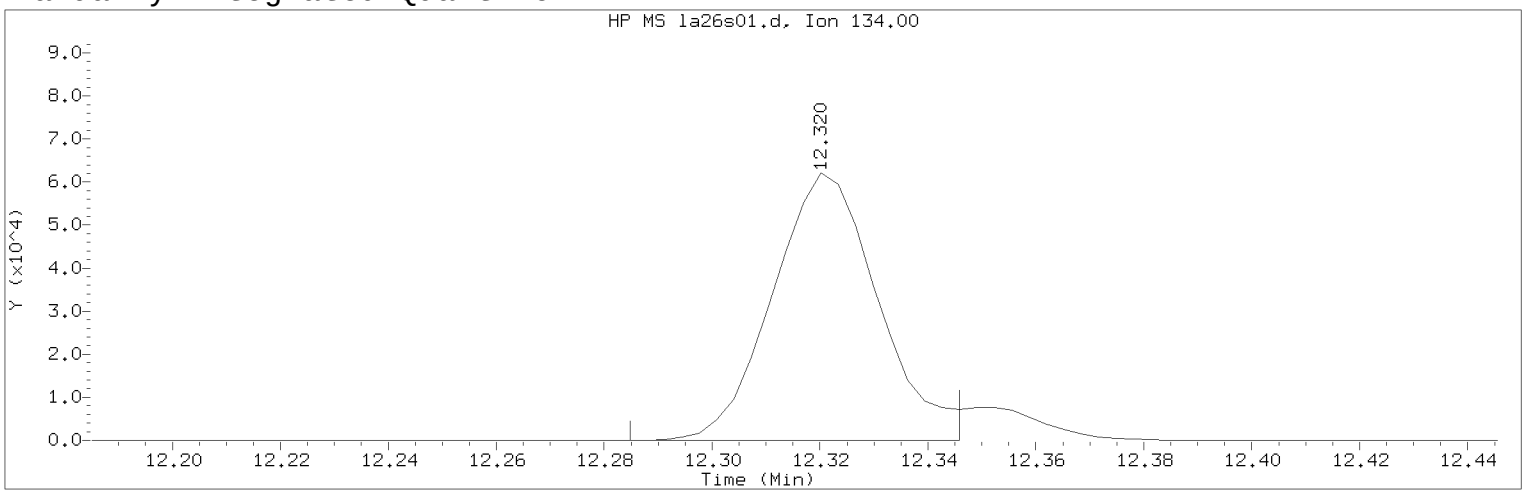
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area : 35295
On-column Amount (ng) : 549.1313
Integration start scan : 2004 Integration stop scan: 2089
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

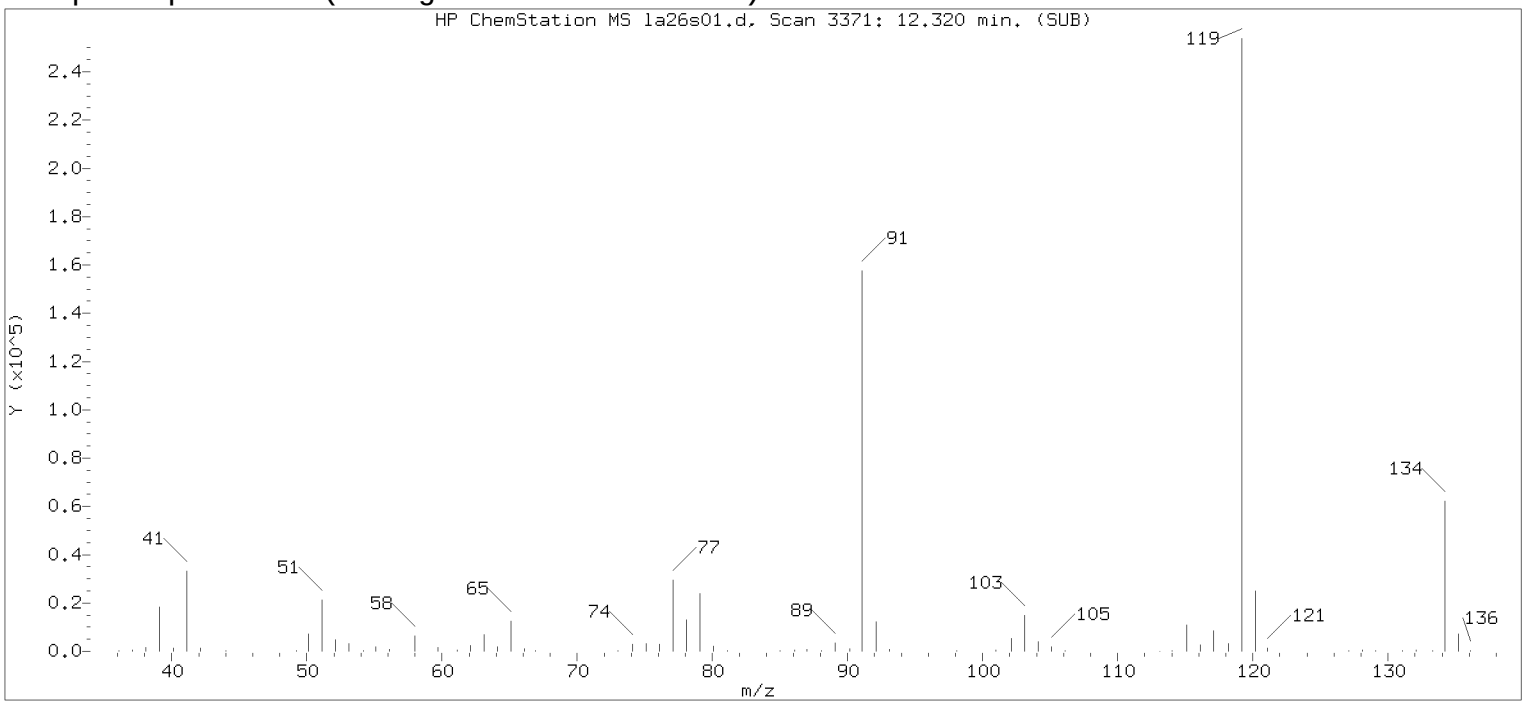
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 84253M
On-Column Amount (ng) : 19.7040
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

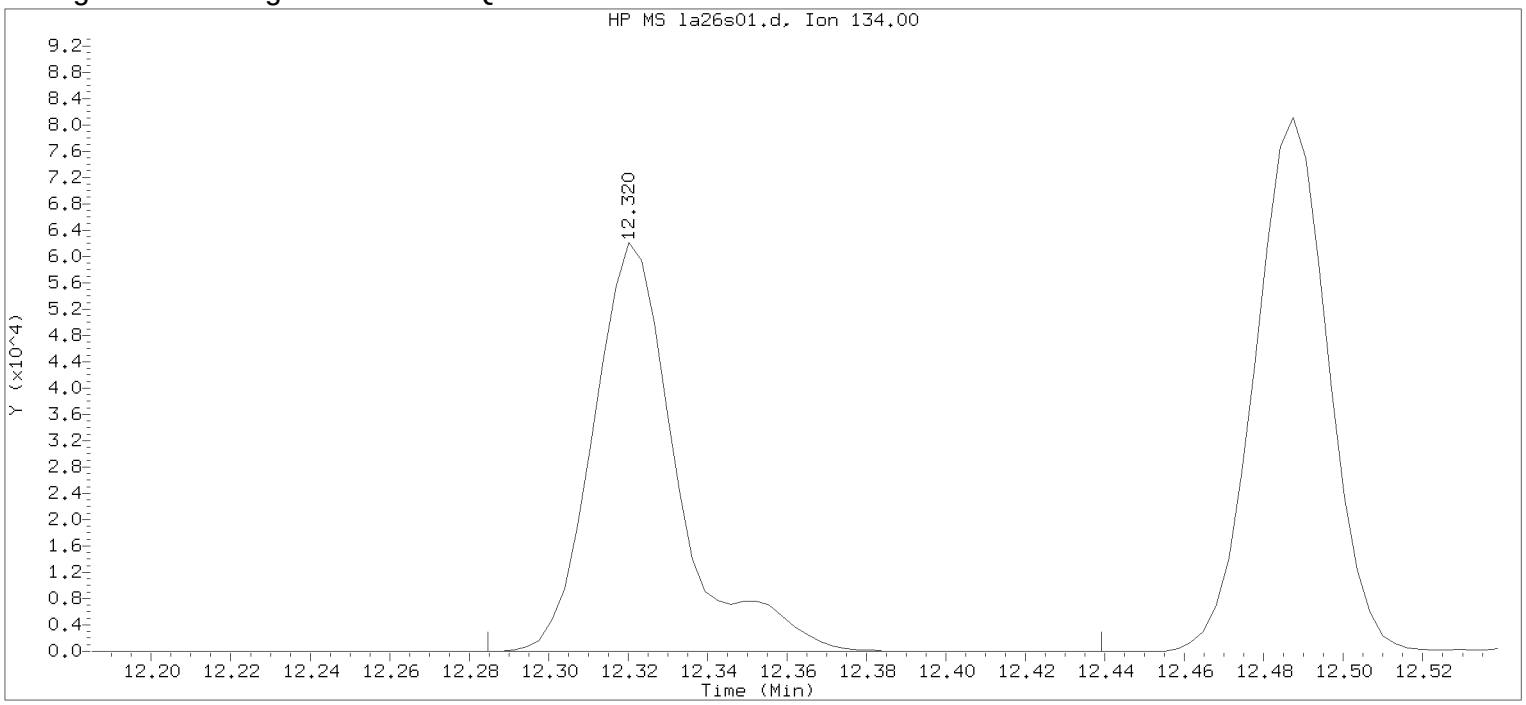
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



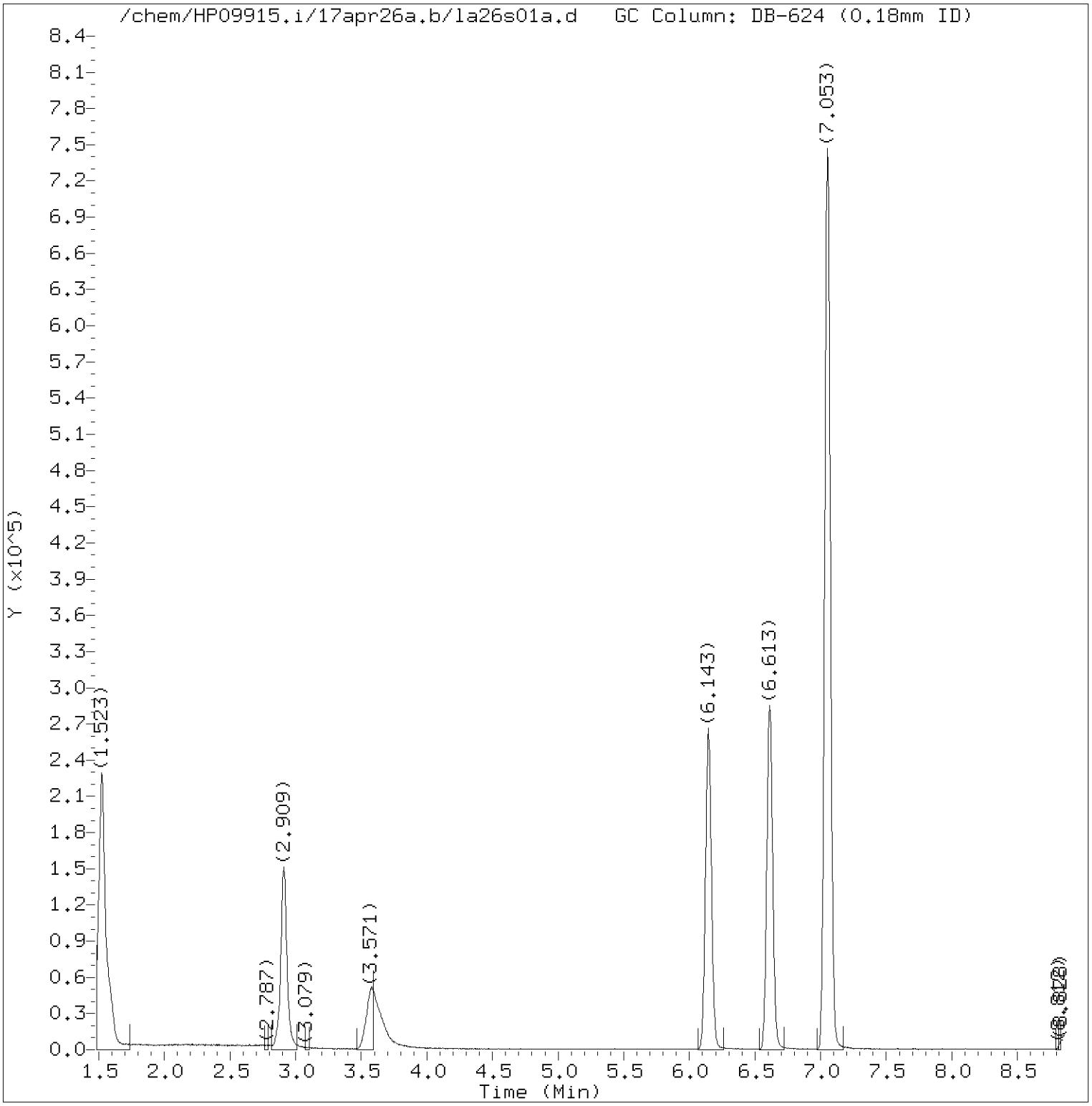

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 91347
On-column Amount (ng) : 21.3630
Integration start scan : 3359 Integration stop scan: 3407
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

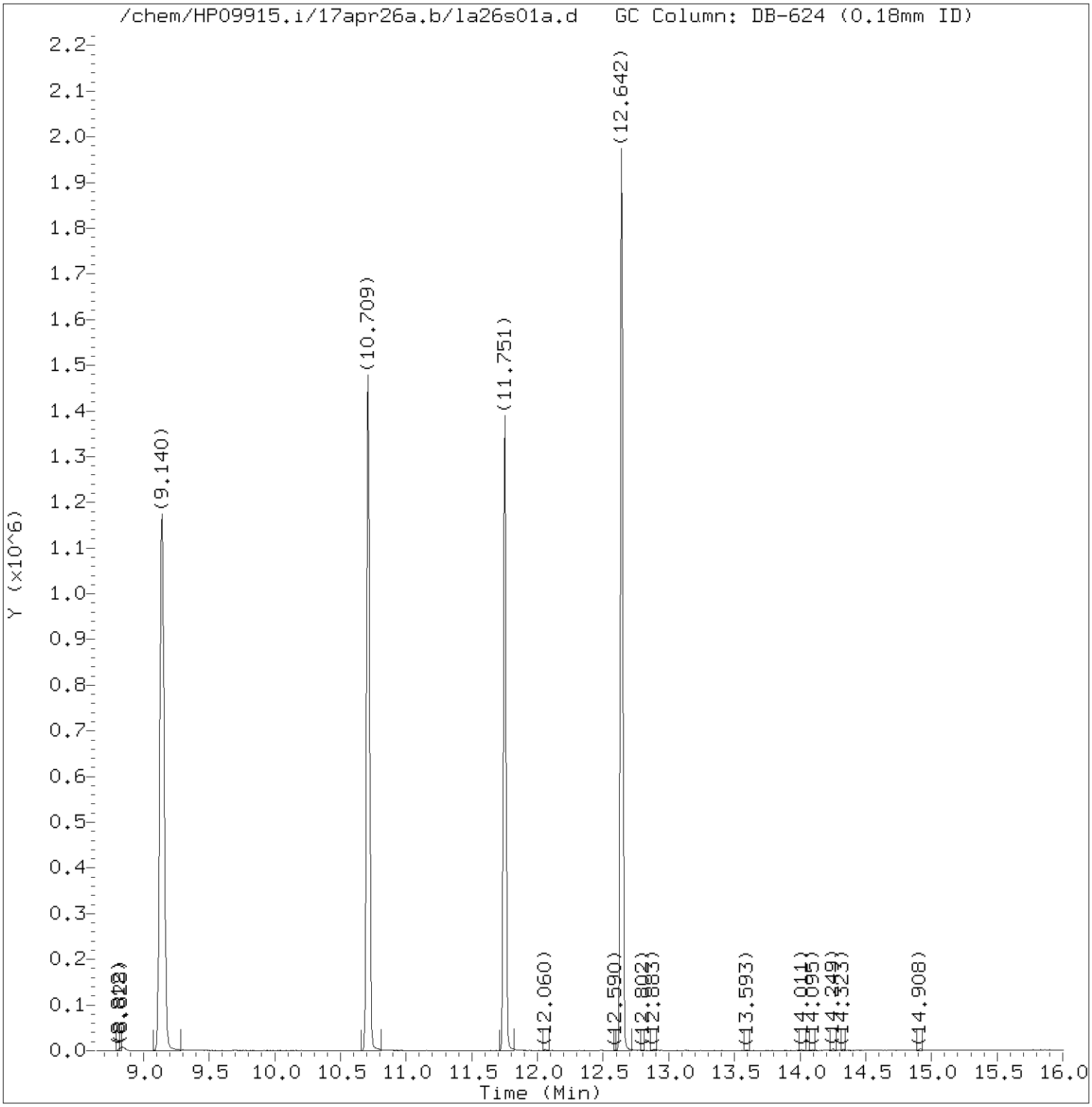
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV  Lab Sample ID: ACRICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 16) Acrolein | (1) | 2.909 | 56 | 230830 | 133.301 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 211536 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 268241 | 49.042 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 67821 | 49.864 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1120094 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1090751 | 50.311 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 849095 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 400969 | 49.759 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 459516 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17jul26b.b/l126t05.d

Page 1

Date : 26-JUL-2017 19:52

Client ID: BFBFeb20-17

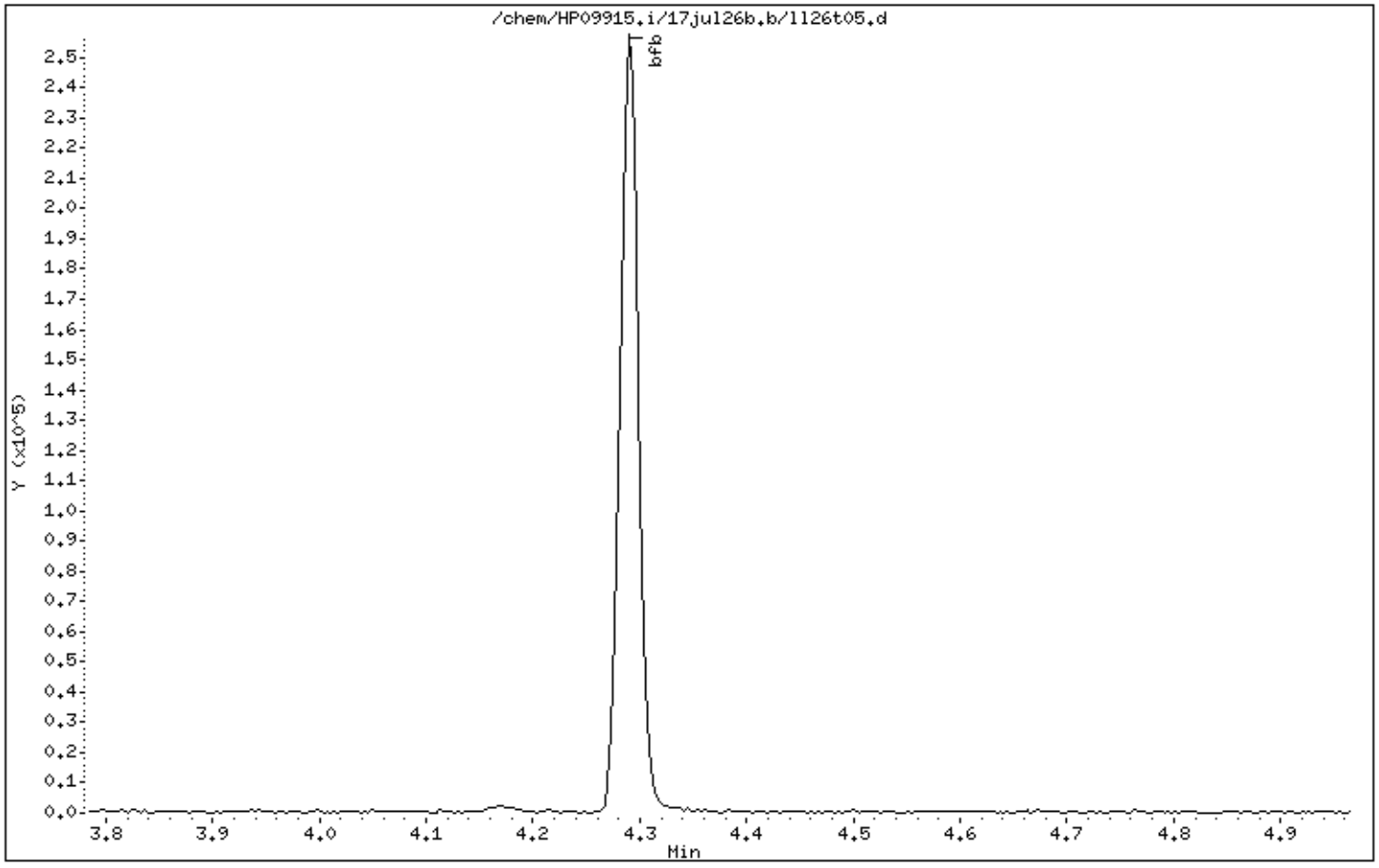
Instrument: HP09915.i

Sample Info: BFBFeb20-17;50NGBFB;1;3;;;;;;

Operator: kk10002

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin Kelly on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002

Data File: /chem/HP09915.i/17jul26b.b/l126t05.d

Date : 26-JUL-2017 19:52

Client ID: BFBFeb20-17

Instrument: HP09915.i

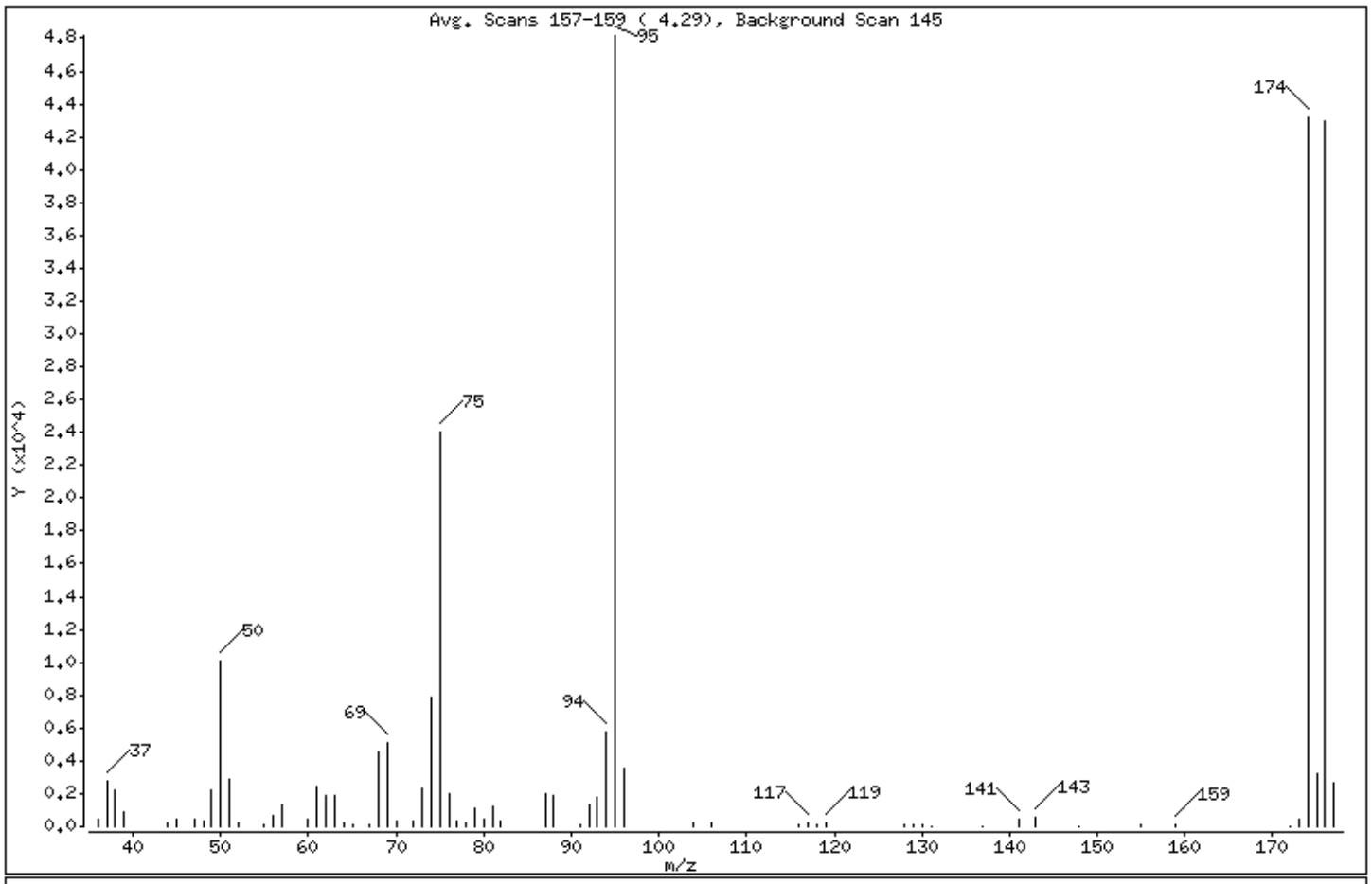
Sample Info: BFBFeb20-17;50NGBFB;1;3;;;;;;

Operator: kk10002

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 20.90 |
| 75 | 30.00 - 60.00% of mass 95 | 49.92 |
| 96 | 5.00 - 9.00% of mass 95 | 7.27 |
| 173 | Less than 2.00% of mass 174 | 0.98 ( 1.10) |
| 174 | 50.00 - 100.00% of mass 95 | 89.67 |
| 175 | 5.00 - 9.00% of mass 174 | 6.78 ( 7.56) |
| 176 | 95.00 - 101.00% of mass 174 | 89.20 ( 99.47) |
| 177 | 5.00 - 9.00% of mass 176 | 5.45 ( 6.11) |

Digitally signed by Kevin Kelly on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002

Date : 26-JUL-2017 19:52

Client ID: BFBFeb20-17 Instrument: HP09915.i

Sample Info: BFBFeb20-17;50NGBFB;1;3;;;;;;

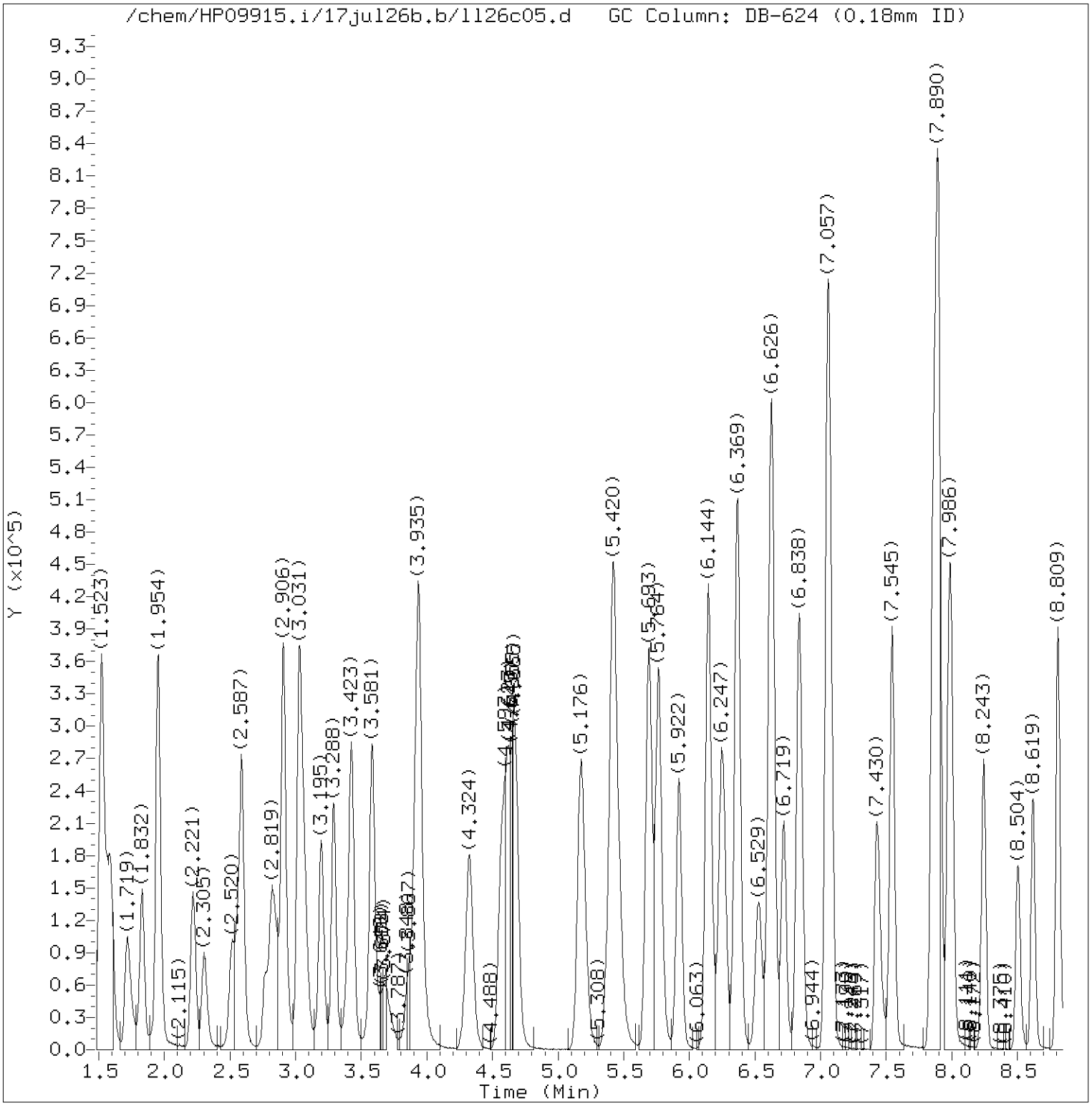
Operator: kk10002

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: l126t05.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 145
Location of Maximum: 95.00
Number of points: 66

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 400 | 62.00 | 1890 | 81.00 | 1239 | 129.00 | 62 |
| 37.00 | 2815 | 63.00 | 1857 | 82.00 | 284 | 130.00 | 60 |
| 38.00 | 2179 | 64.00 | 220 | 87.00 | 2025 | 131.00 | 55 |
| 39.00 | 883 | 65.00 | 71 | 88.00 | 1893 | 137.00 | 50 |
| 44.00 | 245 | 67.00 | 67 | 91.00 | 166 | 141.00 | 401 |
| 45.00 | 495 | 68.00 | 4555 | 92.00 | 1286 | 143.00 | 537 |
| 47.00 | 442 | 69.00 | 5051 | 93.00 | 1746 | 148.00 | 51 |
| 48.00 | 370 | 70.00 | 384 | 94.00 | 5757 | 155.00 | 58 |
| 49.00 | 2244 | 72.00 | 343 | 95.00 | 48160 | 159.00 | 93 |
| 50.00 | 10064 | 73.00 | 2285 | 96.00 | 3499 | 172.00 | 54 |
| 51.00 | 2852 | 74.00 | 7843 | 104.00 | 239 | 173.00 | 474 |
| 52.00 | 171 | 75.00 | 24040 | 106.00 | 202 | 174.00 | 43184 |
| 55.00 | 124 | 76.00 | 1938 | 116.00 | 97 | 175.00 | 3265 |
| 56.00 | 657 | 77.00 | 338 | 117.00 | 274 | 176.00 | 42960 |
| 57.00 | 1278 | 78.00 | 226 | 118.00 | 79 | 177.00 | 2626 |
| 60.00 | 454 | 79.00 | 1060 | 119.00 | 176 | | |
| 61.00 | 2423 | 80.00 | 409 | 128.00 | 120 | | |

Digitally signed by Kevin Kelly on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

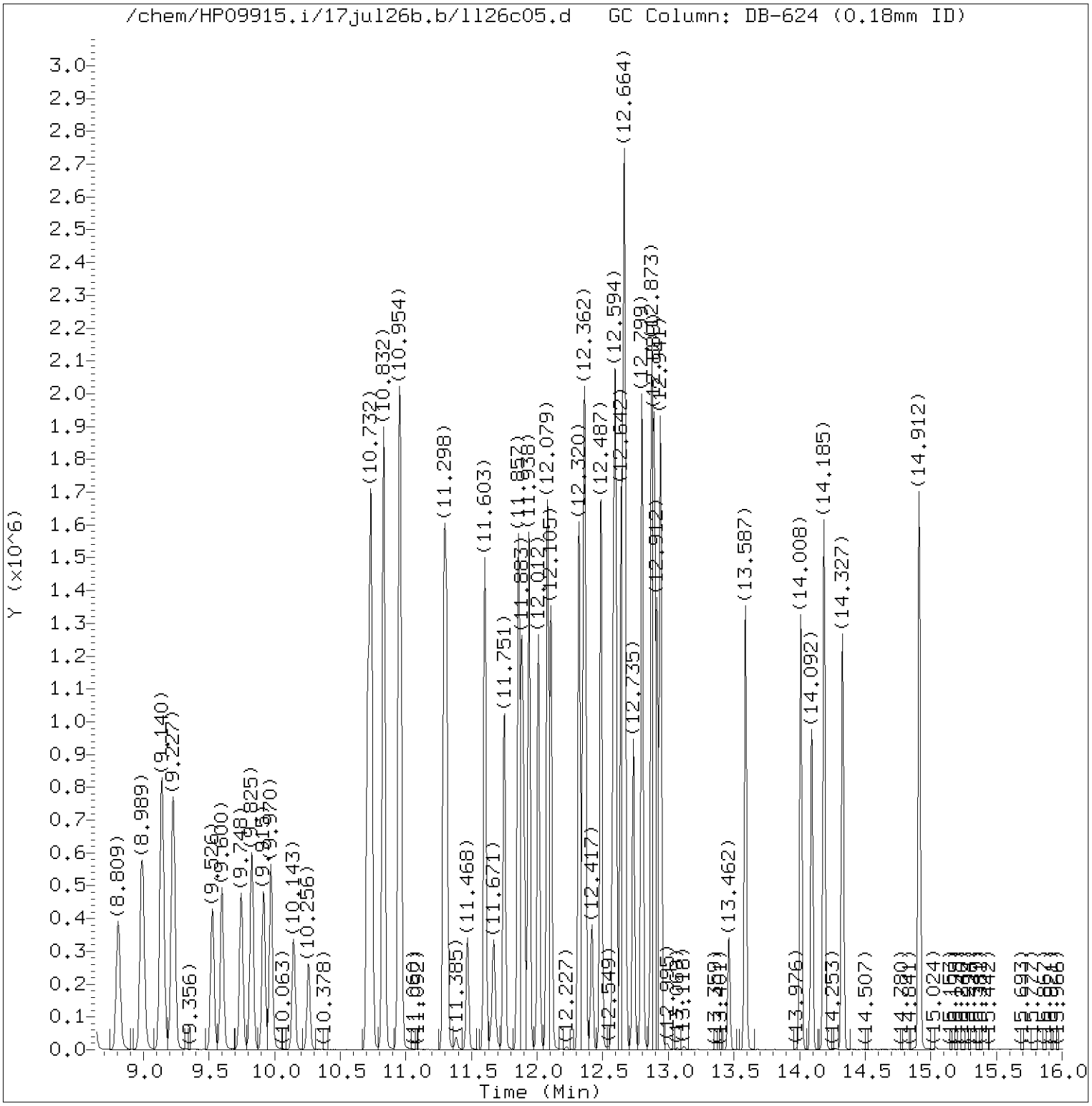
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26c05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:34 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:02 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin Kelly
on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26c05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:34 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:02 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin Kelly
on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26c05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:34 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:02 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.719 | 85 | 219080 | 52.404 |
| 4) Chloromethane | (2) | 1.832 | 50 | 209352 | 48.746 |
| 6) Vinyl Chloride | (2) | 1.948 | 62 | 200869 | 48.435 |
| 5) 1,3-Butadiene | (2) | 1.957 | 39 | 164714 | 65.115 |
| 8) Bromomethane | (2) | 2.218 | 94 | 146052 | 52.360 |
| 9) Chloroethane | (2) | 2.305 | 64 | 115062 | 49.231 |
| 12) Trichlorofluoromethane | (2) | 2.552 | 101 | 273928 | 57.039 |
| 11) n-Pentane | (2) | 2.591 | 43 | 183925 | 46.503 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 44040 | 16.472 |
| 15) Freon 123a | (2) | 2.829 | 67 | 167284 | 52.304 |
| 16) Acrolein | (1) | 2.906 | 56 | 465622 | 433.185 |
| 17) 1,1-Dichloroethene | (2) | 3.022 | 96 | 122556 | 48.217 |
| 17) 1,1-Dichloroethene | (2) | 3.022 | 63 | 65858 | 51.181 |
| 18) Acetone | (1) | 3.044 | 58 | 42935 | 92.032 |
| 19) Freon 113 | (2) | 3.063 | 101 | 129368 | 50.565 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 78388 | 253.467 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 267726 | 54.303 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 440210 | 53.220 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 164544 | 44.602 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 227374 | 44.660 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 131306 | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 152991 | 45.563 |
| 30) t-Butyl alcohol | (1) | 3.687 | 59 | 140254 | 276.066 |
| 31) Acrylonitrile | (2) | 3.858 | 53 | 88494 | 45.679 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.919 | 73 | 483662 | 51.942 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 151195 | 50.699 |
| 34) n-Hexane | (2) | 4.327 | 57 | 173345 | 37.919 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 274637 | 49.008 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 464453 | 43.182 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 257554 | 54.486 |
| 40) Ethyl t-butyl ether | (2) | 5.176 | 59 | 456666 | 49.335 |
| 44) 2-Butanone | (2) | 5.385 | 43 | 238352 | 91.887 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 170806 | 49.983 |
| 45) 2,2-Dichloropropane | (2) | 5.433 | 77 | 229465 | 61.329 |
| 47) Propionitrile | (1) | 5.468 | 54 | 169761 | 228.944 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 224973 | 116.479 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 97438 | 54.100 |
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 61779 | 94.328 |

* = Compound is an internal standard.



Digitally signed by Kevin Kelly
on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26c05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:34 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:02 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.922 | 83 | 293766 | 54.997 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 182401 | 53.225 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 111 | 187484 | 53.388 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 266183 | 54.535 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 322001 | 100.682 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 229404 | 41.278 |
| 54) Cyclohexane | (2) | 6.243 | 84 | 200296 | 44.084 |
| 54) Cyclohexane | (2) | 6.253 | 69 | 71497 | 44.383 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 221366 | 50.954 |
| 56) Carbon Tetrachloride | (2) | 6.372 | 117 | 220100 | 61.774 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 131000 | 734.404 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 43614 | 51.179 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 244906 | 60.757 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 104 | 27421 | 50.731 |
| 60) Benzene | (2) | 6.632 | 78 | 624872 | 48.793 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 263273 | 60.767 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 21226 | 55.238 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 460861 | 50.166 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 701792 | 50.000 |
| 67) n-Heptane | (2) | 7.079 | 43 | 189677 | 37.059 |
| 69) n-Butanol | (1) | 7.430 | 56 | 202334 | 1407.119 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 171508 | 51.822 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 252833 | 43.358 |
| 72) Methylcyclohexane | (2) | 7.851 | 98 | 116458 | 44.255 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 162071 | 46.230 |
| 76) Methyl Methacrylate | (2) | 7.976 | 69 | 147288 | 49.082 |
| 75) 1,4-Dioxane | (1) | 7.983 | 88 | 34024M | 757.935 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 119423 | 54.168 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 225037 | 56.559 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 142563 | 126.356 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 129797 | 48.164 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 266179 | 51.328 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 508944 | 95.212 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 717325 | 49.460 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 463172 | 48.475 |
| 88) Toluene | (3) | 9.227 | 92 | 408191 | 48.433 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 251055 | 53.124 |
| 91) Ethyl Methacrylate | (3) | 9.597 | 69 | 260175 | 48.877 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26c05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:34 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:02 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 161932 | 49.861 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 200407 | 53.762 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 273110 | 48.465 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 374358 | 92.020 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 517234 | 104.453 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 183538 | 54.562 |
| 99) 1,2-Dibromoethane | (3) | 10.256 | 107 | 178943 | 50.330 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 568008 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 215483 | 44.520 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 489212 | 50.304 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 178891 | 55.704 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 824098 | 50.691 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 639802 | 101.089 |
| 107) o-Xylene | (3) | 11.291 | 106 | 321481 | 51.075 |
| 109) Styrene | (3) | 11.311 | 104 | 545452 | 52.421 |
| 110) Bromoform | (3) | 11.468 | 173 | 141313 | 57.855 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 852154 | 52.974 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 125989 | 744.016 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 287413 | 53.317 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 261070 | 55.213 |
| 108) Xylene (Total) | (3) | | 106 | 961283 | 152.164 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 275035 | 46.318 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 234728 | 49.087 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 188431 | 110.744 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 84511 | 50.348 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 1013933 | 47.987 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 209261 | 47.585 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 766267 | 50.857 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 217588 | 47.541 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 172362 | 52.920 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 148682 | 57.820 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 789513 | 50.870 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 946002 | 49.221 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 448734 | 49.290 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 849561 | 50.063 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 334534 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 461819 | 49.059 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 877466 | 53.962 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26c05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:34 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:02 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 536629 | 54.497 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 535954 | 52.862 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 559717 | 52.571 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 408561 | 48.195 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 447340 | 49.988 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 452939 | 53.086 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1548610 | 158.519 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 66137 | 52.668 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 356495 | 49.136 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 341536 | 48.527 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 155153 | 50.761 |
| 148) Naphthalene | (4) | 14.185 | 128 | 1025571 | 48.290 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 329875 | 48.584 |
| 150) 2-Methylnaphthalene | (4) | 14.909 | 142 | 659874 | 48.051 |



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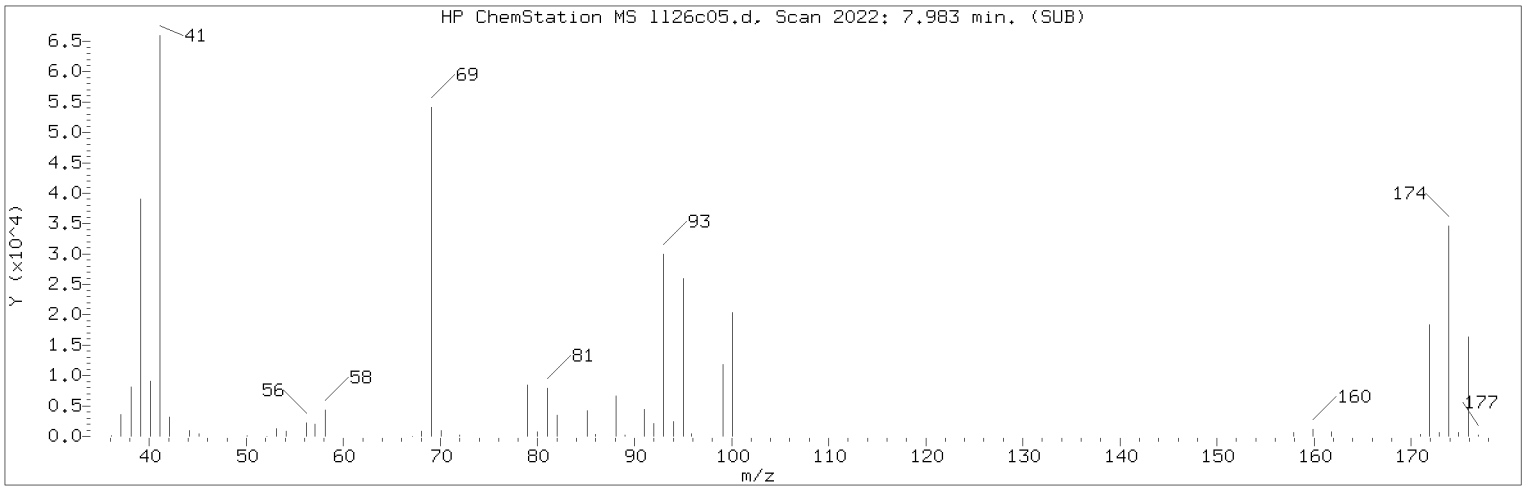
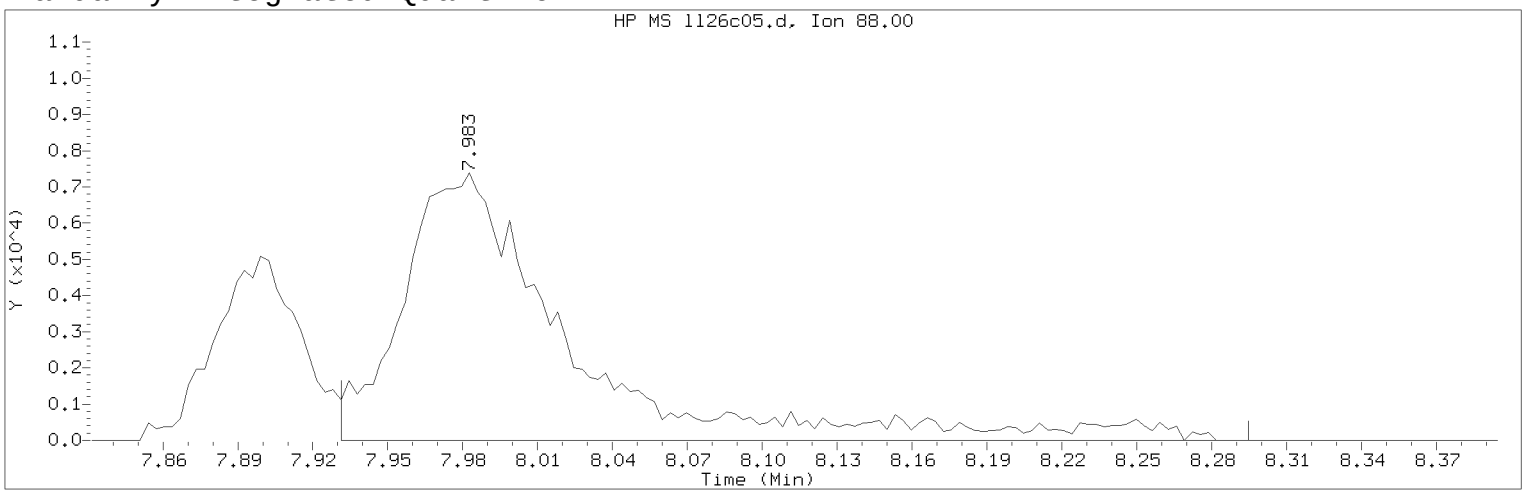
on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul26b.b/ll26c05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:34 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:02 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

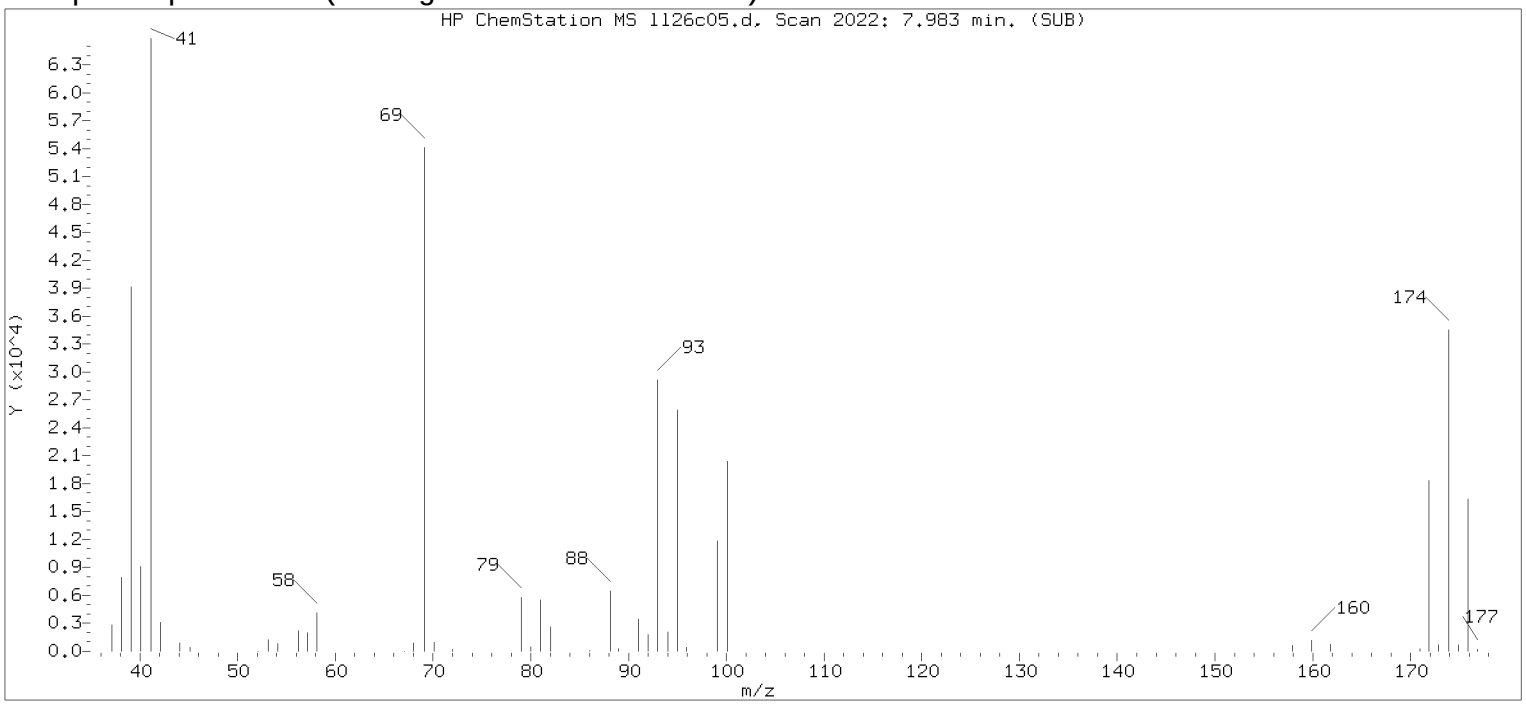
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 88.00
Area (flag) : 34024M
On-Column Amount (ng) : 757.9354
Integration start scan : 2005 Integration stop scan: 2118
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

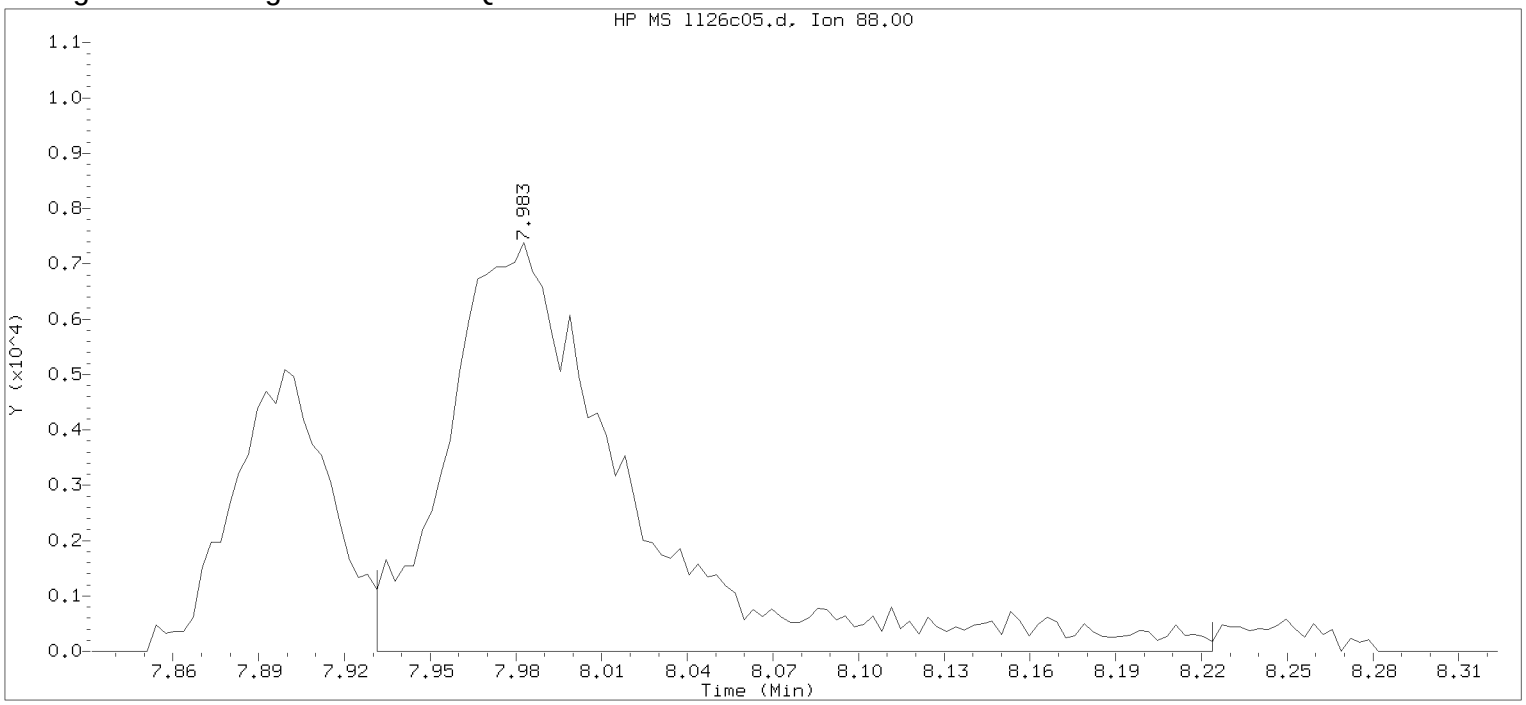
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/26/2017 at 21:03.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:51.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul26b.b/ll26c05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:34 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 20:52 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 88.00
Area : 32735
On-column Amount (ng) : 729.2242
Integration start scan : 2005 Integration stop scan: 2096
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin Kelly on 07/26/2017 at 21:03.
Target 3.5 esignature userKK190kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26ec5.d Injection date and time: **27-JUL-2017 06:40**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 07:39 dhh02035

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **22961**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.013) | 649 | 65 | 184282 ( 40) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.003) | 1732 | 96 | 911234 ( 30) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 712764 ( 25) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.003) | 3470 | 152 | 396053 ( 18) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 228948 | 51.452 | 103% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.001) | 102 | 54158 | 48.945 | 98% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 912436 | 50.136 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 344363 | 50.908 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706( 0.001) | 85 | 261103 | 48.101 | 48.10 | | | 0.5 | 1 |
| 4) Chloromethane | (2) | 1.822( 0.001) | 50 | 292083 | 52.378 | 52.38 | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | 1.938( 0.001) | 62 | 274631 | 51.000 | 51.00 | | | 0.5 | 1 |
| 8) Bromomethane | (2) | 2.208( 0.001) | 94 | 188206M | 51.965 | 51.96 | | | 0.5 | 1 |
| 9) Chloroethane | (2) | 2.295( 0.001) | 64 | 152812 | 50.355 | 50.36 | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | 2.549( 0.000) | 101 | 316787 | 50.802 | 50.80 | | | 0.5 | 1 |
| 17) 1,1-Dichloroethene | (2) | 3.015( 0.000) | 96 | 168783 | 51.141 | 51.14 | | | 0.5 | 1 |
| 18) Acetone | (1) | 3.028( 0.001) | 58 | 63649 | 97.213 | 97.21 | | | 6 | 20 |
| 19) Freon 113 | (2) | 3.054( 0.001) | 101 | 161035 | 48.476 | 48.48 | | | 2 | 10 |
| 23) Carbon Disulfide | (2) | 3.282( 0.001) | 76 | 608687 | 56.674 | 56.67 | | | 1 | 5 |
| 27) Methyl Acetate | (2) | 3.388( 0.001) | 43 | 242013 | 50.523 | 50.52 | | | 1 | 5 |
| 28) Methylene Chloride | (2) | 3.574( 0.001) | 84 | 207305 | 47.548 | 47.55 | | | 2 | 4 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931( 0.001) | 96 | 199220 | 51.448 | 51.45 | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915( 0.000) | 73 | 668603 | 55.300 | 55.30 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.562( 0.000) | 63 | 371174 | 51.011 | 51.01 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417( 0.000) | 96 | 224853 | 50.675 | 50.68 | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | 5.378( 0.000) | 43 | 342786 | 101.774 | 101.77 | | | 3 | 10 |
| 49) Bromochloromethane | (2) | 5.761(-0.000) | 128 | 125784 | 53.787 | 53.79 | | | 1 | 5 |
| 51) Chloroform | (2) | 5.915( 0.000) | 83 | 367093 | 52.929 | 52.93 | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140( 0.000) | 97 | 323678 | 51.072 | 51.07 | | | 0.5 | 1 |
| 54) Cyclohexane | (2) | 6.246( 0.000) | 56 | 324537 | 44.974 | 44.97 | | | 2 | 5 |
| 56) Carbon Tetrachloride | (2) | 6.356( 0.001) | 117 | 258389 | 55.852 | 55.85 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.626( 0.000) | 78 | 836802 | 50.324 | 50.32 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.716( 0.000) | 62 | 315580 | 56.098 | 56.10 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.542(-0.000) | 95 | 219468 | 51.072 | 51.07 | | | 0.5 | 1 |
| 72) Methylcyclohexane | (2) | 7.854(-0.000) | 83 | 342870 | 45.284 | 45.28 | | | 1 | 5 |
| 73) 1,2-Dichloropropane | (2) | 7.883(-0.000) | 63 | 221557 | 48.672 | 48.67 | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | 8.240(-0.000) | 83 | 279481 | 54.098 | 54.10 | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806(-0.000) | 75 | 351950 | 52.269 | 52.27 | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989(-0.000) | 43 | 711361 | 102.492 | 102.49 | | | 3 | 10 |
| 88) Toluene | (3) | 9.227( 0.000) | 92 | 533779 | 50.471 | 50.47 | | | 0.5 | 1 |

**M = Compound was manually integrated.**

Digitally signed by Daniel H. Heller on 07/27/2017 at 07:39. Target 3.5 esignature user ID: dhh02035

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26ec5.d Injection date and time: **27-JUL-2017 06:40**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 27-Jul-2017 07:39 dhh02035

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **22961**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

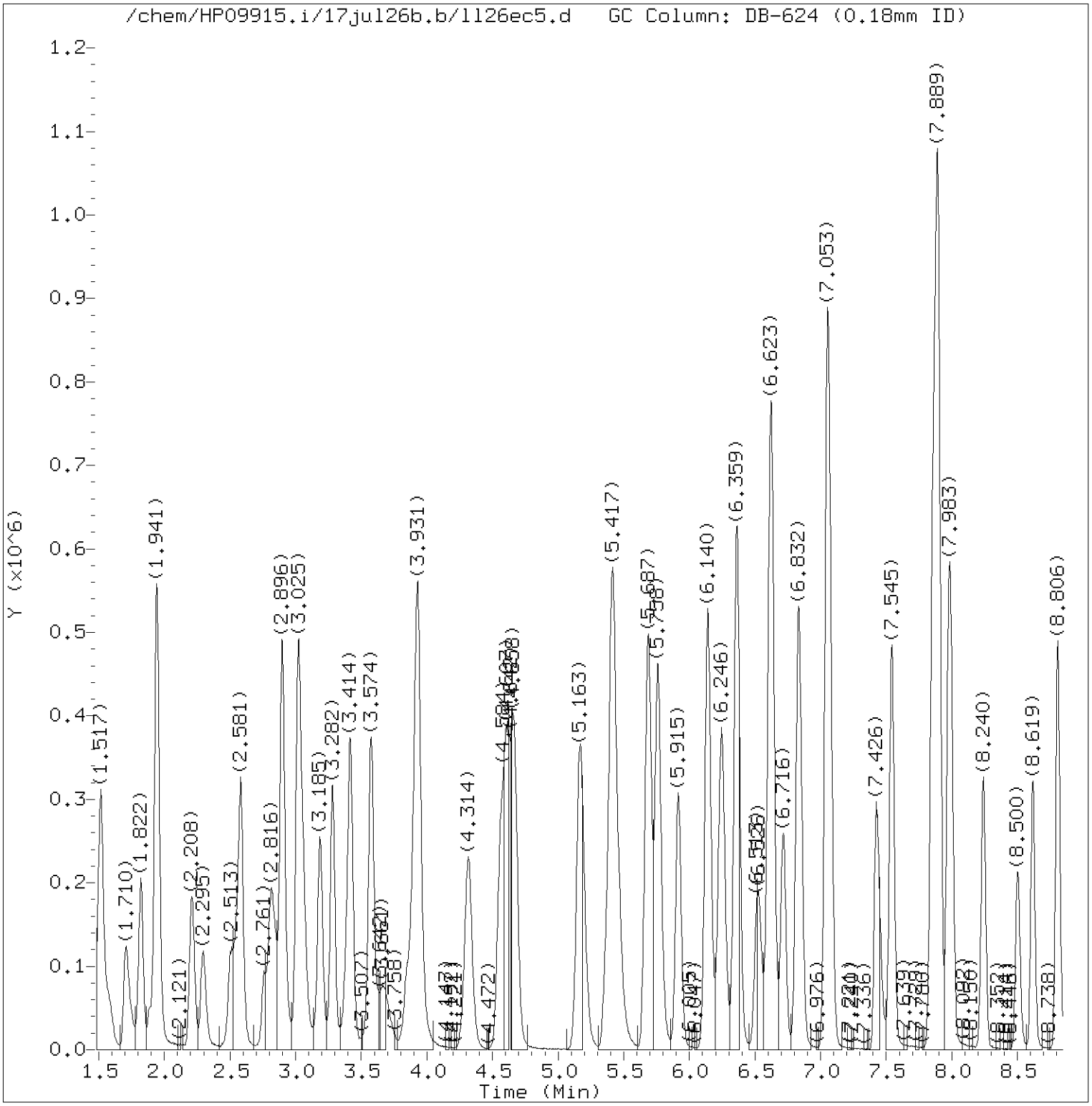
| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 9.526(-0.000) | 75 | 320968 | 54.125 | 54.12 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745( 0.000) | 97 | 208396 | 51.136 | 51.14 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.825(-0.000) | 166 | 255076 | 54.530 | 54.53 | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | 9.970( 0.000) | 43 | 519125 | 101.690 | 101.69 | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | 10.146(-0.000) | 129 | 225354 | 53.387 | 53.39 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.259(-0.000) | 107 | 229428 | 51.424 | 51.42 | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | 10.738(-0.000) | 112 | 613011 | 50.232 | 50.23 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831(-0.000) | 91 | 1044052 | 51.178 | 51.18 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954(-0.000) | 106 | 805372 | 101.406 | 101.41 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291(-0.000) | 106 | 405279 | 51.312 | 51.31 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 1210651 | 152.718 | 152.72 | | | 0.5 | 1 |
| 109) Styrene | (3) | 11.310(-0.000) | 104 | 690674 | 52.897 | 52.90 | | | 1 | 5 |
| 110) Bromoform | (3) | 11.468(-0.000) | 173 | 174215 | 56.839 | 56.84 | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 11.603(-0.000) | 105 | 1053557 | 52.193 | 52.19 | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857(-0.000) | 83 | 336921M | 47.927 | 47.93 | | | 0.5 | 1 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079(-0.000) | 105 | 923590 | 51.777 | 51.78 | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365(-0.000) | 105 | 950838 | 51.748 | 51.75 | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580(-0.000) | 146 | 532414 | 49.397 | 49.40 | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658(-0.000) | 146 | 544759 | 48.880 | 48.88 | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912(-0.000) | 146 | 530308 | 50.055 | 50.05 | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462(-0.000) | 75 | 78440 | 52.763 | 52.76 | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008(-0.000) | 180 | 404957 | 48.601 | 48.60 | | | 1 | 5 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 1224639 | 48.706 | 48.71 | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326(-0.000) | 180 | 389264 | 48.425 | 48.43 | | | 1 | 5 |

**M = Compound was manually integrated.**

Total number of targets = 55

Digitally signed by Daniel H. Heller on 07/27/2017 at 07:39. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 18:13. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

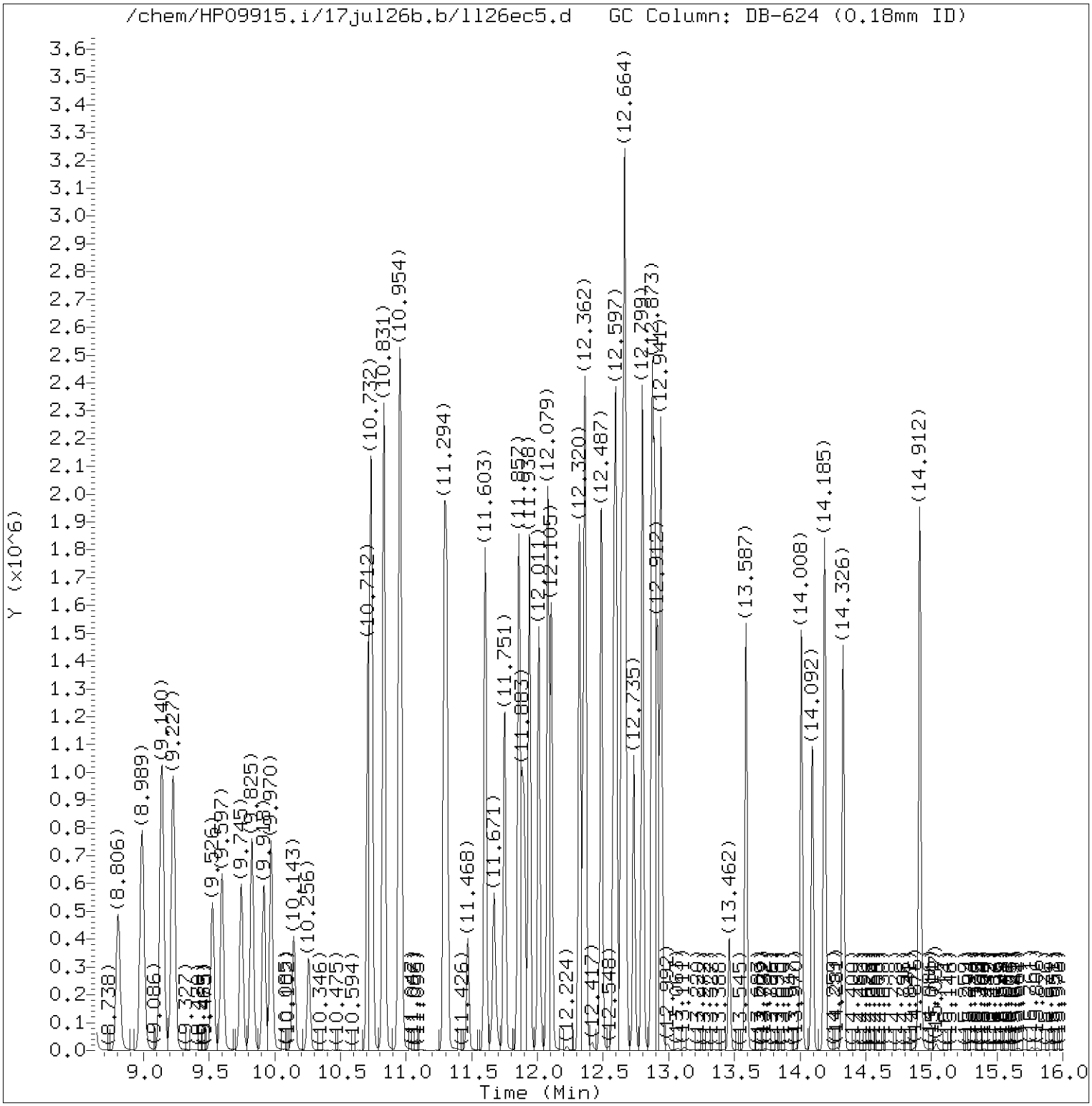
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26ec5.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 06:40 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 07:39 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Daniel H. Heller
on 07/27/2017 at 07:39.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26ec5.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 06:40 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 07:39 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Daniel H. Heller
on 07/27/2017 at 07:39.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26ec5.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 06:40 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 07:39 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 261103 | 48.101 |
| 4) Chloromethane | (2) | 1.822 | 50 | 292083 | 52.378 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 274631 | 51.000 |
| 8) Bromomethane | (2) | 2.208 | 94 | 188206M | 51.965 |
| 9) Chloroethane | (2) | 2.295 | 64 | 152812 | 50.355 |
| 12) Trichlorofluoromethane | (2) | 2.549 | 101 | 316787 | 50.802 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 96 | 168783 | 51.141 |
| 18) Acetone | (1) | 3.028 | 58 | 63649 | 97.213 |
| 19) Freon 113 | (2) | 3.054 | 101 | 161035 | 48.476 |
| 23) Carbon Disulfide | (2) | 3.282 | 76 | 608687 | 56.674 |
| 27) Methyl Acetate | (2) | 3.388 | 43 | 242013 | 50.523 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 184282 | 250.000 |
| 28) Methylene Chloride | (2) | 3.574 | 84 | 207305 | 47.548 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 668603 | 55.300 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 199220 | 51.448 |
| 36) 1,1-Dichloroethane | (2) | 4.562 | 63 | 371174 | 51.011 |
| 44) 2-Butanone | (2) | 5.378 | 43 | 342786 | 101.774 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 224853 | 50.675 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 125784 | 53.787 |
| 51) Chloroform | (2) | 5.915 | 83 | 367093 | 52.929 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 323678 | 51.072 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 228948 | 51.452 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 324537 | 44.974 |
| 56) Carbon Tetrachloride | (2) | 6.356 | 117 | 258389 | 55.852 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 54158 | 48.945 |
| 60) Benzene | (2) | 6.626 | 78 | 836802 | 50.324 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 315580 | 56.098 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 911234 | 50.000 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 219468 | 51.072 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 342870 | 45.284 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 221557 | 48.672 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 279481 | 54.098 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 351950 | 52.269 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 711361 | 102.492 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 912436 | 50.136 |
| 88) Toluene | (3) | 9.227 | 92 | 533779 | 50.471 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 320968 | 54.125 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 208396 | 51.136 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 07/27/2017 at 07:39.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26ec5.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 06:40 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 07:39 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

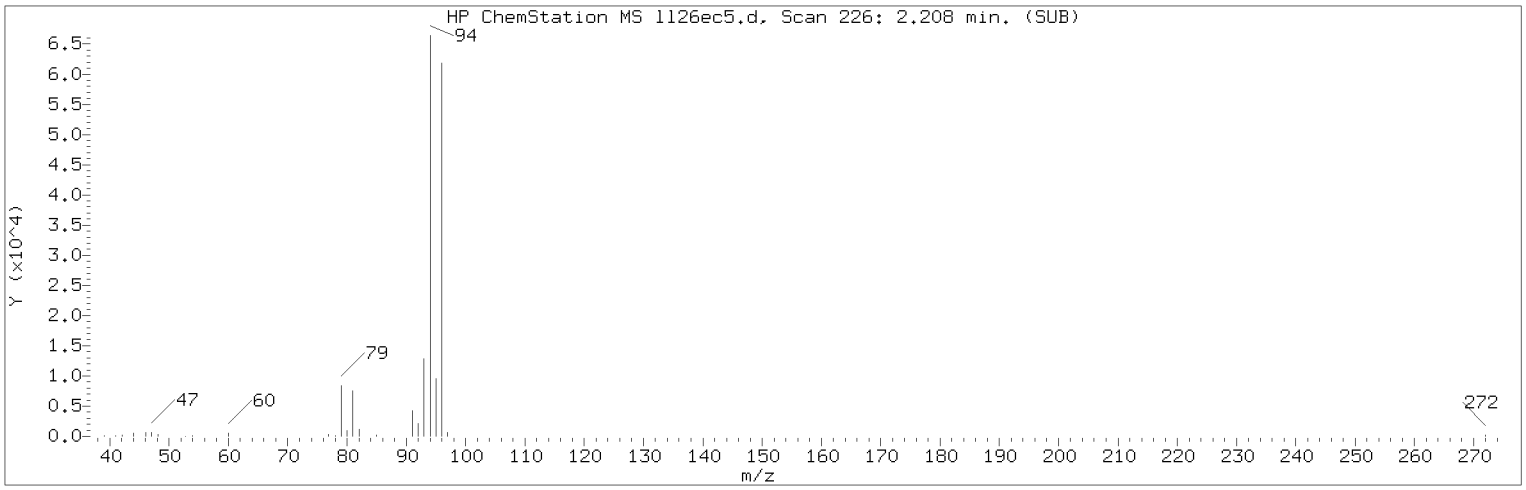
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 255076 | 54.530 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 519125 | 101.690 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 225354 | 53.387 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 229428 | 51.424 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 712764 | 50.000 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 613011 | 50.232 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1044052 | 51.178 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 805372 | 101.406 |
| 107) o-Xylene | (3) | 11.291 | 106 | 405279 | 51.312 |
| 109) Styrene | (3) | 11.311 | 104 | 690674 | 52.897 |
| 110) Bromoform | (3) | 11.468 | 173 | 174215 | 56.839 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 1053557 | 52.193 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 344363 | 50.908 |
| 108) Xylene (Total) | (3) | | 106 | 1210651 | 152.718 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 336921M | 47.927 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 923590 | 51.777 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 950838 | 51.748 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 532414 | 49.397 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 396053 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 544759 | 48.880 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 530308 | 50.055 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 78440 | 52.763 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 404957 | 48.601 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1224639 | 48.706 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 389264 | 48.425 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

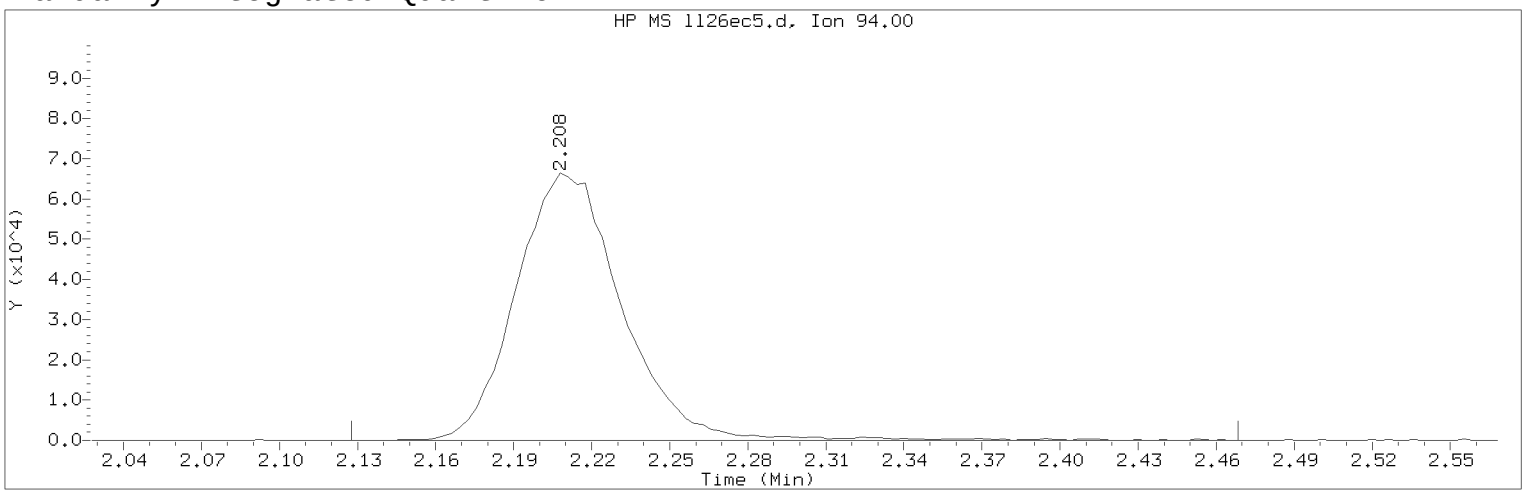


Digitally signed by Daniel H. Heller
on 07/27/2017 at 07:39.
Target 3.5 esignature user ID: dhh02035

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul26b.b/ll26ec5.d  Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 06:40  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m  Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 07:39 dhh02035

Sample Name: SECC050  Lab Sample ID: SECC050

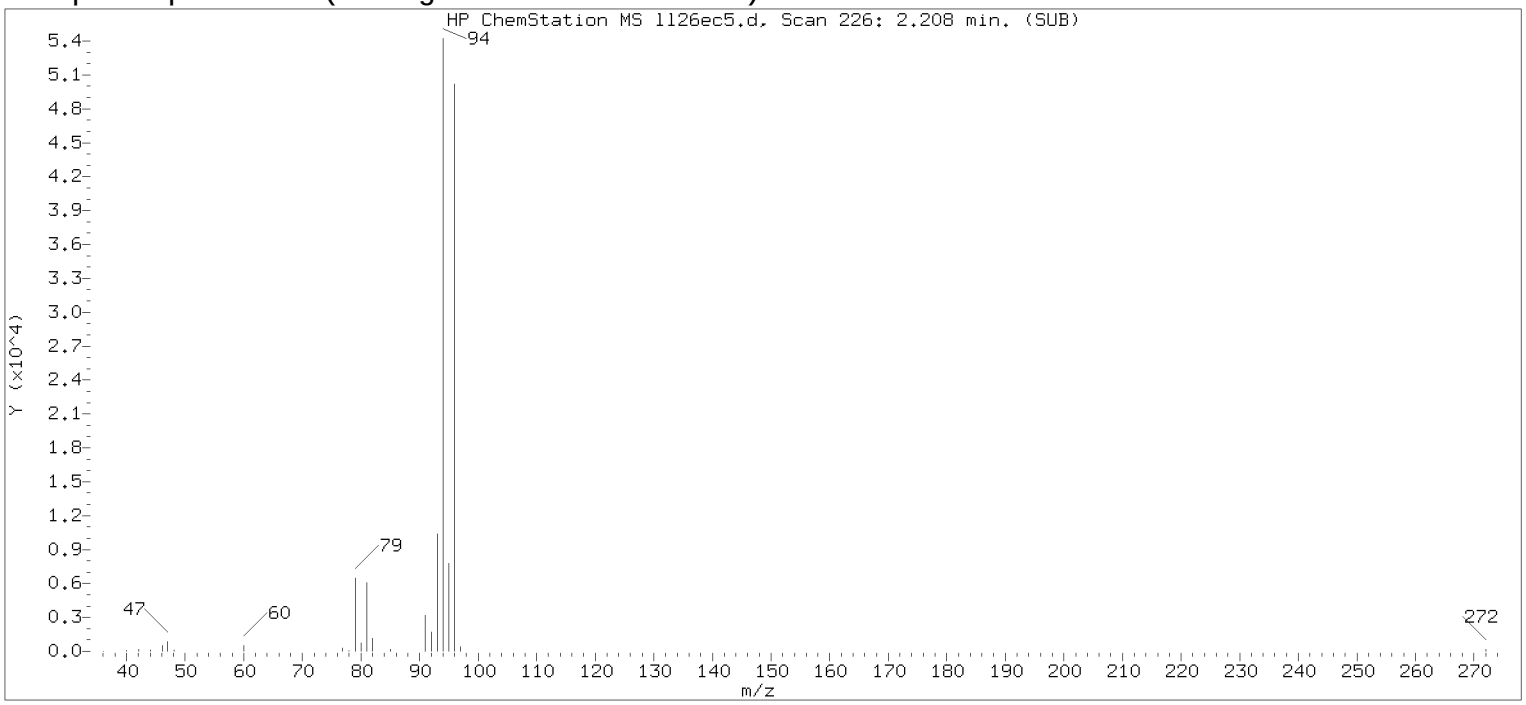
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 226
Retention Time (minutes): 2.208
Quant Ion : 94.00
Area (flag) : 188206M
On-Column Amount (ng) : 51.9646
Integration start scan : 200  Integration stop scan: 306
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

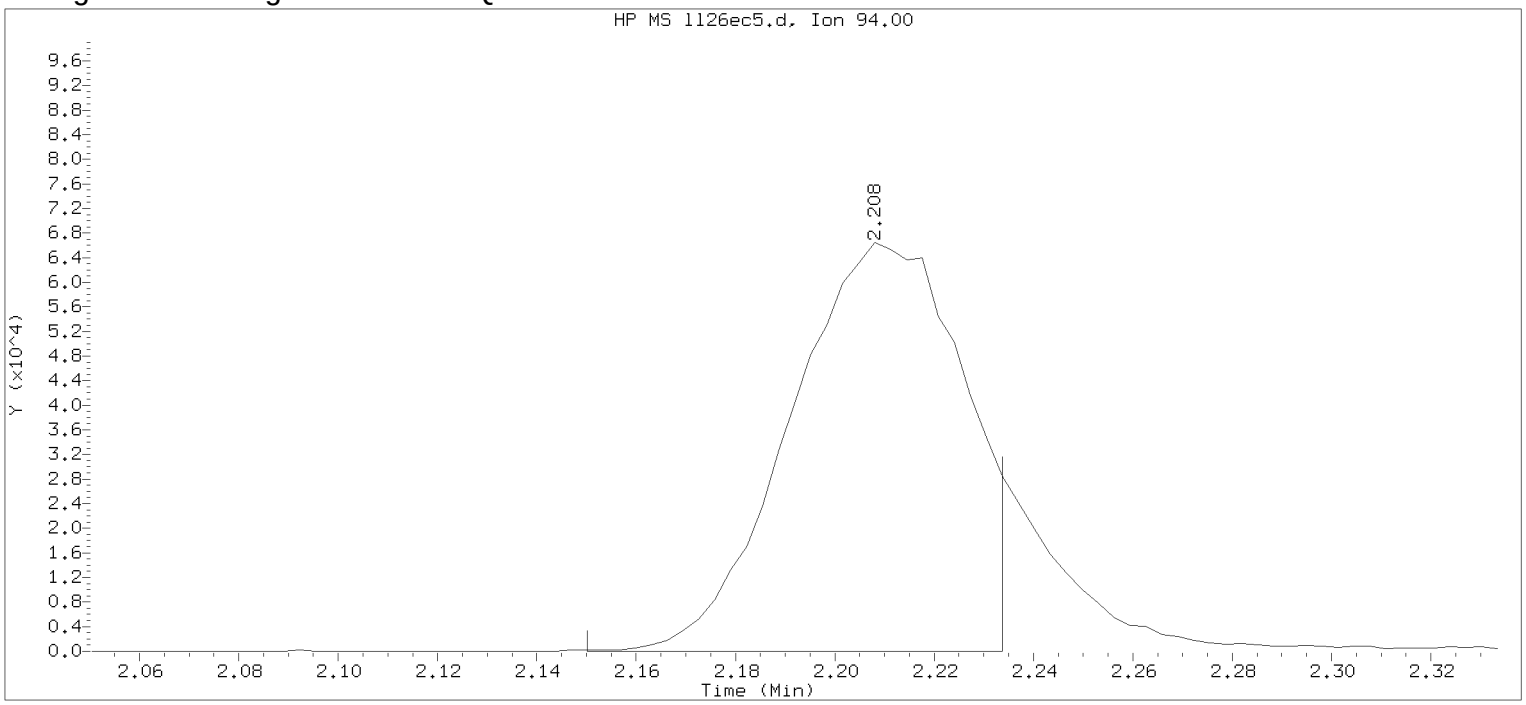
Analyst responsible for change: Digitally signed by Daniel H. Heller
on 07/27/2017 at 07:39.
Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 18:13.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul26b.b/ll26ec5.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 06:40 Analyst ID: kk10002

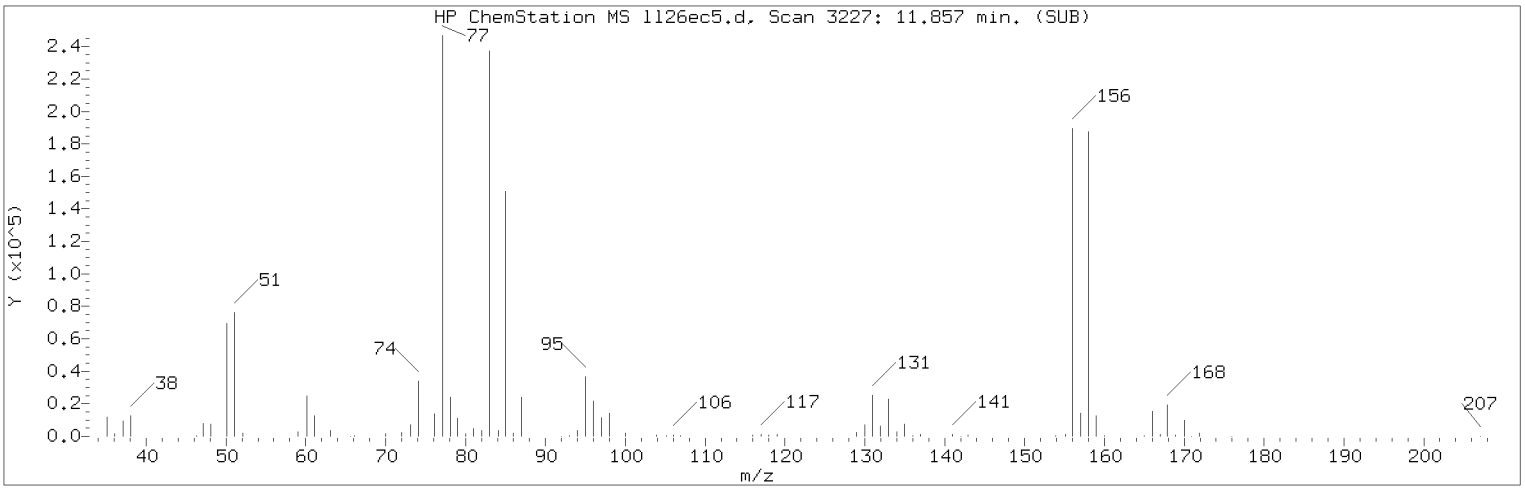
Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 06:58 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

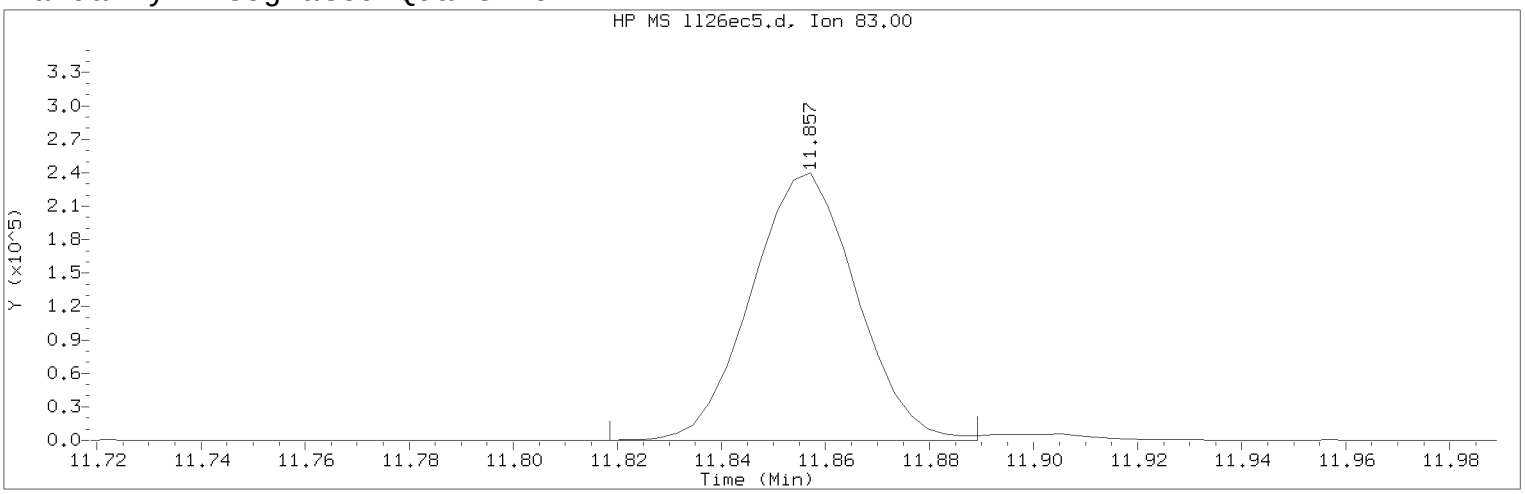
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 226
Retention Time (minutes): 2.208
Quant Ion : 94.00
Area : 159532
On-column Amount (ng) : 44.0475
Integration start scan : 207 Integration stop scan: 233
Y at integration start : 0 Y at integration end: 0

Digitally signed by Daniel H. Heller on 07/27/2017 at 07:39.
Target 3.5 esignature userKR190dhh02335

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul26b.b/ll26ec5.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 06:40 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 07:39 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

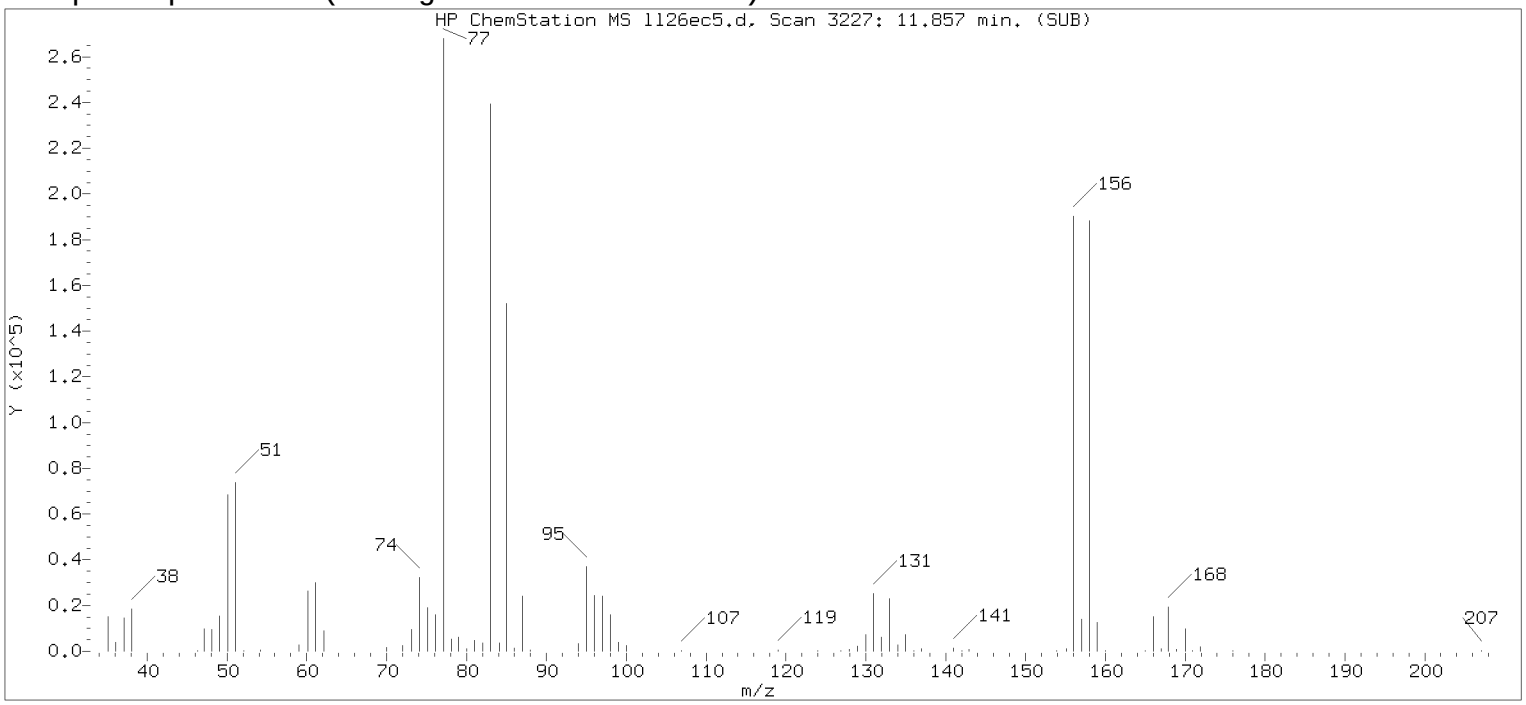
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3227
Retention Time (minutes): 11.857
Quant Ion : 83.00
Area (flag) : 336921M
On-Column Amount (ng) : 47.9271
Integration start scan : 3214 Integration stop scan: 3236
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

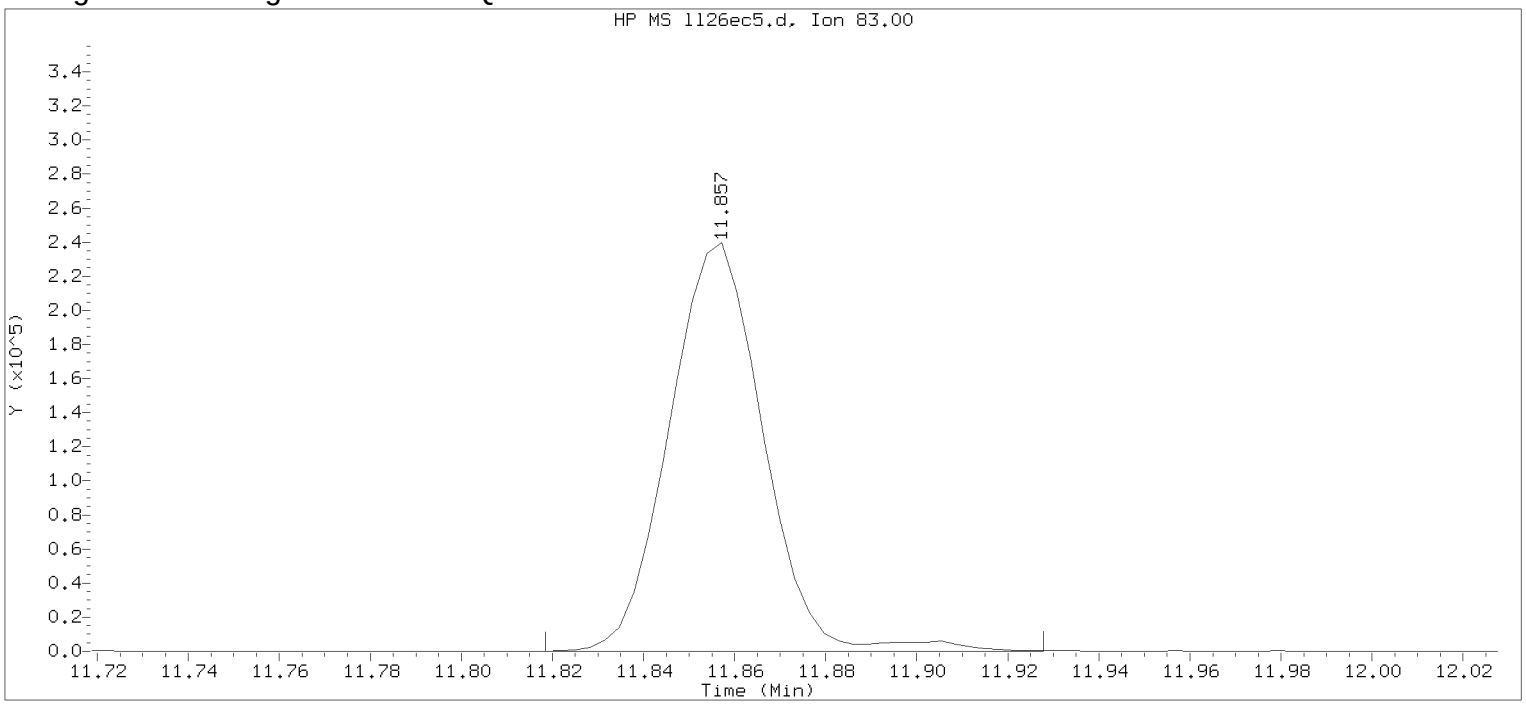
Analyst responsible for change: Digitally signed by Daniel H. Heller
on 07/27/2017 at 07:39.
Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 18:13.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul26b.b/ll26ec5.d Instrument ID: HP09915.i
Injection date and time: 27-JUL-2017 06:40 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 27-Jul-2017 06:58 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3227
Retention Time (minutes): 11.857
Quant Ion : 83.00
Area : 344170
On-column Amount (ng) : 48.9582
Integration start scan : 3214 Integration stop scan: 3248
Y at integration start : 0 Y at integration end: 0

Digitally signed by Daniel H. Heller on 07/27/2017 at 07:39.
Target 3.5 esignature userKK190dhh02337

# Raw QC Data

# Volatiles by GC/MS

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

VBLKL83

Data file: /chem/HP09915.i/17jul26b.b/ll26b05.d  Injection date and time: **26-JUL-2017 21:18**
Data file Sample Info. Line: VBLKL83;VBLKL83;1;3;;;DODWW;;;  Instrument ID: **HP09915.i**  Batch: **L172072AA**
Date, time and analyst ID of latest file update: 26-Jul-2017 21:36 Automation

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m  Sublist used: **22961**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code:  Matrix: WATER  Level: Low

On-Column Amount units: ng  In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo)  VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml  Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.013) | 649 | 65 | 139095 ( 6) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.007) | 1731 | 96 | 710360 ( 1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 568293 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.003) | 3470 | 152 | 318479 ( -5) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 189909 | 54.747 | 109% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 45073 | 52.254 | 105% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 711036 | 49.002 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 271714 | 50.380 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 4) Chloromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 8) Bromomethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 9) Chloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 17) 1,1-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 18) Acetone | (1) | | | Not Detected | | | | | 6 | 20 |
| 19) Freon 113 | (2) | | | Not Detected | | | | | 2 | 10 |
| 23) Carbon Disulfide | (2) | | | Not Detected | | | | | 1 | 5 |
| 27) Methyl Acetate | (2) | | | Not Detected | | | | | 1 | 5 |
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 32) trans-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | | | Not Detected | | | | | 3 | 10 |
| 49) Bromochloromethane | (2) | | | Not Detected | | | | | 1 | 5 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 54) Cyclohexane | (2) | | | Not Detected | | | | | 2 | 5 |
| 56) Carbon Tetrachloride | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 72) Methylcyclohexane | (2) | | | Not Detected | | | | | 1 | 5 |
| 73) 1,2-Dichloropropane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | | | Not Detected | | | | | 3 | 10 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |

Digitally signed by Kevin Kelly on 07/26/2017 at 21:40.  Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26b05.d Injection date and time: **26-JUL-2017 21:18**
Data file Sample Info. Line: VBLKL83;VBLKL83;1;3;;;DODWW;;; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 26-Jul-2017 21:36 Automation

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **22961**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

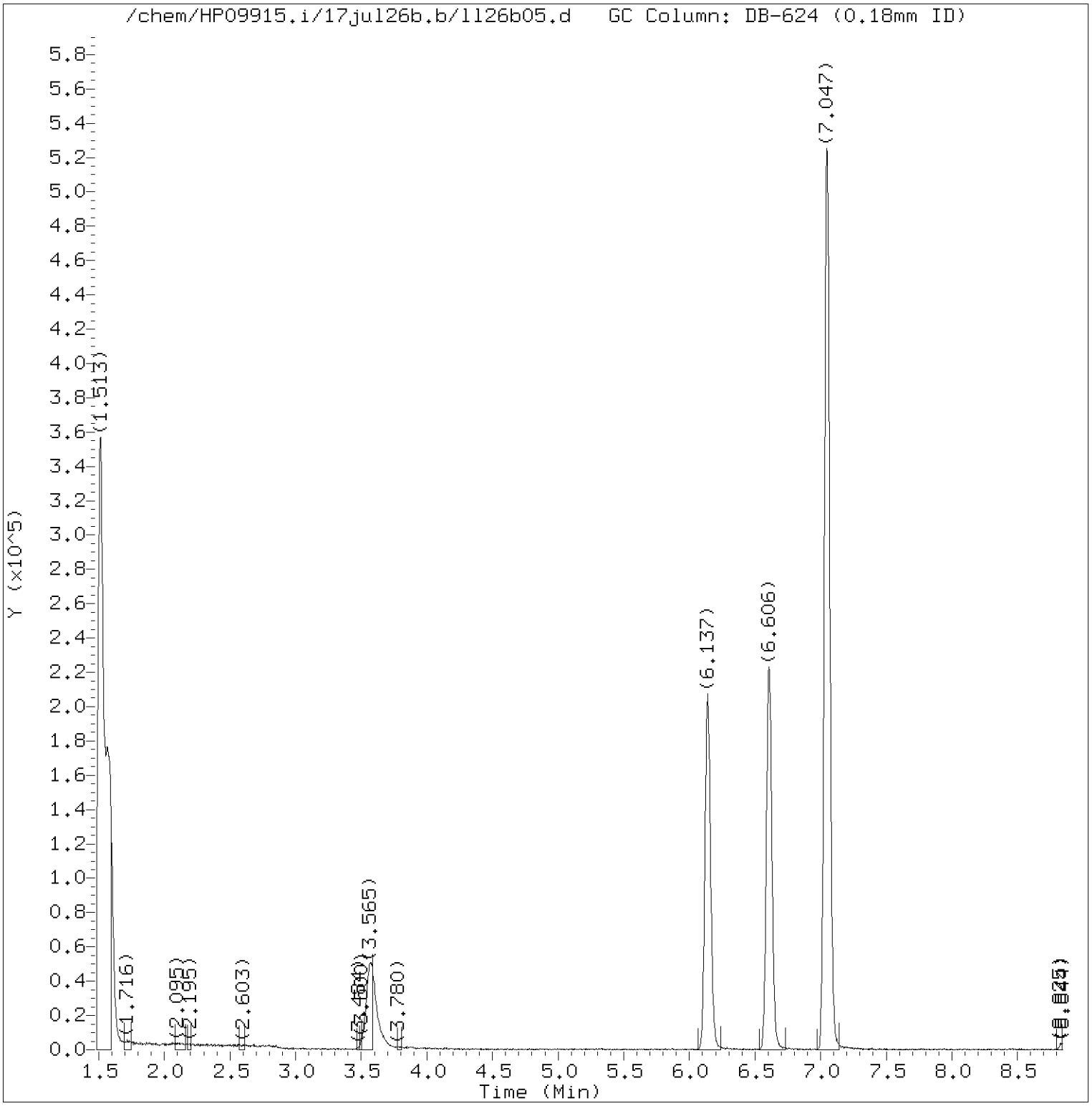
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

| Target Compounds | I.S. Ref. | RT | (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | | | | Not Detected | | | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | | Not Detected | | | | | 0.5 | 1 |
| 109) Styrene | (3) | | | | Not Detected | | | | | 1 | 5 |
| 110) Bromoform | (3) | | | | Not Detected | | | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | | | | Not Detected | | | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | | Not Detected | | | | | 0.5 | 1 |
| 122) 1,3,5-Trimethylbenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | | | | Not Detected | | | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 148) Naphthalene | (4) | | | | Not Detected | | | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | | | | Not Detected | | | | | 1 | 5 |

Total number of targets = 55

Digitally signed by Kevin Kelly on 07/26/2017 at 21:40. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:51. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

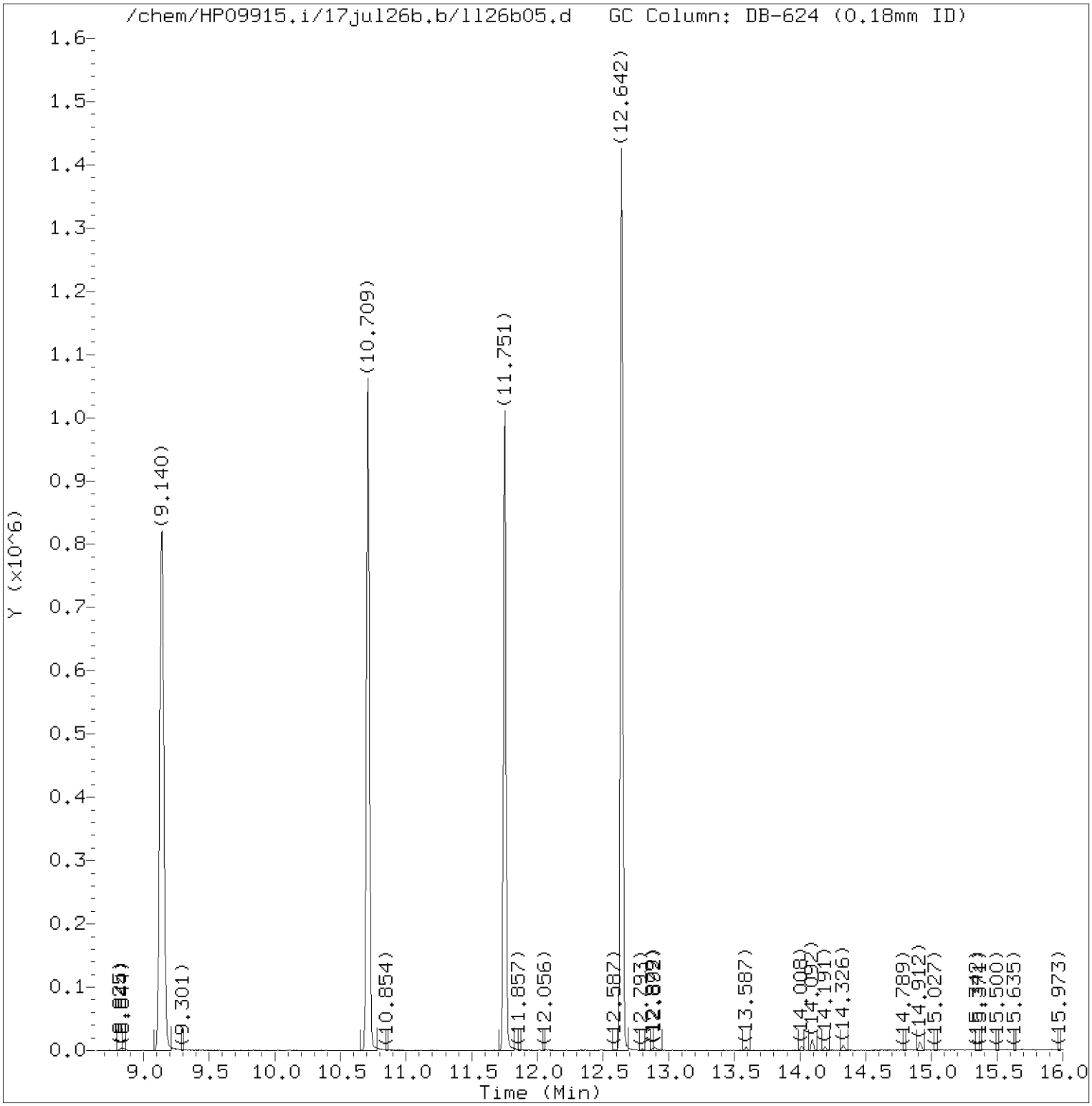
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26b05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 21:18 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:36 Automation

Sample Name: VBLKL83 Lab Sample ID: VBLKL83

Digitally signed by Kevin Kelly
on 07/26/2017 at 21:40.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26b05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 21:18 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:36 Automation

Sample Name: VBLKL83 Lab Sample ID: VBLKL83

Digitally signed by Kevin Kelly
on 07/26/2017 at 21:40.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26b05.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 21:18 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:36 Automation

Sample Name: VBLKL83 Lab Sample ID: VBLKL83

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 139095 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 189909 | 54.747 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 45073 | 52.254 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 710360 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 711036 | 49.002 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 568293 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 271714 | 50.380 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 318479 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/26/2017 at 21:40.
Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26s31.d Injection date and time: **26-JUL-2017 20:56**
Data file Sample Info. Line: LCSL83;LCSL83;1;3;LCS;;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 26-Jul-2017 21:39 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **22961**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.000) | 653 | 65 | 137498 ( 5) | 250.00 | |
| 66) Fluorobenzene | 7.054( 0.000) | 1733 | 96 | 730953 ( 4) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 590196 ( 4) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.003) | 3470 | 152 | 339833 ( 2) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 189791 | 53.172 | 106% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613( 0.000) | 102 | 44344 | 49.960 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 759449 | 50.396 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 300039 | 53.567 | 107% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716( 0.000) | 85 | 85294 | 19.589 | 19.59 | | | 0.5 | 1 |
| 4) Chloromethane | (2) | 1.822( 0.001) | 50 | 98477 | 22.015 | 22.01 | | | 0.5 | 1 |
| 6) Vinyl Chloride | (2) | 1.938( 0.001) | 62 | 94724 | 21.929 | 21.93 | | | 0.5 | 1 |
| 8) Bromomethane | (2) | 2.211( 0.000) | 94 | 67269M | 23.154 | 23.15 | | | 0.5 | 1 |
| 9) Chloroethane | (2) | 2.301( 0.000) | 64 | 53874 | 22.131 | 22.13 | | | 0.5 | 1 |
| 12) Trichlorofluoromethane | (2) | 2.565(-0.001) | 101 | 120779 | 24.146 | 24.15 | | | 0.5 | 1 |
| 17) 1,1-Dichloroethene | (2) | 3.028(-0.000) | 96 | 63047 | 23.815 | 23.81 | | | 0.5 | 1 |
| 18) Acetone | (1) | 3.044( 0.000) | 58 | 67951 | 139.095 | 139.10 | | | 6 | 20 |
| 19) Freon 113 | (2) | 3.063(-0.000) | 101 | 59222 | 22.224 | 22.22 | | | 2 | 10 |
| 23) Carbon Disulfide | (2) | 3.288( 0.000) | 76 | 206788 | 24.003 | 24.00 | | | 1 | 5 |
| 27) Methyl Acetate | (2) | 3.398(-0.000) | 43 | 72444 | 18.854 | 18.85 | | | 1 | 5 |
| 28) Methylene Chloride | (2) | 3.581( 0.000) | 84 | 73328 | 20.967 | 20.97 | | | 2 | 4 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944(-0.000) | 96 | 72077 | 23.205 | 23.20 | | | 0.5 | 1 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925(-0.000) | 73 | 212856 | 21.947 | 21.95 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.568(-0.000) | 63 | 125625 | 21.523 | 21.52 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417( 0.000) | 96 | 78722 | 22.117 | 22.12 | | | 0.5 | 1 |
| 44) 2-Butanone | (2) | 5.382( 0.000) | 43 | 371949 | 137.669 | 137.67 | | | 3 | 10 |
| 49) Bromochloromethane | (2) | 5.764(-0.000) | 128 | 41839 | 22.303 | 22.30 | | | 1 | 5 |
| 51) Chloroform | (2) | 5.922(-0.000) | 83 | 128983 | 23.184 | 23.18 | | | 0.5 | 1 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140( 0.000) | 97 | 118130 | 23.237 | 23.24 | | | 0.5 | 1 |
| 54) Cyclohexane | (2) | 6.250(-0.000) | 56 | 96575 | 16.684 | 16.68 | | | 2 | 5 |
| 56) Carbon Tetrachloride | (2) | 6.366( 0.000) | 117 | 92161 | 24.834 | 24.83 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.632(-0.000) | 78 | 284202 | 21.307 | 21.31 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.722(-0.000) | 62 | 114626 | 25.402 | 25.40 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.546(-0.000) | 95 | 77004 | 22.339 | 22.34 | | | 0.5 | 1 |
| 72) Methylcyclohexane | (2) | 7.857(-0.000) | 83 | 105347 | 17.345 | 17.35 | | | 1 | 5 |
| 73) 1,2-Dichloropropane | (2) | 7.880( 0.000) | 63 | 74588 | 20.427 | 20.43 | | | 0.5 | 1 |
| 78) Bromodichloromethane | (2) | 8.246(-0.000) | 83 | 94379 | 22.774 | 22.77 | | | 0.5 | 1 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806(-0.000) | 75 | 114352 | 21.171 | 21.17 | | | 0.5 | 1 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989( 0.000) | 43 | 536112 | 96.293 | 96.29 | | | 3 | 10 |
| 88) Toluene | (3) | 9.230(-0.000) | 92 | 189036 | 21.586 | 21.59 | | | 0.5 | 1 |

**M = Compound was manually integrated.**

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# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul26b.b/ll26s31.d Injection date and time: **26-JUL-2017 20:56**
Data file Sample Info. Line: LCSL83;LCSL83;1;3;LCS;;DODWW;;ll26b05; Instrument ID: **HP09915.i** Batch: **L172072AA**
Date, time and analyst ID of latest file update: 26-Jul-2017 21:39 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul26b.b/ll26b05.d**

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: **22961**
Calibration date and time (Last Method Edit): 26-JUL-2017 20:52
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul26b.b/ll26c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

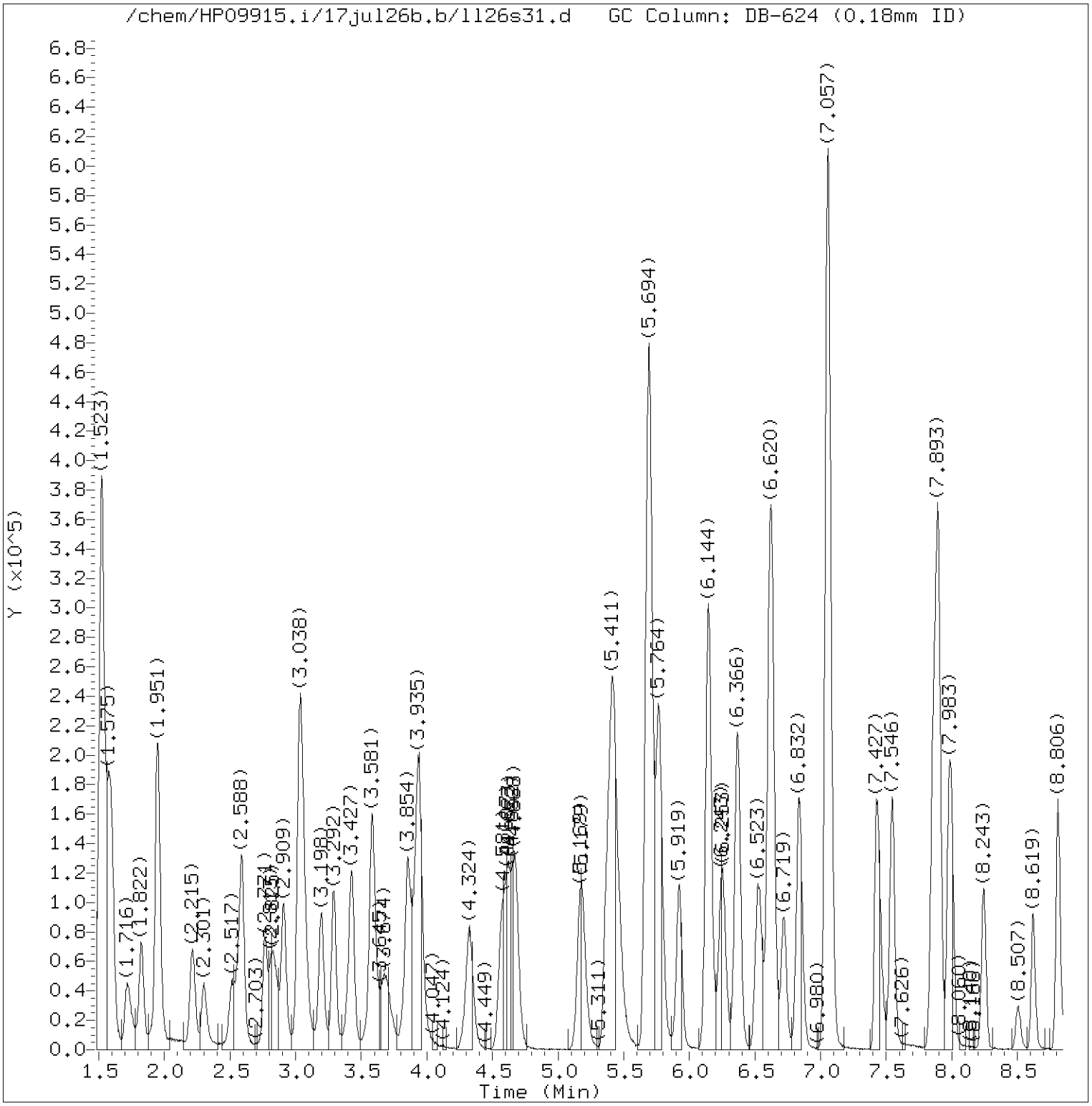
Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 89) trans-1,3-Dichloropropene | (3) | 9.523( 0.000) | 75 | 108649 | 22.126 | 22.13 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748(-0.000) | 97 | 72479 | 21.478 | 21.48 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.825(-0.000) | 166 | 87836 | 22.677 | 22.68 | | | 0.5 | 1 |
| 96) 2-Hexanone | (3) | 9.970(-0.000) | 43 | 390253 | 92.321 | 92.32 | | | 3 | 10 |
| 97) Dibromochloromethane | (3) | 10.147(-0.000) | 129 | 76919 | 22.007 | 22.01 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.259(-0.000) | 107 | 79319 | 21.471 | 21.47 | | | 0.5 | 1 |
| 102) Chlorobenzene | (3) | 10.738( 0.000) | 112 | 219670 | 21.739 | 21.74 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.832( 0.000) | 91 | 369511 | 21.874 | 21.87 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 286487 | 43.563 | 43.56 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291( 0.000) | 106 | 136323 | 20.844 | 20.84 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 422810 | 64.407 | 64.41 | | | 0.5 | 1 |
| 109) Styrene | (3) | 11.311( 0.000) | 104 | 238074 | 22.020 | 22.02 | | | 1 | 5 |
| 110) Bromoform | (3) | 11.471(-0.000) | 173 | 55678 | 21.938 | 21.94 | | | 0.5 | 4 |
| 111) Isopropylbenzene | (3) | 11.603( 0.000) | 105 | 370519 | 22.167 | 22.17 | | | 1 | 5 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857(-0.000) | 83 | 115882 | 19.211 | 19.21 | | | 0.5 | 1 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079(-0.000) | 105 | 331354 | 21.649 | 21.65 | | | 1 | 5 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365(-0.000) | 105 | 342877 | 21.748 | 21.75 | | | 1 | 5 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584(-0.000) | 146 | 193920 | 20.968 | 20.97 | | | 1 | 5 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658(-0.000) | 146 | 205380 | 21.477 | 21.48 | | | 1 | 5 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915(-0.000) | 146 | 195881 | 21.548 | 21.55 | | | 1 | 5 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462(-0.000) | 75 | 27208 | 21.329 | 21.33 | | | 2 | 5 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008(-0.000) | 180 | 146644 | 20.511 | 20.51 | | | 1 | 5 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 438024 | 20.303 | 20.30 | | | 1 | 5 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327(-0.000) | 180 | 149471 | 21.671 | 21.67 | | | 1 | 5 |

Total number of targets = 55

Digitally signed by Kevin Kelly on 07/26/2017 at 21:40. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:51. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

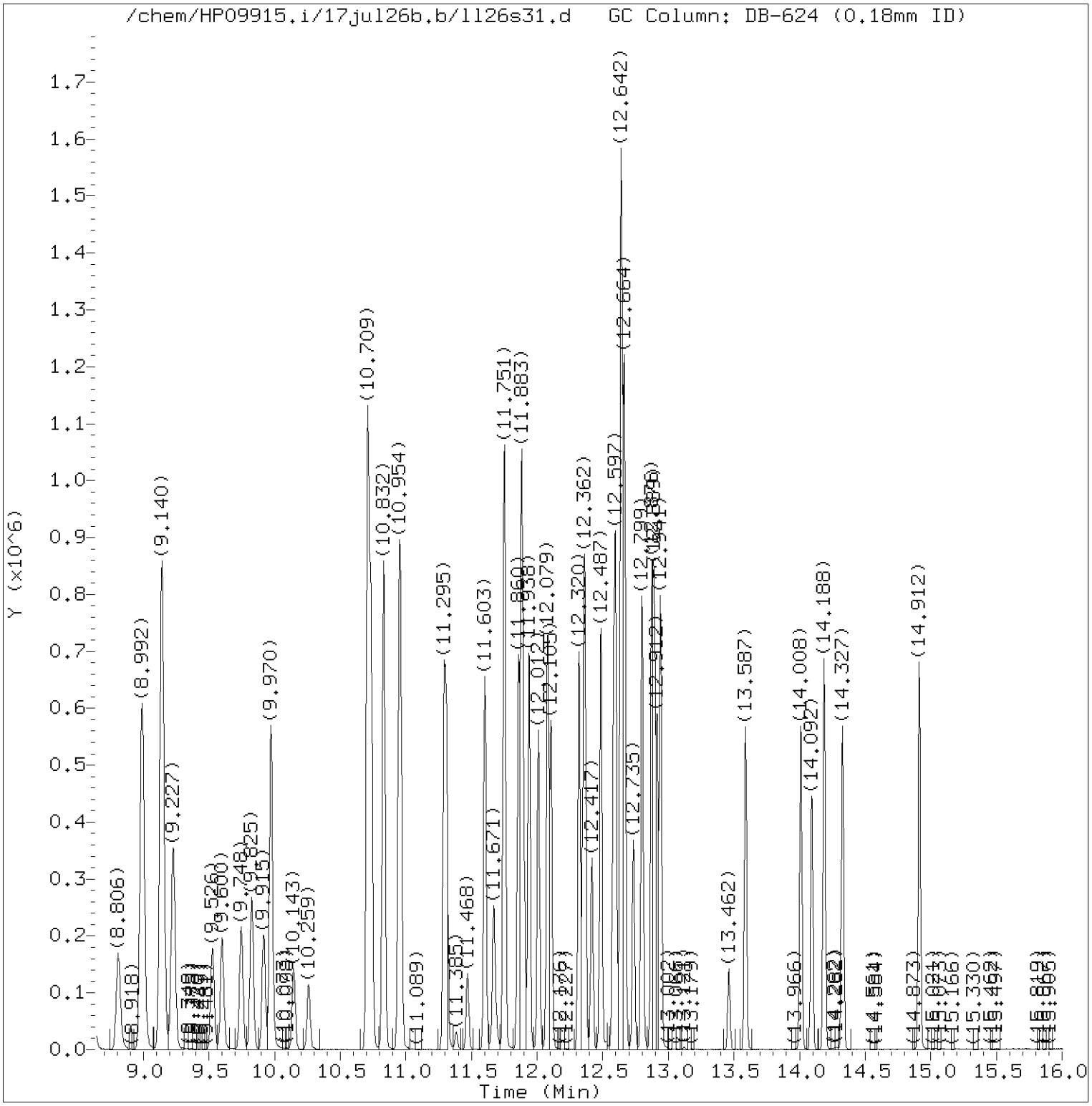
Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s31.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:56 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:39 kk10002

Sample Name: LCSL83 Lab Sample ID: LCSL83

Digitally signed by Kevin Kelly
on 07/26/2017 at 21:40.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s31.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:56 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:39 kk10002

Sample Name: LCSL83 Lab Sample ID: LCSL83

Digitally signed by Kevin Kelly
on 07/26/2017 at 21:40.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s31.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:56 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:39 kk10002

Sample Name: LCSL83 Lab Sample ID: LCSL83

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716 | 85 | 85294 | 19.589 |
| 4) Chloromethane | (2) | 1.822 | 50 | 98477 | 22.015 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 94724 | 21.929 |
| 8) Bromomethane | (2) | 2.211 | 94 | 67269M | 23.154 |
| 9) Chloroethane | (2) | 2.301 | 64 | 53874 | 22.131 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 120779 | 24.146 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 63047 | 23.815 |
| 18) Acetone | (1) | 3.044 | 58 | 67951 | 139.095 |
| 19) Freon 113 | (2) | 3.063 | 101 | 59222 | 22.224 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 206788 | 24.003 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 72444 | 18.854 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 73328 | 20.967 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 137498 | 250.000 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 212856 | 21.947 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 72077 | 23.205 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 125625 | 21.523 |
| 44) 2-Butanone | (2) | 5.382 | 43 | 371949 | 137.669 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 78722 | 22.117 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 41839 | 22.303 |
| 51) Chloroform | (2) | 5.922 | 83 | 128983 | 23.184 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 118130 | 23.237 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 189791 | 53.172 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 96575 | 16.684 |
| 56) Carbon Tetrachloride | (2) | 6.366 | 117 | 92161 | 24.834 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 44344 | 49.960 |
| 60) Benzene | (2) | 6.632 | 78 | 284202 | 21.307 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 114626 | 25.402 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 730953 | 50.000 |
| 71) Trichloroethene | (2) | 7.546 | 95 | 77004 | 22.339 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 105347 | 17.345 |
| 73) 1,2-Dichloropropane | (2) | 7.880 | 63 | 74588 | 20.427 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 94379 | 22.774 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 114352 | 21.171 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 536112 | 96.293 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 759449 | 50.396 |
| 88) Toluene | (3) | 9.230 | 92 | 189036 | 21.586 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 108649 | 22.126 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 72479 | 21.478 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/26/2017 at 21:40.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul26b.b/ll26s31.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:56 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:39 kk10002

Sample Name: LCSL83 Lab Sample ID: LCSL83

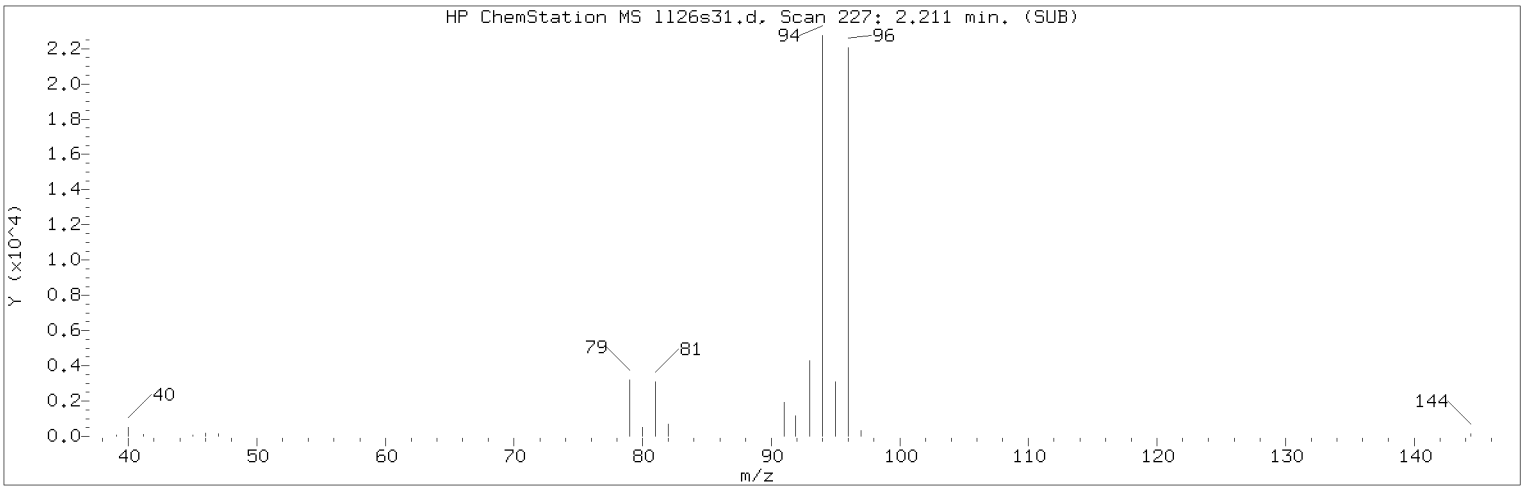
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 87836 | 22.677 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 390253 | 92.321 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 76919 | 22.007 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 79319 | 21.471 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 590196 | 50.000 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 219670 | 21.739 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 369511 | 21.874 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 286487 | 43.563 |
| 107) o-Xylene | (3) | 11.291 | 106 | 136323 | 20.844 |
| 109) Styrene | (3) | 11.311 | 104 | 238074 | 22.020 |
| 110) Bromoform | (3) | 11.471 | 173 | 55678 | 21.938 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 370519 | 22.167 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 300039 | 53.567 |
| 108) Xylene (Total) | (3) | | 106 | 422810 | 64.407 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 115882 | 19.211 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 331354 | 21.649 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 342877 | 21.748 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 193920 | 20.968 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 339833 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 205380 | 21.477 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 195881 | 21.548 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 27208 | 21.329 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 146644 | 20.511 |
| 148) Naphthalene | (4) | 14.188 | 128 | 438024 | 20.303 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 149471 | 21.671 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

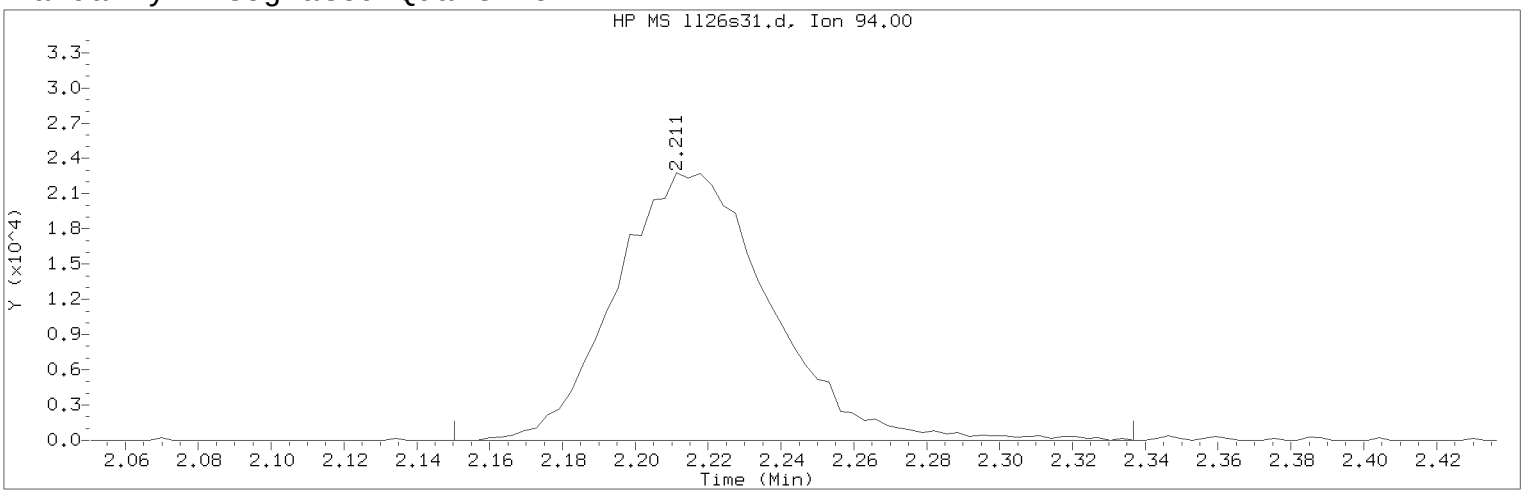


Digitally signed by Kevin Kelly
on 07/26/2017 at 21:40.
Target 3.5 esignature user ID: kk10002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul26b.b/ll26s31.d  Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:56  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m  Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:39 kk10002

Sample Name: LCSL83  Lab Sample ID: LCSL83

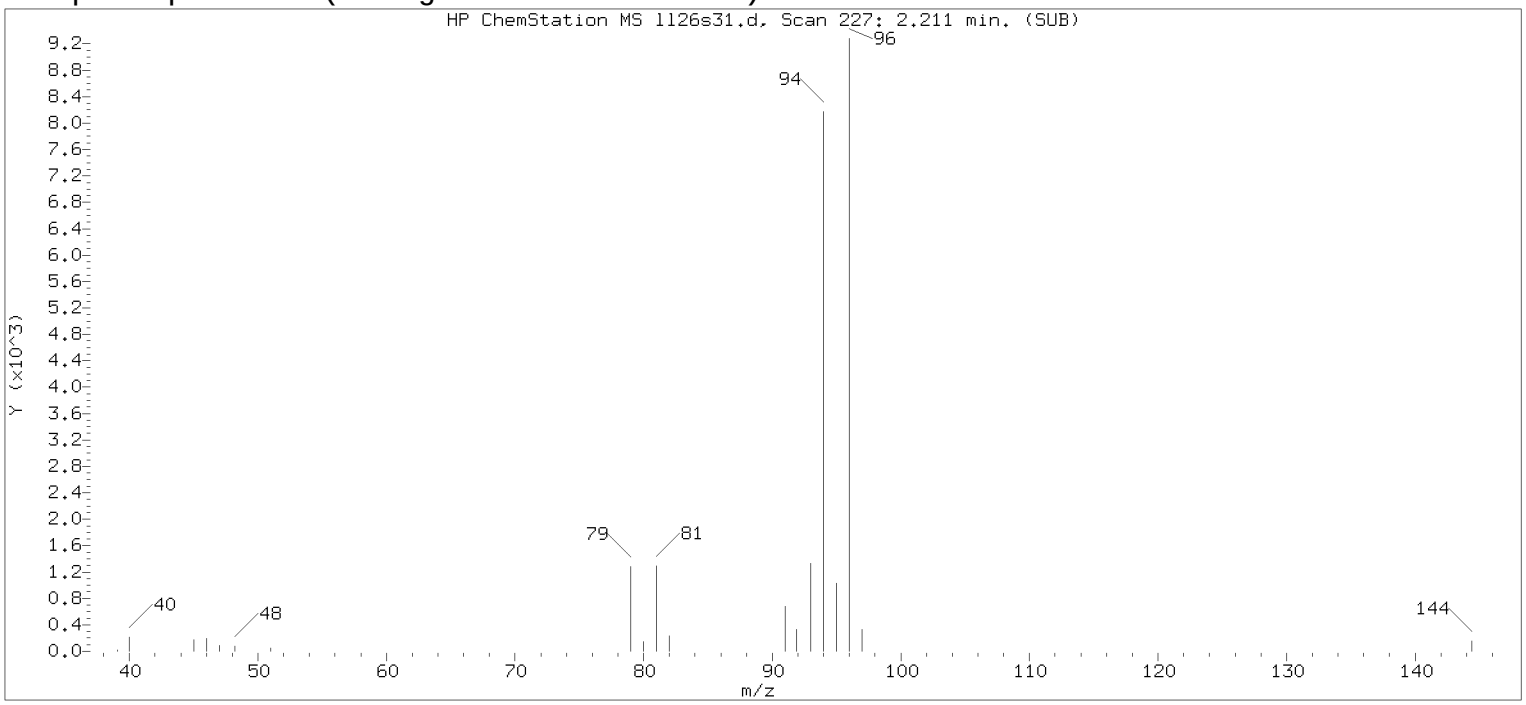
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 227
Retention Time (minutes): 2.211
Quant Ion : 94.00
Area (flag) : 67269M
On-Column Amount (ng) : 23.1541
Integration start scan : 207  Integration stop scan: 265
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

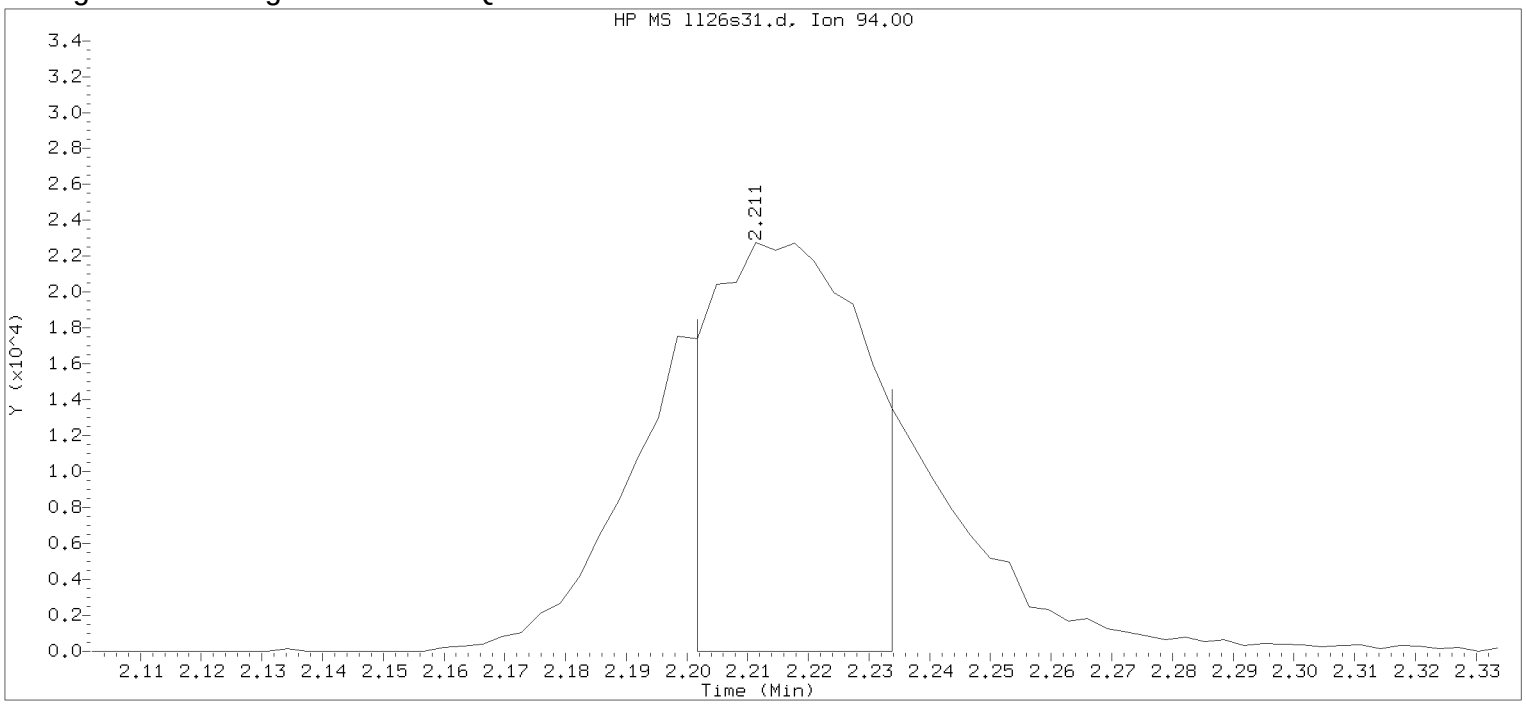
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/26/2017 at 21:40.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 07/27/2017 at 17:51.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul26b.b/ll26s31.d Instrument ID: HP09915.i
Injection date and time: 26-JUL-2017 20:56 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul26b.b/m8260c5.m Sublist used: 22961
Calibration date and time: 26-JUL-2017 20:52
Date, time and analyst ID of latest file update: 26-Jul-2017 21:14 Automation

Sample Name: LCSL83 Lab Sample ID: LCSL83

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 227
Retention Time (minutes): 2.211
Quant Ion : 94.00
Area : 38823
On-column Amount (ng) : 13.3631
Integration start scan : 223 Integration stop scan: 233
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin Kelly on 07/26/2017 at 21:40.
Target 3.5 esignature userKK190kk10002

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR190**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9114605 | GW004-173 | X | | 1 | |
| 9114606 | GW099-173 | X | | 1 | |
| 9114607 | GW100-173 | X | | 1 | |
| 9114608 | TB173-27 | X | | 1 | Trip Blank |
| 9114609 | TB173-28 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9114605-9114609: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR190**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR190**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172020053A | PBLK53202 | 07/25/2017 00:20:00 |
| | | LCS53202 | 07/25/2017 00:36:00 |
| | | LCSD53202 | 07/25/2017 00:52:00 |
| | | 9114605 | 07/25/2017 01:08:00 |
| | | 9114606 | 07/25/2017 01:24:00 |
| | | 9114607 | 07/25/2017 01:40:00 |
| | | 9114608 DUP | 07/25/2017 01:56:00 |
| | | 9114608 BKG | 07/25/2017 02:12:00 |
| | | 9114609 UNSPK | 07/25/2017 02:28:00 |
| | | 9114609 MS | 07/25/2017 02:44:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR190**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172020053A / PBLK53202<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/25/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR190**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172020053A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK53202 | 100 | 46 - 136 |
| LCS53202 | 99 | 46 - 136 |
| LCSD53202 | 94 | 46 - 136 |
| 9114605 | 108 | 46 - 136 |
| 9114606 | 105 | 46 - 136 |
| 9114607 | 111 | 46 - 136 |
| 9114608 DUP | 99 | 46 - 136 |
| 9114608 UNSPK | 96 | 46 - 136 |
| 9114609 UNSPK | 97 | 46 - 136 |
| 9114609 MS | 100 | 46 - 136 |

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| UNSPK: 9114609<br>MS: 9114609<br><br>**Analyte** | Batch: **172020053A** (Sample number(s): 9114605-9114609 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.121 | N.D. | 0.129 | NA | 106 | NA | 60-140 | NA | NA |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR190**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS53202<br>LCSD: LCSD53202<br><br>**Analyte** | Batch: **172020053A** (Sample number(s): 9114605-9114609 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 0.128 | 0.137 | 0.137 | 107 | 107 | 60-140 | 0 | 20 |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1720501

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.85 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 | 3.81 | 3.87 |
| 1,1,2,2-TETRACHLOROETHANE | 5.33 | 5.32 | 5.33 | 5.32 | 5.32 | 5.32 | 5.32 | 5.29 | 5.35 |
| 1,2,3-Trichloropropane | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.37 | 5.43 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.65 | 7.71 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1720501

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.26E+04 | 1.18E+04 | 1.05E+04 | 1.02E+04 | 9.22E+03 | 8.88E+03 | 1.05E+04 | 14 |
| 1,1,2,2-TETRACHLOROETHANE | 1.39E+04 | 1.33E+04 | 1.28E+04 | 1.18E+04 | 1.11E+04 | 1.11E+04 | 1.23E+04 | 9 |
| 1,2,3-Trichloropropane | 1.94E+03 | 1.81E+03 | 1.74E+03 | 1.57E+03 | 1.48E+03 | 1.48E+03 | 1.67E+03 | 11 |
| 1,2-DIBROMO-3-CHLOROPROPA | 2.46E+04 | 2.33E+04 | 2.31E+04 | 2.09E+04 | 2.10E+04 | 2.13E+04 | 2.23E+04 | 7 |

linear linear

Average % RSD: 10

4/25/17

File Name: V:\CP18\18EDBS1720501.CAL
Version: 8

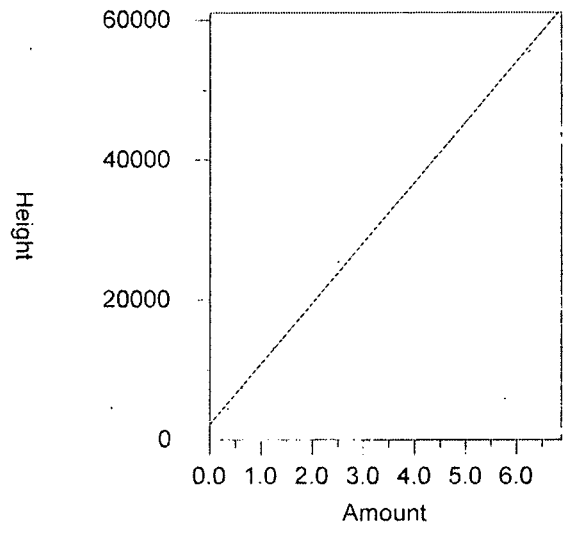
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.843 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

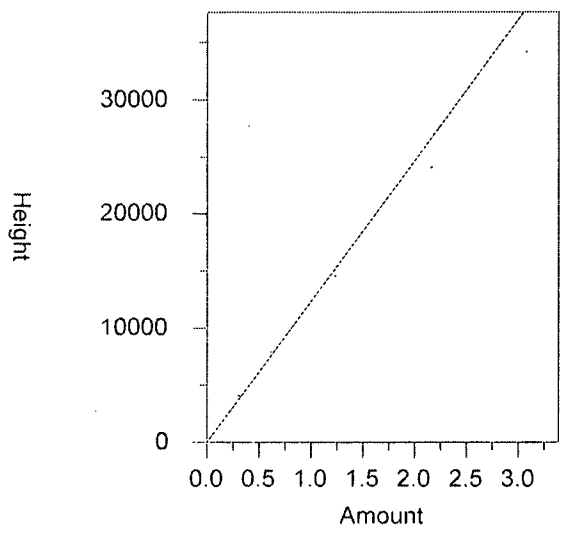
Single peak quantification by height

Y = 8638.205 X + 2245.084

Linear fit with equal weighting
Coefficient of determination: 0.9981241
Average error: 4.751%
Average CF: 10517.59
RSD: 13.769%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 4411.598 | 12604.57 | -16.264 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.006.BN |
| 2 | 0.63 | 7425.705 | 11786.83 | -3.401 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.007.BN |
| 3 | 1.25 | 13085.5 | 10468.4 | 0.327 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.008.BN |
| 4 | 2.5 | 25380.56 | 10152.22 | 6.459 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.009.BN |
| 5 | 4.38 | 40367.42 | 9216.306 | 0.716 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.010.BN |
| 6 | 6.25 | 55482.57 | 8877.211 | -1.336 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.011.BN |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.324 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

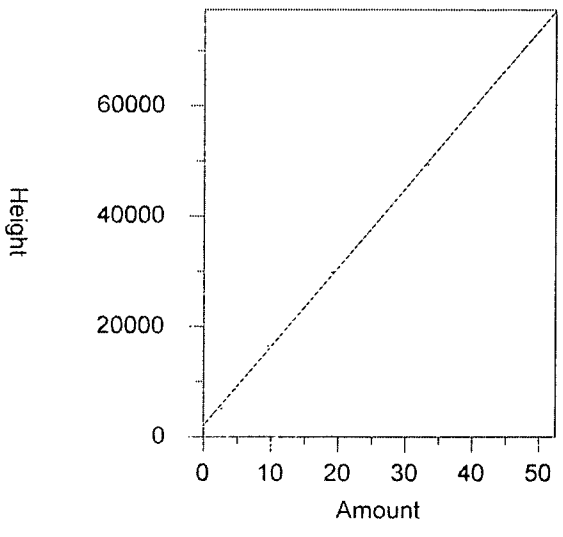
Y = 12331.18 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9723406 |
| Average error: | 7.996% |
| Average CF: | 12331.18 |
| RSD: | 9.455% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 2407.838 | 13918.14 | 12.869 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 0.308 | 4086.132 | 13266.66 | 7.586 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 0.616 | 7864.292 | 12766.71 | 3.532 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 1.23 | 14501.67 | 11789.98 | -4.389 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 2.16 | 24060.62 | 11139.17 | -9.667 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |
| 6 | 3.08 | 34207.75 | 11106.41 | -9.932 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.398 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

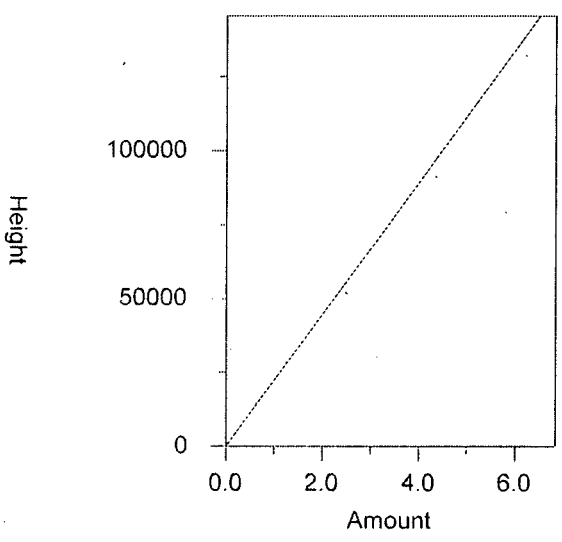
Y = 1435.139 X + 2038.979

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9994225 |
| Average error: | 3.883% |
| Average CF: | 1670.156 |
| RSD: | 11.343% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 5183.897 | 1941.534 | -11.700 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 4.76 | 8598.273 | 1806.36 | -3.066 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 9.52 | 16579.96 | 1741.592 | 5.595 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 19.05 | 29943.89 | 1571.858 | 1.925 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 33.34 | 49389.79 | 1481.397 | -0.996 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |
| 6 | 47.63 | 70406.27 | 1478.192 | 0.017 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0 |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.679 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 22348.63 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9918822 |
| Average error: | 5.849% |
| Average CF: | 22348.63 |
| RSD: | 6.828% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 8603.578 | 24581.65 | 9.992 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 2 | 0.62 | 14448.06 | 23303.32 | 4.272 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 3 | 1.24 | 28621.88 | 23082.16 | 3.282 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 4 | 2.49 | 51969.48 | 20871.28 | -6.610 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0( |
| 5 | 4.35 | 91292.15 | 20986.7 | -6.094 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0: |
| 6 | 6.22 | 132278.8 | 21266.69 | -4.841 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.0: |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1720501B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.79 | 2.79 | 2.78 | 2.79 | 2.79 | 2.79 | 2.76 | 2.82 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.01 | 4.07 |
| 1,2,3-Trichloropropane | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.13 | 4.19 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.41 | 6.47 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1720501B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/24/2017  7/24/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.68E+04 | 1.68E+04 | 1.47E+04 | 1.45E+04 | 1.31E+04 | 1.26E+04 | 1.47E+04 | 12 |
| 1,1,2,2-TETRACHLOROETHANE | 2.00E+04 | 1.93E+04 | 1.74E+04 | 1.57E+04 | 1.55E+04 | 1.51E+04 | 1.72E+04 | 12 |
| 1,2,3-Trichloropropane | 2.48E+03 | 2.44E+03 | 2.28E+03 | 2.08E+03 | 1.97E+03 | 1.91E+03 | 2.19E+03 | 11 |
| 1,2-DIBROMO-3-CHLOROPROPA | 2.87E+04 | 2.73E+04 | 2.57E+04 | 2.28E+04 | 2.16E+04 | 2.06E+04 | 2.44E+04 | 13 |

Average % RSD: 12

linear linear linear linear

HWW 7/26/17 7/25/17

File Name: V:\CP18\18EDBS1720501b.CAL
Version: 8

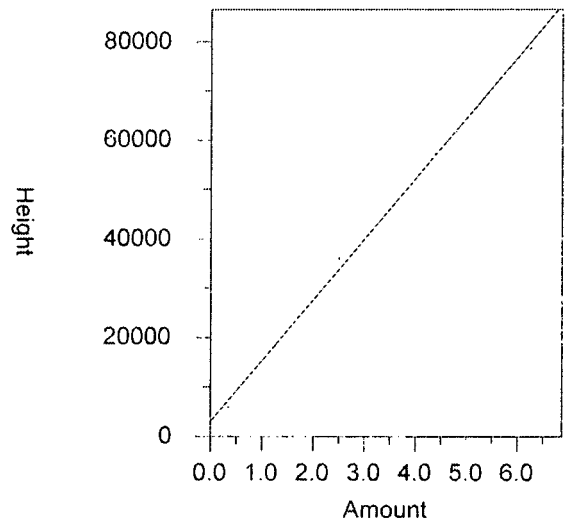
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 2.785 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

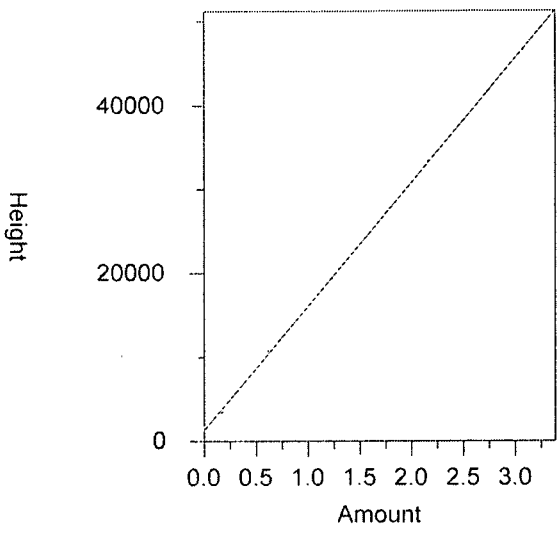
Single peak quantification by height

Y = 12288.05 X + 3051.388

Linear fit with equal weighting
Coefficient of determination: 0.9976688
Average error: 5.239%
Average CF: 14746.95
RSD: 12.137%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5879.512 | 16798.61 | -20.031 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.006.B |
| 2 | 0.63 | 10602.94 | 16830.06 | -1.760 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.007.B |
| 3 | 1.25 | 18381.3 | 14705.04 | -0.164 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.008.B |
| 4 | 2.5 | 36156.34 | 14462.54 | 7.062 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.009.B |
| 5 | 4.38 | 57388.45 | 13102.39 | 0.906 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.010.B |
| 6 | 6.25 | 78644.2 | 12583.07 | -1.512 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.011.B |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.04 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

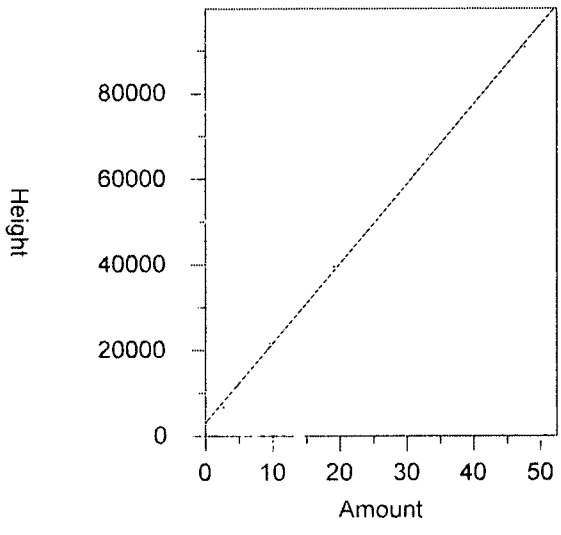
Single peak quantification by height

Y = 14761.19 X + 1285.783

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9997328 |
| Average error: | 2.747% |
| Average CF: | 17160.96 |
| RSD: | 12.182% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 3465.057 | 20029.23 | -9.752 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 0.308 | 5937.518 | 19277.66 | 1.805 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 0.616 | 10688.68 | 17351.75 | 2.987 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 1.23 | 19317.39 | 15705.2 | -0.641 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 2.16 | 33456.21 | 15488.99 | 0.863 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 3.08 | 46547.8 | 15112.92 | -0.433 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.158 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

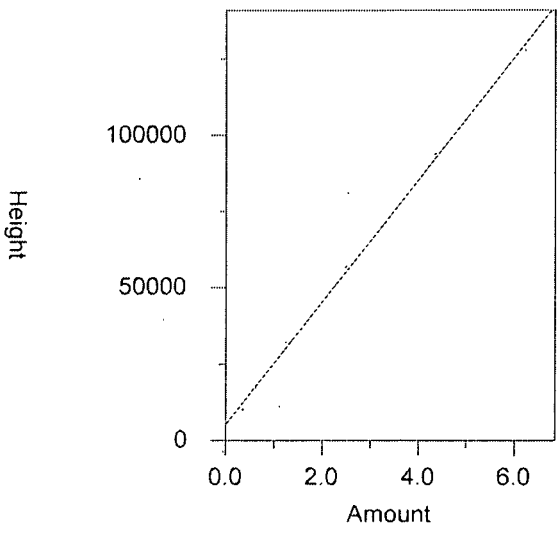
Single peak quantification by height

Y = 1862.06 X + 3028.528

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9990299 |
| Average error: | 4.822% |
| Average CF: | 2191.157 |
| RSD: | 11.050% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 6622.405 | 2480.301 | -17.222 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 4.76 | 11596.27 | 2436.191 | -2.486 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 9.53 | 21683.32 | 2275.27 | 4.377 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 19.05 | 39566.1 | 2076.961 | 2.767 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 33.34 | 65776.43 | 1972.898 | 1.024 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 47.63 | 90750.45 | 1905.321 | -1.055 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.436 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 20014.06 X + 5310.747

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9984107 |
| Average error: | 5.782% |
| Average CF: | 24448.19 |
| RSD: | 13.424% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 10051.81 | 28719.46 | -18.382 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 2 | 0.62 | 16928.15 | 27303.47 | -4.466 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 3 | 1.24 | 31855.28 | 25689.74 | 5.732 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 4 | 2.49 | 56857.13 | 22834.19 | 3.103 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 5 | 4.35 | 93834.88 | 21571.24 | 1.584 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |
| 6 | 6.22 | 127951.9 | 20571.04 | -1.422 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/24/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 23:48

Lab File ID: 18EDBS17205001.034.RAW Initial Calibration: 18EDBS1720501

Lab Standard ID: EDB_4QM Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 2.65 | 2.50 | 6 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 1.19 | 1.23 | -4 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 19.71 | 19.05 | 3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 2.30 | 2.49 | -7 |

Compounds 4 Average of %D: 5

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/24/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 23:48

Lab File ID: 18EDBS17205001B.034.RAW Initial Calibration: 18EDBS1720501B

Lab Standard ID: EDB_4QM Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 2.69 | 2.50 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 1.34 | 1.23 | 9 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 20.76 | 19.05 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 2.68 | 2.49 | 8 |

Compounds 4 Average of %D: 9

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKTP Sample ID: TP **Batchnumber: 1720499999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 00:04:33
Instrument : CP18--19846A
Result file : 18EDBS17205001.035.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.067339

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.85 | 3.87 | 443 | -0.011919 |
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 14531 | 0.067339 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 467 | -0.062610 |

## Analysis Report (B)

Injected on : Jul 25, 2017 00:04:33
Instrument : CP18--19846B
Result file : 18EDBS17205001B.035.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.072114

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19914 | 0.072114 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 787 | -0.068793 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.067339 | | | | 6.85 | |
| ☑ 1,2,3-TCP | A | -0.062610 | | | | 9.41 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist

Date: JUL 25 2017

Verified by: SD 7/25/17

Date: 07/25/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Date Analyzed: 07/25/17

GC Column (1) : ZB MR1  ID: .32 (mm)  Time Analyzed: 3:00

Lab File ID: 18EDBS17205001.046.RAW  Initial Calibration: 18EDBS1720501

Lab Standard ID: EDB_3PI  Init. Calib Date(s): 07/24/17  07/24/17

Calibration: 18EDBS1720501

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.85 | 3.81 | 3.87 | 1.47 | 1.25 | 17 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 0.69 | 0.62 | 11 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 10.89 | 9.53 | 14 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 1.36 | 1.24 | 9 |

Compounds 4  Average of %D: 13

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/25/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 3:00

Lab File ID: 18EDBS17205001B.046.RAW Initial Calibration: 18EDBS1720501B

Lab Standard ID: EDB_3PI Init. Calib Date(s): 07/24/17 07/24/17

Calibration: 18EDBS1720501B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 1.53 | 1.25 | 23 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 0.76 | 0.62 | 23 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 11.17 | 9.53 | 17 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 1.53 | 1.24 | 23 |

Compounds 4 Average of %D: 22

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKTQ Sample ID: TQ **Batchnumber: 1720499999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 03:15:59
Instrument : CP18--19846A
Result file : 18EDBS17205001.047.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.066857

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 14427 | 0.066857 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 446 | -0.063443 |

## Analysis Report (B)

Injected on : Jul 25, 2017 03:15:59
Instrument : CP18--19846B
Result file : 18EDBS17205001B.047.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.072442

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 800 | -0.010472 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19999 | 0.072442 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 835 | -0.067308 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.066857 | | | | 8.02 | |
| ☑ 1,2,3-TCP | A | -0.063443 | | | | 5.91 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 25 2017

Verified by: DJM 8/16
Date: 8/8/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 18EDBS17205001
Instrument CP18--19846A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17205001.001 | CONDITIONER | | 7/24/17 15:01 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.002 | CONDITIONER | | 7/24/17 15:17 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.003 | CONDITIONER | | 7/24/17 15:32 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.004 | CONDITIONER | | 7/24/17 15:48 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.005 | EIBKX1724C | PIBLKAA | 7/24/17 16:04 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.006 | EDB_11724DT | EDB_1AA | 7/24/17 16:20 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.007 | EDB_21724DT | EDB_2AA | 7/24/17 16:36 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.008 | EDB_31724DT | EDB_3AA | 7/24/17 16:52 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.009 | EDB_41724DT | EDB_4AA | 7/24/17 17:08 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.010 | EDB_51724DT | EDB_5AA | 7/24/17 17:24 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.011 | EDB_61724DT | EDB_6AA | 7/24/17 17:40 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.012 | MDEDX1724DT | MDEDXAA | 7/24/17 17:57 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.013 | EDB_31724DT | EDB_3AA | 7/24/17 18:13 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.014 | EIBKX1724C | PIBLKAA | 7/24/17 18:28 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.015 | BLANKA 7/23/17 | PBLK52202 | 7/24/17 18:44 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.016 | LCSA 7/23/17 | LCS52202 | 7/24/17 19:01 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.017 | LCSDA 7/23/17 | LCSD52202 | 7/24/17 19:17 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.018 | 9112697 | 12201 | 7/24/17 19:33 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.019 | 9112698 | 12202 | 7/24/17 19:48 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.020 | 9112699 | 12203 | 7/24/17 20:04 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.021 | 9112700 | 12204 | 7/24/17 20:20 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.022 | 9112701 | 12205 | 7/24/17 20:36 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.023 | EDB_51724DT | EDB_5LV | 7/24/17 20:52 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.024 | EIBKX1724C | PIBLKTO | 7/24/17 21:08 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.025 | 9114466 | C22-1 | 7/24/17 21:24 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.026 | 9114467MS | C22-1 | 7/24/17 21:40 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.027 | 9114468MSD | C22-1 | 7/24/17 21:56 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.028 | 9114469 | C22-2 | 7/24/17 22:12 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.029 | 9114470 | C22-3 | 7/24/17 22:28 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.030 | 9114471 | C22-4 | 7/24/17 22:44 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.031 | 9114472 | C22-5 | 7/24/17 23:00 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.032 | 9114473 | C22-6 | 7/24/17 23:16 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.033 | 9114474 | C22-7 | 7/24/17 23:32 | 172020052A | 2.00 |
| 7848 | 18EDBS17205001.034 | EDB_41724DT | EDB_4QM | 7/24/17 23:48 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.035 | EIBKX1724C | PIBLKTP | 7/25/17 0:04 | 1720499999 | 2.00 |
| 7848 | 18EDBS17205001.036 | BLANKA 7/23/17 | PBLK53202 | 7/25/17 0:20 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.037 | LCSA 7/23/17 | LCS53202 | 7/25/17 0:36 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.038 | LCSDA 7/23/17 | LCSD53202 | 7/25/17 0:52 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.039 | 9114605 | 19001 | 7/25/17 1:08 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.040 | 9114606 | 19002 | 7/25/17 1:24 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.041 | 9114607 | 19003 | 7/25/17 1:40 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.042 | 9114608 | 19004DUP | 7/25/17 1:56 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.043 | 9114608 | 19004 | 7/25/17 2:12 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.044 | 9114609 | 19005 | 7/25/17 2:28 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.045 | 9114609MS | 19005MS | 7/25/17 2:44 | 172020053A | 2.00 |
| 7848 | 18EDBS17205001.046 | EDB_31724DT | EDB_3PI | 7/25/17 3:00 | 1720499999 | 1.00 |
| 7848 | 18EDBS17205001.047 | EIBKX1724C | PIBLKTQ | 7/25/17 3:15 | 1720499999 | 2.00 |

# Sample Data

# EDB/DBCP

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

# Data Summary

**Sample Name: 9114605** 19001 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.17 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 01:08:23 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.039.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 108% ( 46 - 136 ) Conc: 0.071302

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 01:08:23 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.039.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 109% ( 46 - 136 ) Conc: 0.072296

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.86 | 3.87 | 437 | 0 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 16341 | 0.071302 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 461 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21119 | 0.072296 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 943 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0094 | <0.0188 | <0.0282 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.071302 | 0.0033 | 0.0066 | 0.0066 | | 1.38 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2542 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0094 | <0.0188 | <0.0282 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:45:59

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9114605** 19001 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.17 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 01:08:23
Instrument : CP18--19846A
Result file : 18EDBS17205001.039.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 108% (46-136) Conc.: 0.071302

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.86 | 3.87 | 437 | -0.011261 |
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 16341 | 0.071302 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 461 | -0.059167 |

## Analysis Report (B)

Injected on : Jul 25, 2017 01:08:23
Instrument : CP18--19846B
Result file : 18EDBS17205001B.039.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 109% (46-136) Conc.: 0.072296

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21119 | 0.072296 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 943 | -0.060272 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0282 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.071302 | | | | 1.38 | |
| ☐ 1,2,3-TCP | | | <0.2542 | <0.0942 | | | |
| ☐ DBCP | | | <0.0282 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: JUL 25 2017

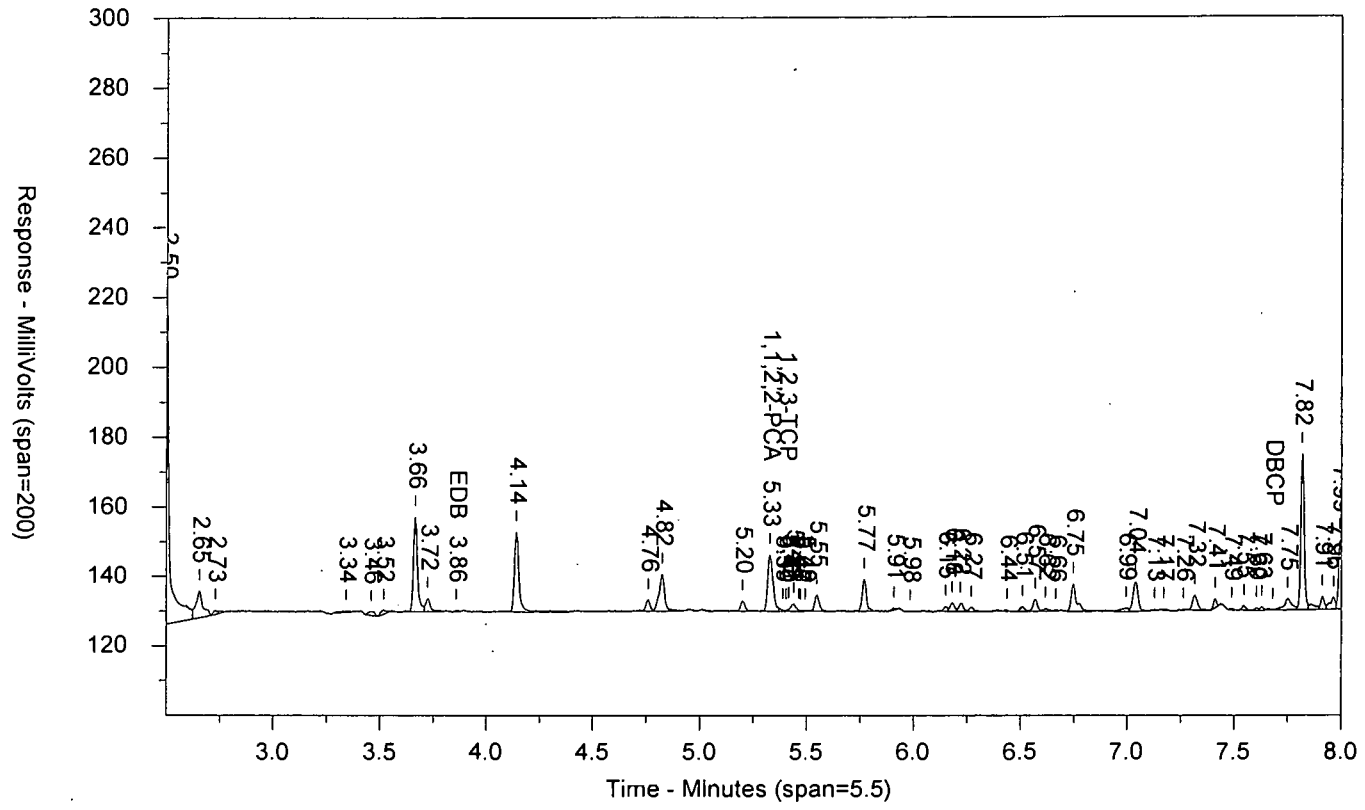
Verified by: Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9114605 AA19001 T 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.039.RAW

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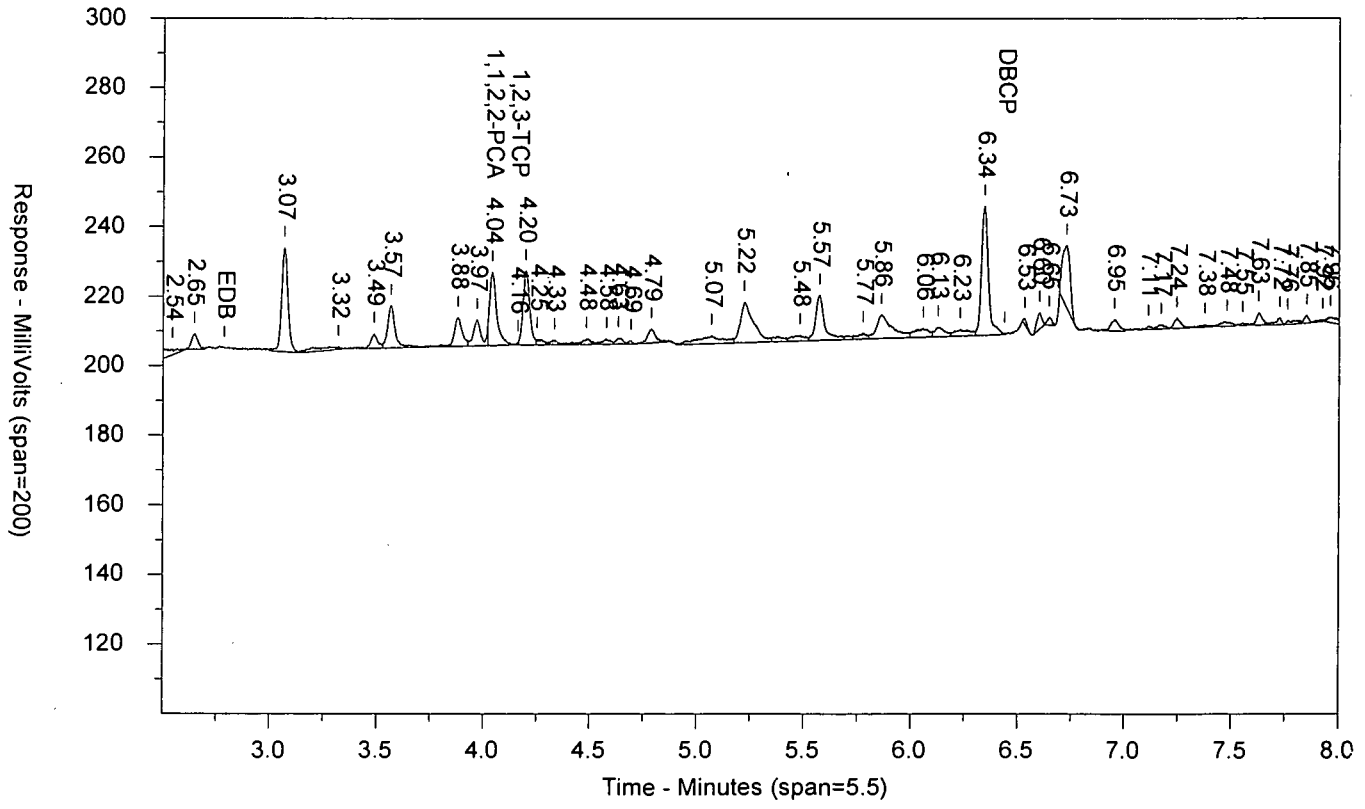

LANCASTER LABORATORIES

Sample Number: 9114605 AA19001 T 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 1:08:23 AM Sample Weight: 37.17
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.857 | 437 | -.011 | EDB | | 0 | | EDB |
| 5.327 | 16341 | .071 | 1,1,2,2-PCA | 4.041 | 21119 | .072 | 1,1,2,2-PCA |
| 5.402 | 461 | -.059 | 1,2,3-TCP | 4.161 | 943 | -.06 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205001.039.RAW
Area File: 18EDBS17205001B.039.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 1:16:57 AM
File Reported On: 7/25/2017 at 10:21:16 AM

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# Data Summary

**Sample Name: 9114606** 19002 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.02 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 01:24:27 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.040.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 105% ( 46 - 136 ) Conc: 0.069667

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 01:24:27 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.040.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 111% ( 46 - 136 ) Conc: 0.073579

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 15902 | 0.069667 |
| 1,2,3-Trichloropropane | 5.37 | 5.38 | 5.43 | 258 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.67 | 7.71 | 521 | 0.001259 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.77 | 2.82 | 1651 | 0 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21390 | 0.073579 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1070 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☑ Ethylene dibromide | | | <0.0095 | <0.0189 | <0.0284 | | | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.069667 | 0.0033 | 0.0066 | 0.0066 | | 5.46 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.2553 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0189 | <0.0284 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:46:01

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9114606** 19002 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.02 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 01:24:27
Instrument : CP18--19846A
Result file : 18EDBS17205001.040.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 105% (46-136) Conc.: 0.069667

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 15902 | 0.069667 |
| **1,2,3-TCP** | 5.37 | 5.38 | 5.43 | 258 | -0.067058 |
| **DBCP** | 7.65 | 7.67 | 7.71 | 521 | 0.001259 |

## Analysis Report (B)

Injected on : Jul 25, 2017 01:24:27
Instrument : CP18--19846B
Result file : 18EDBS17205001B.040.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 111% (46-136) Conc.: 0.073579

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.77 | 2.82 | 1651 | -0.006155 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21390 | 0.073579 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1070 | -0.056812 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0284 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.069667 | | | | 5.46 | |
| ☐ 1,2,3-TCP | | | <0.2553 | <0.0945 | | | |
| ☐ DBCP | | | <0.0284 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 25 2017

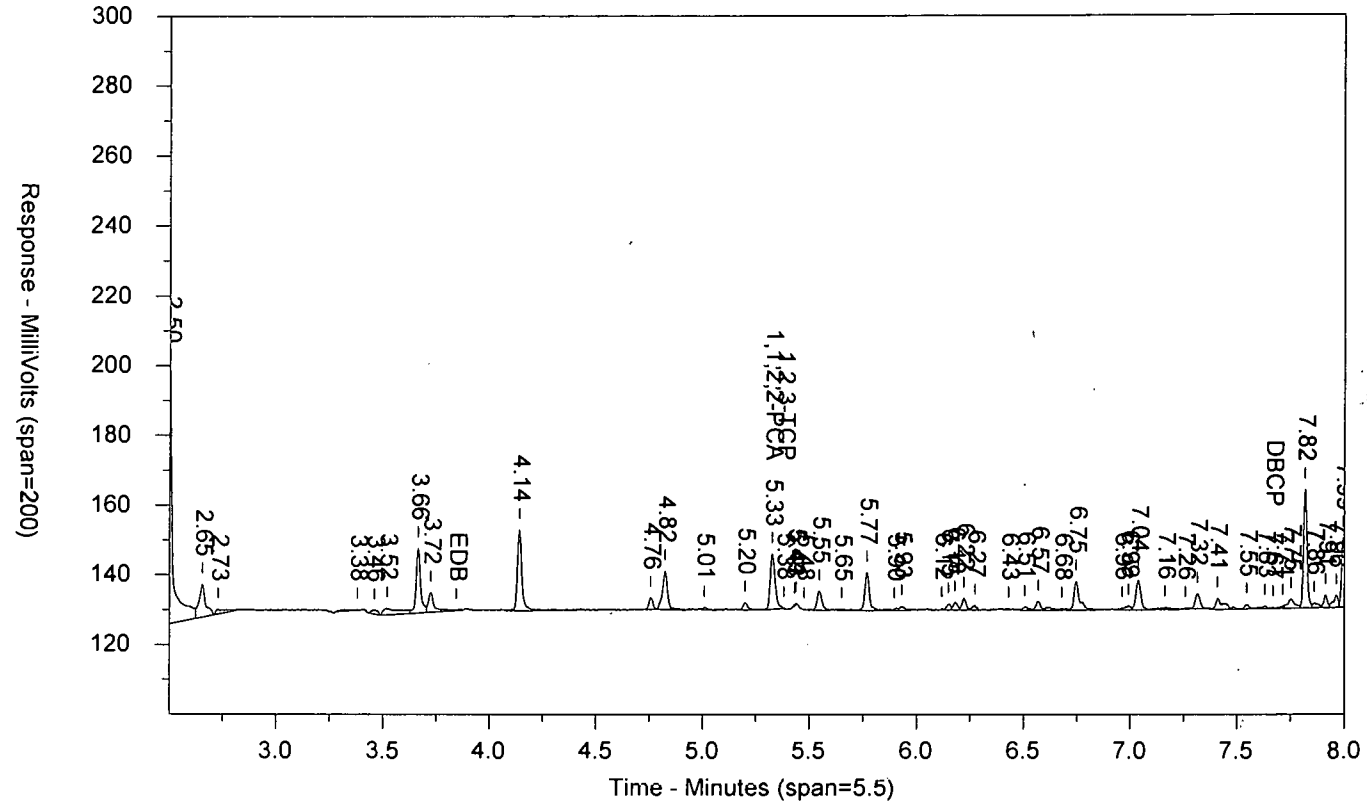
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9114606 AA19002 T 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.040.RAW

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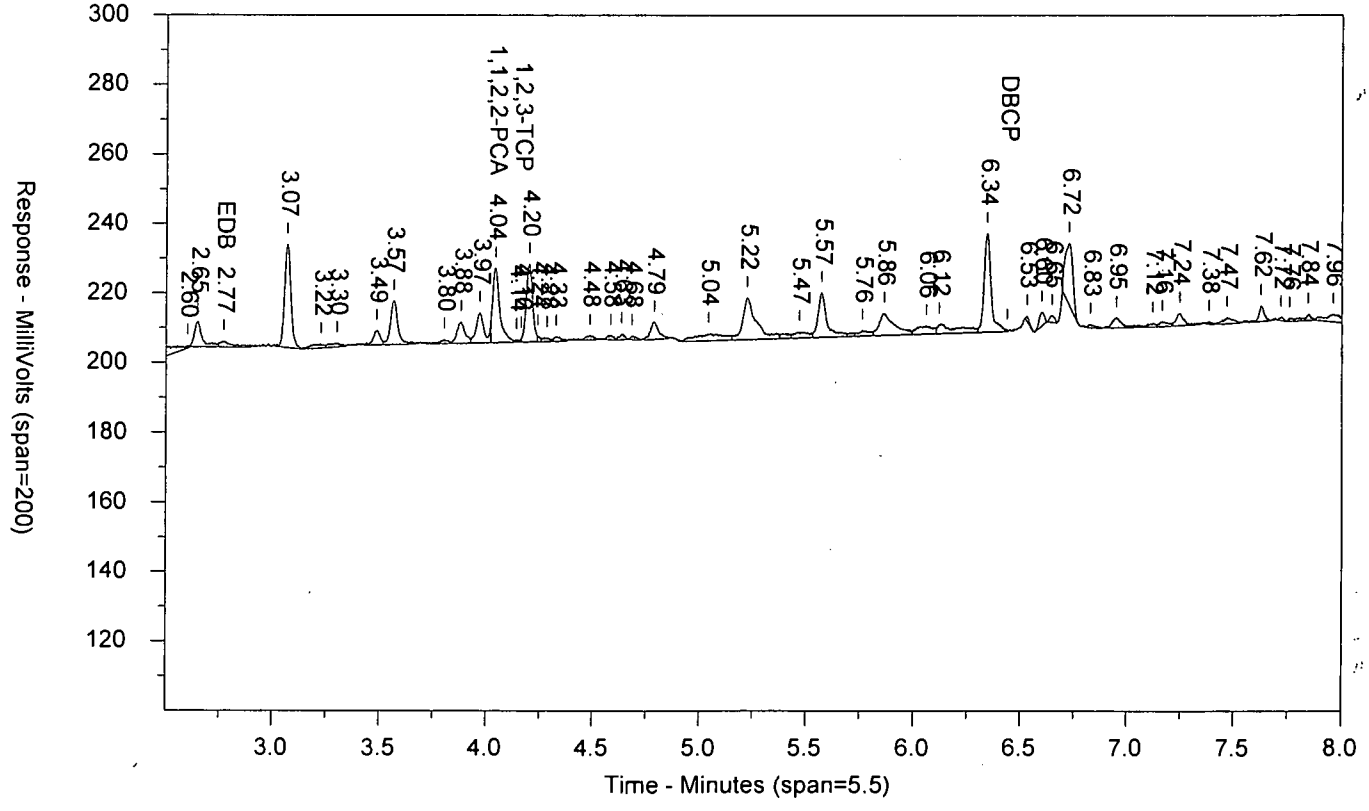

LANCASTER LABORATORIES

Sample Number: 9114606 AA19002 T 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 1:24:27 AM Sample Weight: 37.02
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 2.77 | 1651 | -.006 | EDB |
| 5.325 | 15902 | .07 | 1,1,2,2-PCA | 4.042 | 21390 | .074 | 1,1,2,2-PCA |
| 5.38 | 258 | -.067 | 1,2,3-TCP | 4.162 | 1070 | -.057 | 1,2,3-TCP |
| 7.668 | 521 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17205001.040.RAW
Area File: 18EDBS17205001B.040.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 1:32:58 AM
File Reported On: 7/25/2017 at 10:21:30 AM

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# Data Summary

**Sample Name: 9114607** 19003 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.31 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 01:40:24 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.041.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 111% ( 46 - 136 ) Conc: 0.073553

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 01:40:24 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.041.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 109% ( 46 - 136 ) Conc: 0.071699

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.86 | 3.87 | 881 | 0 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 16920 | 0.073553 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 371 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.66 | 7.71 | 553 | 0.001326 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.76 | 2.82 | 1449 | 0 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21030 | 0.071699 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 769 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☑ Ethylene dibromide | | | <0.0094 | <0.0188 | <0.0281 | | | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.073553 | 0.0033 | 0.0066 | 0.0066 | | 2.55 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.2533 | | | |
| ☐ 1,2-Dibromo-3-chloroprop | | | <0.0094 | <0.0188 | <0.0281 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:46:04

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9114607** 19003 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.31 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 01:40:24
Instrument : CP18--19846A
Result file : 18EDBS17205001.041.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 111% (46-136) Conc.: 0.073553

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.86 | 3.87 | 881 | -0.008467 |
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 16920 | 0.073553 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 371 | -0.062315 |
| **DBCP** | 7.65 | 7.66 | 7.71 | 553 | 0.001326 |

## Analysis Report (B)

Injected on : Jul 25, 2017 01:40:24
Instrument : CP18--19846B
Result file : 18EDBS17205001B.041.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 109% (46-136) Conc.: 0.071699

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.76 | 2.82 | 1449 | -0.006991 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21030 | 0.071699 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 769 | -0.065059 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0281 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.073553 | | | | 2.55 | |
| ☐ 1,2,3-TCP | | | <0.2533 | <0.0938 | | | |
| ☐ DBCP | | | <0.0281 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 25 2017

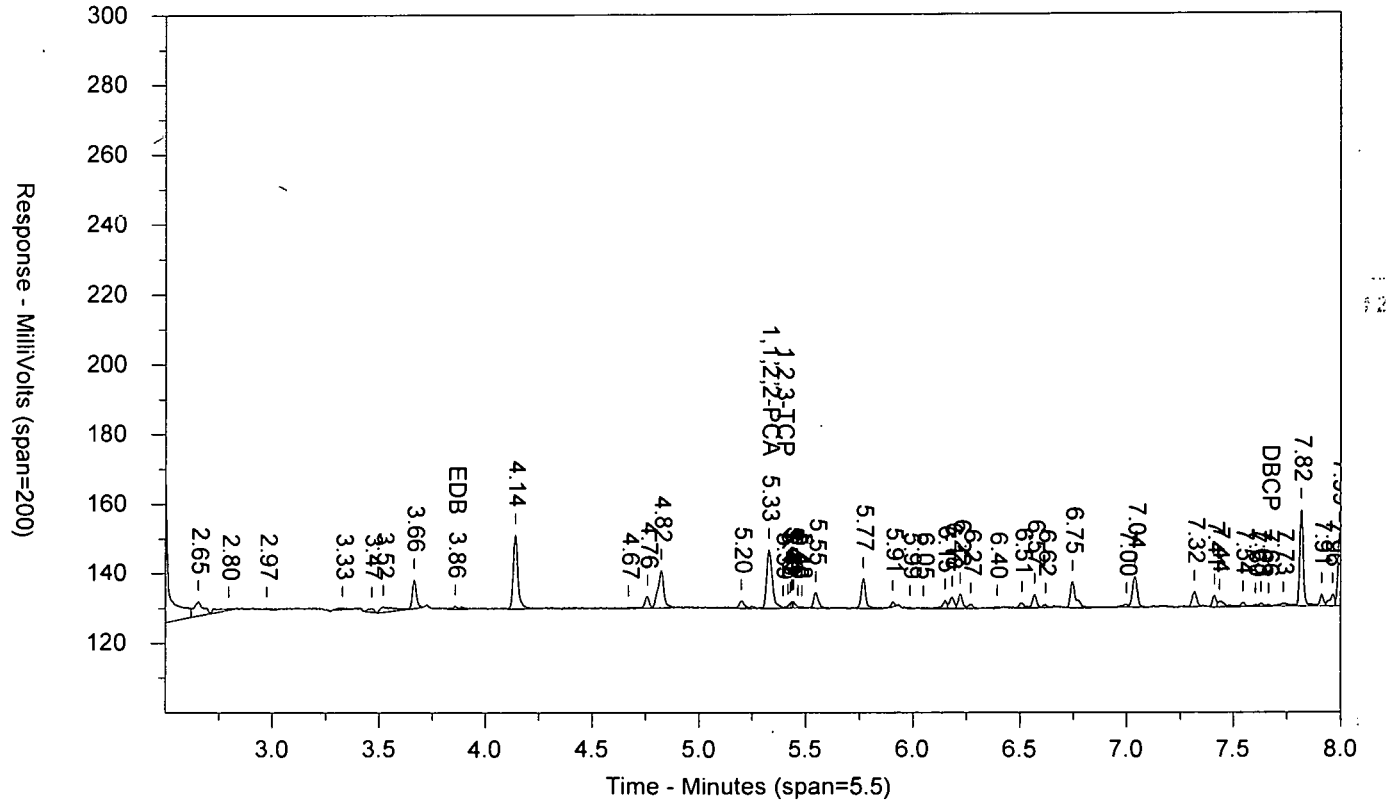
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9114607 AA19003 T 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.041.RAW

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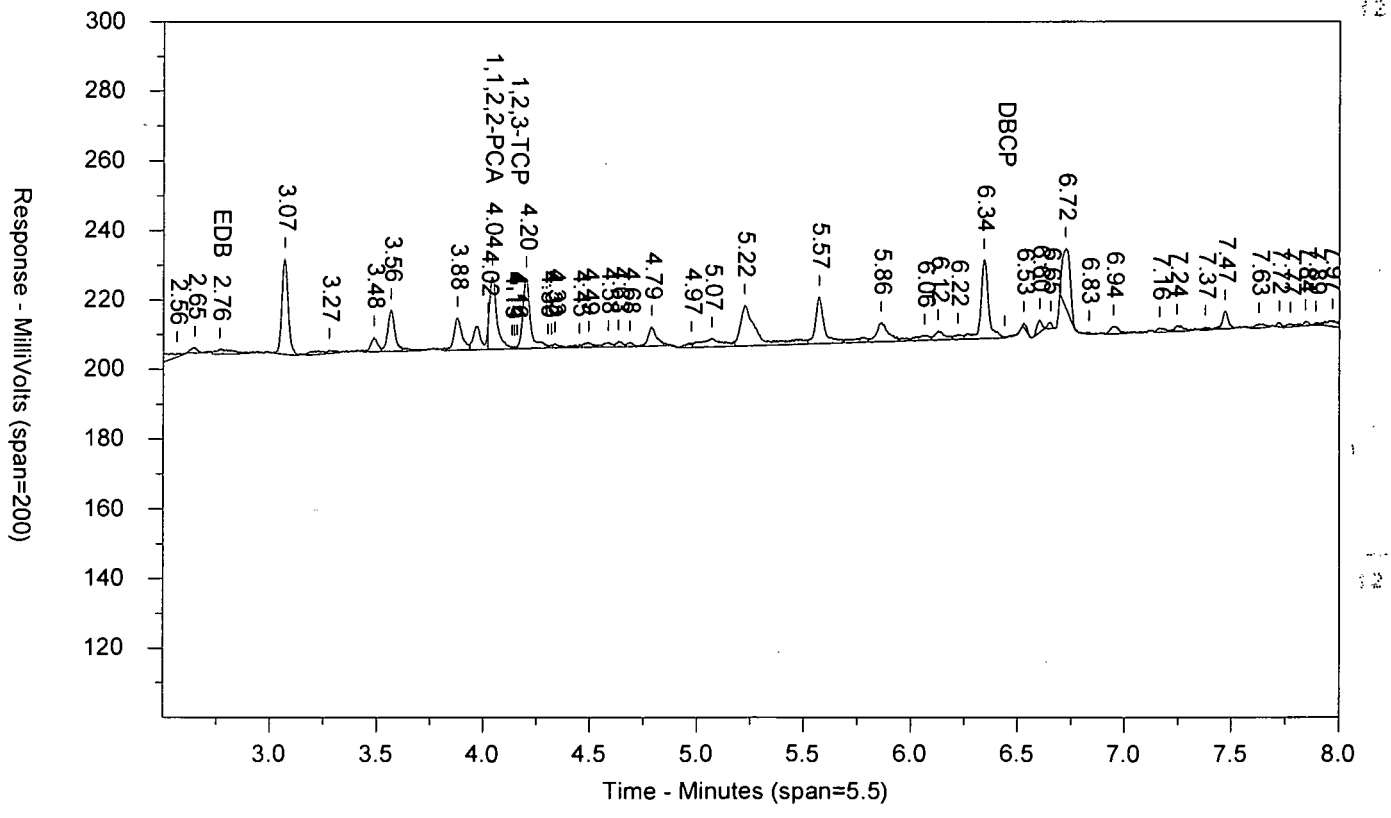


LANCASTER LABORATORIES

Sample Number: 9114607 AA19003 T 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 1:40:24 AM Sample Weight: 37.31
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.857 | 881 | -.008 | EDB | 2.763 | 1449 | -.007 | EDB |
| 5.327 | 16920 | .074 | 1,1,2,2-PCA | 4.039 | 21030 | .072 | 1,1,2,2-PCA |
| 5.394 | 371 | -.062 | 1,2,3-TCP | 4.156 | 769 | -.065 | 1,2,3-TCP |
| 7.663 | 553 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17205001.041.RAW
Area File: 18EDBS17205001B.041.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 1:48:58 AM
File Reported On: 7/25/2017 at 10:21:44 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9114608** 19004 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.39 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 02:12:16 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.043.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.063425

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 02:12:16 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.043.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 105% ( 46 - 136 ) Conc: 0.069324

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.86 | 3.87 | 560 | 0 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14621 | 0.063425 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 421 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20416 | 0.069324 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 673 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0094 | <0.0187 | <0.0281 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063425 | 0.0033 | 0.0066 | 0.0066 | | 8.89 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2527 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0094 | <0.0187 | <0.0281 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:46:09

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9114608** 19004 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.39 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 02:12:16
Instrument : CP18--19846A
Result file : 18EDBS17205001.043.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.063425

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.86 | 3.87 | 560 | -0.010434 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14621 | 0.063425 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 421 | -0.060322 |

## Analysis Report (B)

Injected on : Jul 25, 2017 02:12:16
Instrument : CP18--19846B
Result file : 18EDBS17205001B.043.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 105% (46-136) Conc.: 0.069324

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20416 | 0.069324 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 673 | -0.067667 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0281 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063425 | | | | 8.89 | |
| ☐ 1,2,3-TCP | | | <0.2527 | <0.0936 | | | |
| ☐ DBCP | | | <0.0281 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 25 2017

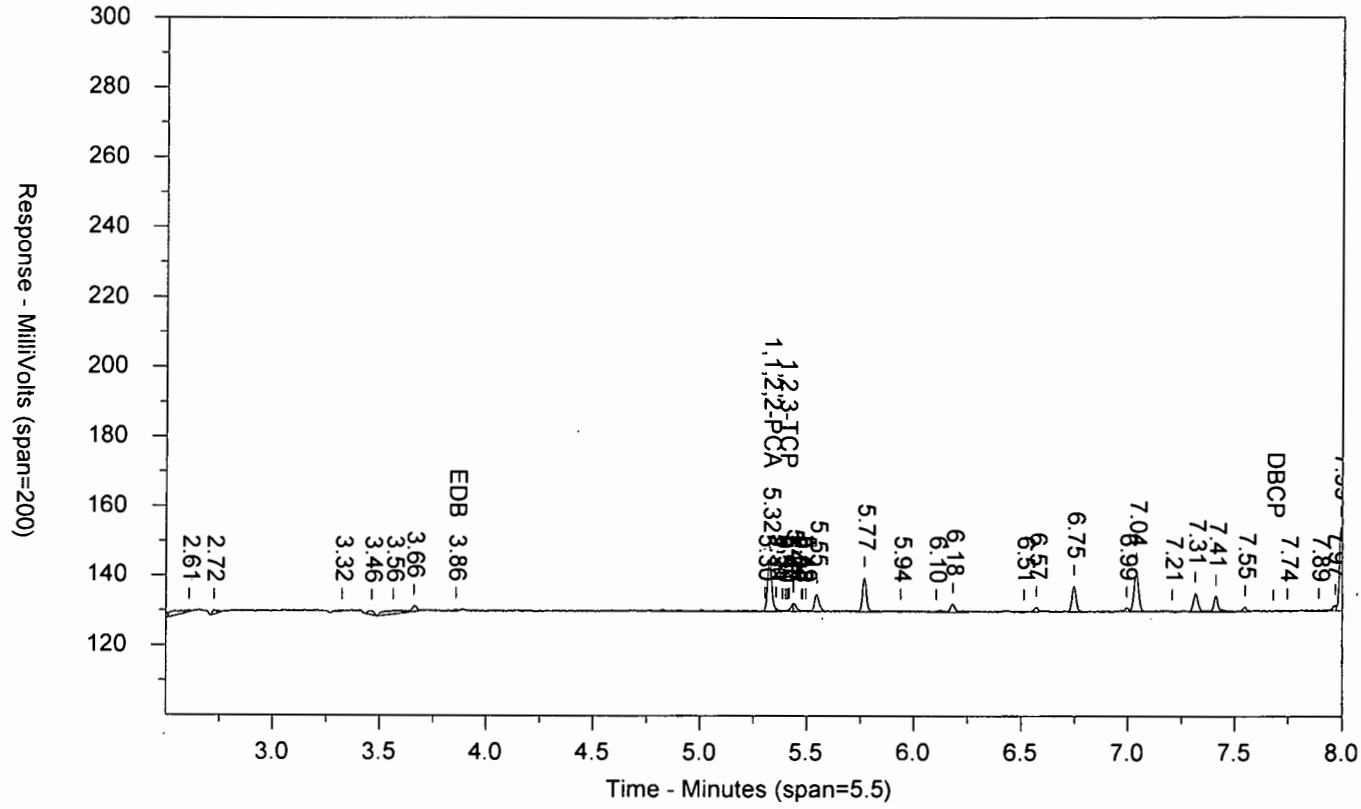
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9114608 AA19004 T 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.043.RAW

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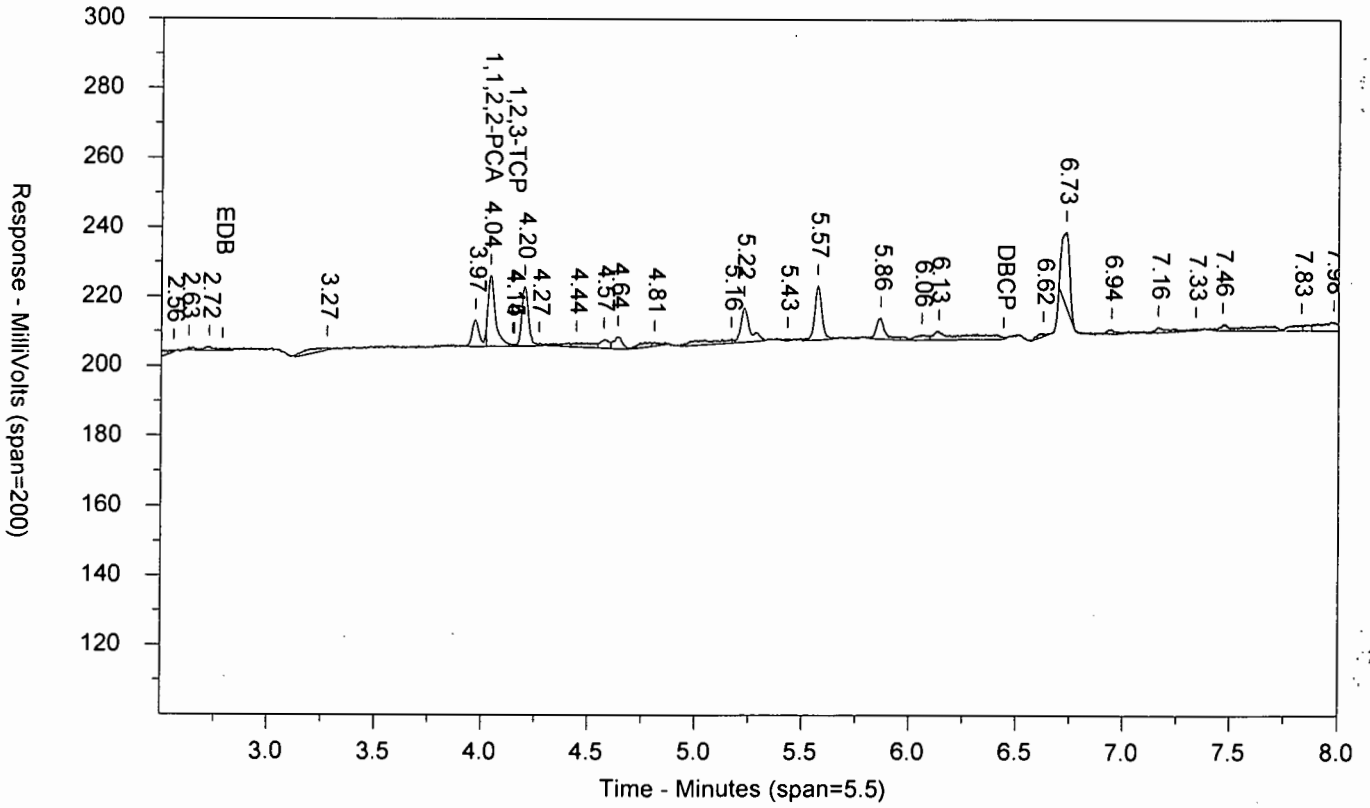

LANCASTER LABORATORIES

Sample Number: 9114608 AA19004 T 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 2:12:16 AM Sample Weight: 37.39
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.857 | 560 | -.01 | EDB | | 0 | | EDB |
| 5.325 | 14621 | .063 | 1,1,2,2-PCA | 4.039 | 20416 | .069 | 1,1,2,2-PCA |
| 5.402 | 421 | -.06 | 1,2,3-TCP | 4.151 | 673 | -.068 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205001.043.RAW
Area File: 18EDBS17205001B.043.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 2:20:56 AM
File Reported On: 7/25/2017 at 10:22:14 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9114609** 19005 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.15 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 02:28:09 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.044.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.06432

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 02:28:09 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.044.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.072698

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 14733 | 0.06432 |
| 1,2,3-Trichloropropane | 5.37 | 5.39 | 5.43 | 400 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21219 | 0.072698 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 724 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0094 | <0.0188 | <0.0283 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.06432 | 0.0033 | 0.0066 | 0.0066 | | 12.23 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2544 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0094 | <0.0188 | <0.0283 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:46:11

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9114609** 19005 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.15 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 02:28:09
Instrument : CP18--19846A
Result file : 18EDBS17205001.044.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.06432

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 14733 | 0.064320 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 400 | -0.061487 |

## Analysis Report (B)

Injected on : Jul 25, 2017 02:28:09
Instrument : CP18--19846B
Result file : 18EDBS17205001B.044.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.072698

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21219 | 0.072698 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 724 | -0.066639 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0283 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.064320 | | | | 12.23 | |
| ☐ 1,2,3-TCP | | | <0.2544 | <0.0942 | | | |
| ☐ DBCP | | | <0.0283 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 25 2017

Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9114609 AA19005 T 172020053A 10398 SW-846 8011

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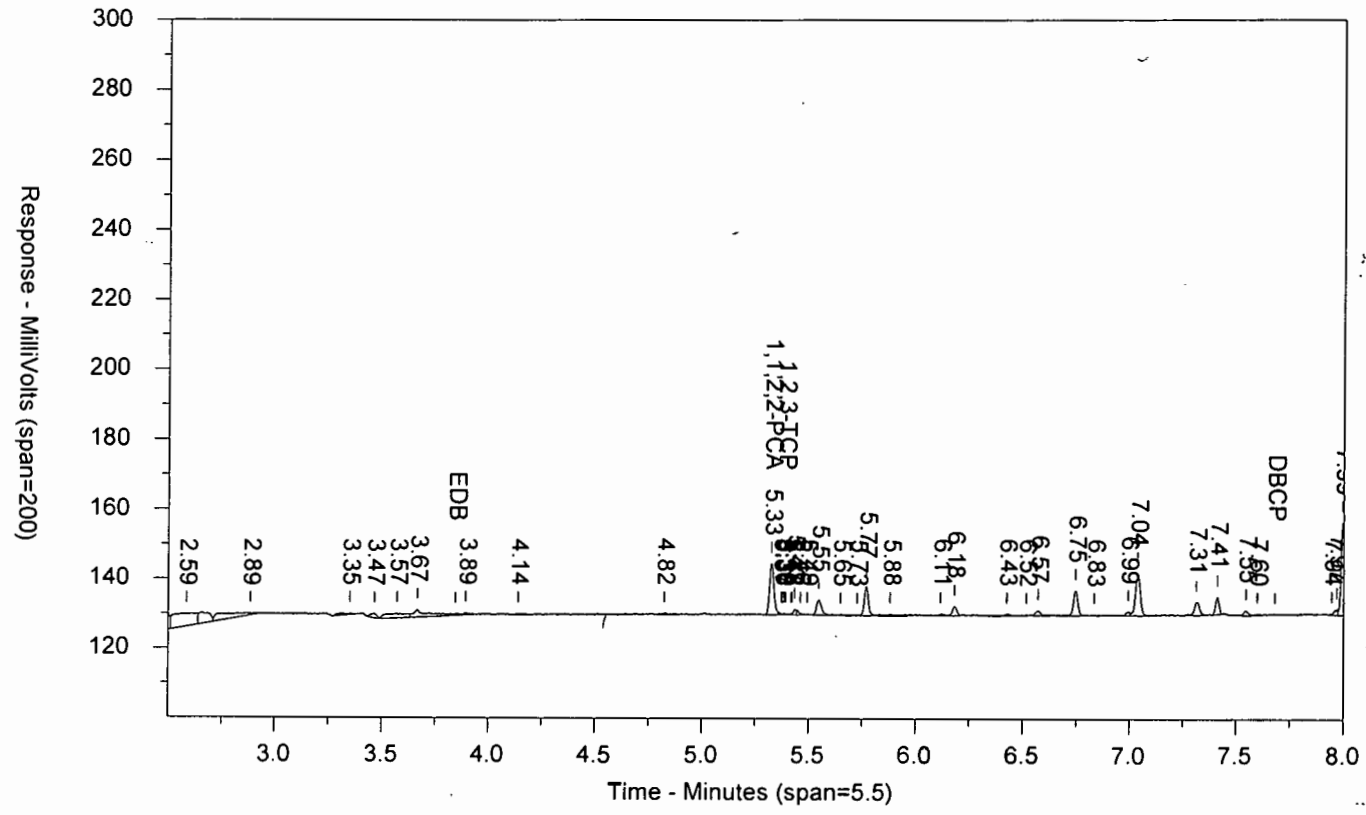


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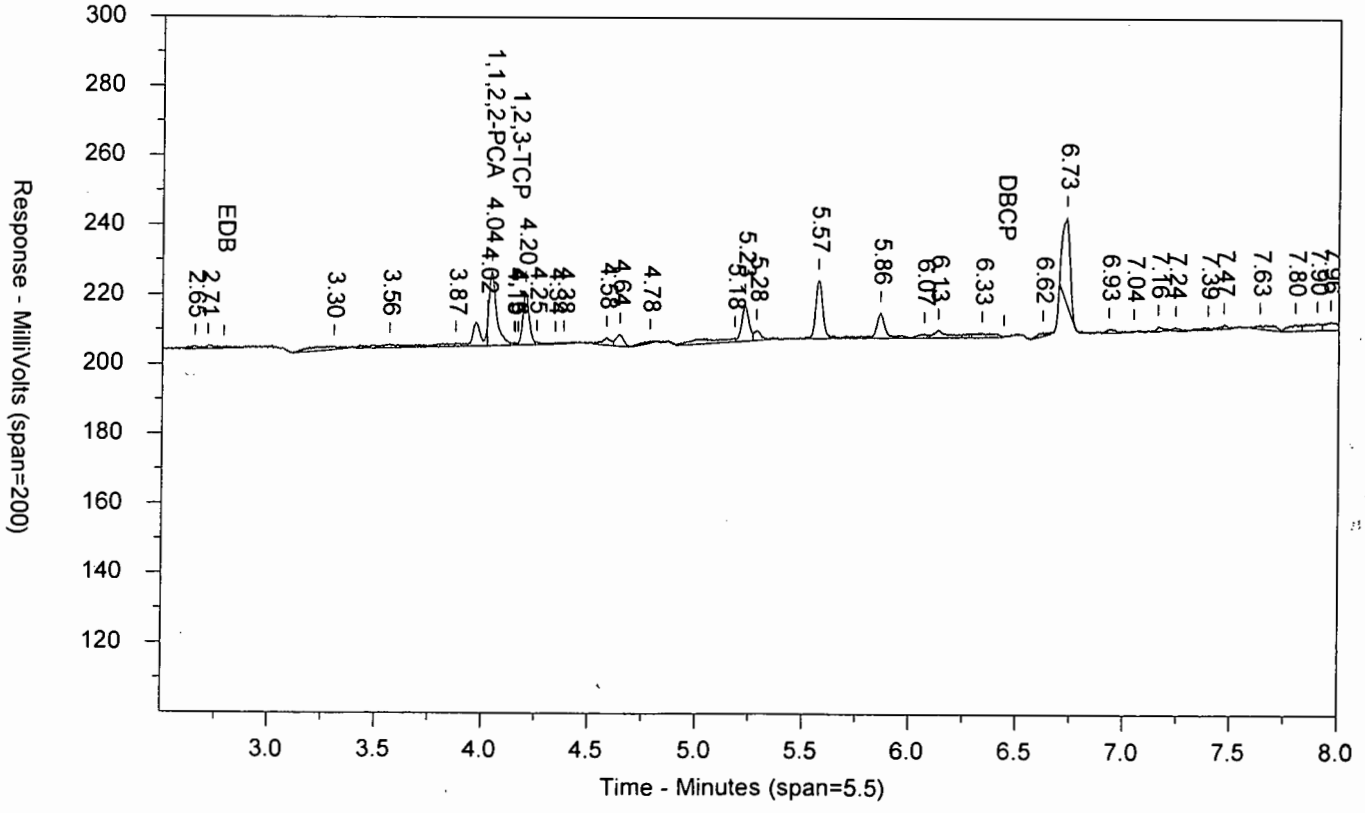

LANCASTER LABORATORIES

Sample Number: 9114609 AA19005 T 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 2:28:09 AM Sample Weight: 37.15
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.326 | 14733 | .064 | 1,1,2,2-PCA | 4.042 | 21219 | .073 | 1,1,2,2-PCA |
| 5.39 | 400 | -.061 | 1,2,3-TCP | 4.164 | 724 | -.067 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205001.044.RAW
Area File: 18EDBS17205001B.044.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 2:36:44 AM
File Reported On: 7/25/2017 at 10:22:32 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17205001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 47

| | Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 2 | CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 3 | CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 4 | CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | |
| 5 | EIBKX1724C | 5 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 6 | EDB_11724DT | 6 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 1 | 1720499999 | 10398 |
| 7 | EDB_21724DT | 7 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 2 | 1720499999 | 10398 |
| 8 | EDB_31724DT | 8 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 3 | 1720499999 | 10398 |
| 9 | EDB_41724DT | 9 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 4 | 1720499999 | 10398 |
| 10 | EDB_51724DT | 10 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 5 | 1720499999 | 10398 |
| 11 | EDB_61724DT | 11 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 6 | 1720499999 | 10398 |
| 12 | MDEDX1724DT | 12 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 13 | EDB_31724DT | 13 | CCAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 14 | EIBKX1724C | 14 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 15 | BLANKA 7/23/17 | 15 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 16 | LCSA 7/23/17 | 16 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 17 | LCSDA 7/23/17 | 17 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020052A | 10398 |
| 18 | 9112697 | 18 | T | AA | 18EDBS.MET | 37.35 | 2 | 1 | 0 | 172020052A | 10398 |
| 19 | 9112698 | 19 | T | AA | 18EDBS.MET | 37.1 | 2 | 1 | 0 | 172020052A | 10398 |
| 20 | 9112699 | 20 | T | AA | 18EDBS.MET | 36.83 | 2 | 1 | 0 | 172020052A | 10398 |
| 21 | 9112700 | 21 | T | AA | 18EDBS.MET | 37.07 | 2 | 1 | 0 | 172020052A | 10398 |
| 22 | 9112701 | 22 | T | AA | 18EDBS.MET | 37.02 | 2 | 1 | 0 | 172020052A | 10398 |
| 23 | EDB_51724DT | 23 | CCAL | LV | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 24 | EIBKX1724C | 24 | PIBLK | TO | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 25 | 9114466 | 25 | T | AA | 18EDBS.MET | 37.26 | 2 | 1 | 0 | 172020052A | 10398 |
| 26 | 9114467MS | 26 | MS | AA | 18EDBS.MET | 37.25 | 2 | 1 | 0 | 172020052A | 10398 |
| 27 | 9114468MSD | 27 | MSD | AA | 18EDBS.MET | 37.35 | 2 | 1 | 0 | 172020052A | 10398 |
| 28 | 9114469 | 28 | T | AA | 18EDBS.MET | 37.47 | 2 | 1 | 0 | 172020052A | 10398 |
| 29 | 9114470 | 29 | T | AA | 18EDBS.MET | 37.23 | 2 | 1 | 0 | 172020052A | 10398 |
| 30 | 9114471 | 30 | T | AA | 18EDBS.MET | 37.43 | 2 | 1 | 0 | 172020052A | 10398 |
| 31 | 9114472 | 31 | T | AA | 18EDBS.MET | 37.29 | 2 | 1 | 0 | 172020052A | 10398 |
| 32 | 9114473 | 32 | T | AA | 18EDBS.MET | 36.94 | 2 | 1 | 0 | 172020052A | 10398 |
| 33 | 9114474 | 33 | T | AA | 18EDBS.MET | 37.12 | 2 | 1 | 0 | 172020052A | 10398 |
| 34 | EDB_41724DT | 34 | CCAL | QM | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 35 | EIBKX1724C | 35 | PIBLK | TP | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |
| 36 | BLANKA 7/23/17 | 36 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 37 | LCSA 7/23/17 | 37 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 38 | LCSDA 7/23/17 | 38 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172020053A | 10398 |
| 39 | 9114605 | 39 | T | AA | 18EDBS.MET | 37.17 | 2 | 1 | 0 | 172020053A | 10398 |
| 40 | 9114606 | 40 | T | AA | 18EDBS.MET | 37.02 | 2 | 1 | 0 | 172020053A | 10398 |
| 41 | 9114607 | 41 | T | AA | 18EDBS.MET | 37.31 | 2 | 1 | 0 | 172020053A | 10398 |
| 42 | 9114608 | 42 | DUP | AA | 18EDBS.MET | 37.22 | 2 | 1 | 0 | 172020053A | 10398 |
| 43 | 9114608 | 43 | T | AA | 18EDBS.MET | 37.39 | 2 | 1 | 0 | 172020053A | 10398 |
| 44 | 9114609 | 44 | T | AA | 18EDBS.MET | 37.15 | 2 | 1 | 0 | 172020053A | 10398 |
| 45 | 9114609MS | 45 | MS | AA | 18EDBS.MET | 37.14 | 2 | 1 | 0 | 172020053A | 10398 |
| 46 | EDB_31724DT | 46 | CCAL | PI | 18EDBS.MET | 1 | 1 | 1 | 0 | 1720499999 | 10398 |
| 47 | EIBKX1724C | 47 | PIBLK | TQ | 18EDBS.MET | 35 | 2 | 1 | 0 | 1720499999 | 10398 |

DD12669 7/25/17

Heather Miller
Heather M. Miller
Chemist

Set-up by: _____ Date: JUL 24 2017

7/24/2017

EIBKX1724C AAPIBLKAA PIBLK1720499999 10398 SW-846 8011...

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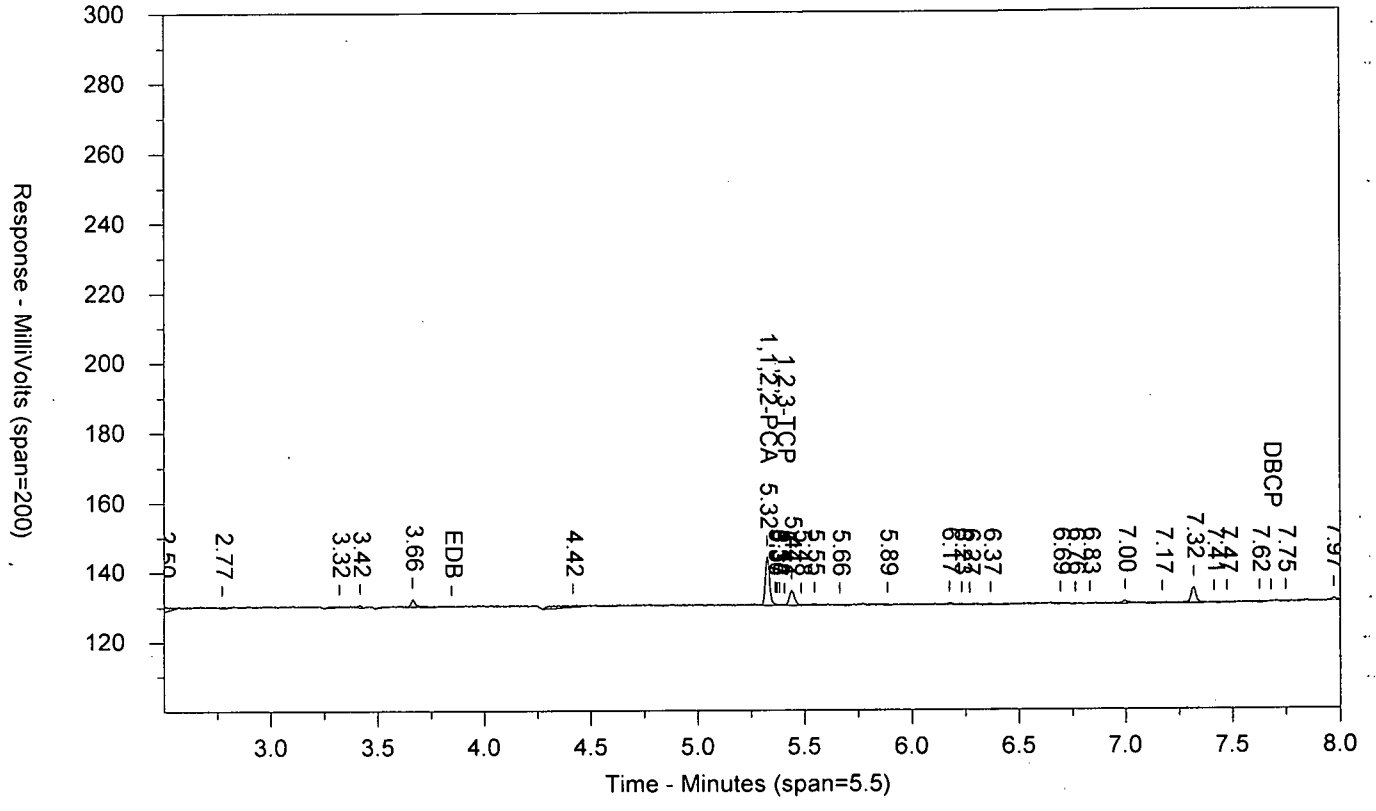


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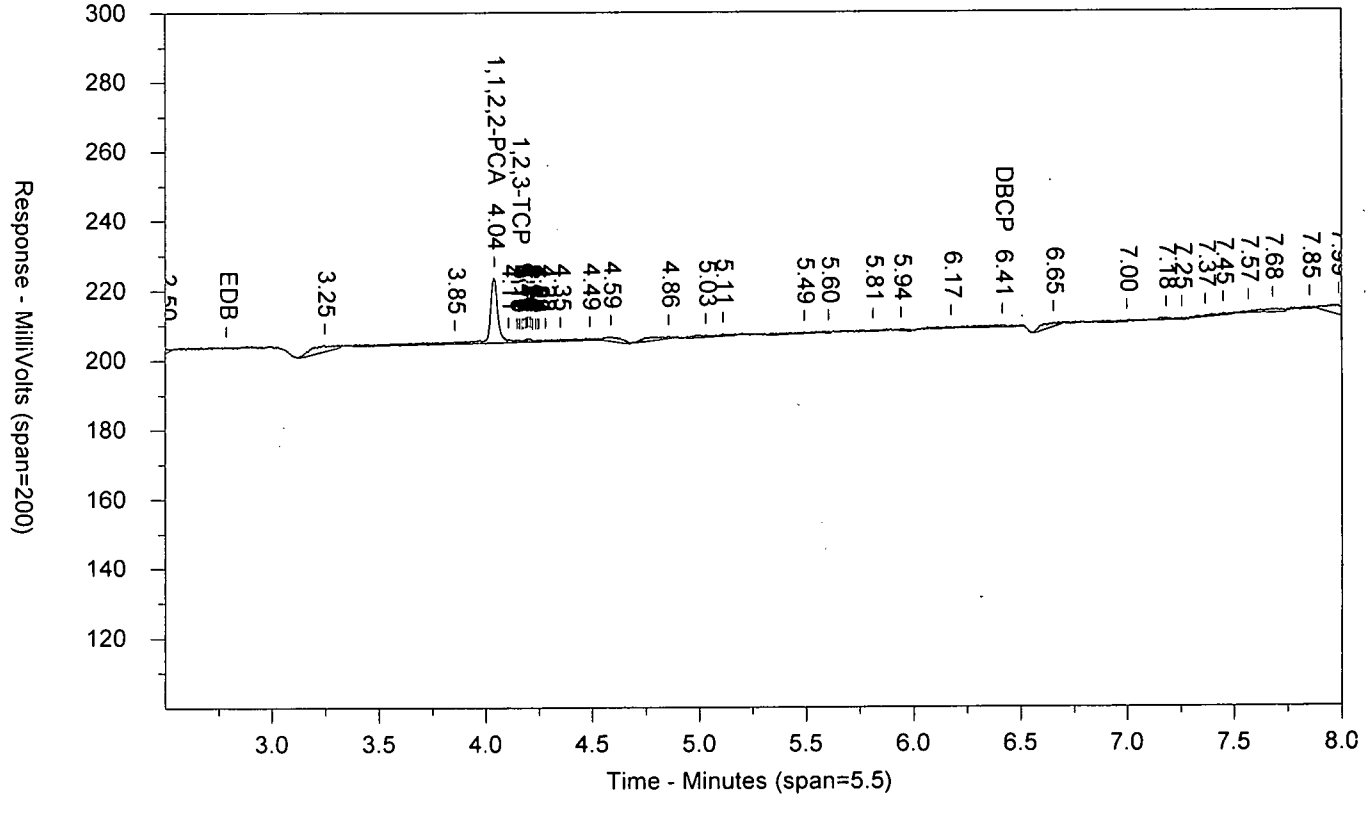

LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:04:58 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 13844 | .068 | 1,1,2,2-PCA | 4.04 | 18692 | .067 | 1,1,2,2-PCA |
| 5.406 | 297 | .01 | 1,2,3-TCP | 4.157 | 753 | .02 | 1,2,3-TCP |
| | 0 | | DBCP | 6.415 | 765 | -.017 | DBCP |

Files:
Area File: 18EDBS17205001.005.RAW
Area File: 18EDBS17205001B.005.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:13:33 PM
File Reported On: 7/25/2017 at 10:02:39 AM

EDB_11724DT AAEDB_1AA ICAL 1720499999 10398 SW-846 8011

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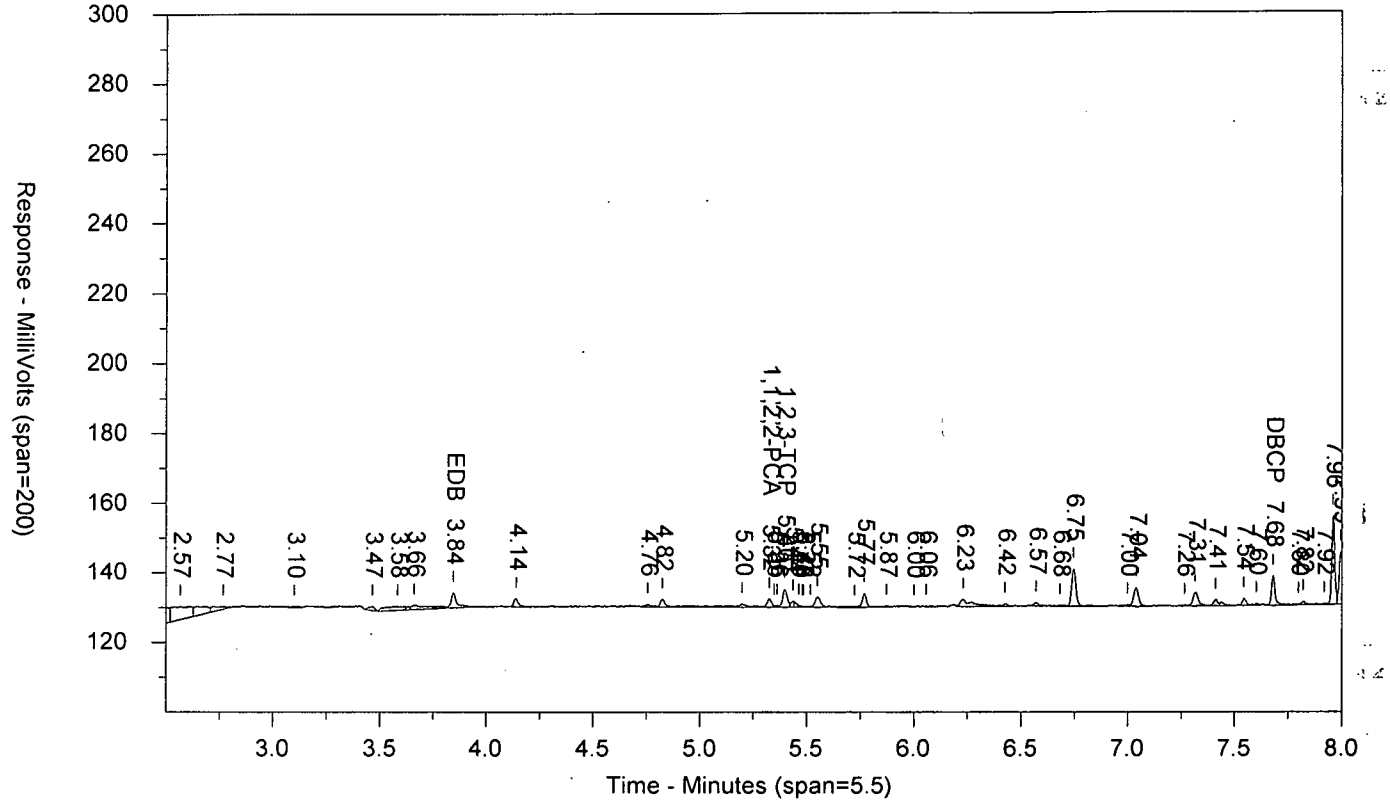


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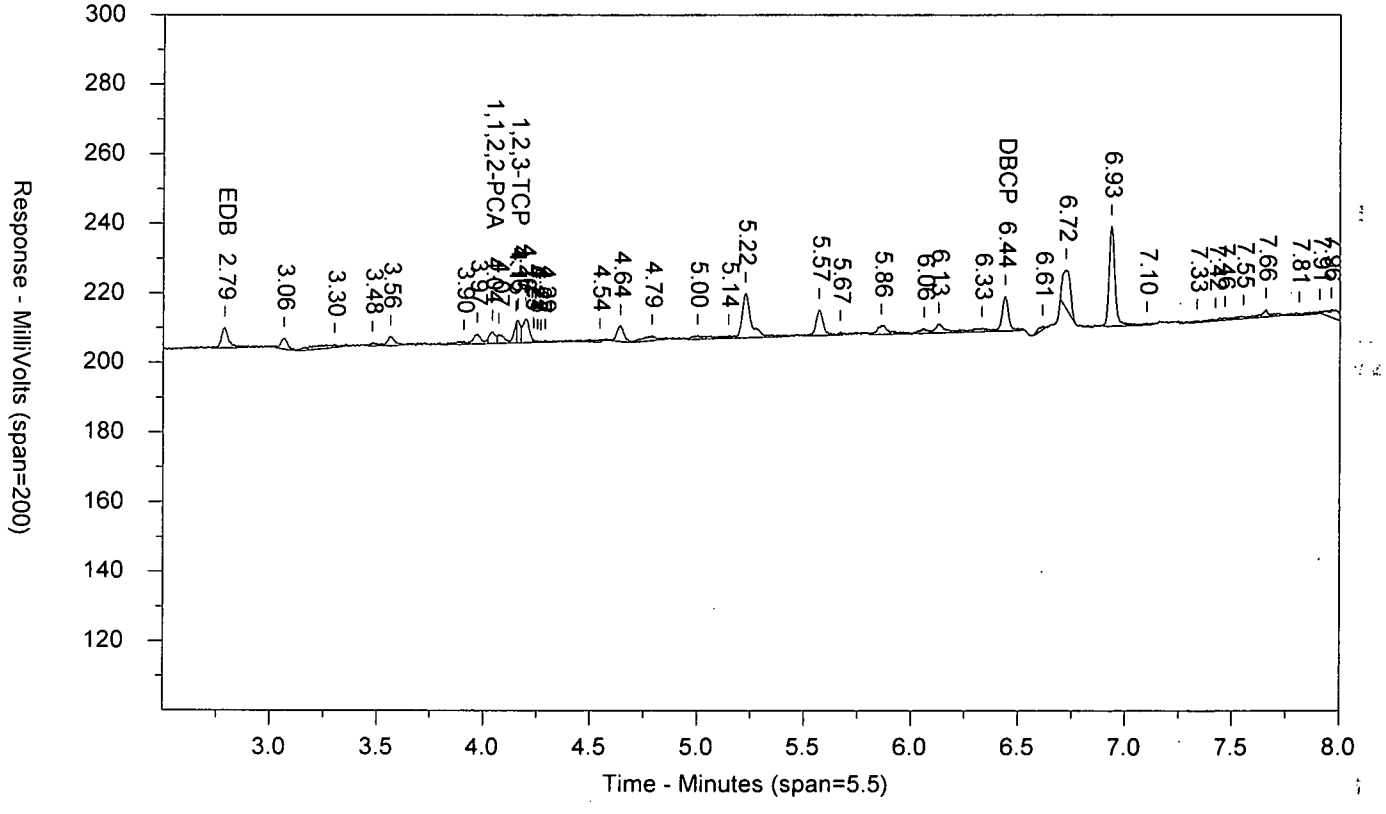


LANCASTER LABORATORIES

Sample Number: EDB_11724DT AAEDB_1AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:20:58 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

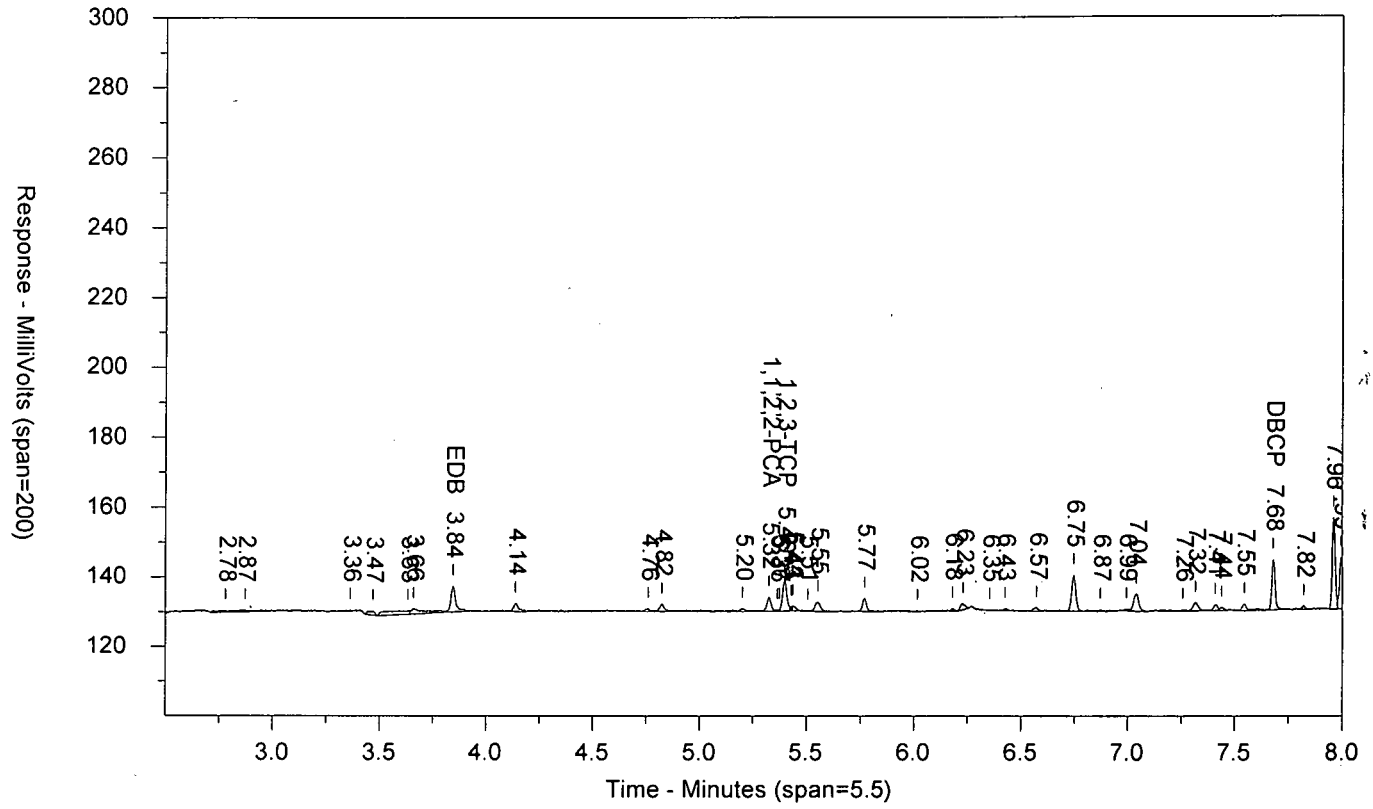
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 4412 | .436 | EDB | 2.787 | 5880 | .323 | EDB |
| 5.325 | 2408 | .207 | 1,1,2,2-PCA | 4.041 | 3465 | .218 | 1,1,2,2-PCA |
| 5.397 | 5184 | 3.153 | 1,2,3-TCP | 4.161 | 6622 | 3.131 | 1,2,3-TCP |
| 7.679 | 8604 | .36 | DBCP | 6.436 | 10052 | .117 | DBCP |

Files:
Area File: 18EDBS17205001.006.RAW
Area File: 18EDBS17205001B.006.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:29:32 PM
File Reported On: 7/25/2017 at 10:02:55 AM

EDB_21724DT AAEDB_2AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.007.RAW

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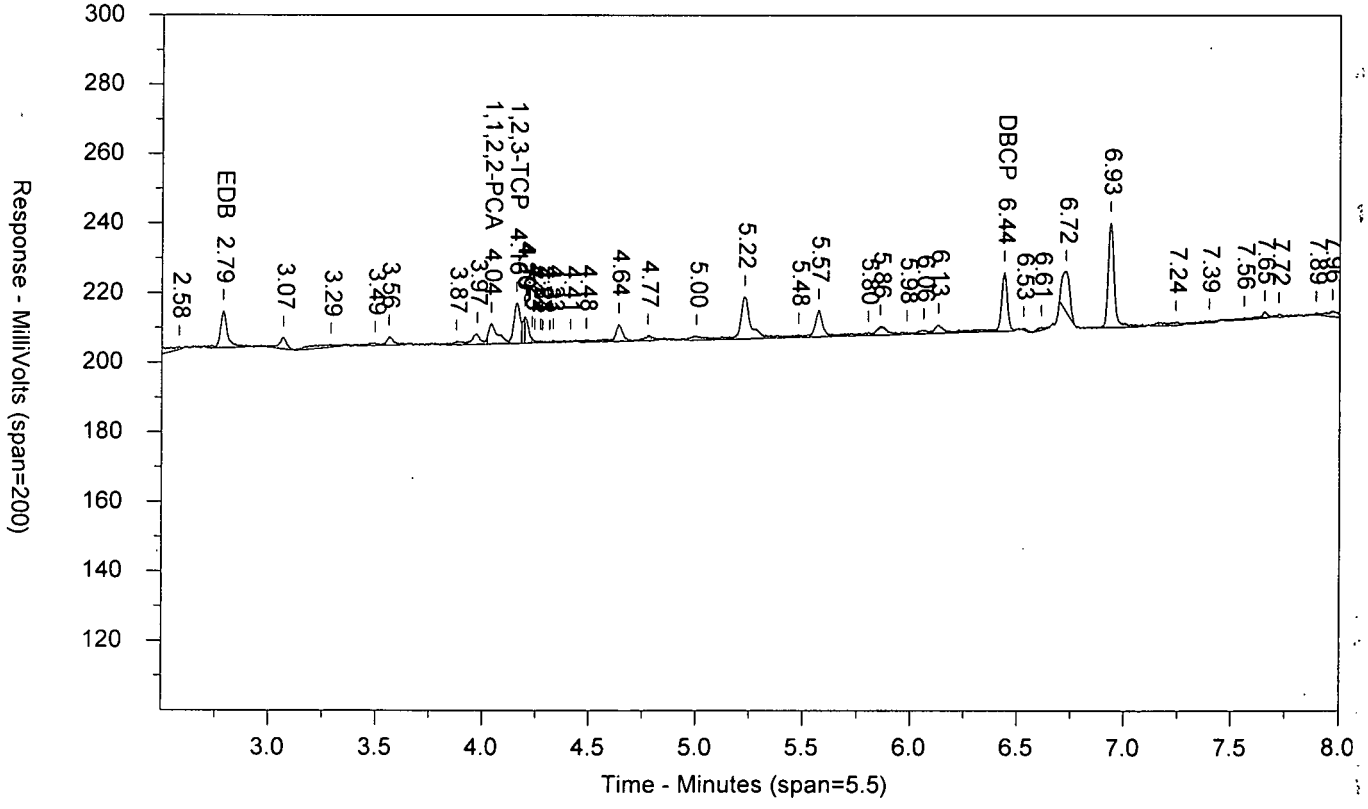


LANCASTER LABORATORIES

Sample Number: EDB_21724DT AAEDB_2AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:36:56 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

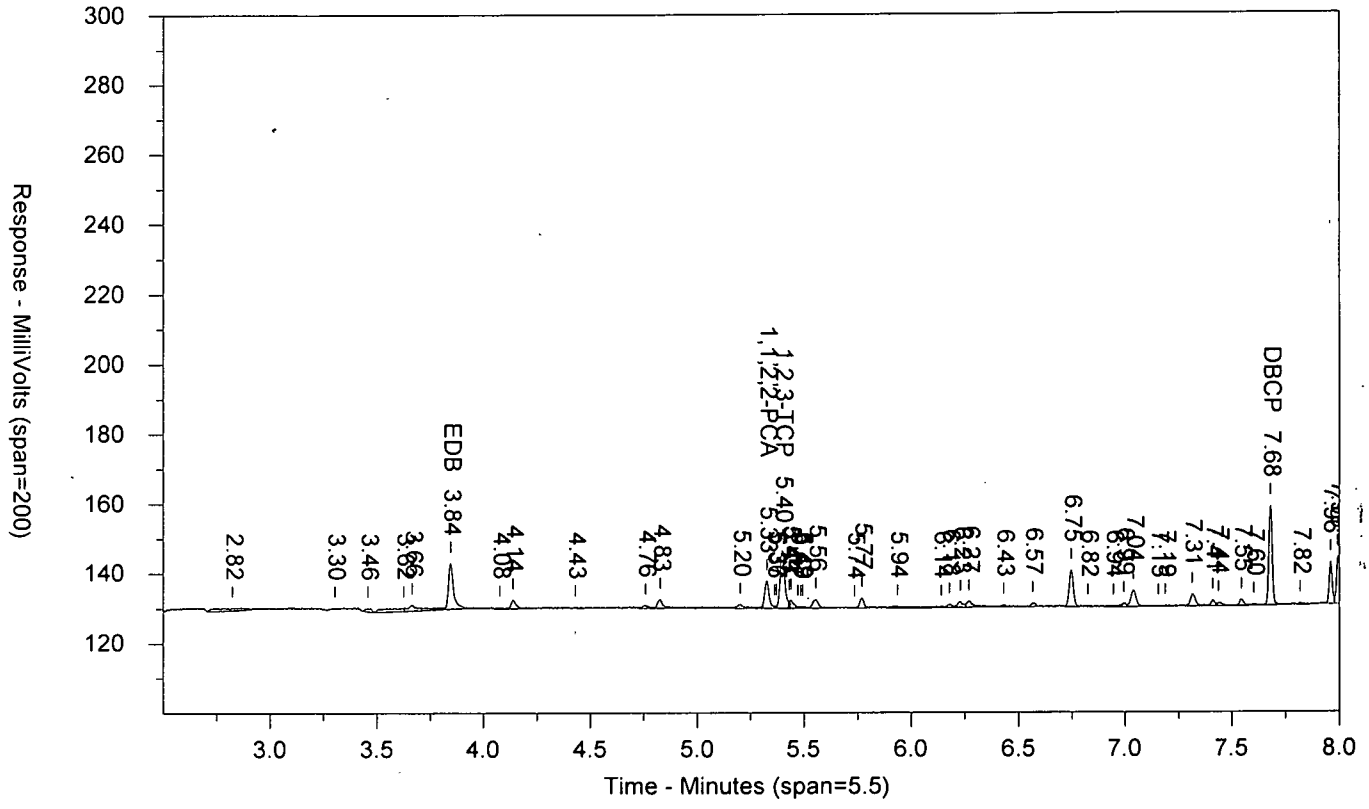
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.845 | 7426 | .701 | EDB | 2.786 | 10603 | .654 | EDB |
| 5.324 | 4086 | .346 | 1,1,2,2-PCA | 4.039 | 5938 | .366 | 1,1,2,2-PCA |
| 5.397 | 8598 | 5.171 | 1,2,3-TCP | 4.158 | 11596 | 5.404 | 1,2,3-TCP |
| 7.679 | 14448 | .609 | DBCP | 6.437 | 16928 | .441 | DBCP |

Files:
Area File: 18EDBS17205001.007.RAW
Area File: 18EDBS17205001B.007.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 4:45:31 PM
File Reported On: 7/25/2017 at 10:03:09 AM

EDB_31724DT AAEDB_3AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.008.RAW

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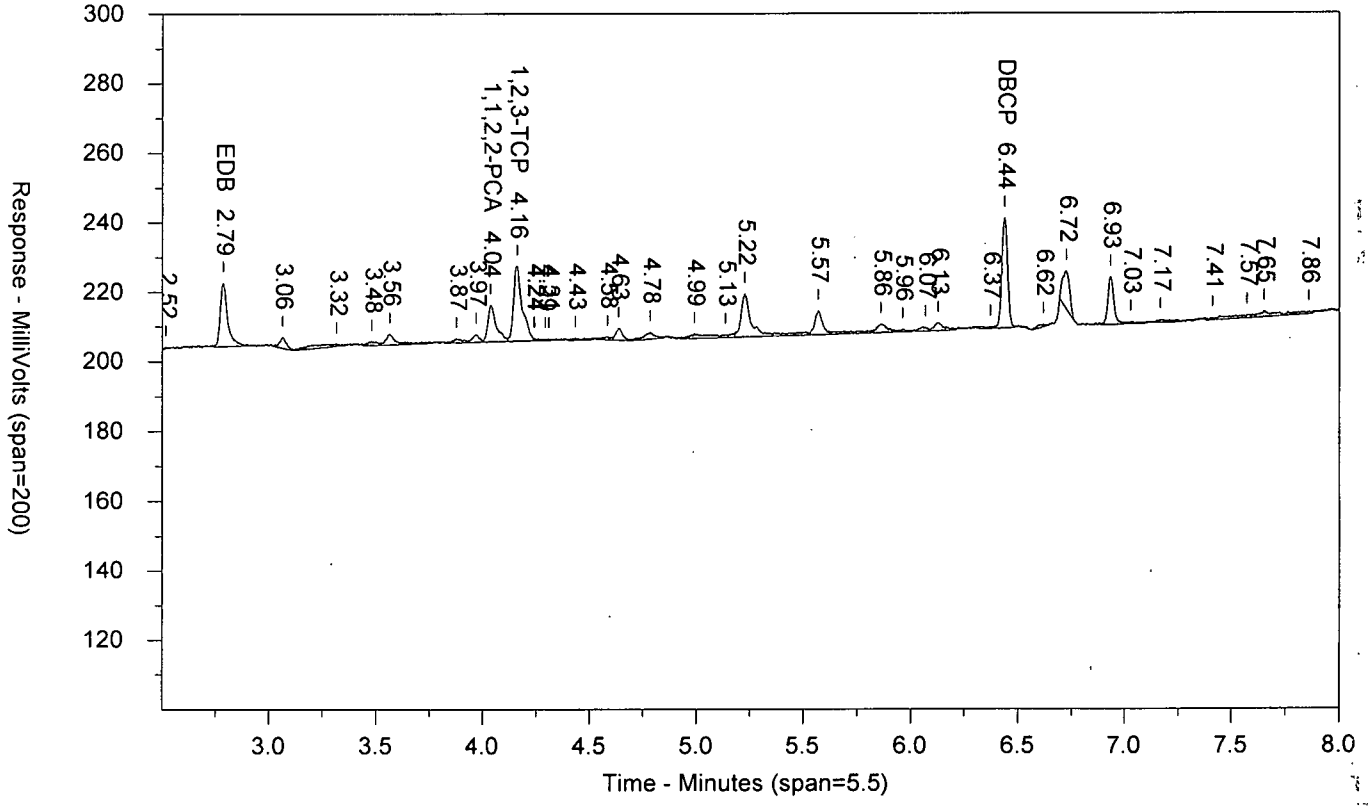


LANCASTER LABORATORIES

Sample Number: EDB_31724DT AAEDB_3AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 4:52:58 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

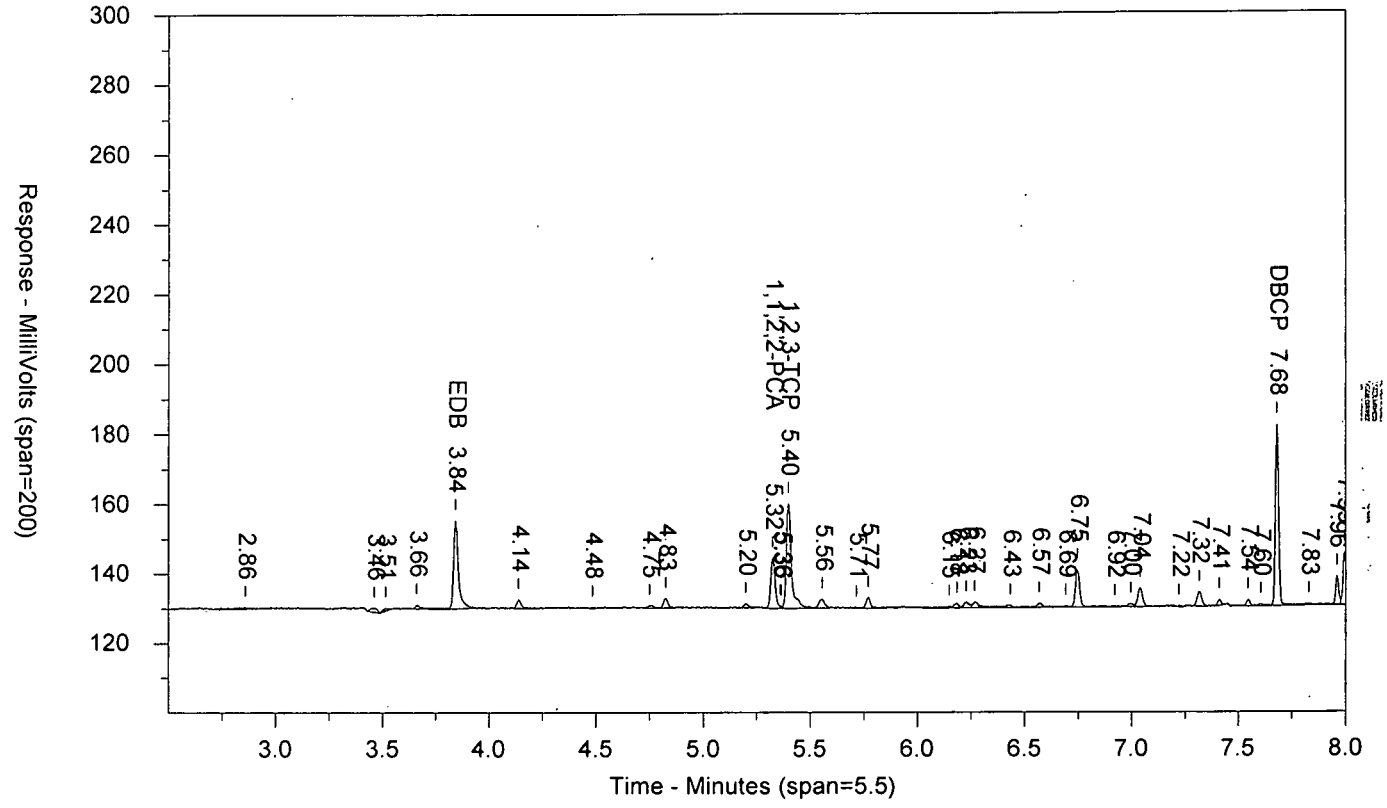
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 13086 | 1.227 | EDB | 2.786 | 18381 | 1.271 | EDB |
| 5.326 | 7864 | .657 | 1,1,2,2-PCA | 4.037 | 10689 | .642 | 1,1,2,2-PCA |
| 5.399 | 16580 | 9.939 | 1,2,3-TCP | 4.16 | 21683 | 9.962 | 1,2,3-TCP |
| 7.679 | 28622 | 1.224 | DBCP | 6.436 | 31855 | 1.133 | DBCP |

Files:
Area File: 18EDBS17205001.008.RAW
Area File: 18EDBS17205001B.008.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:01:32 PM
File Reported On: 7/25/2017 at 10:03:25 AM

EDB_41724DT AAEDB_4AA ICAL 1720499999 10398 SW-846 801

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.009.RAW

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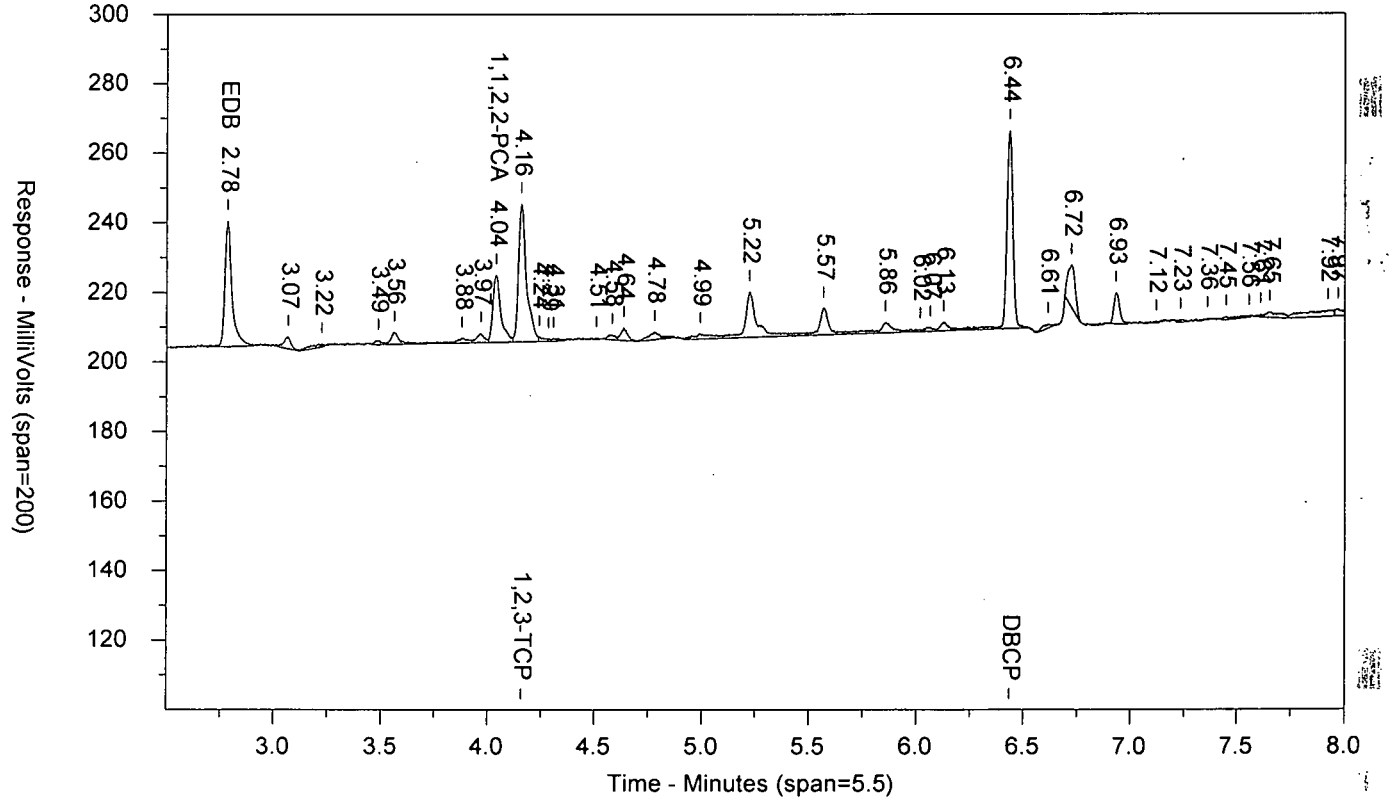

LANCASTER LABORATORIES

Sample Number: EDB_41724DT AAEDB_4AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:08:59 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 25381 | 2.381 | EDB | 2.784 | 36156 | 2.742 | EDB |
| 5.324 | 14502 | 1.188 | 1,1,2,2-PCA | 4.041 | 19317 | 1.147 | 1,1,2,2-PCA |
| 5.397 | 29944 | 17.845 | 1,2,3-TCP | 4.158 | 39566 | 18.1 | 1,2,3-TCP |
| 7.679 | 51969 | 2.25 | DBCP | 6.437 | 56857 | 2.265 | DBCP |

Files:
Area File: 18EDBS17205001.009.RAW
Area File: 18EDBS17205001B.009.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:17:32 PM
File Reported On: 7/25/2017 at 10:03:39 AM

EDB_51724DT AAEDB_5AA ICAL 1720499999 10398 SW-846 8011

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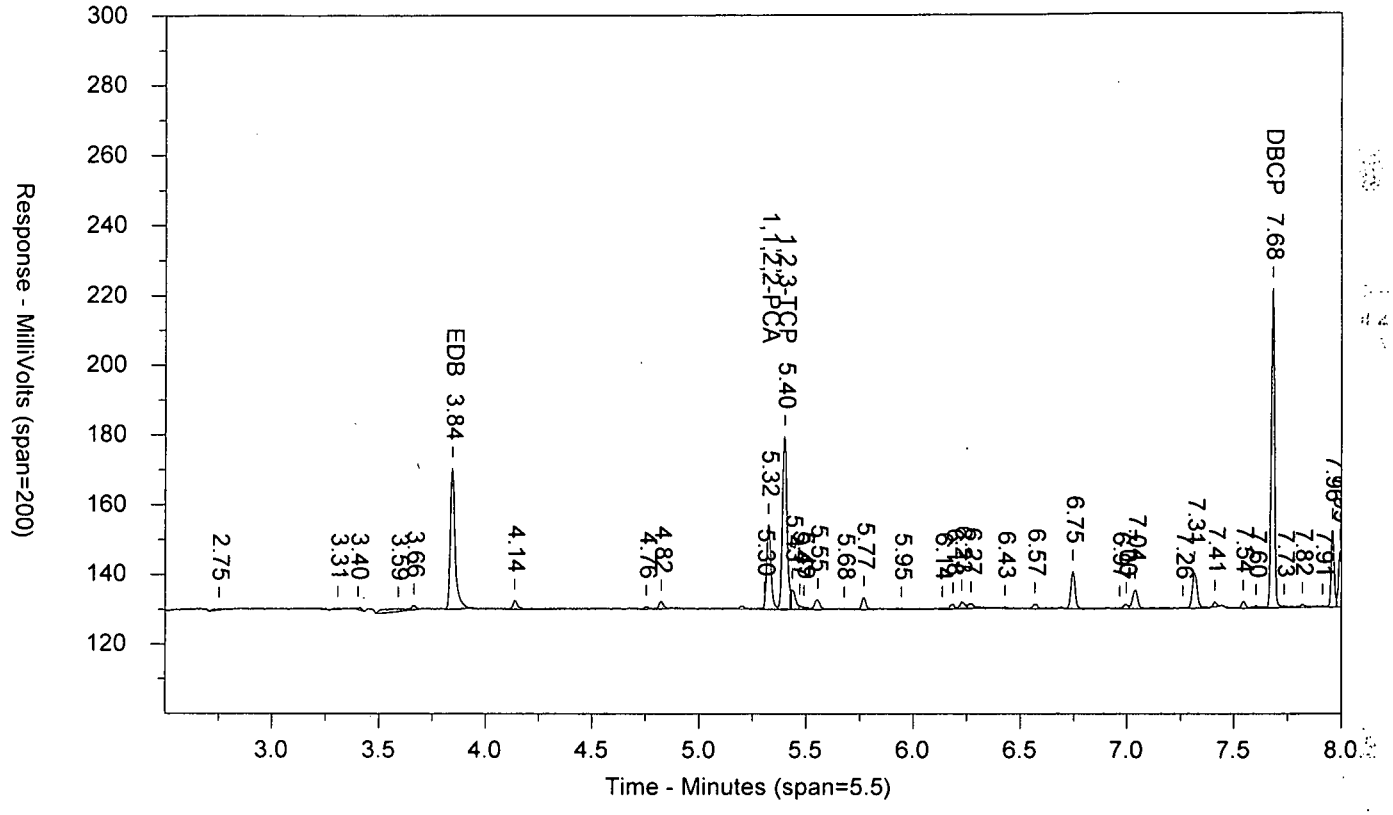


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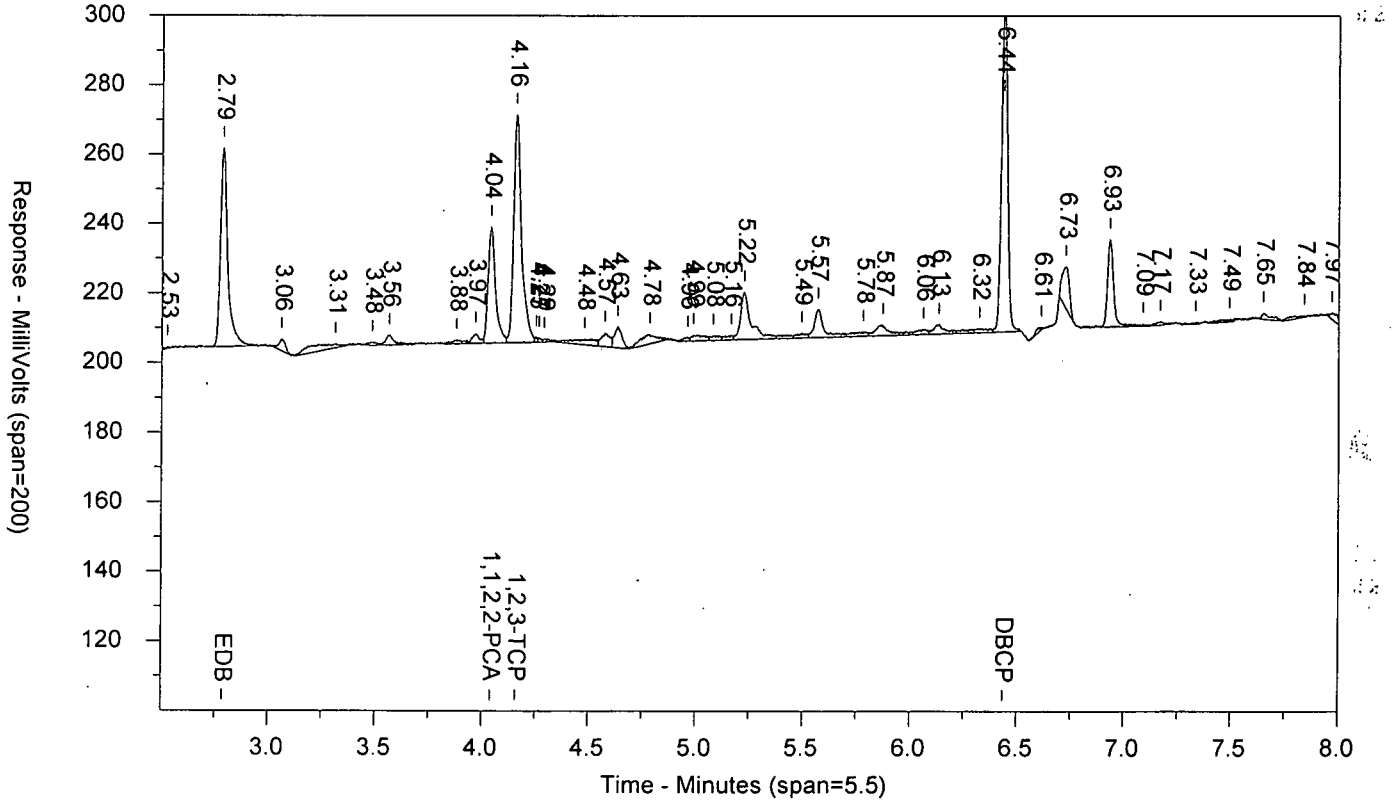


LANCASTER LABORATORIES

Sample Number: EDB_51724DT AAEDB_5AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:24:57 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

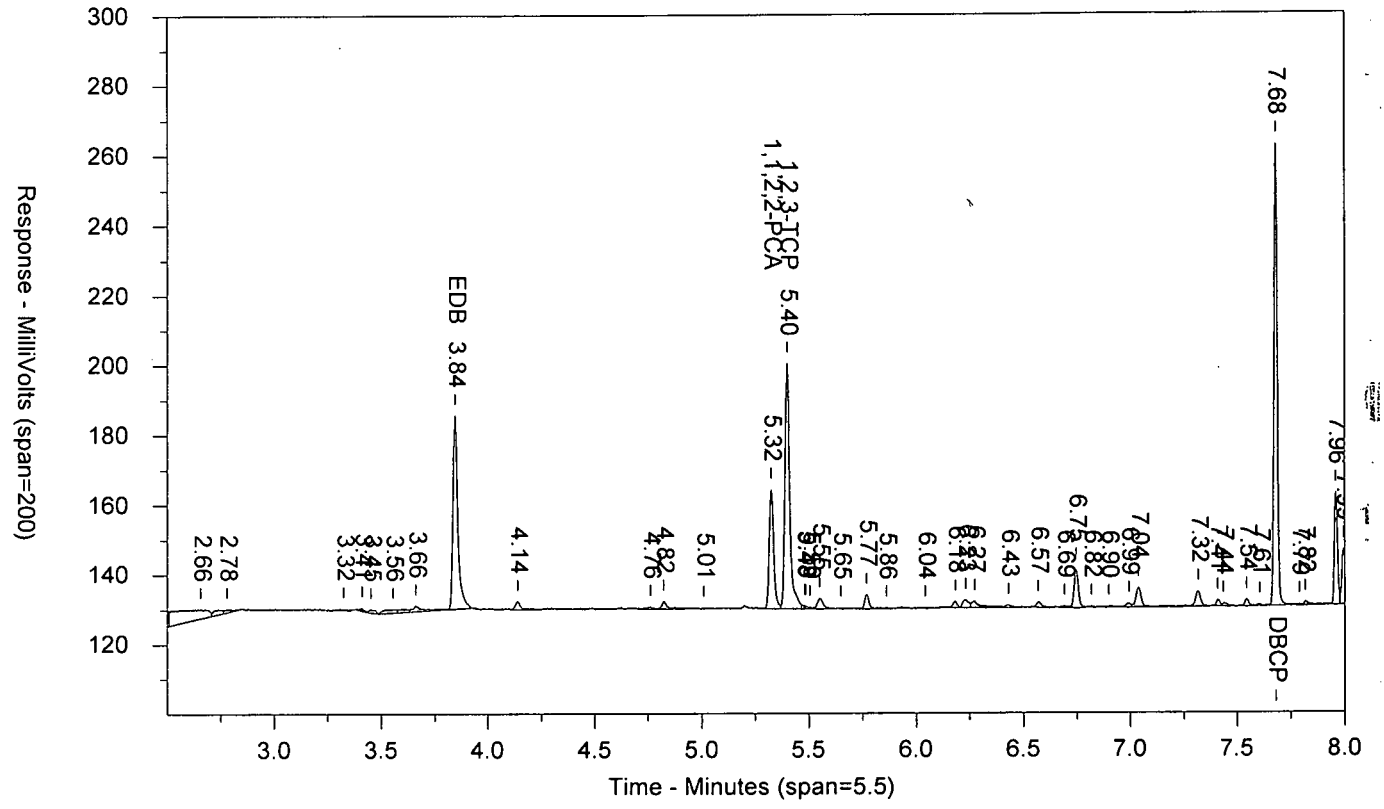
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 40367 | 3.828 | EDB | 2.786 | 57388 | 4.498 | EDB |
| 5.324 | 24061 | 1.974 | 1,1,2,2-PCA | 4.039 | 33456 | 1.99 | 1,1,2,2-PCA |
| 5.397 | 49390 | 29.707 | 1,2,3-TCP | 4.158 | 65776 | 30.242 | 1,2,3-TCP |
| 7.679 | 91292 | 4.031 | DBCP | 6.435 | 93835 | 3.954 | DBCP |

Files:
Area File: 18EDBS17205001.010.RAW
Area File: 18EDBS17205001B.010.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:33:28 PM
File Reported On: 7/25/2017 at 10:03:53 AM

EDB_61724DT AAEDB_6AA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.011.RAW

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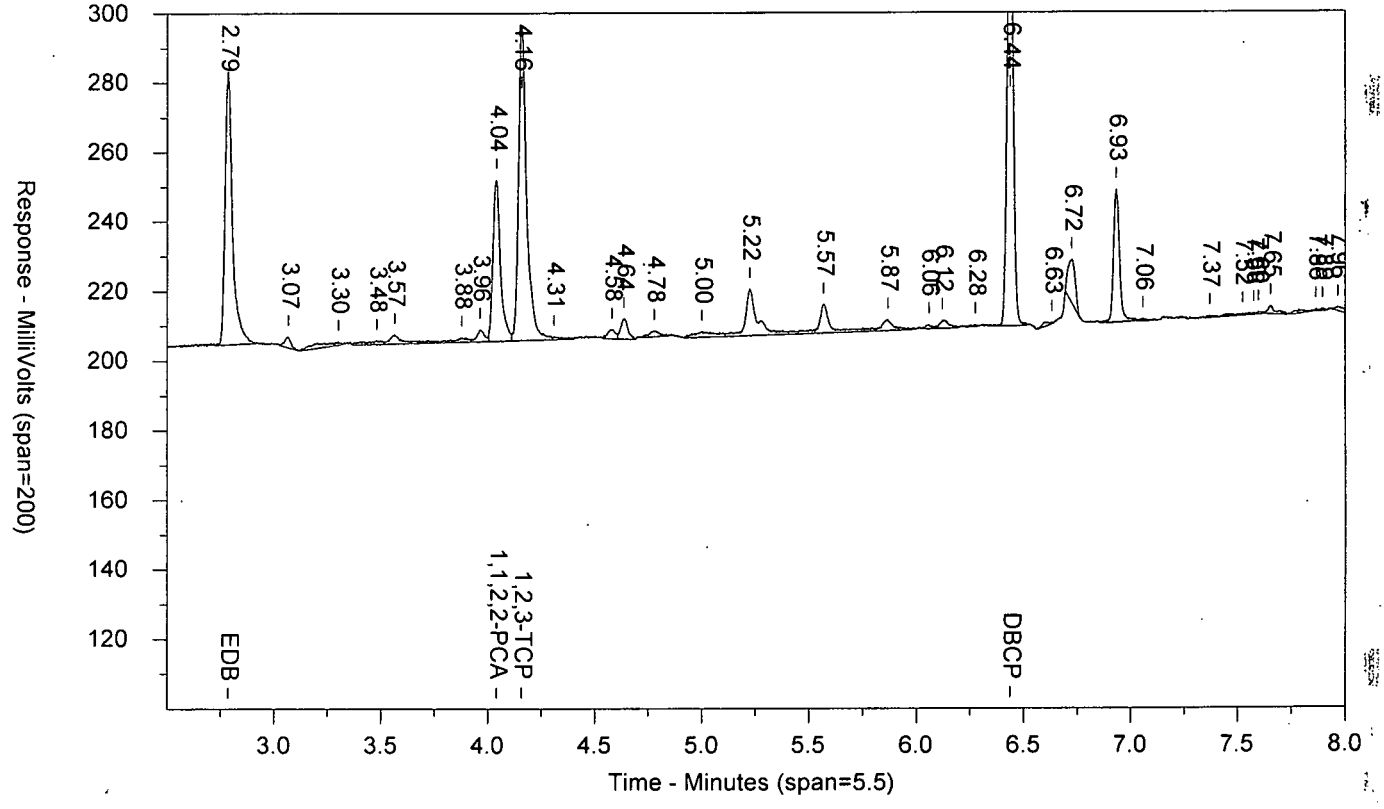


LANCASTER LABORATORIES

Sample Number: EDB_61724DT AAEDB_6AA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:40:57 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

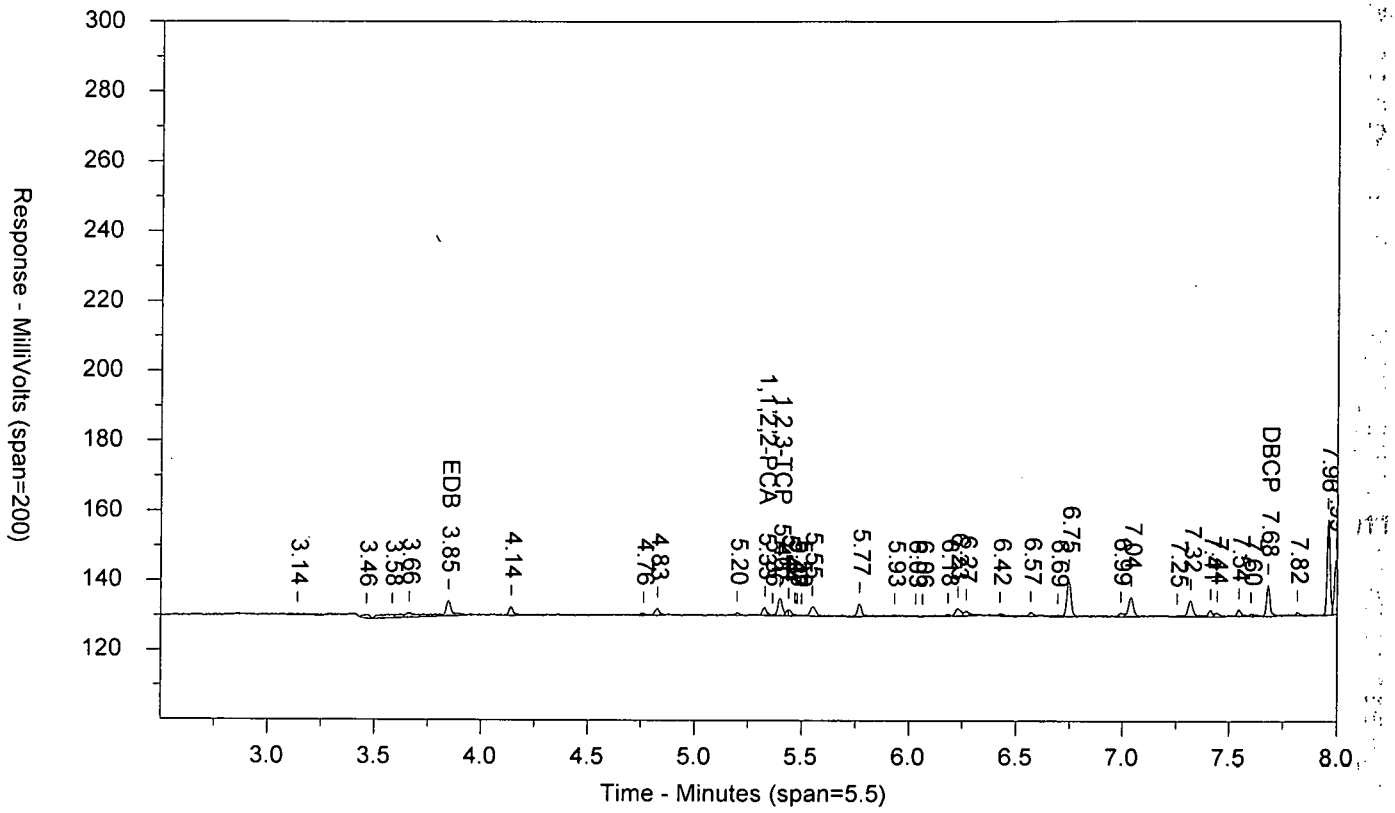
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 55483 | 5.274 | EDB | 2.785 | 78644 | 6.218 | EDB |
| 5.324 | 34208 | 2.799 | 1,1,2,2-PCA | 4.04 | 46548 | 2.742 | 1,1,2,2-PCA |
| 5.398 | 70406 | 42.327 | 1,2,3-TCP | 4.158 | 90750 | 41.603 | 1,2,3-TCP |
| 7.679 | 132279 | 5.889 | DBCP | 6.436 | 127952 | 5.662 | DBCP |

Files:
Area File: 18EDBS17205001.011.RAW
Area File: 18EDBS17205001B.011.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 5:49:32 PM
File Reported On: 7/25/2017 at 10:04:07 AM

MDEDX1724DT AAMDEDXAA ICAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.012.RAW

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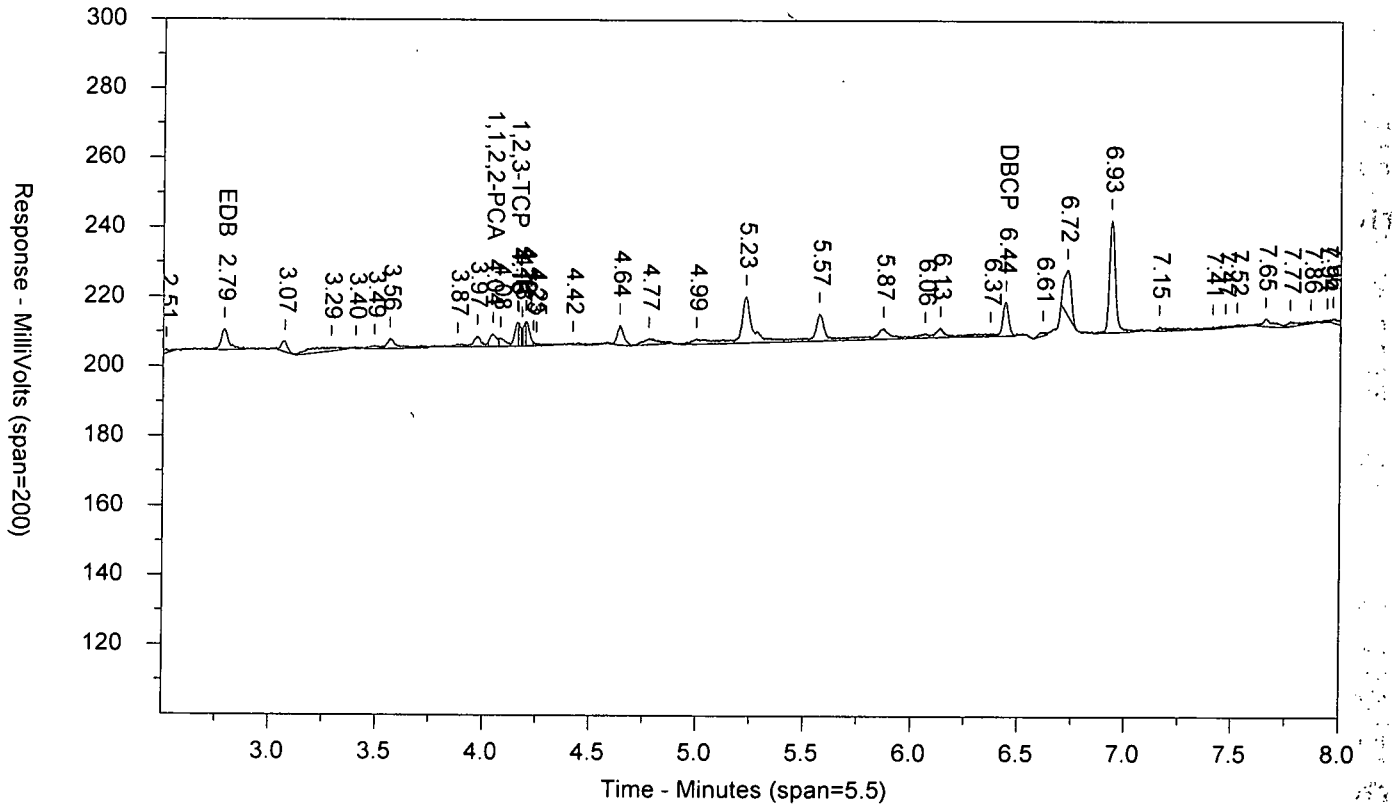


LANCASTER LABORATORIES

Sample Number: MDEDX1724DT AAMDEDXAA ICAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 5:57:00 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

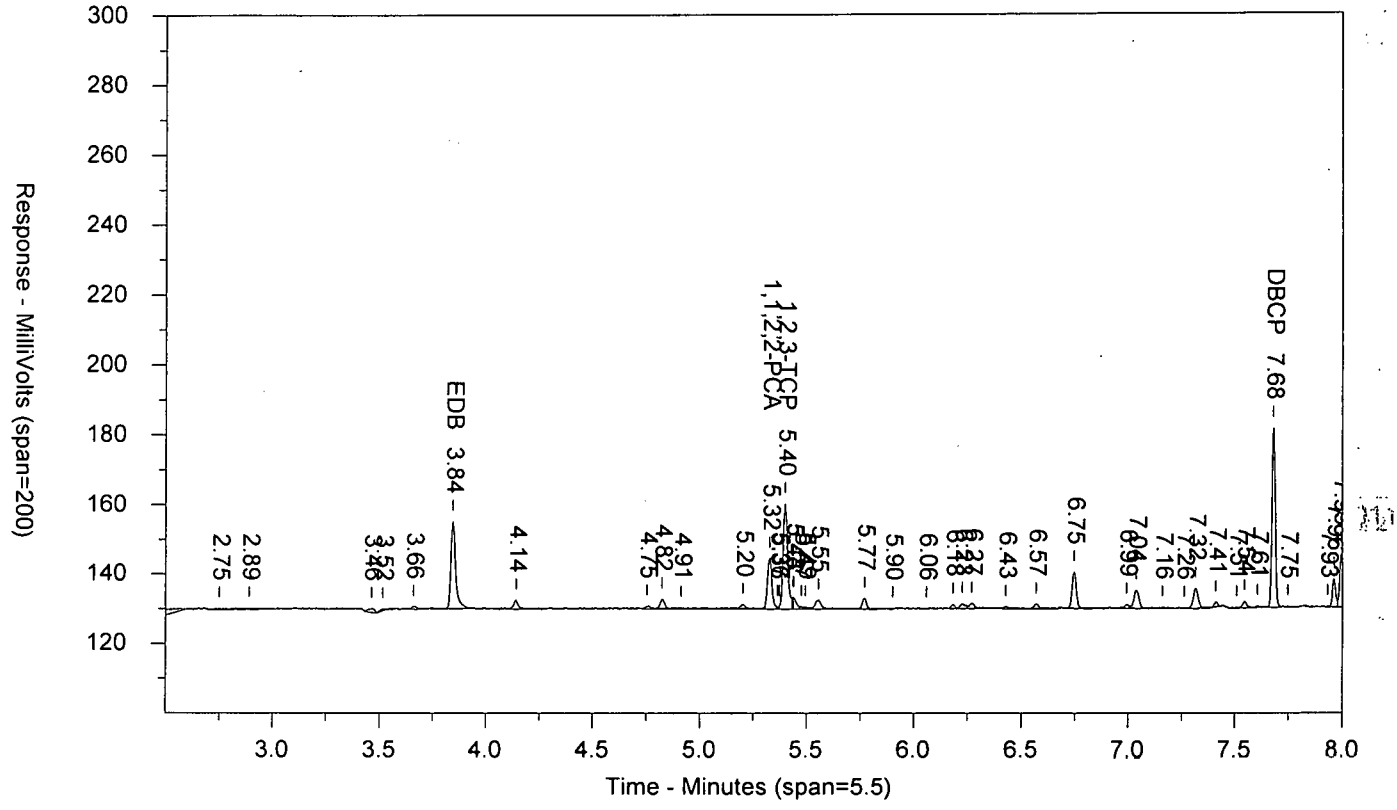
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.845 | 4372 | .246 | EDB | 2.788 | 6007 | .241 | EDB |
| 5.327 | 2294 | .186 | 1,1,2,2-PCA | 4.042 | 3608 | .157 | 1,1,2,2-PCA |
| 5.398 | 5036 | 2.088 | 1,2,3-TCP | 4.158 | 6848 | 2.051 | 1,2,3-TCP |
| 7.679 | 8811 | .394 | DBCP | 6.437 | 9817 | .225 | DBCP |

Files:
Area File: 18EDBS17205001.012.RAW
Area File: 18EDBS17205001B.012.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 6:05:32 PM
File Reported On: 7/25/2017 at 10:13:09 AM

EDB_41724DT QMEDB_4QM CCAL 1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.034.RAW

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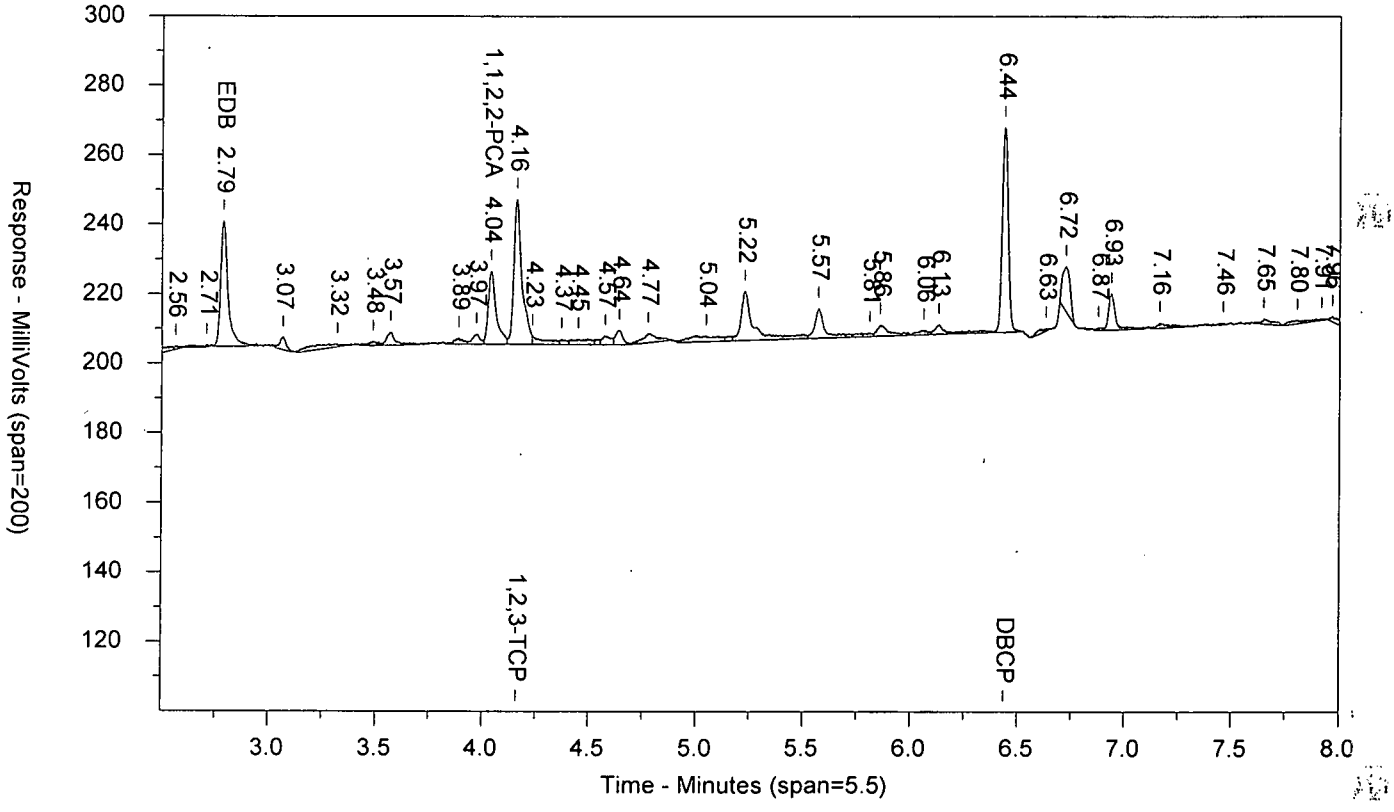


LANCASTER LABORATORIES

Sample Number: EDB_41724DT QMEDB_4QM CCAL 1720499999 10398 SW-846 8011
Injected On: 7/24/2017 11:48:37 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

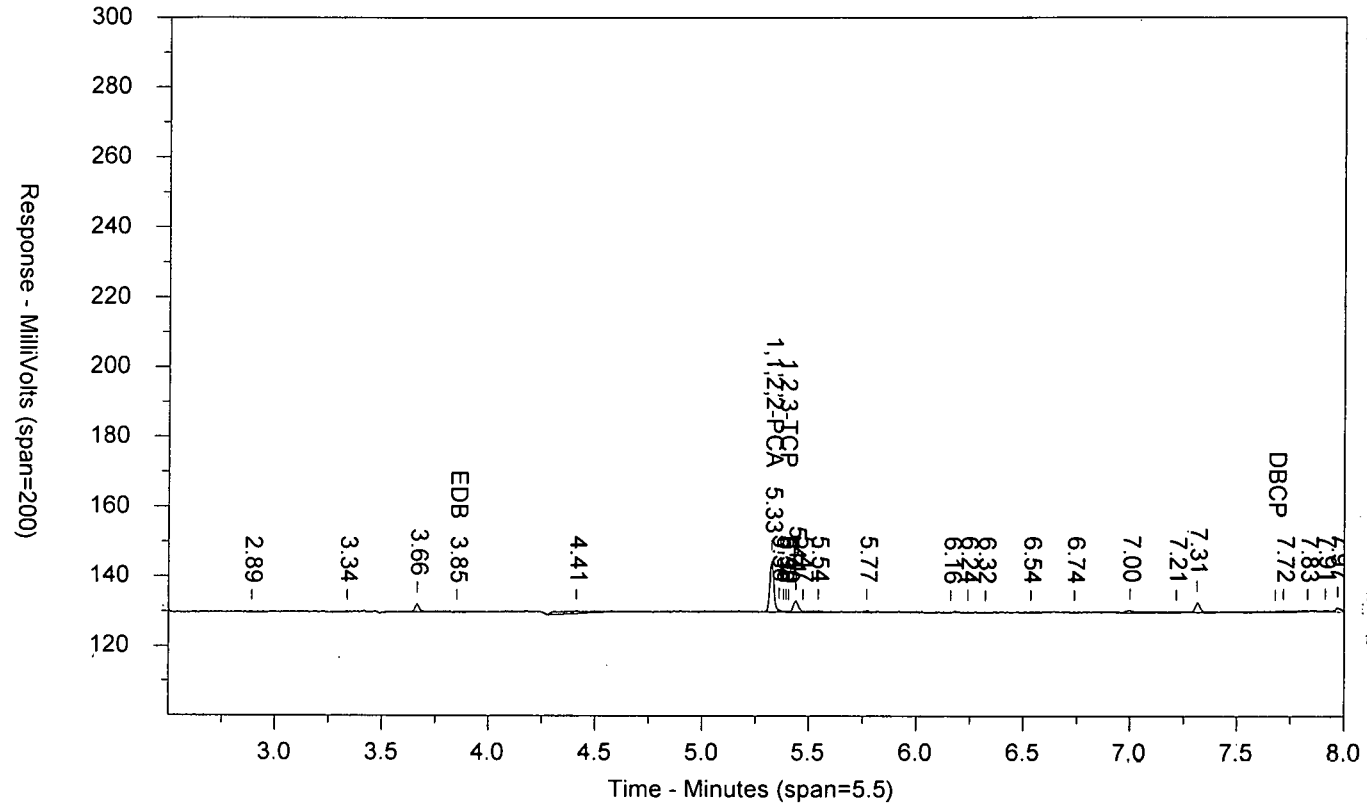
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 25169 | 2.654 | EDB | 2.785 | 36099 | 2.689 | EDB |
| 5.325 | 14640 | 1.187 | 1,1,2,2-PCA | 4.04 | 21095 | 1.342 | 1,1,2,2-PCA |
| 5.397 | 30327 | 19.711 | 1,2,3-TCP | 4.161 | 41688 | 20.762 | 1,2,3-TCP |
| 7.679 | 51497 | 2.304 | DBCP | 6.436 | 58856 | 2.675 | DBCP |

Files:
Area File: 18EDBS17205001.034.RAW
Area File: 18EDBS17205001B.034.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/24/2017 11:57:12 PM
File Reported On: 7/25/2017 at 10:19:55 AM

EIBKX1724C TPPIBLKTP PIBLK1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.035.RAW

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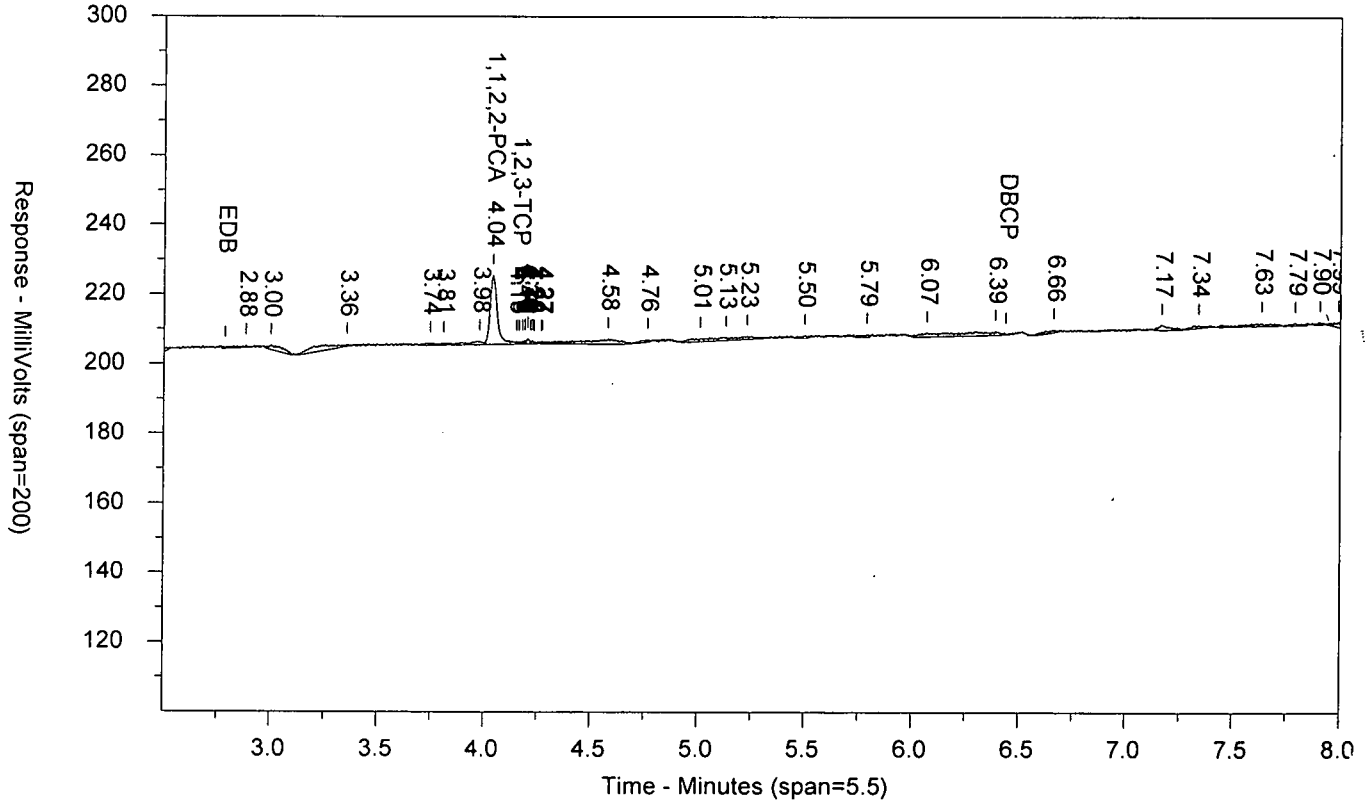

LANCASTER LABORATORIES

Sample Number: EIBKX1724C TPPIBLKTP PIBLK1720499999 10398 SW-846 8011
Injected On: 7/25/2017 12:04:33 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.85 | 443 | -.012 | EDB | | 0 | | EDB |
| 5.325 | 14531 | .067 | 1,1,2,2-PCA | 4.041 | 19914 | .072 | 1,1,2,2-PCA |
| 5.393 | 467 | -.063 | 1,2,3-TCP | 4.162 | 787 | -.069 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205001.035.RAW
Area File: 18EDBS17205001B.035.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 12:13:09 AM
File Reported On: 7/25/2017 at 10:20:11 AM

EDB_31724DT PIEDB_3PI CCAL 1720499999 10398 SW-846 8011

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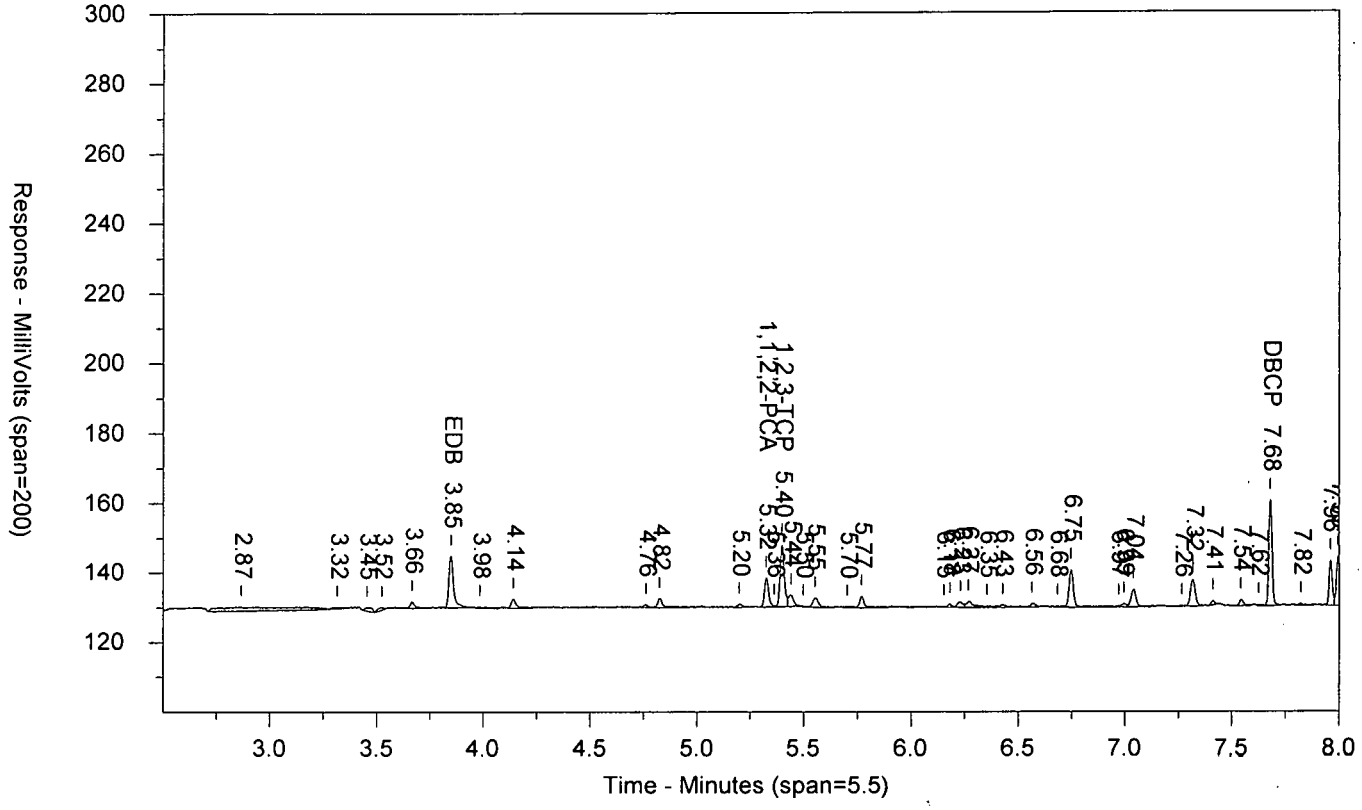


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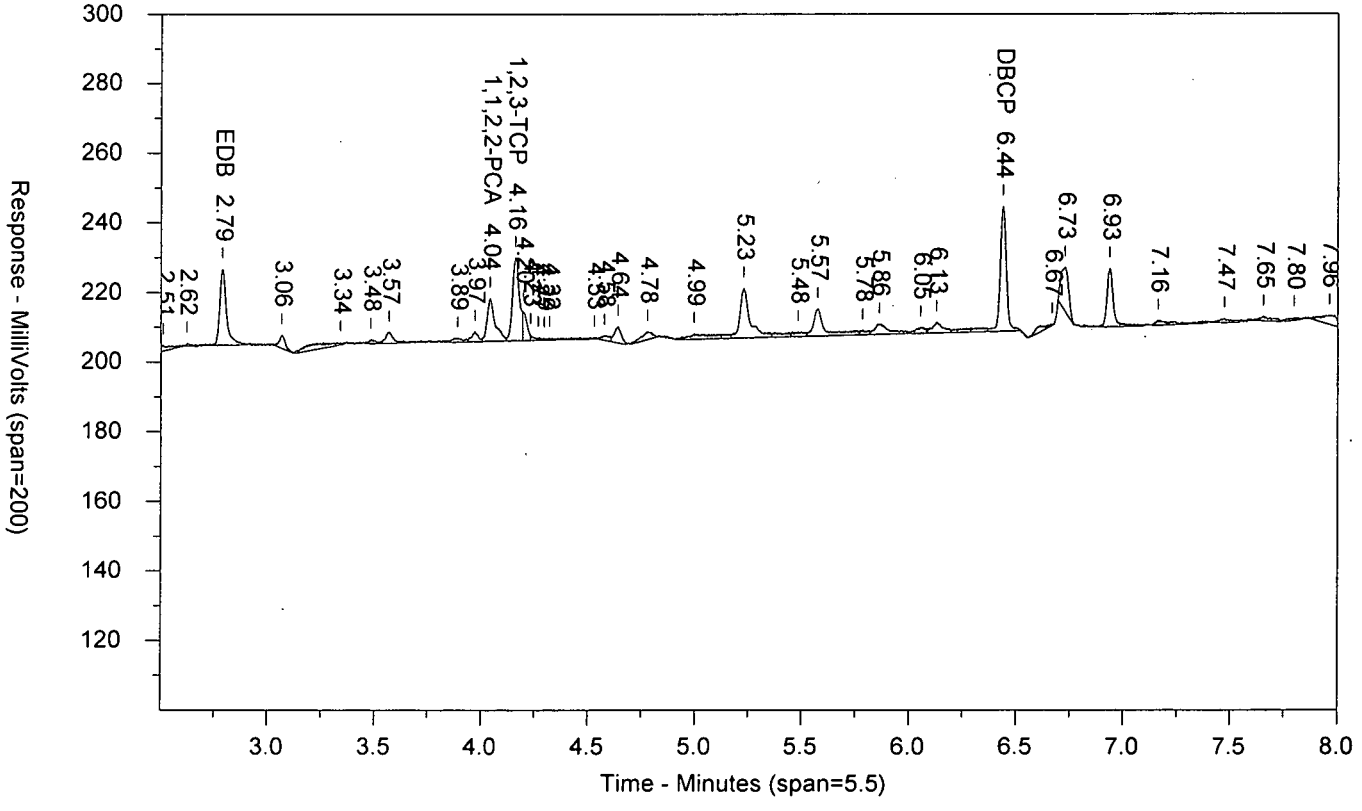


LANCASTER LABORATORIES

Sample Number: EDB_31724DT PIEDB_3PI CCAL 1720499999 10398 SW-846 8011
Injected On: 7/25/2017 3:00:08 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

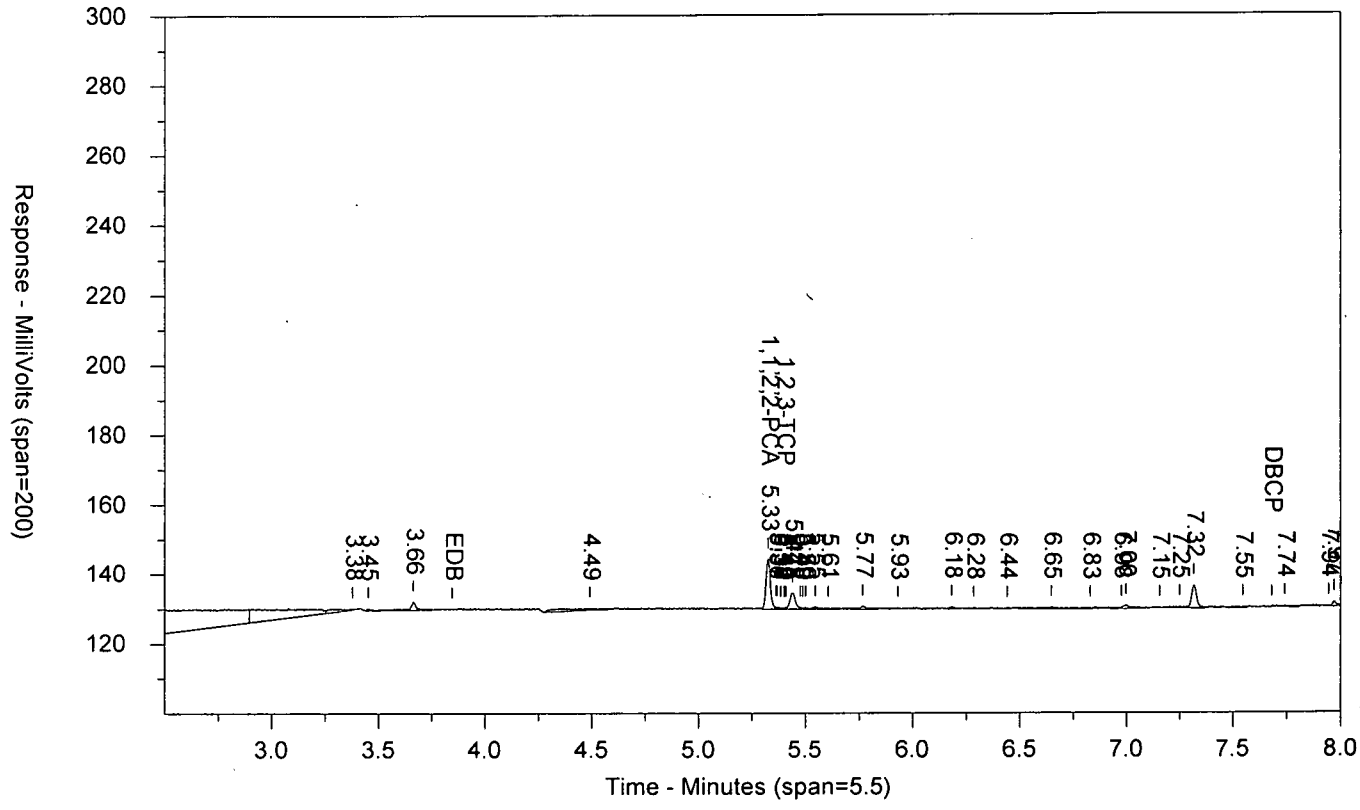
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.846 | 14913 | 1.467 | EDB | 2.789 | 21869 | 1.531 | EDB |
| 5.324 | 8471 | .687 | 1,1,2,2-PCA | 4.042 | 12454 | .757 | 1,1,2,2-PCA |
| 5.398 | 17668 | 10.89 | 1,2,3-TCP | 4.161 | 23831 | 11.172 | 1,2,3-TCP |
| 7.679 | 30390 | 1.36 | DBCP | 6.437 | 35880 | 1.527 | DBCP |

Files:
Area File: 18EDBS17205001.046.RAW
Area File: 18EDBS17205001B.046.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 3:08:38 AM
File Reported On: 7/25/2017 at 10:39:47 AM

EIBKX1724C TQPIBLKTQ PIBLK1720499999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.047.RAW

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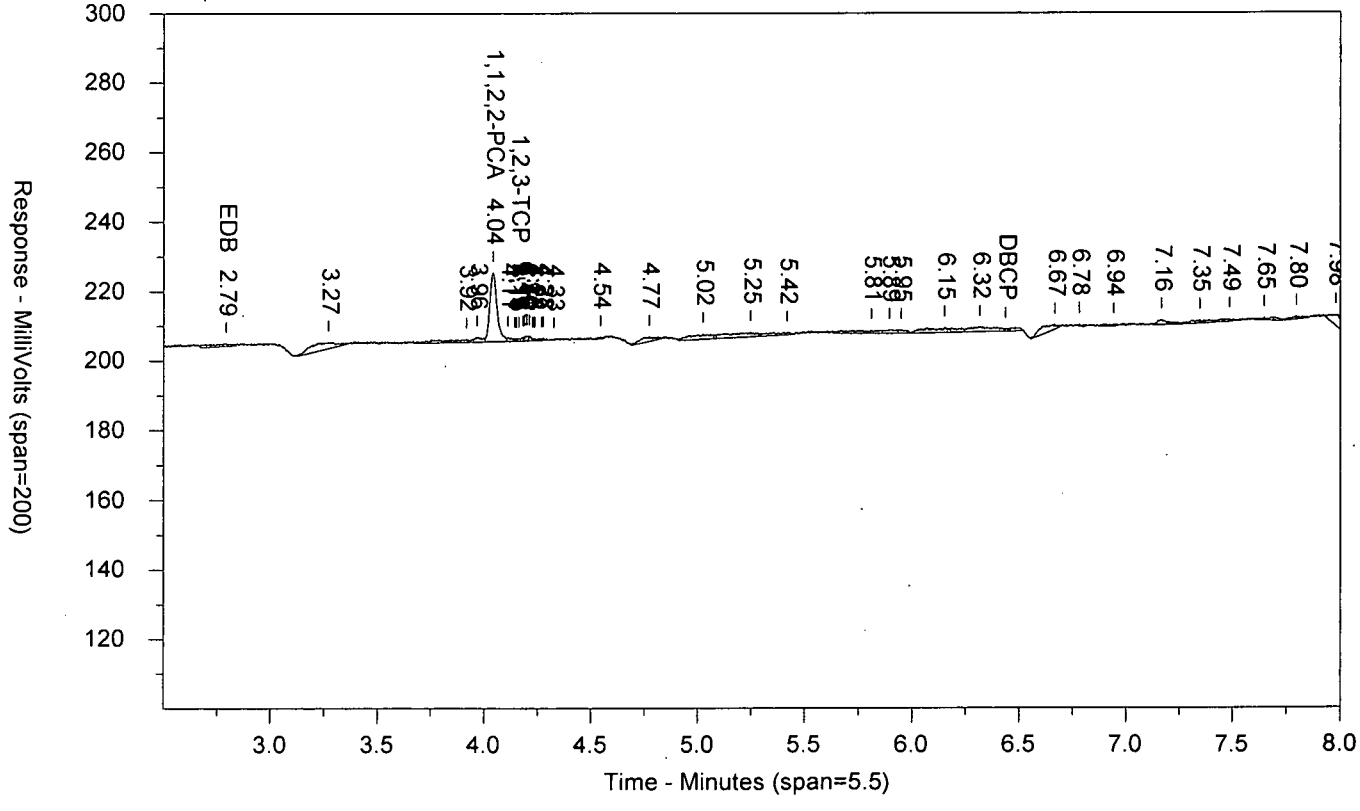

LANCASTER LABORATORIES

Sample Number: EIBKX1724C TQPIBLKTQ PIBLK1720499999 10398 SW-846 8011
Injected On: 7/25/2017 3:15:59 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 2.791 | 800 | -.01 | EDB |
| 5.325 | 14427 | .067 | 1,1,2,2-PCA | 4.041 | 19999 | .072 | 1,1,2,2-PCA |
| 5.399 | 446 | -.063 | 1,2,3-TCP | 4.161 | 835 | -.067 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205001.047.RAW
Area File: 18EDBS17205001B.047.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 3:24:32 AM
File Reported On: 7/25/2017 at 10:40:05 AM

# Raw QC Data

# EDB/DBCP

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# Data Summary

**Sample Name: BLANKA** 7/23/17 PBLK53202 BLK Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 00:20:27 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.036.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.070097

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 00:20:27 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.036.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 108% ( 46 - 136 ) Conc: 0.076412

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15127 | 0.070097 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 410 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 816 | 0.002085 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21025 | 0.076412 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 595 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.070097 | 0.0035 | 0.007 | 0.007 | | 8.62 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| ☐ 1,2-Dibromo-3-chloroprop | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:45:53

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 7/23/17 PBLK53202Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 00:20:27
Instrument : CP18--19846A
Result file : 18EDBS17205001.036.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.070097

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15127 | 0.070097 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 410 | -0.064851 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 816 | 0.002085 |

## Analysis Report (B)

Injected on : Jul 25, 2017 00:20:27
Instrument : CP18--19846B
Result file : 18EDBS17205001B.036.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 108% (46-136) Conc.: 0.076412

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21025 | 0.076412 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 595 | -0.074681 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.070097 | | | | 8.62 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: JUL 25 2017

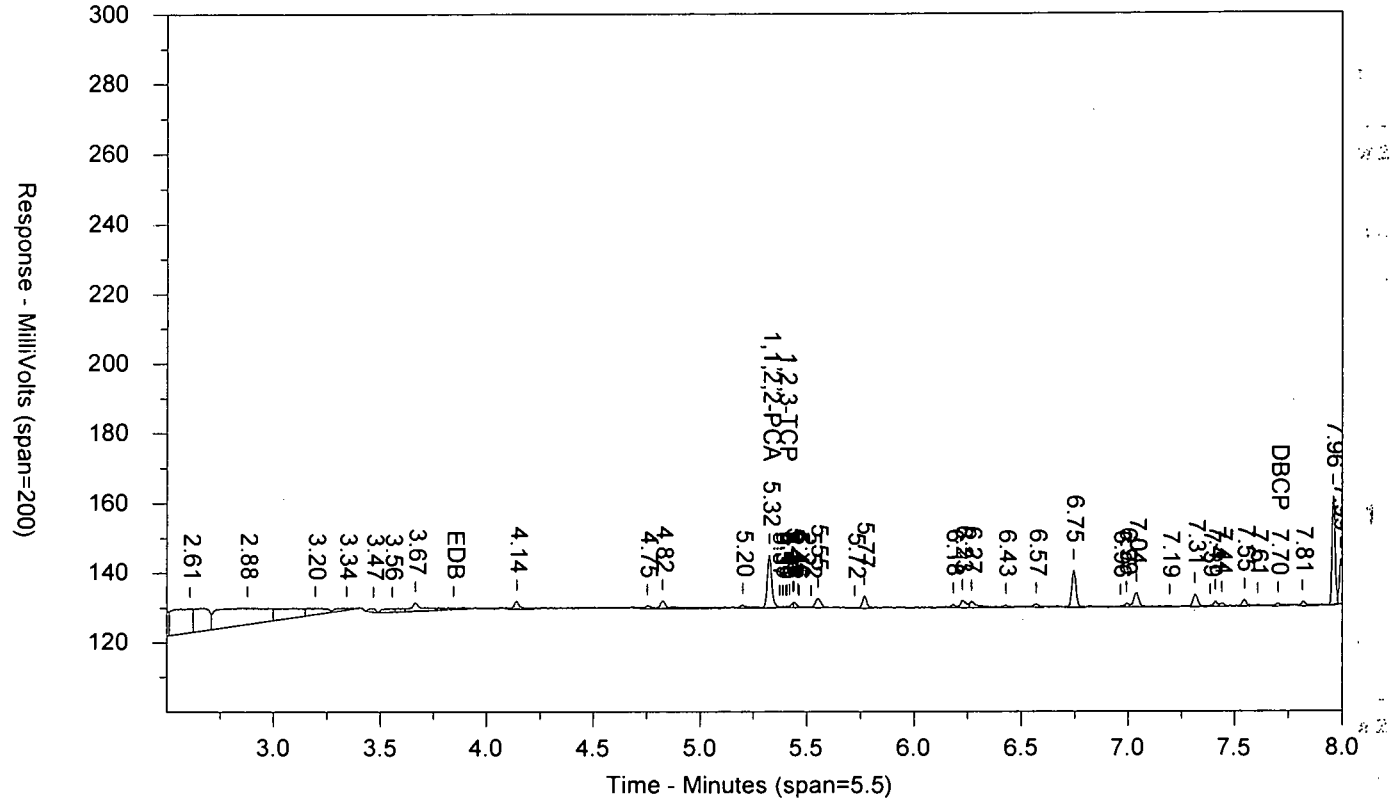
Verified by: Susan M Goshert Susan M. Goshert Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

BLANKA 7/23/17 AAPBLK53202 BLK 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.036.RAW

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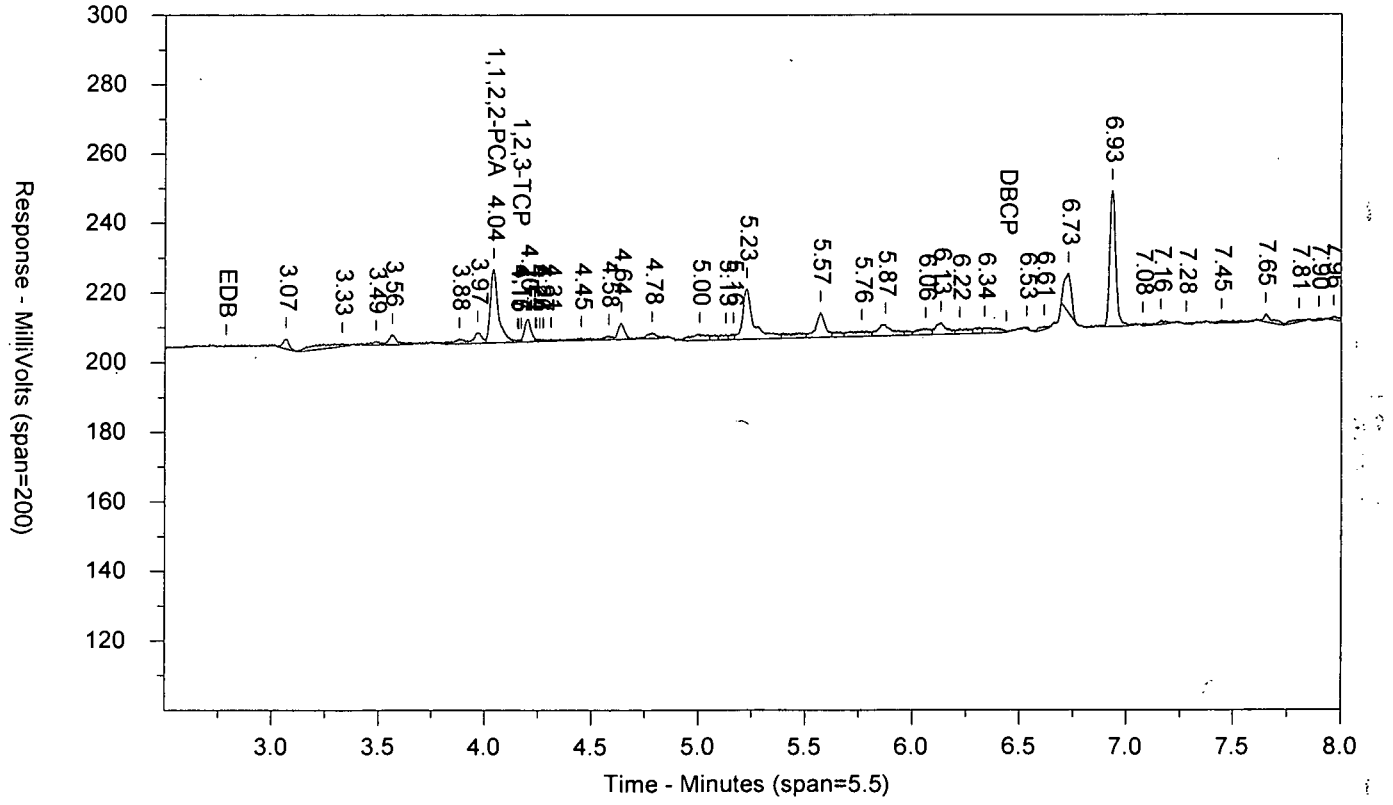


LANCASTER LABORATORIES

Sample Number: BLANKA 7/23/17 AAPBLK53202 BLK 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 12:20:27 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 15127 | .07 | 1,1,2,2-PCA | 4.041 | 21025 | .076 | 1,1,2,2-PCA |
| 5.401 | 410 | -.065 | 1,2,3-TCP | 4.16 | 595 | -.075 | 1,2,3-TCP |
| 7.702 | 816 | .002 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17205001.036.RAW
Area File: 18EDBS17205001B.036.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 12:29:02 AM
File Reported On: 7/25/2017 at 10:20:26 AM

# Data Summary

**Sample Name: 9114608** 19004DUP DUP Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.22 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 01:56:20 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.042.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.065724

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 01:56:20 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.042.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.070745

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15083 | 0.065724 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 442 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20720 | 0.070745 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 678 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.0094 | <0.0188 | <0.0282 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.065724 | 0.0033 | 0.0066 | 0.0066 | | 7.36 | |
| 1,2,3-Trichloropropane | | | | | <0.2539 | | | |
| 1,2-Dibromo-3-chloroprop | | | <0.0094 | <0.0188 | <0.0282 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:46:06

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9114608** 19004DUP Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.22 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 01:56:20
Instrument : CP18--19846A
Result file : 18EDBS17205001.042.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.065724

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15083 | 0.065724 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 442 | -0.059790 |

## Analysis Report (B)

Injected on : Jul 25, 2017 01:56:20
Instrument : CP18--19846B
Result file : 18EDBS17205001B.042.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.070745

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20720 | 0.070745 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 678 | -0.067834 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0282 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065724 | | | | 7.36 | |
| ☐ 1,2,3-TCP | | | <0.2539 | <0.094 | | | |
| ☐ DBCP | | | <0.0282 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 25 2017

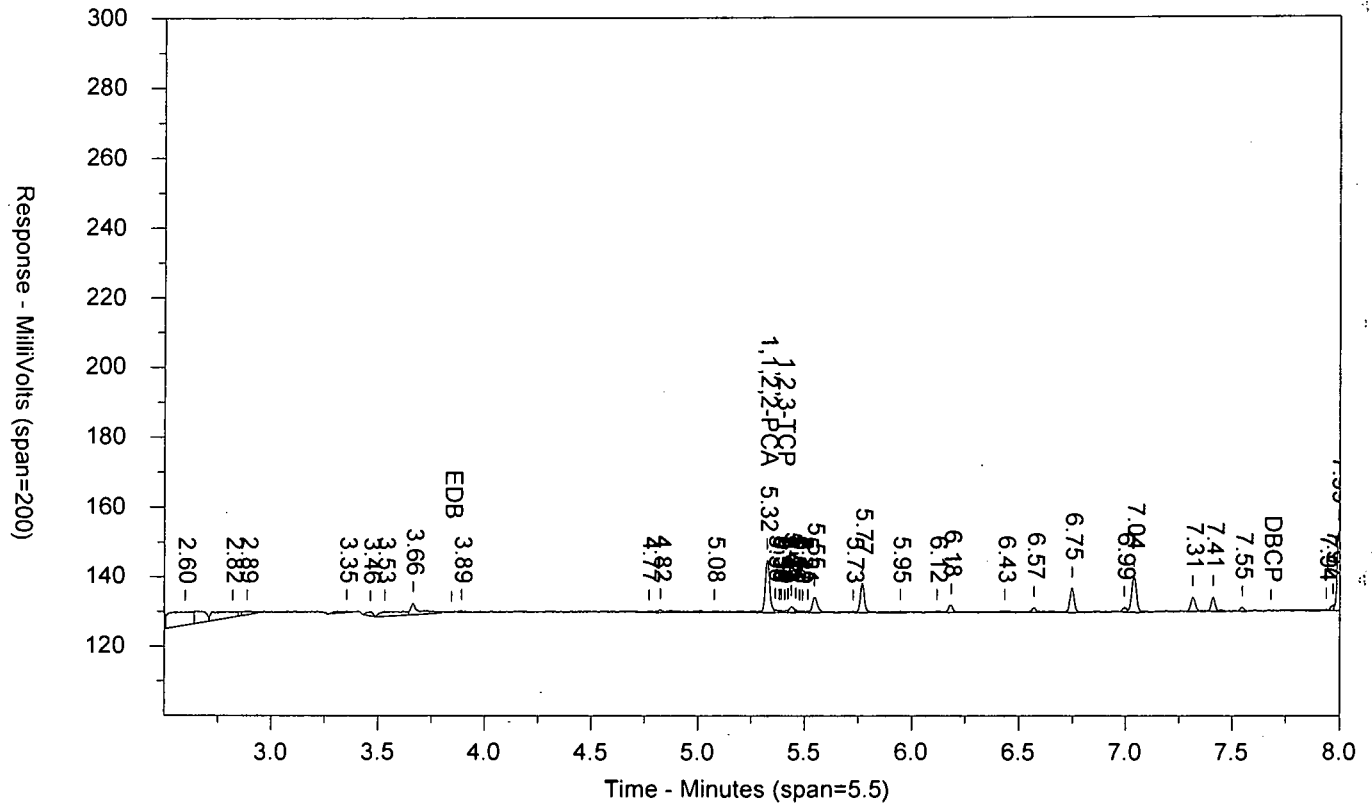
Verified by: Susan M. Gosher
Susan M. Gosher
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9114608 AA19004DUP DUP 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.042.RAW

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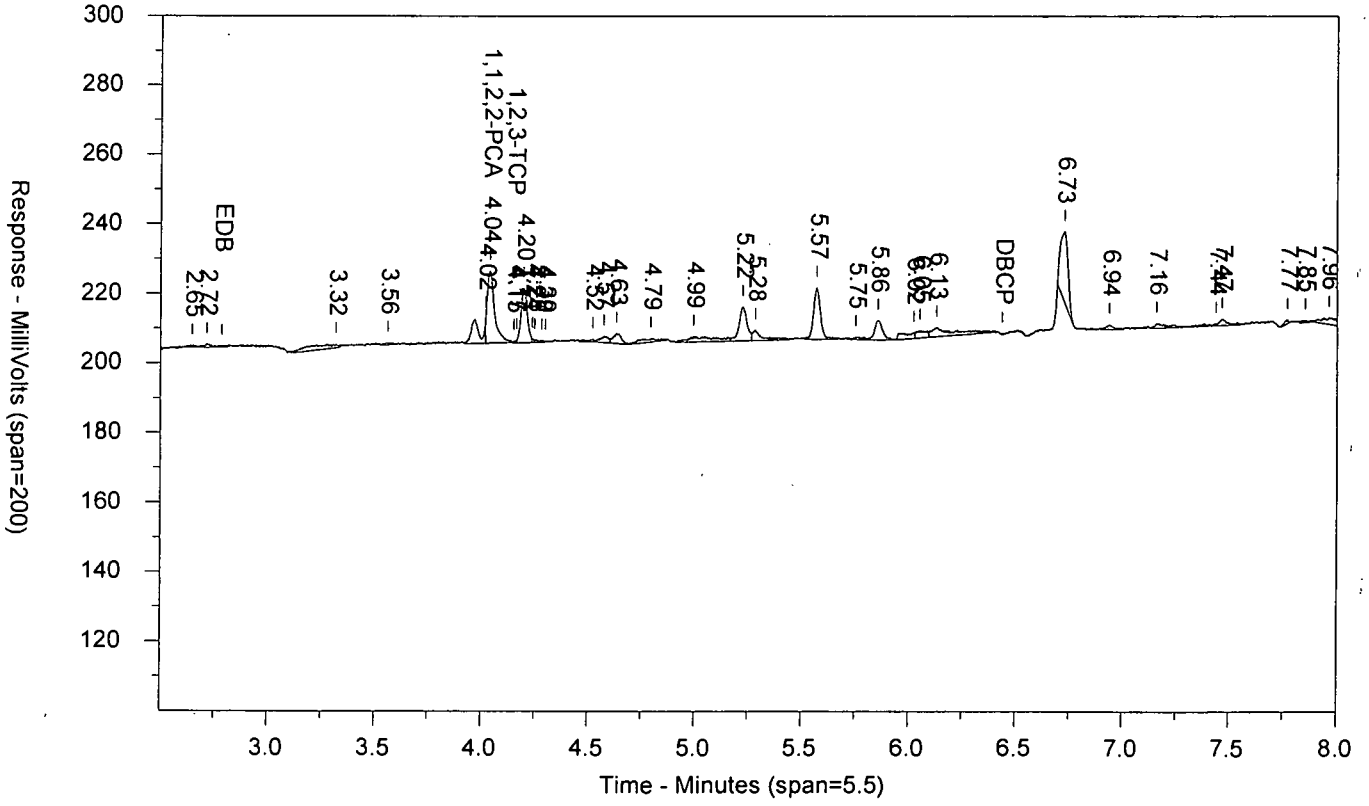

LANCASTER LABORATORIES

Sample Number: 9114608 AA19004DUP DUP 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 1:56:20 AM Sample Weight: 37.22
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 15083 | .066 | 1,1,2,2-PCA | 4.04 | 20720 | .071 | 1,1,2,2-PCA |
| 5.402 | 442 | -.06 | 1,2,3-TCP | 4.153 | 678 | -.068 | 1,2,3-TCP |

Files:
Area File: 18EDBS17205001.042.RAW
Area File: 18EDBS17205001B.042.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 2:05:05 AM
File Reported On: 7/25/2017 at 10:22:00 AM

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# Data Summary

**Sample Name: 9114609** MS 19005MS MS Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.14 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 02:44:11 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.045.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.066564

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 02:44:11 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.045.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 111% ( 46 - 136 ) Conc: 0.07338

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 22891 | 0.128706 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.33 | 5.35 | 15243 | 0.066564 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 31351 | 1.099878 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 51875 | 0.124997 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 32952 | 0.131035 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21400 | 0.07338 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 43397 | 1.167447 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 59521 | 0.145859 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.128706 | 0.0094 | 0.0188 | 0.0283 | | 1.79 | |
| 1,1,2,2-TETRACHLOROE | A | 0.066564 | 0.0033 | 0.0066 | 0.0066 | | 9.74 | |
| 1,2,3-Trichloropropane | A | 1.099878 | | | 0.2544 | | 5.96 | |
| 1,2-Dibromo-3-chloropropa | A | 0.124997 | 0.0094 | 0.0188 | 0.0283 | | 15.40 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:46:14

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9114609** MS 19005MS Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 37.14 mL Total Volume: 2 ml Analyst: 7848 SDG: KR190 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 02:44:11
Instrument : CP18--19846A
Result file : 18EDBS17205001.045.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.066564

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 22891 | 0.128706 |
| **1,1,2,2-PCA** | 5.29 | 5.33 | 5.35 | 15243 | 0.066564 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 31351 | 1.099878 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 51875 | 0.124997 |

## Analysis Report (B)

Injected on : Jul 25, 2017 02:44:11
Instrument : CP18--19846B
Result file : 18EDBS17205001B.045.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 111% (46-136) Conc.: 0.07338

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 32952 | 0.131035 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21400 | 0.073380 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 43397 | 1.167447 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 59521 | 0.145859 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.128706 | 0.0283 | 0.0094 | | 1.79 | |
| ☐ 1,1,2,2-PCA | A | 0.066564 | | | | 9.74 | |
| ☐ 1,2,3-TCP | A | 1.099878 | 0.2544 | 0.0942 | | 5.96 | |
| ☐ DBCP | A | 0.124997 | 0.0283 | 0.0094 | | 15.40 | |

Units: ug/l

Reviewed by: Heather M. Miller Heather M. Miller Chemist Date: JUL 25 2017

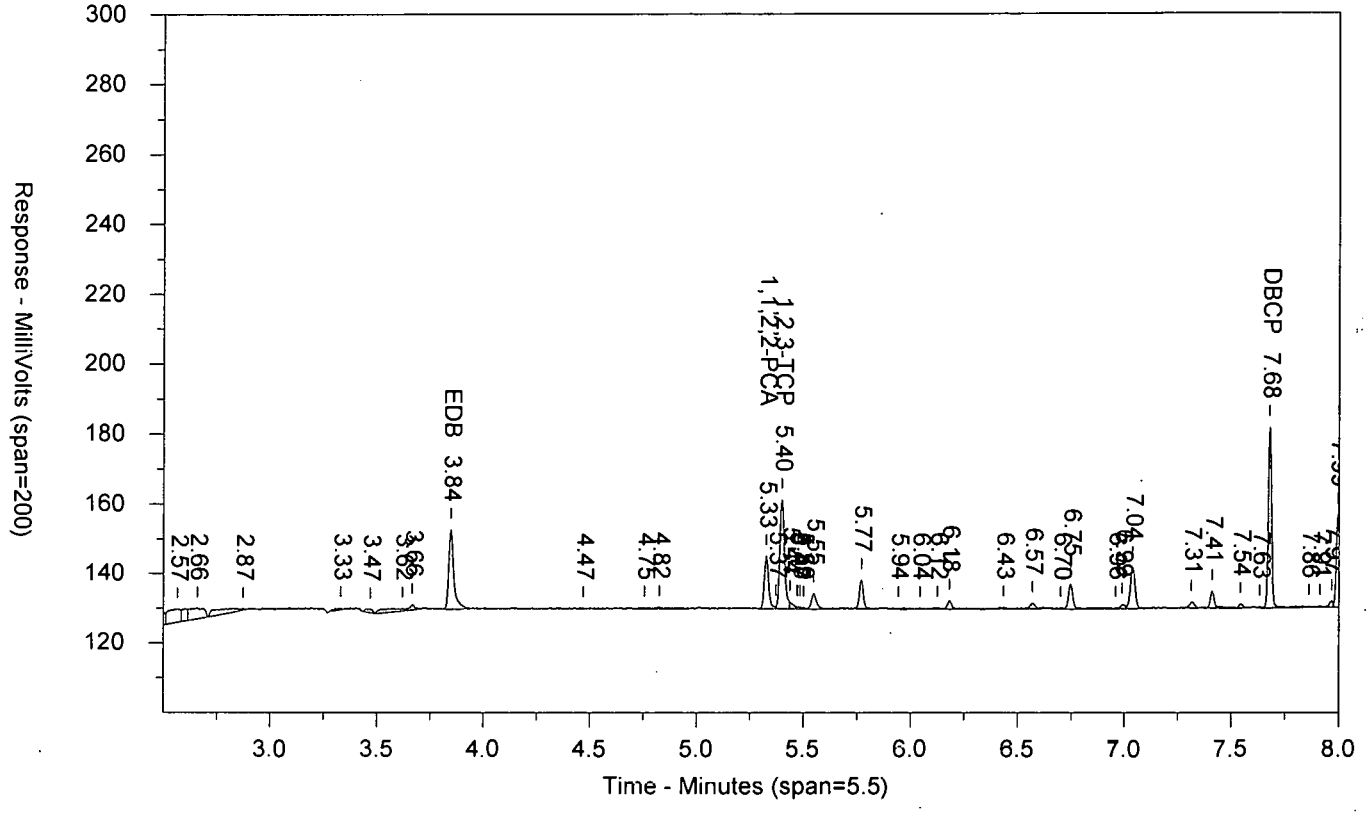
Verified by: Susan M. Goshert Susan M. Goshert Manager Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

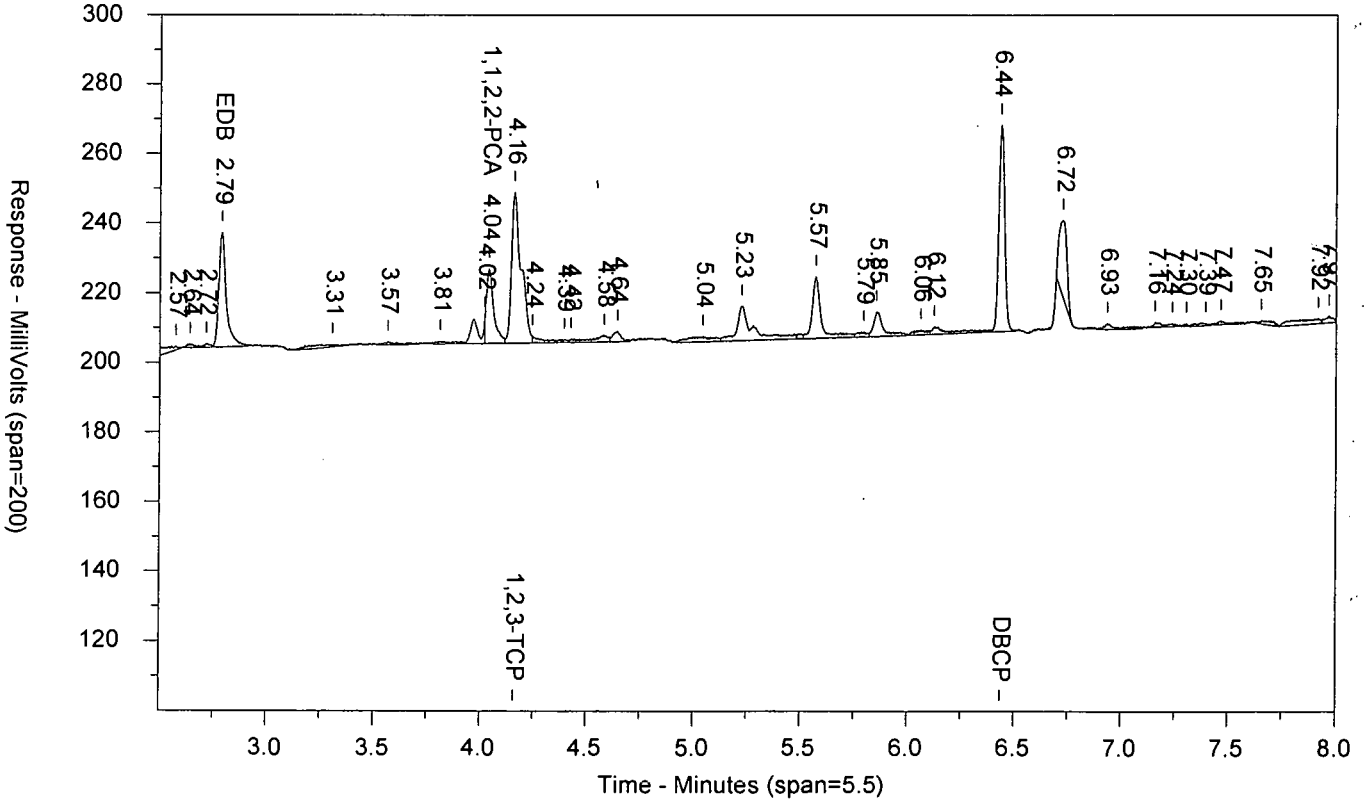
* Recovery outside QC Limits

9114609MS AA19005MS MS 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.045.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.045.RAW



LANCASTER LABORATORIES

Sample Number: 9114609MS AA19005MS MS 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 2:44:11 AM Sample Weight: 37.14
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.845 | 22891 | .129 | EDB | 2.788 | 32952 | .131 | EDB |
| 5.325 | 15243 | .067 | 1,1,2,2-PCA | 4.04 | 21400 | .073 | 1,1,2,2-PCA |
| 5.398 | 31351 | 1.1 | 1,2,3-TCP | 4.16 | 43397 | 1.167 | 1,2,3-TCP |
| 7.679 | 51875 | .125 | DBCP | 6.435 | 59521 | .146 | DBCP |

Files:
Area File: 18EDBS17205001.045.RAW
Area File: 18EDBS17205001B.045.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 2:52:46 AM
File Reported On: 7/25/2017 at 10:22:52 AM

# Data Summary

**Sample Name: LCSA** 7/23/17 LCS53202 LCS Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 00:36:32 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.037.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.069905

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 00:36:32 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.037.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.077458

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 22986 | 0.137202 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15085 | 0.069905 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 31846 | 1.186809 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 49521 | 0.12662 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 32657 | 0.137674 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21295 | 0.077458 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 42905 | 1.223727 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 56847 | 0.147142 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.137202 | 0.01 | 0.02 | 0.03 | | 0.34 | |
| 1,1,2,2-TETRACHLOROE | A | 0.069905 | 0.0035 | 0.007 | 0.007 | | 10.25 | |
| 1,2,3-Trichloropropane | A | 1.186809 | | | 0.27 | | 3.06 | |
| 1,2-Dibromo-3-chloroprop | A | 0.12662 | 0.01 | 0.02 | 0.03 | | 14.99 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:45:55

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/23/17 LCS53202 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 00:36:32
Instrument : CP18--19846A
Result file : 18EDBS17205001.037.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.069905

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 22986 | 0.137202 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15085 | 0.069905 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 31846 | 1.186809 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 49521 | 0.126620 |

## Analysis Report (B)

Injected on : Jul 25, 2017 00:36:32
Instrument : CP18--19846B
Result file : 18EDBS17205001B.037.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.077458

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 32657 | 0.137674 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21295 | 0.077458 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 42905 | 1.223727 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 56847 | 0.147142 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.137202 | 0.03 | 0.01 | | 0.34 | |
| ☐ 1,1,2,2-PCA | A | 0.069905 | | | | 10.25 | |
| ☑ 1,2,3-TCP | A | 1.186809 | 0.27 | 0.1 | | 3.06 | |
| ☑ DBCP | A | 0.126620 | 0.03 | 0.01 | | 14.99 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: JUL 25 2017

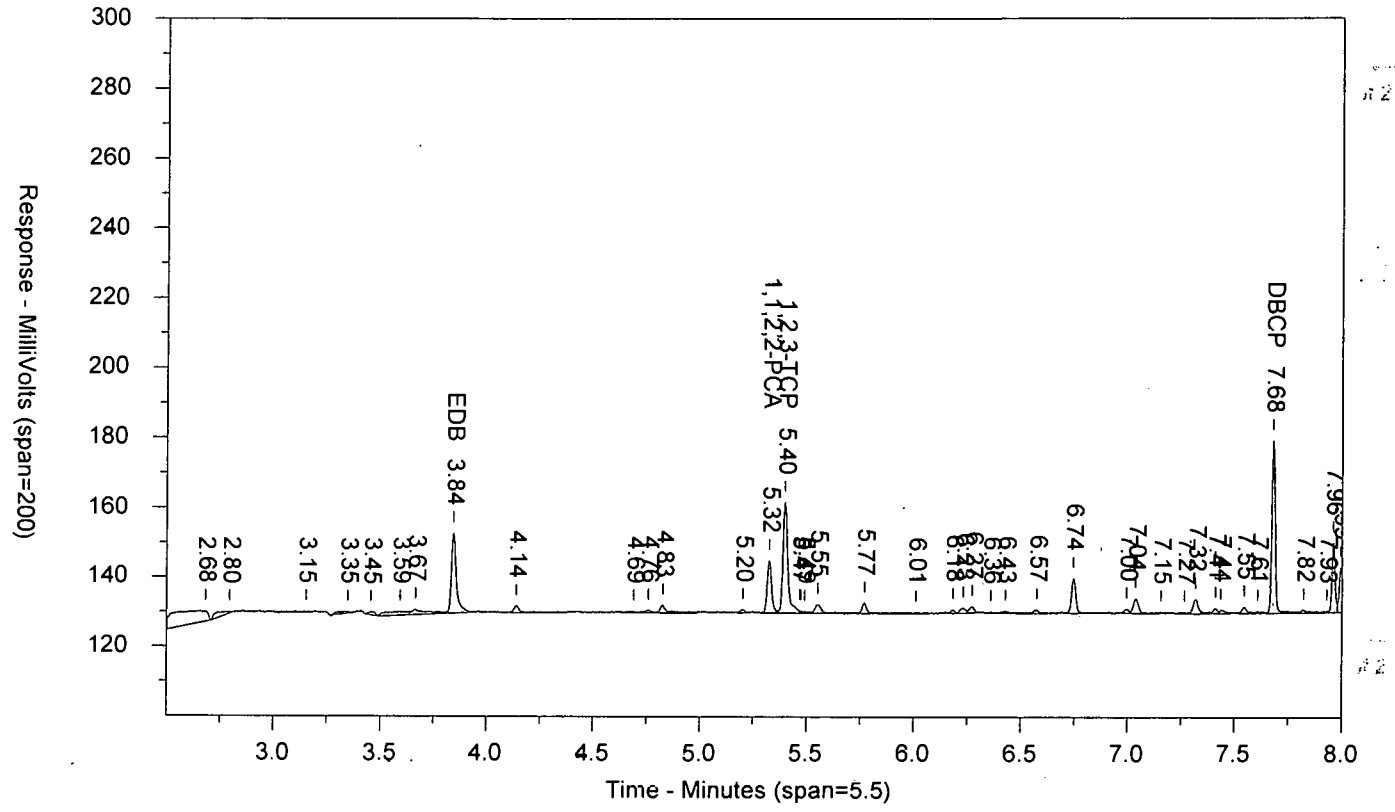
Verified by: Susan M. Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

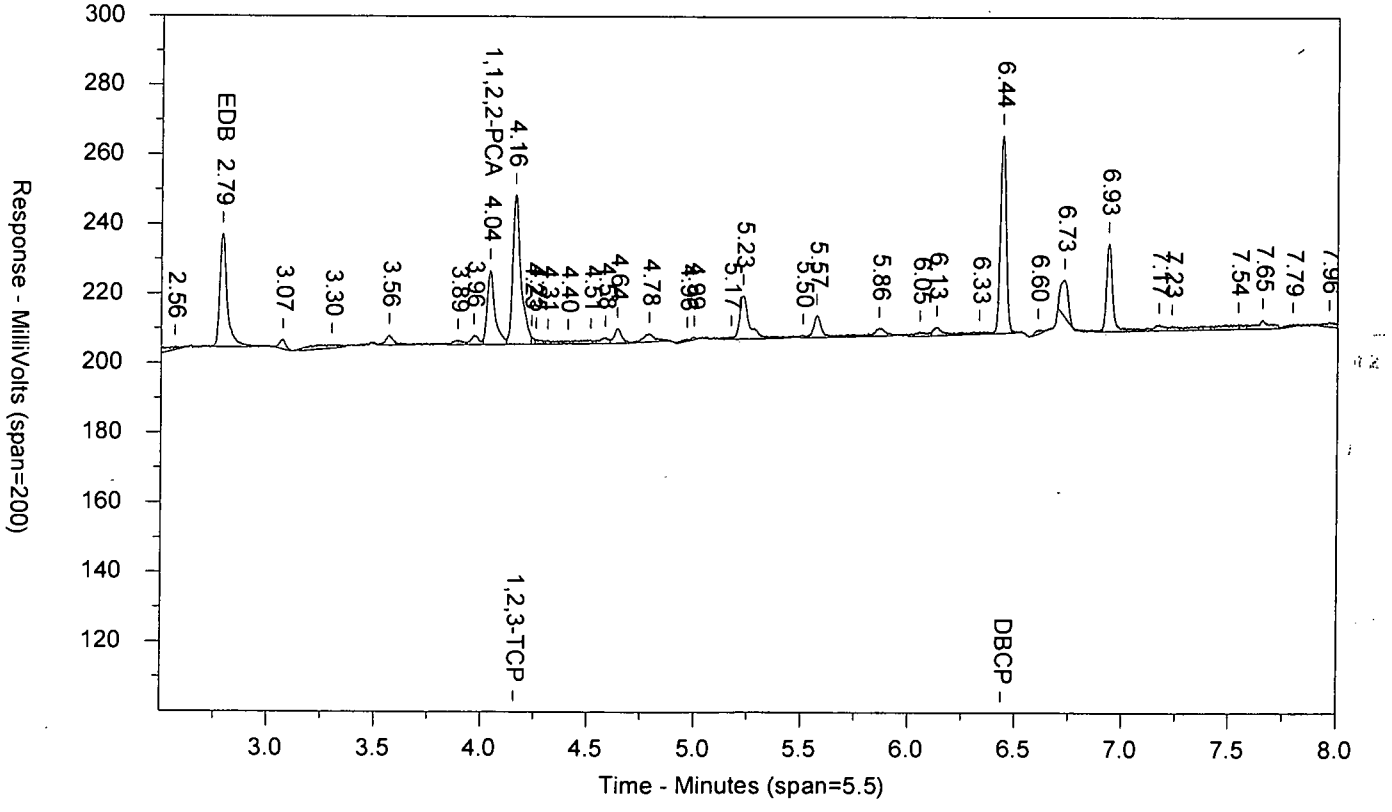
* Recovery outside QC Limits

LCSA 7/23/17 AALCS53202 LCS 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.037.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.037.RAW



LANCASTER LABORATORIES

Sample Number: LCSA 7/23/17 AALCS53202 LCS 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 12:36:32 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 22986 | .137 | EDB | 2.785 | 32657 | .138 | EDB |
| 5.325 | 15085 | .07 | 1,1,2,2-PCA | 4.04 | 21295 | .077 | 1,1,2,2-PCA |
| 5.398 | 31846 | 1.187 | 1,2,3-TCP | 4.158 | 42905 | 1.224 | 1,2,3-TCP |
| 7.679 | 49521 | .127 | DBCP | 6.437 | 56847 | .147 | DBCP |

Files:
Area File: 18EDBS17205001.037.RAW
Area File: 18EDBS17205001B.037.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 12:45:06 AM
File Reported On: 7/25/2017 at 10:20:42 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 7/23/17 LCSD53202 LCSD Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 00:52:28 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17205001.038.RAW |
| **Calibration file** | 18EDBS1720501 |
| **Method file** | 18EDBS |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.066082

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 25, 2017 00:52:28 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17205001B.038.RAW |
| **Calibration file** | 18EDBS1720501B |
| **Method file** | 18EDBSB |

%SSR(PCA) 109% ( 46 - 136 ) Conc: 0.076847

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 22901 | 0.136639 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14260 | 0.066082 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 31573 | 1.175961 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 49257 | 0.125945 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 33141 | 0.139924 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21137 | 0.076847 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 43254 | 1.234439 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 57598 | 0.149287 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.136639 | 0.01 | 0.02 | 0.03 | | 2.38 | |
| 1,1,2,2-TETRACHLOROE | A | 0.066082 | 0.0035 | 0.007 | 0.007 | | 15.06 | |
| 1,2,3-Trichloropropane | A | 1.175961 | | | 0.27 | | 4.85 | |
| 1,2-Dibromo-3-chloropropa | A | 0.125945 | 0.01 | 0.02 | 0.03 | | 16.96 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Susan M. Goshert
Manager

JUL 28 2017

Reviewed and digitally signed by Heather M Miller on 7/25/2017 14:45:57

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/23/17 LCSD53202 Sample ID: AA **Batchnumber: 172020053A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 25, 2017 00:52:28
Instrument : CP18--19846A
Result file : 18EDBS17205001.038.RAW
Calibration file : 18EDBS1720501.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.066082

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 22901 | 0.136639 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14260 | 0.066082 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 31573 | 1.175961 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 49257 | 0.125945 |

## Analysis Report (B)

Injected on : Jul 25, 2017 00:52:28
Instrument : CP18--19846B
Result file : 18EDBS17205001B.038.RAW
Calibration file : 18EDBS1720501B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 109% (46-136) Conc.: 0.076847

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 33141 | 0.139924 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21137 | 0.076847 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 43254 | 1.234439 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 57598 | 0.149287 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.136639 | 0.03 | 0.01 | | 2.38 | |
| ☐ 1,1,2,2-PCA | A | 0.066082 | | | | 15.06 | |
| ☑ 1,2,3-TCP | A | 1.175961 | 0.27 | 0.1 | | 4.85 | |
| ☑ DBCP | A | 0.125945 | 0.03 | 0.01 | | 16.96 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: JUL 25 2017

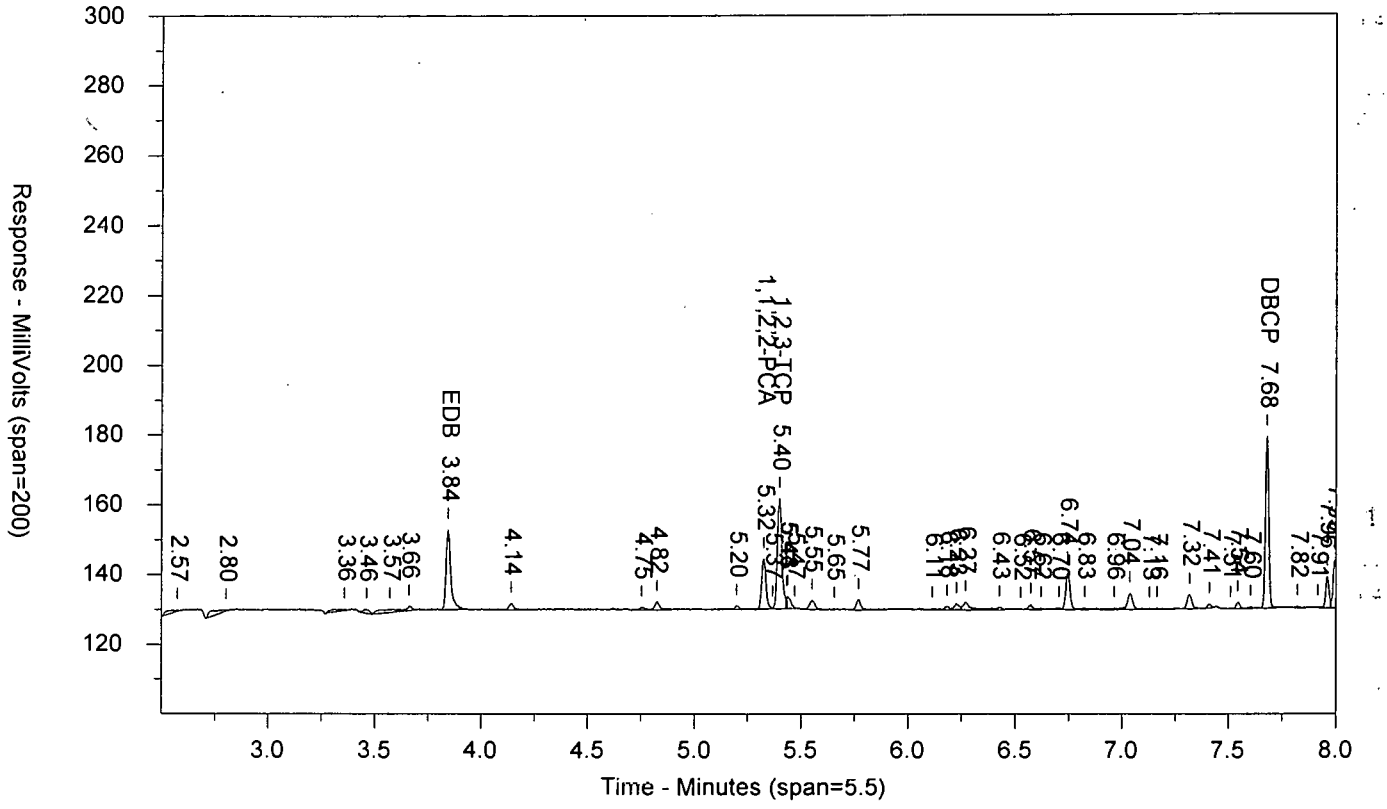
Verified by: Susan M Goshert
Susan M. Goshert
Manager
Date: JUL 28 2017

%RPD = High - Low Amount divided by the Average times 100

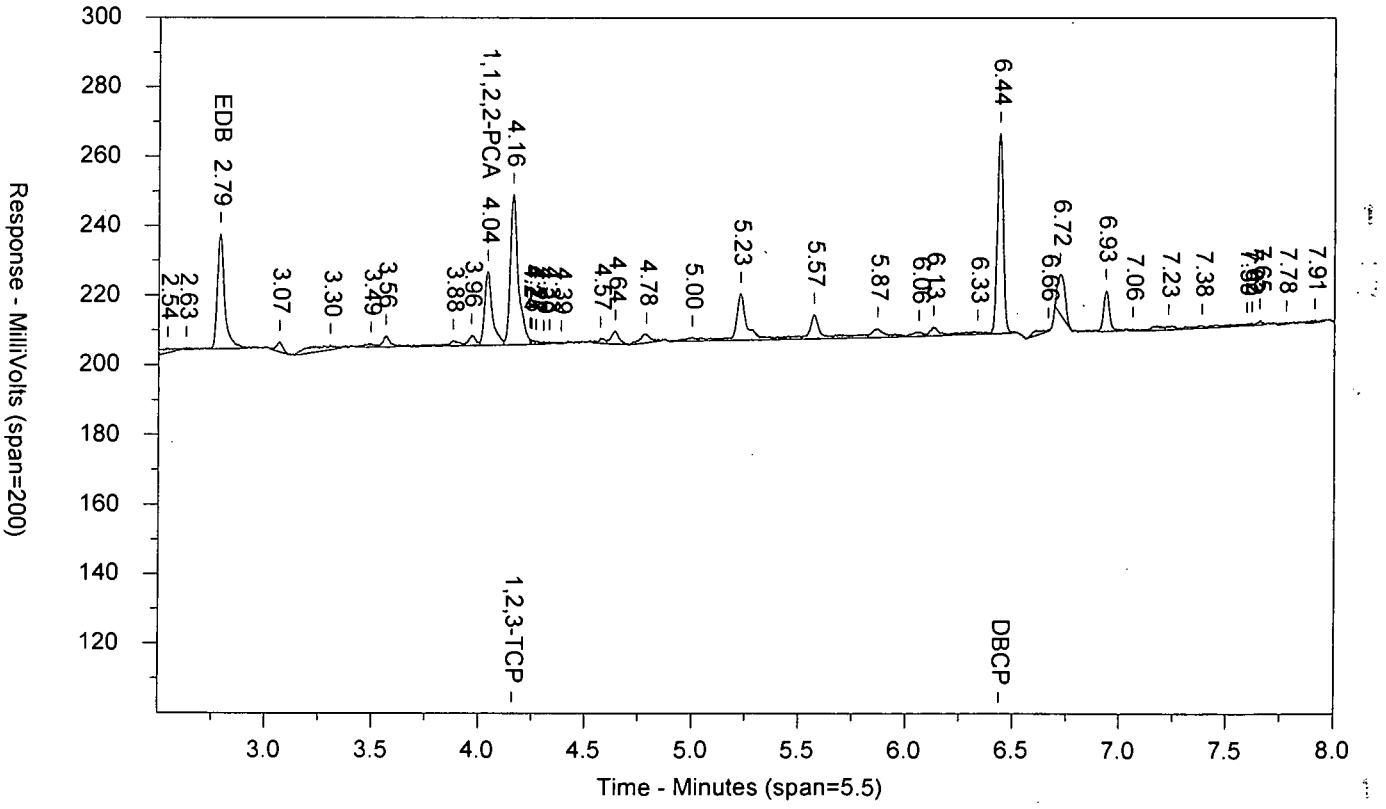
* Recovery outside QC Limits

LCSDA 7/23/17 AALCSD53202 LCSD 172020053A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001.038.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17205001B.038.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 7/23/17 AALCSD53202 LCSD 172020053A 10398 SW-846 8011
Injected On: 7/25/2017 12:52:28 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 22901 | .137 | EDB | 2.786 | 33141 | .14 | EDB |
| 5.325 | 14260 | .066 | 1,1,2,2-PCA | 4.04 | 21137 | .077 | 1,1,2,2-PCA |
| 5.397 | 31573 | 1.176 | 1,2,3-TCP | 4.159 | 43254 | 1.234 | 1,2,3-TCP |
| 7.678 | 49257 | .126 | DBCP | 6.436 | 57598 | .149 | DBCP |

Files:
Area File: 18EDBS17205001.038.RAW
Area File: 18EDBS17205001B.038.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1720501.CAL
Calibration File B: 18EDBS1720501b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/25/2017 1:01:03 AM
File Reported On: 7/25/2017 at 10:20:58 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 572 Edwin Ortiz

Reviewed by: HMM 7/24/17 Start Date: 07/23/2017 Start Time: 16:30

**172020053A**

Tech 1: 572 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9114608DUP | 19004DUP | 37.22 | SS1718724B | .1 | NA | NA | 2 | N | <2 | 057b | clear |
| 9114609MS | 19005MS | 37.14 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | <2 | 057b | clear |
| BLANKA | PBLK53202 | 35 | SS1718724B | .1 | NA | NA | 2 | N | <2 | 57 | = DI H2O |
| LCSA | LCS53202 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | <2 | 57 | = DI H2O |
| LCSDA | LCSD53202 | 35 | SS1718724B | .1 | MS1718124B | .07 | 2 | N | <2 | 57 | = DI H2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185061217A |
| Sodium Sulfate | 16300A |
| Vial Lot# | 2391F |
| Vial Preservative Lot# | 2391 |
| | |

Spike Solutions: Witness: NA

MS1718124B EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9114605 | 19001 | 37.17 | SS1718724B | 0.10 | 2.00 | N | <2 | 057a | clear | 10398 | 17641 | 08/02/2017 | N |
| 2 9114606 | 19002 | 37.02 | SS1718724B | 0.10 | 2.00 | N | <2 | 057a | clear | 10398 | 17641 | 08/02/2017 | N |
| 3 9114607 | 19003 | 37.31 | SS1718724B | 0.10 | 2.00 | N | <2 | 057a | clear | 10398 | 17641 | 08/02/2017 | N |
| 4 9114608 | 19004 | 37.39 | SS1718724B | 0.10 | 2.00 | N | <2 | 057a | clear | 10398 | 17641 | 08/02/2017 | N |
| 5 9114609 | 19005 | 37.15 | SS1718724B | 0.10 | 2.00 | N | <2 | 057a | clear | 10398 | 17641 | 08/02/2017 | N |

KR190 Page 419 of 420

NA 572 7-23-17

| Rack ID: | | Work Station | Room A-370 |
|---|---|---|---|
| Internal Standard | | Balance # | 9330 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172020053A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

# Organic Extraction Batchlog

Prep Analysis # 7796
Prep Group # EDB standards Dept: 24

Reviewed: 7/24/17
Start Date: 7-23-17
Start Time: 18:10
Tech 1: EVS72
Tech 2:

BATCH NO. 172020052A | 172020053A

| QC | Sample Code | Amt (mL) | SS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH | pH | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | | | | | | | | | | |
| [redacted] STD 5-1 | | 35 | | | | 2 | | | | + 35µl MS 172022 4B |
| STD 4-1 | | 35 | | | | 2 | | | | + 20µl MS 172022 4B |
| STD 3-1 | | 35 | | | | 2 | | | | + 50µl MS 172022 4C |

| Sample # | Sample Code | Amt (mL) | SS Sol. | Amt (mL) | FV (mL) | pH | pH | Comments | Analyses | Due Date | Pri |
|---|---|---|---|---|---|---|---|---|---|---|---|
| STD 6 | | 35 | | | 2 | | | + 50µl MS/172022 4B | | | |
| STD 5-2 | | | | | 2 | | | + 35µl | | | |
| STD 4-2 | | | | | 2 | | | + 20µl | | | |
| STD 3-2 | | | | | 2 | | | + 50µl MS/172022 4C | | | |
| STD 2 | | | | | 2 | | | + 25µl | | | |
| STD 1 | | | | | 2 | | | + 14µl | | | |
| MDL | | | | | 2 | | | + 14µl | | | |

NA EVS72 7-23-17

NA EVS72 7-23-17

Additional Comment: See prep. page for Vials + Solvents

DF = Dilution Factor FV = Final Volume

page 1 of 1

| Solvent Used | Lot No. | Solvent Used | Lot No. |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| Internal Standar | | Balance # | |

| S-Evap/bath | °C | S-Evap/bath | °C | N-Evap | °C |
|---|---|---|---|---|---|
| | | | | | |

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# APPENDIX G

# DRINKING WATER SUPPLY WELL SAMPLING DOCUMENTATION

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# APPENDIX G-1

# DAILY QUALITY CONTROL REPORTS – DRINKING WATER SUPPLY WELL SAMPLING

# APPENDIX G-1

## Drinking Water Daily Field Activity Logs and Calibration Logs

# Field Activity Log

| Job Number: | Task Description: | Date: |
|---|---|---|
| US01-023 | DW SAMPLING | 7/18/17 |

0730 - SAFETY TAILGATE
- RYAN SPOKE W/ MARK, WHO CONFIRMED KAFB-003 HAS BEEN ON SINCE 0715

0800 Change pH reference solution and begin calibrating Horiba (water parameter meter)
0820 - END CALIBRATION. PREP EQUIPMENT & LOAD TRUCK
0840 - PICK UP ICE
0850 - ARRIVE @ KAFB-003
~~097~~0857 - BEGIN SAMPLING
0910 - END SAMPLING. DECON EQUIPMENT
0920 - ARRIVE @ KAFB-~~002~~015
0930 - BEGIN SAMPLING
0940 - END SAMPLING. DECON EQUIPMENT
0956 - ARRIVE @ ST106-VA-2
- CALL TIM TO REQUEST DOOR BE OPENED
1005 - DOOR IS OPENED & WELL TURNED ON. WAIT 15 MIN. BEFORE SAMPLING.
1020 - BEGIN SAMPLING
1040 - END SAMPLING. DECON EQUIPMENT.
1110 - RETURN TO TRAILER. PREP SAMPLES
1130 - Finish QC, go to buy more ice
1200 - DEPOSIT IDW
1234 - SAMPLES TO FEDEX
1300 - ~~HORIBA DROP~~ DROP HORIBA & EXTRA BOTTLES @ OFFICE
- END FIELD WORK

7/18/17

| Weather: | Important notes: | Sundance Employes on site | Visitors |
|---|---|---|---|
| Sunny, Warm | N/A | K Copeland<br>R Wortman<br>G Barnett | N/A |

| Name: | Signature: | Date: |
|---|---|---|
| KAYLA COPELAND | | 7/18/17 |

# Calibration Log sheet

| Date/Time 7/18/17 | HORIBA Instument/ Instrument ID | Pre Calibration Reading | Known Cal. Readings | Post Calibration readings | Initials |
|---|---|---|---|---|---|
| 0800 | HORIBA | 100% DO | 100% | 100% | KC |
| ↓ | ↓ | 4.32 pH | 4.01 | 4.01 | KC |
| ↓ | ↓ | 226 ORP | 220 mV | 220 | KC |
| ↓ | ↓ | 0.003 mS/cm | 0.000 | 0.000 | KC |
| ↓ | ↓ | 0.5 NTU | 0.0 | 0.0 | KC |
| ↓ | ↓ | 7.24 pH | 6.86 | 6.86 | KC |
| | | 109 NTU | 100 | 100 | KC |
| | | 1.370 mS/cm | 1.413 | 1.413 | KC |
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# Field Activity Log

| Job Number: | Task Description: | Date: |
|---|---|---|
| US01-023 | DW SAMPLING | 8/8/17 |

0730 - ARRIVE @ TRAILER. SAFETY TAILGATE.
0735 - TURN ON HORIBA. REPLACE 330 SOLUTION
0755 - CALIBRATE HORIBA. VEHICLE INSPECTION, decon equipment
0900 - ARRIVE @ KAFB-003
0910 - BEGIN SAMPLING
0925 - END SAMPLING. DECON EQUIPMENT
0930 - DEPART
0950 - Arrive at KAFB-015
0955 - Begin sampling
~~09~~1005 - END SAMPLING. DECON EQUIPMENT.
1010 - DEPART
1016 - ARRIVE @ ST106-VA-21. CALL TIM TO UNLOCK.
1020 - WELL TURNED ON. WAIT 15 MINUTES.
1038 Collect sample
1055 - Finish sampling, head back to trailer
1105 - Arrive back at trailer, set up for QC
~~12~~ GB
1130 Finish QC, head to EA trailer to drop IDW
1140 Drop IDW
1150 Buy new ice for shipping
1215 Finish packing samples in ice. Head to FEDEX
1235 arrive at FEDEX to ship Samples
1300 Arrive back at trailer, end day

RGB 8/8/17

| Weather: | Important notes: | Sundance Employes on site | Visitors |
|---|---|---|---|
| CLEAR, SUNNY | | K. COPELAND<br>R.G. BARNETT | |

| Name: | Signature: | Date: |
|---|---|---|
| Gaylen Barnett | | 8/8/17 |

# Calibration Log Sheet

| Date/Time | Instument/ instrument ID | Pre Calibration Reading | Know Cal. Radings | Post Calibration readings | Initaials |
|---|---|---|---|---|---|
| 0756 8/8/17 | Horiba | 99.8% DO | 100.0% DO | 100.0% DO | GB |
| | | 0.0 NTU | 0.0 NTU | 0.0 NTU | GB |
| | | 125 NTU | 126.0 NTU | 126 NTU | KC |
| | | 3.95 pH | 4.01 pH | 4.01 pH | GB |
| | | 6.82 pH | 6.86 pH | 6.86 pH | GB |
| | | 218 mV ORP | ORP 220 mV | ORP 220 mV | GB |
| | | 0.1 mScm | 0.0 mScm | 0.0 mScm | KC |
| | | 1.410 mS/cm | 1.413 mS/cm | 1.413 mS/cm | KC |

# Field Activity Log



| Job Number: | Task Description: | Date: |
|---|---|---|
| US01-023 | DW SAMPLING | 09/06/17 |

0730 - SAFETY TAILGATE; TURN ON HORIBA
0745 - CALIBRATE HORIBA
0815 - LOAD TRUCK; DEPART
0830 - ARRIVE @ KAFB-010
- BEEN RUNNING SINCE 0805; SAMPLING FIRST AT REQUEST OF MARK (VIA PHONE)
- MARK NOT PRESENT @ WELL; PHONE CALL TO CONFIRM NO CHLORINE PRESENT @ TIME OF SAMPLE
- WELL IS SAME SET UP AS 015; BLACK WIDOW @ WELL

0840 - BEGIN SAMPLING
0855 - END SAMPLING; DECON EQUIPMENT (1 gal IDW)
0858 - ARRIVE @ KAFB-015
- BEEN RUNNING SINCE 0820; NO CHLORINE

0905 - BEGIN SAMPLING
0913 - END SAMPLING; DECON EQUIPMENT (2 gal IDW)
0929 - ARRIVE @ KAFB-003
- BEEN RUNNING SINCE 0800

0935 - BEGIN SAMPLING
0941 - END SAMPLING; DECON EQUIPMENT (1 gal IDW)
0955 - ARRIVE @ ST106-VA-2
- CALL TIM

1011 - WELL UNLOCKED
ERIC PRICE - 414-1120
1017 - WELL TURNED ON; RUN FOR 15 MINUTES
1035 - BEGIN SAMPLING
1051 - END SAMPLING; DECON EQUIPMENT (4.5 gal IDW)
1055 - TELL TIM WE ARE DONE; DISCUSS IDW LOGISTICS W PETE FROM EA VIA PHONE
1110 - DEPOSIT IDW @ YARD
1130 - ARRIVE @ TRAILER TO QC & PACK FOR SHIPMENT
1220 - DEPART FOR FEDEX. END FIELD WORK.

9/6/17

| Weather: | Important notes: | Sundance Employes on site | Visitors |
|---|---|---|---|
| HAZY W/ SUN, WARM | N/A | K. COPELAND<br>R.G. BARNETT | N/A |

| Name: | Signature: | Date: |
|---|---|---|
| KAYLA COPELAND | | 09/06/17 |

# Calibration Log Sheet

| Date/Time 09/06/17 | Instument/ instrument ID | Pre Calibration Reading | Know Cal. Radings | Post Calibration readings | Initaials |
|---|---|---|---|---|---|
| 0745 | HORIBA | 112 % | 100% DO | 100 % | KC |
| ↓ | ↓ | 0.6 NTU | 0.0 NTU | 0.0 NTU | KC |
| | | 109 NTU | 100 NTU | 100 NTU | KC |
| | | 223 mV | 220 mV | 220 mV | KC |
| | | 1.42 mS/cm | 1.413 mS/cm | 1.413 mS/cm | KC |
| | | 4.02 pH | 4.01 pH | 4.01 pH | KC |
| | | 6.82 pH | 6.86 pH | 6.86 pH | KC |
| | | 0.001 mS/cm | 0.0 mS/cm | 0.0 mS/cm | KC |

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# APPENDIX G-2

# DRINKING WATER SAMPLE COLLECTION LOGS AND CHAIN-OF-CUSTODY FORMS

# APPENDIX G-2

## Drinking Water Sample Collection Logs and Chain-of-Custody Forms

Sundance Consulting Inc.



Date/Time: 07/18/17 , 0800

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1707

Task: DW Sampling

Project Name KAFB_Bulk Fuels Facility

Sample No. **GW17TB07**

Sample Location GW17TB07

Sample Type GRAB

Composite: Y/N No

Sample Team KC, RW

Trip Blank GW17TB07

Sample:

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCL | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |

Field Parameters:

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| Units | °C | S.U. | mg/L | mV | mS/cm | NTU |
| Reading | n/a | n/a | n/a | n/a | n/a | n/a |

Comments:

Logged by: 7/18/17 Reviewed by: 7/20/17

Sundance Consulting Inc.



Date/Time: 07/18/17 , 0857

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1707

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: **GW17025**

Sample Location: Kirtland AFB - **003**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC, RW

Trip Blank: GW17TB07

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| Units | °C | S.U. | mg/L | mV | mS/cm | NTU |
| Reading | 20.67 | 7.64 | 4.30 | 208 | 0.441 | 0.0 |

***Comments:***

Logged by: KC 7/18/17

Reviewed by: Ryan W 7/20/17

Sundance Consulting Inc.



Date/Time: 07/18/17 , 0857

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1707

Task: DW Sampling

Project Name KAFB Bulk Fuels Facility

Sample No. **GW17026**

Sample Location Kirtland AFB - **003**

Sample Type GRAB

Composite: Y/N No

Sample Team KC, RW

Trip Blank GW17TB07

Sample:

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |

Field Parameters:

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| Units | °C | S.U. | mg/L | mV | mS/cm | NTU |
| Reading | 20.67 | 7.64 | 4.30 | 208 | 0.441 | 0.0 |

Comments:

Logged by: KQ 7/18/17 Reviewed by: 7/20/17

Sundance Consulting Inc.



Date/Time: 07/18/17 , 0930

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1707

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: **GW17027**

Sample Location: Kirtland AFB - **015**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC, RW

Trip Blank: GW17TB07

Sample:

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |

Field Parameters:

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| Units | °C | S.U. | mg/L | mV | mS/cm | NTU |
| Reading | 26.09 | 8.03 | 2.61 | 197 | 0.441 | 0.0 |

Comments:

Logged by: [signature] 7/18/17

Reviewed by: [signature] 7/20/17

Sundance Consulting Inc.



Date/Time: 07/18/17 , 1020

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1707

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: **GW17028**

Sample Location: ST106-VA-2

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC, RW

Trip Blank: GW17TB07

Sample:

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |

Field Parameters:

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| Units | °C | S.U. | mg/L | mV | mS/cm | NTU |
| Reading | 23.84 | 7.89 | 2.37 | 208 | 0.383 | 0.1 |

Comments:

Logged by: KC 7/18/17

Reviewed by: RW 7/20/17

Sundance Consulting Inc.



Date/Time: 07/18/17 , 1020

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1707

Task: DW Sampling

Project Name KAFB Bulk Fuels Facility

Sample No. **GW17028-MS**

Sample Location ST106-VA-2

Sample Type GRAB

Composite: Y/N No

Sample Team KC, RW

Trip Blank GW17TB07

Sample:

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |

Field Parameters:

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| Units | °C | S.U. | mg/L | mV | mS/cm | NTU |
| Reading | 23.84 | 7.89 | 2.37 | 208 | 0.383 | 0.1 |

Comments:

Logged by: KC 7/18/17 Reviewed by: 7/20/17

Sundance Consulting Inc.



Date/Time: 07/18/17 , 1020

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1707

Task: DW Sampling

Project Name KAFB Bulk Fuels Facility

Sample No. **GW17028-MSD**

Sample Location ST106-VA-2

Sample Type GRAB

Composite: Y/N No

Sample Team KC, RW

Trip Blank GW17TB07

Sample:

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 ml VOA | 4°C | N | 10 Days | KC |

Field Parameters:

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| Units | °C | S.U. | mg/L | mV | mS/cm | NTU |
| Reading | 23.84 | 7.89 | 2.37 | 208 | 0.383 | 0.1 |

Comments:

Logged by: KC 7/18/17 Reviewed by: MW 7/20/17

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # 7796 1643 2200

COC #: US01023-GW1707

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
R Gaylen Barnett
R Gaylen Barnett

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | Analytical Methods: | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17025 | | 7/18/2017 | 0857 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17026 | | 7/18/2017 | 0857 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17027 | | 7/18/2017 | 0930 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17028 | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17028-MS | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17028-MSD | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB07 | | 7/18/2017 | 0800 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |

***Additional Comments:***

Preservatives:

BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-141167 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) X

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|---|
| R Gaylen Barnett | 7/18/2017 | 1300 | | | 7/19/17 | 0750 |
| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |

Cooler / Blank Temperature 4 °C

3.6(CF+0.3) 3.9

Sundance Consulting Inc.



Date/Time: 0800 8/8/17

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1708

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: GW17TB08

Sample Location: **Trip Blank**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB08

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | X KC |
| BTEX by EPA 524.2 | Hydrochloric Acid | 2 | 3x40 mL VOA | 4°C | N | 10 Days | X KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Current Reading** | n/a | n/a | n/a | n/a | n/a | n/a |

***Comments:*** Trip Blank

Logged by: 8/8/17 Reviewed by: 8/17/17

Sundance Consulting Inc.



# Sample Collection Log

Date/Time: 8/8/17, 0910

Project No: US01-023

COC #: US01023-GW1708

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: GW17029

Sample Location: **KAFB-003**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB08

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading (July)** | 20.67 | 7.64 | 4.30 | 208 | 0.441 | 0.0 |
| **Current Reading** | 21.37 | 7.59 | 7.49 | 165 | 0.394 | 0.3 |

***Comments:***

Logged by: KC 8/8/17 Reviewed by: 8/17/17

Sundance Consulting Inc.



# Sample Collection Log

Date/Time: 8/8/17, 0910

Project No: US01-023

COC #: US01023-GW1708

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: GW170829-MS

Sample Location: **KAFB-003**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB08

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading (July)** | 20.67 | 7.64 | 4.30 | 208 | 0.441 | 0.0 |
| **Current Reading** | 21.37 | 7.59 | 7.49 | 165 | 0.394 | 0.3 |

***Comments:***

Logged by: KC 8/8/17 Reviewed by: mm 8/17/17

Sundance Consulting Inc.



Date/Time: 8/8/17, 0910

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1708

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: GW17029-MSD

Sample Location: **KAFB-003**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB08

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading (July)** | 20.67 | 7.64 | 4.30 | 208 | 0.441 | 0.0 |
| **Current Reading** | 21.37 | 7.59 | 7.49 | 165 | 0.394 | 0.3 |

***Comments:***

Logged by: KC 8/8/17 Reviewed by: 8/17/17

Sundance Consulting Inc.



# Sample Collection Log

Date/Time: 8/8/17, 0955

Project No: US01-023

COC #: US01023 - GW1708

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: GW17030

Sample Location: **KAFB-015**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB08

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading (July)** | 20.69 | 8.03 | 2.61 | 197 | 0.441 | 0.0 |
| **Current Reading** | 25.82 | 8.07 | 3.64 | 201 | 0.430 | 0.0 |

***Comments:***

Logged by: 8/8/17 Reviewed by: 8/17/17

Sundance Consulting Inc.



Date/Time: 1038, 8/8/17

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1708

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: GW17031

Sample Location: **ST106-VA-2**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB08

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | 23.84 | 7.89 | 2.37 | 208 | 0.383 | 0.1 |
| **Current Reading** | 24.74 | 8.10 | 4.76 | 207 | 0.368 | 0.0 |

***Comments:***

Logged by: KC 8/8/17 Reviewed by: 8/17/17

Sundance Consulting Inc.



Date/Time: 1038 8/8/17

# Sample Collection Log

Project No: US01-023

COC #: US01023-GW1708

Task: DW Sampling

Project Name: KAFB Bulk Fuels Facility

Sample No.: GW17032

Sample Location: **ST106-VA-2**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB08

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | 23.84 | 7.89 | 2.37 | 208 | 0.383 | 0.1 |
| **Current Reading** | 24.74 | 8.10 | 4.76 | 207 | 0.368 | 0.0 |

***Comments:***

Logged by: KC 8/8/17 Reviewed by: MM 8/17/17

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # 7798 3090 4453

COC #: US01023-GW1708

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
KAYLA COPELAND

Analytical Methods:

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17029 | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17029-MS | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17029-MSD | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17030 | | 8/8/2017 | 0955 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17031 | | 8/8/2017 | 1038 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17032 | | 8/8/2017 | 1038 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB08 | | 8/8/2017 | 800 | GW | 5 | HCl for BTEX | 3 | 2 | | | 40 mL VOA | |

***Additional Comments:***

*Preservatives:* BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-141929 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) __X__

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No

Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle) (INTACT) BROKEN ABSENT

Project Requirements (MRLs QAPP)

| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|---|
| | 8/8/2017 | 1230 | | | 08 09 17 | 0925 |
| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
| | | | | | | |

Cooler / Blank Temperature 4 °C

1.2(CF) 1.5°C

Sundance Consulting Inc.



# Sample Collection Log

Date: 09/06/17

Time: 0800

Project No: US01-023

COC #: US01029-GW1709

Project Name: KAFB Bulk Fuels Facility

Task: DW Sampling

Sample ID: GW17TB09

Sample Location: **Trip Blank**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB09

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4˚C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4˚C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Current Reading** | n/a | n/a | n/a | n/a | n/a | n/a |

***Comments:***

Logged by: 9/6/17

Reviewed by: 9/11/17

Sundance Consulting Inc.



Date: 09/06/17

# Sample Collection Log

Time: 0840

Project No: US01-023

COC #: US01029-GW1709

Project Name: KAFB Bulk Fuels Facility

Task: DW Sampling

Sample ID: GW17034

Sample Location: **KAFB-016**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB09

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | n/a | n/a | n/a | n/a | n/a | n/a |
| **Current Reading** | 24.49 | 7.63 | 8.31 | 124 | 0.427 | 0.3 |

***Comments:***

Logged by: KC 9/6/17 Reviewed by: 9/11/2017

Sundance Consulting Inc.



Date: 09/06/17

# Sample Collection Log

Time: 0840

Project No: US01-023

COC #: US01029-GW1709

Project Name: KAFB Bulk Fuels Facility

Task: DW Sampling

Sample ID: GW17035

Sample Location: **KAFB-016**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB09

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | n/a | n/a | n/a | n/a | n/a | n/a |
| **Current Reading** | 24.49 | 7.63 | 8.31 | 124 | 0.427 | 0.3 |

***Comments:***

Logged by: KQ 9/6/17

Reviewed by: 9/11/17

Sundance Consulting Inc.



# Sample Collection Log

Date: 09/06/17

Time: 0905

Project No: US01-023

COC #: US01029-GW1709

Project Name: KAFB Bulk Fuels Facility

Task: DW Sampling

Sample ID: GW17036

Sample Location: **KAFB-015**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB09

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | 25.82 | 8.07 | 3.64 | 201 | 0.430 | 0.0 |
| **Current Reading** | 25.64 | 8.08 | 2.58 | 163 | 0.409 | 0.0 |

***Comments:***

Logged by: KCO 9/6/17 Reviewed by: 9/10/17

Sundance Consulting Inc.



Date: 09/06/17

# Sample Collection Log

Time: 0935

Project No: US01-023

COC #: US01029-GW1709

Project Name: KAFB Bulk Fuels Facility

Task: DW Sampling

Sample ID: GW17033

Sample Location: **KAFB-003**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB09

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | 21.37 | 7.59 | 7.49 | 165 | 0.394 | 0.3 |
| **Current Reading** | 22.50 | 8.08 | 6.50 | 190 | 0.346 | 0.0 |

***Comments:***

Logged by: KC 9/6/17 Reviewed by: BM 9/11/2017

Sundance Consulting Inc.



# Sample Collection Log

Date: 09/06/17

Time: 1035

Project No: US01-023

COC #: US01029-GW1709

Project Name: KAFB Bulk Fuels Facility

Task: DW Sampling

Sample ID: GW17037

Sample Location: **ST106-VA-2**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB09

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | 24.74 | 8.10 | 4.76 | 207 | 0.368 | 0.0 |
| **Current Reading** | 22.17 | 8.06 | 5.66 | 173 | 0.345 | 0.0 |

***Comments:***

Logged by: KQ 9/6/17 Reviewed by: 9/10/17

Sundance Consulting Inc.



Date: 09/06/17

# Sample Collection Log

Time: 1035

Project No: US01-023

COC #: US01029-GW1709

Project Name: KAFB Bulk Fuels Facility

Task: DW Sampling

Sample ID: GW17037-MS

Sample Location: **ST106-VA-2**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB09

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | 24.74 | 8.10 | 4.76 | 207 | 0.368 | 0.0 |
| **Current Reading** | 22.17 | 8.06 | 5.66 | 173 | 0.345 | 0.0 |

***Comments:***

Logged by: KC 9/6/17 Reviewed by: 9/11/17

Sundance Consulting Inc.



# Sample Collection Log

Date: 09/06/17

Time: 1035

Project No: US01-023

COC #: US01029-GW1709

Project Name: KAFB Bulk Fuels Facility

Task: DW Sampling

Sample ID: GW17037-MSD

Sample Location: **ST106-VA-2**

Sample Type: GRAB

Composite: Y/N: No

Sample Team: KC GB

Trip Blank: GW17TB09

***Sample:***

| Analytical Suite | Preservative | Quantity | Container | Temp. | FLT. | TAT | Initials |
|---|---|---|---|---|---|---|---|
| EDB by EPA 504.1 | Sodium Thiosulfate | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |
| BTEX by EPA 524.2 | HCl, Ascorbic Acid | 3 | 3x40 mL VOA | 4°C | N | 10 Days | KC |

***Field Parameters:***

| Parameter | Temperature | pH | DO | ORP | Specific Cond. | Turbidity |
|---|---|---|---|---|---|---|
| **Units** | *°C* | *S.U.* | *mg/L* | *mV* | *mS/cm* | *NTU* |
| **Historical Reading** | 24.74 | 8.10 | 4.76 | 207 | 0.368 | 0.0 |
| **Current Reading** | 22.17 | 8.06 | 5.66 | 173 | 0.345 | 0.0 |

***Comments:***

Logged by: KC 9/6/17 Reviewed by: 9/11/17

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # **7701 2418 8691**

COC #: US01023-GW1709

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
Kayla Copeland

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | Analytical Methods: EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17033 | | 9/6/2017 | 0935 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17034 | | 9/6/2017 | 0840 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17035 | | 9/6/2017 | 0840 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17036 | | 9/6/2017 | 0905 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17037 | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17037-MS | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17037-MSD | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB09 | | 9/6/2017 | 0800 | GW | 5 | HCl for BTEX | 3 | 2 | | | 40 mL VOA | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

***Additional Comments:***

*Preservatives:* BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-142971 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) __X__

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No

Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle) (INTACT) BROKEN ABSENT

Project Requirements (MRLs, (QAPP))

| Relinquished by: (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|
| | 9/6/2017 | 1230 | | 9/7/17 | 940 |
| Relinquished by: (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
| | | | | | |

Cooler / Blank Temperature 4 °C

0.4°C (CP) 0.6°C

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# APPENDIX H

# DRINKING WATER SUPPLY WELL DATA QUALITY EVALUATION REPORTS AND DATA PACKAGES

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# APPENDIX H-1

# DATA QUALITY EVALUATION REPORT – DRINKING WATER SUPPLY WELL SAMPLES

# APPENDIX H-1

# Data Quality Evaluation Report - Drinking Water Supply Well Samples

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Sundance Consulting, Inc.
8210 Louisiana Blvd. NE, Suite C
Albuquerque, NM 87113
ATTN: Ms. Rachel Hobbs

August 22, 2017

SUBJECT: **Data Quality Assessment Report**
**Monthly Drinking Water Monitoring for**
**Bulk Fuels Facility Spill Solid Waste**
**Management Unit ST-106/SS-111**
**Kirtland Air Force Base, New Mexico**

Dear Ms. Hobbs,

Enclosed is the Data Quality Assessment Report Monthly Drinking Water Monitoring for Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico.

We appreciate this opportunity to support Sundance Consulting in the performance of this project. Please feel free to call me at (760) 827-1100 if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Chemist

# DATA QUALITY ASSESSMENT REPORT

# MONTHLY DRINKING WATER MONITORING FOR BULK FUELS FACILITY SPILL SOLID WASTE MANAGEMENT UNIT ST-106/SS-111 KIRTLAND AIR FORCE BASE, NEW MEXICO

**August 17, 2017**

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## GLOSSARY

| | |
|---|---|
| BTEX | Benzene, Toluene, Ethylbenzene, and Xylenes |
| CTO | Contract Task Order |
| DQAR | Data Quality Assessment Report |
| DQO | Data Quality Objective |
| DOD | Department of Defense |
| DL | Detection Limit |
| DQO | Data Quality Objectives |
| EDB | 1,2-Dibromoethane |
| EPA | Environmental Protection Agency |
| FD | Field Duplicate |
| LCS/LCSD | Laboratory Control Sample / Laboratory Control Sample Duplicate |
| LDC | Laboratory Data Consultants, Inc |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| MS/MSD | Matrix Spike / Matrix Spike Duplicate |
| NFG | National Functional Guidelines |
| PARCCS | Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity |
| QAPP | Quality Assurance Project Plan |
| QA/QC | Quality Assurance/Quality Control |
| QSM | Quality Systems Manual |
| RPD | Relative Percent Difference |
| SDG | Sample Delivery Group |
| TB | Trip Blank |
| VOCs | Volatile Organic Compounds |
| %D | Percent Difference |
| %R | Percent Recovery |
| %RSD | Percent Relative Standard Deviation |
| ug/L | Micrograms per Liter |

## 1.0 INTRODUCTION

Monthly drinking water monitoring for Bulk Fuels Facility Spill, Solid Waste Management Unit ST-106/SS-111 was conducted at Kirtland Air Force Base, New Mexico. The monitoring included the collection and analyses of 5 environmental and quality control (QC) samples. The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) including Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2
Ethylene Dibromide (EDB) by EPA Method 504.1

Analytical services were provided by TestAmerica, Inc. whom performed analyses on the water samples. The samples were grouped into sample delivery groups (SDGs) as received by the laboratory. The environmental samples are associated with quality assurance and quality control (QA/QC) samples designed to document the data quality of the entire SDG or a sub-group of samples within a SDG. Table I is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, matrix, and validation level.

All of the analytical data were validated according to EPA Level III validation procedures. The analytical data were evaluated for QA/QC based on the *Quality Assurance Project Plan (QAPP) for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016)*, the *Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (DoD 2013),* and the *National Functional Guidelines (NFGs) for Superfund Organic Data Review, August 2014*. Validation services were provided by Laboratory Data Consultants, Inc. (LDC).

This data quality assessment report (DQAR) summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) relative to the data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The DQAR evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each of the PARCCS criteria. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 5 presents a summary of the PARCCS criteria by comparing quantitative parameters with acceptability criteria defined in the DQOs. Qualitative PARCCS criteria are also summarized in this section.

**Precision and Accuracy of Environmental Data**

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors in sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given media.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: method

blanks, trip blanks (TBs), laboratory control sample/laboratory control sample duplicates (LCS/LCSDs), surrogate spikes, and matrix spike/matrix spike duplicates (MS/MSDs) and field duplicates (FDs).

Before conducting the PARCCS evaluation, the analytical data were validated according to the QAPP, DoD QSM, and NFGs. Samples not meeting the QAPP, DoD QSM, and NFG acceptance criteria were qualified with a flag, an abbreviation indicating a deficiency with the data. The following are flags used in data validation.

J- Estimated The associated numerical value is an estimated quantity with a negative bias. The analyte was detected but the reported value may not be accurate or precise.

J+ Estimated The associated numerical value is an estimated quantity with a positive bias. The analyte was detected but the reported value may not be accurate or precise.

J Estimated The associated numerical value is an estimated quantity. It is not possible to assess the direction of the potential bias. The analyte was detected but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data.

R Rejected The data is unusable (the compound or analyte may or may not be present). Use of the "R" qualifier indicates a significant variance from functional guideline acceptance criteria. Either resampling or reanalysis is necessary to determine the presence or absence of the rejected analyte.

U Nondetected Analyses were performed for the compound or analyte, but it was not detected. The "U" designation is also applied to suspected blank contamination. The "U" flag is used to qualify any result detected in an environmental sample at a concentration less than 5 times the blank value for other laboratory contaminants in any associated blank.

UJ Estimated/Nondetected Analyses were performed for the compound or analyte, but it was not detected and the limit of detection (LOD) is an estimated quantity due to poor accuracy or precision. This qualification is also used to flag possible false negative results in the case where low bias in the analytical system is indicated by low calibration response, surrogate, internal standard, or other spike recovery.

Once the data are reviewed and qualified according to the QAPP, DoD QSM, and NFGs, the data set is then evaluated using PARCCS criteria. PARCCS criteria provide an evaluation of overall data usability. The following is a discussion of PARCCS criteria as related to the DQOs.

**Precision** is a measure of the agreement or reproducibility of analytical results under a given set of conditions. It is a quantity that cannot be measured directly but is calculated from percent recovery data.

Precision is expressed as the relative percent difference (RPD):

$$RPD = (D1-D2)/\{1/2(D1+D2)\} \times 100$$

Where:
D1 and D2 = the reported concentrations for sample and duplicate analyses.

Precision is primarily assessed by calculating a RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of a MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC

samples. An additional measure of sampling precision was obtained by collecting and analyzing field duplicate samples, which were compared using the RPD, as the evaluation criteria.

MS and MSD samples are field samples spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the overall efficiency of the analytical method in recovering target analytes from an environmental matrix. A LCS/LCSD is similar to a MS/MSD sample in that the LCS/LCSD is spiked with the same target analytes prior to preparation and analysis. However, the LCS/LCSD is prepared using a controlled interference-free matrix instead of a field sample aliquot. Laboratory reagent water is used to prepare aqueous LCS/LCSD. The LCS/LCSD measures laboratory efficiency in recovering target analytes from an aqueous matrix in the absence of matrix interferences.

Laboratory and field sampling precision are further evaluated by calculating RPDs for field sample duplicate pairs. The sampler collects two field samples at the same location and under identically controlled conditions. The laboratory then analyzes the samples under identical conditions.

An RPD outside the numerical QC limit in either MS/MSD samples, LCS/LCSD, or field duplicates indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a particular reported result. Thus, the actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate sets, results maybe reported in either the primary or duplicate samples at levels below the limit of quantitation (LOQ) or non-detected. Since these values are considered to be estimates, RPD exceedances from these duplicates do not suggest a significant impact on the data quality.

**Accuracy** is a measure of the agreement of an experimental determination and the true value of the parameter being measured. It is used to identify bias in a given measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, LCSD, and samples containing surrogate spikes. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Surrogate spikes are either isotopically labeled compounds or compounds that are not typically detected in the samples. Surrogate spikes are added to every blank, environmental sample, MS/MSD, LCS/LCSD and standard, for all applicable organic analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A–B)/C \times 100$$

Where:
A = measured concentration in the spiked sample
B = measured concentration of the spike compound in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples, LCS/LCSD, and surrogate compounds added to environmental samples is evaluated against the acceptance criteria specified by the previously noted documents. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or LODs reported for environmental samples.

**Representativeness** is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population and is evaluated by reviewing the QC results of blank samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks and TBs.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Trip blanks are used to identify possible volatile organic contamination introduced into the sample during transport. A trip blank is a sample bottle filled in the laboratory with reagent-grade water and preserved to a pH less than 2 with hydrochloric acid. It is transported to the site, stored with the sample containers, and returned unopened to the laboratory for analysis.

Contaminants found in both the environmental sample and a blank sample are assumed to be laboratory artifacts if the concentration in the environmental sample is less than 5 times the blank value for all contaminants.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedances can cause loss of sample constituents due to biodegradation, precipitation, volatization, and chemical degradation.

**Comparability** is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability can only be compared with confidence when precision, accuracy, and representativeness are known.

**Completeness** is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness can be either contractual, analytical, or technical. The following equations are used to calculate the three types of completeness.

%Contract Completeness = (Number of contract compliant results/Number of reported results) X 100

%Analytical Completeness = (Number of unqualified results/Number of reported results) X 100

%Technical Completeness = (Number of usable results/Number of reported results) X 100

As specified in the DQOs, the goals for contractual, analytical, and technical completeness for target analytes in each analytical fraction is 95 percent, 90 percent, and 95 percent, respectively.

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the project planning document, with the number determined above.

**Sensitivity** is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. This capability is established during the planning phase to meet the data quality objectives (DQOs). It is important that calibration requirements, detection limits (DLs), and LOQs presented in the QAPP are achieved and that target analytes can be detected at concentrations necessary to support the DQOs. In addition, sample results are compared to method blank and field blank results to identify potential effects of laboratory background and field procedures on sensitivity.

The following sections present a review of QC data for each analytical method. The details regarding the qualification of results are provided in the data validation reports.

## 2.0 VOLATILE ORGANIC COMPOUNDS

A total of 5 water samples were analyzed for VOCs by EPA Method 524.2. All VOC data were assessed to be valid since none of the 20 total results were rejected due to holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

### 2.1 Precision and Accuracy

#### 2.1.1 Instrument Calibration

Initial and continuing calibration results provide a means of evaluating accuracy within a particular SDG. Percent relative standard deviation (%RSD) and percent difference (%D) are the major parameters used to measure the effectiveness of instrument calibration. %RSD is an expression of the linearity of instrument response. %D is a comparison of a continuing calibration instrumental response with its initial response. %RSD and %D exceedances suggest routine instrumental anomalies, which typically impact all sample results for the affected compounds.

The %RSD in the initial calibration met the acceptance criteria of 20 percent. The %Ds in the initial and continuing calibration verifications met the acceptance criteria of 30 percent.

#### 2.1.2 Surrogates

All surrogate %Rs were within the acceptance criteria.

#### 2.1.3 MS/MSD Samples

All MS/MSD %Rs and RPDs were within the acceptance criteria

#### 2.1.4 LCS Samples

All LCS/LCSD %Rs and RPDs were within the acceptance criteria.

#### 2.1.5 Internal Standards

All internal standard areas and retention times were within acceptance criteria.

#### 2.1.6 FD Samples

The field duplicate RPDs were within the acceptance criteria.

### 2.1.7 Compound Quantitation and Target Identification

All compound quantitation and target identifications were found to be acceptable.

## 2.2 Representativeness

### 2.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

### 2.2.2 Blanks

Method blanks and TBs were collected and analyzed to evaluate representativeness. The concentration for an individual target compound in any of the types of QA/QC blanks was used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results based on the following criteria.

> Results Below or Above the LOQ If a sample result for the blank contaminant was greater than the sample LOQ and less than 5 times the blank value for all contaminants, the sample result for the blank contaminant was amended as a non-detect at the concentration reported in the sample results.
>
> No Action If a sample result for the blank contaminant was greater than 5 times the blank value for all contaminants, the result was not amended.

#### 2.2.2.1 Method Blanks

No contaminants were detected in the method blanks for this analysis.

#### 2.2.2.2 TBs

Although ethylbenzene, toluene, and total xylenes were found in GW17TB07, no data was qualified since all the associated samples were non-detect.

## 2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the DLs and LODs attained were below the specified LOQs. The comparability of the data is regarded as acceptable.

## 2.4 Completeness

The contract completeness level attained for VOC field samples was 100 percent. This percentage was calculated as the total number of contract compliant results divided by the total number of sample results multiplied by 100.

The analytical completeness level attained for VOC field samples was 100 percent. This percentage was calculated as the total number of unqualified sample results divided by the total number of sample results multiplied by 100.

The technical completeness level attained for VOC field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

### 2.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP.

## 3.0 ETHYLENE DIBROMIDE

A total of 5 water samples were analyzed for EDB by EPA Method 504.1. All EDB data were assessed to be valid since none of the 5 total results were rejected due to holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

### 3.1 Precision and Accuracy

#### 3.1.1 Instrument Calibration

The %RSD in the initial calibration met the acceptance criteria of 20 percent. The %Ds in the initial and continuing calibration verifications met the acceptance criteria of 30 percent.

#### 3.1.2 Surrogates

All surrogate %Rs were within the acceptance criteria.

#### 3.1.3 MS/MSD Samples

All MS/MSD %Rs and RPDs were within the acceptance criteria.

#### 3.1.4 LCS Samples

All LCS %Rs were within the acceptance criteria.

#### 3.1.5 FD Samples

The field duplicate RPDs were within the acceptance criteria.

#### 3.1.6 Compound Quantitation and Target Identification

All compound quantitation and target identifications were found to be acceptable.

### 3.2 Representativeness

#### 3.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

### 3.2.2 Blanks

Method blanks and TBs were collected and analyzed to evaluate representativeness.

#### 3.2.2.1 Method Blanks

No contaminants were detected in the method blank for this analysis.

#### 3.2.2.2 Trip Blanks

No contaminants were detected in the trip blank for this analysis.

### 3.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases the DLs and LODs attained were below the specified LOQs. The comparability of the data is regarded as acceptable.

### 3.4 Completeness

The contract completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of contract compliant results divided by the total number of sample results multiplied by 100.

The analytical completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of unqualified sample results divided by the total number of sample results multiplied by 100.

The technical completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

### 3.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP

## 4.0 VARIANCES IN ANALYTICAL PERFORMANCE

The laboratory used standard analytical methods for all of the analyses throughout the project. No systematic variances in analytical performance were noted in the case narratives.

## 5.0 SUMMARY OF PARCCS CRITERIA

The validation reports present the PARCCS results for all SDGs. Each PARCCS criterion is discussed in detail in the following sections.

### 5.1 Precision and Accuracy

Precision and accuracy were evaluated using data quality indicators such as calibration, surrogates, MS/MSD, and LCS/LCSD. The precision and accuracy of the data set were considered acceptable.

### 5.2 Representativeness

All samples for each method and matrix were evaluated for holding time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable.

### 5.3 Comparability

The laboratory used standard analytical methods for their analyses. The analytical results were reported in correct standard units. The overall comparability is considered acceptable.

### 5.4 Completeness

#### 5.4.1 Contract Completeness

The contract completeness level attained for the field samples was 100 percent. Of the 25 total results reported, none of the results were qualified as a result of contract non-compliance. The contract completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Contract Compliant Results | % Contact Completeness |
|---|---|---|---|
| VOCs | 20 | 20 | 100 |
| EDB | 5 | 5 | 100 |
| **Total** | **25** | **25** | **100** |

The contract completeness percentage based on contract complaint data met the 95 percent DQO goal.

#### 5.4.2 Analytical Completeness

The analytical completeness level attained for the field samples was 100 percent. The analytical completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Unqualified Results | % Analytical Completeness |
|---|---|---|---|
| VOCs | 20 | 20 | 100 |
| EDB | 5 | 5 | 100 |
| **Total** | **25** | **25** | **100** |

The analytical completeness percentage based on qualified data met the 90 percent DQO goal.

#### 5.4.3 Technical Completeness

The technical completeness, which included all QC parameters, attained for the field samples was 100 percent. Of the 25 total results reported, none of the results were rejected. The technical completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Rejects | % Technical Completeness |
|---|---|---|---|
| VOCs | 20 | 0 | 100 |
| EDB | 5 | 0 | 100 |
| **Total** | **25** | **0** | **100** |

The technical completeness percentage based on rejected data met the 95 percent DQO goal.

## 5.5 Sensitivity

Sensitivity was achieved by the laboratory to support the DQOs. Calibration concentrations, DLs, and LOQs met the project requirements.

# Table I

## Validation Sample Table

| SDG | Client Sample ID | Lab Sample ID | Matrix | QC Type | Sample Date | Validation Level | VOC (524.2) | EDB (504.1) |
|---|---|---|---|---|---|---|---|---|
| 680-141167-1 | GW17025 | 680-141167-1 | Water | FD | 7/18/2017 | Level III | X | X |
| 680-141167-1 | GW17026 | 680-141167-2 | Water | FD | 7/18/2017 | Level III | X | X |
| 680-141167-1 | GW17027 | 680-141167-3 | Water | | 7/18/2017 | Level III | X | X |
| 680-141167-1 | GW17TB07 | 680-141167-5 | Water | TB | 7/18/2017 | Level III | X | X |
| 680-141167-2 | GW17028 | 680-141167-4 | Water | | 7/18/2017 | Level III | X | X |
| 680-141167-1 | GW17026MS | 680-141167-2MS | Water | MS | 7/18/2017 | Level III | | X |
| 680-141167-2 | GW17028MS | 680-141167-4MS | Water | MS | 7/18/2017 | Level III | X | X |
| 680-141167-2 | GW17028MSD | 680-141167-4MSD | Water | MSD | 7/18/2017 | Level III | X | X |

TB = Trip Blank, MS = Matrix Spike, MSD = Matrix Spike Duplicate, FD = Field Duplicate
EDB = Ethylene Dibromide, VOC = Volatile Organic Compounds

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Sundance Consulting, Inc.
8210 Louisiana Blvd. NE, Suite C
Albuquerque, NM 87113
ATTN: Ms. Rachel Hobbs

August 25, 2017

SUBJECT: **Data Quality Assessment Report**
**Monthly Drinking Water Monitoring for**
**Bulk Fuels Facility Spill Solid Waste**
**Management Unit ST-106/SS-111**
**Kirtland Air Force Base, New Mexico**

Dear Ms. Hobbs,

Enclosed is the Data Quality Assessment Report Monthly Drinking Water Monitoring for Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico.

We appreciate this opportunity to support Sundance Consulting in the performance of this project. Please feel free to call me at (760) 827-1100 if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Chemist

# DATA QUALITY ASSESSMENT REPORT

# MONTHLY DRINKING WATER MONITORING FOR BULK FUELS FACILITY SPILL SOLID WASTE MANAGEMENT UNIT ST-106/SS-111 KIRTLAND AIR FORCE BASE, NEW MEXICO

**August 24, 2017**

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## GLOSSARY

| | |
|---|---|
| BTEX | Benzene, Toluene, Ethylbenzene, and Xylenes |
| CTO | Contract Task Order |
| DQAR | Data Quality Assessment Report |
| DQO | Data Quality Objective |
| DOD | Department of Defense |
| DL | Detection Limit |
| DQO | Data Quality Objectives |
| EDB | 1,2-Dibromoethane |
| EPA | Environmental Protection Agency |
| FD | Field Duplicate |
| LCS/LCSD | Laboratory Control Sample / Laboratory Control Sample Duplicate |
| LDC | Laboratory Data Consultants, Inc |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| MS/MSD | Matrix Spike / Matrix Spike Duplicate |
| NFG | National Functional Guidelines |
| PARCCS | Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity |
| QAPP | Quality Assurance Project Plan |
| QA/QC | Quality Assurance/Quality Control |
| QSM | Quality Systems Manual |
| RPD | Relative Percent Difference |
| SDG | Sample Delivery Group |
| TB | Trip Blank |
| VOCs | Volatile Organic Compounds |
| %D | Percent Difference |
| %R | Percent Recovery |
| %RSD | Percent Relative Standard Deviation |
| ug/L | Micrograms per Liter |

## 1.0 INTRODUCTION

Monthly drinking water monitoring for Bulk Fuels Facility Spill, Solid Waste Management Unit ST-106/SS-111 was conducted at Kirtland Air Force Base, New Mexico. The monitoring included the collection and analyses of 5 environmental and quality control (QC) samples. The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) including Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2
Ethylene Dibromide (EDB) by EPA Method 504.1

Analytical services were provided by TestAmerica, Inc. whom performed analyses on the water samples. The samples were grouped into sample delivery groups (SDGs) as received by the laboratory. The environmental samples are associated with quality assurance and quality control (QA/QC) samples designed to document the data quality of the entire SDG or a sub-group of samples within a SDG. Table I is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, matrix, and validation level.

All of the analytical data were validated according to EPA Level III validation procedures. The analytical data were evaluated for QA/QC based on the *Quality Assurance Project Plan (QAPP) for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016)*, the *Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (DoD 2013),* and the *National Functional Guidelines (NFGs) for Superfund Organic Data Review, August 2014*. Validation services were provided by Laboratory Data Consultants, Inc. (LDC).

This data quality assessment report (DQAR) summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) relative to the data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The DQAR evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each of the PARCCS criteria. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 5 presents a summary of the PARCCS criteria by comparing quantitative parameters with acceptability criteria defined in the DQOs. Qualitative PARCCS criteria are also summarized in this section.

### Precision and Accuracy of Environmental Data

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors in sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given media.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: method

blanks, trip blanks (TBs), laboratory control sample/laboratory control sample duplicates (LCS/LCSDs), surrogate spikes, and matrix spike/matrix spike duplicates (MS/MSDs) and field duplicates (FDs).

Before conducting the PARCCS evaluation, the analytical data were validated according to the QAPP, DoD QSM, and NFGs. Samples not meeting the QAPP, DoD QSM, and NFG acceptance criteria were qualified with a flag, an abbreviation indicating a deficiency with the data. The following are flags used in data validation.

J- Estimated The associated numerical value is an estimated quantity with a negative bias. The analyte was detected but the reported value may not be accurate or precise.

J+ Estimated The associated numerical value is an estimated quantity with a positive bias. The analyte was detected but the reported value may not be accurate or precise.

J Estimated The associated numerical value is an estimated quantity. It is not possible to assess the direction of the potential bias. The analyte was detected but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data.

R Rejected The data is unusable (the compound or analyte may or may not be present). Use of the "R" qualifier indicates a significant variance from functional guideline acceptance criteria. Either resampling or reanalysis is necessary to determine the presence or absence of the rejected analyte.

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MS and MSD samples are field samples spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the overall efficiency of the analytical method in recovering target analytes from an environmental matrix. A LCS/LCSD is similar to a MS/MSD sample in that the LCS/LCSD is spiked with the same target analytes prior to preparation and analysis. However, the LCS/LCSD is prepared using a controlled interference-free matrix instead of a field sample aliquot. Laboratory reagent water is used to prepare aqueous LCS/LCSD. The LCS/LCSD measures laboratory efficiency in recovering target analytes from an aqueous matrix in the absence of matrix interferences.

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Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate sets, results maybe reported in either the primary or duplicate samples at levels below the limit of quantitation (LOQ) or non-detected. Since these values are considered to be estimates, RPD exceedances from these duplicates do not suggest a significant impact on the data quality.

**Accuracy** is a measure of the agreement of an experimental determination and the true value of the parameter being measured. It is used to identify bias in a given measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, LCSD, and samples containing surrogate spikes. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Surrogate spikes are either isotopically labeled compounds or compounds that are not typically detected in the samples. Surrogate spikes are added to every blank, environmental sample, MS/MSD, LCS/LCSD and standard, for all applicable organic analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A–B)/C \times 100$$

Where:
A = measured concentration in the spiked sample
B = measured concentration of the spike compound in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples, LCS/LCSD, and surrogate compounds added to environmental samples is evaluated against the acceptance criteria specified by the previously noted documents. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or LODs reported for environmental samples.

**Representativeness** is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population and is evaluated by reviewing the QC results of blank samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks and TBs.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Trip blanks are used to identify possible volatile organic contamination introduced into the sample during transport. A trip blank is a sample bottle filled in the laboratory with reagent-grade water and preserved to a pH less than 2 with hydrochloric acid. It is transported to the site, stored with the sample containers, and returned unopened to the laboratory for analysis.

Contaminants found in both the environmental sample and a blank sample are assumed to be laboratory artifacts if the concentration in the environmental sample is less than 5 times the blank value for all contaminants.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedances can cause loss of sample constituents due to biodegradation, precipitation, volatization, and chemical degradation.

**Comparability** is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability can only be compared with confidence when precision, accuracy, and representativeness are known.

**Completeness** is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness can be either contractual, analytical, or technical. The following equations are used to calculate the three types of completeness.

%Contract Completeness = (Number of contract compliant results/Number of reported results) X 100

%Analytical Completeness = (Number of unqualified results/Number of reported results) X 100

%Technical Completeness = (Number of usable results/Number of reported results) X 100

As specified in the DQOs, the goals for contractual, analytical, and technical completeness for target analytes in each analytical fraction is 95 percent, 90 percent, and 95 percent, respectively.

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the project planning document, with the number determined above.

**Sensitivity** is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. This capability is established during the planning phase to meet the data quality objectives (DQOs). It is important that calibration requirements, detection limits (DLs), and LOQs presented in the QAPP are achieved and that target analytes can be detected at concentrations necessary to support the DQOs. In addition, sample results are compared to method blank and field blank results to identify potential effects of laboratory background and field procedures on sensitivity.

The following sections present a review of QC data for each analytical method. The details regarding the qualification of results are provided in the data validation reports.

## 2.0 VOLATILE ORGANIC COMPOUNDS

A total of 5 water samples were analyzed for VOCs by EPA Method 524.2. All VOC data were assessed to be valid since none of the 20 total results were rejected due to holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

### 2.1 Precision and Accuracy

#### 2.1.1 Instrument Calibration

Initial and continuing calibration results provide a means of evaluating accuracy within a particular SDG. Percent relative standard deviation (%RSD) and percent difference (%D) are the major parameters used to measure the effectiveness of instrument calibration. %RSD is an expression of the linearity of instrument response. %D is a comparison of a continuing calibration instrumental response with its initial response. %RSD and %D exceedances suggest routine instrumental anomalies, which typically impact all sample results for the affected compounds.

The %RSD in the initial calibration met the acceptance criteria of 20 percent. The %Ds in the initial and continuing calibration verifications met the acceptance criteria of 30 percent.

#### 2.1.2 Surrogates

All surrogate %Rs were within the acceptance criteria.

#### 2.1.3 MS/MSD Samples

All MS/MSD %Rs and RPDs were within the acceptance criteria

#### 2.1.4 LCS Samples

All LCS/LCSD %Rs and RPDs were within the acceptance criteria.

#### 2.1.5 Internal Standards

All internal standard areas and retention times were within acceptance criteria.

#### 2.1.6 FD Samples

The field duplicate RPDs were within the acceptance criteria.

### 2.1.7 Compound Quantitation and Target Identification

All compound quantitation and target identifications were found to be acceptable.

## 2.2 Representativeness

### 2.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

### 2.2.2 Blanks

Method blanks and TBs were collected and analyzed to evaluate representativeness. The concentration for an individual target compound in any of the types of QA/QC blanks was used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results based on the following criteria.

> Results Below or Above the LOQ If a sample result for the blank contaminant was greater than the sample LOQ and less than 5 times the blank value for all contaminants, the sample result for the blank contaminant was amended as a non-detect at the concentration reported in the sample results.
>
> No Action If a sample result for the blank contaminant was greater than 5 times the blank value for all contaminants, the result was not amended.

#### 2.2.2.1 Method Blanks

No contaminants were detected in the method blanks for this analysis.

#### 2.2.2.2 TBs

No contaminants were detected in the trip blank for this analysis.

## 2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the DLs and LODs attained were below the specified LOQs. The comparability of the data is regarded as acceptable.

## 2.4 Completeness

The contract completeness level attained for VOC field samples was 100 percent. This percentage was calculated as the total number of contract compliant results divided by the total number of sample results multiplied by 100.

The analytical completeness level attained for VOC field samples was 100 percent. This percentage was calculated as the total number of unqualified sample results divided by the total number of sample results multiplied by 100.

The technical completeness level attained for VOC field samples was 100 percent. This percentage was

calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

### 2.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP.

## 3.0 ETHYLENE DIBROMIDE

A total of 5 water samples were analyzed for EDB by EPA Method 504.1. All EDB data were assessed to be valid since none of the 5 total results were rejected due to holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

### 3.1 Precision and Accuracy

#### 3.1.1 Instrument Calibration

The %RSD in the initial calibration met the acceptance criteria of 20 percent. The %Ds in the initial and continuing calibration verifications met the acceptance criteria of 30 percent.

#### 3.1.2 Surrogates

Although the surrogate %R for GW17030 and GW17031 were outside QC limits, no data was qualified since the surrogate failed high and the associated compounds were non-detect.

#### 3.1.3 MS/MSD Samples

All MS/MSD %Rs and RPDs were within the acceptance criteria.

#### 3.1.4 LCS Samples

All LCS %Rs were within the acceptance criteria.

#### 3.1.5 FD Samples

The field duplicate RPDs were within the acceptance criteria.

#### 3.1.6 Compound Quantitation and Target Identification

All compound quantitation and target identifications were found to be acceptable.

### 3.2 Representativeness

#### 3.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

### 3.2.2 Blanks

Method blanks and TBs were collected and analyzed to evaluate representativeness.

#### 3.2.2.1 Method Blanks

No contaminants were detected in the method blank for this analysis.

#### 3.2.2.2 Trip Blanks

No contaminants were detected in the trip blank for this analysis.

### 3.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases the DLs and LODs attained were below the specified LOQs. The comparability of the data is regarded as acceptable.

### 3.4 Completeness

The contract completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of contract compliant results divided by the total number of sample results multiplied by 100.

The analytical completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of unqualified sample results divided by the total number of sample results multiplied by 100.

The technical completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

### 3.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP

## 4.0 VARIANCES IN ANALYTICAL PERFORMANCE

The laboratory used standard analytical methods for all of the analyses throughout the project. No systematic variances in analytical performance were noted in the case narratives.

## 5.0 SUMMARY OF PARCCS CRITERIA

The validation reports present the PARCCS results for all SDGs. Each PARCCS criterion is discussed in detail in the following sections.

### 5.1 Precision and Accuracy

Precision and accuracy were evaluated using data quality indicators such as calibration, surrogates, MS/MSD, and LCS/LCSD. The precision and accuracy of the data set were considered acceptable.

## 5.2 Representativeness

All samples for each method and matrix were evaluated for holding time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable.

## 5.3 Comparability

The laboratory used standard analytical methods for their analyses. The analytical results were reported in correct standard units. The overall comparability is considered acceptable.

## 5.4 Completeness

### 5.4.1 Contract Completeness

The contract completeness level attained for the field samples was 100 percent. Of the 25 total results reported, none of the results were qualified as a result of contract non-compliance. The contract completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Contract Compliant Results | % Contact Completeness |
|---|---|---|---|
| VOCs | 20 | 20 | 100 |
| EDB | 5 | 5 | 100 |
| **Total** | **25** | **25** | **100** |

The contract completeness percentage based on contract complaint data met the 95 percent DQO goal.

### 5.4.2 Analytical Completeness

The analytical completeness level attained for the field samples was 100 percent. The analytical completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Unqualified Results | % Analytical Completeness |
|---|---|---|---|
| VOCs | 20 | 20 | 100 |
| EDB | 5 | 5 | 100 |
| **Total** | **25** | **25** | **100** |

The analytical completeness percentage based on qualified data met the 90 percent DQO goal.

### 5.4.3 Technical Completeness

The technical completeness, which included all QC parameters, attained for the field samples was 100 percent. Of the 25 total results reported, none of the results were rejected. The technical completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Rejects | % Technical Completeness |
|---|---|---|---|
| VOCs | 20 | 0 | 100 |
| EDB | 5 | 0 | 100 |
| **Total** | **25** | **0** | **100** |

The technical completeness percentage based on rejected data met the 95 percent DQO goal.

## 5.5 Sensitivity

Sensitivity was achieved by the laboratory to support the DQOs. Calibration concentrations, DLs, and LOQs met the project requirements.

# Table I

## Validation Sample Table

| SDG | Client Sample ID | Lab Sample ID | Matrix | QC Type | Sample Date | Validation Level | VOC (524.2) | EDB (504.1) |
|---|---|---|---|---|---|---|---|---|
| 680-141929-1 | GW17029 | 680-141929-1 | Water | | 8/8/2017 | Level III | X | X |
| 680-141929-1 | GW17030 | 680-141929-2 | Water | | 8/8/2017 | Level III | X | X |
| 680-141929-1 | GW17TB08 | 680-141929-5 | Water | TB | 8/8/2017 | Level III | X | X |
| 680-141929-2 | GW17031 | 680-141929-3 | Water | FD | 8/8/2017 | Level III | X | X |
| 680-141929-2 | GW17032 | 680-141929-4 | Water | FD | 8/8/2017 | Level III | X | X |
| 680-141929-1 | GW17029MS | 680-141929-1MS | Water | MS | 8/8/2017 | Level III | X | X |
| 680-141929-1 | GW17029MSD | 680-141929-1MSD | Water | MSD | 8/8/2017 | Level III | X | X |

TB = Trip Blank, MS = Matrix Spike, MSD = Matrix Spike Duplicate, FD = Field Duplicate
EDB = Ethylene Dibromide, VOC = Volatile Organic Compounds

**LABORATORY DATA CONSULTANTS, INC.**
**2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099**

Sundance Consulting, Inc.
8210 Louisiana Blvd. NE, Suite C
Albuquerque, NM 87113
ATTN: Ms. Rachel Hobbs

October 16, 2017

SUBJECT: **Data Quality Assessment Report**
**Monthly Drinking Water Monitoring for**
**Bulk Fuels Facility Spill Solid Waste**
**Management Unit ST-106/SS-111**
**Kirtland Air Force Base, New Mexico**

Dear Ms. Hobbs,

Enclosed is the Data Quality Assessment Report Monthly Drinking Water Monitoring for Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico.

We appreciate this opportunity to support Sundance Consulting in the performance of this project. Please feel free to call me at (760) 827-1100 if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Chemist

# DATA QUALITY ASSESSMENT REPORT

# MONTHLY DRINKING WATER MONITORING FOR BULK FUELS FACILITY SPILL SOLID WASTE MANAGEMENT UNIT ST-106/SS-111 KIRTLAND AIR FORCE BASE, NEW MEXICO

**October 16, 2017**

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**GLOSSARY**

| | |
|---|---|
| BTEX | Benzene, Toluene, Ethylbenzene, and Xylenes |
| CTO | Contract Task Order |
| DQAR | Data Quality Assessment Report |
| DQO | Data Quality Objective |
| DOD | Department of Defense |
| DL | Detection Limit |
| DQO | Data Quality Objectives |
| EDB | 1,2-Dibromoethane |
| EPA | Environmental Protection Agency |
| FD | Field Duplicate |
| LCS/LCSD | Laboratory Control Sample / Laboratory Control Sample Duplicate |
| LDC | Laboratory Data Consultants, Inc |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| MS/MSD | Matrix Spike / Matrix Spike Duplicate |
| NFG | National Functional Guidelines |
| PARCCS | Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity |
| QAPP | Quality Assurance Project Plan |
| QA/QC | Quality Assurance/Quality Control |
| QSM | Quality Systems Manual |
| RPD | Relative Percent Difference |
| SDG | Sample Delivery Group |
| TB | Trip Blank |
| VOCs | Volatile Organic Compounds |
| %D | Percent Difference |
| %R | Percent Recovery |
| %RSD | Percent Relative Standard Deviation |
| ug/L | Micrograms per Liter |

## 1.0 INTRODUCTION

Monthly drinking water monitoring for Bulk Fuels Facility Spill, Solid Waste Management Unit ST-106/SS-111 was conducted at Kirtland Air Force Base, New Mexico. The monitoring included the collection and analyses of 6 environmental and quality control (QC) samples. The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) including Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2
Ethylene Dibromide (EDB) by EPA Method 504.1

Analytical services were provided by TestAmerica, Inc. whom performed analyses on the water samples. The samples were grouped into sample delivery groups (SDGs) as received by the laboratory. The environmental samples are associated with quality assurance and quality control (QA/QC) samples designed to document the data quality of the entire SDG or a sub-group of samples within a SDG. Table I is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, matrix, and validation level.

All of the analytical data were validated according to EPA Level III validation procedures. The analytical data were evaluated for QA/QC based on the *Quality Assurance Project Plan (QAPP) for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016)*, the *Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (DoD 2013),* and the *National Functional Guidelines (NFGs) for Superfund Organic Data Review, August 2014*. Validation services were provided by Laboratory Data Consultants, Inc. (LDC).

This data quality assessment report (DQAR) summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) relative to the data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The DQAR evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each of the PARCCS criteria. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 5 presents a summary of the PARCCS criteria by comparing quantitative parameters with acceptability criteria defined in the DQOs. Qualitative PARCCS criteria are also summarized in this section.

### Precision and Accuracy of Environmental Data

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors in sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given media.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: method

blanks, trip blanks (TBs), laboratory control sample/laboratory control sample duplicates (LCS/LCSDs), surrogate spikes, and matrix spike/matrix spike duplicates (MS/MSDs) and field duplicates (FDs).

Before conducting the PARCCS evaluation, the analytical data were validated according to the QAPP, DoD QSM, and NFGs. Samples not meeting the QAPP, DoD QSM, and NFG acceptance criteria were qualified with a flag, an abbreviation indicating a deficiency with the data. The following are flags used in data validation.

J- Estimated The associated numerical value is an estimated quantity with a negative bias. The analyte was detected but the reported value may not be accurate or precise.

J+ Estimated The associated numerical value is an estimated quantity with a positive bias. The analyte was detected but the reported value may not be accurate or precise.

J Estimated The associated numerical value is an estimated quantity. It is not possible to assess the direction of the potential bias. The analyte was detected but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data.

R Rejected The data is unusable (the compound or analyte may or may not be present). Use of the "R" qualifier indicates a significant variance from functional guideline acceptance criteria. Either resampling or reanalysis is necessary to determine the presence or absence of the rejected analyte.

U Nondetected Analyses were performed for the compound or analyte, but it was not detected. The "U" designation is also applied to suspected blank contamination. The "U" flag is used to qualify any result detected in an environmental sample at a concentration less than 5 times the blank value for other laboratory contaminants in any associated blank.

UJ Estimated/Nondetected Analyses were performed for the compound or analyte, but it was not detected and the limit of detection (LOD) is an estimated quantity due to poor accuracy or precision. This qualification is also used to flag possible false negative results in the case where low bias in the analytical system is indicated by low calibration response, surrogate, internal standard, or other spike recovery.

Once the data are reviewed and qualified according to the QAPP, DoD QSM, and NFGs, the data set is then evaluated using PARCCS criteria. PARCCS criteria provide an evaluation of overall data usability. The following is a discussion of PARCCS criteria as related to the DQOs.

**Precision** is a measure of the agreement or reproducibility of analytical results under a given set of conditions. It is a quantity that cannot be measured directly but is calculated from percent recovery data.

Precision is expressed as the relative percent difference (RPD):

$$RPD = (D1–D2)/\{1/2(D1+D2)\} \times 100$$

Where:
D1 and D2 = the reported concentrations for sample and duplicate analyses.

Precision is primarily assessed by calculating a RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of a MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC

samples. An additional measure of sampling precision was obtained by collecting and analyzing field duplicate samples, which were compared using the RPD, as the evaluation criteria.

MS and MSD samples are field samples spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the overall efficiency of the analytical method in recovering target analytes from an environmental matrix. A LCS/LCSD is similar to a MS/MSD sample in that the LCS/LCSD is spiked with the same target analytes prior to preparation and analysis. However, the LCS/LCSD is prepared using a controlled interference-free matrix instead of a field sample aliquot. Laboratory reagent water is used to prepare aqueous LCS/LCSD. The LCS/LCSD measures laboratory efficiency in recovering target analytes from an aqueous matrix in the absence of matrix interferences.

Laboratory and field sampling precision are further evaluated by calculating RPDs for field sample duplicate pairs. The sampler collects two field samples at the same location and under identically controlled conditions. The laboratory then analyzes the samples under identical conditions.

An RPD outside the numerical QC limit in either MS/MSD samples, LCS/LCSD, or field duplicates indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a particular reported result. Thus, the actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate sets, results maybe reported in either the primary or duplicate samples at levels below the limit of quantitation (LOQ) or non-detected. Since these values are considered to be estimates, RPD exceedances from these duplicates do not suggest a significant impact on the data quality.

**Accuracy** is a measure of the agreement of an experimental determination and the true value of the parameter being measured. It is used to identify bias in a given measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, LCSD, and samples containing surrogate spikes. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Surrogate spikes are either isotopically labeled compounds or compounds that are not typically detected in the samples. Surrogate spikes are added to every blank, environmental sample, MS/MSD, LCS/LCSD and standard, for all applicable organic analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A–B)/C \times 100$$

Where:
A = measured concentration in the spiked sample
B = measured concentration of the spike compound in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples, LCS/LCSD, and surrogate compounds added to environmental samples is evaluated against the acceptance criteria specified by the previously noted documents. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or LODs reported for environmental samples.

**Representativeness** is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population and is evaluated by reviewing the QC results of blank samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks and TBs.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Trip blanks are used to identify possible volatile organic contamination introduced into the sample during transport. A trip blank is a sample bottle filled in the laboratory with reagent-grade water and preserved to a pH less than 2 with hydrochloric acid. It is transported to the site, stored with the sample containers, and returned unopened to the laboratory for analysis.

Contaminants found in both the environmental sample and a blank sample are assumed to be laboratory artifacts if the concentration in the environmental sample is less than 5 times the blank value for all contaminants.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedances can cause loss of sample constituents due to biodegradation, precipitation, volatization, and chemical degradation.

**Comparability** is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability can only be compared with confidence when precision, accuracy, and representativeness are known.

**Completeness** is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness can be either contractual, analytical, or technical. The following equations are used to calculate the three types of completeness.

%Contract Completeness = (Number of contract compliant results/Number of reported results) X 100

%Analytical Completeness = (Number of unqualified results/Number of reported results) X 100

%Technical Completeness = (Number of usable results/Number of reported results) X 100

As specified in the DQOs, the goals for contractual, analytical, and technical completeness for target analytes in each analytical fraction is 95 percent, 90 percent, and 95 percent, respectively.

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the project planning document, with the number determined above.

**Sensitivity** is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. This capability is established during the planning phase to meet the data quality objectives (DQOs). It is important that calibration requirements, detection limits (DLs), and LOQs presented in the QAPP are achieved and that target analytes can be detected at concentrations necessary to support the DQOs. In addition, sample results are compared to method blank and field blank results to identify potential effects of laboratory background and field procedures on sensitivity.

The following sections present a review of QC data for each analytical method. The details regarding the qualification of results are provided in the data validation reports.

## 2.0 VOLATILE ORGANIC COMPOUNDS

A total of 6 water samples were analyzed for VOCs by EPA Method 524.2. All VOC data were assessed to be valid since none of the 24 total results were rejected due to holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

### 2.1 Precision and Accuracy

#### 2.1.1 Instrument Calibration

Initial and continuing calibration results provide a means of evaluating accuracy within a particular SDG. Percent relative standard deviation (%RSD) and percent difference (%D) are the major parameters used to measure the effectiveness of instrument calibration. %RSD is an expression of the linearity of instrument response. %D is a comparison of a continuing calibration instrumental response with its initial response. %RSD and %D exceedances suggest routine instrumental anomalies, which typically impact all sample results for the affected compounds.

The %RSD in the initial calibration met the acceptance criteria of 20 percent. The %Ds in the initial and continuing calibration verifications met the acceptance criteria of 30 percent.

#### 2.1.2 Surrogates

All surrogate %Rs were within the acceptance criteria.

#### 2.1.3 MS/MSD Samples

All MS/MSD %Rs and RPDs were within the acceptance criteria

#### 2.1.4 LCS Samples

All LCS/LCSD %Rs and RPDs were within the acceptance criteria.

#### 2.1.5 Internal Standards

All internal standard areas and retention times were within acceptance criteria.

#### 2.1.6 FD Samples

The field duplicate RPDs were within the acceptance criteria.

### 2.1.7 Compound Quantitation and Target Identification

All compound quantitation and target identifications were found to be acceptable.

## 2.2 Representativeness

### 2.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

### 2.2.2 Blanks

Method blanks and TBs were collected and analyzed to evaluate representativeness. The concentration for an individual target compound in any of the types of QA/QC blanks was used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results based on the following criteria.

> Results Below or Above the LOQ If a sample result for the blank contaminant was greater than the sample LOQ and less than 5 times the blank value for all contaminants, the sample result for the blank contaminant was amended as a non-detect at the concentration reported in the sample results.
>
> No Action If a sample result for the blank contaminant was greater than 5 times the blank value for all contaminants, the result was not amended.

#### 2.2.2.1 Method Blanks

No contaminants were detected in the method blanks for this analysis.

#### 2.2.2.2 TBs

No contaminants were detected in the trip blank for this analysis.

## 2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the DLs and LODs attained were below the specified LOQs. The comparability of the data is regarded as acceptable.

## 2.4 Completeness

The contract completeness level attained for VOC field samples was 100 percent. This percentage was calculated as the total number of contract compliant results divided by the total number of sample results multiplied by 100.

The analytical completeness level attained for VOC field samples was 100 percent. This percentage was calculated as the total number of unqualified sample results divided by the total number of sample results multiplied by 100.

The technical completeness level attained for VOC field samples was 100 percent. This percentage was

calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

### 2.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP.

## 3.0 ETHYLENE DIBROMIDE

A total of 6 water samples were analyzed for EDB by EPA Method 504.1. All EDB data were assessed to be valid since none of the 6 total results were rejected due to holding time or QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

### 3.1 Precision and Accuracy

#### 3.1.1 Instrument Calibration

The %RSD in the initial calibration met the acceptance criteria of 20 percent. The %Ds in the initial and continuing calibration verifications met the acceptance criteria of 30 percent.

#### 3.1.2 Surrogates

Although the surrogate %R for GW17TB09 were outside QC limits, no data was qualified since the surrogate failed high and the associated compounds were non-detect.

#### 3.1.3 MS/MSD Samples

All MS/MSD %Rs and RPDs were within the acceptance criteria.

#### 3.1.4 LCS Samples

All LCS %Rs were within the acceptance criteria.

#### 3.1.5 FD Samples

The field duplicate RPDs were within the acceptance criteria.

#### 3.1.6 Compound Quantitation and Target Identification

All compound quantitation and target identifications were found to be acceptable.

### 3.2 Representativeness

#### 3.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

### 3.2.2 Blanks

Method blanks and TBs were collected and analyzed to evaluate representativeness.

#### 3.2.2.1 Method Blanks

No contaminants were detected in the method blank for this analysis.

#### 3.2.2.2 Trip Blanks

No contaminants were detected in the trip blank for this analysis.

### 3.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases the DLs and LODs attained were below the specified LOQs. The comparability of the data is regarded as acceptable.

### 3.4 Completeness

The contract completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of contract compliant results divided by the total number of sample results multiplied by 100.

The analytical completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of unqualified sample results divided by the total number of sample results multiplied by 100.

The technical completeness level attained for EDB field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

### 3.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory DLs and LOQs met the specified requirements described in the QAPP

## 4.0 VARIANCES IN ANALYTICAL PERFORMANCE

The laboratory used standard analytical methods for all of the analyses throughout the project. No systematic variances in analytical performance were noted in the case narratives.

## 5.0 SUMMARY OF PARCCS CRITERIA

The validation reports present the PARCCS results for all SDGs. Each PARCCS criterion is discussed in detail in the following sections.

### 5.1 Precision and Accuracy

Precision and accuracy were evaluated using data quality indicators such as calibration, surrogates, MS/MSD, and LCS/LCSD. The precision and accuracy of the data set were considered acceptable.

### 5.2 Representativeness

All samples for each method and matrix were evaluated for holding time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable.

### 5.3 Comparability

The laboratory used standard analytical methods for their analyses. The analytical results were reported in correct standard units. The overall comparability is considered acceptable.

### 5.4 Completeness

#### 5.4.1 Contract Completeness

The contract completeness level attained for the field samples was 100 percent. Of the 25 total results reported, none of the results were qualified as a result of contract non-compliance. The contract completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Contract Compliant Results | % Contact Completeness |
|---|---|---|---|
| VOCs | 24 | 24 | 100 |
| EDB | 6 | 6 | 100 |
| **Total** | **30** | **30** | **100** |

The contract completeness percentage based on contract complaint data met the 95 percent DQO goal.

#### 5.4.2 Analytical Completeness

The analytical completeness level attained for the field samples was 100 percent. The analytical completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Unqualified Results | % Analytical Completeness |
|---|---|---|---|
| VOCs | 24 | 24 | 100 |
| EDB | 6 | 6 | 100 |
| **Total** | **30** | **30** | **100** |

The analytical completeness percentage based on qualified data met the 90 percent DQO goal.

#### 5.4.3 Technical Completeness

The technical completeness, which included all QC parameters, attained for the field samples was 100 percent. Of the 25 total results reported, none of the results were rejected. The technical completeness for all methods is as follows:

| Parameter | Total Analytes | No. of Rejects | % Technical Completeness |
|---|---|---|---|
| VOCs | 24 | 0 | 100 |
| EDB | 6 | 0 | 100 |
| **Total** | **30** | **0** | **100** |

The technical completeness percentage based on rejected data met the 95 percent DQO goal.

### 5.5 Sensitivity

Sensitivity was achieved by the laboratory to support the DQOs. Calibration concentrations, DLs, and LOQs met the project requirements.

# Table I

## Validation Sample Table

| SDG | Client Sample ID | Lab Sample ID | Matrix | QC Type | Sample Date | Validation Level | VOC (524.2) | EDB (504.1) |
|---|---|---|---|---|---|---|---|---|
| 680-142971-1 | GW17033 | 680-142971-1 | Water | | 9/6/2017 | Level III | X | X |
| 680-142971-1 | GW17034 | 680-142971-2 | Water | FD | 9/6/2017 | Level III | X | X |
| 680-142971-1 | GW17035 | 680-142971-3 | Water | FD | 9/6/2017 | Level III | X | X |
| 680-142971-1 | GW17036 | 680-142971-4 | Water | | 9/6/2017 | Level III | X | X |
| 680-142971-1 | GW17TB09 | 680-142971-6 | Water | TB | 9/6/2017 | Level III | X | X |
| 680-142971-2 | GW17037 | 680-142972-5 | Water | | 9/6/2017 | Level III | X | X |
| 680-142971-2 | GW17037MS | 680-142972-5MS | Water | | 9/6/2017 | Level III | X | X |
| 680-142971-2 | GW17037MSD | 680-142972-5MSD | Water | | 9/6/2017 | Level III | X | X |

TB = Trip Blank, MS = Matrix Spike, MSD = Matrix Spike Duplicate, FD = Field Duplicate
EDB = Ethylene Dibromide, VOC = Volatile Organic Compounds

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# APPENDIX H-2

# DATA PACKAGES
# – DRINKING WATER SUPPLY WELL SAMPLES

# APPENDIX H-2

# Data Packages - Drinking Water Supply Well Samples

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-141167-1
Client Project/Site: KAFB Bulk Fuel Facilities

For:
Sundance Consulting, Inc
8210 Louisiana Blvd NE
Suite C
Albuquerque, New Mexico 87113

Attn: Rachel Hobbs

Michele R Kersey

*Authorized for release by:*
*8/4/2017 3:23:42 PM*

Michele Kersey, Project Manager II
(912)354-7858
michele.kersey@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Definitions/Glossary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |
| J | Estimated: The analyte was positively identified; the quantitation is an estimation |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Sample Summary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-141167-1 | GW17025 | GW | 07/18/17 08:57 | 07/19/17 07:56 |
| 680-141167-2 | GW17026 | GW | 07/18/17 08:57 | 07/19/17 07:56 |
| 680-141167-3 | GW17027 | GW | 07/18/17 09:30 | 07/19/17 07:56 |
| 680-141167-5 | GW17TB07 | GW | 07/18/17 08:00 | 07/19/17 07:56 |

## Job ID: 680-141167-1

**Laboratory: TestAmerica Savannah**

**Narrative**

# CASE NARRATIVE

## Client: Sundance Consulting, Inc

## Project: KAFB Bulk Fuel Facilities

## Report Number: 680-141167-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

**RECEIPT**

The samples were received on 7/19/2017 7:56 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9º C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples GW17025 (680-141167-1), GW17026 (680-141167-2), GW17027 (680-141167-3) and GW17TB07 (680-141167-5) were analyzed for Volatile organic Compounds (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 07/31/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-489718.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**EDB AND DBCP**

Samples GW17025 (680-141167-1), GW17026 (680-141167-2), GW17027 (680-141167-3) and GW17TB07 (680-141167-5) were analyzed for EDB and DBCP in accordance with EPA Method 504.1. The samples were prepared and analyzed on 07/19/2017.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Client Sample ID: GW17025

**Lab Sample ID: 680-141167-1**

**Date Collected: 07/18/17 08:57**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 07/31/17 17:05 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 07/31/17 17:05 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 17:05 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 17:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 130* | | *07/31/17 17:05* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *95* | | *70 - 130* | | *07/31/17 17:05* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.017 | 0.0048 | 0.0021 | ug/L | | 07/19/17 19:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *101* | | *70 - 130* | *07/19/17 16:07* | *07/19/17 19:28* | *1* |

## Client Sample ID: GW17026

**Lab Sample ID: 680-141167-2**

**Date Collected: 07/18/17 08:57**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 07/31/17 17:28 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 07/31/17 17:28 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 17:28 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 17:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 130* | | *07/31/17 17:28* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *96* | | *70 - 130* | | *07/31/17 17:28* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.017 | 0.0048 | 0.0021 | ug/L | | 07/19/17 20:46 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *108* | | *70 - 130* | *07/19/17 16:07* | *07/19/17 20:46* | *1* |

## Client Sample ID: GW17027

**Lab Sample ID: 680-141167-3**

**Date Collected: 07/18/17 09:30**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 07/31/17 17:51 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 07/31/17 17:51 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 17:51 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 17:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 130* | | *07/31/17 17:51* | *1* |

## Client Sample ID: GW17027

**Lab Sample ID: 680-141167-3**

**Date Collected: 07/18/17 09:30**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

### Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene-d4 (Surr) | 97 | | 70 - 130 | | 07/31/17 17:51 | 1 |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.017 | 0.0047 | 0.0021 | ug/L | | 07/19/17 19:48 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Pentachloroethane | 105 | | 70 - 130 | 07/19/17 16:07 | 07/19/17 19:48 | 1 |

## Client Sample ID: GW17TB07

**Lab Sample ID: 680-141167-5**

**Date Collected: 07/18/17 08:00**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 07/31/17 19:22 | 1 |
| **Ethylbenzene** | **0.16** | **J** | 0.50 | 0.25 | 0.099 | ug/L | | 07/31/17 19:22 | 1 |
| **Toluene** | **0.10** | **J** | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 19:22 | 1 |
| **Xylenes, Total** | **0.40** | **J** | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 19:22 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 97 | | 70 - 130 | | 07/31/17 19:22 | 1 |
| 1,2-Dichlorobenzene-d4 (Surr) | 95 | | 70 - 130 | | 07/31/17 19:22 | 1 |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0049 | U | 0.018 | 0.0049 | 0.0021 | ug/L | | 07/19/17 21:06 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Pentachloroethane | 102 | | 70 - 130 | 07/19/17 16:07 | 07/19/17 21:06 | 1 |

## Method: 524.2 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 680-489718/8**
**Matrix: Water**
**Analysis Batch: 489718**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 07/31/17 14:23 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 07/31/17 14:23 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 14:23 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 14:23 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 130* | | *07/31/17 14:23* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *99* | | *70 - 130* | | *07/31/17 14:23* | *1* |

**Lab Sample ID: LCS 680-489718/3**
**Matrix: Water**
**Analysis Batch: 489718**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 17.7 | | ug/L | | 88 | 70 - 130 |
| Ethylbenzene | 20.0 | 17.6 | | ug/L | | 88 | 70 - 130 |
| Toluene | 20.0 | 17.5 | | ug/L | | 87 | 70 - 130 |
| Xylenes, Total | 40.0 | 34.9 | | ug/L | | 87 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *103* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *95* | | *70 - 130* |

**Lab Sample ID: LCSD 680-489718/4**
**Matrix: Water**
**Analysis Batch: 489718**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 17.8 | | ug/L | | 89 | 70 - 130 | 0 | 30 |
| Ethylbenzene | 20.0 | 17.7 | | ug/L | | 89 | 70 - 130 | 1 | 30 |
| Toluene | 20.0 | 17.5 | | ug/L | | 87 | 70 - 130 | 0 | 30 |
| Xylenes, Total | 40.0 | 35.8 | | ug/L | | 90 | 70 - 130 | 3 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *106* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

**Lab Sample ID: MB 680-488343/3-A**
**Matrix: Water**
**Analysis Batch: 488352**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0050 | U | 0.018 | 0.0050 | 0.0022 | ug/L | | 07/19/17 18:10 | 1 |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

**Lab Sample ID: MB 680-488343/3-A**
**Matrix: Water**
**Analysis Batch: 488352**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Pentachloroethane | 104 | | 70 - 130 | 07/19/17 16:07 | 07/19/17 18:10 | 1 |

**Lab Sample ID: LCS 680-488343/4-A**
**Matrix: Water**
**Analysis Batch: 488352**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | | | 0.100 | 0.0866 | | ug/L | | 87 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 109 | | 70 - 130 |

**Lab Sample ID: LCSD 680-488343/5-A**
**Matrix: Water**
**Analysis Batch: 488352**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | | | 0.100 | 0.0834 | | ug/L | | 83 | 70 - 130 | 4 | 30 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 108 | | 70 - 130 |

**Lab Sample ID: 680-141167-2 MS**
**Matrix: GW**
**Analysis Batch: 488352**

**Client Sample ID: GW17026**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.0946 | 0.0803 | | ug/L | | 85 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 112 | | 70 - 130 |

# QC Association Summary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-1

## GC/MS VOA

### Analysis Batch: 489718

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141167-1 | GW17025 | Total/NA | GW | 524.2 | |
| 680-141167-2 | GW17026 | Total/NA | GW | 524.2 | |
| 680-141167-3 | GW17027 | Total/NA | GW | 524.2 | |
| 680-141167-5 | GW17TB07 | Total/NA | GW | 524.2 | |
| MB 680-489718/8 | Method Blank | Total/NA | Water | 524.2 | |
| LCS 680-489718/3 | Lab Control Sample | Total/NA | Water | 524.2 | |
| LCSD 680-489718/4 | Lab Control Sample Dup | Total/NA | Water | 524.2 | |

## GC Semi VOA

### Prep Batch: 488343

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141167-1 | GW17025 | Total/NA | GW | 504.1 | |
| 680-141167-2 | GW17026 | Total/NA | GW | 504.1 | |
| 680-141167-3 | GW17027 | Total/NA | GW | 504.1 | |
| 680-141167-5 | GW17TB07 | Total/NA | GW | 504.1 | |
| MB 680-488343/3-A | Method Blank | Total/NA | Water | 504.1 | |
| LCS 680-488343/4-A | Lab Control Sample | Total/NA | Water | 504.1 | |
| LCSD 680-488343/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | |
| 680-141167-2 MS | GW17026 | Total/NA | GW | 504.1 | |

### Analysis Batch: 488352

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141167-1 | GW17025 | Total/NA | GW | 504.1 | 488343 |
| 680-141167-2 | GW17026 | Total/NA | GW | 504.1 | 488343 |
| 680-141167-3 | GW17027 | Total/NA | GW | 504.1 | 488343 |
| 680-141167-5 | GW17TB07 | Total/NA | GW | 504.1 | 488343 |
| MB 680-488343/3-A | Method Blank | Total/NA | Water | 504.1 | 488343 |
| LCS 680-488343/4-A | Lab Control Sample | Total/NA | Water | 504.1 | 488343 |
| LCSD 680-488343/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | 488343 |
| 680-141167-2 MS | GW17026 | Total/NA | GW | 504.1 | 488343 |

# Lab Chronicle

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-1

## Client Sample ID: GW17025

**Lab Sample ID: 680-141167-1**

**Date Collected: 07/18/17 08:57**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 489718 | 07/31/17 17:05 | JD1 | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.6 mL | 2 mL | 488343 | 07/19/17 16:07 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 488352 | 07/19/17 19:28 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17026

**Lab Sample ID: 680-141167-2**

**Date Collected: 07/18/17 08:57**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 489718 | 07/31/17 17:28 | JD1 | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.5 mL | 2 mL | 488343 | 07/19/17 16:07 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 488352 | 07/19/17 20:46 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17027

**Lab Sample ID: 680-141167-3**

**Date Collected: 07/18/17 09:30**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 489718 | 07/31/17 17:51 | JD1 | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.9 mL | 2 mL | 488343 | 07/19/17 16:07 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 488352 | 07/19/17 19:48 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17TB07

**Lab Sample ID: 680-141167-5**

**Date Collected: 07/18/17 08:00**

**Matrix: GW**

**Date Received: 07/19/17 07:56**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 489718 | 07/31/17 19:22 | JD1 | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 35.9 mL | 2 mL | 488343 | 07/19/17 16:07 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 488352 | 07/19/17 21:06 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Accreditation/Certification Summary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-1

## Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| | AFCEE | | SAVLAB | |
| Alabama | State Program | 4 | 41450 | 06-30-18 |
| Alaska | State Program | 10 | | 06-30-18 |
| Alaska (UST) | State Program | 10 | UST-104 | 11-05-17 |
| Arizona | State Program | 9 | AZ808 | 12-14-17 |
| Arkansas DEQ | State Program | 6 | 88-0692 | 02-01-18 |
| California | State Program | 9 | 2939 | 06-30-17 * |
| Colorado | State Program | 8 | N/A | 12-31-17 |
| Connecticut | State Program | 1 | PH-0161 | 03-31-19 |
| Florida | NELAP | 4 | E87052 | 06-30-18 |
| GA Dept. of Agriculture | State Program | 4 | N/A | 06-12-18 |
| Georgia | State Program | 4 | 803 | 06-30-18 |
| Guam | State Program | 9 | 15-005r | 04-16-18 |
| Hawaii | State Program | 9 | N/A | 06-30-18 |
| Illinois | NELAP | 5 | 200022 | 11-30-17 |
| Indiana | State Program | 5 | N/A | 06-30-18 |
| Iowa | State Program | 7 | 353 | 06-30-19 |
| Kentucky (DW) | State Program | 4 | 90084 | 12-31-17 |
| Kentucky (UST) | State Program | 4 | 18 | 06-30-18 |
| Kentucky (WW) | State Program | 4 | 90084 | 12-31-17 |
| L-A-B | DoD ELAP | | L2463 | 09-22-19 |
| L-A-B | ISO/IEC 17025 | | L2463.01 | 09-22-19 |
| Louisiana | NELAP | 6 | 30690 | 06-30-18 |
| Louisiana (DW) | NELAP | 6 | LA160019 | 12-31-17 |
| Maine | State Program | 1 | GA00006 | 09-24-18 |
| Maryland | State Program | 3 | 250 | 12-31-17 |
| Massachusetts | State Program | 1 | M-GA006 | 06-30-18 |
| Michigan | State Program | 5 | 9925 | 06-30-17 * |
| Mississippi | State Program | 4 | N/A | 06-30-18 |
| New Jersey | NELAP | 2 | GA769 | 06-30-18 |
| New Mexico | State Program | 6 | N/A | 06-30-18 |
| New York | NELAP | 2 | 10842 | 03-31-18 |
| North Carolina (DW) | State Program | 4 | 13701 | 07-31-18 |
| North Carolina (WW/SW) | State Program | 4 | 269 | 12-31-17 |
| Oklahoma | State Program | 6 | 9984 | 08-31-17 * |
| Pennsylvania | NELAP | 3 | 68-00474 | 06-30-18 |
| Puerto Rico | State Program | 2 | GA00006 | 12-31-17 |
| South Carolina | State Program | 4 | 98001 | 06-30-17 * |
| Tennessee | State Program | 4 | TN02961 | 06-30-18 |
| Texas | NELAP | 6 | T104704185-16-9 | 11-30-17 |
| US Fish & Wildlife | Federal | | LE058448-0 | 10-31-17 |
| USDA | Federal | | SAV 3-04 | 06-14-20 * |
| Virginia | NELAP | 3 | 460161 | 06-14-18 |
| Washington | State Program | 10 | C805 | 06-10-18 |
| West Virginia (DW) | State Program | 3 | 9950C | 12-31-17 |
| West Virginia DEP | State Program | 3 | 094 | 06-30-18 |
| Wisconsin | State Program | 5 | 999819810 | 08-31-17 * |
| Wyoming | State Program | 8 | 8TMS-L | 06-30-16 * |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 524.2 | Volatile Organic Compounds (GC/MS) | EPA-DW | TAL SAV |
| 504.1 | EDB, DBCP and 1,2,3-TCP (GC) | EPA-DW | TAL SAV |

**Protocol References:**

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # 7796 1643 2200

COC #: US01023-GW1707

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
R Gaylen Barnett
R Gaylen Barnett

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | Analytical Methods: EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17025 | | 7/18/2017 | 0857 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17026 | | 7/18/2017 | 0857 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17027 | | 7/18/2017 | 0930 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17028 | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17028-MS | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17028-MSD | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB07 | | 7/18/2017 | 0800 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |

***Additional Comments:***

Preservatives:

BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-141167 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) X

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|---|
| R Gaylen Barnett | 7/18/2017 | 1300 | | | 7/19/17 | 0850 |
| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |

Cooler / Blank Temperature 4 °C

3.5(C(F+0.3)3.9

# Login Sample Receipt Checklist

Client: Sundance Consulting, Inc

Job Number: 680-141167-1

**Login Number: 141167**

**List Source: TestAmerica Savannah**

**List Number: 1**

**Creator: Edwards, Jessica R**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-141167-2
Client Project/Site: KAFB Bulk Fuel Facilities

For:
Sundance Consulting, Inc
8210 Louisiana Blvd NE
Suite C
Albuquerque, New Mexico 87113

Attn: Rachel Hobbs

Michele R Kersey

*Authorized for release by:*
*8/4/2017 3:23:22 PM*

Michele Kersey, Project Manager II
(912)354-7858
michele.kersey@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Definitions/Glossary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-2

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Sample Summary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-2

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-141167-4 | GW17028 | GW | 07/18/17 10:20 | 07/19/17 07:56 |

## Job ID: 680-141167-2

**Laboratory: TestAmerica Savannah**

**Narrative**

# CASE NARRATIVE

## Client: Sundance Consulting, Inc

## Project: KAFB Bulk Fuel Facilities

## Report Number: 680-141167-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

**RECEIPT**

The samples were received on 07/19/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.9 C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Sample GW17028 (680-141167-4) was analyzed for Volatile organic Compounds (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 07/31/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-489718.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**EDB AND DBCP**

Sample GW17028 (680-141167-4) was analyzed for EDB and DBCP in accordance with EPA Method 504.1. The samples were prepared and analyzed on 07/19/2017.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-2

**Client Sample ID: GW17028**
**Date Collected: 07/18/17 10:20**
**Date Received: 07/19/17 07:56**

**Lab Sample ID: 680-141167-4**
**Matrix: GW**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 07/31/17 18:14 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 07/31/17 18:14 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 18:14 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 18:14 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 130* | | *07/31/17 18:14* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *99* | | *70 - 130* | | *07/31/17 18:14* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.017 | 0.0047 | 0.0021 | ug/L | | 07/19/17 20:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *106* | | *70 - 130* | *07/19/17 16:07* | *07/19/17 20:17* | *1* |

## Method: 524.2 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 680-489718/8**
**Matrix: Water**
**Analysis Batch: 489718**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 07/31/17 14:23 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 07/31/17 14:23 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 14:23 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 07/31/17 14:23 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 130* | | *07/31/17 14:23* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *99* | | *70 - 130* | | *07/31/17 14:23* | *1* |

**Lab Sample ID: LCS 680-489718/3**
**Matrix: Water**
**Analysis Batch: 489718**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 20.0 | 17.7 | | ug/L | | 88 | 70 - 130 | | |
| Ethylbenzene | | | 20.0 | 17.6 | | ug/L | | 88 | 70 - 130 | | |
| Toluene | | | 20.0 | 17.5 | | ug/L | | 87 | 70 - 130 | | |
| Xylenes, Total | | | 40.0 | 34.9 | | ug/L | | 87 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *103* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *95* | | *70 - 130* |

**Lab Sample ID: LCSD 680-489718/4**
**Matrix: Water**
**Analysis Batch: 489718**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 20.0 | 17.8 | | ug/L | | 89 | 70 - 130 | 0 | 30 |
| Ethylbenzene | | | 20.0 | 17.7 | | ug/L | | 89 | 70 - 130 | 1 | 30 |
| Toluene | | | 20.0 | 17.5 | | ug/L | | 87 | 70 - 130 | 0 | 30 |
| Xylenes, Total | | | 40.0 | 35.8 | | ug/L | | 90 | 70 - 130 | 3 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *106* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: 680-141167-4 MS**
**Matrix: GW**
**Analysis Batch: 489718**

**Client Sample ID: GW17028-MS**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 20.0 | 18.4 | | ug/L | | 92 | 70 - 130 | | |
| Ethylbenzene | 0.25 | U | 20.0 | 18.1 | | ug/L | | 91 | 70 - 130 | | |
| Toluene | 0.25 | U | 20.0 | 17.9 | | ug/L | | 90 | 70 - 130 | | |
| Xylenes, Total | 0.25 | U | 40.0 | 35.4 | | ug/L | | 89 | 70 - 130 | | |

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 680-141167-4 MS**
**Matrix: GW**
**Analysis Batch: 489718**

**Client Sample ID: GW17028-MS**
**Prep Type: Total/NA**

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| *4-Bromofluorobenzene* | *103* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: 680-141167-4 MSD**
**Matrix: GW**
**Analysis Batch: 489718**

**Client Sample ID: GW17028-MSD**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 20.0 | 20.4 | | ug/L | | 102 | 70 - 130 | 10 | 30 |
| Ethylbenzene | 0.25 | U | 20.0 | 20.6 | | ug/L | | 103 | 70 - 130 | 13 | 30 |
| Toluene | 0.25 | U | 20.0 | 20.0 | | ug/L | | 100 | 70 - 130 | 11 | 30 |
| Xylenes, Total | 0.25 | U | 40.0 | 40.6 | | ug/L | | 101 | 70 - 130 | 14 | 30 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| *4-Bromofluorobenzene* | *101* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *101* | | *70 - 130* |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

**Lab Sample ID: MB 680-488343/3-A**
**Matrix: Water**
**Analysis Batch: 488352**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0050 | U | 0.018 | 0.0050 | 0.0022 | ug/L | | 07/19/17 18:10 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *104* | | *70 - 130* | *07/19/17 16:07* | *07/19/17 18:10* | *1* |

**Lab Sample ID: LCS 680-488343/4-A**
**Matrix: Water**
**Analysis Batch: 488352**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.100 | 0.0866 | | ug/L | | 87 | 70 - 130 |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *109* | | *70 - 130* |

**Lab Sample ID: LCSD 680-488343/5-A**
**Matrix: Water**
**Analysis Batch: 488352**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.100 | 0.0834 | | ug/L | | 83 | 70 - 130 | 4 | 30 |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

**Lab Sample ID: LCSD 680-488343/5-A**
**Matrix: Water**
**Analysis Batch: 488352**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 108 | | 70 - 130 |

**Lab Sample ID: 680-141167-4 MS**
**Matrix: GW**
**Analysis Batch: 488352**

**Client Sample ID: GW17028-MS**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.0938 | 0.0757 | | ug/L | | 81 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 96 | | 70 - 130 |

**Lab Sample ID: 680-141167-4 MSD**
**Matrix: GW**
**Analysis Batch: 488352**

**Client Sample ID: GW17028-MSD**
**Prep Type: Total/NA**
**Prep Batch: 488343**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.0959 | 0.0762 | | ug/L | | 80 | 70 - 130 | 1 | 30 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 95 | | 70 - 130 |

# QC Association Summary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-2

## GC/MS VOA

### Analysis Batch: 489718

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141167-4 | GW17028 | Total/NA | GW | 524.2 | |
| MB 680-489718/8 | Method Blank | Total/NA | Water | 524.2 | |
| LCS 680-489718/3 | Lab Control Sample | Total/NA | Water | 524.2 | |
| LCSD 680-489718/4 | Lab Control Sample Dup | Total/NA | Water | 524.2 | |
| 680-141167-4 MS | GW17028-MS | Total/NA | GW | 524.2 | |
| 680-141167-4 MSD | GW17028-MSD | Total/NA | GW | 524.2 | |

## GC Semi VOA

### Prep Batch: 488343

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141167-4 | GW17028 | Total/NA | GW | 504.1 | |
| MB 680-488343/3-A | Method Blank | Total/NA | Water | 504.1 | |
| LCS 680-488343/4-A | Lab Control Sample | Total/NA | Water | 504.1 | |
| LCSD 680-488343/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | |
| 680-141167-4 MS | GW17028-MS | Total/NA | GW | 504.1 | |
| 680-141167-4 MSD | GW17028-MSD | Total/NA | GW | 504.1 | |

### Analysis Batch: 488352

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141167-4 | GW17028 | Total/NA | GW | 504.1 | 488343 |
| MB 680-488343/3-A | Method Blank | Total/NA | Water | 504.1 | 488343 |
| LCS 680-488343/4-A | Lab Control Sample | Total/NA | Water | 504.1 | 488343 |
| LCSD 680-488343/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | 488343 |
| 680-141167-4 MS | GW17028-MS | Total/NA | GW | 504.1 | 488343 |
| 680-141167-4 MSD | GW17028-MSD | Total/NA | GW | 504.1 | 488343 |

# Lab Chronicle

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-2

**Client Sample ID: GW17028**
**Date Collected: 07/18/17 10:20**
**Date Received: 07/19/17 07:56**

**Lab Sample ID: 680-141167-4**
**Matrix: GW**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 489718 | 07/31/17 18:14 | JD1 | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.9 mL | 2 mL | 488343 | 07/19/17 16:07 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 488352 | 07/19/17 20:17 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Accreditation/Certification Summary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-2

## Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| | AFCEE | | SAVLAB | |
| Alabama | State Program | 4 | 41450 | 06-30-18 |
| Alaska | State Program | 10 | | 06-30-18 |
| Alaska (UST) | State Program | 10 | UST-104 | 11-05-17 |
| Arizona | State Program | 9 | AZ808 | 12-14-17 |
| Arkansas DEQ | State Program | 6 | 88-0692 | 02-01-18 |
| California | State Program | 9 | 2939 | 06-30-17 * |
| Colorado | State Program | 8 | N/A | 12-31-17 |
| Connecticut | State Program | 1 | PH-0161 | 03-31-19 |
| Florida | NELAP | 4 | E87052 | 06-30-18 |
| GA Dept. of Agriculture | State Program | 4 | N/A | 06-12-18 |
| Georgia | State Program | 4 | 803 | 06-30-18 |
| Guam | State Program | 9 | 15-005r | 04-16-18 |
| Hawaii | State Program | 9 | N/A | 06-30-18 |
| Illinois | NELAP | 5 | 200022 | 11-30-17 |
| Indiana | State Program | 5 | N/A | 06-30-18 |
| Iowa | State Program | 7 | 353 | 06-30-19 |
| Kentucky (DW) | State Program | 4 | 90084 | 12-31-17 |
| Kentucky (UST) | State Program | 4 | 18 | 06-30-18 |
| Kentucky (WW) | State Program | 4 | 90084 | 12-31-17 |
| L-A-B | DoD ELAP | | L2463 | 09-22-19 |
| L-A-B | ISO/IEC 17025 | | L2463.01 | 09-22-19 |
| Louisiana | NELAP | 6 | 30690 | 06-30-18 |
| Louisiana (DW) | NELAP | 6 | LA160019 | 12-31-17 |
| Maine | State Program | 1 | GA00006 | 09-24-18 |
| Maryland | State Program | 3 | 250 | 12-31-17 |
| Massachusetts | State Program | 1 | M-GA006 | 06-30-18 |
| Michigan | State Program | 5 | 9925 | 06-30-17 * |
| Mississippi | State Program | 4 | N/A | 06-30-18 |
| New Jersey | NELAP | 2 | GA769 | 06-30-18 |
| New Mexico | State Program | 6 | N/A | 06-30-18 |
| New York | NELAP | 2 | 10842 | 03-31-18 |
| North Carolina (DW) | State Program | 4 | 13701 | 07-31-18 |
| North Carolina (WW/SW) | State Program | 4 | 269 | 12-31-17 |
| Oklahoma | State Program | 6 | 9984 | 08-31-17 * |
| Pennsylvania | NELAP | 3 | 68-00474 | 06-30-18 |
| Puerto Rico | State Program | 2 | GA00006 | 12-31-17 |
| South Carolina | State Program | 4 | 98001 | 06-30-17 * |
| Tennessee | State Program | 4 | TN02961 | 06-30-18 |
| Texas | NELAP | 6 | T104704185-16-9 | 11-30-17 |
| US Fish & Wildlife | Federal | | LE058448-0 | 10-31-17 |
| USDA | Federal | | SAV 3-04 | 06-14-20 * |
| Virginia | NELAP | 3 | 460161 | 06-14-18 |
| Washington | State Program | 10 | C805 | 06-10-18 |
| West Virginia (DW) | State Program | 3 | 9950C | 12-31-17 |
| West Virginia DEP | State Program | 3 | 094 | 06-30-18 |
| Wisconsin | State Program | 5 | 999819810 | 08-31-17 * |
| Wyoming | State Program | 8 | 8TMS-L | 06-30-16 * |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Sundance Consulting, Inc
Project/Site: KAFB Bulk Fuel Facilities

TestAmerica Job ID: 680-141167-2

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 524.2 | Volatile Organic Compounds (GC/MS) | EPA-DW | TAL SAV |
| 504.1 | EDB, DBCP and 1,2,3-TCP (GC) | EPA-DW | TAL SAV |

**Protocol References:**

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # 7796 1643 2200

COC #: US01023-GW1707

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
R Gaylen Barnett
R Gaylen Barnett

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | Analytical Methods: EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17025 | | 7/18/2017 | 0857 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17026 | | 7/18/2017 | 0857 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17027 | | 7/18/2017 | 0930 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17028 | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17028-MS | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17028-MSD | | 7/18/2017 | 1020 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB07 | | 7/18/2017 | 0800 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |

***Additional Comments:***

Preservatives:

BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-141167 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) X

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|---|
| R Gaylen Barnett | 7/18/2017 | 1300 | | | 7/19/17 | 0850 |
| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |

Cooler / Blank Temperature 4 °C

3.5(C(F+0.3)3.9

# Login Sample Receipt Checklist

Client: Sundance Consulting, Inc

Job Number: 680-141167-2

**Login Number: 141167**

**List Source: TestAmerica Savannah**

**List Number: 1**

**Creator: Edwards, Jessica R**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-141929-1
Client Project/Site: Kirtland Bulk Fuel Facilities

For:
Sundance Consulting, Inc
8210 Louisiana Blvd NE
Suite C
Albuquerque, New Mexico 87113

Attn: Rachel Hobbs

Michele R Kersey

*Authorized for release by:*
*8/14/2017 2:42:27 PM*

Michele Kersey, Project Manager II
(912)354-7858
michele.kersey@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |
| Q | One or more quality control criteria failed. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Sample Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-141929-1 | GW17029 | GW | 08/08/17 09:10 | 08/09/17 09:25 |
| 680-141929-2 | GW17030 | GW | 08/08/17 09:55 | 08/09/17 09:25 |
| 680-141929-5 | GW17TB08 | GW | 08/08/17 08:00 | 08/09/17 09:25 |

## Job ID: 680-141929-1

**Laboratory: TestAmerica Savannah**

**Narrative**

# CASE NARRATIVE

## Client: Sundance Consulting, Inc

## Project: Kirtland Bulk Fuel Facilities

## Report Number: 680-141929-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

**RECEIPT**

The samples were received on 8/9/2017 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5º C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples GW17029 (680-141929-1), GW17030 (680-141929-2) and GW17TB08 (680-141929-5) were analyzed for Volatile organic Compounds (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 08/10/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**EDB AND DBCP**

Samples GW17029 (680-141929-1), GW17030 (680-141929-2) and GW17TB08 (680-141929-5) were analyzed for EDB and DBCP in accordance with EPA Method 504.1. The samples were prepared and analyzed on 08/11/2017.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

Surrogate recovery for the following sample was outside the upper control limit: GW17030 (680-141929-2). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Client Sample ID: GW17029

**Lab Sample ID: 680-141929-1**

**Date Collected: 08/08/17 09:10**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 08/10/17 21:40 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 08/10/17 21:40 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 21:40 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 21:40 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *91* | | *70 - 130* | | *08/10/17 21:40* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *95* | | *70 - 130* | | *08/10/17 21:40* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.017 | 0.0048 | 0.0021 | ug/L | | 08/11/17 16:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *117* | | *70 - 130* | *08/11/17 11:31* | *08/11/17 16:38* | *1* |

## Client Sample ID: GW17030

**Lab Sample ID: 680-141929-2**

**Date Collected: 08/08/17 09:55**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 08/10/17 22:03 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 08/10/17 22:03 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 22:03 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 22:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *91* | | *70 - 130* | | *08/10/17 22:03* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *95* | | *70 - 130* | | *08/10/17 22:03* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.017 | 0.0047 | 0.0021 | ug/L | | 08/11/17 17:08 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *132* | *Q* | *70 - 130* | *08/11/17 11:31* | *08/11/17 17:08* | *1* |

## Client Sample ID: GW17TB08

**Lab Sample ID: 680-141929-5**

**Date Collected: 08/08/17 08:00**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 08/10/17 18:38 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 08/10/17 18:38 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 18:38 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 18:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *92* | | *70 - 130* | | *08/10/17 18:38* | *1* |

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-1

**Client Sample ID: GW17TB08**
**Date Collected: 08/08/17 08:00**
**Date Received: 08/09/17 09:25**

**Lab Sample ID: 680-141929-5**
**Matrix: GW**

### Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichlorobenzene-d4 (Surr)* | *96* | | *70 - 130* | | *08/10/17 18:38* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.017 | 0.0047 | 0.0021 | ug/L | | 08/11/17 17:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *114* | | *70 - 130* | *08/11/17 11:31* | *08/11/17 17:28* | *1* |

## Method: 524.2 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 680-491089/9**
**Matrix: Water**
**Analysis Batch: 491089**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 08/10/17 17:52 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 08/10/17 17:52 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 17:52 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 17:52 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *90* | | *70 - 130* | | *08/10/17 17:52* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *97* | | *70 - 130* | | *08/10/17 17:52* | *1* |

**Lab Sample ID: LCS 680-491089/3**
**Matrix: Water**
**Analysis Batch: 491089**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 19.4 | | ug/L | | 97 | 70 - 130 |
| Ethylbenzene | 20.0 | 20.1 | | ug/L | | 100 | 70 - 130 |
| Toluene | 20.0 | 19.7 | | ug/L | | 98 | 70 - 130 |
| Xylenes, Total | 40.0 | 39.4 | | ug/L | | 98 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *101* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 680-491089/4**
**Matrix: Water**
**Analysis Batch: 491089**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 19.1 | | ug/L | | 96 | 70 - 130 | 2 | 30 |
| Ethylbenzene | 20.0 | 20.1 | | ug/L | | 101 | 70 - 130 | 0 | 30 |
| Toluene | 20.0 | 19.8 | | ug/L | | 99 | 70 - 130 | 0 | 30 |
| Xylenes, Total | 40.0 | 39.6 | | ug/L | | 99 | 70 - 130 | 1 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *103* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 680-141929-1 MS**
**Matrix: GW**
**Analysis Batch: 491089**

**Client Sample ID: GW17029-MS**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 20.0 | 20.5 | | ug/L | | 102 | 70 - 130 |
| Ethylbenzene | 0.25 | U | 20.0 | 21.6 | | ug/L | | 108 | 70 - 130 |
| Toluene | 0.25 | U | 20.0 | 21.2 | | ug/L | | 106 | 70 - 130 |
| Xylenes, Total | 0.25 | U | 40.0 | 42.3 | | ug/L | | 106 | 70 - 130 |

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 680-141929-1 MS**
**Matrix: GW**
**Analysis Batch: 491089**

**Client Sample ID: GW17029-MS**
**Prep Type: Total/NA**

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *99* | | *70 - 130* |

**Lab Sample ID: 680-141929-1 MSD**
**Matrix: GW**
**Analysis Batch: 491089**

**Client Sample ID: GW17029-MSD**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 20.0 | 20.5 | | ug/L | | 102 | 70 - 130 | 0 | 30 |
| Ethylbenzene | 0.25 | U | 20.0 | 20.9 | | ug/L | | 104 | 70 - 130 | 3 | 30 |
| Toluene | 0.25 | U | 20.0 | 21.3 | | ug/L | | 106 | 70 - 130 | 0 | 30 |
| Xylenes, Total | 0.25 | U | 40.0 | 40.8 | | ug/L | | 102 | 70 - 130 | 4 | 30 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *98* | | *70 - 130* |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

**Lab Sample ID: MB 680-491214/3-A**
**Matrix: Water**
**Analysis Batch: 491246**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0050 | U | 0.018 | 0.0050 | 0.0022 | ug/L | | 08/11/17 13:39 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *98* | | *70 - 130* | *08/11/17 11:31* | *08/11/17 13:39* | *1* |

**Lab Sample ID: LCS 680-491214/4-A**
**Matrix: Water**
**Analysis Batch: 491246**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | | | 0.100 | 0.0859 | | ug/L | | 86 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 680-491214/5-A**
**Matrix: Water**
**Analysis Batch: 491246**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | | | 0.100 | 0.0885 | | ug/L | | 89 | 70 - 130 | 3 | 30 |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

**Lab Sample ID: LCSD 680-491214/5-A**
**Matrix: Water**
**Analysis Batch: 491246**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *99* | | *70 - 130* |

**Lab Sample ID: 680-141929-1 MS**
**Matrix: GW**
**Analysis Batch: 491246**

**Client Sample ID: GW17029-MS**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.0951 | 0.0967 | | ug/L | | 102 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *114* | | *70 - 130* |

**Lab Sample ID: 680-141929-1 MSD**
**Matrix: GW**
**Analysis Batch: 491246**

**Client Sample ID: GW17029-MSD**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.0933 | 0.103 | | ug/L | | 110 | 70 - 130 | 6 | 30 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *126* | | *70 - 130* |

# QC Association Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-1

## GC/MS VOA

### Analysis Batch: 491089

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141929-1 | GW17029 | Total/NA | GW | 524.2 | |
| 680-141929-2 | GW17030 | Total/NA | GW | 524.2 | |
| 680-141929-5 | GW17TB08 | Total/NA | GW | 524.2 | |
| MB 680-491089/9 | Method Blank | Total/NA | Water | 524.2 | |
| LCS 680-491089/3 | Lab Control Sample | Total/NA | Water | 524.2 | |
| LCSD 680-491089/4 | Lab Control Sample Dup | Total/NA | Water | 524.2 | |
| 680-141929-1 MS | GW17029-MS | Total/NA | GW | 524.2 | |
| 680-141929-1 MSD | GW17029-MSD | Total/NA | GW | 524.2 | |

## GC Semi VOA

### Prep Batch: 491214

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141929-1 | GW17029 | Total/NA | GW | 504.1 | |
| 680-141929-2 | GW17030 | Total/NA | GW | 504.1 | |
| 680-141929-5 | GW17TB08 | Total/NA | GW | 504.1 | |
| MB 680-491214/3-A | Method Blank | Total/NA | Water | 504.1 | |
| LCS 680-491214/4-A | Lab Control Sample | Total/NA | Water | 504.1 | |
| LCSD 680-491214/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | |
| 680-141929-1 MS | GW17029-MS | Total/NA | GW | 504.1 | |
| 680-141929-1 MSD | GW17029-MSD | Total/NA | GW | 504.1 | |

### Analysis Batch: 491246

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141929-1 | GW17029 | Total/NA | GW | 504.1 | 491214 |
| 680-141929-2 | GW17030 | Total/NA | GW | 504.1 | 491214 |
| 680-141929-5 | GW17TB08 | Total/NA | GW | 504.1 | 491214 |
| MB 680-491214/3-A | Method Blank | Total/NA | Water | 504.1 | 491214 |
| LCS 680-491214/4-A | Lab Control Sample | Total/NA | Water | 504.1 | 491214 |
| LCSD 680-491214/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | 491214 |
| 680-141929-1 MS | GW17029-MS | Total/NA | GW | 504.1 | 491214 |
| 680-141929-1 MSD | GW17029-MSD | Total/NA | GW | 504.1 | 491214 |

# Lab Chronicle

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-1

## Client Sample ID: GW17029

**Lab Sample ID: 680-141929-1**

**Date Collected: 08/08/17 09:10**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 491089 | 08/10/17 21:40 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.7 mL | 2 mL | 491214 | 08/11/17 11:31 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 491246 | 08/11/17 16:38 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17030

**Lab Sample ID: 680-141929-2**

**Date Collected: 08/08/17 09:55**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 491089 | 08/10/17 22:03 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 37.3 mL | 2 mL | 491214 | 08/11/17 11:31 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 491246 | 08/11/17 17:08 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17TB08

**Lab Sample ID: 680-141929-5**

**Date Collected: 08/08/17 08:00**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 491089 | 08/10/17 18:38 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.9 mL | 2 mL | 491214 | 08/11/17 11:31 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 491246 | 08/11/17 17:28 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Accreditation/Certification Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-1

## Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| | AFCEE | | SAVLAB | |
| Alabama | State Program | 4 | 41450 | 06-30-18 |
| Alaska | State Program | 10 | | 06-30-18 |
| Alaska (UST) | State Program | 10 | UST-104 | 11-05-17 |
| Arizona | State Program | 9 | AZ808 | 12-14-17 |
| Arkansas DEQ | State Program | 6 | 88-0692 | 02-01-18 |
| California | State Program | 9 | 2939 | 06-30-17 * |
| Colorado | State Program | 8 | N/A | 12-31-17 |
| Connecticut | State Program | 1 | PH-0161 | 03-31-19 |
| Florida | NELAP | 4 | E87052 | 06-30-18 |
| GA Dept. of Agriculture | State Program | 4 | N/A | 06-12-18 |
| Georgia | State Program | 4 | 803 | 06-30-18 |
| Guam | State Program | 9 | 15-005r | 04-16-18 |
| Hawaii | State Program | 9 | N/A | 06-30-18 |
| Illinois | NELAP | 5 | 200022 | 11-30-17 |
| Indiana | State Program | 5 | N/A | 06-30-18 |
| Iowa | State Program | 7 | 353 | 06-30-19 |
| Kentucky (DW) | State Program | 4 | 90084 | 12-31-17 |
| Kentucky (UST) | State Program | 4 | 18 | 06-30-18 |
| Kentucky (WW) | State Program | 4 | 90084 | 12-31-17 |
| L-A-B | DoD ELAP | | L2463 | 09-22-19 |
| L-A-B | ISO/IEC 17025 | | L2463.01 | 09-22-19 |
| Louisiana | NELAP | 6 | 30690 | 06-30-18 |
| Louisiana (DW) | NELAP | 6 | LA160019 | 12-31-17 |
| Maine | State Program | 1 | GA00006 | 09-24-18 |
| Maryland | State Program | 3 | 250 | 12-31-17 |
| Massachusetts | State Program | 1 | M-GA006 | 06-30-18 |
| Michigan | State Program | 5 | 9925 | 06-30-17 * |
| Mississippi | State Program | 4 | N/A | 06-30-18 |
| Nebraska | State Program | 7 | TestAmerica-Savannah | 06-30-18 |
| New Jersey | NELAP | 2 | GA769 | 06-30-18 |
| New Mexico | State Program | 6 | N/A | 06-30-18 |
| New York | NELAP | 2 | 10842 | 03-31-18 |
| North Carolina (DW) | State Program | 4 | 13701 | 07-31-18 |
| North Carolina (WW/SW) | State Program | 4 | 269 | 12-31-17 |
| Oklahoma | State Program | 6 | 9984 | 08-31-17 * |
| Pennsylvania | NELAP | 3 | 68-00474 | 06-30-18 |
| Puerto Rico | State Program | 2 | GA00006 | 12-31-17 |
| South Carolina | State Program | 4 | 98001 | 06-30-17 * |
| Tennessee | State Program | 4 | TN02961 | 06-30-18 |
| Texas | NELAP | 6 | T104704185-16-9 | 11-30-17 |
| US Fish & Wildlife | Federal | | LE058448-0 | 10-31-17 |
| USDA | Federal | | SAV 3-04 | 06-14-20 * |
| Virginia | NELAP | 3 | 460161 | 06-14-18 |
| Washington | State Program | 10 | C805 | 06-10-18 |
| West Virginia (DW) | State Program | 3 | 9950C | 12-31-17 |
| West Virginia DEP | State Program | 3 | 094 | 06-30-18 |
| Wisconsin | State Program | 5 | 999819810 | 08-31-17 * |
| Wyoming | State Program | 8 | 8TMS-L | 06-30-16 * |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 524.2 | Volatile Organic Compounds (GC/MS) | EPA-DW | TAL SAV |
| 504.1 | EDB, DBCP and 1,2,3-TCP (GC) | EPA-DW | TAL SAV |

**Protocol References:**

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # 7798 3090 4453

COC #: US01023-GW1708

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
KAYLA COPELAND

Analytical Methods:

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17029 | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17029-MS | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17029-MSD | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17030 | | 8/8/2017 | 0955 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17031 | | 8/8/2017 | 1038 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17032 | | 8/8/2017 | 1038 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB08 | | 8/8/2017 | 800 | GW | 5 | HCl for BTEX | 3 | 2 | | | 40 mL VOA | |

***Additional Comments:***

*Preservatives:* BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-141929 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) __X__

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No

Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle) (INTACT) BROKEN ABSENT

Project Requirements (MRLs) (QAPP)

| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|---|
| | 8/8/2017 | 1230 | | 08 09 17 | 0925 | |
| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |

Cooler / Blank Temperature 4 °C

1.2(CF) 1.5°C

# Login Sample Receipt Checklist

Client: Sundance Consulting, Inc

Job Number: 680-141929-1

**Login Number: 141929**

**List Source: TestAmerica Savannah**

**List Number: 1**

**Creator: Banda, Christy S**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-141929-2
Client Project/Site: Kirtland Bulk Fuel Facilities

For:
Sundance Consulting, Inc
8210 Louisiana Blvd NE
Suite C
Albuquerque, New Mexico 87113

Attn: Rachel Hobbs

Michele R Kersey

*Authorized for release by:*
*8/14/2017 2:46:20 PM*

Michele Kersey, Project Manager II
(912)354-7858
michele.kersey@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Definitions/Glossary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-2

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |
| Q | One or more quality control criteria failed. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Sample Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-2

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-141929-3 | GW17031 | GW | 08/08/17 10:38 | 08/09/17 09:25 |
| 680-141929-4 | GW17032 | GW | 08/08/17 10:38 | 08/09/17 09:25 |

## Job ID: 680-141929-2

**Laboratory: TestAmerica Savannah**

**Narrative**

# CASE NARRATIVE

## Client: Sundance Consulting, Inc

## Project: Kirtland Bulk Fuel Facilities

## Report Number: 680-141929-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

**RECEIPT**

The samples were received on 8/9/2017 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5º C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples GW17031 (680-141929-3) and GW17032 (680-141929-4) were analyzed for Volatile organic Compounds (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 08/10/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**EDB AND DBCP**

Samples GW17031 (680-141929-3) and GW17032 (680-141929-4) were analyzed for EDB and DBCP in accordance with EPA Method 504.1. The samples were prepared and analyzed on 08/11/2017.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

Surrogate recovery for the following sample was outside the upper control limit: GW17031 (680-141929-3). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-2

## Client Sample ID: GW17031

**Lab Sample ID: 680-141929-3**

**Date Collected: 08/08/17 10:38**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 08/10/17 22:25 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 08/10/17 22:25 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 22:25 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 22:25 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *90* | | *70 - 130* | | *08/10/17 22:25* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* | | *08/10/17 22:25* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.017 | 0.0047 | 0.0021 | ug/L | | 08/11/17 17:18 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *136* | *Q* | *70 - 130* | *08/11/17 11:31* | *08/11/17 17:18* | *1* |

## Client Sample ID: GW17032

**Lab Sample ID: 680-141929-4**

**Date Collected: 08/08/17 10:38**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 08/10/17 22:48 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 08/10/17 22:48 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 22:48 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 22:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *90* | | *70 - 130* | | *08/10/17 22:48* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* | | *08/10/17 22:48* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.017 | 0.0047 | 0.0021 | ug/L | | 08/11/17 17:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *106* | | *70 - 130* | *08/11/17 11:31* | *08/11/17 17:38* | *1* |

## Method: 524.2 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 680-491089/9**
**Matrix: Water**
**Analysis Batch: 491089**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 08/10/17 17:52 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 08/10/17 17:52 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 17:52 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 08/10/17 17:52 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *90* | | *70 - 130* | | *08/10/17 17:52* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *97* | | *70 - 130* | | *08/10/17 17:52* | *1* |

**Lab Sample ID: LCS 680-491089/3**
**Matrix: Water**
**Analysis Batch: 491089**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 19.4 | | ug/L | | 97 | 70 - 130 |
| Ethylbenzene | 20.0 | 20.1 | | ug/L | | 100 | 70 - 130 |
| Toluene | 20.0 | 19.7 | | ug/L | | 98 | 70 - 130 |
| Xylenes, Total | 40.0 | 39.4 | | ug/L | | 98 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *101* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 680-491089/4**
**Matrix: Water**
**Analysis Batch: 491089**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 19.1 | | ug/L | | 96 | 70 - 130 | 2 | 30 |
| Ethylbenzene | 20.0 | 20.1 | | ug/L | | 101 | 70 - 130 | 0 | 30 |
| Toluene | 20.0 | 19.8 | | ug/L | | 99 | 70 - 130 | 0 | 30 |
| Xylenes, Total | 40.0 | 39.6 | | ug/L | | 99 | 70 - 130 | 1 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *103* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *102* | | *70 - 130* |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

**Lab Sample ID: MB 680-491214/3-A**
**Matrix: Water**
**Analysis Batch: 491246**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0050 | U | 0.018 | 0.0050 | 0.0022 | ug/L | | 08/11/17 13:39 | 1 |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

**Lab Sample ID: MB 680-491214/3-A**
**Matrix: Water**
**Analysis Batch: 491246**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Pentachloroethane | 98 | | 70 - 130 | 08/11/17 11:31 | 08/11/17 13:39 | 1 |

**Lab Sample ID: LCS 680-491214/4-A**
**Matrix: Water**
**Analysis Batch: 491246**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | | | 0.100 | 0.0859 | | ug/L | | 86 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 100 | | 70 - 130 |

**Lab Sample ID: LCSD 680-491214/5-A**
**Matrix: Water**
**Analysis Batch: 491246**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 491214**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | | | 0.100 | 0.0885 | | ug/L | | 89 | 70 - 130 | 3 | 30 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 99 | | 70 - 130 |

# QC Association Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-2

## GC/MS VOA

### Analysis Batch: 491089

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141929-3 | GW17031 | Total/NA | GW | 524.2 | |
| 680-141929-4 | GW17032 | Total/NA | GW | 524.2 | |
| MB 680-491089/9 | Method Blank | Total/NA | Water | 524.2 | |
| LCS 680-491089/3 | Lab Control Sample | Total/NA | Water | 524.2 | |
| LCSD 680-491089/4 | Lab Control Sample Dup | Total/NA | Water | 524.2 | |

## GC Semi VOA

### Prep Batch: 491214

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141929-3 | GW17031 | Total/NA | GW | 504.1 | |
| 680-141929-4 | GW17032 | Total/NA | GW | 504.1 | |
| MB 680-491214/3-A | Method Blank | Total/NA | Water | 504.1 | |
| LCS 680-491214/4-A | Lab Control Sample | Total/NA | Water | 504.1 | |
| LCSD 680-491214/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | |

### Analysis Batch: 491246

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-141929-3 | GW17031 | Total/NA | GW | 504.1 | 491214 |
| 680-141929-4 | GW17032 | Total/NA | GW | 504.1 | 491214 |
| MB 680-491214/3-A | Method Blank | Total/NA | Water | 504.1 | 491214 |
| LCS 680-491214/4-A | Lab Control Sample | Total/NA | Water | 504.1 | 491214 |
| LCSD 680-491214/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | 491214 |

# Lab Chronicle

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-2

## Client Sample ID: GW17031

**Lab Sample ID: 680-141929-3**

**Date Collected: 08/08/17 10:38**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 491089 | 08/10/17 22:25 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 37 mL | 2 mL | 491214 | 08/11/17 11:31 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 491246 | 08/11/17 17:18 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17032

**Lab Sample ID: 680-141929-4**

**Date Collected: 08/08/17 10:38**

**Matrix: GW**

**Date Received: 08/09/17 09:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 491089 | 08/10/17 22:48 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 37.1 mL | 2 mL | 491214 | 08/11/17 11:31 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 491246 | 08/11/17 17:38 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Accreditation/Certification Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-2

## Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| | AFCEE | | SAVLAB | |
| Alabama | State Program | 4 | 41450 | 06-30-18 |
| Alaska | State Program | 10 | | 06-30-18 |
| Alaska (UST) | State Program | 10 | UST-104 | 11-05-17 |
| Arizona | State Program | 9 | AZ808 | 12-14-17 |
| Arkansas DEQ | State Program | 6 | 88-0692 | 02-01-18 |
| California | State Program | 9 | 2939 | 06-30-17 * |
| Colorado | State Program | 8 | N/A | 12-31-17 |
| Connecticut | State Program | 1 | PH-0161 | 03-31-19 |
| Florida | NELAP | 4 | E87052 | 06-30-18 |
| GA Dept. of Agriculture | State Program | 4 | N/A | 06-12-18 |
| Georgia | State Program | 4 | 803 | 06-30-18 |
| Guam | State Program | 9 | 15-005r | 04-16-18 |
| Hawaii | State Program | 9 | N/A | 06-30-18 |
| Illinois | NELAP | 5 | 200022 | 11-30-17 |
| Indiana | State Program | 5 | N/A | 06-30-18 |
| Iowa | State Program | 7 | 353 | 06-30-19 |
| Kentucky (DW) | State Program | 4 | 90084 | 12-31-17 |
| Kentucky (UST) | State Program | 4 | 18 | 06-30-18 |
| Kentucky (WW) | State Program | 4 | 90084 | 12-31-17 |
| L-A-B | DoD ELAP | | L2463 | 09-22-19 |
| L-A-B | ISO/IEC 17025 | | L2463.01 | 09-22-19 |
| Louisiana | NELAP | 6 | 30690 | 06-30-18 |
| Louisiana (DW) | NELAP | 6 | LA160019 | 12-31-17 |
| Maine | State Program | 1 | GA00006 | 09-24-18 |
| Maryland | State Program | 3 | 250 | 12-31-17 |
| Massachusetts | State Program | 1 | M-GA006 | 06-30-18 |
| Michigan | State Program | 5 | 9925 | 06-30-17 * |
| Mississippi | State Program | 4 | N/A | 06-30-18 |
| Nebraska | State Program | 7 | TestAmerica-Savannah | 06-30-18 |
| New Jersey | NELAP | 2 | GA769 | 06-30-18 |
| New Mexico | State Program | 6 | N/A | 06-30-18 |
| New York | NELAP | 2 | 10842 | 03-31-18 |
| North Carolina (DW) | State Program | 4 | 13701 | 07-31-18 |
| North Carolina (WW/SW) | State Program | 4 | 269 | 12-31-17 |
| Oklahoma | State Program | 6 | 9984 | 08-31-17 * |
| Pennsylvania | NELAP | 3 | 68-00474 | 06-30-18 |
| Puerto Rico | State Program | 2 | GA00006 | 12-31-17 |
| South Carolina | State Program | 4 | 98001 | 06-30-17 * |
| Tennessee | State Program | 4 | TN02961 | 06-30-18 |
| Texas | NELAP | 6 | T104704185-16-9 | 11-30-17 |
| US Fish & Wildlife | Federal | | LE058448-0 | 10-31-17 |
| USDA | Federal | | SAV 3-04 | 06-14-20 * |
| Virginia | NELAP | 3 | 460161 | 06-14-18 |
| Washington | State Program | 10 | C805 | 06-10-18 |
| West Virginia (DW) | State Program | 3 | 9950C | 12-31-17 |
| West Virginia DEP | State Program | 3 | 094 | 06-30-18 |
| Wisconsin | State Program | 5 | 999819810 | 08-31-17 * |
| Wyoming | State Program | 8 | 8TMS-L | 06-30-16 * |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-141929-2

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 524.2 | Volatile Organic Compounds (GC/MS) | EPA-DW | TAL SAV |
| 504.1 | EDB, DBCP and 1,2,3-TCP (GC) | EPA-DW | TAL SAV |

**Protocol References:**

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # 7798 3090 4453

COC #: US01023-GW1708

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
KAYLA COPELAND

Analytical Methods:

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17029 | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17029-MS | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17029-MSD | | 8/8/2017 | 0910 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17030 | | 8/8/2017 | 0955 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17031 | | 8/8/2017 | 1038 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17032 | | 8/8/2017 | 1038 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB08 | | 8/8/2017 | 800 | GW | 5 | HCl for BTEX | 3 | 2 | | | 40 mL VOA | |

***Additional Comments:***

*Preservatives:* BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-141929 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) __X__

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No

Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle) (INTACT) BROKEN ABSENT

Project Requirements (MRLs QAPP)

| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|---|
| | 8/8/2017 | 1230 | | | 08 09 17 | 0925 |
| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
| | | | | | | |

Cooler / Blank Temperature 4 °C

1.2(CF) 1.5°C

# Login Sample Receipt Checklist

Client: Sundance Consulting, Inc

Job Number: 680-141929-2

**Login Number: 141929**

**List Source: TestAmerica Savannah**

**List Number: 1**

**Creator: Banda, Christy S**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-142971-1
Client Project/Site: Kirtland Bulk Fuel Facilities

For:
Sundance Consulting, Inc
8210 Louisiana Blvd NE
Suite C
Albuquerque, New Mexico 87113

Attn: Rachel Hobbs

Michele R Kersey

*Authorized for release by:*
*9/19/2017 3:26:10 PM*

Michele Kersey, Project Manager II
(912)354-7858
michele.kersey@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |
| Q | One or more quality control criteria failed. |
| M | Manual integrated compound. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Sample Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-142971-1 | GW17033 | Water | 09/06/17 09:35 | 09/07/17 09:10 |
| 680-142971-2 | GW17034 | Water | 09/06/17 08:40 | 09/07/17 09:10 |
| 680-142971-3 | GW17035 | Water | 09/06/17 08:40 | 09/07/17 09:10 |
| 680-142971-4 | GW17036 | Water | 09/06/17 09:05 | 09/07/17 09:10 |
| 680-142971-6 | GW17TB09 | Water | 09/06/17 08:00 | 09/07/17 09:10 |

## Job ID: 680-142971-1

**Laboratory: TestAmerica Savannah**

**Narrative**

# CASE NARRATIVE

## Client: Sundance Consulting, Inc

## Project: Kirtland Bulk Fuel Facilities

## Report Number: 680-142971-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

**RECEIPT**

The samples were received on 9/7/2017 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6º C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples GW17033 (680-142971-1), GW17034 (680-142971-2), GW17035 (680-142971-3), GW17036 (680-142971-4) and GW17TB09 (680-142971-6) were analyzed for Volatile organic Compounds (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 09/13/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**EDB AND DBCP**

Samples GW17033 (680-142971-1), GW17034 (680-142971-2), GW17035 (680-142971-3), GW17036 (680-142971-4) and GW17TB09 (680-142971-6) were analyzed for EDB and DBCP in accordance with EPA Method 504.1. The samples were prepared and analyzed on 09/08/2017.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

Surrogate recovery for the following sample was outside the upper control limit: GW17TB09 (680-142971-6). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Client Sample ID: GW17033

**Lab Sample ID: 680-142971-1**

**Date Collected: 09/06/17 09:35**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 09/13/17 17:12 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 09/13/17 17:12 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 17:12 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 17:12 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *87* | | *70 - 130* | | *09/13/17 17:12* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *97* | | *70 - 130* | | *09/13/17 17:12* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.017 | 0.0048 | 0.0021 | ug/L | | 09/08/17 13:20 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *100* | | *70 - 130* | *09/08/17 10:38* | *09/08/17 13:20* | *1* |

## Client Sample ID: GW17034

**Lab Sample ID: 680-142971-2**

**Date Collected: 09/06/17 08:40**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 09/13/17 17:35 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 09/13/17 17:35 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 17:35 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 17:35 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *89* | | *70 - 130* | | *09/13/17 17:35* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *93* | | *70 - 130* | | *09/13/17 17:35* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.017 | 0.0048 | 0.0021 | ug/L | | 09/08/17 13:30 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *108* | | *70 - 130* | *09/08/17 10:38* | *09/08/17 13:30* | *1* |

## Client Sample ID: GW17035

**Lab Sample ID: 680-142971-3**

**Date Collected: 09/06/17 08:40**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 09/13/17 17:58 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 09/13/17 17:58 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 17:58 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 17:58 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *88* | | *70 - 130* | | *09/13/17 17:58* | *1* |

## Client Sample ID: GW17035

**Lab Sample ID: 680-142971-3**

**Date Collected: 09/06/17 08:40**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

### Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,2-Dichlorobenzene-d4 (Surr)* | *95* | | *70 - 130* | | *09/13/17 17:58* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0047 | U | 0.017 | 0.0047 | 0.0021 | ug/L | | 09/08/17 13:39 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *115* | | *70 - 130* | *09/08/17 10:38* | *09/08/17 13:39* | *1* |

## Client Sample ID: GW17036

**Lab Sample ID: 680-142971-4**

**Date Collected: 09/06/17 09:05**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 09/13/17 18:21 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 09/13/17 18:21 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 18:21 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 18:21 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *90* | | *70 - 130* | | *09/13/17 18:21* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* | | *09/13/17 18:21* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.017 | 0.0048 | 0.0021 | ug/L | | 09/08/17 13:10 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *101* | | *70 - 130* | *09/08/17 10:38* | *09/08/17 13:10* | *1* |

## Client Sample ID: GW17TB09

**Lab Sample ID: 680-142971-6**

**Date Collected: 09/06/17 08:00**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 09/13/17 19:06 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 09/13/17 19:06 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 19:06 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 19:06 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *88* | | *70 - 130* | | *09/13/17 19:06* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *98* | | *70 - 130* | | *09/13/17 19:06* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.017 | 0.0048 | 0.0021 | ug/L | | 09/08/17 13:00 | 1 |

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-1

**Client Sample ID: GW17TB09**
**Date Collected: 09/06/17 08:00**
**Date Received: 09/07/17 09:10**

**Lab Sample ID: 680-142971-6**
**Matrix: Water**

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Pentachloroethane | 132 | Q | 70 - 130 | 09/08/17 10:38 | 09/08/17 13:00 | 1 |

## Method: 524.2 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 680-494602/9**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 09/13/17 14:56 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 09/13/17 14:56 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 14:56 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 14:56 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 130* | | *09/13/17 14:56* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *95* | | *70 - 130* | | *09/13/17 14:56* | *1* |

**Lab Sample ID: LCS 680-494602/3**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 20.2 | | ug/L | | 101 | 70 - 130 |
| Ethylbenzene | 20.0 | 20.3 | | ug/L | | 101 | 70 - 130 |
| Toluene | 20.0 | 20.6 | | ug/L | | 103 | 70 - 130 |
| Xylenes, Total | 40.0 | 39.2 | | ug/L | | 98 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *97* | | *70 - 130* |

**Lab Sample ID: LCSD 680-494602/4**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 19.6 | | ug/L | | 98 | 70 - 130 | 3 | 30 |
| Ethylbenzene | 20.0 | 20.3 | | ug/L | | 101 | 70 - 130 | 0 | 30 |
| Toluene | 20.0 | 20.2 | | ug/L | | 101 | 70 - 130 | 2 | 30 |
| Xylenes, Total | 40.0 | 40.1 | | ug/L | | 100 | 70 - 130 | 2 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *103* | | *70 - 130* |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

**Lab Sample ID: MB 680-494524/3-A**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0050 | U | 0.018 | 0.0050 | 0.0022 | ug/L | | 09/08/17 12:21 | 1 |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

**Lab Sample ID: MB 680-494524/3-A**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Pentachloroethane | 99 | | 70 - 130 | 09/08/17 10:38 | 09/08/17 12:21 | 1 |

**Lab Sample ID: LCS 680-494524/4-A**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | | | 0.100 | 0.0844 | M | ug/L | | 84 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 102 | | 70 - 130 |

**Lab Sample ID: LCSD 680-494524/5-A**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | | | 0.100 | 0.0900 | | ug/L | | 90 | 70 - 130 | 6 | 30 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| Pentachloroethane | 110 | | 70 - 130 |

# QC Association Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-1

## GC/MS VOA

### Analysis Batch: 494602

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-142971-1 | GW17033 | Total/NA | Water | 524.2 | |
| 680-142971-2 | GW17034 | Total/NA | Water | 524.2 | |
| 680-142971-3 | GW17035 | Total/NA | Water | 524.2 | |
| 680-142971-4 | GW17036 | Total/NA | Water | 524.2 | |
| 680-142971-6 | GW17TB09 | Total/NA | Water | 524.2 | |
| MB 680-494602/9 | Method Blank | Total/NA | Water | 524.2 | |
| LCS 680-494602/3 | Lab Control Sample | Total/NA | Water | 524.2 | |
| LCSD 680-494602/4 | Lab Control Sample Dup | Total/NA | Water | 524.2 | |

## GC Semi VOA

### Prep Batch: 494524

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-142971-1 | GW17033 | Total/NA | Water | 504.1 | |
| 680-142971-2 | GW17034 | Total/NA | Water | 504.1 | |
| 680-142971-3 | GW17035 | Total/NA | Water | 504.1 | |
| 680-142971-4 | GW17036 | Total/NA | Water | 504.1 | |
| 680-142971-6 | GW17TB09 | Total/NA | Water | 504.1 | |
| MB 680-494524/3-A | Method Blank | Total/NA | Water | 504.1 | |
| LCS 680-494524/4-A | Lab Control Sample | Total/NA | Water | 504.1 | |
| LCSD 680-494524/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | |

### Analysis Batch: 494528

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-142971-1 | GW17033 | Total/NA | Water | 504.1 | 494524 |
| 680-142971-2 | GW17034 | Total/NA | Water | 504.1 | 494524 |
| 680-142971-3 | GW17035 | Total/NA | Water | 504.1 | 494524 |
| 680-142971-4 | GW17036 | Total/NA | Water | 504.1 | 494524 |
| 680-142971-6 | GW17TB09 | Total/NA | Water | 504.1 | 494524 |
| MB 680-494524/3-A | Method Blank | Total/NA | Water | 504.1 | 494524 |
| LCS 680-494524/4-A | Lab Control Sample | Total/NA | Water | 504.1 | 494524 |
| LCSD 680-494524/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | 494524 |

# Lab Chronicle

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-1

## Client Sample ID: GW17033

**Lab Sample ID: 680-142971-1**

**Date Collected: 09/06/17 09:35**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 494602 | 09/13/17 17:12 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.4 mL | 2 mL | 494524 | 09/08/17 10:38 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 494528 | 09/08/17 13:20 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17034

**Lab Sample ID: 680-142971-2**

**Date Collected: 09/06/17 08:40**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 494602 | 09/13/17 17:35 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.2 mL | 2 mL | 494524 | 09/08/17 10:38 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 494528 | 09/08/17 13:30 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17035

**Lab Sample ID: 680-142971-3**

**Date Collected: 09/06/17 08:40**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 494602 | 09/13/17 17:58 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 37.2 mL | 2 mL | 494524 | 09/08/17 10:38 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 494528 | 09/08/17 13:39 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

## Client Sample ID: GW17036

**Lab Sample ID: 680-142971-4**

**Date Collected: 09/06/17 09:05**

**Matrix: Water**

**Date Received: 09/07/17 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 494602 | 09/13/17 18:21 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.1 mL | 2 mL | 494524 | 09/08/17 10:38 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 494528 | 09/08/17 13:10 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

# Lab Chronicle

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-1

**Client Sample ID: GW17TB09**
**Date Collected: 09/06/17 08:00**
**Date Received: 09/07/17 09:10**

**Lab Sample ID: 680-142971-6**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 494602 | 09/13/17 19:06 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.2 mL | 2 mL | 494524 | 09/08/17 10:38 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 494528 | 09/08/17 13:00 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Accreditation/Certification Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-1

## Laboratory: TestAmerica Savannah

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| L-A-B | DoD ELAP | | L2463 | 09-22-19 |

# Method Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 524.2 | Volatile Organic Compounds (GC/MS) | EPA-DW | TAL SAV |
| 504.1 | EDB, DBCP and 1,2,3-TCP (GC) | EPA-DW | TAL SAV |

**Protocol References:**

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # **7701 2418 8691**

COC #: US01023-GW1709

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
Kayla Copeland

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | Analytical Methods: EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17033 | | 9/6/2017 | 0935 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17034 | | 9/6/2017 | 0840 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17035 | | 9/6/2017 | 0840 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17036 | | 9/6/2017 | 0905 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17037 | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17037-MS | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17037-MSD | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB09 | | 9/6/2017 | 0800 | GW | 5 | HCl for BTEX | 3 | 2 | | | 40 mL VOA | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

***Additional Comments:***

*Preservatives:* BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-142971 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) __X__

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No

Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle) (INTACT) BROKEN ABSENT

Project Requirements (MRLs, (QAPP))

| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|---|
| | 9/6/2017 | 1230 | | | 9/7/17 | 940 |
| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
| | | | | | | |

Cooler / Blank Temperature 4 °C

0.4°C (CF) 0.6°C

# Login Sample Receipt Checklist

Client: Sundance Consulting, Inc

Job Number: 680-142971-1

**Login Number: 142971**

**List Source: TestAmerica Savannah**

**List Number: 1**

**Creator: Tyler, Matthew M**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-142971-2
Client Project/Site: Kirtland Bulk Fuel Facilities

For:
Sundance Consulting, Inc
8210 Louisiana Blvd NE
Suite C
Albuquerque, New Mexico 87113

Attn: Rachel Hobbs

Michele R Kersey

*Authorized for release by:*
*9/19/2017 3:25:43 PM*

Michele Kersey, Project Manager II
(912)354-7858
michele.kersey@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Definitions/Glossary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-2

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Undetected at the Limit of Detection. |
| M | Manual integrated compound. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Sample Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-2

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-142971-5 | GW17037 | Water | 09/06/17 10:35 | 09/07/17 09:10 |

## Job ID: 680-142971-2

**Laboratory: TestAmerica Savannah**

**Narrative**

# CASE NARRATIVE

## Client: Sundance Consulting, Inc

## Project: Kirtland Bulk Fuel Facilities

## Report Number: 680-142971-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

**RECEIPT**

The samples were received on 9/7/2017 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6º C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Sample GW17037 (680-142971-5) was analyzed for Volatile organic Compounds (GC-MS) in accordance with EPA Method 524.2. The samples were analyzed on 09/13/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**EDB AND DBCP**

Sample GW17037 (680-142971-5) was analyzed for EDB and DBCP in accordance with EPA Method 504.1. The samples were prepared and analyzed on 09/08/2017.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-2

**Client Sample ID: GW17037**
**Date Collected: 09/06/17 10:35**
**Date Received: 09/07/17 09:10**

**Lab Sample ID: 680-142971-5**
**Matrix: Water**

### Method: 524.2 - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 09/13/17 16:27 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 09/13/17 16:27 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 16:27 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 16:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *89* | | *70 - 130* | | *09/13/17 16:27* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *99* | | *70 - 130* | | *09/13/17 16:27* | *1* |

### Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

| Analyte | Result | Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.017 | 0.0048 | 0.0021 | ug/L | | 09/08/17 13:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *104* | | *70 - 130* | *09/08/17 10:38* | *09/08/17 13:49* | *1* |

## Method: 524.2 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 680-494602/9**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 0.50 | 0.25 | 0.082 | ug/L | | 09/13/17 14:56 | 1 |
| Ethylbenzene | 0.25 | U | 0.50 | 0.25 | 0.099 | ug/L | | 09/13/17 14:56 | 1 |
| Toluene | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 14:56 | 1 |
| Xylenes, Total | 0.25 | U | 0.50 | 0.25 | 0.086 | ug/L | | 09/13/17 14:56 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 130* | | *09/13/17 14:56* | *1* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *95* | | *70 - 130* | | *09/13/17 14:56* | *1* |

**Lab Sample ID: LCS 680-494602/3**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 20.2 | | ug/L | | 101 | 70 - 130 |
| Ethylbenzene | 20.0 | 20.3 | | ug/L | | 101 | 70 - 130 |
| Toluene | 20.0 | 20.6 | | ug/L | | 103 | 70 - 130 |
| Xylenes, Total | 40.0 | 39.2 | | ug/L | | 98 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *97* | | *70 - 130* |

**Lab Sample ID: LCSD 680-494602/4**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 19.6 | | ug/L | | 98 | 70 - 130 | 3 | 30 |
| Ethylbenzene | 20.0 | 20.3 | | ug/L | | 101 | 70 - 130 | 0 | 30 |
| Toluene | 20.0 | 20.2 | | ug/L | | 101 | 70 - 130 | 2 | 30 |
| Xylenes, Total | 40.0 | 40.1 | | ug/L | | 100 | 70 - 130 | 2 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 680-142971-5 MS**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: GW17037**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 20.0 | 19.3 | | ug/L | | 96 | 70 - 130 |
| Ethylbenzene | 0.25 | U | 20.0 | 19.2 | | ug/L | | 96 | 70 - 130 |
| Toluene | 0.25 | U | 20.0 | 20.0 | | ug/L | | 100 | 70 - 130 |
| Xylenes, Total | 0.25 | U | 40.0 | 37.7 | | ug/L | | 94 | 70 - 130 |

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 680-142971-5 MS**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: GW17037**
**Prep Type: Total/NA**

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *96* | | *70 - 130* |

**Lab Sample ID: 680-142971-5 MSD**
**Matrix: Water**
**Analysis Batch: 494602**

**Client Sample ID: GW17037**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.25 | U | 20.0 | 19.4 | | ug/L | | 97 | 70 - 130 | 0 | 30 |
| Ethylbenzene | 0.25 | U | 20.0 | 19.7 | | ug/L | | 98 | 70 - 130 | 2 | 30 |
| Toluene | 0.25 | U | 20.0 | 20.0 | | ug/L | | 100 | 70 - 130 | 0 | 30 |
| Xylenes, Total | 0.25 | U | 40.0 | 38.7 | | ug/L | | 97 | 70 - 130 | 3 | 30 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| *4-Bromofluorobenzene* | *92* | | *70 - 130* |
| *1,2-Dichlorobenzene-d4 (Surr)* | *100* | | *70 - 130* |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

**Lab Sample ID: MB 680-494524/3-A**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Analyte | MB Result | MB Qualifier | LOQ | LOD | DL | Unit | D | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0050 | U | 0.018 | 0.0050 | 0.0022 | ug/L | | 09/08/17 12:21 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Pentachloroethane* | *99* | | *70 - 130* | *09/08/17 10:38* | *09/08/17 12:21* | *1* |

**Lab Sample ID: LCS 680-494524/4-A**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.100 | 0.0844 | M | ug/L | | 84 | 70 - 130 |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *102* | | *70 - 130* |

**Lab Sample ID: LCSD 680-494524/5-A**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.100 | 0.0900 | | ug/L | | 90 | 70 - 130 | 6 | 30 |

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

**Lab Sample ID: LCSD 680-494524/5-A**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *110* | | *70 - 130* |

**Lab Sample ID: 680-142971-5 MS**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: GW17037**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.0956 | 0.0804 | | ug/L | | 84 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *109* | | *70 - 130* |

**Lab Sample ID: 680-142971-5 MSD**
**Matrix: Water**
**Analysis Batch: 494528**

**Client Sample ID: GW17037**
**Prep Type: Total/NA**
**Prep Batch: 494524**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Dibromide | 0.0048 | U | 0.0962 | 0.0735 | | ug/L | | 76 | 70 - 130 | 9 | 30 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| *Pentachloroethane* | *104* | | *70 - 130* |

# QC Association Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-2

## GC/MS VOA

### Analysis Batch: 494602

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-142971-5 | GW17037 | Total/NA | Water | 524.2 | |
| MB 680-494602/9 | Method Blank | Total/NA | Water | 524.2 | |
| LCS 680-494602/3 | Lab Control Sample | Total/NA | Water | 524.2 | |
| LCSD 680-494602/4 | Lab Control Sample Dup | Total/NA | Water | 524.2 | |
| 680-142971-5 MS | GW17037 | Total/NA | Water | 524.2 | |
| 680-142971-5 MSD | GW17037 | Total/NA | Water | 524.2 | |

## GC Semi VOA

### Prep Batch: 494524

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-142971-5 | GW17037 | Total/NA | Water | 504.1 | |
| MB 680-494524/3-A | Method Blank | Total/NA | Water | 504.1 | |
| LCS 680-494524/4-A | Lab Control Sample | Total/NA | Water | 504.1 | |
| LCSD 680-494524/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | |
| 680-142971-5 MS | GW17037 | Total/NA | Water | 504.1 | |
| 680-142971-5 MSD | GW17037 | Total/NA | Water | 504.1 | |

### Analysis Batch: 494528

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-142971-5 | GW17037 | Total/NA | Water | 504.1 | 494524 |
| MB 680-494524/3-A | Method Blank | Total/NA | Water | 504.1 | 494524 |
| LCS 680-494524/4-A | Lab Control Sample | Total/NA | Water | 504.1 | 494524 |
| LCSD 680-494524/5-A | Lab Control Sample Dup | Total/NA | Water | 504.1 | 494524 |
| 680-142971-5 MS | GW17037 | Total/NA | Water | 504.1 | 494524 |
| 680-142971-5 MSD | GW17037 | Total/NA | Water | 504.1 | 494524 |

# Lab Chronicle

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-2

**Client Sample ID: GW17037**
**Date Collected: 09/06/17 10:35**
**Date Received: 09/07/17 09:10**

**Lab Sample ID: 680-142971-5**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 524.2 | | 1 | 5 mL | 5 mL | 494602 | 09/13/17 16:27 | DAS | TAL SAV |
| | Instrument ID: CMSS | | | | | | | | | |
| Total/NA | Prep | 504.1 | | | 36.6 mL | 2 mL | 494524 | 09/08/17 10:38 | LBH | TAL SAV |
| Total/NA | Analysis | 504.1 | | 1 | | | 494528 | 09/08/17 13:49 | LBH | TAL SAV |
| | Instrument ID: CSGX | | | | | | | | | |

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Accreditation/Certification Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-2

## Laboratory: TestAmerica Savannah

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| L-A-B | DoD ELAP | | L2463 | 09-22-19 |

# Method Summary

Client: Sundance Consulting, Inc
Project/Site: Kirtland Bulk Fuel Facilities

TestAmerica Job ID: 680-142971-2

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 524.2 | Volatile Organic Compounds (GC/MS) | EPA-DW | TAL SAV |
| 504.1 | EDB, DBCP and 1,2,3-TCP (GC) | EPA-DW | TAL SAV |

**Protocol References:**

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Groundwater- Chain of Custody Record & Analytical Service Request



Test America Sample Receiving
5102 LaRoche Ave
Savannah, GA 31404
Phone 912 345-7858

Waybill # **7701 2418 8691**

COC #: US01023-GW1709

**Requested Turnaround Time in Business Days (Surcharges) please circle**
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day-Standard)

Lab Project No.

Company Name & Address (Reporting Information)
Sundance Consulting, Inc.
8210 Louisiana Blvd Suite C
Albuquerque, NM 87113

PO/Billing Information
US01023, Task 007

Project Name
KAFB Bulk Fuel Facilities

Project Number
US01-023

Project Manager
Rachel Hobbs

Phone
505-835-7660

Fax
505-345-0742

Email Address for Result Reporting
rhobbs@sundance-inc.net

Sampler Name/Signature
Kayla Copeland

| Client Sample ID | Laboratory ID Number | Date Collected | Time Collected | Sample Matrix | No. Of Containers | Preservative | Analytical Methods: EDB by EPA Method 504.1 | BTEX by EPA Method 524.2 | | | Sample Volume | Comments e.g. specific instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GW17033 | | 9/6/2017 | 0935 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17034 | | 9/6/2017 | 0840 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17035 | | 9/6/2017 | 0840 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17036 | | 9/6/2017 | 0905 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | |
| GW17037 | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17037-MS | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17037-MSD | | 9/6/2017 | 1035 | GW | 6 | HCl for BTEX | 3 | 3 | | | 40 mL VOA | Separate Report |
| GW17TB09 | | 9/6/2017 | 0800 | GW | 5 | HCl for BTEX | 3 | 2 | | | 40 mL VOA | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

***Additional Comments:***

*Preservatives:* BTEX = HCl and Ascorbic Acid

EDB = Sodium Thiosulfate

680-142971 Chain of Custody

**Report Tier Levels - please select**

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) __X__

Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No

Type: ERPIMS Units: ____

Chain of Custody Seal: (Circle) (INTACT) BROKEN ABSENT

Project Requirements (MRLs, (QAPP))

| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|---|
| | 9/6/2017 | 1230 | | | 9/7/17 | 940 |
| Relinquished by: (Signature) | Date: | Time: | | Received by: (Signature) | Date: | Time: |
| | | | | | | |

Cooler / Blank Temperature 4 °C

0.4°C (CF) 0.6°C

# Login Sample Receipt Checklist

Client: Sundance Consulting, Inc

Job Number: 680-142971-2

**Login Number: 142971**

**List Source: TestAmerica Savannah**

**List Number: 1**

**Creator: Tyler, Matthew M**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Sundance Consulting, Inc.
8210 Louisiana Blvd. NE, Suite C
Albuquerque, NM 87113
ATTN: Ms. Rachel Hobbs

August 22, 2017

SUBJECT: Kirtland AFB, Bulk Fuels Facility, Data Validation

Dear Ms. Hobbs,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 9, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project #39235:**

| SDG # | Fraction |
|---|---|
| 680-141167-1<br>680-141167-2 | Volatiles, Ethylene Dibromide |

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico, April 2016
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, National Functional Guidelines for Superfund Organic Methods Data Review, August 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Chemist

580 pages-SF ERPIMS EDD Qrtly GW Attachment 1

**Level III** **LDC #39235 (Sundance Consulting, Inc., Albuquerque, NM / Kirtland AFB, Bulk Fuels Facilities)** **Project # US01-023**

| LDC | SDG# | DATE REC'D | (3) DATE DUE | BTEX (524.2) | | EDB (504.1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Matrix: | Water/Soil | | | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S |
| A | 680-141167-1 | 08/09/17 | 08/30/17 | 4 | 0 | 4 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | 680-141167-2 | 08/09/17 | 08/30/17 | 1 | 0 | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | J/CR | | | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |

Shaded cells indicate Level IV validation (all other cells are Level III validation). Sample counts do not include MS, MSD's or DUP's.

V:\LOGIN\Sundance\Kirtland AFB\GW\39235ST-GW.wpd

# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** August 16, 2017

**Parameters:** Volatiles

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-141167-1

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17025 | 680-141167-1 | Water | 07/18/17 |
| GW17026 | 680-141167-2 | Water | 07/18/17 |
| GW17027 | 680-141167-3 | Water | 07/18/17 |
| GW17TB07 | 680-141167-5 | Water | 07/18/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample GW17TB07 was identified as a trip blank. No contaminants were found with the following exceptions:

| Blank ID | Collection Date | Compound | Concentration | Associated Samples |
|---|---|---|---|---|
| GW17TB07 | 07/18/17 | Ethylbenzene<br>Toluene<br>Xylenes, total | 0.16 ug/L<br>0.10 ug/L<br>0.40 ug/L | GW17025<br>GW17026<br>GW17027 |

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

**VII. Surrogates**

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

**VIII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

**IX. Laboratory Control Samples**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

**X. Field Duplicates**

Samples GW17025 and GW17026 were identified as field duplicates. No results were detected in any of the samples.

**XI. Internal Standards**

All internal standard areas and retention times were within QC limits.

**XII. Compound Quantitation**

Raw data were not reviewed for Level III validation.

**XIII. Target Compound Identifications**

Raw data were not reviewed for Level III validation.

**XIV. System Performance**

Raw data were not reviewed for Level III validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Data Qualification Summary - SDG 680-141167-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 680-141167-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Field Blank Data Qualification Summary - SDG 680-141167-1**

No Sample Data Qualified in this SDG

LDC #: 39235A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/11/17
SDG #: 680-141167-1 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

**METHOD:** GC/MS Volatiles (BTEX) (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A/A | |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration/ICV | A/A | %D RSD ≤ 20 ICV ≤ 30 |
| IV. | Continuing calibration | A | CCV ≤ 30 |
| V. | Laboratory Blanks | A | |
| VI. | Field blanks | SW | TB = 4 |
| VII. | Surrogate spikes | A | F7 |
| VIII. | Matrix spike/Matrix spike duplicates | NA | ~~insufficient vol~~ 680-141167-4MS/D |
| IX. | Laboratory control samples | A | LCS/D |
| X. | Field duplicates | ND | D = 1,2 |
| XI. | Internal standards | A | |
| XII. | Compound quantitation RL/LOQ/LODs | N | |
| XIII. | Target compound identification | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

| | Client ID | | Lab ID | Matrix | Date |
|---|---|---|---|---|---|
| 1 | GW17025 | D | 680-141167-1 | Water | 07/18/17 |
| 2 | GW17026 | D | 680-141167-2 | Water | 07/18/17 |
| 3 | GW17027 | | 680-141167-3 | Water | 07/18/17 |
| 4 | GW17TB07 | | 680-141167-~~4~~ 5 | Water | 07/18/17 |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |

Notes:

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|---|---|---|---|---|---|---|---|
| | MB 680-489718 | | | | | | |
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# TARGET COMPOUND WORKSHEET

**METHOD: VOA**

| | | | | |
|---|---|---|---|---|
| A. Chloromethane | AA. Tetrachloroethene | AAA. 1,3,5-Trimethylbenzene | AAAA. Ethyl tert-butyl ether | A1. 1,3-Butadiene |
| B. Bromomethane | BB. 1,1,2,2-Tetrachloroethane | BBB. 4-Chlorotoluene | BBBB. tert-Amyl methyl ether | B1. Hexane |
| C. Vinyl choride | CC. Toluene | CCC. tert-Butylbenzene | CCCC. 1-Chlorohexane | C1. Heptane |
| D. Chloroethane | DD. Chlorobenzene | DDD. 1,2,4-Trimethylbenzene | DDDD. Isopropyl alcohol | D1. Propylene |
| E. Methylene chloride | EE. Ethylbenzene | EEE. sec-Butylbenzene | EEEE. Acetonitrile | E1. Freon 11 |
| F. Acetone | FF. Styrene | FFF. 1,3-Dichlorobenzene | FFFF. Acrolein | F1. Freon 12 |
| G. Carbon disulfide | GG. Xylenes, total | GGG. p-Isopropyltoluene | GGGG. Acrylonitrile | G1. Freon 113 |
| H. 1,1-Dichloroethene | HH. Vinyl acetate | HHH. 1,4-Dichlorobenzene | HHHH. 1,4-Dioxane | H1. Freon 114 |
| I. 1,1-Dichloroethane | II. 2-Chloroethylvinyl ether | III. n-Butylbenzene | IIII. Isobutyl alcohol | I1. 2-Nitropropane |
| J. 1,2-Dichloroethene, total | JJ. Dichlorodifluoromethane | JJJ. 1,2-Dichlorobenzene | JJJJ. Methacrylonitrile | J1. Dimethyl disulfide |
| K. Chloroform | KK. Trichlorofluoromethane | KKK. 1,2,4-Trichlorobenzene | KKKK. Propionitrile | K1. 2,3-Dimethyl pentane |
| L. 1,2-Dichloroethane | LL. Methyl-tert-butyl ether | LLL. Hexachlorobutadiene | LLLL. Ethyl ether | L1. 2,4-Dimethyl pentane |
| M. 2-Butanone | MM. 1,2-Dibromo-3-chloropropane | MMM. Naphthalene | MMMM. Benzyl chloride | M1. 3,3-Dimethyl pentane |
| N. 1,1,1-Trichloroethane | NN. Methyl ethyl ketone | NNN. 1,2,3-Trichlorobenzene | NNNN. Iodomethane | N1. 2-Methylpentane |
| O. Carbon tetrachloride | OO. 2,2-Dichloropropane | OOO. 1,3,5-Trichlorobenzene | OOOO.1,1-Difluoroethane | O1. 3-Methylpentane |
| P. Bromodichloromethane | PP. Bromochloromethane | PPP. trans-1,2-Dichloroethene | PPPP. Tetrahydrofuran | P1. 3-Ethylpentane |
| Q. 1,2-Dichloropropane | QQ. 1,1-Dichloropropene | QQQ. cis-1,2-Dichloroethene | QQQQ. Methyl acetate | Q1. 2,2-Dimethylpentane |
| R. cis-1,3-Dichloropropene | RR. Dibromomethane | RRR. m,p-Xylenes | RRRR. Ethyl acetate | R1. 2,2,3- Trimethylbutane |
| S. Trichloroethene | SS. 1,3-Dichloropropane | SSS. o-Xylene | SSSS. Cyclohexane | S1. 2,2,4-Trimethylpentane |
| T. Dibromochloromethane | TT. 1,2-Dibromoethane | TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane | TTTT. Methylcyclohexane | T1. 2-Methylhexane |
| U. 1,1,2-Trichloroethane | UU. 1,1,1,2-Tetrachloroethane | UUU. 1,2-Dichlorotetrafluoroethane | UUUU. Allyl chloride | U1. Nonanal |
| V. Benzene | VV. Isopropylbenzene | VVV. 4-Ethyltoluene | VVVV. Methyl methacrylate | V1. 2-Methylnaphthalene |
| W. trans-1,3-Dichloropropene | WW. Bromobenzene | WWW. Ethanol | WWWW. Ethyl methacrylate | W1. Methanol |
| X. Bromoform | XX. 1,2,3-Trichloropropane | XXX. Di-isopropyl ether | XXXX. cis-1,4-Dichloro-2-butene | X1. 1,2,3-Trimethylbenzene |
| Y. 4-Methyl-2-pentanone | YY. n-Propylbenzene | YYY. tert-Butanol | YYYY. trans-1,4-Dichloro-2-butene | Y1. |
| Z. 2-Hexanone | ZZ. 2-Chlorotoluene | ZZZ. tert-Butyl alcohol | ZZZZ. Pentachloroethane | Z1. |

LDC #: 39235A1

# VALIDATION FINDINGS WORKSHEET
## Field Blanks


Reviewer: FT
2nd Reviewer: G

**METHOD:** GC/MS VOA (EPA Method 524.2)

(Y) N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

**Blank units:** ug/L **Associated sample units:** ug/L
**Sampling date:** 7/18/17
**Field blank type:** (circle one) Field Blank / Rinsate / (Trip Blank) / Other: TB Associated Samples: 173 (ND)

| Compound | Blank ID | Sample Identification | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 4 | | | | | | | | | |
| EE | 0.16 | | | | | | | | | |
| CC | 0.10 | | | | | | | | | |
| GG | 0.40 | | | | | | | | | |
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**Blank units:** _____ **Associated sample units:** _____
**Sampling date:** _____
**Field blank type:** (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

| Compound | Blank ID | Sample Identification | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
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CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** August 16, 2017

**Parameters:** Ethylene Dibromide

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-141167-1

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17025 | 680-141167-1 | Water | 07/18/17 |
| GW17026 | 680-141167-2 | Water | 07/18/17 |
| GW17027 | 680-141167-3 | Water | 07/18/17 |
| GW17TB07 | 680-141167-5 | Water | 07/18/17 |
| GW17026MS | 680-141167-2MS | Water | 07/18/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Ethylene Dibromide by Environmental Protection Agency (EPA) Method 504.1

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

## II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0%.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0%.

## III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0%.

## IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## V. Field Blanks

Sample GW17TB07 was identified as a trip blank. No contaminants were found.

## VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Field Duplicates

Samples GW17025 and GW17026 were identified as field duplicates. No results were detected in any of the samples.

## X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Data Qualification Summary - SDG 680-141167-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Laboratory Blank Data Qualification Summary - SDG 680-141167-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Field Blank Data Qualification Summary - SDG 680-141167-1**

No Sample Data Qualified in this SDG

LDC #: 39235A10 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/11/17
SDG #: 680-141167-1 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: B
2nd Reviewer: C

**METHOD:** GC Ethylene Dibromide (EPA Method 504.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A / A | |
| II. | Initial calibration/ICV | A / A | %D RSD ≤ 20 ICV ≤ 30 |
| III. | Continuing calibration | A | CCV ≤ 30 |
| IV. | Laboratory Blanks | A | |
| V. | Field blanks | ND | TB = 4 |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | A | MS only |
| VIII. | Laboratory control samples | A | LCS / D |
| IX. | Field duplicates | ND | D = 1,2 |
| X. | Compound quantitation RL/LOQ/LODs | N | |
| XI. | Target compound identification | N | |
| XII. | Overall assessment of data | A | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17025 | 680-141167-1 | Water | 07/18/17 |
| 2 | GW17026 | 680-141167-2 | Water | 07/18/17 |
| 3 | GW17027 | 680-141167-3 | Water | 07/18/17 |
| 4 | GW17TB07 | 680-141167-~~4~~ 5 | Water | 07/18/17 |
| 5 | GW17026MS | 680-141167-2MS | Water | 07/18/17 |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |

Notes:

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|---|---|---|---|---|---|---|---|
| | MB 680-48343 | | | | | | |
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# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** August 16, 2017

**Parameters:** Volatiles

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-141167-2

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17028 | 680-141167-4 | Water | 07/18/17 |
| GW17028MS | 680-141167-4MS | Water | 07/18/17 |
| GW17028MSD | 680-141167-4MSD | Water | 07/18/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample GW17TB07 (from SDG 680-141167-1) was identified as a trip blank. No contaminants were found with the following exceptions:

| Blank ID | Collection Date | Compound | Concentration | Associated Samples |
|---|---|---|---|---|
| GW17TB07 | 07/18/17 | Ethylbenzene<br>Toluene<br>Xylenes, total | 0.16 ug/L<br>0.10 ug/L<br>0.40 ug/L | GW17028 |

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

**VII. Surrogates**

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

**VIII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

**IX. Laboratory Control Samples**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

**X. Field Duplicates**

No field duplicates were identified in this SDG.

**XI. Internal Standards**

All internal standard areas and retention times were within QC limits.

**XII. Compound Quantitation**

Raw data were not reviewed for Level III validation.

**XIII. Target Compound Identifications**

Raw data were not reviewed for Level III validation.

**XIV. System Performance**

Raw data were not reviewed for Level III validation.

**XV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Data Qualification Summary - SDG 680-141167-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 680-141167-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Field Blank Data Qualification Summary - SDG 680-141167-2**

No Sample Data Qualified in this SDG

LDC #: 39235B1
SDG #: 680-141167-2
Laboratory: Test America, Inc.

# VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 8/1/17
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

**METHOD:** GC/MS Volatiles (BTEX) (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A / A | |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration/ICV | A / A | %D/RSD ≤ 30 ICV ≤ 30 |
| IV. | Continuing calibration | A | CCV ≤ 30 |
| V. | Laboratory Blanks | A | |
| VI. | Field blanks | SW | TB = GW17TB07 (680-141167-1) |
| VII. | Surrogate spikes | A | |
| VIII. | Matrix spike/Matrix spike duplicates | A | |
| IX. | Laboratory control samples | A | LCS/D |
| X. | Field duplicates | N | |
| XI. | Internal standards | A | |
| XII. | Compound quantitation RL/LOQ/LODs | N | |
| XIII. | Target compound identification | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17028 | 680-141167-4 | Water | 07/18/17 |
| 2 | GW17028MS | 680-141167-4MS | Water | 07/18/17 |
| 3 | GW17028MSD | 680-141167-4MSD | Water | 07/18/17 |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
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Notes:

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|---|---|---|---|---|---|---|---|
| | MB 680-489718 | | | | | | |
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# TARGET COMPOUND WORKSHEET

**METHOD: VOA**

| | | | | |
|---|---|---|---|---|
| A. Chloromethane | AA. Tetrachloroethene | AAA. 1,3,5-Trimethylbenzene | AAAA. Ethyl tert-butyl ether | A1. 1,3-Butadiene |
| B. Bromomethane | BB. 1,1,2,2-Tetrachloroethane | BBB. 4-Chlorotoluene | BBBB. tert-Amyl methyl ether | B1. Hexane |
| C. Vinyl choride | CC. Toluene | CCC. tert-Butylbenzene | CCCC. 1-Chlorohexane | C1. Heptane |
| D. Chloroethane | DD. Chlorobenzene | DDD. 1,2,4-Trimethylbenzene | DDDD. Isopropyl alcohol | D1. Propylene |
| E. Methylene chloride | EE. Ethylbenzene | EEE. sec-Butylbenzene | EEEE. Acetonitrile | E1. Freon 11 |
| F. Acetone | FF. Styrene | FFF. 1,3-Dichlorobenzene | FFFF. Acrolein | F1. Freon 12 |
| G. Carbon disulfide | GG. Xylenes, total | GGG. p-Isopropyltoluene | GGGG. Acrylonitrile | G1. Freon 113 |
| H. 1,1-Dichloroethene | HH. Vinyl acetate | HHH. 1,4-Dichlorobenzene | HHHH. 1,4-Dioxane | H1. Freon 114 |
| I. 1,1-Dichloroethane | II. 2-Chloroethylvinyl ether | III. n-Butylbenzene | IIII. Isobutyl alcohol | I1. 2-Nitropropane |
| J. 1,2-Dichloroethene, total | JJ. Dichlorodifluoromethane | JJJ. 1,2-Dichlorobenzene | JJJJ. Methacrylonitrile | J1. Dimethyl disulfide |
| K. Chloroform | KK. Trichlorofluoromethane | KKK. 1,2,4-Trichlorobenzene | KKKK. Propionitrile | K1. 2,3-Dimethyl pentane |
| L. 1,2-Dichloroethane | LL. Methyl-tert-butyl ether | LLL. Hexachlorobutadiene | LLLL. Ethyl ether | L1. 2,4-Dimethyl pentane |
| M. 2-Butanone | MM. 1,2-Dibromo-3-chloropropane | MMM. Naphthalene | MMMM. Benzyl chloride | M1. 3,3-Dimethyl pentane |
| N. 1,1,1-Trichloroethane | NN. Methyl ethyl ketone | NNN. 1,2,3-Trichlorobenzene | NNNN. Iodomethane | N1. 2-Methylpentane |
| O. Carbon tetrachloride | OO. 2,2-Dichloropropane | OOO. 1,3,5-Trichlorobenzene | OOOO.1,1-Difluoroethane | O1. 3-Methylpentane |
| P. Bromodichloromethane | PP. Bromochloromethane | PPP. trans-1,2-Dichloroethene | PPPP. Tetrahydrofuran | P1. 3-Ethylpentane |
| Q. 1,2-Dichloropropane | QQ. 1,1-Dichloropropene | QQQ. cis-1,2-Dichloroethene | QQQQ. Methyl acetate | Q1. 2,2-Dimethylpentane |
| R. cis-1,3-Dichloropropene | RR. Dibromomethane | RRR. m,p-Xylenes | RRRR. Ethyl acetate | R1. 2,2,3- Trimethylbutane |
| S. Trichloroethene | SS. 1,3-Dichloropropane | SSS. o-Xylene | SSSS. Cyclohexane | S1. 2,2,4-Trimethylpentane |
| T. Dibromochloromethane | TT. 1,2-Dibromoethane | TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane | TTTT. Methylcyclohexane | T1. 2-Methylhexane |
| U. 1,1,2-Trichloroethane | UU. 1,1,1,2-Tetrachloroethane | UUU. 1,2-Dichlorotetrafluoroethane | UUUU. Allyl chloride | U1. Nonanal |
| V. Benzene | VV. Isopropylbenzene | VVV. 4-Ethyltoluene | VVVV. Methyl methacrylate | V1. 2-Methylnaphthalene |
| W. trans-1,3-Dichloropropene | WW. Bromobenzene | WWW. Ethanol | WWWW. Ethyl methacrylate | W1. Methanol |
| X. Bromoform | XX. 1,2,3-Trichloropropane | XXX. Di-isopropyl ether | XXXX. cis-1,4-Dichloro-2-butene | X1. 1,2,3-Trimethylbenzene |
| Y. 4-Methyl-2-pentanone | YY. n-Propylbenzene | YYY. tert-Butanol | YYYY. trans-1,4-Dichloro-2-butene | Y1. |
| Z. 2-Hexanone | ZZ. 2-Chlorotoluene | ZZZ. tert-Butyl alcohol | ZZZZ. Pentachloroethane | Z1. |

LDC #: 39235B1

# VALIDATION FINDINGS WORKSHEET
## Field Blanks


Reviewer: FT
2nd Reviewer: a

**METHOD:** GC/MS VOA (EPA Method 524.2)

TB = GW17TB07

(Y) N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

**Blank units:** ug/L **Associated sample units:** ug/L
**Sampling date:** 7/18/17
**Field blank type:** (circle one) Field Blank / Rinsate / Trip Blank / Other: TB Associated Samples: 1 (ND)

| Compound | Blank ID | Sample Identification | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TB | | | | | | | | | |
| EE | 0.16 | | | | | | | | | |
| CC | 0.10 | | | | | | | | | |
| GG | 0.40 | | | | | | | | | |
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**Blank units:** _____ **Associated sample units:** _____
**Sampling date:** _____
**Field blank type:** (circle one) Field Blank / Rinsate / Trip Blank / Other: _____ Associated Samples: _____

| Compound | Blank ID | Sample Identification | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
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CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** August 16, 2017

**Parameters:** Ethylene Dibromide

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-141167-2

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17028 | 680-141167-4 | Water | 07/18/17 |
| GW17028MS | 680-141167-4MS | Water | 07/18/17 |
| GW17028MSD | 680-141167-4MSD | Water | 07/18/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Ethylene Dibromide by Environmental Protection Agency (EPA) Method 504.1

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

## II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0%.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0%.

## III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0%.

## IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## V. Field Blanks

Sample GW17TB07 (from SDG 680-141167-1) was identified as a trip blank. No contaminants were found.

## VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

## X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Data Qualification Summary - SDG 680-141167-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Laboratory Blank Data Qualification Summary - SDG 680-141167-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Field Blank Data Qualification Summary - SDG 680-141167-2**

No Sample Data Qualified in this SDG

LDC #: 39235B10 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/11/17
SDG #: 680-141167-2 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

**METHOD:** GC Ethylene Dibromide (EPA Method 504.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A / A | |
| II. | Initial calibration/ICV | A / A | %RSD ≤ 20 ICV ≤ 30 |
| III. | Continuing calibration | A | CCV ≤ 30 |
| IV. | Laboratory Blanks | A | |
| V. | Field blanks | ND | TB- GW17TB07 (680-141167-1) |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | A | |
| VIII. | Laboratory control samples | A | LCS ID |
| IX. | Field duplicates | N | |
| X. | Compound quantitation RL/LOQ/LODs | N | |
| XI. | Target compound identification | N | |
| XII | Overall assessment of data | A | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17028 | 680-141167-4 | Water | 07/18/17 |
| 2 | GW17028MS | 680-141167-4MS | Water | 07/18/17 |
| 3 | GW17028MSD | 680-141167-4MSD | Water | 07/18/17 |
| 4 | | | | |
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Notes:

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|---|---|---|---|---|---|---|---|
| | MB 680-488343 | | | | | | |
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LDC #: 39235

# EDD POPULATION COMPLETENESS WORKSHEET

Date: 8/21/17
Page: 1 of 1
2nd Reviewer: JE

The LDC job number listed above was entered by KK.

| | EDD Process | | Comments/Action |
|---|---|---|---|
| I. | EDD Completeness | - | |
| Ia. | - All methods present? | Y | |
| Ib. | - All samples present/match report? | Y | |
| Ic. | - All reported analytes present? | Y | |
| Id. | -10% or 100% verification of EDD? | Y | |
| | | | |
| II. | EDD Preparation/Entry | - | |
| IIa. | - Carryover U/J? | Y | |
| IIb. | - Reason Codes used? If so, note which codes | Y | NFG. |
| IIc. | -Additional Information (QC Level, Validator, Date, Validated Y/N, etc.) | N | |
| | | | |
| III. | Reasonableness Checks | - | |
| IIIa. | - Do all qualified ND results have ND qualifier (i.e. UJ)? | — | |
| IIIb. | - Do all qualified detect results have detect qualifier (i.e. J)? | — | |
| IIIc. | - If reason codes used, do all qualified results have reason code field populated? | — | |
| IIId. | -Does the detect flag require changing for blank qualifiers? If so, are all U results marked ND? | Y / — | |
| IIIe. | - Do blank concentrations in report match EDD, where data was qualified due to blank? | — | |
| IIIf. | - Were any results rejected for overall assessment? If so, were results changed to nonreportable? | N / — | |
| IIIg. | - Is the readme complete? If applicable, were edits or discrepancies listed in the readme? | Y | |

Notes: No Quals

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Sundance Consulting, Inc.
8210 Louisiana Blvd. NE, Suite C
Albuquerque, NM 87113
ATTN: Ms. Rachel Hobbs

August 25, 2017

SUBJECT: Kirtland AFB, Bulk Fuels Facility, Data Validation

Dear Ms. Hobbs,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project #39265:**

| SDG # | Fraction |
|---|---|
| 680-141929-1, 680-141929-2 | Volatiles, Ethylene Dibromide |

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico, April 2016
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, National Functional Guidelines for Superfund Organic Methods Data Review, August 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Chemist

547 pages-ADV ERPIMS EDD Qrtly GW Attachment 1

**Level III** **LDC #39265 (Sundance Consulting, Inc., Albuquerque, NM / Kirtland AFB, Bulk Fuels Facilities)** **Project # US01-023**

| LDC | SDG# | DATE REC'D | (3) DATE DUE | BTEX (524.2) | | EDB (504.1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Matrix: | Water/Soil | | | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S |
| A | 680-141929-1 | 08/15/17 | 09/05/17 | 3 | 0 | 3 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | 680-141929-2 | 08/15/17 | 09/05/17 | 2 | 0 | 2 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | J/CR | | | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |

Shaded cells indicate Level IV validation (all other cells are Level III validation). Sample counts do not include MS, MSD's or DUP's.

V:\LOGIN\Sundance\Kirtland AFB\GW\39265ST-GW.wpd

# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** August 24, 2017

**Parameters:** Volatiles

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-141929-1

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17029 | 680-141929-1 | Water | 08/08/17 |
| GW17030 | 680-141929-2 | Water | 08/08/17 |
| GW17TB08 | 680-141929-5 | Water | 08/08/17 |
| GW17029MS | 680-141929-1MS | Water | 08/08/17 |
| GW17029MSD | 680-141929-1MSD | Water | 08/08/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample GW17TB08 was identified as a trip blank. No contaminants were found.

## VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## X. Field Duplicates

No field duplicates were identified in this SDG.

## XI. Internal Standards

All internal standard areas and retention times were within QC limits.

## XII. Compound Quantitation

Raw data were not reviewed for Level III validation.

## XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

## XIV. System Performance

Raw data were not reviewed for Level III validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Data Qualification Summary - SDG 680-141929-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 680-141929-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Field Blank Data Qualification Summary - SDG 680-141929-1**

No Sample Data Qualified in this SDG

LDC #: 39265A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/22/17
SDG #: 680-141929-1 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: SV6
2nd Reviewer: C

**METHOD:** GC/MS Volatiles (BTEX) (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A/A | |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration/ICV | A/A | ICAL ≤ 20 %, ICV ≤ 30 % |
| IV. | Continuing calibration | A | CCV ≤ 30 % |
| V. | Laboratory Blanks | A | |
| VI. | Field blanks | ND | TB = 3 |
| VII. | Surrogate spikes | A | |
| VIII. | Matrix spike/Matrix spike duplicates | A | |
| IX. | Laboratory control samples | A | LCS/D |
| X. | Field duplicates | N | |
| XI. | Internal standards | A | |
| XII. | Compound quantitation RL/LOQ/LODs | N | |
| XIII. | Target compound identification | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17029 | 680-141929-1 | Water | 08/08/17 |
| 2 | GW17030 | 680-141929-2 | Water | 08/08/17 |
| 3 | GW17TB08 | 680-141929-5 | Water | 08/08/17 |
| 4 | GW17029MS | 680-141929-1MS | Water | 08/08/17 |
| 5 | GW17029MSD | 680-141929-1MSD | Water | 08/08/17 |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |

Notes:

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|---|---|---|---|---|---|---|---|
| - | MB 680-491089/9 | | | | | | |
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# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** August 24, 2017

**Parameters:** Ethylene Dibromide

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-141929-1

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17029 | 680-141929-1 | Water | 08/08/17 |
| GW17030 | 680-141929-2 | Water | 08/08/17 |
| GW17TB08 | 680-141929-5 | Water | 08/08/17 |
| GW17029MS | 680-141929-1MS | Water | 08/08/17 |
| GW17029MSD | 680-141929-1MSD | Water | 08/08/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Ethylene Dibromide by Environmental Protection Agency (EPA) Method 504.1

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

## II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0%.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0%.

## III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0%.

## IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## V. Field Blanks

Sample GW17TB08 was identified as a trip blank. No contaminants were found.

## VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

| Sample | Surrogate | %R (Limits) | Affected Compound | Flag | A or P |
|---|---|---|---|---|---|
| GW17030 | Pentachloroethane | 132 (70-130) | All compounds | NA | - |

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

## X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Data Qualification Summary - SDG 680-141929-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Laboratory Blank Data Qualification Summary - SDG 680-141929-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Field Blank Data Qualification Summary - SDG 680-141929-1**

No Sample Data Qualified in this SDG

LDC #: 39265A10 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/22/17
SDG #: 680-141929-1 Level III Page: 1 of
Laboratory: Test America, Inc. Reviewer: JVG
2nd Reviewer:

**METHOD:** GC Ethylene Dibromide (EPA Method 504.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A / A | |
| II. | Initial calibration/ICV | A / A | ICAL ≤ 20 % ICV ≤ 30 % |
| III. | Continuing calibration | A | CCV ≤ 30 % |
| IV. | Laboratory Blanks | A | |
| V. | Field blanks | ND | TB = 3 |
| VI. | Surrogate spikes | SW | |
| VII. | Matrix spike/Matrix spike duplicates | A | |
| VIII. | Laboratory control samples | A | LCS / D |
| IX. | Field duplicates | N | |
| X. | Compound quantitation RL/LOQ/LODs | N | |
| XI. | Target compound identification | N | |
| XII | Overall assessment of data | A | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17029 | 680-141929-1 | Water | 08/08/17 |
| 2 | GW17030 | 680-141929-2 | Water | 08/08/17 |
| 3 | GW17TB08 | 680-141929-5 | Water | 08/08/17 |
| 4 | GW17029MS | 680-141929-1MS | Water | 08/08/17 |
| 5 | GW17029MSD | 680-141929-1MSD | Water | 08/08/17 |
| 6 | | | | |
| 7 | | | | |
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Notes:

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|---|---|---|---|---|---|---|---|
| | MB 680-491214/3-A | | | | | | |
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LDC #: 39265A10

# VALIDATION FINDINDS WORKSHEET
## Surrogate Recovery

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: Q

**METHOD:** / GC __ HPLC
Are surrogates required by the method? Yes / or No____.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were surrogates spiked into all samples and blanks?
Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

| # | Sample ID | Detector/ Column | Surrogate Compound | %R (Limits) | Qualifications |
|---|---|---|---|---|---|
| | 2 (ND) | | Pentachloroethane | 132 ( 70-130 ) | J+ dets / P |
| | | | | ( ) | |
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| | Surrogate Compound | | Surrogate Compound | | Surrogate Compound | | Surrogate Compound | | Surrogate Compound |
|---|---|---|---|---|---|---|---|---|---|
| A | Chlorobenzene (CBZ) | H | Ortho-Terphenyl | O | Decachlorobiphenyl (DCB) | V | Tri-n-propyltin | CC | 2,5-Dibromotoluene |
| B | 4-Bromofluorobenzene (BFB) | I | Fluorobenzene (FBZ) | P | 1-methylnaphthalene | W | Tributyl Phosphate | DD | n-Nonatriacontane |
| C | a,a,a-Trifluorotoluene | J | n-Triacontane | Q | Dichlorophenyl Acetic Acid (DCAA) | X | Triphenyl Phosphate | EE | 1,2-Dibromopropane |
| D | Bromochlorobenene | K | Hexacosane | R | 4-Nitrophenol | Y | Tetrachloro-m- xylene | FF | 1,2-Dinitrobenzene |
| E | 1,4-Dichlorobutane | L | Bromobenzene | S | 1-Chloro-3-Nitrobenzene | Z | 2-Bromonaphthalene | GG | 2-Nitro-m-xylene |
| F | 1,4-Difluorobenzene (DFB) | M | Benzo(e)Pyrene | T | 3,4-Dinitrotoluene | AA | 1-Chlorooctadecane | HH | p-Terphenyl |
| G | Octacosane | N | Terphenyl-D14 | U | Tripentyltin | BB | 2,4-Dichlorophenylacetic acid | II | |

# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** August 24, 2017

**Parameters:** Volatiles

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-141929-2

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17031 | 680-141929-3 | Water | 08/08/17 |
| GW17032 | 680-141929-4 | Water | 08/08/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample GW17TB08 (from SDG 680-141929-1) was identified as a trip blank. No contaminants were found.

## VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## X. Field Duplicates

Samples GW17031and GW17032 were identified as field duplicates. No results were detected in any of the samples.

## XI. Internal Standards

All internal standard areas and retention times were within QC limits.

## XII. Compound Quantitation

Raw data were not reviewed for Level III validation.

## XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

## XIV. System Performance

Raw data were not reviewed for Level III validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Data Qualification Summary - SDG 680-141929-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 680-141929-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Field Blank Data Qualification Summary - SDG 680-141929-2**

No Sample Data Qualified in this SDG

LDC #: 39265B1 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/22/17
SDG #: 680-141929-2 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: JVG
2nd Reviewer: ~

**METHOD:** GC/MS Volatiles (BTEX) (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A / A | |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration/ICV | A / A | ICAL ≤ 20%. ICV ≤ 30% |
| IV. | Continuing calibration | A | CCV ≤ 30% |
| V. | Laboratory Blanks | A | |
| VI. | Field blanks | ND | TB = GW17TB08 ( from 680-141929-1) |
| VII. | Surrogate spikes | A | |
| VIII. | Matrix spike/Matrix spike duplicates | ~~A~~ | GW17029 |
| IX. | Laboratory control samples | A | LCS / D |
| X. | Field duplicates | ND | D = 1/2 |
| XI. | Internal standards | A | |
| XII. | Compound quantitation RL/LOQ/LODs | N | |
| XIII. | Target compound identification | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17031 | 680-141929-3 | Water | 08/08/17 |
| 2 | GW17032 | 680-141929-4 | Water | 08/08/17 |
| 3 | | | | |
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Notes:

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| - | TB 680-491089/9 | | | | | | |
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# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** August 24, 2017

**Parameters:** Ethylene Dibromide

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-141929-2

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17031 | 680-141929-3 | Water | 08/08/17 |
| GW17032 | 680-141929-4 | Water | 08/08/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Ethylene Dibromide by Environmental Protection Agency (EPA) Method 504.1

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

## II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0%.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0%.

## III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0%.

## IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## V. Field Blanks

Sample GW17TB08 (from SDG 680-141929-1) was identified as a trip blank. No contaminants were found.

## VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

| Sample | Surrogate | %R (Limits) | Affected Compound | Flag | A or P |
|---|---|---|---|---|---|
| GW17031 | Pentachloroethane | 136 (70-130) | All compounds | NA | - |

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Field Duplicates

Samples GW17031and GW17032 were identified as field duplicates. No results were detected in any of the samples.

## X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Data Qualification Summary - SDG 680-141929-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Laboratory Blank Data Qualification Summary - SDG 680-141929-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Field Blank Data Qualification Summary - SDG 680-141929-2**

No Sample Data Qualified in this SDG

LDC #: 39265B10 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/22/17

SDG #: 680-141929-2 Level III Page: 1 of 1

Laboratory: Test America, Inc. Reviewer: SVG

2nd Reviewer: [signature]

**METHOD:** GC Ethylene Dibromide (EPA Method 504.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A / A | |
| II. | Initial calibration/ICV | A / A | ICAL ≤ 20 % ICV ≤ 30 % |
| III. | Continuing calibration | A | CCV ≤ 30 % |
| IV. | Laboratory Blanks | A | |
| V. | Field blanks | ND | TB = GW17TB08 ( from 680-141929-1 ) |
| VI. | Surrogate spikes | SW | |
| VII. | Matrix spike/Matrix spike duplicates | A | GW17029 |
| VIII. | Laboratory control samples | A | LCS/D |
| IX. | Field duplicates | ND | D = 1/2 |
| X. | Compound quantitation RL/LOQ/LODs | N | |
| XI. | Target compound identification | N | |
| XII. | Overall assessment of data | A | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17031 | 680-141929-3 | Water | 08/08/17 |
| 2 | GW17032 | 680-141929-4 | Water | 08/08/17 |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
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Notes:

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|---|---|---|---|---|---|---|---|
| | MB 680-491214/3-A | | | | | | |
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LDC #: 89265 B10

# VALIDATION FINDINDS WORKSHEET
## Surrogate Recovery

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: a

**METHOD:** __GC __ HPLC

Are surrogates required by the method? Yes / or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

| # | Sample ID | Detector/ Column | Surrogate Compound | %R (Limits) | Qualifications |
|---|---|---|---|---|---|
| | 1 (ND) | | Pentachloroethane | 136 ( 70-130 ) | J+ dets / p |
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| | Surrogate Compound | | Surrogate Compound | | Surrogate Compound | | Surrogate Compound | | Surrogate Compound |
|---|---|---|---|---|---|---|---|---|---|
| A | Chlorobenzene (CBZ) | H | Ortho-Terphenyl | O | Decachlorobiphenyl (DCB) | V | Tri-n-propyltin | CC | 2,5-Dibromotoluene |
| B | 4-Bromofluorobenzene (BFB) | I | Fluorobenzene (FBZ) | P | 1-methylnaphthalene | W | Tributyl Phosphate | DD | n-Nonatriacontane |
| C | a,a,a-Trifluorotoluene | J | n-Triacontane | Q | Dichlorophenyl Acetic Acid (DCAA) | X | Triphenyl Phosphate | EE | 1,2-Dibromopropane |
| D | Bromochlorobenene | K | Hexacosane | R | 4-Nitrophenol | Y | Tetrachloro-m- xylene | FF | 1,2-Dinitrobenzene |
| E | 1,4-Dichlorobutane | L | Bromobenzene | S | 1-Chloro-3-Nitrobenzene | Z | 2-Bromonaphthalene | GG | 2-Nitro-m-xylene |
| F | 1,4-Difluorobenzene (DFB) | M | Benzo(e)Pyrene | T | 3,4-Dinitrotoluene | AA | 1-Chlorooctadecane | HH | p-Terphenyl |
| G | Octacosane | N | Terphenyl-D14 | U | Tripentyltin | BB | 2,4-Dichlorophenylacetic acid | II | |

LDC #: 39265

# EDD POPULATION COMPLETENESS WORKSHEET

Date: 8/24/17



2nd Reviewer: AG

The LDC job number listed above was entered by KK.

| | EDD Process | | Comments/Action |
|---|---|---|---|
| I. | EDD Completeness | - | |
| Ia. | - All methods present? | Y | |
| Ib. | - All samples present/match report? | Y | |
| Ic. | - All reported analytes present? | Y | |
| Id. | -10% or 100% verification of EDD? | Y | |
| | | | |
| II. | EDD Preparation/Entry | - | |
| IIa. | - Carryover U/J? | Y | |
| IIb. | - Reason Codes used? If so, note which codes | Y | LDC |
| IIc. | -Additional Information (QC Level, Validator, Date, Validated Y/N, etc.) | SN | |
| | | | |
| III. | Reasonableness Checks | - | |
| IIIa. | - Do all qualified ND results have ND qualifier (i.e. UJ)? | NA | |
| IIIb. | - Do all qualified detect results have detect qualifier (i.e. J)? | NA | |
| IIIc. | - If reason codes used, do all qualified results have reason code field populated? | NA | |
| IIId. | -Does the detect flag require changing for blank qualifiers? If so, are all U results marked ND? | Y / - | |
| IIIe. | - Do blank concentrations in report match EDD, where data was qualified due to blank? | NA | |
| IIIf. | - Were any results rejected for overall assessment? If so, were results changed to nonreportable? | N / - | |
| IIIg. | - Is the readme complete? If applicable, were edits or discrepancies listed in the readme? | - | |

Notes: No Quals

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Sundance Consulting, Inc.
8210 Louisiana Blvd. NE, Suite C
Albuquerque, NM 87113
ATTN: Ms. Rachel Hobbs

October 11, 2017

SUBJECT: Kirtland AFB, Bulk Fuels Facility, Data Validation

Dear Ms. Hobbs,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 20, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project #39484:**

| SDG # | Fraction |
|---|---|
| 680-142971-1, 680-142971-2 | Volatiles, Ethylene Dibromide |

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico, April 2016
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, National Functional Guidelines for Superfund Organic Methods Data Review, August 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Chemist

583 pages-ADV ERPIMS EDD Qrtly GW Attachment 1

**Level III** **LDC #39484 (Sundance Consulting, Inc., Albuquerque, NM / Kirtland AFB, Bulk Fuels Facilities)** **Project # US01-023**

| LDC | SDG# | DATE REC'D | (3) DATE DUE | BTEX (524.2) | | EDB (504.1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Matrix: | Water/Soil | | | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S |
| A | 680-142971-1 | 09/20/17 | 10/11/17 | 5 | 0 | 5 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | 680-142971-2 | 09/20/17 | 10/11/17 | 1 | 0 | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | J/CR | | | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |

Shaded cells indicate Level IV validation (all other cells are Level III validation). Sample counts do not include MS, MSD's or DUP's.

V:\LOGIN\Sundance\Kirtland AFB\GW\39484ST-GW.wpd

# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** October 9, 2017

**Parameters:** Volatiles

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-142971-1

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17033 | 680-142971-1 | Water | 09/06/17 |
| GW17034 | 680-142971-2 | Water | 09/06/17 |
| GW17035 | 680-142971-3 | Water | 09/06/17 |
| GW17036 | 680-142971-4 | Water | 09/06/17 |
| GW17TB09 | 680-142971-6 | Water | 09/06/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample GW17TB09 was identified as a trip blank. No contaminants were found.

## VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## X. Field Duplicates

Samples GW17034 and GW17035 were identified as field duplicates. No results were detected in any of the samples.

## XI. Internal Standards

All internal standard areas and retention times were within QC limits.

## XII. Compound Quantitation

Raw data were not reviewed for Level III validation.

## XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

## XIV. System Performance

Raw data were not reviewed for Level III validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Data Qualification Summary - SDG 680-142971-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 680-142971-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Field Blank Data Qualification Summary - SDG 680-142971-1**

No Sample Data Qualified in this SDG

LDC #: 39484A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/6/17
SDG #: 680-142971 -1 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: F-7
2nd Reviewer:

**METHOD:** GC/MS Volatiles (BTEX) (EPA Method 524.2)
BTEX

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A /A | |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration/ICV | A/A | %D RSD ≤ 20 ICV ≤ 30 |
| IV. | Continuing calibration | A | CCV ≤ 30 |
| V. | Laboratory Blanks | A | |
| VI. | Field blanks | ND | TB = 5 |
| VII. | Surrogate spikes | A | |
| VIII. | Matrix spike/Matrix spike duplicates | A | 680-142972-5 MS/MSD |
| IX. | Laboratory control samples | A | LCS/D |
| X. | Field duplicates | ND | D = 2, 3 |
| XI. | Internal standards | A | |
| XII. | Compound quantitation RL/LOQ/LODs | N | |
| XIII. | Target compound identification | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17033 | 680-142971-1 | Water | 09/06/17 |
| 2 | GW17034 | 680-142971-2 | Water | 09/06/17 |
| 3 | GW17035 | 680-142971-3 | Water | 09/06/17 |
| 4 | GW17036 | 680-142971-4 | Water | 09/06/17 |
| 5 | GW17TB09 | 680-142971-6 | Water | 09/06/17 |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |

Notes:

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|---|---|---|---|---|---|---|---|
| | MB 680-494602 | | | | | | |
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# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** October 9, 2017

**Parameters:** Ethylene Dibromide

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-142971-1

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17033 | 680-142971-1 | Water | 09/06/17 |
| GW17034 | 680-142971-2 | Water | 09/06/17 |
| GW17035 | 680-142971-3 | Water | 09/06/17 |
| GW17036 | 680-142971-4 | Water | 09/06/17 |
| GW17TB09 | 680-142971-6 | Water | 09/06/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Ethylene Dibromide by Environmental Protection Agency (EPA) Method 504.1

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

## II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0%.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0%.

## III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0%.

## IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## V. Field Blanks

Sample GW17TB09 was identified as a trip blank. No contaminants were found.

## VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

| Sample | Surrogate | %R (Limits) | Affected Compound | Flag | A or P |
|---|---|---|---|---|---|
| GW17TB09 | Pentachloroethane | 132 (70-130) | All compounds | NA | - |

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Field Duplicates

Samples GW17034 and GW17035 were identified as field duplicates. No results were detected in any of the samples.

## X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Data Qualification Summary - SDG 680-142971-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Laboratory Blank Data Qualification Summary - SDG 680-142971-1**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Field Blank Data Qualification Summary - SDG 680-142971-1**

No Sample Data Qualified in this SDG

LDC #: 39484A10 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/6/17
SDG #: 680-142971-1 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: EF
2nd Reviewer: MT

**METHOD:** GC Ethylene Dibromide (EPA Method 504.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A / A | |
| II. | Initial calibration/ICV | A / A | √², %RSD=20 ICV ≤30 |
| III. | Continuing calibration | A | CCV ≤30 |
| IV. | Laboratory Blanks | A | |
| V. | Field blanks | ND | TB = 5 |
| VI. | Surrogate spikes | SW | |
| VII. | Matrix spike/Matrix spike duplicates | A | 680-142972-5 MS/D |
| VIII. | Laboratory control samples | A | LCS/D |
| IX. | Field duplicates | ND | D = 3, 3 |
| X. | Compound quantitation RL/LOQ/LODs | N | |
| XI. | Target compound identification | N | |
| XII. | Overall assessment of data | A | |

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17033 | 680-142971-1 | Water | 09/06/17 |
| 2 | GW17034 | 680-142971-2 | Water | 09/06/17 |
| 3 | GW17035 | 680-142971-3 | Water | 09/06/17 |
| 4 | GW17036 | 680-142971-4 | Water | 09/06/17 |
| 5 | GW17TB09 | 680-142971-6 | Water | 09/06/17 |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |

Notes:

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|---|---|---|---|---|---|---|
| | MB 680-494524 | | | | | |
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LDC #: 39484A10

# VALIDATION FINDINDS WORKSHEET
## Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

**METHOD:** V **GC** ___ **HPLC**

Are surrogates required by the method? Yes___ or No___.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

| # | Sample ID | Detector/ Column | Surrogate Compound | %R (Limits) | Qualifications |
|---|---|---|---|---|---|
| | 5 | cLP 1 | Pentachloroethane | 132 ( 70-130 ) | J+ all/P ND |
| | | | | ( ) | |
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| | Surrogate Compound | | Surrogate Compound | | Surrogate Compound | | Surrogate Compound | | |
|---|---|---|---|---|---|---|---|---|---|
| A | Chlorobenzene (CBZ) | G | Octacosane | M | Benzo(e)Pyrene | S | 1-Chloro-3-Nitrobenzene | Y | Tetrachloro-m- xylene |
| B | 4-Bromofluorobenzene (BFB) | H | Ortho-Terphenyl | N | Terphenyl-D14 | T | 3,4-Dinitrotoluene | Z | 2-Bromonaphthalene |
| C` | a,a,a-Trifluorotoluene | I | Fluorobenzene (FBZ) | O | Decachlorobiphenyl (DCB) | U | Tripentyltin | AA | Chloro-octadecane |
| D | Bromochlorobenene | J | n-Triacontane | P | 1-methylnaphthalene | V | Tri-n-propyltin | BB | 2,4-Dichlorophenylacetic acid |
| E | 1,4-Dichlorobutane | K | Hexacosane | Q | Dichlorophenyl Acetic Acid (DCAA) | W | Tributyl Phosphate | CC | 2,5-Dibromotoluene |
| F | 1,4-Difluorobenzene (DFB) | L | Bromobenzene | R | 4-Nitrophenol | X | Triphenyl Phosphate | | |

# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** October 9, 2017

**Parameters:** Volatiles

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-142971-2

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17037 | 680-142972-5 | Water | 09/06/17 |
| GW17037MS | 680-142972-5MS | Water | 09/06/17 |
| GW17037MSD | 680-142972-5MSD | Water | 09/06/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 524.2

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample GW17TB09 (from SDG 680-142971-1) was identified as a trip blank. No contaminants were found.

## VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## X. Field Duplicates

No field blanks were identified in this SDG.

## XI. Internal Standards

All internal standard areas and retention times were within QC limits.

## XII. Compound Quantitation

Raw data were not reviewed for Level III validation.

## XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

## XIV. System Performance

Raw data were not reviewed for Level III validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Data Qualification Summary - SDG 680-142971-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 680-142971-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Volatiles - Field Blank Data Qualification Summary - SDG 680-142971-2**

No Sample Data Qualified in this SDG

LDC #: 39484B1 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/6/17
SDG #: 680-142971 -2 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: KF
2nd Reviewer: KK

**METHOD:** GC/MS Volatiles (BTEX) (EPA Method 524.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A/A | |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration/ICV | A/A | |
| IV. | Continuing calibration | A | |
| V. | Laboratory Blanks | A | |
| VI. | Field blanks | ND | TB = GW17TB09 (SDG 680-142971-1) |
| VII. | Surrogate spikes | A | |
| VIII. | Matrix spike/Matrix spike duplicates | A | |
| IX. | Laboratory control samples | A | LCS/D |
| X. | Field duplicates | N | |
| XI. | Internal standards | A | |
| XII. | Compound quantitation RL/LOQ/LODs | N | |
| XIII. | Target compound identification | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17037 | 680-142972-5 | Water | 09/06/17 |
| 2 | GW17037MS | 680-142972-5MS | Water | 09/06/17 |
| 3 | GW17037MSD | 680-142972-5MSD | Water | 09/06/17 |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |

Notes:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | MB 680-494602 | | | | | | |
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| | | | | | | | |
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# Laboratory Data Consultants, Inc.
# Data Validation Report

**Project/Site Name:** Kirtland AFB, Bulk Fuels Facility

**LDC Report Date:** October 9, 2017

**Parameters:** Ethylene Dibromide

**Validation Level:** Level III

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 680-142971-2

| Sample Identification | Laboratory Sample Identification | Matrix | Collection Date |
|---|---|---|---|
| GW17037 | 680-142972-5 | Water | 09/06/17 |
| GW17037MS | 680-142972-5MS | Water | 09/06/17 |
| GW17037MSD | 680-142972-5MSD | Water | 09/06/17 |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for the Quarterly Soil Vapor Monitoring and Monthly Drinking Water Monitoring Bulk Fuels Facility Spill Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico (April 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Ethylene Dibromide by Environmental Protection Agency (EPA) Method 504.1

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J+ (Estimated, High Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.

J- (Estimated, Low Bias): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.

J (Estimated, Bias Indeterminate): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

## II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 20.0%

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ($r^2$) were greater than or equal to 0.990.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0%.

## III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0%.

## IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## V. Field Blanks

Sample GW17TB09 (from SDG 680-142971-1) was identified as a trip blank. No contaminants were found.

## VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

## X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Data Qualification Summary - SDG 680-142971-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Laboratory Blank Data Qualification Summary - SDG 680-142971-2**

No Sample Data Qualified in this SDG

**Kirtland AFB, Bulk Fuels Facility**
**Ethylene Dibromide - Field Blank Data Qualification Summary - SDG 680-142971-2**

No Sample Data Qualified in this SDG

LDC #: 39484B10 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/6/17
SDG #: 680-142971-2 Level III Page: 1 of 1
Laboratory: Test America, Inc. Reviewer: KF
2nd Reviewer: KF

**METHOD:** GC Ethylene Dibromide (EPA Method 504.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Sample receipt/Technical holding times | A / A | |
| II. | Initial calibration/ICV | A / A | %RSD, r² ≤ 20 ICV ≤ 30 |
| III. | Continuing calibration | A | CCV ≤ 30 |
| IV. | Laboratory Blanks | A | |
| V. | Field blanks | ND | TB= GW17TB09 (680-142971-1) |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | A | |
| VIII. | Laboratory control samples | A | LCS ID |
| IX. | Field duplicates | N | |
| X. | Compound quantitation RL/LOQ/LODs | N | |
| XI. | Target compound identification | N | |
| XII. | Overall assessment of data | A | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

| | Client ID | Lab ID | Matrix | Date |
|---|---|---|---|---|
| 1 | GW17037 | 680-142972-5 | Water | 09/06/17 |
| 2 | GW17037MS | 680-142972-5MS | Water | 09/06/17 |
| 3 | GW17037MSD | 680-142972-5MSD | Water | 09/06/17 |
| 4 | | | | |
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| 12 | | | | |

Notes:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | MB 680-494524 | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

LDC #: 39484

# EDD POPULATION COMPLETENESS WORKSHEET

Date: 10/10/17



2nd Reviewer:

The LDC job number listed above was entered by KK.

| | EDD Process | | Comments/Action |
|---|---|---|---|
| I. | EDD Completeness | - | |
| Ia. | - All methods present? | Y | |
| Ib. | - All samples present/match report? | Y | |
| Ic. | - All reported analytes present? | Y | |
| Id. | - 10% or 100% verification of EDD? | Y | |
| | | | |
| II. | EDD Preparation/Entry | - | |
| IIa. | - Carryover U/J? | Y | |
| IIb. | - Reason Codes used? If so, note which codes. | Y | |
| IIc. | - Additional Information (QC Level, Validator, Validated Y/N, etc.) | N | |
| | | | |
| III. | Reasonableness Checks | - | |
| IIIa. | - Do all qualified ND results have ND qualifier (e.g. UJ)? | — | |
| IIIb. | - Do all qualified detect results have detect qualifier (e.g. J)? | — | |
| IIIc. | - If reason codes are used, do all qualified results have reason code field populated, and vice versa? | — | |
| IIId. | -Does the detect flag require changing for blank qualifier? If so, are all U results marked ND? | Y/— | |
| IIIe. | - Do blank concentrations in report match EDD where data was qualified due to blank contamination? | — | |
| IIIf. | - Were multiple results reported due to dilutions/reanalysis? If so, were results qualified appropriately? | N/— | |
| IIIg. | -Are there any discrepancies between the data packet and the EDD? | N | |

Notes: *see discrepancy sheet

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# APPENDIX I

# GROUNDWATER TREATMENT SYSTEM PERFORMANCE SAMPLING

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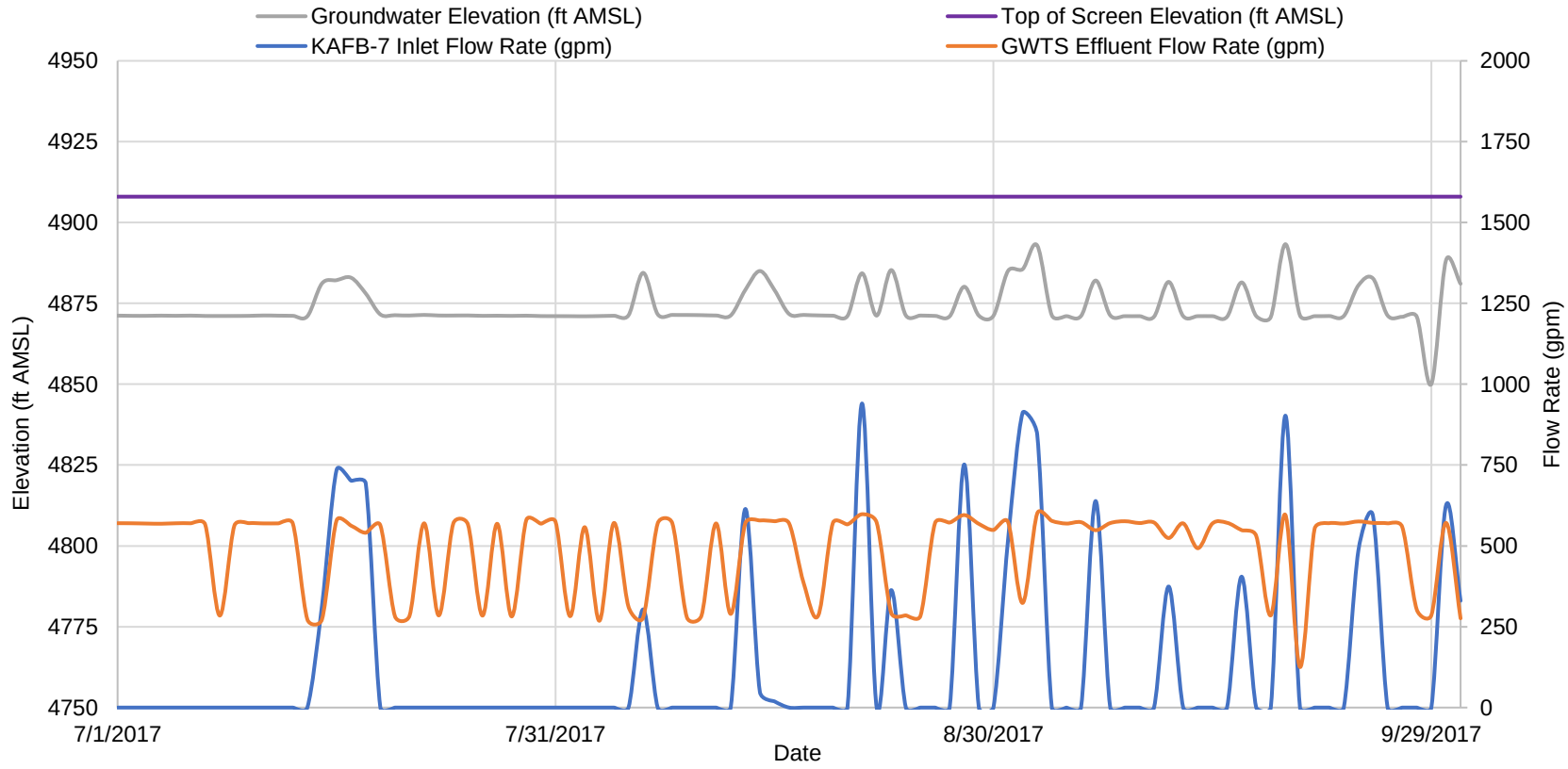
# APPENDIX I-1

# GROUNDWATER TREATMENT SYSTEM PLANT OPERATION AND MAINTENANCE DOCUMENTATION

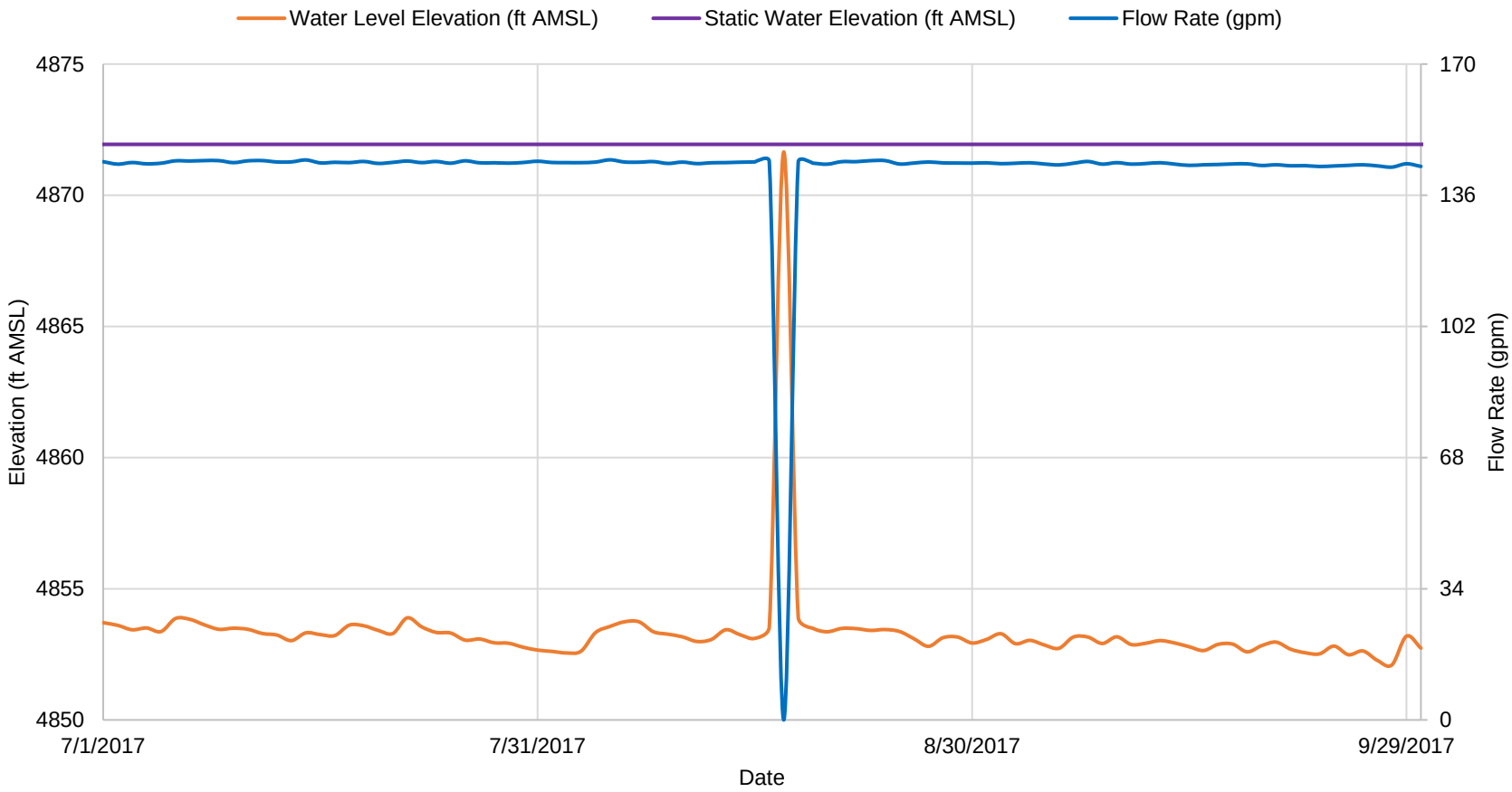
# Q3 2017 WELL PERFORMANCE FIGURES

**Figure I-1-1**
**Well KAFB-7**



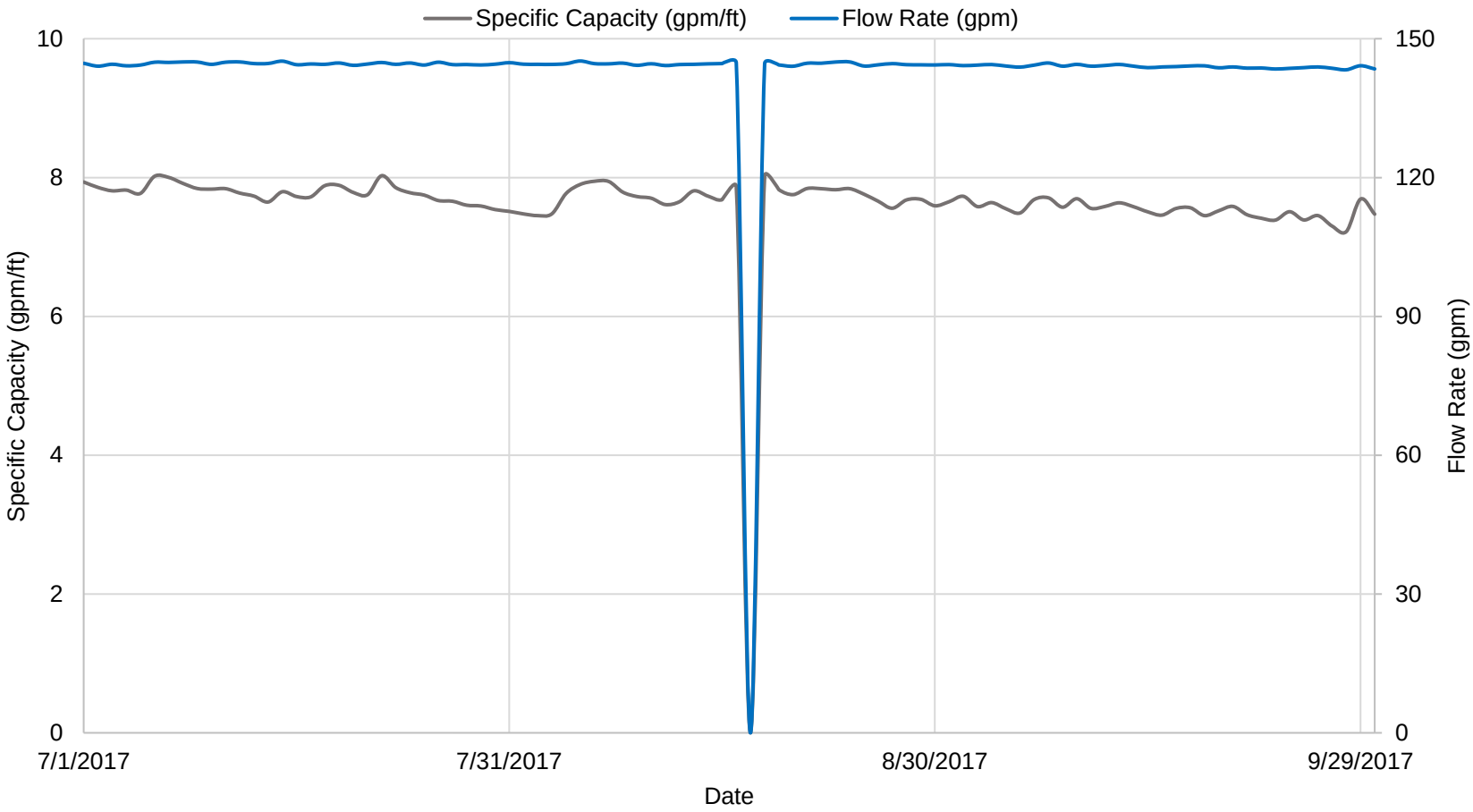

AMSL = above mean sea level
ft = foot/feet
gpm = gallon per minute
Data points shown on graph were taken at midnight on each date, whereas minimum, maximum and average values shown on Table 5-4 were calculated from data points taken each minute.
KAFB-7 inlet flow rate is provided to show injection events but fluctuates during injection events due to surging and turbulence at the KAFB-7 flowmeter. GWTS Effluent Flow Rate is provided to show that daily injection volume did not exceed permitted daily injection volumes (1.44 million gallons per day).
At times when KAFB-7 injection flow rate is 0 gpm, all GWTS effluent is routed to Tijeras Arroyo Golf Course pond.

**Figure I-1-2**
**KAFB-106228**



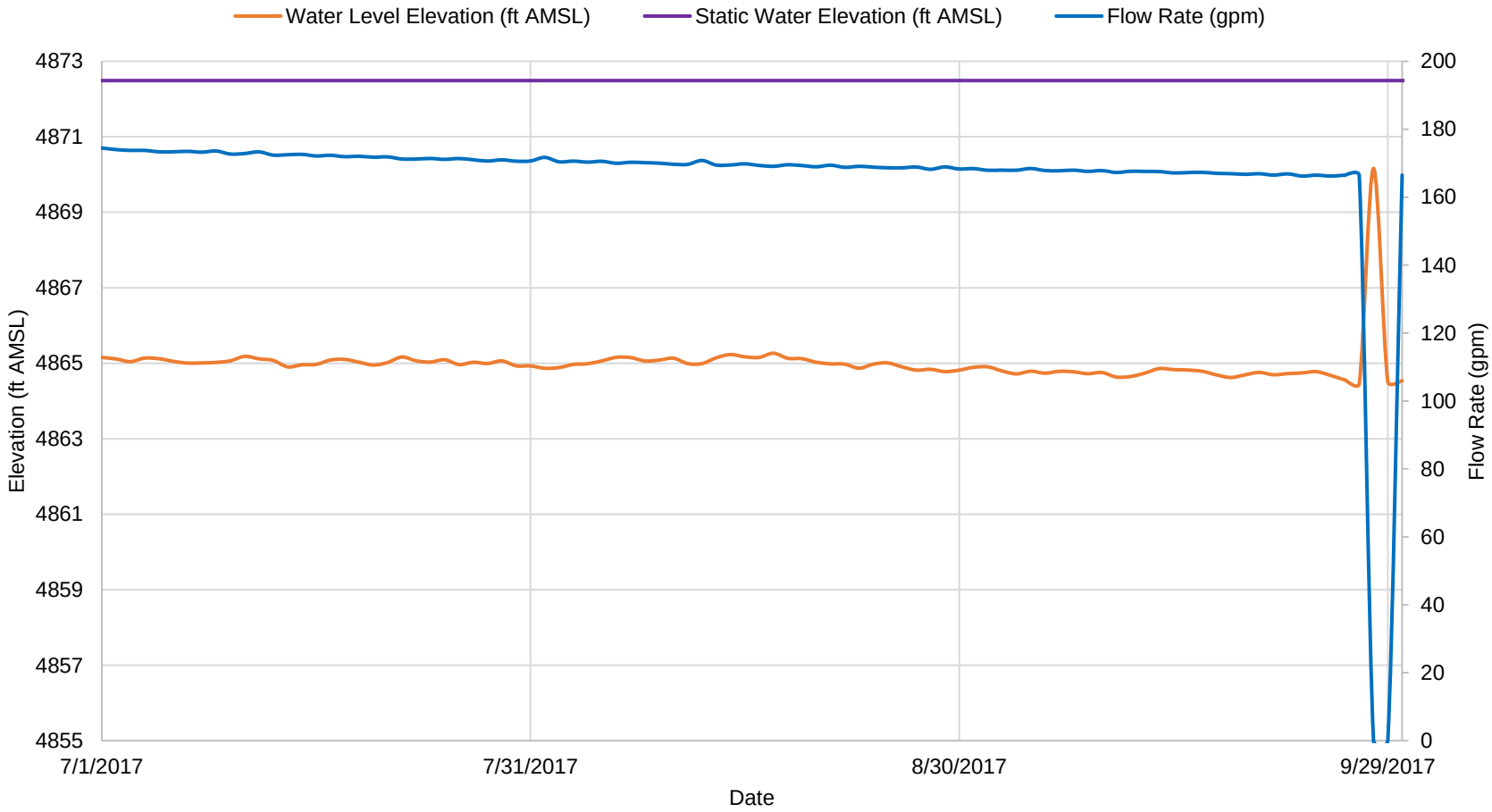

Water level elevation and flow rate are graphed from daily values.
AMSL = above mean sea level
ft = foot/feet
gpm = gallon per minute

**Figure I-1-3**
**KAFB-106228**



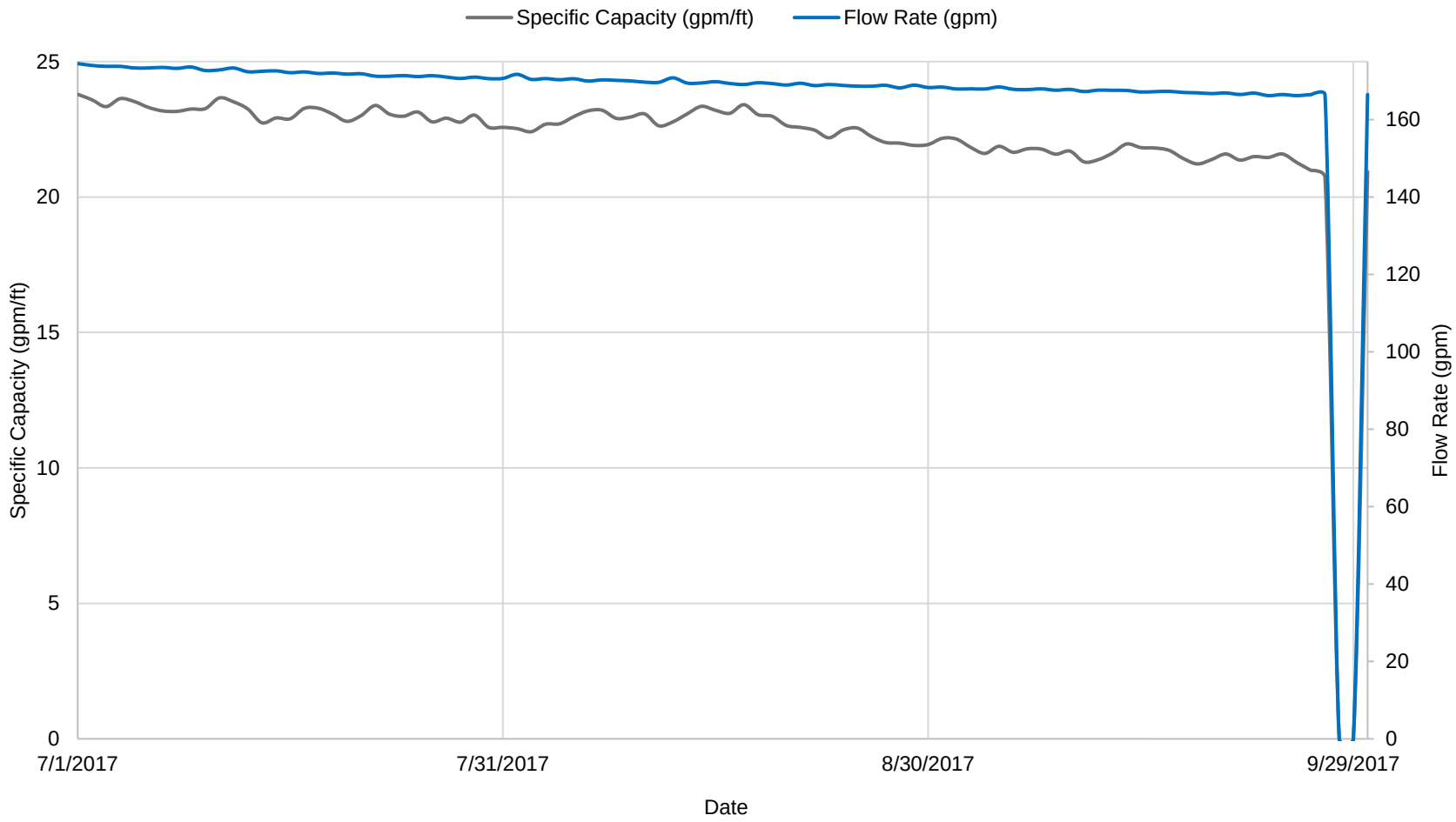

Flow rate is graphed from daily values.
AMSL = above mean sea level
ft = foot/feet
gpm = gallon per minute

**Figure I-1-4**
**KAFB-106233**



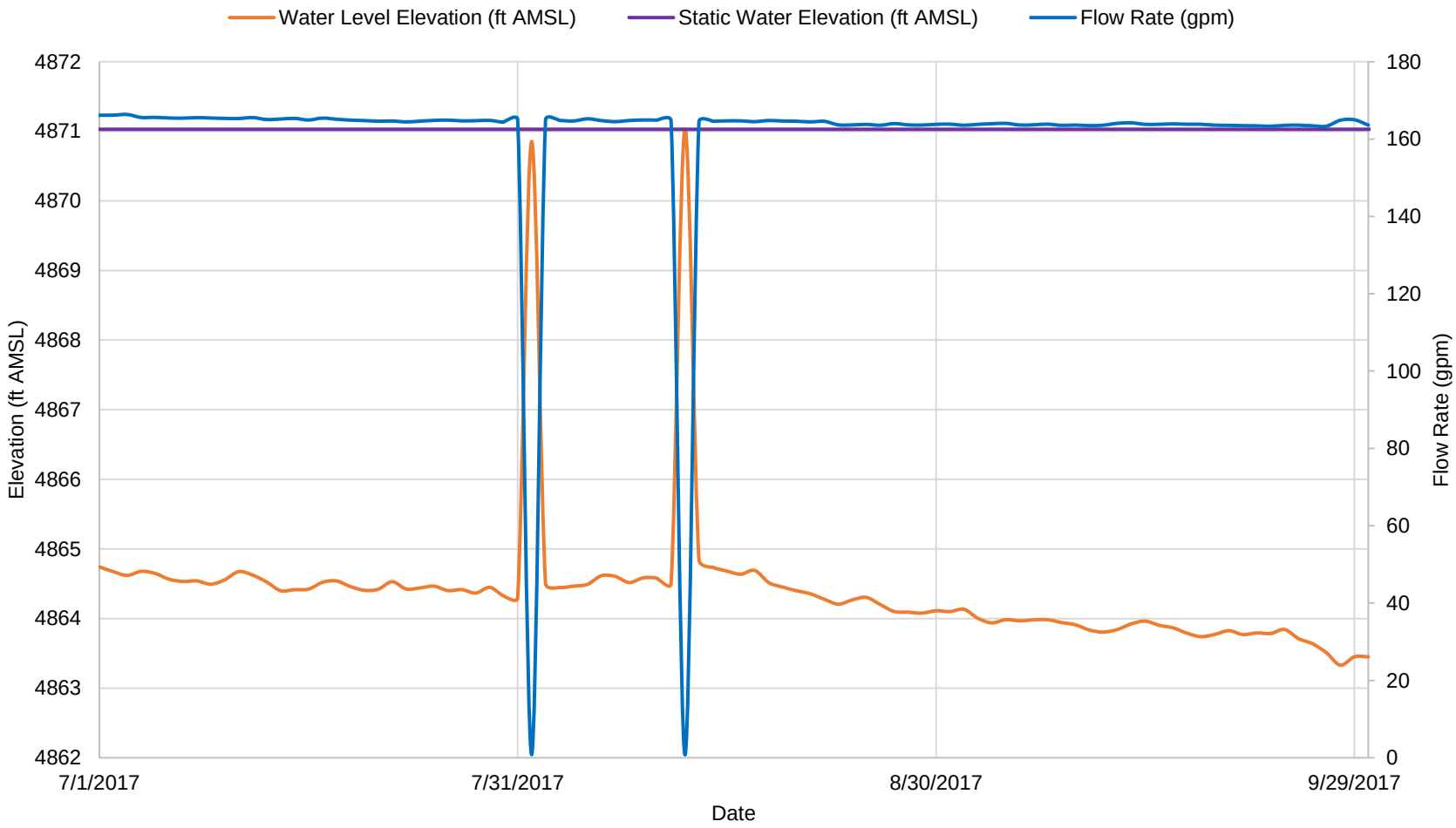

Water level elevation and flow rate are graphed from daily values.
AMSL = above mean sea level
ft = foot/feet
gpm = gallon per minute

**Figure I-1-5**
**KAFB-106233**



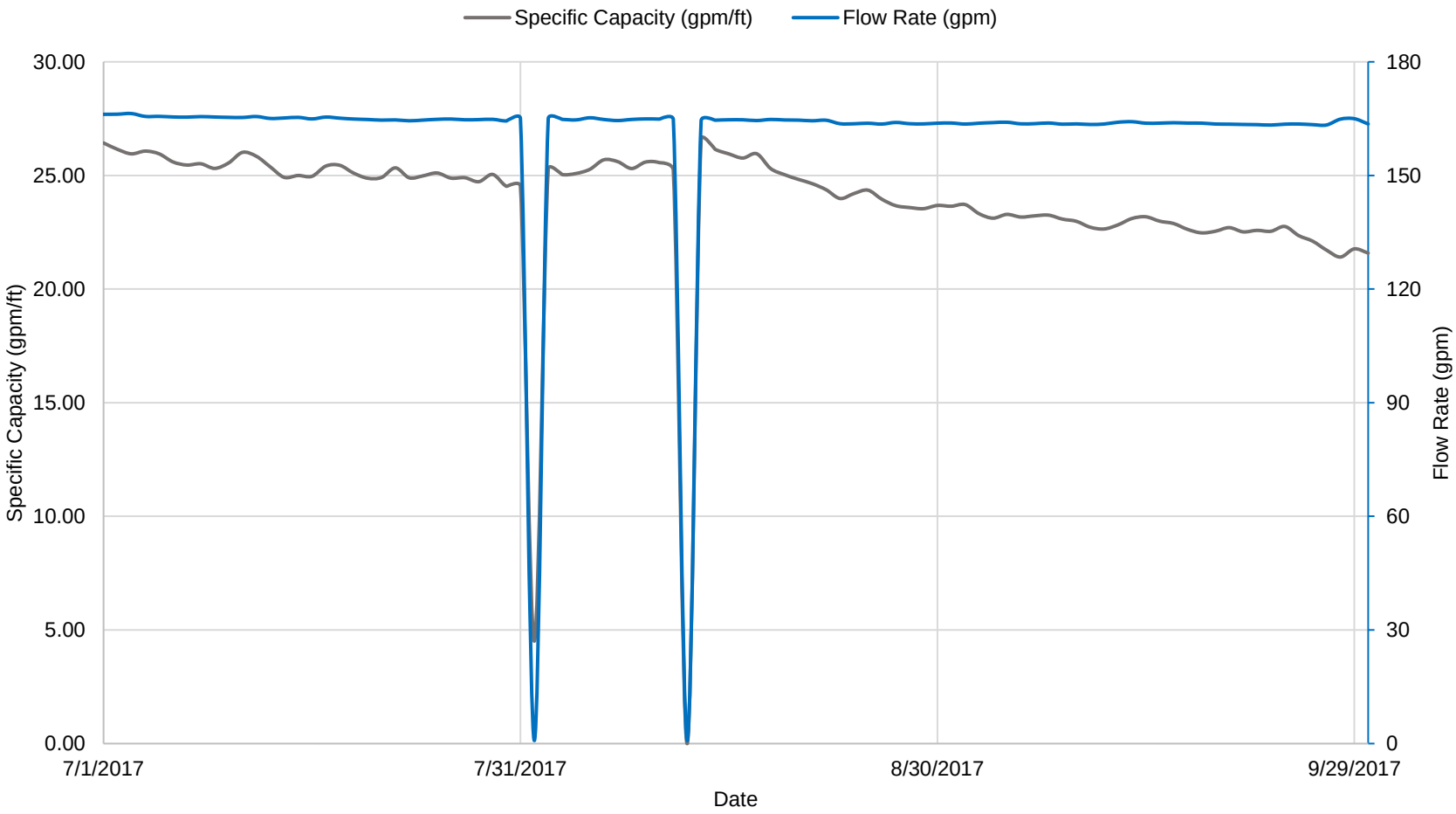

Flow rate is graphed from daily values.
AMSL = above mean sea level
ft = foot/feet
gpm = gallon per minute

**Figure I-1-6**
**KAFB-106234**




Water level and flow rate are graphed from daily values.
AMSL = above mean sea level
ft = foot/feet
gpm = gallon per minute

**Figure I-1-7**
**KAFB-106234**




Flow rate is graphed from daily values.
AMSL = above mean sea level
ft = foot/feet
gpm = gallon per minute

# Q3 2017 WELL PERFORMANCE TABLES

## Table I-1-1
## Extraction Well KAFB-106228 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 7/1/2017 | 144.69 | 4853.71 | 18.23 | 7.94 | 11903.98 |
| 7/2/2017 | 144.07 | 4853.61 | 18.33 | 7.86 | 11787.16 |
| 7/3/2017 | 144.48 | 4853.44 | 18.50 | 7.81 | 11713.24 |
| 7/4/2017 | 144.14 | 4853.51 | 18.43 | 7.82 | 11728.74 |
| 7/5/2017 | 144.31 | 4853.37 | 18.57 | 7.77 | 11657.18 |
| 7/6/2017 | 144.92 | 4853.87 | 18.07 | 8.02 | 12028.14 |
| 7/7/2017 | 144.88 | 4853.83 | 18.11 | 8.00 | 12001.97 |
| 7/8/2017 | 144.98 | 4853.62 | 18.32 | 7.92 | 11872.82 |
| 7/9/2017 | 144.97 | 4853.45 | 18.49 | 7.84 | 11763.39 |
| 7/10/2017 | 144.46 | 4853.50 | 18.44 | 7.83 | 11749.21 |
| 7/11/2017 | 144.92 | 4853.45 | 18.49 | 7.84 | 11759.67 |
| 7/12/2017 | 144.98 | 4853.29 | 18.65 | 7.78 | 11663.57 |
| 7/13/2017 | 144.63 | 4853.24 | 18.70 | 7.73 | 11598.89 |
| 7/14/2017 | 144.65 | 4853.02 | 18.92 | 7.65 | 11470.75 |
| 7/15/2017 | 145.15 | 4853.32 | 18.62 | 7.80 | 11693.00 |
| 7/16/2017 | 144.39 | 4853.25 | 18.69 | 7.73 | 11589.59 |
| 7/17/2017 | 144.54 | 4853.22 | 18.72 | 7.72 | 11580.96 |
| 7/18/2017 | 144.46 | 4853.61 | 18.33 | 7.88 | 11824.97 |
| 7/19/2017 | 144.75 | 4853.59 | 18.35 | 7.89 | 11832.31 |
| 7/20/2017 | 144.25 | 4853.41 | 18.53 | 7.79 | 11678.66 |
| 7/21/2017 | 144.52 | 4853.29 | 18.65 | 7.75 | 11626.74 |
| 7/22/2017 | 144.86 | 4853.89 | 18.05 | 8.03 | 12039.99 |
| 7/23/2017 | 144.46 | 4853.55 | 18.39 | 7.85 | 11781.65 |
| 7/24/2017 | 144.75 | 4853.34 | 18.60 | 7.78 | 11671.75 |
| 7/25/2017 | 144.31 | 4853.31 | 18.63 | 7.75 | 11620.21 |
| 7/26/2017 | 144.92 | 4853.04 | 18.90 | 7.67 | 11502.92 |
| 7/27/2017 | 144.40 | 4853.08 | 18.86 | 7.66 | 11487.27 |
| 7/28/2017 | 144.42 | 4852.94 | 19.00 | 7.60 | 11401.97 |
| 7/29/2017 | 144.33 | 4852.92 | 19.02 | 7.59 | 11384.50 |
| 7/30/2017 | 144.49 | 4852.77 | 19.17 | 7.54 | 11307.73 |
| 7/31/2017 | 144.81 | 4852.66 | 19.28 | 7.51 | 11268.51 |
| 8/1/2017 | 144.49 | 4852.61 | 19.33 | 7.48 | 11214.03 |
| 8/2/2017 | 144.46 | 4852.55 | 19.39 | 7.45 | 11177.50 |
| 8/3/2017 | 144.45 | 4852.62 | 19.32 | 7.48 | 11215.30 |
| 8/4/2017 | 144.60 | 4853.33 | 18.61 | 7.77 | 11653.94 |
| 8/5/2017 | 145.18 | 4853.56 | 18.38 | 7.90 | 11850.84 |
| 8/6/2017 | 144.62 | 4853.74 | 18.20 | 7.95 | 11919.72 |
| 8/7/2017 | 144.57 | 4853.74 | 18.20 | 7.94 | 11915.95 |
| 8/8/2017 | 144.72 | 4853.36 | 18.58 | 7.79 | 11684.93 |
| 8/9/2017 | 144.25 | 4853.27 | 18.67 | 7.73 | 11589.17 |
| 8/10/2017 | 144.59 | 4853.17 | 18.77 | 7.70 | 11553.59 |
| 8/11/2017 | 144.20 | 4852.99 | 18.95 | 7.61 | 11415.32 |
| 8/12/2017 | 144.42 | 4853.07 | 18.87 | 7.65 | 11478.38 |
| 8/13/2017 | 144.46 | 4853.44 | 18.50 | 7.81 | 11712.01 |

## Table I-1-1
## Extraction Well KAFB-106228 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 8/14/2017 | 144.57 | 4853.24 | 18.70 | 7.73 | 11599.14 |
| 8/15/2017 | 144.63 | 4853.11 | 18.83 | 7.68 | 11520.99 |
| 8/16/2017 | 144.78 | 4853.54 | 18.40 | 7.87 | 11802.46 |
| 8/17/2017 | 0.00 | 4871.65 | 0.29 | 0.00 | 0.00 |
| 8/18/2017 | 144.62 | 4853.91 | 18.03 | 8.02 | 12031.09 |
| 8/19/2017 | 144.33 | 4853.50 | 18.44 | 7.83 | 11738.04 |
| 8/20/2017 | 144.05 | 4853.36 | 18.58 | 7.75 | 11630.72 |
| 8/21/2017 | 144.71 | 4853.49 | 18.45 | 7.84 | 11763.78 |
| 8/22/2017 | 144.71 | 4853.48 | 18.46 | 7.84 | 11758.49 |
| 8/23/2017 | 144.97 | 4853.41 | 18.53 | 7.82 | 11736.72 |
| 8/24/2017 | 144.98 | 4853.45 | 18.49 | 7.84 | 11759.34 |
| 8/25/2017 | 144.10 | 4853.37 | 18.57 | 7.76 | 11639.92 |
| 8/26/2017 | 144.36 | 4853.09 | 18.85 | 7.66 | 11488.68 |
| 8/27/2017 | 144.62 | 4852.81 | 19.13 | 7.56 | 11337.22 |
| 8/28/2017 | 144.39 | 4853.13 | 18.81 | 7.68 | 11517.07 |
| 8/29/2017 | 144.36 | 4853.16 | 18.78 | 7.69 | 11529.90 |
| 8/30/2017 | 144.33 | 4852.93 | 19.01 | 7.59 | 11389.77 |
| 8/31/2017 | 144.40 | 4853.07 | 18.87 | 7.65 | 11477.16 |
| 9/1/2017 | 144.19 | 4853.29 | 18.65 | 7.73 | 11594.57 |
| 9/2/2017 | 144.30 | 4852.91 | 19.03 | 7.58 | 11372.17 |
| 9/3/2017 | 144.42 | 4853.03 | 18.91 | 7.64 | 11457.92 |
| 9/4/2017 | 144.10 | 4852.86 | 19.08 | 7.55 | 11326.31 |
| 9/5/2017 | 143.87 | 4852.73 | 19.21 | 7.49 | 11234.16 |
| 9/6/2017 | 144.30 | 4853.16 | 18.78 | 7.68 | 11525.03 |
| 9/7/2017 | 144.75 | 4853.16 | 18.78 | 7.71 | 11561.59 |
| 9/8/2017 | 144.07 | 4852.92 | 19.02 | 7.57 | 11359.08 |
| 9/9/2017 | 144.45 | 4853.17 | 18.77 | 7.70 | 11542.62 |
| 9/10/2017 | 144.07 | 4852.87 | 19.07 | 7.56 | 11334.06 |
| 9/11/2017 | 144.22 | 4852.92 | 19.02 | 7.58 | 11376.08 |
| 9/12/2017 | 144.43 | 4853.02 | 18.92 | 7.64 | 11453.81 |
| 9/13/2017 | 144.07 | 4852.93 | 19.01 | 7.58 | 11369.29 |
| 9/14/2017 | 143.75 | 4852.79 | 19.15 | 7.51 | 11258.97 |
| 9/15/2017 | 143.90 | 4852.65 | 19.29 | 7.46 | 11187.35 |
| 9/16/2017 | 143.98 | 4852.88 | 19.06 | 7.55 | 11331.79 |
| 9/17/2017 | 144.11 | 4852.89 | 19.05 | 7.57 | 11347.55 |
| 9/18/2017 | 144.14 | 4852.60 | 19.34 | 7.45 | 11177.19 |
| 9/19/2017 | 143.72 | 4852.83 | 19.11 | 7.52 | 11281.61 |
| 9/20/2017 | 143.90 | 4852.97 | 18.97 | 7.58 | 11376.21 |
| 9/21/2017 | 143.64 | 4852.70 | 19.24 | 7.46 | 11196.65 |
| 9/22/2017 | 143.67 | 4852.56 | 19.38 | 7.41 | 11121.14 |
| 9/23/2017 | 143.46 | 4852.52 | 19.42 | 7.39 | 11080.32 |
| 9/24/2017 | 143.59 | 4852.81 | 19.13 | 7.51 | 11261.95 |
| 9/25/2017 | 143.75 | 4852.49 | 19.45 | 7.39 | 11083.48 |
| 9/26/2017 | 143.90 | 4852.63 | 19.31 | 7.45 | 11177.73 |

## Table I-1-1
## Extraction Well KAFB-106228 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 9/27/2017 | 143.61 | 4852.27 | 19.67 | 7.30 | 10949.77 |
| 9/28/2017 | 143.29 | 4852.10 | 19.84 | 7.22 | 10832.58 |
| 9/29/2017 | 144.16 | 4853.19 | 18.75 | 7.69 | 11534.75 |
| 9/30/2017 | 143.47 | 4852.74 | 19.20 | 7.47 | 11208.02 |

Notes:
AMSL = above mean sea level
d = day
ft = foot/feet
gal = gallon
gpm = gallons per minute
Q = quarter
WL = water level

## Table I-1-2
## Extraction Well KAFB-106233 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 7/1/2017 | 174.48 | 4865.16 | 7.33 | 23.79 | 35686.90 |
| 7/2/2017 | 174.01 | 4865.11 | 7.38 | 23.59 | 35387.48 |
| 7/3/2017 | 173.76 | 4865.04 | 7.45 | 23.34 | 35005.60 |
| 7/4/2017 | 173.76 | 4865.14 | 7.35 | 23.63 | 35448.36 |
| 7/5/2017 | 173.35 | 4865.12 | 7.37 | 23.53 | 35287.52 |
| 7/6/2017 | 173.35 | 4865.05 | 7.44 | 23.31 | 34960.16 |
| 7/7/2017 | 173.49 | 4865.00 | 7.48 | 23.18 | 34768.16 |
| 7/8/2017 | 173.24 | 4865.01 | 7.48 | 23.16 | 34742.44 |
| 7/9/2017 | 173.59 | 4865.02 | 7.47 | 23.25 | 34873.43 |
| 7/10/2017 | 172.69 | 4865.07 | 7.42 | 23.26 | 34893.51 |
| 7/11/2017 | 172.85 | 4865.18 | 7.31 | 23.66 | 35488.43 |
| 7/12/2017 | 173.34 | 4865.12 | 7.37 | 23.51 | 35270.06 |
| 7/13/2017 | 172.37 | 4865.08 | 7.41 | 23.25 | 34875.74 |
| 7/14/2017 | 172.48 | 4864.90 | 7.58 | 22.74 | 34110.58 |
| 7/15/2017 | 172.60 | 4864.96 | 7.53 | 22.92 | 34379.49 |
| 7/16/2017 | 172.13 | 4864.97 | 7.52 | 22.89 | 34335.42 |
| 7/17/2017 | 172.33 | 4865.09 | 7.40 | 23.28 | 34913.57 |
| 7/18/2017 | 171.92 | 4865.10 | 7.39 | 23.27 | 34910.26 |
| 7/19/2017 | 172.04 | 4865.03 | 7.46 | 23.06 | 34588.54 |
| 7/20/2017 | 171.76 | 4864.95 | 7.54 | 22.79 | 34189.63 |
| 7/21/2017 | 171.85 | 4865.02 | 7.47 | 23.01 | 34510.10 |
| 7/22/2017 | 171.23 | 4865.17 | 7.32 | 23.38 | 35069.92 |
| 7/23/2017 | 171.21 | 4865.06 | 7.42 | 23.06 | 34589.77 |
| 7/24/2017 | 171.38 | 4865.03 | 7.46 | 22.98 | 34475.10 |
| 7/25/2017 | 171.12 | 4865.09 | 7.40 | 23.14 | 34706.84 |
| 7/26/2017 | 171.37 | 4864.97 | 7.52 | 22.78 | 34165.06 |
| 7/27/2017 | 171.00 | 4865.03 | 7.46 | 22.91 | 34366.10 |
| 7/28/2017 | 170.63 | 4864.99 | 7.50 | 22.76 | 34146.10 |
| 7/29/2017 | 170.99 | 4865.06 | 7.43 | 23.02 | 34534.23 |
| 7/30/2017 | 170.59 | 4864.93 | 7.56 | 22.57 | 33856.90 |
| 7/31/2017 | 170.65 | 4864.93 | 7.56 | 22.57 | 33860.05 |
| 8/1/2017 | 171.70 | 4864.87 | 7.62 | 22.52 | 33787.40 |
| 8/2/2017 | 170.41 | 4864.89 | 7.60 | 22.41 | 33615.95 |
| 8/3/2017 | 170.60 | 4864.97 | 7.52 | 22.69 | 34031.03 |
| 8/4/2017 | 170.31 | 4864.99 | 7.50 | 22.70 | 34054.72 |
| 8/5/2017 | 170.56 | 4865.06 | 7.43 | 22.97 | 34452.57 |
| 8/6/2017 | 169.98 | 4865.16 | 7.33 | 23.18 | 34770.91 |
| 8/7/2017 | 170.27 | 4865.15 | 7.34 | 23.20 | 34806.48 |
| 8/8/2017 | 170.15 | 4865.06 | 7.43 | 22.90 | 34355.47 |
| 8/9/2017 | 170.01 | 4865.08 | 7.41 | 22.95 | 34429.70 |
| 8/10/2017 | 169.69 | 4865.13 | 7.36 | 23.07 | 34603.06 |
| 8/11/2017 | 169.64 | 4864.99 | 7.50 | 22.63 | 33943.08 |
| 8/12/2017 | 170.80 | 4864.99 | 7.50 | 22.78 | 34166.02 |
| 8/13/2017 | 169.44 | 4865.14 | 7.34 | 23.07 | 34605.02 |

## Table I-1-2
## Extraction Well KAFB-106233 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 8/14/2017 | 169.47 | 4865.23 | 7.26 | 23.35 | 35021.32 |
| 8/15/2017 | 169.81 | 4865.17 | 7.32 | 23.20 | 34803.02 |
| 8/16/2017 | 169.34 | 4865.16 | 7.33 | 23.09 | 34635.08 |
| 8/17/2017 | 169.08 | 4865.27 | 7.22 | 23.41 | 35113.48 |
| 8/18/2017 | 169.54 | 4865.13 | 7.36 | 23.04 | 34562.54 |
| 8/19/2017 | 169.31 | 4865.12 | 7.37 | 22.98 | 34469.03 |
| 8/20/2017 | 168.94 | 4865.03 | 7.46 | 22.64 | 33961.19 |
| 8/21/2017 | 169.40 | 4864.98 | 7.51 | 22.57 | 33853.59 |
| 8/22/2017 | 168.79 | 4864.98 | 7.51 | 22.47 | 33700.18 |
| 8/23/2017 | 169.08 | 4864.87 | 7.62 | 22.19 | 33279.65 |
| 8/24/2017 | 168.83 | 4864.98 | 7.51 | 22.48 | 33713.81 |
| 8/25/2017 | 168.65 | 4865.01 | 7.48 | 22.55 | 33821.32 |
| 8/26/2017 | 168.64 | 4864.90 | 7.58 | 22.23 | 33350.09 |
| 8/27/2017 | 168.86 | 4864.82 | 7.67 | 22.01 | 33020.95 |
| 8/28/2017 | 168.21 | 4864.84 | 7.65 | 21.99 | 32982.94 |
| 8/29/2017 | 168.91 | 4864.78 | 7.71 | 21.91 | 32858.56 |
| 8/30/2017 | 168.30 | 4864.82 | 7.67 | 21.94 | 32906.25 |
| 8/31/2017 | 168.41 | 4864.89 | 7.60 | 22.17 | 33252.22 |
| 9/1/2017 | 167.92 | 4864.90 | 7.58 | 22.14 | 33208.25 |
| 9/2/2017 | 167.96 | 4864.80 | 7.69 | 21.83 | 32750.96 |
| 9/3/2017 | 167.92 | 4864.72 | 7.77 | 21.61 | 32413.39 |
| 9/4/2017 | 168.44 | 4864.79 | 7.70 | 21.87 | 32809.08 |
| 9/5/2017 | 167.84 | 4864.74 | 7.75 | 21.65 | 32478.07 |
| 9/6/2017 | 167.77 | 4864.79 | 7.70 | 21.78 | 32669.81 |
| 9/7/2017 | 167.95 | 4864.77 | 7.71 | 21.77 | 32654.60 |
| 9/8/2017 | 167.60 | 4864.72 | 7.77 | 21.58 | 32372.36 |
| 9/9/2017 | 167.81 | 4864.75 | 7.73 | 21.70 | 32543.53 |
| 9/10/2017 | 167.26 | 4864.64 | 7.85 | 21.30 | 31945.51 |
| 9/11/2017 | 167.61 | 4864.65 | 7.84 | 21.38 | 32069.71 |
| 9/12/2017 | 167.57 | 4864.74 | 7.75 | 21.62 | 32433.28 |
| 9/13/2017 | 167.54 | 4864.86 | 7.63 | 21.96 | 32937.39 |
| 9/14/2017 | 167.14 | 4864.83 | 7.66 | 21.83 | 32739.24 |
| 9/15/2017 | 167.23 | 4864.82 | 7.67 | 21.81 | 32714.46 |
| 9/16/2017 | 167.31 | 4864.79 | 7.70 | 21.72 | 32584.90 |
| 9/17/2017 | 167.02 | 4864.69 | 7.80 | 21.42 | 32132.08 |
| 9/18/2017 | 166.93 | 4864.62 | 7.87 | 21.22 | 31832.76 |
| 9/19/2017 | 166.73 | 4864.69 | 7.80 | 21.38 | 32076.31 |
| 9/20/2017 | 166.90 | 4864.76 | 7.73 | 21.59 | 32382.72 |
| 9/21/2017 | 166.50 | 4864.70 | 7.79 | 21.36 | 32044.60 |
| 9/22/2017 | 166.85 | 4864.73 | 7.76 | 21.49 | 32240.38 |
| 9/23/2017 | 166.21 | 4864.74 | 7.74 | 21.46 | 32191.19 |
| 9/24/2017 | 166.48 | 4864.78 | 7.71 | 21.59 | 32382.36 |
| 9/25/2017 | 166.21 | 4864.68 | 7.81 | 21.28 | 31915.09 |
| 9/26/2017 | 166.45 | 4864.56 | 7.93 | 20.99 | 31478.42 |

## Table I-1-2
## Extraction Well KAFB-106233 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 9/27/2017 | 166.32 | 4864.46 | 8.03 | 20.71 | 31072.45 |
| 9/28/2017 | 0.00 | 4870.16 | 2.33 | 0.00 | 0.00 |
| 9/29/2017 | 0.00 | 4864.52 | 7.97 | 0.00 | 0.00 |
| 9/30/2017 | 166.48 | 4864.54 | 7.95 | 20.94 | 31405.00 |

Notes:
AMSL = above mean sea level
d = day
ft = foot/feet
gal = gallon
gpm = gallons per minute
Q = quarter
WL = water level

## Table I-1-3
## Extraction Well KAFB-106234 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 7/1/2017 | 166.15 | 4864.74 | 6.29 | 26.43 | 39647.11 |
| 7/2/2017 | 166.18 | 4864.67 | 6.35 | 26.15 | 39223.85 |
| 7/3/2017 | 166.35 | 4864.62 | 6.41 | 25.95 | 38926.57 |
| 7/4/2017 | 165.58 | 4864.68 | 6.35 | 26.07 | 39107.99 |
| 7/5/2017 | 165.60 | 4864.65 | 6.38 | 25.95 | 38927.71 |
| 7/6/2017 | 165.45 | 4864.57 | 6.46 | 25.59 | 38392.46 |
| 7/7/2017 | 165.40 | 4864.53 | 6.50 | 25.46 | 38186.88 |
| 7/8/2017 | 165.54 | 4864.54 | 6.49 | 25.51 | 38271.60 |
| 7/9/2017 | 165.43 | 4864.49 | 6.54 | 25.31 | 37966.03 |
| 7/10/2017 | 165.34 | 4864.56 | 6.47 | 25.55 | 38326.16 |
| 7/11/2017 | 165.31 | 4864.68 | 6.35 | 26.02 | 39024.68 |
| 7/12/2017 | 165.55 | 4864.62 | 6.41 | 25.84 | 38765.07 |
| 7/13/2017 | 165.05 | 4864.53 | 6.50 | 25.38 | 38064.84 |
| 7/14/2017 | 165.17 | 4864.40 | 6.63 | 24.92 | 37374.69 |
| 7/15/2017 | 165.34 | 4864.42 | 6.61 | 25.00 | 37497.52 |
| 7/16/2017 | 164.93 | 4864.42 | 6.61 | 24.96 | 37443.71 |
| 7/17/2017 | 165.42 | 4864.52 | 6.51 | 25.41 | 38120.00 |
| 7/18/2017 | 165.13 | 4864.54 | 6.49 | 25.45 | 38170.46 |
| 7/19/2017 | 164.90 | 4864.46 | 6.57 | 25.10 | 37653.34 |
| 7/20/2017 | 164.77 | 4864.41 | 6.62 | 24.88 | 37318.69 |
| 7/21/2017 | 164.61 | 4864.42 | 6.61 | 24.91 | 37365.30 |
| 7/22/2017 | 164.67 | 4864.53 | 6.50 | 25.33 | 38000.22 |
| 7/23/2017 | 164.44 | 4864.42 | 6.60 | 24.90 | 37344.15 |
| 7/24/2017 | 164.62 | 4864.44 | 6.59 | 24.98 | 37476.52 |
| 7/25/2017 | 164.82 | 4864.47 | 6.56 | 25.11 | 37664.59 |
| 7/26/2017 | 164.90 | 4864.40 | 6.63 | 24.88 | 37323.80 |
| 7/27/2017 | 164.70 | 4864.42 | 6.61 | 24.90 | 37352.17 |
| 7/28/2017 | 164.74 | 4864.37 | 6.66 | 24.73 | 37087.79 |
| 7/29/2017 | 164.82 | 4864.45 | 6.58 | 25.04 | 37567.29 |
| 7/30/2017 | 164.39 | 4864.33 | 6.70 | 24.52 | 36782.43 |
| 7/31/2017 | 164.99 | 4864.30 | 6.73 | 24.52 | 36778.44 |
| 8/1/2017 | 0.79 | 4870.85 | 0.18 | 4.51 | 6762.83 |
| 8/2/2017 | 164.96 | 4864.50 | 6.52 | 25.28 | 37921.28 |
| 8/3/2017 | 164.80 | 4864.45 | 6.58 | 25.04 | 37558.11 |
| 8/4/2017 | 164.67 | 4864.47 | 6.56 | 25.09 | 37629.72 |
| 8/5/2017 | 165.23 | 4864.49 | 6.54 | 25.27 | 37908.90 |
| 8/6/2017 | 164.77 | 4864.62 | 6.41 | 25.69 | 38534.72 |
| 8/7/2017 | 164.50 | 4864.61 | 6.42 | 25.61 | 38410.60 |
| 8/8/2017 | 164.79 | 4864.52 | 6.51 | 25.31 | 37958.32 |
| 8/9/2017 | 164.93 | 4864.58 | 6.44 | 25.59 | 38384.89 |
| 8/10/2017 | 164.88 | 4864.58 | 6.45 | 25.56 | 38344.48 |
| 8/11/2017 | 164.71 | 4864.50 | 6.53 | 25.22 | 37836.16 |
| 8/12/2017 | 0.75 | 4871.03 | 0.00 | 0.00 | 0.00 |
| 8/13/2017 | 164.42 | 4864.85 | 6.18 | 26.59 | 39882.80 |

## Table I-1-3
## Extraction Well KAFB-106234 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 8/14/2017 | 164.59 | 4864.74 | 6.29 | 26.15 | 39232.01 |
| 8/15/2017 | 164.70 | 4864.68 | 6.35 | 25.95 | 38923.47 |
| 8/16/2017 | 164.70 | 4864.64 | 6.39 | 25.77 | 38649.44 |
| 8/17/2017 | 164.50 | 4864.69 | 6.34 | 25.95 | 38931.79 |
| 8/18/2017 | 164.79 | 4864.52 | 6.51 | 25.31 | 37958.32 |
| 8/19/2017 | 164.65 | 4864.45 | 6.58 | 25.03 | 37551.86 |
| 8/20/2017 | 164.61 | 4864.40 | 6.63 | 24.83 | 37241.31 |
| 8/21/2017 | 164.44 | 4864.36 | 6.67 | 24.64 | 36958.07 |
| 8/22/2017 | 164.58 | 4864.28 | 6.75 | 24.37 | 36556.22 |
| 8/23/2017 | 163.66 | 4864.21 | 6.82 | 23.99 | 35979.88 |
| 8/24/2017 | 163.65 | 4864.27 | 6.76 | 24.20 | 36306.44 |
| 8/25/2017 | 163.78 | 4864.30 | 6.72 | 24.35 | 36531.43 |
| 8/26/2017 | 163.57 | 4864.20 | 6.83 | 23.96 | 35933.42 |
| 8/27/2017 | 164.00 | 4864.10 | 6.93 | 23.67 | 35507.26 |
| 8/28/2017 | 163.66 | 4864.09 | 6.94 | 23.59 | 35383.50 |
| 8/29/2017 | 163.61 | 4864.08 | 6.95 | 23.54 | 35307.45 |
| 8/30/2017 | 163.80 | 4864.11 | 6.92 | 23.68 | 35520.71 |
| 8/31/2017 | 163.84 | 4864.10 | 6.93 | 23.65 | 35469.10 |
| 9/1/2017 | 163.57 | 4864.13 | 6.90 | 23.72 | 35579.09 |
| 9/2/2017 | 163.80 | 4864.00 | 7.02 | 23.32 | 34974.63 |
| 9/3/2017 | 163.95 | 4863.94 | 7.09 | 23.12 | 34681.38 |
| 9/4/2017 | 164.06 | 4863.98 | 7.05 | 23.29 | 34930.57 |
| 9/5/2017 | 163.63 | 4863.97 | 7.06 | 23.17 | 34755.73 |
| 9/6/2017 | 163.68 | 4863.98 | 7.05 | 23.22 | 34834.51 |
| 9/7/2017 | 163.84 | 4863.98 | 7.05 | 23.25 | 34880.13 |
| 9/8/2017 | 163.54 | 4863.94 | 7.09 | 23.08 | 34618.63 |
| 9/9/2017 | 163.61 | 4863.91 | 7.12 | 22.98 | 34474.23 |
| 9/10/2017 | 163.46 | 4863.84 | 7.19 | 22.72 | 34083.01 |
| 9/11/2017 | 163.58 | 4863.81 | 7.22 | 22.64 | 33966.82 |
| 9/12/2017 | 164.06 | 4863.84 | 7.19 | 22.83 | 34240.42 |
| 9/13/2017 | 164.19 | 4863.92 | 7.11 | 23.11 | 34659.71 |
| 9/14/2017 | 163.80 | 4863.96 | 7.07 | 23.18 | 34771.69 |
| 9/15/2017 | 163.81 | 4863.90 | 7.13 | 22.99 | 34482.13 |
| 9/16/2017 | 163.92 | 4863.87 | 7.16 | 22.88 | 34326.38 |
| 9/17/2017 | 163.83 | 4863.79 | 7.24 | 22.63 | 33942.34 |
| 9/18/2017 | 163.81 | 4863.74 | 7.29 | 22.47 | 33711.02 |
| 9/19/2017 | 163.58 | 4863.77 | 7.26 | 22.54 | 33817.02 |
| 9/20/2017 | 163.54 | 4863.83 | 7.20 | 22.70 | 34056.31 |
| 9/21/2017 | 163.46 | 4863.77 | 7.26 | 22.52 | 33777.82 |
| 9/22/2017 | 163.42 | 4863.79 | 7.24 | 22.58 | 33875.69 |
| 9/23/2017 | 163.31 | 4863.79 | 7.24 | 22.54 | 33816.16 |
| 9/24/2017 | 163.54 | 4863.84 | 7.19 | 22.75 | 34132.13 |
| 9/25/2017 | 163.58 | 4863.71 | 7.32 | 22.35 | 33530.51 |
| 9/26/2017 | 163.42 | 4863.64 | 7.39 | 22.11 | 33165.27 |

## Table I-1-3
## Extraction Well KAFB-106234 Performance Figure Data, Q3 2017

| Date | Flow Rate (gpm) | WL Elevation (ft AMSL) | Drawdown (ft) | Specific Capacity (gpm/ft) | Transmissivity (gal/d•ft) |
|---|---|---|---|---|---|
| 9/27/2017 | 163.32 | 4863.51 | 7.52 | 21.72 | 32573.75 |
| 9/28/2017 | 164.87 | 4863.33 | 7.70 | 21.41 | 32116.76 |
| 9/29/2017 | 164.99 | 4863.45 | 7.58 | 21.77 | 32653.67 |
| 9/30/2017 | 163.60 | 4863.45 | 7.58 | 21.59 | 32378.83 |

Notes:
AMSL = above mean sea level
d = day
ft = foot/feet
gal = gallon
gpm = gallons per minute
Q = quarter
WL = water level

**DAILY/WEEKLY INSPECTION LOGS**

**(JULY 1 – SEPTEMBER 30, 2017)**

Train 1

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

0845

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/3/17 | Tuesday 7/4/17 | Wednesday 7/5/17 | Thursday 7/6/17 | Friday 7/7/17 | Saturday 7/8/17 | Sunday 7/9/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | ~~17~~ | 144 | 145 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 21,941,916 | | 22,342,559 | 22,557,132 | 22,711,718 | | |
| | | Transducer, ft below measuring point | | Daily | 4853.42 | | 4853.24 | 4854.09 | 4853.78 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59.86 | 59 / 59.86 | 59 | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | 145.1 | 145.1 | | | | |
| | | Temperature, (F) | | Weekly | | | — | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 174 | | 173 | 173 | 173 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 21,085,978 | | 21,440,184 | 21,639,506 | 21,815,890 | | |
| | | Transducer, ft below measuring point | | Daily | ~~4865.92~~ | | 4865.67 | 4865.42 | 4865.88 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | ~~23~~ | 22.66 | 23 / 22.66 | 23 | 23 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | PF ~~173.8~~ | 173.8 | 173.8 | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | ~~22.66~~ | 92 | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 165 | | 165 | 165 | 165 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 018,445,892 | | 18,800,168 | 18,999,422 | 19,175,800 | | |
| | | Transducer, ft below measuring point | | Daily | 4992.19 | | 4991.56 | 4992.27 | 4992.23 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 23 | 22.58 | 22 / 22.58 | 22 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | 164.3 | 164.3 | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | 70 | 70 | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | 21 | 21 | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 12.7 | 14 | 13.5 | 15 | 13 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.1961 | ✓ | 0.978 | 2.519 | 0.136 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.2708 | | 1.029 | 2.555 | 0.216 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11 | | 11.2 | 11.4 | 11.5 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.1 | | 275.0 | 275.3 | 275.2 | | |
| | | Totalizer (gal) | | Daily | 35.3501 | ✓ | 36.1630 | 36.6141 | 37.0198 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | ✓ | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 31,822,720 | ✓ | 32,523,024 | 32,910,652 | 33,260,280 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | ✓ | No | No | YES | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.0 | | 7.0 | 6.9 | 7.1 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 10.8 | | 10.9 | 11.0 | 11.0 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.1 | | 9.1 | 9.1 | 9.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | ✓ | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | — | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | ✓ | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | ✓ | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | ✓ | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 15.8 | | 21 | 21 | 21 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | ~~12.7~~ 12.40 | | 20.13 | 20.01 | 19.83 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285.7 | | 285.6 | 284.7 | 285.6 | | |
| | | Totalizer, (gal) | | Daily | 49.6180 | | 50.7365 | 50.8902 | 51.2981 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 15 | ✓ | 285 | 285 | 284 | | |
| | | Totalizer, (1000 gal) | | Daily | 44,038,648 | 44,718024 | ~~50.7365~~ PF | 45,094,248 | 45,433,232 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | ~~2~~ PF | 273328.5 | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.3 | | 0.2 | 0.3 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.19 | | 4877.18 | 4877.14 | 4877.10 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 4.28 | | 5.13 | 5.02 | 5.00 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

3.12 — At POND S. Rod

7/5/17
34.5984 MG

7/5/17
16.5025 MG

7/5/17
35.1420 MG

Train 2

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Q 850

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/3/17 | Tuesday 7/4/17 | Wednesday 7/5/17 | Thursday 7/6/17 | Friday 7/7/17 | Saturday 7/8/17 | Sunday 7/9/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 14.5 | | 12.7 | ~~PI 11.8~~ 12.8 | ~~PI 11.9~~ 12.8 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 1.936 | | 0.161 | 0.161 | 0.166 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 1.879 | | 0.150 | 0.159 | 0.164 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11 | | 11.9 | 11.9 | ~~PI 12.8~~ | 11.9 | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.1 | | 275.6 | 275.3 | 275.1 | | |
| | | Totalizer (gal) | | Daily | 36.1974 | | 37.3795 | 37.7428 | 38.0574 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | | | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | | | 32,842,900 | 33,156,128 | 33,427,982 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | Yes | | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 8.0 | | 7.8 | 7.8 | 7.8 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 12.0 | ~~4.9~~ | 11.9 | 11.9 | 11.8 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.2 | | 6.1 | 6.1 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | ~~21.76~~ (25) ~~18.8~~ 11 | 22.5 | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 14.0 | | | 0 K | 21.9 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | | 0 | 0 K | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | | 0 | 0 K | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 12.3 | | (21.76) ~~20.11~~ | 20.10 | 19.82 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 309.2 | | 274.2 | 285.5 | 286.5 | | |
| | | Totalizer, (gal) | | Daily | 35.5866 | | 36.1998 | 36.5535 | 36.8601 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | | | 287 | 285 | 286 | | |
| | | Totalizer, (1000 gal) | | Daily | | | 33,012,366 | 33,311,540 | 33,569,564 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | 0.2 | 0.3 | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | 4877.10 | 4877.14 | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | 5.12 | 5.02 | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Train 1

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

~~1215~~ 1646 1210 0830 0840

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/10/17 | Tuesday 7/11/17 | Wednesday 7/12/17 | Thursday 7/13/17 | Friday 7/14/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 145 | 144 | 144 | 144 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 23,203,810 | 23,406,058 | 23,544,870 | 23,697,926 | 23,860,868 | | |
| | | Transducer, ft below measuring point | | Daily | 4853.49 | 4853.54 | 4853.29 | 4853.13 | 453.01 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | 59 | 59 / 59.61 | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | 144.5 | — | | |
| | | Temperature, (F) | | Weekly | — | — | — | — | — | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 173 | 173 | 173 | 173 | 172 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 22,313,064 | 22,517,420 | 22,657,660 | 22,812,336 | 22,977,032 | | |
| | | Transducer, ft below measuring point | | Daily | 4865.88 | 4866.09 | 4865.92 | 4865.62 | 4865.62 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 23 | 23 | 23 | 23 / 22.29 | 23 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | 172.9 | — | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | 94 | — | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 165 | 165 | 165 | 165 | 165 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 19,672,996 | 19,877,337 | 20,017,630 | 20,172,274 | 20,336,954 | | |
| | | Transducer, ft below measuring point | | Daily | 4993.48 | 4994.00 | 4992.23 | 4991.93 | 4990.25 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22 | 22 / 22.48 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | 164.1 | — | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | 74 | — | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | 21 | — | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 13.5 | 13.9 | 14.5 | 15.0 | 16.7 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.191 | 0.408 | 0.897 | 1.685 | 7.648 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.764 | 0.486 | 0.969 | 1.775 | 2.540 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11.7 | 12 | 12 | 12 | 12.5 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.3 | 275.6 | 275.1 | 275.5 | 280.8 | | |
| | | Totalizer (gal) | | Daily | 38,1625 | 38,6346 | 38,9514 | 39,2873 | 39,5837 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 276 | 274 | 277 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 34,244,868 | 34,649,212 | 34,926,952 | 35,212,160 | 35,468,928 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No * | Yes * | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.0 | 7.1 | 7.1 | 7.0 | 7.0 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.2 | 11.5 | 11.7 | 11.8 | 11.9 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.1 | 9.2 | 9.2 | 9.0 | 9.0 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21 | 26 | 22 | 22 | 23.3 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 19.97 | 23.89 | 20.67 | 20.86 | 20.72 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 286.4 | 288.5 | 286.3 | 284.1 | 285.8 | | |
| | | Totalizer, (gal) | | Daily | 52,4472 | 52,9247 | 53,2456 | 53,5808 | 53,8804 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 285 | 284 | 285 | 325 | 288 | | |
| | | Totalizer, (1000 gal) | | Daily | 46,389,776 | 46,782,376 | 47,051,604 | 47,329,164 | 47,577,372 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | 27351.2 | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.28 | 4877.38 | 4877.14 | 4877.18 | 4876.77 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 4.35 | 4.13 | 4.04 | 4.13 | 5.08 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

7/13/17
36,2654

7/13/17
18.4974 MG

7/13/17
37.0306 MG

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 2

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/10/17 | Tuesday 7/11/17 | Wednesday 7/12/17 | Thursday 7/13/17 | Friday 7/14/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1215 | 1650 | 1215 | 0840 | 0850 | | |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 12.8 | 13.0 | 13.1 | 13.5 | 14.2 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.275 | 0.420 | 0.657 | 0.976 | 1.548 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.255 | 0.475 | 0.648 | 0.995 | 1.576 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11.9 | 11.8 | 11.8 | 11.7 | 11.9 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.3 | 275.4 | 275.0 | 276.4 | 275.6 | | |
| | | Totalizer (gal) | | Daily | 34,190,984 | 34,3075 | 39,5572 | 39.8543 | 40.2350 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 34,190,984 | 34,503,116 | 34,719,416 | 34,975,628 | 35,307,324 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.5 | 7.6 | 7.8 | 7.6 | 7.8 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.8 | 11.9 | 11.9 | 11.8 | 11.8 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.2 | 6.2 | 6.1 | 6.1 | 6.1 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.8 | 24.5 | 22.2 | 22.7 | 21.5 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.04 | 24.02 | 20.46 | 20.83 | 11.64 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285.3 | 280.5 | 291.2 | 290.8 | 289.5 | | |
| | | Totalizer, (gal) | | Daily | 37.7236 | 38.0783 | 38.3209 | 38.6110 | 38.9823 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 282 | 282 | 285 | 325 | 318 | | |
| | | Totalizer, (1000 gal) | | Daily | 34,296,236 | 34,592,320 | 34,798,380 | 35,041,232 | 35,350,744 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Trash 1

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

1038 0736 0740 0755 0740

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/17/17 | Tuesday 7/18/17 | Wednesday 7/19/17 | Thursday 7/20/17 | Friday 7/21/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 145 | 145 | 144 | 145 | 145 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 24,370,580 | 24,519,450 | 24 691 854 | 24,863 294 | 25 030 730 | | |
| | | Transducer, ft below measuring point | | Daily | 4853.88 | 4853.51 | 4853.51 | 4853.25 | 4853.28 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | 59 | 59 | ~~59~~ 59.69 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | 144.7 | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 172 | 172 | 172 | 172 | 172 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 23,492,206 | 23,642,624 | 23 816 904 | 23 990 156 | 24,159,362 | | |
| | | Transducer, ft below measuring point | | Daily | 4866.13 | 4865.80 | 4865.67 | 4865.62 | 4865.83 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 23 | 23 | 23 | 23 | 23/22.55 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | 171.7 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | 94 | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 165 | 165 | 165 | 165 | 165 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 20,852,016 | 21,002,432 | 21,176 676 | 21349 930 | 21,519,144 | | |
| | | Transducer, ft below measuring point | | Daily | 4993.79 | 4991.14 | 4990.50 | 4990.04 | 4990.46 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22 | 22 | 22/22.50 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | 163.9 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | 73 | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | 15 | | 20.7 | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 14 | 14.1 | ~~15.09~~ | 16 | 17 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.198 | 0.314 | 0.592 | 1.803 | 2.728 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.239 | 0.349 | 0.585 | 1.790 | 2.690 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 12.5 | 12.6 | 12.6 | 12.9 | 13 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.7 | 275.8 | 275.4 | 275.3 | 274.7 | | |
| | | Totalizer (gal) | | Daily | 40.5000 | 40.5408 | 41.2374 | 41.6369 | 42.0257 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 274 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 36,257,300 | 36,557,486 | 36 893 300 | 37,236 524 | 37571,410 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | Yes | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.0 | 6.9 | 6.9 | 6.9 | 6.9 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 12 | 12.1 | 12.1 | 12.2 | 12.5 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.0 | 8.9 | 8.9 | 8.9 | 9.0 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.5 | 26.9 | 23.5 | 20.9 | ~~20.2~~ 20.35 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 23.9 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.20 | ~~15.89~~ | 22.21 | 19.67 | 23.71 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285 ~~54.7~~ | 287.7 | 285.1 | 285.7 | 285.4 | | |
| | | Totalizer, (gal) | | Daily | 57,8007 | 55,1497 | 55,5436 | 55,9452 | 56.3363 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 286 | ~~264~~ 286 | ~~290~~ 285 | 285 | 286 | | |
| | | Totalizer, (1000 gal) | | Daily | 48342720 | 48 634 240 | 48 960 184 | 49,293,440 | 49,619,192 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | 276387.8 | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 14.9 | 22.6 | 0.3 | 0.3 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4889.64 | 4885.32 | 4877.39 | 4877.35 | 4877.35 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 5.01 | 3.81 | 4.40 | 4.52 | 4.68 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Pumping to Well-7 water Main break

WELL-7 in AM

SW. to GCP

Compress 94 hrs.

7/21/17
37.9095 MG

7/21/17
~~28.~~ 20.4598 MG

7/21/17
38.8968 MG

Train 2

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/17/17 | Tuesday 7/18/17 | Wednesday 7/19/17 | Thursday 7/20/17 | Friday 7/21/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 13.0 | 13.0 | 13.0 | 12.8 | 12.9 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.161 | 0.157 | 0.161 | 0.162 | 0.169 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.153 | 0.150 | 0.158 | 0.158 | 0.159 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 12 | 12.1 | 12.1 | 11.9 | 11.9 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.9 | 275.1 | 275.3 | 275.2 | 275.7 | | |
| | | Totalizer (gal) | | Daily | 41,4166 | 41,6937 | 41,9968 | 42,3033 | 42,6011 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275.8 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 36,320,720 | 36 560976 | 36 821 356 | 37 084 732 | 37,340,800 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | * Yes | No | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.3 | 7.8 | 7.6 | 7.6 | 7.6 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.5 | 11.9 | 12 | 11.9 | 11.9 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.1 | 6.1 | 6.2 | 6.2 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 22 | 21.9 | 23.9 | 21.2 | 24.5 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.24 | 18.3 | 22.16 | 19.61 | 22.84 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 286.2 | 299.9 | 288.4 | 284.4 | 285.5 | | |
| | | Totalizer, (gal) | | Daily | 40,1350 | 40,4066 | 40,7018 | 41.0000 | 41,2935 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 284 | 256 | 290 | 285 | 285.5 | | |
| | | Totalizer, (1000 gal) | | Daily | 36,314,896 | 36542948 | 36790992 | 37042068 | 37,286,200 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 15.0 | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | 4889.47 | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 5.01 | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 1

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/24/17 | Tuesday 7/25/17 | Wednesday 7/26/17 | Thursday 7/27/17 | Friday 7/28/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1020 | 1025 | 0803 | 15:15 | 10:30 | | |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 144 | 145 | 144 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 25 557 180 | 25 728 840 | 25883 042 | 26 104 544 | 26,241,514 | | |
| | | Transducer, ft below measuring point | | Daily | 4853.38 | 4853.21 | 4853.06 | 4853.03 | 4852.93 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | 59 | 59/59.58 | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | 144.6 | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 171 | 171 | 171 | 171 | 171 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 24 691 430 | 24,864,834 | 25 020 649 | 25 244, 442 | 25,382,854 | | |
| | | Transducer, ft below measuring point | | Daily | 4865.92 | 4865.83 | 4865.67 | 4865.80 | 4865.79 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 23 | 23 | 22 | 23/22.54 | 23 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | 171.0 | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | 1F73 96 | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 165 | 165 | 165 | 165 | 165 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 22,05/164 | 22,224,546 | 22,380 258 | 22604150 | 22742,564 | | |
| | | Transducer, ft below measuring point | | Daily | 4990.93 | 4990.21 | 4989.98 | 4990.50 | 4990.04 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22 | 22/22.45 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | 163.7 | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | 73 | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | 21 | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 15.1 | 15.5 | 16 | 17.5 | 18.4 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.205 | 0.356 | 0.782 | 2.013 | 2.828 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.240 | 0.382 | 0.801 | 2.033 | 2.836 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 13.5 | 13.6 | 13.8 | 14 | 14 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.0 | 274.9 | 275.4 | 277.1 | 275.17 | | |
| | | Totalizer (gal) | | Daily | 43,2458 | 43,6440 | 44,0019 | 44,5146 | 44.8338 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 276 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 38,622,328 | 38965840 | 39,274,240 | 39715736 | 39,991 152 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | Yes | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 6.9 | 6.9 | 6.9 | 7.0 | 6.9 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 13.0 | 13.1 | 13.2 | 13.6 | 13.8 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 8.9 | 9.0 | 9.0 | 9.0 | 9.0 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 20.9 | 25.8 | 20 | 20.9 | 21 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 19.72 | 24.5 | 19.04 | 19.7 | 19.85 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285.1 | 288.2 | 285.2 | 285.2 | 284.7 | | |
| | | Totalizer, (gal) | | Daily | 57.5639 | 57.9641 | 58.3240 | 58.8405 | 59,1620 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 286 | 285.8 | 285 | 285 | 284.7 | | |
| | | Totalizer, (1000 gal) | | Daily | 50,638,972 | ~~57 214~~ 50,971,000 | 51,270,976 | 51,699,620 | 51,966 972 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | 27657.5 | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.1 | 0.2 | 0.3 | 0.21 | 0.2 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.18 | 4877.14 | 4877.18 | 4877.39 | 4877.18 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 4.28 | 4.07 | 4.12 | 4.42 | 4.34 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

27
7/~~26~~/17 228 = 10.75'
39.1541 MG

27
7/~~20~~/17
21.9501 MG

7/27/17
40.3199 MG

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 2

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/24/17 | Tuesday 7/25/17 | Wednesday 7/26/17 | Thursday 7/27/17 | Friday 7/28/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 1025 | 1030 | | 1525 | 1033 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | PF 13.1 1.284 | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 12.9 | 13.0 | 13.2 | 12.7 | | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.285 | 0.412 | 0.628 | 0.996 | 1.249 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.259 | 0.376 | 0.566 | 0.948 | | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11.9 | 11.8 | 11.8 | 11 | 11 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.2 | 275.1 | 275.2 | 275.0 | 275.2 | | |
| | | Totalizer (gal) | | Daily | 43,5420 | 43,9446 | 44.1207 | 44.5127 | 44.7547 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 38,150,005 | 38 410 588 | 38,646,592 | 38,932,804 | 39,193 852 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.5 | 7.6 | 7.6 | 7.5 | 7.6 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.9 | 11.9 | 11.9 | 11 | 11 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.8 | 25.0 | 20.9 | 21.5 | 21.5 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 19.77 | 23.65 | 19.01 | 19.67 | 19.90 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 278.0 | 273.6 | 282 | 283.9 | 285.3 | | |
| | | Totalizer, (gal) | | Daily | 42.2080 | 42.5029 | 42.7735 | 43.1543 | 43.3921 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 282 | 286 | 282.8 | 285 | 285 | | |
| | | Totalizer, (1000 gal) | | Daily | 38,058,252 | 38,306,500 | 38,532,84 | 38,854,100 | 39,054 240 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 1

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/31/17 | Tuesday 8/01/17 | Wednesday 8/02/17 | Thursday 8/03/17 | Friday 8/04/17 | Saturday ___/___/___ | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0948 | 1033 | 0758 | 1050 | 915 | | |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 145 | 144 | 144 | 145 | 145 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 26,749,844 | 26,927,806 | 27077968 | 27,259,493 | 27,413,346 | | |
| | | Transducer, ft below measuring point | | Daily | 4857.63 | 4852.58 | 4852.63 | 4853.27 | 4853.67 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | 59 | 59 /59.77 | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | 144.9 | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 171 | 171 | 170 | 170 | 170 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 25,896,520 | 26,076,342 | 26,228052 | 26,411,512 | 26,567,092 | | |
| | | Transducer, ft below measuring point | | Daily | 4865.62 | 4865.62 | 4865.67 | 4865.83 | 4865.88 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 23 | 23 | 22 | 22/22.52 | 22 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | 170.5 | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | 95 | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 165 | 165 | 165 | 165 | 165 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 23,256,234 | 23,335074 | 23486778 | 23,670,182 | 23,825,692 | | |
| | | Transducer, ft below measuring point | | Daily | 4989.16 | 4994.0 | 4990.72 | 4992.59 | 4991.43 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22 | 22/22.44 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | 163.8 | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | 74 | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | 21 | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 16.1 | 16 | 16.5 | 17 | 17.8 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.221 | 0.356 | 0.743 | 1.649 | 2,374 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.255 | 0.374 | 0.758 | 1.650 | 2.382 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 14.5 | 14.2 | 14.4 | 14 | 14 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.3 | 276.9 | 275.2 | 275.2 | 276.0 | | |
| | | Totalizer (gal) | | Daily | 46,0140 | | 46.5855 | 46.9244 | 47,2014 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | ~~287~~ 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 41,007,788 | 41,198 736 | 41,499,072 | 41,791,396 | 42,027368 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | YES | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.0 | 6.9 | 6.9 | 7.0 | 7.0 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 14.0 | ~~13.9~~ | 14.0 | 13.8 | 13.8 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.2 | ~~8.9~~ | 9.0 | 9.0 | 9.0 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily Pressure Drop | 4.8 | 4.9 | 5.0 | 4.8 | 4.8 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 27 | 23.8 | 21 | 22.5 | 21.9 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 24.67 | 22.5 | 19.92 | 21.27 | 20.64 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 283.5 | 285.9 | 285.9 | 285.5 | 285.2 | | |
| | | Totalizer, (gal) | | Daily | 60,3508 | 60.5745 | 60.9262 | 61,2676 | 61.5460 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 283 | 288 | 285 | 285 | 285 | | |
| | | Totalizer, (1000 gal) | | Daily | PF ~~39~~ 53,955408 | ~~40,094,567~~ 53,139,848 | 53,432 032 | 53,715,684 | 53,945568 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | 276567.6 | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.3 | 0.3 | 0.3 | 14.9 | | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.93 | 4877.10 | 4876.97 | 4887,28 | 488 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 3.99 | 3.39 | 3.75 | 4.75 | 4.62 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

PF

TO WELL-7 GCP overnight

back to WELL-7

228 : 8/03/2017 – 11:20
40.6180

8/03/17
23,6863 – 1248

8/03/17
41.8457 – 1249

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 2

11:00 9:15

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 7/31/17 | Tuesday 8/01/17 | Wednesday 8/02/17 | Thursday 8/03/17 | Friday 8/04/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 14.1 | 12 | 12 | 12 | 12 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 2.302 | 0.169 | 0.170 | 0.172 | 0.194 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 2.265 | 0.146 | 0.147 | 0.149 | 0.170 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11 | 11 | 11 | 11.1 | 11.1 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.5 | 275.9 | 275.6 | 275.5 | 276.1 | | |
| | | Totalizer (gal) | | Daily | 45.6523 | 46.0230 | 46.2902 | 46.6937 | 47.0475 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275.0 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 39,966,969 | 40,286,168 | 40515968 | 40,862,880 | 41,169,640 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | YES | No | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 8 | 7.6 | 7.6 | 7.6 | 7.5 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11 | 11 | 11 | 11 | 11.0 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.2 | 6.1 | 6.1 | 6.1 | 6.1 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | Pressure Drop 3.0 | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 26 | 24.2 | 22 | 23 | 22.7 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 24.97 | 22.58 | 19.91 | 21.16 | 20.59 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 261.9 | 288.0 | 285.5 | 286.8 | 285.7 | | |
| | | Totalizer, (gal) | | Daily | 44,2678 | 44.6297 | 44.8918 | 45.2840 | 45.6298 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 293 | 287 | 284 | 286 | 287 | | |
| | | Totalizer, (1000 gal) | | Daily | 39,791,220 | 40,194,636 | 40 314 276 | 40,644,440 | 40,934,076 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

TO WELL-7 GCP over night

TO WELL 7

Trash 1

# Daily and Weekly Inspection Log for the Kirtland AFB GWTS

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 8/7/17 | Tuesday 8/8/17 | Wednesday 8/9/17 | Thursday 8/10/17 | Friday 8/11/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 145 | 144 | 144 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 27,916,226 | 28,077,398 | 28,221,498 | 28,422,960 | 28,623,074 | | |
| | | Transducer, ft below measuring point | | Daily | 4853.62 | 4853.23 | 4853.24 | 4853.02 | 4853.00 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | 59 | 59/59.6 | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | 144.3 | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 170 | 170 | 170 | 170 | 169 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 27,075,452 | 27,238,280 | 27,455,676 | 27,587,450 | 27,789,652 | | |
| | | Transducer, ft below measuring point | | Daily | 4865.83 | 4865.92 | 4865.92 | 4865.92 | 4865.88 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22 | 22/95 | 22 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 165 | 165 | 165 | 165 | 165 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 24,533,782 | 24,696,758 | 24,714/80 | 24,845,992 | 25,048,128 | | |
| | | Transducer, ft below measuring point | | Daily | 4991.85 | 4991.22 | 4 997.06 | 4991.35 | 4992.15 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22 | 22/75 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | 20,5 | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 15,1 | 15,0 | 15.2 | 15,8 | 16,8 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.196 | 0.238 | 0.483 | 0.889 | 1.774 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.219 | 0.264 | 0.805 | 0.892 | 1.783 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 13,5 | 13.5 | 13.5 | 13.5 | 13.5 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 276.3 | 275.8 | 275.0 | 276.5 | 275.5 | | |
| | | Totalizer (gal) | | Daily | 48,0983 | 48,3837 | 48,7653 | 49.0609 | 49.5121 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 277 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 42,779,724 | 43,045,472 | 43,374,544 | 43,633,084 | 44,032,920 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | YES | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 13.1 | 13.0 | 13.0 | 13.0 | 13.1 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 24.8 | 24.0 | 22.0 | 14.0 * | 24.1 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 23.17 | 23.05 | 20.57 | 15,45 | 23,27 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 286.1 | 286.8 | 286.2 | 285.8 | 285.6 | | |
| | | Totalizer, (gal) | | Daily | 54,95864 | 62.7384 | 63.1730 | 63.4231 | 63.8758 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 285 | 288 | 287 | 284 | 285 | | |
| | | Totalizer, (1000 gal) | | Daily | 62.4510 | 54934,044 | 55,253,336 | 55,504,652 | 55,892,500 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | 277795.6 | | | 277715.5 | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.35 | 4877.39 | 4877.35 | 4877.39 | 4877.35 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 3.72 | 4.04 | 4.59 | 4.52/2.66 | 4.65 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

8/11/17

8/11/17 1106
~~25.6104~~ RF 25.6102

8/11/17 1106
43.6971 MG

* One train running

Train 2

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

0930 0755 1416 0840

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 8/7/17 | Tuesday 8/8/17 | Wednesday 8/9/17 | Thursday 8/10/17 | Friday __/__/__ | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 12.9 | 13.3 | 14.1 | 12.1 | 12.1 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.871 | 1.337 | 2.038 | 0.151 | 0.159 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.798 | 1.269 | 1.970 | 0.160 | 0.152 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11.1 | 11.3 | 11.4 | 11.0 | 11.0 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275.1 | 275.2 | 275.3 | 275.4 | | |
| | | Totalizer (gal) | | Daily | 48.2192 | 48.5889 | 49.0921 | 49.3749 | 49.6617 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 276 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 42,173,416 | 42,495,752 | 42,98,424 | 43,187,616 | 43,429,252 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | YES | No | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.5 | 7.5 | 7.5 | 7.6 | 7.6 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.1 | 11.1 | 11.1 | 11.1 | 11.1 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.1 | 6.1 | 6.1 | 6.2 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 25.8 | 25.2 | 22.8 | 22.0 | 24.1 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 23.24 | 22.35 | 20.58 | 19.55 | 22.55 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 283.5 | 293.8 | 287.1 | 287.4 | 287.6 | | |
| | | Totalizer, (gal) | | Daily | 46.7673 | 47.1323 | 47.6194 | 47.8993 | 48.1763 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 289 | 281 | 285 | 254 | 290 | | |
| | | Totalizer, (1000 gal) | | Daily | 41,889,048 | 42,191,856 | 42,601,064 | 42,792,044 | 43,080,512 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Train 1

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 8/14/17 | Tuesday 8/15/17 | Wednesday 8/16/17 | Thursday 8/17/17 | Friday 8/18/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0745 | 0725 | 0720 | 0720 | 1831 | | |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 145 | 144 | OFF | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 29,057,764 | 29,271,626 | 29427 874 | 29,442,844 | 29,644,842 | | |
| | | Transducer, ft below measuring point | | Daily | 4853.19 | 4852.97 | 4853.49 | 4871.58 | 4853.67 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 /59.58 | 59 | 59 | — 30.02 | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | 144.1 | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 169 | 169 | 169 | 169 | 169 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 28,268,816 | 28,444,498 | 28,602 508 | 28,720,346 | 28,961,922 | | |
| | | Transducer, ft below measuring point | | Daily | 4865.83 | 4865.88 | 4865.83 | 4865.88 | 4865.97 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 /22.52 | 22 | 22 | 23 | 23 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | 170 | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily 165 | ~~169~~ | 165 | 165 | 164 | 165 | | |
| | | Totalizer, FQI-7002, (1000 gal) 8/14 25,3~~88~~ 064 | | Daily | ~~25,268,816~~ | 25,573,608 | 25 731 530 | 25,850,446 | 26,094,912 | | |
| | | Transducer, ft below measuring point | | Daily 4864.60 | ~~4865.83~~ | 4864.51 | 4864.47 | 4864.42 | 4864.40 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 /22.42 | 22 | 22 | 23 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | 164.0 | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 15 | 15 | 15 | * 21 | 16.1 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.188 | 0.209 | 0.331 | 1.307 | 1.847 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.215 | 0.234 | 0.344 | 1.247 | 1.842 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 13.4 | 13.2 | 13.25 | 16.5 | 13.5 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 277.0 | 275.3 | 274.8 | 374.8 | 275.4 | | |
| | | Totalizer (gal) | | Daily | 50.1939 | 50.5011 | 50.7789 | 51,1136 | 51.6768 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 375 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 44,606,908 | 44 871 617 | 45, 109,980 | 45,522,204 | 46,051,620 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | | | | | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 8.0 | 6.9 | 7.0 | 7.1 | 7.0 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 13 | 12.8 | 12.9 | 15.7 | 13.0 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.0 | 9.0 | 9.0 | 9.9 | 9.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily 31.5 | ~~18.511~~ | 079239 | 21 | 21.8 | 20.8 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily 30.11 | ~~15.621~~ | 20.15 | 20.05 | 18.95 | 19.43 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 318.6 | 290.1 | 285.8 | 386.8 | 285.4 | | |
| | | Totalizer, (gal) | | Daily | 64,5641 | 64,8709 | 65.1509 | 65,48558 | 66.0529 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 282 | 283 | 284 | 383 | 285 | | |
| | | Totalizer, (1000 gal) | | Daily | 56 449 764 | 56 706 836 | ~~44,603,~~ 56,939104 | 57, 341,564 | 57,862,652 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | 279226.6 | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 13.4 | 14.9 | 0.3 | 0.4 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily 4892.21 | ~~4829.34~~ | 4889.66 | 4877.63 | 4877.39 | 4877.55 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 5.13 | 4.50 | 4.81 | 4.36 | 4.78 | | |

To Well 7 WELL-7 GCP *Train 1 ONLY

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

8/14 228 Total 42.8747

8/14 235 total 26.3311

8/14 234 total 44.2148

Train 2

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

0745

Train 2 OFF

1430 / Thursday

1831 Friday

~~1430~~ KM

~~8/17/17~~ KM

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 8/14/17 | Tuesday 8/15/17 | Wednesday 8/16/17 | Thursday 8/17/17 | Friday 8/17/17 | Saturday 8/18/17 | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 12.2 | 12.2 | 12.5 | | 12.5 | 13.1 | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.182 | 0.216 | 0.395 | | 0.448 | 0.767 | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.166 | 0.209 | 0.366 | | 0.418 | 0.743 | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11.1 | 11.1 | 11.25 | | 11.25 | 11.5 | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.2 | 275.1 | 276.0 | | 275.3 | 275.2 | |
| | | Totalizer (gal) | | Daily | 50.7705 | 51.1742 | 51.5351 | | 51.5521 | 51.8827 | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 274 | 275 | | 275 | 274 | |
| | | Totalizer, (1000 gal) | | Daily | 44,374,792 | 44,722,160 | 45,032,820 | | 45,044,036 | 45,344,020 | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | | | | | ? | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.5 | 7.6 | 7.6 | | 7.6 | 7.9 | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.1 | 11.1 | 11.1 | | 11.1 | 11.7 | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.1 | 6.1 | 6.1 | | 6.1 | 6.2 | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | | A | A | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | | B | B | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 18.5 | 29 | 22.8 | | 24.5 | ~~23~~ 23.5 | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | | 0 | 0 | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | | 0 | 0 | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 15.67 | 22.7 | 20.15 | | 21.52 | 23.10 | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 300.1 | 254.1 | 282.7 | | 287.1 | 284.8 | |
| | | Totalizer, (gal) | | Daily | 49.2626 | 49.6555 | 50.0079 | | 50.0077 | 50.3507 | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 244 | 256 | 284 | | 285 | 0 | |
| | | Totalizer, (1000 gal) | | Daily | 43,978,528 | 44,308,896 | 44,603,208 | | 44,614,544 | 45,332,924 | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | 279226.6 | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 13.4 | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | 4593.29 | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 5.13 | | | | | | |

Train 2 OFF (VALVE INSTALL)

To Well-7

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Trash 1

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 1300 8/21/17 | Tuesday 0800 8/22/17 | Wednesday 0815 8/23/17 | Thursday 1135 8/24/17 | Friday 0800 8/25/17 | Saturday ___/___/___ | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 144 | 145 | 144 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 30,111,348 | 30 244 430 | 30412636 | 30605778 | 30,751,726 | | |
| | | Transducer, ft below measuring point | | Daily | ~~4594853.75~~ | 4853.41 | 4853.83 | 4853.51 | 4853.32 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59/59.77 | 59/ | 59/ | 59/ | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | 144.3 | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 169 | 169 | 169 | 169 | 169 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 29,433,224 | 29567727 | 29737717 | 29932710 | 30,080,190 | | |
| | | Transducer, ft below measuring point | | Daily | 4865.71 | 4865.67 | 4927.41 | 4913.34 | 4902.14 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22/22.49 | 22/ | 22/ | 22/ | 22 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | 169.3 | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | ~~#22~~ 165 | 165 | 163 | 164 | 164 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 26566100 | 26700594 | 26870506 | 27065514 | 27,213,092 | | |
| | | Transducer, ft below measuring point | | Daily | 4864.24 | 4864.12 | 4920.39 | 4920.39 | 4920.39 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22/22.41 | 22/ | 22/ | 22/ | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | 163.8 | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 15 | 15.4 | 15.1 | 15.4 | 15.4 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.176 | 0.2048 | 0.2565 | 0.4001 | 0.594 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.211 | 0.2373 | 0.2899 | 0.4272 | 0.629 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 13.4 | 13.6 | 13.5 | 13.5 | 13.4 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.0 | 276.0 | 275.0 | 275.3 | 275.1 | | |
| | | Totalizer (gal) | | Daily | 52,7729 | 53.0840 | 53.4744 | 53.9736 | 54.2639 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 46798244 | 47264280 | 47600816 | 47986812 | 48,278,304 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | | | | | | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 12.8 | 13.1 | 12.9 | 13.0 | 12.9 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 8.9 | 9.0 | 8.9 | 9.1 | 9.0 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.5 | 15.5 | 21.2 | 25.1 | 21.5 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 23.21 | 14.82 | 20.01 | 24.25 | 20.30 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 286.1 | 284.9 | 285.8 | 285.1 | 283.3 | | |
| | | Totalizer, (gal) | | Daily | 67.1563 | 67.4703 | 67.8674 | 68.3158 | 68.6576 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 285 | 285 | 285 | 285 | 286 | | |
| | | Totalizer, (1000 gal) | | Daily | 58781924 | 59041074 | 59366936 | 59741016 | 60,025,280 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.2 | 0.4 | 0.3 | 0.3 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.35 | 4877.18 | 4877.60 | 4877.39 | 4877.18 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 3.95 | 4.65 | 4.16 | 4.34 | ~~4.23~~ AC> 4.37 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

8/21/17 10:06
44,0633

8/21/17 0833
27,9063

8/21/17 0833
45,7424

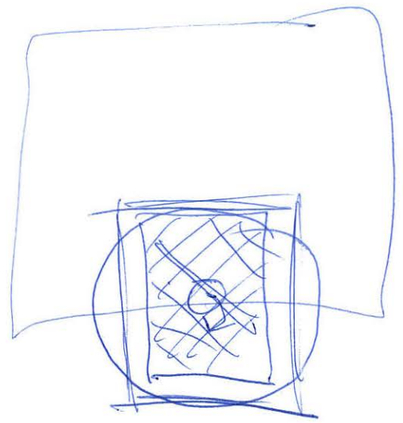
Train 2

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 8/21/17 (1300) | Tuesday 8/22/17 (0800) | Wednesday 8/23/17 (0820) | Thursday 8/24/17 (1135) | Friday 8/25/17 (0800) | Saturday ___/___/___ | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 14.0 | ~~15.5~~ 14.8 JM | 15.1 | 12.5 | 12.7 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 1.651 | ~~1.827~~ JM | 2.801 | 0.144 | 0.148 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 1.670 | 1.8~~70~~68 JM | 2.826 | 0.156 | 0.172 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11.5 | 11.5 ~~8~~ JM | 11.5 | 11.5 | 11.5 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.5 | 275.1 | 275.3 | 275.3 | 275.3 | | |
| | | Totalizer (gal) | | Daily | 52.7107 | 52.9450 | 53.2402 | 53.5797 | 53.8344 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 46047160 | 46246537 | 46502856 | 46795884 | 47,011,372 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | | | 465 | | | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.5 | 7.9 | ~~7.8~~ | 7.7 | 7.6 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.0 | 11.5 ~~6.9~~ JM | 6.3 | 11.3 | 11.3 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.2 | 6.1 | 6.2 | 6.3 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 26.2 | 27.0 | 24.5 | 28.1 | ~~20.26~~ PP | 25.1 | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 2.5 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 2.5 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 23.32 | 23.50 | 19.75 | 23.39 | 20.26 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 267.1 | 275.2 | 286.0 | 283.5 | 283.6 | | |
| | | Totalizer, (gal) | | Daily | 51.1587 | 51.3907 | 51.6817 | 52.0120 | 52.2595 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 285 | 287 | 285 | 287 | 284 | | |
| | | Totalizer, (1000 gal) | | Daily | 45577548 | 45769016 | 46015236 | 46294576 | 46,503,328 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

was off; waited for it to turn back on.



Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 1

Totalizers
8/30/17
228 - 48.9646 MG
233 - 30.1407 MG
234 - 47.9079 MG

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 8/28/17 | Tuesday 8/29/17 | Wednesday 8/30/17 | Thursday 8/31/17 | Friday 9/1/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 144 | 144 | 144 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 31275765 | 31,424,492 | 31,653,822 | 31,770,444 | 31,931,992 | | |
| | | Transducer, ft below measuring point | | Daily | 4853.46 | 4853.13 | 4853.10 | 4852.78 | 4853.14 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | 59.55/59 | 59 | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | — | — | 144.0 | | | | |
| | | Temperature, (F) | | Weekly | — | — | — | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 169 | 168 | 168 | 168 | 168 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 30609642 | 30,759,918 | 30,991,776 | 31,109,468 | 31,272,646 | | |
| | | Transducer, ft below measuring point | | Daily | 4897.84 | 4896.62 | 4896.71 | 4897.72 | 4898.05 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22.2/22 | 22 | 22 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | — | — | 168.5 | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | — | — | 85 | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 164 | 163 | 164 | 164 | 164 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 27747768 | 27,892,646 | 28,124,420 | 28,242,164 | 28,405,782 | | |
| | | Transducer, ft below measuring point | | Daily | 4920.39 | 4920.39 | 4920.39 | 4920.39 | 4920.39 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22.5/22 | 22 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | — | — | 163.8 | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | — | — | 75 | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | — | — | 22.0 | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 17.1 | 15 | 15.0 | 15 | 15 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 2.866 | 0.181 | 0.183 | 0.193 | 0.209 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 2.889 | 0.210 | 0.212 | 0.221 | 0.238 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 13.5 | 13.2 | 13.4 | 13.2 | 13.2 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.0 | 275.3 | 275.4 | 276.4 | 275.3 | | |
| | | Totalizer (gal) | | Daily | 55.3892 | 55.6458 | 56.0507 | 56.2535 | 56.5352 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 281 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 49242472 | 49,467,664 | 49,844,088 | 49,989,292 | 50,233,888 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | YES | No | No | No | YES | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.0 | 6.9 | 7.0 | 7.0 | 6.9 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 12.6 | 12.9 | 12.9 | 12.9 | 12.9 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.0 | 9.1 | 9.1 | 9.0 | 9.1 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | — | — | — | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | — | — | — | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | — | — | — | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | — | — | — | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | — | — | — | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.3 | 21.0 | 14.0 | 28.5 | 23 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.13 | 19.87 | 12.10 | 25.72 | 19.67 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285.7 | 285.3 | 292.0 | 286.5 | 289.7 | | |
| | | Totalizer, (gal) | | Daily | 69.7843 | 70.0477 | 70.4556 | 70.6595 | 70.9738 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 285 | 285.6 | 285 | | ~~254~~ 296 | | |
| | | Totalizer, (1000 gal) | | Daily | 60960384 | 61,179,692 | 61,515,368 | 61,685,992 | 61,922,880 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | — | — | 281776.9 | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.2 | 0.4 | 15.0 | 14.7 | 20.6 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.60 | 4877.22 | 4884.73 | 4893.70 | 4889.56 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 4.15 | 4.45 | 5.32 | 5.31 | 4.82 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Tran 2

| Well | Location | Item | Normal Range | Recordation Frequency | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 8/28/17 | 8/29/17 | 8/30/17 | 8/31/17 | 9/1/17 | __/__/__ | __/__/__ |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 11.6 | 12.6 | 12.7 | 12.8 | 12.0 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.160 | ~~11.6~~ OUTLET | 11.7 | 11.8 | 0.414 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.153 | 0.178 | 0.215 | 0.247 | 0.449 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11.6 | 0.165 | 0.210 | 0.283 | ~~275~~ 19 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.4 | 277.8 | 274.8 | 275.5 | 275.0 | | |
| | | Totalizer (gal) | | Daily | 54.8439 | 55.1914 | 55.7267 | 55.9977 | 56.3689 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | | 273 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | | 48,179,928 | 48,687,588 | 48,877,532 | 49,194,600 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | Yes | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 8.0 | 7.7 | 7.7 | 7.6 | 7.7 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.4 | 11.1 | 11.1 | 11.1 | 11.1 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.7 | 6.2 | 6.2 | 6.2 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.0 | 20.1 | 22 | 25 | 19 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.82 | 19.85 | 21.41 | 25.31 | 18.16 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 278.6 | 288.0 | 290.3 | 289.3 | 311.4 | | |
| | | Totalizer, (gal) | | Daily | 53.2490 | 53.5860 | 54.1093 | 54.3732 | 54.7377 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | | 285 | 288 | 273 | 293 | | |
| | | Totalizer, (1000 gal) | | Daily | | 47,616,376 | 48,053,116 | 48,277,792 | 48,578,584 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 1

1050 1630 1637 0730

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 9/5/17 | Tuesday 9/6/17 | Wednesday __/__/__ | Thursday 9/7/17 | Friday 9/8/17 | Saturday __/__/__ | Sunday 9/10/17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 144 | | 144 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 32,638,110 | 32,842,468 | | 33,011,394 | 33166828 | | |
| | | Transducer, ft below measuring point | | Daily | 4852.54 | | | 4853.15 | 4852.85 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | | 59 | 59/59.58 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | 144.1 | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 168 | 168 | | 168 | 168 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 31,973,180 | 32179604 | | 32,350,210 | 32436768 | | |
| | | Transducer, ft below measuring point | | Daily | 4891.82 | 4892.12 | | 4892.37 | 4891.95 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | | 22 | 22/2247 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | 167.8 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | 95 | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 164 | 164 | | 164 | 164 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 29,118,782 | 29325142 | | 29495686 | 29602266 | | |
| | | Transducer, ft below measuring point | | Daily | 4920.39 | 4920.39 | | 4920.39 | 4920.39 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | | 22 | 22/2237 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | 163.7 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | 75 | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | 20.5 | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 15.2 | 15.5 | ~~16 PF~~ | 16 | 16.4 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.226 | 0.386 | ~~0.756~~ | 0.756 | 1.077 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.240 | 0.397 | ~~0.745~~ | 0.745 | 1.074 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 13.6 | 13.7 | ~~13.7~~ | 13.7 | 13.8 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 276.0 | 275.6 | ~~27~~ PF | 274.9 | 275.2 | | |
| | | Totalizer (gal) | | Daily | 57,8981 | 58.3711 | | 58,7352 | 58,9395 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 ~~13.~~ PF | 276 | | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 57,404,220 | 57,811,388 | | 52,125068 | 52301244 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | No | | YES |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 6.9 | 6.9 | | 7.0 | 6.9 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 13.1 | 13.1 | | 13.3 | 13.3 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.1 | 9.0 | | 9.0 | 9.0 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.9 | 25 | | 21 | 21.1 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | PF 21.9 | 0 | | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 0 2059 | 24.35 | | 19.79 | 20.12 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 284.8 | 283.9 | | 285.4 | 285.3 | | |
| | | Totalizer, (gal) | | Daily | 72,3160 | 72,7924 | | 73,1582 | 73,3647 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 280 | 283 | | 285 | 284 | | |
| | | Totalizer, (1000 gal) | | Daily | 63,060,560 | 63,455676 | | 63,759,556 | 63,931068 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | 284213.7 | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.3 | 14.1 | | 0.3 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.14 | 4888.74 | | 4877.35 | 4877.18 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 4.71 | 4.24 | | 4.53 | 4.46 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

9/8/17 133 #
47.7818 MG

9/8/17 233
32.2443 MG

49.9727 MG

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 2

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 9/5/17 (1050) | Tuesday 9/6/17 (1630) | Wednesday __/__/__ | Thursday 9/7/17 | Friday 9/8/17 (0730) | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 13 | 13 | | 13 | 13.1 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.154 | 0.153 | | 0.180 | 0.197 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.160 | 0.182 | | 0.189 | 0.208 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 11.9 | 11.9 | | 12 | 12 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.4 | 275.5 | | 275.2 | 275.3 | | |
| | | Totalizer (gal) | | Daily | 57.9617 | 58,21.44 | | 58,3365 | 58,7603 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275.7 | 275 | | 275 | 275.3 | | |
| | | Totalizer, (1000 gal) | | Daily | 50,474,200 | 50,780750 | | 51,058,056 | 51,250,780 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | ~~Yes~~ No | | | | | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.7 | 7.7 | | 7.7 | 7.7 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.7 | 11.8 | | 11.6 | 11.7 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.2 | 6.2 | | 6.2 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21 | 24.9 | | 20 | 20.1 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.59 | 24.35 | | 19.82 | 20.12 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285.1 | 26.25 | | 285.2 | 284.3 | | |
| | | Totalizer, (gal) | | Daily | 56.1949 | 56.5421 | | 568577 | 57.0771 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 289 | 279 | | 285 | 284 | | |
| | | Totalizer, (1000 gal) | | Daily | 49796280 | 50087996 | | 50,353,216 | 50,536864 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 1 — 1250 — 0730 — 9:00 — 0758 / ~~77~~ 0840

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 9/11/17 | Tuesday 9/12/17 | Wednesday 9/13/17 | Thursday 9/14/17 | Friday 9/15/17 | Saturday ___/___/___ | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 144 | 144 | 144 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 33,765788 | 34,026 412 | 34,391,516 | 34720 008 | 35,064,936 | | |
| | | Transducer, ft below measuring point | | Daily | 4852.86 | 4852.95 | 4852.87 | 4852.69 | 4853.13 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | 59/59.69 | 59 | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | ~~167.6~~ | | | | |
| | | Temperature, (F) | | Weekly | | | 144.4 | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 168 | 168 | 167 | 167 | 167 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 32 989036 | 33120660 | 33,305,136 | 33,471,636 | 33 734204 | | |
| | | Transducer, ft below measuring point | | Daily | 4838.41 | 4880.95 | 4882.06 | 4879.33 | 4883.86 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22.49 | 22 | 22 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | 167.6 | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | Bus on vault | 92 | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 164 | 164 | 163 | 164 | 164 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 30,150,996 | 30,282,570 | 30467,034 | 30,633,542 | 30,806,170 | | |
| | | Transducer, ft below measuring point | | Daily | 4920.39 | 4920.39 | 4920.39 | 4920.39 | 492039 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22/22.42 | 22 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | ~~46~~ | 163.8 | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | 73 | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | ~~215~~ | 21.5 | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 15.4 | 15.4 | 15.4 | 15.6 | 15.2 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.190 | 0.193 | 0.244 | 0.341 | 0.593 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.212 | 0.215 | 0.258 | 0.340 | 0.587 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 13.7 | 13.7 | 13.8 | 13.9 | 13.5 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.1 | 277.8 | 275.0 | 274.9 | 264.5 | | |
| | | Totalizer (gal) | | Daily | 59,8902 | 60,1203 | 60.4402 | 60.8244 | 61.1676 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 282 | 278 | 275 | 274 | | |
| | | Totalizer, (1000 gal) | | Daily | 53 116, 476 | 53,312 100 | 53,592,460 | 53 921 944 | 54216 796 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 13.0 | 13.2 | 13.3 | 13.3 | 13.2 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.0 | 9.1 | 9.1 | 9.1 | 9.0 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 20.1 | 21 | 20.9 | 25 | 21.2 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.11 | 19.9 | 18.96 | 22.70 | 21.32 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285.5 | 285.4 | 283.7 | 285.2 | 284.2 | | |
| | | Totalizer, (gal) | | Daily | 74.3213 | 74.5509 | 74,8729 | 75.2613 | 75.6071 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 286 | 287 | 282 | 284 | 281 | | |
| | | Totalizer, (1000 gal) | | Daily | 64,721,708 | 64912160 | 65,184,192 | 65,504,236 | 65,789,880 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 14.8 | 0.3 | 0.3 | 0.3 | 15.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4891.25 | 4877.14 | 4877.18 | 4877.18 | 4882.04 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 4.09 | 4.03 | 4.33 | 4.56 | 4.79 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

228 9/13 7:58
48.7780 MG

233 9/13 7:~~75~~50 PP
33,3810 MG

234 9/13 7:50
51.1041 MG

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 2 — 1250 — 0730 — 9:00 — 8:50

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 9/11/17 | Tuesday 9/12/17 | Wednesday 9/13/17 | Thursday 9/14/17 | Friday 9/15/17 | Saturday ___/___/___ | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 13.7 | 14.3 | 15.0 | 15.0 | 4.3 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.770 | 1.276 | 12.1 K | 2.13 | 0.150 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.804 | 1.313 | 1.952 | 2.16 | 0.144 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 12 | 12.1 | 1.904 K | 12.1 | 17.0 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.4 | 277.3 | 274.3 | 275.8 | 275.7 | | |
| | | Totalizer (gal) | | Daily | 59,9920 | 60,2913 | 60,7103 | 60,9959 | 61.3488 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 274 | 274 | ~~275~~ 274 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 52,310,036 | 52,569,300 | 52,929,788 | ~~52,364,035~~ | 53,478,252 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | YES | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.8 | 7.8 | 7.8 | 7.7 | 7.7 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 11.8 | 11.9 | 12.0 | ~~11.9~~ 12 | 11.9 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.4 | 6.2 | 6.2 | 6.2 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 20.9 | 20.2 | 20 | 23.1 | 22.0 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.11 | 19.9 | 18.96 | 22.84 | 21.65 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285.2 | 285.8 | 289.1 | 283.5 | 288.9 | | |
| | | Totalizer, (gal) | | Daily | 58,2841 | 58,5756 | 58,9827 | 59,2629 | 59,6089 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 284 | 276 | 289 | 287 | 270 | | |
| | | Totalizer, (1000 gal) | | Daily | 51,543,688 | 51788752 | 52,131,460 | 52364038 | 52,683,112 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

2/13/17 HMI Total 53,175,176

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 1

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 9/18/17 | Tuesday 9/19/17 | Wednesday 9/20/17 | Thursday 9/21/17 | Friday 9/22/17 | Saturday __/__/__ | Sunday __/__/__ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0725 | 0738 | 0710 | 0709 | 0946 | | |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 144 | 144 | 144 | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 36,063,944 | 36,403,764 | 36,733,980 | 37,075,404 | 37,452,884 | | |
| | | Transducer, ft below measuring point | | Daily | 4852.51 | 4852.71 | 4852.81 | 4852.55 | 4852.48 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59 | 59 | 59 | 59 | 59/59.60 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | 143.9 | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 167 | 167 | 167 | 169 | 167 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 34,689,420 | 35,032,696 | 35,366,284 | 35711276 | 36,092,764 | | |
| | | Transducer, ft below measuring point | | Daily | 4902.52 | 4902.98 | 4964.29 | 4904.25 | 4904.54 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22 | 22 | 22/22.48 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | 167.1 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | 84 | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 164 | 164 | 164 | 164 | 164 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 31,311,884 | 31,483,502 | 31,660,426 | 31,822,750 | 32013500 | | |
| | | Transducer, ft below measuring point | | Daily | 4920.39 | 4920.39 | 4920.39 | 4920.39 | 4920.39 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22 | 22 | 22 | 22 | 22/22.42 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | 163.7 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | 75 | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | 21.5 | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 18.7 | 15.8 | 15.8 | 16.4 | 16.6 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 3.25 | 0.206 | 0.205 | 0.219 | 0.293 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 3.20 | 0.205 | 0.215 | 0.221 | 0.284 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 14.1 | 14.2 | 14.3 | 14.5 | 14.9 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 278.0 | 275.1 | 278.3 | 274.17 | 276.9 | | |
| | | Totalizer (gal) | | Daily | 62,2844 | 62,6746 | 63.0575 | 63,4536 | 63,8922 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 274 | 276 | | |
| | | Totalizer, (1000 gal) | | Daily | 55,173,512 | 55,513,368 | 55,843,368 | 56184104 | 56,561,576 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | Yes | No | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.0 | 7.1 | 6.9 | 6.9 | 6.9 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 13.7 | 13.7 | 14.0 | 14.1 | 14.2 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.0 | 9.0 | 9.0 | 9.0 | 9.1 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | ~~286~~ KM | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.2 | 18.1 | 23.0 | 21.9 | 22 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 19.52 | 17.68 | 21.65 | 20.61 | 20.92 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 286 | 288.9 | 286.4 | 285.1 | 287.3 | | |
| | | Totalizer, (gal) | | Daily | 66,710,068 | 77,1246 | 77.5092 | 77,9119 | 78.3498 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 285 | 282 | 287 | 284 | 283 | | |
| | | Totalizer, (1000 gal) | | Daily | 66,750,3 | 67,149,616 | 67,608,320 | 68291216 | 69,023,448 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 0.3 | 8.9 | 0.3 | 0.3 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4877.18 | 4884.33 | 4877.44 | 4877.47 | 4877.14 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 4.91 | 4.30 | 4.03 | 4.33 | 4.66 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

9/22/17 228 1313
50.6782

9/22/17 233 1255
35.5445

9/22/17 234 1235
53.2602

Train 2

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 9/18/17 | Tuesday 9/19/17 | Wednesday 9/20/17 | Thursday 9/21/17 | Friday 9/22/17 | Saturday ___/___/___ | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0730 | 0738 | 0715 | 0714 | 0946 | | |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 13.4 | 13.3 | 13.0 | 13.5 | 13.4 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.162 | 0.151 | 0.154 | 0.159 | 0.175 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.150 | 0.168 | 0.164 | 0.169 | ~~0.190~~ 0.203 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 12.2 | 12.2 | 12.0 | 12.2 | 12.2 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.0 | 275.4 | 275.3 | 276.2 | 272.4 | | |
| | | Totalizer (gal) | | Daily | 62.2258 | 62.5160 | 62.8019 | 63.0944 | 63.4248 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 275 | 275 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 54,229,136 | 54,481,260 | 54,736,780 | 54,973748 | 55,258232 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.9 | 7.7 | 7.5 | 7.7 | 7.7 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 12.1 | 12.1 | 12.1 | 11.9 | 11.9 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.1 | 6.1 | 6.0 | 6.2 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 20.5 | 18.1 | 22.2 | 21 | 21.3 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 20.01 | 17.68 | 21.64 | ~~20.58~~ 20.58 | 20.92 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 285.5 | 296.2 | 290.8 | 286.9 | 291.4 | | |
| | | Totalizer, (gal) | | Daily | 60.4668 | 60.7514 | 61.0508 | 61.3202 | 61.6367 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 286 | 260 | 290 | 273 | | | |
| | | Totalizer, (1000 gal) | | Daily | 53,371,836 | 53,613,304 | 53,848,108 | 54,089188 | 54,358300 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 1

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 9/25/17 | Tuesday 9/26/17 | Wednesday 9/27/17 | Thursday 9/28/17 | Friday 9/29/17 | Saturday ___/___/___ | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 0730 | 0850 | 1654 | 1514 1236 | | |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | 144 | 143 | OFF @ | 144 | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | 38,531,240 | 38,776,936 | 39,138,632 | 39,571,136 | 39,741,964 | | |
| | | Transducer, ft below measuring point | | Daily | 4852.34 | 4852.49 | 4852.17 | 4870.90 | 4852.65 | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | 59/ 59.72 | 59 | 59 | OFF | 59 | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | 144.1 | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | 167 | 166 | 166 | 166 | 166 | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | 37,182,528 | 37,420,496 | 37,773,296 | 38,016,700 | 38,180,472 | | |
| | | Transducer, ft below measuring point | | Daily | 4904.75 | 4904.88 | 4903.40 | 4903.61 | 4905.00 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22/ 22.48 | 22 | 22 | 22 | 22 | | |
| | | GW flow FI-7001, (gpm) | | Weekly | 166.7 | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | 96 | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | 164 | 163 | 164 | 164 | 164 | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | 32,558,340 | 32,682,294 | 32,865,050 | 33,084,166 | 33,226,734 | | |
| | | Transducer, ft below measuring point | | Daily | 4920.39 | 4920.39 | 4920.39 | 4920.39 | 4920.39 | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | 22/ 22.39 | 22 | 22 | 22 | 22 | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | 79 | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | 21.5 | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 18.75 | 19.6 | 17.7 | 16.5 | 16.6 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 2.1289 | 2.953 | 0.208 | 0.214 | 0.229 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 2.0258 | 2.876 | 0.209 | 0.209 | 0.216 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 15.25 | 15.4 | 15.0 | 15.0 | 15.0 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 275.6 | 275.2 | 275.5 | 274.1 | 275.3 | | |
| | | Totalizer (gal) | | Daily | 65.1411 | 65.4259 | 65.7863 | 66.1005 | 66.2079 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 276 | 275 | 275 | 271 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 57,639,900 | 57,884,416 | 58,191,724 | 58,459,480 | 58,554,296 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | YES | No | No | No | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 6.9 | 6.9 | 7.0 | 7.0 | 7.0 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 14.8 | 14.8 | 14.7 | 14.3 | 14.8 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 9.0 | 8.9 | 9.1 | 8.9 | 9.1 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | B | B | B | B | B | | |
| | | Which Tank is Lag? | V116X | Daily | A | A | A | A | A | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 21.5 | 23.1 | 21.5 | 22.2 | 21 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 13.75 | 21.84 | 20.13 | 21.17 | 19.85 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 307.5 | 285.4 | 286.0 | 285.0 | 285.0 | | |
| | | Totalizer, (gal) | | Daily | 79 5146 | 79,8959 | 80,2560 | 80,5725 | 80,6807 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 296 | 285 | 285 | 285 | 285 | | |
| | | Totalizer, (1000 gal) | | Daily | 71,115,376 | 71,586,704 | 72,195,488 | 72,714 104 | 72,815,088 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | 28866 3.1 | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | 24.5 | 0.3 | 0.3 | 0.3 | 0.3 | | |
| | | Transducer, ft below measuring point | ft | Daily | 4882.96 | 4877.74 | 4877.97 | 4856.40 | 4856.40 | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | 4.28 | 4.19 | 4.47 | 0.00 | 0.00 | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

228 9/25/17
5,2582

233 9/25/17
36.2212 MG

234 9/25/17
53,9240 MG

9/25/17
Pond Water Level : 2.26'

7/28/17 1630
Pond level 2.94'

Well 7
PLC-498
Error Code
0x040000
return from
~~OFFLINE~~ PLC in service

WELL 7
PLC-498

Daily and Weekly Inspection Log for the Kirtland AFB GWTS

Train 2

| Well | Location | Item | Normal Range | Recordation Frequency | Monday 9/25/17 | Tuesday 9/26/17 | Wednesday 9/27/17 | Thursday 9/28/17 | Friday 9/29/17 | Saturday ___/___/___ | Sunday ___/___/___ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 0730 | 0850 | 1654 | 1237 | | |
| Well KAFB-106228 (Church Lot) | HMI | GW flow FIT-3001, (gpm) | 0-200 gpm | Daily | 144 | | | | | | |
| | | Totalizer, FIT-3001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FIT-3001, (gpm) | | Weekly | | | | | | | |
| | | Temperature, (F) | | Weekly | | | | | | | |
| Well KAFB-106233 (California) | HMI | GW flow FT-7001, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7001, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7001, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well KAFB-106234 (Anderson) | HMI | GW flow FI-7034, (gpm) | 0-200 gpm | Daily | | | | | | | |
| | | Totalizer, FQI-7002, (1000 gal) | | Daily | | | | | | | |
| | | Transducer, ft below measuring point | | Daily | | | | | | | |
| | Well Control House | Wellhead Pressure, (psig) | < 150 psig | Weekly | | | | | | | |
| | | GW flow FI-7002, (gpm) | | Weekly | | | | | | | |
| | Well vault | Wellhead Pressure, (psig) | < 150 psig | Monthly | | | | | | | |
| Well Control House | Well Control House | Effluent Line Pressure, PI-7005 | < 150 psig | Weekly | | | | | | | |
| Influent Pump Skid | Pump Skid (Influent) | Inlet pressure pump skid, PI-3102, (psig) | < 60 psig | Daily | 13.5 | 13.7 | 14.0 | 14.5 | 15.4 | | |
| | | Bag filter differential pressure F112A, PDI-3102A | <15 psid | Daily | 0.360 | 0.486 | 12.1 | 1.273 | 2.169 | | |
| | | Bag filter differential pressure F112B, PDI-3102B | <15 psid | Daily | 0.340 | 0.526 | 0.787 | 1.322 | 2.185 | | |
| | | Outlet pressure pump skid, PI-3103, (psig) | < 60 psig | Daily | 12.25 | 12.2 | 0.757 | ~~1.322~~ | 12.2 | | 12.2 |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 274.8 | 275.5 | 275.6 | 274.9 | 275.4 | | |
| | | Totalizer (gal) | | Daily | 64.3452 | 64.5566 | 64.9136 | 65.3489 | 65.6563 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | ~~1~~305 | 275 | 275 | 275 | 275 | | |
| | | Totalizer, (1000 gal) | | Daily | 56,056,492 | 56,238,112 | 56,544,104 | 56,916,228 | 57,182,980 | | |
| | Bag Filters | Bag filters changed? | yes/no | Daily | No | No | No | No | (YES) | | |
| GACs | GAC Drain Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | 12.1 | 12.0 | 12.1 | 12.1 | 12.1 | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | 6.3 | 6.2 | 6.3 | 6.2 | 6.2 | | |
| | Lead/Lag | Which Tank is Lead? | V116X | Daily | A | A | A | A | A | | |
| | | Which Tank is Lag? | V116X | Daily | B | B | B | B | B | | |
| | GAC Fill Mode | V-116A Pressure, PI-3104A, (psig) | 0-20 psig | Daily | | | | | | | |
| | | Between Tanks, PI-3105, (psig) | 0-20 psig | Daily | | | | | | | |
| | | V-116B Pressure, PI-3104B, (psig) | 0-20 psig | Daily | | | | | | | |
| | HMI | GW flow, FIT 3102 (gpm) | 0-500 gpm | Daily | | | | | | | |
| | | Totalizer, FIT 3102 (gal) | | Daily | | | | | | | |
| Effluent Pump Skid | Pump Skid (Effluent) | Inlet press. pump skid, PI-3108, (psig) | < 60 psig | Daily | 14.5 | 22.1 | 20.5 | 21.9 | 20.2 | | |
| | | Bag filter diff. press., PI-3102, F-118A, PDI-3108A | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Bag filter diff. press., PI-3103, F-118B, PDI-3108B | <15 psid | Daily | 0 | 0 | 0 | 0 | 0 | | |
| | | Outlet press. pump tree, PI-3102, (psig) | < 60 psig | Daily | 13.75 | 21.78 | 19.97 | 21.2 | 19.83 | | |
| | | GW flow, (gpm) | 0-500 gpm | Daily | 326.6 | 289.9 | 287.6 | 287.3 | 285.5 | | |
| | | Totalizer, (gal) | | Daily | 62.4739 | 62,7489 | 63.0975 | 63,5211 | 63.8215 | | |
| | HMI | GW flow, (gpm) | 0-500 gpm | Daily | 258 | 294 | 285 | 283 | 285 | | |
| | | Totalizer, (1000 gal) | | Daily | 55,124,036 | 55,276,728 | 55,588,272 | 55,942,772 | 56,196,640 | | |
| Injection Well 7 | Well head | Totalizer, (1000 gal) | | Weekly* | | | | | | | |
| | HMI | Pressure, (psig) | 0-120 psig | Daily | | | | | | | |
| | | Transducer, ft below measuring point | ft | Daily | | | | 485 | | | |
| Golf Course Pond | HMI | Pond Level, (ft) | 0.7-3.5 ft | Daily | | | | | | | |

* The Injection Well 7 Totalizer reading should be recorded on switch over days too.

**WEEKLY INSPECTION LOGS**
**(JULY – SEPTEMBER 2017)**

Form 16
Weekly Inspection
Kirtland AFB GWTS

Train 1

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/7/2017 1530 |
| Feed pump (P-112 A/B) seals free of leaks P-112A bearing frame | ODE seal (small slow leak) | | |
| Pump vibration normal | Good | | 7/7/2017 |
| Oil reservoir for feed pumps full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-112 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/7/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| | ✓ | ✓ | ✓ |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/7/17 |
| Treated water discharge pump (P-118) seal free of leaks (grease drip at elec. motor DE bearing) | | | |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pump full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-118 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

Train 2

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/7/17 1540 |
| Feed pump (P-~~112~~ 213 A/B) seals free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pumps full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-~~112~~ 213 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/7/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| | ✓ | ✓ | ✓ |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/7/17 |
| Treated water discharge pump (P-~~118~~ 218) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pump full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-~~118~~ 218 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/14/17 |
| Feed pump (P-112 A/B) seals free of leaks P-112A ODE bearing frame oil seal leak | | | |
| Pump vibration normal | Good | PF | |
| Oil reservoir for feed pumps full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-112 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/14/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| Empty 5 gal. bucket at V114B vent line | ✓ | ✓ | ✓ |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/14/17 |
| Treated water discharge pump (P-118) seal free of leaks Grease drip at DE elec motor bearing | | | |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pump full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-118 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

Form 16
Weekly Inspection
Kirtland AFB GWTS

Train 2

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/14/17 |
| Feed pump (P-~~112~~ 212 A/B) seals free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pumps full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-~~112~~ 212 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/14/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds → Yes | ↓ | ↓ | ↓ |
| Empty vent down pipe 5 gal buckets | ↓ | ↓ | ↓ |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/14/17 |
| Treated water discharge pump (P-~~118~~ 218) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pump full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-~~118~~ 218 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

Train 1

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/19/17 830 |
| Feed pump (P-112 A/B) seals free of leaks P-112A DE Elec. Motor one drop of bearing grease | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/19/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | | | |
| small amt. of water in bucket at V-114B | ↓ | ↓ | ↓ |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/19/17 |
| Treated water discharge pump (P-118) seal free of leaks DE bearing grease dripping on elec. motor | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

→ side (east) of bearing frame has oil in a groove near site glass, will clean and see if it reappears,

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Train 2

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/19/17 |
| Feed pump (P-~~112~~ 212 A/B) seals free of leaks | P-212 A/B ODE Bearing frame slow oil leaks | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~112~~ 212 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/19/17 |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds : Bleed vent lines | | | |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/19/17 |
| Treated water discharge pump (P-~~118~~ 218 PF) seal free of leaks | Good | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~118~~ 218 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

**Form 16**
**Weekly Inspection**
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Train 1

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks P-112A | Good | PP | 7/26/17 1000 |
| Feed pump (P-112 A/B) seals free of leaks ~~B~~ PP=DE bearing frame seals have small oil leaks | | | |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pumps full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-112 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ↓ | ↓ | ✓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PP | 7/26/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| | ↓ | ↓ | ↓ |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PP | 7/26/17 |
| Treated water discharge pump (P-118) seal free of leaks small grease drip DE elec. motor bearing | | | |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pump full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-118 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ↓ | ↓ |

Form 16
Weekly Inspection
Kirtland AFB GWTS

Trailer 2

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/26/17 |
| Feed pump (P-~~112~~ 212 A/B) seals free of leaks | Both ODE bearing frame seals leak | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~112~~ 212 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/26/17 |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds GAC B is leaking at the manway again | | | |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 7/26/17 |
| Treated water discharge pump (P-~~118~~ 218) seal free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~118~~ 215 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | ✓ | ✓ | ✓ |
| Vent air from top of Filter housings | | | |

Form 16
Weekly Inspection
Kirtland AFB GWTS

Train 1

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/03/17 1320 |
| Feed pump (P-112 A/B) seals free of leaks | Possible DE bearing from seal leaks (both) | (oil level good, both) | (is pump) |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ✓ |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/03/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| | | | |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/03/17 |
| Treated water discharge pump (P-118) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ✓ |

**Form 16**
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Trash 2

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/03/17 1325 |
| Feed pump (P-112 A/B) seals free of leaks | possi. ODE beneath front leak (Eastern pump) | (oil levels good) | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Manway intermittent leak V-214B | Good | PF 8/03/17 |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds | Yes | | |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/13/17 |
| Treated water discharge pump (P-118) seal free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

**Form 16**
**Weekly Inspection**
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Train 1

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | JM/KM | 8/10/17 0820 |
| Feed pump (P-112 A/B) seals free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | JM/KM | 8/10/17 0830 |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds | | | |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | JM/KM | 8/10/17 0900 |
| Treated water discharge pump (P-118) seal free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full Minimal oil leak | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

Train 2

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | GOOD | JM/KM | 8/10/17 0850 |
| Feed pump (P-112 A/B) seals free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | GOOD | JM/KM | 8/10/17 0857 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | | | |
| | ↓ | ↓ | ↓ |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | GOOD | JM/KM | 8/10/17 0902 |
| Treated water discharge pump (P-118) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

Train 1

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/18/2017 |
| Feed pump (P-112 A/B) seals free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pumps full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-112 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/18/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/18/17 |
| Treated water discharge pump (P-118) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pump full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-118 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

Form 16
Weekly Inspection
Kirtland AFB GWTS

Train

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/18/17 |
| Feed pump (P-112 A/B) seals free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds | | | |
| | | | |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/18/17 |
| Treated water discharge pump (P-118) seal free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

Train 1

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/25/17 |
| Feed pump (P-112 A/B) seals free of leaks Some grease on skid DE | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/25/17 |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds | | | |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/25/17 |
| Treated water discharge pump (P-118) seal free of leaks Some grease on skid DE | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

Train 2

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/25/17 |
| Feed pump (P-~~112~~ 113 A/B) seals free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~112~~ 112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/25/17 |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds | | | |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/25/17 |
| Treated water discharge pump (P-~~118~~ 213) seal free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~118~~ 213 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

**Form 16**
**Weekly Inspection**
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| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/30/17 |
| Feed pump (P-112 A/B) seals free of leaks Small drip DE Electric Motor Bearing | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/30/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | |
| Vent air from top of carbon beds | | | |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/30/17 |
| Treated water discharge pump (P-118) seal free of leaks Small oil drip DE Electric Motor | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

**Form 16**
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| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/30/17 |
| Feed pump (P-~~112~~ 213 A/B) seals free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~112~~ 212 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/30/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | | | |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 8/30/17 |
| Treated water discharge pump (P-~~118~~ 213) seal free of leaks | ↑ | ↑ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~118~~ 215 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | |

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| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/8/17 |
| Feed pump (P-112 A/B) seals free of leaks DE grease drip Baldor motor (both pumps) | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/8/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | |
| Vent air from top of carbon beds | ↓ | ✓ | |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/8/17 |
| Treated water discharge pump (P-118) seal free of leaks Small DE Grease drip elec motor | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

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| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/8/17 |
| Feed pump (P-~~112~~ 212 A/B) seals free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~112~~ 212 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/8/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/8/17 |
| Treated water discharge pump (P-~~118~~ 218) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~118~~ 218 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

Form 16
Weekly Inspection
Kirtland AFB GWTS

Train 1

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | PF | Good | 9/12/17 |
| Feed pump (P-112 A/B) seals free of leaks | PF elec. motor, small grease drip | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | changed 9/11/17 | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/12/17 |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds | | | |
| | | | |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks Good | PF | PF | 9/12/17 |
| Treated water discharge pump (P-118) seal free of leaks | | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days changed 9/11/17 | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

Form 16
Weekly Inspection
Kirtland AFB GWTS

Train 2

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/12/17 |
| Feed pump (P-~~112~~ 213 A/B) seals free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days changed 9/11/17 | | | |
| Filter housing (F-~~112~~ 213 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/11/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| | | | |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/11/17 |
| Treated water discharge pump (P-~~118~~ 215) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days changed 9/11/17 | | | |
| Filter housing (F-~~118~~ 218 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

Train 1

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/22/17 10:15 |
| Feed pump (P-112 A/B) seals free of leaks slight DE grease drip of elec. motor | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pumps full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-112 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/22/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ✓ | ✓ | ✓ |
| | | | |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/22/17 |
| Treated water discharge pump (P-118) seal free of leaks slight DE drip elec. motor | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pump full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-118 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ✓ | ✓ | ✓ |

**Form 16**
**Weekly Inspection**
**Kirtland AFB GWTS**

Train 2

| **Groundwater Feed (tank, feed pumps and pre-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | ~~PF~~ 9/22/17 1025 |
| Feed pump (P-~~112~~ 2/3 A/B) seals free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pumps full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-~~112~~ 2/3 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

| **Carbon Adsorbers** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/22/17 1025 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | ↓ | ↓ | ↓ |
| | ↓ | ↓ | ↓ |

| **Treated water discharge (tank, feed pumps and post-filter)** | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/22/17 1025 |
| Treated water discharge pump (P-~~118~~ 2/3) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | ↓ | ↓ | ↓ |
| Oil reservoir for feed pump full | ↓ | ↓ | ↓ |
| Pump oil has been changed within last 90 days | ↓ | ↓ | ↓ |
| Filter housing (F-~~118~~ 2/3 A/B) gaskets free of leaks | ↓ | ↓ | ↓ |
| Filter differential pressure less than 15 psi | ↓ | ↓ | ↓ |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

Form 16
Weekly Inspection
Kirtland AFB GWTS

Train 1

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PP | 9/29/17 |
| Feed pump (P-112 A/B) seals free of leaks | slight grease drip DE electric motor | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-112 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PP | 9/29/17 |
| Pressure drop less than 15 psig for each bed | | | |
| Vent air from top of carbon beds | | | |
| | | | |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PP | 9/29/17 |
| Treated water discharge pump (P-118) seal free of leaks | DE grease drip elec. motor | | |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-118 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | | | |

Form 16
Weekly Inspection
Kirtland AFB GWTS

Train 2

| Groundwater Feed (tank, feed pumps and pre-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/29/17 |
| Feed pump (P-~~112~~ 212 A/B) seals free of leaks | ↓ | ↓ | |
| Pump vibration normal P-212A ODE elec. motor bearing, slight noise | | | |
| Oil reservoir for feed pumps full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~112~~ 213 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | |

| Carbon Adsorbers | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/29/17 |
| Pressure drop less than 15 psig for each bed | ↓ | ↓ | ↓ |
| Vent air from top of carbon beds | | | |
| | | | |

| Treated water discharge (tank, feed pumps and post-filter) | condition | inspected by | date - time |
|---|---|---|---|
| Pipes, fittings and instruments free of leaks | Good | PF | 9/29/17 |
| Treated water discharge pump (P-~~118~~ 218) seal free of leaks | ↓ | ↓ | ↓ |
| Pump vibration normal | | | |
| Oil reservoir for feed pump full | | | |
| Pump oil has been changed within last 90 days | | | |
| Filter housing (F-~~118~~ 218 A/B) gaskets free of leaks | | | |
| Filter differential pressure less than 15 psi | | | |
| Vent air from top of Filter housings | ↓ | ↓ | ↓ |

**MONTHLY INSPECTION LOGS**
**(JULY – SEPTEMBER 2017)**

Form 17
Monthly Inspection
Kirtland AFB GWTS

| Wellhead Vault KAFB-106228 | condition | inspected by | date - time |
|---|---|---|---|
| wellhead vault dry and free of debris Pipes sweating | Good | PF | 7/27/2017 |
| Air relief valve (ARV-3005) outlet clear | ↓ | ↓ | ↓ |
| Pressure in double wall pipe interstitial space (PI-3002) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |
| Locks on electrical shed and panels intact | ↓ | ↓ | ↓ |

| Valve Vault KAFB-106228 (Louisianna inside base fence) | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris ~~slight moisture~~ JM | GOOD | PF/JM | 7-27-17 1257 |
| Air relief valve (ARV-3008) outlet clear exchanged bucket | ↓ | ↓ | ↓ |
| Pressure in double wall pipe interstitial space (PI-3003) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | ↓ | ↓ | ↓ |

| Wellhead Vault KAFB-106233 | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | GOOD | PF/JM | 7-27-17 1215 |
| Air relief valve (ARV-4001) outlet clear | ↓ | ↓ | ↓ |
| Pressure in double wall pipe interstitial space (PI-4001) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | ↓ | ↓ | ↓ |

| Wellhead Vault KAFB-106234 | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | Good | PF/JM | 7-27-17 1105 |
| Air relief valve (ARV-5001) outlet clear | ↓ | ↓ | ↓ |
| Pressure in double wall pipe interstitial space (PI-5001) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | ↓ | ↓ | ↓ |

Form 17
Monthly Inspection
Kirtland AFB GWTS

| Air Release Valve Vault - Eastern Avenue | condition | inspected by | date - time |
|---|---|---|---|
| wellhead vault dry and free of debris Standing Water / Pumped vault | Good | PF/JM | 7/27/2017 |
| Air relief valve (ARV-6001 and ARV-6002) outlets clear | ↓ | ↓ | ↓ |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables intact | | | |
| Vault cover and seals intact | | | |

| Well Control House (WCH) - Gibson Avenue (inside base fence) | condition | inspected by | date - time |
|---|---|---|---|
| WCH dry and free of debris | Good | PF/JM | 7/27/2017 |
| Air relief valve (ARV-3008) outlet clear exchanged bucket | ↓ | ↓ | ↓ |
| Pressure in double wall pipe interstitial spaces (PI-7001 and PI-7002) is near zero after space is vented at wellhead. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables intact | | | |

| Valve Vault WCH to GWTS (Louisianna inside base fence) | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris slight moisture | GOOD | PF/JM | 7-27-17 1255 |
| Air relief valve (ARV-8001) outlet clear | ↓ | ↓ | ↓ |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables intact | | | |

| Air Relief Valve Vaults on Discharge line (on base) | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris All others good | Good | PF/JM | 7/27/17 |
| Air relief valve outlets clear | | | |

ARV at Pennsylvania & Hardin (NW corner) is leaking

| KAFB Well 7 Wellhead | condition | by | time |
|---|---|---|---|
| Well 7 flowmeter vault dry and free of debris | Good | PF/JM | 7/27/17 |
| Air relief valve (ARV-9012) outlet clear | ↓ | ↓ | ↓ |
| V-Smart valve hydraulic oil reservoir full | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables intact | | | |

**Form 10**

**Monthly Flow Meter Inspection**

**Kirtland AFB MPPTS**

**FE/FIT- 3001,** located in KAFB-106228 well vault. ~~V-cone meter~~ Mag. Meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures well flow to GWTS.

**FE/FIT- 7001,** located in well control house. ~~V-cone meter~~ Magnetic with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from KAFB-106233 to GWTS.

**FE/FIT- 7002,** located in well control house. ~~V-cone meter~~ Magnetic with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from KAFB-106234 to GWTS.

**FE/FIT- 3102,** located on the feed pump skid in the treatment building. V-cone meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from feed tank to carbon beds.

**FE/FIT- 3108,** located on the discharge pump skid in the treatment building. ~~V-cone meter~~ Magnetic with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from treated water tank to discharge line.

**FI/FQI- 3120,** located on the ~~feed pump skid~~ DUST CONTOL LINE in the treatment building. Turbine meter (local) with analog flow rate and mechanical totalizer readout in increments of 100 gallons. Measures water volume used for dust control.

**FI/FQI- at KAFB well 7,** located in existing vault near KAFB 7. Turbine meter (local) with analog flow rate and mechanical totalizer readout in increments of 100 gallons. Measures injection volume into KAFB 7.

Add pressure indicators at 228, WCH and feed skids

**Monthly Inspection Log**

| date/inspected by 7/27/2017 | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | FIT 3202 | FIT 3208 |
|---|---|---|---|---|---|---|---|---|---|
| flow reading operational | Good | Good | Good | Good | Good | Good | Good | Good | ~~Good~~ |
| PLC totalizer functional | | | | | | | | | |
| No moisture in readout | | | | | | | | | |
| Free of mechanical damage | | | | | | | | | |
| Readings consistent with past operations | | | | | | | | | |

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

**Form 17**
**Monthly Inspection**
**Kirtland AFB GWTS**

| **Wellhead Vault KAFB-106228** | condition | inspected by | date - time |
|---|---|---|---|
| wellhead vault dry and free of debris | OK | KM | 8/30/17 1527 |
| Air relief valve (ARV-3005) outlet clear | | | |
| Pressure in double wall pipe interstitial space (PI-3002) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |
| Locks on electrical shed and panels intact | | | |

| **Valve Vault KAFB-106228 (Louisianna inside base fence)** | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | OK | KM | 08/30/17 1450 |
| Air relief valve (ARV-3008) outlet clear | | | |
| Pressure in double wall pipe interstitial space (PI-3003) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |

| **Wellhead Vault KAFB-106233** | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | OK | KM | 8/31/17 1325 |
| Air relief valve (ARV-4001) outlet clear | | | |
| Pressure in double wall pipe interstitial space (PI-4001) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |

| **Wellhead Vault KAFB-106234** | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | OK | KM | 8/31/17 1355 |
| Air relief valve (ARV-5001) outlet clear | | | |
| Pressure in double wall pipe interstitial space (PI-5001) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |

Form 17
Monthly Inspection
Kirtland AFB GWTS

| Air Release Valve Vault - Eastern Avenue | condition | inspected by | date - time |
|---|---|---|---|
| wellhead vault dry and free of debris | OK | KM | 8/30/17 1535 |
| Air relief valve (ARV-6001 and ARV-6002) outlets clear | ↓ | ↓ | ↓ |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | ↓ | ↓ | ↓ |
| Electrical cables intact | ↓ | ↓ | ↓ |
| Vault cover and seals intact | ↓ | ↓ | ↓ |

| Well Control House (WCH) - Gibson Avenue (inside base fence) | condition | inspected by | date - time |
|---|---|---|---|
| WCH dry and free of debris | OK | KM | 8/30/17 1510 ~~1510~~ KM |
| Air relief valve (ARV-3008) outlet clear | ↓ | ↓ | ↓ |
| Pressure in double wall pipe interstitial spaces (PI-7001 and PI-7002) is near zero after space is vented at wellhead. | ↓ | ↓ | ↓ |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | ↓ | ↓ | ↓ |
| Electrical cables intact | ↓ | ↓ | ↓ |

| Valve Vault WCH to GWTS (Louisianna inside base fence) | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | OK | KM | 8/30/17 1455 |
| Air relief valve (ARV-8001) outlet clear | ↓ | ↓ | ↓ |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | ↓ | ↓ | ↓ |
| Electrical cables intact | ↓ | ↓ | ↓ |

| Air Relief Valve Vaults on Discharge line (on base) | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | OK | KM | 08/30/17 0913 |
| Air relief valve outlets clear | ↓ | ↓ | ↓ |

| KAFB Well 7 Wellhead | condition | by | time |
|---|---|---|---|
| Well 7 flowmeter vault dry and free of debris | OK | KM | 8/30/17 09:35 |
| Air relief valve (ARV-9012) outlet clear | ↓ | ↓ | ↓ |
| V-Smart valve hydraulic oil reservoir full | ↓ | ↓ | ↓ |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | ↓ | ↓ | ↓ |
| Electrical cables intact | ↓ | ↓ | ↓ |

**Form 10**
**Monthly Flow Meter Inspection**
**Kirtland AFB MPPTS**

**FE/FIT- 3001,** located in KAFB-106228 well vault. V-cone meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures well flow to GWTS.

**FE/FIT- 7001,** located in well control house. V-cone meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from KAFB-106233 to GWTS.

**FE/FIT- 7002,** located in well control house. V-cone meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from KAFB-106234 to GWTS.

**FE/FIT- 3102,** located on the feed pump skid in the treatment building. V-cone meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from feed tank to carbon beds.

**FE/FIT- 3108,** located on the discharge pump skid in the treatment building. V-cone meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from treated water tank to discharge line.

**FI/FQI- 3120,** located on the feed pump skid in the treatment building. Turbine meter (local) with analog flow rate and mechanical totalizer readout in increments of 100 gallons. Measures water volume used for dust control.

**FI/FQI- at KAFB well 7,** located in existing vault near KAFB 7. Turbine meter (local) with analog flow rate and mechanical totalizer readout in increments of 100 gallons. Measures injection volume into KAFB 7.

**Monthly Inspection Log**

| date/inspected by 08/30/17 KM | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | FIT 3208 |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | ✓ |
| PLC totalizer functional | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | ✓ |
| No moisture in readout | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Free of mechanical damage | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Readings consistent with past operations | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

FIT ~~FIT~~ KM 3102 ✓ ✓ ✓ ✓ ✓

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

**Form 17**
**Monthly Inspection**
**Kirtland AFB GWTS**

| **Wellhead Vault KAFB-106228** | condition | inspected by | date - time |
|---|---|---|---|
| wellhead vault dry and free of debris (changed out 5 gal ARV bucket) | GOOD | PF/JM | 9-25-17 0851 |
| Air relief valve (ARV-3005) outlet clear | | | |
| Pressure in double wall pipe interstitial space (PI-3002) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |
| Locks on electrical shed and panels intact | | | |

| **Valve Vault KAFB-106228 (Louisianna inside base fence)** | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris (change out 5 gal. ARV bucket) | GOOD | PF/JM | 9-25-17 1200 |
| Air relief valve (ARV-3008) outlet clear | | | |
| Pressure in double wall pipe interstitial space (PI-3003) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |

| **Wellhead Vault KAFB-106233** | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | GOOD | PF/JM | 9-25-17 |
| Air relief valve (ARV-4001) outlet clear | | | |
| Pressure in double wall pipe interstitial space (PI-4001) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |

| **Wellhead Vault KAFB-106234** | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | GOOD | PF/JM | 9-25-17 |
| Air relief valve (ARV-5001) outlet clear | | | |
| Pressure in double wall pipe interstitial space (PI-5001) is near zero after vent valve is opened for 2 minutes and then closed. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables, vault cover and seals intact | | | |

Form 17
Monthly Inspection
Kirtland AFB GWTS

| Air Release Valve Vault - Eastern Avenue | condition | inspected by | date - time |
|---|---|---|---|
| wellhead vault dry and free of debris slight moisture | GOOD | PF/JM | 9-25-17 0945 |
| Air relief valve (ARV-6001 and ARV-6002) outlets clear | ↓ | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables intact | | | |
| Vault cover and seals intact seal cleaned | ↓ | | |

| Well Control House (WCH) - Gibson Avenue (inside base fence) | condition | inspected by | date - time |
|---|---|---|---|
| WCH dry and free of debris (change out 5 gal. ARV bucket) | GOOD | PF/JM | 9-25-17 0840 |
| Air relief valve (ARV-3008) outlet clear | ↓ | | |
| Pressure in double wall pipe interstitial spaces (PI-7001 and PI-7002) is near zero after space is vented at wellhead. | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables intact | ↓ | | |

| Valve Vault WCH to GWTS (Louisianna inside base fence) | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris water present (~1") dumped out | GOOD | PF/JM | 9-25-17 1205 |
| Air relief valve (ARV-8001) outlet clear | ↓ | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables intact | ↓ | | |

| Air Relief Valve Vaults on Discharge line (on base) | condition | inspected by | date - time |
|---|---|---|---|
| Vault dry and free of debris | Good | PF/JM | 9-25-17 1330 |
| Air relief valve outlets clear | Good | PF/JM | 9-25-17 |

| KAFB Well 7 Wellhead | condition | by | time |
|---|---|---|---|
| Well 7 flowmeter vault dry and free of debris | Good | PF/JM | 9/25/17 0825 |
| Air relief valve (ARV-9012) outlet clear | ↓ | ↓ | ↓ |
| V-Smart valve hydraulic oil reservoir full 78°F, filter pressure 0 | | | |
| Piping, valves and electrical boxes are free of leaks and external corrosion. | | | |
| Electrical cables intact | ↓ | ↓ | ↓ |

**Form 10**

**Monthly Flow Meter Inspection**

**Kirtland AFB MPPTS**

**FE/FIT- 3001,** located in KAFB-106228 well vault. ~~V-cone~~ Magnetic meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures well flow to GWTS.

**FE/FIT- 7001,** located in well control house. ~~V-cone~~ Magn. Meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from KAFB-106233 to GWTS.

**FE/FIT- 7002,** located in well control house. ~~V-cone~~ Magn Meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from KAFB-106234 to GWTS.

**FE/FIT- 3102,** located on the feed pump skid in the treatment building. V-cone meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from feed tank to carbon beds.

**FE/FIT- 3108,** located on the discharge pump skid in the treatment building. V-cone meter with differential pressure transmitter. Local display at meter, display and totalizer in HMI. Measures flow from treated water tank to discharge line. Dust control/discharge line

**FI/FQI- 3120,** located on the feed ~~pump skid~~ in the treatment building. Turbine meter (local) with analog flow rate and mechanical totalizer readout in increments of 100 gallons. Measures water volume used for dust control.

**FI/FQI- at KAFB well 7,** located in existing vault near KAFB 7. Turbine meter (local) with analog flow rate and mechanical totalizer readout in increments of 100 gallons. Measures injection volume into KAFB 7.

**Monthly Inspection Log**

| date/inspected by 9/25/2017 PF/SM | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | FIT 3202 |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | Good | Good | Good | Good | Good | Good | Good | Good |
| PLC totalizer functional | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| No moisture in readout | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Free of mechanical damage | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Readings consistent with past operations | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

FIT 3208 Good ↓ ↓ ↓ ↓ ✓

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

| date- | FIT-3001 | FIT-7001 | FIT-7002 | FIT-3102 | FIT-3108 | FIT-3120 | Well 7 | |
|---|---|---|---|---|---|---|---|---|
| flow reading operational | | | | | | | | |
| PLC totalizer functional | | | | | | | | |
| No moisture in readout | | | | | | | | |
| Free of mechanical damage | | | | | | | | |
| Readings consistent with past operations | | | | | | | | |

# FILTER PACK TAGGING TABLE
# (JULY – SEPTEMBER 2017)

## Appendix I-1-6 - Filter Pack Tagging

| Filter pack tagging | | | | | |
|---|---|---|---|---|---|
| **Well** | | **KAFB-106228** | **KAFB-106233** | **KAFB-106234** | **Notes** |
| July | Date/Time | 7/27/17 0915 | 7/27/2017 1205 | 7/27/2017 1115 | |
| | WL Depth (ft) | 469.67 | 449.41 | 461.41 | |
| | Filter Pack Depth (ft) | 418.75 | 419.65 | 429.4 | |
| | Troll Comm Data Collected | NA | □ | □ | KAFB-7 troll com data collected |
| August | Date/Time | 8/31/17 1305 | 8/31/17 1330 | 8/31/17 1405 | |
| | WL Depth (ft) | 469.68 | 449.54 | 461.54 | |
| | Filter Pack Depth (ft) | 418.7 | 419.85 | 429.5 | |
| | Troll Comm Data Collected | NA | □ | □ | KAFB-7 troll com data collected |
| September | Date/Time | 9/25/2017 12:05 | 9/25/17 1230 | 9/25/17 1305 | |
| | WL Depth (ft) | 470.4 | 449.84 | 461.99 | |
| | Filter Pack Depth (ft) | 418.8 | 419.65 | 429.5 | |
| | Troll Comm Data Collected | NA | □ | □ | KAFB-7 troll com data collected |

bgs = below ground surface
ft = feet
NM = not measured

**Filter pack tagging tool reference points**

Top black mark = 432 ft
Red mark = 429.5 ft
Bottom black mark = 428 ft

# SYSTEM SHUTDOWN LOGS
# (JULY – SEPTEMBER 2017)

# KAFB GWTS System Shutdown Log

| Date of shutdown | Time of shutdown | Date of restart | Time of restart | Was system completely shut down? | If No, which equipment was shut down? | Reason for shutdown |
|---|---|---|---|---|---|---|
| 7/5/2017 | 10:19 | 7/5/2017 | 10:44 | YES ☑ NO ☐ | WELL-7 273328.5<br>Train 1 50.4423<br>Train 2 36.2049 | Change to Well-7 temporarily |
| 7/5/17 | 16:35 | 7/5/17 | 16:59 | YES ☑ NO ☐ | Well 7 273510.9<br>Train 1 50.5577<br>Train 2 36.2793 | Change to Golf Course |
| 7/6/17 | 0933 | 7/6/17 | 09:54 | YES ☐ NO ☑ | Well 228 | P-101 Failed |
| 7/14/17 | 0924 ~~082~~ | 7/14/17 | 0945 | YES ☑ NO ☐ | WELL 7 273511.2<br>Train 1 53.3858<br>Train 2 38.9933 | Change to Well-7 |
| 7/17/17 | 0702 | 0906 | 7/17/17 | YES ☑ NO ☐ | | Change bag filters Train 2 Inf Pump Clean VS trainers & guards |
| 7/18/17 | 0818 | 7/18/17 | 0829 | YES ☑ NO ☐ | WELL 7 276387.8<br>Train 1 55.1545<br>Train 2 40.4092 | Change From Well-7 to GCMP |
| 7/21/17 | 1102 | 7/21/17 | 11:26 | YES ☑ NO ☐ | 276387.8<br>Train 1 56.3921<br>Train 2 41.3322 | Change from GCMP to Well-7 |
| 7/21/17 | 1712 | 7/21/17 | 1732 | YES ☑ NO ☐ | Well 7 276567.6<br>Train 1 56.4879<br>Train 2 41.4055 | Change to GCMP from Well-7. |
| 7/31/17 | 1615 | 08/01/17 | 0717 | YES ☐ NO ☑ | | Well KAFB-106234 leak detection at vault |
| ~~10:44~~ | | | | ~~YES ☑ NO ☐~~ | | ~~change~~ |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |

# Kirtland AFB GWTS System Shutdown Log

| Date of shutdown | Time of shutdown | Date of restart | Time of restart | Was system completely shut down? | If No, which equipment was shut down? | Reason for shutdown |
|---|---|---|---|---|---|---|
| 7/31/17 | 1615 | 08/01/17 | 0717 | YES ☐ NO ☑ | | WELL KAFB-106234 leak detection at vault |
| 8/3/17 | 0820 | 8/3/17 | 0944 | YES ☑ NO ☐ | Well 7 276567.6<br>Train 1 61.2525<br>Train 2 45.2642 | Change over from GCMP to WELL 7 |
| 8/3/17 | 1507 | 8/3/17 | 1530 | YES ☑ NO ☐ | WELL 7 276733.3<br>Train 1 61.3219<br>Train 2 45.3509 | Change back to GCMP |
| 8/4/17 | 0719 | 8/4/17 | 0742 | YES ☑ NO ☐ | Well 7 276735.3<br>Train 1 61.5240<br>Train 2 45.6042 | Change over from GCMP to Well-7 |
| 8/4/17 | 1404 | 8/4/17 | 1426 | YES ☑ NO ☐ | Well 7 276931.8<br>Train 1 61.6070<br>Train 2 45.7072 | Back to GCMP |
| 8/5/17 | 1044 | 8/5/17 | 1113 | YES ☑ NO ☐ | Well 7 276931.8<br>Train 1 61.8663<br>Train 2 46.0327 | Pond 226' 4.33 HMI<br>Change GCP to Well-7 |
| 8/6/17 | ~~1505~~ 1505 PT | 8/5/17 | 1526 | YES ☐ NO ☐ | WELL-7 277795.6<br>Train 1 62.2317<br>Train 2 46.4744 | Change from well-7 to GCMP |
| 8/12/17 | 0816 | 8/12/17 | 0837 | YES ☑ NO ☐ | Well 7 277795.8<br>Train 1 63.7776<br>Train 2 48.5017 | Change from GCMP to well 7 |
| 8/12/17 | 1513 | 8/12/17 | 0936 | YES ☐ NO ☑ | | Well KAFB-106234 shut down due to leak sensor (rain) |
| 8/15/17 | 1014 | 8/15/17 | 1112 | YES ☑ NO ☐ | | ~~Well~~ Plant shutdown due to KAFB-7 High level, box inspected, no liq & box dectected |
| 8/15/17 | 1230 | 8/15/17 | 1251 | YES ☑ NO ☐ | Well 7 280100.2<br>Train 1 64.9148<br>Train 2 49.7102 | Change from Well 7 to GCMP |
| 8/16/17 | 0816 | 8/16/17 | 1424 | YES ☑ NO ☐ | 228 until 1444 only<br>234 until 1449 only | Removing Piping for Construction. Train 2 only. |
| 8/17/17 | 1309 | 8/17/17 | 1411 | YES ☑ NO ☐ | All Wells online | Reattaching Piping. Reduced Manway gasket. |
| 8/18/17 | 1416 | 8/18/17 | 1445 | YES ☐ NO ☑ | ~~228~~ 233 offline + Train 2 | Re seating gasket. GAC B. |

# Kirtland AFB GWTS System Shutdown Log

| Date of shutdown | Time of shutdown | Date of restart | Time of restart | Was system completely shut down? | If No, which equipment was shut down? | Reason for shutdown |
|---|---|---|---|---|---|---|
| 8/20/17 | 1131 | 8/20/17 | 1230 | YES ☒ NO ☐ | Train 1 66.7547<br>Train 2 50.8637<br>Well 7 28.0101 | change discharge from GCMP to well 7 |
| 8/21/17 | 0848 | 8/21/17 | 0907 | YES ☑ NO ☐ | Train 1 67.0917<br>Train 2 51.1108<br>Well 7 28066.5 | Change discharge from Well 7 to GCMP. |
| 8/22/17 | 1559 | 8/22/17 | 1617 | YES ☑ NO ☐ | WELL 7 28067.3<br>Train 1 67.6043<br>Train 2 51.4364 | Change from GCMP to Well-7 |
| 8/23/17 | ~~0733~~ ~~1730~~ | 8/23/17 | 0756 | YES ☑ NO ☐ | TRAIN 2 51.6744<br>TRAIN 1 67.8571 | Change discharge from Well-7 to GCMP |
| 8/27/17 | 1458 | 8/27/17 | 1519 | YES ☑ NO ☐ | ~~WELL-7 28115.3.9~~ ↑<br>WELL-7 28115 4.9<br>Train 1 69.5467 | Change GCMP to Well-7<br>Train 2 52.9479 |
| 8/28/17 | 0947 | 8/28/17 | 1008 | YES ☑ NO ☐ | Well-7 28172.0<br>Train 1 69.7891<br>Train 2 53.2463 | Change well 7 to GCMP. |
| 8/30/17 | 0703 | 8/30/17 | 0732 | YES ☑ NO ☐ | Train 1 ~~28172~~ 281 70.3468<br>Train 2 53.9703 | 726.9 change from GCMP to Well 7 |
| 8/31/17 | 1700 | 8/31/17 | 1716 | YES ☑ NO ☐ | | WELL-7 High Level Elevation |
| 9/1/17 | 1001 | 9/1/17 | 1245 | YES ☐ NO ☑ | KAFB-10(233 is shut off | Clean all Wye strainer and bag filter 1 Influent |
| 9/2/17 | 1705 | 9/2/17 | 1727 | YES ☑ NO ☐ | Train 1 = 71.3648<br>Train 2 = 55.2665<br>Well 7 = 28431 4.7 | Change discharge from Well 7 to GCMP |
| 9/5/17 | 1753 | 9/5/17 | 1813 | YES ☑ NO ☐ | Train 1 = 72.4309<br>Train 2 = 56.2775<br>Well 7 = 28421 6.2 | change from GCMP to Well 7 |
| 9/6/17 | 1645 | 9/6/17 | 1707 | YES ☑ NO ☐ | Train 1 72.7951<br>Train 2 56.5448<br>Well 7 28497.0 | Chang from Well 7 to GCMP |
| 9/8/17 | 0751 | 9/8/17 | 0814 | YES ☑ NO ☐ | Train 1 73.3704<br>Train 2 57.0802<br>Well-7 28493.3 | change from GCMP to Well-7 |
| 9/8/17 | 1528 | 9/8/17 | 1549 | YES ☑ NO ☐ | Train 1 73.4603<br>Train 2 57.1457<br>Well 7 28509.9 | Change from Well 7 to GCMP |

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# Kirtland AFB GWTS System Shutdown Log

| Date of shutdown | Time of shutdown | Date of restart | Time of restart | Was system completely shut down? | If No, which equipment was shut down? | Reason for shutdown |
|---|---|---|---|---|---|---|
| 9/10/17 | 0845 | 9/10/17 | 9:04 | YES ☑ NO ☐ | Train 1 73.9711<br>Train 2 57.8584<br>Well-7 28509.4 | Change from GCMP to Well 7 |
| 9-5-17 | 1826 | 9-5-17 | 1911 | YES ☑ NO ☐ | | telemetry interference well-7 high level |
| 9/11/17 | | | | YES ☐ NO ☐ | Pump Sys | |
| 9/11/17 | 9:25 | 9/11/17 | 1225 | YES ☐ NO ☑ | KAFB-106233 | Oil changes |
| 9/11/17 | 1439 | 9/11/17 | 1501 | YES ☑ NO ☐ | Train 1 74.3439<br>Train 2 58.3120<br>Well 7 28599.4 | Change from Well-7 to GCMP |
| 9/15/17 | 08:15 | 9/15/17 | 08:36 | YES ☑ NO ☐ | Train 1 75.6049<br>Train 2 59.6078<br>Well 7 28593.4 | Change from GCMP to Well 7 |
| 9/15/17 | 08:55 | 9/15/17 | 10:03 | YES ☐ NO ☑ | | Well 233 offline to clean Y strainers. |
| 9/16/17 | 05:36 | 9/16/17 | 0822 | YES ☐ NO ☑ | | Well 233 |
| 9/16/17 | 12:39 | 9/16/17 | 1259 | YES ☑ NO ☐ | Train 1 76.0217<br>Train 2 59.9533<br>Well 7 28681.7 | Change from Well 7 to the GCMP |
| 9/18/17 | 8:39 | 9/18/17 | 09:02 | YES ☑ NO ☐ | Train 1 76.7479<br>Train 2 60.4783<br>Well 7 28681.2 | Change from GCMP to Well 7 |
| 9/19/17 | 1608 | 9/19/17 | 1627 | YES ☑ NO ☐ | Train 1 77.2693<br>Train 2 60.8524<br>Well 7 28776.1 | Change from Well 7 to ~~KAFB~~ GCMP |
| 9/23/17 | 1634 | 9/23/17 | 1703 | YES ☑ NO ☐ | Train 1 78.8623<br>Train 2 62.0041.5<br>Well 7 28777 | change from GCMP to well 7 |
| 9/25/17 | 1429 | 9/25/17 | 1449 | YES ☑ NO ☐ | Train 1 79.6170<br>Train 2 62.5475<br>Well 7 29803.5 | Change from Well 7 to GCMP |
| 9/26/17 | 1036 | 9/26/17 1210 | 1210 | YES ☐ NO ☑ | KAFB-106233 | Clean Wye Strainers |

# Kirtland AFB GWTS System Shutdown Log

| Date of shutdown | Time of shutdown | Date of restart | Time of restart | Was system completely shut down? | If No, which equipment was shut down? | Reason for shutdown |
|---|---|---|---|---|---|---|
| 9/27/17 | 1714 | 9/28/17 | 0719 | YES ☐ NO ☑ | KAFB-106233 | Radon Event Vault Leak detected |
| 9/28/17 | 1514 | 9/28/17 | ↓ | YES ☑ NO ☐ | Well 7 288303.5 Train 1 80.5669 Train 2 63.5151 | change from GCMP to Well-7 Pond (1615) 2.94 |
| | | 9/28/17 | 1648 | YES ☐ NO ☐ | Running KAFB-106233 and KAFB-106234 | Stay at pumping to GCMP (228 off) |
| 9/29/17 | 1223 | 9/29/17 | 0843 | YES ☐ NO ☑ | KAFB-106233-OFF Restart 106228-ON → 1243 | Vault leak detect |
| 9/29/17 | | 9/29/17 | 0840 | YES ☐ NO ☐ | Restart 106233 | |
| 09/29/17 | 1528 | 9/29/17 | 1549 | YES ☑ NO ☐ | Well7: 288 09.5 Train1: 80.7267 Train2: 63.8543 | Switch to KAFB7 from GCMP |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |
| | | | | YES ☐ NO ☐ | | |

# YARD INSPECTION LOGS
# (JULY – SEPTEMBER 2017)

## KAFB GWM Weekly Inspection

| | | |
|---|---|---|
| Inspected by: | Pete Ferrani | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 7/7/17 | Company: EA Engineering, Science, and Technology, Inc., PBC |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Is emergency contact information in place and up to date? | ☒ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☐ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☐ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☐ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☐ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☐ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☐ | ☐ | ☐ | | |
| Is the yard free of trash? | ☐ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☐ | ☐ | ☐ | | |
| Is all equipment clear of the yard and put away? | ☐ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☐ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☐ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☐ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☐ | ☐ | ☐ | | |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are containers holding water securely placed on pallets? | ☐ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☐ | ☐ | ☐ | | |
| Are waste labels on each container? | ☐ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☐ | ☐ | | |
| Is IDW yard signage in place? | ☐ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☐ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☐ | ☐ | ☐ | | |

| Truck Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are fire extinguishers present and easily accessible in the front of the truck? | ☐ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☐ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☐ | ☐ | ☐ | | |

## KAFB GWM Weekly Inspection

| | | |
|---|---|---|
| Inspected by: | Pete Ferrari | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 7/13/17 | Company: EA Engineering, Science, and Technology, Inc., PBC |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☑ | ☐ | ☐ | | |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☑ | ☐ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |

| Truck Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

| KAFB GWM Weekly Inspection | | | | | |
|---|---|---|---|---|---|
| Inspected by: | Pete Ferrari | | | | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 7/21/2017 | | | | Company: EA Engineering, Science, and Technology, Inc., PBC |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☐ | ☑ | ☐ | | Growing back again |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☐ | ☑ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |
| **Truck Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

| KAFB GWM Weekly Inspection | | | | | |
|---|---|---|---|---|---|
| Inspected by: | Pete Ferrari | | | | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 7/28/2017 | | | | Company: EA Engineering, Science, and Technology, Inc., PBC |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☐ | ☑ | ☐ | No time this week, | Weeds are coming back |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☐ | ☑ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |
| **Truck Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

| KAFB GWM Weekly Inspection | | | | | |
|---|---|---|---|---|---|
| Inspected by: | Pete Farrant | | | | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 8/4/2017 | | | | Company: EA Engineering, Science, and Technology, Inc., PBC |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☑ | ☐ | ☐ | | Just cut down, 8/2/17 |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☑ | ☐ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |
| **Truck Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

| KAFB GWM Weekly Inspection | | | | | |
|---|---|---|---|---|---|
| Inspected by: | Pete Ferrari | | | Project: KAFB Bulk Fuels Facility Expansion Project | |
| Date: | 8/11/17 | | | Company: EA Engineering, Science, and Technology, Inc., PBC | |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☑ | ☐ | ☐ | | |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☐ | ☑ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |
| **Truck Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

## KAFB GWM Weekly Inspection

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|---|---|---|
| Inspected by: | Pete Ferrari | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 8/17/17 | Company: EA Engineering, Science, and Technology, Inc., PBC |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☐ | ☑ | ☐ | | Making a comeback |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☑ | ☐ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |

| Truck Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

## KAFB GWM Weekly Inspection

| | | |
|---|---|---|
| Inspected by: | Pete Ferrari | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 8/25/2017 | Company: EA Engineering, Science, and Technology, Inc., PBC |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☑ | ☐ | ☐ | | |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☑ | ☐ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |
| **Truck Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

| KAFB GWM Weekly Inspection | | | | | |
|---|---|---|---|---|---|
| Inspected by: | Joshua Messenger | | | | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 9-1-17 | | | | Company: EA Engineering, Science, and Technology, Inc., PBC |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Is emergency contact information in place and up to date? | X | | | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | X | | | | |
| Are flammables storage signs in place and legible? | X | | | | |
| Are all flammables stored in the appropriate cabinet? | X | | | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | X | | | | |
| Are the portable restroom exteriors free of leaks or spillage? | X | | | | |
| Are the EA vehicles and compressors free of leaks or spillage? | X | | | | |
| Is the yard free of trash? | X | | | | |
| Is the yard free of weeds? | X | | | | Minimal |
| Is all equipment clear of the yard and put away? | X | | | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | X | | | | |
| Is the gravel driveway in acceptable condition for vehicle access? | X | | | | |
| Is the enclosed fence upright and intact? | X | | | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | X | | | | |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are containers holding water securely placed on pallets? | X | | | | |
| Are container lids on properly and secure? | X | | | | |
| Are waste labels on each container? | X | | | | |
| Are containers damaged or leaking? | | X | | | |
| Is IDW yard signage in place? | X | | | | |
| Are barricades and caution tape in place and in good order? | X | | | | |
| Are empty containers properly stored in the appropriate container areas? | X | | | | |
| **Truck Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are fire extinguishers present and easily accessible in the front of the truck? | X | | | | |
| Are first aid kids present in the trucks? | X | | | | |
| Is emergency contact information in place and up to date in each truck? | X | | | | |

## KAFB GWM Weekly Inspection

| | | |
|---|---|---|
| Inspected by: | Pete Ferrari | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 9/8/2017 | Company: EA Engineering, Science, and Technology, Inc., PBC |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Is emergency contact information in place and up to date? | ☒ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☒ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☒ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☒ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☒ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☒ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☒ | ☐ | ☐ | | |
| Is the yard free of trash? | ☒ | ☐ | ☐ | Picked up trash this morning | |
| Is the yard free of weeds? | ☐ | ☒ | ☐ | Will start again soon | |
| Is all equipment clear of the yard and put away? | ☒ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☒ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☒ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☒ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☒ | ☐ | ☐ | | |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are containers holding water securely placed on pallets? | ☒ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☒ | ☐ | ☐ | | |
| Are waste labels on each container? | ☒ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☒ | ☐ | | |
| Is IDW yard signage in place? | ☒ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☒ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☒ | ☐ | ☐ | | |

| Truck Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are fire extinguishers present and easily accessible in the front of the truck? | ☒ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☒ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☒ | ☐ | ☐ | | Need to update one more APP (truck in shop) |

## KAFB GWM Weekly Inspection

| | | |
|---|---|---|
| Inspected by: | Pete Ferrari | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 9/14/2017 | Company: EA Engineering, Science, and Technology, Inc., PBC |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☐ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☐ | ☑ | ☐ | | Maybe next week |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☑ | ☐ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |

| Truck Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

## KAFB GWM Weekly Inspection

| | | |
|---|---|---|
| Inspected by: | Pete Ferrari | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 9/22/2017 | Company: EA Engineering, Science, and Technology, Inc., PBC |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☐ | ☑ | ☐ | | Maybe next week |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☐ | ☐ | | |
| Is IDW yard signage in place? | ☑ | ☐ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☐ | ☐ | ☐ | | |

| Truck Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☑ | ☐ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

## KAFB GWM Weekly Inspection

| | | |
|---|---|---|
| Inspected by: | Peter Ferrari | Project: KAFB Bulk Fuels Facility Expansion Project |
| Date: | 9/29/2017 | Company: EA Engineering, Science, and Technology, Inc., PBC |

| Trailer Yard Inspection | Yes | No | NA | Corrective Action Taken | Comments |
|---|---|---|---|---|---|
| Is emergency contact information in place and up to date? | ☑ | ☐ | ☐ | | |
| Are signs present for emergency safety equipment? (eyewash, fire extinguisher, etc.) | ☑ | ☐ | ☐ | | |
| Are flammables storage signs in place and legible? | ☑ | ☐ | ☐ | | |
| Are all flammables stored in the appropriate cabinet? | ☑ | ☐ | ☐ | | |
| Are the refridgerator, freezer, and flammable liquid storage areas free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the portable restroom exteriors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Are the EA vehicles and compressors free of leaks or spillage? | ☑ | ☐ | ☐ | | |
| Is the yard free of trash? | ☑ | ☐ | ☐ | | |
| Is the yard free of weeds? | ☐ | ☑ | ☐ | | Maybe next week |
| Is all equipment clear of the yard and put away? | ☑ | ☐ | ☐ | | |
| Is the yard free of obstructions or safty hazards? (slip, trip, fall, etc.) | ☑ | ☐ | ☐ | | |
| Is the gravel driveway in acceptable condition for vehicle access? | ☑ | ☐ | ☐ | | |
| Is the enclosed fence upright and intact? | ☑ | ☐ | ☐ | | |
| Are all locks smooth and functional? (trailer, regrigerator, etc.) | ☑ | ☐ | ☐ | | |
| **Trailer Yard Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are containers holding water securely placed on pallets? | ☑ | ☐ | ☐ | | |
| Are container lids on properly and secure? | ☑ | ☐ | ☐ | | |
| Are waste labels on each container? | ☑ | ☐ | ☐ | | |
| Are containers damaged or leaking? | ☐ | ☑ | ☐ | | |
| Is IDW yard signage in place? | ☑ | ☑ | ☐ | | |
| Are barricades and caution tape in place and in good order? | ☑ | ☐ | ☐ | | |
| Are empty containers properly stored in the appropriate container areas? | ☑ | ☐ | ☐ | | |
| **Truck Inspection** | **Yes** | **No** | **NA** | **Corrective Action Taken** | **Comments** |
| Are fire extinguishers present and easily accessible in the front of the truck? | ☑ | ☐ | ☐ | | |
| Are first aid kids present in the trucks? | ☐ | ☑ | ☐ | | |
| Is emergency contact information in place and up to date in each truck? | ☑ | ☐ | ☐ | | |

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# APPENDIX I-2

# NEW MEXICO 811 LINE LOCATE TICKETS

# APPENDIX I-2

# NEW MEXICO 811 LINE LOCATE TICKETS

**Table I-2-1**

**NM 811 Ticket Summary for Groundwater Conveyance Line July - September 2017**

| Year | Month | Date | Ticket # | Status |
|---|---|---|---|---|
| 2017 | July | 7/7/2017 | 17JU070153 | UFO Cleared |
| | | 7/10/2017 | 17JU100159 | UFO Cleared |
| | | 7/12/2017 | 17JU120148 | UFO Cleared |
| | | 7/12/2017 | 17JU120132 | UFO Cleared |
| | | 7/17/2017 | 17JU170193 | UFO Cleared |
| | | 7/26/2017 | 17JU260467 | UFO Cleared |
| | August | 8/11/2017 | 17AG110264 | UFO Cleared |
| | | 8/15/2017 | 17AG150894 | UFO Cleared |
| | September | 9/1/2017 | 17SE010268 | UFO Cleared |
| | | 9/20/2017 | 17SE200789 | UFO Cleared |

Notes:

UFO CLEARED - The Underground Facility Owner/Operator (UFO) has determined they don't have any underground lines in the area of excavation.

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Emergency Locate Ticket: 17JU070153
**Date:** Friday, July 7, 2017 8:25:35 AM
**Importance:** High

# NM811 EMERGENCY LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17JU070153 | Update of: | |
| Ticket Type: | Emergency Locate | For Code: | KAFB |
| Creation Date: | 07/07/17 08:25 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | ALBUQUERQUE PLUMBING HEATING/COOLING | Main Contact Phone: | (505) 903-9959 |
| Address: | 6145 2ND ST NW | Secondary Phone: | |
| City, St, Zip: | ALBUQUERQUE, NM 87102 | Main Contact Email: | |
| Company Phone: | (505) 508-3808 | Alternate Contact: | FRANCISCO SMULL |
| Company Fax: | (505) 212-1875 | Alternate Contact Phone: | (505) 933-1585 |
| Main Contact: | ANTHONY GIANNINI | Alternate Contact Email: | |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 07/07/17 AT 10:30 |
| County: | BERNALILLO | | |
| Place: | ALBUQUERQUE | | |
| Address: | 6307 MITCHELL RD SE | | |
| Intersection: | ODLUM DR SE | | |
| Latitude: | 35.056567 | Longitude: | -106.572534 |
| Secondary Lat: | 35.057168 | Secondary Long: | -106.570143 |
| Work Type: | Emergency - Water | Working For: | HOMEOWNER |
| Pre-marked: | Yes | Mechanical Boring: | No |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

## Spotting Instructions

SPOT: FRM THE WATER METER TO THE HOUSE

## Remarks

Crew is EN ROUTE No Hazards - Open Access

TRSQ: [W8T10NR03ES36NE]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| 2NMPSO | NEW MEXICO PIPELINE SAFETY BUREAU - CENTRAL NM | True |
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| NML3 | LEVEL 3 COMMUNICATIONS | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Locate Ticket: 17JU100159
**Date:** Monday, July 10, 2017 8:35:39 AM

# NM811 LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17JU100159 | Update of: | |
| Ticket Type: | Standard Locate | For Code: | KAFB |
| Creation Date: | 07/10/17 08:35 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | Cobb Fendley | Main Contact Phone: | (505) 508-0749 |
| Address: | 3820 Academy Parkway North NE | Secondary Phone: | |
| City, St, Zip: | Albuquerque, NM 87109 | Main Contact Email: | mbowen@cobbfendley.com |
| Company Phone: | (505) 508-0749 | Alternate Contact: | |
| Company Fax: | | Alternate Contact Phone: | |
| Main Contact: | christopher bowen | Alternate Contact Email: | |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 07/12/17 AT 08:45 |
| County: | BERNALILLO | Expire Date: | 07/26/17 AT 08:45 |
| Place: | ALBUQUERQUE | | |
| Address: | Gibson | | |
| Intersection: | Louisiana | | |
| Latitude: | 35.055439 | Longitude: | -106.569015 |
| Secondary Lat: | 35.058299 | Secondary Long: | -106.564775 |
| Work Type: | Pot Hole Utilities | Working For: | KAFB |
| Pre-marked: | Yes | Mechanical Boring: | No |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

## Spotting Instructions

Mark the South east corner of the intersection including the east bound lanes on Gibson Blvd from the corner of Gibson and Louisiana to the entrance to the elementary school.

## Remarks

No Hazards - Open Access

TRSQ: [W8T10NR03ES25SE] [W8T10NR03ES36NE] [W8T10NR04ES30SW] [W8T10NR04ES31NW]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| APS | ALBUQUERQUE PUBLIC SCHOOLS | False |
| COA | CITY OF ALBUQUERQUE | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| NML3 | LEVEL 3 COMMUNICATIONS | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Locate Ticket: 17JU120132
**Date:** Wednesday, July 12, 2017 8:19:30 AM

# NM811 LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17JU120132 | Update of: | |
| Ticket Type: | Standard Locate | For Code: | KAFB |
| Creation Date: | 07/12/17 08:19 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | CITY OF ALBUQUERQUE- PARKS DEPT | Main Contact Phone: | (505) 450-7838 |
| Address: | 5501 PINO AVE NE BLDG A | Secondary Phone: | |
| City, St, Zip: | ALBUQUERQUE, NM 87109 | Main Contact Email: | |
| Company Phone: | (505) 857-8626 | Alternate Contact: | |
| Company Fax: | | Alternate Contact Phone: | |
| Main Contact: | FRAD MOYA | Alternate Contact Email: | |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 07/14/17 AT 08:15 |
| County: | BERNALILLO | Expire Date: | 07/28/17 AT 08:15 |
| Place: | ALBUQUERQUE | | |
| Address: | 1100 LOUISIANA BLVD SE | | |
| Intersection: | GIBSON BLVD SE | | |
| Latitude: | 35.057932 | Longitude: | -106.568907 |
| Secondary Lat: | 35.062852 | Secondary Long: | -106.564227 |
| Work Type: | Install - See Remarks | Working For: | CITY OF ALBUQUERQUE |
| Pre-marked: | Yes | Mechanical Boring: | No |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

## Spotting Instructions

WHEN YOU DRIVE IN TO AT THE VETERANS MEMORIAL SPOT THE AREA THAT IS ON THE R MARKED IN WHITE

## Remarks

TYPE OF WORK: INSTALLING BENCHES No Hazards - Open Access

TRSQ: [W8T10NR03ES25SE] [W8T10NR03ES36NE] [W8T10NR04ES30SW] [W8T10NR04ES31NW]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| APS | ALBUQUERQUE PUBLIC SCHOOLS | False |
| COA | CITY OF ALBUQUERQUE | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| NML3 | LEVEL 3 COMMUNICATIONS | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Locate Ticket: 17JU120148
**Date:** Wednesday, July 12, 2017 8:24:06 AM

# NM811 LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17JU120148 | Update of: | |
| Ticket Type: | Standard Locate | For Code: | KAFB |
| Creation Date: | 07/12/17 08:23 | Seq Num: | 2 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | CITY OF ALBUQUERQUE/PARKS | Main Contact Phone: | (505) 450-7838 |
| Address: | 5500 PINO NE | Secondary Phone: | |
| City, St, Zip: | ALBUQUERQUE, NM 87109 | Main Contact Email: | |
| Company Phone: | (505) 857-8650 | Alternate Contact: | |
| Company Fax: | | Alternate Contact Phone: | |
| Main Contact: | FRAN MOYA | Alternate Contact Email: | |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 07/14/17 AT 08:15 |
| County: | BERNALILLO | Expire Date: | 07/28/17 AT 08:15 |
| Place: | ALBUQUERQUE | | |
| Address: | 1100 LOUISIANA BLVD SE | | |
| Intersection: | GIBSON BLVD SE | | |
| Latitude: | 35.058118 | Longitude: | -106.568862 |
| Secondary Lat: | 35.061214 | Secondary Long: | -106.56498 |
| Work Type: | Install - See Remarks | Working For: | CITY OF ALB. |
| Pre-marked: | Yes | Mechanical Boring: | No |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

## Spotting Instructions

SW CORNER OF THE VETERAN'S MEMORIAL PARK :: MARKED IN PINK

## Remarks

No Hazards - Open Access TYPE OF WORK :: INSTALL PARK BENCHES

TRSQ: [W8T10NR03ES25SE] [W8T10NR03ES36NE] [W8T10NR04ES30SW] [W8T10NR04ES31NW]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| COA | CITY OF ALBUQUERQUE | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Locate Ticket: 17JU170193
**Date:** Monday, July 17, 2017 8:53:22 AM

# NM811 LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17JU170193 | Update of: | |
| Ticket Type: | Standard Locate | For Code: | KAFB |
| Creation Date: | 07/17/17 08:53 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | Westwind Landscape Construction | Main Contact Phone: | (505) 881-8925 |
| Address: | 2739 Vassar Place NE | Secondary Phone: | 5052061791 |
| City, St, Zip: | Albuquerque, NM 87107 | Main Contact Email: | mark@westwindlandscape.com |
| Company Phone: | (505) 881-8925 | Alternate Contact: | Kevin Neel |
| Company Fax: | | Alternate Contact Phone: | 328-6125 |
| Main Contact: | Mark Matheson | Alternate Contact Email: | kevin@westwindlandscape.com |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 07/19/17 AT 09:00 |
| County: | BERNALILLO | Expire Date: | 08/02/17 AT 09:00 |
| Place: | kirtland afb | | |
| Address: | 25000 Kirtland Dr se | | |
| Intersection: | Gibson Blvd. SE | | |
| Latitude: | 35.053761 | Longitude: | -106.569105 |
| Secondary Lat: | 35.058591 | Secondary Long: | -106.559585 |
| Work Type: | New Construction - Lot Prep | Working For: | APS - Wherry Elementary School |
| Pre-marked: | Yes | Mechanical Boring: | No |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

You will get to the school off of Gibson without having to enter the airforce base- head east on Gibson past Louisiana and Wherry will be on the south side of the road before the Gibson gate to Kirtland

## Spotting Instructions

There is a new building being constructed on the northeast side of campus, adjacent to the playground - please spot from the bus loop back to the building on the north side and then wrapping around both the east and the west side and now including the south side of the building in the landscape areas between the building and the far sidewalks, where the landscape is just dirt. On the west side, this is both inside and outside the dumpster enclosure wall and extends to the edge of the western parking lot.

## Remarks

APS # 0376.5308.31501 APS Construction Manager = Michael McMurphy 975-6196

TRSQ: [W8T10NR03ES25SE] [W8T10NR03ES36NE] [W8T10NR04ES30SW] [W8T10NR04ES31NW]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| APS | ALBUQUERQUE PUBLIC SCHOOLS | False |
| COA | CITY OF ALBUQUERQUE | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| NML3 | LEVEL 3 COMMUNICATIONS | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Locate Ticket: 17JU260467
**Date:** Wednesday, July 26, 2017 11:41:22 AM

# NM811 LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17JU260467 | Update of: | |
| Ticket Type: | Standard Locate | For Code: | KAFB |
| Creation Date: | 07/26/17 11:41 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | M&J SIGN COMPANY | Main Contact Phone: | (505) 550-0507 |
| Address: | PO BOX 30205 | Secondary Phone: | |
| City, St, Zip: | ALBUQUERQUE, NM 87190 | Main Contact Email: | mjsign@comcast.net |
| Company Phone: | (505) 344-2475 | Alternate Contact: | ESTEVAN EBELL |
| Company Fax: | | Alternate Contact Phone: | (505) 366-9779 |
| Main Contact: | CHRIS RIVERA | Alternate Contact Email: | |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 07/28/17 AT 11:45 |
| County: | BERNALILLO | Expire Date: | 08/11/17 AT 11:45 |
| Place: | KIRTLAND AFB | | |
| Address: | 2500 KIRTLAND AVE SE | | |
| Intersection: | LOUISIANA BLVD SE | | |
| Latitude: | 35.055813 | Longitude: | -106.567027 |
| Secondary Lat: | 35.058153 | Secondary Long: | -106.559847 |
| Work Type: | Install - Signs | Working For: | APS |
| Pre-marked: | No | Mechanical Boring: | No |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

## Spotting Instructions

E FROM LOUISIANA APRX 0.25MI, AT THE 1ST ENTRANCE TO SCHOOL, IS A WHITE ANGLE IRON STAKE IN THE GRAVEL AREA - SPOT 20FT RAD OF STAKE

## Remarks

SIGN FOOTINGS WHERRY ELEMENTARY PROJECT #16171558 PROJECT MGR: AIMEE SEWELL, aimee.sewell@aps.edu

TRSQ: [W8T10NR04ES30SW] [W8T10NR04ES31NW]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| APS | ALBUQUERQUE PUBLIC SCHOOLS | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Locate Ticket: 17AG110264
**Date:** Friday, August 11, 2017 10:18:36 AM

# NM811 LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17AG110264 | Update of: | |
| Ticket Type: | Standard Locate | For Code: | KAFB |
| Creation Date: | 08/11/17 10:18 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | SEQUOIA LANDSCAPING INC. | Main Contact Phone: | (505) 415-9977 |
| Address: | 810 RANKIN RD NE | Secondary Phone: | |
| City, St, Zip: | ALBUQUERQUE, NM 87107 | Main Contact Email: | |
| Company Phone: | (505) 977-2767 | Alternate Contact: | |
| Company Fax: | (505) 715-4703 | Alternate Contact Phone: | |
| Main Contact: | RUDY PENA | Alternate Contact Email: | |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 08/15/17 AT 10:15 |
| County: | BERNALILLO | Expire Date: | 08/29/17 AT 10:15 |
| Place: | ALBUQUERQUE | | |
| Address: | RIDGECREST DR SE | | |
| Intersection: | LOUISIANA BLVD SE | | |
| Latitude: | 35.052572 | Longitude: | -106.577601 |
| Secondary Lat: | 35.055299 | Secondary Long: | -106.568901 |
| Work Type: | Landscaping - Remove Trees | Working For: | EA ENGINEERING |
| Pre-marked: | No | Mechanical Boring: | No |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

## Spotting Instructions

SPOT: WITHIN THE AREAS MARKED IN WHITE ON THE N AND S SIDES OF RIDGECREST FRM LOUISIANA BLVD TO SAN PEDRO.

## Remarks

No Hazards - Open Access

TRSQ: [W8T10NR03ES36NE] [W8T10NR03ES36NW]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| ABQSL | CITY OF ALBUQUERQUE - STREET LIGHTING DEPT | False |
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| NML3 | LEVEL 3 COMMUNICATIONS | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Locate Ticket: 17AG150894
**Date:** Tuesday, August 15, 2017 3:43:25 PM

# NM811 LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17AG150894 | Update of: | |
| Ticket Type: | Standard Locate | For Code: | KAFB |
| Creation Date: | 08/15/17 15:43 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | Westwind Landscape Construction | Main Contact Phone: | (505) 881-8925 |
| Address: | 2739 Vassar Place NE | Secondary Phone: | 5052061791 |
| City, St, Zip: | Albuquerque, NM 87107 | Main Contact Email: | mark@westwindlandscape.com |
| Company Phone: | (505) 881-8925 | Alternate Contact: | Kevin Neel |
| Company Fax: | | Alternate Contact Phone: | 328-6125 |
| Main Contact: | Mark Matheson | Alternate Contact Email: | kevin@westwindlandscape.com |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 08/17/17 AT 15:45 |
| County: | BERNALILLO | Expire Date: | 08/31/17 AT 15:45 |
| Place: | KIRTLAND AFB | | |
| Address: | 25000 Kirtland Dr SE | | |
| Intersection: | Gibson Blvd. SE | | |
| Latitude: | 35.054678 | Longitude: | -106.56902 |
| Secondary Lat: | 35.058528 | Secondary Long: | -106.559395 |
| Work Type: | Landscaping - Planting Trees & Shrubs | Working For: | APS - Wherry ES - Michael McMurphy |
| Pre-marked: | Yes | Mechanical Boring: | No |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

You will get to the school off of Gibson without having to enter the airforce base- head east on Gibson past Louisiana and Wherry will be on the south side of the road before the Gibson gate to Kirtland

## Spotting Instructions

There is a new building that has been constructed on the northeast side of campus, adjacent to the playground - please spot from the bus loop back to the building on the north side and then wrapping around both the east and the west side and the south side of the building in the landscape areas between the building and the far sidewalks. On the west side, this is both inside and outside the dumpster enclosure wall and extends to the edge of the western parking lot. On the south side, you no longer need to spot the area immediately adjacent to the building that has already been planted and graveled, however the area in front of that and stretching south to the sidewalk will still need to be spotted.

## Remarks

APS # 0376.5308.31501 APS Construction Manager = Michael McMurphy 975-6196 - Wherry's address is on Kirtland, however it is not on the base

TRSQ: [W8T10NR03ES25SE] [W8T10NR03ES36NE] [W8T10NR04ES30SW] [W8T10NR04ES31NW]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| APS | ALBUQUERQUE PUBLIC SCHOOLS | False |
| COA | CITY OF ALBUQUERQUE | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| NML3 | LEVEL 3 COMMUNICATIONS | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Emergency Locate Ticket: 17SE010268
**Date:** Friday, September 1, 2017 11:05:21 AM
**Importance:** High

# NM811 EMERGENCY LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17SE010268 | Update of: | |
| Ticket Type: | Emergency Locate | For Code: | KAFB |
| Creation Date: | 09/01/17 11:05 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | CIVIL ENGINEER/KIRTLAND AFB | Main Contact Phone: | (505) 269-7181 |
| Address: | 2050 WYOMING BLVD SE (KAB) | Secondary Phone: | |
| City, St, Zip: | ALBUQUERQUE, NM 87117 | Main Contact Email: | DANIEL.ROMERO@KIRTLAND.AF.MAIL |
| Company Phone: | (505) 846-7863 | Alternate Contact: | |
| Company Fax: | | Alternate Contact Phone: | |
| Main Contact: | BEN CREEK | Alternate Contact Email: | |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 09/01/17 AT 13:00 |
| County: | BERNALILLO | | |
| Place: | KIRTLAND AFB | | |
| Address: | MORTAR RANGE RD | | |
| Intersection: | LOVELACE RD | | |
| Latitude: | 34.946134 | Longitude: | -106.611737 |
| Secondary Lat: | 35.069734 | Secondary Long: | -106.372937 |
| Work Type: | Emergency - Water | Working For: | KIRTLAND AFB |
| Pre-marked: | No | Mechanical Boring: | No |
| Contact Prior to Locating: | Yes | Contact After Locating: | No |

## Driving Directions

## Spotting Instructions

8FT S OF MORTAR RANGE RD SPOT AREAS MARKED.

## Remarks

No Hazards - Open Access

TRSQ: [W8T08NR03ES01NE] [W8T08NR03ES01SE] [W8T08NR04ES01NE] [W8T08NR04ES01NW] [W8T08NR04ES01SE] [W8T08NR04ES01SW] [W8T08NR04ES02NE] [W8T08NR04ES02NW] [W8T08NR04ES02SE] [W8T08NR04ES02SW]
There are 254 grids not shown. Please contact the center for the rest of them

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| 2NMPSO | NEW MEXICO PIPELINE SAFETY BUREAU - CENTRAL NM | True |
| ABQSL | CITY OF ALBUQUERQUE - STREET LIGHTING DEPT | False |
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| APS | ALBUQUERQUE PUBLIC SCHOOLS | False |
| COA | CITY OF ALBUQUERQUE | False |
| ETSC | PLATEAU TELECOMMUNICATIONS | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| NML3 | LEVEL 3 COMMUNICATIONS | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| PNMEM | PNM ELECTRIC - EAST MOUNTAINS | False |
| QEST | CENTURYLINK COMMUNICATIONS | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |
| SSTP | SANDIA SCIENCE AND TECHNOLOGY PARK | False |
| ZAYONM | ZAYO GROUP - ALBUQUERQUE | False |

**From:** eticket@nm811.org
**To:** NM811BFF
**Subject:** NM811 Locate Ticket: 17SE200789
**Date:** Wednesday, September 20, 2017 3:13:59 PM

# NM811 LOCATE REQUEST

| | | | |
|---|---|---|---|
| TICKET NUMBER: | 17SE200789 | Update of: | |
| Ticket Type: | Standard Locate | For Code: | KAFB |
| Creation Date: | 09/20/17 15:13 | Seq Num: | 1 |

## Excavator Information

| | | | |
|---|---|---|---|
| Company: | Bixby Electric, Inc. | Main Contact Phone: | (505) 350-1098 |
| Address: | 521 Wheeler Ave. SE. | Secondary Phone: | 5058425384 |
| City, St, Zip: | Albuquerque, NM 87121 | Main Contact Email: | drilling@bixbyelectric.com |
| Company Phone: | (505) 842-5384 | Alternate Contact: | |
| Company Fax: | | Alternate Contact Phone: | |
| Main Contact: | BOB NORTON | Alternate Contact Email: | |

## Work Information

| | | | |
|---|---|---|---|
| State: | NM | Work To Begin: | 09/22/17 AT 15:15 |
| County: | BERNALILLO | Expire Date: | 10/06/17 AT 15:15 |
| Place: | albuquerque | | |
| Address: | RIDGECREST DR | | |
| Intersection: | LOUISIANA BLVD SE | | |
| Latitude: | 35.052258 | Longitude: | -106.570346 |
| Secondary Lat: | 35.052978 | Secondary Long: | -106.568046 |
| Work Type: | Install - See Remarks | Working For: | RMCI for KAFB CONVEYANCE |
| Pre-marked: | Yes | Mechanical Boring: | Yes |
| Contact Prior to Locating: | No | Contact After Locating: | No |

## Driving Directions

From Big 'I' in ABQ; go East on I-40; go south on Louisiana Blvd; go to Ridge crest Dr SE; THE PROJECT IS ON THE RIGHT HAND SIDE.

## Spotting Instructions

Locate west 150 ft from the center line of Kentucky St SE to 100 ft east of center line of Louisiana Blvd SE; spot from the block wall on the north side to 20 ft south of the curb on the south side of Ridgecrest Dr. And all areas in between.White Lines marks the proposed area of line locates. White Lines are in the place.

## Remarks

Contact Bob Norton (505-350-1098); no restriction ON OUTSIDE OF BASE, AREA INSIDE OF BASE WILL NEED TO BE LOCATED BY BASE PERSONNEL Install WATER & COMMUNICATION conduit by way of directional boring,

TRSQ: [W8T10NR03ES36NE] [W8T10NR04ES31NW]

## Utilities Notified:

| Code | Name | Manually Added |
|---|---|---|
| ABQWA | ALBUQUERQUE/BERNALILLO COUNTY WUA | False |
| JONE | COMCAST - ALBUQUERQUE | False |
| KAFB | KIRTLAND AIR FORCE BASE | False |
| MCI1 | MCI CABLE SEC | False |
| NMGAQ | NEW MEXICO GAS COMPANY - ALBUQUERQUE | False |
| PNMAB | PNM ELECTRIC - ALBUQUERQUE | False |
| QLNN | CENTURYLINK LOCAL NETWORK CENTRAL | False |

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# APPENDIX I-3

# GROUNDWATER TREATMENT SYSTEM PERFORMANCE SAMPLE COLLECTION LOGS

# Monthly Sampling Log

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: Q3 July

Project: Kirtland AFB BFF ST-106/SS-111 Well ID:

***Purge Information and Field Parameter*** Date: 07/25/17

Purge Start Time: -- Purge Rate: -- L/min X 0.265 = -- gal/min

Description of first water purged:

Drawdown Limit: -- ft (based on previous water level)

| Time | Sample Location | Facility | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|
| Historical Data: | | | | | | | | | |
| 1345 | EFF1 | GWTS | 0.07 | 20.4 | 68.3 | 6.09 | 428.6 | 7.55 | 123.7 |
| 1400 | GAC1 | GWTS | 0.09 | 20.2 | 49.9 | 4.52 | 432.7 | 7.63 | 107.1 |
| 1410 | INF1 | GWTS | 0.15 | 20.2 | 66.8 | 6.05 | 435.0 | 7.81 | 103.3 |
| 1425 | ~~1400~~ SS | EFF2 | GWTS | 0.15 | 20.8 | 59.9 | 5.43 | 345.9 | 7.60 | 32.9 |
| 1450 | GAC2 | GWTS | 0.08 | 20.3 | 45.7 | 4.12 | 383.7 | 7.68 | 65.2 |
| 1500 | INF2 | GWTS | 0.08 | 20.3 | 65.1 | 5.85 | 387.6 | 7.84 | 56.1 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Sample Time: ~~1345~~ SS — Sample Date: 07/25/17

Purge End Time: --

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: SHARMIN SULTANA Sampler Signature: Sharmin Sultana

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | -- |
| 2 | -- |
| Total | -- |

**IDW will be taken to:** --

**IDW Label:** --

***Sample Information***

Sample ID: GWTS-XXXX-072517

Duplicate ID: (if applicable) GWTS-EFFXDUP-072517

COC#: COC-GWTSX-072517

Sampling Method: Tap

Sampling Medium: Water

Comments:

Reviewed by: Initials: Review Date:

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS1-072517

YEAR: 2017

QUARTER: Q3

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

PROJECT SITE AND PHASE: ST106/SS110

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

LAB PO NUMBER: 14800

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | SVOCs (8270D) | EDB (8011) | Dissolved Al, Ba, Cu, Mn, Zn, Fe, Sb, As, Be, Cd, Cr, Pb, Se, Ag, Tl, U (6010C/6020A) | Chloride, Fluoride, Sulfate (300.0) | Nitrate-Nitrite (353.2) | Free Cyanide (1677-09) | Total Mercury (7470A) | Total Phenol (420.4) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GWTS-EFF1-072517 | 07/25/17 | 1345 | 13 | 3 | 2 | 2 | 1* | 1 | 1 | 1 | 1 | 1 | |
| 2 | GWTS-EFF1DUP-072517 | 07/25/17 | 1345 | 13 | 3 | 2 | 2 | 1* | 1 | 1 | 1 | 1 | 1 | |
| 3 | GWTS-GAC1-072517 | 07/25/17 | 1400 | 6 | 3 | -- | 2 | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-INF1-072517 | 07/25/17 | 1410 | 13 | 3 | 2 | 2 | 1* | 1 | 1 | 1 | 1 | 1 | |
| 5 | GWTS-TB01-072517 | 07/25/17 | 1530 | 4 | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Metals aliquot was field filtered. INF1, EFF1, EFF1DUP are to be analyzed for all dissolved metals (Al, Ba, Cu, Mn, Zn, Fe, Sb, As, Be, Cd, Cr, Pb, Se, Ag, Tl, U), GAC1 is to be analyzed for dissolved Fe and Mn only.

SAMPLER(S): Pete Ferrari / Sharmin Sultana

COURIER AND SHIPPING NUMBER: Fedex: 810487007905

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA Sharmin Sultana | 7/25/17 ~~7/27/17~~ | 1530 | | | |
| Pete Ferrari Pete Ferrari | 7/25/17 | 1530 | | | |
| | | | | | |
| | | | | | |

EA

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS2-072517

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: Q3

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | SVOCs (8270D) | EDB (8011) | Dissolved Al, Ba, Cu, Mn, Zn, Fe, Sb, As, Be, Cd, Cr, Pb, Se, Ag, Tl, U (6010C/6020A) | Chloride, Fluoride, sulfate (300.0) | Nitrate-Nitrite (353.2) | Free Cyanide (1677-09) | Mercury (7470A) | Total Phenol (420.4) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GWTS-EFF2-072517 | 07/25/17 | 1425 | 39 | 9 | 6 | 6 | 3* | 3 | 3 | 3 | 3 | 3 | Additional Volume Provided for MSMSD |
| 2 | GWTS-GAC2-072517 | 07/25/17 | 1450 | 6 | 3 | -- | 2 | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-INF2-072517 | 07/25/17 | 1500 | 13 | 3 | 2 | 2 | 1* | 1 | 1 | 1 | 1 | 1 | |
| 4 | GWTS-TB02-072517 | 07/25/17 | 1530 | 4 | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 5 | GWTS-FB02-072517 | 07/25/17 | 1425 | 5 | 3 | -- | 2 | -- | -- | -- | -- | -- | -- | Collected simultaneously with GWTS-EFF2-072517 |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Metals aliquot was field filtered. INF2, EFF2 are to be analyzed for all dissolved metals (Al, Ba, Cu, Mn, Zn, Fe, Sb, As, Be, Cd, Cr, Pb, Se, Ag, Tl, U), GAC2 is to be analyzed for Fe and Mn only.

SAMPLER(S): SHARMIN SULTANA / Peter Ferrari

COURIER AND SHIPPING NUMBER: Fedex: 810487007916

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA | 7/25/17 | 1530 | | | |
| Peter Ferrari | 7/25/17 | 1530 | | | |
| | | | | | |
| | | | | | |

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: Q3 August

Project: Kirtland AFB BFF ST-106/SS-111 Well ID:

***Purge Information and Field Parameter*** Date: 08/24/17

Purge Start Time: -- Purge Rate: -- L/min X 0.265 = -- gal/min

Description of first water purged: —

Drawdown Limit: -- ft (based on previous water level)

| Time | Sample Location | Facility | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|
| **Historical Data:** | | | | | | | | | |
| 0915 | EFF1 | GWTS | 0.11 | 20.3 | 70.2 | 6.36 | 426.7 | 7.44 | 277.9 |
| 0956 | GAC1 | GWTS | 0.28 | 20.2 | 49.8 | 4.50 | 424.2 | 7.52 | 232.3 |
| 1028 | INF1 | GWTS | 0.17 | 20.2 | 77.4 | 6.95 | 431.1 | 7.69 | 310.9 |
| 0932 | EFF2 | GWTS | 0.27 | 20.3 | 56.0 | 5.04 | 384.4 | 7.31 | 241.7 |
| 1005 | GAC2 | GWTS | 0.10 | 20.1 | 34.1 | 3.09 | 385.2 | 7.49 | 269.5 |
| 1040 | INF2 | GWTS | 0.14 | 20.2 | 68.3 | 5.29 | 110.8 | 7.70 | 313.5 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Sample Time: — Sample Date: 08/24/17

Purge End Time: --

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: SHARMIN SULTANA Sampler Signature: Sharmin Sultana

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | -- |
| 2 | -- |
| Total | -- |

**IDW will be taken to:** --

**IDW Label:** --

***Sample Information***

Sample ID: GWTS-XXXX-082417

Duplicate ID: (if applicable) GWTS-EFFXDUP-082417

COC#: COC-GWTSX-082417

Sampling Method: Tap

Sampling Medium: Water

Comments:

Reviewed by: Initials: Review Date:

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS1-082417

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: Q2

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | Chloride, bromide, sulfate (300.0) | (353.2) Nitrate-Nitrite | (SM4500NH3) Ammonia | (SM4500S2CF) Sulfide | (SM2320B) Alkalinity | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GWTS-EFF1-082417 | 08/24/17 | 0917 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 2 | GWTS-GAC1-082417 | 08/24/17 | 0957 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-INF1-082417 | 08/24/17 | 1030 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-TB01-082417 | 08/24/17 | 1415 | 4 | -- | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | -- | |
| 5 | GWTS-FB01-082417 | 08/24/17 | 0917 | 5 | -- | 3 | -- | 2 | -- | -- | -- | -- | -- | -- | -- | Collected simultaneously with GWTS-EFF1-082417 |
| 6 | | | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: Fedex: 8111 5673 8122

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA Sharmin Sultana | 8/24/17 | 1515 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| | | | | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS2-082417

PROJECT NAME: Kirtland AFB Bulk Fuels Facility
PROJECT NUMBER: 62599DM01
LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601
FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA
YEAR: 2017
QUARTER: Q2
PROJECT SITE AND PHASE: ST106/SS110
LAB PO NUMBER: 14800
LAB CONTACT: Natalie Luciano NatalieLuciano@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM4500NH3) Ammonia | (SM4500S2CF) Sulfide | (SM2320B) Alkalinity | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | | |
| 1 | GWTS-EFF2-082417 | 08/24/17 | 0932 | 18 | -- | 9 | -- | 6 | -- | 3* | -- | -- | -- | -- | -- | Additional Volume Provided for MSMSD |
| 2 | GWTS-EFF2DUP-082417 | 08/24/17 | 0932 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-GAC2-082417 | 08/24/17 | 1010 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-INF2-082417 | 08/24/17 | 1040 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 5 | ~~GWTS-TB02-082417~~ SS | ~~08/24/17~~ | — | - | -- | 2 | -- | 2 | SS-- | -- | -- | -- | -- | -- | -- | |
| 6 | GWTS-TB01-082417 | 8/24/17 | 1415 | 4 | - | 2 | - | 2 | - | - | - | - | - | - | - | *See COC-GWTS1-082417 |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): SHARMIN SULTANA
COURIER AND SHIPPING NUMBER: Fedex: 811156738122

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME | RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA Shar Sulta | 8/24/17 | 1515 | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Scanned by CamScanner

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: Q3 September

Project: Kirtland AFB BFF ST-106/SS-111 Well ID:

***Purge Information and Field Parameter*** Date: 09/21/17

Purge Start Time: -- Purge Rate: -- L/min X 0.265 = -- gal/min

Description of first water purged: —

Drawdown Limit: -- ft (based on previous water level)

| Time | Sample Location | Facility | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|
| **Historical Data:** | | | | | | | | | |
| 1340 | EFF1 | GWTS | 0.07 | 20.3 | 67.0 | 6.03 | 431.4 | 7.31 | 154.1 |
| 1358 | GAC1 | GWTS | 0.16 | 20.5 | 49.1 | 4.42 | 430.7 | 7.58 | 137.2 |
| 1406 | INF1 | GWTS | 0.15 | 20.1 | 68.5 | 6.22 | 437.0 | 7.78 | 130.9 |
| 1412 | EFF2 | GWTS | 0.13 | 20.3 | 67.4 | 6.09 | 381.6 | 7.41 | 91.8 |
| 1433 | GAC2 | GWTS | 0.08 | 20.3 | 40.3 | 3.64 | 382.8 | 7.49 | 83.2 |
| 1442 | INF2 | GWTS | 0.07 | 20.2 | 63.9 | 5.82 | 382.9 | 7.79 | 77.5 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Sample Time: — Sample Date: 09/21/17

Purge End Time: --

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: SHARMIN SULTANA Sampler Signature: Sharmin Sultana

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | -- |
| 2 | -- |
| Total | -- |

**IDW will be taken to:** --

**IDW Label:** --

***Sample Information***

Sample ID: GWTS-XXXX-092117

Duplicate ID: (if applicable) GWTS-EFFXDUP-092117

COC#: COC-GWTSX-092117

Sampling Method: Tap

Sampling Medium: Water

Comments:

Reviewed by: Initials: Review Date:

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS1-092117

YEAR: 2017

QUARTER: Q3

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

PROJECT SITE AND PHASE: ST106/SS110

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

LAB PO NUMBER: 14800

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Ammonia (SM4500NH3) | Sulfide (SM4500S2CF) | Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GWTS-EFF1-092117 | 09/21/17 | 1345 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 2 | GWTS-EFF1DUP-092117 | 09/21/17 | 1345 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-GAC1-092117 | 09/21/17 | 1400 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-INF1-092117 | 09/21/17 | 1407 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 5 | GWTS-TB01-092117 | 09/21/17 | 1515 | 4 | -- | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | -- | |
| 6 | | | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: Fedex: 811156735270

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| SHARMIN SULTANA Sharmin Sultana | 9-21-17 | 1530 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS2-092117

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: Q3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Natalie Luciano NatalieLuciano@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | ANALYSIS REQUIRED (Specify number of bottles) Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | (6010C) Dissolved Fe, Mn | Chloride, bromide, sulfate (300.0) | (353.2) Nitrate-Nitrite | (SM4500NH3) Ammonia | (SM4500S2CF) Sulfide | (SM2320B) Alkalinity | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GWTS-EFF2-092117 | 09/21/17 | 1415 | 18 | -- | 9 | -- | 6 | -- | 3* | -- | -- | -- | -- | -- | Additional Volume Provided for MSMSD |
| 2 | GWTS-GAC2-092117 | 09/21/17 | 1435 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-INF2-092117 | 09/21/17 | 1445 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-FB02-092117 | 09/21/17 | 1415 | 5 | -- | 3 | -- | 2 | -- | | -- | -- | -- | -- | -- | Collected simultaneously with GWTS-EFF1-092117 |
| 5 | ~~GWTS-TB02-092117~~ | 09/21/17 | SS | | -- | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | -- | Please see COC-GWTS1-092117 |
| 6 | | | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: Fedex: 811567352702

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| SHARMIN SULTANA | 9-21-17 | 1530 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

# Extraction Wells Sampling Log

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: Q3 July

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106228, KAFB-106233, KAFB-106234

***Purge Information and Field Parameter*** Date: 07/27/17

Purge Start Time: -- Purge Rate: -- L/min X 0.265 = -- gal/min

Description of first water purged: clear; no odor

Drawdown Limit: -- ft (based on previous water level)

| Time | Sample Location | Facility | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|
| **Historical Data:** | | | | | | | | | |
| 0900 | KAFB-106228 | VAULT 228 | 0.20 | 20.1 | 45.5 | 4.13 | 349.3 | 7.70 | 154.6 |
| 1003 | KAFB-106233 | WCH | 0.10 | 20.0 | 28.6 | 2.60 | 390.0 | 7.72 | 134.0 |
| 0958 | KAFB-106234 | WCH | 0.22 | 19.9 | 57.9 | 5.28 | 465.1 | 7.67 | 140.5 |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |

Sample Time: 0905; 0959; 1008 Sample Date: 07/27/17

Purge End Time: --

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: Pete Ferrari Sampler Signature: Pete Ferrari

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | -- |
| 2 | -- |
| Total | -- |

**IDW will be taken to:** --

**IDW Label:** --

***Sample Information***

Sample ID: GWXXX-173

Duplicate ID: (if applicable)

COC#: COC-GWTS1-072717

Sampling Method: Tap

Sampling Medium: Water

Comments:

Reviewed by: Initials: Review Date:

# Groundwater Purge and Sampling Log

Year: 2017
Quarter: Q3 July

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106228, KAFB-106233, KAFB-106234

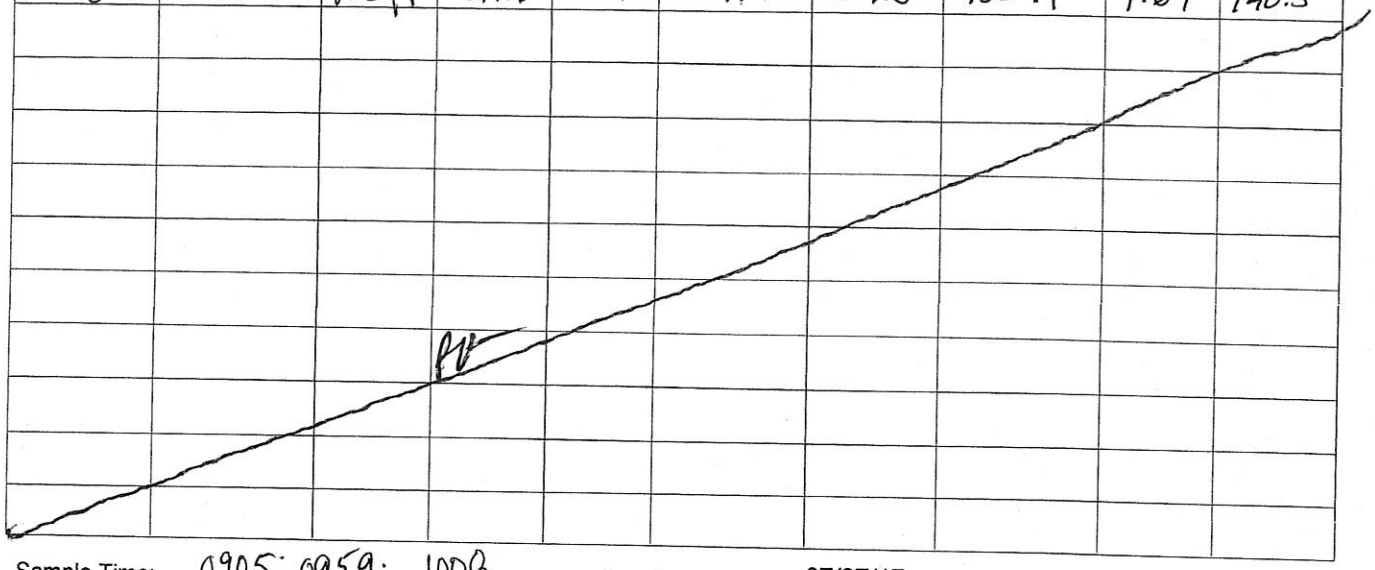
***Purge Information and Field Parameter*** Date: 07/27/17

Purge Start Time: -- Purge Rate: -- L/min X 0.265 = -- gal/min

Description of first water purged: clear; no odor

Drawdown Limit: -- ft (based on previous water level)

| Time | Sample Location | Facility | Turbidity (NTU) | Temp. (°C) | Saturated DO (%) | DO (mg/L) | Specific Conductance (µS/cm) | pH | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|
| Historical Data: | | | | | | | | | |
| 0900 | KAFB-106228 | VAULT 228 | 0.20 | 20.1 | 45.5 | 4.13 | 349.3 | 7.70 | 154.6 |
| 1003 | KAFB-106233 | WCH | 0.10 | 20.0 | 28.6 | 2.60 | 390.0 | 7.72 | 134.0 |
| 0958 | KAFB-106234 | WCH | 0.22 | 19.9 | 57.9 | 5.28 | 465.1 | 7.67 | 140.5 |



Sample Time: 0905; 0959; 1008 Sample Date: 07/27/17

Purge End Time: --

Bubbles in the vials? ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: Pete Ferrari Sampler Signature: Pete Ferrari

***IDW Management***

| Drum No. | Estimated volume per IDW drum (gal) |
|---|---|
| 1 | -- |
| 2 | -- |
| Total | -- |

**IDW will be taken to:** --

**IDW Label:** --

***Sample Information***

Sample ID: GWXXX-173

Duplicate ID: (if applicable)

COC#: COC-GWTS1-072717

Sampling Method: Tap

Sampling Medium: Water

Comments:

Reviewed by: Initials: Review Date:

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS1-072717

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: Q3

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | SVOCs (8270D) | EDB (8011) | Total As, Pb, Ca, K, NA, Mg (6010C/6020A) | *Dissolved Fe, Mn (6010C) | Chloride, Fluoride, Sulfate (300.0) | Nitrate-Nitrite (353.2) | Total Mercury (7470A) | Total Phenol (420.4) | COMMENTS |
| 1 | GW228-173 | 07/27/17 | 0905 | 2 | -- | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 2 | GW233-173 | 07/27/17 | 1008 | 2 | -- | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 3 | GW234-173 | 07/27/17 | 0959 | 2 | -- | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 4 | GWTS-TB01-072717 | 07/27/17 | 1410 | 2 | -- | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Metals aliquot was field filtered.

SAMPLER(S): Pete Ferrari

COURIER AND SHIPPING NUMBER: Fedex: 811156738133

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME | RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|---|---|---|
| Pete Ferrari Peter Ferrari | 7-27-17 | 1600 | | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |

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# APPENDIX I-4

# GROUNDWATER TREATMENT SYSTEM DATA QUALITY EVALUATION REPORT JULY–SEPTEMBER 2017

# APPENDIX I-4

## Data Quality Evaluation Report – Groundwater Treatment System Samples (July–September 2017)

# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AFB | Air Force Base |
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| DL | detection limit |
| DoD | Department of Defense |
| EDB | ethylene dibromide |
| EFF | effluent |
| ELLE | Eurofins Lancaster Laboratories Environmental, LLC |
| EPA | U.S. Environmental Protection Agency |
| GAC | granular activated carbon |
| GWTS | groundwater treatment system |
| ICP | inductively coupled plasma |
| ICS | interference check sample |
| INF | influent |
| LCS | laboratory control sample |
| LCSD | laboratory control sample duplicate |
| LOD | limit of detection |
| LOQ | limit of quantification |
| MS | matrix spike |
| MSD | matrix spike duplicate |
| O&M | operations and maintenance |
| Q3 | third quarter of the year (July 1 through September 30) |
| QAPjP | Quality Assurance Project Plan |
| QC | quality control |
| QSM | Quality Systems Manual |
| RPD | relative percent different |
| SW | Solid Waste |
| USACE | U.S. Army Corps of Engineers |
| VOA | volatile organic analysis |
| VOC | volatile organic compound |

# DATA QUALITY EVALUATION REPORT – GROUNDWATER TREATMENT SYSTEM SAMPLES (JULY–SEPTEMBER 2017)

## 1. LABORATORY DATA QUALITY SUMMARY

This Data Quality Evaluation Report describes the findings of the data validation performed for the analysis of samples collected during third quarter (Q3) of 2017 at the groundwater treatment system (GWTS). These data were collected in support of the Work Plan, Bulk Fuels Facility Expansion of the Dissolved-Phase Plume GWTS Design Revision 2, Solid Waste Management Units ST-106 and SS-111, Kirtland Air Force Base (AFB), New Mexico (U.S. Army Corps of Engineers [USACE], 2017a). Sampling and analysis for the Q3 2017 GWTS were conducted in accordance with the procedures and overall quality control (QC) and quality assurance protocols presented in the following documents: Operations and Maintenance (O&M) Plan GWTS Bulk Fuels Facility Solid Waste Management Unit ST-106/SS-111, Kirtland AFB, New Mexico (USACE, 2017b), and Quality Assurance Project Plan (QAPjP) (USACE, 2016).

Samples discussed in this report were collected during the months of July, August and September 2017. All samples collected during this time are associated with the performance of the treatment trains within the GWTS, specifically to monitor performance of the carbon treatment system. For each of the monitoring events, from the two treatment trains, water samples were collected from the: (1) inlet to the carbon vessel (identified as influent samples [INF]), (2) outlet at the lead carbon vessel (identified as granular activated carbon [GAC]), and (3) outlet of the post-bag filter skids (identified as effluent samples [EFF]). The GWTS samples collected during the July event were analyzed to comply with the Kirtland AFB discharge permit DP-1839, Tables 3 and 4 (annual and 5-year monitoring constituent list). In addition, extraction wells KAFB-106228, KAFB-106233, and KAFB-106234 were sampled on July 27, 2017 for analysis of ethylene dibromide (EDB). Field QC samples were collected in association with each sampling event and included field duplicates, trip blanks, and field blank samples.

All samples collected from the treatment trains were shipped to Eurofins Lancaster Laboratories Environmental, LLC (ELLE), Lancaster, Pennsylvania for analysis. ELLE maintains a current U.S. Department of Defense (DoD) Environmental Laboratory Accreditation Program certification to perform the analyses required for this project. Sample analyses were performed in accordance with the following guidance documents:

- DoD Quality Systems Manual (QSM), Version 5.0 (2013)
- U.S. Environmental Protection Agency (EPA) Solid Waste (SW) 846 – Test Methods for Evaluating SW, Third Edition and Updates (1986)
- EPA-600/4-79-020 – Methods for Chemical Analysis of Water and Wastes, and Updates (1983)
- EPA-821-R-99-013 – Method OIA-1677 Available Cyanide by Flow Injection, Ligand Exchange and Amperometry (1999).

Q3 2017 GWTS samples were analyzed for the following list of parameters and methods as required:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) and volatile organic compounds (VOCs) – Method SW8260C
- EDB – Method SW8011
- Semivolatile organic compounds (bis[2-ethylhexyl] phthalate, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, pyrene) – Method SW8270D
- Dissolved metals (aluminum, barium, copper, iron, manganese, and zinc) – Method SW6010C
- Dissolved metals (antimony, arsenic, beryllium, cadmium, chromium, lead, selenium, silver, thallium, and uranium) – Method SW6020A
- Total mercury – Method SW7470A
- Anions (chloride, fluoride, and sulfate) – Method E300.0
- Nitrate/nitrite nitrogen – Method E353.2
- Total phenolics – Method E420.4
- Free cyanide – Method OIA-1677.

Chemical analytical data for Q3 2017 were reported by ELLE in sample delivery groups KR191, KR192, KR194, and KR195. Appendix I-4 – Table 1 summarizes GWTS and field QC samples, collection date, laboratory sample delivery group, and analytical parameters for the Q3 2017 sampling events.

A third-party subcontractor, Environmental Data Services, Inc., Newport News, Virginia, conducted EPA Stage 3 data validation on 100% of the Q3 2017 sample data associated with the GWTS. Analytical data validation was performed using the quality criteria specified in the following documents, analytical guidelines, and methods:

- Work Plan (USACE, 2017a), O&M Plan (USACE, 2017b), and QAPjP (USACE, 2016)
- DoD QSM for Environmental Laboratories, Version 5.0 (DoD, 2013)
- EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW 846, Third Edition and updates) (EPA, 1986)
- EPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review (EPA, 2014a)
- EPA Contract Laboratory Program, National Functional Guidelines for Inorganic Superfund Data Review (EPA, 2014b).

The following QC criteria were included in the EPA Stage 3 validation as applicable to the analytical method:

- Sample preservation and extraction and analysis holding times
- Laboratory method blank contamination
- Surrogate spike recoveries (organic analyses)
- Laboratory control sample (LCS) and LCS duplicate (LCSD) recoveries
- Matrix spike (MS) and matrix spike duplicate (MSD) sample recoveries
- Relative percent difference (RPD)
- Initial and continuing calibrations
- Inductively coupled plasma (ICP) interference check samples (metals)
- ICP serial dilutions (metals)
- Second column confirmation (for EDB analysis only)
- Trip blank results
- Field duplicate sample precision.

Analytical data were reviewed for all sampling events to evaluate precision, accuracy (bias), representativeness, comparability, completeness, and sensitivity as defined below:

- *Precision* is expressed as the RPD between the results of replicate sample analyses: sample duplicates, LCSDs, and MSDs. When analyte RPDs exceed the acceptance criteria, the data are qualified accordingly.

- *Accuracy (bias*) is demonstrated by recovery of target analytes from fortified blank and sample matrices, LCS/LCSD, and MS/MSD, respectively. For organic methods, bias is also demonstrated through recovery of surrogates from each field and QC sample. A comparison was made from the recovery of target analytes from fortified samples to the acceptance criteria defined in the QAPjP (USACE, 2016) and DoD QSM. When the acceptance criteria are not available in the QAPjP or DoD QSM, results are compared with the laboratory in-house control limits. When these criteria are not met, the data are qualified accordingly. Bias may be indicated as high or low.

- *Representativeness* of the samples submitted for analysis is ensured by adherence to standard sampling techniques and standard analytical method protocols.

- *Comparability* of sample results is ensured through the use of approved sampling and analysis methods and comparison of sample results to historical sample data.

- *Completeness* of data is evaluated based on contractual, analytical, and technical completeness for the Q3 2017 data. Technical completeness of data is used to assess overall project completeness and is expressed as a percentage of the ratio of the number of usable data results to the total number of analytical data results. Only rejected data (R-qualified) are considered not usable to achieve project objectives.

- *Sensitivity* is determined by the ability to achieve the established method-specific reporting limits in accordance with DoD QSM requirements and includes establishing the detection limit (DL), limit of detection (LOD), and limit of quantitation (LOQ). For this project, the laboratory will report positive results to the DL and results between the DL and LOQ will be flagged with a J-qualifier and reported as estimated data. Sensitivity is evaluated based on comparison of the sample reporting limits to the project screening levels.

The following sections present the EPA Stage 3 data validation findings for the Q3 GWTS sample data. Appendix I-4 – Table 2 presents the data qualification flags and reason codes to be applied to analytical data, if required.

## 1.1 DATA QUALITY FINDINGS

### 1.1.1 Sample Preservation and Sample Extraction and Analysis Holding Times (Reason Code HT)

The sample coolers and samples contained within the coolers were received intact at the laboratory below 6 degrees Celsius, per EPA guidelines. All samples were preserved appropriately per the requirements of EPA method guidelines, with no exceptions. Sample holding times were evaluated by comparing the (1) sample collection date to the sample extraction date, and (2) extraction date to the analysis date to determine if the method-specified holding times were exceeded. Q3 2017 sample extraction and analysis holding times were met for all samples.

### 1.1.2 Laboratory Method Blanks (Reason Code MB)

The GWTS sample results were evaluated with respect to the laboratory method blank prepared and analyzed for each analytical batch for each analytical method. Based on the DoD QSM requirements (2013), laboratory method blank concentrations are considered acceptable when contaminant levels in the blank are less than one-half the LOQ for target analytes and less than the LOQ for common laboratory contaminants. No detections of analytes were reported in method blank samples for the Q3 GWTS samples.

### 1.1.3 Initial and Continuing Calibration Blanks (Reason Code CB/CCB)

Initial and continuing calibration blank criteria were reviewed to ensure that the instruments were free of contamination prior to sample analysis. Based on the DoD QSM requirements (2013), calibration blank concentrations are considered acceptable when contaminant levels in the blank are less than one-half the LOQ for target analytes and less than the LOQ for common laboratory contaminants. Initial and continuing calibration blank data were within control criteria for the Q3 2017 sample analyses. All percent relative standard deviation and/or correlation coefficients and relative response factor criteria were met and no data were qualified based on initial and continuing calibration blank criteria.

### 1.1.4 Surrogate Recoveries (Reason Code SURR)

Surrogate compounds are added to field and laboratory QC samples for organic analysis to evaluate the matrix effect and method performance on an individual sample basis. All surrogate compound recoveries for the Q3 2017 sample data were within method control criteria or did not result in data qualification.

### 1.1.5 Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries and Precision (Reason Codes LCS/RPD)

The LCS is an aliquot of an analyte-free matrix spiked with target analytes that are prepared with each analytical batch for each analytical method. The recovery of target analytes from the LCS analysis is a measurement of method performance in an interference-free sample matrix. All LCS recoveries for the Q3 2017 data were within method control limits. No GWTS sample data were qualified based on LCS recoveries.

### 1.1.6 Matrix Spike/Matrix Spike Duplicate Recoveries and Precision (Reason Codes MS/MSD and RPD)

The MS and MSD samples are a portion of a field sample or a standard reference material spiked with target analytes that are prepared with each analytical batch and method as appropriate. The MS/MSD results are used to evaluate any bias introduced to the method due to matrix interference, and to measure bias and precision for each analytical batch.

MS/MSD project-specific samples were collected for each of the July through September monthly GWTS sampling events, achieving the QAPjP rate of 1 per 20 samples for the GWTS routine monitoring program. MS/MSD recoveries were within method-specific control criteria with the exception of the slightly elevated chloride, sulfate, and nitrate/nitrite nitrogen MS recoveries for the July sampling event. Associated detect values are qualified "J" to signify estimated data. Q3 2017 qualified sample results are presented on Appendix I-4 – Table 3.

### 1.1.7 Initial and Continuing Calibration Verification (Reason Code CCV)

Instrument calibration is performed for all analyses in accordance with method requirements. The linear analytical range is established for each method by analysis of calibration standards prepared at increasing concentrations that cover the expected sample concentration range. The acceptability of the initial calibration is determined by calculation of a percent relative standard deviation or coefficient. Routinely during sample analysis, the stability of the analytical system is monitored by analysis of continuing calibration standards at concentrations near the mid-point of the instrument calibration range. The percent difference values between the relative response factor in the initial calibration and the relative response factor in the continuing calibration are reviewed to ensure instrument calibration criteria are within method control limits. Initial and continuing calibration verification met the method-specific control criteria for the Q3 2017 GWTS analytical data with exception of one VOC analyte (1-2-dichloroethane) associated with the July sampling event. Associated non-detect sample results are qualified "UJ" to signify estimated non-detect data and included on Appendix I-4 – Table 3.

### 1.1.8 Interference Check Sample (Reason Code ICS)

The interference check sample (ICS) verifies the inter-element and background correction factors for metals analysis using ICP instrumentation. The ICSs were analyzed at the required frequencies, and all ICS results are within the established control criteria for the ICP analytical methods for the Q3 2017 GWTS analytical data.

### 1.1.9 Inductively Coupled Plasma Serial Dilution (Reason Code SD)

The ICP serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. When the concentration of an analyte exceeds 50 times the DL for ICP and 100 times the DL for ICP mass spectrometry, the ICP serial dilution is performed and the results between the original analysis and the diluted analysis are compared. The results of the ICP serial dilution are deemed acceptable when a percent difference between the original analysis and the diluted analysis is less than or equal to 10%.

ICP serial dilution was performed based on the above criteria for the Q3 GWTS samples as deemed appropriate. ICP serial dilution results were within the above criteria for all samples and analytes for the Q3 2017 data.

### 1.1.10 Sample Confirmation (Reason Code RPD)

As required by DoD and EPA analytical method guidance, sample detections for EDB require confirmation using a second column analysis. EDB sample detections for the Q3 2017 data analyzed by EPA Method SW8011 were confirmed by a second column analysis and reported from the primary column. Any detection of EDB on the second column is considered confirmation unless it appears to be associated with matrix interference. There were no data reporting issues associated with EDB detections and second column confirmation for the Q3 GWTS data.

### 1.1.11 Field Blanks for Volatile Organic Compounds (Reason Code FB)

Field blanks serve as a check for possible VOCs in air associated with a sampling location. The field blanks are prepared in the field during sampling by pouring ultra-pure water into EPA-certified clean sample containers and exposing the container to the environment at a particular sample location that may be associated with airborne VOCs.

Field blanks for the GWTS sampling events are collected as deemed necessary based on the site conditions at the time of sample collection. During the Q3 2017 GWTS sampling events, 1 field blank was collected in association with each of the monthly GWTS sampling events. There were no detections of VOCs, BTEX, or EDB in the Q3 field blank samples. Appendix I-4 – Table 4 presents the results for the field blank samples collected during the Q3 2017 sampling events.

### 1.1.12 Trip Blanks for Volatile Organic Compounds (Reason Code TB)

Trip blanks were prepared by the laboratory and stored with the groundwater samples collected for VOCs, BTEX, and EDB analysis. In accordance with the QAPjP requirements, trip blank samples are to be included at a rate of one per cooler when sampling groundwater samples for VOC analysis. A trip blank sample was included with each GWTS sample shipment. No detections of VOCs, BTEX, or EDB were reported in trip blank samples for Q3 2017 GWTS sampling events. Appendix I-4 – Table 4 summarizes the results for trip blank samples for the Q3 2017 sampling events.

### 1.1.13 Equipment Rinse Blanks (Reason Code EB)

No equipment rinse blank samples are required to be collected in conjunction with the GWTS sampling since samples are collected directly from a designated sampling port using dedicated sampling equipment.

### 1.1.14 Field Duplicate Samples

In accordance with the project QAPjP requirements (USACE, 2016), field duplicate samples are collected at a frequency of 10% of the total number of GWTS samples for each monthly sampling event. For the Q3 2017 sampling events, a total of 3 field duplicate samples were collected for 21 field samples. One field duplicate sample was collected for each monthly monitoring event. This exceeds the 10% project requirement for the Q3 2017 event.

Field duplicate RPD was evaluated by calculating the RPD between the parent sample and the duplicate sample. The RPD was calculated using the following equation:

$$RPD = |(S-D)/[(S+D)/2]| \times 100$$

where

S = Sample result.
D = Duplicate result.

Acceptable precision control criteria are established at less than or equal to 35% for water samples. The RPD was calculated between pairs of field duplicate samples when both results are reported at or above the LOQ.

The results for the field duplicate samples collected during Q3 2017 are presented on Appendix I-4 – Table 5. The field duplicate results demonstrate acceptable overall field sampling procedures and analytical method precision.

### 1.1.15 Professional Judgement

Professional judgement may be applied by a third-party data validation subcontractor or the project chemist during the data review process to apply validation qualifiers based on site-specific and project-specific knowledge, historical data, comparability of data, and analytical expertise. There were no exceptions to the validation qualifiers as applied to the data by the validation subcontractor for the Q3 2017 GWTS sampling events.

## 1.2 COMPLETENESS

The following sections present a discussion of contractual, analytical, and technical completeness for the Q3 2017 GWTS monitoring analytical data. Completeness calculations were performed for the GWTS samples that are used for project decisions. Completeness results are presented in the following sections.

### 1.2.1 Contractual Completeness

Contractual completeness is a quantitative determination of the number of unqualified results compared to the total number of sample results expressed as a percentage, based on data qualified for QC outliers related to analytical method performance. These include data qualified for calibration or method blank contamination, missed holding times, LCS recovery, and/or precision. The contractual completeness goal is 95% per quarterly event. Contractual completeness was calculated as follows:

$$\text{Percent Contractual Completeness} = \frac{\text{Number of Unqualified Results}}{\text{Total Number of Results}} \times 100$$

For the Q3 GWTS sample results, 7 VOC results were qualified as estimated data resulting in a contractual completeness of 96% for VOCs and 98.2% for all analytical methods. The 95% contractual completeness objective was achieved for all of the methods for the Q32 2017 sampling events.

### 1.2.2 Analytical Completeness

Analytical completeness is a quantitative measure of the number of unqualified data results compared to the total number of results expressed as a percentage, based on the target analytes qualified for exceedances of QC requirements based on calibration, LCS, MS/MSD, surrogate, method precision, and laboratory method blank contamination results. The analytical completeness goal is 90% for the project. Analytical completeness was calculated as follows:

$$\text{Percent Analytical Completeness} = \frac{\text{Number of Unqualified Results}}{\text{Total Number of Results}} \times 100 =$$

The 90% analytical completeness objective was achieved for the Q3 2017 sampling events with analytical completeness of 94.1%.

### 1.2.3 Technical Completeness

Technical completeness is a quantitative measure of the data usability based on the number of rejected data compared to the total number of sample results. The technical completeness goal for each method is equal to or greater than 95%. The technical completeness calculation considers all data that are not rejected (R-qualified) to be usable data to achieve project objectives. The technical completeness was calculated as follows:

$$\text{Percent Technical Completeness} = \frac{\text{Number of Usable Results}}{\text{Total Number of Results}} \times 100$$

The project data quality objectives were achieved for all methods and samples for the Q3 2017 GWTS monitoring events. The technical completeness for the Q3 2017 data is 100% for all analytical parameters. Technical completeness is presented in Appendix I-4 – Table 6.

### 1.2.4 Data Analysis Completeness

As a part of the data review process, chain-of-custody forms and project data deliverables are reviewed against the project requirements in the Work Plan (USACE, 2017a) and O&M Plan (USACE, 2017b) to ensure compliance with the sampling plan and that analytical results were reported for all planned methods and samples. Data completeness for the Q3 data deliverables was determined to be 100 percent complete. Level 4 analytical data packages for Q3 2017 GWTS data are provided in Appendix I-5.

## 1.3 REPRESENTATIVENESS AND COMPARABILITY

Q3 2017 GWTS sampling was conducted in accordance with the sampling and analysis protocols and standard operating procedures documented in the O&M Plan (USACE, 2017b). Approved procedures were used to collect, preserve, document, and ship samples to the ELLE laboratory, thus ensuring the samples collected for the Q3 2017 sampling events were representative of the GWTS and conditions.

Groundwater samples for VOCs, BTEX, and EDB were collected in 40-milliliter volatile organic analysis (VOA) vials preserved with hydrochloric acid and shipped to ELLE at a temperature less than 6 degrees Celsius. Samples received in VOA vials were inspected to evaluate the presence or absence of any headspace (estimated in millimeters) and documented as sample condition on the laboratory sample receipt report. No VOA vials presented headspace greater than 6 millimeters for Q3 2017 monitoring samples.

The project laboratory (ELLE) maintains current DoD Environmental Laboratory Accreditation Program certification and adhered to the analytical methods documented in the project QAPjP and DoD QSM requirements to prepare and analyze samples and report the data. This ensured the comparability of the analytical results between different samples and different sampling events. For the Q3 GWTS data, an EPA Stage 3 validation was performed on 100% of the analytical data to verify that the laboratory complied with the DoD QSM, project QAPjP, and method requirements. QC results that exceeded method control criteria resulted in data qualification as presented in the previous sections. Based on a review of the completed sample collection logs, chain-of-custody forms, sample receipt forms, and laboratory data packages, the analytical data reported for the Q3 monitoring event achieved the project data representativeness and comparability requirements.

## 1.4 SENSITIVITY

Data sensitivity for the Q3 GWTS analytical data was achieved by complying with the analytical method guidelines and reporting limits specified in the project QAPjP. The analytical methods used for GWTS sample analysis achieved the lower of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 (New Mexico Environment Department, 2010) and New Mexico Administrative Code Title 20.6.23103, Standards for Groundwater of 10,000 Milligrams per Liter Total Dissolved Solids Concentration or Less (New Mexico Administrative Code, 2004). Project screening levels are presented in the QAPjP, Attachment 1, Table 1-1. For the Q3 analytical results, detections of target compounds reported below the LOQ are J-flagged as estimated values. Non-detect analytes are reported at the LOD per the DoD QSM requirements unless as noted above.

## 1.5 CONCLUSIONS

The analytical data reported for the Q3 2017 GWTS samples have been reviewed for precision, accuracy (bias), representativeness, comparability, completeness, and sensitivity. Data quality criteria exceedances were noted for the Q3 GWTS sampling data as follows: 1) MS recovery high for chloride, sulfate and nitrate/nitrite nitrogen; 2) exceedance of calibration verification for 1,2-dichloroethane. Data quality criteria exceedances resulted in "UJ" and "J" flagged estimated data. The 95% technical completeness goal was achieved for all analytical methods for the Q3 2017 sampling events. All data are usable to achieve the project data quality objectives.

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# TABLES

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Appendix I-4 – Table 1 Sample Collection Summary, Q3 2017

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# Table 1
# Sample Collection Summary, Q3 2017

| Location ID | Field Sample ID | Sample Date | Sample Delivery Group | Analytical Parameter [a] | Comments |
|---|---|---|---|---|---|
| GWTS-BFF-EFF1 | GWTS-EFF1-072517 | 7/25/2017 | KR191 | VOCs, EDB, SVOCs, phenols, metals, anions, cyanide | Field Duplicate |
| GWTS-BFF-EFF2 | GWTS-EFF2-072517 | 7/25/2017 | KR191 | VOCs, EDB, SVOCs, phenols, metals, anions, cyanide | MS/MSD |
| GWTS-BFF-GAC1 | GWTS-GAC1-072517 | 7/25/2017 | KR191 | VOCs, EDB, metals | |
| GWTS-BFF-GAC2 | GWTS-GAC2-072517 | 7/25/2017 | KR191 | VOCs, EDB, metals | |
| GWTS-BFF-INF1 | GWTS-INF1-072517 | 7/25/2017 | KR191 | VOCs, EDB, SVOCs, phenols, metals, anions, cyanide | |
| GWTS-BFF-INF2 | GWTS-INF2-072517 | 7/25/2017 | KR191 | VOCs, EDB, SVOCs, phenols, metals, anions, cyanide | |
| Field Blank | GWTS-FB02-072517 | 7/25/2017 | KR191 | VOCs, EDB | |
| Trip Blank | GWTS-TB01-072517 | 7/25/2017 | KR191 | VOCs, EDB | |
| Trip Blank | GWTS-TB02-072517 | 7/25/2017 | KR191 | VOCs, EDB | |
| KAFB-106228 | GW228-173 | 7/27/2017 | KR192 | EDB | |
| KAFB-106233 | GW233-173 | 7/27/2017 | KR192 | EDB | |
| KAFB-106234 | GW234-173 | 7/27/2017 | KR192 | EDB | |
| Trip Blank | GWTS-TB01-072717 | 7/27/2017 | KR192 | EDB | |
| GWTS-BFF-EFF1 | GWTS-EFF1-082417 | 8/24/2017 | KR194 | BTEX, EDB, metals | |
| GWTS-BFF-EFF2 | GWTS-EFF2-082417 | 8/24/2017 | KR194 | BTEX, EDB, metals | Field Duplicate, MS/MSD |
| Field Blank | GWTS-FB01-082417 | 8/24/2017 | KR194 | BTEX, EDB | |
| GWTS-BFF-GAC1 | GWTS-GAC1-082417 | 8/24/2017 | KR194 | BTEX, EDB, metals | |
| GWTS-BFF-GAC2 | GWTS-GAC2-082417 | 8/24/2017 | KR194 | BTEX, EDB, metals | |
| GWTS-BFF-INF1 | GWTS-INF1-082417 | 8/24/2017 | KR194 | BTEX, EDB, metals | |
| GWTS-BFF-INF2 | GWTS-INF2-082417 | 8/24/2017 | KR194 | BTEX, EDB, metals | |
| Trip Blank | GWTS-TB01-082417 | 8/24/2017 | KR194 | BTEX, EDB | |
| GWTS-BFF-EFF1 | GWTS-EFF1-092117 | 9/21/2017 | KR195 | BTEX, EDB, metals | Field Duplicate |
| GWTS-BFF-EFF2 | GWTS-EFF2-092117 | 9/21/2017 | KR195 | BTEX, EDB, metals | MS/MSD |
| Field Blank | GWTS-FB02-092117 | 9/21/2017 | KR195 | BTEX, EDB | |
| GWTS-BFF-GAC1 | GWTS-GAC1-092117 | 9/21/2017 | KR195 | BTEX, EDB, metals | |
| GWTS-BFF-GAC2 | GWTS-GAC2-092117 | 9/21/2017 | KR195 | BTEX, EDB, metals | |
| GWTS-BFF-INF1 | GWTS-INF1-092117 | 9/21/2017 | KR195 | BTEX, EDB, metals | |
| GWTS-BFF-INF2 | GWTS-INF2-092117 | 9/21/2017 | KR195 | BTEX, EDB, metals | |
| Trip Blank | GWTS-TB01-092117 | 9/21/2017 | KR195 | BTEX, EDB | |

[a]Analytical methods include: Method SW8260C (VOCs and BTEX); Method SW8011 (EDB); Method SW8270D (SVOCs); Method SW6010C/6020A (dissolved metals); Method SW7470A (total mercury); Method E300.0 (anions); Method E353.2 (nitrate/nitrite); Method E420.4 (phenols); Method OIA-1677-09 (cyanide).

BTEX = benzene, toluene, ethylbenzene, and xylenes

EDB = ethylene dibromide

ID = identification

MS/MSD = matrix spike/matrix spike duplicate

SVOC = semivolatile organic compound

VOC = volatile organic compound

# Table 2
# Data Qualification Flags and Reason Codes

**Data Qualifier Definitions for Data Validation**

| Qualifier | Definition |
|---|---|
| | **No Qualifier** indicates that the data are acceptable both qualitatively and quantitatively. |
| U | The analyte was analyzed for but was not detected above the detection limit. The value associated with the U-qualifier is the limit of detection. |
| J | The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample. Results are estimated, although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain. |
| J- | The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample. |
| J+ | The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample. |
| UJ | The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise. |
| R | The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and re-analysis may be necessary to confirm or deny the presence of the analyte. Results are rejected, and data are unusable for any purposes. |

**Reason Codes for Data Validation**

| Reason Code | Description |
|---|---|
| CB/CCB | Calibration blank or continuing calibration blank outside of control limits |
| CCV | Calibration verification outside of control limits |
| EB | Equipment rinse blank contamination |
| FB | Field blank contamination |
| FD | Field duplicate sample results out of control criteria |
| HT | Holding time exceedance |
| ICS | Interference check sample |
| LCS | Laboratory control sample recovery out of control criteria |
| MB | Method blank contamination |
| MS/MSD | Matrix spike/matrix spike duplicate recovery outside of control criteria |
| RPD | Relative percent difference outside of control limits |
| SD | Inductively coupled plasma serial dilution out of control criteria |
| SURR | Surrogate recovery outside of control limits |
| TB | Trip blank contamination |

**Table 3**
**Qualified Sample Results, Q3 2017**

| Location ID | Sample Name | Sample Delivery Group | Sample Type | Analyte | Data Qualifier | Validation Reason Code |
|---|---|---|---|---|---|---|
| GWTS-BFF-EFF1 | GWTS-EFF1-072517 | KR191 | N | 1,2-Dichloroethane | UJ | CCV - Calibration verification |
| GWTS-BFF-EFF1 | GWTS-EFF1-072517 | KR191 | N | Chloride | J | MS - Percent recovery |
| GWTS-BFF-EFF1 | GWTS-EFF1-072517 | KR191 | N | Sulfate | J | MS - Percent recovery |
| GWTS-BFF-EFF1 | GWTS-EFF1-072517 | KR191 | N | Nitrate/nitrite nitrogen | J | MS - Percent recovery |
| GWTS-BFF-EFF1 | GWTS-EFF1DUP-072517 | KR191 | FD | 1,2-Dichloroethane | UJ | CCV - Calibration verification |
| GWTS-BFF-EFF1 | GWTS-EFF1DUP-072517 | KR191 | FD | Chloride | J | MS - Percent recovery |
| GWTS-BFF-EFF1 | GWTS-EFF1DUP-072517 | KR191 | FD | Sulfate | J | MS - Percent recovery |
| GWTS-BFF-EFF1 | GWTS-EFF1DUP-072517 | KR191 | FD | Nitrate/nitrite nitrogen | J | MS - Percent recovery |
| GWTS-BFF-GAC1 | GWTS-GAC1-072517 | KR191 | N | 1,2-Dichloroethane | UJ | CCV - Calibration verification |
| GWTS-BFF-INF1 | GWTS-INF1-072517 | KR191 | N | 1,2-Dichloroethane | UJ | CCV - Calibration verification |
| GWTS-BFF-INF1 | GWTS-INF1-072517 | KR191 | N | Chloride | J | MS - Percent recovery |
| GWTS-BFF-INF1 | GWTS-INF1-072517 | KR191 | N | Sulfate | J | MS - Percent recovery |
| GWTS-BFF-INF1 | GWTS-INF1-072517 | KR191 | N | Nitrate/nitrite nitrogen | J | MS - Percent recovery |
| GWTS-BFF-EFF2 | GWTS-EFF2-072517 | KR191 | N | 1,2-Dichloroethane | UJ | CCV - Calibration verification |
| GWTS-BFF-EFF2 | GWTS-EFF2-072517 | KR191 | N | Chloride | J | MS - Percent recovery |
| GWTS-BFF-EFF2 | GWTS-EFF2-072517 | KR191 | N | Sulfate | J | MS - Percent recovery |
| GWTS-BFF-EFF2 | GWTS-EFF2-072517 | KR191 | N | Nitrate/nitrite nitrogen | J | MS - Percent recovery |
| GWTS-BFF-GAC2 | GWTS-GAC2-072517 | KR191 | N | 1,2-Dichloroethane | UJ | CCV - Calibration verification |
| GWTS-BFF-INF2 | GWTS-INF2-072517 | KR191 | N | 1,2-Dichloroethane | UJ | CCV - Calibration verification |
| GWTS-BFF-INF2 | GWTS-INF2-072517 | KR191 | N | Chloride | J | MS - Percent recovery |
| GWTS-BFF-INF2 | GWTS-INF2-072517 | KR191 | N | Sulfate | J | MS - Percent recovery |
| GWTS-BFF-INF2 | GWTS-INF2-072517 | KR191 | N | Nitrate/nitrite nitrogen | J | MS - Percent recovery |

**Table 3**
**Qualified Sample Results, Q3 2017**

CCV = continuing calibration verification

FD = field duplicate

ID = identification

MS = matrix spike

N = normal field sample

Data qualifier based on independent validation:

J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.

U = Qualifier denotes the analyte was analyzed for but was not detected above the detection limit.

UJ = Qualifier denotes the analyte was analyzed for but was not detected. The reported quantitation limit is approximate.

**Table 4**
**Field Quality Control Sample Data, Q3 2017**

| | | Field Sample ID: | GWTS-FB02-072517 | | | GWTS-FB01-082417 | | | GWTS-FB02-092117 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date: | 7/25/2017 | | | 8/24/2017 | | | 9/21/2017 | | |
| | | Sample Type: | FB | | | FB | | | FB | | |
| **Parameter** | **Analytical Method** | **Analyte** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | 1,1,2,2-tetrachloroethane | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | 1,1,2-trichloroethane | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | 1,1-dichloroethane | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | 1,2-dibromoethane | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | 1,2-dichloroethane | ND | UJ | 1 | -- | -- | -- | -- | -- | -- |
| | | Benzene | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Chloroform | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | cis-1,2-dichloroethene | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Dibromochloromethane | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Ethylbenzene | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Methyl tert-butyl ether | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Methylene Chloride | ND | U | 4 | -- | -- | -- | -- | -- | -- |
| | | Naphthalene | ND | U | 2 | -- | -- | -- | -- | -- | -- |
| | | Tetrachloroethene | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Toluene | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Trichloroethene | ND | U | 1 | -- | -- | -- | -- | -- | -- |
| | | Xylenes, Total | ND | U | 1 | ND | U | 1 | ND | U | 1 |

**Table 4**
**Field Quality Control Sample Data, Q3 2017**

| | | Field Sample ID: | GWTS-TB01-072517 | | | GWTS-TB02-072517 | | | GWTS-TB01-072717 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample Date: | 7/25/2017 | | | 7/25/2017 | | | 7/27/2017 | | |
| | | Sample Type: | TB | | | TB | | | TB | | |
| **Parameter** | **Analytical Method** | **Analyte** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.02 |
| VOCs | Method SW8260C (µg/L) | 1,1,2,2-tetrachloroethane | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | 1,1,2-trichloroethane | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | 1,1-dichloroethane | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | 1,2-dibromoethane | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | 1,2-dichloroethane | ND | UJ | 1 | ND | UJ | 1 | -- | -- | -- |
| | | Benzene | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | Chloroform | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | cis-1,2-dichloroethene | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | Dibromochloromethane | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | Ethylbenzene | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | Methyl tert-butyl ether | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | Methylene Chloride | ND | U | 4 | ND | U | 4 | -- | -- | -- |
| | | Naphthalene | ND | U | 2 | ND | U | 2 | -- | -- | -- |
| | | Tetrachloroethene | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | Toluene | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | Trichloroethene | ND | U | 1 | ND | U | 1 | -- | -- | -- |
| | | Xylenes, Total | ND | U | 1 | ND | U | 1 | -- | -- | -- |

**Table 4**
**Field Quality Control Sample Data, Q3 2017**

| | | Field Sample ID: | GWTS-TB01-082417 | | | GWTS-TB01-092117 | | |
|---|---|---|---|---|---|---|---|---|
| | | Sample Date: | 8/24/2017 | | | 9/21/2017 | | |
| | | Sample Type: | TB | | | TB | | |
| **Parameter** | **Analytical Method** | **Analyte** | **Result** | **Val Qual** | **LOD** | **Result** | **Val Qual** | **LOD** |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | 1,1,2,2-tetrachloroethane | -- | -- | -- | -- | -- | -- |
| | | 1,1,2-trichloroethane | -- | -- | -- | -- | -- | -- |
| | | 1,1-dichloroethane | -- | -- | -- | -- | -- | -- |
| | | 1,2-dibromoethane | -- | -- | -- | -- | -- | -- |
| | | 1,2-dichloroethane | -- | -- | -- | -- | -- | -- |
| | | Benzene | ND | U | 1 | ND | U | 1 |
| | | Chloroform | -- | -- | -- | -- | -- | -- |
| | | cis-1,2-dichloroethene | -- | -- | -- | -- | -- | -- |
| | | Dibromochloromethane | -- | -- | -- | -- | -- | -- |
| | | Ethylbenzene | ND | U | 1 | ND | U | 1 |
| | | Methyl tert-butyl ether | -- | -- | -- | -- | -- | -- |
| | | Methylene Chloride | -- | -- | -- | -- | -- | -- |
| | | Naphthalene | -- | -- | -- | -- | -- | -- |
| | | Tetrachloroethene | -- | -- | -- | -- | -- | -- |
| | | Toluene | ND | U | 1 | ND | U | 1 |
| | | Trichloroethene | -- | -- | -- | -- | -- | -- |
| | | Xylenes, Total | ND | U | 1 | ND | U | 1 |

**Table 4**
**Field Quality Control Sample Data, Q3 2017**

µg/L = microgram per liter
EDB = ethylene dibromide (1, 2-dibromoethane)
FB = field blank
ID = identification
LOD = limit of detection
ND = not detected above the detection limit
TB = trip blank
Val Qual = validation qualifier
VOC = volatile organic compound
-- = Not analyzed.
Shading = detected concentrations above the detection limit
Qualifiers:
Val Qual based on independent data validation.
J = Denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Denotes analyte was analyzed for but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
UJ = Denotes the value associated with the U-qualifier is estimated.

**Table 5**
**Field Duplicate Sample Data, Q3 2017**

| Parameter | Analytical Method | Analyte | NMAC NMWQCC[a] | GWTS-BFF-EFF1 GWTS-EFF1-072517 7/25/2017 REG | | | GWTS-BFF-EFF1 GWTS-EFF1DUP-072517 7/25/2017 Field Duplicate | | | GWTS-BFF-EFF1 GWTS-EFF1-092117 9/21/2017 REG | | | GWTS-BFF-EFF1 WTS-EFF1DUP-09211 9/21/2017 Field Duplicate | | | GWTS-BFF-EFF2 GWTS-EFF2-082417 8/24/2017 REG | | | GWTS-BFF-EFF2 WTS-EFF2DUP-08241 8/24/2017 Field Duplicate | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Result | Val Qual | LOD | Result | Val Qual | LOD | Result | Val Qual | LOD | Result | Val Qual | LOD | Result | Val Qual | LOD | Result | Val Qual | LOD |
| EDB | Method SW8011 (µg/L) | 1,2-dibromoethane | 0.1 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 | ND | U | 0.019 |
| VOCs | Method SW8260C (µg/L) | 1,1,2,2-tetrachloroethane | 10 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 1,1,2-trichloroethane | 10 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 1,1-dichloroethane | 25 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 1,2-dibromoethane | 0.1 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 1,2-dichloroethane | 5 | ND | UJ | 1 | ND | UJ | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Benzene | 10 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Chloroform | 100 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | cis-1,2-dichloroethene | NS | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Dibromochloromethane | NS | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Ethylbenzene | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Methyl tert-butyl ether | NS | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Methylene Chloride | 100 | ND | U | 4 | ND | U | 4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Naphthalene | 30[b] | ND | U | 2 | ND | U | 2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Tetrachloroethene | 20 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Toluene | 750 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| | | Trichloroethene | 100 | ND | U | 1 | ND | U | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Xylenes, Total | 620 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 | ND | U | 1 |
| Dissolved Metals | Method SW6010C (mg/L) | Aluminum, dissolved | 5 | ND | U | 0.2 | ND | U | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Barium, dissolved | 1 | 0.0953 | -- | 0.0025 | 0.0944 | -- | 0.0025 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Copper, dissolved | 1 | ND | U | 0.01 | ND | U | 0.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Iron, dissolved | 1.0 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 | ND | U | 0.2 |
| | | Manganese, dissolved | 0.2 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 | ND | U | 0.005 |
| | | Zinc, dissolved | 10 | 0.0156 | J | 0.01 | 0.0148 | J | 0.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Method SW6020A (mg/L) | Antimony, dissolved | NS | ND | U | 0.001 | ND | U | 0.001 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Arsenic, dissolved | NS | ND | U | 0.002 | 0.00099 | J | 0.002 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Beryllium, dissolved | NS | ND | U | 0.00025 | ND | U | 0.00025 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Cadmium, dissolved | NS | ND | U | 0.0005 | ND | U | 0.0005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Chromium, dissolved | NS | 0.0021 | J | 0.002 | 0.0015 | J | 0.002 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Lead, dissolved | NS | ND | U | 0.00025 | ND | U | 0.00025 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Selenium, dissolved | NS | 0.0018 | J | 0.001 | 0.0019 | J | 0.001 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Silver, dissolved | NS | ND | U | 0.00025 | ND | U | 0.00025 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Thallium, dissolved | NS | ND | U | 0.00025 | ND | U | 0.00025 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Uranium-238, dissolved | NS | 0.0014 | -- | 0.000063 | 0.0014 | -- | 0.000063 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Metals | Method SW7470A (mg/L) | Mercury | 0.002 | ND | U | 0.0001 | ND | U | 0.0001 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Anions | E300.0 | Chloride | 250 | 28.2 | J | 8 | 27.9 | J | 8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Fluoride | 1.6 | 0.82 | -- | 0.5 | 0.52 | -- | 0.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Sulfate | 600 | 50.4 | J | 5 | 51 | J | 5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | E353.2 | Nitrate/Nitrite Nitrogen | 10[c] | 0.73 | J | 0.1 | 0.73 | J | 0.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Phenols | Method E420.4 (µg/L) | Phenols | 0.005 | ND | U | 0.02 | ND | U | 0.02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cyanide | Method OIA1677 (mg/L) | Cyanide, Free | 0.2 | ND | U | 0.006 | ND | U | 0.006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SVOCs | Method SW8270D (µg/L) | 1-methylnaphthalene | 30[b] | ND | U | 0.2 | ND | U | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2-methylnaphthalene | 30[b] | ND | U | 0.2 | ND | U | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Bis(2-ethylhexyl) phthalate | NS | ND | U | 4 | ND | U | 4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Naphthalene | 30[b] | ND | U | 0.4 | ND | U | 0.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | Pyrene | NS | ND | U | 0.2 | ND | U | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 5**
**Field Duplicate Sample Data, Q3 2017**

[a] NMWQCC standards per the New Mexico Administrative Code Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004). For metals, the NMWQCC standard applies to dissolved metals.

[b] NMWQCC standard represents total naphthalene and monomethylnaphthalene.

[c] Based on the geochemical equilibrium of the site groundwater and previous site data analyses, nitrate/nitrite results represent nitrate concentrations.

µg/L = microgram per liter
ID = identification
LOD = limit of detection
mg/L = milligram per liter
ND = not detected above the detection limit
NS = not specified
REG = normal field sample
SVOC = semivolatile organic compound
VAL QUAL = validation qualifier
VOC = volatile organic compound

Shading = detected concentrations above the detection limit
**Bold/Shading = reported concentrations exceed the project screening level**

Qualifiers:
Val Qual based on independent data validation.
J = Qualifier denotes the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOD.
-- = Qualifier not assigned to the associated numerical value.

**Table 6**
**Technical Data Completeness, Q3 2017**

| Analytical Parameter | Field/Field Duplicate Sample Analytes | Quality Control Sample Analytes (TB and FB) | Qualified Analytes | Percent Completeness |
|---|---|---|---|---|
| VOCs (SW8260C) | 175 | 50 | 7 | 100 |
| Ethylene dibromide (SW8011) | 24 | 7 | 0 | 100 |
| Dissolved metals (SW6010C) | 62 | 0 | 0 | 100 |
| Dissolved metals (SW6020A) | 50 | 0 | 0 | 100 |
| Mercury (SW7470A) | 5 | 0 | 0 | 100 |
| Phenols (E420.4) | 5 | 0 | 0 | 100 |
| Anions (E300.0) | 15 | 0 | 10 | 100 |
| Nitrate/nitrite nitrogen (E353.2) | 5 | 0 | 5 | 100 |
| Cyanide, Free (OAI1677) | 5 | 0 | 0 | 100 |
| SVOCs (SW8270D) | 25 | 0 | 0 | 100 |

FB = field blank
SVOC = semivolatile organic compound
TB = trip blank
VOC = volatile organic compound

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# APPENDIX I-5

# DATA PACKAGES – GROUNDWATER TREATMENT SYSTEM SAMPLES

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# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 07/25/17

# SDG# KR191

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1830113 | 9121674-9121696 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **08/17/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR191
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9121674 | GWTS-EFF1-072517 | 07/25/2017 13:45 | 07/26/2017 09:30 |
| 9121675 | GWTS-EFF1-072517 | 07/25/2017 13:45 | 07/26/2017 09:30 |
| 9121676 | GWTS-EFF1DUP-072517 | 07/25/2017 13:45 | 07/26/2017 09:30 |
| 9121677 | GWTS-EFF1DUP-072517 | 07/25/2017 13:45 | 07/26/2017 09:30 |
| 9121678 | GWTS-GAC1-072517 | 07/25/2017 14:00 | 07/26/2017 09:30 |
| 9121679 | GWTS-GAC1-072517 | 07/25/2017 14:00 | 07/26/2017 09:30 |
| 9121680 | GWTS-INF1-072517 | 07/25/2017 14:10 | 07/26/2017 09:30 |
| 9121681 | GWTS-INF1-072517 | 07/25/2017 14:10 | 07/26/2017 09:30 |
| 9121682 | GWTS-TB01-072517 | 07/25/2017 15:30 | 07/26/2017 09:30 |
| 9121683 | GWTS-EFF2-072517 | 07/25/2017 14:25 | 07/26/2017 09:30 |
| 9121684 | GWTS-EFF2-072517MS | 07/25/2017 14:25 | 07/26/2017 09:30 |
| 9121685 | GWTS-EFF2-072517MSD | 07/25/2017 14:25 | 07/26/2017 09:30 |
| 9121686 | GWTS-EFF2-072517DUP | 07/25/2017 14:25 | 07/26/2017 09:30 |
| 9121687 | GWTS-EFF2-072517 | 07/25/2017 14:25 | 07/26/2017 09:30 |
| 9121688 | GWTS-EFF2-072517MS | 07/25/2017 14:25 | 07/26/2017 09:30 |
| 9121689 | GWTS-EFF2-072517MSD | 07/25/2017 14:25 | 07/26/2017 09:30 |
| 9121690 | GWTS-EFF2-072517DUP | 07/25/2017 14:25 | 07/26/2017 09:30 |
| 9121691 | GWTS-GAC2-072517 | 07/25/2017 14:50 | 07/26/2017 09:30 |
| 9121692 | GWTS-GAC2-072517 | 07/25/2017 14:50 | 07/26/2017 09:30 |
| 9121693 | GWTS-INF2-072517 | 07/25/2017 15:00 | 07/26/2017 09:30 |
| 9121694 | GWTS-INF2-072517 | 07/25/2017 15:00 | 07/26/2017 09:30 |
| 9121695 | GWTS-TB02-072517 | 07/25/2017 15:30 | 07/26/2017 09:30 |
| 9121696 | GWTS-FB02-072517 | 07/25/2017 14:25 | 07/26/2017 09:30 |

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# Sample pH Log

**SDG: KR191**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9121674 | 002A | >12 | >12 | PK | NA | NA | NA | NA | NA | Y | N | NA | NA | N | NA | NA | 7/26/2017 7:25:39PM | 12665 |
| 9121674 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:29:39PM | 12665 |
| 9121674 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:47PM | 2035 |
| 9121674 | 151A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | N | NA | NA | 7/26/2017 7:08:27PM | 12665 |
| 9121674 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:27:34PM | 12665 |
| 9121675 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:23:11PM | 12665 |
| 9121676 | 002A | >12 | >12 | PK | NA | NA | NA | NA | NA | Y | N | NA | NA | N | NA | NA | 7/26/2017 7:25:06PM | 12665 |
| 9121676 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:14:48PM | 12665 |
| 9121676 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:47PM | 2035 |
| 9121676 | 151A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | N | NA | NA | 7/26/2017 7:06:41PM | 12665 |
| 9121676 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:21:47PM | 12665 |
| 9121677 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:24:13PM | 12665 |
| 9121678 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:47PM | 2035 |
| 9121679 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:21:25PM | 12665 |
| 9121680 | 002A | >12 | >12 | PK | NA | NA | NA | NA | NA | Y | N | NA | NA | N | NA | NA | 7/26/2017 7:20:23PM | 12665 |
| 9121680 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:15:07PM | 12665 |
| 9121680 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |
| 9121680 | 151A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | N | NA | NA | 7/26/2017 7:06:09PM | 12665 |
| 9121680 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:15:25PM | 12665 |
| 9121681 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:23:30PM | 12665 |
| 9121682 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |
| 9121683 | 002A | >12 | >12 | PK | NA | NA | NA | NA | NA | Y | N | NA | NA | N | NA | NA | 7/26/2017 7:19:50PM | 12665 |
| 9121683 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:19:18PM | 12665 |
| 9121683 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |
| 9121683 | 151A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | N | NA | NA | 7/26/2017 7:09:50PM | 12665 |
| 9121683 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:17:57PM | 12665 |
| 9121684 | 002A | >12 | >12 | PK | NA | NA | NA | NA | NA | Y | N | NA | NA | N | NA | NA | 7/26/2017 7:22:48PM | 12665 |
| 9121684 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:19:00PM | 12665 |
| 9121684 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |
| 9121684 | 151A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | N | NA | NA | 7/26/2017 7:08:54PM | 12665 |
| 9121684 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:17:41PM | 12665 |
| 9121685 | 002A | >12 | >12 | PK | NA | NA | NA | NA | NA | Y | N | NA | NA | N | NA | NA | 7/26/2017 7:27:01PM | 12665 |
| 9121685 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:22:21PM | 12665 |
| 9121685 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |
| 9121685 | 151A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | N | NA | NA | 7/26/2017 7:09:21PM | 12665 |
| 9121686 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:22:04PM | 12665 |
| 9121687 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:13:06PM | 12665 |
| 9121688 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:12:48PM | 12665 |

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9121689 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:13:25PM | 12665 |
| 9121691 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |
| 9121692 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:14:29PM | 12665 |
| 9121693 | 002A | >12 | >12 | PK | NA | NA | NA | NA | NA | Y | N | NA | NA | N | NA | NA | 7/26/2017 7:16:03PM | 12665 |
| 9121693 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:14:12PM | 12665 |
| 9121693 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |
| 9121693 | 151A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | N | NA | NA | 7/26/2017 7:05:41PM | 12665 |
| 9121693 | 157A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:17:25PM | 12665 |
| 9121694 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 7/26/2017 7:13:56PM | 12665 |
| 9121695 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |
| 9121696 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/1/2017 4:25:48PM | 2035 |

**Check Code Key**

**PK** = Original container checked - pH is within the correct range. (No preservative was added)
**PA** = Original container checked - pH adjusted to correct range. (Preservative was added)
**PV** = Volatile container checked
**PC** = pH checked (unpreserved container)
**SPK** = Subsampled from an original container. Original container checked - pH is within correct range
**SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range.
**SPC** = Subsampled from an original container. pH checked (unpreserved container).
**SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample.
**UP** = Unable to preserve due to matrix of the sample.
**NA** = Not applicable

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

**01163 GC/MS VOA Water Prep**

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

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**11997 VOCs- 5ml Water by 8260C**

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

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**00259 Mercury**

The solution resulting from the mercury digestion is analyzed by Cold Vapor AA.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 7470A, September 1994

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**10635 ICP-WW, 3005A (tot rec) - U4**

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

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**10639 ICPMS - Water, 3020A - U4**

The sample is digested with nitric and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3020A, July 1992

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**05713 WW SW846 Hg Digest**

The sample is heated at 95 c with nitric acid, sulfuric acid, potassium persulfate, and potassium permanganate. Excess potassium permanganate is reduced with sodium chloride/hydroxylamine hydrochloride. Mercuric ions are reduced to mercury metal using stannous chloride.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 7470A, September 1994

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**01743 Aluminum**
**07046 Barium**
**07053 Copper**
**01754 Iron**
**07058 Manganese**
**07072 Zinc**

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

---

**06024 Antimony**
**06025 Arsenic**
**06027 Beryllium**

**06028 Cadmium**
**06031 Chromium**
**06035 Lead**
**06041 Selenium**
**06042 Silver**
**06045 Thallium**
**13501 Uranium**

The solution resulting from the metals digestion is analyzed by ICP/MS.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6020A, February 2007.

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**10398 8011 Master Master**

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

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**07786 EDB Extraction (8011)**

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

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**00813 BNA Water Extraction**

The sample aliquot is extracted with methylene chloride by either separatory funnel or liquid/liquid apparatus. Extraction is performed at both a pH of 11 and 2. The extract is concentrated prior to analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3510C, Rev 3, December 1996

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**14242 TCL SW846 8270D MINI**

The sample extract is analyzed by capillary column Gas Chromatography/Mass Spectrometry.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 8270D, February 2007.

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**07882 Total Nitrite/Nitrate Nitrogen**

Nitrate ions are reduced to nitrite by passing through a cadmium coil. The nitrite ions then react with sulfanilamide to yield a diazo compound which couples with N-1-naphthylethylene diamine dihydrochloride to form a soluble, highly-colored dye. The result is determined colorimetrically.

Reference: Method 353.2, Revision 2.0 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

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**00224 Chloride**
**01504 Fluoride**
**00228 Sulfate**

A small volume of sample is introduced into an ion chromatograph. The anions are then separated and measured by a system consisting of a guard column, separator column, suppressor, and conductivity detector.

Reference: Method 300.0, Revision 2.1 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

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### 14002 Phenols (water)

This method is based on automated distillation of phenol and the subsequent reaction with 4-aminoantipyrine in basic buffer to produce a red-colored complex. The result is colorimetrically determined.

Reference: Method 420.4, Revision 1.0 (1993), Determination of Total Recoverable Phenolics By Semi-Automated Colorimetry, USEPA 600.

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### 12941 Free Cyanide

Cyanide is measured by segmented flow injection followed by gas diffusion amperometry.

Reference: Available Cyanide by Ligand Exchange and Flow Injection Analysis, OI Analytical, 2009.

# Analysis Reports / Field Chain of Custody

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: August 07, 2017

**Project: Kirtland AFB**

Submittal Date: 07/26/2017
Group Number: 1830113
SDG: KR191
PO Number: 14800
State of Sample Origin: NM

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| GWTS-EFF1-072517 Water | 9121674 |
| GWTS-EFF1-072517 Filtered Water | 9121675 |
| GWTS-EFF1DUP-072517 Water | 9121676 |
| GWTS-EFF1DUP-072517 Filtered Water | 9121677 |
| GWTS-GAC1-072517 Water | 9121678 |
| GWTS-GAC1-072517 Filtered Water | 9121679 |
| GWTS-INF1-072517 Water | 9121680 |
| GWTS-INF1-072517 Filtered Water | 9121681 |
| GWTS-TB01-072517 Water | 9121682 |
| GWTS-EFF2-072517 Water | 9121683 |
| GWTS-EFF2-072517MS Water | 9121684 |
| GWTS-EFF2-072517MSD Water | 9121685 |
| GWTS-EFF2-072517DUP Water | 9121686 |
| GWTS-EFF2-072517 Filtered Water | 9121687 |
| GWTS-EFF2-072517MS Filtered Water | 9121688 |
| GWTS-EFF2-072517MSD Filtered Water | 9121689 |
| GWTS-EFF2-072517DUP Filtered Water | 9121690 |
| GWTS-GAC2-072517 Water | 9121691 |
| GWTS-GAC2-072517 Filtered Water | 9121692 |
| GWTS-INF2-072517 Water | 9121693 |
| GWTS-INF2-072517 Filtered Water | 9121694 |
| GWTS-TB02-072517 Water | 9121695 |
| GWTS-FB02-072517 Water | 9121696 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-

laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

Respectfully Submitted,

Kay Hower

(717) 556-7364

Project Name: Kirtland AFB
LL Group #: 1830113

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

SW-846 8260C, GC/MS Volatiles

Sample #s: 9121674, 9121676, 9121678, 9121680, 9121682, 9121683, 9121691, 9121693, 9121695, 9121696

The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

Batch #: L172122AA (Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696 UNSPK: 9121683)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD exceeded the acceptance window indicating a positive bias: 1,2-Dichloroethane

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: 1,2-Dichloroethane, Chloroform

SW-846 6020A, Metals Dissolved

Batch #: 172091063902A (Sample number(s): 9121675, 9121677, 9121681, 9121687-9121690, 9121694 UNSPK: 9121687 BKG: 9121687)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Chromium

**EPA 300.0, Wet Chemistry**

Batch #: 17207249213A (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693 UNSPK: 9121683 BKG: 9121683)

The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Chloride, Sulfate

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Fluoride

**EPA 353.2, Wet Chemistry**

Batch #: 17214118101B (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693 UNSPK: 9121683 BKG: 9121683)

The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Total Nitrite/Nitrate Nitrogen

**OIA-1677-09, Wet Chemistry**

Batch #: 17218941101A (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121685, 9121693 UNSPK: 9121683)

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside acceptance windows: Free Cyanide

**Sample Description: GWTS-EFF1-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121674**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 13:45 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1901 SDG#: KR191-01

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| | The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported. | | | | | | | |
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 14242 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 4.0 | U | 2.0 | 4.0 | 5.0 | 1 |
| 14242 | 1-Methylnaphthalene | 90-12-0 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | 2-Methylnaphthalene | 91-57-6 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | Naphthalene | 91-20-3 | 0.40 | U | 0.10 | 0.40 | 0.50 | 1 |
| 14242 | Pyrene | 129-00-0 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 7470A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury 7470A | 7439-97-6 | 0.00010 | U | 0.000050 | 0.00010 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00224 | Chloride | 16887-00-6 | 28.2 | | 4.0 | 8.0 | 8.0 | 20 |
| 01504 | Fluoride | 16984-48-8 | 0.82 | | 0.25 | 0.50 | 0.50 | 5 |
| 00228 | Sulfate | 14808-79-8 | 50.4 | | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.73 | | 0.040 | 0.10 | 0.10 | 1 |
| | **EPA 420.4** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 14002 | Phenols (water) | n.a. | 0.020 | U | 0.010 | 0.020 | 0.030 | 1 |

*=This limit was used in the evaluation of the final result

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

# Analysis Report

**Sample Description: GWTS-EFF1-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121674**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 13:45 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1901 SDG#: KR191-01

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Wet Chemistry** | **OIA-1677-09** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 12941 | Free Cyanide | n.a. | 0.0060 U | 0.0020 | 0.0060 | 0.0060 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 02:49 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 02:49 | Kevin D Kelly | 1 |
| 14242 | SVOCs 8270D GWTS | SW-846 8270D | 1 | 17208WAC026 | 08/03/2017 02:00 | Edward C Monborne | 1 |
| 00813 | BNA Water Extraction | SW-846 3510C | 1 | 17208WAC026 | 07/27/2017 16:10 | Kate E Lutte | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 07/31/2017 21:56 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |
| 00259 | Mercury 7470A | SW-846 7470A | 1 | 172090571309 | 08/01/2017 06:40 | Damary Valentin | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 172090571309 | 07/31/2017 17:50 | JoElla L Rice | 1 |
| 00224 | Chloride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 08:41 | Zachary W Enck | 20 |
| 01504 | Fluoride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 08:24 | Zachary W Enck | 5 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17207249213A | 07/27/2017 08:24 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17214118101B | 08/03/2017 04:07 | Joseph E McKenzie | 1 |
| 14002 | Phenols (water) | EPA 420.4 | 1 | 17215125101B | 08/03/2017 03:00 | Joseph E McKenzie | 1 |
| 12941 | Free Cyanide | OIA-1677-09 | 1 | 17218941101A | 08/06/2017 17:45 | Joseph E McKenzie | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF1-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121675**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 13:45 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1902 SDG#: KR191-02

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01743 | Aluminum | 7429-90-5 | 0.200 U | 0.0894 | 0.200 | 0.400 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0953 | 0.00085 | 0.0025 | 0.0100 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0100 U | 0.0040 | 0.0100 | 0.0200 | 1 |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |
| 07072 | Zinc | 7440-66-6 | 0.0156 J | 0.0065 | 0.0100 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06024 | Antimony | 7440-36-0 | 0.0010 U | 0.00045 | 0.0010 | 0.0020 | 1 |
| 06025 | Arsenic | 7440-38-2 | 0.0020 U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06027 | Beryllium | 7440-41-7 | 0.00025 U | 0.000071 | 0.00025 | 0.0010 | 1 |
| 06028 | Cadmium | 7440-43-9 | 0.00050 U | 0.00015 | 0.00050 | 0.0010 | 1 |
| 06031 | Chromium | 7440-47-3 | 0.0021 J | 0.00087 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 U | 0.00011 | 0.00025 | 0.0020 | 1 |
| 06041 | Selenium | 7782-49-2 | 0.0018 J | 0.00050 | 0.0010 | 0.0040 | 1 |
| 06042 | Silver | 7440-22-4 | 0.00025 U | 0.00015 | 0.00025 | 0.0010 | 1 |
| 06045 | Thallium | 7440-28-0 | 0.00025 U | 0.00012 | 0.00025 | 0.0010 | 1 |
| 13501 | Uranium | 7440-61-1 | 0.0014 | 0.000029 | 0.000063 | 0.0010 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01743 | Aluminum | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:00 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:00 | Eric L Eby | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:00 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:00 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:00 | Eric L Eby | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:00 | Eric L Eby | 1 |
| 06024 | Antimony | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 06027 | Beryllium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 06028 | Cadmium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 06031 | Chromium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 06041 | Selenium | SW-846 6020A | 1 | 172091063902B | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 06042 | Silver | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 06045 | Thallium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 13501 | Uranium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:01 | Scott P Cuff | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF1-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121675**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 13:45 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1902 SDG#: KR191-02

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172091063902 | 07/31/2017 05:00 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GWTS-EFF1DUP-072517 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9121676**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 13:45 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1903 SDG#: KR191-03FD

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| | The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported. | | | | | | | |
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 14242 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 4.0 | U | 2.0 | 4.0 | 5.1 | 1 |
| 14242 | 1-Methylnaphthalene | 90-12-0 | 0.20 | U | 0.10 | 0.20 | 0.51 | 1 |
| 14242 | 2-Methylnaphthalene | 91-57-6 | 0.20 | U | 0.10 | 0.20 | 0.51 | 1 |
| 14242 | Naphthalene | 91-20-3 | 0.40 | U | 0.10 | 0.40 | 0.51 | 1 |
| 14242 | Pyrene | 129-00-0 | 0.20 | U | 0.10 | 0.20 | 0.51 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 7470A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury 7470A | 7439-97-6 | 0.00010 | U | 0.000050 | 0.00010 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00224 | Chloride | 16887-00-6 | 27.9 | | 4.0 | 8.0 | 8.0 | 20 |
| 01504 | Fluoride | 16984-48-8 | 0.52 | | 0.25 | 0.50 | 0.50 | 5 |
| 00228 | Sulfate | 14808-79-8 | 51.0 | | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.73 | | 0.040 | 0.10 | 0.10 | 1 |
| | **EPA 420.4** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 14002 | Phenols (water) | n.a. | 0.020 | U | 0.010 | 0.020 | 0.030 | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GWTS-EFF1DUP-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121676**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 13:45 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1903 SDG#: KR191-03FD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Wet Chemistry** | **OIA-1677-09** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 12941 | Free Cyanide | n.a. | 0.0060 U | 0.0020 | 0.0060 | 0.0060 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 03:11 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 03:11 | Kevin D Kelly | 1 |
| 14242 | SVOCs 8270D GWTS | SW-846 8270D | 1 | 17208WAC026 | 08/03/2017 02:28 | Edward C Monborne | 1 |
| 00813 | BNA Water Extraction | SW-846 3510C | 1 | 17208WAC026 | 07/27/2017 16:10 | Kate E Lutte | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 07/31/2017 22:12 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |
| 00259 | Mercury 7470A | SW-846 7470A | 1 | 172090571309 | 08/01/2017 06:42 | Damary Valentin | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 172090571309 | 07/31/2017 17:50 | JoElla L Rice | 1 |
| 00224 | Chloride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 09:16 | Zachary W Enck | 20 |
| 01504 | Fluoride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 08:59 | Zachary W Enck | 5 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17207249213A | 07/27/2017 08:59 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17214118101B | 08/03/2017 04:09 | Joseph E McKenzie | 1 |
| 14002 | Phenols (water) | EPA 420.4 | 1 | 17215125101B | 08/03/2017 03:03 | Joseph E McKenzie | 1 |
| 12941 | Free Cyanide | OIA-1677-09 | 1 | 17218941101A | 08/06/2017 17:47 | Joseph E McKenzie | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF1DUP-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121677**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 13:45 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1904 SDG#: KR191-04FD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01743 | Aluminum | 7429-90-5 | 0.200 U | 0.0894 | 0.200 | 0.400 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0944 | 0.00085 | 0.0025 | 0.0100 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0100 U | 0.0040 | 0.0100 | 0.0200 | 1 |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |
| 07072 | Zinc | 7440-66-6 | 0.0148 J | 0.0065 | 0.0100 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06024 | Antimony | 7440-36-0 | 0.0010 U | 0.00045 | 0.0010 | 0.0020 | 1 |
| 06025 | Arsenic | 7440-38-2 | 0.00099 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06027 | Beryllium | 7440-41-7 | 0.00025 U | 0.000071 | 0.00025 | 0.0010 | 1 |
| 06028 | Cadmium | 7440-43-9 | 0.00050 U | 0.00015 | 0.00050 | 0.0010 | 1 |
| 06031 | Chromium | 7440-47-3 | 0.0015 J | 0.00087 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 U | 0.00011 | 0.00025 | 0.0020 | 1 |
| 06041 | Selenium | 7782-49-2 | 0.0019 J | 0.00050 | 0.0010 | 0.0040 | 1 |
| 06042 | Silver | 7440-22-4 | 0.00025 U | 0.00015 | 0.00025 | 0.0010 | 1 |
| 06045 | Thallium | 7440-28-0 | 0.00025 U | 0.00012 | 0.00025 | 0.0010 | 1 |
| 13501 | Uranium | 7440-61-1 | 0.0014 | 0.000029 | 0.000063 | 0.0010 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01743 | Aluminum | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:03 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:03 | Eric L Eby | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:03 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:03 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:03 | Eric L Eby | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:03 | Eric L Eby | 1 |
| 06024 | Antimony | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 06027 | Beryllium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 06028 | Cadmium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 06031 | Chromium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 06041 | Selenium | SW-846 6020A | 1 | 172091063902B | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 06042 | Silver | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 06045 | Thallium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 13501 | Uranium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:04 | Scott P Cuff | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF1DUP-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121677**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 13:45 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1904 SDG#: KR191-04FD

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172091063902 | 07/31/2017 05:00 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-GAC1-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121678**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:00 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1905 SDG#: KR191-05

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |

The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.029 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 03:33 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 03:33 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 07/31/2017 22:28 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-GAC1-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121679**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:00 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1906 SDG#: KR191-06

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:12 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:12 | Eric L Eby | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-INF1-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121680**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:10 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1907 SDG#: KR191-07

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| | The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported. | | | | | | | |
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 14242 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 4.0 | U | 2.0 | 4.0 | 5.0 | 1 |
| 14242 | 1-Methylnaphthalene | 90-12-0 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | 2-Methylnaphthalene | 91-57-6 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | Naphthalene | 91-20-3 | 0.40 | U | 0.10 | 0.40 | 0.50 | 1 |
| 14242 | Pyrene | 129-00-0 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.054 | | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 7470A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury 7470A | 7439-97-6 | 0.00010 | U | 0.000050 | 0.00010 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00224 | Chloride | 16887-00-6 | 29.6 | | 4.0 | 8.0 | 8.0 | 20 |
| 01504 | Fluoride | 16984-48-8 | 0.72 | | 0.25 | 0.50 | 0.50 | 5 |
| 00228 | Sulfate | 14808-79-8 | 54.5 | | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.78 | | 0.040 | 0.10 | 0.10 | 1 |
| | **EPA 420.4** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 14002 | Phenols (water) | n.a. | 0.020 | U | 0.010 | 0.020 | 0.030 | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GWTS-INF1-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121680**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:10 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1907 SDG#: KR191-07

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Wet Chemistry** | **OIA-1677-09** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 12941 | Free Cyanide | n.a. | 0.0060 U | 0.0020 | 0.0060 | 0.0060 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 03:54 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 03:54 | Kevin D Kelly | 1 |
| 14242 | SVOCs 8270D GWTS | SW-846 8270D | 1 | 17208WAC026 | 08/03/2017 02:55 | Edward C Monborne | 1 |
| 00813 | BNA Water Extraction | SW-846 3510C | 1 | 17208WAC026 | 07/27/2017 16:10 | Kate E Lutte | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 07/31/2017 22:44 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |
| 00259 | Mercury 7470A | SW-846 7470A | 1 | 172090571309 | 08/01/2017 06:45 | Damary Valentin | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 172090571309 | 07/31/2017 17:50 | JoElla L Rice | 1 |
| 00224 | Chloride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 11:00 | Zachary W Enck | 20 |
| 01504 | Fluoride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 10:43 | Zachary W Enck | 5 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17207249213A | 07/27/2017 10:43 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17214118101B | 08/03/2017 04:11 | Joseph E McKenzie | 1 |
| 14002 | Phenols (water) | EPA 420.4 | 1 | 17215125101B | 08/03/2017 03:06 | Joseph E McKenzie | 1 |
| 12941 | Free Cyanide | OIA-1677-09 | 1 | 17218941101A | 08/06/2017 17:49 | Joseph E McKenzie | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GWTS-INF1-072517 Filtered Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9121681
**LL Group #** 1830113
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/25/2017 14:10 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1908 SDG#: KR191-08

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01743 | Aluminum | 7429-90-5 | 0.200 U | 0.0894 | 0.200 | 0.400 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0970 | 0.00085 | 0.0025 | 0.0100 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0100 U | 0.0040 | 0.0100 | 0.0200 | 1 |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |
| 07072 | Zinc | 7440-66-6 | 0.0129 J | 0.0065 | 0.0100 | 0.0400 | 1 |
| | **SW-846 6020A** | | mg/l | mg/l | mg/l | mg/l | |
| 06024 | Antimony | 7440-36-0 | 0.0010 U | 0.00045 | 0.0010 | 0.0020 | 1 |
| 06025 | Arsenic | 7440-38-2 | 0.0011 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06027 | Beryllium | 7440-41-7 | 0.00025 U | 0.000071 | 0.00025 | 0.0010 | 1 |
| 06028 | Cadmium | 7440-43-9 | 0.00050 U | 0.00015 | 0.00050 | 0.0010 | 1 |
| 06031 | Chromium | 7440-47-3 | 0.0015 J | 0.00087 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 U | 0.00011 | 0.00025 | 0.0020 | 1 |
| 06041 | Selenium | 7782-49-2 | 0.0020 J | 0.00050 | 0.0010 | 0.0040 | 1 |
| 06042 | Silver | 7440-22-4 | 0.00025 U | 0.00015 | 0.00025 | 0.0010 | 1 |
| 06045 | Thallium | 7440-28-0 | 0.00025 U | 0.00012 | 0.00025 | 0.0010 | 1 |
| 13501 | Uranium | 7440-61-1 | 0.0017 | 0.000029 | 0.000063 | 0.0010 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01743 | Aluminum | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:15 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:15 | Eric L Eby | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:15 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:15 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:15 | Eric L Eby | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:15 | Eric L Eby | 1 |
| 06024 | Antimony | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 06027 | Beryllium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 06028 | Cadmium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 06031 | Chromium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 06041 | Selenium | SW-846 6020A | 1 | 172091063902B | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 06042 | Silver | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 06045 | Thallium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 13501 | Uranium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:13 | Scott P Cuff | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-INF1-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121681**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:10 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1908 SDG#: KR191-08

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172091063902 | 07/31/2017 05:00 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-TB01-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121682**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 15:30

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1909 SDG#: KR191-09TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |

The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 07/31/2017 23:11 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 07/31/2017 23:11 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 07/31/2017 22:59 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121683**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1910 SDG#: KR191-10BKG

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| | The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported. | | | | | | | |
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 14242 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 4.0 | U | 2.0 | 4.0 | 5.0 | 1 |
| 14242 | 1-Methylnaphthalene | 90-12-0 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | 2-Methylnaphthalene | 91-57-6 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | Naphthalene | 91-20-3 | 0.40 | U | 0.10 | 0.40 | 0.50 | 1 |
| 14242 | Pyrene | 129-00-0 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 7470A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury 7470A | 7439-97-6 | 0.00010 | U | 0.000050 | 0.00010 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00224 | Chloride | 16887-00-6 | 22.8 | | 1.0 | 2.0 | 2.0 | 5 |
| 01504 | Fluoride | 16984-48-8 | 0.79 | | 0.25 | 0.50 | 0.50 | 5 |
| 00228 | Sulfate | 14808-79-8 | 44.0 | | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.40 | | 0.040 | 0.10 | 0.10 | 1 |
| | **EPA 420.4** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 14002 | Phenols (water) | n.a. | 0.020 | U | 0.010 | 0.020 | 0.030 | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GWTS-EFF2-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121683**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1910 SDG#: KR191-10BKG

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Wet Chemistry** | **OIA-1677-09** | | mg/l | mg/l | mg/l | mg/l | |
| 12941 | Free Cyanide | n.a. | 0.0060 U | 0.0020 | 0.0060 | 0.0060 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 00:16 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 00:16 | Kevin D Kelly | 1 |
| 14242 | SVOCs 8270D GWTS | SW-846 8270D | 1 | 17208WAC026 | 08/03/2017 03:23 | Edward C Monborne | 1 |
| 00813 | BNA Water Extraction | SW-846 3510C | 1 | 17208WAC026 | 07/27/2017 16:10 | Kate E Lutte | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 07/31/2017 23:47 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |
| 00259 | Mercury 7470A | SW-846 7470A | 1 | 172090571309 | 08/01/2017 06:30 | Damary Valentin | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 172090571309 | 07/31/2017 17:50 | JoElla L Rice | 1 |
| 00224 | Chloride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 05:30 | Zachary W Enck | 5 |
| 01504 | Fluoride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 05:30 | Zachary W Enck | 5 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17207249213A | 07/27/2017 05:30 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17214118101B | 08/03/2017 04:02 | Joseph E McKenzie | 1 |
| 14002 | Phenols (water) | EPA 420.4 | 1 | 17215125101B | 08/03/2017 02:51 | Joseph E McKenzie | 1 |
| 12941 | Free Cyanide | OIA-1677-09 | 1 | 17218941101A | 08/06/2017 17:39 | Joseph E McKenzie | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517MS Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121684**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1910 SDG#: KR191-10MS

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 25 | | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 21 | | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 27 | | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 23 | | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 21 | | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 19 | | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 18 | | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 23 | | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 21 | | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 24 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 66 | | 0.5 | 1 | 1 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 14242 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 48 | | 2.0 | 4.1 | 5.1 | 1 |
| 14242 | 1-Methylnaphthalene | 90-12-0 | 45 | | 0.10 | 0.20 | 0.51 | 1 |
| 14242 | 2-Methylnaphthalene | 91-57-6 | 43 | | 0.10 | 0.20 | 0.51 | 1 |
| 14242 | Naphthalene | 91-20-3 | 44 | | 0.10 | 0.41 | 0.51 | 1 |
| 14242 | Pyrene | 129-00-0 | 49 | | 0.10 | 0.20 | 0.51 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.15 | | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 7470A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury 7470A | 7439-97-6 | 0.00092 | | 0.000050 | 0.00010 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00224 | Chloride | 16887-00-6 | 34.2 | E | 1.0 | 2.0 | 2.0 | 5 |
| 01504 | Fluoride | 16984-48-8 | 3.3 | | 0.25 | 0.50 | 0.50 | 5 |
| 00228 | Sulfate | 14808-79-8 | 73.1 | | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 1.6 | | 0.040 | 0.10 | 0.10 | 1 |
| | **EPA 420.4** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 14002 | Phenols (water) | n.a. | 0.20 | | 0.010 | 0.020 | 0.030 | 1 |
| | **OIA-1677-09** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 12941 | Free Cyanide | n.a. | 0.019 | | 0.0020 | 0.0060 | 0.0060 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517MS Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121684**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1910 SDG#: KR191-10MS

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 00:38 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 00:38 | Kevin D Kelly | 1 |
| 14242 | SVOCs 8270D GWTS | SW-846 8270D | 1 | 17208WAC026 | 08/03/2017 03:51 | Edward C Monborne | 1 |
| 00813 | BNA Water Extraction | SW-846 3510C | 1 | 17208WAC026 | 07/27/2017 16:10 | Kate E Lutte | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 08/01/2017 00:03 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |
| 00259 | Mercury 7470A | SW-846 7470A | 1 | 172090571309 | 08/01/2017 06:35 | Damary Valentin | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 172090571309 | 07/31/2017 17:50 | JoElla L Rice | 1 |
| 00224 | Chloride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 07:15 | Zachary W Enck | 5 |
| 01504 | Fluoride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 07:15 | Zachary W Enck | 5 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17207249213A | 07/27/2017 07:15 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17214118101B | 08/03/2017 04:03 | Joseph E McKenzie | 1 |
| 14002 | Phenols (water) | EPA 420.4 | 1 | 17215125101B | 08/03/2017 02:55 | Joseph E McKenzie | 1 |
| 12941 | Free Cyanide | OIA-1677-09 | 1 | 17218941101A | 08/06/2017 17:41 | Joseph E McKenzie | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GWTS-EFF2-072517MSD Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9121685
**LL Group #** 1830113
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1910 SDG#: KR191-10MSD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | ug/l | ug/l | ug/l | |
| 11997 | Benzene | 71-43-2 | 22 | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 25 | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 22 | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 21 | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 23 | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 26 | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 23 | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 22 | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 23 | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 21 | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 19 | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 19 | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 23 | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 21 | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 21 | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 23 | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 66 | 0.5 | 1 | 1 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270D** | | ug/l | ug/l | ug/l | ug/l | |
| 14242 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 42 | 2.0 | 4.0 | 5.0 | 1 |
| 14242 | 1-Methylnaphthalene | 90-12-0 | 44 | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | 2-Methylnaphthalene | 91-57-6 | 41 | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | Naphthalene | 91-20-3 | 42 | 0.10 | 0.40 | 0.50 | 1 |
| 14242 | Pyrene | 129-00-0 | 43 | 0.10 | 0.20 | 0.50 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | ug/l | ug/l | ug/l | ug/l | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.14 | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 7470A** | | mg/l | mg/l | mg/l | mg/l | |
| 00259 | Mercury 7470A | 7439-97-6 | 0.00092 | 0.000050 | 0.00010 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 420.4** | | mg/l | mg/l | mg/l | mg/l | |
| 14002 | Phenols (water) | n.a. | 0.19 | 0.010 | 0.020 | 0.030 | 1 |
| | **OIA-1677-09** | | mg/l | mg/l | mg/l | mg/l | |
| 12941 | Free Cyanide | n.a. | 0.017 | 0.0020 | 0.0060 | 0.0060 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517MSD Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121685**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1910 SDG#: KR191-10MSD

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 01:00 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 01:00 | Kevin D Kelly | 1 |
| 14242 | SVOCs 8270D GWTS | SW-846 8270D | 1 | 17208WAC026 | 08/03/2017 04:18 | Edward C Monborne | 1 |
| 00813 | BNA Water Extraction | SW-846 3510C | 1 | 17208WAC026 | 07/27/2017 16:10 | Kate E Lutte | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 08/01/2017 00:19 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |
| 00259 | Mercury 7470A | SW-846 7470A | 1 | 172090571309 | 08/01/2017 06:37 | Damary Valentin | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 172090571309 | 07/31/2017 17:50 | JoElla L Rice | 1 |
| 14002 | Phenols (water) | EPA 420.4 | 1 | 17215125101B | 08/03/2017 02:58 | Joseph E McKenzie | 1 |
| 12941 | Free Cyanide | OIA-1677-09 | 1 | 17218941101A | 08/06/2017 17:43 | Joseph E McKenzie | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517DUP Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121686**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1910 SDG#: KR191-10DUP

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **Metals** | **SW-846 7470A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury 7470A | 7439-97-6 | 0.00010 | U | 0.000050 | 0.00010 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00224 | Chloride | 16887-00-6 | 21.6 | | 1.0 | 2.0 | 2.0 | 5 |
| 01504 | Fluoride | 16984-48-8 | 0.48 | J | 0.25 | 0.50 | 0.50 | 5 |
| 00228 | Sulfate | 14808-79-8 | 42.6 | | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.41 | | 0.040 | 0.10 | 0.10 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 00259 | Mercury 7470A | SW-846 7470A | 1 | 172090571309 | 08/01/2017 06:32 | Damary Valentin | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 172090571309 | 07/31/2017 17:50 | JoElla L Rice | 1 |
| 00224 | Chloride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 06:05 | Zachary W Enck | 5 |
| 01504 | Fluoride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 06:05 | Zachary W Enck | 5 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17207249213A | 07/27/2017 06:05 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17214118101B | 08/03/2017 04:05 | Joseph E McKenzie | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GWTS-EFF2-072517 Filtered Water
Kirtland AFB Bulk Fuels Facility

**LL Sample #** WW 9121687
**LL Group #** 1830113
**Account #** 31675

**Project Name:** Kirtland AFB

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1911 SDG#: KR191-11BKG

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01743 | Aluminum | 7429-90-5 | 0.200 U | 0.0894 | 0.200 | 0.400 | 1 |
| 07046 | Barium | 7440-39-3 | 0.108 | 0.00085 | 0.0025 | 0.0100 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0100 U | 0.0040 | 0.0100 | 0.0200 | 1 |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |
| 07072 | Zinc | 7440-66-6 | 0.0119 J | 0.0065 | 0.0100 | 0.0400 | 1 |
| | **SW-846 6020A** | | mg/l | mg/l | mg/l | mg/l | |
| 06024 | Antimony | 7440-36-0 | 0.0010 U | 0.00045 | 0.0010 | 0.0020 | 1 |
| 06025 | Arsenic | 7440-38-2 | 0.0011 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06027 | Beryllium | 7440-41-7 | 0.00025 U | 0.000071 | 0.00025 | 0.0010 | 1 |
| 06028 | Cadmium | 7440-43-9 | 0.00050 U | 0.00015 | 0.00050 | 0.0010 | 1 |
| 06031 | Chromium | 7440-47-3 | 0.0011 J | 0.00087 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 U | 0.00011 | 0.00025 | 0.0020 | 1 |
| 06041 | Selenium | 7782-49-2 | 0.0011 J | 0.00050 | 0.0010 | 0.0040 | 1 |
| 06042 | Silver | 7440-22-4 | 0.00025 U | 0.00015 | 0.00025 | 0.0010 | 1 |
| 06045 | Thallium | 7440-28-0 | 0.00025 U | 0.00012 | 0.00025 | 0.0010 | 1 |
| 13501 | Uranium | 7440-61-1 | 0.0012 | 0.000029 | 0.000063 | 0.0010 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01743 | Aluminum | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:42 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:42 | Eric L Eby | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:42 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:42 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:42 | Eric L Eby | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:42 | Eric L Eby | 1 |
| 06024 | Antimony | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 06027 | Beryllium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 06028 | Cadmium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 06031 | Chromium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 06041 | Selenium | SW-846 6020A | 1 | 172091063902B | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 06042 | Silver | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 06045 | Thallium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 13501 | Uranium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:42 | Scott P Cuff | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121687**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1911 SDG#: KR191-11BKG

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172091063902 | 07/31/2017 05:00 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517MS Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121688**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1911 SDG#: KR191-11MS

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01743 | Aluminum | 7429-90-5 | 1.91 | 0.0894 | 0.200 | 0.400 | 1 |
| 07046 | Barium | 7440-39-3 | 1.96 | 0.00085 | 0.0025 | 0.0100 | 1 |
| 07053 | Copper | 7440-50-8 | 0.238 | 0.0040 | 0.0100 | 0.0200 | 1 |
| 01754 | Iron | 7439-89-6 | 0.931 | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.469 | 0.0016 | 0.0050 | 0.0100 | 1 |
| 07072 | Zinc | 7440-66-6 | 0.493 | 0.0065 | 0.0100 | 0.0400 | 1 |
| | **SW-846 6020A** | | mg/l | mg/l | mg/l | mg/l | |
| 06024 | Antimony | 7440-36-0 | 0.0060 | 0.00045 | 0.0010 | 0.0020 | 1 |
| 06025 | Arsenic | 7440-38-2 | 0.0118 | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06027 | Beryllium | 7440-41-7 | 0.0039 | 0.000071 | 0.00025 | 0.0010 | 1 |
| 06028 | Cadmium | 7440-43-9 | 0.0046 | 0.00015 | 0.00050 | 0.0010 | 1 |
| 06031 | Chromium | 7440-47-3 | 0.0518 | 0.00087 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.0148 | 0.00011 | 0.00025 | 0.0020 | 1 |
| 06041 | Selenium | 7782-49-2 | 0.0106 | 0.00050 | 0.0010 | 0.0040 | 1 |
| 06042 | Silver | 7440-22-4 | 0.0495 | 0.00015 | 0.00025 | 0.0010 | 1 |
| 06045 | Thallium | 7440-28-0 | 0.0021 | 0.00012 | 0.00025 | 0.0010 | 1 |
| 13501 | Uranium | 7440-61-1 | 0.0255 | 0.000029 | 0.000063 | 0.0010 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01743 | Aluminum | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:51 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:51 | Eric L Eby | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:51 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:51 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:51 | Eric L Eby | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:51 | Eric L Eby | 1 |
| 06024 | Antimony | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 06027 | Beryllium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 06028 | Cadmium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 06031 | Chromium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 06041 | Selenium | SW-846 6020A | 1 | 172091063902B | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 06042 | Silver | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 06045 | Thallium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 13501 | Uranium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:51 | Scott P Cuff | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517MS Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121688**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1911 SDG#: KR191-11MS

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172091063902 | 07/31/2017 05:00 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517MSD Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121689**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1911 SDG#: KR191-11MSD

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01743 | Aluminum | 7429-90-5 | 1.96 | 0.0894 | 0.200 | 0.400 | 1 |
| 07046 | Barium | 7440-39-3 | 1.98 | 0.00085 | 0.0025 | 0.0100 | 1 |
| 07053 | Copper | 7440-50-8 | 0.240 | 0.0040 | 0.0100 | 0.0200 | 1 |
| 01754 | Iron | 7439-89-6 | 0.966 | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.471 | 0.0016 | 0.0050 | 0.0100 | 1 |
| 07072 | Zinc | 7440-66-6 | 0.494 | 0.0065 | 0.0100 | 0.0400 | 1 |
| | **SW-846 6020A** | | mg/l | mg/l | mg/l | mg/l | |
| 06024 | Antimony | 7440-36-0 | 0.0051 | 0.00045 | 0.0010 | 0.0020 | 1 |
| 06025 | Arsenic | 7440-38-2 | 0.0096 | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06027 | Beryllium | 7440-41-7 | 0.0038 | 0.000071 | 0.00025 | 0.0010 | 1 |
| 06028 | Cadmium | 7440-43-9 | 0.0049 | 0.00015 | 0.00050 | 0.0010 | 1 |
| 06031 | Chromium | 7440-47-3 | 0.0496 | 0.00087 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.0147 | 0.00011 | 0.00025 | 0.0020 | 1 |
| 06041 | Selenium | 7782-49-2 | 0.0104 | 0.00050 | 0.0010 | 0.0040 | 1 |
| 06042 | Silver | 7440-22-4 | 0.0509 | 0.00015 | 0.00025 | 0.0010 | 1 |
| 06045 | Thallium | 7440-28-0 | 0.0019 | 0.00012 | 0.00025 | 0.0010 | 1 |
| 13501 | Uranium | 7440-61-1 | 0.0251 | 0.000029 | 0.000063 | 0.0010 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01743 | Aluminum | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:54 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:54 | Eric L Eby | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:54 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:54 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:54 | Eric L Eby | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:54 | Eric L Eby | 1 |
| 06024 | Antimony | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 06025 | Arsenic | SW-846 6020A | 2 | 172091063902A | 08/03/2017 11:46 | Scott P Cuff | 1 |
| 06027 | Beryllium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 06028 | Cadmium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 06031 | Chromium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 06041 | Selenium | SW-846 6020A | 1 | 172091063902B | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 06042 | Silver | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 06045 | Thallium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 13501 | Uranium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:55 | Scott P Cuff | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517MSD Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121689**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1911 SDG#: KR191-11MSD

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172091063902 | 07/31/2017 05:00 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517DUP Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121690**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1911 SDG#: KR191-11DUP

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01743 | Aluminum | 7429-90-5 | 0.200 U | 0.0894 | 0.200 | 0.400 | 1 |
| 07046 | Barium | 7440-39-3 | 0.109 | 0.00085 | 0.0025 | 0.0100 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0100 U | 0.0040 | 0.0100 | 0.0200 | 1 |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |
| 07072 | Zinc | 7440-66-6 | 0.0120 J | 0.0065 | 0.0100 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06024 | Antimony | 7440-36-0 | 0.0010 U | 0.00045 | 0.0010 | 0.0020 | 1 |
| 06025 | Arsenic | 7440-38-2 | 0.0012 J | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06027 | Beryllium | 7440-41-7 | 0.00025 U | 0.000071 | 0.00025 | 0.0010 | 1 |
| 06028 | Cadmium | 7440-43-9 | 0.00050 U | 0.00015 | 0.00050 | 0.0010 | 1 |
| 06031 | Chromium | 7440-47-3 | 0.0020 U | 0.00087 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 U | 0.00011 | 0.00025 | 0.0020 | 1 |
| 06041 | Selenium | 7782-49-2 | 0.0012 J | 0.00050 | 0.0010 | 0.0040 | 1 |
| 06042 | Silver | 7440-22-4 | 0.00025 U | 0.00015 | 0.00025 | 0.0010 | 1 |
| 06045 | Thallium | 7440-28-0 | 0.00025 U | 0.00012 | 0.00025 | 0.0010 | 1 |
| 13501 | Uranium | 7440-61-1 | 0.0011 | 0.000029 | 0.000063 | 0.0010 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01743 | Aluminum | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:48 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:48 | Eric L Eby | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:48 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:48 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:48 | Eric L Eby | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 172091063503 | 07/31/2017 11:48 | Eric L Eby | 1 |
| 06024 | Antimony | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 06027 | Beryllium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 06028 | Cadmium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 06031 | Chromium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 06041 | Selenium | SW-846 6020A | 1 | 172091063902B | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 06042 | Silver | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 06045 | Thallium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 13501 | Uranium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 17:48 | Scott P Cuff | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-072517DUP Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121690**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1911 SDG#: KR191-11DUP

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172091063902 | 07/31/2017 05:00 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-GAC2-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121691**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:50 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1912 SDG#: KR191-12

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |

The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 04:16 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 04:16 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 08/01/2017 00:35 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-GAC2-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121692**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:50 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1913 SDG#: KR191-13

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:18 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:18 | Eric L Eby | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-INF2-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121693**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 15:00 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1914 SDG#: KR191-14

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| | The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported. | | | | | | | |
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 14242 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 4.0 | U | 2.0 | 4.0 | 5.0 | 1 |
| 14242 | 1-Methylnaphthalene | 90-12-0 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | 2-Methylnaphthalene | 91-57-6 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| 14242 | Naphthalene | 91-20-3 | 0.40 | U | 0.10 | 0.40 | 0.50 | 1 |
| 14242 | Pyrene | 129-00-0 | 0.20 | U | 0.10 | 0.20 | 0.50 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.055 | | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals** | **SW-846 7470A** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury 7470A | 7439-97-6 | 0.00010 | U | 0.000050 | 0.00010 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 300.0** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 00224 | Chloride | 16887-00-6 | 22.2 | | 1.0 | 2.0 | 2.0 | 5 |
| 01504 | Fluoride | 16984-48-8 | 0.76 | | 0.25 | 0.50 | 0.50 | 5 |
| 00228 | Sulfate | 14808-79-8 | 43.5 | | 1.5 | 5.0 | 5.0 | 5 |
| | **EPA 353.2** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 07882 | Total Nitrite/Nitrate Nitrogen | n.a. | 0.46 | | 0.040 | 0.10 | 0.10 | 1 |
| | **EPA 420.4** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 14002 | Phenols (water) | n.a. | 0.020 | U | 0.010 | 0.020 | 0.030 | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GWTS-INF2-072517 Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121693**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 15:00 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1914 SDG#: KR191-14

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Wet Chemistry** | **OIA-1677-09** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 12941 | Free Cyanide | n.a. | 0.0060 U | 0.0020 | 0.0060 | 0.0060 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 04:38 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 04:38 | Kevin D Kelly | 1 |
| 14242 | SVOCs 8270D GWTS | SW-846 8270D | 1 | 17208WAC026 | 08/03/2017 04:46 | Edward C Monborne | 1 |
| 00813 | BNA Water Extraction | SW-846 3510C | 1 | 17208WAC026 | 07/27/2017 16:10 | Kate E Lutte | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 08/01/2017 00:51 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |
| 00259 | Mercury 7470A | SW-846 7470A | 1 | 172090571309 | 08/01/2017 06:48 | Damary Valentin | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 172090571309 | 07/31/2017 17:50 | JoElla L Rice | 1 |
| 00224 | Chloride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 09:33 | Zachary W Enck | 5 |
| 01504 | Fluoride | EPA 300.0 | 1 | 17207249213A | 07/27/2017 09:33 | Zachary W Enck | 5 |
| 00228 | Sulfate | EPA 300.0 | 1 | 17207249213A | 07/27/2017 09:33 | Zachary W Enck | 5 |
| 07882 | Total Nitrite/Nitrate Nitrogen | EPA 353.2 | 1 | 17214118101B | 08/03/2017 04:13 | Joseph E McKenzie | 1 |
| 14002 | Phenols (water) | EPA 420.4 | 1 | 17215125101B | 08/03/2017 03:15 | Joseph E McKenzie | 1 |
| 12941 | Free Cyanide | OIA-1677-09 | 1 | 17218941101A | 08/06/2017 17:51 | Joseph E McKenzie | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GWTS-INF2-072517 Filtered Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9121694**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 15:00 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1915 SDG#: KR191-15

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 01743 | Aluminum | 7429-90-5 | 0.200 U | 0.0894 | 0.200 | 0.400 | 1 |
| 07046 | Barium | 7440-39-3 | 0.109 | 0.00085 | 0.0025 | 0.0100 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0100 U | 0.0040 | 0.0100 | 0.0200 | 1 |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |
| 07072 | Zinc | 7440-66-6 | 0.0159 J | 0.0065 | 0.0100 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | **mg/l** | |
| 06024 | Antimony | 7440-36-0 | 0.0010 U | 0.00045 | 0.0010 | 0.0020 | 1 |
| 06025 | Arsenic | 7440-38-2 | 0.0020 U | 0.00072 | 0.0020 | 0.0040 | 1 |
| 06027 | Beryllium | 7440-41-7 | 0.00025 U | 0.000071 | 0.00025 | 0.0010 | 1 |
| 06028 | Cadmium | 7440-43-9 | 0.00050 U | 0.00015 | 0.00050 | 0.0010 | 1 |
| 06031 | Chromium | 7440-47-3 | 0.0021 J | 0.00087 | 0.0020 | 0.0040 | 1 |
| 06035 | Lead | 7439-92-1 | 0.00025 U | 0.00011 | 0.00025 | 0.0020 | 1 |
| 06041 | Selenium | 7782-49-2 | 0.0011 J | 0.00050 | 0.0010 | 0.0040 | 1 |
| 06042 | Silver | 7440-22-4 | 0.00025 U | 0.00015 | 0.00025 | 0.0010 | 1 |
| 06045 | Thallium | 7440-28-0 | 0.00025 U | 0.00012 | 0.00025 | 0.0010 | 1 |
| 13501 | Uranium | 7440-61-1 | 0.0015 | 0.000029 | 0.000063 | 0.0010 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01743 | Aluminum | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:21 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:21 | Eric L Eby | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:21 | Eric L Eby | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:21 | Eric L Eby | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:21 | Eric L Eby | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 172091063503 | 07/31/2017 12:21 | Eric L Eby | 1 |
| 06024 | Antimony | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 06027 | Beryllium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 06028 | Cadmium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 06031 | Chromium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 06041 | Selenium | SW-846 6020A | 1 | 172091063902B | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 06042 | Silver | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 06045 | Thallium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 13501 | Uranium | SW-846 6020A | 1 | 172091063902A | 08/01/2017 18:16 | Scott P Cuff | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172091063503 | 07/31/2017 04:51 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-INF2-072517 Filtered Water**
**Kirtland AFB Bulk Fuels Facility**

**LL Sample # WW 9121694**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 15:00 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1915 SDG#: KR191-15

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 172091063902 | 07/31/2017 05:00 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GWTS-TB02-072517 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9121695**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 15:30

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1916 SDG#: KR191-16TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |

The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0095 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 07/31/2017 23:33 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 07/31/2017 23:33 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 08/01/2017 01:07 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GWTS-FB02-072517 Water
Kirtland AFB Bulk Fuels Facility

**LL Sample # WW 9121696**
**LL Group # 1830113**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/25/2017 14:25 by PF

Submitted: 07/26/2017 09:30
Reported: 08/07/2017 09:13

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1917 SDG#: KR191-17

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dibromoethane | 106-93-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 1 | UZ | 0.5 | 1 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methyl Tertiary Butyl Ether | 1634-04-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 4 | U | 2 | 4 | 4 | 1 |
| 11997 | Naphthalene | 91-20-3 | 2 | U | 1 | 2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |

The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | U | 0.0096 | 0.019 | 0.029 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs 8260C GWTS Annual | SW-846 8260C | 1 | L172122AA | 08/01/2017 05:00 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172122AA | 08/01/2017 05:00 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172090034A | 08/01/2017 01:23 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172090034A | 07/31/2017 10:30 | Kerrie A Freeburn | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 09:13

Group Number: 1830113

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Batch number: L172122AA | Sample number(s): 9121674,9121676,9121678,9121680,9121682-9121685,9121691,9121693,9121695-9121696 | | | | |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Chloroform | 1 | U | 0.5 | 1 | 1 |
| Dibromochloromethane | 1 | U | 0.5 | 1 | 1 |
| 1,2-Dibromoethane | 1 | U | 0.5 | 1 | 1 |
| 1,1-Dichloroethane | 1 | U | 0.5 | 1 | 1 |
| 1,2-Dichloroethane | 1 | U | 0.5 | 1 | 1 |
| cis-1,2-Dichloroethene | 1 | U | 0.5 | 1 | 1 |
| Ethylbenzene | 1 | U | 0.5 | 1 | 1 |
| Methyl Tertiary Butyl Ether | 1 | U | 0.5 | 1 | 1 |
| Methylene Chloride | 4 | U | 2 | 4 | 4 |
| Naphthalene | 2 | U | 1 | 2 | 5 |
| 1,1,2,2-Tetrachloroethane | 1 | U | 0.5 | 1 | 1 |
| Tetrachloroethene | 1 | U | 0.5 | 1 | 1 |
| Toluene | 1 | U | 0.5 | 1 | 1 |
| 1,1,2-Trichloroethane | 1 | U | 0.5 | 1 | 1 |
| Trichloroethene | 1 | U | 0.5 | 1 | 1 |
| Xylene (Total) | 1 | U | 0.5 | 1 | 1 |
| Batch number: 17208WAC026 | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 | | | | |
| bis(2-Ethylhexyl)phthalate | 4.0 | U | 2.0 | 4.0 | 5.0 |
| 1-Methylnaphthalene | 0.20 | U | 0.10 | 0.20 | 0.50 |
| 2-Methylnaphthalene | 0.20 | U | 0.10 | 0.20 | 0.50 |
| Naphthalene | 0.40 | U | 0.10 | 0.40 | 0.50 |
| Pyrene | 0.20 | U | 0.10 | 0.20 | 0.50 |
| Batch number: 172090034A | Sample number(s): 9121674,9121676,9121678,9121680,9121682-9121685,9121691,9121693,9121695-9121696 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| | mg/l | | mg/l | mg/l | mg/l |
| Batch number: 172090571309 | Sample number(s): 9121674,9121676,9121680,9121683-9121686,9121693 | | | | |
| Mercury 7470A | 0.00010 | U | 0.000050 | 0.00010 | 0.00020 |
| Batch number: 172091063503 | Sample number(s): 9121675,9121677,9121679,9121681,9121687-9121690,9121692,9121694 | | | | |
| Aluminum | 0.200 | U | 0.0894 | 0.200 | 0.400 |
| Barium | 0.0025 | U | 0.00085 | 0.0025 | 0.0100 |
| Copper | 0.0100 | U | 0.0040 | 0.0100 | 0.0200 |
| Iron | 0.200 | U | 0.0805 | 0.200 | 0.400 |
| Manganese | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 |
| Zinc | 0.0100 | U | 0.0065 | 0.0100 | 0.0400 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 09:13

Group Number: 1830113

## Method Blank (continued)

| Analysis Name | Result | DL** | LOD | LOQ |
|---|---|---|---|---|
| | mg/l | mg/l | mg/l | mg/l |
| Batch number: 172091063902A | Sample number(s): 9121675,9121677,9121681,9121687-9121690,9121694 | | | |
| Antimony | 0.0010 U | 0.00045 | 0.0010 | 0.0020 |
| Arsenic | 0.0020 U | 0.00072 | 0.0020 | 0.0040 |
| Beryllium | 0.00025 U | 0.000071 | 0.00025 | 0.0010 |
| Cadmium | 0.00050 U | 0.00015 | 0.00050 | 0.0010 |
| Chromium | 0.0020 U | 0.00087 | 0.0020 | 0.0040 |
| Lead | 0.00025 U | 0.00011 | 0.00025 | 0.0020 |
| Silver | 0.00025 U | 0.00015 | 0.00025 | 0.0010 |
| Thallium | 0.00025 U | 0.00012 | 0.00025 | 0.0010 |
| Uranium | 0.000063 U | 0.000029 | 0.000063 | 0.0010 |
| Batch number: 172091063902B | Sample number(s): 9121675,9121677,9121681,9121687-9121690,9121694 | | | |
| Selenium | 0.0010 U | 0.00050 | 0.0010 | 0.0040 |
| Batch number: 17207249213A | Sample number(s): 9121674,9121676,9121680,9121683-9121684,9121686,9121693 | | | |
| Chloride | 0.40 U | 0.20 | 0.40 | 0.40 |
| Fluoride | 0.10 U | 0.050 | 0.10 | 0.10 |
| Sulfate | 1.0 U | 0.30 | 1.0 | 1.0 |
| Batch number: 17214118101B | Sample number(s): 9121674,9121676,9121680,9121683-9121684,9121686,9121693 | | | |
| Total Nitrite/Nitrate Nitrogen | 0.10 U | 0.040 | 0.10 | 0.10 |
| Batch number: 17215125101B | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 | | | |
| Phenols (water) | 0.020 U | 0.010 | 0.020 | 0.030 |
| Batch number: 17218941101A | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 | | | |
| Free Cyanide | 0.0060 U | 0.0020 | 0.0060 | 0.0060 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L172122AA | Sample number(s): 9121674,9121676,9121678,9121680,9121682-9121685,9121691,9121693,9121695-9121696 | | | | | | | | |
| Benzene | 20 | 21.27 | 20 | 21.12 | 106 | 106 | 79-120 | 1 | 20 |
| Chloroform | 20 | 23.8 | 20 | 23.7 | 119 | 119 | 79-124 | 0 | 20 |
| Dibromochloromethane | 20 | 21.83 | 20 | 21.31 | 109 | 107 | 74-126 | 2 | 20 |
| 1,2-Dibromoethane | 20 | 21 | 20 | 21.35 | 105 | 107 | 77-121 | 2 | 20 |
| 1,1-Dichloroethane | 20 | 21.7 | 20 | 21.77 | 108 | 109 | 77-125 | 0 | 20 |
| 1,2-Dichloroethane | 20 | 26.15 | 20 | 26.28 | 131* | 131* | 73-128 | 0 | 20 |
| cis-1,2-Dichloroethene | 20 | 22.63 | 20 | 21.98 | 113 | 110 | 78-123 | 3 | 20 |
| Ethylbenzene | 20 | 21.47 | 20 | 21.14 | 107 | 106 | 79-121 | 2 | 20 |
| Methyl Tertiary Butyl Ether | 20 | 22.52 | 20 | 22.96 | 113 | 115 | 71-124 | 2 | 20 |
| Methylene Chloride | 20 | 21.68 | 20 | 21.31 | 108 | 107 | 74-124 | 2 | 20 |
| Naphthalene | 20 | 19.73 | 20 | 19.86 | 99 | 99 | 61-128 | 1 | 20 |

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 09:13

Group Number: 1830113

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| 1,1,2,2-Tetrachloroethane | 20 | 19.19 | 20 | 19.39 | 96 | 97 | 71-121 | 1 | 20 |
| Tetrachloroethene | 20 | 22.4 | 20 | 21.81 | 112 | 109 | 74-129 | 3 | 20 |
| Toluene | 20 | 20.67 | 20 | 20.89 | 103 | 104 | 80-121 | 1 | 20 |
| 1,1,2-Trichloroethane | 20 | 21.3 | 20 | 21.4 | 106 | 107 | 80-119 | 1 | 20 |
| Trichloroethene | 20 | 22.32 | 20 | 21.88 | 112 | 109 | 79-123 | 2 | 20 |
| Xylene (Total) | 60 | 63.31 | 60 | 62.93 | 106 | 105 | 79-121 | 1 | 20 |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 17208WAC026 | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 50 | 46.79 | | | 94 | | 55-135 | | |
| 1-Methylnaphthalene | 50 | 39.95 | | | 80 | | 41-119 | | |
| 2-Methylnaphthalene | 50 | 37.32 | | | 75 | | 40-121 | | |
| Naphthalene | 50 | 39.12 | | | 78 | | 40-121 | | |
| Pyrene | 50 | 47.2 | | | 94 | | 57-126 | | |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172090034A | Sample number(s): 9121674,9121676,9121678,9121680,9121682-9121685,9121691,9121693,9121695-9121696 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.137 | 0.128 | 0.146 | 107 | 114 | 60-140 | 6 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172090571309 | Sample number(s): 9121674,9121676,9121680,9121683-9121686,9121693 | | | | | | | | |
| Mercury 7470A | 0.00100 | 0.000948 | | | 95 | | 82-119 | | |
| Batch number: 172091063503 | Sample number(s): 9121675,9121677,9121679,9121681,9121687-9121690,9121692,9121694 | | | | | | | | |
| Aluminum | 2.00 | 1.96 | | | 98 | | 86-115 | | |
| Barium | 2.00 | 1.88 | | | 94 | | 88-113 | | |
| Copper | 0.250 | 0.240 | | | 96 | | 86-114 | | |
| Iron | 1.00 | 0.967 | | | 97 | | 87-115 | | |
| Manganese | 0.500 | 0.478 | | | 96 | | 90-114 | | |
| Zinc | 0.500 | 0.480 | | | 96 | | 87-115 | | |
| Batch number: 172091063902A | Sample number(s): 9121675,9121677,9121681,9121687-9121690,9121694 | | | | | | | | |
| Antimony | 0.00600 | 0.00561 | | | 94 | | 85-117 | | |
| Arsenic | 0.0100 | 0.00908 | | | 91 | | 84-116 | | |
| Beryllium | 0.00400 | 0.00402 | | | 100 | | 83-121 | | |
| Cadmium | 0.00500 | 0.00523 | | | 105 | | 87-115 | | |
| Chromium | 0.0500 | 0.0534 | | | 107 | | 85-116 | | |
| Lead | 0.0150 | 0.0151 | | | 101 | | 88-115 | | |
| Silver | 0.0500 | 0.0522 | | | 104 | | 85-116 | | |
| Thallium | 0.00200 | 0.00199 | | | 100 | | 82-116 | | |
| Uranium | 0.0250 | 0.0245 | | | 98 | | 86-115 | | |
| Batch number: 172091063902B | Sample number(s): 9121675,9121677,9121681,9121687-9121690,9121694 | | | | | | | | |
| Selenium | 0.0100 | 0.0102 | | | 102 | | 80-120 | | |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17207249213A | Sample number(s): 9121674,9121676,9121680,9121683-9121684,9121686,9121693 | | | | | | | | |

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 09:13

Group Number: 1830113

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added mg/l | LCS Conc mg/l | LCSD Spike Added mg/l | LCSD Conc mg/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 3.00 | 2.70 | | | 90 | | 90-110 | | |
| Fluoride | 0.750 | 0.792 | | | 106 | | 90-110 | | |
| Sulfate | 7.50 | 7.03 | | | 94 | | 90-110 | | |
| Batch number: 17214118101B | Sample number(s): 9121674,9121676,9121680,9121683-9121684,9121686,9121693 | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 2.50 | 2.51 | | | 100 | | 90-110 | | |
| Batch number: 17215125101B | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 | | | | | | | | |
| Phenols (water) | 0.250 | 0.230 | | | 92 | | 90-110 | | |
| Batch number: 17218941101A | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 | | | | | | | | |
| Free Cyanide | 0.0400 | 0.0369 | | | 92 | | 86-132 | | |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Batch number: L172122AA | Sample number(s): 9121674,9121676,9121678,9121680,9121682-9121685,9121691,9121693,9121695-9121696 UNSPK: 9121683 | | | | | | | | | | |
| Benzene | 1 | U | 20 | 21.85 | 20 | 22.33 | 109 | 112 | 79-120 | 2 | 20 |
| Chloroform | 1 | U | 20 | 25.08 | 20 | 24.61 | 125* | 123 | 79-124 | 2 | 20 |
| Dibromochloromethane | 1 | U | 20 | 21.62 | 20 | 21.51 | 108 | 108 | 74-126 | 1 | 20 |
| 1,2-Dibromoethane | 1 | U | 20 | 20.86 | 20 | 20.62 | 104 | 103 | 77-121 | 1 | 20 |
| 1,1-Dichloroethane | 1 | U | 20 | 22.19 | 20 | 22.58 | 111 | 113 | 77-125 | 2 | 20 |
| 1,2-Dichloroethane | 1 | U | 20 | 26.69 | 20 | 26.5 | 133* | 132* | 73-128 | 1 | 20 |
| cis-1,2-Dichloroethene | 1 | U | 20 | 22.94 | 20 | 23.23 | 115 | 116 | 78-123 | 1 | 20 |
| Ethylbenzene | 1 | U | 20 | 22.46 | 20 | 22.24 | 112 | 111 | 79-121 | 1 | 20 |
| Methyl Tertiary Butyl Ether | 1 | U | 20 | 22.47 | 20 | 22.91 | 112 | 115 | 71-124 | 2 | 20 |
| Methylene Chloride | 4 | U | 20 | 21.23 | 20 | 21.07 | 106 | 105 | 74-124 | 1 | 20 |
| Naphthalene | 2 | U | 20 | 18.56 | 20 | 18.83 | 93 | 94 | 61-128 | 1 | 20 |
| 1,1,2,2-Tetrachloroethane | 1 | U | 20 | 18.38 | 20 | 18.77 | 92 | 94 | 71-121 | 2 | 20 |
| Tetrachloroethene | 1 | U | 20 | 23.33 | 20 | 23.21 | 117 | 116 | 74-129 | 0 | 20 |
| Toluene | 1 | U | 20 | 21.56 | 20 | 21.37 | 108 | 107 | 80-121 | 1 | 20 |
| 1,1,2-Trichloroethane | 1 | U | 20 | 21.05 | 20 | 20.72 | 105 | 104 | 80-119 | 2 | 20 |
| Trichloroethene | 1 | U | 20 | 23.95 | 20 | 23.49 | 120 | 117 | 79-123 | 2 | 20 |
| Xylene (Total) | 1 | U | 60 | 66.03 | 60 | 65.67 | 110 | 109 | 79-121 | 1 | 20 |
| | ug/l | | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 17208WAC026 | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 UNSPK: 9121683 | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 4.0 | U | 50.81 | 48.22 | 50.4 | 41.51 | 95 | 82 | 55-135 | 15 | 20 |

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 09:13

Group Number: 1830113

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| 1-Methylnaphthalene | 0.20 U | 50.81 | 45.07 | 50.4 | 43.54 | 89 | 86 | 41-119 | 3 | 20 |
| 2-Methylnaphthalene | 0.20 U | 50.81 | 42.78 | 50.4 | 41.46 | 84 | 82 | 40-121 | 3 | 20 |
| Naphthalene | 0.40 U | 50.81 | 43.51 | 50.4 | 41.67 | 86 | 83 | 40-121 | 4 | 20 |
| Pyrene | 0.20 U | 50.81 | 48.53 | 50.4 | 42.75 | 96 | 85 | 57-126 | 13 | 20 |
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172090034A | Sample number(s): 9121674,9121676,9121678,9121680,9121682-9121685,9121691,9121693,9121695-9121696 UNSPK: 9121683 | | | | | | | | | |
| Ethylene dibromide | 0.019 U | 0.123 | 0.145 | 0.123 | 0.137 | 118 | 112 | 60-140 | 5 | 20 |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172090571309 | Sample number(s): 9121674,9121676,9121680,9121683-9121686,9121693 UNSPK: 9121683 | | | | | | | | | |
| Mercury 7470A | 0.00010 U | 0.00100 | 0.000923 | 0.00100 | 0.000924 | 92 | 92 | 82-119 | 0 | 20 |
| Batch number: 172091063503 | Sample number(s): 9121675,9121677,9121679,9121681,9121687-9121690,9121692,9121694 UNSPK: 9121687 | | | | | | | | | |
| Aluminum | 0.200 U | 2.00 | 1.91 | 2.00 | 1.96 | 95 | 98 | 86-115 | 3 | 20 |
| Barium | 0.108 | 2.00 | 1.96 | 2.00 | 1.98 | 93 | 93 | 88-113 | 1 | 20 |
| Copper | 0.0100 U | 0.250 | 0.238 | 0.250 | 0.240 | 95 | 96 | 86-114 | 1 | 20 |
| Iron | 0.200 U | 1.00 | 0.931 | 1.00 | 0.966 | 93 | 97 | 87-115 | 4 | 20 |
| Manganese | 0.0050 U | 0.500 | 0.469 | 0.500 | 0.471 | 94 | 94 | 90-114 | 0 | 20 |
| Zinc | 0.0119 | 0.500 | 0.493 | 0.500 | 0.494 | 96 | 96 | 87-115 | 0 | 20 |
| Batch number: 172091063902A | Sample number(s): 9121675,9121677,9121681,9121687-9121690,9121694 UNSPK: 9121687 | | | | | | | | | |
| Antimony | 0.0010 U | 0.00600 | 0.00600 | 0.00600 | 0.00509 | 100 | 85 | 85-117 | 16 | 20 |
| Arsenic | 0.00114 | 0.0100 | 0.0118 | 0.0100 | 0.00960 | 106 | 85 | 84-116 | 20 | 20 |
| Beryllium | 0.00025 U | 0.00400 | 0.00390 | 0.00400 | 0.00383 | 97 | 96 | 83-121 | 2 | 20 |
| Cadmium | 0.00050 U | 0.00500 | 0.00464 | 0.00500 | 0.00488 | 93 | 98 | 87-115 | 5 | 20 |
| Chromium | 0.00112 | 0.0500 | 0.0518 | 0.0500 | 0.0496 | 101 | 97 | 85-116 | 4 | 20 |
| Lead | 0.00025 U | 0.0150 | 0.0148 | 0.0150 | 0.0147 | 99 | 98 | 88-115 | 0 | 20 |
| Silver | 0.00025 U | 0.0500 | 0.0495 | 0.0500 | 0.0509 | 99 | 102 | 85-116 | 3 | 20 |
| Thallium | 0.00025 U | 0.00200 | 0.00207 | 0.00200 | 0.00195 | 103 | 97 | 82-116 | 6 | 20 |
| Uranium | 0.00118 | 0.0250 | 0.0255 | 0.0250 | 0.0251 | 97 | 96 | 75-125 | 2 | 20 |
| Batch number: 172091063902B | Sample number(s): 9121675,9121677,9121681,9121687-9121690,9121694 UNSPK: 9121687 | | | | | | | | | |
| Selenium | 0.00108 | 0.0100 | 0.0106 | 0.0100 | 0.0104 | 96 | 93 | 80-120 | 2 | 20 |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 17207249213A | Sample number(s): 9121674,9121676,9121680,9121683-9121684,9121686,9121693 UNSPK: 9121683 | | | | | | | | | |
| Chloride | 22.78 | 10 | 34.2 | | | 114* | | 90-110 | | |
| Fluoride | 0.789 | 2.50 | 3.26 | | | 99 | | 90-110 | | |
| Sulfate | 43.97 | 25 | 73.09 | | | 116* | | 90-110 | | |

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 09:13

Group Number: 1830113

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc mg/l | MS Spike Added mg/l | MS Conc mg/l | MSD Spike Added mg/l | MSD Conc mg/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Batch number: 17214118101B | Sample number(s): 9121674,9121676,9121680,9121683-9121684,9121686,9121693 UNSPK: 9121683 | | | | | | | | | |
| Total Nitrite/Nitrate Nitrogen | 0.405 | 1.00 | 1.61 | | | 120* | | 90-110 | | |
| Batch number: 17215125101B | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 UNSPK: 9121683 | | | | | | | | | |
| Phenols (water) | 0.020 U | 0.200 | 0.195 | 0.200 | 0.192 | 98 | 96 | 90-110 | 2 | 6 |
| Batch number: 17218941101A | Sample number(s): 9121674,9121676,9121680,9121683-9121685,9121693 UNSPK: 9121683 | | | | | | | | | |
| Free Cyanide | 0.0060 U | 0.0200 | 0.0194 | 0.0200 | 0.0173 | 97 | 86 | 86-132 | 11* | 3 |

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc mg/l | DUP Conc mg/l | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| Batch number: 172090571309 | Sample number(s): 9121674,9121676,9121680,9121683-9121686,9121693 BKG: 9121683 | | | |
| Mercury 7470A | 0.00010 U | 0.00010 U | 0 (1) | 20 |
| Batch number: 172091063503 | Sample number(s): 9121675,9121677,9121679,9121681,9121687-9121690,9121692,9121694 BKG: 9121687 | | | |
| Aluminum | 0.200 U | 0.200 U | 0 (1) | 20 |
| Barium | 0.108 | 0.109 | 1 | 20 |
| Copper | 0.0100 U | 0.0100 U | 0 (1) | 20 |
| Iron | 0.200 U | 0.200 U | 0 (1) | 20 |
| Manganese | 0.0050 U | 0.0050 U | 0 (1) | 20 |
| Zinc | 0.0119 | 0.0120 | 1 (1) | 20 |
| Batch number: 172091063902A | Sample number(s): 9121675,9121677,9121681,9121687-9121690,9121694 BKG: 9121687 | | | |
| Antimony | 0.0010 U | 0.0010 U | 0 (1) | 20 |
| Arsenic | 0.00114 | 0.00121 | 6 (1) | 20 |
| Beryllium | 0.00025 U | 0.00025 U | 0 (1) | 20 |
| Cadmium | 0.00050 U | 0.00050 U | 0 (1) | 20 |
| Chromium | 0.00112 | 0.0020 U | 200* (1) | 20 |
| Lead | 0.00025 U | 0.00025 U | 0 (1) | 20 |
| Silver | 0.00025 U | 0.00025 U | 0 (1) | 20 |
| Thallium | 0.00025 U | 0.00025 U | 0 (1) | 20 |
| Uranium | 0.00118 | 0.00113 | 5 (1) | 20 |
| Batch number: 172091063902B | Sample number(s): 9121675,9121677,9121681,9121687-9121690,9121694 BKG: 9121687 | | | |
| Selenium | 0.00108 | 0.00117 | 7 (1) | 20 |
| | mg/l | mg/l | | |

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 09:13

Group Number: 1830113

## Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc mg/l | DUP Conc mg/l | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| Batch number: 17207249213A | Sample number(s): 9121674,9121676,9121680,9121683-9121684,9121686,9121693 BKG: 9121683 | | | |
| Chloride | 22.78 | 21.56 | 6 | 15 |
| Fluoride | 0.789 | 0.485 | 48* (1) | 15 |
| Sulfate | 43.97 | 42.58 | 3 | 15 |
| Batch number: 17214118101B | Sample number(s): 9121674,9121676,9121680,9121683-9121684,9121686,9121693 BKG: 9121683 | | | |
| Total Nitrite/Nitrate Nitrogen | 0.405 | 0.410 | 1 (1) | 10 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: VOCs 8260C GWTS Annual
Batch number: L172122AA

| | Dibromofluoromethane %Rec | LOD (ug/l) | 1,2-Dichloroethane-d4 %Rec | LOD (ug/l) | Toluene-d8 %Rec | LOD (ug/l) | 4-Bromofluorobenzene %Rec | LOD (ug/l) |
|---|---|---|---|---|---|---|---|---|
| 9121674 | 113 | 1 | 101 | 1 | 98 | 1 | 103 | 1 |
| 9121676 | 113 | 1 | 104 | 1 | 98 | 1 | 102 | 1 |
| 9121678 | 112 | 1 | 101 | 1 | 99 | 1 | 102 | 1 |
| 9121680 | 114 | 1 | 104 | 1 | 98 | 1 | 103 | 1 |
| 9121682 | 111 | 1 | 102 | 1 | 98 | 1 | 101 | 1 |
| 9121683 | 113 | 1 | 105 | 1 | 98 | 1 | 102 | 1 |
| 9121684 | 109 | 1 | 103 | 1 | 100 | 1 | 108 | 1 |
| 9121685 | 110 | 1 | 103 | 1 | 99 | 1 | 109 | 1 |
| 9121691 | 113 | 1 | 106 | 1 | 98 | 1 | 102 | 1 |
| 9121693 | 115 | 1 | 105 | 1 | 97 | 1 | 103 | 1 |
| 9121695 | 111 | 1 | 101 | 1 | 97 | 1 | 102 | 1 |
| 9121696 | 113 | 1 | 100 | 1 | 99 | 1 | 103 | 1 |
| Blank | 111 | 1 | 105 | 1 | 98 | 1 | 103 | 1 |
| LCS | 110 | 1 | 103 | 1 | 100 | 1 | 108 | 1 |
| LCSD | 109 | 1 | 102 | 1 | 101 | 1 | 107 | 1 |
| MS | 109 | 1 | 103 | 1 | 100 | 1 | 108 | 1 |
| MSD | 110 | 1 | 103 | 1 | 99 | 1 | 109 | 1 |
| Limits: | 80-119 | | 81-118 | | 89-112 | | 85-114 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/07/2017 09:13

Group Number: 1830113

## Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: SVOCs 8270D GWTS
Batch number: 17208WAC026

| | Nitrobenzene-d5 %Rec | LOD (ug/l) | 2-Fluorobiphenyl %Rec | LOD (ug/l) | Terphenyl-d14 %Rec | LOD (ug/l) |
|---|---|---|---|---|---|---|
| 9121674 | 87 | 40 | 87 | 40 | 94 | 40 |
| 9121676 | 85 | 40 | 87 | 40 | 93 | 40 |
| 9121680 | 83 | 40 | 84 | 40 | 93 | 40 |
| 9121683 | 79 | 40 | 83 | 40 | 88 | 40 |
| 9121684 | 87 | 41 | 87 | 41 | 91 | 41 |
| 9121685 | 83 | 40 | 84 | 40 | 84 | 40 |
| 9121693 | 86 | 40 | 82 | 40 | 91 | 40 |
| Blank | 84 | 40 | 77 | 40 | 96 | 40 |
| LCS | 86 | 40 | 81 | 40 | 89 | 40 |
| MS | 87 | 41 | 87 | 41 | 91 | 41 |
| MSD | 83 | 40 | 84 | 40 | 84 | 40 |
| Limits: | 44-120 | | 44-119 | | 50-134 | |

Analysis Name: EDB 8011 Water
Batch number: 172090034A

| | 1,1,2,2-Tetrachloroethane %Rec | LOD (ug/l) |
|---|---|---|
| 9121674 | 113 | 0.0067 |
| 9121676 | 90 | 0.0067 |
| 9121678 | 87 | 0.0067 |
| 9121680 | 94 | 0.0067 |
| 9121682 | 96 | 0.0067 |
| 9121683 | 91 | 0.0067 |
| 9121684 | 99 | 0.0067 |
| 9121685 | 92 | 0.0067 |
| 9121691 | 94 | 0.0067 |
| 9121693 | 96 | 0.0067 |
| 9121695 | 89 | 0.0066 |
| 9121696 | 98 | 0.0067 |
| Blank | 89 | 0.0070 |
| LCS | 90 | 0.0070 |
| LCSD | 97 | 0.0070 |
| MS | 99 | 0.0067 |
| MSD | 92 | 0.0067 |
| Limits: | 46-136 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 / 1830113 / 9121674-97

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS1-072517

| | | | |
|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA; FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA |
| YEAR: 2017 | QUARTER: Q3 | | |
| PROJECT SITE AND PHASE: ST106/SS110 | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

ANALYSIS REQUIRED (Specify number of bottles)

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | SVOCs (8270D) | EDB (8011) | Dissolved Al, Ba, Cu, Mn, Zn, Fe, Sb, As, Be, Cd, Cr, Pb, Se, Ag, Tl, U (6010C/6020A) | Chloride, Fluoride, Sulfate (300.0) | Nitrate-Nitrite (353.2) | Free Cyanide (1677-09) | Total Mercury (7470A) | Total Phenol (420.4) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GWTS-EFF1-072517 | 07/25/17 | 1345 | 13 | 3 | 2 | 2 | 1* | 1 | 1 | 1 | 1 | 1 | |
| 2 | GWTS-EFF1DUP-072517 | 07/25/17 | 1345 | 13 | 3 | 2 | 2 | 1* | 1 | 1 | 1 | 1 | 1 | |
| 3 | GWTS-GAC1-072517 | 07/25/17 | 1400 | 6 | 3 | -- | 2 | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-INF1-072517 | 07/25/17 | 1410 | 13 | 3 | 2 | 2 | 1* | 1 | 1 | 1 | 1 | 1 | |
| 5 | GWTS-TB01-072517 | 07/25/17 | 1530 | 4 | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Metals aliquot was field filtered. INF1, EFF1, EFF1DUP are to be analyzed for all dissolved metals (Al, Ba, Cu, Mn, Zn, Fe, Sb, As, Be, Cd, Cr, Pb, Se, Ag, Tl, U), GAC1 is to be analyzed for dissolved Fe and Mn only.

SAMPLER(S): Pete Ferrari / Sharmin Sultana

COURIER AND SHIPPING NUMBER: Fedex: 810487007905

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA Sharmin Sultana | 7/25/17 ~~7/27/17~~ | 1530 | Printed Name and Signature: | | |
| Printed Name and Signature: Pete Ferrari Pete Ferrari | 7/25/17 | 1530 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Wendy Wakeley | 7/26/17 | 930 |



09

31675 | 1830113 | 9121674-97

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS2-072517

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: Q3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | SVOCs (8270D) | EDB (8011) | Dissolved Al, Ba, Cu, Mn, Zn, Fe, Sb, As, Be, Cd, Cr, Pb, Se, Ag, Tl, U (6010C/6020A) | Chloride, Fluoride, sulfate (300.0) | Nitrate-Nitrite (353.2) | Free Cyanide (1677-09) | Mercury (7470A) | Total Phenol (420.4) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GWTS-EFF2-072517 | 07/25/17 | 1425 | 39 | 9 | 6 | 6 | 3* | 3 | 3 | 3 | 3 | 3 | Additional Volume Provided for MSMSD |
| 2 | GWTS-GAC2-072517 | 07/25/17 | 1450 | 6 | 3 | -- | 2 | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-INF2-072517 | 07/25/17 | 1500 | 13 | 3 | 2 | 2 | 1* | 1 | 1 | 1 | 1 | 1 | |
| 4 | GWTS-TB02-072517 | 07/25/17 | 1530 | 4 | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 5 | GWTS-FB02-072517 | 07/25/17 | 1425 | 5 | 3 | -- | 2 | -- | -- | -- | -- | -- | -- | Collected simultaneously with GWTS-EFF2-072517 |
| 6 | | | | | | | | | | | | | | |

ANALYSIS REQUIRED (Specify number of bottles)

COMMENTS: *Dissolved Metals aliquot was field filtered. INF2, EFF2 are to be analyzed for all dissolved metals (Al, Ba, Cu, Mn, Zn, Fe, Sb, As, Be, Cd, Cr, Pb, Se, Ag, Tl, U), GAC2 is to be analyzed for Fe and Mn only.

SAMPLER(S): SHARMIN SULTANA / Peter Ferrari

COURIER AND SHIPPING NUMBER: Fedex: 810487007916

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA | 7/25/17 | 1530 | Printed Name and Signature: | | |
| Printed Name and Signature: Peter Ferrari | 7/25/17 | 1530 | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: | | |
| Printed Name and Signature: | | | Printed Name and Signature: Wendy Wakeley | 7/26/17 | 930 |



08

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# Sample Administration Receipt Documentation Log

Doc Log ID: 189828

Group Number(s): 1830113

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/26/2017 9:30 |
| Number of Packages: | 2 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 8 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Wendy Wakeley (1669) at 12:28 on 07/26/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT42-01 | 0.9 | DT | Wet | Y | Bagged | N |
| 2 | DT42-01 | 0.8 | DT | Wet | Y | Bagged | N |



2425 New Holland Pike
Lancaster, PA 17601-5825
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | non-detect |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| D1 | Indicates for dual column analyses that the result is reported from column 1 |
| D2 | Indicates for dual column analyses that the result is reported from column 2 |
| E | Concentration exceeds the calibration range |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# Volatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Volatiles by GC/MS

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9121674 | GWTS-EFF1-072517 | X | | 1 | |
| 9121676 | GWTS-EFF1DUP-072517 | X | | 1 | Field Duplicate Sample |
| 9121678 | GWTS-GAC1-072517 | X | | 1 | |
| 9121680 | GWTS-INF1-072517 | X | | 1 | |
| 9121682 | GWTS-TB01-072517 | X | | 1 | Trip Blank |
| 9121683 | GWTS-EFF2-072517 | X | | 1 | Unspiked |
| 9121684 | GWTS-EFF2-072517MS | X | | 1 | Matrix Spike |
| 9121685 | GWTS-EFF2-072517MSD | X | | 1 | Matrix Spike Duplicate |
| 9121691 | GWTS-GAC2-072517 | X | | 1 | |
| 9121693 | GWTS-INF2-072517 | X | | 1 | |
| 9121695 | GWTS-TB02-072517 | X | | 1 | Trip Blank |
| 9121696 | GWTS-FB02-072517 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**LCS/LCSD**

(Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696: Analysis: 11997)
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. Since the recovery is high and the target analyte(s) was not detected in the sample, the data is reported.

Batch#: L172122AA (Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696, UNSPK: 9121683)
The recovery(ies) for the following analyte(s) in the LCS and LCSD exceeded the acceptance window indicating a positive bias. 1,2-Dichloroethane
Refer to the QC Summary forms for more information.

**MS/MSD**

Please note that US EPA Methods for organic compounds do not require action by the laboratory based on out-of-specification MS/MSD results.

Batch#: L172122AA (Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696, UNSPK: 9121683)
The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Chloroform
The recovery(ies) for the following analyte(s) in the MS and MSD exceeded the acceptance window indicating a positive bias: 1,2-Dichloroethane

### SAMPLE ANALYSIS:

(Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121683, 9121691, 9121693, 9121695-9121696: Analysis: 11997)
The response for a target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Volatiles by GC/MS

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# Quality Control Reference List
## GC/MS Volatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

**Fraction: Volatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| VOCs 8260C GWTS Annual | L172122AA | VBLKL94 | 07/31/2017 22:35:00 |
| | | LCSL94 | 07/31/2017 21:52:00 |
| | | LCDL94 | 07/31/2017 22:13:00 |
| | | 9121674 | 08/01/2017 02:49:00 |
| | | 9121676 | 08/01/2017 03:11:00 |
| | | 9121678 | 08/01/2017 03:33:00 |
| | | 9121680 | 08/01/2017 03:54:00 |
| | | 9121682 | 07/31/2017 23:11:00 |
| | | 9121683 UNSPK | 08/01/2017 00:16:00 |
| | | 9121684 MS | 08/01/2017 00:38:00 |
| | | 9121685 MSD | 08/01/2017 01:00:00 |
| | | 9121691 | 08/01/2017 04:16:00 |
| | | 9121693 | 08/01/2017 04:38:00 |
| | | 9121695 | 07/31/2017 23:33:00 |
| | | 9121696 | 08/01/2017 05:00:00 |

**Quality Control Summary**
**Method Blank**
**GC/MS Volatiles**
**SDG: KR191**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172122AA / VBLKL94<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Methylene Chloride | 07/31/17 | N.D. | ug/l | 2 | 4 | 4 |
| Methyl Tertiary Butyl Ether | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,1-Dichloroethane | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| cis-1,2-Dichloroethene | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Chloroform | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Benzene | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,2-Dichloroethane | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Trichloroethene | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Toluene | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Tetrachloroethene | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,1,2-Trichloroethane | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Dibromochloromethane | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,2-Dibromoethane | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Ethylbenzene | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Xylene (Total) | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| 1,1,2,2-Tetrachloroethane | 07/31/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Naphthalene | 07/31/17 | N.D. | ug/l | 1 | 2 | 5 |

**Quality Control Summary**
**Surrogates**
**GC/MS Volatiles**
**SDG: KR191**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172122AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKL94 | 105 | 81 - 118 | 103 | 85 - 114 | 111 | 80 - 119 | 98 | 89 - 112 |
| LCSL94 | 103 | 81 - 118 | 108 | 85 - 114 | 110 | 80 - 119 | 100 | 89 - 112 |
| LCDL94 | 102 | 81 - 118 | 107 | 85 - 114 | 109 | 80 - 119 | 101 | 89 - 112 |
| 9121674 | 101 | 81 - 118 | 103 | 85 - 114 | 113 | 80 - 119 | 98 | 89 - 112 |
| 9121676 | 104 | 81 - 118 | 102 | 85 - 114 | 113 | 80 - 119 | 98 | 89 - 112 |
| 9121678 | 101 | 81 - 118 | 102 | 85 - 114 | 112 | 80 - 119 | 99 | 89 - 112 |
| 9121680 | 104 | 81 - 118 | 103 | 85 - 114 | 114 | 80 - 119 | 98 | 89 - 112 |
| 9121682 | 102 | 81 - 118 | 101 | 85 - 114 | 111 | 80 - 119 | 98 | 89 - 112 |
| 9121683 UNSPK | 105 | 81 - 118 | 102 | 85 - 114 | 113 | 80 - 119 | 98 | 89 - 112 |
| 9121684 MS | 103 | 81 - 118 | 108 | 85 - 114 | 109 | 80 - 119 | 100 | 89 - 112 |
| 9121685 MSD | 103 | 81 - 118 | 109 | 85 - 114 | 110 | 80 - 119 | 99 | 89 - 112 |
| 9121691 | 106 | 81 - 118 | 102 | 85 - 114 | 113 | 80 - 119 | 98 | 89 - 112 |
| 9121693 | 105 | 81 - 118 | 103 | 85 - 114 | 115 | 80 - 119 | 97 | 89 - 112 |
| 9121695 | 101 | 81 - 118 | 102 | 85 - 114 | 111 | 80 - 119 | 97 | 89 - 112 |
| 9121696 | 100 | 81 - 118 | 103 | 85 - 114 | 113 | 80 - 119 | 99 | 89 - 112 |

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| UNSPK: 9121683<br>MS: 9121684<br>MSD: 9121685<br>**Analyte** | Batch: **L172122AA** (Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Methylene Chloride | 20 | N.D. | 21.23 | 21.07 | 106 | 105 | 74-124 | 1 | 20 |
| Methyl Tertiary Butyl Ether | 20 | N.D. | 22.47 | 22.91 | 112 | 115 | 71-124 | 2 | 20 |
| 1,1-Dichloroethane | 20 | N.D. | 22.19 | 22.58 | 111 | 113 | 77-125 | 2 | 20 |
| cis-1,2-Dichloroethene | 20 | N.D. | 22.94 | 23.23 | 115 | 116 | 78-123 | 1 | 20 |
| Chloroform | 20 | N.D. | 25.08 | 24.61 | 125 * | 123 | 79-124 | 2 | 20 |
| 1,2-Dichloroethane | 20 | N.D. | 26.69 | 26.5 | 133 * | 132 * | 73-128 | 1 | 20 |
| Benzene | 20 | N.D. | 21.85 | 22.33 | 109 | 112 | 79-120 | 2 | 20 |
| Trichloroethene | 20 | N.D. | 23.95 | 23.49 | 120 | 117 | 79-123 | 2 | 20 |
| Toluene | 20 | N.D. | 21.56 | 21.37 | 108 | 107 | 80-121 | 1 | 20 |
| 1,1,2-Trichloroethane | 20 | N.D. | 21.05 | 20.72 | 105 | 104 | 80-119 | 2 | 20 |
| Tetrachloroethene | 20 | N.D. | 23.33 | 23.21 | 117 | 116 | 74-129 | 0 | 20 |
| Dibromochloromethane | 20 | N.D. | 21.62 | 21.51 | 108 | 108 | 74-126 | 1 | 20 |
| 1,2-Dibromoethane | 20 | N.D. | 20.86 | 20.62 | 104 | 103 | 77-121 | 1 | 20 |
| Ethylbenzene | 20 | N.D. | 22.46 | 22.24 | 112 | 111 | 79-121 | 1 | 20 |
| Xylene (Total) | 60 | N.D. | 66.03 | 65.67 | 110 | 109 | 79-121 | 1 | 20 |
| 1,1,2,2-Tetrachloroethane | 20 | N.D. | 18.38 | 18.77 | 92 | 94 | 71-121 | 2 | 20 |
| Naphthalene | 20 | N.D. | 18.56 | 18.83 | 93 | 94 | 61-128 | 1 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSL94<br>LCSD: LCDL94<br><br>**Analyte** | Batch: **L172122AA** (Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | 20 | 21.68 | 21.31 | 108 | 107 | 74-124 | 2 | 20 |
| Methyl Tertiary Butyl Ether | 20 | 22.52 | 22.96 | 113 | 115 | 71-124 | 2 | 20 |
| 1,1-Dichloroethane | 20 | 21.7 | 21.77 | 108 | 109 | 77-125 | 0 | 20 |
| cis-1,2-Dichloroethene | 20 | 22.63 | 21.98 | 113 | 110 | 78-123 | 3 | 20 |
| Chloroform | 20 | 23.8 | 23.7 | 119 | 119 | 79-124 | 0 | 20 |
| 1,2-Dichloroethane | 20 | 26.15 | 26.28 | 131 * | 131 * | 73-128 | 0 | 20 |
| Benzene | 20 | 21.27 | 21.12 | 106 | 106 | 79-120 | 1 | 20 |
| Trichloroethene | 20 | 22.32 | 21.88 | 112 | 109 | 79-123 | 2 | 20 |
| Toluene | 20 | 20.67 | 20.89 | 103 | 104 | 80-121 | 1 | 20 |
| 1,1,2-Trichloroethane | 20 | 21.3 | 21.4 | 106 | 107 | 80-119 | 1 | 20 |
| Tetrachloroethene | 20 | 22.4 | 21.81 | 112 | 109 | 74-129 | 3 | 20 |
| Dibromochloromethane | 20 | 21.83 | 21.31 | 109 | 107 | 74-126 | 2 | 20 |
| 1,2-Dibromoethane | 20 | 21 | 21.35 | 105 | 107 | 77-121 | 2 | 20 |
| Ethylbenzene | 20 | 21.47 | 21.14 | 107 | 106 | 79-121 | 2 | 20 |
| Xylene (Total) | 60 | 63.31 | 62.93 | 106 | 105 | 79-121 | 1 | 20 |
| 1,1,2,2-Tetrachloroethane | 20 | 19.19 | 19.39 | 96 | 97 | 71-121 | 1 | 20 |
| Naphthalene | 20 | 19.73 | 19.86 | 99 | 99 | 61-128 | 1 | 20 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR191___

Lab File ID: la26t01.d  BFB Injection Date: 04/26/17

Instrument ID: HP09915  BFB Injection Time: 12:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.10 |
| 75 | 30.0 - 60.0% of mass 95 | 44.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.79 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.54)1 |
| 174 | Greater than 50.0% of mass 95 | 90.09 |
| 175 | 5.0 - 9.0% of mass 174 | 6.12 ( 6.79)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 86.74 (96.29)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.56 ( 6.41)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | la26i01.d | 04/26/17 | 13:20 |
| 02 | VSTD300 | la26i01.d | 04/26/17 | 13:20 |
| 03 | VSTD100 | la26i02.d | 04/26/17 | 13:42 |
| 04 | VSTD100 | la26i02.d | 04/26/17 | 13:42 |
| 05 | VSTD50 | la26i03.d | 04/26/17 | 14:04 |
| 06 | VSTD50 | la26i03.d | 04/26/17 | 14:04 |
| 07 | VSTD20 | la26i04.d | 04/26/17 | 14:26 |
| 08 | VSTD20 | la26i04.d | 04/26/17 | 14:26 |
| 09 | VSTD10 | la26i05.d | 04/26/17 | 14:48 |
| 10 | VSTD10 | la26i05.d | 04/26/17 | 14:48 |
| 11 | VSTD4 | la26i06.d | 04/26/17 | 15:10 |
| 12 | VSTD4 | la26i06.d | 04/26/17 | 15:10 |
| 13 | VSTD1 | la26i07.d | 04/26/17 | 15:32 |
| 14 | VSTD1 | la26i07.d | 04/26/17 | 15:32 |
| 15 | MDL0.5 - MDL0.5 | la26m01.d | 04/26/17 | 15:54 |
| 16 | VBLKL48 | la26b31.d | 04/26/17 | 17:03 |
| 17 | LCSL46 | la26s01.d | 04/26/17 | 17:25 |
| 18 | LCSL48 | la26s31.d | 04/26/17 | 17:25 |
| 19 | ACRICV | la26s01a.d | 04/26/17 | 18:34 |
| 20 | 8944378 | la26s32.d | 04/26/17 | 19:15 |
| 21 | 8944379 | la26s33.d | 04/26/17 | 19:37 |
| 22 | 8947184 | la26s34.d | 04/26/17 | 19:59 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR191___

Lab File ID: la26t01.d  BFB Injection Date: 04/26/17

Instrument ID: HP09915  BFB Injection Time: 12:45

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 17.10 |
| 75 | 30.0 - 60.0% of mass 95 | 44.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.79 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.54)1 |
| 174 | Greater than 50.0% of mass 95 | 90.09 |
| 175 | 5.0 - 9.0% of mass 174 | 6.12 ( 6.79)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 86.74 (96.29)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.56 ( 6.41)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 8944352 | la26s35.d | 04/26/17 | 20:21 |
| 24 | 8944353MS | la26s36.d | 04/26/17 | 20:43 |
| 25 | 8944354MSD | la26s37.d | 04/26/17 | 21:05 |
| 26 | 8944360 | la26s38.d | 04/26/17 | 21:27 |
| 27 | 8944366 | la26s39.d | 04/26/17 | 21:49 |
| 28 | 8944368 | la26s40.d | 04/26/17 | 22:11 |
| 29 | 8944370 | la26s41.d | 04/26/17 | 22:33 |
| 30 | 8947174 | la26s42.d | 04/26/17 | 22:55 |
| 31 | 8947180 | la26s43.d | 04/26/17 | 23:17 |
| 32 | SECC050 | la26ec1.d | 04/26/17 | 23:38 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR191___

Lab File ID: l131t05.d  BFB Injection Date: 07/31/17

Instrument ID: HP09915  BFB Injection Time: 20:49

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 19.76 |
| 75 | 30.0 - 60.0% of mass 95 | 52.23 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.63 |
| 173 | Less than 2.0% of mass 174 | 0.66 ( 0.72)1 |
| 174 | Greater than 50.0% of mass 95 | 92.68 |
| 175 | 5.0 - 9.0% of mass 174 | 6.28 ( 6.77)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 90.22 (97.35)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.23 ( 6.90)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | l131c05.d | 07/31/17 | 21:30 |
| 02 | LCSL94 | l131s41.d | 07/31/17 | 21:52 |
| 03 | LCDL94 | l131s42.d | 07/31/17 | 22:13 |
| 04 | VBLKL94 | l131b05.d | 07/31/17 | 22:35 |
| 05 | 9121682 | l131s43.d | 07/31/17 | 23:11 |
| 06 | 9121695 | l131s44.d | 07/31/17 | 23:33 |
| 07 | 9124762 | l131s45.d | 07/31/17 | 23:55 |
| 08 | 9121683 | l131s46.d | 08/01/17 | 00:16 |
| 09 | 9121684MS | l131s47.d | 08/01/17 | 00:38 |
| 10 | 9121685MSD | l131s48.d | 08/01/17 | 01:00 |
| 11 | 9121064 | l131s49.d | 08/01/17 | 01:22 |
| 12 | 9121065 | l131s50.d | 08/01/17 | 01:44 |
| 13 | 9121066 | l131s51.d | 08/01/17 | 02:05 |
| 14 | 9121074 | l131s52.d | 08/01/17 | 02:27 |
| 15 | 9121674 | l131s53.d | 08/01/17 | 02:49 |
| 16 | 9121676 | l131s54.d | 08/01/17 | 03:11 |
| 17 | 9121678 | l131s55.d | 08/01/17 | 03:33 |
| 18 | 9121680 | l131s56.d | 08/01/17 | 03:54 |
| 19 | 9121691 | l131s57.d | 08/01/17 | 04:16 |
| 20 | 9121693 | l131s58.d | 08/01/17 | 04:38 |
| 21 | 9121696 | l131s59.d | 08/01/17 | 05:00 |
| 22 | 9124755 | l131s60.d | 08/01/17 | 05:21 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR191___

Lab File ID: l131t05.d  BFB Injection Date: 07/31/17

Instrument ID: HP09915  BFB Injection Time: 20:49

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 19.76 |
| 75 | 30.0 - 60.0% of mass 95 | 52.23 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.63 |
| 173 | Less than 2.0% of mass 174 | 0.66 ( 0.72)1 |
| 174 | Greater than 50.0% of mass 95 | 92.68 |
| 175 | 5.0 - 9.0% of mass 174 | 6.28 ( 6.77)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 90.22 (97.35)1 |
| 177 | 5.0 - 9.0% of mass 176 | 6.23 ( 6.90)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 9124756 | l131s61.d | 08/01/17 | 05:43 |
| 24 | 9124758 | l131s62.d | 08/01/17 | 06:05 |
| 25 | 9124759 | l131s63.d | 08/01/17 | 06:27 |
| 26 | 9124764 | l131s64.d | 08/01/17 | 06:49 |
| 27 | SECC050 | l131ec5.d | 08/01/17 | 07:11 |

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 04/26/17 04/26/17

Heated Purge: (Y/N) Y Calibration Times: 13:20 15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d RRF 4 = la26i06.d RRF 10= la26i05.d
RRF 20= la26i04.d RRF 50= la26i03.d RRF100= la26i02.d RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | #0.2475 | 0.3109 | 0.2816 | 0.2855 | 0.3296 | 0.3182 | 0.3116 | 0.2979 | 9 | AVG | # |
| Chloromethane | #0.2728 | 0.3009 | 0.2971 | 0.3105 | 0.3299 | 0.3276 | 0.3031 | 0.3060 | 6 | AVG | # |
| 1,3-Butadiene | 0.1870 | 0.2029 | 0.1572 | 0.1857 | 0.1788 | 0.1756 | 0.1743 | 0.1802 | 8 | AVG | |
| Vinyl Chloride | #0.2596 | 0.2956 | 0.2812 | 0.2907 | 0.3269 | 0.3169 | 0.2974 | 0.2955 | 8 | AVG | # |
| Bromomethane | #0.1784 | 0.1942 | 0.1974 | 0.1985 | 0.2158 | 0.2102 | 0.1966 | 0.1987 | 6 | AVG | # |
| Chloroethane | #0.1512 | 0.1679 | 0.1637 | 0.1665 | 0.1796 | 0.1749 | 0.1619 | 0.1665 | 6 | AVG | # |
| Dichlorofluoromethane | 0.3565 | 0.4027 | 0.3929 | 0.4138 | 0.4398 | 0.4365 | 0.4009 | 0.4062 | 7 | AVG | |
| n-Pentane | 0.2779 | 0.3107 | 0.2558 | 0.2941 | 0.2818 | 0.2797 | 0.2725 | 0.2818 | 6 | AVG | |
| Trichlorofluoromethane | #0.2818 | 0.3506 | 0.3242 | 0.3264 | 0.3829 | 0.3708 | 0.3584 | 0.3422 | 10 | AVG | # |
| Ethyl ether | 0.1717 | 0.1900 | 0.1802 | 0.1983 | 0.2030 | 0.1997 | 0.1904 | 0.1905 | 6 | AVG | |
| Freon 123a | 0.2093 | 0.2464 | 0.2048 | 0.2441 | 0.2326 | 0.2304 | 0.2276 | 0.2279 | 7 | AVG | |
| Acrolein | 1.6997 | 1.7547 | 2.0438 | 2.0158 | 2.1800 | 2.3475 | 2.2840 | 2.0465 | 12 | AVG | |
| 1,1-Dichloroethene | #0.1731 | 0.1915 | 0.1632 | 0.1881 | 0.1862 | 0.1822 | 0.1833 | 0.1811 | 5 | AVG | # |
| 1,1-Dichloroethene(2) | #0.0849 | 0.0966 | 0.0823 | 0.0976 | 0.0939 | 0.0935 | 0.0931 | 0.0917 | 6 | AVG | #<- |
| Acetone | #0.7871 | 0.8113 | 0.9514 | 0.8091 | 0.9410 | 0.9228 | 0.9949 | 0.8882 | 9 | AVG | # |
| Freon 113 | #0.1559 | 0.1939 | 0.1621 | 0.1954 | 0.1881 | 0.1902 | 0.1903 | 0.1823 | 9 | AVG | # |
| 2-Propanol | 0.6182 | 0.6115 | 0.5764 | 0.6050 | 0.5447 | 0.5811 | 0.5848 | 0.5888 | 4 | AVG | |
| Methyl Iodide | 0.3218 | 0.3593 | 0.3218 | 0.3715 | 0.3659 | 0.3574 | 0.3612 | 0.3513 | 6 | AVG | |
| Carbon Disulfide | #0.5351 | 0.6016 | 0.5236 | 0.6223 | 0.6181 | 0.6105 | 0.6139 | 0.5893 | 7 | AVG | # |
| Allyl Chloride | 0.3475 | 0.3734 | 0.3447 | 0.3759 | 0.3727 | 0.3634 | 0.3616 | 0.3627 | 3 | AVG | |
| Methyl Acetate | #0.2908 | 0.2561 | 0.2535 | 0.2717 | 0.2645 | 0.2509 | 0.2524 | 0.2628 | 5 | AVG | # |
| Methylene Chloride | #0.2903 | 0.2500 | 0.2150 | 0.2388 | 0.2329 | 0.2250 | 0.2226 | 0.2392 | 11 | AVG | # |
| t-Butyl alcohol | 1.0273 | 0.9259 | 0.9637 | 0.9834 | 0.9700 | 0.9707 | 0.9301 | 0.9673 | 4 | AVG | |
| Acrylonitrile | 0.1150 | 0.1324 | 0.1390 | 0.1386 | 0.1542 | 0.1476 | 0.1394 | 0.1380 | 9 | AVG | |
| trans-1,2-Dichloroethene | #0.1880 | 0.2213 | 0.1984 | 0.2258 | 0.2203 | 0.2168 | 0.2167 | 0.2125 | 7 | AVG | # |
| Methyl Tertiary Butyl Ether | #0.6379 | 0.6679 | 0.6247 | 0.7026 | 0.6961 | 0.6730 | 0.6419 | 0.6634 | 4 | AVG | # |
| n-Hexane | 0.2805 | 0.3406 | 0.3182 | 0.3412 | 0.3308 | 0.3375 | 0.3312 | 0.3257 | 7 | AVG | |
| 1,1-Dichloroethane | #0.3662 | 0.4103 | 0.3686 | 0.4216 | 0.4181 | 0.4088 | 0.4012 | 0.3993 | 6 | AVG | # |
| di-Isopropyl ether | 0.7192 | 0.7694 | 0.7224 | 0.8149 | 0.8086 | 0.7840 | 0.7457 | 0.7663 | 5 | AVG | |
| 2-Chloro-1,3-butadiene | 0.2922 | 0.3422 | 0.3064 | 0.3592 | 0.3555 | 0.3527 | 0.3492 | 0.3368 | 8 | AVG | |
| Ethyl t-butyl ether | 0.6073 | 0.6490 | 0.6229 | 0.7065 | 0.7083 | 0.6819 | 0.6404 | 0.6595 | 6 | AVG | |
| cis-1,2-Dichloroethene | #0.2327 | 0.2468 | 0.2228 | 0.2546 | 0.2536 | 0.2482 | 0.2457 | 0.2435 | 5 | AVG | # |
| 2-Butanone | #0.1686 | 0.1714 | 0.1875 | 0.1858 | 0.2021 | 0.1923 | 0.1859 | 0.1848 | 6 | AVG | # |
| 2,2-Dichloropropane | 0.2099 | 0.2545 | 0.2401 | 0.2836 | 0.2893 | 0.2940 | 0.2945 | 0.2666 | 12 | AVG | |
| Propionitrile | 1.3266 | 1.3235 | 1.3715 | 1.3990 | 1.4565 | 1.5001 | 1.5052 | 1.4118 | 5 | AVG | |
| Methacrylonitrile | 0.1279 | 0.1312 | 0.1333 | 0.1469 | 0.1449 | 0.1412 | 0.1379 | 0.1376 | 5 | AVG | |
| Bromochloromethane | 0.1202 | 0.1246 | 0.1239 | 0.1349 | 0.1321 | 0.1301 | 0.1324 | 0.1283 | 4 | AVG | |
| Tetrahydrofuran | 1.0421 | 1.0386 | 1.2419 | 1.1297 | 1.3657 | 1.4221 | 1.4886 | 1.2470 | 15 | AVG | |
| Chloroform | #0.3575 | 0.3896 | 0.3506 | 0.4000 | 0.3966 | 0.3873 | 0.3822 | 0.3805 | 5 | AVG | # |
| 1,1,1-Trichloroethane | #0.3319 | 0.3922 | 0.3194 | 0.3655 | 0.3422 | 0.3419 | 0.3412 | 0.3478 | 7 | AVG | # |
| Cyclohexane | #0.3470 | 0.4113 | 0.3645 | 0.4180 | 0.4101 | 0.4134 | 0.4075 | 0.3959 | 7 | AVG | # |
| Cyclohexane(2) | #0.2687 | 0.3423 | 0.2971 | 0.3432 | 0.3342 | 0.3422 | 0.3382 | 0.3237 | 9 | AVG | # |
| Cyclohexane(3) | #0.0964 | 0.1208 | 0.1042 | 0.1221 | 0.1184 | 0.1210 | 0.1205 | 0.1148 | 9 | AVG | # |
| 1,1-Dichloropropene | 0.2765 | 0.3166 | 0.2837 | 0.3287 | 0.3218 | 0.3200 | 0.3194 | 0.3095 | 7 | AVG | |
| Carbon Tetrachloride | #0.2046 | 0.2490 | 0.2225 | 0.2690 | 0.2712 | 0.2774 | 0.2834 | 0.2539 | 12 | AVG | # |
| Isobutyl Alcohol | 0.3182 | 0.3284 | 0.3287 | 0.3597 | 0.3519 | 0.3476 | 0.3429 | 0.3396 | 4 | AVG | |
| Benzene | #0.8572 | 0.9361 | 0.8525 | 0.9667 | 0.9477 | 0.9252 | 0.9015 | 0.9124 | 5 | AVG | # |
| 1,2-Dichloroethane | #0.2889 | 0.3116 | 0.2915 | 0.3214 | 0.3232 | 0.3161 | 0.3080 | 0.3087 | 4 | AVG | # |
| 1,2-Dichloroethane(2) | #0.0134 | 0.0275 | 0.0279 | 0.0320 | 0.0308 | 0.0302 | 0.0298 | 0.0274 | 23 | AVG | #<- |
| t-Amyl methyl ether | 0.5956 | 0.6302 | 0.6087 | 0.7002 | 0.7074 | 0.6895 | 0.6501 | 0.6545 | 7 | AVG | |
| n-Heptane | 0.3402 | 0.4010 | 0.3501 | 0.3663 | 0.3616 | 0.3739 | 0.3594 | 0.3647 | 5 | AVG | |
| n-Butanol | 0.2321 | 0.2408 | 0.2553 | 0.2948 | 0.2885 | 0.3038 | 0.3010 | 0.2738 | 11 | AVG | |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 04/26/17  04/26/17

Heated Purge: (Y/N) Y  Calibration Times: 13:20  15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d  RRF 4 = la26i06.d  RRF 10= la26i05.d
RRF 20= la26i04.d  RRF 50= la26i03.d  RRF100= la26i02.d  RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | #0.2291 | 0.2376 | 0.2171 | 0.2444 | 0.2420 | 0.2413 | 0.2390 | 0.2358 | 4 | AVG # |
| Methylcyclohexane | #0.3425 | 0.4354 | 0.3756 | 0.4391 | 0.4392 | 0.4349 | 0.4416 | 0.4155 | 10 | AVG # |
| Methylcyclohexane(2) | #0.1527 | 0.1938 | 0.1685 | 0.1974 | 0.1996 | 0.1987 | 0.2016 | 0.1875 | 10 | AVG # |
| 1,2-Dichloropropane | #0.2227 | 0.2483 | 0.2358 | 0.2634 | 0.2654 | 0.2596 | 0.2533 | 0.2498 | 6 | AVG # |
| Dibromomethane | 0.1469 | 0.1540 | 0.1453 | 0.1634 | 0.1659 | 0.1621 | 0.1620 | 0.1571 | 5 | AVG |
| 1,4-Dioxane | 0.0843 | 0.0764 | 0.0797 | 0.1053 | 0.0898 | 0.0835 | 0.0793 | 0.0855 | 11 | AVG |
| Methyl Methacrylate | 0.1770 | 0.2008 | 0.1983 | 0.2262 | 0.2326 | 0.2311 | 0.2307 | 0.2138 | 10 | AVG |
| Bromodichloromethane | #0.2481 | 0.2673 | 0.2555 | 0.2955 | 0.3066 | 0.3052 | 0.3061 | 0.2835 | 9 | AVG # |
| 2-Nitropropane | 0.0655 | 0.0668 | 0.0740 | 0.0780 | 0.0927 | 0.0915 | 0.0942 | 0.0804 | 15 | AVG |
| 2-Chloroethyl Vinyl Ether | 0.1508 | 0.1784 | 0.1836 | 0.2048 | 0.2093 | 0.2102 | 0.2070 | 0.1920 | 12 | AVG |
| cis-1,3-Dichloropropene | #0.2930 | 0.3410 | 0.3372 | 0.3925 | 0.4071 | 0.4071 | 0.4084 | 0.3695 | 12 | AVG # |
| 4-Methyl-2-pentanone | #0.3194 | 0.3294 | 0.3796 | 0.3953 | 0.4247 | 0.4132 | 0.4041 | 0.3808 | 11 | AVG # |
| Toluene | #0.6827 | 0.7517 | 0.7064 | 0.7999 | 0.7677 | 0.7520 | 0.7330 | 0.7419 | 5 | AVG # |
| trans-1,3-Dichloropropene | #0.3059 | 0.3663 | 0.3795 | 0.4472 | 0.4726 | 0.4689 | 0.4716 | 0.4160 | 16 | AVG # |
| Ethyl Methacrylate | 0.3763 | 0.4210 | 0.4425 | 0.5116 | 0.5217 | 0.5113 | 0.4957 | 0.4686 | 12 | AVG |
| 1,1,2-Trichloroethane | #0.2665 | 0.2762 | 0.2728 | 0.3034 | 0.3049 | 0.2920 | 0.2854 | 0.2859 | 5 | AVG # |
| Tetrachloroethene | #0.2930 | 0.3299 | 0.3192 | 0.3548 | 0.3312 | 0.3339 | 0.3351 | 0.3281 | 6 | AVG # |
| 1,3-Dichloropropane | 0.4716 | 0.4813 | 0.4656 | 0.5287 | 0.5239 | 0.5079 | 0.4934 | 0.4961 | 5 | AVG |
| 2-Hexanone | #0.2828 | 0.3057 | 0.3608 | 0.3898 | 0.3977 | 0.3931 | 0.3768 | 0.3581 | 13 | AVG # |
| Dibromochloromethane | #0.2375 | 0.2630 | 0.2641 | 0.3102 | 0.3298 | 0.3308 | 0.3374 | 0.2961 | 14 | AVG # |
| 1,2-Dibromoethane | #0.2767 | 0.2967 | 0.2975 | 0.3352 | 0.3339 | 0.3278 | 0.3230 | 0.3130 | 7 | AVG # |
| 1-Chlorohexane | 0.4536 | 0.4352 | 0.4043 | 0.4273 | 0.4181 | 0.4234 | 0.4205 | 0.4261 | 4 | AVG |
| Chlorobenzene | #0.7867 | 0.8528 | 0.8140 | 0.9180 | 0.8874 | 0.8733 | 0.8605 | 0.8561 | 5 | AVG # |
| 1,1,1,2-Tetrachloroethane | 0.2410 | 0.2658 | 0.2572 | 0.3009 | 0.3047 | 0.3045 | 0.3048 | 0.2827 | 10 | AVG |
| Ethylbenzene | #1.3005 | 1.4333 | 1.3909 | 1.5359 | 1.4779 | 1.4625 | 1.4167 | 1.4311 | 5 | AVG # |
| m+p-Xylene | #0.4994 | 0.5538 | 0.5367 | 0.5978 | 0.5772 | 0.5732 | 0.5619 | 0.5571 | 6 | AVG # |
| o-Xylene | #0.4903 | 0.5421 | 0.5360 | 0.5924 | 0.5812 | 0.5730 | 0.5635 | 0.5541 | 6 | AVG # |
| Styrene | #0.7531 | 0.8692 | 0.8880 | 1.0054 | 0.9833 | 0.9681 | 0.9446 | 0.9159 | 10 | AVG # |
| Bromoform | #0.1549 | 0.1771 | 0.1880 | 0.2267 | 0.2449 | 0.2513 | 0.2622 | 0.2150 | 19 | AVG # |
| Isopropylbenzene | #1.2079 | 1.4227 | 1.4232 | 1.5063 | 1.4687 | 1.4666 | 1.4168 | 1.4160 | 7 | AVG # |
| Cyclohexanone | 0.2990 | 0.2968 | 0.3246 | 0.3566 | 0.3401 | 0.3292 | 0.3106 | 0.3224 | 7 | AVG |
| Bromobenzene | 0.6537 | 0.7071 | 0.6780 | 0.7611 | 0.7396 | 0.7364 | 0.7270 | 0.7147 | 5 | AVG |
| 1,1,2,2-Tetrachloroethane | #0.8142 | 0.8692 | 0.8499 | 0.9481 | 0.9471 | 0.9256 | 0.8583 | 0.8875 | 6 | AVG # |
| 1,2,3-Trichloropropane | 0.2342 | 0.2517 | 0.2412 | 0.2638 | 0.2643 | 0.2577 | 0.2432 | 0.2509 | 5 | AVG |
| trans-1,4-Dichloro-2-butene | 0.2210 | 0.2407 | 0.2456 | 0.2735 | 0.2756 | 0.2705 | 0.2534 | 0.2543 | 8 | AVG |
| n-Propylbenzene | 2.8221 | 3.2015 | 3.2581 | 3.3397 | 3.2365 | 3.2414 | 3.0068 | 3.1580 | 6 | AVG |
| 2-Chlorotoluene | 0.5895 | 0.6545 | 0.6517 | 0.6887 | 0.6778 | 0.6784 | 0.6601 | 0.6573 | 5 | AVG |
| 4-Chlorotoluene | 0.6274 | 0.6695 | 0.6724 | 0.7240 | 0.7029 | 0.7028 | 0.6895 | 0.6841 | 5 | AVG |
| 1,3,5-Trimethylbenzene | 1.8650 | 2.2247 | 2.2970 | 2.3886 | 2.3617 | 2.3625 | 2.2642 | 2.2520 | 8 | AVG |
| tert-Butylbenzene | 0.4332 | 0.4662 | 0.4786 | 0.4996 | 0.5085 | 0.5149 | 0.5065 | 0.4868 | 6 | AVG |
| Pentachloroethane | 0.3051 | 0.3420 | 0.3506 | 0.4009 | 0.4186 | 0.4307 | 0.4424 | 0.3843 | 14 | AVG |
| 1,2,4-Trimethylbenzene | 1.9827 | 2.2719 | 2.3523 | 2.4469 | 2.4266 | 2.4253 | 2.3321 | 2.3197 | 7 | AVG |
| sec-Butylbenzene | 2.4903 | 2.8982 | 2.9677 | 2.9884 | 2.9562 | 2.9854 | 2.8220 | 2.8726 | 6 | AVG |
| 1,3-Dichlorobenzene | #1.3064 | 1.3716 | 1.3473 | 1.4172 | 1.3858 | 1.3710 | 1.3255 | 1.3607 | 3 | AVG # |
| p-Isopropyltoluene | 2.1849 | 2.5019 | 2.5974 | 2.6342 | 2.6235 | 2.6717 | 2.5408 | 2.5364 | 7 | AVG |
| 1,4-Dichlorobenzene | #1.4027 | 1.4149 | 1.3899 | 1.4733 | 1.4246 | 1.4029 | 1.3406 | 1.4070 | 3 | AVG # |
| 1,2,3-Trimethylbenzene | 2.2649 | 2.4023 | 2.4235 | 2.6015 | 2.4902 | 2.4528 | 2.3775 | 2.4304 | 4 | AVG |
| Benzyl Chloride |  | 1.0778 | 1.2005 | 1.5200 | 1.6375 | 1.7029 | 1.6917 | 1.4717 | 18 | AVG |
| 1,3-Diethylbenzene | 1.3296 | 1.4969 | 1.5112 | 1.6363 | 1.5648 | 1.5488 | 1.5197 | 1.5153 | 6 | AVG |
| 1,4-Diethylbenzene | 1.4533 | 1.6043 | 1.5938 | 1.6958 | 1.6245 | 1.6050 | 1.5624 | 1.5913 | 5 | AVG |
| 1,2-Dichlorobenzene | #1.2897 | 1.3533 | 1.3092 | 1.4015 | 1.3684 | 1.3483 | 1.2923 | 1.3375 | 3 | AVG # |
| n-Butylbenzene | 1.2065 | 1.3017 | 1.3115 | 1.2971 | 1.2671 | 1.2809 | 1.2043 | 1.2670 | 4 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 04/26/17 04/26/17

Heated Purge: (Y/N) Y Calibration Times: 13:20 15:32

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = la26i07.d RRF 4 = la26i06.d RRF 10= la26i05.d
RRF 20= la26i04.d RRF 50= la26i03.d RRF100= la26i02.d RRF300= la26i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diethylbenzene | 1.1319 | 1.2774 | 1.2787 | 1.3659 | 1.3106 | 1.2945 | 1.2676 | 1.2752 | 6 | AVG |
| 1,2-Dibromo-3-chloropropane# | 0.1623 | 0.1719 | 0.1751 | 0.2007 | 0.2065 | 0.2045 | 0.1928 | 0.1877 | 9 | AVG # |
| 1,3,5-Trichlorobenzene | | 1.1060 | 1.0957 | 1.0943 | 1.0851 | 1.0959 | 1.0293 | 1.0844 | 3 | AVG |
| 1,2,4-Trichlorobenzene # | | 1.0544 | 1.0590 | 1.0780 | 1.0666 | 1.0670 | 0.9865 | 1.0519 | 3 | AVG # |
| Hexachlorobutadiene | | 0.4890 | 0.4549 | 0.4629 | 0.4481 | 0.4651 | 0.4211 | 0.4568 | 5 | AVG |
| Naphthalene | 3.0754 | 3.0911 | 3.1332 | 3.3963 | 3.3573 | 3.2808 | 2.8858 | 3.1742 | 6 | AVG |
| 1,2,3-Trichlorobenzene | | 1.0198 | 1.0312 | 1.0550 | 1.0298 | 1.0226 | 0.9306 | 1.0148 | 4 | AVG |
| 2-Methylnaphthalene | | 1.9258 | 2.0069 | 2.2473 | 2.1829 | 2.1335 | 1.8189 | 2.0525 | 8 | AVG |
| Dibromofluoromethane | 0.2444 | 0.2422 | 0.2443 | 0.2417 | 0.2460 | 0.2463 | 0.2442 | 0.2441 | 1 | AVG |
| Dibromofluoromethane(2) | 0.2484 | 0.2493 | 0.2512 | 0.2479 | 0.2518 | 0.2517 | 0.2511 | 0.2502 | 1 | AVG |
| 1,2-Dichloroethane-d4 | 0.0609 | 0.0612 | 0.0603 | 0.0600 | 0.0609 | 0.0616 | 0.0602 | 0.0607 | 1 | AVG |
| 1,2-Dichloroethane-d4(2) | 0.2880 | 0.2902 | 0.2913 | 0.2865 | 0.2857 | 0.2879 | 0.2807 | 0.2872 | 1 | AVG |
| 1,2-Dichloroethane-d4(3) | 0.0378 | 0.0385 | 0.0394 | 0.0383 | 0.0385 | 0.0387 | 0.0385 | 0.0385 | 1 | AVG |
| Toluene-d8 | 1.2792 | 1.2789 | 1.2799 | 1.2875 | 1.2795 | 1.2720 | 1.2596 | 1.2766 | 1 | AVG |
| Toluene-d8(2) | 0.8411 | 0.8411 | 0.8400 | 0.8460 | 0.8426 | 0.8383 | 0.8385 | 0.8411 | 0 | AVG |
| 4-Bromofluorobenzene | 0.4774 | 0.4787 | 0.4758 | 0.4766 | 0.4724 | 0.4722 | 0.4686 | 0.4745 | 1 | AVG |
| 4-Bromofluorobenzene(2) | 0.4208 | 0.4208 | 0.4169 | 0.4148 | 0.4132 | 0.4117 | 0.4155 | 0.4162 | 1 | AVG |

Average %RSD 7

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

| | |
|---|---|
| /chem/HP09915.i/17apr26a.b/la26i01.d | VSTD300 |
| /chem/HP09915.i/17apr26a.b/la26i02.d | VSTD100 |
| /chem/HP09915.i/17apr26a.b/la26i03.d | VSTD050 |
| /chem/HP09915.i/17apr26a.b/la26i04.d | VSTD020 |
| /chem/HP09915.i/17apr26a.b/la26i05.d | VSTD010 |
| /chem/HP09915.i/17apr26a.b/la26i06.d | VSTD004 |
| /chem/HP09915.i/17apr26a.b/la26i07.d | VSTD001 |

Area Summary

File ID:

| Internal Standard Name | la26i01.d | la26i02.d | la26i03.d | la26i04.d | la26i05.d | la26i06.d | la26i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 169188 | 183612 | 194134 | 210810 | 194850 | 205105 | 204400 | 194586 | 7 | Yes |
| Fluorobenzene | 1047200 | 1062919 | 1036296 | 1038230 | 1049965 | 1046774 | 1036977 | 1045480 | 1 | Yes |
| Chlorobenzene-d5 | 832450 | 834937 | 803001 | 793538 | 806654 | 805037 | 790373 | 809427 | 2 | Yes |
| 1,4-Dichlorobenzene-d4 | 451513 | 443338 | 430663 | 425437 | 429808 | 433758 | 428650 | 434738 | 2 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | la26i01.d | la26i02.d | la26i03.d | la26i04.d | la26i05.d | la26i06.d | la26i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 3.578 | 3.584 | 3.565 | 3.578 | 3.565 | 3.574 | 3.581 | 3.575 |
| Fluorobenzene | 7.057 | 7.057 | 7.053 | 7.053 | 7.050 | 7.053 | 7.050 | 7.053 |
| Chlorobenzene-d5 | 10.712 | 10.713 | 10.712 | 10.709 | 10.709 | 10.709 | 10.709 | 10.711 |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 | 12.642 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 04/26/2017 at 16:04.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.2979 | 0.2605 | 17.49 | 20 | -13 | # |
| # | Chloromethane | 0.3060 | 0.2823 | 18.45 | 20 | -8 | # |
| \| | 1,3-Butadiene | 0.1802 | 0.2800 | 31.07 | 20 | 55 | \|<- |
| # | Vinyl Chloride | 0.2955 | 0.2777 | 18.80 | 20 | -6 | # |
| # | Bromomethane | 0.1987 | 0.1876 | 18.88 | 20 | -6 | # |
| # | Chloroethane | 0.1665 | 0.1559 | 18.73 | 20 | -6 | # |
| \| | Dichlorofluoromethane | 0.4062 | 0.4016 | 19.77 | 20 | -1 | \| |
| \| | n-Pentane | 0.2818 | 0.3710 | 26.34 | 20 | 32 | \|<- |
| # | Trichlorofluoromethane | 0.3422 | 0.3370 | 19.70 | 20 | -1 | # |
| \| | Ethyl ether | 0.1905 | 0.1869 | 19.62 | 20 | -2 | \| |
| \| | Freon 123a | 0.2279 | 0.2357 | 20.69 | 20 | 3 | \| |
| \| | Acrolein | 2.0465 | 1.2690 | 93.01 | 150 | -38 | \|<- |
| # | 1,1-Dichloroethene | 0.1811 | 0.2024 | 22.36 | 20 | 12 | # |
| # | Acetone | 0.8882 | 0.8195 | 138.39 | 150 | -8 | # |
| # | Freon 113 | 0.1823 | 0.2076 | 22.78 | 20 | 14 | # |
| \| | 2-Propanol | 0.5888 | 0.5195 | 132.34 | 150 | -12 | \| |
| \| | Methyl Iodide | 0.3513 | 0.3762 | 21.42 | 20 | 7 | \| |
| # | Carbon Disulfide | 0.5893 | 0.6570 | 22.30 | 20 | 11 | # |
| \| | Allyl Chloride | 0.3627 | 0.3572 | 19.69 | 20 | -2 | \| |
| # | Methyl Acetate | 0.2628 | 0.2584 | 19.66 | 20 | -2 | # |
| # | Methylene Chloride | 0.2392 | 0.2381 | 19.90 | 20 | 0 | # |
| \| | t-Butyl alcohol | 0.9673 | 0.8975 | 185.56 | 200 | -7 | \| |
| \| | Acrylonitrile | 0.1380 | 0.1313 | 95.14 | 100 | -5 | \| |
| # | trans-1,2-Dichloroethene | 0.2125 | 0.2299 | 21.64 | 20 | 8 | # |
| # | Methyl Tertiary Butyl Ether | 0.6634 | 0.6558 | 19.77 | 20 | -1 | # |
| \| | n-Hexane | 0.3257 | 0.3535 | 21.71 | 20 | 9 | \| |
| # | 1,1-Dichloroethane | 0.3993 | 0.4121 | 20.64 | 20 | 3 | # |
| \| | di-Isopropyl ether | 0.7663 | 0.7768 | 20.28 | 20 | 1 | \| |
| \| | 2-Chloro-1,3-butadiene | 0.3368 | 0.3399 | 20.18 | 20 | 1 | \| |
| \| | Ethyl t-butyl ether | 0.6595 | 0.6369 | 19.32 | 20 | -3 | \| |
| # | cis-1,2-Dichloroethene | 0.2435 | 0.2490 | 20.45 | 20 | 2 | # |
| # | 2-Butanone | 0.1848 | 0.1714 | 139.09 | 150 | -7 | # |
| \| | 2,2-Dichloropropane | 0.2666 | 0.2562 | 19.23 | 20 | -4 | \| |
| \| | Propionitrile | 1.4118 | 1.3352 | 141.87 | 150 | -5 | \| |
| \| | Methacrylonitrile | 0.1376 | 0.1355 | 147.71 | 150 | -2 | \| |
| \| | Bromochloromethane | 0.1283 | 0.1260 | 19.64 | 20 | -2 | \| |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.2470 | 1.1660 | 93.51 | 100 | -6 | |
| # | Chloroform | 0.3805 | 0.3823 | 20.09 | 20 | 0 | # |
| # | 1,1,1-Trichloroethane | 0.3478 | 0.3382 | 19.45 | 20 | -3 | # |
| # | Cyclohexane | 0.3959 | 0.3959 | 20.00 | 20 | 0 | # |
| | 1,1-Dichloropropene | 0.3095 | 0.2993 | 19.34 | 20 | -3 | |
| # | Carbon Tetrachloride | 0.2539 | 0.2483 | 19.57 | 20 | -2 | # |
| | Isobutyl Alcohol | 0.3396 | 0.3237 | 476.51 | 500 | -5 | |
| # | Benzene | 0.9124 | 0.9212 | 20.19 | 20 | 1 | # |
| # | 1,2-Dichloroethane | 0.3087 | 0.3133 | 20.30 | 20 | 2 | # |
| | t-Amyl methyl ether | 0.6545 | 0.6265 | 19.14 | 20 | -4 | |
| | n-Heptane | 0.3647 | 0.3640 | 19.96 | 20 | 0 | |
| | n-Butanol | 0.2738 | 0.2575 | 940.39 | 1000 | -6 | |
| # | Trichloroethene | 0.2358 | 0.2353 | 19.96 | 20 | 0 | # |
| # | Methylcyclohexane | 0.4155 | 0.4168 | 20.06 | 20 | 0 | # |
| # | 1,2-Dichloropropane | 0.2498 | 0.2524 | 20.21 | 20 | 1 | # |
| | Dibromomethane | 0.1571 | 0.1582 | 20.14 | 20 | 1 | |
| | 1,4-Dioxane | 0.0855 | 0.0944 | 552.41 | 500 | 10 | |
| | Methyl Methacrylate | 0.2138 | 0.2084 | 19.49 | 20 | -3 | |
| # | Bromodichloromethane | 0.2835 | 0.2745 | 19.37 | 20 | -3 | # |
| | 2-Nitropropane | 0.0804 | 0.0666 | 16.57 | 20 | -17 | |
| | 2-Chloroethyl Vinyl Ether | 0.1920 | 0.1805 | 18.80 | 20 | -6 | |
| # | cis-1,3-Dichloropropene | 0.3695 | 0.3611 | 19.55 | 20 | -2 | # |
| # | 4-Methyl-2-pentanone | 0.3808 | 0.3600 | 94.52 | 100 | -5 | # |
| # | Toluene | 0.7419 | 0.7452 | 20.09 | 20 | 0 | # |
| # | trans-1,3-Dichloropropene | 0.4160 | 0.4154 | 19.97 | 20 | 0 | # |
| | Ethyl Methacrylate | 0.4686 | 0.4750 | 20.27 | 20 | 1 | |
| # | 1,1,2-Trichloroethane | 0.2859 | 0.2905 | 20.32 | 20 | 2 | # |
| # | Tetrachloroethene | 0.3281 | 0.3228 | 19.68 | 20 | -2 | # |
| | 1,3-Dichloropropane | 0.4961 | 0.4971 | 20.04 | 20 | 0 | |
| # | 2-Hexanone | 0.3581 | 0.3396 | 94.83 | 100 | -5 | # |
| # | Dibromochloromethane | 0.2961 | 0.2792 | 18.86 | 20 | -6 | # |
| # | 1,2-Dibromoethane | 0.3130 | 0.3224 | 20.60 | 20 | 3 | # |
| | 1-Chlorohexane | 0.4261 | 0.4012 | 18.83 | 20 | -6 | |
| # | Chlorobenzene | 0.8561 | 0.8413 | 19.65 | 20 | -2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2827 | 0.2699 | 19.10 | 20 | -5 | |
| # | Ethylbenzene | 1.4311 | 1.4100 | 19.70 | 20 | -1 | # |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 17:25

Lab File ID: la26s01.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | m+p-Xylene | 0.5571 | 0.5494 | 39.45 | 40 | -1 | # |
| # | o-Xylene | 0.5541 | 0.5404 | 19.51 | 20 | -2 | # |
| # | Styrene | 0.9159 | 0.9324 | 20.36 | 20 | 2 | # |
| # | Bromoform | 0.2150 | 0.1947 | 18.11 | 20 | -9 | # |
| # | Isopropylbenzene | 1.4160 | 1.4202 | 20.06 | 20 | 0 | # |
| | Cyclohexanone | 0.3224 | 0.3366 | 522.07 | 500 | 4 | |
| | Bromobenzene | 0.7147 | 0.6986 | 19.55 | 20 | -2 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8875 | 0.8909 | 20.08 | 20 | 0 | # |
| | 1,2,3-Trichloropropane | 0.2509 | 0.2569 | 20.48 | 20 | 2 | |
| | trans-1,4-Dichloro-2-butene | 0.2543 | 0.2468 | 97.04 | 100 | -3 | |
| | n-Propylbenzene | 3.1580 | 3.0963 | 19.61 | 20 | -2 | |
| | 2-Chlorotoluene | 0.6573 | 0.6330 | 19.26 | 20 | -4 | |
| | 4-Chlorotoluene | 0.6841 | 0.6691 | 19.56 | 20 | -2 | |
| | 1,3,5-Trimethylbenzene | 2.2520 | 2.1982 | 19.52 | 20 | -2 | |
| | tert-Butylbenzene | 0.4868 | 0.4796 | 19.70 | 20 | -1 | |
| | Pentachloroethane | 0.3843 | 0.3671 | 19.10 | 20 | -4 | |
| | 1,2,4-Trimethylbenzene | 2.3197 | 2.2673 | 19.55 | 20 | -2 | |
| | sec-Butylbenzene | 2.8726 | 2.8359 | 19.74 | 20 | -1 | |
| # | 1,3-Dichlorobenzene | 1.3607 | 1.2946 | 19.03 | 20 | -5 | # |
| | p-Isopropyltoluene | 2.5364 | 2.4766 | 19.53 | 20 | -2 | |
| # | 1,4-Dichlorobenzene | 1.4070 | 1.3571 | 19.29 | 20 | -4 | # |
| | 1,2,3-Trimethylbenzene | 2.4304 | 2.4322 | 20.02 | 20 | 0 | |
| | Benzyl Chloride | 1.4717 | 1.2688 | 17.24 | 20 | -14 | |
| | 1,3-Diethylbenzene | 1.5153 | 1.4812 | 19.55 | 20 | -2 | |
| | 1,4-Diethylbenzene | 1.5913 | 1.5419 | 19.38 | 20 | -3 | |
| # | 1,2-Dichlorobenzene | 1.3375 | 1.2970 | 19.39 | 20 | -3 | # |
| | n-Butylbenzene | 1.2670 | 1.2177 | 19.22 | 20 | -4 | |
| | 1,2-Diethylbenzene | 1.2752 | 1.2547 | 19.68 | 20 | -2 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1877 | 0.1770 | 18.86 | 20 | -6 | # |
| | 1,3,5-Trichlorobenzene | 1.0844 | 1.0144 | 18.71 | 20 | -6 | |
| # | 1,2,4-Trichlorobenzene | 1.0519 | 0.9806 | 18.64 | 20 | -7 | # |
| | Hexachlorobutadiene | 0.4568 | 0.3983 | 17.44 | 20 | -13 | |
| | Naphthalene | 3.1742 | 3.1214 | 19.67 | 20 | -2 | |
| | 1,2,3-Trichlorobenzene | 1.0148 | 0.9259 | 18.25 | 20 | -9 | |
| | 2-Methylnaphthalene | 2.0525 | 1.8562 | 18.09 | 20 | -10 | |

Average %Drift 5

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

page 3 of 3 FORM VII VOA

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 04/26/17 Time: 18:34

Lab File ID: la26s01a.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Acrolein | 2.0465 | 1.8187 | 133.30 | 150 | -11 |

Average %Drift 11

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

# Lancaster Laboratories
## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09915.i/17apr26a.b/la26i07.d
/chem/HP09915.i/17apr26a.b/la26i06.d
/chem/HP09915.i/17apr26a.b/la26i05.d
/chem/HP09915.i/17apr26a.b/la26i04.d
/chem/HP09915.i/17apr26a.b/la26i03.d
/chem/HP09915.i/17apr26a.b/la26i02.d
/chem/HP09915.i/17apr26a.b/la26i01.d

File /chem/HP09915.i/17apr26a.b/la26i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP09915.i/17jul31b.b/l131c05.d

RT Summary

| Internal Standard Name | File ID: l131c05.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 3.571 | 3.565 | Yes |
| Fluorobenzene | 7.047 | 7.053 | Yes |
| Chlorobenzene-d5 | 10.709 | 10.712 | Yes |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.642 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: l131c05.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 183829 | 194134 | 97067 | 388268 | Yes |
| Fluorobenzene | 893571 | 1036296 | 518148 | 2072592 | Yes |
| Chlorobenzene-d5 | 732516 | 803001 | 401500 | 1606002 | Yes |
| 1,4-Dichlorobenzene-d4 | 431425 | 430663 | 215332 | 861326 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/31/17 Time: 21:30

Lab File ID: ll31c05.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Dichlorodifluoromethane | 0.2979 | 0.3333 | 55.95 | 50 | 12 | # |
| # Chloromethane | 0.3060 | 0.3148 | 51.44 | 50 | 3 | # |
| 1,3-Butadiene | 0.1802 | 0.0975 | 27.04 | 50 | -46 | <- |
| # Vinyl Chloride | 0.2955 | 0.3053 | 51.67 | 50 | 3 | # |
| # Bromomethane | 0.1987 | 0.2223 | 55.94 | 50 | 12 | # |
| # Chloroethane | 0.1665 | 0.1764 | 52.98 | 50 | 6 | # |
| n-Pentane | 0.2818 | 0.0894 | 15.86 | 50 | -68 | <- |
| # Trichlorofluoromethane | 0.3422 | 0.4324 | 63.18 | 50 | 26 | #<- |
| Ethyl ether | 0.1905 | 0.1895 | 49.75 | 50 | -1 | |
| Freon 123a | 0.2279 | 0.2249 | 49.35 | 50 | -1 | |
| Acrolein | 2.0465 | 1.4913 | 364.35 | 500 | -27 | <- |
| # 1,1-Dichloroethene | 0.1811 | 0.1213 | 33.50 | 50 | -33 | #<- |
| # 1,1-Dichloroethene(2) | 0.0917 | 0.0654 | 35.68 | 50 | -29 | #<- |
| # Acetone | 0.8882 | 0.7429 | 83.64 | 100 | -16 | # |
| # Freon 113 | 0.1823 | 0.1433 | 39.30 | 50 | -21 | #<- |
| 2-Propanol | 0.5888 | 0.5821 | 247.16 | 250 | -1 | |
| Methyl Iodide | 0.3513 | 0.2590 | 36.86 | 50 | -26 | <- |
| # Carbon Disulfide | 0.5893 | 0.3032 | 25.72 | 50 | -49 | #<- |
| Allyl Chloride | 0.3627 | 0.3066 | 42.26 | 50 | -15 | |
| # Methyl Acetate | 0.2628 | 0.2304 | 43.84 | 50 | -12 | # |
| # Methylene Chloride | 0.2392 | 0.1936 | 40.46 | 50 | -19 | # |
| t-Butyl alcohol | 0.9673 | 1.0984 | 283.89 | 250 | 14 | |
| Acrylonitrile | 0.1380 | 0.1241 | 44.96 | 50 | -10 | |
| # trans-1,2-Dichloroethene | 0.2125 | 0.1819 | 42.80 | 50 | -14 | # |
| # Methyl Tertiary Butyl Ether | 0.6634 | 0.6784 | 51.13 | 50 | 2 | # |
| n-Hexane | 0.3257 | 0.1677 | 25.74 | 50 | -49 | <- |
| # 1,1-Dichloroethane | 0.3993 | 0.3520 | 44.08 | 50 | -12 | # |
| di-Isopropyl ether | 0.7663 | 0.6565 | 42.84 | 50 | -14 | |
| 2-Chloro-1,3-butadiene | 0.3368 | 0.3280 | 48.70 | 50 | -3 | |
| Ethyl t-butyl ether | 0.6595 | 0.6550 | 49.66 | 50 | -1 | |
| # cis-1,2-Dichloroethene | 0.2435 | 0.2332 | 47.90 | 50 | -4 | # |
| # 2-Butanone | 0.1848 | 0.1646 | 89.06 | 100 | -11 | # |
| 2,2-Dichloropropane | 0.2666 | 0.3133 | 58.77 | 50 | 18 | |
| Propionitrile | 1.4118 | 1.2095 | 214.17 | 250 | -14 | |
| Methacrylonitrile | 0.1376 | 0.1336 | 121.40 | 125 | -3 | |
| Bromochloromethane | 0.1283 | 0.1342 | 52.29 | 50 | 5 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/31/17 Time: 21:30

Lab File ID: l131c05.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| Tetrahydrofuran | 1.2470 | 1.0481 | 84.05 | 100 | -16 | |
| # Chloroform | 0.3805 | 0.4233 | 55.62 | 50 | 11 | # |
| # 1,1,1-Trichloroethane | 0.3478 | 0.3735 | 53.70 | 50 | 7 | # |
| # Cyclohexane | 0.3959 | 0.2714 | 34.28 | 50 | -31 | #<- |
| # Cyclohexane(2) | 0.3237 | 0.2366 | 36.54 | 50 | -27 | #<- |
| # Cyclohexane(3) | 0.1148 | 0.0841 | 36.66 | 50 | -27 | #<- |
| 1,1-Dichloropropene | 0.3095 | 0.2898 | 46.81 | 50 | -6 | |
| # Carbon Tetrachloride | 0.2539 | 0.2998 | 59.04 | 50 | 18 | # |
| Isobutyl Alcohol | 0.3396 | 0.3956 | 728.11 | 625 | 16 | |
| # Benzene | 0.9124 | 0.8445 | 46.28 | 50 | -7 | # |
| # 1,2-Dichloroethane | 0.3087 | 0.3859 | 62.51 | 50 | 25 | #<- |
| # 1,2-Dichloroethane(2) | 0.0274 | 0.0308 | 56.27 | 50 | 13 | #<- |
| t-Amyl methyl ether | 0.6545 | 0.6768 | 51.70 | 50 | 3 | |
| n-Heptane | 0.3647 | 0.2494 | 34.20 | 50 | -32 | <- |
| n-Butanol | 0.2738 | 0.3036 | 1386.32 | 1250 | 11 | |
| # Trichloroethene | 0.2358 | 0.2443 | 51.81 | 50 | 4 | # |
| # Methylcyclohexane | 0.4155 | 0.3627 | 43.65 | 50 | -13 | # |
| # Methylcyclohexane(2) | 0.1875 | 0.1667 | 44.47 | 50 | -11 | # |
| # 1,2-Dichloropropane | 0.2498 | 0.2362 | 47.28 | 50 | -5 | # |
| Dibromomethane | 0.1571 | 0.1778 | 56.60 | 50 | 13 | |
| 1,4-Dioxane | 0.0855 | 0.1102 | 806.01 | 625 | 29 | <- |
| Methyl Methacrylate | 0.2138 | 0.2176 | 50.90 | 50 | 2 | |
| # Bromodichloromethane | 0.2835 | 0.3346 | 59.02 | 50 | 18 | # |
| 2-Nitropropane | 0.0804 | 0.0990 | 123.12 | 100 | 23 | <- |
| 2-Chloroethyl Vinyl Ether | 0.1920 | 0.1863 | 48.53 | 50 | -3 | |
| # cis-1,3-Dichloropropene | 0.3695 | 0.3907 | 52.88 | 50 | 6 | # |
| # 4-Methyl-2-pentanone | 0.3808 | 0.3510 | 92.16 | 100 | -8 | # |
| # Toluene | 0.7419 | 0.7267 | 48.98 | 50 | -2 | # |
| # trans-1,3-Dichloropropene | 0.4160 | 0.4629 | 55.63 | 50 | 11 | # |
| Ethyl Methacrylate | 0.4686 | 0.4782 | 51.03 | 50 | 2 | |
| # 1,1,2-Trichloroethane | 0.2859 | 0.2935 | 51.34 | 50 | 3 | # |
| # Tetrachloroethene | 0.3281 | 0.3539 | 53.93 | 50 | 8 | # |
| 1,3-Dichloropropane | 0.4961 | 0.4945 | 49.84 | 50 | 0 | |
| # 2-Hexanone | 0.3581 | 0.3227 | 90.12 | 100 | -10 | # |
| # Dibromochloromethane | 0.2961 | 0.3350 | 56.57 | 50 | 13 | # |
| # 1,2-Dibromoethane | 0.3130 | 0.3317 | 52.98 | 50 | 6 | # |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/31/17 Time: 21:30

Lab File ID: l131c05.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| 1-Chlorohexane | 0.4261 | 0.3963 | 46.51 | 50 | -7 | |
| # Chlorobenzene | 0.8561 | 0.8853 | 51.71 | 50 | 3 | # |
| 1,1,1,2-Tetrachloroethane | 0.2827 | 0.3256 | 57.59 | 50 | 15 | |
| # Ethylbenzene | 1.4311 | 1.5034 | 52.53 | 50 | 5 | # |
| # m+p-Xylene | 0.5571 | 0.5820 | 104.46 | 100 | 4 | # |
| # o-Xylene | 0.5541 | 0.5758 | 51.96 | 50 | 4 | # |
| # Styrene | 0.9159 | 0.9966 | 54.40 | 50 | 9 | # |
| # Bromoform | 0.2150 | 0.2593 | 60.31 | 50 | 21 | #<- |
| # Isopropylbenzene | 1.4160 | 1.5572 | 54.98 | 50 | 10 | # |
| Cyclohexanone | 0.3224 | 0.6013 | 1165.65 | 625 | 87 | <- |
| Bromobenzene | 0.7147 | 0.7222 | 50.53 | 50 | 1 | |
| # 1,1,2,2-Tetrachloroethane | 0.8875 | 0.8466 | 47.70 | 50 | -5 | # |
| 1,2,3-Trichloropropane | 0.2509 | 0.2736 | 54.52 | 50 | 9 | |
| trans-1,4-Dichloro-2-butene | 0.2543 | 0.2101 | 103.25 | 125 | -17 | |
| n-Propylbenzene | 3.1580 | 3.1257 | 49.49 | 50 | -1 | |
| 2-Chlorotoluene | 0.6573 | 0.6426 | 48.88 | 50 | -2 | |
| 4-Chlorotoluene | 0.6841 | 0.6810 | 49.77 | 50 | 0 | |
| 1,3,5-Trimethylbenzene | 2.2520 | 2.3916 | 53.10 | 50 | 6 | |
| tert-Butylbenzene | 0.4868 | 0.4826 | 49.56 | 50 | -1 | |
| Pentachloroethane | 0.3843 | 0.3938 | 51.24 | 50 | 2 | |
| 1,2,4-Trimethylbenzene | 2.3197 | 2.4483 | 52.77 | 50 | 6 | |
| sec-Butylbenzene | 2.8726 | 2.9065 | 50.59 | 50 | 1 | |
| # 1,3-Dichlorobenzene | 1.3607 | 1.3728 | 50.45 | 50 | 1 | # |
| p-Isopropyltoluene | 2.5364 | 2.6388 | 52.02 | 50 | 4 | |
| # 1,4-Dichlorobenzene | 1.4070 | 1.4047 | 49.92 | 50 | 0 | # |
| 1,2,3-Trimethylbenzene | 2.4304 | 2.4435 | 50.27 | 50 | 1 | |
| Benzyl Chloride | 1.4717 | 1.6924 | 57.50 | 50 | 15 | |
| 1,3-Diethylbenzene | 1.5153 | 1.4947 | 49.32 | 50 | -1 | |
| 1,4-Diethylbenzene | 1.5913 | 1.5560 | 48.89 | 50 | -2 | |
| # 1,2-Dichlorobenzene | 1.3375 | 1.3822 | 51.67 | 50 | 3 | # |
| n-Butylbenzene | 1.2670 | 1.2632 | 49.85 | 50 | 0 | |
| 1,2-Diethylbenzene | 1.2752 | 1.2687 | 49.74 | 50 | -1 | |
| # 1,2-Dibromo-3-chloropropane | 0.1877 | 0.2234 | 59.51 | 50 | 19 | # |
| 1,3,5-Trichlorobenzene | 1.0844 | 1.1389 | 52.51 | 50 | 5 | |
| # 1,2,4-Trichlorobenzene | 1.0519 | 1.0615 | 50.46 | 50 | 1 | # |
| Hexachlorobutadiene | 0.4568 | 0.4735 | 51.83 | 50 | 4 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 07/31/17 Time: 21:30

Lab File ID: l131c05.d Init. Calib. Date(s): 04/26/17 04/26/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Naphthalene | 3.1742 | 3.2260 | 50.81 | 50 | 2 |
| 1,2,3-Trichlorobenzene | 1.0148 | 1.0334 | 50.91 | 50 | 2 |
| 2-Methylnaphthalene | 2.0525 | 1.8228 | 44.40 | 50 | -11 |
| Dibromofluoromethane | 0.2441 | 0.2689 | 55.06 | 50 | 10 |
| Dibromofluoromethane(2) | 0.2502 | 0.2768 | 55.32 | 50 | 11 |
| 1,2-Dichloroethane-d4 | 0.0607 | 0.0615 | 50.64 | 50 | 1 |
| 1,2-Dichloroethane-d4(2) | 0.2872 | 0.3742 | 65.16 | 50 | 30 |
| 1,2-Dichloroethane-d4(3) | 0.0385 | 0.0403 | 52.35 | 50 | 5 |
| Toluene-d8 | 1.2766 | 1.2652 | 49.55 | 50 | -1 |
| Toluene-d8(2) | 0.8411 | 0.8112 | 48.23 | 50 | -4 |
| 4-Bromofluorobenzene | 0.4745 | 0.5127 | 54.02 | 50 | 8 |
| 4-Bromofluorobenzene(2) | 0.4162 | 0.4574 | 54.94 | 50 | 10 |

Average %Drift 12

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem/HP09915.i/17jul31b.b/l131ec5.d
Report Date: 08/01/2017 07:55

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i
Client ID: SECC050
Lab Sample ID: SECC050
Sublist used: 24689.sub

Injection Date and Time: 01-AUG-2017 07:11
Initial Calibration Date(s): 13-FEB-2017 28-APR-2017
Initial Calibration Time(s): 13:59 12:18
Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Methylene Chloride | 0.23923 | 0.19430 | 0.01 | -18.8 | 50.0 |
| Methyl Tertiary Butyl Ether | 0.66341 | 0.67761 | 0.01 | 2.1 | 50.0 |
| 1,1-Dichloroethane | 0.39926 | 0.36342 | 0.01 | -9.0 | 50.0 |
| cis-1,2-Dichloroethene | 0.24347 | 0.23138 | 0.01 | -5.0 | 50.0 |
| Chloroform | 0.38056 | 0.41647 | 0.01 | 9.4 | 50.0 |
| Benzene | 0.91241 | 0.83860 | 0.01 | -8.1 | 50.0 |
| 1,2-Dichloroethane | 0.30868 | 0.37048 | 0.01 | 20.0 | 50.0 |
| Trichloroethene | 0.23579 | 0.23917 | 0.01 | 1.4 | 50.0 |
| Toluene | 0.74189 | 0.71182 | 0.01 | -4.1 | 50.0 |
| 1,1,2-Trichloroethane | 0.28588 | 0.28877 | 0.01 | 1.0 | 50.0 |
| Tetrachloroethene | 0.32814 | 0.38125 | 0.01 | 16.2 | 50.0 |
| Dibromochloromethane | 0.29611 | 0.33125 | 0.01 | 11.9 | 50.0 |
| 1,2-Dibromoethane | 0.31297 | 0.32380 | 0.01 | 3.5 | 50.0 |
| Ethylbenzene | 1.43108 | 1.48133 | 0.01 | 3.5 | 50.0 |
| m+p-Xylene | 0.55713 | 0.57143 | 0.01 | 2.6 | 50.0 |
| o-Xylene | 0.55407 | 0.56903 | 0.01 | 2.7 | 50.0 |
| Xylene (Total) | 0.55611 | 0.57063 | 0.01 | 2.6 | 50.0 |
| 1,1,2,2-Tetrachloroethane | 0.88749 | 0.83320 | 0.01 | -6.1 | 50.0 |
| Naphthalene | 3.17425 | 3.13939 | 0.01 | -1.1 | 50.0 |
| **Surrogate Standards** | **ICAL Avg. RRF** | **SECC RRF** | **Min. RRF** | **% Diff.** | **Max. %Diff.** |
| Dibromofluoromethane | 0.24416 | 0.26554 | 0.01 | 8.8 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06071 | 0.06248 | 0.01 | 2.9 | 20.5 |
| Toluene-d8 | 1.27666 | 1.26919 | 0.01 | -0.6 | 20.5 |
| 4-Bromofluorobenzene | 0.47452 | 0.51049 | 0.01 | 7.6 | 20.5 |

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR191___

Lab File ID (Standard): l131c05.d Date Analyzed: 07/31/17

Instrument ID: HP09915 Time Analyzed: 21:30

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 183829 | 3.571 | 893571 | 7.047 | 732516 | 10.709 | 431425 | 12.642 |
| UPPER LIMIT | 367658 | 4.071 | 1787142 | 7.547 | 1465032 | 11.209 | 862850 | 13.142 |
| LOWER LIMIT | 91914 | 3.071 | 446786 | 6.547 | 366258 | 10.209 | 215712 | 12.142 |
| LAB SAMPLE ID | | | | | | | | |
| 01 LCSL94 | 192824 | 3.581 | 949944 | 7.053 | 763878 | 10.709 | 443494 | 12.638 |
| 02 LCDL94 | 197881 | 3.574 | 960792 | 7.047 | 770857 | 10.709 | 444208 | 12.638 |
| 03 VBLKL94 | 179967 | 3.574 | 923444 | 7.047 | 748027 | 10.709 | 425230 | 12.638 |
| 04 9121682 | 196618 | 3.578 | 930835 | 7.047 | 743883 | 10.706 | 412541 | 12.642 |
| 05 9121695 | 178601 | 3.578 | 871132 | 7.047 | 703920 | 10.709 | 396539 | 12.642 |
| 06 9124762 | 169547 | 3.568 | 838068 | 7.050 | 685573 | 10.709 | 387697 | 12.642 |
| 07 9121683 | 169613 | 3.571 | 844349 | 7.044 | 680272 | 10.709 | 385318 | 12.638 |
| 08 9121684MS | 174781 | 3.578 | 885073 | 7.047 | 714281 | 10.709 | 416478 | 12.638 |
| 09 9121685MSD | 192183 | 3.568 | 908047 | 7.047 | 735693 | 10.709 | 428791 | 12.642 |
| 10 9121064 | 176778 | 3.571 | 871270 | 7.047 | 698122 | 10.709 | 395566 | 12.638 |
| 11 9121065 | 175387 | 3.568 | 860097 | 7.047 | 685273 | 10.709 | 390089 | 12.638 |
| 12 9121066 | 165924 | 3.568 | 843868 | 7.047 | 679013 | 10.709 | 383094 | 12.638 |
| 13 9121074 | 165428 | 3.568 | 827991 | 7.047 | 667941 | 10.709 | 380630 | 12.642 |
| 14 9121674 | 164031 | 3.584 | 823814 | 7.050 | 662336 | 10.709 | 380534 | 12.642 |
| 15 9121676 | 162313 | 3.588 | 811511 | 7.057 | 661709 | 10.709 | 368844 | 12.642 |
| 16 9121678 | 158665 | 3.584 | 802344 | 7.054 | 648558 | 10.709 | 365104 | 12.642 |
| 17 9121680 | 161222 | 3.558 | 796161 | 7.047 | 659246 | 10.709 | 381590 | 12.642 |
| 18 9121691 | 152699 | 3.565 | 789755 | 7.050 | 642491 | 10.709 | 367619 | 12.642 |
| 19 9121693 | 157046 | 3.562 | 782659 | 7.050 | 651208 | 10.709 | 357862 | 12.642 |
| 20 9121696 | 153762 | 3.568 | 790247 | 7.047 | 635796 | 10.709 | 357815 | 12.642 |
| 21 9124755 | 151921 | 3.578 | 775392 | 7.054 | 632591 | 10.709 | 355658 | 12.642 |
| 22 9124756 | 153443 | 3.581 | 773285 | 7.050 | 628066 | 10.709 | 355676 | 12.642 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR191___

Lab File ID (Standard): l131c05.d Date Analyzed: 07/31/17

Instrument ID: HP09915 Time Analyzed: 21:30

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 183829 | 3.571 | 893571 | 7.047 | 732516 | 10.709 | 431425 | 12.642 |
| UPPER LIMIT | 367658 | 4.071 | 1787142 | 7.547 | 1465032 | 11.209 | 862850 | 13.142 |
| LOWER LIMIT | 91914 | 3.071 | 446786 | 6.547 | 366258 | 10.209 | 215712 | 12.142 |
| LAB SAMPLE ID | | | | | | | | |
| 23 9124758 | 149283 | 3.581 | 766643 | 7.050 | 626956 | 10.709 | 357736 | 12.642 |
| 24 9124759 | 154682 | 3.584 | 779278 | 7.050 | 635187 | 10.709 | 360983 | 12.642 |
| 25 9124764 | 152804 | 3.568 | 812170 | 7.047 | 644731 | 10.709 | 370075 | 12.638 |
| 26 SECC050 | 196515 | 3.565 | 942407 | 7.047 | 765870 | 10.709 | 446307 | 12.642 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

# Sample Data

# Volatiles by GC/MS

**Fraction: Volatiles by GC/MS**

| 11997: VOCs 8260C GWTS Annual Analyte Name | Default DL | Default LOD | Default LOQ | Units |
|---|---|---|---|---|
| Methylene Chloride | 2 | 4 | 4 | ug/l |
| Methyl Tertiary Butyl Ether | .5 | 1 | 1 | ug/l |
| 1,1-Dichloroethane | .5 | 1 | 1 | ug/l |
| cis-1,2-Dichloroethene | .5 | 1 | 1 | ug/l |
| Chloroform | .5 | 1 | 1 | ug/l |
| Benzene | .5 | 1 | 1 | ug/l |
| 1,2-Dichloroethane | .5 | 1 | 1 | ug/l |
| Trichloroethene | .5 | 1 | 1 | ug/l |
| Toluene | .5 | 1 | 1 | ug/l |
| 1,1,2-Trichloroethane | .5 | 1 | 1 | ug/l |
| Tetrachloroethene | .5 | 1 | 1 | ug/l |
| Dibromochloromethane | .5 | 1 | 1 | ug/l |
| 1,2-Dibromoethane | .5 | 1 | 1 | ug/l |
| Ethylbenzene | .5 | 1 | 1 | ug/l |
| Xylene (Total) | .5 | 1 | 1 | ug/l |
| 1,1,2,2-Tetrachloroethane | .5 | 1 | 1 | ug/l |
| Naphthalene | 1 | 2 | 5 | ug/l |

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s53.d Injection date and time: **01-AUG-2017 02:49**
Data file Sample Info. Line: K1901;9121674;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 03:07 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.584(-0.013) | 654 | 65 | 164031 ( -11) | 250.00 | |
| 66) Fluorobenzene | 7.050(-0.003) | 1732 | 96 | 823814 ( -8) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 662336 ( -10) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 380534 ( -12) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147(-0.001) | 113 | 228069 | 56.693 | 113% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613( 0.000) | 102 | 50717 | 50.700 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 832644 | 49.235 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 324740 | 51.662 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:19. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s53.d Injection date and time: **01-AUG-2017 02:49**
Data file Sample Info. Line: K1901;9121674;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 03:07 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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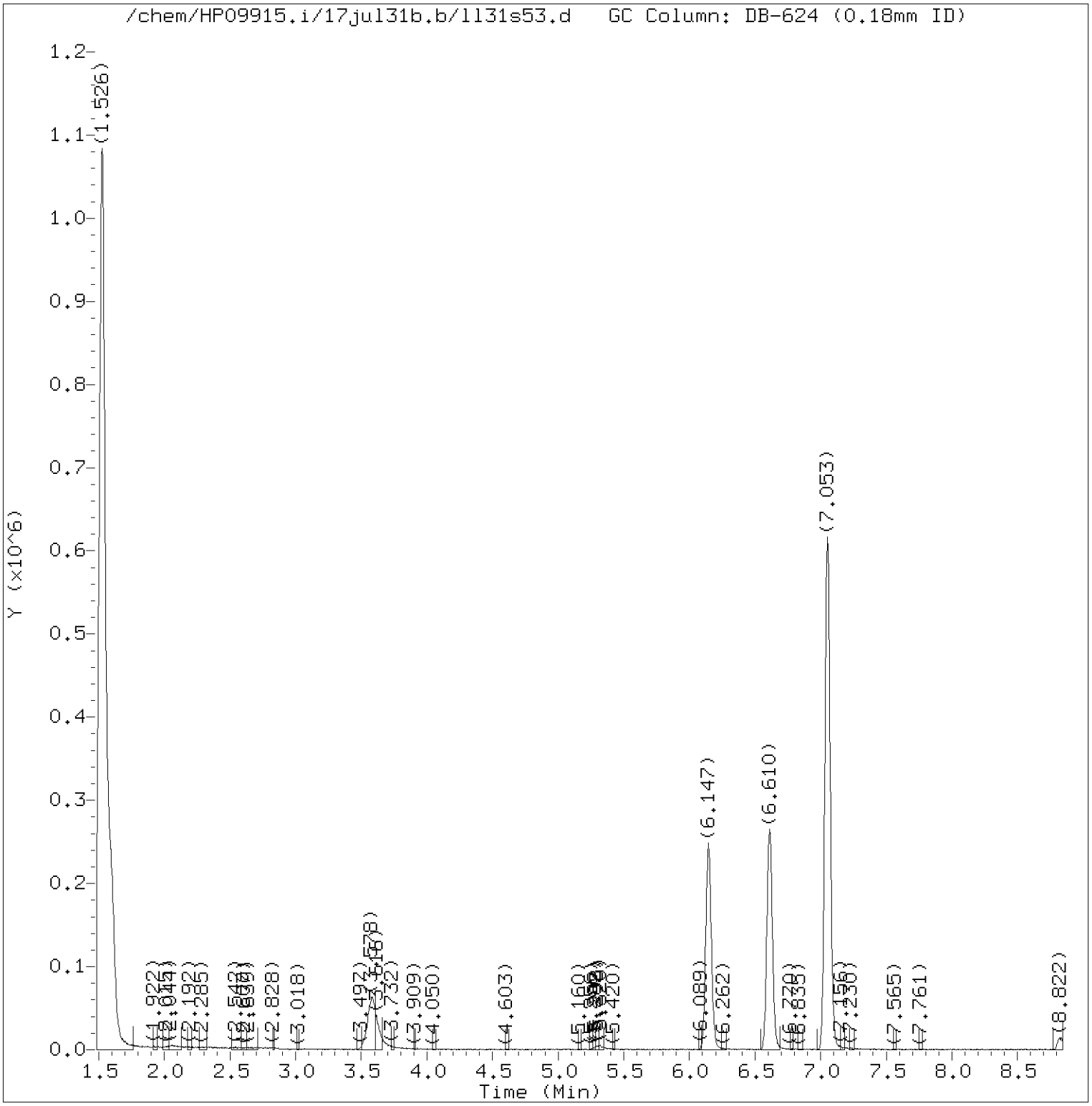
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:19. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

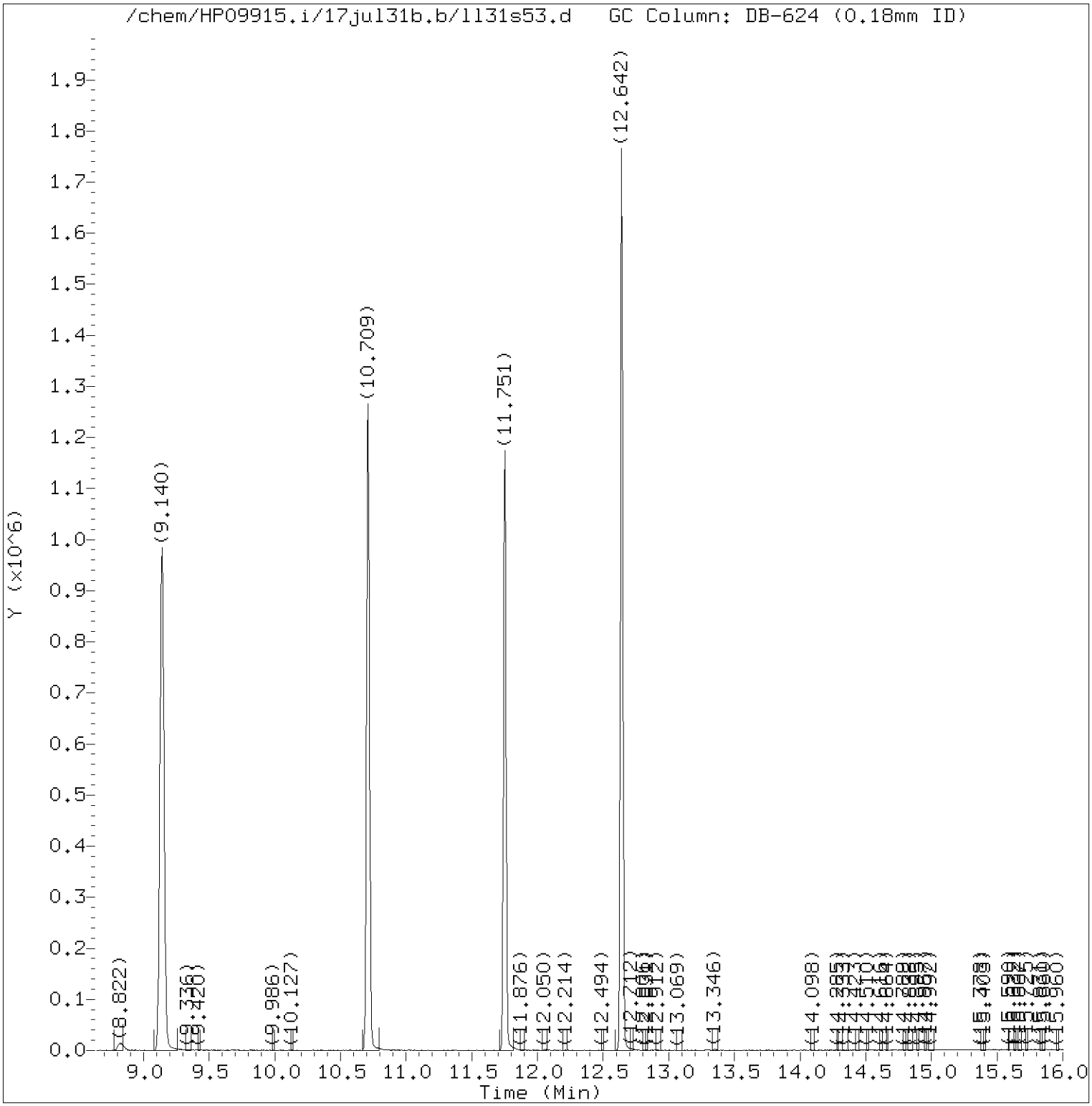
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s53.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 02:49 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 03:07 Automation

Sample Name: K1901 Lab Sample ID: 9121674

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s53.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 02:49 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 03:07 Automation

Sample Name: K1901 Lab Sample ID: 9121674

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s53.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 02:49 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 03:07 Automation

Sample Name: K1901 Lab Sample ID: 9121674

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 164031 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 228069 | 56.693 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 50717 | 50.700 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 823814 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 832644 | 49.235 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 662336 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 324740 | 51.662 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 380534 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles



Data file: /chem/HP09915.i/17jul31b.b/ll31s54.d Injection date and time: **01-AUG-2017 03:11**
Data file Sample Info. Line: K1903;9121676;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 09:18 dhh02035

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.587(-0.016) | 655 | 65 | 162313 ( -12) | 250.00 | |
| 66) Fluorobenzene | 7.057(-0.010) | 1734 | 96 | 811511 ( -9) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 661709 ( -10) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 368844 ( -15) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 223145 | 56.310 | 113% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.001) | 102 | 51099 | 51.856 | 104% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 828749 | 49.051 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 320483 | 51.033 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:18. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s54.d Injection date and time: **01-AUG-2017 03:11**
Data file Sample Info. Line: K1903;9121676;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 09:18 dhh02035

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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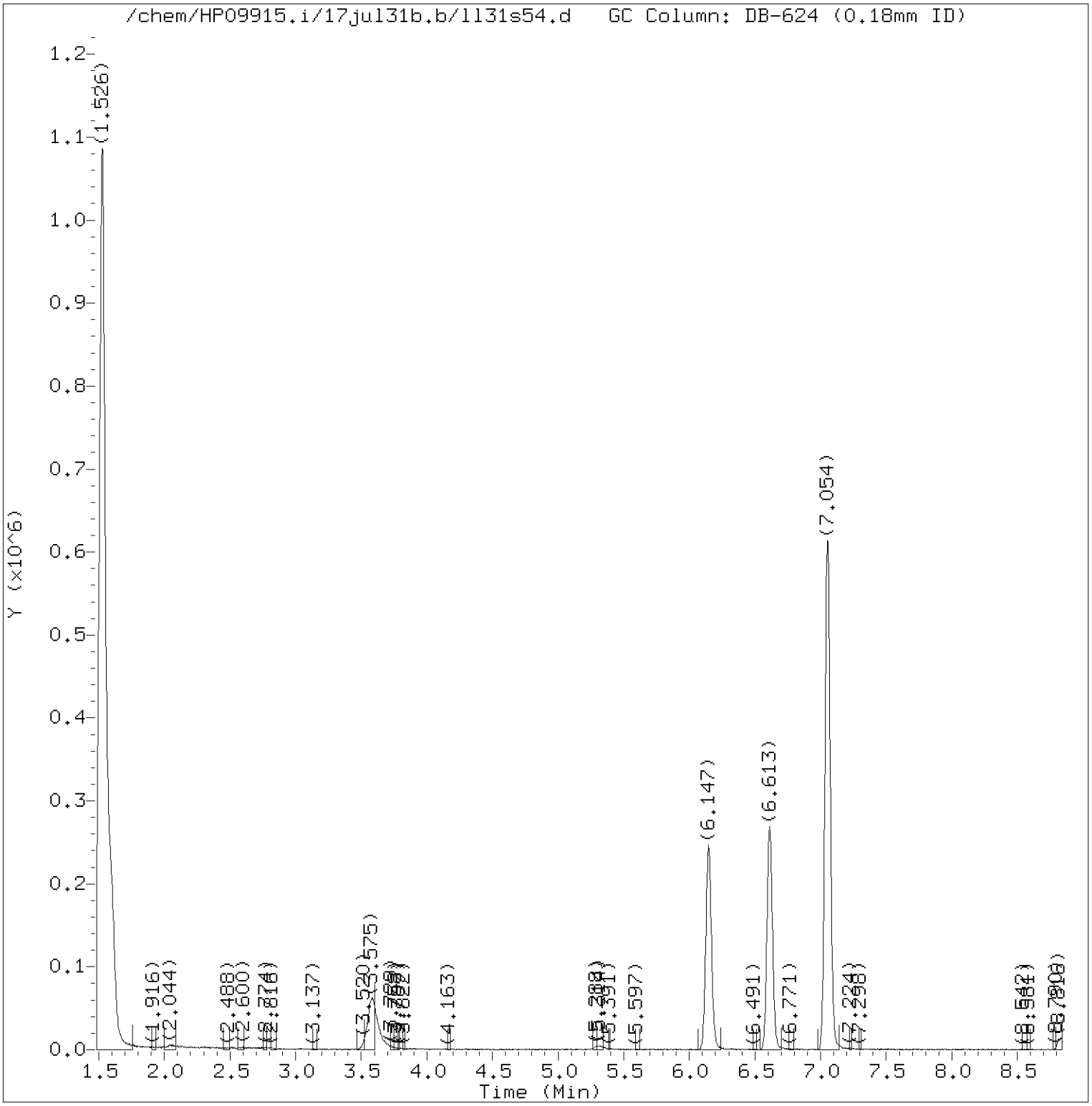
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:18. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

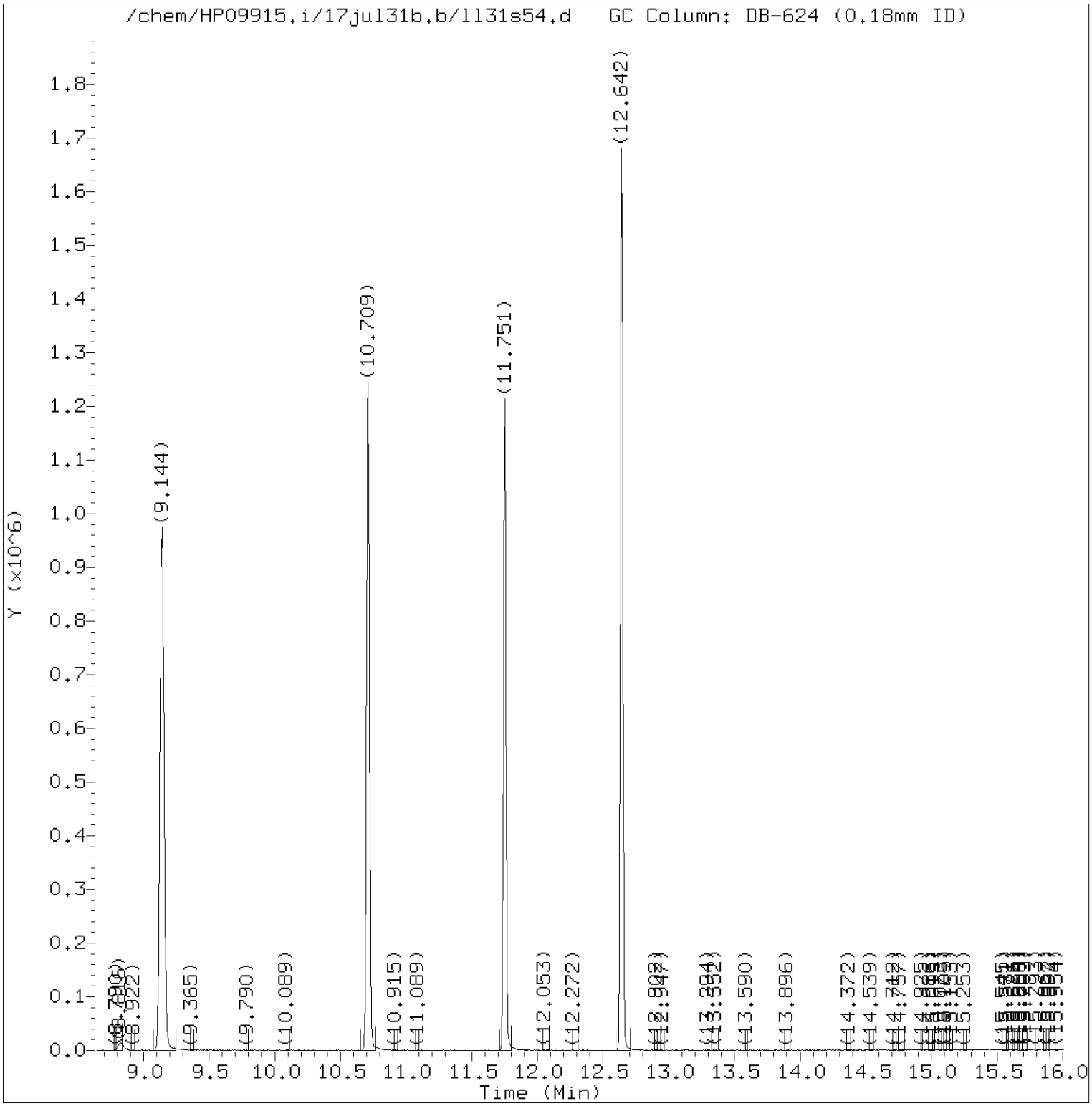
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s54.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 09:18 dhh02035

Sample Name: K1903 Lab Sample ID: 9121676

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:18.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s54.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 09:18 dhh02035

Sample Name: K1903 Lab Sample ID: 9121676

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:18.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s54.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 09:18 dhh02035

Sample Name: K1903 Lab Sample ID: 9121676

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.587 | 65 | 162313 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 223145 | 56.310 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 51099 | 51.856 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 811511 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 828749 | 49.051 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 661709 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 320483 | 51.033 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 368844 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:18.
Target 3.5 esignature user ID: dhh02035

K1905 Lancaster Laboratories 9121678
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s55.d Injection date and time: **01-AUG-2017 03:33**
Data file Sample Info. Line: K1905;9121678;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 03:50 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.584(-0.013) | 654 | 65 | 158665 ( -14) | 250.00 | |
| 66) Fluorobenzene | 7.053(-0.007) | 1733 | 96 | 802344 ( -10) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 648558 ( -11) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 365104 ( -15) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 220335 | 56.237 | 112% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613( 0.000) | 102 | 49286 | 50.588 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 817209 | 49.349 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 313519 | 50.937 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:18. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s55.d Injection date and time: **01-AUG-2017 03:33**
Data file Sample Info. Line: K1905;9121678;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 03:50 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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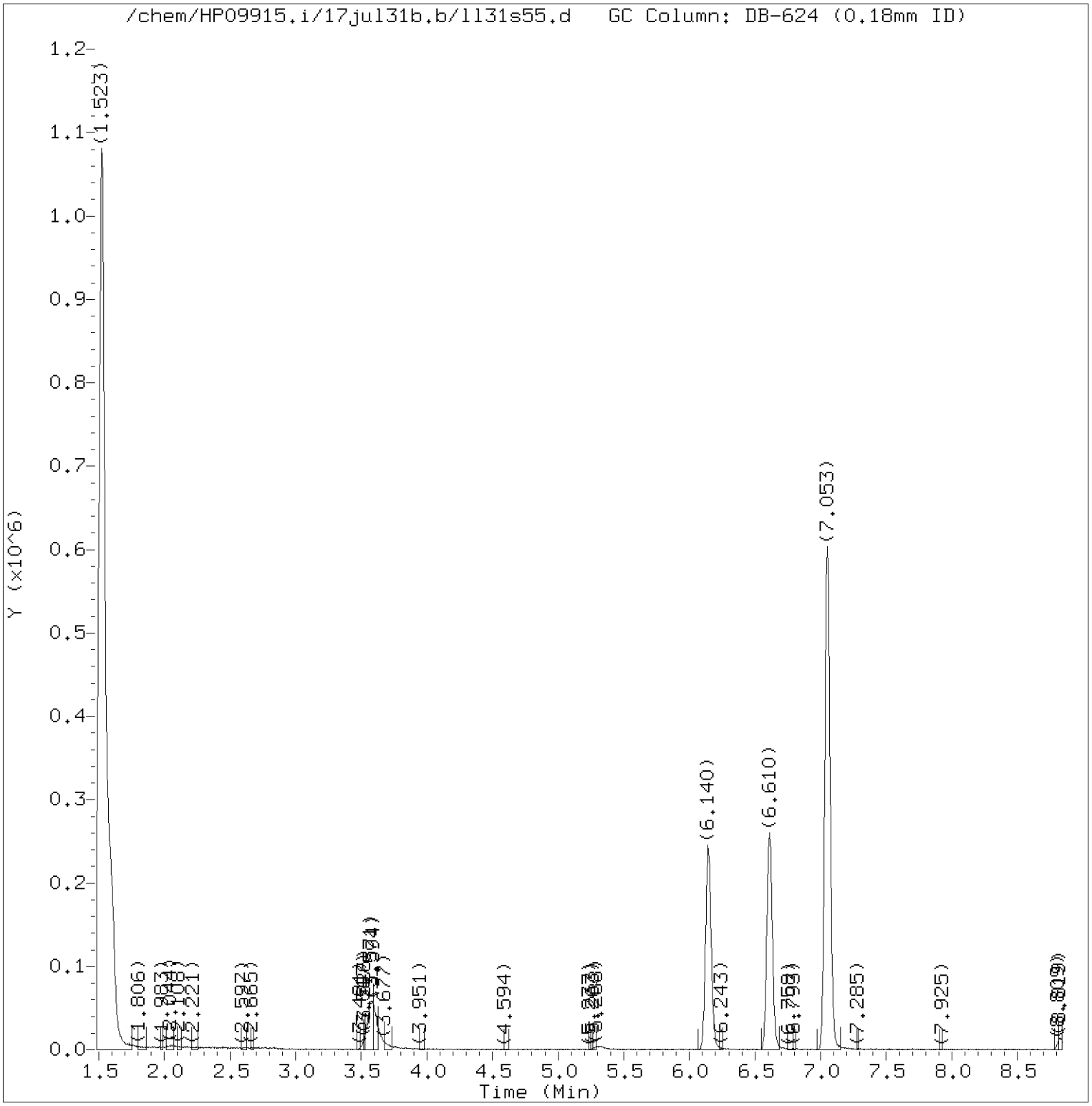
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:18. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

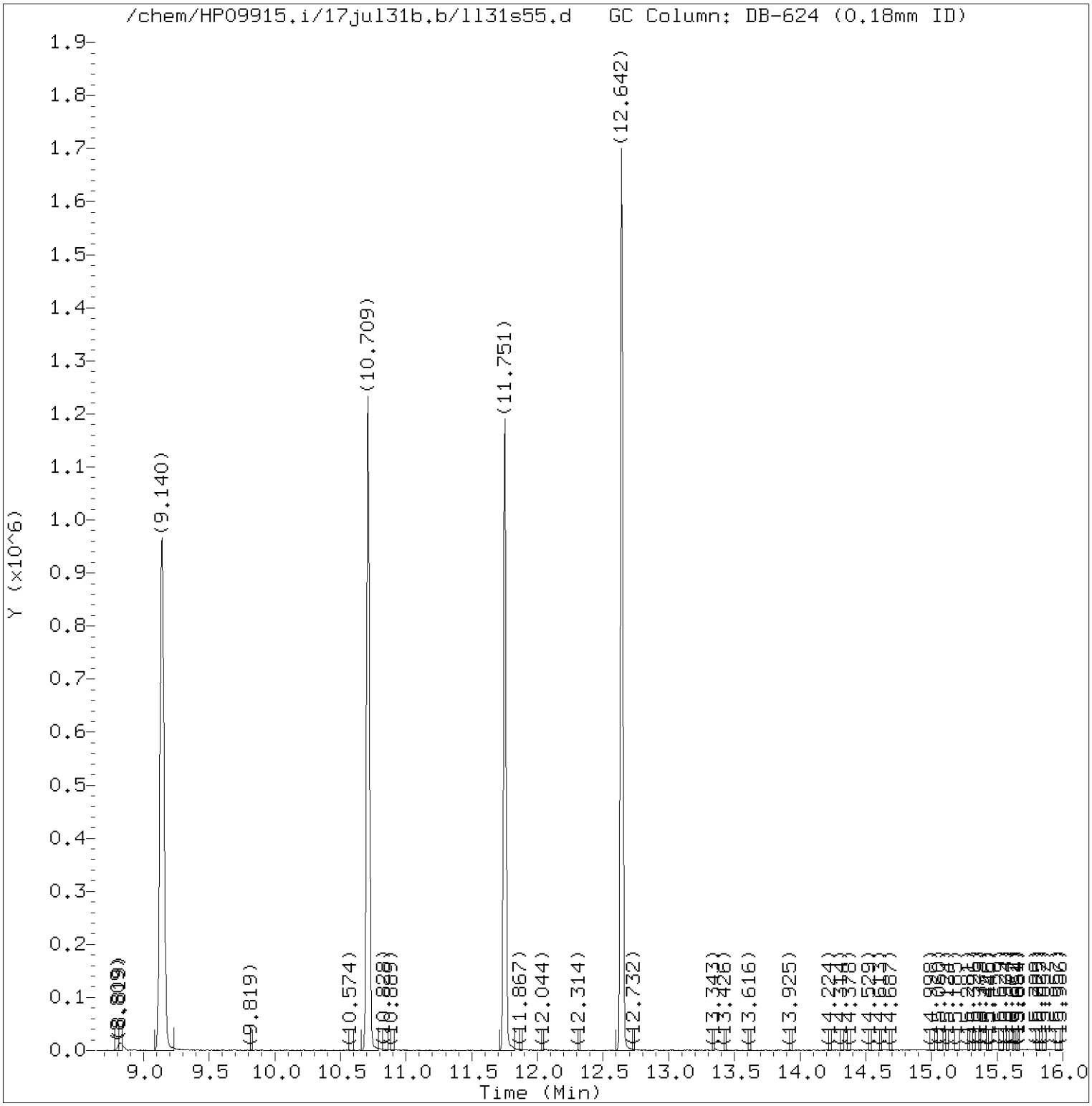
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s55.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 03:50 Automation

Sample Name: K1905 Lab Sample ID: 9121678

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:18.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s55.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 03:50 Automation

Sample Name: K1905 Lab Sample ID: 9121678

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:18.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s55.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 03:50 Automation

Sample Name: K1905 Lab Sample ID: 9121678

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 158665 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 220335 | 56.237 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 49286 | 50.588 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 802344 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 817209 | 49.349 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 648558 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 313519 | 50.937 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 365104 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:18.
Target 3.5 esignature user ID: dhh02035

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s56.d Injection date and time: **01-AUG-2017 03:54**
Data file Sample Info. Line: K1907;9121680;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 04:12 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.558( 0.013) | 646 | 65 | 161222 ( -12) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 796161 ( -11) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 659246 ( -10) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 381590 ( -12) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 221244 | 56.907 | 114% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.606( 0.000) | 102 | 50257 | 51.985 | 104% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 826439 | 49.097 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 322682 | 51.575 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

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Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s56.d Injection date and time: **01-AUG-2017 03:54**
Data file Sample Info. Line: K1907;9121680;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 04:12 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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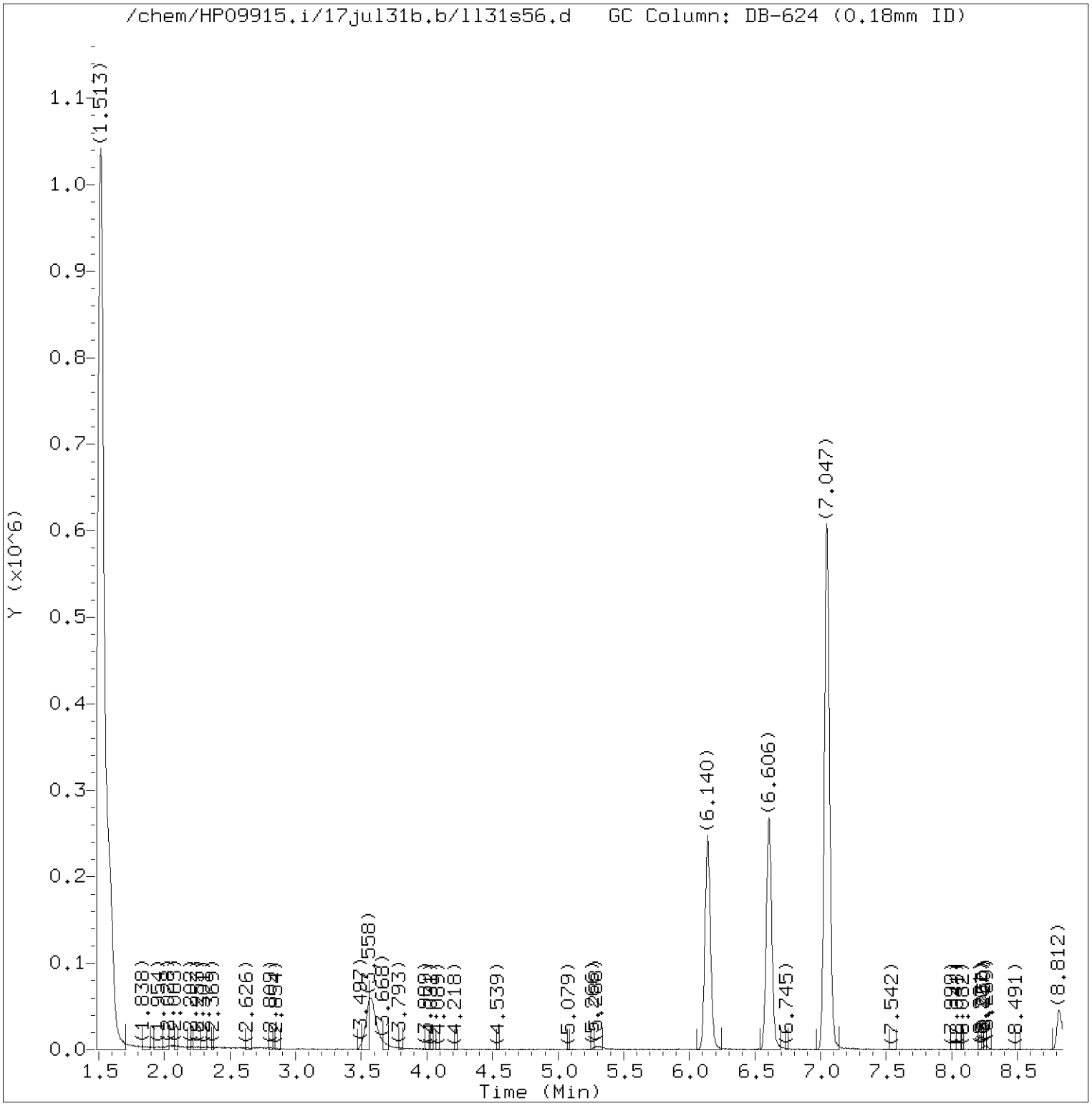
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:19. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

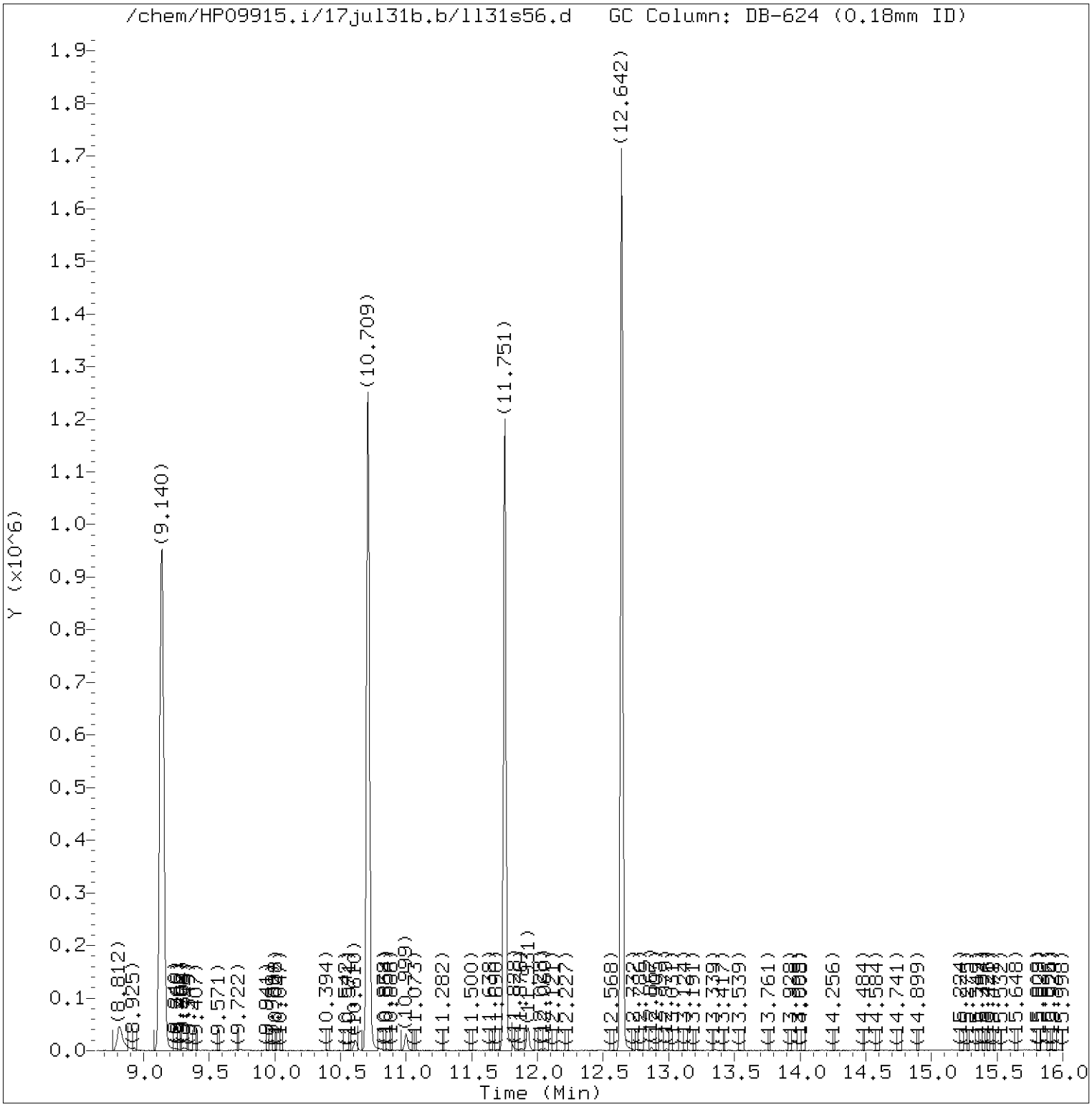
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s56.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:54 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:12 Automation

Sample Name: K1907 Lab Sample ID: 9121680

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s56.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:54 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:12 Automation

Sample Name: K1907 Lab Sample ID: 9121680

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s56.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 03:54 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:12 Automation

Sample Name: K1907 Lab Sample ID: 9121680

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.558 | 65 | 161222 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 221244 | 56.907 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 50257 | 51.985 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 796161 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 826439 | 49.097 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 659246 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 322682 | 51.575 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 381590 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles



Data file: /chem/HP09915.i/17jul31b.b/ll31s43.d Injection date and time: **31-JUL-2017 23:11**
Data file Sample Info. Line: K1909;9121682;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 23:29 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.578(-0.006) | 652 | 65 | 196618 ( 7) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 930835 ( 4) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.003) | 2869 | 117 | 743883 ( 2) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 412541 ( -4) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 251427 | 55.314 | 111% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 57568 | 50.932 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 933242 | 49.134 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 358017 | 50.712 | 101% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Kevin Kelly on 07/31/2017 at 23:37. Target 3.5 esignature user ID: kk10002

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s43.d Injection date and time: **31-JUL-2017 23:11**
Data file Sample Info. Line: K1909;9121682;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 23:29 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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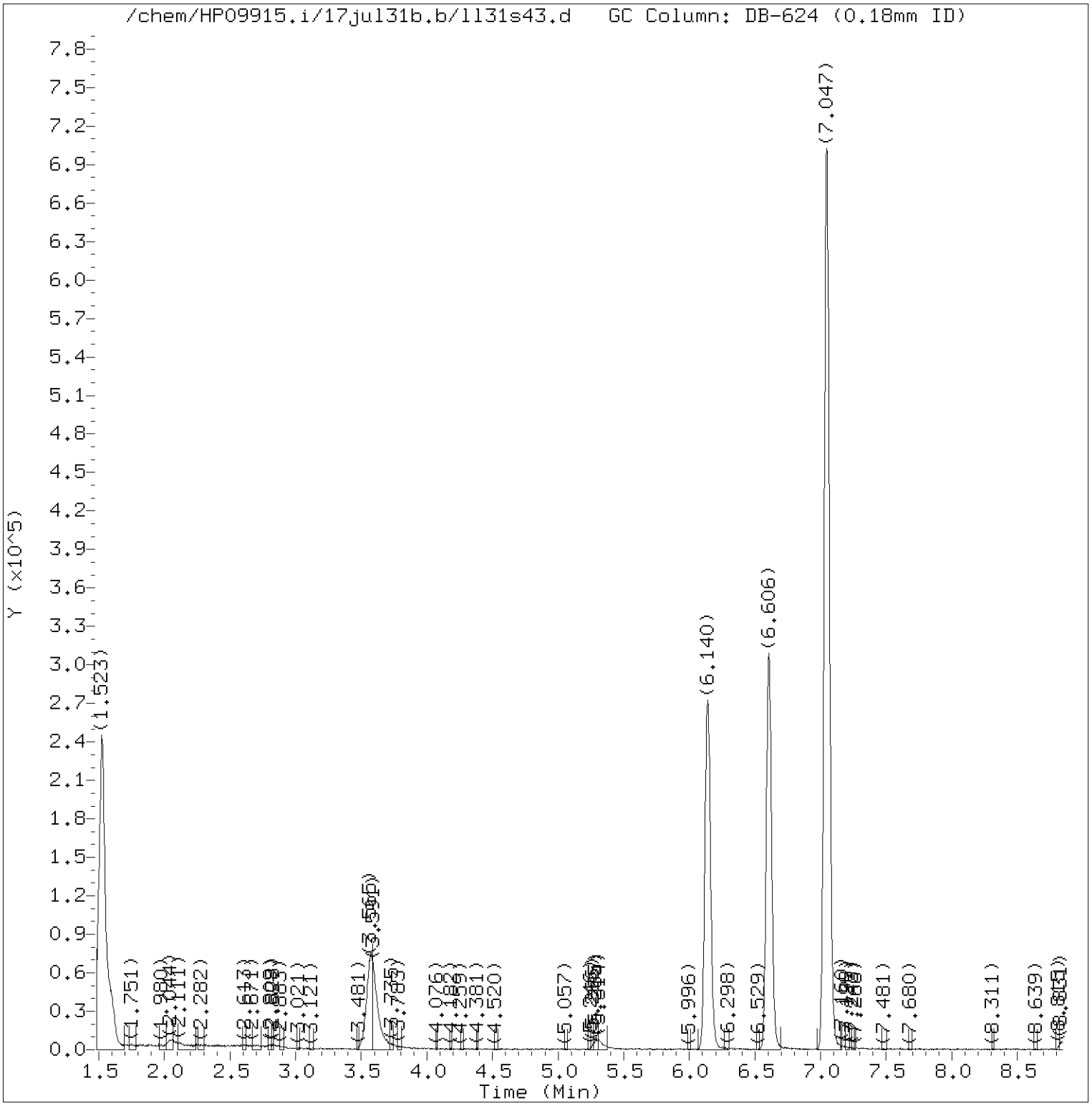
Total number of targets = 19

Digitally signed by Kevin Kelly on 07/31/2017 at 23:37. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

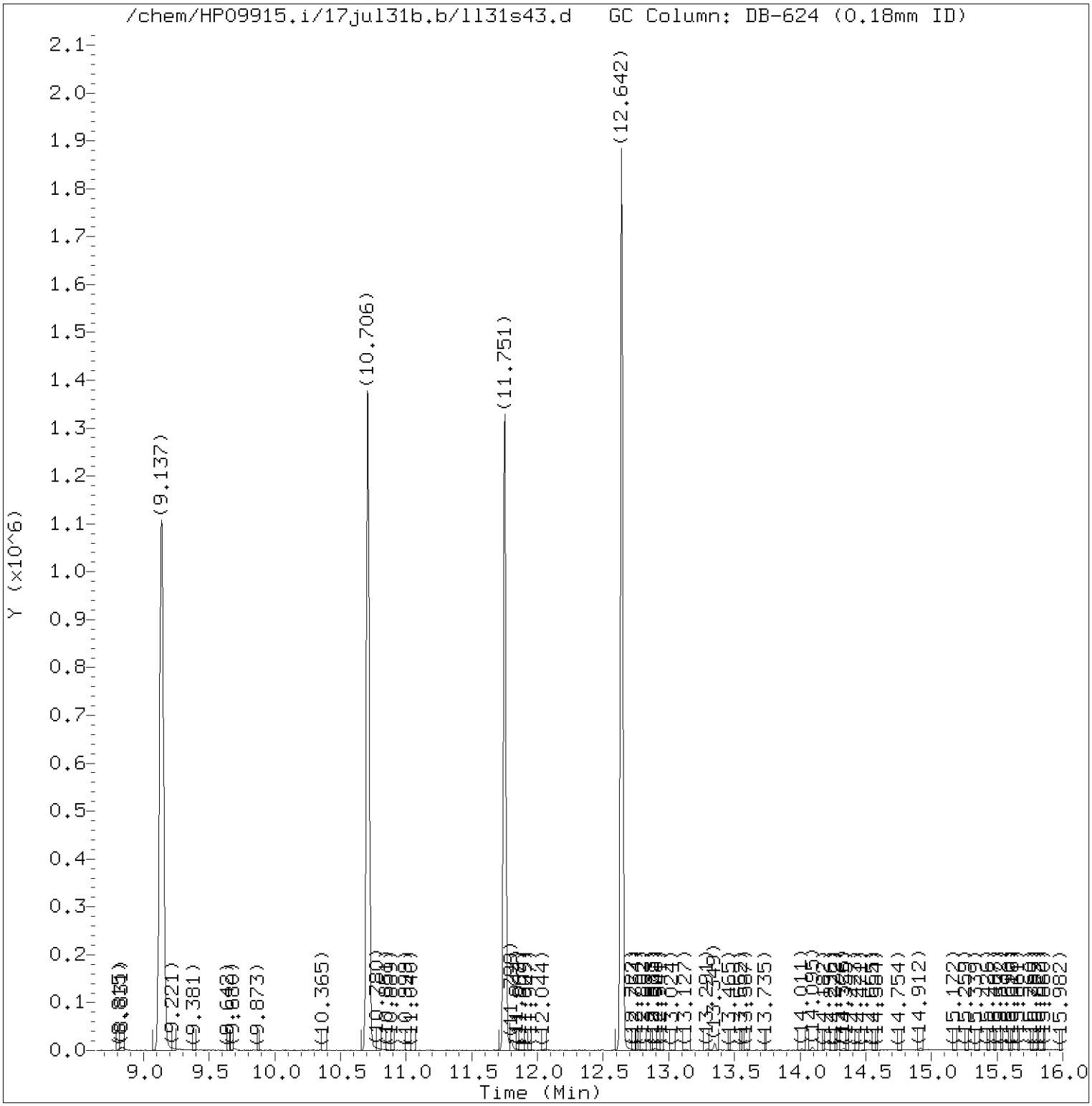
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s43.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 23:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 23:29 Automation

Sample Name: K1909 Lab Sample ID: 9121682

Digitally signed by Kevin Kelly
on 07/31/2017 at 23:37.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s43.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 23:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 23:29 Automation

Sample Name: K1909 Lab Sample ID: 9121682

Digitally signed by Kevin Kelly
on 07/31/2017 at 23:37.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s43.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 23:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 23:29 Automation

Sample Name: K1909 Lab Sample ID: 9121682

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 196618 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 251427 | 55.314 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 57568 | 50.932 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 930835 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 933242 | 49.134 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 743883 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 358017 | 50.712 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 412541 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/31/2017 at 23:37.
Target 3.5 esignature user ID: kk10002

K1910 Lancaster Laboratories 9121683
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s46.d Injection date and time: **01-AUG-2017 00:16**
Data file Sample Info. Line: K1910;9121683;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 00:34 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.000) | 650 | 65 | 169613 ( -8) | 250.00 | |
| 66) Fluorobenzene | 7.044( 0.003) | 1730 | 96 | 844349 ( -6) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 680272 ( -7) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.003) | 3470 | 152 | 385318 ( -11) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 233636 | 56.665 | 113% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613(-0.001) | 102 | 53808 | 52.481 | 105% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 855248 | 49.239 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 329092 | 50.974 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:17. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s46.d Injection date and time: **01-AUG-2017 00:16**
Data file Sample Info. Line: K1910;9121683;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 00:34 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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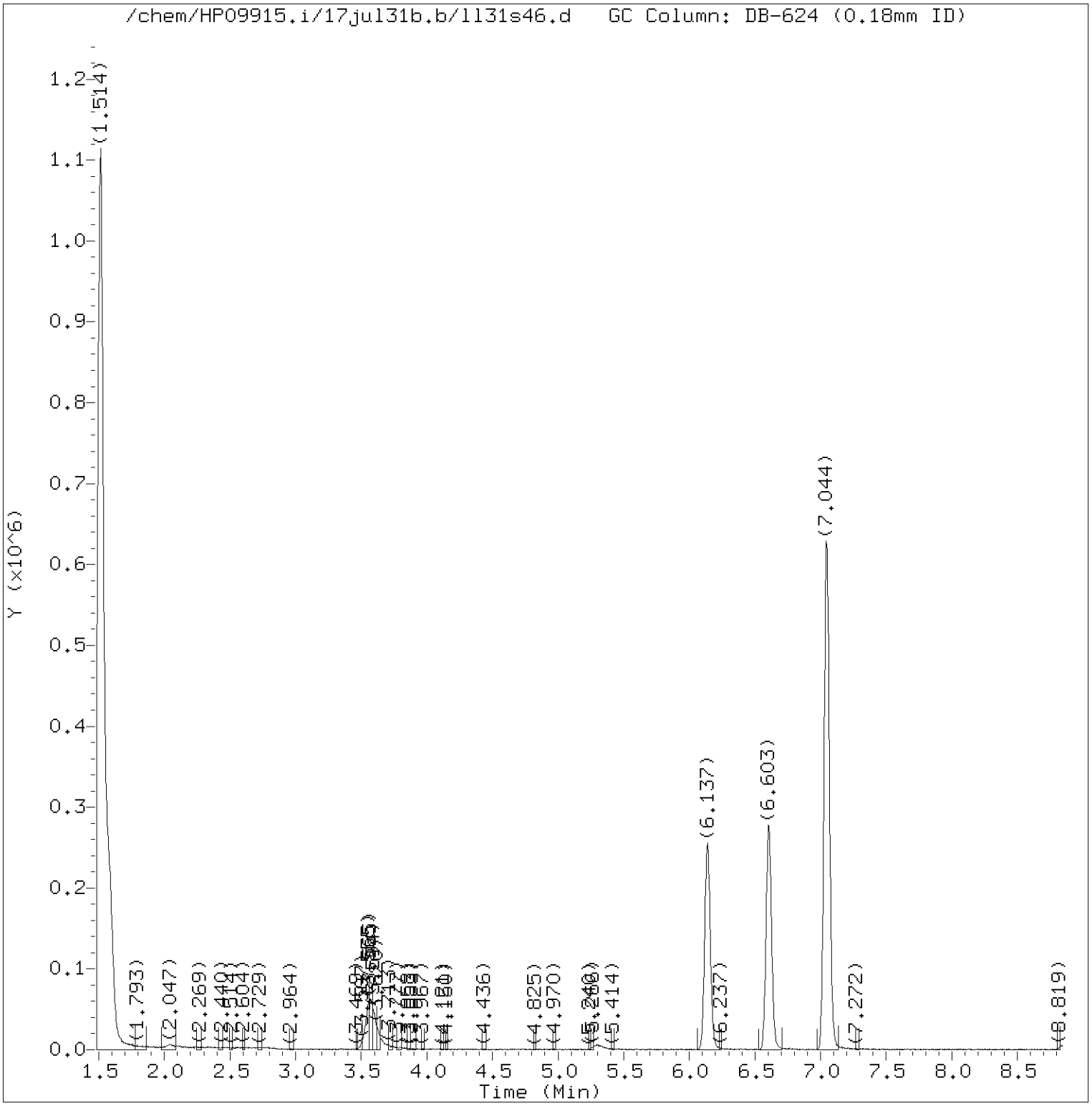
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:17. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

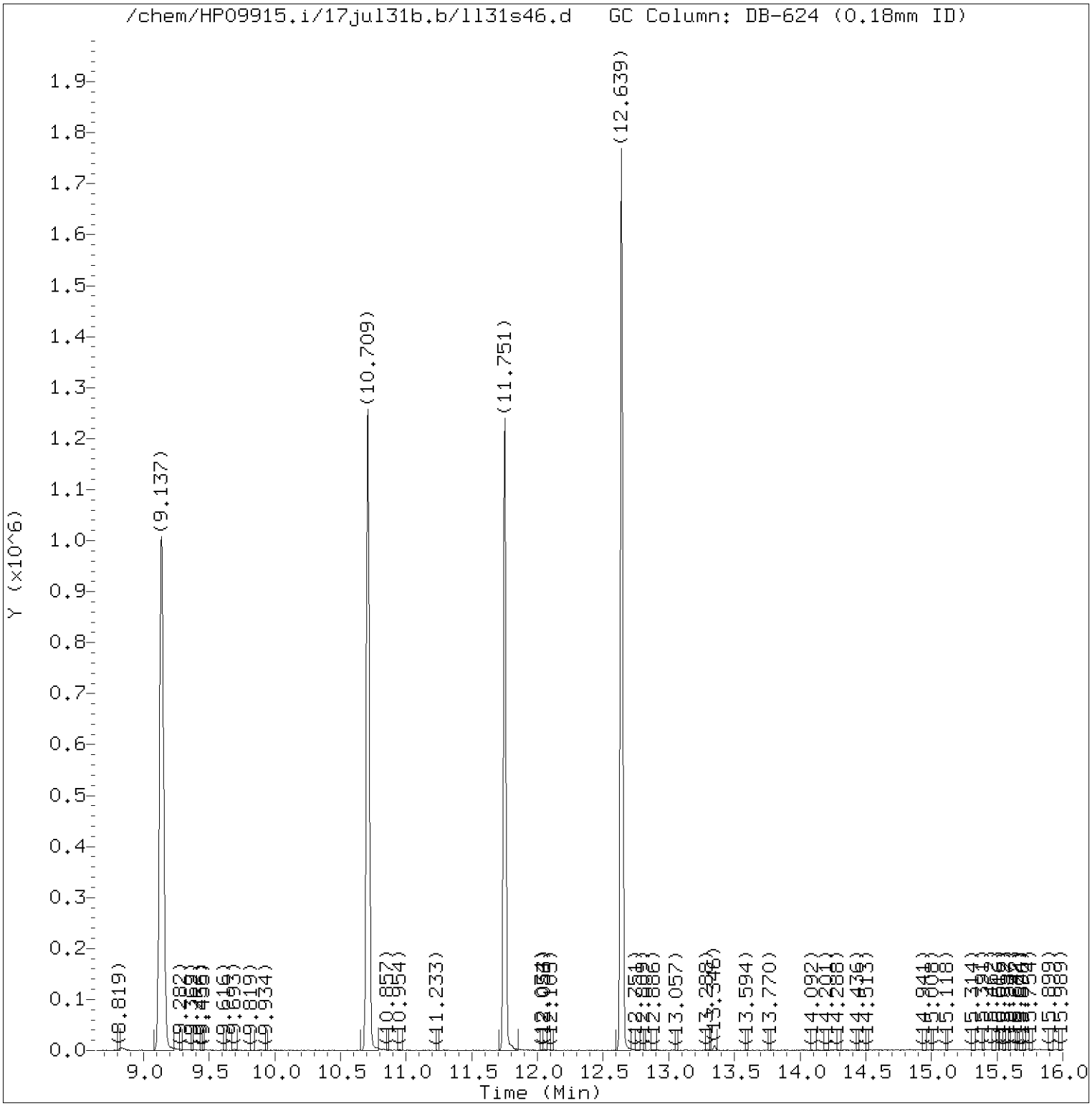
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s46.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 00:16 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 00:34 Automation

Sample Name: K1910 Lab Sample ID: 9121683

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s46.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 00:16 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 00:34 Automation

Sample Name: K1910 Lab Sample ID: 9121683

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s46.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 00:16 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 00:34 Automation

Sample Name: K1910 Lab Sample ID: 9121683

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 169613 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 233636 | 56.665 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 53808 | 52.481 |
| 66)*Fluorobenzene | (2) | 7.044 | 96 | 844349 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 855248 | 49.239 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 680272 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 329092 | 50.974 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 385318 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s57.d Injection date and time: **01-AUG-2017 04:16**
Data file Sample Info. Line: K1912;9121691;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 04:34 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.565( 0.006) | 648 | 65 | 152699 ( -17) | 250.00 | |
| 66) Fluorobenzene | 7.050(-0.003) | 1732 | 96 | 789755 ( -12) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 642491 ( -12) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 367619 ( -15) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 218784 | 56.731 | 113% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.001) | 102 | 51014 | 53.196 | 106% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 805145 | 49.080 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 312142 | 51.192 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:19. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s57.d Injection date and time: **01-AUG-2017 04:16**
Data file Sample Info. Line: K1912;9121691;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 04:34 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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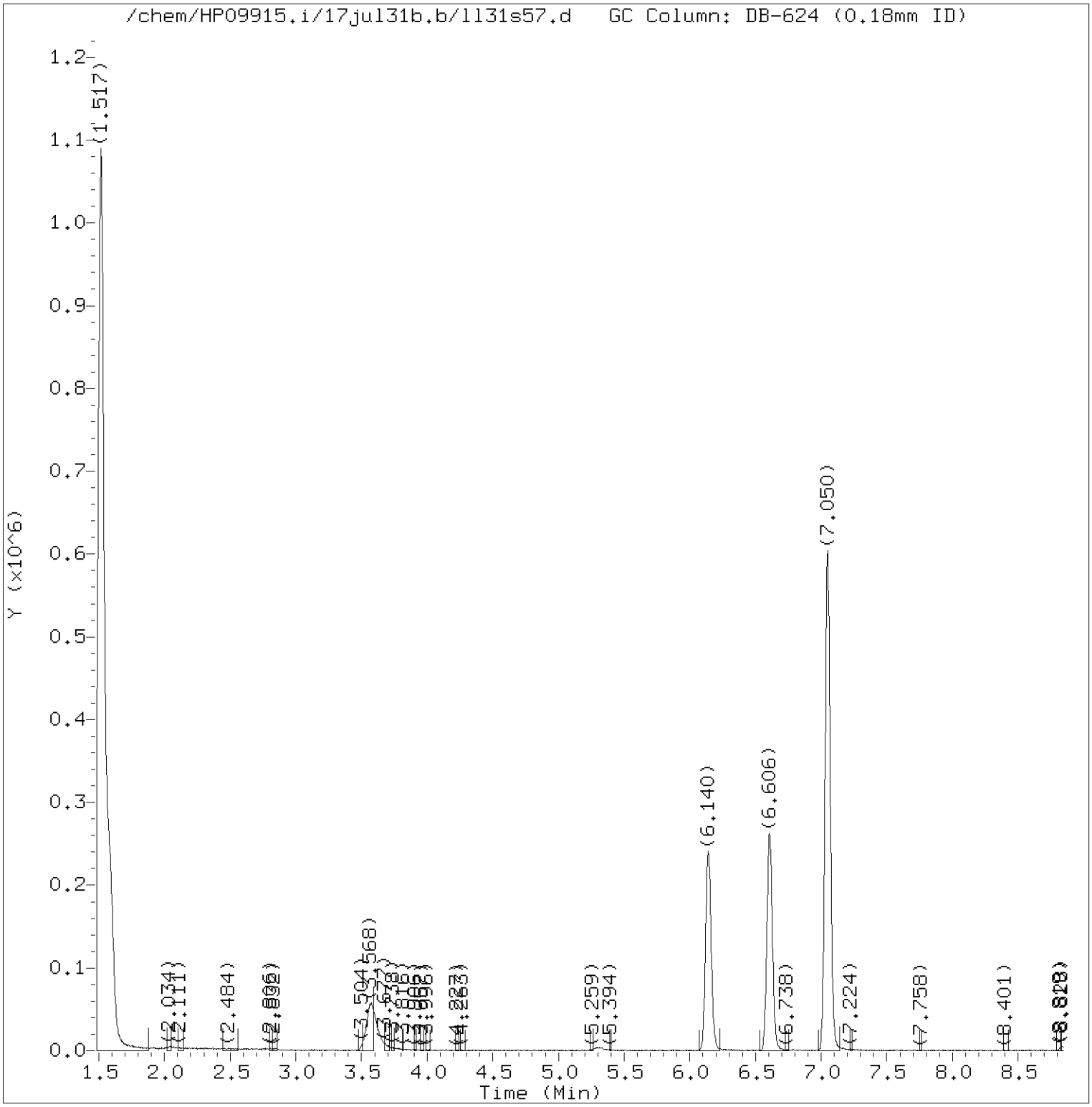
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:19. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

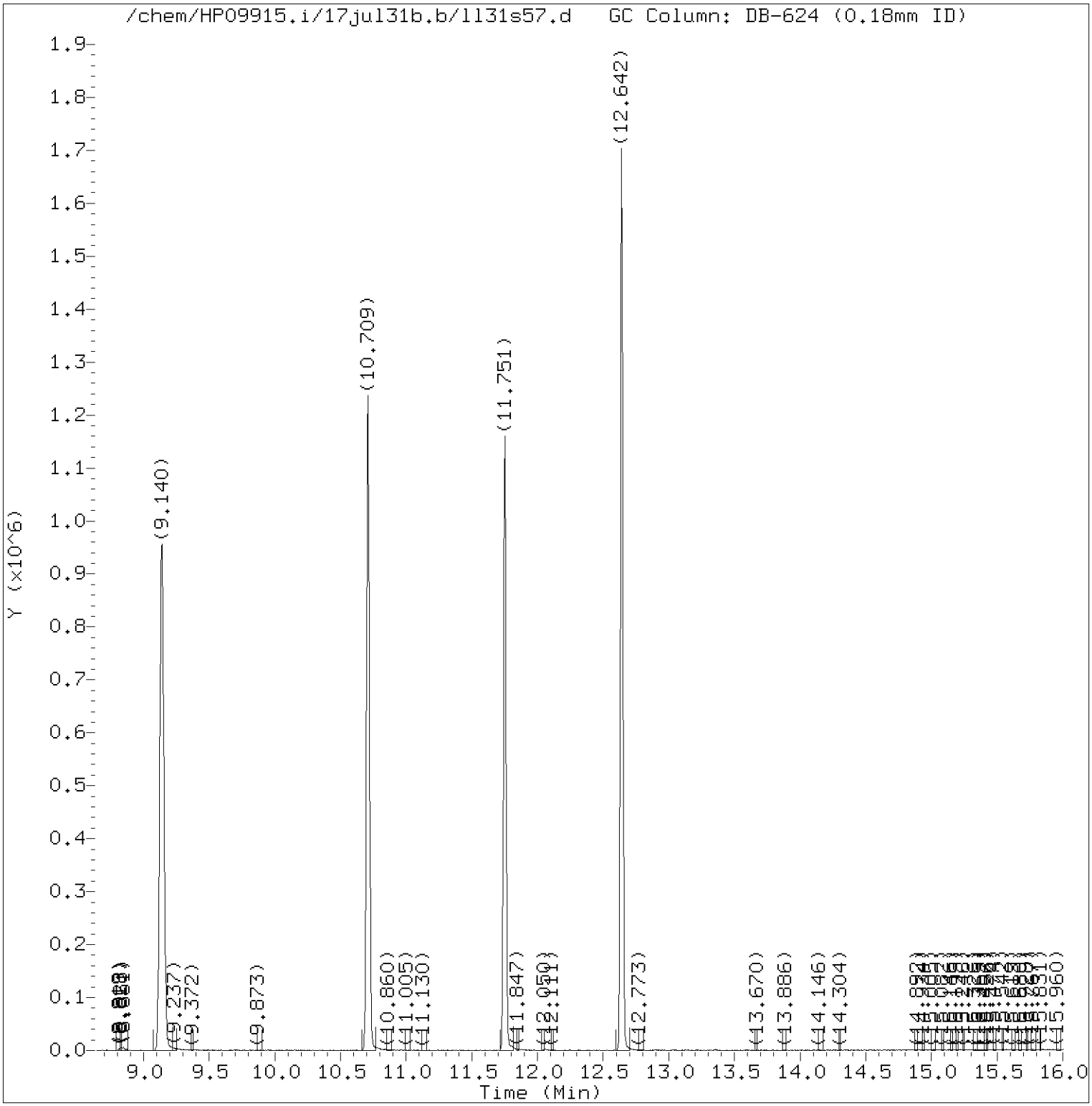
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s57.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 04:16 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:34 Automation

Sample Name: K1912 Lab Sample ID: 9121691

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s57.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 04:16 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:34 Automation

Sample Name: K1912 Lab Sample ID: 9121691

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s57.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 04:16 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:34 Automation

Sample Name: K1912 Lab Sample ID: 9121691

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 152699 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 218784 | 56.731 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 51014 | 53.196 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 789755 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 805145 | 49.080 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 642491 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 312142 | 51.192 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 367619 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles



Data file: /chem/HP09915.i/17jul31b.b/ll31s58.d Injection date and time: **01-AUG-2017 04:38**
Data file Sample Info. Line: K1914;9121693;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 04:56 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.562( 0.009) | 647 | 65 | 157046 ( -15) | 250.00 | |
| 66) Fluorobenzene | 7.050(-0.003) | 1732 | 96 | 782659 ( -12) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 651208 ( -11) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 357862 ( -17) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 220221 | 57.621 | 115% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.001) | 102 | 50034 | 52.647 | 105% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 809623 | 48.692 | 97% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 317579 | 51.386 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

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Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s58.d Injection date and time: **01-AUG-2017 04:38**
Data file Sample Info. Line: K1914;9121693;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 04:56 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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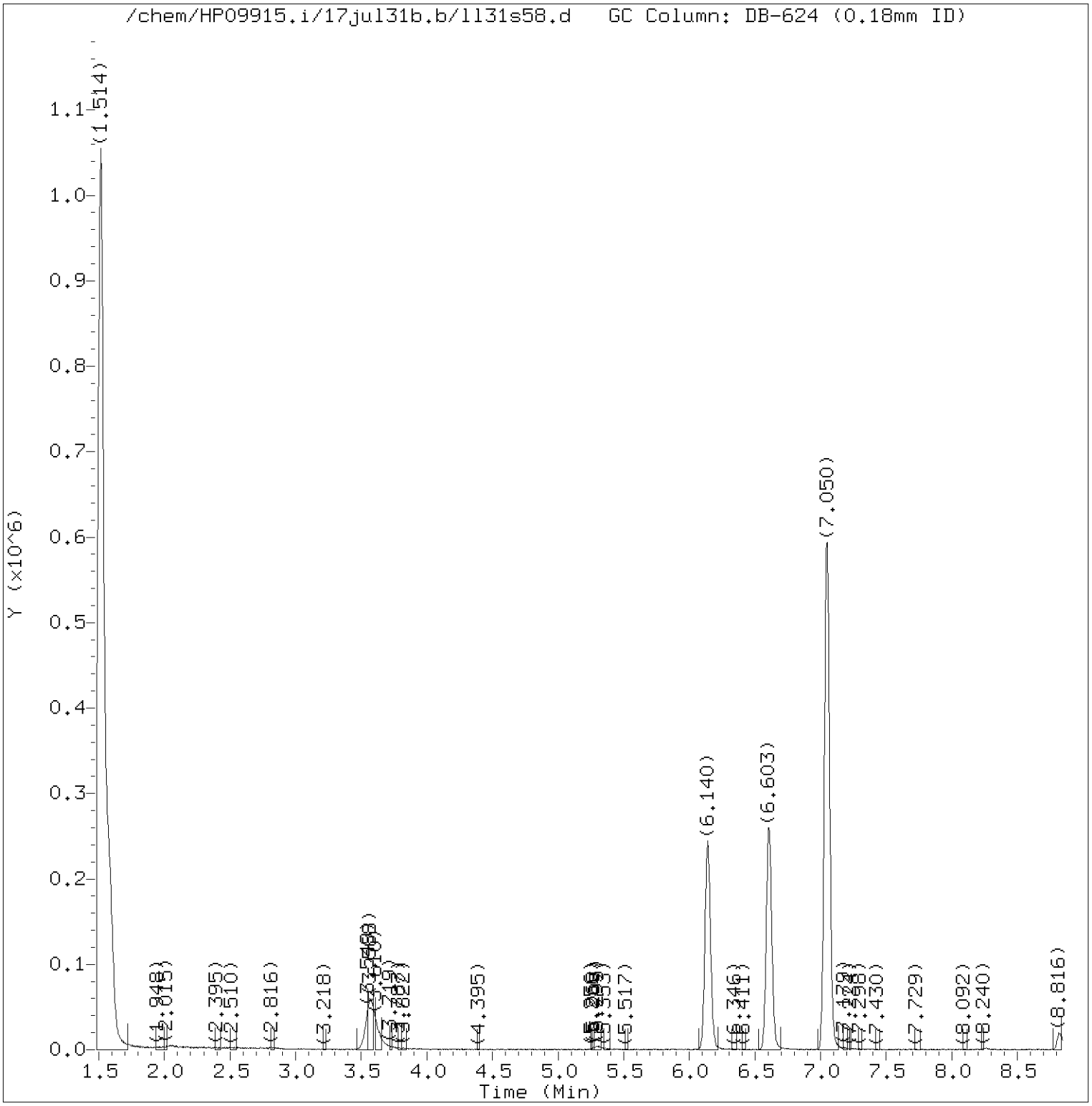
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:19. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

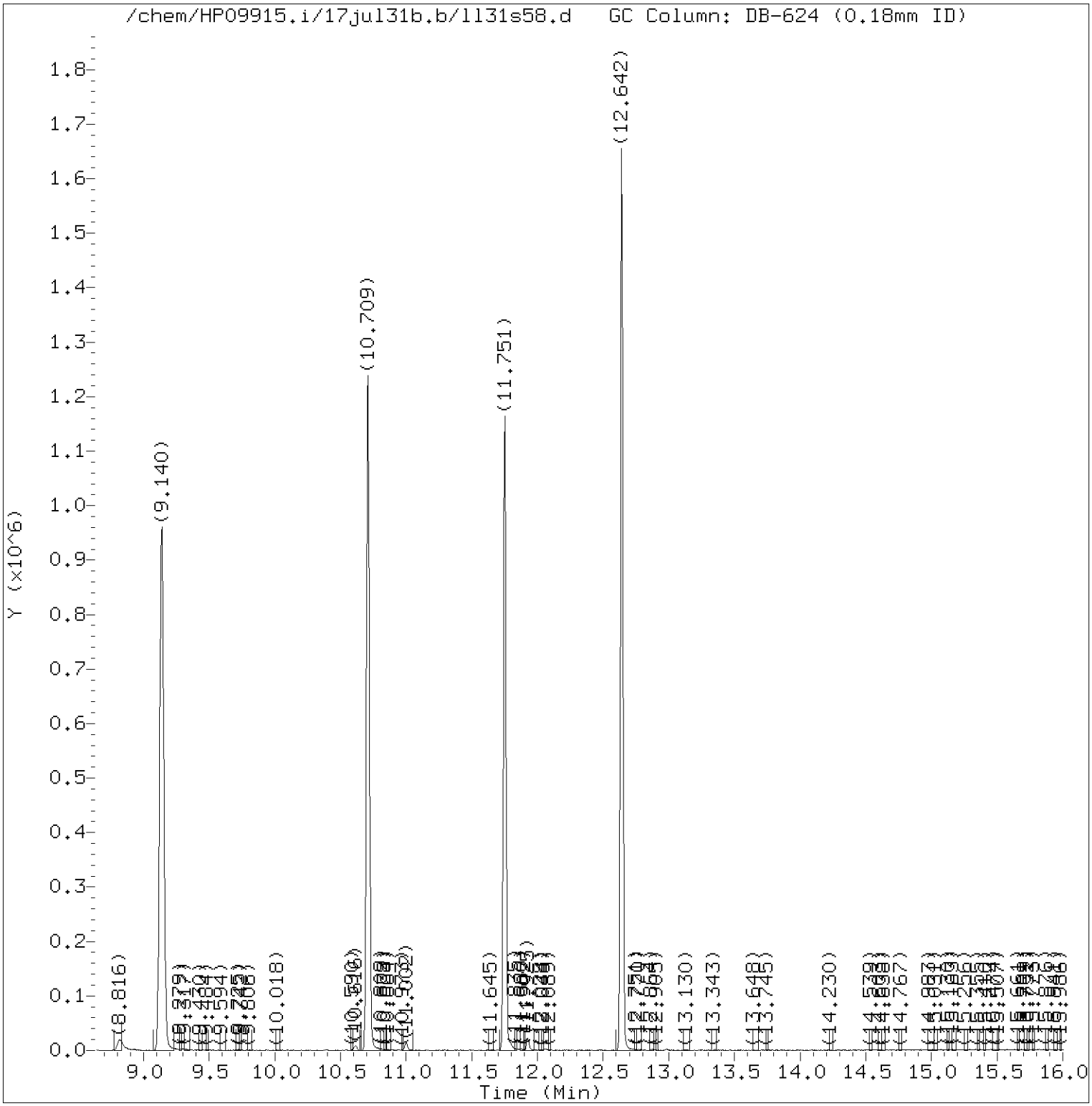
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s58.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 04:38 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:56 Automation

Sample Name: K1914 Lab Sample ID: 9121693

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s58.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 04:38 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:56 Automation

Sample Name: K1914 Lab Sample ID: 9121693

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s58.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 04:38 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 04:56 Automation

Sample Name: K1914 Lab Sample ID: 9121693

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.562 | 65 | 157046 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 220221 | 57.621 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 50034 | 52.647 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 782659 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 809623 | 48.692 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 651208 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 317579 | 51.386 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 357862 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:19.
Target 3.5 esignature user ID: dhh02035

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s44.d Injection date and time: **31-JUL-2017 23:33**
Data file Sample Info. Line: K1916;9121695;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 23:51 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.578(-0.006) | 652 | 65 | 178601 ( -3) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 871132 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 703920 ( -4) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 396539 ( -8) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 236029 | 55.485 | 111% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.606( 0.000) | 102 | 53374 | 50.458 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 868629 | 48.329 | 97% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 341049 | 51.052 | 102% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:17. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s44.d Injection date and time: **31-JUL-2017 23:33**
Data file Sample Info. Line: K1916;9121695;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 23:51 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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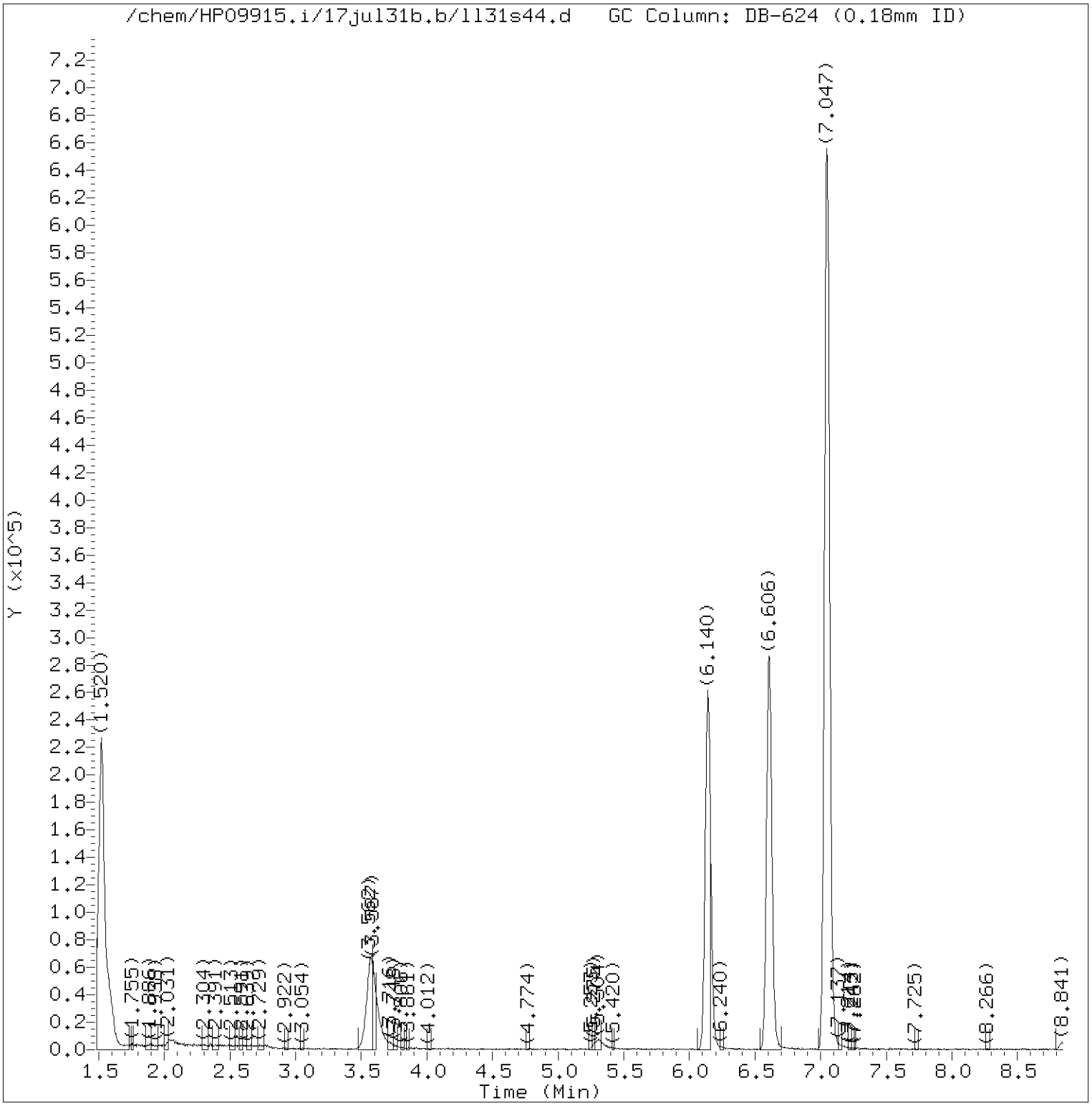
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:17. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

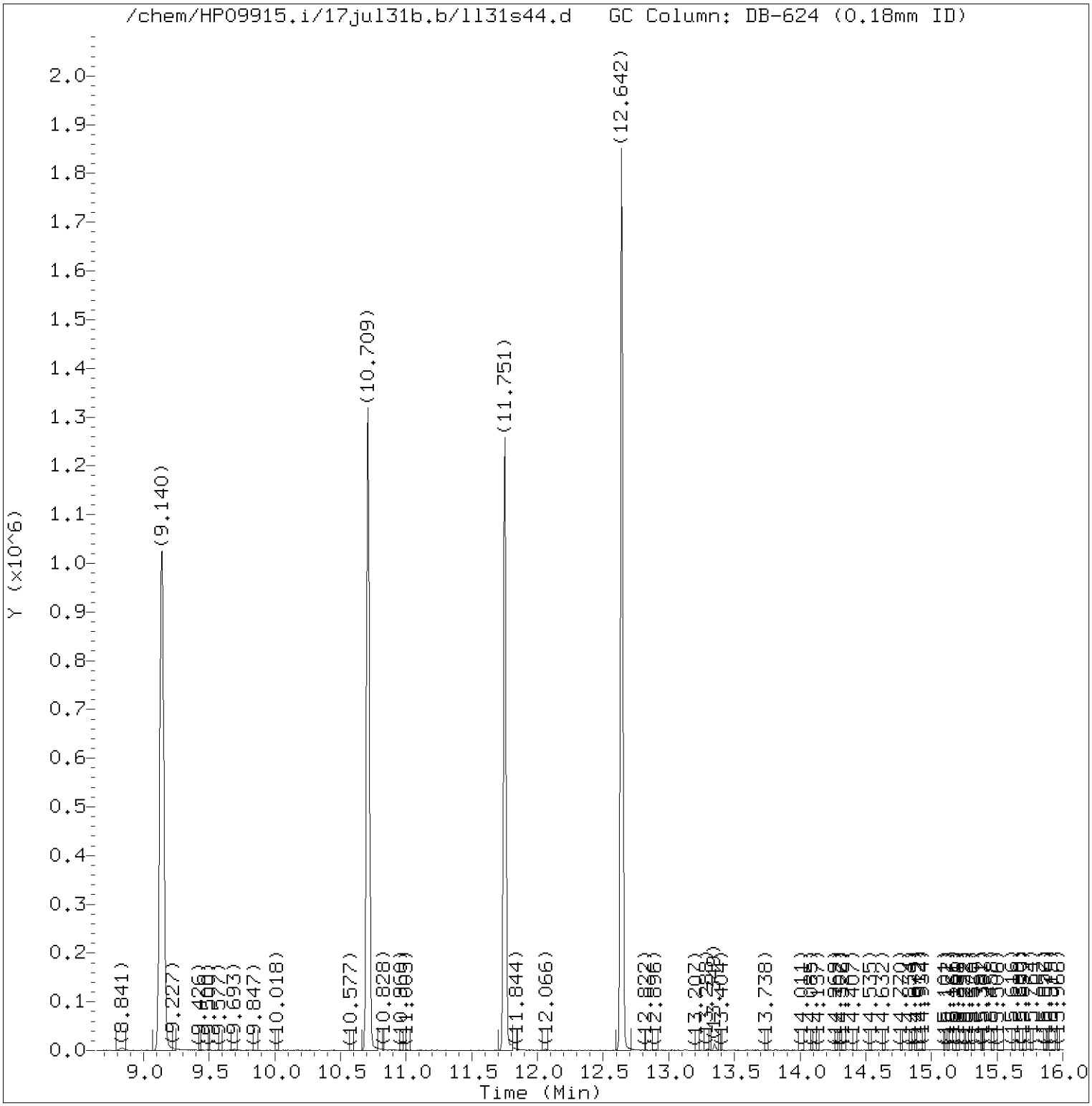
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s44.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 23:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 23:51 Automation

Sample Name: K1916 Lab Sample ID: 9121695

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s44.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 23:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 23:51 Automation

Sample Name: K1916 Lab Sample ID: 9121695

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s44.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 23:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 23:51 Automation

Sample Name: K1916 Lab Sample ID: 9121695

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 178601 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 236029 | 55.485 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 53374 | 50.458 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 871132 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 868629 | 48.329 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 703920 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 341049 | 51.052 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 396539 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035

K1917 Lancaster Laboratories 9121696
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s59.d Injection date and time: **01-AUG-2017 05:00**
Data file Sample Info. Line: K1917;9121696;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 05:17 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.003) | 649 | 65 | 153762 ( -16) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 790247 ( -12) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 635796 ( -13) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 357815 ( -17) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 218488 | 56.619 | 113% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 48206 | 50.236 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 803891 | 49.519 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 310454 | 51.451 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:20. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s59.d Injection date and time: **01-AUG-2017 05:00**
Data file Sample Info. Line: K1917;9121696;1;0;;KR191;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 05:17 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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THIS SPACE
WAS LEFT
BLANK INTENTIONALLY

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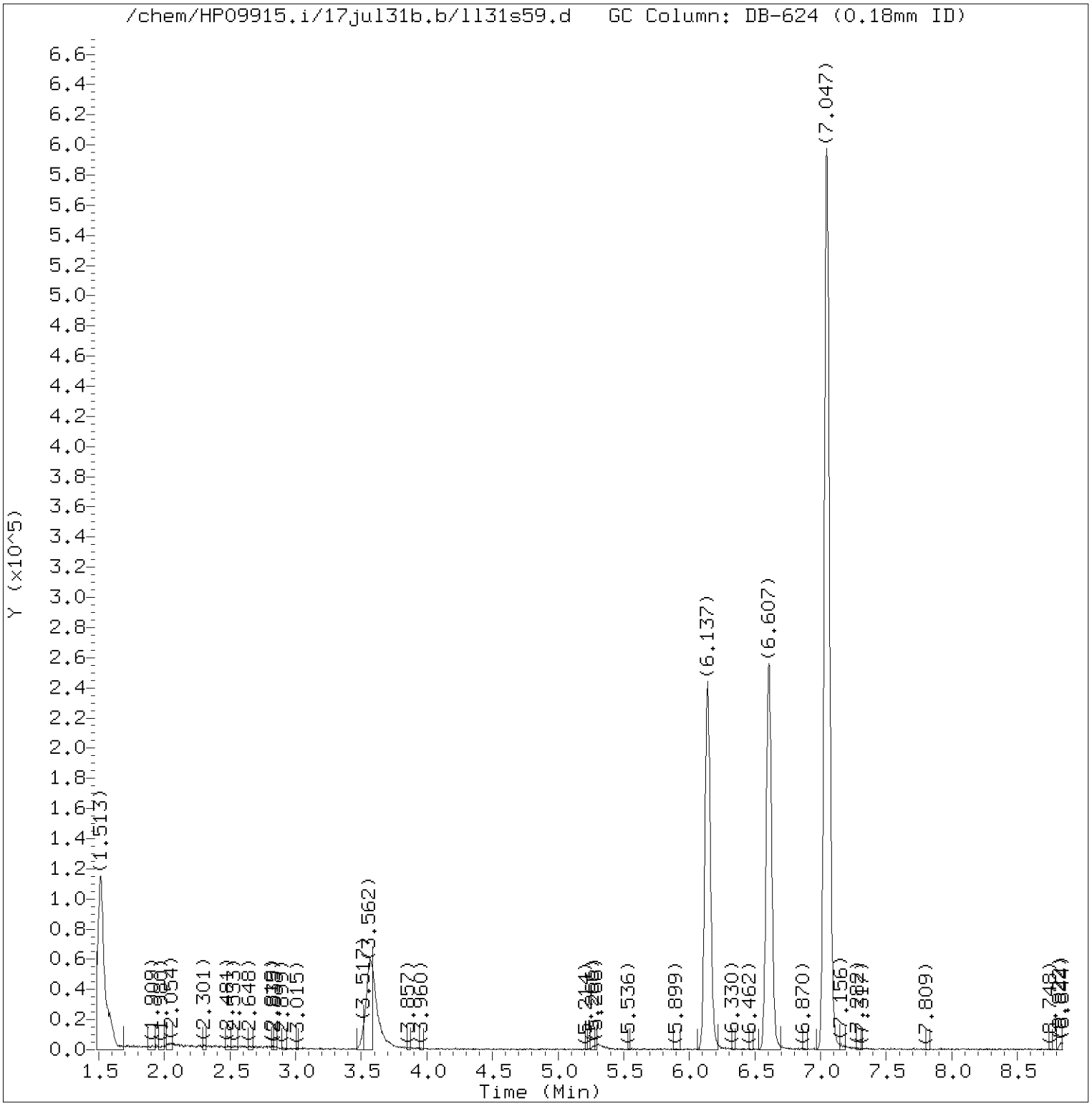
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:20. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

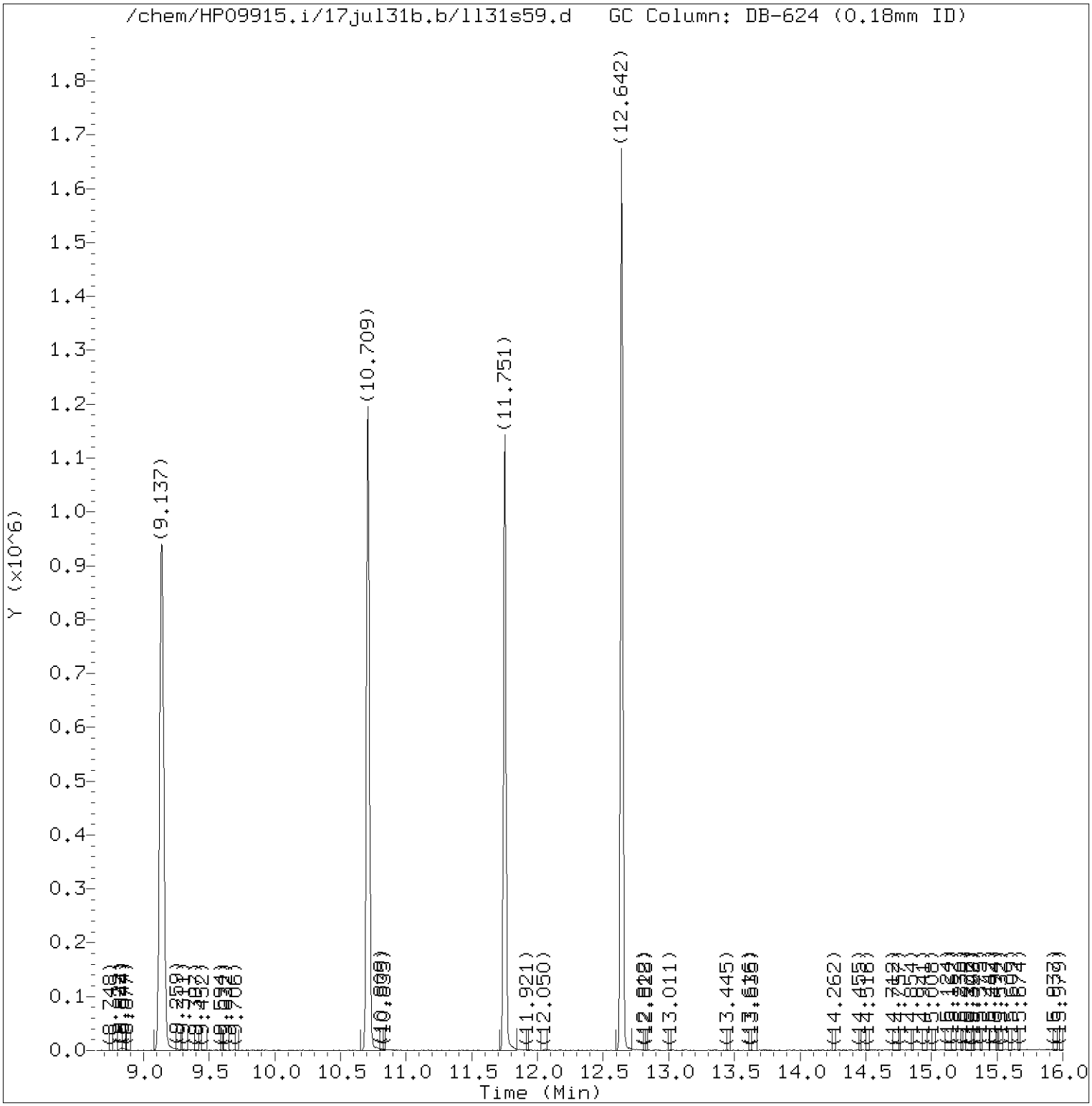
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s59.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 05:00 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 05:17 Automation

Sample Name: K1917 Lab Sample ID: 9121696

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:20.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s59.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 05:00 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 05:17 Automation

Sample Name: K1917 Lab Sample ID: 9121696

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:20.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s59.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 05:00 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 05:17 Automation

Sample Name: K1917 Lab Sample ID: 9121696

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 153762 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 218488 | 56.619 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 48206 | 50.236 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 790247 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 803891 | 49.519 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 635796 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 310454 | 51.451 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 357815 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:20.
Target 3.5 esignature user ID: dhh02035

# Standards Data

# Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17APR26A\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| KAS02648 | LA26T01.D | 50NG BFB | 04/26/2017 | 12:45 | | |
| KAS02648 | LA26X01.D | BLK | 04/26/2017 | 12:58 | | |
| KAS02648 | LA26I01.D | VSTD300 | 04/26/2017 | 13:20 | | |
| KAS02648 | LA26I02.D | VSTD100 | 04/26/2017 | 13:42 | | |
| KAS02648 | LA26I03.D | VSTD050 | 04/26/2017 | 14:04 | | |
| KAS02648 | LA26I04.D | VSTD020 | 04/26/2017 | 14:26 | | |
| KAS02648 | LA26I05.D | VSTD010 | 04/26/2017 | 14:48 | | |
| KAS02648 | LA26I06.D | VSTD004 | 04/26/2017 | 15:10 | | |
| KAS02648 | LA26I07.D | VSTD001 | 04/26/2017 | 15:32 | | |
| KAS02648 | LA26M01.D | MDL0.5 | 04/26/2017 | 15:54 | | |
| KAS02648 | LA26C01.D | VSTD050 | 04/26/2017 | 16:41 | L171161AA | |
| KAS02648 | LA26B01.D | VBLKL46 | 04/26/2017 | 17:03 | L171161AA | |
| KAS02648 | LA26S01.D | LCSL46 | 04/26/2017 | 17:25 | L171161AA | |
| KAS02648 | LA26S02.D | LCSL47 | 04/26/2017 | 17:47 | L171161AA | |
| KAS02648 | LA26M02.D | MDL001 | 04/26/2017 | 18:09 | L171161AA | |
| KAS02648 | LA26S01A.D | LCSL46 | 04/26/2017 | 18:34 | L171161AA | |
| KAS02648 | LA26S32.D | 8944378 | 04/26/2017 | 19:15 | L171162AA | |
| KAS02648 | LA26S33.D | 8944379 | 04/26/2017 | 19:37 | L171162AA | |
| KAS02648 | LA26S34.D | 8947184 | 04/26/2017 | 19:59 | L171162AA | |
| KAS02648 | LA26S35.D | 8944352 | 04/26/2017 | 20:21 | L171162AA | |
| KAS02648 | LA26S36.D | 8944353MS | 04/26/2017 | 20:43 | L171162AA | |
| KAS02648 | LA26S37.D | 8944354MSD | 04/26/2017 | 21:05 | L171162AA | |
| KAS02648 | LA26S38.D | 8944360 | 04/26/2017 | 21:27 | L171162AA | |
| KAS02648 | LA26S39.D | 8944366 | 04/26/2017 | 21:49 | L171162AA | |
| KAS02648 | LA26S40.D | 8944368 | 04/26/2017 | 22:11 | L171162AA | |
| KAS02648 | LA26S41.D | 8944370 | 04/26/2017 | 22:33 | L171162AA | |
| KAS02648 | LA26S42.D | 8947174 | 04/26/2017 | 22:55 | L171162AA | |
| KAS02648 | LA26S43.D | 8947180 | 04/26/2017 | 23:17 | L171162AA | |
| KAS02648 | LA26EC1.D | SECC050 | 04/26/2017 | 23:38 | L171162AA | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17jul31b\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| kk10002 | LL31T05.D | 50NGBFB | 07/31/2017 | 20:49 | L172122AA | |
| kk10002 | LL31X04.D | CBLKL94 | 07/31/2017 | 21:08 | L172122AA | |
| kk10002 | LL31C05.D | VSTD050 | 07/31/2017 | 21:30 | L172122AA | |
| kk10002 | LL31S41.D | LCSL94 | 07/31/2017 | 21:52 | L172122AA | |
| kk10002 | LL31S42.D | LCDL94 | 07/31/2017 | 22:13 | L172122AA | |
| kk10002 | LL31B05.D | VBLKL94 | 07/31/2017 | 22:35 | L172122AA | |
| kk10002 | LL31S43.D | 9121682 | 07/31/2017 | 23:11 | L172122AA | |
| kk10002 | LL31S44.D | 9121695 | 07/31/2017 | 23:33 | L172122AA | |
| kk10002 | LL31S45.D | 9124762 | 07/31/2017 | 23:55 | L172122AA | |
| kk10002 | LL31S46.D | 9121683 | 08/01/2017 | 00:16 | L172122AA | |
| kk10002 | LL31S47.D | 9121684MS | 08/01/2017 | 00:38 | L172122AA | |
| kk10002 | LL31S48.D | 9121685MSD | 08/01/2017 | 01:00 | L172122AA | |
| kk10002 | LL31S49.D | 9121064 | 08/01/2017 | 01:22 | L172122AA | |
| kk10002 | LL31S50.D | 9121065 | 08/01/2017 | 01:44 | L172122AA | |
| kk10002 | LL31S51.D | 9121066 | 08/01/2017 | 02:05 | L172122AA | |
| kk10002 | LL31S52.D | 9121074 | 08/01/2017 | 02:27 | L172122AA | |
| kk10002 | LL31S53.D | 9121674 | 08/01/2017 | 02:49 | L172122AA | |
| kk10002 | LL31S54.D | 9121676 | 08/01/2017 | 03:11 | L172122AA | |
| kk10002 | LL31S55.D | 9121678 | 08/01/2017 | 03:33 | L172122AA | |
| kk10002 | LL31S56.D | 9121680 | 08/01/2017 | 03:54 | L172122AA | |
| kk10002 | LL31S57.D | 9121691 | 08/01/2017 | 04:16 | L172122AA | |
| kk10002 | LL31S58.D | 9121693 | 08/01/2017 | 04:38 | L172122AA | |
| kk10002 | LL31S59.D | 9121696 | 08/01/2017 | 05:00 | L172122AA | |
| kk10002 | LL31S60.D | 9124755 | 08/01/2017 | 05:21 | L172122AA | |
| kk10002 | LL31S61.D | 9124756 | 08/01/2017 | 05:43 | L172122AA | |
| kk10002 | LL31S62.D | 9124758 | 08/01/2017 | 06:05 | L172122AA | |
| kk10002 | LL31S63.D | 9124759 | 08/01/2017 | 06:27 | L172122AA | |
| kk10002 | LL31S64.D | 9124764 | 08/01/2017 | 06:49 | L172122AA | |
| kk10002 | LL31EC5.D | SECC050 | 08/01/2017 | 07:11 | L172122AA | |

Data File: /chem/HP09915.i/17apr26a.b/la26t01.d



Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017

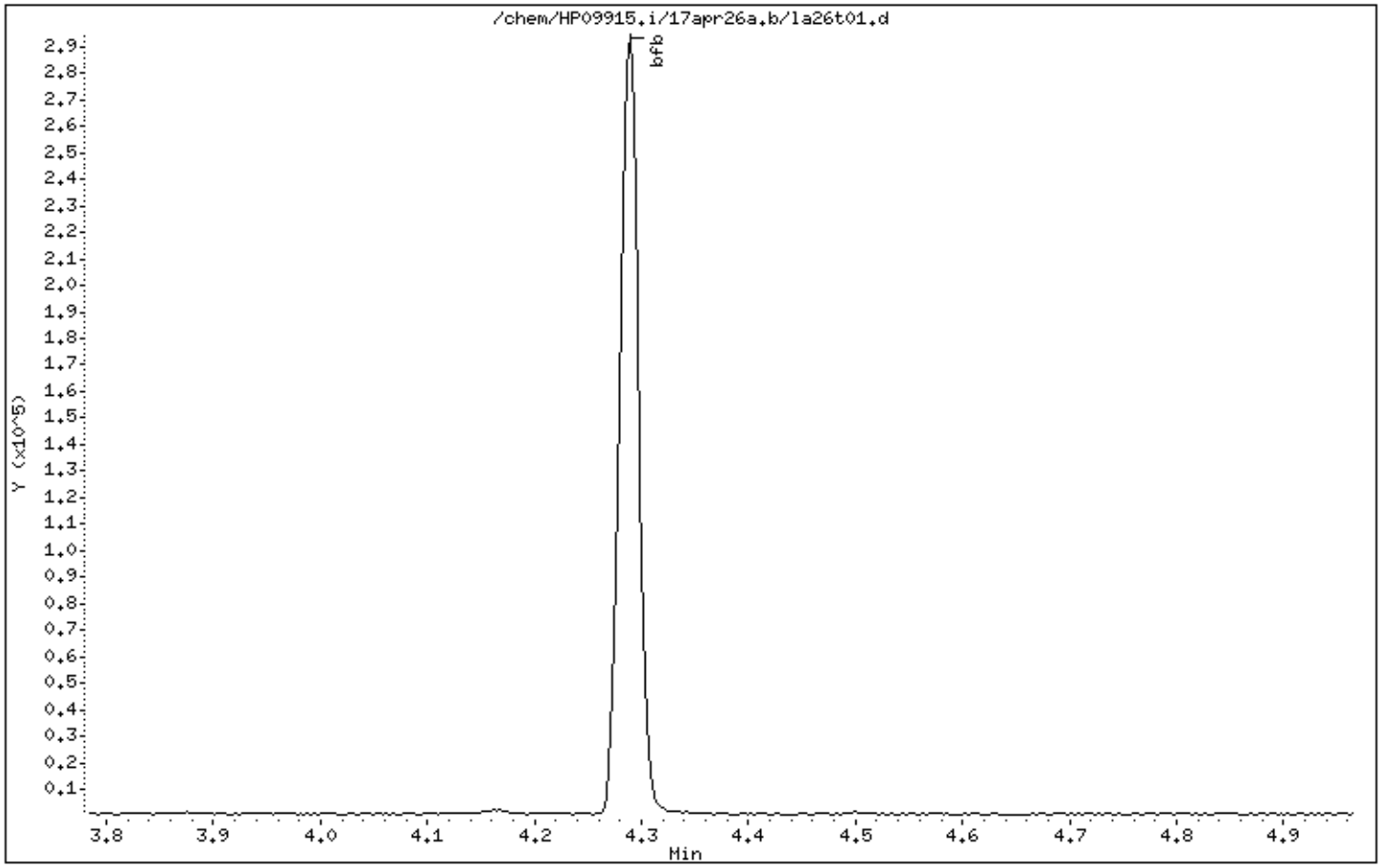
Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17apr26a.b/la26t01.d



Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017

Instrument: HP09915.i

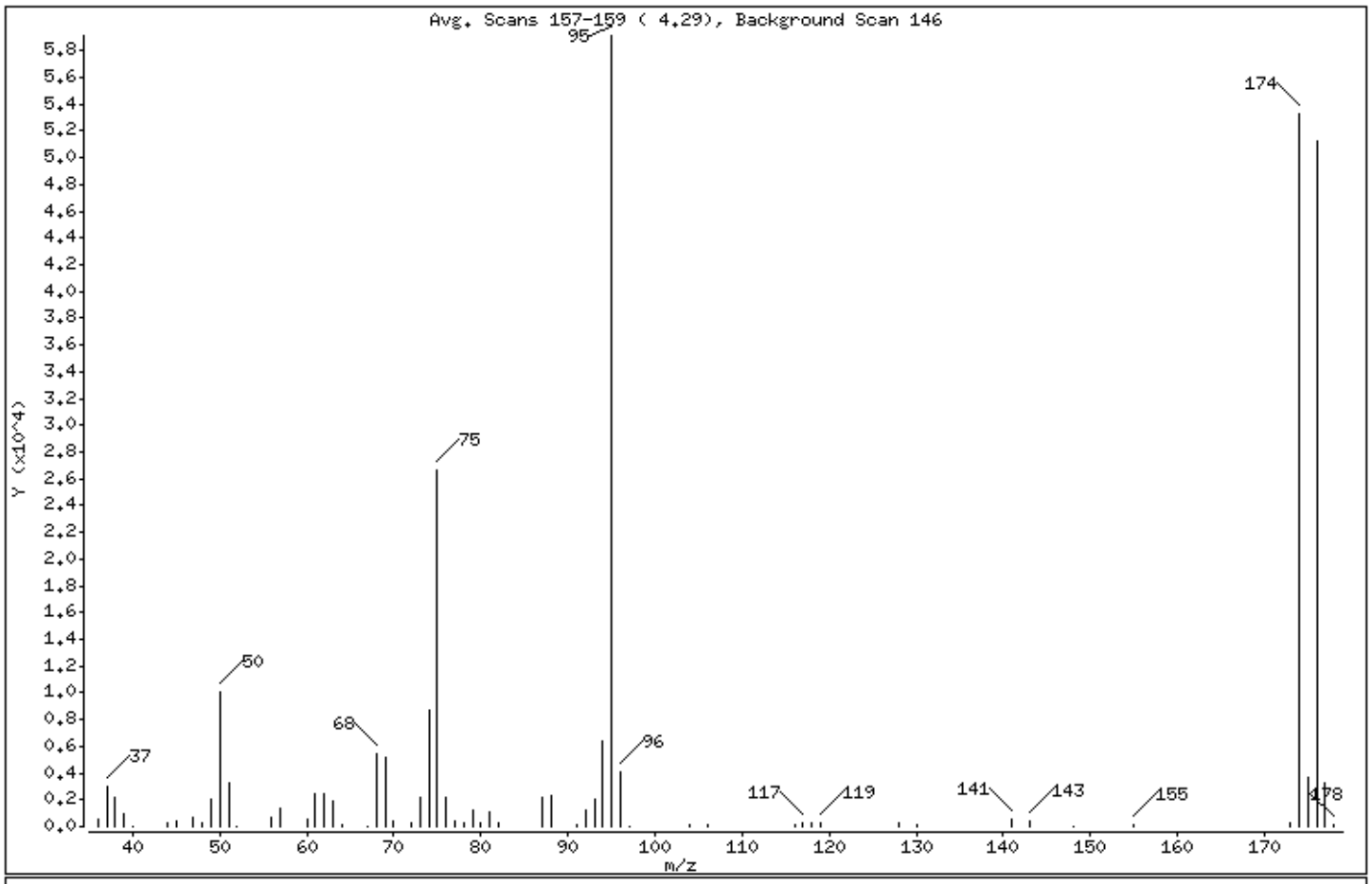
Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

Operator: KAS02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 17.10 |
| 75 | 30.00 - 60.00% of mass 95 | 44.97 |
| 96 | 5.00 - 9.00% of mass 95 | 6.79 |
| 173 | Less than 2.00% of mass 174 | 0.49 ( 0.54) |
| 174 | 50.00 - 100.00% of mass 95 | 90.09 |
| 175 | 5.00 - 9.00% of mass 174 | 6.12 ( 6.79) |
| 176 | 95.00 - 101.00% of mass 174 | 86.74 ( 96.29) |
| 177 | 5.00 - 9.00% of mass 176 | 5.56 ( 6.41) |

Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648

Date : 26-APR-2017 12:45

Client ID: BFB FEB 20, 2017 Instrument: HP09915.i

Sample Info: BFB FEB 20, 2017;50NG BFB;1;3;;;;;;

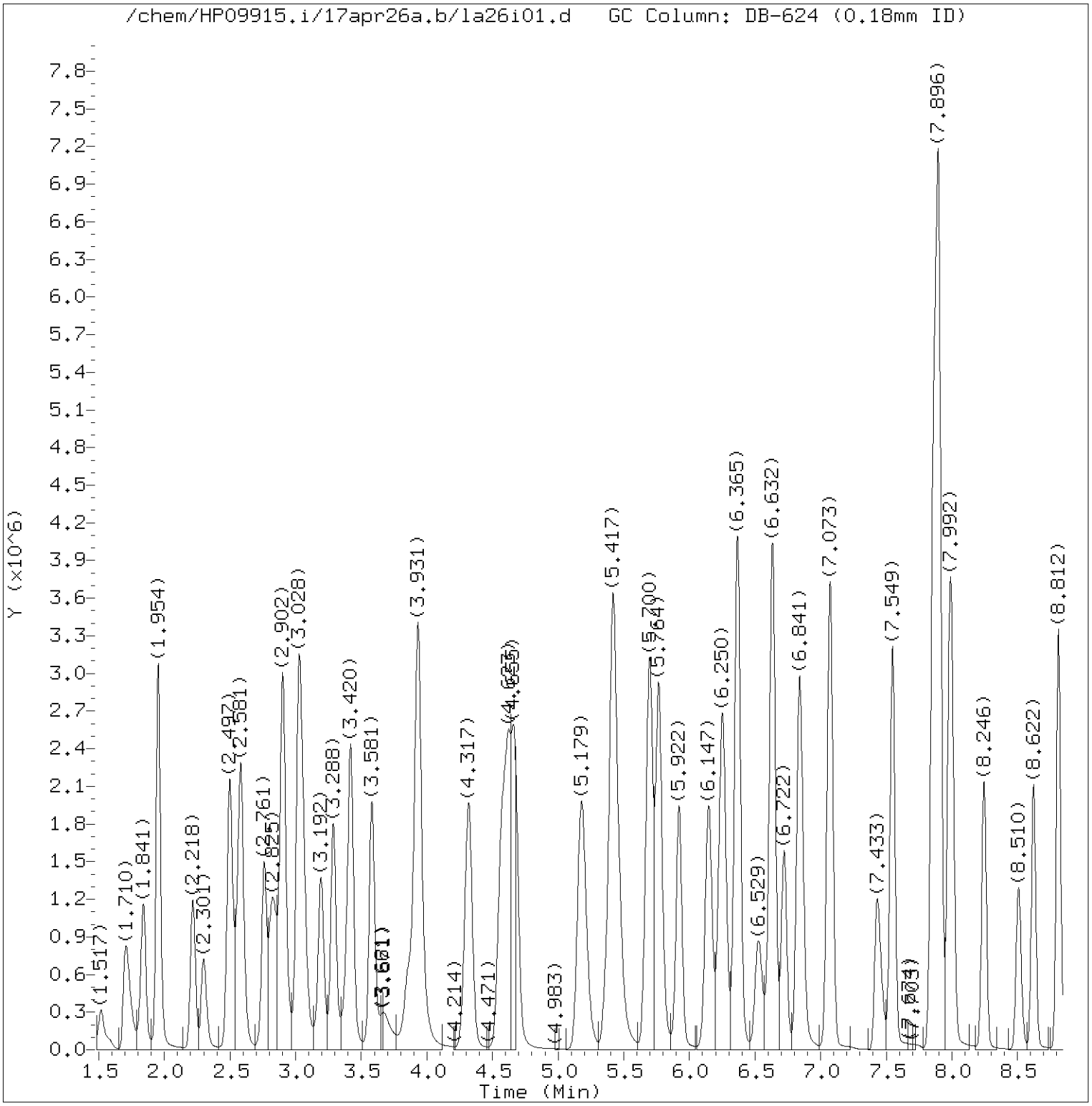
Operator: KAS02648

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: la26t01.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 146
Location of Maximum: 95.00
Number of points: 62

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 581 | 61.00 | 2433 | 80.00 | 261 | 118.00 | 213 |
| 37.00 | 2955 | 62.00 | 2451 | 81.00 | 1135 | 119.00 | 269 |
| 38.00 | 2227 | 63.00 | 1939 | 82.00 | 248 | 128.00 | 225 |
| 39.00 | 905 | 64.00 | 156 | 87.00 | 2238 | 130.00 | 116 |
| 40.00 | 18 | 67.00 | 61 | 88.00 | 2301 | 141.00 | 493 |
| 44.00 | 266 | 68.00 | 5493 | 91.00 | 177 | 143.00 | 436 |
| 45.00 | 425 | 69.00 | 5219 | 92.00 | 1262 | 148.00 | 51 |
| 47.00 | 688 | 70.00 | 432 | 93.00 | 2027 | 155.00 | 68 |
| 48.00 | 283 | 72.00 | 236 | 94.00 | 6417 | 173.00 | 287 |
| 49.00 | 2054 | 73.00 | 2174 | 95.00 | 59120 | 174.00 | 53256 |
| 50.00 | 10110 | 74.00 | 8666 | 96.00 | 4015 | 175.00 | 3618 |
| 51.00 | 3256 | 75.00 | 26584 | 97.00 | 51 | 176.00 | 51280 |
| 52.00 | 55 | 76.00 | 2212 | 104.00 | 202 | 177.00 | 3288 |
| 56.00 | 714 | 77.00 | 371 | 106.00 | 68 | 178.00 | 74 |
| 57.00 | 1411 | 78.00 | 215 | 116.00 | 182 | | |
| 60.00 | 513 | 79.00 | 1182 | 117.00 | 318 | | |

Digitally signed by Kevin A. Sposito on 04/26/2017 at 12:52.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

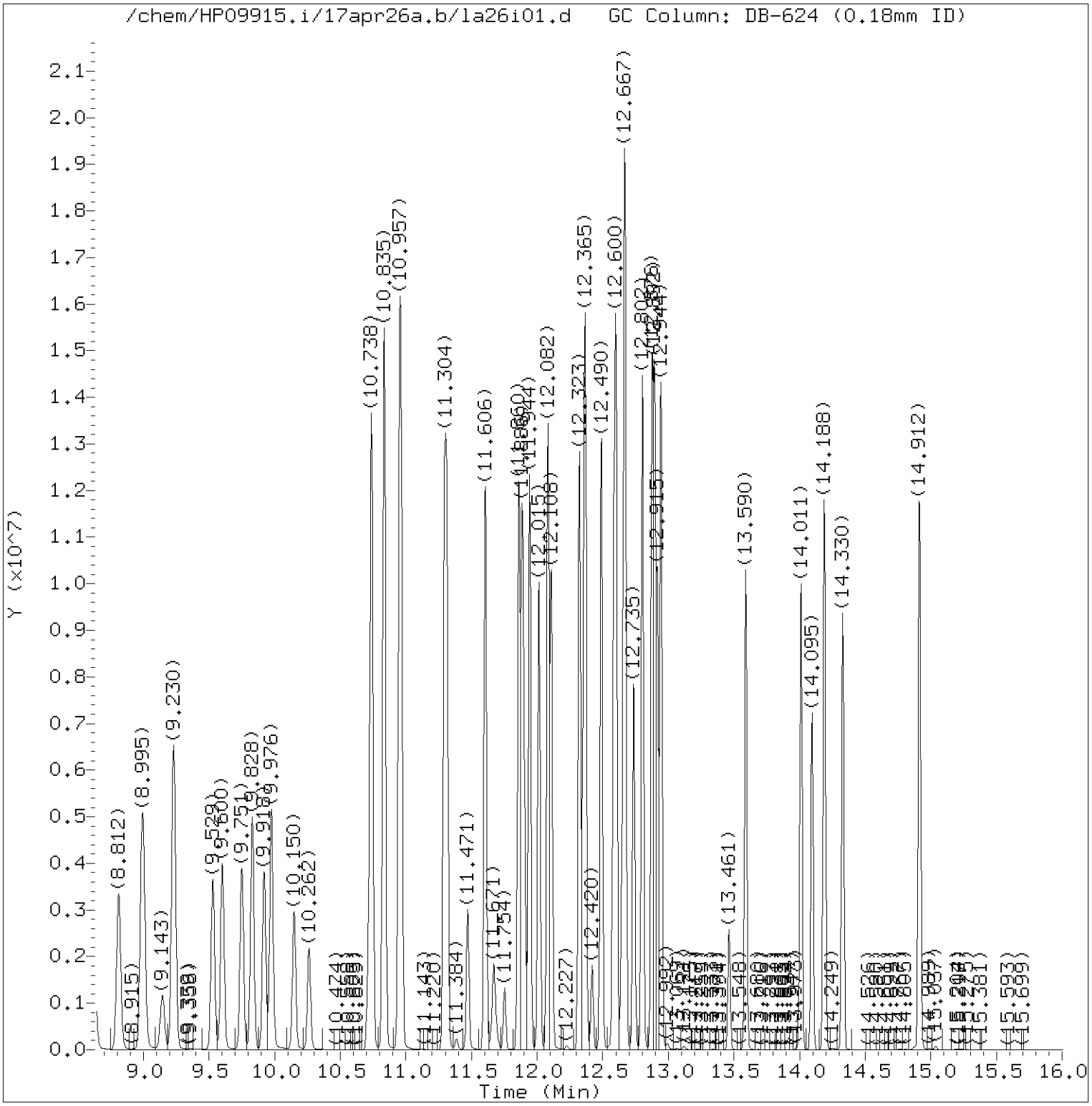
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 1958047 | 313.882 |
| 4) Chloromethane | (2) | 1.841 | 50 | 1904237 | 297.140 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 1095441 | 290.215 |
| 6) Vinyl Chloride | (2) | 1.954 | 62 | 1868685 | 301.966 |
| 8) Bromomethane | (2) | 2.218 | 94 | 1235545 | 296.846 |
| 9) Chloroethane | (2) | 2.301 | 64 | 1017254 | 291.687 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 2518637 | 296.081 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 2251585 | 314.196 |
| 11) n-Pentane | (2) | 2.587 | 43 | 1712208 | 290.122 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 1196266 | 299.857 |
| 15) Freon 123a | (2) | 2.822 | 67 | 1429955 | 299.625 |
| 16) Acrolein | (1) | 2.902 | 56 | 4637155 | 3348.162 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 1151917 | 303.712 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 63 | 584950 | 304.648 |
| 18) Acetone | (1) | 3.037 | 58 | 403999 | 672.085 |
| 19) Freon 113 | (2) | 3.054 | 101 | 1196009 | 313.286 |
| 21) 2-Propanol | (1) | 3.173 | 45 | 593623 | 1489.698 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 2269414 | 308.478 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 3857476 | 312.534 |
| 27) Methyl Acetate | (2) | 3.391 | 43 | 1585782 | 288.068 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 2271974 | 299.058 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 169188M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 1398327 | 279.081 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 944135 | 1442.270 |
| 31) Acrylonitrile | (2) | 3.851 | 53 | 875676 | 302.918 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 4032886 | 290.250 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 1361677 | 305.995 |
| 34) n-Hexane | (2) | 4.317 | 57 | 2081106 | 305.081 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 2520546 | 301.428 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 4685474 | 291.938 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 2194166 | 311.075 |
| 40) Ethyl t-butyl ether | (2) | 5.182 | 59 | 4023920 | 291.328 |
| 44) 2-Butanone | (2) | 5.385 | 43 | 2335957 | 603.500 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 1543601 | 302.715 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 1850165 | 331.391 |
| 47) Propionitrile | (1) | 5.468 | 54 | 1527979 | 1599.274 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 2165702 | 751.439 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 831794 | 309.503 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300  Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 604452 | 716.270 |
| 51) Chloroform | (2) | 5.922 | 83 | 2401549 | 301.309 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 255745 | 50.012 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 111 | 262971 | 50.184 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 2144080 | 294.382 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 2905278 | 608.709 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 2560169 | 308.719 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 2125161 | 309.600 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 756981 | 314.913 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 1780485 | 334.890 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2006976 | 309.593 |
| 58) Isobutyl Alcohol | (1) | 6.529 | 41 | 870124 | 3785.822 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 63036 | 49.572 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 293986 | 48.877 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 104 | 40289 | 49.952 |
| 60) Benzene | (2) | 6.635 | 78 | 5664323 | 296.413 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 1935203 | 299.340 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 98 | 187547 | 329.010 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 4084653 | 297.970 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1047200 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 2258430 | 295.708 |
| 69) n-Butanol | (1) | 7.433 | 56 | 1528004M | 8247.101 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 1501811 | 304.105 |
| 72) Methylcyclohexane | (2) | 7.860 | 83 | 2774376 | 318.844 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 1266884 | 322.636 |
| 73) 1,2-Dichloropropane | (2) | 7.893 | 63 | 1591407 | 304.211 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 201278M | 3479.803 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 1449583 | 323.724 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 1017942 | 309.424 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 1923473 | 323.978 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 1184003 | 703.267 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.622 | 63 | 1300550 | 323.419 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 2566038 | 331.609 |
| 82) 4-Methyl-2-pentanone | (2) | 8.995 | 43 | 5077972 | 636.634 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1048562 | 49.332 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 698016 | 49.847 |
| 88) Toluene | (3) | 9.230 | 92 | 3661123 | 296.405 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 2355530 | 340.103 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 2475882 | 317.369 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 1425551 | 299.507 |
| 93) Tetrachloroethene | (3) | 9.831 | 166 | 1673578 | 306.339 |
| 94) 1,3-Dichloropropane | (3) | 9.921 | 76 | 2464344 | 298.391 |
| 96) 2-Hexanone | (3) | 9.976 | 43 | 3763816 | 631.277 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 4921568 | 671.712 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 1685181 | 341.825 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 1613118 | 309.581 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 832450 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 2100198 | 296.072 |
| 102) Chlorobenzene | (3) | 10.741 | 112 | 4297711 | 301.535 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 1522321 | 323.444 |
| 104) Ethylbenzene | (3) | 10.838 | 91 | 7075752 | 296.976 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 5612991 | 605.130 |
| 107) o-Xylene | (3) | 11.294 | 106 | 2814653 | 305.123 |
| 109) Styrene | (3) | 11.314 | 104 | 4717754 | 309.374 |
| 110) Bromoform | (3) | 11.471 | 173 | 1309455 | 365.799 |
| 111) Isopropylbenzene | (3) | 11.606 | 105 | 7076637 | 300.169 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 788204 | 3612.463 |
| 114)$4-Bromofluorobenzene | (3) | 11.754 | 95 | 390072 | 49.374 |
| 114)$4-Bromofluorobenzene | (3) | 11.754 | 174 | 345842 | 49.906 |
| 108) Xylene (Total) | (3) | | 106 | 8427644 | 910.253 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.860 | 83 | 2325327 | 290.148 |
| 115) Bromobenzene | (4) | 11.863 | 156 | 1969582 | 305.174 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 1716308 | 747.363 |
| 117) 1,2,3-Trichloropropane | (4) | 11.905 | 110 | 658906 | 290.845 |
| 119) n-Propylbenzene | (4) | 11.944 | 91 | 8145618 | 285.633 |
| 120) 2-Chlorotoluene | (4) | 12.015 | 126 | 1788274 | 301.293 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 6133887 | 301.630 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 1867872 | 302.377 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 1372178M | 312.149 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1198514 | 345.326 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 6317724 | 301.599 |
| 127) sec-Butylbenzene | (4) | 12.490 | 105 | 7645015 | 294.717 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 3590968 | 292.247 |
| 130) p-Isopropyltoluene | (4) | 12.603 | 119 | 6883297 | 300.529 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 451513 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 3631810 | 285.849 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 6440778 | 293.471 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 4582840 | 364.666 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 4116951 | 300.860 |
| 137) 1,4-Diethylbenzene | (4) | 12.876 | 119 | 4232692 | 294.554 |
| 139) n-Butylbenzene | (4) | 12.896 | 92 | 3262571 | 285.151 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 3500895 | 289.855 |
| 140) 1,2-Diethylbenzene | (4) | 12.944 | 119 | 3434155 | 298.215 |
| 141) Diethylbenzene (total) | (4) | | 100 | 11783798 | 893.629 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.461 | 75 | 522343 | 308.197 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 2788456 | 284.760 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 2672501 | 281.341 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 1140885 | 276.553 |
| 148) Naphthalene | (4) | 14.188 | 128 | 7817799 | 272.736 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 2521047 | 275.101 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 4927545 | 265.852 |



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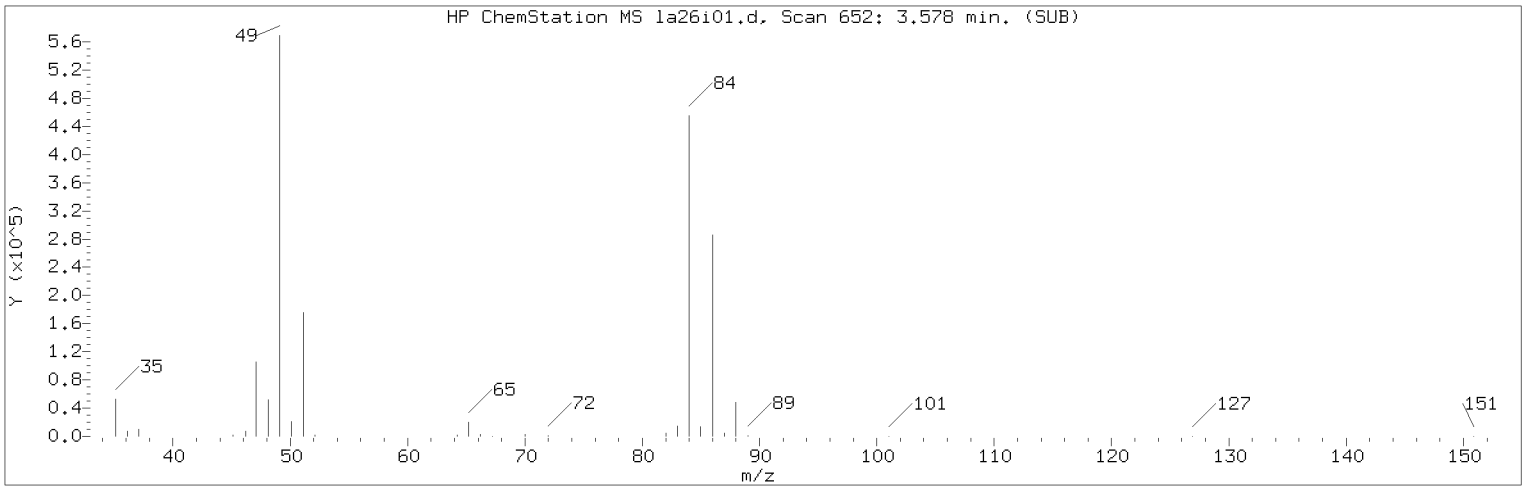
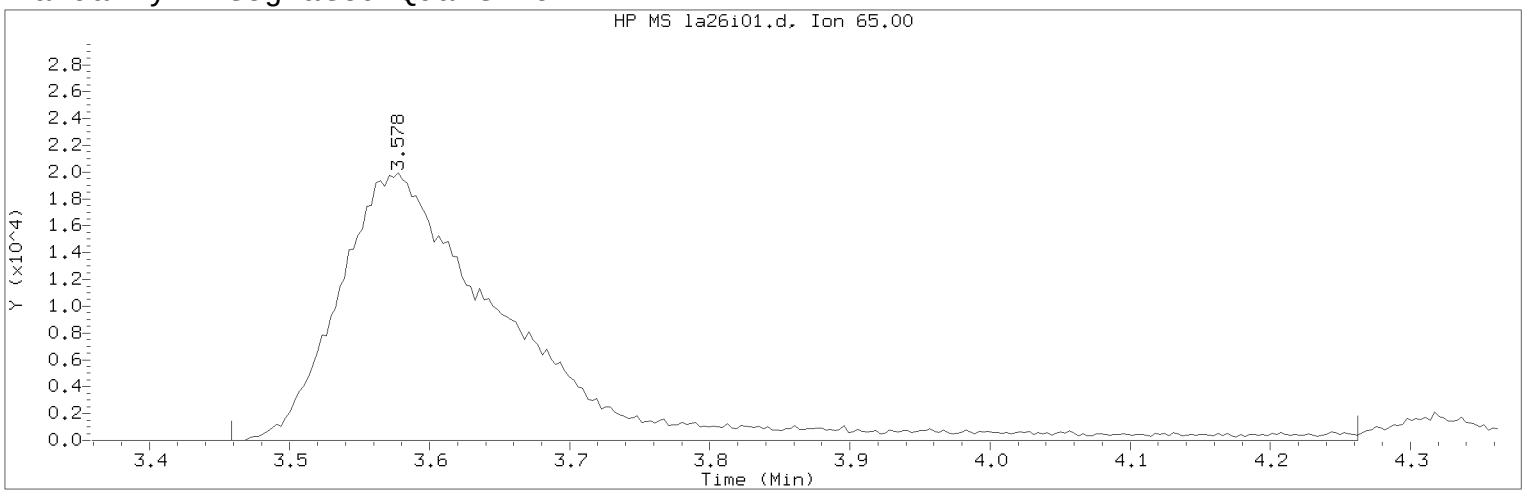
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

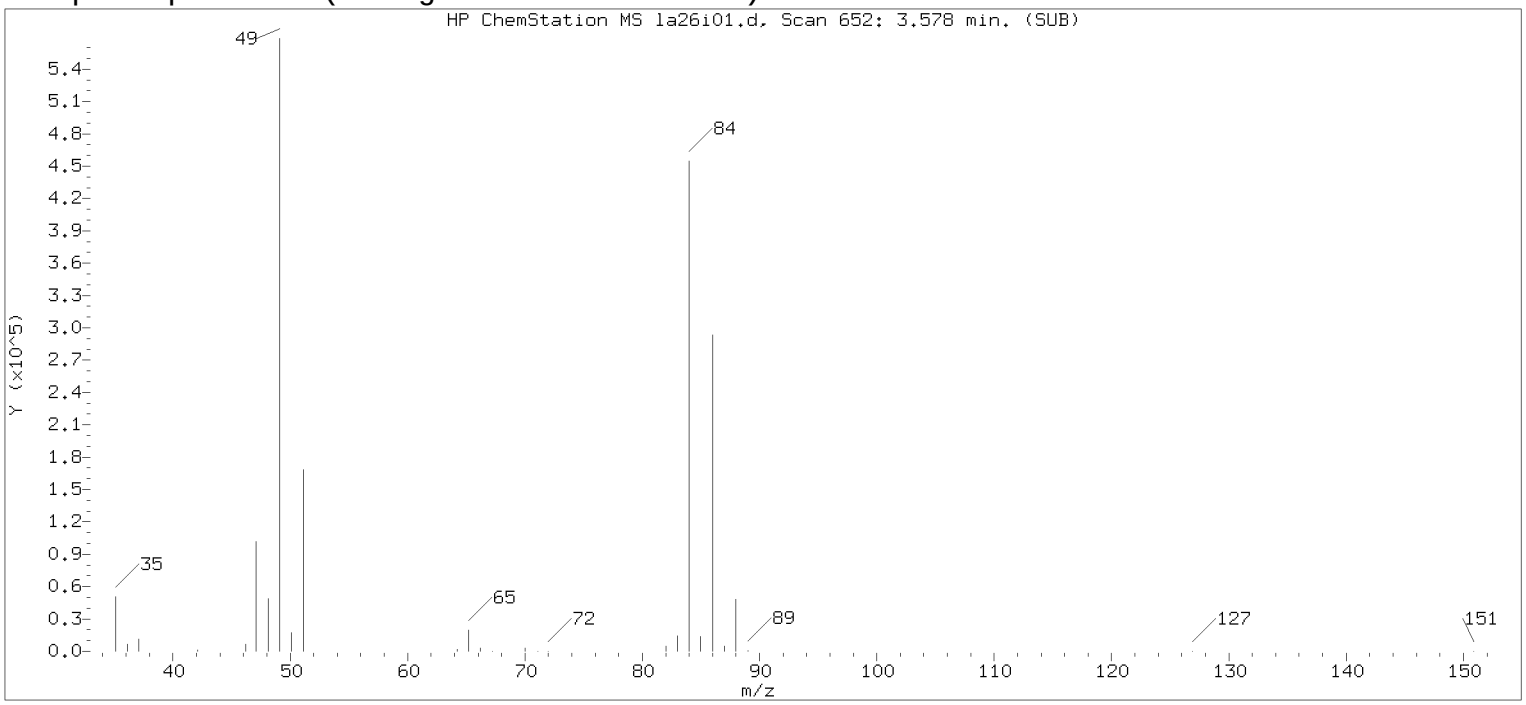
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area (flag) : 169188M
On-Column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 864
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

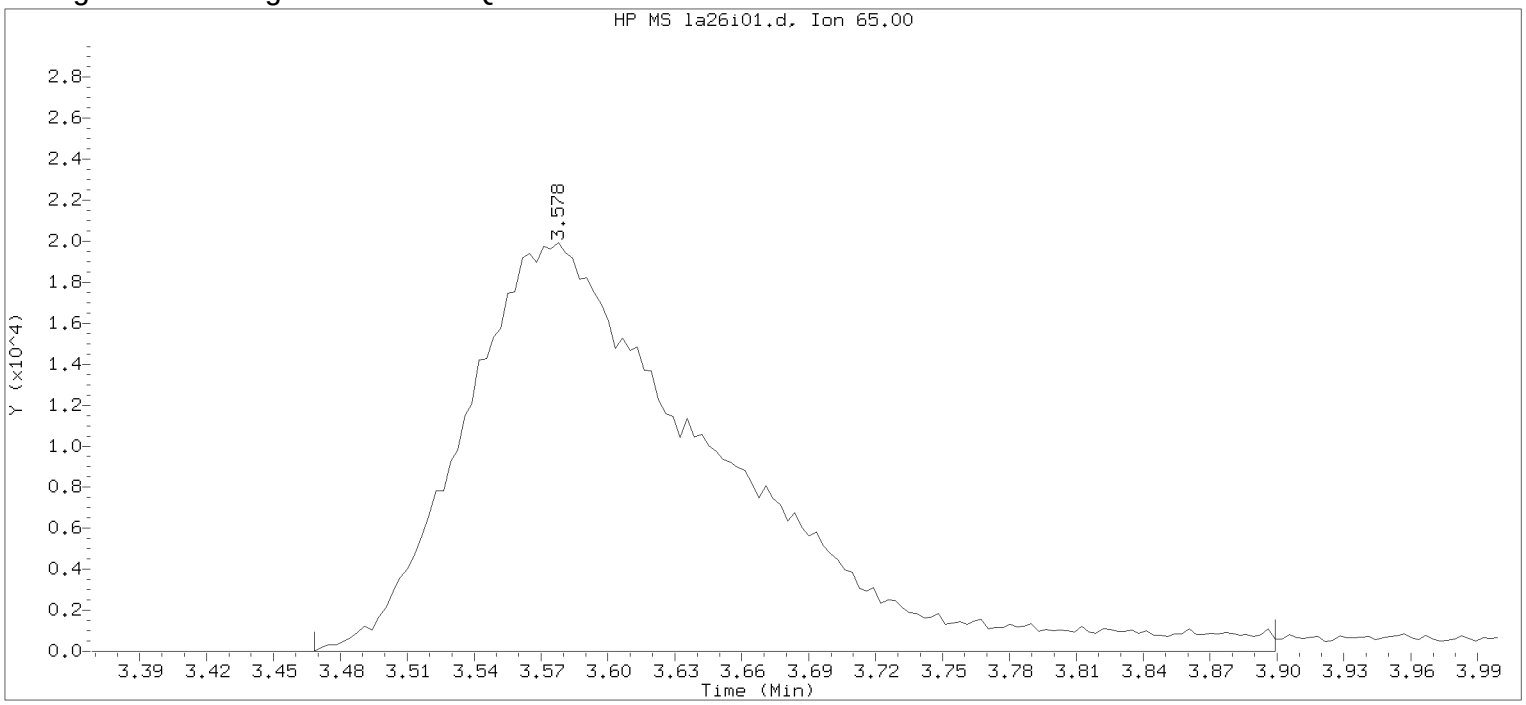
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

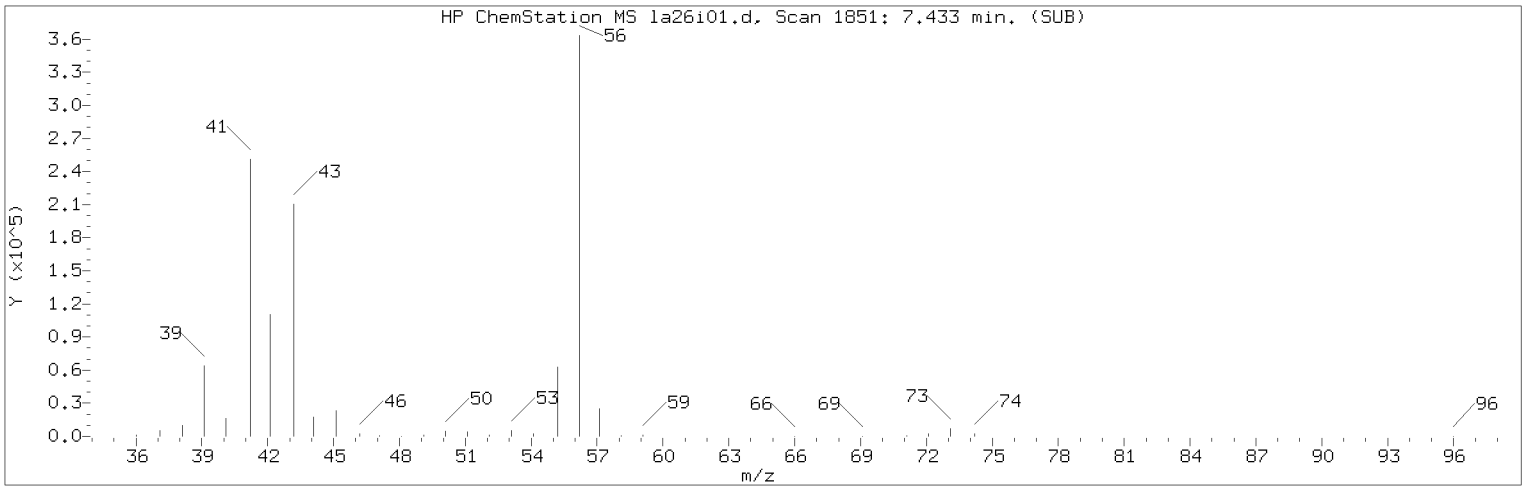
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

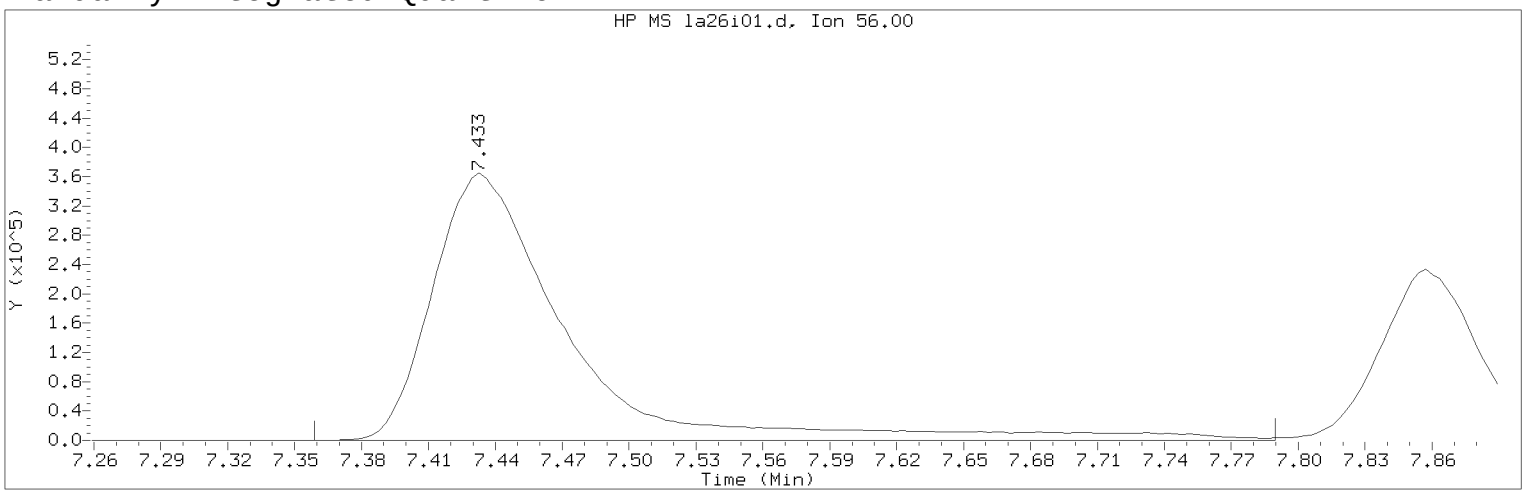
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 158080
On-column Amount (ng) : 250.0000
Integration start scan : 617 Integration stop scan: 751
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

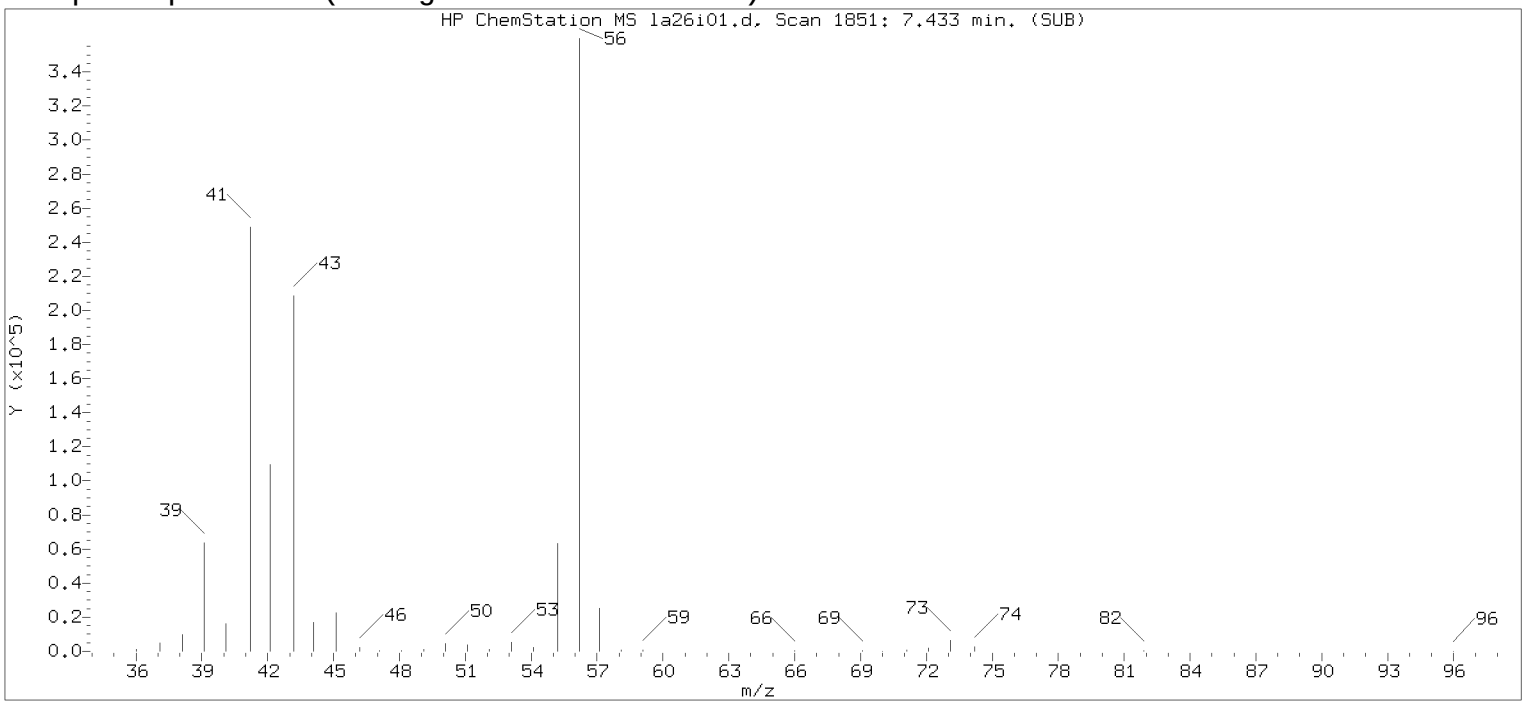
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1851
Retention Time (minutes): 7.433
Quant Ion : 56.00
Area (flag) : 1528004M
On-Column Amount (ng) : 8247.1010
Integration start scan : 1827 Integration stop scan: 1961
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

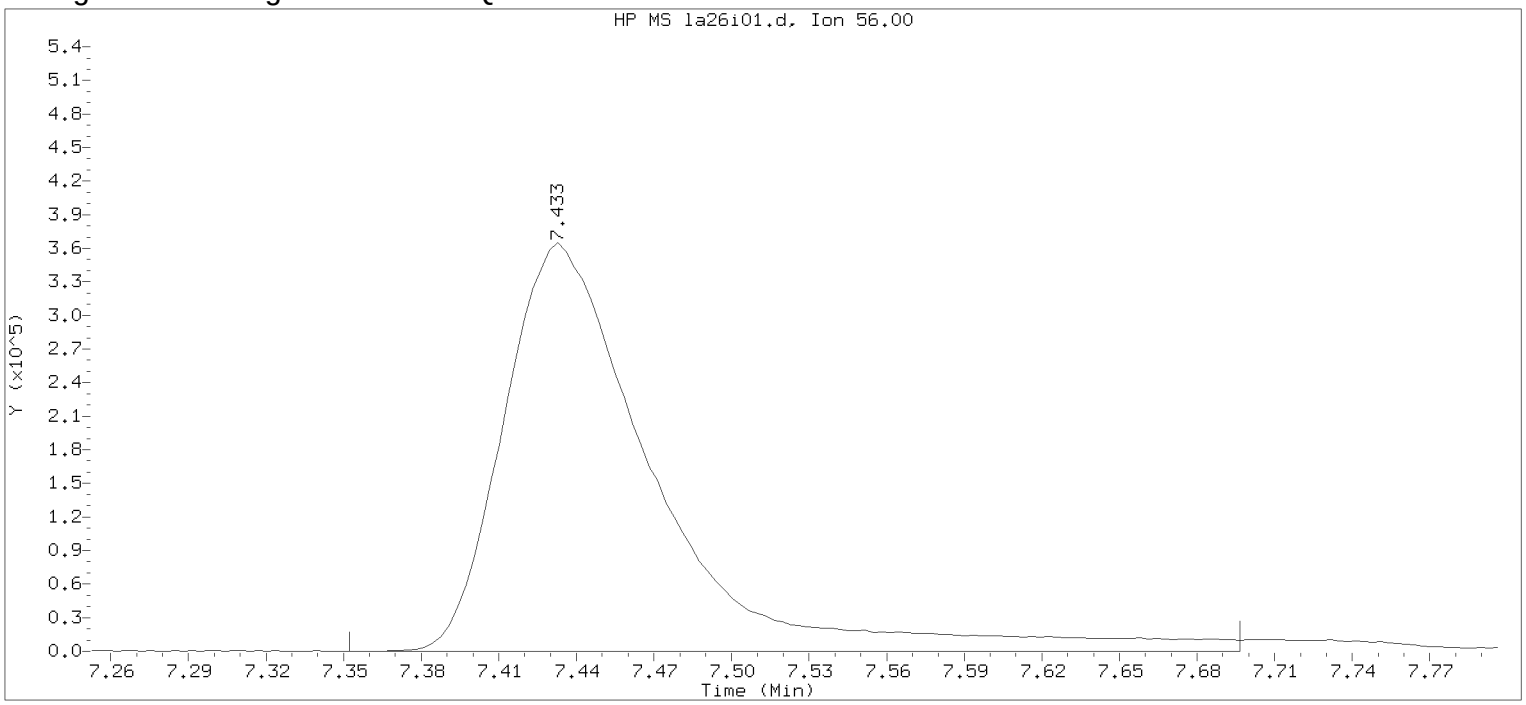
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1851
Retention Time (minutes): 7.433
Quant Ion : 56.00
Area : 1485088
On-column Amount (ng) : 7806.8912
Integration start scan : 1825 Integration stop scan: 1932
Y at integration start : 0 Y at integration end: 0

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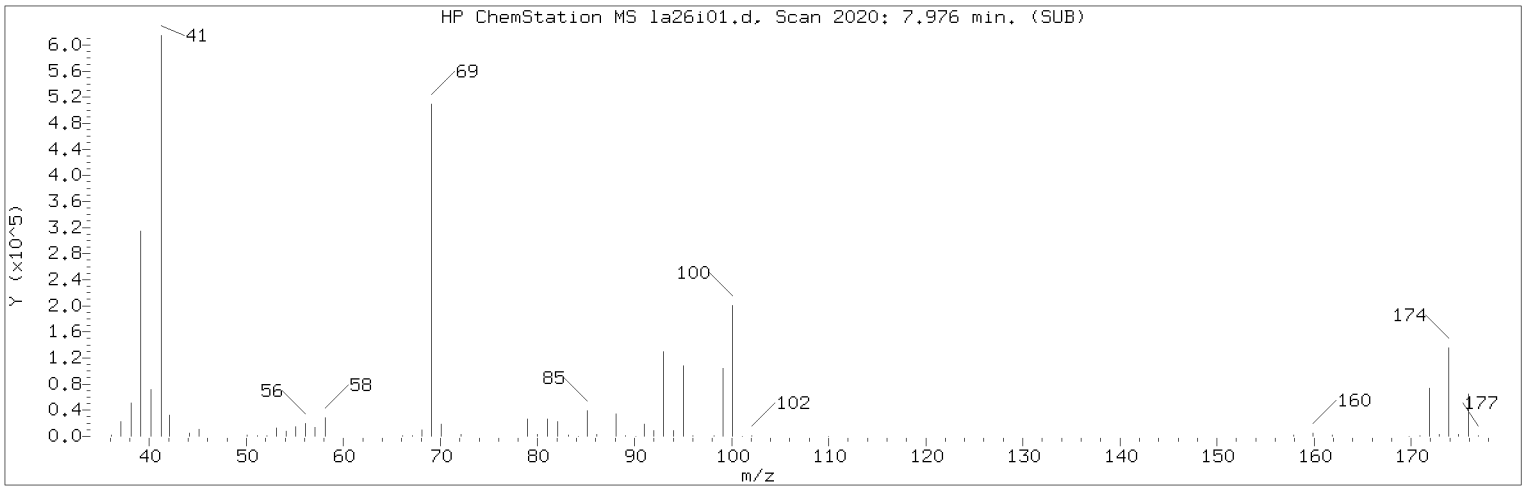
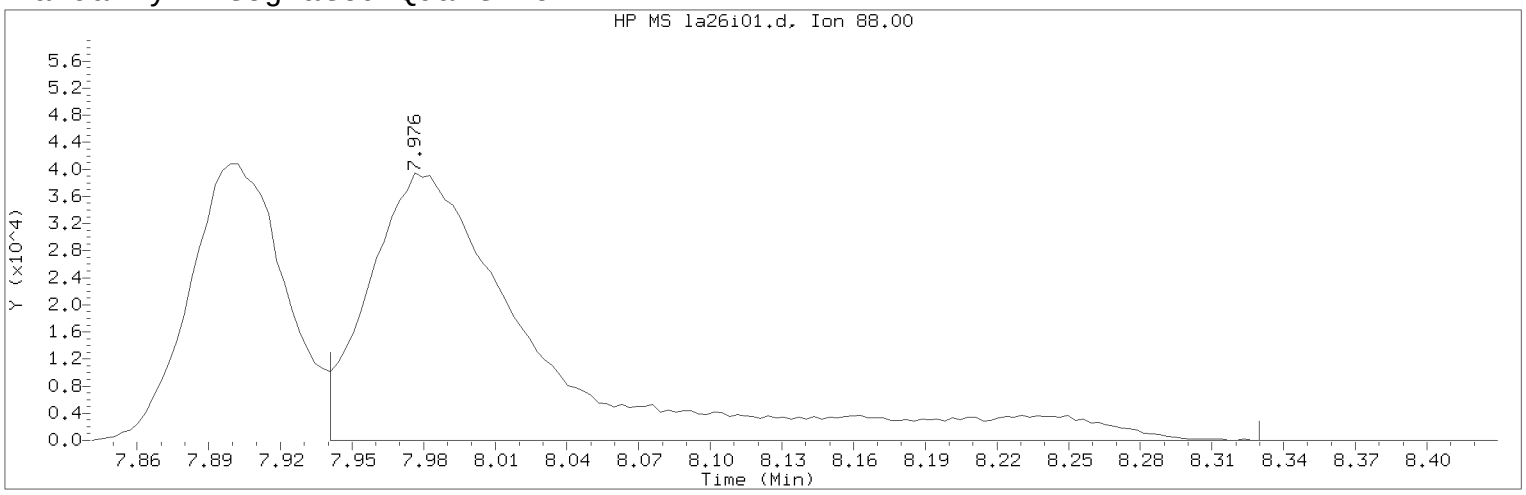
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

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Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

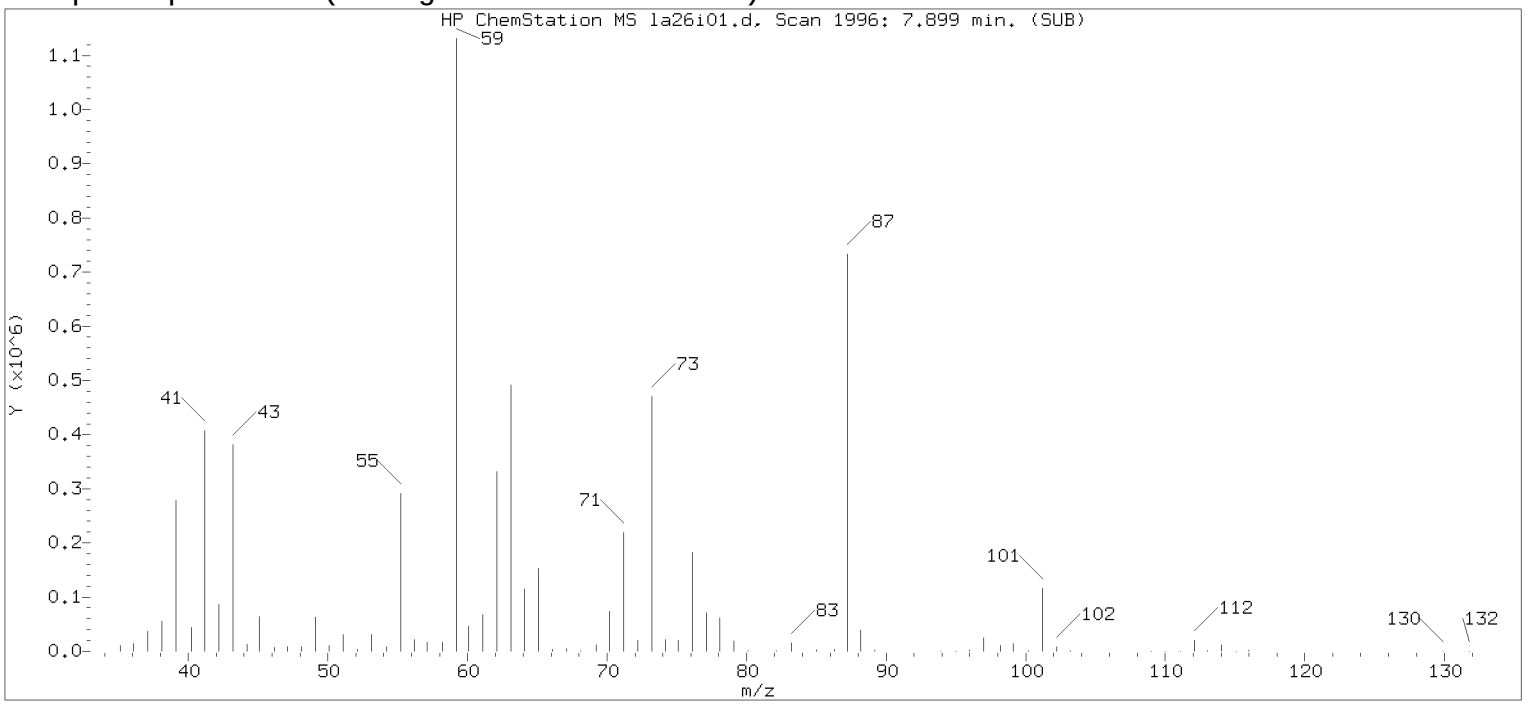
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 201278M
On-Column Amount (ng) : 3479.8034
Integration start scan : 2008 Integration stop scan: 2129
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

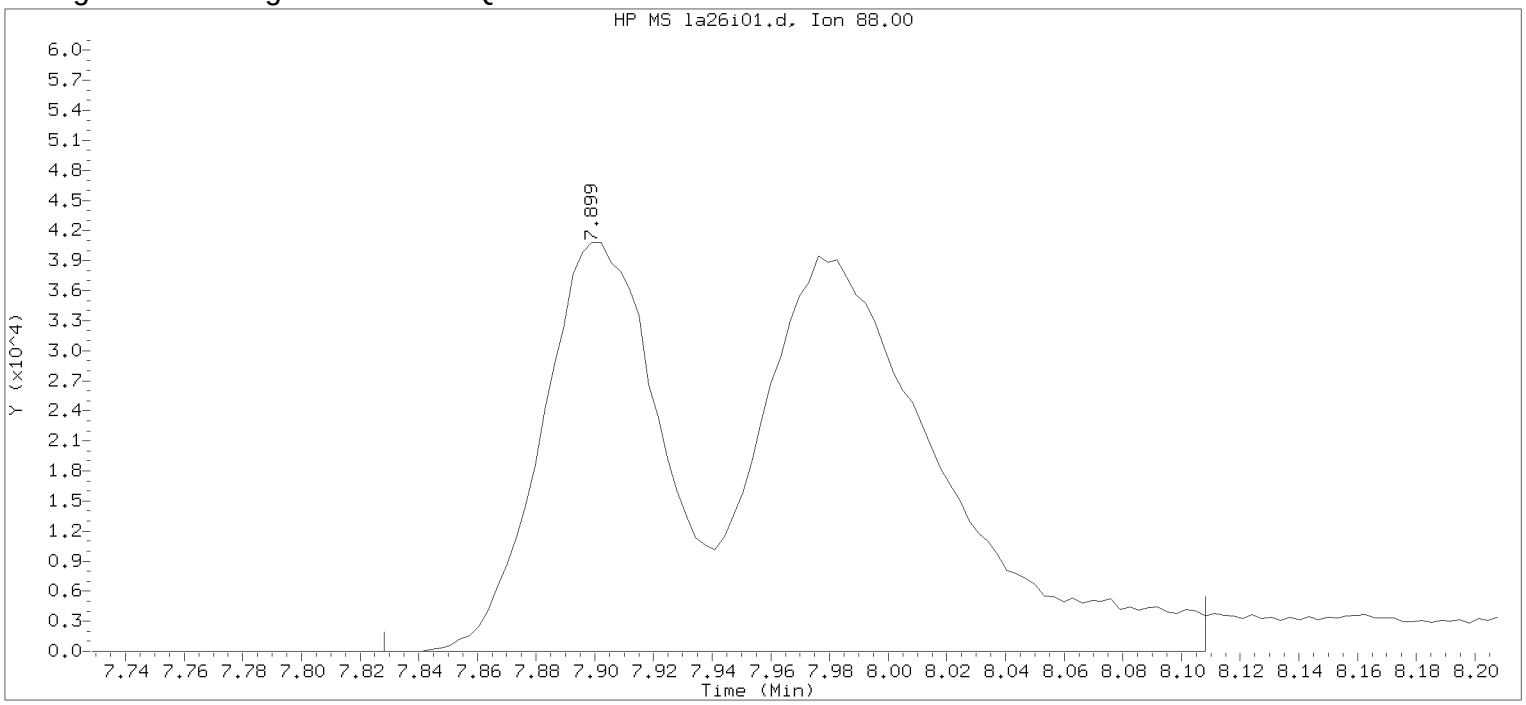
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

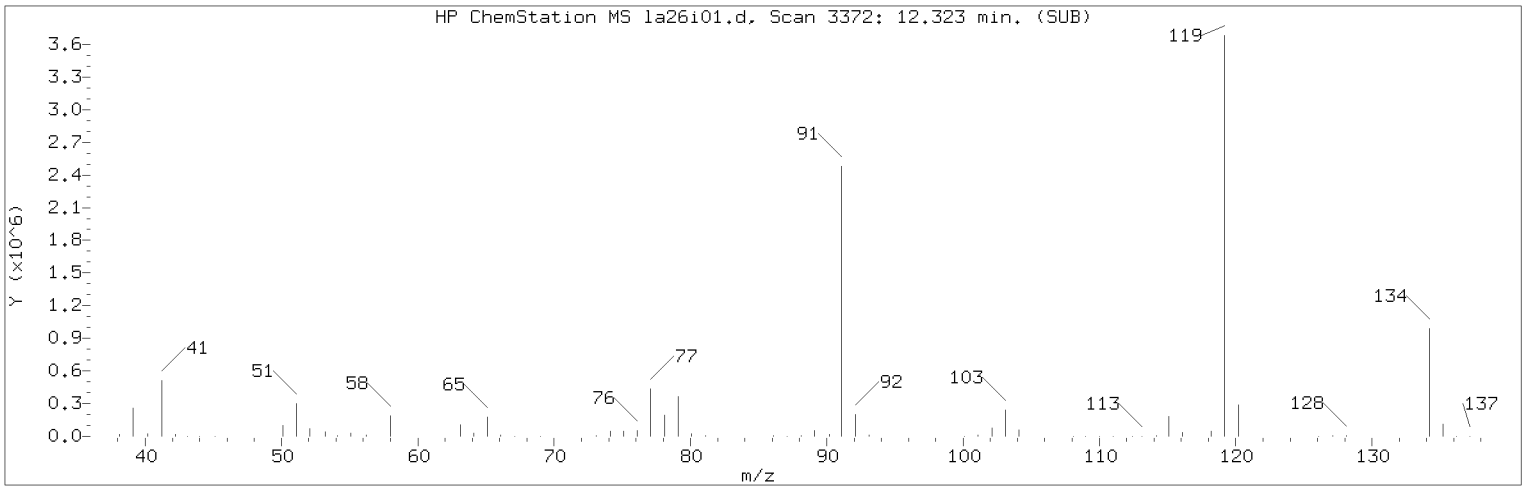
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

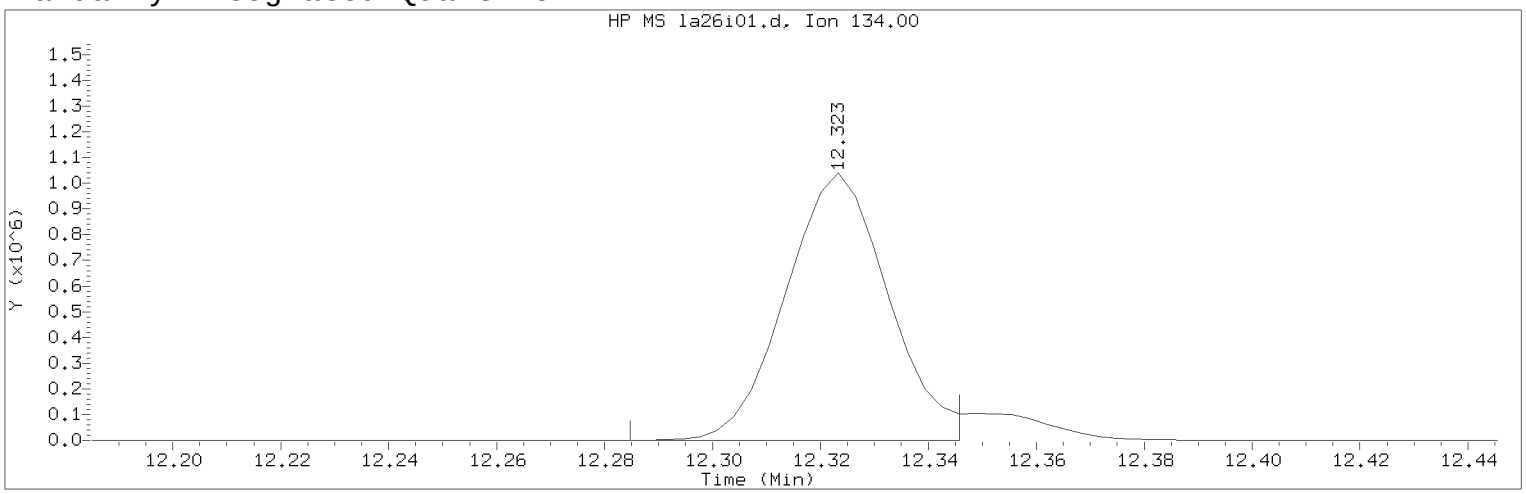
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1996
Retention Time (minutes): 7.899
Quant Ion : 88.00
Area : 279960
On-column Amount (ng) : 4259.9914
Integration start scan : 1973 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

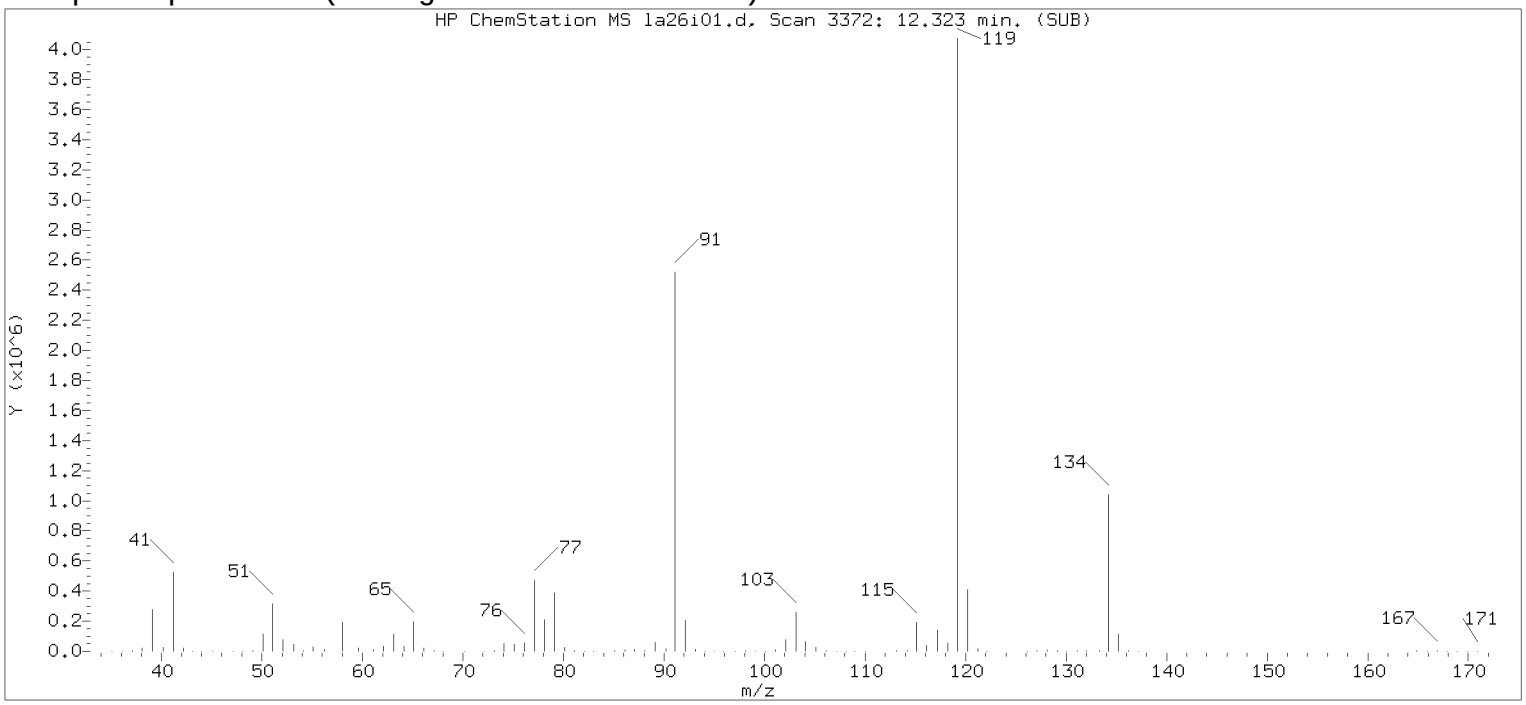
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area (flag) : 1372178M
On-Column Amount (ng) : 312.1487
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

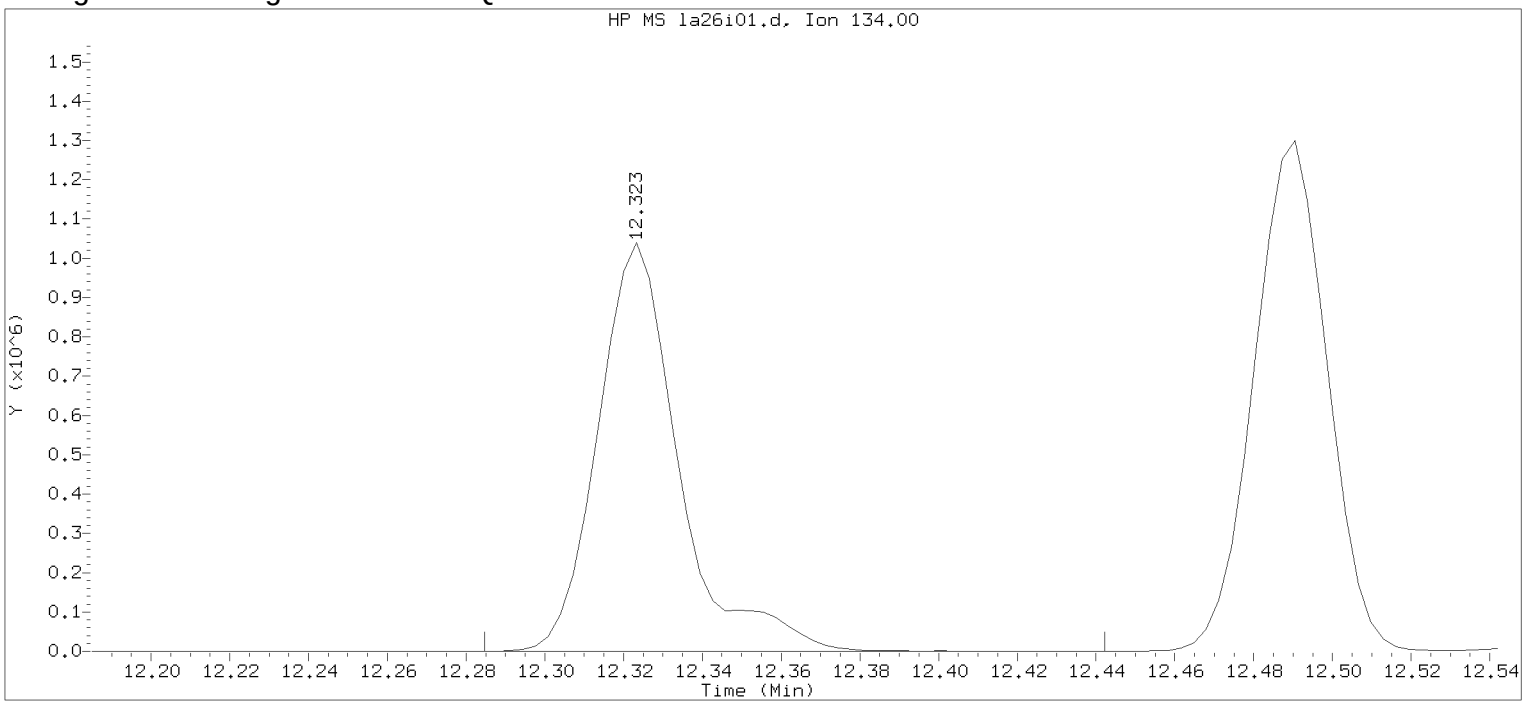
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



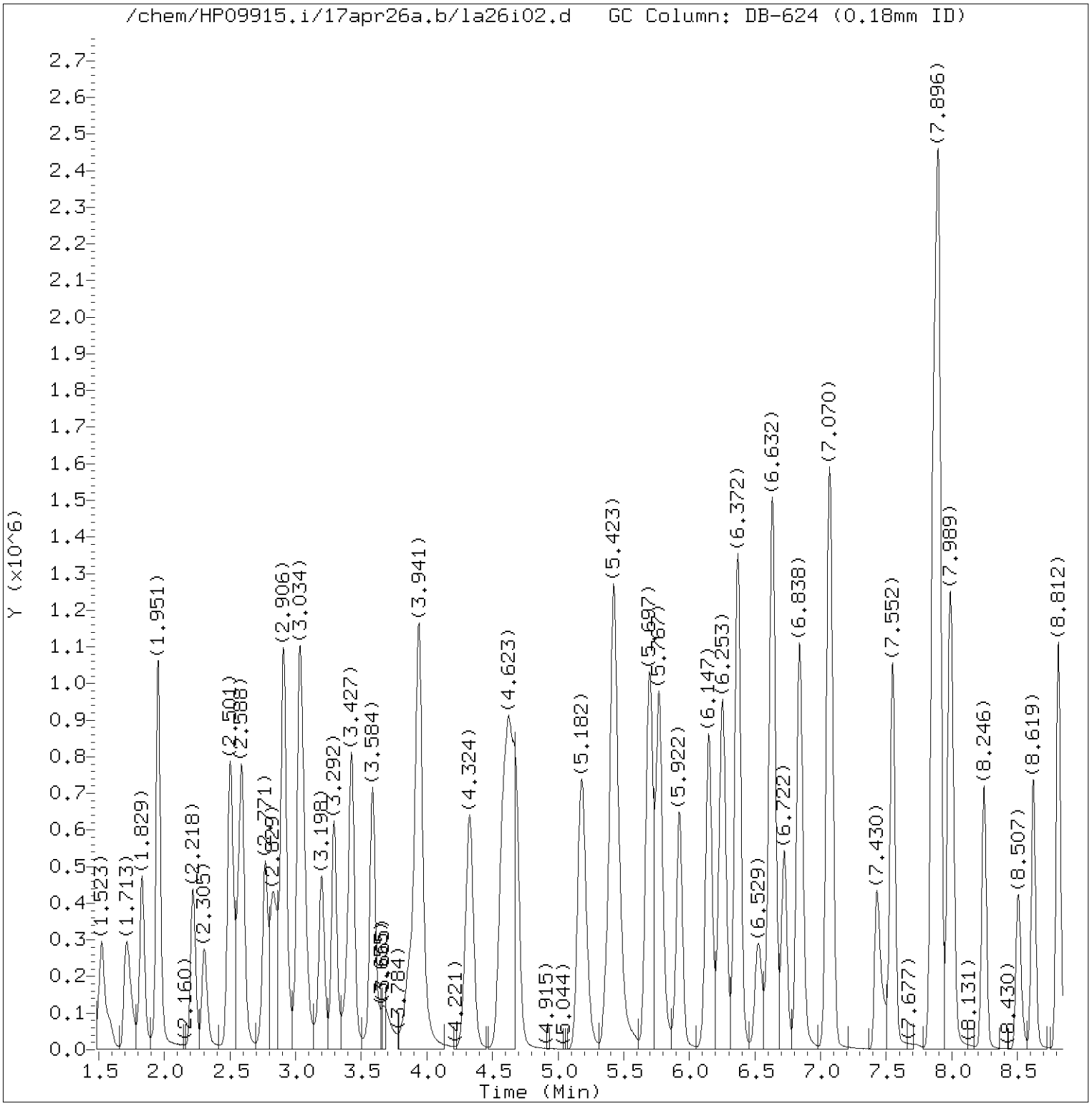

Data File: /chem/HP09915.i/17apr26a.b/la26i01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:20 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area : 1481292
On-column Amount (ng) : 310.8715
Integration start scan : 3359 Integration stop scan: 3408
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

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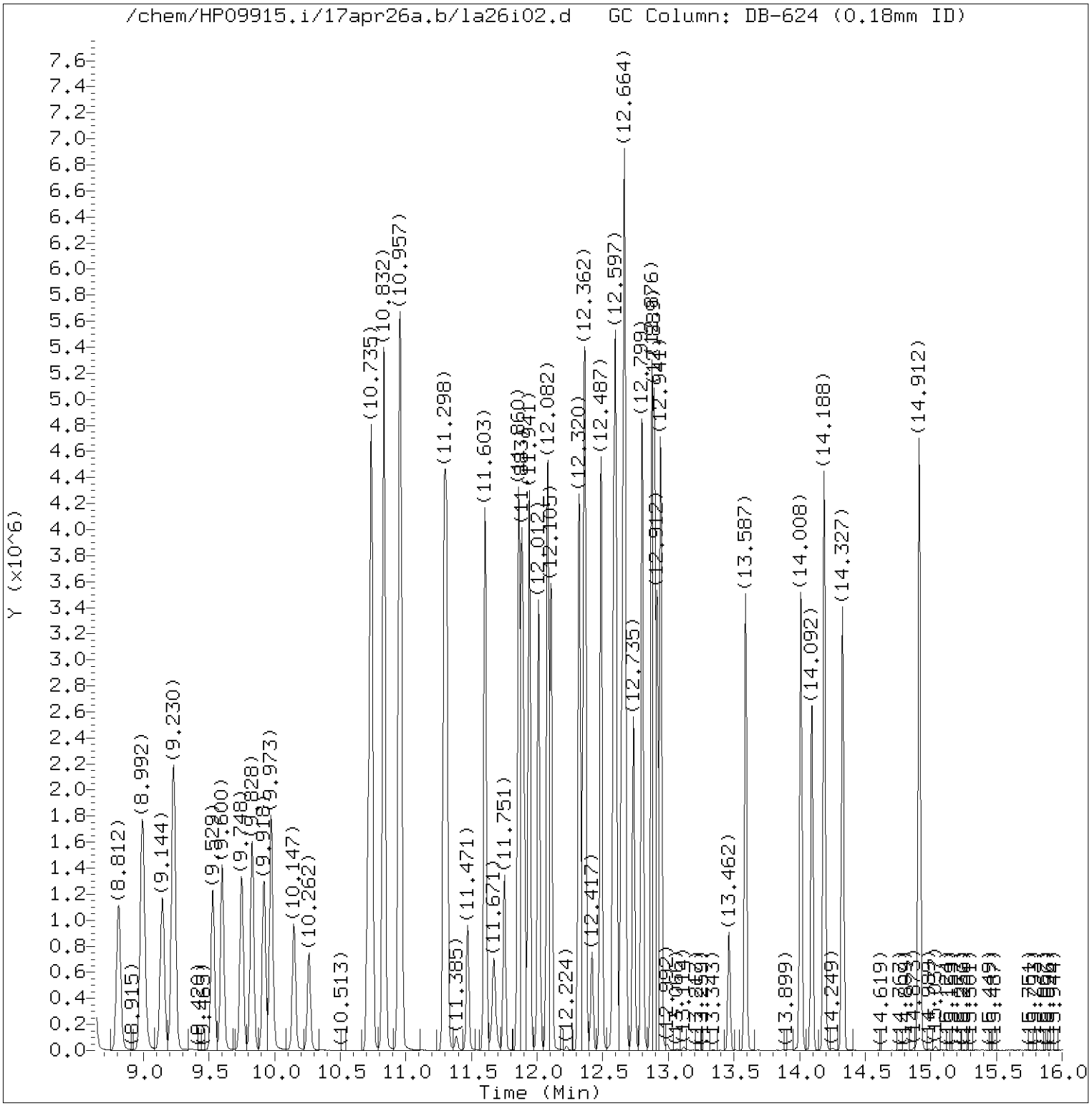
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 676369 | 106.821 |
| 4) Chloromethane | (2) | 1.832 | 50 | 696329 | 107.049 |
| 6) Vinyl Chloride | (2) | 1.948 | 62 | 673578 | 107.236 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 373286 | 97.432 |
| 8) Bromomethane | (2) | 2.221 | 94 | 446773M | 105.752 |
| 9) Chloroethane | (2) | 2.305 | 64 | 371704 | 105.006 |
| 10) Dichlorofluoromethane | (2) | 2.498 | 67 | 927938 | 107.471 |
| 12) Trichlorofluoromethane | (2) | 2.568 | 101 | 788292 | 108.375 |
| 11) n-Pentane | (2) | 2.591 | 43 | 594640 | 99.268 |
| 14) Ethyl ether | (2) | 2.771 | 59 | 424582 | 104.852 |
| 15) Freon 123a | (2) | 2.829 | 67 | 489753 | 101.103 |
| 16) Acrolein | (1) | 2.906 | 56 | 1724138 | 1147.084 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 387264 | 100.595 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 198662 | 101.935 |
| 18) Acetone | (1) | 3.047 | 58 | 135546M | 207.778 |
| 19) Freon 113 | (2) | 3.057 | 101 | 404388 | 104.360 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 213396M | 493.449 |
| 22) Methyl Iodide | (2) | 3.198 | 142 | 759847 | 101.758 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 1297816 | 103.594 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 533323 | 95.449 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 772442 | 100.172 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 183612M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 478418 | 94.072 |
| 30) t-Butyl alcohol | (1) | 3.674 | 59 | 356471M | 501.770 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 313741 | 106.926 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 1430590 | 101.438 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 460884 | 102.038 |
| 34) n-Hexane | (2) | 4.324 | 57 | 717390 | 103.611 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 868994 | 102.385 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 1666588 | 102.304 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.681 | 53 | 749751 | 104.723 |
| 40) Ethyl t-butyl ether | (2) | 5.179 | 59 | 1449530 | 103.393 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 817585 | 208.101 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 527726 | 101.961 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 625083 | 110.306 |
| 47) Propionitrile | (1) | 5.465 | 54 | 550872 | 531.282 |
| 48) Methacrylonitrile | (2) | 5.700 | 67 | 750559 | 256.572 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 276608 | 101.401 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 208895 | 228.093 |
| 51) Chloroform | (2) | 5.922 | 83 | 823317 | 101.769 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 261749 | 50.429 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 267507 | 50.295 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 726792 | 98.313 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 988610 | 203.999 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 878754 | 104.398 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 727430 | 104.407 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 257243 | 105.433 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 680358 | 103.399 |
| 56) Carbon Tetrachloride | (2) | 6.372 | 117 | 589658 | 109.268 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 319107 | 1279.334 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 65444 | 50.705 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 306047 | 50.130 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 41083 | 50.183 |
| 60) Benzene | (2) | 6.639 | 78 | 1966914 | 101.406 |
| 61) 1,2-Dichloroethane | (2) | 6.726 | 62 | 672041 | 102.415 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 64097 | 110.781 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 1465784 | 105.346 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1062919 | 50.000 |
| 67) n-Heptane | (2) | 7.079 | 43 | 794949 | 102.548 |
| 69) n-Butanol | (1) | 7.430 | 56 | 557797M | 2774.096 |
| 71) Trichloroethene | (2) | 7.552 | 95 | 513037 | 102.350 |
| 72) Methylcyclohexane | (2) | 7.861 | 83 | 924633 | 104.692 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 422409 | 105.983 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 551772 | 103.916 |
| 75) 1,4-Dioxane | (1) | 7.980 | 88 | 76692M | 1221.735 |
| 76) Methyl Methacrylate | (2) | 7.980 | 69 | 491230 | 108.080 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 344598 | 103.199 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 648848 | 107.672 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 389115 | 227.706 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 446824 | 109.472 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 865511 | 110.196 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 1756835 | 217.000 |
| 83)$Toluene-d8 | (3) | 9.144 | 98 | 1062057 | 49.818 |
| 83)$Toluene-d8 | (3) | 9.144 | 100 | 699948 | 49.836 |
| 88) Toluene | (3) | 9.230 | 92 | 1255687 | 101.358 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 782955 | 112.710 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 853753 | 109.112 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 487635 | 102.147 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 557539 | 101.750 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 848064 | 102.380 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 1313009 | 219.565 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1648466 | 222.906 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 552445 | 111.725 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 547365 | 104.734 |
| 100)*Chlorobenzene-d5 | (3) | 10.713 | 117 | 834937 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.735 | 91 | 707076 | 99.382 |
| 102) Chlorobenzene | (3) | 10.742 | 112 | 1458292 | 102.011 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 508422 | 107.701 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 2442108 | 102.192 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 1914407 | 205.775 |
| 107) o-Xylene | (3) | 11.291 | 106 | 956788 | 103.412 |
| 109) Styrene | (3) | 11.311 | 104 | 1616649 | 105.698 |
| 110) Bromoform | (3) | 11.471 | 173 | 419593 | 116.865 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 2449038 | 103.571 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 302205 | 1276.247 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 394235 | 49.753 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 343734 | 49.454 |
| 108) Xylene (Total) | (3) | | 106 | 2871195 | 309.187 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 820749 | 104.299 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 652939 | 103.034 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 599531 | 265.878 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 228521 | 102.730 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 2874087 | 102.641 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 601559 | 103.221 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 2094753 | 104.908 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 623137 | 102.736 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 456579M | 105.780 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 381883 | 112.060 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 2150464 | 104.553 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 2647066 | 103.927 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 1215672 | 100.760 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 2368950 | 105.337 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 443338 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 1243887 | 99.708 |

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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.668 | 105 | 2174826 | 100.922 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 1509958 | 122.366 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 1373318 | 102.211 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 1423124 | 100.862 |
| 139) n-Butylbenzene | (4) | 12.893 | 92 | 1135761 | 101.097 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 1195487 | 100.805 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 1147775 | 101.508 |
| 141) Diethylbenzene (total) | (4) | | 100 | 3944217 | 304.580 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 181306 | 108.948 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 971739 | 101.065 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 946069 | 101.432 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 412377 | 101.804 |
| 148) Naphthalene | (4) | 14.188 | 128 | 2908962 | 103.355 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 906692 | 100.764 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 1891682 | 103.943 |



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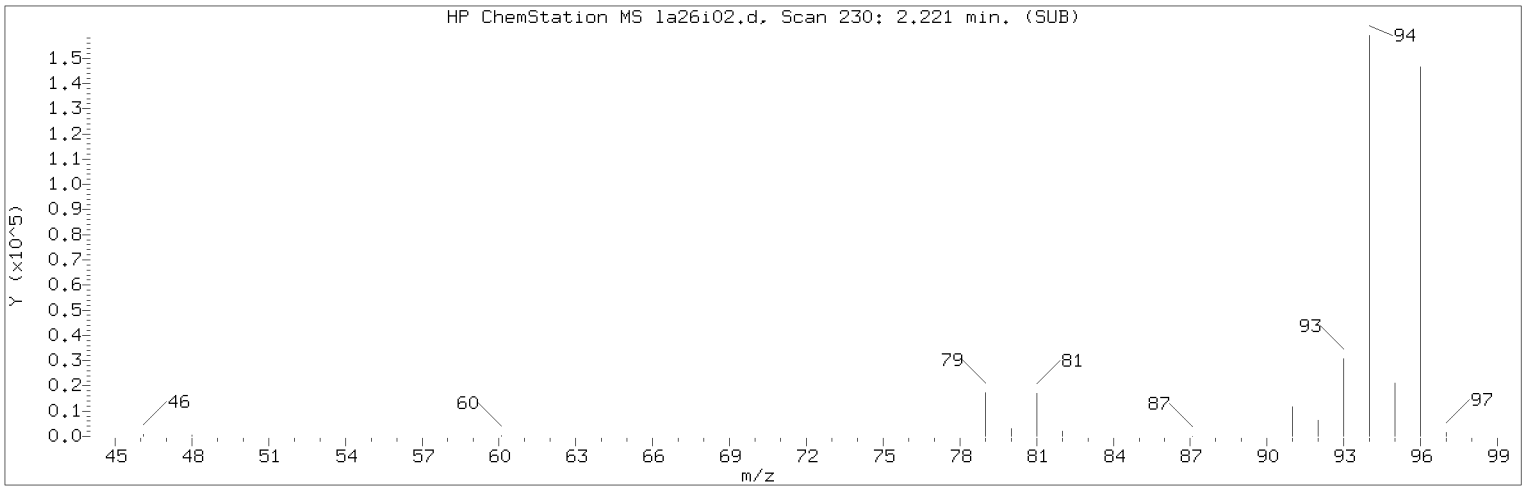
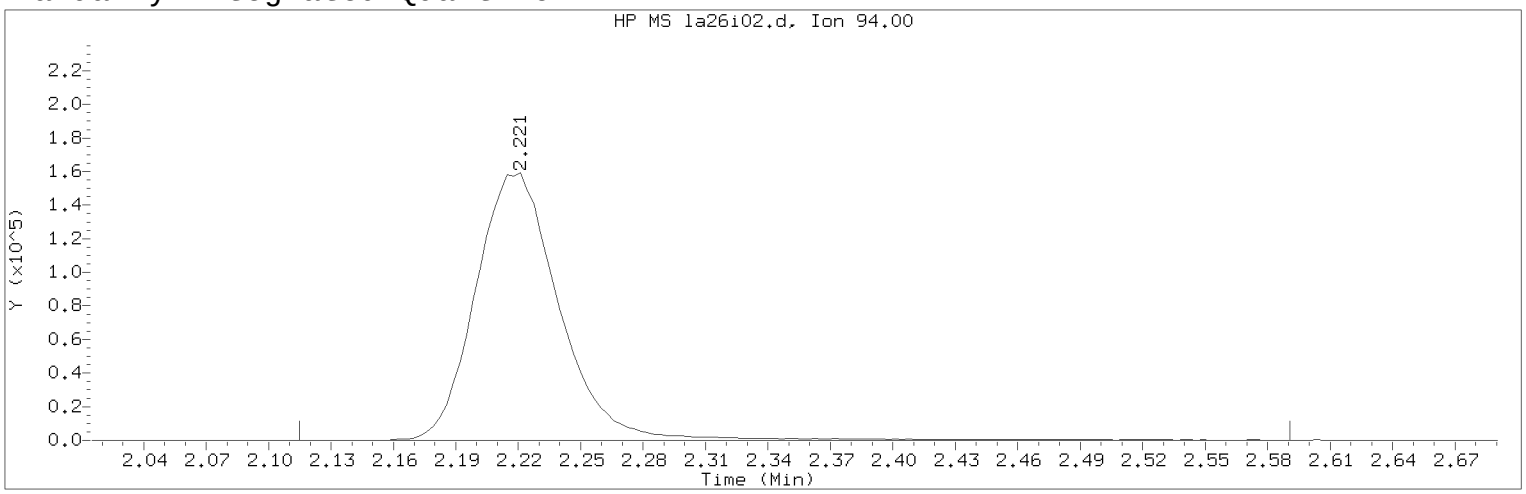
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

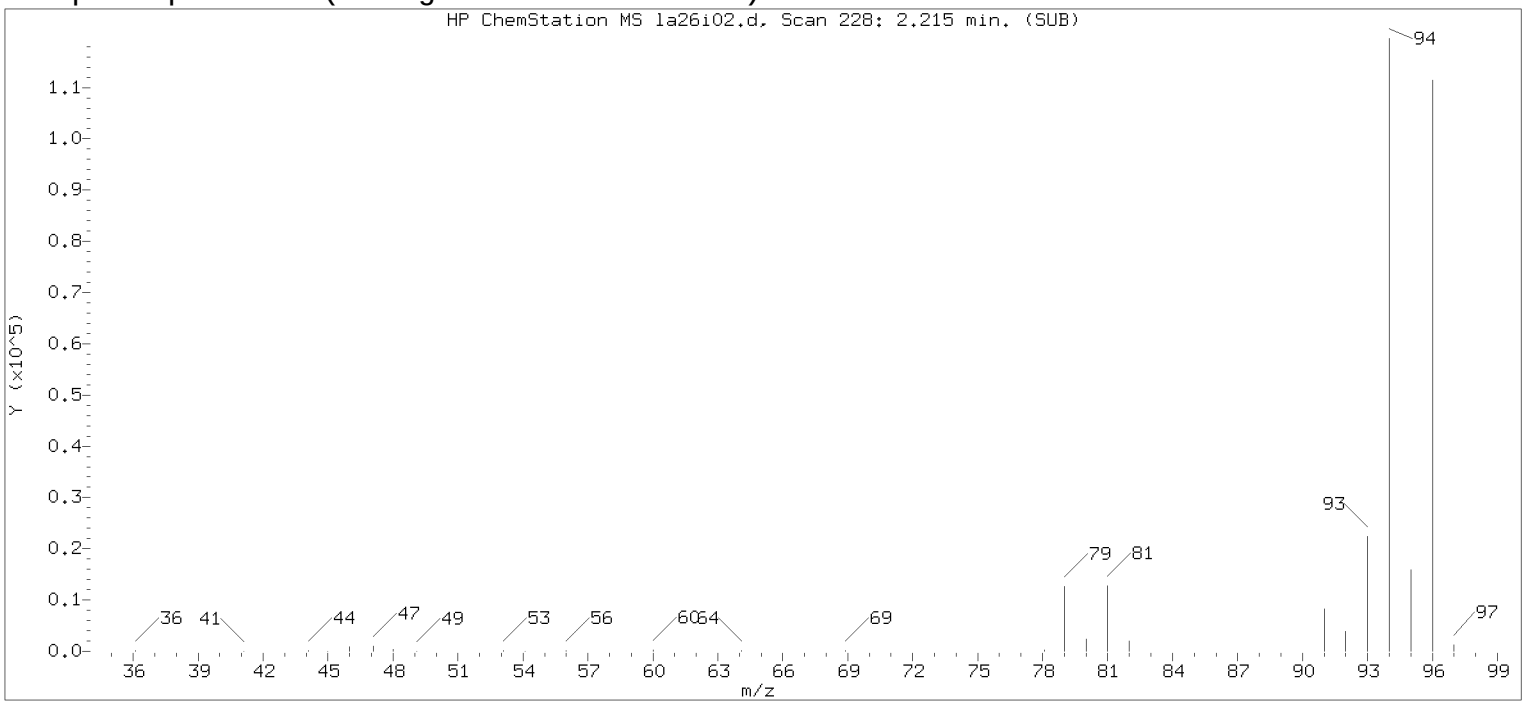
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 230
Retention Time (minutes): 2.221
Quant Ion : 94.00
Area (flag) : 446773M
On-Column Amount (ng) : 105.7521
Integration start scan : 196 Integration stop scan: 344
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

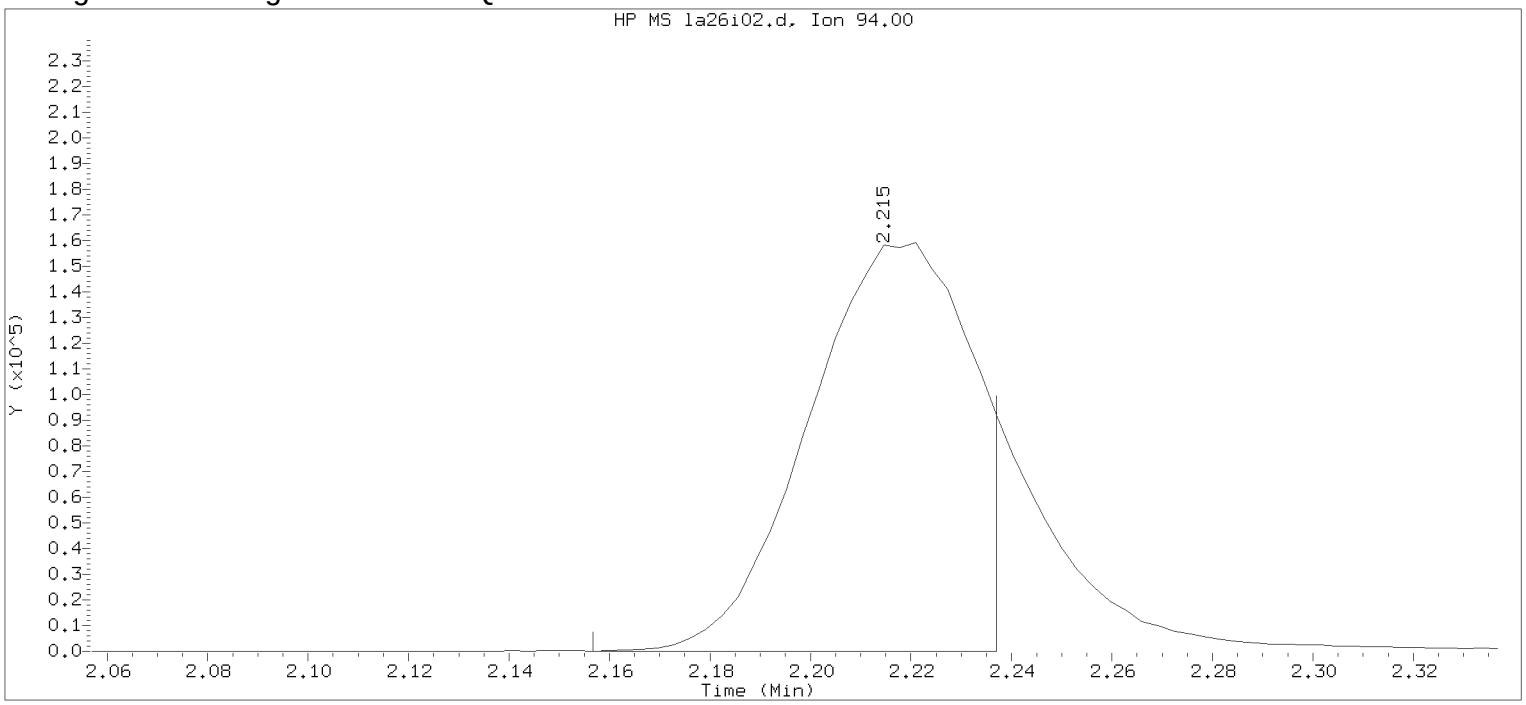
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

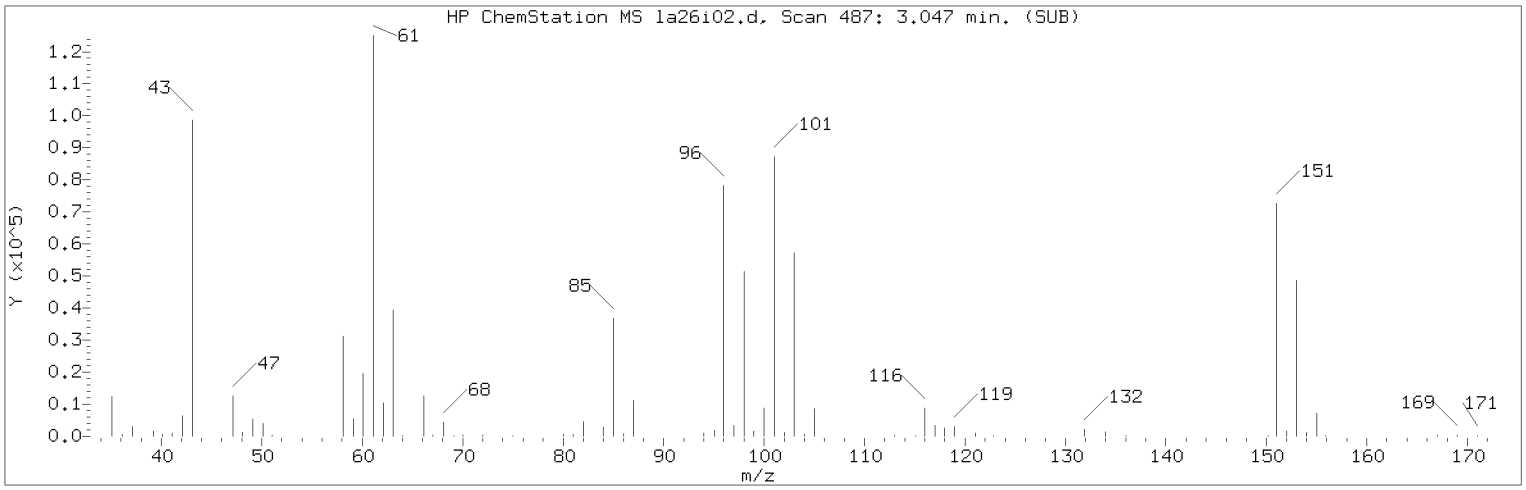
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

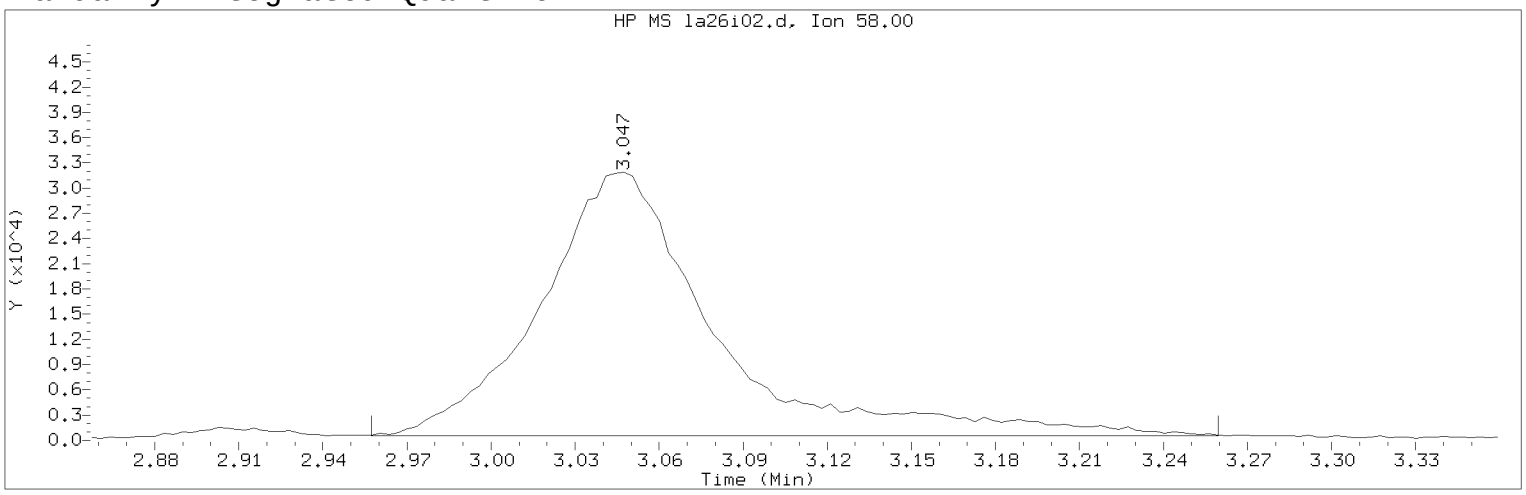
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 228
Retention Time (minutes): 2.215
Quant Ion : 94.00
Area : 353561
On-column Amount (ng) : 86.2140
Integration start scan : 209 Integration stop scan: 234
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

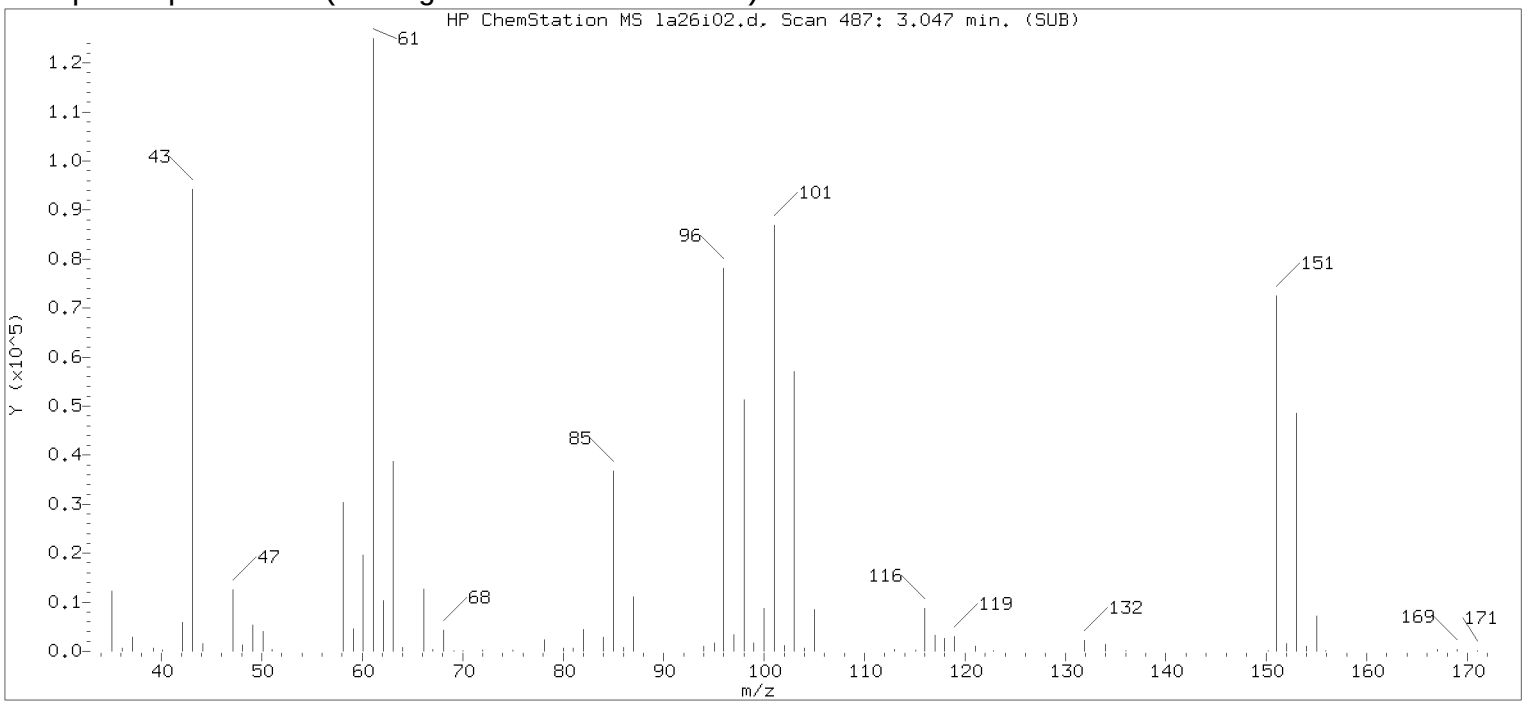
Compound Number : 18
Compound Name : Acetone
Scan Number : 487
Retention Time (minutes): 3.047
Quant Ion : 58.00
Area (flag) : 135546M
On-Column Amount (ng) : 207.7778
Integration start scan : 458 Integration stop scan: 552
Y at integration start : 496 Y at integration end: 496

Reason for manual integration: improper integration

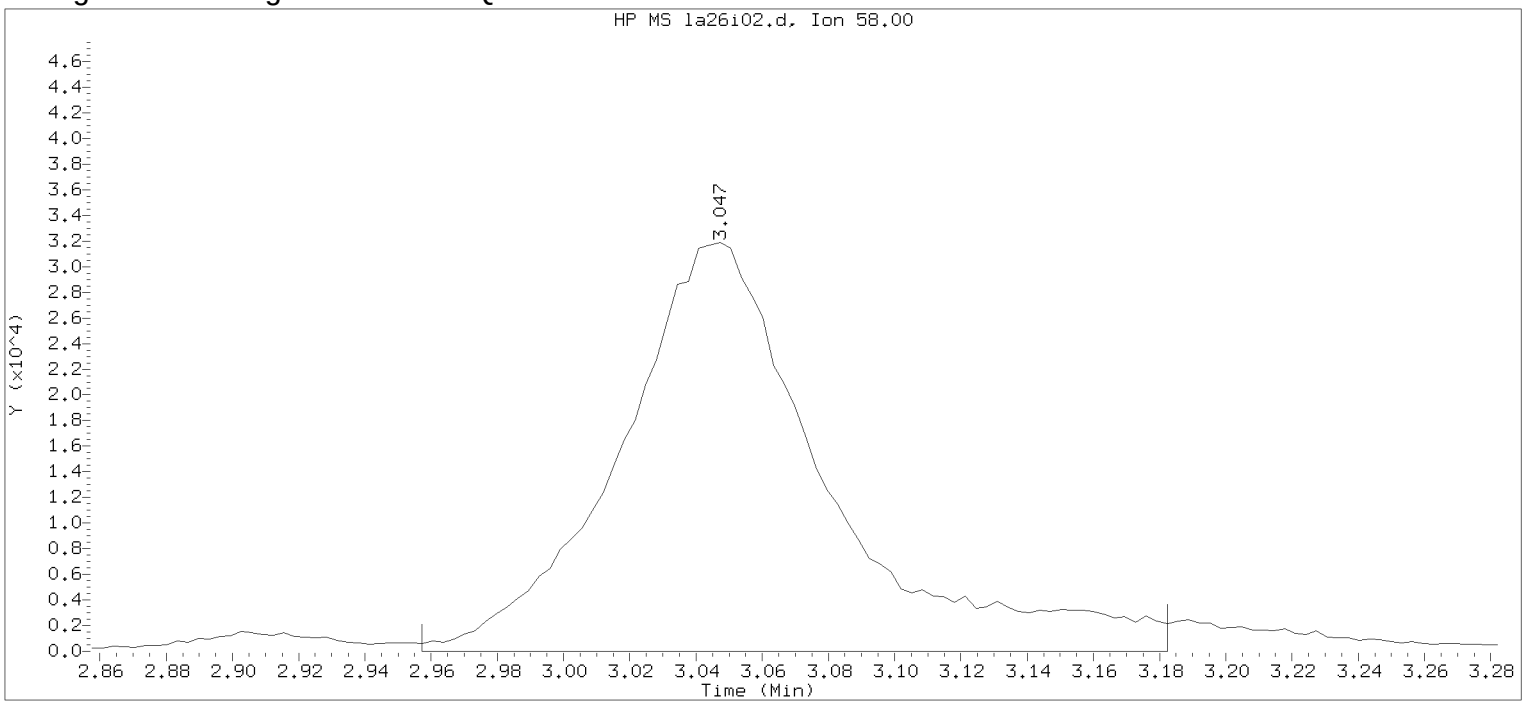
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

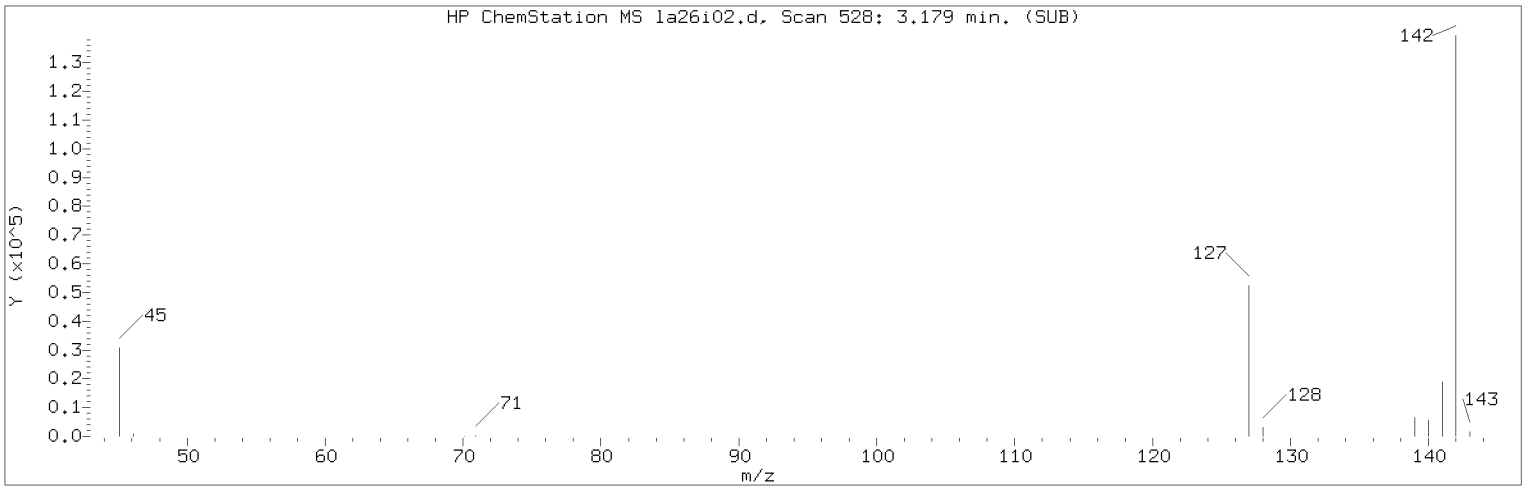
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

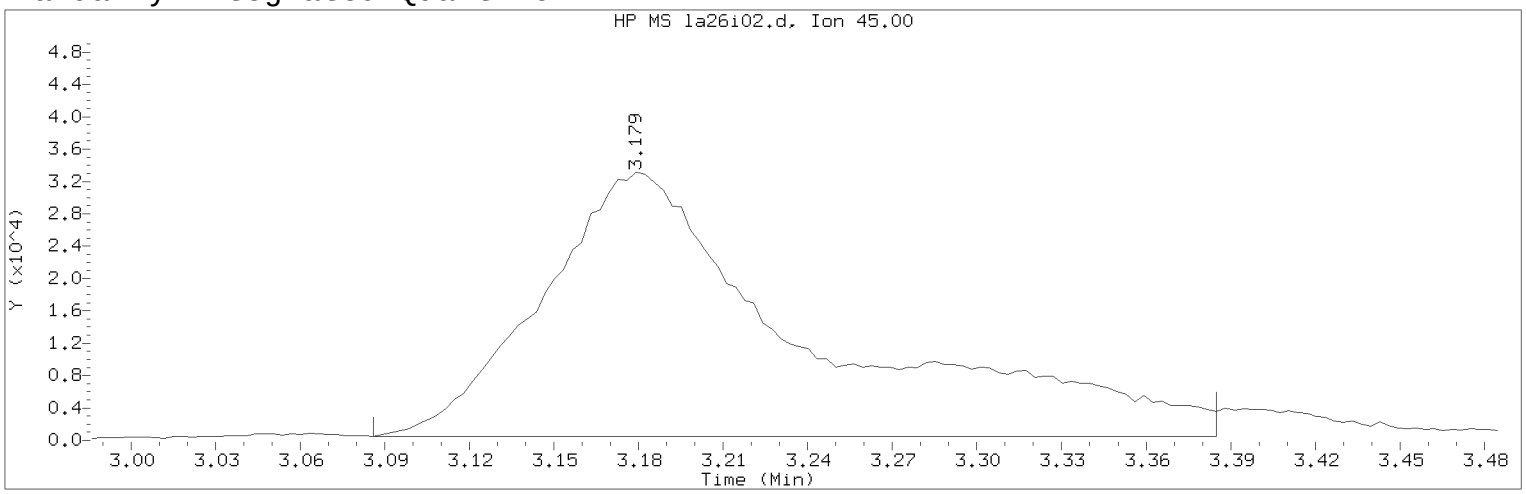
| | | | |
|---|---|---|---|
| Compound Number | : 18 | | |
| Compound Name | : Acetone | | |
| Scan Number | : 487 | | |
| Retention Time (minutes) | : 3.047 | | |
| Quant Ion | : 58.00 | | |
| Area | : 137735 | | |
| On-column Amount (ng) | : 199.5156 | | |
| Integration start scan | : 458 | Integration stop scan: | 528 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 key 02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

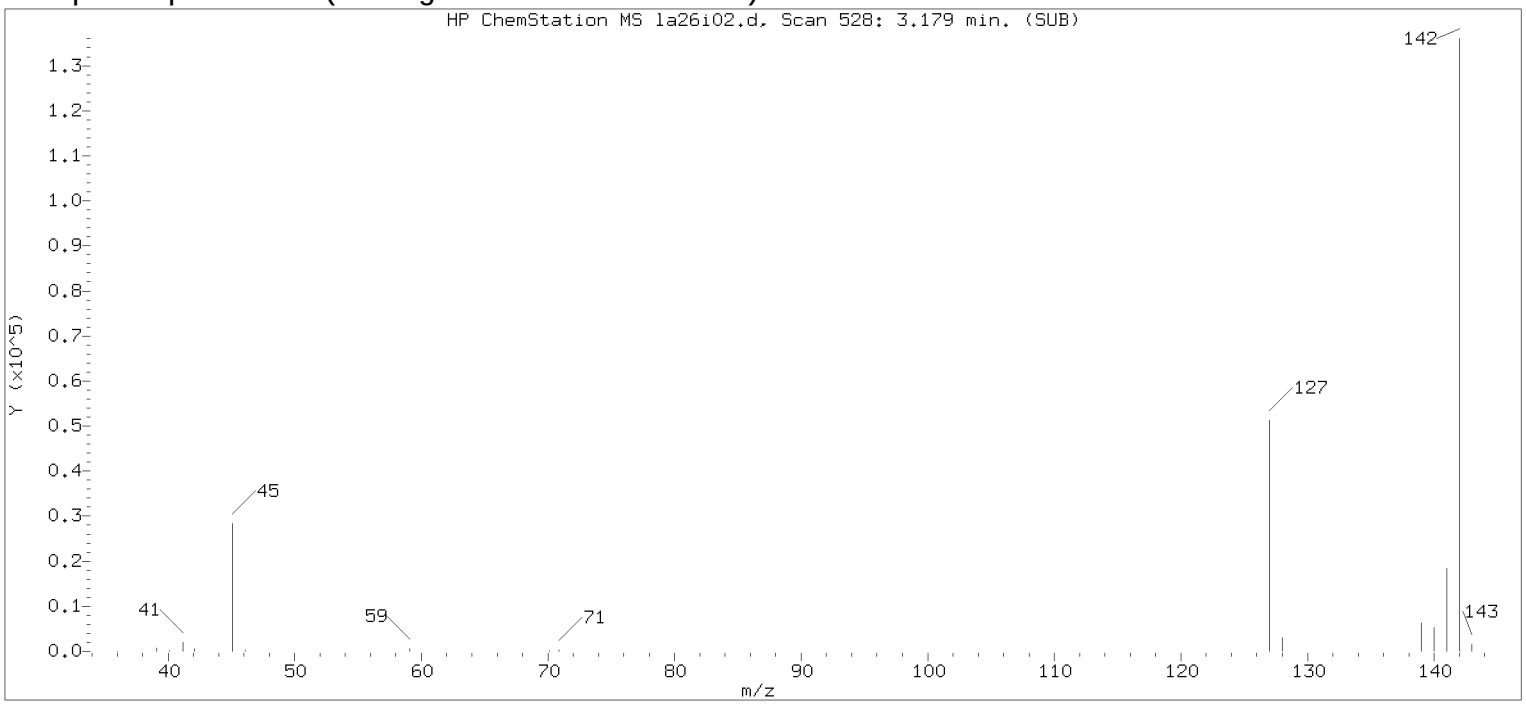
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 528
Retention Time (minutes): 3.179
Quant Ion : 45.00
Area (flag) : 213396M
On-Column Amount (ng) : 493.4490
Integration start scan : 498 Integration stop scan: 591
Y at integration start : 488 Y at integration end: 488

Reason for manual integration: improper integration

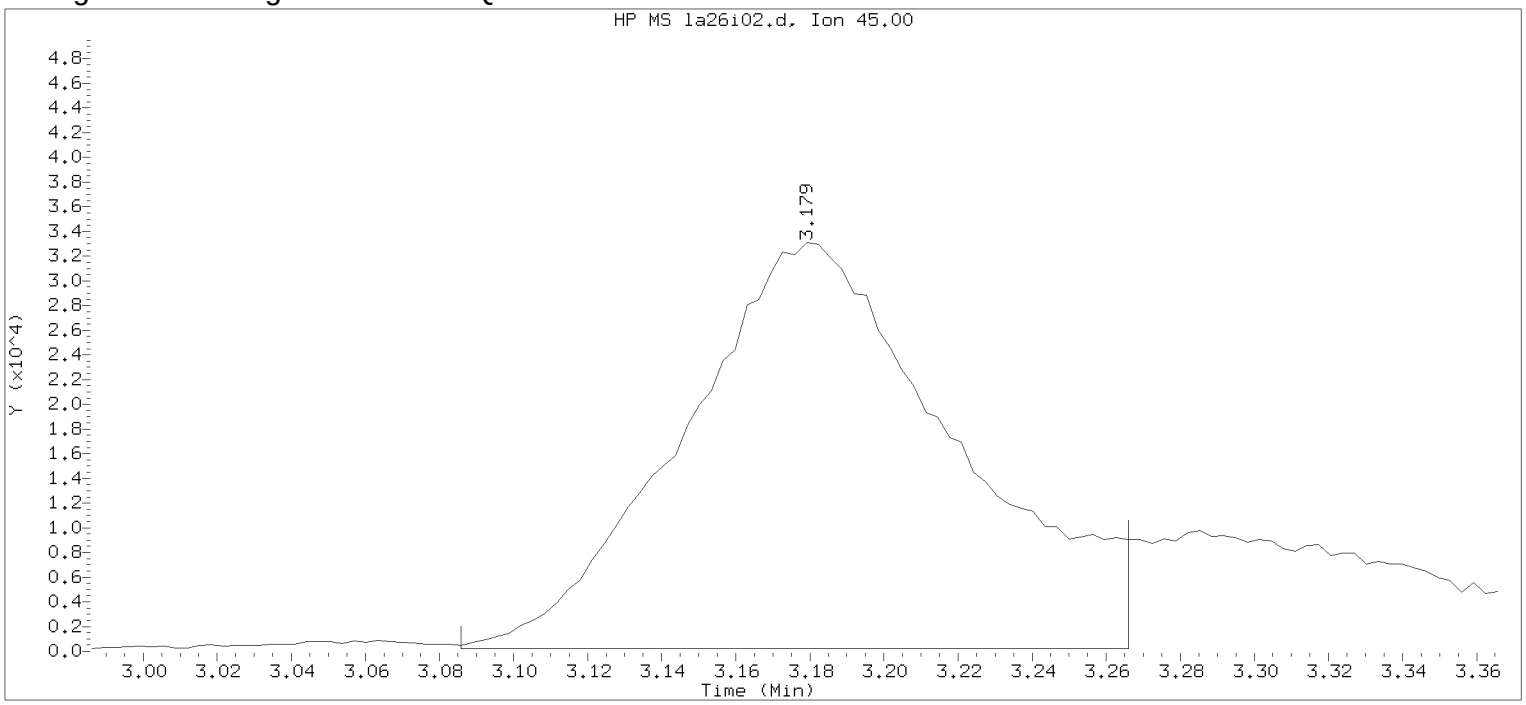
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

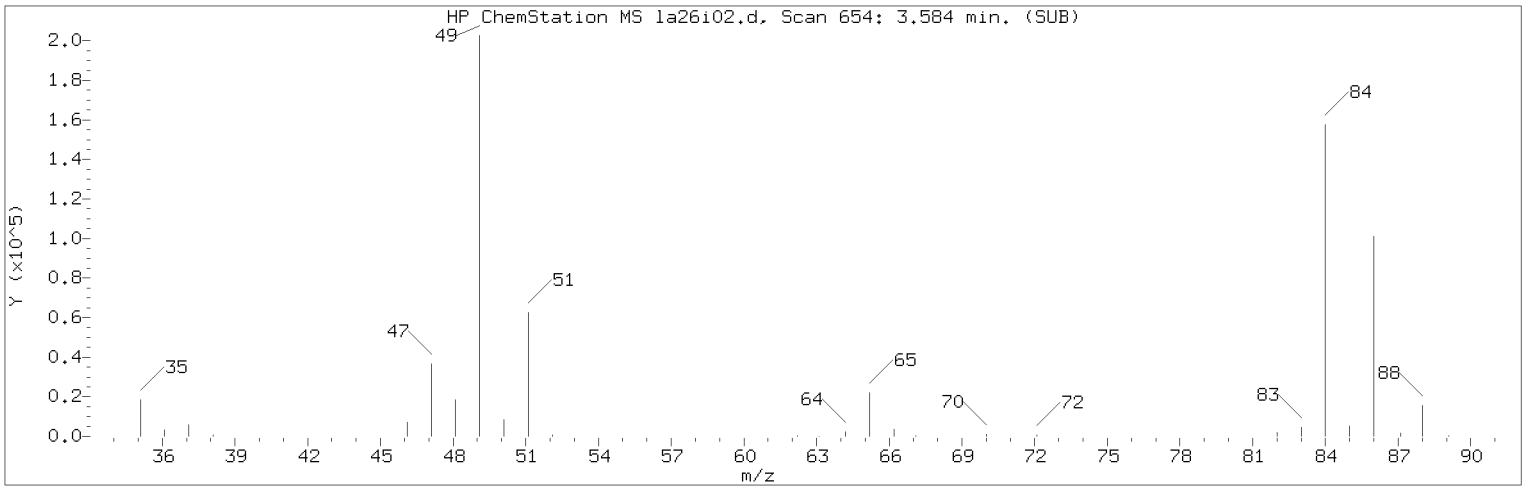
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

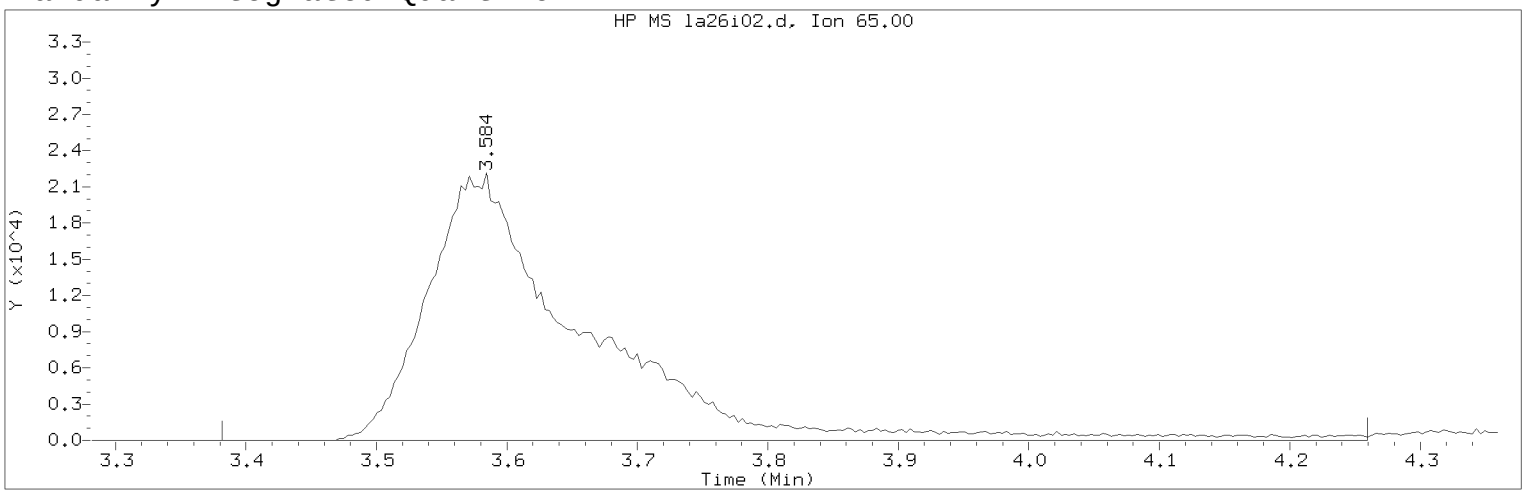
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 528
Retention Time (minutes): 3.179
Quant Ion : 45.00
Area : 167823
On-column Amount (ng) : 440.7134
Integration start scan : 498 Integration stop scan: 554
Y at integration start : 223 Y at integration end: 223

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

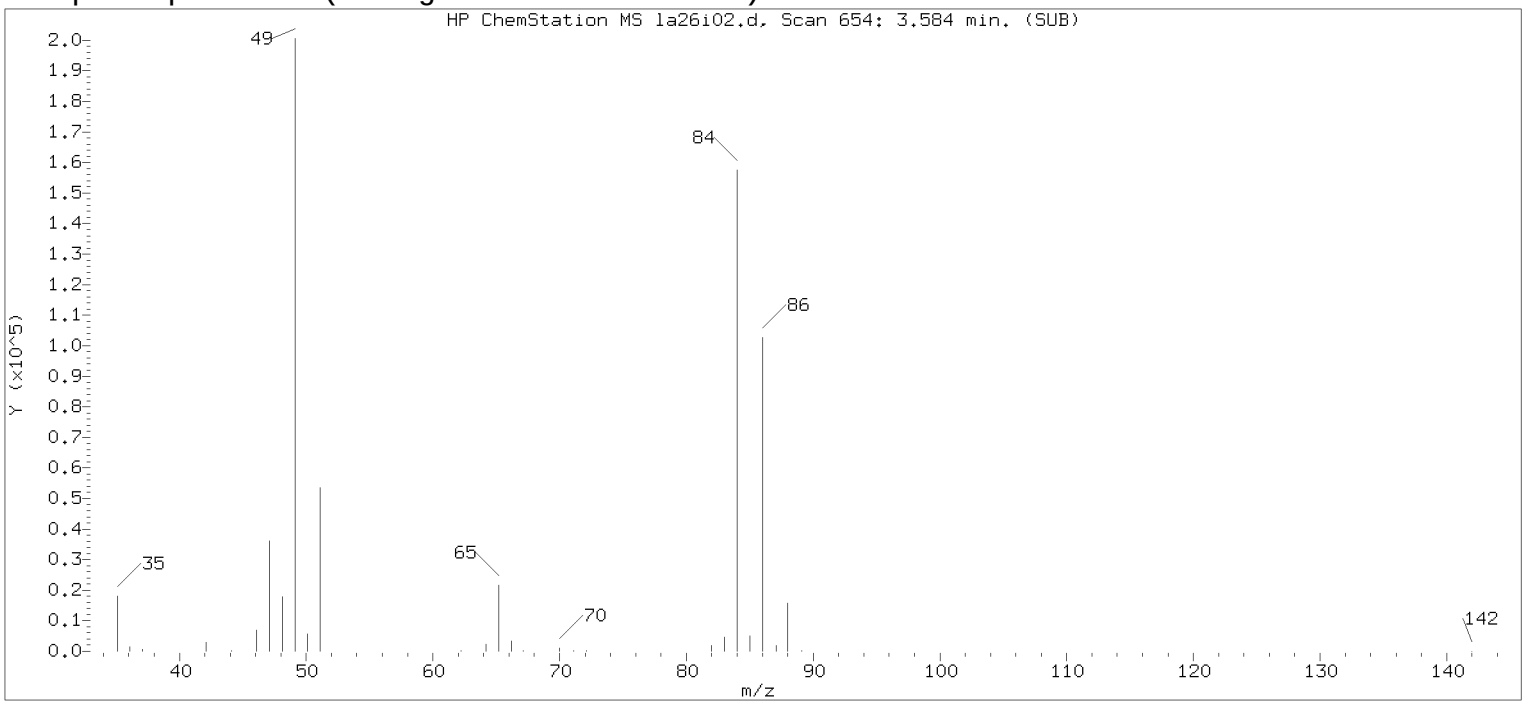
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 654
Retention Time (minutes): 3.584
Quant Ion : 65.00
Area (flag) : 183612M
On-Column Amount (ng) : 250.0000
Integration start scan : 590 Integration stop scan: 863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

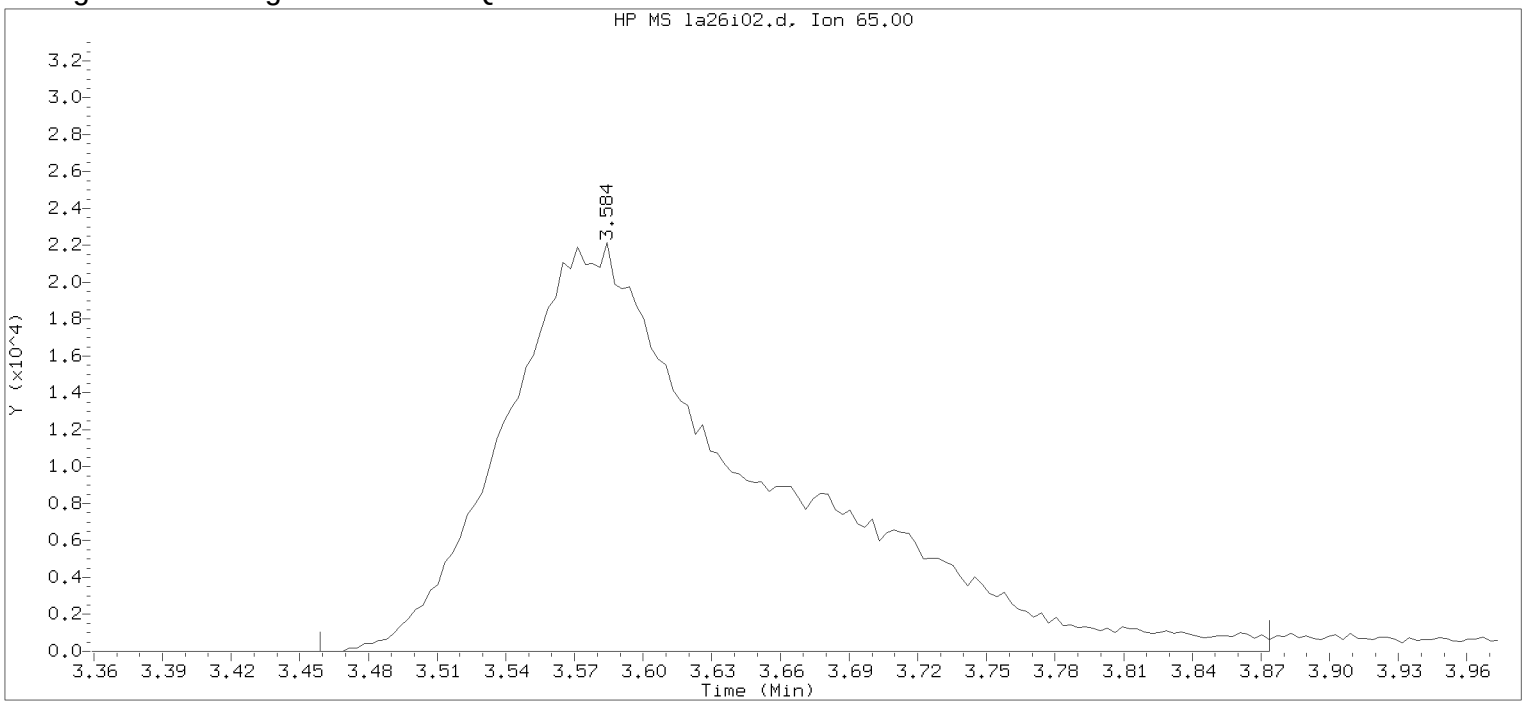
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

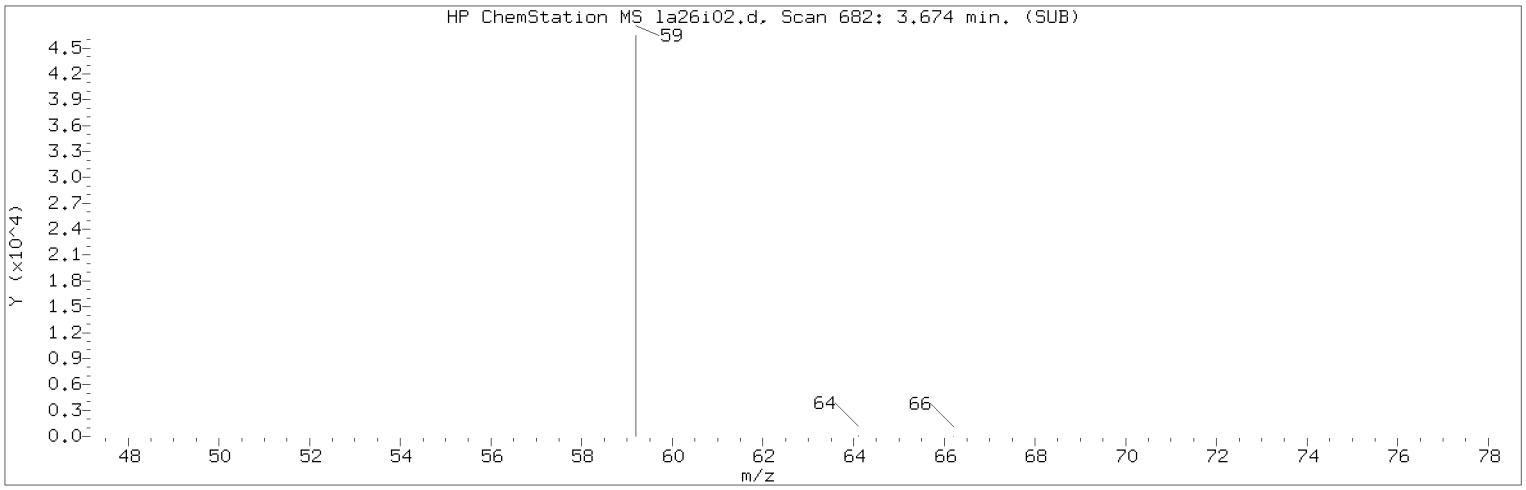
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

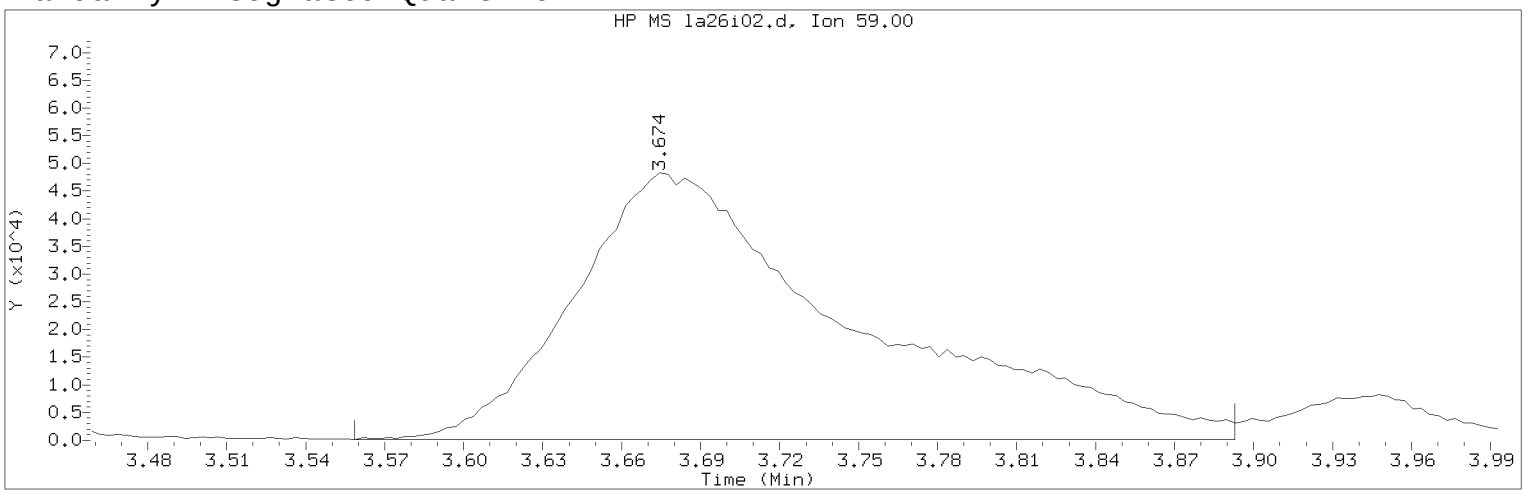
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 654
Retention Time (minutes): 3.584
Quant Ion : 65.00
Area : 172293
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 743
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

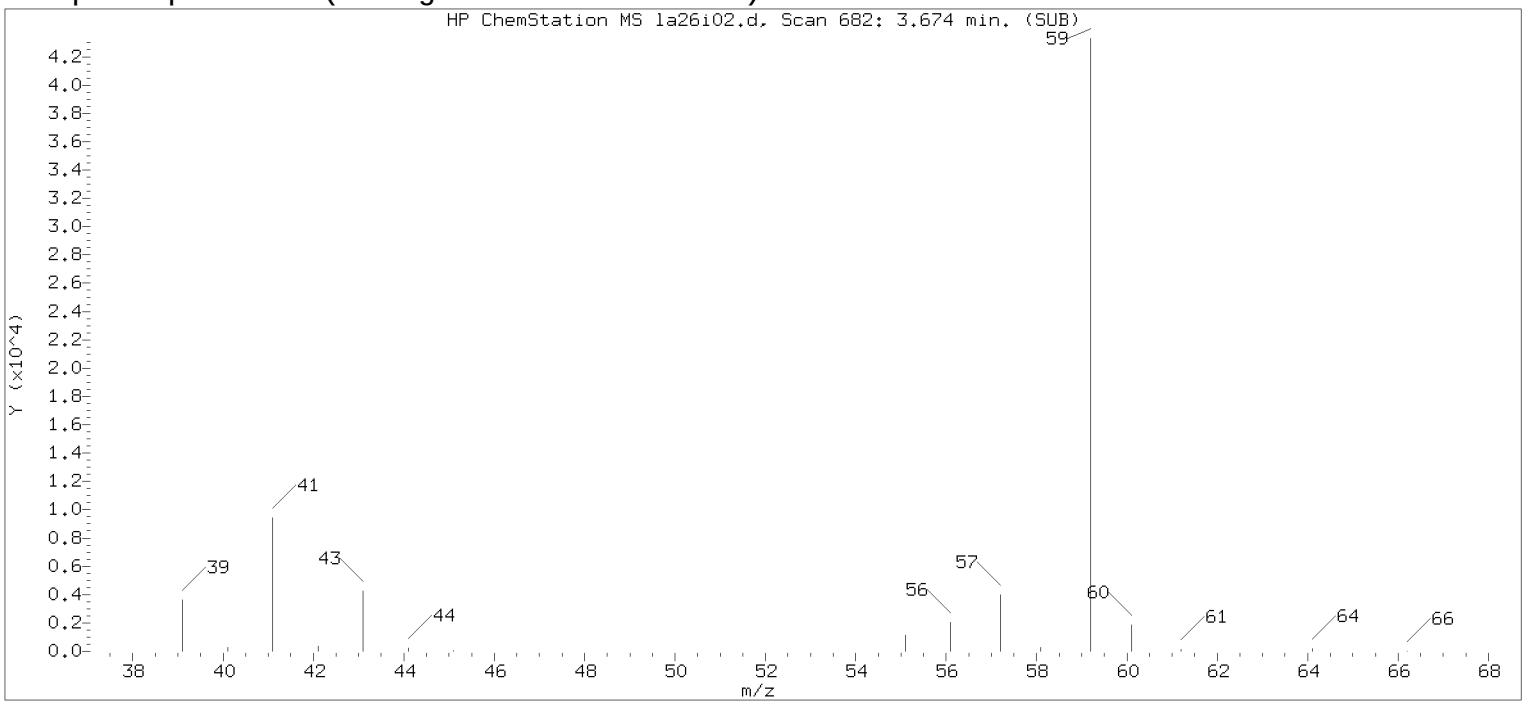
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 682
Retention Time (minutes): 3.674
Quant Ion : 59.00
Area (flag) : 356471M
On-Column Amount (ng) : 501.7705
Integration start scan : 645 Integration stop scan: 749
Y at integration start : 168 Y at integration end: 168

Reason for manual integration: improper integration

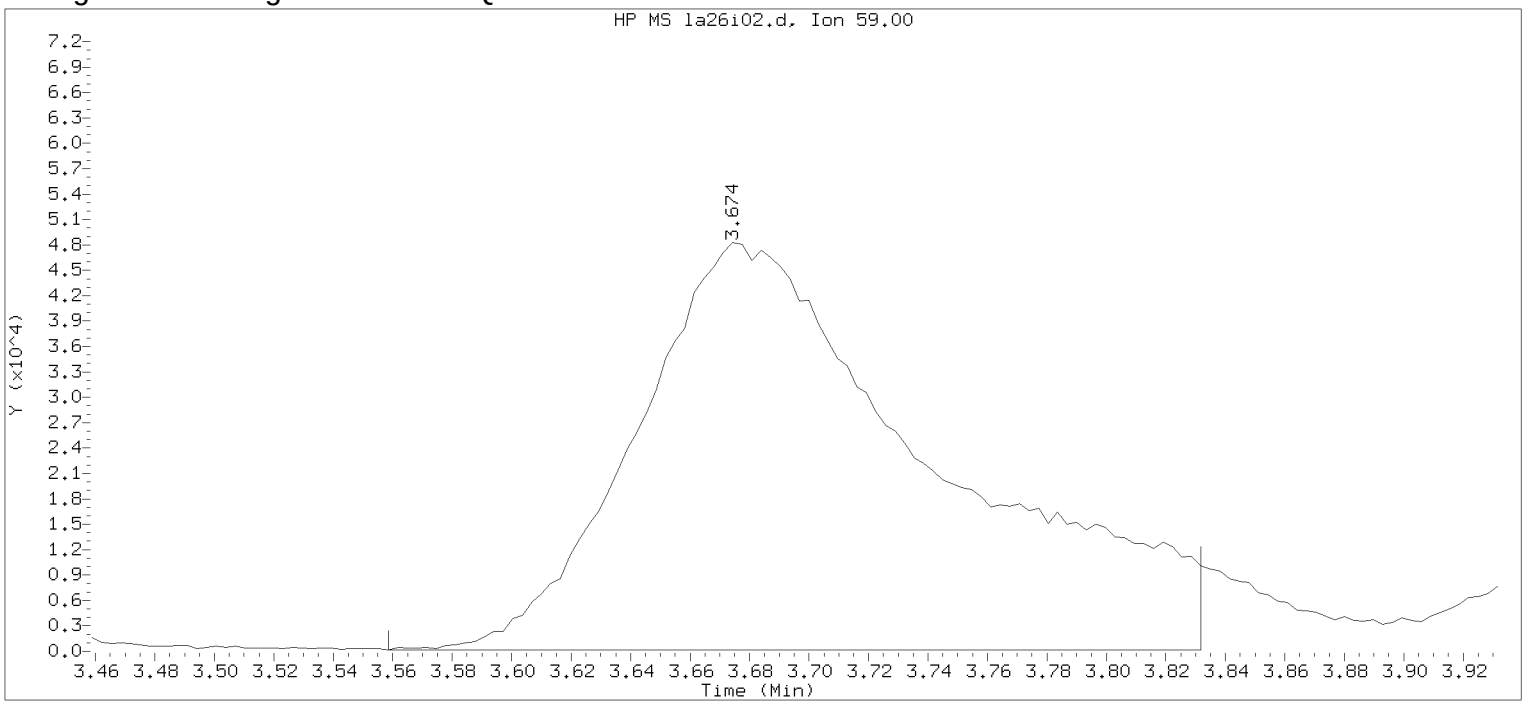
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

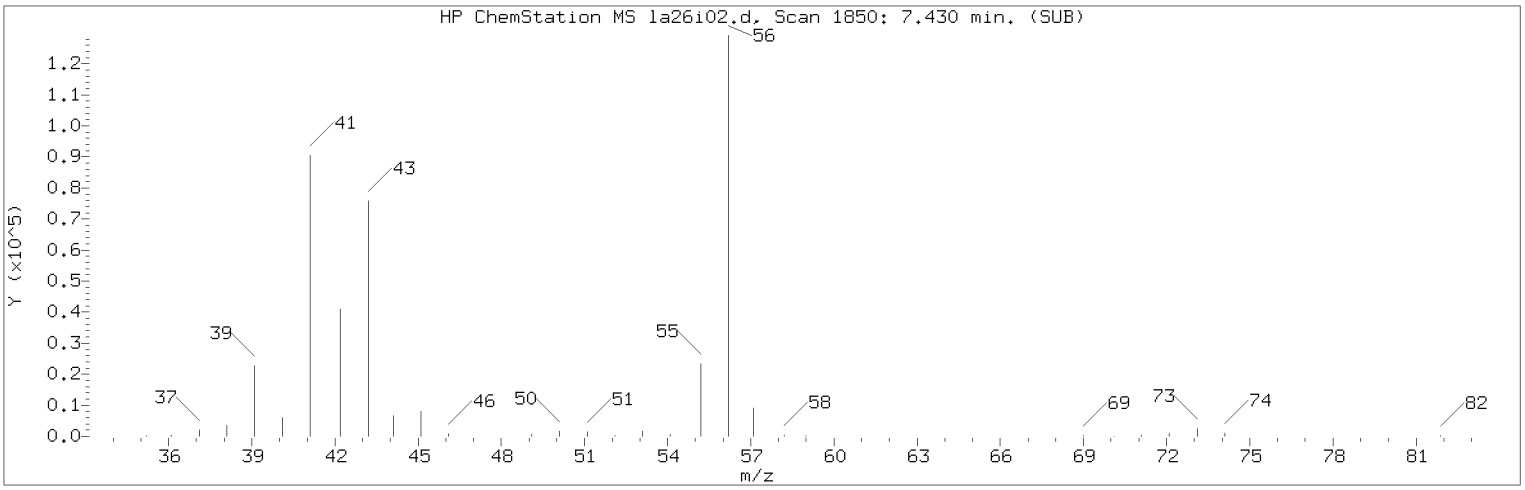
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

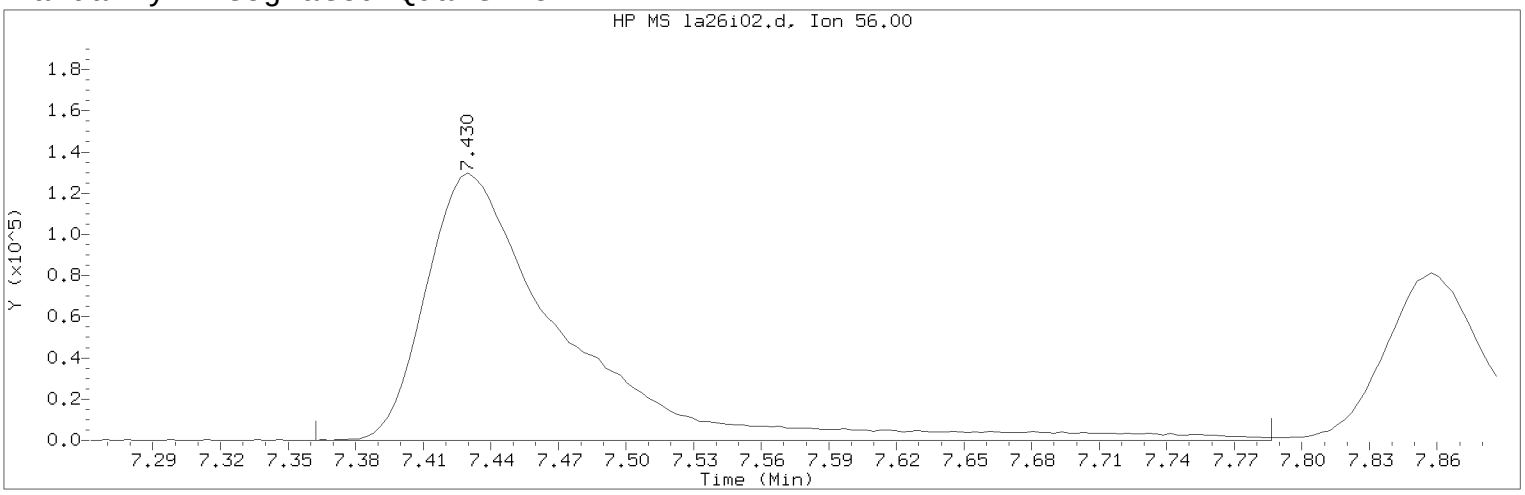
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 682
Retention Time (minutes): 3.674
Quant Ion : 59.00
Area : 335006
On-column Amount (ng) : 496.4294
Integration start scan : 645 Integration stop scan: 730
Y at integration start : 169 Y at integration end: 169

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

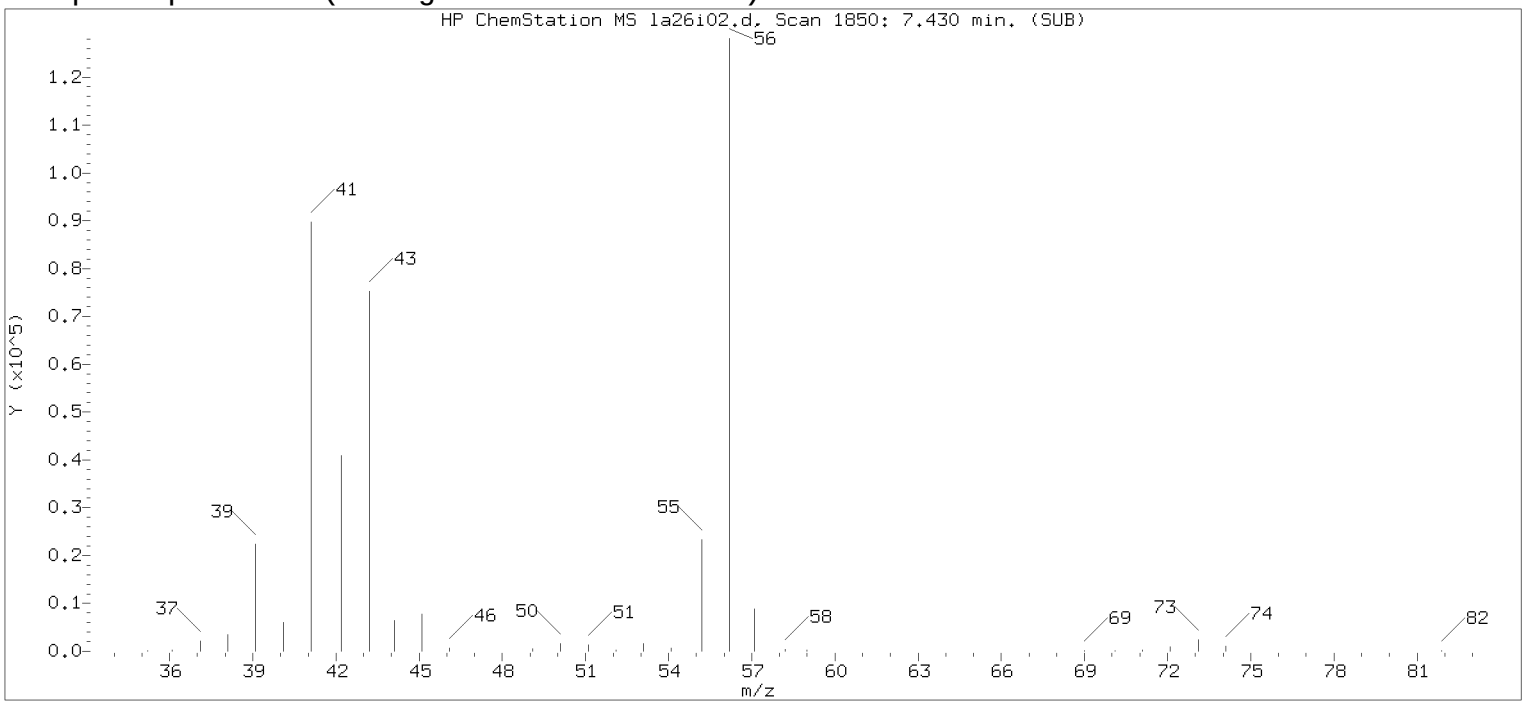
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1850
Retention Time (minutes): 7.430
Quant Ion : 56.00
Area (flag) : 557797M
On-Column Amount (ng) : 2774.0960
Integration start scan : 1828 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

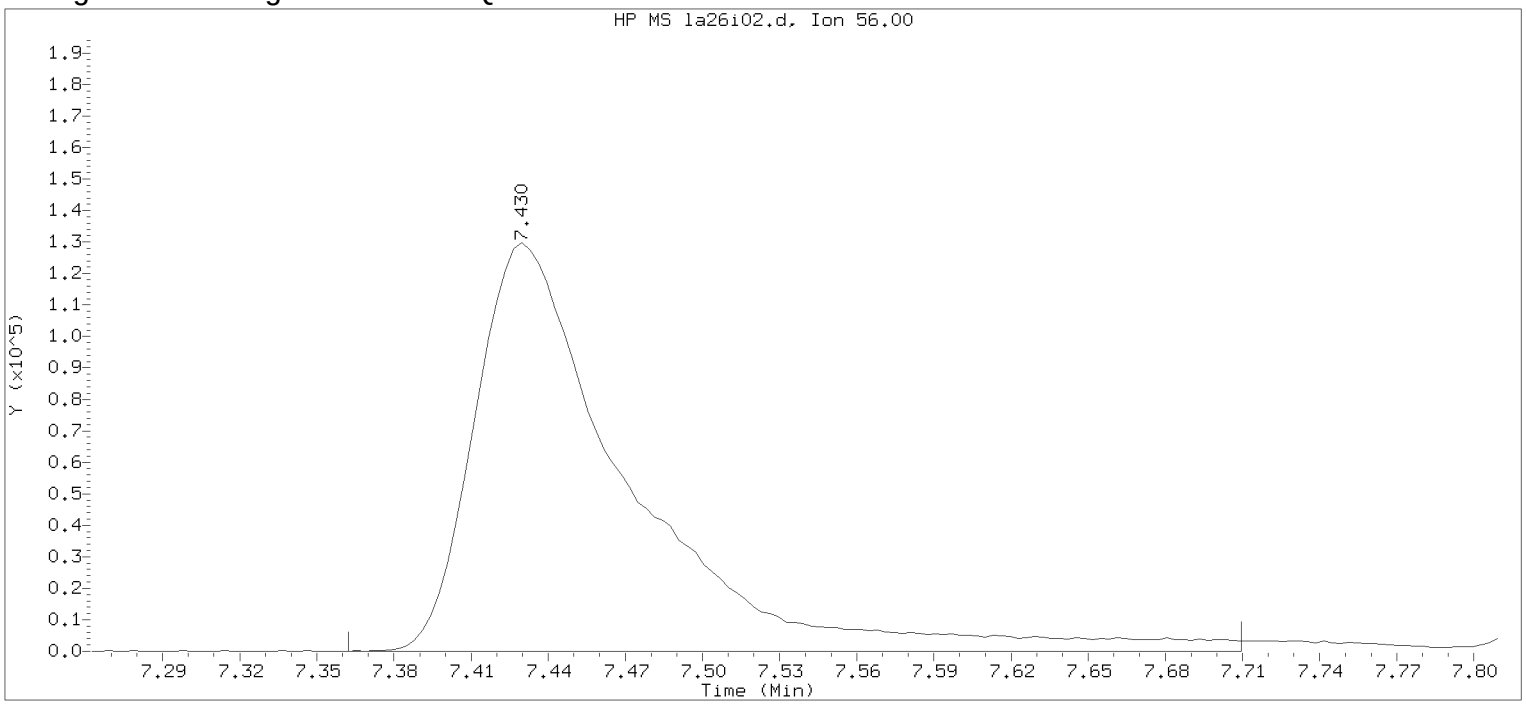
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

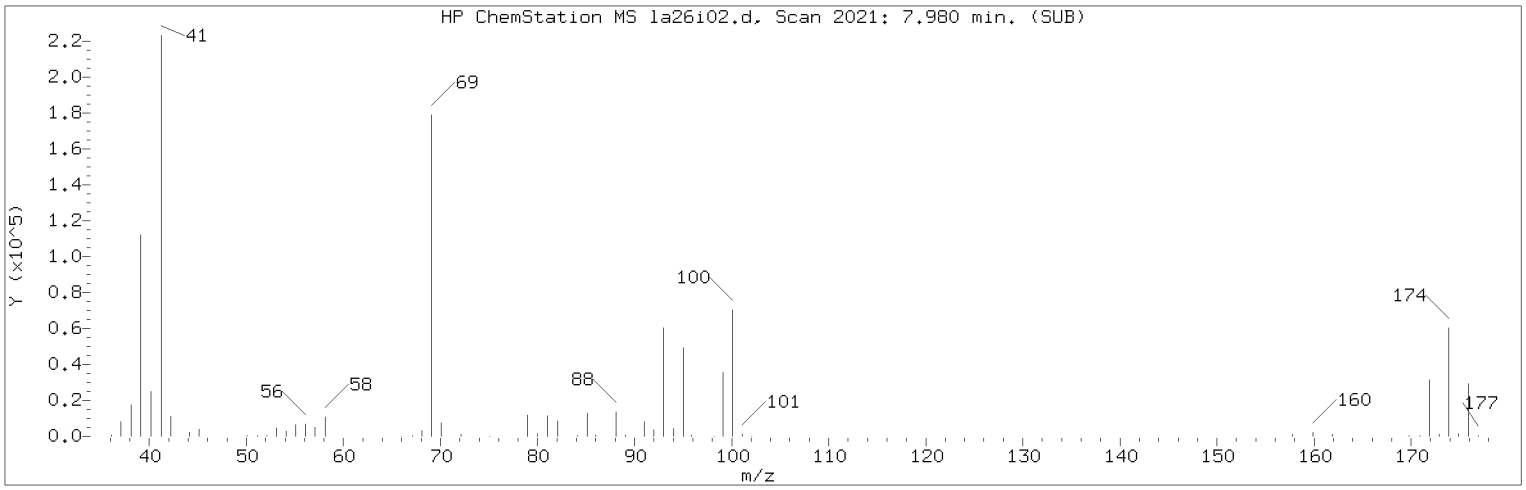
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

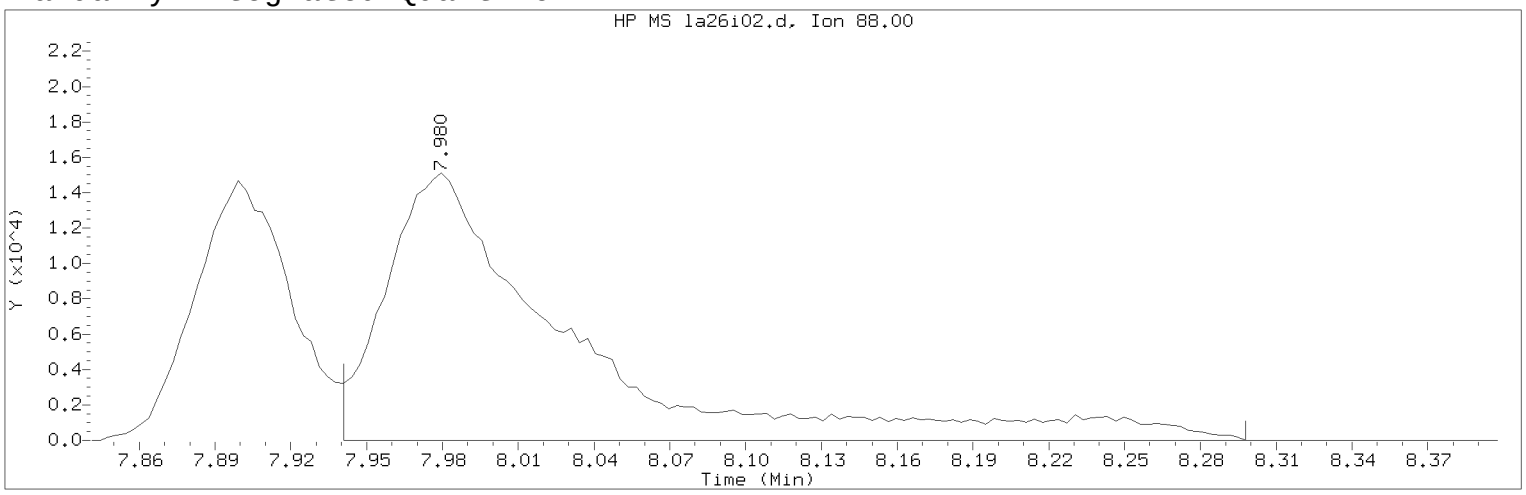
Compound Number : 69
Compound Name : n-Butanol
Scan Number : 1850
Retention Time (minutes): 7.430
Quant Ion : 56.00
Area : 545706
On-column Amount (ng) : 2586.5087
Integration start scan : 1828 Integration stop scan: 1936
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

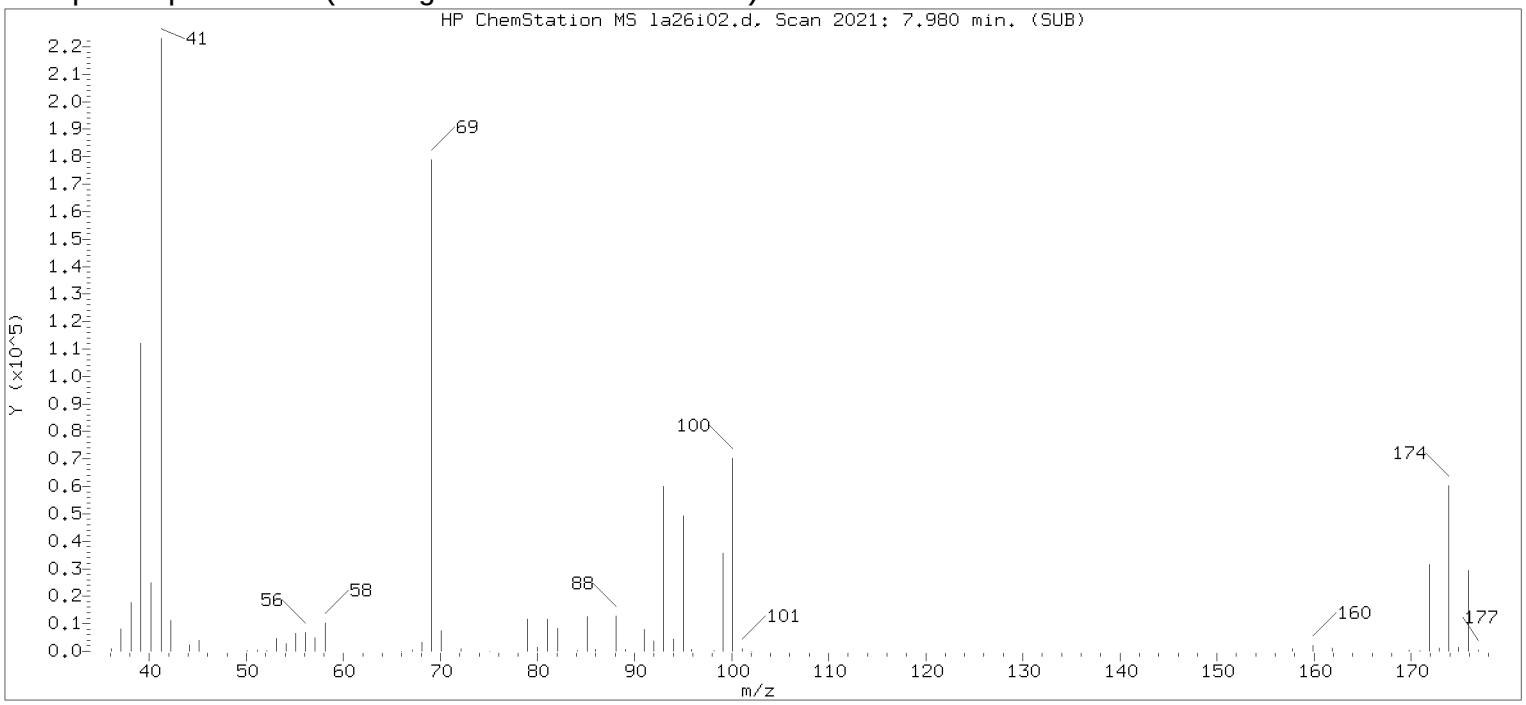
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 88.00
Area (flag) : 76692M
On-Column Amount (ng) : 1221.7348
Integration start scan : 2008 Integration stop scan: 2119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

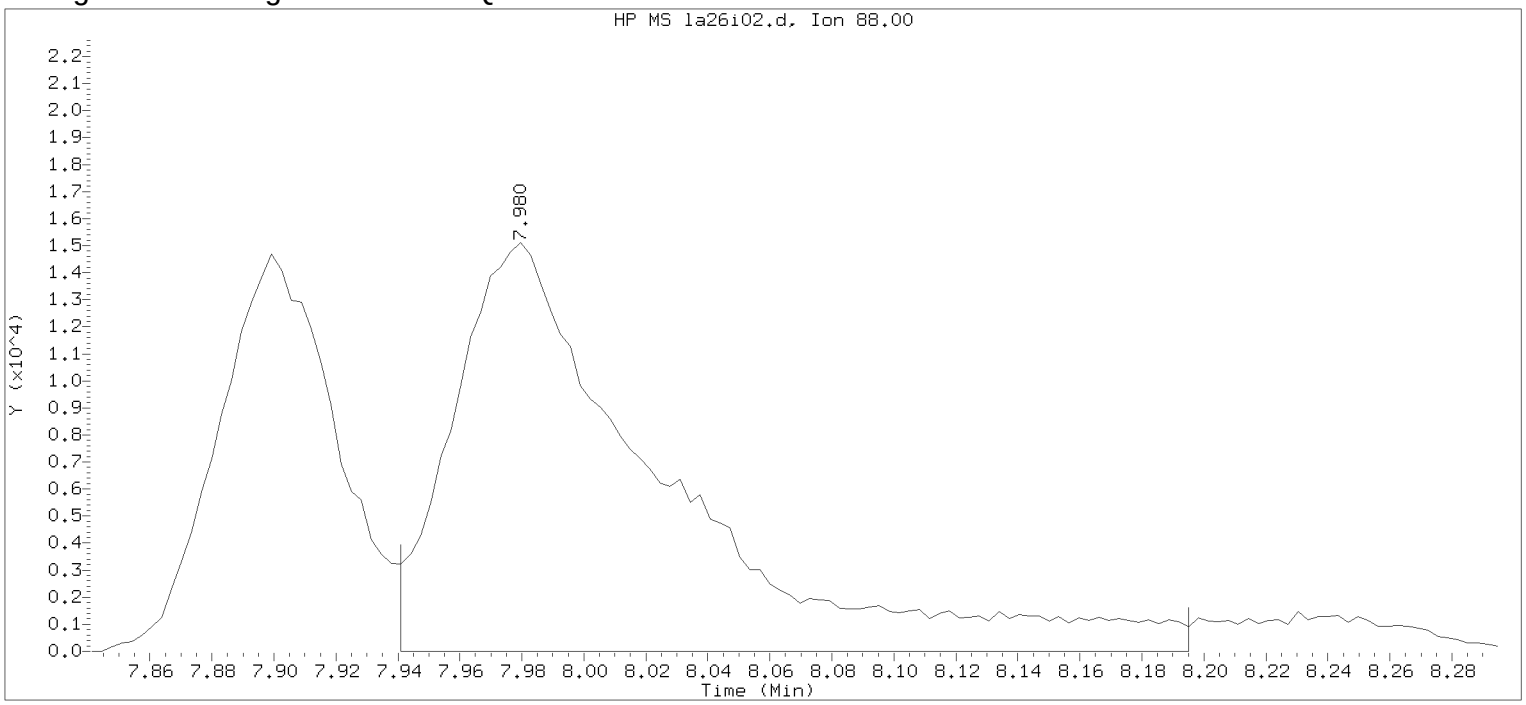
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

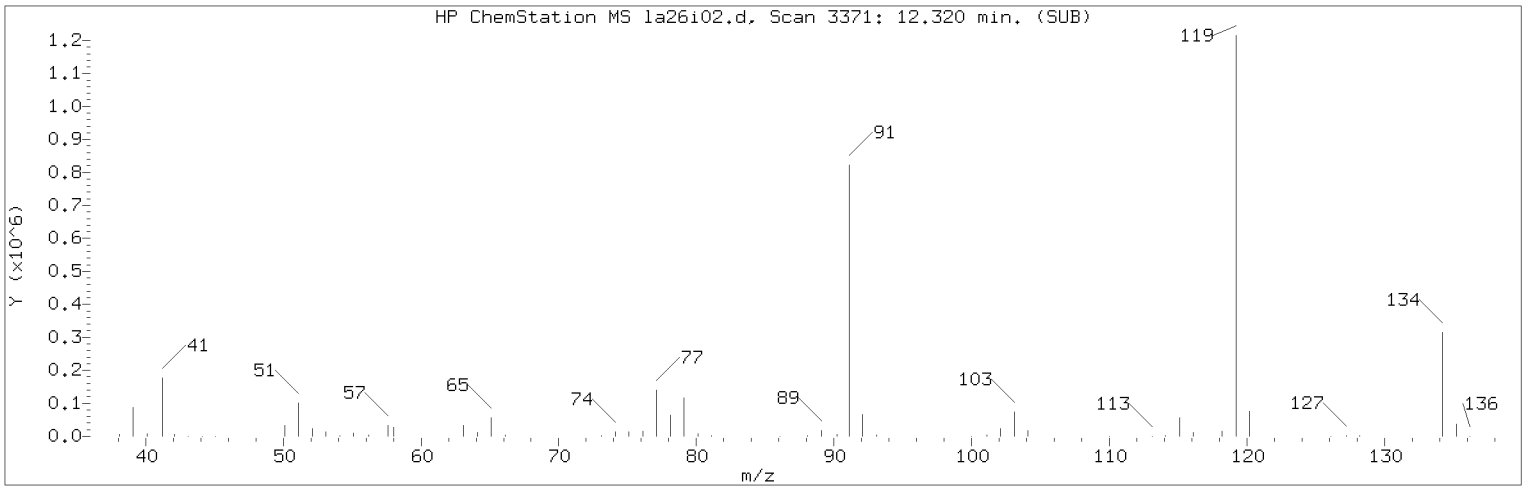
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

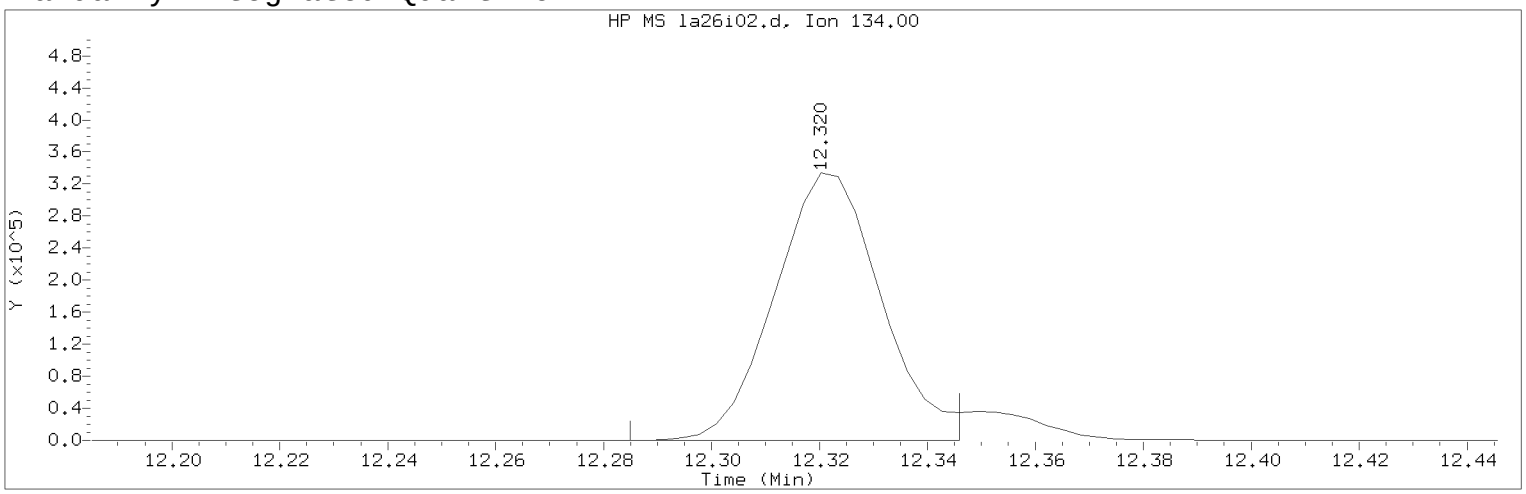
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 88.00
Area : 70705
On-column Amount (ng) : 1061.5410
Integration start scan : 2008 Integration stop scan: 2087
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

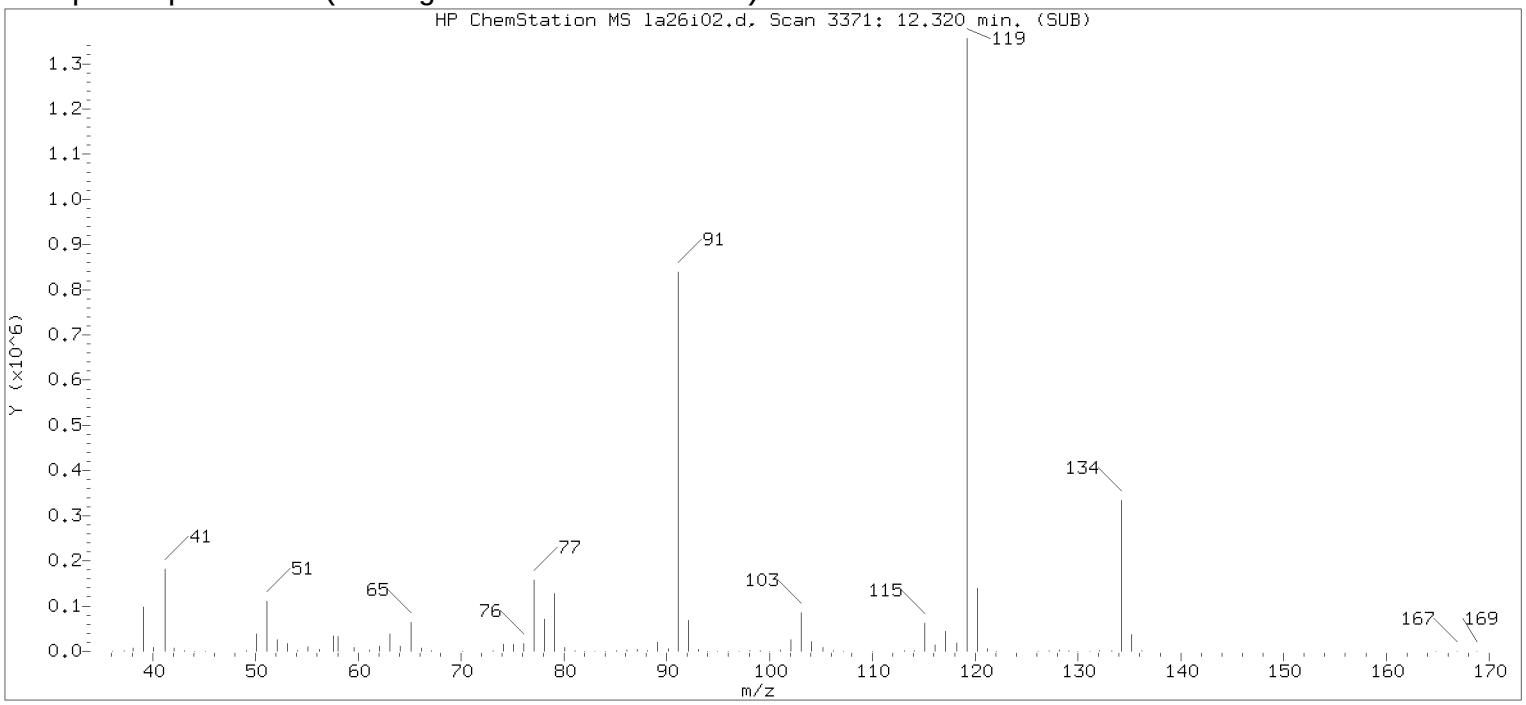
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 456579M
On-Column Amount (ng) : 105.7797
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

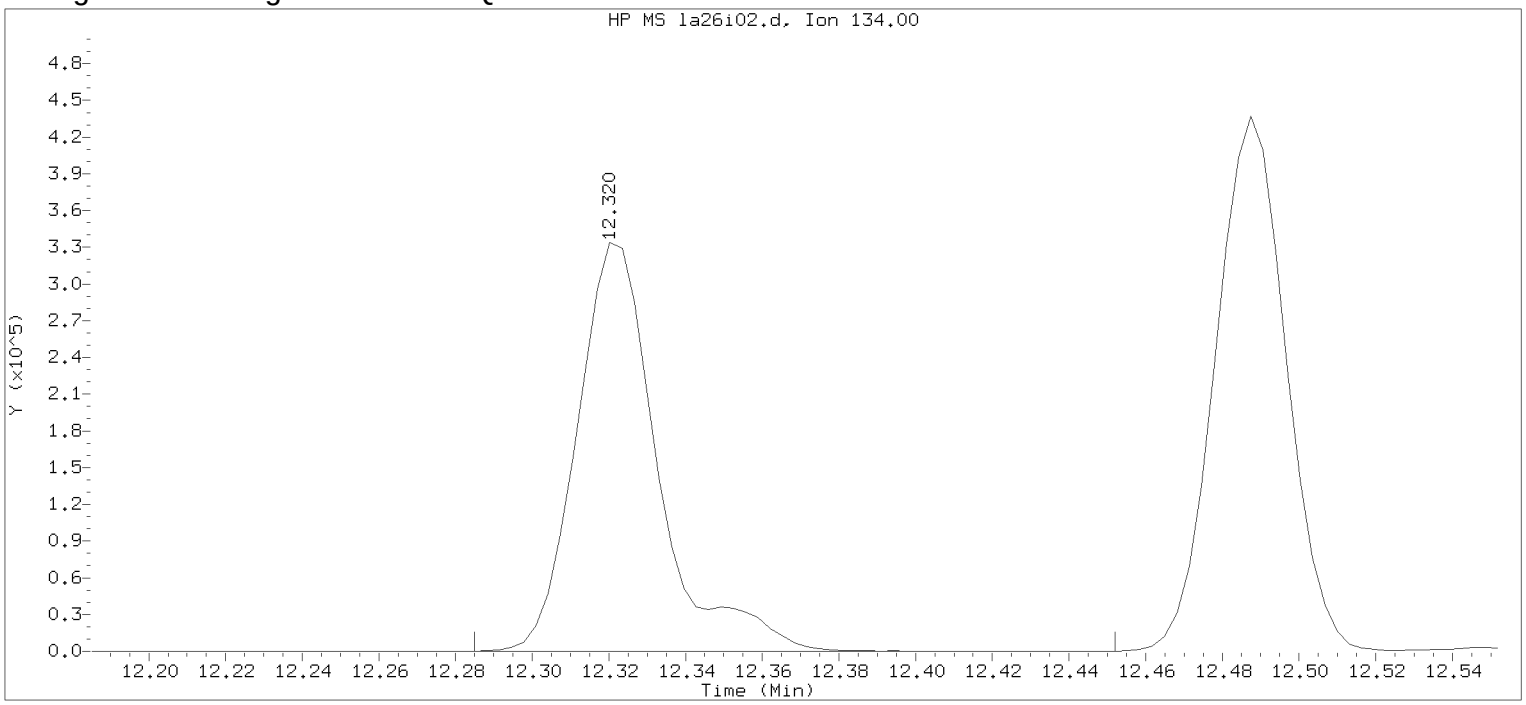
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



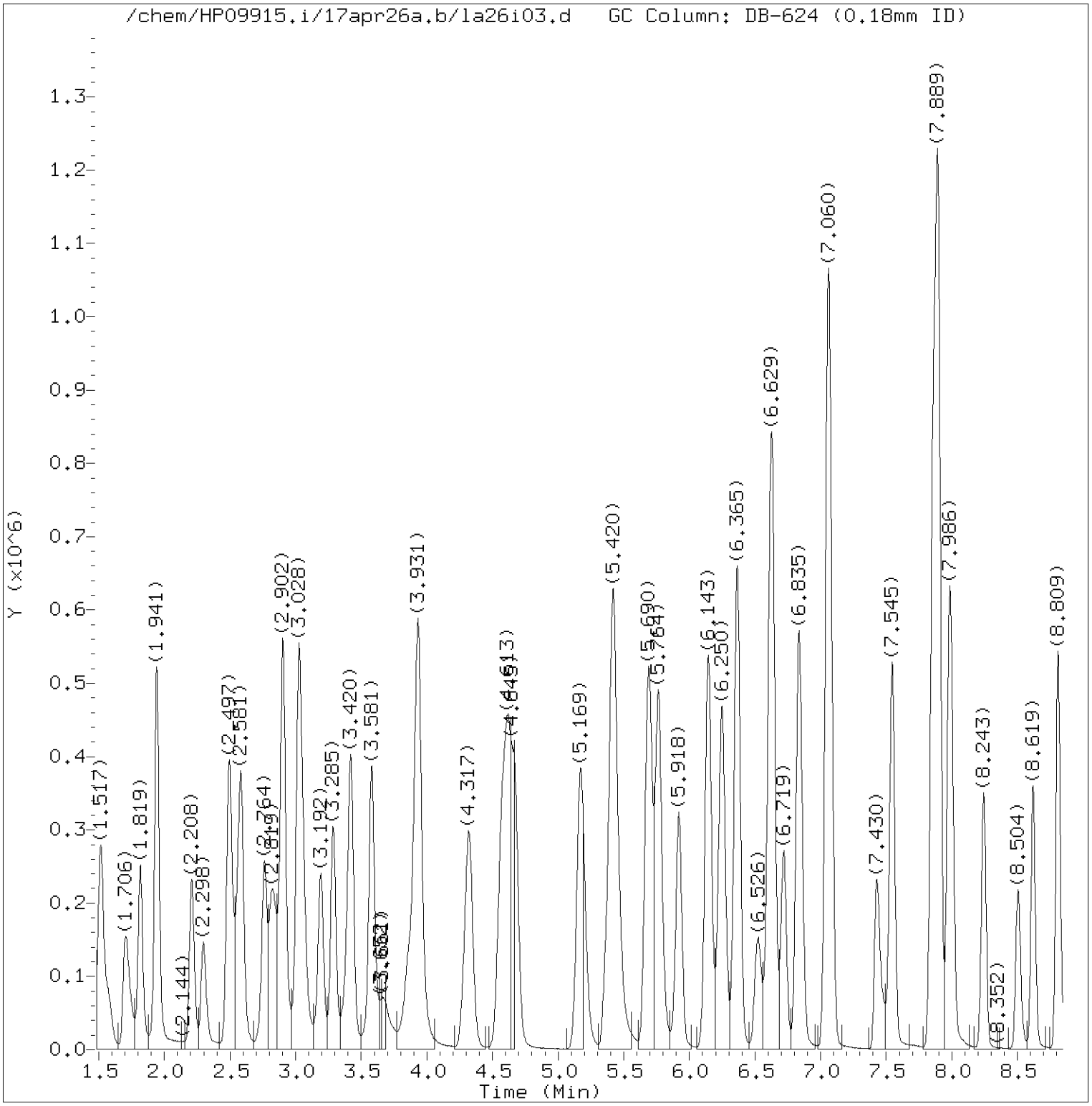

Data File: /chem/HP09915.i/17apr26a.b/la26i02.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 13:42 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 491130
On-column Amount (ng) : 103.2605
Integration start scan : 3359 Integration stop scan: 3411
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 Page 693 of 1128




Total Ion Chromatogram (TIC)

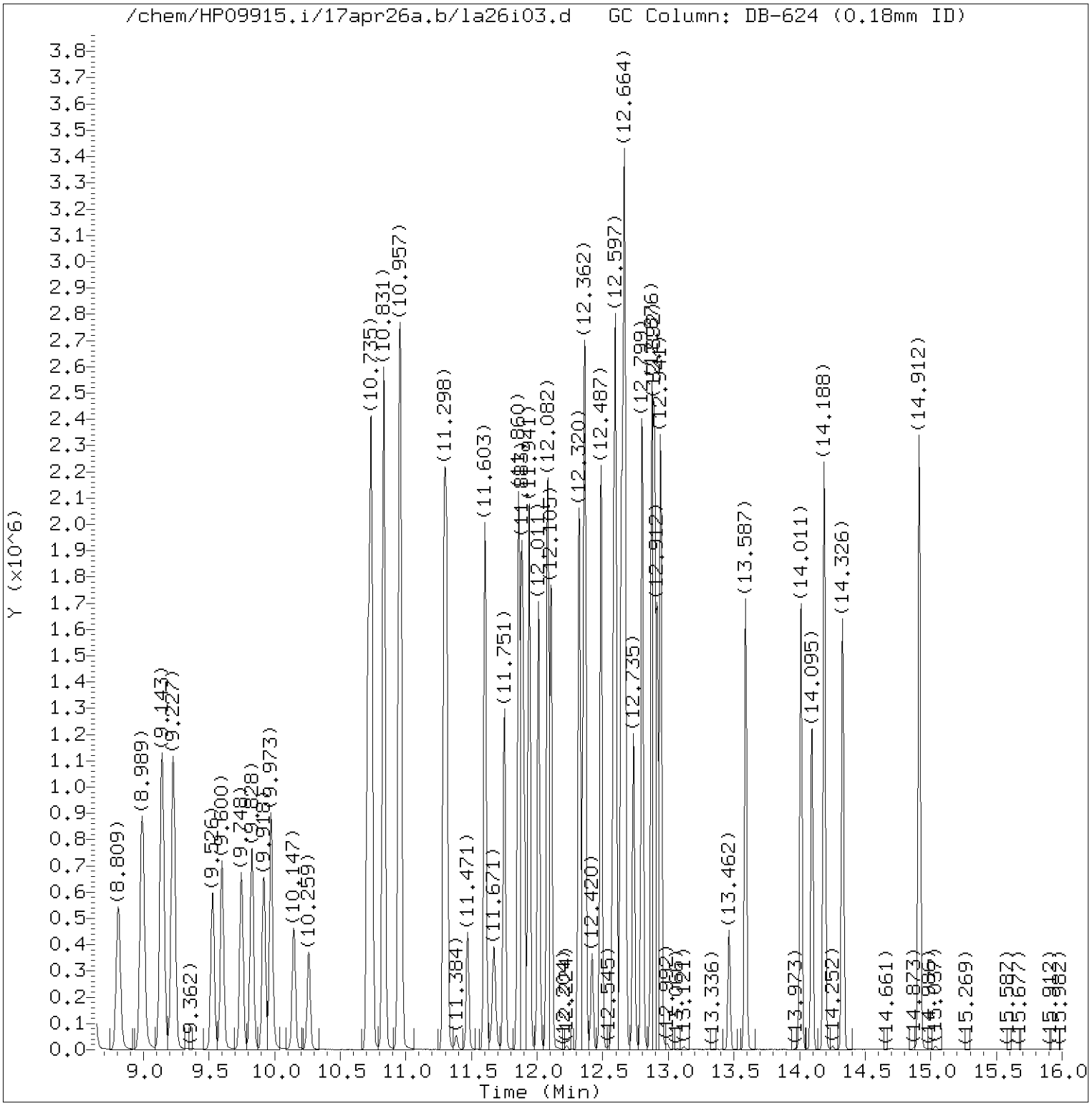
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 341531 | 55.325 |
| 4) Chloromethane | (2) | 1.819 | 50 | 341915 | 53.914 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 338740 | 55.314 |
| 5) 1,3-Butadiene | (2) | 1.948 | 39 | 185287 | 49.605 |
| 8) Bromomethane | (2) | 2.211 | 94 | 223606 | 54.288 |
| 9) Chloroethane | (2) | 2.301 | 64 | 186081 | 53.918 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 455798 | 54.146 |
| 12) Trichlorofluoromethane | (2) | 2.562 | 101 | 396809 | 55.955 |
| 11) n-Pentane | (2) | 2.584 | 43 | 292021 | 50.002 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 210376 | 53.288 |
| 15) Freon 123a | (2) | 2.819 | 67 | 241023 | 51.034 |
| 16) Acrolein | (1) | 2.902 | 56 | 846420 | 532.609 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 192923 | 51.401 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 97269 | 51.192 |
| 18) Acetone | (1) | 3.041 | 58 | 73070M | 105.938 |
| 19) Freon 113 | (2) | 3.047 | 101 | 194876 | 51.583 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 105752 | 231.283 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 379144 | 52.079 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 640566 | 52.445 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 274054 | 50.308 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 386191 | 51.369 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 194134M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 241364 | 48.679 |
| 30) t-Butyl alcohol | (1) | 3.677 | 59 | 188301 | 250.688 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 159848 | 55.877 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 721326 | 52.461 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 228348 | 51.854 |
| 34) n-Hexane | (2) | 4.320 | 57 | 342791 | 50.780 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 433276 | 52.360 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 837918 | 52.757 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 368443 | 52.785 |
| 40) Ethyl t-butyl ether | (2) | 5.172 | 59 | 734026 | 53.702 |
| 44) 2-Butanone | (2) | 5.378 | 43 | 418947 | 109.375 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 262755 | 52.071 |
| 45) 2,2-Dichloropropane | (2) | 5.433 | 77 | 299786 | 54.261 |
| 47) Propionitrile | (1) | 5.462 | 54 | 282765 | 257.928 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 375487 | 131.654 |
| 49) Bromochloromethane | (2) | 5.758 | 128 | 136891 | 51.472 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 106051 | 109.521 |
| 51) Chloroform | (2) | 5.918 | 83 | 411040 | 52.113 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 254980 | 50.387 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 111 | 260921 | 50.317 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 354588 | 49.197 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 491103 | 103.925 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 424936 | 51.780 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 346297 | 50.980 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 122692 | 51.578 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 281006 | 53.410 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 333440 | 51.977 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 170793 | 647.615 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 63118 | 50.159 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 296089 | 49.745 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 39897 | 49.986 |
| 60) Benzene | (2) | 6.629 | 78 | 982091 | 51.933 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 334956 | 52.357 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 31873 | 56.503 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 733093 | 54.041 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1036296 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 374695 | 49.577 |
| 69) n-Butanol | (1) | 7.430 | 56 | 280068 | 1317.372 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 250765 | 51.312 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 455106 | 52.853 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 206857 | 53.234 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 275068 | 53.135 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 43582M | 656.649 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 241048 | 54.398 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 171942 | 52.815 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 317704 | 54.075 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 192161 | 115.340 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 216850 | 54.493 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 421854 | 55.090 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 880332 | 111.530 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1027431 | 50.111 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 676600 | 50.089 |
| 88) Toluene | (3) | 9.227 | 92 | 616434 | 51.737 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 379484 | 56.801 |

M = Compound was manually integrated.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 418944 | 55.671 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 244835 | 53.326 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 265915 | 50.459 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 420710 | 52.809 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 638735 | 111.059 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 801338 | 111.891 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 264807 | 55.684 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 268109 | 53.341 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 803001 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 335726 | 49.064 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 712548 | 51.827 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 244656 | 53.888 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1186726 | 51.635 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 926946 | 103.598 |
| 107) o-Xylene | (3) | 11.291 | 106 | 466673 | 52.445 |
| 109) Styrene | (3) | 11.310 | 104 | 789557 | 53.675 |
| 110) Bromoform | (3) | 11.471 | 173 | 196645 | 56.948 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 1179385 | 51.860 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 165040 | 659.207 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379333 | 49.776 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 331825 | 49.640 |
| 108) Xylene (Total) | (3) | | 106 | 1393619 | 156.043 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 407876 | 53.358 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 318530 | 51.744 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 296713 | 135.458 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 113804 | 52.666 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 1393854 | 51.243 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 291915 | 51.564 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 1017107 | 52.437 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 302722 | 51.378 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 219011M | 52.234 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 180272 | 54.456 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 1045061 | 52.305 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 1273140 | 51.456 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 596808 | 50.922 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1129862 | 51.719 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 430663 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 613522 | 50.626 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 1072423 | 51.230 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 705215 | 58.832 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 673907 | 51.632 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 699626 | 51.044 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 545695 | 50.003 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 589322 | 51.155 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 564439 | 51.388 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1937972 | 154.064 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 88925 | 55.008 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 467325 | 50.034 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 459337 | 50.697 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 192963 | 49.039 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1445873 | 52.884 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 443490 | 50.737 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 940076 | 53.175 |



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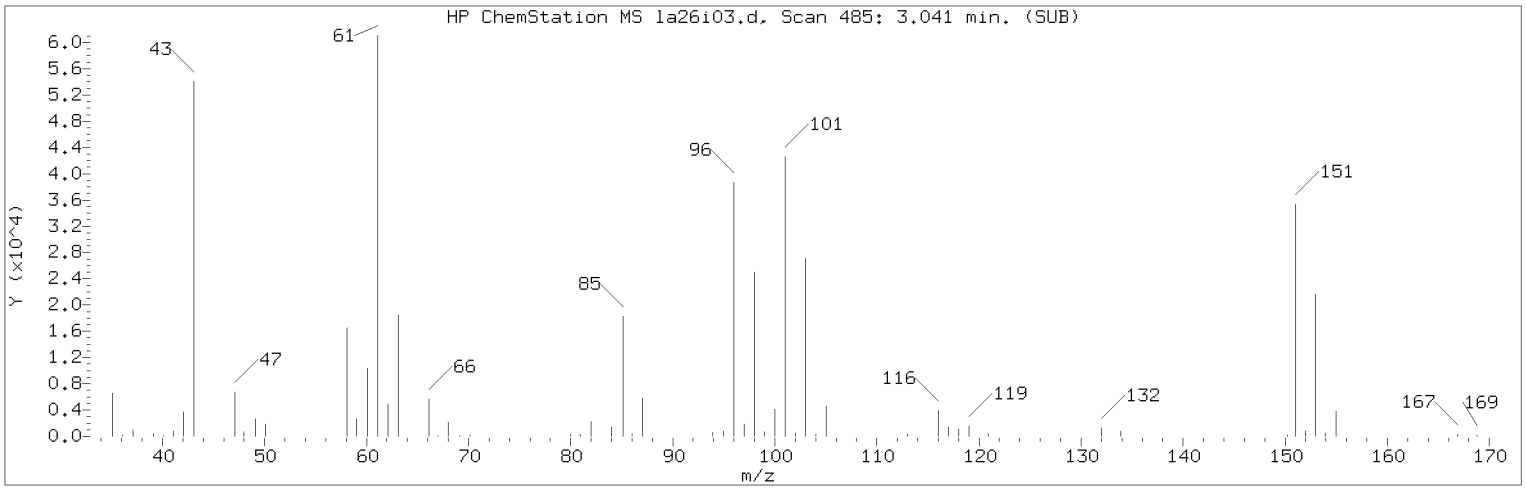
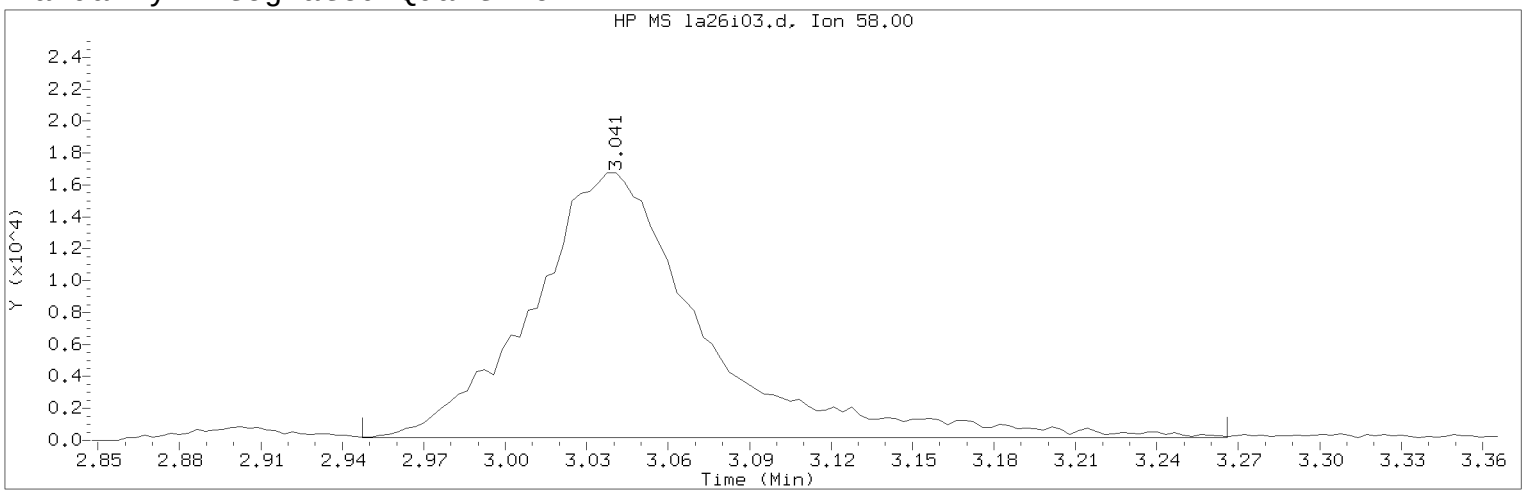
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

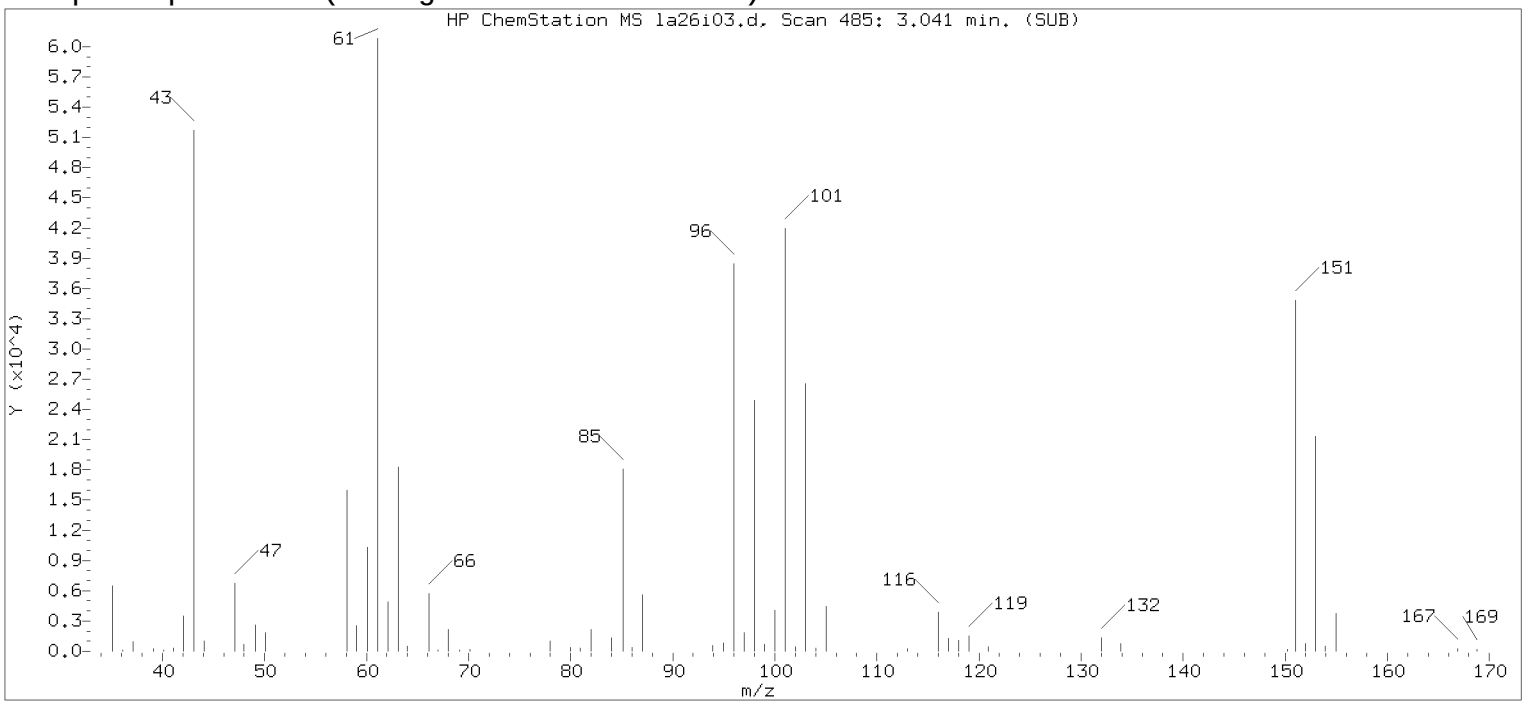
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area (flag) : 73070M
On-Column Amount (ng) : 105.9378
Integration start scan : 455 Integration stop scan: 554
Y at integration start : 159 Y at integration end: 159

Reason for manual integration: improper integration

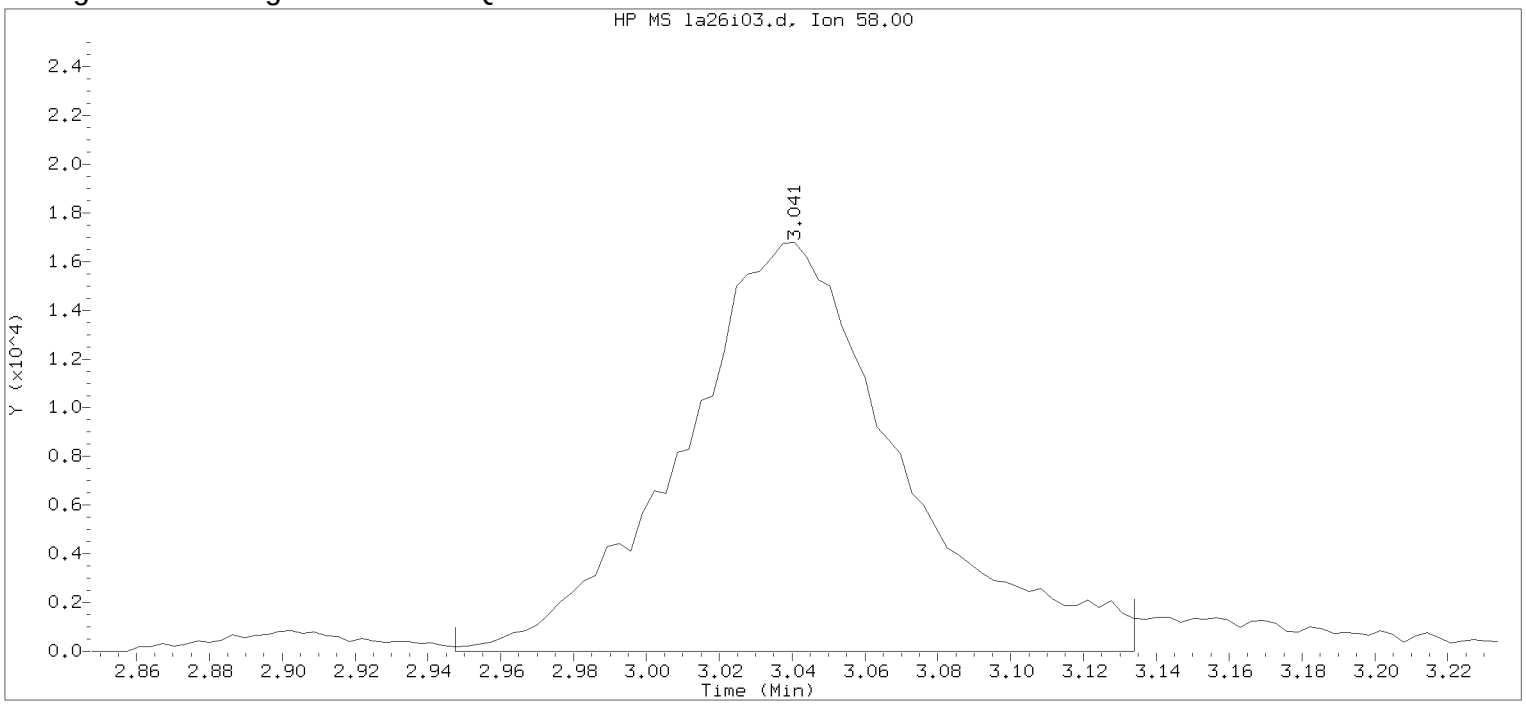
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area : 69964
On-column Amount (ng) : 100.7133
Integration start scan : 455 Integration stop scan: 513
Y at integration start : 0 Y at integration end: 0

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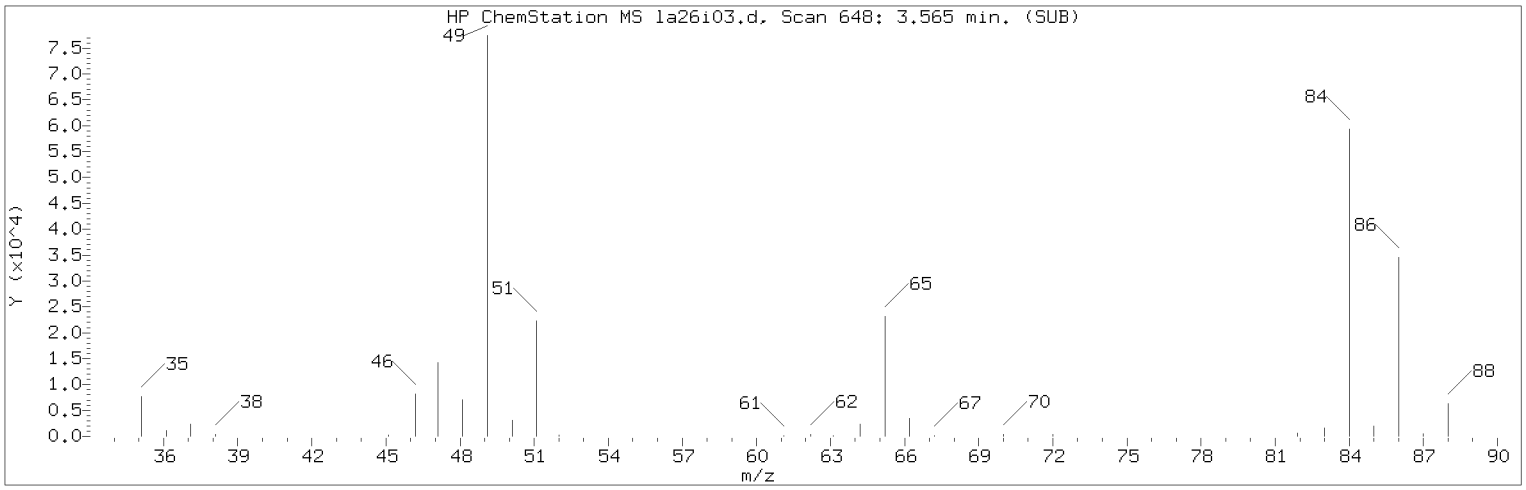
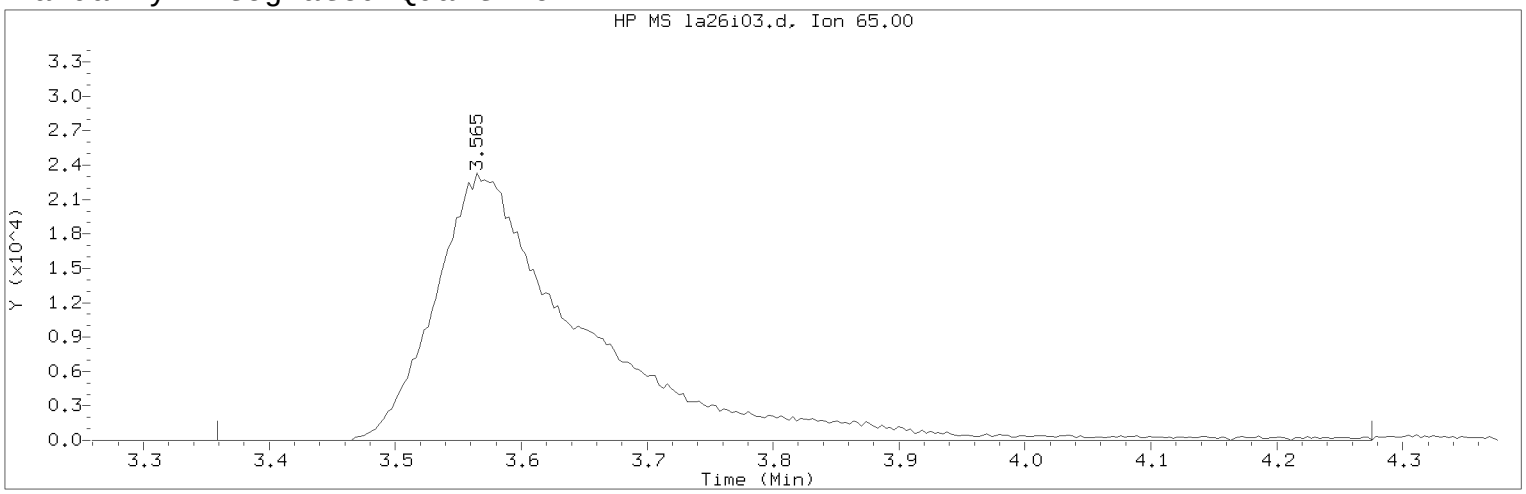
Target 3.5 esignature user KAS1 Page 698 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

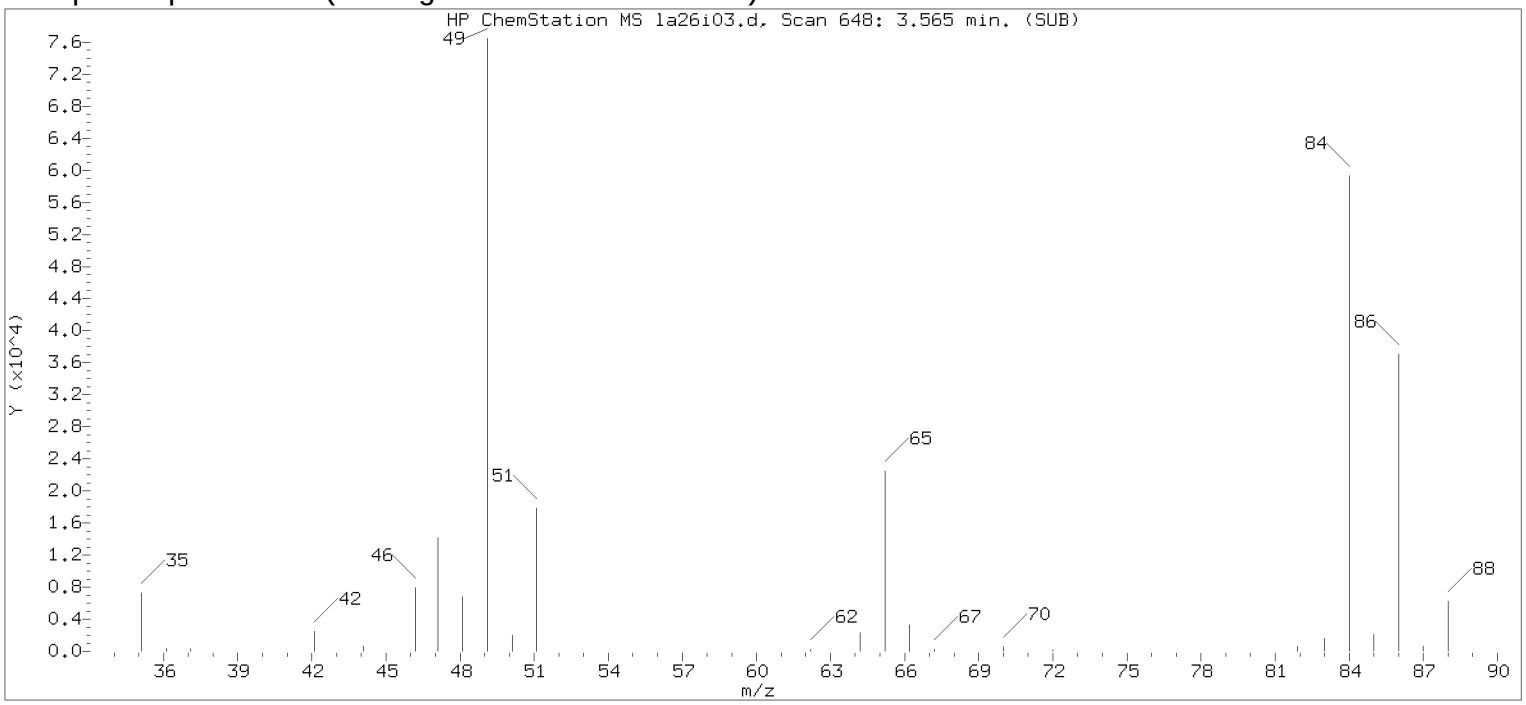
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area (flag) : 194134M
On-Column Amount (ng) : 250.0000
Integration start scan : 583 Integration stop scan: 868
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

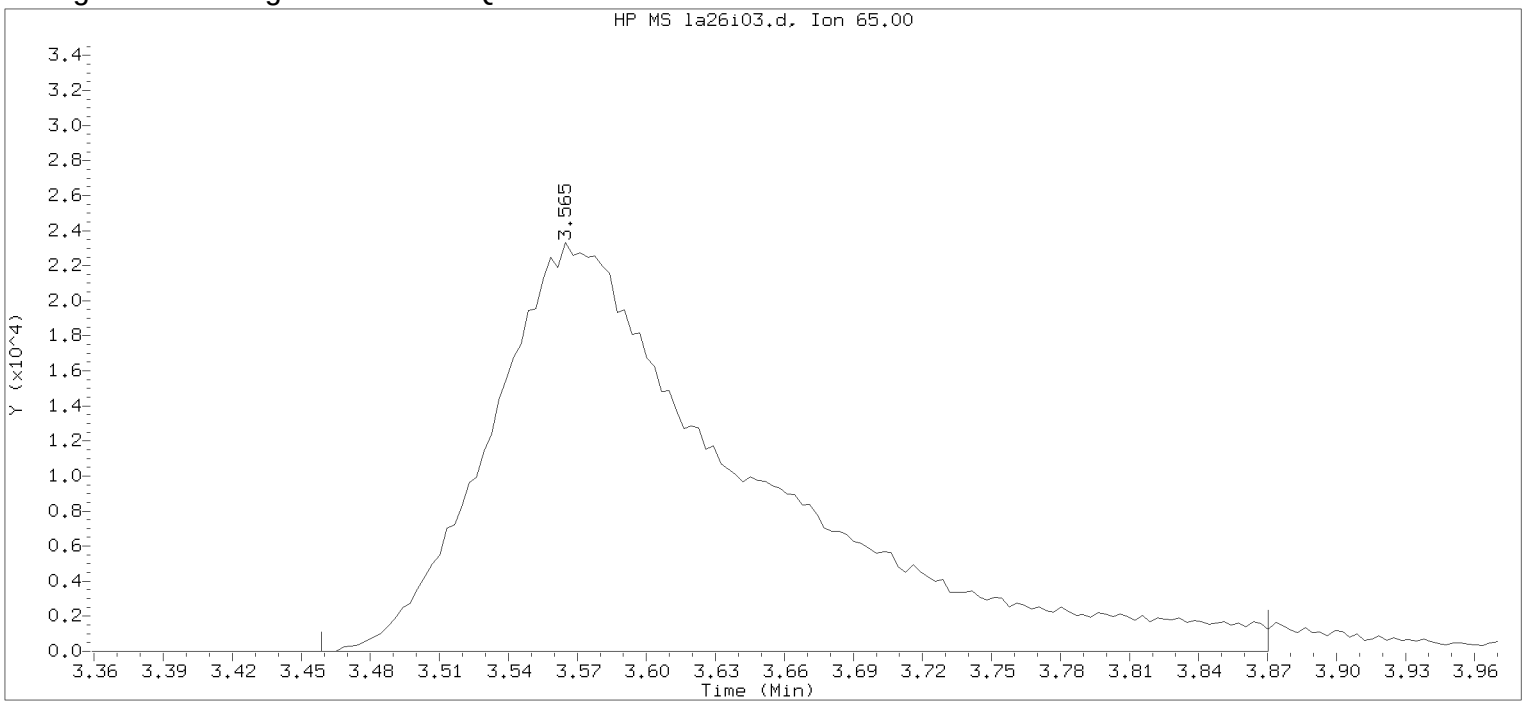
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area : 184407
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 742
Y at integration start : 0 Y at integration end: 0

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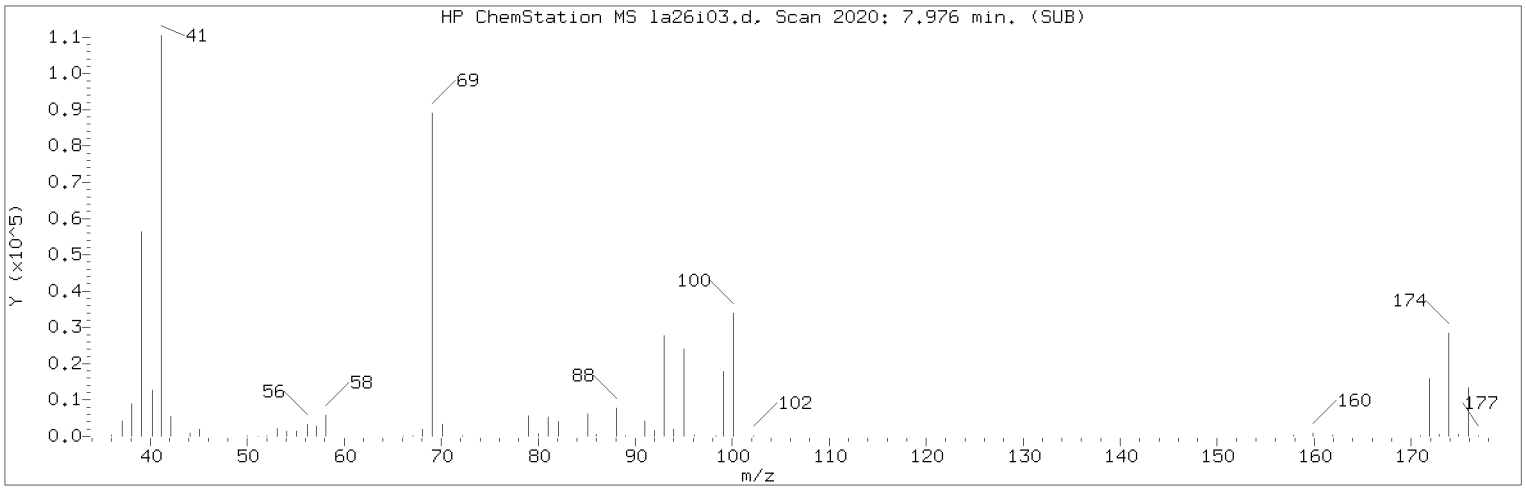
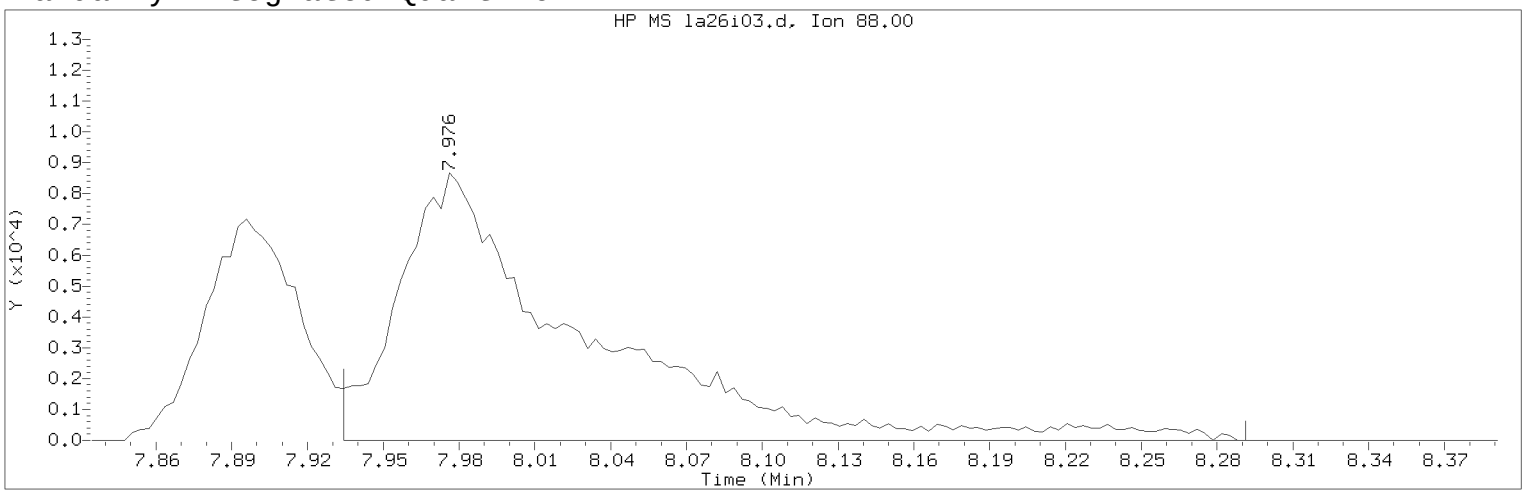
Target 3.5 esignature user KAS1 Page 208 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

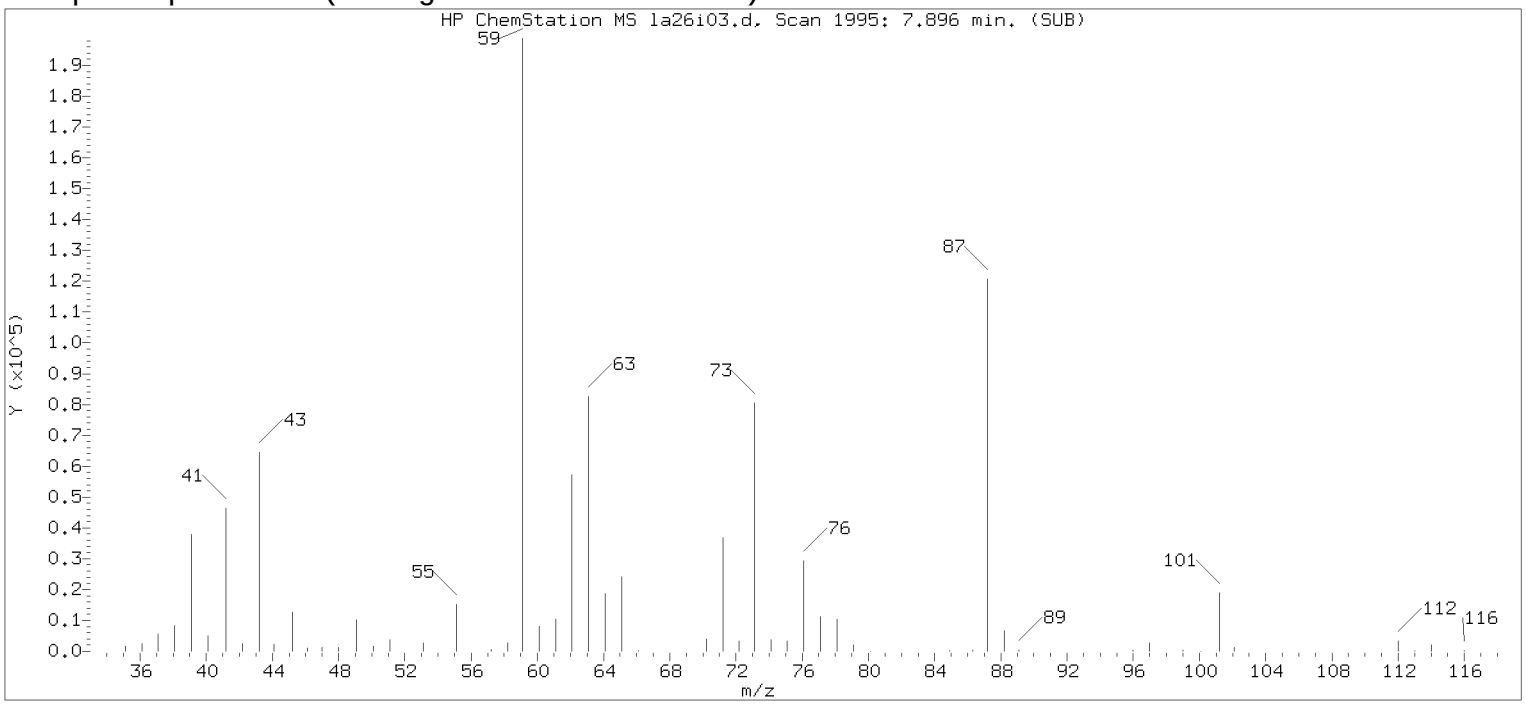
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 43582M
On-Column Amount (ng) : 656.6493
Integration start scan : 2006 Integration stop scan: 2117
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

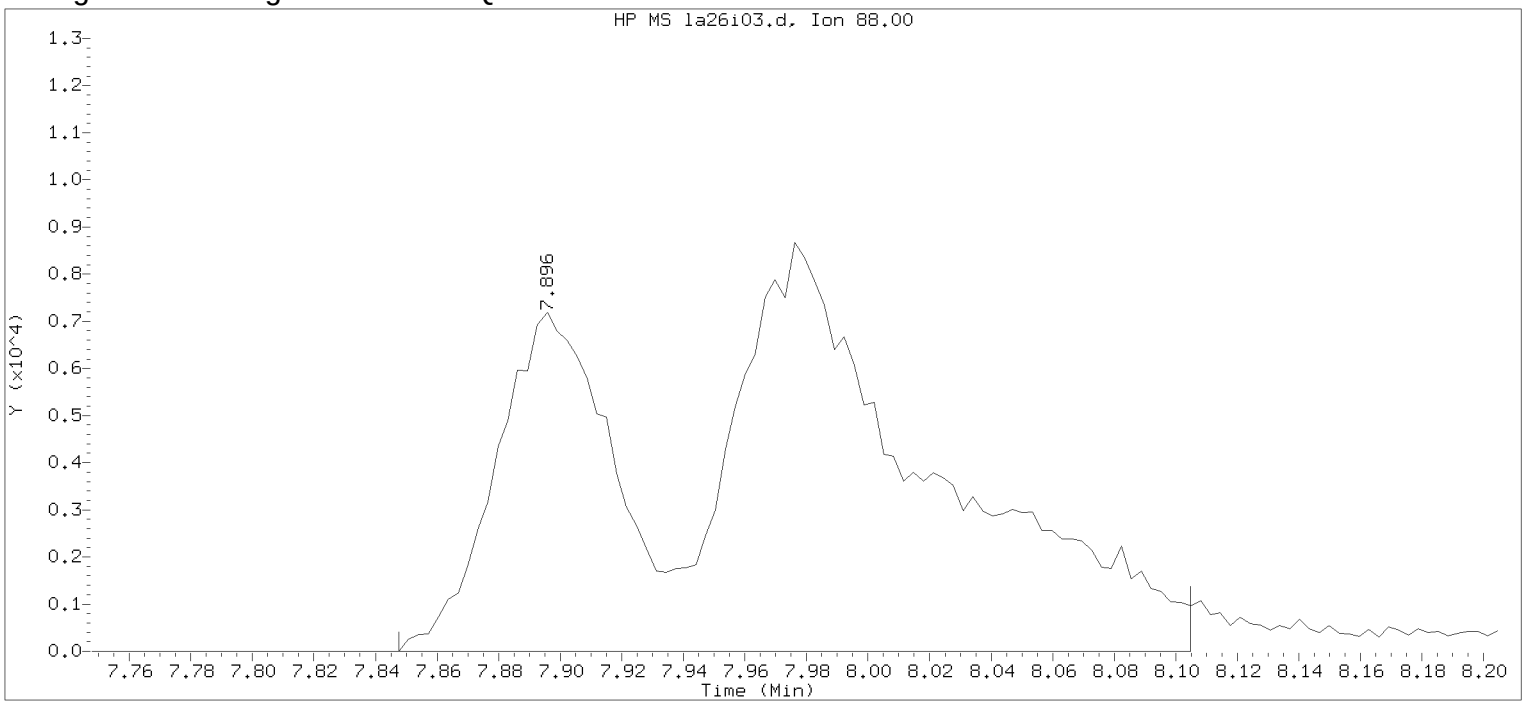
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 57387
On-column Amount (ng) : 846.7526
Integration start scan : 1979 Integration stop scan: 2059
Y at integration start : 0 Y at integration end: 0

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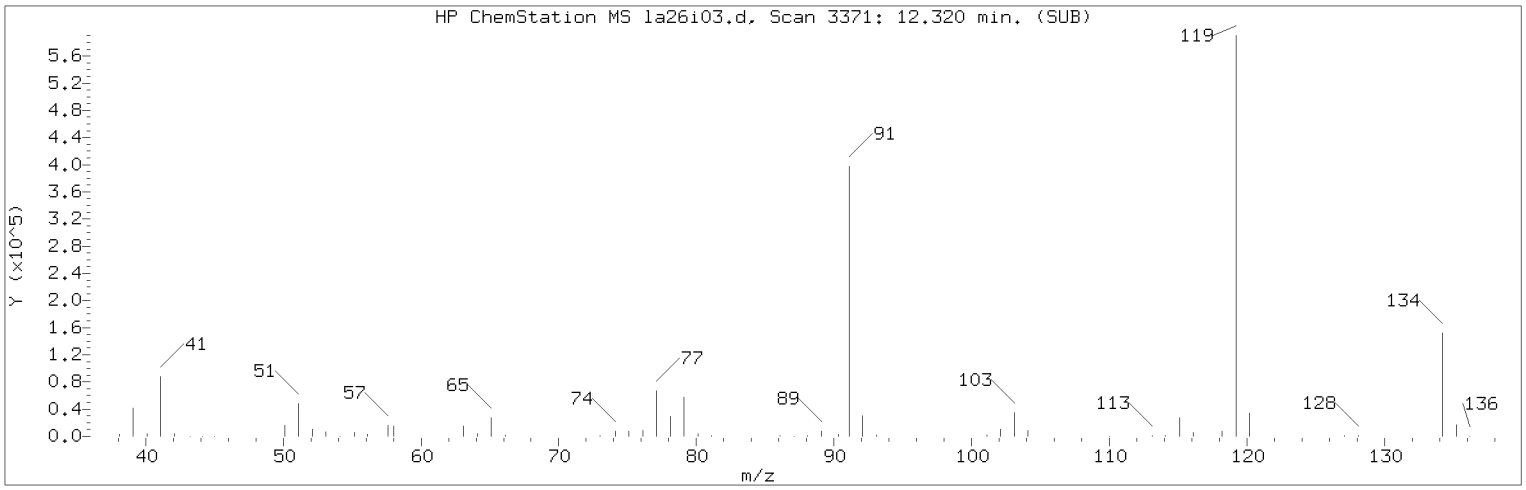
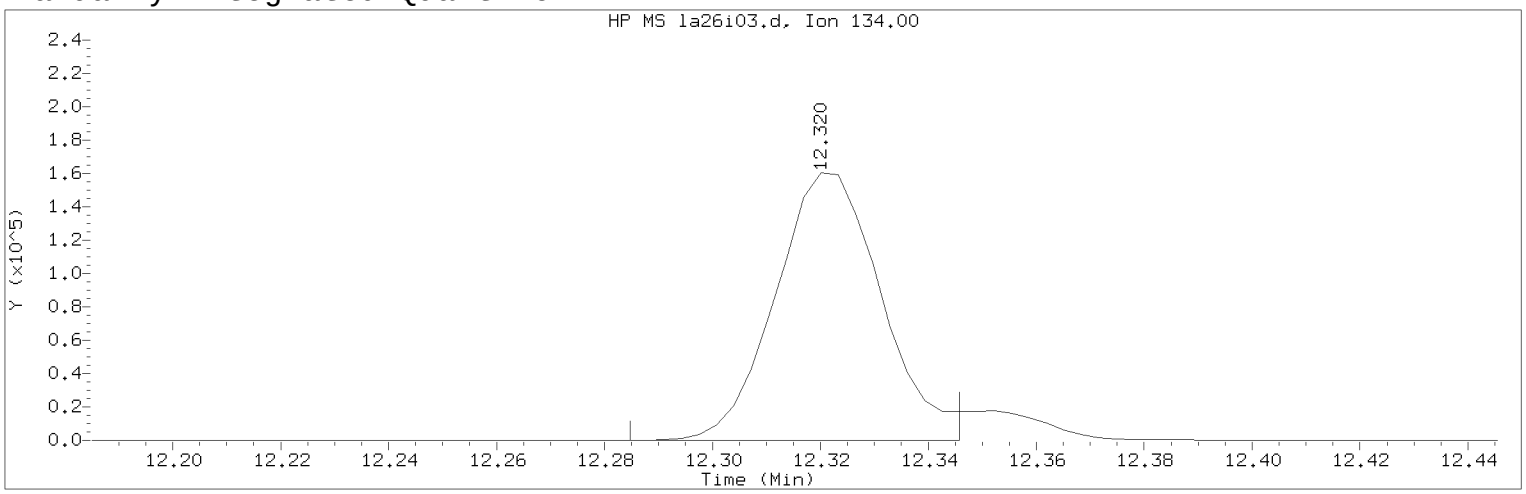
Target 3.5 esignature user KAS1 Page 203 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

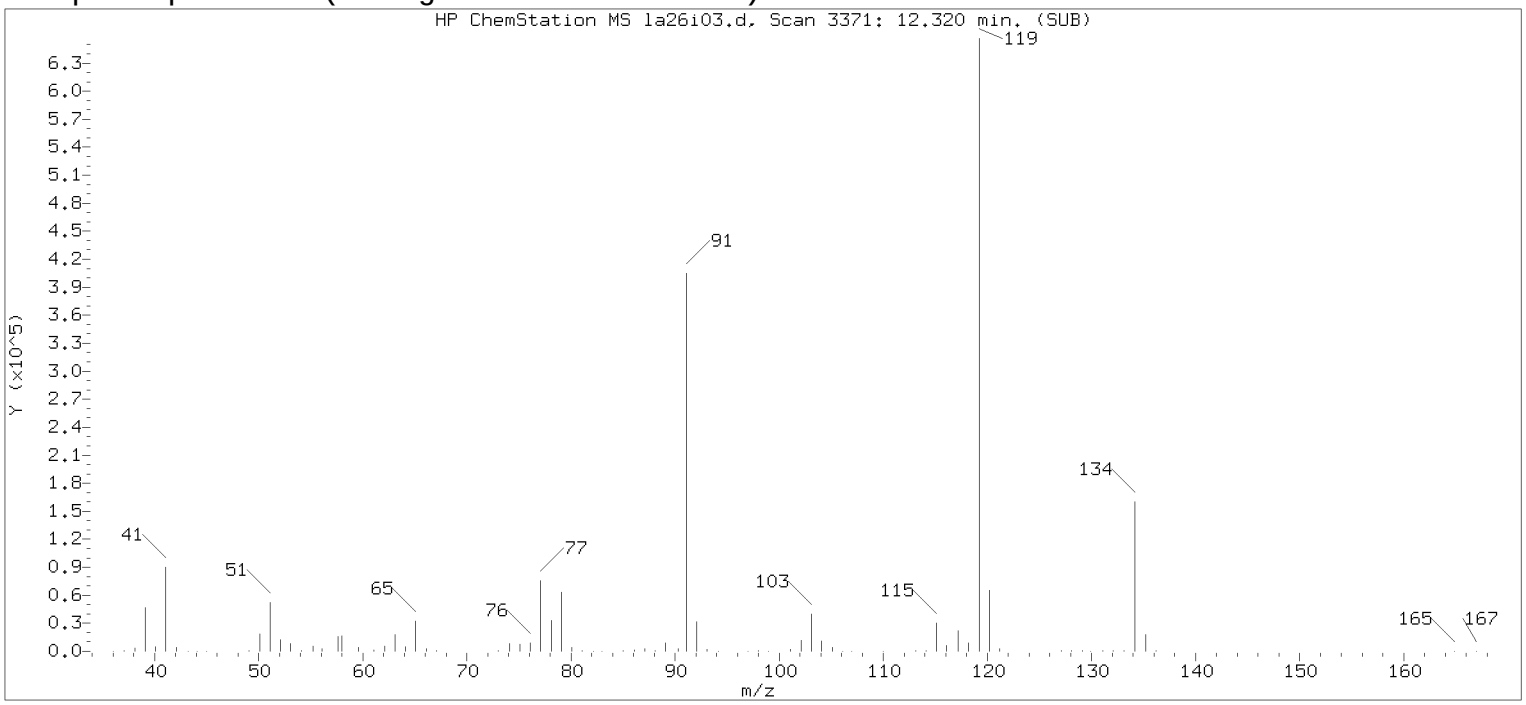
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 219011M
On-Column Amount (ng) : 52.2336
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

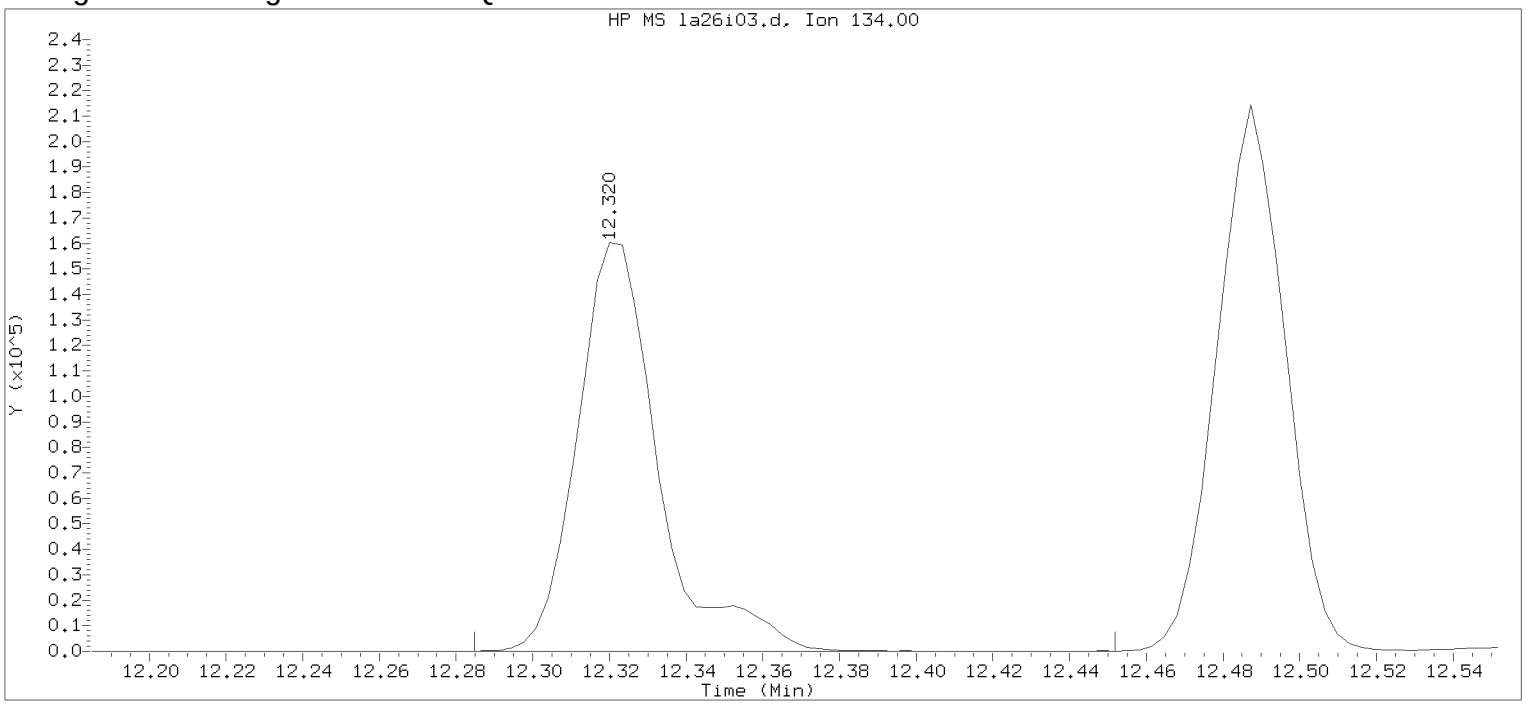
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i03.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:04 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 14:22
Date, time and analyst ID of latest file update: 26-Apr-2017 14:22 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 236254
On-column Amount (ng) : 52.1386
Integration start scan : 3359 Integration stop scan: 3411
Y at integration start : 0 Y at integration end: 0

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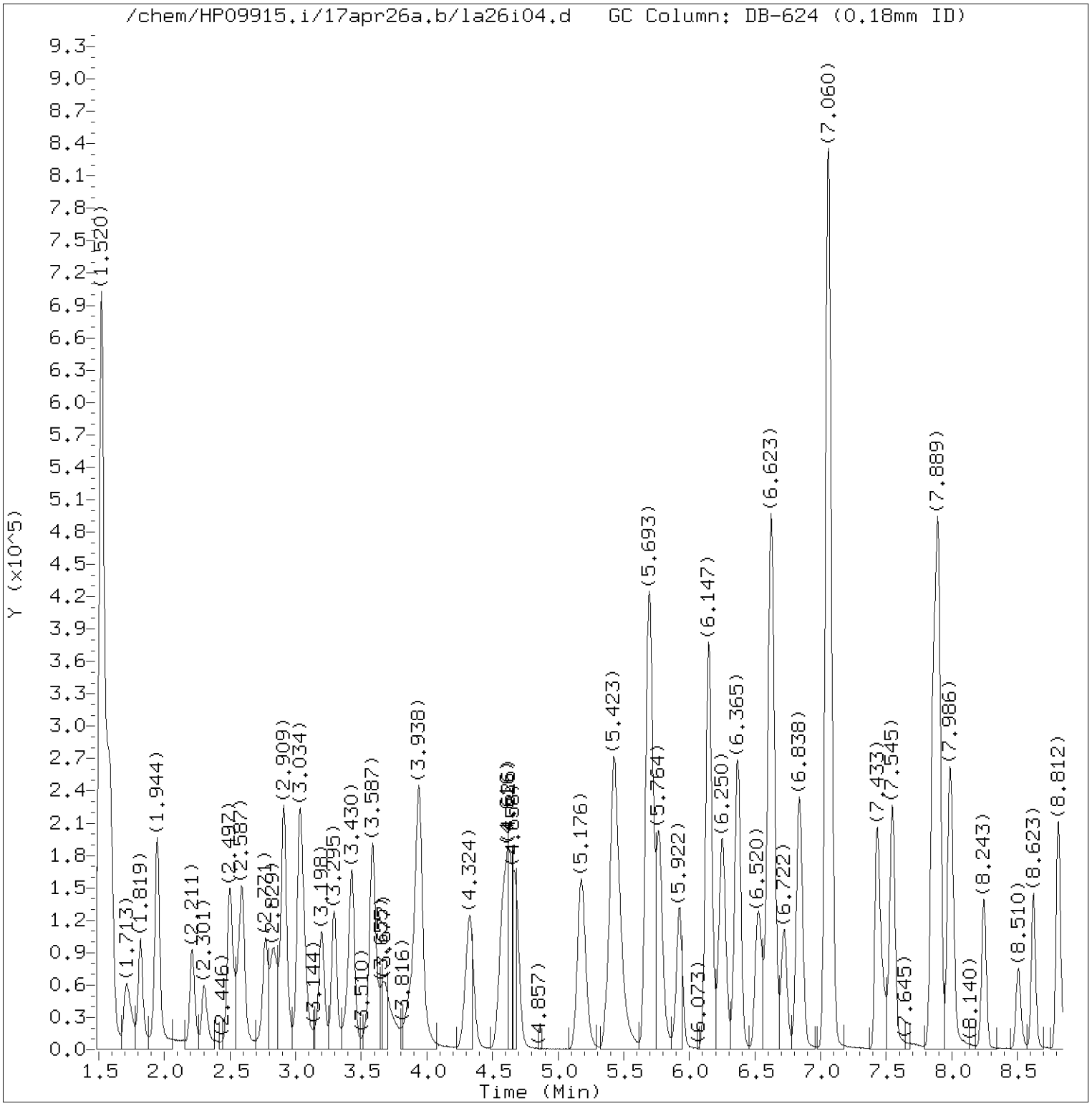
Target 3.5 esignature user KAS1 Page 2048 of 1128




Total Ion Chromatogram (TIC)

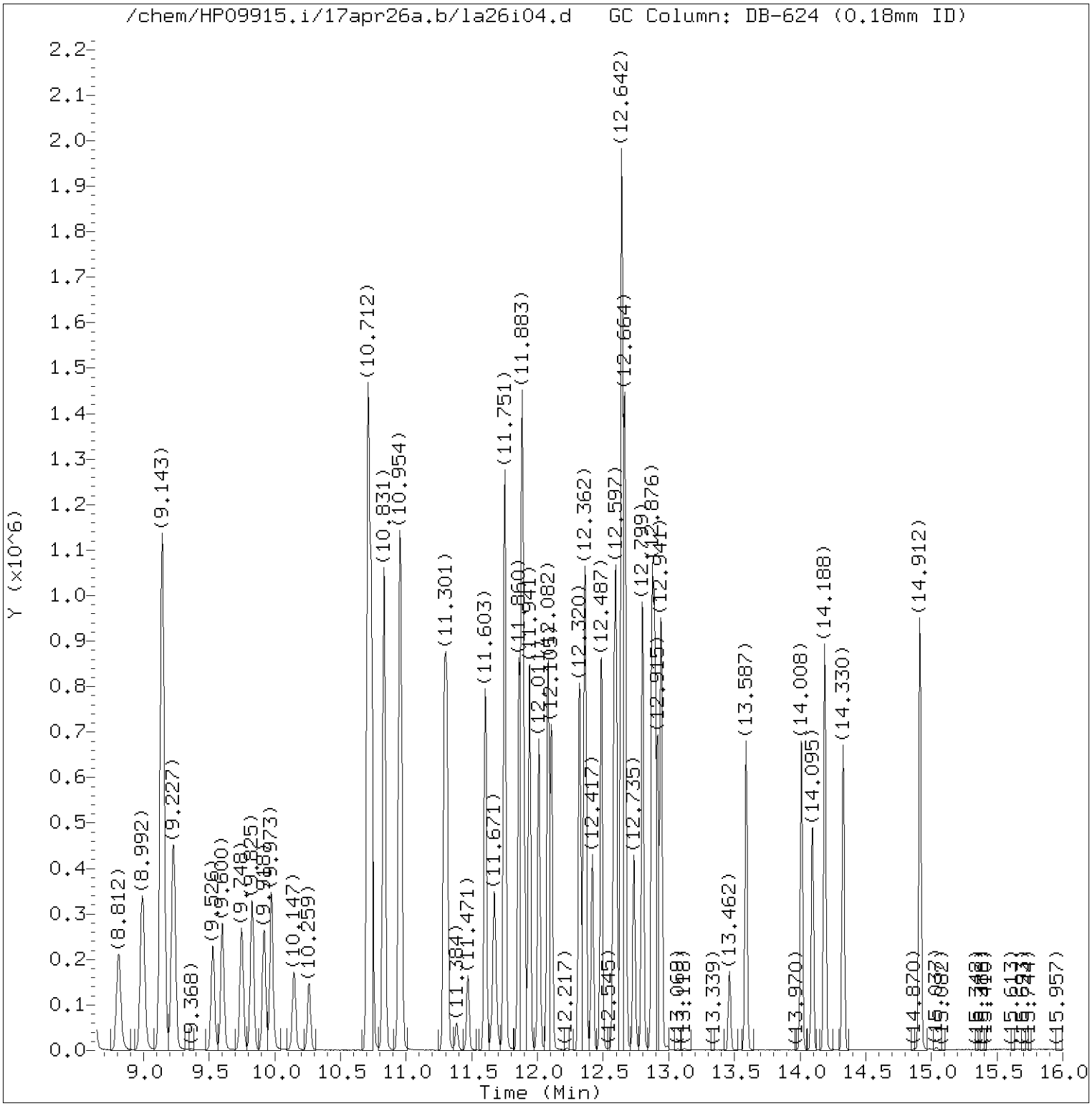
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 118583 | 19.173 |
| 4) Chloromethane | (2) | 1.819 | 50 | 128941 | 20.294 |
| 6) Vinyl Chloride | (2) | 1.935 | 62 | 120731 | 19.678 |
| 5) 1,3-Butadiene | (2) | 1.951 | 39 | 77112 | 20.606 |
| 8) Bromomethane | (2) | 2.208 | 94 | 82440 | 19.978 |
| 9) Chloroethane | (2) | 2.304 | 64 | 69158 | 20.002 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 171864 | 20.378 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 135555 | 19.079 |
| 11) n-Pentane | (2) | 2.594 | 43 | 122151 | 20.876 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 82347 | 20.820 |
| 15) Freon 123a | (2) | 2.829 | 67 | 101357 | 21.421 |
| 16) Acrolein | (1) | 2.909 | 56 | 339968 | 197.002 |
| 17) 1,1-Dichloroethene | (2) | 3.031 | 96 | 78125 | 20.776 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 40512 | 21.281 |
| 18) Acetone | (1) | 3.047 | 58 | 27291 | 36.437 |
| 19) Freon 113 | (2) | 3.060 | 101 | 81156 | 21.442 |
| 21) 2-Propanol | (1) | 3.185 | 45 | 102028M | 205.487 |
| 22) Methyl Iodide | (2) | 3.202 | 142 | 154277 | 21.152 |
| 23) Carbon Disulfide | (2) | 3.292 | 76 | 258440 | 21.120 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 112854 | 20.678 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 156101 | 20.725 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 210810M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 99182 | 19.966 |
| 30) t-Butyl alcohol | (1) | 3.684 | 59 | 165846 | 203.327 |
| 31) Acrylonitrile | (2) | 3.864 | 53 | 57543 | 20.078 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.928 | 73 | 291785 | 21.181 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 93758 | 21.251 |
| 34) n-Hexane | (2) | 4.324 | 57 | 141702 | 20.952 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 175099 | 21.121 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 338404 | 21.267 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 149170 | 21.331 |
| 40) Ethyl t-butyl ether | (2) | 5.173 | 59 | 293404 | 21.426 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 154336 | 40.218 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 105715 | 20.911 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 117791 | 21.280 |
| 47) Propionitrile | (1) | 5.472 | 54 | 235941 | 198.193 |
| 48) Methacrylonitrile | (2) | 5.697 | 67 | 304947 | 106.722 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 56020 | 21.025 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 38105 | 36.239 |
| 51) Chloroform | (2) | 5.928 | 83 | 166128 | 21.023 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 250917 | 49.492 |
| 52)$Dibromofluoromethane | (2) | 6.150 | 111 | 257391 | 49.544 |
| 53) 1,1,1-Trichloroethane | (2) | 6.147 | 97 | 151774 | 21.019 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 199473 | 42.162 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 173572 | 21.111 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 142535 | 20.944 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 50722 | 21.283 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 111699 | 21.191 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 136486 | 21.236 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 151646 | 529.527 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 62253 | 49.379 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 297412 | 49.874 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.619 | 104 | 39719 | 49.671 |
| 60) Benzene | (2) | 6.632 | 78 | 401463 | 21.190 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 62 | 133462 | 20.822 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 13310 | 23.551 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 290768 | 21.394 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1038230 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 152105 | 20.088 |
| 69) n-Butanol | (1) | 7.433 | 56 | 248560 | 1076.679 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 101480 | 20.726 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 182363 | 21.139 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 81992 | 21.061 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 109388 | 21.091 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 44394M | 615.972 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 93921 | 21.156 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 67846 | 20.801 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 122710 | 20.847 |
| 79) 2-Nitropropane | (2) | 8.510 | 41 | 64758 | 38.797 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 85040 | 21.330 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 163005 | 21.247 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 328366 | 41.523 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1021680 | 50.425 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 671346 | 50.293 |
| 88) Toluene | (3) | 9.230 | 92 | 253889 | 21.563 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 141943 | 21.499 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 162375 | 21.835 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 96297 | 21.224 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 112611 | 21.624 |
| 94) 1,3-Dichloropropane | (3) | 9.922 | 76 | 167817 | 21.316 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 247487 | 43.545 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 304948 | 42.746 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 98456 | 20.950 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 106400 | 21.421 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 793538 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 135630 | 20.058 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 291376 | 21.446 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 95498 | 21.285 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 487509 | 21.465 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 379488 | 42.918 |
| 107) o-Xylene | (3) | 11.291 | 106 | 188046 | 21.385 |
| 109) Styrene | (3) | 11.311 | 104 | 319117 | 21.953 |
| 110) Bromoform | (3) | 11.471 | 173 | 71969 | 21.091 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 478133 | 21.275 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 150358 | 553.057 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 378161 | 50.214 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 329178 | 49.831 |
| 108) Xylene (Total) | (3) | | 106 | 567534 | 64.303 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 161347 | 21.366 |
| 115) Bromobenzene | (4) | 11.864 | 156 | 129515 | 21.297 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 232678 | 107.529 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 44888 | 21.028 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 568331 | 21.150 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 117207 | 20.958 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 406477 | 21.213 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 123204 | 21.167 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 85014M | 20.525 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 68219 | 20.861 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 416404 | 21.097 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 508544 | 20.806 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 241164 | 20.830 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 448274 | 20.772 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 425437 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 250724 | 20.943 |

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Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

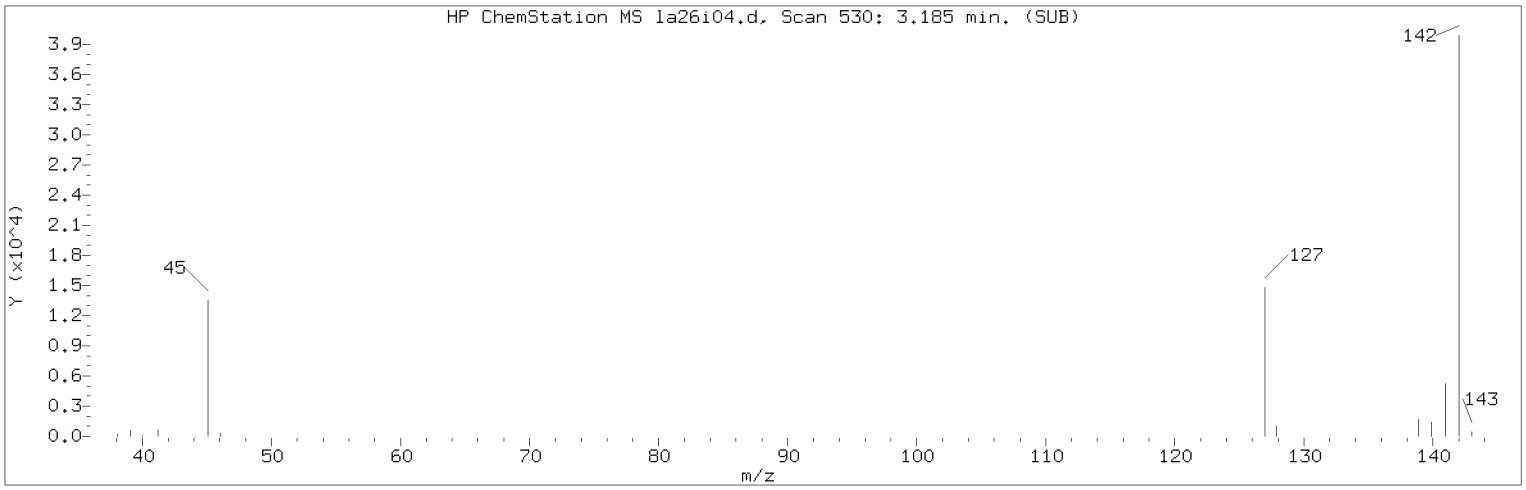
Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 442708 | 21.408 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 258669 | 21.844 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 278453 | 21.596 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 288580 | 21.313 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 220740 | 20.475 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 238492 | 20.956 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 232437 | 21.421 |
| 141) Diethylbenzene (total) | (4) | | 100 | 799470 | 64.331 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 34158 | 21.389 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 186215 | 20.182 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 183451 | 20.496 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 78778 | 20.266 |
| 148) Naphthalene | (4) | 14.188 | 128 | 577965 | 21.399 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 179538 | 20.792 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 382427 | 21.897 |

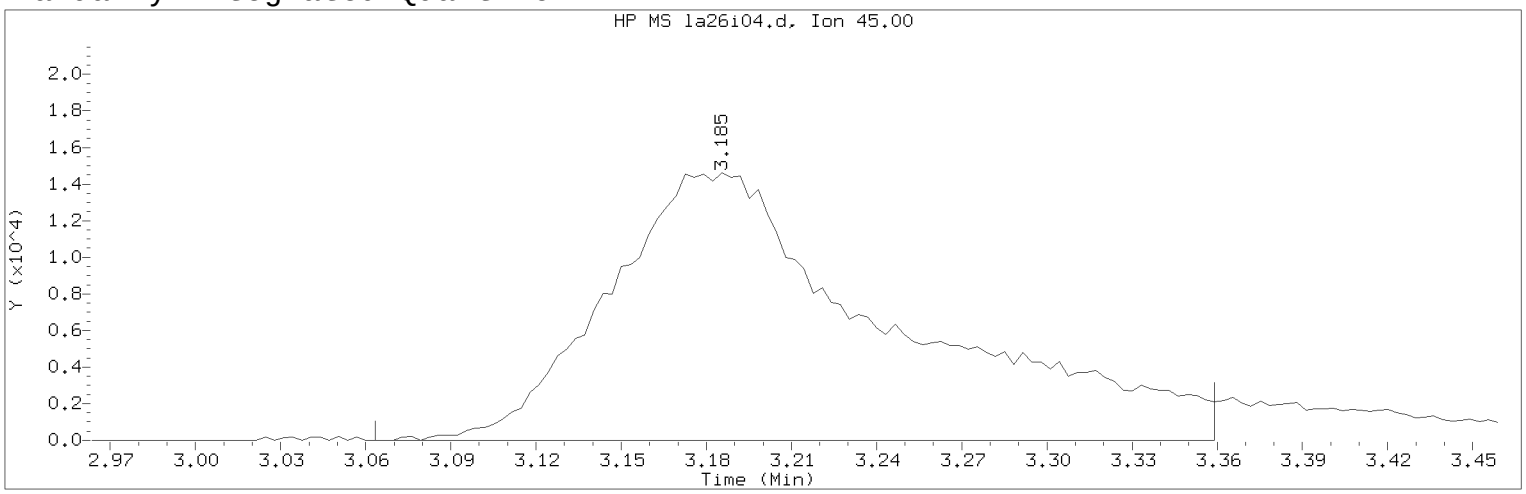


Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020  Lab Sample ID: VSTD020

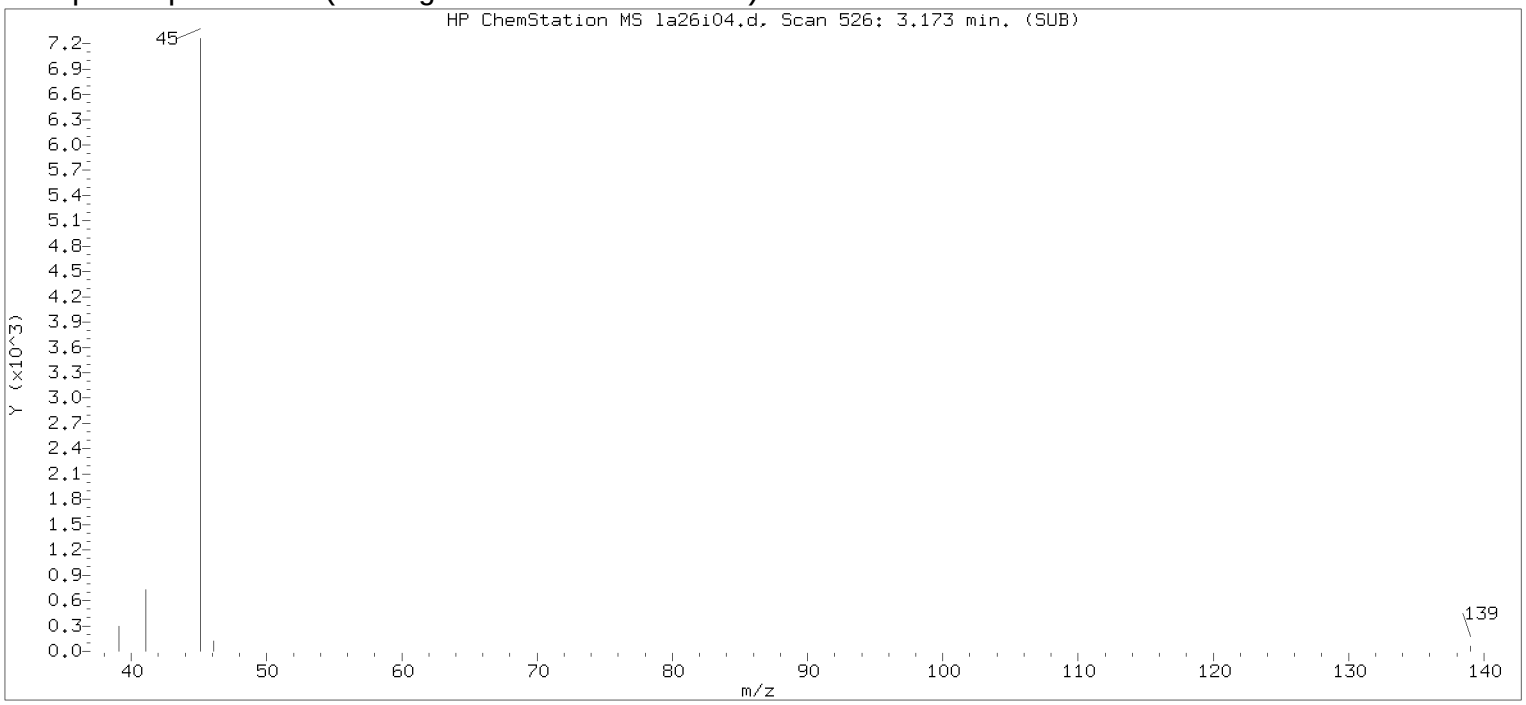
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 530
Retention Time (minutes): 3.185
Quant Ion : 45.00
Area (flag) : 102028M
On-Column Amount (ng) : 205.4874
Integration start scan : 491  Integration stop scan: 583
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

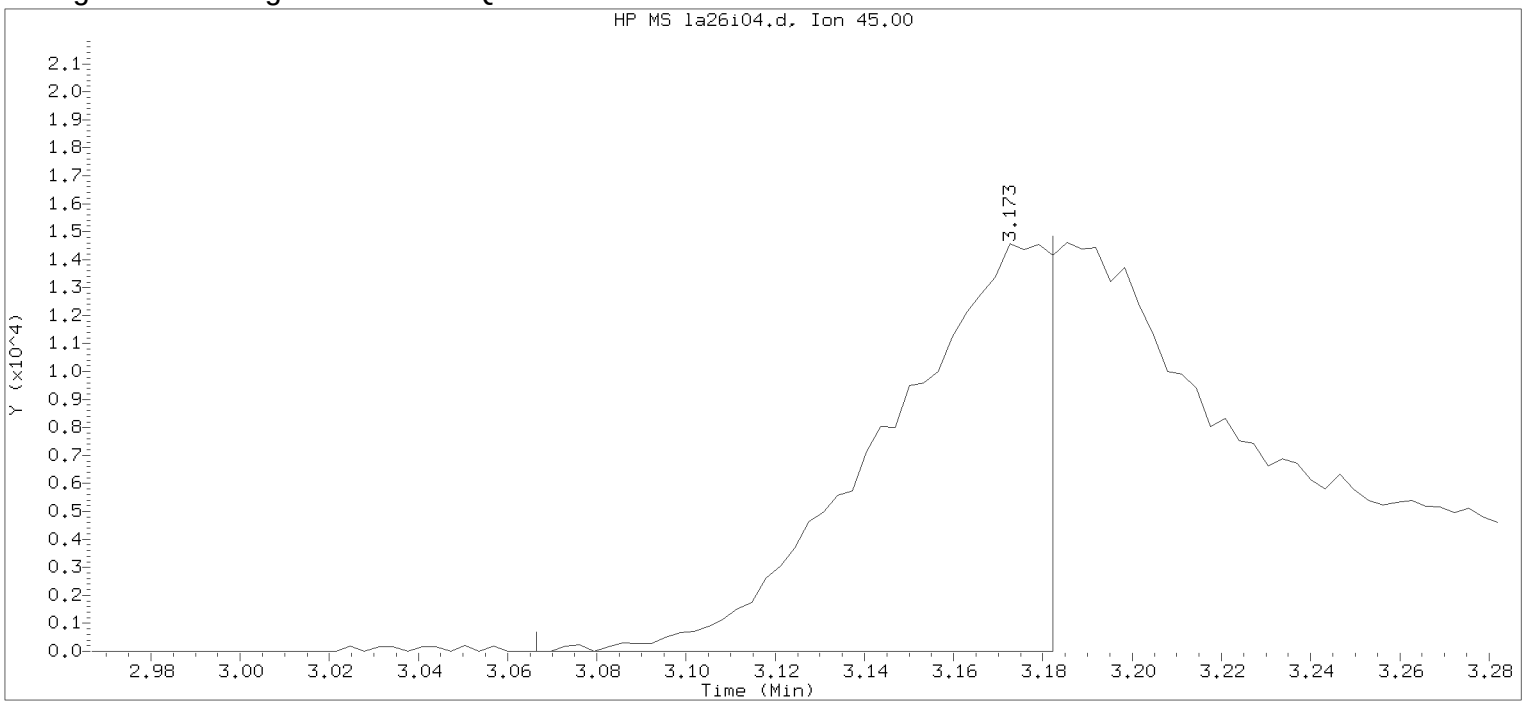
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

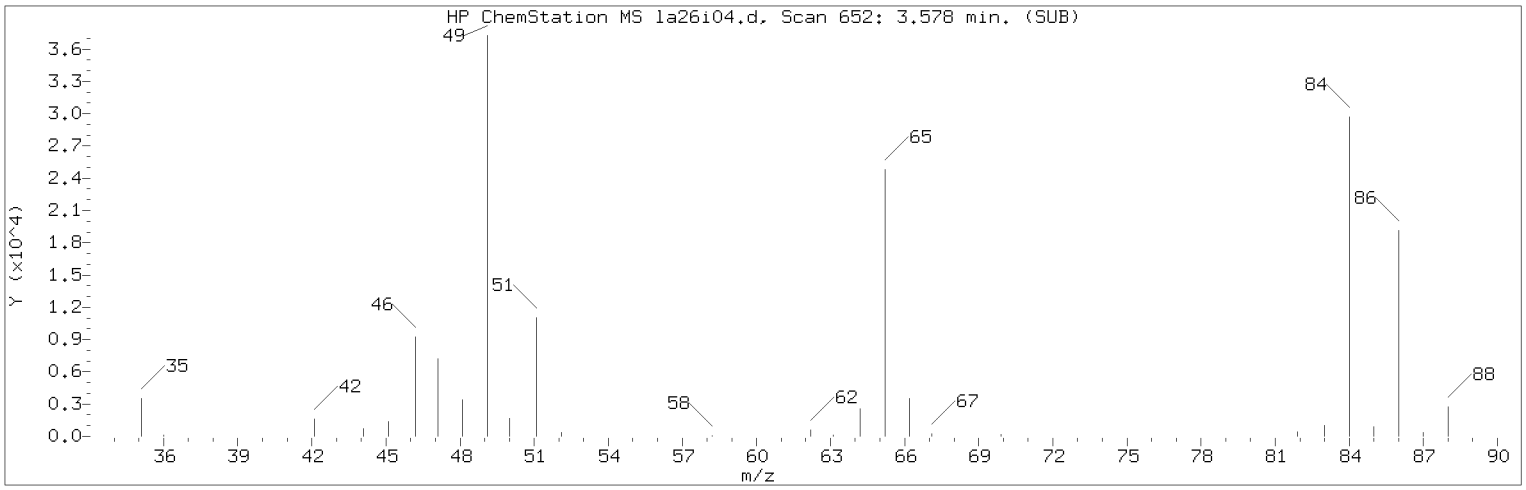
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

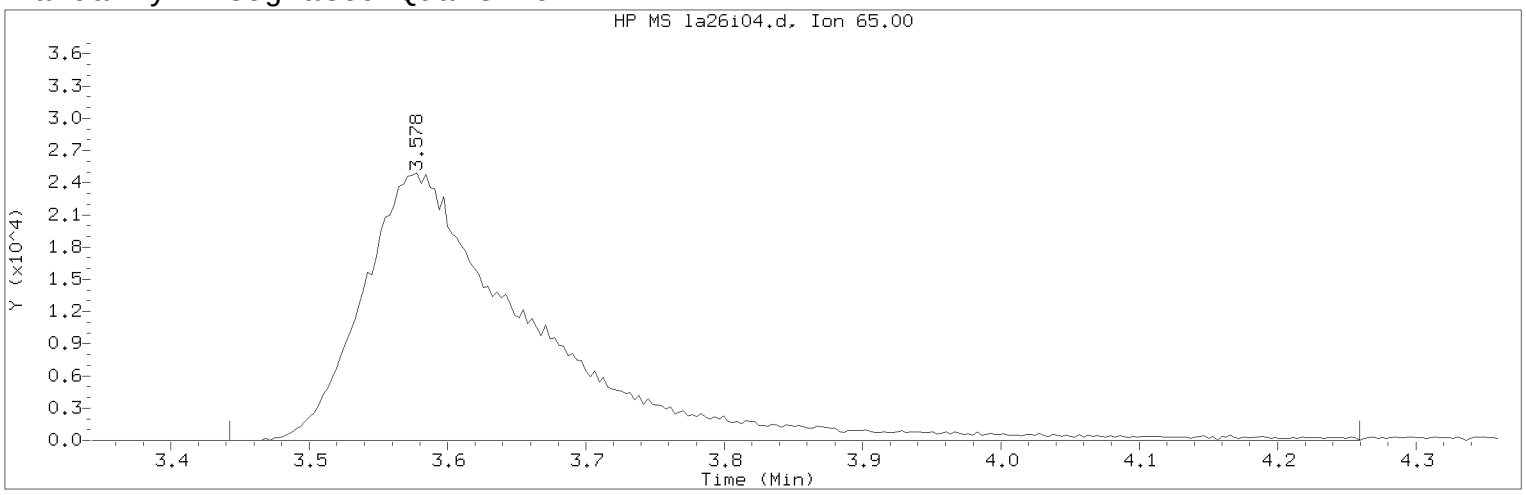
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 526
Retention Time (minutes): 3.173
Quant Ion : 45.00
Area : 36897
On-column Amount (ng) : 95.5026
Integration start scan : 492 Integration stop scan: 528
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

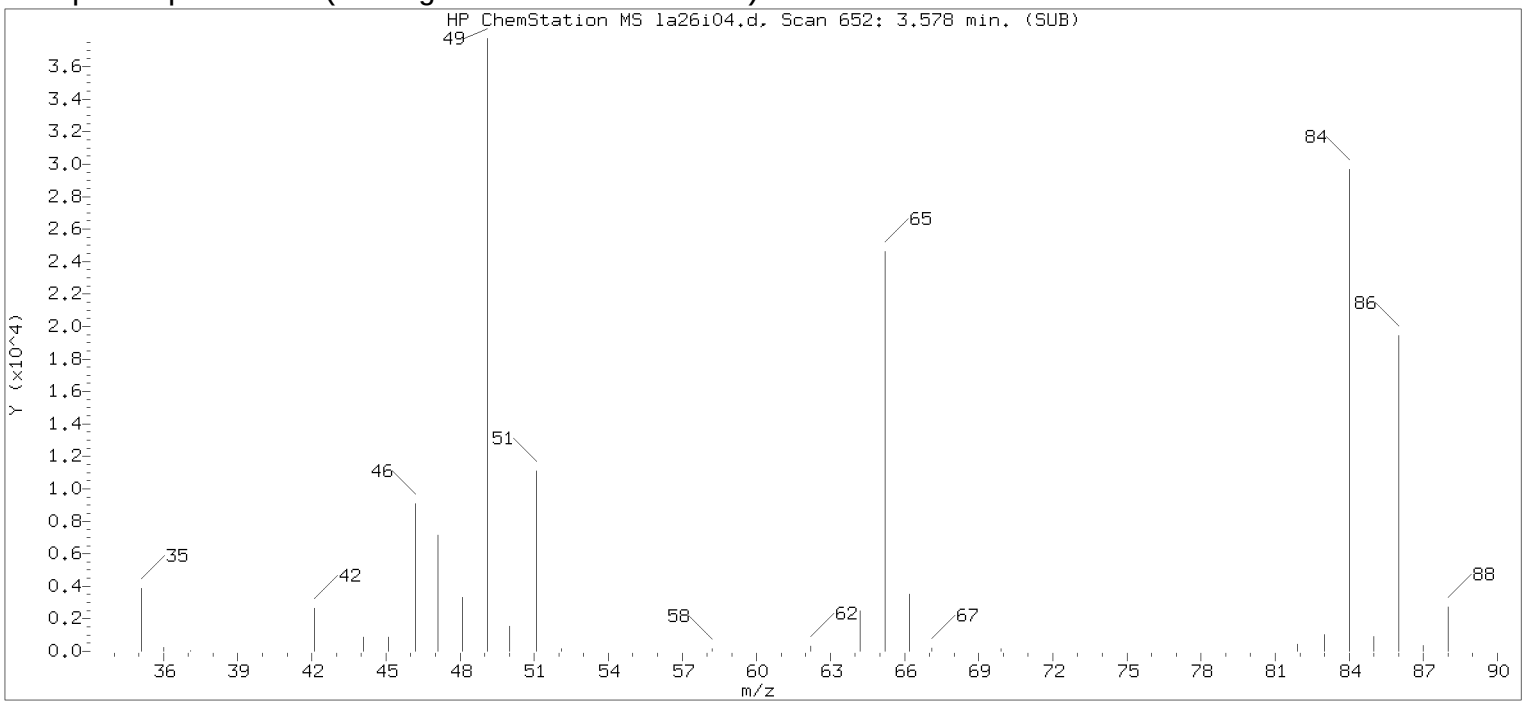
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area (flag) : 210810M
On-Column Amount (ng) : 250.0000
Integration start scan : 609 Integration stop scan: 863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

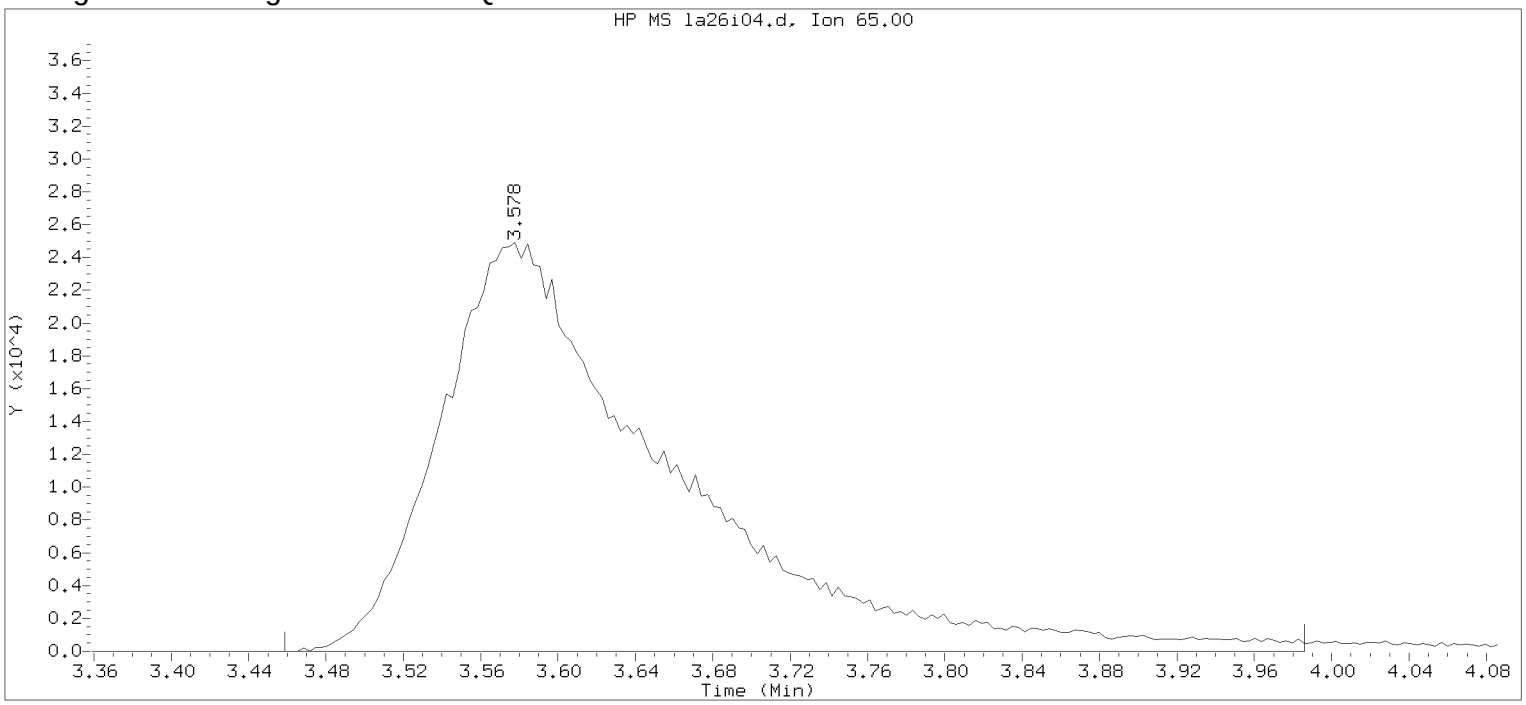
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

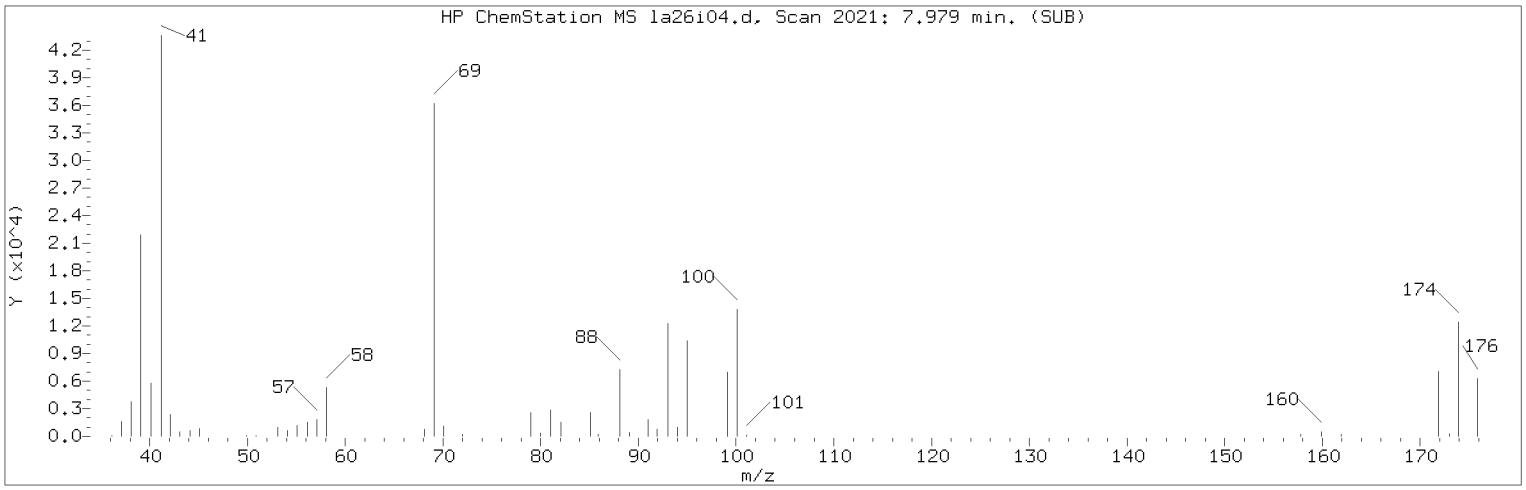
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

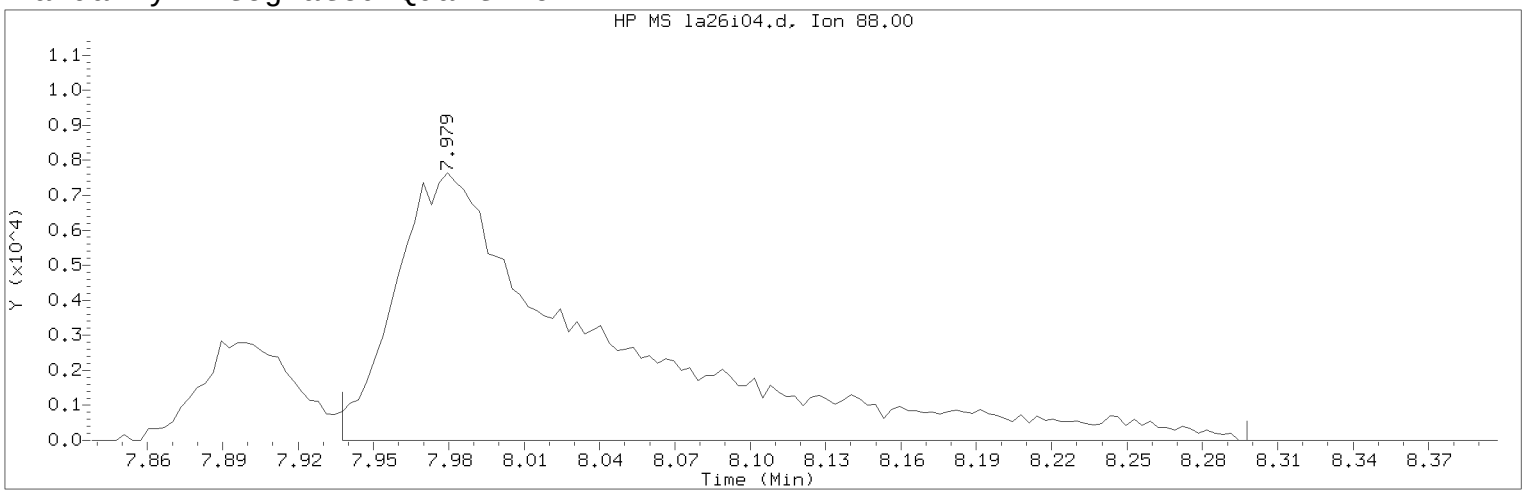
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 205251
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 778
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

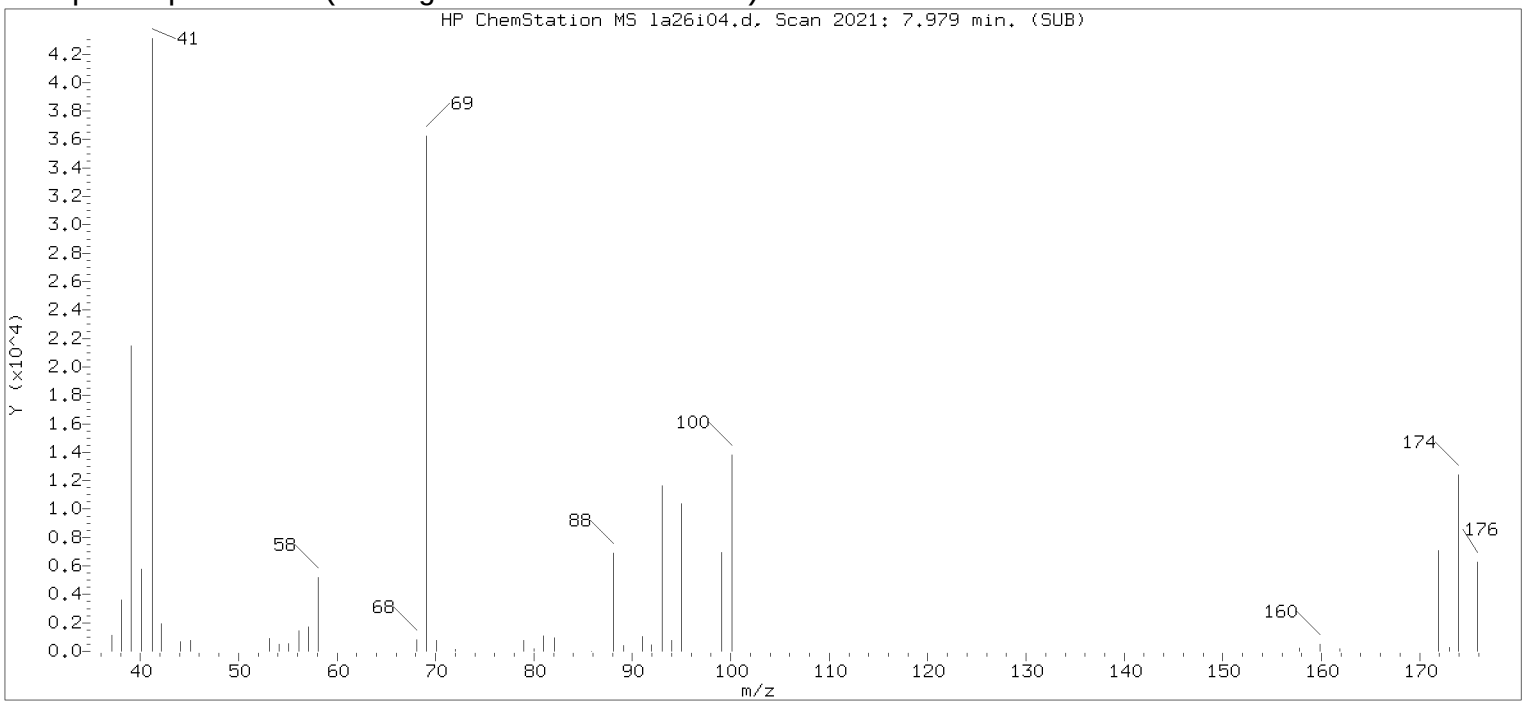
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area (flag) : 44394M
On-Column Amount (ng) : 615.9721
Integration start scan : 2007 Integration stop scan: 2119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

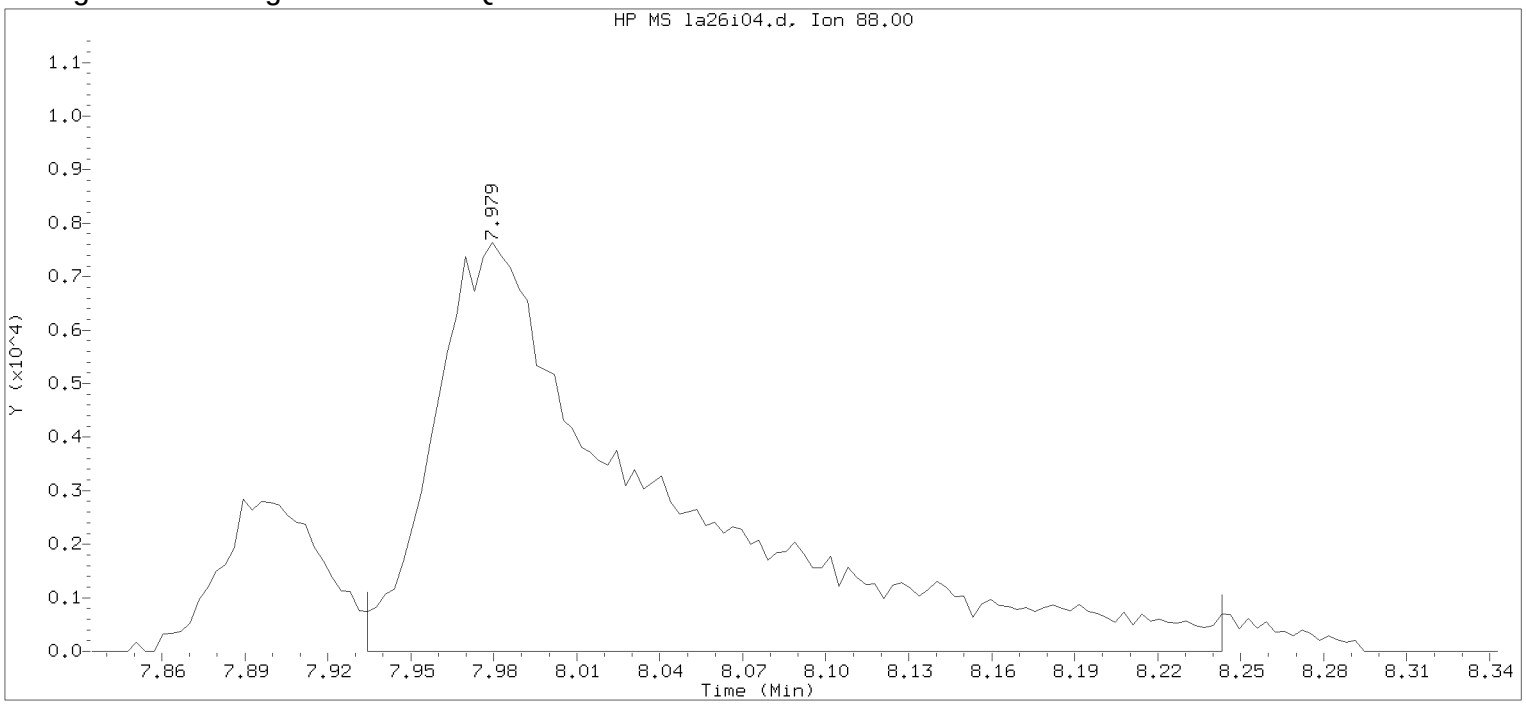
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area : 43334
On-column Amount (ng) : 533.8251
Integration start scan : 2006 Integration stop scan: 2102
Y at integration start : 0 Y at integration end: 0

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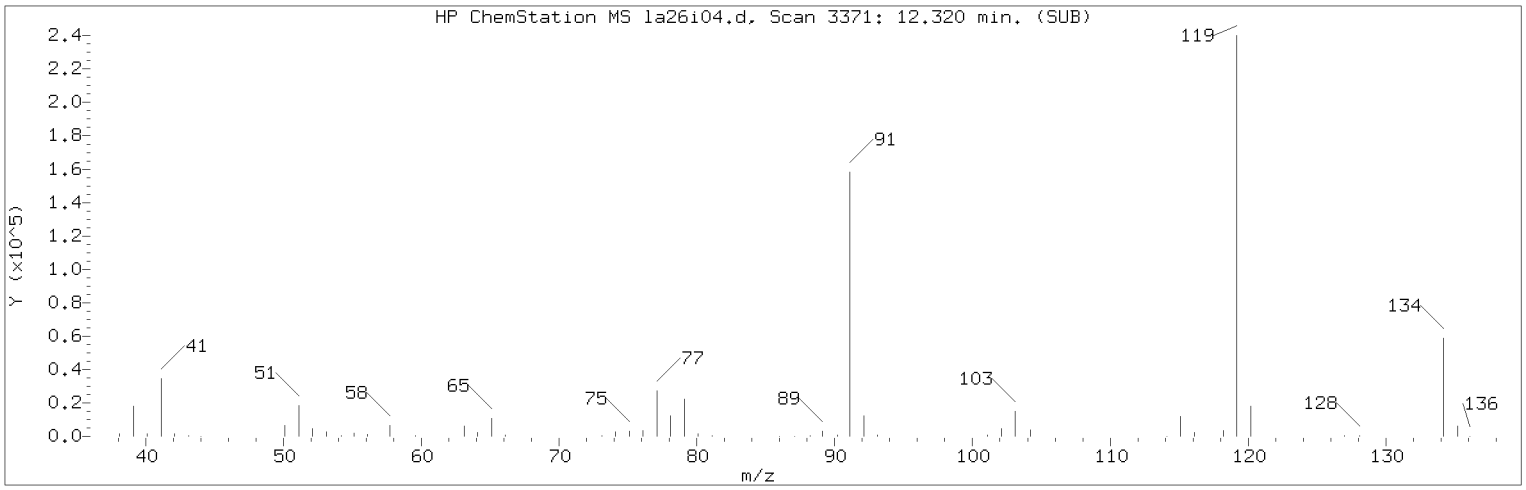
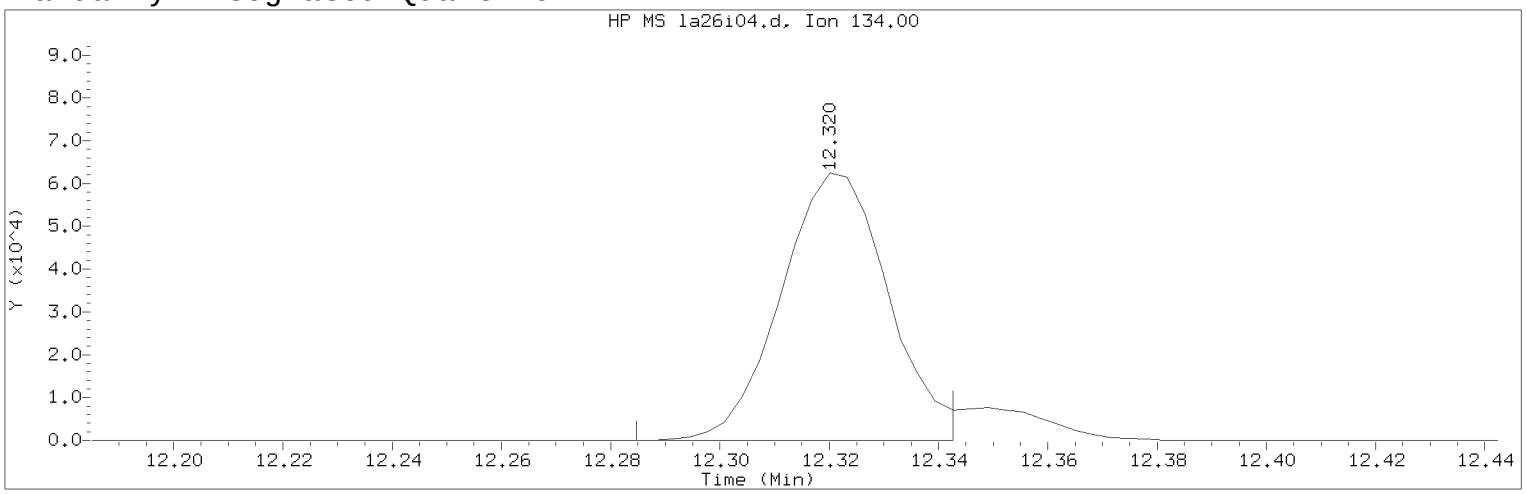
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

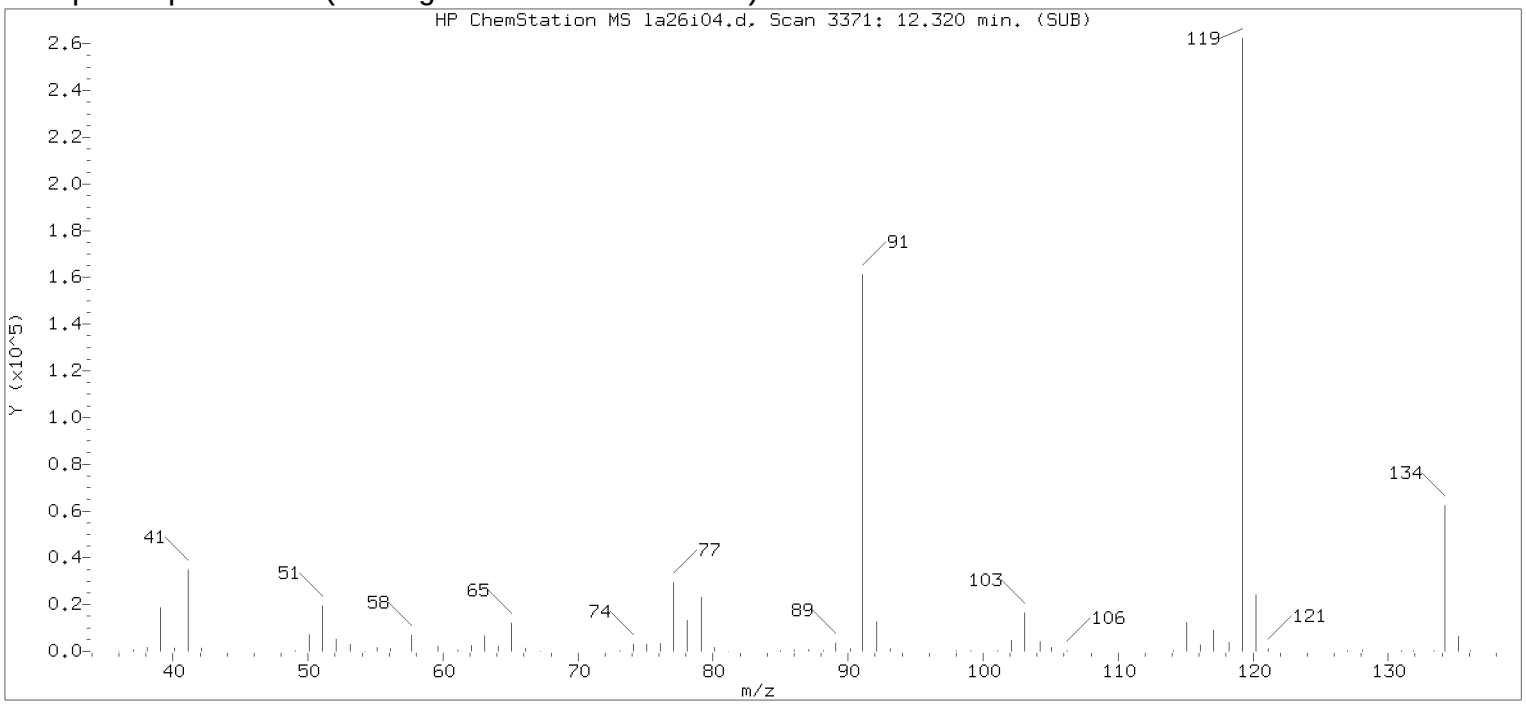
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 85014M
On-Column Amount (ng) : 20.5247
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

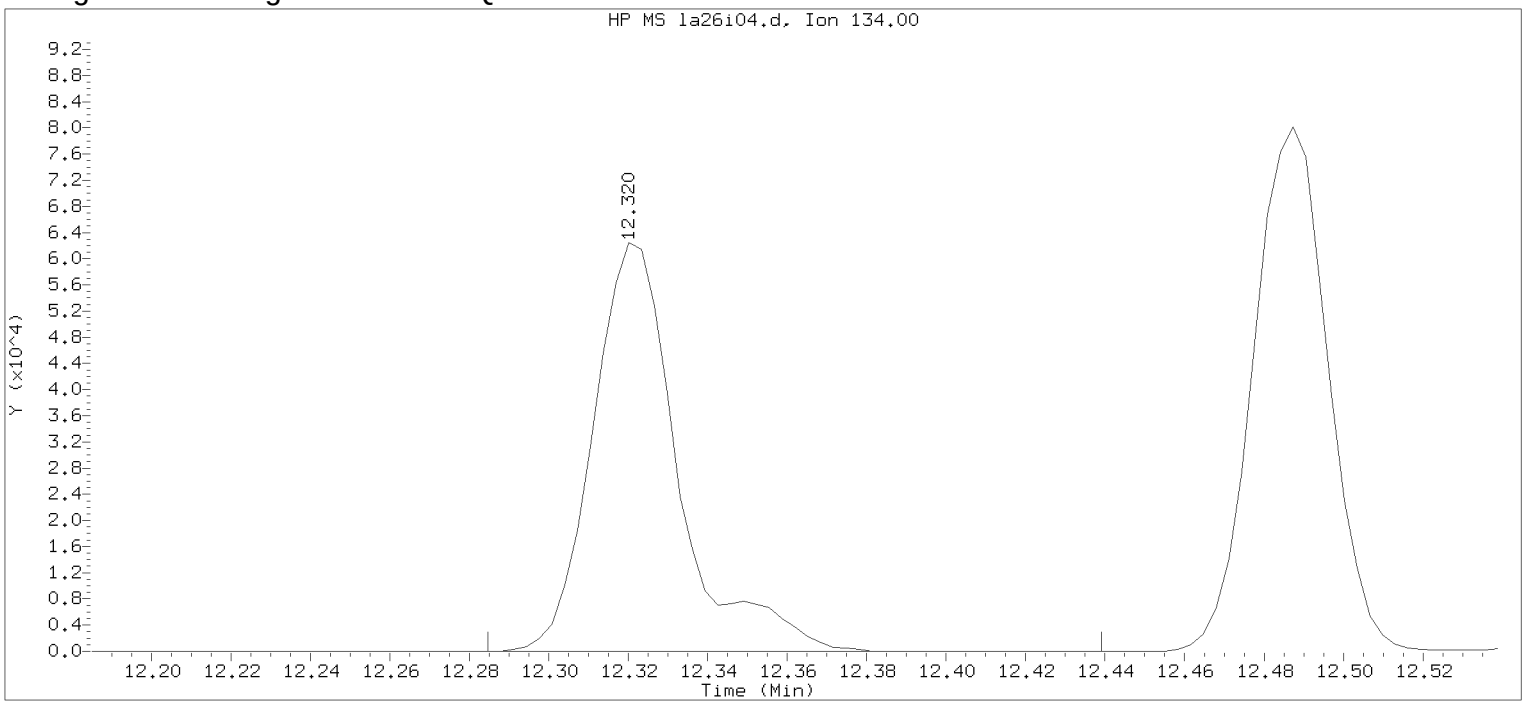
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



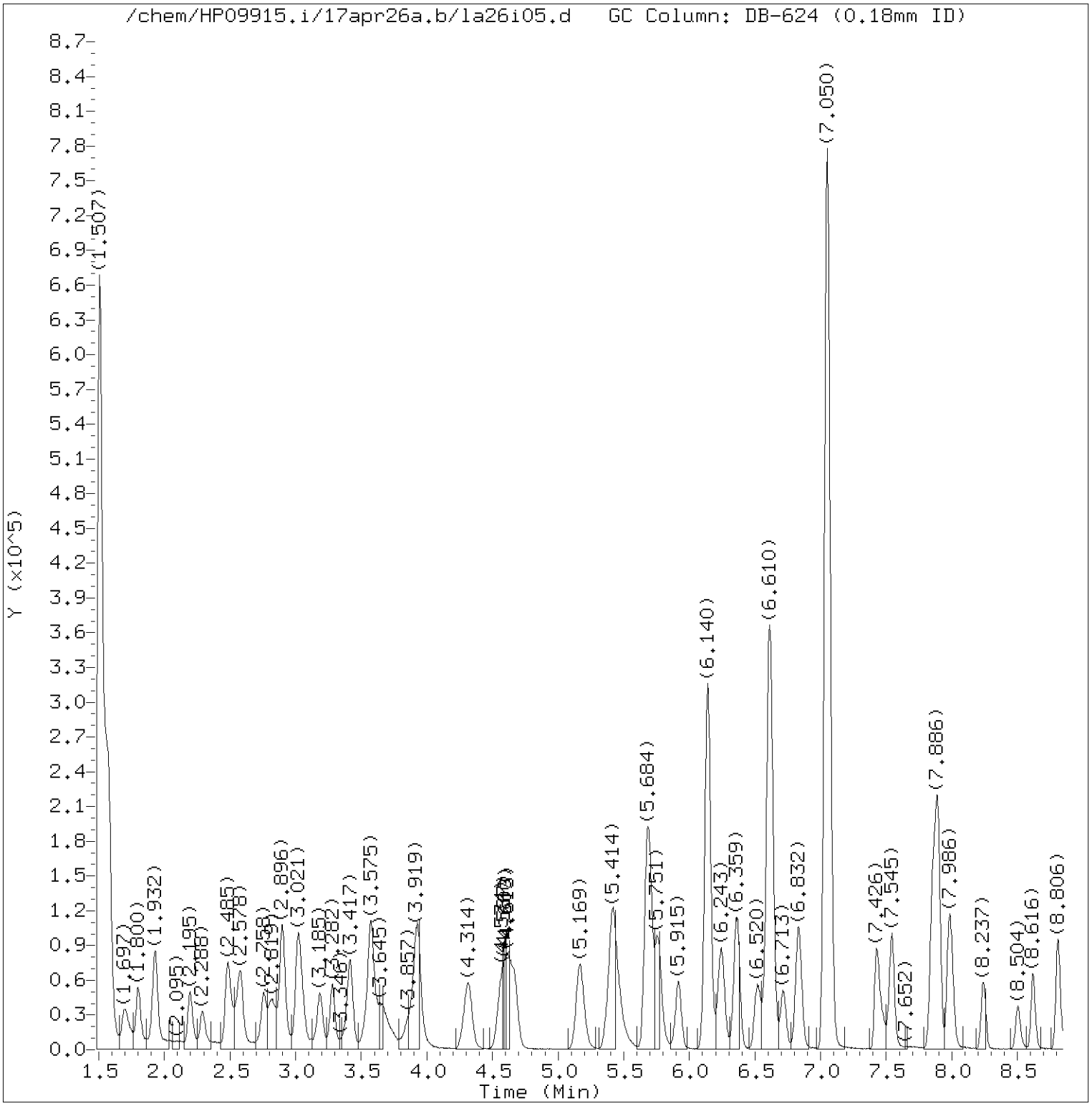

Data File: /chem/HP09915.i/17apr26a.b/la26i04.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:26 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 93218
On-column Amount (ng) : 20.3163
Integration start scan : 3359 Integration stop scan: 3407
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648




Total Ion Chromatogram (TIC)

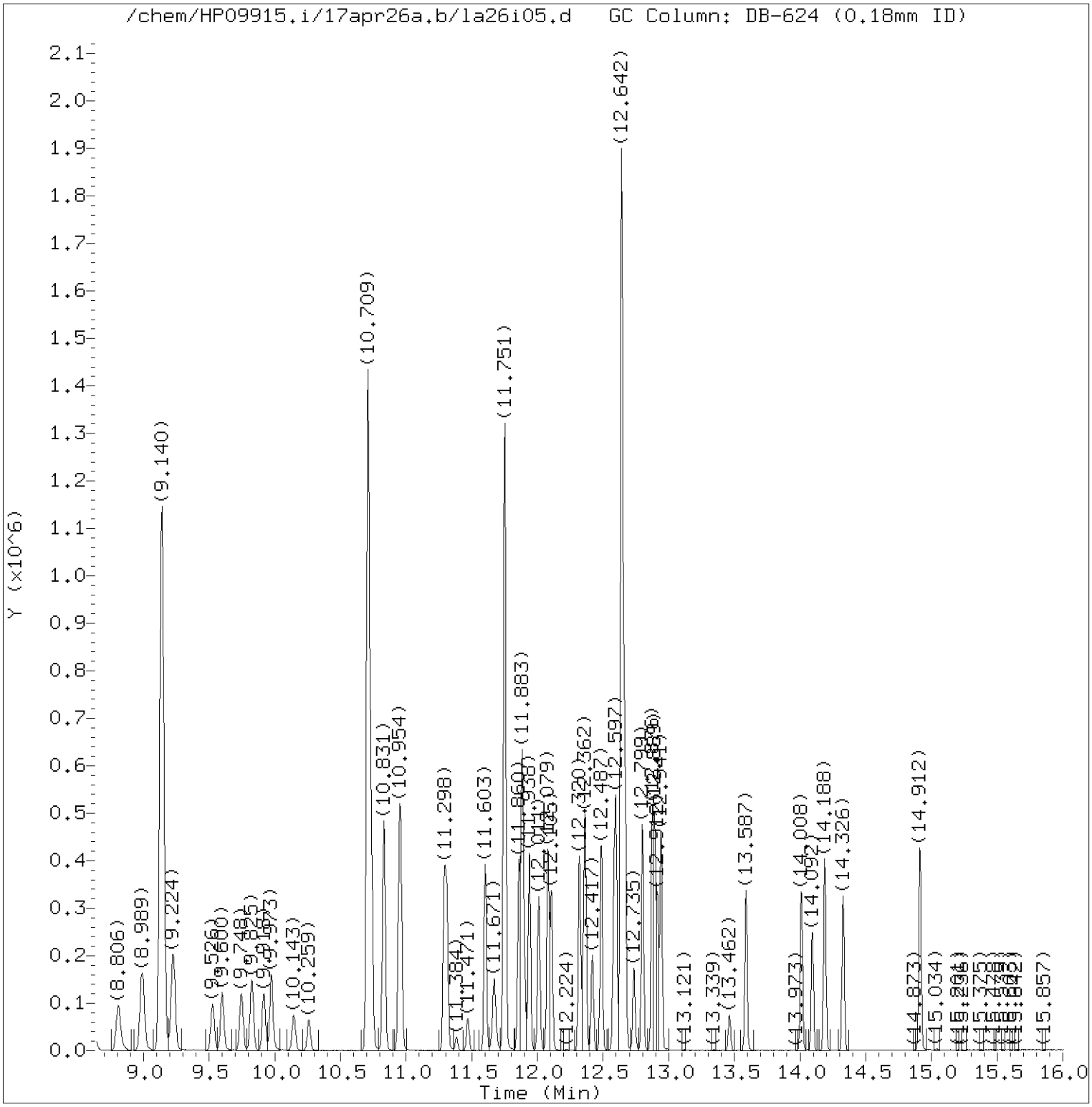
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.694 | 85 | 59129 | 9.454 |
| 4) Chloromethane | (2) | 1.800 | 50 | 62392 | 9.710 |
| 6) Vinyl Chloride | (2) | 1.915 | 62 | 59051 | 9.517 |
| 5) 1,3-Butadiene | (2) | 1.935 | 39 | 33003 | 8.720 |
| 8) Bromomethane | (2) | 2.195 | 94 | 41463M | 9.935 |
| 9) Chloroethane | (2) | 2.288 | 64 | 34369 | 9.829 |
| 10) Dichlorofluoromethane | (2) | 2.485 | 67 | 82511 | 9.674 |
| 12) Trichlorofluoromethane | (2) | 2.536 | 101 | 68090 | 9.477 |
| 11) n-Pentane | (2) | 2.584 | 43 | 53715 | 9.078 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 37841 | 9.460 |
| 15) Freon 123a | (2) | 2.812 | 67 | 43016 | 8.990 |
| 16) Acrolein | (1) | 2.896 | 56 | 159296 | 99.869 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 96 | 34274 | 9.013 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 17277 | 8.974 |
| 18) Acetone | (1) | 3.038 | 58 | 14831M | 21.423 |
| 19) Freon 113 | (2) | 3.044 | 101 | 34042 | 8.894 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 44925M | 97.891 |
| 22) Methyl Iodide | (2) | 3.185 | 142 | 67573 | 9.161 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 109946 | 8.884 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 53241 | 9.646 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 72375 | 9.502 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 194850M | 250.000 |
| 28) Methylene Chloride | (2) | 3.575 | 84 | 45146 | 8.987 |
| 30) t-Butyl alcohol | (1) | 3.665 | 59 | 75108M | 99.625 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 29199 | 10.074 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.909 | 73 | 131184 | 9.417 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 41659 | 9.337 |
| 34) n-Hexane | (2) | 4.314 | 57 | 66816 | 9.769 |
| 36) 1,1-Dichloroethane | (2) | 4.555 | 63 | 77409 | 9.233 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 151698 | 9.427 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.668 | 53 | 64336 | 9.097 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 130812 | 9.446 |
| 44) 2-Butanone | (2) | 5.382 | 43 | 78761 | 20.295 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 46779 | 9.150 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 50428 | 9.009 |
| 47) Propionitrile | (1) | 5.459 | 54 | 106892 | 97.145 |
| 48) Methacrylonitrile | (2) | 5.681 | 67 | 139926 | 48.423 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 26022 | 9.657 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 19359 | 19.919 |
| 51) Chloroform | (2) | 5.915 | 83 | 73627 | 9.213 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 256526 | 50.033 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 111 | 263734 | 50.197 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 67074 | 9.185 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 88438 | 18.487 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 76539 | 9.205 |
| 54) Cyclohexane | (2) | 6.246 | 84 | 62394 | 9.066 |
| 54) Cyclohexane | (2) | 6.243 | 69 | 21874 | 9.076 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 46720 | 8.764 |
| 55) 1,1-Dichloropropene | (2) | 6.359 | 75 | 59578 | 9.166 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 64054 | 241.988 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63277 | 49.631 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 65 | 305872 | 50.719 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 41354 | 51.137 |
| 60) Benzene | (2) | 6.632 | 78 | 179018 | 9.343 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 61212 | 9.443 |
| 61) 1,2-Dichloroethane | (2) | 6.709 | 98 | 5860 | 10.253 |
| 65) t-Amyl methyl ether | (2) | 6.828 | 73 | 127821 | 9.300 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1049965 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 73529 | 9.602 |
| 69) n-Butanol | (1) | 7.426 | 56 | 99502 | 466.313 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 45597 | 9.209 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 78864 | 9.040 |
| 72) Methylcyclohexane | (2) | 7.851 | 98 | 35389 | 8.989 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 49507 | 9.439 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 15525M | 233.055 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 41640M | 9.275 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 30502 | 9.247 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 53652 | 9.013 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 31065 | 18.403 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 38546 | 9.560 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 70800 | 9.125 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 159436 | 19.936 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1032472 | 50.129 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 677627 | 49.938 |
| 88) Toluene | (3) | 9.224 | 92 | 113958 | 9.521 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 61223 | 9.122 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010  Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 71393 | 9.444 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 44018 | 9.544 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 51504 | 9.729 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 75121 | 9.387 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 116413 | 20.149 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 132023 | 18.248 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 42605 | 8.918 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 48002 | 9.507 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 806654 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 65231 | 9.490 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 131328 | 9.509 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 41501 | 9.100 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 224396 | 9.719 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 173163 | 19.266 |
| 107) o-Xylene | (3) | 11.291 | 106 | 86473 | 9.674 |
| 109) Styrene | (3) | 11.311 | 104 | 143254 | 9.695 |
| 110) Bromoform | (3) | 11.471 | 173 | 30332 | 8.744 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 229604 | 10.051 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 63246 | 251.691 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 383820 | 50.137 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 336286 | 50.079 |
| 108) Xylene (Total) | (3) | | 106 | 259636 | 28.939 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 73056 | 9.576 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 58282 | 9.486 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 105547 | 48.281 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 20738 | 9.616 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 280075 | 10.317 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 56022 | 9.915 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 197456 | 10.200 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 57797 | 9.829 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 41143M | 9.832 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 30142 | 9.123 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 202204 | 10.140 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 255110 | 10.331 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 115818 | 9.902 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 223274 | 10.241 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 429808 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 119475 | 9.878 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 208329 | 9.972 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 103198 | 8.626 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 129904 | 9.973 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 137007 | 10.016 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 112742 | 10.351 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 112538 | 9.788 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 109919 | 10.027 |
| 141) Diethylbenzene (total) | (4) | | 100 | 376830 | 30.016 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 15055 | 9.331 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 94185 | 10.104 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 91035 | 10.067 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 39102 | 9.957 |
| 148) Naphthalene | (4) | 14.188 | 128 | 269332 | 9.871 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 88643 | 10.161 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 172519 | 9.778 |



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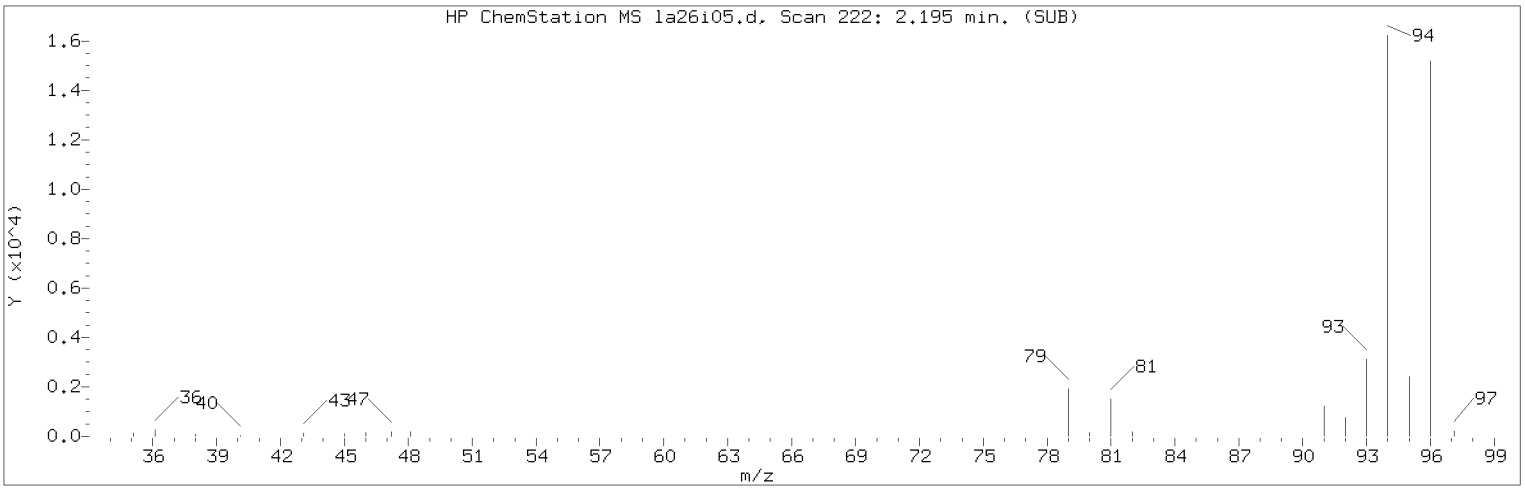
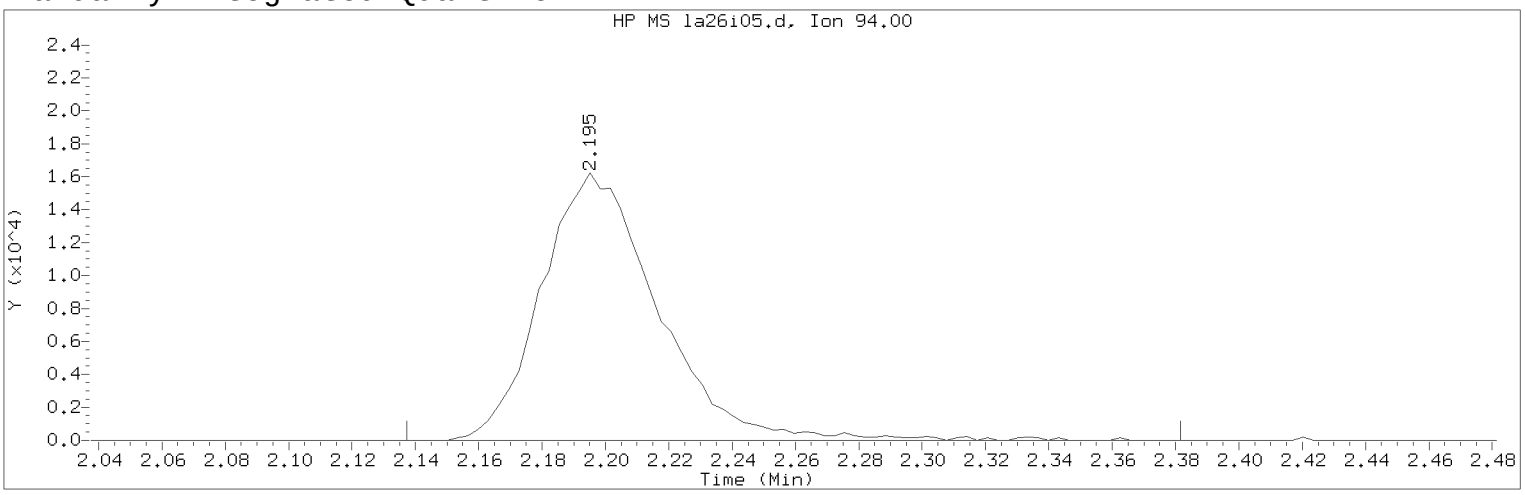
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010  Lab Sample ID: VSTD010

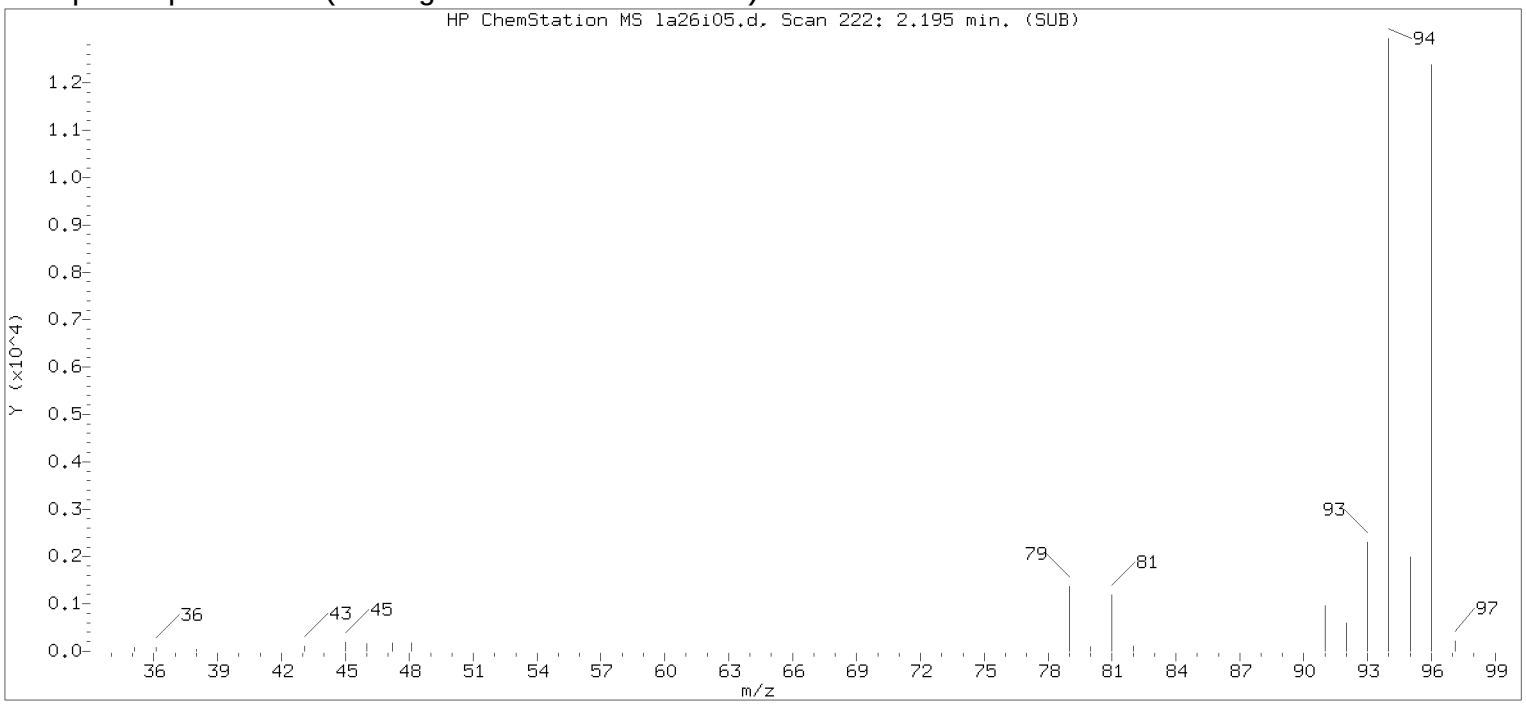
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area (flag) : 41463M
On-Column Amount (ng) : 9.9355
Integration start scan : 203  Integration stop scan: 279
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

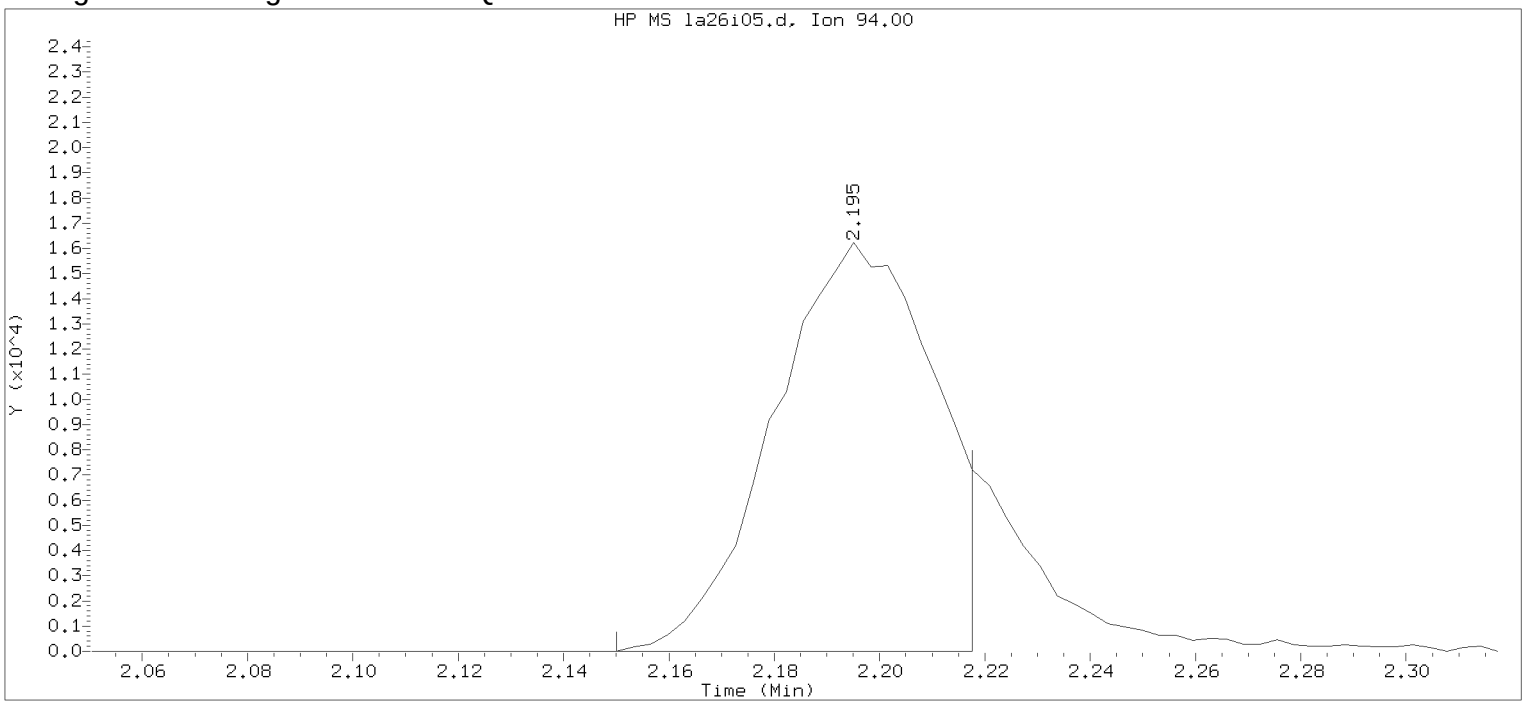
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

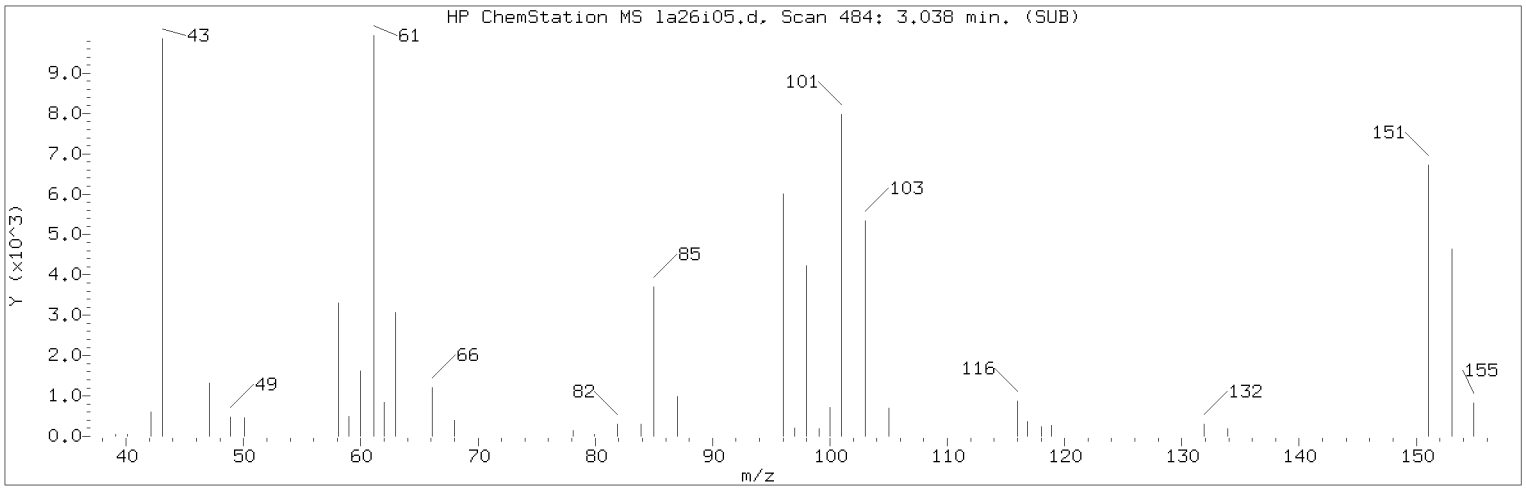
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

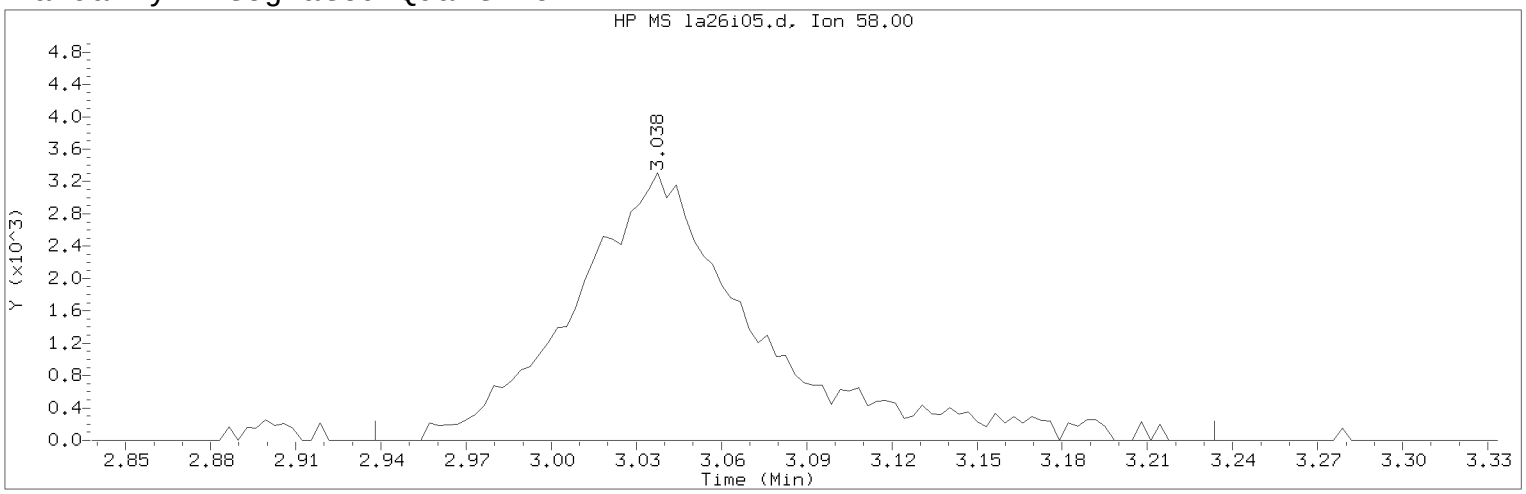
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 34035
On-column Amount (ng) : 8.6274
Integration start scan : 207 Integration stop scan: 228
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

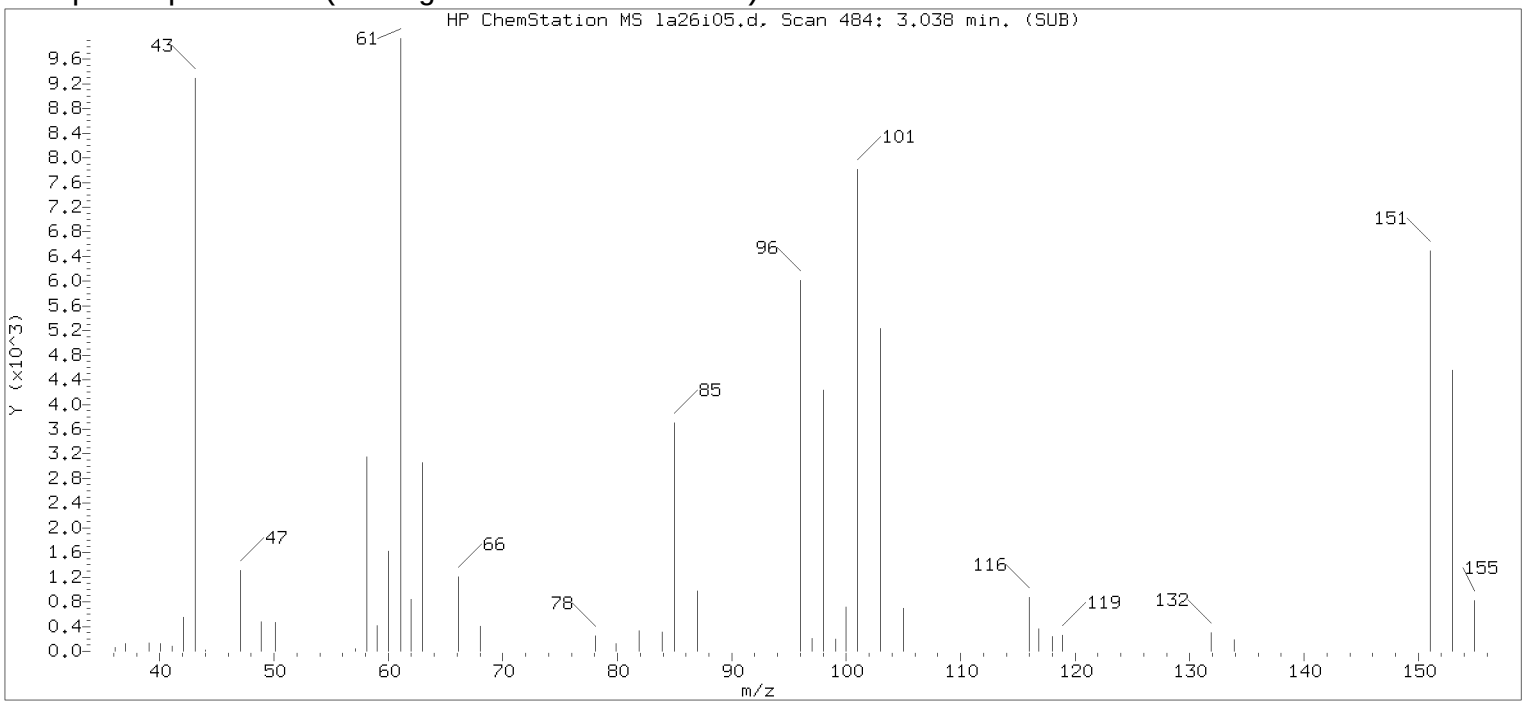
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area (flag) : 14831M
On-Column Amount (ng) : 21.4232
Integration start scan : 452 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

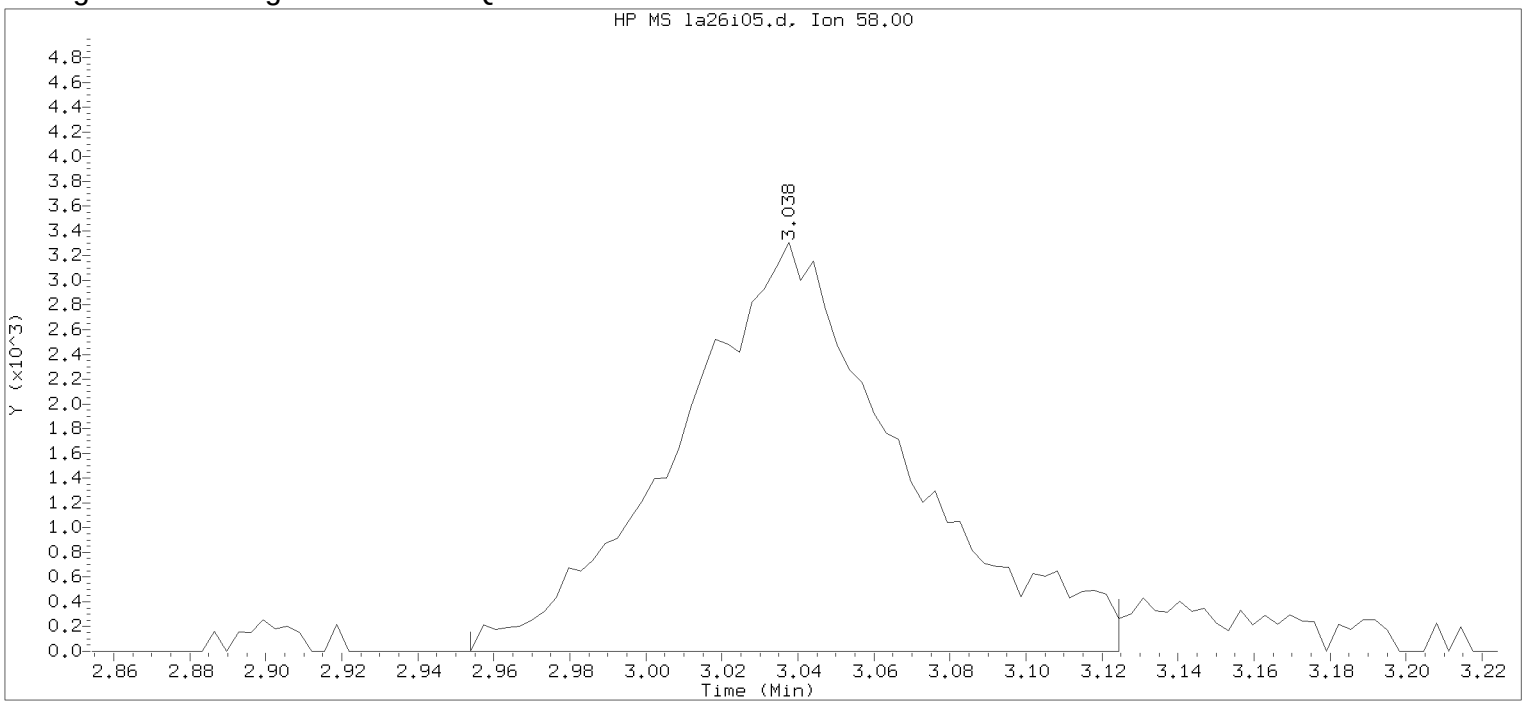
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area : 13613
On-column Amount (ng) : 19.2845
Integration start scan : 457 Integration stop scan: 510
Y at integration start : 0 Y at integration end: 0

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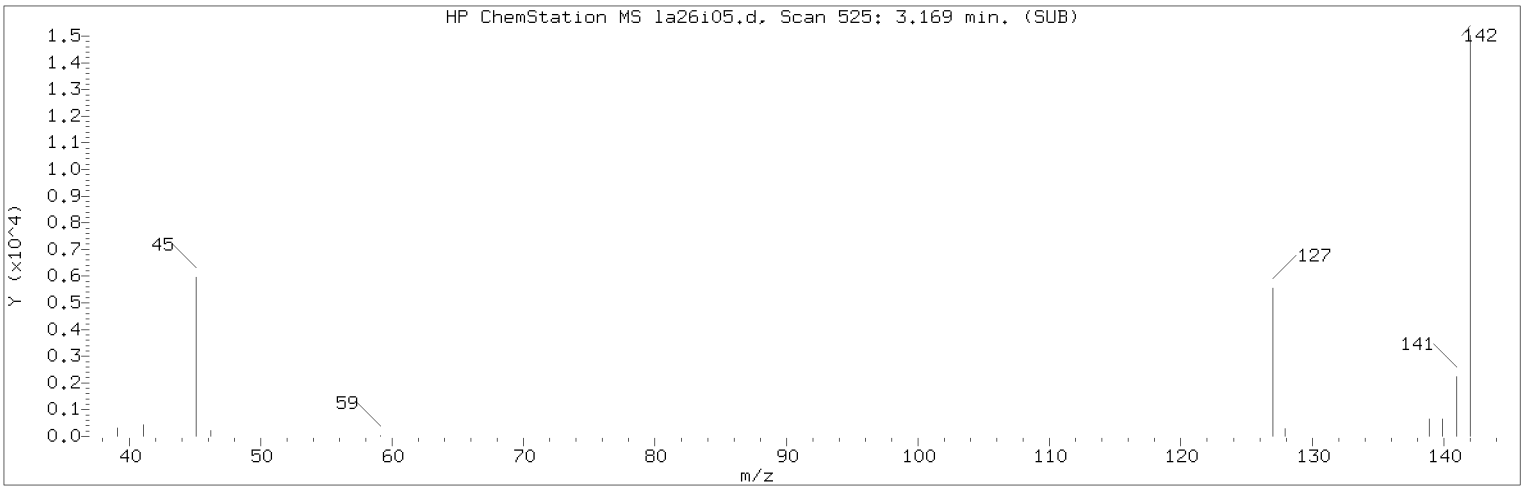
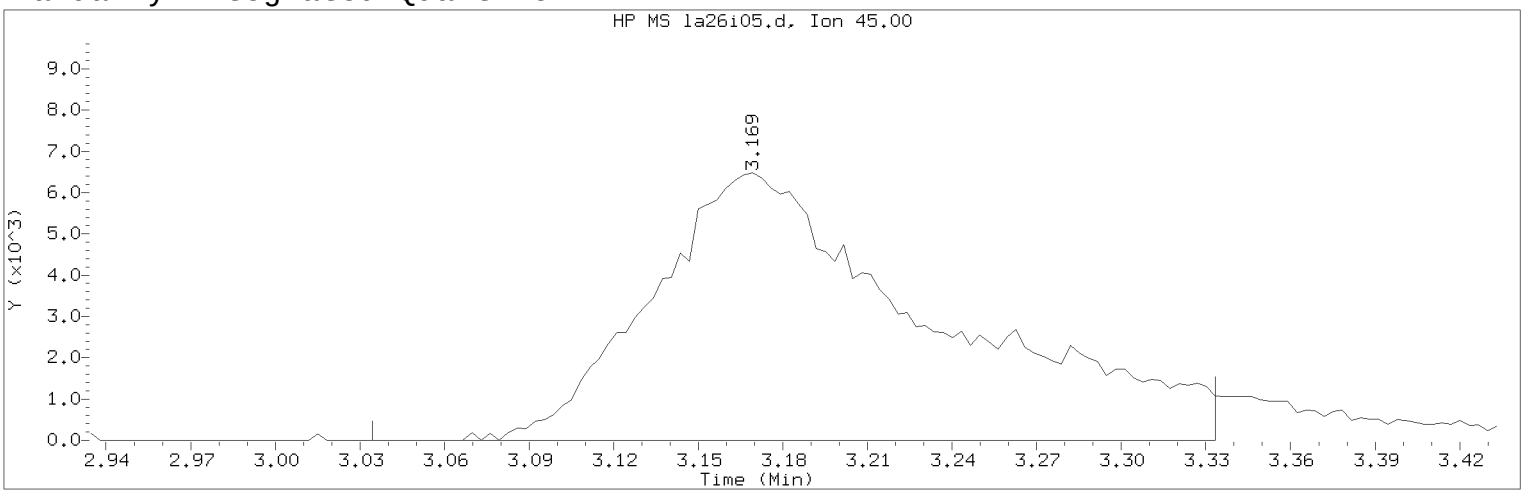
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

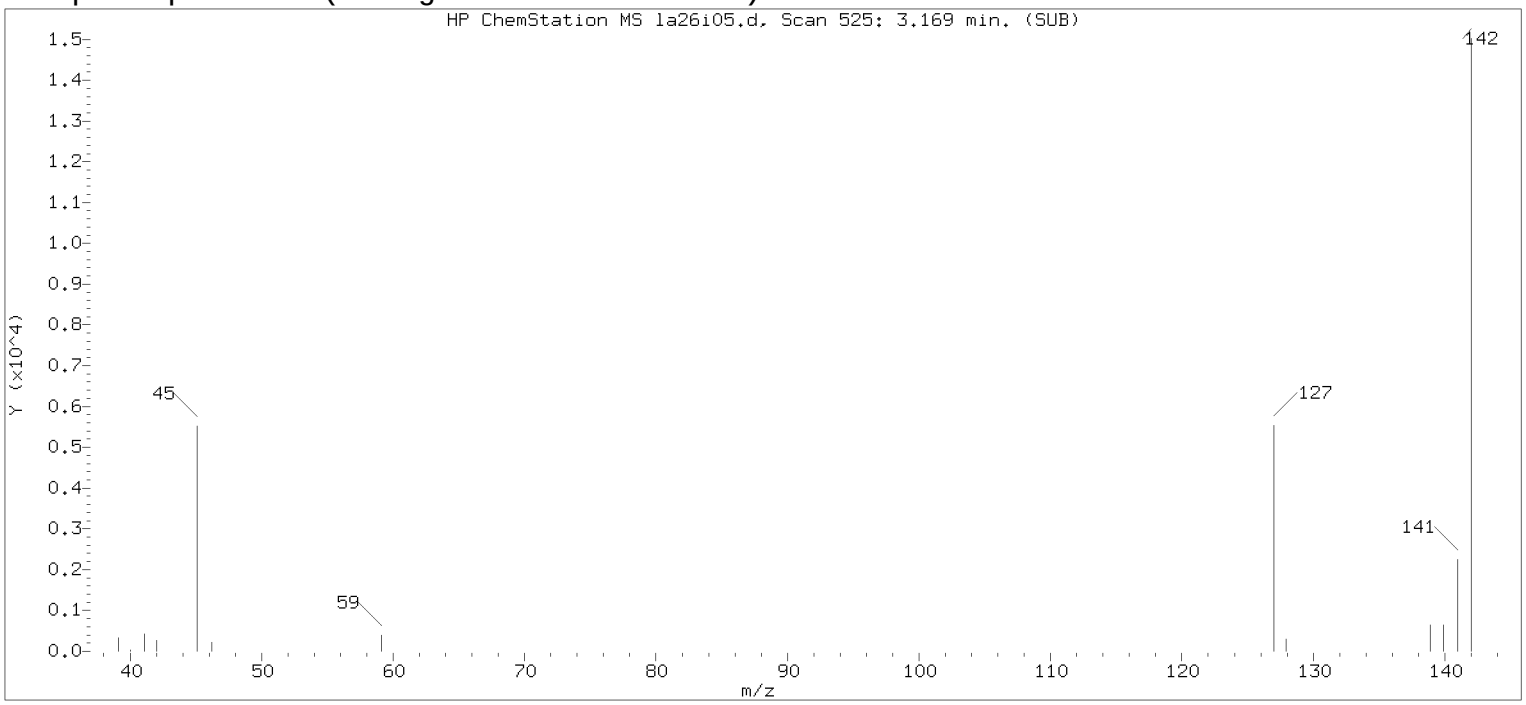
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area (flag) : 44925M
On-Column Amount (ng) : 97.8914
Integration start scan : 482 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

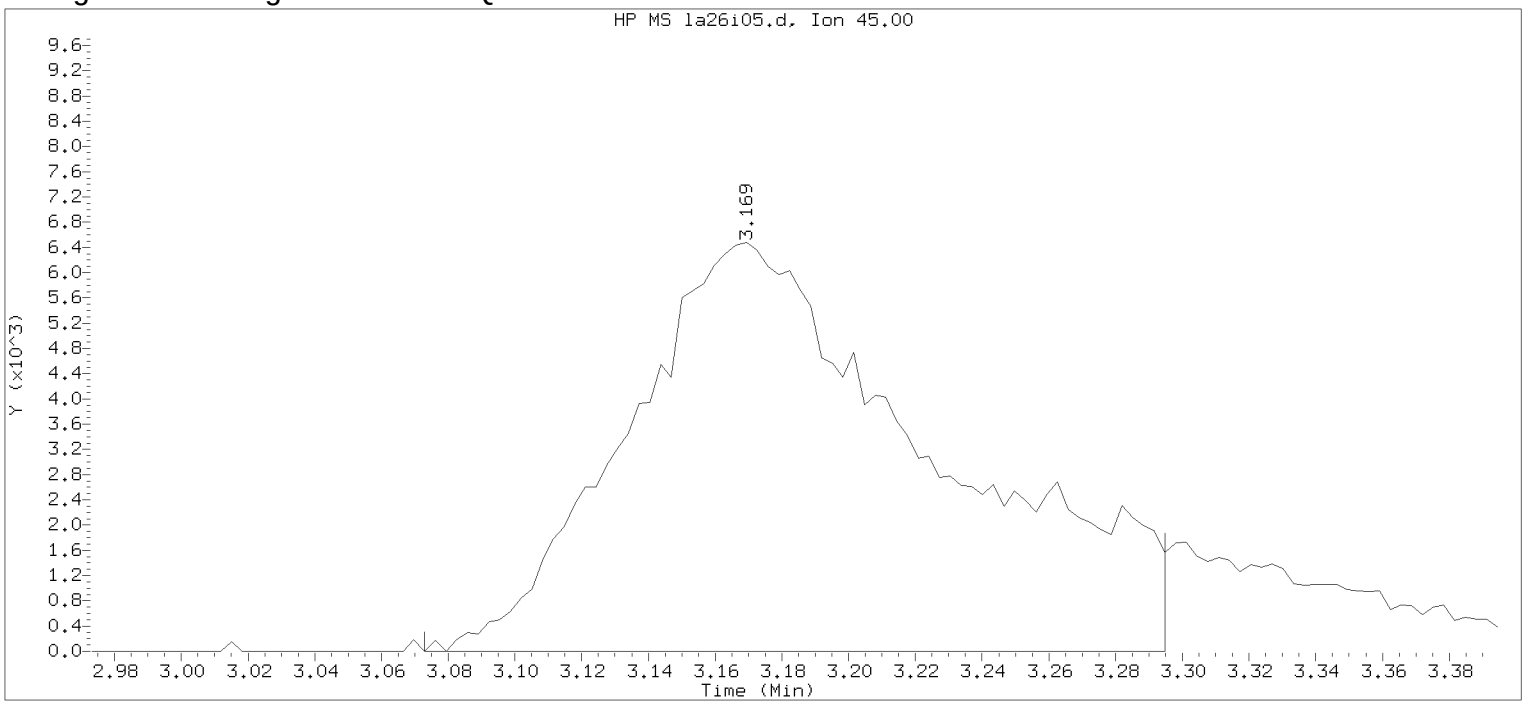
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area : 41457
On-column Amount (ng) : 114.3657
Integration start scan : 494 Integration stop scan: 563
Y at integration start : 0 Y at integration end: 0

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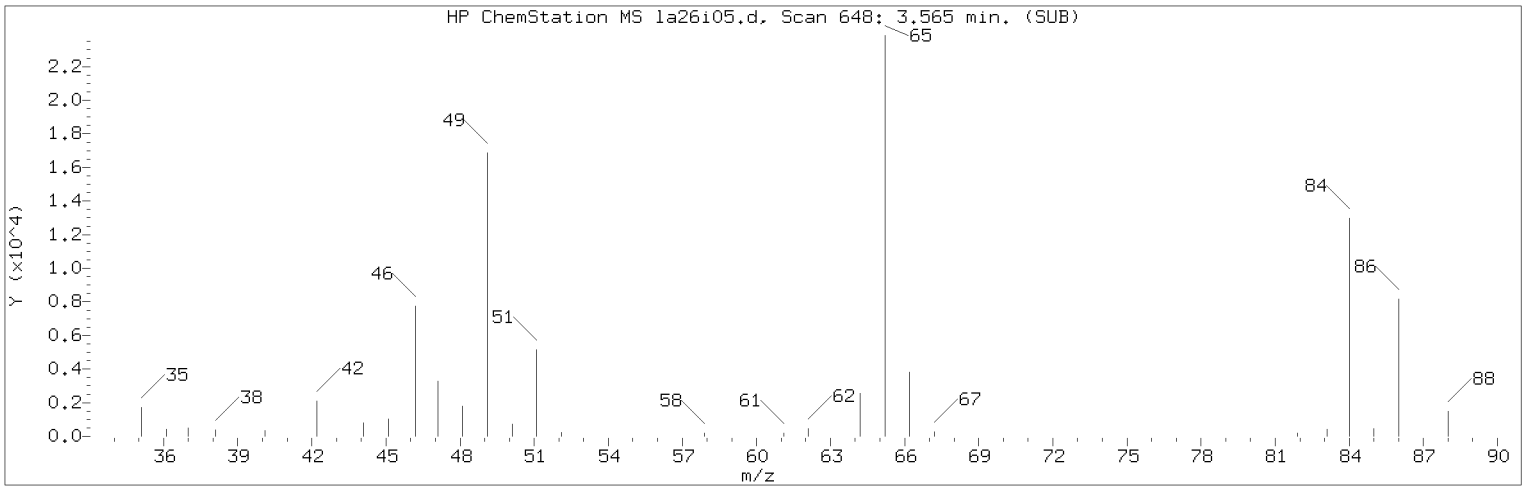
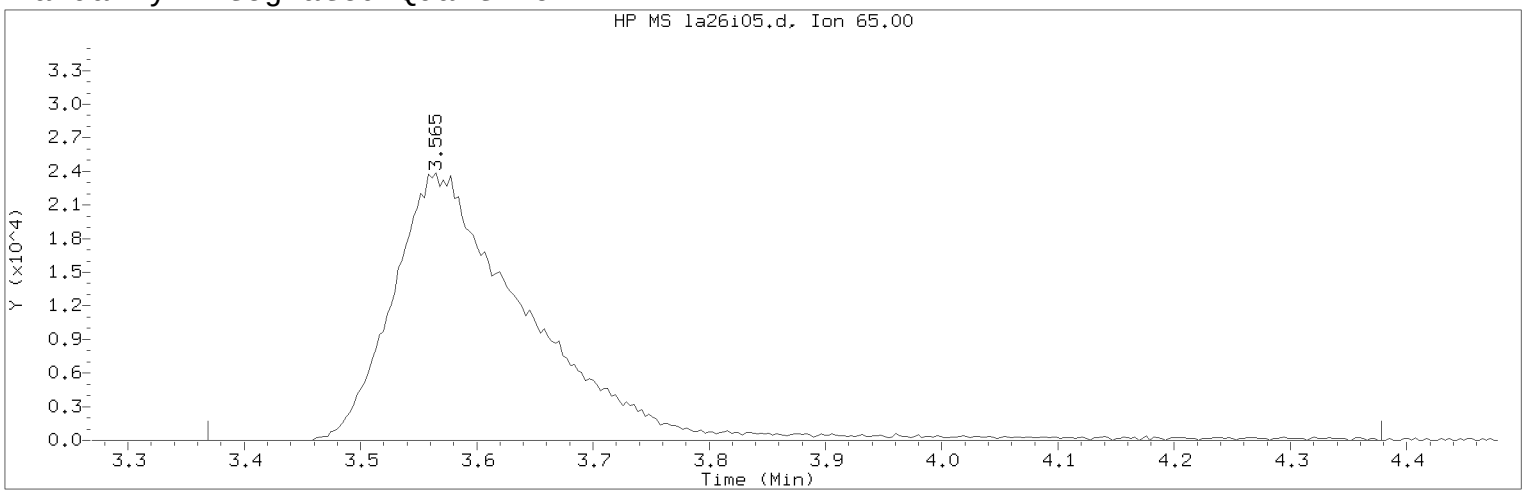
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

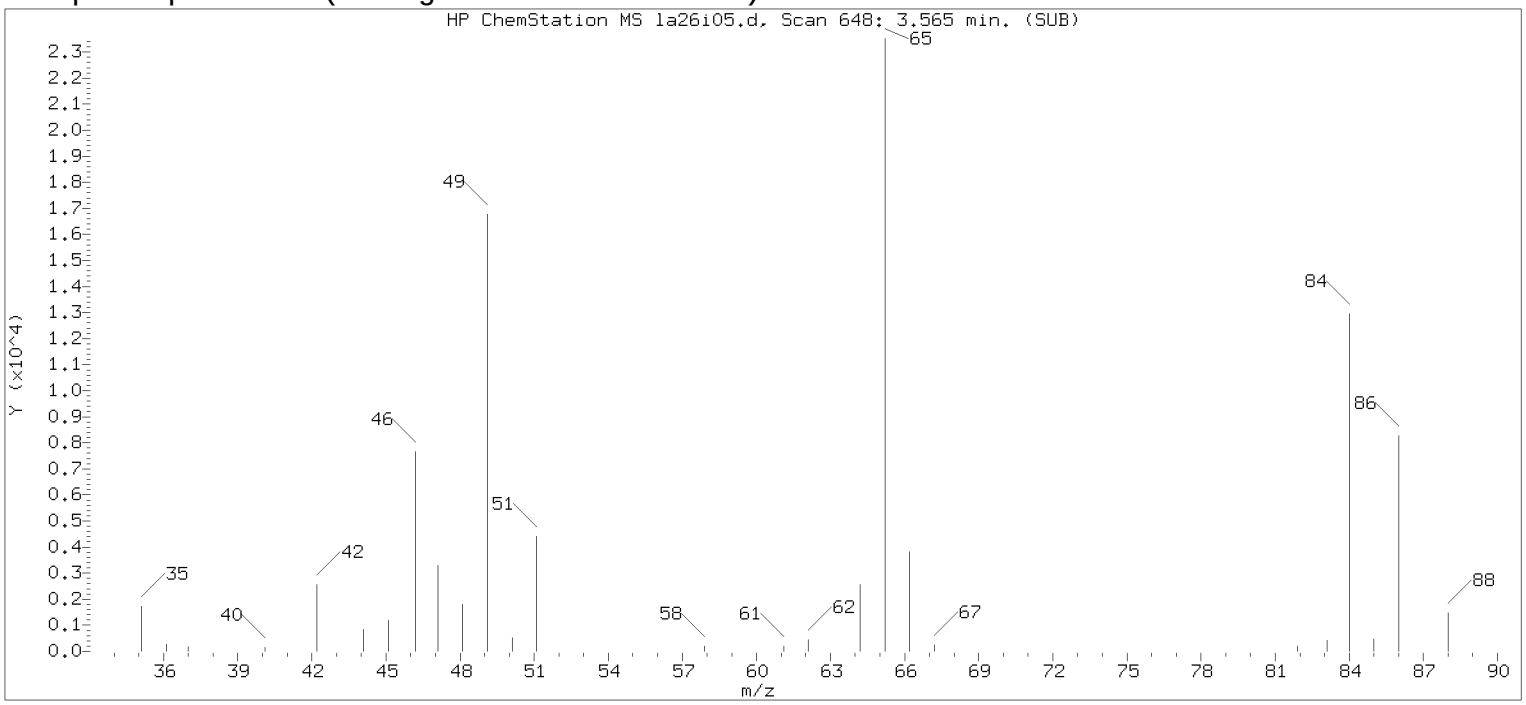
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area (flag) : 194850M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 900
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

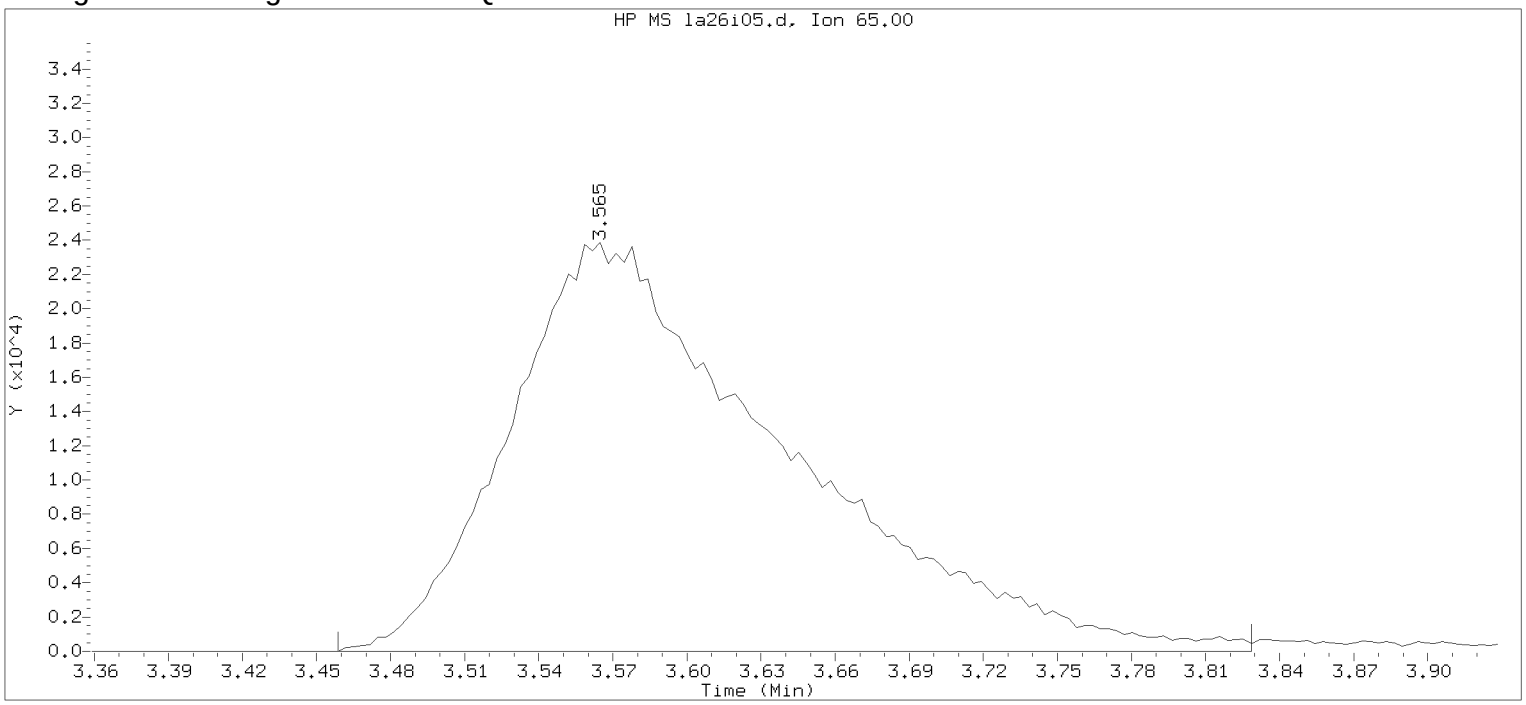
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

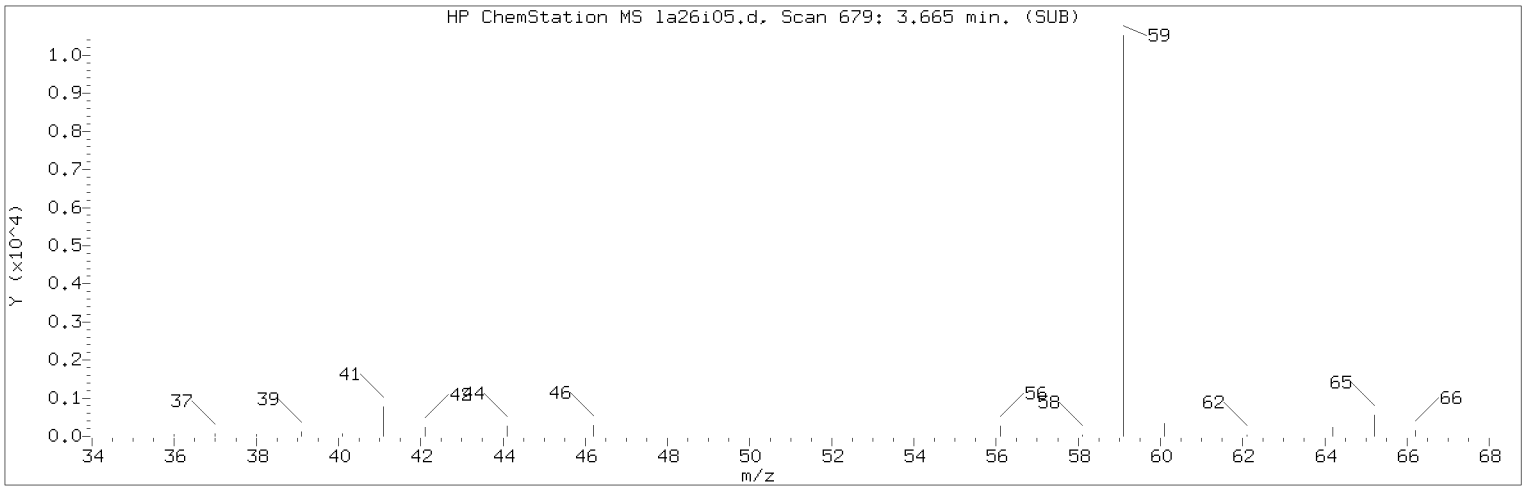
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

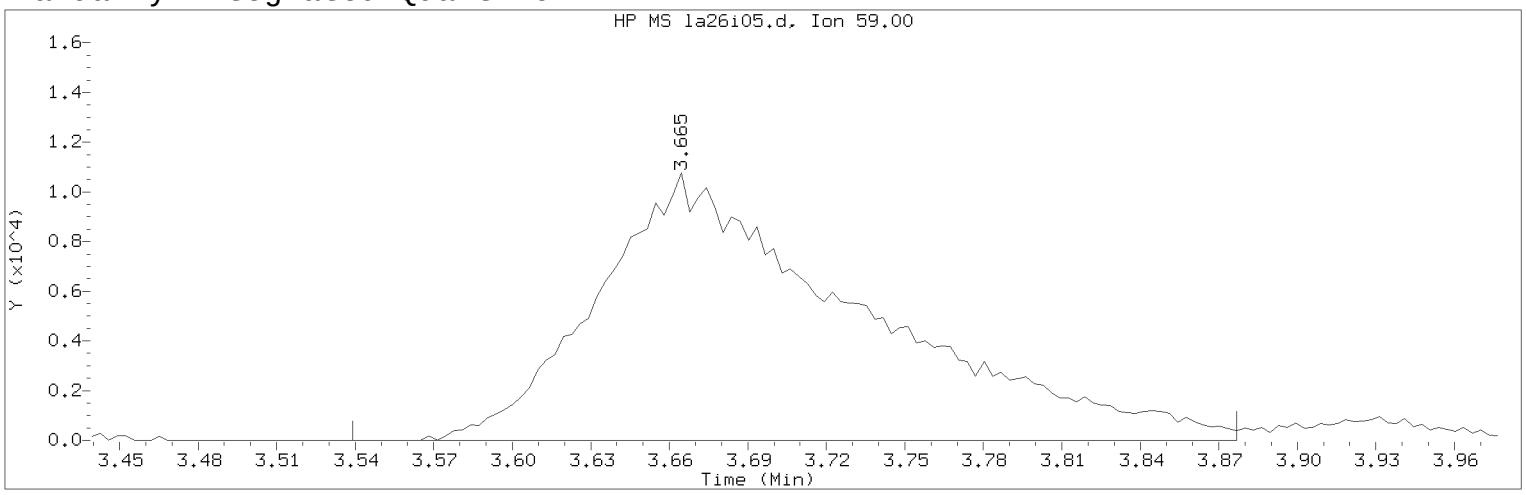
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 648
Retention Time (minutes): 3.565
Quant Ion : 65.00
Area : 185663
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 729
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

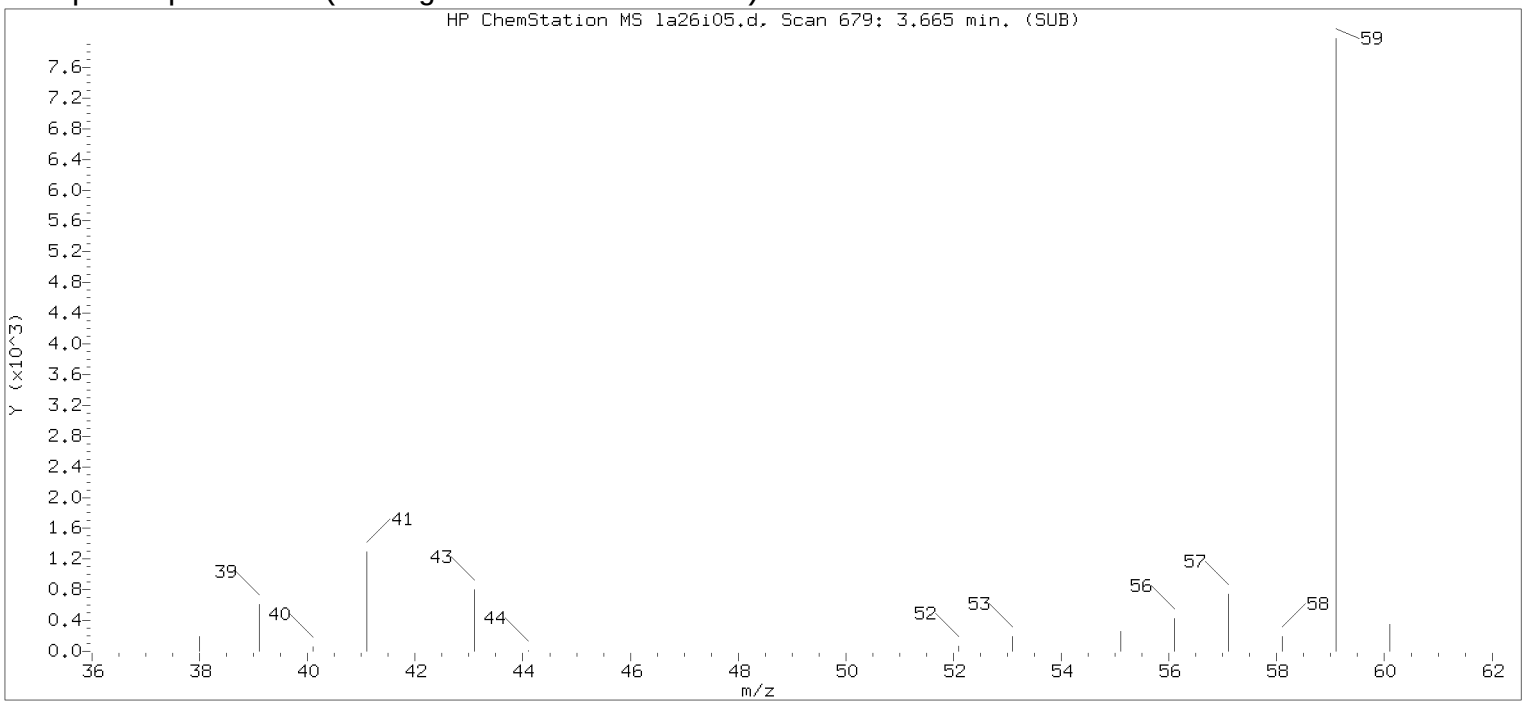
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 679
Retention Time (minutes): 3.665
Quant Ion : 59.00
Area (flag) : 75108M
On-Column Amount (ng) : 99.6249
Integration start scan : 639 Integration stop scan: 744
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

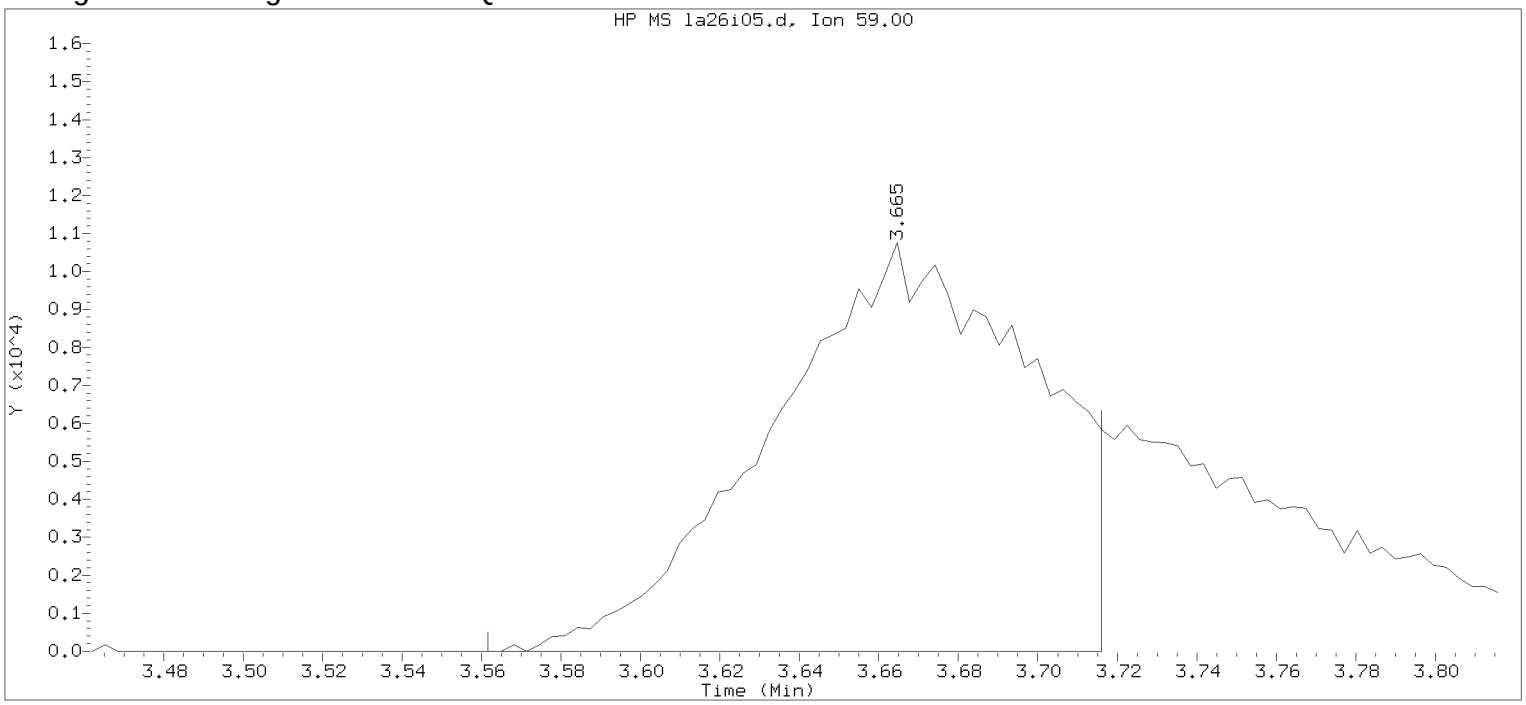
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

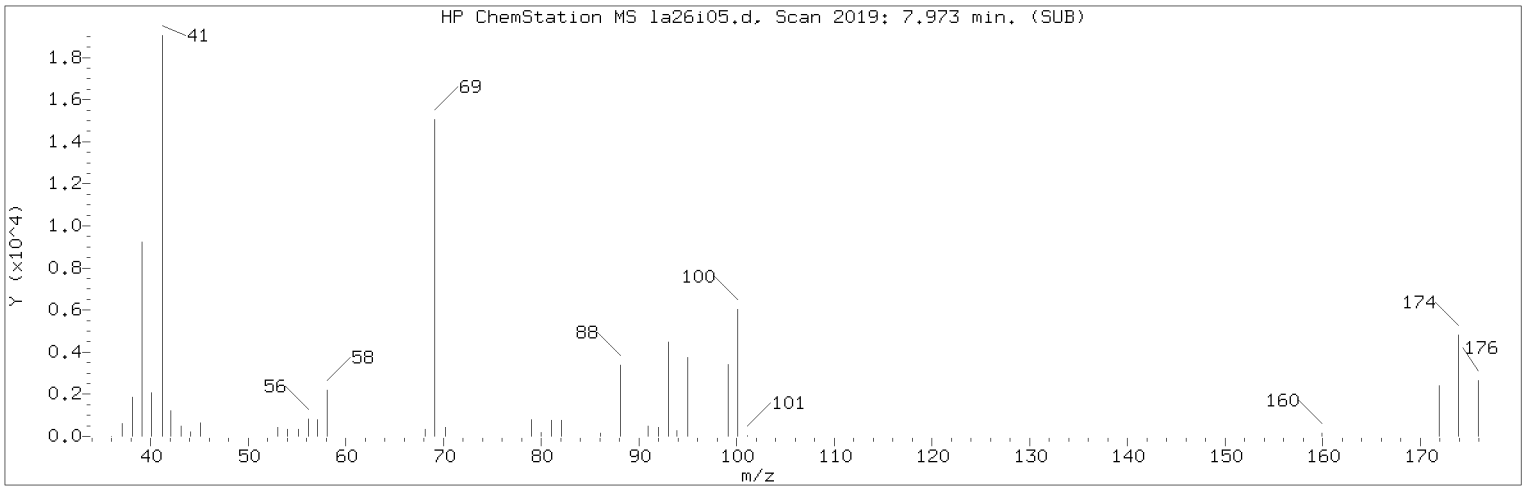
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

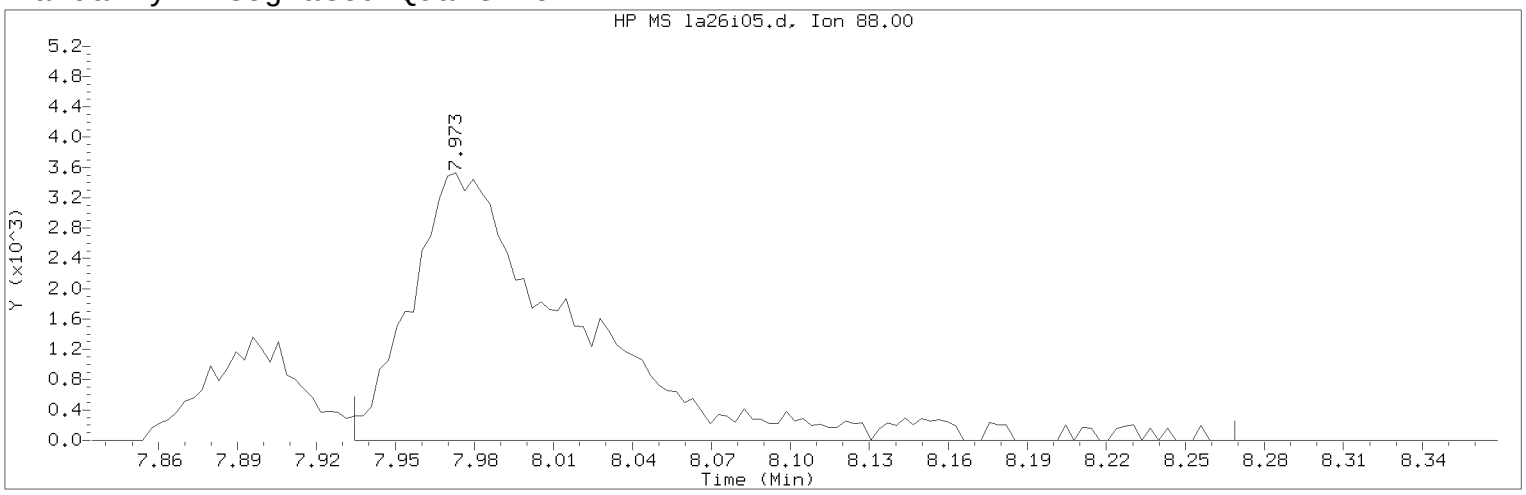
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 679
Retention Time (minutes): 3.665
Quant Ion : 59.00
Area : 49216
On-column Amount (ng) : 71.8732
Integration start scan : 646 Integration stop scan: 694
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

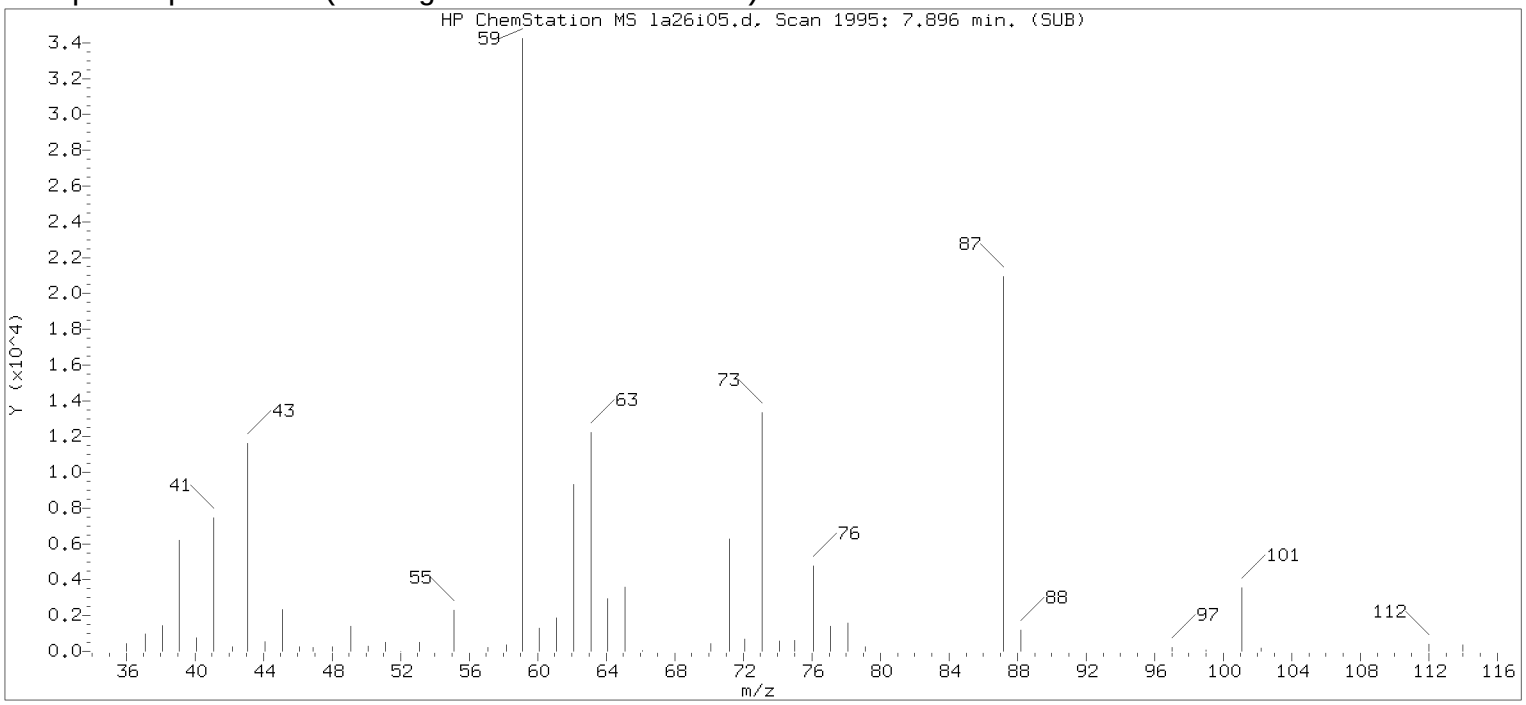
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 15525M
On-Column Amount (ng) : 233.0554
Integration start scan : 2006 Integration stop scan: 2110
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

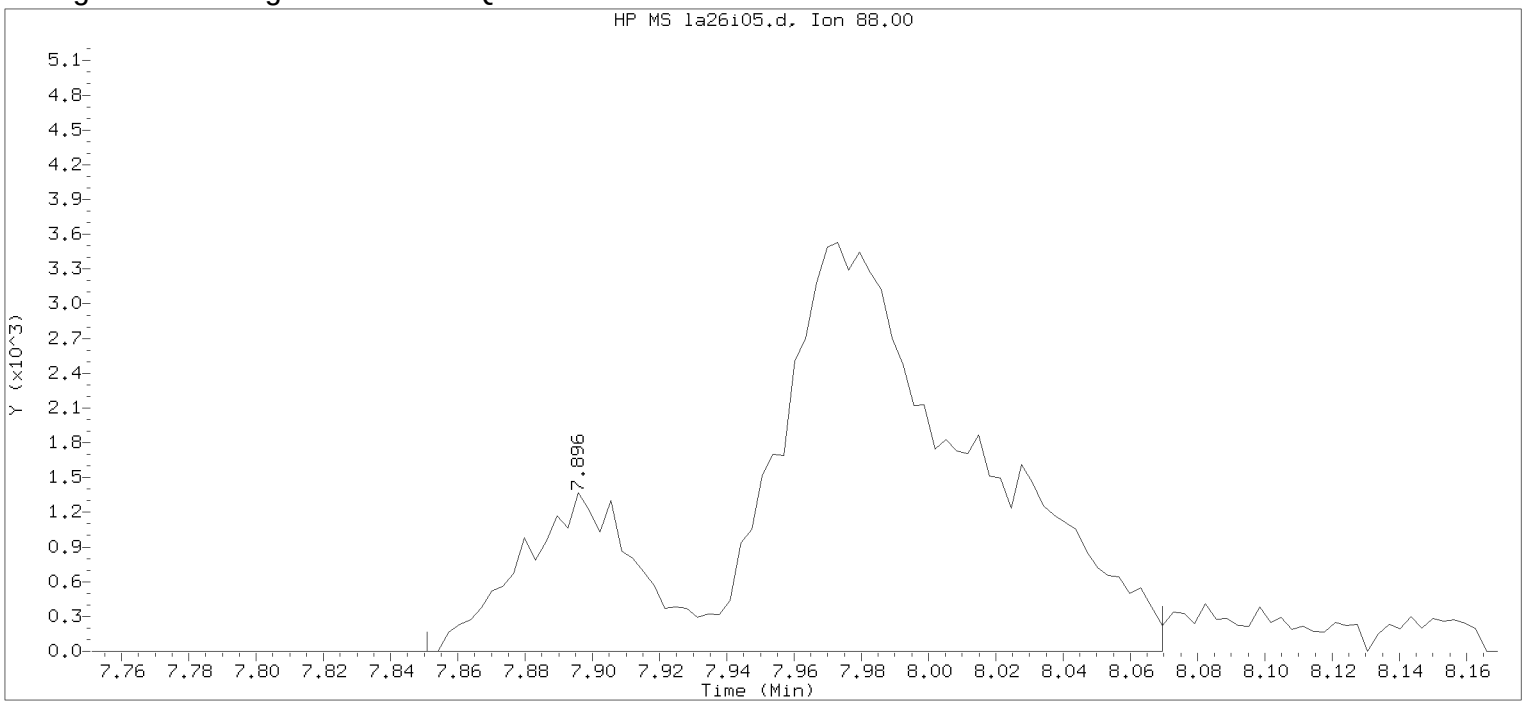
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 16999
On-column Amount (ng) : 234.9759
Integration start scan : 1980 Integration stop scan: 2048
Y at integration start : 0 Y at integration end: 0

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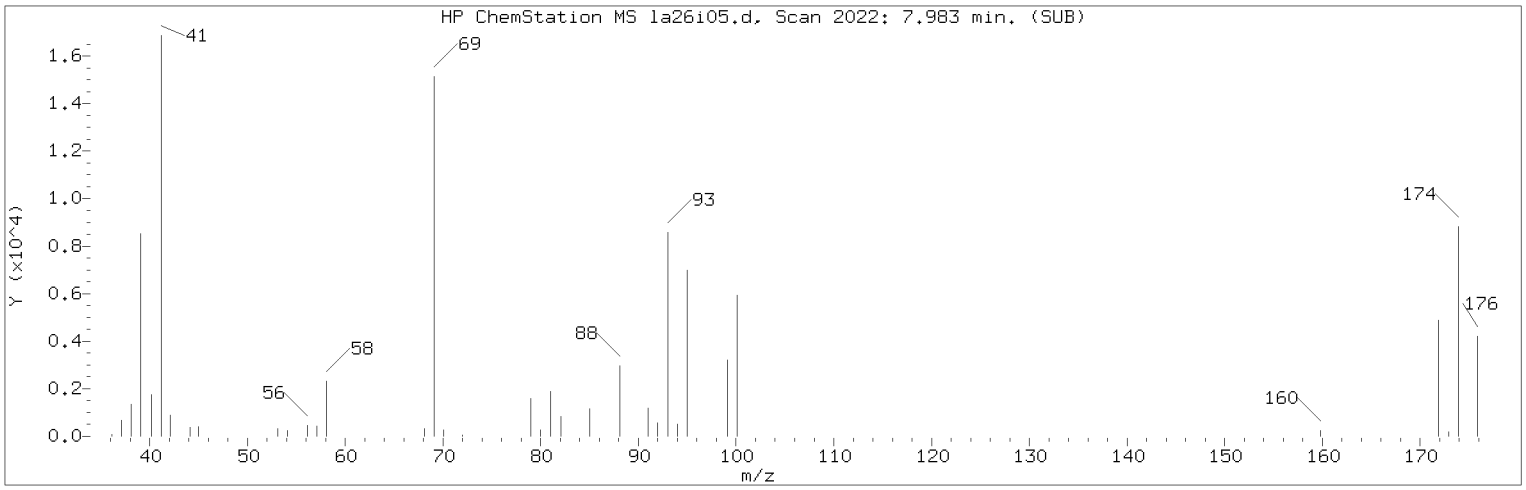
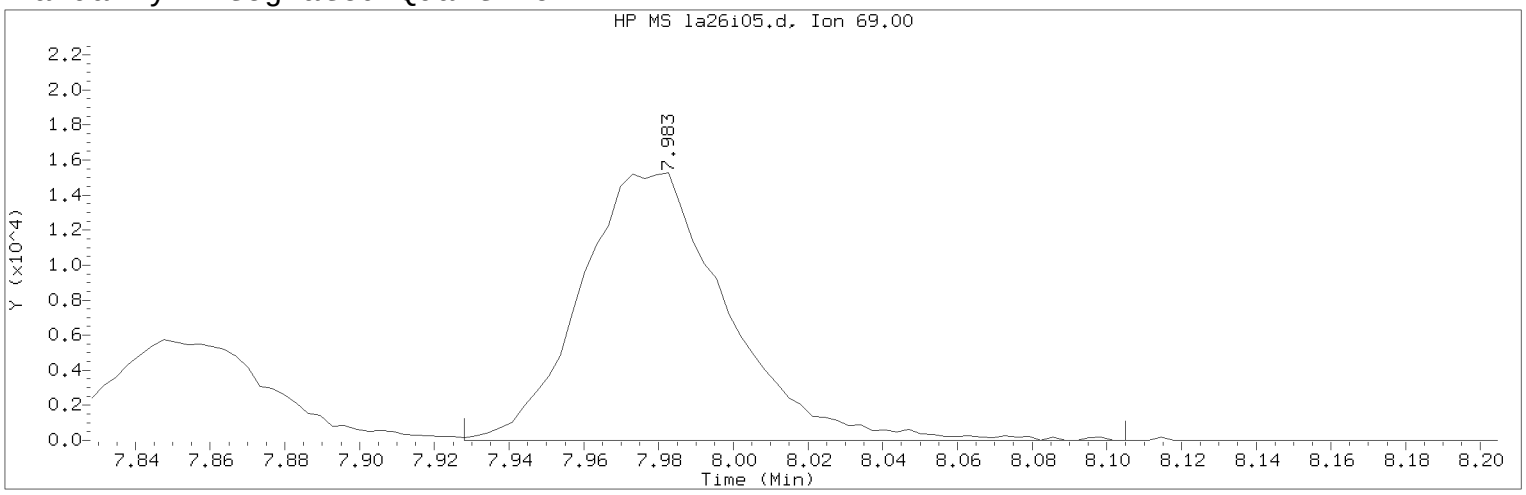
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

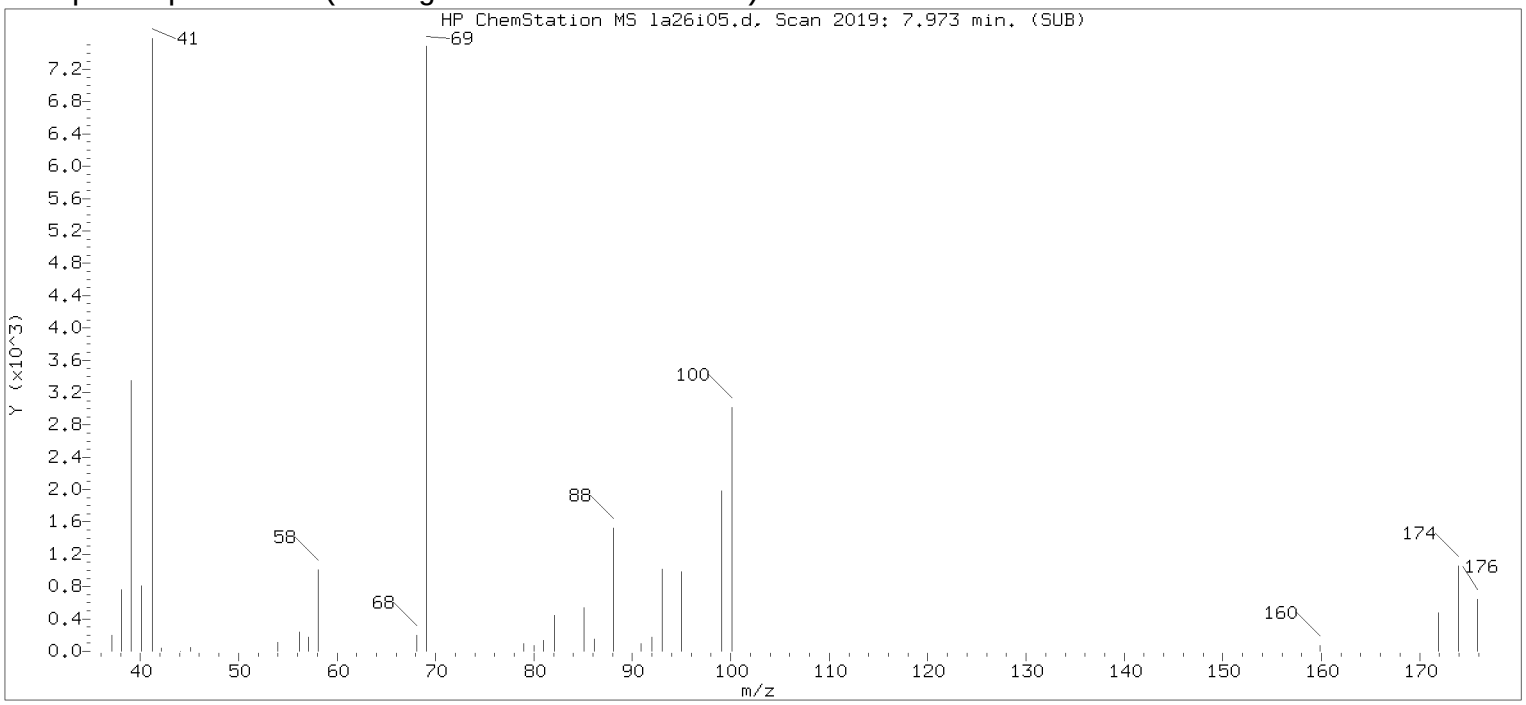
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 41640M
On-Column Amount (ng) : 9.2747
Integration start scan : 2004 Integration stop scan: 2059
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

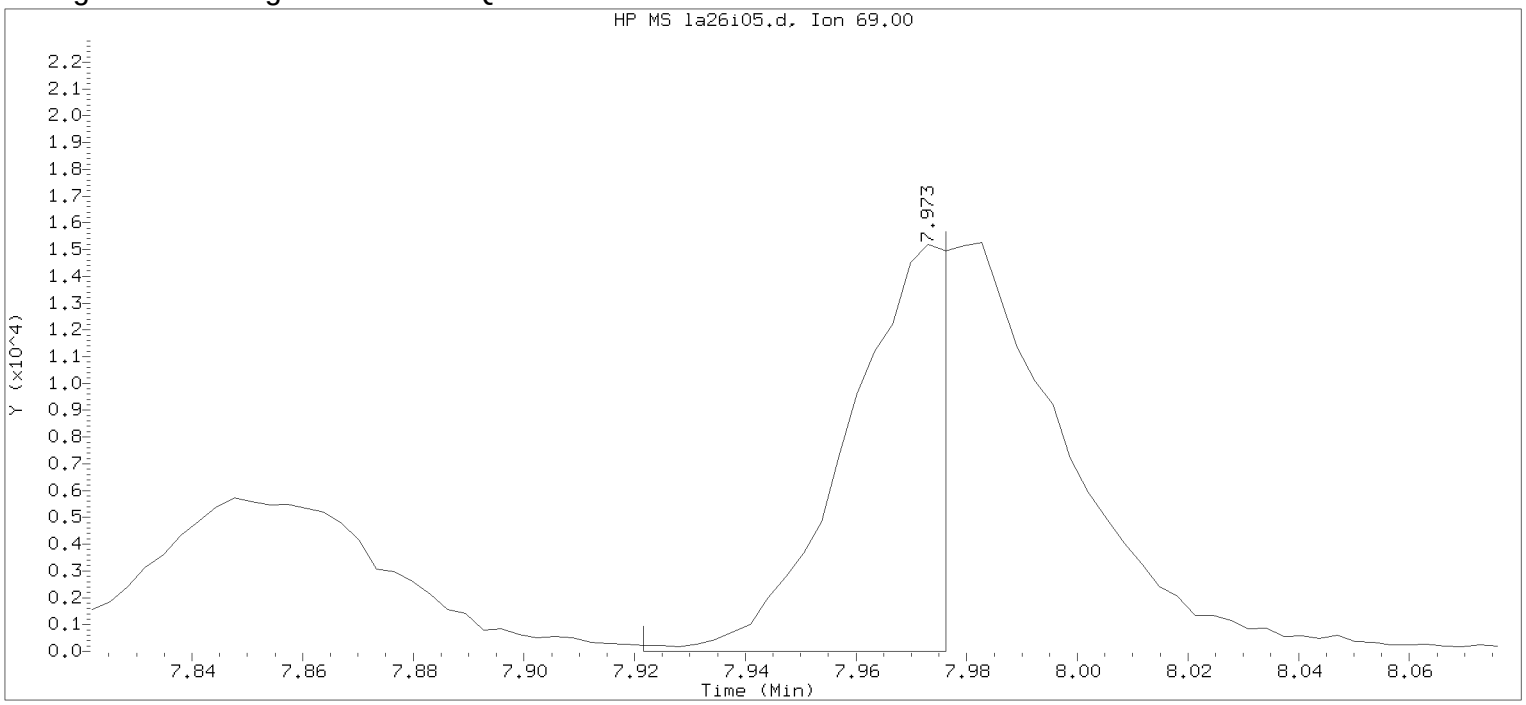
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area : 18069
On-column Amount (ng) : 4.2742
Integration start scan : 2002 Integration stop scan: 2019
Y at integration start : 0 Y at integration end: 0

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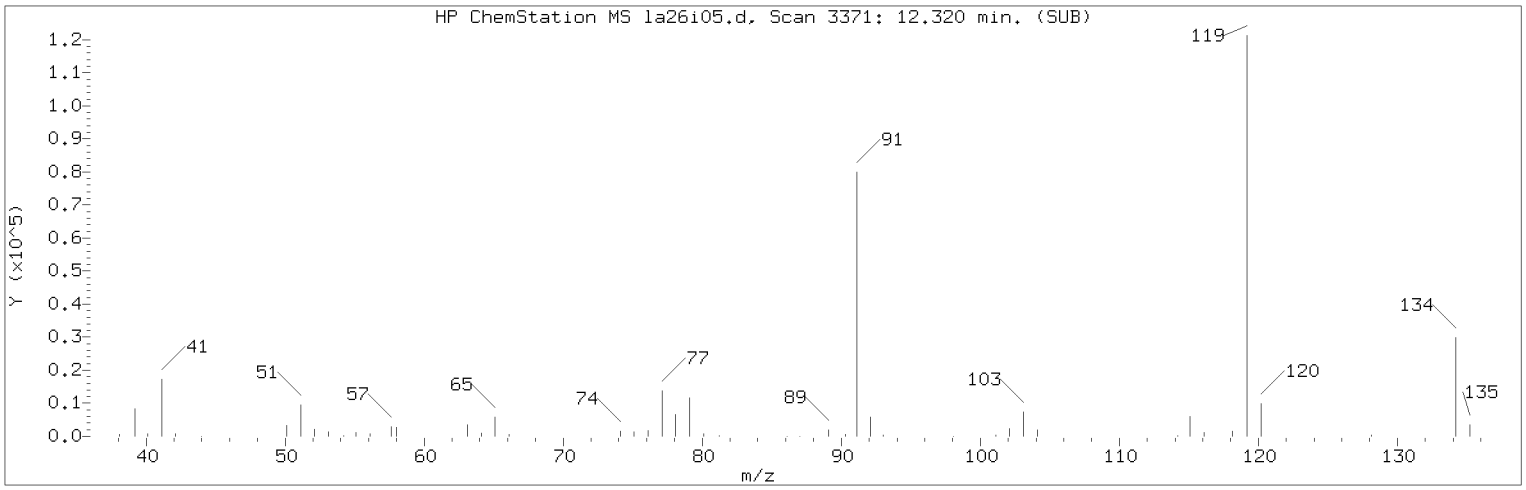
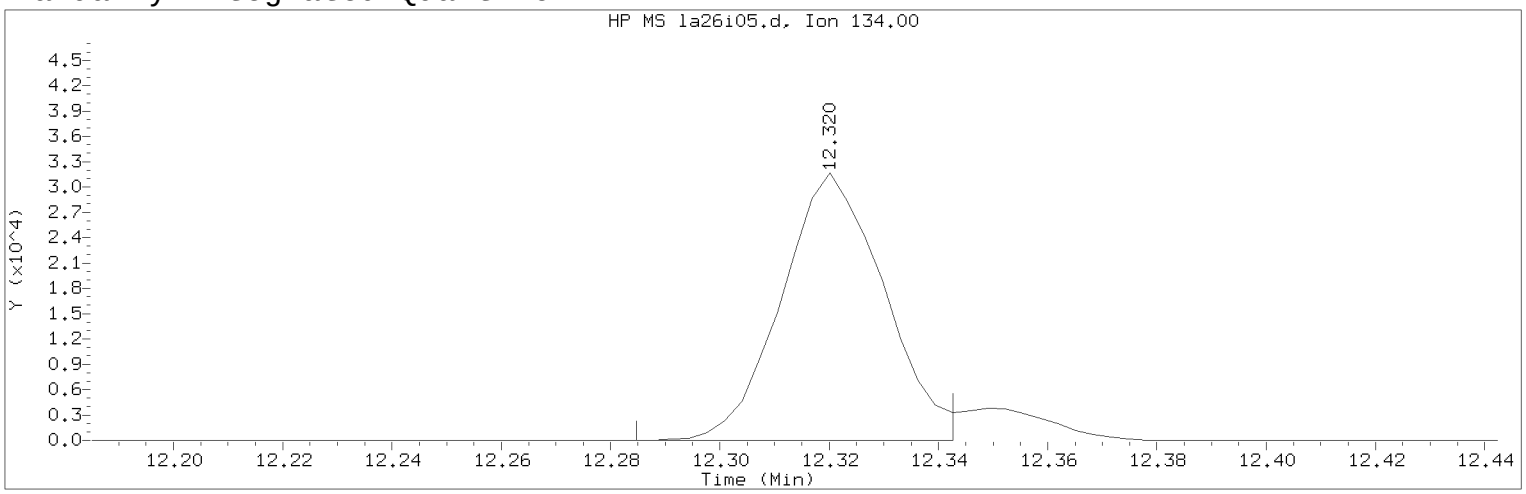
Target 3.5 esignature user KAS1 Page 238 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

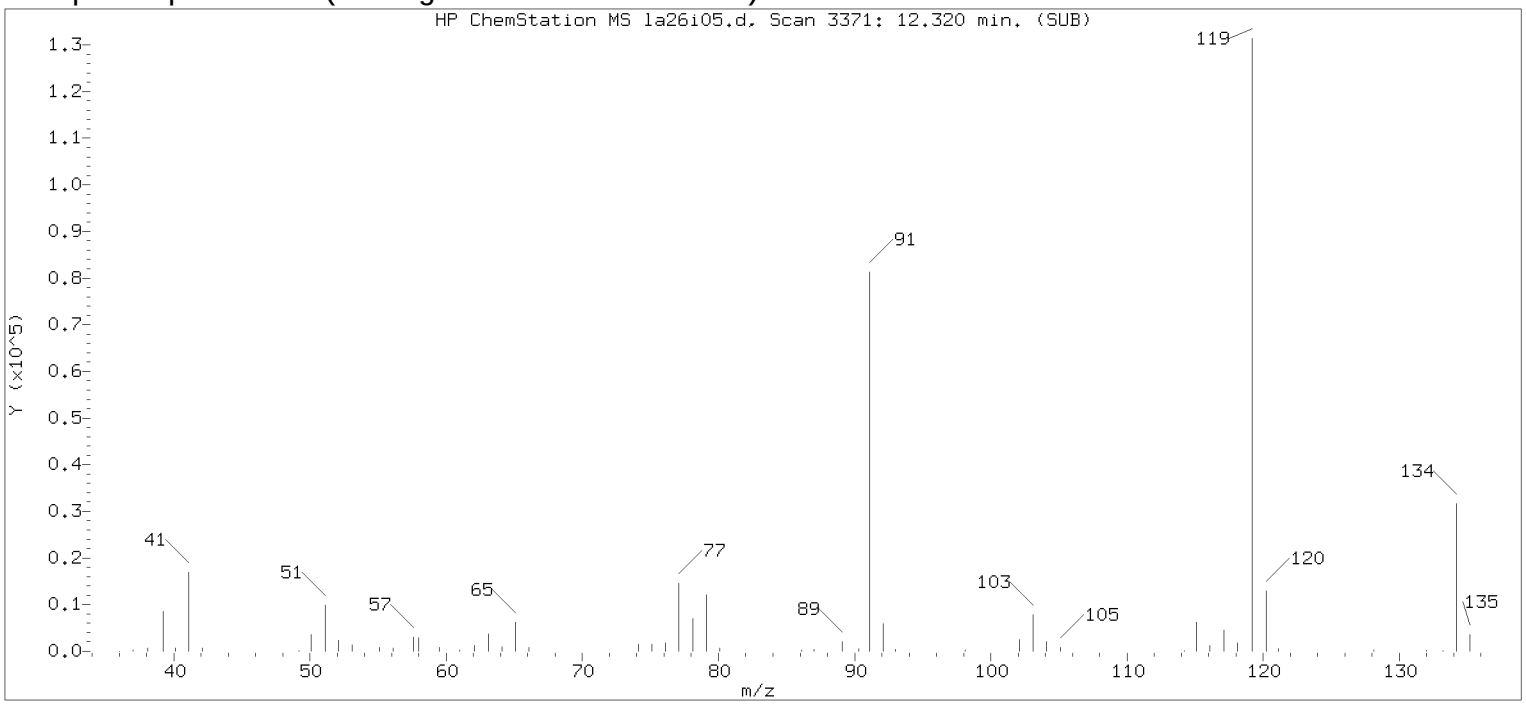
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 41143M
On-Column Amount (ng) : 9.8320
Integration start scan : 3359 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

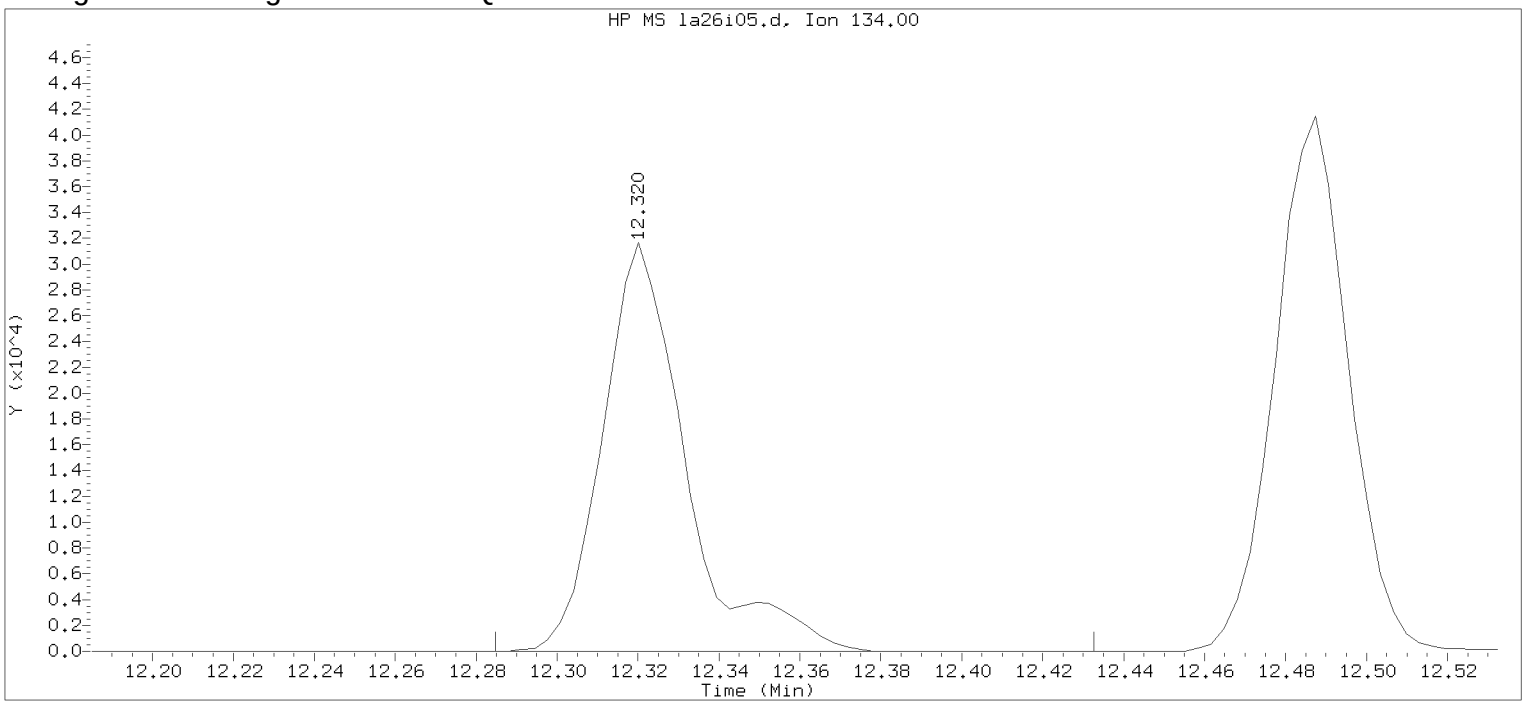
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i05.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 14:48 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:17
Date, time and analyst ID of latest file update: 26-Apr-2017 15:17 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 45210
On-column Amount (ng) : 9.8016
Integration start scan : 3359 Integration stop scan: 3405
Y at integration start : 0 Y at integration end: 0

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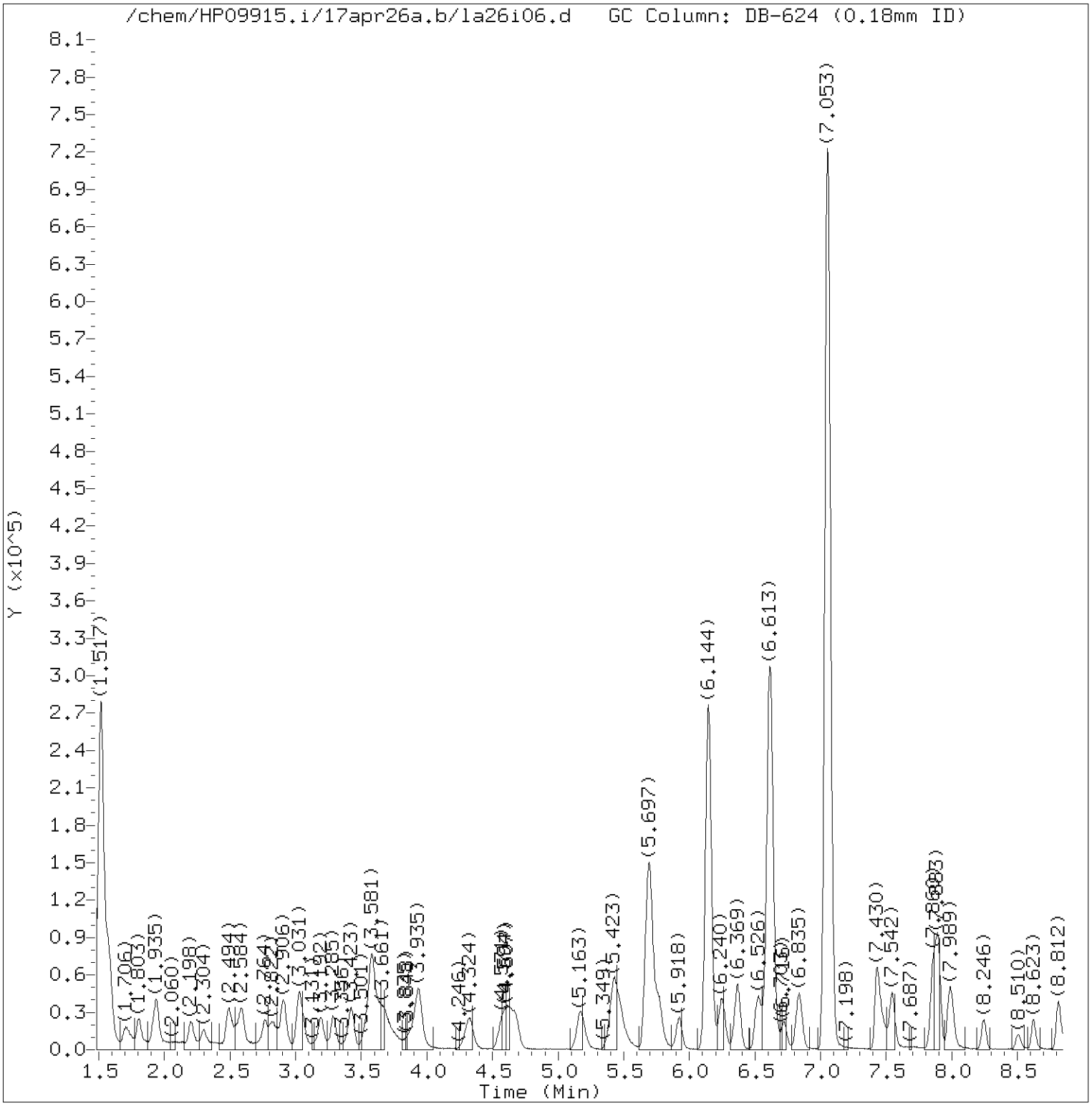
Target 3.5 esignature user KAS1 Page 2648 of 1128




Total Ion Chromatogram (TIC)

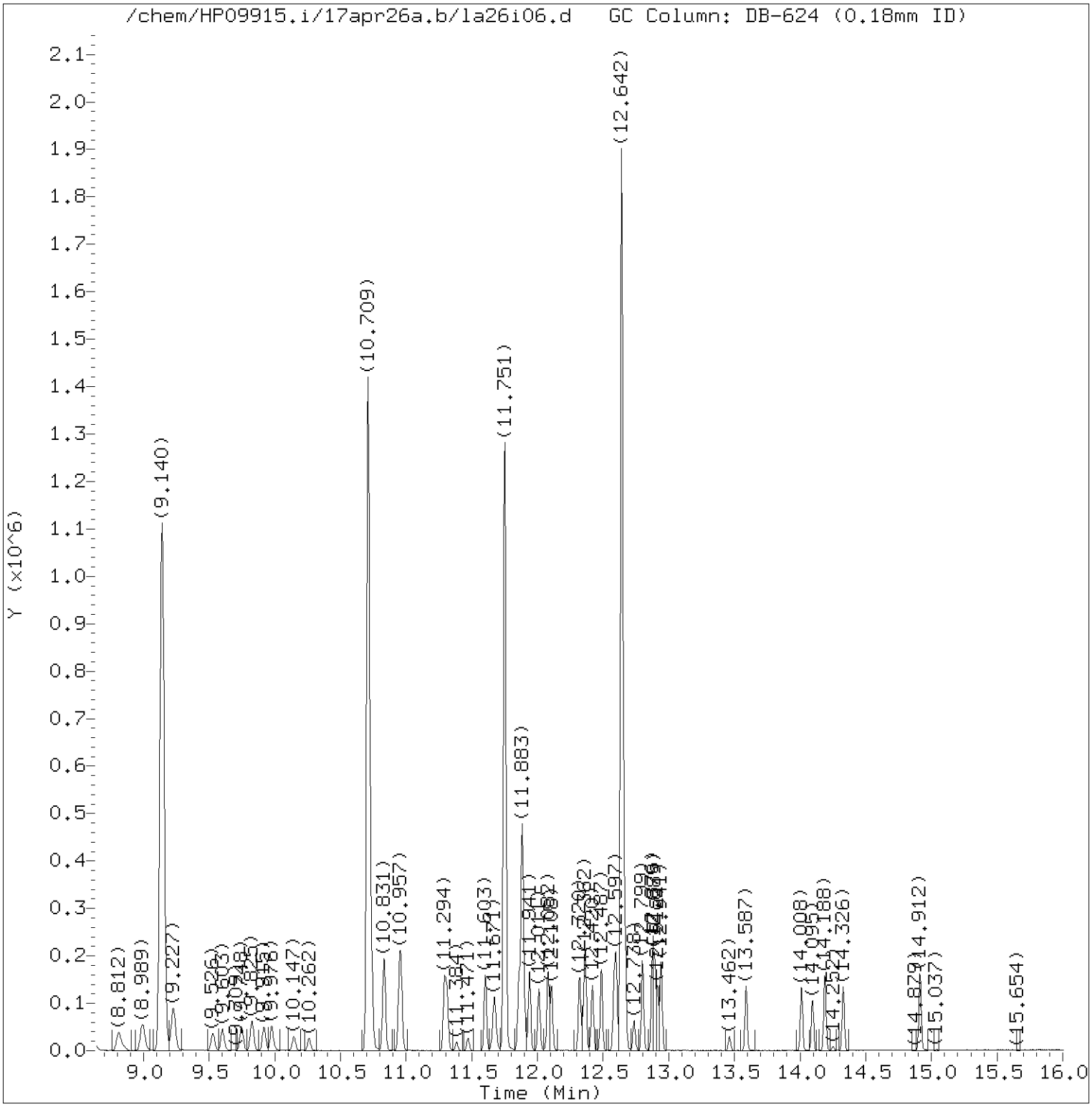
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 26037 | 4.176 |
| 4) Chloromethane | (2) | 1.803 | 50 | 25200 | 3.934 |
| 6) Vinyl Chloride | (2) | 1.915 | 62 | 24755 | 4.002 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 16995 | 4.504 |
| 8) Bromomethane | (2) | 2.205 | 94 | 16261M | 3.908 |
| 9) Chloroethane | (2) | 2.295 | 64 | 14059 | 4.033 |
| 10) Dichlorofluoromethane | (2) | 2.484 | 67 | 33722 | 3.966 |
| 12) Trichlorofluoromethane | (2) | 2.542 | 101 | 29360 | 4.099 |
| 11) n-Pentane | (2) | 2.591 | 43 | 26016 | 4.410 |
| 14) Ethyl ether | (2) | 2.767 | 59 | 15912 | 3.990 |
| 15) Freon 123a | (2) | 2.816 | 67 | 20631 | 4.325 |
| 16) Acrolein | (1) | 2.906 | 56 | 57583 | 34.296 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 16036 | 4.230 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 63 | 8089 | 4.215 |
| 18) Acetone | (1) | 3.041 | 58 | 5325M | 7.307 |
| 19) Freon 113 | (2) | 3.044 | 101 | 16238 | 4.255 |
| 21) 2-Propanol | (1) | 3.189 | 45 | 40137M | 83.086 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 30085 | 4.091 |
| 23) Carbon Disulfide | (2) | 3.282 | 76 | 50383 | 4.084 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 21444 | 3.897 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 31272 | 4.118 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 205105M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 20934 | 4.180 |
| 30) t-Butyl alcohol | (1) | 3.687 | 59 | 60772M | 76.579 |
| 31) Acrylonitrile | (2) | 3.870 | 53 | 11085 | 3.836 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 55927 | 4.027 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 18531 | 4.166 |
| 34) n-Hexane | (2) | 4.324 | 57 | 28520 | 4.183 |
| 36) 1,1-Dichloroethane | (2) | 4.562 | 63 | 34363 | 4.111 |
| 38) di-Isopropyl ether | (2) | 4.619 | 45 | 64435 | 4.016 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 28657 | 4.064 |
| 40) Ethyl t-butyl ether | (2) | 5.176 | 59 | 54352 | 3.937 |
| 44) 2-Butanone | (2) | 5.381 | 43 | 28701 | 7.418 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 21315M | 3.819 |
| 42) cis-1,2-Dichloroethene | (2) | 5.423 | 96 | 20667 | 4.055 |
| 47) Propionitrile | (1) | 5.465 | 54 | 86867 | 74.999 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 109898 | 38.147 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 10436 | 3.885 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 6817 | 6.663 |
| 51) Chloroform | (2) | 5.925 | 83 | 32628 | 4.095 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 32845 | 4.511 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 253557 | 49.604 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 111 | 260923 | 49.814 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 39198 | 8.221 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 34447 | 4.155 |
| 54) Cyclohexane | (2) | 6.240 | 84 | 28669 | 4.230 |
| 54) Cyclohexane | (2) | 6.243 | 69 | 10119 | 4.211 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 20852 | 3.924 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 26512 | 4.091 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 53887 | 193.400 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 64045 | 50.386 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 303739 | 50.519 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 104 | 40296 | 49.981 |
| 60) Benzene | (2) | 6.629 | 78 | 78391 | 4.104 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 26098 | 4.039 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 2305M | 4.022 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 52770 | 3.851 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1046774 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 33581 | 4.399 |
| 69) n-Butanol | (1) | 7.433 | 56 | 79036 | 351.880 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 19901 | 4.031 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 36459 | 4.192 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 16232 | 4.135 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 20791 | 3.976 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 12532 | 178.720 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 16816M | 3.757 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 12893M | 3.921 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 22387 | 3.772 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 11184 | 6.646 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 14941 | 3.717 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 28555 | 3.692 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 55176 | 6.920 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1029529 | 50.086 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 677093 | 49.999 |
| 88) Toluene | (3) | 9.227 | 92 | 48414 | 4.053 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 23592 | 3.522 |

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004  Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.603 | 69 | 27111 | 3.594 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 17786 | 3.864 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 21245 | 4.021 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 30994 | 3.881 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 39380 | 6.830 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 52147 | 7.214 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 16936 | 3.552 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 19109 | 3.792 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 805037 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 28026 | 4.085 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 54921 | 3.985 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 17119 | 3.761 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 92312 | 4.006 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 71336 | 7.953 |
| 107) o-Xylene | (3) | 11.291 | 106 | 34913 | 3.914 |
| 109) Styrene | (3) | 11.310 | 104 | 55976 | 3.796 |
| 110) Bromoform | (3) | 11.471 | 173 | 11404 | 3.294 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 91623 | 4.019 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 48698 | 184.107 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 385379 | 50.441 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 338738 | 50.546 |
| 108) Xylene (Total) | (3) | | 106 | 106249 | 11.866 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 30161 | 3.917 |
| 115) Bromobenzene | (4) | 11.864 | 156 | 24538 | 3.958 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 83531 | 37.862 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 8734 | 4.013 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 111094 | 4.055 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 22713 | 3.983 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 77197 | 3.952 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 23232 | 3.915 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 16177M | 3.831 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 11868 | 3.559 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 78838 | 3.918 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 100568 | 4.036 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 47596 | 4.032 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 86819 | 3.946 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 433758 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 49098 | 4.023 |

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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

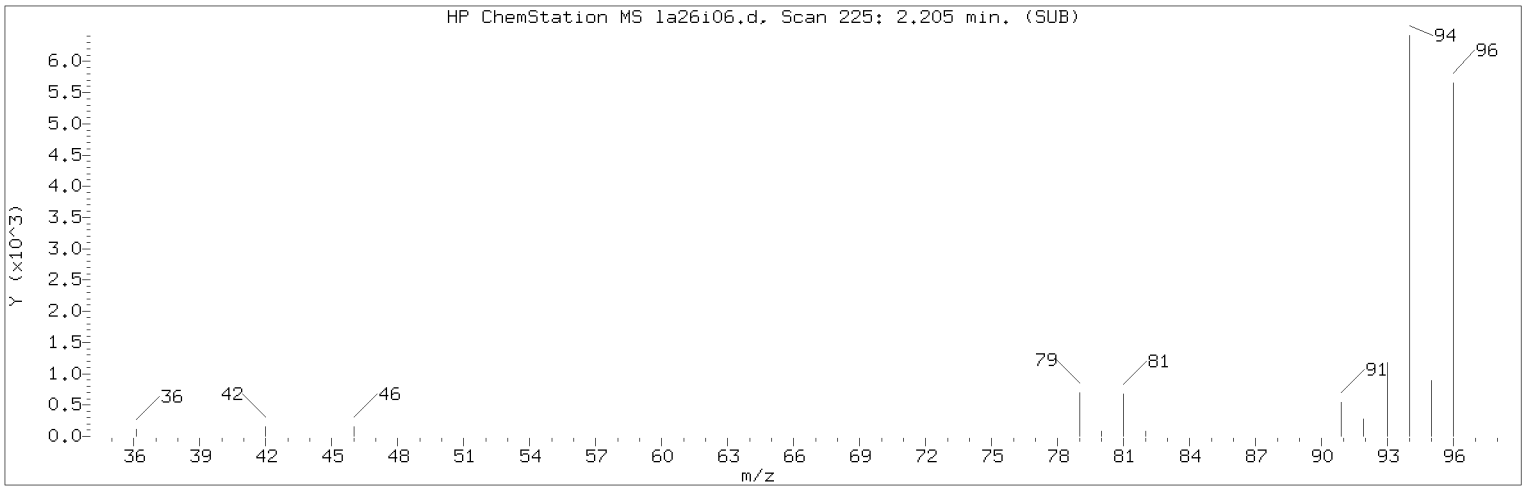
Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 83360 | 3.954 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 37399 | 3.098 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 51945 | 3.951 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 55669 | 4.033 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 45170 | 4.109 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 46959 | 4.047 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 44327 | 4.007 |
| 141) Diethylbenzene (total) | (4) | | 100 | 151941 | 11.991 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 5965 | 3.664 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 38380 | 4.080 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 36590 | 4.010 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 16967 | 4.281 |
| 148) Naphthalene | (4) | 14.188 | 128 | 107263 | 3.895 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 35386 | 4.019 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 66826 | 3.753 |

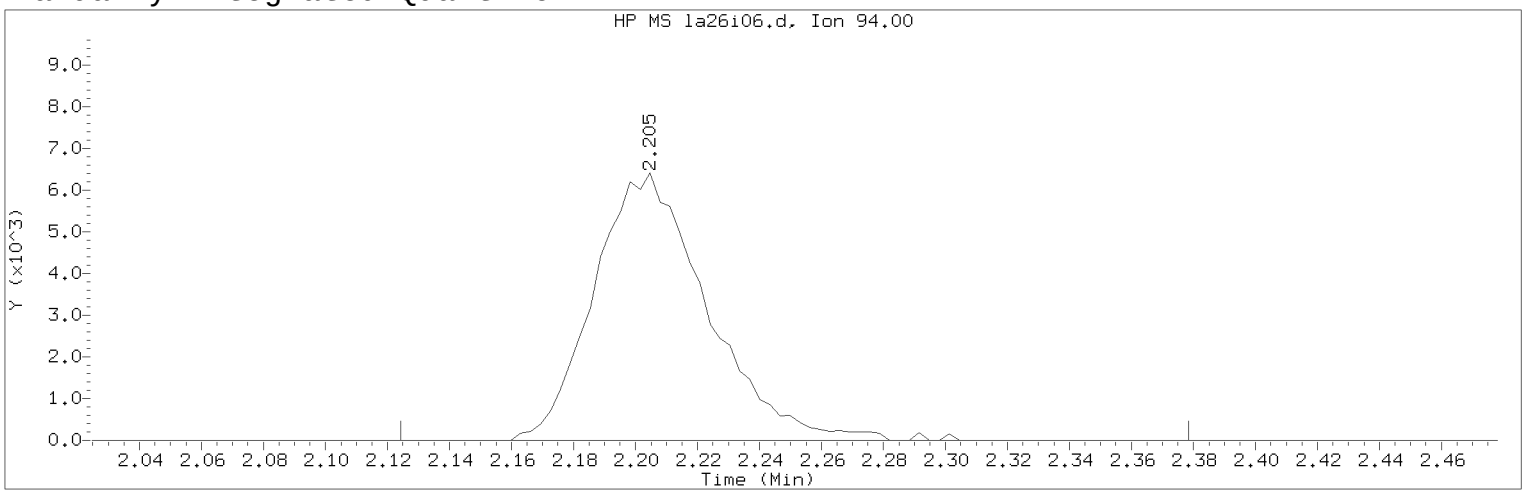


Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

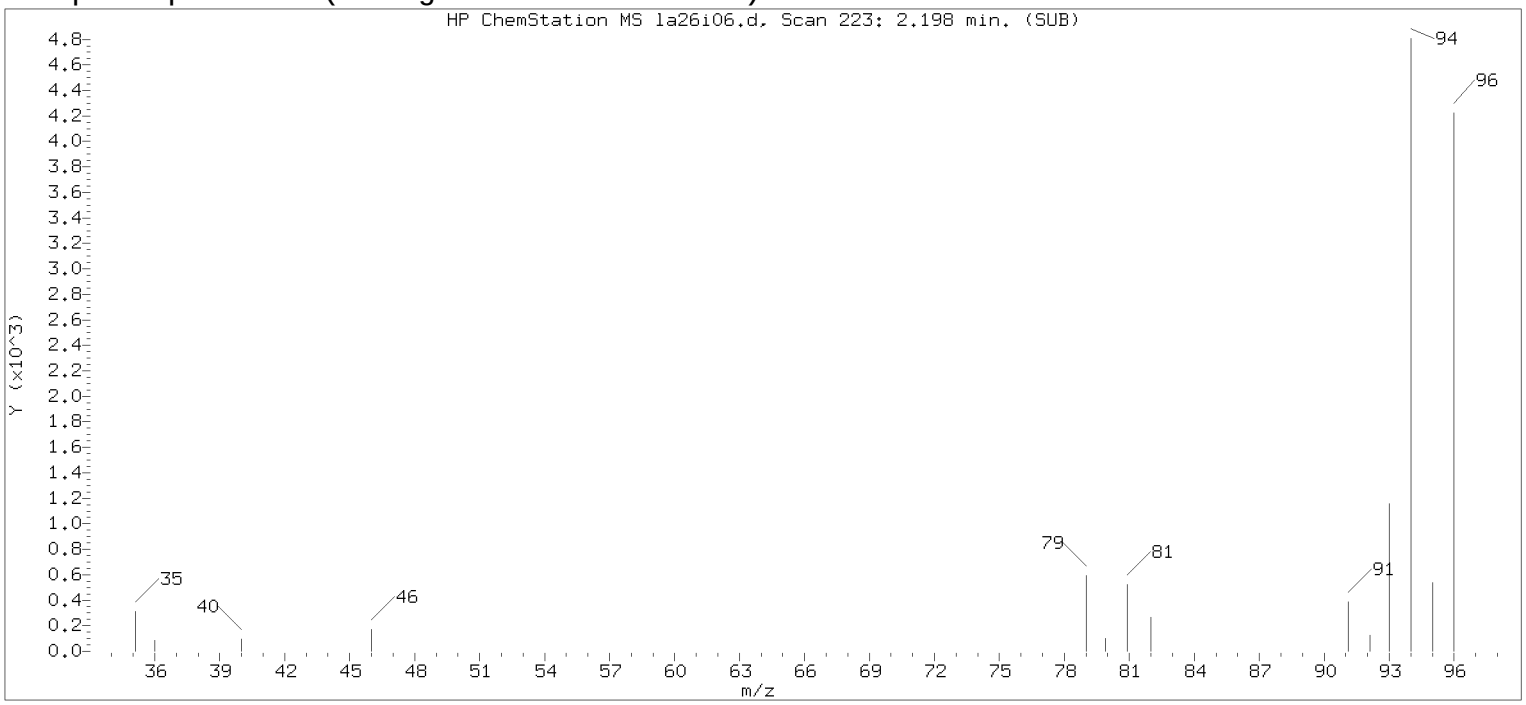
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 225
Retention Time (minutes): 2.205
Quant Ion : 94.00
Area (flag) : 16261M
On-Column Amount (ng) : 3.9084
Integration start scan : 199 Integration stop scan: 278
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

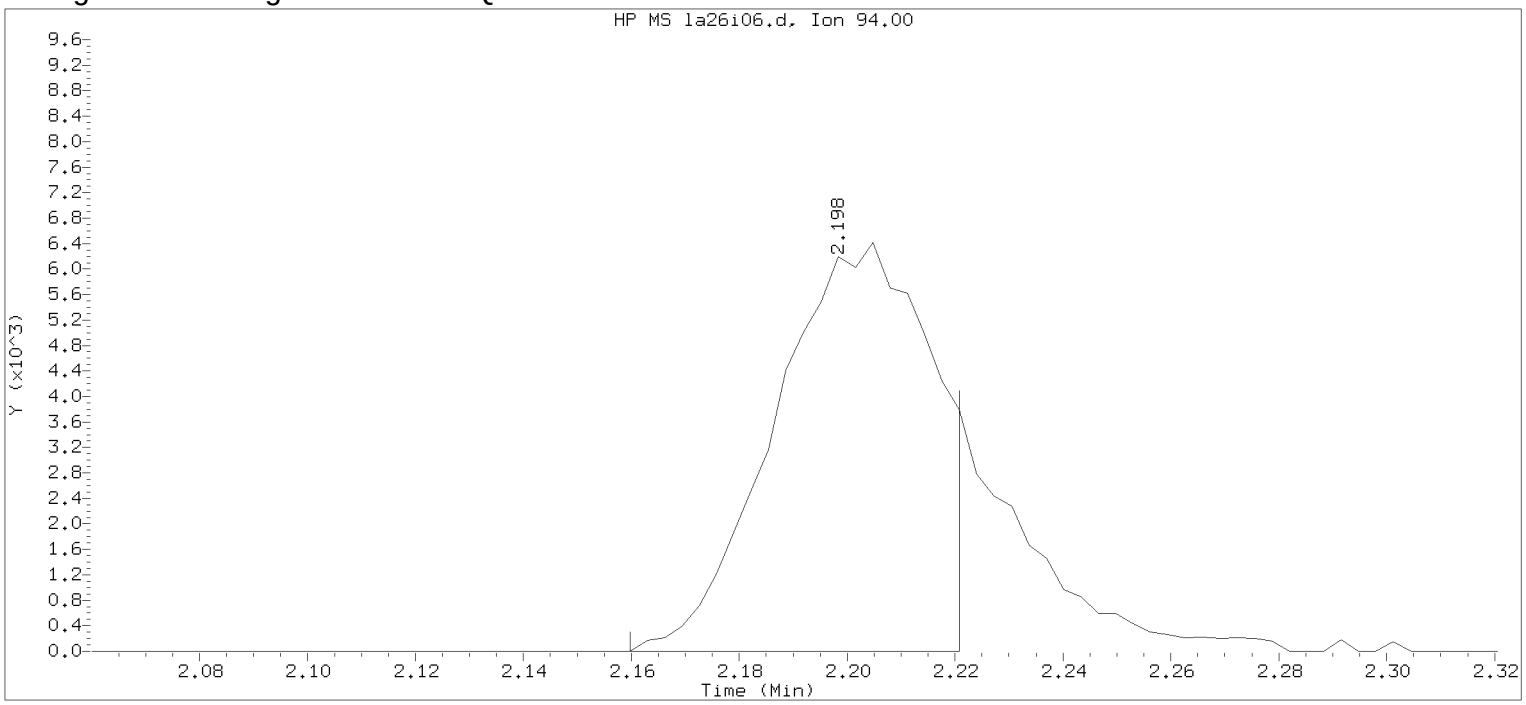
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

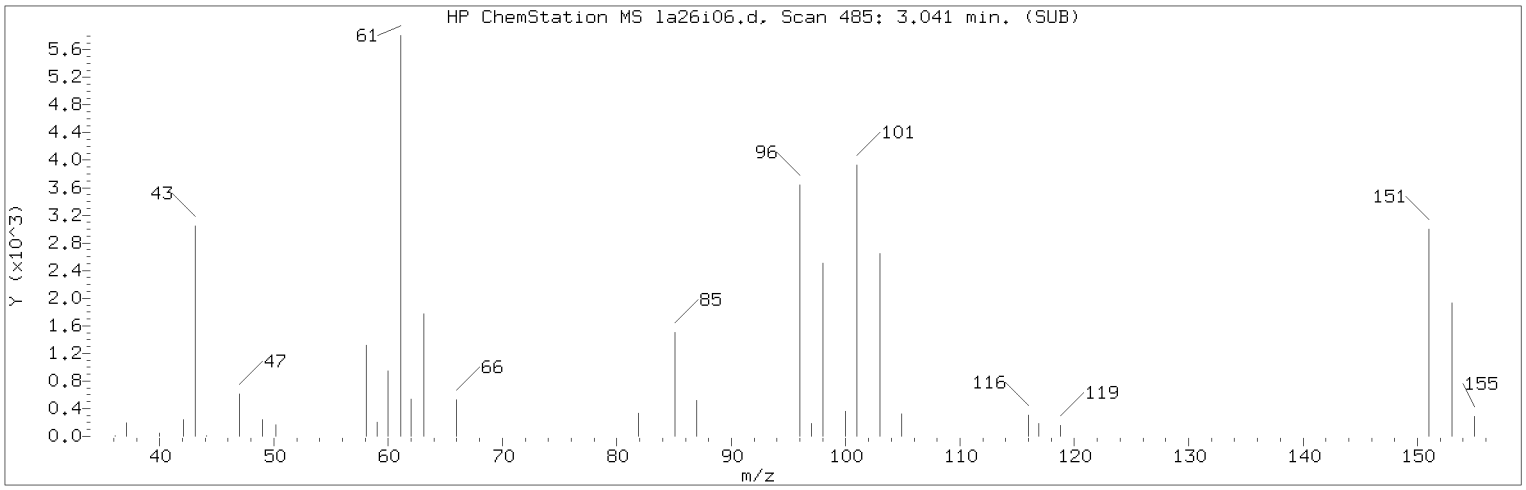
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

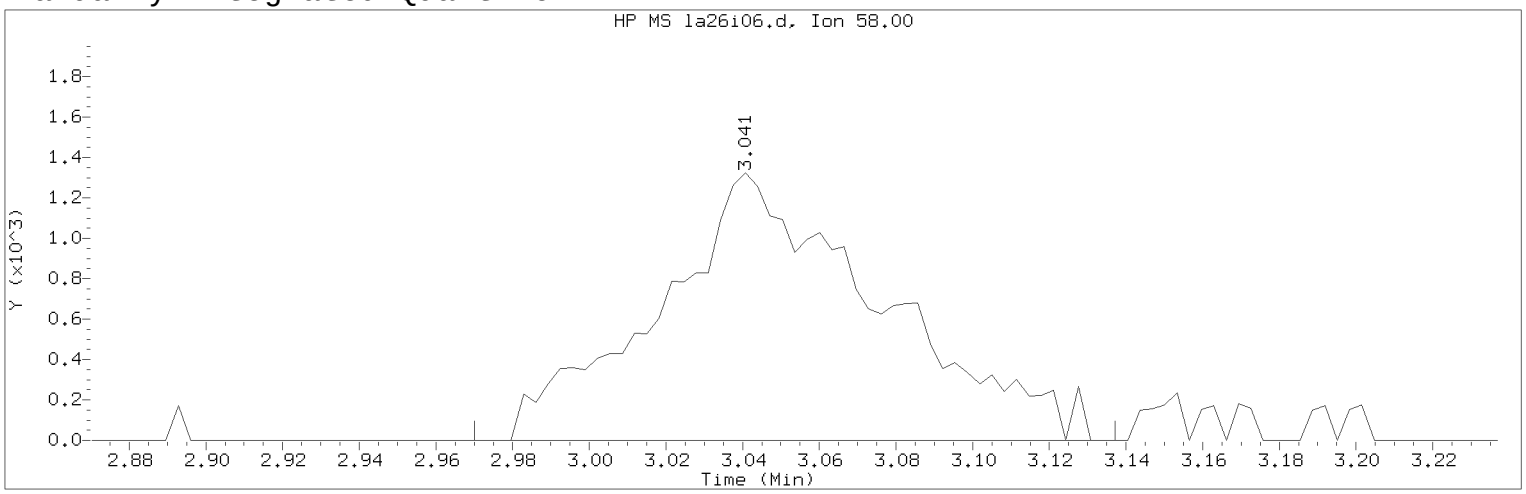
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area : 12778
On-column Amount (ng) : 3.1270
Integration start scan : 210 Integration stop scan: 229
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648 Page 248 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

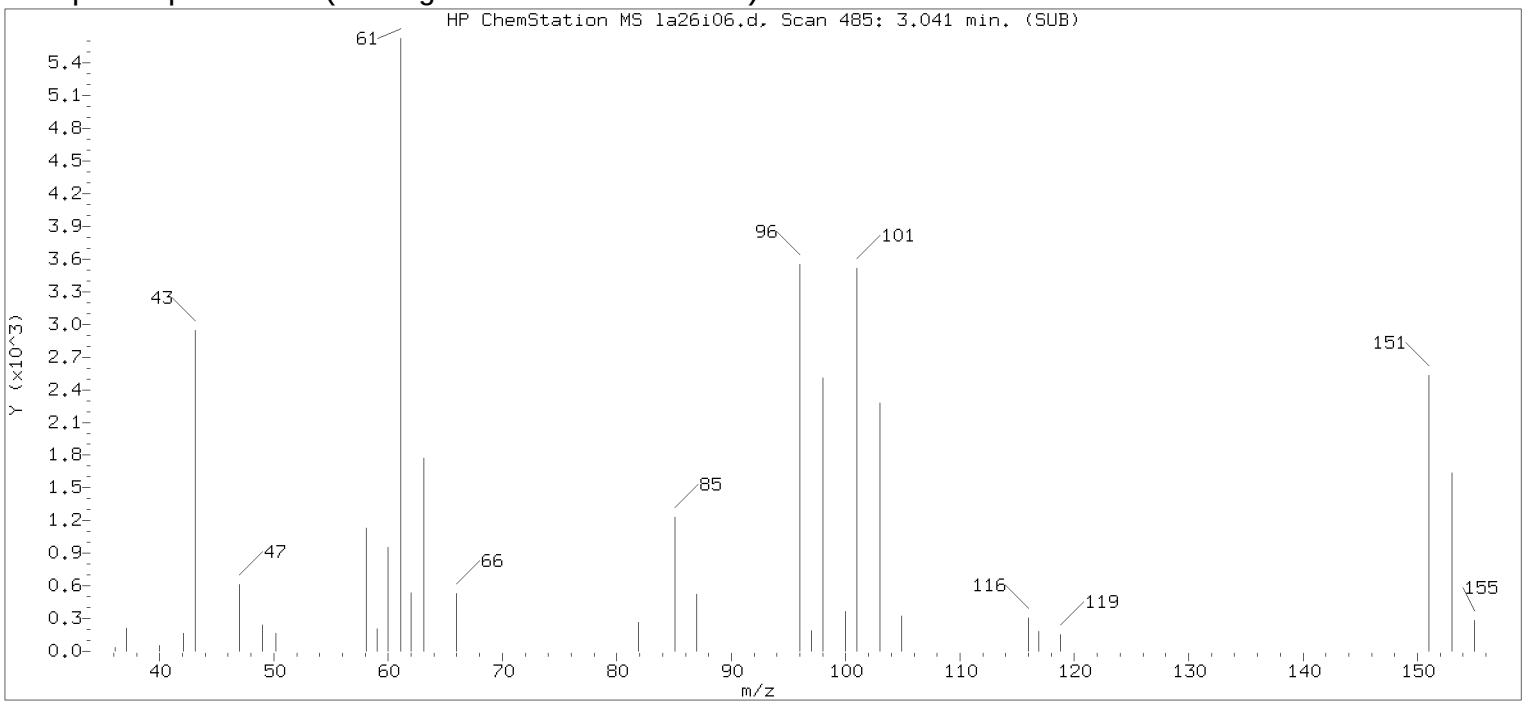
Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area (flag) : 5325M
On-Column Amount (ng) : 7.3073
Integration start scan : 462 Integration stop scan: 514
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

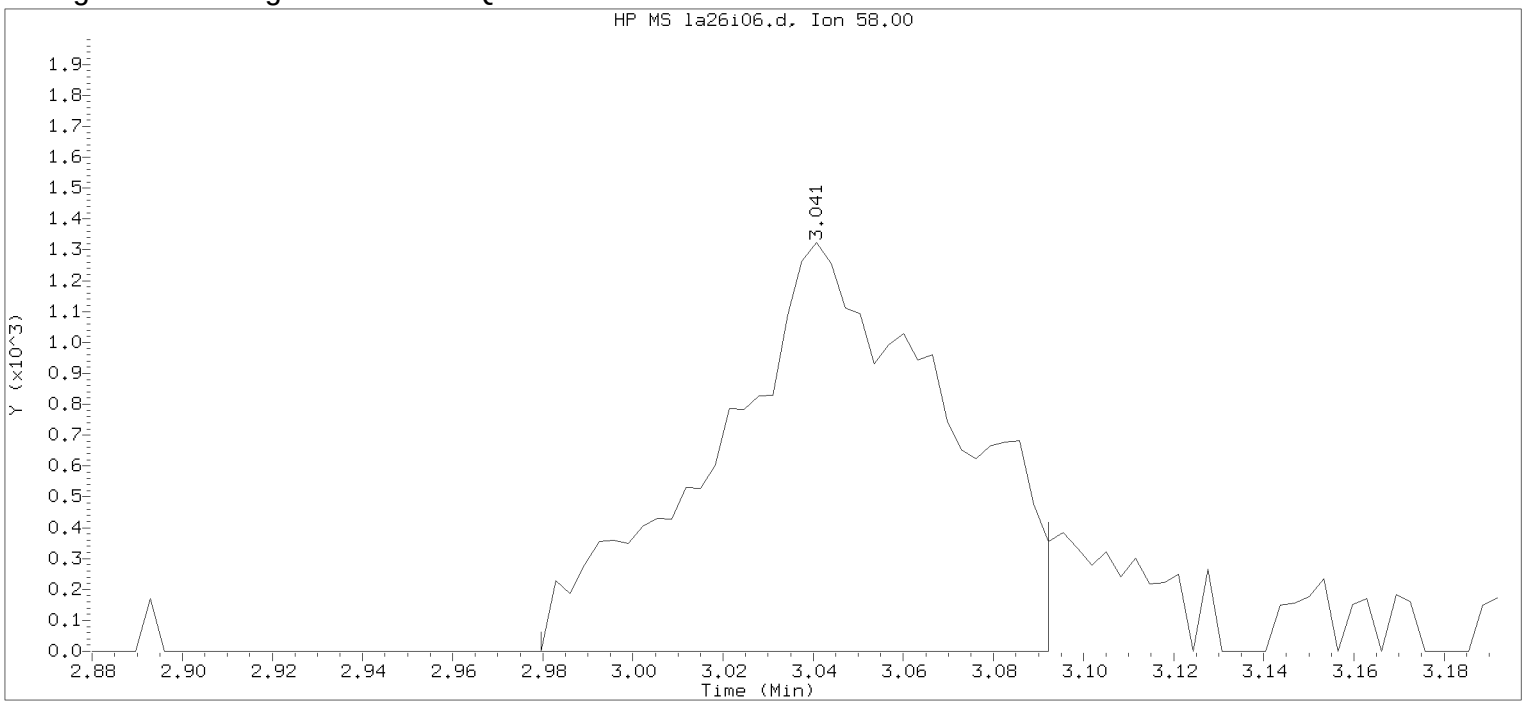
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 18
Compound Name : Acetone
Scan Number : 485
Retention Time (minutes): 3.041
Quant Ion : 58.00
Area : 4747
On-column Amount (ng) : 6.6314
Integration start scan : 465 Integration stop scan: 500
Y at integration start : 0 Y at integration end: 0

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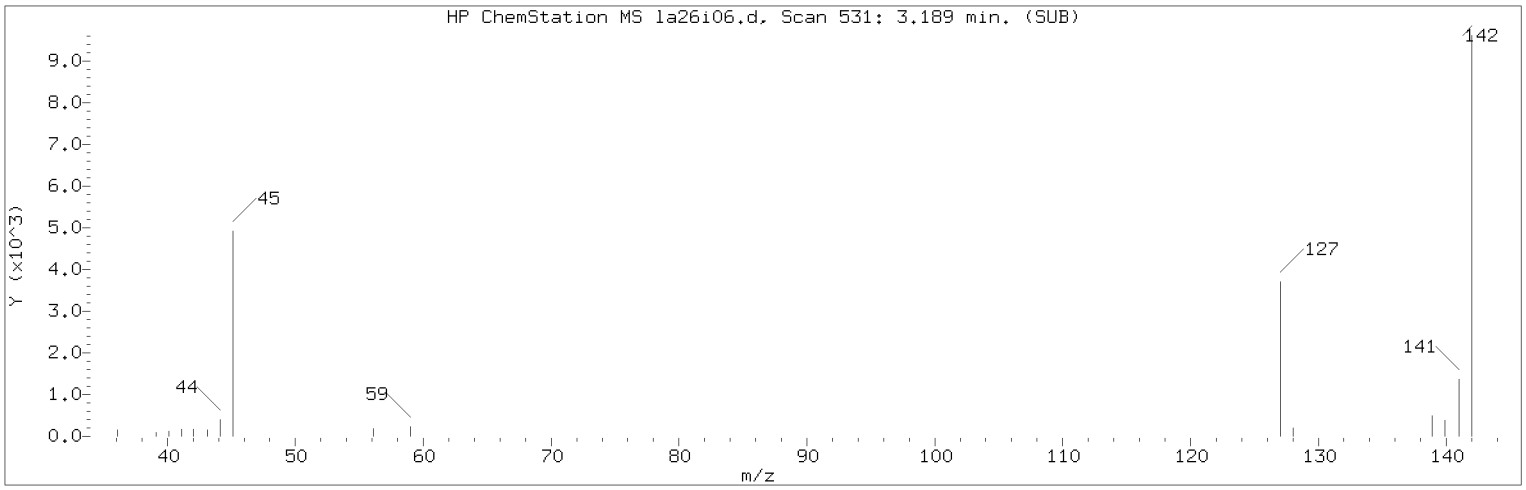
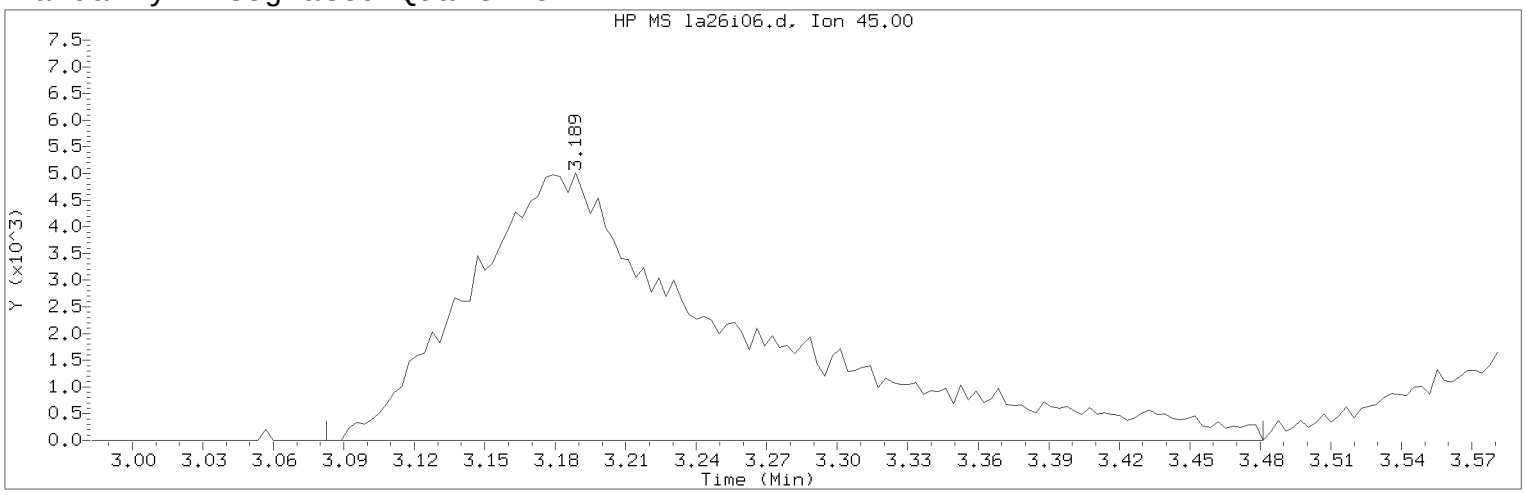
Target 3.5 esignature user KAS1 Page 2548 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

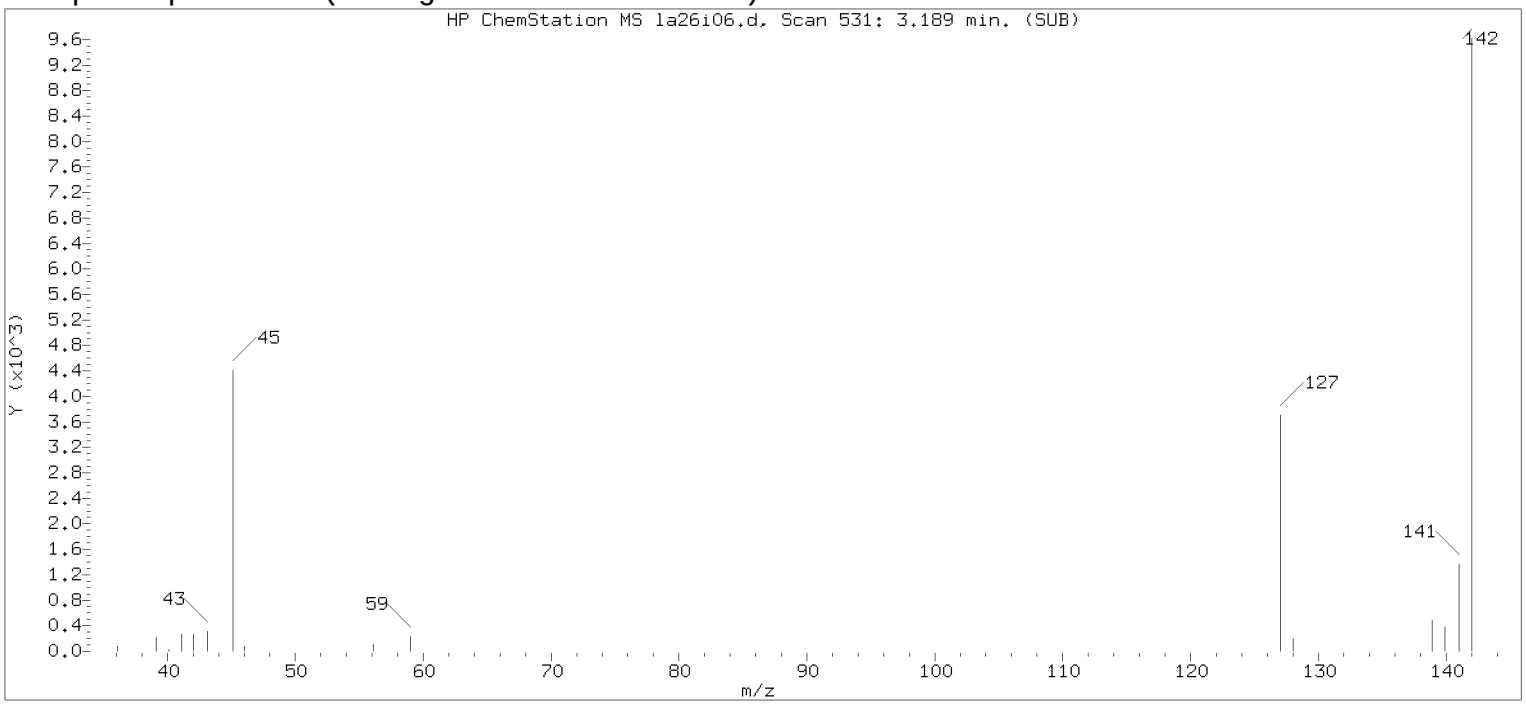
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area (flag) : 40137M
On-Column Amount (ng) : 83.0856
Integration start scan : 497 Integration stop scan: 621
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

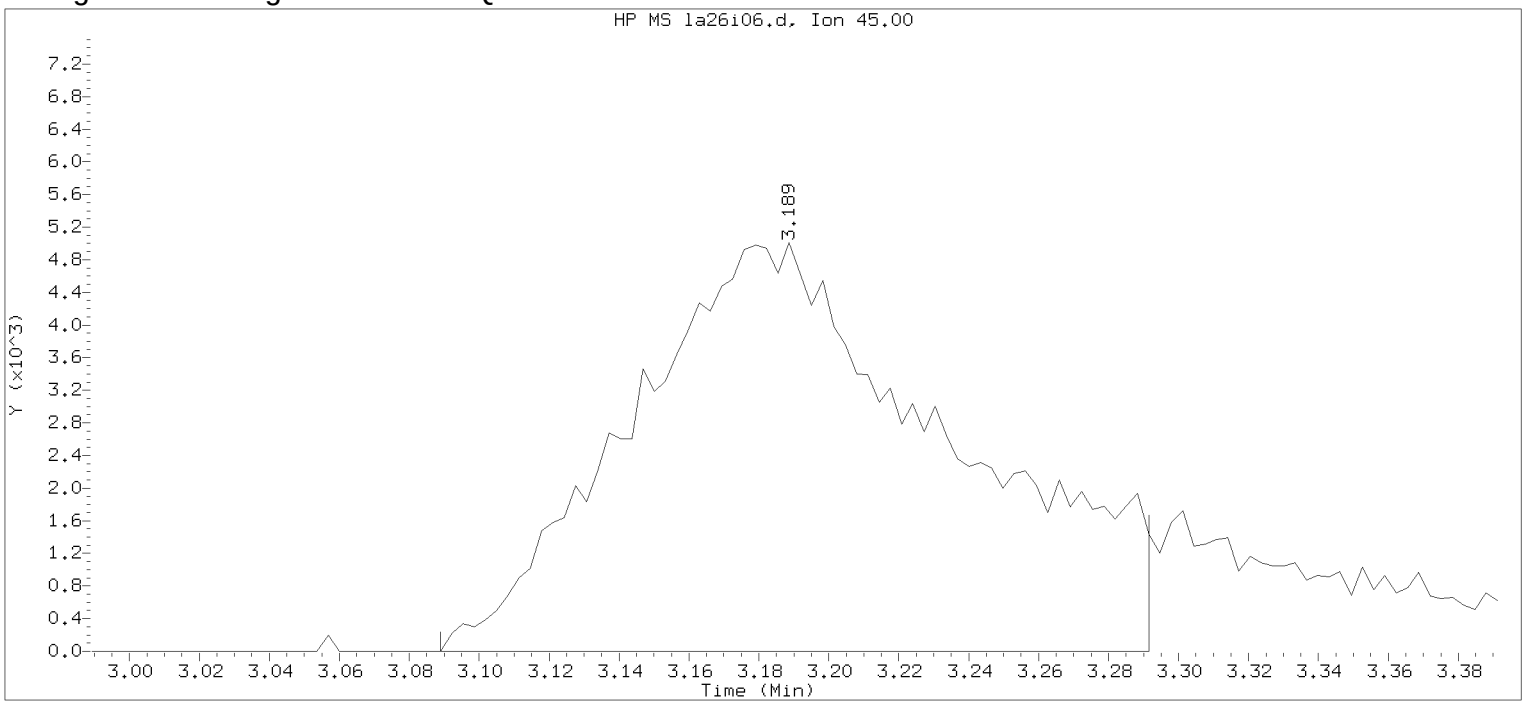
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area : 31951
On-column Amount (ng) : 64.3252
Integration start scan : 499 Integration stop scan: 562
Y at integration start : 0 Y at integration end: 0

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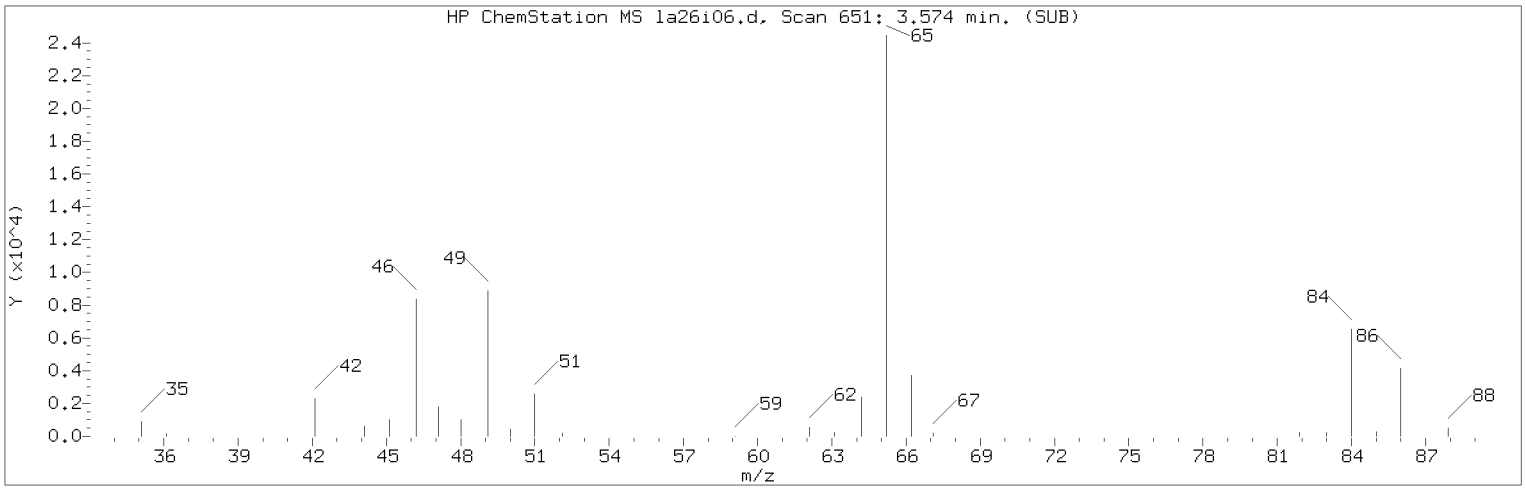
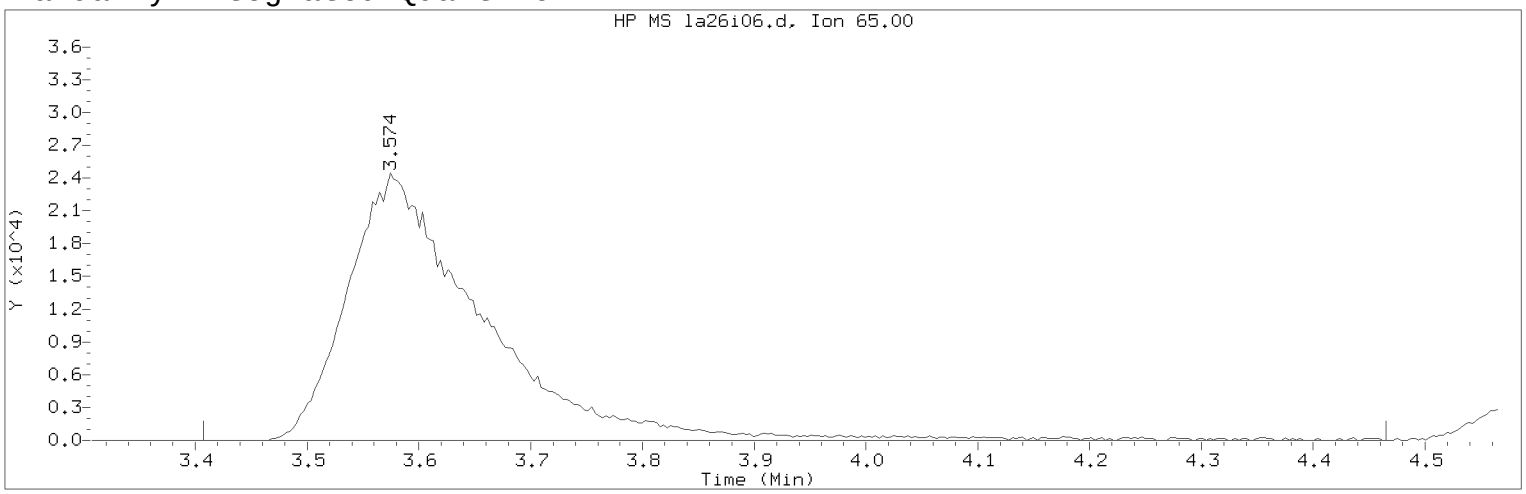
Target 3.5 esignature user KAS02648 Page 2643 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

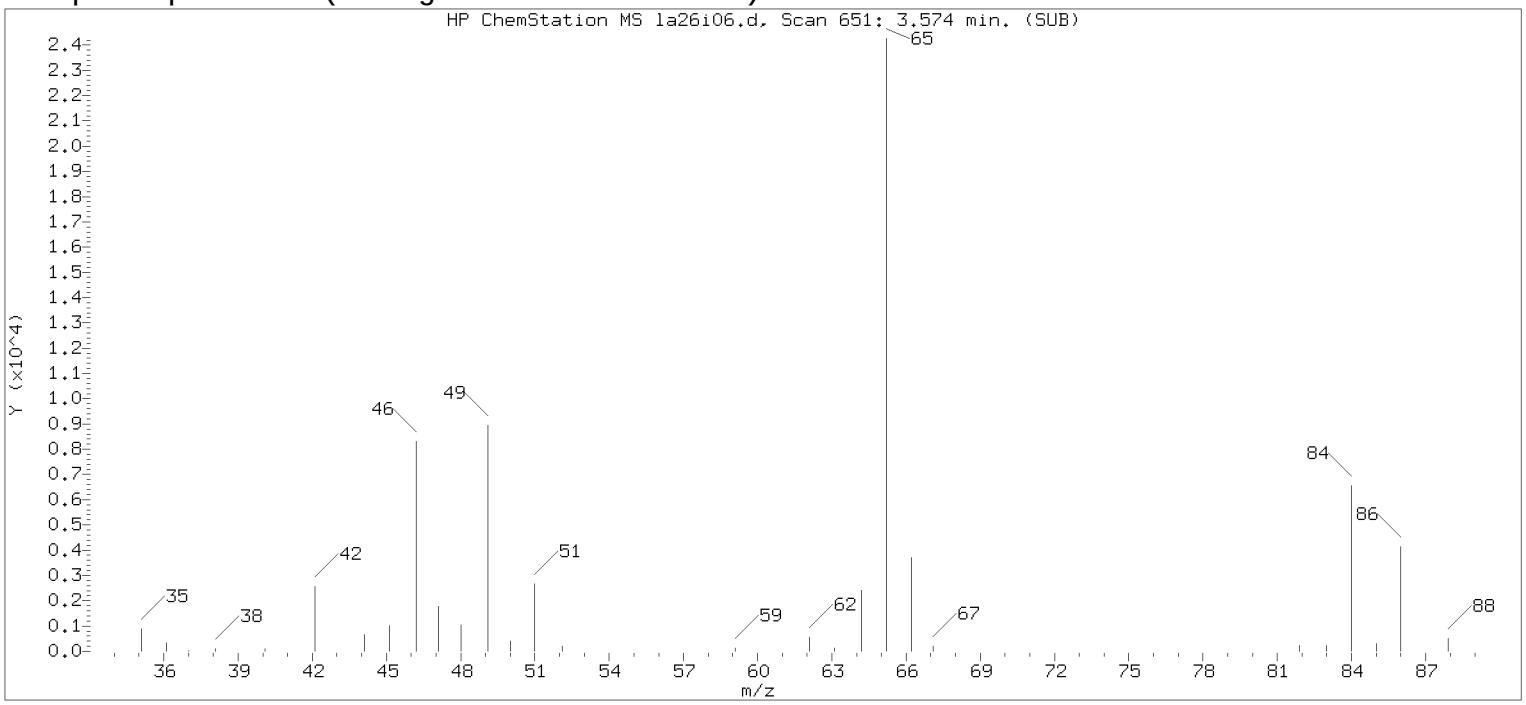
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 205105M
On-Column Amount (ng) : 250.0000
Integration start scan : 598 Integration stop scan: 927
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

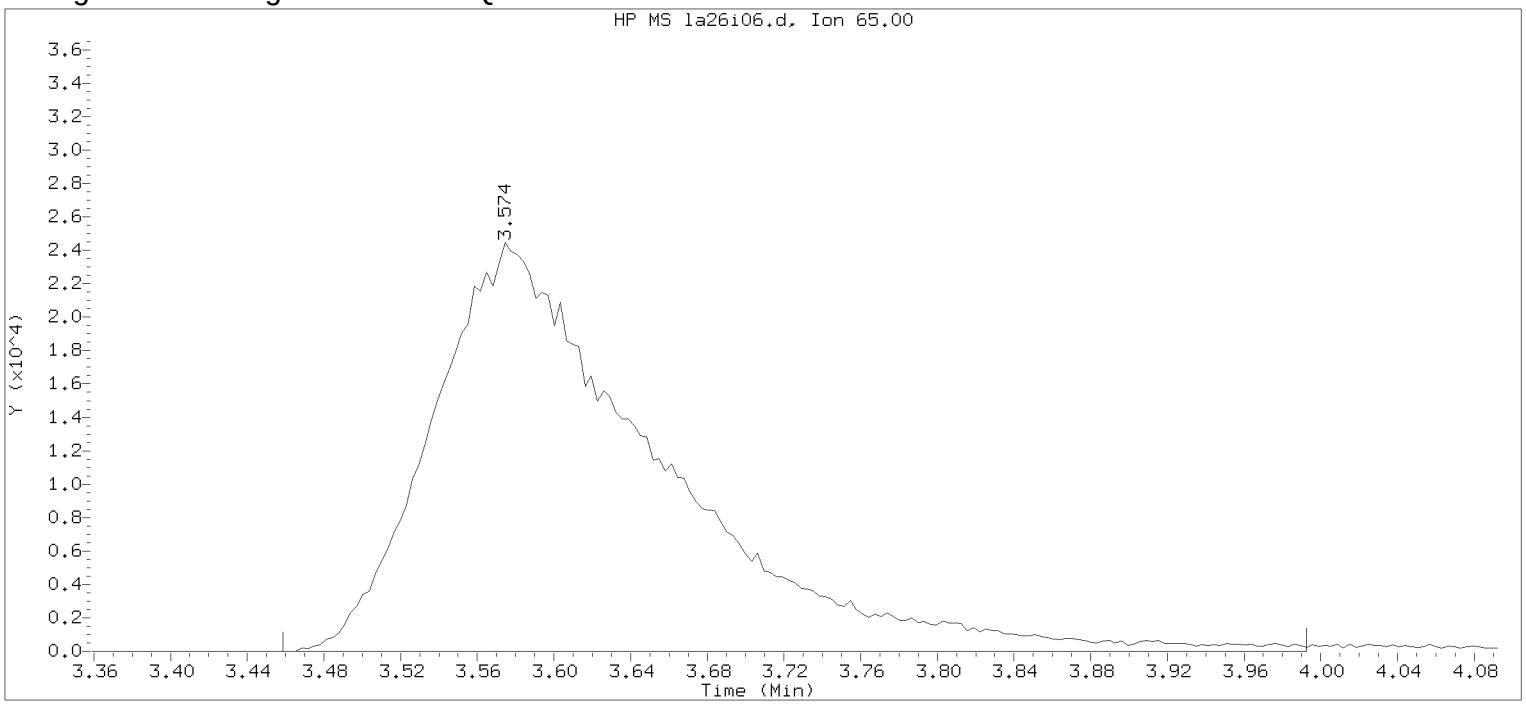
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

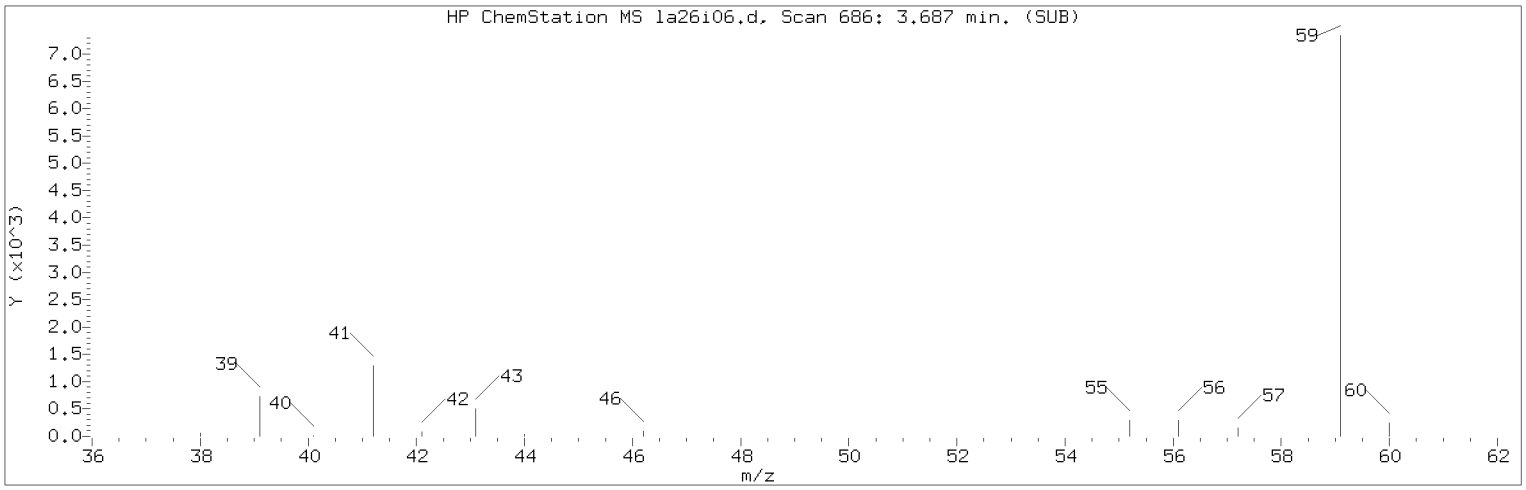
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

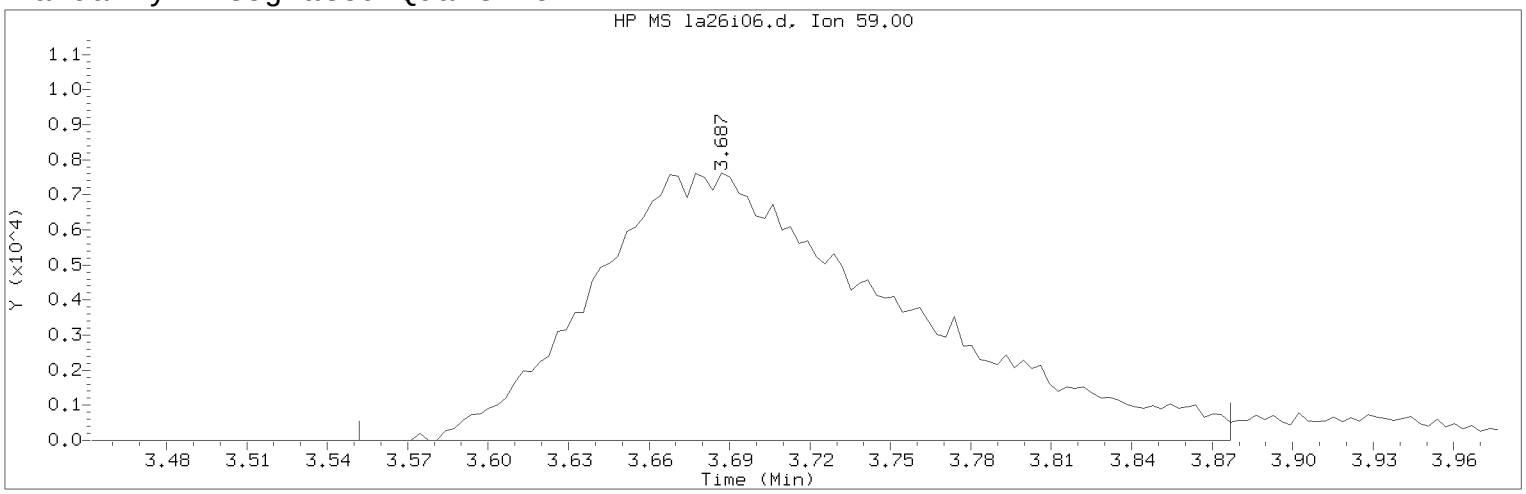
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area : 200349
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 780
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

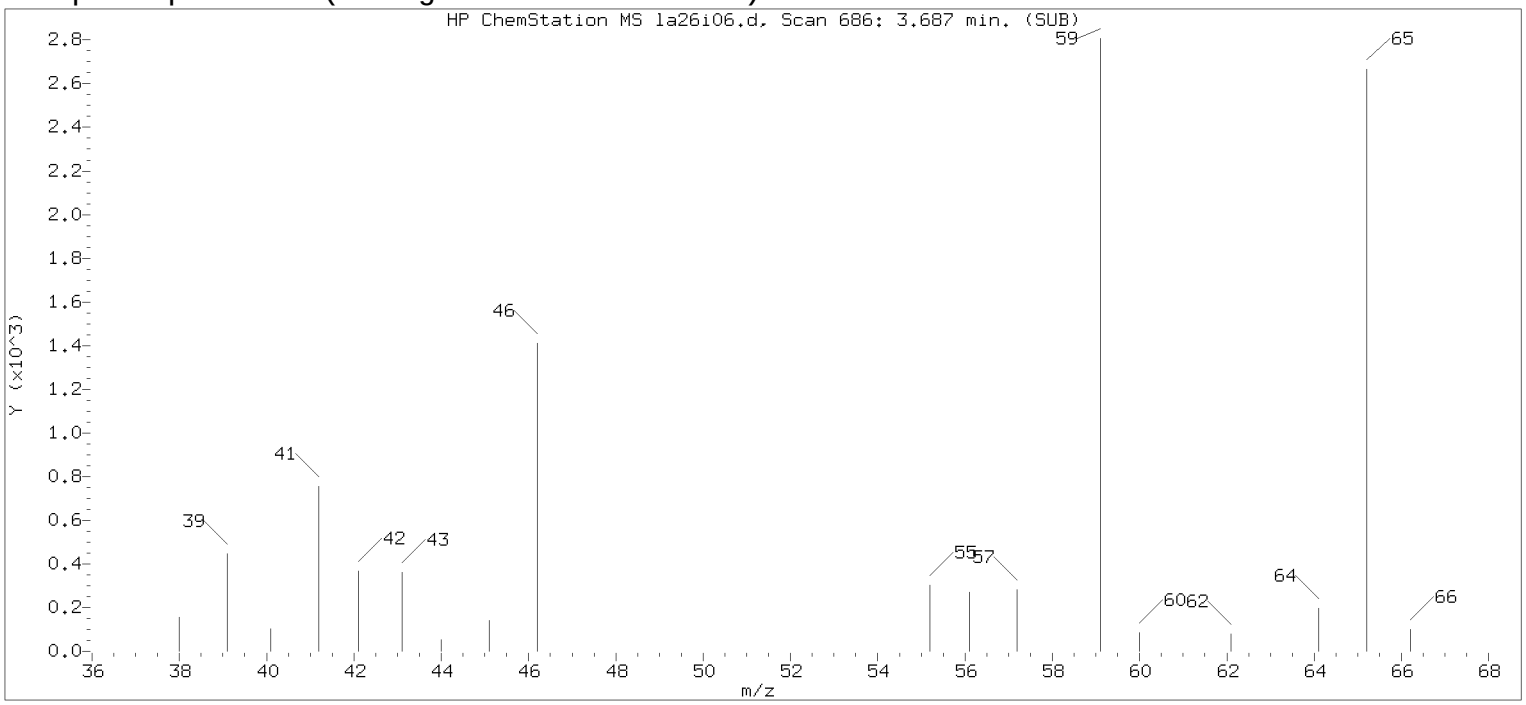
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area (flag) : 60772M
On-Column Amount (ng) : 76.5789
Integration start scan : 643 Integration stop scan: 744
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

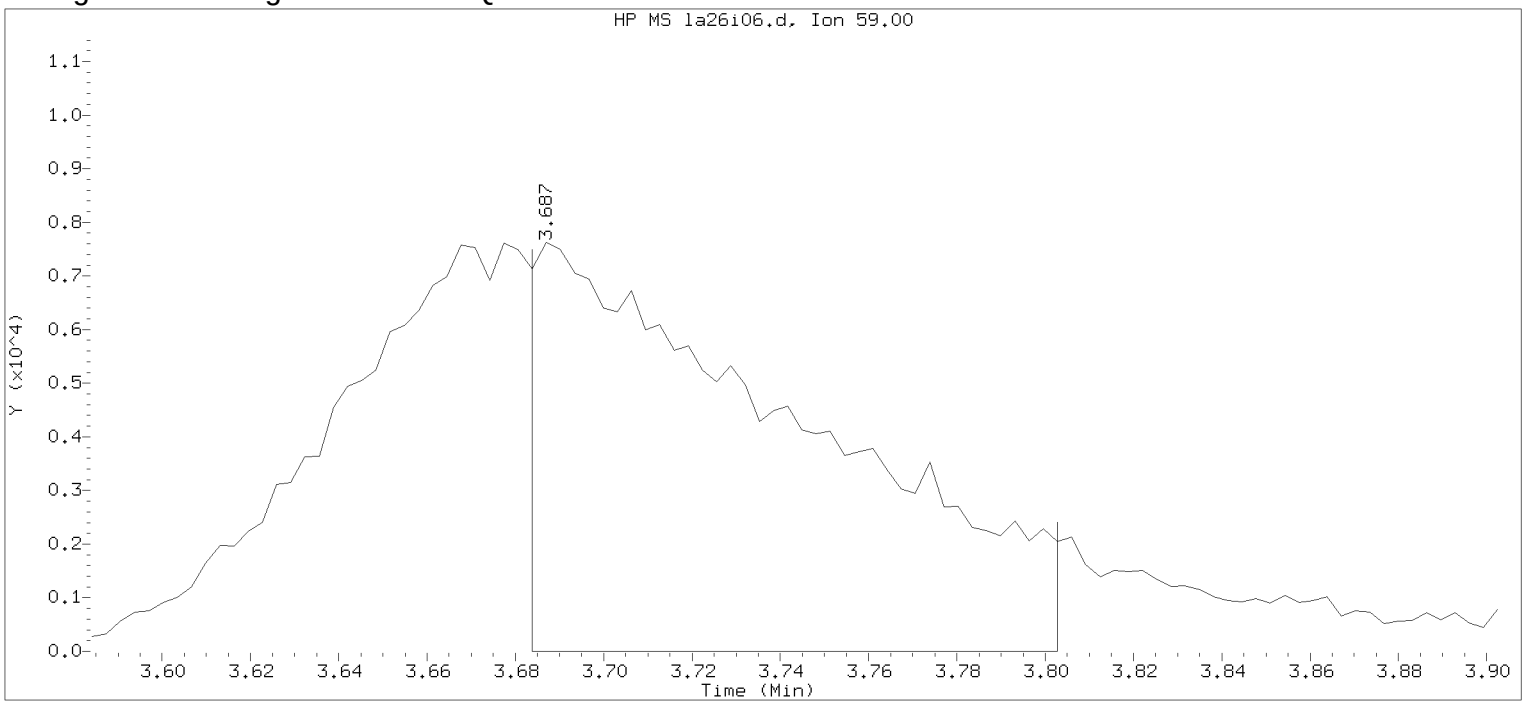
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

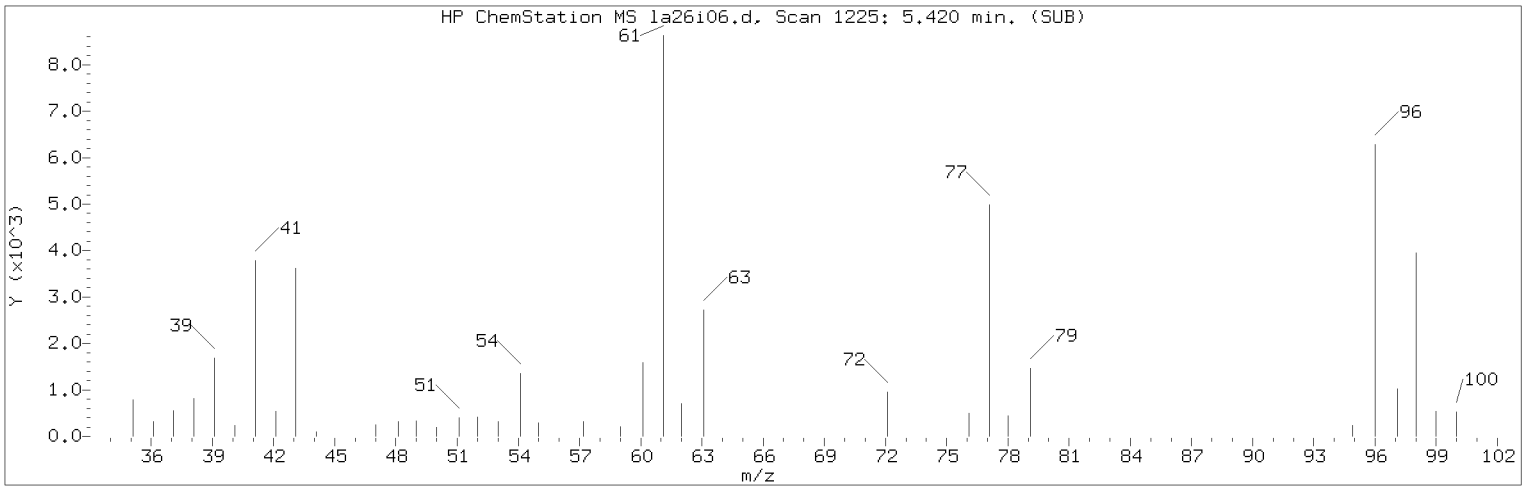
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

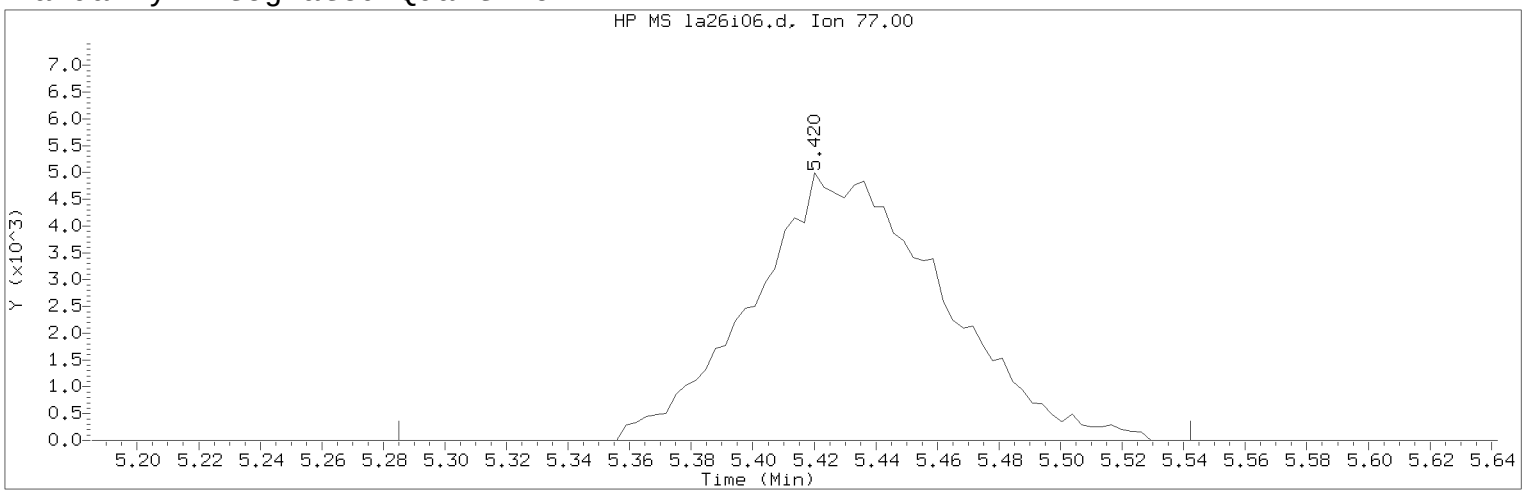
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area : 31960
On-column Amount (ng) : 48.0104
Integration start scan : 684 Integration stop scan: 721
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 key 2648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

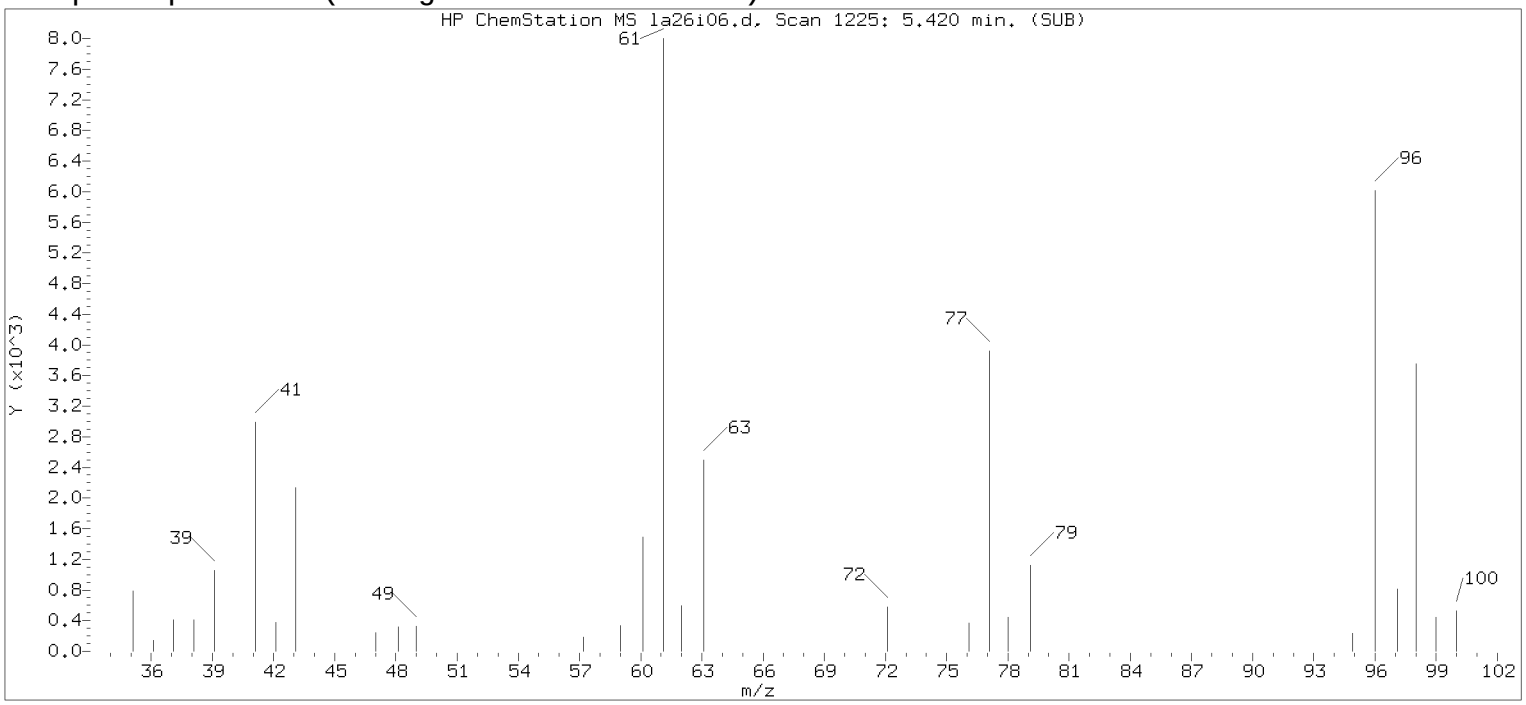
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1225
Retention Time (minutes): 5.420
Quant Ion : 77.00
Area (flag) : 21315M
On-Column Amount (ng) : 3.8194
Integration start scan : 1182 Integration stop scan: 1262
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

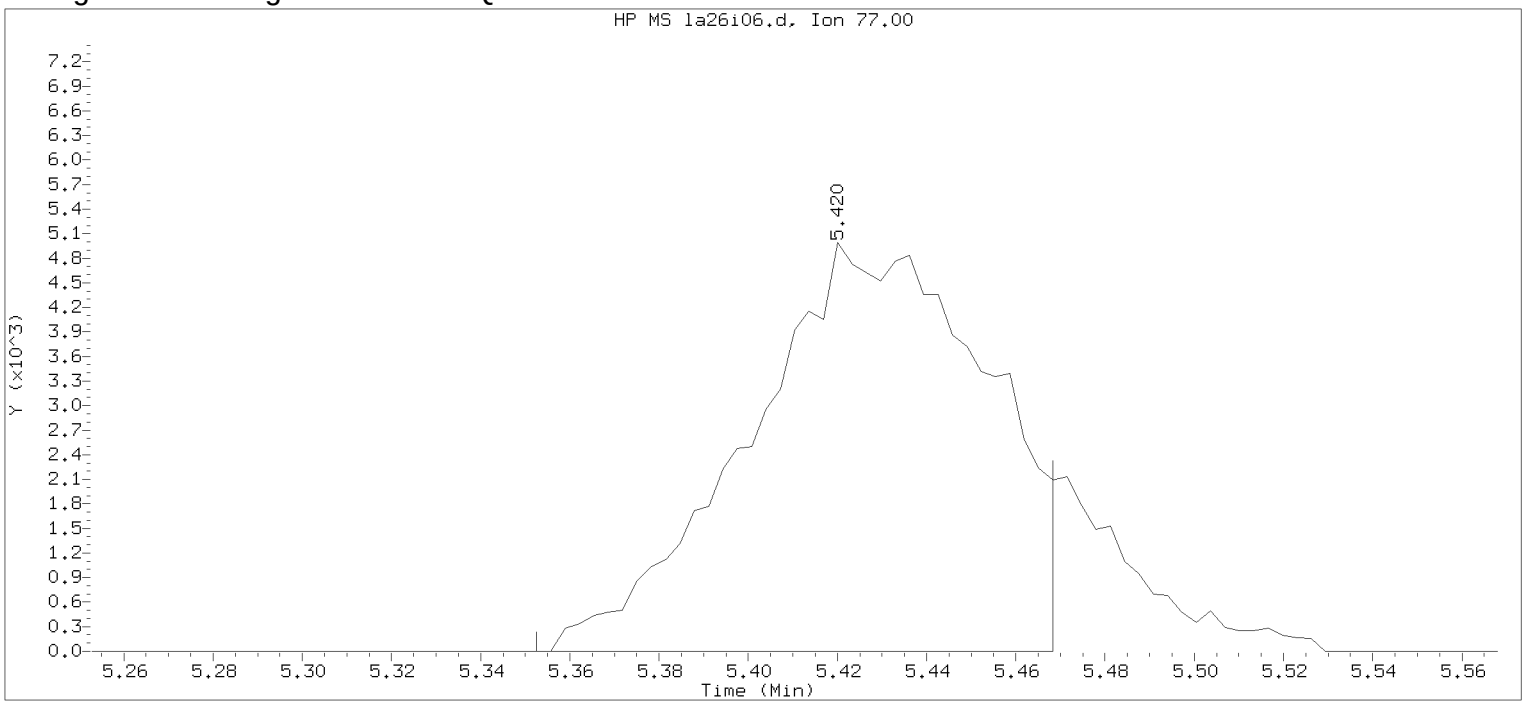
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

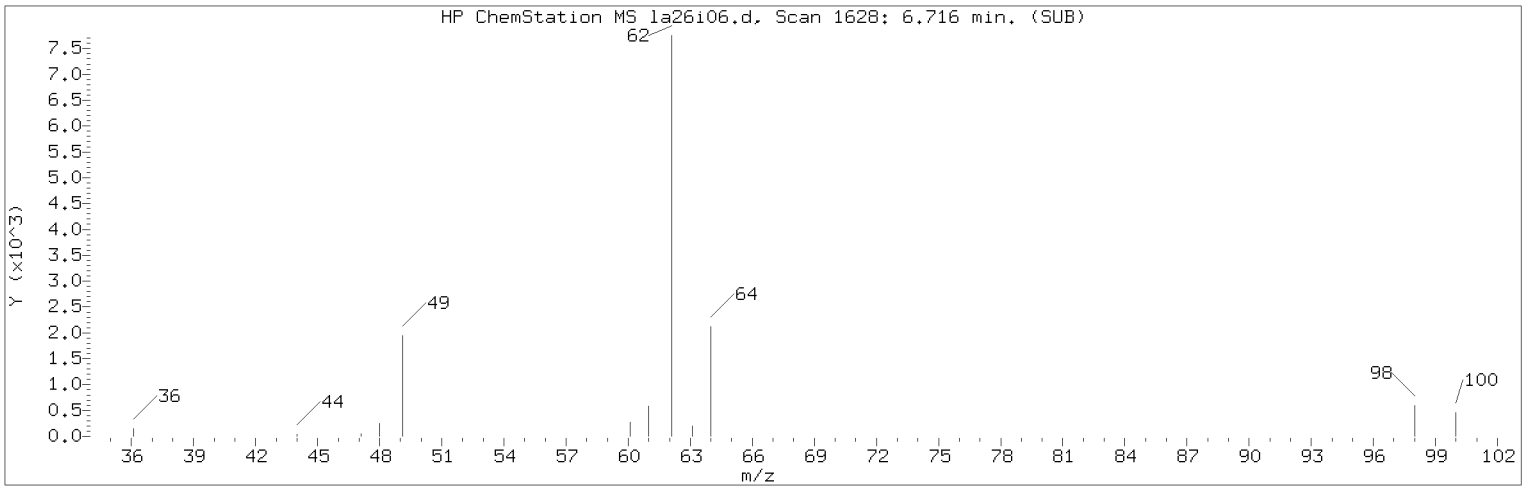
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

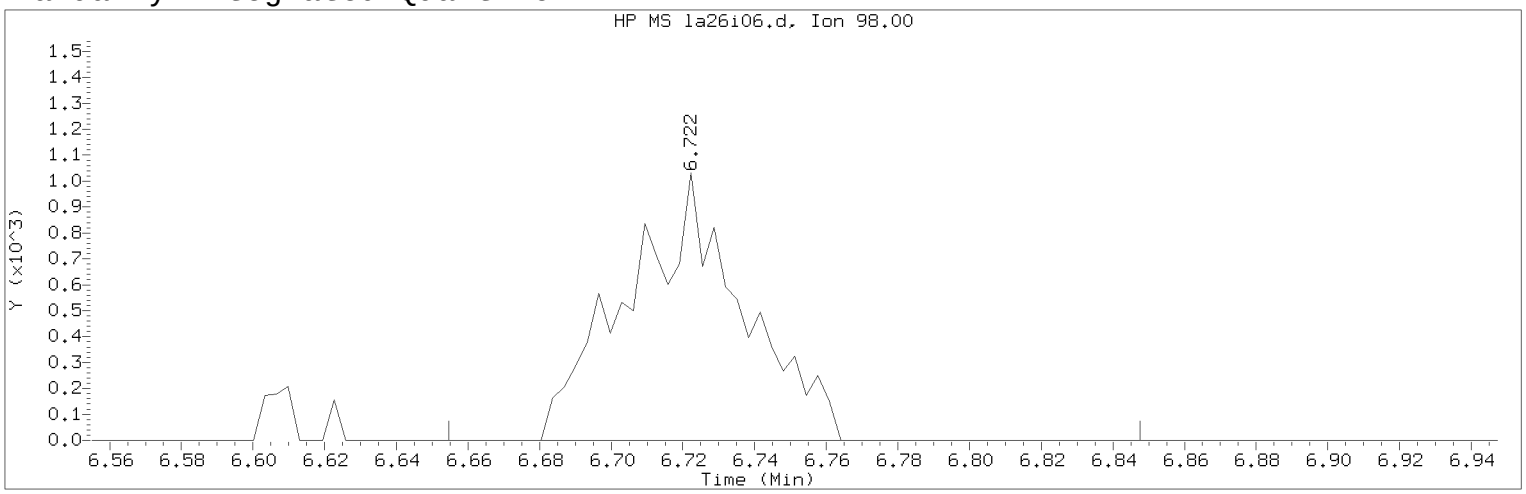
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1225
Retention Time (minutes): 5.420
Quant Ion : 77.00
Area : 18551
On-column Amount (ng) : 3.2757
Integration start scan : 1203 Integration stop scan: 1239
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648 Page 268 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

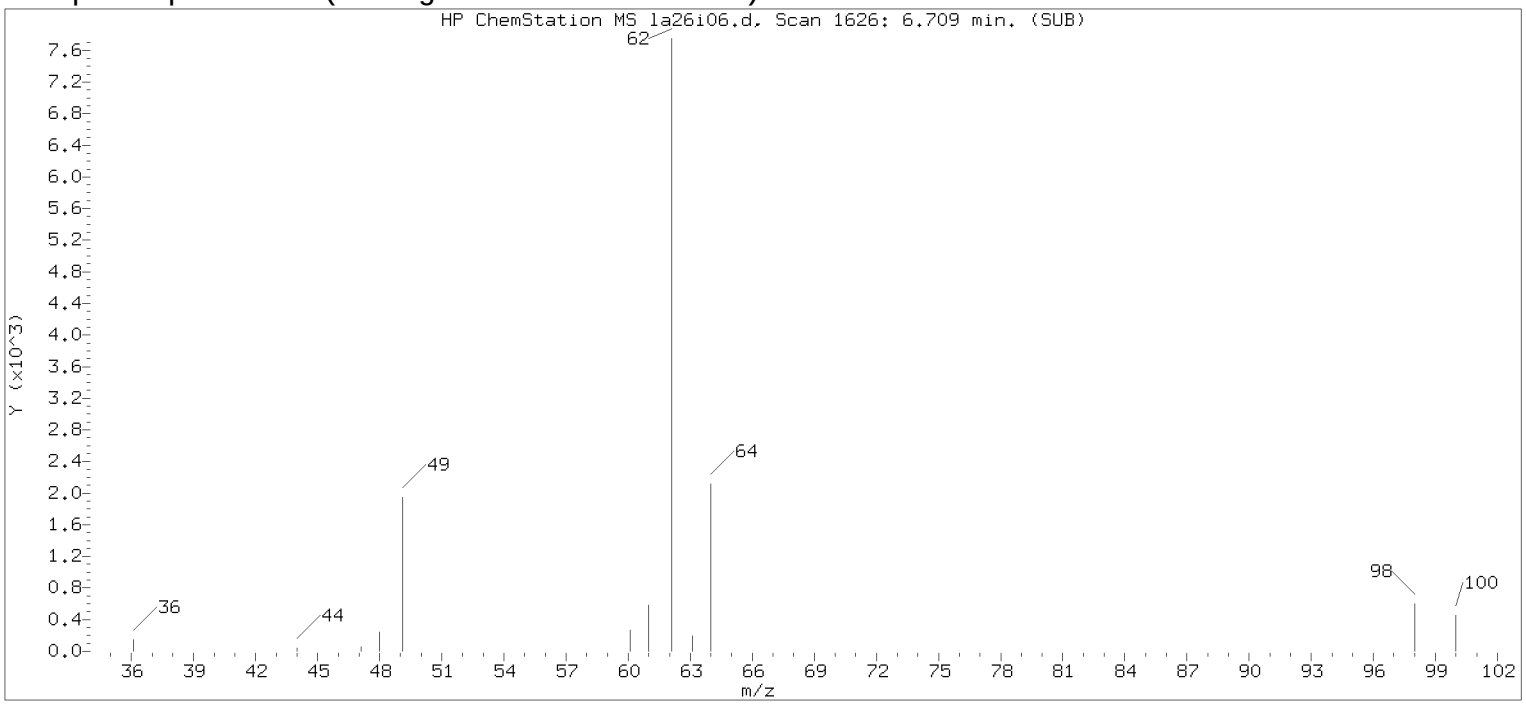
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1630
Retention Time (minutes): 6.722
Quant Ion : 98.00
Area (flag) : 2305M
On-Column Amount (ng) : 4.0222
Integration start scan : 1608 Integration stop scan: 1668
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

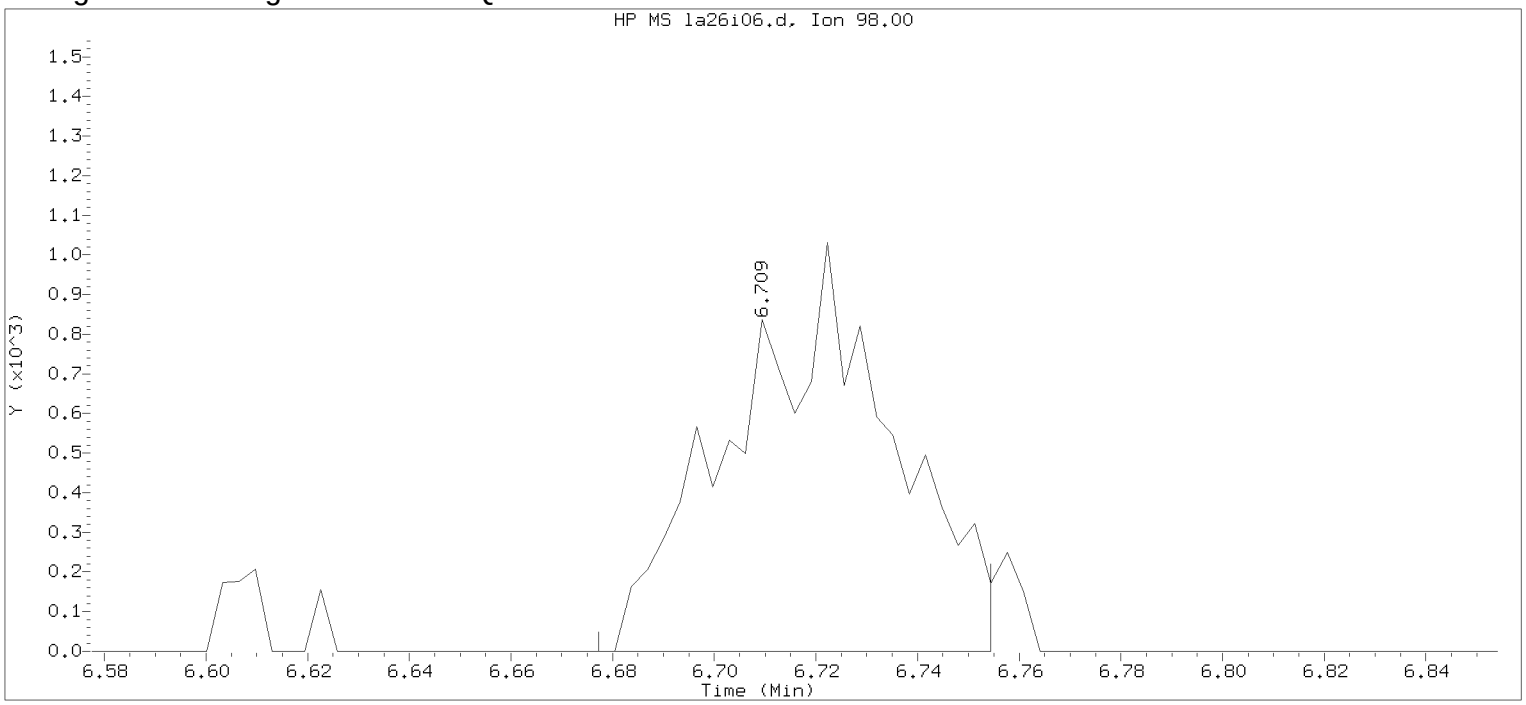
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

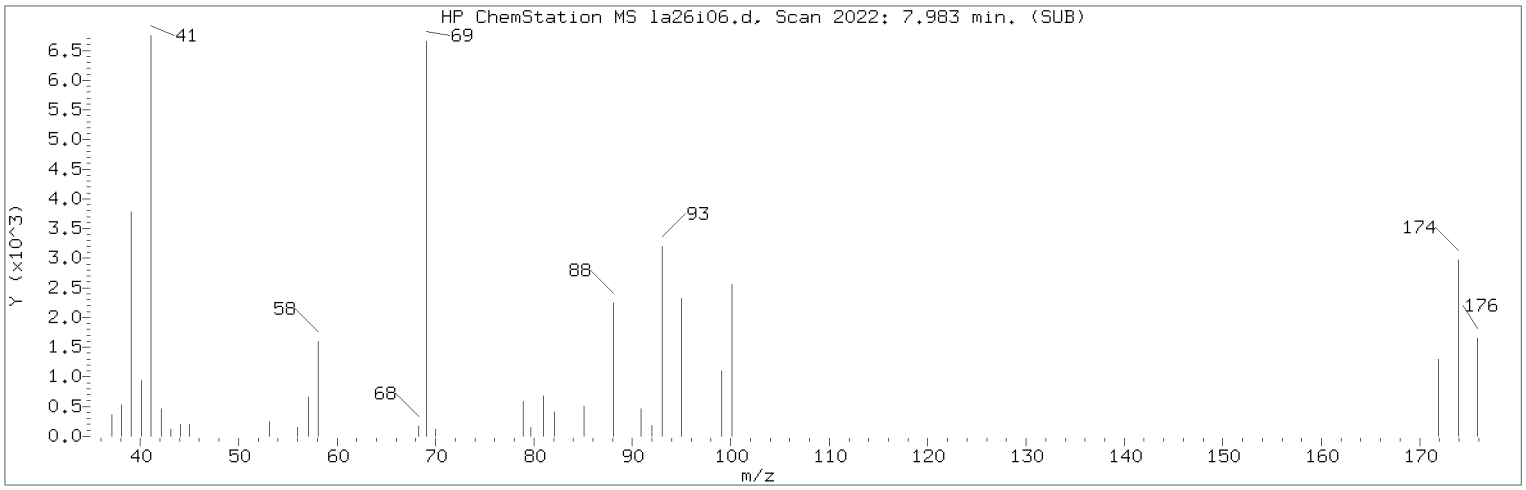
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

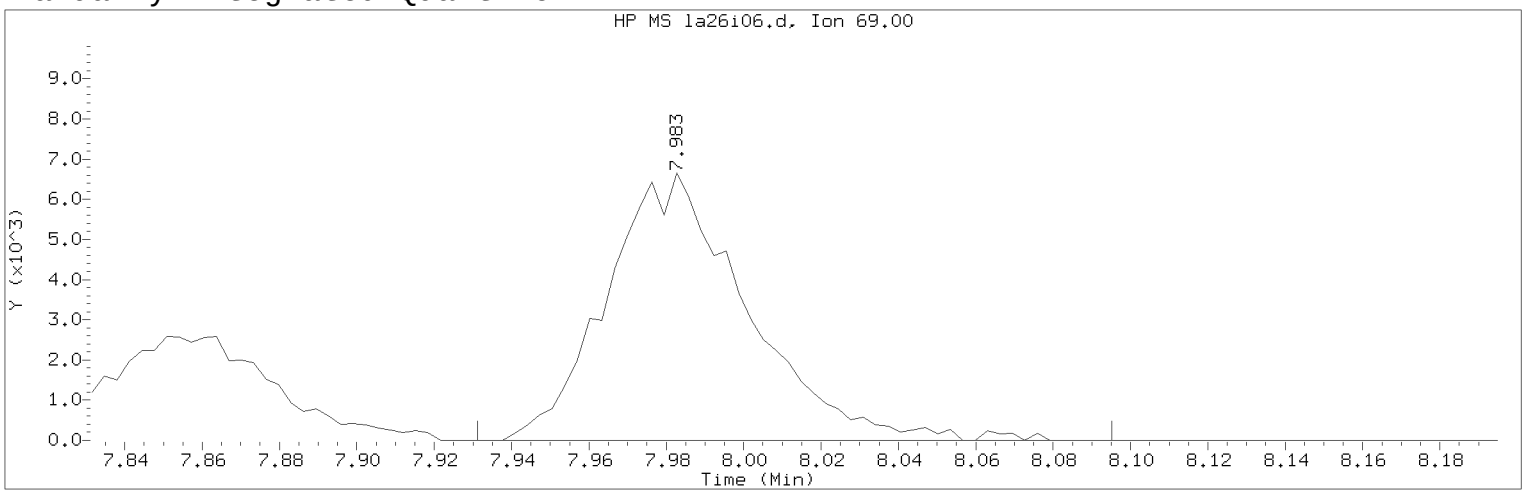
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1626
Retention Time (minutes): 6.709
Quant Ion : 98.00
Area : 2211
On-column Amount (ng) : 3.5785
Integration start scan : 1615 Integration stop scan: 1639
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 Page 268 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

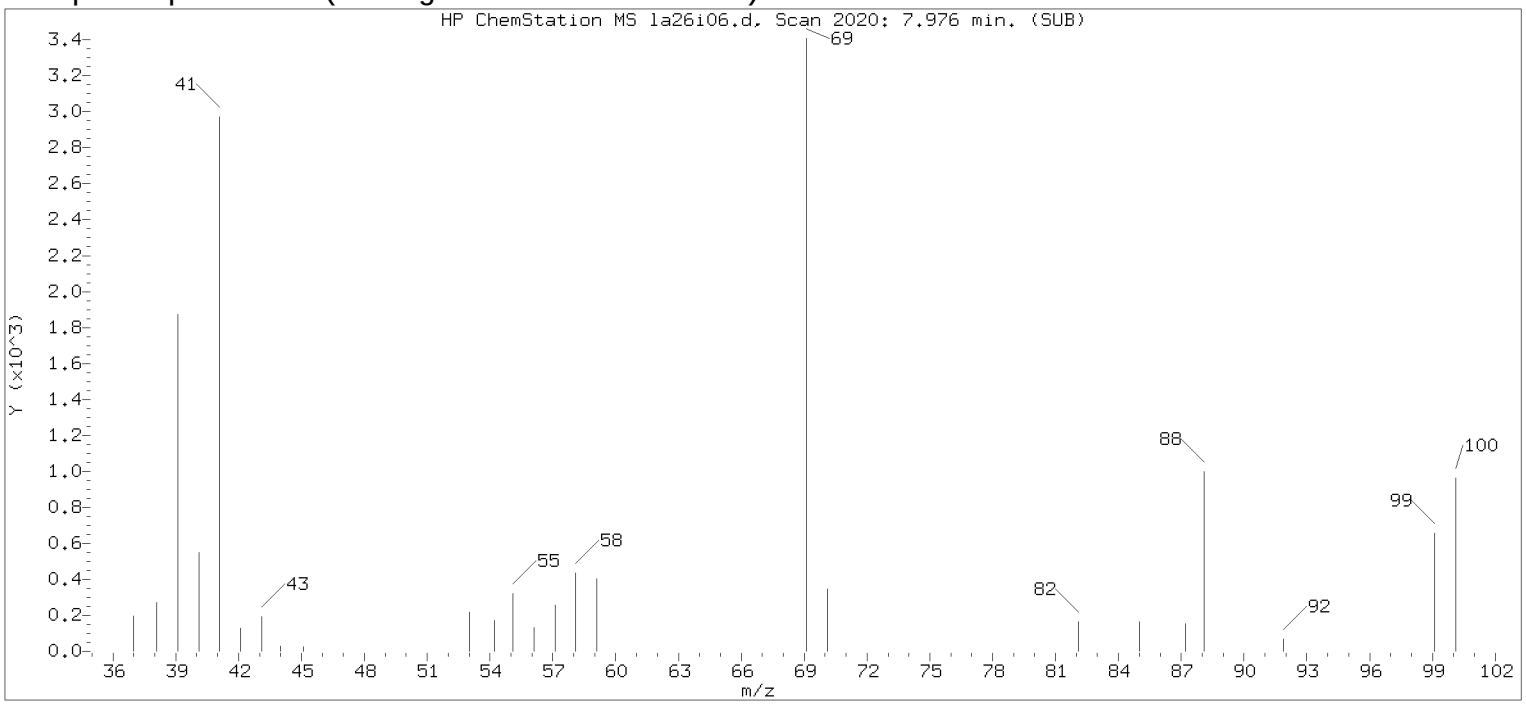
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 16816M
On-Column Amount (ng) : 3.7569
Integration start scan : 2005 Integration stop scan: 2056
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

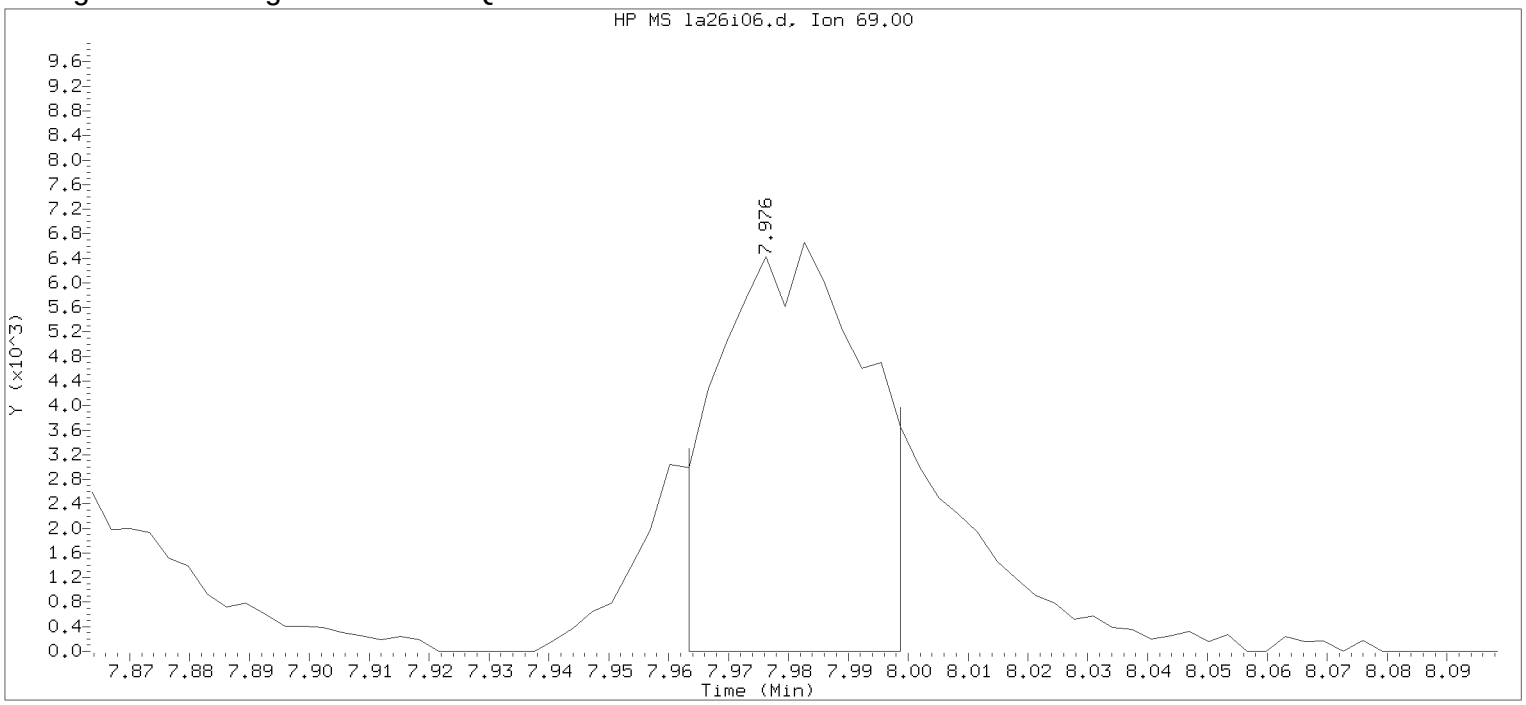
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

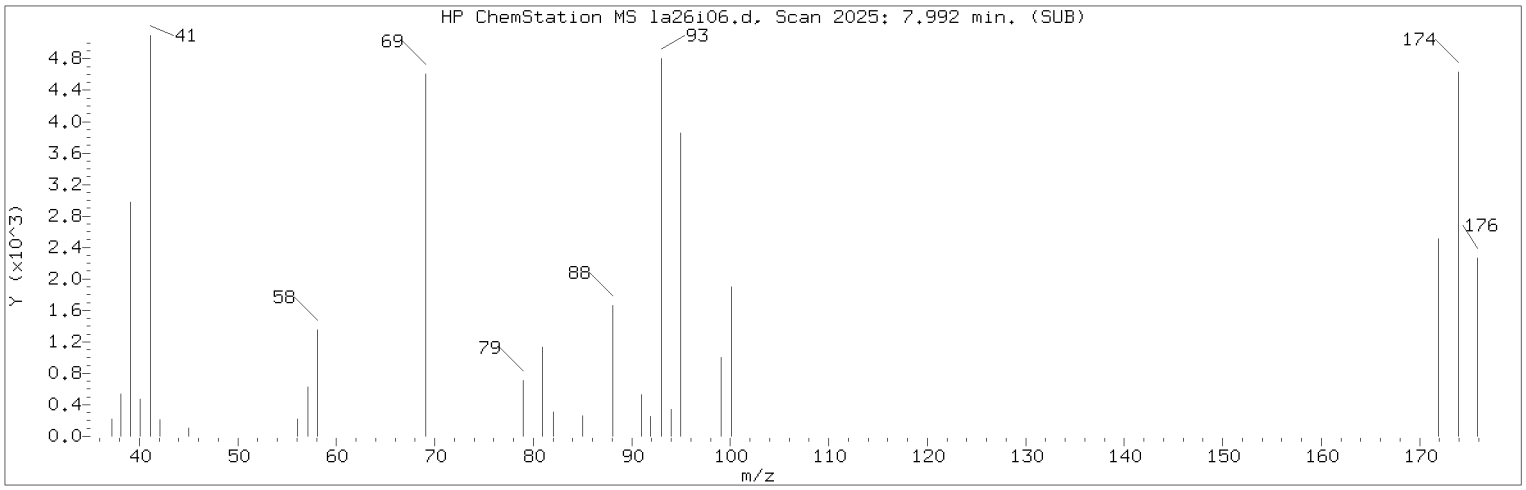
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

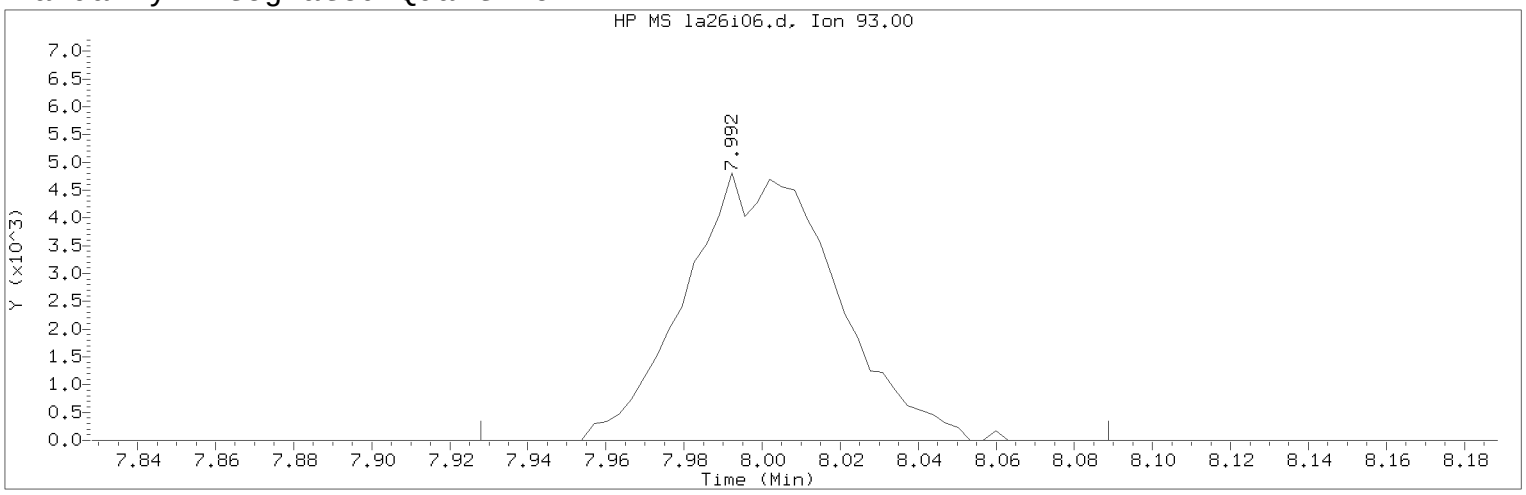
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 69.00
Area : 11128
On-column Amount (ng) : 2.7989
Integration start scan : 2015 Integration stop scan: 2026
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 key 2643

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

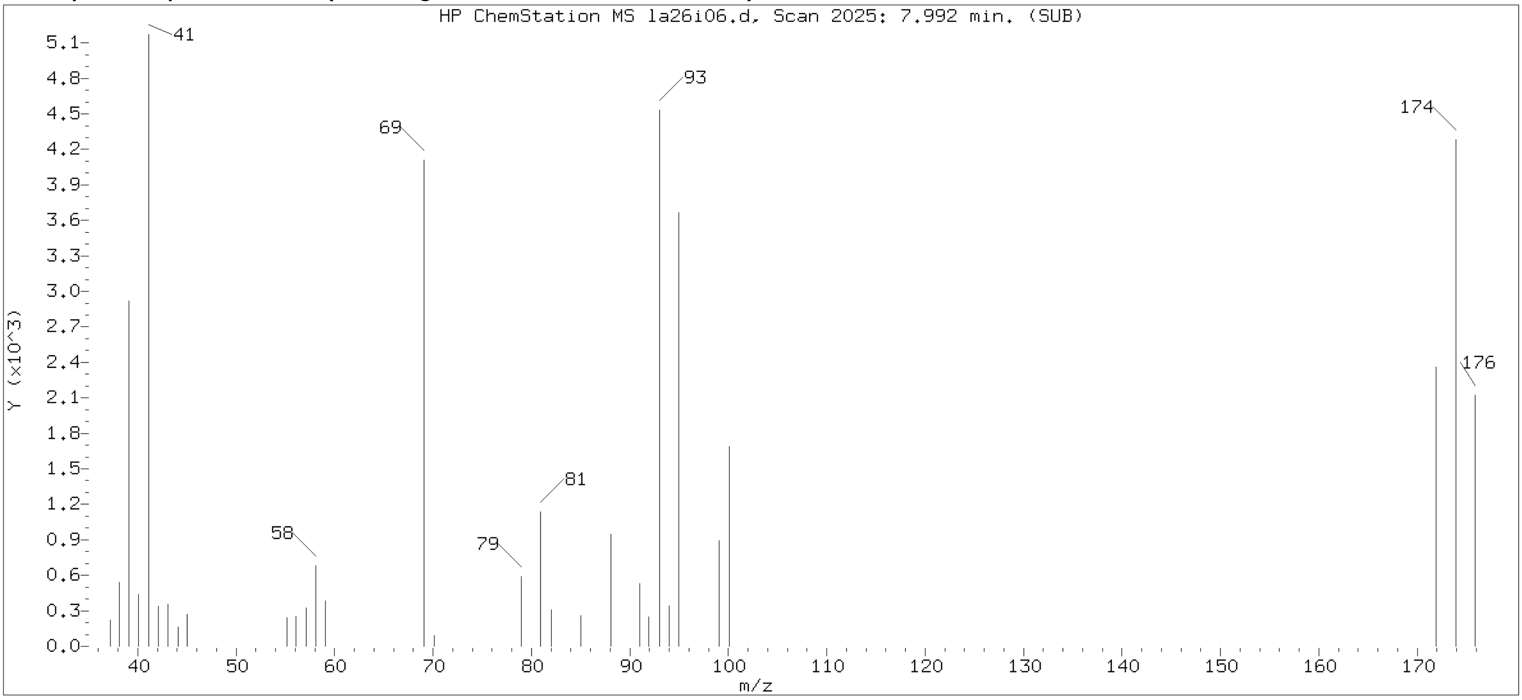
Compound Number : 74
Compound Name : Dibromomethane
Scan Number : 2025
Retention Time (minutes): 7.992
Quant Ion : 93.00
Area (flag) : 12893M
On-Column Amount (ng) : 3.9207
Integration start scan : 2004 Integration stop scan: 2054
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

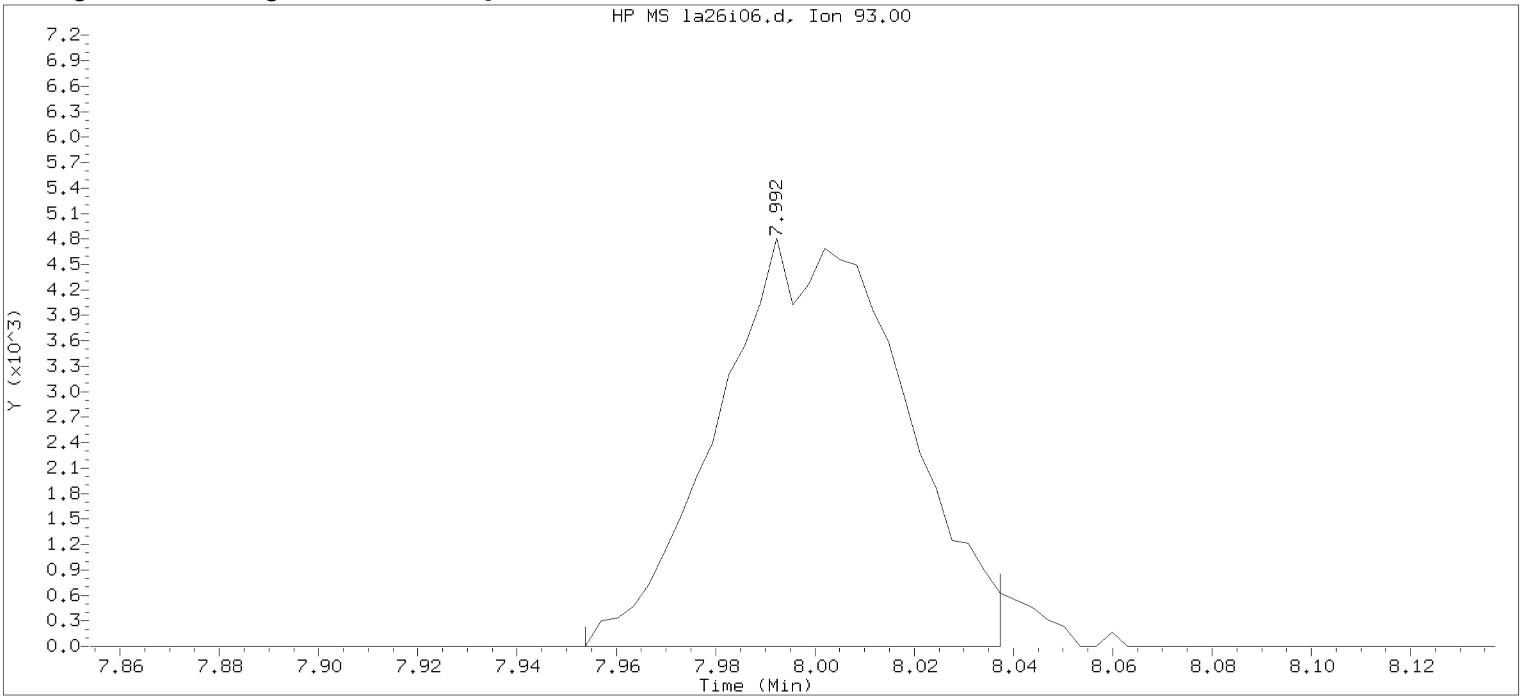
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 74
Compound Name : Dibromomethane
Scan Number : 2025
Retention Time (minutes): 7.992
Quant Ion : 93.00
Area : 12501
On-column Amount (ng) : 3.7797
Integration start scan : 2012 Integration stop scan: 2038
Y at integration start : 0 Y at integration end: 0

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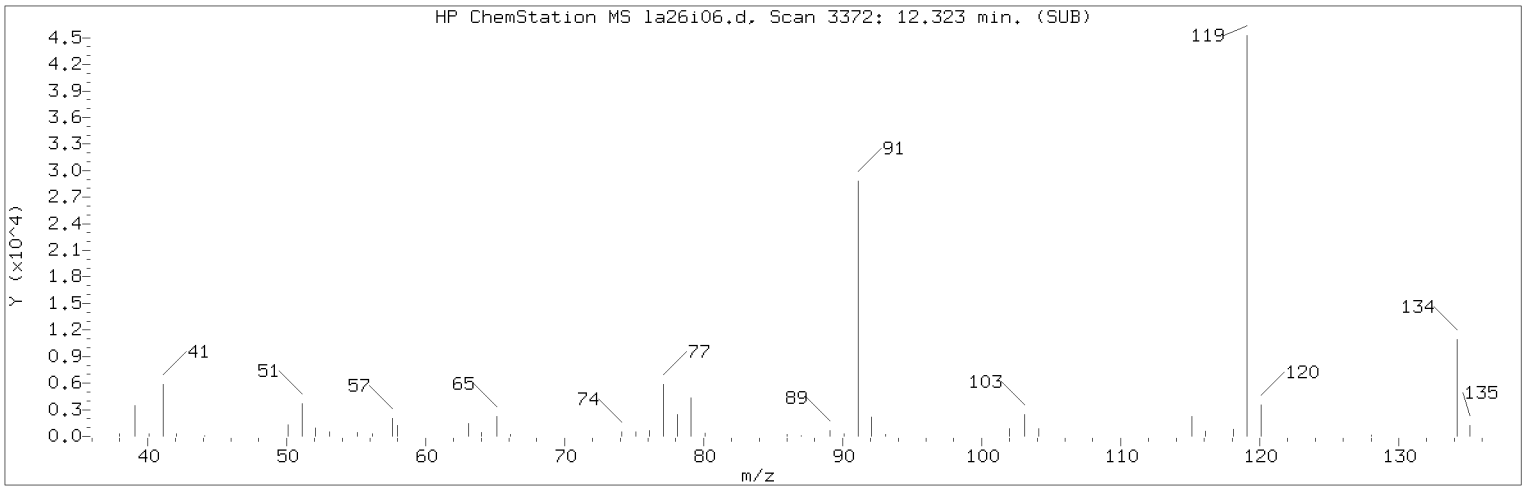
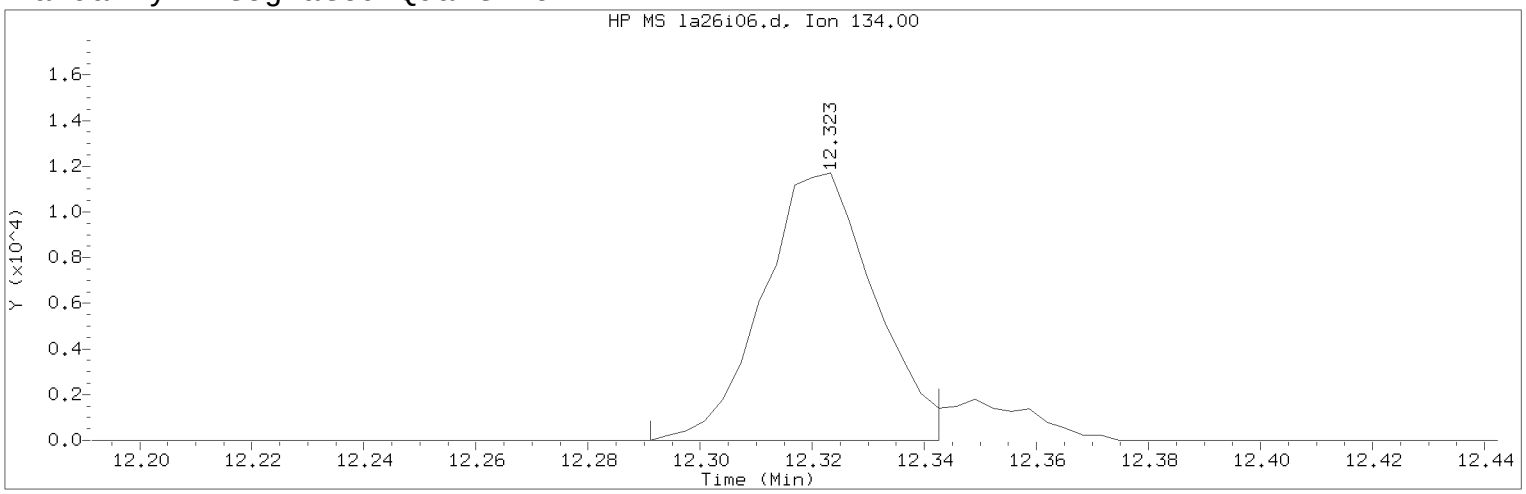
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:01 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

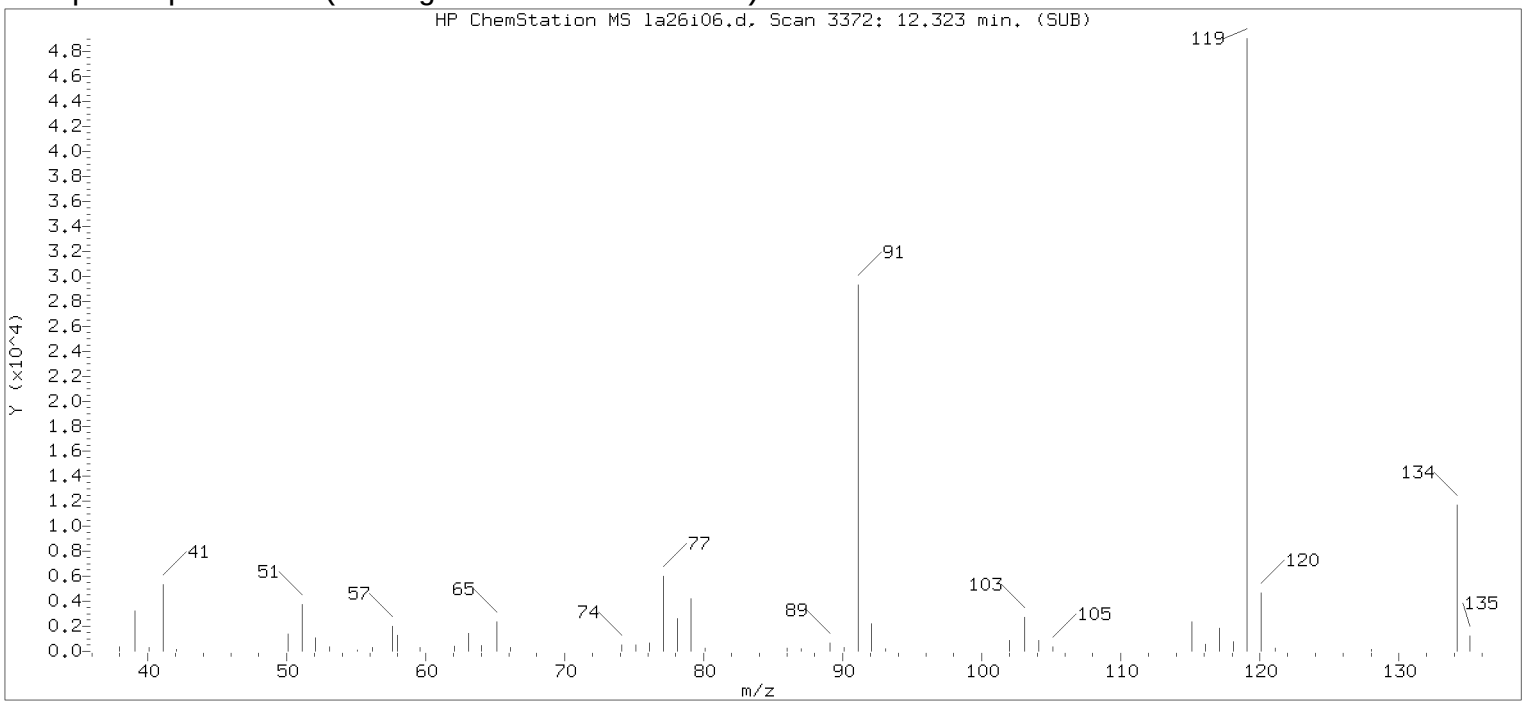
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area (flag) : 16177M
On-Column Amount (ng) : 3.8306
Integration start scan : 3361 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

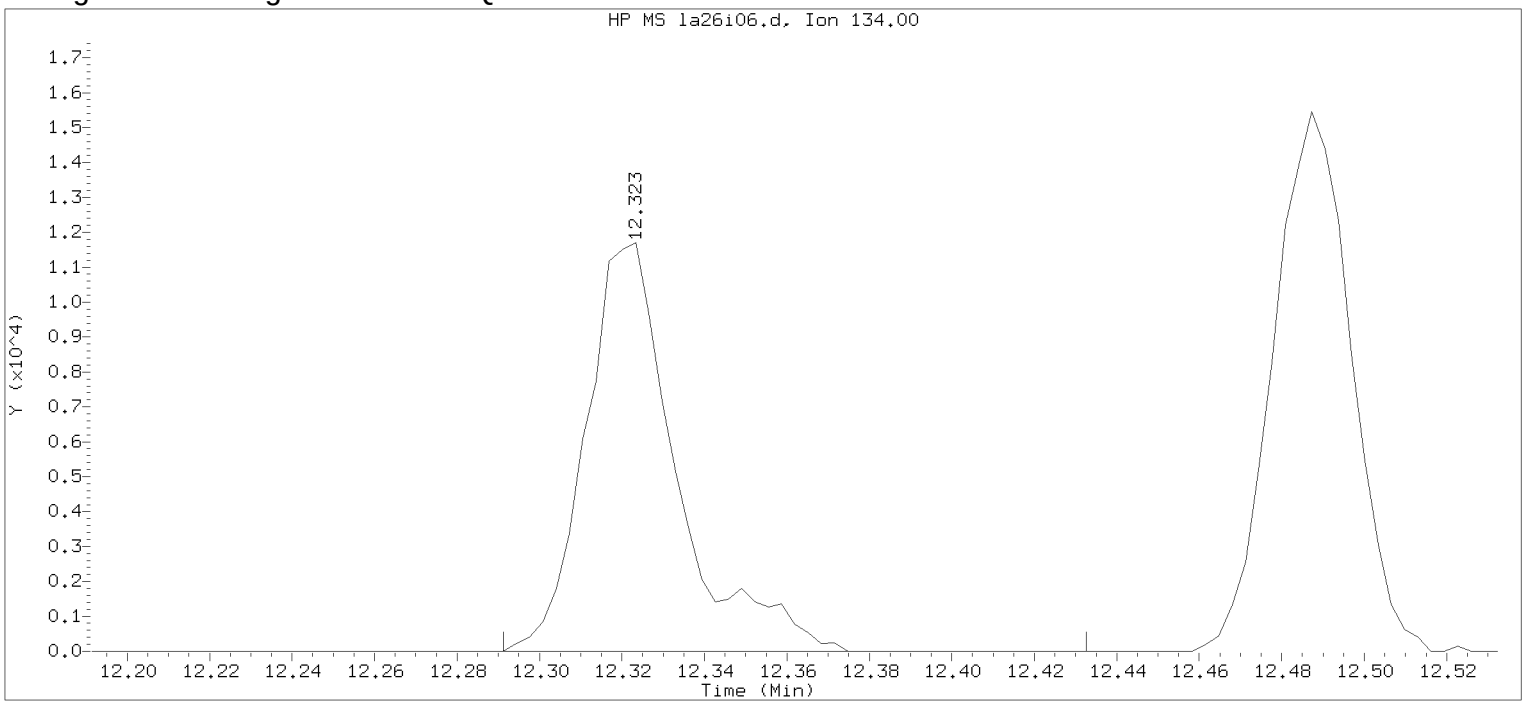
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



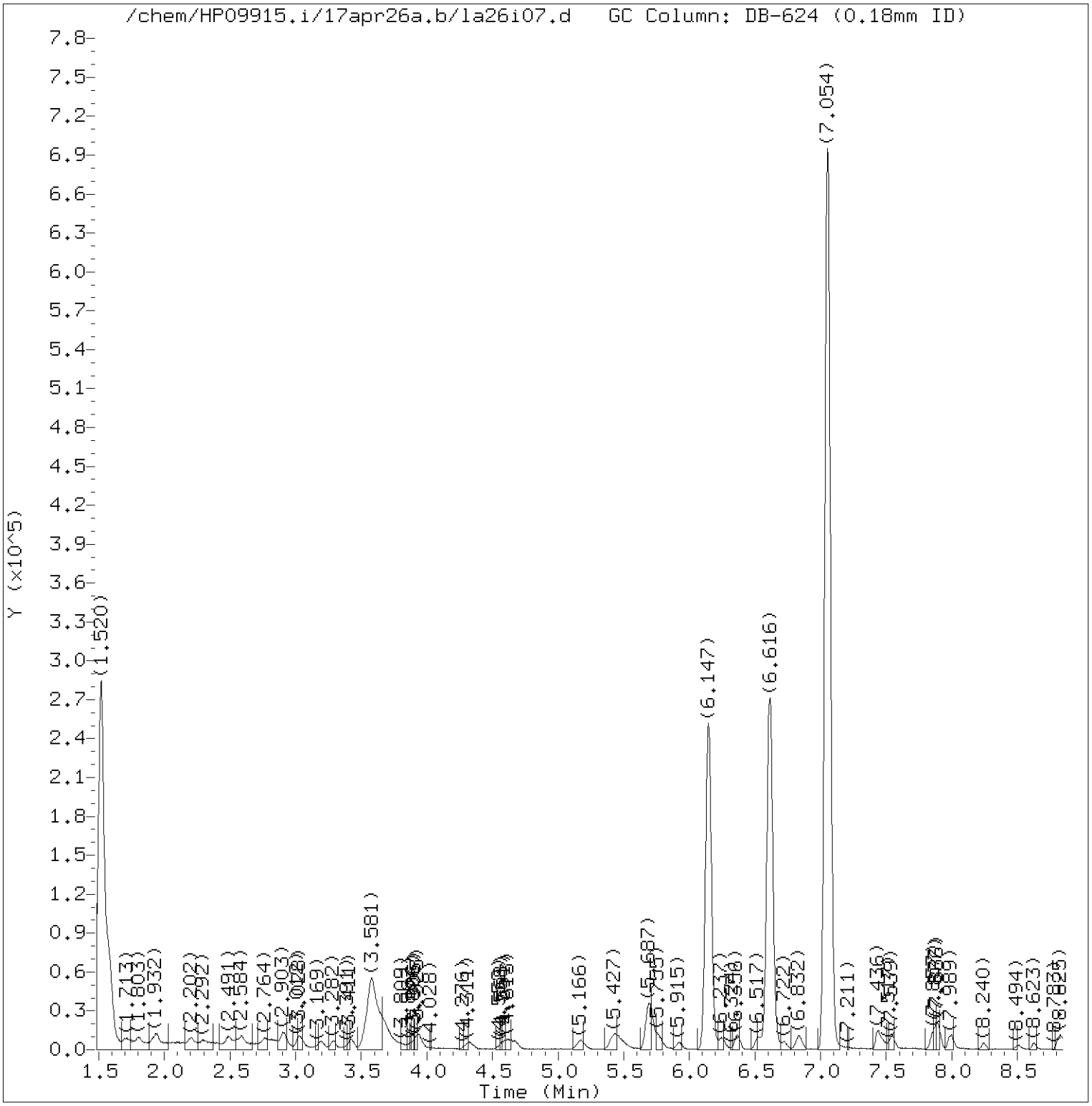

Data File: /chem/HP09915.i/17apr26a.b/la26i06.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:10 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:28
Date, time and analyst ID of latest file update: 26-Apr-2017 15:28 Automation

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3372
Retention Time (minutes): 12.323
Quant Ion : 134.00
Area : 17933
On-column Amount (ng) : 4.0372
Integration start scan : 3361 Integration stop scan: 3405
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 key 2648




Total Ion Chromatogram (TIC)

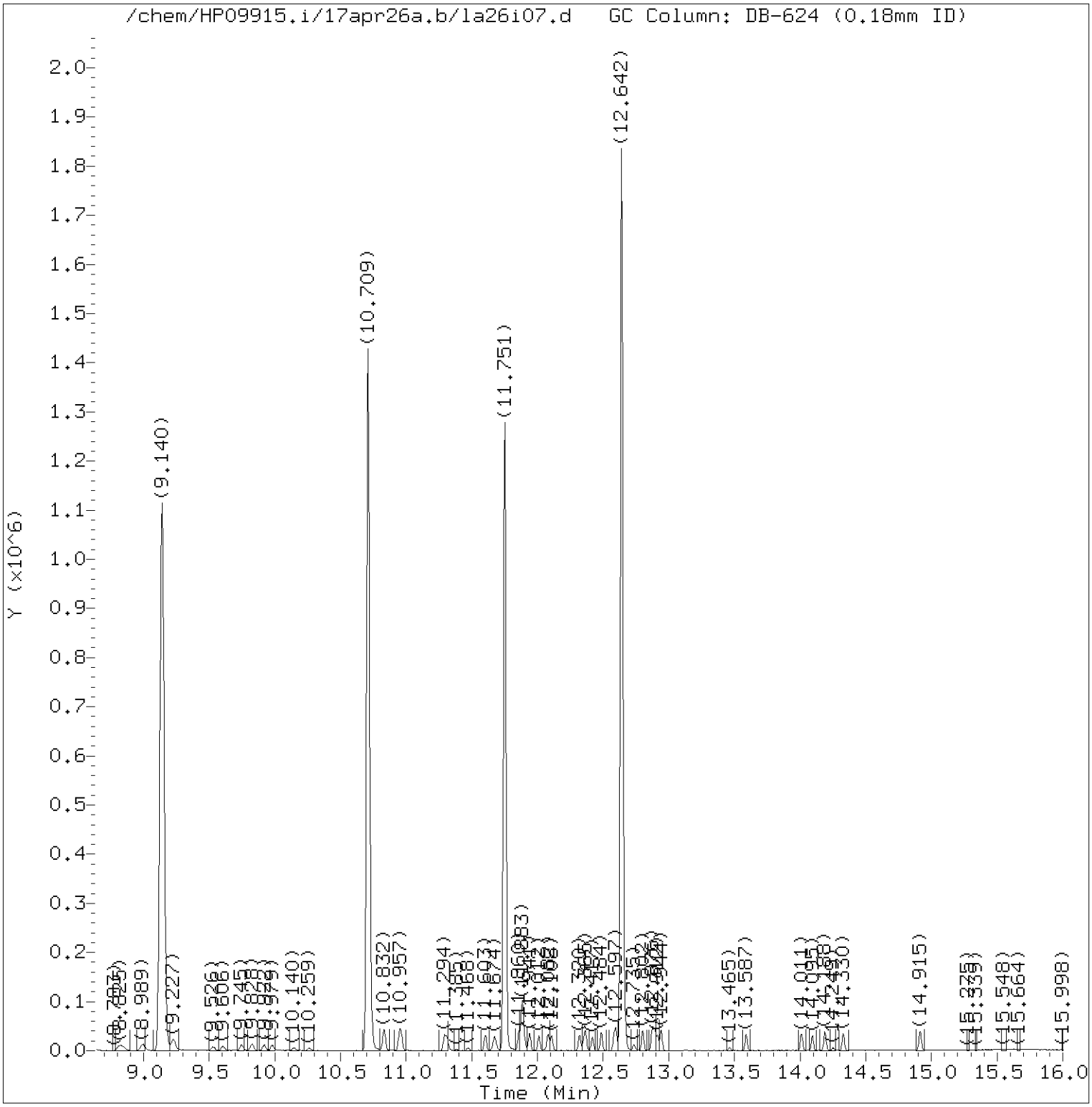
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.713 | 85 | 5134 | 0.831 |
| 4) Chloromethane | (2) | 1.806 | 50 | 5658 | 0.892 |
| 6) Vinyl Chloride | (2) | 1.922 | 62 | 5385 | 0.879 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 3879M | 1.038 |
| 8) Bromomethane | (2) | 2.205 | 94 | 3700 | 0.898 |
| 9) Chloroethane | (2) | 2.292 | 64 | 3136 | 0.908 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 7393 | 0.878 |
| 12) Trichlorofluoromethane | (2) | 2.549 | 101 | 5844 | 0.824 |
| 11) n-Pentane | (2) | 2.587 | 43 | 5763M | 0.986 |
| 14) Ethyl ether | (2) | 2.771 | 59 | 3562 | 0.902 |
| 15) Freon 123a | (2) | 2.816 | 67 | 4340M | 0.918 |
| 16) Acrolein | (1) | 2.903 | 56 | 13897 | 8.305 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 3591 | 0.956 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 63 | 1761 | 0.926 |
| 18) Acetone | (1) | 3.038 | 58 | 1287M | 1.772 |
| 19) Freon 113 | (2) | 3.060 | 101 | 3233 | 0.855 |
| 21) 2-Propanol | (1) | 3.192 | 45 | 10109M | 20.998 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 6674 | 0.916 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 11098M | 0.908 |
| 27) Methyl Acetate | (2) | 3.411 | 43 | 6031M | 1.106 |
| 25) Allyl Chloride | (2) | 3.433 | 41 | 7208M | 0.958 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 204400M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 6021 | 1.214 |
| 30) t-Butyl alcohol | (1) | 3.690 | 59 | 16799M | 21.241 |
| 31) Acrylonitrile | (2) | 3.874 | 53 | 2385 | 0.833 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 13229 | 0.961 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 3899 | 0.885 |
| 34) n-Hexane | (2) | 4.317 | 57 | 5817M | 0.861 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 7594 | 0.917 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 14916 | 0.939 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 6061 | 0.868 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 12596 | 0.921 |
| 44) 2-Butanone | (2) | 5.404 | 43 | 6995 | 1.825 |
| 42) cis-1,2-Dichloroethene | (2) | 5.427 | 96 | 4826 | 0.956 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 4353 | 0.787 |
| 47) Propionitrile | (1) | 5.481 | 54 | 21692 | 18.793 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 26519 | 9.292 |
| 49) Bromochloromethane | (2) | 5.771 | 128 | 2493 | 0.937 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 1704 | 1.671 |
| 51) Chloroform | (2) | 5.925 | 83 | 7414 | 0.939 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 6883 | 0.954 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 253408 | 50.043 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 257623 | 49.648 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 8725 | 1.841 |
| 54) Cyclohexane | (2) | 6.240 | 56 | 7197 | 0.876 |
| 54) Cyclohexane | (2) | 6.256 | 84 | 5572M | 0.830 |
| 54) Cyclohexane | (2) | 6.259 | 69 | 1999 | 0.840 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 4243 | 0.806 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 5734 | 0.893 |
| 58) Isobutyl Alcohol | (1) | 6.536 | 41 | 13006 | 46.839 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 63172 | 50.169 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 298618 | 50.137 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 104 | 39207 | 49.090 |
| 60) Benzene | (2) | 6.639 | 78 | 17777 | 0.939 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 5991 | 0.936 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 278 | 0.492 |
| 65) t-Amyl methyl ether | (2) | 6.832 | 73 | 12353 | 0.910 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1036977 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 7056M | 0.933 |
| 69) n-Butanol | (1) | 7.436 | 56 | 18978 | 84.784 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 4751 | 0.972 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 7103 | 0.824 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 3166 | 0.814 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 4619 | 0.892 |
| 75) 1,4-Dioxane | (1) | 7.983 | 88 | 3446 | 49.313 |
| 76) Methyl Methacrylate | (2) | 7.989 | 69 | 3670M | 0.828 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 3047 | 0.935 |
| 78) Bromodichloromethane | (2) | 8.246 | 83 | 5145 | 0.875 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 2718 | 1.630 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.626 | 63 | 3128 | 0.786 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 6077 | 0.793 |
| 82) 4-Methyl-2-pentanone | (2) | 8.996 | 43 | 13249 | 1.677 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1011031 | 50.099 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 664751 | 49.998 |
| 88) Toluene | (3) | 9.230 | 92 | 10791 | 0.920 |
| 89) trans-1,3-Dichloropropene | (3) | 9.533 | 75 | 4836 | 0.735 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001  Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.606 | 69 | 5948 | 0.803 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 4212 | 0.932 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 4631 | 0.893 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 7455 | 0.951 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 8940 | 1.579 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 10913 | 1.528 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 3755 | 0.802 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 4374 | 0.884 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 790373 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.729 | 91 | 7171 | 1.065 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 12435 | 0.919 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.832 | 131 | 3810 | 0.853 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 20557 | 0.909 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 15787 | 1.793 |
| 107) o-Xylene | (3) | 11.294 | 106 | 7750 | 0.885 |
| 109) Styrene | (3) | 11.311 | 104 | 11905 | 0.822 |
| 110) Bromoform | (3) | 11.468 | 173 | 2449 | 0.721 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 19094 | 0.853 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 12225A | 46.377 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 377337 | 50.305 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 332561 | 50.545 |
| 108) Xylene (Total) | (3) | | 106 | 23537 | 2.677 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 6980 | 0.917 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 5604 | 0.915 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 18943 | 8.689 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 2008 | 0.934 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 24194 | 0.894 |
| 120) 2-Chlorotoluene | (4) | 12.012 | 126 | 5054 | 0.897 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 15989 | 0.828 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 5379 | 0.917 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 3714 | 0.890 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 2616 | 0.794 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 16998 | 0.855 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 21349 | 0.867 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 11200 | 0.960 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 18731 | 0.861 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 428650 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 12025 | 0.997 |

A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 19417 | 0.932 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 7813 | 0.655 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 11399 | 0.877 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 12459 | 0.913 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 10343 | 0.952 |
| 138) 1,2-Dichlorobenzene | (4) | 12.918 | 146 | 11057 | 0.964 |
| 140) 1,2-Diethylbenzene | (4) | 12.944 | 119 | 9704 | 0.888 |
| 141) Diethylbenzene (total) | (4) | | 100 | 33562 | 2.678 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.465 | 75 | 1391 | 0.865 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 9757 | 1.050 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 10012 | 1.110 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 4846 | 1.237 |
| 148) Naphthalene | (4) | 14.188 | 128 | 26365 | 0.969 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 10045 | 1.155 |
| 150) 2-Methylnaphthalene | (4) | 14.915 | 142 | 17518 | 0.996 |



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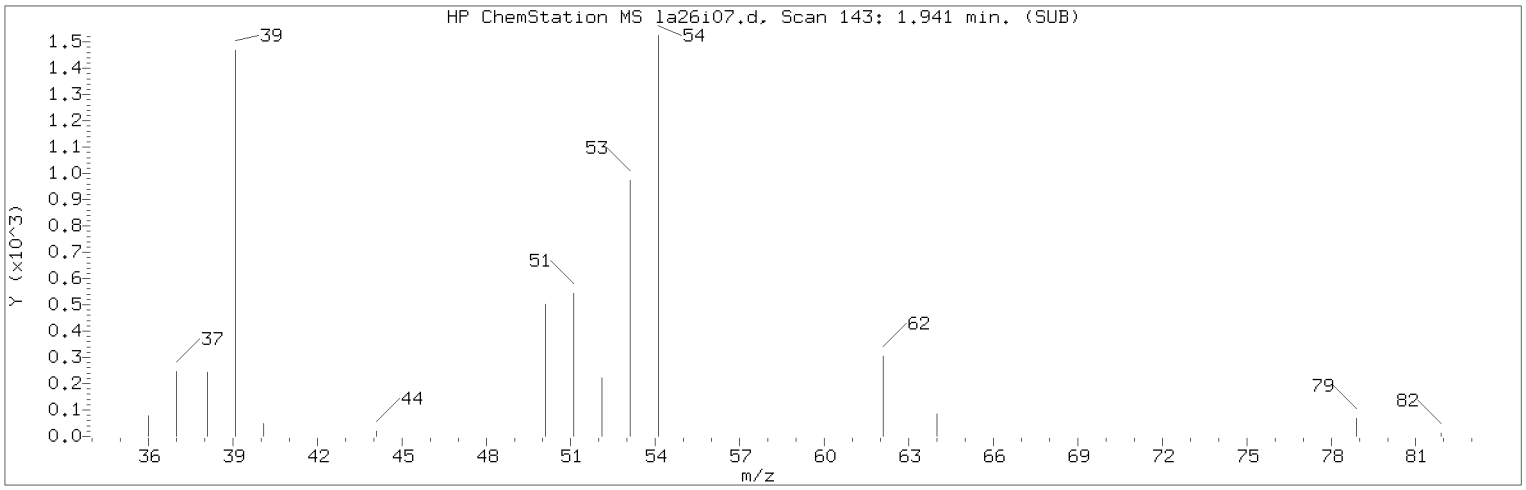
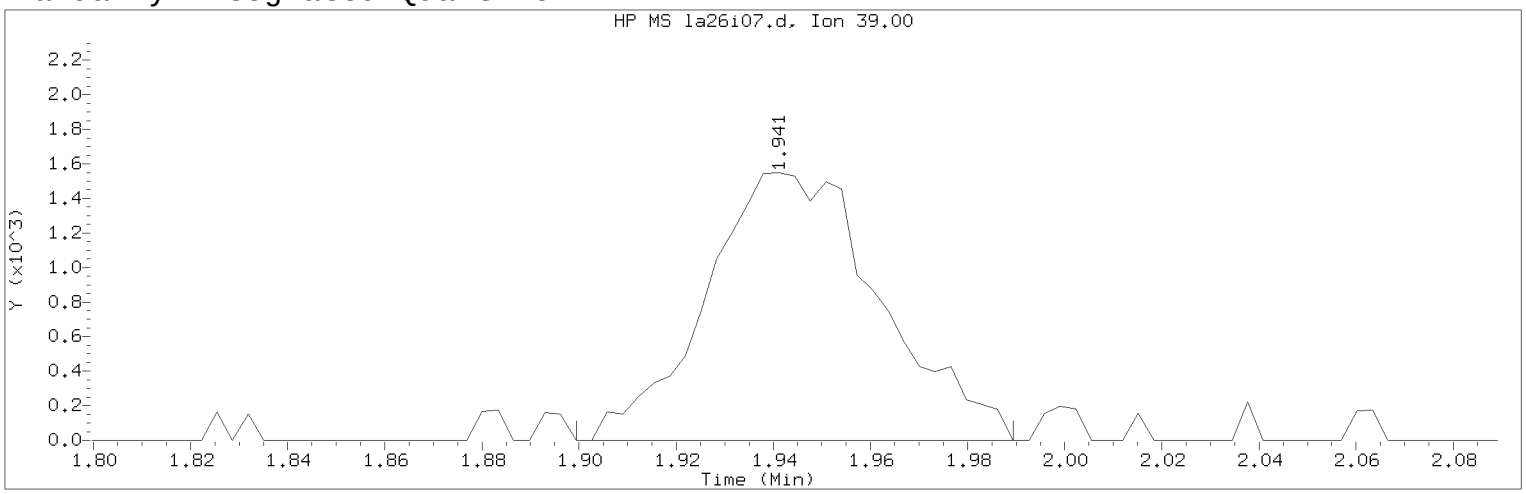
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

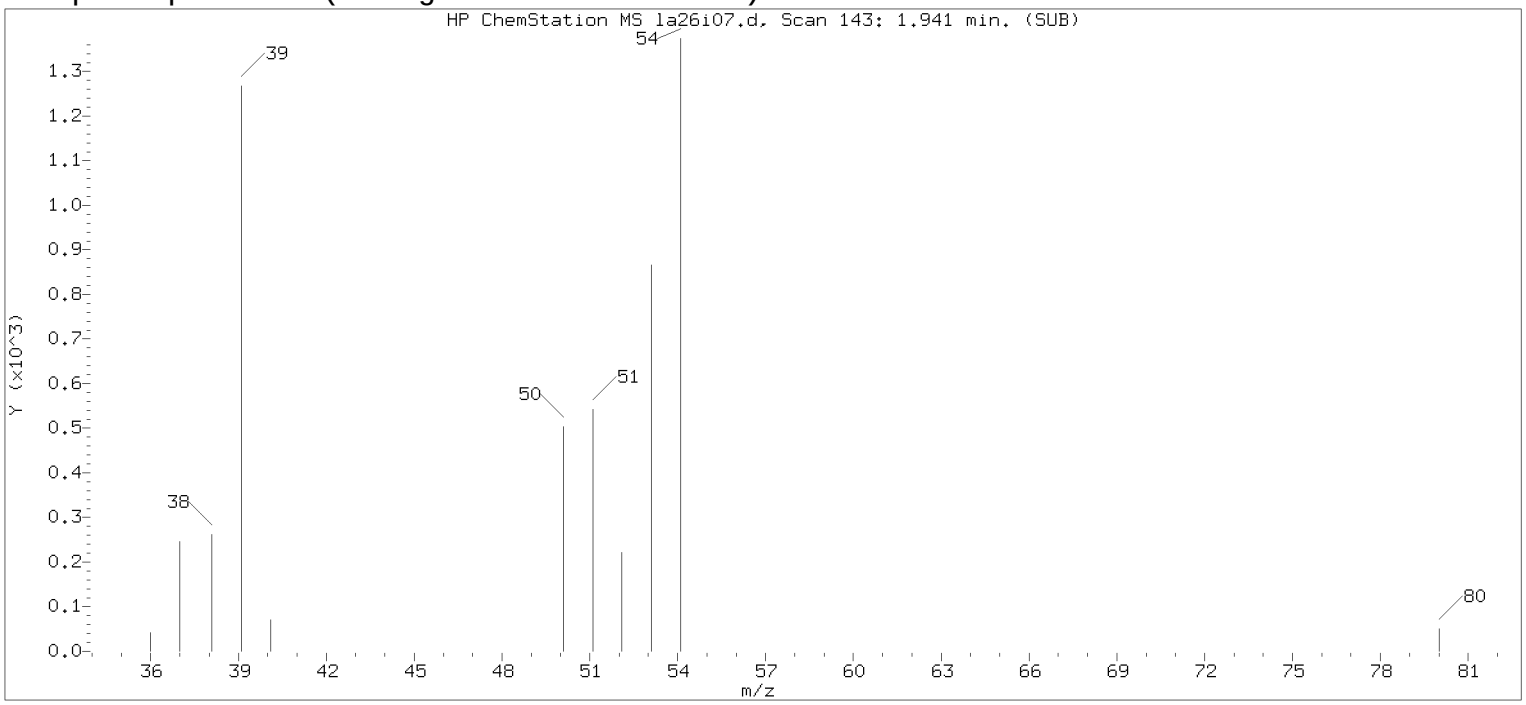
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 3879M
On-Column Amount (ng) : 1.0378
Integration start scan : 129 Integration stop scan: 157
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

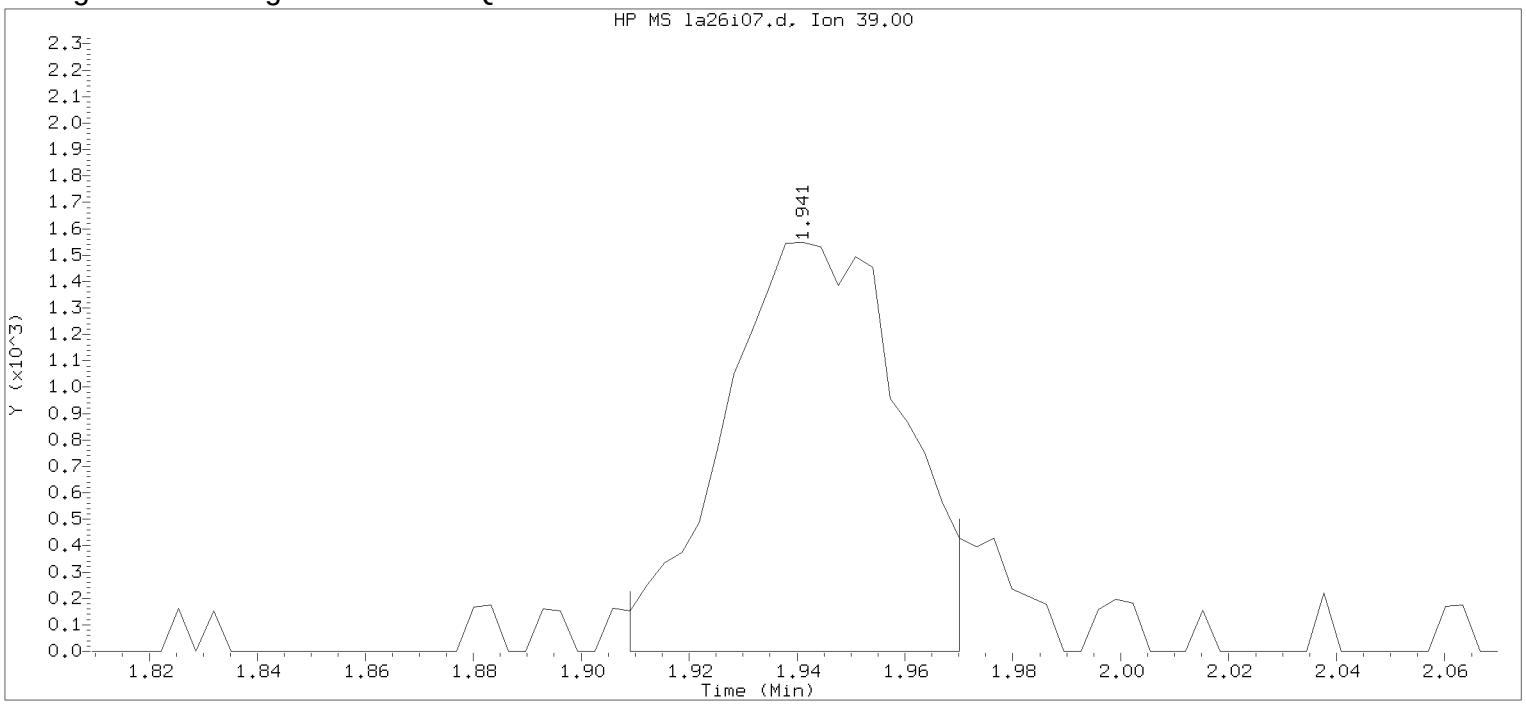
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 3513
On-column Amount (ng) : 0.9533
Integration start scan : 132 Integration stop scan: 151
Y at integration start : 0 Y at integration end: 0

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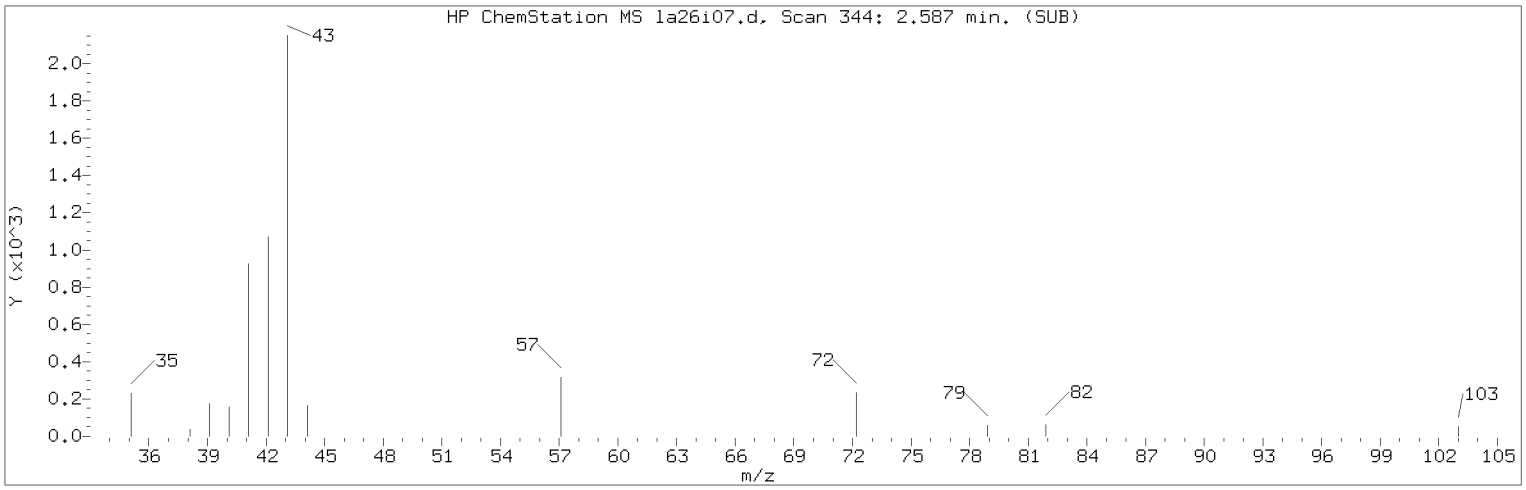
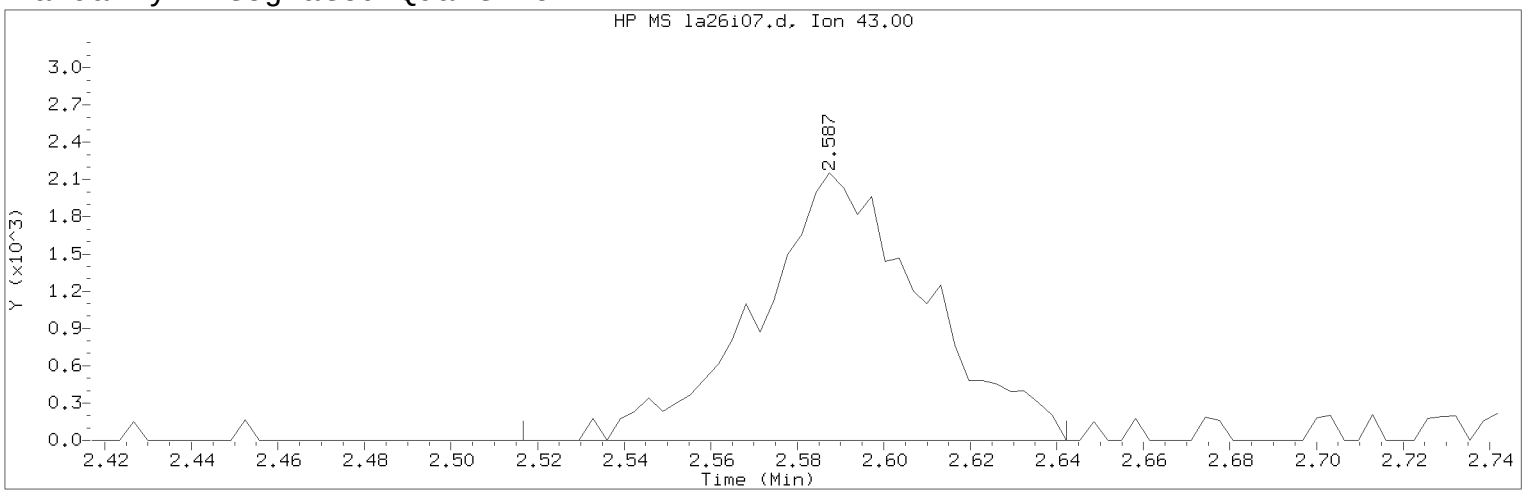
Target 3.5 esignature user KAS1 key 2648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

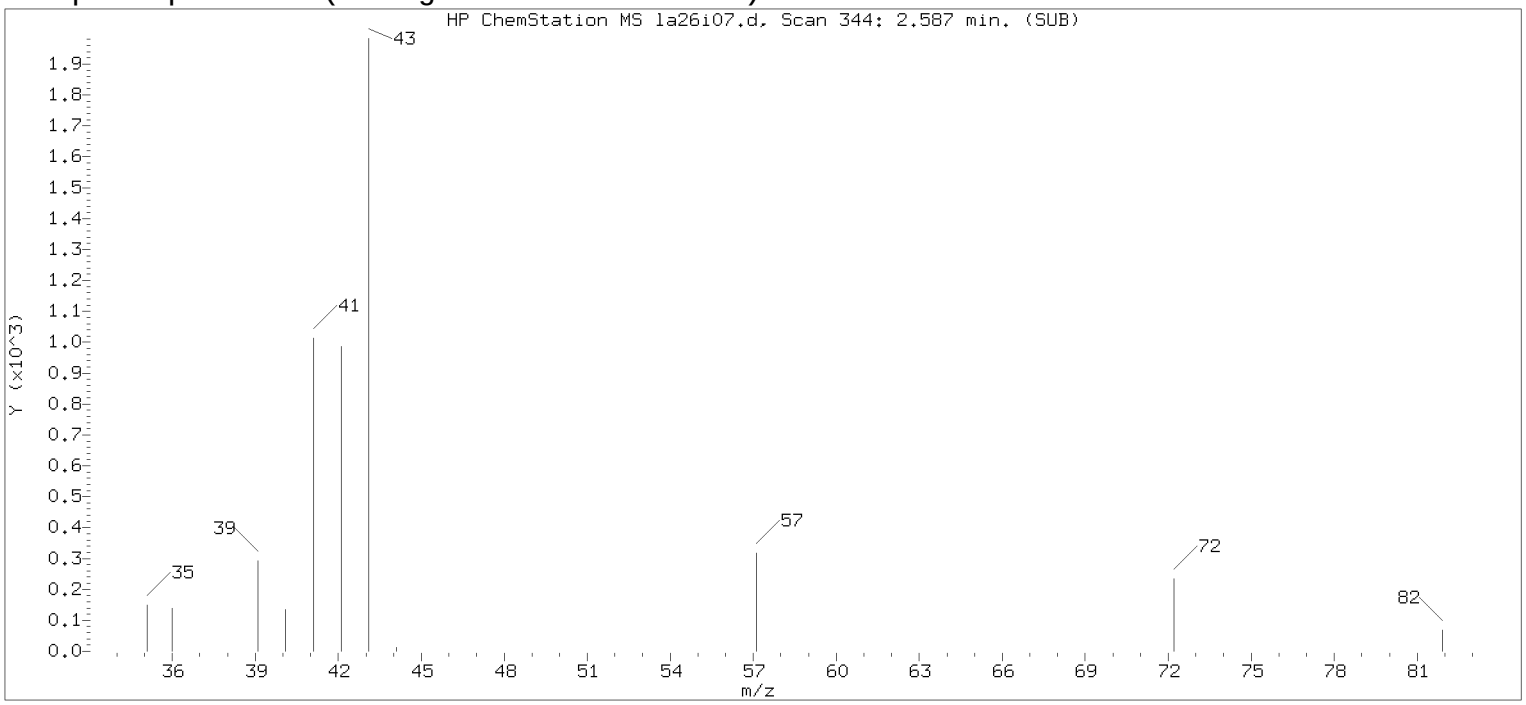
Compound Number : 11
Compound Name : n-Pentane
Scan Number : 344
Retention Time (minutes): 2.587
Quant Ion : 43.00
Area (flag) : 5763M
On-Column Amount (ng) : 0.9861
Integration start scan : 321 Integration stop scan: 360
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

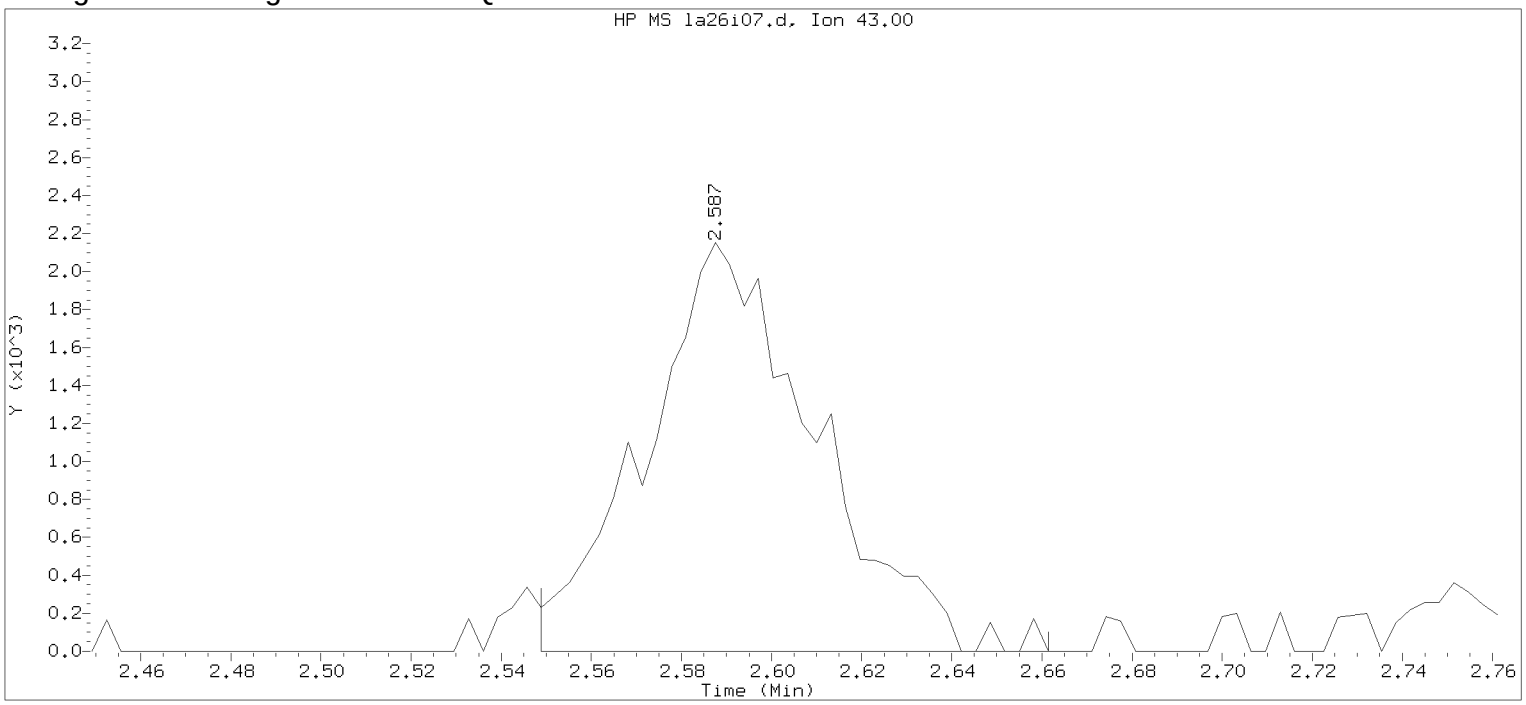
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 11
Compound Name : n-Pentane
Scan Number : 344
Retention Time (minutes): 2.587
Quant Ion : 43.00
Area : 5626
On-column Amount (ng) : 0.9660
Integration start scan : 331 Integration stop scan: 366
Y at integration start : 0 Y at integration end: 0

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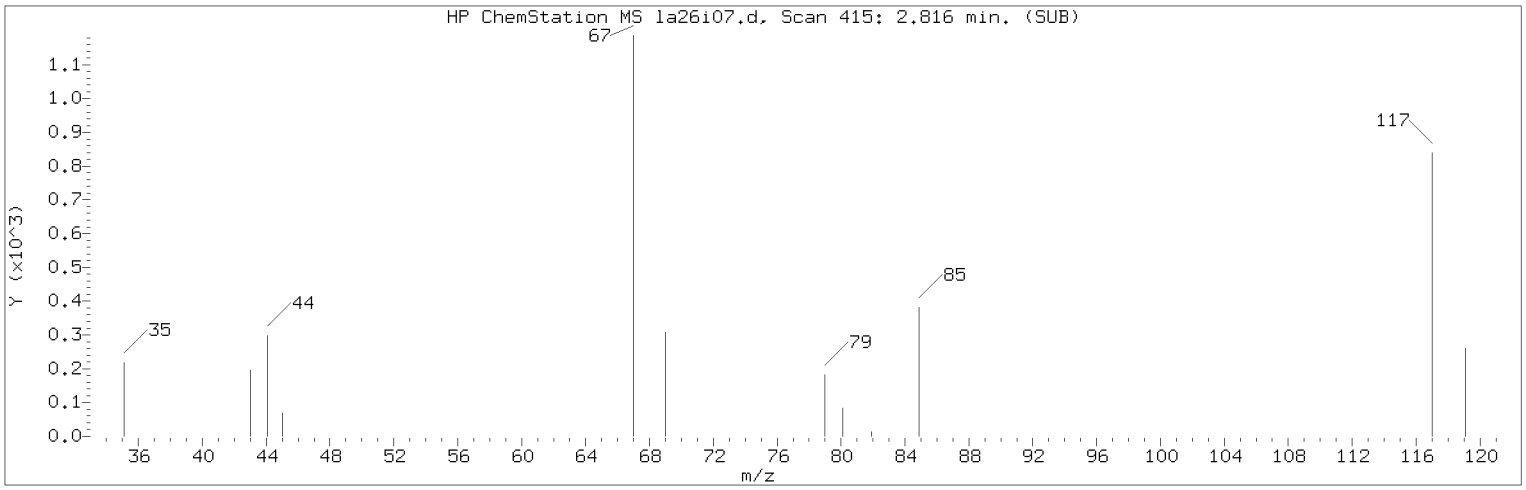
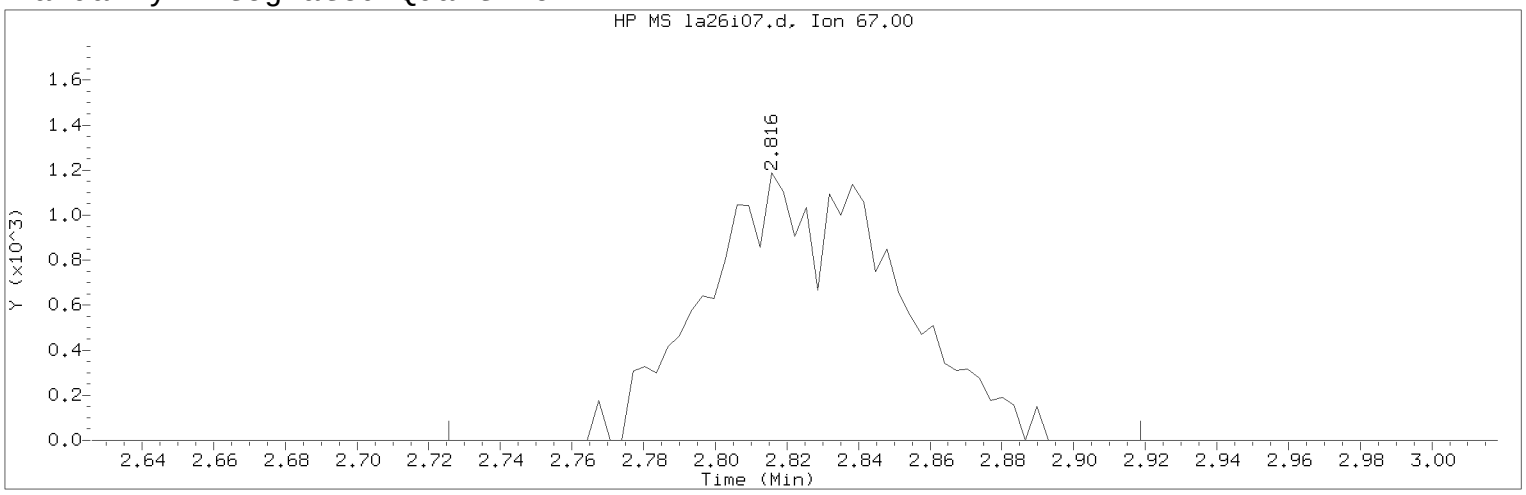
Target 3.5 esignature user KAS1 key 2648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

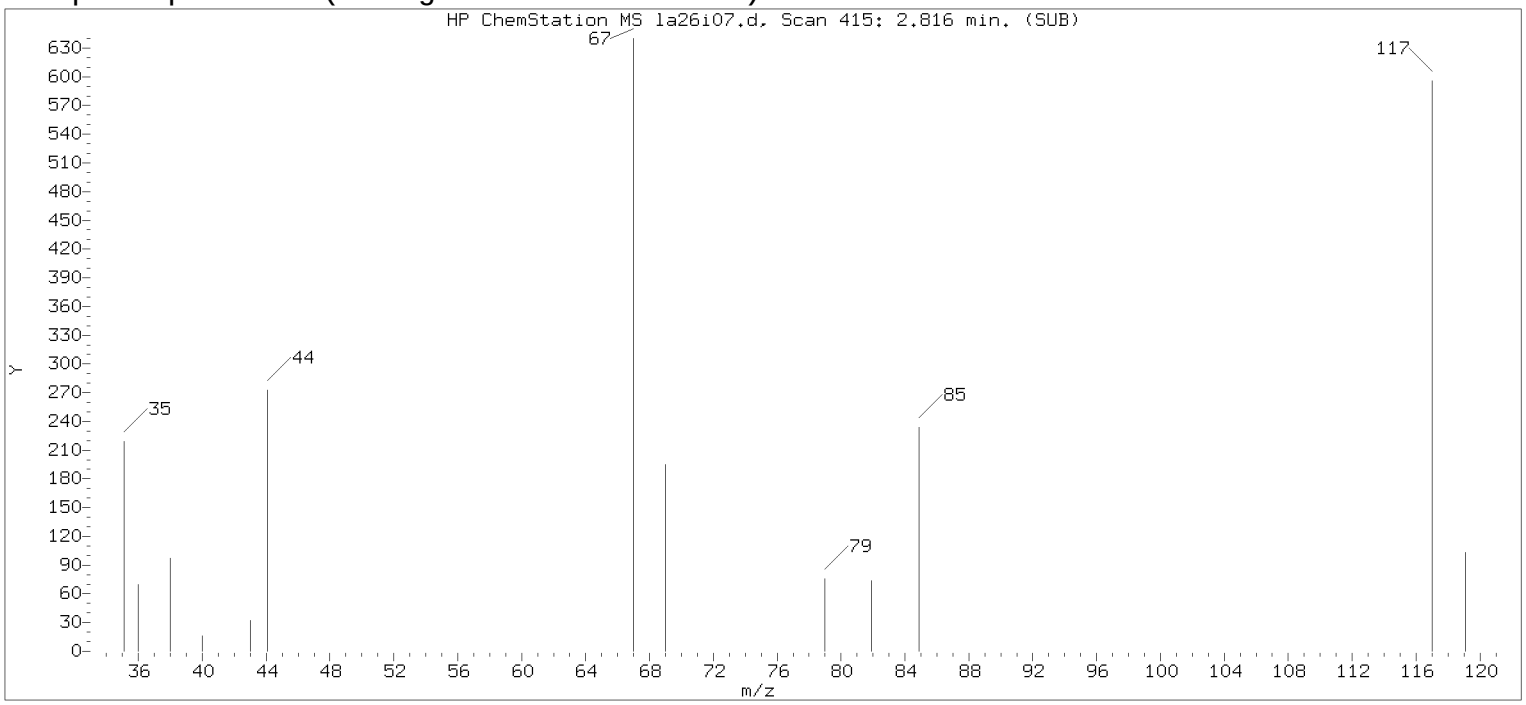
Compound Number : 15
Compound Name : Freon 123a
Scan Number : 415
Retention Time (minutes): 2.816
Quant Ion : 67.00
Area (flag) : 4340M
On-Column Amount (ng) : 0.9183
Integration start scan : 386 Integration stop scan: 446
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

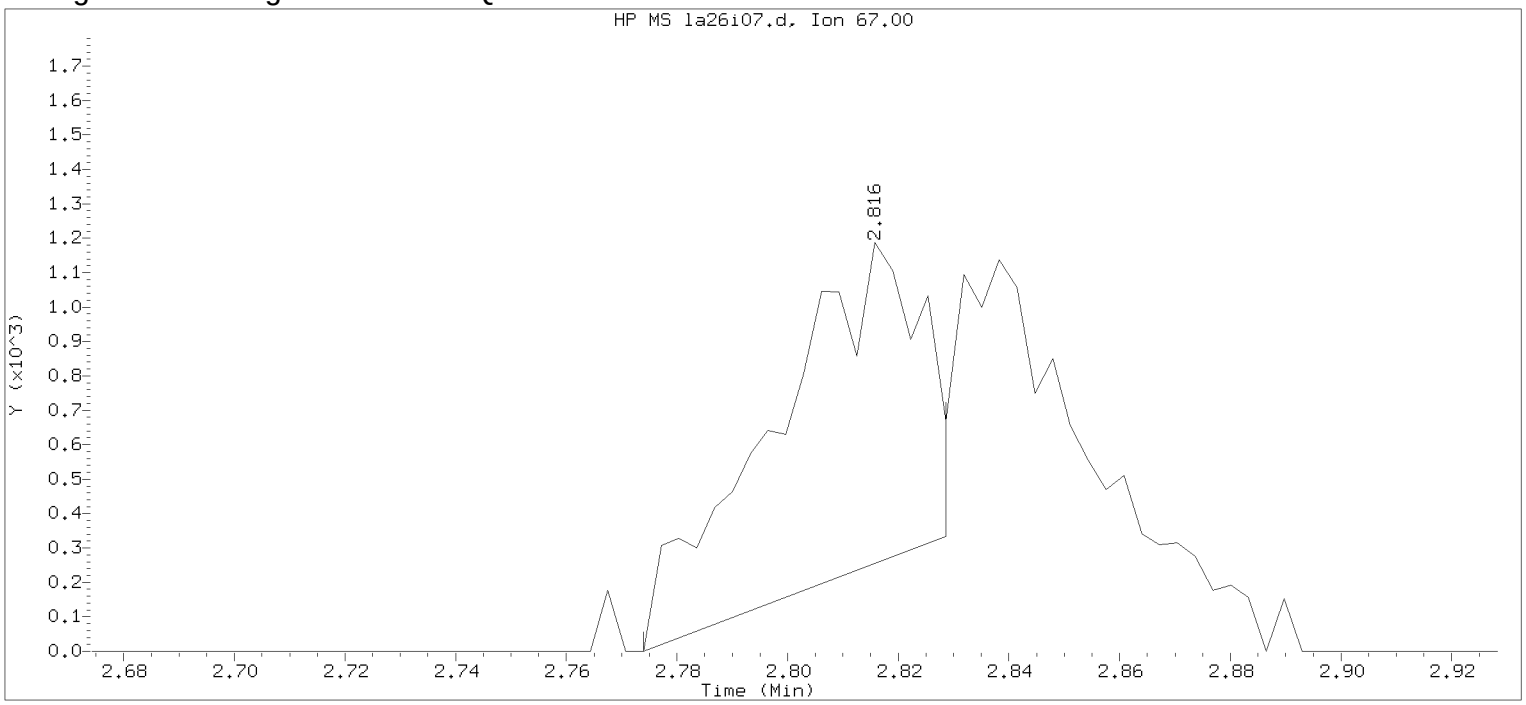
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 15
Compound Name : Freon 123a
Scan Number : 415
Retention Time (minutes): 2.816
Quant Ion : 67.00
Area : 1764
On-column Amount (ng) : 0.4048
Integration start scan : 401 Integration stop scan: 418
Y at integration start : 0 Y at integration end: 334

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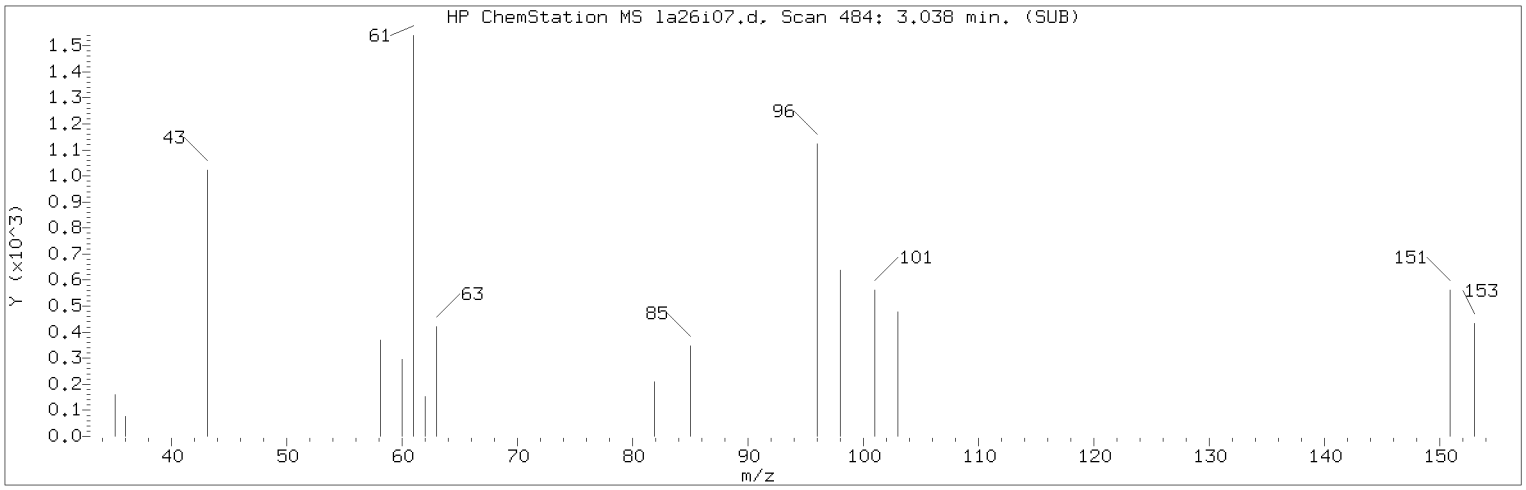
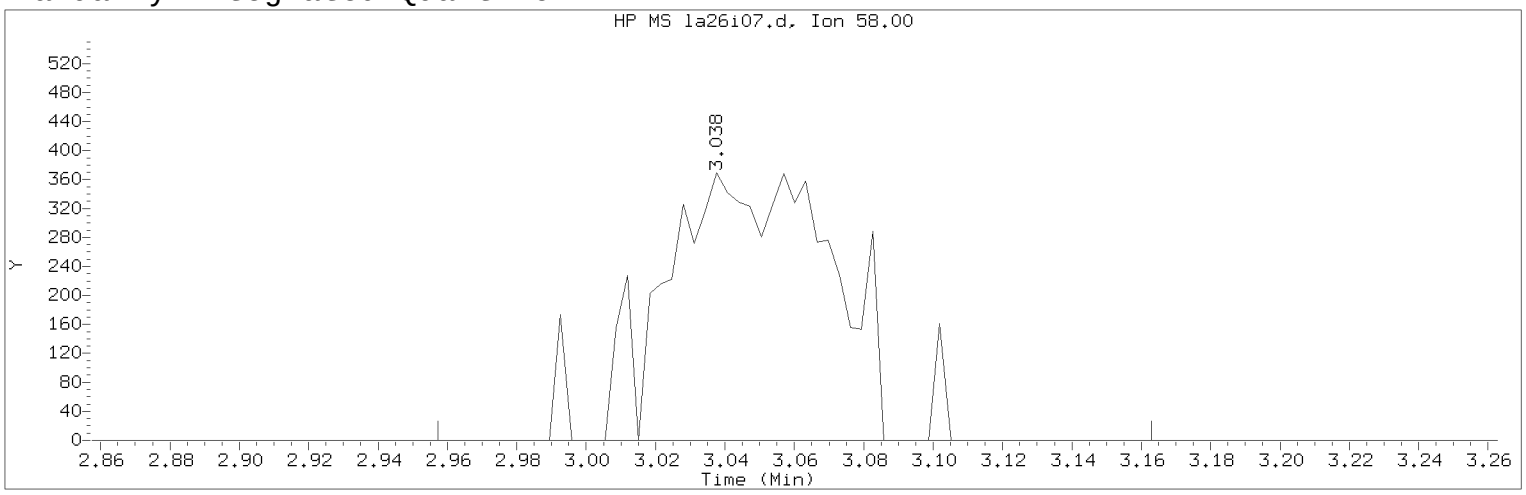
Target 3.5 esignature user KAS1 key 2648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

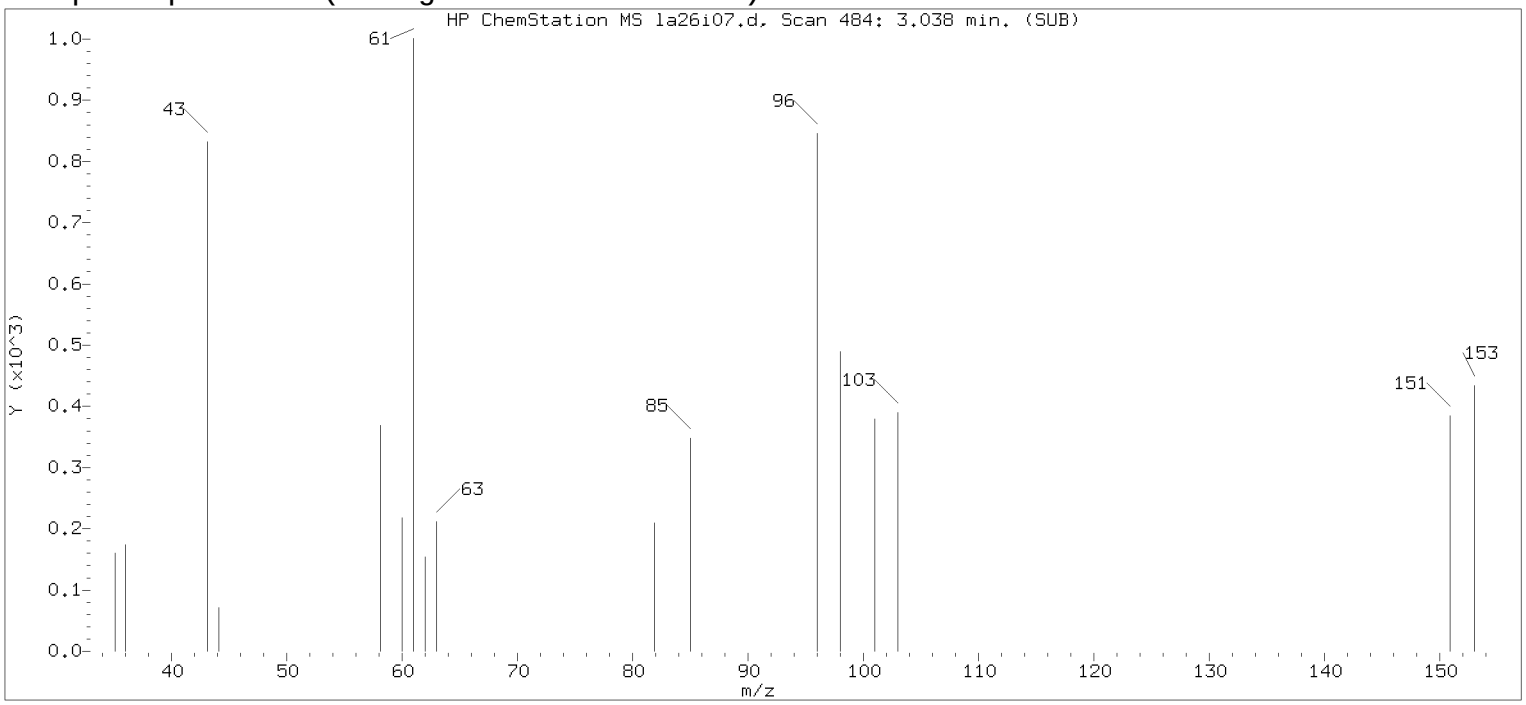
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area (flag) : 1287M
On-Column Amount (ng) : 1.7722
Integration start scan : 458 Integration stop scan: 522
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

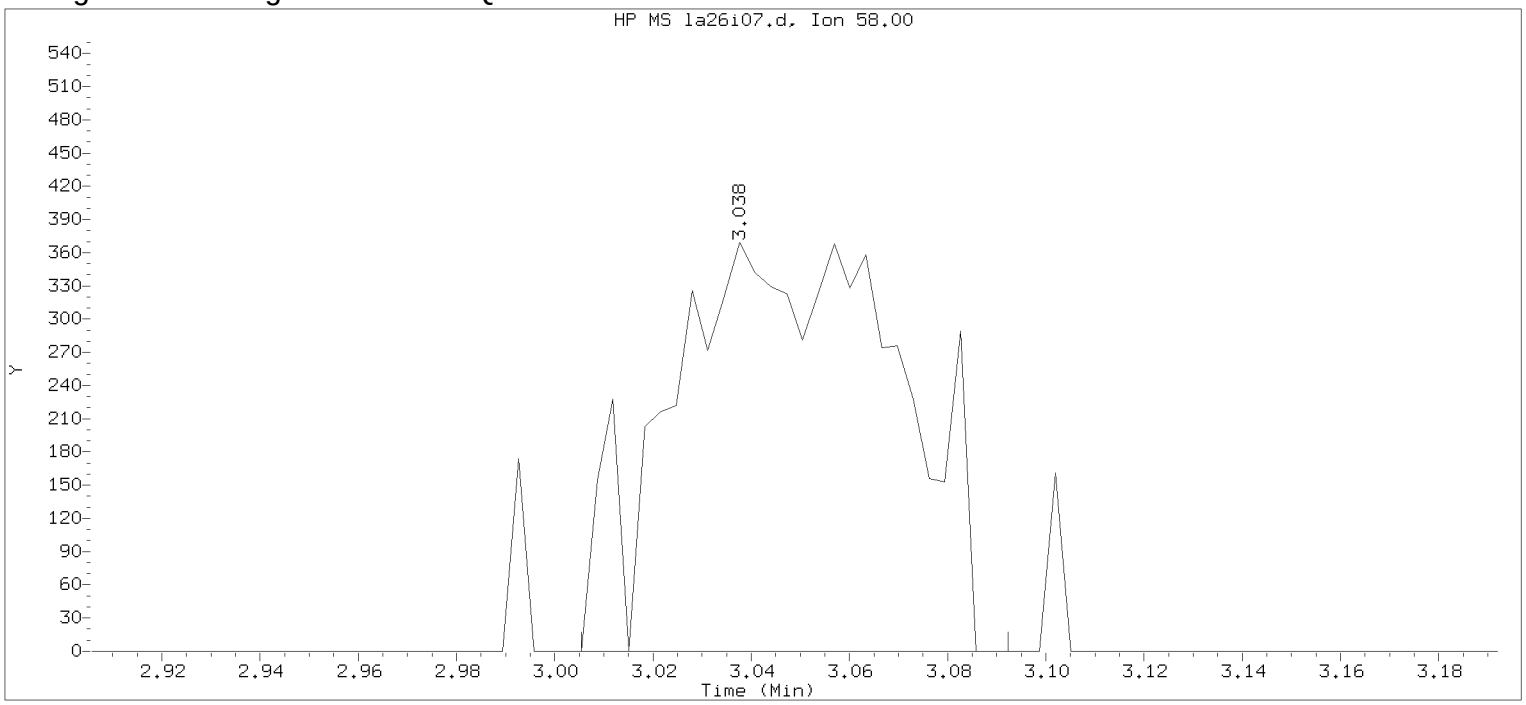
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

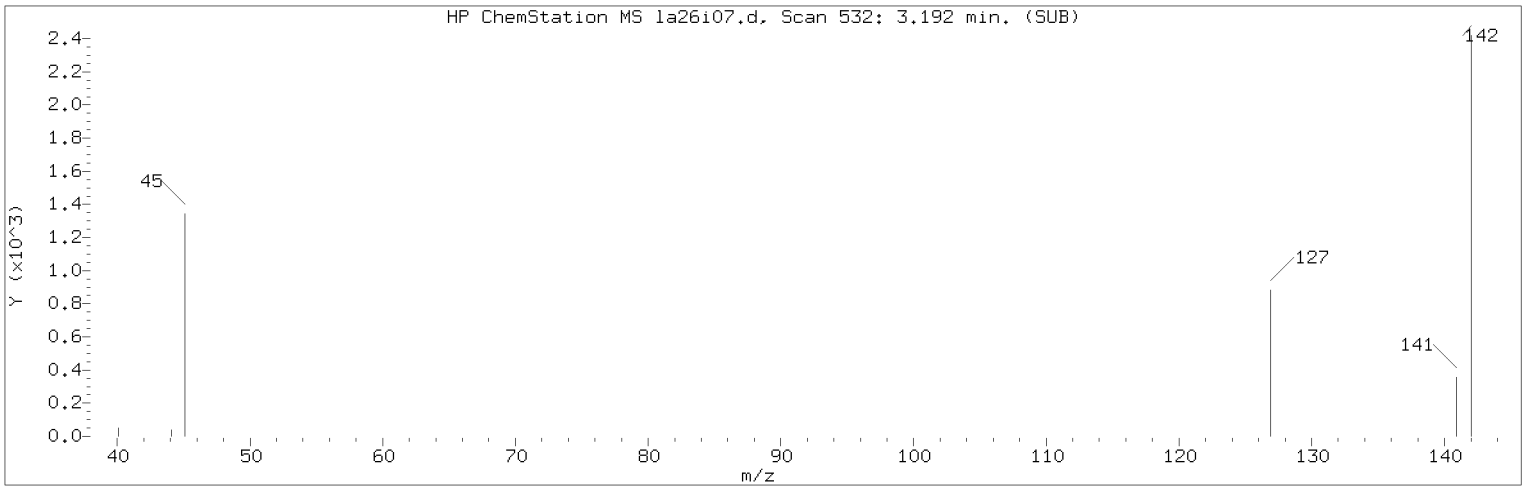
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

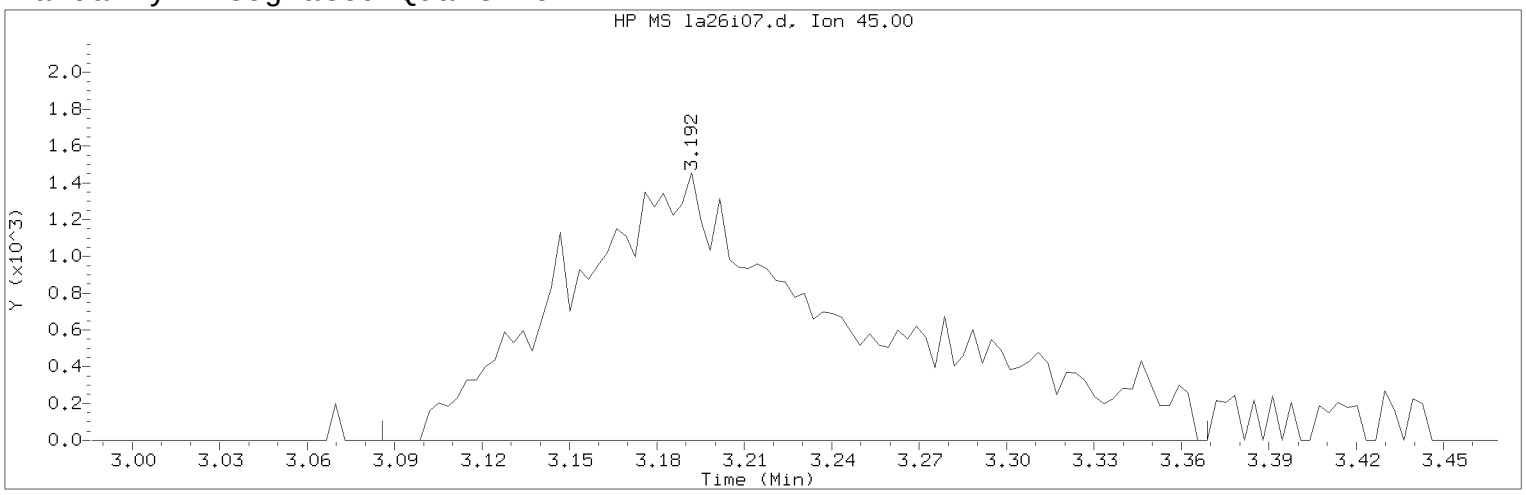
Compound Number : 18
Compound Name : Acetone
Scan Number : 484
Retention Time (minutes): 3.038
Quant Ion : 58.00
Area : 1222
On-column Amount (ng) : 1.7234
Integration start scan : 473 Integration stop scan: 500
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 key 2848

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

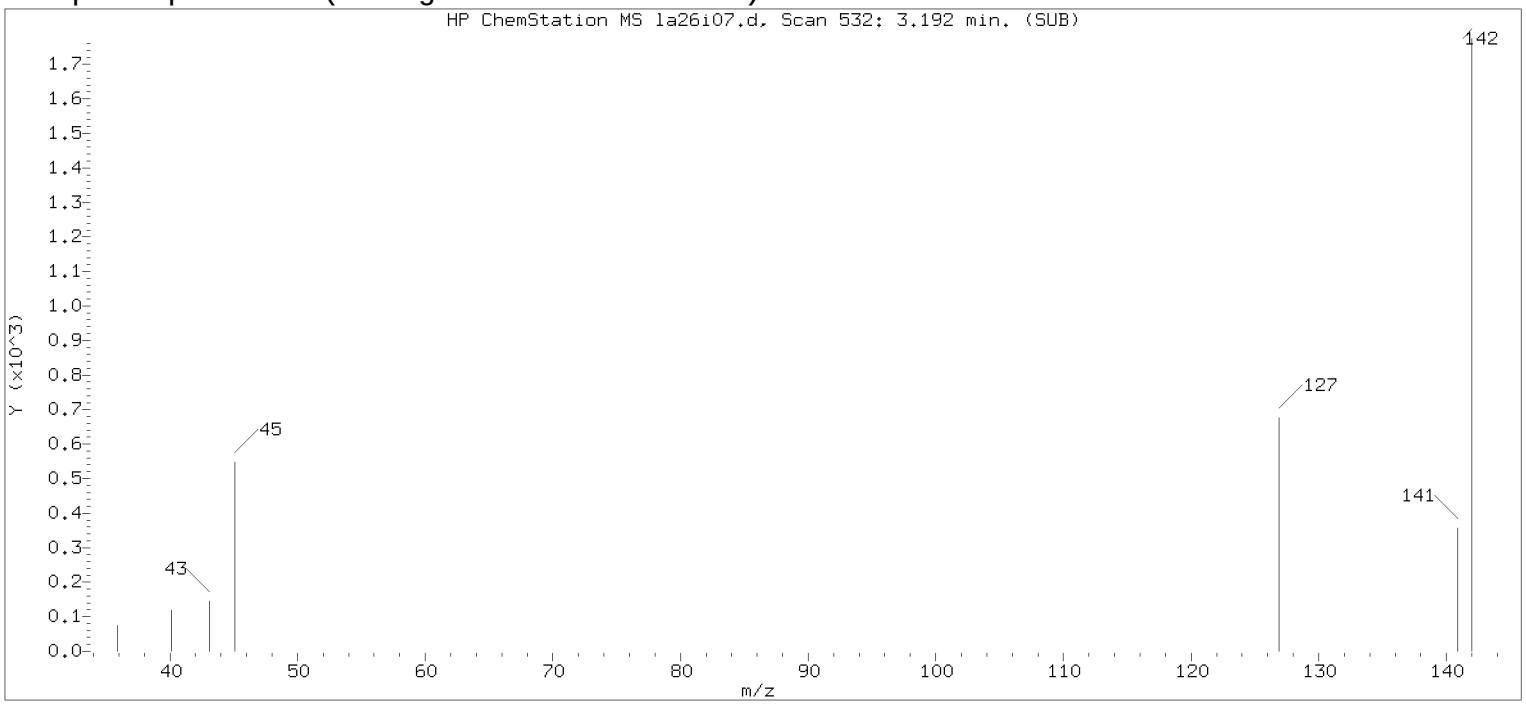
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 532
Retention Time (minutes): 3.192
Quant Ion : 45.00
Area (flag) : 10109M
On-Column Amount (ng) : 20.9983
Integration start scan : 498 Integration stop scan: 586
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

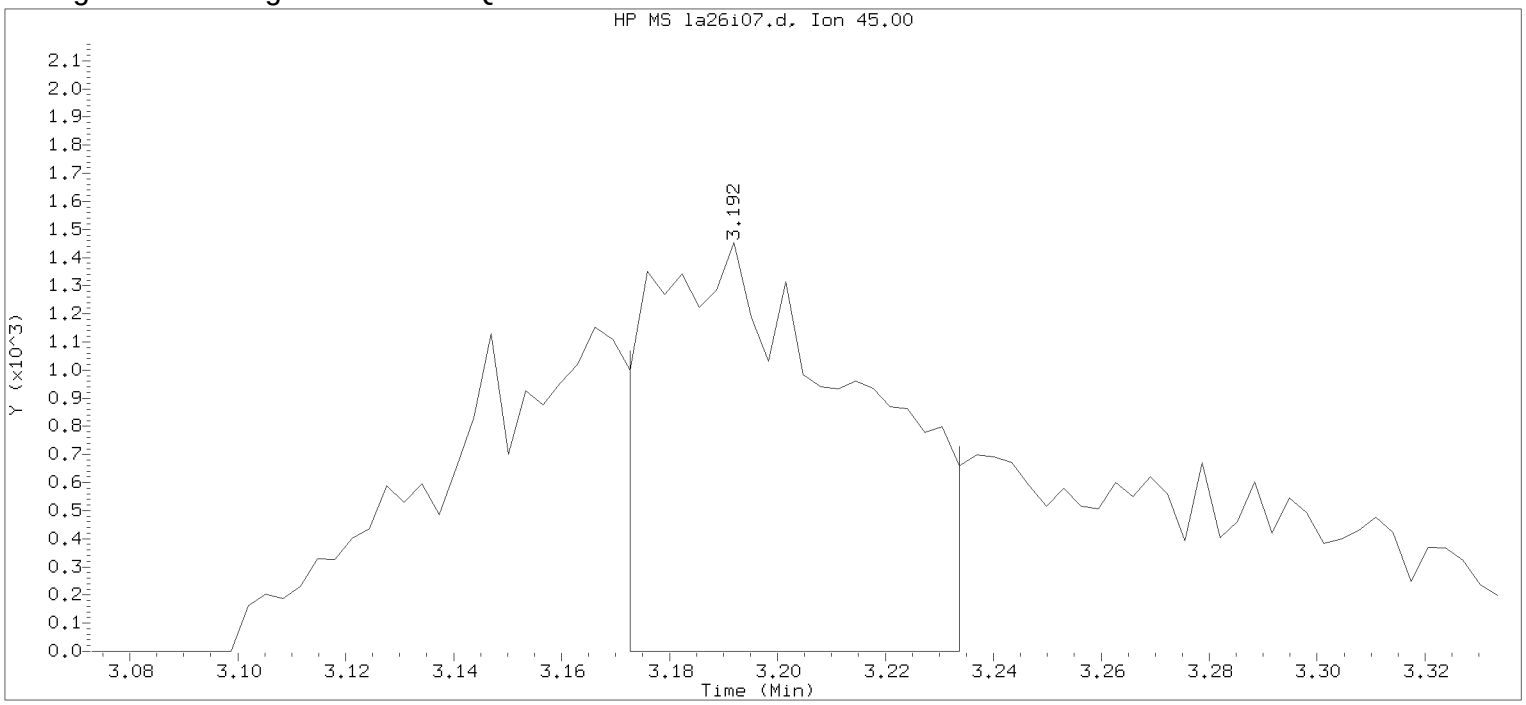
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

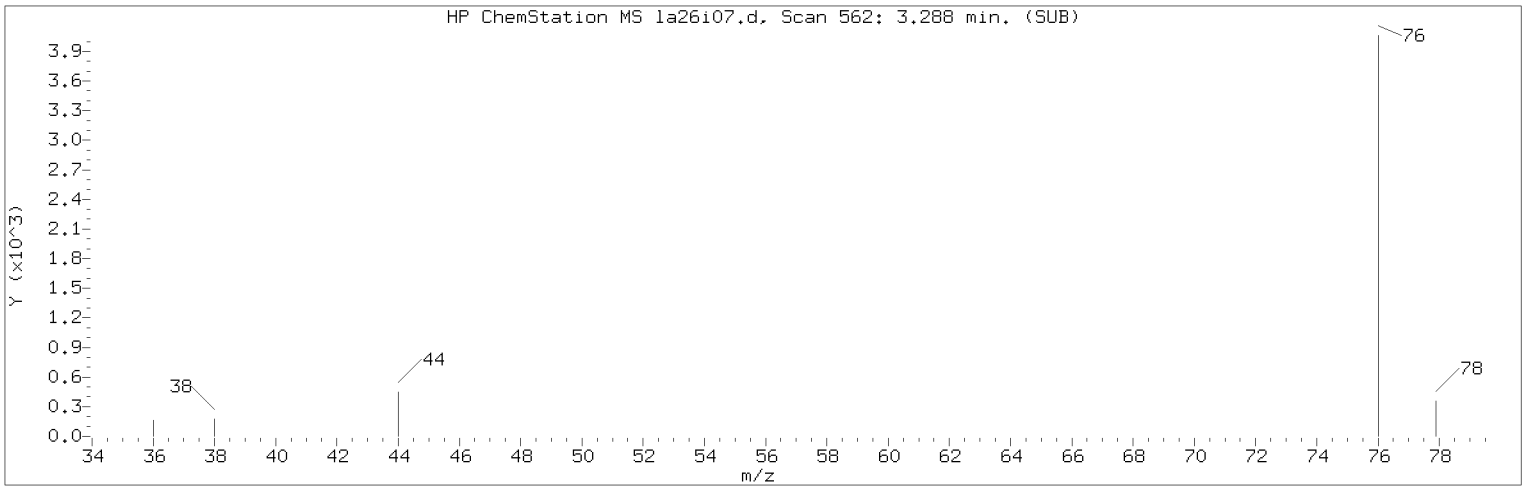
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

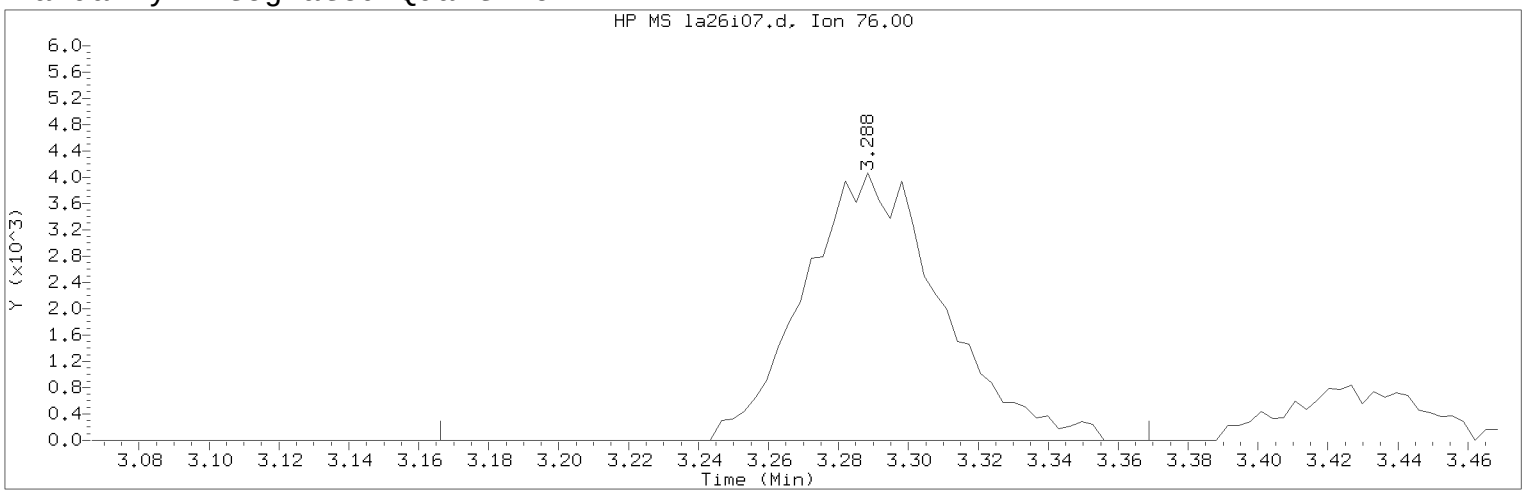
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 532
Retention Time (minutes): 3.192
Quant Ion : 45.00
Area : 3925
On-column Amount (ng) : 9.1397
Integration start scan : 525 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

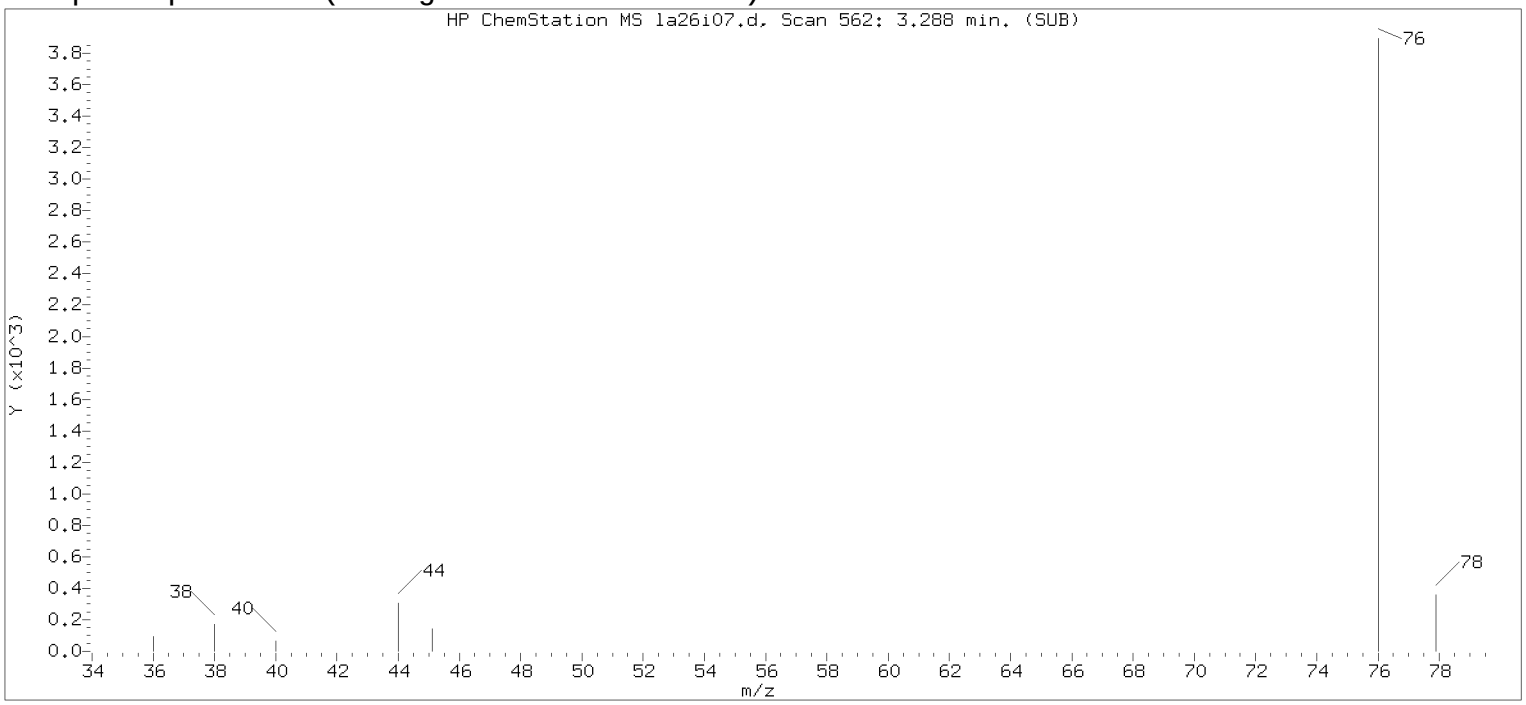
Compound Number : 23
Compound Name : Carbon Disulfide
Scan Number : 562
Retention Time (minutes): 3.288
Quant Ion : 76.00
Area (flag) : 11098M
On-Column Amount (ng) : 0.9080
Integration start scan : 523 Integration stop scan: 586
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

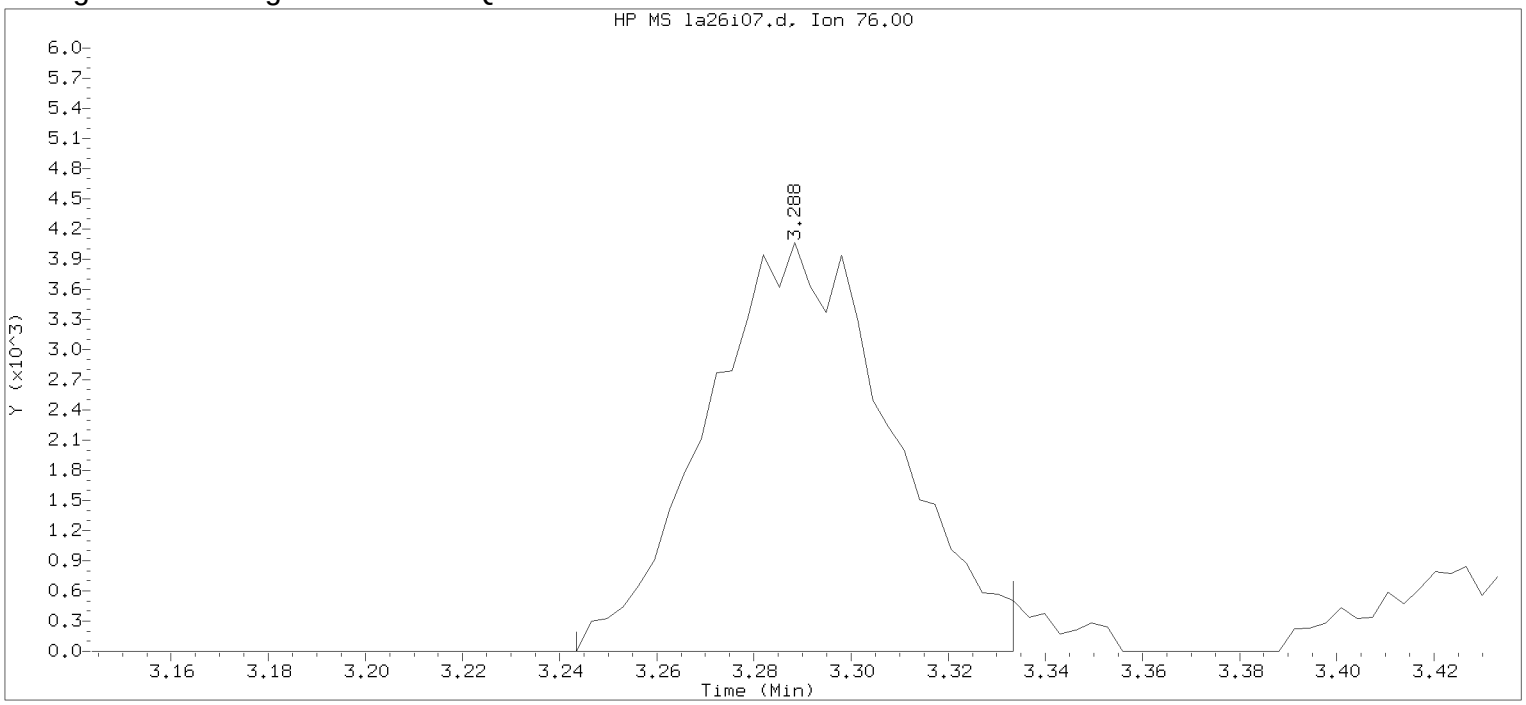
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

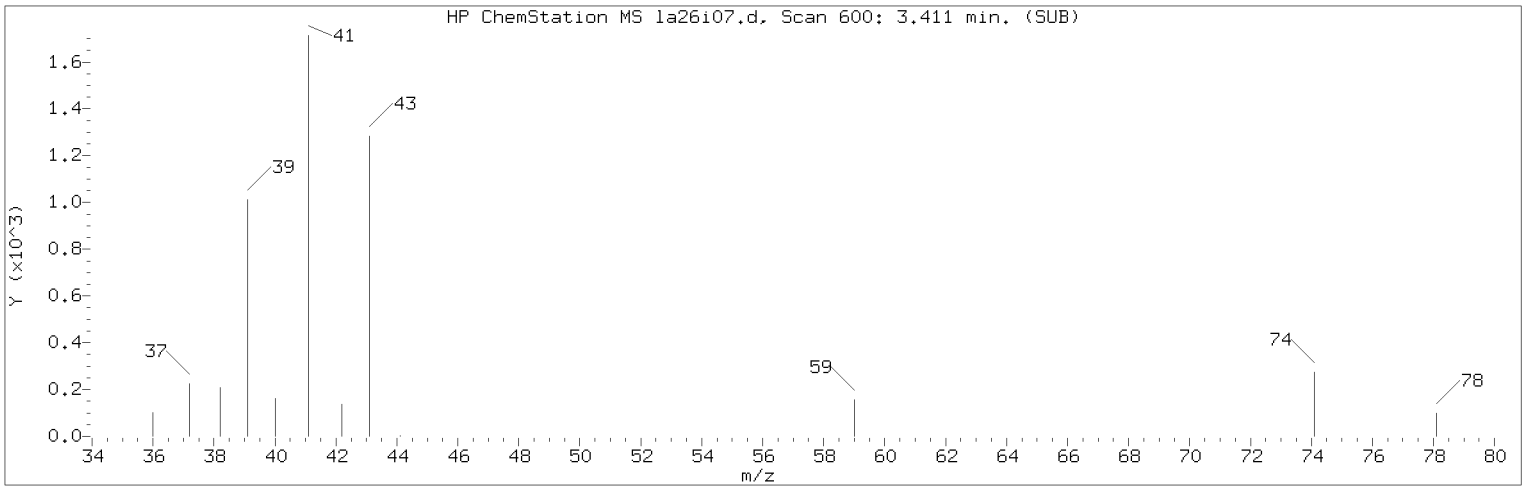
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

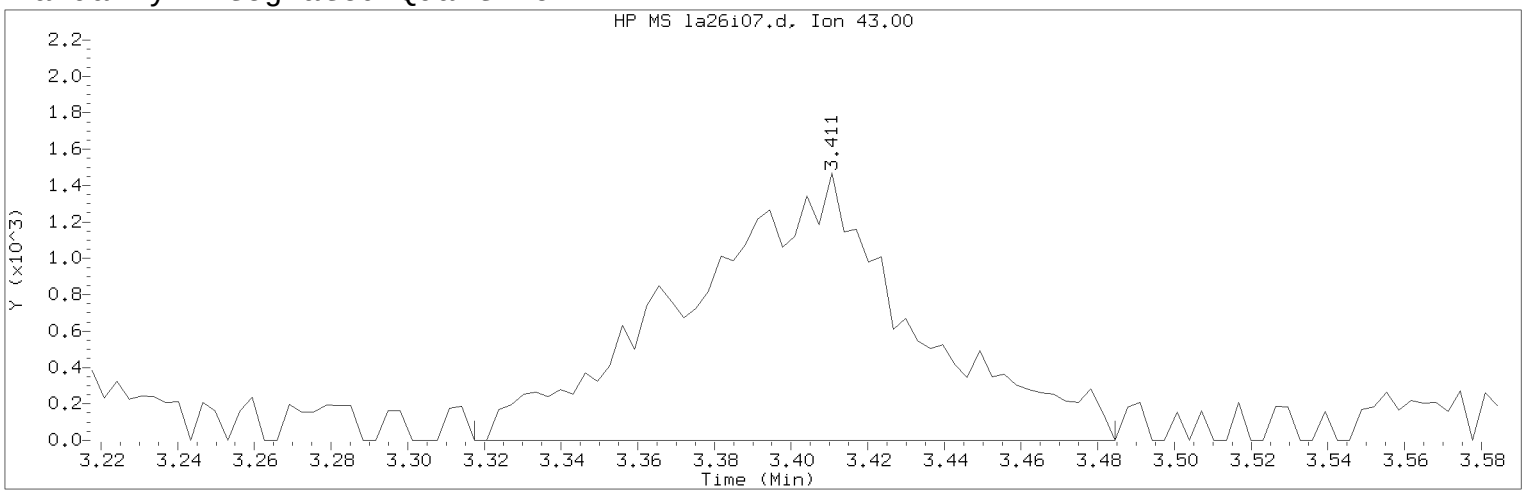
Compound Number : 23
Compound Name : Carbon Disulfide
Scan Number : 562
Retention Time (minutes): 3.288
Quant Ion : 76.00
Area : 10736
On-column Amount (ng) : 0.8822
Integration start scan : 547 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

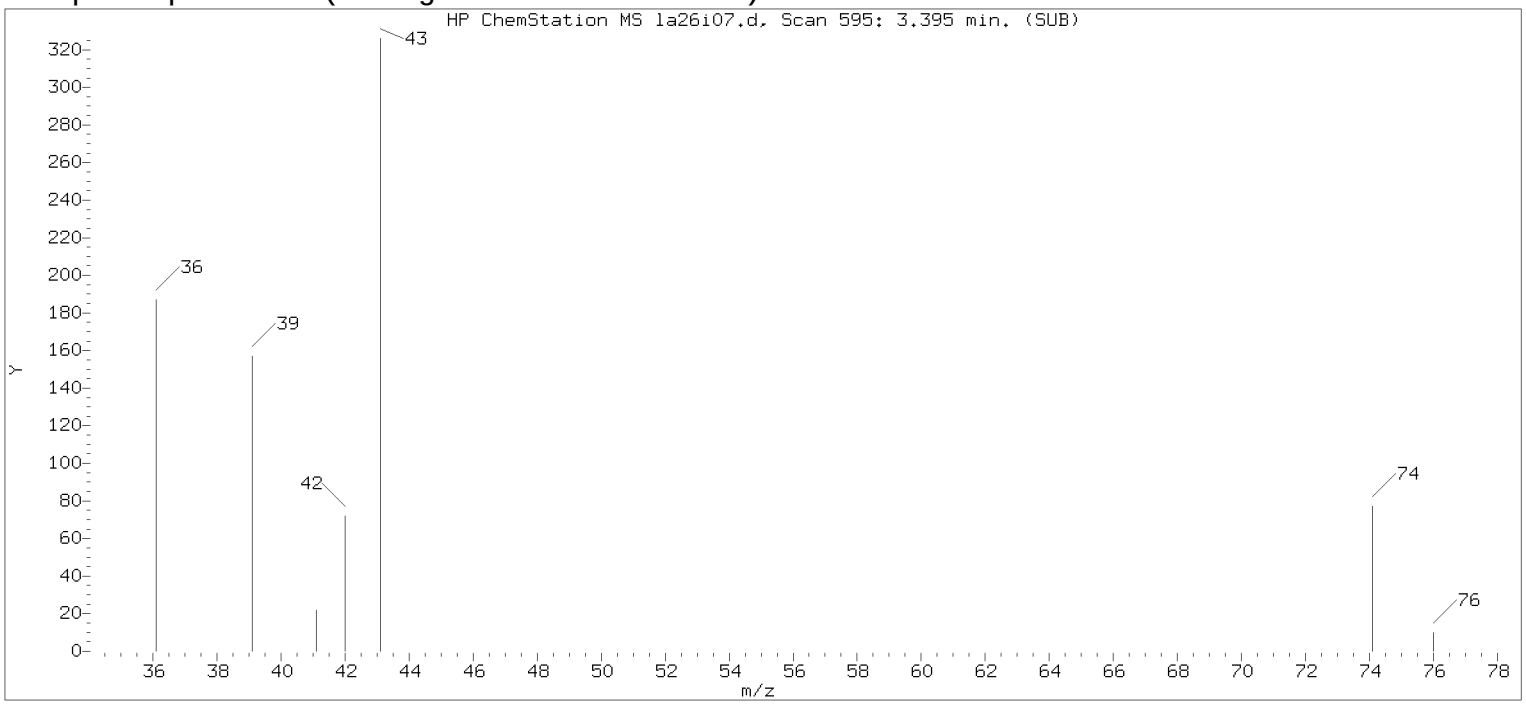
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 600
Retention Time (minutes): 3.411
Quant Ion : 43.00
Area (flag) : 6031M
On-Column Amount (ng) : 1.1064
Integration start scan : 570 Integration stop scan: 622
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

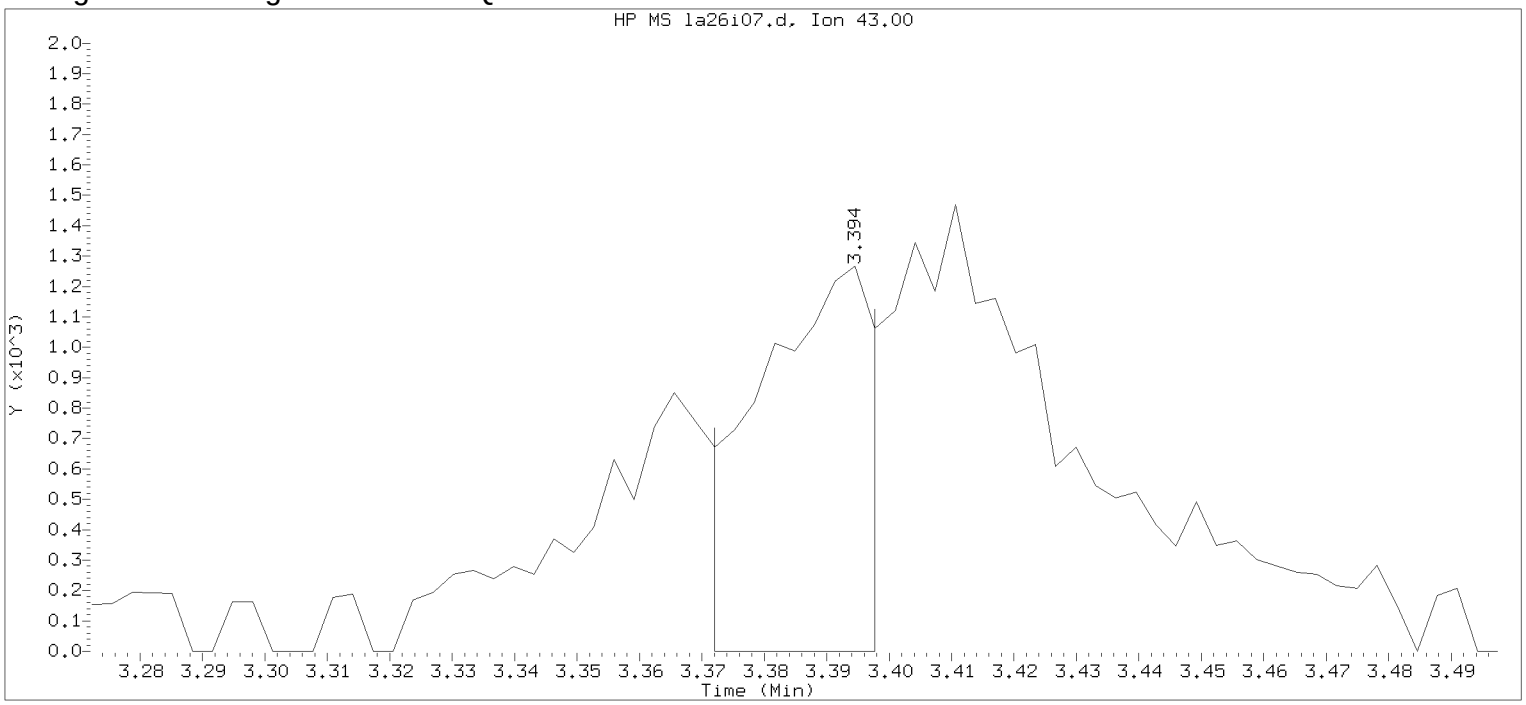
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

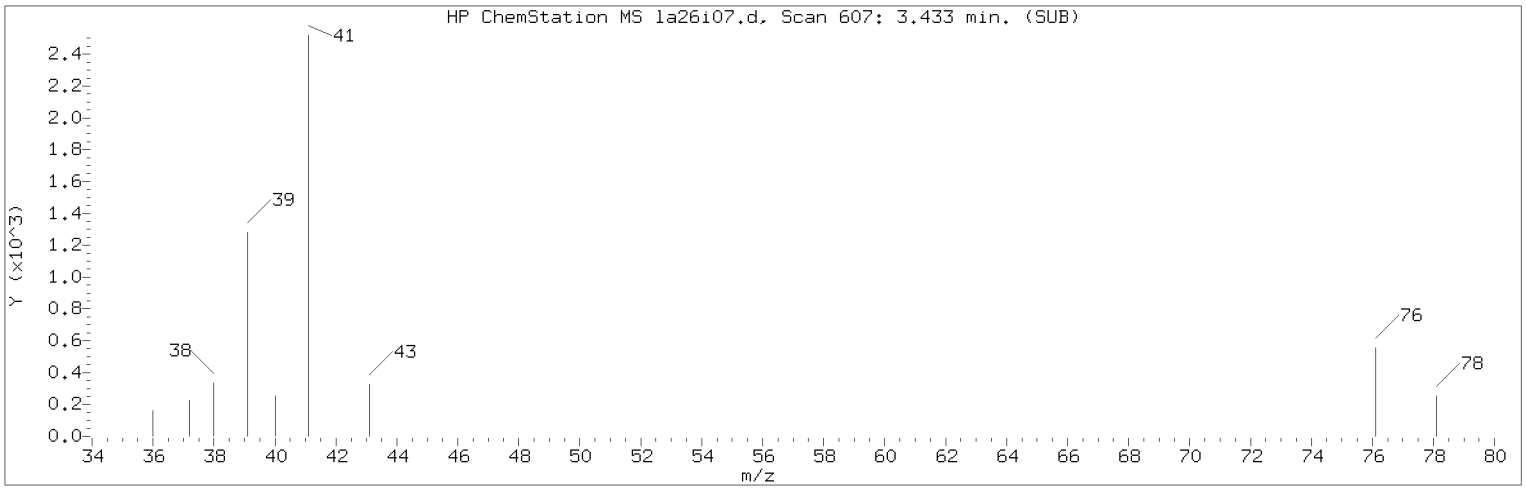
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

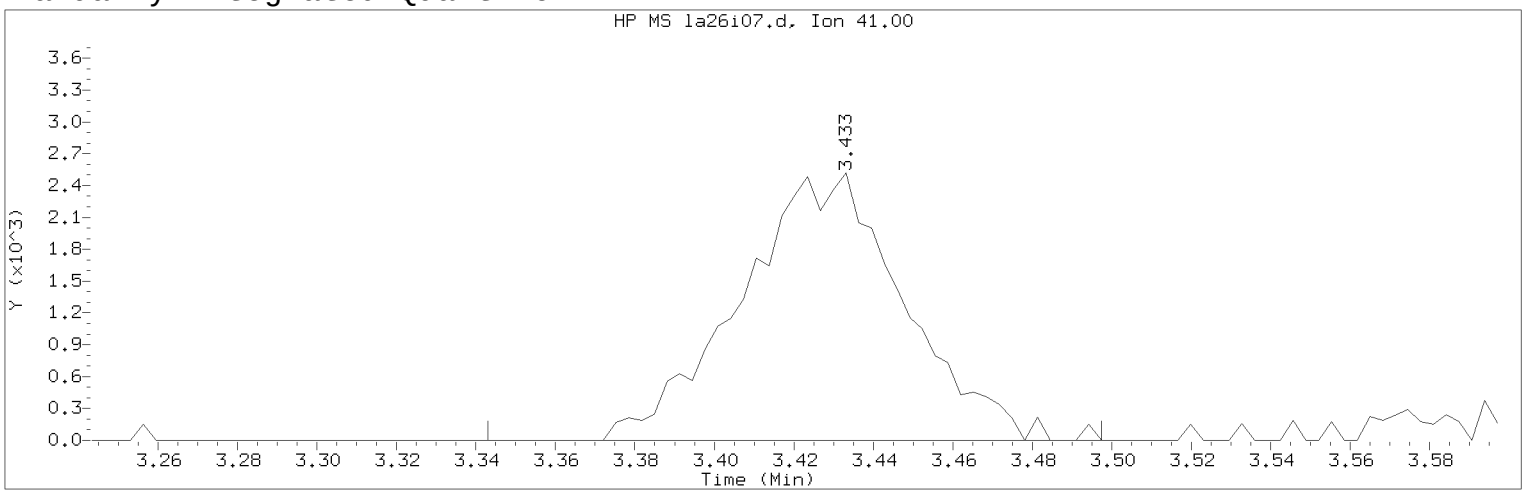
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 595
Retention Time (minutes): 3.394
Quant Ion : 43.00
Area : 1538
On-column Amount (ng) : 0.3199
Integration start scan : 587 Integration stop scan: 595
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648 Page 2848 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

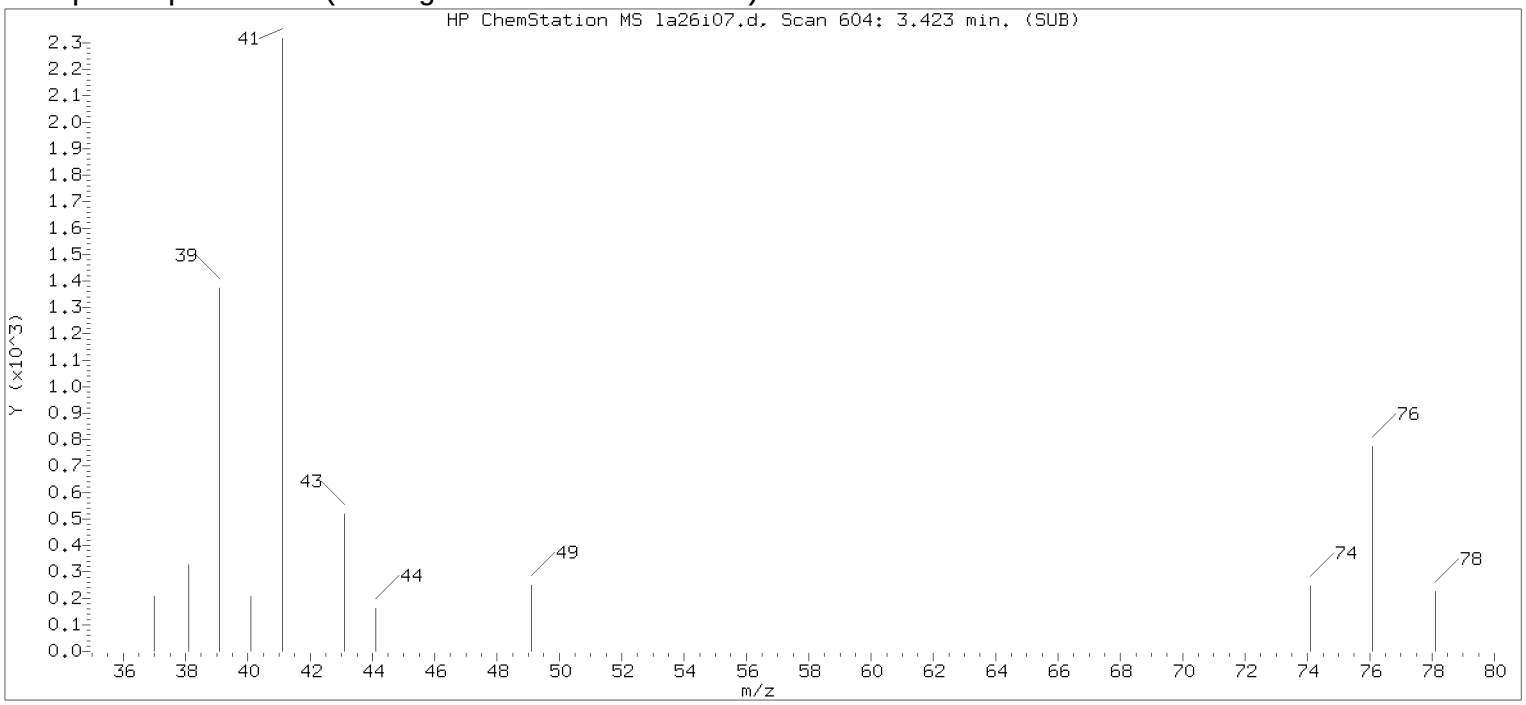
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 607
Retention Time (minutes): 3.433
Quant Ion : 41.00
Area (flag) : 7208M
On-Column Amount (ng) : 0.9581
Integration start scan : 578 Integration stop scan: 626
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

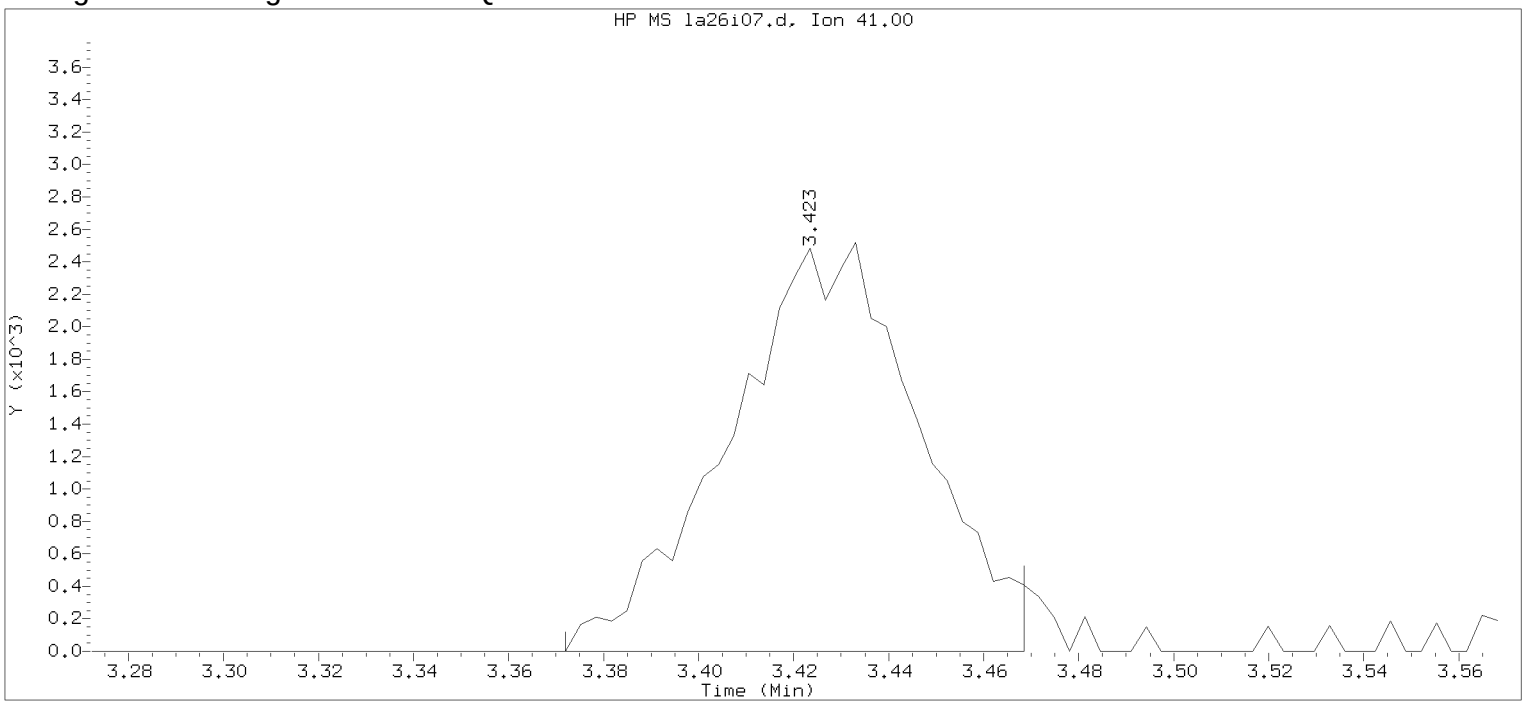
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

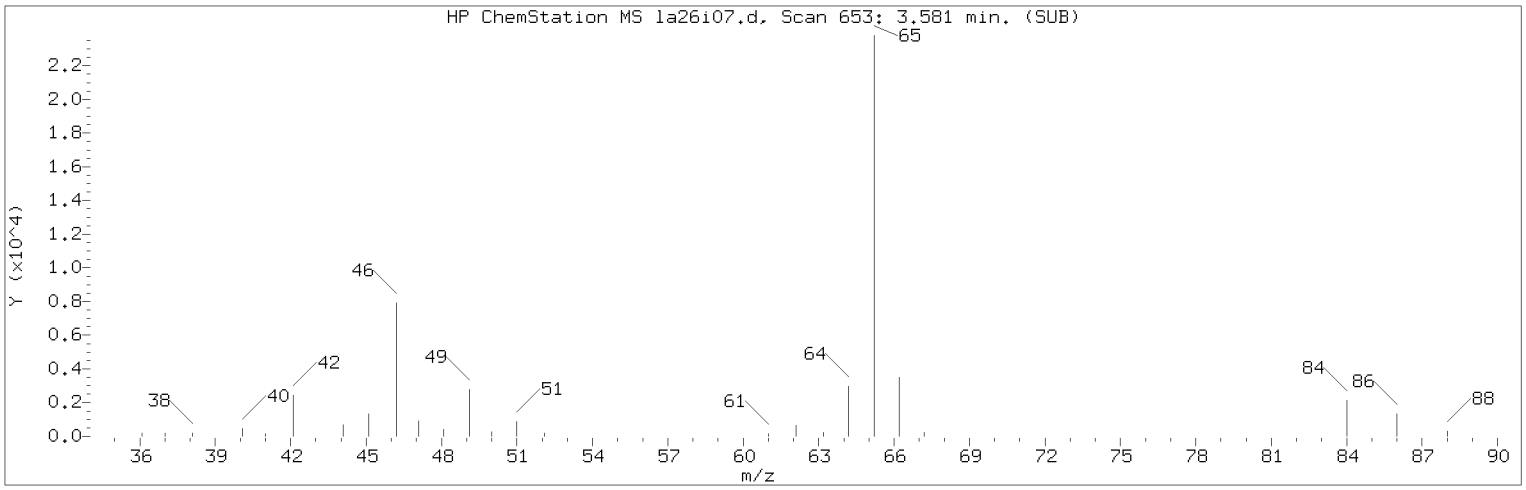
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

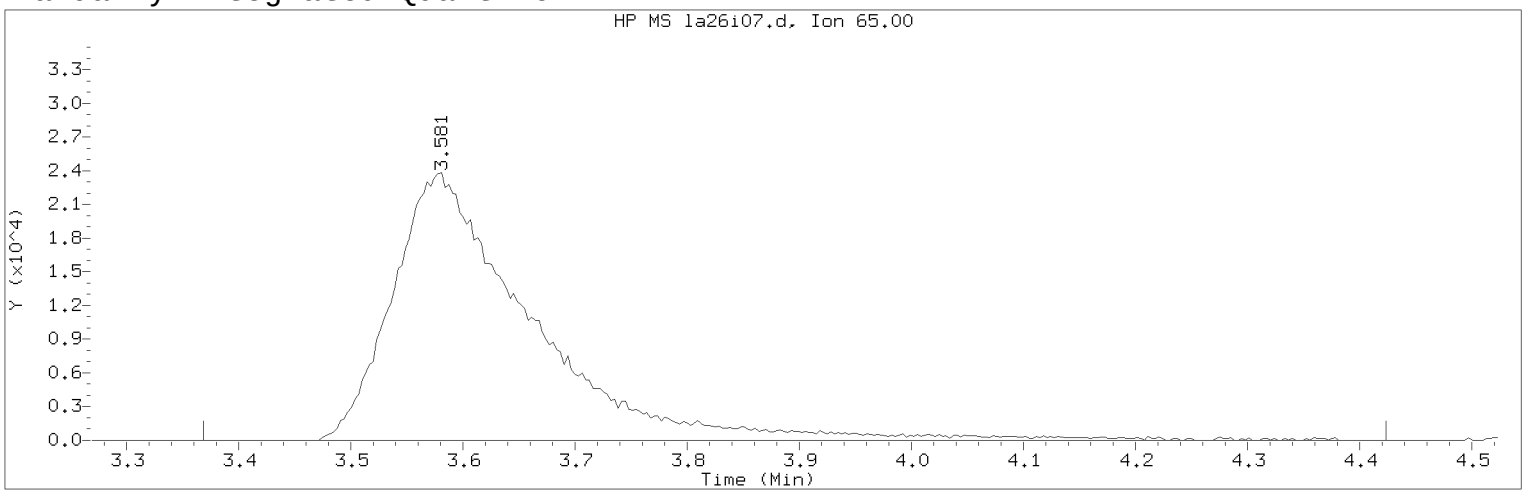
Compound Number : 25
Compound Name : Allyl Chloride
Scan Number : 604
Retention Time (minutes): 3.423
Quant Ion : 41.00
Area : 6993
On-column Amount (ng) : 0.9334
Integration start scan : 587 Integration stop scan: 617
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001  Lab Sample ID: VSTD001

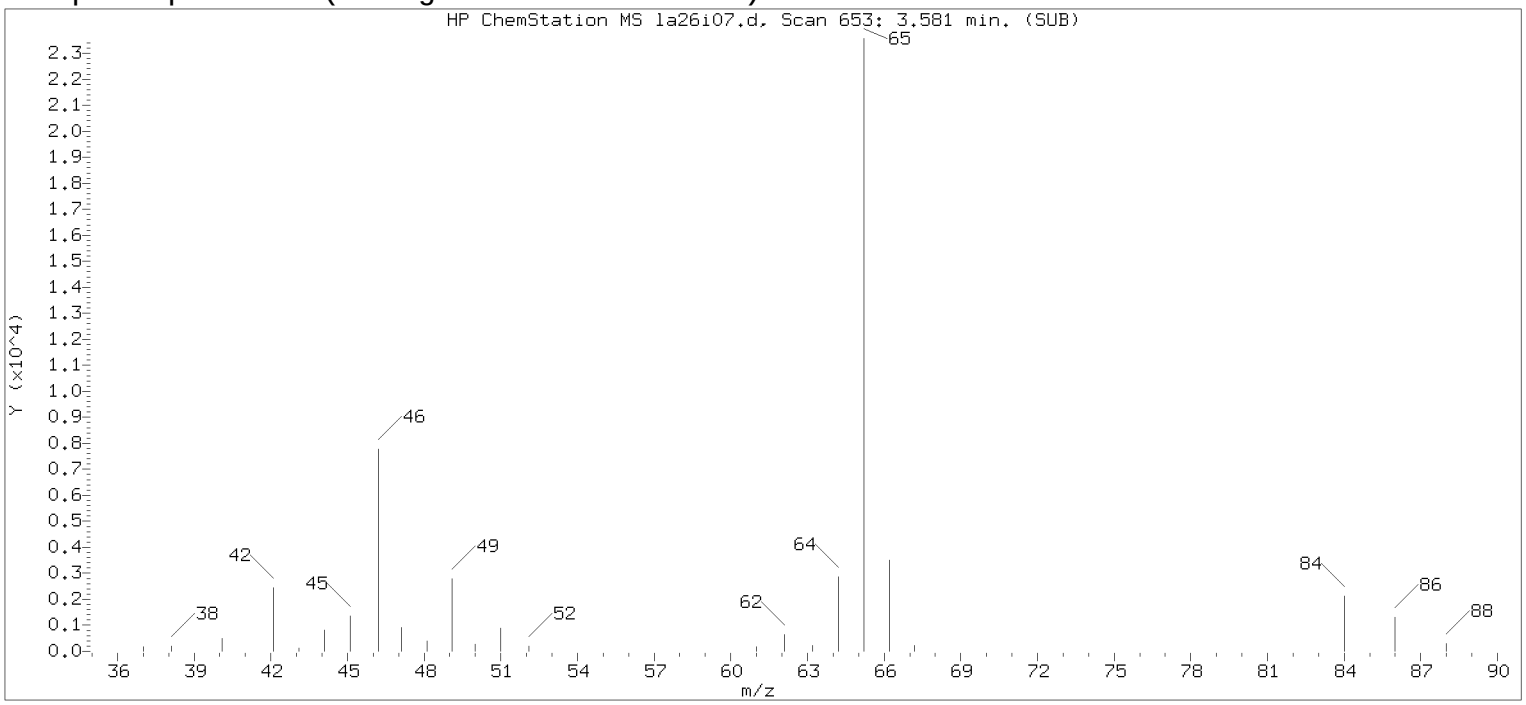
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 204400M
On-Column Amount (ng) : 250.0000
Integration start scan : 586  Integration stop scan: 914
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

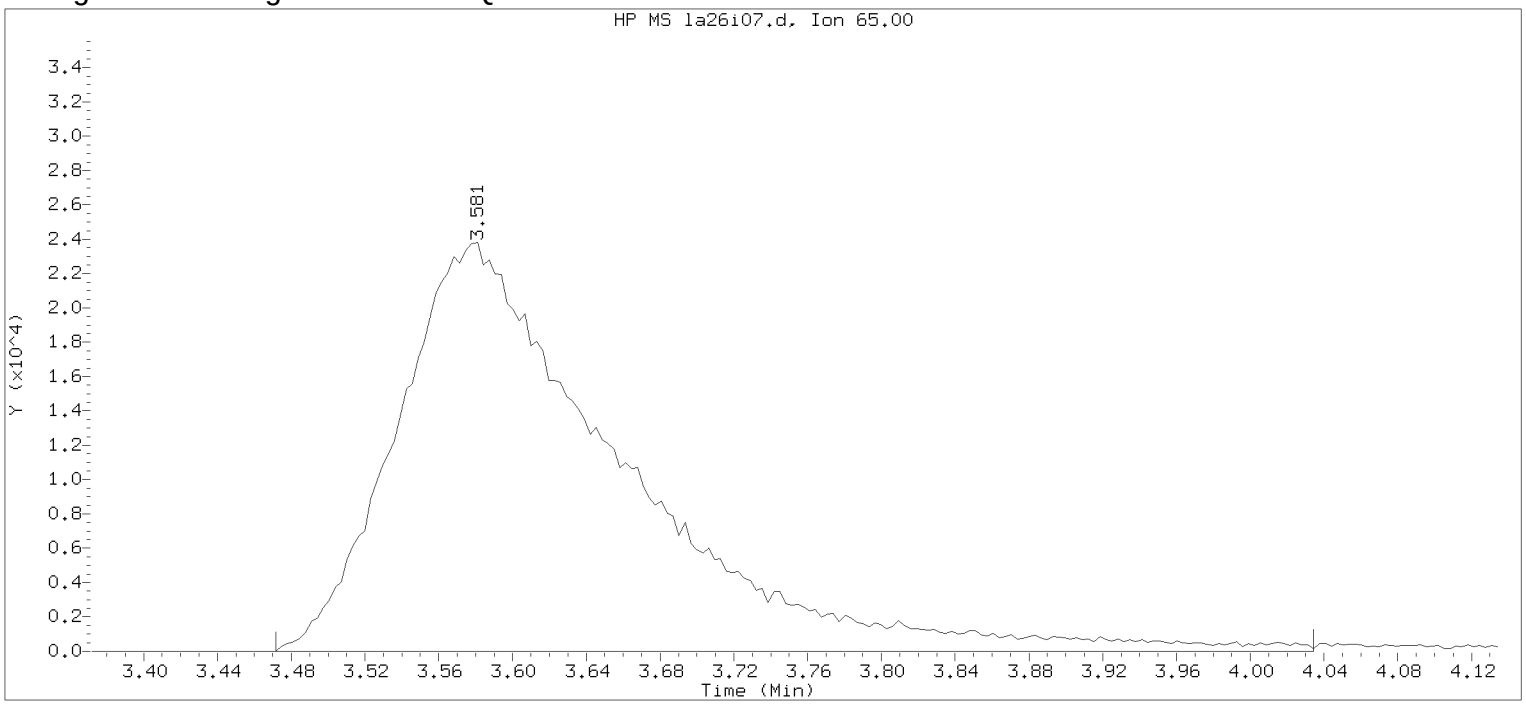
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

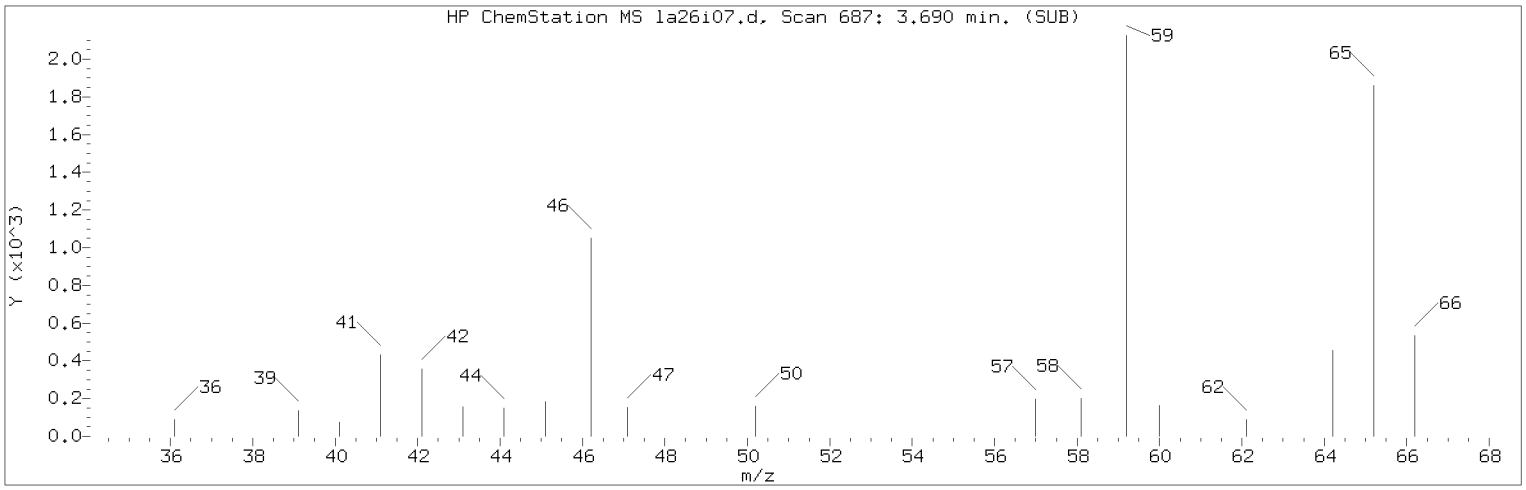
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

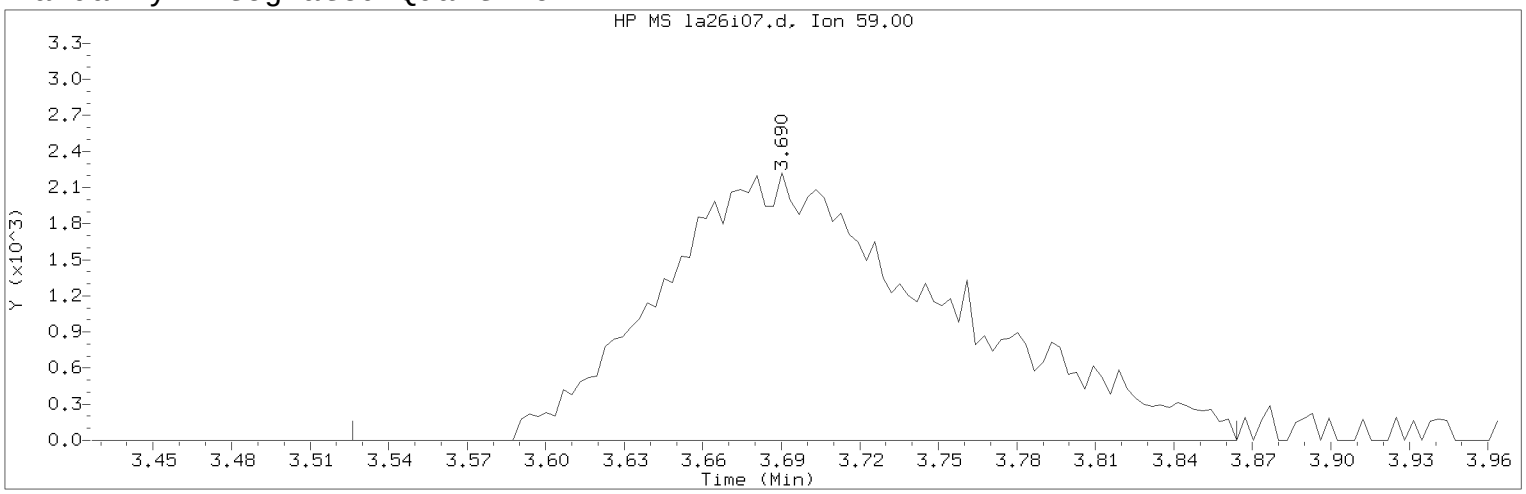
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 200515
On-column Amount (ng) : 250.0000
Integration start scan : 618 Integration stop scan: 793
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 Page 293 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

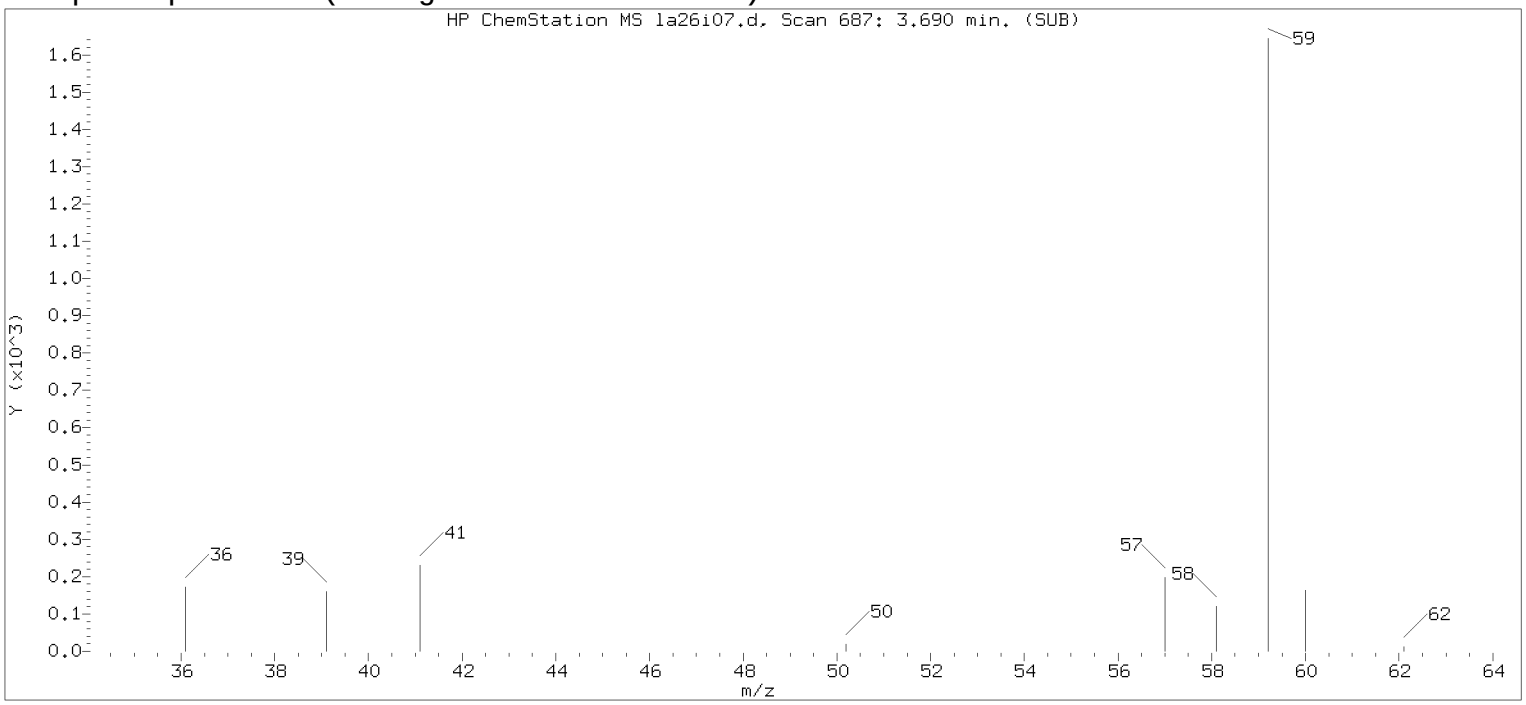
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 687
Retention Time (minutes): 3.690
Quant Ion : 59.00
Area (flag) : 16799M
On-Column Amount (ng) : 21.2415
Integration start scan : 635 Integration stop scan: 740
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

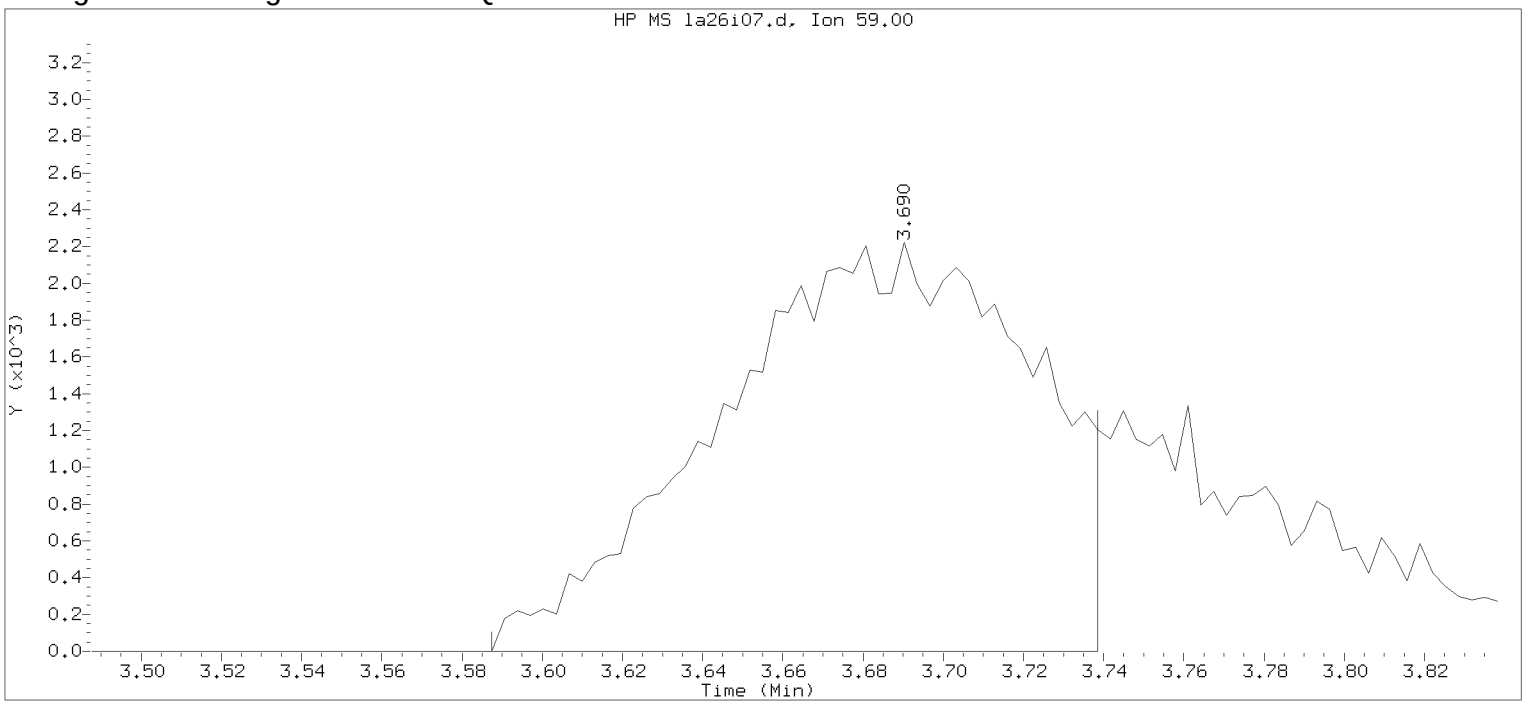
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

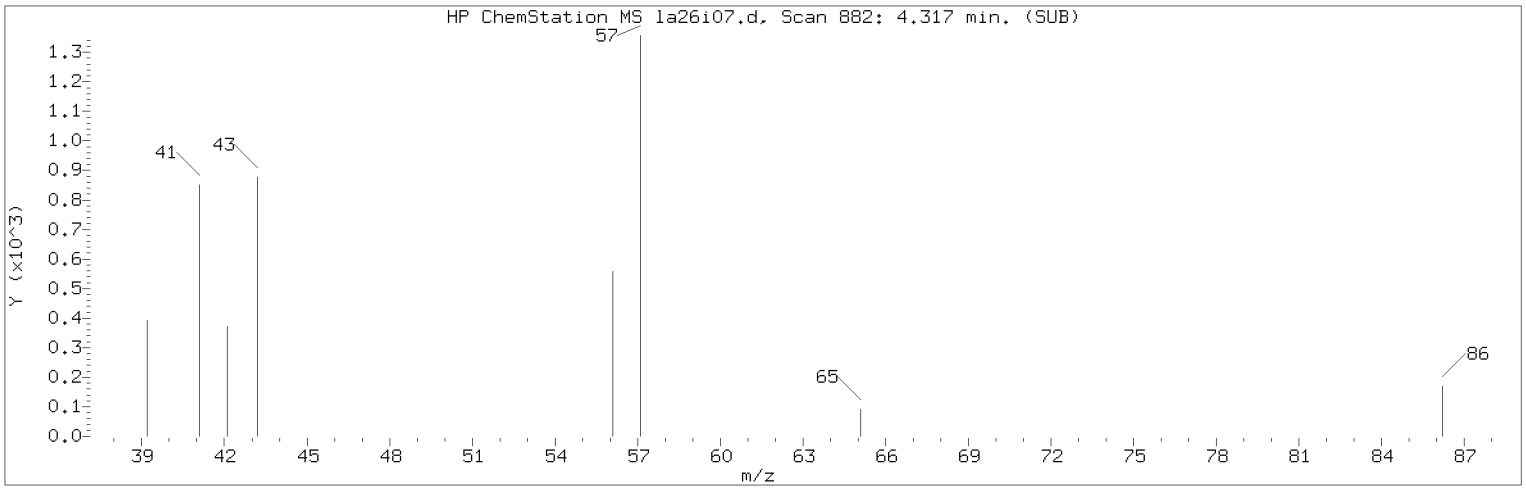
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

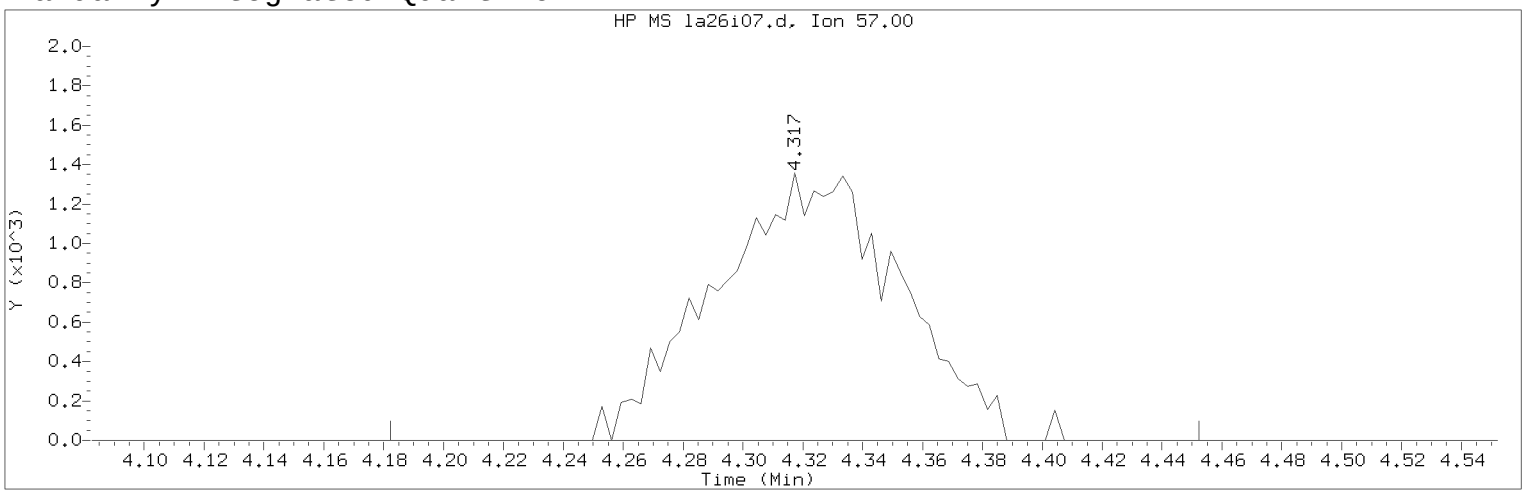
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 687
Retention Time (minutes): 3.690
Quant Ion : 59.00
Area : 12039
On-column Amount (ng) : 16.1792
Integration start scan : 654 Integration stop scan: 701
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 key 2943

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

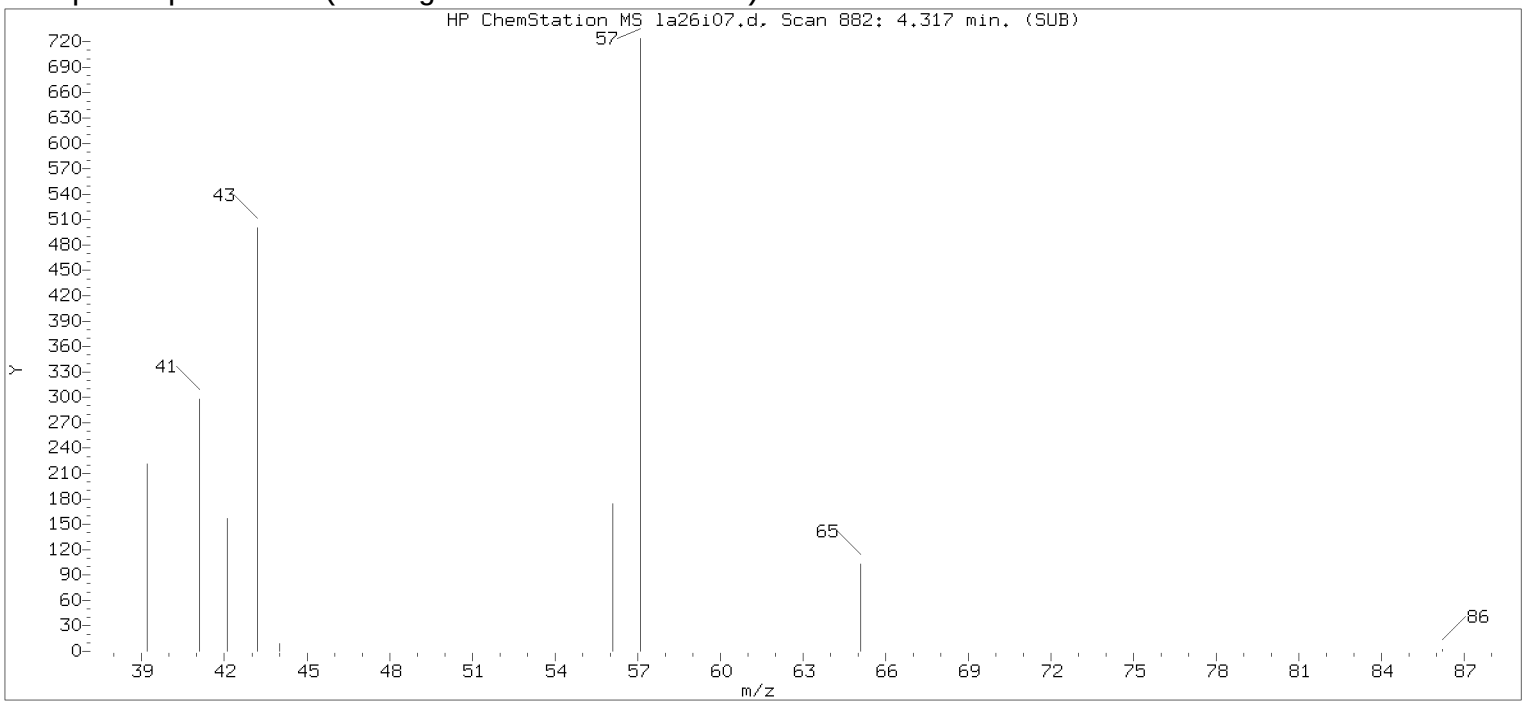
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area (flag) : 5817M
On-Column Amount (ng) : 0.8612
Integration start scan : 839 Integration stop scan: 923
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

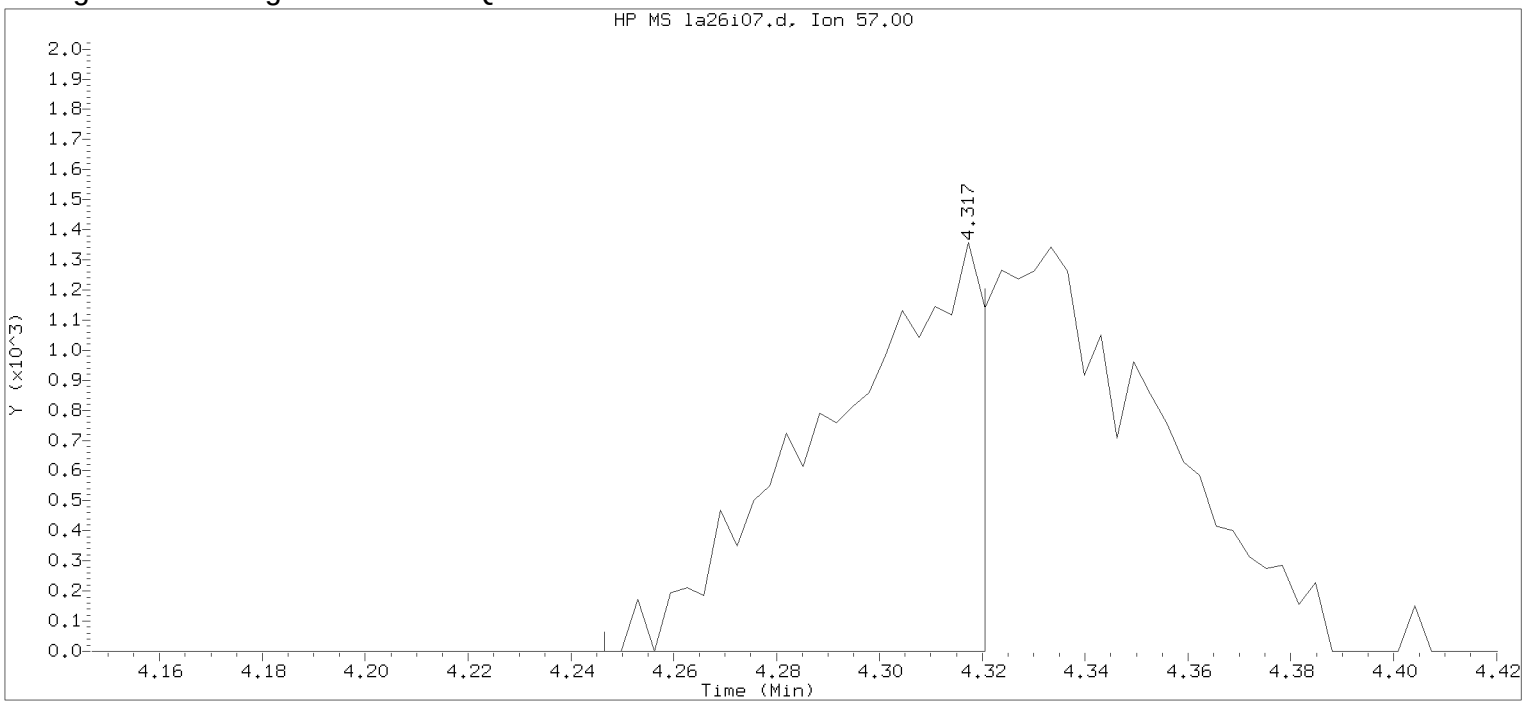
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

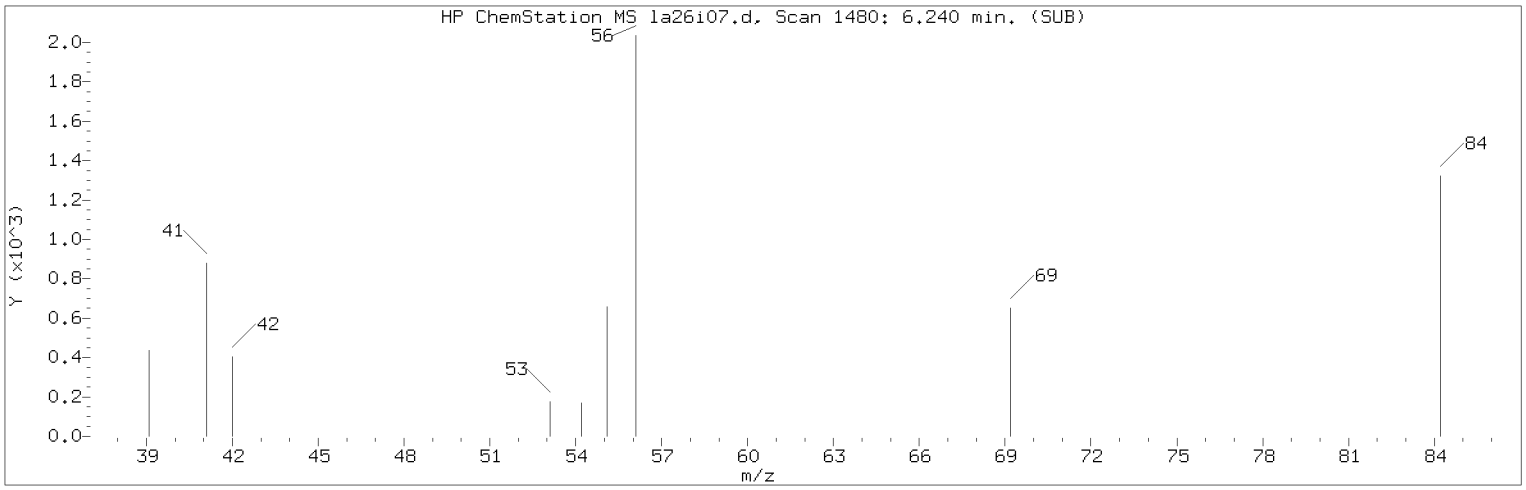
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

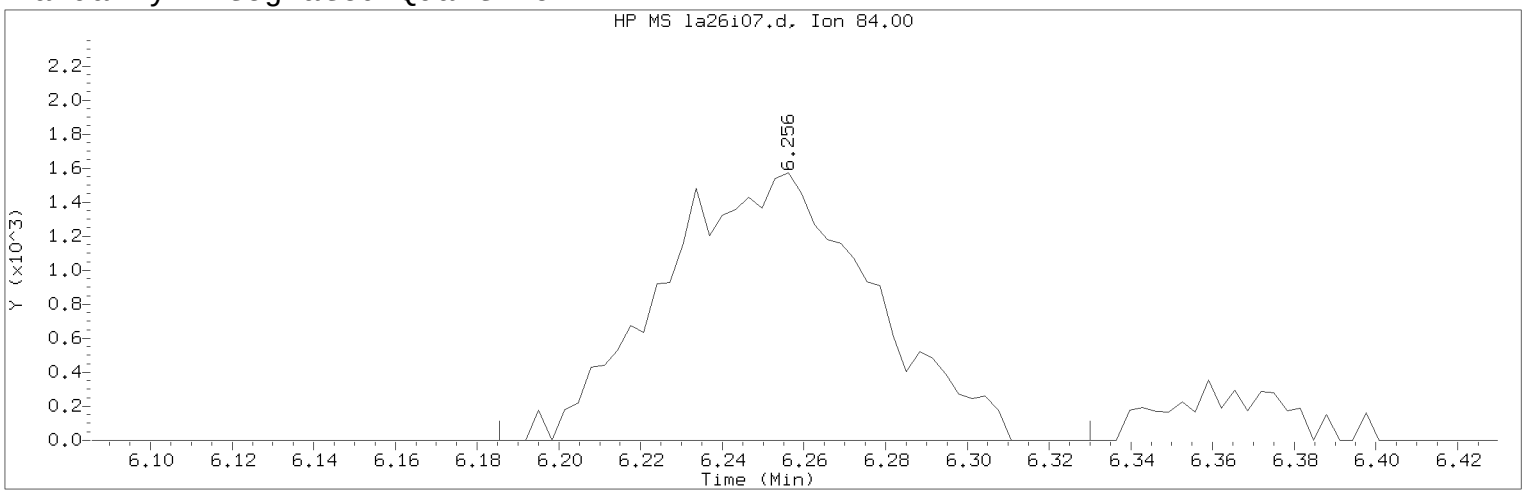
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area : 2803
On-column Amount (ng) : 0.4433
Integration start scan : 859 Integration stop scan: 882
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 key 2948

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

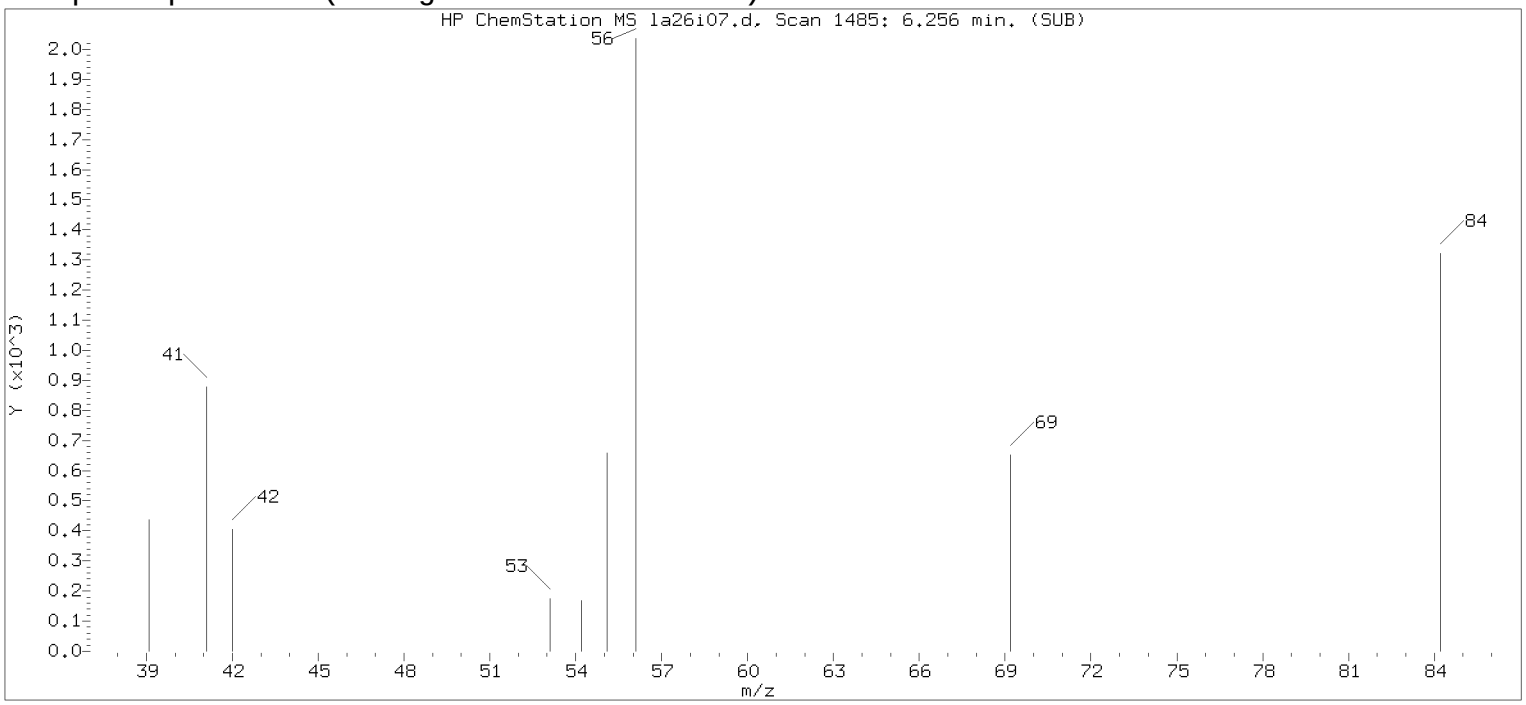
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 1485
Retention Time (minutes): 6.256
Quant Ion : 84.00
Area (flag) : 5572M
On-Column Amount (ng) : 0.8301
Integration start scan : 1462 Integration stop scan: 1507
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

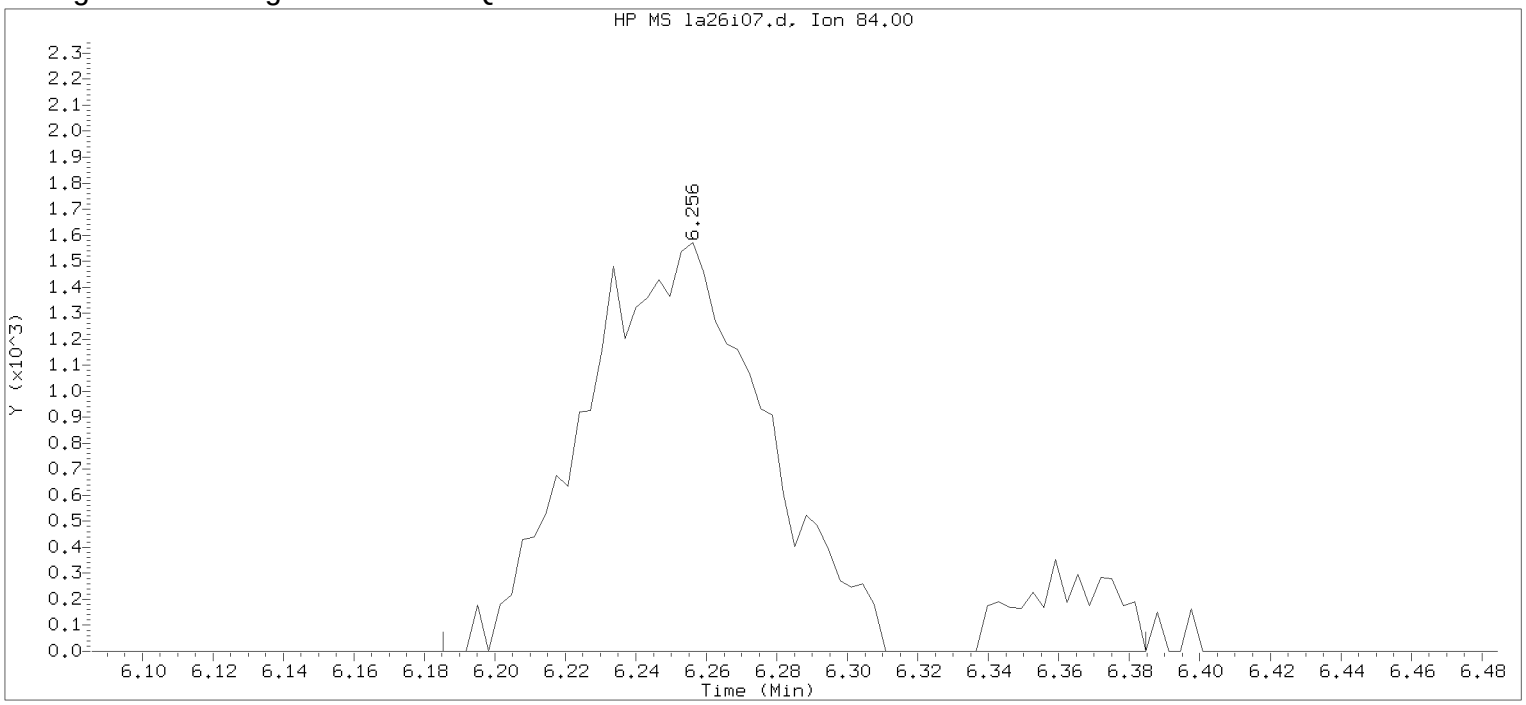
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

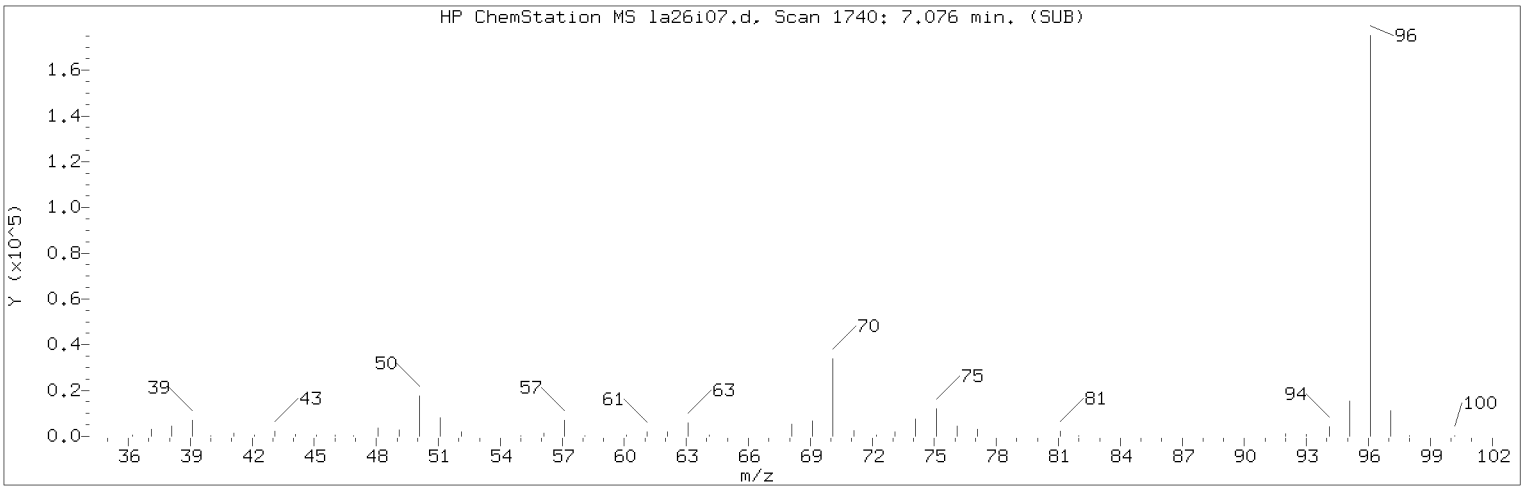
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

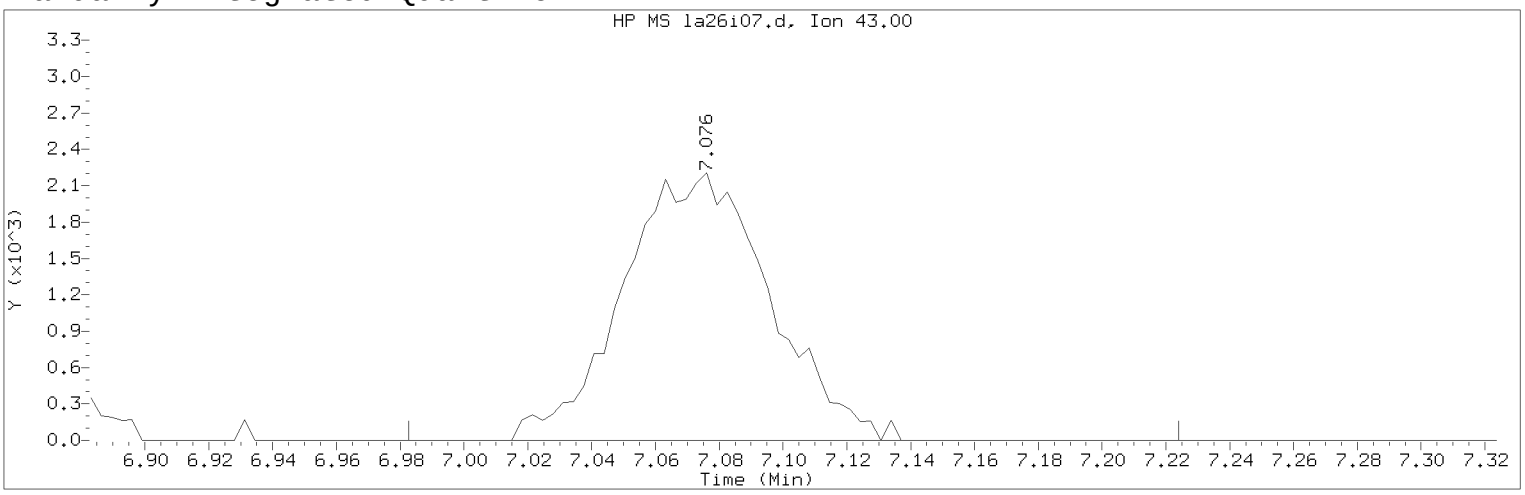
Compound Number : 54
Compound Name : Cyclohexane
Scan Number : 1485
Retention Time (minutes): 6.256
Quant Ion : 84.00
Area : 6158
On-column Amount (ng) : 0.9060
Integration start scan : 1462 Integration stop scan: 1524
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:07.
Target 3.5 esignature user KAS1 key 2948

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001  Lab Sample ID: VSTD001

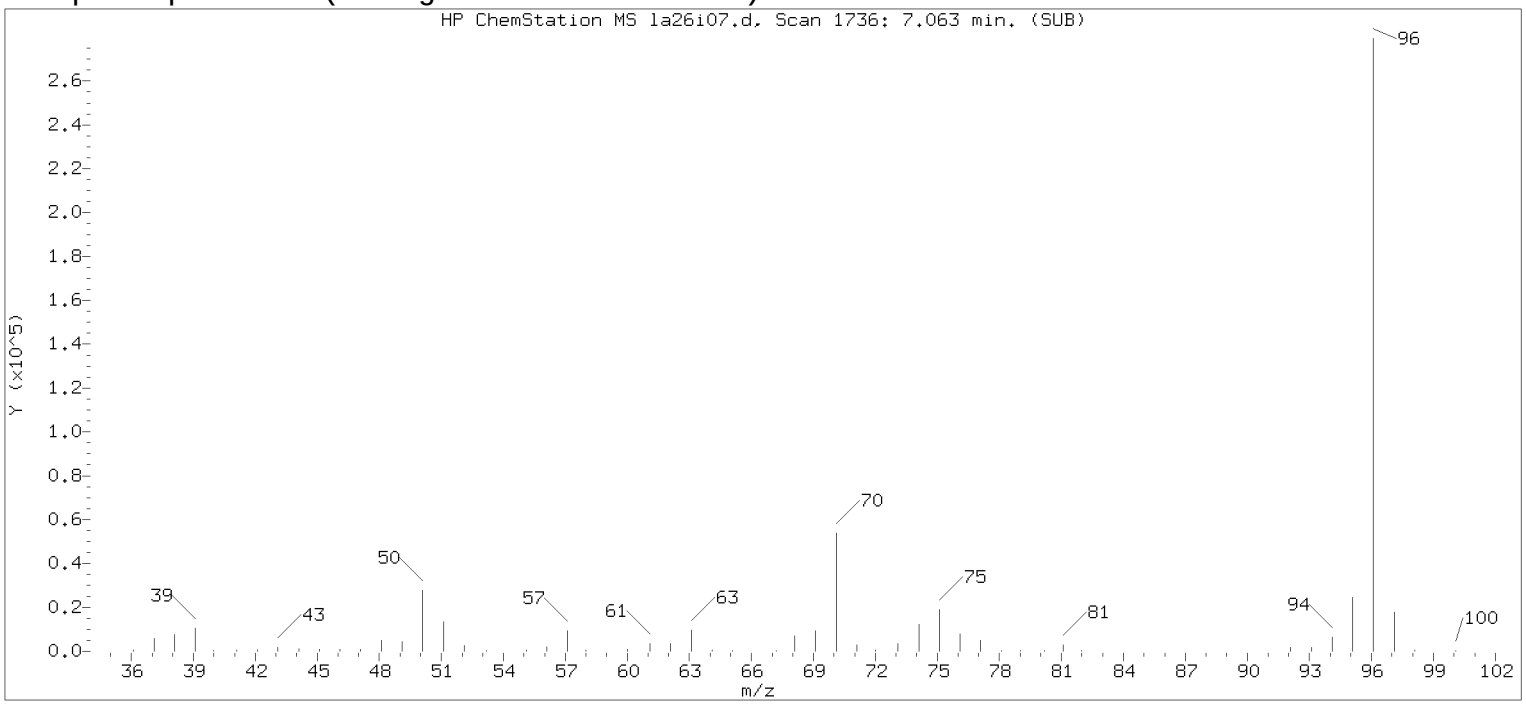
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1740
Retention Time (minutes): 7.076
Quant Ion : 43.00
Area (flag) : 7056M
On-Column Amount (ng) : 0.9330
Integration start scan : 1710  Integration stop scan: 1785
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

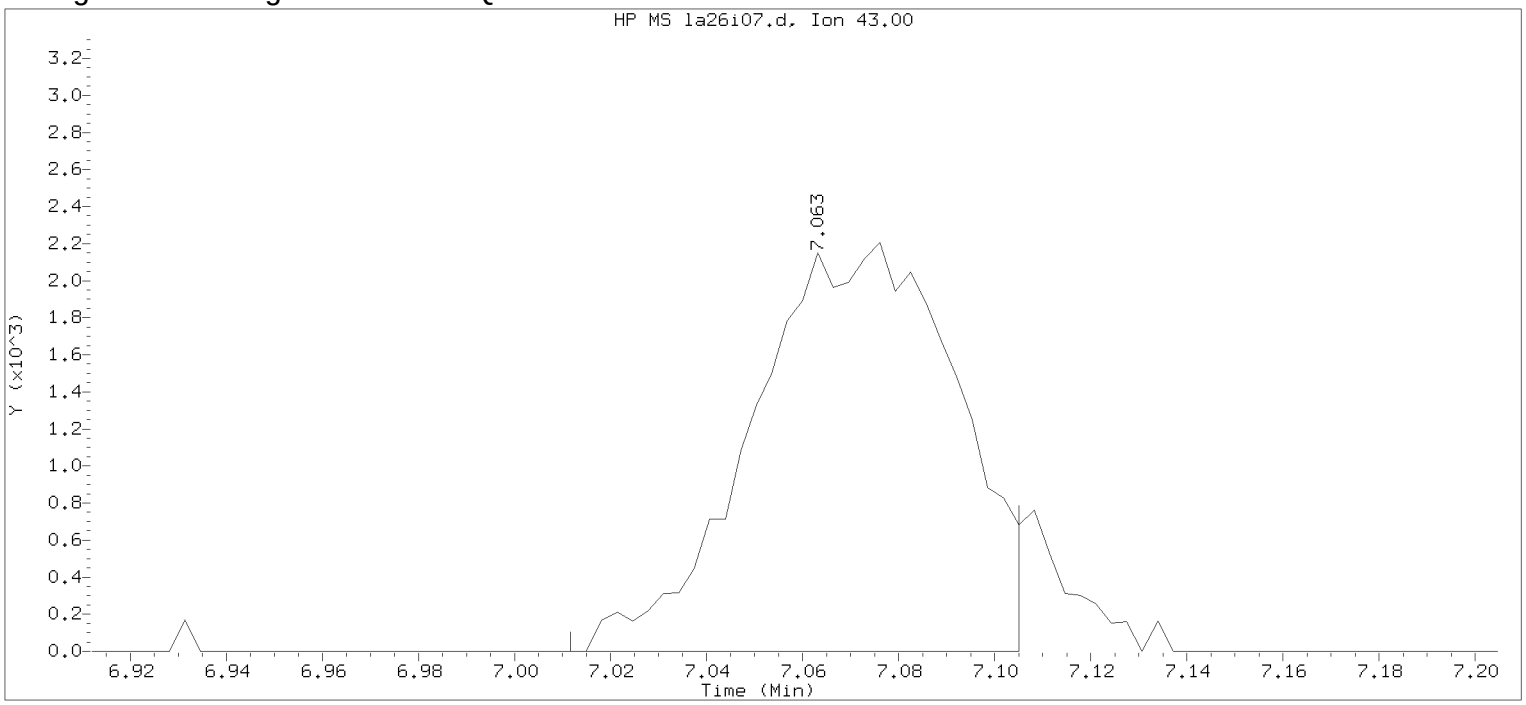
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1736
Retention Time (minutes): 7.063
Quant Ion : 43.00
Area : 6483
On-column Amount (ng) : 0.8667
Integration start scan : 1719 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

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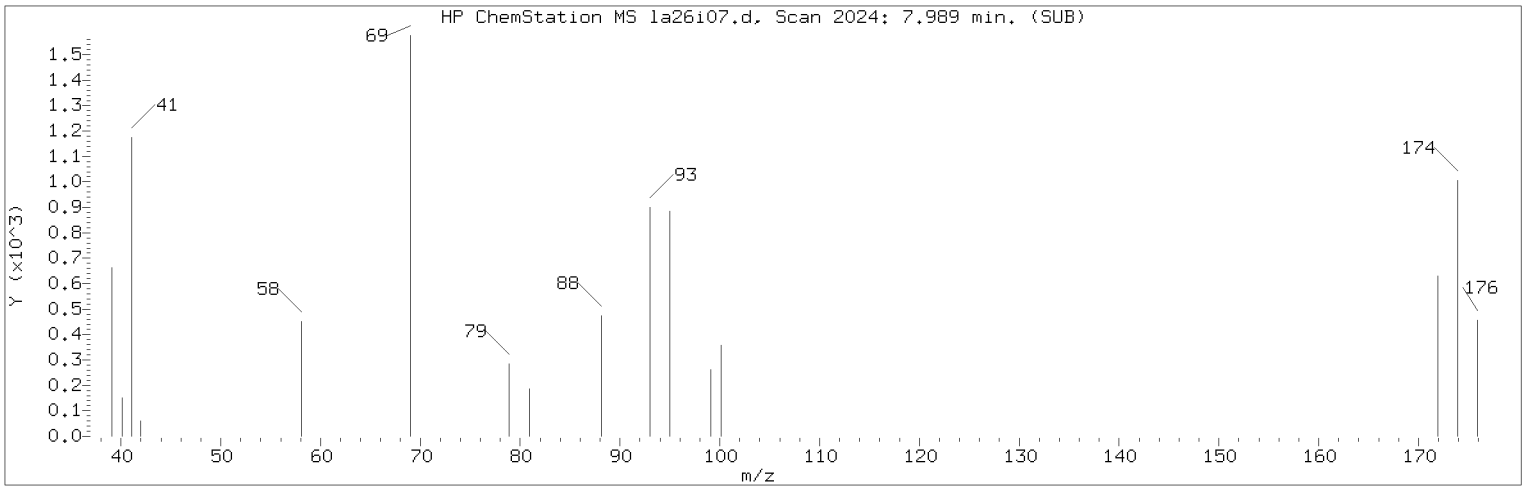
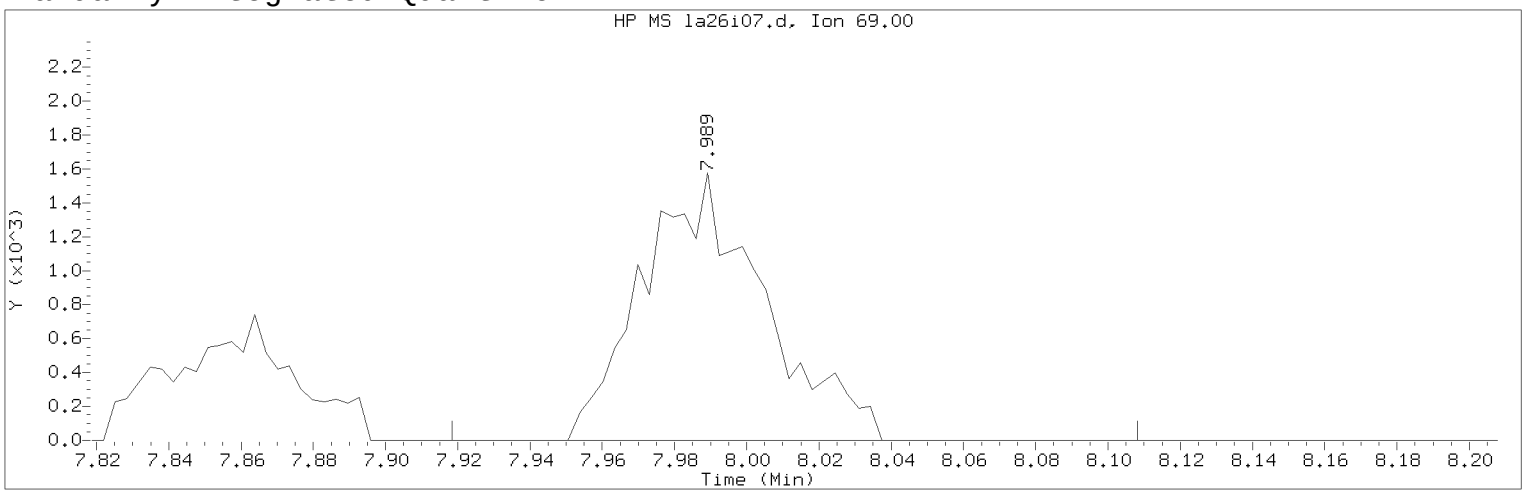
Target 3.5 esignature user KAS1 key 2048

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

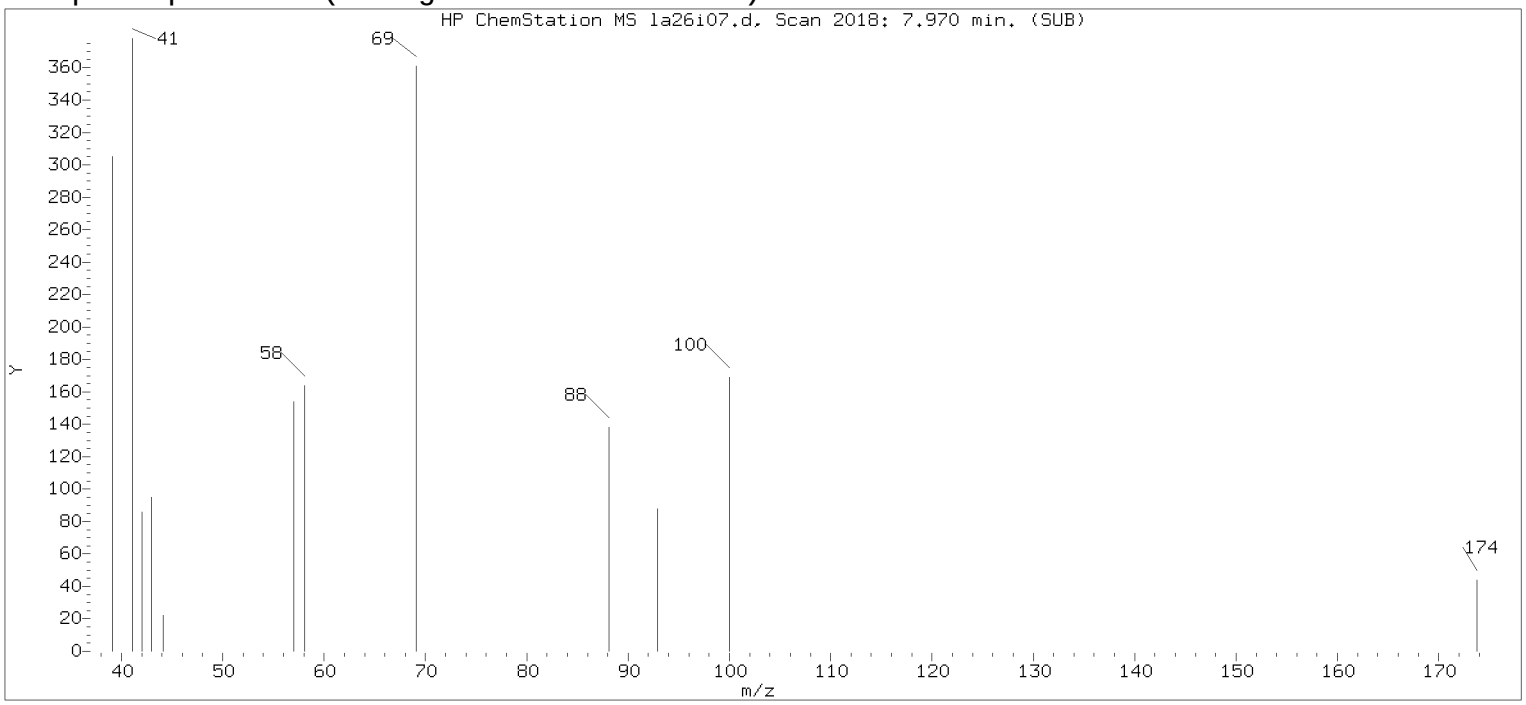
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2024
Retention Time (minutes): 7.989
Quant Ion : 69.00
Area (flag) : 3670M
On-Column Amount (ng) : 0.8277
Integration start scan : 2001 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

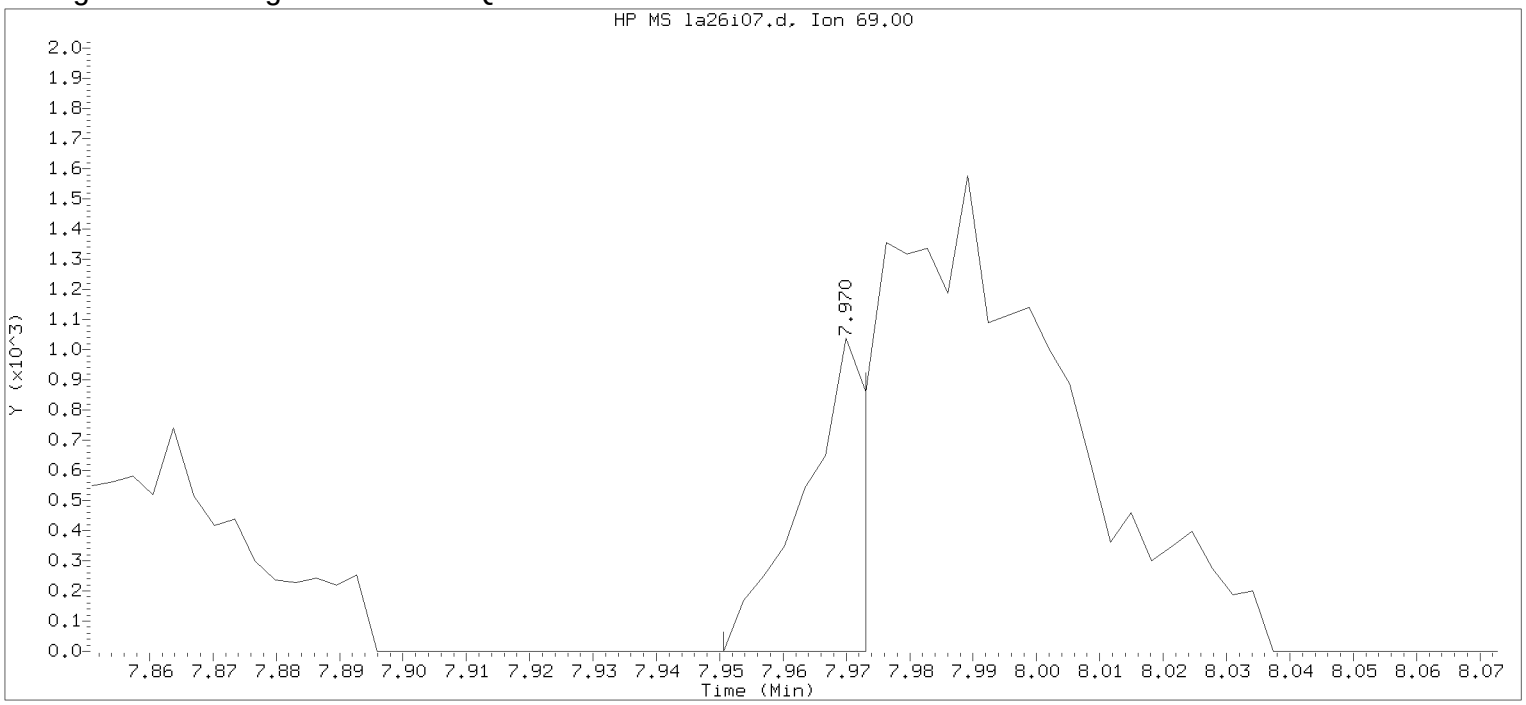
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2018
Retention Time (minutes): 7.970
Quant Ion : 69.00
Area : 661
On-column Amount (ng) : 0.1652
Integration start scan : 2011 Integration stop scan: 2018
Y at integration start : 0 Y at integration end: 0

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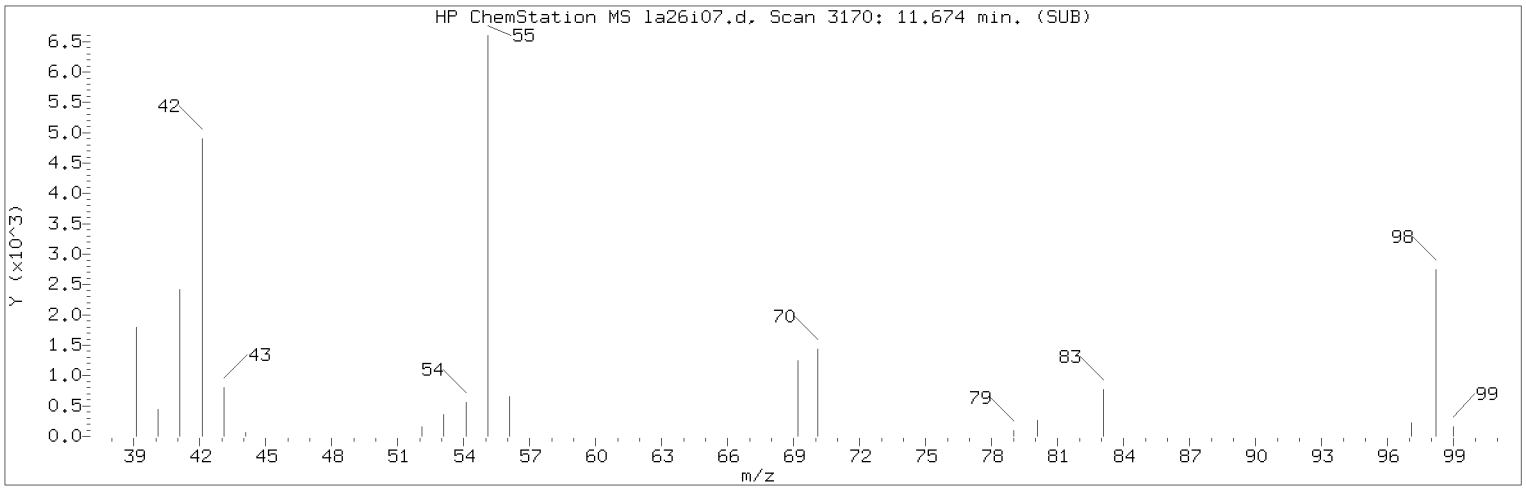
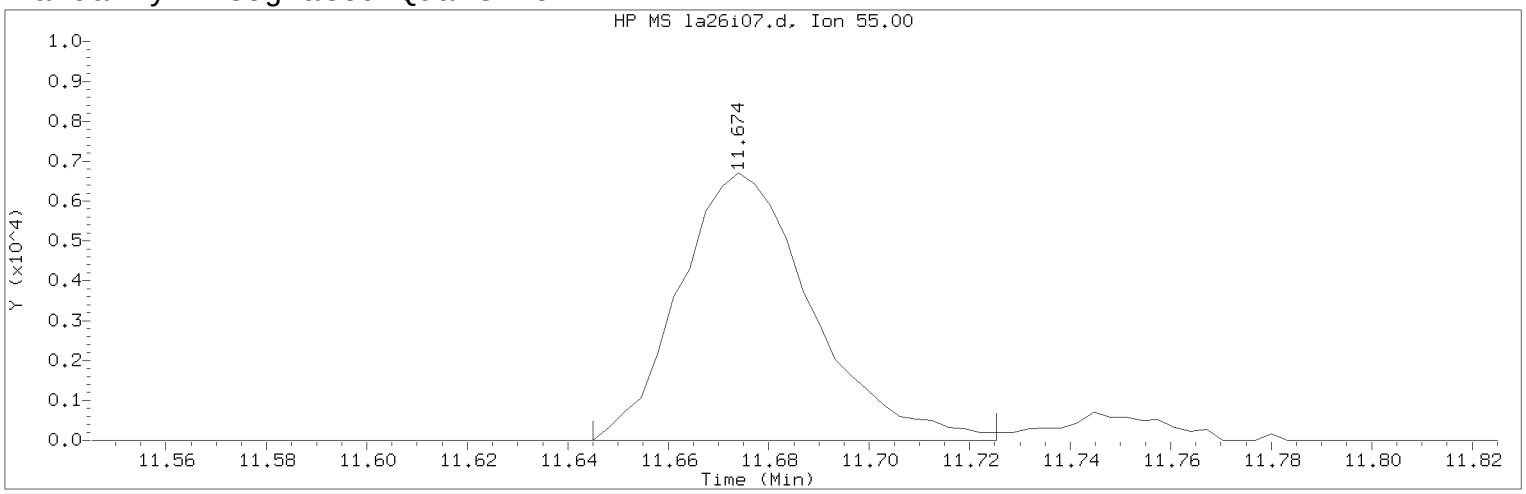
Target 3.5 esignature user KAS1 keyed 2008

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:00
Date, time and analyst ID of latest file update: 26-Apr-2017 16:00 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

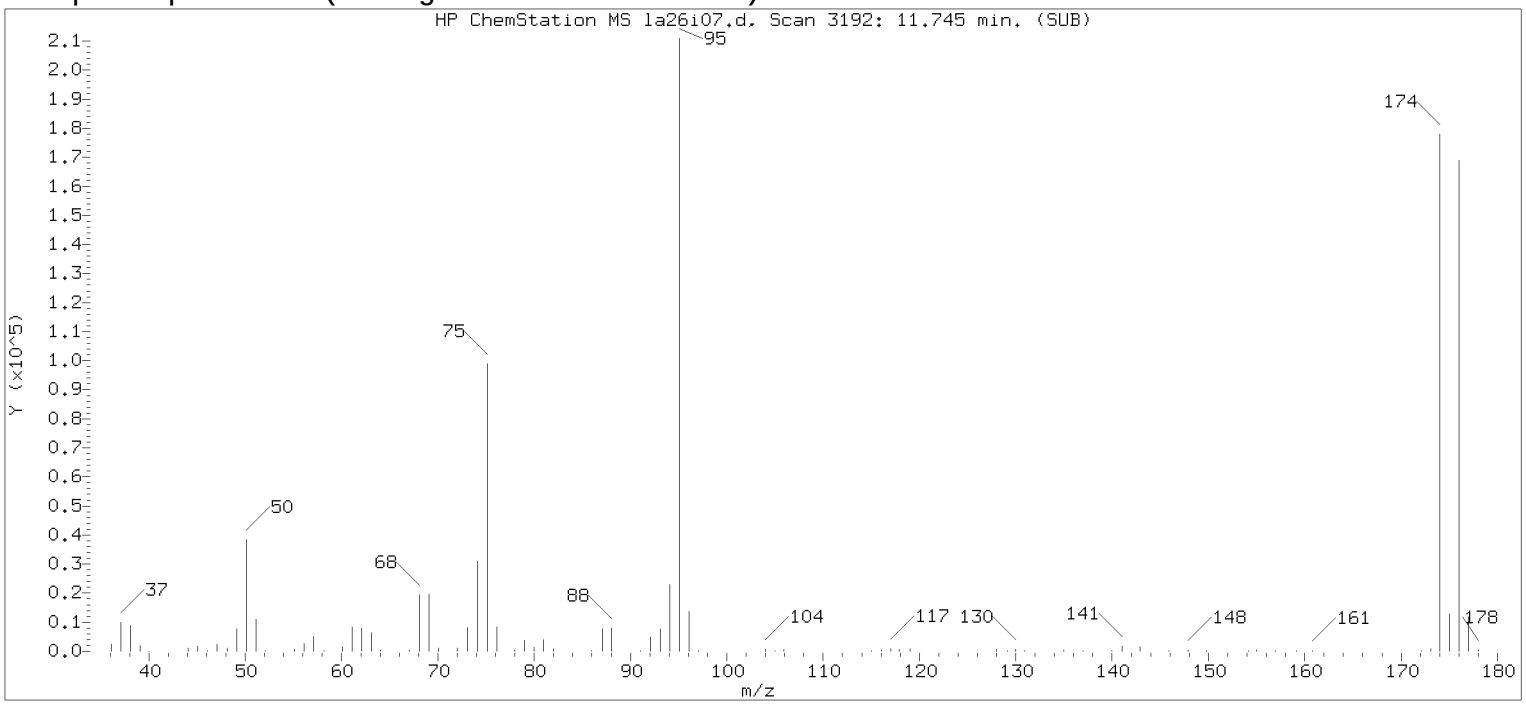
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3170
Retention Time (minutes): 11.674
Quant Ion : 55.00
Area (flag) : 12225A
On-Column Amount (ng) : 46.3770
Integration start scan : 3160 Integration stop scan: 3185
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

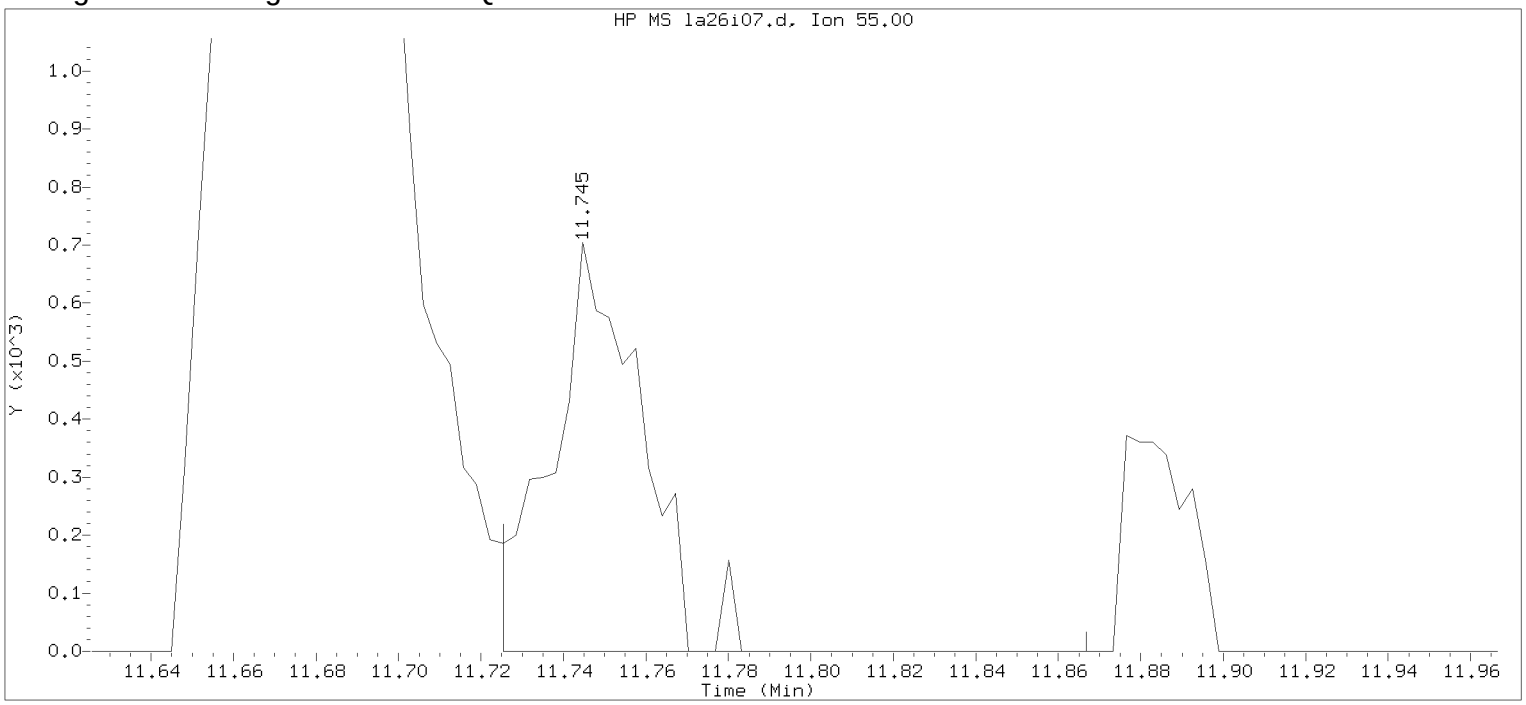
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:07.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26i07.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:32 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 15:50
Date, time and analyst ID of latest file update: 26-Apr-2017 15:50 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3192
Retention Time (minutes): 11.745
Quant Ion : 55.00
Area : 1058
On-column Amount (ng) : 4.6543
Integration start scan : 3185 Integration stop scan: 3229
Y at integration start : 0 Y at integration end: 0

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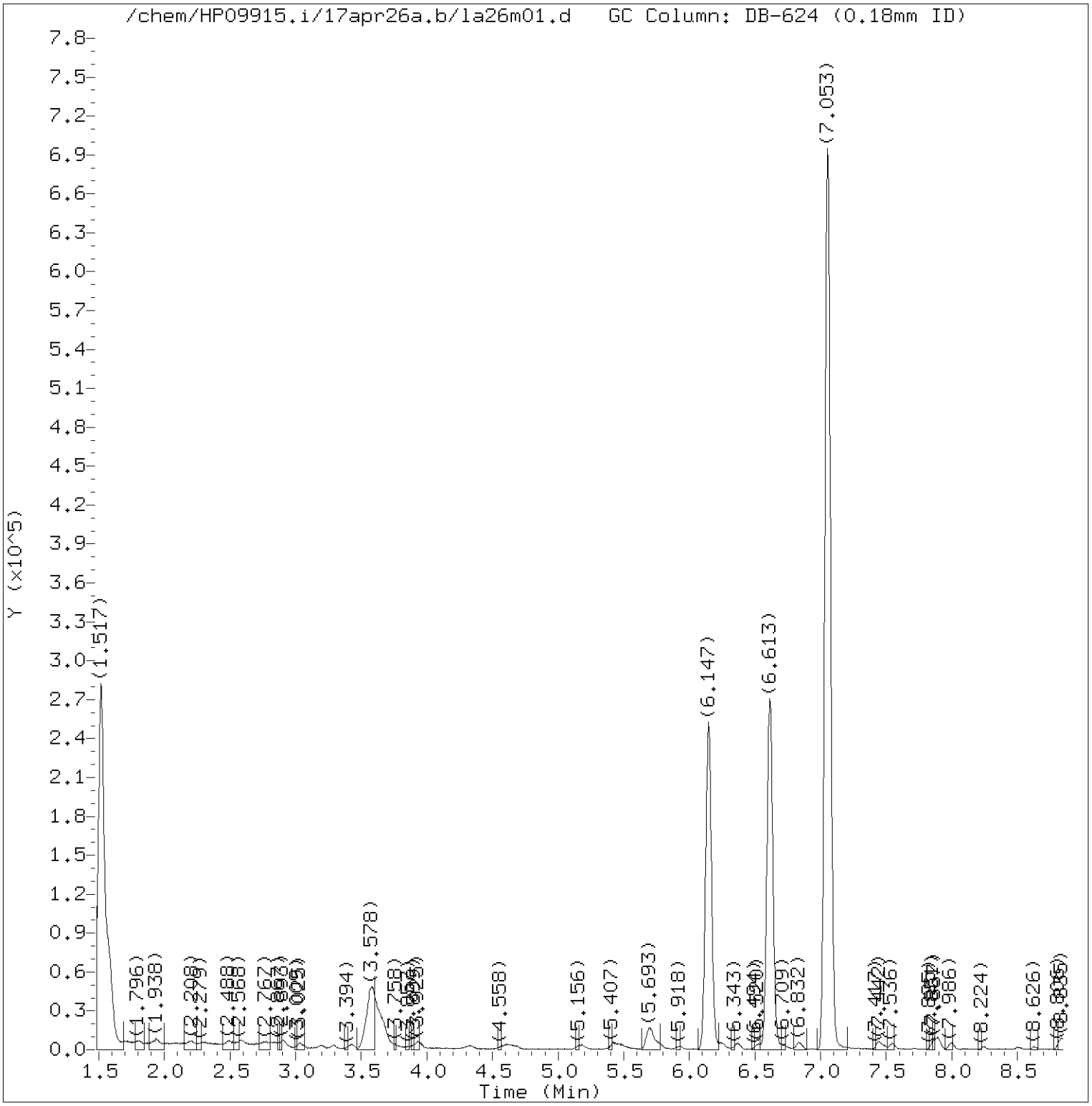
Target 3.5 esignature user KAS1 Page 303 of 1128




Total Ion Chromatogram (TIC)

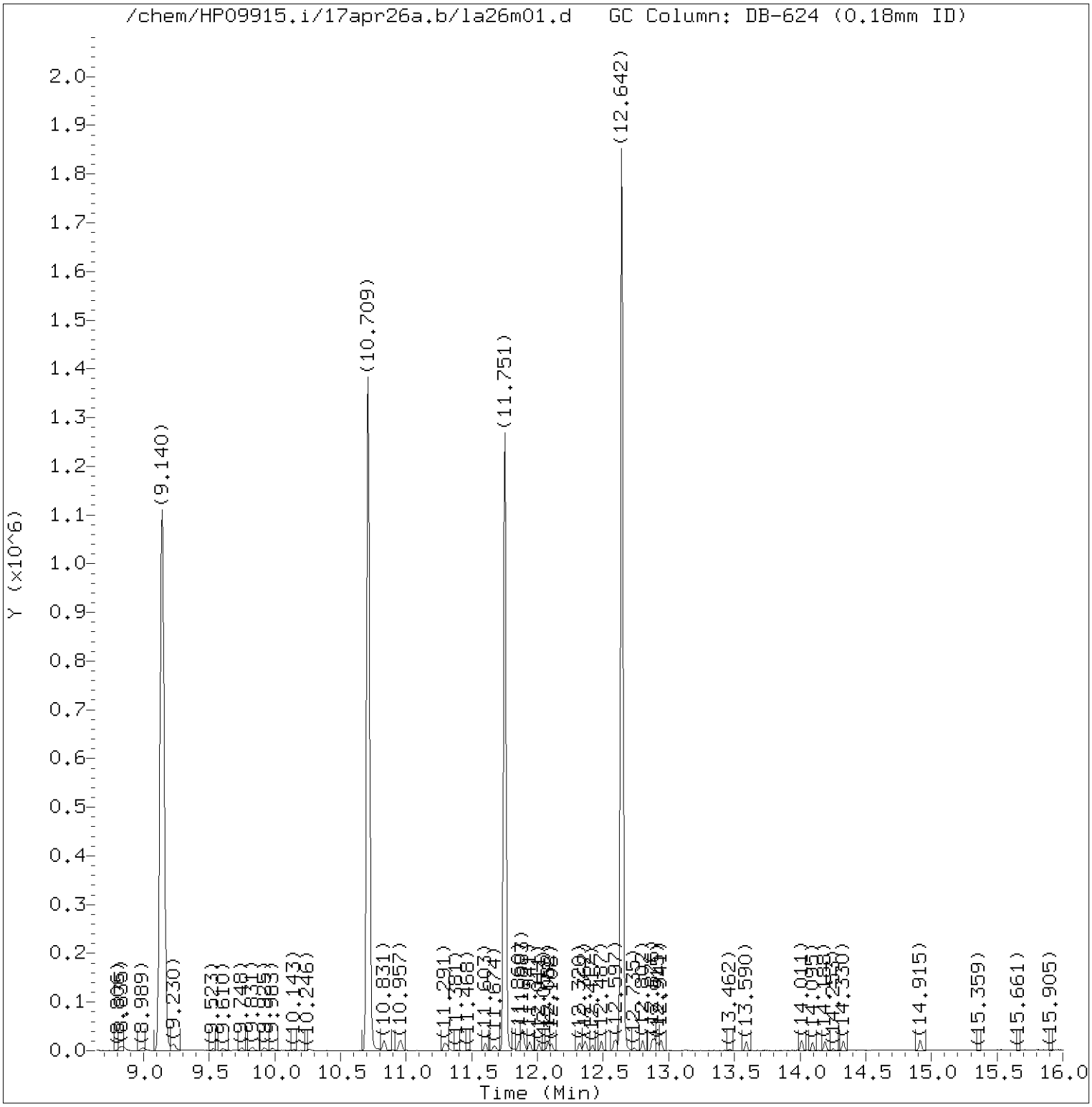
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.722 | 85 | 2339 | 0.380 |
| 4) Chloromethane | (2) | 1.809 | 50 | 2857 | 0.452 |
| 6) Vinyl Chloride | (2) | 1.912 | 62 | 2381 | 0.390 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 1925M | 0.517 |
| 8) Bromomethane | (2) | 2.208 | 94 | 1847M | 0.450 |
| 9) Chloroethane | (2) | 2.301 | 64 | 1571 | 0.456 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 3590 | 0.428 |
| 12) Trichlorofluoromethane | (2) | 2.520 | 101 | 2884 | 0.408 |
| 11) n-Pentane | (2) | 2.591 | 43 | 3057 | 0.525 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 1634 | 0.415 |
| 15) Freon 123a | (2) | 2.809 | 67 | 1902 | 0.404 |
| 16) Acrolein | (1) | 2.912 | 56 | 6871 | 4.797 |
| 18) Acetone | (1) | 3.009 | 58 | 319 | 0.513 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 1569 | 0.419 |
| 19) Freon 113 | (2) | 3.038 | 101 | 1321 | 0.351 |
| 21) 2-Propanol | (1) | 3.182 | 45 | 4366M | 10.594 |
| 22) Methyl Iodide | (2) | 3.189 | 142 | 3071 | 0.423 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 5057 | 0.415 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 2680M | 0.493 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 3325 | 0.443 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 174972 | 250.000 |
| 28) Methylene Chloride | (2) | 3.591 | 84 | 3930 | 0.795 |
| 30) t-Butyl alcohol | (1) | 3.693 | 59 | 7505M | 11.087 |
| 31) Acrylonitrile | (2) | 3.857 | 53 | 696 | 0.244 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 6241 | 0.455 |
| 32) trans-1,2-Dichloroethene | (2) | 3.941 | 96 | 1892 | 0.431 |
| 34) n-Hexane | (2) | 4.314 | 57 | 2680M | 0.398 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 3427 | 0.415 |
| 38) di-Isopropyl ether | (2) | 4.610 | 45 | 7417 | 0.468 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.690 | 53 | 2753 | 0.395 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 5835 | 0.428 |
| 44) 2-Butanone | (2) | 5.407 | 43 | 3021 | 0.791 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 2175 | 0.432 |
| 45) 2,2-Dichloropropane | (2) | 5.423 | 77 | 1812 | 0.329 |
| 47) Propionitrile | (1) | 5.484 | 54 | 9583 | 9.699 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 12206 | 4.290 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 1031 | 0.389 |
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 517M | 0.593 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.931 | 83 | 3387 | 0.430 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 3253M | 0.453 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 251275 | 49.779 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4067 | 0.863 |
| 54) Cyclohexane | (2) | 6.240 | 56 | 3352 | 0.409 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 2006 | 0.382 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2672 | 0.418 |
| 58) Isobutyl Alcohol | (1) | 6.539 | 41 | 5623M | 23.658 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 62764 | 50.002 |
| 60) Benzene | (2) | 6.629 | 78 | 8895 | 0.472 |
| 61) 1,2-Dichloroethane | (2) | 6.706 | 62 | 2708 | 0.424 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 5953 | 0.440 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1033706 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 3401M | 0.451 |
| 69) n-Butanol | (1) | 7.446 | 56 | 7231 | 37.738 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 1999 | 0.410 |
| 72) Methylcyclohexane | (2) | 7.851 | 83 | 3533 | 0.411 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 2149 | 0.416 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 845 | 14.126 |
| 76) Methyl Methacrylate | (2) | 7.983 | 69 | 1518M | 0.343 |
| 74) Dibromomethane | (2) | 7.996 | 93 | 1393 | 0.429 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 2298 | 0.392 |
| 79) 2-Nitropropane | (2) | 8.510 | 41 | 1240 | 0.746 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.632 | 63 | 1335 | 0.336 |
| 81) cis-1,3-Dichloropropene | (2) | 8.815 | 75 | 2761 | 0.361 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 5828 | 0.740 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1012343 | 50.270 |
| 88) Toluene | (3) | 9.230 | 92 | 5535 | 0.473 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 2362 | 0.360 |
| 91) Ethyl Methacrylate | (3) | 9.610 | 69 | 2755 | 0.373 |
| 92) 1,1,2-Trichloroethane | (3) | 9.751 | 97 | 2117 | 0.469 |
| 93) Tetrachloroethene | (3) | 9.831 | 166 | 2288 | 0.442 |
| 94) 1,3-Dichloropropane | (3) | 9.925 | 76 | 3487 | 0.446 |
| 96) 2-Hexanone | (3) | 9.983 | 43 | 3976 | 0.704 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 5123 | 0.721 |
| 97) Dibromochloromethane | (3) | 10.150 | 129 | 1597 | 0.342 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 2039 | 0.413 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 788712 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 4267 | 0.635 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 6446 | 0.477 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 1648 | 0.370 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 9923 | 0.440 |
| 106) m+p-Xylene | (3) | 10.960 | 106 | 7187 | 0.818 |
| 107) o-Xylene | (3) | 11.291 | 106 | 3699 | 0.423 |
| 109) Styrene | (3) | 11.311 | 104 | 5315 | 0.368 |
| 110) Bromoform | (3) | 11.468 | 173 | 1137 | 0.335 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 9437 | 0.422 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 4553M | 20.180 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379187 | 50.658 |
| 108) Xylene (Total) | (3) | | 106 | 10886 | 1.241 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 3396 | 0.450 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 2630 | 0.432 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.886 | 53 | 8626 | 3.986 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 993 | 0.465 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 12373 | 0.460 |
| 120) 2-Chlorotoluene | (4) | 12.015 | 126 | 2680M | 0.479 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 8325 | 0.434 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 2713 | 0.466 |
| 124) tert-Butylbenzene | (4) | 12.323 | 134 | 1768 | 0.427 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1190 | 0.364 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 8421 | 0.427 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 11053 | 0.452 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 6155 | 0.532 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 10017 | 0.464 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 425430 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 6850 | 0.572 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 9695 | 0.469 |
| 135) Benzyl Chloride | (4) | 12.738 | 91 | 3470 | 0.277 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 5811 | 0.451 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 6562 | 0.485 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 5769 | 0.535 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 5976 | 0.525 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 4851 | 0.447 |
| 141) Diethylbenzene (total) | (4) | | 100 | 17224 | 1.382 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.468 | 75 | 594 | 0.372 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.593 | 180 | 5802 | 0.629 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 6179 | 0.690 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 2914 | 0.750 |
| 148) Naphthalene | (4) | 14.188 | 128 | 13901 | 0.515 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 6003 | 0.695 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 9582 | 0.549 |



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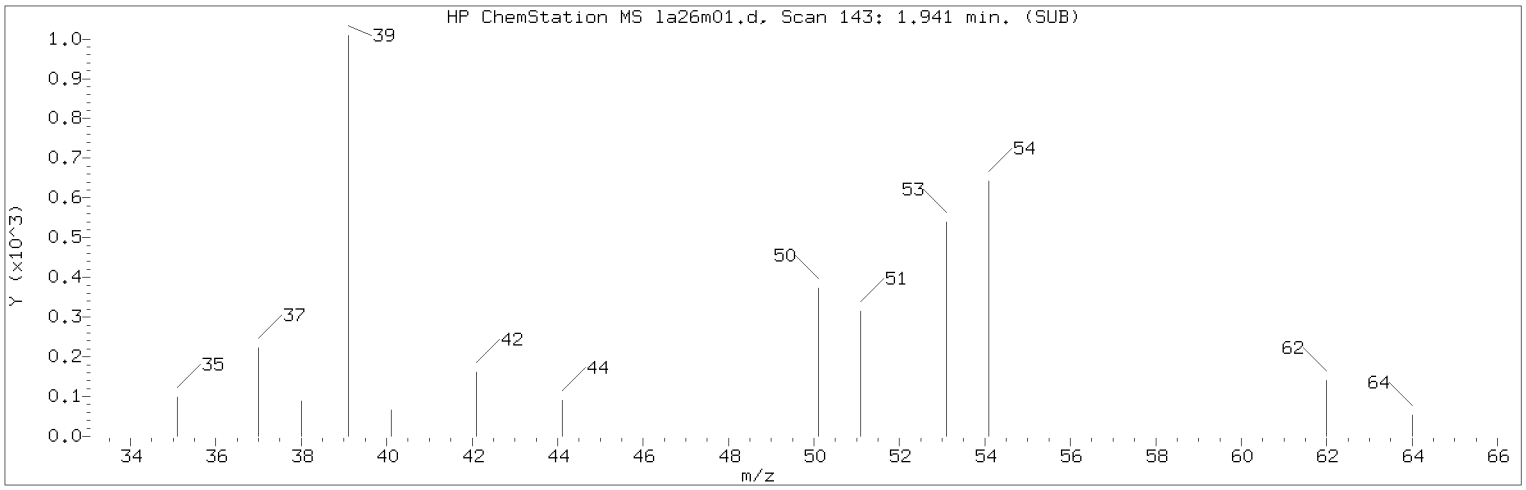
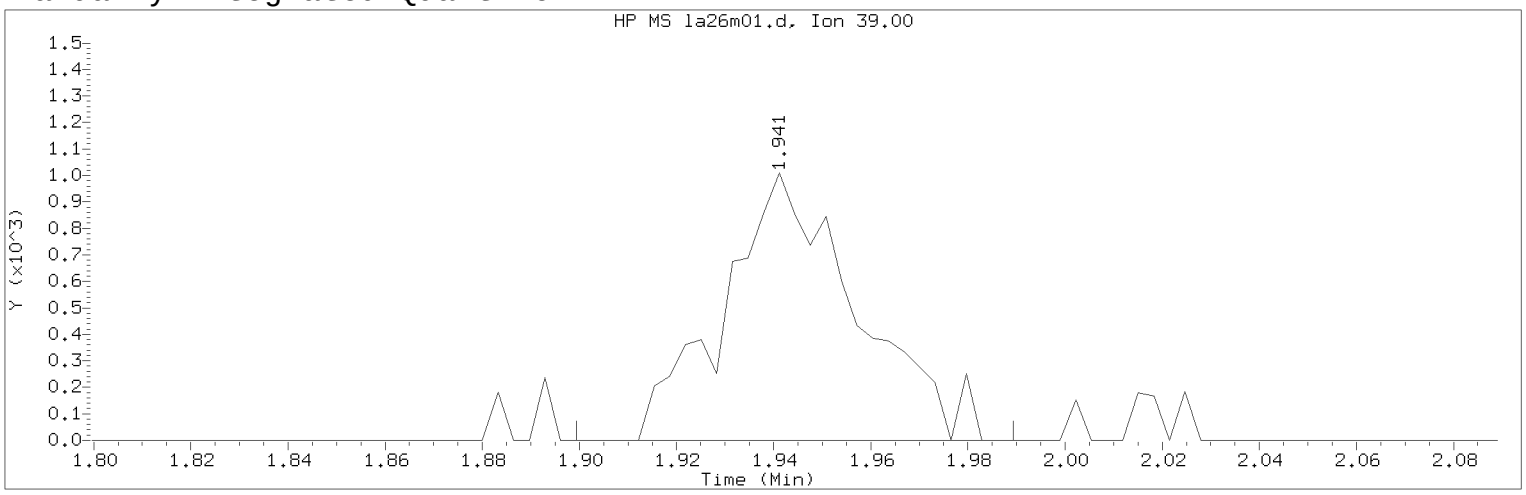
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

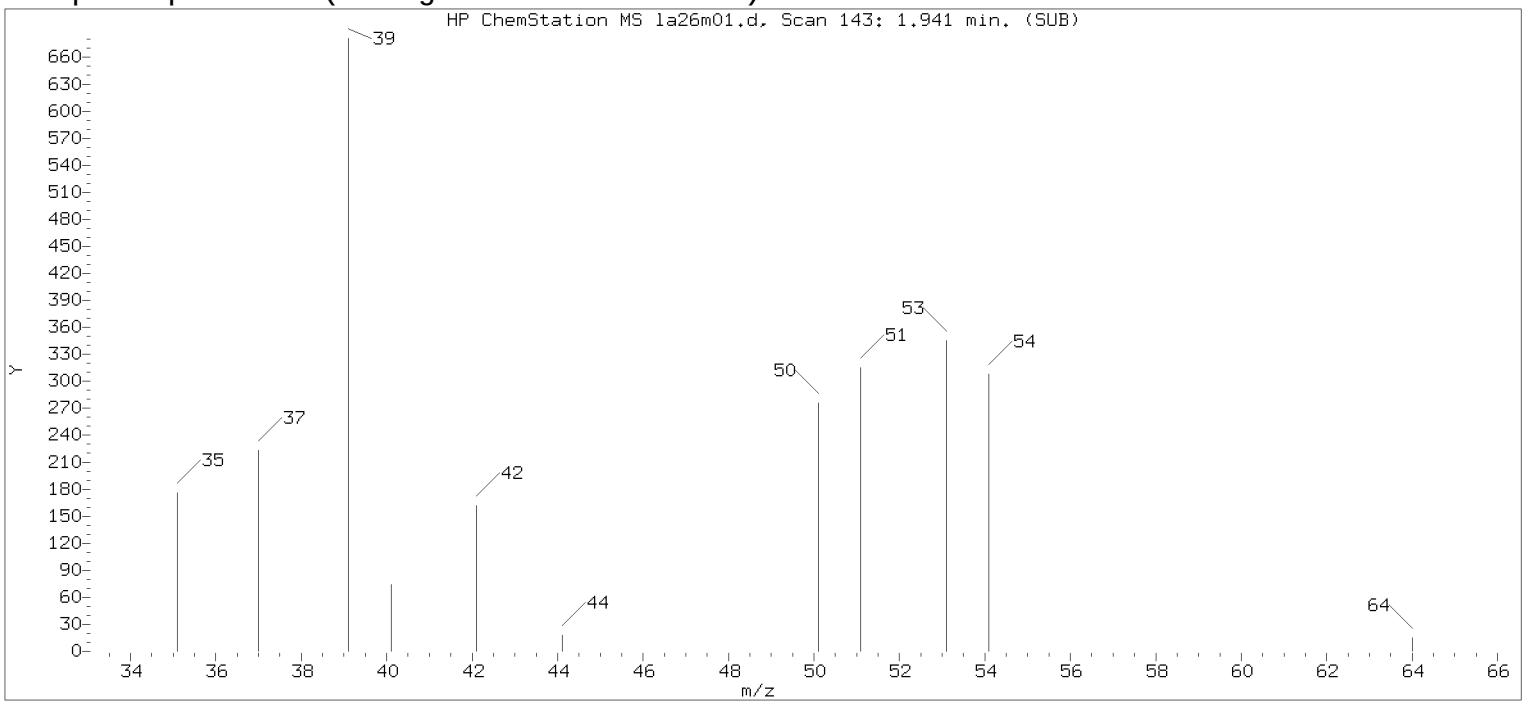
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 1925M
On-Column Amount (ng) : 0.5167
Integration start scan : 129  Integration stop scan: 157
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

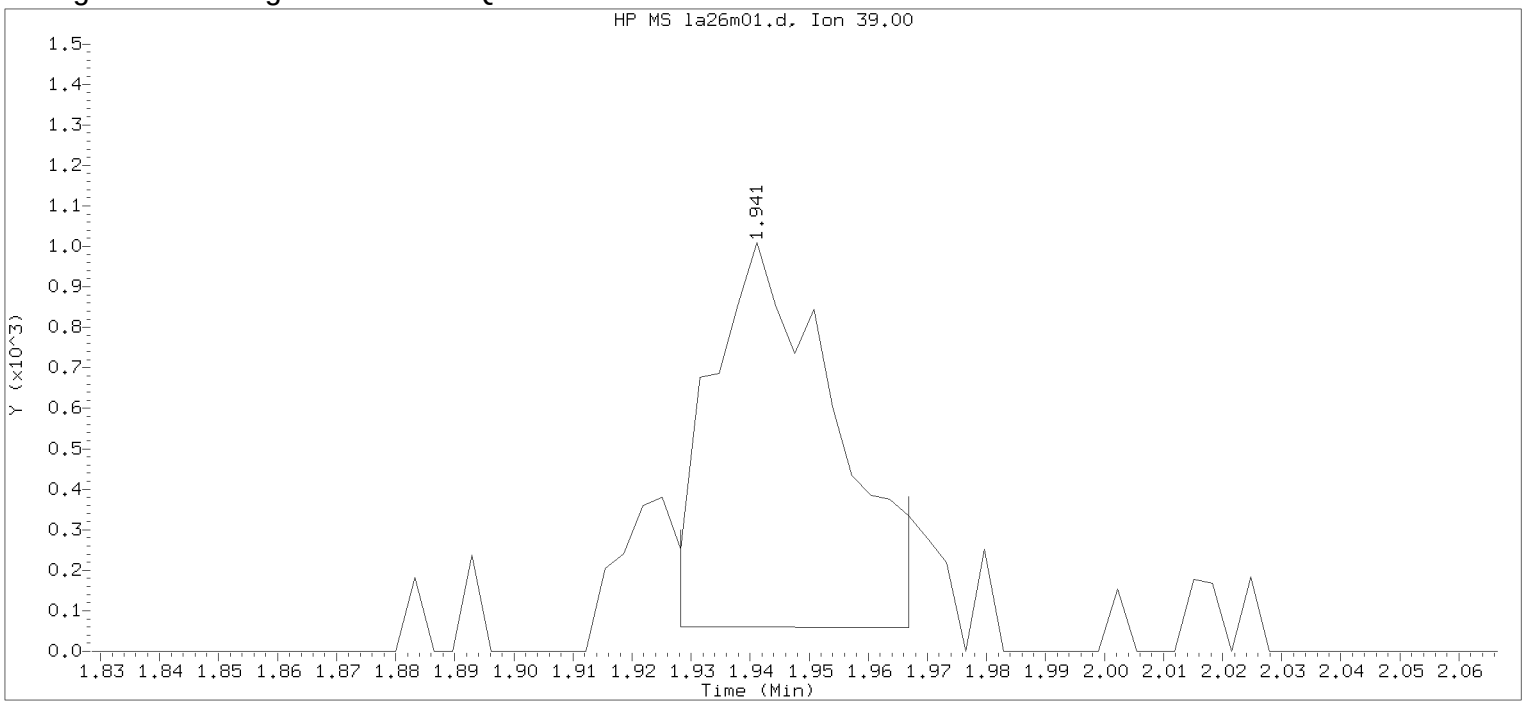
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 1358
On-column Amount (ng) : 0.3645
Integration start scan : 138 Integration stop scan: 150
Y at integration start : 61 Y at integration end: 58

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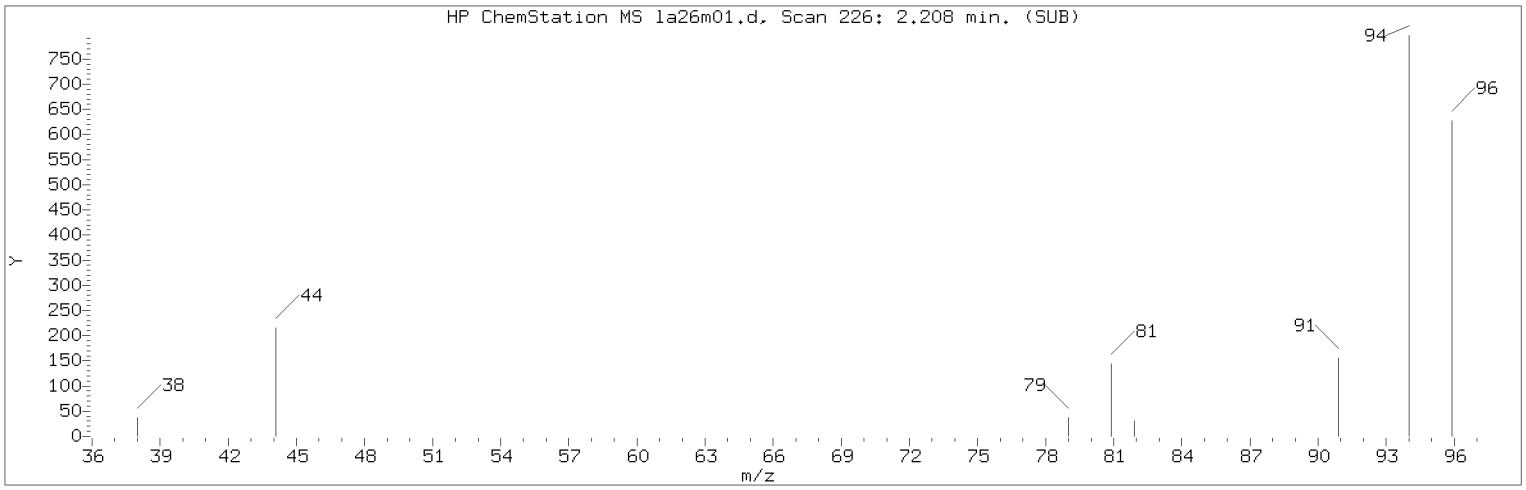
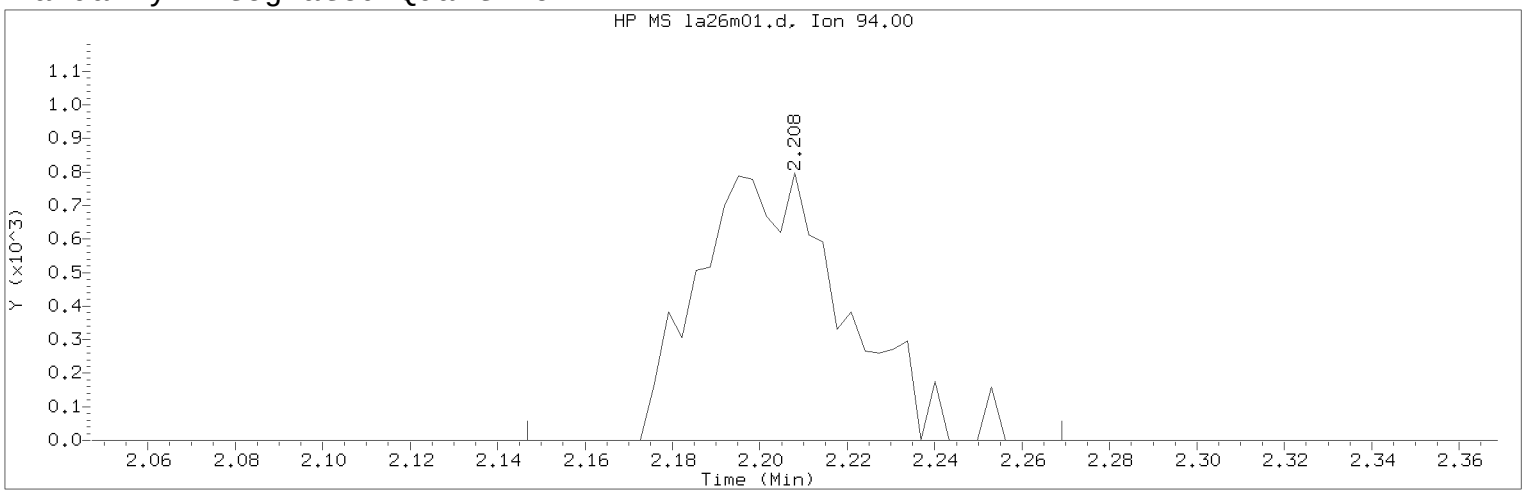
Target 3.5 esignature user KAS1 key 2648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

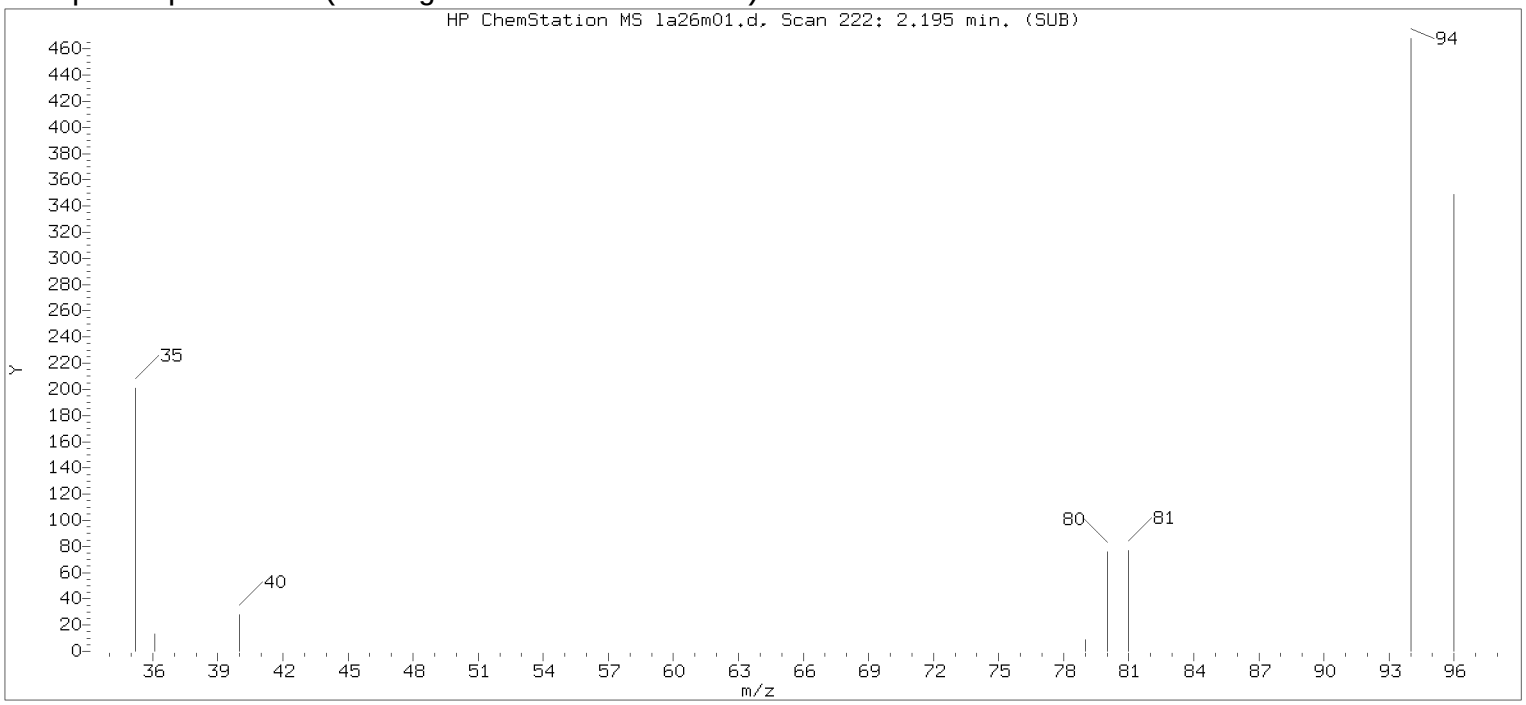
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 226
Retention Time (minutes): 2.208
Quant Ion : 94.00
Area (flag) : 1847M
On-Column Amount (ng) : 0.4496
Integration start scan : 206 Integration stop scan: 244
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

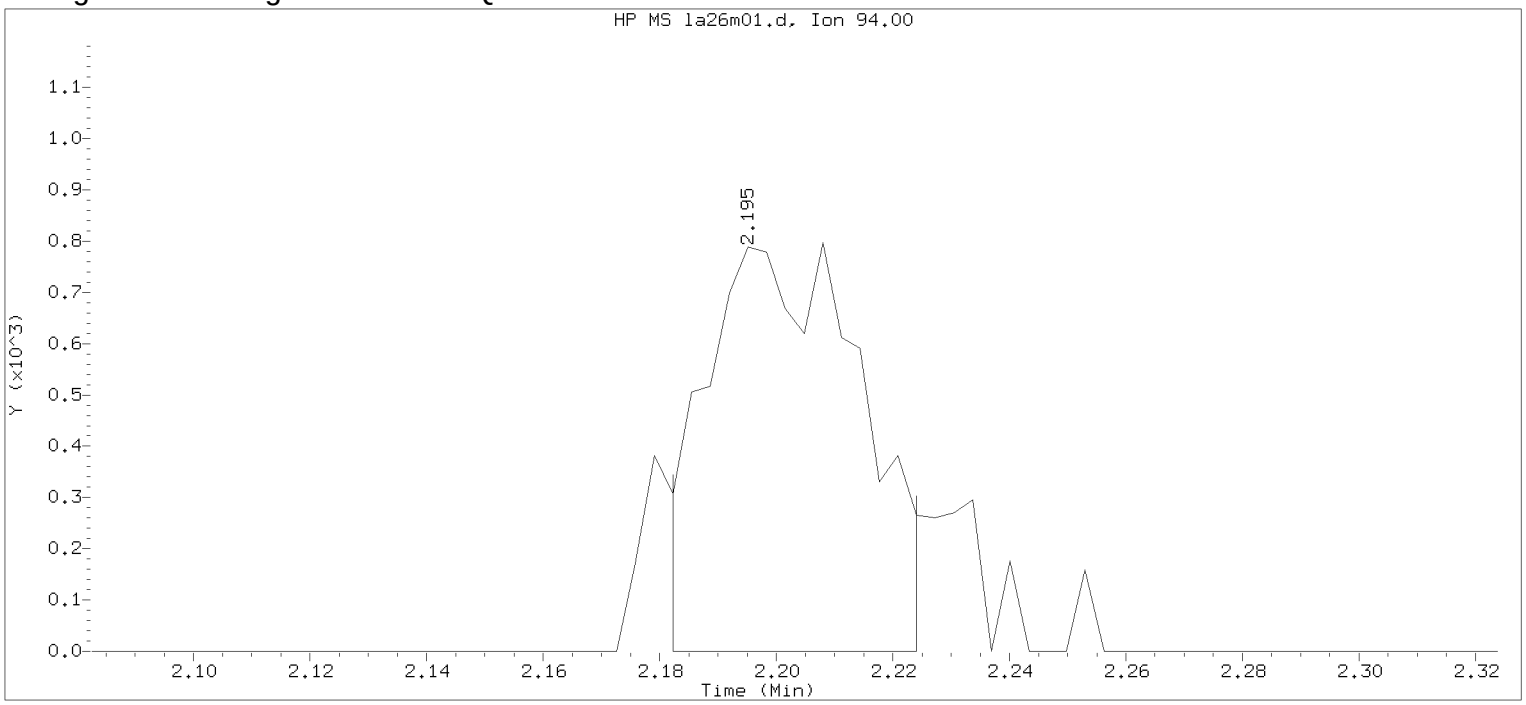
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 222
Retention Time (minutes): 2.195
Quant Ion : 94.00
Area : 1461
On-column Amount (ng) : 0.3557
Integration start scan : 217 Integration stop scan: 230
Y at integration start : 0 Y at integration end: 0

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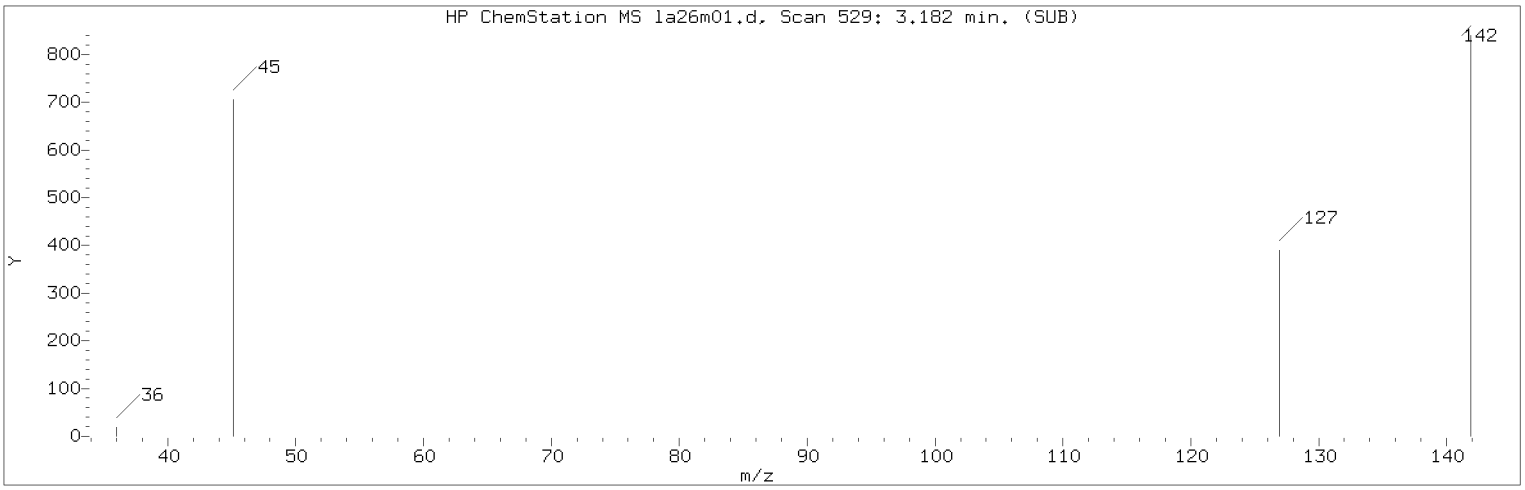
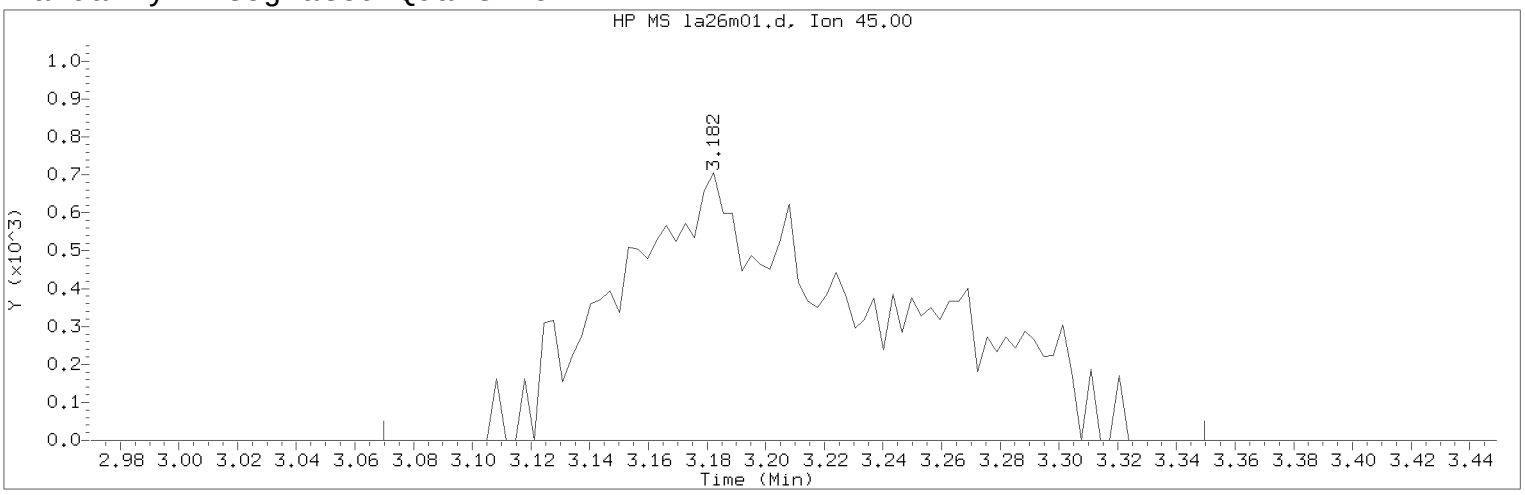
Target 3.5 esignature user KAS1 Page 2648 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

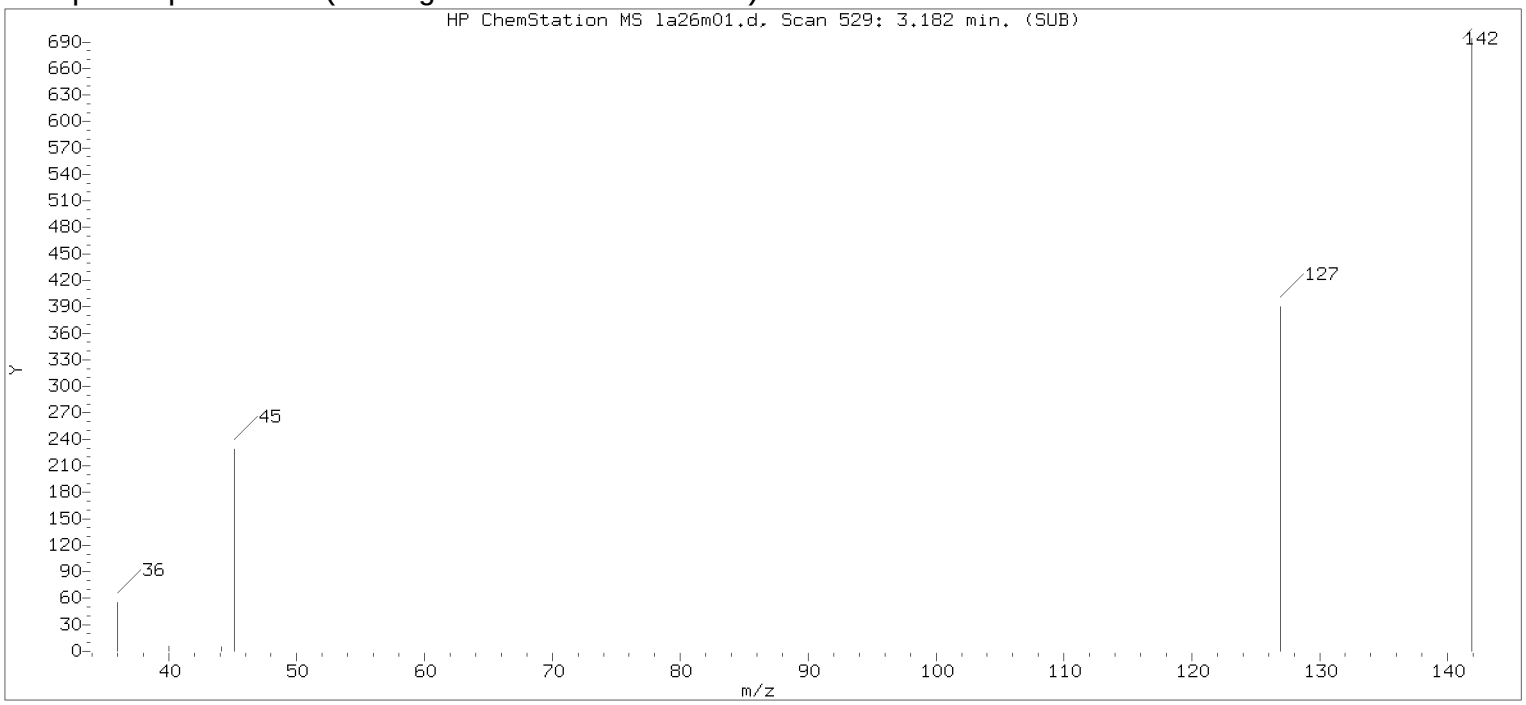
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area (flag) : 4366M
On-Column Amount (ng) : 10.5945
Integration start scan : 493  Integration stop scan: 580
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

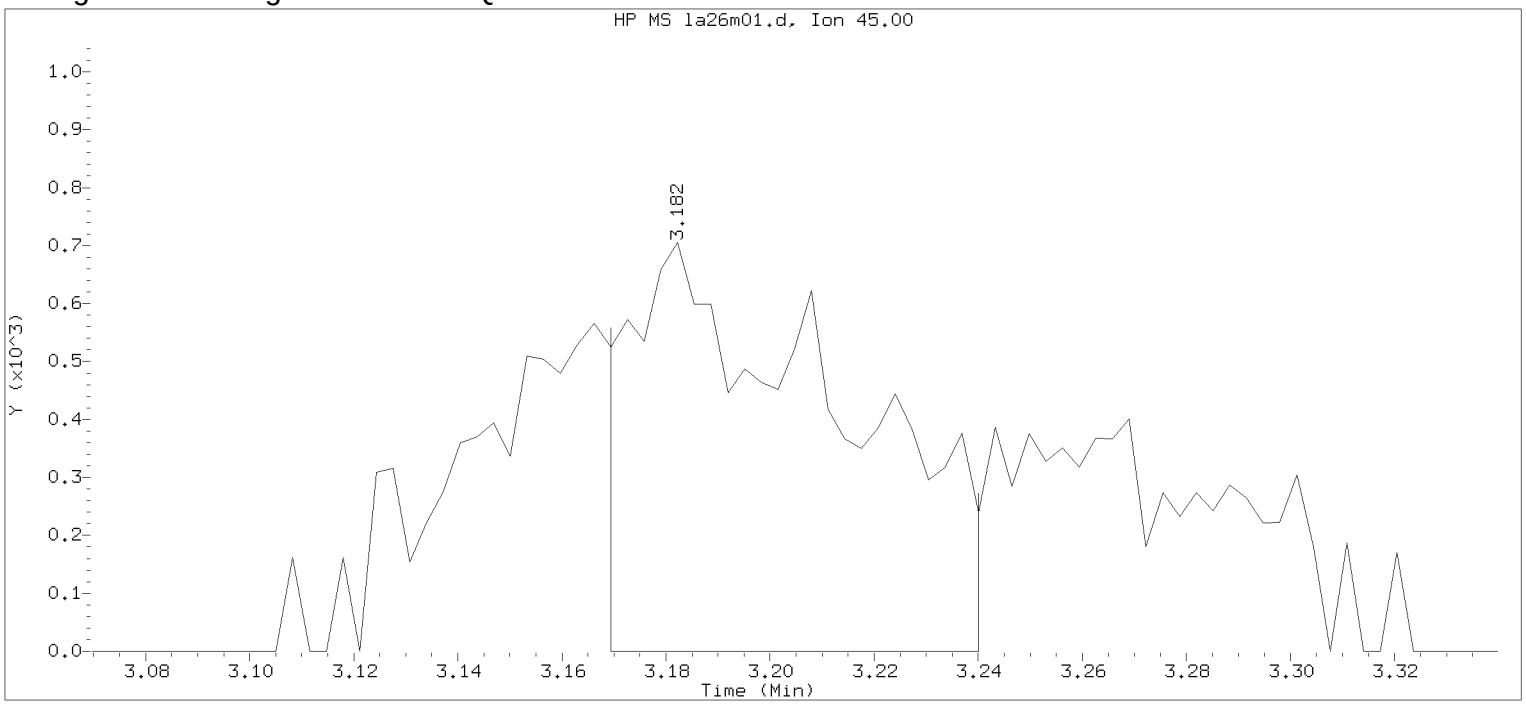
Analyst responsible for change: Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area : 2003
On-column Amount (ng) : 4.8605
Integration start scan : 524 Integration stop scan: 546
Y at integration start : 0 Y at integration end: 0

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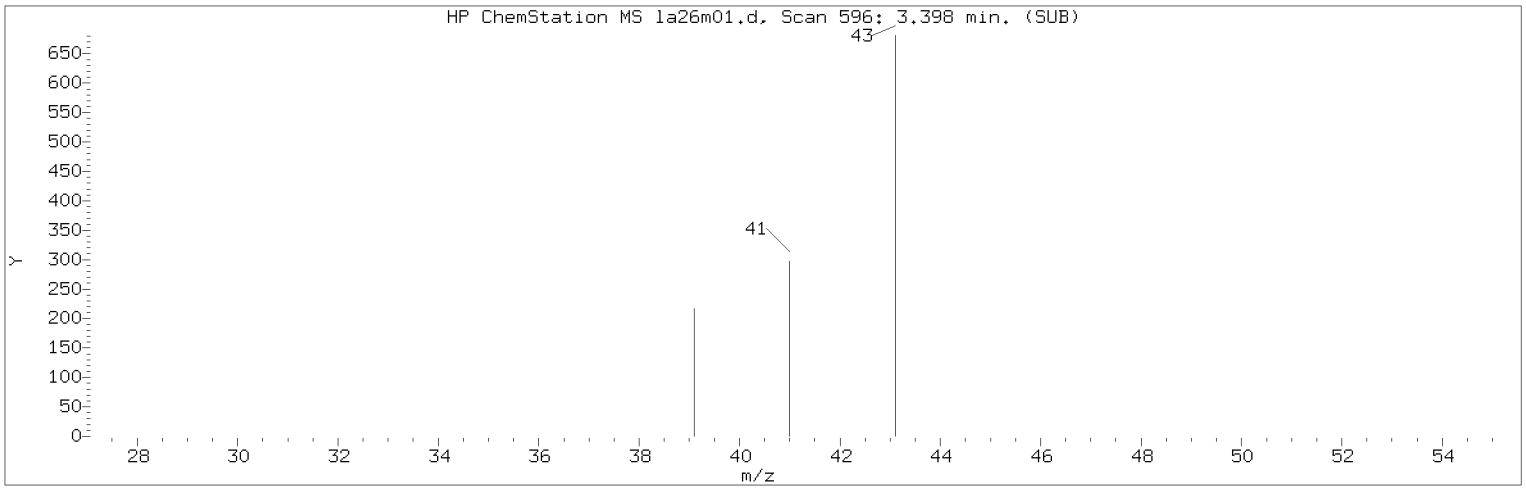
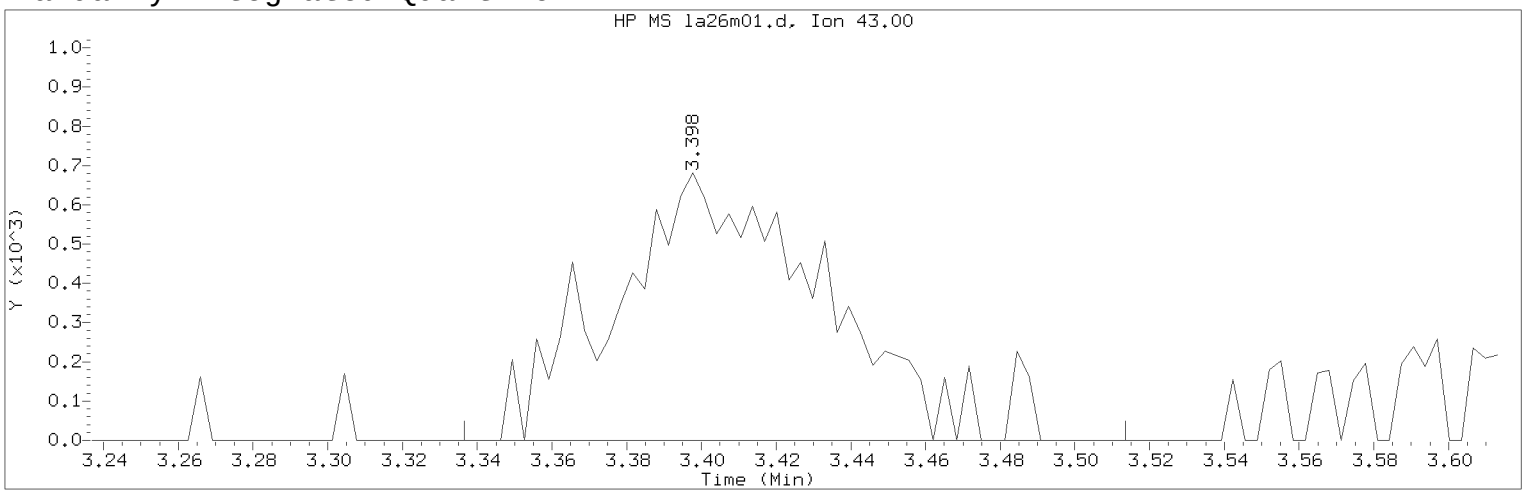
Target 3.5 esignature user KAS02648 Page 514 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

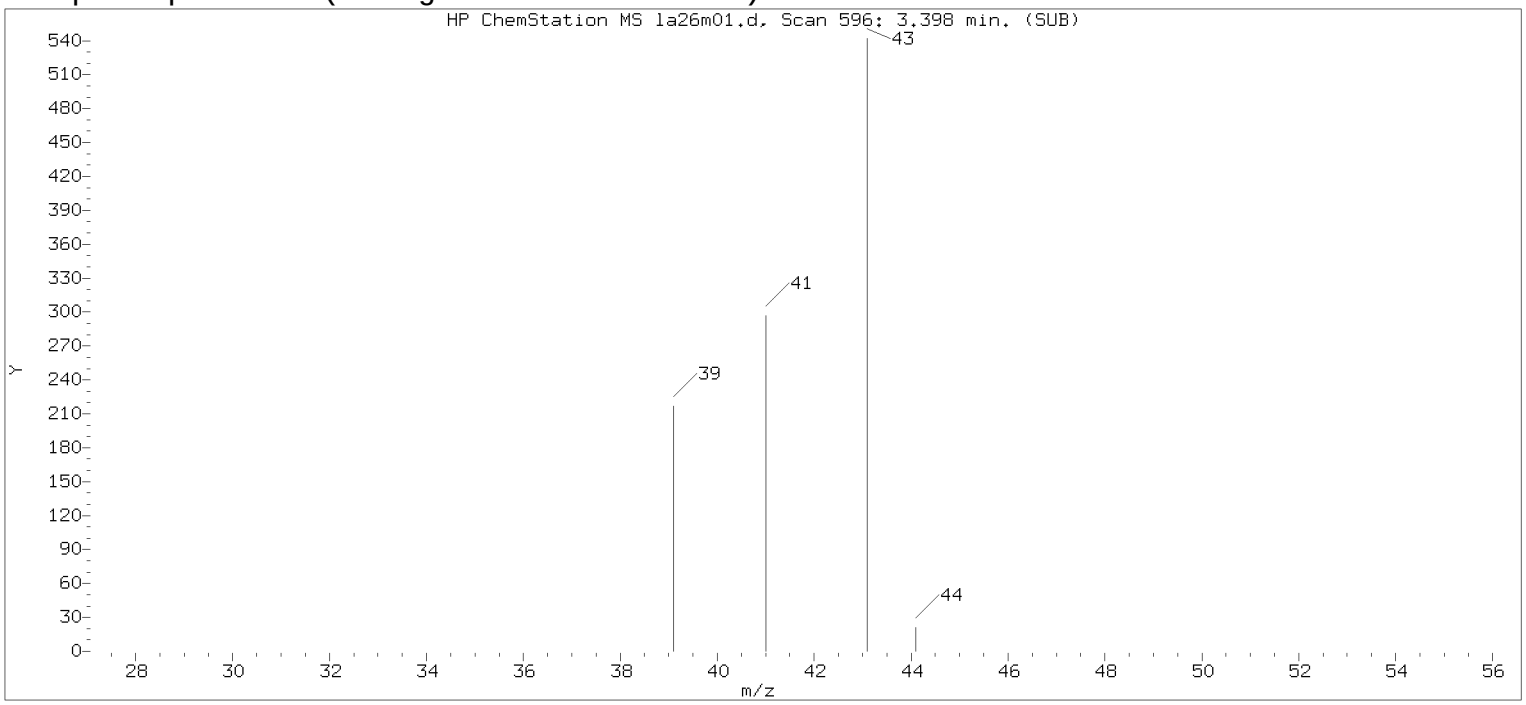
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 596
Retention Time (minutes): 3.398
Quant Ion : 43.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.4933
Integration start scan : 576  Integration stop scan: 631
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

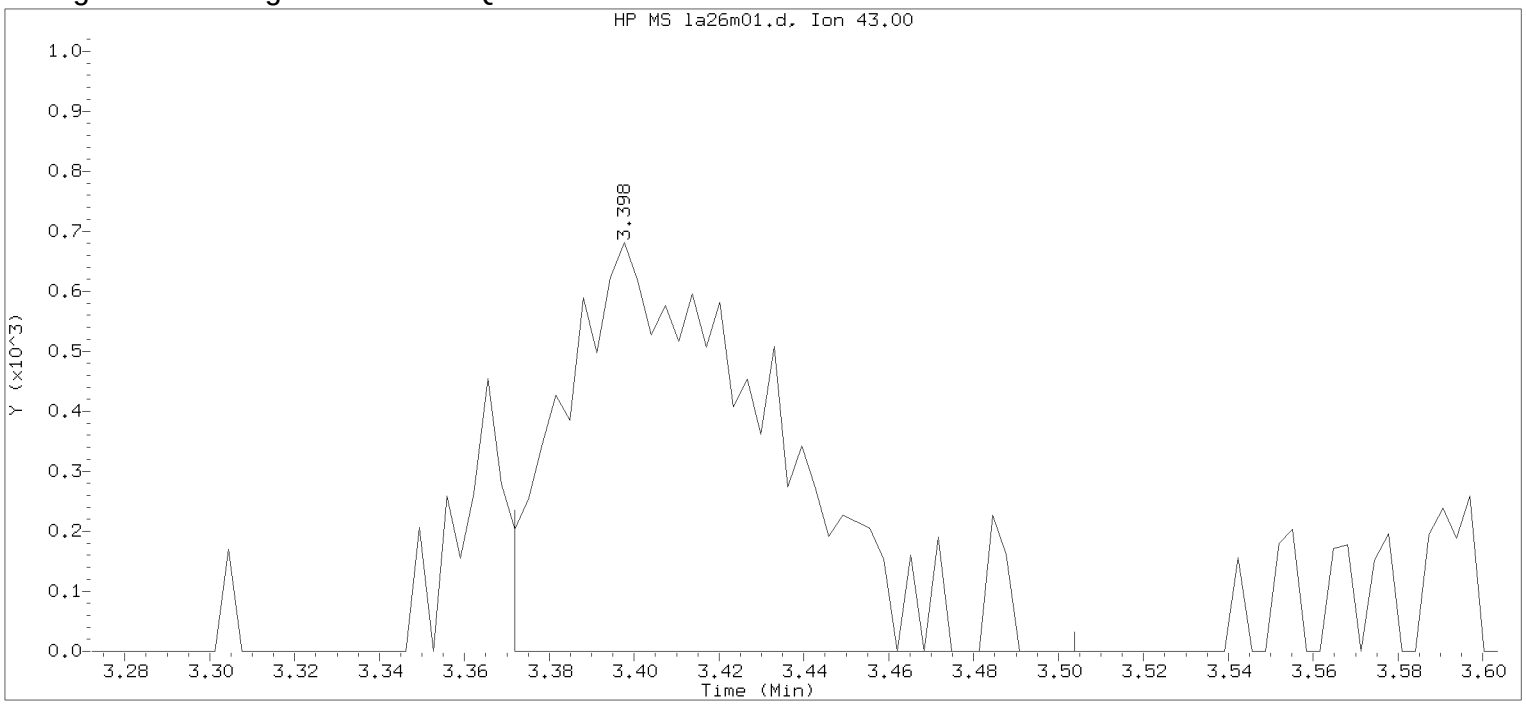
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 596
Retention Time (minutes): 3.398
Quant Ion : 43.00
Area : 2349
On-column Amount (ng) : 0.4323
Integration start scan : 587 Integration stop scan: 628
Y at integration start : 0 Y at integration end: 0

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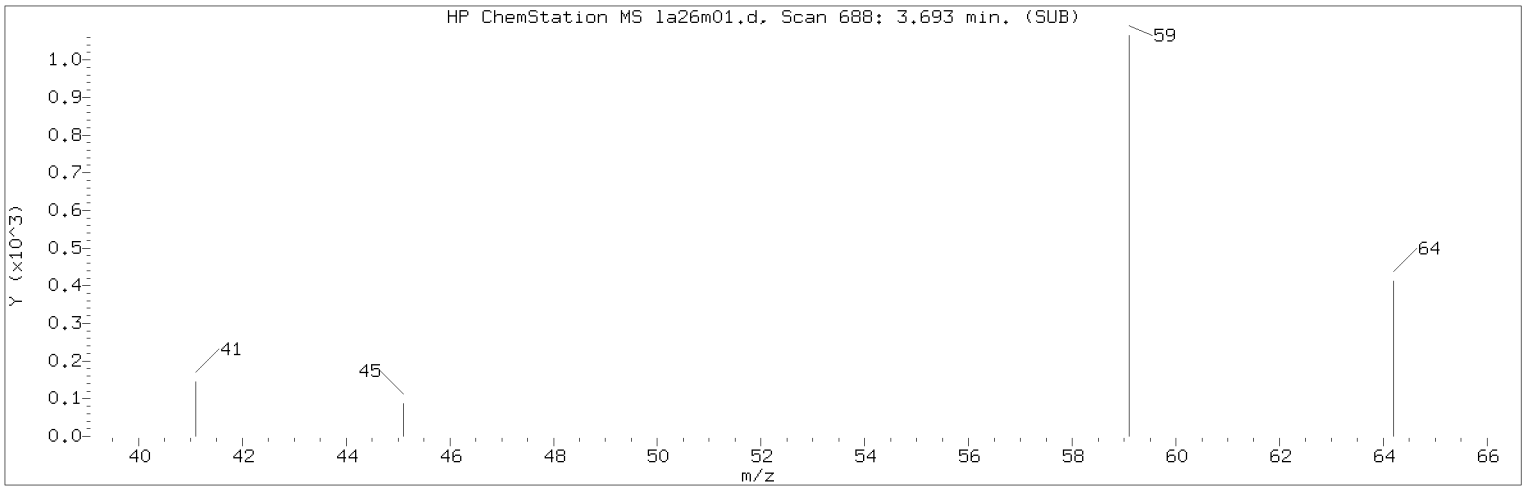
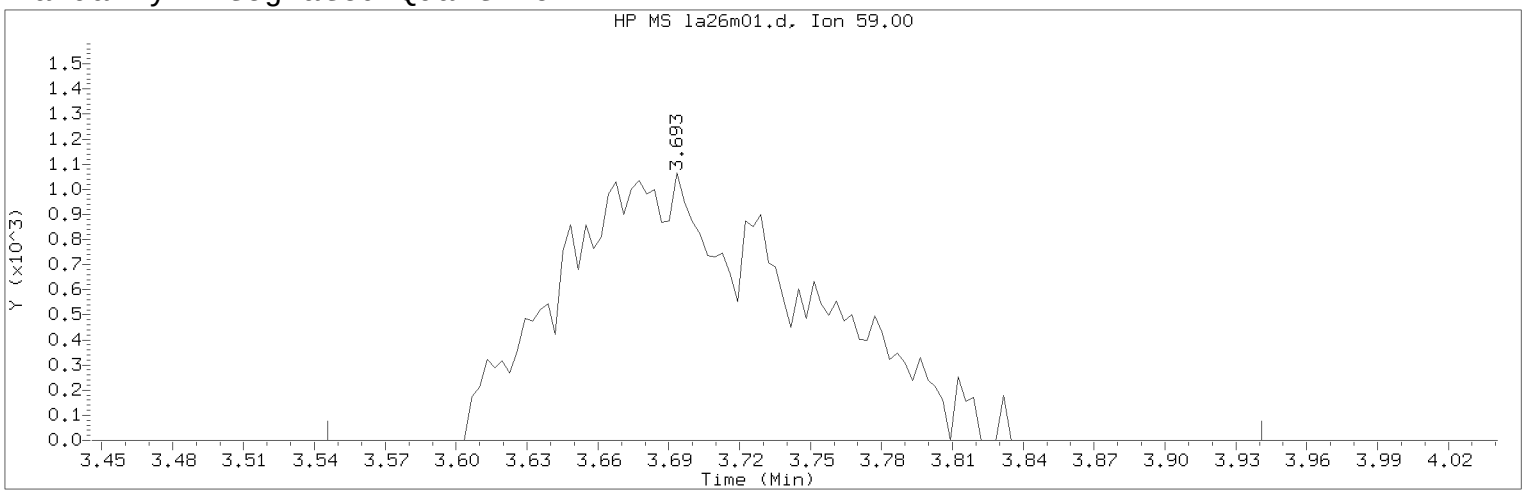
Target 3.5 esignature user KAS02648 Page 548 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

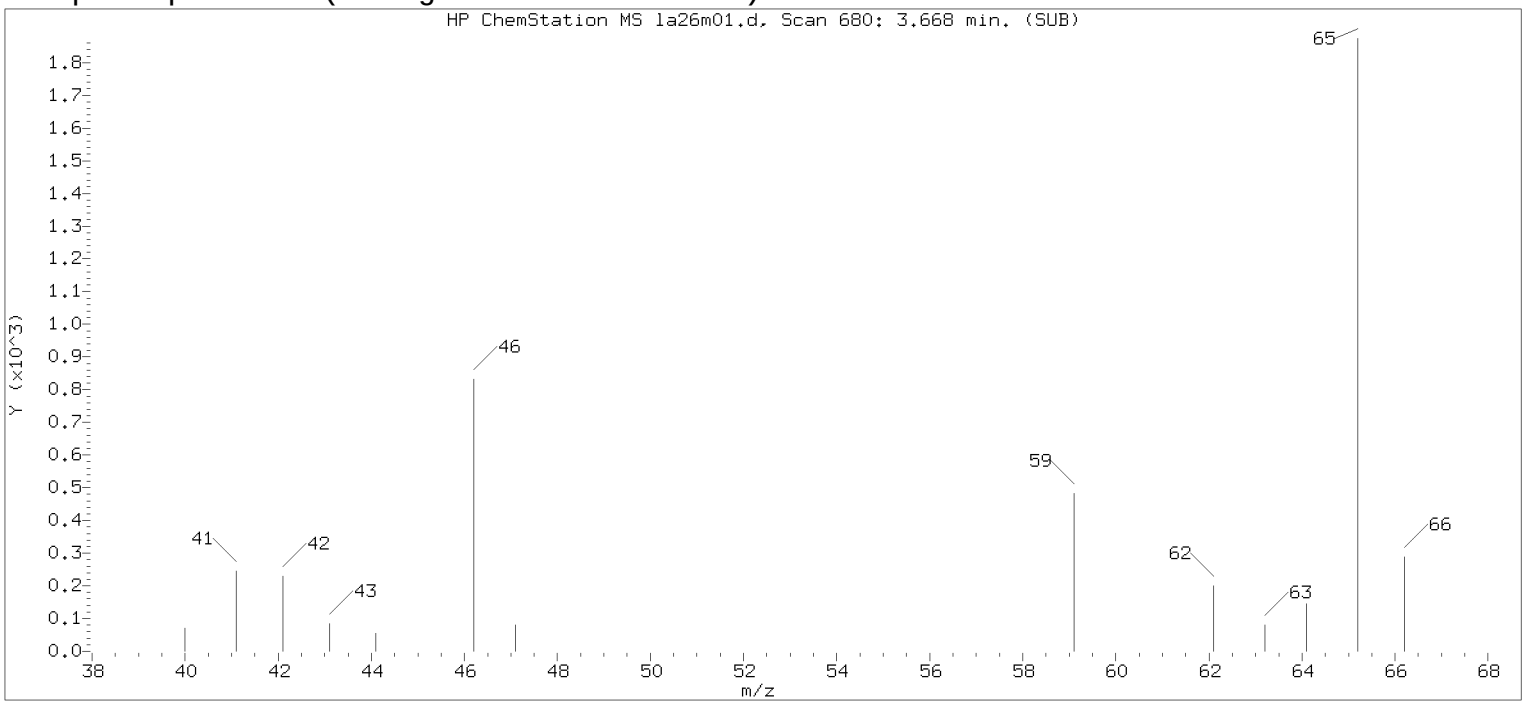
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 688
Retention Time (minutes): 3.693
Quant Ion : 59.00
Area (flag) : 7505M
On-Column Amount (ng) : 11.0871
Integration start scan : 641 Integration stop scan: 764
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

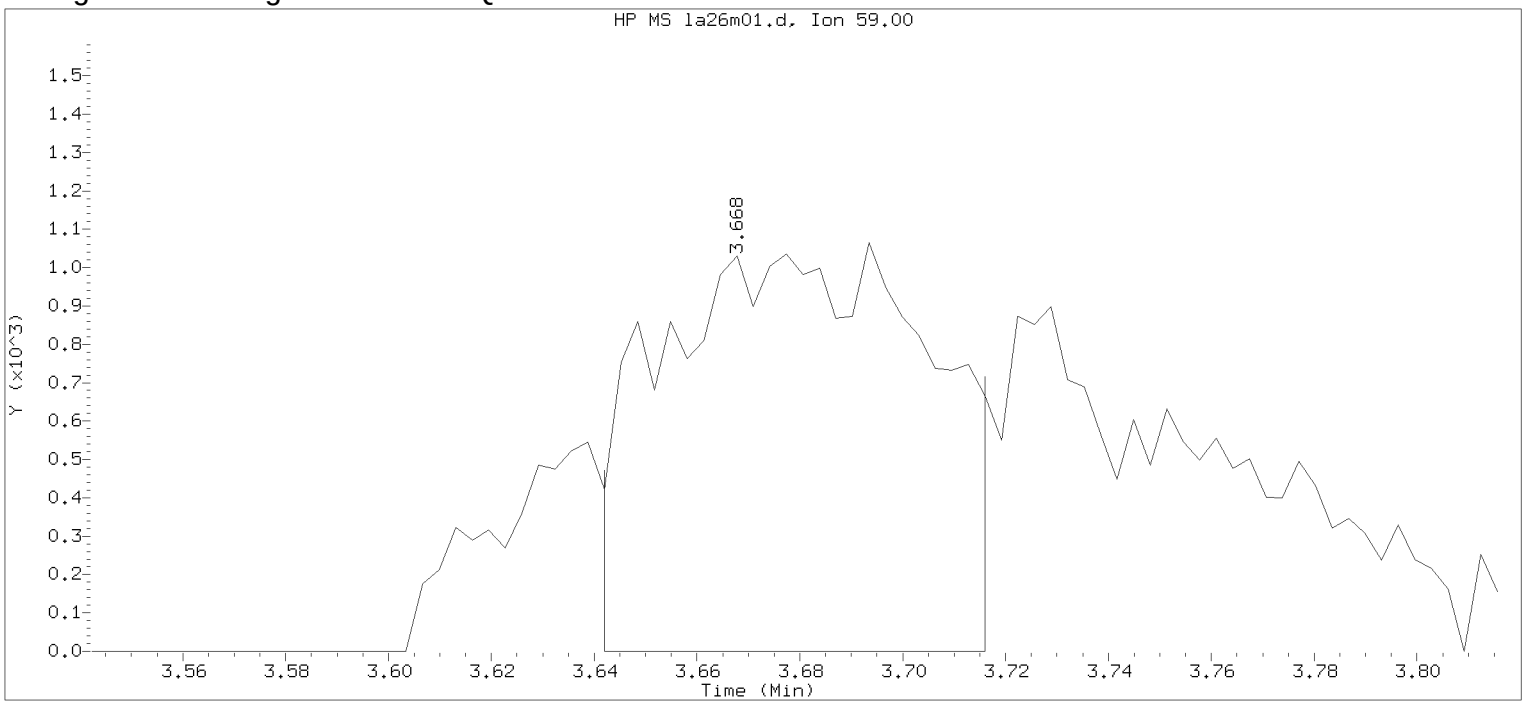
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

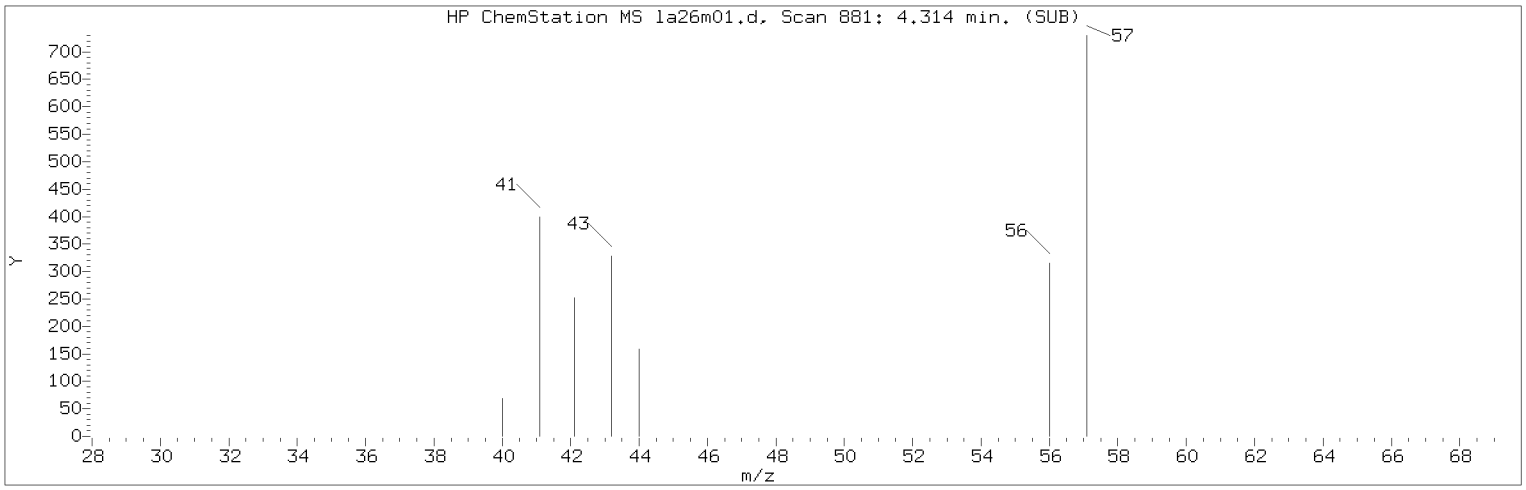
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

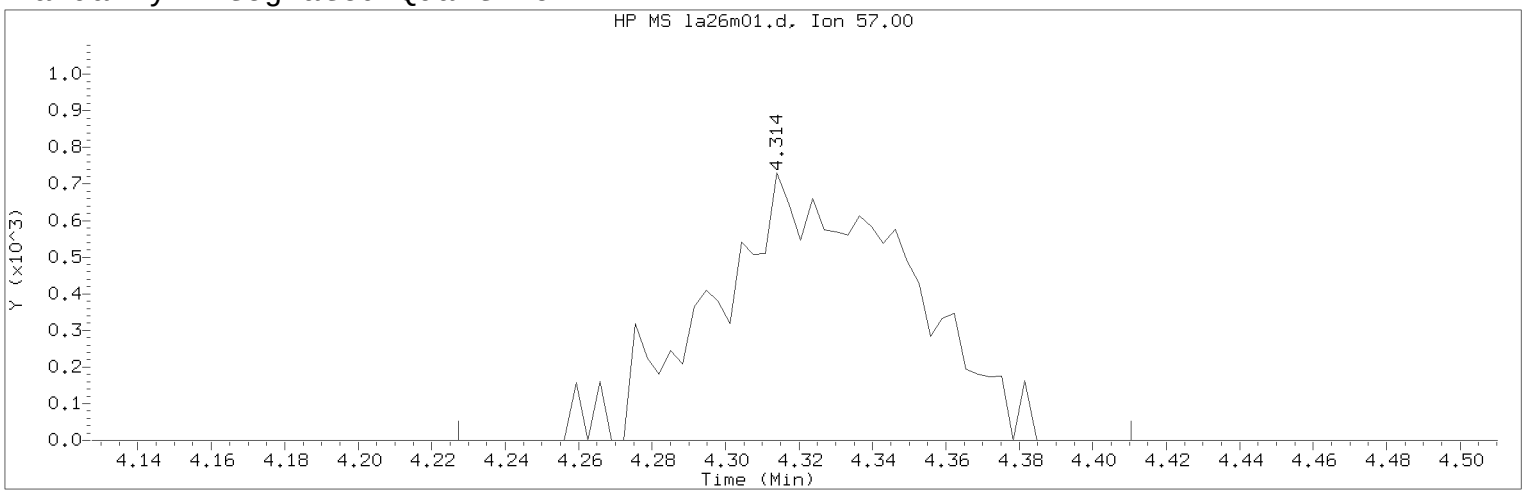
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 680
Retention Time (minutes): 3.668
Quant Ion : 59.00
Area : 3832
On-column Amount (ng) : 5.6607
Integration start scan : 671 Integration stop scan: 694
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS02648 Page 548 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

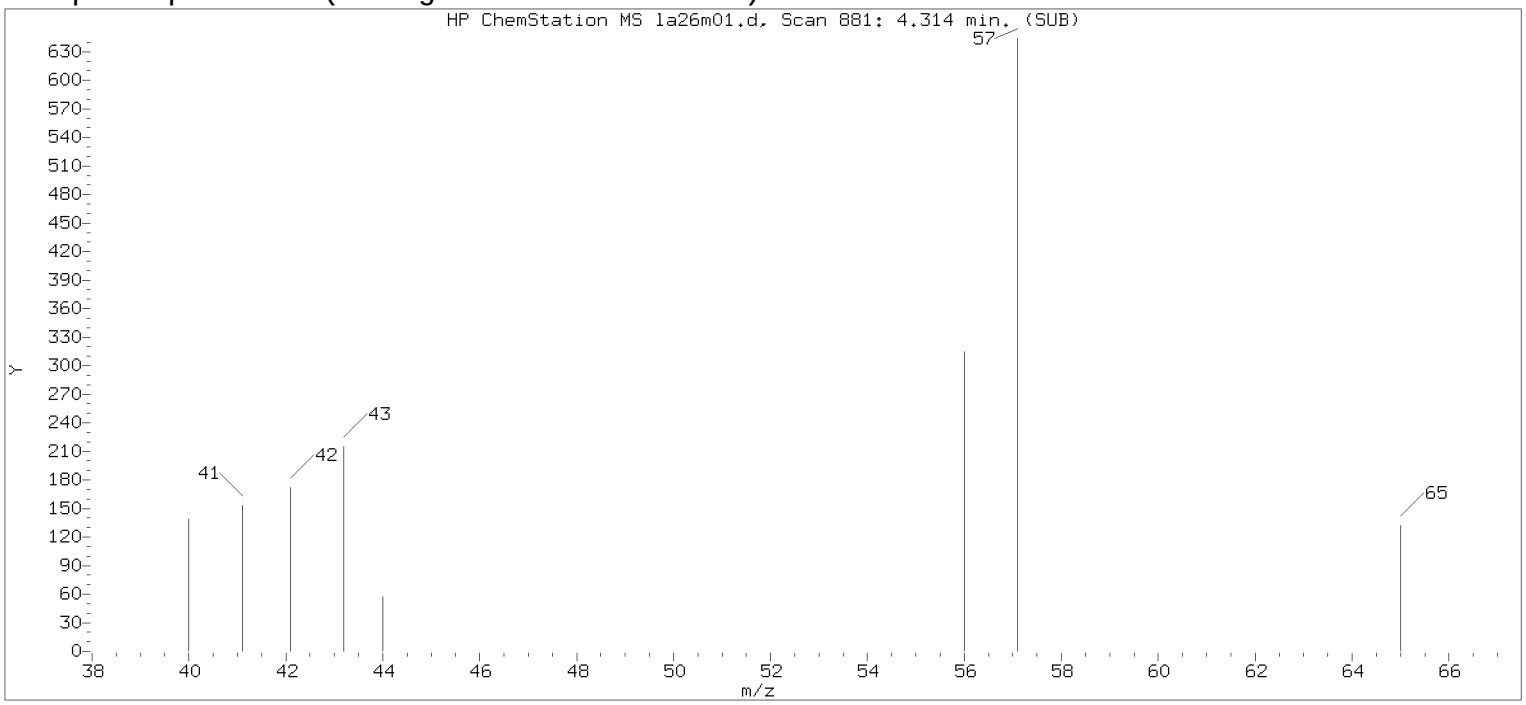
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 881
Retention Time (minutes): 4.314
Quant Ion : 57.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.3981
Integration start scan : 853 Integration stop scan: 910
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

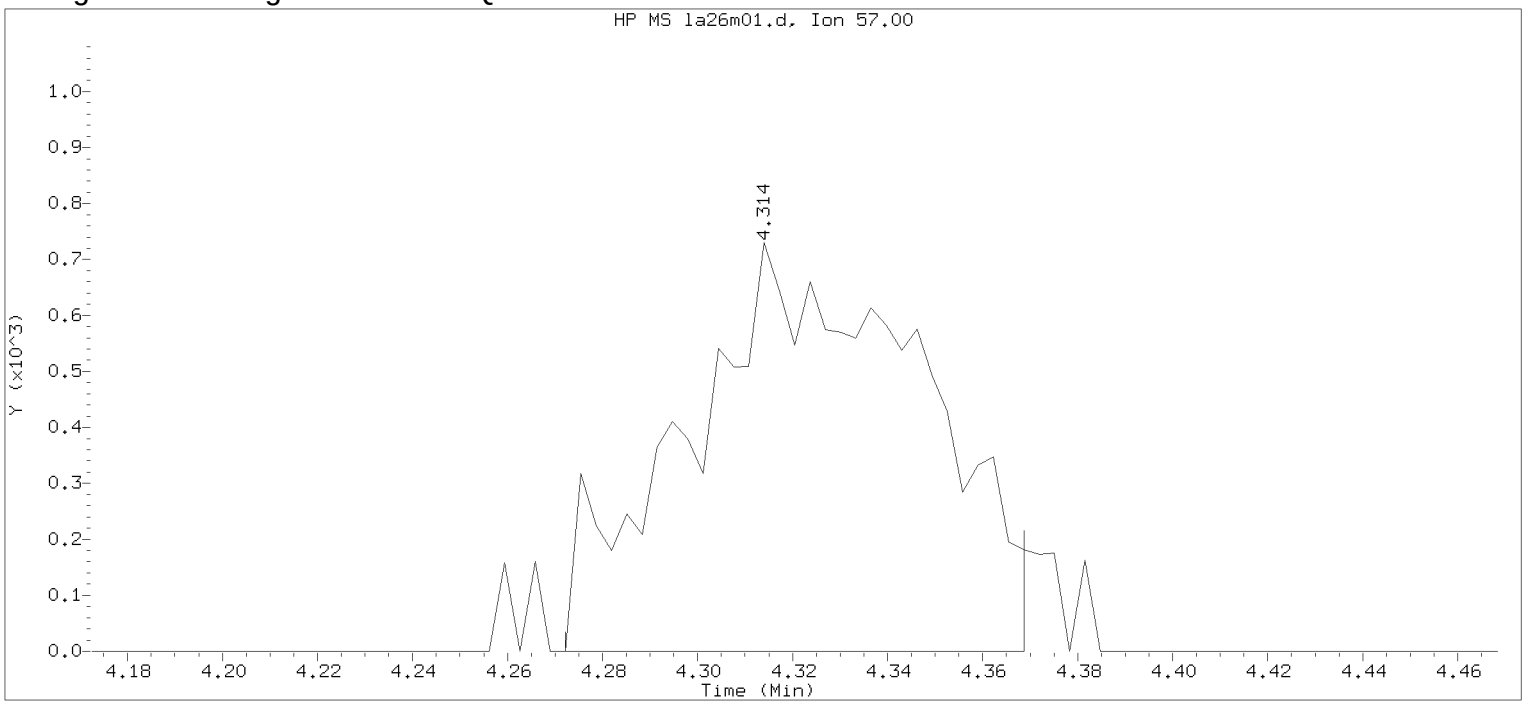
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

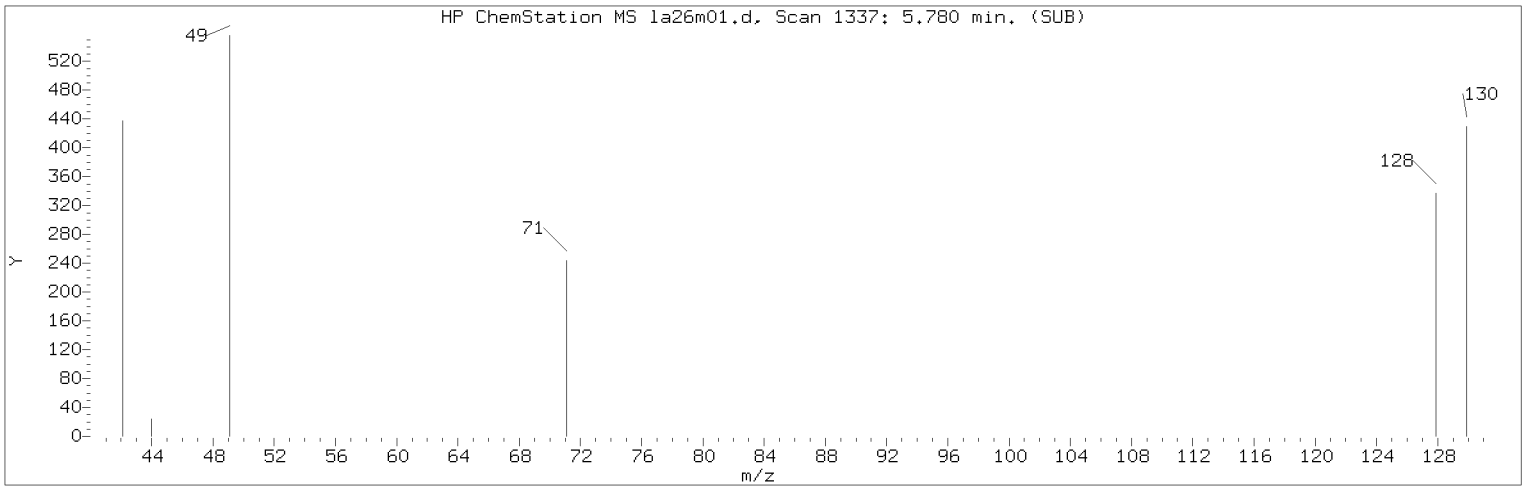
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

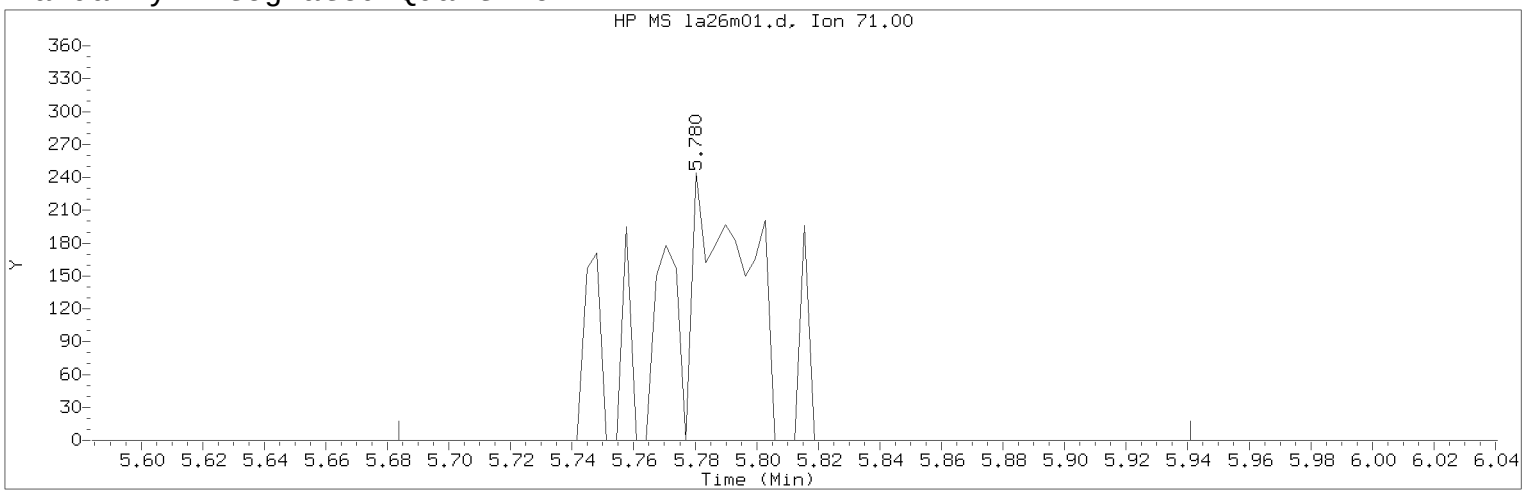
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 881
Retention Time (minutes): 4.314
Quant Ion : 57.00
Area : 2502
On-column Amount (ng) : 0.3717
Integration start scan : 867 Integration stop scan: 897
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS1 key 2648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

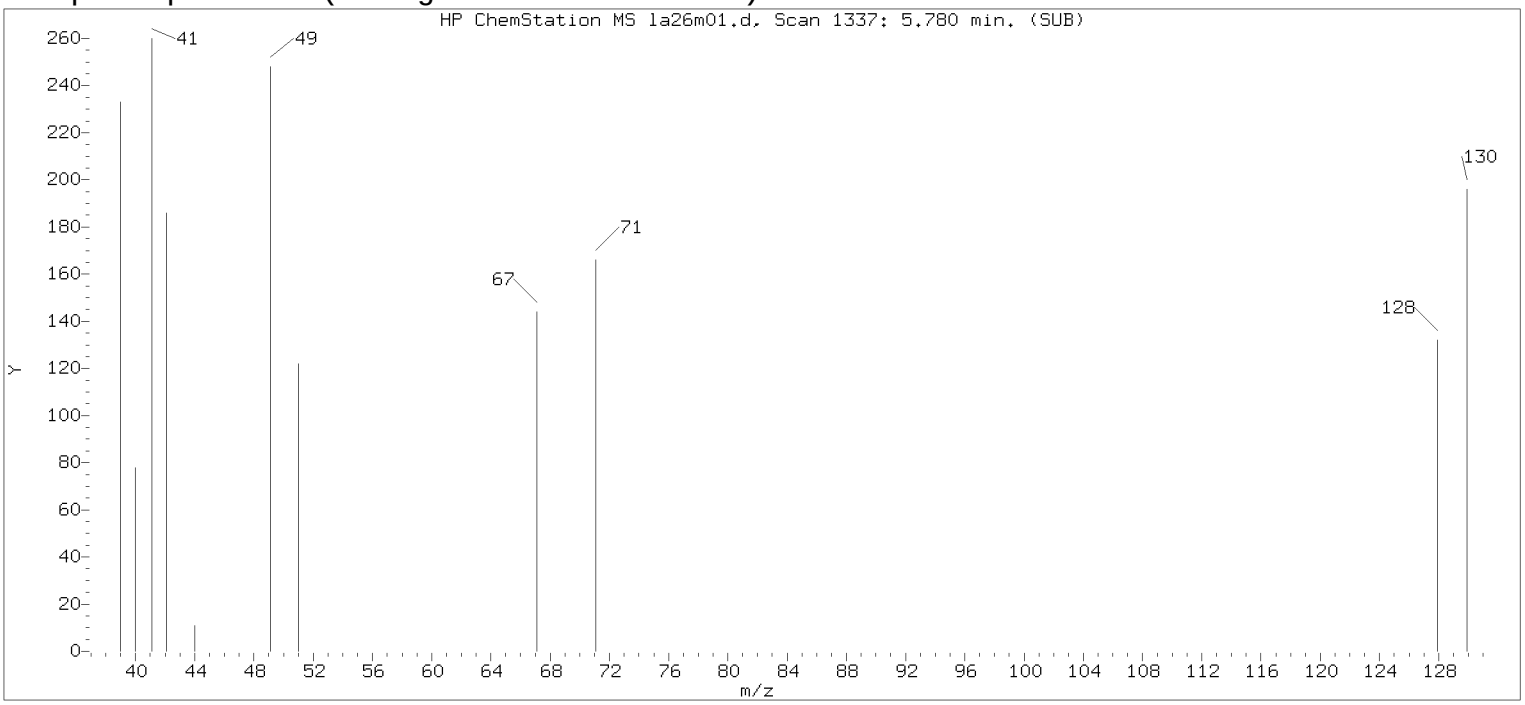
Compound Number : 50
Compound Name : Tetrahydrofuran
Scan Number : 1337
Retention Time (minutes): 5.780
Quant Ion : 71.00
Area (flag) : 517M
On-Column Amount (ng) : 0.5933
Integration start scan : 1306 Integration stop scan: 1386
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

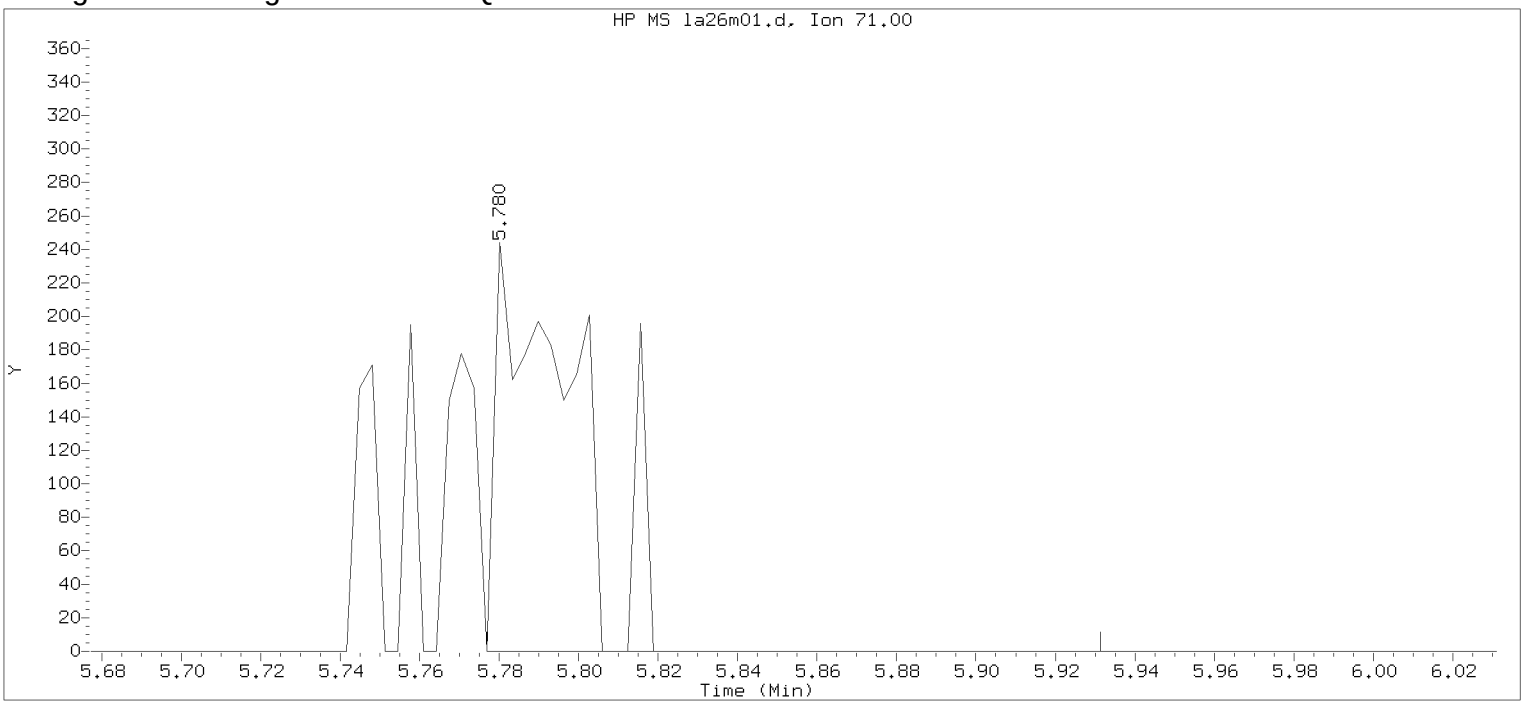
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

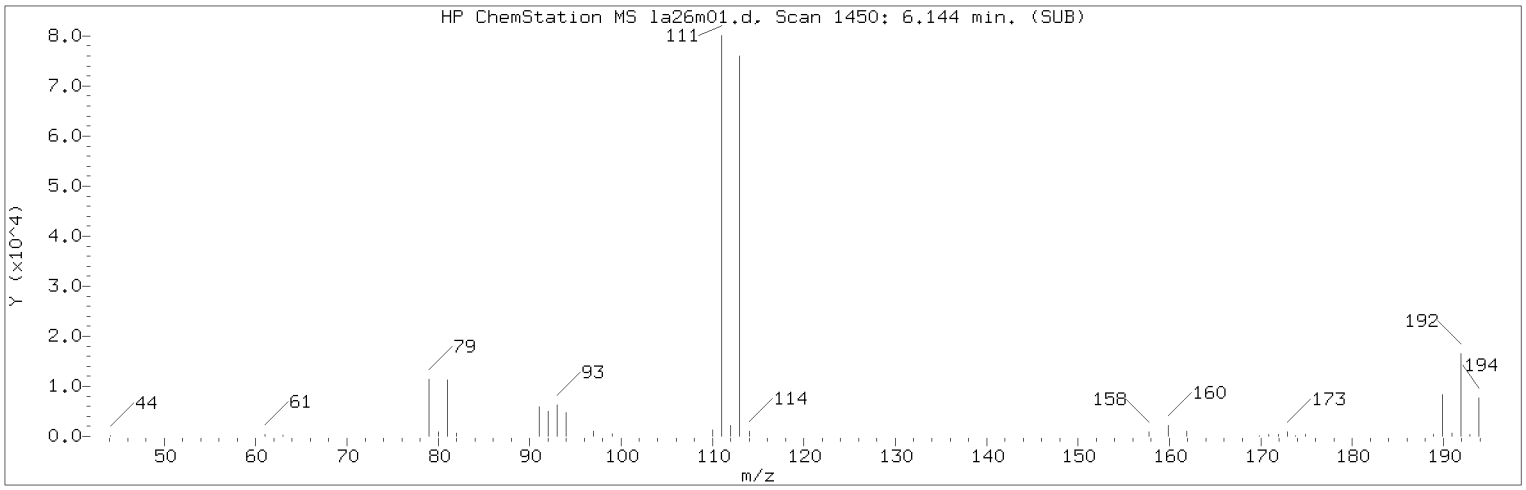
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

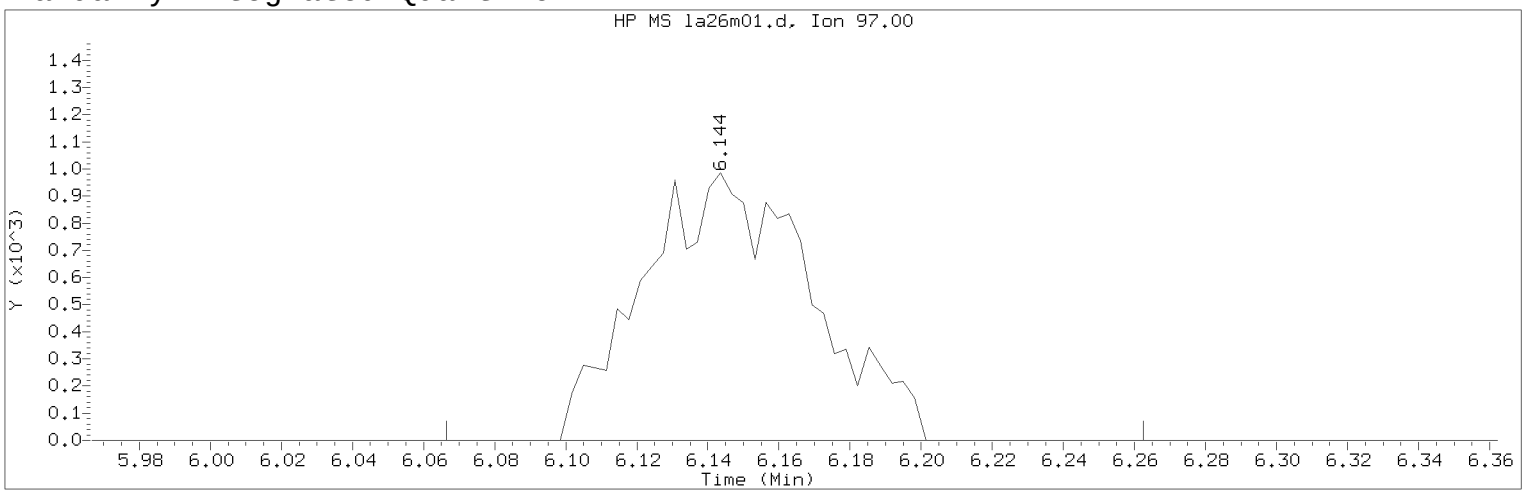
Compound Number : 50
Compound Name : Tetrahydrofuran
Scan Number : 1337
Retention Time (minutes): 5.780
Quant Ion : 71.00
Area : 323
On-column Amount (ng) : 0.3705
Integration start scan : 1335 Integration stop scan: 1383
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS1 key 02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

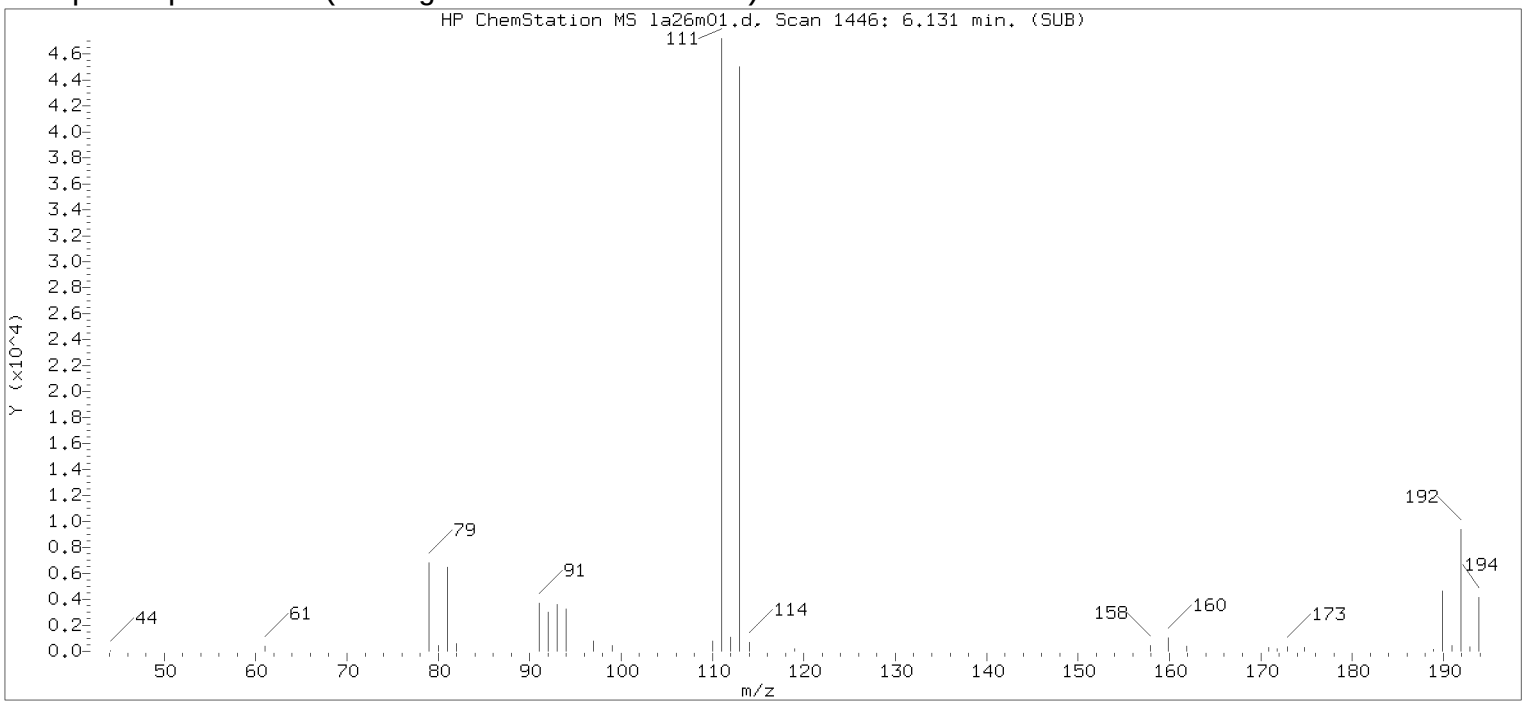
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1450
Retention Time (minutes): 6.144
Quant Ion : 97.00
Area (flag) : 3253M
On-Column Amount (ng) : 0.4525
Integration start scan : 1425 Integration stop scan: 1486
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

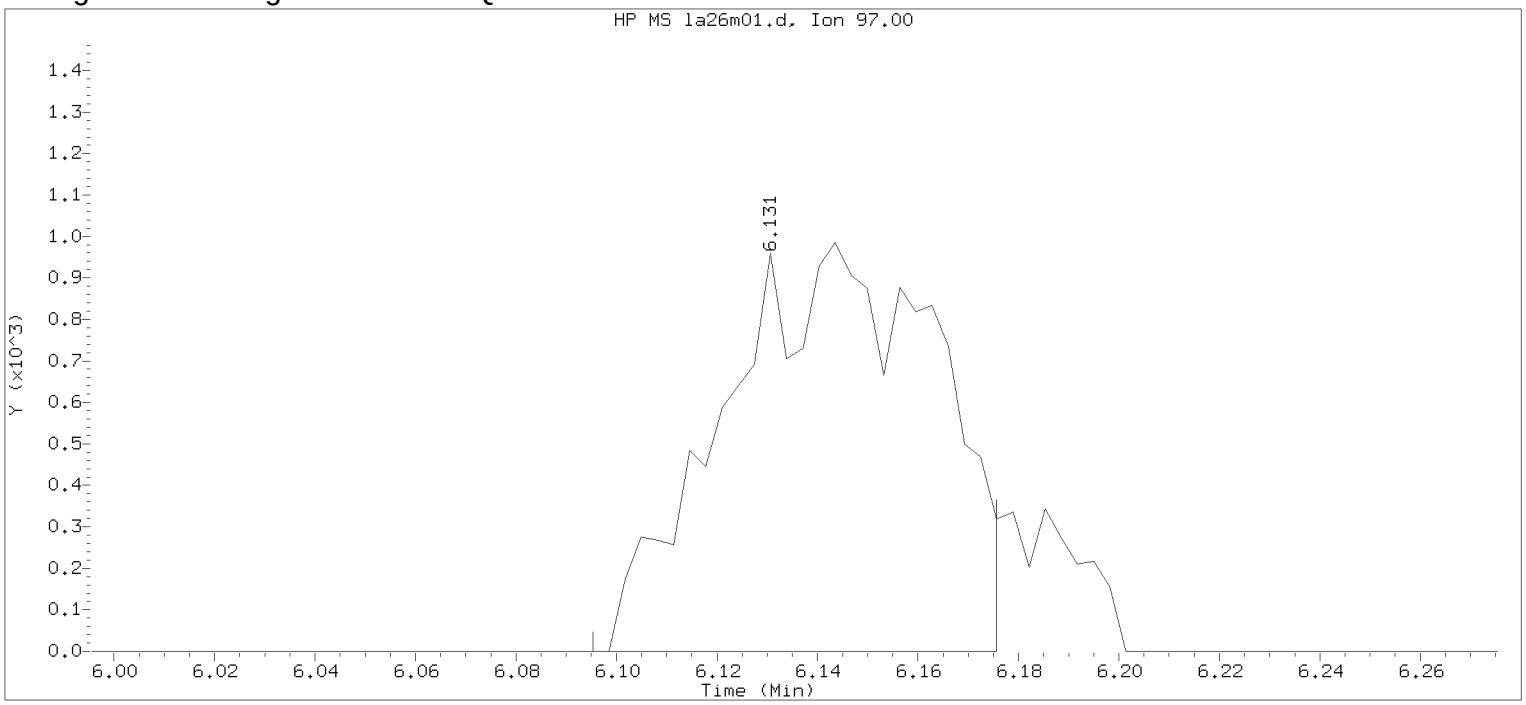
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

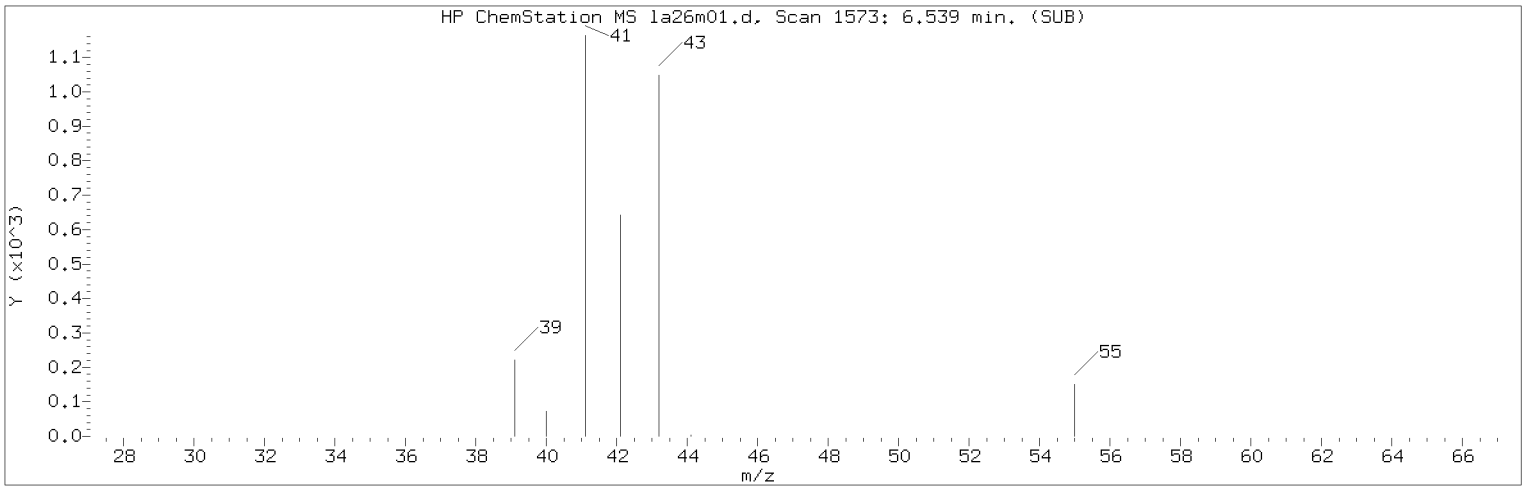
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

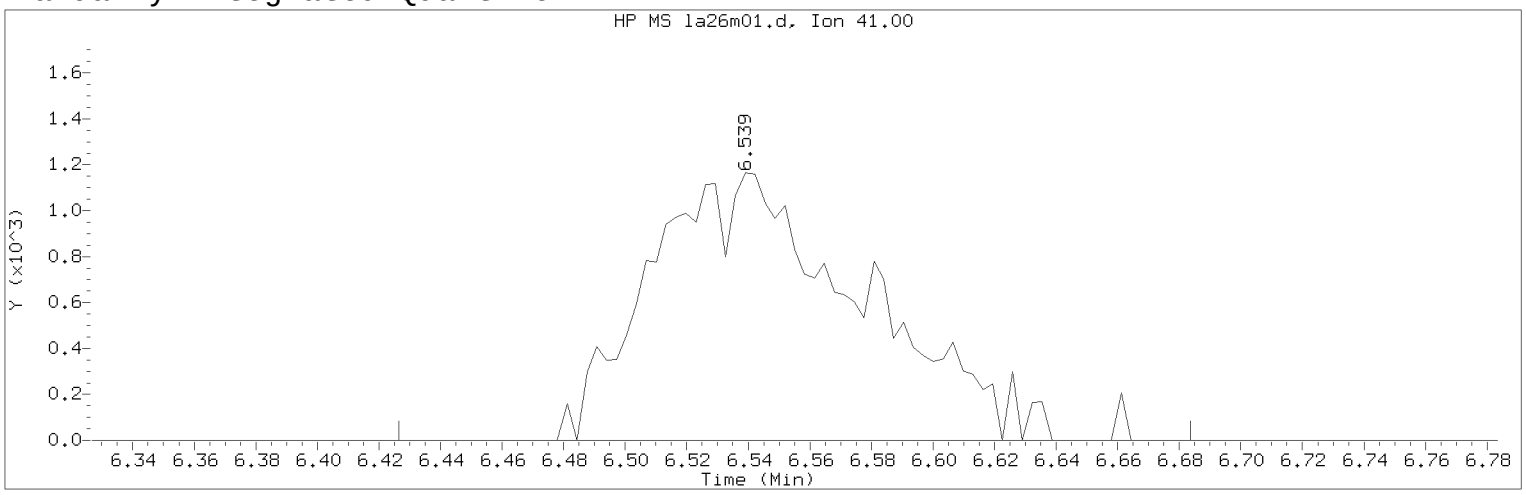
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1446
Retention Time (minutes): 6.131
Quant Ion : 97.00
Area : 2887
On-column Amount (ng) : 0.4017
Integration start scan : 1434 Integration stop scan: 1459
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS1 key 02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

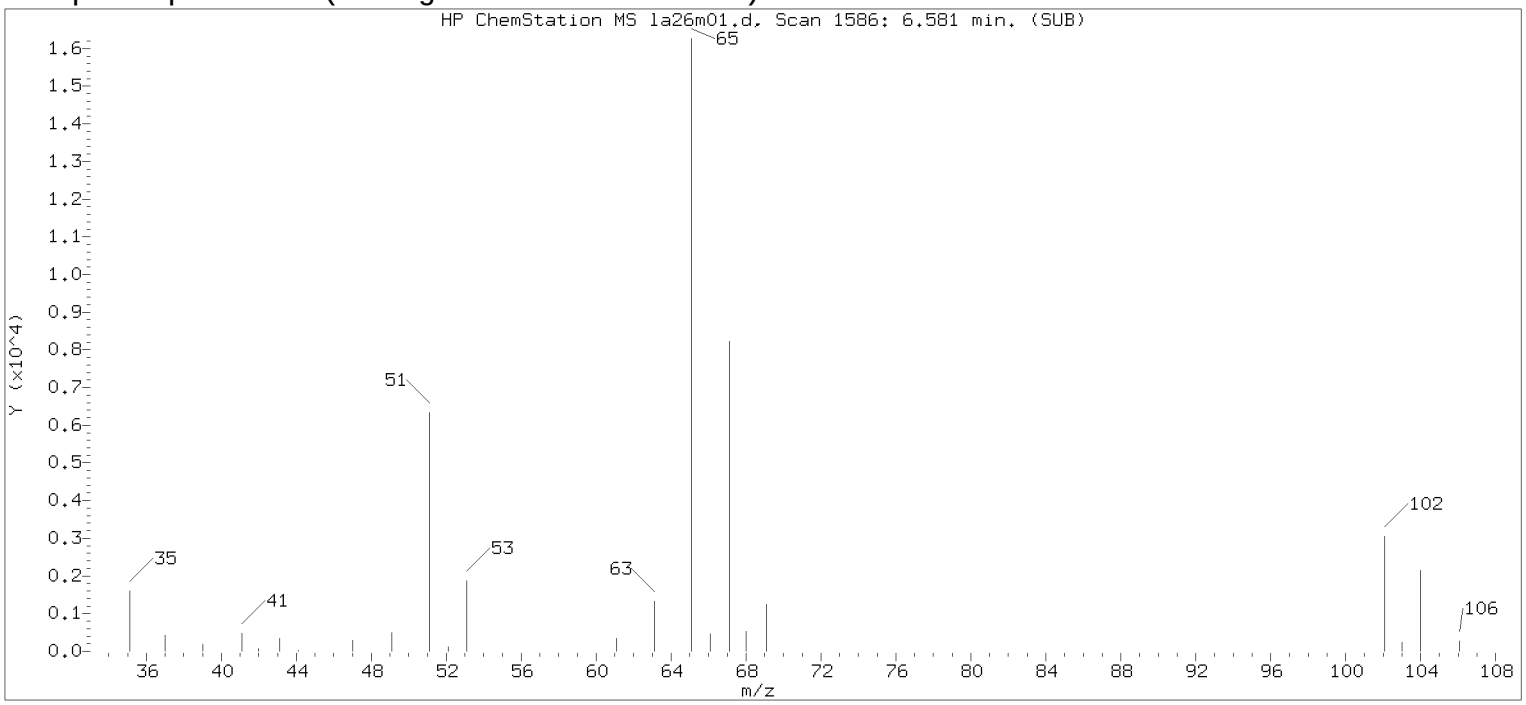
Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 1573
Retention Time (minutes): 6.539
Quant Ion : 41.00
Area (flag) : 5623M
On-Column Amount (ng) : 23.6581
Integration start scan : 1537  Integration stop scan: 1617
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

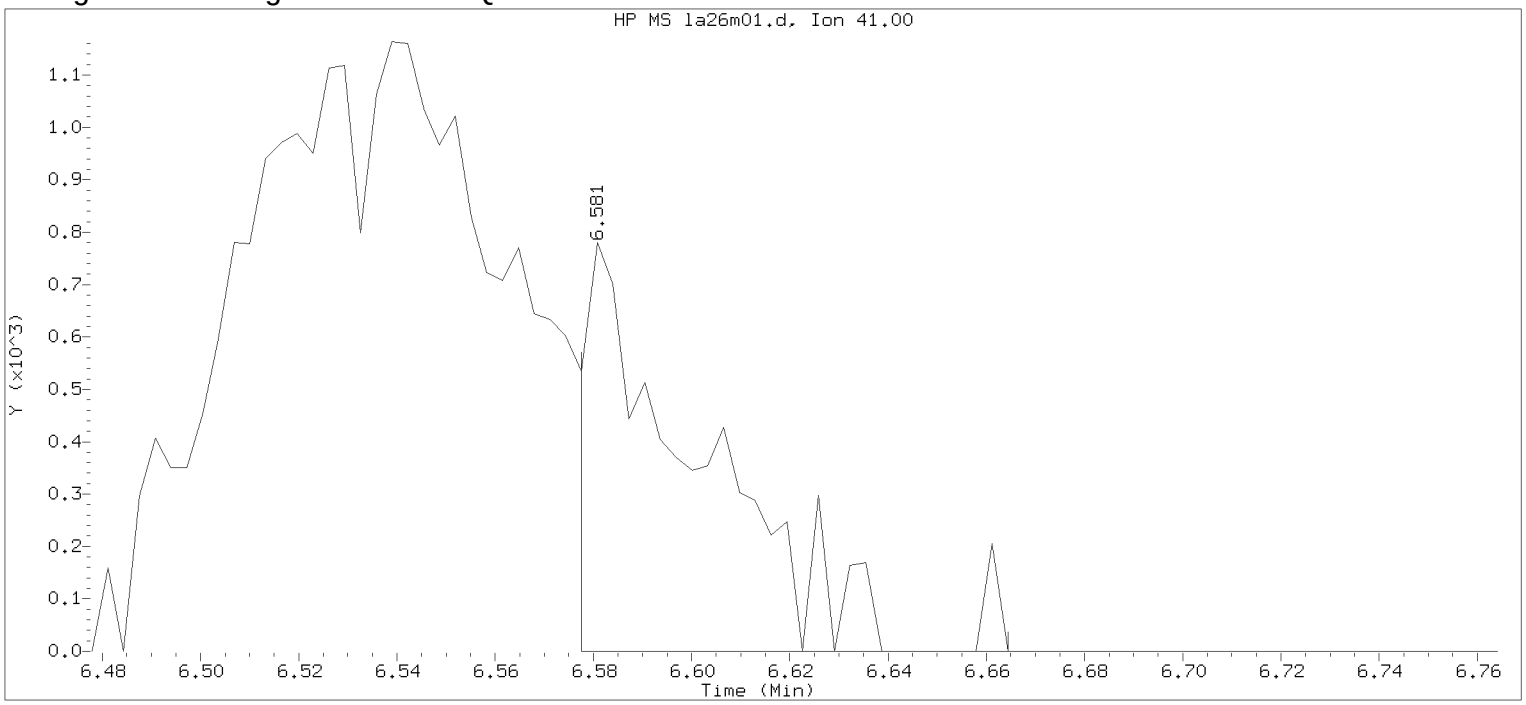
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 58
Compound Name : Isobutyl Alcohol
Scan Number : 1586
Retention Time (minutes): 6.581
Quant Ion : 41.00
Area : 1254
On-column Amount (ng) : 5.2771
Integration start scan : 1584 Integration stop scan: 1611
Y at integration start : 0 Y at integration end: 0

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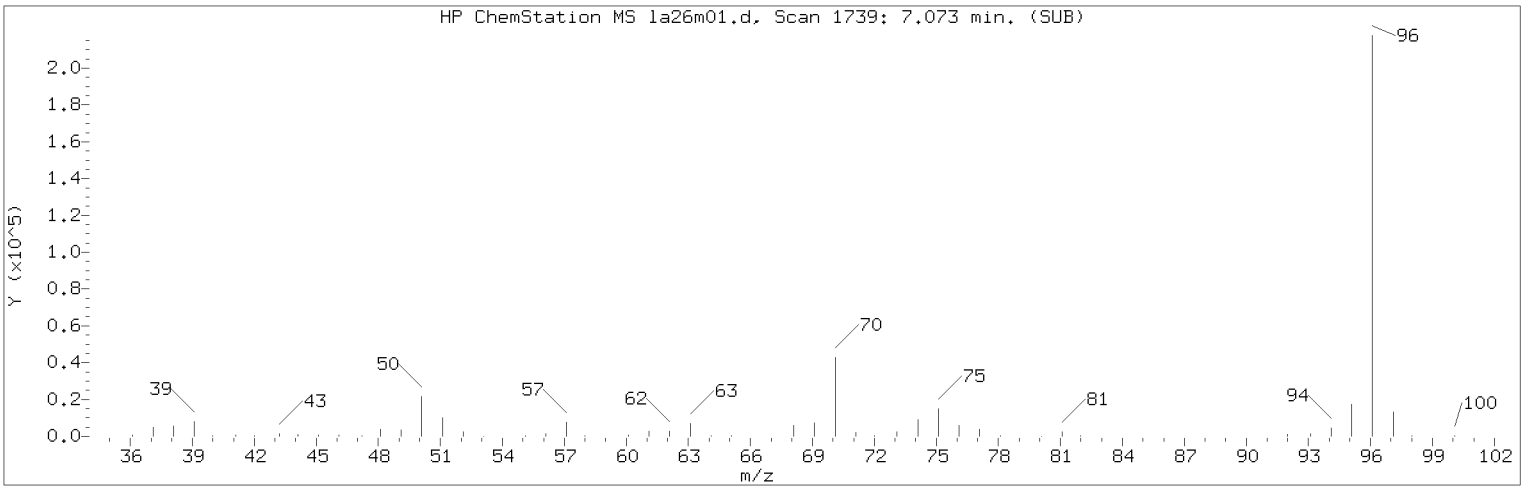
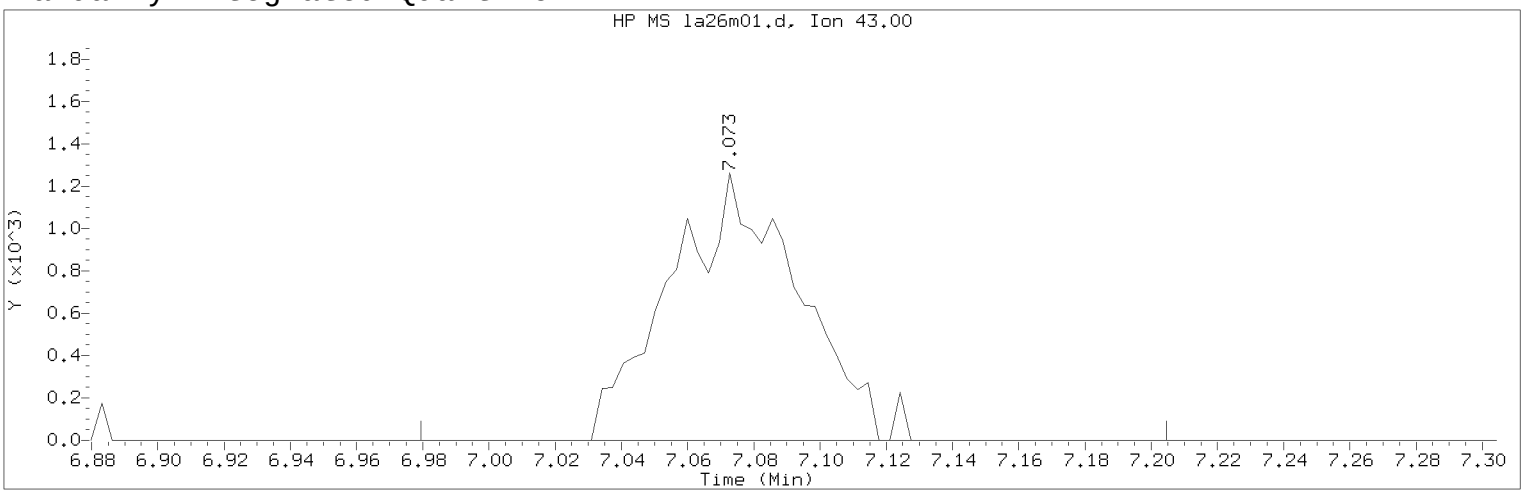
Target 3.5 esignature user KAS02648 Page 26 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

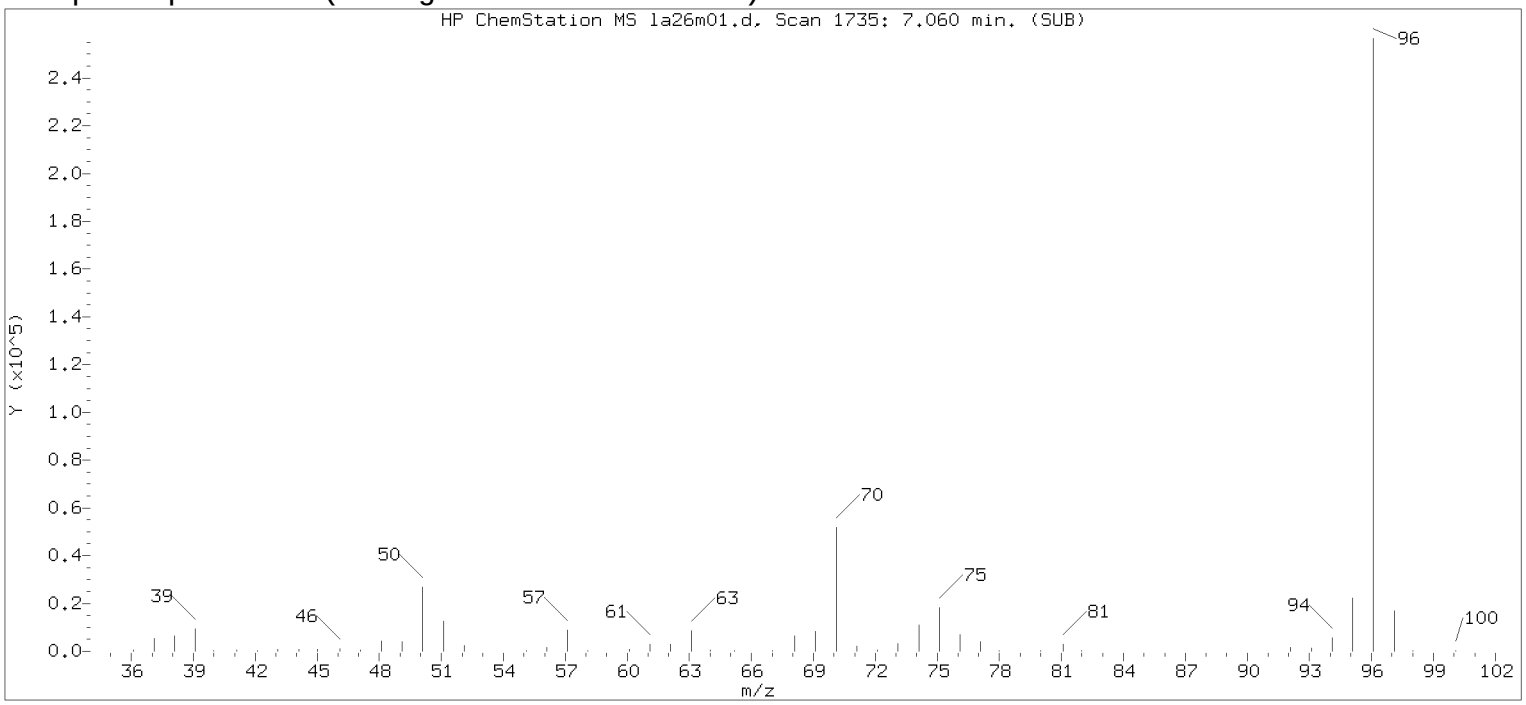
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1739
Retention Time (minutes): 7.073
Quant Ion : 43.00
Area (flag) : 3401M
On-Column Amount (ng) : 0.4512
Integration start scan : 1709 Integration stop scan: 1779
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

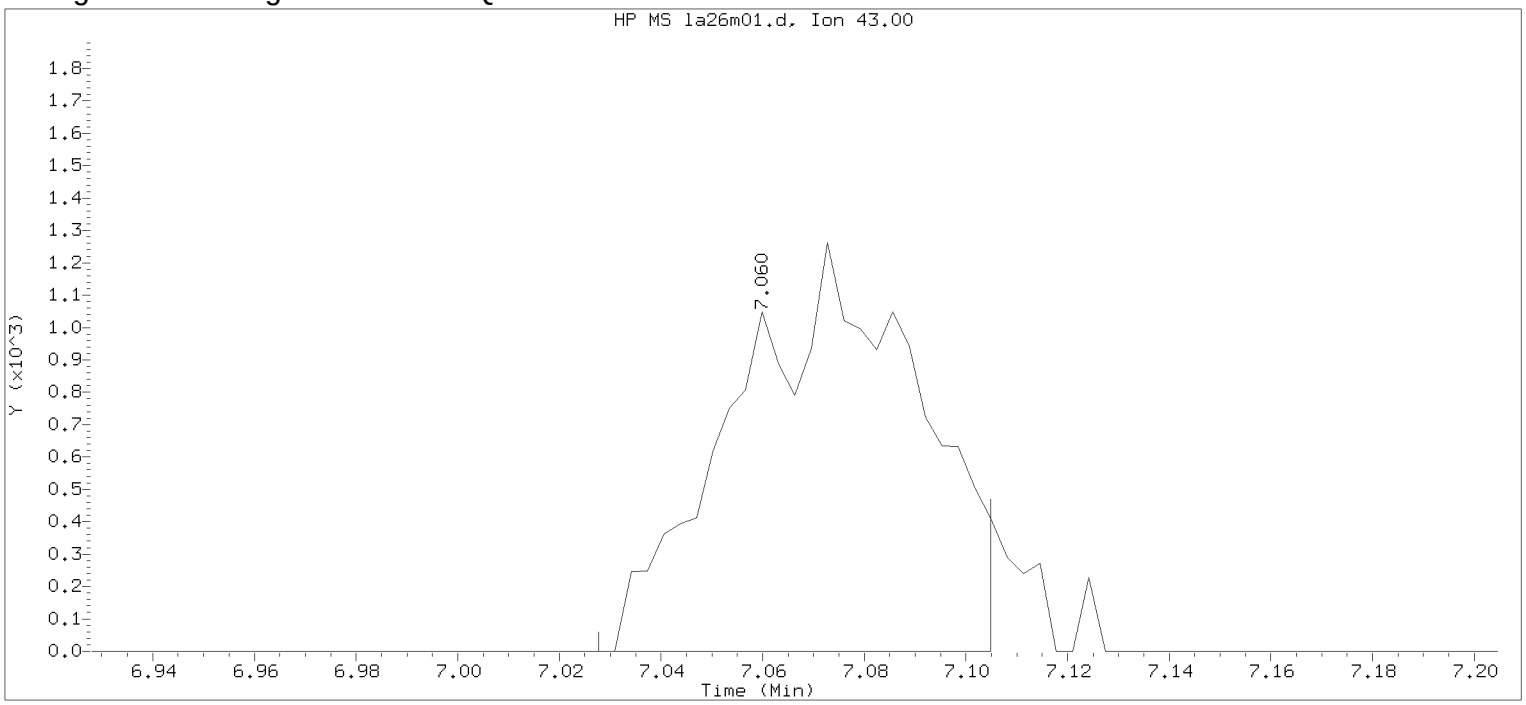
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

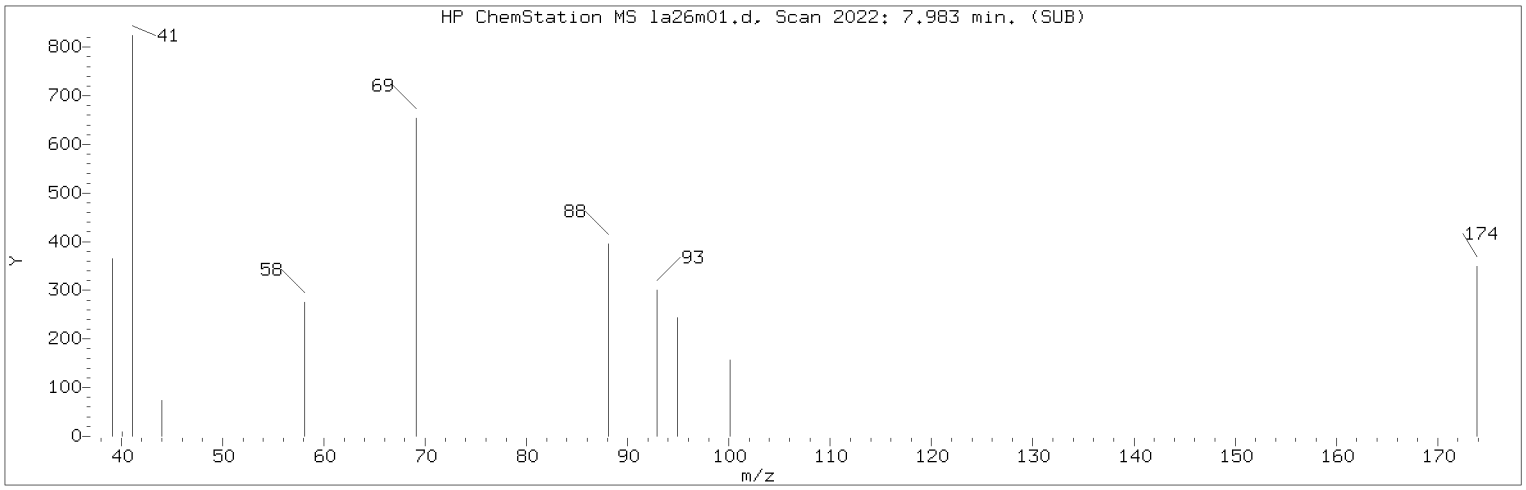
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

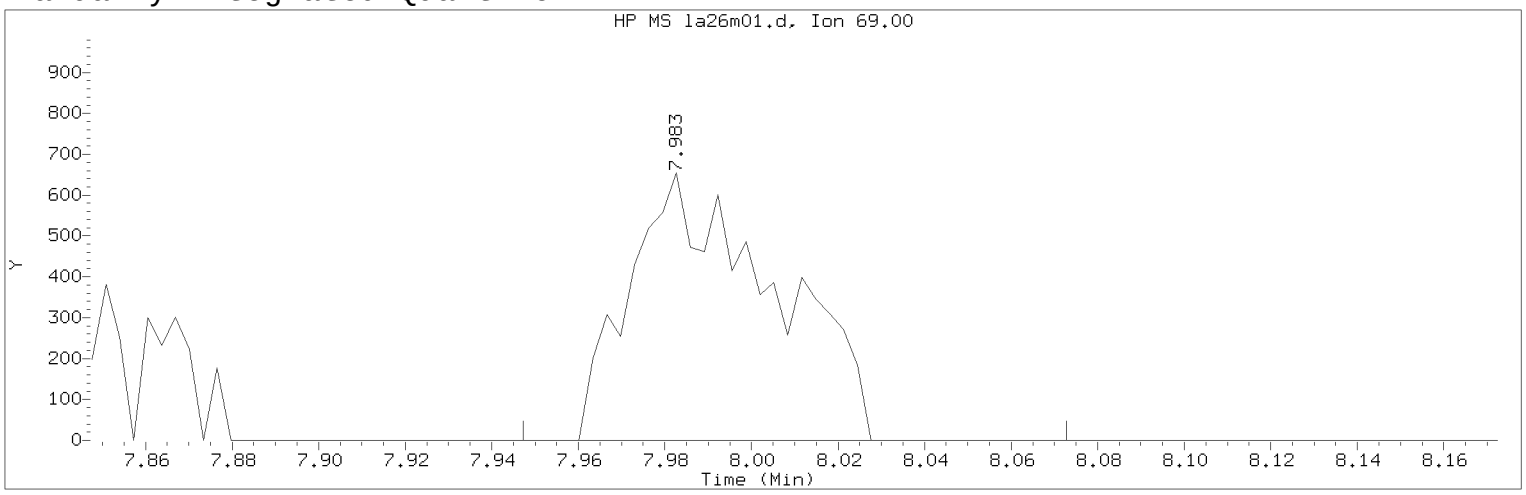
Compound Number : 67
Compound Name : n-Heptane
Scan Number : 1735
Retention Time (minutes): 7.060
Quant Ion : 43.00
Area : 3163
On-column Amount (ng) : 0.4196
Integration start scan : 1724 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS1 key 2648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

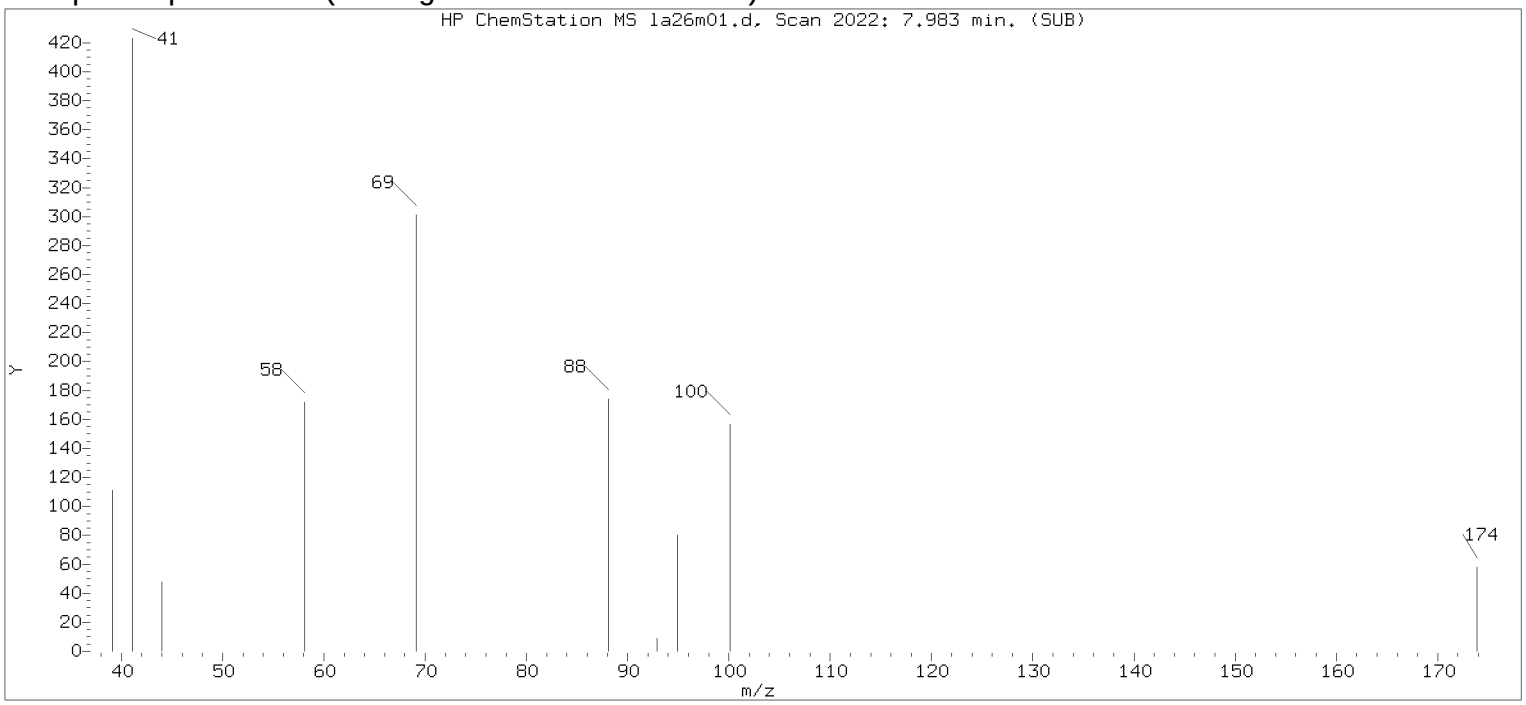
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area (flag) : 1518M
On-Column Amount (ng) : 0.3435
Integration start scan : 2010 Integration stop scan: 2049
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

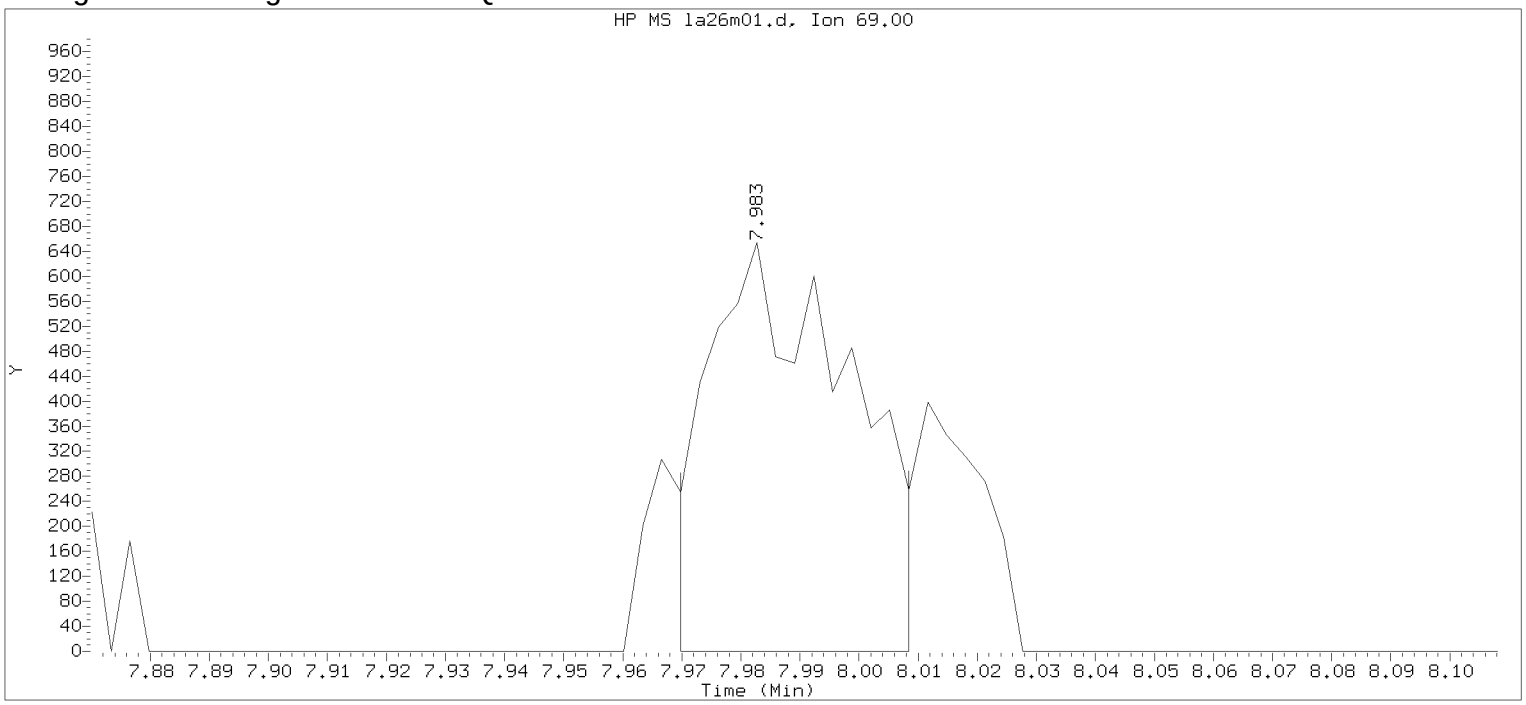
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

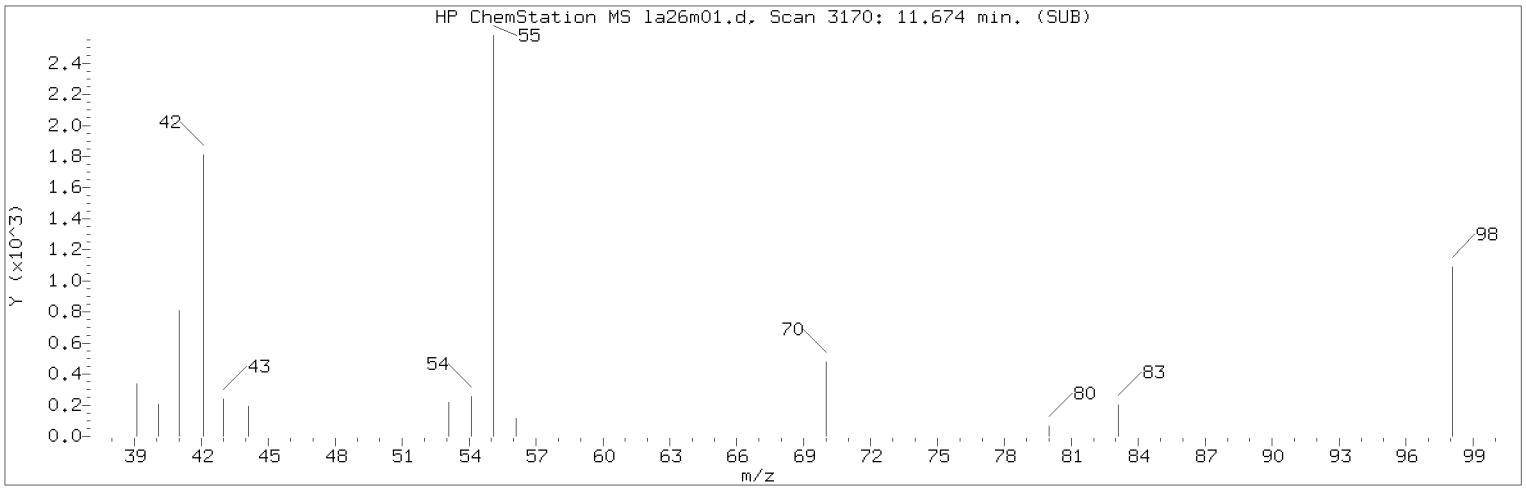
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

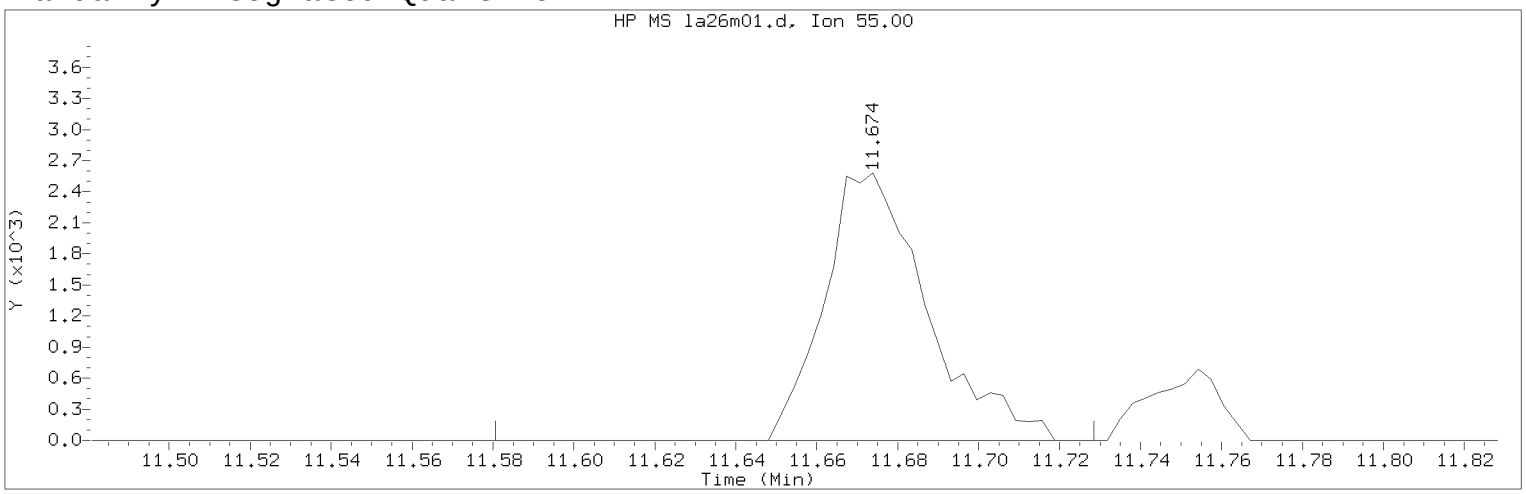
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2022
Retention Time (minutes): 7.983
Quant Ion : 69.00
Area : 1079
On-column Amount (ng) : 0.2442
Integration start scan : 2017 Integration stop scan: 2029
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS1 Page 638 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

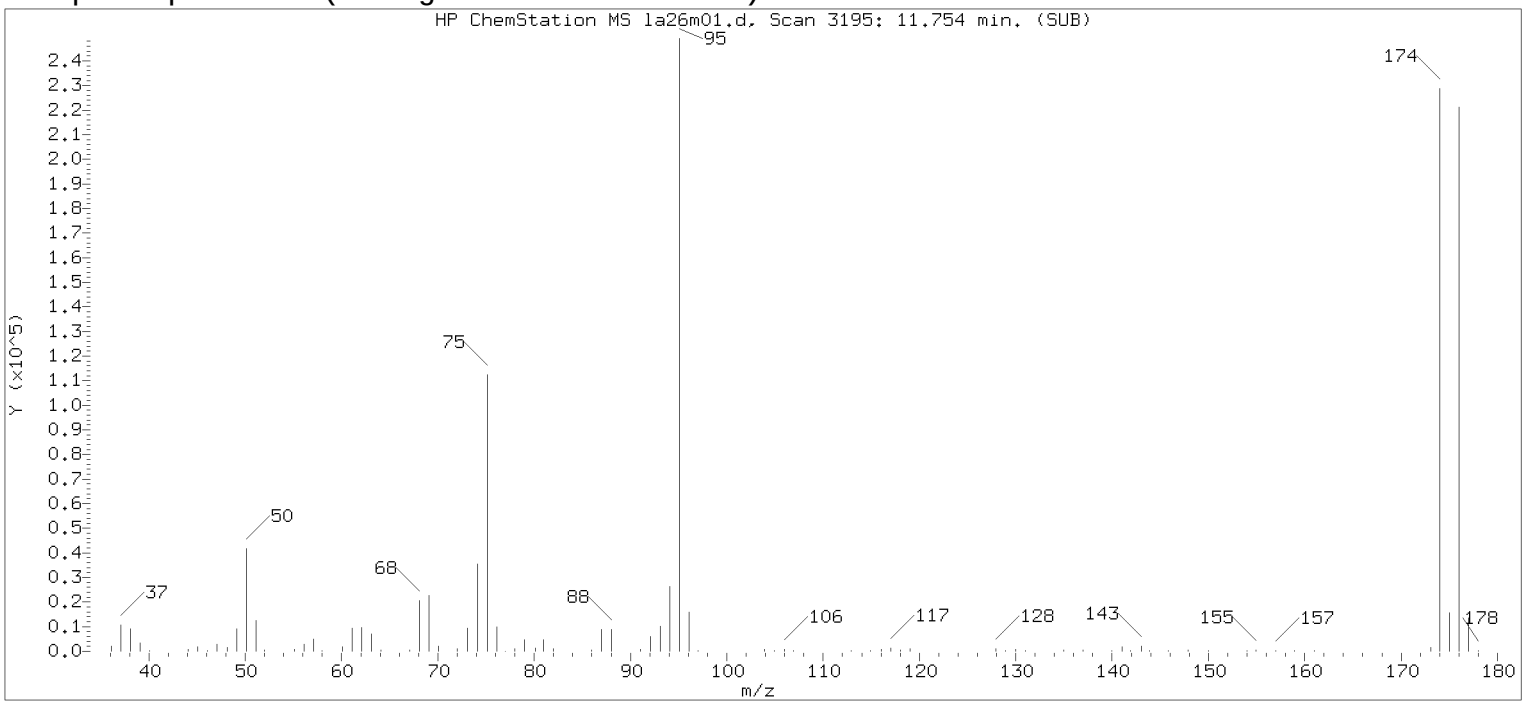
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3170
Retention Time (minutes): 11.674
Quant Ion : 55.00
Area (flag) : 4553M
On-Column Amount (ng) : 20.1799
Integration start scan : 3140  Integration stop scan: 3186
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

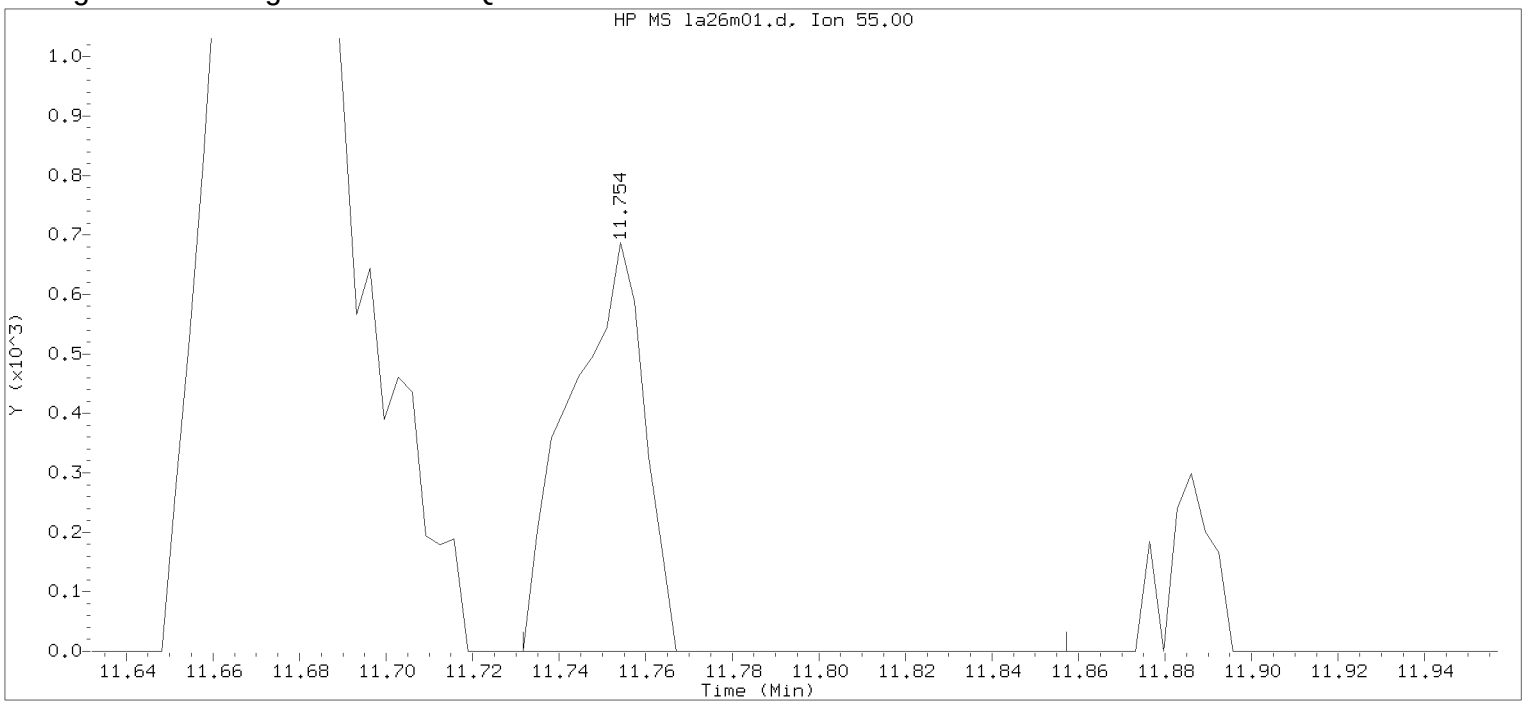
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

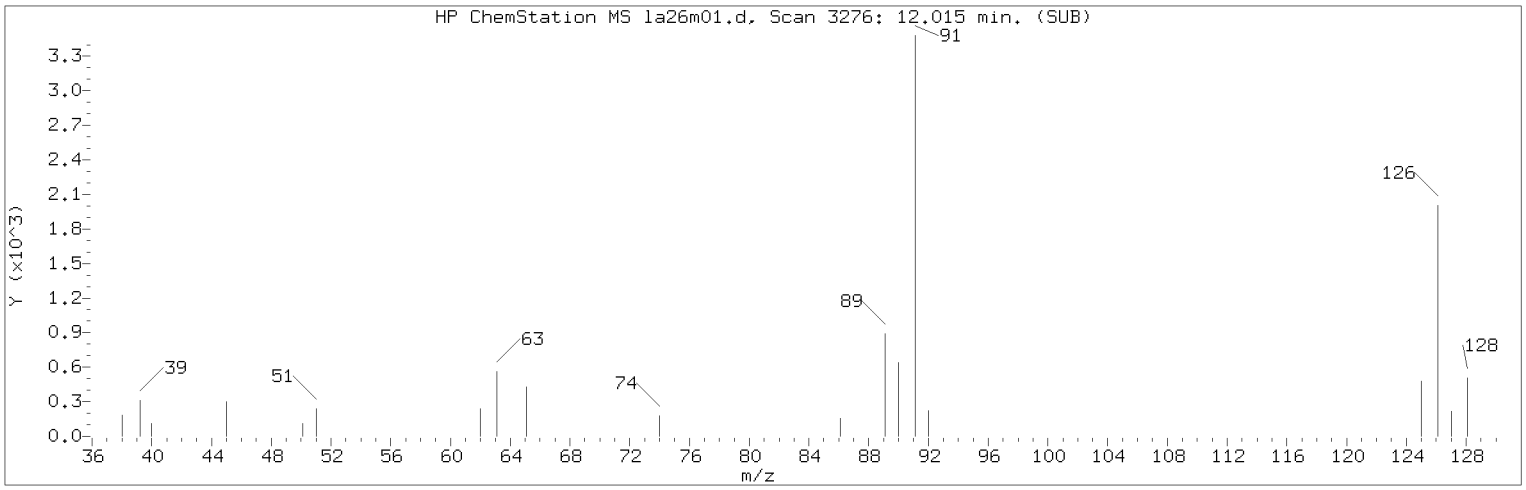
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

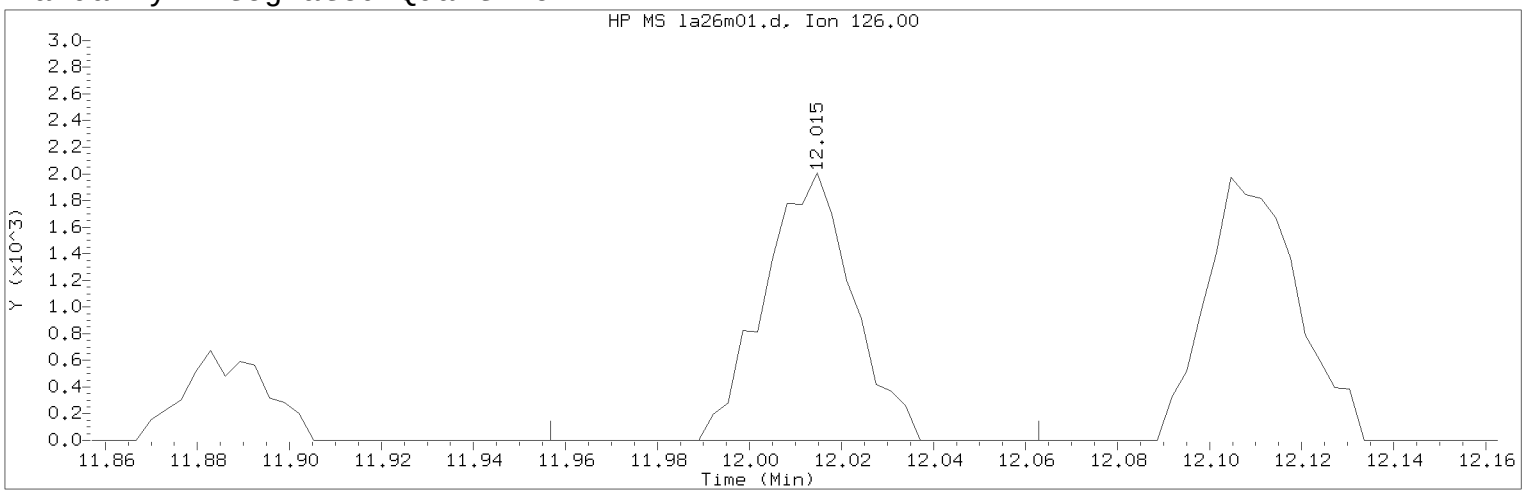
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3195
Retention Time (minutes): 11.754
Quant Ion : 55.00
Area : 817
On-column Amount (ng) : 3.6224
Integration start scan : 3187 Integration stop scan: 3226
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 16:23.
Target 3.5 esignature user KAS1 key 2638

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:22 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

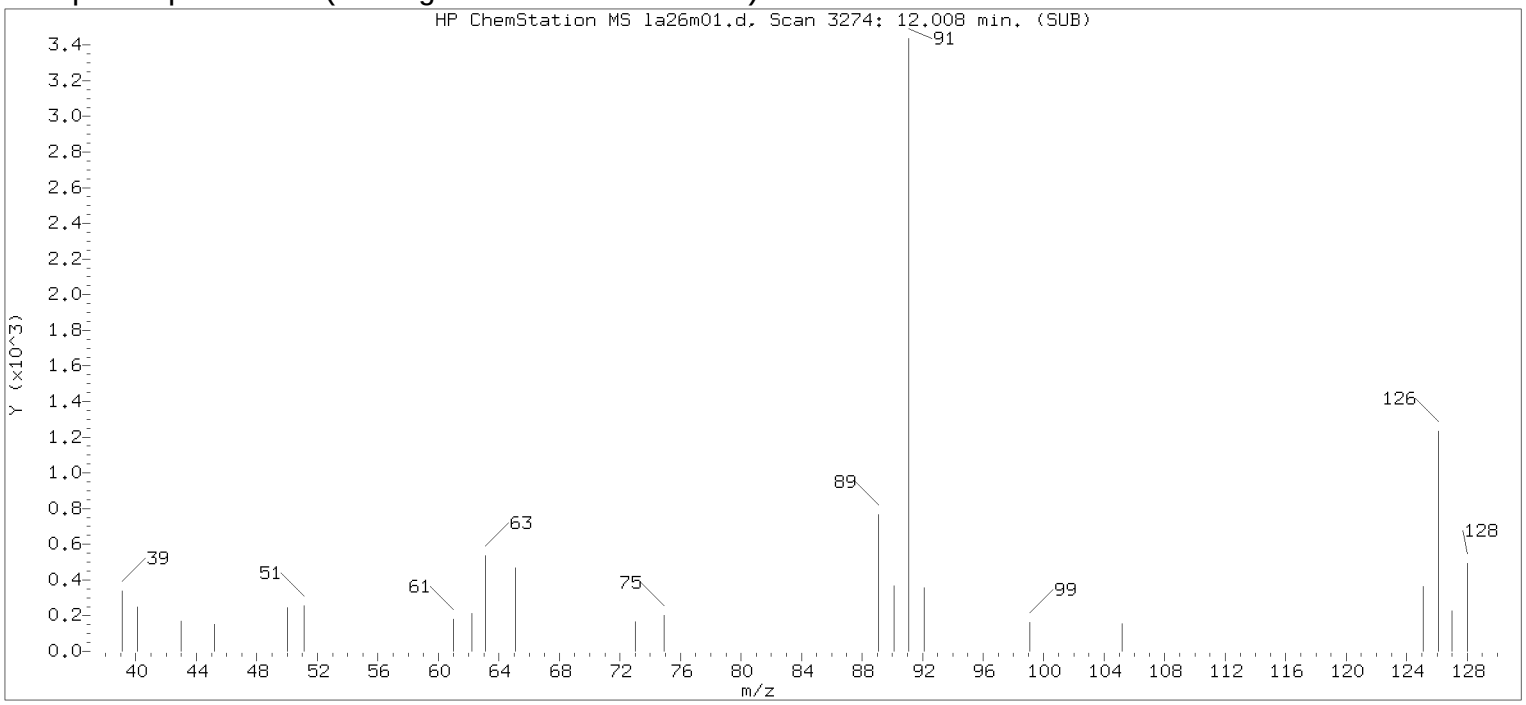
Compound Number : 120
Compound Name : 2-Chlorotoluene
Scan Number : 3276
Retention Time (minutes): 12.015
Quant Ion : 126.00
Area (flag) : 2680M
On-Column Amount (ng) : 0.4793
Integration start scan : 3257  Integration stop scan: 3290
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

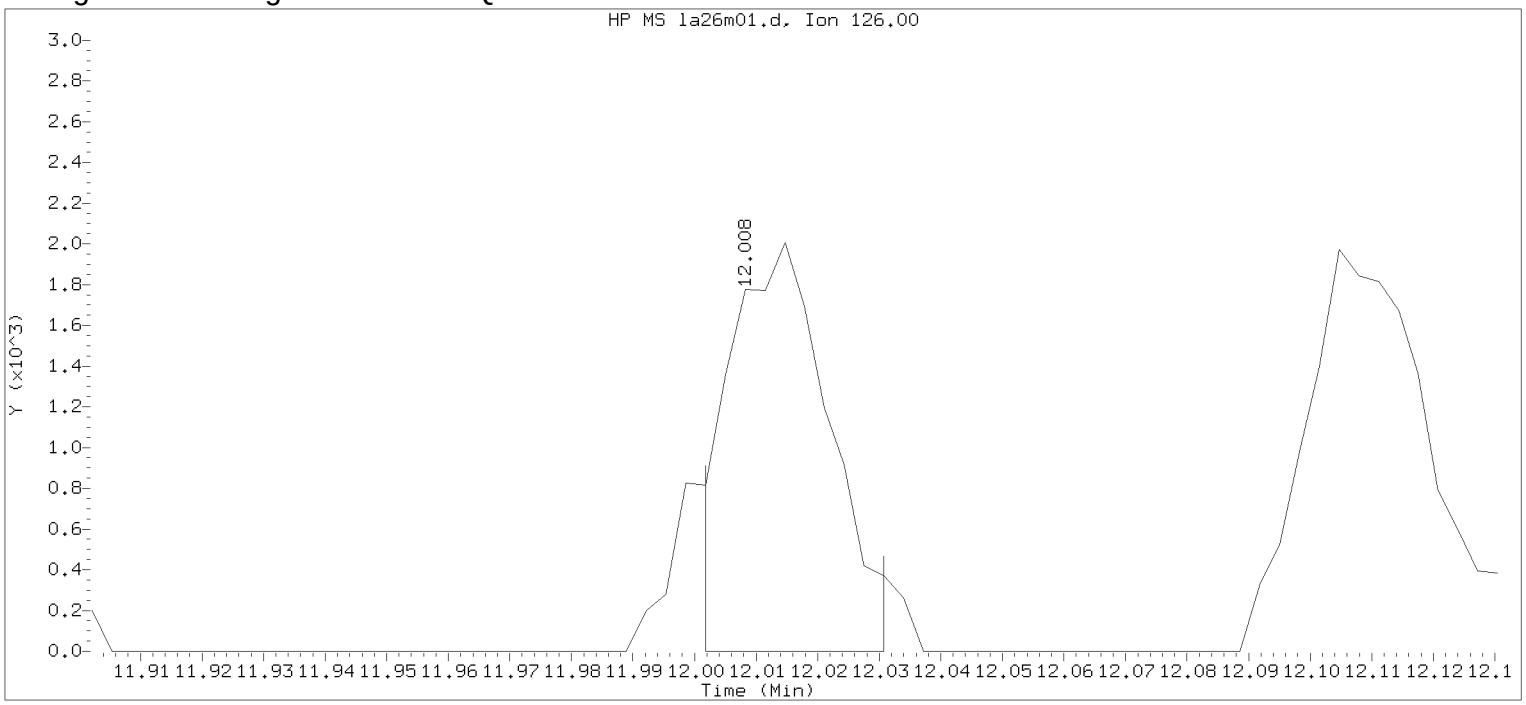
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 16:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26m01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 15:54 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 16:03
Date, time and analyst ID of latest file update: 26-Apr-2017 16:12 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 120
Compound Name : 2-Chlorotoluene
Scan Number : 3274
Retention Time (minutes): 12.008
Quant Ion : 126.00
Area : 2264
On-column Amount (ng) : 0.4049
Integration start scan : 3271 Integration stop scan: 3280
Y at integration start : 0 Y at integration end: 0

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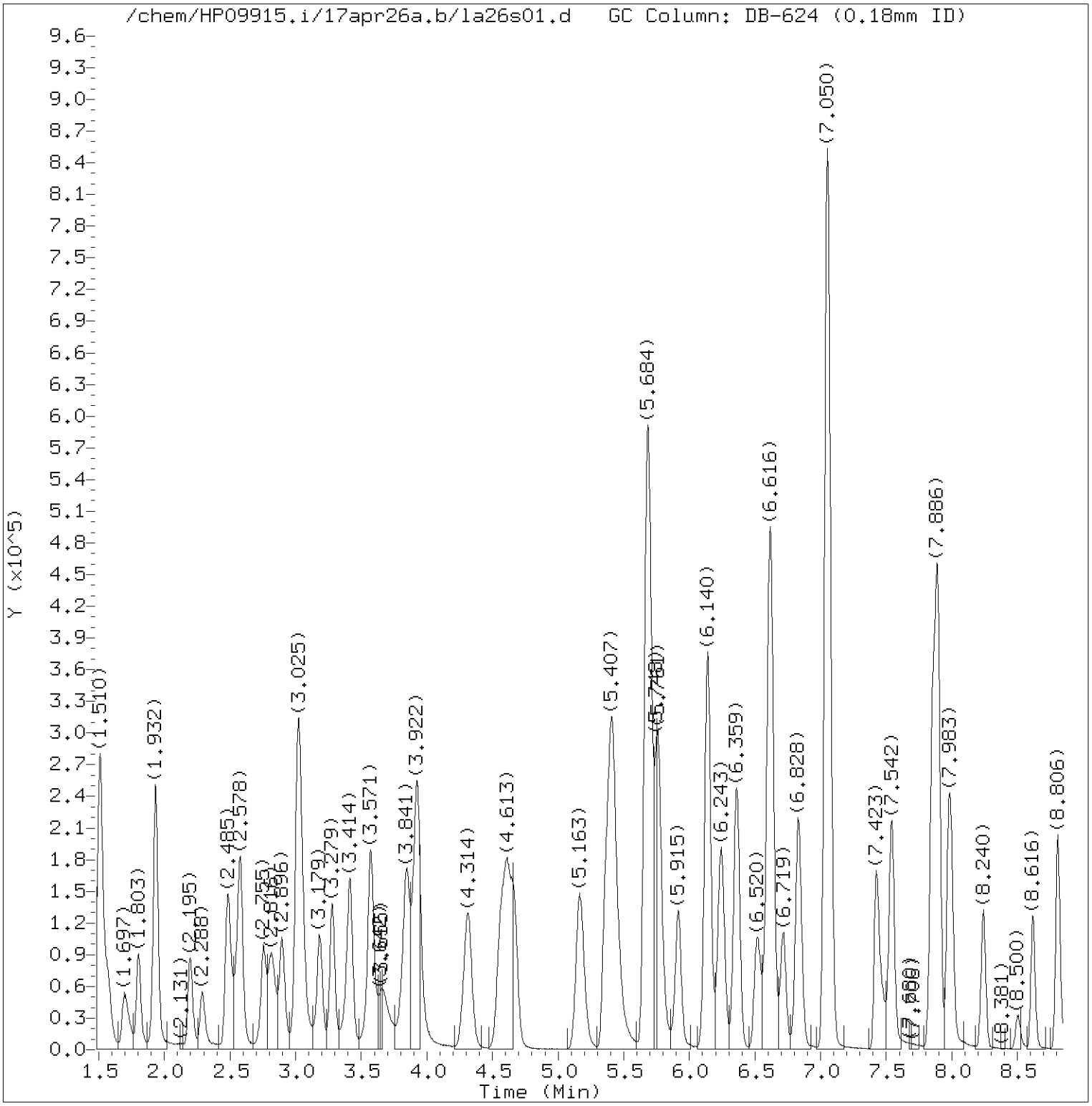
Target 3.5 esignature user KAS02648 Page 634 of 1128




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

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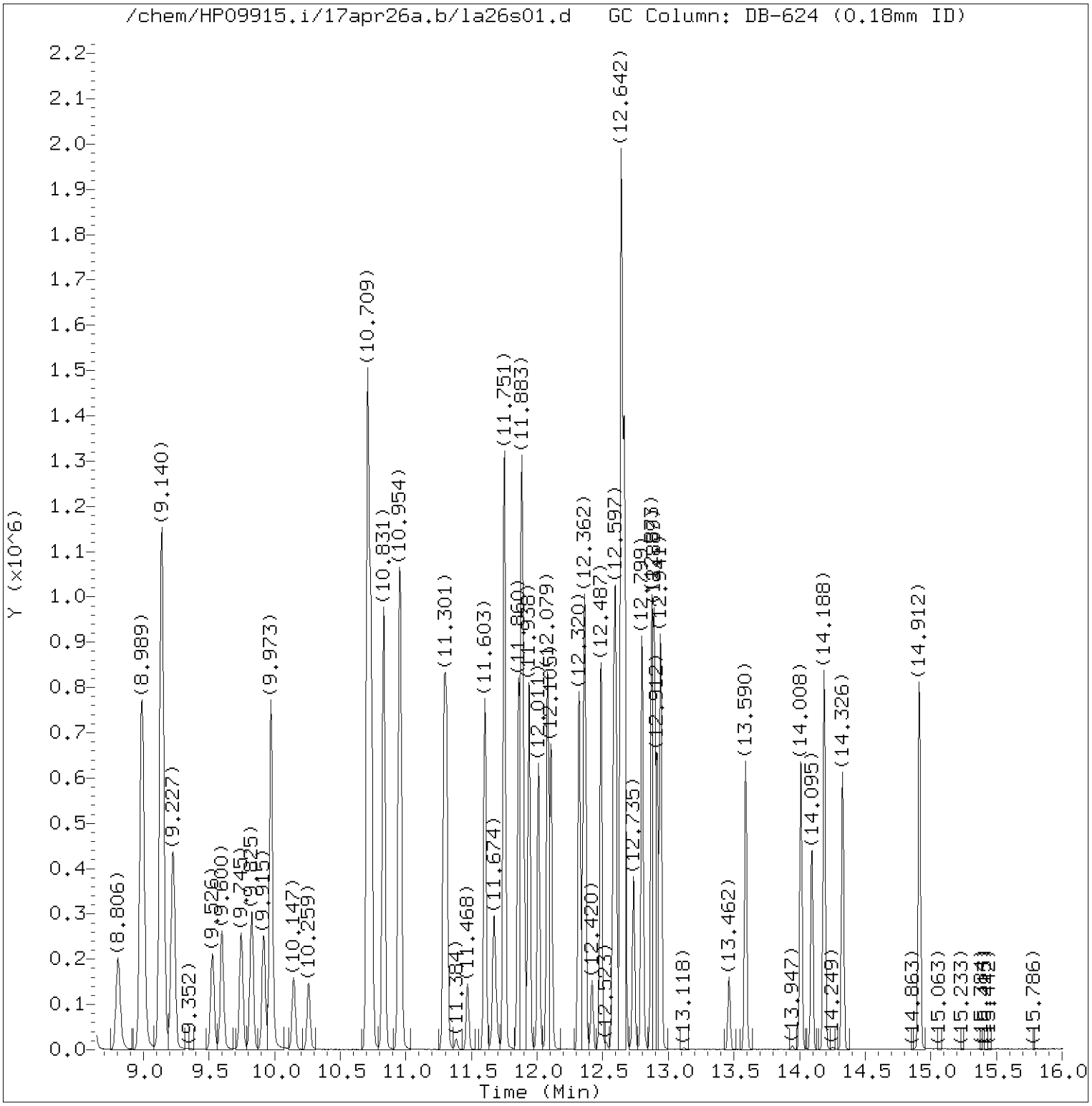
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

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on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d  Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46  Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.697 | 85 | 109499 | 17.491 |
| 4) Chloromethane | (2) | 1.803 | 50 | 118648 | 18.449 |
| 6) Vinyl Chloride | (2) | 1.919 | 62 | 116746 | 18.799 |
| 5) 1,3-Butadiene | (2) | 1.938 | 39 | 117706 | 31.074 |
| 8) Bromomethane | (2) | 2.195 | 94 | 78860 | 18.880 |
| 9) Chloroethane | (2) | 2.288 | 64 | 65535 | 18.726 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 168800 | 19.774 |
| 12) Trichlorofluoromethane | (2) | 2.546 | 101 | 141676 | 19.701 |
| 11) n-Pentane | (2) | 2.581 | 43 | 155972 | 26.336 |
| 14) Ethyl ether | (2) | 2.755 | 59 | 78549 | 19.620 |
| 15) Freon 123a | (2) | 2.816 | 67 | 99077 | 20.687 |
| 16) Acrolein | (1) | 2.899 | 56 | 152765 | 93.014 |
| 17) 1,1-Dichloroethene | (2) | 3.012 | 96 | 85092 | 22.356 |
| 18) Acetone | (1) | 3.031 | 58 | 98646M | 138.386 |
| 19) Freon 113 | (2) | 3.034 | 101 | 87279 | 22.782 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 62534M | 132.335 |
| 22) Methyl Iodide | (2) | 3.179 | 142 | 158156 | 21.423 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 276153 | 22.295 |
| 27) Methyl Acetate | (2) | 3.385 | 43 | 108608 | 19.660 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 150132 | 19.692 |
| 28) Methylene Chloride | (2) | 3.571 | 84 | 100067 | 19.902 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 200632M | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 144050 | 185.564 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 276003 | 95.141 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.912 | 73 | 275653 | 19.769 |
| 32) trans-1,2-Dichloroethene | (2) | 3.925 | 96 | 96639 | 21.640 |
| 34) n-Hexane | (2) | 4.314 | 57 | 148593 | 21.707 |
| 36) 1,1-Dichloroethane | (2) | 4.558 | 63 | 173220 | 20.642 |
| 38) di-Isopropyl ether | (2) | 4.607 | 45 | 326552 | 20.275 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.661 | 53 | 142863 | 20.183 |
| 40) Ethyl t-butyl ether | (2) | 5.163 | 59 | 267730 | 19.315 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 540273 | 139.091 |
| 42) cis-1,2-Dichloroethene | (2) | 5.410 | 96 | 104661 | 20.453 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 107714 | 19.225 |
| 47) Propionitrile | (1) | 5.459 | 54 | 160735 | 141.868 |
| 48) Methacrylonitrile | (2) | 5.684 | 67 | 427221 | 147.714 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 52961 | 19.637 |
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 93578 | 93.510 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.918 | 83 | 160721 | 20.094 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 254549 | 49.603 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 142170 | 19.451 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 201300 | 42.093 |
| 54) Cyclohexane | (2) | 6.243 | 56 | 166429 | 19.998 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 104390 | 19.566 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 125804 | 19.338 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 129876 | 476.515 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63935 | 50.103 |
| 60) Benzene | (2) | 6.629 | 78 | 387251 | 20.194 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 131704 | 20.301 |
| 65) t-Amyl methyl ether | (2) | 6.828 | 73 | 263343 | 19.143 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1050887 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 153007 | 19.964 |
| 69) n-Butanol | (1) | 7.423 | 56 | 206615 | 940.388 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 98914 | 19.959 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 175190 | 20.063 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 106099 | 20.211 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 87598 | 19.494 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 37891M | 552.412 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 66490 | 20.140 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 115395 | 19.368 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 27997 | 16.571 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 75861 | 18.799 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 151800 | 19.548 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 756555 | 94.518 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1039935 | 50.132 |
| 88) Toluene | (3) | 9.227 | 92 | 242182 | 20.090 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 134989 | 19.971 |
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 154350 | 20.273 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 94409 | 20.324 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 104916 | 19.678 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 161543 | 20.042 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 551770 | 94.825 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 286789 | 39.519 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 90734 | 18.858 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 104756 | 20.600 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 812425 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 130363 | 18.831 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 273397 | 19.655 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 87717 | 19.096 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 458197 | 19.705 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 357105 | 39.448 |
| 107) o-Xylene | (3) | 11.291 | 106 | 175615 | 19.507 |
| 109) Styrene | (3) | 11.311 | 104 | 302990 | 20.359 |
| 110) Bromoform | (3) | 11.471 | 173 | 63277 | 18.112 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 461508 | 20.058 |
| 112) Cyclohexanone | (1) | 11.674 | 55 | 135081 | 522.068 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 384984 | 49.931 |
| 108) Xylene (Total) | (3) | | 106 | 532720 | 58.955 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 156503 | 20.076 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 122720 | 19.548 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 216768 | 97.039 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 45126 | 20.478 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 543948 | 19.609 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 111198 | 19.261 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 386164 | 19.522 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 117549 | 19.563 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 84253M | 19.704 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 64493 | 19.104 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 398317 | 19.549 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 498192 | 19.744 |
| 129) 1,3-Dichlorobenzene | (4) | 12.584 | 146 | 227433 | 19.029 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 435084 | 19.529 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 439191 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.661 | 146 | 238412 | 19.291 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 427280 | 20.015 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 222904 | 17.243 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 260216 | 19.550 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 270880 | 19.379 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 213925 | 19.222 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 227861 | 19.395 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 220414 | 19.677 |
| 141) Diethylbenzene (total) | (4) | | 100 | 751510 | 58.606 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 31087 | 18.857 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 178208 | 18.709 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 172270 | 18.644 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 69967 | 17.436 |
| 148) Naphthalene | (4) | 14.188 | 128 | 548363 | 19.667 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 162660 | 18.248 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 326087 | 18.087 |



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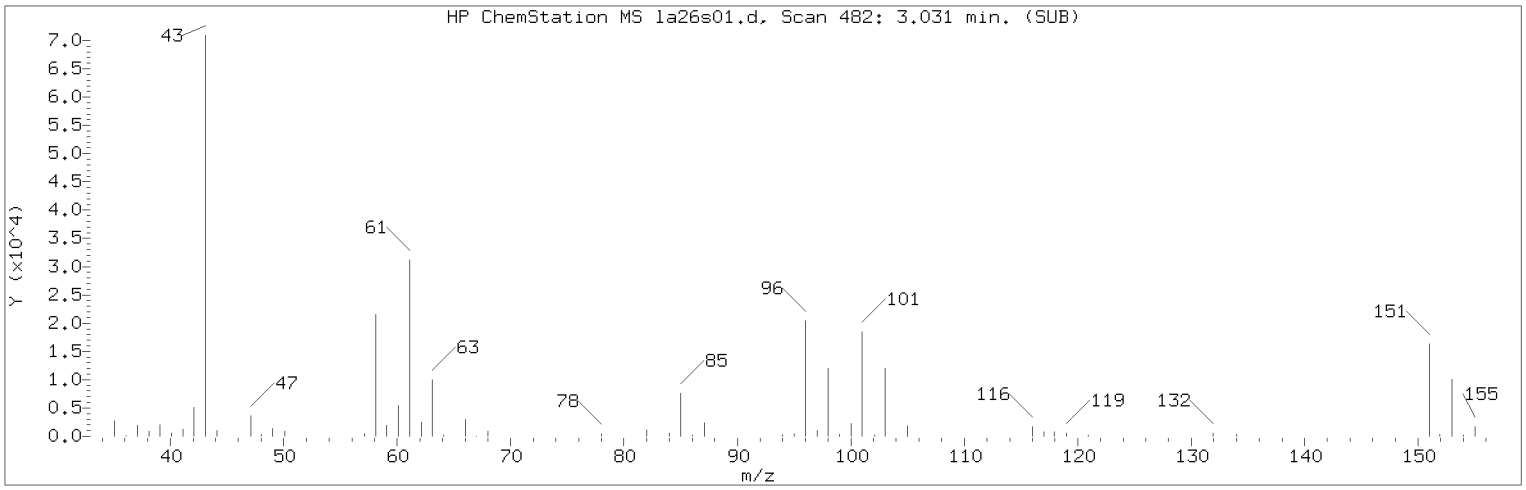
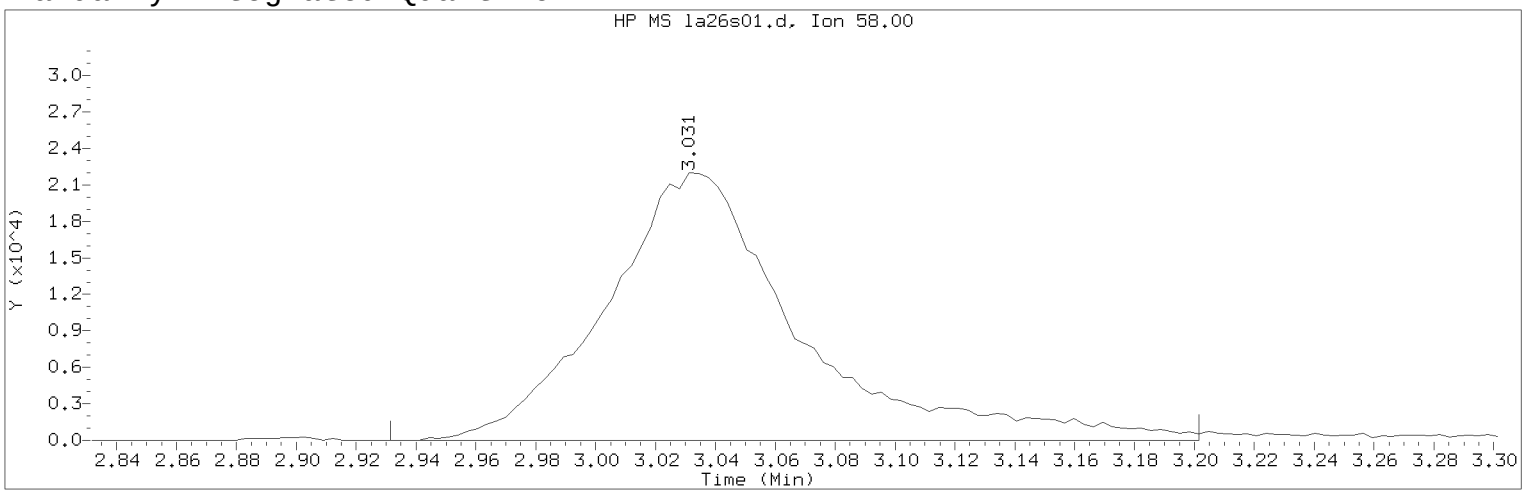
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

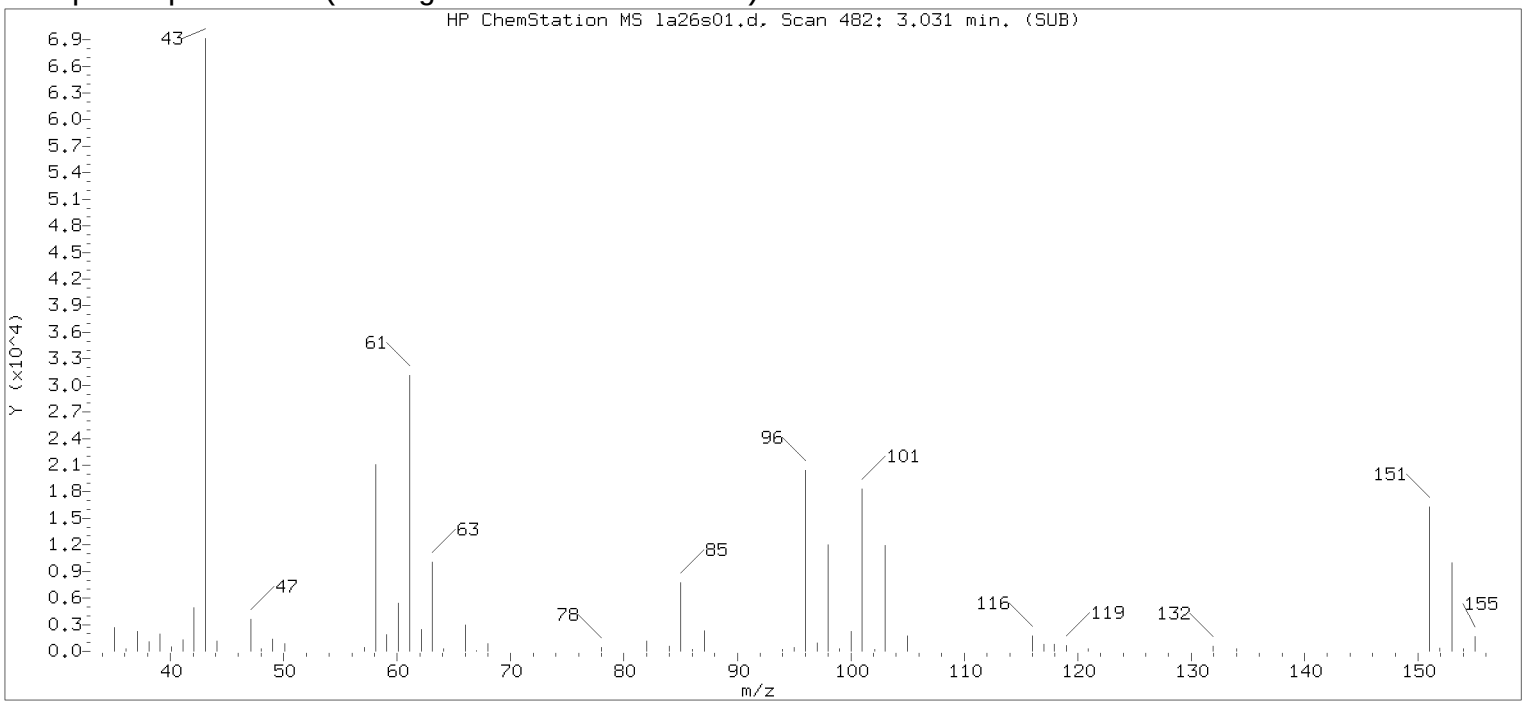
Compound Number : 18
Compound Name : Acetone
Scan Number : 482
Retention Time (minutes): 3.031
Quant Ion : 58.00
Area (flag) : 98646M
On-Column Amount (ng) : 138.3860
Integration start scan : 450 Integration stop scan: 534
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

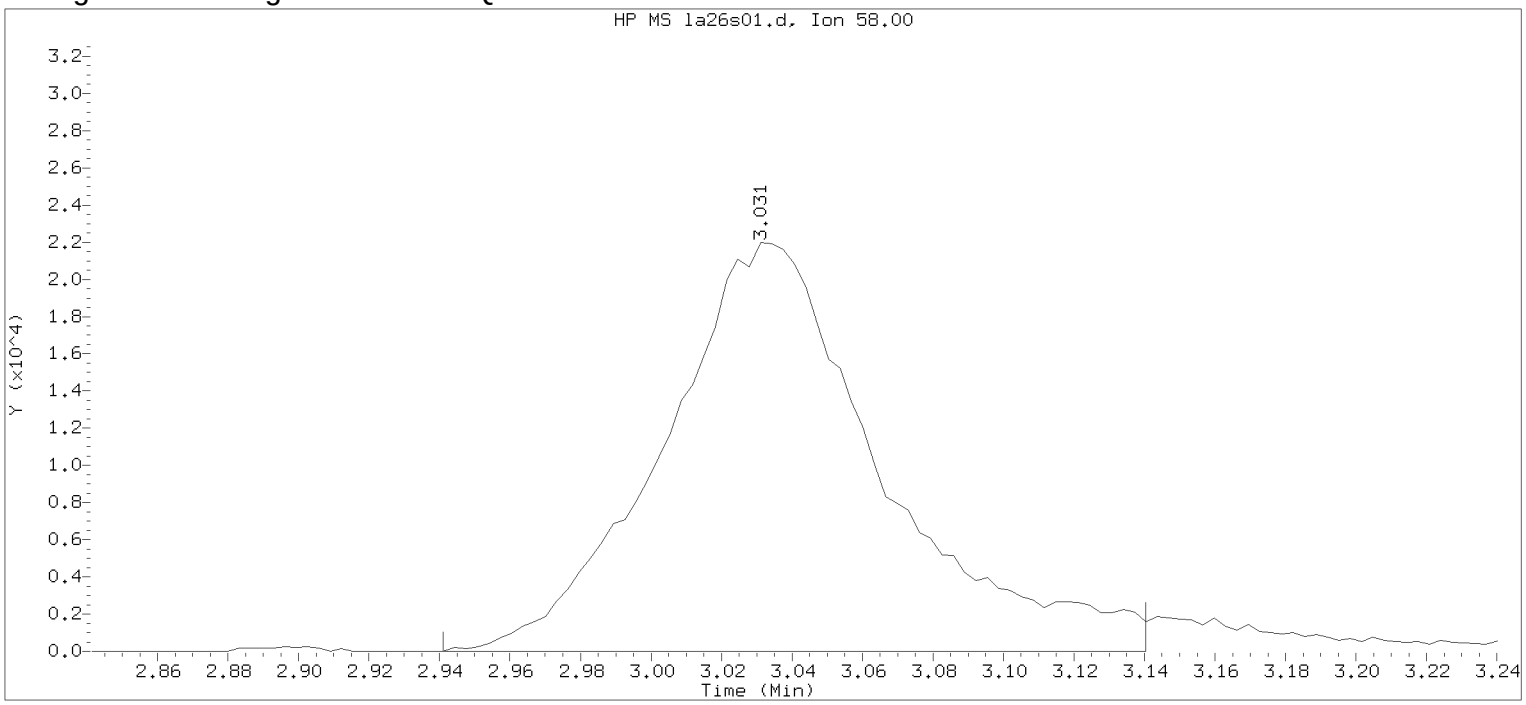
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

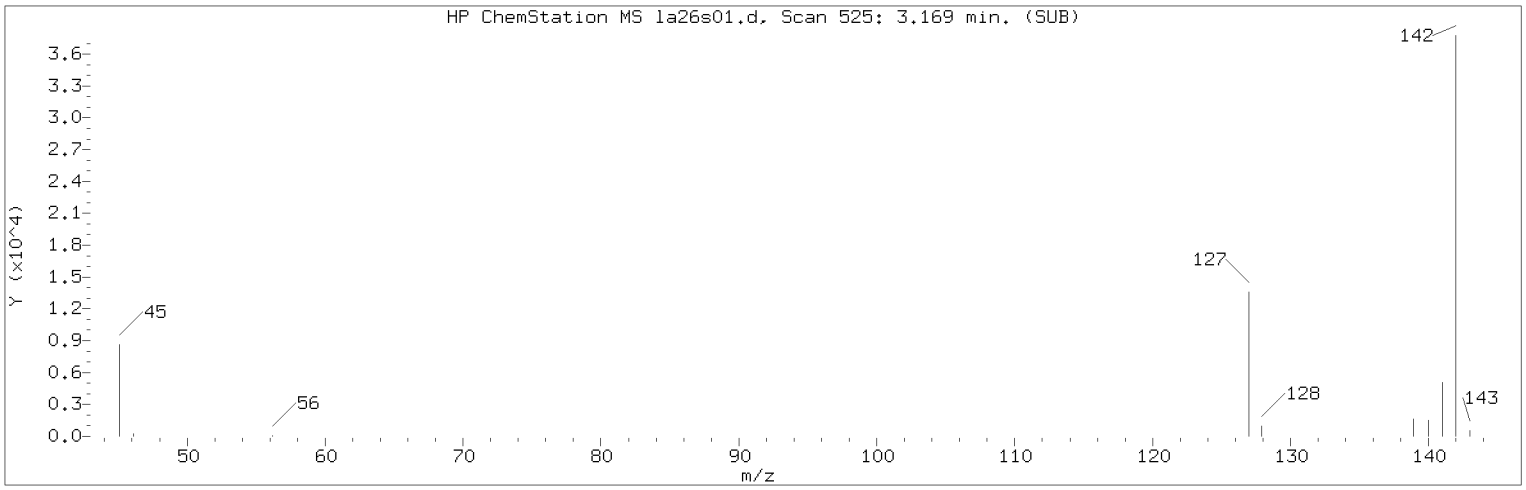
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

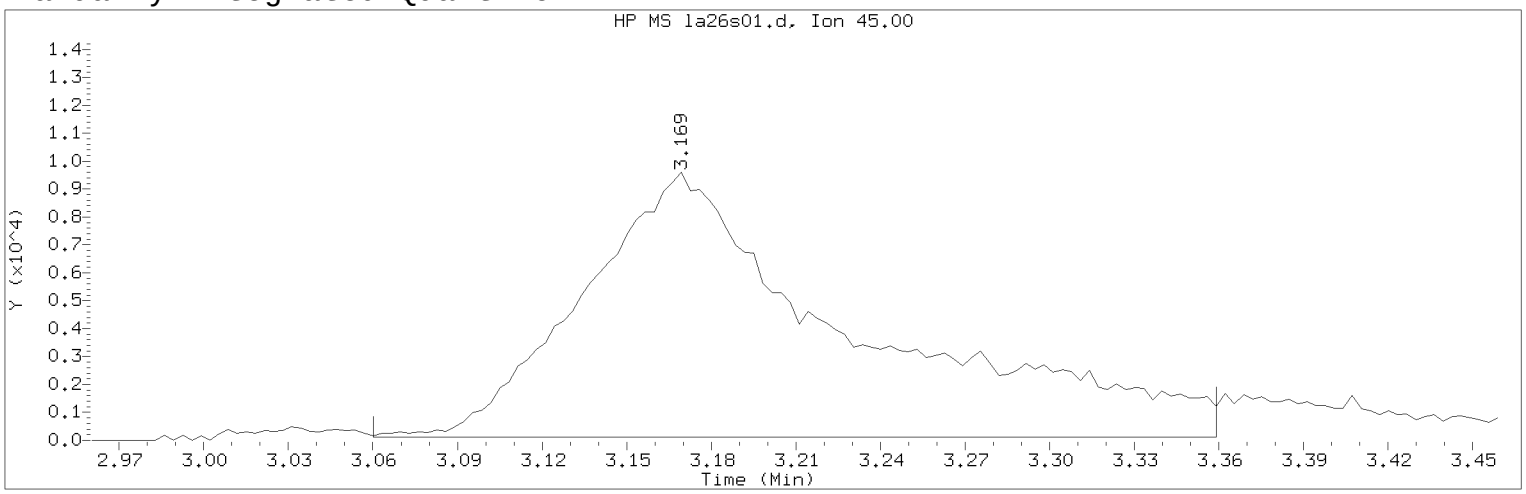
Compound Number : 18
Compound Name : Acetone
Scan Number : 482
Retention Time (minutes): 3.031
Quant Ion : 58.00
Area : 94153
On-column Amount (ng) : 140.9555
Integration start scan : 453 Integration stop scan: 515
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature user KAS02648 Page 643 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

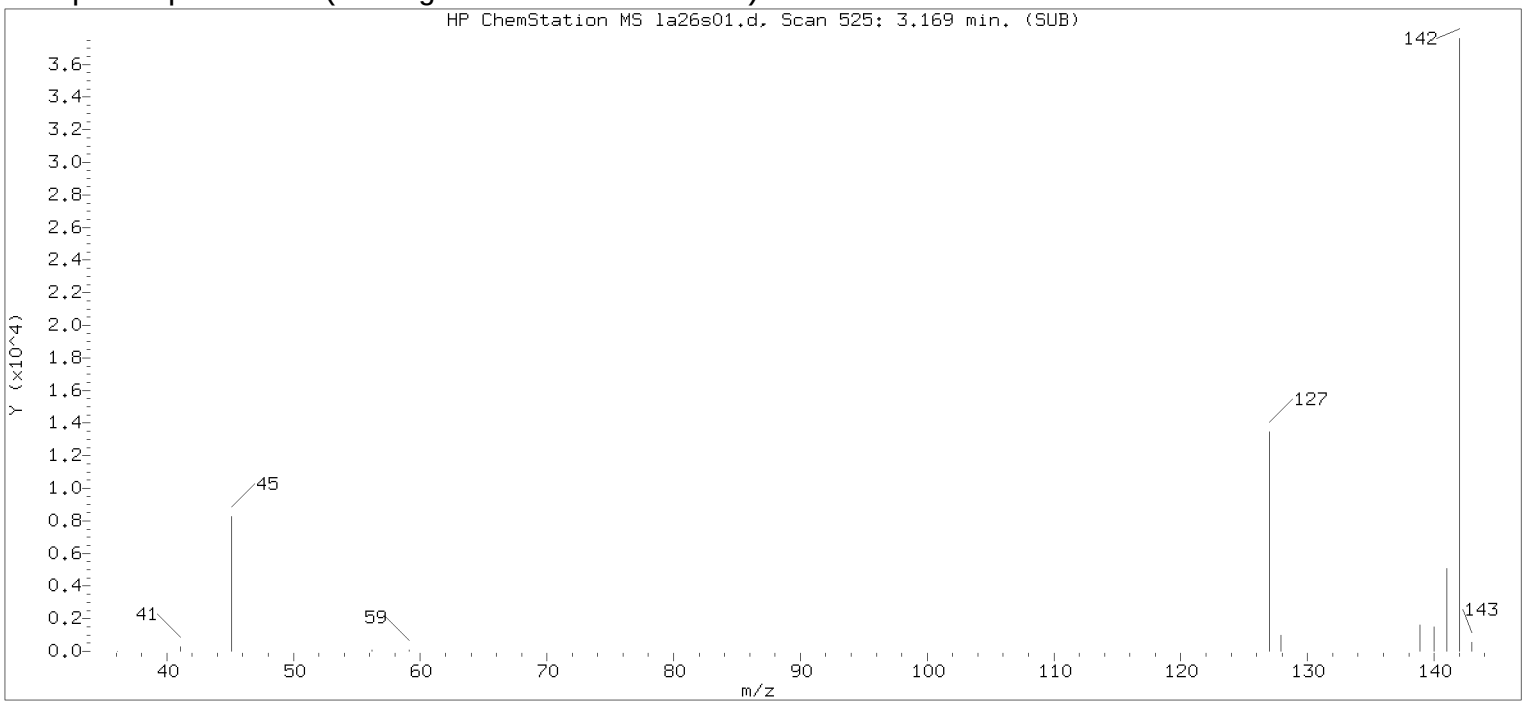
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area (flag) : 62534M
On-Column Amount (ng) : 132.3351
Integration start scan : 490 Integration stop scan: 583
Y at integration start : 121 Y at integration end: 121

Reason for manual integration: improper integration

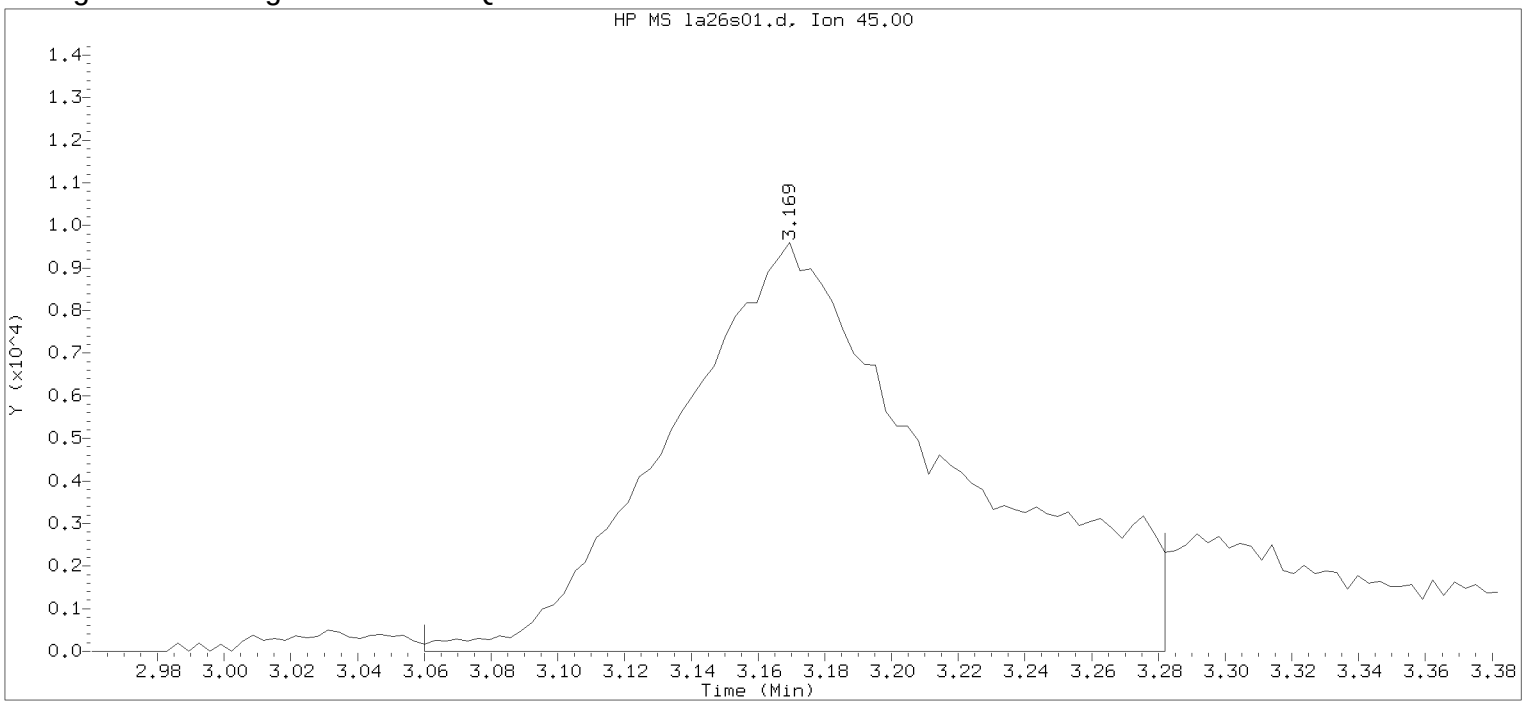
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

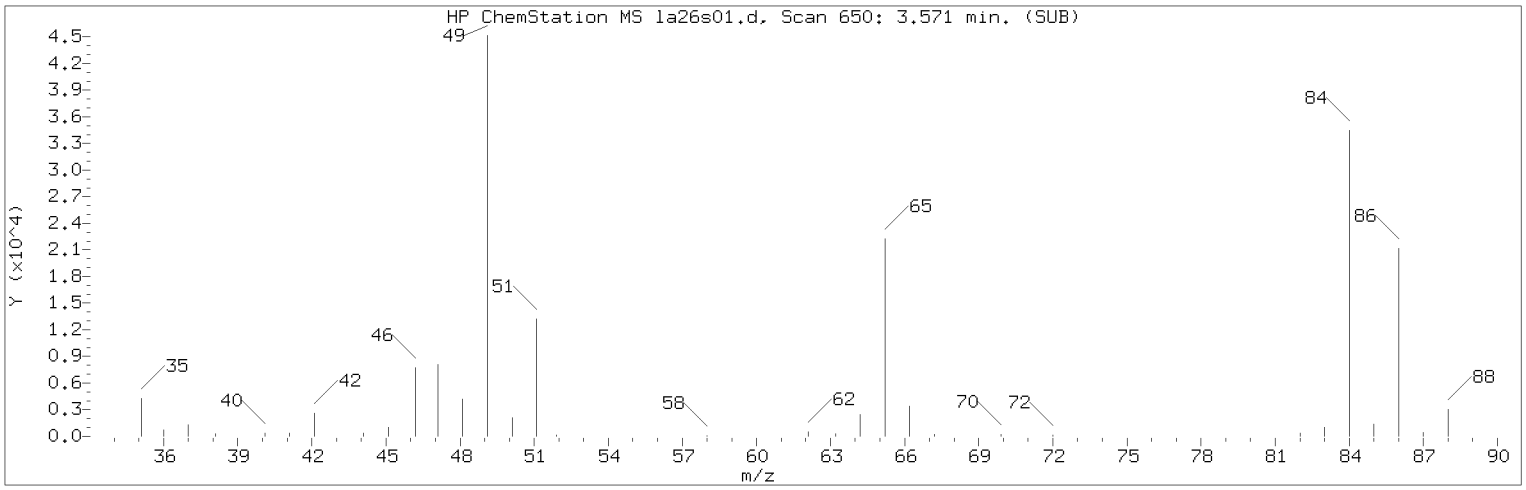
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

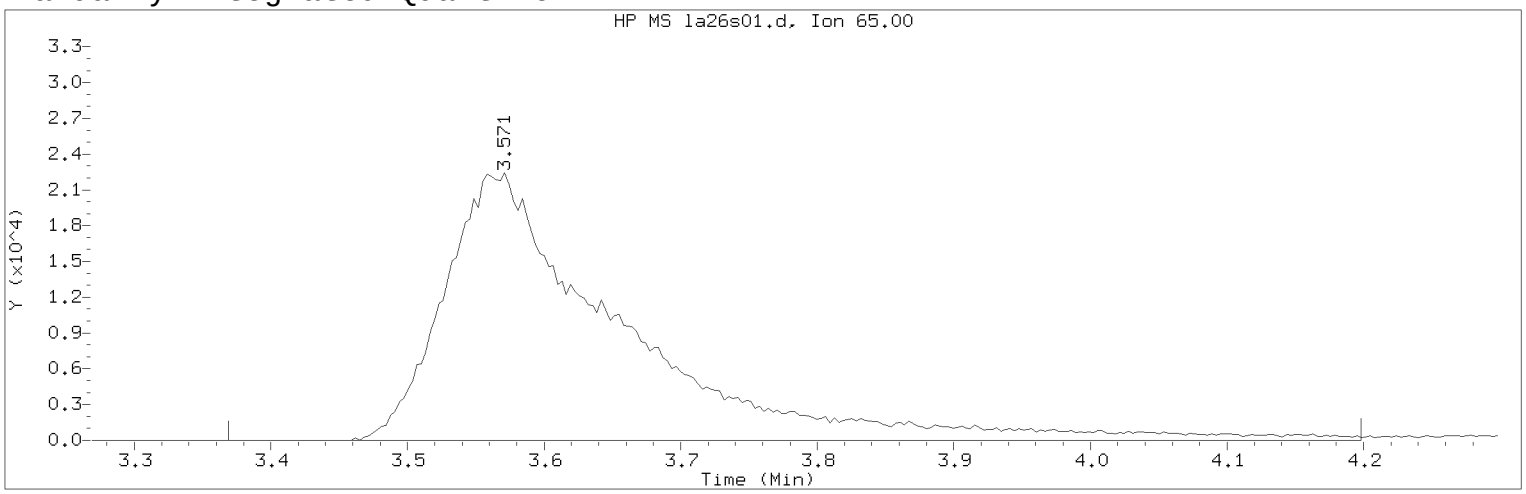
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 525
Retention Time (minutes): 3.169
Quant Ion : 45.00
Area : 55120
On-column Amount (ng) : 124.4820
Integration start scan : 490 Integration stop scan: 559
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

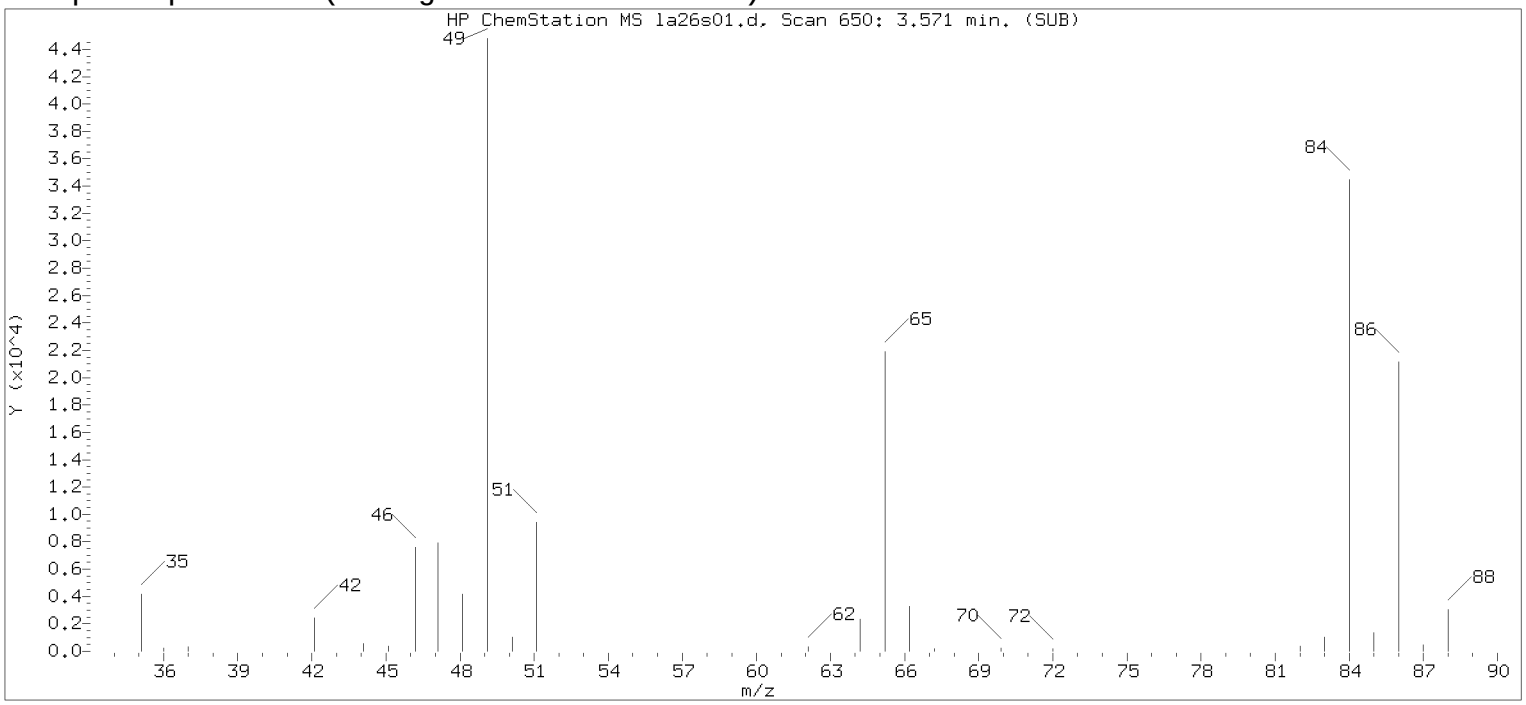
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area (flag) : 200632M
On-Column Amount (ng) : 250.0000
Integration start scan : 586 Integration stop scan: 844
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

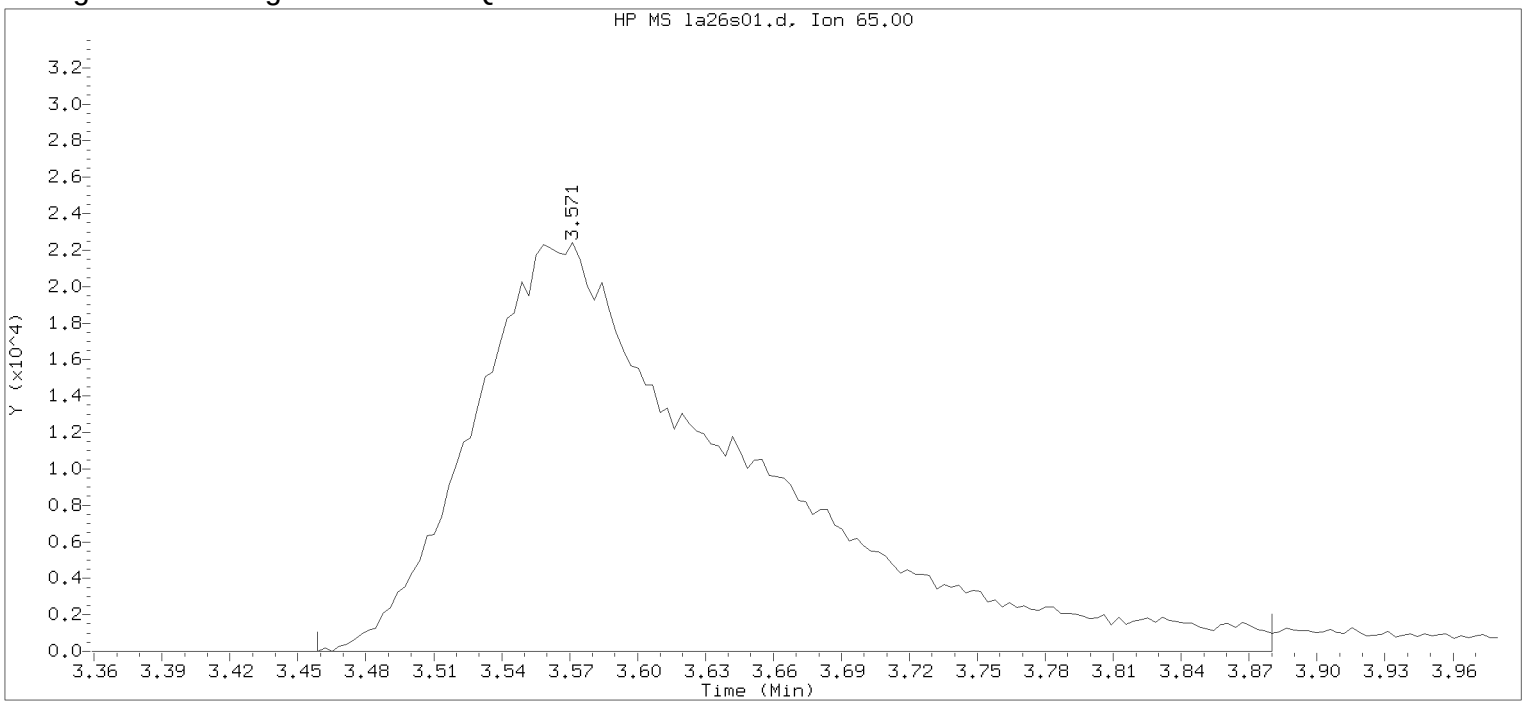
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

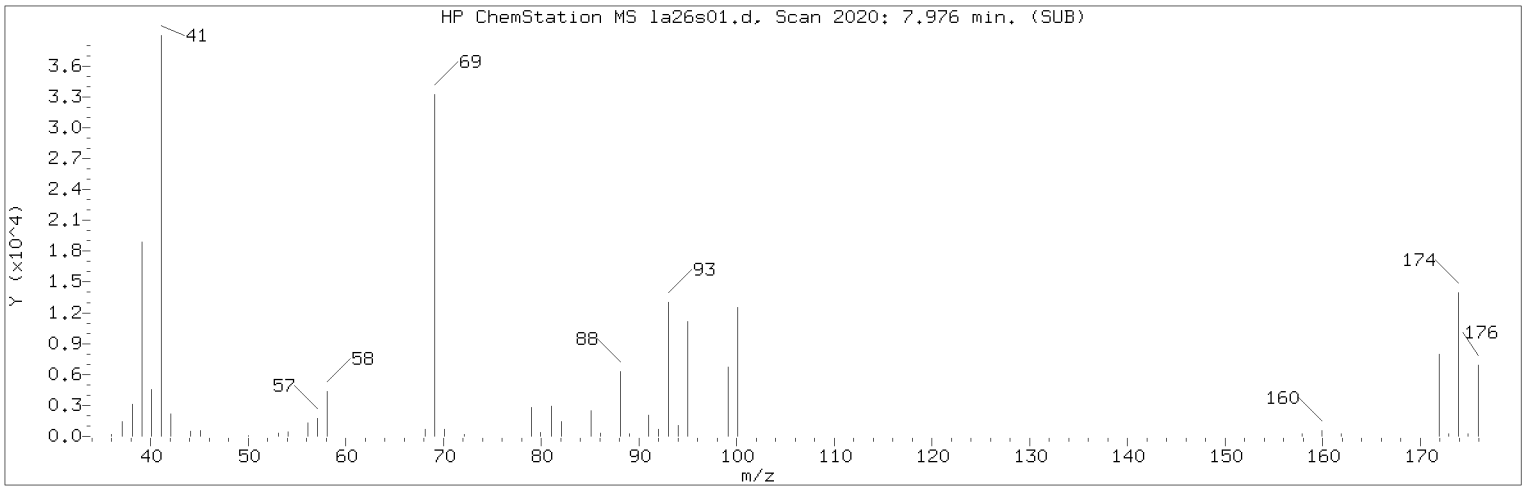
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

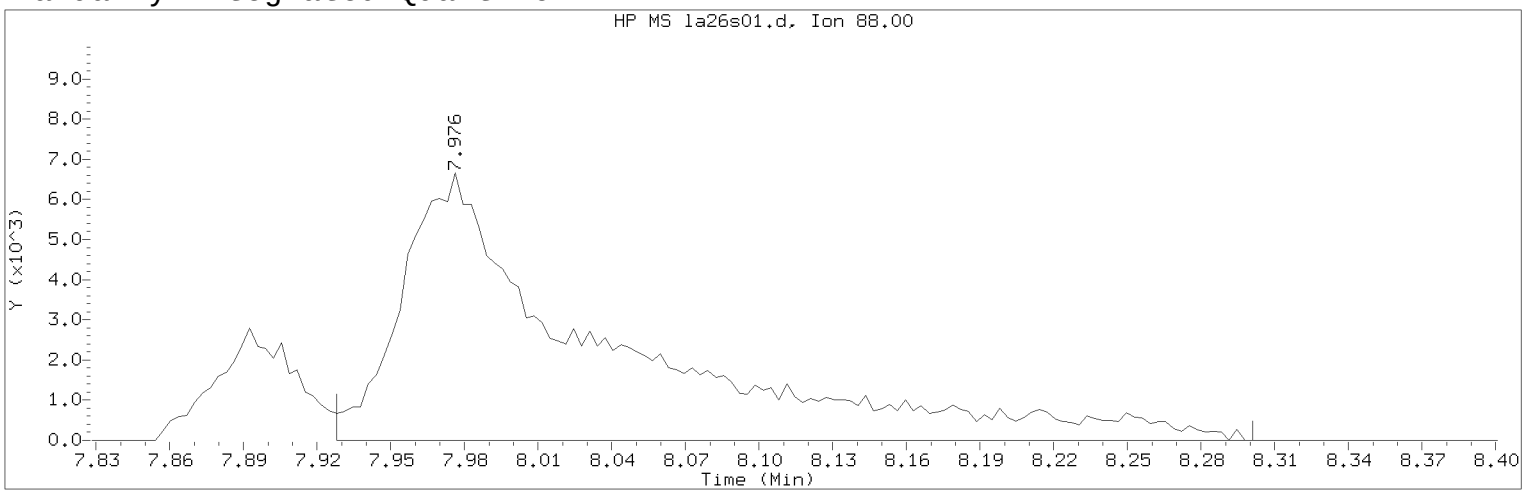
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area : 188003
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 745
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature user KAS1 keage 2648 of 1128

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

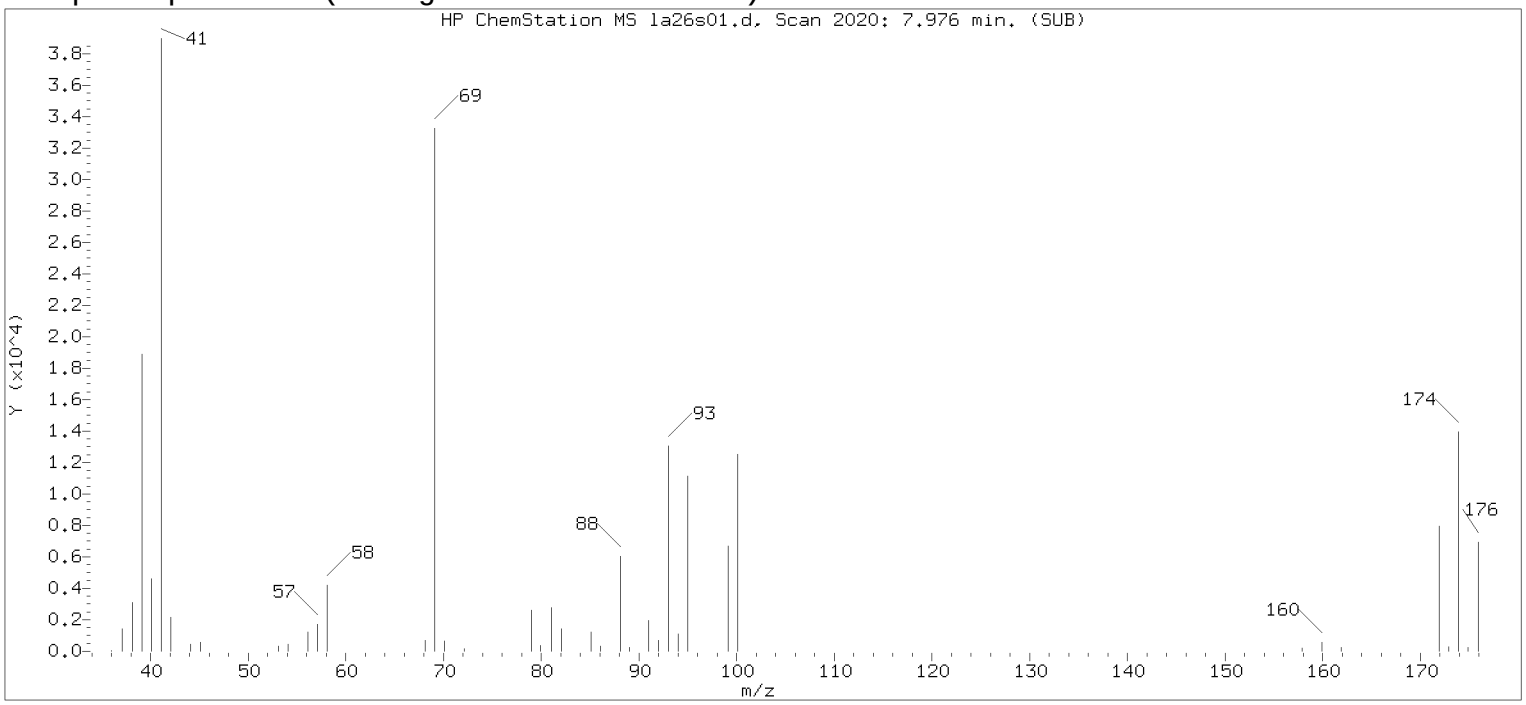
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 37891M
On-Column Amount (ng) : 552.4123
Integration start scan : 2004 Integration stop scan: 2120
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

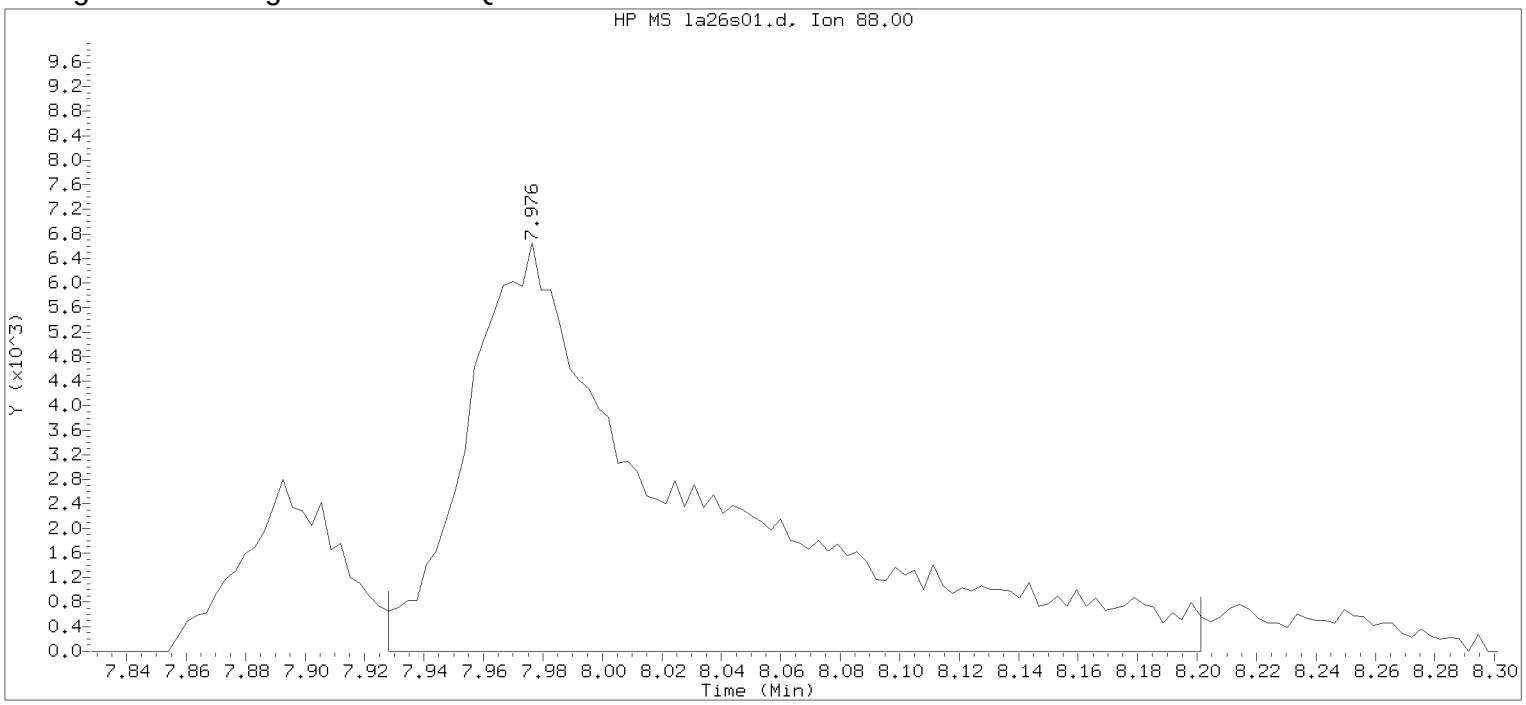
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

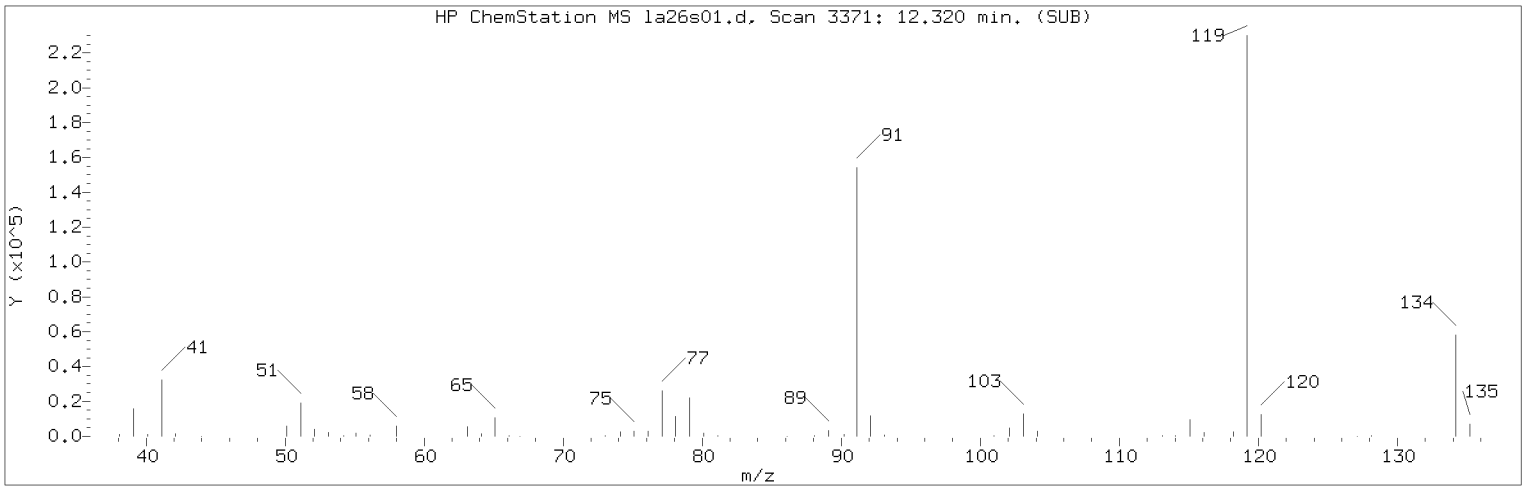
Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

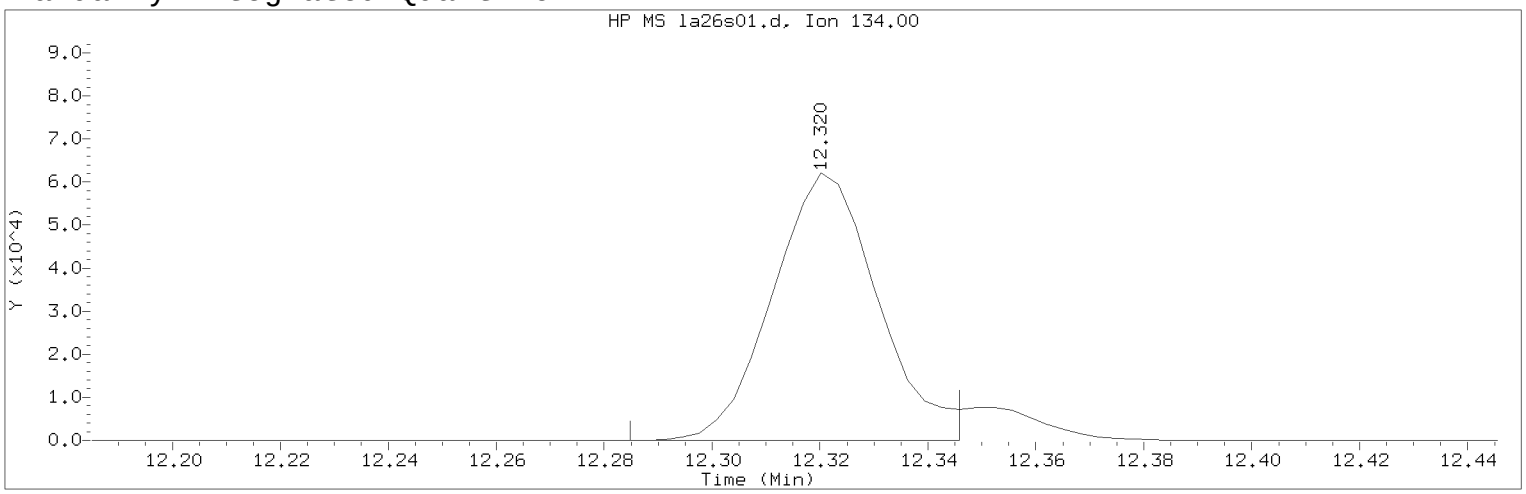
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area : 35295
On-column Amount (ng) : 549.1313
Integration start scan : 2004 Integration stop scan: 2089
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature user KAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 18:11 kas02648

Sample Name: LCSL46 Lab Sample ID: LCSL46

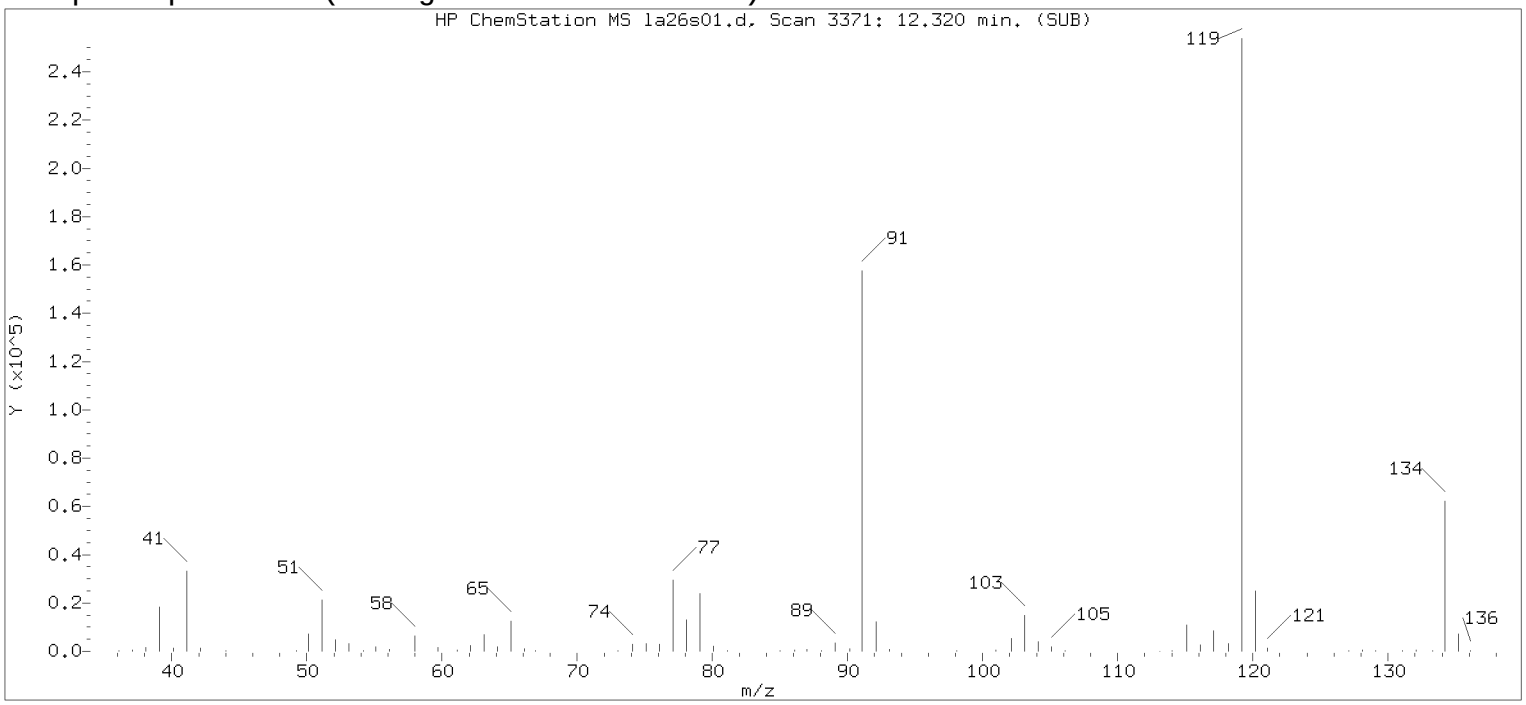
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 84253M
On-Column Amount (ng) : 19.7040
Integration start scan : 3359 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

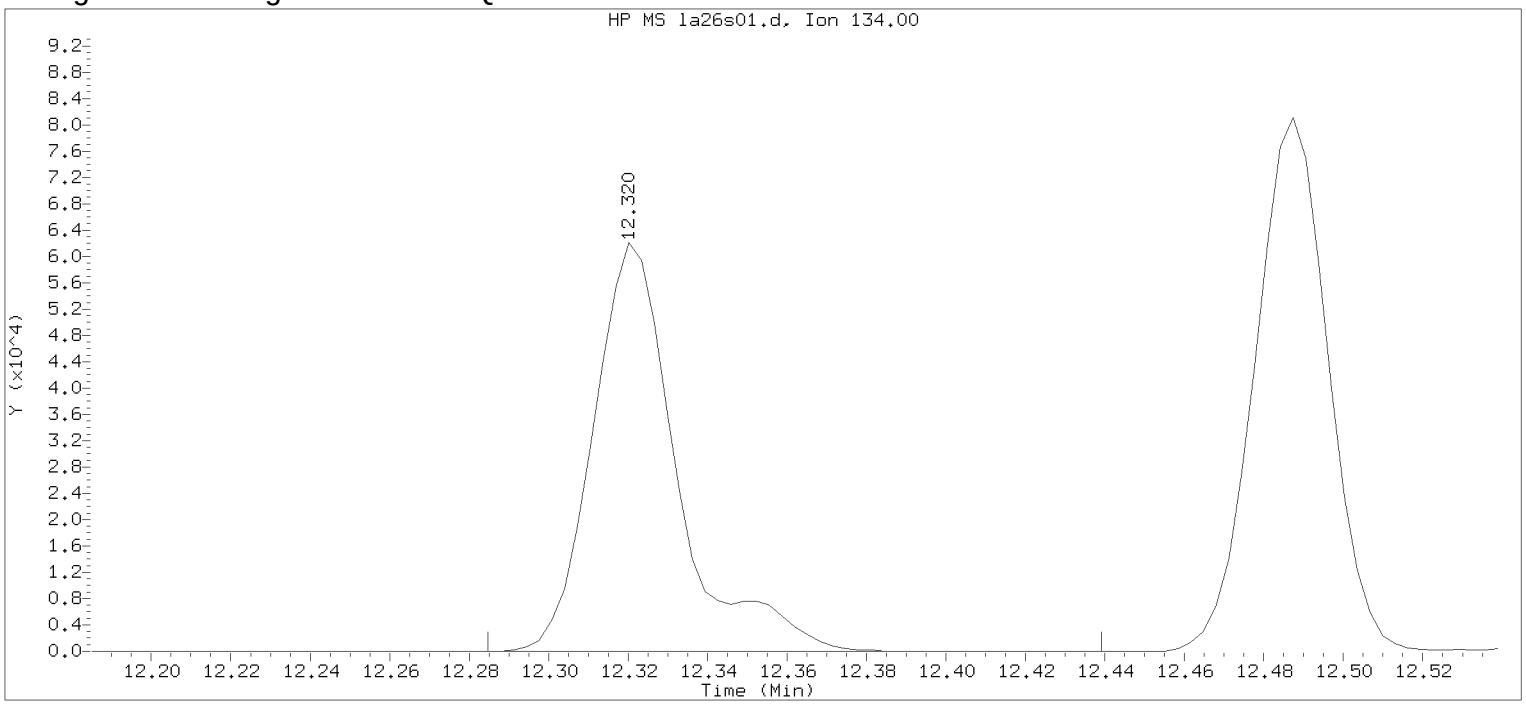
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:11.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chad A. Moline on 04/28/2017 at 11:21.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



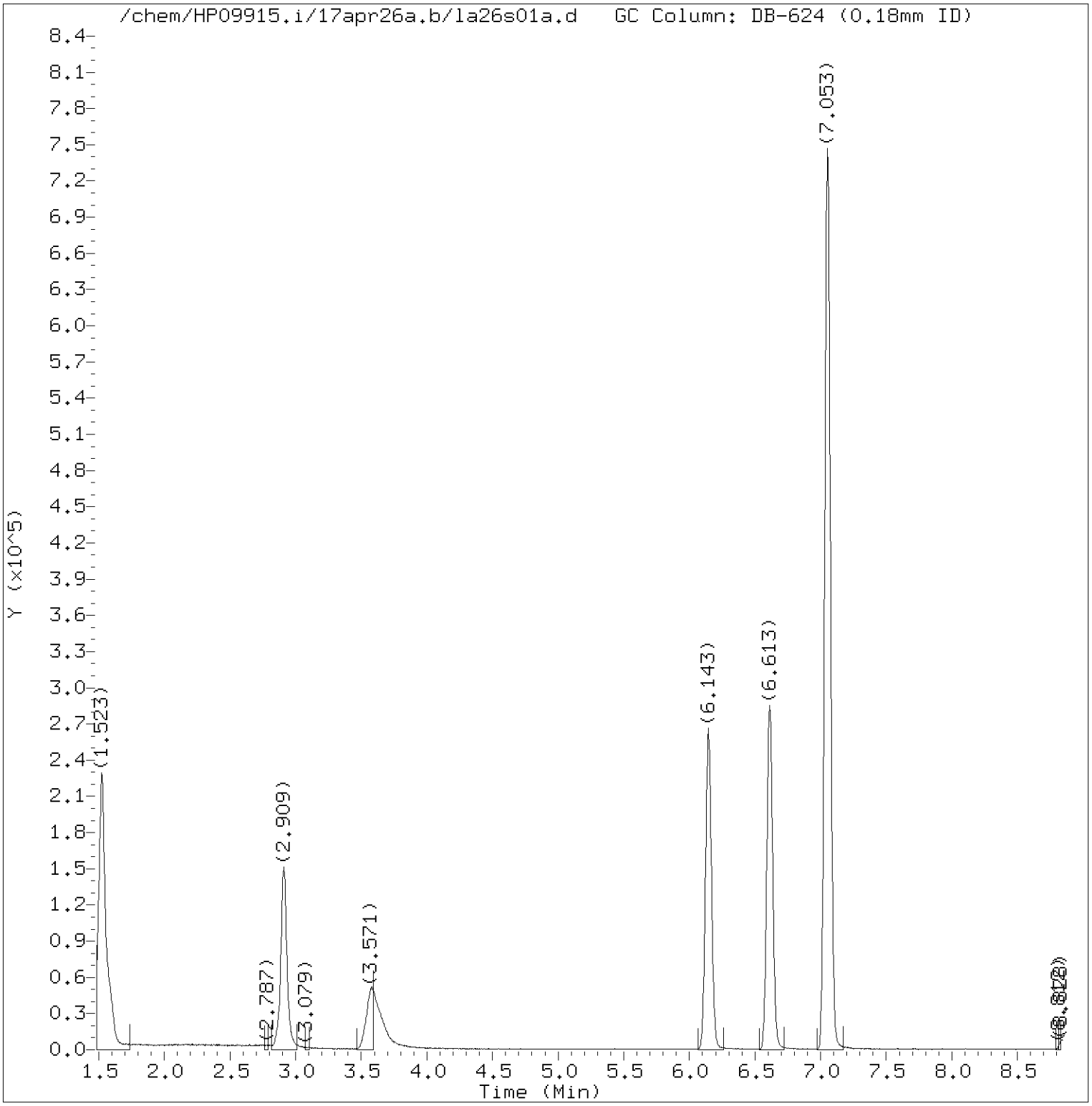

Data File: /chem/HP09915.i/17apr26a.b/la26s01.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 17:25 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 26-APR-2017 17:28
Date, time and analyst ID of latest file update: 26-Apr-2017 17:43 Automation

Sample Name: LCSL46 Lab Sample ID: LCSL46

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 91347
On-column Amount (ng) : 21.3630
Integration start scan : 3359 Integration stop scan: 3407
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 04/26/2017 at 18:11.
Target 3.5 esignature user KAS1 Page 368 of 1128




Total Ion Chromatogram (TIC)

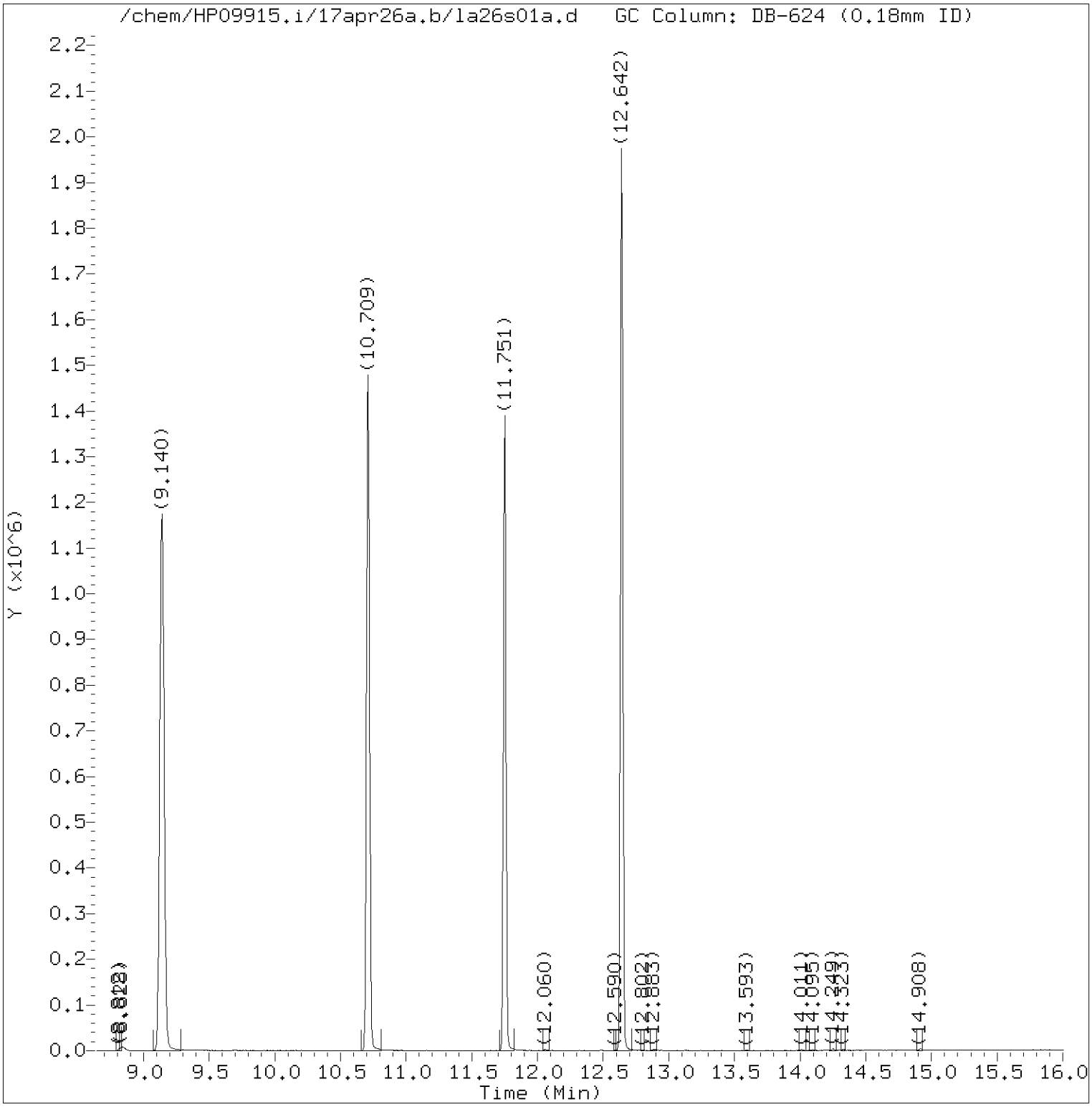
Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17apr26a.b/la26s01a.d Instrument ID: HP09915.i
Injection date and time: 26-APR-2017 18:34 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17apr26a.b/m8260c5.m Sublist used: ACR
Calibration date and time: 26-APR-2017 18:53
Date, time and analyst ID of latest file update: 26-Apr-2017 18:54 kas02648

Sample Name: ACRICV Lab Sample ID: ACRICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 16) Acrolein | (1) | 2.909 | 56 | 230830 | 133.301 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 211536 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 268241 | 49.042 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 67821 | 49.864 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1120094 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1090751 | 50.311 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 849095 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 400969 | 49.759 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 459516 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 04/26/2017 at 18:55.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17jul31b.b/l131t05.d



Date : 31-JUL-2017 20:49

Client ID: BFBFeb20-17

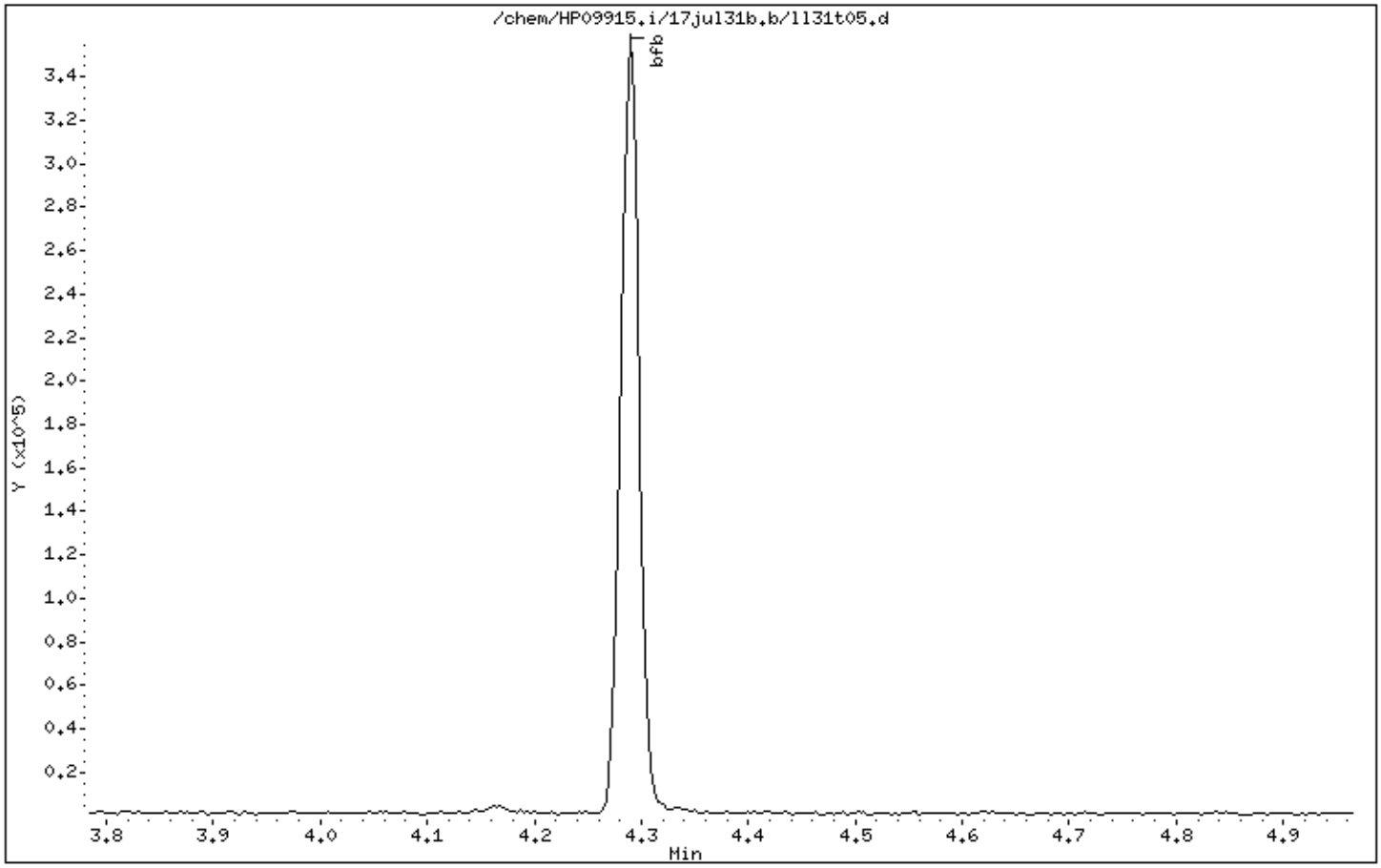
Instrument: HP09915.i

Sample Info: BFBFeb20-17;50NGBFB;1;3;;;;;;

Operator: kk10002

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin Kelly on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Data File: /chem/HP09915.i/17jul31b.b/l131t05.d

Date : 31-JUL-2017 20:49

Client ID: BFBFeb20-17

Instrument: HP09915.i

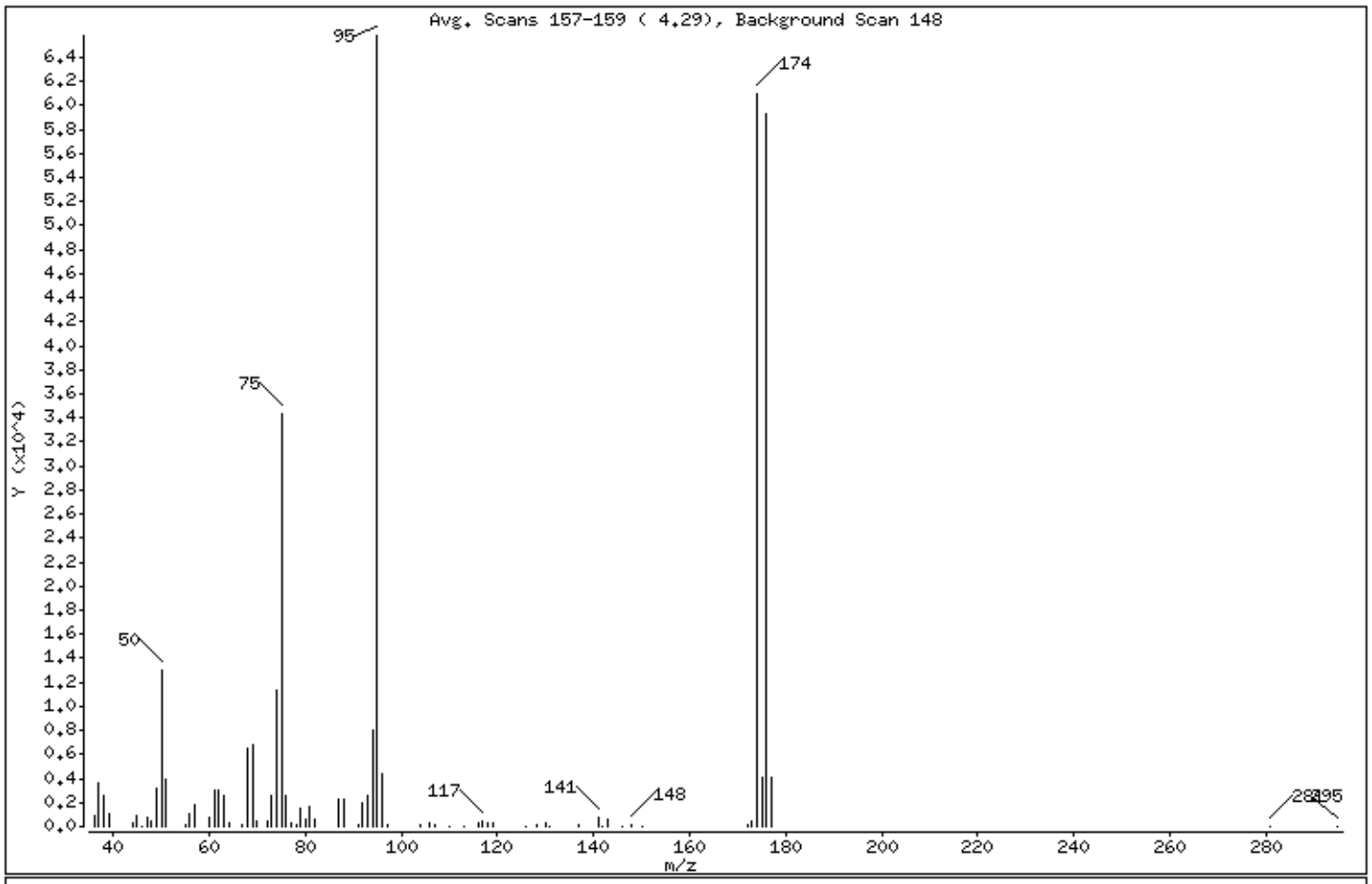
Sample Info: BFBFeb20-17;50NGBFB;1;3;;;;;;

Operator: kk10002

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 19.76 |
| 75 | 30.00 - 60.00% of mass 95 | 52.23 |
| 96 | 5.00 - 9.00% of mass 95 | 6.63 |
| 173 | Less than 2.00% of mass 174 | 0.66 ( 0.72) |
| 174 | 50.00 - 100.00% of mass 95 | 92.68 |
| 175 | 5.00 - 9.00% of mass 174 | 6.28 ( 6.77) |
| 176 | 95.00 - 101.00% of mass 174 | 90.22 ( 97.35) |
| 177 | 5.00 - 9.00% of mass 176 | 6.23 ( 6.90) |

Digitally signed by Kevin Kelly on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Date : 31-JUL-2017 20:49

Client ID: BFBFeb20-17 Instrument: HP09915.i

Sample Info: BFBFeb20-17;50NGBFB;1;3;;;;;;

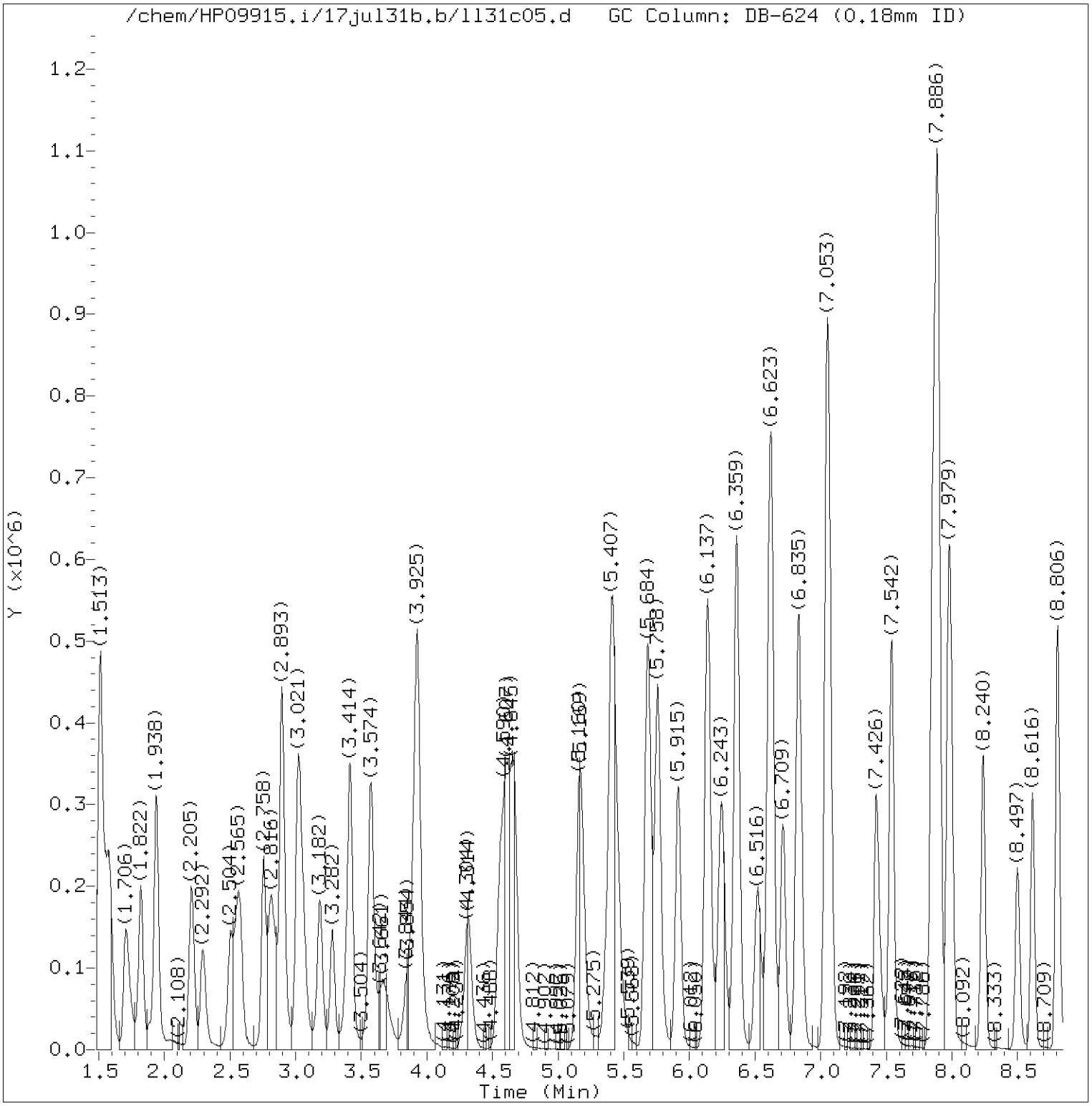
Operator: kk10002

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: l131t05.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 148
Location of Maximum: 95.00
Number of points: 72

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 911 | 64.00 | 245 | 92.00 | 1976 | 137.00 | 89 |
| 37.00 | 3619 | 67.00 | 167 | 93.00 | 2536 | 141.00 | 702 |
| 38.00 | 2513 | 68.00 | 6508 | 94.00 | 8046 | 142.00 | 53 |
| 39.00 | 1092 | 69.00 | 6816 | 95.00 | 65800 | 143.00 | 679 |
| 44.00 | 344 | 70.00 | 477 | 96.00 | 4361 | 146.00 | 68 |
| 45.00 | 846 | 72.00 | 476 | 97.00 | 189 | 148.00 | 164 |
| 46.00 | 63 | 73.00 | 2623 | 104.00 | 162 | 150.00 | 73 |
| 47.00 | 732 | 74.00 | 11366 | 106.00 | 347 | 172.00 | 78 |
| 48.00 | 519 | 75.00 | 34368 | 107.00 | 111 | 173.00 | 437 |
| 49.00 | 3251 | 76.00 | 2527 | 110.00 | 55 | 174.00 | 60984 |
| 50.00 | 13001 | 77.00 | 308 | 113.00 | 53 | 175.00 | 4131 |
| 51.00 | 3981 | 78.00 | 194 | 116.00 | 285 | 176.00 | 59360 |
| 55.00 | 185 | 79.00 | 1478 | 117.00 | 415 | 177.00 | 4098 |
| 56.00 | 992 | 80.00 | 561 | 118.00 | 265 | 281.00 | 50 |
| 57.00 | 1840 | 81.00 | 1593 | 119.00 | 299 | 295.00 | 50 |
| 60.00 | 708 | 82.00 | 535 | 126.00 | 71 | | |
| 61.00 | 3010 | 87.00 | 2257 | 128.00 | 113 | | |
| 62.00 | 2995 | 88.00 | 2274 | 130.00 | 282 | | |
| 63.00 | 2606 | 91.00 | 222 | 131.00 | 50 | | |

Digitally signed by Kevin Kelly on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

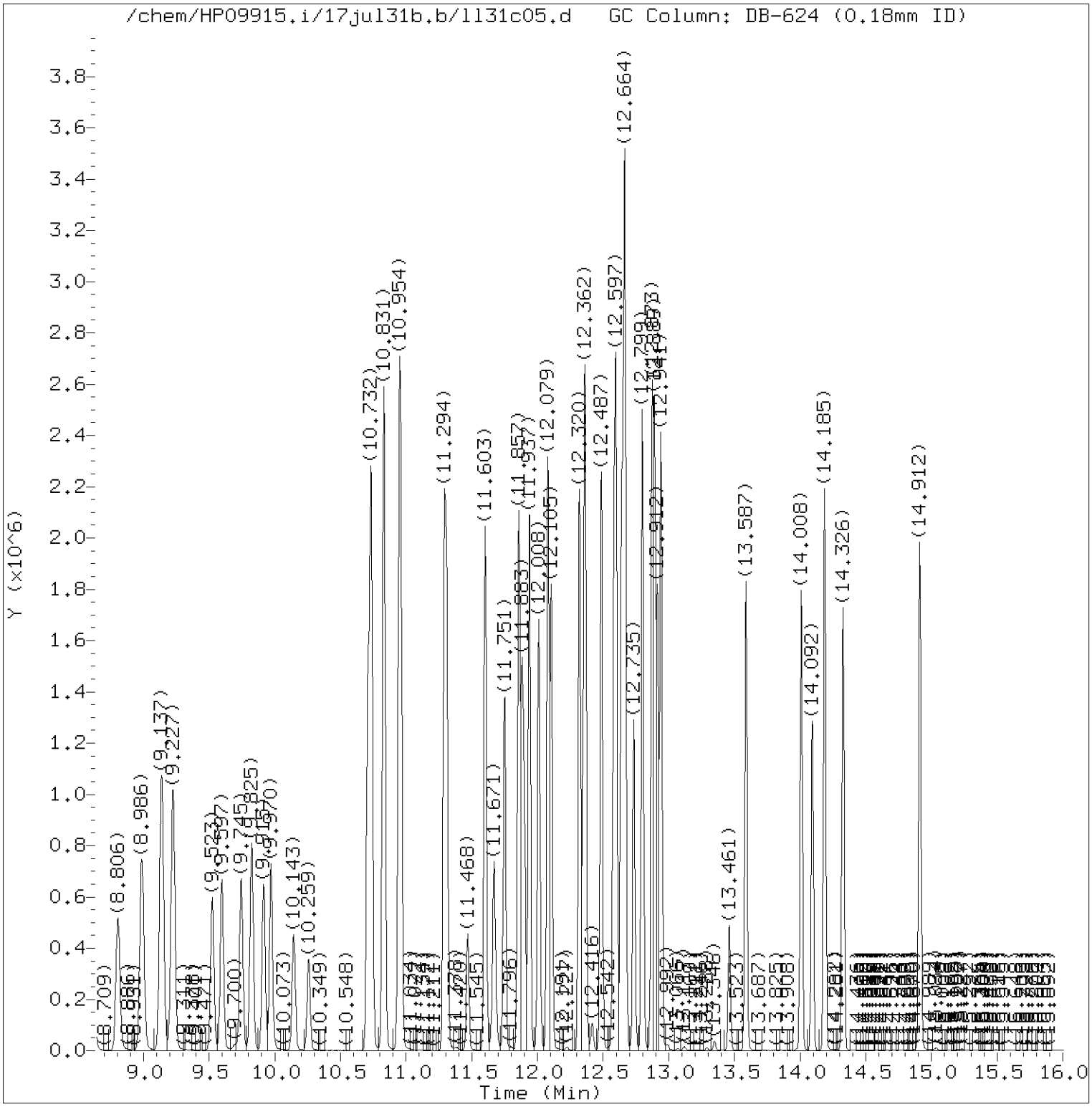
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin Kelly
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin Kelly
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 297837 | 55.953 |
| 4) Chloromethane | (2) | 1.825 | 50 | 281287 | 51.439 |
| 5) 1,3-Butadiene | (2) | 1.938 | 39 | 87087 | 27.039 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 272847 | 51.670 |
| 8) Bromomethane | (2) | 2.205 | 94 | 198684 | 55.942 |
| 9) Chloroethane | (2) | 2.292 | 64 | 157665 | 52.981 |
| 12) Trichlorofluoromethane | (2) | 2.552 | 101 | 386344M | 63.181 |
| 11) n-Pentane | (2) | 2.581 | 43 | 79891 | 15.864 |
| 14) Ethyl ether | (2) | 2.758 | 59 | 169344 | 49.746 |
| 15) Freon 123a | (2) | 2.816 | 67 | 200975 | 49.351 |
| 16) Acrolein | (1) | 2.893 | 56 | 548297 | 364.355 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 96 | 108415 | 33.499 |
| 17) 1,1-Dichloroethene | (2) | 3.015 | 63 | 58465 | 35.684 |
| 18) Acetone | (1) | 3.034 | 58 | 54626 | 83.637 |
| 19) Freon 113 | (2) | 3.054 | 101 | 128032 | 39.303 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 107015 | 247.164 |
| 22) Methyl Iodide | (2) | 3.185 | 142 | 231403 | 36.862 |
| 23) Carbon Disulfide | (2) | 3.279 | 76 | 270930 | 25.725 |
| 27) Methyl Acetate | (2) | 3.385 | 43 | 205906 | 43.835 |
| 25) Allyl Chloride | (2) | 3.414 | 41 | 273973 | 42.263 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 183829M | 250.000 |
| 28) Methylene Chloride | (2) | 3.574 | 84 | 172979 | 40.459 |
| 30) t-Butyl alcohol | (1) | 3.674 | 59 | 201919 | 283.885 |
| 31) Acrylonitrile | (2) | 3.844 | 53 | 110914 | 44.964 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.909 | 73 | 606157 | 51.126 |
| 32) trans-1,2-Dichloroethene | (2) | 3.928 | 96 | 162537 | 42.805 |
| 34) n-Hexane | (2) | 4.317 | 57 | 149851 | 25.744 |
| 36) 1,1-Dichloroethane | (2) | 4.555 | 63 | 314534 | 44.082 |
| 38) di-Isopropyl ether | (2) | 4.607 | 45 | 586628 | 42.835 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.661 | 53 | 293104 | 48.699 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 585323 | 49.663 |
| 44) 2-Butanone | (2) | 5.381 | 43 | 294134 | 89.055 |
| 42) cis-1,2-Dichloroethene | (2) | 5.407 | 96 | 208419 | 47.900 |
| 45) 2,2-Dichloropropane | (2) | 5.420 | 77 | 279975 | 58.769 |
| 47) Propionitrile | (1) | 5.459 | 54 | 222336 | 214.175 |
| 48) Methacrylonitrile | (2) | 5.684 | 67 | 298554 | 121.400 |
| 49) Bromochloromethane | (2) | 5.754 | 128 | 119918 | 52.292 |
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 77071 | 84.054 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.915 | 83 | 378287 | 55.621 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 240264 | 55.062 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 111 | 247345 | 55.318 |
| 53) 1,1,1-Trichloroethane | (2) | 6.137 | 97 | 333708 | 53.696 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 370956 | 90.705 |
| 54) Cyclohexane | (2) | 6.243 | 56 | 242547 | 34.276 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 211376 | 36.538 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 75190 | 36.658 |
| 56) Carbon Tetrachloride | (2) | 6.356 | 117 | 267858 | 59.043 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 258946 | 46.812 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 181830 | 728.112 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 54943 | 50.636 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 65 | 334412 | 65.157 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 36029 | 52.350 |
| 60) Benzene | (2) | 6.626 | 78 | 754650 | 46.280 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 344844 | 62.512 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 27532 | 56.271 |
| 65) t-Amyl methyl ether | (2) | 6.832 | 73 | 604789 | 51.704 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 893571 | 50.000 |
| 67) n-Heptane | (2) | 7.069 | 43 | 222866 | 34.198 |
| 69) n-Butanol | (1) | 7.423 | 56 | 279083 | 1386.320 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 218309 | 51.806 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 324058 | 43.645 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 148995 | 44.468 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 211043 | 47.279 |
| 76) Methyl Methacrylate | (2) | 7.976 | 69 | 194467 | 50.895 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 50656M | 806.014 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 158888 | 56.601 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 299004 | 59.021 |
| 79) 2-Nitropropane | (2) | 8.497 | 41 | 176876 | 123.122 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 166510 | 48.527 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 349132 | 52.875 |
| 82) 4-Methyl-2-pentanone | (2) | 8.986 | 43 | 627228 | 92.156 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 926790 | 49.552 |
| 83)$Toluene-d8 | (3) | 9.137 | 100 | 594239 | 48.225 |
| 88) Toluene | (3) | 9.224 | 92 | 532310 | 48.975 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 339045 | 55.631 |
| 91) Ethyl Methacrylate | (3) | 9.597 | 69 | 350283 | 51.026 |

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.



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on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d  Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 215008 | 51.336 |
| 93) Tetrachloroethene | (3) | 9.822 | 166 | 259262 | 53.931 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 362202 | 49.840 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 472818 | 90.121 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 688177 | 108.507 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 245428 | 56.575 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 242942 | 52.985 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 732516 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 290320 | 46.511 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 648480 | 51.706 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 238517 | 57.591 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1101247 | 52.526 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 852630 | 104.461 |
| 107) o-Xylene | (3) | 11.291 | 106 | 421758 | 51.958 |
| 109) Styrene | (3) | 11.307 | 104 | 730043 | 54.405 |
| 110) Bromoform | (3) | 11.468 | 173 | 189972 | 60.309 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 1140651 | 54.983 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 276345 | 1165.654 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 375564 | 54.023 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 335050 | 54.945 |
| 108) Xylene (Total) | (3) | | 106 | 1274388 | 156.420 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 365243M | 47.696 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 311594 | 50.527 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 226567 | 103.252 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 118023 | 54.522 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 1348494 | 49.488 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 277225 | 48.882 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 1031797 | 53.101 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 293793 | 49.775 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 208189M | 49.565 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 169915 | 51.237 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 1056267 | 52.772 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 1253933 | 50.590 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580 | 146 | 592281 | 50.446 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1138452 | 52.020 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 431425 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 606028 | 49.920 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 1054202 | 50.271 |

M = Compound was manually integrated.
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on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 730165 | 57.498 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 644872 | 49.321 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 671294 | 48.891 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 544991M | 49.850 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 596332 | 51.672 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 547343 | 49.743 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1863509 | 147.954 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.461 | 75 | 96371 | 59.509 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 491340 | 52.513 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 457958 | 50.455 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 204290 | 51.826 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1391764 | 50.815 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 445819 | 50.914 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 786407 | 44.404 |

M = Compound was manually integrated.



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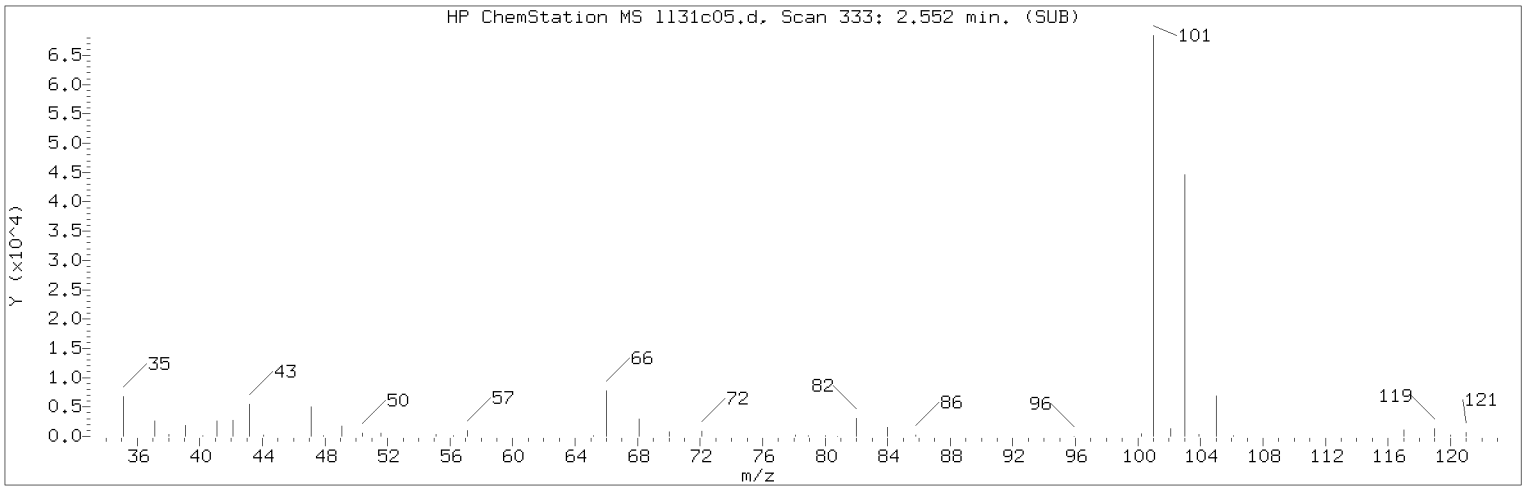
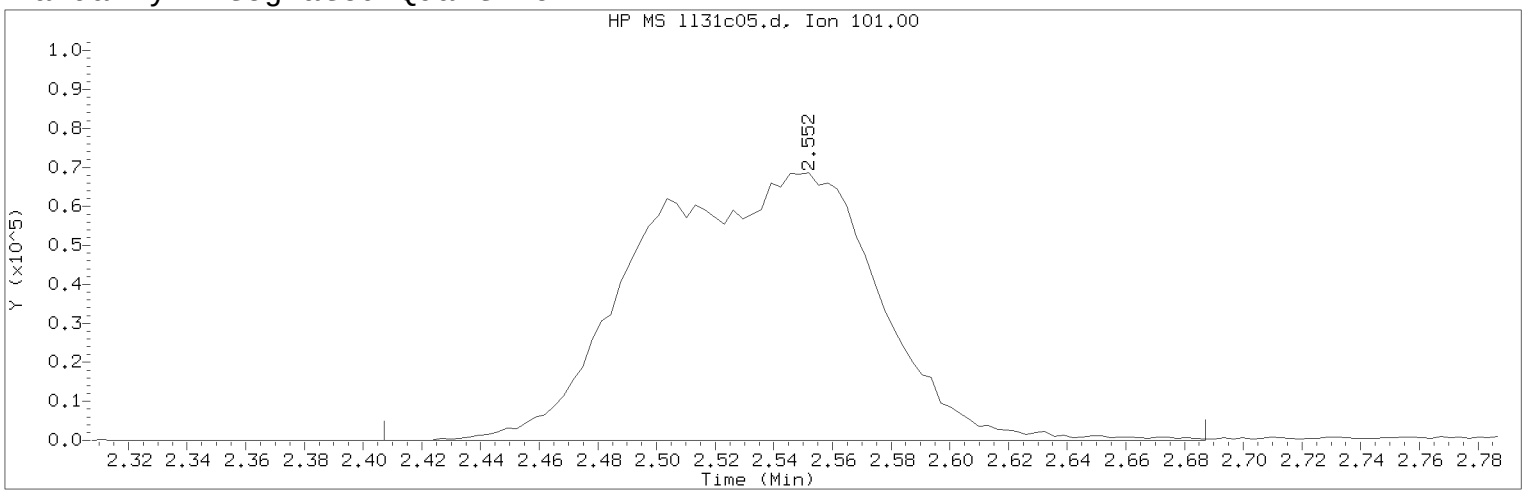
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

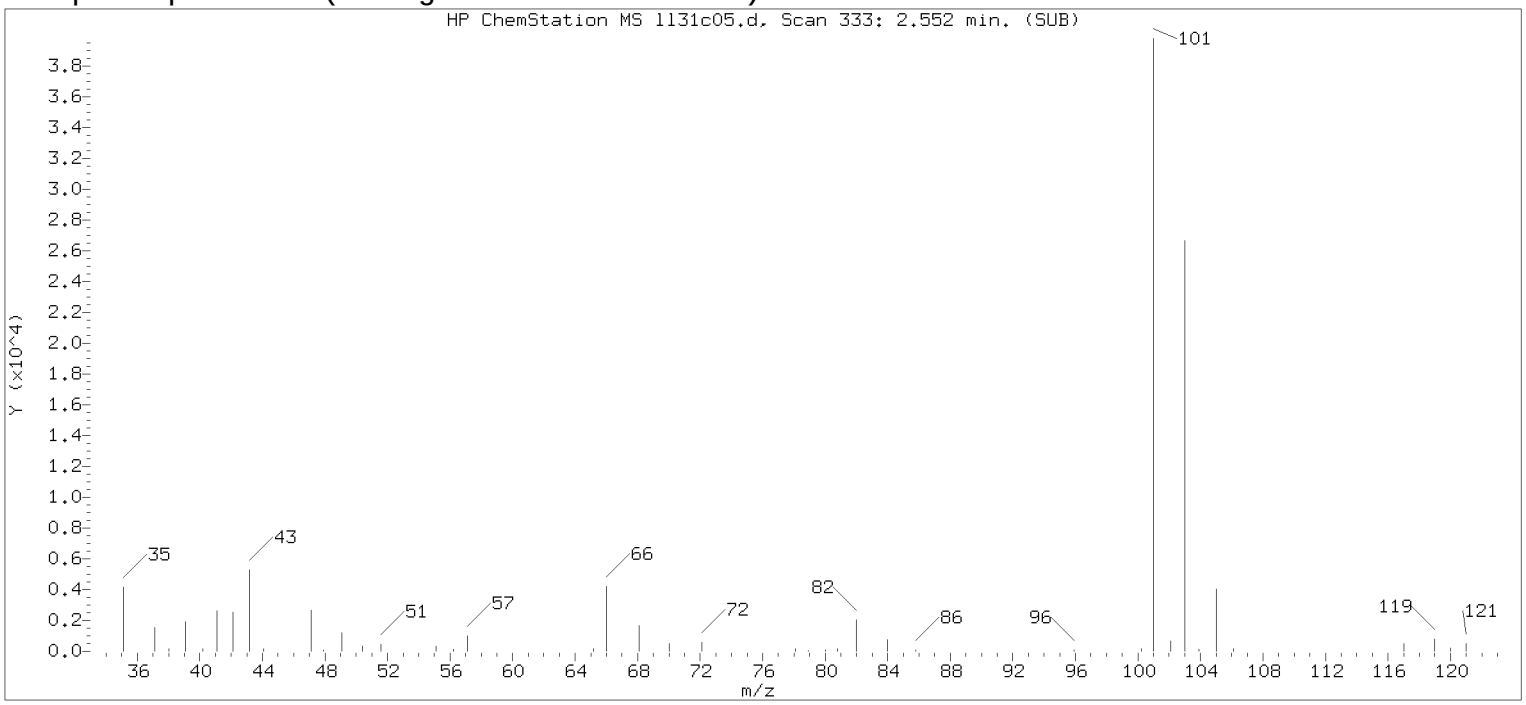
Compound Number : 12
Compound Name : Trichlorofluoromethane
Scan Number : 333
Retention Time (minutes): 2.552
Quant Ion : 101.00
Area (flag) : 386344M
On-Column Amount (ng) : 63.1811
Integration start scan : 287 Integration stop scan: 374
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

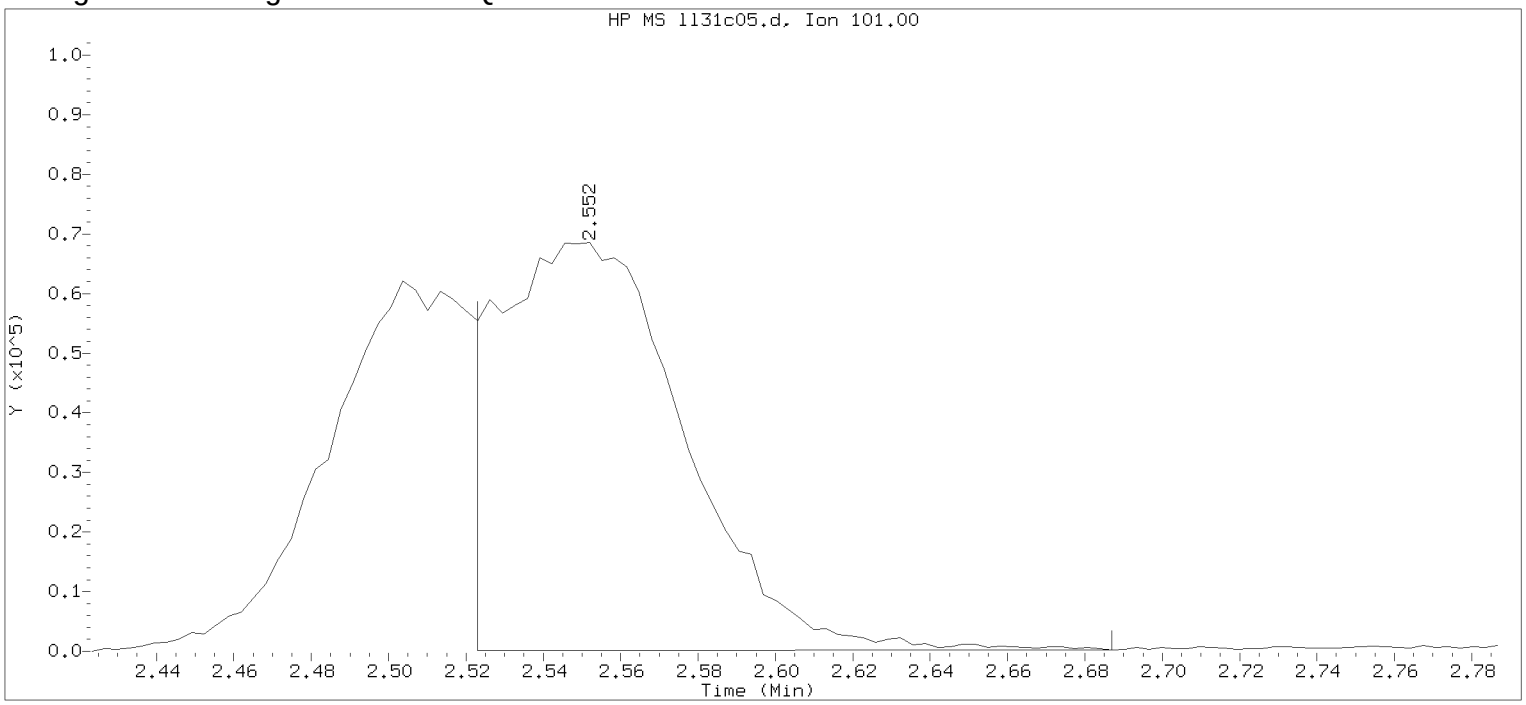
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

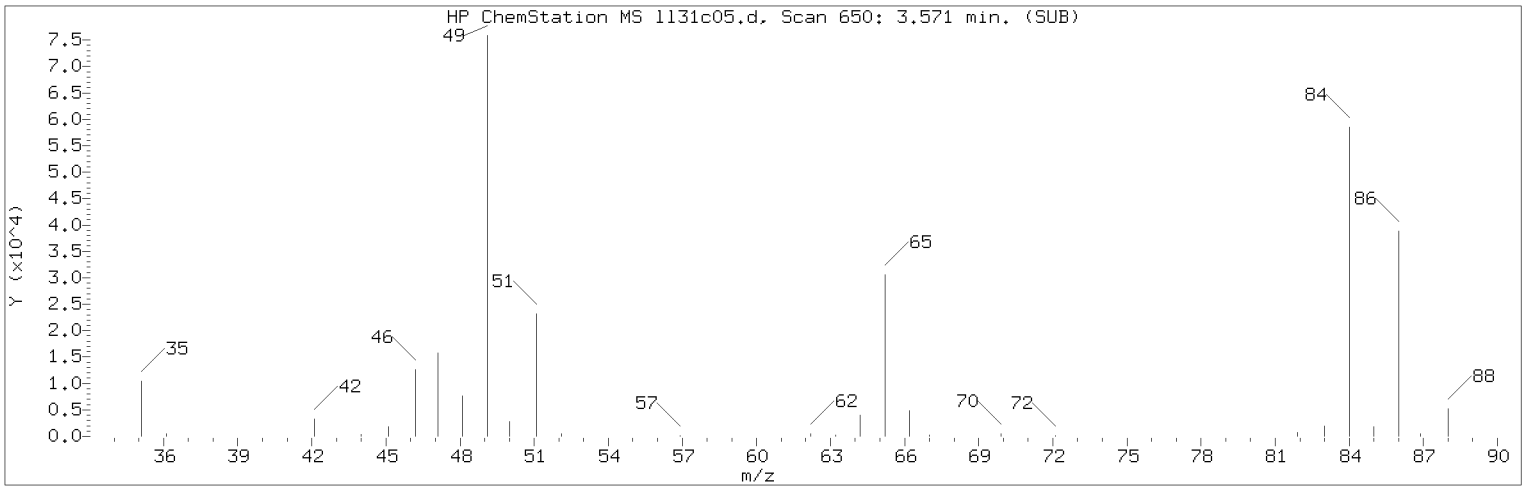
Method used: /chem/HP09915.i/17jul31b.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:47
Date, time and analyst ID of latest file update: 31-Jul-2017 21:48 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

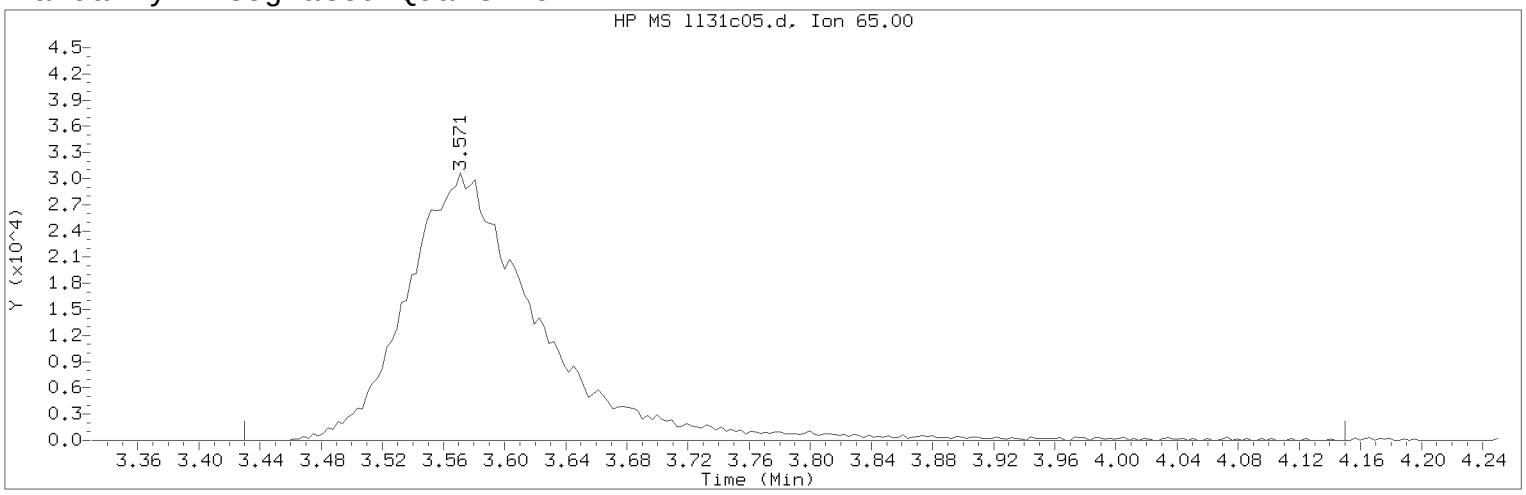
Compound Number : 12
Compound Name : Trichlorofluoromethane
Scan Number : 333
Retention Time (minutes): 2.552
Quant Ion : 101.00
Area : 229165
On-column Amount (ng) : 37.5001
Integration start scan : 323 Integration stop scan: 374
Y at integration start : 145 Y at integration end: 196

Digitally signed by Kevin Kelly on 07/31/2017 at 22:00.
Target 3.5 esignature user KELLY kkelly0004

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

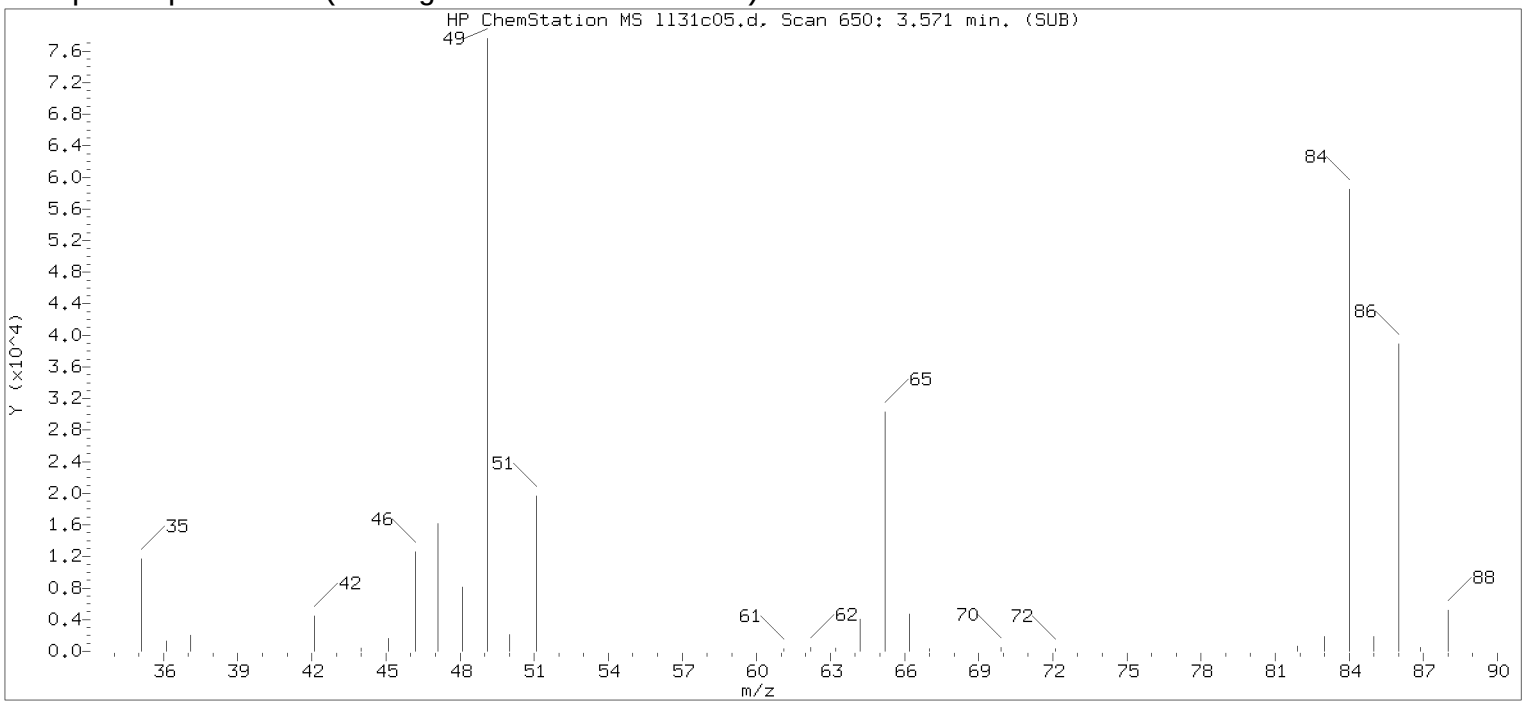
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area (flag) : 183829M
On-Column Amount (ng) : 250.0000
Integration start scan : 605 Integration stop scan: 829
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

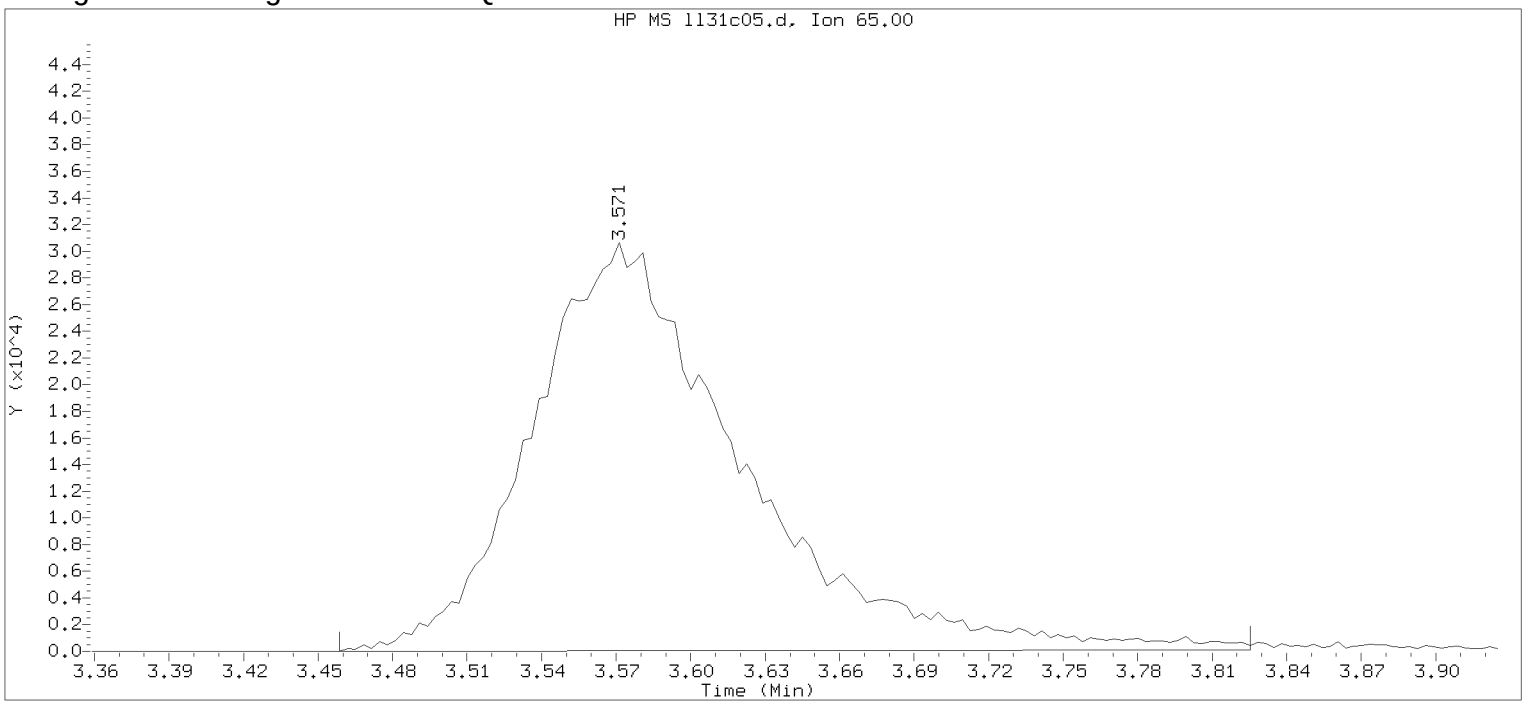
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:47
Date, time and analyst ID of latest file update: 31-Jul-2017 21:48 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area : 178890
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 728
Y at integration start : 0 Y at integration end: 80

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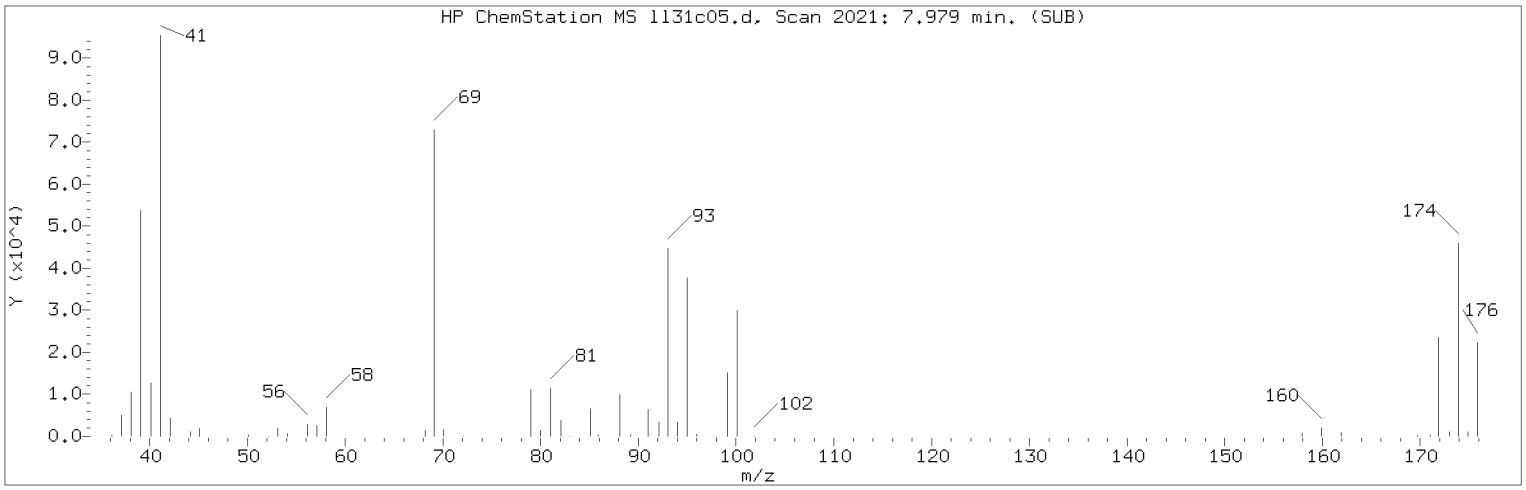
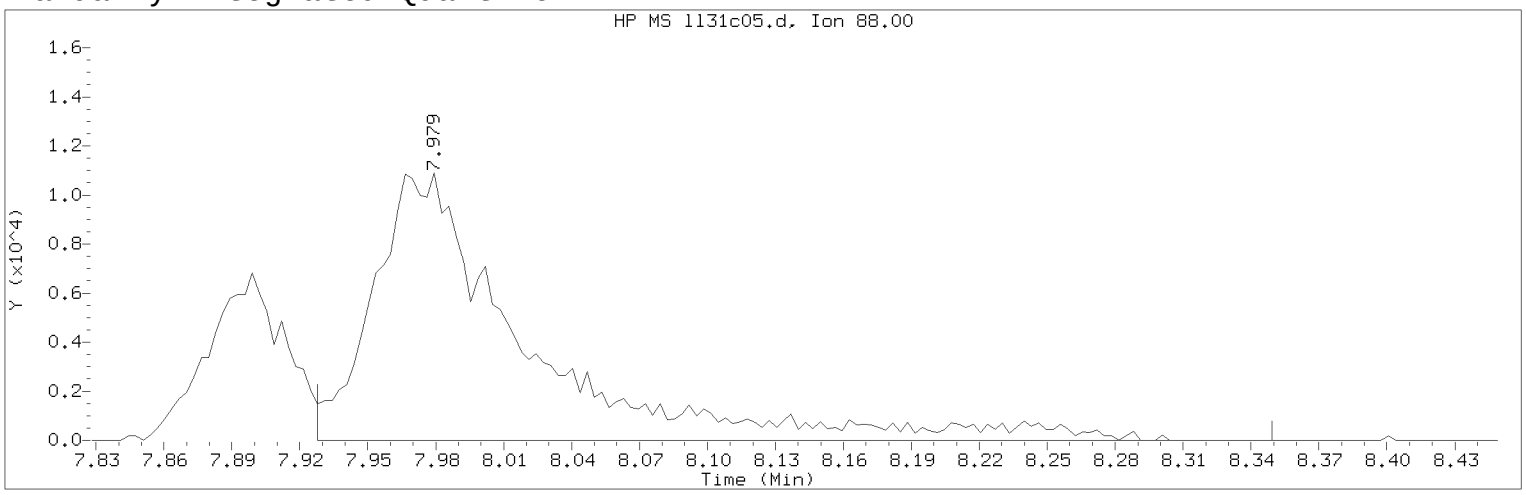
Target 3.5 esignature user KK01 kk10002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d  Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050  Lab Sample ID: VSTD050

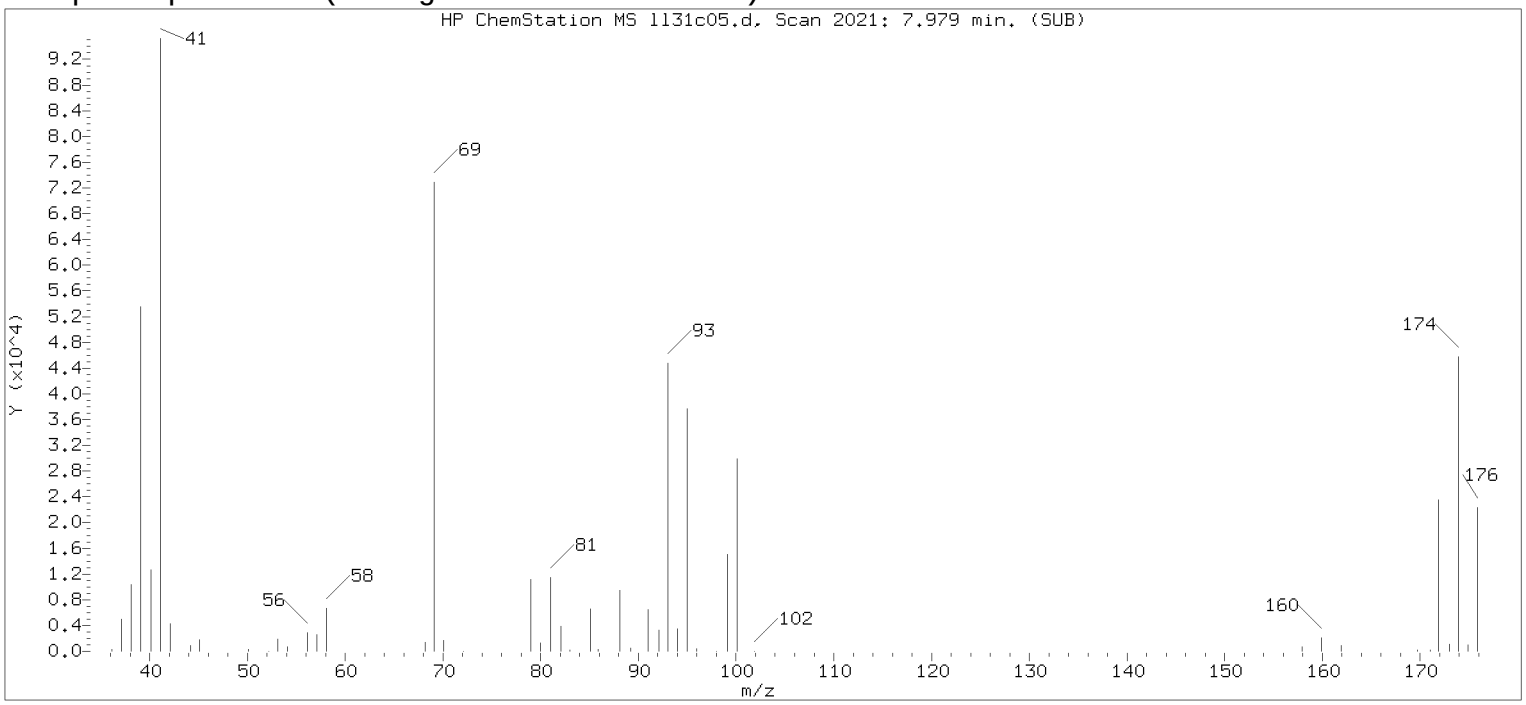
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area (flag) : 50656M
On-Column Amount (ng) : 806.0142
Integration start scan : 2004  Integration stop scan: 2135
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

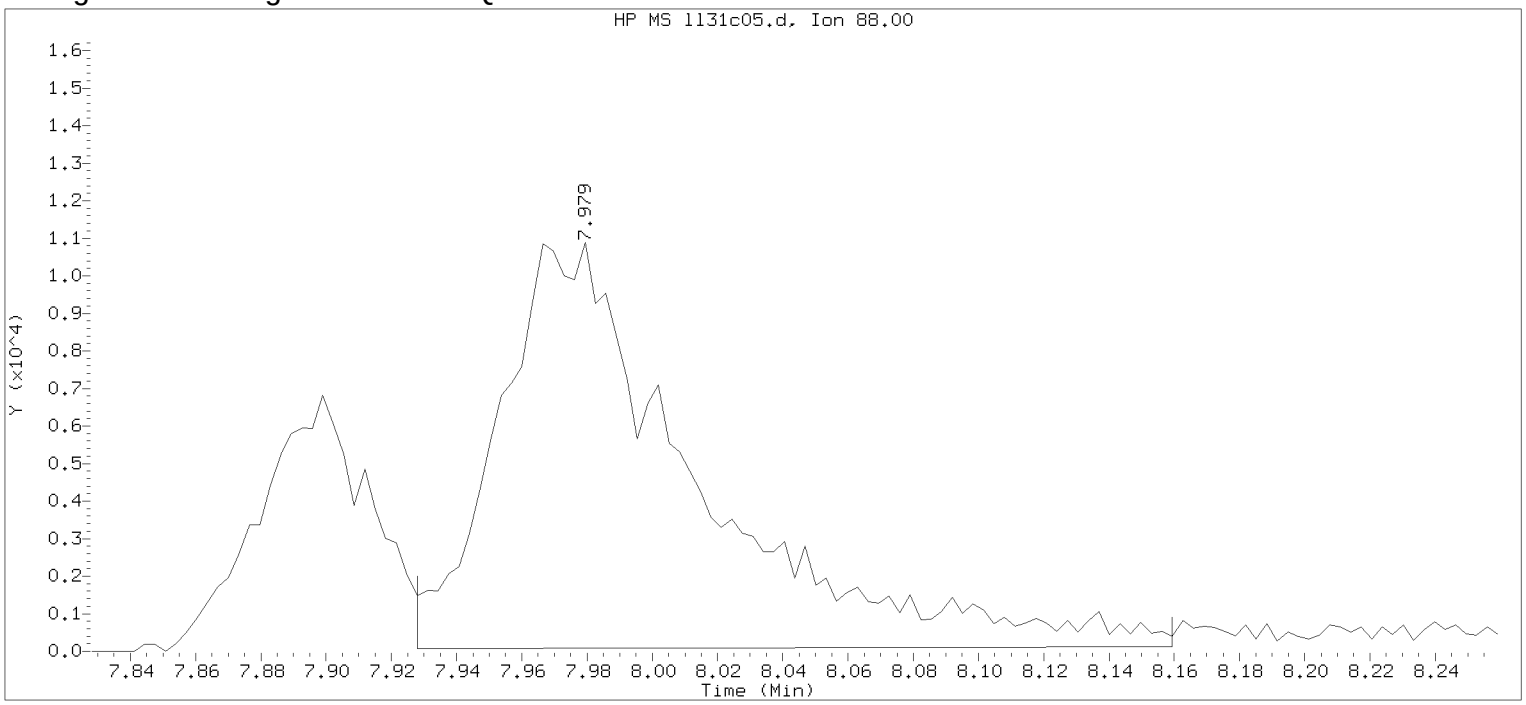
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

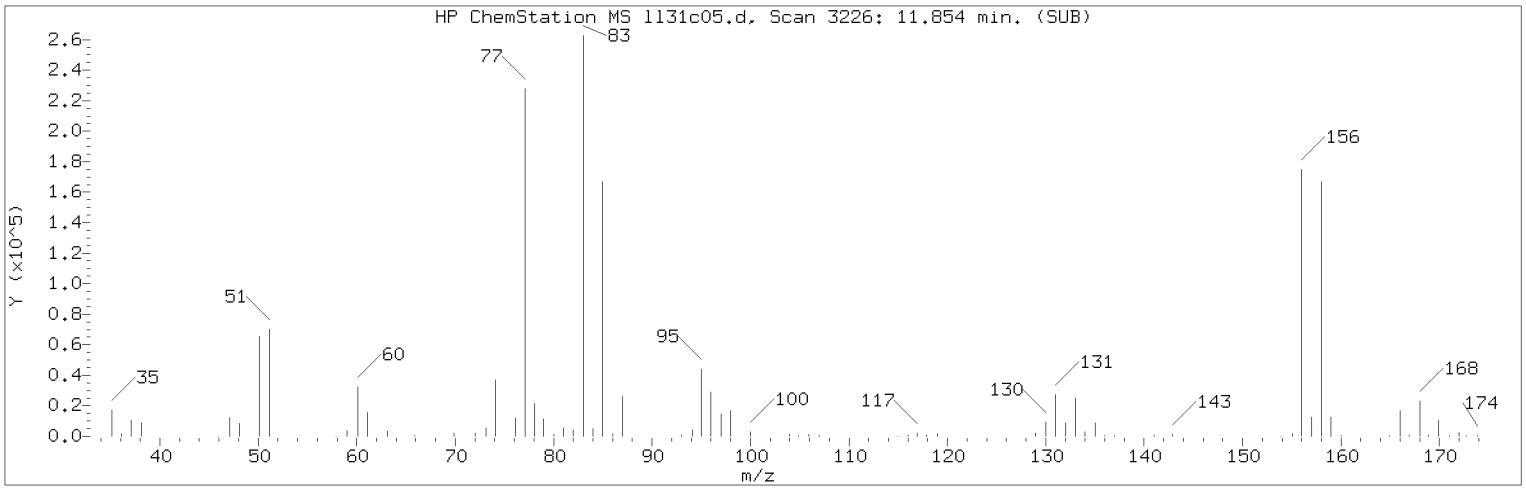
Method used: /chem/HP09915.i/17jul31b.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:47
Date, time and analyst ID of latest file update: 31-Jul-2017 21:48 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

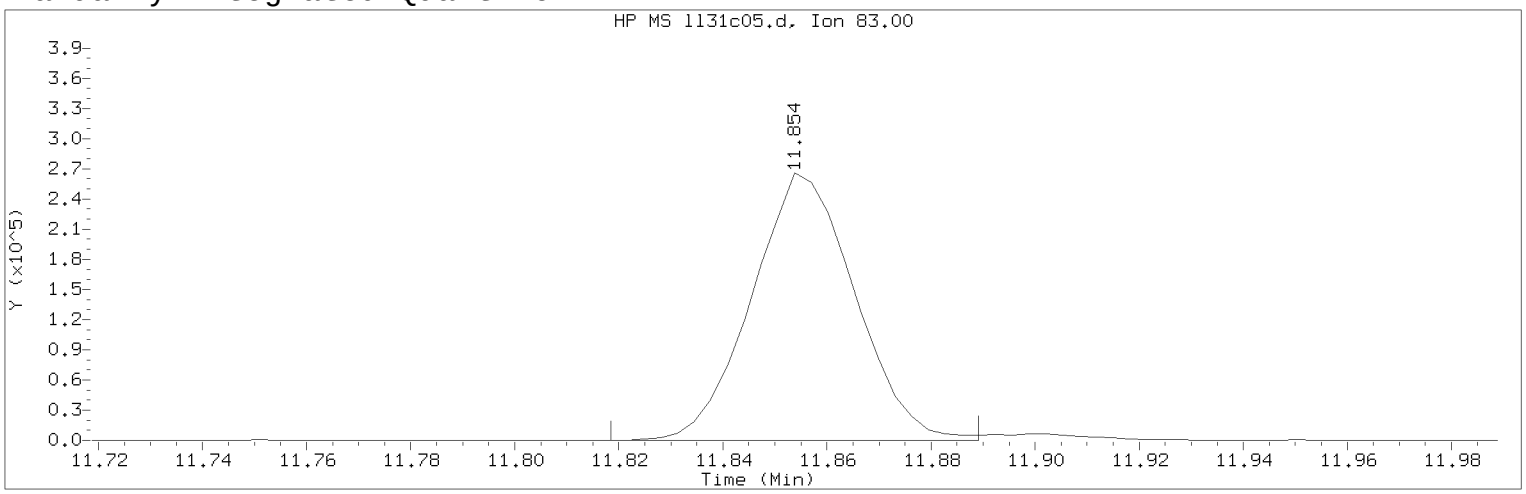
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 88.00
Area : 45515
On-column Amount (ng) : 637.8833
Integration start scan : 2004 Integration stop scan: 2076
Y at integration start : 68 Y at integration end: 112

Digitally signed by Kevin Kelly on 07/31/2017 at 22:00.
Target 3.5 esignature user KK01 kkelly0002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d  Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050  Lab Sample ID: VSTD050

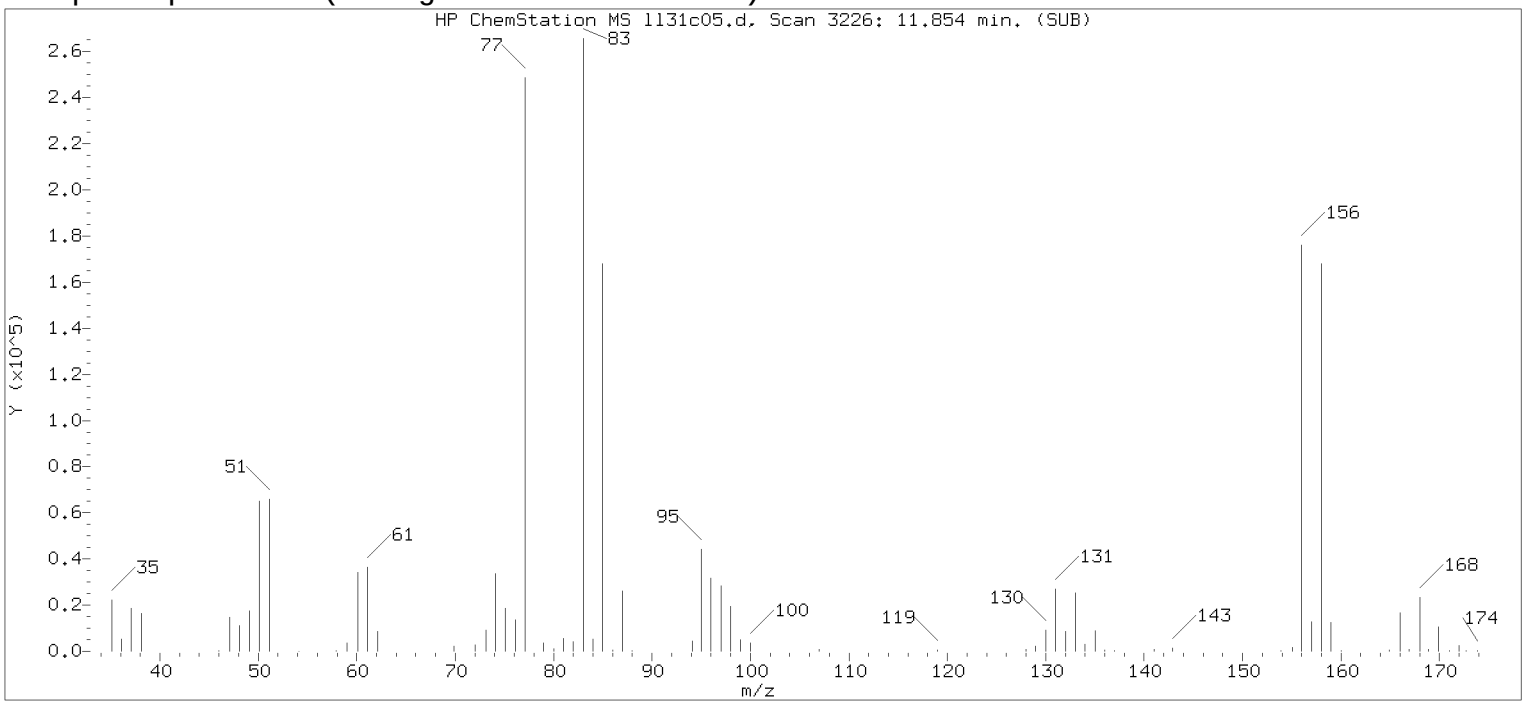
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3226
Retention Time (minutes): 11.854
Quant Ion : 83.00
Area (flag) : 365243M
On-Column Amount (ng) : 47.6961
Integration start scan : 3214  Integration stop scan: 3236
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

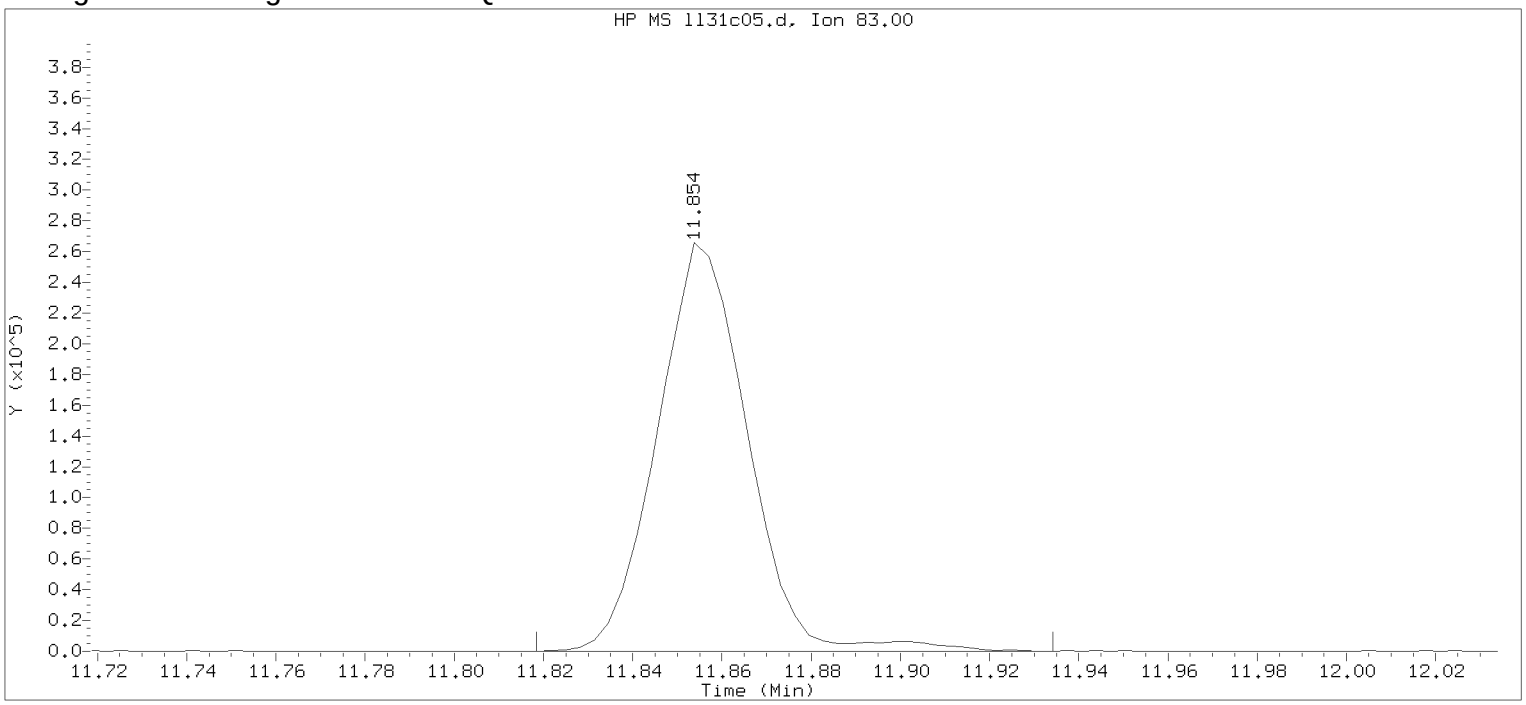
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

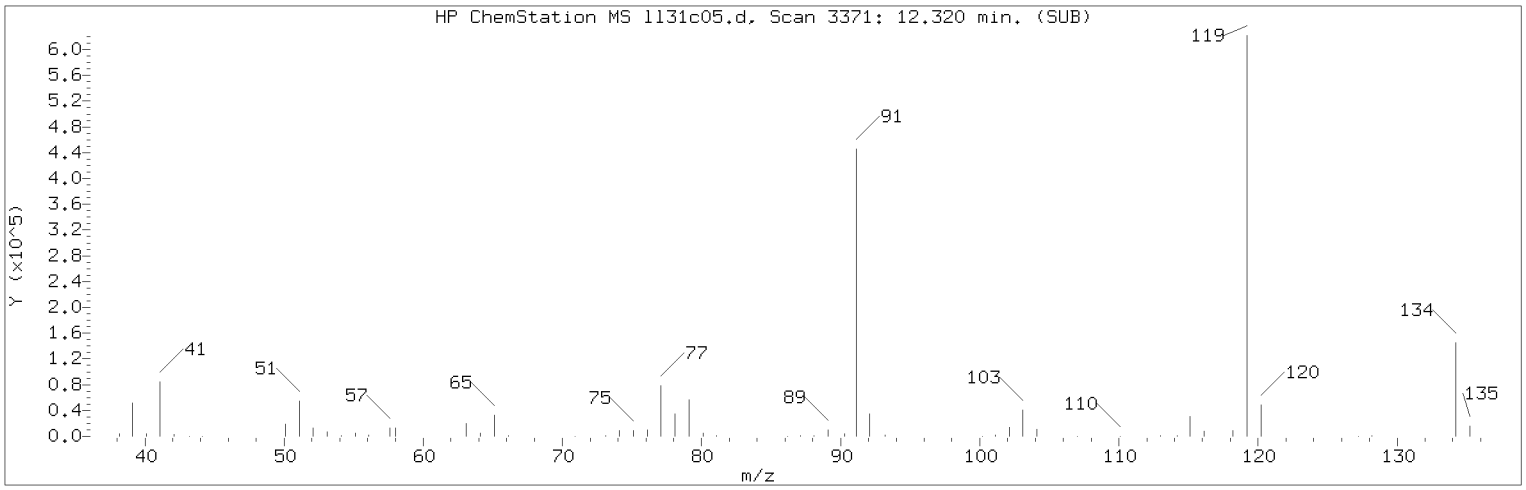
Method used: /chem/HP09915.i/17jul31b.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:47
Date, time and analyst ID of latest file update: 31-Jul-2017 21:48 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

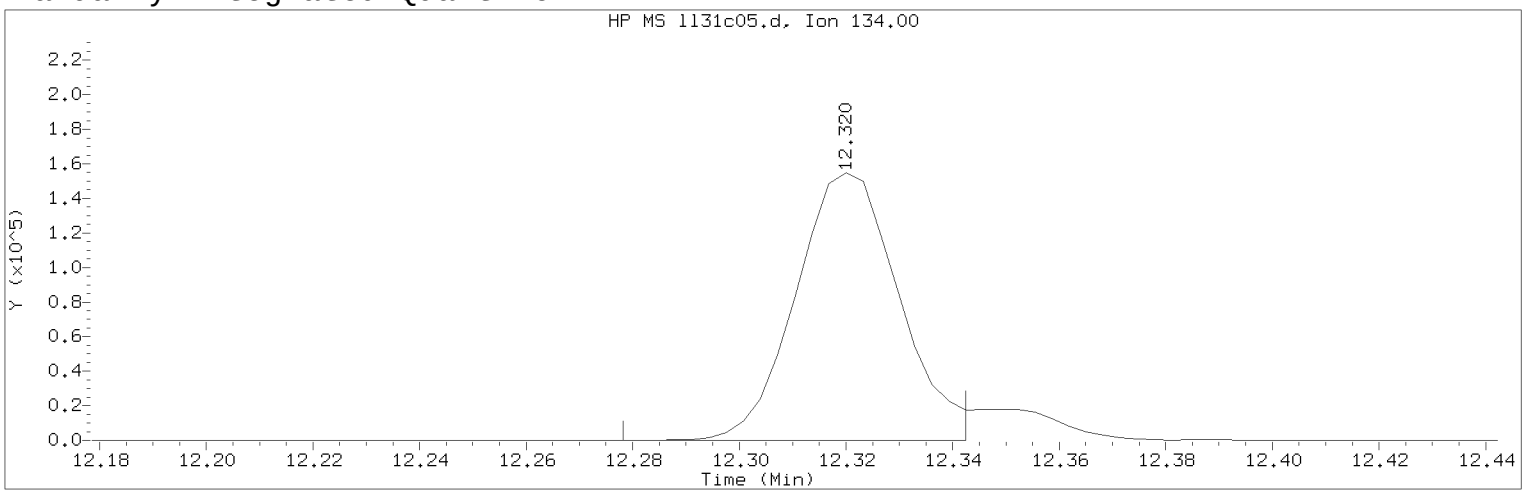
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3226
Retention Time (minutes): 11.854
Quant Ion : 83.00
Area : 373321
On-column Amount (ng) : 47.2909
Integration start scan : 3214 Integration stop scan: 3250
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin Kelly on 07/31/2017 at 22:00.
Target 3.5 esignature user KK01 kk10002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d  Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050  Lab Sample ID: VSTD050

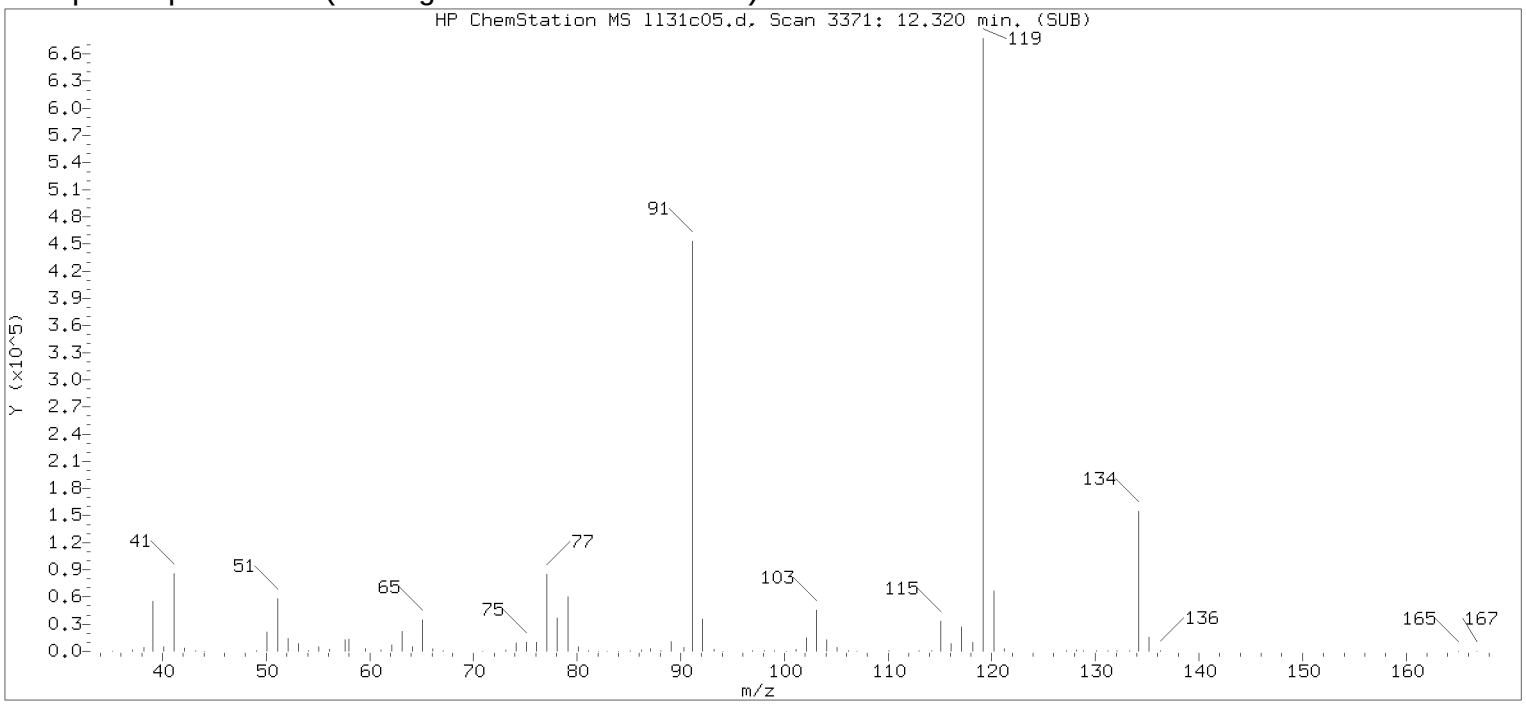
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 208189M
On-Column Amount (ng) : 49.5648
Integration start scan : 3357  Integration stop scan: 3377
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

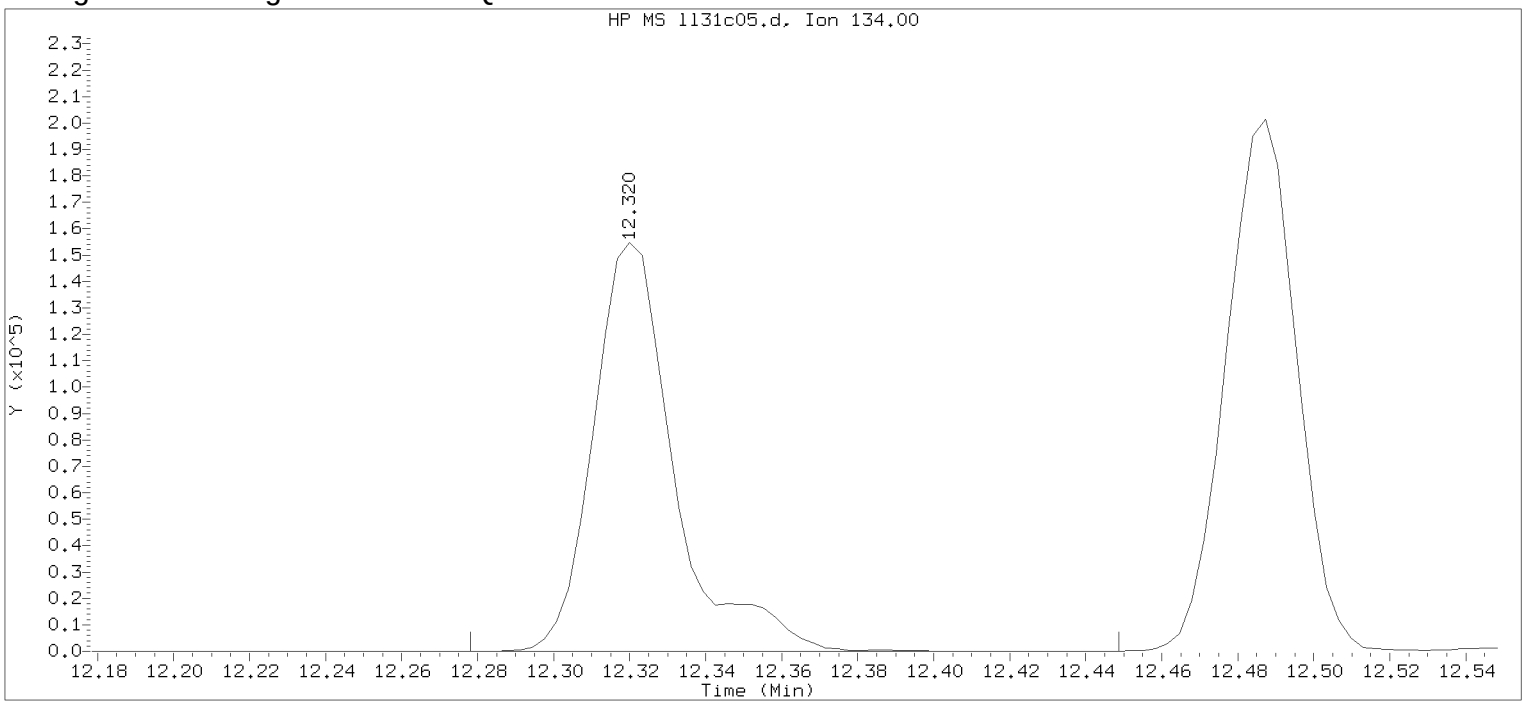
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

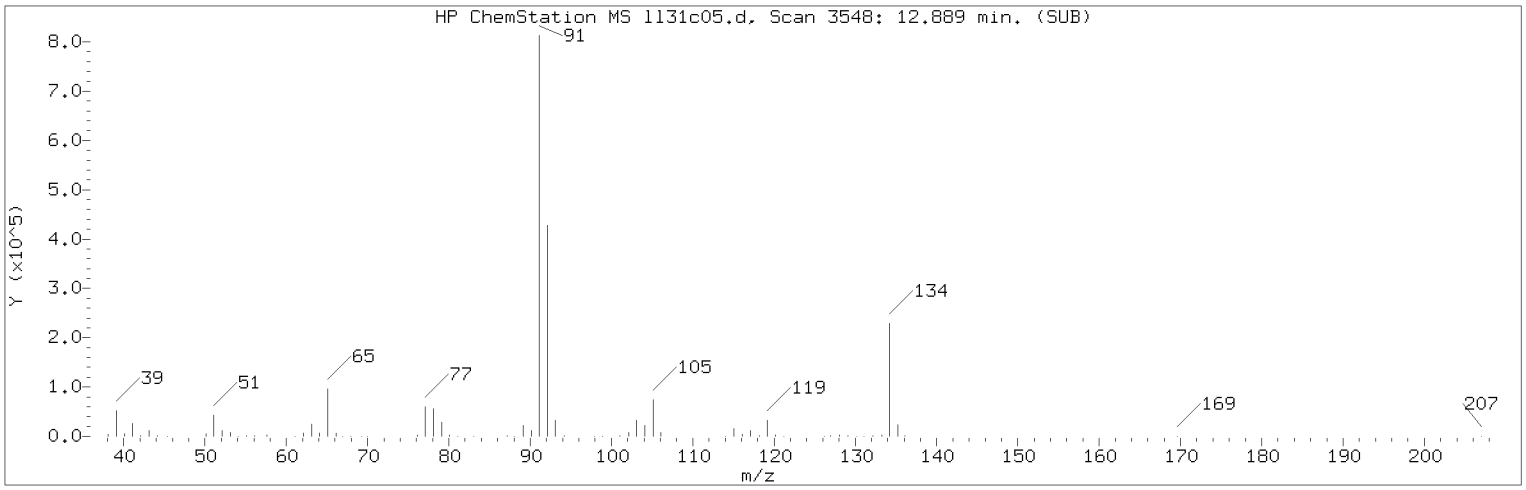
Method used: /chem/HP09915.i/17jul31b.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:47
Date, time and analyst ID of latest file update: 31-Jul-2017 21:48 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

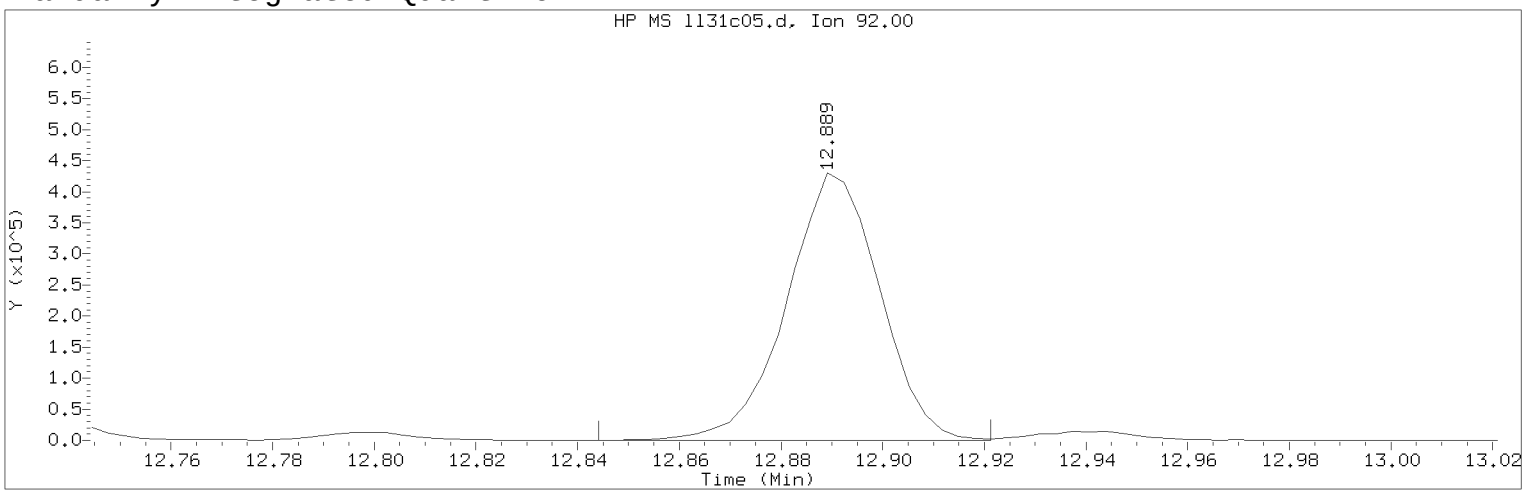
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 227911
On-column Amount (ng) : 53.9842
Integration start scan : 3357 Integration stop scan: 3410
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin Kelly on 07/31/2017 at 22:00.
Target 3.5 esignature user KK01 kkelly002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d  Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30  Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 21:59 kk10002

Sample Name: VSTD050  Lab Sample ID: VSTD050

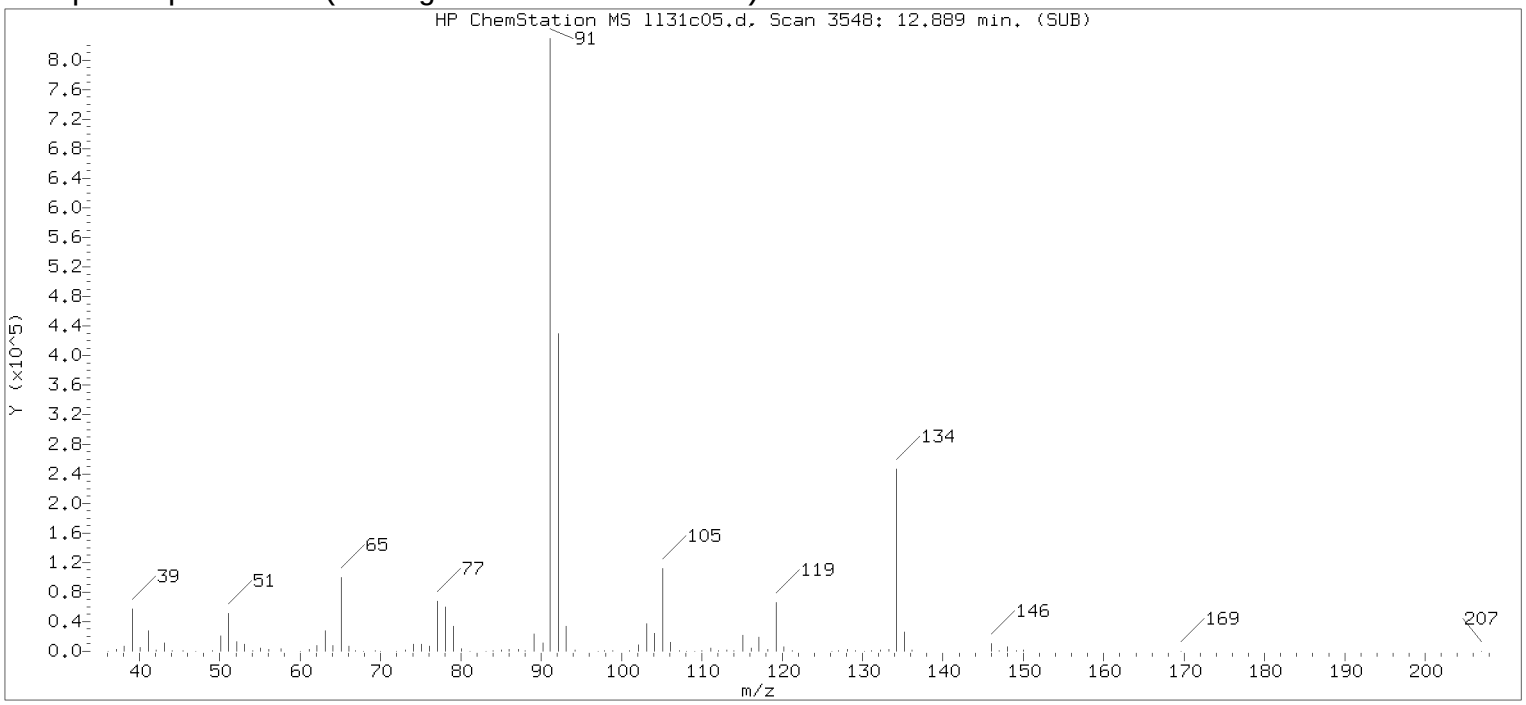
Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 3548
Retention Time (minutes): 12.889
Quant Ion : 92.00
Area (flag) : 544991M
On-Column Amount (ng) : 49.8504
Integration start scan : 3533  Integration stop scan: 3557
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

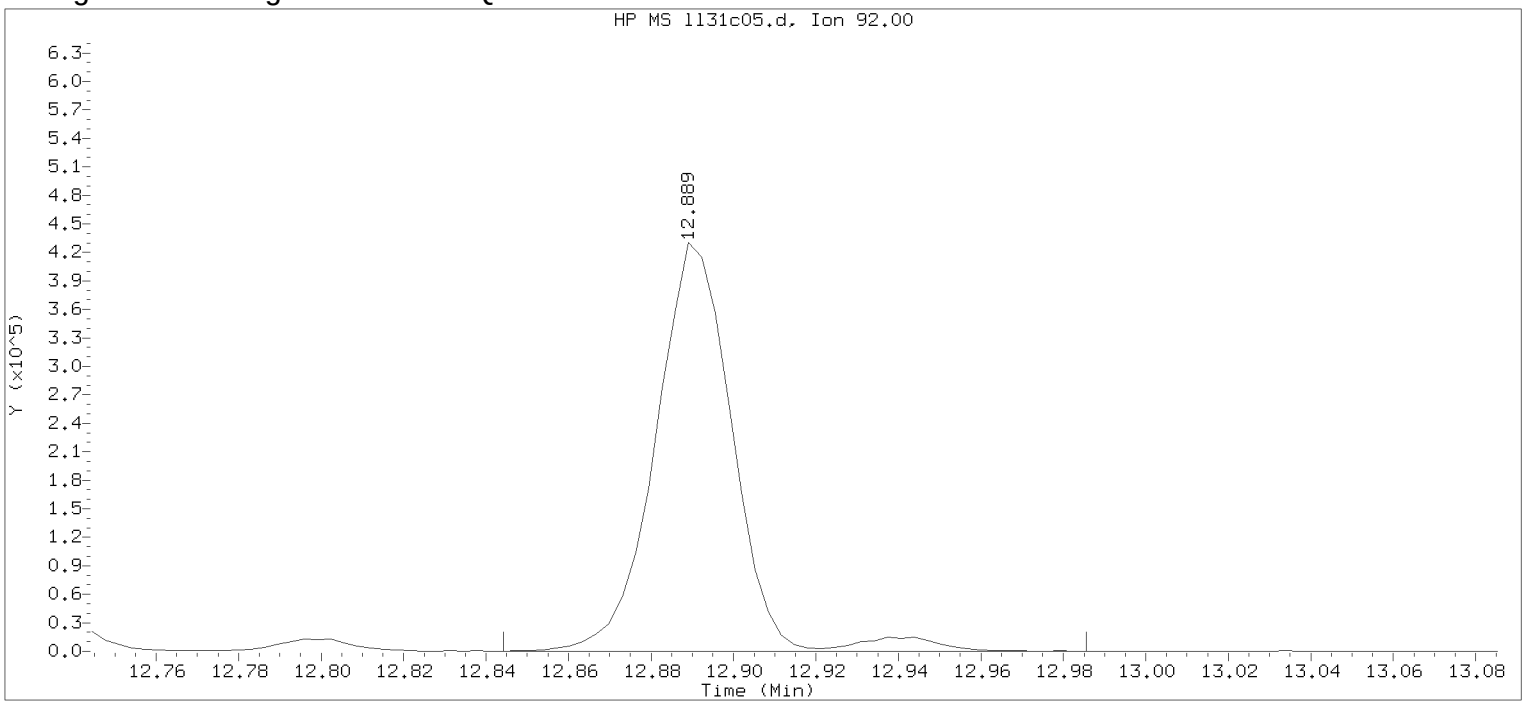
Analyst responsible for change: Digitally signed by Kevin Kelly
on 07/31/2017 at 22:00.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31c05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260b5.m Sublist used: 8260W
Calibration date and time: 31-JUL-2017 21:47
Date, time and analyst ID of latest file update: 31-Jul-2017 21:48 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 139
Compound Name : n-Butylbenzene
Scan Number : 3548
Retention Time (minutes): 12.889
Quant Ion : 92.00
Area : 564945
On-column Amount (ng) : 50.9691
Integration start scan : 3533 Integration stop scan: 3577
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin Kelly on 07/31/2017 at 22:00.
Target 3.5 esignature user KK11 kkelly0074

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31ec5.d Injection date and time: **01-AUG-2017 07:11**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 07:54 dhh02035

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.565( 0.006) | 648 | 65 | 196515 ( 7) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 942407 ( 5) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 765870 ( 5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 446307 ( 3) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 250251 | 54.379 | 109% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.600( 0.001) | 102 | 58879 | 51.452 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 972037 | 49.708 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 390970 | 53.790 | 108% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | 3.568( 0.000) | 84 | 183108 | 40.609 | 40.61 | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.912(-0.000) | 73 | 638580 | 51.070 | 51.07 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.555(-0.000) | 63 | 342486 | 45.512 | 45.51 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.404( 0.000) | 96 | 218052 | 47.517 | 47.52 | | | 0.5 | 1 |
| 51) Chloroform | (2) | 5.912( 0.000) | 83 | 392485 | 54.719 | 54.72 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.626(-0.000) | 78 | 790303 | 45.955 | 45.96 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.712( 0.000) | 62 | 349143 | 60.011 | 60.01 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.539( 0.000) | 95 | 225392 | 50.715 | 50.72 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.224(-0.000) | 92 | 545162 | 47.973 | 47.97 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745(-0.000) | 97 | 221163 | 50.506 | 50.51 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.825(-0.000) | 166 | 291985 | 58.092 | 58.09 | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | 10.143(-0.000) | 129 | 253697 | 55.934 | 55.93 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.256( 0.000) | 107 | 247988 | 51.730 | 51.73 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831( 0.000) | 91 | 1134505 | 51.756 | 51.76 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 875283 | 102.567 | 102.57 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291( 0.000) | 106 | 435801 | 51.350 | 51.35 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 1311084 | 153.917 | 153.92 | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857(-0.000) | 83 | 371862M | 46.941 | 46.94 | | | 0.5 | 1 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 1401133 | 49.451 | 49.45 | | | 1 | 5 |

**M = Compound was manually integrated.**

Digitally signed by Daniel H. Heller on 08/01/2017 at 07:55. Target 3.5 esignature user ID: dhh02035

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31ec5.d Injection date and time: **01-AUG-2017 07:11**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 07:54 dhh02035

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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WAS LEFT
BLANK INTENTIONALLY

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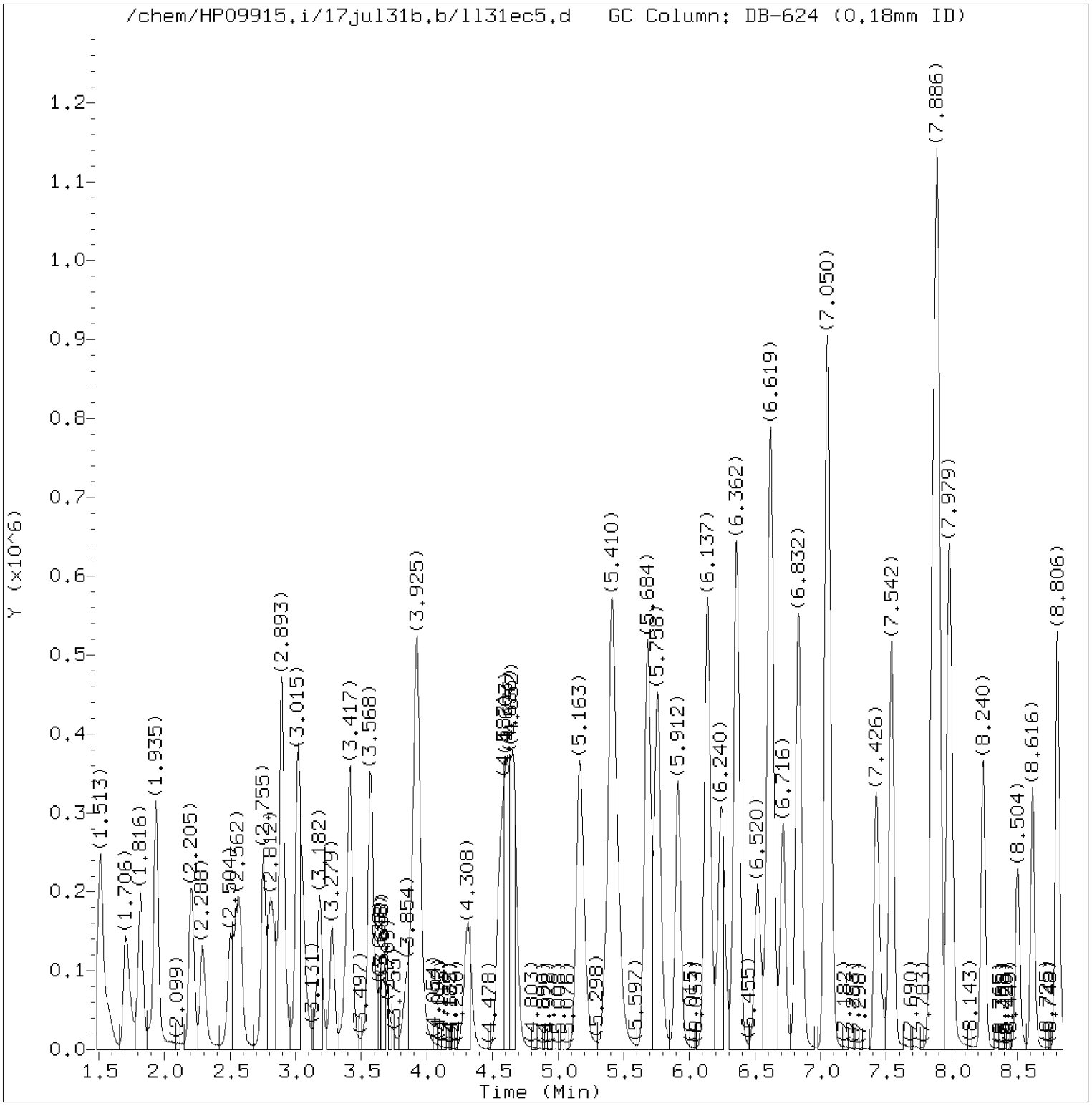
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 07:55. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:39. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

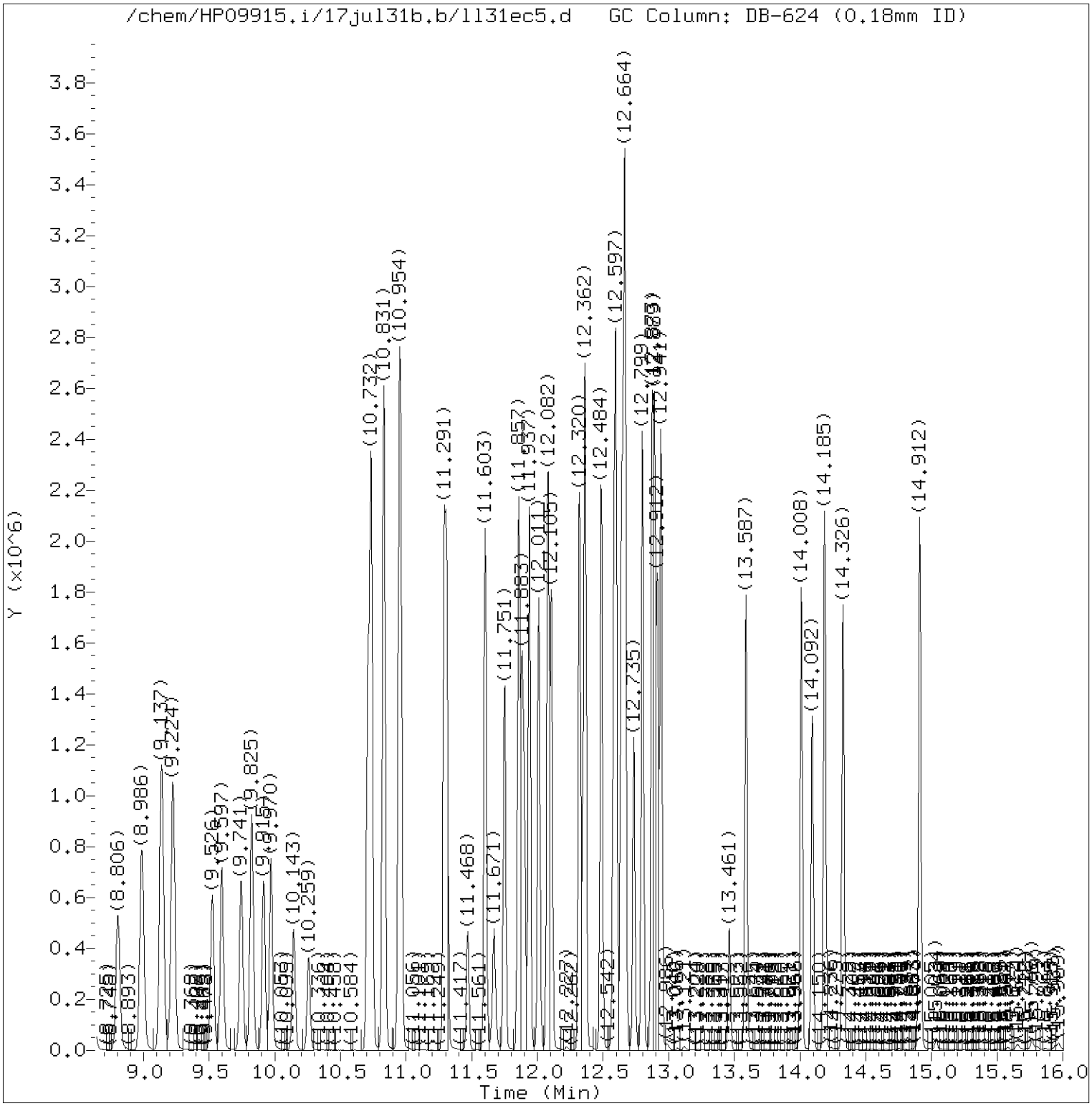
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31ec5.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 07:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 07:54 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Daniel H. Heller
on 08/01/2017 at 07:55.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31ec5.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 07:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 07:54 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Daniel H. Heller
on 08/01/2017 at 07:55.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31ec5.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 07:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 07:54 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

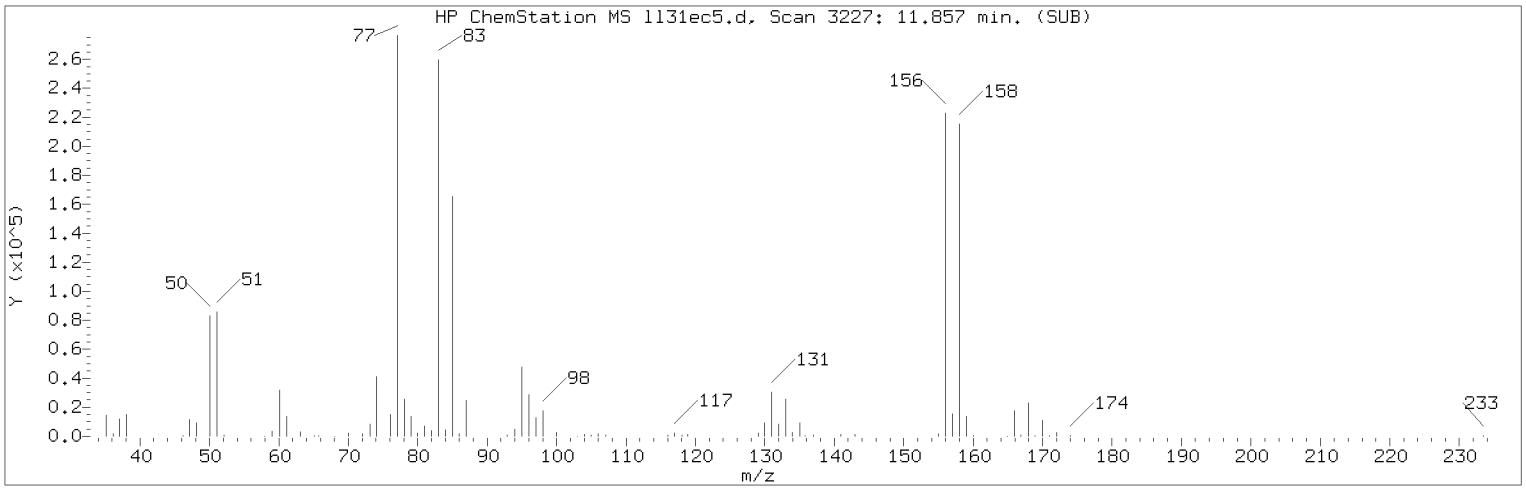
| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 196515 | 250.000 |
| 28) Methylene Chloride | (2) | 3.568 | 84 | 183108 | 40.609 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.912 | 73 | 638580 | 51.070 |
| 36) 1,1-Dichloroethane | (2) | 4.555 | 63 | 342486 | 45.512 |
| 42) cis-1,2-Dichloroethene | (2) | 5.404 | 96 | 218052 | 47.517 |
| 51) Chloroform | (2) | 5.912 | 83 | 392485 | 54.719 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 250251 | 54.379 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.600 | 102 | 58879 | 51.452 |
| 60) Benzene | (2) | 6.626 | 78 | 790303 | 45.955 |
| 61) 1,2-Dichloroethane | (2) | 6.713 | 62 | 349143 | 60.011 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 942407 | 50.000 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 225392 | 50.715 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 972037 | 49.708 |
| 88) Toluene | (3) | 9.224 | 92 | 545162 | 47.973 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 221163 | 50.506 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 291985 | 58.092 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 253697 | 55.934 |
| 99) 1,2-Dibromoethane | (3) | 10.256 | 107 | 247988 | 51.730 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 765870 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1134505 | 51.756 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 875283 | 102.567 |
| 107) o-Xylene | (3) | 11.291 | 106 | 435801 | 51.350 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 390970 | 53.790 |
| 108) Xylene (Total) | (3) | | 106 | 1311084 | 153.917 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 371862M | 46.941 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 446307 | 50.000 |
| 148) Naphthalene | (4) | 14.188 | 128 | 1401133 | 49.451 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

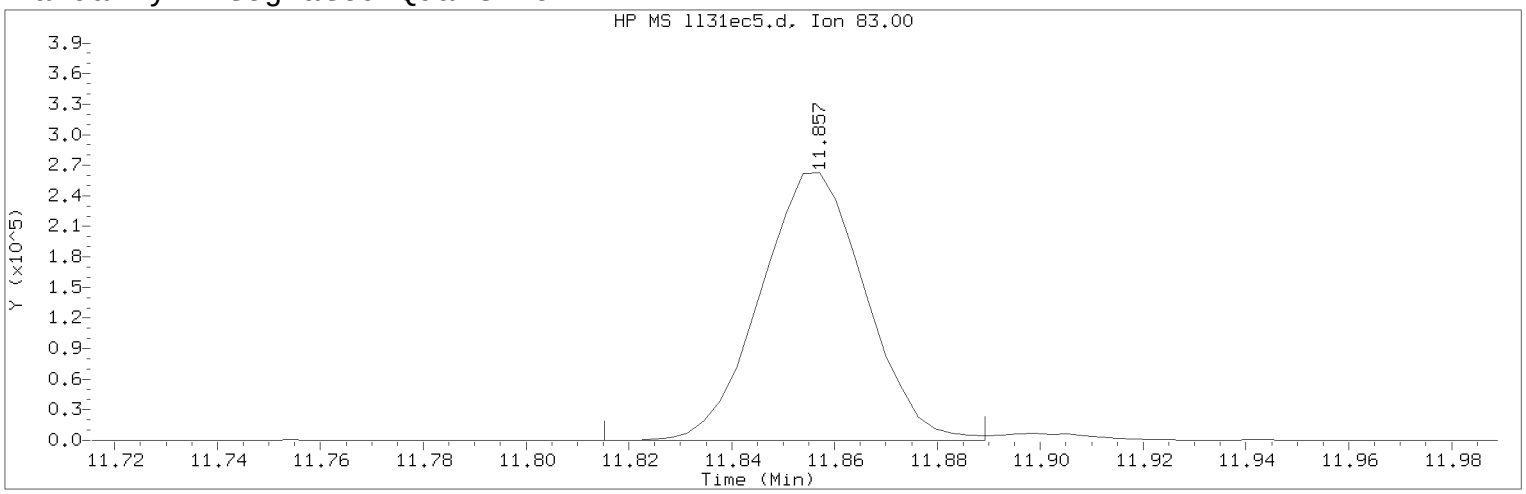


Digitally signed by Daniel H. Heller
on 08/01/2017 at 07:55.
Target 3.5 esignature user ID: dhh02035

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31ec5.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 07:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 07:54 dhh02035

Sample Name: SECC050 Lab Sample ID: SECC050

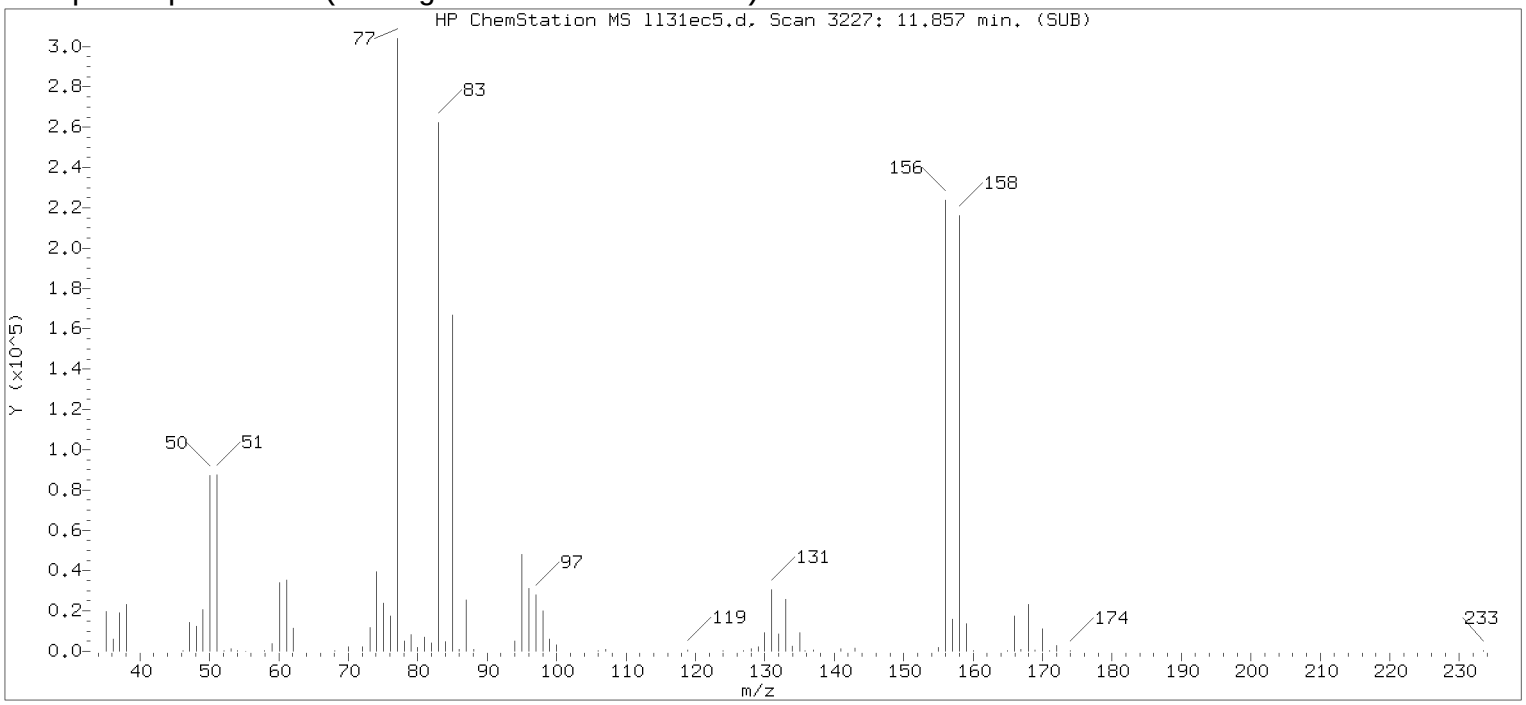
Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3227
Retention Time (minutes): 11.857
Quant Ion : 83.00
Area (flag) : 371862M
On-Column Amount (ng) : 46.9413
Integration start scan : 3213 Integration stop scan: 3236
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

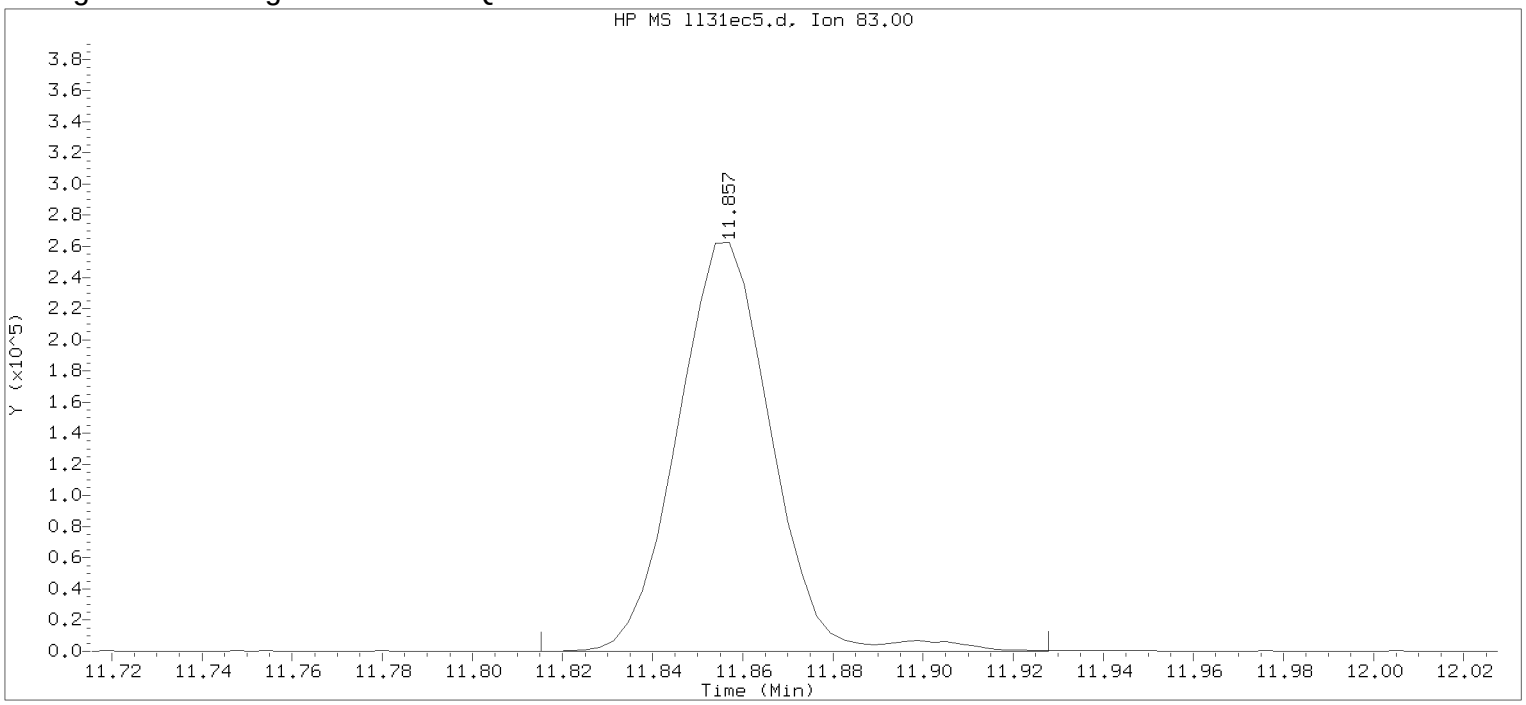
Analyst responsible for change: Digitally signed by Daniel H. Heller
on 08/01/2017 at 07:55.
Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:39.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17jul31b.b/ll31ec5.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 07:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 07:28 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Compound Number : 116
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 3227
Retention Time (minutes): 11.857
Quant Ion : 83.00
Area : 379982
On-column Amount (ng) : 47.9662
Integration start scan : 3213 Integration stop scan: 3248
Y at integration start : 0 Y at integration end: 0

Digitally signed by Daniel H. Heller on 08/01/2017 at 07:55.
Target 3.5 esignature user KK01 date 2035

# Raw QC Data

# Volatiles by GC/MS

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

VBLKL94

Data file: /chem/HP09915.i/17jul31b.b/ll31b05.d  Injection date and time: **31-JUL-2017 22:35**
Data file Sample Info. Line: VBLKL94;VBLKL94;1;3;;;DODWW;;;  Instrument ID: **HP09915.i**  Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m  Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code:  Matrix: WATER  Level: Low

On-Column Amount units: ng  In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo)  VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml  Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.575(-0.003) | 651 | 65 | 179967 ( -2) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 923444 ( 3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 748027 ( 2) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.003) | 3470 | 152 | 425230 ( -1) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 249412 | 55.310 | 111% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613(-0.001) | 102 | 59143 | 52.744 | 105% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 932858 | 48.842 | 98% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 366577 | 51.637 | 103% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | | | Not Detected | | | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 51) Chloroform | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | | | Not Detected | | | | | 0.5 | 1 |
| 148) Naphthalene | (4) | | | Not Detected | | | | | 1 | 5 |

Digitally signed by Matthew S. Krause on 08/01/2017 at 20:08. Target 3.5 esignature user ID: msk07970

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31b05.d Injection date and time: **31-JUL-2017 22:35**
Data file Sample Info. Line: VBLKL94;VBLKL94;1;3;;;DODWW;;; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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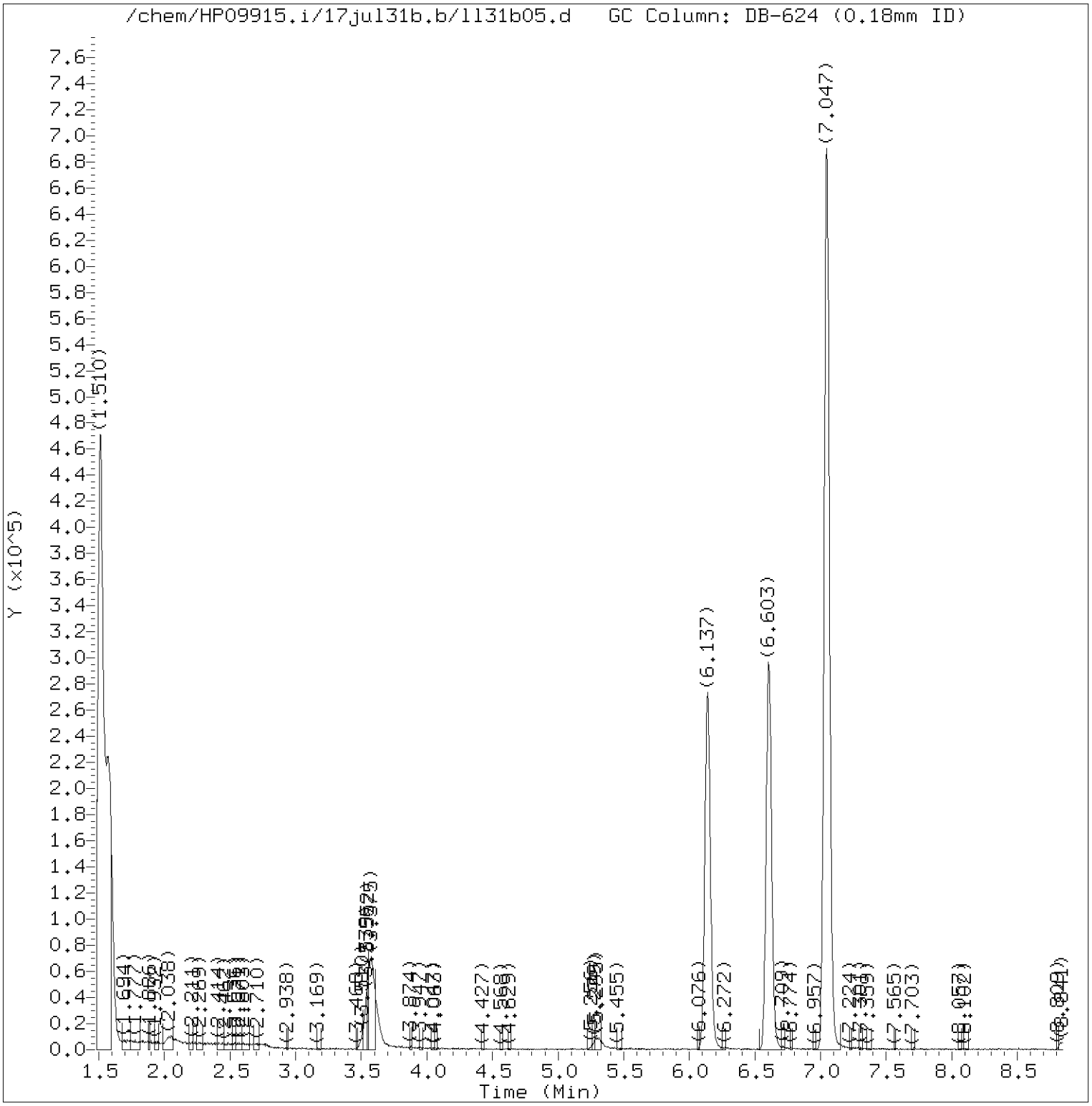
Total number of targets = 19

Digitally signed by Matthew S. Krause on 08/01/2017 at 20:08. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 20:11. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

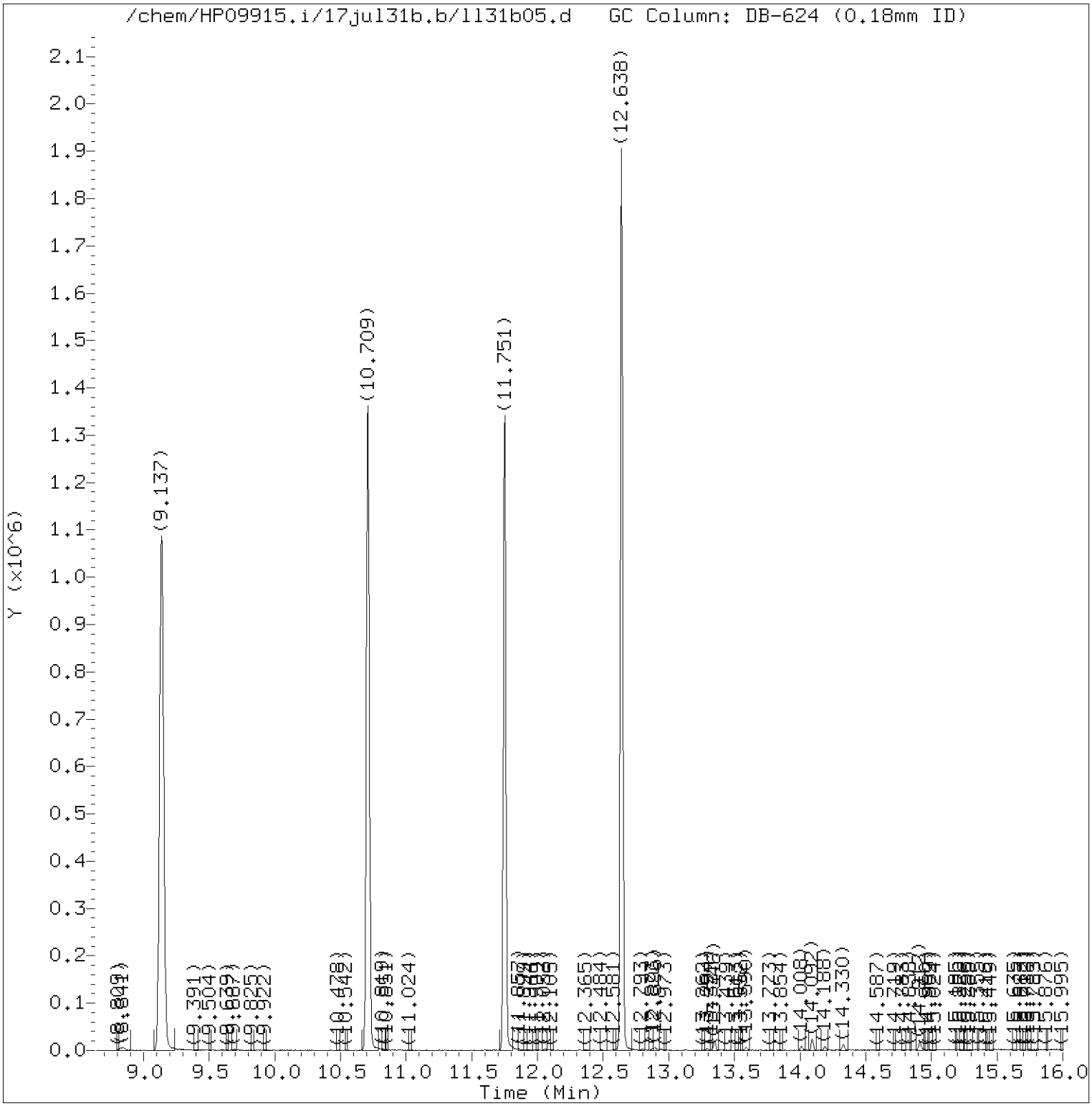
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31b05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 22:35 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 Automation

Sample Name: VBLKL94 Lab Sample ID: VBLKL94

Digitally signed by Matthew S. Krause
on 08/01/2017 at 20:08.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31b05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 22:35 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 Automation

Sample Name: VBLKL94 Lab Sample ID: VBLKL94

Digitally signed by Matthew S. Krause
on 08/01/2017 at 20:08.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31b05.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 22:35 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 Automation

Sample Name: VBLKL94 Lab Sample ID: VBLKL94

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 179967 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 249412 | 55.310 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 59143 | 52.744 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 923444 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 932858 | 48.842 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 748027 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 366577 | 51.637 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 425230 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 08/01/2017 at 20:08.
Target 3.5 esignature user ID: msk07970

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s47.d Injection date and time: **01-AUG-2017 00:38**
Data file Sample Info. Line: K1910MS;9121684MS;1;3;MS;KR191;DODWW;;ll31b05 Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 00:56 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.578(-0.007) | 652 | 65 | 174781 ( -5) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 885073 ( -1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 714281 ( -2) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.003) | 3470 | 152 | 416478 ( -3) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144(-0.001) | 113 | 236312 | 54.677 | 109% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.616(-0.001) | 102 | 55185 | 51.348 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 907884 | 49.780 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 365651 | 53.940 | 108% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | 3.581(-0.000) | 84 | 89891 | 21.227 | 21.23 | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.919(-0.001) | 73 | 263898 | 22.472 | 22.47 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.568(-0.001) | 63 | 156791 | 22.185 | 22.19 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420(-0.001) | 96 | 98878 | 22.943 | 22.94 | | | 0.5 | 1 |
| 51) Chloroform | (2) | 5.918(-0.000) | 83 | 168980 | 25.085 | 25.08 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.632(-0.000) | 78 | 352925 | 21.852 | 21.85 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.716( 0.000) | 62 | 145845 | 26.692 | 26.69 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.539( 0.000) | 95 | 99963 | 23.950 | 23.95 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227(-0.000) | 92 | 228497 | 21.560 | 21.56 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745(-0.000) | 97 | 85977 | 21.052 | 21.05 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.828(-0.000) | 166 | 109353 | 23.328 | 23.33 | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | 10.147(-0.000) | 129 | 91470 | 21.624 | 21.62 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.256( 0.000) | 107 | 93248 | 20.856 | 20.86 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.835(-0.000) | 91 | 459253 | 22.464 | 22.46 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 354711 | 44.568 | 44.57 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291( 0.000) | 106 | 169876 | 21.462 | 21.46 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 524587 | 66.030 | 66.03 | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857(-0.000) | 83 | 135867 | 18.379 | 18.38 | | | 0.5 | 1 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 490787 | 18.562 | 18.56 | | | 1 | 5 |

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:17. Target 3.5 esignature user ID: dhh02035

Data file: /chem/HP09915.i/17jul31b.b/ll31s47.d Injection date and time: **01-AUG-2017 00:38**
Data file Sample Info. Line: K1910MS;9121684MS;1;3;MS;KR191;DODWW;;ll31b05 Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 00:56 Automation

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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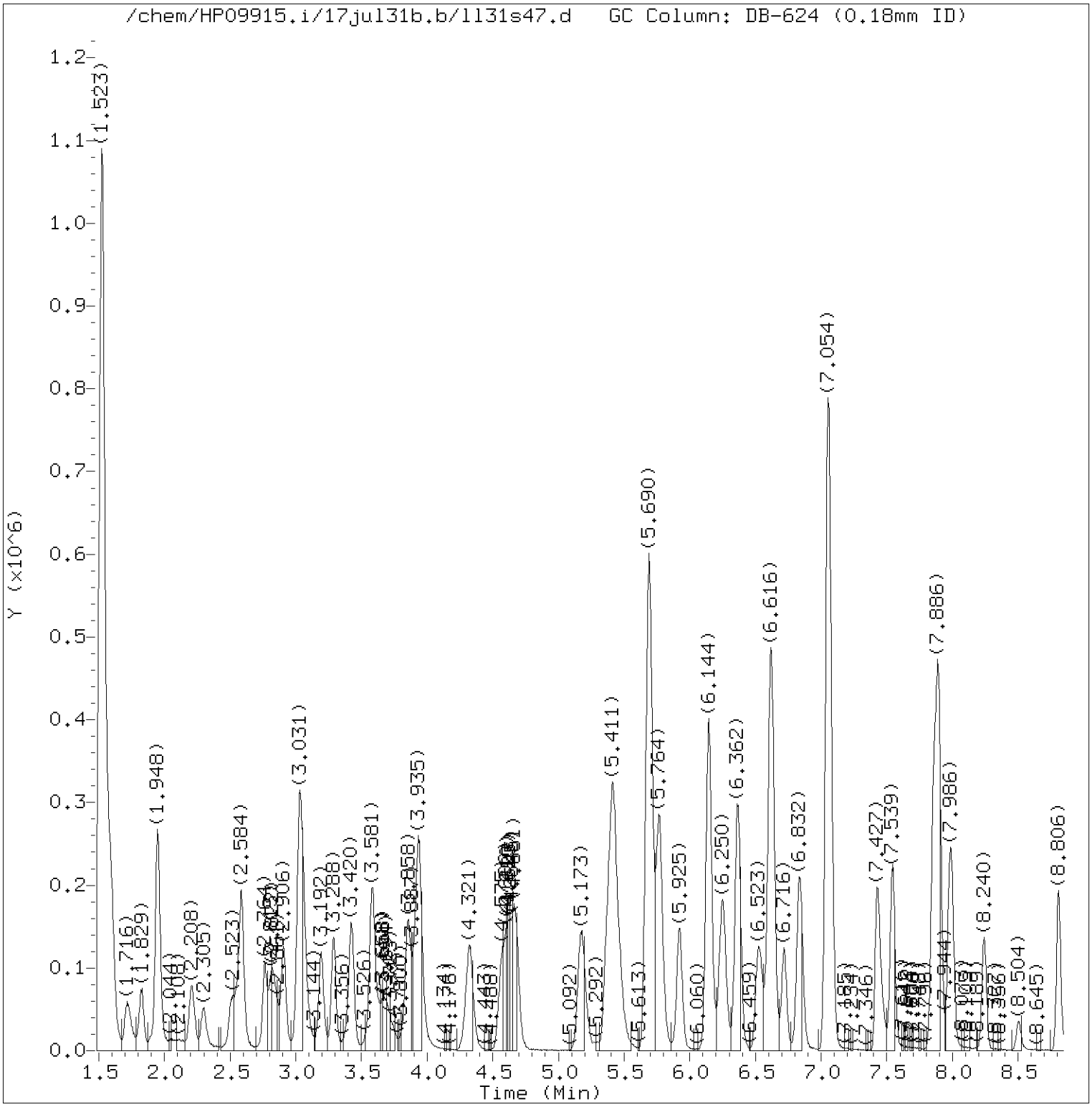
Total number of targets = 19

Digitally signed by Daniel H. Heller on 08/01/2017 at 09:17. Target 3.5 esignature user ID: dhh02035

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

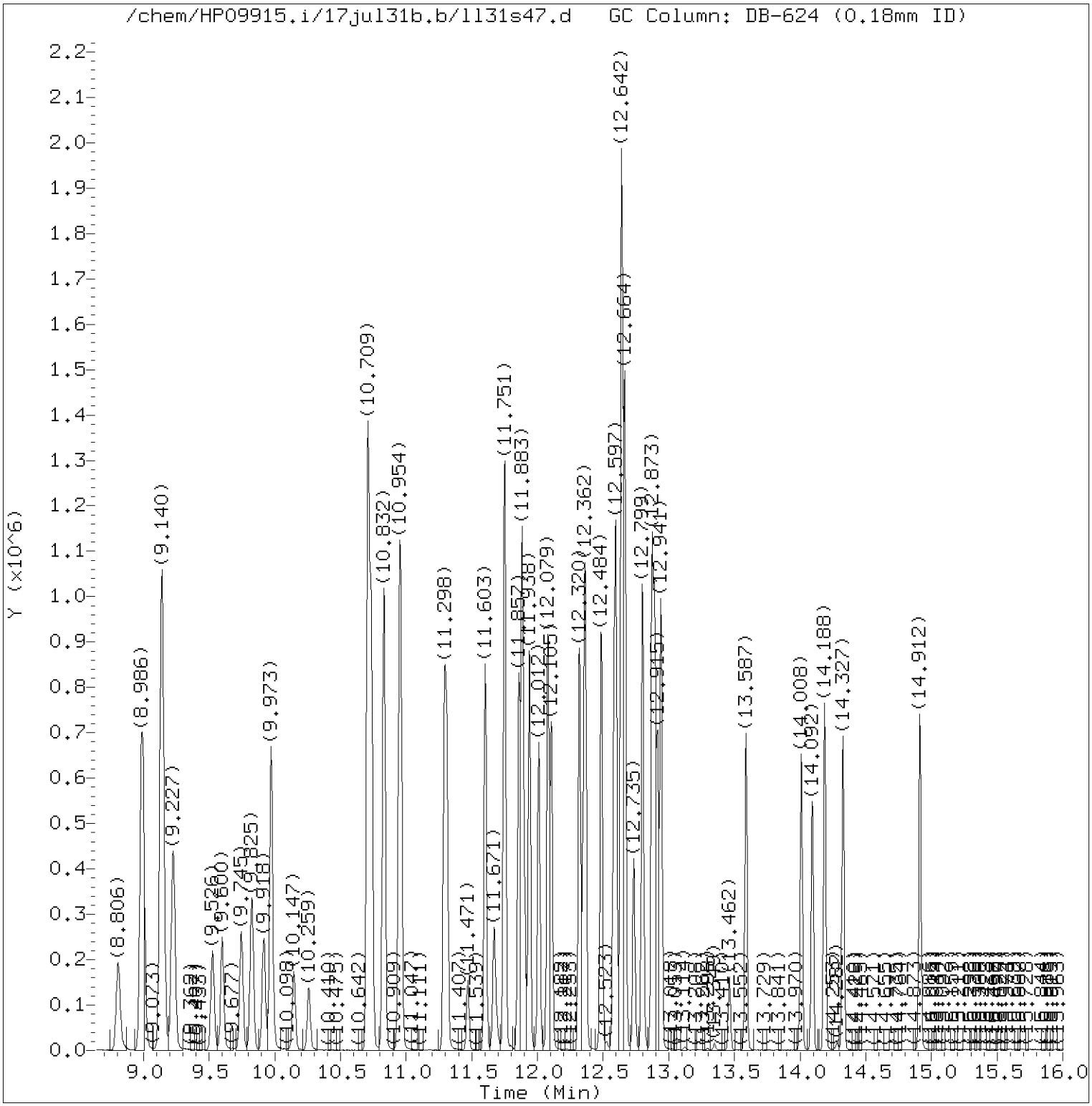
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s47.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 00:38 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 00:56 Automation

Sample Name: K1910MS Lab Sample ID: 9121684MS

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s47.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 00:38 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 00:56 Automation

Sample Name: K1910MS Lab Sample ID: 9121684MS

Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s47.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 00:38 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 00:56 Automation

Sample Name: K1910MS Lab Sample ID: 9121684MS

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 174781 | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 89891 | 21.227 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.919 | 73 | 263898 | 22.472 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 156791 | 22.185 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 98878 | 22.943 |
| 51) Chloroform | (2) | 5.919 | 83 | 168980 | 25.085 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 236312 | 54.677 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 55185 | 51.348 |
| 60) Benzene | (2) | 6.632 | 78 | 352925 | 21.852 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 145845 | 26.692 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 885073 | 50.000 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 99963 | 23.950 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 907884 | 49.780 |
| 88) Toluene | (3) | 9.227 | 92 | 228497 | 21.560 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 85977 | 21.052 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 109353 | 23.328 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 91470 | 21.624 |
| 99) 1,2-Dibromoethane | (3) | 10.256 | 107 | 93248 | 20.856 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 714281 | 50.000 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 459253 | 22.464 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 354711 | 44.568 |
| 107) o-Xylene | (3) | 11.291 | 106 | 169876 | 21.462 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 365651 | 53.940 |
| 108) Xylene (Total) | (3) | | 106 | 524587 | 66.030 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 135867 | 18.379 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 416478 | 50.000 |
| 148) Naphthalene | (4) | 14.188 | 128 | 490787 | 18.562 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Daniel H. Heller
on 08/01/2017 at 09:17.
Target 3.5 esignature user ID: dhh02035

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s48.d Injection date and time: **01-AUG-2017 01:00**
Data file Sample Info. Line: K1910MSD;9121685MSD;1;3;MSD;KR191;DODWW;;ll31b05 Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 19:34 kek01027

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.003) | 649 | 65 | 192183 ( 5) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 908047 ( 2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 735693 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.642( 0.000) | 3471 | 152 | 428791 ( -1) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 243295 | 54.868 | 110% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 56655 | 51.382 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 934489 | 49.748 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 379502 | 54.354 | 109% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | 3.571( 0.000) | 84 | 91549 | 21.072 | 21.07 | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915(-0.000) | 73 | 276056 | 22.913 | 22.91 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.558(-0.000) | 63 | 163743 | 22.583 | 22.58 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.414(-0.000) | 96 | 102711 | 23.229 | 23.23 | | | 0.5 | 1 |
| 51) Chloroform | (2) | 5.912( 0.000) | 83 | 170059 | 24.606 | 24.61 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.629(-0.000) | 78 | 370053 | 22.332 | 22.33 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.713( 0.000) | 62 | 148549 | 26.499 | 26.50 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.539( 0.000) | 95 | 100587 | 23.489 | 23.49 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227(-0.000) | 92 | 233268 | 21.369 | 21.37 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.741( 0.000) | 97 | 87173 | 20.724 | 20.72 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.825(-0.000) | 166 | 112071 | 23.212 | 23.21 | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | 10.143(-0.000) | 129 | 93724 | 21.511 | 21.51 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.259(-0.000) | 107 | 94972 | 20.624 | 20.62 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831( 0.000) | 91 | 468209 | 22.236 | 22.24 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 363357 | 44.325 | 44.33 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288( 0.000) | 106 | 173997 | 21.343 | 21.34 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 537354 | 65.668 | 65.67 | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854(-0.000) | 83 | 142894 | 18.775 | 18.77 | | | 0.5 | 1 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 512525 | 18.828 | 18.83 | | | 1 | 5 |

Digitally signed by Matthew S. Krause on 08/01/2017 at 20:08. Target 3.5 esignature user ID: msk07970

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s48.d Injection date and time: **01-AUG-2017 01:00**
Data file Sample Info. Line: K1910MSD;9121685MSD;1;3;MSD;KR191;DODWW;;ll31b05 Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 01-Aug-2017 19:34 kek01027

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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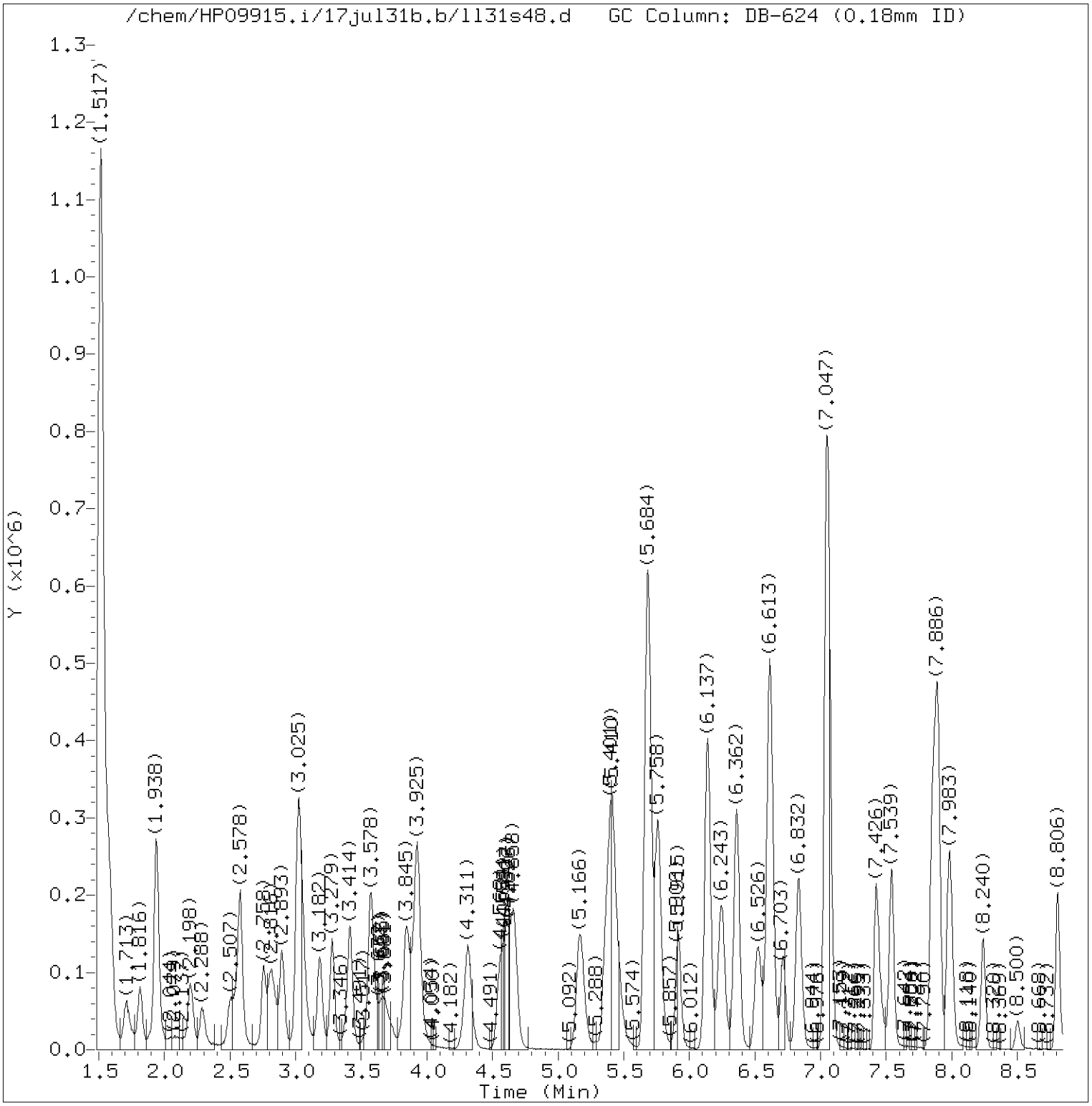
Total number of targets = 19

Digitally signed by Matthew S. Krause on 08/01/2017 at 20:08. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 20:11. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

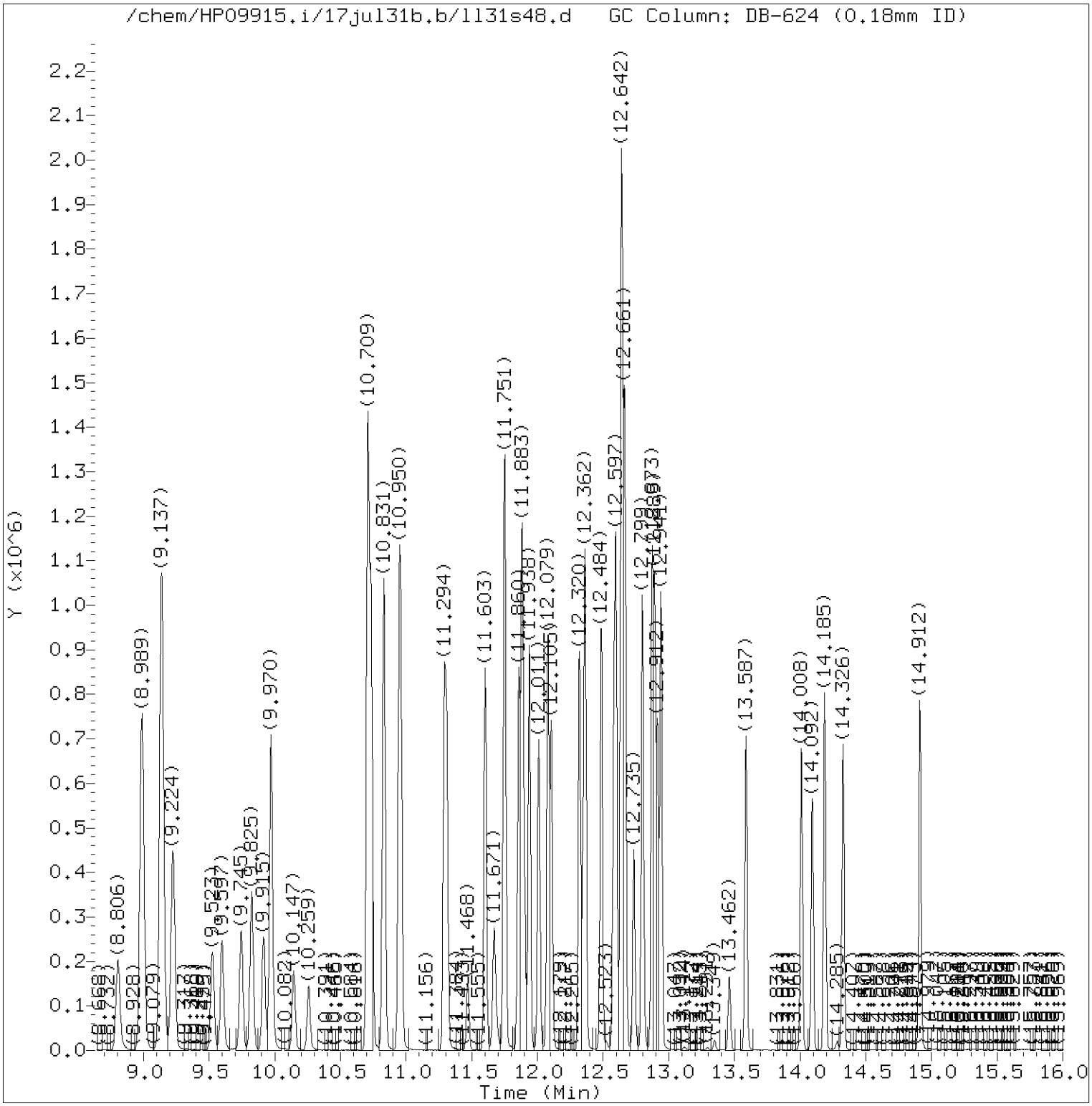
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s48.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 01:00 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 19:34 kek01027

Sample Name: K1910MSD Lab Sample ID: 9121685MSD

Digitally signed by Matthew S. Krause
on 08/01/2017 at 20:08.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s48.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 01:00 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 19:34 kek01027

Sample Name: K1910MSD Lab Sample ID: 9121685MSD

Digitally signed by Matthew S. Krause
on 08/01/2017 at 20:08.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s48.d Instrument ID: HP09915.i
Injection date and time: 01-AUG-2017 01:00 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 01-Aug-2017 19:34 kek01027

Sample Name: K1910MSD Lab Sample ID: 9121685MSD

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 192183 | 250.000 |
| 28) Methylene Chloride | (2) | 3.571 | 84 | 91549 | 21.072 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 276056 | 22.913 |
| 36) 1,1-Dichloroethane | (2) | 4.558 | 63 | 163743 | 22.583 |
| 42) cis-1,2-Dichloroethene | (2) | 5.414 | 96 | 102711 | 23.229 |
| 51) Chloroform | (2) | 5.912 | 83 | 170059 | 24.606 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 243295 | 54.868 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 56655 | 51.382 |
| 60) Benzene | (2) | 6.629 | 78 | 370053 | 22.332 |
| 61) 1,2-Dichloroethane | (2) | 6.713 | 62 | 148549 | 26.499 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 908047 | 50.000 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 100587 | 23.489 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 934489 | 49.748 |
| 88) Toluene | (3) | 9.227 | 92 | 233268 | 21.369 |
| 92) 1,1,2-Trichloroethane | (3) | 9.741 | 97 | 87173 | 20.724 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 112071 | 23.212 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 93724 | 21.511 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 94972 | 20.624 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 735693 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 468209 | 22.236 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 363357 | 44.325 |
| 107) o-Xylene | (3) | 11.288 | 106 | 173997 | 21.343 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 379502 | 54.354 |
| 108) Xylene (Total) | (3) | | 106 | 537354 | 65.668 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 142894 | 18.775 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 428791 | 50.000 |
| 148) Naphthalene | (4) | 14.188 | 128 | 512525 | 18.828 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 08/01/2017 at 20:08.
Target 3.5 esignature user ID: msk07970

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s41.d Injection date and time: **31-JUL-2017 21:52**
Data file Sample Info. Line: LCSL94;LCSL94;1;3;LCS;;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581(-0.010) | 653 | 65 | 192824 ( 5) | 250.00 | |
| 66) Fluorobenzene | 7.053(-0.007) | 1733 | 96 | 949944 ( 6) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 763878 ( 4) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.003) | 3470 | 152 | 443494 ( 3) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 254876 | 54.945 | 110% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 59537 | 51.614 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 977981 | 50.142 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 390104 | 53.811 | 108% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | 3.581(-0.000) | 84 | 98526 | 21.677 | 21.68 | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925(-0.001) | 73 | 283822 | 22.518 | 22.52 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.568(-0.001) | 63 | 164590 | 21.698 | 21.70 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417(-0.000) | 96 | 104700 | 22.635 | 22.63 | | | 0.5 | 1 |
| 51) Chloroform | (2) | 5.922(-0.000) | 83 | 172090 | 23.802 | 23.80 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.632(-0.000) | 78 | 368722 | 21.271 | 21.27 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.719( 0.000) | 62 | 153378 | 26.154 | 26.15 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.545( 0.000) | 95 | 100009 | 22.324 | 22.32 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227(-0.000) | 92 | 234306 | 20.672 | 20.67 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748(-0.000) | 97 | 93007 | 21.295 | 21.29 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.825(-0.000) | 166 | 112298 | 22.401 | 22.40 | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | 10.143(-0.000) | 129 | 98773 | 21.834 | 21.83 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.256( 0.000) | 107 | 100419 | 21.002 | 21.00 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831( 0.000) | 91 | 469385 | 21.469 | 21.47 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.950( 0.000) | 106 | 363915 | 42.755 | 42.76 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291(-0.000) | 106 | 173988 | 20.554 | 20.55 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 537903 | 63.310 | 63.31 | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857(-0.000) | 83 | 151029 | 19.186 | 19.19 | | | 0.5 | 1 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 555440 | 19.728 | 19.73 | | | 1 | 5 |

Digitally signed by Kevin Kelly on 07/31/2017 at 23:41. Target 3.5 esignature user ID: kk10002

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s41.d Injection date and time: **31-JUL-2017 21:52**
Data file Sample Info. Line: LCSL94;LCSL94;1;3;LCS;;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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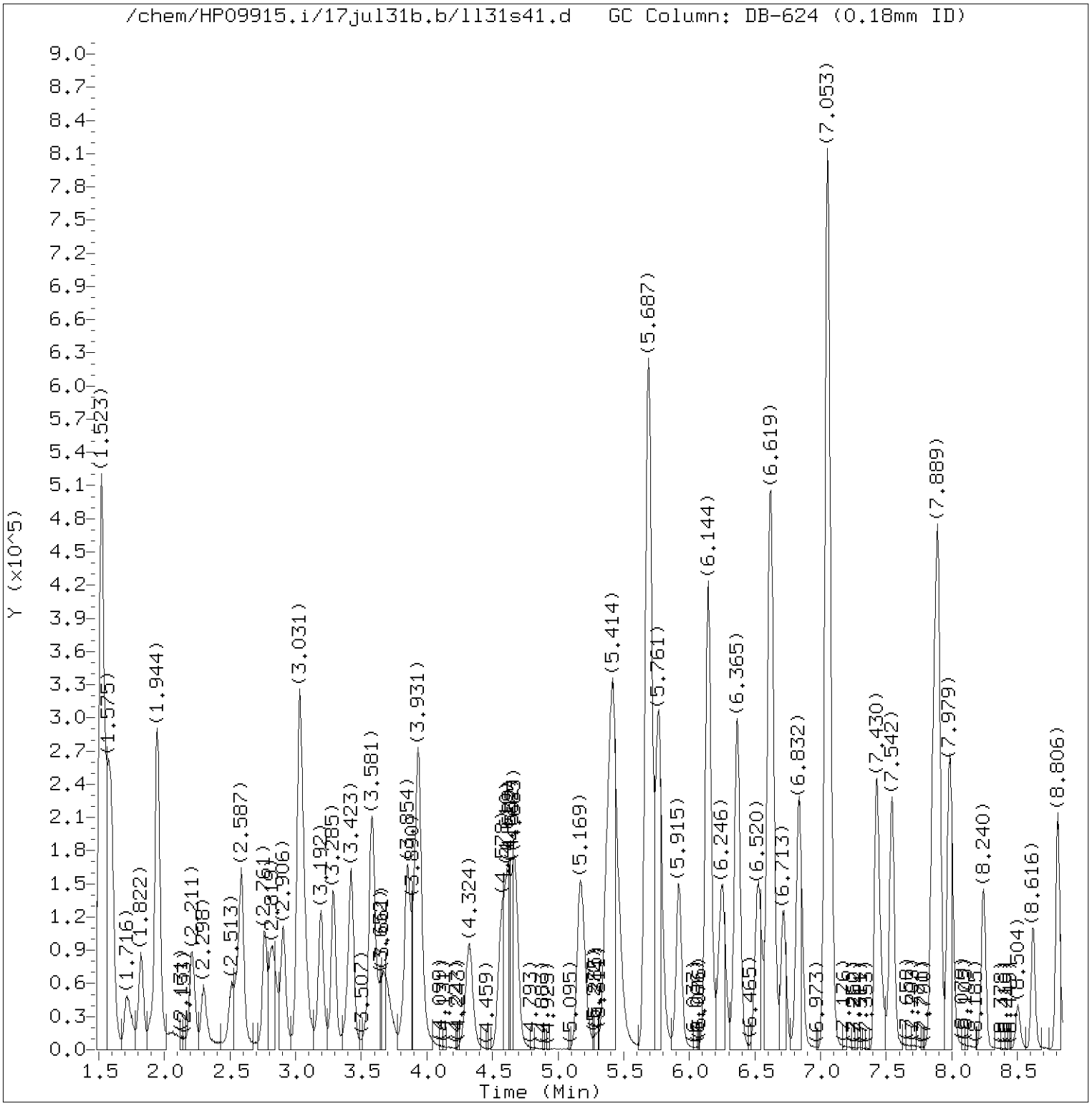
Total number of targets = 19

Digitally signed by Kevin Kelly on 07/31/2017 at 23:41. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

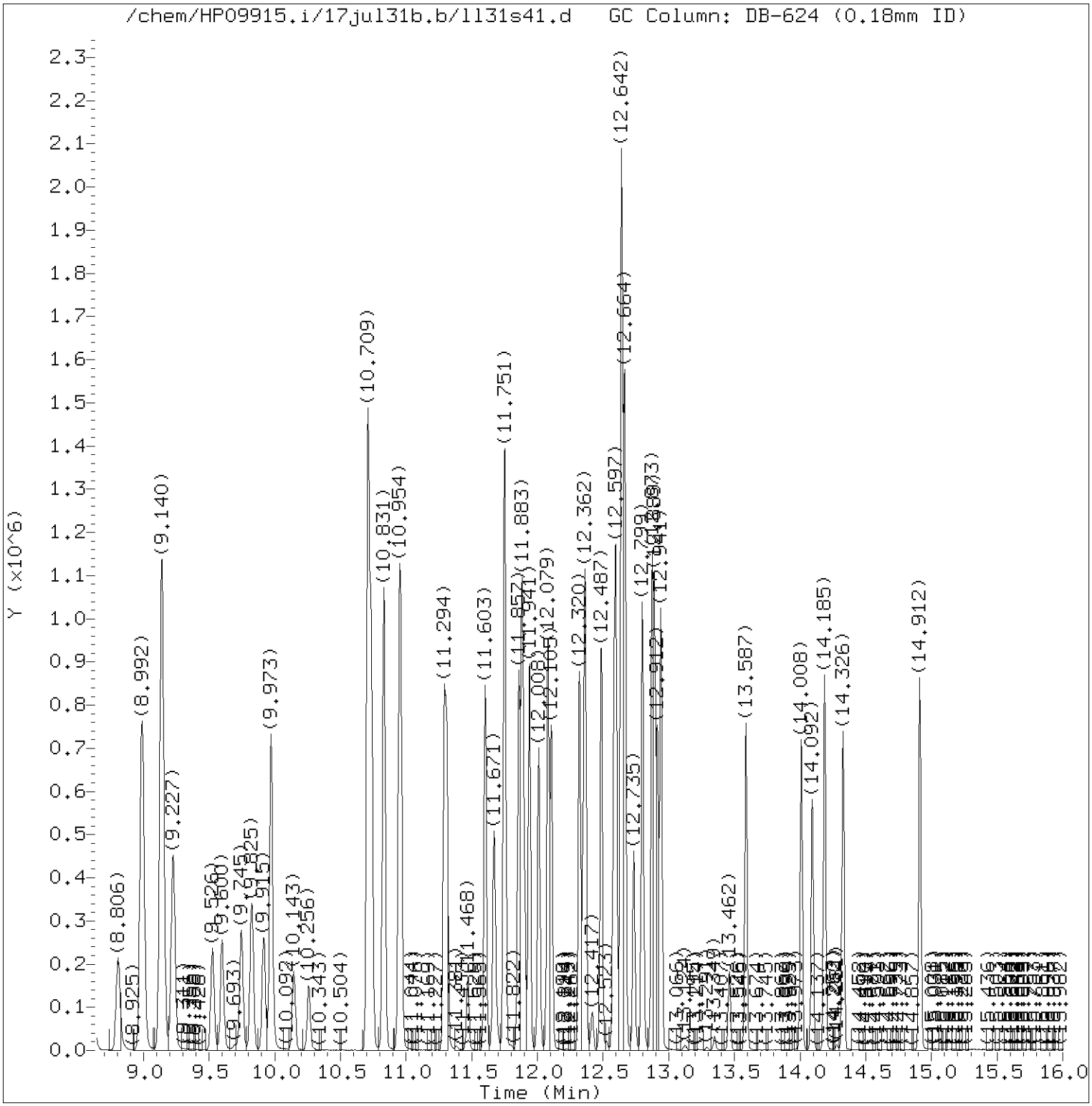
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s41.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:52 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Sample Name: LCSL94 Lab Sample ID: LCSL94

Digitally signed by Kevin Kelly
on 07/31/2017 at 23:41.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s41.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:52 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Sample Name: LCSL94 Lab Sample ID: LCSL94

Digitally signed by Kevin Kelly
on 07/31/2017 at 23:41.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s41.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 21:52 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Sample Name: LCSL94 Lab Sample ID: LCSL94

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | 3.581 | 84 | 98526 | 21.677 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 192824 | 250.000 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 283822 | 22.518 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 164590 | 21.698 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 104700 | 22.635 |
| 51) Chloroform | (2) | 5.922 | 83 | 172090 | 23.802 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 254876 | 54.945 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 59537 | 51.614 |
| 60) Benzene | (2) | 6.632 | 78 | 368722 | 21.271 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 153378 | 26.154 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 949944 | 50.000 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 100009 | 22.324 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 977981 | 50.142 |
| 88) Toluene | (3) | 9.227 | 92 | 234306 | 20.672 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 93007 | 21.295 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 112298 | 22.401 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 98773 | 21.834 |
| 99) 1,2-Dibromoethane | (3) | 10.256 | 107 | 100419 | 21.002 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 763878 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 469385 | 21.469 |
| 106) m+p-Xylene | (3) | 10.950 | 106 | 363915 | 42.755 |
| 107) o-Xylene | (3) | 11.291 | 106 | 173988 | 20.554 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 390104 | 53.811 |
| 108) Xylene (Total) | (3) | | 106 | 537903 | 63.310 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 151029 | 19.186 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 443494 | 50.000 |
| 148) Naphthalene | (4) | 14.188 | 128 | 555440 | 19.728 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/31/2017 at 23:41.
Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s42.d Injection date and time: **31-JUL-2017 22:13**
Data file Sample Info. Line: LCDL94;LCDL94;1;3;LCSD;;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.574(-0.003) | 651 | 65 | 197881 ( 8) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 960792 ( 8) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 770857 ( 5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.003) | 3470 | 152 | 444208 ( 3) | 50.00 | |

| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144(-0.001) | 113 | 254910 | 54.332 | 109% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 59616 | 51.099 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 990078 | 50.303 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.751( 0.000) | 95 | 391537 | 53.520 | 107% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 28) Methylene Chloride | (2) | 3.578(-0.000) | 84 | 97979 | 21.314 | 21.31 | | | 2 | 4 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915(-0.000) | 73 | 292667 | 22.958 | 22.96 | | | 0.5 | 1 |
| 36) 1,1-Dichloroethane | (2) | 4.558(-0.000) | 63 | 166983 | 21.765 | 21.77 | | | 0.5 | 1 |
| 42) cis-1,2-Dichloroethene | (2) | 5.414(-0.000) | 96 | 102836 | 21.981 | 21.98 | | | 0.5 | 1 |
| 51) Chloroform | (2) | 5.922(-0.000) | 83 | 173335 | 23.703 | 23.70 | | | 0.5 | 1 |
| 60) Benzene | (2) | 6.629(-0.000) | 78 | 370376 | 21.125 | 21.12 | | | 0.5 | 1 |
| 61) 1,2-Dichloroethane | (2) | 6.719(-0.000) | 62 | 155902 | 26.284 | 26.28 | | | 0.5 | 1 |
| 71) Trichloroethene | (2) | 7.542( 0.000) | 95 | 99154 | 21.884 | 21.88 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.224(-0.000) | 92 | 238979 | 20.894 | 20.89 | | | 0.5 | 1 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745(-0.000) | 97 | 94331 | 21.402 | 21.40 | | | 0.5 | 1 |
| 93) Tetrachloroethene | (3) | 9.822(-0.000) | 166 | 110349 | 21.813 | 21.81 | | | 0.5 | 1 |
| 97) Dibromochloromethane | (3) | 10.143(-0.000) | 129 | 97305 | 21.315 | 21.31 | | | 0.5 | 1 |
| 99) 1,2-Dibromoethane | (3) | 10.259(-0.000) | 107 | 103029 | 21.353 | 21.35 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831( 0.000) | 91 | 466324 | 21.136 | 21.14 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 364938 | 42.487 | 42.49 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291(-0.000) | 106 | 174626 | 20.443 | 20.44 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 539564 | 62.930 | 62.93 | | | 0.5 | 1 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857(-0.000) | 83 | 152916 | 19.394 | 19.39 | | | 0.5 | 1 |
| 148) Naphthalene | (4) | 14.188(-0.000) | 128 | 560045 | 19.859 | 19.86 | | | 1 | 5 |

Digitally signed by Kevin Kelly on 07/31/2017 at 23:41. Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17jul31b.b/ll31s42.d Injection date and time: **31-JUL-2017 22:13**
Data file Sample Info. Line: LCDL94;LCDL94;1;3;LCSD;;DODWW;;ll31b05; Instrument ID: **HP09915.i** Batch: **L172122AA**
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Blank Data file reference: **/chem/HP09915.i/17jul31b.b/ll31b05.d**

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: **24689**
Calibration date and time (Last Method Edit): 31-JUL-2017 21:58
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17jul31b.b/ll31c05.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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WAS LEFT
BLANK INTENTIONALLY

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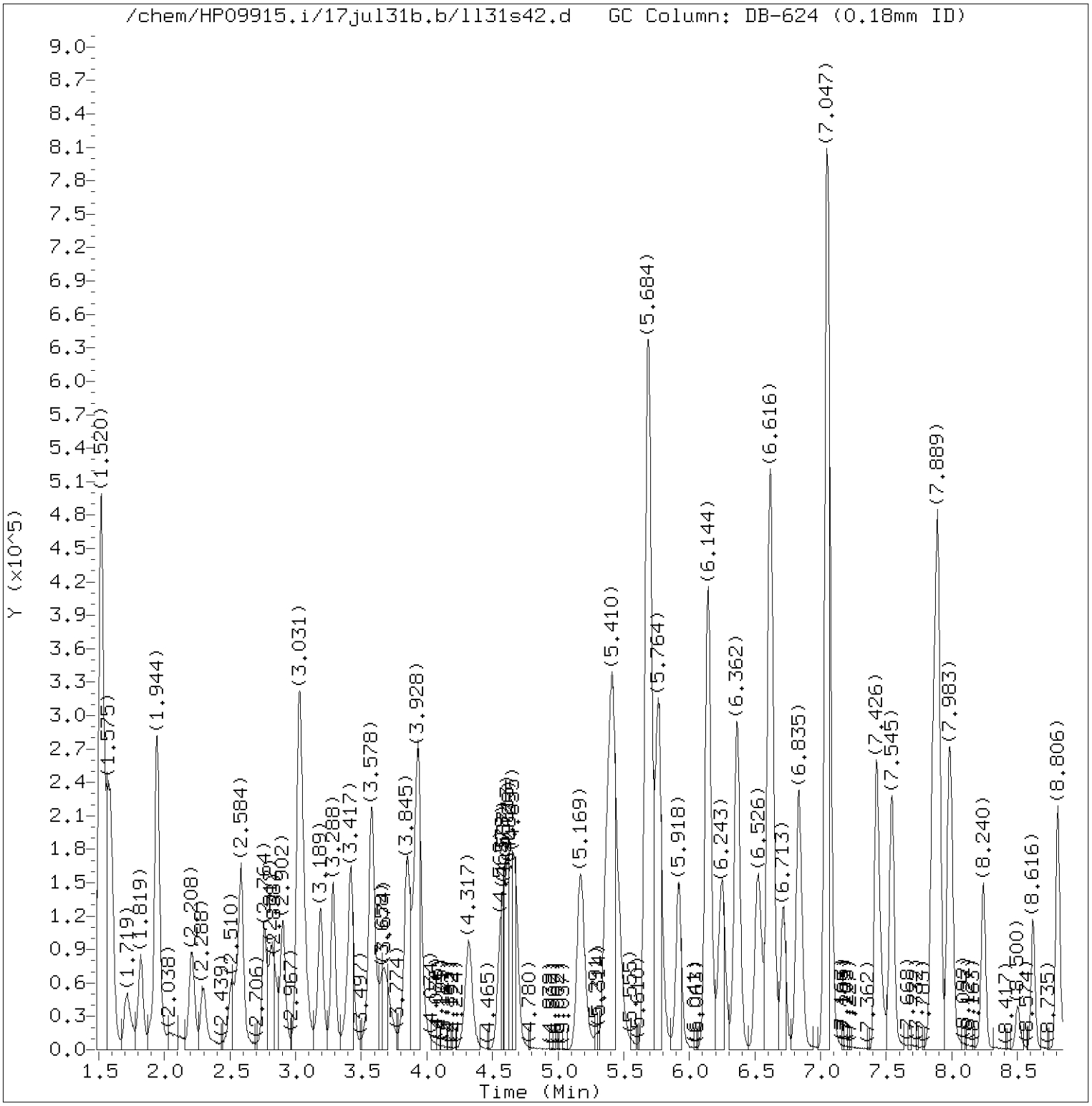
Total number of targets = 19

Digitally signed by Kevin Kelly on 07/31/2017 at 23:41. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Kelly E. Keller on 08/01/2017 at 19:37. PARALLAX ID: kek01027




Total Ion Chromatogram (TIC)

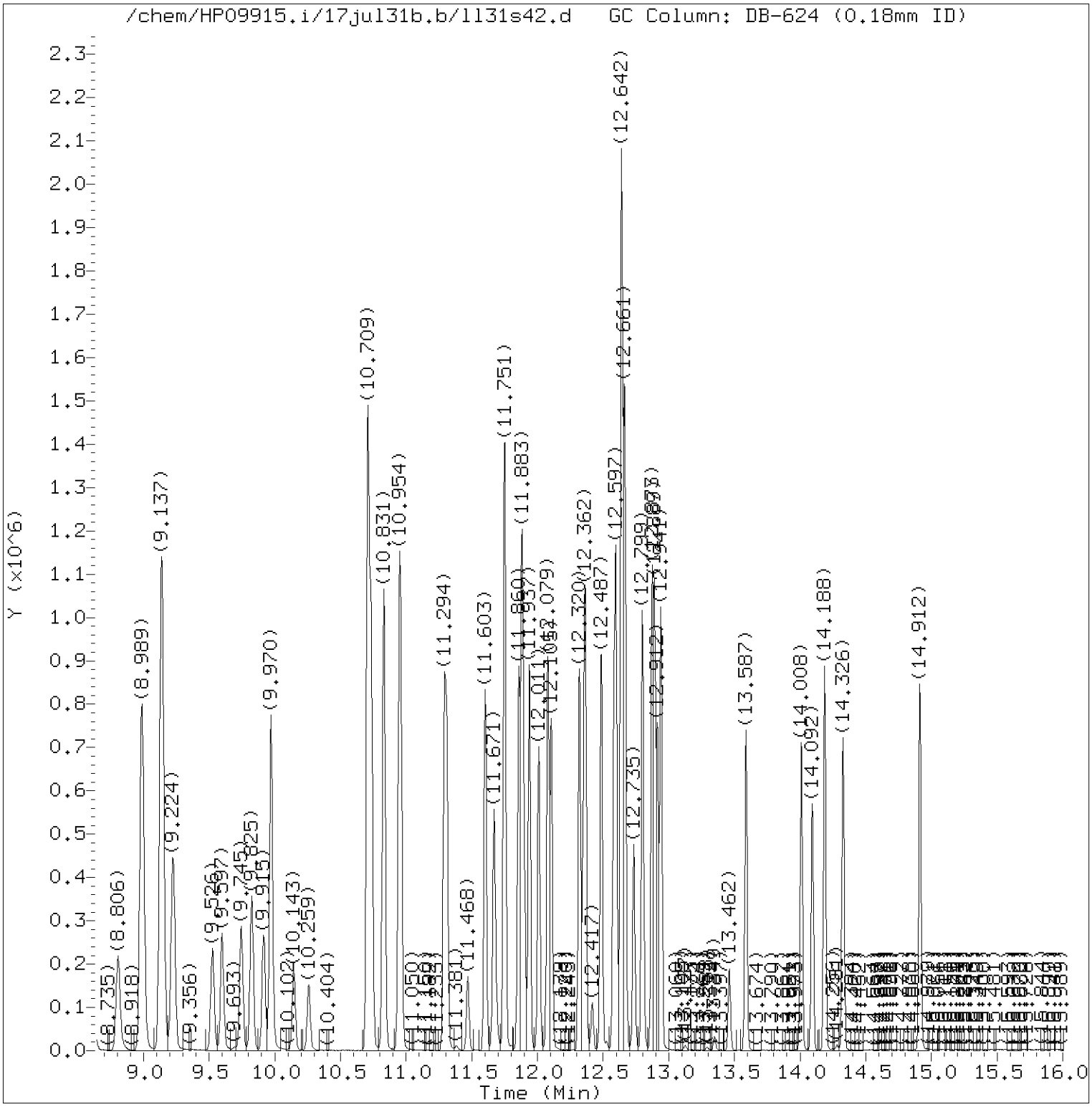
Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s42.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 22:13 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Sample Name: LCDL94 Lab Sample ID: LCDL94

Digitally signed by Kevin Kelly
on 07/31/2017 at 23:41.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s42.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 22:13 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Sample Name: LCDL94 Lab Sample ID: LCDL94

Digitally signed by Kevin Kelly
on 07/31/2017 at 23:41.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17jul31b.b/ll31s42.d Instrument ID: HP09915.i
Injection date and time: 31-JUL-2017 22:13 Analyst ID: kk10002

Method used: /chem/HP09915.i/17jul31b.b/m8260c5.m Sublist used: 24689
Calibration date and time: 31-JUL-2017 21:58
Date, time and analyst ID of latest file update: 31-Jul-2017 22:53 kk10002

Sample Name: LCDL94 Lab Sample ID: LCDL94

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 197881 | 250.000 |
| 28) Methylene Chloride | (2) | 3.578 | 84 | 97979 | 21.314 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 292667 | 22.958 |
| 36) 1,1-Dichloroethane | (2) | 4.558 | 63 | 166983 | 21.765 |
| 42) cis-1,2-Dichloroethene | (2) | 5.414 | 96 | 102836 | 21.981 |
| 51) Chloroform | (2) | 5.922 | 83 | 173335 | 23.703 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 254910 | 54.332 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 59616 | 51.099 |
| 60) Benzene | (2) | 6.629 | 78 | 370376 | 21.125 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 155902 | 26.284 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 960792 | 50.000 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 99154 | 21.884 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 990078 | 50.303 |
| 88) Toluene | (3) | 9.224 | 92 | 238979 | 20.894 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 94331 | 21.402 |
| 93) Tetrachloroethene | (3) | 9.822 | 166 | 110349 | 21.813 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 97305 | 21.315 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 103029 | 21.353 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 770857 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 466324 | 21.136 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 364938 | 42.487 |
| 107) o-Xylene | (3) | 11.291 | 106 | 174626 | 20.443 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 391537 | 53.520 |
| 108) Xylene (Total) | (3) | | 106 | 539564 | 62.930 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 152916 | 19.394 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 444208 | 50.000 |
| 148) Naphthalene | (4) | 14.188 | 128 | 560045 | 19.859 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 07/31/2017 at 23:41.
Target 3.5 esignature user ID: kk10002

# Semivolatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Semivolatiles by GC/MS

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## GC/MS Semivolatiles

**Fraction: Semivolatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9121674 | GWTS-EFF1-072517 | X | | 1 | |
| 9121676 | GWTS-EFF1DUP-072517 | X | | 1 | Field Duplicate Sample |
| 9121680 | GWTS-INF1-072517 | X | | 1 | |
| 9121683 | GWTS-EFF2-072517 | X | | 1 | Unspiked |
| 9121684 | GWTS-EFF2-072517MS | X | | 1 | Matrix Spike |
| 9121685 | GWTS-EFF2-072517MSD | X | | 1 | Matrix Spike Duplicate |
| 9121693 | GWTS-INF2-072517 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## GC/MS Semivolatiles

**Fraction: Semivolatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Semivolatiles by GC/MS

eurofins | Lancaster Laboratories Environmental

# Quality Control Reference List
## GC/MS Semivolatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

**Fraction: Semivolatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| SVOCs 8270D GWTS | 17208WAC026 | SBLKWC208 | 08/02/2017 20:02:00 |
| | | 208WCLCS | 08/02/2017 20:29:00 |
| | | 9121674 | 08/03/2017 02:00:00 |
| | | 9121676 | 08/03/2017 02:28:00 |
| | | 9121680 | 08/03/2017 02:55:00 |
| | | 9121683 UNSPK | 08/03/2017 03:23:00 |
| | | 9121684 MS | 08/03/2017 03:51:00 |
| | | 9121685 MSD | 08/03/2017 04:18:00 |
| | | 9121693 | 08/03/2017 04:46:00 |

**Quality Control Summary**
**Method Blank**
**GC/MS Semivolatiles**
**SDG: KR191**
**Matrix: LIQUID**

**Fraction: Semivolatiles by GC/MS**

| 17208WAC026 / SBLKWC208<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Naphthalene | 08/02/17 | N.D. | ug/l | 0.10 | 0.40 | 0.50 |
| 2-Methylnaphthalene | 08/02/17 | N.D. | ug/l | 0.10 | 0.20 | 0.50 |
| 1-Methylnaphthalene | 08/02/17 | N.D. | ug/l | 0.10 | 0.20 | 0.50 |
| Pyrene | 08/02/17 | N.D. | ug/l | 0.10 | 0.20 | 0.50 |
| bis(2-Ethylhexyl)phthalate | 08/02/17 | N.D. | ug/l | 2.0 | 4.0 | 5.0 |

**Quality Control Summary**
**Surrogates**
**GC/MS Semivolatiles**
**SDG: KR191**
**Matrix: LIQUID**

**Fraction: Semivolatiles by GC/MS**

| 17208WAC026 | 2-Fluorobiphenyl | | Nitrobenzene-d5 | | Terphenyl-d14 | |
|---|---|---|---|---|---|---|
| | Spike Added | 100 ug/l | Spike Added | 100 ug/l | Spike Added | 100 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| SBLKWC208 | 77 | 44 - 119 | 84 | 44 - 120 | 96 | 50 - 134 |
| 208WCLCS | 81 | 44 - 119 | 86 | 44 - 120 | 89 | 50 - 134 |
| 9121674 | 87 | 44 - 119 | 87 | 44 - 120 | 94 | 50 - 134 |
| 9121676 | 87 | 44 - 119 | 85 | 44 - 120 | 93 | 50 - 134 |
| 9121680 | 84 | 44 - 119 | 83 | 44 - 120 | 93 | 50 - 134 |
| 9121683 UNSPK | 83 | 44 - 119 | 79 | 44 - 120 | 88 | 50 - 134 |
| 9121684 MS | 87 | 44 - 119 | 87 | 44 - 120 | 91 | 50 - 134 |
| 9121685 MSD | 84 | 44 - 119 | 83 | 44 - 120 | 84 | 50 - 134 |
| 9121693 | 82 | 44 - 119 | 86 | 44 - 120 | 91 | 50 - 134 |

## GC/MS Semivolatiles

**Fraction: Semivolatiles by GC/MS**

| UNSPK: 9121683<br>MS: 9121684<br>MSD: 9121685<br>**Analyte** | Batch: **17208WAC026** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121685, 9121693 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l MS/MSD** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Naphthalene | 50.81 / 50.4 | N.D. | 43.51 | 41.67 | 86 | 83 | 40-121 | 4 | 20 |
| 2-Methylnaphthalene | 50.81 / 50.4 | N.D. | 42.78 | 41.46 | 84 | 82 | 40-121 | 3 | 20 |
| 1-Methylnaphthalene | 50.81 / 50.4 | N.D. | 45.07 | 43.54 | 89 | 86 | 41-119 | 3 | 20 |
| Pyrene | 50.81 / 50.4 | N.D. | 48.53 | 42.75 | 96 | 85 | 57-126 | 13 | 20 |
| bis(2-Ethylhexyl)phthalate | 50.81 / 50.4 | N.D. | 48.22 | 41.51 | 95 | 82 | 55-135 | 15 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR191**
**Matrix: LIQUID**

## GC/MS Semivolatiles

**Fraction: Semivolatiles by GC/MS**

| LCS: 208WCLCS | Batch: **17208WAC026** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121685, 9121693 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Naphthalene | 50 | 39.12 | NA | 78 | NA | 40-121 | NA | NA |
| 2-Methylnaphthalene | 50 | 37.32 | NA | 75 | NA | 40-121 | NA | NA |
| 1-Methylnaphthalene | 50 | 39.95 | NA | 80 | NA | 41-119 | NA | NA |
| Pyrene | 50 | 47.2 | NA | 94 | NA | 57-126 | NA | NA |
| bis(2-Ethylhexyl)phthalate | 50 | 46.79 | NA | 94 | NA | 55-135 | NA | NA |

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: dg0770.d DFTPP Injection Date: 07/26/17

Instrument ID: HP19760 DFTPP Injection Time: 08:46

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 10.0 - 80.00% of mass 198 | 46.5 |
| 68 | Less than 2.0% of mass 69 | 0.78 ( 1.61)1 |
| 69 | Mass 69 relative abundance | 48.5 |
| 70 | Less than 2.0% of mass 69 | 0.12 ( 0.24)1 |
| 127 | 10.0 - 80.00% of mass 198 | 48.9 |
| 197 | Less than 2.0% of mass 198 | 0.81 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.00 to 9.00% of mass 198 | 6.9 |
| 275 | 10.0 - 60.0% of mass 198 | 22.1 |
| 365 | Greater than 1.00% of mass 198 | 2.26 |
| 441 | Present, and less than mass 443 | 10.7 |
| 442 | Greater than 50.00% of mass 198 | 68.6 |
| 443 | 15.00 - 24.00% of mass 442 | 13.2 ( 19.3)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | rvSTD1577 - SSTD7.5 | dg0771.d | 07/26/17 | 09:08 |
| 02 | rvSTD1577 - SSTD.125 | dg0772.d | 07/26/17 | 09:52 |
| 03 | rvSTD1577 - SSTD30 | dg0773.d | 07/26/17 | 10:19 |
| 04 | rvSTD1577 - SSTD20 | dg0774.d | 07/26/17 | 10:47 |
| 05 | rvSTD1577 - SSTD12.5 | dg0775.d | 07/26/17 | 11:15 |
| 06 | rvSTD1577 - SSTD3.75 | dg0776.d | 07/26/17 | 11:42 |
| 07 | rvSTD1577 - SSTD1.25 | dg0777.d | 07/26/17 | 12:10 |
| 08 | rvSTD1577 - SSTD.25 | dg0778.d | 07/26/17 | 12:38 |
| 09 | rvMDL1577 - SSTD0.125 | dg0779.d | 07/26/17 | 13:05 |
| 10 | PAHMDL1577 - SSTD0.025 | dg0780.d | 07/26/17 | 13:33 |
| 11 | rvICV1147 - SSTD12.5 | dg0781.d | 07/26/17 | 14:01 |
| 12 | rvBASICV0637 - SSTD12.5 | dg0782.d | 07/26/17 | 14:28 |



FORM V SV

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: dh0100a.d DFTPP Injection Date: 08/02/17

Instrument ID: HP19760 DFTPP Injection Time: 19:10

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 10.0 - 80.00% of mass 198 | 48.4 |
| 68 | Less than 2.0% of mass 69 | 0.9 ( 1.78)1 |
| 69 | Mass 69 relative abundance | 50.5 |
| 70 | Less than 2.0% of mass 69 | 0.27 ( 0.54)1 |
| 127 | 10.0 - 80.00% of mass 198 | 49.0 |
| 197 | Less than 2.0% of mass 198 | 1.03 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.00 to 9.00% of mass 198 | 6.71 |
| 275 | 10.0 - 60.0% of mass 198 | 23.6 |
| 365 | Greater than 1.00% of mass 198 | 2.44 |
| 441 | Present, and less than mass 443 | 12.3 |
| 442 | Greater than 50.00% of mass 198 | 76.6 |
| 443 | 15.00 - 24.00% of mass 442 | 14.6 ( 19.0)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | rvSTD2077 - SSTD7.5 | dh0101.d | 08/02/17 | 19:24 |
| 02 | SBLKWC208 | dh0102.d | 08/02/17 | 20:02 |
| 03 | 208WCLCS | dh0103.d | 08/02/17 | 20:29 |
| 04 | SBLKWG213 | dh0104.d | 08/02/17 | 20:57 |
| 05 | 213WGLCS | dh0105.d | 08/02/17 | 21:24 |
| 06 | 213WGLCSD | dh0106.d | 08/02/17 | 21:52 |
| 07 | 9122418 | dh0123.d | 08/02/17 | 23:15 |
| 08 | 9122419 | dh0124.d | 08/02/17 | 23:42 |
| 09 | 9122420 | dh0125.d | 08/03/17 | 00:10 |
| 10 | 9122421 | dh0126.d | 08/03/17 | 00:37 |
| 11 | 9122422 | dh0127.d | 08/03/17 | 01:05 |
| 12 | 9122424 | dh0128.d | 08/03/17 | 01:33 |
| 13 | 9121674 | dh0116.d | 08/03/17 | 02:00 |
| 14 | 9121676 | dh0117.d | 08/03/17 | 02:28 |
| 15 | 9121680 | dh0118.d | 08/03/17 | 02:55 |
| 16 | 9121683 | dh0119.d | 08/03/17 | 03:23 |
| 17 | 9121684MS | dh0120.d | 08/03/17 | 03:51 |
| 18 | 9121685MSD | dh0121.d | 08/03/17 | 04:18 |



FORM V SV

5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: dh0100a.d DFTPP Injection Date: 08/02/17

Instrument ID: HP19760 DFTPP Injection Time: 19:10

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 10.0 - 80.00% of mass 198 | 48.4 |
| 68 | Less than 2.0% of mass 69 | 0.9 ( 1.78)1 |
| 69 | Mass 69 relative abundance | 50.5 |
| 70 | Less than 2.0% of mass 69 | 0.27 ( 0.54)1 |
| 127 | 10.0 - 80.00% of mass 198 | 49.0 |
| 197 | Less than 2.0% of mass 198 | 1.03 |
| 198 | Base peak, 100% relative abundance | 100.0 |
| 199 | 5.00 to 9.00% of mass 198 | 6.71 |
| 275 | 10.0 - 60.0% of mass 198 | 23.6 |
| 365 | Greater than 1.00% of mass 198 | 2.44 |
| 441 | Present, and less than mass 443 | 12.3 |
| 442 | Greater than 50.00% of mass 198 | 76.6 |
| 443 | 15.00 - 24.00% of mass 442 | 14.6 ( 19.0)2 |

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 19 | 9121693 | dh0122.d | 08/03/17 | 04:46 |
| 20 | rvSTD2077 | dh0129.d | 08/03/17 | 05:13 |
| 21 | 9112854 | dh0109.d | 08/03/17 | 05:41 |
| 22 | 9112856 | dh0110.d | 08/03/17 | 06:08 |

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP19760  Calibration Date(s): 07/26/17  07/26/17

Calibration Times: 09:08  12:38

Min $\overline{RRF}$ for SPCC(#) = 0.050  Max %RSD for CCC(*) = 30%

LAB FILE ID:RRF0.125 = dg0772.d  RRF0.25 = dg0778.d  RRF1.25 = dg0777.d  RRF3.75 = dg0776.d
RRF7.5 = dg0771.d  RRF12.5 = dg0775.d  RRF20 = dg0774.d  RRF30 = dg0773.d

| COMPOUND | RRF0.125 | RRF0.25 | RRF1.25 | RRF3.75 | RRF7.5 | RRF12.5 | RRF20 | RRF30 | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dioxane | | | 0.677 | 0.643 | 0.669 | 0.661 | 0.676 | 0.711 | 0.673 | 3 | AVG |
| N-Nitrosodimethylamine | | | 1.027 | 1.039 | 1.106 | 1.133 | 1.097 | 1.170 | 1.096 | 5 | AVG |
| Pyridine | | | 1.834 | 1.680 | 1.743 | 1.761 | 1.782 | 1.851 | 1.775 | 4 | AVG |
| 2-Picoline | | | 1.792 | 1.905 | 1.927 | 1.913 | 1.901 | 1.974 | 1.902 | 3 | AVG |
| N-Nitrosomethylethylamine | | | 0.728 | 0.760 | 0.791 | 0.794 | 0.788 | 0.811 | 0.779 | 4 | AVG |
| Methyl methanesulfonate | | | 0.852 | 0.873 | 0.919 | 0.891 | 0.890 | 0.921 | 0.891 | 3 | AVG |
| N-Nitrosodiethylamine | | 0.699 | 0.717 | 0.761 | 0.781 | 0.780 | 0.770 | 0.800 | 0.758 | 5 | AVG |
| Ethyl methanesulfonate | | 0.673 | 0.736 | 0.799 | 0.800 | 0.805 | 0.793 | 0.821 | 0.775 | 7 | AVG |
| Benzaldehyde | | | 1.386 | 1.428 | 1.401 | 1.322 | 1.137 | 1.008 | 1.280 | 13 | AVG |
| Phenol | | 2.008 | 1.941 | 2.290 | 2.307 | 2.310 | 2.277 | 2.325 | 2.208 | 7 | AVG |
| Aniline | | 2.336 | 2.419 | 2.634 | 2.685 | 2.635 | 2.634 | 2.707 | 2.579 | 6 | AVG |
| a-methylstyrene | | | 1.572 | 1.585 | 1.721 | 1.695 | 1.673 | 1.695 | 1.657 | 4 | AVG |
| bis(2-Chloroethyl)ether | | 1.502 | 1.602 | 1.649 | 1.719 | 1.644 | 1.622 | 1.677 | 1.631 | 4 | AVG |
| 2-Chlorophenol | | 1.337 | 1.355 | 1.450 | 1.481 | 1.489 | 1.461 | 1.503 | 1.439 | 5 | AVG |
| 1,3-Dichlorobenzene | | 1.595 | 1.563 | 1.611 | 1.614 | 1.616 | 1.597 | 1.630 | 1.604 | 1 | AVG |
| 1,4-Dichlorobenzene | | 1.591 | 1.566 | 1.621 | 1.636 | 1.639 | 1.610 | 1.656 | 1.617 | 2 | AVG |
| Benzyl alcohol | | | 0.954 | 0.979 | 1.108 | 1.090 | 1.079 | 1.109 | 1.053 | 7 | AVG |
| 1,2-Dichlorobenzene | | 1.512 | 1.460 | 1.551 | 1.540 | 1.543 | 1.521 | 1.551 | 1.525 | 2 | AVG |
| Indene | | | 2.785 | 2.772 | 3.022 | 3.010 | 2.933 | 3.009 | 2.922 | 4 | AVG |
| 2-Methylphenol | | 1.233 | 1.295 | 1.418 | 1.467 | 1.442 | 1.416 | 1.472 | 1.392 | 7 | AVG |
| 2,2'-oxybis(1-Chloropropane) | | 2.242 | 2.114 | 2.182 | 2.269 | 2.191 | 2.153 | 2.226 | 2.197 | 2 | AVG |
| bis(2-Chloroisopropyl)ether | | 2.242 | 2.114 | 2.182 | 2.269 | 2.191 | 2.153 | 2.226 | 2.197 | 2 | AVG |
| N-Nitrosopyrrolidine | | 0.706 | 0.763 | 0.797 | 0.845 | 0.843 | 0.829 | 0.859 | 0.806 | 7 | AVG |
| Acetophenone | | 2.021 | 2.078 | 2.268 | 2.328 | 2.240 | 2.144 | 2.151 | 2.176 | 5 | AVG |
| 4-Methylphenol | | 1.443 | 1.399 | 1.523 | 1.544 | 1.537 | 1.626 | 1.672 | 1.535 | 6 | AVG |
| Total Cresols | | 1.338 | 1.347 | 1.470 | 1.506 | 1.490 | 1.521 | 1.572 | 1.463 | 6 | AVG |
| N-Nitroso-di-n-propylamine | | 1.174 | 1.186 | 1.244 | 1.293 | 1.252 | 1.218 | 1.285 | 1.236 | 4 | AVG |
| N-Nitrosomorpholine | | | 0.978 | 1.020 | 1.050 | 1.027 | 0.999 | 1.029 | 1.017 | 2 | AVG |
| o-Toluidine | | 2.195 | 2.374 | 2.524 | 2.558 | 2.525 | 2.499 | 2.526 | 2.457 | 5 | AVG |
| Hexachloroethane | | | 0.661 | 0.656 | 0.673 | 0.669 | 0.647 | 0.667 | 0.662 | 1 | AVG |
| Nitrobenzene | | 0.448 | 0.462 | 0.486 | 0.504 | 0.486 | 0.483 | 0.480 | 0.478 | 4 | AVG |
| N-Nitrosopiperidine | | 0.171 | 0.178 | 0.194 | 0.204 | 0.203 | 0.200 | 0.200 | 0.193 | 7 | AVG |
| Isophorone | | 0.729 | 0.752 | 0.821 | 0.859 | 0.834 | 0.831 | 0.841 | 0.810 | 6 | AVG |
| 2-Nitrophenol | | 0.125 | 0.158 | 0.182 | 0.198 | 0.196 | 0.197 | 0.196 | 0.179 | 16 | AVG |
| 2,4-Dimethylphenol | | 0.340 | 0.373 | 0.415 | 0.434 | 0.422 | 0.421 | 0.423 | 0.404 | 8 | AVG |
| O,O,O-Triethylphosphorothioat | | | 0.176 | 0.186 | 0.193 | 0.188 | 0.189 | 0.188 | 0.187 | 3 | AVG |
| bis(2-Chloroethoxy)methane | | 0.523 | 0.497 | 0.526 | 0.556 | 0.529 | 0.526 | 0.516 | 0.525 | 3 | AVG |
| Benzoic acid | | | 0.140 | 0.208 | 0.264 | 0.312 | 0.314 | 0.326 | 0.261 | 28 | 1STDEG |
| 1,2,3,4-Tetrahydronaphthalene | | | 0.627 | 0.621 | 0.681 | 0.659 | 0.658 | 0.650 | 0.649 | 3 | AVG |
| 2,4-Dichlorophenol | | 0.265 | 0.289 | 0.317 | 0.327 | 0.323 | 0.319 | 0.316 | 0.308 | 7 | AVG |
| 1,2,4-Trichlorobenzene | | 0.342 | 0.340 | 0.351 | 0.362 | 0.352 | 0.350 | 0.349 | 0.349 | 2 | AVG |
| Naphthalene | 1.106 | 1.081 | 1.052 | 1.123 | 1.156 | 1.115 | 1.112 | 1.103 | 1.106 | 3 | AVG |
| 4-Chloroaniline | | 0.404 | 0.419 | 0.449 | 0.471 | 0.458 | 0.448 | 0.448 | 0.442 | 5 | AVG |
| 2,6-Dichlorophenol | | 0.286 | 0.284 | 0.315 | 0.324 | 0.316 | 0.317 | 0.313 | 0.308 | 5 | AVG |
| Hexachloropropene | | | 0.197 | 0.218 | 0.225 | 0.219 | 0.220 | 0.219 | 0.216 | 5 | AVG |
| Hexachlorobutadiene | | 0.201 | 0.190 | 0.202 | 0.206 | 0.195 | 0.197 | 0.197 | 0.198 | 3 | AVG |
| Quinoline | | | 0.656 | 0.700 | 0.731 | 0.712 | 0.703 | 0.692 | 0.699 | 4 | AVG |
| Caprolactam | | | 0.083 | 0.102 | 0.105 | 0.103 | 0.098 | 0.099 | 0.098 | 8 | AVG |
| N-Nitrosodi-n-butylamine | | | 0.286 | 0.320 | 0.415 | 0.401 | 0.397 | 0.396 | 0.369 | 14 | AVG |
| 4-Chloro-3-methylphenol | | 0.288 | 0.308 | 0.349 | 0.374 | 0.361 | 0.354 | 0.354 | 0.341 | 9 | AVG |
| Safrole | | | 0.265 | 0.288 | 0.302 | 0.294 | 0.292 | 0.289 | 0.288 | 4 | AVG |
| 2-Methylnaphthalene | 0.671 | 0.701 | 0.700 | 0.742 | 0.773 | 0.745 | 0.735 | 0.732 | 0.725 | 4 | AVG |

4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19760 Calibration Date(s): 07/26/17 07/26/17

Calibration Times: 09:08 12:38

Min $\overline{\text{RRF}}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID:RRF0.125 = dg0772.d RRF0.25 = dg0778.d RRF1.25 = dg0777.d RRF3.75 = dg0776.d
RRF7.5 = dg0771.d RRF12.5 = dg0775.d RRF20 = dg0774.d RRF30 = dg0773.d

| COMPOUND | RRF0.125 | RRF0.25 | RRF1.25 | RRF3.75 | RRF7.5 | RRF12.5 | RRF20 | RRF30 | $\overline{\text{RRF}}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.630 | 0.634 | 0.619 | 0.665 | 0.693 | 0.672 | 0.664 | 0.664 | 0.655 | 4 | AVG |
| Hexachlorocyclopentadiene | | | 0.308 | 0.325 | 0.337 | 0.326 | 0.320 | 0.307 | 0.320 | 4 | AVG |
| 1,2,4,5-Tetrachlorobenzene | | 0.594 | 0.611 | 0.645 | 0.635 | 0.637 | 0.638 | 0.651 | 0.630 | 3 | AVG |
| cis-Isosafrole | | | 0.481 | 0.541 | 0.577 | 0.549 | 0.558 | 0.564 | 0.545 | 6 | AVG |
| 2,4,6-Trichlorophenol | | 0.329 | 0.367 | 0.395 | 0.413 | 0.412 | 0.410 | 0.413 | 0.391 | 8 | AVG |
| 2,4,5-Trichlorophenol | | 0.354 | 0.396 | 0.429 | 0.437 | 0.425 | 0.430 | 0.432 | 0.415 | 7 | AVG |
| trans-Isosafrole | | | 0.504 | 0.543 | 0.567 | 0.551 | 0.557 | 0.570 | 0.549 | 4 | AVG |
| Isosafrole | | | 0.500 | 0.542 | 0.569 | 0.551 | 0.558 | 0.569 | 0.548 | 5 | AVG |
| 1,1'-Biphenyl | | 1.550 | 1.505 | 1.625 | 1.606 | 1.572 | 1.512 | 1.481 | 1.550 | 3 | AVG |
| 2-Chloronaphthalene | | 1.157 | 1.198 | 1.292 | 1.240 | 1.297 | 1.252 | 1.301 | 1.248 | 4 | AVG |
| 1-Chloronaphthalene | | 1.176 | 1.190 | 1.134 | 1.230 | 1.108 | 1.124 | 1.087 | 1.150 | 4 | AVG |
| Diphenyl ether | | 0.854 | 0.823 | 0.855 | 0.886 | 0.845 | 0.841 | 0.856 | 0.851 | 2 | AVG |
| 2-Nitroaniline | | 0.313 | 0.321 | 0.372 | 0.402 | 0.391 | 0.392 | 0.409 | 0.371 | 10 | AVG |
| 1,4-Naphthoquinone | | | 0.418 | 0.483 | 0.515 | 0.499 | 0.498 | 0.511 | 0.487 | 7 | AVG |
| 1,4-Dinitrobenzene | | | 0.160 | 0.185 | 0.199 | 0.199 | 0.202 | 0.207 | 0.192 | 9 | AVG |
| Dimethylphthalate | | | 1.320 | 1.372 | 1.399 | 1.366 | 1.360 | 1.393 | 1.368 | 2 | AVG |
| 1,3-Dinitrobenzene | | | 0.180 | 0.210 | 0.222 | 0.223 | 0.220 | 0.225 | 0.213 | 8 | AVG |
| 2,6-Dinitrotoluene | | 0.249 | 0.269 | 0.303 | 0.309 | 0.301 | 0.300 | 0.310 | 0.291 | 8 | AVG |
| Acenaphthylene | 1.578 | 1.612 | 1.662 | 1.737 | 1.822 | 1.763 | 1.745 | 1.764 | 1.710 | 5 | AVG |
| 3-Nitroaniline | | 0.252 | 0.282 | 0.318 | 0.339 | 0.343 | 0.343 | 0.356 | 0.319 | 12 | AVG |
| Acenaphthene | 1.380 | 1.282 | 1.241 | 1.300 | 1.329 | 1.292 | 1.284 | 1.290 | 1.300 | 3 | AVG |
| 2,4-Dinitrophenol | | | | 0.152 | 0.176 | 0.196 | 0.197 | 0.209 | 0.186 | 12 | AVG |
| 4-Nitrophenol | | | | 0.231 | 0.245 | 0.248 | 0.243 | 0.252 | 0.244 | 3 | AVG |
| Pentachlorobenzene | | 0.525 | 0.529 | 0.527 | 0.539 | 0.518 | 0.517 | 0.513 | 0.524 | 2 | AVG |
| 2,4-Dinitrotoluene | | | 0.352 | 0.388 | 0.419 | 0.420 | 0.416 | 0.422 | 0.403 | 7 | AVG |
| 2,4_2,6-Dinitrotoluenes | | 0.283 | 0.310 | 0.345 | 0.364 | 0.360 | 0.358 | 0.366 | 0.341 | 9 | AVG |
| Dibenzofuran | | 1.673 | 1.676 | 1.710 | 1.739 | 1.672 | 1.650 | 1.676 | 1.685 | 2 | AVG |
| 1-Naphthylamine | | | | 1.217 | 1.306 | 1.264 | 1.302 | 1.327 | 1.283 | 3 | AVG |
| 2,3,4,6-Tetrachlorophenol | | 0.236 | 0.280 | 0.312 | 0.341 | 0.342 | 0.337 | 0.345 | 0.313 | 13 | AVG |
| 2-Naphthylamine | | | | 1.175 | 1.249 | 1.226 | 1.245 | 1.267 | 1.232 | 3 | AVG |
| Diethylphthalate | | | 1.194 | 1.293 | 1.379 | 1.354 | 1.368 | 1.375 | 1.327 | 5 | AVG |
| Thionazin | | | 0.230 | 0.261 | 0.282 | 0.278 | 0.273 | 0.276 | 0.267 | 7 | AVG |
| Fluorene | 1.347 | 1.315 | 1.287 | 1.344 | 1.371 | 1.349 | 1.329 | 1.371 | 1.339 | 2 | AVG |
| 4-Chlorophenyl-phenylether | | 0.631 | 0.630 | 0.658 | 0.654 | 0.648 | 0.633 | 0.640 | 0.642 | 2 | AVG |
| 5-Nitro-o-toluidine | | 0.315 | 0.358 | 0.381 | 0.408 | 0.410 | 0.402 | 0.404 | 0.382 | 9 | AVG |
| 4-Nitroaniline | | 0.258 | 0.294 | 0.328 | 0.353 | 0.346 | 0.342 | 0.349 | 0.324 | 11 | AVG |
| 4,6-Dinitro-2-methylphenol | | | | 0.114 | 0.125 | 0.134 | 0.135 | 0.136 | 0.129 | 7 | AVG |
| N-Nitrosodiphenylamine (1) | | 0.587 | 0.583 | 0.618 | 0.617 | 0.625 | 0.623 | 0.607 | 0.609 | 3 | AVG |
| NDPA as diphenylamine | | 0.587 | 0.583 | 0.618 | 0.617 | 0.625 | 0.623 | 0.607 | 0.609 | 3 | AVG |
| 1,2-Diphenylhydrazine | | 0.831 | 0.841 | 0.888 | 0.880 | 0.877 | 0.879 | 0.862 | 0.865 | 3 | AVG |
| Tetraethyldithiopyrophosphate | | | 0.134 | 0.141 | 0.145 | 0.147 | 0.145 | 0.142 | 0.142 | 3 | AVG |
| 1,3,5-Trinitrobenzene | | | | 0.075 | 0.078 | 0.083 | 0.083 | 0.084 | 0.081 | 5 | AVG |
| Diallate (peak 1) | | | 0.372 | 0.394 | 0.396 | 0.401 | 0.401 | 0.394 | 0.393 | 3 | AVG |
| Phorate | | 0.443 | 0.511 | 0.560 | 0.577 | 0.564 | 0.563 | 0.561 | 0.540 | 9 | AVG |
| Phenacetin | | 0.303 | 0.361 | 0.418 | 0.421 | 0.427 | 0.426 | 0.422 | 0.397 | 12 | AVG |
| 4-Bromophenyl-phenylether | | 0.189 | 0.195 | 0.201 | 0.199 | 0.201 | 0.200 | 0.196 | 0.197 | 2 | AVG |
| Diallate (peak 2) | | | 0.309 | 0.317 | 0.320 | 0.324 | 0.327 | 0.327 | 0.321 | 2 | AVG |
| Diallate trans/cis | | | 0.362 | 0.381 | 0.383 | 0.388 | 0.388 | 0.383 | 0.381 | 3 | AVG |
| Hexachlorobenzene | 0.211 | 0.203 | 0.209 | 0.213 | 0.207 | 0.210 | 0.214 | 0.210 | 0.210 | 2 | AVG |
| Dimethoate | | | 0.294 | 0.344 | 0.350 | 0.355 | 0.353 | 0.342 | 0.340 | 7 | AVG |
| Atrazine | | | 0.193 | 0.215 | 0.206 | 0.199 | 0.190 | 0.174 | 0.196 | 7 | AVG |
| Pentachlorophenol | | | 0.091 | 0.119 | 0.129 | 0.141 | 0.143 | 0.142 | 0.127 | 16 | AVG |

(1) Cannot be separated from Diphenylamine
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP19760  Calibration Date(s): 07/26/17  07/26/17

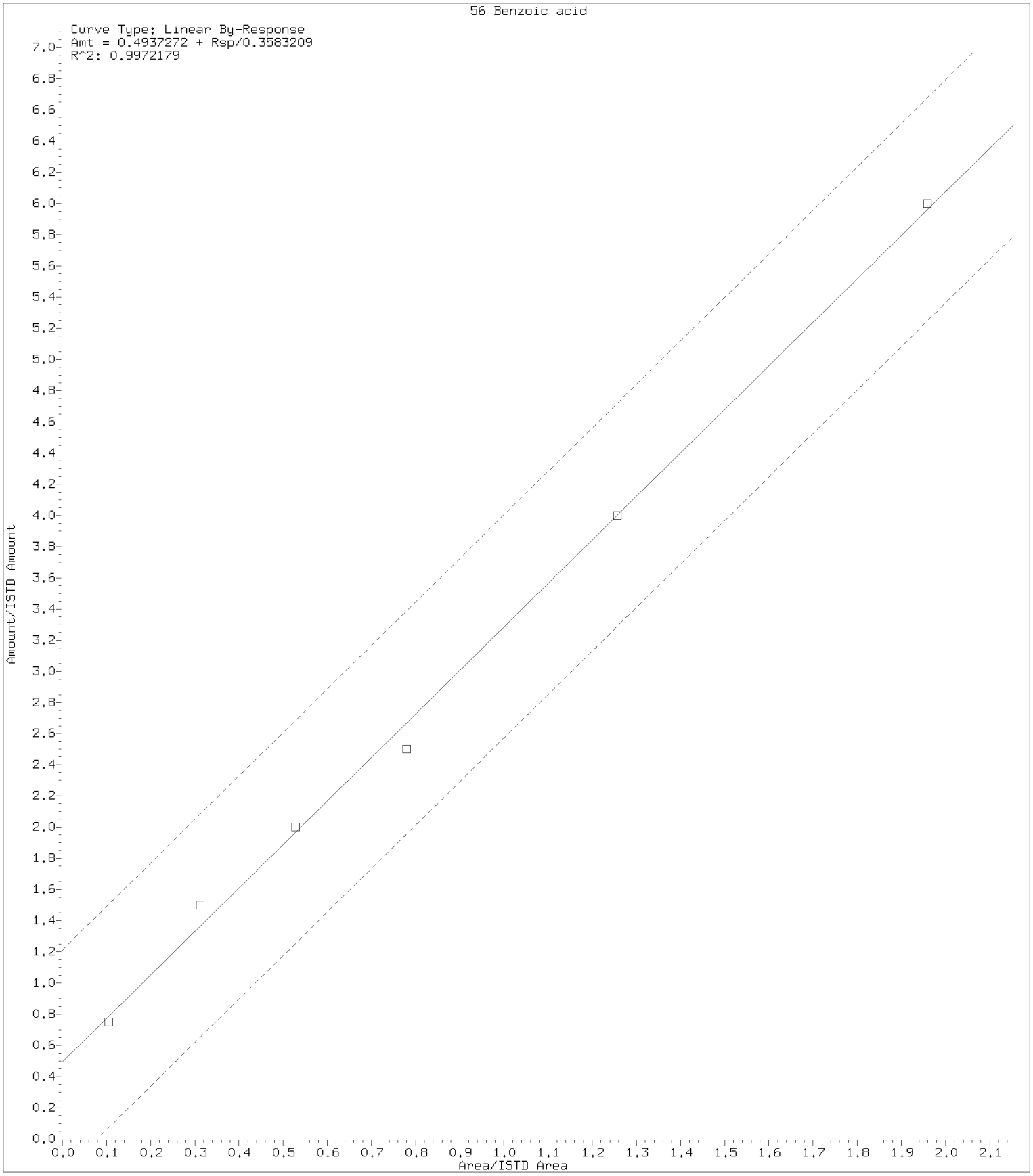
Calibration Times: 09:08  12:38

Min $\overline{RRF}$ for SPCC(#) = 0.050  Max %RSD for CCC(*) = 30%

LAB FILE ID: RRF0.125 = dg0772.d  RRF0.25 = dg0778.d  RRF1.25 = dg0777.d  RRF3.75 = dg0776.d
RRF7.5 = dg0771.d  RRF12.5 = dg0775.d  RRF20 = dg0774.d  RRF30 = dg0773.d

| COMPOUND | RRF0.125 | RRF0.25 | RRF1.25 | RRF3.75 | RRF7.5 | RRF12.5 | RRF20 | RRF30 | $\overline{RRF}$ | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Aminobiphenyl | | 0.398 | 0.429 | 0.478 | 0.489 | 0.495 | 0.493 | 0.475 | 0.465 | 8 | AVG |
| Pentachloronitrobenzene | | | 0.087 | 0.094 | 0.095 | 0.098 | 0.097 | 0.096 | 0.094 | 4 | AVG |
| Pronamide | | 0.265 | 0.311 | 0.347 | 0.362 | 0.363 | 0.361 | 0.355 | 0.338 | 11 | AVG |
| Dinoseb | | | 0.141 | 0.184 | 0.201 | 0.224 | 0.224 | 0.225 | 0.200 | 17 | AVG |
| Phenanthrene | 1.134 | 1.055 | 1.105 | 1.093 | 1.090 | 1.087 | 1.086 | 1.061 | 1.089 | 2 | AVG |
| Anthracene | 1.086 | 1.017 | 1.046 | 1.087 | 1.096 | 1.086 | 1.082 | 1.068 | 1.071 | 2 | AVG |
| Carbazole | | 0.887 | 0.943 | 1.028 | 1.029 | 1.028 | 1.020 | 1.003 | 0.991 | 6 | AVG |
| Methyl parathion | | | 0.210 | 0.265 | 0.277 | 0.289 | 0.286 | 0.279 | 0.268 | 11 | AVG |
| Di-n-butylphthalate | | | 1.089 | 1.224 | 1.253 | 1.285 | 1.273 | 1.243 | 1.228 | 6 | AVG |
| Parathion | | | 0.124 | 0.159 | 0.170 | 0.180 | 0.181 | 0.181 | 0.166 | 13 | AVG |
| 4-Nitroquinoline-1-oxide | | | | 0.101 | 0.122 | 0.136 | 0.139 | 0.142 | 0.128 | 13 | AVG |
| Octachlorostyrene | | | 0.074 | 0.076 | 0.082 | 0.083 | 0.083 | 0.082 | 0.080 | 5 | AVG |
| Isodrin | | 0.141 | 0.121 | 0.129 | 0.129 | 0.128 | 0.131 | 0.128 | 0.130 | 5 | AVG |
| Fluoranthene | 1.212 | 1.083 | 1.173 | 1.229 | 1.226 | 1.244 | 1.219 | 1.207 | 1.199 | 4 | AVG |
| Benzidine | | | | 0.661 | 0.680 | 0.661 | 0.665 | 0.626 | 0.659 | 3 | AVG |
| Pyrene | 1.109 | 1.085 | 1.106 | 1.096 | 1.102 | 1.080 | 1.083 | 1.058 | 1.090 | 2 | AVG |
| p-Dimethylaminoazobenzene | | 0.100 | 0.126 | 0.149 | 0.169 | 0.170 | 0.175 | 0.175 | 0.152 | 19 | AVG |
| Chlorobenzilate | | | 0.291 | 0.320 | 0.330 | 0.337 | 0.338 | 0.332 | 0.324 | 5 | AVG |
| 3,3'-Dimethylbenzidine | | | 0.519 | 0.627 | 0.693 | 0.678 | 0.678 | 0.662 | 0.643 | 10 | AVG |
| Butylbenzylphthalate | | | 0.400 | 0.462 | 0.479 | 0.485 | 0.492 | 0.489 | 0.468 | 7 | AVG |
| 2-Acetylaminofluorene | | | 0.297 | 0.385 | 0.423 | 0.453 | 0.464 | 0.475 | 0.416 | 16 | AVG |
| 3,3'-Dichlorobenzidine | | | 0.323 | 0.370 | 0.388 | 0.391 | 0.398 | 0.391 | 0.377 | 7 | AVG |
| 4,4'-Methylenebis(2-chloroani | | | | 0.190 | 0.197 | 0.201 | 0.203 | 0.199 | 0.198 | 3 | AVG |
| Benzo(a)anthracene | 0.878 | 0.835 | 0.910 | 0.973 | 1.029 | 0.999 | 1.009 | 1.002 | 0.954 | 7 | AVG |
| Chrysene | 0.839 | 0.831 | 0.895 | 0.928 | 0.935 | 0.929 | 0.931 | 0.918 | 0.901 | 5 | AVG |
| bis(2-Ethylhexyl)phthalate | | | 0.562 | 0.653 | 0.698 | 0.716 | 0.730 | 0.718 | 0.680 | 9 | AVG |
| 6-Methylchrysene | | | 0.607 | 0.648 | 0.678 | 0.691 | 0.707 | 0.699 | 0.672 | 6 | AVG |
| Di-n-octylphthalate | | | 1.175 | 1.418 | 1.565 | 1.582 | 1.570 | 1.551 | 1.477 | 11 | AVG |
| Benzo(b)fluoranthene | 1.206 | 1.100 | 1.185 | 1.248 | 1.307 | 1.270 | 1.268 | 1.283 | 1.233 | 5 | AVG |
| 7,12-Dimethylbenz[a]anthracen | | 0.402 | 0.457 | 0.524 | 0.553 | 0.535 | 0.565 | 0.565 | 0.515 | 12 | AVG |
| Benzo(k)fluoranthene | 1.137 | 1.152 | 1.149 | 1.247 | 1.232 | 1.255 | 1.214 | 1.182 | 1.196 | 4 | AVG |
| Benzo(a)pyrene | 1.061 | 0.981 | 1.058 | 1.165 | 1.203 | 1.206 | 1.197 | 1.210 | 1.135 | 8 | AVG |
| 3-Methylcholanthrene | | 0.373 | 0.421 | 0.483 | 0.534 | 0.529 | 0.530 | 0.542 | 0.488 | 14 | AVG |
| Dibenz(a,h)acridine | | | 0.768 | 0.885 | 0.948 | 0.974 | 0.978 | 0.978 | 0.922 | 9 | AVG |
| Dibenz(a,j)acridine | | | 0.787 | 0.918 | 0.991 | 1.006 | 1.005 | 0.993 | 0.950 | 9 | AVG |
| Indeno(1,2,3-cd)pyrene | 1.128 | 1.050 | 1.167 | 1.288 | 1.379 | 1.373 | 1.359 | 1.346 | 1.261 | 10 | AVG |
| Dibenz(a,h)anthracene | 0.840 | 0.854 | 0.928 | 1.080 | 1.179 | 1.138 | 1.125 | 1.125 | 1.034 | 13 | AVG |
| Benzo(g,h,i)perylene | 0.990 | 0.980 | 0.988 | 1.112 | 1.156 | 1.146 | 1.130 | 1.106 | 1.076 | 7 | AVG |
| Total PAHs | 1.115 | 1.068 | 1.060 | 1.113 | 1.135 | 1.095 | 1.075 | 1.061 | 1.090 | 3 | AVG |
| 2-Fluorophenol | | 1.389 | 1.381 | 1.481 | 1.532 | 1.527 | 1.510 | 1.549 | 1.481 | 5 | AVG |
| Phenol-d6 | | 1.738 | 1.865 | 1.972 | 2.016 | 2.020 | 1.978 | 2.035 | 1.946 | 6 | AVG |
| Nitrobenzene-d5 | | 0.443 | 0.455 | 0.487 | 0.503 | 0.485 | 0.483 | 0.483 | 0.477 | 4 | AVG |
| 2-Fluorobiphenyl | | 1.462 | 1.429 | 1.463 | 1.484 | 1.436 | 1.423 | 1.415 | 1.445 | 2 | AVG |
| 2,4,6-Tribromophenol | | 0.132 | 0.149 | 0.161 | 0.181 | 0.178 | 0.178 | 0.181 | 0.166 | 12 | AVG |
| Terphenyl-d14 | | 0.651 | 0.685 | 0.709 | 0.699 | 0.706 | 0.705 | 0.689 | 0.692 | 3 | AVG |
| | | | | | | | Average %RSD | | | 6 | |

4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.
Benzidine Levels in the 5,15,30,50,80,120 standards are 15,45,90,150,240,360 ng/ul, respectively.
Benzoic acid and 2,4-Dinitrophenol are at 15 ng/ul, 30 ng/ul,40 ng/ul in the 5,15,30 standards.




Digitally signed by Edward Monborne on 07/26/2017 at 18:01.
Target 3.5 esignature user ID: em10340

# Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP19760.i/17jul26a.b/dg0771.d SSTD7.5
/chem/HP19760.i/17jul26a.b/dg0772.d SSTD0.125
/chem/HP19760.i/17jul26a.b/dg0773.d SSTD030
/chem/HP19760.i/17jul26a.b/dg0774.d SSTD020
/chem/HP19760.i/17jul26a.b/dg0775.d SSTD12.5
/chem/HP19760.i/17jul26a.b/dg0776.d SSTD3.75
/chem/HP19760.i/17jul26a.b/dg0777.d SSTD1.25
/chem/HP19760.i/17jul26a.b/dg0778.d SSTD0.25

## Area Summary

File ID:

| Internal Standard Name | dg0771.d | dg0772.d | dg0773.d | dg0774.d | dg0775.d | dg0776.d | dg0777.d | dg0778.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene-d4 | 256945 | 197775 | 199945 | 196806 | 249344 | 202267 | 195283 | 187569 | 210742 | 13 | Yes |
| Naphthalene-d8 | 957205 | 744727 | 774284 | 737720 | 950508 | 763572 | 744175 | 719765 | 798994 | 12 | Yes |
| Acenaphthene-d10 | 538334 | 406304 | 419080 | 407197 | 531507 | 424214 | 404492 | 391722 | 440356 | 13 | Yes |
| Phenanthrene-d10 | 1018234 | 734989 | 798204 | 754308 | 989945 | 763716 | 722983 | 700363 | 810343 | 15 | Yes |
| Pyrene-d10 | 1184235 | 846180 | 930201 | 880105 | 1174146 | 906864 | 849088 | 822488 | 949163 | 15 | Yes |
| Perylene-d12 | 929036 | 616910 | 778460 | 733236 | 946452 | 706131 | 661420 | 599535 | 746398 | 18 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

## RT Summary

File ID:

| Internal Standard Name | dg0771.d | dg0772.d | dg0773.d | dg0774.d | dg0775.d | dg0776.d | dg0777.d | dg0778.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene-d4 | 6.907 | 6.907 | 6.913 | 6.913 | 6.907 | 6.907 | 6.907 | 6.907 | 6.909 |
| Naphthalene-d8 | 8.848 | 8.842 | 8.848 | 8.848 | 8.848 | 8.842 | 8.842 | 8.842 | 8.845 |
| Acenaphthene-d10 | 11.634 | 11.628 | 11.634 | 11.634 | 11.634 | 11.628 | 11.628 | 11.628 | 11.631 |
| Phenanthrene-d10 | 13.517 | 13.511 | 13.523 | 13.517 | 13.517 | 13.511 | 13.511 | 13.511 | 13.515 |
| Pyrene-d10 | 15.510 | 15.505 | 15.510 | 15.510 | 15.510 | 15.504 | 15.504 | 15.504 | 15.507 |
| Perylene-d12 | 20.016 | 20.016 | 20.022 | 20.016 | 20.016 | 20.010 | 20.010 | 20.010 | 20.014 |

Comments:_____

_____



Report generated on 07/26/2017 at 17:20

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS | LAB CODE: LANCAS | INSTRUMENT: HP19760

Method: SW-846 8270D MINI | File ID: dg0781.d

ICV SAMPLE ID: rvICV1147 | BATCH: 17JUL26A026 | Sample Name: SSTD12.5

| COMPOUND NAME | TRUE CONC. | ACTUAL CONC. | % DRIFT | %D window | INSPEC |
|---|---|---|---|---|---|
| 1,4-Dioxane | 12.50 | 12.06 | -4 | 30 | YES |
| N-Nitrosodimethylamine | 12.50 | 13.00 | 4 | 30 | YES |
| Pyridine | 12.50 | 12.73 | 2 | 30 | YES |
| 2-Picoline | 12.50 | 12.90 | 3 | 30 | YES |
| N-Nitrosomethylethylamine | 12.50 | 12.24 | -2 | 30 | YES |
| Methyl methanesulfonate | 12.50 | 13.27 | 6 | 30 | YES |
| N-Nitrosodiethylamine | 12.50 | 12.23 | -2 | 30 | YES |
| Ethyl methanesulfonate | 12.50 | 12.45 | 0 | 30 | YES |
| Phenol | 12.50 | 13.16 | 5 | 30 | YES |
| Aniline | 12.50 | 12.03 | -4 | 30 | YES |
| bis(2-Chloroethyl)ether | 12.50 | 13.04 | 4 | 30 | YES |
| 2-Chlorophenol | 12.50 | 13.28 | 6 | 30 | YES |
| 1,3-Dichlorobenzene | 12.50 | 13.07 | 5 | 30 | YES |
| 1,4-Dichlorobenzene | 12.50 | 13.31 | 6 | 30 | YES |
| Benzyl alcohol | 12.50 | 12.84 | 3 | 30 | YES |
| 1,2-Dichlorobenzene | 12.50 | 13.36 | 7 | 30 | YES |
| Indene | 12.50 | 12.21 | -2 | 30 | YES |
| 2-Methylphenol | 12.50 | 13.25 | 6 | 30 | YES |
| 2,2'-oxybis(1-Chloropropane | 12.50 | 12.81 | 2 | 30 | YES |
| bis(2-Chloroisopropyl)ether | 12.50 | 12.81 | 2 | 30 | YES |
| N-Nitrosopyrrolidine | 12.50 | 12.56 | 0 | 30 | YES |
| Acetophenone | 12.50 | 13.16 | 5 | 30 | YES |
| 4-Methylphenol | 12.50 | 13.78 | 10 | 30 | YES |
| N-Nitroso-di-n-propylamine | 12.50 | 13.15 | 5 | 30 | YES |
| N-Nitrosomorpholine | 12.50 | 12.59 | 1 | 30 | YES |
| o-Toluidine | 12.50 | 12.76 | 2 | 30 | YES |
| Total Cresols | 25.00 | 27.04 | 8 | 30 | YES |
| Hexachloroethane | 12.50 | 12.98 | 4 | 30 | YES |
| Nitrobenzene | 12.50 | 13.16 | 5 | 30 | YES |
| N-Nitrosopiperidine | 12.50 | 12.14 | -3 | 30 | YES |
| Isophorone | 12.50 | 13.42 | 7 | 30 | YES |
| 2-Nitrophenol | 12.50 | 13.90 | 11 | 30 | YES |
| 2,4-Dimethylphenol | 12.50 | 10.74 | -14 | 30 | YES |
| bis(2-Chloroethoxy)methane | 12.50 | 13.60 | 9 | 30 | YES |
| Benzoic acid | 25.00 | 21.74 | -13 | 30 | YES |
| O,O,O-Triethylphosphorothio | 12.50 | 12.61 | 1 | 30 | YES |
| 2,4-Dichlorophenol | 12.50 | 13.41 | 7 | 30 | YES |

NC = Could not calculate

Comments: _____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS | LAB CODE: LANCAS | INSTRUMENT: HP19760

Method: SW-846 8270D MINI | File ID: dg0781.d

ICV SAMPLE ID: rvICV1147 | BATCH: 17JUL26A026 | Sample Name: SSTD12.5

| COMPOUND NAME | TRUE CONC. | ACTUAL CONC. | % DRIFT | %D window | INSPEC |
|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 12.50 | 13.34 | 7 | 30 | YES |
| Naphthalene | 12.50 | 13.34 | 7 | 30 | YES |
| 4-Chloroaniline | 12.50 | 13.08 | 5 | 30 | YES |
| 2,6-Dichlorophenol | 12.50 | 12.80 | 2 | 30 | YES |
| Hexachloropropene | 12.50 | 14.43 | 15 | 30 | YES |
| Hexachlorobutadiene | 12.50 | 13.17 | 5 | 30 | YES |
| Quinoline | 12.50 | 12.90 | 3 | 30 | YES |
| N-Nitrosodi-n-butylamine | 12.50 | 10.62 | -15 | 30 | YES |
| 4-Chloro-3-methylphenol | 12.50 | 13.59 | 9 | 30 | YES |
| Safrole | 12.50 | 12.41 | -1 | 30 | YES |
| 2-Methylnaphthalene | 12.50 | 13.31 | 6 | 30 | YES |
| 1-Methylnaphthalene | 12.50 | 13.59 | 9 | 30 | YES |
| Hexachlorocyclopentadiene | 25.00 | 24.24 | -3 | 30 | YES |
| 1,2,4,5-Tetrachlorobenzene | 12.50 | 12.96 | 4 | 30 | YES |
| cis-Isosafrole | 1.50 | 1.62 | 8 | 30 | YES |
| 2,4,6-Trichlorophenol | 12.50 | 13.47 | 8 | 30 | YES |
| 2,4,5-Trichlorophenol | 12.50 | 13.51 | 8 | 30 | YES |
| trans-Isosafrole | 11.00 | 12.72 | 16 | 30 | YES |
| 1,1'-Biphenyl | 12.50 | 13.34 | 7 | 30 | YES |
| 2-Chloronaphthalene | 12.50 | 12.97 | 4 | 30 | YES |
| Isosafrole | 12.50 | 14.33 | 15 | 30 | YES |
| 1-Chloronaphthalene | 12.50 | 13.26 | 6 | 30 | YES |
| Diphenyl ether | 12.50 | 12.94 | 4 | 30 | YES |
| 2-Nitroaniline | 12.50 | 13.65 | 9 | 30 | YES |
| 1,4-Naphthoquinone | 15.63 | 16.06 | 3 | 30 | YES |
| 1,4-Dinitrobenzene | 12.50 | 13.19 | 6 | 30 | YES |
| Dimethylphthalate | 12.50 | 12.99 | 4 | 30 | YES |
| 1,3-Dinitrobenzene | 12.50 | 12.90 | 3 | 30 | YES |
| 2,6-Dinitrotoluene | 12.50 | 13.48 | 8 | 30 | YES |
| Acenaphthylene | 12.50 | 13.78 | 10 | 30 | YES |
| 3-Nitroaniline | 12.50 | 13.67 | 9 | 30 | YES |
| Acenaphthene | 12.50 | 13.43 | 7 | 30 | YES |
| 2,4-Dinitrophenol | 25.00 | 27.15 | 9 | 30 | YES |
| 4-Nitrophenol | 12.50 | 13.07 | 5 | 30 | YES |
| Pentachlorobenzene | 12.50 | 12.14 | -3 | 30 | YES |
| 2,4-Dinitrotoluene | 12.50 | 13.37 | 7 | 30 | YES |
| Dibenzofuran | 12.50 | 13.20 | 6 | 30 | YES |

NC = Could not calculate

Comments: _____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS | LAB CODE: LANCAS | INSTRUMENT: HP19760

Method: SW-846 8270D MINI | File ID: dg0781.d

ICV SAMPLE ID: rvICV1147 | BATCH: 17JUL26A026 | Sample Name: SSTD12.5

| COMPOUND NAME | TRUE CONC. | ACTUAL CONC. | % DRIFT | %D window | INSPEC |
|---|---|---|---|---|---|
| 2,4_2,6-Dinitrotoluenes | 25.00 | 26.85 | 7 | 30 | YES |
| 1-Naphthylamine | 25.00 | 22.51 | -10 | 30 | YES |
| 2,3,4,6-Tetrachlorophenol | 12.50 | 14.12 | 13 | 30 | YES |
| 2-Naphthylamine | 25.00 | 22.65 | -9 | 30 | YES |
| Diethylphthalate | 12.50 | 13.25 | 6 | 30 | YES |
| Thionazin | 12.50 | 13.02 | 4 | 30 | YES |
| Fluorene | 12.50 | 13.06 | 4 | 30 | YES |
| 4-Chlorophenyl-phenylether | 12.50 | 12.95 | 4 | 30 | YES |
| 5-Nitro-o-toluidine | 12.50 | 13.23 | 6 | 30 | YES |
| 4-Nitroaniline | 12.50 | 13.50 | 8 | 30 | YES |
| 4,6-Dinitro-2-methylphenol | 12.50 | 12.98 | 4 | 30 | YES |
| N-Nitrosodiphenylamine | 12.50 | 13.19 | 6 | 30 | YES |
| NDPA as diphenylamine | 12.50 | 13.19 | 6 | 30 | YES |
| 1,2-Diphenylhydrazine | 12.50 | 13.74 | 10 | 30 | YES |
| Tetraethyldithiopyrophospha | 12.50 | 12.67 | 1 | 30 | YES |
| 1,3,5-Trinitrobenzene | 12.50 | 12.86 | 3 | 30 | YES |
| Diallate (peak 1) | 9.38 | 8.96 | -4 | 30 | YES |
| Phorate | 12.50 | 13.15 | 5 | 30 | YES |
| Phenacetin | 12.50 | 13.22 | 6 | 30 | YES |
| 4-Bromophenyl-phenylether | 12.50 | 13.41 | 7 | 30 | YES |
| Diallate (peak 2) | 3.13 | 3.58 | 15 | 30 | YES |
| Hexachlorobenzene | 12.50 | 13.29 | 6 | 30 | YES |
| Diallate trans/cis | 12.50 | 12.54 | 0 | 30 | YES |
| Dimethoate | 12.50 | 13.16 | 5 | 30 | YES |
| Pentachlorophenol | 12.50 | 15.21 | 22 | 30 | YES |
| 4-Aminobiphenyl | 12.50 | 22.09 | 77 | 30 | NO* |
| Pentachloronitrobenzene | 12.50 | 13.06 | 4 | 30 | YES |
| Pronamide | 12.50 | 13.57 | 9 | 30 | YES |
| Dinoseb | 12.50 | 13.42 | 7 | 30 | YES |
| Phenanthrene | 12.50 | 12.99 | 4 | 30 | YES |
| Anthracene | 12.50 | 13.39 | 7 | 30 | YES |
| Carbazole | 12.50 | 13.57 | 9 | 30 | YES |
| Methyl parathion | 12.50 | 13.81 | 10 | 30 | YES |
| Di-n-butylphthalate | 12.50 | 13.65 | 9 | 30 | YES |
| Parathion | 12.50 | 13.79 | 10 | 30 | YES |
| 4-Nitroquinoline-1-oxide | 150.00 | 182.43 | 22 | 30 | YES |
| Isodrin | 12.50 | 13.05 | 4 | 30 | YES |

NC = Could not calculate

Comments: _____*Run under valid ICV ECM10340 7/26/17_____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS | LAB CODE: LANCAS | INSTRUMENT: HP19760

Method: SW-846 8270D MINI | File ID: dg0781.d

ICV SAMPLE ID: rvICV1147 | BATCH: 17JUL26A026 | Sample Name: SSTD12.5

| COMPOUND NAME | TRUE CONC. | ACTUAL CONC. | % DRIFT | %D window | INSPEC |
|---|---|---|---|---|---|
| Fluoranthene | 12.50 | 13.54 | 8 | 30 | YES |
| Benzidine | 62.50 | 57.01 | -9 | 30 | YES |
| Pyrene | 12.50 | 12.83 | 3 | 30 | YES |
| p-Dimethylaminoazobenzene | 12.50 | 16.67 | 33 | 30 | NO* |
| Chlorobenzilate | 12.50 | 13.62 | 9 | 30 | YES |
| 3,3'-Dimethylbenzidine | 25.00 | 24.92 | 0 | 30 | YES |
| Butylbenzylphthalate | 12.50 | 13.86 | 11 | 30 | YES |
| 2-Acetylaminofluorene | 12.50 | 13.10 | 5 | 30 | YES |
| 3,3'-Dichlorobenzidine | 12.50 | 12.65 | 1 | 30 | YES |
| Benzo(a)anthracene | 12.50 | 14.08 | 13 | 30 | YES |
| Chrysene | 12.50 | 13.97 | 12 | 30 | YES |
| 4,4'-Methylenebis(2-chloroa | 12.50 | 13.21 | 6 | 30 | YES |
| bis(2-Ethylhexyl)phthalate | 12.50 | 13.79 | 10 | 30 | YES |
| 6-Methylchrysene | 12.50 | 12.90 | 3 | 30 | YES |
| Di-n-octylphthalate | 12.50 | 13.70 | 10 | 30 | YES |
| Benzo(b)fluoranthene | 12.50 | 13.43 | 7 | 30 | YES |
| 7,12-Dimethylbenz[a]anthrac | 12.50 | 13.94 | 12 | 30 | YES |
| Benzo(k)fluoranthene | 12.50 | 13.74 | 10 | 30 | YES |
| Benzo(a)pyrene | 12.50 | 13.14 | 5 | 30 | YES |
| 3-Methylcholanthrene | 12.50 | 15.68 | 25 | 30 | YES |
| Dibenz(a,h)acridine | 12.50 | 13.12 | 5 | 30 | YES |
| Dibenz(a,j)acridine | 12.50 | 13.03 | 4 | 30 | YES |
| Indeno(1,2,3-cd)pyrene | 12.50 | 13.95 | 12 | 30 | YES |
| Dibenz(a,h)anthracene | 12.50 | 14.49 | 16 | 30 | YES |
| Benzo(g,h,i)perylene | 12.50 | 13.53 | 8 | 30 | YES |
| Total PAHs | 225.00 | 243.60 | 8 | 30 | YES |

NC = Could not calculate

Comments: _____*Run under valid ICV ECM10340 7/26/17_____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP19760

Method: SW-846 8270D MINI File ID: dg0782.d

ICV SAMPLE ID: rvBASICV0637 BATCH: 17JUL26A026 Sample Name: SSTD12.5

| COMPOUND NAME | TRUE CONC. | ACTUAL CONC. | % DRIFT | %D window | INSPEC |
|---|---|---|---|---|---|
| Benzaldehyde | 12.50 | 14.53 | 16 | 30 | YES |
| Caprolactam | 12.50 | 12.29 | -2 | 30 | YES |
| Atrazine | 12.50 | 13.62 | 9 | 30 | YES |

NC = Could not calculate

Comments: _____

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19760 Calibration Date: 08/02/17 Time: 19:24

Lab File ID: dh0101.d Init. Calib. Date(s): 07/26/17 07/26/17

Init. Calib. Times(s): 09:08 12:38

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF7.5 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| 1,4-Dioxane | 0.673 | 0.679 | 7.570 | 7.5 | 1 |
| N-Nitrosodimethylamine | 1.095 | 1.043 | 7.140 | 7.5 | -5 |
| Pyridine | 1.775 | 1.623 | 6.860 | 7.5 | -9 |
| 2-Picoline | 1.902 | 1.848 | 7.290 | 7.5 | -3 |
| N-Nitrosomethylethylamine | 0.779 | 0.762 | 7.340 | 7.5 | -2 |
| Methyl methanesulfonate | 0.891 | 0.887 | 7.470 | 7.5 | 0 |
| N-Nitrosodiethylamine | 0.758 | 0.752 | 7.440 | 7.5 | -1 |
| Ethyl methanesulfonate | 0.775 | 0.783 | 7.570 | 7.5 | 1 |
| Benzaldehyde | 1.280 | 1.395 | 8.170 | 7.5 | 9 |
| Phenol | 2.208 | 2.252 | 7.650 | 7.5 | 2 |
| Aniline | 2.579 | 2.621 | 7.620 | 7.5 | 2 |
| a-methylstyrene | 1.657 | 1.656 | 7.500 | 7.5 | 0 |
| bis(2-Chloroethyl)ether | 1.631 | 1.648 | 7.580 | 7.5 | 1 |
| 2-Chlorophenol | 1.439 | 1.460 | 7.610 | 7.5 | 1 |
| 1,3-Dichlorobenzene | 1.604 | 1.615 | 7.550 | 7.5 | 1 |
| 1,4-Dichlorobenzene | 1.617 | 1.639 | 7.600 | 7.5 | 1 |
| Benzyl alcohol | 1.053 | 1.045 | 7.440 | 7.5 | -1 |
| 1,2-Dichlorobenzene | 1.526 | 1.558 | 7.660 | 7.5 | 2 |
| Indene | 2.922 | 2.955 | 7.590 | 7.5 | 1 |
| 2-Methylphenol | 1.392 | 1.418 | 7.640 | 7.5 | 2 |
| 2,2'-oxybis(1-Chloropropane) | 2.197 | 2.147 | 7.330 | 7.5 | -2 |
| bis(2-Chloroisopropyl)ether | 2.197 | 2.147 | 7.330 | 7.5 | -2 |
| N-Nitrosopyrrolidine | 0.806 | 0.811 | 7.550 | 7.5 | 1 |
| Acetophenone | 2.176 | 2.167 | 7.470 | 7.5 | 0 |
| 4-Methylphenol | 1.535 | 1.613 | 7.880 | 7.5 | 5 |
| Total Cresols | 1.463 | 1.515 | 15.520 | 15.0 | 3 |
| N-Nitroso-di-n-propylamine | 1.236 | 1.235 | 7.500 | 7.5 | 0 |
| N-Nitrosomorpholine | 1.017 | 1.005 | 7.410 | 7.5 | -1 |
| o-Toluidine | 2.457 | 2.506 | 7.650 | 7.5 | 2 |
| Hexachloroethane | 0.662 | 0.662 | 7.500 | 7.5 | 0 |
| Nitrobenzene | 0.478 | 0.483 | 7.570 | 7.5 | 1 |
| N-Nitrosopiperidine | 0.193 | 0.198 | 7.710 | 7.5 | 3 |
| Isophorone | 0.810 | 0.829 | 7.680 | 7.5 | 2 |
| 2-Nitrophenol | 0.179 | 0.188 | 7.900 | 7.5 | 5 |
| 2,4-Dimethylphenol | 0.404 | 0.416 | 7.720 | 7.5 | 3 |
| O,O,O-Triethylphosphorothioate | 0.187 | 0.186 | 7.490 | 7.5 | 0 |

7C

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19760 Calibration Date: 08/02/17 Time: 19:24

Lab File ID: dh0101.d Init. Calib. Date(s): 07/26/17 07/26/17

Init. Calib. Times(s): 09:08 12:38

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF7.5 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | 0.525 | 0.528 | 7.540 | 7.5 | 1 |
| Benzoic acid | 0.261 | 0.207 | 8.260 | 10.0 | -17 |
| 1,2,3,4-Tetrahydronaphthalene | 0.649 | 0.659 | 7.610 | 7.5 | 1 |
| 2,4-Dichlorophenol | 0.308 | 0.320 | 7.790 | 7.5 | 4 |
| 1,2,4-Trichlorobenzene | 0.349 | 0.361 | 7.750 | 7.5 | 3 |
| Naphthalene | 1.106 | 1.129 | 7.660 | 7.5 | 2 |
| 4-Chloroaniline | 0.442 | 0.456 | 7.730 | 7.5 | 3 |
| 2,6-Dichlorophenol | 0.308 | 0.316 | 7.700 | 7.5 | 3 |
| Hexachloropropene | 0.216 | 0.222 | 7.680 | 7.5 | 2 |
| Hexachlorobutadiene | 0.198 | 0.203 | 7.700 | 7.5 | 3 |
| Quinoline | 0.699 | 0.703 | 7.540 | 7.5 | 0 |
| Caprolactam | 0.098 | 0.094 | 7.130 | 7.5 | -5 |
| N-Nitrosodi-n-butylamine | 0.369 | 0.385 | 7.820 | 7.5 | 4 |
| 4-Chloro-3-methylphenol | 0.341 | 0.350 | 7.700 | 7.5 | 3 |
| Safrole | 0.288 | 0.292 | 7.600 | 7.5 | 1 |
| 2-Methylnaphthalene | 0.725 | 0.747 | 7.730 | 7.5 | 3 |
| 1-Methylnaphthalene | 0.655 | 0.667 | 7.640 | 7.5 | 2 |
| Hexachlorocyclopentadiene | 0.320 | 0.325 | 7.610 | 7.5 | 2 |
| 1,2,4,5-Tetrachlorobenzene | 0.630 | 0.647 | 7.690 | 7.5 | 3 |
| cis-Isosafrole | 0.545 | 0.539 | 1.260 | 1.3 | -1 |
| 2,4,6-Trichlorophenol | 0.391 | 0.400 | 7.670 | 7.5 | 2 |
| 2,4,5-Trichlorophenol | 0.415 | 0.430 | 7.770 | 7.5 | 4 |
| trans-Isosafrole | 0.549 | 0.539 | 6.120 | 6.2 | -2 |
| Isosafrole | 0.548 | 0.539 | 7.380 | 7.5 | -2 |
| 1,1'-Biphenyl | 1.550 | 1.557 | 7.530 | 7.5 | 0 |
| 2-Chloronaphthalene | 1.248 | 1.292 | 7.770 | 7.5 | 4 |
| 1-Chloronaphthalene | 1.150 | 1.138 | 7.420 | 7.5 | -1 |
| Diphenyl ether | 0.851 | 0.855 | 7.530 | 7.5 | 0 |
| 2-Nitroaniline | 0.371 | 0.375 | 7.570 | 7.5 | 1 |
| 1,4-Naphthoquinone | 0.487 | 0.494 | 7.610 | 7.5 | 1 |
| 1,4-Dinitrobenzene | 0.192 | 0.189 | 7.380 | 7.5 | -2 |
| Dimethylphthalate | 1.368 | 1.355 | 7.430 | 7.5 | -1 |
| 1,3-Dinitrobenzene | 0.213 | 0.212 | 7.450 | 7.5 | -1 |
| 2,6-Dinitrotoluene | 0.291 | 0.299 | 7.710 | 7.5 | 3 |
| Acenaphthylene | 1.710 | 1.765 | 7.740 | 7.5 | 3 |
| 3-Nitroaniline | 0.319 | 0.318 | 7.480 | 7.5 | 0 |

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19760 Calibration Date: 08/02/17 Time: 19:24

Lab File ID: dh0101.d Init. Calib. Date(s): 07/26/17 07/26/17

Init. Calib. Times(s): 09:08 12:38

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF7.5 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Acenaphthene | 1.300 | 1.308 | 7.550 | 7.5 | 1 |
| 2,4-Dinitrophenol | 0.186 | 0.160 | 8.630 | 10.0 | -14 |
| 4-Nitrophenol | 0.244 | 0.229 | 7.040 | 7.5 | -6 |
| Pentachlorobenzene | 0.524 | 0.534 | 7.640 | 7.5 | 2 |
| 2,4-Dinitrotoluene | 0.403 | 0.401 | 7.470 | 7.5 | 0 |
| 2,4_2,6-Dinitrotoluenes | 0.341 | 0.350 | 15.180 | 15.0 | 1 |
| Dibenzofuran | 1.685 | 1.706 | 7.590 | 7.5 | 1 |
| 1-Naphthylamine | 1.283 | 1.232 | 7.200 | 7.5 | -4 |
| 2,3,4,6-Tetrachlorophenol | 0.313 | 0.324 | 7.770 | 7.5 | 4 |
| 2-Naphthylamine | 1.232 | 1.193 | 7.260 | 7.5 | -3 |
| Diethylphthalate | 1.327 | 1.296 | 7.320 | 7.5 | -2 |
| Thionazin | 0.267 | 0.259 | 7.270 | 7.5 | -3 |
| Fluorene | 1.339 | 1.346 | 7.540 | 7.5 | 1 |
| 4-Chlorophenyl-phenylether | 0.642 | 0.652 | 7.610 | 7.5 | 1 |
| 5-Nitro-o-toluidine | 0.382 | 0.390 | 7.650 | 7.5 | 2 |
| 4-Nitroaniline | 0.324 | 0.329 | 7.610 | 7.5 | 2 |
| 4,6-Dinitro-2-methylphenol | 0.129 | 0.120 | 7.000 | 7.5 | -7 |
| N-Nitrosodiphenylamine (1) | 0.609 | 0.623 | 7.680 | 7.5 | 2 |
| NDPA as diphenylamine | 0.609 | 0.623 | 7.680 | 7.5 | 2 |
| 1,2-Diphenylhydrazine | 0.865 | 0.871 | 7.550 | 7.5 | 1 |
| Tetraethyldithiopyrophosphate | 0.142 | 0.141 | 7.410 | 7.5 | -1 |
| 1,3,5-Trinitrobenzene | 0.081 | 0.075 | 6.960 | 7.5 | -7 |
| Diallate (peak 1) | 0.393 | 0.390 | 6.170 | 6.2 | -1 |
| Phorate | 0.540 | 0.549 | 7.620 | 7.5 | 2 |
| Phenacetin | 0.397 | 0.412 | 7.780 | 7.5 | 4 |
| 4-Bromophenyl-phenylether | 0.197 | 0.202 | 7.690 | 7.5 | 3 |
| Diallate (peak 2) | 0.321 | 0.318 | 1.270 | 1.3 | -1 |
| Diallate trans/cis | 0.381 | 0.378 | 7.440 | 7.5 | -1 |
| Hexachlorobenzene | 0.210 | 0.218 | 7.790 | 7.5 | 4 |
| Dimethoate | 0.340 | 0.339 | 7.480 | 7.5 | 0 |
| Atrazine | 0.196 | 0.196 | 7.480 | 7.5 | 0 |
| Pentachlorophenol | 0.127 | 0.127 | 7.490 | 7.5 | 0 |
| 4-Aminobiphenyl | 0.465 | 0.628 | 10.130 | 7.5 | 35 |
| Pentachloronitrobenzene | 0.094 | 0.099 | 7.840 | 7.5 | 5 |
| Pronamide | 0.338 | 0.354 | 7.870 | 7.5 | 5 |
| Dinoseb | 0.200 | 0.196 | 7.370 | 7.5 | -2 |

(1) Cannot be Separated from Diphenylamine

7C cont

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19760 Calibration Date: 08/02/17 Time: 19:24

Lab File ID: dh0101.d Init. Calib. Date(s): 07/26/17 07/26/17

Init. Calib. Times(s): 09:08 12:38

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF7.5 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Phenanthrene | 1.089 | 1.094 | 7.530 | 7.5 | 0 |
| Anthracene | 1.071 | 1.105 | 7.740 | 7.5 | 3 |
| Carbazole | 0.991 | 1.024 | 7.750 | 7.5 | 3 |
| Methyl parathion | 0.268 | 0.272 | 7.630 | 7.5 | 2 |
| Di-n-butylphthalate | 1.228 | 1.230 | 7.510 | 7.5 | 0 |
| Parathion | 0.166 | 0.168 | 7.600 | 7.5 | 1 |
| 4-Nitroquinoline-1-oxide | 0.128 | 0.091 | 5.320 | 7.5 | -29 |
| Octachlorostyrene | 0.080 | 0.085 | 7.960 | 7.5 | 6 |
| Isodrin | 0.130 | 0.129 | 7.470 | 7.5 | 0 |
| Fluoranthene | 1.199 | 1.249 | 7.810 | 7.5 | 4 |
| Benzidine | 0.659 | 0.644 | 22.010 | 22.5 | -2 |
| Pyrene | 1.090 | 1.096 | 7.540 | 7.5 | 1 |
| p-Dimethylaminoazobenzene | 0.152 | 0.159 | 7.850 | 7.5 | 5 |
| Chlorobenzilate | 0.324 | 0.322 | 7.440 | 7.5 | -1 |
| 3,3'-Dimethylbenzidine | 0.643 | 0.664 | 7.750 | 7.5 | 3 |
| Butylbenzylphthalate | 0.468 | 0.473 | 7.570 | 7.5 | 1 |
| 2-Acetylaminofluorene | 0.416 | 0.414 | 7.460 | 7.5 | -1 |
| 3,3'-Dichlorobenzidine | 0.377 | 0.387 | 7.710 | 7.5 | 3 |
| 4,4'-Methylenebis(2-chloroanil | 0.198 | 0.196 | 7.430 | 7.5 | -1 |
| Benzo(a)anthracene | 0.954 | 0.997 | 7.830 | 7.5 | 4 |
| Chrysene | 0.901 | 0.943 | 7.850 | 7.5 | 5 |
| bis(2-Ethylhexyl)phthalate | 0.680 | 0.670 | 7.390 | 7.5 | -1 |
| 6-Methylchrysene | 0.672 | 0.677 | 7.560 | 7.5 | 1 |
| Di-n-octylphthalate | 1.477 | 1.437 | 7.300 | 7.5 | -3 |
| Benzo(b)fluoranthene | 1.233 | 1.283 | 7.800 | 7.5 | 4 |
| 7,12-Dimethylbenz[a]anthracene | 0.515 | 0.571 | 8.320 | 7.5 | 11 |
| Benzo(k)fluoranthene | 1.196 | 1.290 | 8.090 | 7.5 | 8 |
| Benzo(a)pyrene | 1.135 | 1.159 | 7.660 | 7.5 | 2 |
| 3-Methylcholanthrene | 0.488 | 0.489 | 7.520 | 7.5 | 0 |
| Dibenz(a,h)acridine | 0.922 | 0.880 | 7.160 | 7.5 | -5 |
| Dibenz(a,j)acridine | 0.950 | 0.924 | 7.290 | 7.5 | -3 |
| Indeno(1,2,3-cd)pyrene | 1.261 | 1.276 | 7.590 | 7.5 | 1 |
| Dibenz(a,h)anthracene | 1.034 | 1.052 | 7.640 | 7.5 | 2 |
| Benzo(g,h,i)perylene | 1.076 | 1.062 | 7.400 | 7.5 | -1 |
| Total PAHs | 1.090 | 1.108 | 138.330 | 135.0 | 2 |
| 2-Fluorophenol | 1.481 | 1.501 | 15.200 | 15.0 | 1 |



FORM VII SV-1

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19760 Calibration Date: 08/02/17 Time: 19:24

Lab File ID: dh0101.d Init. Calib. Date(s): 07/26/17 07/26/17

Init. Calib. Times(s): 09:08 12:38

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

| COMPOUND | RRF | RRF7.5 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Phenol-d6 | 1.946 | 1.975 | 15.220 | 15.0 | 1 |
| Nitrobenzene-d5 | 0.477 | 0.486 | 15.270 | 15.0 | 2 |
| 2-Fluorobiphenyl | 1.445 | 1.476 | 15.330 | 15.0 | 2 |
| 2,4,6-Tribromophenol | 0.166 | 0.171 | 15.510 | 15.0 | 3 |
| Terphenyl-d14 | 0.692 | 0.712 | 15.430 | 15.0 | 3 |
| | | | Average %Drift: | | 3 |



FORM VII SV-1

# Continuing Calibration
# Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP19760.i/17jul26a.b/dg0771.d **
/chem/HP19760.i/17jul26a.b/dg0772.d
/chem/HP19760.i/17jul26a.b/dg0773.d
/chem/HP19760.i/17jul26a.b/dg0774.d
/chem/HP19760.i/17jul26a.b/dg0775.d
/chem/HP19760.i/17jul26a.b/dg0776.d
/chem/HP19760.i/17jul26a.b/dg0777.d
/chem/HP19760.i/17jul26a.b/dg0778.d

** indicates the Mid Level Calibration Standard.

Mid Level Calibration Standard is used for comparison.

Current Continuing Calibration Standard:

/chem/HP19760.i/17aug02a.b/dh0101.d

Area Summary

| Internal Standard Name | File ID: dh0101.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| 1,4-Dichlorobenzene-d4 | 280313 | 256945 | 128472 | 513890 | Yes |
| Naphthalene-d8 | 1047002 | 957205 | 478602 | 1914410 | Yes |
| Acenaphthene-d10 | 582391 | 538334 | 269167 | 1076668 | Yes |
| Phenanthrene-d10 | 1057394 | 1018234 | 509117 | 2036468 | Yes |
| Pyrene-d10 | 1271229 | 1184235 | 592118 | 2368470 | Yes |
| Perylene-d12 | 993510 | 929036 | 464518 | 1858072 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

RT Summary

| Internal Standard Name | File ID: dh0101.d | ICAL RT | In Spec |
|---|---|---|---|
| 1,4-Dichlorobenzene-d4 | 6.839 | 6.907 | Yes |
| Naphthalene-d8 | 8.780 | 8.848 | Yes |
| Acenaphthene-d10 | 11.566 | 11.634 | Yes |
| Phenanthrene-d10 | 13.449 | 13.517 | Yes |
| Pyrene-d10 | 15.431 | 15.510 | Yes |
| Perylene-d12 | 19.925 | 20.016 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the RT of the referenced standard.

Comments: _____

_____



Report generated on 08/02/2017 at 19:55

Data File: /chem/HP19760.i/17aug02a.b/dh0129.d
Report Date: 08/03/2017 10:08

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP19760.i
Client ID: SECC12.5
Lab Sample ID: rvSTD2077
Sublist used: 24690M.sub

Injection Date and Time: 03-AUG-2017 05:13
Initial Calibration Date(s): 26-JUL-2017 29-JUL-2017
Initial Calibration Time(s): 09:08 14:30
Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Naphthalene | 1.10603 | 1.10358 | 0.010 | 0.2 | 20.0 |
| 2-Methylnaphthalene | 0.72471 | 0.74090 | 0.010 | -2.2 | 20.0 |
| 1-Methylnaphthalene | 0.65520 | 0.66566 | 0.010 | -1.6 | 20.0 |
| Pyrene | 1.08977 | 1.08192 | 0.010 | 0.7 | 20.0 |
| bis(2-Ethylhexyl)phthalate | 0.67962 | 0.66377 | 0.010 | 2.3 | 20.0 |
| **Surrogate Standards** | **ICAL Avg. RRF** | **SECC RRF** | **Min. RRF** | **% Diff.** | **Max. %Diff.** |
| Nitrobenzene-d5 | 0.47702 | 0.48052 | 0.010 | -0.7 | 20.0 |
| 2-Fluorobiphenyl | 1.44462 | 1.46149 | 0.010 | -1.2 | 20.0 |
| Terphenyl-d14 | 0.69191 | 0.69283 | 0.010 | -0.1 | 20.0 |

# SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): dh0101.d Date Analyzed: 08/02/17

Instrument ID: HP19760 Time Analyzed: 19:24

| | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 280313 | 6.839 | 1047002 | 8.780 | 582391 | 11.566 |
| UPPER LIMIT | 560626 | 7.339 | 2094004 | 9.280 | 1164782 | 12.066 |
| LOWER LIMIT | 140157 | 6.339 | 523501 | 8.280 | 291196 | 11.066 |
| LLI SAMPLE NO. | | | | | | |
| 01 SBLKWC208 | 241165 | 6.839 | 906252 | 8.774 | 492625 | 11.560 |
| 02 208WCLCS | 237429 | 6.845 | 881421 | 8.775 | 480330 | 11.566 |
| 03 SBLKWG213 | 252830 | 6.839 | 932150 | 8.774 | 507410 | 11.561 |
| 04 213WGLCS | 252312 | 6.845 | 925976 | 8.775 | 515116 | 11.566 |
| 05 213WGLCSD | 249393 | 6.845 | 935374 | 8.775 | 512784 | 11.566 |
| 06 9122418 | 264092 | 6.840 | 980611 | 8.775 | 532094 | 11.561 |
| 07 9122419 | 256520 | 6.839 | 958010 | 8.775 | 515152 | 11.561 |
| 08 9122420 | 265416 | 6.839 | 981059 | 8.775 | 528404 | 11.561 |
| 09 9122421 | 253441 | 6.839 | 945796 | 8.774 | 512483 | 11.560 |
| 10 9122422 | 256076 | 6.839 | 944109 | 8.774 | 524586 | 11.560 |
| 11 9122424 | 252609 | 6.839 | 941509 | 8.775 | 515856 | 11.561 |
| 12 9121674 | 246375 | 6.839 | 912777 | 8.775 | 494751 | 11.561 |
| 13 9121676 | 242513 | 6.839 | 913857 | 8.774 | 491667 | 11.560 |
| 14 9121680 | 241210 | 6.839 | 908246 | 8.774 | 492352 | 11.560 |
| 15 9121683 | 240195 | 6.839 | 901014 | 8.774 | 477086 | 11.561 |
| 16 9121684MS | 241662 | 6.845 | 897356 | 8.775 | 493024 | 11.566 |
| 17 9121685MSD | 243236 | 6.845 | 900474 | 8.774 | 481512 | 11.566 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): dh0101.d Date Analyzed: 08/02/17

Instrument ID: HP19760 Time Analyzed: 19:24

| | IS4(PHN) | | IS5(PYR) | | IS6(PRY) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 1057394 | 13.449 | 1271229 | 15.431 | 993510 | 19.925 |
| UPPER LIMIT | 2114788 | 13.949 | 2542458 | 15.931 | 1987020 | 20.425 |
| LOWER LIMIT | 528697 | 12.949 | 635615 | 14.931 | 496755 | 19.425 |
| LLI SAMPLE NO. | | | | | | |
| 01 SBLKWC208 | 891777 | 13.449 | 1068831 | 15.425 | 782182 | 19.925 |
| 02 208WCLCS | 865075 | 13.449 | 1024585 | 15.431 | 805362 | 19.925 |
| 03 SBLKWG213 | 899613 | 13.449 | 1051097 | 15.425 | 744919 | 19.919 |
| 04 213WGLCS | 916380 | 13.449 | 1058821 | 15.425 | 846955 | 19.925 |
| 05 213WGLCSD | 923312 | 13.449 | 1077081 | 15.431 | 843182 | 19.919 |
| 06 9122418 | 942346 | 13.449 | 1087047 | 15.425 | 759700 | 19.919 |
| 07 9122419 | 921421 | 13.449 | 1055839 | 15.425 | 742678 | 19.919 |
| 08 9122420 | 940796 | 13.449 | 1078583 | 15.425 | 735559 | 19.919 |
| 09 9122421 | 921459 | 13.449 | 1084396 | 15.425 | 731988 | 19.925 |
| 10 9122422 | 930925 | 13.449 | 1044402 | 15.425 | 743617 | 19.925 |
| 11 9122424 | 908047 | 13.455 | 1054870 | 15.425 | 753981 | 19.919 |
| 12 9121674 | 884587 | 13.449 | 998893 | 15.425 | 701624 | 19.919 |
| 13 9121676 | 875140 | 13.449 | 990928 | 15.425 | 675960 | 19.919 |
| 14 9121680 | 876554 | 13.449 | 983065 | 15.425 | 672596 | 19.919 |
| 15 9121683 | 861263 | 13.449 | 977246 | 15.425 | 664891 | 19.919 |
| 16 9121684MS | 864208 | 13.449 | 1033342 | 15.425 | 813011 | 19.919 |
| 17 9121685MSD | 866266 | 13.449 | 1034290 | 15.425 | 802316 | 19.919 |

IS4 (PHN) = Phenanthrene-d10
IS5 (PYR) = Pyrene-d10
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): dh0101.d Date Analyzed: 08/02/17

Instrument ID: HP19760 Time Analyzed: 19:24

| | IS1(DCB) | | IS2(NPT) | | IS3(ANT) | |
|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 280313 | 6.839 | 1047002 | 8.780 | 582391 | 11.566 |
| UPPER LIMIT | 560626 | 7.339 | 2094004 | 9.280 | 1164782 | 12.066 |
| LOWER LIMIT | 140157 | 6.339 | 523501 | 8.280 | 291196 | 11.066 |
| LLI SAMPLE NO. | | | | | | |
| 18 9121693 | 242664 | 6.839 | 910513 | 8.775 | 497207 | 11.561 |
| 19 rvSTD2077 | 266844 | 6.839 | 988366 | 8.780 | 543486 | 11.566 |
| 20 9112854 | 271861 | 6.839 | 1004952 | 8.774 | 544592 | 11.560 |
| 21 9112856 | 268740 | 6.839 | 1020768 | 8.774 | 555885 | 11.560 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): dh0101.d Date Analyzed: 08/02/17

Instrument ID: HP19760 Time Analyzed: 19:24

| | | IS4(PHN) | | IS5(PYR) | | IS6(PRY) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 1057394 | 13.449 | 1271229 | 15.431 | 993510 | 19.925 |
| | UPPER LIMIT | 2114788 | 13.949 | 2542458 | 15.931 | 1987020 | 20.425 |
| | LOWER LIMIT | 528697 | 12.949 | 635615 | 14.931 | 496755 | 19.425 |
| | LLI SAMPLE NO. | | | | | | |
| 18 | 9121693 | 886055 | 13.449 | 1002513 | 15.425 | 687868 | 19.919 |
| 19 | rvSTD2077 | 956986 | 13.449 | 1136003 | 15.431 | 923508 | 19.925 |
| 20 | 9112854 | 970490 | 13.449 | 1123010 | 15.425 | 791694 | 19.919 |
| 21 | 9112856 | 989001 | 13.449 | 1150159 | 15.425 | 789576 | 19.919 |

IS4 (PHN) = Phenanthrene-d10
IS5 (PYR) = Pyrene-d10
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

# Sample Data

# Semivolatiles by GC/MS

**Fraction: Semivolatiles by GC/MS**

| 14242: SVOCs 8270D GWTS<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Naphthalene | .1 | .4 | 0.50 | ug/l |
| 2-Methylnaphthalene | .1 | .2 | 0.50 | ug/l |
| 1-Methylnaphthalene | .1 | .2 | 0.50 | ug/l |
| Pyrene | .1 | .2 | 0.50 | ug/l |
| bis(2-Ethylhexyl)phthalate | 2 | 4 | 5.0 | ug/l |

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0116.d Injection date and time: **03-AUG-2017 02:00**
Data file Sample Info. Line: K1901;9121674;1;0;SAMPLE;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 03-Aug-2017 02:25 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 248 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.839( 0.000) | 884 | 152 | 246375 ( -12) | 5.00 | |
| 65) Naphthalene-d8 | 8.775( 0.006) | 1216 | 136 | 912777 ( -13) | 5.00 | |
| 113) Acenaphthene-d10 | 11.561( 0.006) | 1694 | 164 | 494751 ( -15) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 884587 ( -16) | 5.00 | |
| 175) Pyrene-d10 | 15.425( 0.006) | 2357 | 212 | 998893 ( -21) | 5.00 | |
| 213) Perylene-d12 | 19.919( 0.006) | 3128 | 264 | 701624 ( -29) | 5.00 | |

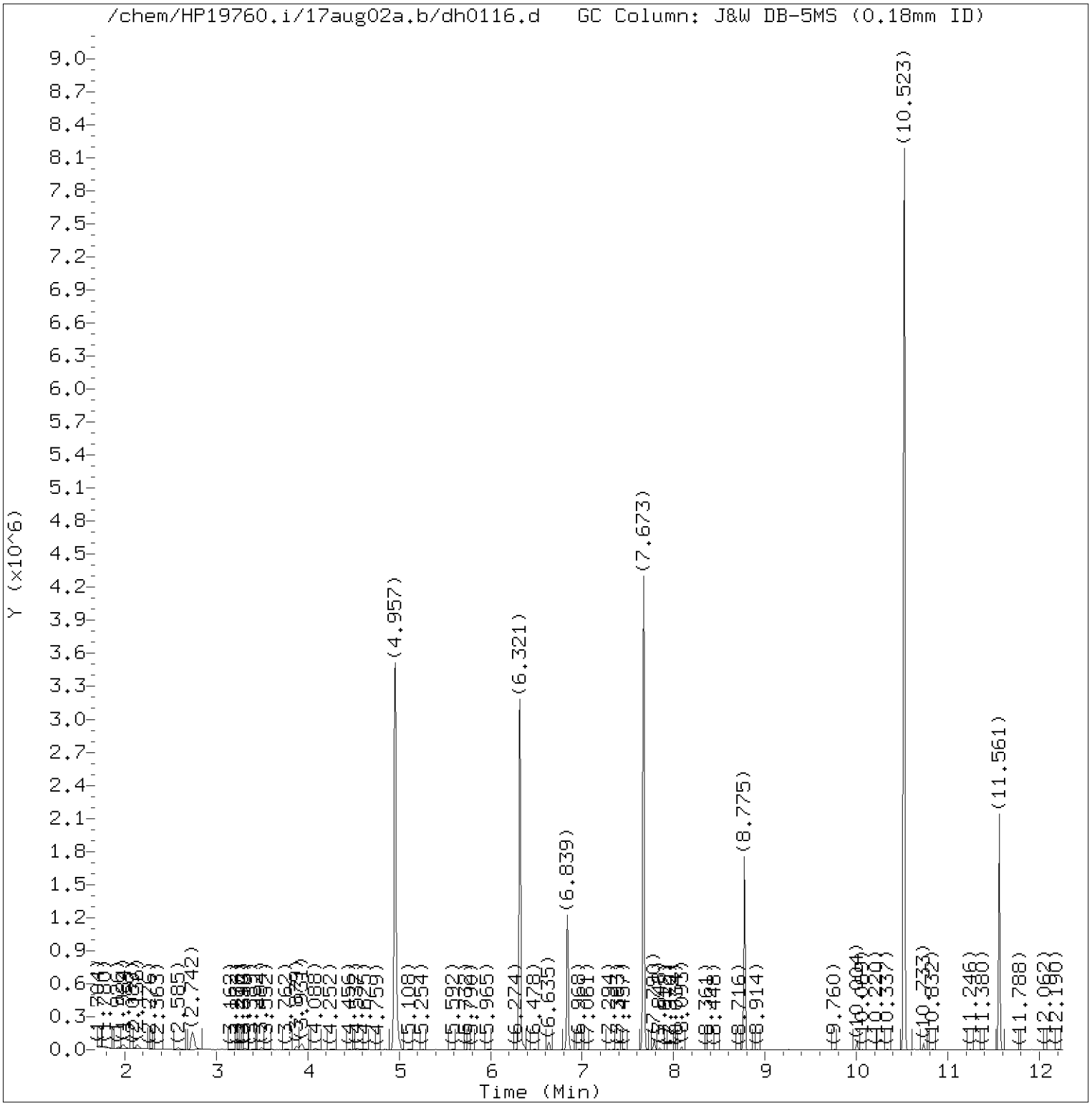
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.673( 0.000) | 82 | 1893649 | 21.745 | 87% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 3096718 | 21.664 | 87% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.740( 0.000) | 244 | 3258139 | 23.570 | 94% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 177) Pyrene | (5) | | | Not Detected | | | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | | | Not Detected | | | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:14. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

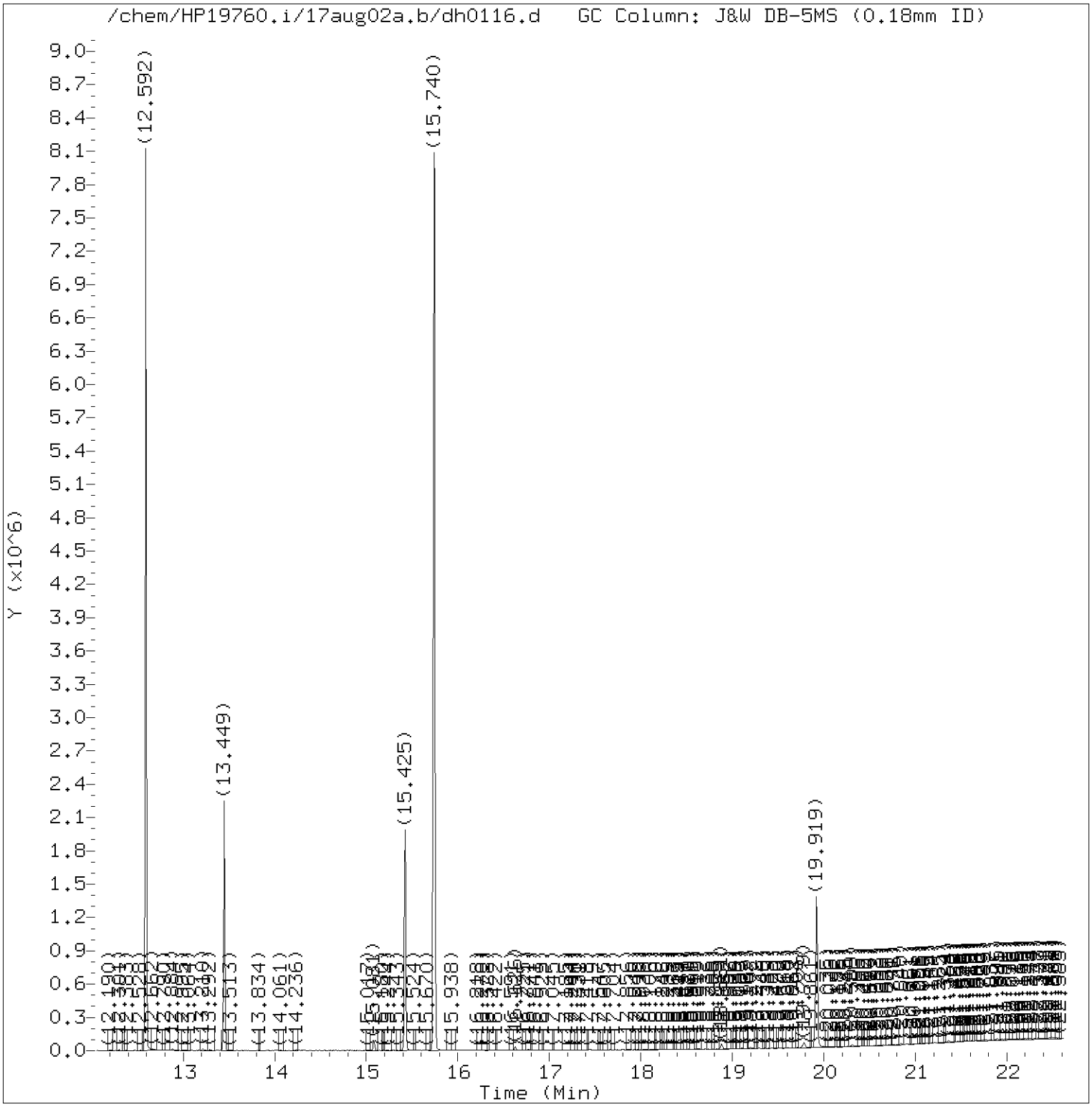
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0116.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:00 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 02:25 Automation

Sample Name: K1901 Lab Sample ID: 9121674

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0116.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:00 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 02:25 Automation

Sample Name: K1901 Lab Sample ID: 9121674

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0116.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:00 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 02:25 Automation

Sample Name: K1901 Lab Sample ID: 9121674

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.839 | 152 | 246375 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.673 | 82 | 1893649 | 21.745 |
| 65)*Naphthalene-d8 | (2) | 8.775 | 136 | 912777 | 5.000 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 3096718 | 21.664 |
| 113)*Acenaphthene-d10 | (3) | 11.561 | 164 | 494751 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 884587 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.425 | 212 | 998893 | 5.000 |
| 179)$Terphenyl-d14 | (5) | 15.740 | 244 | 3258139 | 23.570 |
| 213)*Perylene-d12 | (6) | 19.919 | 264 | 701624 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0117.d Injection date and time: **03-AUG-2017 02:28**
Data file Sample Info. Line: K1903;9121676;1;0;SAMPLE;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 03-Aug-2017 02:52 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 247 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.839( 0.000) | 884 | 152 | 242513 ( -13) | 5.00 | |
| 65) Naphthalene-d8 | 8.774( 0.006) | 1216 | 136 | 913857 ( -13) | 5.00 | |
| 113) Acenaphthene-d10 | 11.560( 0.006) | 1694 | 164 | 491667 ( -16) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 875140 ( -17) | 5.00 | |
| 175) Pyrene-d10 | 15.425( 0.006) | 2357 | 212 | 990928 ( -22) | 5.00 | |
| 213) Perylene-d12 | 19.919( 0.006) | 3128 | 264 | 675960 ( -32) | 5.00 | |

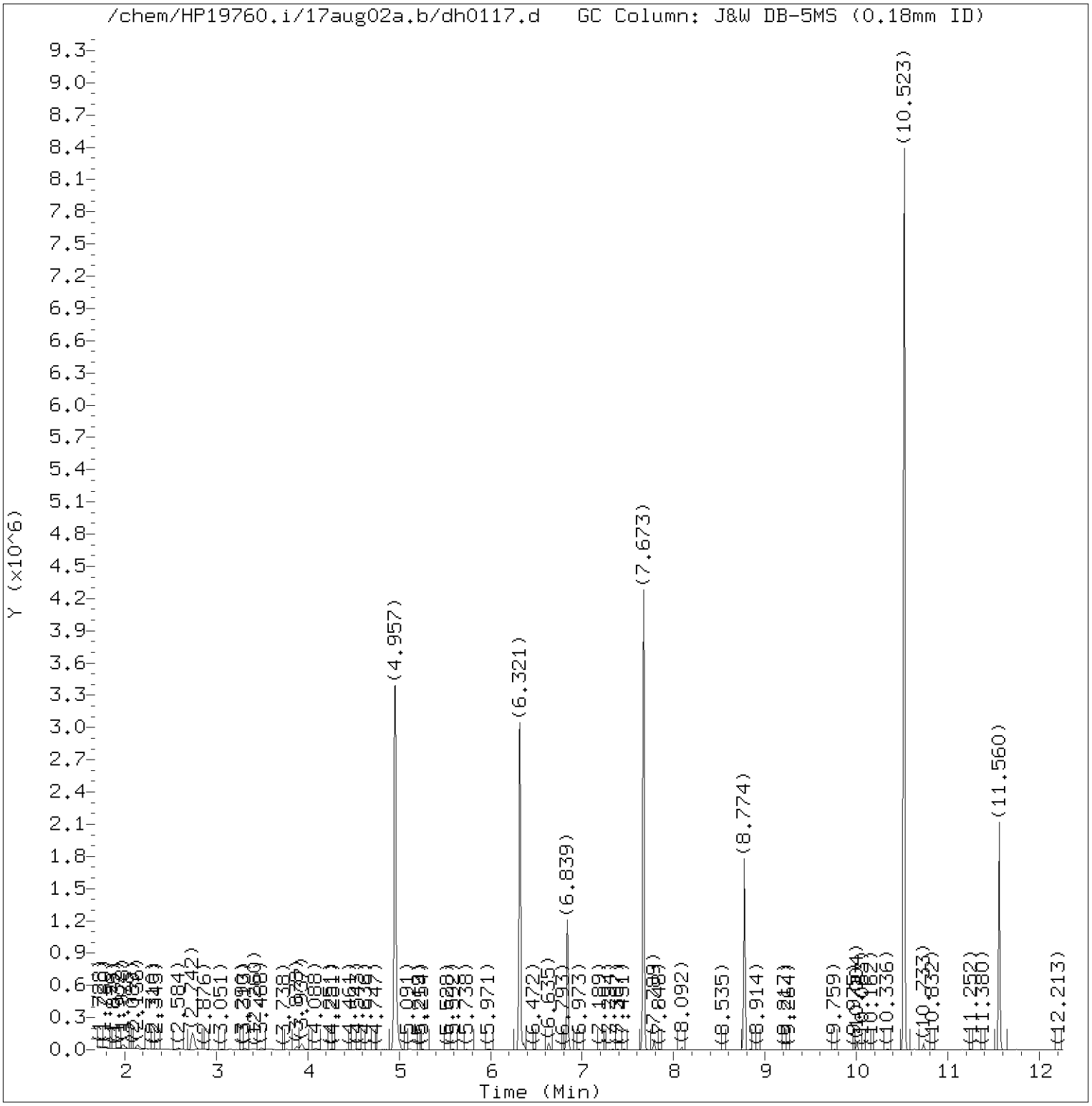
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.673( 0.000) | 82 | 1860253 | 21.337 | 85% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 3076686 | 21.658 | 87% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.740( 0.000) | 244 | 3185874 | 23.233 | 93% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 177) Pyrene | (5) | | | Not Detected | | | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | | | Not Detected | | | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:14. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

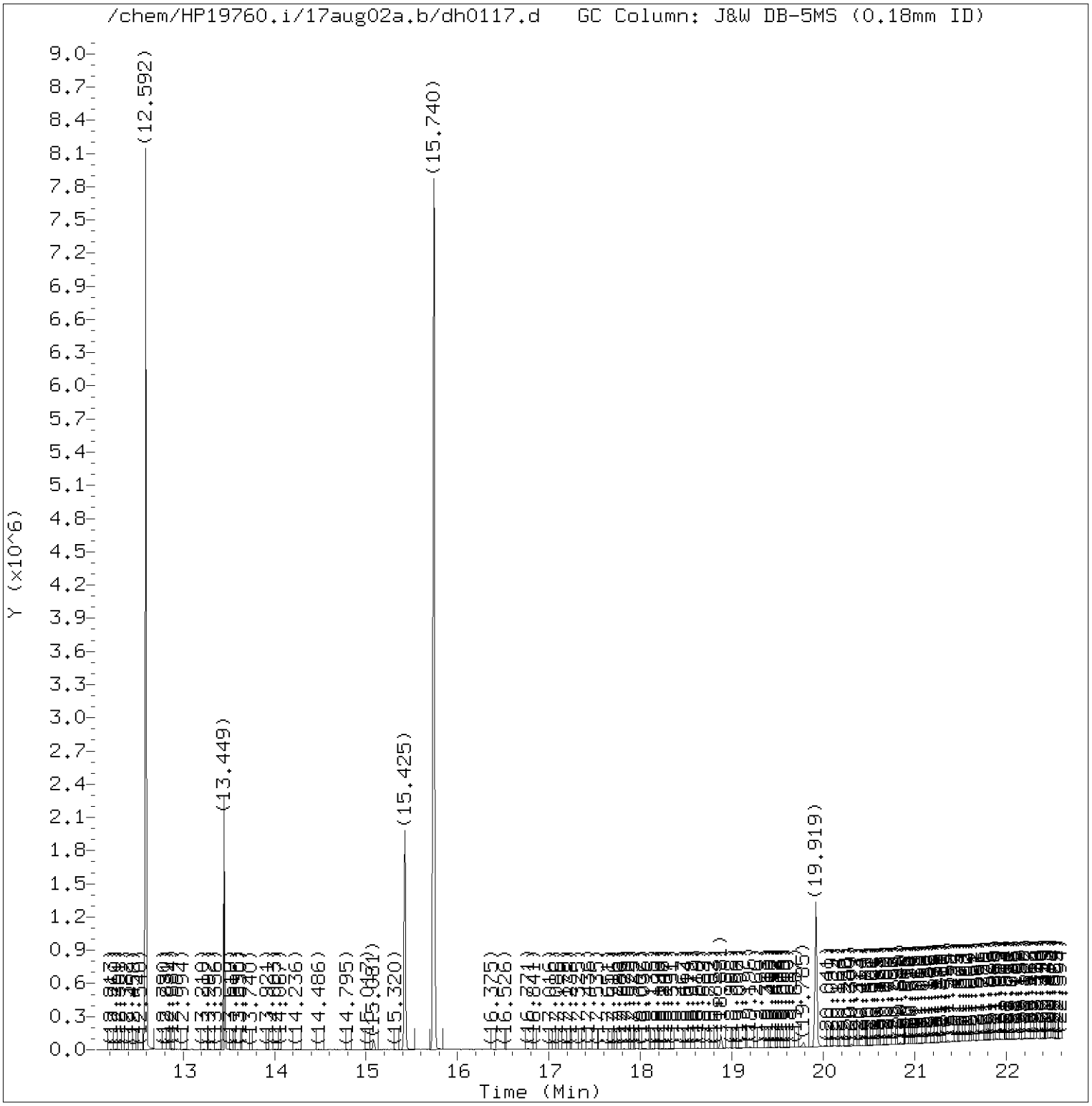
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0117.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:28 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 02:52 Automation

Sample Name: K1903 Lab Sample ID: 9121676

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0117.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:28 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 02:52 Automation

Sample Name: K1903 Lab Sample ID: 9121676

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0117.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:28 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 02:52 Automation

Sample Name: K1903 Lab Sample ID: 9121676

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.839 | 152 | 242513 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.673 | 82 | 1860253 | 21.337 |
| 65)*Naphthalene-d8 | (2) | 8.774 | 136 | 913857 | 5.000 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 3076686 | 21.658 |
| 113)*Acenaphthene-d10 | (3) | 11.560 | 164 | 491667 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 875140 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.425 | 212 | 990928 | 5.000 |
| 179)$Terphenyl-d14 | (5) | 15.740 | 244 | 3185874 | 23.233 |
| 213)*Perylene-d12 | (6) | 19.919 | 264 | 675960 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0118.d Injection date and time: **03-AUG-2017 02:55**
Data file Sample Info. Line: K1907;9121680;1;0;SAMPLE;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 03-Aug-2017 03:20 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 249 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.839( 0.000) | 884 | 152 | 241210 ( -14) | 5.00 | |
| 65) Naphthalene-d8 | 8.774( 0.006) | 1216 | 136 | 908246 ( -13) | 5.00 | |
| 113) Acenaphthene-d10 | 11.560( 0.006) | 1694 | 164 | 492352 ( -15) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 876554 ( -17) | 5.00 | |
| 175) Pyrene-d10 | 15.425( 0.006) | 2357 | 212 | 983065 ( -23) | 5.00 | |
| 213) Perylene-d12 | 19.919( 0.006) | 3128 | 264 | 672596 ( -32) | 5.00 | |

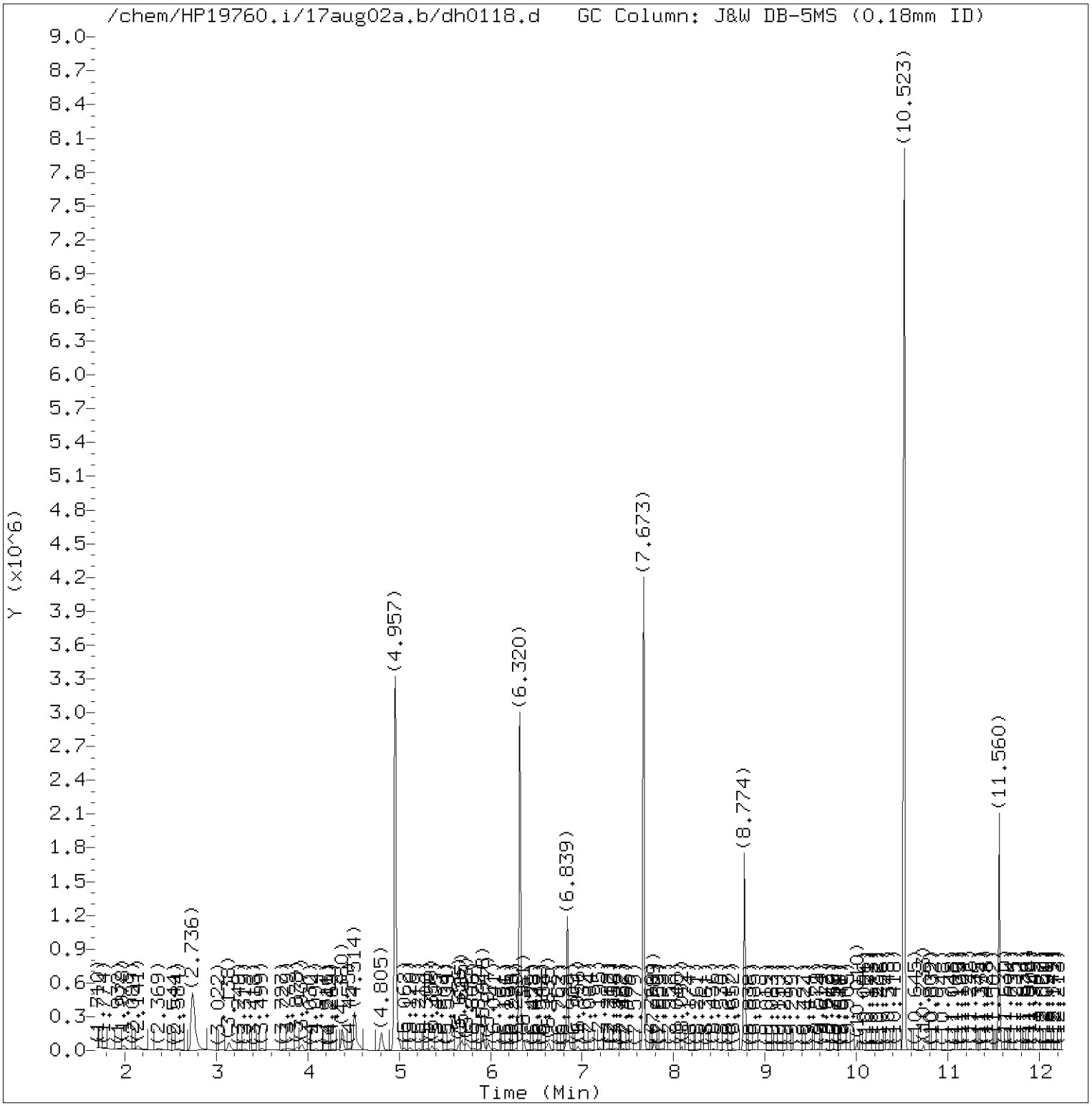
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.673( 0.000) | 82 | 1798316 | 20.754 | 83% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 2992781 | 21.038 | 84% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.740( 0.000) | 244 | 3172005 | 23.317 | 93% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 177) Pyrene | (5) | | | Not Detected | | | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | | | Not Detected | | | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:14. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

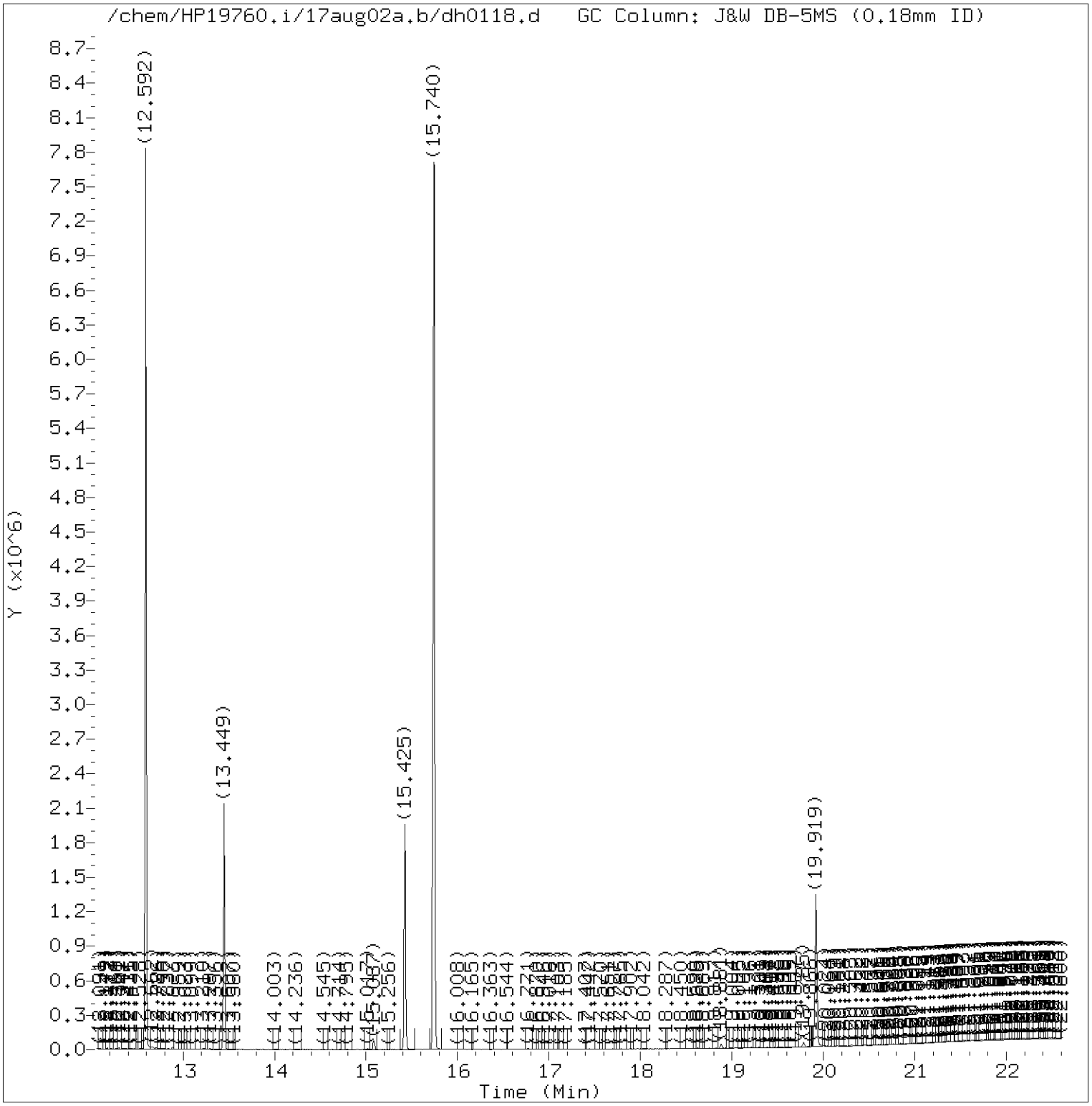
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0118.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:55 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 03:20 Automation

Sample Name: K1907 Lab Sample ID: 9121680

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0118.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:55 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 03:20 Automation

Sample Name: K1907 Lab Sample ID: 9121680

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0118.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 02:55 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 03:20 Automation

Sample Name: K1907 Lab Sample ID: 9121680

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.839 | 152 | 241210 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.673 | 82 | 1798316 | 20.754 |
| 65)*Naphthalene-d8 | (2) | 8.774 | 136 | 908246 | 5.000 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 2992781 | 21.038 |
| 113)*Acenaphthene-d10 | (3) | 11.560 | 164 | 492352 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 876554 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.425 | 212 | 983065 | 5.000 |
| 179)$Terphenyl-d14 | (5) | 15.740 | 244 | 3172005 | 23.317 |
| 213)*Perylene-d12 | (6) | 19.919 | 264 | 672596 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0119.d Injection date and time: **03-AUG-2017 03:23**
Data file Sample Info. Line: K1910;9121683;1;0;SAMPLE;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 03-Aug-2017 03:47 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 249 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.839( 0.000) | 884 | 152 | 240195 ( -14) | 5.00 | |
| 65) Naphthalene-d8 | 8.774( 0.006) | 1216 | 136 | 901014 ( -14) | 5.00 | |
| 113) Acenaphthene-d10 | 11.561( 0.006) | 1694 | 164 | 477086 ( -18) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 861263 ( -19) | 5.00 | |
| 175) Pyrene-d10 | 15.425( 0.006) | 2357 | 212 | 977246 ( -23) | 5.00 | |
| 213) Perylene-d12 | 19.919( 0.006) | 3128 | 264 | 664891 ( -33) | 5.00 | |

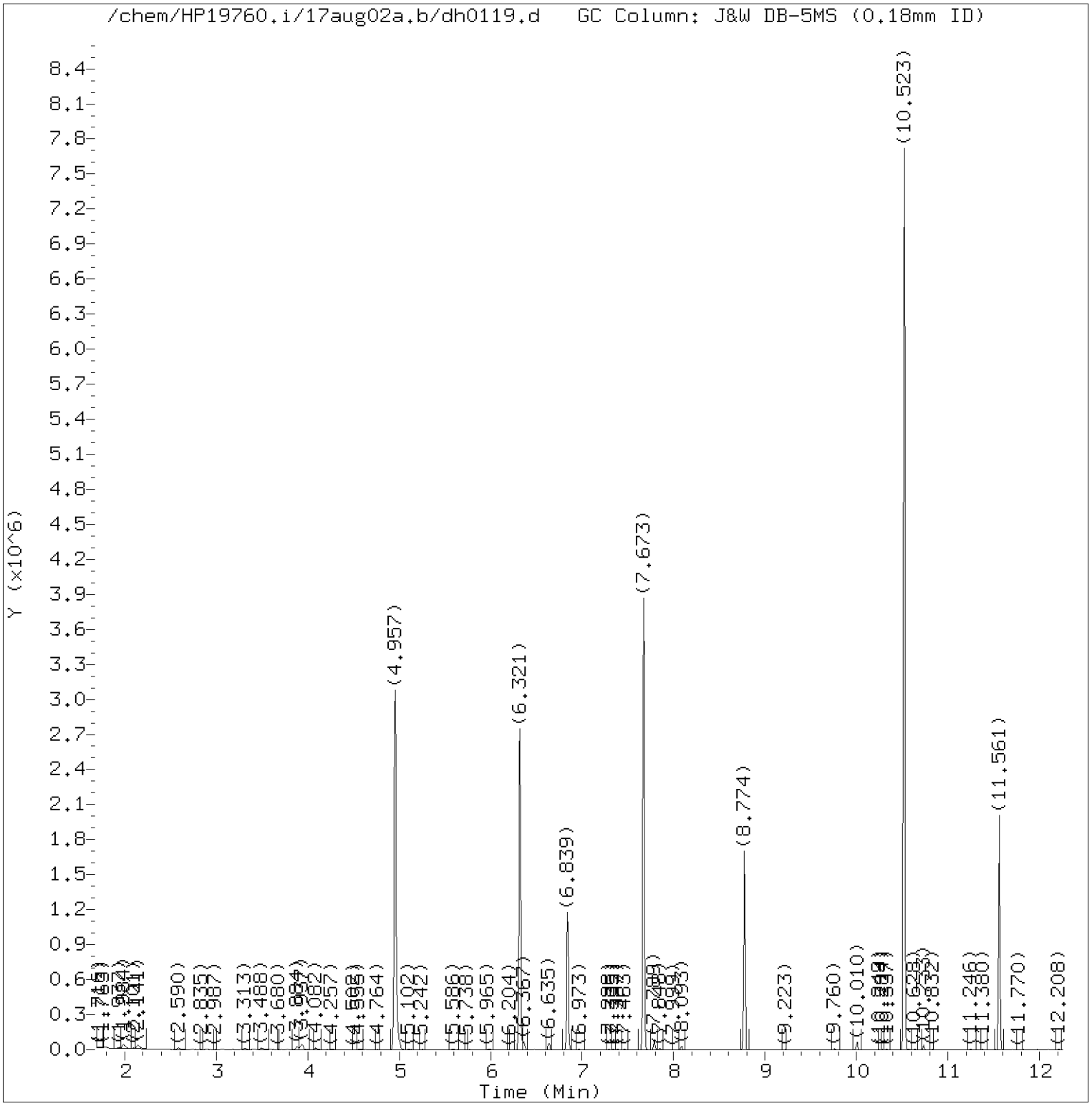
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.673( 0.000) | 82 | 1703479 | 19.817 | 79% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 2844321 | 20.635 | 83% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.740( 0.000) | 244 | 2988477 | 22.099 | 88% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 177) Pyrene | (5) | | | Not Detected | | | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | | | Not Detected | | | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:14. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

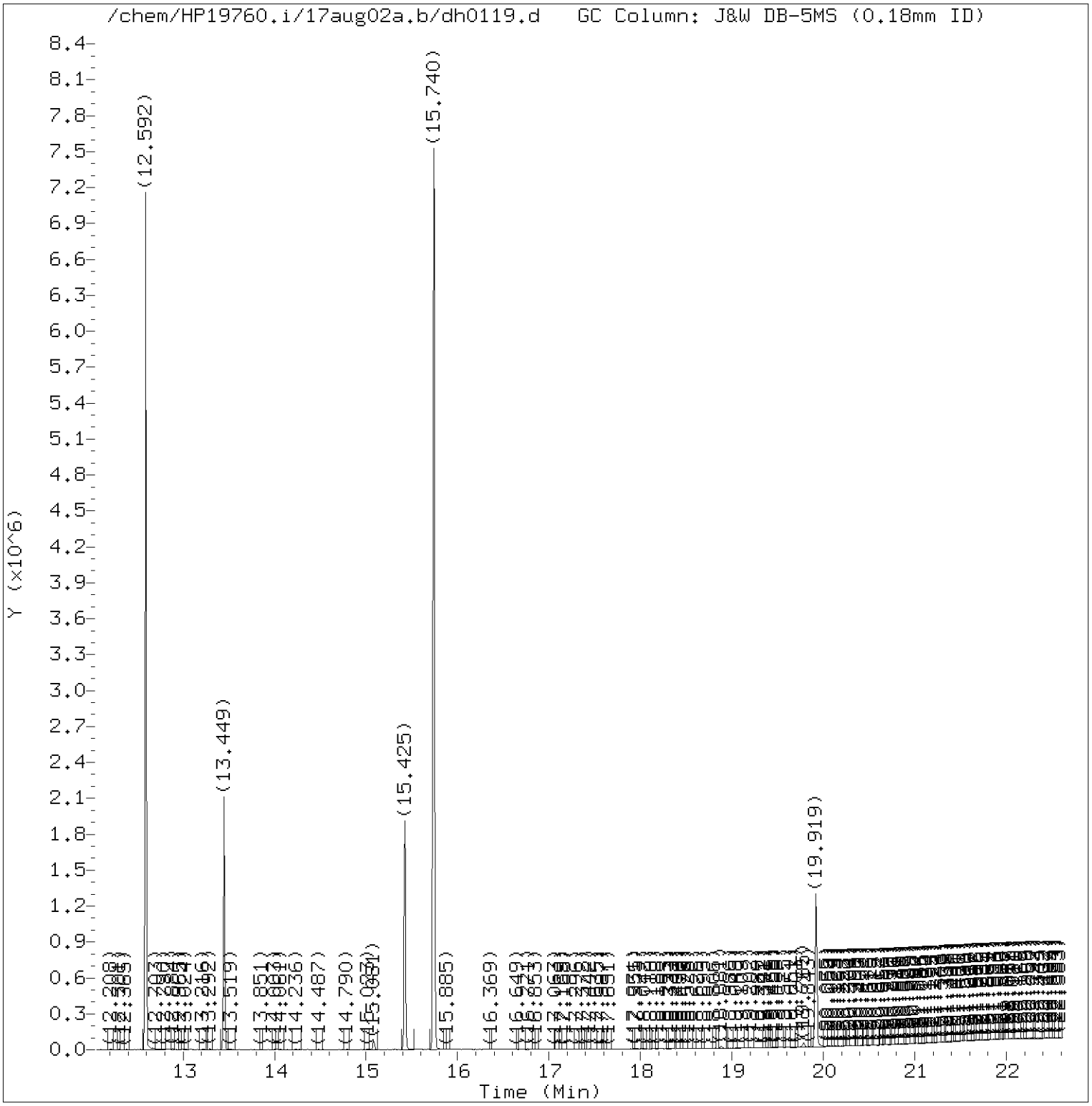
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0119.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 03:23 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 03:47 Automation

Sample Name: K1910 Lab Sample ID: 9121683

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0119.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 03:23 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 03:47 Automation

Sample Name: K1910 Lab Sample ID: 9121683

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0119.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 03:23 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 03:47 Automation

Sample Name: K1910 Lab Sample ID: 9121683

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.839 | 152 | 240195 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.673 | 82 | 1703479 | 19.817 |
| 65)*Naphthalene-d8 | (2) | 8.774 | 136 | 901014 | 5.000 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 2844321 | 20.635 |
| 113)*Acenaphthene-d10 | (3) | 11.561 | 164 | 477086 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 861263 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.425 | 212 | 977246 | 5.000 |
| 179)$Terphenyl-d14 | (5) | 15.740 | 244 | 2988477 | 22.099 |
| 213)*Perylene-d12 | (6) | 19.919 | 264 | 664891 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0122.d Injection date and time: **03-AUG-2017 04:46**
Data file Sample Info. Line: K1914;9121693;1;0;SAMPLE;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 03-Aug-2017 05:10 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 250 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.839( 0.000) | 884 | 152 | 242664 ( -13) | 5.00 | |
| 65) Naphthalene-d8 | 8.775( 0.006) | 1216 | 136 | 910513 ( -13) | 5.00 | |
| 113) Acenaphthene-d10 | 11.561( 0.006) | 1694 | 164 | 497207 ( -15) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 886055 ( -16) | 5.00 | |
| 175) Pyrene-d10 | 15.425( 0.006) | 2357 | 212 | 1002513 ( -21) | 5.00 | |
| 213) Perylene-d12 | 19.919( 0.006) | 3128 | 264 | 687868 ( -31) | 5.00 | |

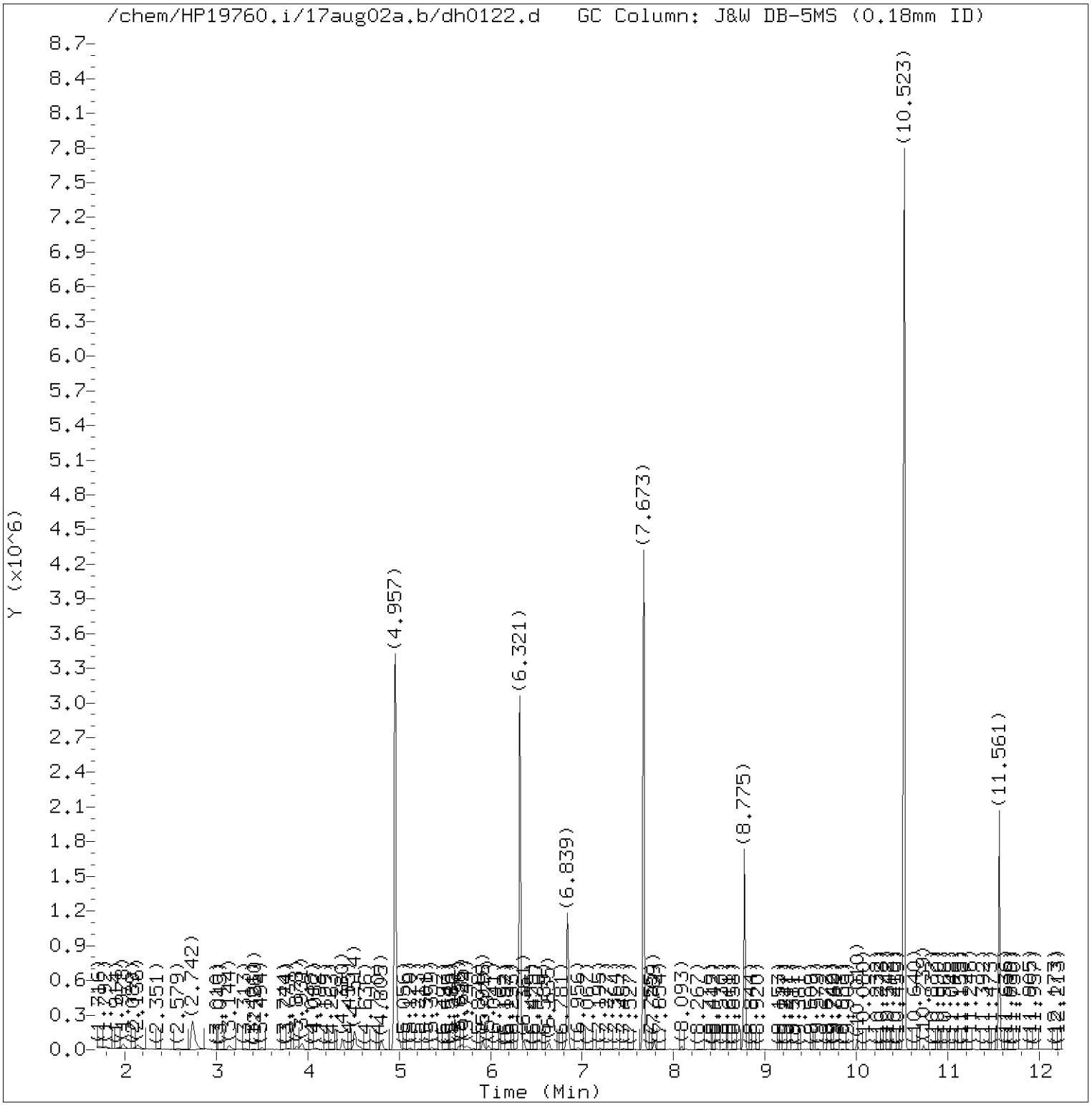
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.673( 0.000) | 82 | 1868723 | 21.513 | 86% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 2958789 | 20.596 | 82% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.746(-0.001) | 244 | 3169828 | 22.849 | 91% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 177) Pyrene | (5) | | | Not Detected | | | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | | | Not Detected | | | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:14. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

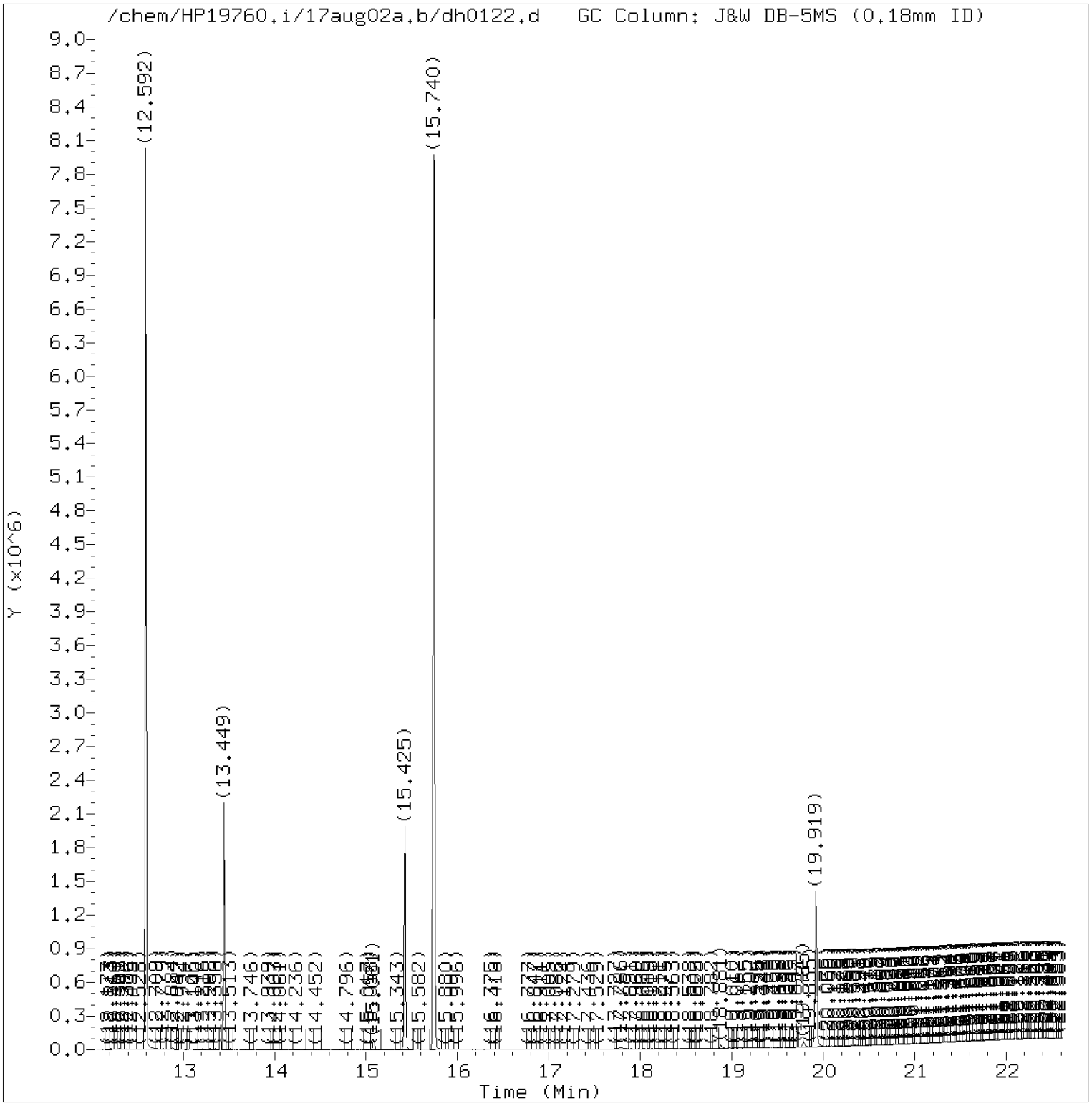
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0122.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 04:46 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 05:10 Automation

Sample Name: K1914 Lab Sample ID: 9121693

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0122.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 04:46 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 05:10 Automation

Sample Name: K1914 Lab Sample ID: 9121693

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0122.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 04:46 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 05:10 Automation

Sample Name: K1914 Lab Sample ID: 9121693

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.839 | 152 | 242664 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.673 | 82 | 1868723 | 21.513 |
| 65)*Naphthalene-d8 | (2) | 8.775 | 136 | 910513 | 5.000 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 2958789 | 20.596 |
| 113)*Acenaphthene-d10 | (3) | 11.561 | 164 | 497207 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 886055 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.425 | 212 | 1002513 | 5.000 |
| 179)$Terphenyl-d14 | (5) | 15.746 | 244 | 3169828 | 22.849 |
| 213)*Perylene-d12 | (6) | 19.919 | 264 | 687868 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

# Standards Data

# Semivolatiles by GC/MS

Lancaster Laboratories
Semi-Volatiles
Runlog for Agilent GC/MS System HP19760 **HP #04**

Data Directory Path is - D:\data\17jul26a\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| ceb05247 | DG0770.D | rvDFTPP2007 | 07/26/2017 | 08:46 | | |
| ceb05247 | DG0771.D | rvSTD1577 | 07/26/2017 | 09:08 | | |
| ceb05247 | DG0772.D | rvSTD1577 | 07/26/2017 | 09:52 | | |
| ceb05247 | DG0773.D | rvSTD1577 | 07/26/2017 | 10:19 | | |
| ceb05247 | DG0774.D | rvSTD1577 | 07/26/2017 | 10:47 | | |
| ceb05247 | DG0775.D | rvSTD1577 | 07/26/2017 | 11:15 | | |
| ceb05247 | DG0776.D | rvSTD1577 | 07/26/2017 | 11:42 | | |
| ceb05247 | DG0777.D | rvSTD1577 | 07/26/2017 | 12:10 | | |
| ceb05247 | DG0778.D | rvSTD1577 | 07/26/2017 | 12:38 | | |
| ceb05247 | DG0779.D | rvMDL1577 | 07/26/2017 | 13:05 | | |
| ceb05247 | DG0780.D | PAHMDL1577 | 07/26/2017 | 13:33 | | |
| ceb05247 | DG0781.D | rvICV1147 | 07/26/2017 | 14:01 | | |
| ceb05247 | DG0782.D | rvBASICV0637 | 07/26/2017 | 14:28 | | |
| ceb05247 | DG0783.D | rvBACICV1737 | 07/26/2017 | 14:56 | | |

Lancaster Laboratories
Semi-Volatiles
Runlog for Agilent GC/MS System HP19760 **HP #04**

Data Directory Path is - D:\data\17aug02a\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| em10340 | DH0100.D | rvDFTPP2007 | 08/02/2017 | 18:26 | | |
| em10340 | DH0100a.D | rvDFTPP2007 | 08/02/2017 | 19:10 | | |
| em10340 | DH0101.D | rvSTD2077 | 08/02/2017 | 19:24 | | |
| em10340 | DH0102.D | SBLKWC208 | 08/02/2017 | 20:02 | 17208WAC | |
| em10340 | DH0103.D | 208WCLCS | 08/02/2017 | 20:29 | 17208WAC | |
| em10340 | DH0104.D | SBLKWG213 | 08/02/2017 | 20:57 | 17213WAG | |
| em10340 | DH0105.D | 213WGLCS | 08/02/2017 | 21:24 | 17213WAG | |
| em10340 | DH0106.D | 213WGLCSD | 08/02/2017 | 21:52 | 17213WAG | |
| em10340 | DH0107.D | 213WGLCS2 | 08/02/2017 | 22:20 | 17213WAG | |
| em10340 | DH0108.D | 213WGLCSD2 | 08/02/2017 | 22:47 | 17213WAG | |
| em10340 | DH0123.D | 9122418RE | 08/02/2017 | 23:15 | 17213WAG | |
| em10340 | DH0124.D | 9122419RE | 08/02/2017 | 23:42 | 17213WAG | |
| em10340 | DH0125.D | 9122420RE | 08/03/2017 | 00:10 | 17213WAG | |
| em10340 | DH0126.D | 9122421RE | 08/03/2017 | 00:37 | 17213WAG | |
| em10340 | DH0127.D | 9122422RE | 08/03/2017 | 01:05 | 17213WAG | |
| em10340 | DH0128.D | 9122424RE | 08/03/2017 | 01:33 | 17213WAG | |
| em10340 | DH0116.D | 9121674 | 08/03/2017 | 02:00 | 17208WAC | |
| em10340 | DH0117.D | 9121676 | 08/03/2017 | 02:28 | 17208WAC | |
| em10340 | DH0118.D | 9121680 | 08/03/2017 | 02:55 | 17208WAC | |
| em10340 | DH0119.D | 9121683 | 08/03/2017 | 03:23 | 17208WAC | |
| em10340 | DH0120.D | 9121684 | 08/03/2017 | 03:51 | 17208WAC | |
| em10340 | DH0121.D | 9121685 | 08/03/2017 | 04:18 | 17208WAC | |
| em10340 | DH0122.D | 9121693 | 08/03/2017 | 04:46 | 17208WAC | |
| em10340 | DH0129.D | rvSTD2077 | 08/03/2017 | 05:13 | | |
| em10340 | DH0109.D | 9112854 | 08/03/2017 | 05:41 | 17201WAT | 2 |
| em10340 | DH0110.D | 9112856 | 08/03/2017 | 06:08 | 17201WAT | 2 |

Data File: /chem/HP19760.i/17jul26a.b/dg0770.d

Date : 26-JUL-2017 08:46

Client ID: DFTPP12.5

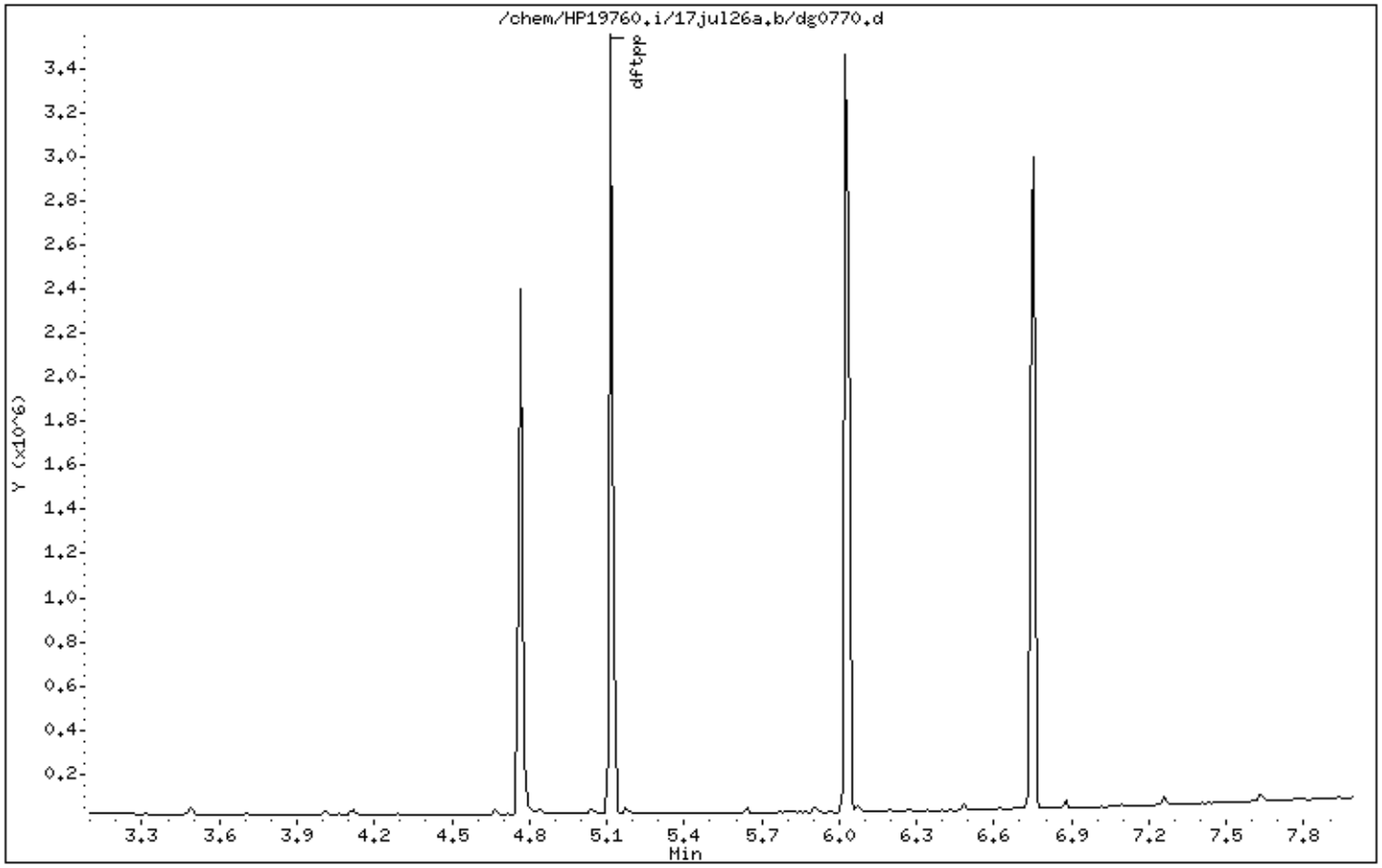
Instrument: HP19760.i

Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP;

Operator: ceb05247

Column phase: DB-5MS

Column diameter: 0.18




Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Data File: /chem/HP19760.i/17jul26a.b/dg0770.d

Date : 26-JUL-2017 08:46

Client ID: DFTPP12.5

Instrument: HP19760.i

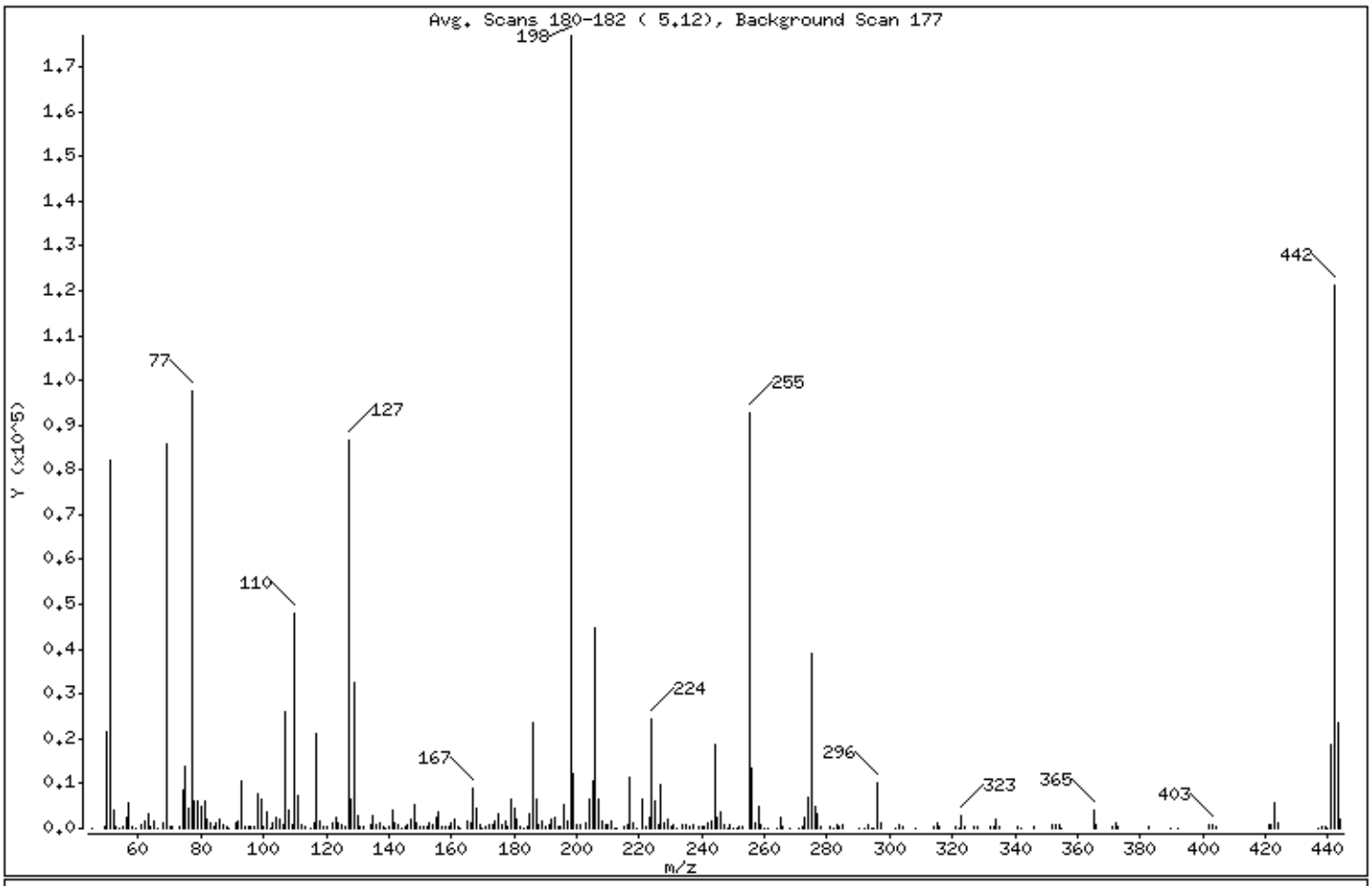
Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP;

Operator: ceb05247

Column phase: DB-5MS

Column diameter: 0.18

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 10.00 - 80.00% of mass 198 | 46.45 |
| 68 | Less than 2.00% of mass 69 | 0.78 ( 1.61) |
| 69 | Mass 69 relative abundance | 48.54 |
| 70 | Less than 2.00% of mass 69 | 0.12 ( 0.24) |
| 127 | 10.00 - 80.00% of mass 198 | 48.92 |
| 197 | Less than 2.00% of mass 198 | 0.81 |
| 199 | 5.00 - 9.00% of mass 198 | 6.90 |
| 275 | 10.00 - 60.00% of mass 198 | 22.13 |
| 365 | Greater than 1.00% of mass 198 | 2.26 |
| 441 | 0.01 - 24.00% of mass 442 | 10.66 ( 15.55) |
| 442 | 50.00 - 99.99% of mass 198 | 68.55 |
| 443 | 15.00 - 24.00% of mass 442 | 13.22 ( 19.28) |

Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Date : 26-JUL-2017 08:46

Client ID: DFTPP12.5 Instrument: HP19760.i

Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP; Operator: ceb05247

Column phase: DB-5MS Column diameter: 0.18

Data File: dg0770.d
Spectrum: Avg. Scans 180-182 ( 5.12), Background Scan 177
Location of Maximum: 198.00
Number of points: 271

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 45.00 | 196 | 122.00 | 1396 | 192.00 | 2167 | 271.00 | 168 |
| 49.00 | 522 | 123.00 | 2323 | 193.00 | 2245 | 272.00 | 366 |
| 50.00 | 21440 | 124.00 | 1178 | 194.00 | 563 | 273.00 | 2640 |
| 51.00 | 82184 | 125.00 | 940 | 195.00 | 327 | 274.00 | 6920 |
| 52.00 | 3944 | 126.00 | 555 | 196.00 | 5134 | 275.00 | 39152 |
| 53.00 | 345 | 127.00 | 86576 | 197.00 | 1435 | 276.00 | 5015 |
| 54.00 | 93 | 128.00 | 6478 | 198.00 | 176896 | 277.00 | 3218 |
| 55.00 | 390 | 129.00 | 32448 | 199.00 | 12217 | 278.00 | 544 |
| 56.00 | 2371 | 130.00 | 2918 | 200.00 | 805 | 281.00 | 232 |
| 57.00 | 5536 | 131.00 | 540 | 201.00 | 775 | 282.00 | 78 |
| 58.00 | 239 | 132.00 | 315 | 203.00 | 1185 | 283.00 | 644 |
| 59.00 | 178 | 134.00 | 915 | 204.00 | 6306 | 284.00 | 300 |
| 61.00 | 955 | 135.00 | 2822 | 205.00 | 10515 | 285.00 | 686 |
| 62.00 | 1490 | 136.00 | 946 | 206.00 | 44832 | 290.00 | 90 |
| 63.00 | 3446 | 137.00 | 1378 | 207.00 | 6412 | 292.00 | 84 |
| 64.00 | 434 | 138.00 | 255 | 208.00 | 1620 | 293.00 | 688 |
| 65.00 | 1697 | 139.00 | 192 | 209.00 | 723 | 294.00 | 106 |
| 66.00 | 81 | 140.00 | 267 | 210.00 | 637 | 295.00 | 168 |
| 68.00 | 1382 | 141.00 | 4154 | 211.00 | 1630 | 296.00 | 10029 |
| 69.00 | 85888 | 142.00 | 1240 | 212.00 | 196 | 297.00 | 1319 |
| 70.00 | 208 | 143.00 | 894 | 213.00 | 107 | 302.00 | 104 |
| 71.00 | 308 | 144.00 | 183 | 215.00 | 396 | 303.00 | 1005 |
| 73.00 | 291 | 145.00 | 251 | 216.00 | 991 | 304.00 | 360 |
| 74.00 | 8565 | 146.00 | 793 | 217.00 | 11474 | 308.00 | 109 |
| 75.00 | 13652 | 147.00 | 1864 | 218.00 | 1372 | 314.00 | 453 |
| 76.00 | 4630 | 148.00 | 5140 | 219.00 | 177 | 315.00 | 1224 |
| 77.00 | 97744 | 149.00 | 1115 | 221.00 | 6615 | 316.00 | 569 |
| 78.00 | 6251 | 150.00 | 309 | 222.00 | 434 | 321.00 | 289 |
| 79.00 | 6263 | 151.00 | 543 | 223.00 | 2582 | 322.00 | 104 |
| 80.00 | 4787 | 152.00 | 231 | 224.00 | 24512 | 323.00 | 3024 |
| 81.00 | 6281 | 153.00 | 1415 | 225.00 | 6128 | 324.00 | 550 |
| 82.00 | 1836 | 154.00 | 774 | 226.00 | 824 | 327.00 | 591 |
| 83.00 | 1276 | 155.00 | 2327 | 227.00 | 9775 | 328.00 | 356 |
| 84.00 | 386 | 156.00 | 3622 | 228.00 | 1285 | 332.00 | 269 |
| 85.00 | 1080 | 157.00 | 602 | 229.00 | 2034 | 333.00 | 345 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Date : 26-JUL-2017 08:46

Client ID: DFTPP12.5 Instrument: HP19760.i

Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP; Operator: ceb05247

Column phase: DB-5MS Column diameter: 0.18

Data File: dg0770.d
Spectrum: Avg. Scans 180-182 ( 5,12), Background Scan 177
Location of Maximum: 198.00
Number of points: 271

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 86.00 | 1849 | 158.00 | 507 | 230.00 | 235 | 334.00 | 1890 |
| 87.00 | 812 | 159.00 | 535 | 231.00 | 815 | 335.00 | 576 |
| 88.00 | 310 | 160.00 | 1255 | 232.00 | 100 | 341.00 | 537 |
| 89.00 | 147 | 161.00 | 1972 | 234.00 | 622 | 342.00 | 180 |
| 91.00 | 1206 | 162.00 | 454 | 235.00 | 672 | 346.00 | 591 |
| 92.00 | 1709 | 163.00 | 135 | 236.00 | 526 | 352.00 | 923 |
| 93.00 | 10412 | 165.00 | 1821 | 237.00 | 863 | 353.00 | 622 |
| 94.00 | 544 | 166.00 | 1157 | 239.00 | 430 | 354.00 | 982 |
| 95.00 | 241 | 167.00 | 8752 | 240.00 | 285 | 355.00 | 87 |
| 96.00 | 556 | 168.00 | 4516 | 241.00 | 572 | 365.00 | 3993 |
| 97.00 | 419 | 169.00 | 622 | 242.00 | 1252 | 366.00 | 613 |
| 98.00 | 7927 | 170.00 | 201 | 243.00 | 1436 | 371.00 | 271 |
| 99.00 | 6379 | 171.00 | 309 | 244.00 | 18736 | 372.00 | 1365 |
| 100.00 | 496 | 172.00 | 820 | 245.00 | 2553 | 373.00 | 386 |
| 101.00 | 3752 | 173.00 | 790 | 246.00 | 3561 | 383.00 | 408 |
| 102.00 | 163 | 174.00 | 1801 | 247.00 | 696 | 390.00 | 100 |
| 103.00 | 1309 | 175.00 | 3197 | 248.00 | 112 | 392.00 | 83 |
| 104.00 | 2303 | 176.00 | 947 | 249.00 | 727 | 402.00 | 642 |
| 105.00 | 2002 | 177.00 | 1585 | 250.00 | 125 | 403.00 | 741 |
| 106.00 | 634 | 178.00 | 370 | 251.00 | 159 | 404.00 | 313 |
| 107.00 | 25888 | 179.00 | 6406 | 252.00 | 254 | 421.00 | 708 |
| 108.00 | 4170 | 180.00 | 4432 | 253.00 | 598 | 422.00 | 733 |
| 109.00 | 928 | 181.00 | 2041 | 255.00 | 92520 | 423.00 | 5550 |
| 110.00 | 48000 | 182.00 | 329 | 256.00 | 13588 | 424.00 | 1266 |
| 111.00 | 7248 | 183.00 | 133 | 257.00 | 1104 | 437.00 | 129 |
| 112.00 | 772 | 184.00 | 474 | 258.00 | 4785 | 438.00 | 275 |
| 113.00 | 263 | 185.00 | 3121 | 259.00 | 759 | 439.00 | 519 |
| 115.00 | 165 | 186.00 | 23464 | 260.00 | 84 | 440.00 | 188 |
| 116.00 | 1311 | 187.00 | 6455 | 261.00 | 89 | 441.00 | 18864 |
| 117.00 | 21080 | 188.00 | 673 | 264.00 | 108 | 442.00 | 121304 |
| 118.00 | 1521 | 189.00 | 1431 | 265.00 | 2356 | 443.00 | 23384 |
| 119.00 | 217 | 190.00 | 227 | 266.00 | 368 | 444.00 | 2035 |
| 120.00 | 286 | 191.00 | 747 | 268.00 | 89 | | |

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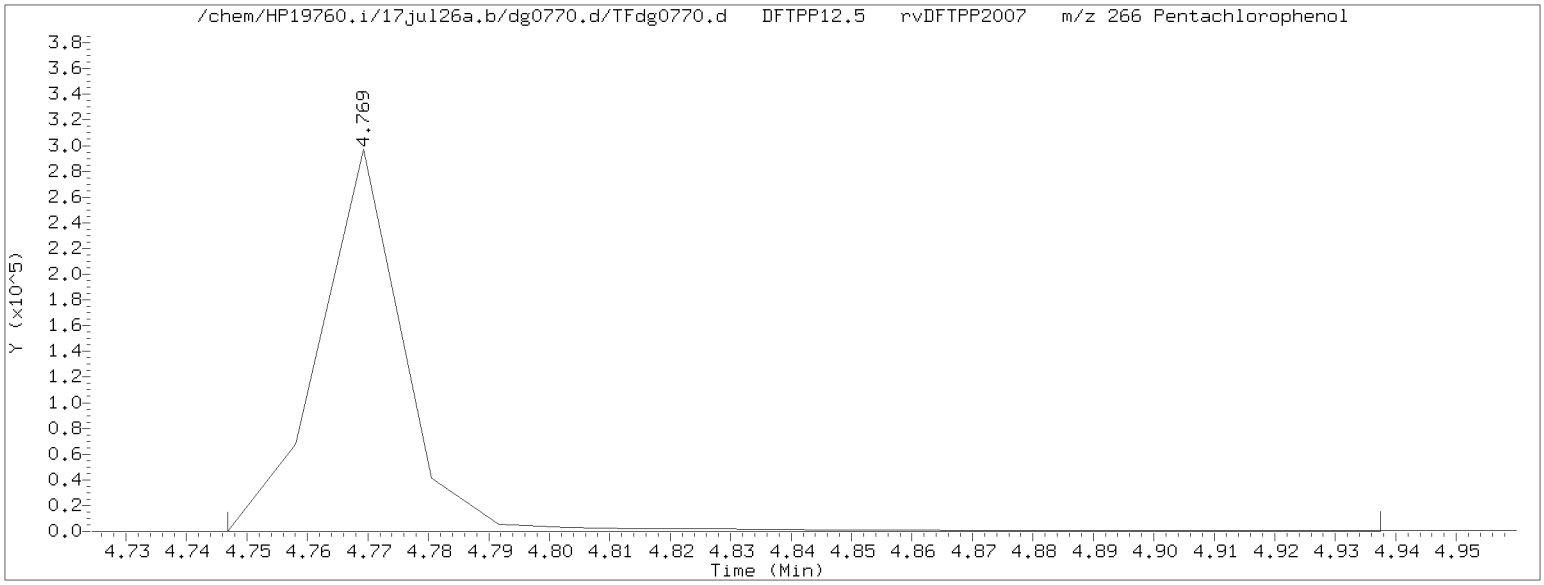
Target 3.5 esignature user ID: em10340

# Assessment of GC Column Performance and Injection Port Inertness for

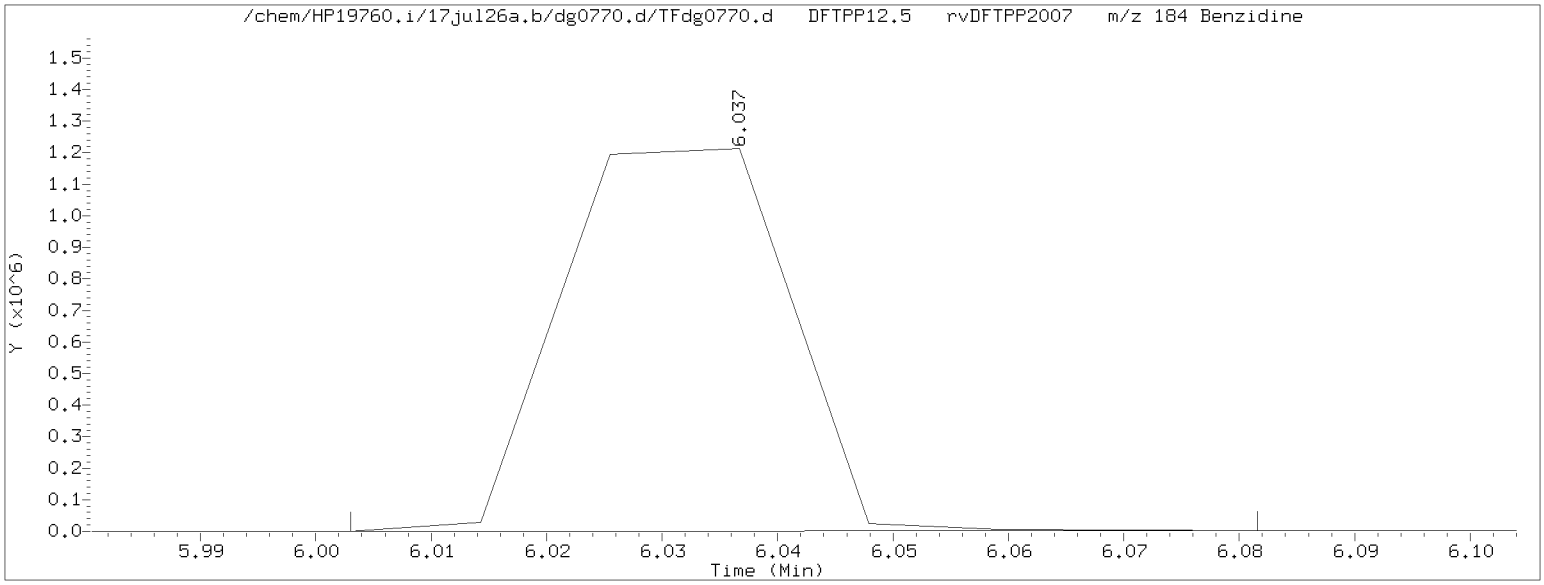
Instrument ID: HP19760.i  Injection Date: 26-JUL-2017 08:46  Operator: ceb05247




Pentachlorophenol EICP peak height = 297344  EICP peak height at 10% = 29734  Pentachlorophenol EICP area = 286629

Pentachlorophenol EICP peak apex (min.) = 4.769
RT at 10% of front half of EICP (min.) = 4.752  'Front' peak width (min.) = 0.0175000000
RT at 10% of back half of EICP (min.) = 4.784  'Tailing' peak width (min.) = 0.0148500000

$$\text{PCP tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0148500000}{0.0175000000} = 0.849$$




Benzidine EICP peak height = 1211385  EICP peak height at 1.25% = 15142  Benzidine EICP area = 1658008

Benzidine EICP peak apex (min.) = 6.037
RT at 1.25% of front half of EICP (min.) = 6.010  'Front' peak width (min.) = 0.0271833333
RT at 1.25% of back half of EICP (min.) = 6.053  'Tailing' peak width (min.) = 0.0165833333

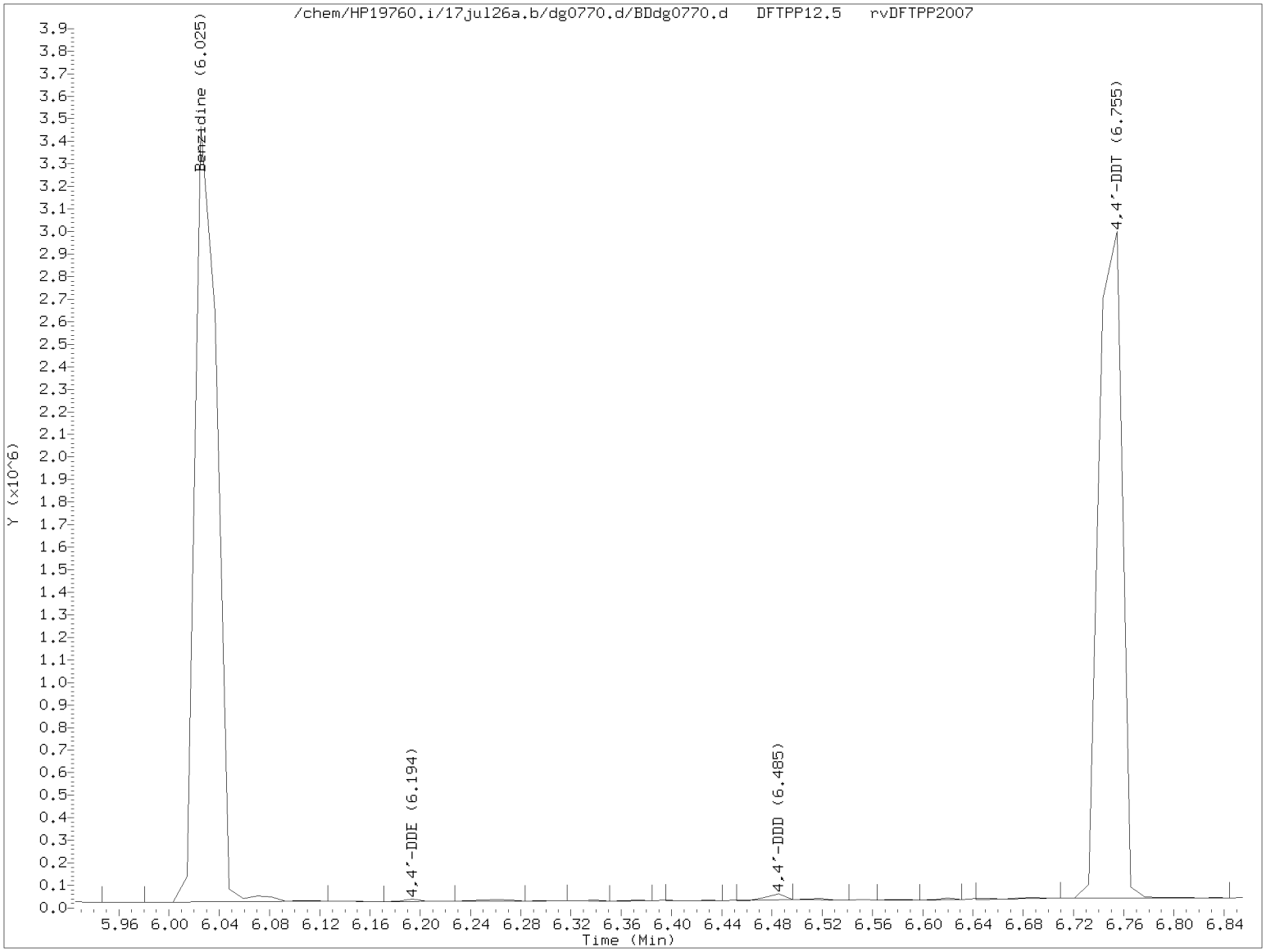
$$\text{Benzidine tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0165833333}{0.0271833333} = 0.610$$



Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.  PARALLAX ID: reb00745

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP19760.i  Injection Date: 26-JUL-2017 08:46  Operator: ceb05247

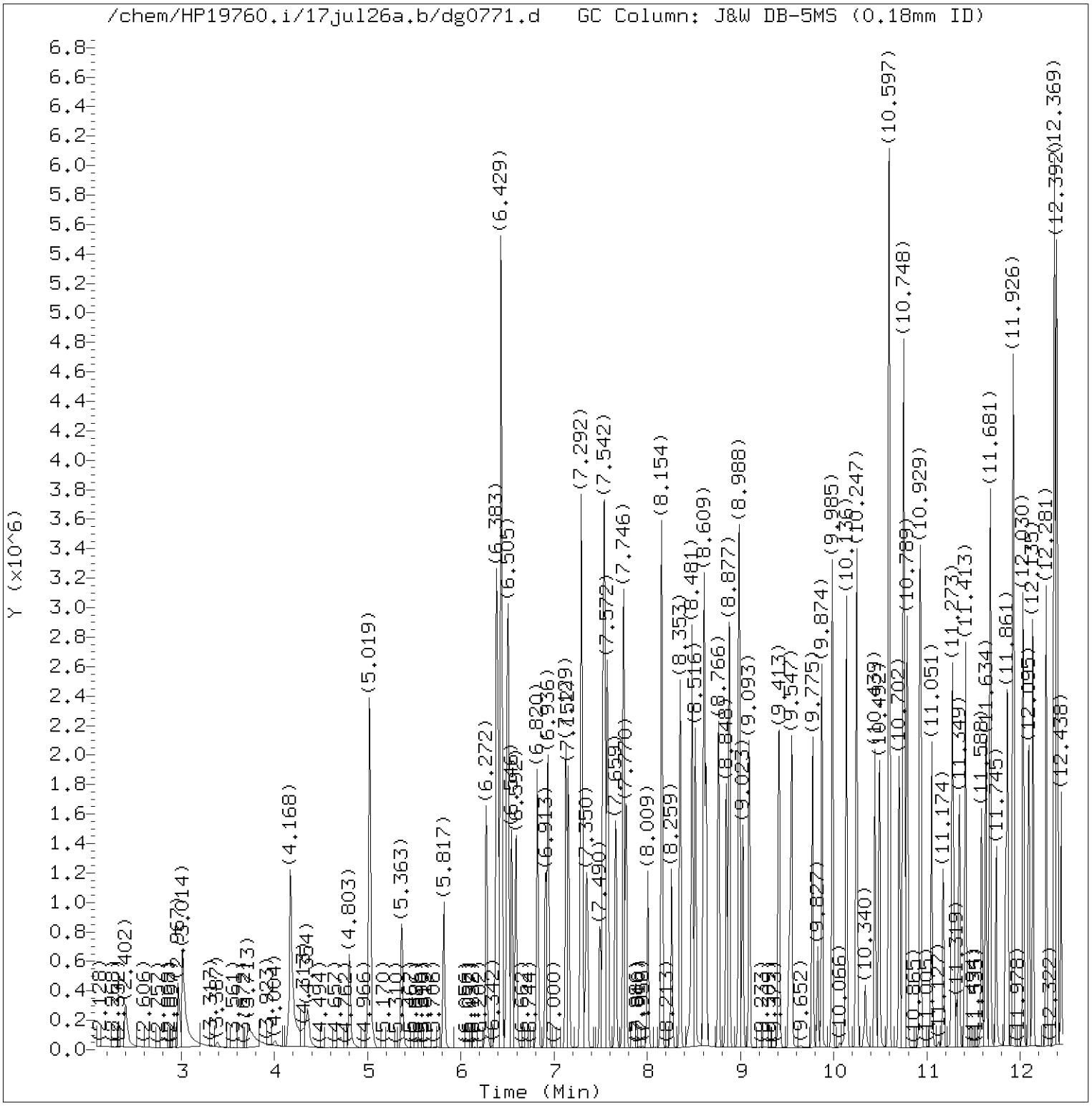



$$\%\ 4,4'\text{-DDT breakdown} = \frac{4,4'\text{-DDE TIC area} + 4,4'\text{-DDD TIC area}}{4,4'\text{-DDE TIC area} + 4,4'\text{-DDD TIC area} + 4,4'\text{-DDT TIC area}} \times 100$$

$$\%\ 4,4'\text{-DDT breakdown} = \frac{9553 + 25593}{9553 + 25593 + 3865750} \times 100 = 0.9$$


printed on 07/26/2017 at 08:56

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.  PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

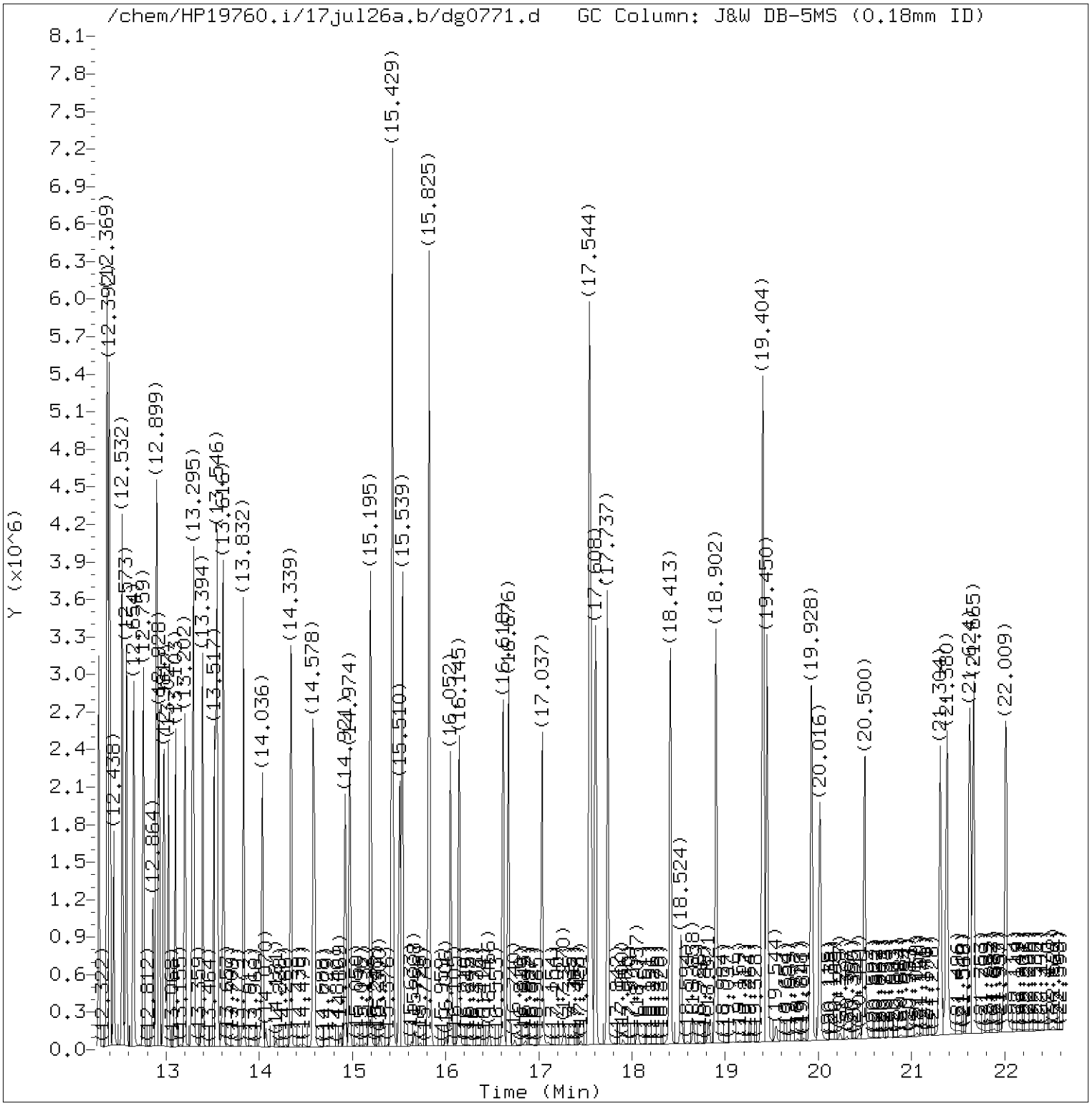
Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0771.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:08 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0771.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:08 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0771.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:08  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD7.5  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.402 | 88 | 257681 | 7.500 |
| 4) N-Nitrosodimethylamine | (1) | 2.967 | 74 | 426410 | 7.500 |
| 5) Pyridine | (1) | 3.014 | 79 | 671872 | 7.500 |
| 7) 2-Picoline | (1) | 4.173 | 93 | 742600 | 7.500 |
| 8) N-Nitrosomethylethylamine | (1) | 4.354 | 88 | 304748 | 7.500 |
| 9) Methyl methanesulfonate | (1) | 4.803 | 80 | 354230 | 7.500 |
| 11)$2-Fluorophenol | (1) | 5.019 | 112 | 1180839 | 15.000 |
| 13) N-Nitrosodiethylamine | (1) | 5.363 | 102 | 300947 | 7.500 |
| 42) Total Cresols | (1) | | | 1160662 | 15.000 |
| 15) Ethyl methanesulfonate | (1) | 5.817 | 109 | 308361 | 7.500 |
| 16) Benzaldehyde | (1) | 6.272 | 77 | 539808 | 7.500 |
| 17)$Phenol-d6 | (1) | 6.383 | 99 | 1554267 | 15.000 |
| 18) Phenol | (1) | 6.400 | 94 | 889310 | 7.500 |
| 19) Aniline | (1) | 6.429 | 93 | 1035021 | 7.500 |
| 20) a-methylstyrene | (1) | 6.505 | 118 | 663391 | 7.500 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.546 | 93 | 662493 | 7.500 |
| 23) 2-Chlorophenol | (1) | 6.592 | 128 | 570899 | 7.500 |
| 24) 1,3-Dichlorobenzene | (1) | 6.820 | 146 | 621960 | 7.500 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 256945 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.936 | 146 | 630674 | 7.500 |
| 27) Benzyl alcohol | (1) | 7.129 | 108 | 427071 | 7.500 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 593373 | 7.500 |
| 30) Indene | (1) | 7.286 | 115 | 1164659 | 7.500 |
| 31) 2-Methylphenol | (1) | 7.298 | 108 | 565398 | 7.500 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.350 | 45 | 874413 | 7.500 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.350 | 45 | 874413 | 7.500 |
| 97) Isosafrole | (3) | | | 459244 | 7.500 |
| 35) N-Nitrosopyrrolidine | (1) | 7.490 | 100 | 325698 | 7.500 |
| 36) Acetophenone | (1) | 7.525 | 105 | 897324 | 7.500 |
| 37) 4-Methylphenol | (1) | 7.537 | 108 | 595264 | 7.500 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.542 | 70 | 498314 | 7.500 |
| 39) N-Nitrosomorpholine | (1) | 7.560 | 56 | 404573 | 7.500 |
| 40) o-Toluidine | (1) | 7.572 | 106 | 985817 | 7.500 |
| 43) Hexachloroethane | (1) | 7.659 | 117 | 259507 | 7.500 |
| 44)$Nitrobenzene-d5 | (2) | 7.746 | 82 | 1443176 | 15.000 |
| 45) Nitrobenzene | (2) | 7.770 | 77 | 723185 | 7.500 |
| 48) N-Nitrosopiperidine | (2) | 8.009 | 114 | 292797 | 7.500 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 587644 | 15.000 |
| 50) Isophorone | (2) | 8.149 | 82 | 1233768 | 7.500 |
| 51) 2-Nitrophenol | (2) | 8.259 | 139 | 283671 | 7.500 |

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$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0771.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:08  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD7.5  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.353 | 107 | 623337 | 7.500 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.481 | 198 | 277383 | 7.500 |
| 56) Benzoic acid | (2) | 8.498 | 105 | 505471M | 10.000 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.516 | 93 | 797908 | 7.500 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.609 | 104 | 978443 | 7.500 |
| 60) 2,4-Dichlorophenol | (2) | 8.632 | 162 | 469657 | 7.500 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.766 | 180 | 520138 | 7.500 |
| 146) Diallate trans/cis | (4) | | | 585497 | 7.500 |
| 65)*Naphthalene-d8 | (2) | 8.848 | 136 | 957205 | 5.000 |
| 66) Naphthalene | (2) | 8.883 | 128 | 1659701 | 7.500 |
| 67) 4-Chloroaniline | (2) | 8.982 | 127 | 676253 | 7.500 |
| 68) 2,6-Dichlorophenol | (2) | 8.988 | 162 | 465258 | 7.500 |
| 69) Hexachloropropene | (2) | 9.023 | 213 | 323769 | 7.500 |
| 71) Hexachlorobutadiene | (2) | 9.093 | 225 | 295275 | 7.500 |
| 75) Quinoline | (2) | 9.413 | 129 | 1049987 | 7.500 |
| 76) Caprolactam | (2) | 9.530 | 113 | 150291 | 7.500 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.547 | 84 | 596010 | 7.500 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.775 | 107 | 536687 | 7.500 |
| 82) Safrole | (2) | 9.874 | 162 | 434244 | 7.500 |
| 83) 2-Methylnaphthalene | (2) | 9.985 | 142 | 1110036 | 7.500 |
| 84) 1-Methylnaphthalene | (2) | 10.136 | 142 | 995546 | 7.500 |
| 85) Hexachlorocyclopentadiene | (3) | 10.241 | 237 | 272049 | 7.500 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.247 | 216 | 512469 | 7.500 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 79140 | 1.275 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.439 | 196 | 333451 | 7.500 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.492 | 196 | 352839 | 7.500 |
| 93)$2-Fluorobiphenyl | (3) | 10.597 | 172 | 2396001 | 15.000 |
| 94) trans-Isosafrole | (3) | 10.702 | 162 | 380104 | 6.225 |
| 95) 1,1'-Biphenyl | (3) | 10.742 | 154 | 1296801 | 7.500 |
| 96) 2-Chloronaphthalene | (3) | 10.760 | 162 | 1001135 | 7.500 |
| 98) 1-Chloronaphthalene | (3) | 10.789 | 162 | 992939 | 7.500 |
| 99) Diphenyl ether | (3) | 10.923 | 170 | 715323 | 7.500 |
| 100) 2-Nitroaniline | (3) | 10.935 | 138 | 324451 | 7.500 |
| 104) 1,4-Naphthoquinone | (3) | 11.051 | 158 | 415797 | 7.500 |
| 105) 1,4-Dinitrobenzene | (3) | 11.174 | 168 | 160708 | 7.500 |
| 106) Dimethylphthalate | (3) | 11.273 | 163 | 1129638 | 7.500 |
| 107) 1,3-Dinitrobenzene | (3) | 11.290 | 168 | 179615 | 7.500 |
| 108) 2,6-Dinitrotoluene | (3) | 11.349 | 165 | 249438 | 7.500 |
| 109) Acenaphthylene | (3) | 11.413 | 152 | 1471541 | 7.500 |
| 112) 3-Nitroaniline | (3) | 11.588 | 138 | 273407 | 7.500 |

M = Compound was manually integrated.
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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0771.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:08  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD7.5  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 113)*Acenaphthene-d10 | (3) | 11.634 | 164 | 538334 | 5.000 |
| 114) Acenaphthene | (3) | 11.681 | 153 | 1073357 | 7.500 |
| 115) 2,4-Dinitrophenol | (3) | 11.745 | 184 | 189690 | 10.000 |
| 116) 4-Nitrophenol | (3) | 11.844 | 109 | 197742 | 7.500 |
| 117) Pentachlorobenzene | (3) | 11.867 | 250 | 435171 | 7.500 |
| 119) Dibenzofuran | (3) | 11.926 | 168 | 1404586 | 7.500 |
| 118) 2,4-Dinitrotoluene | (3) | 11.931 | 165 | 338206 | 7.500 |
| 121) 1-Naphthylamine | (3) | 12.030 | 143 | 1054574 | 7.500 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.095 | 232 | 275013 | 7.500 |
| 123) 2-Naphthylamine | (3) | 12.135 | 143 | 1008462 | 7.500 |
| 124) Diethylphthalate | (3) | 12.281 | 149 | 1113442 | 7.500 |
| 126) Fluorene | (3) | 12.363 | 166 | 1106800 | 7.500 |
| 125) Thionazin | (3) | 12.374 | 107 | 227321 | 7.500 |
| 128) 5-Nitro-o-toluidine | (3) | 12.392 | 152 | 329379 | 7.500 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.392 | 204 | 528472 | 7.500 |
| 129) 4-Nitroaniline | (3) | 12.404 | 138 | 285247 | 7.500 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.438 | 198 | 191351 | 7.500 |
| 132) NDPA as diphenylamine | (4) | 12.532 | 169 | 942725 | 7.500 |
| 131) N-Nitrosodiphenylamine | (4) | 12.532 | 169 | 942725 | 7.500 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.573 | 77 | 1343485 | 7.500 |
| 135)$2,4,6-Tribromophenol | (3) | 12.654 | 330 | 291624 | 15.000 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.759 | 97 | 221780 | 7.500 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.864 | 213 | 118616 | 7.500 |
| 140) Diallate (peak 1) | (4) | 12.893 | 86 | 502452 | 6.225 |
| 141) Phorate | (4) | 12.905 | 75 | 881247 | 7.500 |
| 142) Phenacetin | (4) | 12.928 | 108 | 642949 | 7.500 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.981 | 248 | 304306 | 7.500 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 83045 | 1.275 |
| 145) Hexachlorobenzene | (4) | 13.027 | 284 | 315712 | 7.500 |
| 147) Dimethoate | (4) | 13.103 | 87 | 534762 | 7.500 |
| 148) Atrazine | (4) | 13.202 | 200 | 314587 | 7.500 |
| 149) Pentachlorophenol | (4) | 13.278 | 266 | 197210 | 7.500 |
| 150) 4-Aminobiphenyl | (4) | 13.295 | 169 | 746165 | 7.500 |
| 151) Pentachloronitrobenzene | (4) | 13.295 | 237 | 145498 | 7.500 |
| 152) Pronamide | (4) | 13.394 | 173 | 552580 | 7.500 |
| 153)*Phenanthrene-d10 | (4) | 13.517 | 188 | 1018234 | 5.000 |
| 154) Dinoseb | (4) | 13.534 | 211 | 306826 | 7.500 |
| 155) Phenanthrene | (4) | 13.546 | 178 | 1664285 | 7.500 |
| 157) Anthracene | (4) | 13.616 | 178 | 1673265 | 7.500 |
| 163) Carbazole | (4) | 13.832 | 167 | 1571464 | 7.500 |

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0771.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:08 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 164) Methyl parathion | (4) | 14.036 | 109 | 422669 | 7.500 |
| 165) Di-n-butylphthalate | (4) | 14.339 | 149 | 1914369 | 7.500 |
| 167) Parathion | (4) | 14.578 | 109 | 259053 | 7.500 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.595 | 190 | 186765 | 7.500 |
| 169) Octachlorostyrene | (4) | 14.921 | 308 | 125226 | 7.500 |
| 171) Isodrin | (4) | 14.974 | 193 | 197232 | 7.500 |
| 222) Total PAHs | (6) | | | 28464037 | 135.000 |
| 173) Fluoranthene | (4) | 15.195 | 202 | 1872717 | 7.500 |
| 174) Benzidine | (5) | 15.429 | 184 | 3625065 | 22.500 |
| 175)*Pyrene-d10 | (5) | 15.510 | 212 | 1184235 | 5.000 |
| 177) Pyrene | (5) | 15.539 | 202 | 1958049 | 7.500 |
| 179)$Terphenyl-d14 | (5) | 15.825 | 244 | 2481658 | 15.000 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.052 | 225 | 300884 | 7.500 |
| 185) Chlorobenzilate | (5) | 16.145 | 139 | 585401 | 7.500 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.618 | 212 | 1231485 | 7.500 |
| 188) Butylbenzylphthalate | (5) | 16.676 | 149 | 851150 | 7.500 |
| 191) 2-Acetylaminofluorene | (5) | 17.037 | 181 | 751578 | 7.500 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.544 | 252 | 688757 | 7.500 |
| 195) Benzo(a)anthracene | (5) | 17.544 | 228 | 1827085 | 7.500 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.562 | 231 | 350105 | 7.500 |
| 196) Chrysene | (5) | 17.608 | 228 | 1661405 | 7.500 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.737 | 149 | 1240602 | 7.500 |
| 203) 6-Methylchrysene | (5) | 18.413 | 242 | 1204889 | 7.500 |
| 205) Di-n-octylphthalate | (6) | 18.902 | 149 | 2180587 | 7.500 |
| 206) Benzo(b)fluoranthene | (6) | 19.404 | 252 | 1822007 | 7.500 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.410 | 256 | 770113 | 7.500 |
| 208) Benzo(k)fluoranthene | (6) | 19.450 | 252 | 1716597 | 7.500 |
| 211) Benzo(a)pyrene | (6) | 19.928 | 252 | 1676882 | 7.500 |
| 213)*Perylene-d12 | (6) | 20.016 | 264 | 929036 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.500 | 268 | 744503 | 7.500 |
| 217) Dibenz(a,h)acridine | (6) | 21.310 | 279 | 1321174 | 7.500 |
| 218) Dibenz(a,j)acridine | (6) | 21.380 | 279 | 1380973 | 7.500 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.624 | 276 | 1921140 | 7.500 |
| 220) Dibenz(a,h)anthracene | (6) | 21.665 | 278 | 1642732 | 7.500 |
| 221) Benzo(g,h,i)perylene | (6) | 22.009 | 276 | 1610892 | 7.500 |

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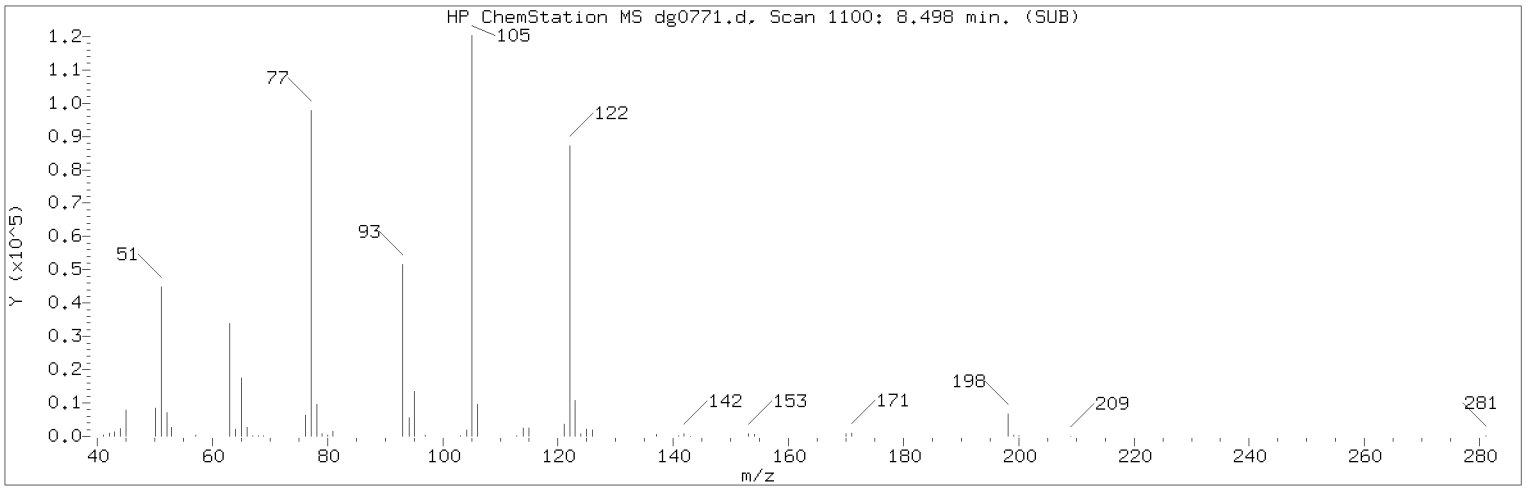
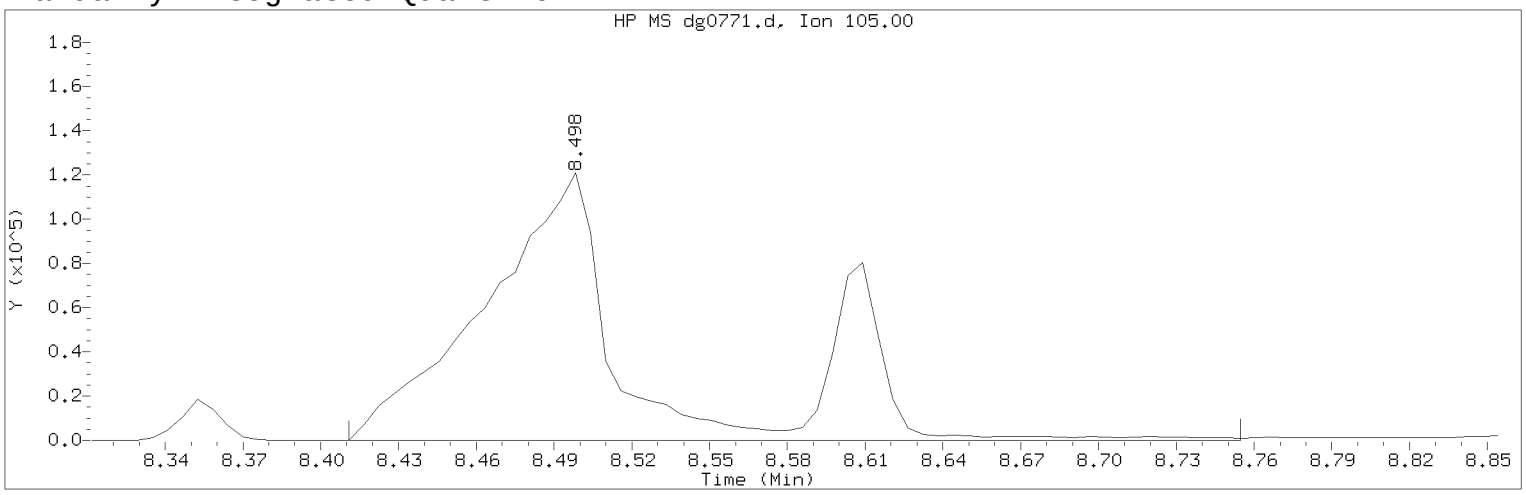
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0771.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:08 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD1577

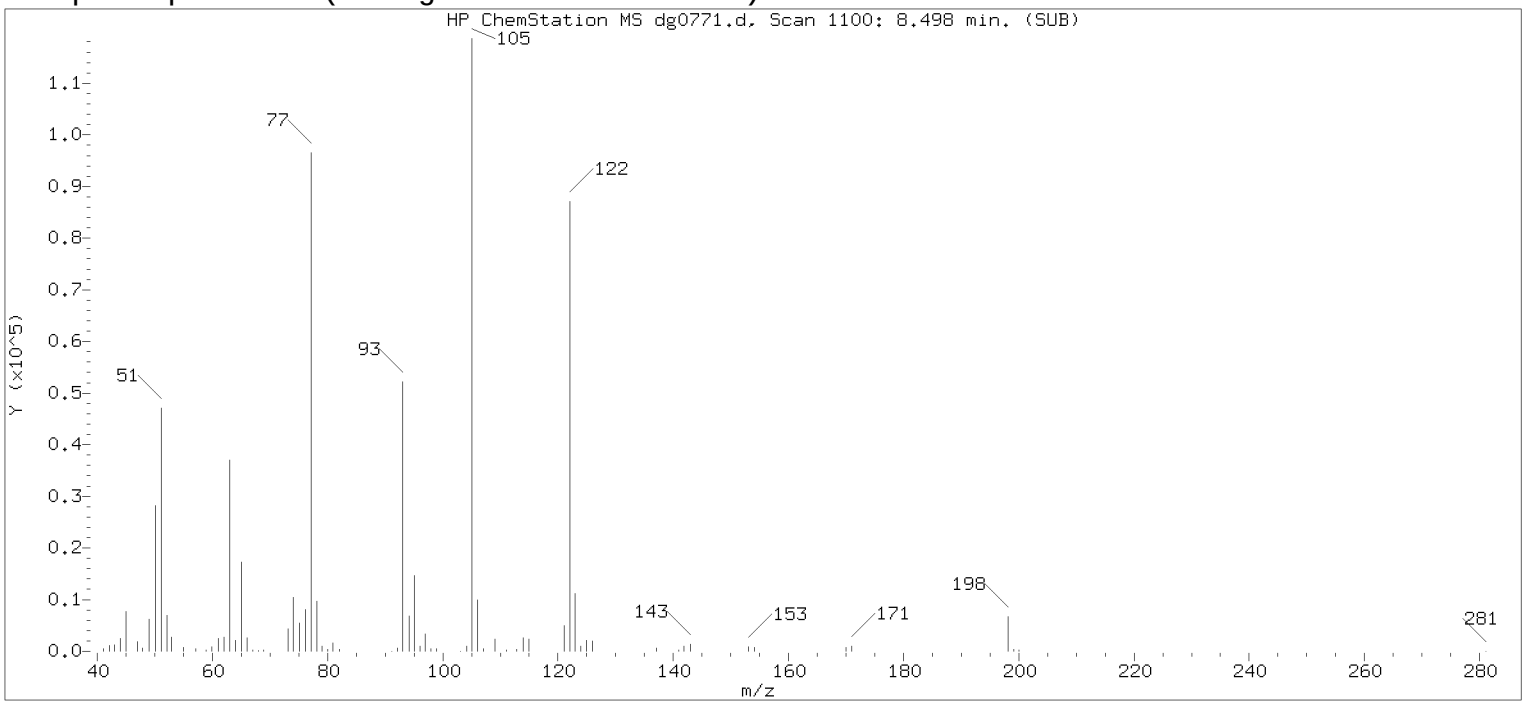
Compound Number : 56
Compound Name : Benzoic acid
Scan Number : 1100
Retention Time (minutes) : 8.498
Quant Ion : 105.00
Area (flag) : 505471M
On-Column Amount (ng/ul) : 10.0000
Integration start scan : 1084 Integration stop scan: 1143
Y at integration start : 15 Y at integration end: 15

Reason for manual integration: improper integration

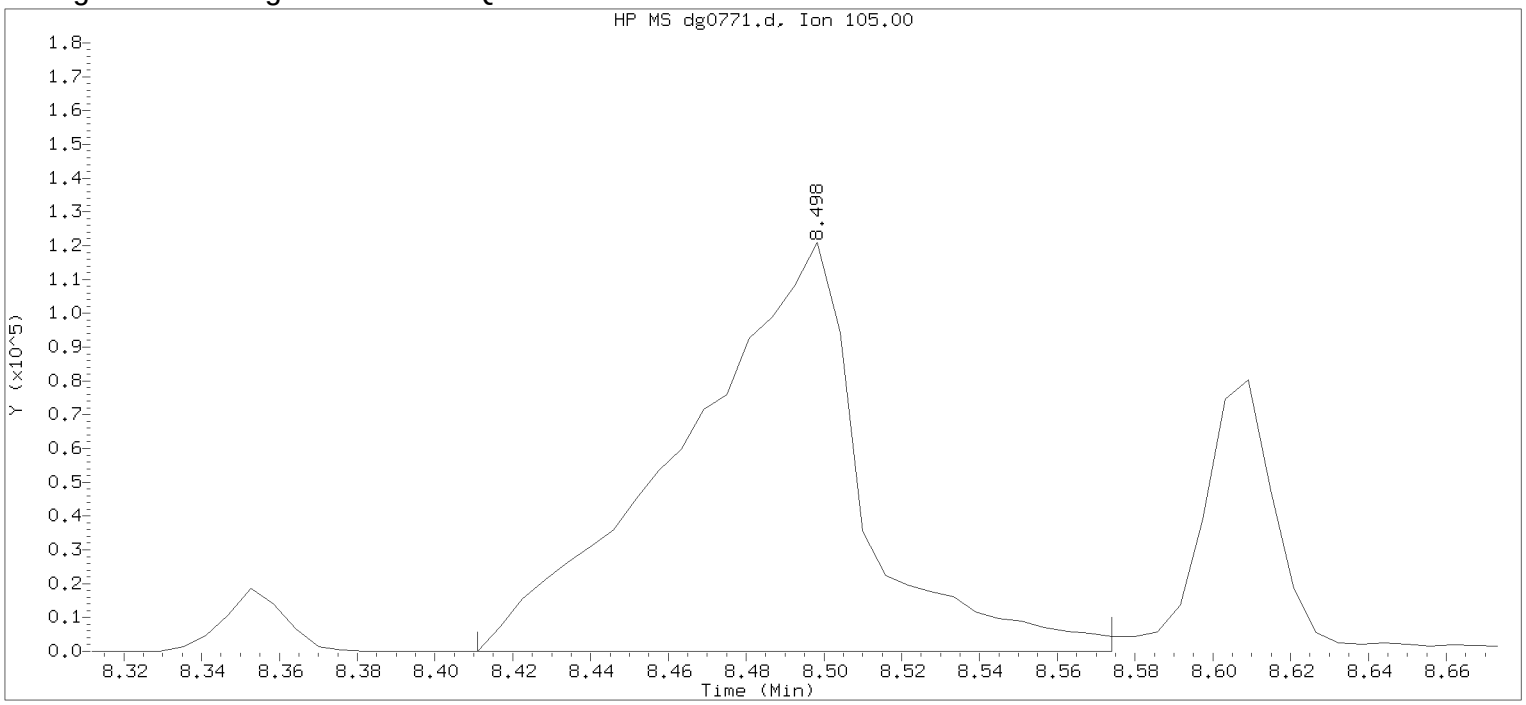
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



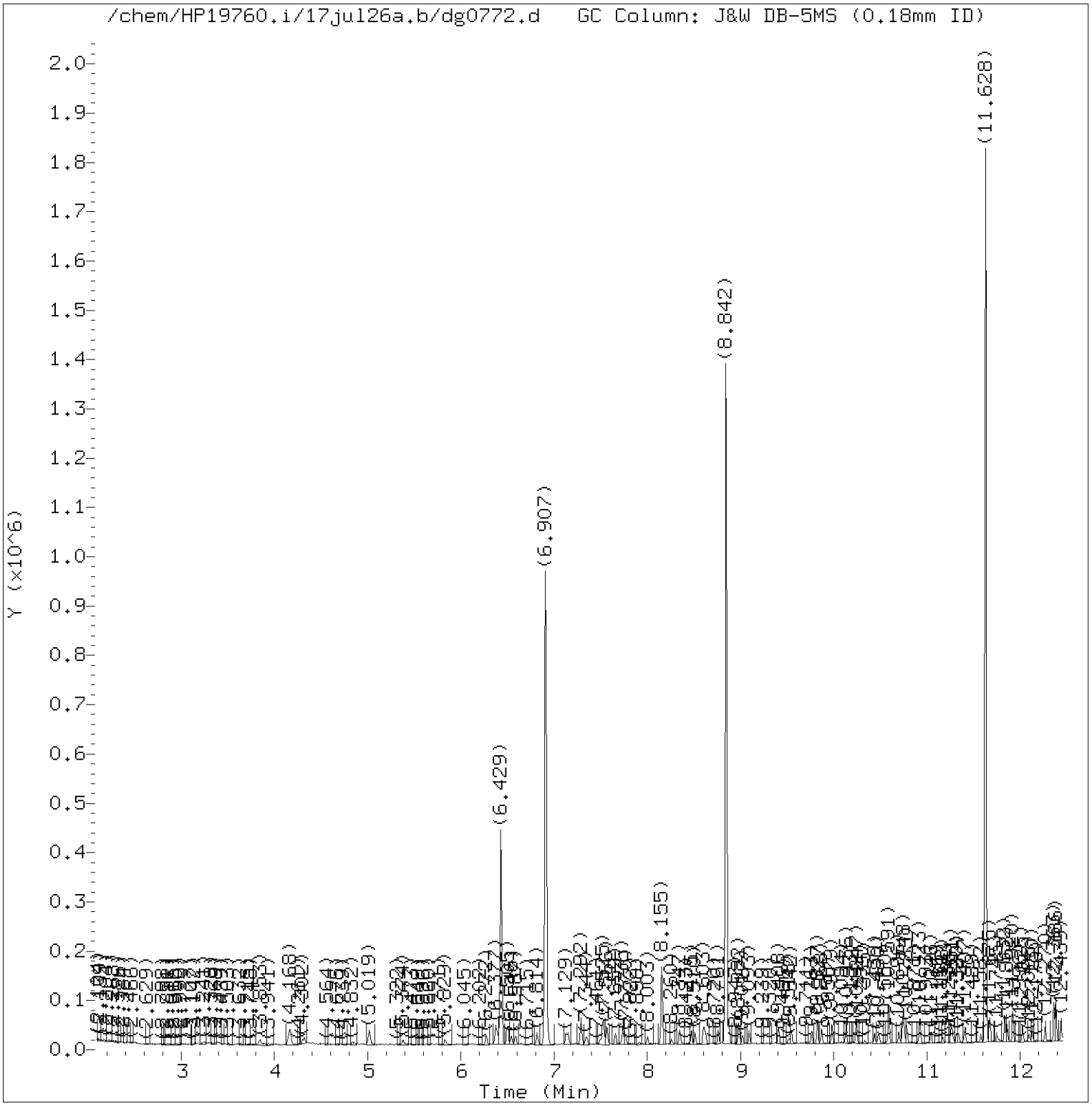

Data File: /chem/HP19760.i/17jul26a.b/dg0771.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:08 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:33
Date, time and analyst ID of latest file update: 26-Jul-2017 16:33 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD1577

Compound Number : 56
Compound Name : Benzoic acid
Scan Number : 1100
Retention Time (minutes) : 8.498
Quant Ion : 105.00
Area : 391666
On-column Amount (ng/ul) : 10.7524
Integration start scan : 1084 Integration stop scan: 1112
Y at integration start : 0 Y at integration end: 0

Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user id: em10340




Total Ion Chromatogram (TIC)

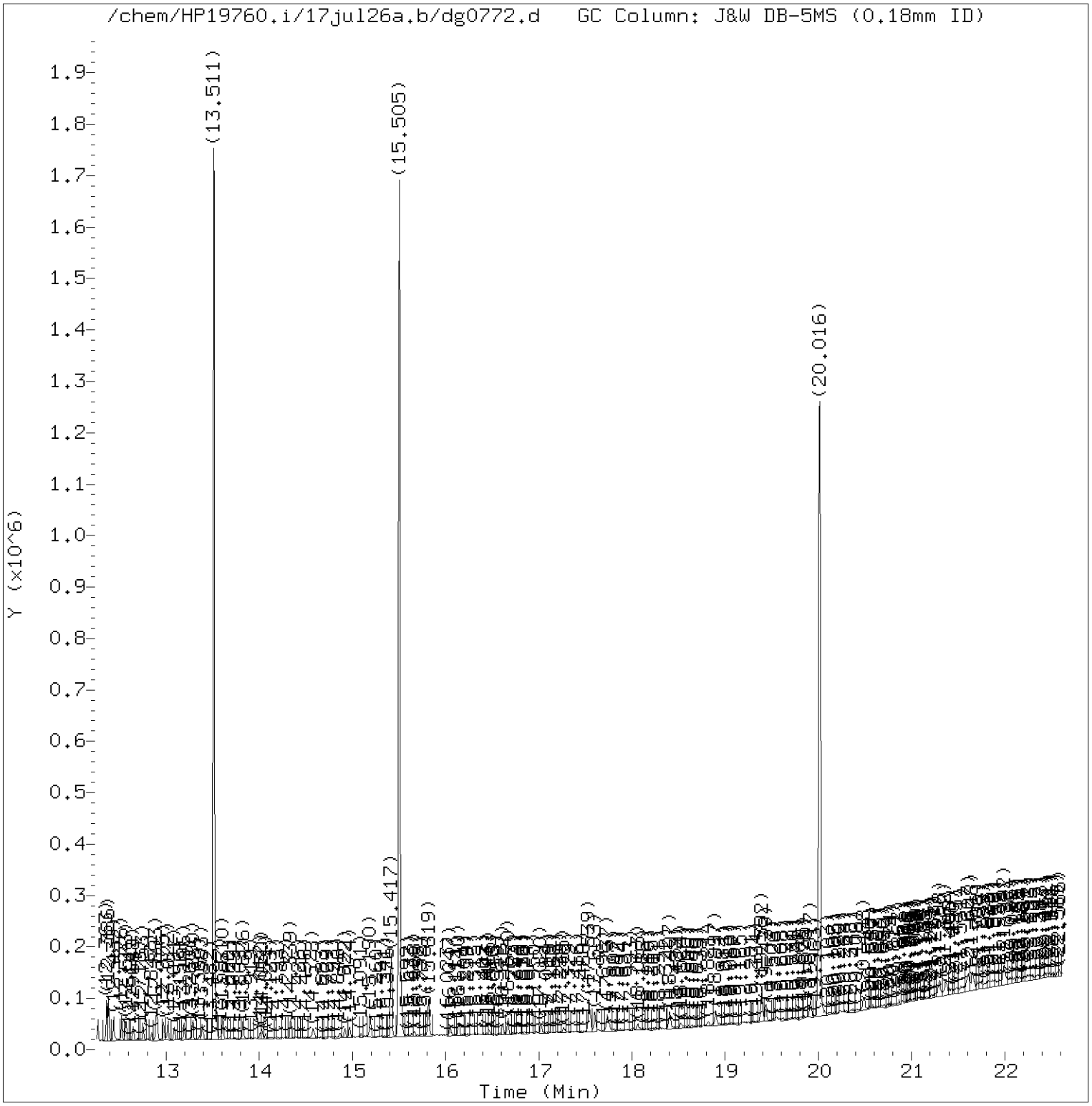
Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0772.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:52 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:12 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0772.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:52 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:12 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0772.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:52  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:12 em10340

Sample Name: SSTD0.125  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 4) N-Nitrosodimethylamine | (1) | 3.148 | 74 | 2862 | 0.065 |
| 7) 2-Picoline | (1) | 4.302 | 93 | 7561 | 0.099 |
| 9) Methyl methanesulfonate | (1) | 4.832 | 80 | 2565 | 0.071 |
| 11)$2-Fluorophenol | (1) | 5.019 | 112 | 13173 | 0.217 |
| 13) N-Nitrosodiethylamine | (1) | 5.374 | 102 | 3012 | 0.098 |
| 42) Total Cresols | (1) | | | 13384 | 0.224 |
| 15) Ethyl methanesulfonate | (1) | 5.829 | 109 | 3311 | 0.105 |
| 16) Benzaldehyde | (1) | 6.272 | 77 | 6132 | 0.111 |
| 17)$Phenol-d6 | (1) | 6.377 | 99 | 17558 | 0.220 |
| 18) Phenol | (1) | 6.394 | 94 | 10526 | 0.115 |
| 19) Aniline | (1) | 6.429 | 93 | 11769 | 0.111 |
| 20) a-methylstyrene | (1) | 6.505 | 118 | 7479 | 0.110 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.540 | 93 | 8128 | 0.120 |
| 23) 2-Chlorophenol | (1) | 6.587 | 128 | 6749 | 0.115 |
| 24) 1,3-Dichlorobenzene | (1) | 6.814 | 146 | 7712 | 0.121 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 197775 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.931 | 146 | 7728 | 0.119 |
| 27) Benzyl alcohol | (1) | 7.129 | 108 | 4191 | 0.096 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 7231 | 0.119 |
| 30) Indene | (1) | 7.286 | 115 | 13176 | 0.110 |
| 31) 2-Methylphenol | (1) | 7.292 | 108 | 6074 | 0.105 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.344 | 45 | 11341 | 0.126 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.344 | 45 | 11341 | 0.126 |
| 97) Isosafrole | (3) | | | 5379 | 0.116 |
| 35) N-Nitrosopyrrolidine | (1) | 7.496 | 100 | 3257 | 0.097 |
| 36) Acetophenone | (1) | 7.519 | 105 | 10140 | 0.110 |
| 37) 4-Methylphenol | (1) | 7.531 | 108 | 7310 | 0.120 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.531 | 70 | 6143 | 0.120 |
| 39) N-Nitrosomorpholine | (1) | 7.560 | 56 | 4903 | 0.118 |
| 40) o-Toluidine | (1) | 7.566 | 106 | 11538 | 0.114 |
| 43) Hexachloroethane | (1) | 7.659 | 117 | 3214 | 0.121 |
| 44)$Nitrobenzene-d5 | (2) | 7.735 | 82 | 17189 | 0.230 |
| 45) Nitrobenzene | (2) | 7.764 | 77 | 8610 | 0.115 |
| 48) N-Nitrosopiperidine | (2) | 8.009 | 114 | 3064 | 0.101 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 5867 | 0.200 |
| 50) Isophorone | (2) | 8.149 | 82 | 14355 | 0.112 |
| 51) 2-Nitrophenol | (2) | 8.260 | 139 | 2560 | 0.087 |
| 53) 2,4-Dimethylphenol | (2) | 8.347 | 107 | 6381 | 0.099 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.475 | 198 | 3397 | 0.118 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.510 | 93 | 9821 | 0.119 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0772.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:52 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:12 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 56) Benzoic acid | (2) | 8.603 | 105 | 868 | 0.022 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.603 | 104 | 11172 | 0.110 |
| 60) 2,4-Dichlorophenol | (2) | 8.627 | 162 | 5152 | 0.106 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.761 | 180 | 6431 | 0.119 |
| 146) Diallate trans/cis | (4) | | | 6474 | 0.115 |
| 65)*Naphthalene-d8 | (2) | 8.842 | 136 | 744727 | 5.000 |
| 66) Naphthalene | (2) | 8.877 | 128 | 20584 | 0.122 |
| 67) 4-Chloroaniline | (2) | 8.982 | 127 | 7732 | 0.110 |
| 68) 2,6-Dichlorophenol | (2) | 8.982 | 162 | 5337 | 0.111 |
| 69) Hexachloropropene | (2) | 9.023 | 213 | 3913 | 0.117 |
| 71) Hexachlorobutadiene | (2) | 9.093 | 225 | 3853 | 0.126 |
| 75) Quinoline | (2) | 9.408 | 129 | 12636 | 0.116 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.542 | 84 | 6220 | 0.101 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.763 | 107 | 5814 | 0.104 |
| 82) Safrole | (2) | 9.868 | 162 | 4540 | 0.101 |
| 83) 2-Methylnaphthalene | (2) | 9.979 | 142 | 12488 | 0.116 |
| 84) 1-Methylnaphthalene | (2) | 10.136 | 142 | 11727 | 0.119 |
| 85) Hexachlorocyclopentadiene | (3) | 10.235 | 237 | 2811 | 0.103 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.247 | 216 | 6792 | 0.132 |
| 88) cis-Isosafrole | (3) | 10.335 | 162 | 953 | 0.020 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.439 | 196 | 3369 | 0.100 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.486 | 196 | 4123 | 0.116 |
| 93)$2-Fluorobiphenyl | (3) | 10.591 | 172 | 29566 | 0.245 |
| 94) trans-Isosafrole | (3) | 10.702 | 162 | 4426 | 0.096 |
| 95) 1,1'-Biphenyl | (3) | 10.743 | 154 | 16453 | 0.126 |
| 96) 2-Chloronaphthalene | (3) | 10.754 | 162 | 11702 | 0.116 |
| 98) 1-Chloronaphthalene | (3) | 10.783 | 162 | 12202 | 0.122 |
| 99) Diphenyl ether | (3) | 10.923 | 170 | 8595 | 0.119 |
| 100) 2-Nitroaniline | (3) | 10.929 | 138 | 3517 | 0.108 |
| 104) 1,4-Naphthoquinone | (3) | 11.046 | 158 | 4198 | 0.100 |
| 105) 1,4-Dinitrobenzene | (3) | 11.168 | 168 | 1646 | 0.102 |
| 106) Dimethylphthalate | (3) | 11.261 | 163 | 14542 | 0.128 |
| 107) 1,3-Dinitrobenzene | (3) | 11.279 | 168 | 1970 | 0.109 |
| 108) 2,6-Dinitrotoluene | (3) | 11.343 | 165 | 2617 | 0.104 |
| 109) Acenaphthylene | (3) | 11.413 | 152 | 16033 | 0.116 |
| 112) 3-Nitroaniline | (3) | 11.582 | 138 | 2827 | 0.103 |
| 113)*Acenaphthene-d10 | (3) | 11.628 | 164 | 406304 | 5.000 |
| 114) Acenaphthene | (3) | 11.675 | 153 | 14016 | 0.127 |
| 115) 2,4-Dinitrophenol | (3) | 11.751 | 184 | 2962 | 0.207 |
| 116) 4-Nitrophenol | (3) | 11.832 | 109 | 7503 | 0.377 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0772.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:52 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:12 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 117) Pentachlorobenzene | (3) | 11.862 | 250 | 5557 | 0.127 |
| 118) 2,4-Dinitrotoluene | (3) | 11.920 | 165 | 3250 | 0.095 |
| 119) Dibenzofuran | (3) | 11.920 | 168 | 17166 | 0.121 |
| 121) 1-Naphthylamine | (3) | 12.025 | 143 | 10795 | 0.102 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.095 | 232 | 1849 | 0.067 |
| 123) 2-Naphthylamine | (3) | 12.136 | 143 | 10453 | 0.103 |
| 124) Diethylphthalate | (3) | 12.270 | 149 | 13154 | 0.117 |
| 126) Fluorene | (3) | 12.363 | 166 | 13685 | 0.124 |
| 125) Thionazin | (3) | 12.369 | 107 | 2588 | 0.113 |
| 129) 4-Nitroaniline | (3) | 12.386 | 138 | 2572 | 0.090 |
| 128) 5-Nitro-o-toluidine | (3) | 12.386 | 152 | 3095 | 0.093 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.386 | 204 | 6388 | 0.120 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.439 | 198 | 3961 | 0.215 |
| 132) NDPA as diphenylamine | (4) | 12.526 | 169 | 10496 | 0.116 |
| 131) N-Nitrosodiphenylamine | (4) | 12.526 | 169 | 10496 | 0.116 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.567 | 77 | 16333 | 0.126 |
| 135)$2,4,6-Tribromophenol | (3) | 12.648 | 330 | 2626 | 0.179 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.753 | 97 | 2576 | 0.121 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.847 | 213 | 905 | 0.079 |
| 140) Diallate (peak 1) | (4) | 12.893 | 86 | 5595 | 0.096 |
| 141) Phorate | (4) | 12.899 | 75 | 9300 | 0.110 |
| 142) Phenacetin | (4) | 12.911 | 108 | 6028 | 0.097 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.975 | 248 | 3811 | 0.130 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 879 | 0.019 |
| 145) Hexachlorobenzene | (4) | 13.022 | 284 | 3884 | 0.126 |
| 147) Dimethoate | (4) | 13.091 | 87 | 4914 | 0.095 |
| 148) Atrazine | (4) | 13.196 | 200 | 3694 | 0.122 |
| 151) Pentachloronitrobenzene | (4) | 13.290 | 237 | 1395 | 0.100 |
| 150) 4-Aminobiphenyl | (4) | 13.295 | 169 | 6688 | 0.093 |
| 149) Pentachlorophenol | (4) | 13.307 | 266 | 303 | 0.016 |
| 152) Pronamide | (4) | 13.389 | 173 | 5585 | 0.105 |
| 153)*Phenanthrene-d10 | (4) | 13.511 | 188 | 734989 | 5.000 |
| 155) Phenanthrene | (4) | 13.546 | 178 | 20831 | 0.127 |
| 157) Anthracene | (4) | 13.610 | 178 | 19948 | 0.124 |
| 163) Carbazole | (4) | 13.826 | 167 | 17083 | 0.113 |
| 164) Methyl parathion | (4) | 14.030 | 109 | 3544 | 0.087 |
| 165) Di-n-butylphthalate | (4) | 14.339 | 149 | 20148 | 0.109 |
| 167) Parathion | (4) | 14.572 | 109 | 1962 | 0.079 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.584 | 190 | 957 | 0.053 |
| 171) Isodrin | (4) | 14.974 | 193 | 3180 | 0.168 |

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0772.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 09:52 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:12 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 222) Total PAHs | (6) | | | 309493 | 2.149 |
| 173) Fluoranthene | (4) | 15.190 | 202 | 22268 | 0.124 |
| 174) Benzidine | (5) | 15.417 | 184 | 70081 | 0.609 |
| 175)*Pyrene-d10 | (5) | 15.505 | 212 | 846180 | 5.000 |
| 177) Pyrene | (5) | 15.534 | 202 | 23468 | 0.125 |
| 179)$Terphenyl-d14 | (5) | 15.813 | 244 | 28637 | 0.242 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.052 | 225 | 2474 | 0.086 |
| 185) Chlorobenzilate | (5) | 16.146 | 139 | 5594 | 0.100 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.612 | 212 | 8736 | 0.074 |
| 188) Butylbenzylphthalate | (5) | 16.670 | 149 | 8209 | 0.101 |
| 191) 2-Acetylaminofluorene | (5) | 17.020 | 181 | 5217 | 0.073 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.539 | 252 | 6687 | 0.102 |
| 195) Benzo(a)anthracene | (5) | 17.539 | 228 | 18584 | 0.115 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.556 | 231 | 3045 | 0.091 |
| 196) Chrysene | (5) | 17.603 | 228 | 17751 | 0.118 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.737 | 149 | 11555 | 0.098 |
| 203) 6-Methylchrysene | (5) | 18.401 | 242 | 12318 | 0.107 |
| 205) Di-n-octylphthalate | (6) | 18.897 | 149 | 18039 | 0.093 |
| 206) Benzo(b)fluoranthene | (6) | 19.392 | 252 | 18607 | 0.120 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.398 | 256 | 6711 | 0.098 |
| 208) Benzo(k)fluoranthene | (6) | 19.439 | 252 | 17531 | 0.120 |
| 211) Benzo(a)pyrene | (6) | 19.917 | 252 | 16362 | 0.117 |
| 213)*Perylene-d12 | (6) | 20.016 | 264 | 616910 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.488 | 268 | 7678 | 0.116 |
| 217) Dibenz(a,h)acridine | (6) | 21.298 | 279 | 11531 | 0.099 |
| 218) Dibenz(a,j)acridine | (6) | 21.362 | 279 | 12241 | 0.100 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.607 | 276 | 17392 | 0.112 |
| 220) Dibenz(a,h)anthracene | (6) | 21.654 | 278 | 12949 | 0.104 |
| 221) Benzo(g,h,i)perylene | (6) | 21.992 | 276 | 15269 | 0.115 |

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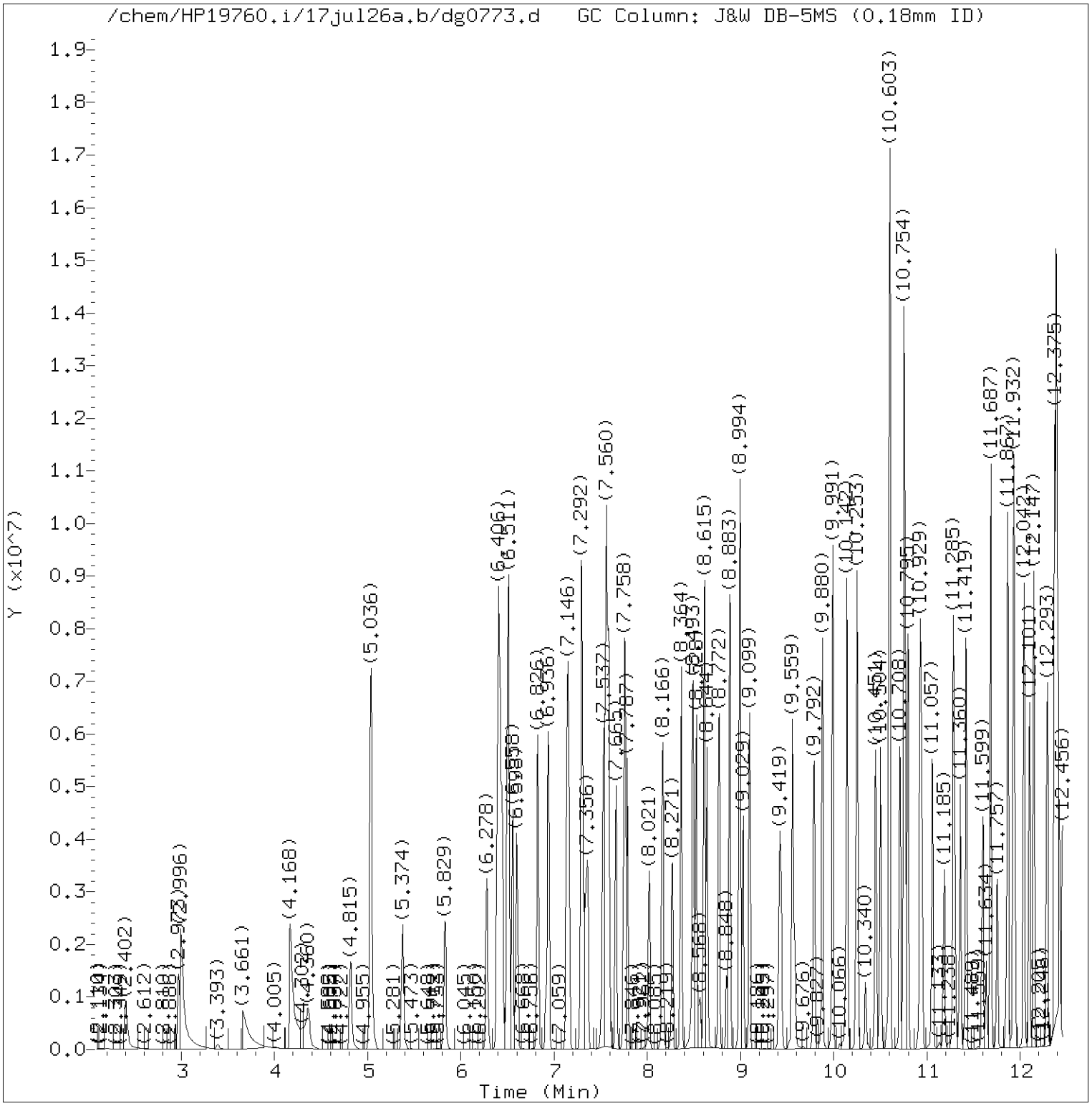
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

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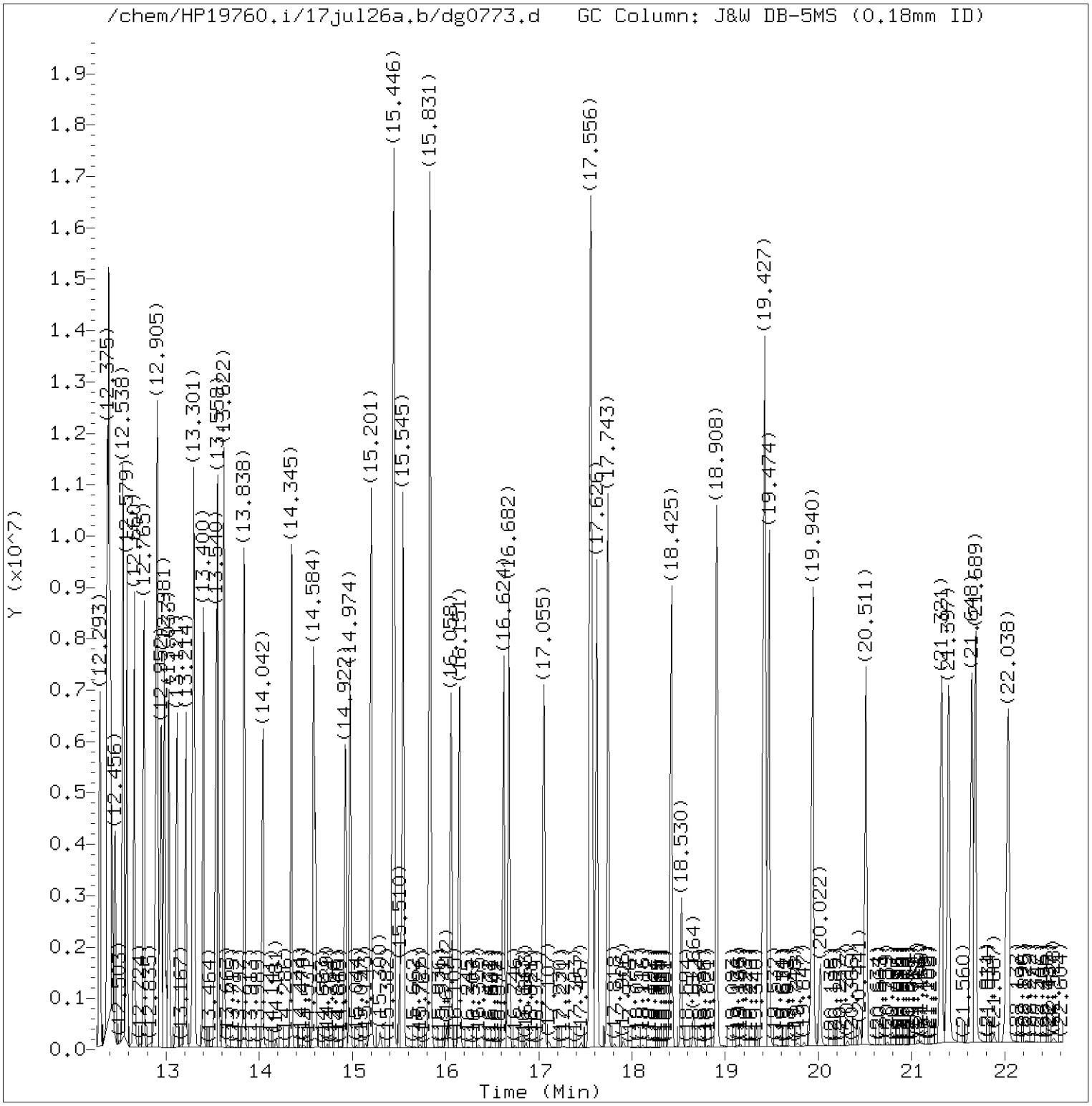
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.402 | 88 | 852764 | 30.919 |
| 4) N-Nitrosodimethylamine | (1) | 2.973 | 74 | 1403873 | 30.841 |
| 5) Pyridine | (1) | 2.996 | 79 | 2220595 | 30.900 |
| 7) 2-Picoline | (1) | 4.168 | 93 | 2367554 | 30.360 |
| 8) N-Nitrosomethylethylamine | (1) | 4.360 | 88 | 973055 | 30.382 |
| 9) Methyl methanesulfonate | (1) | 4.815 | 80 | 1104843 | 30.031 |
| 11)$2-Fluorophenol | (1) | 5.036 | 112 | 3717371 | 60.340 |
| 13) N-Nitrosodiethylamine | (1) | 5.374 | 102 | 959537 | 30.361 |
| 42) Total Cresols | (1) | | | 3772232 | 61.244 |
| 15) Ethyl methanesulfonate | (1) | 5.835 | 109 | 984659 | 30.383 |
| 16) Benzaldehyde | (1) | 6.278 | 77 | 1209820 | 25.117 |
| 17)$Phenol-d6 | (1) | 6.400 | 99 | 4882465 | 60.275 |
| 18) Phenol | (1) | 6.418 | 94 | 2789505 | 30.115 |
| 19) Aniline | (1) | 6.441 | 93 | 3247930 | 30.122 |
| 20) a-methylstyrene | (1) | 6.511 | 118 | 2033770 | 29.772 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.558 | 93 | 2011471 | 29.627 |
| 23) 2-Chlorophenol | (1) | 6.598 | 128 | 1802544 | 30.214 |
| 24) 1,3-Dichlorobenzene | (1) | 6.826 | 146 | 1955972 | 30.154 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.913 | 152 | 199945 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.936 | 146 | 1986264 | 30.176 |
| 27) Benzyl alcohol | (1) | 7.140 | 108 | 1331026 | 30.019 |
| 28) 1,2-Dichlorobenzene | (1) | 7.158 | 146 | 1860468 | 30.109 |
| 30) Indene | (1) | 7.292 | 115 | 3609969 | 29.937 |
| 31) 2-Methylphenol | (1) | 7.309 | 108 | 1765875 | 30.051 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.356 | 45 | 2670759 | 29.716 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.356 | 45 | 2670759 | 29.716 |
| 97) Isosafrole | (3) | | | 1431030 | 30.011 |
| 35) N-Nitrosopyrrolidine | (1) | 7.525 | 100 | 1030989 | 30.252 |
| 36) Acetophenone | (1) | 7.537 | 105 | 2580684 | 28.814 |
| 37) 4-Methylphenol | (1) | 7.560 | 108 | 2006357 | 31.193 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.572 | 70 | 1541829 | 29.910 |
| 40) o-Toluidine | (1) | 7.583 | 106 | 3029908 | 29.810 |
| 39) N-Nitrosomorpholine | (1) | 7.589 | 56 | 1233988 | 29.696 |
| 43) Hexachloroethane | (1) | 7.665 | 117 | 800769 | 29.870 |
| 44)$Nitrobenzene-d5 | (2) | 7.758 | 82 | 4486994 | 58.804 |
| 45) Nitrobenzene | (2) | 7.787 | 77 | 2228615 | 29.269 |
| 48) N-Nitrosopiperidine | (2) | 8.021 | 114 | 931054 | 29.739 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 1839893 | 60.152 |
| 50) Isophorone | (2) | 8.166 | 82 | 3907421 | 29.679 |
| 51) 2-Nitrophenol | (2) | 8.271 | 139 | 909224 | 29.858 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.364 | 107 | 1964058 | 29.602 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.493 | 198 | 872005 | 29.568 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.528 | 93 | 2398153 | 28.894 |
| 56) Benzoic acid | (2) | 8.609 | 105 | 1516411M | 33.169 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.615 | 104 | 3017735 | 29.281 |
| 60) 2,4-Dichlorophenol | (2) | 8.644 | 162 | 1469369 | 29.496 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.772 | 180 | 1620169 | 29.430 |
| 146) Diallate trans/cis | (4) | | | 1833822 | 29.994 |
| 65)*Naphthalene-d8 | (2) | 8.848 | 136 | 774284 | 5.000 |
| 66) Naphthalene | (2) | 8.883 | 128 | 5123559 | 29.502 |
| 67) 4-Chloroaniline | (2) | 8.994 | 127 | 2080079 | 29.241 |
| 68) 2,6-Dichlorophenol | (2) | 9.000 | 162 | 1455243 | 29.492 |
| 69) Hexachloropropene | (2) | 9.029 | 213 | 1018169 | 29.573 |
| 71) Hexachlorobutadiene | (2) | 9.099 | 225 | 914706 | 29.347 |
| 75) Quinoline | (2) | 9.425 | 129 | 3216586 | 29.180 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.559 | 84 | 1838656 | 29.285 |
| 76) Caprolactam | (2) | 9.583 | 113 | 458775A | 29.127 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.792 | 107 | 1644705 | 29.185 |
| 82) Safrole | (2) | 9.880 | 162 | 1342883 | 29.321 |
| 83) 2-Methylnaphthalene | (2) | 9.991 | 142 | 3401643 | 30.284 |
| 84) 1-Methylnaphthalene | (2) | 10.142 | 142 | 3085341 | 30.076 |
| 85) Hexachlorocyclopentadiene | (3) | 10.247 | 237 | 770889 | 28.586 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.253 | 216 | 1638015 | 30.392 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 241239 | 5.046 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.451 | 196 | 1039098 | 30.011 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.504 | 196 | 1085050 | 29.812 |
| 93)$2-Fluorobiphenyl | (3) | 10.603 | 172 | 7115024 | 58.576 |
| 94) trans-Isosafrole | (3) | 10.708 | 162 | 1189791 | 24.965 |
| 95) 1,1'-Biphenyl | (3) | 10.754 | 154 | 3723026 | 28.782 |
| 96) 2-Chloronaphthalene | (3) | 10.766 | 162 | 3271085 | 30.722 |
| 98) 1-Chloronaphthalene | (3) | 10.795 | 162 | 2734488 | 28.160 |
| 99) Diphenyl ether | (3) | 10.929 | 170 | 2153520 | 29.494 |
| 100) 2-Nitroaniline | (3) | 10.947 | 138 | 1027196 | 30.249 |
| 104) 1,4-Naphthoquinone | (3) | 11.063 | 158 | 1285036 | 29.887 |
| 105) 1,4-Dinitrobenzene | (3) | 11.185 | 168 | 520983 | 30.604 |
| 106) Dimethylphthalate | (3) | 11.285 | 163 | 3502819 | 29.937 |
| 107) 1,3-Dinitrobenzene | (3) | 11.302 | 168 | 566367 | 30.188 |
| 108) 2,6-Dinitrotoluene | (3) | 11.360 | 165 | 778629 | 30.037 |
| 109) Acenaphthylene | (3) | 11.419 | 152 | 4436654 | 30.744 |
| 112) 3-Nitroaniline | (3) | 11.605 | 138 | 895746 | 30.762 |

M = Compound was manually integrated.
A = User selected an alternate hit.
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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0773.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD030  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 113)*Acenaphthene-d10 | (3) | 11.634 | 164 | 419080 | 5.000 |
| 114) Acenaphthene | (3) | 11.687 | 153 | 3242633 | 29.025 |
| 115) 2,4-Dinitrophenol | (3) | 11.757 | 184 | 526068 | 32.571 |
| 117) Pentachlorobenzene | (3) | 11.867 | 250 | 1290747 | 29.271 |
| 116) 4-Nitrophenol | (3) | 11.867 | 109 | 633639 | 30.430 |
| 119) Dibenzofuran | (3) | 11.932 | 168 | 4214717 | 29.445 |
| 118) 2,4-Dinitrotoluene | (3) | 11.943 | 165 | 1061264 | 30.115 |
| 121) 1-Naphthylamine | (3) | 12.042 | 143 | 3335900 | 30.236 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.101 | 232 | 867116 | 30.187 |
| 123) 2-Naphthylamine | (3) | 12.147 | 143 | 3186880 | 30.221 |
| 124) Diethylphthalate | (3) | 12.293 | 149 | 3457393 | 29.958 |
| 126) Fluorene | (3) | 12.369 | 166 | 3446929 | 30.174 |
| 125) Thionazin | (3) | 12.386 | 107 | 694244 | 29.709 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.392 | 204 | 1610008 | 29.672 |
| 128) 5-Nitro-o-toluidine | (3) | 12.404 | 152 | 1016167 | 29.861 |
| 129) 4-Nitroaniline | (3) | 12.421 | 138 | 877833 | 29.823 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.456 | 198 | 649013 | 31.177 |
| 131) N-Nitrosodiphenylamine | (4) | 12.538 | 169 | 2907177 | 29.750 |
| 132) NDPA as diphenylamine | (4) | 12.538 | 169 | 2907177 | 29.750 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.579 | 77 | 4125958 | 29.688 |
| 135)$2,4,6-Tribromophenol | (3) | 12.660 | 330 | 912235 | 60.137 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.765 | 97 | 682448 | 29.718 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.887 | 213 | 404377 | 31.254 |
| 140) Diallate (peak 1) | (4) | 12.899 | 86 | 1567413 | 24.836 |
| 141) Phorate | (4) | 12.911 | 75 | 2686398 | 29.577 |
| 142) Phenacetin | (4) | 12.946 | 108 | 2019449 | 30.025 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.981 | 248 | 940204 | 29.778 |
| 144) Diallate (peak 2) | (4) | 13.004 | 86 | 266409 | 5.158 |
| 145) Hexachlorobenzene | (4) | 13.033 | 284 | 1007246 | 30.122 |
| 147) Dimethoate | (4) | 13.121 | 87 | 1636953 | 29.639 |
| 148) Atrazine | (4) | 13.214 | 200 | 834824 | 27.503 |
| 149) Pentachlorophenol | (4) | 13.284 | 266 | 678911 | 31.400 |
| 151) Pentachloronitrobenzene | (4) | 13.301 | 237 | 460243 | 30.131 |
| 150) 4-Aminobiphenyl | (4) | 13.307 | 169 | 2276370 | 29.588 |
| 152) Pronamide | (4) | 13.400 | 173 | 1698510 | 29.701 |
| 153)*Phenanthrene-d10 | (4) | 13.523 | 188 | 798204 | 5.000 |
| 154) Dinoseb | (4) | 13.540 | 211 | 1078645 | 31.713 |
| 155) Phenanthrene | (4) | 13.558 | 178 | 5080772 | 29.072 |
| 157) Anthracene | (4) | 13.622 | 178 | 5115051 | 29.584 |
| 163) Carbazole | (4) | 13.838 | 167 | 4805157 | 29.623 |

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 164) Methyl parathion | (4) | 14.042 | 109 | 1336682 | 30.128 |
| 165) Di-n-butylphthalate | (4) | 14.345 | 149 | 5954630 | 29.879 |
| 167) Parathion | (4) | 14.584 | 109 | 865329 | 30.948 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.607 | 190 | 679963 | 32.236 |
| 169) Octachlorostyrene | (4) | 14.927 | 308 | 394757 | 30.080 |
| 171) Isodrin | (4) | 14.974 | 193 | 614426 | 29.902 |
| 222) Total PAHs | (6) | | | 89198703 | 545.030 |
| 173) Fluoranthene | (4) | 15.201 | 202 | 5778368 | 29.795 |
| 174) Benzidine | (5) | 15.446 | 184 | 10489846 | 86.298 |
| 175)*Pyrene-d10 | (5) | 15.510 | 212 | 930201 | 5.000 |
| 177) Pyrene | (5) | 15.545 | 202 | 5902571 | 29.115 |
| 179)$Terphenyl-d14 | (5) | 15.831 | 244 | 7691091 | 59.589 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.058 | 225 | 974236 | 30.451 |
| 185) Chlorobenzilate | (5) | 16.146 | 139 | 1853818 | 30.118 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.624 | 212 | 3693949 | 29.305 |
| 188) Butylbenzylphthalate | (5) | 16.682 | 149 | 2729629 | 30.307 |
| 191) 2-Acetylaminofluorene | (5) | 17.055 | 181 | 2648513 | 31.719 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.550 | 252 | 2181035 | 30.117 |
| 195) Benzo(a)anthracene | (5) | 17.556 | 228 | 5590295 | 30.992 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.574 | 231 | 1112889 | 30.175 |
| 196) Chrysene | (5) | 17.626 | 228 | 5124544 | 30.690 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.743 | 149 | 4008092 | 30.418 |
| 203) 6-Methylchrysene | (5) | 18.425 | 242 | 3902377 | 30.455 |
| 205) Di-n-octylphthalate | (6) | 18.908 | 149 | 7246472 | 29.872 |
| 206) Benzo(b)fluoranthene | (6) | 19.421 | 252 | 5991598 | 30.408 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.427 | 256 | 2641076 | 30.344 |
| 208) Benzo(k)fluoranthene | (6) | 19.474 | 252 | 5519876 | 29.958 |
| 211) Benzo(a)pyrene | (6) | 19.940 | 252 | 5650038 | 31.340 |
| 213)*Perylene-d12 | (6) | 20.022 | 264 | 778460 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.511 | 268 | 2533802 | 30.229 |
| 217) Dibenz(a,h)acridine | (6) | 21.321 | 279 | 4565800 | 30.459 |
| 218) Dibenz(a,j)acridine | (6) | 21.397 | 279 | 4637352 | 30.028 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.648 | 276 | 6288610 | 31.452 |
| 220) Dibenz(a,h)anthracene | (6) | 21.689 | 278 | 5255823 | 32.215 |
| 221) Benzo(g,h,i)perylene | (6) | 22.038 | 276 | 5164398 | 30.603 |

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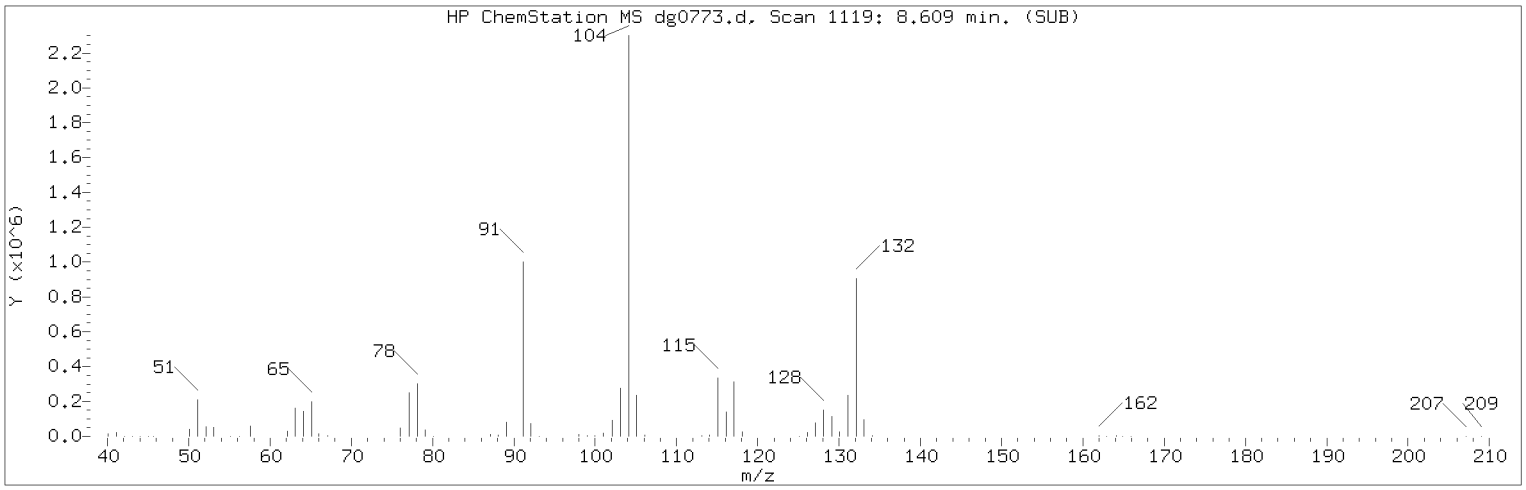
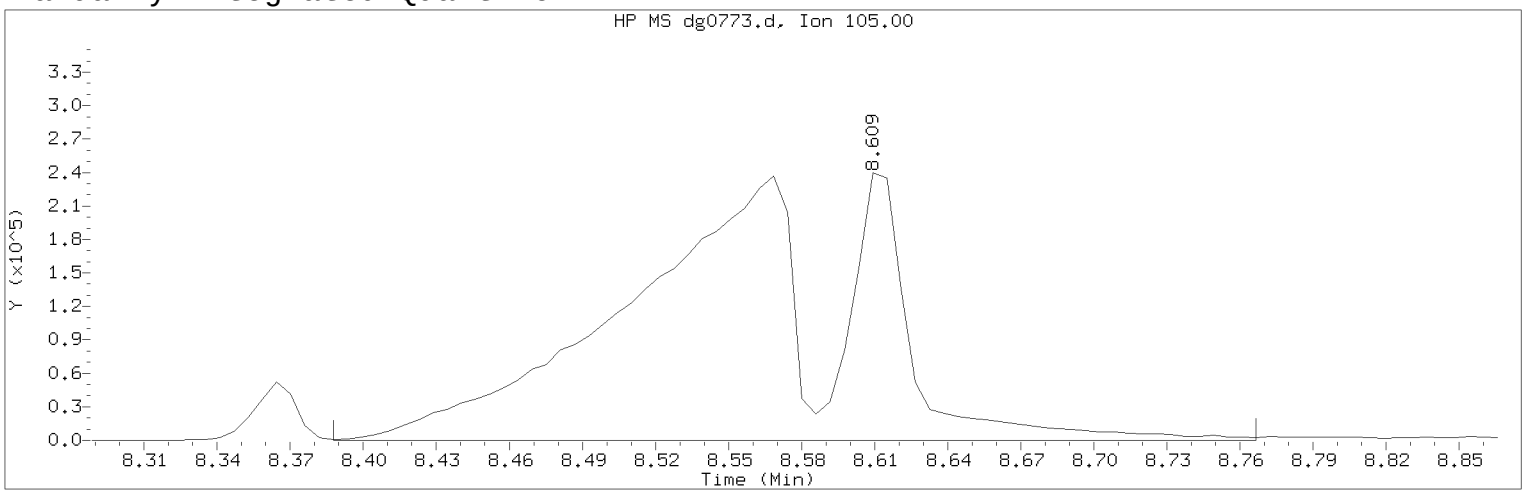
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

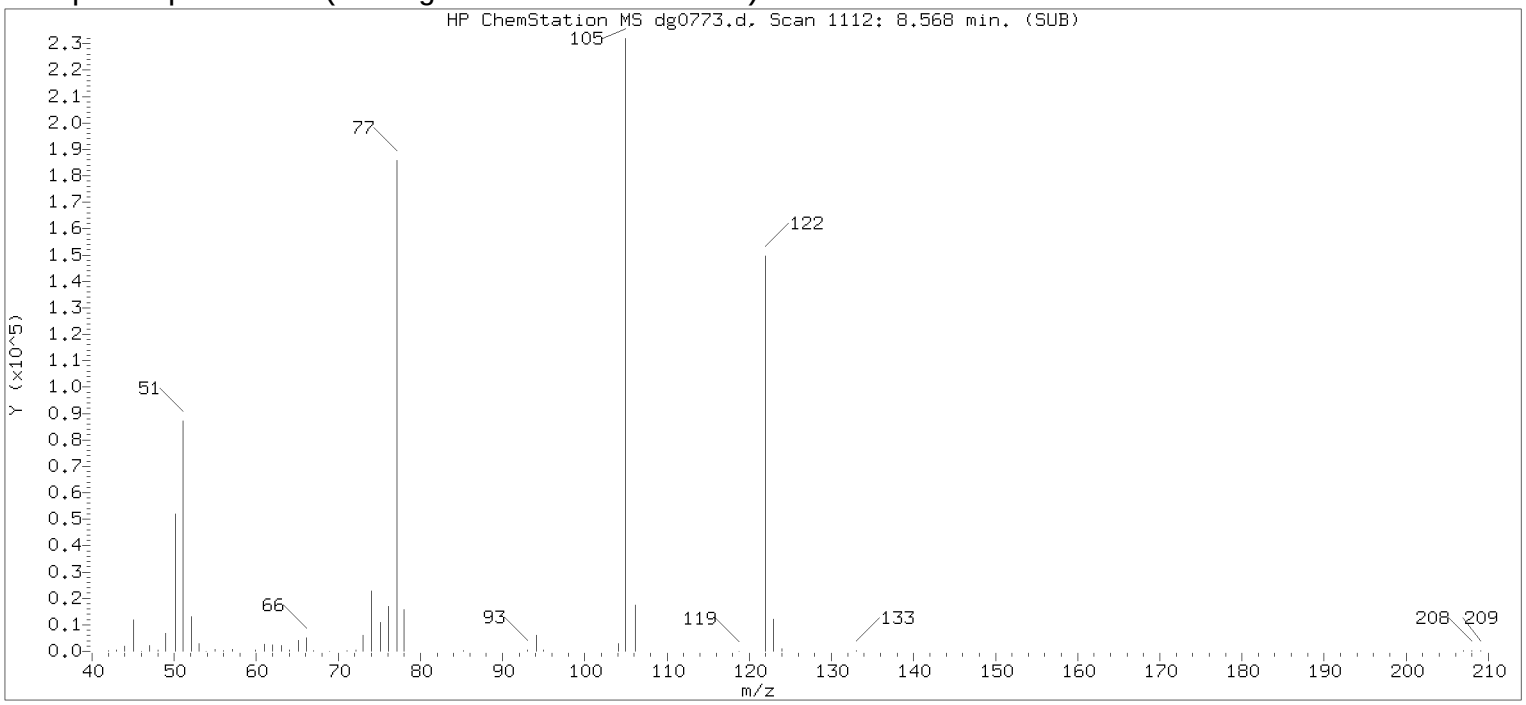
Compound Number : 56
Compound Name : Benzoic acid
Scan Number : 1119
Retention Time (minutes) : 8.609
Quant Ion : 105.00
Area (flag) : 1516411M
On-Column Amount (ng/ul) : 33.1693
Integration start scan : 1080 Integration stop scan: 1145
Y at integration start : 86 Y at integration end: 86

Reason for manual integration: improper integration

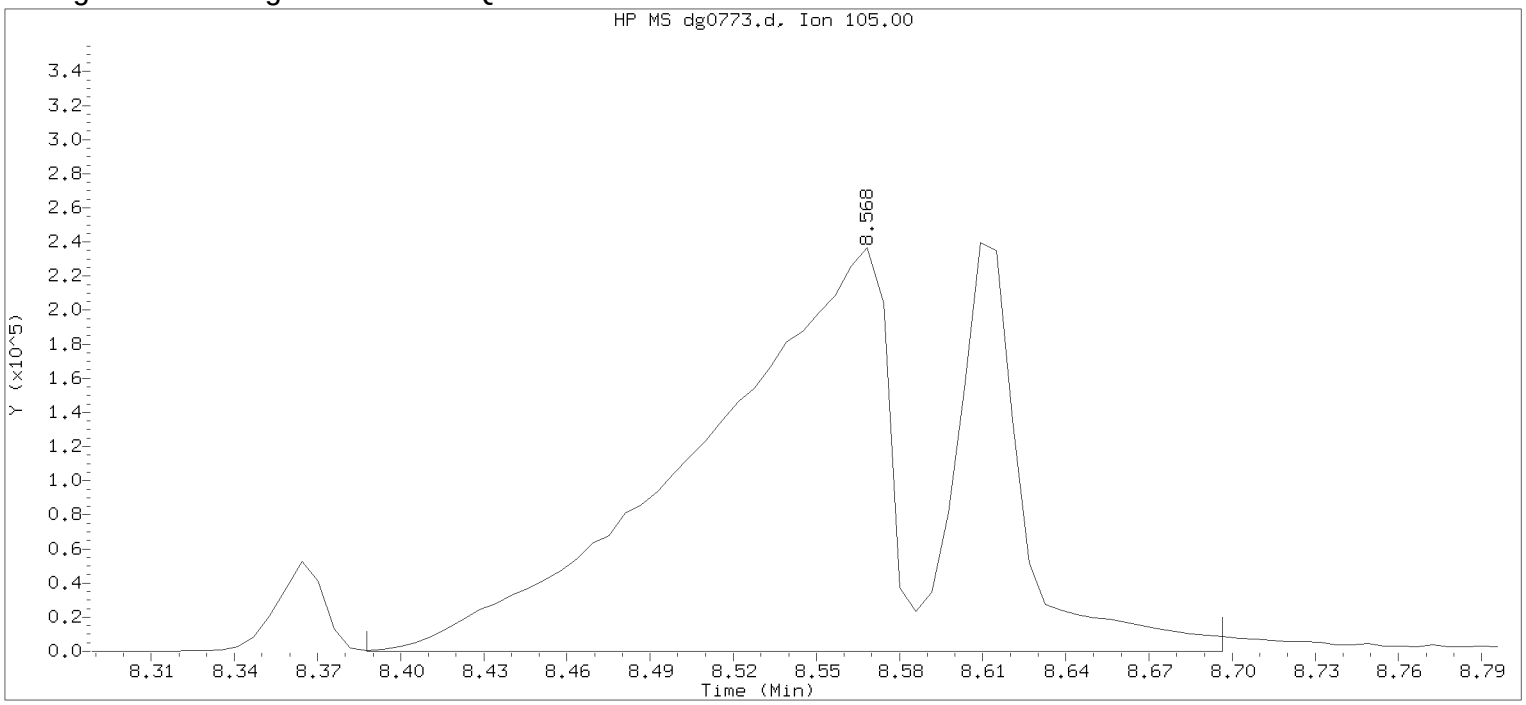
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

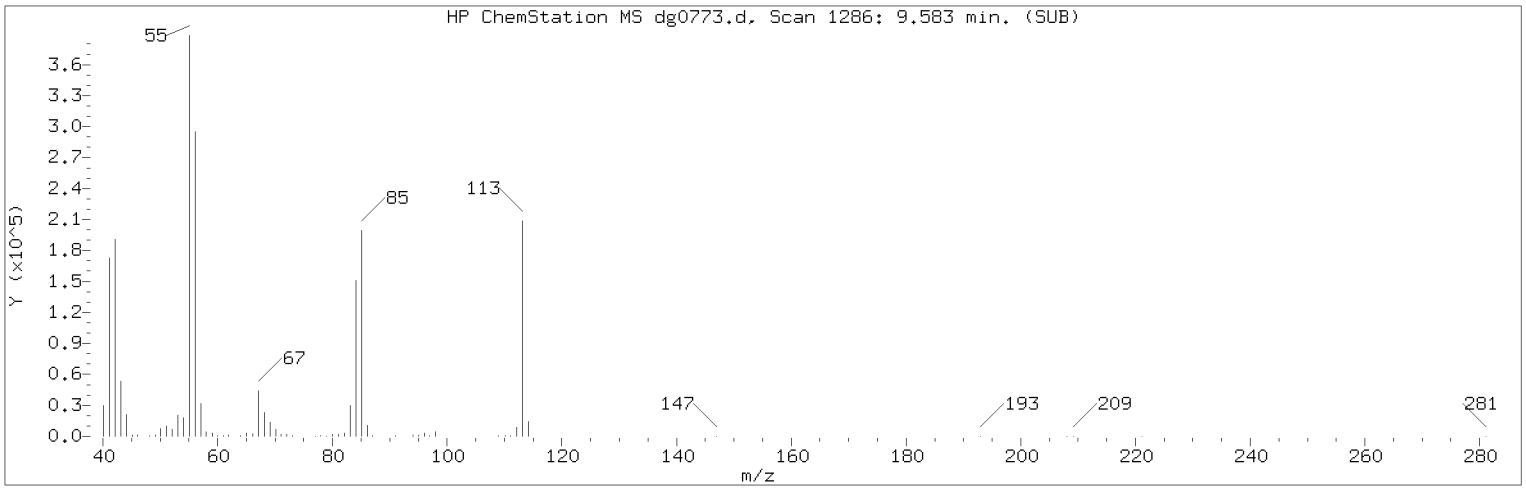
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:35
Date, time and analyst ID of latest file update: 26-Jul-2017 16:35 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

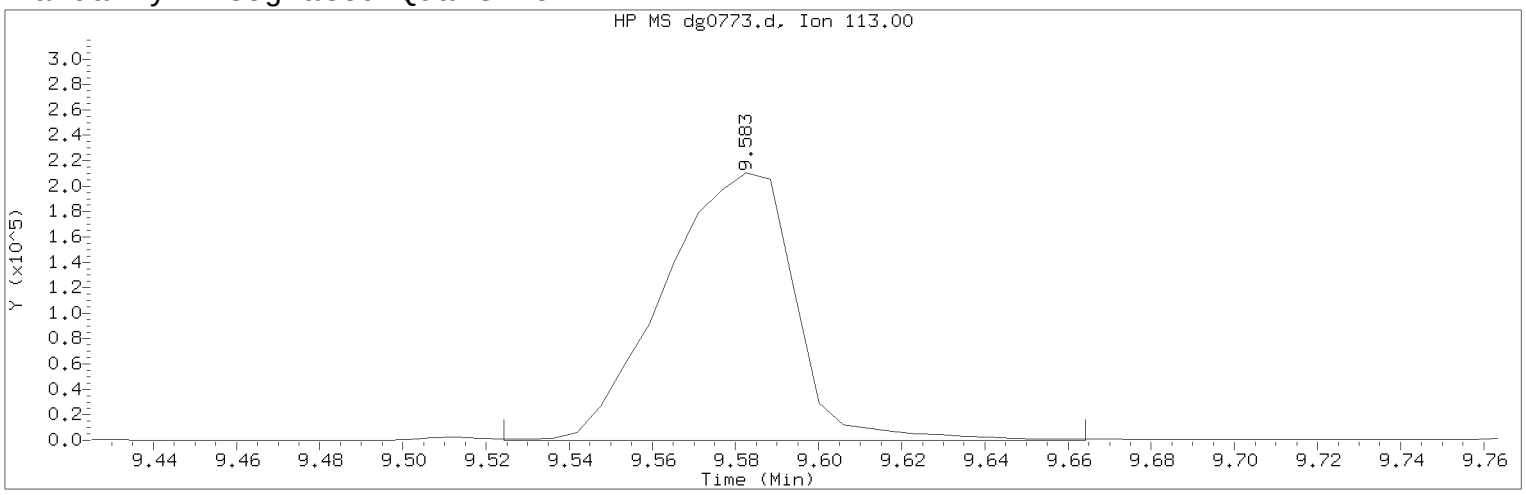
| | | | |
|---|---|---|---|
| Compound Number | : 56 | | |
| Compound Name | : Benzoic acid | | |
| Scan Number | : 1112 | | |
| Retention Time (minutes) | : 8.568 | | |
| Quant Ion | : 105.00 | | |
| Area | : 1496420 | | |
| On-column Amount (ng/ul) | : 13.0902 | | |
| Integration start scan | : 1080 | Integration stop scan: | 1133 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

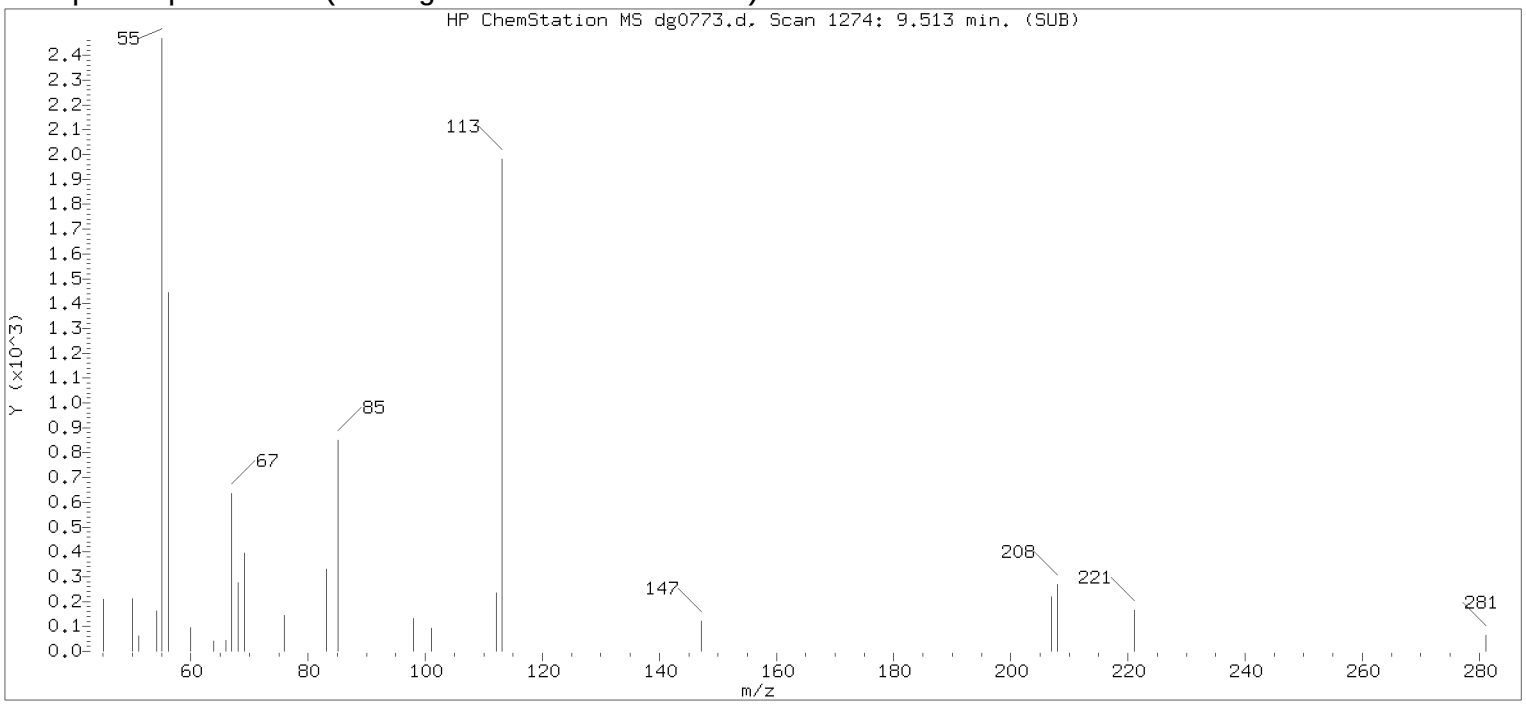
Compound Number : 76
Compound Name : Caprolactam
Scan Number : 1286
Retention Time (minutes) : 9.583
Quant Ion : 113.00
Area (flag) : 458775A
On-Column Amount (ng/ul) : 29.1268
Integration start scan : 1275 Integration stop scan: 1299
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

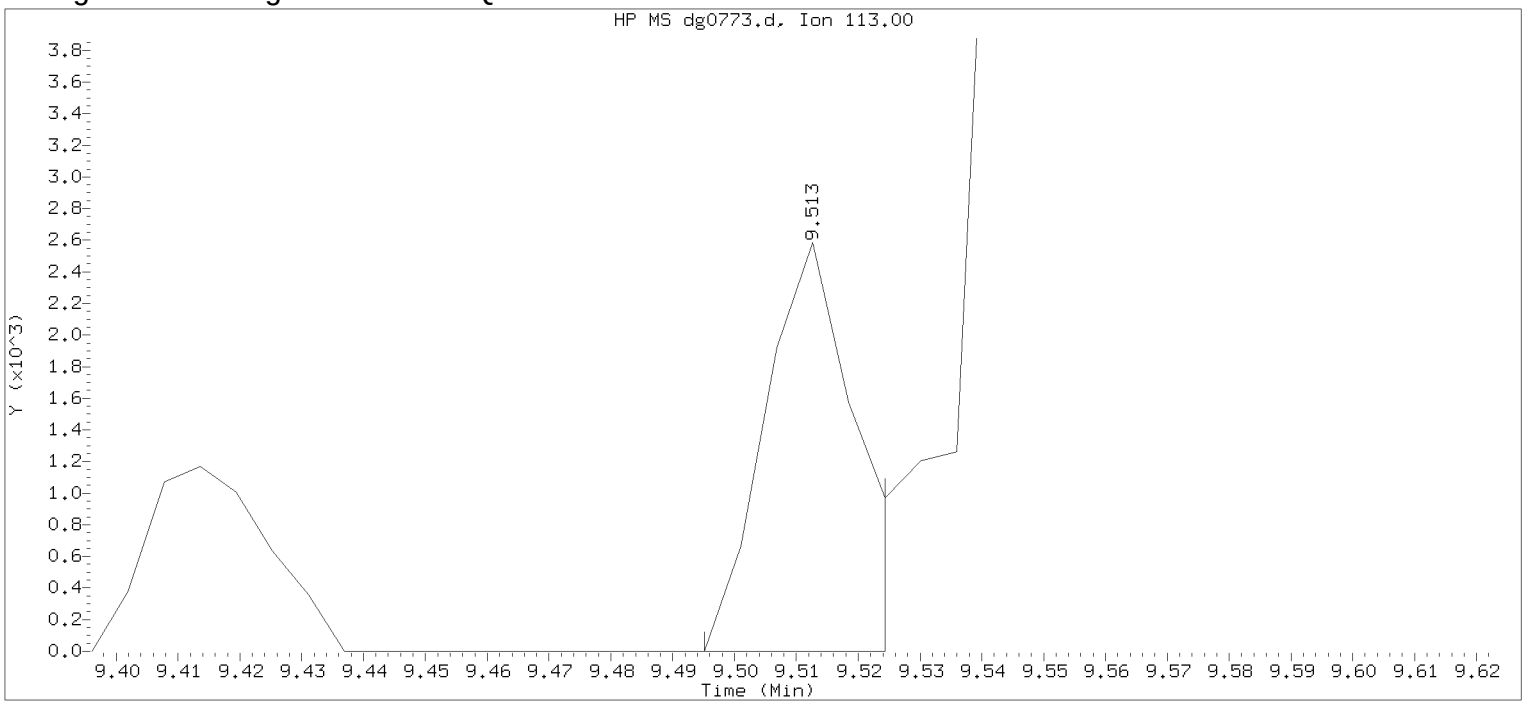
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



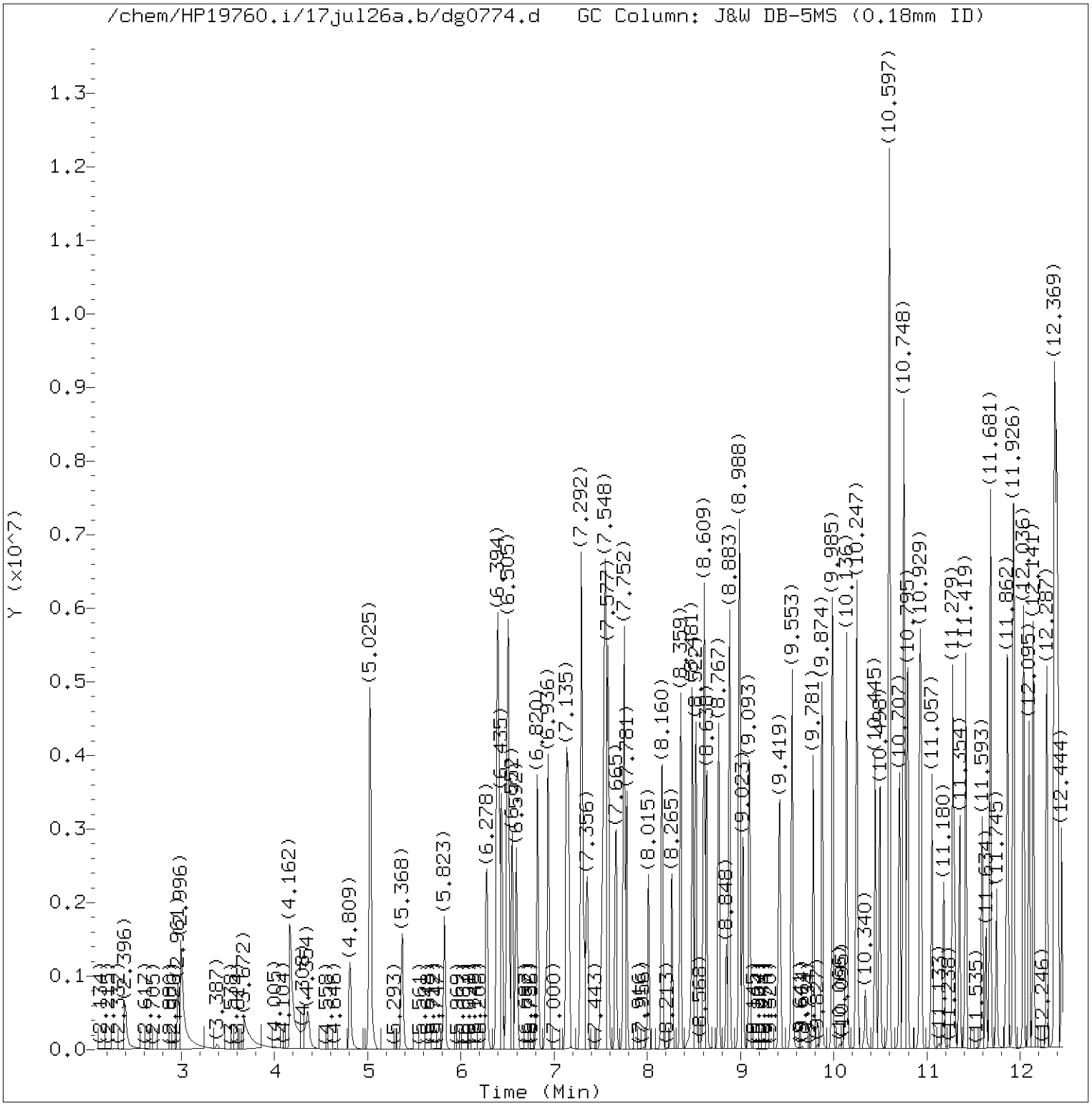

Data File: /chem/HP19760.i/17jul26a.b/dg0773.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:19 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:35
Date, time and analyst ID of latest file update: 26-Jul-2017 16:35 em10340

Sample Name: SSTD030 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 76 | | |
| Compound Name | : Caprolactam | | |
| Scan Number | : 1274 | | |
| Retention Time (minutes) | : 9.513 | | |
| Quant Ion | : 113.00 | | |
| Area | : 2527 | | |
| On-column Amount (ng/ul) | : 0.0058 | | |
| Integration start scan | : 1270 | Integration stop scan: | 1275 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user id: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0774.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:47 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD020 Lab Sample ID: rvSTD1577

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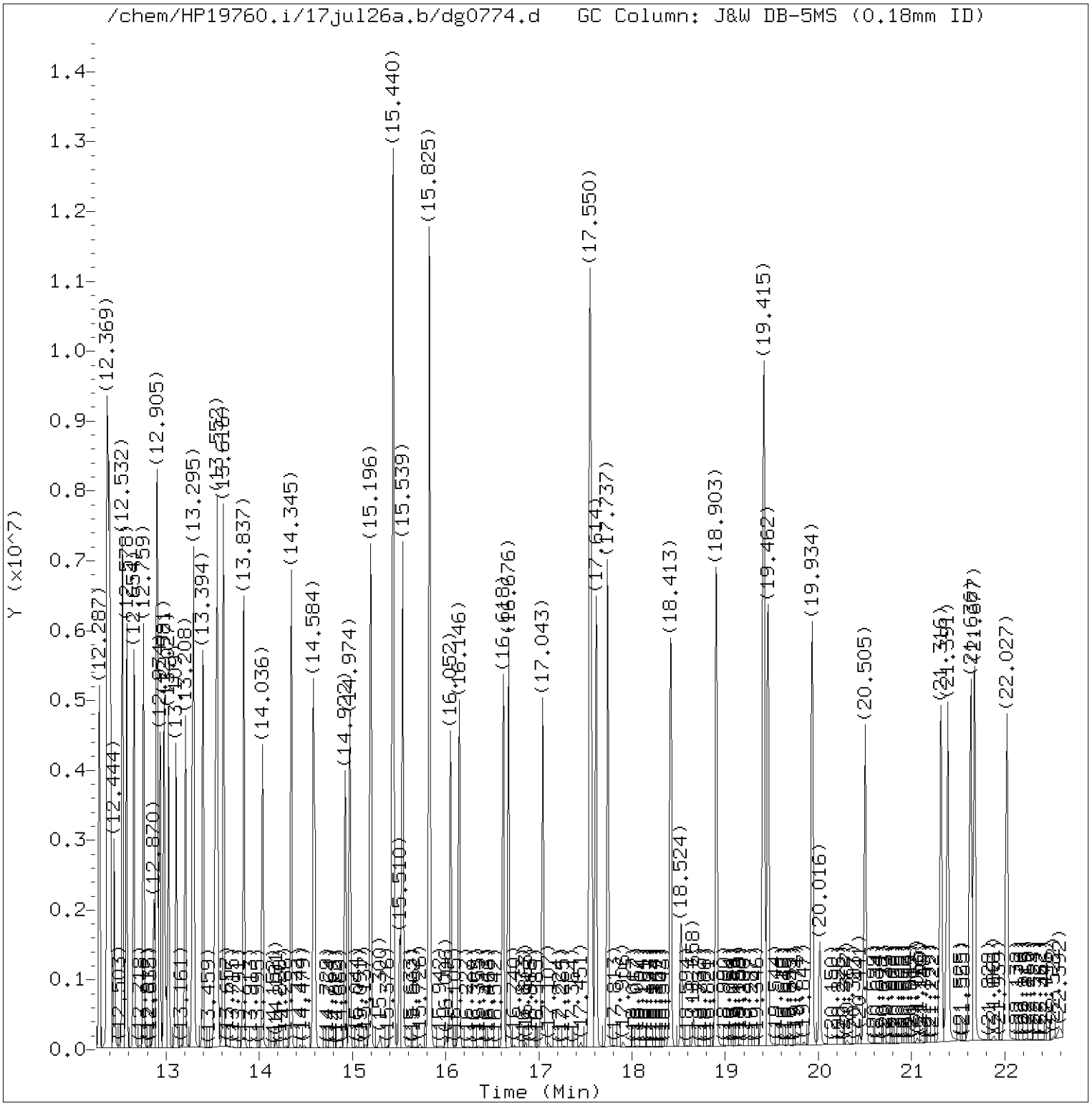
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0774.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:47 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD020 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0774.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:47 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD020 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.396 | 88 | 532486 | 19.741 |
| 4) N-Nitrosodimethylamine | (1) | 2.961 | 74 | 863887 | 19.515 |
| 5) Pyridine | (1) | 2.996 | 79 | 1402450 | 19.884 |
| 7) 2-Picoline | (1) | 4.162 | 93 | 1496215 | 19.659 |
| 8) N-Nitrosomethylethylamine | (1) | 4.354 | 88 | 620673 | 19.791 |
| 9) Methyl methanesulfonate | (1) | 4.809 | 80 | 700551 | 19.559 |
| 11)$2-Fluorophenol | (1) | 5.025 | 112 | 2376909 | 39.461 |
| 13) N-Nitrosodiethylamine | (1) | 5.368 | 102 | 606143 | 19.654 |
| 42) Total Cresols | (1) | | | 2394246 | 39.649 |
| 15) Ethyl methanesulfonate | (1) | 5.823 | 109 | 624638 | 19.719 |
| 16) Benzaldehyde | (1) | 6.278 | 77 | 895014 | 19.237 |
| 17)$Phenol-d6 | (1) | 6.394 | 99 | 3114432 | 39.369 |
| 18) Phenol | (1) | 6.412 | 94 | 1792273 | 19.771 |
| 19) Aniline | (1) | 6.435 | 93 | 2073414 | 19.688 |
| 20) a-methylstyrene | (1) | 6.511 | 118 | 1316679 | 19.719 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.552 | 93 | 1276589 | 19.393 |
| 23) 2-Chlorophenol | (1) | 6.592 | 128 | 1150227 | 19.723 |
| 24) 1,3-Dichlorobenzene | (1) | 6.820 | 146 | 1257428 | 19.795 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.913 | 152 | 196806 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.936 | 146 | 1267199 | 19.704 |
| 27) Benzyl alcohol | (1) | 7.135 | 108 | 849088 | 19.634 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 1196986 | 19.786 |
| 30) Indene | (1) | 7.292 | 115 | 2309315 | 19.634 |
| 31) 2-Methylphenol | (1) | 7.304 | 108 | 1114533 | 19.507 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.356 | 45 | 1695013 | 19.432 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.356 | 45 | 1695013 | 19.432 |
| 97) Isosafrole | (3) | | | 908077 | 19.731 |
| 35) N-Nitrosopyrrolidine | (1) | 7.508 | 100 | 652729 | 19.636 |
| 36) Acetophenone | (1) | 7.531 | 105 | 1687760 | 19.422 |
| 37) 4-Methylphenol | (1) | 7.548 | 108 | 1279713 | 20.142 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.554 | 70 | 958701 | 19.249 |
| 39) N-Nitrosomorpholine | (1) | 7.572 | 56 | 786769 | 19.484 |
| 40) o-Toluidine | (1) | 7.577 | 106 | 1967591 | 19.777 |
| 43) Hexachloroethane | (1) | 7.659 | 117 | 509151 | 19.524 |
| 44)$Nitrobenzene-d5 | (2) | 7.752 | 82 | 2851124 | 39.475 |
| 45) Nitrobenzene | (2) | 7.781 | 77 | 1425189 | 19.762 |
| 48) N-Nitrosopiperidine | (2) | 8.015 | 114 | 591590 | 19.888 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 1165146 | 39.430 |
| 50) Isophorone | (2) | 8.160 | 82 | 2452963 | 19.701 |
| 51) 2-Nitrophenol | (2) | 8.265 | 139 | 581342 | 20.025 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0774.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:47 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD020 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.359 | 107 | 1241177 | 19.755 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.487 | 198 | 556339 | 19.866 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.522 | 93 | 1550912 | 19.740 |
| 56) Benzoic acid | (2) | 8.533 | 105 | 927388M | 20.842 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.609 | 104 | 1941482 | 19.847 |
| 60) 2,4-Dichlorophenol | (2) | 8.638 | 162 | 942415 | 19.903 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.767 | 180 | 1032486 | 19.788 |
| 146) Diallate trans/cis | (4) | | | 1171121 | 20.173 |
| 65)*Naphthalene-d8 | (2) | 8.848 | 136 | 737720 | 5.000 |
| 66) Naphthalene | (2) | 8.883 | 128 | 3282518 | 19.878 |
| 67) 4-Chloroaniline | (2) | 8.988 | 127 | 1323176 | 19.679 |
| 68) 2,6-Dichlorophenol | (2) | 8.994 | 162 | 935105 | 19.927 |
| 69) Hexachloropropene | (2) | 9.023 | 213 | 647812 | 19.831 |
| 71) Hexachlorobutadiene | (2) | 9.099 | 225 | 580834 | 19.704 |
| 75) Quinoline | (2) | 9.419 | 129 | 2074224 | 19.832 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.553 | 84 | 1171586 | 19.721 |
| 76) Caprolactam | (2) | 9.559 | 113 | 290432 | 19.564 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.781 | 107 | 1044905 | 19.637 |
| 82) Safrole | (2) | 9.874 | 162 | 861407 | 19.826 |
| 83) 2-Methylnaphthalene | (2) | 9.985 | 142 | 2167997 | 20.193 |
| 84) 1-Methylnaphthalene | (2) | 10.142 | 142 | 1957912 | 20.024 |
| 85) Hexachlorocyclopentadiene | (3) | 10.241 | 237 | 520782 | 19.917 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.253 | 216 | 1039921 | 19.905 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 154587 | 3.351 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.445 | 196 | 667964 | 19.903 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.498 | 196 | 700921 | 19.880 |
| 93)$2-Fluorobiphenyl | (3) | 10.597 | 172 | 4636158 | 39.519 |
| 94) trans-Isosafrole | (3) | 10.707 | 162 | 753490 | 16.380 |
| 95) 1,1'-Biphenyl | (3) | 10.748 | 154 | 2462548 | 19.727 |
| 96) 2-Chloronaphthalene | (3) | 10.760 | 162 | 2038502 | 19.802 |
| 98) 1-Chloronaphthalene | (3) | 10.795 | 162 | 1831568 | 19.604 |
| 99) Diphenyl ether | (3) | 10.929 | 170 | 1370104 | 19.536 |
| 100) 2-Nitroaniline | (3) | 10.941 | 138 | 638538 | 19.563 |
| 104) 1,4-Naphthoquinone | (3) | 11.057 | 158 | 810956 | 19.604 |
| 105) 1,4-Dinitrobenzene | (3) | 11.180 | 168 | 328851 | 19.921 |
| 106) Dimethylphthalate | (3) | 11.279 | 163 | 2215096 | 19.653 |
| 107) 1,3-Dinitrobenzene | (3) | 11.296 | 168 | 358370 | 19.771 |
| 108) 2,6-Dinitrotoluene | (3) | 11.354 | 165 | 488196 | 19.584 |
| 109) Acenaphthylene | (3) | 11.419 | 152 | 2841731 | 20.199 |
| 112) 3-Nitroaniline | (3) | 11.593 | 138 | 559206 | 19.843 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0774.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:47  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD020  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 113)*Acenaphthene-d10 | (3) | 11.634 | 164 | 407197 | 5.000 |
| 114) Acenaphthene | (3) | 11.681 | 153 | 2091652 | 19.447 |
| 115) 2,4-Dinitrophenol | (3) | 11.751 | 184 | 320308 | 20.272 |
| 116) 4-Nitrophenol | (3) | 11.856 | 109 | 396171 | 19.719 |
| 117) Pentachlorobenzene | (3) | 11.867 | 250 | 841891 | 19.765 |
| 119) Dibenzofuran | (3) | 11.926 | 168 | 2687627 | 19.544 |
| 118) 2,4-Dinitrotoluene | (3) | 11.937 | 165 | 676950 | 19.846 |
| 121) 1-Naphthylamine | (3) | 12.036 | 143 | 2120722 | 19.855 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.095 | 232 | 548410 | 19.765 |
| 123) 2-Naphthylamine | (3) | 12.141 | 143 | 2028074 | 19.862 |
| 124) Diethylphthalate | (3) | 12.287 | 149 | 2227495 | 19.909 |
| 126) Fluorene | (3) | 12.369 | 166 | 2164864 | 19.626 |
| 125) Thionazin | (3) | 12.380 | 107 | 443963 | 19.700 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.392 | 204 | 1031067 | 19.702 |
| 128) 5-Nitro-o-toluidine | (3) | 12.398 | 152 | 654888 | 19.870 |
| 129) 4-Nitroaniline | (3) | 12.409 | 138 | 556996 | 19.647 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.444 | 198 | 405917 | 20.418 |
| 132) NDPA as diphenylamine | (4) | 12.538 | 169 | 1881156 | 20.246 |
| 131) N-Nitrosodiphenylamine | (4) | 12.538 | 169 | 1881156 | 20.246 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.578 | 77 | 2653518 | 20.136 |
| 135)$2,4,6-Tribromophenol | (3) | 12.660 | 330 | 578257 | 39.485 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.759 | 97 | 437658 | 20.111 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.876 | 213 | 251038 | 20.351 |
| 140) Diallate (peak 1) | (4) | 12.899 | 86 | 1003312 | 16.748 |
| 141) Phorate | (4) | 12.905 | 75 | 1700189 | 19.872 |
| 142) Phenacetin | (4) | 12.934 | 108 | 1286405 | 20.159 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.981 | 248 | 602553 | 20.129 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 167809 | 3.425 |
| 145) Hexachlorobenzene | (4) | 13.027 | 284 | 644995 | 20.307 |
| 147) Dimethoate | (4) | 13.109 | 87 | 1065137 | 20.270 |
| 148) Atrazine | (4) | 13.208 | 200 | 572808 | 19.979 |
| 149) Pentachlorophenol | (4) | 13.284 | 266 | 430675 | 20.706 |
| 151) Pentachloronitrobenzene | (4) | 13.295 | 237 | 292490 | 20.175 |
| 150) 4-Aminobiphenyl | (4) | 13.301 | 169 | 1486543 | 20.296 |
| 152) Pronamide | (4) | 13.394 | 173 | 1089477 | 20.106 |
| 153)*Phenanthrene-d10 | (4) | 13.517 | 188 | 754308 | 5.000 |
| 154) Dinoseb | (4) | 13.534 | 211 | 676237 | 20.681 |
| 155) Phenanthrene | (4) | 13.552 | 178 | 3276447 | 19.879 |
| 157) Anthracene | (4) | 13.616 | 178 | 3265871 | 19.991 |
| 163) Carbazole | (4) | 13.837 | 167 | 3076675 | 20.047 |

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$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0774.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:47 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD020 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 164) Methyl parathion | (4) | 14.036 | 109 | 862692 | 20.380 |
| 165) Di-n-butylphthalate | (4) | 14.345 | 149 | 3842006 | 20.265 |
| 167) Parathion | (4) | 14.584 | 109 | 545128 | 20.416 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.601 | 190 | 418409 | 20.650 |
| 169) Octachlorostyrene | (4) | 14.922 | 308 | 251634 | 20.192 |
| 171) Isodrin | (4) | 14.974 | 193 | 395754 | 20.252 |
| 222) Total PAHs | (6) | | | 56759021 | 363.843 |
| 173) Fluoranthene | (4) | 15.196 | 202 | 3679280 | 20.056 |
| 174) Benzidine | (5) | 15.440 | 184 | 7021493 | 60.698 |
| 175)*Pyrene-d10 | (5) | 15.510 | 212 | 880105 | 5.000 |
| 177) Pyrene | (5) | 15.539 | 202 | 3811048 | 19.901 |
| 179)$Terphenyl-d14 | (5) | 15.825 | 244 | 4964718 | 40.434 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.052 | 225 | 615572 | 20.223 |
| 185) Chlorobenzilate | (5) | 16.146 | 139 | 1189861 | 20.286 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.618 | 212 | 2387461 | 20.012 |
| 188) Butylbenzylphthalate | (5) | 16.676 | 149 | 1733786 | 20.229 |
| 191) 2-Acetylaminofluorene | (5) | 17.043 | 181 | 1634433 | 20.454 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.544 | 252 | 1402580 | 20.311 |
| 195) Benzo(a)anthracene | (5) | 17.550 | 228 | 3552217 | 20.605 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.568 | 231 | 714498 | 20.314 |
| 196) Chrysene | (5) | 17.614 | 228 | 3278700 | 20.560 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.737 | 149 | 2568836 | 20.399 |
| 203) 6-Methylchrysene | (5) | 18.413 | 242 | 2489728 | 20.355 |
| 205) Di-n-octylphthalate | (6) | 18.903 | 149 | 4604163 | 20.100 |
| 206) Benzo(b)fluoranthene | (6) | 19.410 | 252 | 3719087 | 20.029 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.415 | 256 | 1657810 | 20.147 |
| 208) Benzo(k)fluoranthene | (6) | 19.462 | 252 | 3562061 | 20.391 |
| 211) Benzo(a)pyrene | (6) | 19.934 | 252 | 3509664 | 20.497 |
| 213)*Perylene-d12 | (6) | 20.016 | 264 | 733236 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.505 | 268 | 1554185 | 19.789 |
| 217) Dibenz(a,h)acridine | (6) | 21.316 | 279 | 2868868 | 20.212 |
| 218) Dibenz(a,j)acridine | (6) | 21.391 | 279 | 2948525 | 20.179 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.636 | 276 | 3985956 | 20.861 |
| 220) Dibenz(a,h)anthracene | (6) | 21.677 | 278 | 3298902 | 21.081 |
| 221) Benzo(g,h,i)perylene | (6) | 22.027 | 276 | 3313114 | 20.626 |

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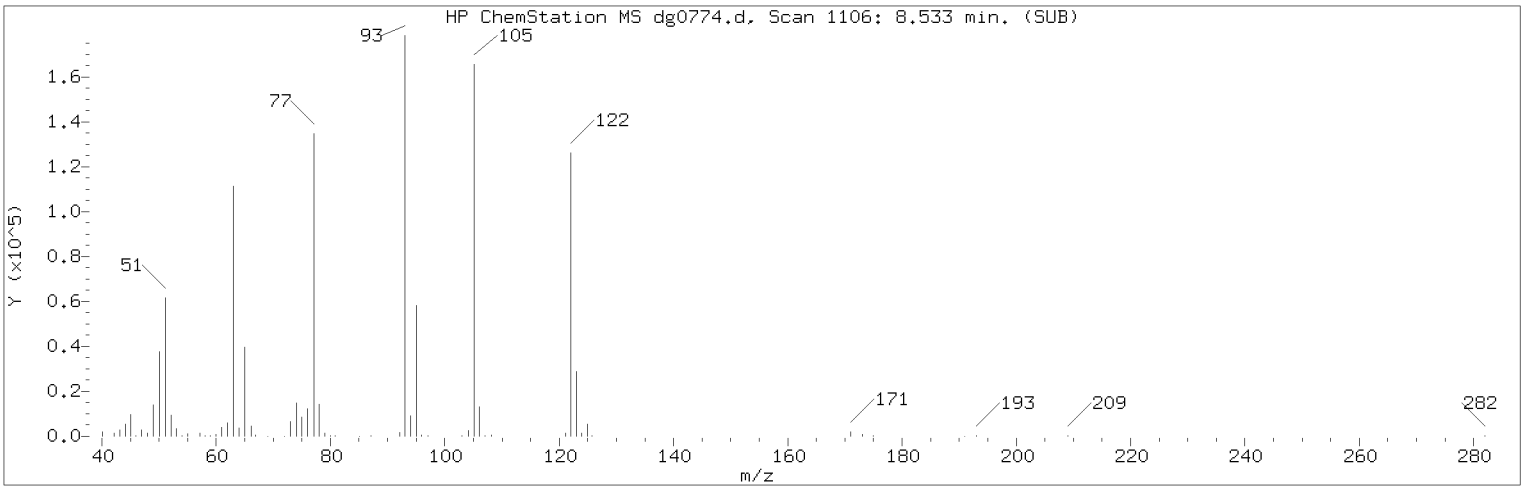
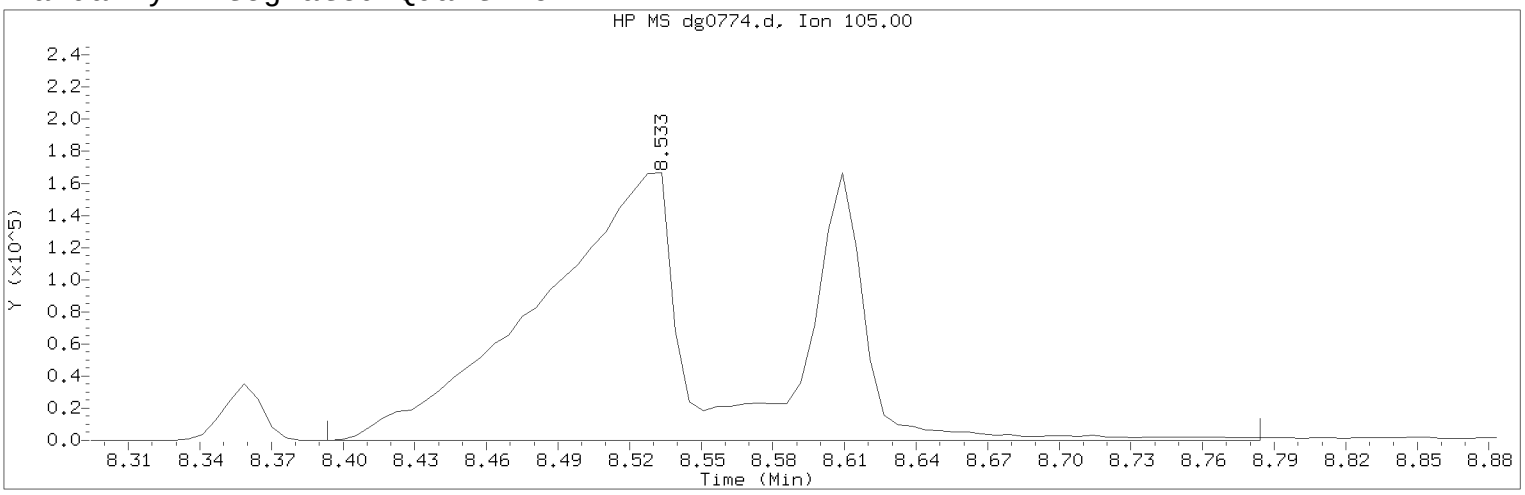
$ = Compound is a surrogate standard.

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0774.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:47  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD020  Lab Sample ID: rvSTD1577

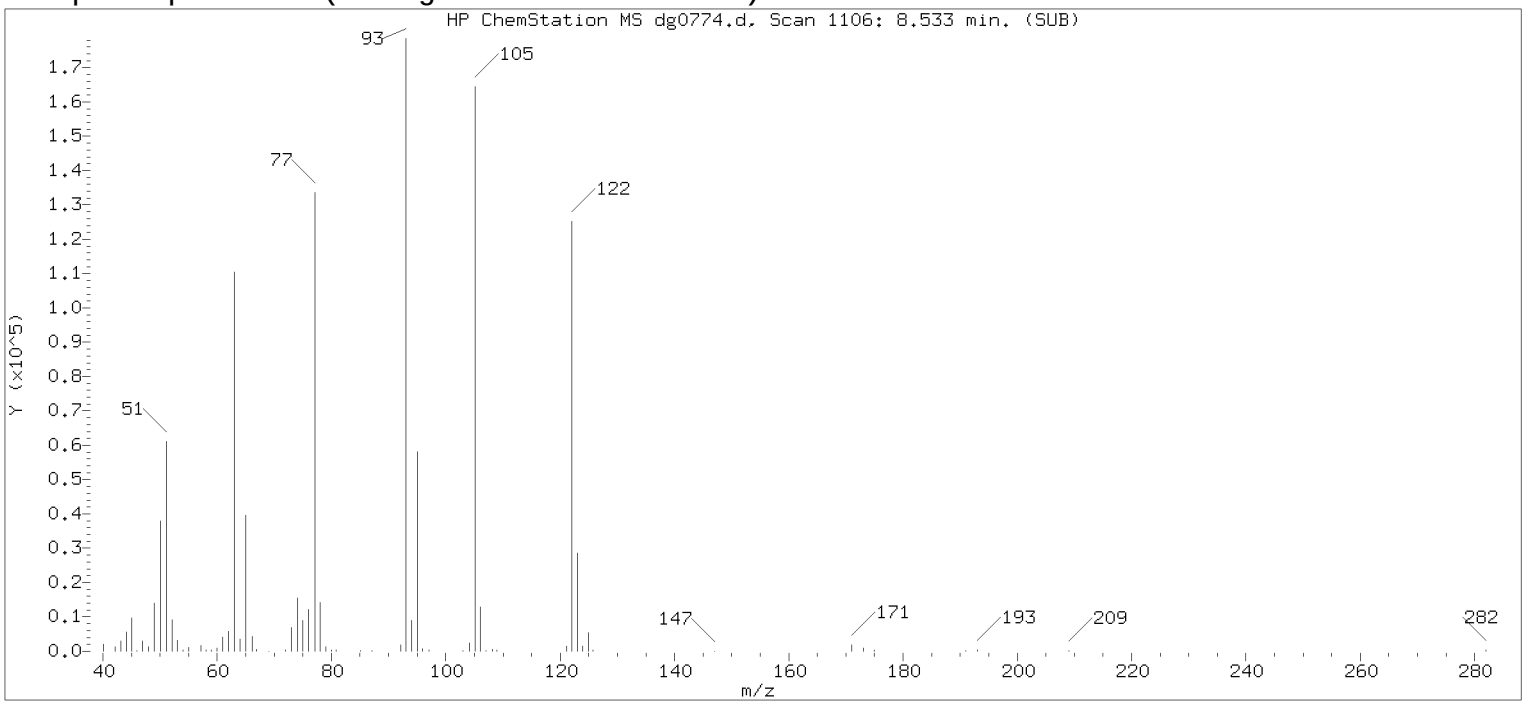
Compound Number : 56
Compound Name : Benzoic acid
Scan Number : 1106
Retention Time (minutes) : 8.533
Quant Ion : 105.00
Area (flag) : 927388M
On-Column Amount (ng/ul) : 20.8423
Integration start scan : 1081  Integration stop scan: 1148
Y at integration start : 25  Y at integration end: 25

Reason for manual integration: improper integration

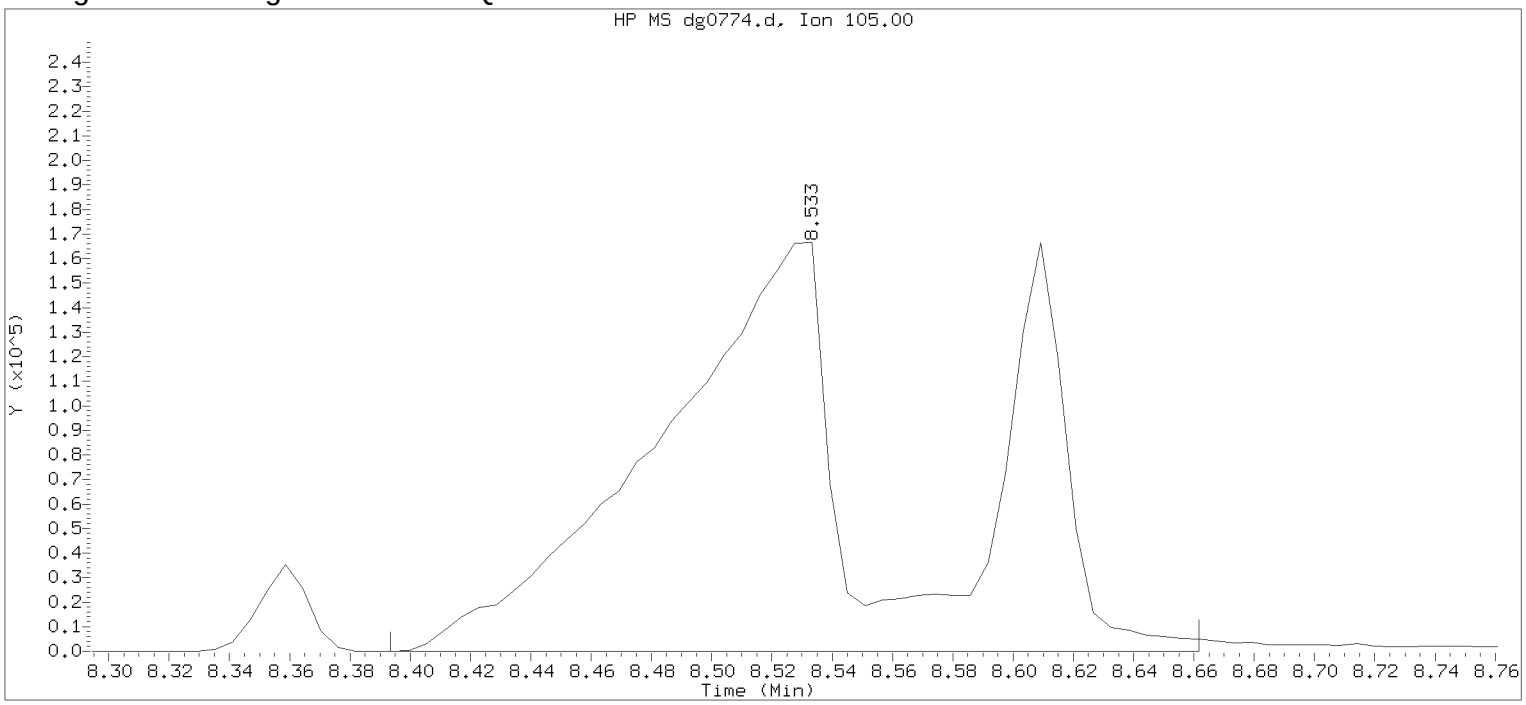
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



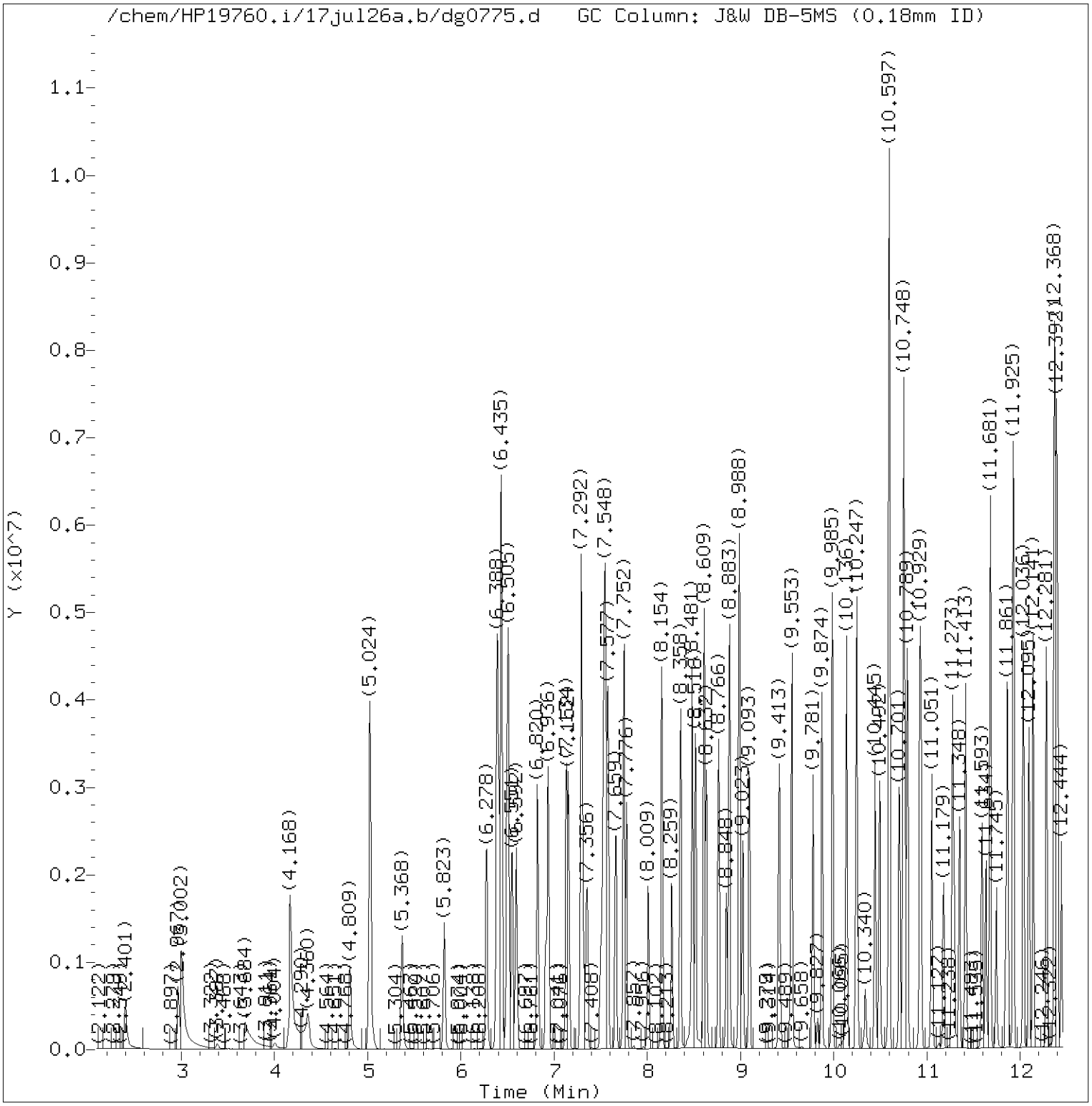

Data File: /chem/HP19760.i/17jul26a.b/dg0774.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 10:47 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:35
Date, time and analyst ID of latest file update: 26-Jul-2017 16:35 em10340

Sample Name: SSTD020 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 56 | | |
| Compound Name | : Benzoic acid | | |
| Scan Number | : 1106 | | |
| Retention Time (minutes) | : 8.533 | | |
| Quant Ion | : 105.00 | | |
| Area | : 909683 | | |
| On-column Amount (ng/ul) | : 0.0000 | | |
| Integration start scan | : 1081 | Integration stop scan: | 1127 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user id: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0775.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:15 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvSTD1577

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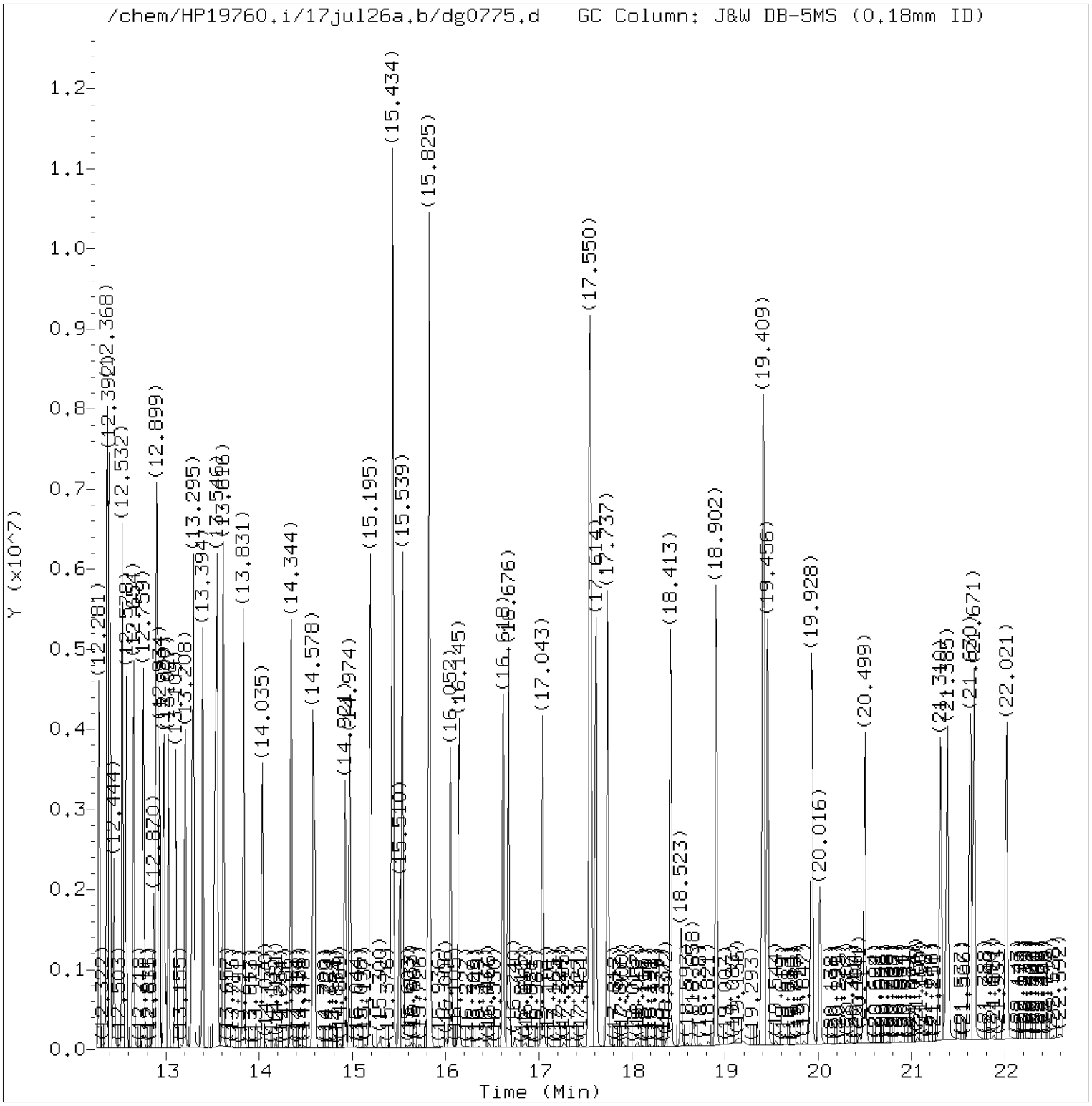
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0775.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:15 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0775.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:15  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD12.5  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.401 | 88 | 411825 | 12.160 |
| 4) N-Nitrosodimethylamine | (1) | 2.967 | 74 | 706107 | 12.567 |
| 5) Pyridine | (1) | 3.002 | 79 | 1097942 | 12.339 |
| 7) 2-Picoline | (1) | 4.168 | 93 | 1192300 | 12.398 |
| 8) N-Nitrosomethylethylamine | (1) | 4.354 | 88 | 494996 | 12.469 |
| 9) Methyl methanesulfonate | (1) | 4.809 | 80 | 555282 | 12.301 |
| 11)$2-Fluorophenol | (1) | 5.024 | 112 | 1904363 | 24.966 |
| 13) N-Nitrosodiethylamine | (1) | 5.368 | 102 | 486066 | 12.455 |
| 42) Total Cresols | (1) | | | 1857263 | 24.487 |
| 15) Ethyl methanesulfonate | (1) | 5.823 | 109 | 501934 | 12.505 |
| 16) Benzaldehyde | (1) | 6.278 | 77 | 823776 | 13.575 |
| 17)$Phenol-d6 | (1) | 6.388 | 99 | 2517929 | 25.092 |
| 18) Phenol | (1) | 6.406 | 94 | 1439978 | 12.528 |
| 19) Aniline | (1) | 6.435 | 93 | 1642753 | 12.359 |
| 20) a-methylstyrene | (1) | 6.505 | 118 | 1056547 | 12.492 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.551 | 93 | 1024899 | 12.341 |
| 23) 2-Chlorophenol | (1) | 6.592 | 128 | 928213 | 12.547 |
| 24) 1,3-Dichlorobenzene | (1) | 6.820 | 146 | 1007153 | 12.511 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 249344 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.936 | 146 | 1021679 | 12.529 |
| 27) Benzyl alcohol | (1) | 7.129 | 108 | 679614 | 12.428 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 962115 | 12.539 |
| 30) Indene | (1) | 7.292 | 115 | 1876343 | 12.569 |
| 31) 2-Methylphenol | (1) | 7.303 | 108 | 898861 | 12.438 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.356 | 45 | 1365928 | 12.395 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.356 | 45 | 1365928 | 12.395 |
| 97) Isosafrole | (3) | | | 731928 | 12.262 |
| 35) N-Nitrosopyrrolidine | (1) | 7.502 | 100 | 525527 | 12.484 |
| 36) Acetophenone | (1) | 7.531 | 105 | 1396239 | 12.636 |
| 37) 4-Methylphenol | (1) | 7.542 | 108 | 958402 | 12.049 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.554 | 70 | 780212 | 12.398 |
| 39) N-Nitrosomorpholine | (1) | 7.572 | 56 | 639977 | 12.507 |
| 40) o-Toluidine | (1) | 7.577 | 106 | 1574060 | 12.491 |
| 43) Hexachloroethane | (1) | 7.659 | 117 | 417251 | 12.596 |
| 44)$Nitrobenzene-d5 | (2) | 7.752 | 82 | 2306822 | 24.841 |
| 45) Nitrobenzene | (2) | 7.776 | 77 | 1154843 | 12.446 |
| 48) N-Nitrosopiperidine | (2) | 8.009 | 114 | 481299 | 12.544 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 957700 | 24.861 |
| 50) Isophorone | (2) | 8.154 | 82 | 1982609 | 12.394 |
| 51) 2-Nitrophenol | (2) | 8.265 | 139 | 465364 | 12.456 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0775.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:15  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD12.5  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.358 | 107 | 1003275 | 12.420 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.481 | 198 | 447516 | 12.427 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.516 | 93 | 1257582 | 12.442 |
| 56) Benzoic acid | (2) | 8.516 | 105 | 741137M | 12.818 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.609 | 104 | 1566663 | 12.448 |
| 60) 2,4-Dichlorophenol | (2) | 8.632 | 162 | 767322 | 12.558 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.766 | 180 | 835295 | 12.444 |
| 146) Diallate trans/cis | (4) | | | 960481 | 12.577 |
| 65)*Naphthalene-d8 | (2) | 8.848 | 136 | 950508 | 5.000 |
| 66) Naphthalene | (2) | 8.883 | 128 | 2650240 | 12.465 |
| 67) 4-Chloroaniline | (2) | 8.988 | 127 | 1087611 | 12.541 |
| 68) 2,6-Dichlorophenol | (2) | 8.994 | 162 | 750549 | 12.435 |
| 69) Hexachloropropene | (2) | 9.023 | 213 | 520096 | 12.393 |
| 71) Hexachlorobutadiene | (2) | 9.099 | 225 | 464035 | 12.287 |
| 75) Quinoline | (2) | 9.413 | 129 | 1692795 | 12.546 |
| 76) Caprolactam | (2) | 9.547 | 113 | 244275 | 12.702 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.553 | 84 | 953983 | 12.473 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.781 | 107 | 858904 | 12.521 |
| 82) Safrole | (2) | 9.874 | 162 | 698702 | 12.486 |
| 83) 2-Methylnaphthalene | (2) | 9.985 | 142 | 1769417 | 12.732 |
| 84) 1-Methylnaphthalene | (2) | 10.136 | 142 | 1598010 | 12.647 |
| 85) Hexachlorocyclopentadiene | (3) | 10.241 | 237 | 433686 | 12.654 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.253 | 216 | 846959 | 12.440 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 124119 | 2.077 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.445 | 196 | 547067 | 12.491 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.492 | 196 | 564896 | 12.330 |
| 93)$2-Fluorobiphenyl | (3) | 10.597 | 172 | 3817115 | 24.945 |
| 94) trans-Isosafrole | (3) | 10.707 | 162 | 607809 | 10.184 |
| 95) 1,1'-Biphenyl | (3) | 10.748 | 154 | 2088930 | 12.739 |
| 96) 2-Chloronaphthalene | (3) | 10.760 | 162 | 1723430 | 12.743 |
| 98) 1-Chloronaphthalene | (3) | 10.789 | 162 | 1472471 | 12.178 |
| 99) Diphenyl ether | (3) | 10.929 | 170 | 1122162 | 12.318 |
| 100) 2-Nitroaniline | (3) | 10.940 | 138 | 520051 | 12.279 |
| 104) 1,4-Naphthoquinone | (3) | 11.051 | 158 | 663681 | 12.343 |
| 105) 1,4-Dinitrobenzene | (3) | 11.179 | 168 | 264846 | 12.343 |
| 106) Dimethylphthalate | (3) | 11.273 | 163 | 1815277 | 12.379 |
| 107) 1,3-Dinitrobenzene | (3) | 11.290 | 168 | 295976 | 12.508 |
| 108) 2,6-Dinitrotoluene | (3) | 11.348 | 165 | 399487 | 12.332 |
| 109) Acenaphthylene | (3) | 11.418 | 152 | 2342557 | 12.705 |
| 112) 3-Nitroaniline | (3) | 11.593 | 138 | 456182 | 12.426 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0775.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:15  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD12.5  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 113)*Acenaphthene-d10 | (3) | 11.634 | 164 | 531507 | 5.000 |
| 114) Acenaphthene | (3) | 11.681 | 153 | 1717374 | 12.285 |
| 115) 2,4-Dinitrophenol | (3) | 11.745 | 184 | 260842 | 12.610 |
| 116) 4-Nitrophenol | (3) | 11.850 | 109 | 329889 | 12.559 |
| 117) Pentachlorobenzene | (3) | 11.867 | 250 | 687996 | 12.405 |
| 119) Dibenzofuran | (3) | 11.925 | 168 | 2222308 | 12.410 |
| 118) 2,4-Dinitrotoluene | (3) | 11.931 | 165 | 558213 | 12.528 |
| 121) 1-Naphthylamine | (3) | 12.036 | 143 | 1680193 | 12.160 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.095 | 232 | 454827 | 12.544 |
| 123) 2-Naphthylamine | (3) | 12.141 | 143 | 1628846 | 12.290 |
| 124) Diethylphthalate | (3) | 12.281 | 149 | 1798884 | 12.363 |
| 126) Fluorene | (3) | 12.368 | 166 | 1792724 | 12.461 |
| 125) Thionazin | (3) | 12.374 | 107 | 369947 | 12.557 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.392 | 204 | 861486 | 12.584 |
| 128) 5-Nitro-o-toluidine | (3) | 12.398 | 152 | 544242 | 12.613 |
| 129) 4-Nitroaniline | (3) | 12.409 | 138 | 459943 | 12.447 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.444 | 198 | 332124 | 12.672 |
| 132) NDPA as diphenylamine | (4) | 12.532 | 169 | 1547703 | 12.643 |
| 131) N-Nitrosodiphenylamine | (4) | 12.532 | 169 | 1547703 | 12.643 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.578 | 77 | 2170574 | 12.538 |
| 135)$2,4,6-Tribromophenol | (3) | 12.654 | 330 | 472094 | 24.772 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.759 | 97 | 363866 | 12.679 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.870 | 213 | 204830 | 12.614 |
| 140) Diallate (peak 1) | (4) | 12.899 | 86 | 824206 | 10.456 |
| 141) Phorate | (4) | 12.905 | 75 | 1396341 | 12.452 |
| 142) Phenacetin | (4) | 12.934 | 108 | 1057586 | 12.596 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.980 | 248 | 497121 | 12.615 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 136275 | 2.121 |
| 145) Hexachlorobenzene | (4) | 13.027 | 284 | 520329 | 12.486 |
| 147) Dimethoate | (4) | 13.109 | 87 | 877526 | 12.668 |
| 148) Atrazine | (4) | 13.208 | 200 | 491819 | 12.924 |
| 149) Pentachlorophenol | (4) | 13.278 | 266 | 349188 | 12.718 |
| 151) Pentachloronitrobenzene | (4) | 13.295 | 237 | 241761 | 12.654 |
| 150) 4-Aminobiphenyl | (4) | 13.301 | 169 | 1225578 | 12.686 |
| 152) Pronamide | (4) | 13.394 | 173 | 897731 | 12.593 |
| 153)*Phenanthrene-d10 | (4) | 13.517 | 188 | 989945 | 5.000 |
| 154) Dinoseb | (4) | 13.534 | 211 | 554729 | 12.817 |
| 155) Phenanthrene | (4) | 13.552 | 178 | 2691047 | 12.453 |
| 157) Anthracene | (4) | 13.616 | 178 | 2688657 | 12.532 |
| 163) Carbazole | (4) | 13.831 | 167 | 2543025 | 12.594 |

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0775.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:15 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

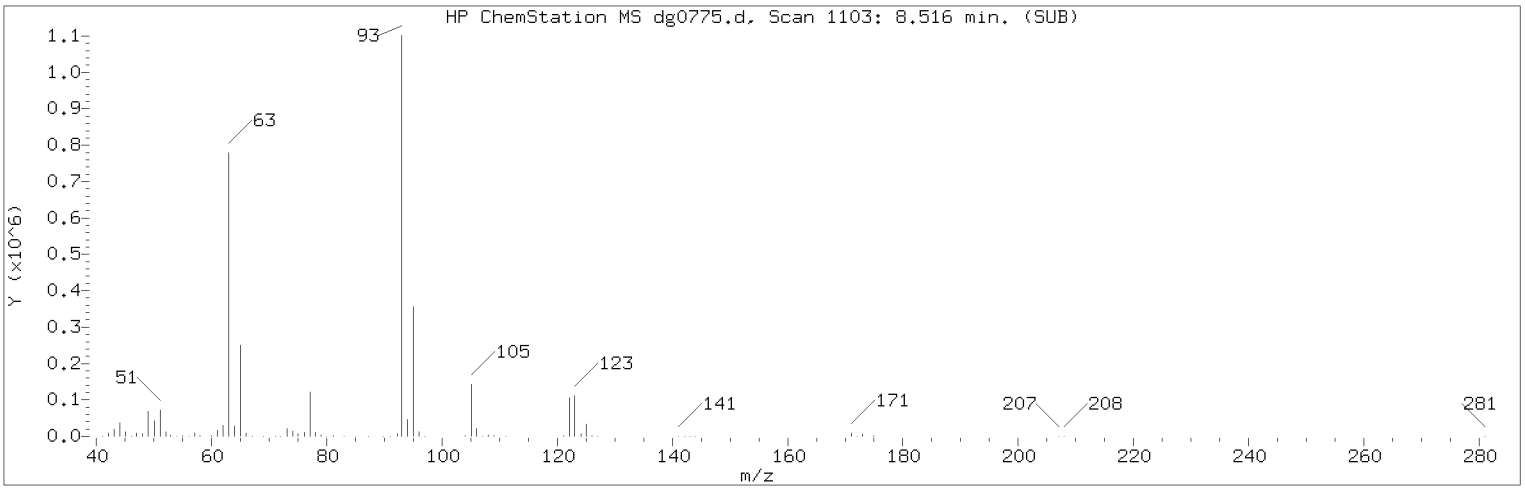
Sample Name: SSTD12.5 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 164) Methyl parathion | (4) | 14.035 | 109 | 715459 | 12.782 |
| 165) Di-n-butylphthalate | (4) | 14.344 | 149 | 3180321 | 12.710 |
| 167) Parathion | (4) | 14.578 | 109 | 445600 | 12.662 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.595 | 190 | 336267 | 12.609 |
| 169) Octachlorostyrene | (4) | 14.921 | 308 | 205678 | 12.557 |
| 171) Isodrin | (4) | 14.974 | 193 | 317883 | 12.421 |
| 222) Total PAHs | (6) | | | 46638570 | 228.418 |
| 173) Fluoranthene | (4) | 15.195 | 202 | 3079580 | 12.732 |
| 174) Benzidine | (5) | 15.434 | 184 | 5817480 | 37.646 |
| 175)*Pyrene-d10 | (5) | 15.510 | 212 | 1174146 | 5.000 |
| 177) Pyrene | (5) | 15.539 | 202 | 3168778 | 12.422 |
| 179)$Terphenyl-d14 | (5) | 15.825 | 244 | 4142053 | 25.214 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.052 | 225 | 500380 | 12.366 |
| 185) Chlorobenzilate | (5) | 16.145 | 139 | 988564 | 12.599 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.618 | 212 | 1989319 | 12.499 |
| 188) Butylbenzylphthalate | (5) | 16.676 | 149 | 1424409 | 12.468 |
| 191) 2-Acetylaminofluorene | (5) | 17.043 | 181 | 1330914 | 12.488 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.544 | 252 | 1146522 | 12.459 |
| 195) Benzo(a)anthracene | (5) | 17.550 | 228 | 2930992 | 12.694 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.568 | 231 | 588844 | 12.537 |
| 196) Chrysene | (5) | 17.614 | 228 | 2726653 | 12.752 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.737 | 149 | 2100661 | 12.503 |
| 203) 6-Methylchrysene | (5) | 18.413 | 242 | 2028626 | 12.449 |
| 205) Di-n-octylphthalate | (6) | 18.902 | 149 | 3743675 | 12.621 |
| 206) Benzo(b)fluoranthene | (6) | 19.404 | 252 | 3004969 | 12.530 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.415 | 256 | 1266937 | 12.066 |
| 208) Benzo(k)fluoranthene | (6) | 19.456 | 252 | 2970047 | 13.032 |
| 211) Benzo(a)pyrene | (6) | 19.928 | 252 | 2854340 | 12.829 |
| 213)*Perylene-d12 | (6) | 20.016 | 264 | 946452 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.499 | 268 | 1252697 | 12.393 |
| 217) Dibenz(a,h)acridine | (6) | 21.310 | 279 | 2304808 | 12.560 |
| 218) Dibenz(a,j)acridine | (6) | 21.385 | 279 | 2379682 | 12.588 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.630 | 276 | 3248401 | 13.031 |
| 220) Dibenz(a,h)anthracene | (6) | 21.671 | 278 | 2692850 | 13.156 |
| 221) Benzo(g,h,i)perylene | (6) | 22.021 | 276 | 2711934 | 12.960 |

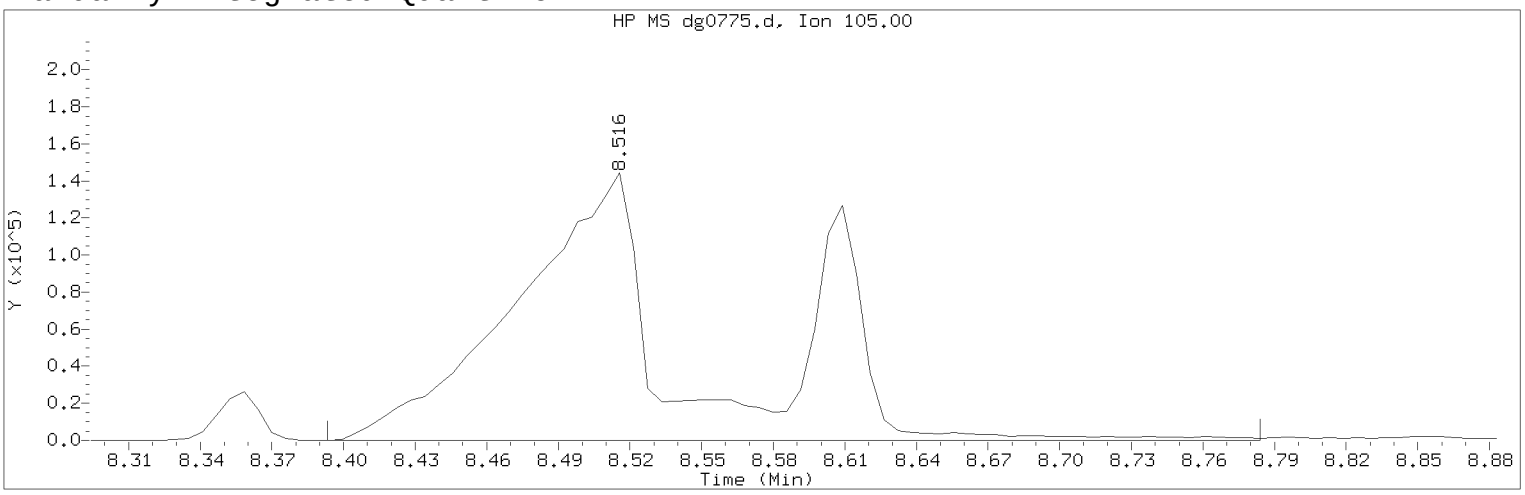
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0775.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:15 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvSTD1577

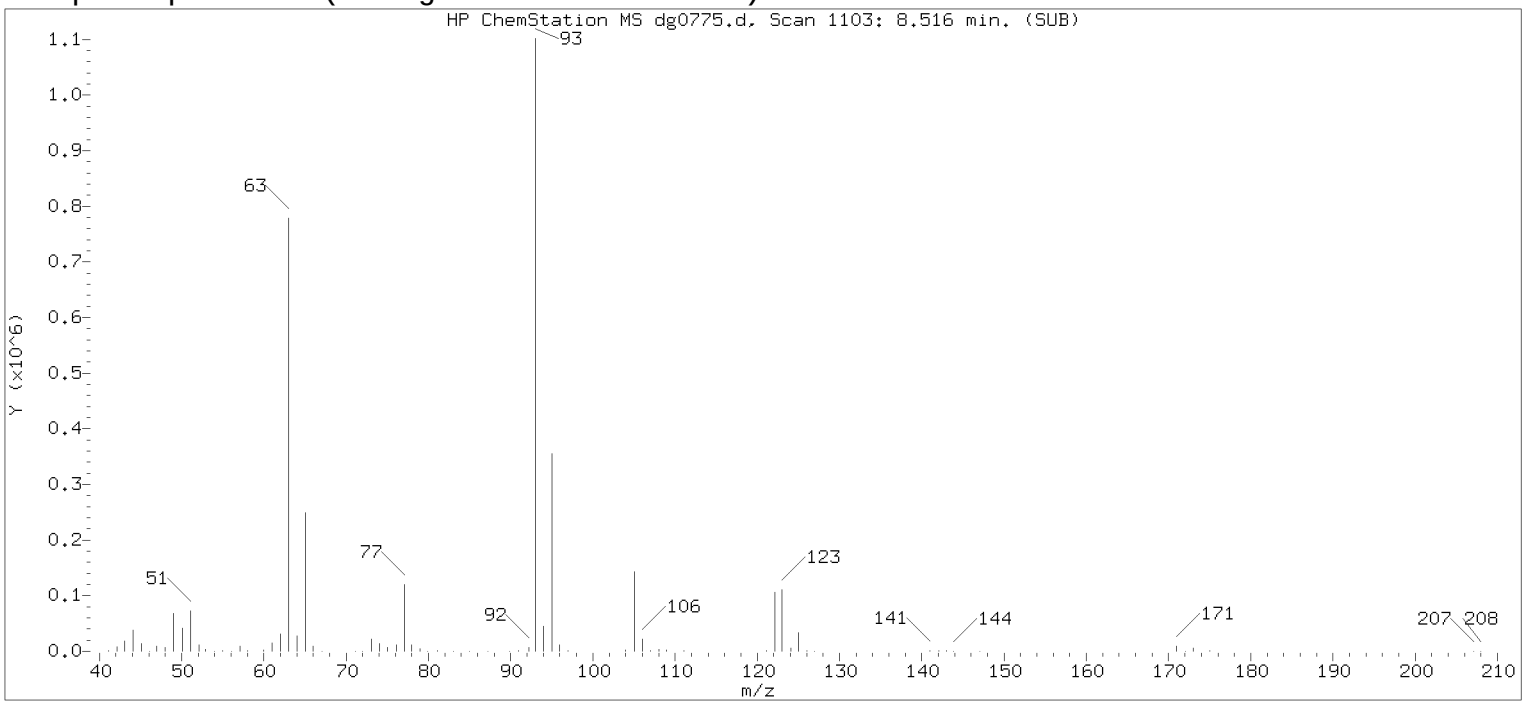
Compound Number : 56
Compound Name : Benzoic acid
Scan Number : 1103
Retention Time (minutes) : 8.516
Quant Ion : 105.00
Area (flag) : 741137M
On-Column Amount (ng/ul) : 12.8180
Integration start scan : 1081 Integration stop scan: 1148
Y at integration start : -4 Y at integration end: -4

Reason for manual integration: improper integration

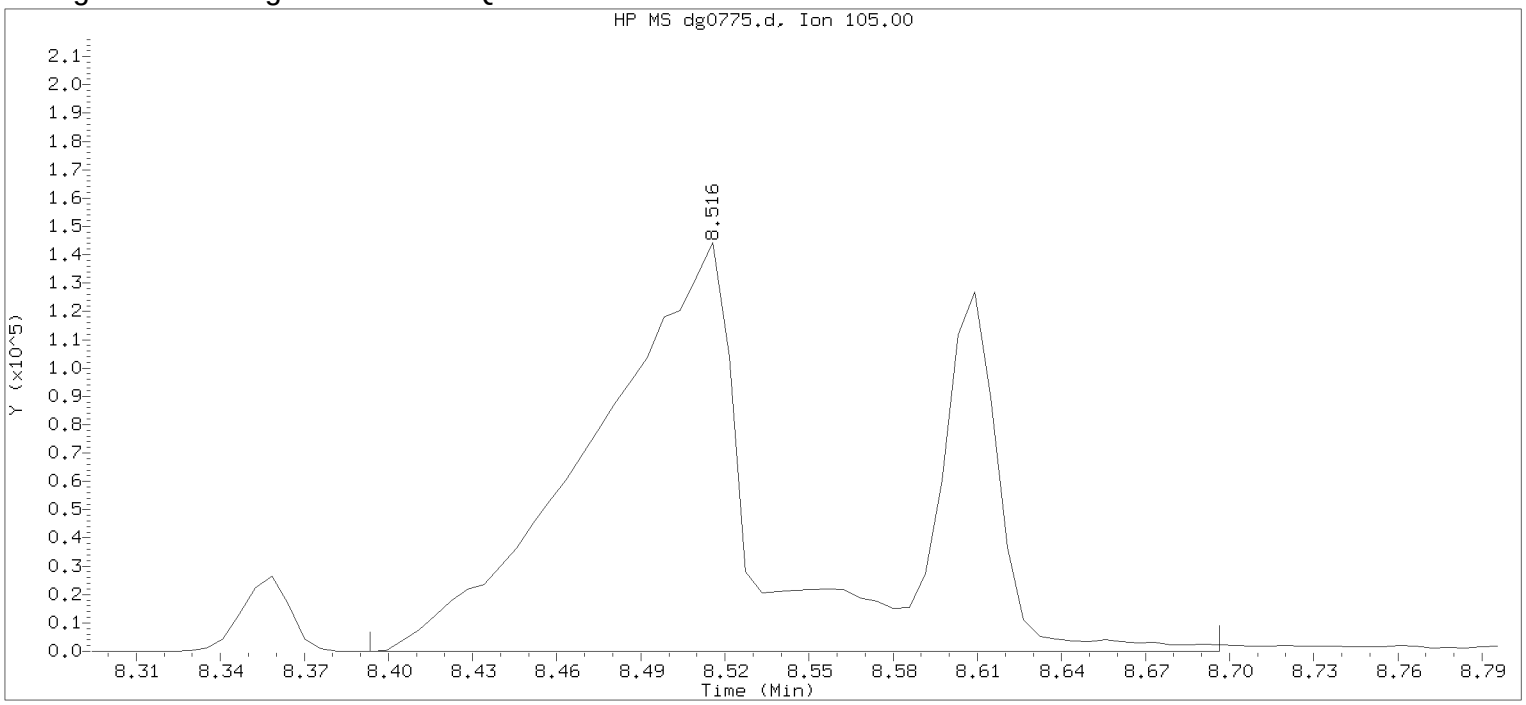
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



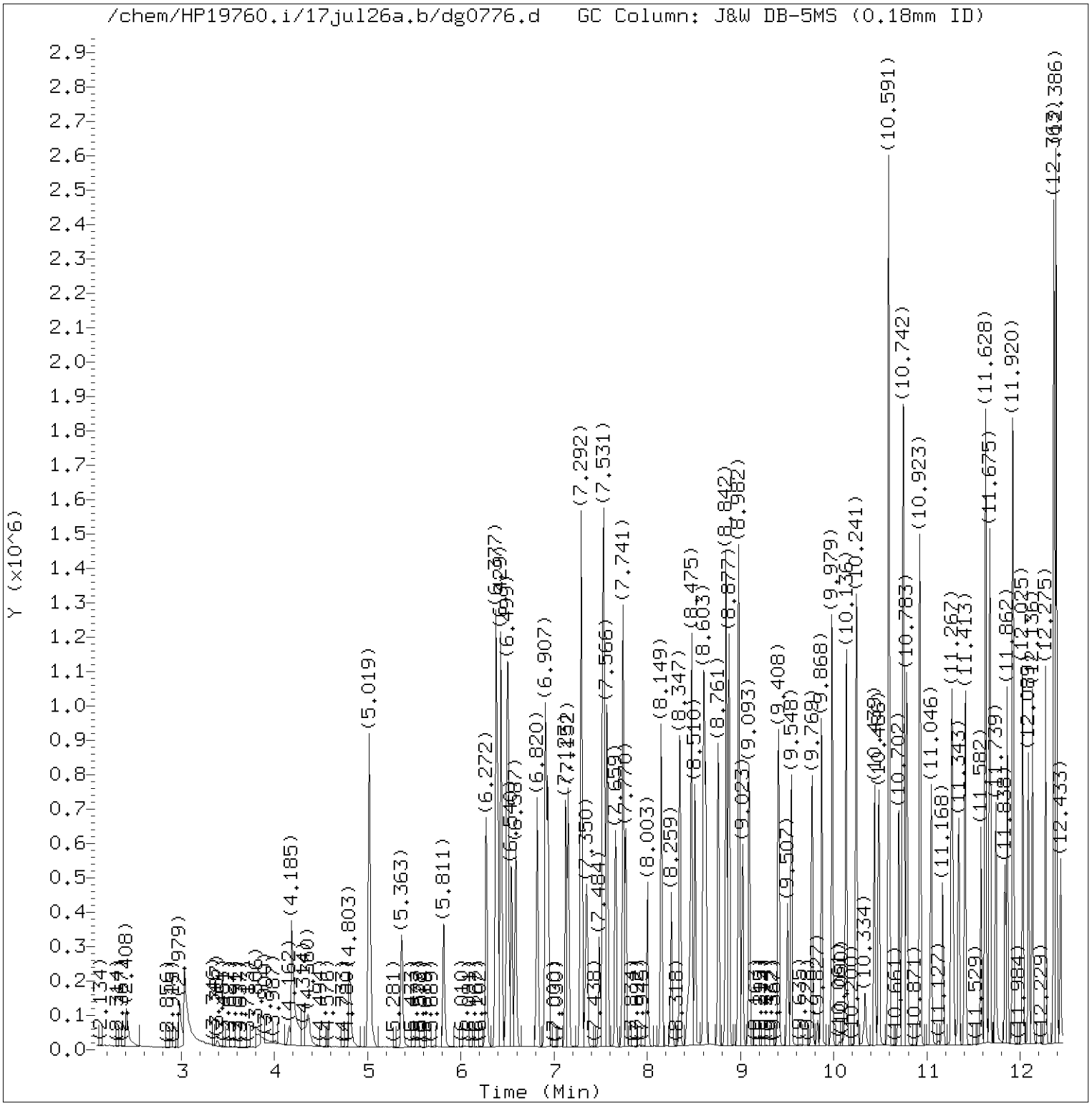

Data File: /chem/HP19760.i/17jul26a.b/dg0775.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:15 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:35
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 56 | | |
| Compound Name | : Benzoic acid | | |
| Scan Number | : 1103 | | |
| Retention Time (minutes) | : 8.516 | | |
| Quant Ion | : 105.00 | | |
| Area | : 731771 | | |
| On-column Amount (ng/ul) | : 0.0000 | | |
| Integration start scan | : 1081 | Integration stop scan: | 1133 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user id: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0776.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:42 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD3.75 Lab Sample ID: rvSTD1577

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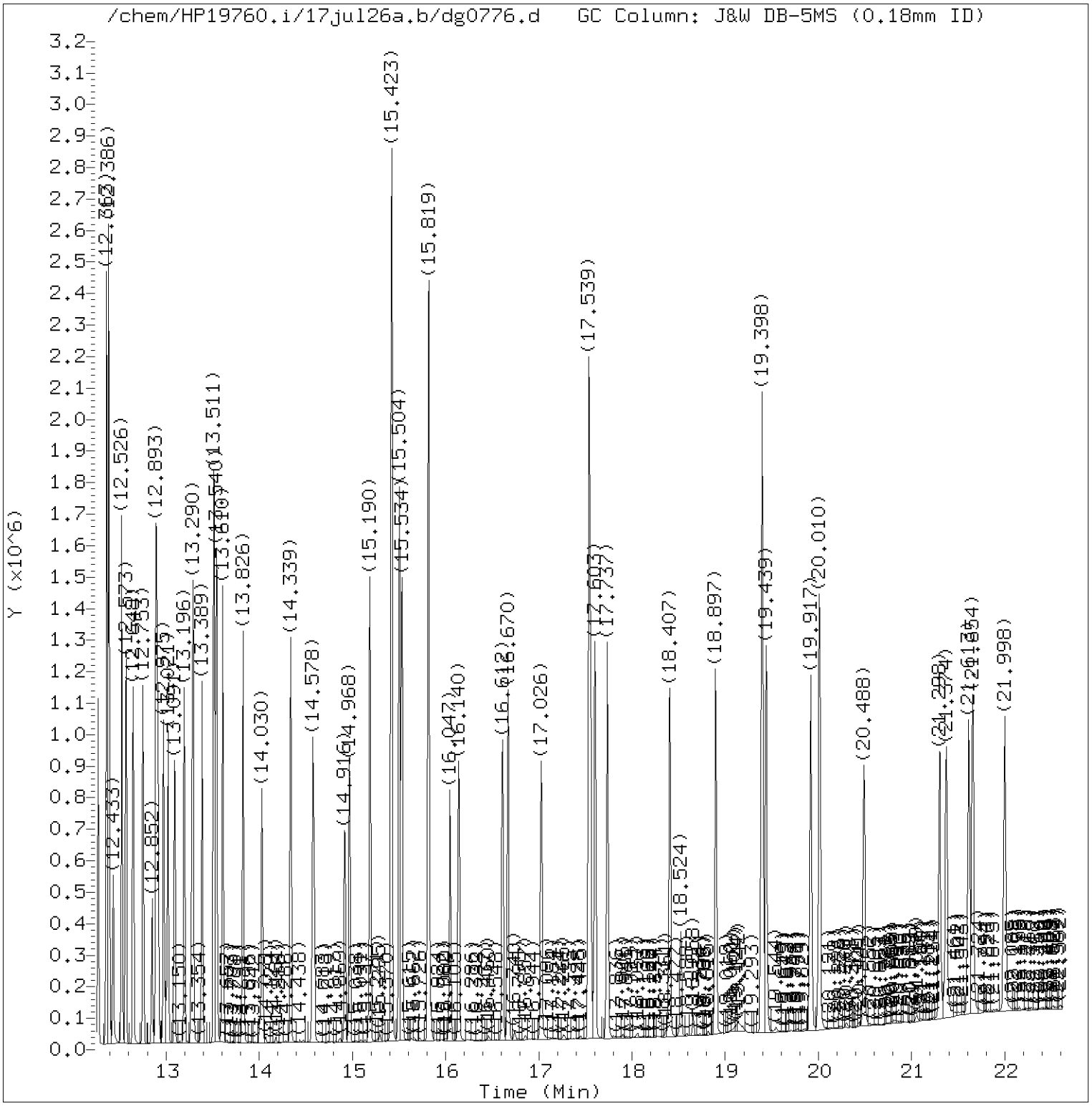
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0776.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:42 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD3.75 Lab Sample ID: rvSTD1577

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0776.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:42  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD3.75  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.408 | 88 | 97573 | 3.590 |
| 4) N-Nitrosodimethylamine | (1) | 2.979 | 74 | 157673 | 3.514 |
| 5) Pyridine | (1) | 3.037 | 79 | 254798 | 3.572 |
| 7) 2-Picoline | (1) | 4.185 | 93 | 288917 | 3.713 |
| 8) N-Nitrosomethylethylamine | (1) | 4.360 | 88 | 115268 | 3.612 |
| 9) Methyl methanesulfonate | (1) | 4.803 | 80 | 132477 | 3.644 |
| 11)$2-Fluorophenol | (1) | 5.019 | 112 | 449218 | 7.307 |
| 13) N-Nitrosodiethylamine | (1) | 5.363 | 102 | 115370 | 3.665 |
| 42) Total Cresols | (1) | | | 446134 | 7.298 |
| 15) Ethyl methanesulfonate | (1) | 5.817 | 109 | 121170 | 3.727 |
| 16) Benzaldehyde | (1) | 6.272 | 77 | 216611 | 4.253 |
| 17)$Phenol-d6 | (1) | 6.377 | 99 | 598342 | 7.380 |
| 18) Phenol | (1) | 6.394 | 94 | 347335 | 3.730 |
| 19) Aniline | (1) | 6.429 | 93 | 399522 | 3.714 |
| 20) a-methylstyrene | (1) | 6.505 | 118 | 240517 | 3.552 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.546 | 93 | 250199 | 3.721 |
| 23) 2-Chlorophenol | (1) | 6.587 | 128 | 219932 | 3.682 |
| 24) 1,3-Dichlorobenzene | (1) | 6.820 | 146 | 244327 | 3.743 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 202267 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.931 | 146 | 245977 | 3.725 |
| 27) Benzyl alcohol | (1) | 7.123 | 108 | 148541 | 3.422 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 235338 | 3.775 |
| 30) Indene | (1) | 7.286 | 115 | 420531 | 3.525 |
| 31) 2-Methylphenol | (1) | 7.298 | 108 | 215167 | 3.686 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.350 | 45 | 331031 | 3.712 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.350 | 45 | 331031 | 3.712 |
| 97) Isosafrole | (3) | | | 172589 | 3.647 |
| 35) N-Nitrosopyrrolidine | (1) | 7.484 | 100 | 120918 | 3.581 |
| 36) Acetophenone | (1) | 7.519 | 105 | 343993 | 3.820 |
| 37) 4-Methylphenol | (1) | 7.531 | 108 | 230967 | 3.612 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.537 | 70 | 188737 | 3.708 |
| 39) N-Nitrosomorpholine | (1) | 7.554 | 56 | 154761 | 3.733 |
| 40) o-Toluidine | (1) | 7.572 | 106 | 382871 | 3.746 |
| 43) Hexachloroethane | (1) | 7.659 | 117 | 99544 | 3.714 |
| 44)$Nitrobenzene-d5 | (2) | 7.741 | 82 | 558074 | 7.485 |
| 45) Nitrobenzene | (2) | 7.770 | 77 | 278389 | 3.738 |
| 48) N-Nitrosopiperidine | (2) | 8.003 | 114 | 110992 | 3.630 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 219638 | 7.251 |
| 50) Isophorone | (2) | 8.149 | 82 | 470302 | 3.677 |
| 51) 2-Nitrophenol | (2) | 8.259 | 139 | 104438 | 3.531 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0776.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:42 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD3.75 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.353 | 107 | 237634 | 3.679 |
| 56) Benzoic acid | (2) | 8.469 | 105 | 238513M | 5.481 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.475 | 198 | 106614 | 3.698 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.510 | 93 | 301437 | 3.720 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.603 | 104 | 355699 | 3.562 |
| 60) 2,4-Dichlorophenol | (2) | 8.627 | 162 | 181451 | 3.707 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.761 | 180 | 201013 | 3.732 |
| 146) Diallate trans/cis | (4) | | | 218405 | 3.715 |
| 65)*Naphthalene-d8 | (2) | 8.842 | 136 | 763572 | 5.000 |
| 66) Naphthalene | (2) | 8.877 | 128 | 643058 | 3.763 |
| 67) 4-Chloroaniline | (2) | 8.982 | 127 | 257184 | 3.703 |
| 68) 2,6-Dichlorophenol | (2) | 8.988 | 162 | 180237 | 3.724 |
| 69) Hexachloropropene | (2) | 9.023 | 213 | 124801 | 3.711 |
| 71) Hexachlorobutadiene | (2) | 9.093 | 225 | 115801 | 3.803 |
| 75) Quinoline | (2) | 9.408 | 129 | 400896 | 3.709 |
| 76) Caprolactam | (2) | 9.507 | 113 | 58556 | 3.782 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.548 | 84 | 183119 | 3.108 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.769 | 107 | 199969 | 3.652 |
| 82) Safrole | (2) | 9.868 | 162 | 164723 | 3.681 |
| 83) 2-Methylnaphthalene | (2) | 9.979 | 142 | 424743 | 3.795 |
| 84) 1-Methylnaphthalene | (2) | 10.136 | 142 | 380763 | 3.751 |
| 85) Hexachlorocyclopentadiene | (3) | 10.241 | 237 | 103321 | 3.772 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.247 | 216 | 205212 | 3.771 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 29280 | 0.618 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.439 | 196 | 125823 | 3.629 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.486 | 196 | 136418 | 3.735 |
| 93)$2-Fluorobiphenyl | (3) | 10.591 | 172 | 930938 | 7.598 |
| 94) trans-Isosafrole | (3) | 10.702 | 162 | 143309 | 3.029 |
| 95) 1,1'-Biphenyl | (3) | 10.742 | 154 | 516973 | 3.908 |
| 96) 2-Chloronaphthalene | (3) | 10.754 | 162 | 411019 | 3.796 |
| 98) 1-Chloronaphthalene | (3) | 10.783 | 162 | 360719 | 3.740 |
| 99) Diphenyl ether | (3) | 10.923 | 170 | 272087 | 3.744 |
| 100) 2-Nitroaniline | (3) | 10.929 | 138 | 118268 | 3.546 |
| 104) 1,4-Naphthoquinone | (3) | 11.046 | 158 | 153535 | 3.611 |
| 105) 1,4-Dinitrobenzene | (3) | 11.168 | 168 | 58911 | 3.498 |
| 106) Dimethylphthalate | (3) | 11.267 | 163 | 436475 | 3.733 |
| 107) 1,3-Dinitrobenzene | (3) | 11.279 | 168 | 66891 | 3.581 |
| 108) 2,6-Dinitrotoluene | (3) | 11.343 | 165 | 96272 | 3.729 |
| 109) Acenaphthylene | (3) | 11.413 | 152 | 552595 | 3.754 |
| 112) 3-Nitroaniline | (3) | 11.582 | 138 | 101332 | 3.513 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0776.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:42  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD3.75  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 113)*Acenaphthene-d10 | (3) | 11.628 | 164 | 424214 | 5.000 |
| 114) Acenaphthene | (3) | 11.675 | 153 | 413486 | 3.713 |
| 115) 2,4-Dinitrophenol | (3) | 11.739 | 184 | 96691 | 6.125 |
| 116) 4-Nitrophenol | (3) | 11.838 | 109 | 73585 | 3.556 |
| 117) Pentachlorobenzene | (3) | 11.862 | 250 | 167646 | 3.780 |
| 119) Dibenzofuran | (3) | 11.920 | 168 | 544186 | 3.796 |
| 118) 2,4-Dinitrotoluene | (3) | 11.926 | 165 | 123366 | 3.522 |
| 121) 1-Naphthylamine | (3) | 12.025 | 143 | 387320 | 3.557 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.089 | 232 | 99286 | 3.490 |
| 123) 2-Naphthylamine | (3) | 12.136 | 143 | 373720 | 3.574 |
| 124) Diethylphthalate | (3) | 12.275 | 149 | 411345 | 3.582 |
| 126) Fluorene | (3) | 12.363 | 166 | 427532 | 3.728 |
| 125) Thionazin | (3) | 12.369 | 107 | 83138 | 3.577 |
| 128) 5-Nitro-o-toluidine | (3) | 12.386 | 152 | 121218 | 3.564 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.386 | 204 | 209469 | 3.817 |
| 129) 4-Nitroaniline | (3) | 12.392 | 138 | 104313 | 3.578 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.433 | 198 | 65535 | 3.331 |
| 132) NDPA as diphenylamine | (4) | 12.526 | 169 | 354098 | 3.750 |
| 131) N-Nitrosodiphenylamine | (4) | 12.526 | 169 | 354098 | 3.750 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.573 | 77 | 508434 | 3.795 |
| 135)$2,4,6-Tribromophenol | (3) | 12.648 | 330 | 102763 | 6.893 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.753 | 97 | 80805 | 3.669 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.852 | 213 | 42979 | 3.490 |
| 140) Diallate (peak 1) | (4) | 12.893 | 86 | 187545 | 3.090 |
| 141) Phorate | (4) | 12.899 | 75 | 320978 | 3.718 |
| 142) Phenacetin | (4) | 12.917 | 108 | 239644 | 3.710 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.975 | 248 | 115282 | 3.784 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 30860 | 0.625 |
| 145) Hexachlorobenzene | (4) | 13.021 | 284 | 121766 | 3.781 |
| 147) Dimethoate | (4) | 13.091 | 87 | 197298 | 3.703 |
| 148) Atrazine | (4) | 13.196 | 200 | 123242 | 4.100 |
| 149) Pentachlorophenol | (4) | 13.272 | 266 | 68135 | 3.311 |
| 151) Pentachloronitrobenzene | (4) | 13.290 | 237 | 53563 | 3.657 |
| 150) 4-Aminobiphenyl | (4) | 13.295 | 169 | 273805 | 3.689 |
| 152) Pronamide | (4) | 13.389 | 173 | 198731 | 3.640 |
| 153)*Phenanthrene-d10 | (4) | 13.511 | 188 | 763716 | 5.000 |
| 154) Dinoseb | (4) | 13.529 | 211 | 105207 | 3.255 |
| 155) Phenanthrene | (4) | 13.546 | 178 | 626102 | 3.755 |
| 157) Anthracene | (4) | 13.610 | 178 | 622352 | 3.758 |
| 163) Carbazole | (4) | 13.826 | 167 | 589055 | 3.775 |

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on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0776.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:42 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD3.75 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 164) Methyl parathion | (4) | 14.030 | 109 | 151602 | 3.556 |
| 165) Di-n-butylphthalate | (4) | 14.339 | 149 | 701120 | 3.655 |
| 167) Parathion | (4) | 14.572 | 109 | 90794 | 3.418 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.589 | 190 | 57573 | 2.948 |
| 169) Octachlorostyrene | (4) | 14.922 | 308 | 43680 | 3.512 |
| 171) Isodrin | (4) | 14.968 | 193 | 73714 | 3.737 |
| 222) Total PAHs | (6) | | | 10613792 | 67.570 |
| 173) Fluoranthene | (4) | 15.190 | 202 | 704096 | 3.769 |
| 174) Benzidine | (5) | 15.423 | 184 | 1348996 | 11.292 |
| 175)*Pyrene-d10 | (5) | 15.504 | 212 | 906864 | 5.000 |
| 177) Pyrene | (5) | 15.534 | 202 | 745158 | 3.777 |
| 179)$Terphenyl-d14 | (5) | 15.819 | 244 | 964408 | 7.581 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.047 | 225 | 101572 | 3.339 |
| 185) Chlorobenzilate | (5) | 16.140 | 139 | 217395 | 3.619 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.612 | 212 | 426790 | 3.524 |
| 188) Butylbenzylphthalate | (5) | 16.670 | 149 | 313966 | 3.595 |
| 191) 2-Acetylaminofluorene | (5) | 17.026 | 181 | 262121 | 3.283 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.539 | 252 | 251443 | 3.578 |
| 195) Benzo(a)anthracene | (5) | 17.539 | 228 | 661640 | 3.717 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.556 | 231 | 129060 | 3.595 |
| 196) Chrysene | (5) | 17.603 | 228 | 630892 | 3.808 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.737 | 149 | 444397 | 3.485 |
| 203) 6-Methylchrysene | (5) | 18.407 | 242 | 440616 | 3.548 |
| 205) Di-n-octylphthalate | (6) | 18.897 | 149 | 751212 | 3.460 |
| 206) Benzo(b)fluoranthene | (6) | 19.392 | 252 | 660694 | 3.702 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.398 | 256 | 277249 | 3.579 |
| 208) Benzo(k)fluoranthene | (6) | 19.439 | 252 | 660475 | 3.861 |
| 211) Benzo(a)pyrene | (6) | 19.917 | 252 | 616800 | 3.721 |
| 213)*Perylene-d12 | (6) | 20.010 | 264 | 706131 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.488 | 268 | 255714 | 3.457 |
| 217) Dibenz(a,h)acridine | (6) | 21.304 | 279 | 468748 | 3.484 |
| 218) Dibenz(a,j)acridine | (6) | 21.374 | 279 | 486270 | 3.504 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.613 | 276 | 682159 | 3.681 |
| 220) Dibenz(a,h)anthracene | (6) | 21.654 | 278 | 572110 | 3.747 |
| 221) Benzo(g,h,i)perylene | (6) | 21.998 | 276 | 589137 | 3.770 |

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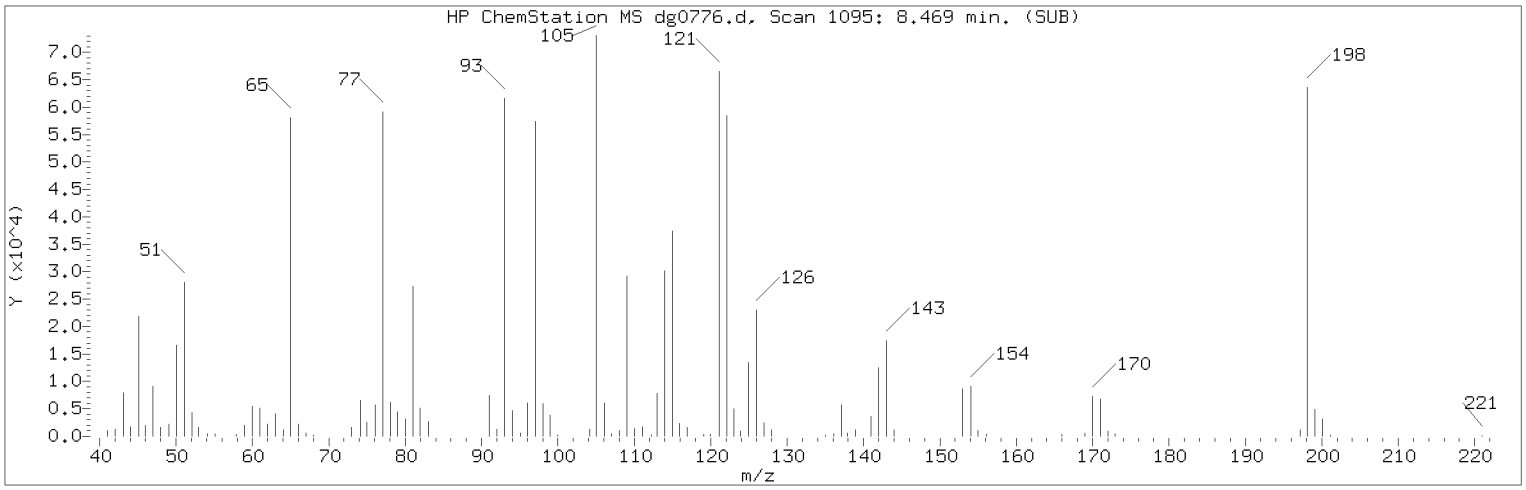
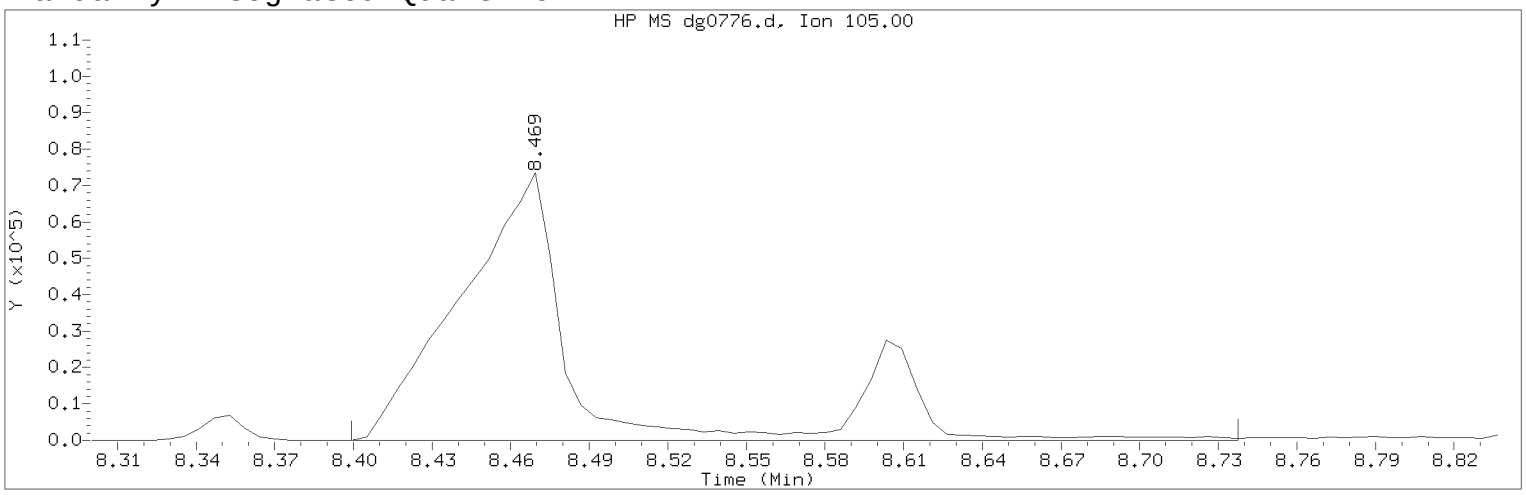
$ = Compound is a surrogate standard.

Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0776.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:42  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:12
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD3.75  Lab Sample ID: rvSTD1577

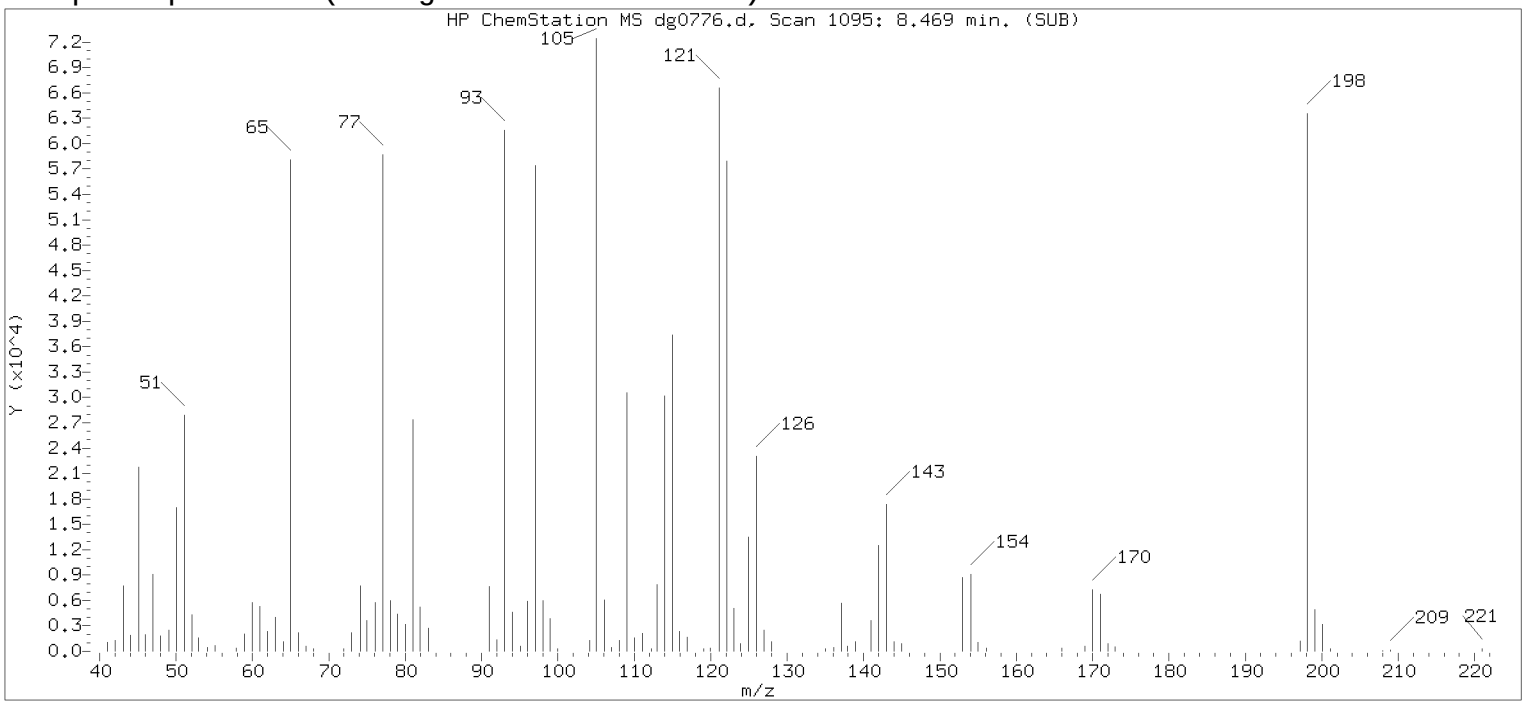
Compound Number : 56
Compound Name : Benzoic acid
Scan Number : 1095
Retention Time (minutes) : 8.469
Quant Ion : 105.00
Area (flag) : 238513M
On-Column Amount (ng/ul) : 5.4806
Integration start scan : 1082  Integration stop scan: 1140
Y at integration start : -10  Y at integration end: -10

Reason for manual integration: improper integration

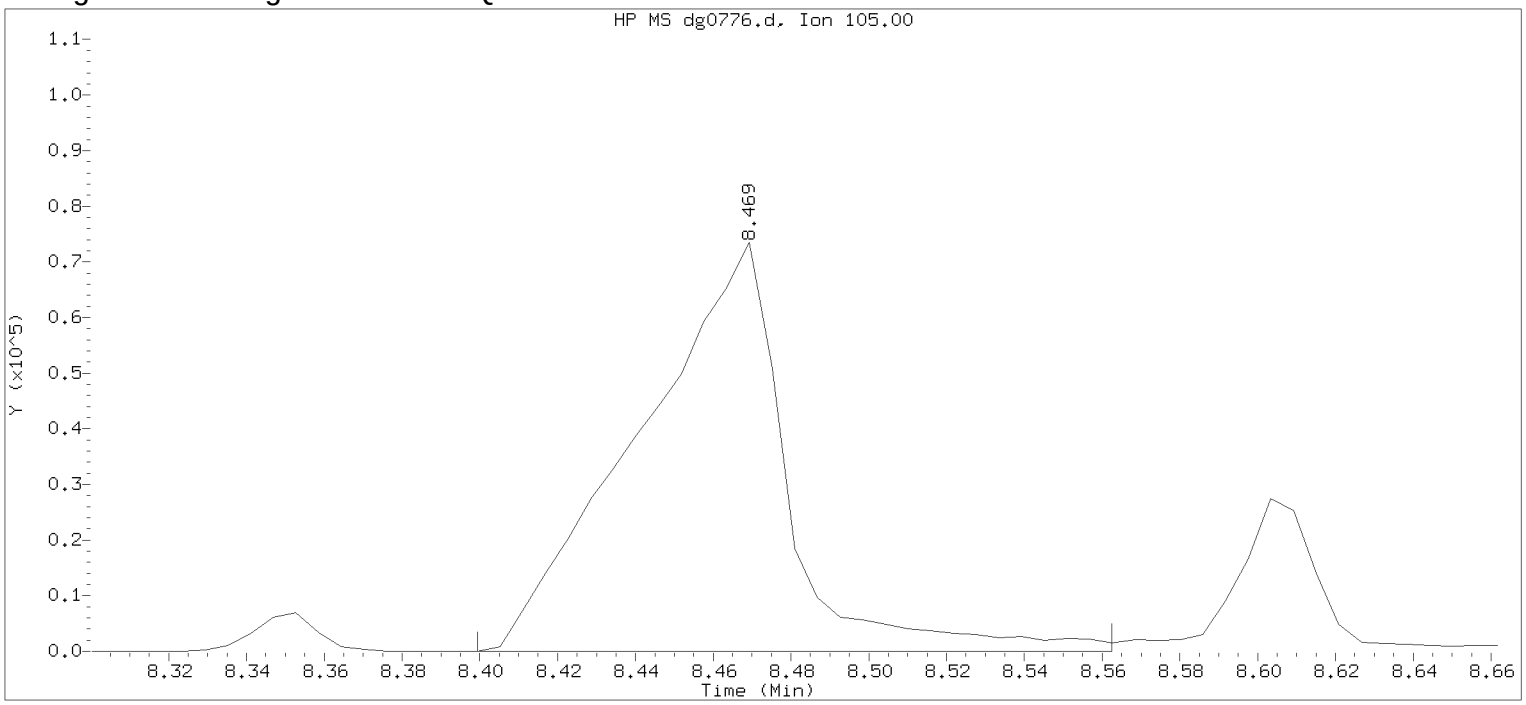
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:03.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



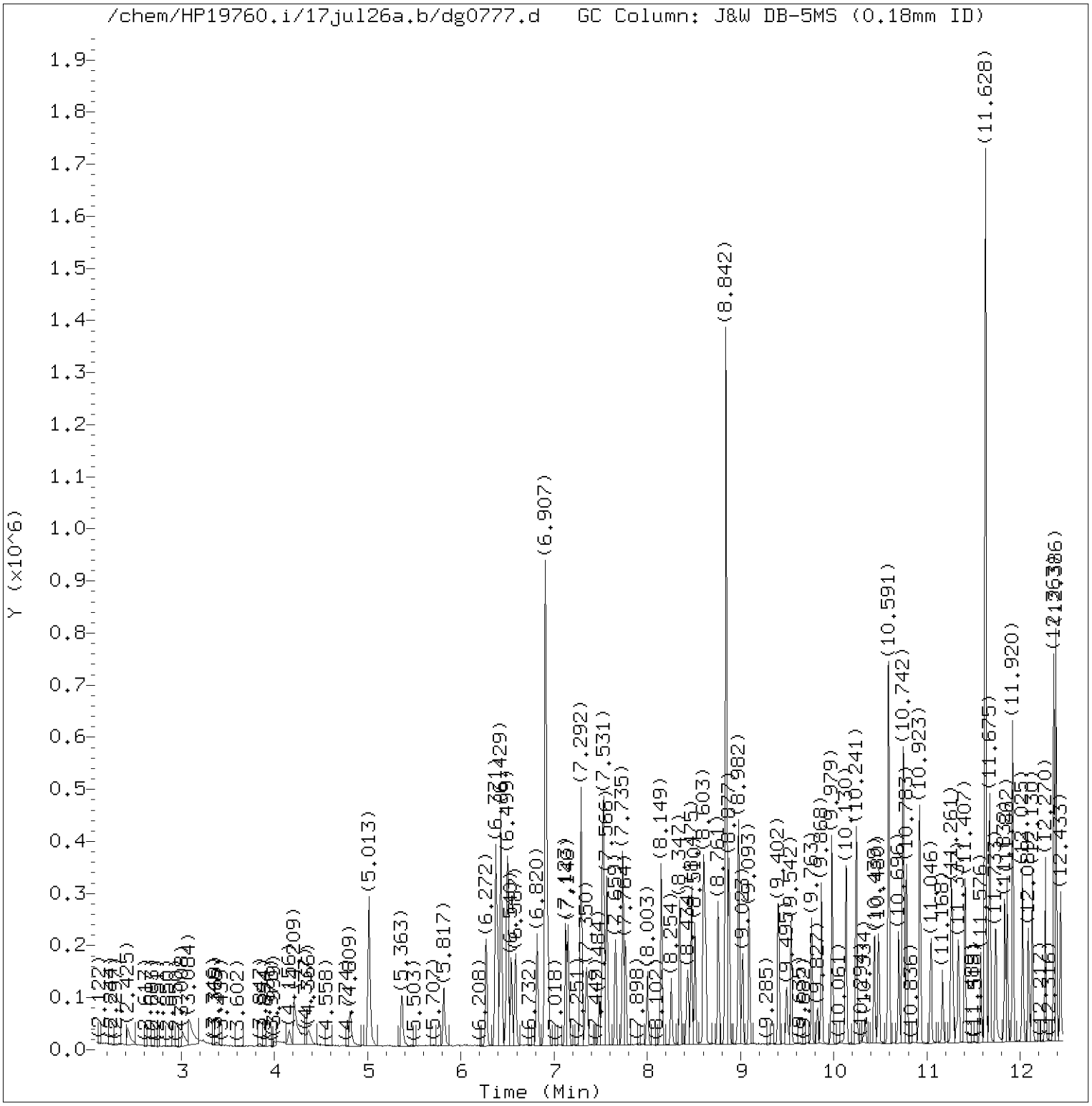

Data File: /chem/HP19760.i/17jul26a.b/dg0776.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 11:42 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD3.75 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 56 | | |
| Compound Name | : Benzoic acid | | |
| Scan Number | : 1095 | | |
| Retention Time (minutes) | : 8.469 | | |
| Quant Ion | : 105.00 | | |
| Area | : 194187 | | |
| On-column Amount (ng/ul) | : 6.1100 | | |
| Integration start scan | : 1082 | Integration stop scan: | 1110 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:03.
Target 3.5 esignature user id: em10340




Total Ion Chromatogram (TIC)

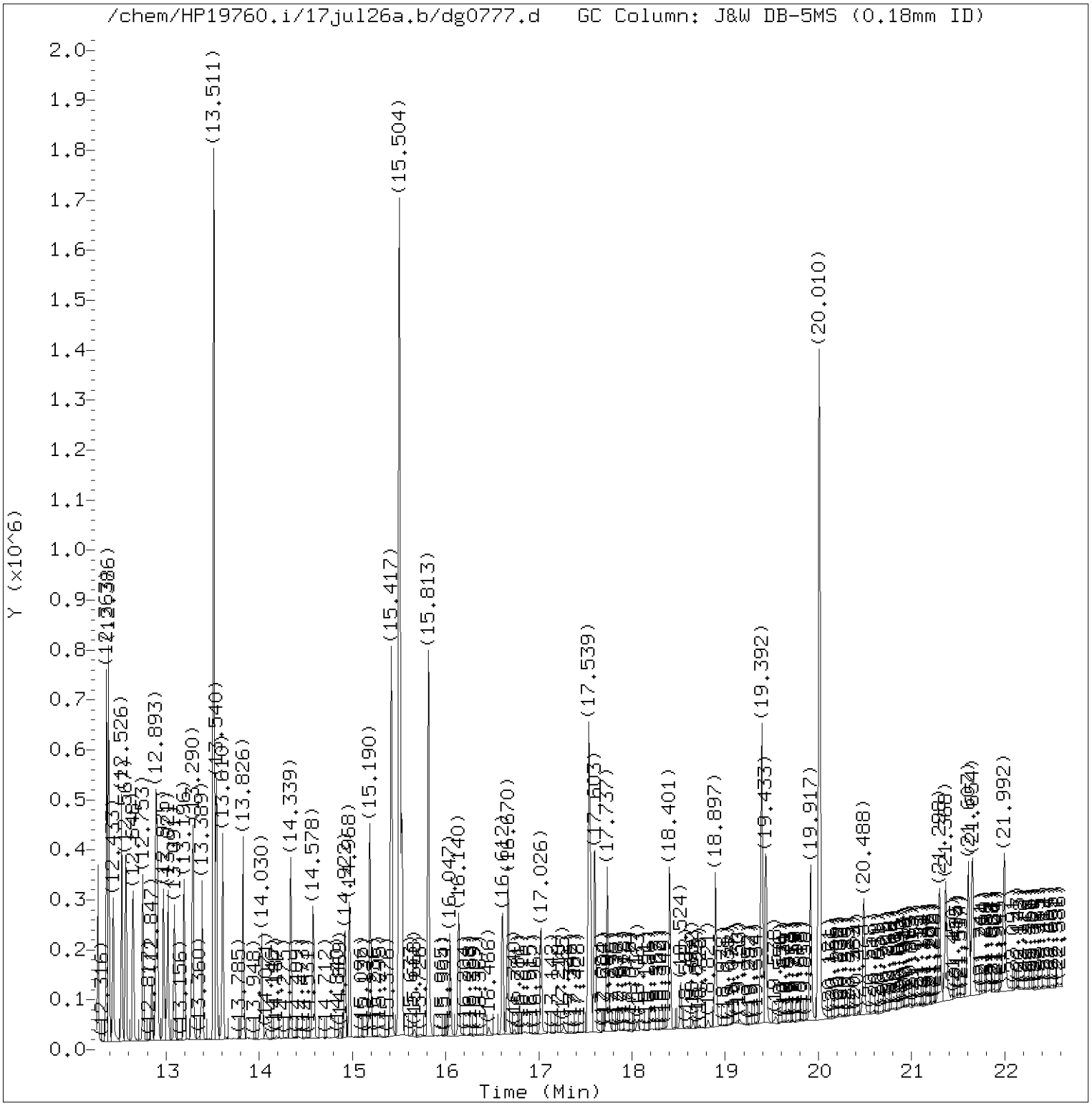
Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0777.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.425 | 88 | 33053M | 1.258 |
| 4) N-Nitrosodimethylamine | (1) | 3.014 | 74 | 50145M | 1.172 |
| 5) Pyridine | (1) | 3.084 | 79 | 89550M | 1.292 |
| 7) 2-Picoline | (1) | 4.209 | 93 | 87481M | 1.178 |
| 8) N-Nitrosomethylethylamine | (1) | 4.366 | 88 | 35527M | 1.168 |
| 9) Methyl methanesulfonate | (1) | 4.809 | 80 | 41571M | 1.195 |
| 11)$2-Fluorophenol | (1) | 5.013 | 112 | 134845 | 2.307 |
| 13) N-Nitrosodiethylamine | (1) | 5.368 | 102 | 35016M | 1.167 |
| 42) Total Cresols | (1) | | | 131526 | 2.269 |
| 15) Ethyl methanesulfonate | (1) | 5.817 | 109 | 35921 | 1.161 |
| 16) Benzaldehyde | (1) | 6.272 | 77 | 67643 | 1.353 |
| 17)$Phenol-d6 | (1) | 6.371 | 99 | 182066 | 2.353 |
| 18) Phenol | (1) | 6.394 | 94 | 94738 | 1.082 |
| 19) Aniline | (1) | 6.429 | 93 | 118119 | 1.155 |
| 20) a-methylstyrene | (1) | 6.505 | 118 | 76723 | 1.186 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.540 | 93 | 78217 | 1.212 |
| 23) 2-Chlorophenol | (1) | 6.587 | 128 | 66175 | 1.163 |
| 24) 1,3-Dichlorobenzene | (1) | 6.820 | 146 | 76283 | 1.217 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 195283 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.931 | 146 | 76463 | 1.207 |
| 27) Benzyl alcohol | (1) | 7.123 | 108 | 46573 | 1.132 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 71291 | 1.195 |
| 30) Indene | (1) | 7.286 | 115 | 135954 | 1.191 |
| 31) 2-Methylphenol | (1) | 7.292 | 108 | 63241 | 1.142 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.350 | 45 | 103223 | 1.207 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.350 | 45 | 103223 | 1.207 |
| 97) Isosafrole | (3) | | | 50565 | 1.140 |
| 35) N-Nitrosopyrrolidine | (1) | 7.484 | 100 | 37262 | 1.159 |
| 36) Acetophenone | (1) | 7.519 | 105 | 101472 | 1.180 |
| 37) 4-Methylphenol | (1) | 7.531 | 108 | 68285 | 1.128 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.537 | 70 | 57889 | 1.189 |
| 39) N-Nitrosomorpholine | (1) | 7.554 | 56 | 47769 | 1.202 |
| 40) o-Toluidine | (1) | 7.566 | 106 | 115884 | 1.186 |
| 43) Hexachloroethane | (1) | 7.659 | 117 | 32260 | 1.247 |
| 44)$Nitrobenzene-d5 | (2) | 7.735 | 82 | 169414 | 2.358 |
| 45) Nitrobenzene | (2) | 7.764 | 77 | 85977 | 1.195 |
| 48) N-Nitrosopiperidine | (2) | 8.003 | 114 | 33124 | 1.132 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 62765 | 2.218 |
| 50) Isophorone | (2) | 8.149 | 82 | 139834 | 1.141 |
| 51) 2-Nitrophenol | (2) | 8.259 | 139 | 29405 | 1.052 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.347 | 107 | 69459 | 1.125 |
| 56) Benzoic acid | (2) | 8.434 | 105 | 77891 | 2.007 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.475 | 198 | 32748 | 1.179 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.510 | 93 | 92389 | 1.182 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.603 | 104 | 116659 | 1.207 |
| 60) 2,4-Dichlorophenol | (2) | 8.627 | 162 | 53774 | 1.146 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.761 | 180 | 63199 | 1.211 |
| 146) Diallate trans/cis | (4) | | | 65356 | 1.187 |
| 65)*Naphthalene-d8 | (2) | 8.842 | 136 | 744175 | 5.000 |
| 66) Naphthalene | (2) | 8.877 | 128 | 195801 | 1.186 |
| 67) 4-Chloroaniline | (2) | 8.976 | 127 | 77877 | 1.166 |
| 68) 2,6-Dichlorophenol | (2) | 8.982 | 162 | 52878 | 1.141 |
| 69) Hexachloropropene | (2) | 9.023 | 213 | 36633 | 1.138 |
| 71) Hexachlorobutadiene | (2) | 9.093 | 225 | 35321 | 1.200 |
| 75) Quinoline | (2) | 9.408 | 129 | 122096 | 1.173 |
| 76) Caprolactam | (2) | 9.495 | 113 | 15509 | 1.059 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.542 | 84 | 53239 | 0.969 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.763 | 107 | 57248 | 1.099 |
| 82) Safrole | (2) | 9.868 | 162 | 49247 | 1.148 |
| 83) 2-Methylnaphthalene | (2) | 9.979 | 142 | 130246 | 1.202 |
| 84) 1-Methylnaphthalene | (2) | 10.130 | 142 | 115192 | 1.176 |
| 85) Hexachlorocyclopentadiene | (3) | 10.241 | 237 | 31142 | 1.202 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.247 | 216 | 61798 | 1.200 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 8266 | 0.187 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.439 | 196 | 37128 | 1.142 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.480 | 196 | 40075 | 1.166 |
| 93)$2-Fluorobiphenyl | (3) | 10.591 | 172 | 289034 | 2.478 |
| 94) trans-Isosafrole | (3) | 10.696 | 162 | 42299 | 0.953 |
| 95) 1,1'-Biphenyl | (3) | 10.742 | 154 | 152187 | 1.214 |
| 96) 2-Chloronaphthalene | (3) | 10.754 | 162 | 121127 | 1.185 |
| 98) 1-Chloronaphthalene | (3) | 10.783 | 162 | 120290 | 1.298 |
| 99) Diphenyl ether | (3) | 10.923 | 170 | 83229 | 1.209 |
| 100) 2-Nitroaniline | (3) | 10.929 | 138 | 32432 | 1.052 |
| 104) 1,4-Naphthoquinone | (3) | 11.046 | 158 | 42300 | 1.073 |
| 105) 1,4-Dinitrobenzene | (3) | 11.168 | 168 | 16179 | 1.041 |
| 106) Dimethylphthalate | (3) | 11.261 | 163 | 133436 | 1.206 |
| 107) 1,3-Dinitrobenzene | (3) | 11.279 | 168 | 18176 | 1.053 |
| 108) 2,6-Dinitrotoluene | (3) | 11.337 | 165 | 27160 | 1.125 |
| 109) Acenaphthylene | (3) | 11.407 | 152 | 168036 | 1.204 |
| 112) 3-Nitroaniline | (3) | 11.582 | 138 | 28502 | 1.067 |

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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 113)*Acenaphthene-d10 | (3) | 11.628 | 164 | 404492 | 5.000 |
| 114) Acenaphthene | (3) | 11.675 | 153 | 125456 | 1.191 |
| 115) 2,4-Dinitrophenol | (3) | 11.739 | 184 | 34611 | 2.299 |
| 116) 4-Nitrophenol | (3) | 11.832 | 109 | 39888 | 2.021 |
| 117) Pentachlorobenzene | (3) | 11.862 | 250 | 53535 | 1.263 |
| 119) Dibenzofuran | (3) | 11.920 | 168 | 169496 | 1.242 |
| 118) 2,4-Dinitrotoluene | (3) | 11.926 | 165 | 35605 | 1.093 |
| 121) 1-Naphthylamine | (3) | 12.025 | 143 | 110232 | 1.062 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.089 | 232 | 28356 | 1.075 |
| 123) 2-Naphthylamine | (3) | 12.130 | 143 | 114334 | 1.147 |
| 124) Diethylphthalate | (3) | 12.270 | 149 | 120781 | 1.125 |
| 126) Fluorene | (3) | 12.363 | 166 | 130186 | 1.199 |
| 125) Thionazin | (3) | 12.369 | 107 | 23295 | 1.080 |
| 129) 4-Nitroaniline | (3) | 12.386 | 138 | 29708 | 1.095 |
| 128) 5-Nitro-o-toluidine | (3) | 12.386 | 152 | 36221 | 1.137 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.386 | 204 | 63739 | 1.223 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.433 | 198 | 35895 | 1.928 |
| 132) NDPA as diphenylamine | (4) | 12.526 | 169 | 105348 | 1.190 |
| 131) N-Nitrosodiphenylamine | (4) | 12.526 | 169 | 105348 | 1.190 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.567 | 77 | 152093 | 1.207 |
| 135)$2,4,6-Tribromophenol | (3) | 12.648 | 330 | 30084 | 2.172 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.753 | 97 | 24286 | 1.178 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.847 | 213 | 10391 | 0.891 |
| 140) Diallate (peak 1) | (4) | 12.893 | 86 | 55872 | 0.983 |
| 141) Phorate | (4) | 12.899 | 75 | 92389 | 1.149 |
| 142) Phenacetin | (4) | 12.911 | 108 | 65319 | 1.095 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.975 | 248 | 35241 | 1.226 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 9484 | 0.205 |
| 145) Hexachlorobenzene | (4) | 13.021 | 284 | 37803 | 1.241 |
| 147) Dimethoate | (4) | 13.091 | 87 | 53103 | 1.081 |
| 148) Atrazine | (4) | 13.196 | 200 | 34865 | 1.229 |
| 149) Pentachlorophenol | (4) | 13.272 | 266 | 16467 | 0.893 |
| 151) Pentachloronitrobenzene | (4) | 13.290 | 237 | 15813 | 1.157 |
| 150) 4-Aminobiphenyl | (4) | 13.295 | 169 | 77489 | 1.125 |
| 152) Pronamide | (4) | 13.389 | 173 | 56139 | 1.110 |
| 153)*Phenanthrene-d10 | (4) | 13.511 | 188 | 722983 | 5.000 |
| 154) Dinoseb | (4) | 13.529 | 211 | 25490 | 0.882 |
| 155) Phenanthrene | (4) | 13.540 | 178 | 199671 | 1.263 |
| 157) Anthracene | (4) | 13.610 | 178 | 189111 | 1.212 |
| 163) Carbazole | (4) | 13.826 | 167 | 170502 | 1.169 |

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$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

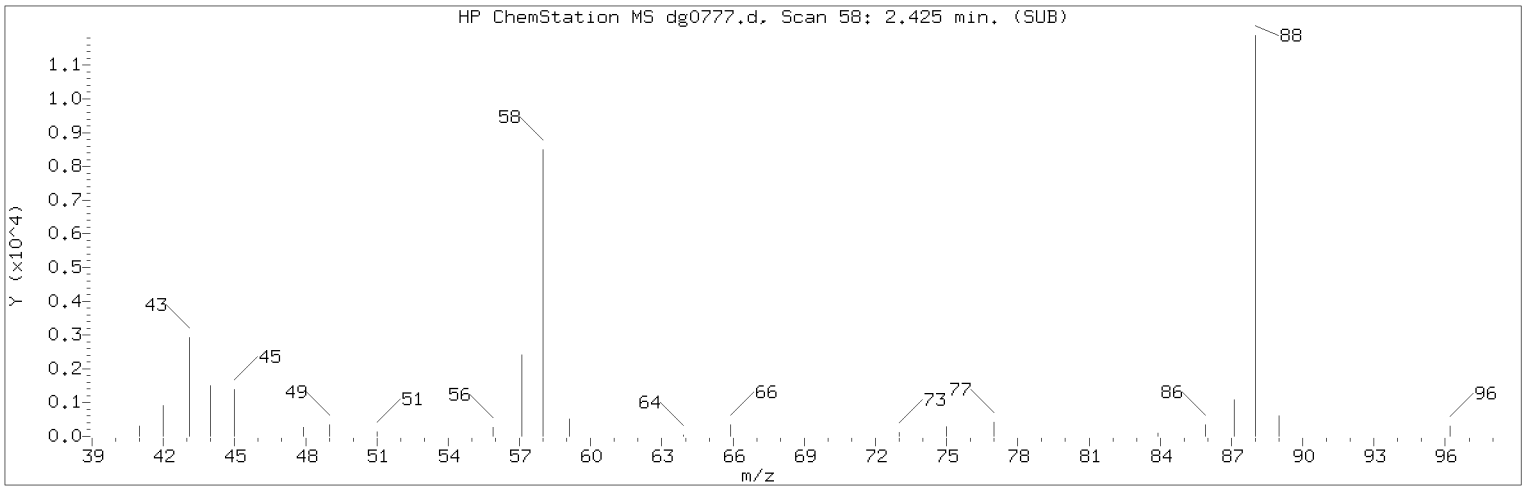
Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 164) Methyl parathion | (4) | 14.030 | 109 | 38008 | 0.982 |
| 165) Di-n-butylphthalate | (4) | 14.339 | 149 | 196903 | 1.109 |
| 167) Parathion | (4) | 14.572 | 109 | 22426 | 0.937 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.584 | 190 | 12318 | 0.666 |
| 169) Octachlorostyrene | (4) | 14.922 | 308 | 13378 | 1.154 |
| 171) Isodrin | (4) | 14.974 | 193 | 21852 | 1.183 |
| 222) Total PAHs | (6) | | | 3154455 | 21.385 |
| 173) Fluoranthene | (4) | 15.190 | 202 | 211986 | 1.206 |
| 174) Benzidine | (5) | 15.417 | 184 | 352588 | 3.152 |
| 175)*Pyrene-d10 | (5) | 15.504 | 212 | 849088 | 5.000 |
| 177) Pyrene | (5) | 15.534 | 202 | 234813 | 1.268 |
| 179)$Terphenyl-d14 | (5) | 15.813 | 244 | 290817 | 2.451 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.047 | 225 | 26681 | 0.978 |
| 185) Chlorobenzilate | (5) | 16.140 | 139 | 61700 | 1.120 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.612 | 212 | 110180 | 1.009 |
| 188) Butylbenzylphthalate | (5) | 16.670 | 149 | 85012 | 1.070 |
| 191) 2-Acetylaminofluorene | (5) | 17.026 | 181 | 63141 | 0.893 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.539 | 252 | 68566 | 1.072 |
| 195) Benzo(a)anthracene | (5) | 17.539 | 228 | 193070 | 1.171 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.556 | 231 | 36126 | 1.075 |
| 196) Chrysene | (5) | 17.603 | 228 | 190023 | 1.229 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.737 | 149 | 119389 | 1.034 |
| 203) 6-Methylchrysene | (5) | 18.401 | 242 | 128782 | 1.129 |
| 205) Di-n-octylphthalate | (6) | 18.897 | 149 | 194298 | 0.994 |
| 206) Benzo(b)fluoranthene | (6) | 19.392 | 252 | 195956 | 1.183 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.392 | 256 | 75565 | 1.071 |
| 208) Benzo(k)fluoranthene | (6) | 19.433 | 252 | 190049 | 1.195 |
| 211) Benzo(a)pyrene | (6) | 19.917 | 252 | 174981 | 1.143 |
| 213)*Perylene-d12 | (6) | 20.010 | 264 | 661420 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.488 | 268 | 69692 | 1.040 |
| 217) Dibenz(a,h)acridine | (6) | 21.298 | 279 | 126934 | 1.041 |
| 218) Dibenz(a,j)acridine | (6) | 21.368 | 279 | 130139 | 1.036 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.607 | 276 | 193026 | 1.130 |
| 220) Dibenz(a,h)anthracene | (6) | 21.654 | 278 | 153462 | 1.095 |
| 221) Benzo(g,h,i)perylene | (6) | 21.992 | 276 | 163390 | 1.133 |

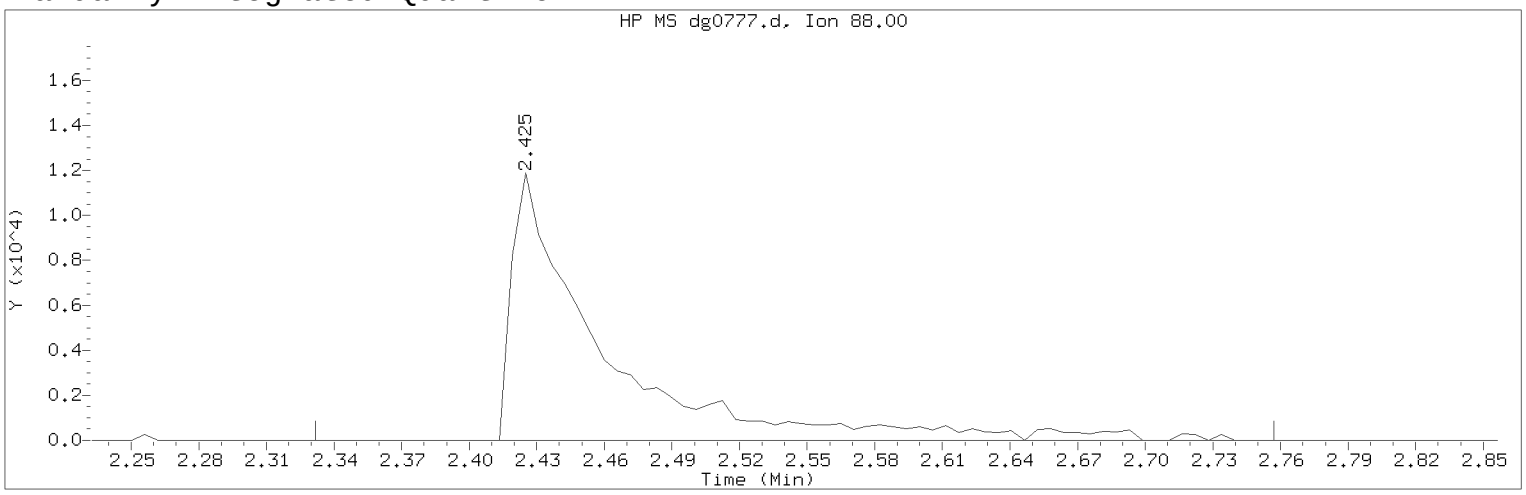
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

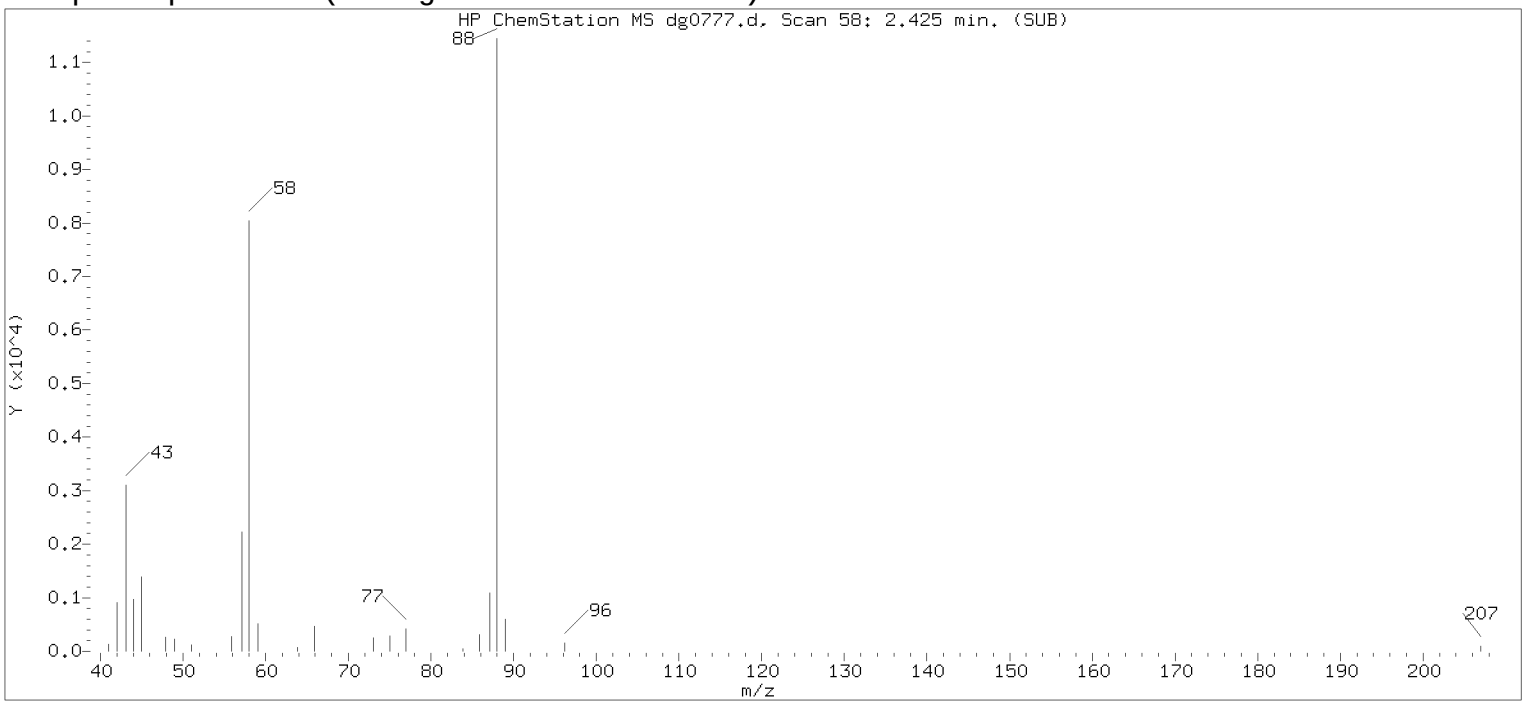
Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 58
Retention Time (minutes) : 2.425
Quant Ion : 88.00
Area (flag) : 33053M
On-Column Amount (ng/ul) : 1.2579
Integration start scan : 41 Integration stop scan: 114
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

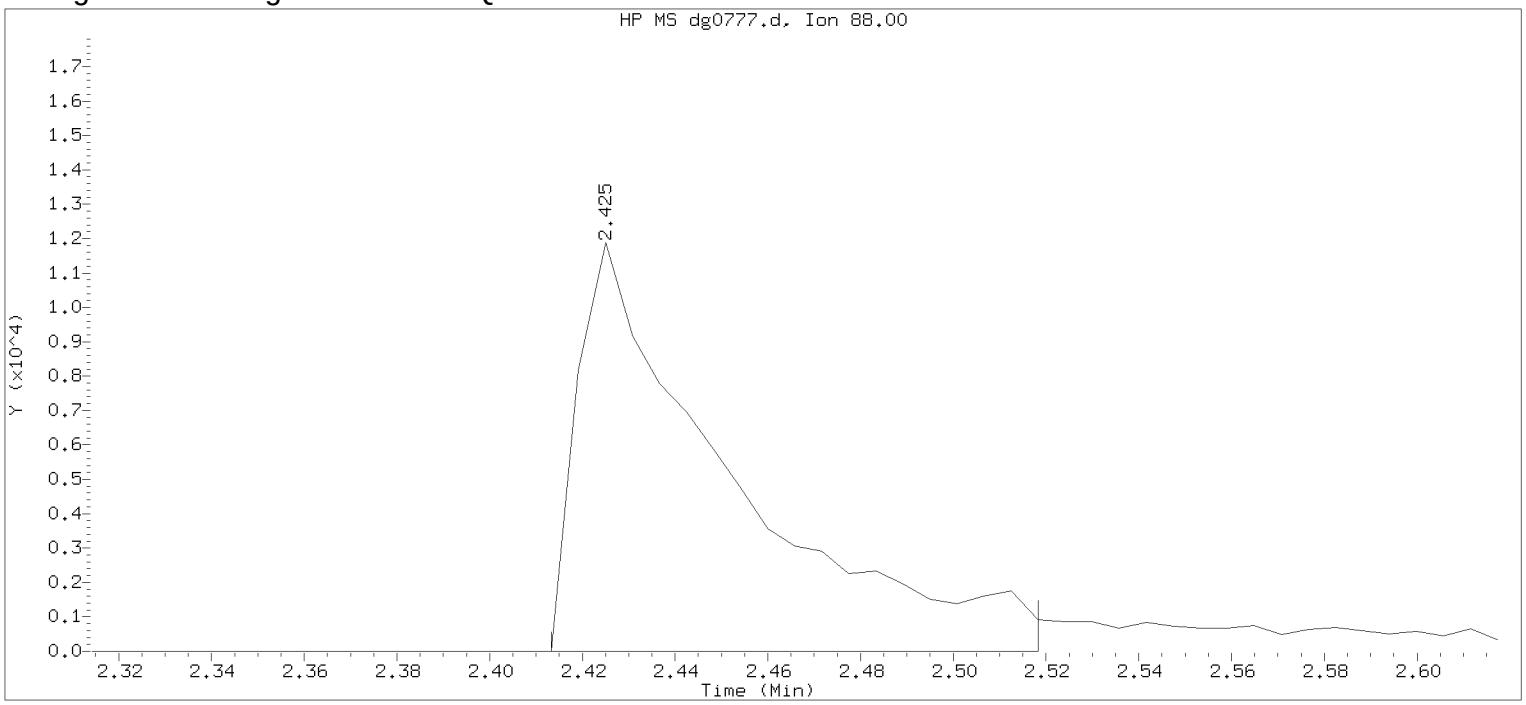
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

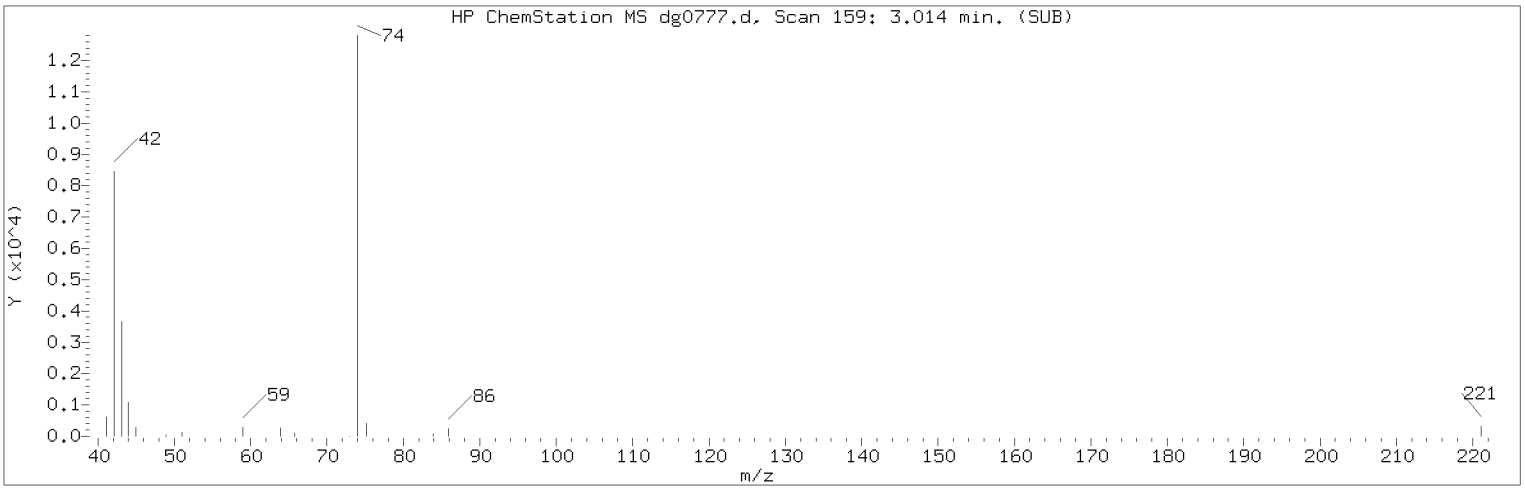
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

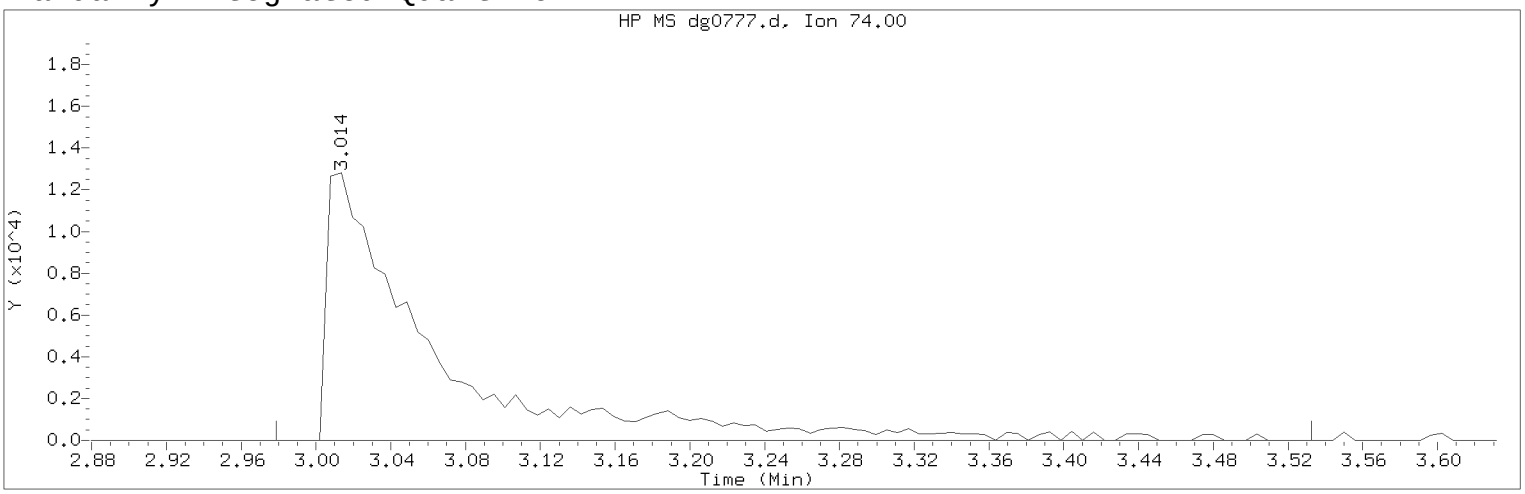
| | | | |
|---|---|---|---|
| Compound Number | : 1 | | |
| Compound Name | : 1,4-Dioxane | | |
| Scan Number | : 58 | | |
| Retention Time (minutes) | : 2.425 | | |
| Quant Ion | : 88.00 | | |
| Area | : 27064 | | |
| On-column Amount (ng/ul) | : 1.0567 | | |
| Integration start scan | : 55 | Integration stop scan: | 73 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRL1 emp10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

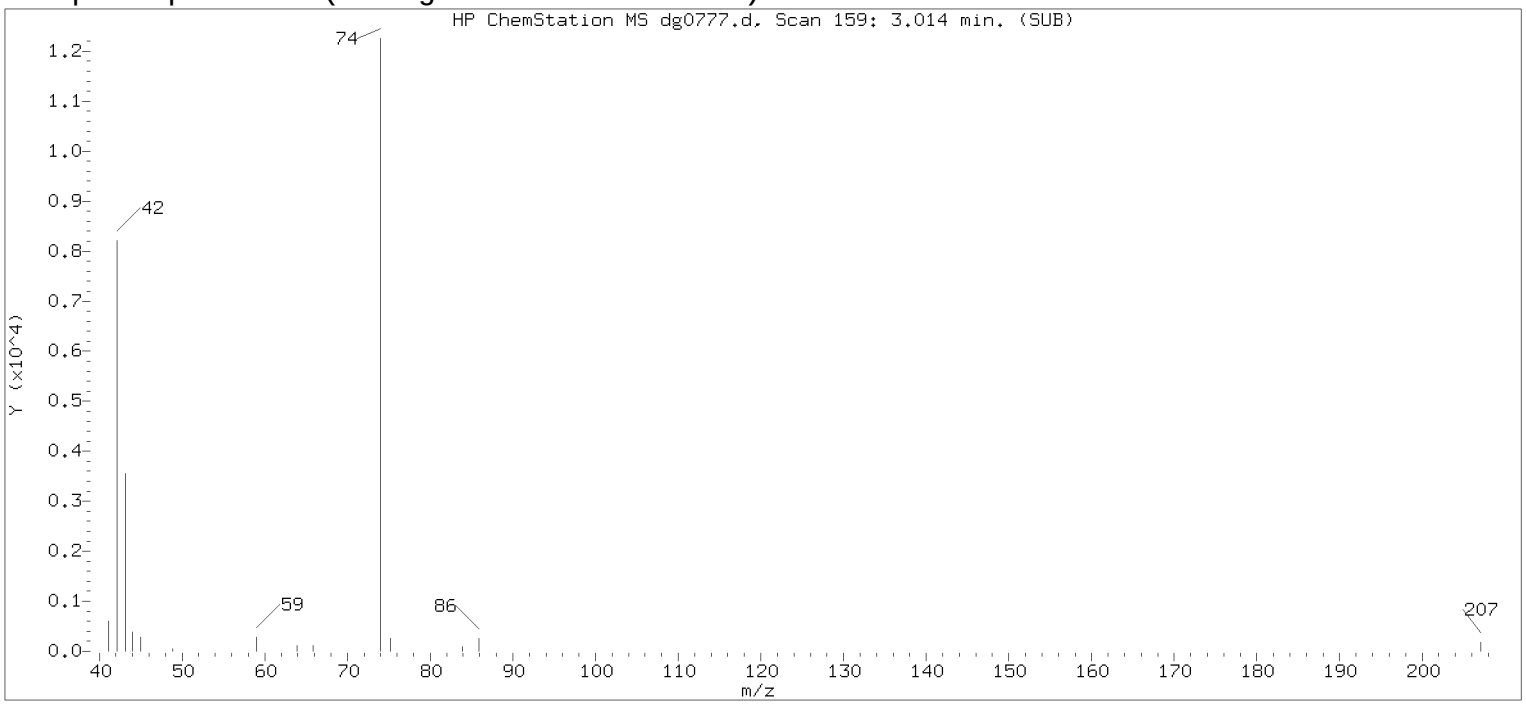
Compound Number : 4
Compound Name : N-Nitrosodimethylamine
Scan Number : 159
Retention Time (minutes) : 3.014
Quant Ion : 74.00
Area (flag) : 50145M
On-Column Amount (ng/ul) : 1.1719
Integration start scan : 152 Integration stop scan: 247
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

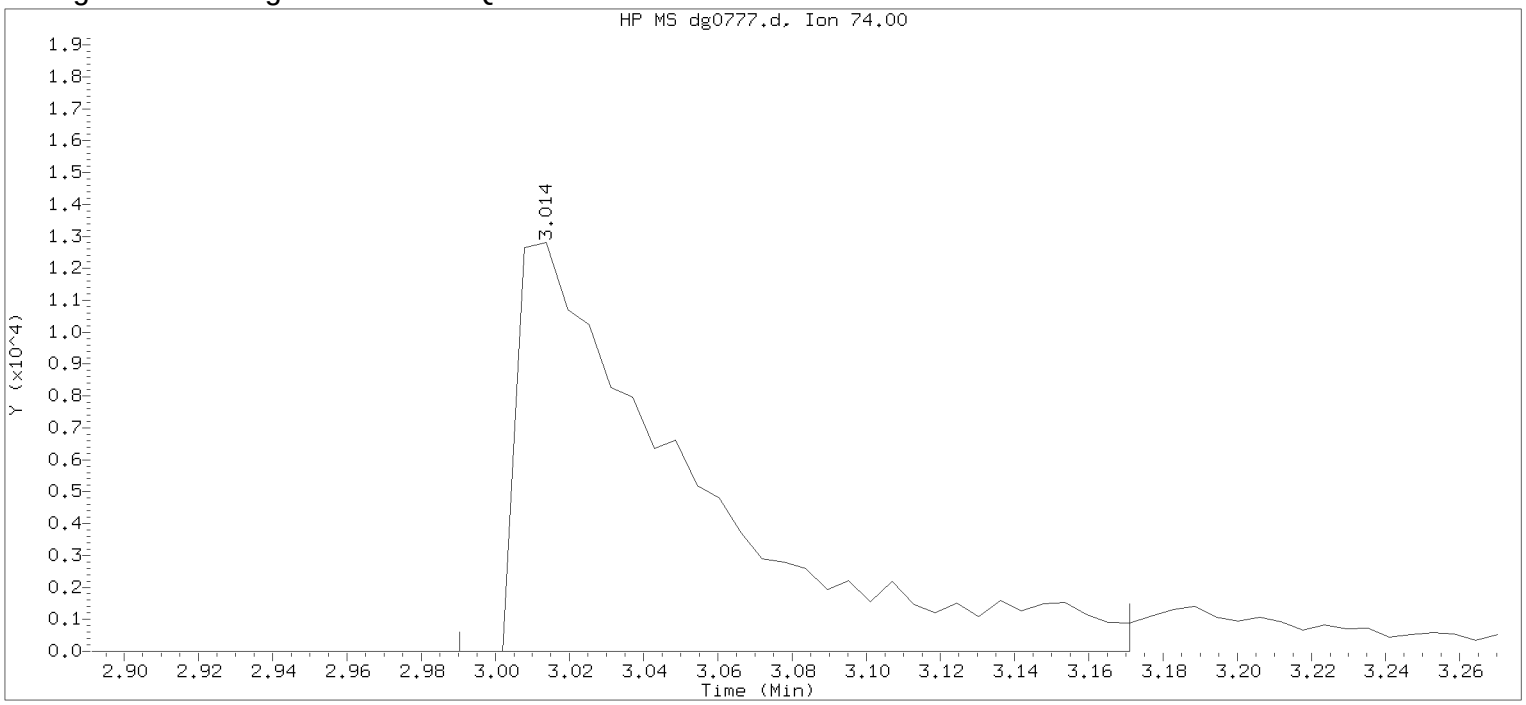
Analyst responsible for change: Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

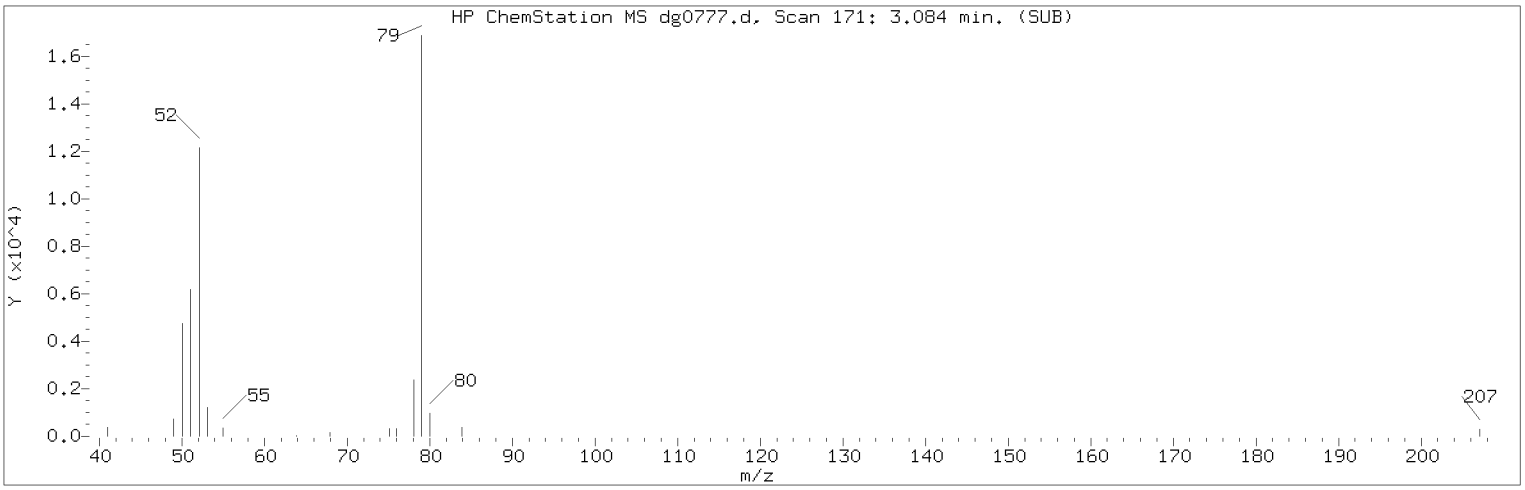
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

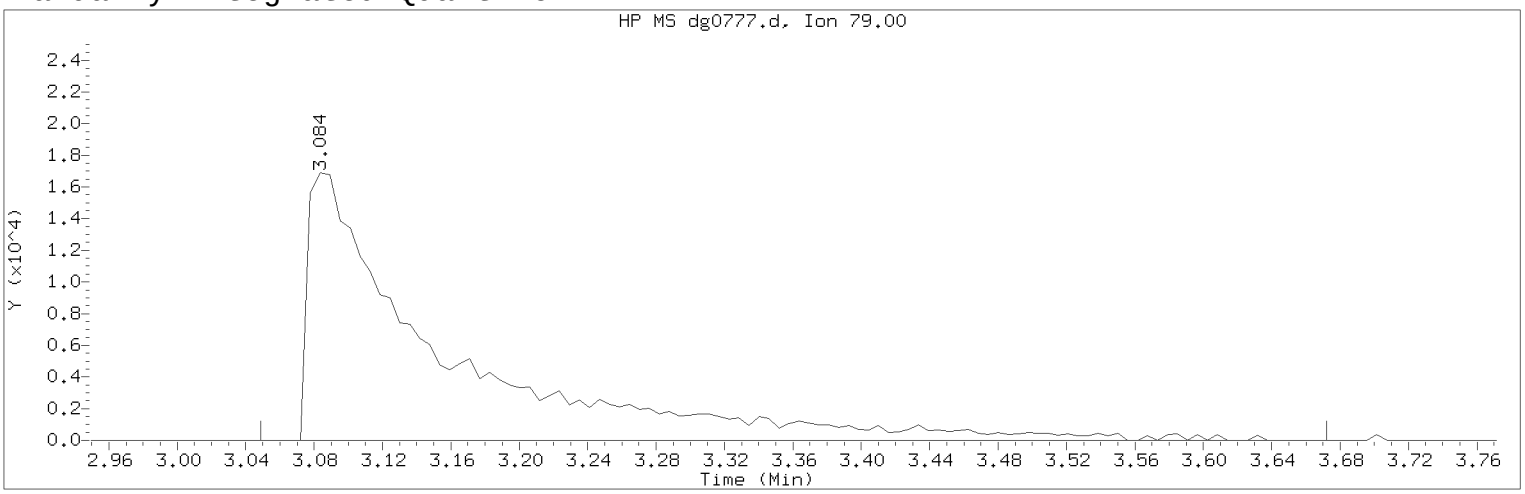
| | | | |
|---|---|---|---|
| Compound Number | : 4 | | |
| Compound Name | : N-Nitrosodimethylamine | | |
| Scan Number | : 159 | | |
| Retention Time (minutes) | : 3.014 | | |
| Quant Ion | : 74.00 | | |
| Area | : 41666 | | |
| On-column Amount (ng/ul) | : 0.9942 | | |
| Integration start scan | : 154 | Integration stop scan: | 185 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRL1 emb0340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

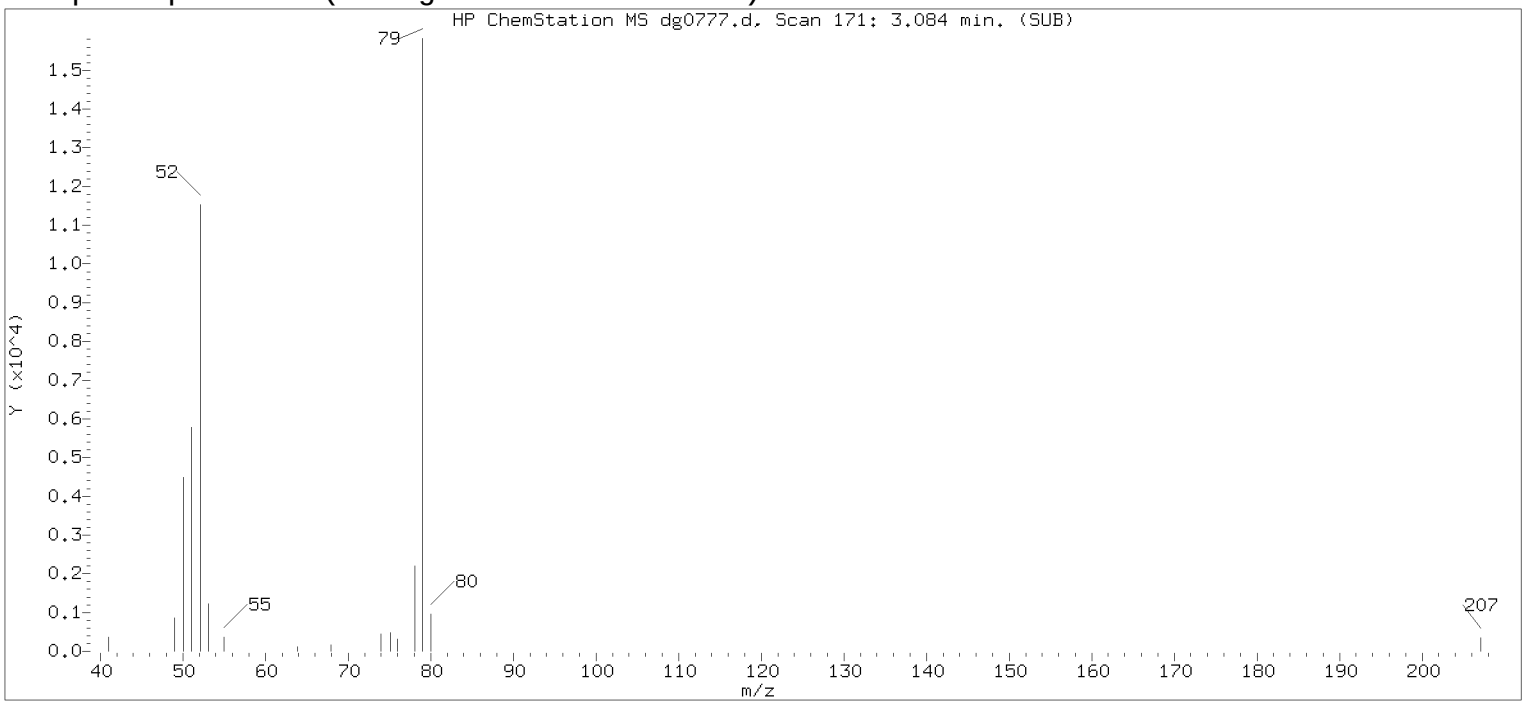
Compound Number : 5
Compound Name : Pyridine
Scan Number : 171
Retention Time (minutes) : 3.084
Quant Ion : 79.00
Area (flag) : 89550M
On-Column Amount (ng/ul) : 1.2916
Integration start scan : 164 Integration stop scan: 271
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

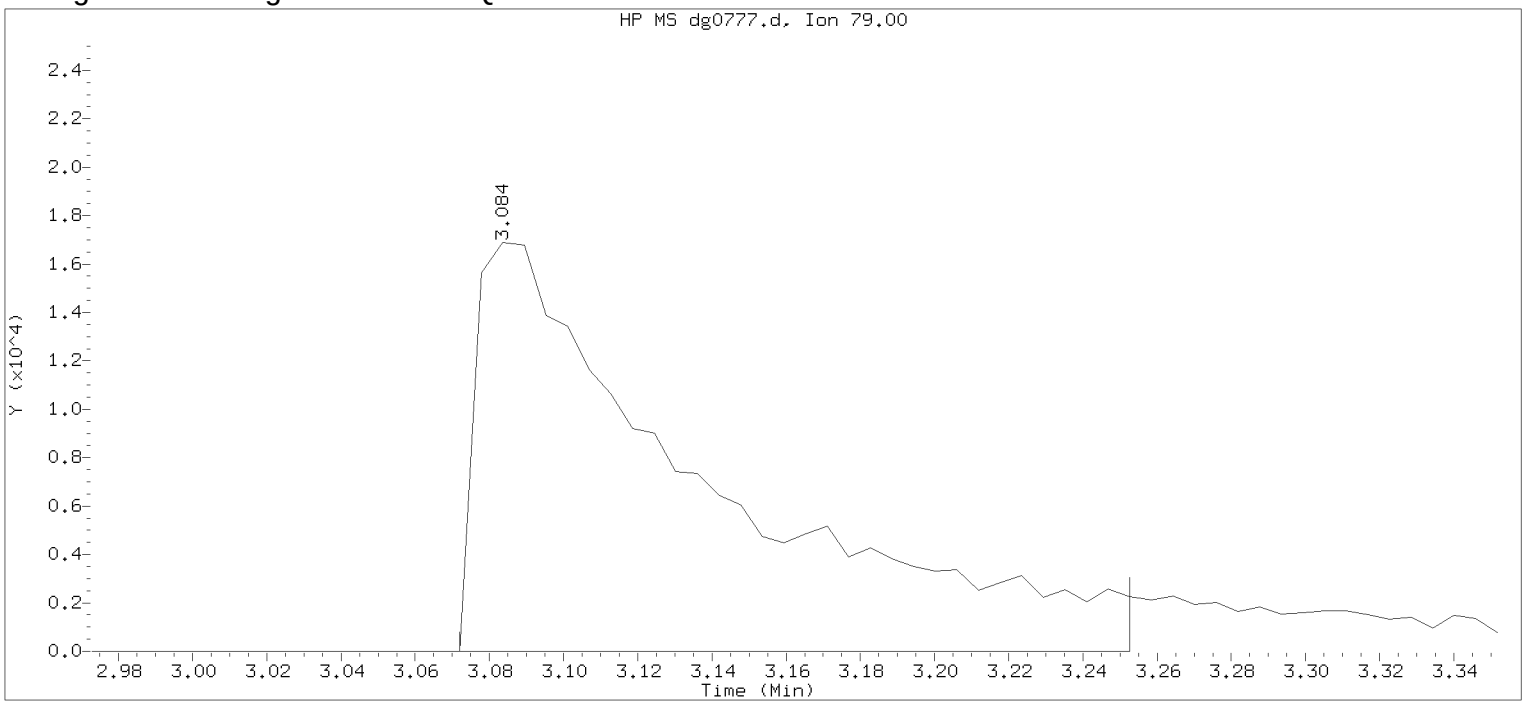
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 5 | | |
| Compound Name | : Pyridine | | |
| Scan Number | : 171 | | |
| Retention Time (minutes) | : 3.084 | | |
| Quant Ion | : 79.00 | | |
| Area | : 71584 | | |
| On-column Amount (ng/ul) | : 1.0638 | | |
| Integration start scan | : 168 | Integration stop scan: | 199 |
| Y at integration start | : 0 | Y at integration end: | 0 |

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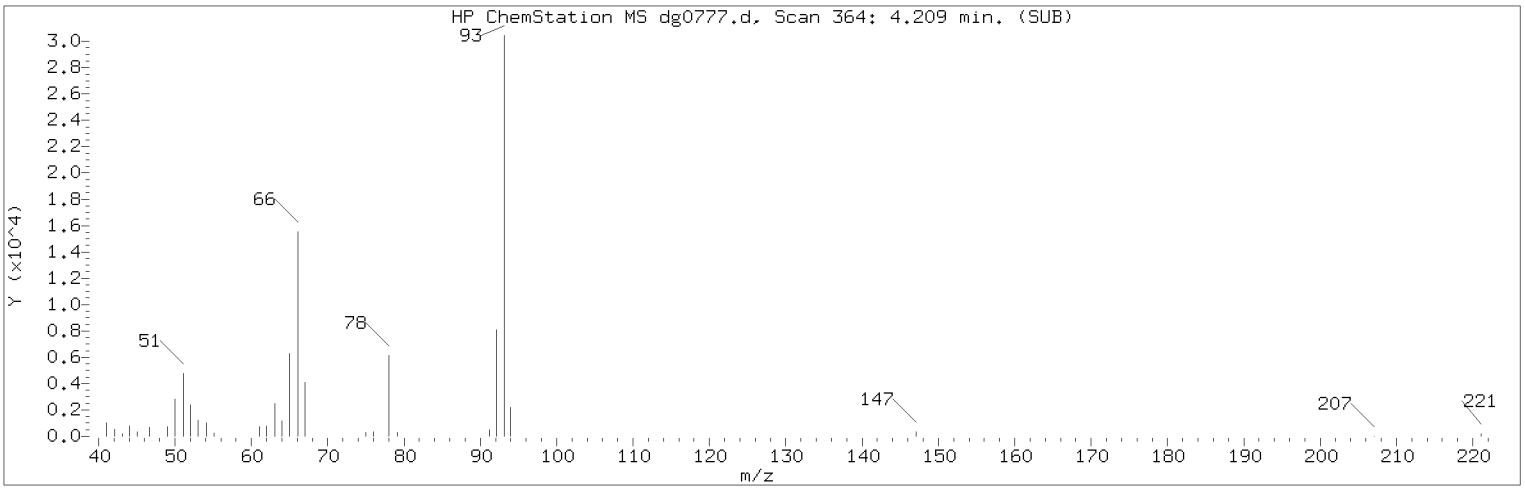
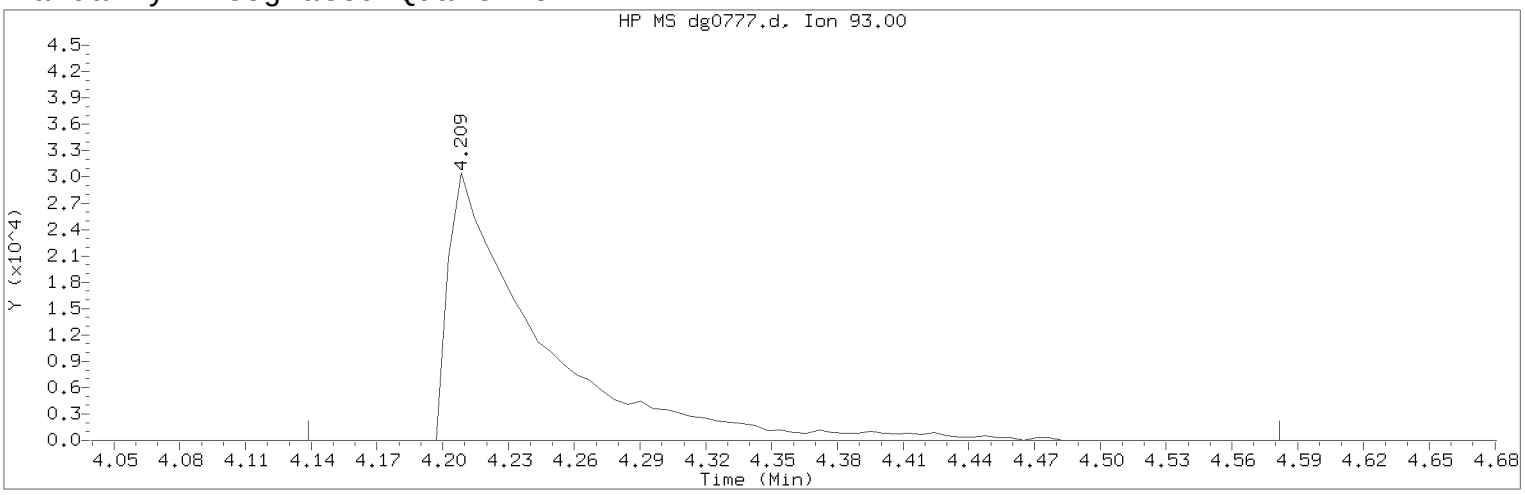
Target 3.5 esignature user KRI1 emb0340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

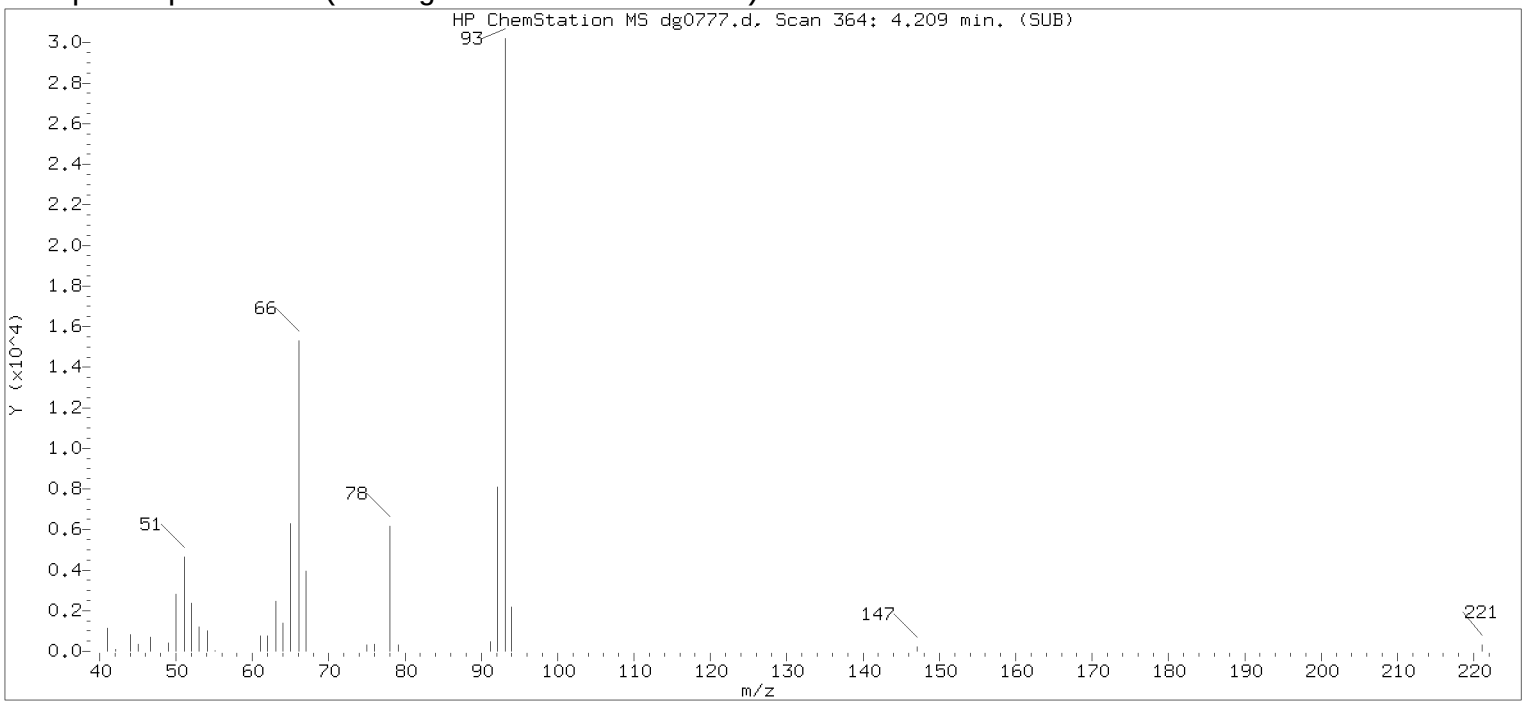
Compound Number : 7
Compound Name : 2-Picoline
Scan Number : 364
Retention Time (minutes) : 4.209
Quant Ion : 93.00
Area (flag) : 87481M
On-Column Amount (ng/ul) : 1.1778
Integration start scan : 351 Integration stop scan: 427
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

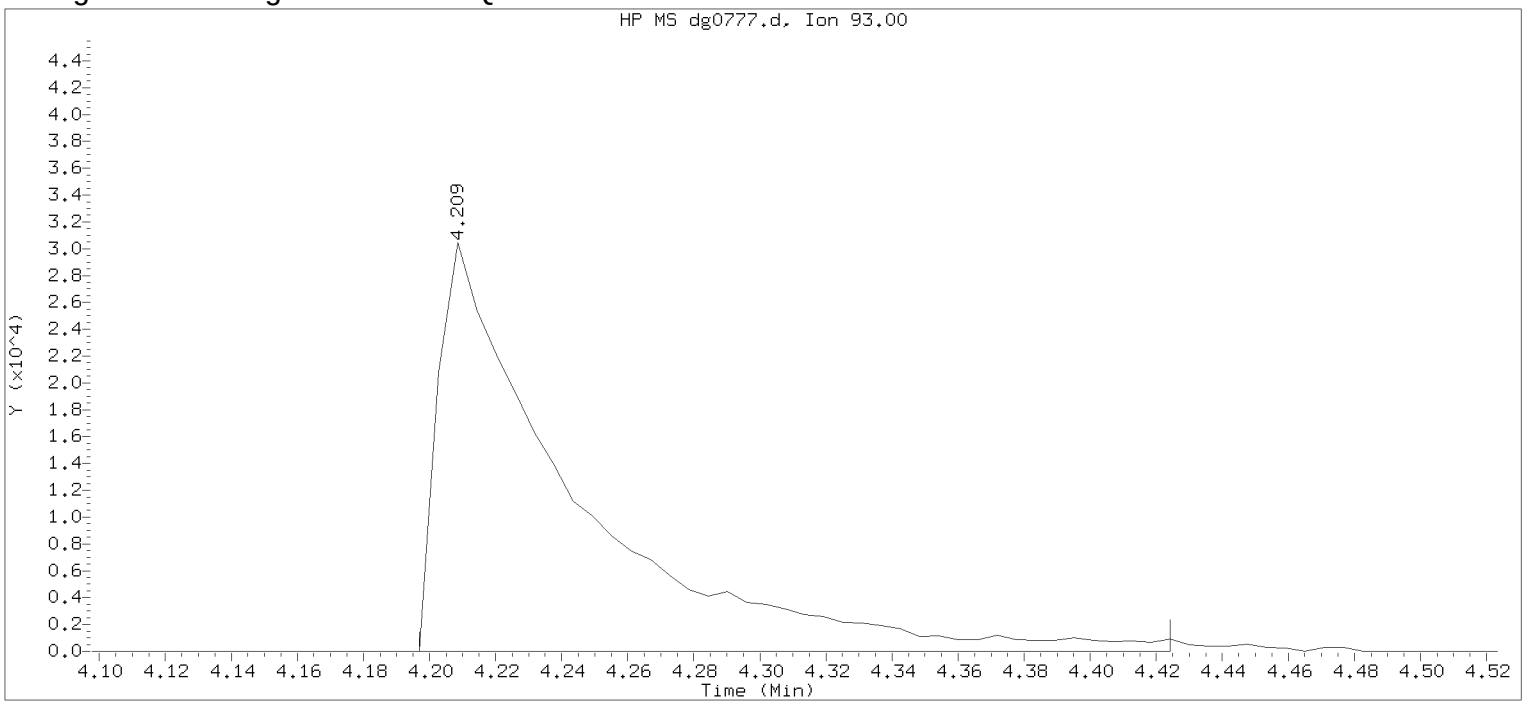
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 7 | | |
| Compound Name | : 2-Picoline | | |
| Scan Number | : 364 | | |
| Retention Time (minutes) | : 4.209 | | |
| Quant Ion | : 93.00 | | |
| Area | : 86302 | | |
| On-column Amount (ng/ul) | : 1.1666 | | |
| Integration start scan | : 361 | Integration stop scan: | 400 |
| Y at integration start | : 0 | Y at integration end: | 0 |

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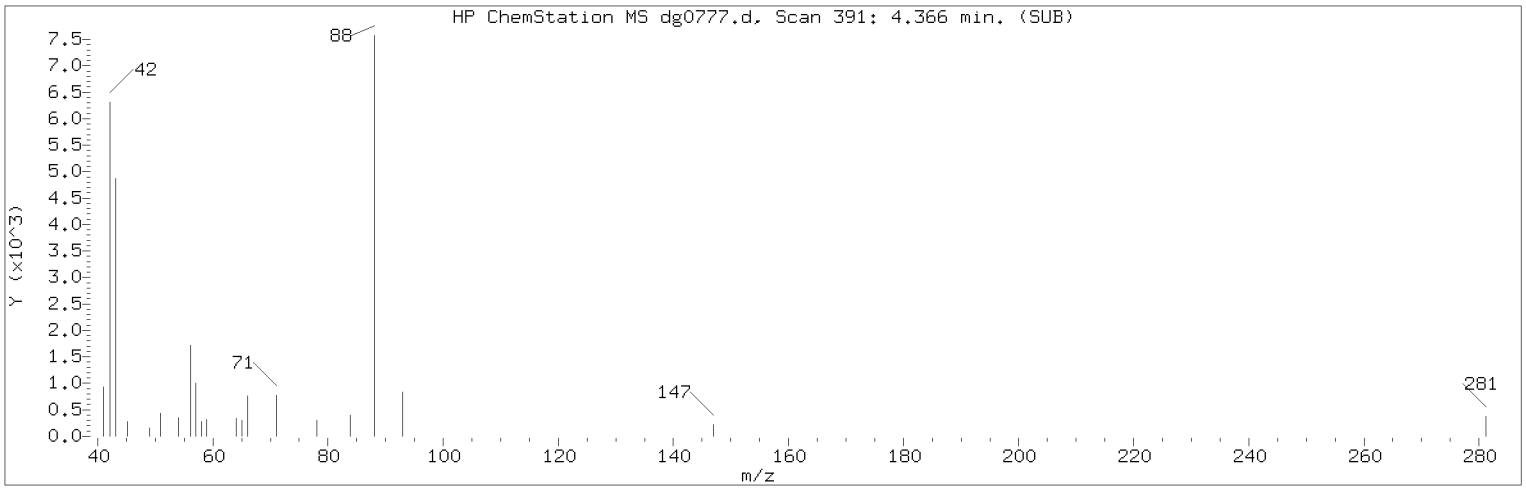
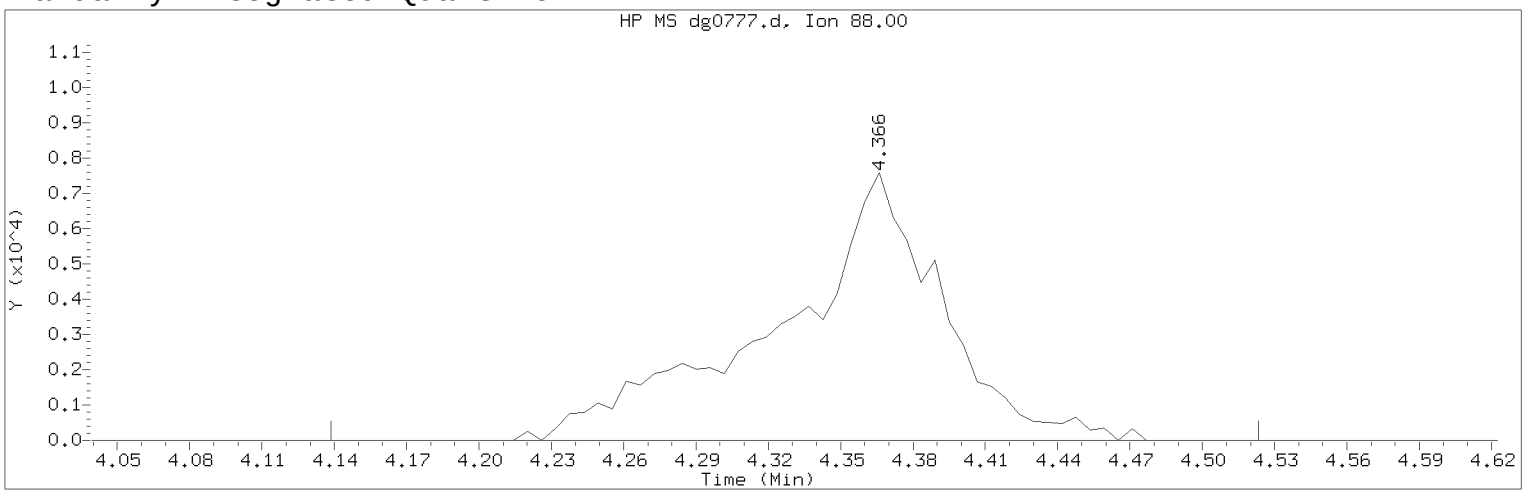
Target 3.5 esignature user KRI1 emb0340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

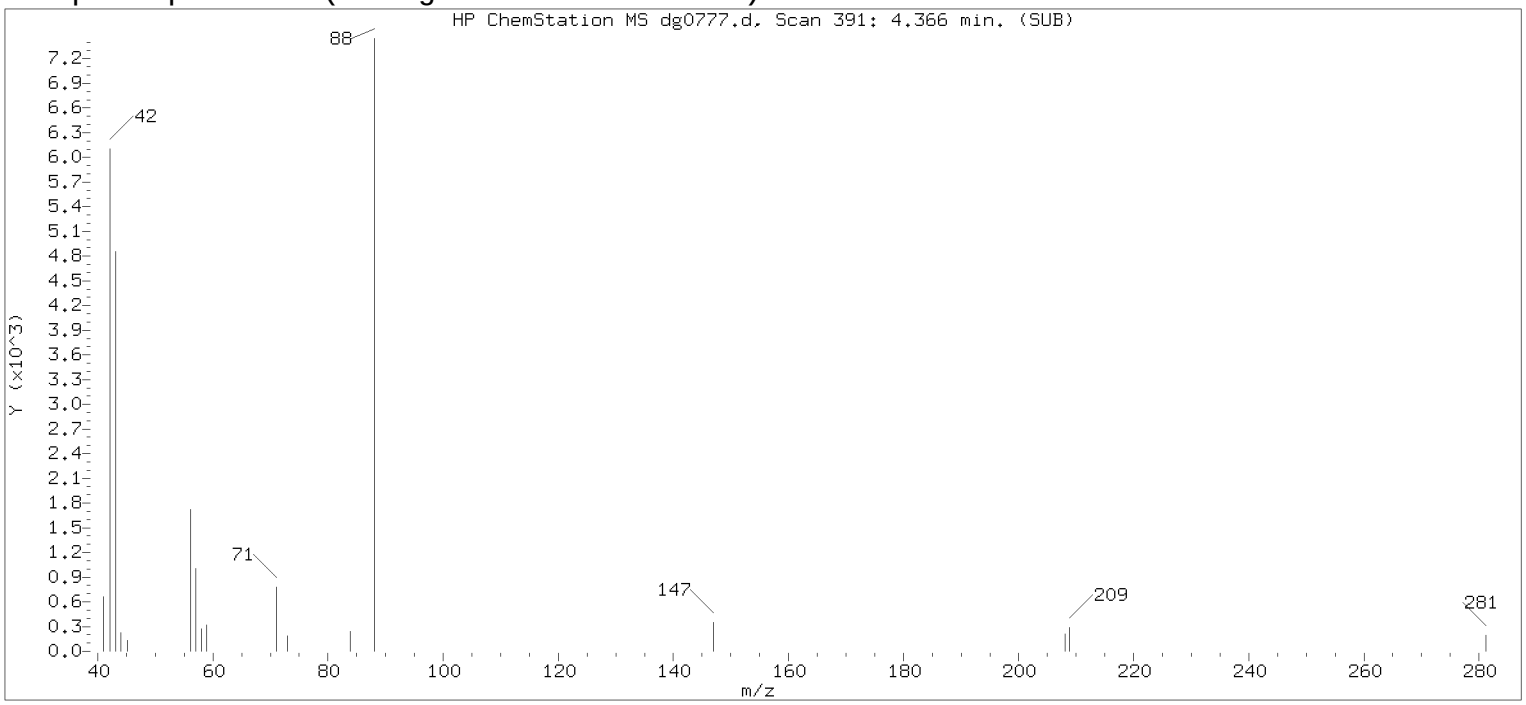
Compound Number : 8
Compound Name : N-Nitrosomethylethylamine
Scan Number : 391
Retention Time (minutes) : 4.366
Quant Ion : 88.00
Area (flag) : 35527M
On-Column Amount (ng/ul) : 1.1682
Integration start scan : 351 Integration stop scan: 417
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

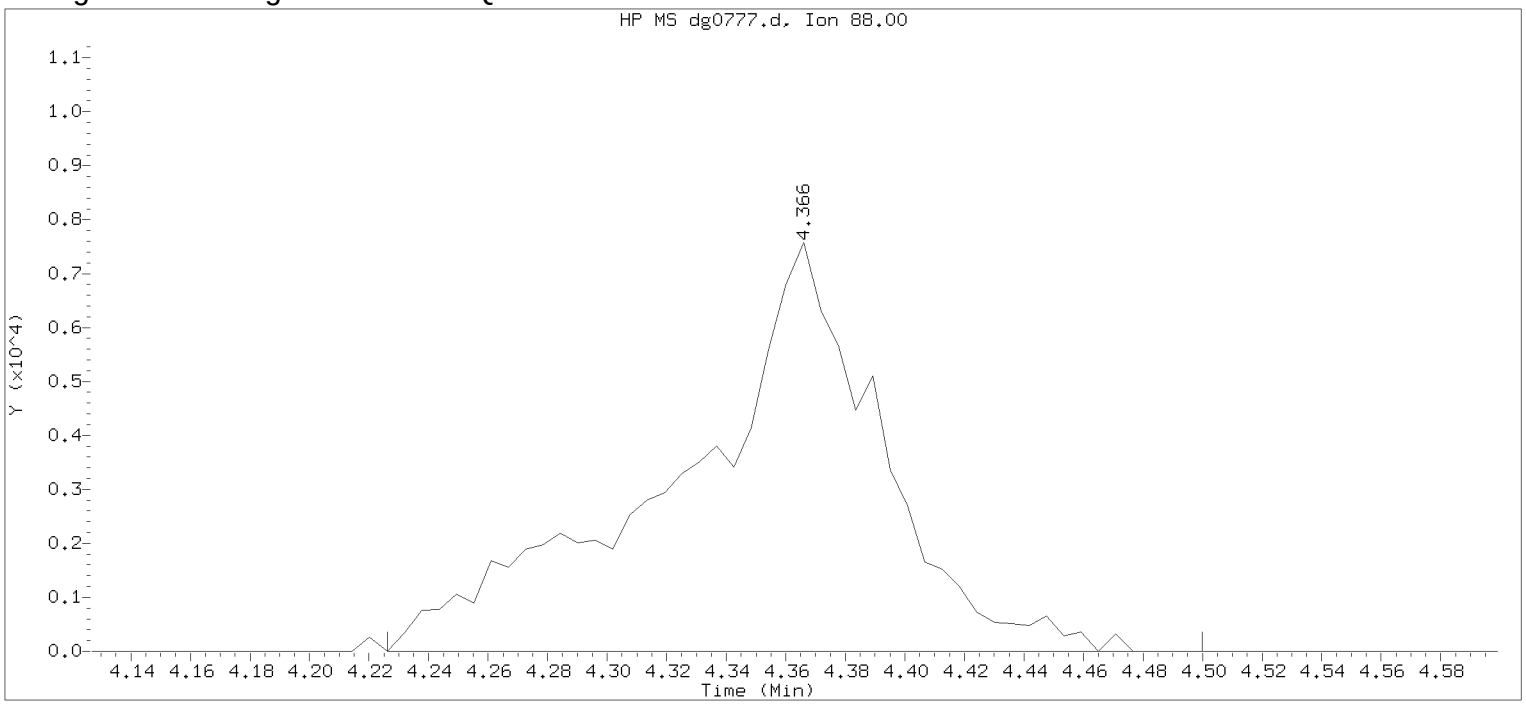
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 8 | | |
| Compound Name | : N-Nitrosomethylethylamine | | |
| Scan Number | : 391 | | |
| Retention Time (minutes) | : 4.366 | | |
| Quant Ion | : 88.00 | | |
| Area | : 35437 | | |
| On-column Amount (ng/ul) | : 1.1591 | | |
| Integration start scan | : 366 | Integration stop scan: | 413 |
| Y at integration start | : 0 | Y at integration end: | 0 |

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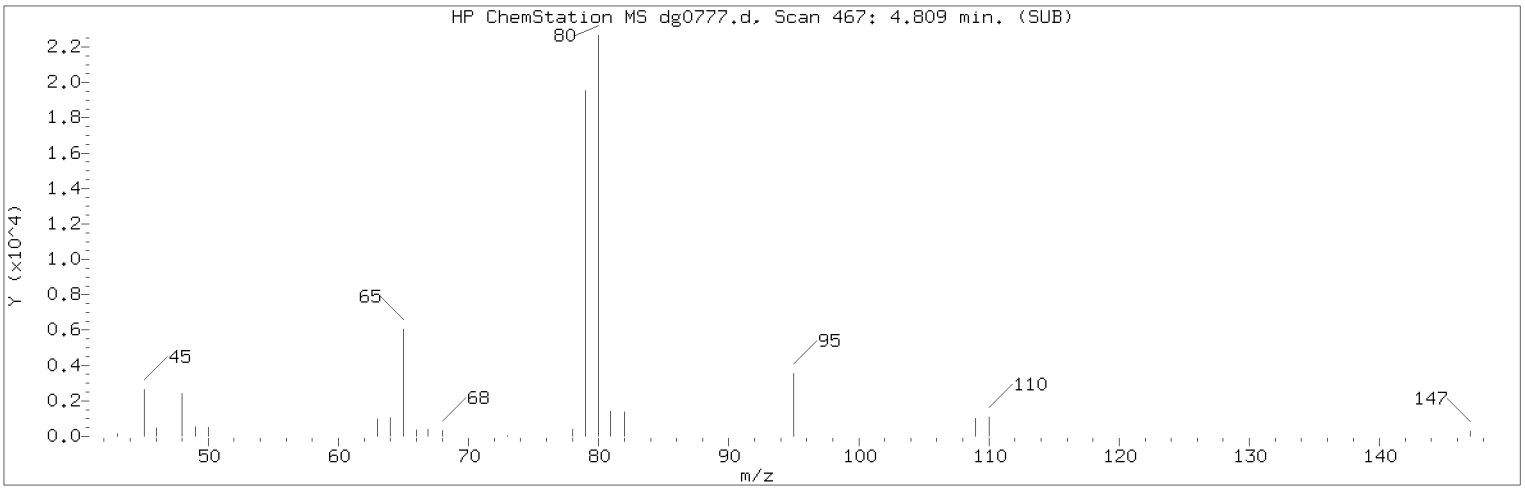
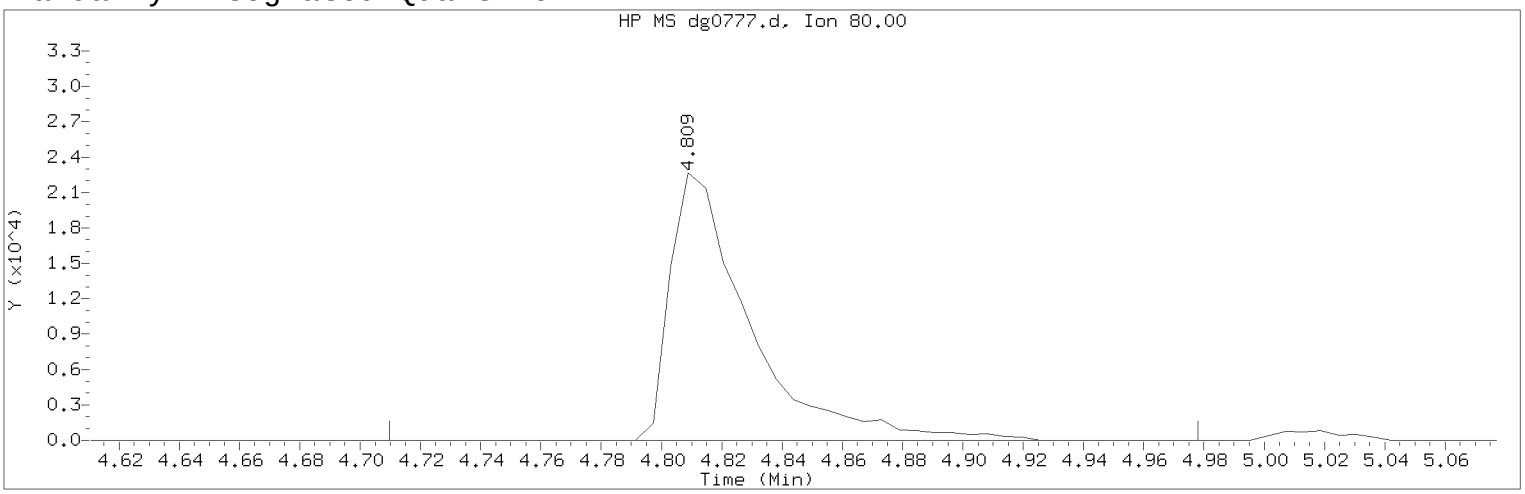
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

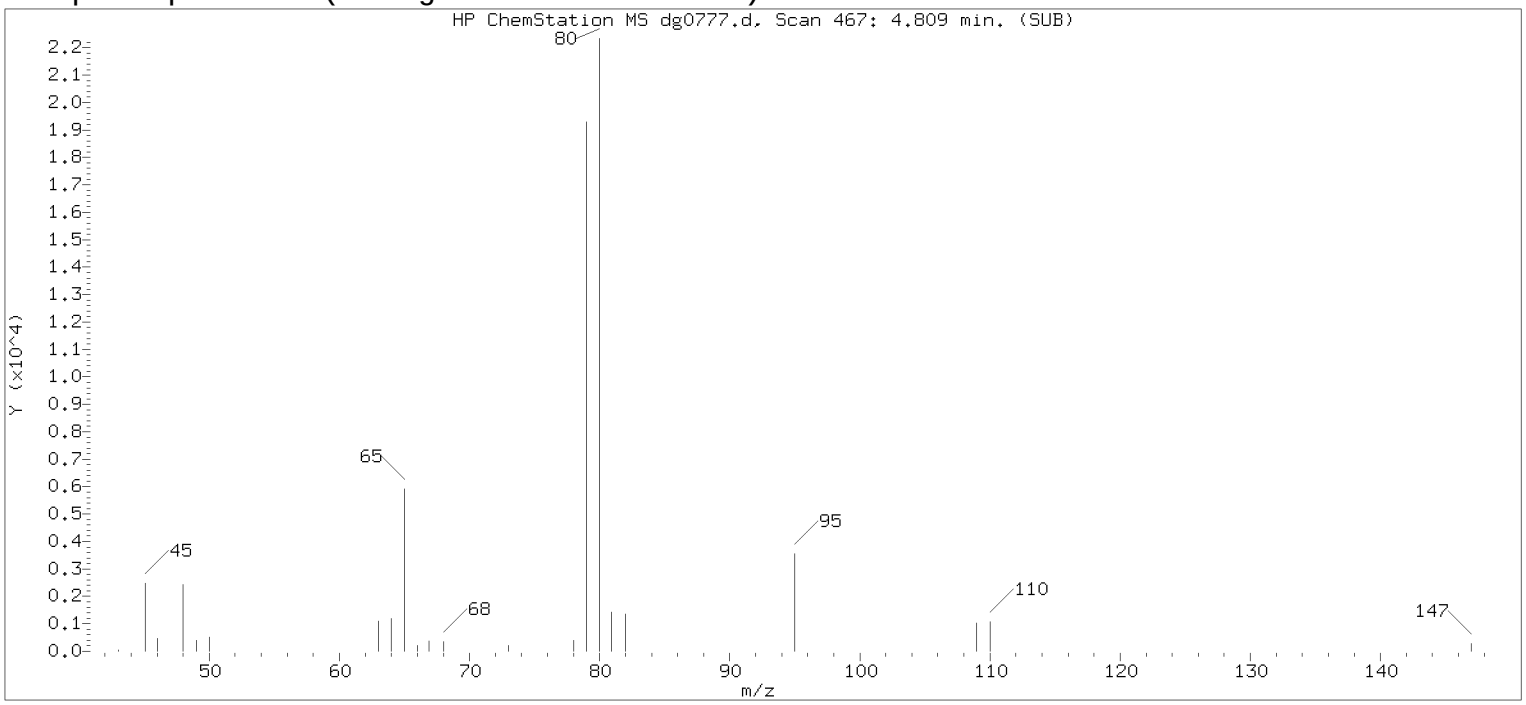
Compound Number : 9
Compound Name : Methyl methanesulfonate
Scan Number : 467
Retention Time (minutes) : 4.809
Quant Ion : 80.00
Area (flag) : 41571M
On-Column Amount (ng/ul) : 1.1947
Integration start scan : 449 Integration stop scan: 495
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

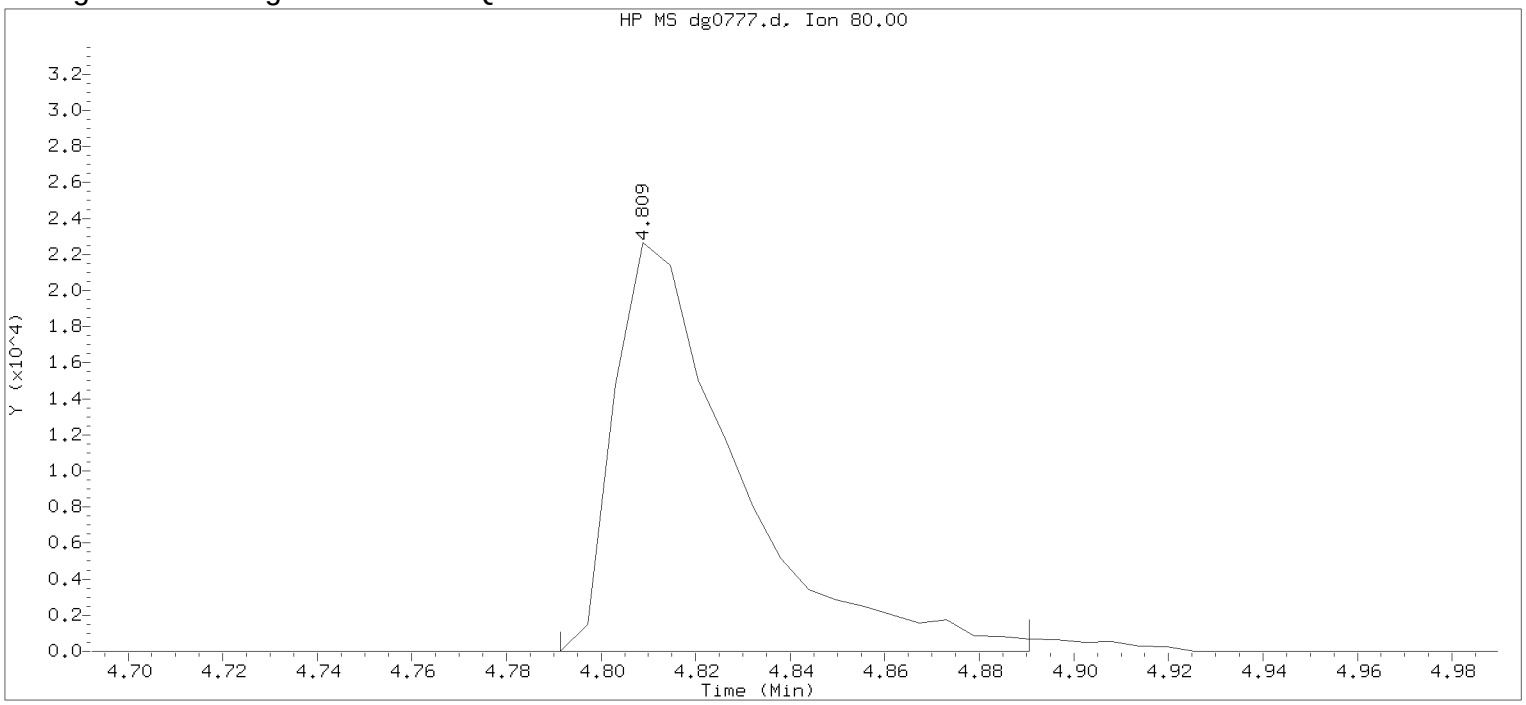
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

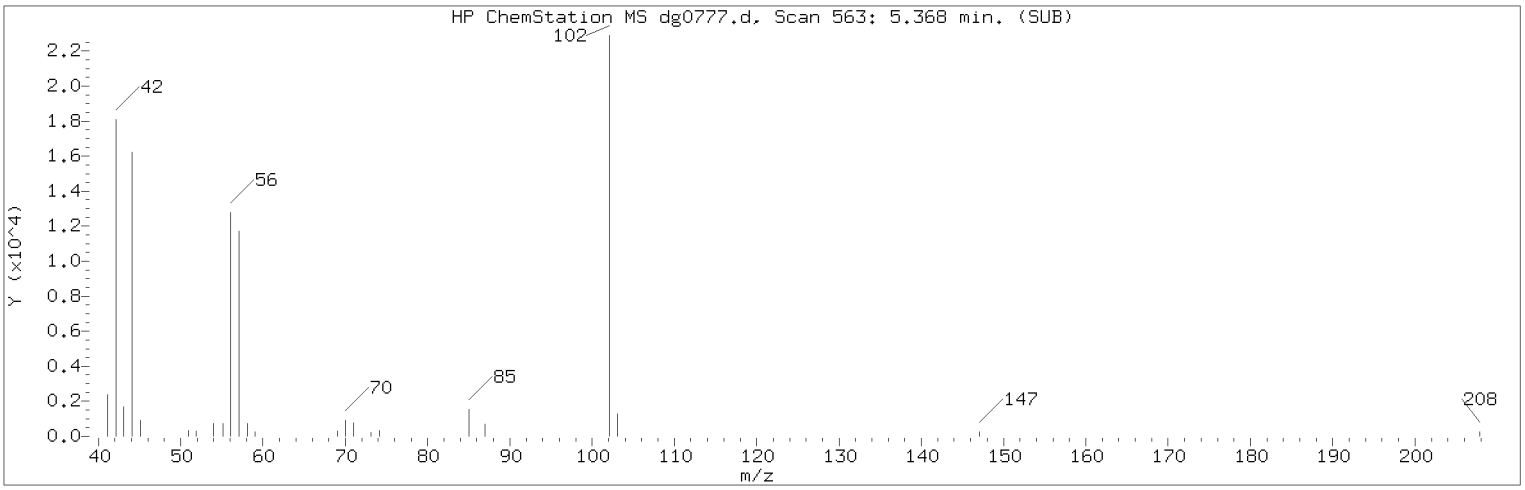
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

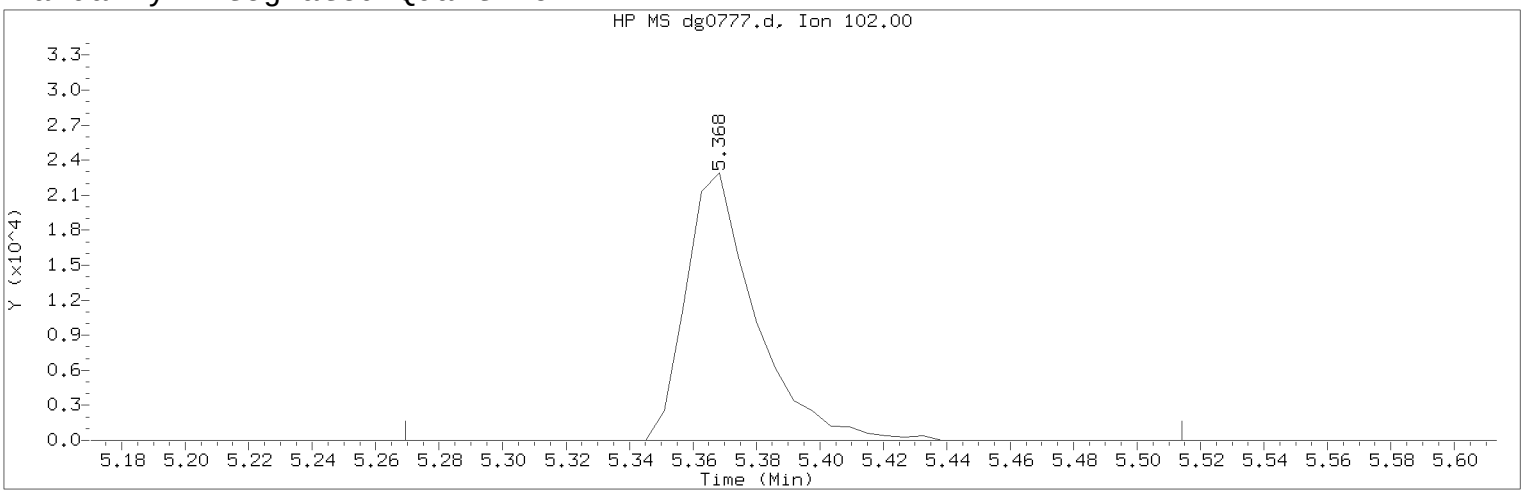
| | | | |
|---|---|---|---|
| Compound Number | : 9 | | |
| Compound Name | : Methyl methanesulfonate | | |
| Scan Number | : 467 | | |
| Retention Time (minutes) | : 4.809 | | |
| Quant Ion | : 80.00 | | |
| Area | : 40679 | | |
| On-column Amount (ng/ul) | : 1.1723 | | |
| Integration start scan | : 463 | Integration stop scan: | 480 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRI1 emp0340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:17 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

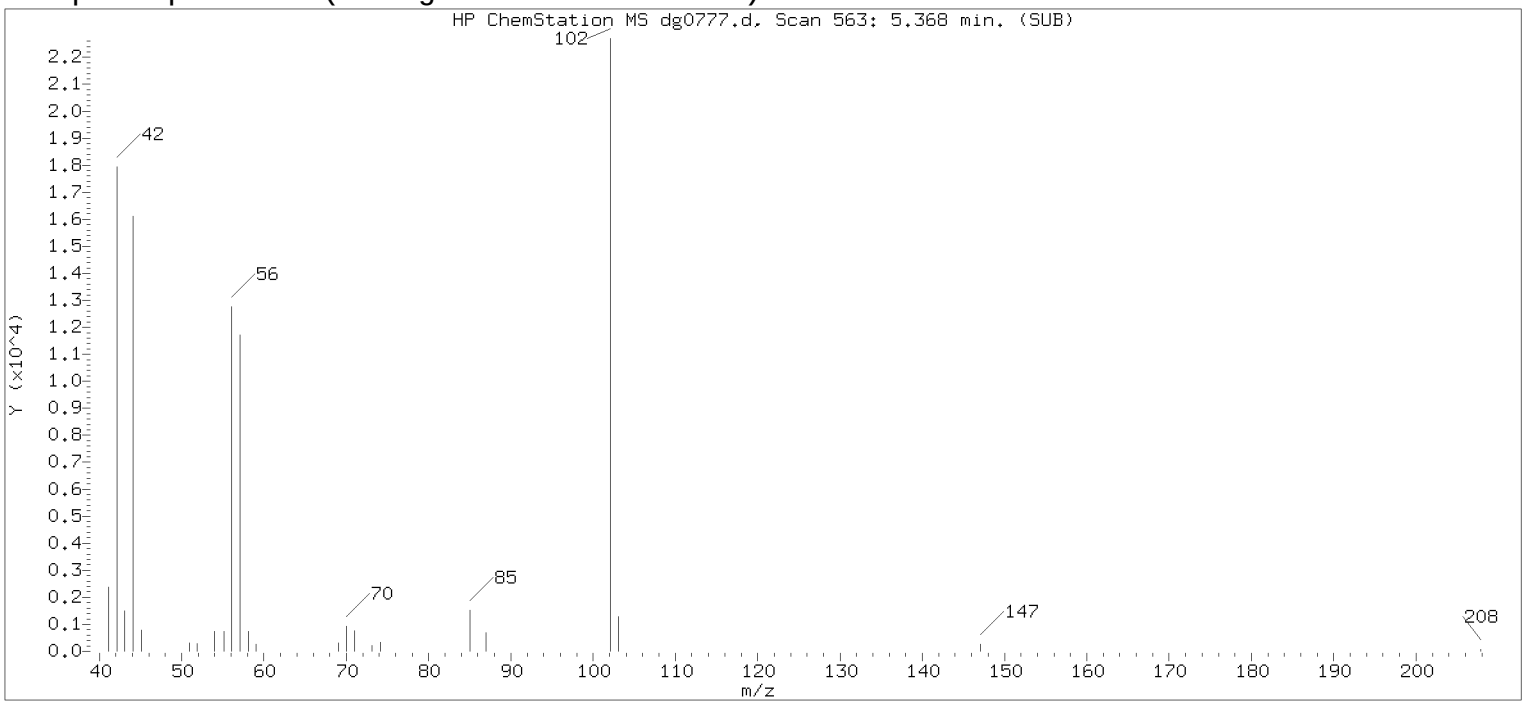
Compound Number : 13
Compound Name : N-Nitrosodiethylamine
Scan Number : 563
Retention Time (minutes) : 5.368
Quant Ion : 102.00
Area (flag) : 35016M
On-Column Amount (ng/ul) : 1.1673
Integration start scan : 545 Integration stop scan: 587
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

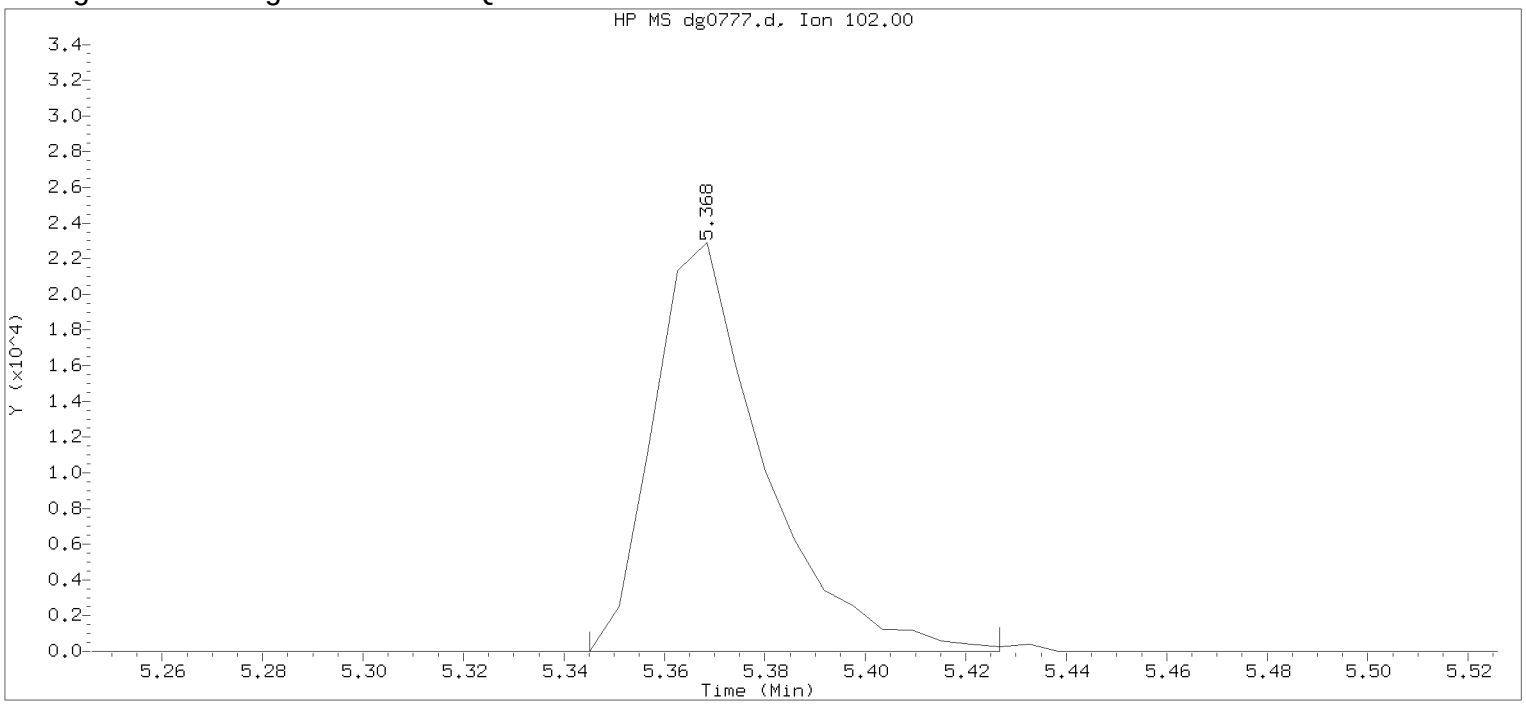
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



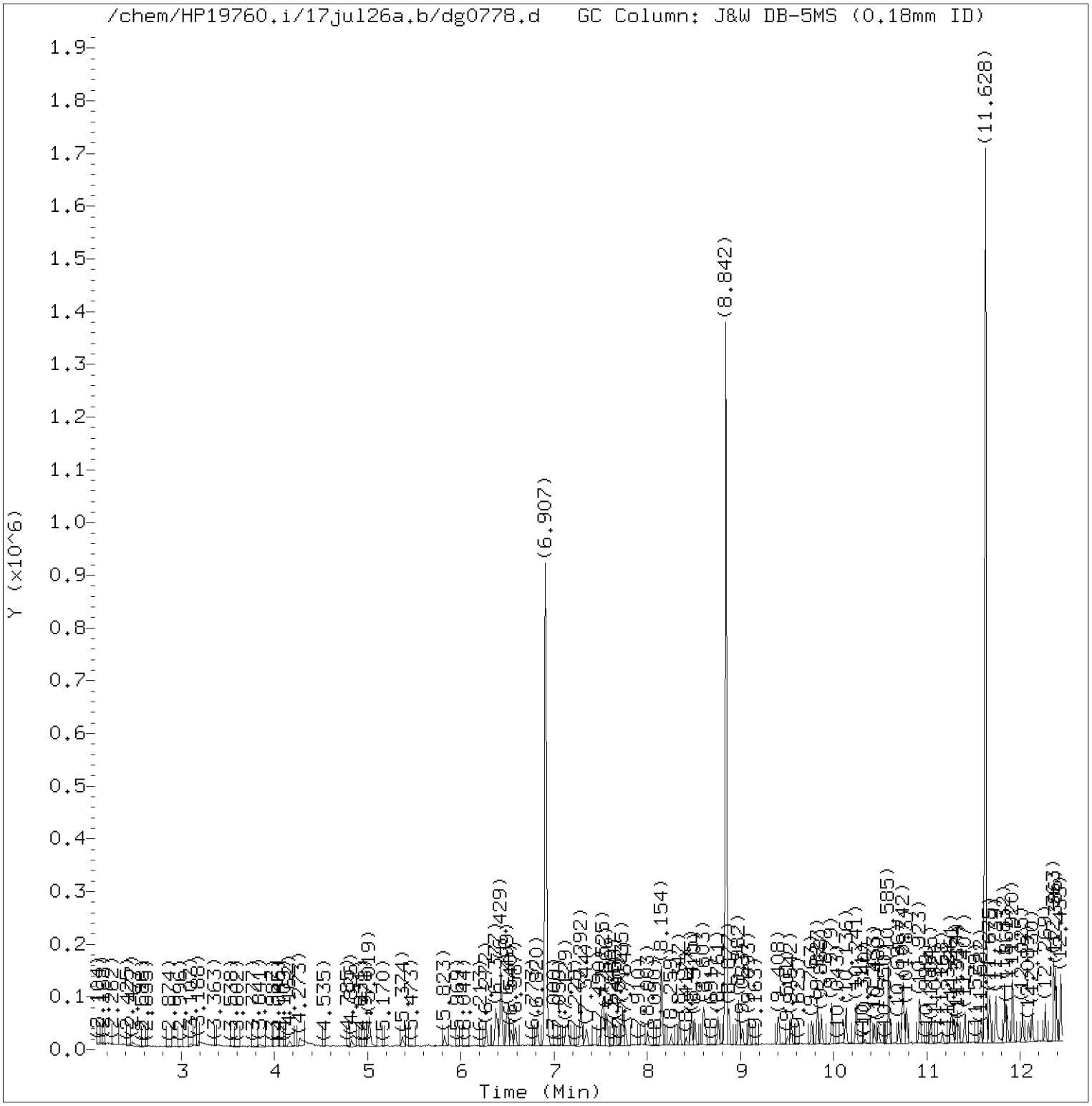

Data File: /chem/HP19760.i/17jul26a.b/dg0777.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:10 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD1.25 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 13 | | |
| Compound Name | : N-Nitrosodiethylamine | | |
| Scan Number | : 563 | | |
| Retention Time (minutes) | : 5.368 | | |
| Quant Ion | : 102.00 | | |
| Area | : 34833 | | |
| On-column Amount (ng/ul) | : 1.1803 | | |
| Integration start scan | : 558 | Integration stop scan: | 572 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340




Total Ion Chromatogram (TIC)

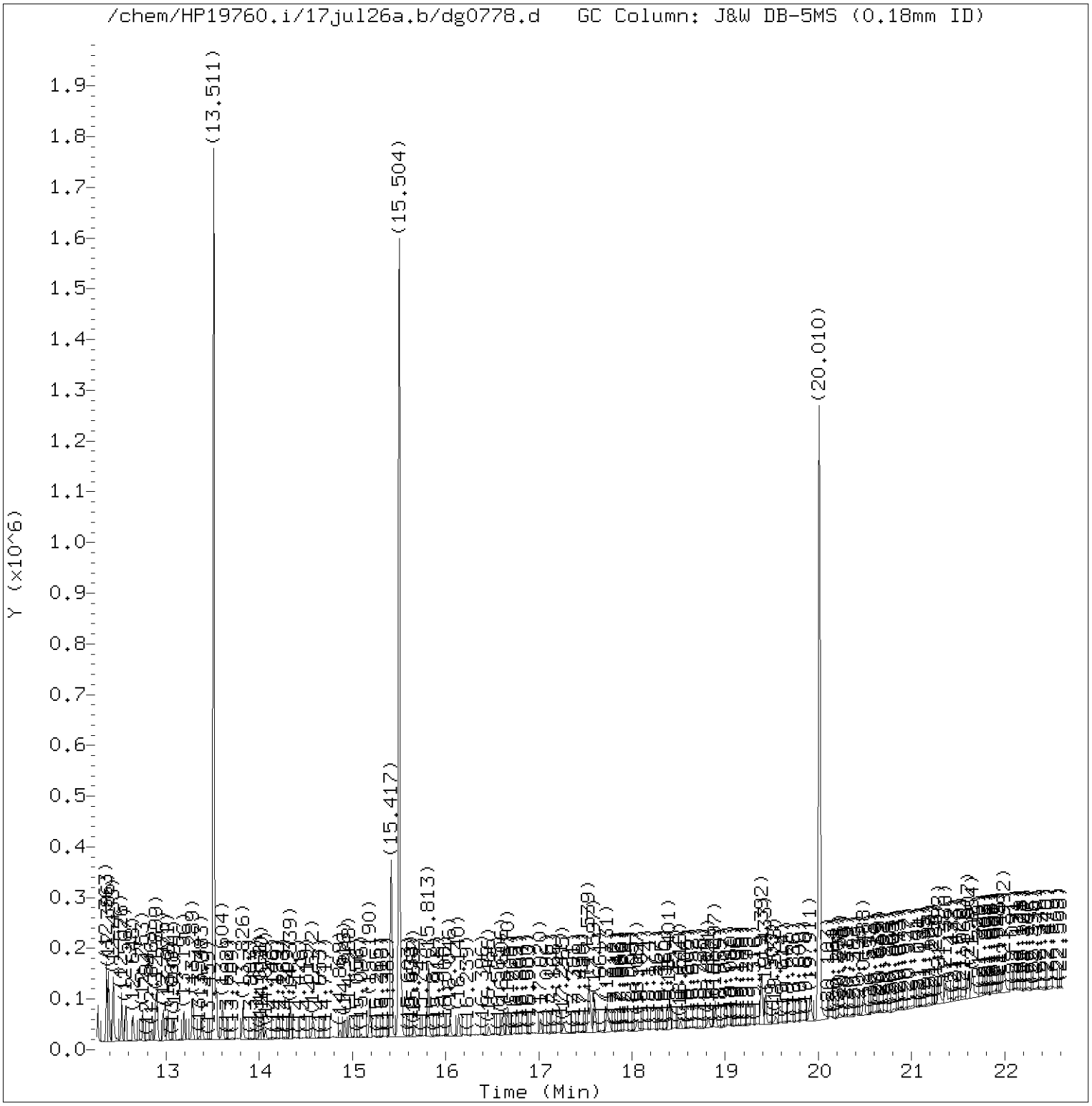
Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0778.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25  Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.477 | 88 | 4976M | 0.197 |
| 4) N-Nitrosodimethylamine | (1) | 3.107 | 74 | 8967M | 0.218 |
| 5) Pyridine | (1) | 3.188 | 79 | 17475M | 0.262 |
| 7) 2-Picoline | (1) | 4.273 | 93 | 16501M | 0.231 |
| 8) N-Nitrosomethylethylamine | (1) | 4.389 | 88 | 6804M | 0.233 |
| 9) Methyl methanesulfonate | (1) | 4.826 | 80 | 8042M | 0.241 |
| 11)$2-Fluorophenol | (1) | 5.019 | 112 | 26055 | 0.469 |
| 13) N-Nitrosodiethylamine | (1) | 5.368 | 102 | 6553 | 0.230 |
| 42) Total Cresols | (1) | | | 25098 | 0.457 |
| 15) Ethyl methanesulfonate | (1) | 5.823 | 109 | 6313 | 0.217 |
| 16) Benzaldehyde | (1) | 6.272 | 77 | 11271 | 0.235 |
| 17)$Phenol-d6 | (1) | 6.371 | 99 | 32596 | 0.446 |
| 18) Phenol | (1) | 6.394 | 94 | 18836 | 0.227 |
| 19) Aniline | (1) | 6.429 | 93 | 21904 | 0.226 |
| 20) a-methylstyrene | (1) | 6.505 | 118 | 13542 | 0.218 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.540 | 93 | 14090 | 0.230 |
| 23) 2-Chlorophenol | (1) | 6.587 | 128 | 12540 | 0.232 |
| 24) 1,3-Dichlorobenzene | (1) | 6.820 | 146 | 14963 | 0.249 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 187569 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.930 | 146 | 14924 | 0.246 |
| 27) Benzyl alcohol | (1) | 7.123 | 108 | 7556 | 0.191 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 14184 | 0.248 |
| 30) Indene | (1) | 7.286 | 115 | 24108 | 0.220 |
| 31) 2-Methylphenol | (1) | 7.292 | 108 | 11562 | 0.221 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.350 | 45 | 21031 | 0.255 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.350 | 45 | 21031 | 0.255 |
| 97) Isosafrole | (3) | | | 9704 | 0.226 |
| 35) N-Nitrosopyrrolidine | (1) | 7.490 | 100 | 6623 | 0.219 |
| 36) Acetophenone | (1) | 7.513 | 105 | 18957 | 0.232 |
| 37) 4-Methylphenol | (1) | 7.531 | 108 | 13536 | 0.235 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.531 | 70 | 11013 | 0.238 |
| 39) N-Nitrosomorpholine | (1) | 7.554 | 56 | 9474 | 0.248 |
| 40) o-Toluidine | (1) | 7.566 | 106 | 20583 | 0.223 |
| 43) Hexachloroethane | (1) | 7.659 | 117 | 6403 | 0.258 |
| 44)$Nitrobenzene-d5 | (2) | 7.735 | 82 | 31858 | 0.464 |
| 45) Nitrobenzene | (2) | 7.764 | 77 | 16115 | 0.234 |
| 48) N-Nitrosopiperidine | (2) | 8.003 | 114 | 6172 | 0.222 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 11095 | 0.411 |
| 50) Isophorone | (2) | 8.149 | 82 | 26243 | 0.225 |
| 51) 2-Nitrophenol | (2) | 8.259 | 139 | 4491 | 0.175 |

M = Compound was manually integrated.
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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.347 | 107 | 12232 | 0.210 |
| 56) Benzoic acid | (2) | 8.417 | 105 | 11206M | 0.299 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.475 | 198 | 5943 | 0.221 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.510 | 93 | 18806 | 0.249 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.603 | 104 | 20853 | 0.223 |
| 60) 2,4-Dichlorophenol | (2) | 8.627 | 162 | 9545 | 0.215 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.761 | 180 | 12302 | 0.245 |
| 146) Diallate trans/cis | (4) | | | 12354 | 0.232 |
| 65)*Naphthalene-d8 | (2) | 8.842 | 136 | 719765 | 5.000 |
| 66) Naphthalene | (2) | 8.877 | 128 | 38898 | 0.244 |
| 67) 4-Chloroaniline | (2) | 8.976 | 127 | 14537 | 0.228 |
| 68) 2,6-Dichlorophenol | (2) | 8.982 | 162 | 10296 | 0.232 |
| 69) Hexachloropropene | (2) | 9.023 | 213 | 7018 | 0.225 |
| 71) Hexachlorobutadiene | (2) | 9.093 | 225 | 7221 | 0.253 |
| 75) Quinoline | (2) | 9.408 | 129 | 23249 | 0.231 |
| 76) Caprolactam | (2) | 9.501 | 113 | 2717 | 0.192 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.542 | 84 | 10805 | 0.203 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.763 | 107 | 10362 | 0.211 |
| 82) Safrole | (2) | 9.868 | 162 | 9075 | 0.219 |
| 83) 2-Methylnaphthalene | (2) | 9.979 | 142 | 25211 | 0.242 |
| 84) 1-Methylnaphthalene | (2) | 10.136 | 142 | 22823 | 0.242 |
| 85) Hexachlorocyclopentadiene | (3) | 10.241 | 237 | 5706 | 0.227 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.247 | 216 | 11633 | 0.236 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 1593 | 0.037 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.439 | 196 | 6441 | 0.210 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.480 | 196 | 6934 | 0.213 |
| 93)$2-Fluorobiphenyl | (3) | 10.591 | 172 | 57282 | 0.506 |
| 94) trans-Isosafrole | (3) | 10.696 | 162 | 8111 | 0.189 |
| 95) 1,1'-Biphenyl | (3) | 10.742 | 154 | 30361 | 0.250 |
| 96) 2-Chloronaphthalene | (3) | 10.748 | 162 | 22658 | 0.232 |
| 98) 1-Chloronaphthalene | (3) | 10.783 | 162 | 23034 | 0.256 |
| 99) Diphenyl ether | (3) | 10.917 | 170 | 16721 | 0.251 |
| 100) 2-Nitroaniline | (3) | 10.929 | 138 | 6139 | 0.211 |
| 104) 1,4-Naphthoquinone | (3) | 11.045 | 158 | 7022 | 0.184 |
| 105) 1,4-Dinitrobenzene | (3) | 11.168 | 168 | 2550 | 0.169 |
| 106) Dimethylphthalate | (3) | 11.261 | 163 | 26147 | 0.244 |
| 107) 1,3-Dinitrobenzene | (3) | 11.279 | 168 | 2894 | 0.173 |
| 108) 2,6-Dinitrotoluene | (3) | 11.337 | 165 | 4876 | 0.214 |
| 109) Acenaphthylene | (3) | 11.407 | 152 | 31564 | 0.236 |
| 112) 3-Nitroaniline | (3) | 11.582 | 138 | 4937 | 0.197 |

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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 113)*Acenaphthene-d10 | (3) | 11.628 | 164 | 391722 | 5.000 |
| 114) Acenaphthene | (3) | 11.675 | 153 | 25107 | 0.247 |
| 115) 2,4-Dinitrophenol | (3) | 11.739 | 184 | 12603 | 0.865 |
| 116) 4-Nitrophenol | (3) | 11.832 | 109 | 15911 | 0.833 |
| 117) Pentachlorobenzene | (3) | 11.861 | 250 | 10292 | 0.251 |
| 119) Dibenzofuran | (3) | 11.920 | 168 | 32773 | 0.248 |
| 118) 2,4-Dinitrotoluene | (3) | 11.920 | 165 | 6219 | 0.197 |
| 121) 1-Naphthylamine | (3) | 12.025 | 143 | 21371 | 0.213 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.089 | 232 | 4624 | 0.188 |
| 123) 2-Naphthylamine | (3) | 12.130 | 143 | 20820 | 0.216 |
| 124) Diethylphthalate | (3) | 12.269 | 149 | 23056 | 0.222 |
| 126) Fluorene | (3) | 12.363 | 166 | 25746 | 0.245 |
| 125) Thionazin | (3) | 12.363 | 107 | 3900 | 0.187 |
| 128) 5-Nitro-o-toluidine | (3) | 12.380 | 152 | 6163 | 0.206 |
| 129) 4-Nitroaniline | (3) | 12.386 | 138 | 5062 | 0.199 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.386 | 204 | 12350 | 0.245 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.433 | 198 | 11900 | 0.660 |
| 132) NDPA as diphenylamine | (4) | 12.526 | 169 | 20559 | 0.241 |
| 131) N-Nitrosodiphenylamine | (4) | 12.526 | 169 | 20559 | 0.241 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.567 | 77 | 29086 | 0.240 |
| 135)$2,4,6-Tribromophenol | (3) | 12.648 | 330 | 5155 | 0.397 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.753 | 97 | 4757 | 0.238 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.846 | 213 | 1845 | 0.163 |
| 140) Diallate (peak 1) | (4) | 12.893 | 86 | 10384 | 0.189 |
| 141) Phorate | (4) | 12.899 | 75 | 15527 | 0.205 |
| 142) Phenacetin | (4) | 12.911 | 108 | 10623 | 0.191 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.975 | 248 | 6601 | 0.239 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 1970 | 0.044 |
| 145) Hexachlorobenzene | (4) | 13.021 | 284 | 7110 | 0.242 |
| 147) Dimethoate | (4) | 13.091 | 87 | 8787 | 0.185 |
| 148) Atrazine | (4) | 13.196 | 200 | 6830 | 0.249 |
| 149) Pentachlorophenol | (4) | 13.278 | 266 | 1847 | 0.103 |
| 150) 4-Aminobiphenyl | (4) | 13.289 | 169 | 13954 | 0.214 |
| 151) Pentachloronitrobenzene | (4) | 13.289 | 237 | 2921 | 0.221 |
| 152) Pronamide | (4) | 13.383 | 173 | 9286 | 0.196 |
| 153)*Phenanthrene-d10 | (4) | 13.511 | 188 | 700363 | 5.000 |
| 154) Dinoseb | (4) | 13.534 | 211 | 3064M | 0.109 |
| 155) Phenanthrene | (4) | 13.540 | 178 | 36942 | 0.242 |
| 157) Anthracene | (4) | 13.610 | 178 | 35604 | 0.237 |
| 163) Carbazole | (4) | 13.826 | 167 | 31049 | 0.224 |

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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 164) Methyl parathion | (4) | 14.030 | 109 | 6000 | 0.160 |
| 165) Di-n-butylphthalate | (4) | 14.339 | 149 | 36795 | 0.214 |
| 167) Parathion | (4) | 14.572 | 109 | 3580 | 0.154 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.589 | 190 | 1496 | 0.084 |
| 169) Octachlorostyrene | (4) | 14.921 | 308 | 2613 | 0.233 |
| 171) Isodrin | (4) | 14.968 | 193 | 4941 | 0.272 |
| 222) Total PAHs | (6) | | | 576344 | 4.182 |
| 173) Fluoranthene | (4) | 15.190 | 202 | 37940 | 0.226 |
| 174) Benzidine | (5) | 15.417 | 184 | 166169 | 1.534 |
| 175)*Pyrene-d10 | (5) | 15.504 | 212 | 822488 | 5.000 |
| 177) Pyrene | (5) | 15.528 | 202 | 44623 | 0.249 |
| 179)$Terphenyl-d14 | (5) | 15.813 | 244 | 53561 | 0.471 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.046 | 225 | 4132 | 0.165 |
| 185) Chlorobenzilate | (5) | 16.140 | 139 | 9955 | 0.187 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.612 | 212 | 16592 | 0.157 |
| 188) Butylbenzylphthalate | (5) | 16.670 | 149 | 15018 | 0.195 |
| 191) 2-Acetylaminofluorene | (5) | 17.020 | 181 | 9298 | 0.136 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.539 | 252 | 11242 | 0.181 |
| 195) Benzo(a)anthracene | (5) | 17.539 | 228 | 34320 | 0.219 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.556 | 231 | 5942 | 0.182 |
| 196) Chrysene | (5) | 17.603 | 228 | 34182 | 0.231 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.731 | 149 | 18672 | 0.167 |
| 203) 6-Methylchrysene | (5) | 18.407 | 242 | 22388 | 0.203 |
| 205) Di-n-octylphthalate | (6) | 18.897 | 149 | 29294 | 0.165 |
| 206) Benzo(b)fluoranthene | (6) | 19.386 | 252 | 32976 | 0.223 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.392 | 256 | 12065 | 0.196 |
| 208) Benzo(k)fluoranthene | (6) | 19.433 | 252 | 34523 | 0.241 |
| 211) Benzo(a)pyrene | (6) | 19.917 | 252 | 29414 | 0.216 |
| 213)*Perylene-d12 | (6) | 20.010 | 264 | 599535 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.488 | 268 | 11195 | 0.191 |
| 217) Dibenz(a,h)acridine | (6) | 21.298 | 279 | 21968 | 0.199 |
| 218) Dibenz(a,j)acridine | (6) | 21.368 | 279 | 20822 | 0.183 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.607 | 276 | 31469 | 0.208 |
| 220) Dibenz(a,h)anthracene | (6) | 21.654 | 278 | 25612 | 0.207 |
| 221) Benzo(g,h,i)perylene | (6) | 21.992 | 276 | 29390 | 0.228 |

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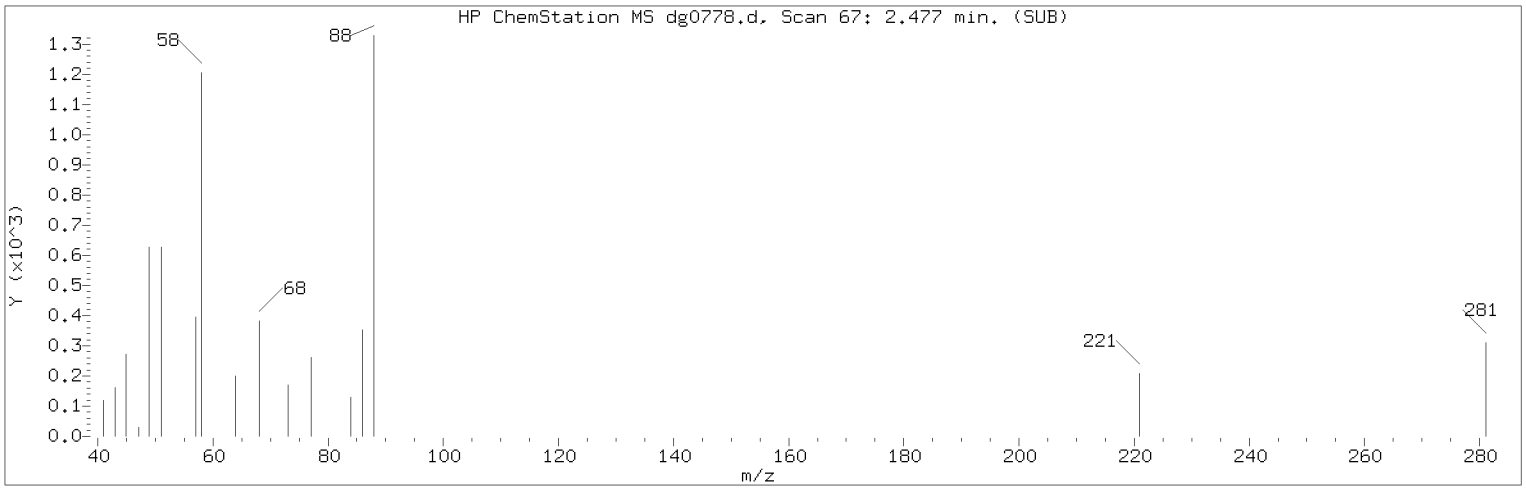
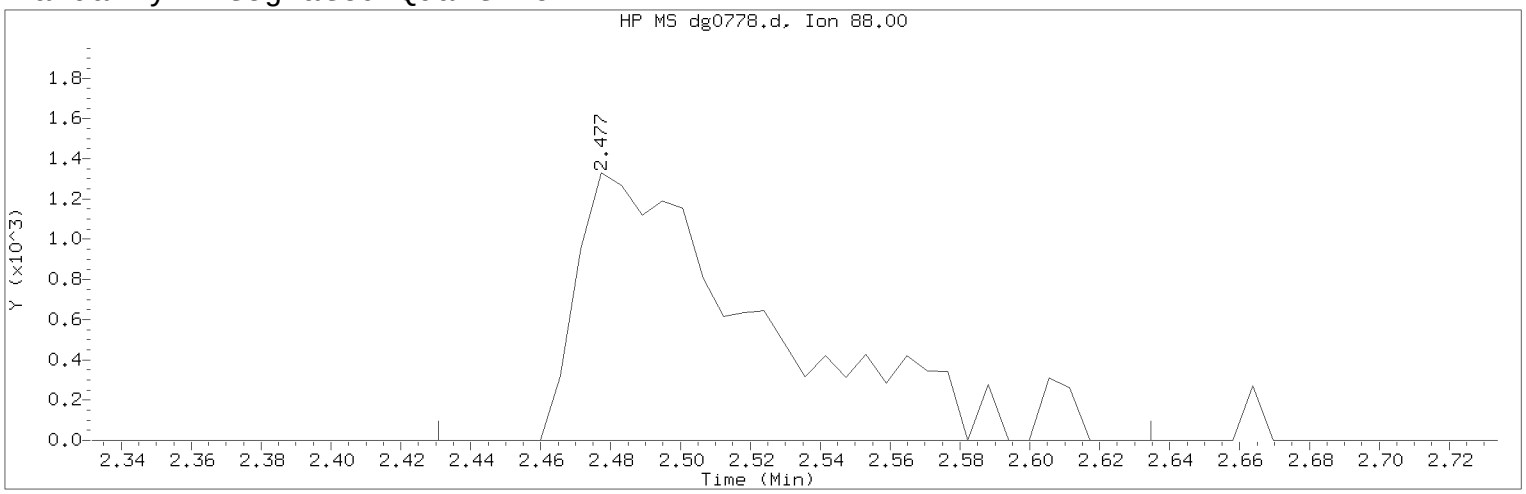
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25  Lab Sample ID: rvSTD1577

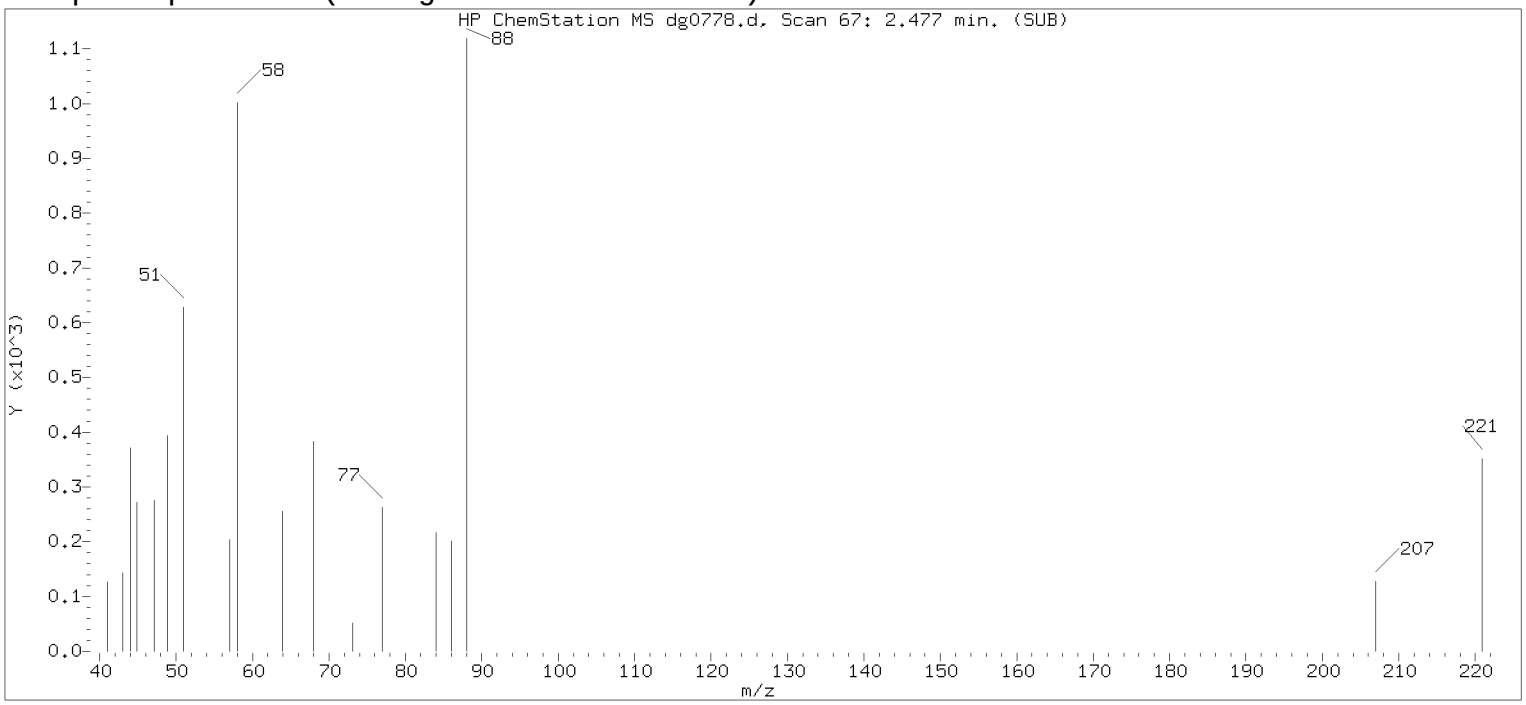
| | |
|---|---|
| Compound Number | : 1 |
| Compound Name | : 1,4-Dioxane |
| Scan Number | : 67 |
| Retention Time (minutes) | : 2.477 |
| Quant Ion | : 88.00 |
| Area (flag) | : 4976M |
| On-Column Amount (ng/ul) | : 0.1972 |
| Integration start scan | : 58 Integration stop scan: 93 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration: improper integration

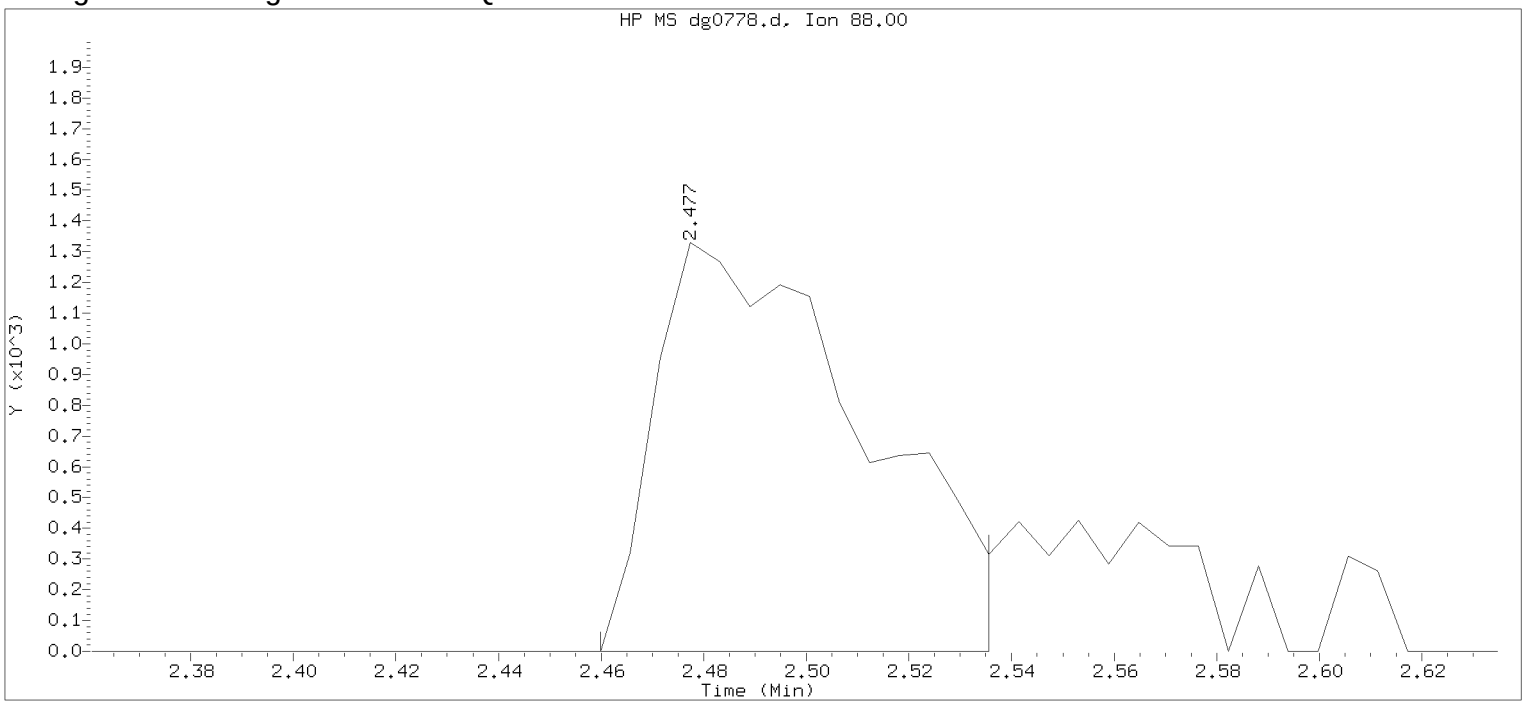
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

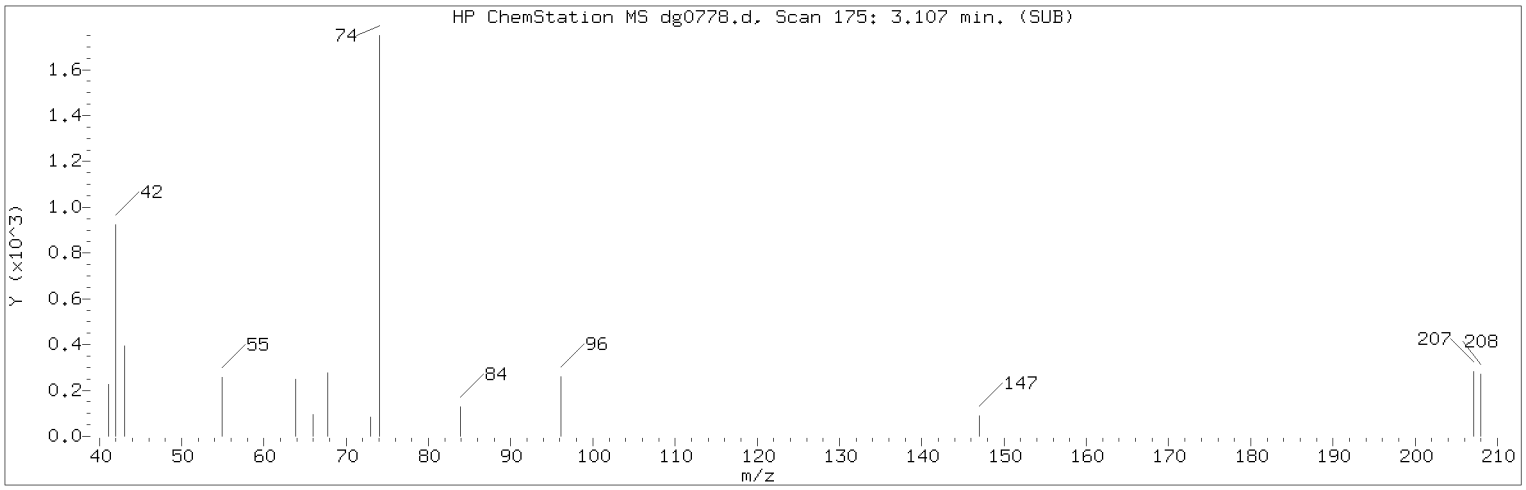
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

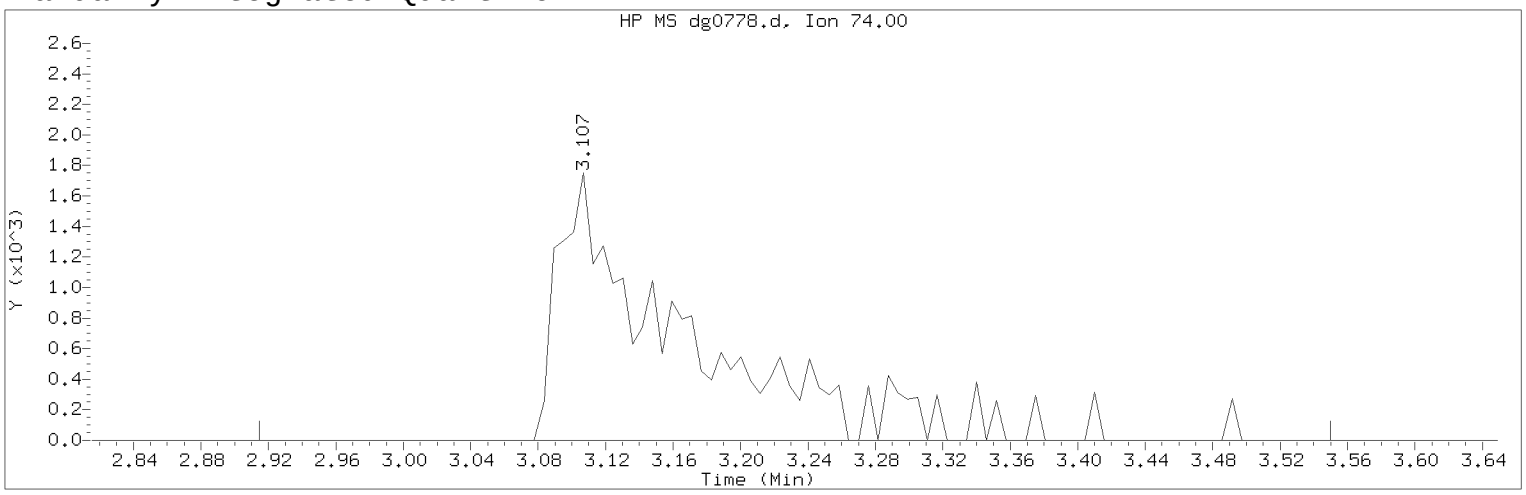
| | | | |
|---|---|---|---|
| Compound Number | : 1 | | |
| Compound Name | : 1,4-Dioxane | | |
| Scan Number | : 67 | | |
| Retention Time (minutes) | : 2.477 | | |
| Quant Ion | : 88.00 | | |
| Area | : 3734 | | |
| On-column Amount (ng/ul) | : 0.1518 | | |
| Integration start scan | : 63 | Integration stop scan: | 76 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

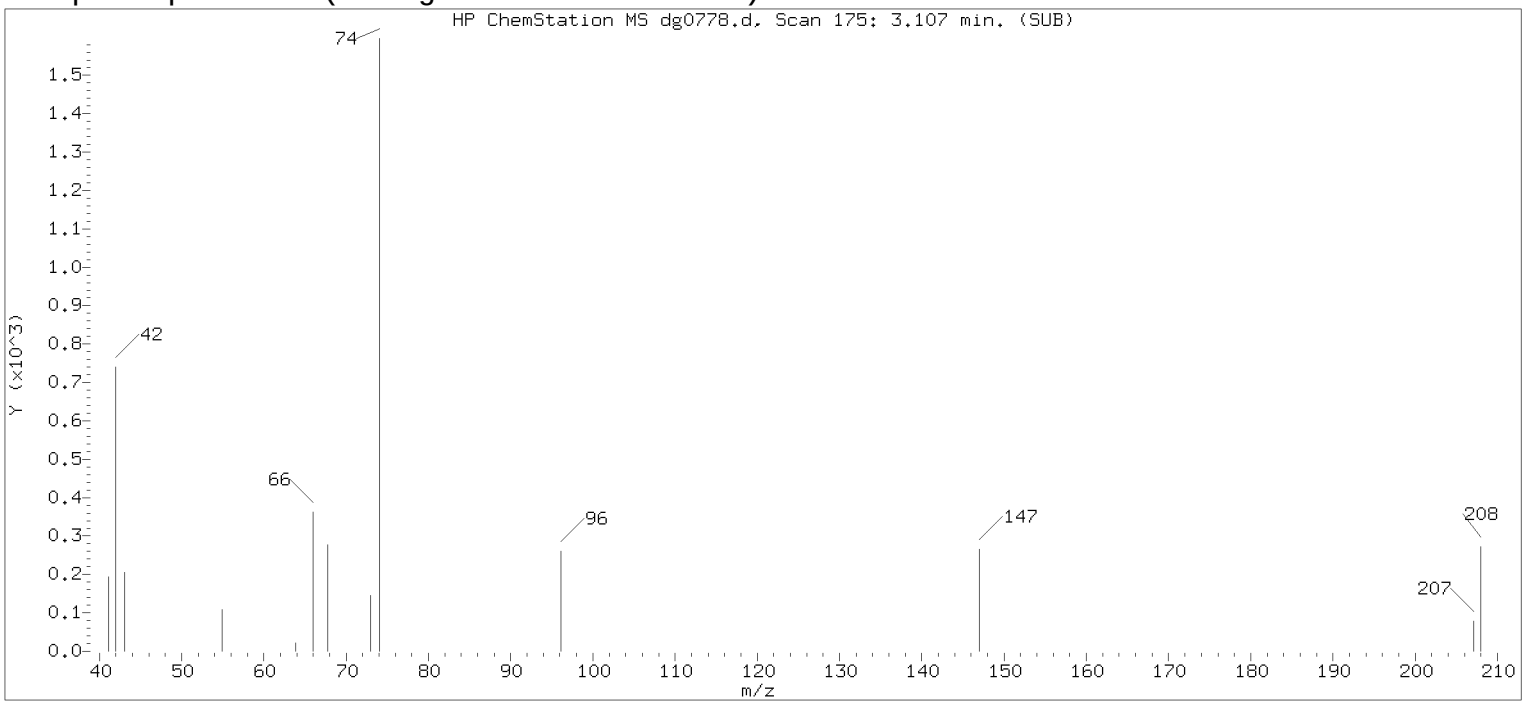
Compound Number : 4
Compound Name : N-Nitrosodimethylamine
Scan Number : 175
Retention Time (minutes) : 3.107
Quant Ion : 74.00
Area (flag) : 8967M
On-Column Amount (ng/ul) : 0.2182
Integration start scan : 141 Integration stop scan: 250
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

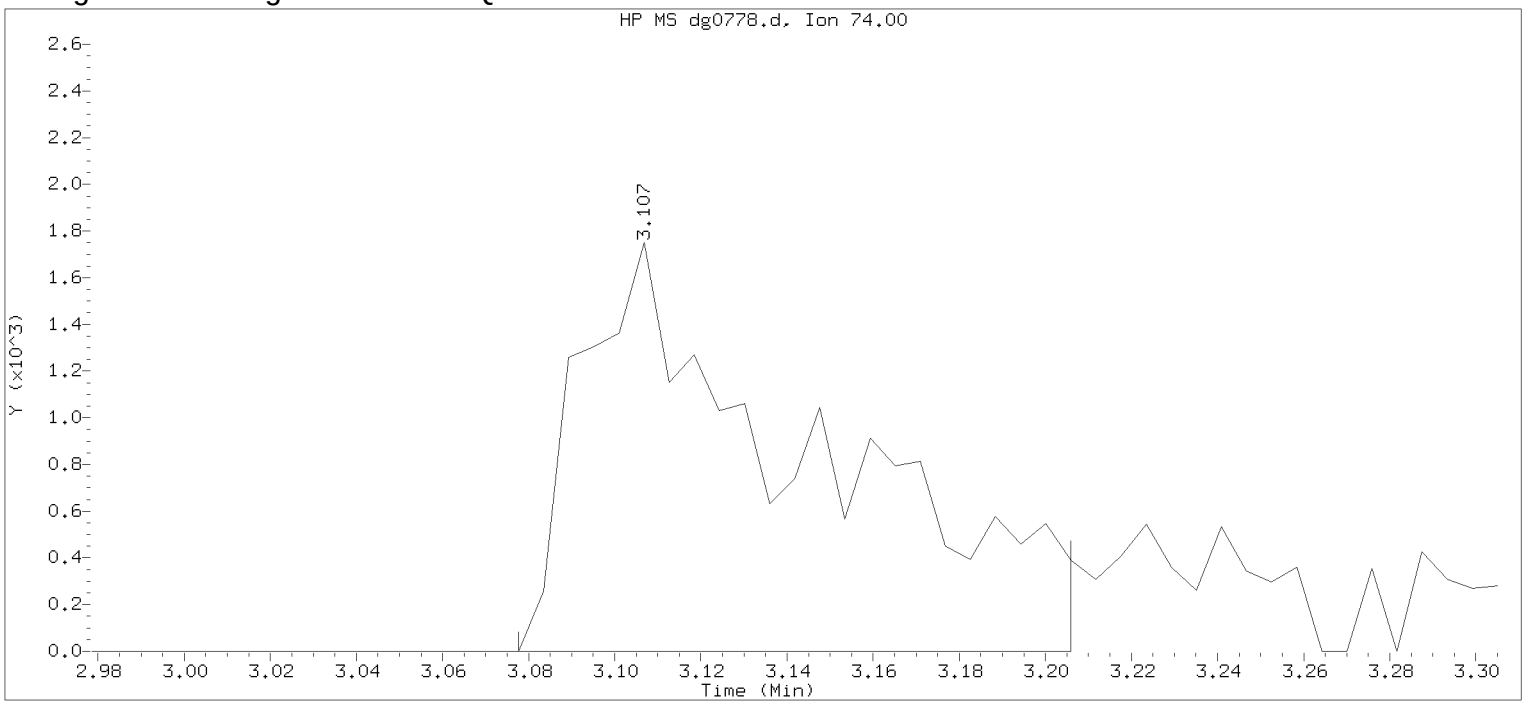
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

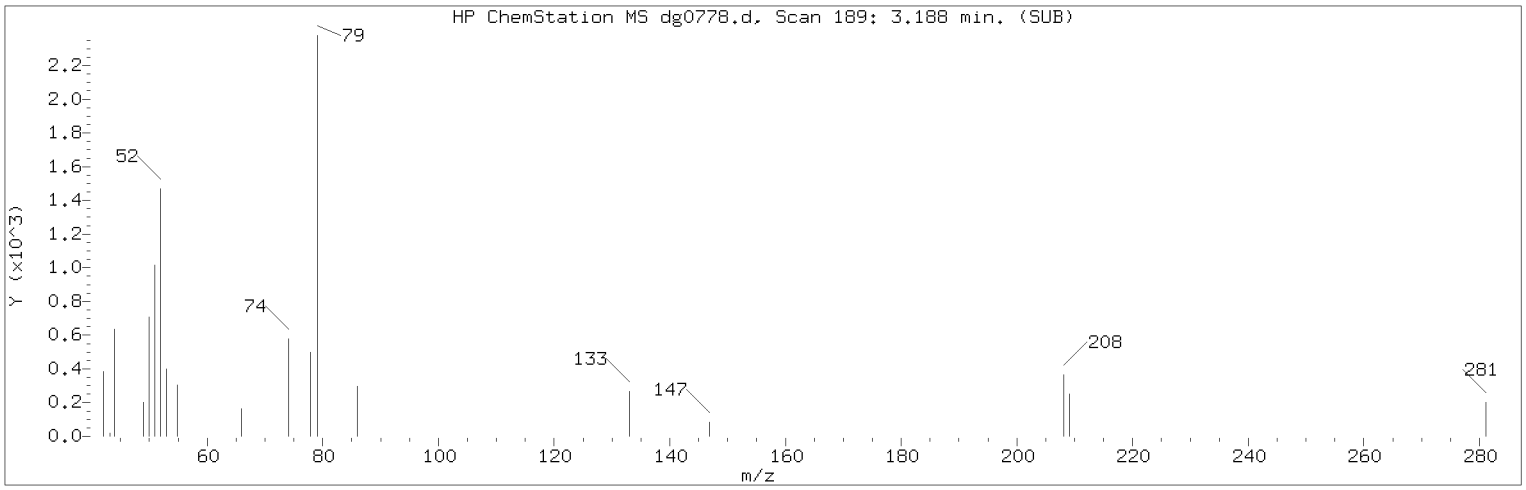
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

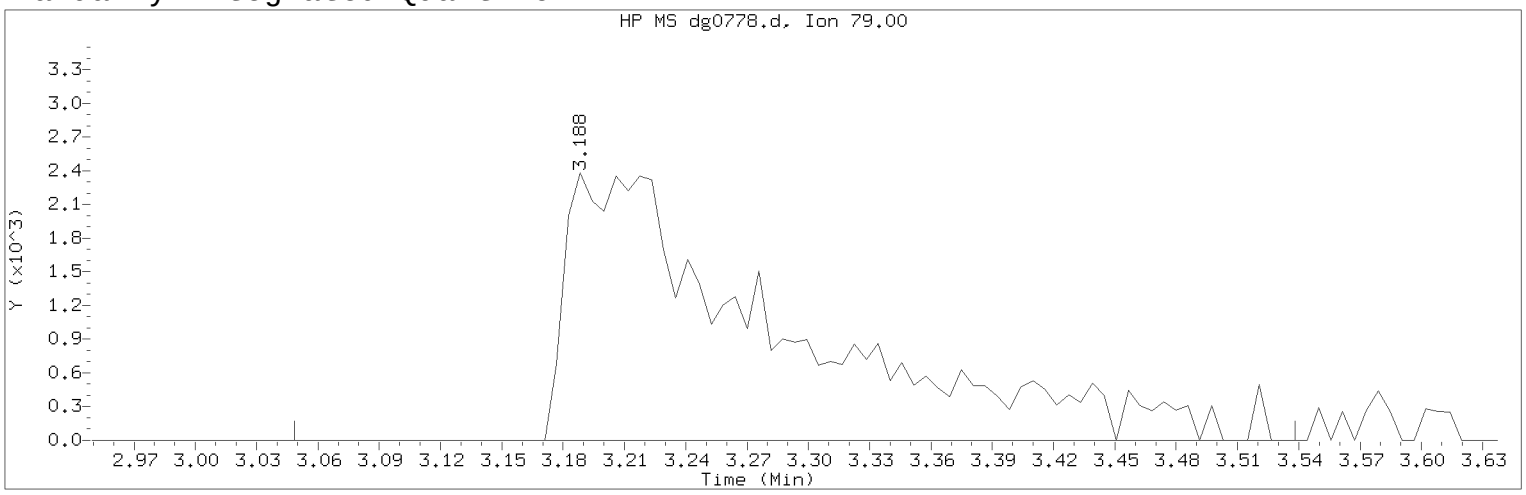
| | | | |
|---|---|---|---|
| Compound Number | : 4 | | |
| Compound Name | : N-Nitrosodimethylamine | | |
| Scan Number | : 175 | | |
| Retention Time (minutes) | : 3.107 | | |
| Quant Ion | : 74.00 | | |
| Area | : 6496 | | |
| On-column Amount (ng/ul) | : 0.1614 | | |
| Integration start scan | : 169 | Integration stop scan: | 191 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRL1 emp0345

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25  Lab Sample ID: rvSTD1577

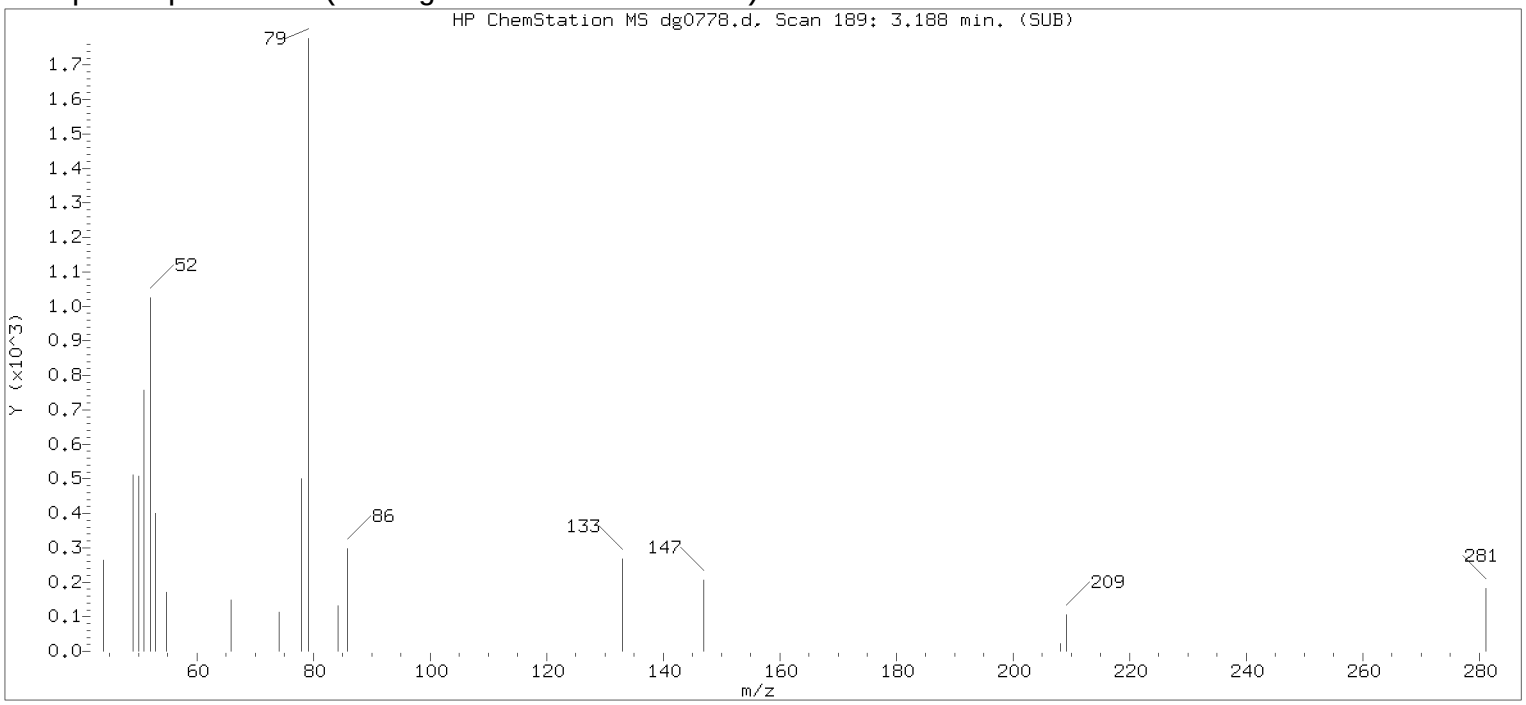
| | | | |
|---|---|---|---|
| Compound Number | : 5 | | |
| Compound Name | : Pyridine | | |
| Scan Number | : 189 | | |
| Retention Time (minutes) | : 3.188 | | |
| Quant Ion | : 79.00 | | |
| Area (flag) | : 17475M | | |
| On-Column Amount (ng/ul) | : 0.2624 | | |
| Integration start scan | : 164 | Integration stop scan: | 248 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Reason for manual integration: improper integration

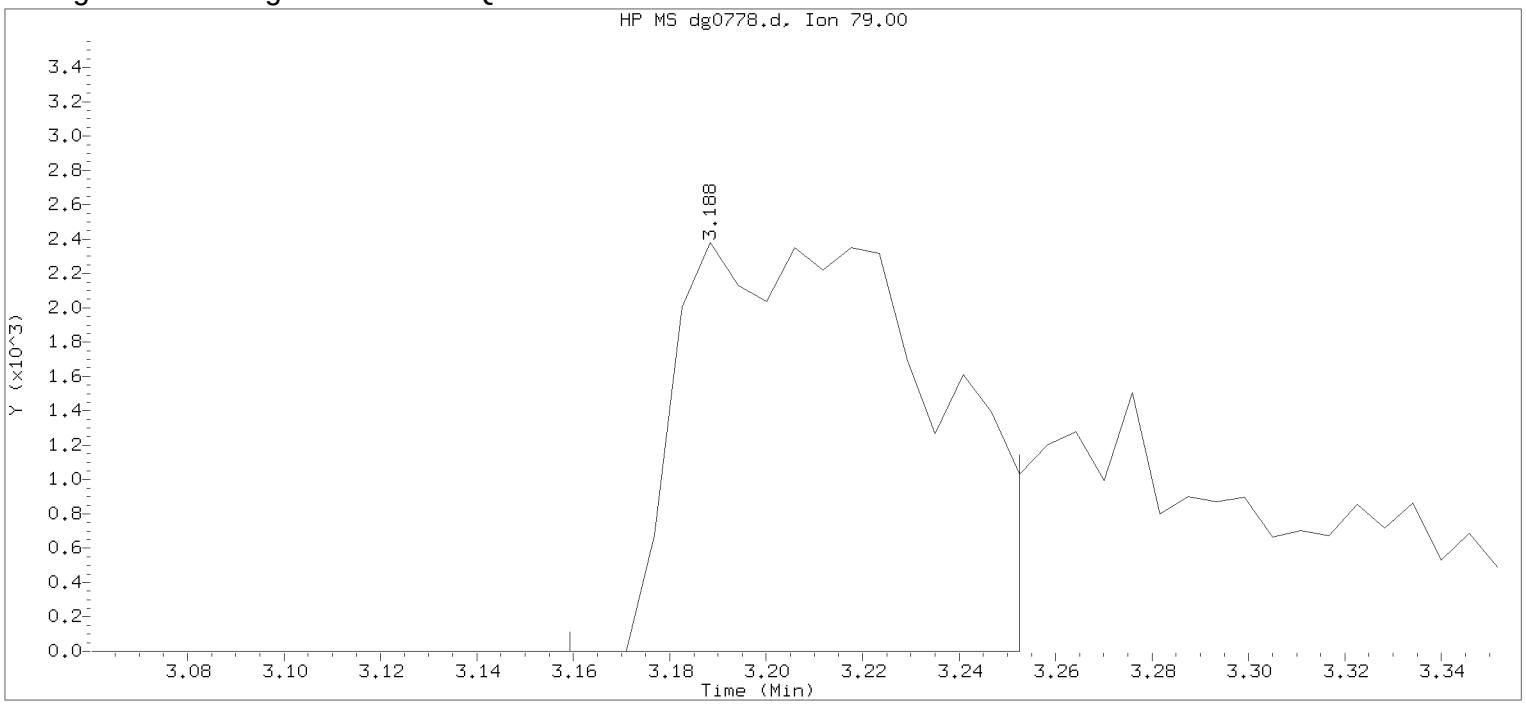
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

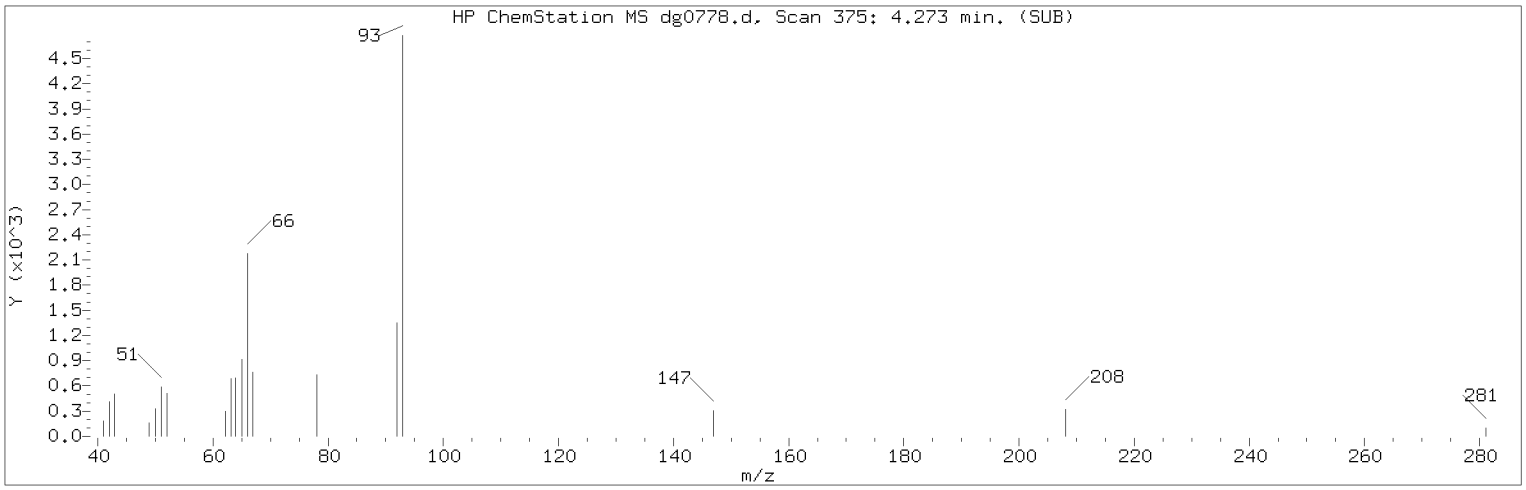
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

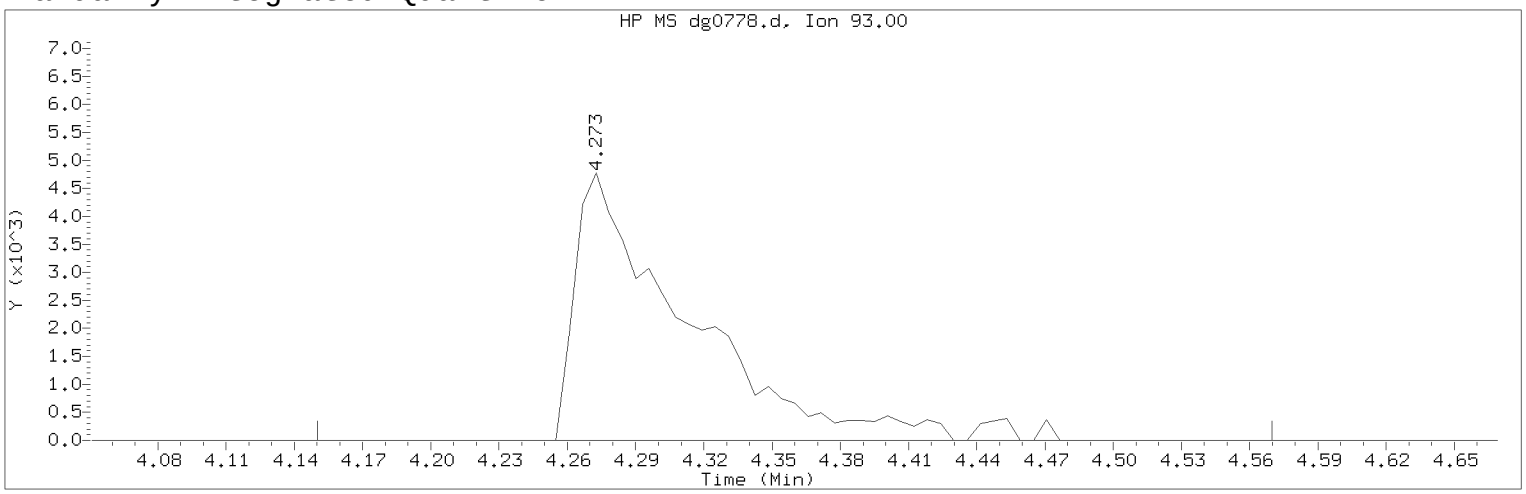
| | | | |
|---|---|---|---|
| Compound Number | : 5 | | |
| Compound Name | : Pyridine | | |
| Scan Number | : 189 | | |
| Retention Time (minutes) | : 3.188 | | |
| Quant Ion | : 79.00 | | |
| Area | : 8725 | | |
| On-column Amount (ng/ul) | : 0.1350 | | |
| Integration start scan | : 183 | Integration stop scan: | 199 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

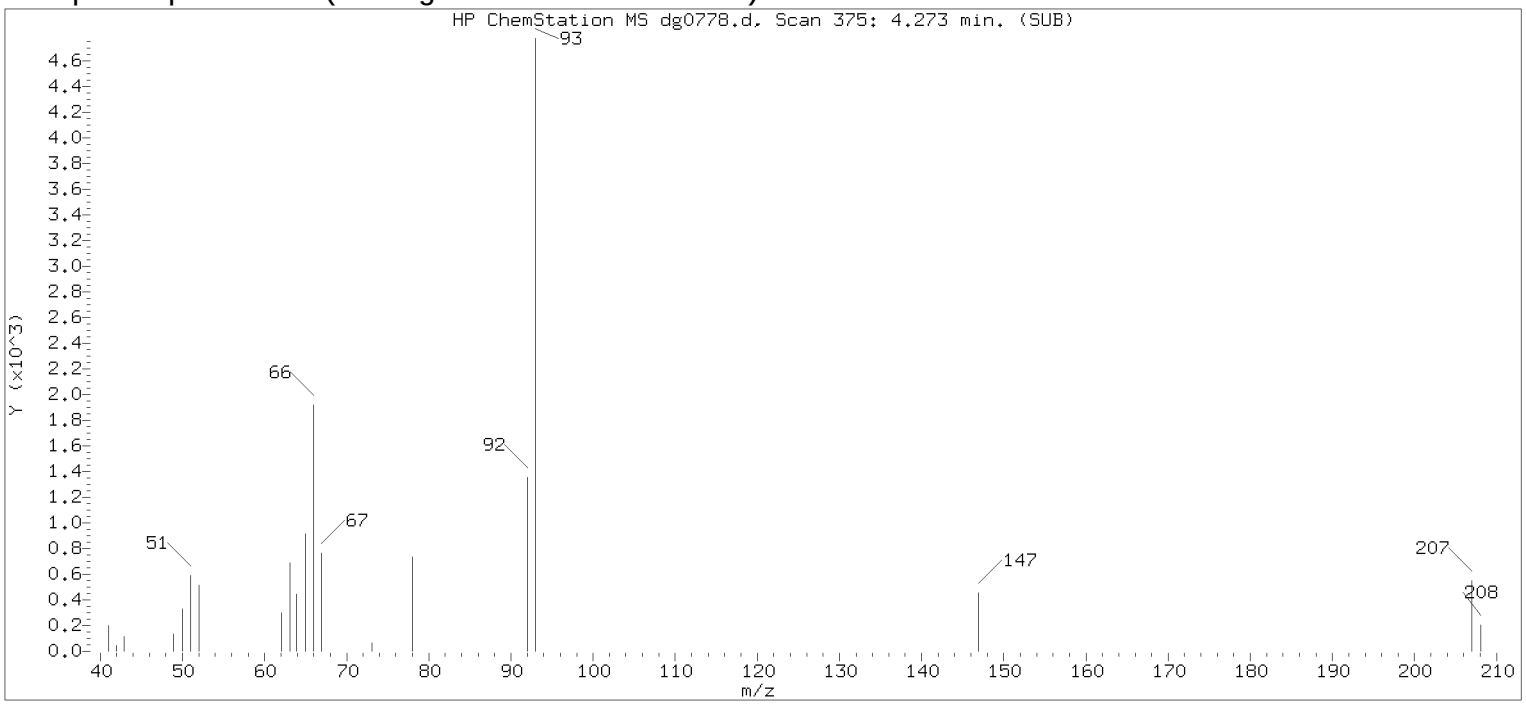
| | |
|---|---|
| Compound Number | : 7 |
| Compound Name | : 2-Picoline |
| Scan Number | : 375 |
| Retention Time (minutes) | : 4.273 |
| Quant Ion | : 93.00 |
| Area (flag) | : 16501M |
| On-Column Amount (ng/ul) | : 0.2313 |
| Integration start scan | : 353 Integration stop scan: 425 |
| Y at integration start | : 0 Y at integration end: 0 |

Reason for manual integration: improper integration

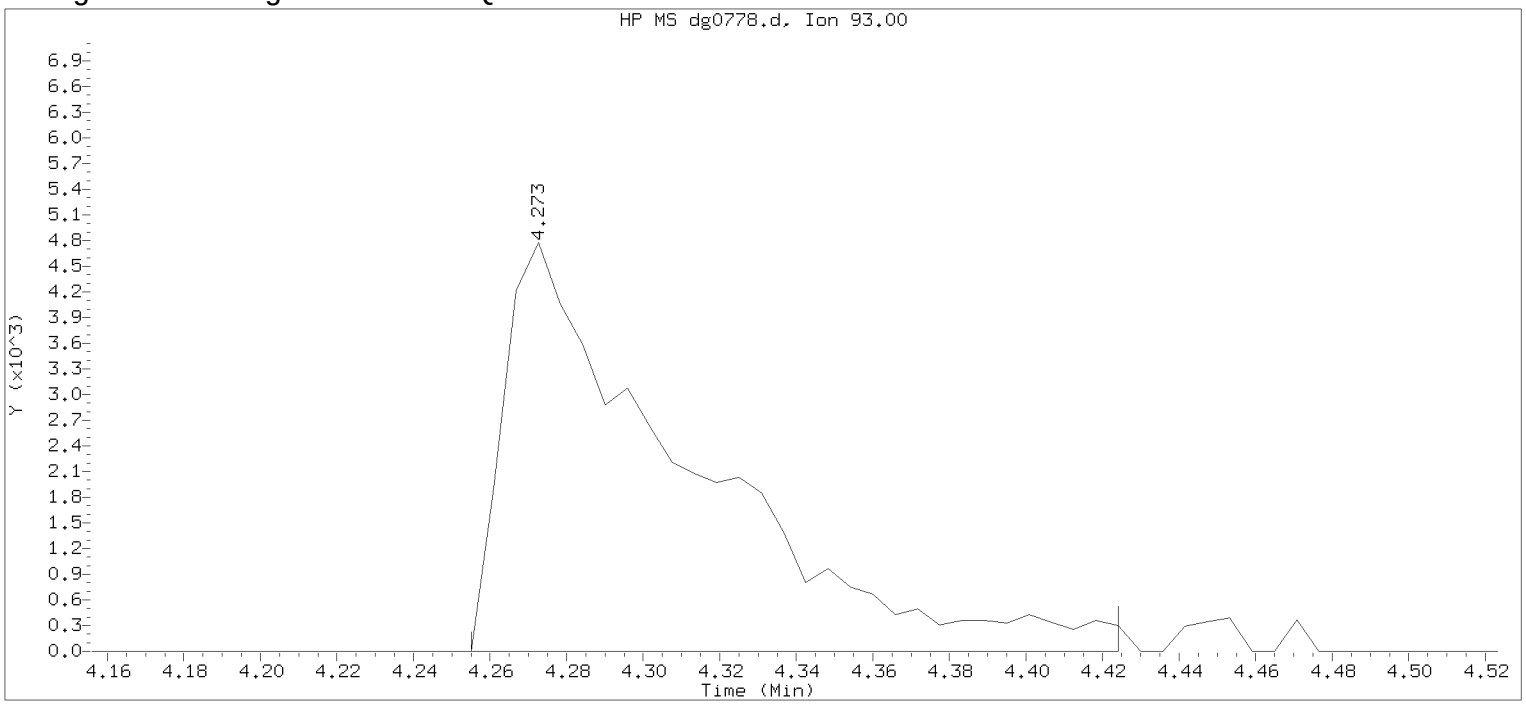
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

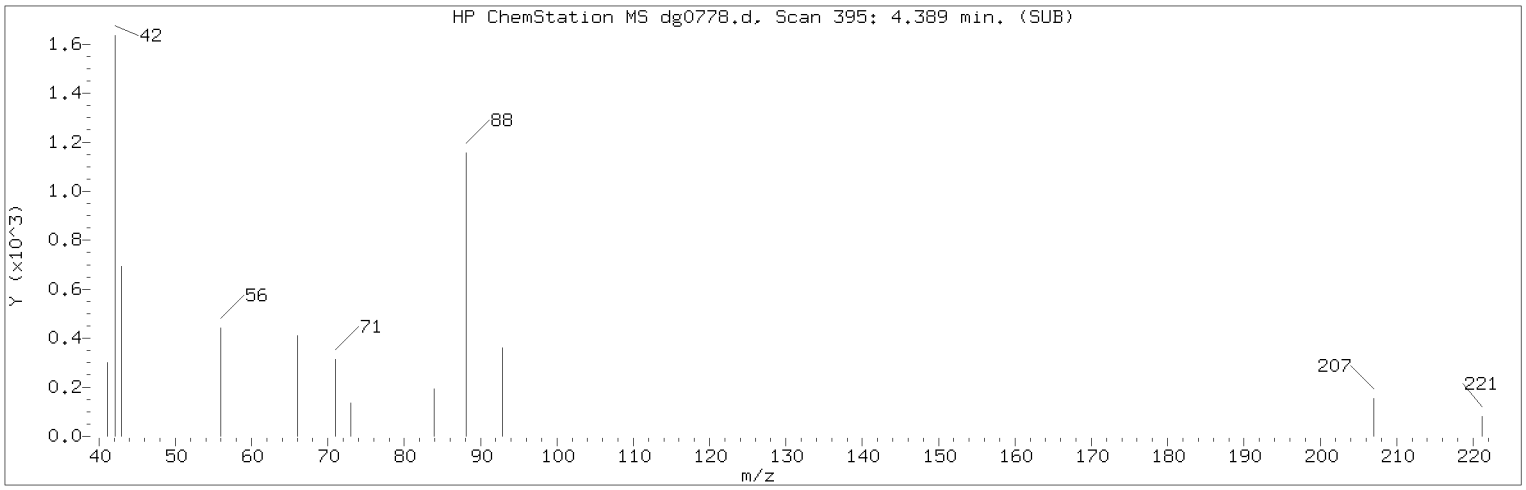
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

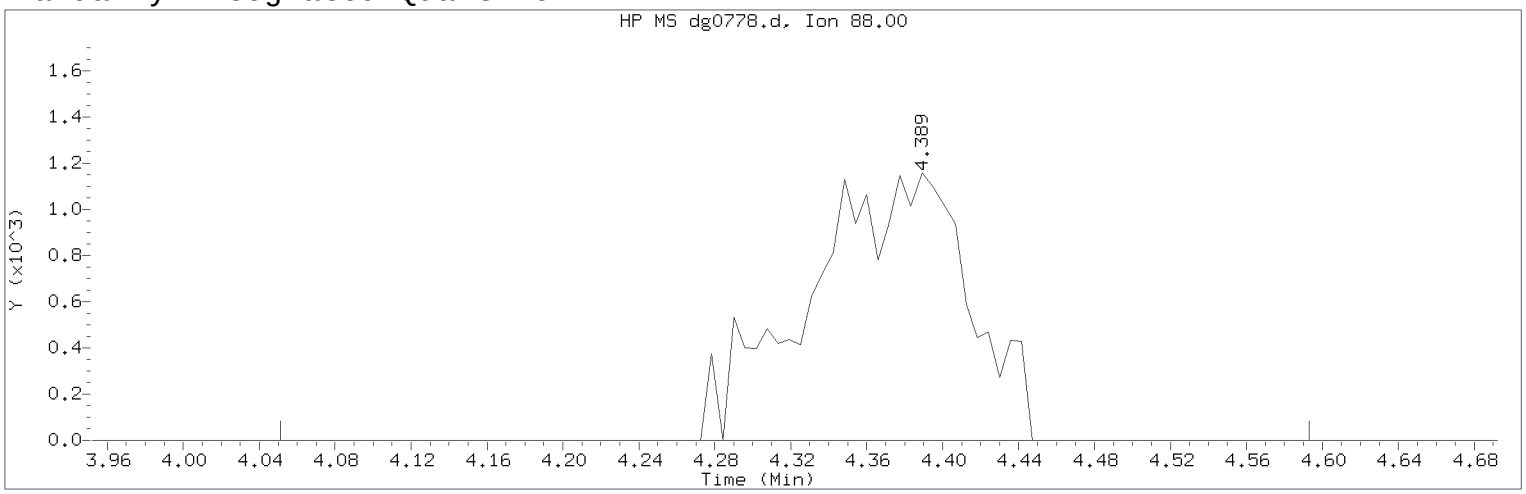
| | | | |
|---|---|---|---|
| Compound Number | : 7 | | |
| Compound Name | : 2-Picoline | | |
| Scan Number | : 375 | | |
| Retention Time (minutes) | : 4.273 | | |
| Quant Ion | : 93.00 | | |
| Area | : 15961 | | |
| On-column Amount (ng/ul) | : 0.2246 | | |
| Integration start scan | : 371 | Integration stop scan: | 400 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

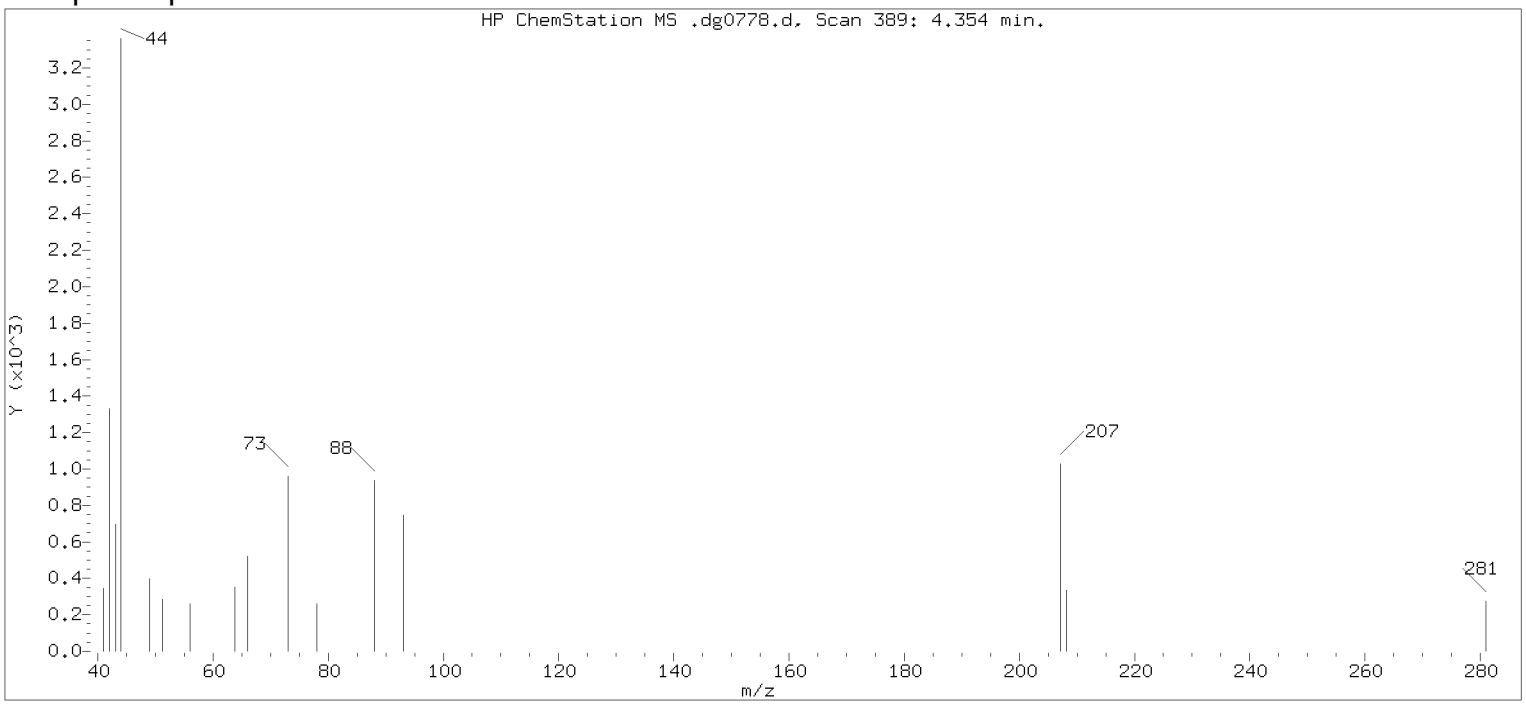
Compound Number : 8
Compound Name : N-Nitrosomethylethylamine
Scan Number : 395
Retention Time (minutes) : 4.389
Quant Ion : 88.00
Area (flag) : 6804M
On-Column Amount (ng/ul) : 0.2329
Integration start scan : 336 Integration stop scan: 429
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

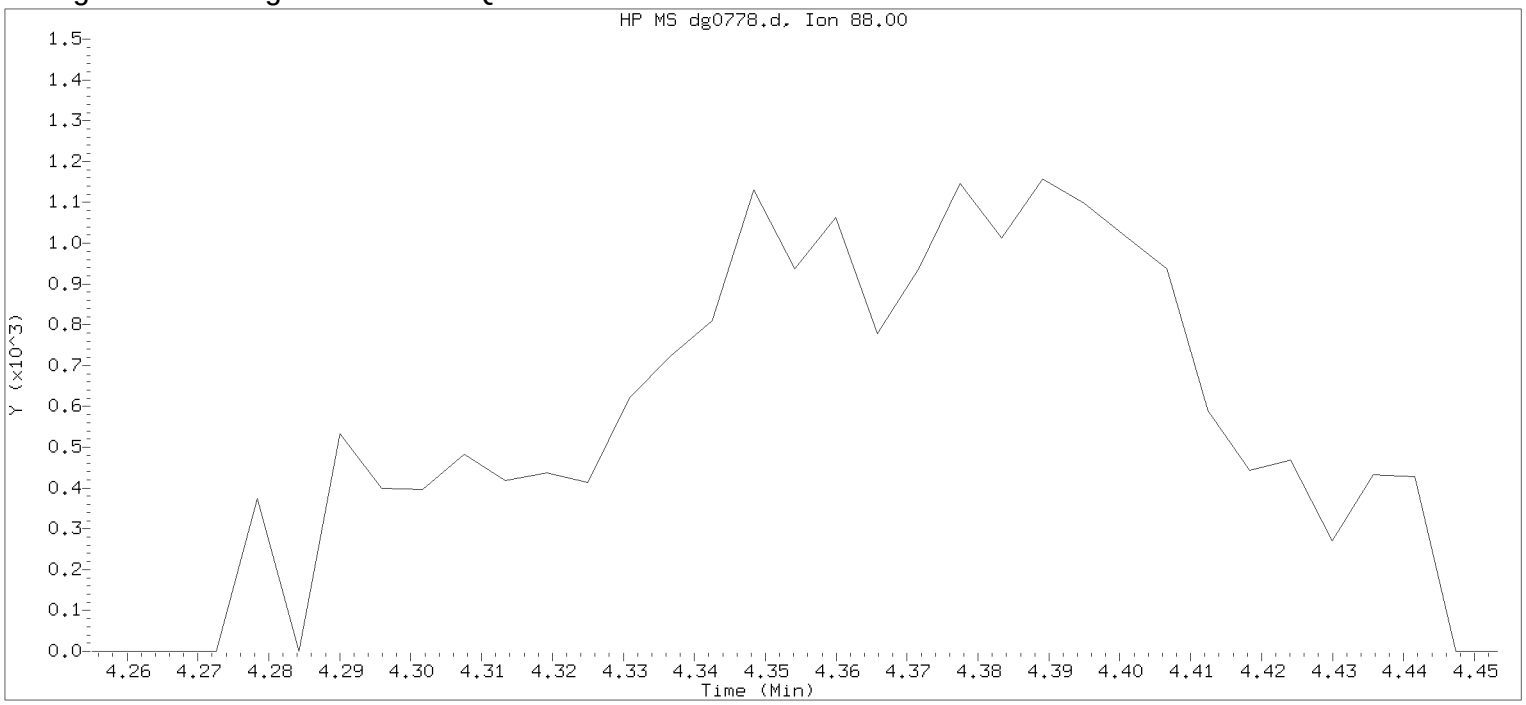
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

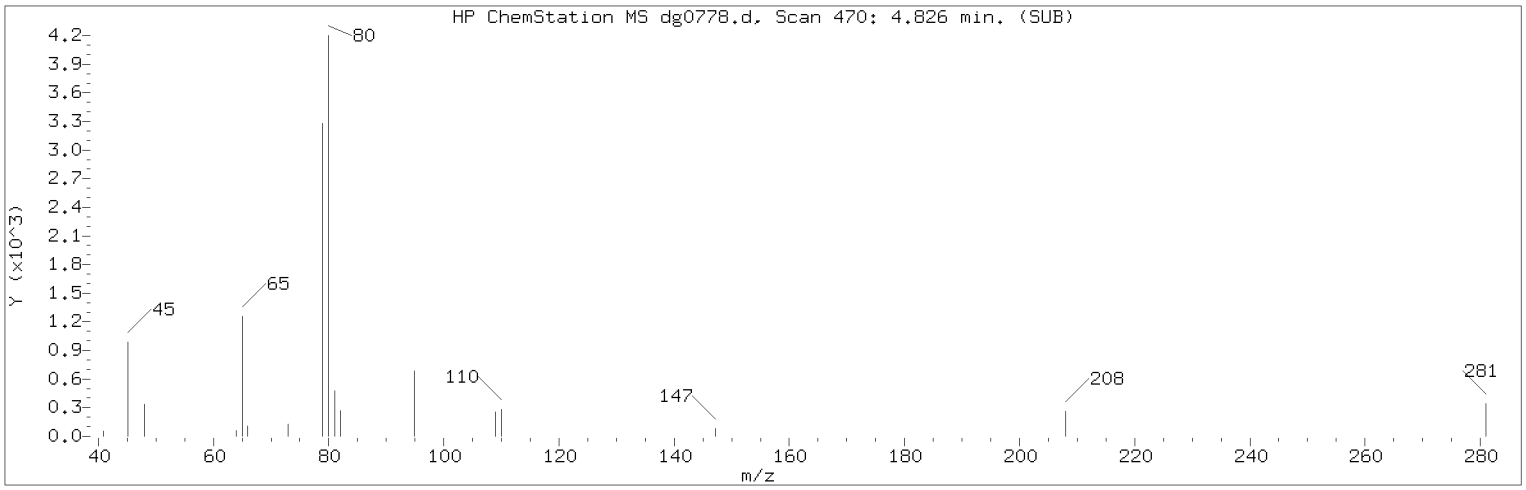
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

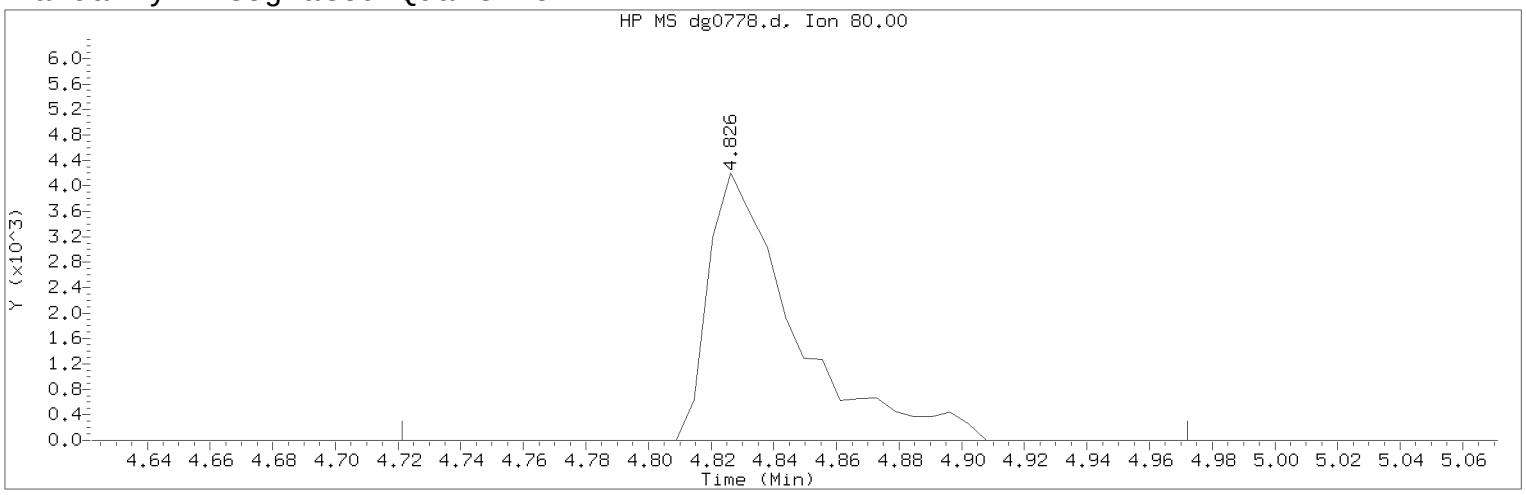
Compound Number : 8
Compound Name : N-Nitrosomethylethylamine
Expected RT (minutes) : 4.354
Quant Ion : 88.00

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRL1 email

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

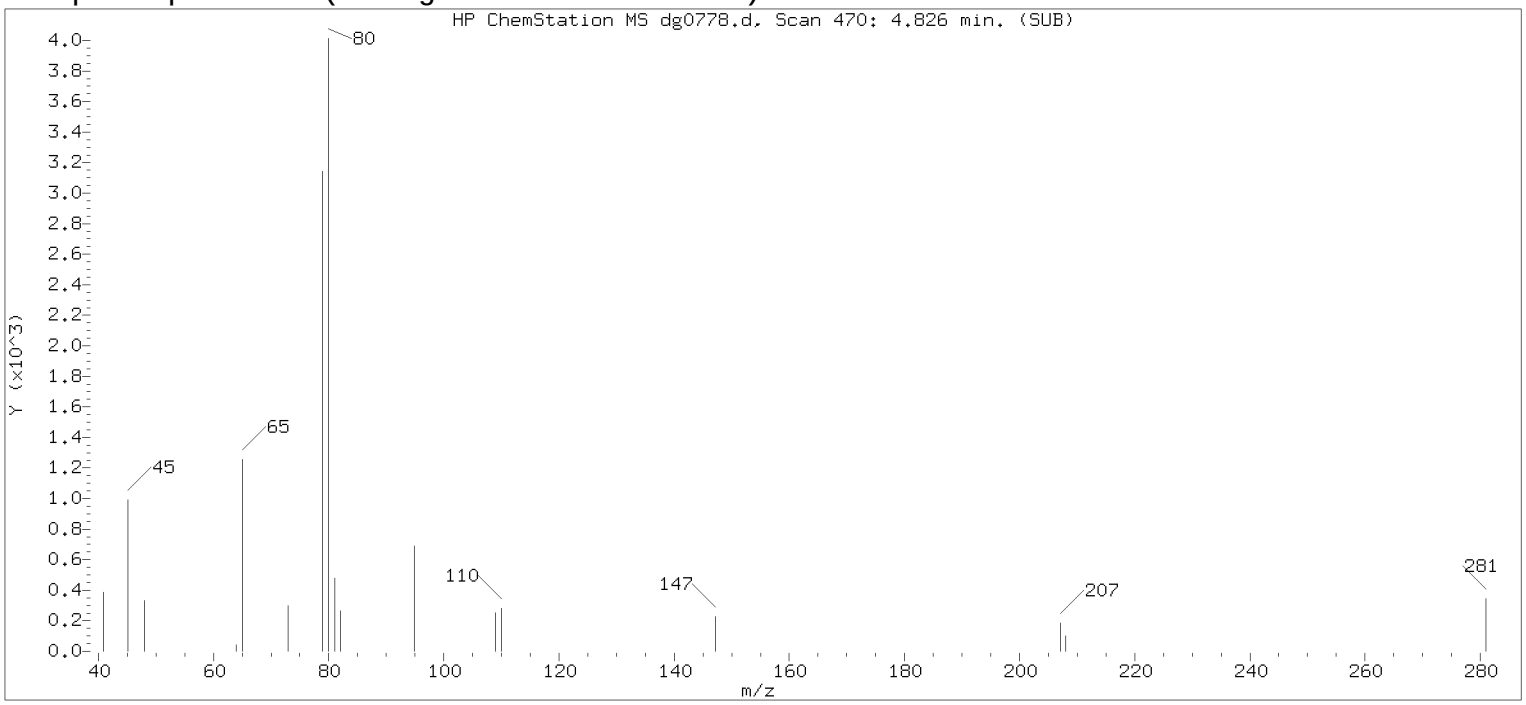
Compound Number : 9
Compound Name : Methyl methanesulfonate
Scan Number : 470
Retention Time (minutes) : 4.826
Quant Ion : 80.00
Area (flag) : 8042M
On-Column Amount (ng/ul) : 0.2406
Integration start scan : 451 Integration stop scan: 494
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

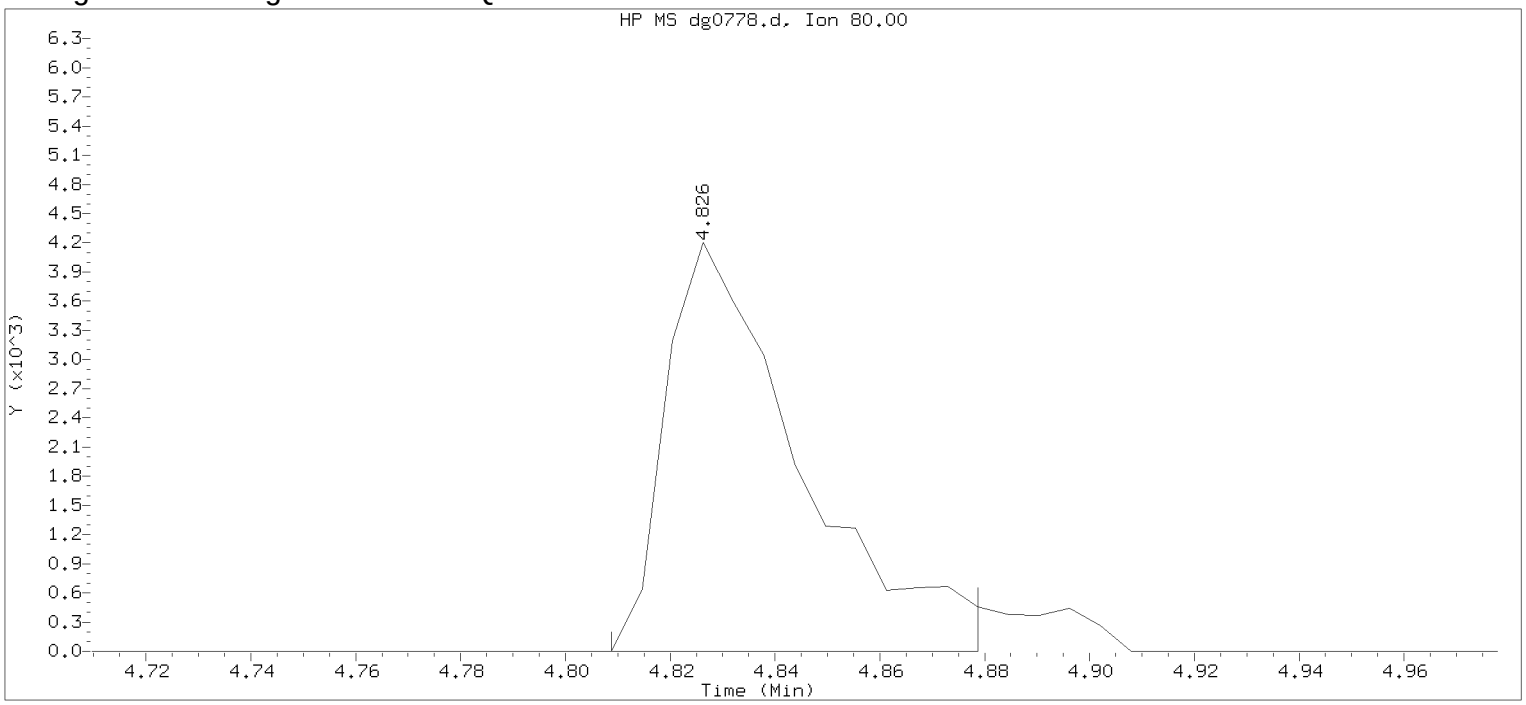
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

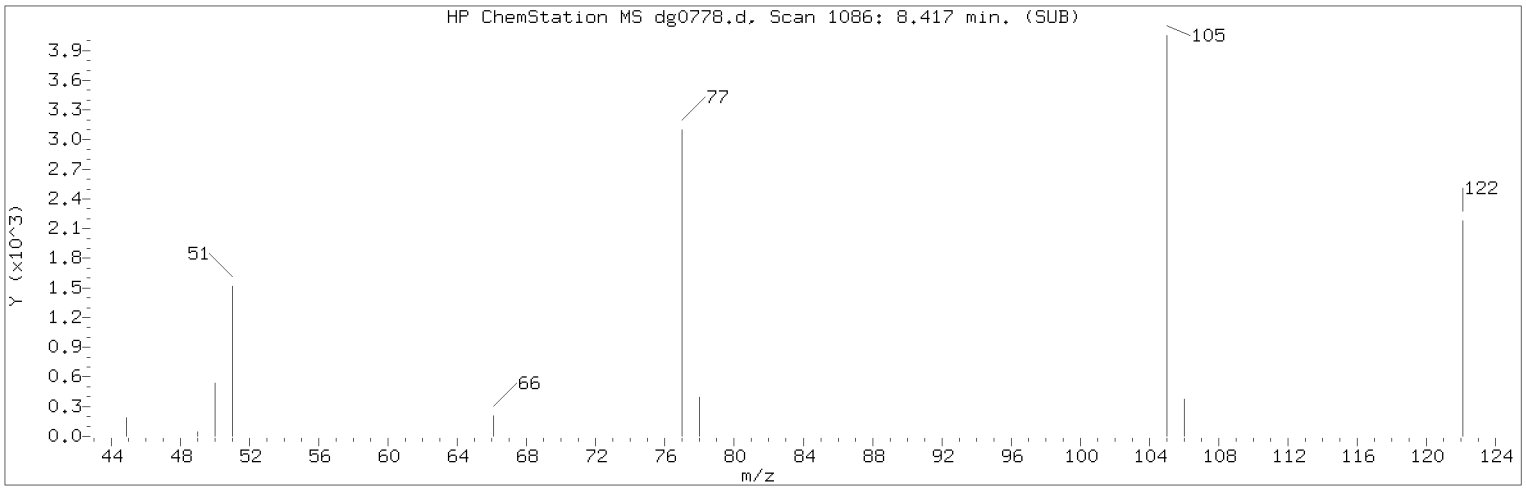
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

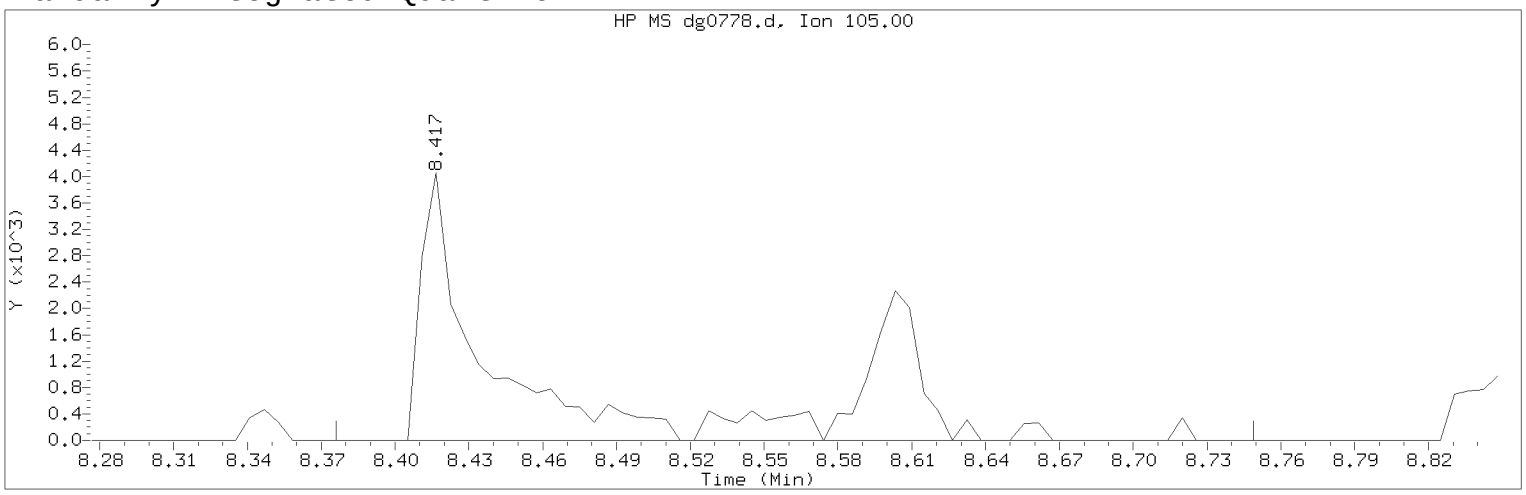
Compound Number : 9
Compound Name : Methyl methanesulfonate
Scan Number : 470
Retention Time (minutes) : 4.826
Quant Ion : 80.00
Area : 7455
On-column Amount (ng/ul) : 0.2237
Integration start scan : 466 Integration stop scan: 478
Y at integration start : 0 Y at integration end: 0

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user entry

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

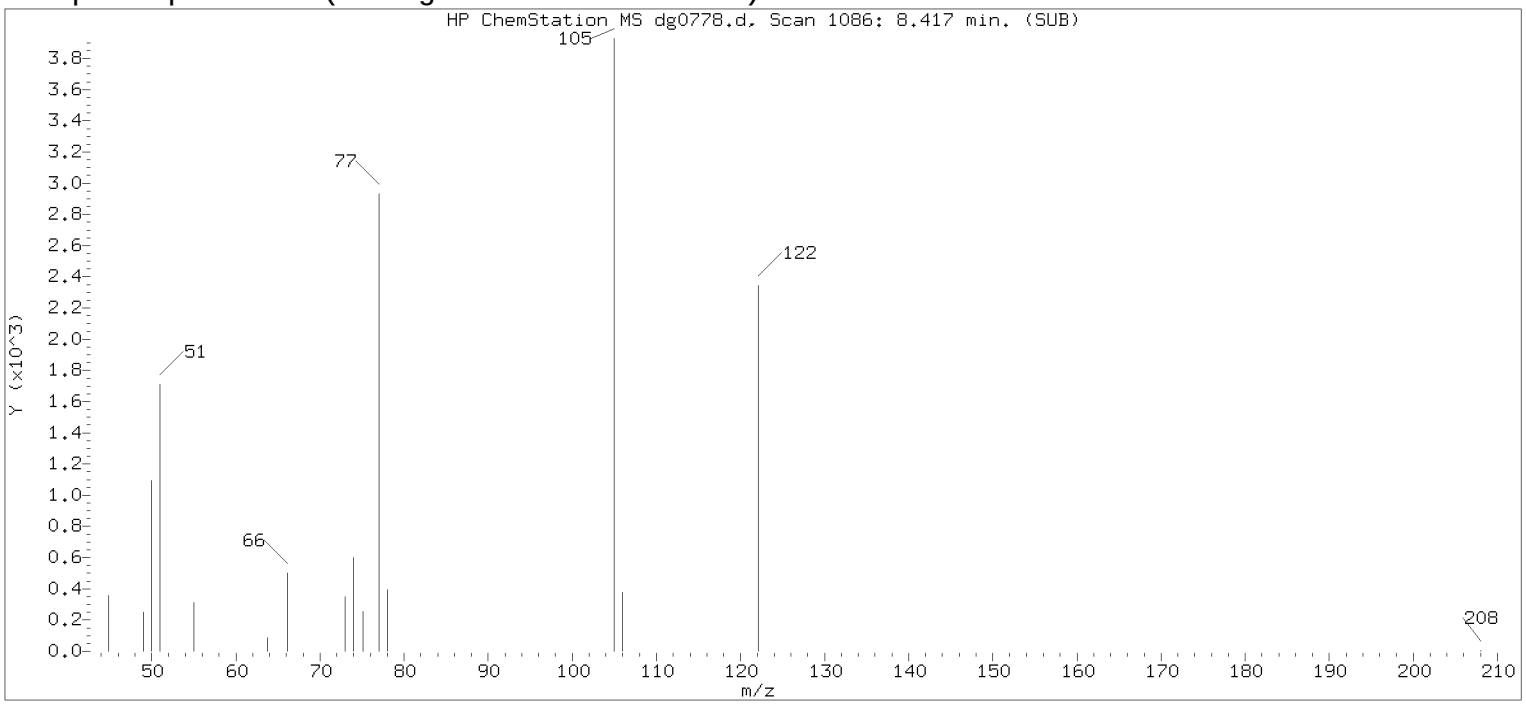
Compound Number : 56
Compound Name : Benzoic acid
Scan Number : 1086
Retention Time (minutes) : 8.417
Quant Ion : 105.00
Area (flag) : 11206M
On-Column Amount (ng/ul) : 0.2986
Integration start scan : 1078 Integration stop scan: 1142
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

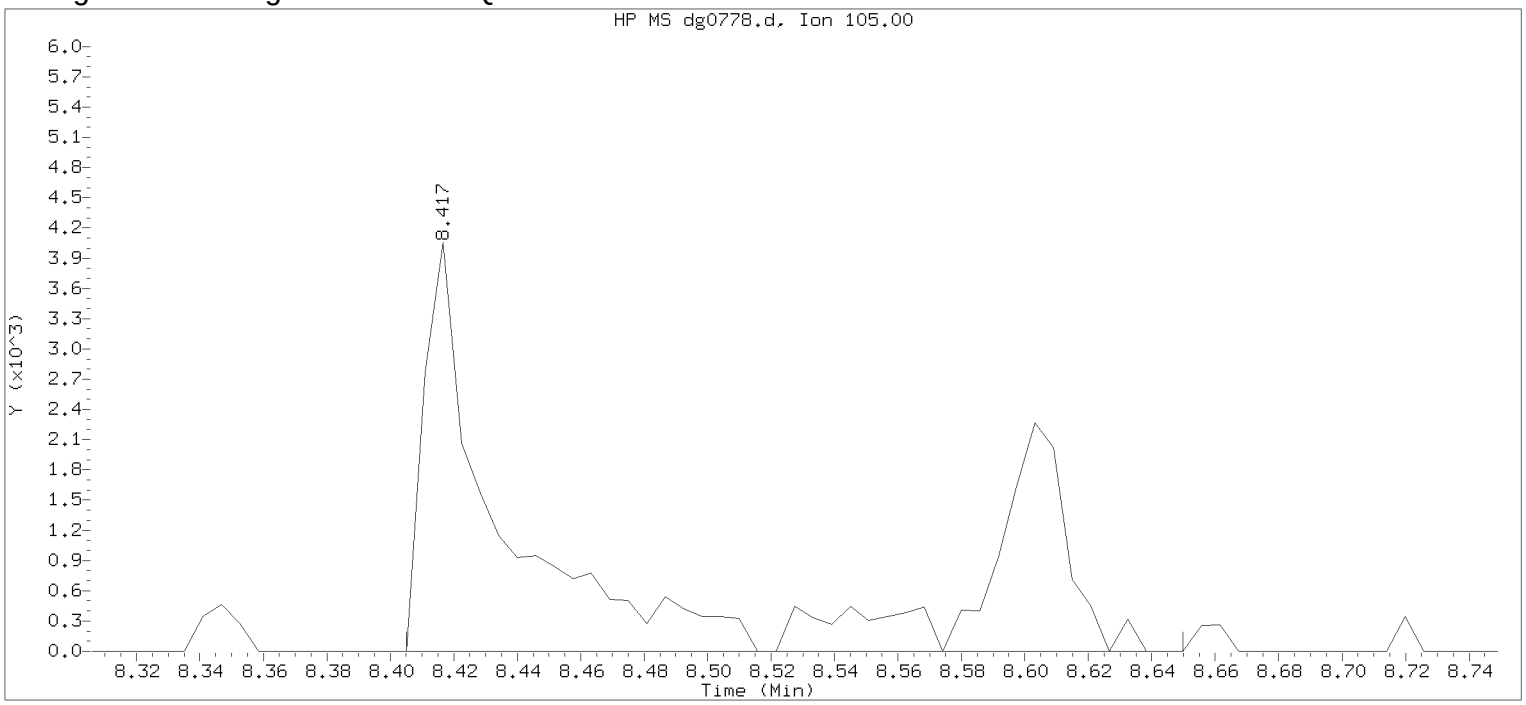
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

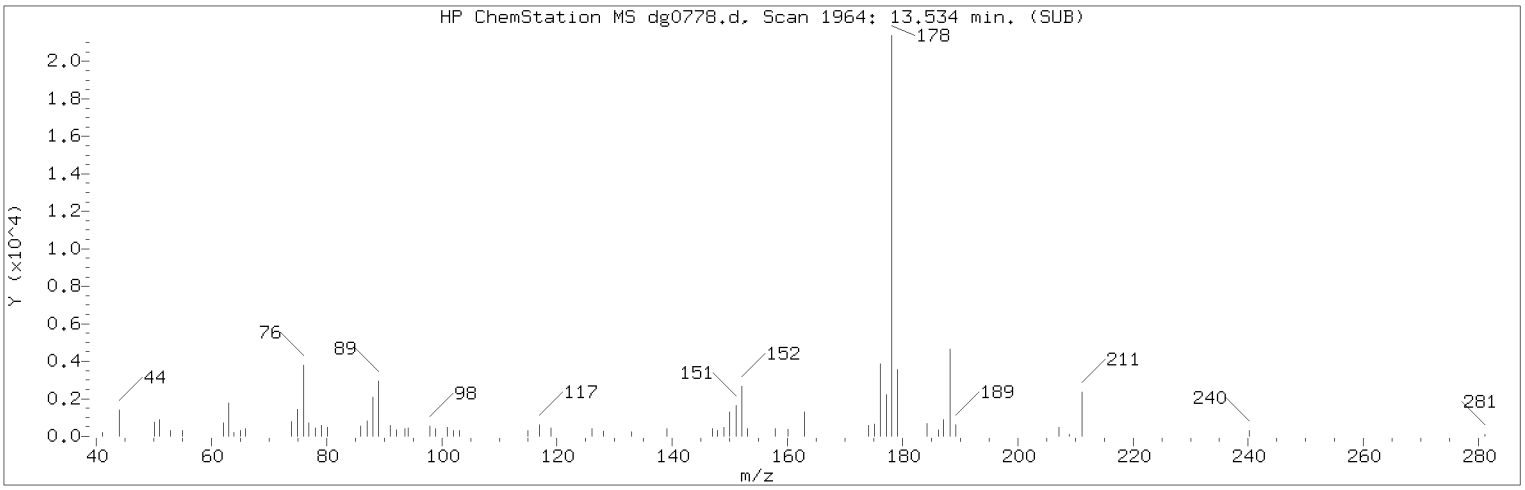
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

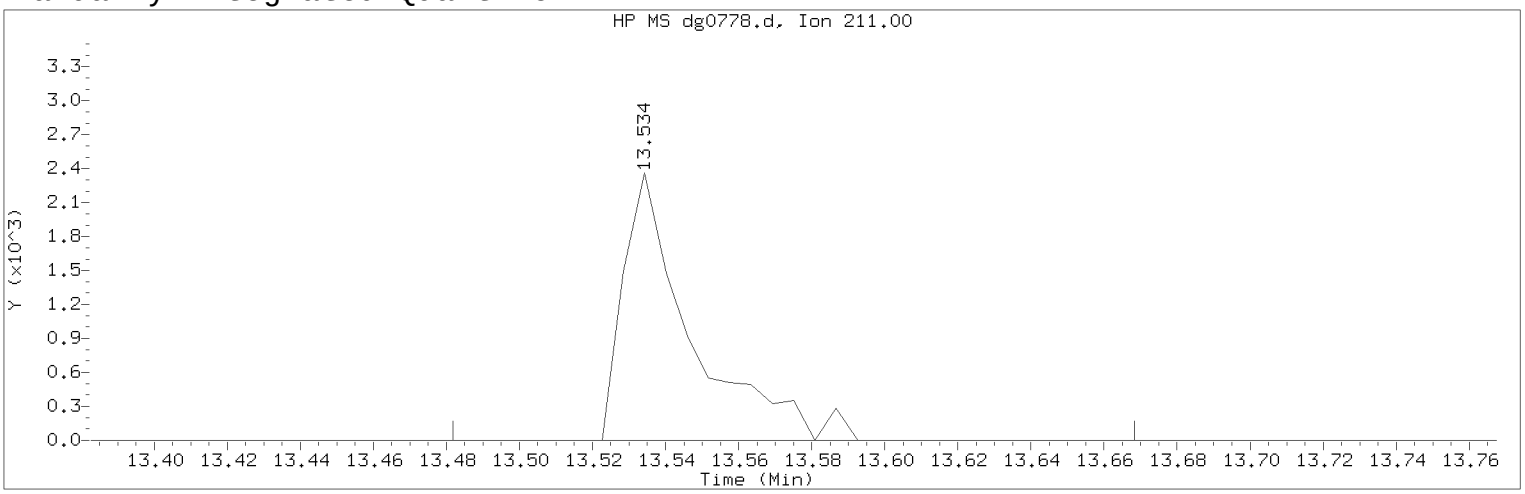
| | | | |
|---|---|---|---|
| Compound Number | : 56 | | |
| Compound Name | : Benzoic acid | | |
| Scan Number | : 1086 | | |
| Retention Time (minutes) | : 8.417 | | |
| Quant Ion | : 105.00 | | |
| Area | : 10904 | | |
| On-column Amount (ng/ul) | : 2.6410 | | |
| Integration start scan | : 1083 | Integration stop scan: | 1125 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 17:13
Date, time and analyst ID of latest file update: 26-Jul-2017 17:13 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

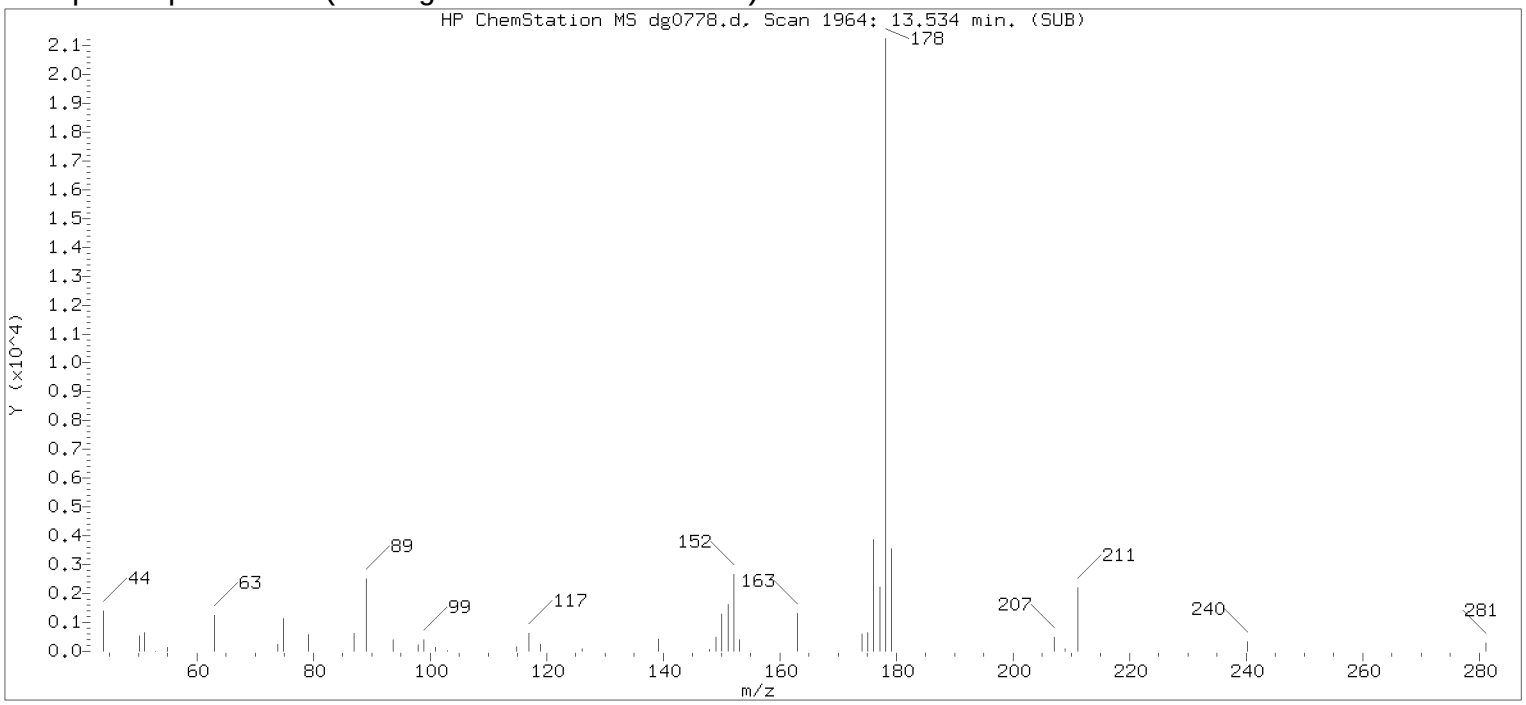
Compound Number : 154
Compound Name : Dinoseb
Scan Number : 1964
Retention Time (minutes) : 13.534
Quant Ion : 211.00
Area (flag) : 3064M
On-Column Amount (ng/ul) : 0.1095
Integration start scan : 1954 Integration stop scan: 1986
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

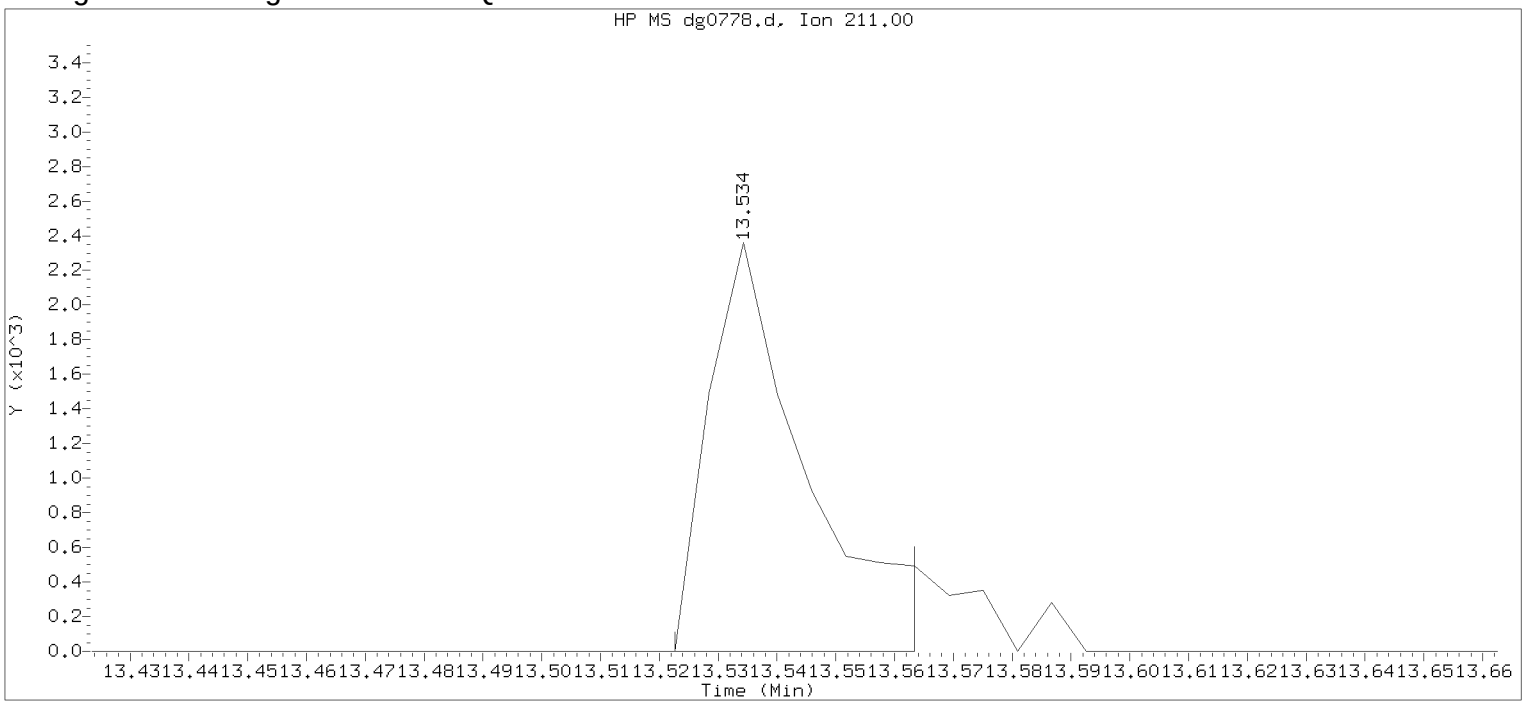
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



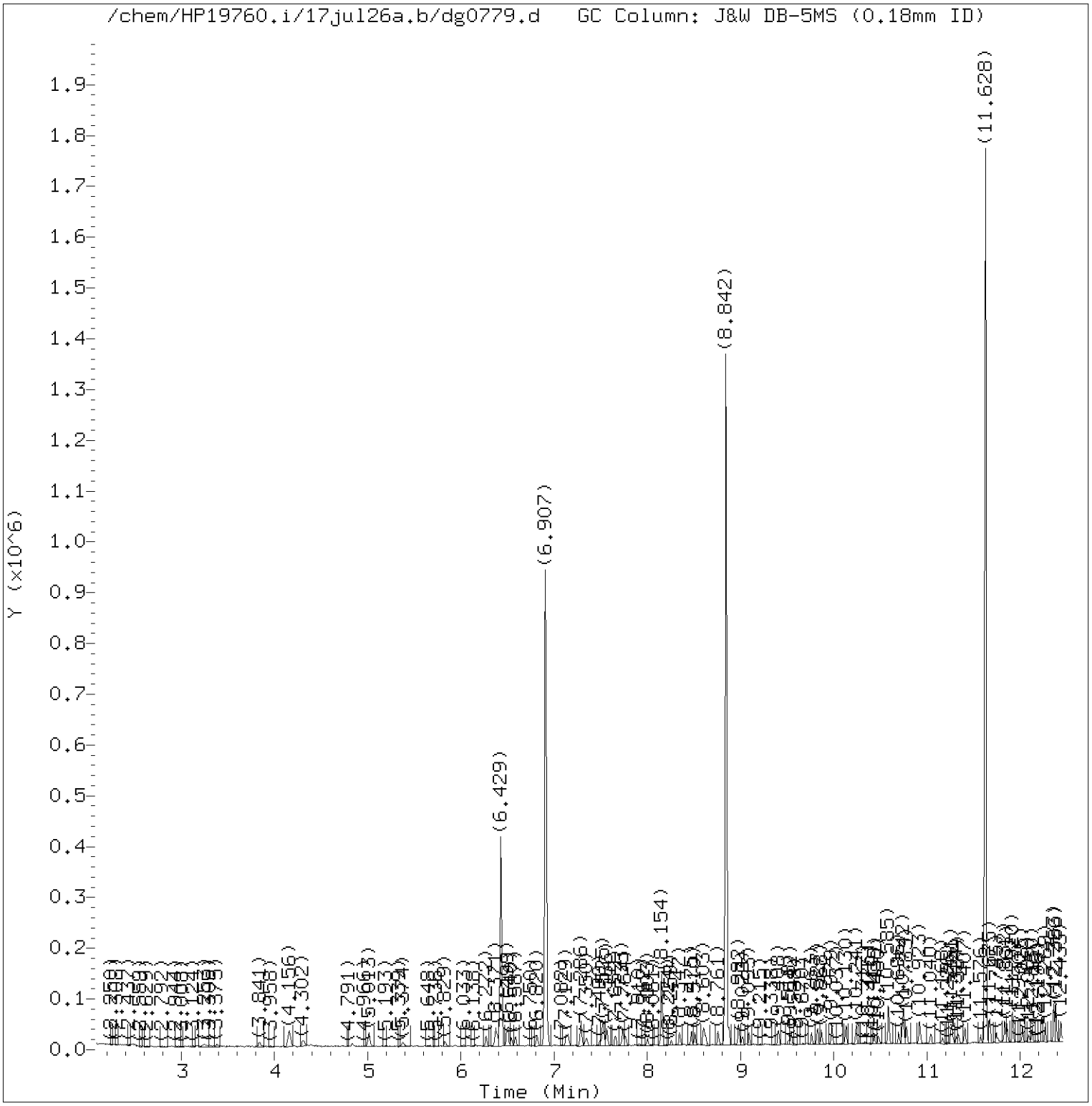

Data File: /chem/HP19760.i/17jul26a.b/dg0778.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 12:38 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: all1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.25 Lab Sample ID: rvSTD1577

| | | | |
|---|---|---|---|
| Compound Number | : 154 | | |
| Compound Name | : Dinoseb | | |
| Scan Number | : 1964 | | |
| Retention Time (minutes) | : 13.534 | | |
| Quant Ion | : 211.00 | | |
| Area | : 2644 | | |
| On-column Amount (ng/ul) | : 0.0934 | | |
| Integration start scan | : 1961 | Integration stop scan: | 1968 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340




Total Ion Chromatogram (TIC)

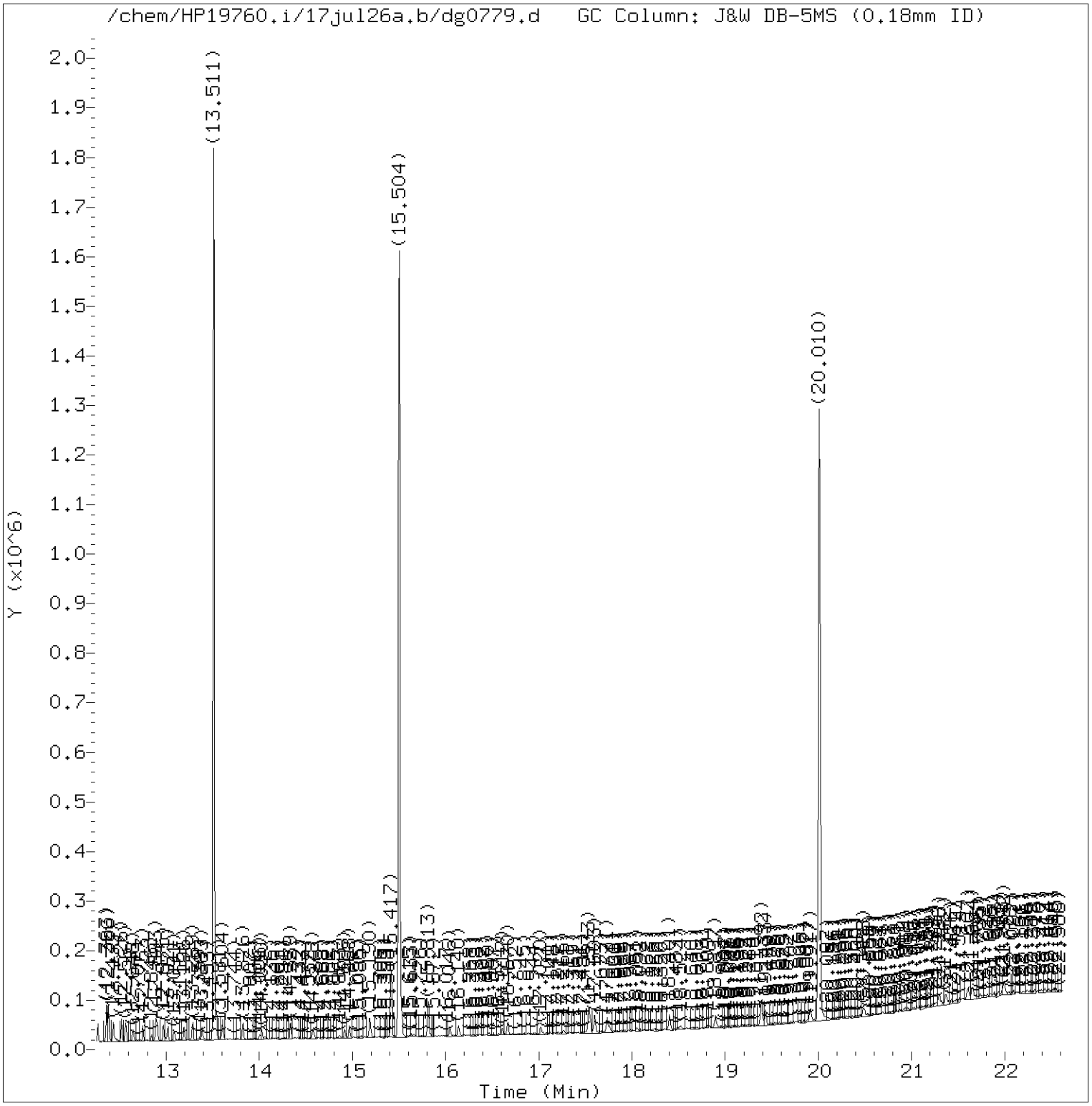
Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0779.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125  Lab Sample ID: rvMDL1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.501 | 88 | 2541M | 0.099 |
| 4) N-Nitrosodimethylamine | (1) | 3.177 | 74 | 3341M | 0.080 |
| 5) Pyridine | (1) | 3.247 | 79 | 8573M | 0.126 |
| 7) 2-Picoline | (1) | 4.302 | 93 | 7252M | 0.099 |
| 8) N-Nitrosomethylethylamine | (1) | 4.395 | 88 | 2634M | 0.088 |
| 9) Methyl methanesulfonate | (1) | 4.826 | 80 | 3030 | 0.089 |
| 11)$2-Fluorophenol | (1) | 5.013 | 112 | 12459 | 0.219 |
| 13) N-Nitrosodiethylamine | (1) | 5.374 | 102 | 3067 | 0.106 |
| 42) Total Cresols | (1) | | | 12444 | 0.222 |
| 15) Ethyl methanesulfonate | (1) | 5.829 | 109 | 3420M | 0.115 |
| 16) Benzaldehyde | (1) | 6.272 | 77 | 6220 | 0.127 |
| 17)$Phenol-d6 | (1) | 6.371 | 99 | 16272 | 0.218 |
| 18) Phenol | (1) | 6.394 | 94 | 10142 | 0.120 |
| 19) Aniline | (1) | 6.429 | 93 | 10612 | 0.107 |
| 20) a-methylstyrene | (1) | 6.499 | 118 | 6702 | 0.105 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.540 | 93 | 7693 | 0.123 |
| 23) 2-Chlorophenol | (1) | 6.587 | 128 | 6359 | 0.115 |
| 24) 1,3-Dichlorobenzene | (1) | 6.820 | 146 | 7256 | 0.118 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 191719 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.930 | 146 | 7774 | 0.125 |
| 27) Benzyl alcohol | (1) | 7.129 | 108 | 4333 | 0.107 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 6742 | 0.115 |
| 30) Indene | (1) | 7.286 | 115 | 12389 | 0.111 |
| 31) 2-Methylphenol | (1) | 7.292 | 108 | 5998 | 0.112 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.350 | 45 | 10681 | 0.127 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.350 | 45 | 10681 | 0.127 |
| 97) Isosafrole | (3) | | | 5005 | 0.113 |
| 35) N-Nitrosopyrrolidine | (1) | 7.496 | 100 | 2861 | 0.093 |
| 36) Acetophenone | (1) | 7.519 | 105 | 9323 | 0.112 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.531 | 70 | 5374 | 0.113 |
| 37) 4-Methylphenol | (1) | 7.531 | 108 | 6446 | 0.110 |
| 39) N-Nitrosomorpholine | (1) | 7.560 | 56 | 4040 | 0.104 |
| 40) o-Toluidine | (1) | 7.566 | 106 | 10639 | 0.113 |
| 43) Hexachloroethane | (1) | 7.659 | 117 | 3027 | 0.119 |
| 44)$Nitrobenzene-d5 | (2) | 7.735 | 82 | 15941 | 0.226 |
| 45) Nitrobenzene | (2) | 7.764 | 77 | 8765 | 0.124 |
| 48) N-Nitrosopiperidine | (2) | 7.997 | 114 | 2980 | 0.104 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 5163 | 0.187 |
| 50) Isophorone | (2) | 8.149 | 82 | 12971 | 0.108 |
| 51) 2-Nitrophenol | (2) | 8.259 | 139 | 2362 | 0.089 |

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.

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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.347 | 107 | 6204 | 0.104 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.475 | 198 | 2984 | 0.108 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.510 | 93 | 9435 | 0.121 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.603 | 104 | 10795 | 0.112 |
| 60) 2,4-Dichlorophenol | (2) | 8.621 | 162 | 4888 | 0.107 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.761 | 180 | 6176 | 0.119 |
| 146) Diallate trans/cis | (4) | | | 6349 | 0.116 |
| 65)*Naphthalene-d8 | (2) | 8.842 | 136 | 740931 | 5.000 |
| 67) 4-Chloroaniline | (2) | 8.976 | 127 | 7104 | 0.108 |
| 68) 2,6-Dichlorophenol | (2) | 8.982 | 162 | 4973 | 0.109 |
| 69) Hexachloropropene | (2) | 9.017 | 213 | 3680 | 0.115 |
| 71) Hexachlorobutadiene | (2) | 9.093 | 225 | 3495 | 0.119 |
| 75) Quinoline | (2) | 9.408 | 129 | 11655 | 0.112 |
| 76) Caprolactam | (2) | 9.512 | 113 | 893M | 0.061 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.542 | 84 | 5715 | 0.104 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.763 | 107 | 5092 | 0.101 |
| 82) Safrole | (2) | 9.868 | 162 | 4450 | 0.104 |
| 85) Hexachlorocyclopentadiene | (3) | 10.241 | 237 | 2910 | 0.113 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.247 | 216 | 6181 | 0.122 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 541 | 0.012 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.439 | 196 | 3132 | 0.099 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.480 | 196 | 3150 | 0.094 |
| 93)$2-Fluorobiphenyl | (3) | 10.591 | 172 | 28558 | 0.245 |
| 94) trans-Isosafrole | (3) | 10.696 | 162 | 4464 | 0.101 |
| 95) 1,1'-Biphenyl | (3) | 10.742 | 154 | 15332 | 0.123 |
| 96) 2-Chloronaphthalene | (3) | 10.748 | 162 | 12262 | 0.122 |
| 98) 1-Chloronaphthalene | (3) | 10.783 | 162 | 12009 | 0.129 |
| 100) 2-Nitroaniline | (3) | 10.923 | 138 | 2851 | 0.095 |
| 99) Diphenyl ether | (3) | 10.923 | 170 | 8016 | 0.117 |
| 104) 1,4-Naphthoquinone | (3) | 11.045 | 158 | 3902 | 0.099 |
| 105) 1,4-Dinitrobenzene | (3) | 11.174 | 168 | 1257M | 0.081 |
| 106) Dimethylphthalate | (3) | 11.261 | 163 | 13775 | 0.125 |
| 107) 1,3-Dinitrobenzene | (3) | 11.279 | 168 | 1469 | 0.085 |
| 108) 2,6-Dinitrotoluene | (3) | 11.337 | 165 | 2369 | 0.101 |
| 112) 3-Nitroaniline | (3) | 11.576 | 138 | 2186 | 0.085 |
| 113)*Acenaphthene-d10 | (3) | 11.628 | 164 | 403325 | 5.000 |
| 115) 2,4-Dinitrophenol | (3) | 11.745 | 184 | 3687 | 0.246 |
| 116) 4-Nitrophenol | (3) | 11.838 | 109 | 6569 | 0.334 |
| 117) Pentachlorobenzene | (3) | 11.861 | 250 | 5663 | 0.134 |
| 119) Dibenzofuran | (3) | 11.920 | 168 | 16393 | 0.121 |

M = Compound was manually integrated.
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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0779.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125  Lab Sample ID: rvMDL1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 118) 2,4-Dinitrotoluene | (3) | 11.920 | 165 | 2794 | 0.086 |
| 121) 1-Naphthylamine | (3) | 12.025 | 143 | 10043 | 0.097 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.089 | 232 | 2227 | 0.088 |
| 123) 2-Naphthylamine | (3) | 12.130 | 143 | 9927 | 0.100 |
| 124) Diethylphthalate | (3) | 12.269 | 149 | 11866 | 0.111 |
| 125) Thionazin | (3) | 12.369 | 107 | 2206M | 0.103 |
| 128) 5-Nitro-o-toluidine | (3) | 12.386 | 152 | 3261 | 0.106 |
| 129) 4-Nitroaniline | (3) | 12.386 | 138 | 2177 | 0.083 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.386 | 204 | 6227 | 0.120 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.433 | 198 | 5139 | 0.278 |
| 131) N-Nitrosodiphenylamine | (4) | 12.526 | 169 | 10318 | 0.118 |
| 132) NDPA as diphenylamine | (4) | 12.526 | 169 | 10318 | 0.118 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.567 | 77 | 14379 | 0.116 |
| 135)$2,4,6-Tribromophenol | (3) | 12.648 | 330 | 2144 | 0.161 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.753 | 97 | 2343 | 0.115 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.846 | 213 | 961 | 0.083 |
| 140) Diallate (peak 1) | (4) | 12.893 | 86 | 5626 | 0.100 |
| 141) Phorate | (4) | 12.899 | 75 | 8048 | 0.104 |
| 142) Phenacetin | (4) | 12.911 | 108 | 4738 | 0.083 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.975 | 248 | 3242 | 0.115 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 723 | 0.016 |
| 147) Dimethoate | (4) | 13.091 | 87 | 4507 | 0.093 |
| 148) Atrazine | (4) | 13.196 | 200 | 3037 | 0.108 |
| 149) Pentachlorophenol | (4) | 13.278 | 266 | 632 | 0.035 |
| 151) Pentachloronitrobenzene | (4) | 13.284 | 237 | 1359 | 0.100 |
| 150) 4-Aminobiphenyl | (4) | 13.289 | 169 | 6037 | 0.091 |
| 152) Pronamide | (4) | 13.383 | 173 | 4685 | 0.097 |
| 153)*Phenanthrene-d10 | (4) | 13.511 | 188 | 716674 | 5.000 |
| 154) Dinoseb | (4) | 13.534 | 211 | 766M | 0.027 |
| 163) Carbazole | (4) | 13.826 | 167 | 15390 | 0.108 |
| 164) Methyl parathion | (4) | 14.030 | 109 | 3083 | 0.080 |
| 165) Di-n-butylphthalate | (4) | 14.339 | 149 | 18265 | 0.104 |
| 167) Parathion | (4) | 14.572 | 109 | 1980 | 0.083 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.583 | 190 | 771 | 0.042 |
| 169) Octachlorostyrene | (4) | 14.916 | 308 | 1105 | 0.096 |
| 171) Isodrin | (4) | 14.968 | 193 | 2848 | 0.153 |
| 174) Benzidine | (5) | 15.417 | 184 | 60161 | 0.550 |
| 175)*Pyrene-d10 | (5) | 15.504 | 212 | 830607 | 5.000 |
| 179)$Terphenyl-d14 | (5) | 15.813 | 244 | 28326 | 0.246 |
| 182) p-Dimethylaminoazobenzene | (5) | 16.052 | 225 | 1874M | 0.074 |

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on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 185) Chlorobenzilate | (5) | 16.140 | 139 | 4613 | 0.086 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.606 | 212 | 7069 | 0.066 |
| 188) Butylbenzylphthalate | (5) | 16.670 | 149 | 7593 | 0.098 |
| 191) 2-Acetylaminofluorene | (5) | 17.026 | 181 | 4217 | 0.061 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.533 | 252 | 5856 | 0.094 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.556 | 231 | 2889 | 0.088 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.731 | 149 | 9551 | 0.085 |
| 203) 6-Methylchrysene | (5) | 18.401 | 242 | 11999 | 0.108 |
| 205) Di-n-octylphthalate | (6) | 18.897 | 149 | 15520 | 0.085 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.392 | 256 | 5923 | 0.093 |
| 213)*Perylene-d12 | (6) | 20.010 | 264 | 617503 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.488 | 268 | 6026 | 0.100 |
| 217) Dibenz(a,h)acridine | (6) | 21.298 | 279 | 11037 | 0.097 |
| 218) Dibenz(a,j)acridine | (6) | 21.368 | 279 | 10309 | 0.088 |

* = Compound is an internal standard.

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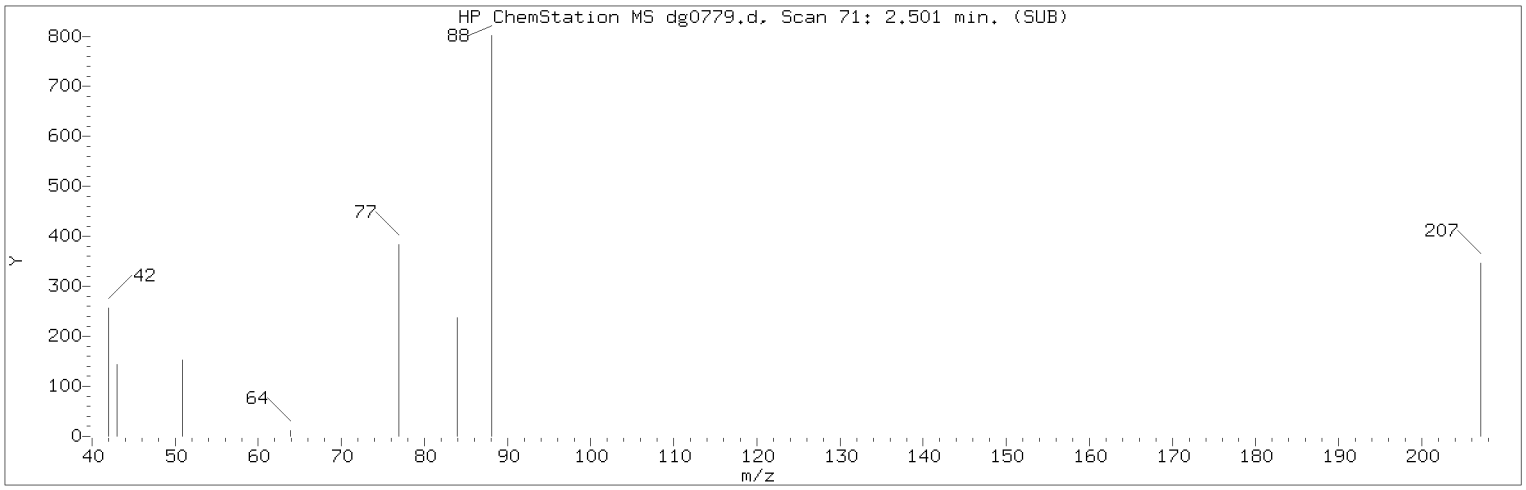
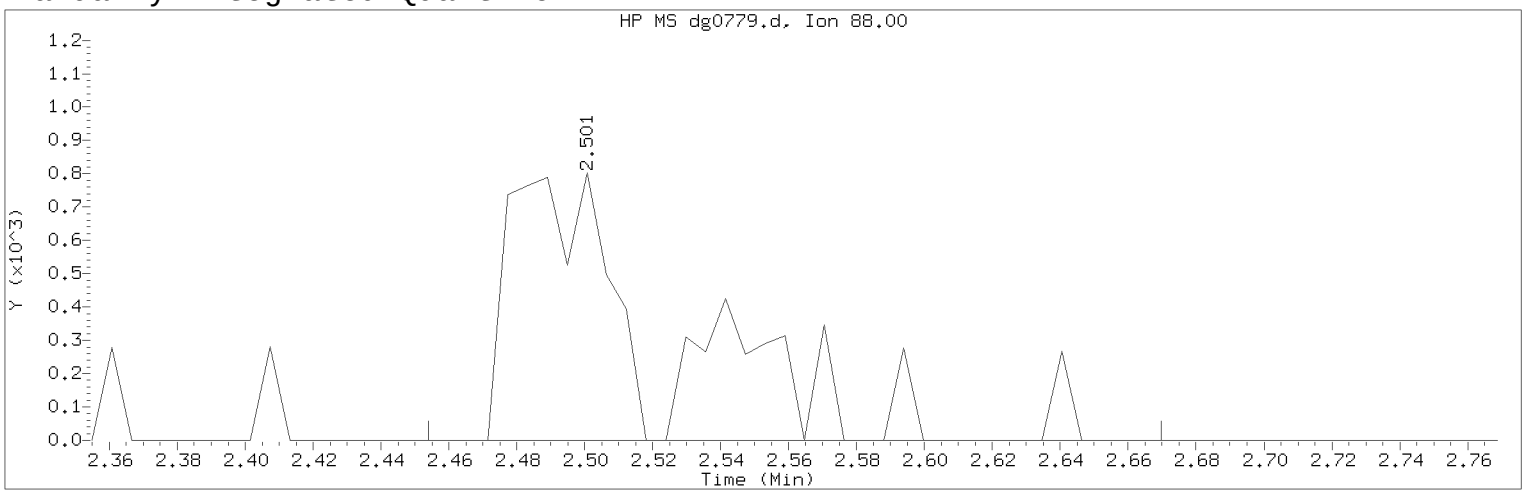
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

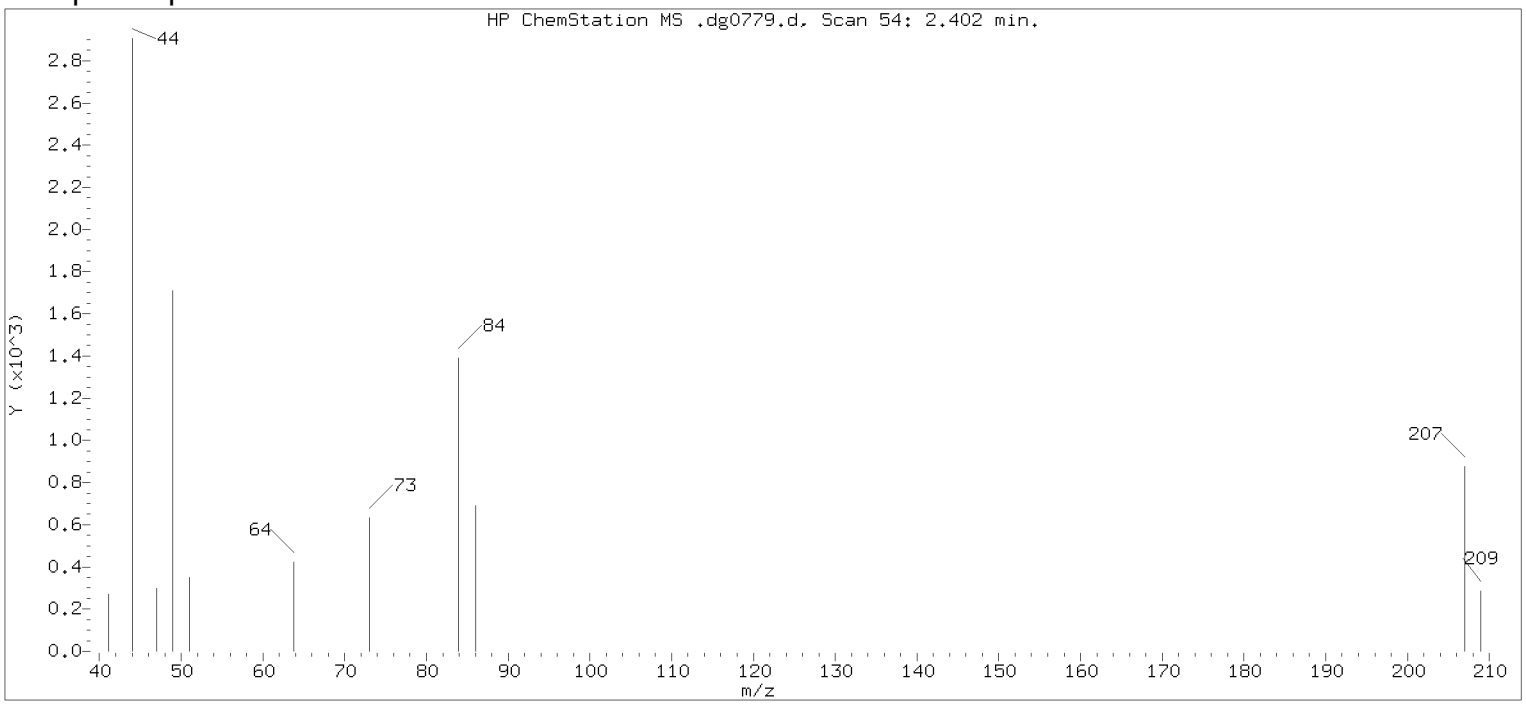
Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 71
Retention Time (minutes) : 2.501
Quant Ion : 88.00
Area (flag) : 2541M
On-Column Amount (ng/ul) : 0.0985
Integration start scan : 62 Integration stop scan: 99
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

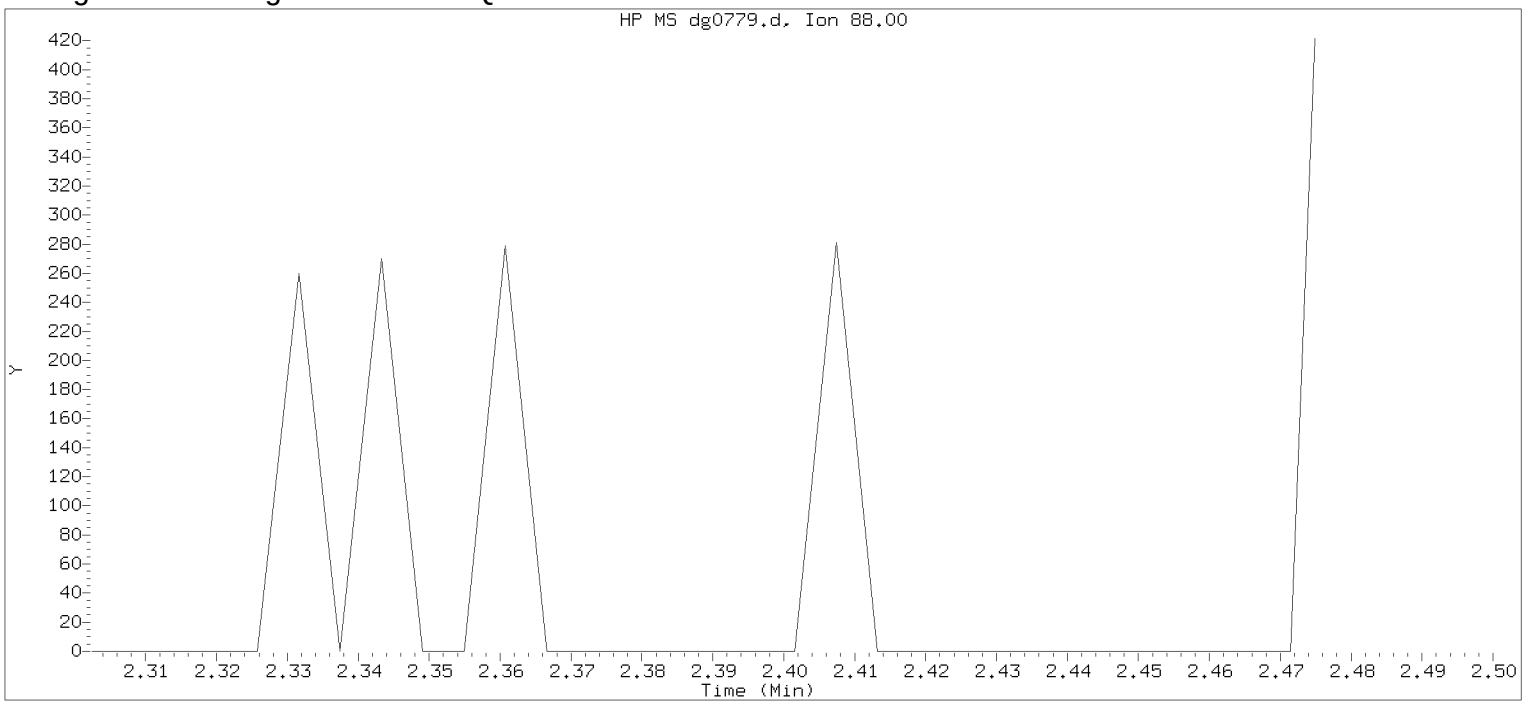
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

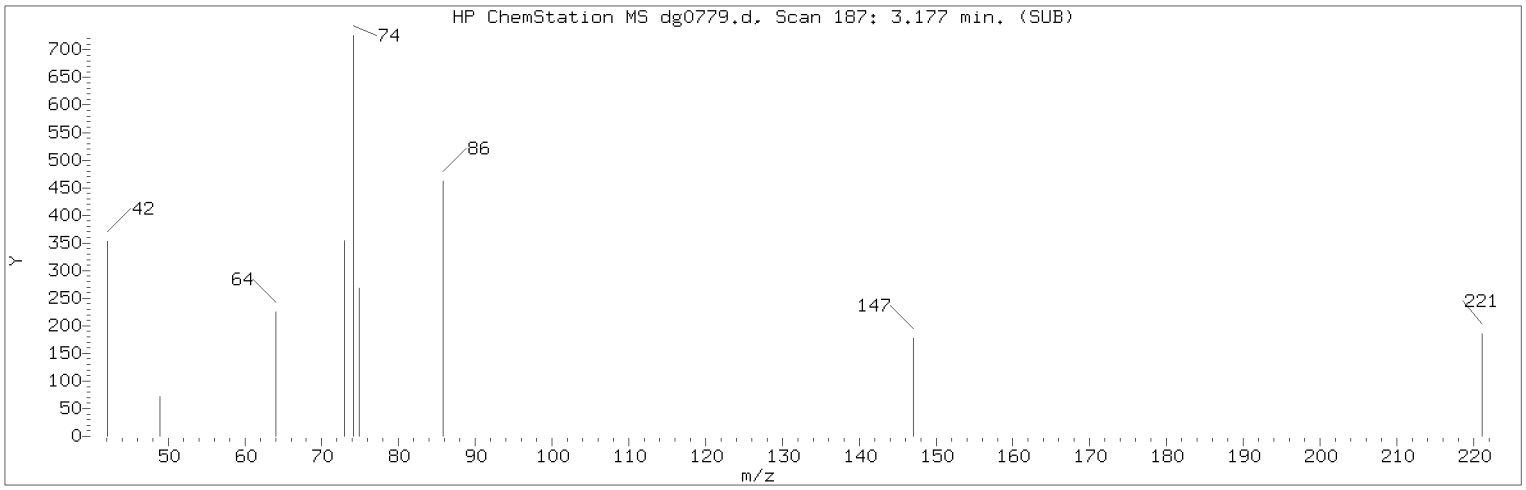
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

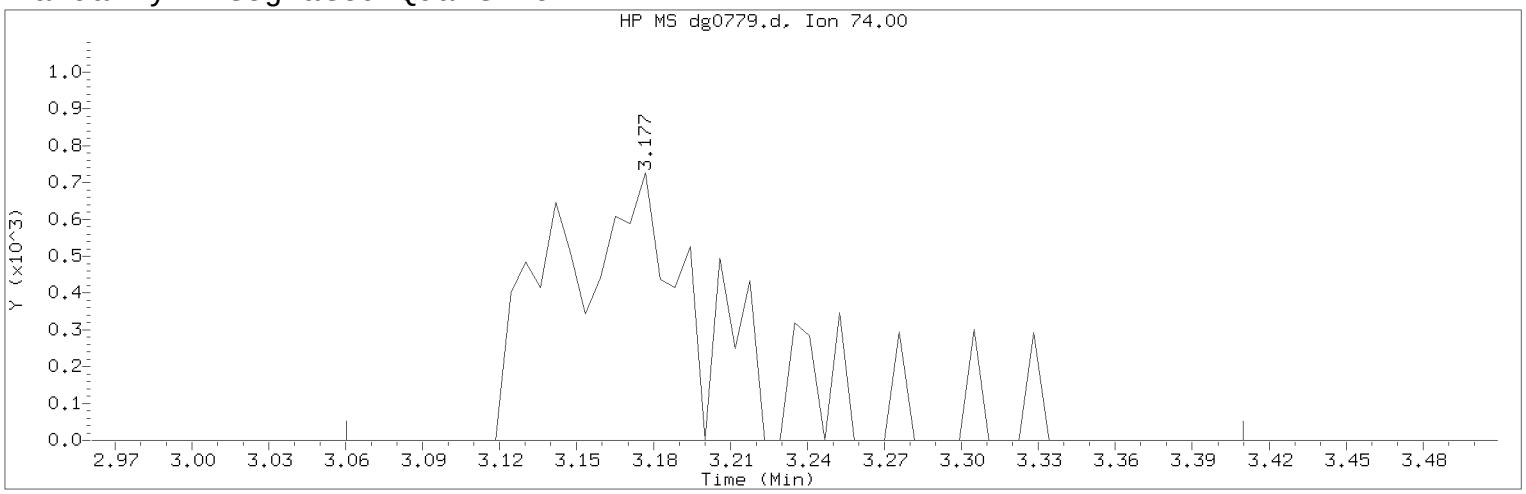
Compound Number : 1
Compound Name : 1,4-Dioxane
Expected RT (minutes) : 2.402
Quant Ion : 88.00

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRI1 emp0340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

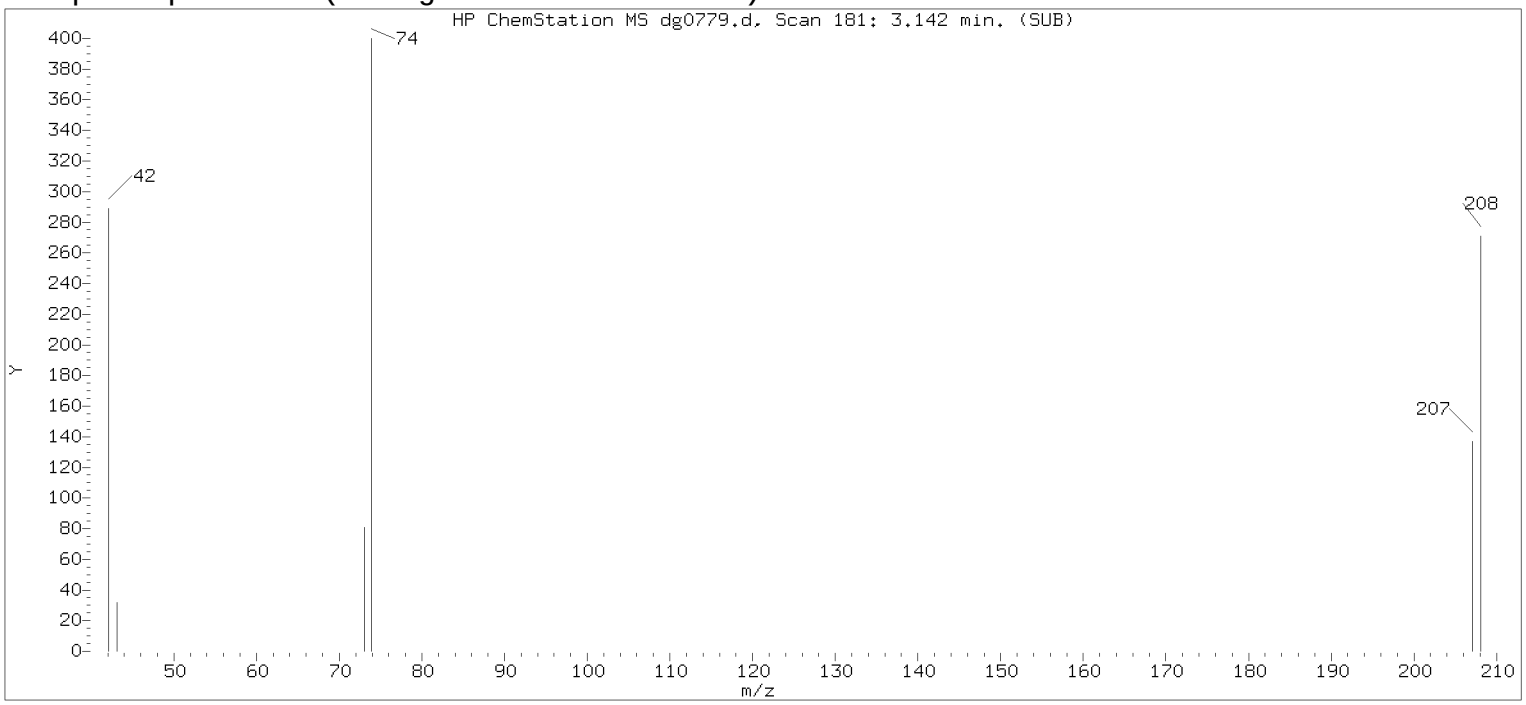
Compound Number : 4
Compound Name : N-Nitrosodimethylamine
Scan Number : 187
Retention Time (minutes) : 3.177
Quant Ion : 74.00
Area (flag) : 3341M
On-Column Amount (ng/ul) : 0.0795
Integration start scan : 166 Integration stop scan: 226
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

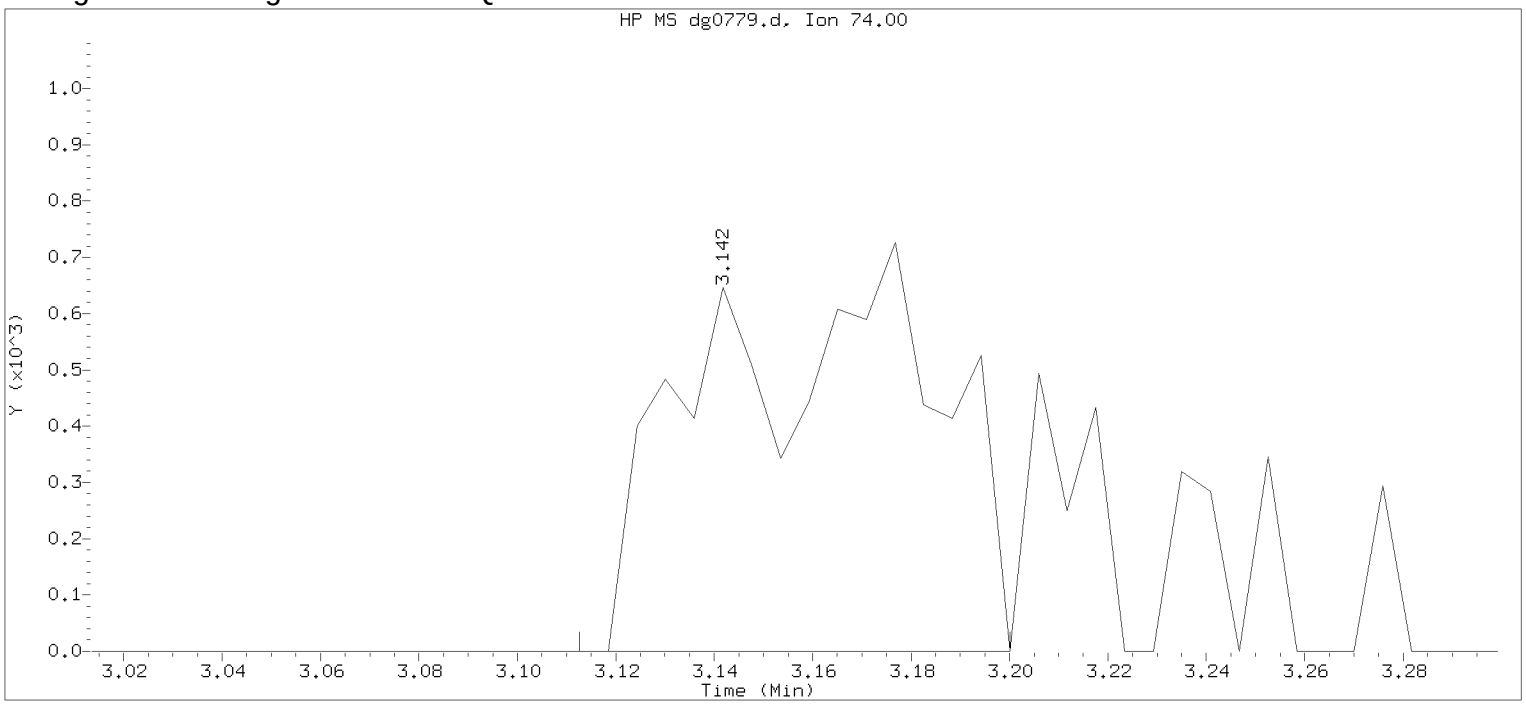
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

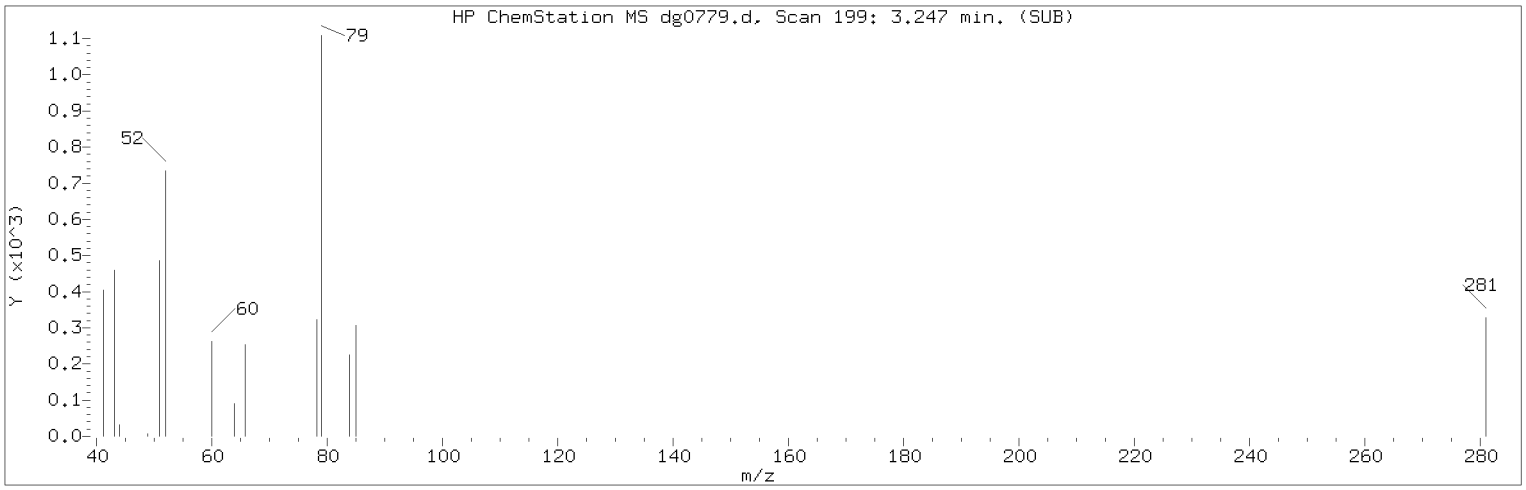
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

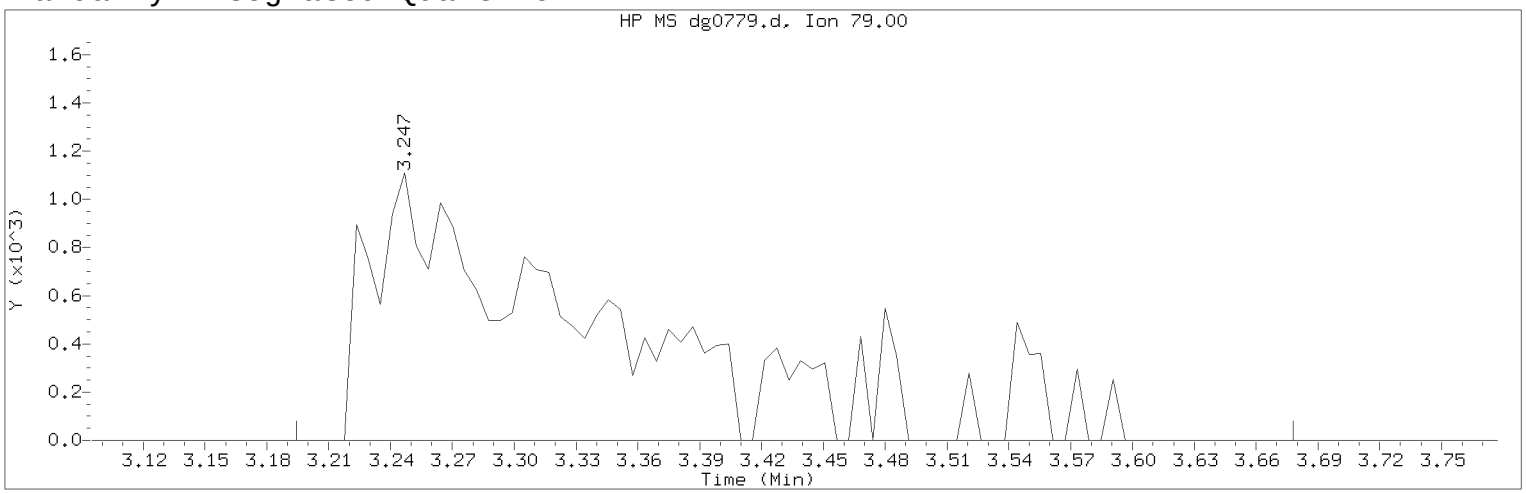
| | | | |
|---|---|---|---|
| Compound Number | : 4 | | |
| Compound Name | : N-Nitrosodimethylamine | | |
| Scan Number | : 181 | | |
| Retention Time (minutes) | : 3.142 | | |
| Quant Ion | : 74.00 | | |
| Area | : 2287 | | |
| On-column Amount (ng/ul) | : 0.0556 | | |
| Integration start scan | : 175 | Integration stop scan: | 190 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

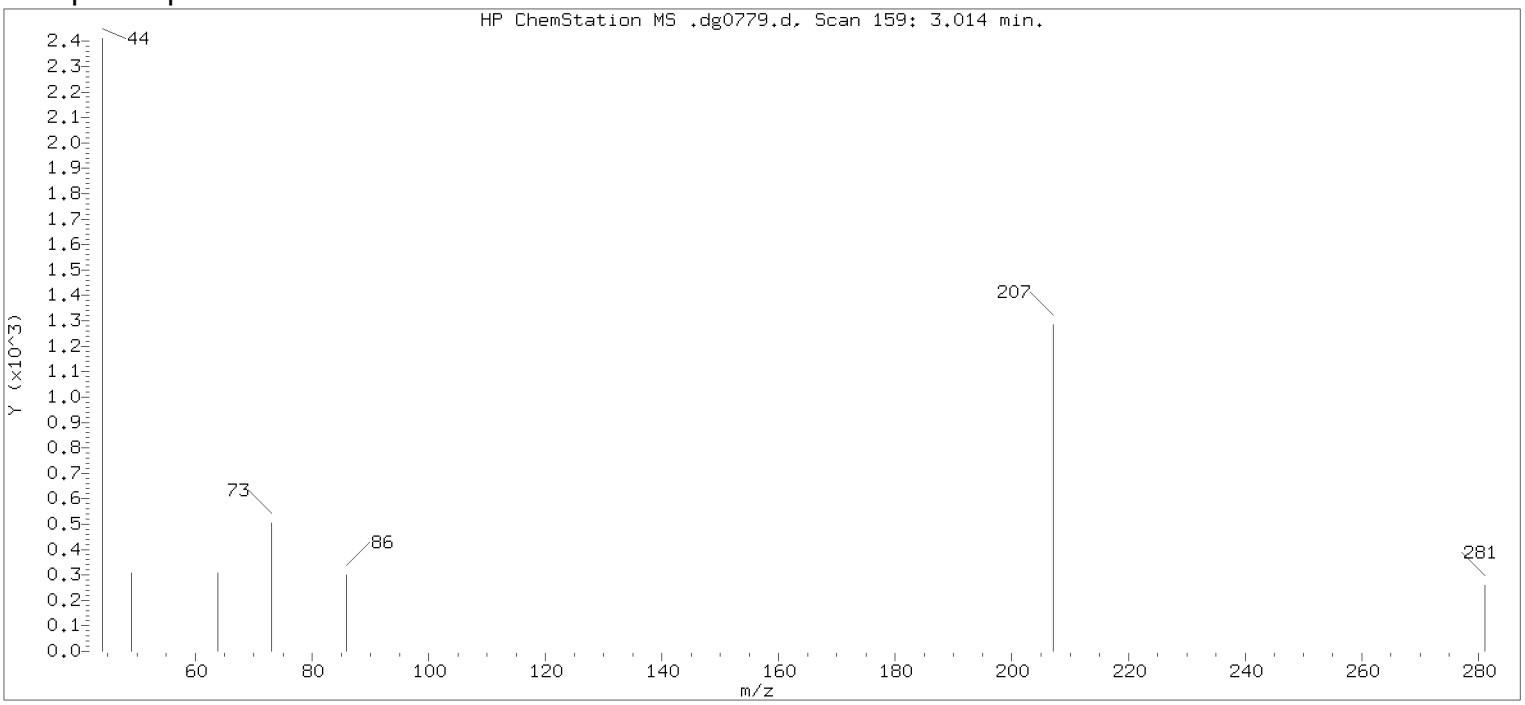
Compound Number : 5
Compound Name : Pyridine
Scan Number : 199
Retention Time (minutes) : 3.247
Quant Ion : 79.00
Area (flag) : 8573M
On-Column Amount (ng/ul) : 0.1260
Integration start scan : 189 Integration stop scan: 272
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

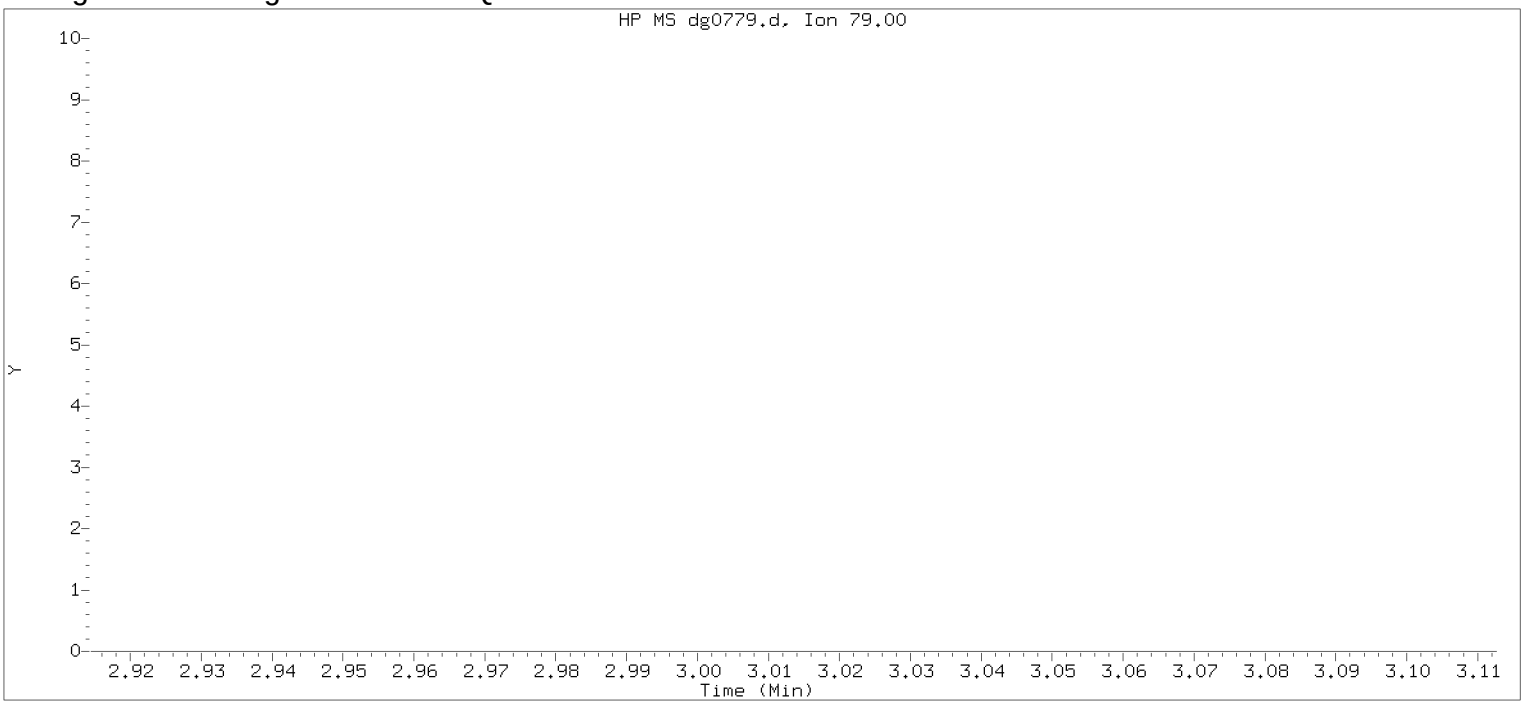
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

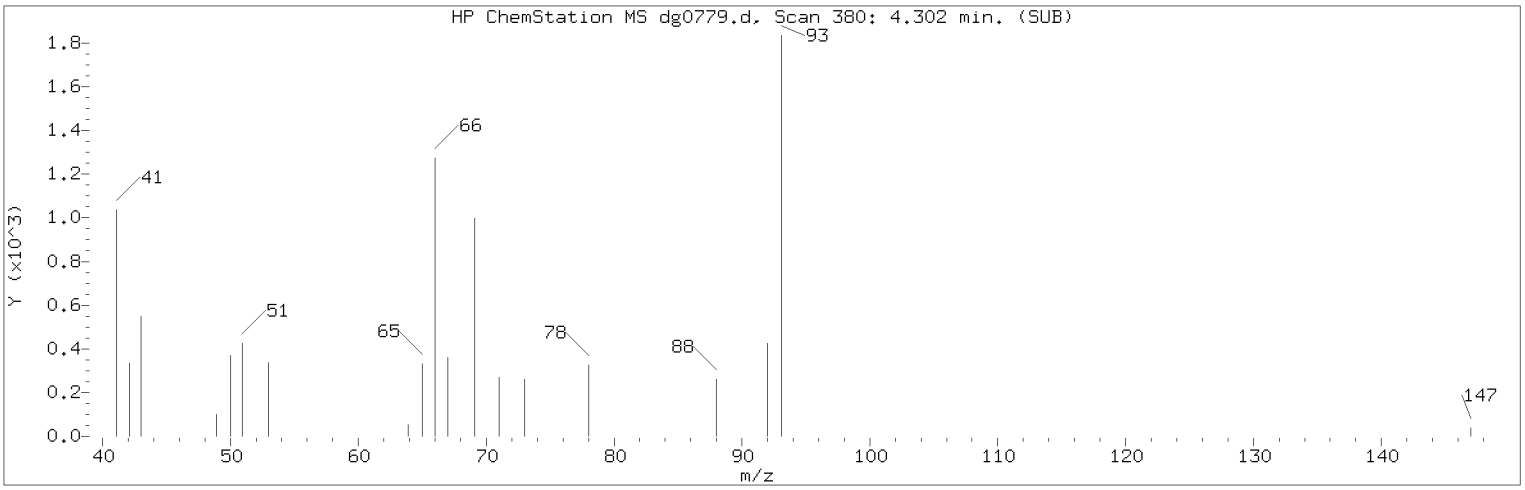
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

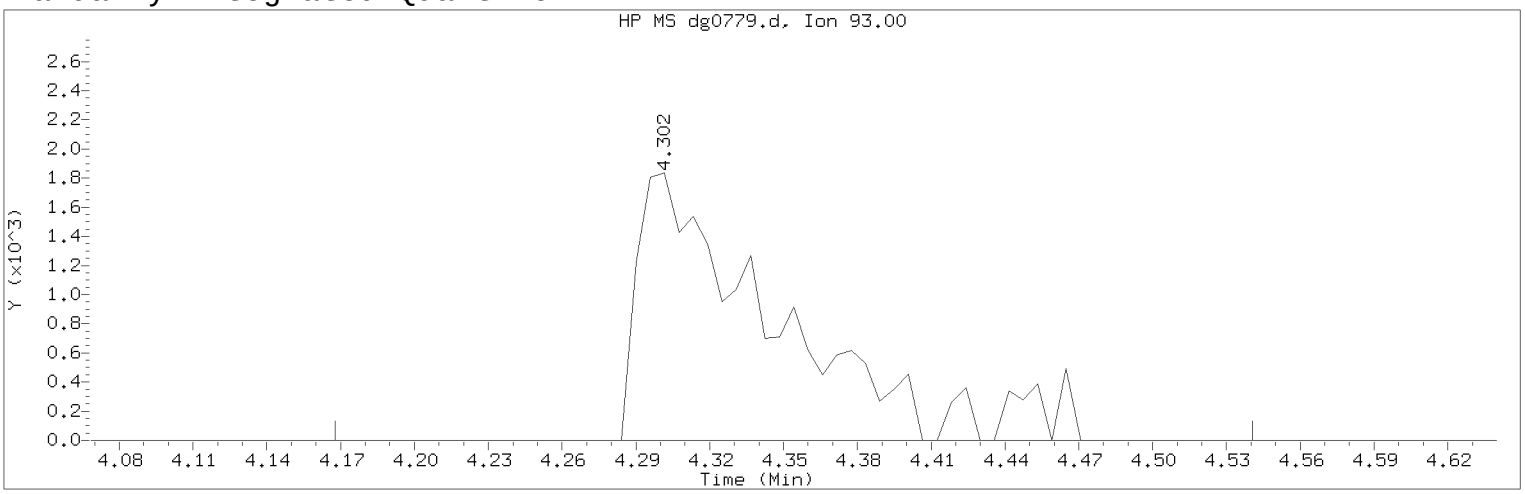
Compound Number : 5
Compound Name : Pyridine
Expected RT (minutes) : 3.014
Quant Ion : 79.00

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

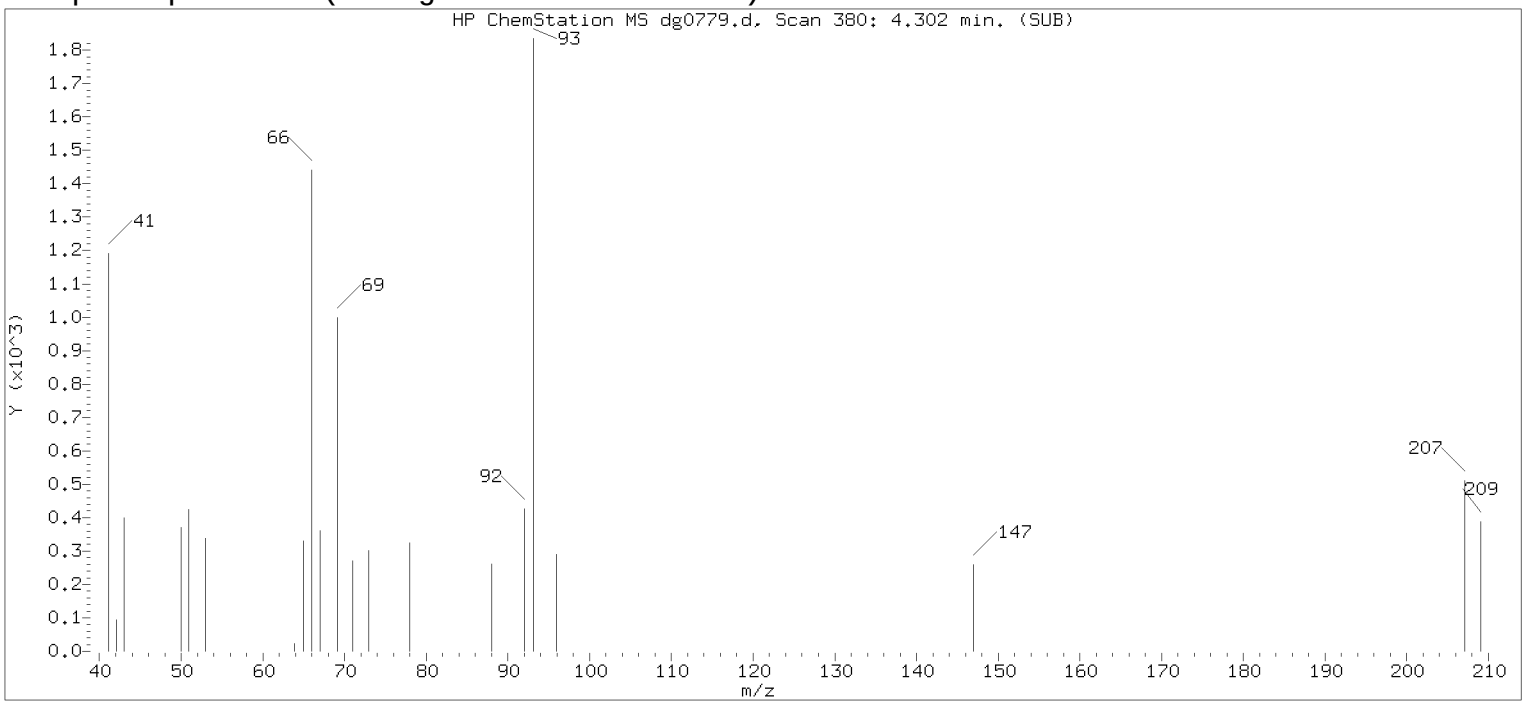
| | | | |
|---|---|---|---|
| Compound Number | : 7 | | |
| Compound Name | : 2-Picoline | | |
| Scan Number | : 380 | | |
| Retention Time (minutes) | : 4.302 | | |
| Quant Ion | : 93.00 | | |
| Area (flag) | : 7252M | | |
| On-Column Amount (ng/ul) | : 0.0995 | | |
| Integration start scan | : 356 | Integration stop scan: | 420 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Reason for manual integration: improper integration

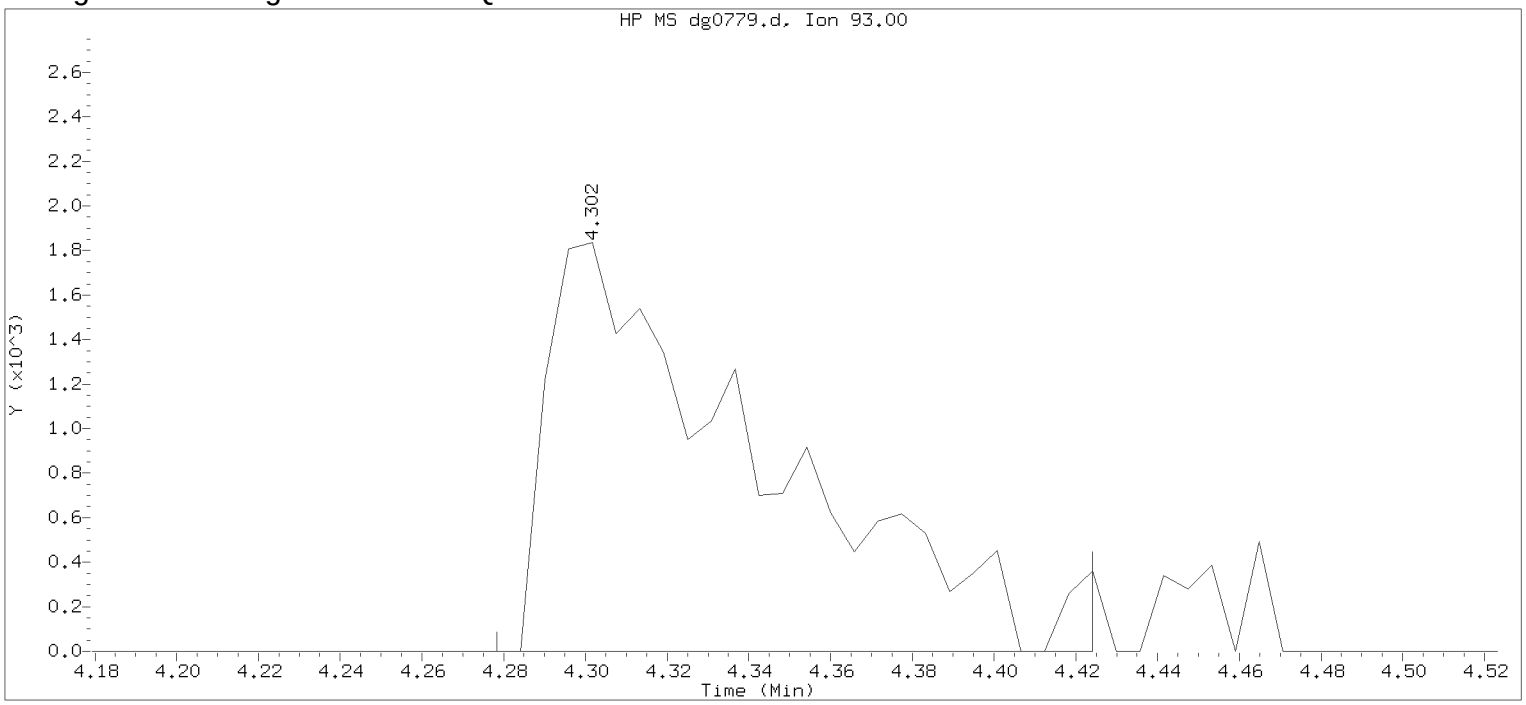
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

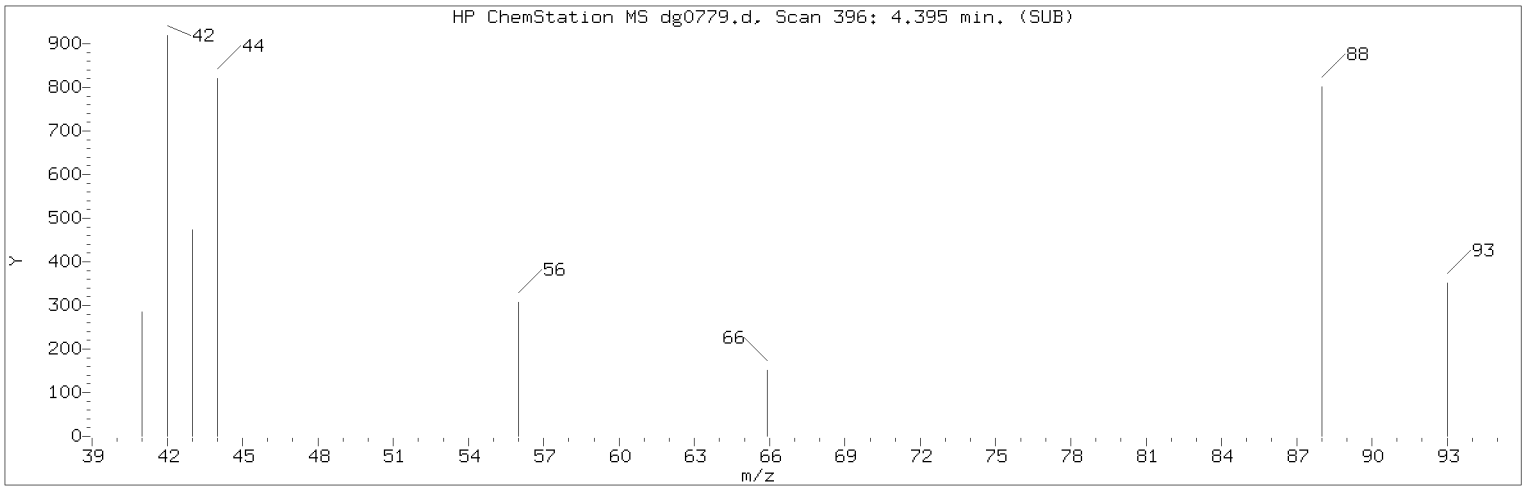
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

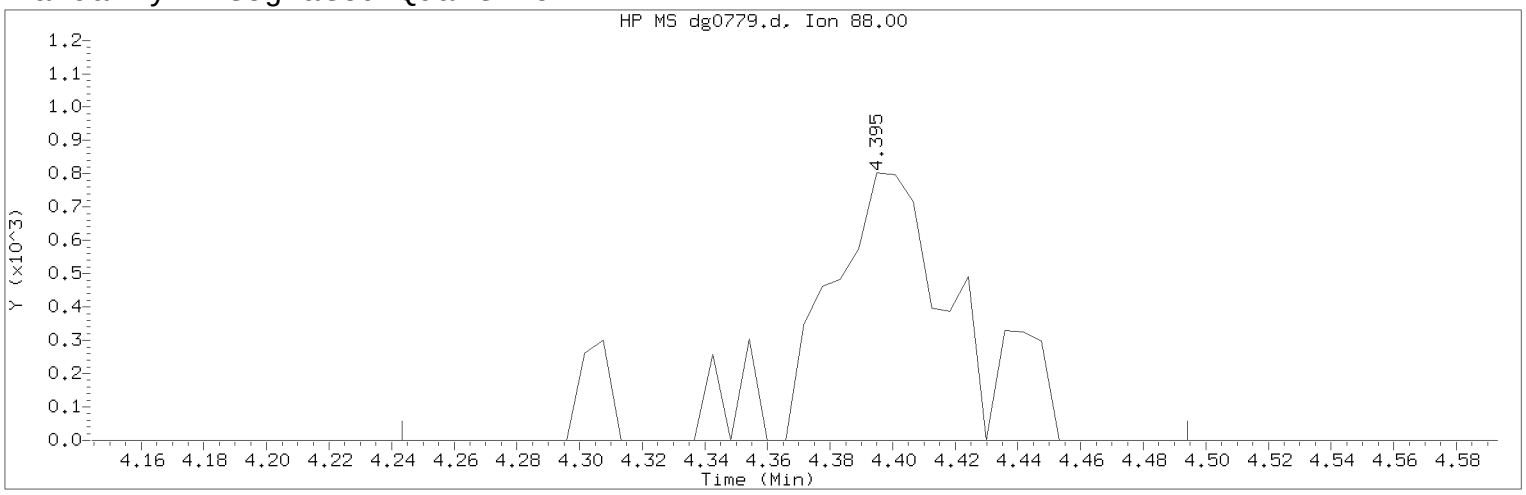
| | | | |
|---|---|---|---|
| Compound Number | : 7 | | |
| Compound Name | : 2-Picoline | | |
| Scan Number | : 380 | | |
| Retention Time (minutes) | : 4.302 | | |
| Quant Ion | : 93.00 | | |
| Area | : 6666 | | |
| On-column Amount (ng/ul) | : 0.0918 | | |
| Integration start scan | : 375 | Integration stop scan: | 400 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

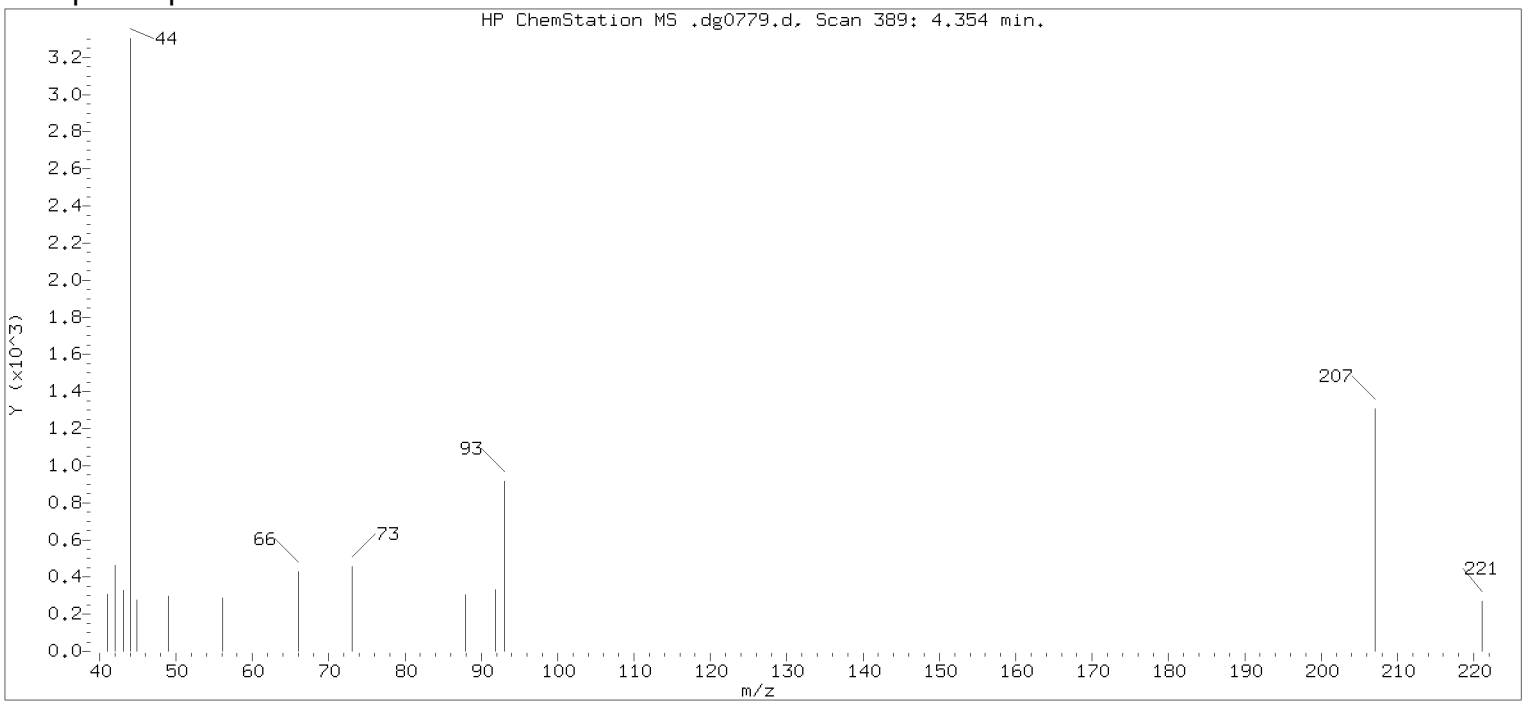
Compound Number : 8
Compound Name : N-Nitrosomethylethylamine
Scan Number : 396
Retention Time (minutes) : 4.395
Quant Ion : 88.00
Area (flag) : 2634M
On-Column Amount (ng/ul) : 0.0882
Integration start scan : 369 Integration stop scan: 412
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

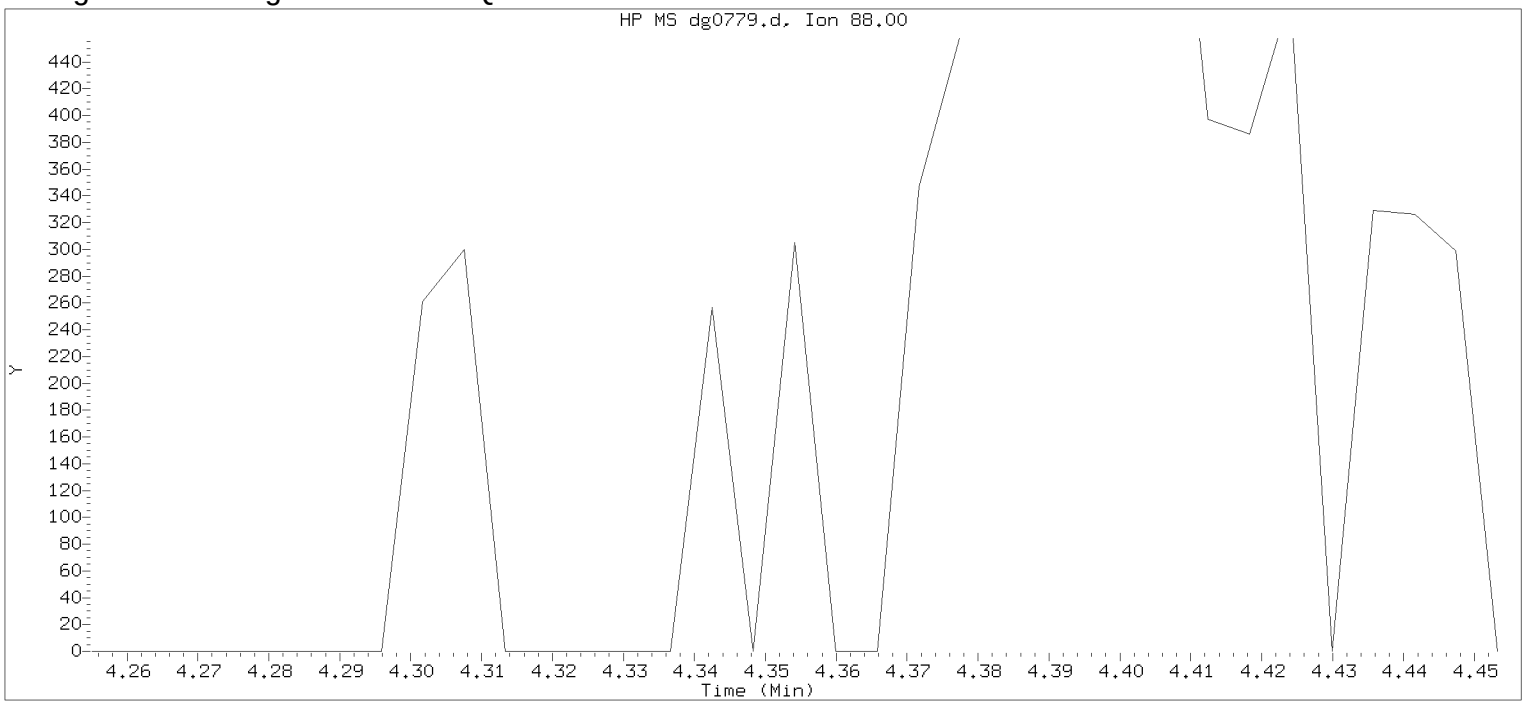
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

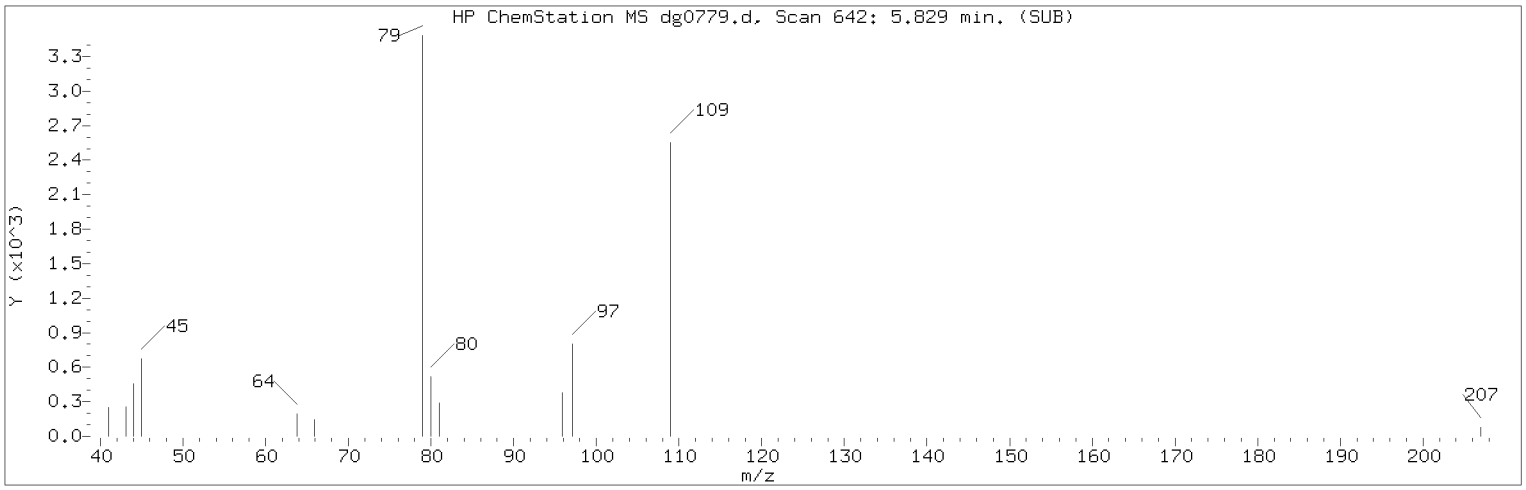
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

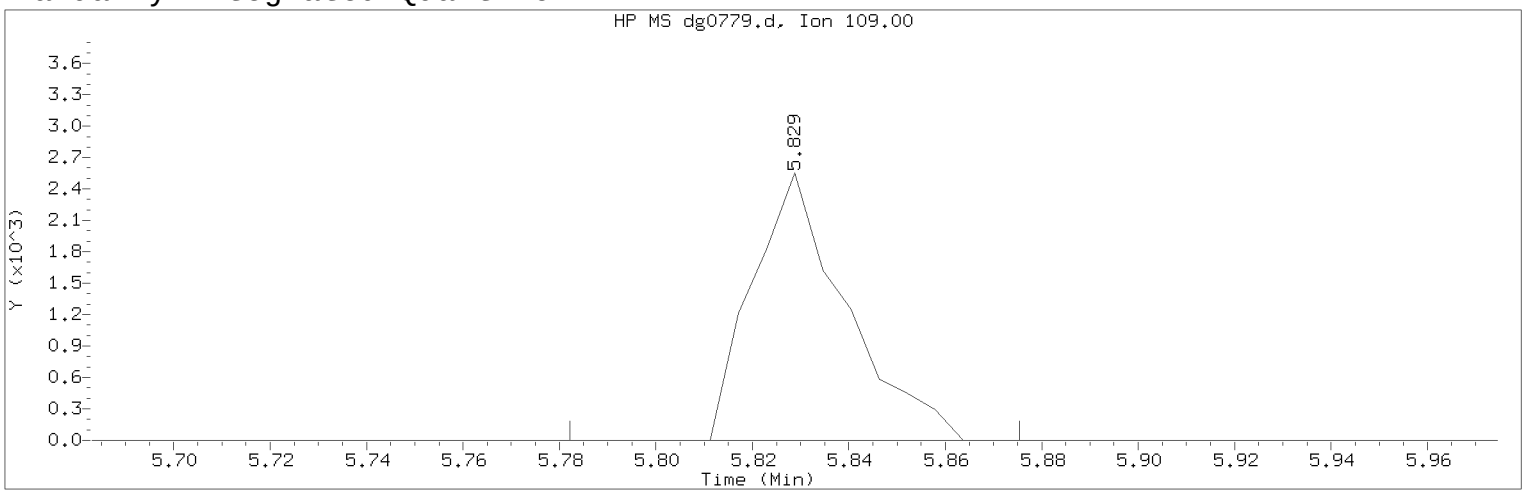
Compound Number : 8
Compound Name : N-Nitrosomethylethylamine
Expected RT (minutes) : 4.354
Quant Ion : 88.00

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRL1 emb0378

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

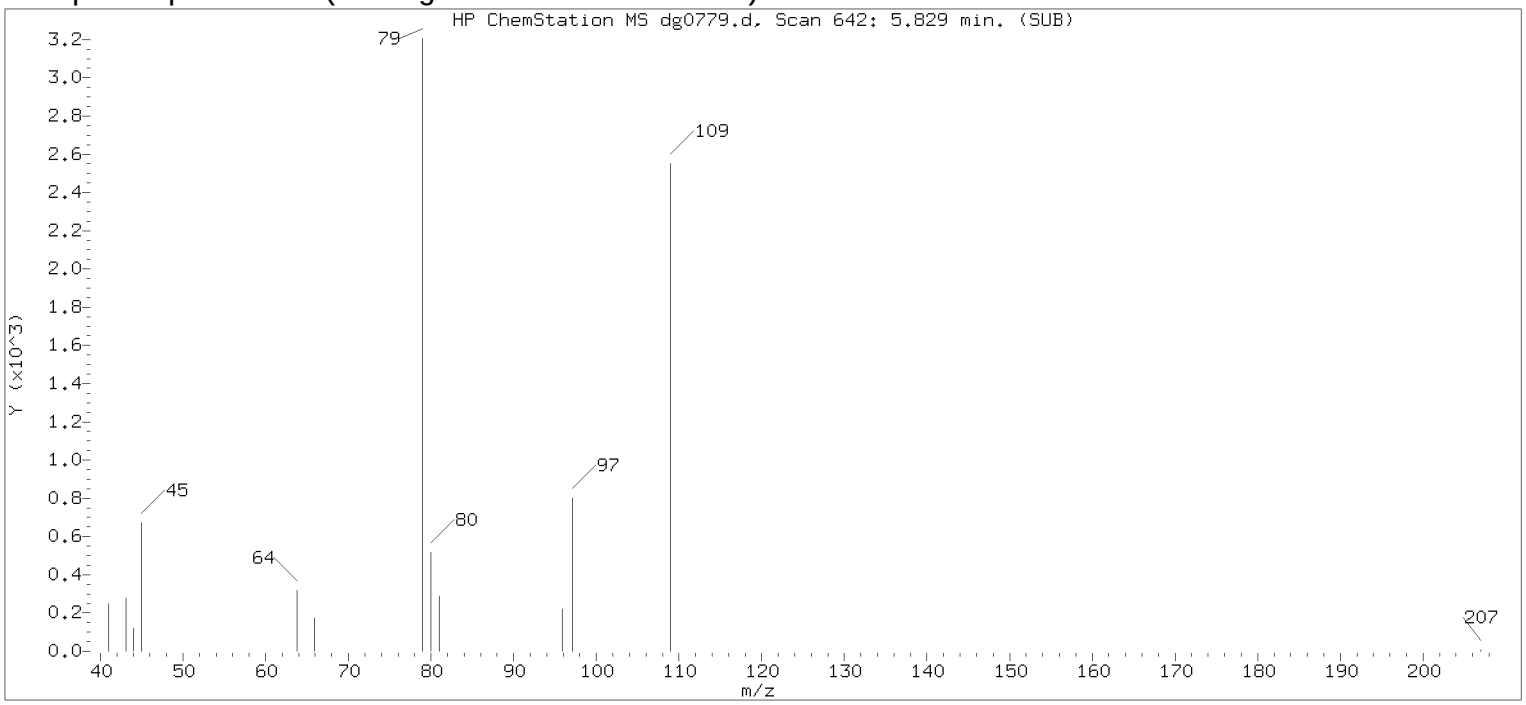
Compound Number : 15
Compound Name : Ethyl methanesulfonate
Scan Number : 642
Retention Time (minutes) : 5.829
Quant Ion : 109.00
Area (flag) : 3420M
On-Column Amount (ng/ul) : 0.1151
Integration start scan : 633 Integration stop scan: 649
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

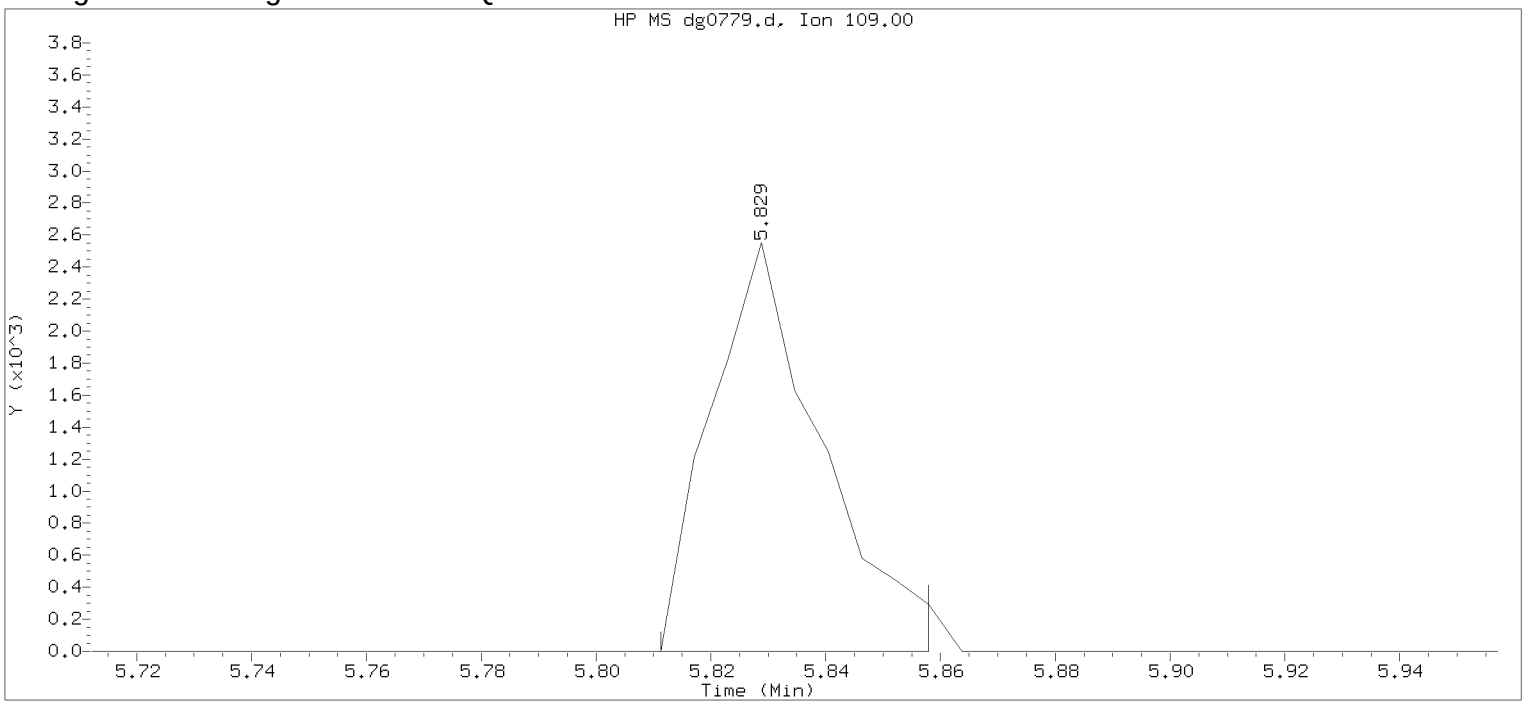
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

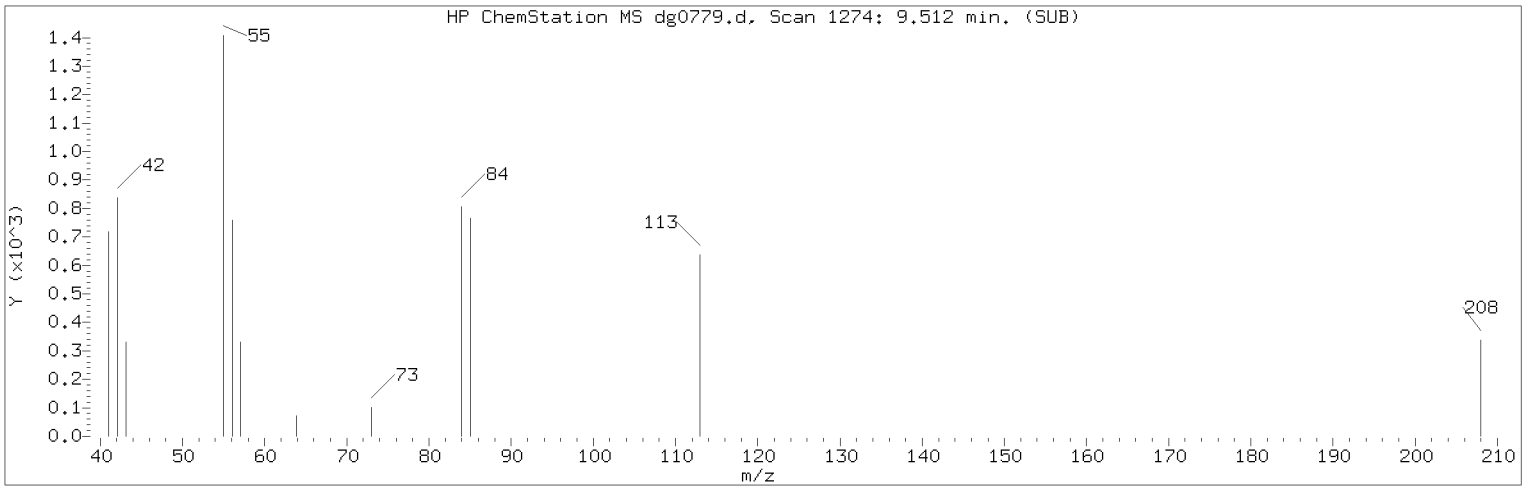
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

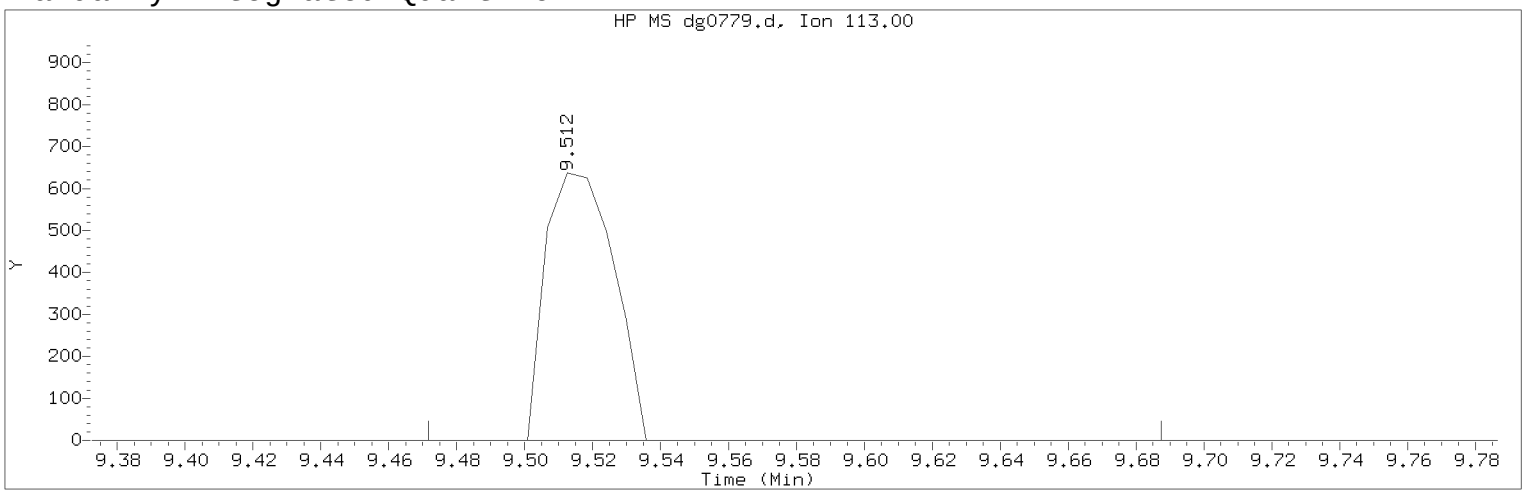
| | | | |
|---|---|---|---|
| Compound Number | : 15 | | |
| Compound Name | : Ethyl methanesulfonate | | |
| Scan Number | : 642 | | |
| Retention Time (minutes) | : 5.829 | | |
| Quant Ion | : 109.00 | | |
| Area | : 3369 | | |
| On-column Amount (ng/ul) | : 0.1126 | | |
| Integration start scan | : 638 | Integration stop scan: | 646 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

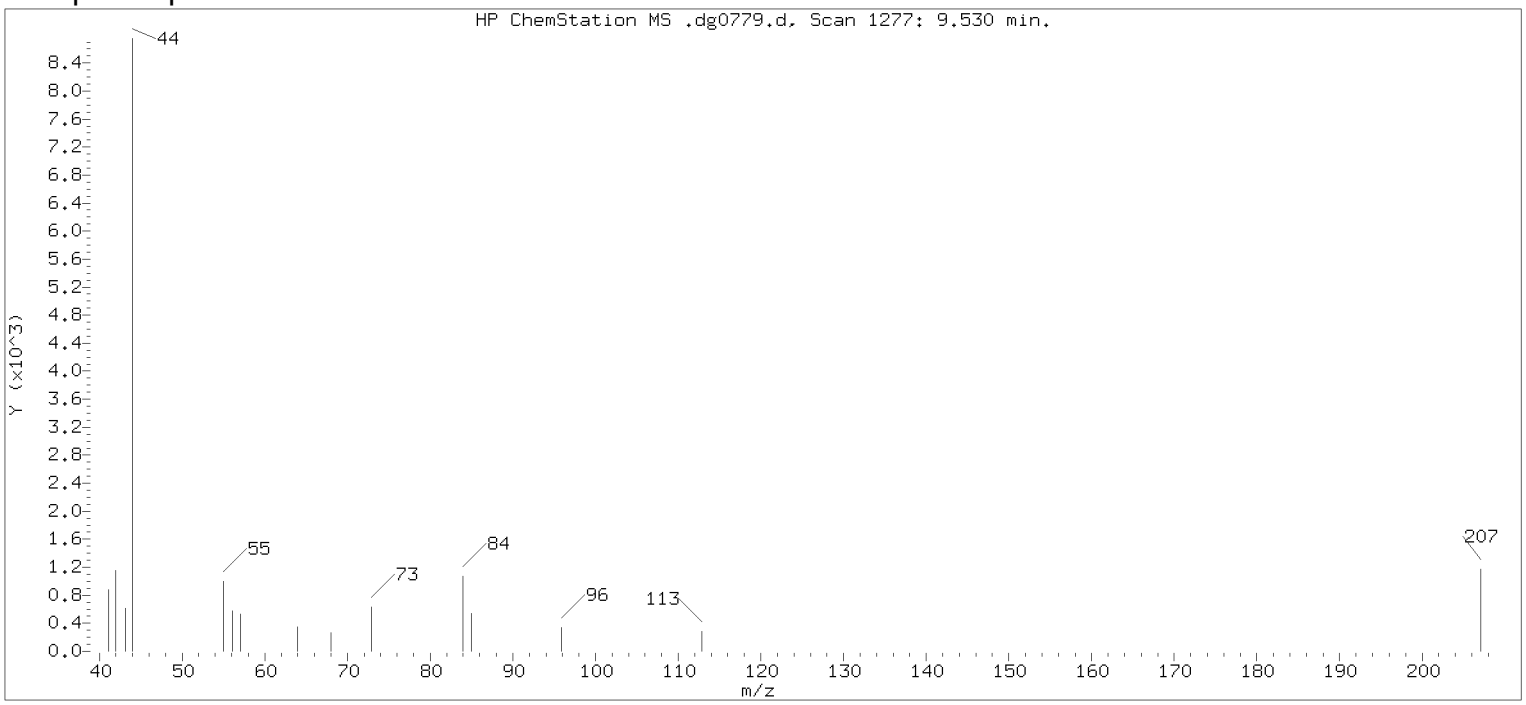
Compound Number : 76
Compound Name : Caprolactam
Scan Number : 1274
Retention Time (minutes) : 9.512
Quant Ion : 113.00
Area (flag) : 893M
On-Column Amount (ng/ul) : 0.0613
Integration start scan : 1266 Integration stop scan: 1303
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

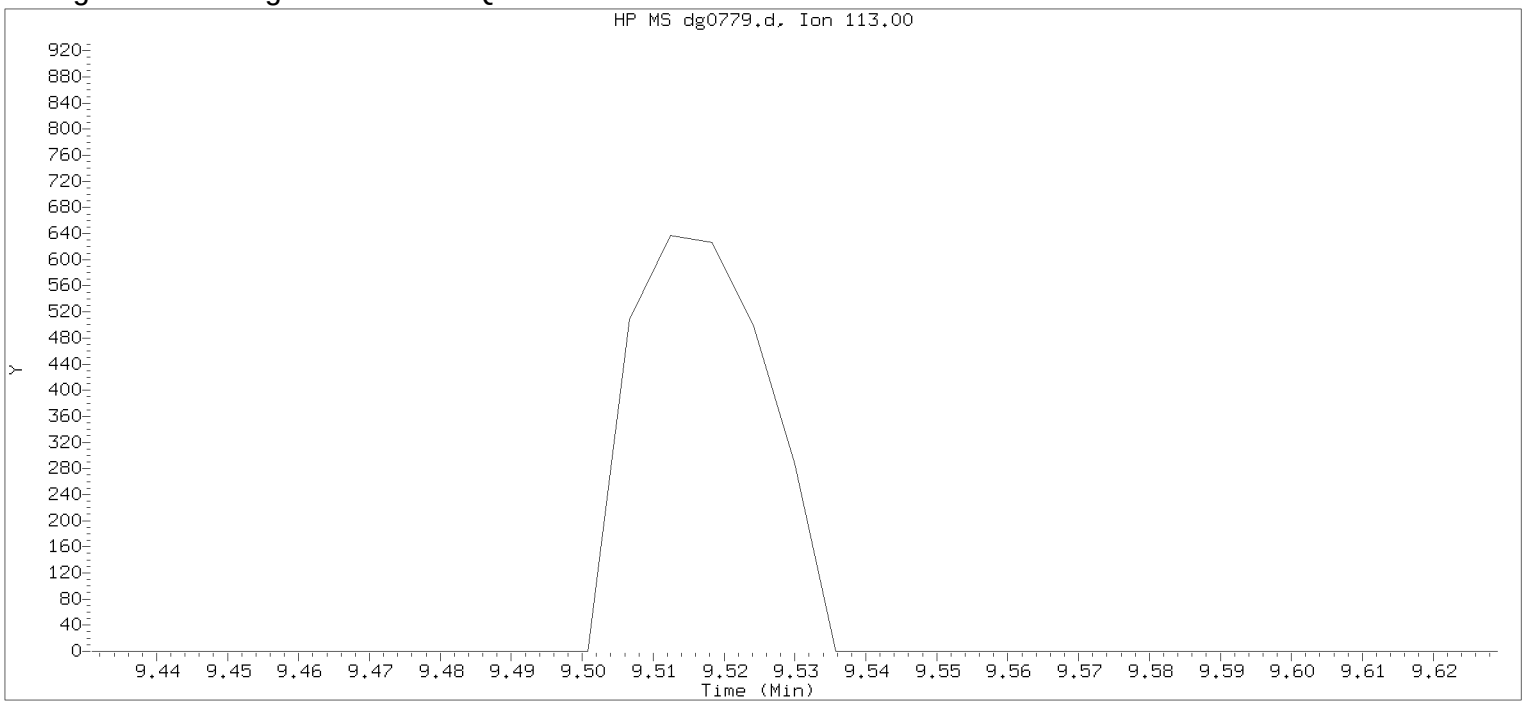
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

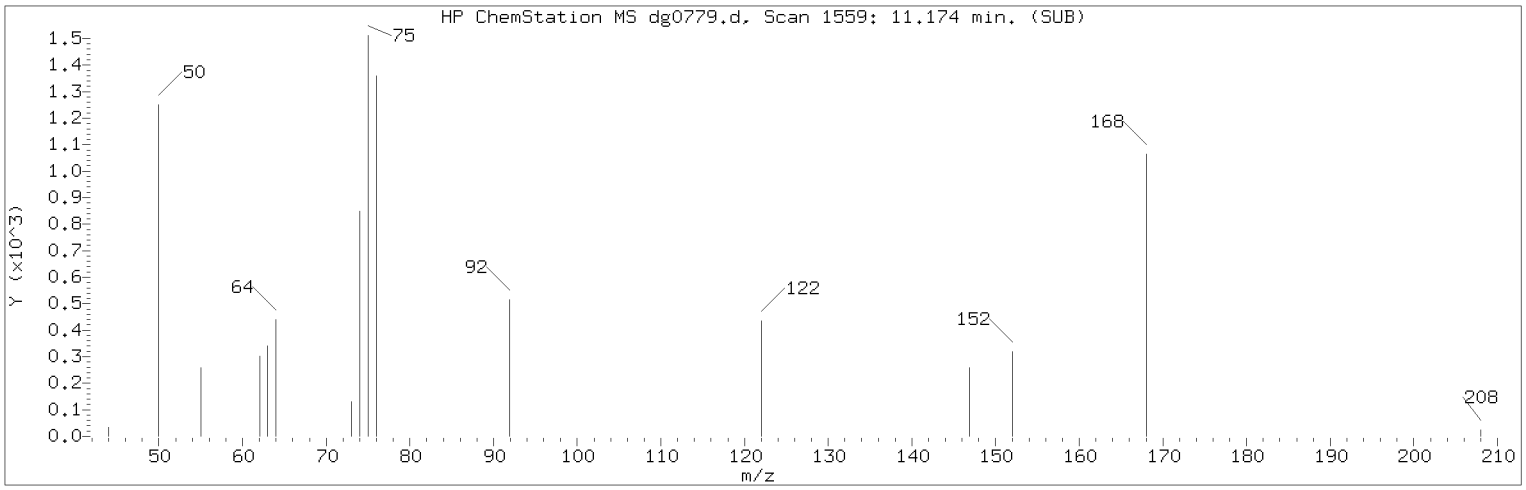
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

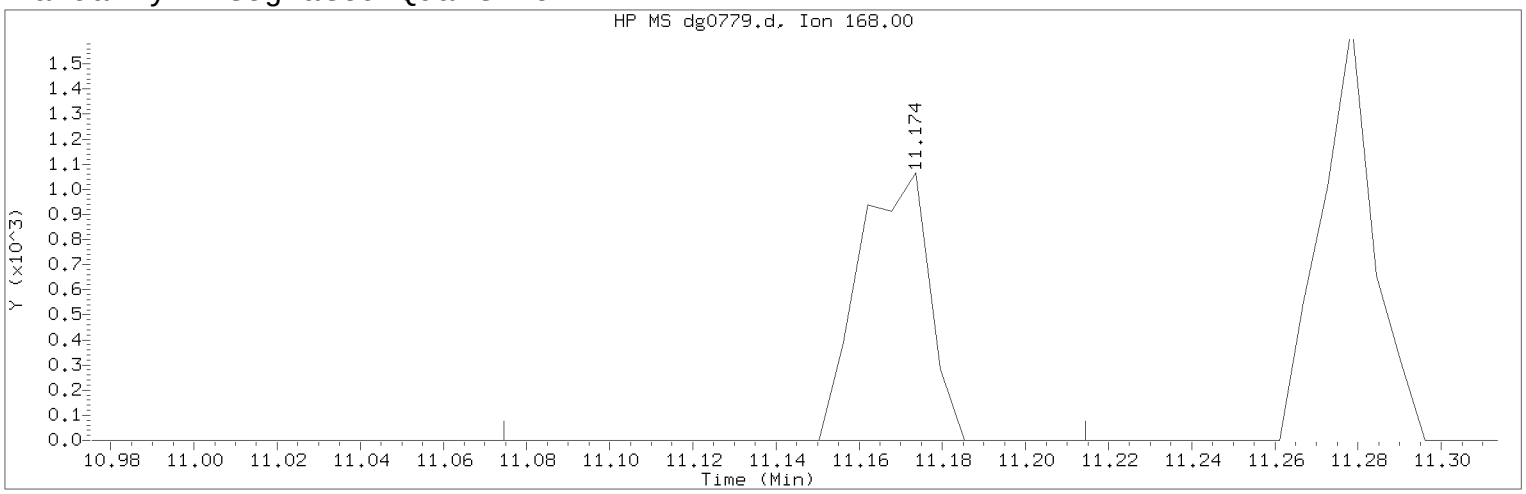
Compound Number : 76
Compound Name : Caprolactam
Expected RT (minutes) : 9.530
Quant Ion : 113.00

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRL1 emp0382

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

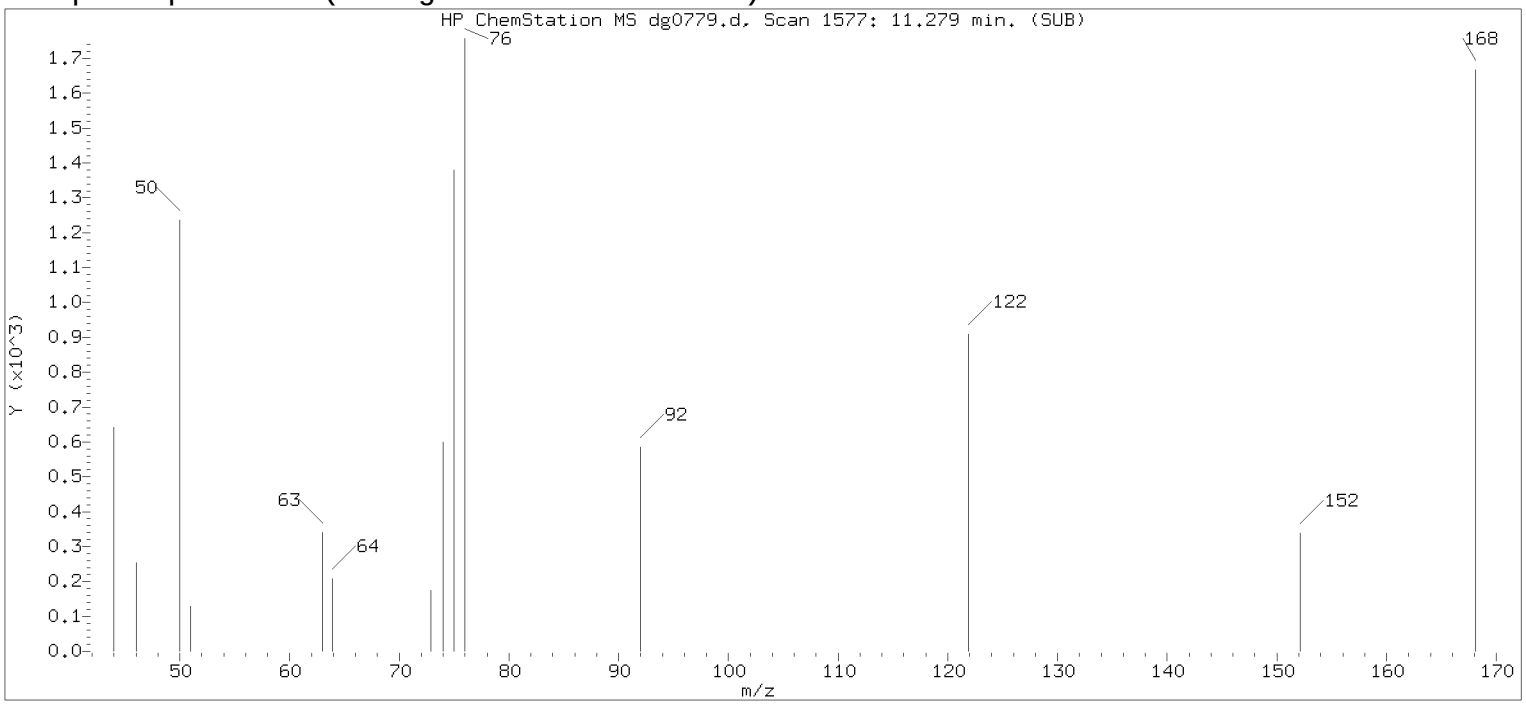
Compound Number : 105
Compound Name : 1,4-Dinitrobenzene
Scan Number : 1559
Retention Time (minutes) : 11.174
Quant Ion : 168.00
Area (flag) : 1257M
On-Column Amount (ng/ul) : 0.0811
Integration start scan : 1541 Integration stop scan: 1565
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

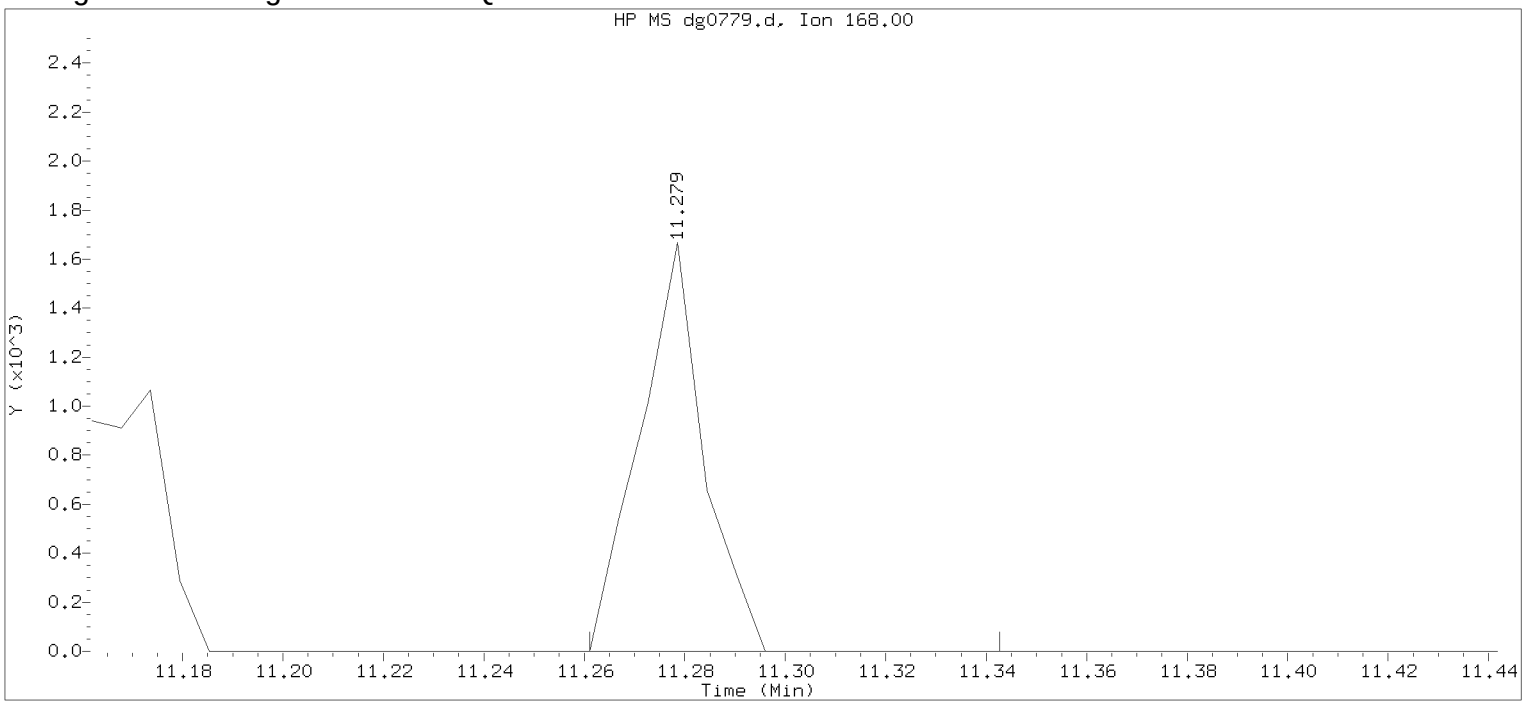
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

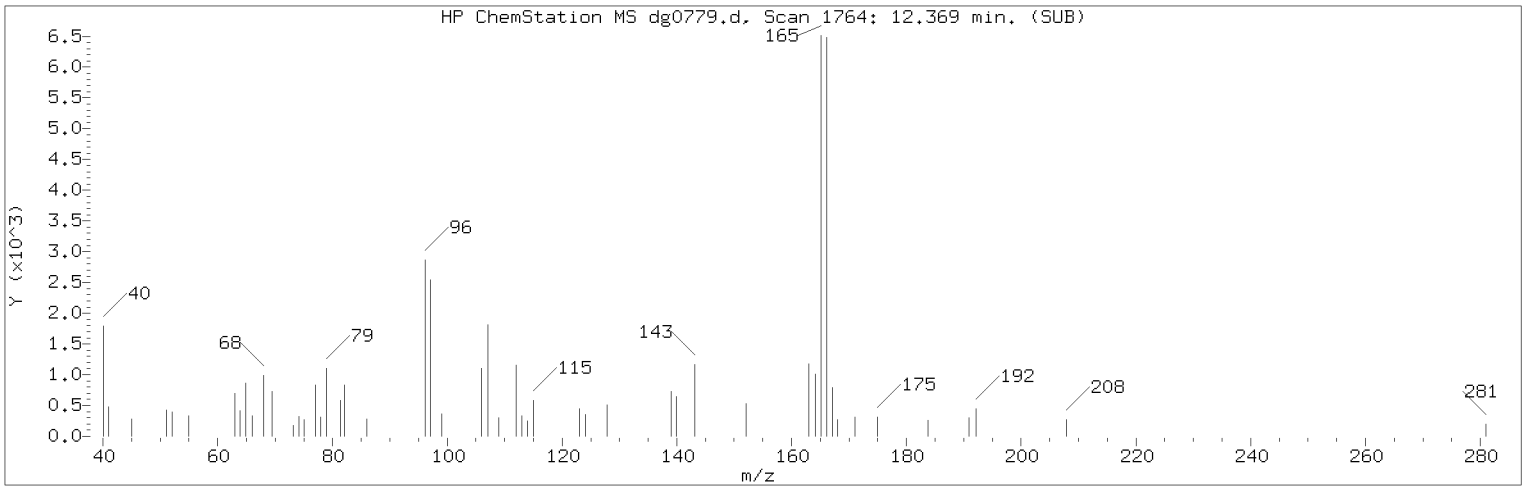
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

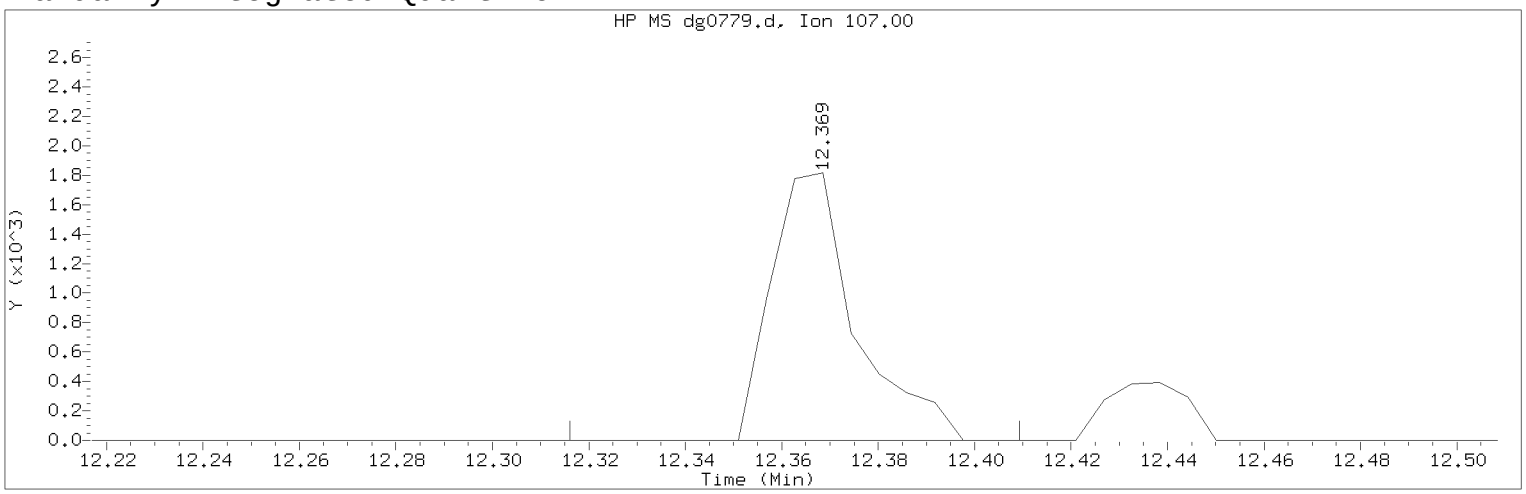
| | | | |
|---|---|---|---|
| Compound Number | : 105 | | |
| Compound Name | : 1,4-Dinitrobenzene | | |
| Scan Number | : 1577 | | |
| Retention Time (minutes) | : 11.279 | | |
| Quant Ion | : 168.00 | | |
| Area | : 1469 | | |
| On-column Amount (ng/ul) | : 0.0951 | | |
| Integration start scan | : 1573 | Integration stop scan: | 1587 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user id: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

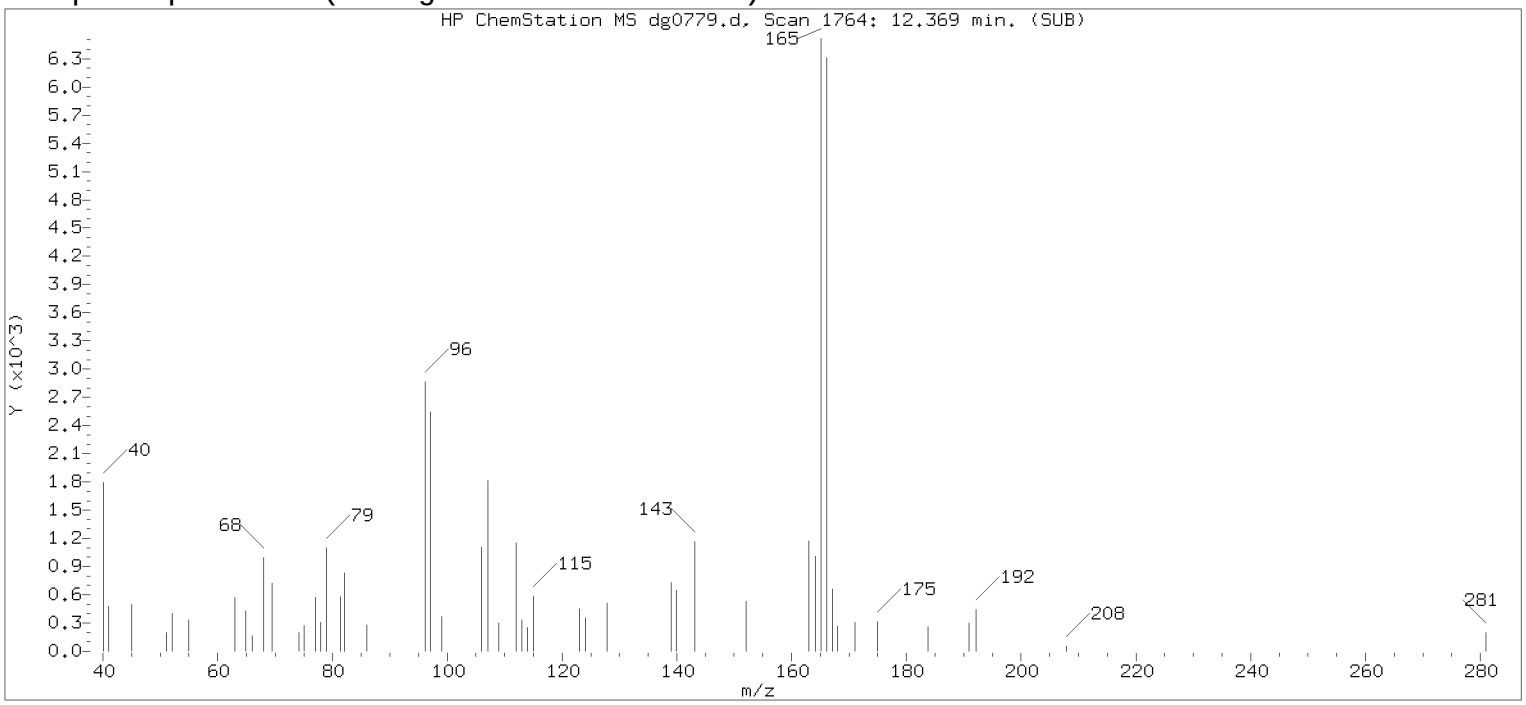
Compound Number : 125
Compound Name : Thionazin
Scan Number : 1764
Retention Time (minutes) : 12.369
Quant Ion : 107.00
Area (flag) : 2206M
On-Column Amount (ng/ul) : 0.1026
Integration start scan : 1754 Integration stop scan: 1770
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

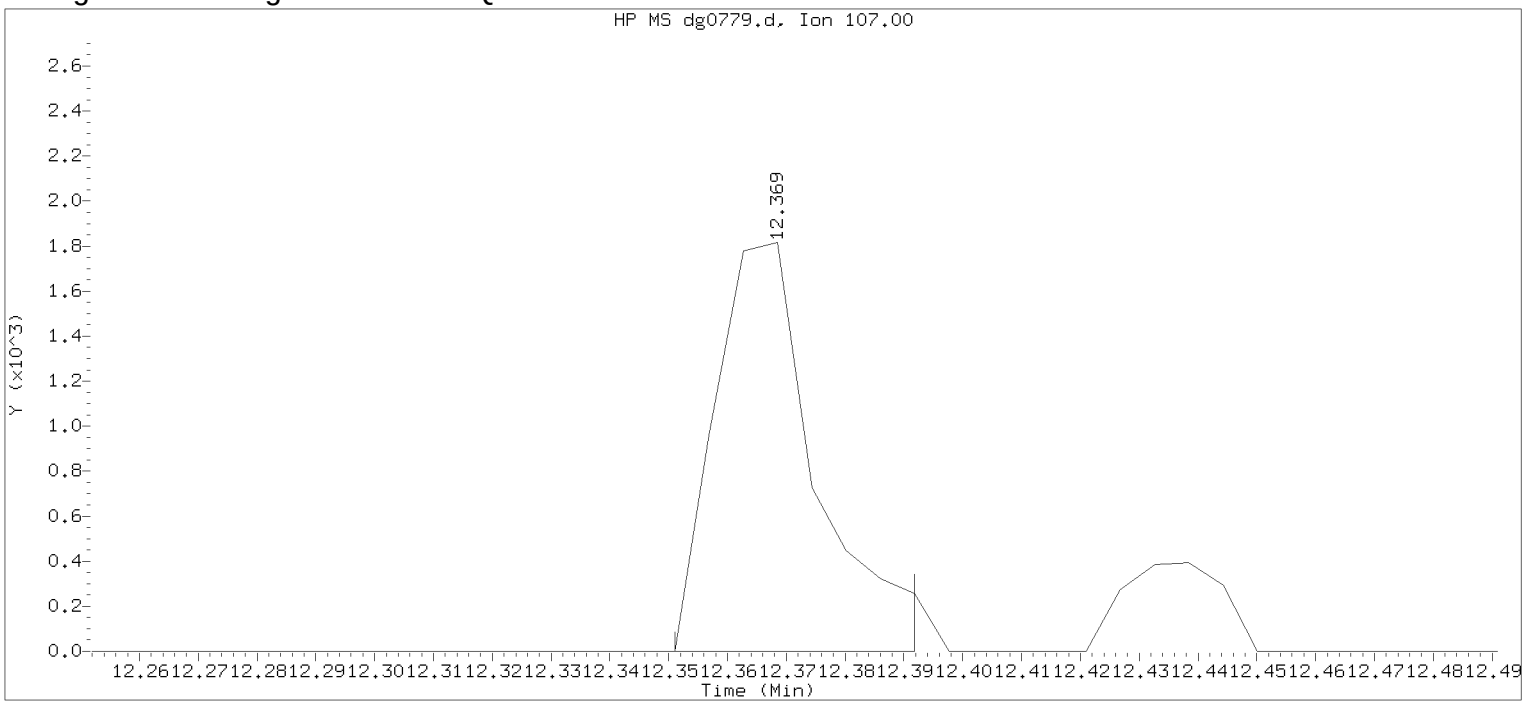
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

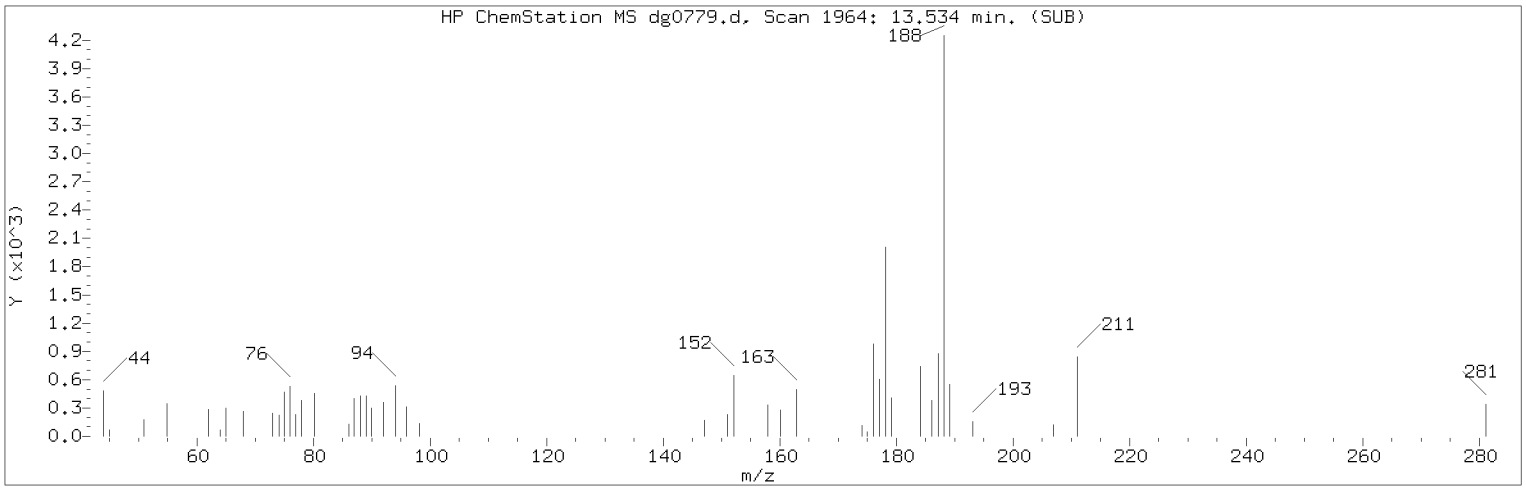
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

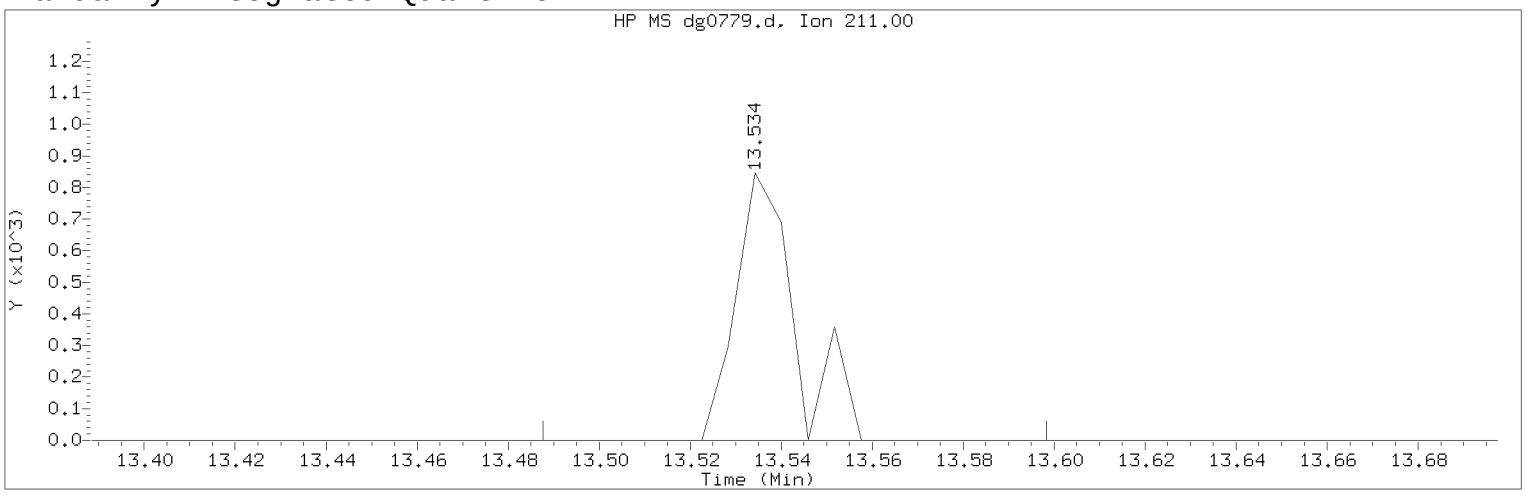
| | | | |
|---|---|---|---|
| Compound Number | : 125 | | |
| Compound Name | : Thionazin | | |
| Scan Number | : 1764 | | |
| Retention Time (minutes) | : 12.369 | | |
| Quant Ion | : 107.00 | | |
| Area | : 2161 | | |
| On-column Amount (ng/ul) | : 0.1014 | | |
| Integration start scan | : 1760 | Integration stop scan: | 1767 |
| Y at integration start | : 0 | Y at integration end: | 0 |

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRI1 emp0340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

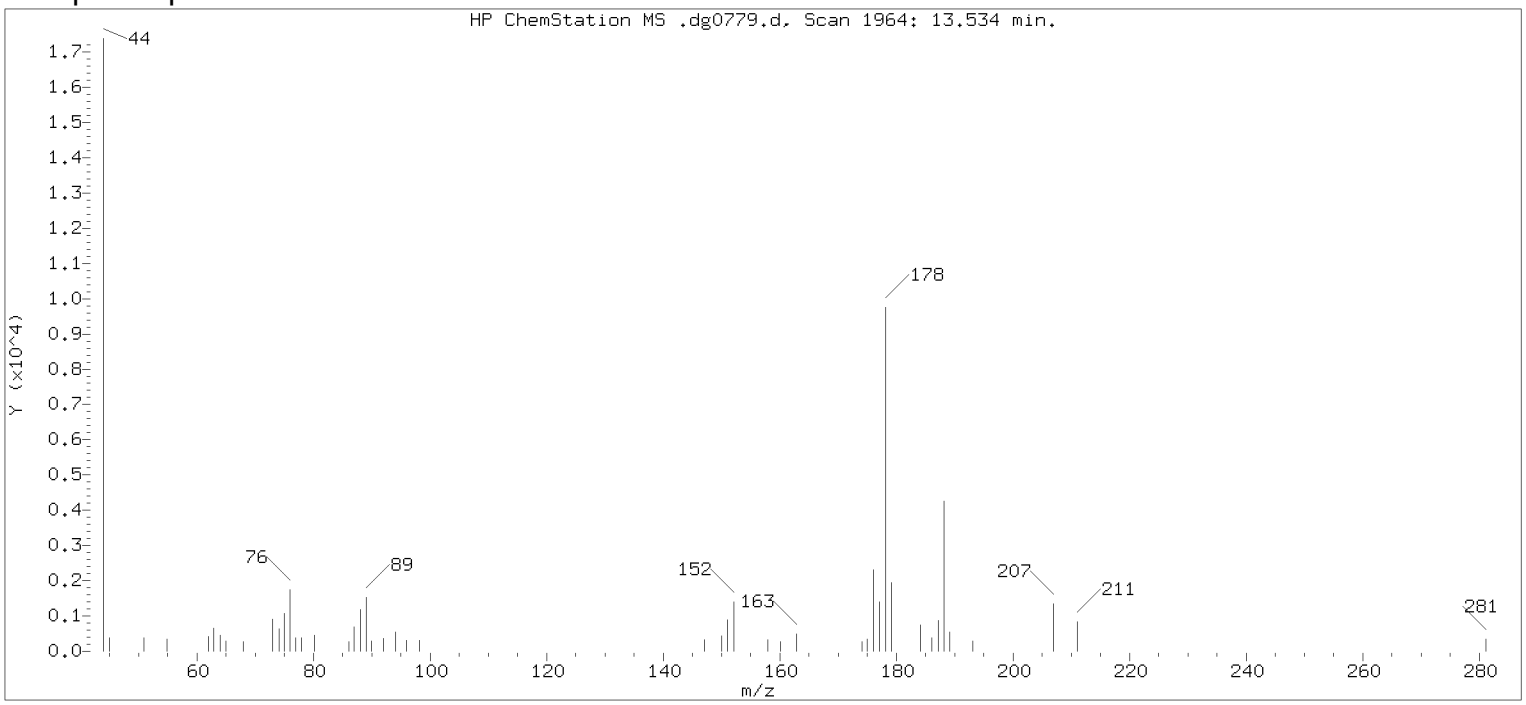
Compound Number : 154
Compound Name : Dinoseb
Scan Number : 1964
Retention Time (minutes) : 13.534
Quant Ion : 211.00
Area (flag) : 766M
On-Column Amount (ng/ul) : 0.0268
Integration start scan : 1955 Integration stop scan: 1974
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

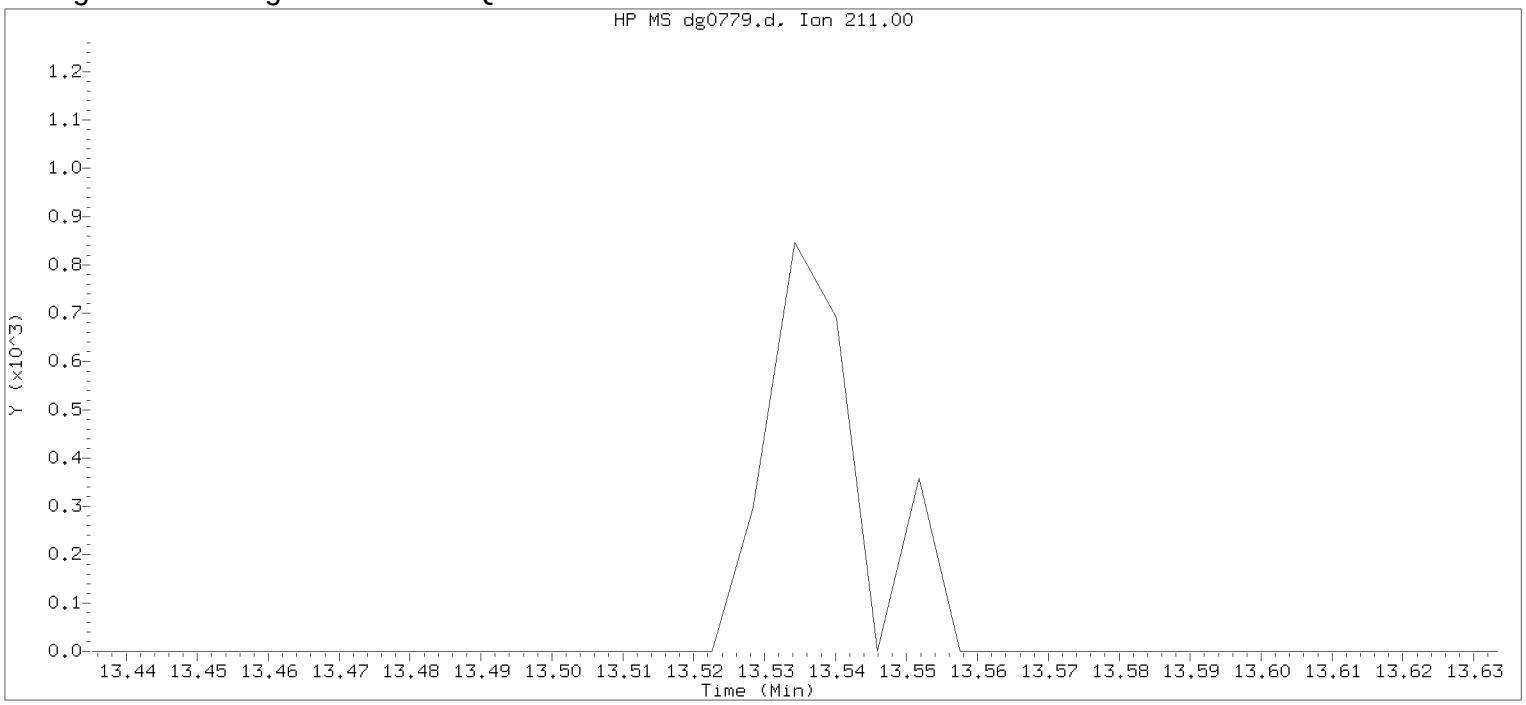
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

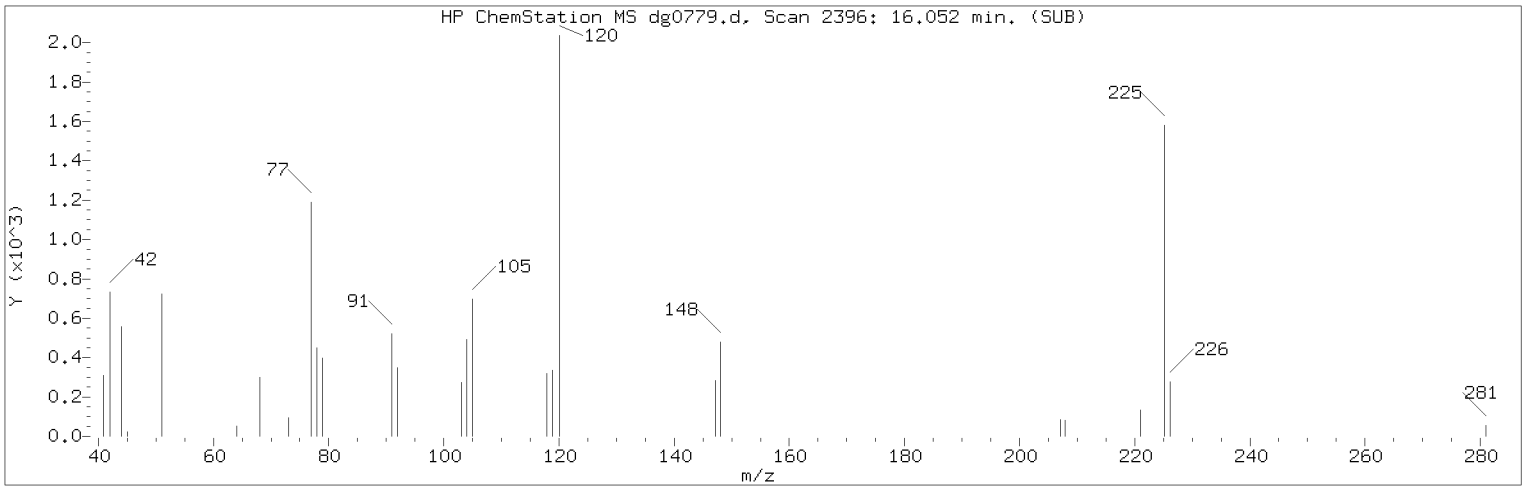
Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

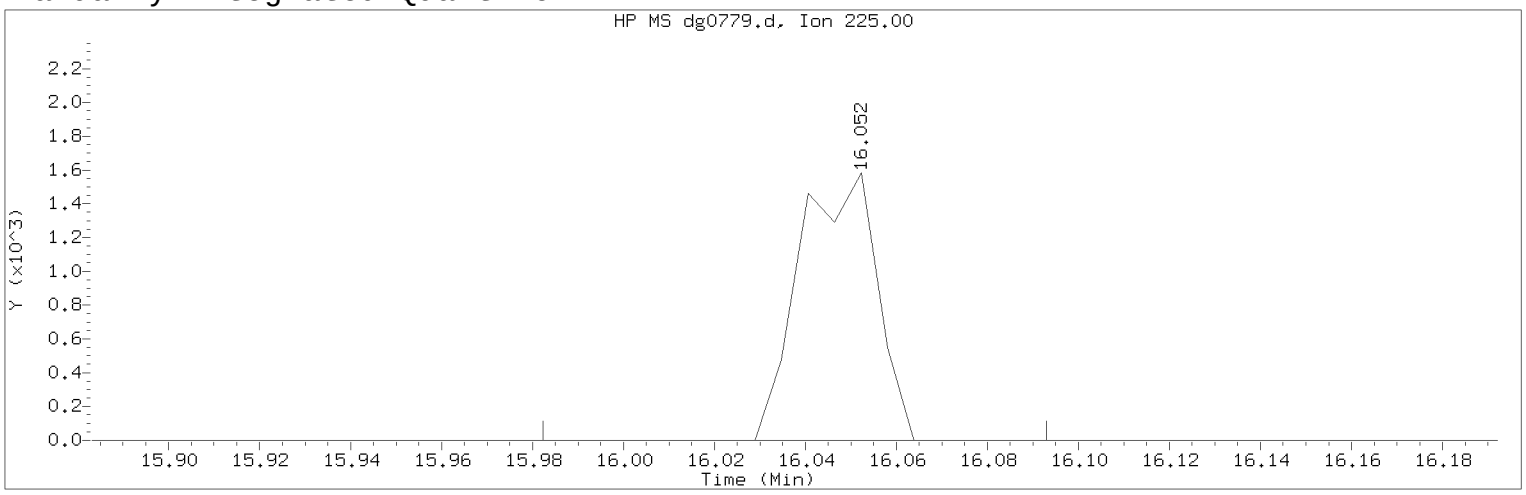
Compound Number : 154
Compound Name : Dinoseb
Expected RT (minutes) : 13.534
Quant Ion : 211.00

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRL1 emp0348

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:23 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

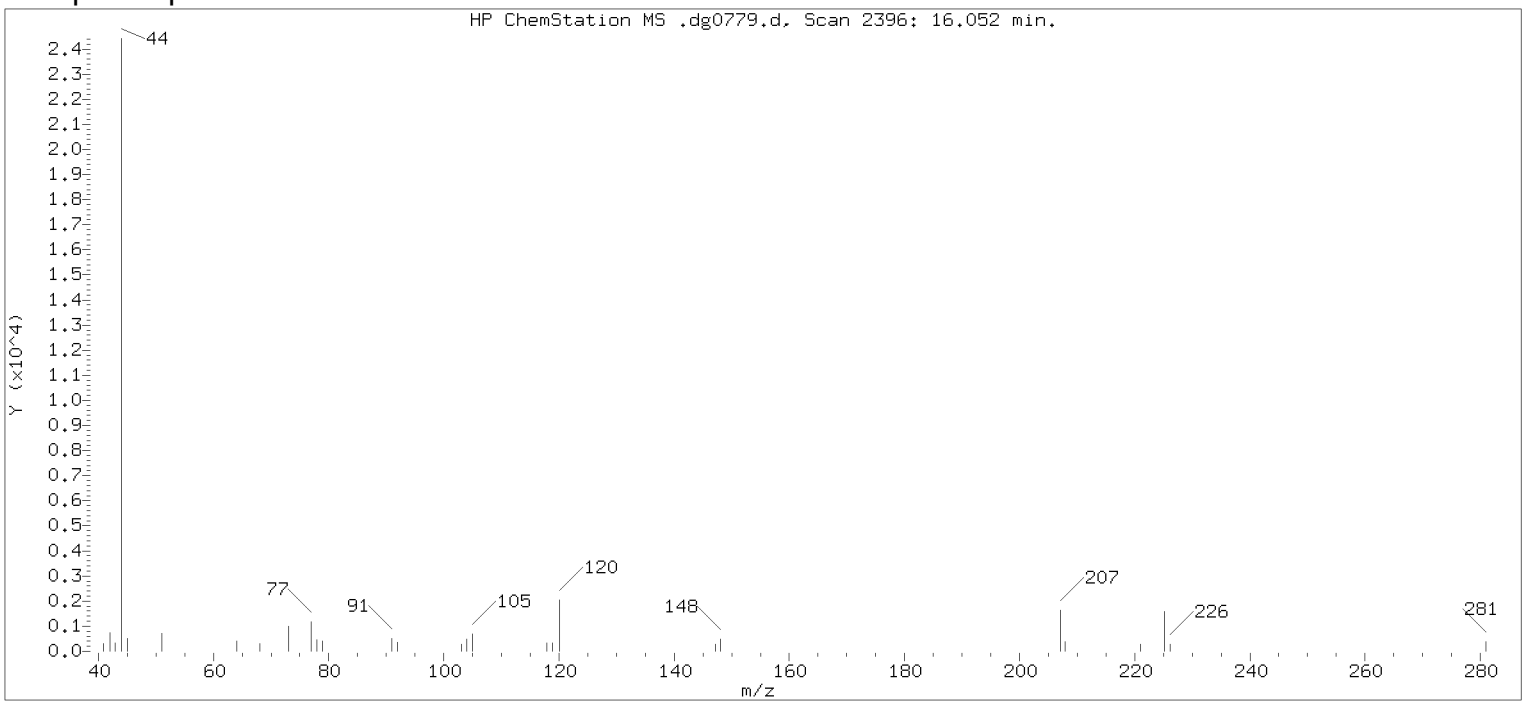
Compound Number : 182
Compound Name : p-Dimethylaminoazobenzene
Scan Number : 2396
Retention Time (minutes) : 16.052
Quant Ion : 225.00
Area (flag) : 1874M
On-Column Amount (ng/ul) : 0.0742
Integration start scan : 2383 Integration stop scan: 2402
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

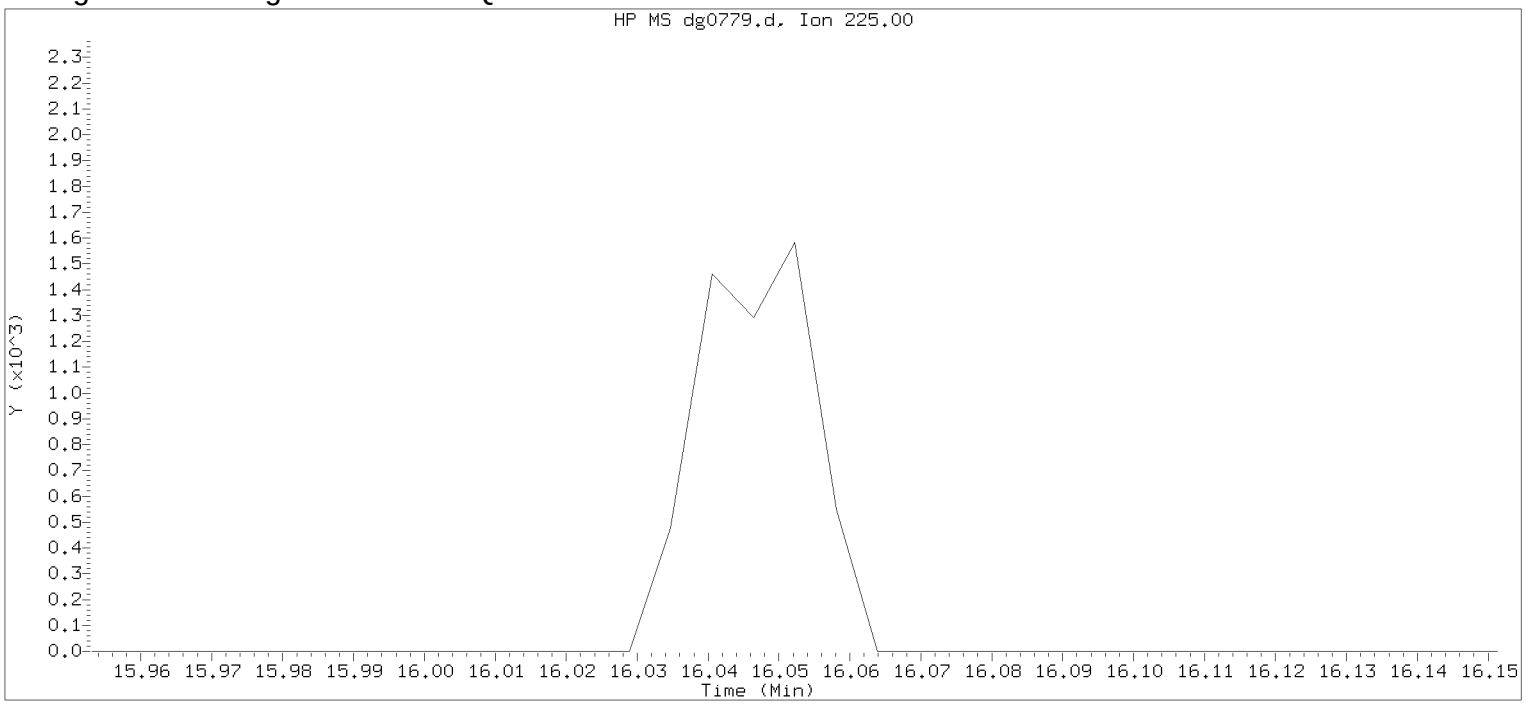
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum




Original Integration of Quant Ion



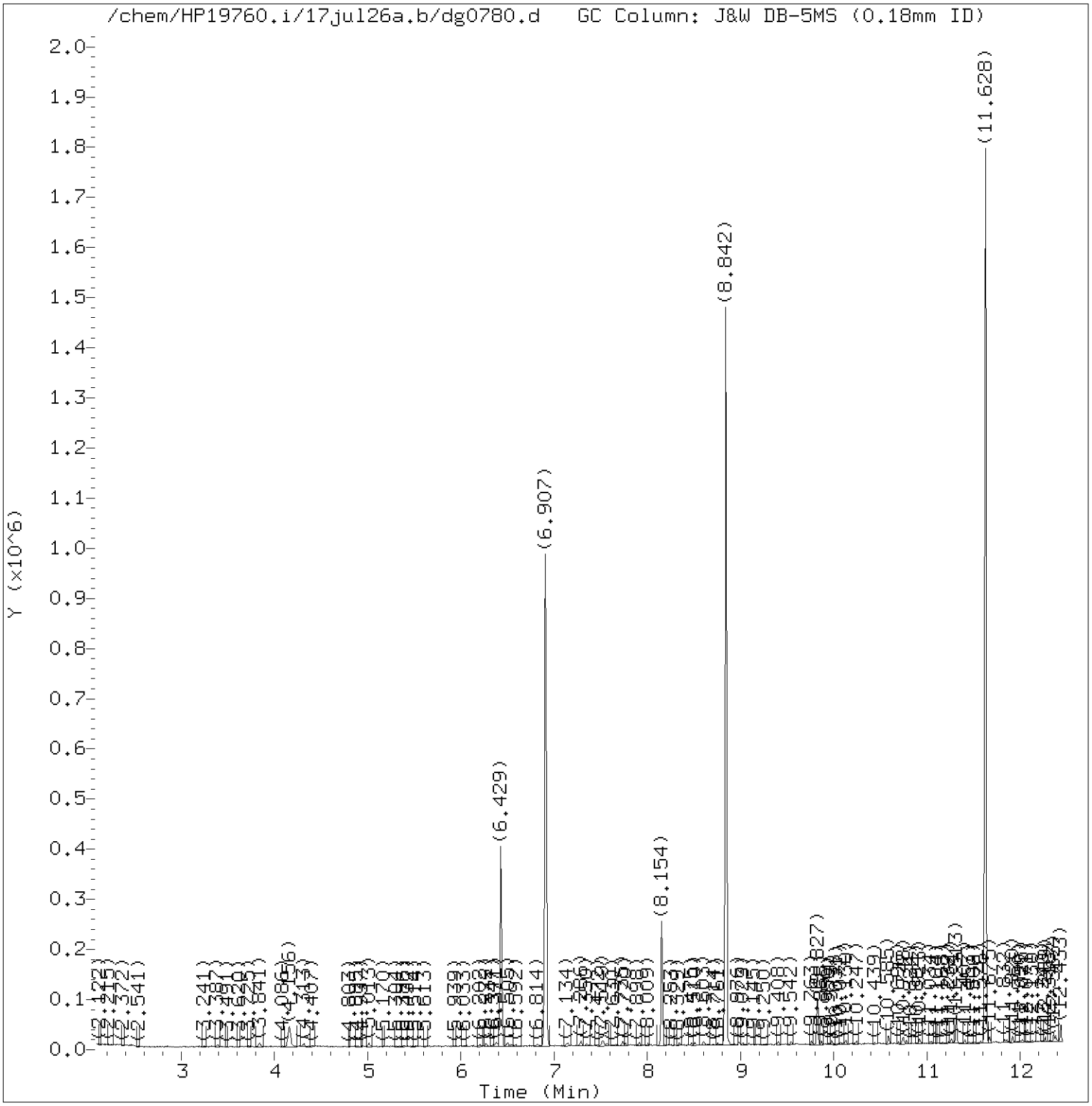

Data File: /chem/HP19760.i/17jul26a.b/dg0779.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:05 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.125 Lab Sample ID: rvMDL1577

Compound Number : 182
Compound Name : p-Dimethylaminoazobenzene
Expected RT (minutes) : 16.052
Quant Ion : 225.00

Digitally signed by Edward Monborne on 07/26/2017 at 18:02.
Target 3.5 esignature user KRL1 emp0340




Total Ion Chromatogram (TIC)

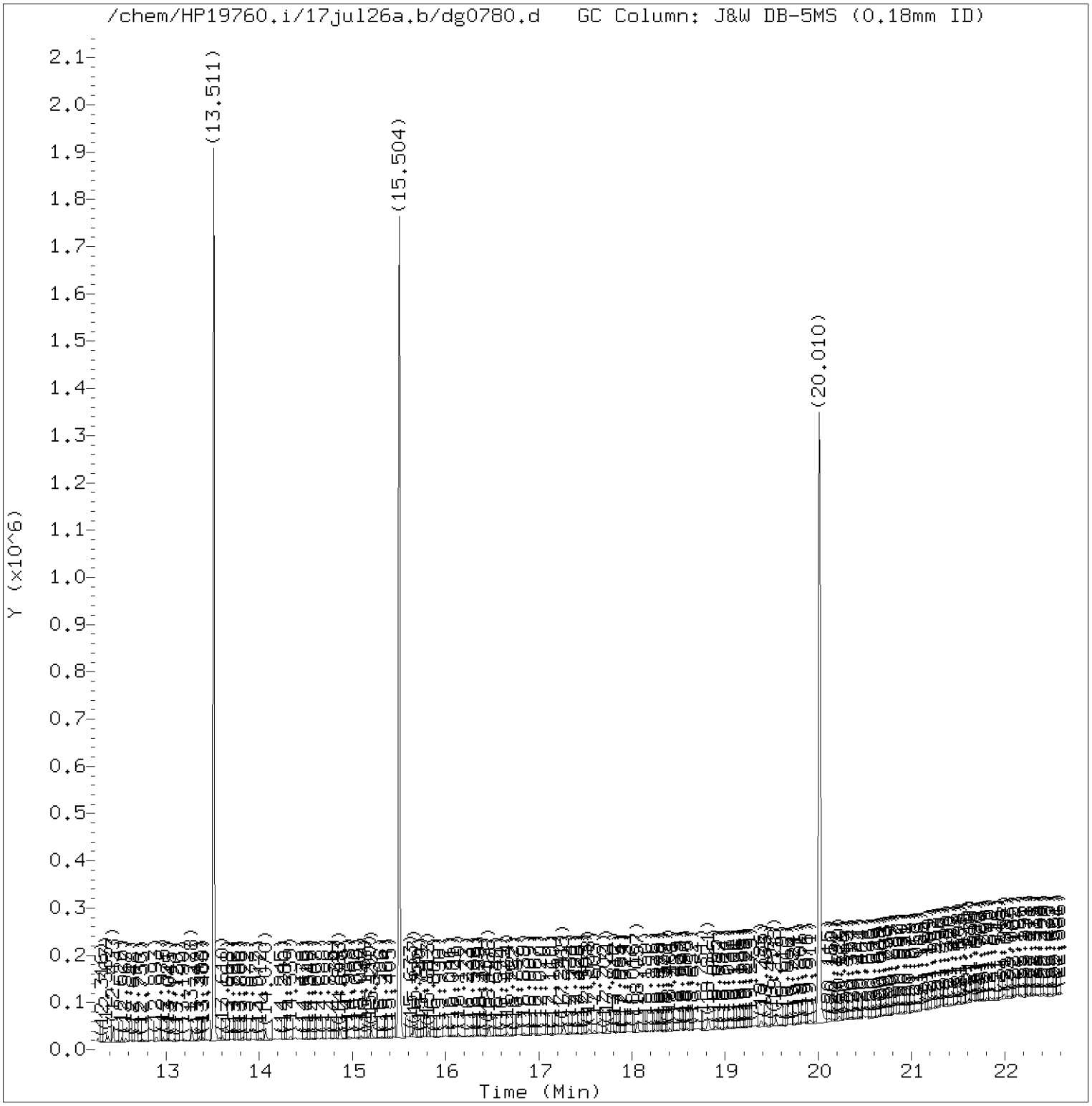
Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0780.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:33 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:24 em10340

Sample Name: SSTD0.025 Lab Sample ID: PAHMDL1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0780.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:33 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:24 em10340

Sample Name: SSTD0.025 Lab Sample ID: PAHMDL1577

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0780.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:33 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:24 em10340

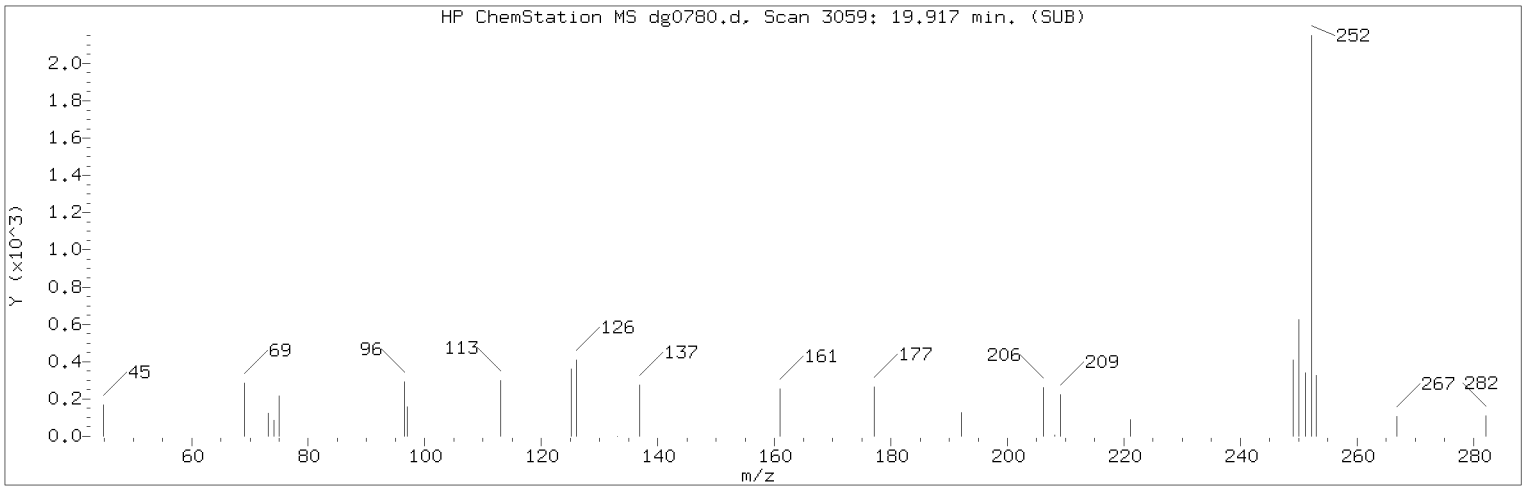
Sample Name: SSTD0.025 Lab Sample ID: PAHMDL1577

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 203970 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.735 | 82 | 3394 | 0.046 |
| 65)*Naphthalene-d8 | (2) | 8.842 | 136 | 770744 | 5.000 |
| 66) Naphthalene | (2) | 8.877 | 128 | 4181 | 0.025 |
| 83) 2-Methylnaphthalene | (2) | 9.979 | 142 | 2655 | 0.024 |
| 84) 1-Methylnaphthalene | (2) | 10.136 | 142 | 2618 | 0.026 |
| 93)$2-Fluorobiphenyl | (3) | 10.585 | 172 | 6684 | 0.055 |
| 109) Acenaphthylene | (3) | 11.407 | 152 | 3606 | 0.025 |
| 113)*Acenaphthene-d10 | (3) | 11.628 | 164 | 417048 | 5.000 |
| 114) Acenaphthene | (3) | 11.675 | 153 | 2690 | 0.025 |
| 126) Fluorene | (3) | 12.363 | 166 | 2872 | 0.026 |
| 145) Hexachlorobenzene | (4) | 13.021 | 284 | 945 | 0.030 |
| 153)*Phenanthrene-d10 | (4) | 13.511 | 188 | 759612 | 5.000 |
| 155) Phenanthrene | (4) | 13.540 | 178 | 4705 | 0.028 |
| 157) Anthracene | (4) | 13.604 | 178 | 3931 | 0.024 |
| 222) Total PAHs | (6) | | | 67734 | 0.450 |
| 173) Fluoranthene | (4) | 15.190 | 202 | 4716 | 0.026 |
| 175)*Pyrene-d10 | (5) | 15.504 | 212 | 887148 | 5.000 |
| 177) Pyrene | (5) | 15.533 | 202 | 6188 | 0.032 |
| 179)$Terphenyl-d14 | (5) | 15.813 | 244 | 6797 | 0.055 |
| 195) Benzo(a)anthracene | (5) | 17.538 | 228 | 4200 | 0.025 |
| 196) Chrysene | (5) | 17.603 | 228 | 3855 | 0.024 |
| 206) Benzo(b)fluoranthene | (6) | 19.392 | 252 | 3876 | 0.024 |
| 208) Benzo(k)fluoranthene | (6) | 19.433 | 252 | 4143 | 0.026 |
| 211) Benzo(a)pyrene | (6) | 19.917 | 252 | 3274M | 0.022 |
| 213)*Perylene-d12 | (6) | 20.010 | 264 | 660815 | 5.000 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.607 | 276 | 3610 | 0.022 |
| 220) Dibenz(a,h)anthracene | (6) | 21.654 | 278 | 2837 | 0.021 |
| 221) Benzo(g,h,i)perylene | (6) | 21.997 | 276 | 3777 | 0.027 |

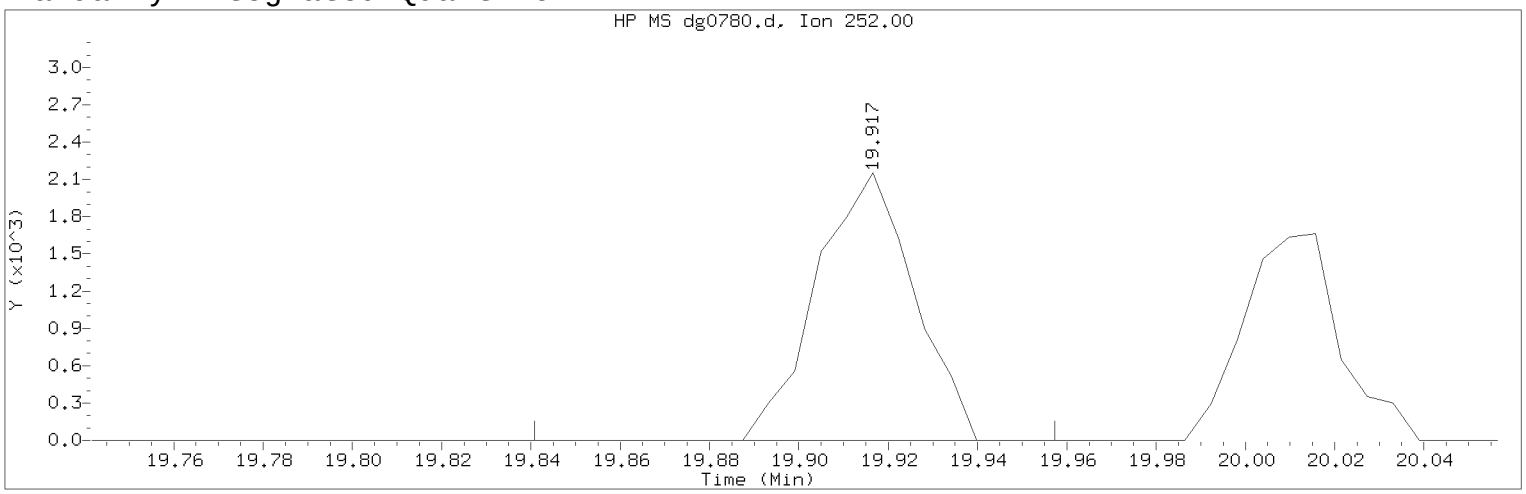
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0780.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:33 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 17:24 em10340

Sample Name: SSTD0.025 Lab Sample ID: PAHMDL1577

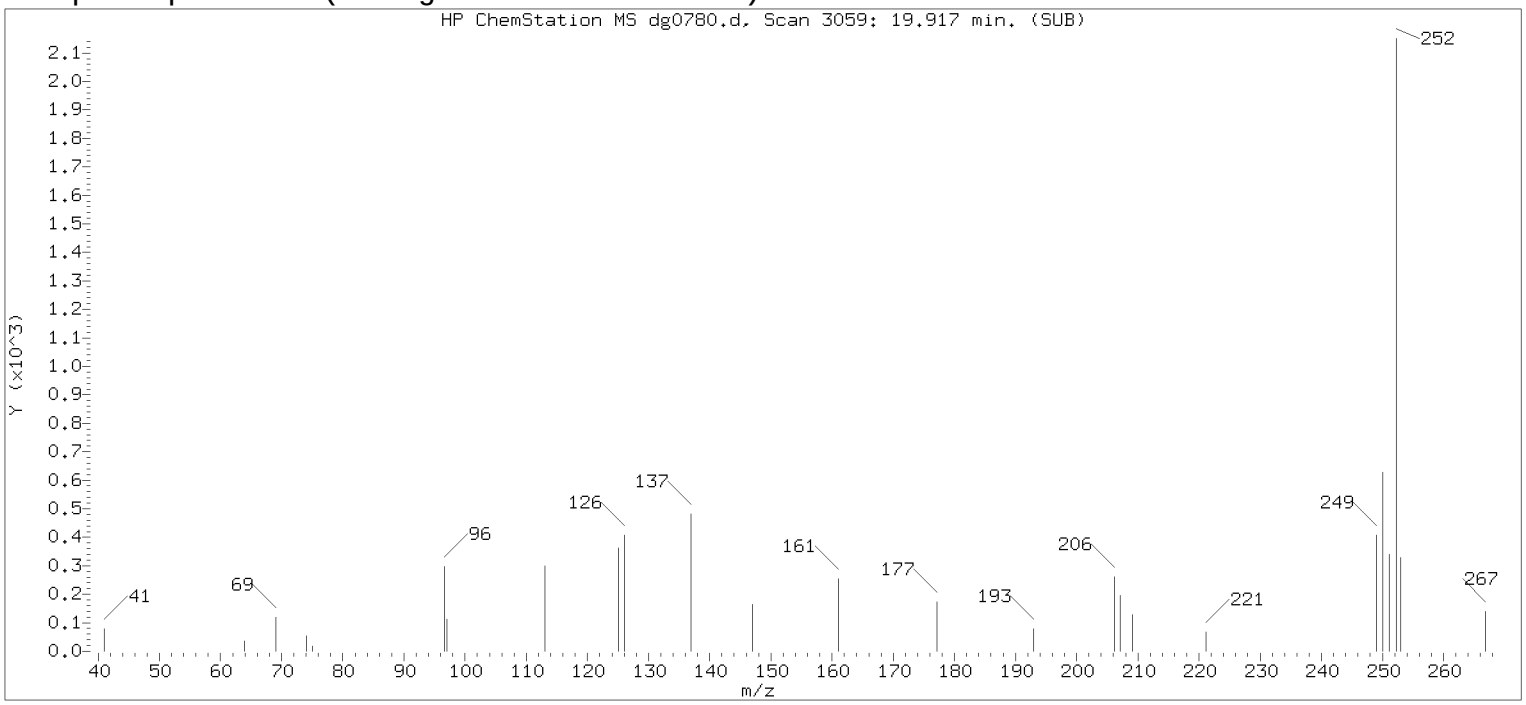
Compound Number : 211
Compound Name : Benzo(a)pyrene
Scan Number : 3059
Retention Time (minutes) : 19.917
Quant Ion : 252.00
Area (flag) : 3274M
On-Column Amount (ng/ul) : 0.0218
Integration start scan : 3045 Integration stop scan: 3065
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

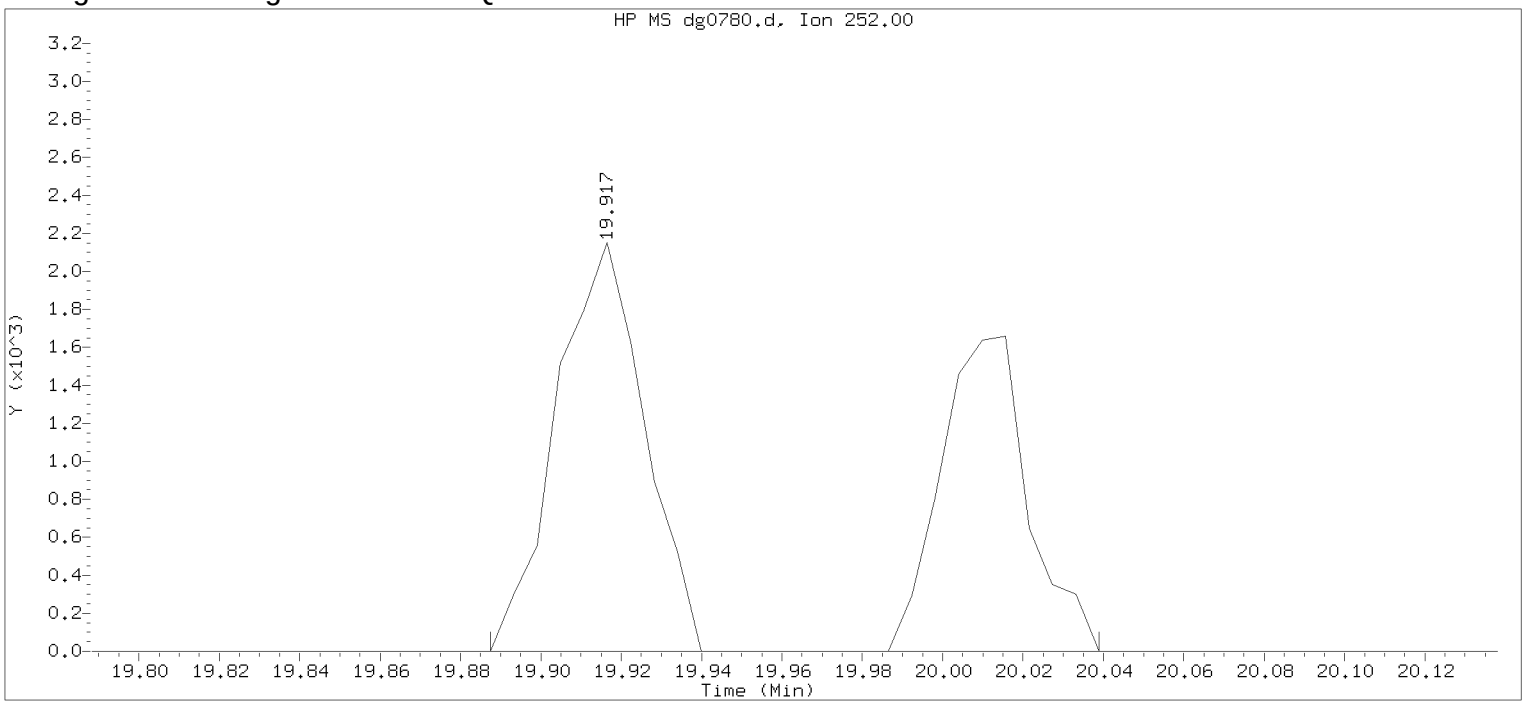
Analyst responsible for change: Digitally signed by Edward Monborne
on 07/26/2017 at 18:02.
Target 3.5 esignature user ID: em10340

Secondary review performed and digitally signed by Matthew E. Barton on 07/31/2017 at 08:47.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP19760.i/17jul26a.b/dg0780.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 13:33 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 26-JUL-2017 16:36
Date, time and analyst ID of latest file update: 26-Jul-2017 16:36 em10340

Sample Name: SSTD0.025 Lab Sample ID: PAHMDL1577

| | | | |
|---|---|---|---|
| Compound Number | : 211 | | |
| Compound Name | : Benzo(a)pyrene | | |
| Scan Number | : 3059 | | |
| Retention Time (minutes) | : 19.917 | | |
| Quant Ion | : 252.00 | | |
| Area | : 5779 | | |
| On-column Amount (ng/ul) | : 0.0388 | | |
| Integration start scan | : 3053 | Integration stop scan: | 3079 |
| Y at integration start | : 0 | Y at integration end: | 0 |

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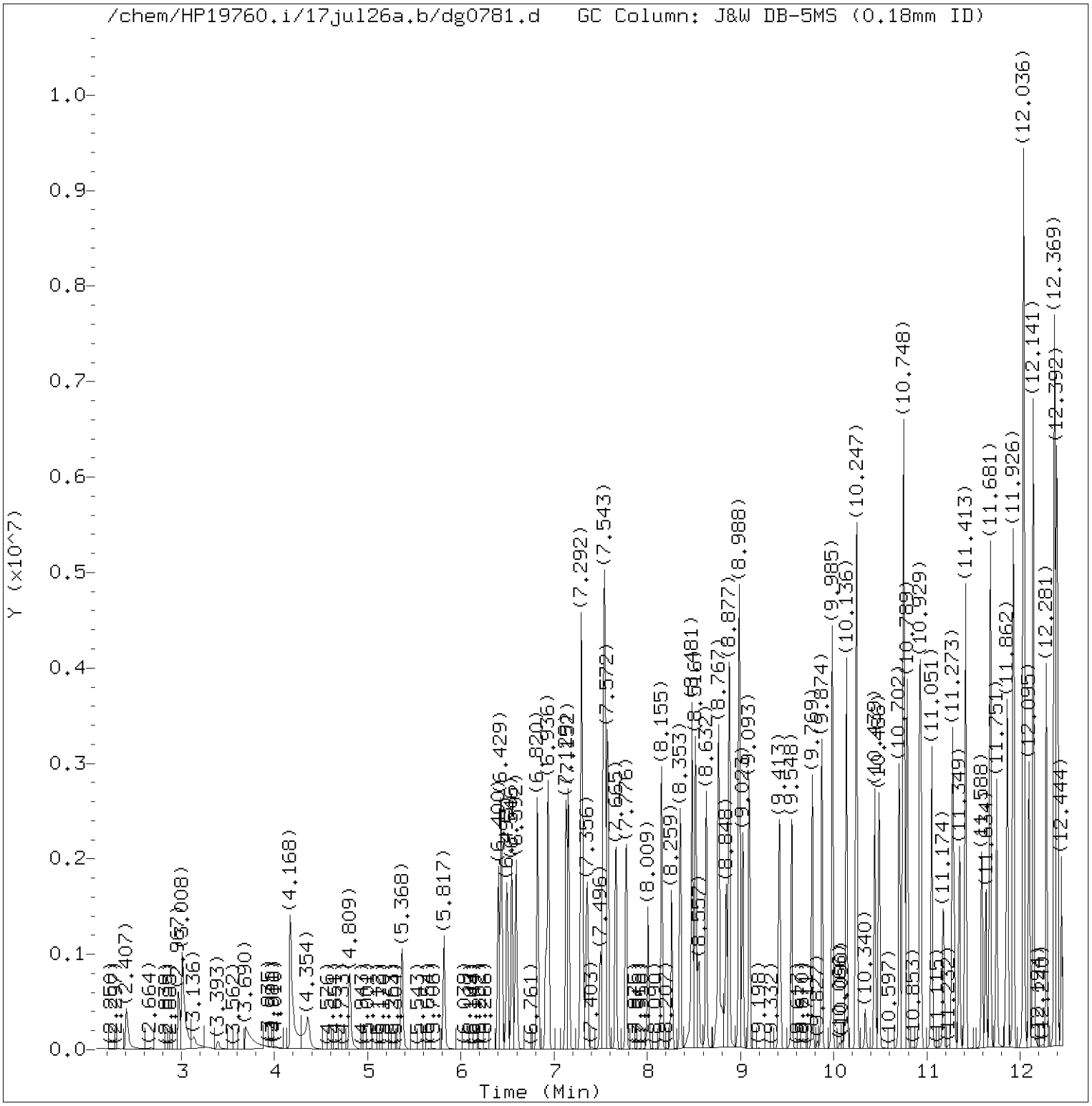
Target 3.5 esignature user id: em10340




Total Ion Chromatogram (TIC)

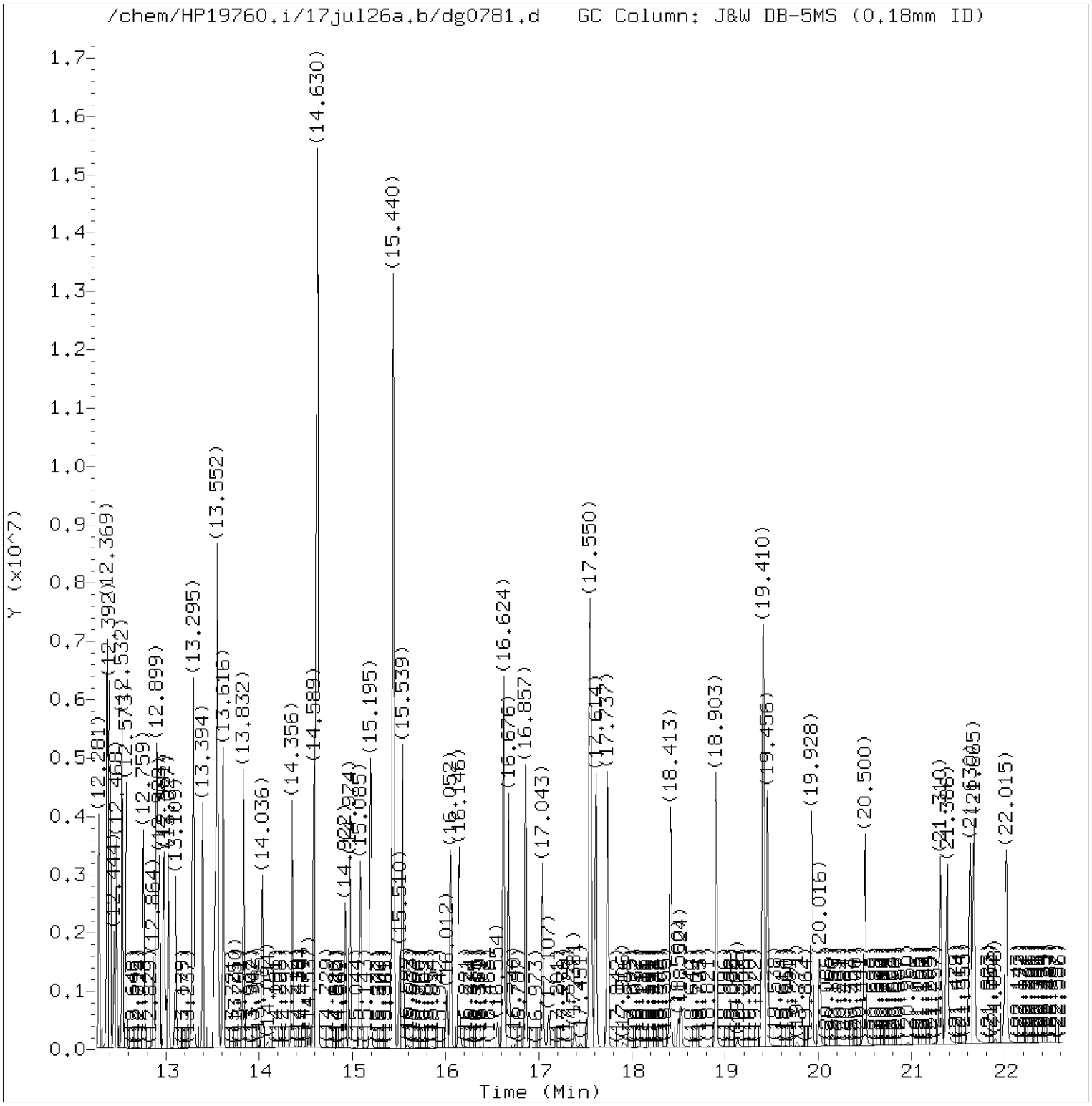
Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0781.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:01 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: icvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvICV1147

Digitally signed by Edward Monborne
on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0781.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:01 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: icvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvICV1147

Digitally signed by Edward Monborne
on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0781.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:01  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: icvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5  Lab Sample ID: rvICV1147

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.407 | 88 | 333648 | 12.060 |
| 4) N-Nitrosodimethylamine | (1) | 2.967 | 74 | 585486 | 12.996 |
| 5) Pyridine | (1) | 3.008 | 79 | 929442 | 12.733 |
| 7) 2-Picoline | (1) | 4.168 | 93 | 1009145 | 12.905 |
| 8) N-Nitrosomethylethylamine | (1) | 4.360 | 88 | 392030 | 12.244 |
| 9) Methyl methanesulfonate | (1) | 4.809 | 80 | 486094 | 13.268 |
| 13) N-Nitrosodiethylamine | (1) | 5.368 | 102 | 381252 | 12.229 |
| 42) Total Cresols | (1) | 5.660 | 100 | 1628572 | 27.037 |
| 15) Ethyl methanesulfonate | (1) | 5.817 | 109 | 396938 | 12.450 |
| 18) Phenol | (1) | 6.400 | 94 | 1194780 | 13.157 |
| 19) Aniline | (1) | 6.435 | 93 | 1275567 | 12.029 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.546 | 93 | 874142 | 13.036 |
| 23) 2-Chlorophenol | (1) | 6.592 | 128 | 785861 | 13.276 |
| 24) 1,3-Dichlorobenzene | (1) | 6.820 | 146 | 861744 | 13.068 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.913 | 152 | 205606 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.936 | 146 | 885130 | 13.311 |
| 27) Benzyl alcohol | (1) | 7.129 | 108 | 556094 | 12.840 |
| 28) 1,2-Dichlorobenzene | (1) | 7.152 | 146 | 837776 | 13.355 |
| 30) Indene | (1) | 7.292 | 115 | 1467046 | 12.210 |
| 31) 2-Methylphenol | (1) | 7.304 | 108 | 758586 | 13.254 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.356 | 45 | 1156819 | 12.805 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.356 | 45 | 1156819 | 12.805 |
| 97) Isosafrole | (3) | 7.383 | 162 | 673784 | 14.334 |
| 35) N-Nitrosopyrrolidine | (1) | 7.496 | 100 | 416305 | 12.558 |
| 36) Acetophenone | (1) | 7.525 | 105 | 1177588 | 13.162 |
| 37) 4-Methylphenol | (1) | 7.543 | 108 | 869986 | 13.783 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.548 | 70 | 668221 | 13.148 |
| 39) N-Nitrosomorpholine | (1) | 7.566 | 56 | 526792 | 12.594 |
| 40) o-Toluidine | (1) | 7.577 | 106 | 1289181 | 12.759 |
| 43) Hexachloroethane | (1) | 7.665 | 117 | 353584 | 12.983 |
| 45) Nitrobenzene | (2) | 7.776 | 77 | 974641 | 13.158 |
| 48) N-Nitrosopiperidine | (2) | 8.009 | 114 | 362759 | 12.140 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | 8.050 | 165 | 798268 | 26.849 |
| 50) Isophorone | (2) | 8.155 | 82 | 1682663 | 13.419 |
| 51) 2-Nitrophenol | (2) | 8.259 | 139 | 384890 | 13.904 |
| 53) 2,4-Dimethylphenol | (2) | 8.353 | 107 | 671842 | 10.739 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.481 | 198 | 364618 | 12.614 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.516 | 93 | 1105168 | 13.604 |
| 56) Benzoic acid | (2) | 8.557 | 105 | 1069568 | 21.744 |
| 60) 2,4-Dichlorophenol | (2) | 8.632 | 162 | 639813 | 13.410 |

* = Compound is an internal standard.

Digitally signed by Edward Monborne
on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0781.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:01 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: icvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvICV1147

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 62) 1,2,4-Trichlorobenzene | (2) | 8.767 | 180 | 721494 | 13.339 |
| 146) Diallate trans/cis | (4) | 8.775 | 86 | 737065 | 12.541 |
| 65)*Naphthalene-d8 | (2) | 8.848 | 136 | 774286 | 5.000 |
| 66) Naphthalene | (2) | 8.883 | 128 | 2284150 | 13.336 |
| 68) 2,6-Dichlorophenol | (2) | 8.988 | 162 | 610368 | 12.803 |
| 67) 4-Chloroaniline | (2) | 8.988 | 127 | 896116 | 13.082 |
| 69) Hexachloropropene | (2) | 9.023 | 213 | 483465 | 14.433 |
| 71) Hexachlorobutadiene | (2) | 9.093 | 225 | 404216 | 13.170 |
| 75) Quinoline | (2) | 9.413 | 129 | 1397012 | 12.902 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.548 | 84 | 607027 | 10.617 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.769 | 107 | 717851 | 13.587 |
| 82) Safrole | (2) | 9.874 | 162 | 554065 | 12.410 |
| 83) 2-Methylnaphthalene | (2) | 9.985 | 142 | 1493307 | 13.306 |
| 84) 1-Methylnaphthalene | (2) | 10.136 | 142 | 1379320 | 13.594 |
| 85) Hexachlorocyclopentadiene | (3) | 10.241 | 237 | 665693 | 24.237 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.253 | 216 | 700518 | 12.964 |
| 88) cis-Isosafrole | (3) | 10.340 | 162 | 75523 | 1.616 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.439 | 196 | 451957 | 13.471 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.486 | 196 | 480240 | 13.507 |
| 94) trans-Isosafrole | (3) | 10.702 | 162 | 598261 | 12.718 |
| 95) 1,1'-Biphenyl | (3) | 10.748 | 154 | 1773131 | 13.343 |
| 96) 2-Chloronaphthalene | (3) | 10.760 | 162 | 1387225 | 12.966 |
| 98) 1-Chloronaphthalene | (3) | 10.789 | 162 | 1307001 | 13.258 |
| 99) Diphenyl ether | (3) | 10.923 | 170 | 944683 | 12.942 |
| 100) 2-Nitroaniline | (3) | 10.941 | 138 | 434543 | 13.649 |
| 104) 1,4-Naphthoquinone | (3) | 11.051 | 158 | 671020 | 16.060 |
| 105) 1,4-Dinitrobenzene | (3) | 11.180 | 168 | 217294 | 13.195 |
| 106) Dimethylphthalate | (3) | 11.273 | 163 | 1523435 | 12.988 |
| 107) 1,3-Dinitrobenzene | (3) | 11.290 | 168 | 235926 | 12.896 |
| 108) 2,6-Dinitrotoluene | (3) | 11.349 | 165 | 336530 | 13.476 |
| 109) Acenaphthylene | (3) | 11.413 | 152 | 2020095 | 13.777 |
| 112) 3-Nitroaniline | (3) | 11.593 | 138 | 374014 | 13.671 |
| 113)*Acenaphthene-d10 | (3) | 11.634 | 164 | 428649 | 5.000 |
| 114) Acenaphthene | (3) | 11.681 | 153 | 1496585 | 13.432 |
| 115) 2,4-Dinitrophenol | (3) | 11.751 | 184 | 433054 | 27.149 |
| 116) 4-Nitrophenol | (3) | 11.856 | 109 | 273352 | 13.071 |
| 117) Pentachlorobenzene | (3) | 11.867 | 250 | 545577 | 12.143 |
| 119) Dibenzofuran | (3) | 11.926 | 168 | 1906893 | 13.197 |
| 118) 2,4-Dinitrotoluene | (3) | 11.937 | 165 | 461738 | 13.373 |
| 121) 1-Naphthylamine | (3) | 12.036 | 143 | 2476702 | 22.512 |

* = Compound is an internal standard.

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on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0781.d  Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:01  Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m  Sublist used: icvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5  Lab Sample ID: rvICV1147

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.095 | 232 | 379318 | 14.123 |
| 123) 2-Naphthylamine | (3) | 12.141 | 143 | 2392847 | 22.649 |
| 124) Diethylphthalate | (3) | 12.281 | 149 | 1507466 | 13.250 |
| 126) Fluorene | (3) | 12.369 | 166 | 1499280 | 13.060 |
| 125) Thionazin | (3) | 12.374 | 107 | 297727 | 13.021 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.392 | 204 | 713134 | 12.953 |
| 128) 5-Nitro-o-toluidine | (3) | 12.398 | 152 | 433968 | 13.234 |
| 129) 4-Nitroaniline | (3) | 12.404 | 138 | 375344 | 13.498 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.444 | 198 | 263780 | 12.981 |
| 131) N-Nitrosodiphenylamine | (4) | 12.532 | 169 | 1266968 | 13.191 |
| 132) NDPA as diphenylamine | (4) | 12.532 | 169 | 1266968 | 13.191 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.573 | 77 | 1876692 | 13.745 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.759 | 97 | 284838 | 12.665 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.870 | 213 | 163614 | 12.862 |
| 140) Diallate (peak 1) | (4) | 12.893 | 86 | 555814 | 8.958 |
| 141) Phorate | (4) | 12.905 | 75 | 1120626 | 13.150 |
| 142) Phenacetin | (4) | 12.928 | 108 | 828142 | 13.218 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.981 | 248 | 417329 | 13.408 |
| 144) Diallate (peak 2) | (4) | 12.998 | 86 | 181251 | 3.583 |
| 145) Hexachlorobenzene | (4) | 13.027 | 284 | 439504 | 13.286 |
| 147) Dimethoate | (4) | 13.109 | 87 | 705293 | 13.161 |
| 149) Pentachlorophenol | (4) | 13.278 | 266 | 305829 | 15.207 |
| 151) Pentachloronitrobenzene | (4) | 13.295 | 237 | 194705 | 13.058 |
| 150) 4-Aminobiphenyl | (4) | 13.301 | 169 | 1621625 | 22.089 |
| 152) Pronamide | (4) | 13.394 | 173 | 722568 | 13.566 |
| 153)*Phenanthrene-d10 | (4) | 13.517 | 188 | 788925 | 5.000 |
| 154) Dinoseb | (4) | 13.534 | 211 | 423319 | 13.425 |
| 155) Phenanthrene | (4) | 13.552 | 178 | 2231174 | 12.988 |
| 157) Anthracene | (4) | 13.616 | 178 | 2261907 | 13.386 |
| 163) Carbazole | (4) | 13.832 | 167 | 2122650 | 13.573 |
| 164) Methyl parathion | (4) | 14.036 | 109 | 583013 | 13.806 |
| 165) Di-n-butylphthalate | (4) | 14.356 | 149 | 2644786 | 13.649 |
| 167) Parathion | (4) | 14.583 | 109 | 360434 | 13.794 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.630 | 190 | 3680485 | 182.428 |
| 171) Isodrin | (4) | 14.974 | 193 | 266995 | 13.049 |
| 222) Total PAHs | (6) | 15.000 | 100 | 39130774 | 243.595 |
| 173) Fluoranthene | (4) | 15.195 | 202 | 2562205 | 13.541 |
| 174) Benzidine | (5) | 15.440 | 184 | 7032843 | 57.005 |
| 175)*Pyrene-d10 | (5) | 15.510 | 212 | 936529 | 5.000 |
| 177) Pyrene | (5) | 15.539 | 202 | 2619828 | 12.835 |

* = Compound is an internal standard.

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on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0781.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:01 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: icvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvICV1147

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 182) p-Dimethylaminoazobenzene | (5) | 16.058 | 225 | 474934 | 16.670 |
| 185) Chlorobenzilate | (5) | 16.146 | 139 | 827954 | 13.624 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.624 | 212 | 3000360 | 24.915 |
| 188) Butylbenzylphthalate | (5) | 16.676 | 149 | 1214660 | 13.856 |
| 191) 2-Acetylaminofluorene | (5) | 17.043 | 181 | 1021465 | 13.098 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.544 | 252 | 892647 | 12.651 |
| 195) Benzo(a)anthracene | (5) | 17.550 | 228 | 2517054 | 14.084 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.568 | 231 | 489819 | 13.210 |
| 196) Chrysene | (5) | 17.614 | 228 | 2357844 | 13.974 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.737 | 149 | 1755948 | 13.794 |
| 203) 6-Methylchrysene | (5) | 18.413 | 242 | 1623267 | 12.902 |
| 205) Di-n-octylphthalate | (6) | 18.903 | 149 | 3067832 | 13.703 |
| 206) Benzo(b)fluoranthene | (6) | 19.404 | 252 | 2510841 | 13.429 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.410 | 256 | 1087045 | 13.937 |
| 208) Benzo(k)fluoranthene | (6) | 19.456 | 252 | 2491458 | 13.742 |
| 211) Benzo(a)pyrene | (6) | 19.928 | 252 | 2261594 | 13.143 |
| 213)*Perylene-d12 | (6) | 20.016 | 264 | 757938 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.500 | 268 | 1159177 | 15.680 |
| 217) Dibenz(a,h)acridine | (6) | 21.310 | 279 | 1832734 | 13.116 |
| 218) Dibenz(a,j)acridine | (6) | 21.386 | 279 | 1876649 | 13.031 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.630 | 276 | 2666579 | 13.948 |
| 220) Dibenz(a,h)anthracene | (6) | 21.671 | 278 | 2270205 | 14.489 |
| 221) Benzo(g,h,i)perylene | (6) | 22.015 | 276 | 2207348 | 13.532 |

* = Compound is an internal standard.

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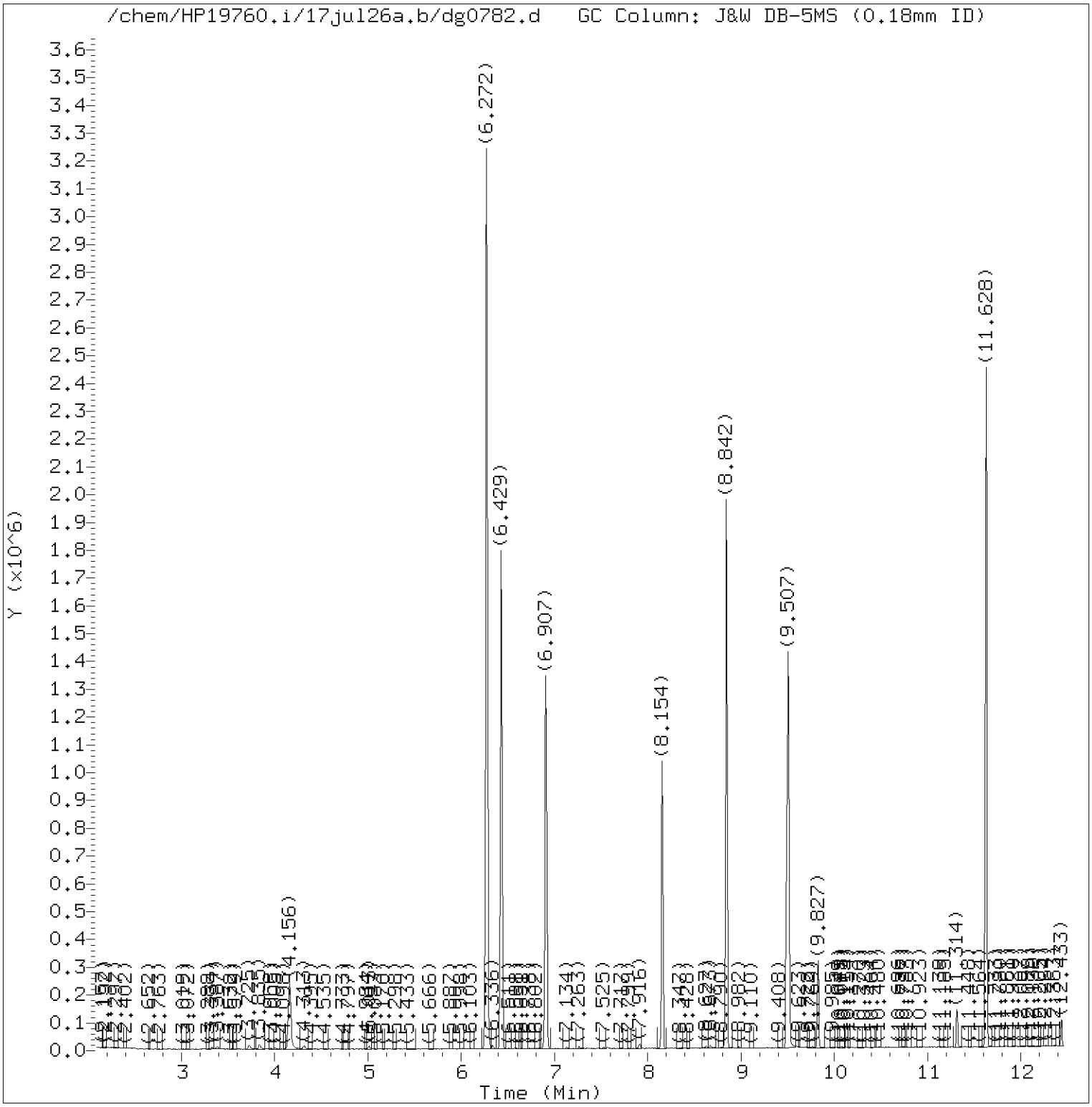
on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0782.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:28 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvBASICV0637

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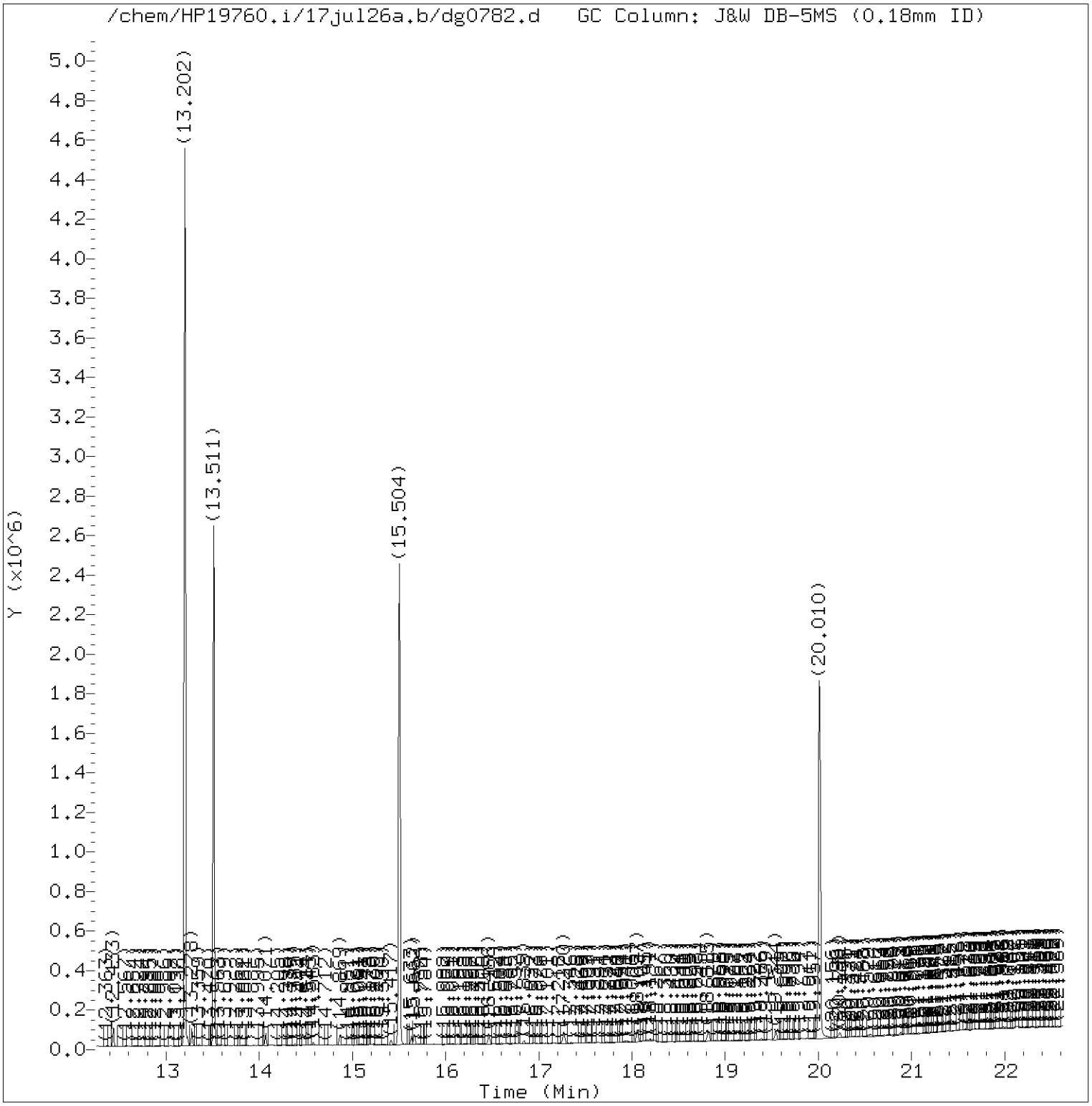
on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0782.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:28 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvBASICV0637

Digitally signed by Edward Monborne
on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17jul26a.b/dg0782.d Instrument ID: HP19760.i
Injection date and time: 26-JUL-2017 14:28 Analyst ID: ceb05247

Method used: /chem/HP19760.i/17jul26a.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 26-JUL-2017 17:19
Date, time and analyst ID of latest file update: 26-Jul-2017 17:36 em10340

Sample Name: SSTD12.5 Lab Sample ID: rvBASICV0637

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 16) Benzaldehyde | (1) | 6.272 | 77 | 1036547 | 14.533 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.907 | 152 | 278579 | 5.000 |
| 65)*Naphthalene-d8 | (2) | 8.842 | 136 | 1042626 | 5.000 |
| 76) Caprolactam | (2) | 9.507 | 113 | 252029 | 12.286 |
| 113)*Acenaphthene-d10 | (3) | 11.628 | 164 | 569020 | 5.000 |
| 148) Atrazine | (4) | 13.202 | 200 | 566697 | 13.623 |
| 153)*Phenanthrene-d10 | (4) | 13.511 | 188 | 1060329 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.504 | 212 | 1236727 | 5.000 |
| 213)*Perylene-d12 | (6) | 20.010 | 264 | 921500 | 5.000 |

* = Compound is an internal standard.

Digitally signed by Edward Monborne
on 07/26/2017 at 20:41.
Target 3.5 esignature user ID: em10340

Data File: /chem/HP19760.i/17aug02a.b/dh0100a.d



Date : 02-AUG-2017 19:10

Client ID: DFTPP12.5

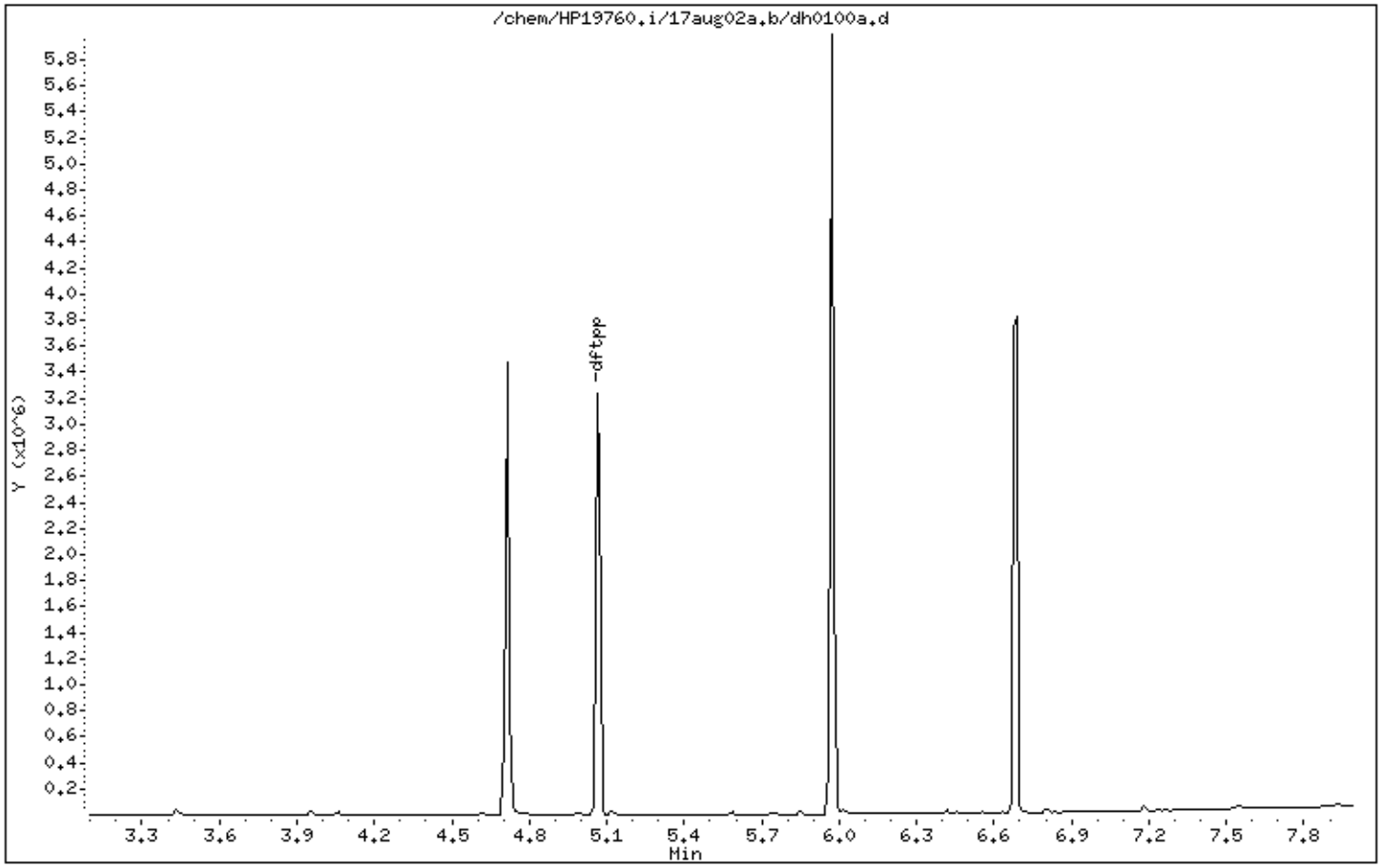
Instrument: HP19760.i

Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP;

Operator: em10340

Column phase: DB-5MS

Column diameter: 0.18




Digitally signed by Edward Monborne on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

Data File: /chem/HP19760.i/17aug02a.b/dh0100a.d

Date : 02-AUG-2017 19:10

Client ID: DFTPP12.5

Instrument: HP19760.i

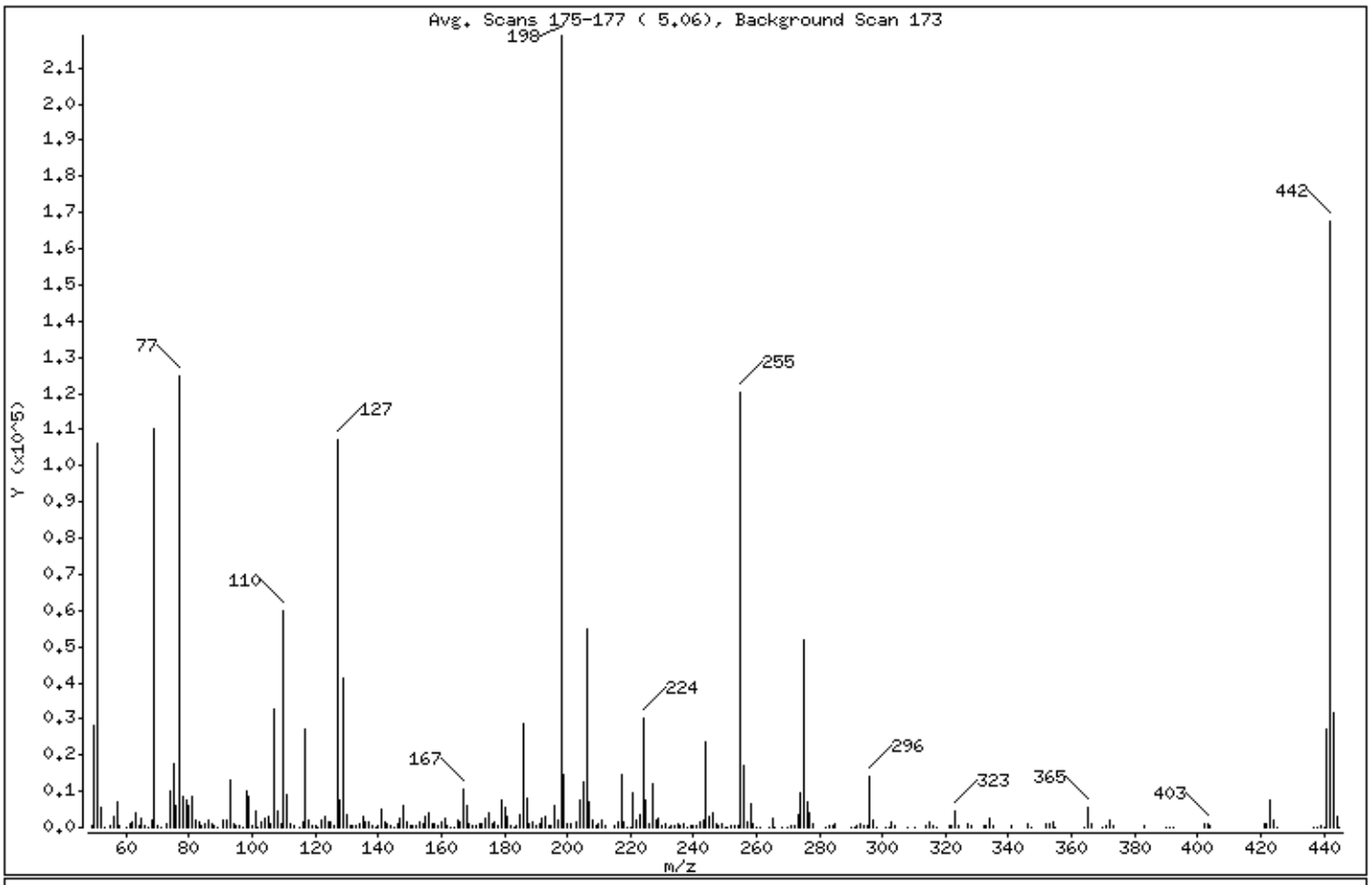
Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP;

Operator: em10340

Column phase: DB-5MS

Column diameter: 0.18

1 dftpp




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 51 | 10.00 - 80.00% of mass 198 | 48.42 |
| 68 | Less than 2.00% of mass 69 | 0.90 ( 1.78) |
| 69 | Mass 69 relative abundance | 50.45 |
| 70 | Less than 2.00% of mass 69 | 0.27 ( 0.54) |
| 127 | 10.00 - 80.00% of mass 198 | 48.99 |
| 197 | Less than 2.00% of mass 198 | 1.03 |
| 199 | 5.00 - 9.00% of mass 198 | 6.71 |
| 275 | 10.00 - 60.00% of mass 198 | 23.64 |
| 365 | Greater than 1.00% of mass 198 | 2.44 |
| 441 | 0.01 - 24.00% of mass 442 | 12.34 ( 16.11) |
| 442 | 50.00 - 99.99% of mass 198 | 76.60 |
| 443 | 15.00 - 24.00% of mass 442 | 14.58 ( 19.04) |

Digitally signed by Edward Monborne on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

Date : 02-AUG-2017 19:10

Client ID: DFTPP12.5 Instrument: HP19760.i

Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP; Operator: em10340

Column phase: DB-5MS Column diameter: 0.18

Data File: dh0100a.d
Spectrum: Avg. Scans 175-177 ( 5.06), Background Scan 173
Location of Maximum: 198.00
Number of points: 286

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 49.00 | 665 | 126.00 | 620 | 198.00 | 218880 | 277.00 | 3930 |
| 50.00 | 28104 | 127.00 | 107240 | 199.00 | 14682 | 278.00 | 771 |
| 51.00 | 106000 | 128.00 | 7565 | 200.00 | 1195 | 282.00 | 110 |
| 52.00 | 5365 | 129.00 | 41200 | 201.00 | 1096 | 283.00 | 552 |
| 53.00 | 181 | 130.00 | 3513 | 203.00 | 1606 | 284.00 | 364 |
| 55.00 | 485 | 131.00 | 731 | 204.00 | 7724 | 285.00 | 783 |
| 56.00 | 2858 | 132.00 | 369 | 205.00 | 12674 | 290.00 | 93 |
| 57.00 | 6796 | 133.00 | 359 | 206.00 | 55072 | 291.00 | 88 |
| 58.00 | 277 | 134.00 | 946 | 207.00 | 7002 | 292.00 | 263 |
| 60.00 | 95 | 135.00 | 3104 | 208.00 | 1850 | 293.00 | 781 |
| 61.00 | 1187 | 136.00 | 1473 | 209.00 | 546 | 294.00 | 372 |
| 62.00 | 1373 | 137.00 | 1751 | 210.00 | 971 | 295.00 | 266 |
| 63.00 | 4104 | 138.00 | 407 | 211.00 | 2074 | 296.00 | 13992 |
| 64.00 | 543 | 139.00 | 240 | 212.00 | 497 | 297.00 | 2005 |
| 65.00 | 2298 | 140.00 | 557 | 215.00 | 572 | 298.00 | 115 |
| 66.00 | 280 | 141.00 | 5196 | 216.00 | 1362 | 301.00 | 90 |
| 67.00 | 164 | 142.00 | 1639 | 217.00 | 14354 | 302.00 | 203 |
| 68.00 | 1968 | 143.00 | 1167 | 218.00 | 1740 | 303.00 | 1614 |
| 69.00 | 110440 | 144.00 | 356 | 219.00 | 93 | 304.00 | 376 |
| 70.00 | 591 | 145.00 | 189 | 220.00 | 132 | 308.00 | 88 |
| 71.00 | 104 | 146.00 | 855 | 221.00 | 9424 | 310.00 | 111 |
| 73.00 | 1007 | 147.00 | 2728 | 222.00 | 2018 | 314.00 | 652 |
| 74.00 | 10280 | 148.00 | 6208 | 223.00 | 3465 | 315.00 | 1543 |
| 75.00 | 17808 | 149.00 | 1460 | 224.00 | 30256 | 316.00 | 752 |
| 76.00 | 6245 | 150.00 | 384 | 225.00 | 7498 | 317.00 | 94 |
| 77.00 | 124576 | 151.00 | 700 | 226.00 | 818 | 321.00 | 442 |
| 78.00 | 8420 | 152.00 | 423 | 227.00 | 12033 | 322.00 | 280 |
| 79.00 | 7782 | 153.00 | 1550 | 228.00 | 1884 | 323.00 | 4415 |
| 80.00 | 6197 | 154.00 | 1158 | 229.00 | 2486 | 324.00 | 752 |
| 81.00 | 8365 | 155.00 | 3121 | 230.00 | 398 | 327.00 | 842 |
| 82.00 | 1940 | 156.00 | 4176 | 231.00 | 967 | 328.00 | 441 |
| 83.00 | 1683 | 157.00 | 765 | 232.00 | 201 | 332.00 | 325 |
| 84.00 | 295 | 158.00 | 997 | 233.00 | 307 | 333.00 | 362 |
| 85.00 | 1240 | 159.00 | 718 | 234.00 | 723 | 334.00 | 2637 |
| 86.00 | 2240 | 160.00 | 1570 | 235.00 | 856 | 335.00 | 735 |

Digitally signed by Edward Monborne on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

Date : 02-AUG-2017 19:10

Client ID: DFTPP12.5 Instrument: HP19760.i

Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP;

Operator: em10340

Column phase: DB-5MS Column diameter: 0.18

Data File: dh0100a.d
Spectrum: Avg. Scans 175-177 ( 5.06), Background Scan 173
Location of Maximum: 198.00
Number of points: 286

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 87.00 | 1019 | 161.00 | 2601 | 236.00 | 585 | 341.00 | 522 |
| 88.00 | 258 | 162.00 | 676 | 237.00 | 1000 | 346.00 | 883 |
| 89.00 | 106 | 163.00 | 209 | 238.00 | 204 | 347.00 | 129 |
| 91.00 | 2089 | 164.00 | 242 | 239.00 | 573 | 352.00 | 1224 |
| 92.00 | 1860 | 165.00 | 1829 | 240.00 | 454 | 353.00 | 849 |
| 93.00 | 13204 | 166.00 | 1571 | 241.00 | 676 | 354.00 | 1328 |
| 94.00 | 921 | 167.00 | 10542 | 242.00 | 1483 | 355.00 | 221 |
| 95.00 | 288 | 168.00 | 6273 | 243.00 | 1915 | 364.00 | 92 |
| 96.00 | 568 | 169.00 | 1011 | 244.00 | 23608 | 365.00 | 5348 |
| 97.00 | 99 | 170.00 | 373 | 245.00 | 2981 | 366.00 | 884 |
| 98.00 | 9812 | 171.00 | 350 | 246.00 | 4245 | 370.00 | 85 |
| 99.00 | 8477 | 172.00 | 982 | 247.00 | 857 | 371.00 | 345 |
| 100.00 | 682 | 173.00 | 1215 | 248.00 | 276 | 372.00 | 2202 |
| 101.00 | 4448 | 174.00 | 2382 | 249.00 | 937 | 373.00 | 544 |
| 102.00 | 206 | 175.00 | 4150 | 250.00 | 228 | 383.00 | 313 |
| 103.00 | 1450 | 176.00 | 1141 | 251.00 | 248 | 390.00 | 173 |
| 104.00 | 2532 | 177.00 | 1751 | 252.00 | 323 | 391.00 | 134 |
| 105.00 | 2957 | 178.00 | 737 | 253.00 | 641 | 392.00 | 105 |
| 106.00 | 950 | 179.00 | 7501 | 254.00 | 666 | 402.00 | 929 |
| 107.00 | 32576 | 180.00 | 5333 | 255.00 | 120472 | 403.00 | 1202 |
| 108.00 | 4726 | 181.00 | 2806 | 256.00 | 17216 | 404.00 | 429 |
| 109.00 | 1042 | 182.00 | 340 | 257.00 | 1419 | 421.00 | 1165 |
| 110.00 | 59984 | 183.00 | 202 | 258.00 | 6366 | 422.00 | 996 |
| 111.00 | 9059 | 184.00 | 627 | 259.00 | 1166 | 423.00 | 7423 |
| 112.00 | 1080 | 185.00 | 3700 | 260.00 | 191 | 424.00 | 1856 |
| 113.00 | 439 | 186.00 | 28856 | 261.00 | 97 | 425.00 | 187 |
| 115.00 | 121 | 187.00 | 7929 | 264.00 | 25 | 437.00 | 102 |
| 116.00 | 1655 | 188.00 | 896 | 265.00 | 2614 | 438.00 | 233 |
| 117.00 | 27024 | 189.00 | 1619 | 266.00 | 57 | 439.00 | 516 |
| 118.00 | 2119 | 190.00 | 289 | 268.00 | 114 | 440.00 | 88 |
| 119.00 | 363 | 191.00 | 802 | 270.00 | 122 | 441.00 | 27016 |
| 120.00 | 394 | 192.00 | 2372 | 271.00 | 325 | 442.00 | 167680 |
| 121.00 | 111 | 193.00 | 2781 | 272.00 | 463 | 443.00 | 31920 |
| 122.00 | 1972 | 194.00 | 698 | 273.00 | 3523 | 444.00 | 3074 |
| 123.00 | 2933 | 195.00 | 450 | 274.00 | 9572 | 445.00 | 126 |

Digitally signed by Edward Monborne on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

Date : 02-AUG-2017 19:10

Client ID: DFTPP12.5 Instrument: HP19760.i

Sample Info: DFTPP12.5;rvDFTPP2007;1;3;DFTPP;

Operator: em10340

Column phase: DB-5MS Column diameter: 0.18

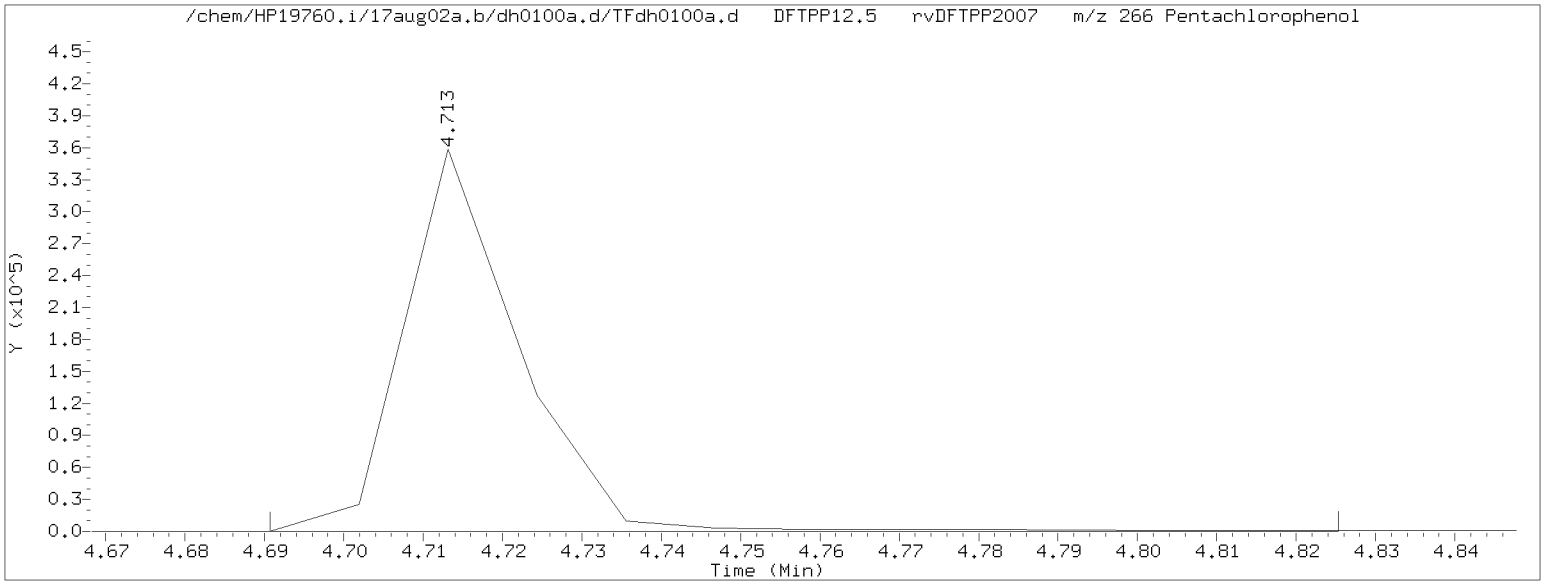
Data File: dh0100a.d
Spectrum: Avg. Scans 175-177 ( 5.06), Background Scan 173
Location of Maximum: 198.00
Number of points: 286

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 124.00 | 1420 | 196.00 | 5971 | 275.00 | 51744 | | |
| 125.00 | 1458 | 197.00 | 2249 | 276.00 | 7154 | | |

Digitally signed by Edward Monborne on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

# Assessment of GC Column Performance and Injection Port Inertness for

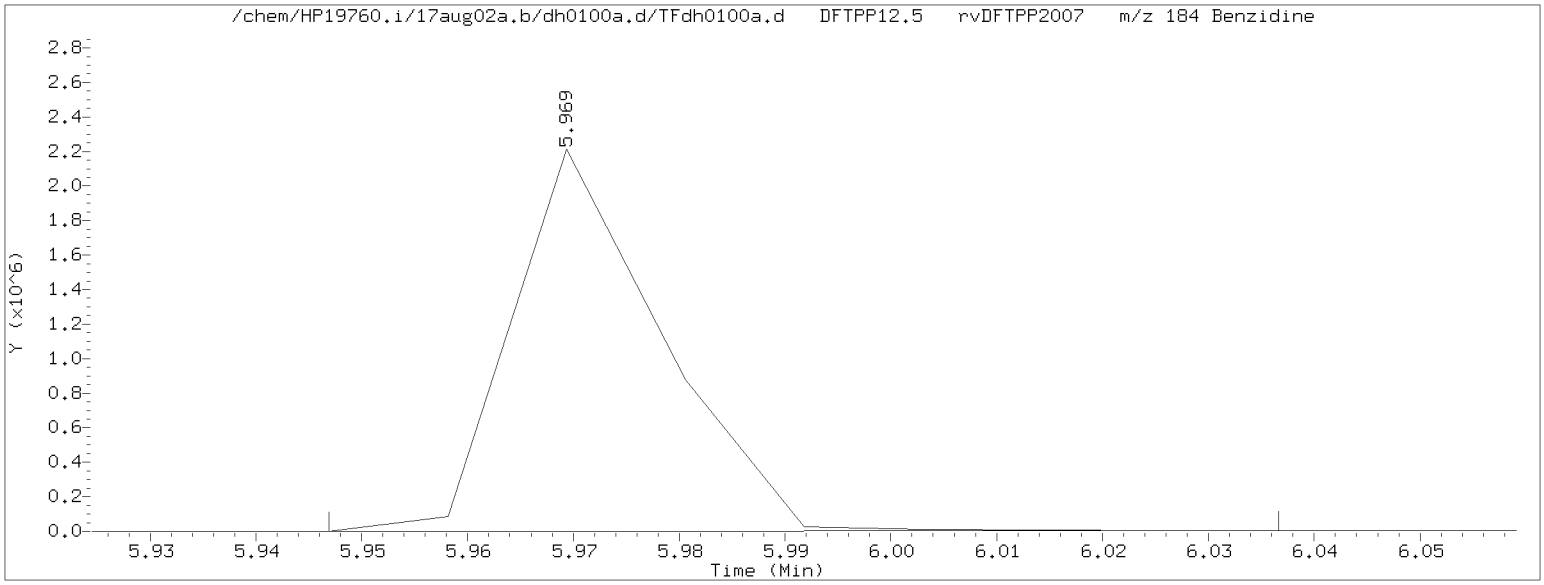
Instrument ID: HP19760.i  Injection Date: 02-AUG-2017 19:10  Operator: em10340




Pentachlorophenol EICP peak height = 358720  EICP peak height at 10% = 35872  Pentachlorophenol EICP area = 358474

Pentachlorophenol EICP peak apex (min.) = 4.713
RT at 10% of front half of EICP (min.) = 4.702  'Front' peak width (min.) = 0.0108500000
RT at 10% of back half of EICP (min.) = 4.733  'Tailing' peak width (min.) = 0.0199000000

PCP tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0199000000}{0.0108500000} = 1.834$




Benzidine EICP peak height = 2214015  EICP peak height at 10% = 221402  Benzidine EICP area = 2161409

Benzidine EICP peak apex (min.) = 5.969
RT at 10% of front half of EICP (min.) = 5.959  'Front' peak width (min.) = 0.0104833333
RT at 10% of back half of EICP (min.) = 5.989  'Tailing' peak width (min.) = 0.0198333333

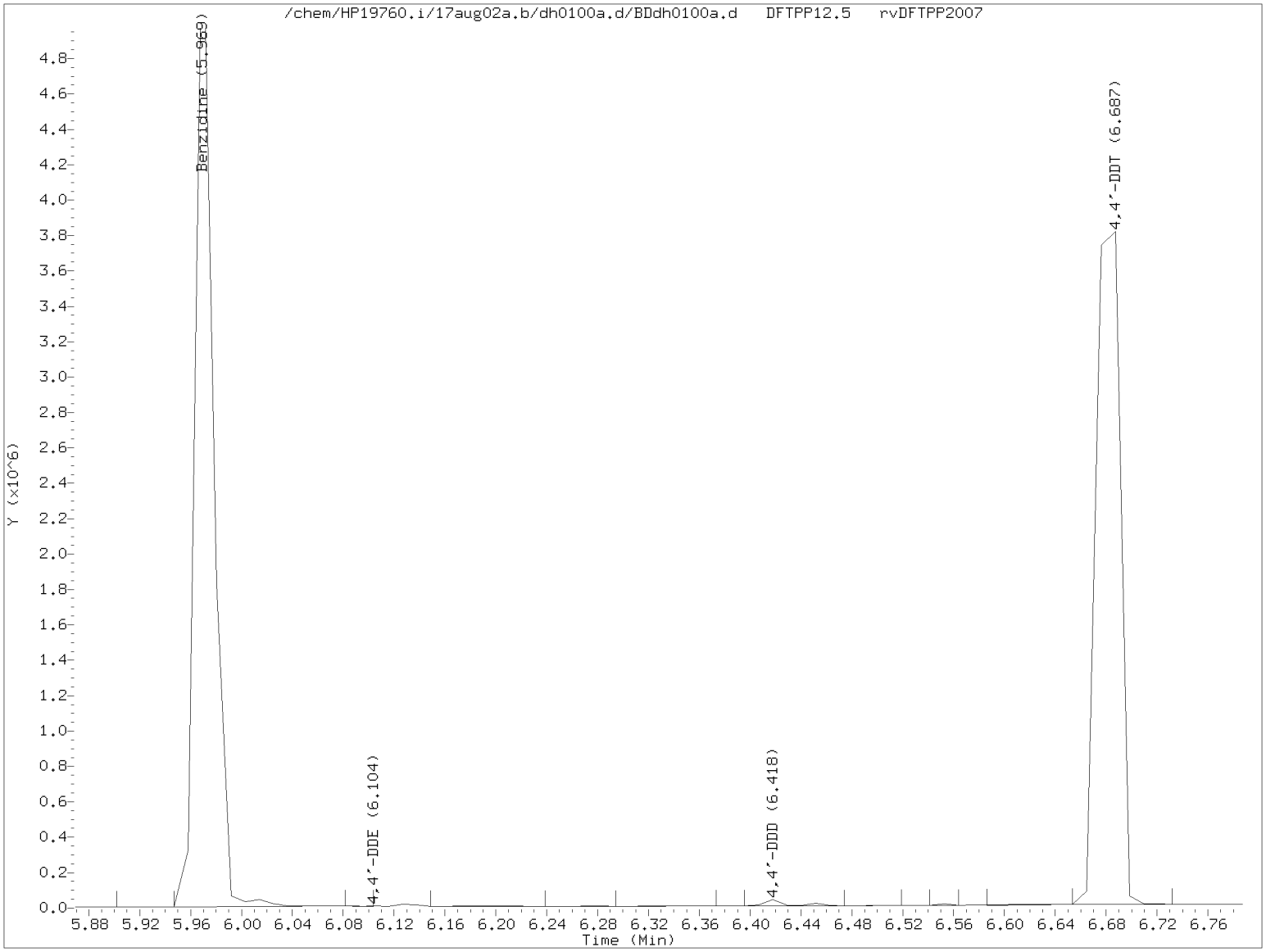
Benzidine tailing factor = $\frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0198333333}{0.0104833333} = 1.892$



Secondary review performed and digitally signed by Matthew E. Barton on 08/03/2017 at 09:39.  PARALLAX ID: reb00745

# Assessment of GC Column Performance and Injection Port Inertness for

Instrument ID: HP19760.i  Injection Date: 02-AUG-2017 19:10  Operator: em10340

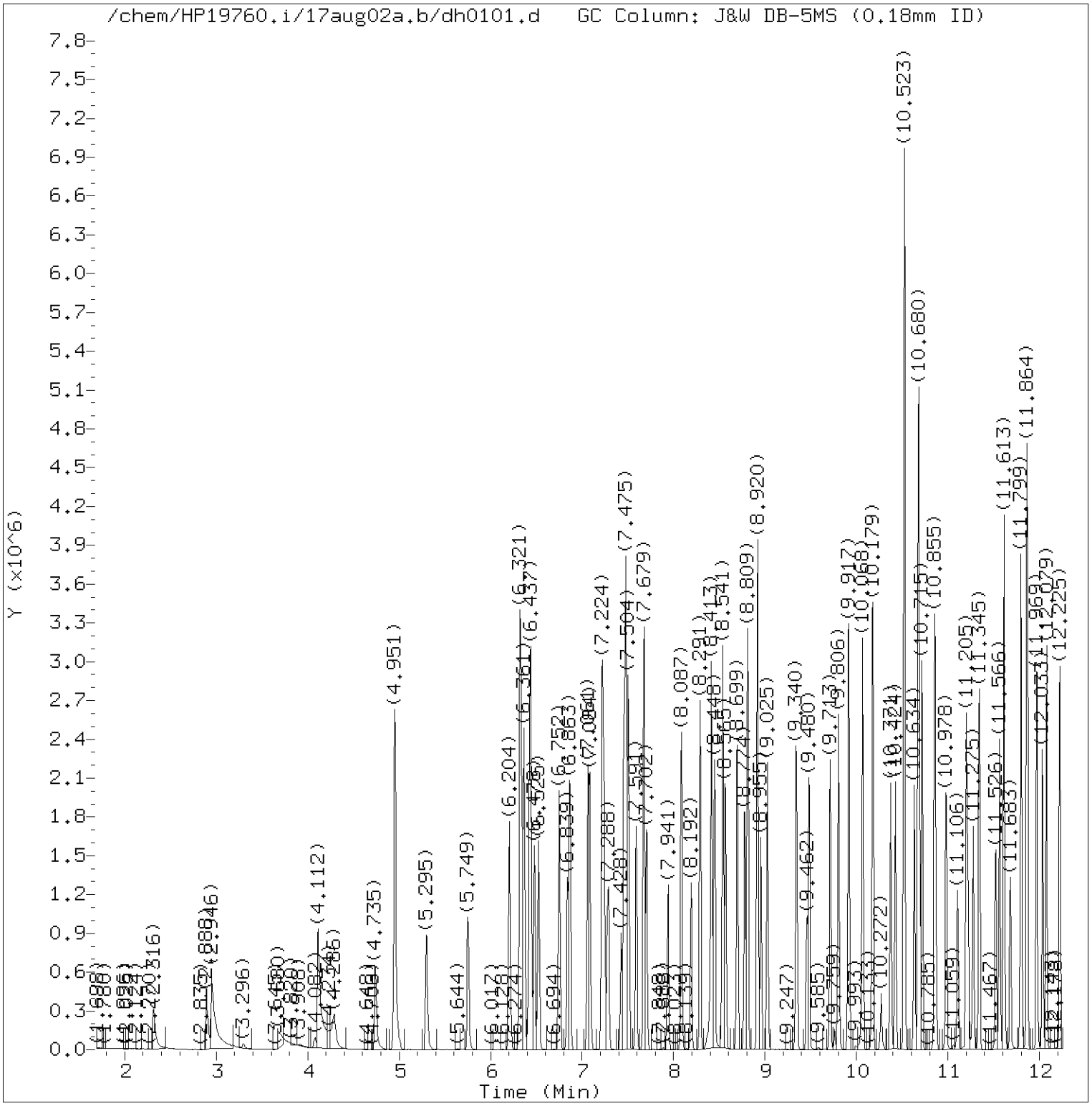



$$\%\ 4,4'\text{-DDT breakdown} = \frac{4,4'\text{-DDE TIC area} + 4,4'\text{-DDD TIC area}}{4,4'\text{-DDE TIC area} + 4,4'\text{-DDD TIC area} + 4,4'\text{-DDT TIC area}} \times 100$$

$$\%\ 4,4'\text{-DDT breakdown} = \frac{688 + 41810}{688 + 41810 + 5153728} \times 100 = 0.8$$



Secondary review performed and digitally signed by Matthew E. Barton on 08/03/2017 at 09:39.  PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

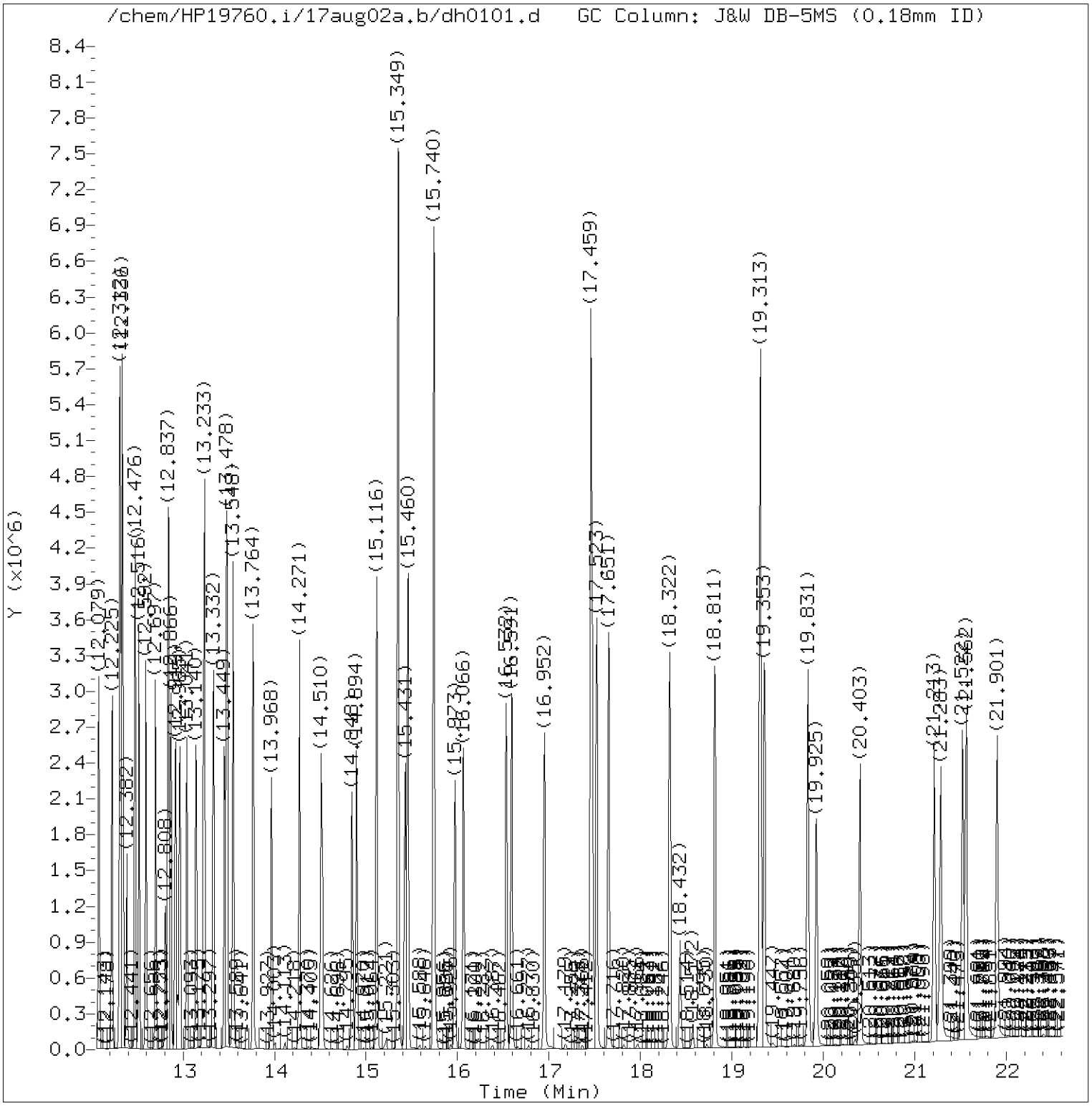
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0101.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 19:24 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: all1
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 19:54 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2077

Digitally signed by Edward Monborne
on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0101.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 19:24 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: all1
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 19:54 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2077

Digitally signed by Edward Monborne
on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0101.d  Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 19:24  Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m  Sublist used: all1
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 19:54 em10340

Sample Name: SSTD7.5  Lab Sample ID: rvSTD2077

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 1) 1,4-Dioxane | (1) | 2.316 | 88 | 285704 | 7.575 |
| 4) N-Nitrosodimethylamine | (1) | 2.893 | 74 | 438599 | 7.141 |
| 5) Pyridine | (1) | 2.946 | 79 | 682422 | 6.857 |
| 7) 2-Picoline | (1) | 4.112 | 93 | 777111 | 7.289 |
| 8) N-Nitrosomethylethylamine | (1) | 4.292 | 88 | 320605 | 7.344 |
| 9) Methyl methanesulfonate | (1) | 4.735 | 80 | 373066 | 7.469 |
| 11)$2-Fluorophenol | (1) | 4.951 | 112 | 1262567 | 15.203 |
| 13) N-Nitrosodiethylamine | (1) | 5.301 | 102 | 316388 | 7.444 |
| 42) Total Cresols | (1) | | | 1274320 | 15.521 |
| 15) Ethyl methanesulfonate | (1) | 5.749 | 109 | 329232 | 7.574 |
| 16) Benzaldehyde | (1) | 6.204 | 77 | 586392 | 8.171 |
| 17)$Phenol-d6 | (1) | 6.321 | 99 | 1661182 | 15.225 |
| 18) Phenol | (1) | 6.338 | 94 | 946943 | 7.649 |
| 19) Aniline | (1) | 6.367 | 93 | 1101887 | 7.622 |
| 20) a-methylstyrene | (1) | 6.437 | 118 | 696366 | 7.497 |
| 22) bis(2-Chloroethyl)ether | (1) | 6.478 | 93 | 692829 | 7.578 |
| 23) 2-Chlorophenol | (1) | 6.525 | 128 | 613782 | 7.606 |
| 24) 1,3-Dichlorobenzene | (1) | 6.752 | 146 | 678888 | 7.551 |
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.839 | 152 | 280313 | 5.000 |
| 26) 1,4-Dichlorobenzene | (1) | 6.868 | 146 | 689247 | 7.603 |
| 27) Benzyl alcohol | (1) | 7.061 | 108 | 439280 | 7.439 |
| 28) 1,2-Dichlorobenzene | (1) | 7.084 | 146 | 654946 | 7.658 |
| 30) Indene | (1) | 7.218 | 115 | 1242608 | 7.586 |
| 31) 2-Methylphenol | (1) | 7.241 | 108 | 596192 | 7.640 |
| 34) bis(2-Chloroisopropyl)ether | (1) | 7.288 | 45 | 902676 | 7.329 |
| 33) 2,2'-oxybis(1-Chloropropane) | (1) | 7.288 | 45 | 902676 | 7.329 |
| 97) Isosafrole | (3) | | | 470873 | 7.375 |
| 35) N-Nitrosopyrrolidine | (1) | 7.428 | 100 | 341137 | 7.548 |
| 36) Acetophenone | (1) | 7.457 | 105 | 911049 | 7.469 |
| 38) N-Nitroso-di-n-propylamine | (1) | 7.475 | 70 | 519399 | 7.496 |
| 37) 4-Methylphenol | (1) | 7.480 | 108 | 678128 | 7.880 |
| 39) N-Nitrosomorpholine | (1) | 7.498 | 56 | 422713 | 7.413 |
| 40) o-Toluidine | (1) | 7.504 | 106 | 1053768 | 7.650 |
| 43) Hexachloroethane | (1) | 7.591 | 117 | 278301 | 7.495 |
| 44)$Nitrobenzene-d5 | (2) | 7.679 | 82 | 1525695 | 15.274 |
| 45) Nitrobenzene | (2) | 7.708 | 77 | 758013 | 7.568 |
| 48) N-Nitrosopiperidine | (2) | 7.941 | 114 | 311392 | 7.707 |
| 120) 2,4_2,6-Dinitrotoluenes | (3) | | | 612047 | 15.180 |
| 50) Isophorone | (2) | 8.087 | 82 | 1301473 | 7.676 |
| 51) 2-Nitrophenol | (2) | 8.192 | 139 | 295835 | 7.903 |

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Digitally signed by Edward Monborne
on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0101.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 19:24 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: all1
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 19:54 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2077

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 53) 2,4-Dimethylphenol | (2) | 8.291 | 107 | 653284 | 7.722 |
| 57) O,O,O-Triethylphosphorothioate | (2) | 8.413 | 198 | 292590 | 7.486 |
| 56) Benzoic acid | (2) | 8.436 | 105 | 434200 | 8.255 |
| 55) bis(2-Chloroethoxy)methane | (2) | 8.448 | 93 | 828682 | 7.544 |
| 59) 1,2,3,4-Tetrahydronaphthalene | (2) | 8.541 | 104 | 1034518 | 7.608 |
| 60) 2,4-Dichlorophenol | (2) | 8.570 | 162 | 502905 | 7.795 |
| 62) 1,2,4-Trichlorobenzene | (2) | 8.699 | 180 | 566672 | 7.748 |
| 146) Diallate trans/cis | (4) | | | 599107 | 7.438 |
| 65)*Naphthalene-d8 | (2) | 8.780 | 136 | 1047002 | 5.000 |
| 66) Naphthalene | (2) | 8.809 | 128 | 1773018 | 7.655 |
| 67) 4-Chloroaniline | (2) | 8.914 | 127 | 716189 | 7.732 |
| 68) 2,6-Dichlorophenol | (2) | 8.920 | 162 | 496382 | 7.700 |
| 69) Hexachloropropene | (2) | 8.955 | 213 | 347956 | 7.682 |
| 71) Hexachlorobutadiene | (2) | 9.025 | 225 | 319475 | 7.698 |
| 75) Quinoline | (2) | 9.340 | 129 | 1103351 | 7.536 |
| 76) Caprolactam | (2) | 9.462 | 113 | 146949 | 7.133 |
| 77) N-Nitrosodi-n-butylamine | (2) | 9.486 | 84 | 604503 | 7.819 |
| 80) 4-Chloro-3-methylphenol | (2) | 9.713 | 107 | 550091 | 7.700 |
| 82) Safrole | (2) | 9.806 | 162 | 458664 | 7.598 |
| 83) 2-Methylnaphthalene | (2) | 9.917 | 142 | 1172695 | 7.728 |
| 84) 1-Methylnaphthalene | (2) | 10.068 | 142 | 1047969 | 7.638 |
| 85) Hexachlorocyclopentadiene | (3) | 10.173 | 237 | 284140 | 7.614 |
| 86) 1,2,4,5-Tetrachlorobenzene | (3) | 10.179 | 216 | 564801 | 7.693 |
| 88) cis-Isosafrole | (3) | 10.272 | 162 | 79980 | 1.260 |
| 90) 2,4,6-Trichlorophenol | (3) | 10.377 | 196 | 349847 | 7.675 |
| 92) 2,4,5-Trichlorophenol | (3) | 10.424 | 196 | 375330 | 7.770 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 2579251 | 15.328 |
| 94) trans-Isosafrole | (3) | 10.634 | 162 | 390892 | 6.116 |
| 95) 1,1'-Biphenyl | (3) | 10.675 | 154 | 1359953 | 7.532 |
| 96) 2-Chloronaphthalene | (3) | 10.686 | 162 | 1128882 | 7.766 |
| 98) 1-Chloronaphthalene | (3) | 10.715 | 162 | 994373 | 7.424 |
| 99) Diphenyl ether | (3) | 10.855 | 170 | 747065 | 7.533 |
| 100) 2-Nitroaniline | (3) | 10.867 | 138 | 327590 | 7.573 |
| 104) 1,4-Naphthoquinone | (3) | 10.983 | 158 | 431880 | 7.608 |
| 105) 1,4-Dinitrobenzene | (3) | 11.106 | 168 | 165176 | 7.382 |
| 106) Dimethylphthalate | (3) | 11.199 | 163 | 1183962 | 7.429 |
| 107) 1,3-Dinitrobenzene | (3) | 11.217 | 168 | 185153 | 7.449 |
| 108) 2,6-Dinitrotoluene | (3) | 11.281 | 165 | 261557 | 7.709 |
| 109) Acenaphthylene | (3) | 11.345 | 152 | 1541665 | 7.738 |
| 112) 3-Nitroaniline | (3) | 11.526 | 138 | 278201 | 7.484 |

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on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0101.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 19:24 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: all1
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 19:54 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2077

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 113)*Acenaphthene-d10 | (3) | 11.566 | 164 | 582391 | 5.000 |
| 114) Acenaphthene | (3) | 11.613 | 153 | 1142751 | 7.549 |
| 115) 2,4-Dinitrophenol | (3) | 11.683 | 184 | 186935 | 8.626 |
| 117) Pentachlorobenzene | (3) | 11.799 | 250 | 466144 | 7.636 |
| 116) 4-Nitrophenol | (3) | 11.799 | 109 | 199941 | 7.037 |
| 119) Dibenzofuran | (3) | 11.864 | 168 | 1490172 | 7.591 |
| 118) 2,4-Dinitrotoluene | (3) | 11.869 | 165 | 350489 | 7.471 |
| 121) 1-Naphthylamine | (3) | 11.974 | 143 | 1076514 | 7.202 |
| 122) 2,3,4,6-Tetrachlorophenol | (3) | 12.033 | 232 | 283383 | 7.766 |
| 123) 2-Naphthylamine | (3) | 12.079 | 143 | 1041814 | 7.258 |
| 124) Diethylphthalate | (3) | 12.225 | 149 | 1131806 | 7.322 |
| 126) Fluorene | (3) | 12.307 | 166 | 1175740 | 7.538 |
| 125) Thionazin | (3) | 12.312 | 107 | 225831 | 7.269 |
| 128) 5-Nitro-o-toluidine | (3) | 12.336 | 152 | 340753 | 7.648 |
| 127) 4-Chlorophenyl-phenylether | (3) | 12.336 | 204 | 569162 | 7.609 |
| 129) 4-Nitroaniline | (3) | 12.342 | 138 | 287676 | 7.614 |
| 130) 4,6-Dinitro-2-methylphenol | (4) | 12.382 | 198 | 190680 | 7.001 |
| 131) N-Nitrosodiphenylamine | (4) | 12.476 | 169 | 988327 | 7.677 |
| 132) NDPA as diphenylamine | (4) | 12.476 | 169 | 988327 | 7.677 |
| 134) 1,2-Diphenylhydrazine | (4) | 12.516 | 77 | 1382246 | 7.553 |
| 135)$2,4,6-Tribromophenol | (3) | 12.592 | 330 | 299110 | 15.510 |
| 137) Tetraethyldithiopyrophosphate | (4) | 12.697 | 97 | 223234 | 7.406 |
| 139) 1,3,5-Trinitrobenzene | (4) | 12.808 | 213 | 118670 | 6.960 |
| 140) Diallate (peak 1) | (4) | 12.837 | 86 | 513231 | 6.171 |
| 141) Phorate | (4) | 12.843 | 75 | 870014 | 7.617 |
| 142) Phenacetin | (4) | 12.866 | 108 | 652913 | 7.776 |
| 143) 4-Bromophenyl-phenylether | (4) | 12.919 | 248 | 320822 | 7.690 |
| 144) Diallate (peak 2) | (4) | 12.942 | 86 | 85876 | 1.267 |
| 145) Hexachlorobenzene | (4) | 12.965 | 284 | 345278 | 7.788 |
| 147) Dimethoate | (4) | 13.041 | 87 | 537385 | 7.482 |
| 148) Atrazine | (4) | 13.146 | 200 | 310348 | 7.482 |
| 149) Pentachlorophenol | (4) | 13.216 | 266 | 201803 | 7.487 |
| 151) Pentachloronitrobenzene | (4) | 13.227 | 237 | 156692 | 7.841 |
| 150) 4-Aminobiphenyl | (4) | 13.233 | 169 | 996412 | 10.126 |
| 152) Pronamide | (4) | 13.332 | 173 | 561905 | 7.871 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 1057394 | 5.000 |
| 154) Dinoseb | (4) | 13.472 | 211 | 311296 | 7.366 |
| 155) Phenanthrene | (4) | 13.484 | 178 | 1734685 | 7.534 |
| 157) Anthracene | (4) | 13.548 | 178 | 1751869 | 7.735 |
| 163) Carbazole | (4) | 13.764 | 167 | 1623880 | 7.747 |

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on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0101.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 19:24 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: all1
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 19:54 em10340

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2077

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 164) Methyl parathion | (4) | 13.968 | 109 | 431730 | 7.628 |
| 165) Di-n-butylphthalate | (4) | 14.271 | 149 | 1950800 | 7.511 |
| 167) Parathion | (4) | 14.504 | 109 | 266070 | 7.597 |
| 168) 4-Nitroquinoline-1-oxide | (4) | 14.521 | 190 | 143730 | 5.315 |
| 169) Octachlorostyrene | (4) | 14.848 | 308 | 135034 | 7.962 |
| 171) Isodrin | (4) | 14.894 | 193 | 204938 | 7.473 |
| 222) Total PAHs | (6) | | | 29724383 | 138.331 |
| 173) Fluoranthene | (4) | 15.116 | 202 | 1980498 | 7.809 |
| 174) Benzidine | (5) | 15.355 | 184 | 3685782 | 22.010 |
| 175)*Pyrene-d10 | (5) | 15.431 | 212 | 1271229 | 5.000 |
| 177) Pyrene | (5) | 15.460 | 202 | 2089136 | 7.540 |
| 179)$Terphenyl-d14 | (5) | 15.740 | 244 | 2715100 | 15.434 |
| 182) p-Dimethylaminoazobenzene | (5) | 15.973 | 225 | 303629 | 7.851 |
| 185) Chlorobenzilate | (5) | 16.066 | 139 | 613965 | 7.443 |
| 187) 3,3'-Dimethylbenzidine | (5) | 16.532 | 212 | 1266199 | 7.746 |
| 188) Butylbenzylphthalate | (5) | 16.596 | 149 | 901223 | 7.574 |
| 191) 2-Acetylaminofluorene | (5) | 16.952 | 181 | 789674 | 7.460 |
| 193) 3,3'-Dichlorobenzidine | (5) | 17.459 | 252 | 738638 | 7.712 |
| 195) Benzo(a)anthracene | (5) | 17.459 | 228 | 1900287 | 7.833 |
| 198) 4,4'-Methylenebis(2-chloroanil | (5) | 17.477 | 231 | 373975 | 7.430 |
| 196) Chrysene | (5) | 17.523 | 228 | 1798884 | 7.854 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.651 | 149 | 1276906 | 7.390 |
| 203) 6-Methylchrysene | (5) | 18.322 | 242 | 1290429 | 7.556 |
| 205) Di-n-octylphthalate | (6) | 18.811 | 149 | 2141071 | 7.296 |
| 206) Benzo(b)fluoranthene | (6) | 19.307 | 252 | 1912326 | 7.803 |
| 207) 7,12-Dimethylbenz[a]anthracene | (6) | 19.313 | 256 | 850605 | 8.320 |
| 208) Benzo(k)fluoranthene | (6) | 19.359 | 252 | 1922144 | 8.088 |
| 211) Benzo(a)pyrene | (6) | 19.831 | 252 | 1726928 | 7.657 |
| 213)*Perylene-d12 | (6) | 19.925 | 264 | 993510 | 5.000 |
| 215) 3-Methylcholanthrene | (6) | 20.403 | 268 | 728519 | 7.518 |
| 217) Dibenz(a,h)acridine | (6) | 21.213 | 279 | 1311116 | 7.158 |
| 218) Dibenz(a,j)acridine | (6) | 21.283 | 279 | 1376877 | 7.294 |
| 219) Indeno(1,2,3-cd)pyrene | (6) | 21.522 | 276 | 1902300 | 7.591 |
| 220) Dibenz(a,h)anthracene | (6) | 21.562 | 278 | 1568206 | 7.635 |
| 221) Benzo(g,h,i)perylene | (6) | 21.901 | 276 | 1583274 | 7.405 |

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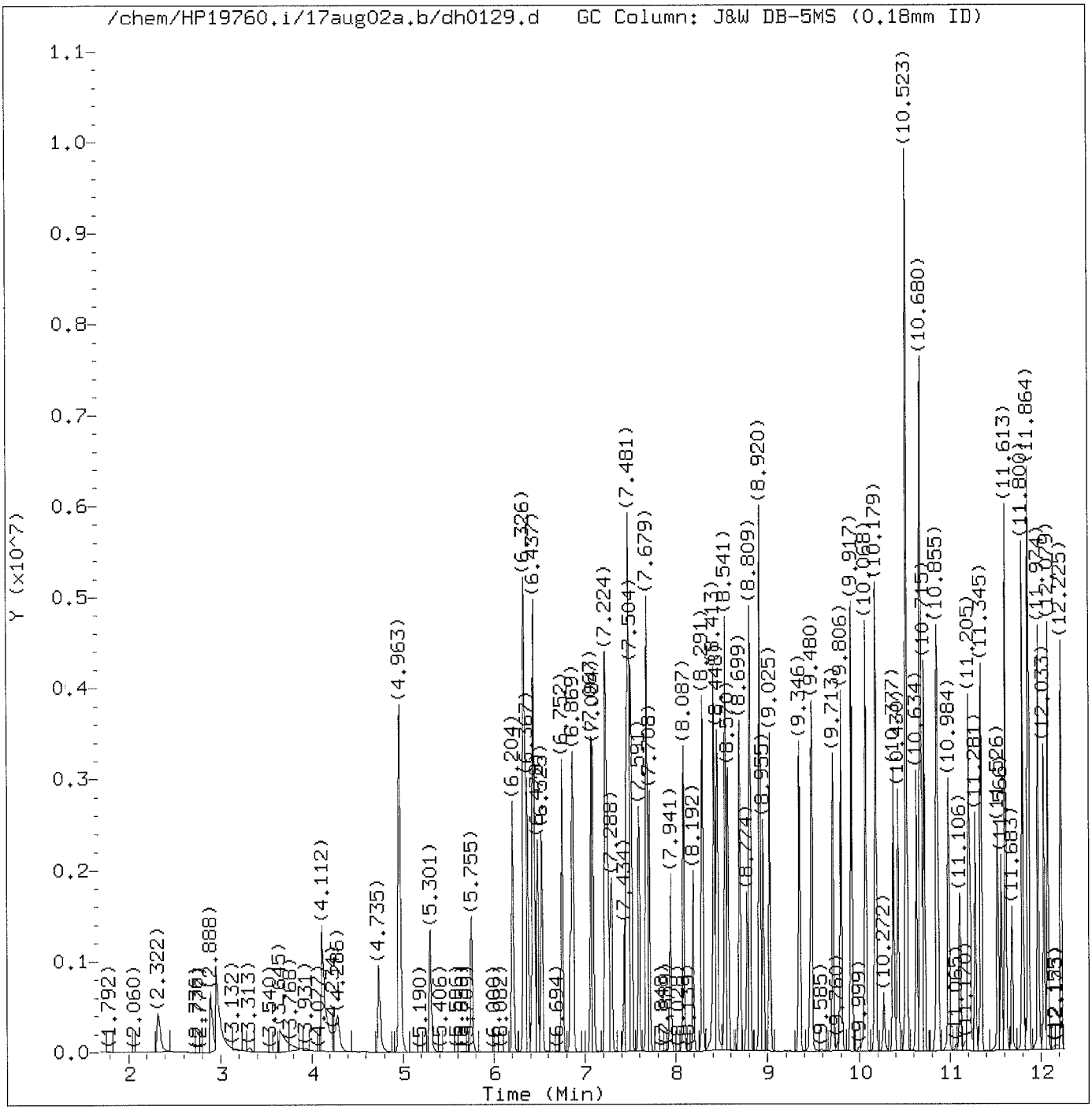
on 08/02/2017 at 19:55.
Target 3.5 esignature user ID: em10340




Total Ion Chromatogram (TIC)

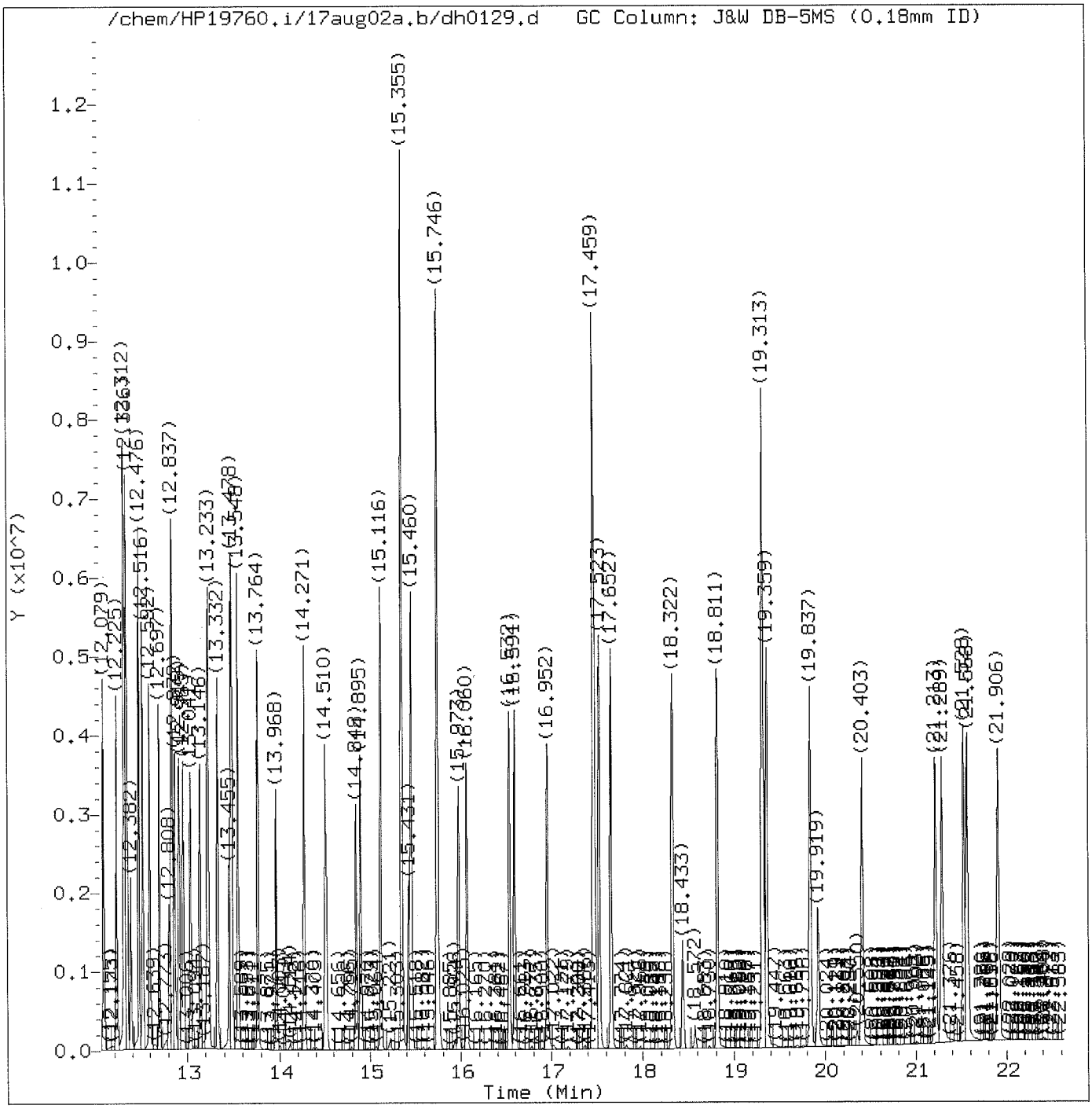
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0129.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 05:13 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 03-AUG-2017 09:18
Date, time and analyst ID of latest file update: 03-Aug-2017 10:07 knk25316

Sample Name: SECC12.5 Lab Sample ID: rvSTD2077

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:08.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0129.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 05:13 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 03-AUG-2017 09:18
Date, time and analyst ID of latest file update: 03-Aug-2017 10:07 knk25316

Sample Name: SECC12.5 Lab Sample ID: rvSTD2077

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:08.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0129.d  Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 05:13  Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m  Sublist used: 24690M
Calibration date and time: 03-AUG-2017 09:18
Date, time and analyst ID of latest file update: 03-Aug-2017 10:07 knk25316

Sample Name: SECC12.5  Lab Sample ID: rvSTD2077

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.839 | 152 | 266844 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.679 | 82 | 2374639 | 25.183 |
| 65)*Naphthalene-d8 | (2) | 8.780 | 136 | 988366 | 5.000 |
| 66) Naphthalene | (2) | 8.809 | 128 | 2726848 | 12.472 |
| 83) 2-Methylnaphthalene | (2) | 9.917 | 142 | 1830698 | 12.779 |
| 84) 1-Methylnaphthalene | (2) | 10.068 | 142 | 1644787 | 12.700 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 3971493 | 25.292 |
| 113)*Acenaphthene-d10 | (3) | 11.566 | 164 | 543486 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 956986 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.431 | 212 | 1136003 | 5.000 |
| 177) Pyrene | (5) | 15.460 | 202 | 3072672 | 12.410 |
| 179)$Terphenyl-d14 | (5) | 15.746 | 244 | 3935289 | 25.033 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.652 | 149 | 1885118 | 12.209 |
| 213)*Perylene-d12 | (6) | 19.925 | 264 | 923508 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:08.
Target 3.5 esignature user ID: knk25316

# Raw QC Data

# Semivolatiles by GC/MS

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0102.d Injection date and time: **02-AUG-2017 20:02**
Data file Sample Info. Line: SBLKWC208;SBLKWC208;1;3;BLANK;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 02-Aug-2017 20:26 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 250 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.839( 0.000) | 884 | 152 | 241165 ( -14) | 5.00 | |
| 65) Naphthalene-d8 | 8.774( 0.006) | 1216 | 136 | 906252 ( -13) | 5.00 | |
| 113) Acenaphthene-d10 | 11.560( 0.006) | 1694 | 164 | 492625 ( -15) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 891777 ( -16) | 5.00 | |
| 175) Pyrene-d10 | 15.425( 0.006) | 2357 | 212 | 1068831 ( -16) | 5.00 | |
| 213) Perylene-d12 | 19.925( 0.000) | 3129 | 264 | 782182 ( -21) | 5.00 | |

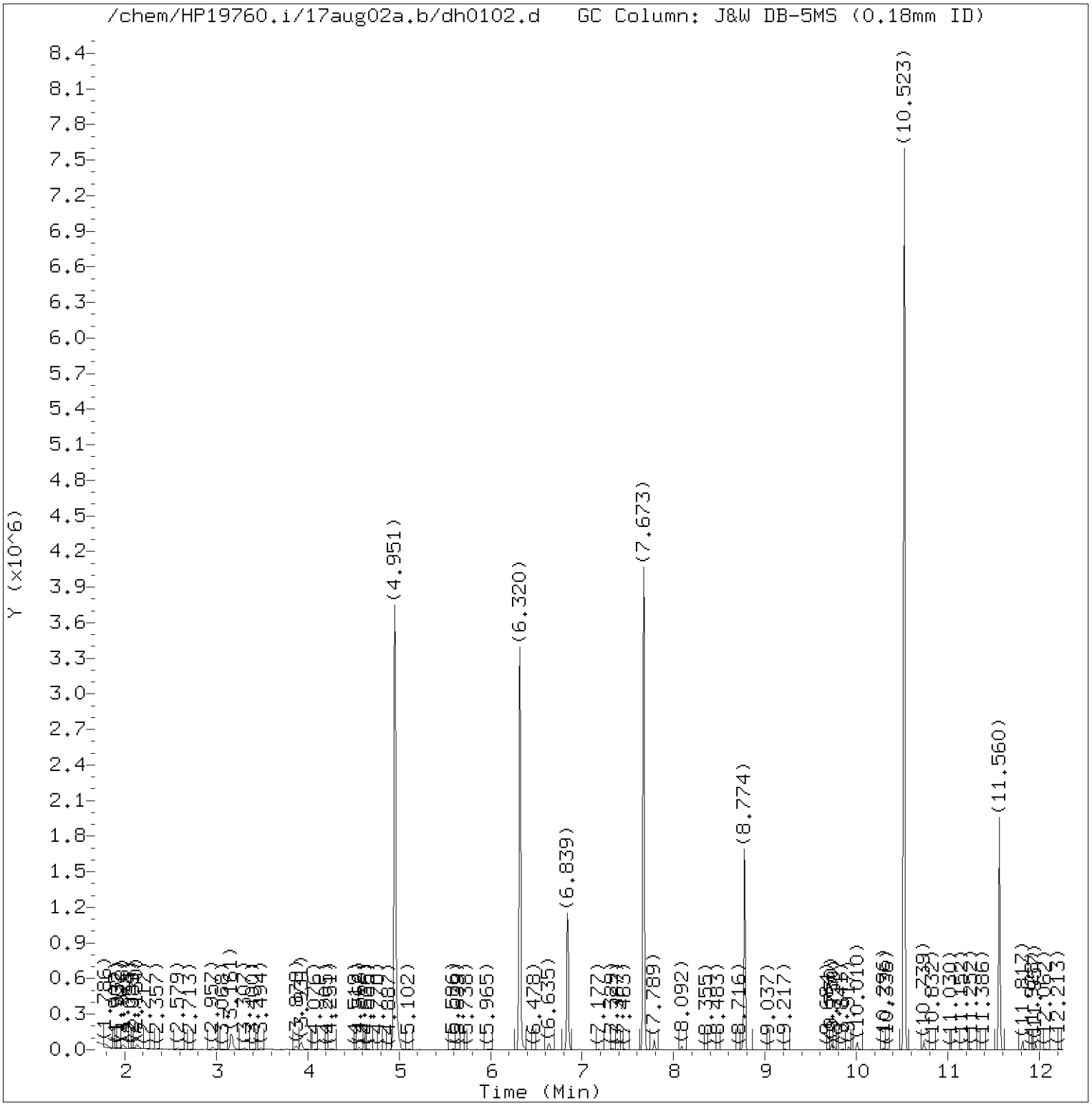
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.673( 0.000) | 82 | 1826058 | 21.120 | 84% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 2740884 | 19.257 | 77% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.745(-0.001) | 244 | 3548926 | 23.994 | 96% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | | | Not Detected | | | | | 0.03 |
| 177) Pyrene | (5) | | | Not Detected | | | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | | | Not Detected | | | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:04. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

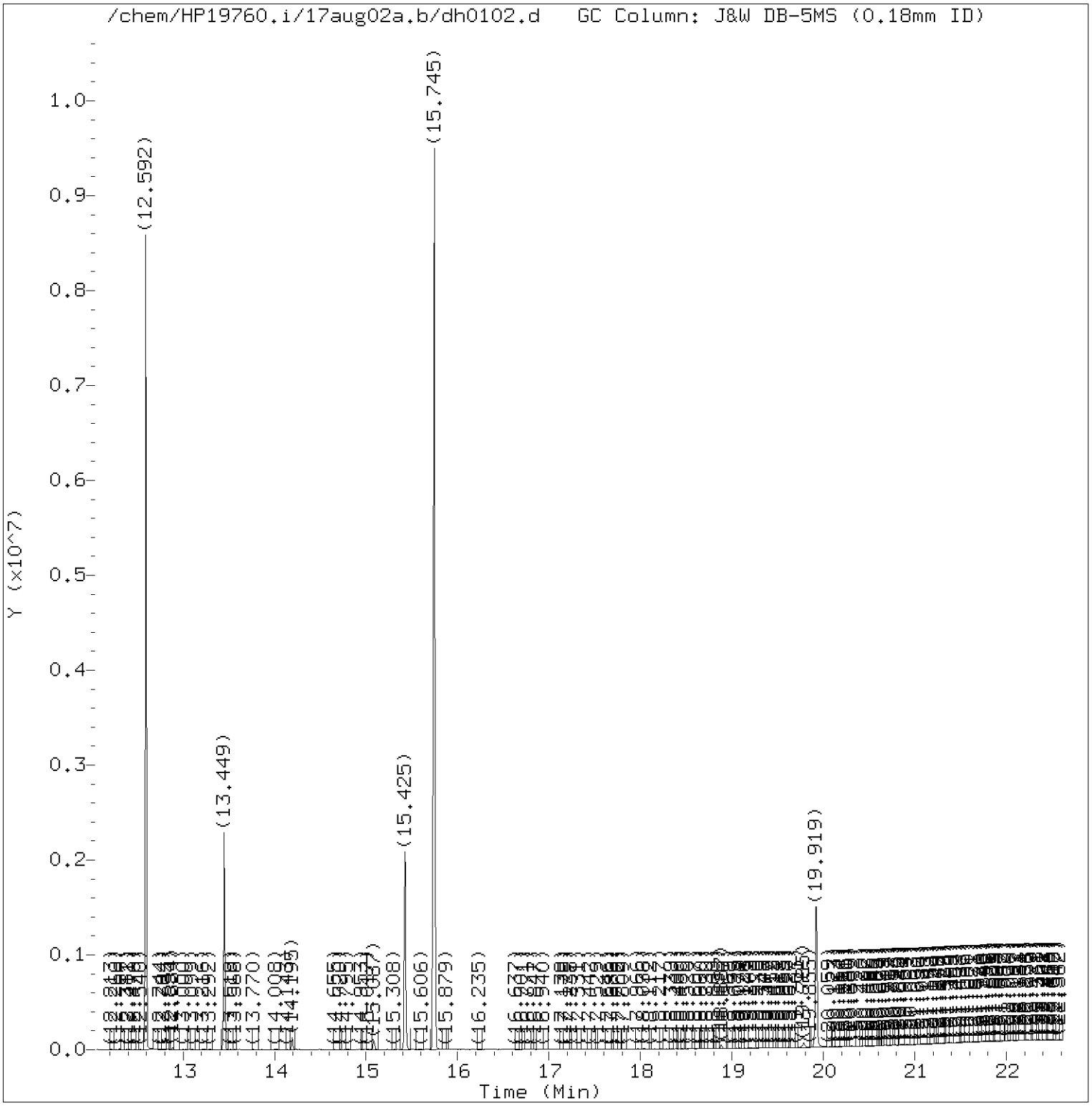
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0102.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 20:02 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 20:26 Automation

Sample Name: SBLKWC208 Lab Sample ID: SBLKWC208

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:04.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0102.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 20:02 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 20:26 Automation

Sample Name: SBLKWC208 Lab Sample ID: SBLKWC208

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:04.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0102.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 20:02 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 20:26 Automation

Sample Name: SBLKWC208 Lab Sample ID: SBLKWC208

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.839 | 152 | 241165 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.673 | 82 | 1826058 | 21.120 |
| 65)*Naphthalene-d8 | (2) | 8.774 | 136 | 906252 | 5.000 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 2740884 | 19.257 |
| 113)*Acenaphthene-d10 | (3) | 11.560 | 164 | 492625 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 891777 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.425 | 212 | 1068831 | 5.000 |
| 179)$Terphenyl-d14 | (5) | 15.745 | 244 | 3548926 | 23.994 |
| 213)*Perylene-d12 | (6) | 19.925 | 264 | 782182 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:04.
Target 3.5 esignature user ID: knk25316

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0120.d Injection date and time: **03-AUG-2017 03:51**
Data file Sample Info. Line: K1910MS;9121684;1;3;MS;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 03-Aug-2017 04:15 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 246 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.845(-0.006) | 885 | 152 | 241662 ( -14) | 5.00 | |
| 65) Naphthalene-d8 | 8.775( 0.006) | 1216 | 136 | 897356 ( -14) | 5.00 | |
| 113) Acenaphthene-d10 | 11.566( 0.000) | 1695 | 164 | 493024 ( -15) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 864208 ( -18) | 5.00 | |
| 175) Pyrene-d10 | 15.425( 0.006) | 2357 | 212 | 1033342 ( -19) | 5.00 | |
| 213) Perylene-d12 | 19.919( 0.006) | 3128 | 264 | 813011 ( -18) | 5.00 | |

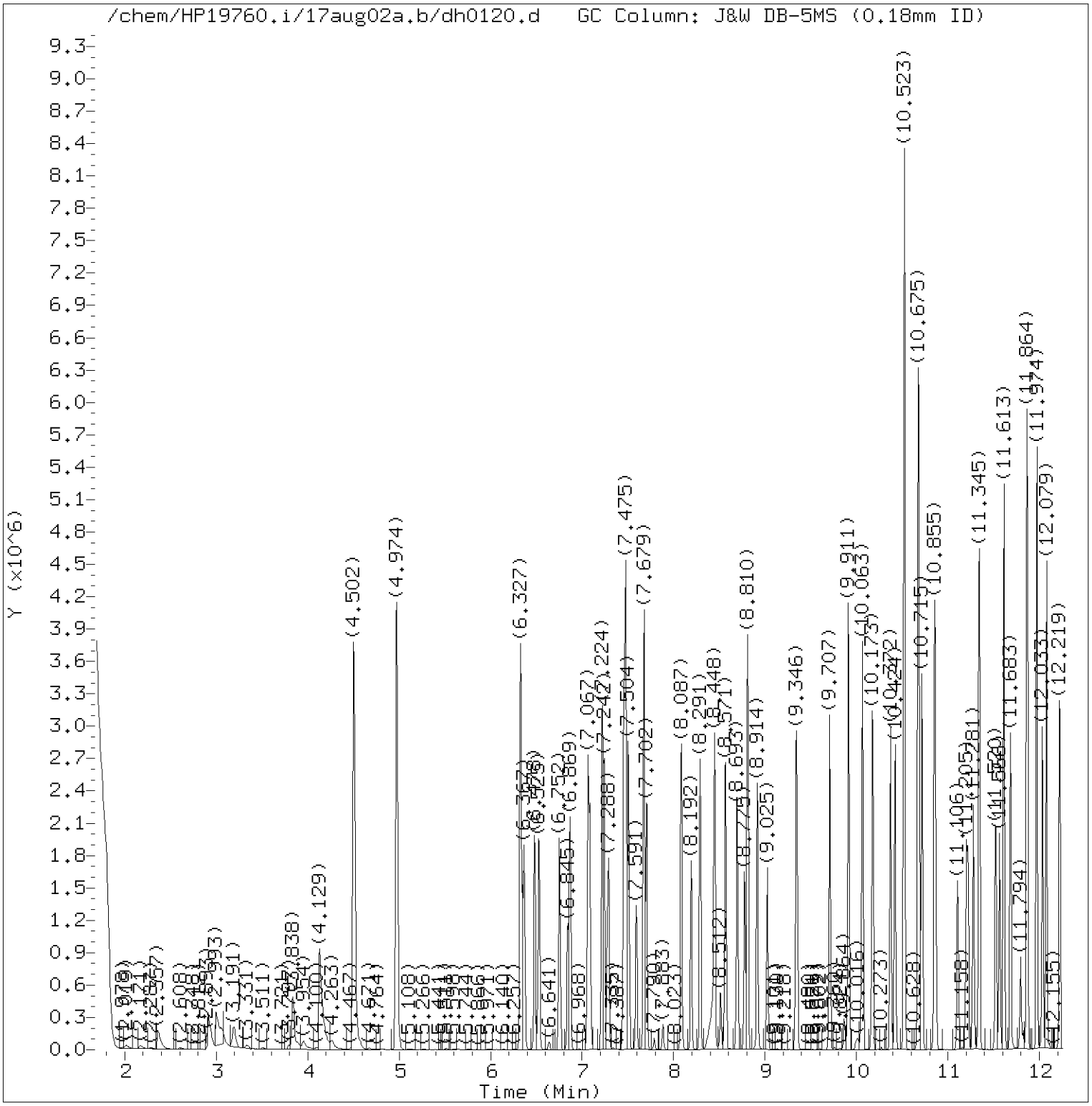
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.679(-0.001) | 82 | 1869105 | 21.832 | 87% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 3087384 | 21.674 | 87% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.740( 0.000) | 244 | 3244400 | 22.689 | 91% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | 8.810(-0.000) | 128 | 2124752 | 10.704 | 43.51 | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | 9.911(-0.000) | 142 | 1368642 | 10.523 | 42.78 | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | 10.063(-0.000) | 142 | 1303786 | 11.088 | 45.07 | | | 0.03 |
| 177) Pyrene | (5) | 15.460(-0.000) | 202 | 2689021 | 11.939 | 48.53 | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.652(-0.000) | 149 | 1666099 | 11.862 | 48.22 | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:14. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

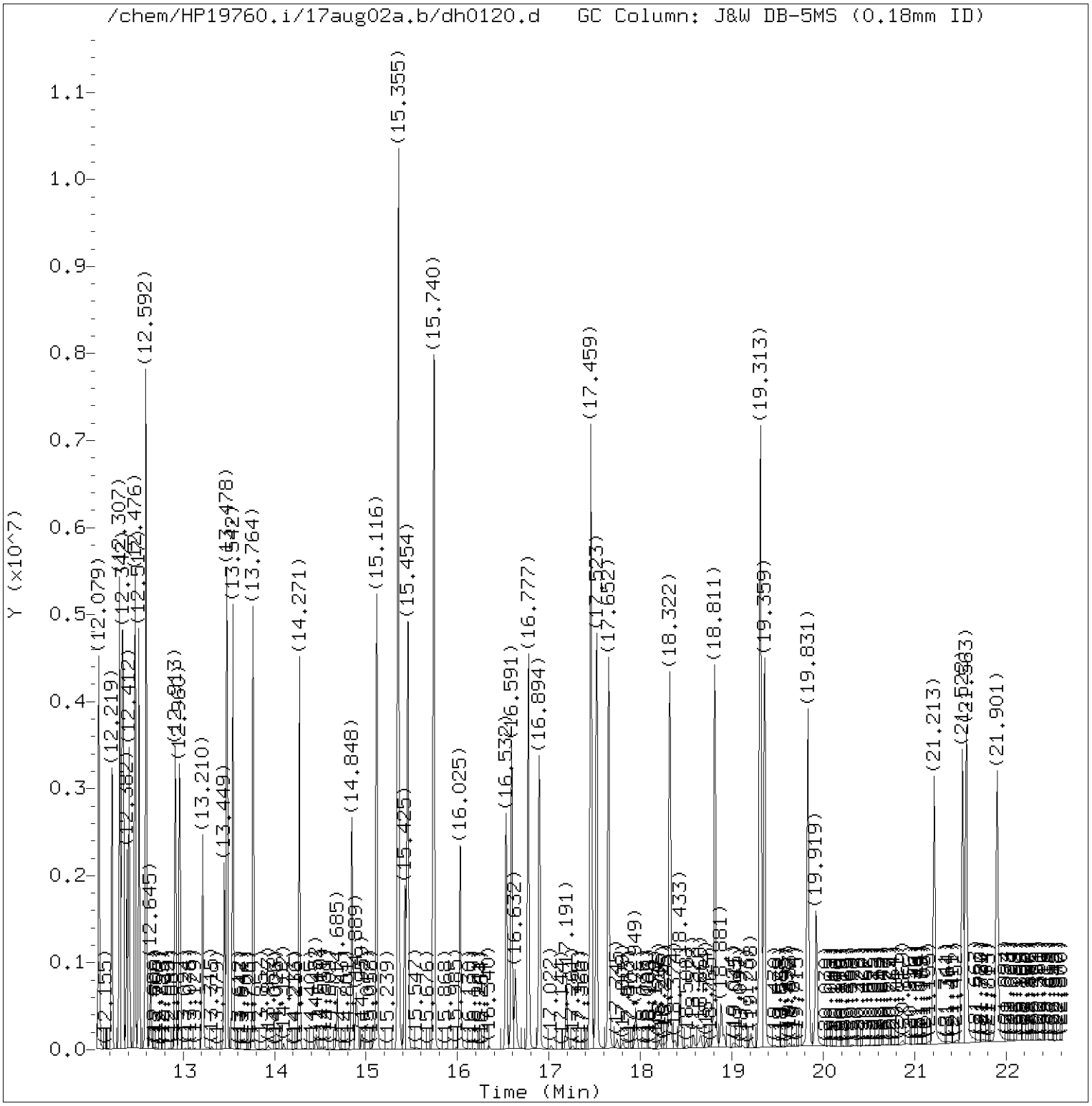
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0120.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 03:51 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 04:15 Automation

Sample Name: K1910MS Lab Sample ID: 9121684

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0120.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 03:51 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 04:15 Automation

Sample Name: K1910MS Lab Sample ID: 9121684

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0120.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 03:51 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 04:15 Automation

Sample Name: K1910MS Lab Sample ID: 9121684

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.845 | 152 | 241662 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.679 | 82 | 1869105 | 21.832 |
| 65)*Naphthalene-d8 | (2) | 8.775 | 136 | 897356 | 5.000 |
| 66) Naphthalene | (2) | 8.810 | 128 | 2124752 | 10.704 |
| 83) 2-Methylnaphthalene | (2) | 9.911 | 142 | 1368642 | 10.523 |
| 84) 1-Methylnaphthalene | (2) | 10.063 | 142 | 1303786 | 11.088 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 3087384 | 21.674 |
| 113)*Acenaphthene-d10 | (3) | 11.566 | 164 | 493024 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 864208 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.425 | 212 | 1033342 | 5.000 |
| 177) Pyrene | (5) | 15.460 | 202 | 2689021 | 11.939 |
| 179)$Terphenyl-d14 | (5) | 15.740 | 244 | 3244400 | 22.689 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.652 | 149 | 1666099 | 11.862 |
| 213)*Perylene-d12 | (6) | 19.919 | 264 | 813011 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0121.d Injection date and time: **03-AUG-2017 04:18**
Data file Sample Info. Line: K1910MSD;9121685;1;3;MSD;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 03-Aug-2017 04:43 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 248 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.845(-0.006) | 885 | 152 | 243236 ( -13) | 5.00 | |
| 65) Naphthalene-d8 | 8.774( 0.006) | 1216 | 136 | 900474 ( -14) | 5.00 | |
| 113) Acenaphthene-d10 | 11.566( 0.000) | 1695 | 164 | 481512 ( -17) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 866266 ( -18) | 5.00 | |
| 175) Pyrene-d10 | 15.425( 0.006) | 2357 | 212 | 1034290 ( -19) | 5.00 | |
| 213) Perylene-d12 | 19.919( 0.006) | 3128 | 264 | 802316 ( -19) | 5.00 | |

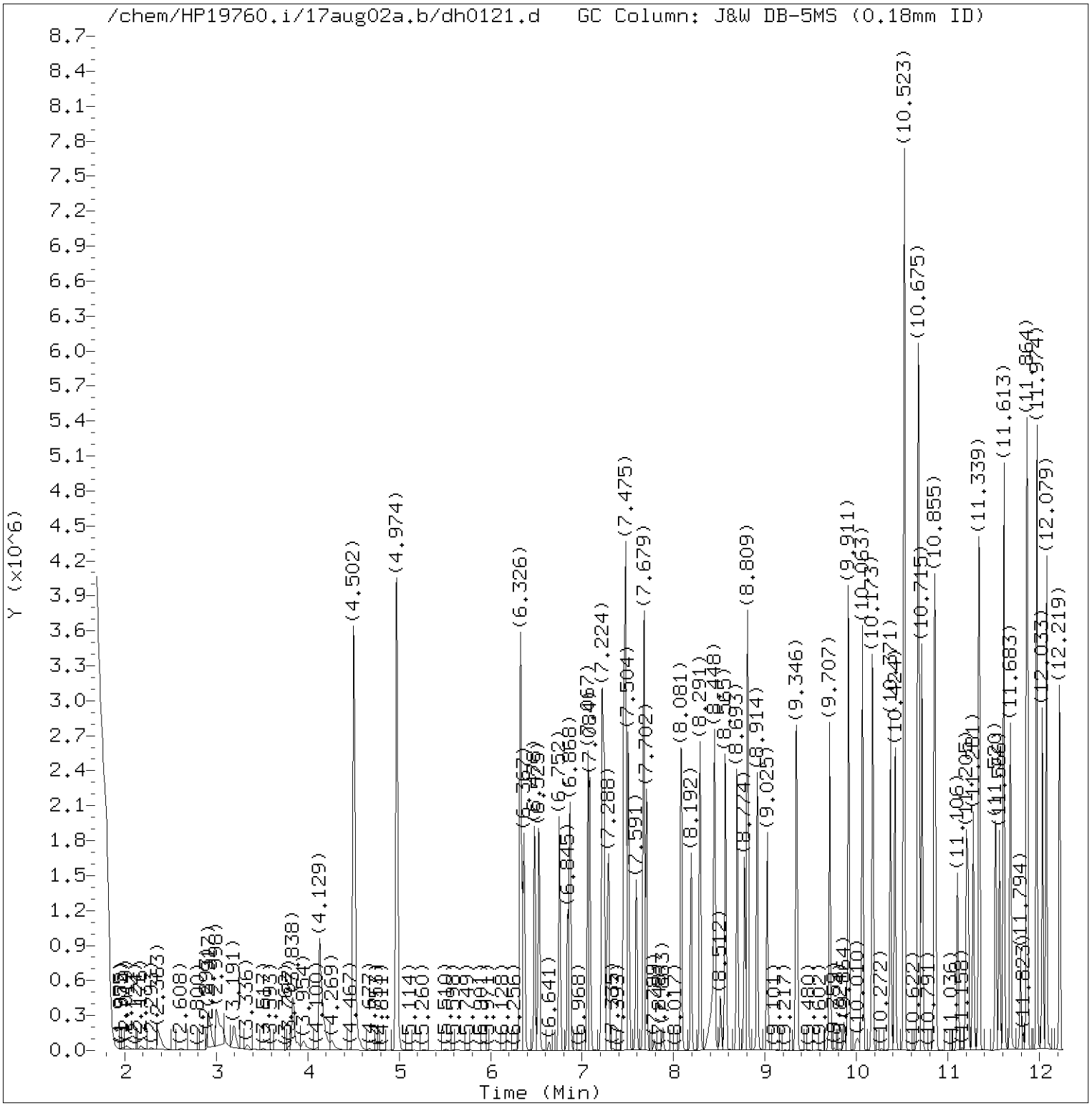
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.679(-0.001) | 82 | 1772459 | 20.632 | 83% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 2938207 | 21.120 | 84% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.740( 0.000) | 244 | 3021735 | 21.112 | 84% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | 8.809(-0.000) | 128 | 2058521 | 10.334 | 41.67 | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | 9.911(-0.000) | 142 | 1342034 | 10.282 | 41.46 | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | 10.068(-0.000) | 142 | 1274059 | 10.797 | 43.54 | | | 0.03 |
| 177) Pyrene | (5) | 15.460(-0.000) | 202 | 2390104 | 10.603 | 42.75 | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.651(-0.000) | 149 | 1447123 | 10.294 | 41.51 | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:14. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

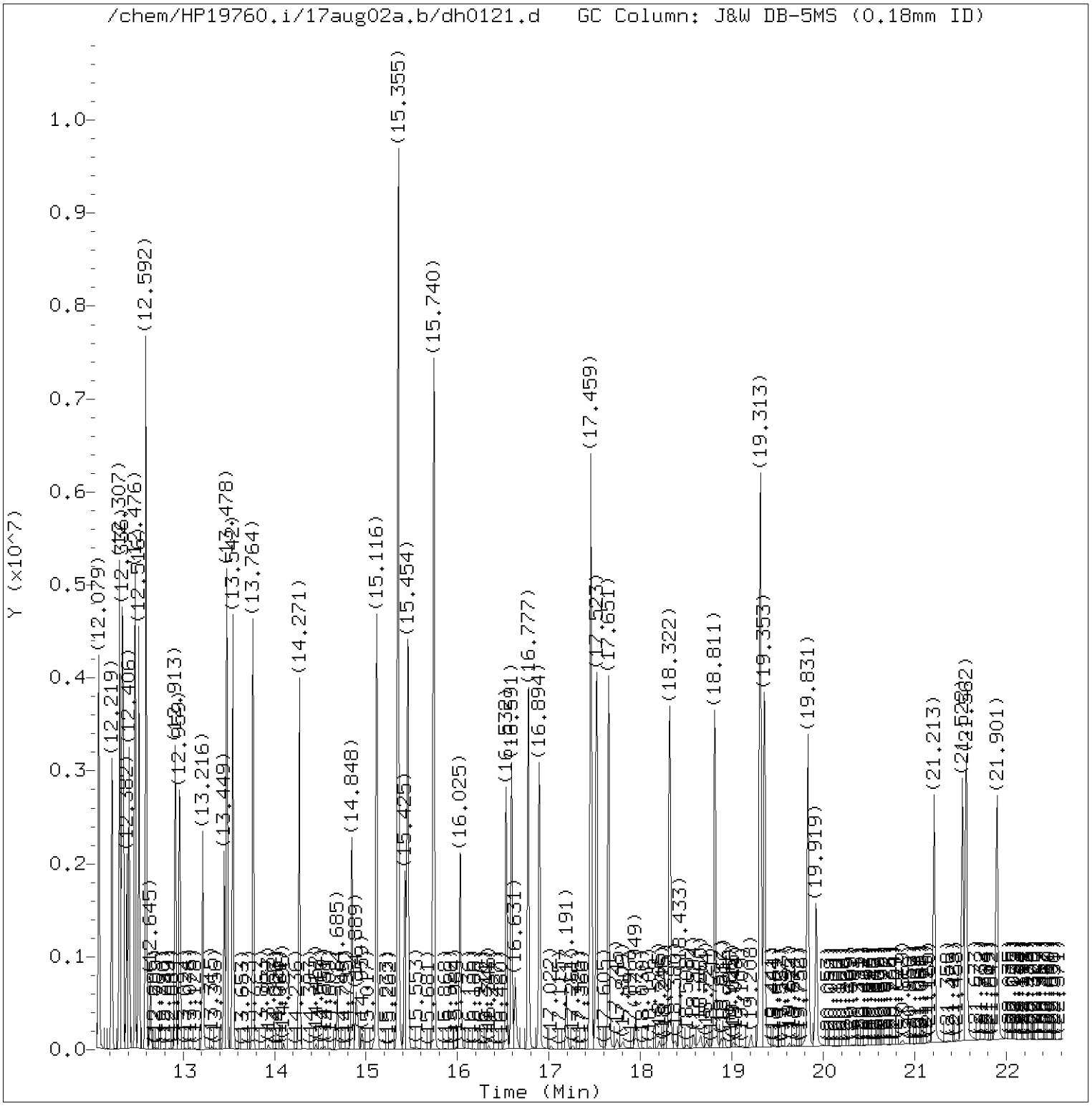
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0121.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 04:18 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 04:43 Automation

Sample Name: K1910MSD Lab Sample ID: 9121685

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0121.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 04:18 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 04:43 Automation

Sample Name: K1910MSD Lab Sample ID: 9121685

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0121.d Instrument ID: HP19760.i
Injection date and time: 03-AUG-2017 04:18 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 03-Aug-2017 04:43 Automation

Sample Name: K1910MSD Lab Sample ID: 9121685

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.845 | 152 | 243236 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.679 | 82 | 1772459 | 20.632 |
| 65)*Naphthalene-d8 | (2) | 8.774 | 136 | 900474 | 5.000 |
| 66) Naphthalene | (2) | 8.809 | 128 | 2058521 | 10.334 |
| 83) 2-Methylnaphthalene | (2) | 9.911 | 142 | 1342034 | 10.282 |
| 84) 1-Methylnaphthalene | (2) | 10.068 | 142 | 1274059 | 10.797 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 2938207 | 21.120 |
| 113)*Acenaphthene-d10 | (3) | 11.566 | 164 | 481512 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 866266 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.425 | 212 | 1034290 | 5.000 |
| 177) Pyrene | (5) | 15.460 | 202 | 2390104 | 10.603 |
| 179)$Terphenyl-d14 | (5) | 15.740 | 244 | 3021735 | 21.112 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.651 | 149 | 1447123 | 10.294 |
| 213)*Perylene-d12 | (6) | 19.919 | 264 | 802316 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:14.
Target 3.5 esignature user ID: knk25316

# Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP19760.i/17aug02a.b/dh0103.d Injection date and time: **02-AUG-2017 20:29**
Data file Sample Info. Line: 208WCLCS;208WCLCS;1;3;LCS;;DOD26; Instrument ID: **HP19760.i** Batch: **17208WAC**
Date, time and analyst ID of latest file update: 02-Aug-2017 20:54 Automation

Blank Data file reference: **/chem/HP19760.i/17aug02a.b/dh0102.d**

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: **24690M**
Calibration date and time (Last Method Edit): 02-AUG-2017 19:54
Mid Level Daily Calibration Standard Reference: **/chem/HP19760.i/17aug02a.b/dh0101.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * Uf * Vt/(Vo)

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 250 ml Volume Injected (Vi): 0.5 ul

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 25) 1,4-Dichlorobenzene-d4 | 6.845(-0.006) | 885 | 152 | 237429 ( -15) | 5.00 | |
| 65) Naphthalene-d8 | 8.775( 0.006) | 1216 | 136 | 881421 ( -16) | 5.00 | |
| 113) Acenaphthene-d10 | 11.566( 0.000) | 1695 | 164 | 480330 ( -18) | 5.00 | |
| 153) Phenanthrene-d10 | 13.449( 0.000) | 2018 | 188 | 865075 ( -18) | 5.00 | |
| 175) Pyrene-d10 | 15.431( 0.000) | 2358 | 212 | 1024585 ( -19) | 5.00 | |
| 213) Perylene-d12 | 19.925( 0.000) | 3129 | 264 | 805362 ( -19) | 5.00 | |

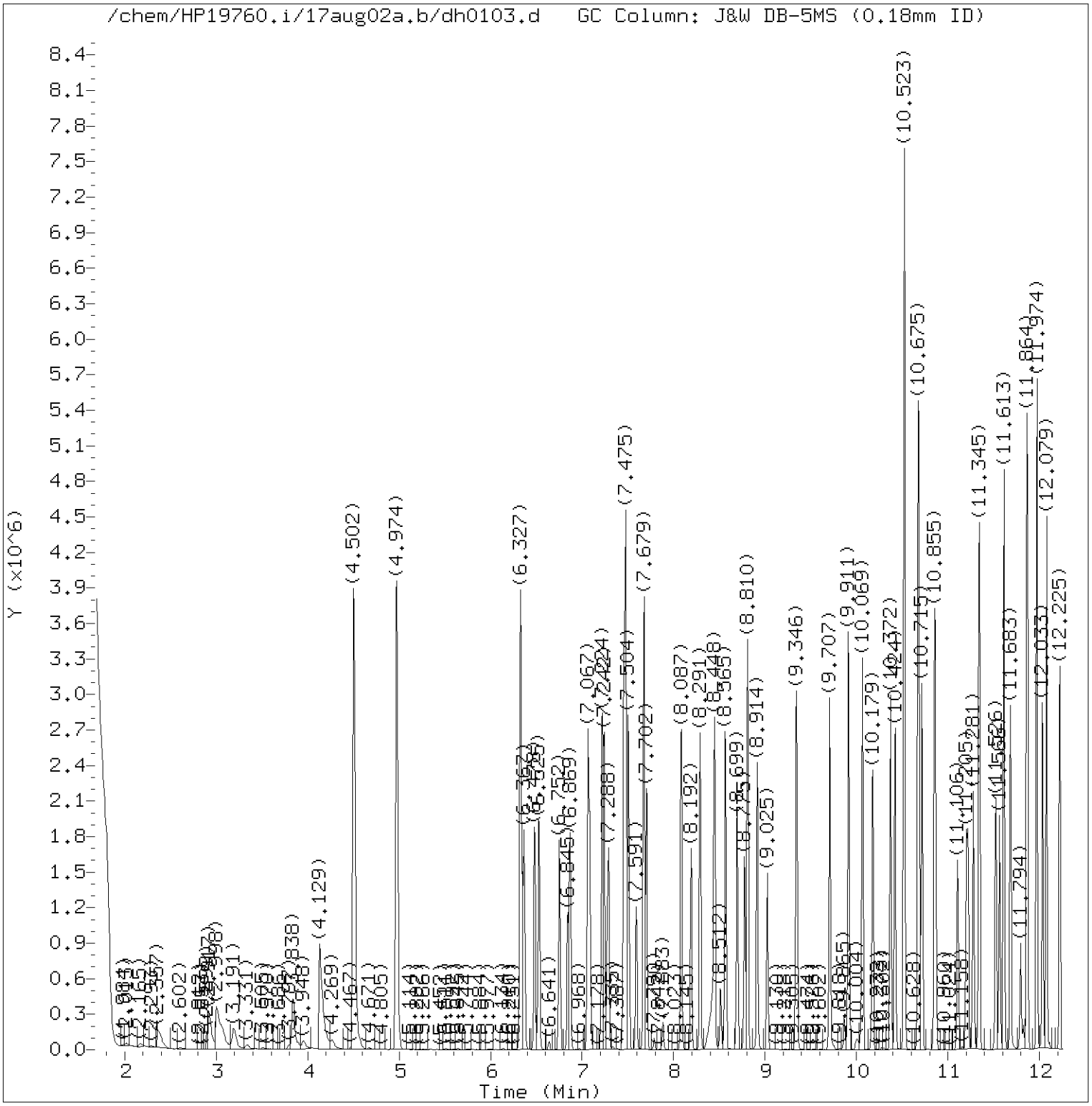
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 44) Nitrobenzene-d5 | (2) | 7.679(-0.001) | 82 | 1803467 | 21.447 | 86% | | 44 - 120 |
| 93) 2-Fluorobiphenyl | (3) | 10.523( 0.000) | 172 | 2806367 | 20.222 | 81% | | 44 - 119 |
| 179) Terphenyl-d14 | (5) | 15.740( 0.000) | 244 | 3158268 | 22.275 | 89% | | 50 - 134 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (on-column) |
|---|---|---|---|---|---|---|---|---|---|
| 66) Naphthalene | (2) | 8.810(-0.000) | 128 | 1906948 | 9.780 | 39.12 | | | 0.03 |
| 83) 2-Methylnaphthalene | (2) | 9.911(-0.000) | 142 | 1191808 | 9.329 | 37.32 | | | 0.03 |
| 84) 1-Methylnaphthalene | (2) | 10.068(-0.000) | 142 | 1153491 | 9.987 | 39.95 | | | 0.03 |
| 177) Pyrene | (5) | 15.460( 0.000) | 202 | 2635315 | 11.801 | 47.20 | | | 0.03 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.652( 0.000) | 149 | 1629009 | 11.697 | 46.79 | | | 0.5 |

Total number of targets = 5

Digitally signed by Kira N. Klaassen on 08/03/2017 at 10:04. Target 3.5 esignature user ID: knk25316

Secondary review performed and digitally signed by Matthew E. Barton on 08/04/2017 at 19:28. PARALLAX ID: reb00745




Total Ion Chromatogram (TIC)

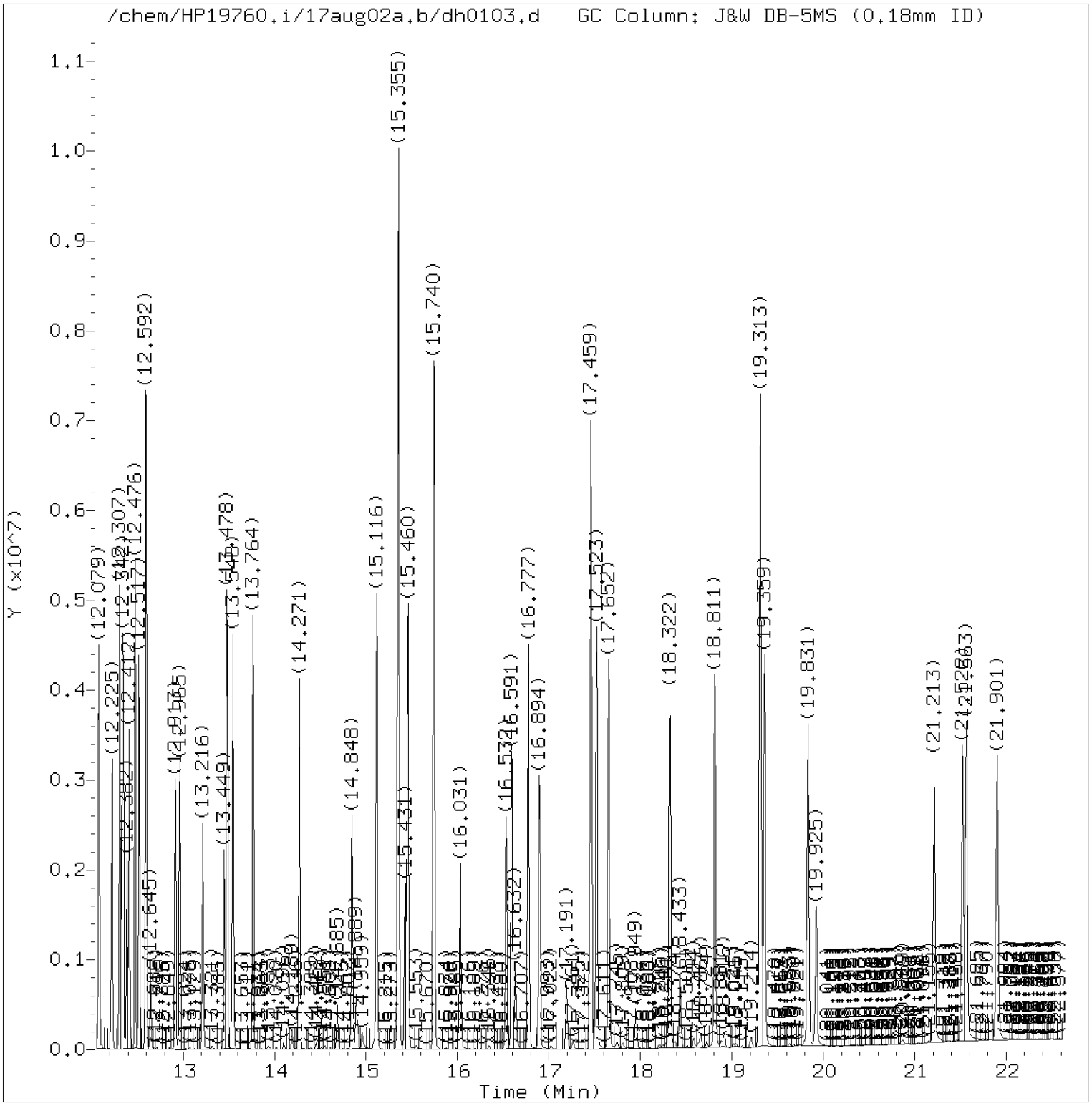
Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0103.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 20:29 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 20:54 Automation

Sample Name: 208WCLCS Lab Sample ID: 208WCLCS

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:04.
Target 3.5 esignature user ID: knk25316




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0103.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 20:29 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 20:54 Automation

Sample Name: 208WCLCS Lab Sample ID: 208WCLCS

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:04.
Target 3.5 esignature user ID: knk25316

Quant Report

Target Revision 3.5

Data File: /chem/HP19760.i/17aug02a.b/dh0103.d Instrument ID: HP19760.i
Injection date and time: 02-AUG-2017 20:29 Analyst ID: em10340

Method used: /chem/HP19760.i/17aug02a.b/rv8270d.m Sublist used: 24690M
Calibration date and time: 02-AUG-2017 19:54
Date, time and analyst ID of latest file update: 02-Aug-2017 20:54 Automation

Sample Name: 208WCLCS Lab Sample ID: 208WCLCS

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng/ul) |
|---|---|---|---|---|---|
| 25)*1,4-Dichlorobenzene-d4 | (1) | 6.845 | 152 | 237429 | 5.000 |
| 44)$Nitrobenzene-d5 | (2) | 7.679 | 82 | 1803467 | 21.447 |
| 65)*Naphthalene-d8 | (2) | 8.775 | 136 | 881421 | 5.000 |
| 66) Naphthalene | (2) | 8.810 | 128 | 1906948 | 9.780 |
| 83) 2-Methylnaphthalene | (2) | 9.911 | 142 | 1191808 | 9.329 |
| 84) 1-Methylnaphthalene | (2) | 10.069 | 142 | 1153491 | 9.987 |
| 93)$2-Fluorobiphenyl | (3) | 10.523 | 172 | 2806367 | 20.222 |
| 113)*Acenaphthene-d10 | (3) | 11.566 | 164 | 480330 | 5.000 |
| 153)*Phenanthrene-d10 | (4) | 13.449 | 188 | 865075 | 5.000 |
| 175)*Pyrene-d10 | (5) | 15.431 | 212 | 1024585 | 5.000 |
| 177) Pyrene | (5) | 15.460 | 202 | 2635315 | 11.801 |
| 179)$Terphenyl-d14 | (5) | 15.740 | 244 | 3158268 | 22.275 |
| 199) bis(2-Ethylhexyl)phthalate | (5) | 17.652 | 149 | 1629009 | 11.697 |
| 213)*Perylene-d12 | (6) | 19.925 | 264 | 805362 | 5.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Klaassen
on 08/03/2017 at 10:04.
Target 3.5 esignature user ID: knk25316

# Extraction/Distillation/Digestion Logs

# Semivolatiles by GC/MS

**Organic Extraction Batchlog** Assigned to: 10217 Kate Lutte Reviewed by:_____ Start Date: 7/27/17 Start time: 16:10

**17208WAC026**

Tech 1: KLutz17 Tech 2: _____

Dept: 26 Prep Analysis: 00813 BNA Water Extraction TCL SW846 8270D MINI

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | pH 2 | pH 11 | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9121684MS | K1910 | 246 | SS1720126B | 1.0 | ~~MS1720126B~~ ⑧ | 1.0 | 1 | ✓ | ✓ | 153A | Clear |
| 9121685MSD | K1910 | 248 | SS1720126B | ↓ | ~~MS1720126B~~ ⑧ | ↓ | 1 | ✓ | ✓ | 153A | ↓ |
| BLANKA | SBLKWC208 | 250 | SS1720126B | ↓ | ——— | ——— | 1 | ✓ | ✓ | 7 | TAP H2O |
| LCSA | 208WCLCS | 250 | SS1720126B | ↓ | ~~MS1720126B~~ ⑧ | 1.0 | 1 | ✓ | ✓ | 7 | ↓ |

| Solvent Used | Lot No. |
|---|---|
| 10N NaOH | 4701F35 |
| Methylene Chloride | 174479 |
| Sodium Sulfate | 172061A |
| Sulfuric Acid | 172557 |
| | |

⑧MS1720726A KLutz17 7/27/17

Spike Solutions: ~~MS1720126B~~ ⑧ SS1720126B

Witness: _____ MINI SEP. LCS SPIKE #1 MINI SEP. BNA SURROGATE

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | pH 2 | pH 11 | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9121674 | K1901 | 248 | SS1720126B | 1.0 | 1 | ✓ | ✓ | 153A | Clear | 14242 | 24690 | 08/07/2017 | N |
| 2 9121676 | K1903 | 247 | SS1720126B | ↓ | 1 | ✓ | ✓ | 153A | ↓ | 14242 | 24690 | 08/07/2017 | N |
| 3 9121680 | K1907 | 249 | SS1720126B | ↓ | 1 | ✓ | ✓ | 153A | ↓ | 14242 | 24690 | 08/07/2017 | N |
| 4 9121683BKG | K1910 | 249 | SS1720126B | ↓ | 1 | ✓ | ✓ | 153A | ↓ | 14242 | 24690 | 08/07/2017 | N |
| 5 9121693 | K1914 | 250 | SS1720126B | ↓ | 1 | ✓ | ✓ | 153A | ↓ | 14242 | 24690 | 08/07/2017 | N |

KR191 Page 639 of 1128

N/A KLutz17 7/27/17

| Bench# | Bench# 11 | Bench# 10 | | |
|---|---|---|---|---|
| Rack ID: | | Work Station | humble | Micro Temp 100? ✓ |
| Internal Standard | | Balance # | 25996 | |

| R-VAP ID 2 | 90 C | R-VAP ID 1 | 90 C | ~~R-VAP ID~~ | ~~C~~ | | |
|---|---|---|---|---|---|---|---|
| ~~S-bath ID~~ | ~~C~~ | ~~S-bath ID~~ | ~~C~~ | ~~N-Evap~~ | ~~C~~ | ~~M-vap~~ | ~~C~~ |

17208WAC026

DF = Dilution Factor FV = Final Volume



Documented temps are NIST corrected.

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9121674 | GWTS-EFF1-072517 | X | | 1 | |
| 9121676 | GWTS-EFF1DUP-072517 | X | | 1 | Field Duplicate Sample |
| 9121678 | GWTS-GAC1-072517 | X | | 1 | |
| 9121680 | GWTS-INF1-072517 | X | | 1 | |
| 9121682 | GWTS-TB01-072517 | X | | 1 | Trip Blank |
| 9121683 | GWTS-EFF2-072517 | X | | 1 | Unspiked |
| 9121684 | GWTS-EFF2-072517MS | X | | 1 | Matrix Spike |
| 9121685 | GWTS-EFF2-072517MSD | X | | 1 | Matrix Spike Duplicate |
| 9121691 | GWTS-GAC2-072517 | X | | 1 | |
| 9121693 | GWTS-INF2-072517 | X | | 1 | |
| 9121695 | GWTS-TB02-072517 | X | | 1 | Trip Blank |
| 9121696 | GWTS-FB02-072517 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

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# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172090034A | PBLK34209 | 07/31/2017 21:08:00 |
| | | LCS34209 | 07/31/2017 21:24:00 |
| | | LCSD34209 | 07/31/2017 21:40:00 |
| | | 9121674 | 07/31/2017 21:56:00 |
| | | 9121676 | 07/31/2017 22:12:00 |
| | | 9121678 | 07/31/2017 22:28:00 |
| | | 9121680 | 07/31/2017 22:44:00 |
| | | 9121682 | 07/31/2017 22:59:00 |
| | | 9121683 UNSPK | 07/31/2017 23:47:00 |
| | | 9121684 MS | 08/01/2017 00:03:00 |
| | | 9121685 MSD | 08/01/2017 00:19:00 |
| | | 9121691 | 08/01/2017 00:35:00 |
| | | 9121693 | 08/01/2017 00:51:00 |
| | | 9121695 | 08/01/2017 01:07:00 |
| | | 9121696 | 08/01/2017 01:23:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR191**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172090034A / PBLK34209<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 07/31/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR191**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172090034A | 1,1,2,2-Tetrachloroethane | |
|---|---|---|
| | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits |
| PBLK34209 | 89 | 46 - 136 |
| LCS34209 | 90 | 46 - 136 |
| LCSD34209 | 97 | 46 - 136 |
| 9121674 | 113 | 46 - 136 |
| 9121676 | 90 | 46 - 136 |
| 9121678 | 87 | 46 - 136 |
| 9121680 | 94 | 46 - 136 |
| 9121682 | 96 | 46 - 136 |
| 9121683 UNSPK | 91 | 46 - 136 |
| 9121684 MS | 99 | 46 - 136 |
| 9121685 MSD | 92 | 46 - 136 |
| 9121691 | 94 | 46 - 136 |
| 9121693 | 96 | 46 - 136 |
| 9121695 | 89 | 46 - 136 |
| 9121696 | 98 | 46 - 136 |

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| UNSPK: 9121683<br>MS: 9121684<br>MSD: 9121685<br>**Analyte** | Batch: **172090034A** (Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.123 | N.D. | 0.145 | 0.137 | 118 | 112 | 60-140 | 5 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR191**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS34209<br>LCSD: LCSD34209<br><br>**Analyte** | Batch: **172090034A** (Sample number(s): 9121674, 9121676, 9121678, 9121680, 9121682-9121685, 9121691, 9121693, 9121695-9121696 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 0.128 | 0.137 | 0.146 | 107 | 114 | 60-140 | 6 | 20 |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1721201

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/31/2017  7/31/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT CCAL #6 RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.85 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 | 3.81 | 3.87 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.32 | 5.33 | 5.32 | 5.32 | 5.32 | 5.32 | 5.29 | 5.35 |
| 1,2,3-Trichloropropane | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.40 | 5.37 | 5.43 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.68 | 7.65 | 7.71 |

HMM 7093
8/1/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Calibration File: 18EDBS1721201

GC Column (1) : ZB MR1 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/31/2017 7/31/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.63E+04 | 1.29E+04 | 1.25E+04 | 1.14E+04 | 1.11E+04 | 1.03E+04 | 1.24E+04 | 17 |
| 1,1,2,2-TETRACHLOROETHANE | 1.70E+04 | 1.44E+04 | 1.45E+04 | 1.36E+04 | 1.34E+04 | 1.26E+04 | 1.43E+04 | 11 |
| 1,2,3-Trichloropropane | 2.50E+03 | 2.02E+03 | 1.93E+03 | 1.73E+03 | 1.67E+03 | 1.62E+03 | 1.91E+03 | 17 |
| 1,2-DIBROMO-3-CHLOROPROPA | 3.00E+04 | 2.57E+04 | 2.45E+04 | 2.25E+04 | 2.35E+04 | 2.26E+04 | 2.48E+04 | 11 |

Average % RSD: 14

linear linear linear linear

HMM 8/1/17

File Name: V:\CP18\18EDBS1721201.CAL
Version: 8

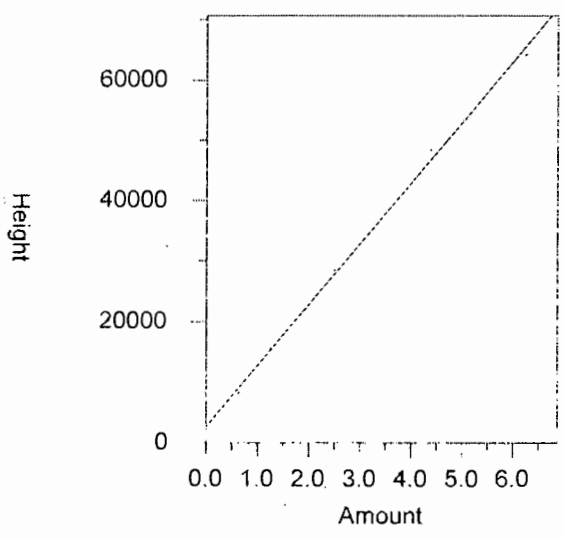
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.843 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

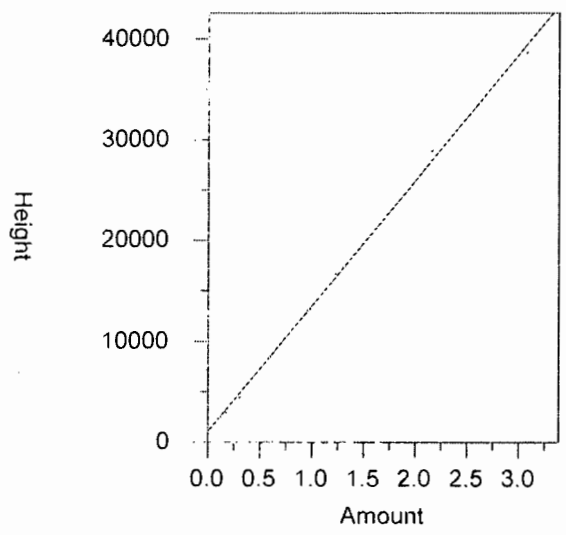
Single peak quantification by height

Y = 10080.04 X + 2641.598

Linear fit with equal weighting
Coefficient of determination: 0.9977498
Average error: 4.590%
Average CF: 12410.92
RSD: 17.230%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5710.87 | 16316.77 | -7.435 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.006.BN |
| 2 | 0.63 | 8132.96 | 12909.46 | -9.554 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.007.BN |
| 3 | 1.25 | 15601.14 | 12480.91 | 2.359 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.008.BN |
| 4 | 2.5 | 28550.08 | 11420.03 | 2.544 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.009.BN |
| 5 | 4.38 | 48439.52 | 11059.25 | 3.521 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.010.BN |
| 6 | 6.25 | 64244.39 | 10279.1 | -2.129 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.011.BN |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.324 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

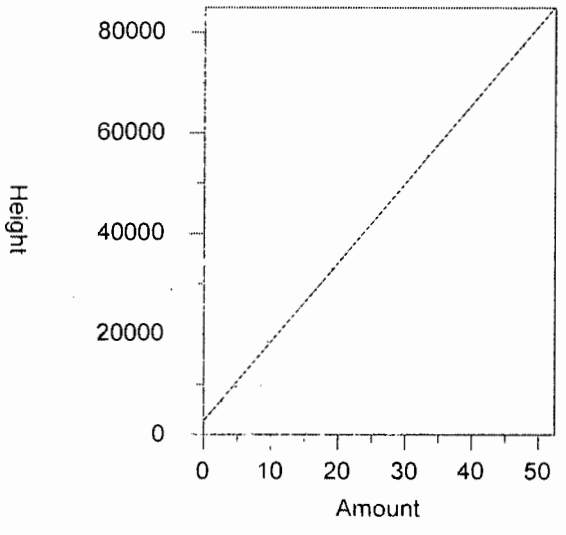
Single peak quantification by height

Y = 12475.75 X + 1052.443

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9981906 |
| Average error: | 4.522% |
| Average CF: | 14260.33 |
| RSD: | 10.775% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 2946.584 | 17032.28 | -8.228 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 2 | 0.308 | 4446.321 | 14436.11 | -9.166 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 3 | 0.616 | 8939.11 | 14511.54 | 2.307 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 4 | 1.23 | 16761.68 | 13627.38 | 2.220 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 5 | 2.16 | 28914.56 | 13386.37 | 3.266 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0: |
| 6 | 3.08 | 38710.42 | 12568.32 | -1.944 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0: |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.397 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

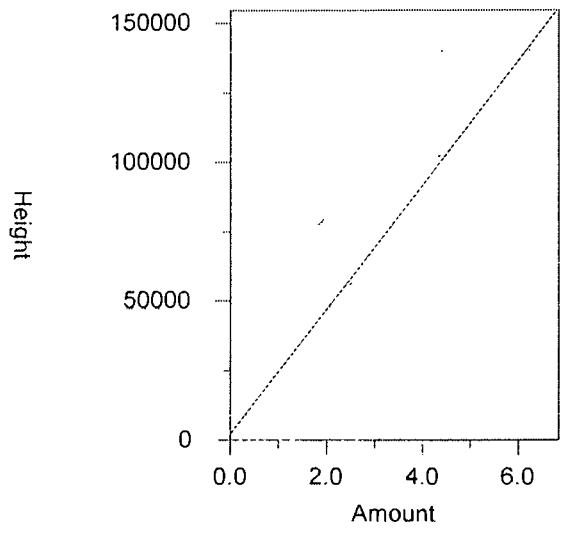
Single peak quantification by height

Y = 1573.808 X + 2750.016

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9996527 |
| Average error: | 2.637% |
| Average CF: | 1913.19 |
| RSD: | 17.134% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 6683.043 | 2503.012 | -3.870 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 2 | 4.76 | 9620.63 | 2021.141 | -6.061 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 3 | 9.52 | 18396.3 | 1932.384 | 3.742 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 4 | 19.05 | 32983.34 | 1731.409 | 0.771 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 5 | 33.34 | 55654.98 | 1669.316 | 0.786 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0: |
| 6 | 47.63 | 77250.13 | 1621.88 | -0.592 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0: |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.679 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 22389.44 X + 2302.546

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9991457 |
| Average error: | 2.094% |
| Average CF: | 24806.54 |
| RSD: | 11.301% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 10488.46 | 29967.03 | 3.448 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 2 | 0.62 | 15951.04 | 25727.48 | -1.439 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 3 | 1.24 | 30387.52 | 24506.06 | 1.071 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 4 | 2.49 | 56144.83 | 22548.12 | -3.286 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0( |
| 5 | 4.35 | 102243.8 | 23504.32 | 2.555 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0: |
| 6 | 6.22 | 140486.4 | 22586.24 | -0.762 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.0: |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Calibration File: 18EDBS1721201B

GC Column (2) : ZB MR2 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/31/2017 7/31/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.79 | 2.79 | 2.79 | 2.79 | 2.79 | 2.79 | 2.76 | 2.82 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.01 | 4.07 |
| 1,2,3-Trichloropropane | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.16 | 4.13 | 4.19 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.44 | 6.41 | 6.47 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1721201B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 7/31/2017  7/31/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 2.12E+04 | 1.70E+04 | 1.76E+04 | 1.59E+04 | 1.56E+04 | 1.43E+04 | 1.69E+04 | 14 |
| 1,1,2,2-TETRACHLOROETHANE | 3.39E+04 | 2.51E+04 | 2.18E+04 | 1.96E+04 | 1.90E+04 | 1.76E+04 | 2.28E+04 | 26 |
| 1,2,3-Trichloropropane | 2.99E+03 | 2.60E+03 | 2.55E+03 | 2.29E+03 | 2.26E+03 | 2.04E+03 | 2.46E+03 | 14 |
| 1,2-DIBROMO-3-CHLOROPROPA | 3.37E+04 | 2.81E+04 | 2.70E+04 | 2.46E+04 | 2.40E+04 | 2.25E+04 | 2.66E+04 | 15 |
| | | | | | | Average % RSD: | | 17 |

Linear Linear Linear Linear

8/11/17

File Name: V:\CP18\18EDBS1721201b.CAL
Version: 8

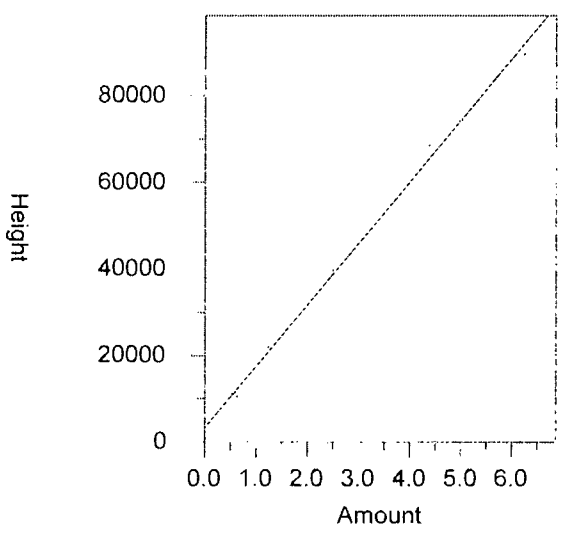
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 2.785 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

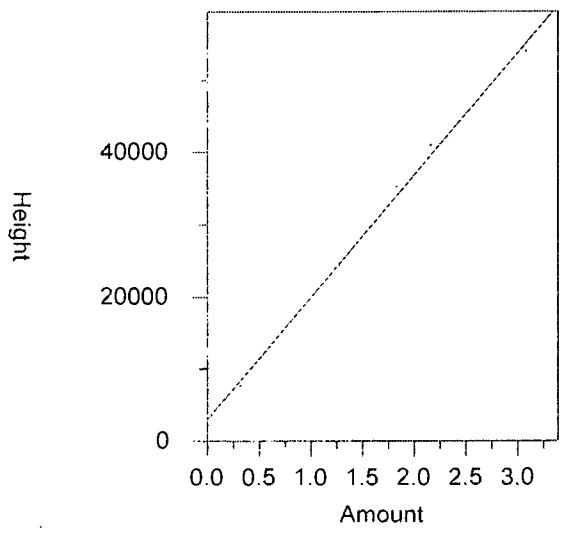
Single peak quantification by height

Y = 14196.41 X + 3312.381

Linear fit with equal weighting
Coefficient of determination: 0.9964683
Average error: 6.132%
Average CF: 16946.56
RSD: 14.018%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 7423.002 | 21208.58 | -10.362 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.006.B |
| 2 | 0.63 | 10726.42 | 17026.06 | -12.481 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.007.B |
| 3 | 1.25 | 21975.47 | 17580.38 | 4.357 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.008.B |
| 4 | 2.5 | 39747.79 | 15899.12 | 2.434 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.009.B |
| 5 | 4.38 | 68450.11 | 15627.88 | 4.516 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.010.B |
| 6 | 6.25 | 89608.31 | 14337.33 | -2.642 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.011.B |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.04 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

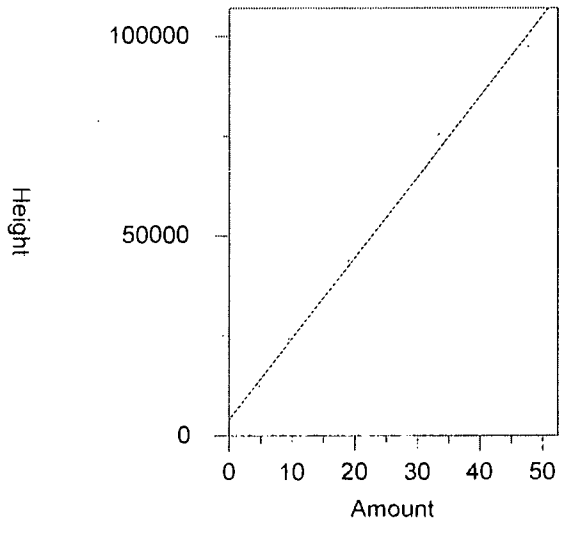
Y = 16907.57 X + 3040.982

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9982699 |
| Average error: | 2.451% |
| Average CF: | 22819.24 |
| RSD: | 26.417% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 5865.203 | 33902.91 | -1.689 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 2 | 0.308 | 7717.56 | 25057.01 | -6.437 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 3 | 0.616 | 13445.9 | 21827.76 | -0.075 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 4 | 1.23 | 24123.04 | 19612.23 | 1.199 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 5 | 2.16 | 40932.18 | 18950.08 | 3.465 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 6 | 3.08 | 54101.59 | 17565.45 | -1.841 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.159 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

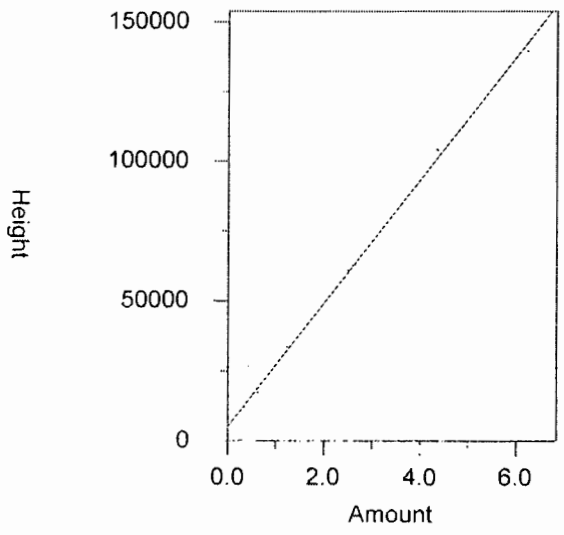
Y = 2022.998 X + 4057.164

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9952314 |
| Average error: | 6.738% |
| Average CF: | 2455.864 |
| RSD: | 13.536% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 7990.203 | 2992.585 | -15.524 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 2 | 4.76 | 12360.11 | 2596.662 | -9.692 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 3 | 9.53 | 24304.7 | 2550.336 | 4.150 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 4 | 19.05 | 43651.78 | 2291.432 | 2.480 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 5 | 33.34 | 75408.46 | 2261.802 | 5.461 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 6 | 47.63 | 97278.02 | 2042.369 | -3.122 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.437 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 22074.63 X + 5149.54

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9983321 |
| Average error: | 4.229% |
| Average CF: | 26628.34 |
| RSD: | 15.056% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 11784.39 | 33669.68 | -8.475 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.. |
| 2 | 0.62 | 17433.88 | 28119.16 | -7.443 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.. |
| 3 | 1.24 | 33426.09 | 26956.52 | 2.780 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.. |
| 4 | 2.49 | 61134.6 | 24552.05 | 1.695 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 5 | 4.35 | 104357.5 | 23990.23 | 3.146 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |
| 6 | 6.22 | 139840.3 | 22482.36 | -1.835 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/31/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 20:36

Lab File ID: 18EDBS17212001.018.RAW Initial Calibration: 18EDBS1721201

Lab Standard ID: EDB_5MC Init. Calib Date(s): 07/31/17 07/31/17

Calibration: 18EDBS1721201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 4.22 | 4.38 | -4 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 2.16 | 2.16 | 0 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 32.41 | 33.34 | -3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 4.30 | 4.35 | -1 |

Compounds 4 Average of %D: 2

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/31/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 20:36

Lab File ID: 18EDBS17212001B.018.RAW Initial Calibration: 18EDBS1721201B

Lab Standard ID: EDB_5MC Init. Calib Date(s): 07/31/17 07/31/17

Calibration: 18EDBS1721201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 4.30 | 4.38 | -2 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 2.17 | 2.16 | 0 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 33.80 | 33.34 | 1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 4.46 | 4.35 | 3 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKXT Sample ID: XT **Batchnumber: 1721199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 20:52:31
Instrument : CP18--19846A
Result file : 18EDBS17212001.019.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060535

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14269 | 0.060535 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 301 | -0.088933 |
| **DBCP** | 7.65 | 7.65 | 7.71 | 443 | -0.004746 |

## Analysis Report (B)

Injected on : Jul 31, 2017 20:52:31
Instrument : CP18--19846B
Result file : 18EDBS17212001B.019.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 86% (46-136) Conc.: 0.057839

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20154 | 0.057839 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 815 | -0.091589 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.060535 | | | | 4.56 | |
| ☑ 1,2,3-TCP | A | -0.088933 | | | | 2.94 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 0 1 2017

Verified by: SD12316
Date: 8/8/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/1/2017 11:47:17

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 07/31/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 23:15

Lab File ID: 18EDBS17212001.028.RAW Initial Calibration: 18EDBS1721201

Lab Standard ID: EDB_4QV Init. Calib Date(s): 07/31/17 07/31/17

Calibration: 18EDBS1721201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 2.55 | 2.50 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 1.23 | 1.23 | -1 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 19.00 | 19.05 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 2.41 | 2.49 | -3 |

Compounds 4 Average of %D: 2

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 07/31/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 23:15

Lab File ID: 18EDBS17212001B.028.RAW Initial Calibration: 18EDBS1721201B

Lab Standard ID: EDB_4QV Init. Calib Date(s): 07/31/17 07/31/17

Calibration: 18EDBS1721201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 2.52 | 2.50 | 1 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 1.22 | 1.23 | -1 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 19.64 | 19.05 | 3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 2.61 | 2.49 | 5 |

Compounds 4 Average of %D: 3

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKYF Sample ID: YF **Batchnumber: 1721199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 23:31:53
Instrument : CP18--19846A
Result file : 18EDBS17212001.029.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060904

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14349 | 0.060904 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 585 | -0.078602 |

## Analysis Report (B)

Injected on : Jul 31, 2017 23:31:53
Instrument : CP18--19846B
Result file : 18EDBS17212001B.029.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 83% (46-136) Conc.: 0.056441

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 19741 | 0.056441 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 472 | -0.101261 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.060904 | | | | 7.61 | |
| ☑ 1,2,3-TCP | A | -0.078602 | | | | 25.20 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 0 1 2017

Verified by: SD 7/31/17
Date: 08/01/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Date Analyzed: 08/01/17

GC Column (1) : ZB MR1  ID: .32 (mm)  Time Analyzed: 2:11

Lab File ID: 18EDBS17212001.039.RAW  Initial Calibration: 18EDBS1721201

Lab Standard ID: EDB_3QI  Init. Calib Date(s): 07/31/17  07/31/17

Calibration: 18EDBS1721201

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.84 | 3.81 | 3.87 | 1.29 | 1.25 | 3 |
| 1,1,2,2-TETRACHLOROETHANE | 5.32 | 5.29 | 5.35 | 0.62 | 0.62 | 1 |
| 1,2,3-Trichloropropane | 5.40 | 5.37 | 5.43 | 9.78 | 9.53 | 3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.68 | 7.65 | 7.71 | 1.22 | 1.24 | -2 |

Compounds 4  Average of %D: 2

# 7E
## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 08/01/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 2:11

Lab File ID: 18EDBS17212001B.039.RAW Initial Calibration: 18EDBS1721201B

Lab Standard ID: EDB_3QI Init. Calib Date(s): 07/31/17 07/31/17

Calibration: 18EDBS1721201B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.79 | 2.76 | 2.82 | 1.30 | 1.25 | 4 |
| 1,1,2,2-TETRACHLOROETHANE | 4.04 | 4.01 | 4.07 | 0.64 | 0.62 | 4 |
| 1,2,3-Trichloropropane | 4.16 | 4.13 | 4.19 | 10.24 | 9.53 | 7 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.44 | 6.41 | 6.47 | 1.37 | 1.24 | 10 |

Compounds 4 Average of %D: 6

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKYG Sample ID: YG **Batchnumber: 1721199999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 01, 2017 02:27:01
Instrument : CP18--19846A
Result file : 18EDBS17212001.040.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.064738

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15186 | 0.064738 |
| **1,2,3-TCP** | 5.37 | 5.39 | 5.43 | 497 | -0.081790 |

## Analysis Report (B)

Injected on : Aug 01, 2017 02:27:01
Instrument : CP18--19846B
Result file : 18EDBS17212001B.040.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.0609

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21060 | 0.060900 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 737 | -0.093795 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064738 | | | | 6.11 | |
| ☑ 1,2,3-TCP | A | -0.081790 | | | | 13.67 | |
| ☑ DBCP | | | | | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 0 1 2017

Verified by: SDB 8/16
Date: 08/01/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 18EDBS17212001
Instrument CP18--19846A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17212001.001 | CONDITIONER | | 7/31/17 16:05 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.002 | CONDITIONER | | 7/31/17 16:21 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.003 | CONDITIONER | | 7/31/17 16:37 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.004 | CONDITIONER | | 7/31/17 16:53 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.005 | EIBKX1724C | PIBLKAA | 7/31/17 17:09 | 1721199999 | 2.00 |
| 7848 | 18EDBS17212001.006 | EDB_11724DW | EDB_1AA | 7/31/17 17:25 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.007 | EDB_21724DW | EDB_2AA | 7/31/17 17:41 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.008 | EDB_31724DW | EDB_3AA | 7/31/17 17:57 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.009 | EDB_41724DW | EDB_4AA | 7/31/17 18:13 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.010 | EDB_51724DW | EDB_5AA | 7/31/17 18:29 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.011 | EDB_61724DW | EDB_6AA | 7/31/17 18:44 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.012 | MDEDX1724DW | MDEDXAA | 7/31/17 19:00 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.013 | DBCMX1724B | DBCMXAA | 7/31/17 19:16 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.014 | EDB_31724DW | EDB_3AA | 7/31/17 19:32 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.015 | EIBKX1724C | PIBLKAA | 7/31/17 19:48 | 1721199999 | 2.00 |
| 7848 | 18EDBS17212001.016 | BLANKA 7/31/17 | PBLK36209 | 7/31/17 20:04 | 172090036A | 2.00 |
| 7848 | 18EDBS17212001.017 | LOD 7/31/17 | | 7/31/17 20:20 | 172090036A | 2.00 |
| 7848 | 18EDBS17212001.018 | EDB_51724DW | EDB_5MC | 7/31/17 20:36 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.019 | EIBKX1724C | PIBLKXT | 7/31/17 20:52 | 1721199999 | 2.00 |
| 7848 | 18EDBS17212001.020 | BLANKA 7/31/17 | PBLK34209 | 7/31/17 21:08 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.021 | LCSA 7/31/17 | LCS34209 | 7/31/17 21:24 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.022 | LCSDA 7/31/17 | LCSD34209 | 7/31/17 21:40 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.023 | 9121674 | K1901 | 7/31/17 21:56 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.024 | 9121676 | K1903 | 7/31/17 22:12 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.025 | 9121678 | K1905 | 7/31/17 22:28 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.026 | 9121680 | K1907 | 7/31/17 22:44 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.027 | 9121682 | K1909 | 7/31/17 22:59 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.028 | EDB_41724DW | EDB_4QV | 7/31/17 23:15 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.029 | EIBKX1724C | PIBLKYF | 7/31/17 23:31 | 1721199999 | 2.00 |
| 7848 | 18EDBS17212001.030 | 9121683 | K1910 | 7/31/17 23:47 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.031 | 9121684MS | K1910 | 8/1/17 0:03 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.032 | 9121685MSD | K1910 | 8/1/17 0:19 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.033 | 9121691 | K1912 | 8/1/17 0:35 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.034 | 9121693 | K1914 | 8/1/17 0:51 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.035 | 9121695 | K1916 | 8/1/17 1:07 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.036 | 9121696 | K1917 | 8/1/17 1:23 | 172090034A | 2.00 |
| 7848 | 18EDBS17212001.037 | SS1718724B | AA | 8/1/17 1:39 | 172090034A | 20.00 |
| 7848 | 18EDBS17212001.038 | SS1720824A | AA | 8/1/17 1:55 | 172090034A | 20.00 |
| 7848 | 18EDBS17212001.039 | EDB_31724DW | EDB_3QI | 8/1/17 2:11 | 1721199999 | 1.00 |
| 7848 | 18EDBS17212001.040 | EIBKX1724C | PIBLKYG | 8/1/17 2:27 | 1721199999 | 2.00 |

# Sample Data

# EDB/DBCP

**LOQ/MDL Summary**
**Pesticide Residue Analysis**

**SDG: KR191**

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

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# Data Summary

**Sample Name: 9121674** K1901 Sample ID: AA **Batchnumber: 172090034A**

Sample Amount: 36.78 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 21:56:16 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.023.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 113% ( 46 - 136 ) Conc: 0.07597

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 21:56:16 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.023.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 109% ( 46 - 136 ) Conc: 0.073204

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 18482 | 0.07597 |
| 1,2,3-Trichloropropane | 5.37 | 5.41 | 5.43 | 624 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 539 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 25802 | 0.073204 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 376 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.07597 | 0.0033 | 0.0067 | 0.0067 | | 3.71 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2569 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:19

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121674** K1901 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.78 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 21:56:16
Instrument : CP18--19846A
Result file : 18EDBS17212001.023.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 113% (46-136) Conc.: 0.07597

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 18482 | 0.075970 |
| **1,2,3-TCP** | 5.37 | 5.41 | 5.43 | 624 | -0.073453 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 539 | -0.004283 |

## Analysis Report (B)

Injected on : Jul 31, 2017 21:56:16
Instrument : CP18--19846B
Result file : 18EDBS17212001B.023.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 109% (46-136) Conc.: 0.073204

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 25802 | 0.073204 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 376 | -0.098954 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.075970 | | | | 3.71 | |
| ☐ 1,2,3-TCP | | | <0.2569 | <0.0952 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: AUG 0 2 2017

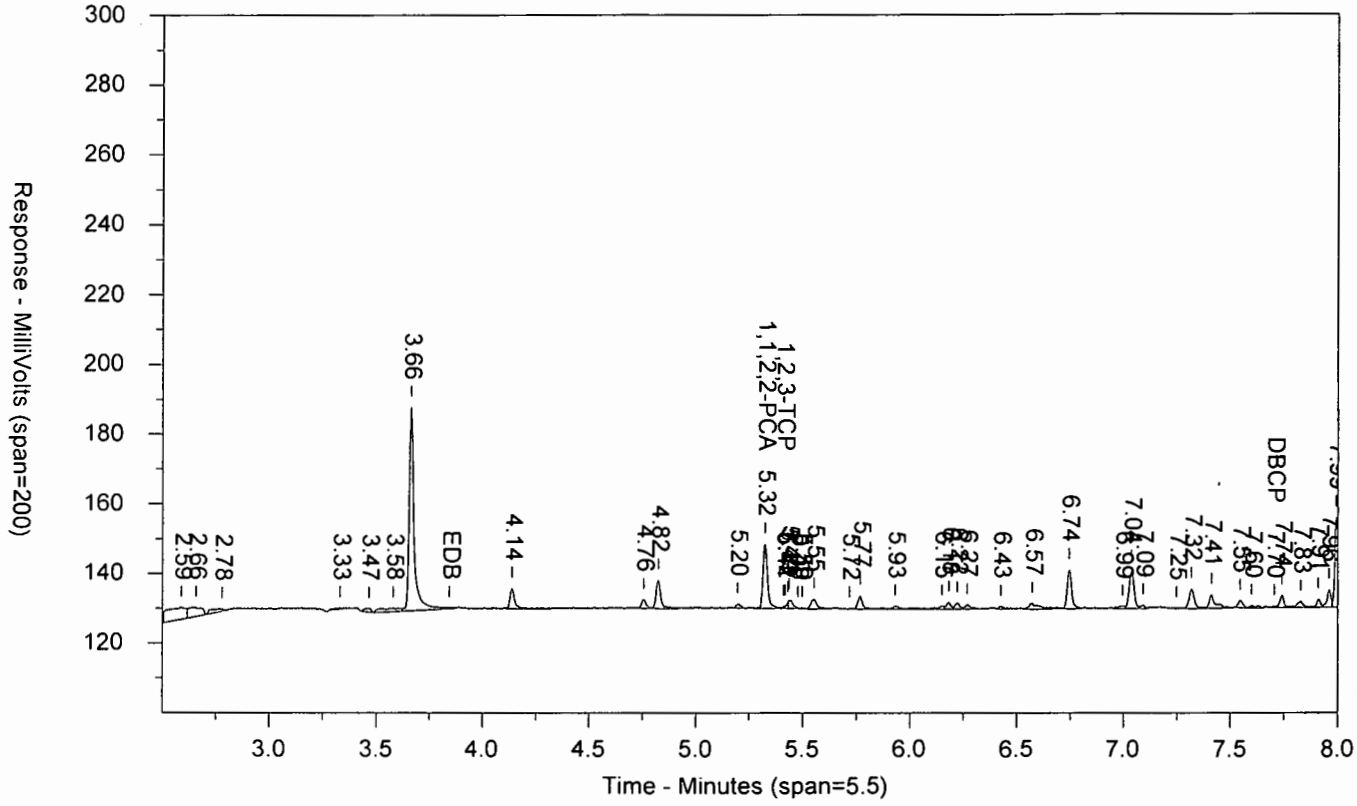
Verified by: Valerie L. Tomayko Valerie L. Tomayko Principal Specialist
Date: AUG 0 2 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121674 AAK1901 T 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.023.RAW

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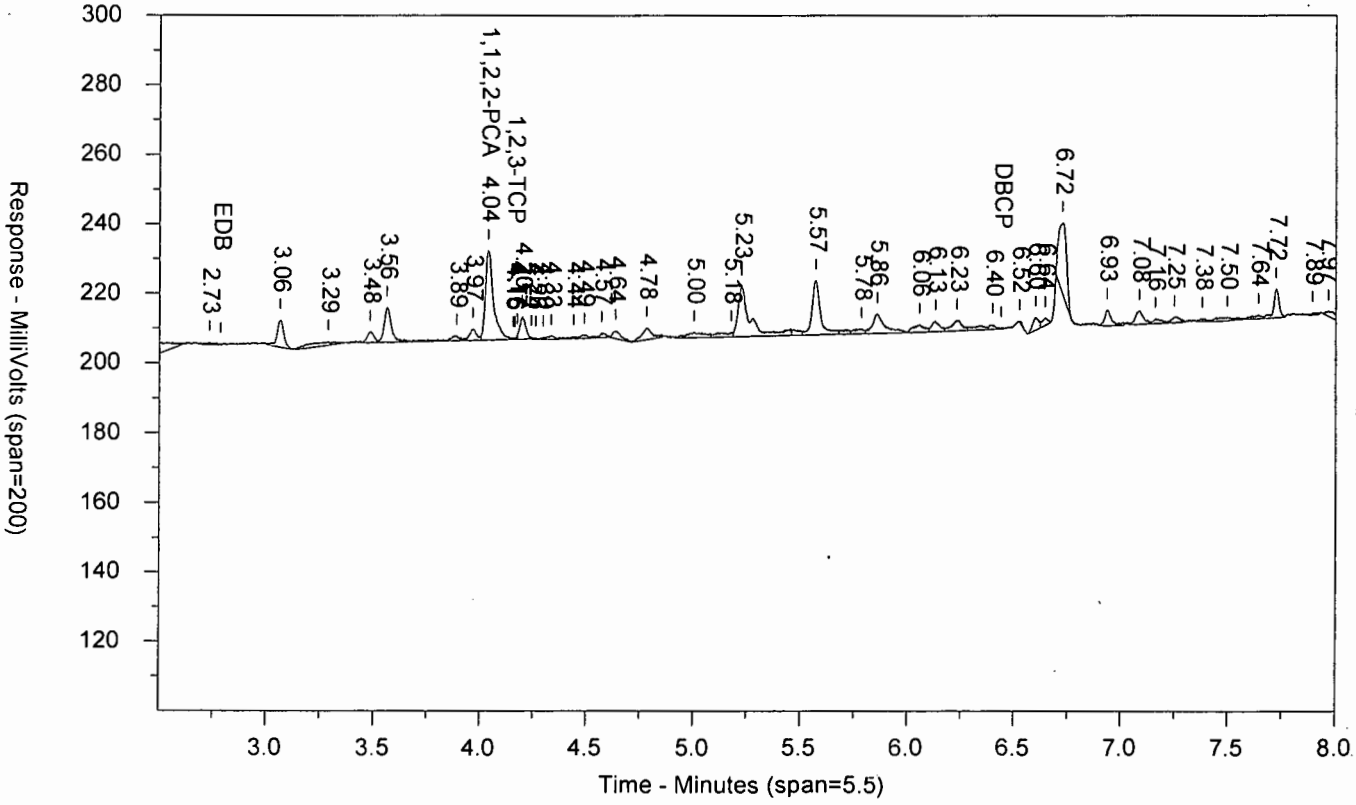

LANCASTER LABORATORIES

Sample Number: 9121674 AAK1901 T 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 9:56:16 PM Sample Weight: 36.78
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 18482 | .076 | 1,1,2,2-PCA | 4.038 | 25802 | .073 | 1,1,2,2-PCA |
| 5.411 | 624 | -.073 | 1,2,3-TCP | 4.159 | 376 | -.099 | 1,2,3-TCP |
| 7.705 | 539 | -.004 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17212001.023.RAW
Area File: 18EDBS17212001B.023.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 10:04:50 PM
File Reported On: 8/1/2017 at 11:36:04 AM

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# Data Summary

**Sample Name: 9121676** K1903 Sample ID: AA **Batchnumber: 172090034A**

Sample Amount: 36.37 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 22:12:15 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.024.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.061209

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 22:12:15 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.024.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 85% ( 46 - 136 ) Conc: 0.057511

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14939 | 0.061209 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 508 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.80 | 2.82 | 619 | 0 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20724 | 0.057511 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 683 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0289 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.061209 | 0.0034 | 0.0067 | 0.0067 | | 6.23 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2598 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valorie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:21

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121676** K1903 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.37 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 22:12:15
Instrument : CP18--19846A
Result file : 18EDBS17212001.024.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.061209

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14939 | 0.061209 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 508 | -0.078353 |

## Analysis Report (B)

Injected on : Jul 31, 2017 22:12:15
Instrument : CP18--19846B
Result file : 18EDBS17212001B.024.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 85% (46-136) Conc.: 0.057511

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.80 | 2.82 | 619 | -0.010435 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20724 | 0.057511 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 683 | -0.091718 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.061209 | | | | 6.23 | |
| ☐ 1,2,3-TCP | | | <0.2598 | <0.0962 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

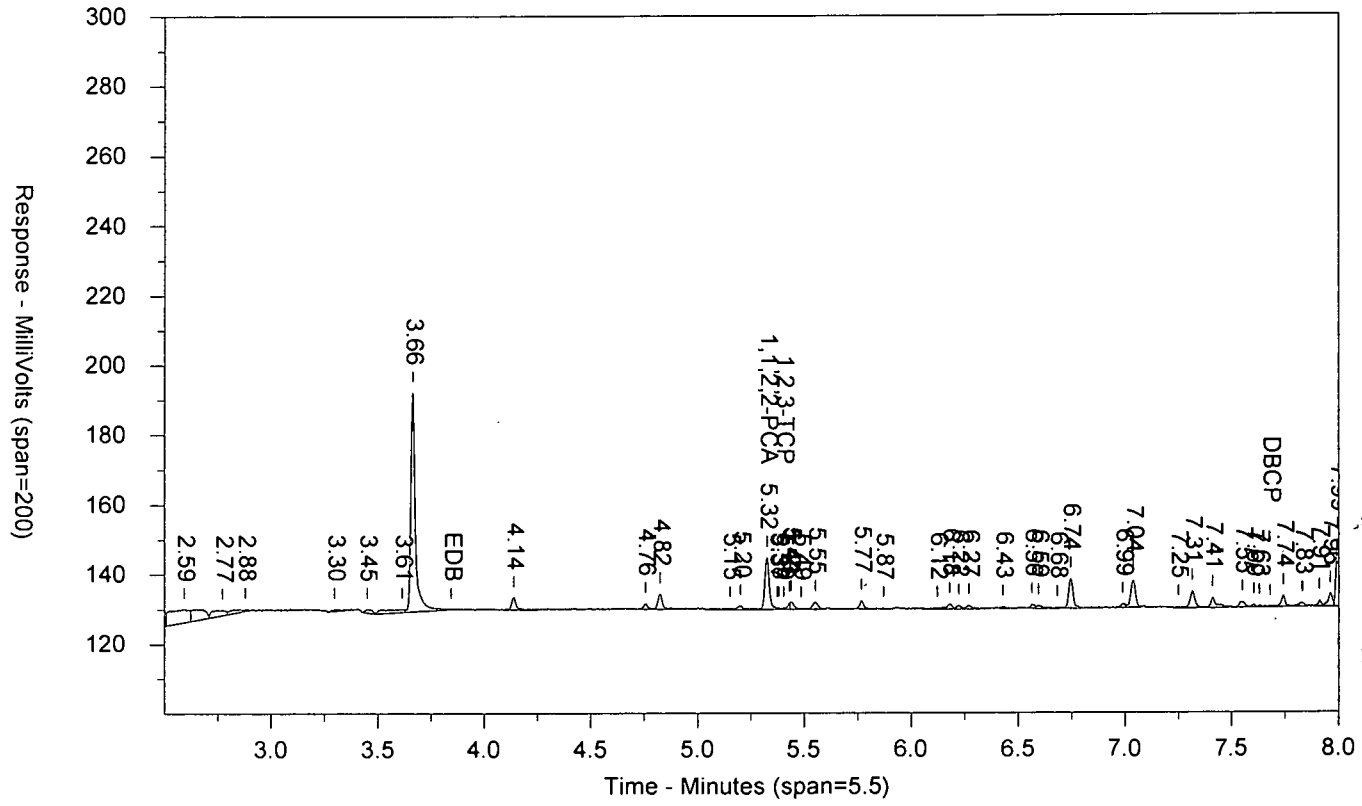
Verified by: Valorie L. Tomayko
Valorie L. Tomayko
Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

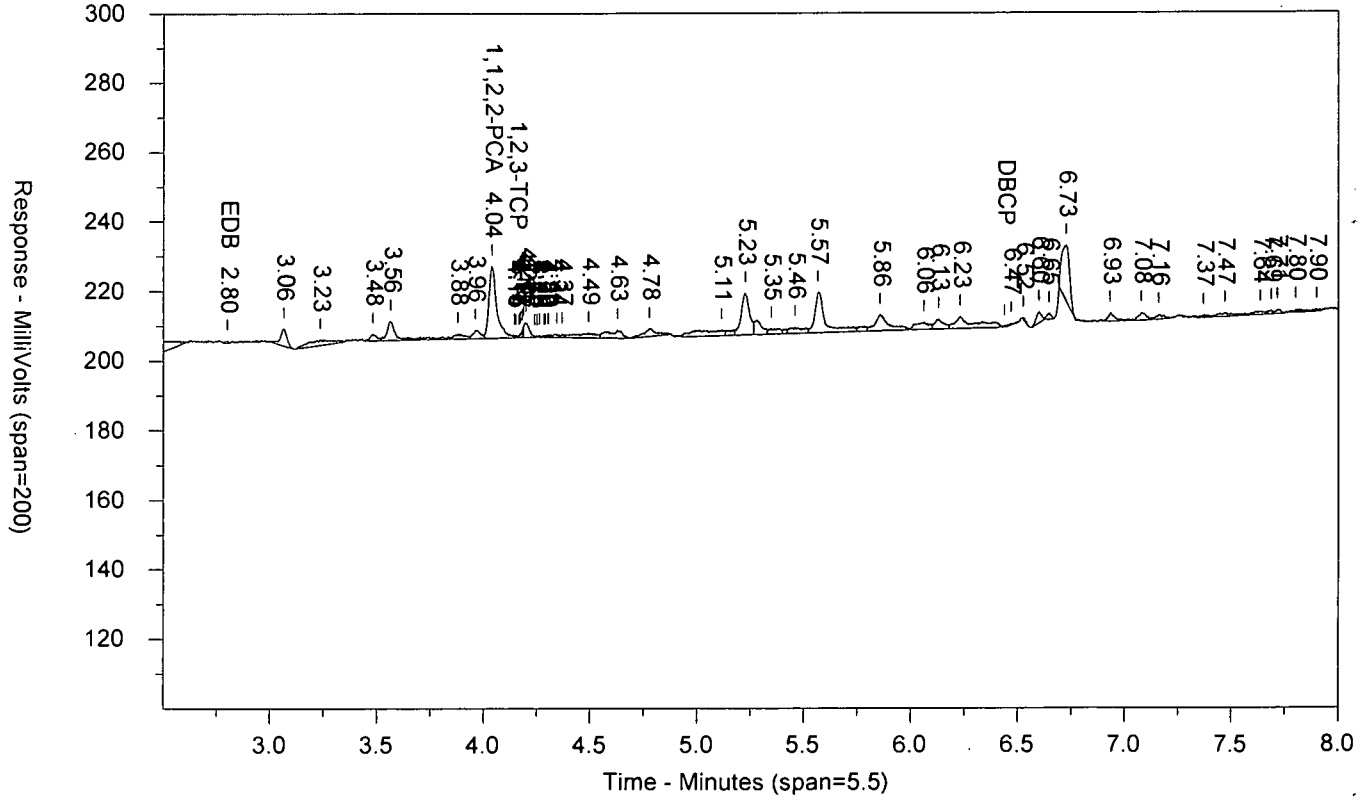
* Recovery outside QC Limits

9121676 AAK1903 T 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.024.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.024.RAW



LANCASTER LABORATORIES

Sample Number: 9121676 AAK1903 T 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 10:12:15 PM Sample Weight: 36.37
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 2.798 | 619 | -.01 | EDB |
| 5.325 | 14939 | .061 | 1,1,2,2-PCA | 4.039 | 20724 | .058 | 1,1,2,2-PCA |
| 5.402 | 508 | -.078 | 1,2,3-TCP | 4.153 | 683 | -.092 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.024.RAW
Area File: 18EDBS17212001B.024.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 10:20:45 PM
File Reported On: 8/1/2017 at 11:36:18 AM

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# Data Summary

**Sample Name: 9121678** K1905 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.68 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| Injected on | Jul 31, 2017 22:28:13 |
| Instrument | 19846A |
| Result file | 18EDBS17212001.025.RAW |
| Calibration file | 18EDBS1721201 |
| Method file | 18EDBS |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.058138

## Analysis Report (B)

| | |
|---|---|
| Injected on | Jul 31, 2017 22:28:13 |
| Instrument | 19846B |
| Result file | 18EDBS17212001B.025.RAW |
| Calibration file | 18EDBS1721201B |
| Method file | 18EDBSB |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.056619

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14355 | 0.058138 |
| 1,2,3-Trichloropropane | 5.37 | 5.42 | 5.43 | 364 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20598 | 0.056619 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 746 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.058138 | 0.0033 | 0.0067 | 0.0067 | | 2.65 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2576 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:23

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121678** K1905 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.68 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 22:28:13
Instrument : CP18--19846A
Result file : 18EDBS17212001.025.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.058138

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14355 | 0.058138 |
| **1,2,3-TCP** | 5.37 | 5.42 | 5.43 | 364 | -0.082668 |

## Analysis Report (B)

Injected on : Jul 31, 2017 22:28:13
Instrument : CP18--19846B
Result file : 18EDBS17212001B.025.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.056619

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20598 | 0.056619 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 746 | -0.089252 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.058138 | | | | 2.65 | |
| ☐ 1,2,3-TCP | | | <0.2576 | <0.0954 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121678 AAK1905 T 172090034A 10398 SW-846 8011

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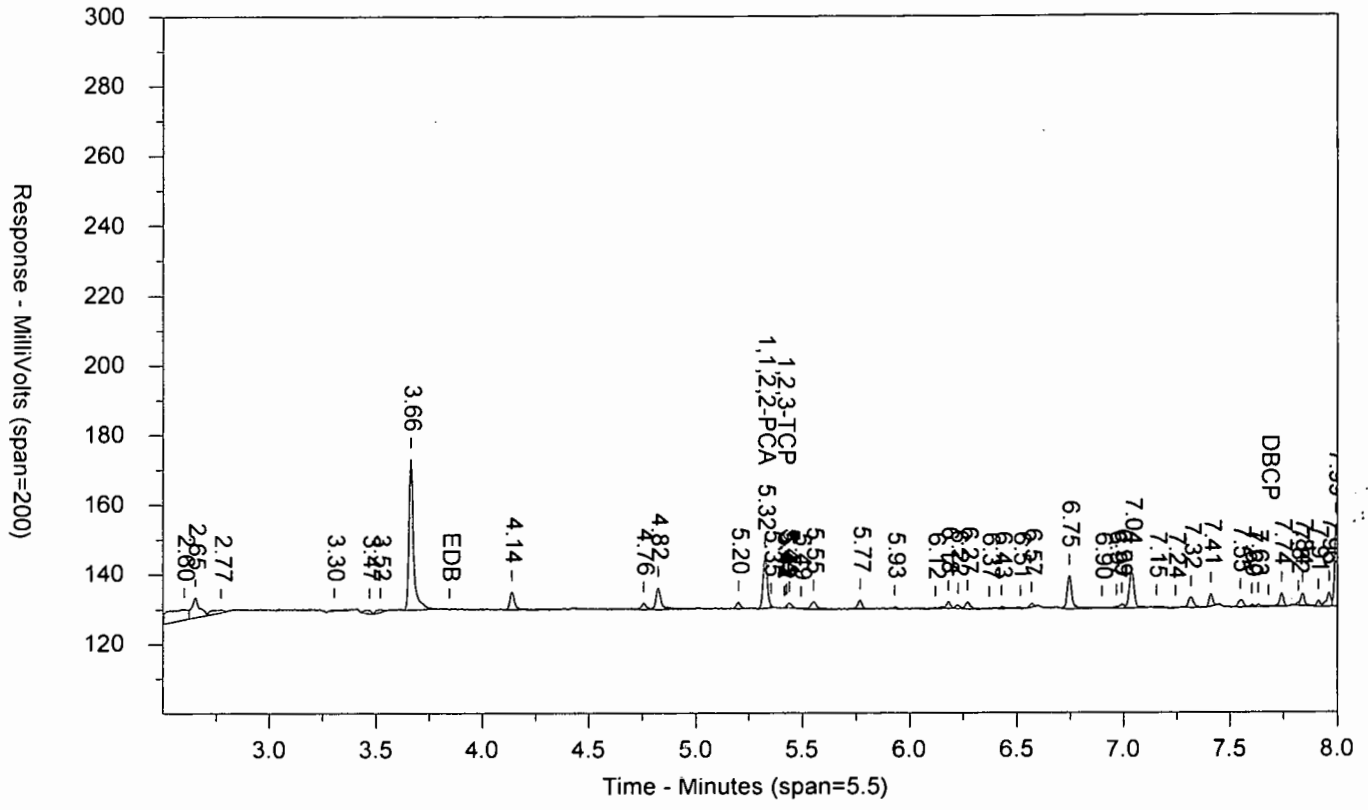
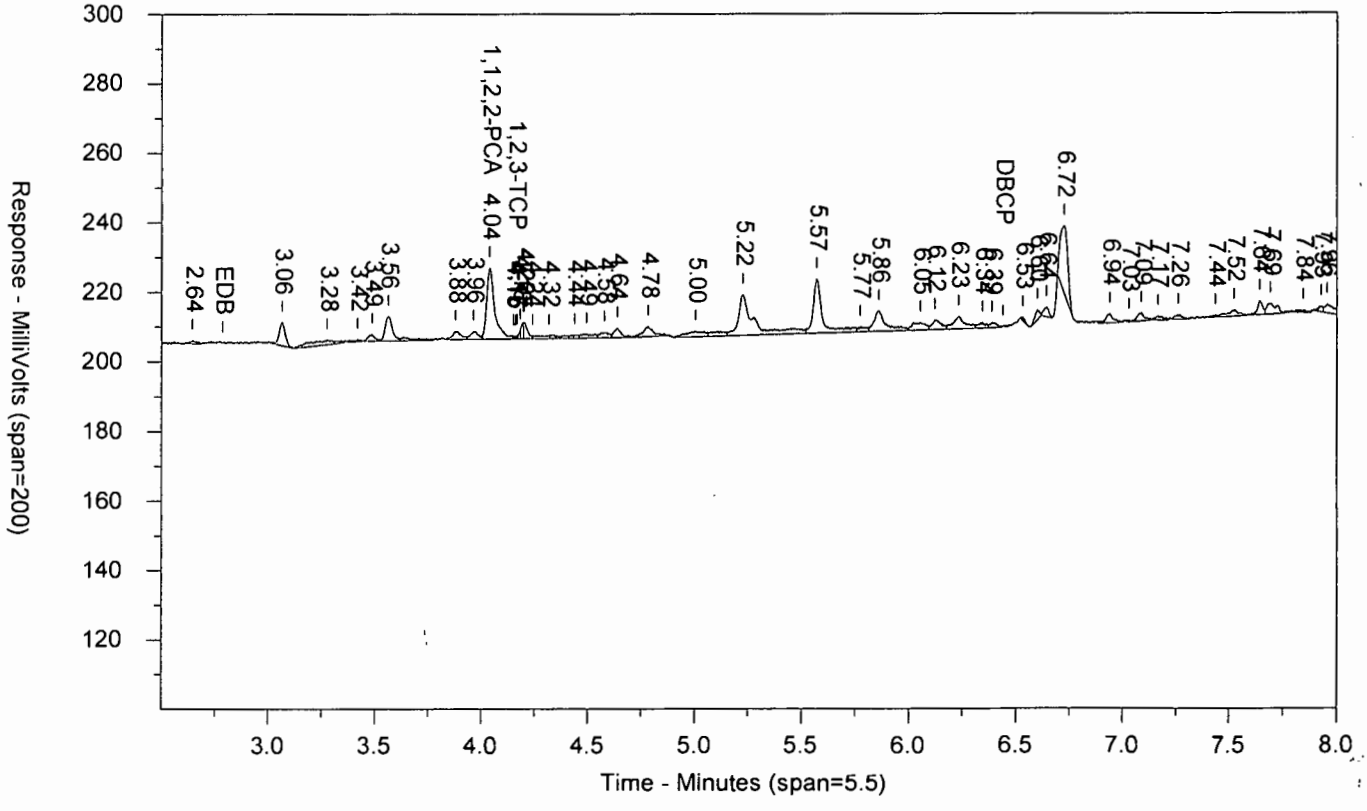



\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.025.RAW



LANCASTER LABORATORIES

Sample Number: 9121678 AAK1905 T 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 10:28:13 PM Sample Weight: 36.68
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14355 | .058 | 1,1,2,2-PCA | 4.038 | 20598 | .057 | 1,1,2,2-PCA |
| 5.415 | 364 | -.083 | 1,2,3-TCP | 4.159 | 746 | -.089 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.025.RAW
Area File: 18EDBS17212001B.025.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 10:36:47 PM
File Reported On: 8/1/2017 at 11:36:34 AM

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# Data Summary

**Sample Name: 9121680** K1907 Sample ID: AA **Batchnumber: 172090034A**

Sample Amount: 36.58 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 22:44:03 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.026.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.063307

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 22:44:03 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.026.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.060407

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 12588 | 0.053947 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15498 | 0.063307 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 533 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 5467 | 0.007728 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 17577 | 0.054937 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21721 | 0.060407 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1108 | 0 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.46 | 6.47 | 872 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☑ Ethylene dibromide | A | 0.053947 | 0.0096 | 0.0191 | 0.0287 | | 1.82 | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.063307 | 0.0033 | 0.0067 | 0.0067 | | 4.69 | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.2583 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:24

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121680** K1907 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.58 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 22:44:03
Instrument : CP18--19846A
Result file : 18EDBS17212001.026.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063307

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 12588 | 0.053947 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15498 | 0.063307 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 533 | -0.077004 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 5467 | 0.007728 |

## Analysis Report (B)

Injected on : Jul 31, 2017 22:44:03
Instrument : CP18--19846B
Result file : 18EDBS17212001B.026.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060407

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 17577 | 0.054937 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21721 | 0.060407 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1108 | -0.079702 |
| **DBCP** | 6.41 | 6.46 | 6.47 | 872 | -0.010595 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.053947 | 0.0287 | 0.0096 | | 1.82 | |
| ☐ 1,1,2,2-PCA | A | 0.063307 | | | | 4.69 | |
| ☐ 1,2,3-TCP | | | <0.2583 | <0.0957 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121680 AAK1907 T 172090034A 10398 SW-846 8011

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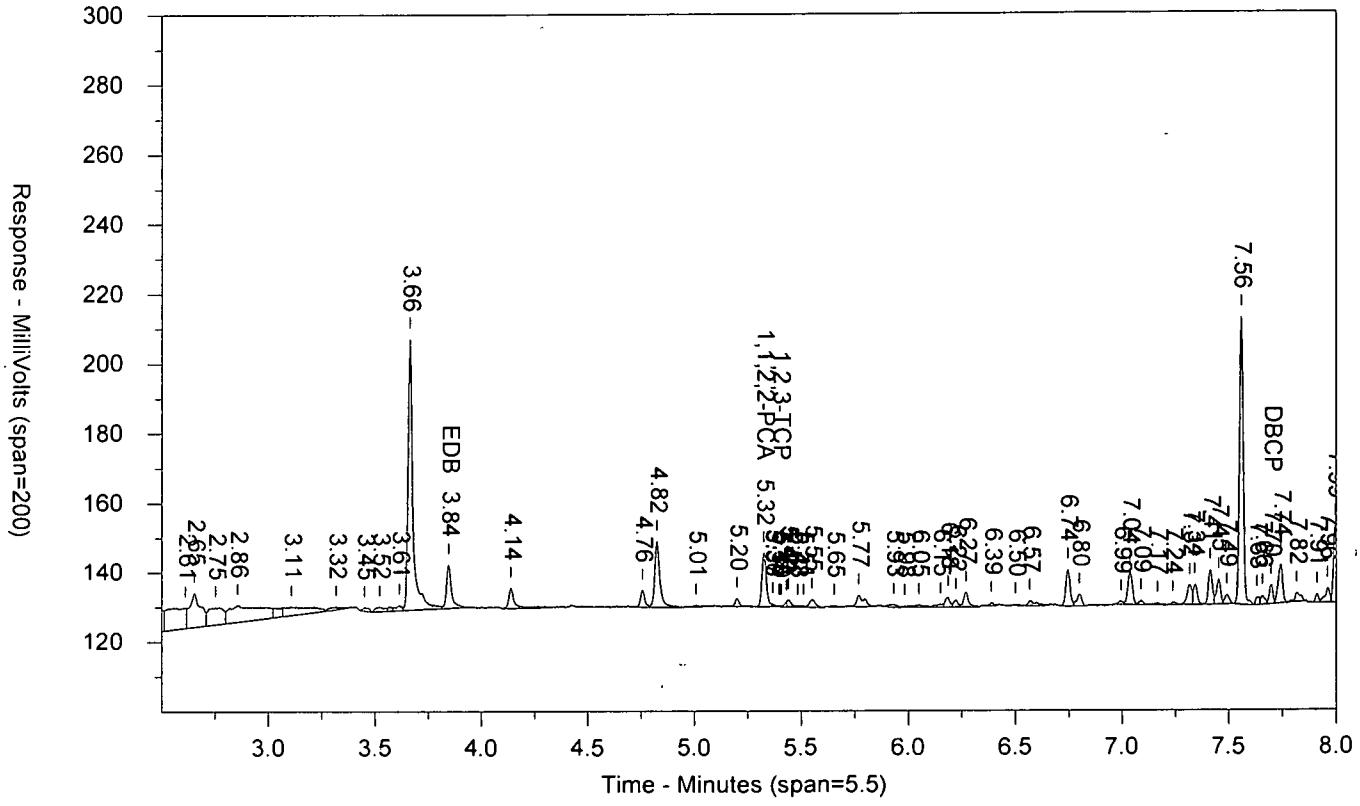


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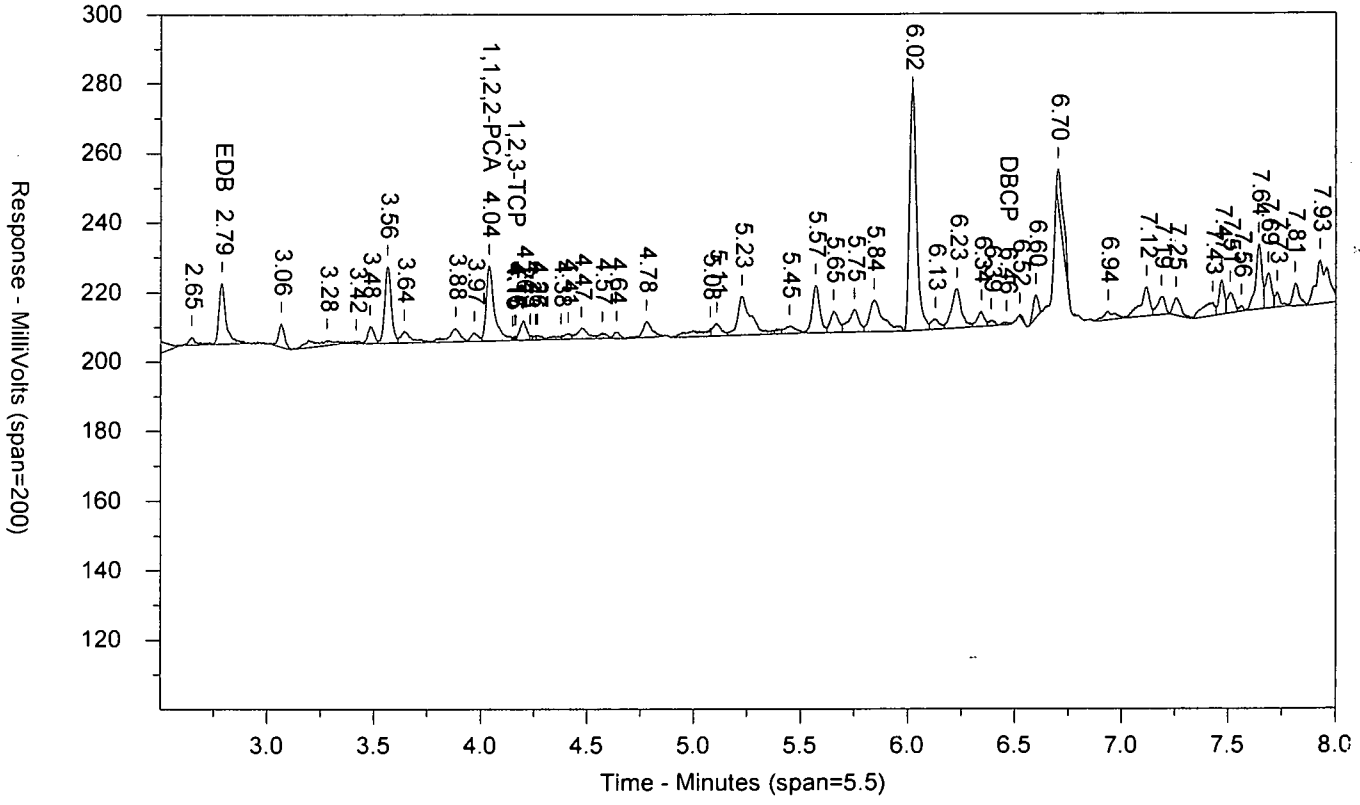

LANCASTER LABORATORIES

Sample Number: 9121680 AAK1907 T 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 10:44:03 PM Sample Weight: 36.58
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 12588 | .054 | EDB | 2.787 | 17577 | .055 | EDB |
| 5.324 | 15498 | .063 | 1,1,2,2-PCA | 4.039 | 21721 | .06 | 1,1,2,2-PCA |
| 5.4 | 533 | -.077 | 1,2,3-TCP | 4.157 | 1108 | -.08 | 1,2,3-TCP |
| 7.696 | 5467 | .008 | DBCP | 6.461 | 872 | -.011 | DBCP |

Files:
Area File: 18EDBS17212001.026.RAW
Area File: 18EDBS17212001B.026.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 10:52:37 PM
File Reported On: 8/1/2017 at 11:36:50 AM

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# Data Summary

**Sample Name: 9121682** K1909 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.42 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 22:59:59 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.027.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.064999

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 22:59:59 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.027.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 91% ( 46 - 136 ) Conc: 0.061275

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15819 | 0.064999 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 433 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 434 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21907 | 0.061275 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 920 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.064999 | 0.0034 | 0.0067 | 0.0067 | | 5.90 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2595 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:26

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121682** K1909 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.42 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 22:59:59
Instrument : CP18--19846A
Result file : 18EDBS17212001.027.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.064999

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15819 | 0.064999 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 433 | -0.080837 |
| **DBCP** | 7.65 | 7.70 | 7.71 | 434 | -0.004583 |

## Analysis Report (B)

Injected on : Jul 31, 2017 22:59:59
Instrument : CP18--19846B
Result file : 18EDBS17212001B.027.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 91% (46-136) Conc.: 0.061275

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21907 | 0.061275 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 920 | -0.085153 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.064999 | | | | 5.90 | |
| ☐ 1,2,3-TCP | | | <0.2595 | <0.0961 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist

Date: AUG 02 2017

Verified by: Valerie L. Tomayko Valerie L. Tomayko Principal Specialist

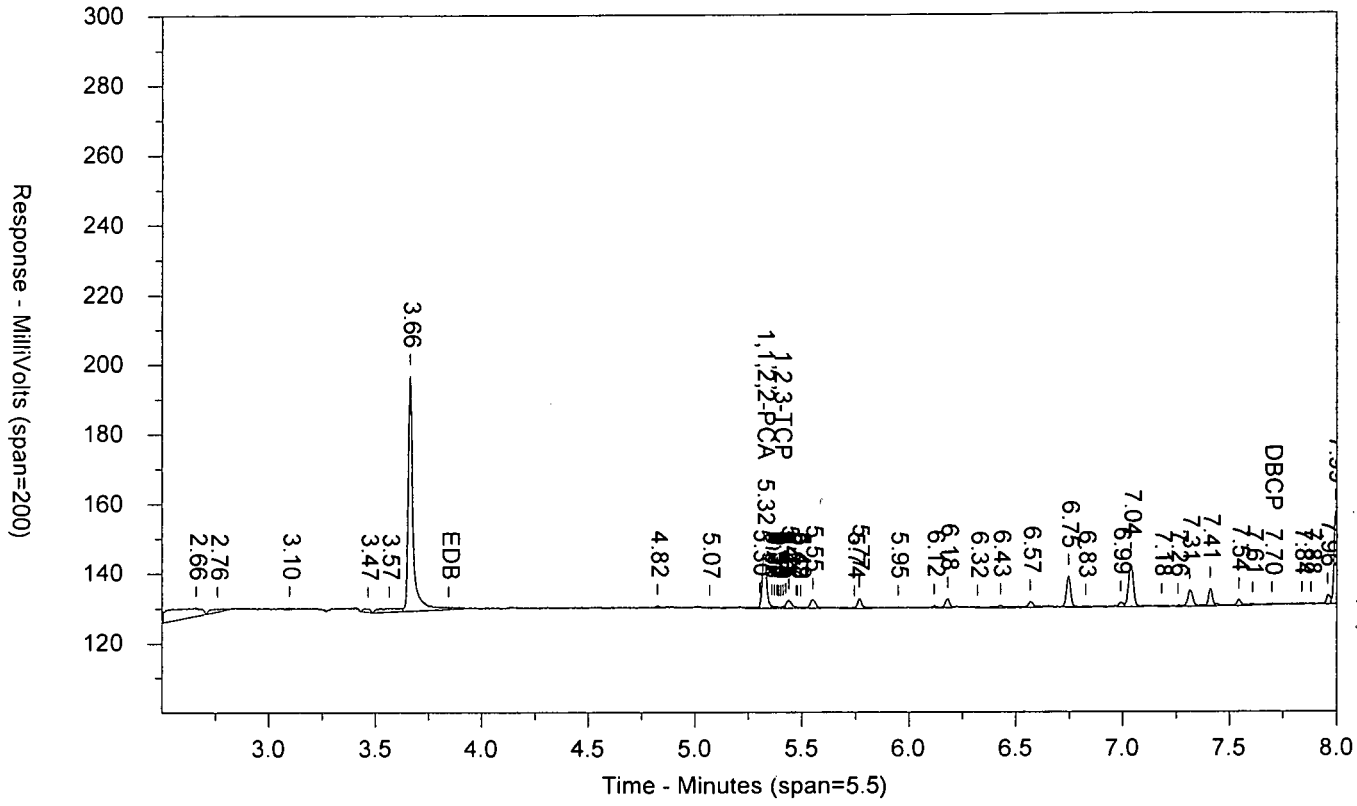
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

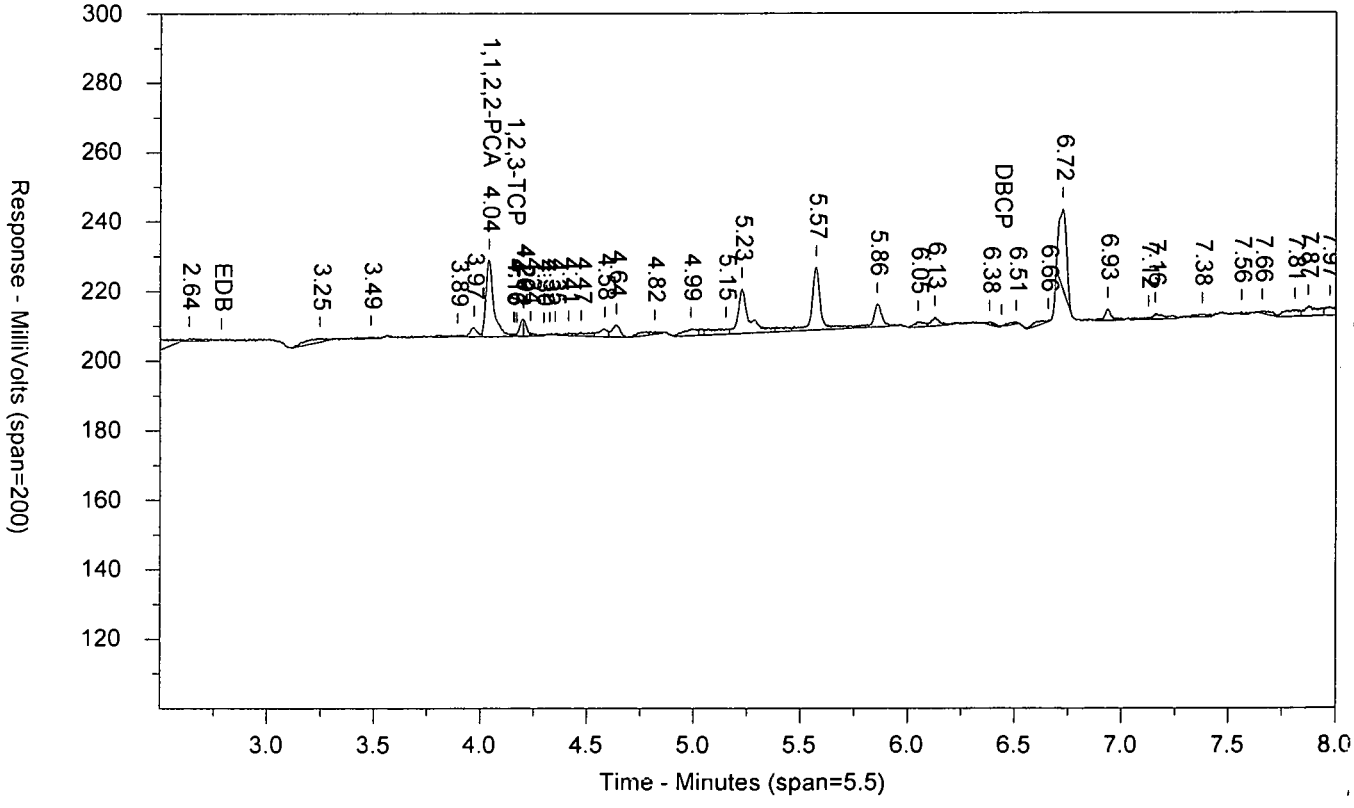
* Recovery outside QC Limits

9121682 AAK1909 T 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.027.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.027.RAW



LANCASTER LABORATORIES

Sample Number: 9121682 AAK1909 T 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 10:59:59 PM Sample Weight: 36.42
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 15819 | .065 | 1,1,2,2-PCA | 4.041 | 21907 | .061 | 1,1,2,2-PCA |
| 5.402 | 433 | -.081 | 1,2,3-TCP | 4.156 | 920 | -.085 | 1,2,3-TCP |
| 7.698 | 434 | -.005 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17212001.027.RAW
Area File: 18EDBS17212001B.027.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 11:08:33 PM
File Reported On: 8/1/2017 at 11:37:06 AM

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# Data Summary

**Sample Name: 9121683** K1910 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.55 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| Injected on | Jul 31, 2017 23:47:53 |
| Instrument | 19846A |
| Result file | 18EDBS17212001.030.RAW |
| Calibration file | 18EDBS1721201 |
| Method file | 18EDBS |

%SSR(PCA) 91% ( 46 - 136 ) Conc: 0.061648

## Analysis Report (B)

| | |
|---|---|
| Injected on | Jul 31, 2017 23:47:53 |
| Instrument | 19846B |
| Result file | 18EDBS17212001B.030.RAW |
| Calibration file | 18EDBS1721201B |
| Method file | 18EDBSB |

%SSR(PCA) 85% ( 46 - 136 ) Conc: 0.057484

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15108 | 0.061648 |
| 1,2,3-Trichloropropane | 5.37 | 5.38 | 5.43 | 454 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20803 | 0.057484 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 704 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.061648 | 0.0034 | 0.0067 | 0.0067 | | 6.99 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2585 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0192 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:28

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121683** K1910 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.55 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 23:47:53
Instrument : CP18--19846A
Result file : 18EDBS17212001.030.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 91% (46-136) Conc.: 0.061648

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.29 | 5.32 | 5.35 | 15108 | 0.061648 |
| 1,2,3-TCP | 5.37 | 5.38 | 5.43 | 454 | -0.079839 |

## Analysis Report (B)

Injected on : Jul 31, 2017 23:47:53
Instrument : CP18--19846B
Result file : 18EDBS17212001B.030.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 85% (46-136) Conc.: 0.057484

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.01 | 4.04 | 4.07 | 20803 | 0.057484 |
| 1,2,3-TCP | 4.13 | 4.16 | 4.19 | 704 | -0.090702 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.061648 | | | | 6.99 | |
| ☐ 1,2,3-TCP | | | <0.2585 | <0.0958 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: AUG 02 2017

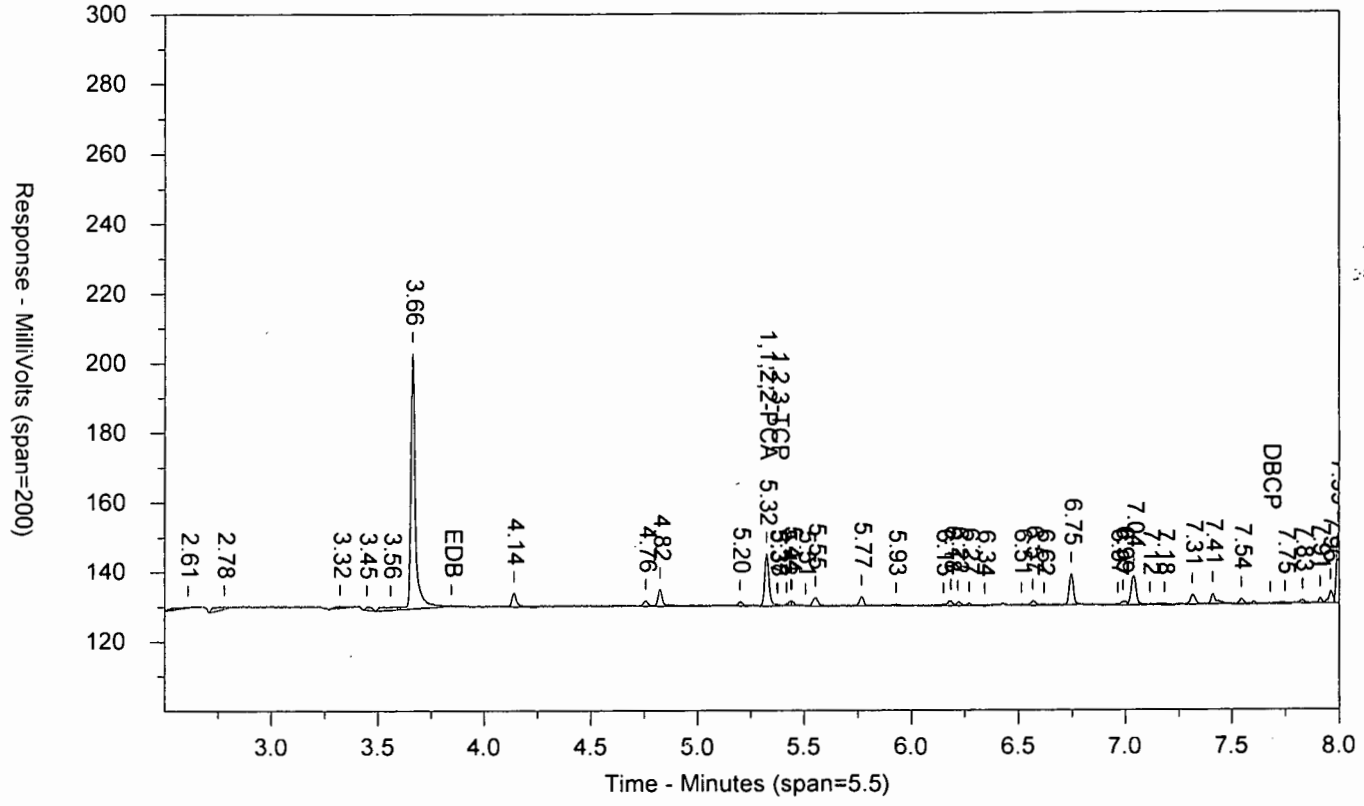
Verified by: Valerie L. Tomayko Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121683 AAK1910 T 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.030.RAW

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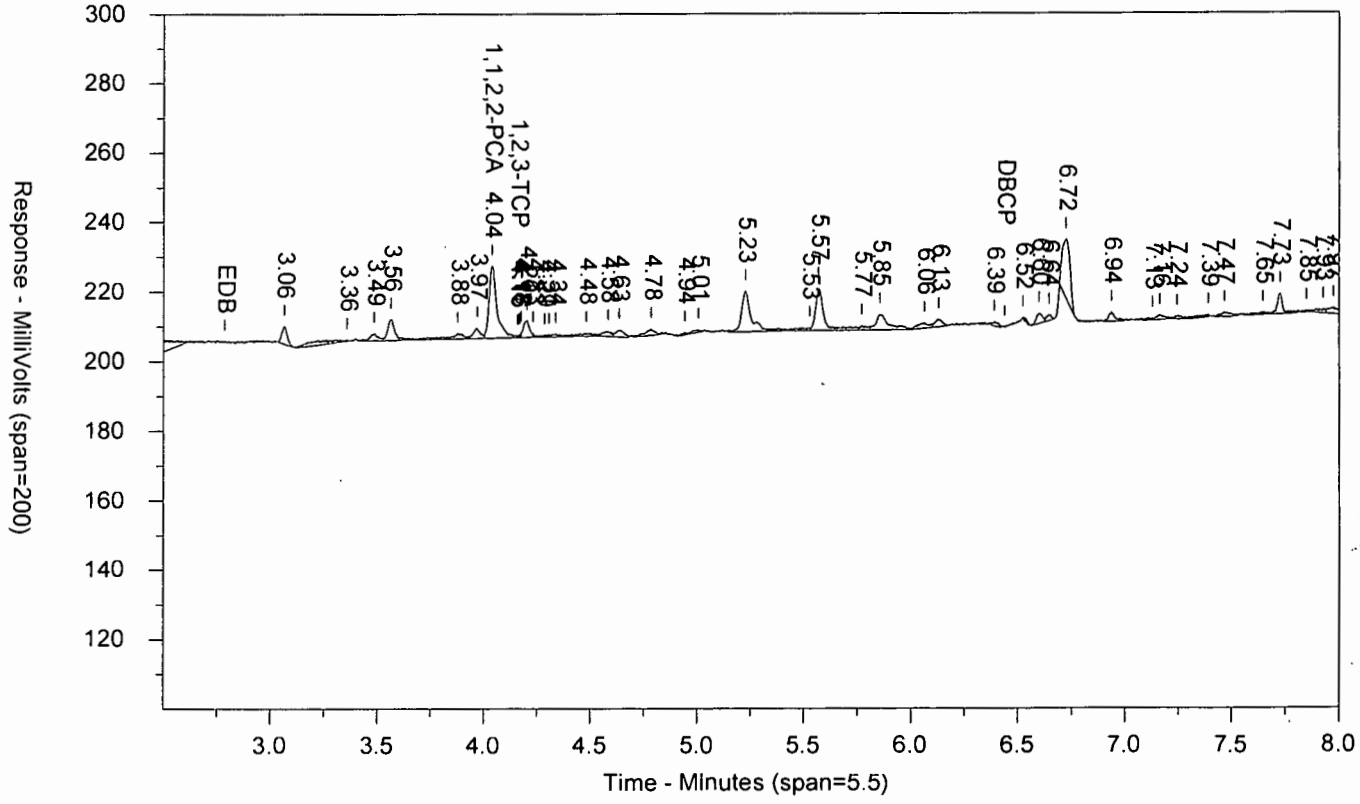

LANCASTER LABORATORIES

Sample Number: 9121683 AAK1910 T 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 11:47:53 PM Sample Weight: 36.55
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 15108 | .062 | 1,1,2,2-PCA | 4.039 | 20803 | .057 | 1,1,2,2-PCA |
| 5.377 | 454 | -.08 | 1,2,3-TCP | 4.159 | 704 | -.091 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.030.RAW
Area File: 18EDBS17212001B.030.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 11:56:25 PM
File Reported On: 8/1/2017 at 11:37:49 AM

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# Data Summary

**Sample Name: 9121691** K1912 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.52 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| Injected on | Aug 01, 2017 00:35:38 |
| Instrument | 19846A |
| Result file | 18EDBS17212001.033.RAW |
| Calibration file | 18EDBS1721201 |
| Method file | 18EDBS |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.063628

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 00:35:38 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.033.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.061902

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15547 | 0.063628 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 502 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 22152 | 0.061902 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1272 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0192 | <0.0288 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063628 | 0.0034 | 0.0067 | 0.0067 | | 2.75 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2588 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:33

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121691** K1912 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.52 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: **NM**
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 01, 2017 00:35:38
Instrument : CP18--19846A
Result file : 18EDBS17212001.033.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063628

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15547 | 0.063628 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 502 | -0.078208 |

## Analysis Report (B)

Injected on : Aug 01, 2017 00:35:38
Instrument : CP18--19846B
Result file : 18EDBS17212001B.033.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.061902

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 22152 | 0.061902 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1272 | -0.075390 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0288 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063628 | | | | 2.75 | |
| ☐ 1,2,3-TCP | | | <0.2588 | <0.0958 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

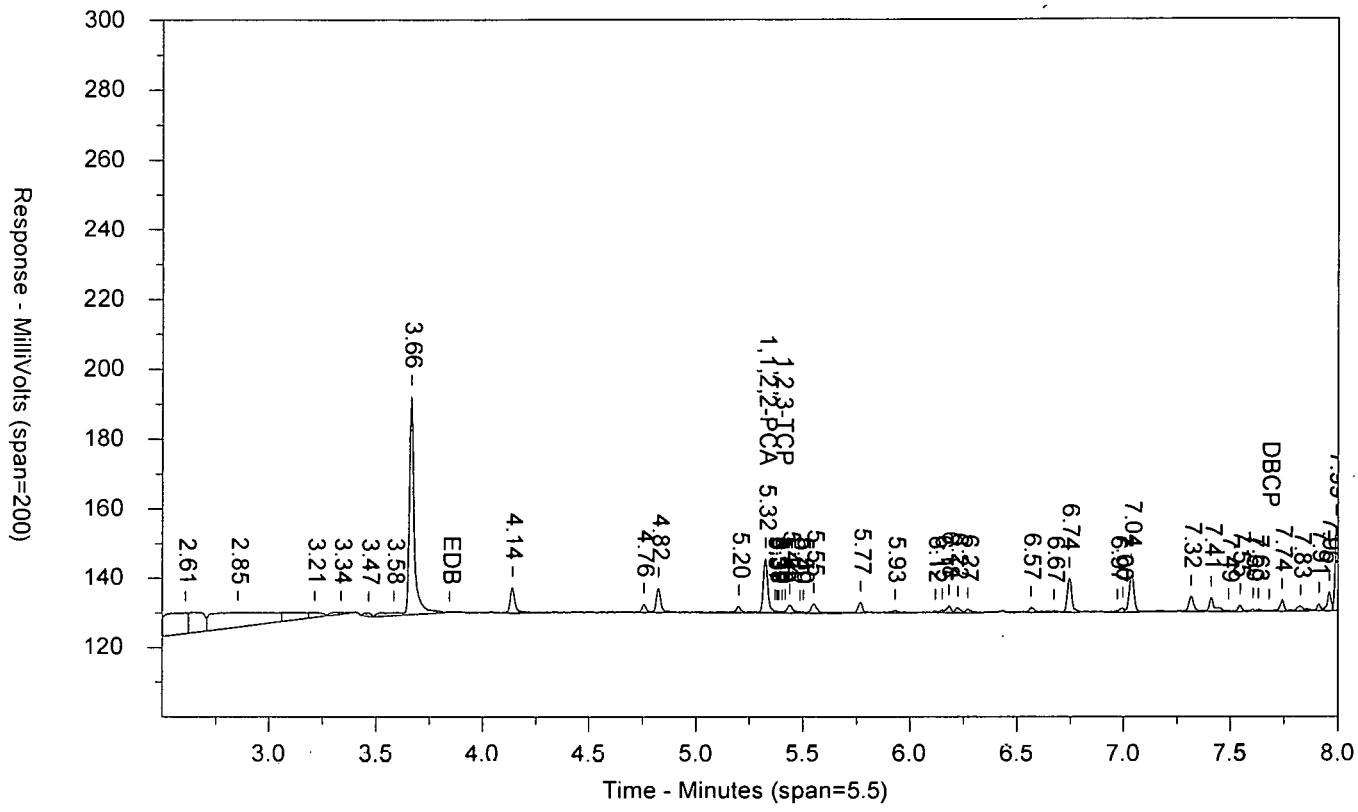
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121691 AAK1912 T 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.033.RAW

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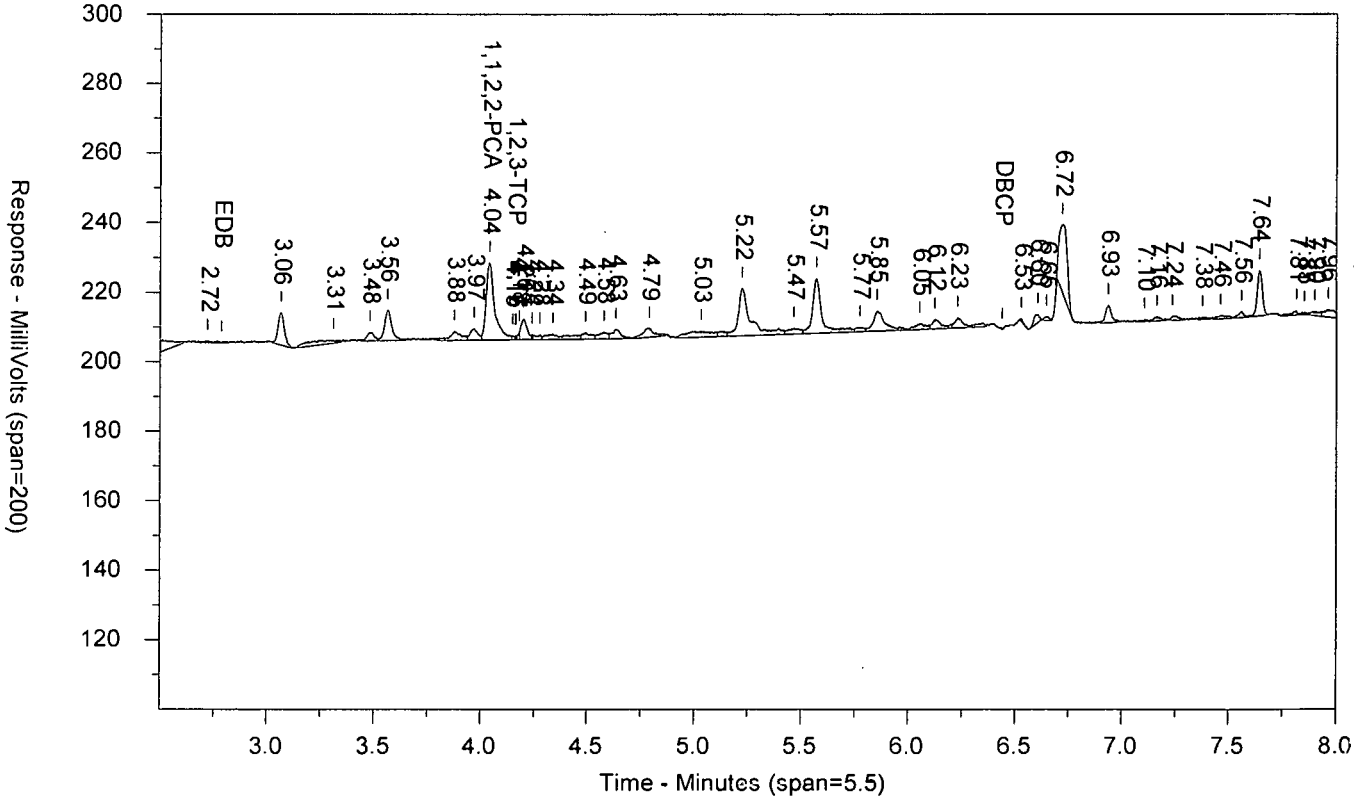

LANCASTER LABORATORIES

Sample Number: 9121691 AAK1912 T 172090034A 10398 SW-846 8011
Injected On: 8/1/2017 12:35:38 AM Sample Weight: 36.52
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 15547 | .064 | 1,1,2,2-PCA | 4.04 | 22152 | .062 | 1,1,2,2-PCA |
| 5.402 | 502 | -.078 | 1,2,3-TCP | 4.16 | 1272 | -.075 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.033.RAW
Area File: 18EDBS17212001B.033.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 8/1/2017 12:44:11 AM
File Reported On: 8/1/2017 at 11:38:33 AM

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# Data Summary

**Sample Name: 9121693** K1914 Sample ID: AA **Batchnumber: 172090034A**

Sample Amount: 36.52 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 00:51:35 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.034.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 96% ( 46 - 136 ) Conc: 0.064526

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 00:51:35 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.034.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.060554

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 12682 | 0.054547 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15752 | 0.064526 |
| 1,2,3-Trichloropropane | 5.37 | 5.41 | 5.43 | 316 | 0 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.70 | 7.71 | 1109 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.78 | 2.82 | 18086 | 0.056993 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21736 | 0.060554 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 969 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.054547 | 0.0096 | 0.0192 | 0.0288 | | 4.39 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.064526 | 0.0034 | 0.0067 | 0.0067 | | 6.35 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2588 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0192 | <0.0288 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:35

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121693** K1914 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.52 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 01, 2017 00:51:35
Instrument : CP18--19846A
Result file : 18EDBS17212001.034.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.064526

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.81 | 3.84 | 3.87 | 12682 | 0.054547 |
| 1,1,2,2-PCA | 5.29 | 5.32 | 5.35 | 15752 | 0.064526 |
| 1,2,3-TCP | 5.37 | 5.41 | 5.43 | 316 | -0.084690 |
| DBCP | 7.65 | 7.70 | 7.71 | 1109 | -0.002920 |

## Analysis Report (B)

Injected on : Aug 01, 2017 00:51:35
Instrument : CP18--19846B
Result file : 18EDBS17212001B.034.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060554

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 2.76 | 2.78 | 2.82 | 18086 | 0.056993 |
| 1,1,2,2-PCA | 4.01 | 4.04 | 4.07 | 21736 | 0.060554 |
| 1,2,3-TCP | 4.13 | 4.16 | 4.19 | 969 | -0.083590 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.054547 | 0.0288 | 0.0096 | | 4.38 | |
| ☐ 1,1,2,2-PCA | A | 0.064526 | | | | 6.35 | |
| ☐ 1,2,3-TCP | | | <0.2588 | <0.0958 | | | |
| ☐ DBCP | | | <0.0288 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121693 AAK1914 T 172090034A 10398 SW-846 8011

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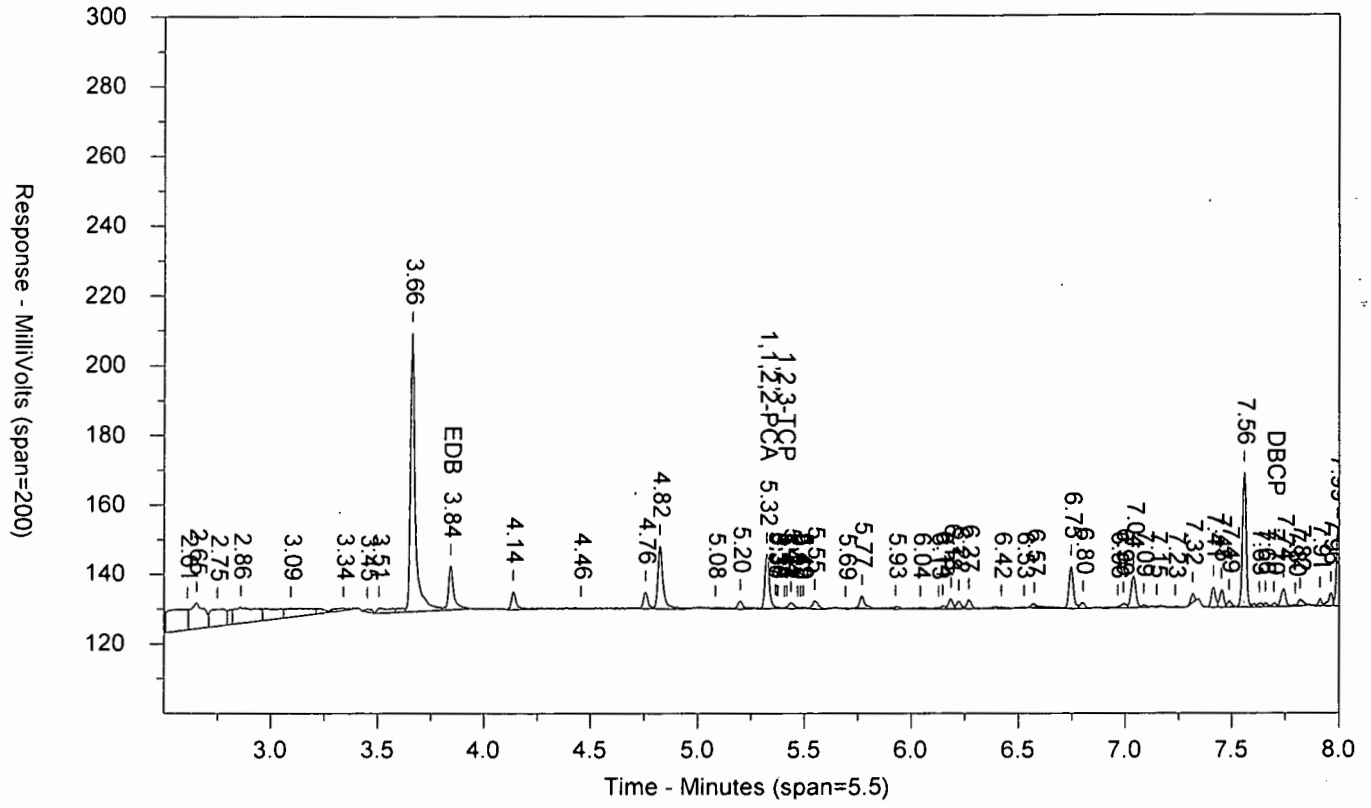


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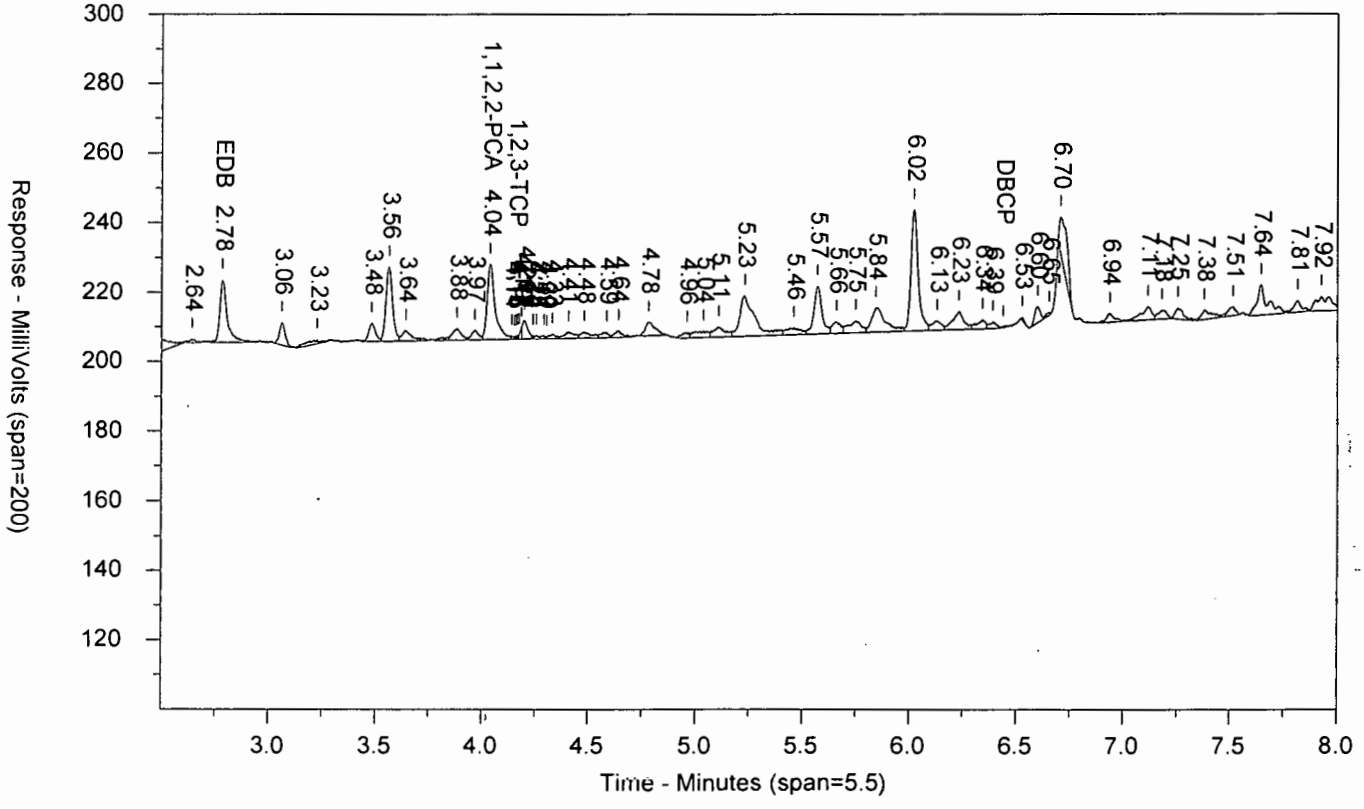


LANCASTER LABORATORIES

Sample Number: 9121693 AAK1914 T 172090034A 10398 SW-846 8011
Injected On: 8/1/2017 12:51:35 AM Sample Weight: 36.52
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 12682 | .055 | EDB | 2.783 | 18086 | .057 | EDB |
| 5.324 | 15752 | .065 | 1,1,2,2-PCA | 4.038 | 21736 | .061 | 1,1,2,2-PCA |
| 5.406 | 316 | -.085 | 1,2,3-TCP | 4.16 | 969 | -.084 | 1,2,3-TCP |
| 7.697 | 1109 | -.003 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17212001.034.RAW
Area File: 18EDBS17212001B.034.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 8/1/2017 1:00:07 AM
File Reported On: 8/1/2017 at 11:38:51 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9121695** K1916 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.93 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 01:07:24 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.035.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.059688

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 01:07:24 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.035.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.055831

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14803 | 0.059688 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 432 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20471 | 0.055831 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 551 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0284 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.059688 | 0.0033 | 0.0066 | 0.0066 | | 6.68 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2559 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0284 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:37

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121695** K1916 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.93 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 01, 2017 01:07:24
Instrument : CP18--19846A
Result file : 18EDBS17212001.035.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.059688

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14803 | 0.059688 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 432 | -0.079752 |

## Analysis Report (B)

Injected on : Aug 01, 2017 01:07:24
Instrument : CP18--19846B
Result file : 18EDBS17212001B.035.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.055831

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20471 | 0.055831 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 551 | -0.093868 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0284 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.059688 | | | | 6.68 | |
| ☐ 1,2,3-TCP | | | <0.2559 | <0.0948 | | | |
| ☐ DBCP | | | <0.0284 | <0.0095 | | | |

Units: ug/l

Valerie L. Tomayko
Principal Specialist

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

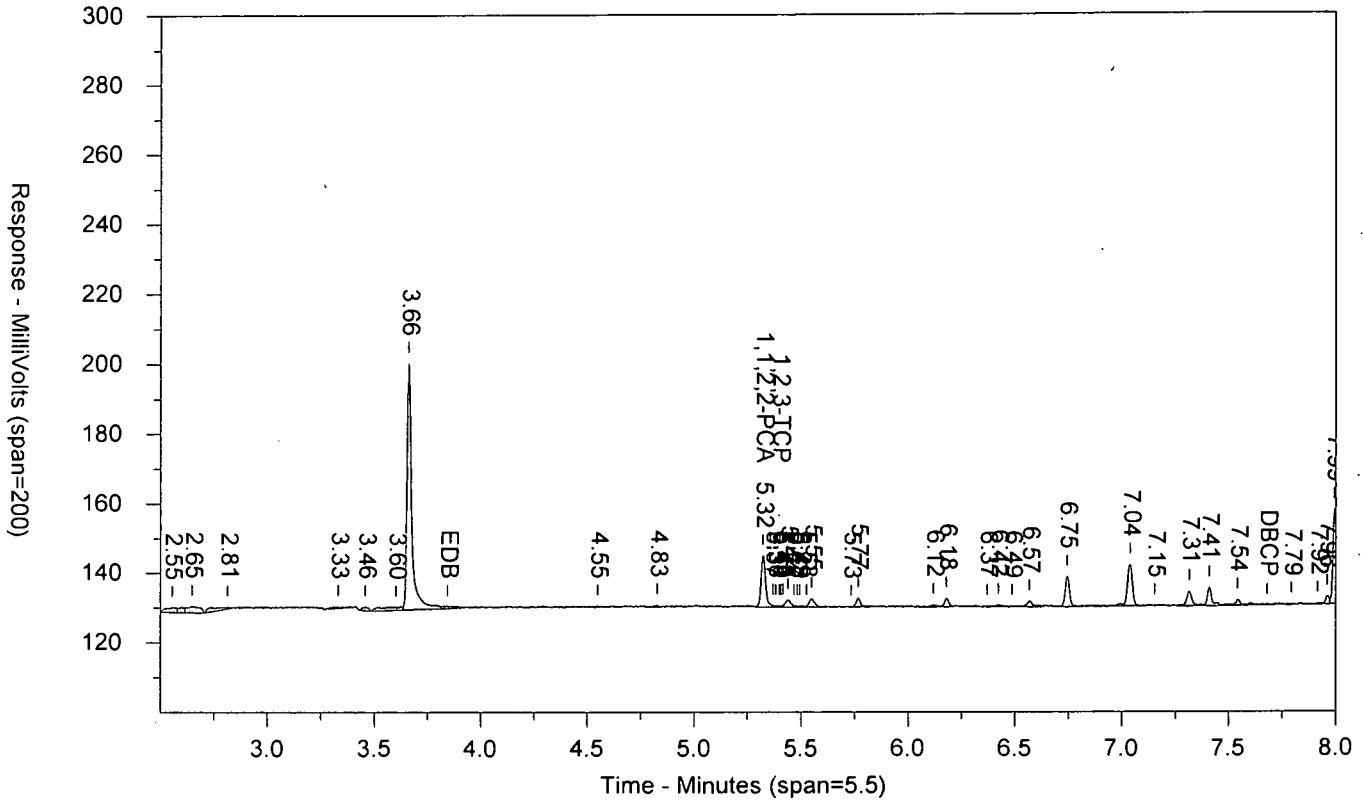
Verified by:
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121695 AAK1916 T 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.035.RAW

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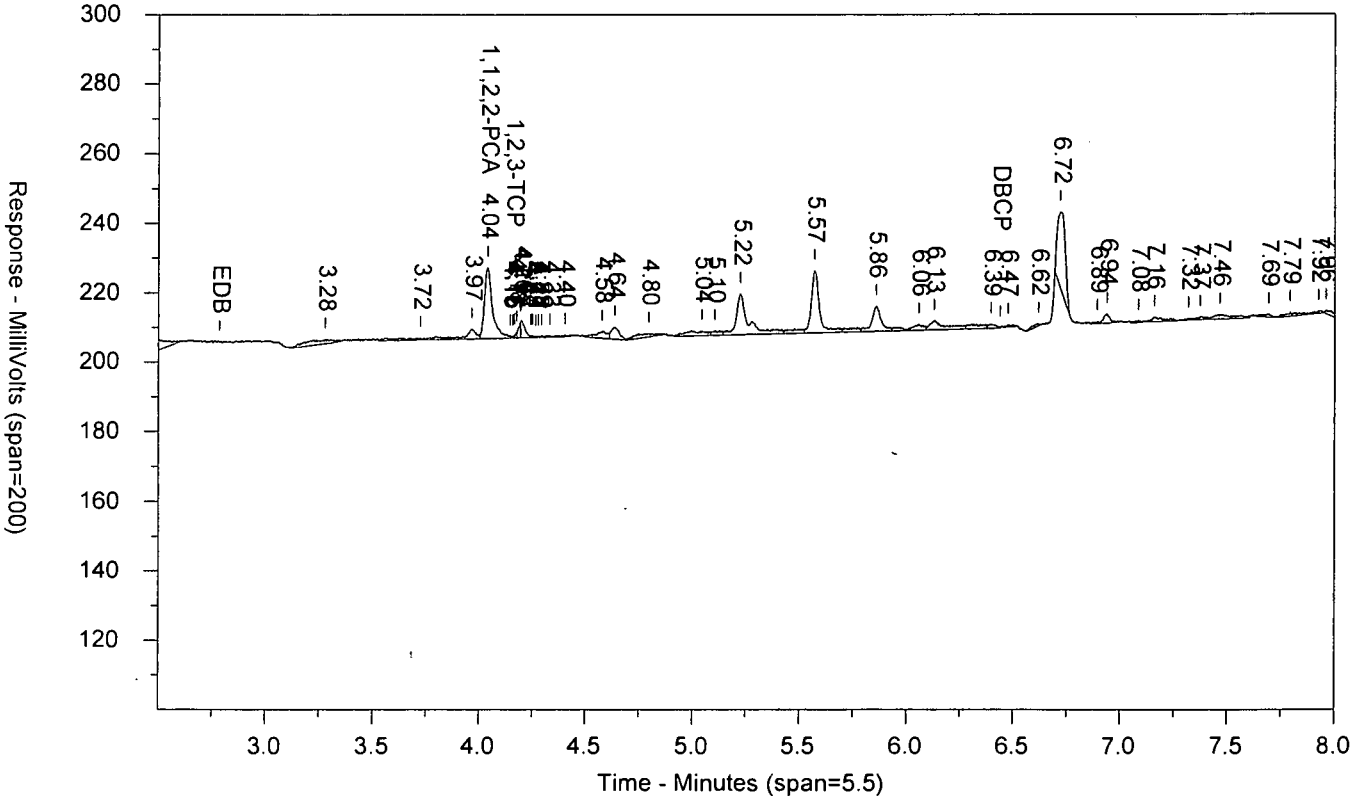

LANCASTER LABORATORIES

Sample Number: 9121695 AAK1916 T 172090034A 10398 SW-846 8011
Injected On: 8/1/2017 1:07:24 AM Sample Weight: 36.93
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.323 | 14803 | .06 | 1,1,2,2-PCA | 4.04 | 20471 | .056 | 1,1,2,2-PCA |
| 5.398 | 432 | -.08 | 1,2,3-TCP | 4.16 | 551 | -.094 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.035.RAW
Area File: 18EDBS17212001B.035.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 8/1/2017 1:15:59 AM
File Reported On: 8/1/2017 at 11:39:09 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9121696** K1917 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 01:23:22 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.036.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 98% ( 46 - 136 ) Conc: 0.065639

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 01:23:22 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.036.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.066547

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 16050 | 0.065639 |
| 1,2,3-Trichloropropane | 5.37 | 5.38 | 5.43 | 376 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 23648 | 0.066547 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 1983 | 0 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.065639 | 0.0033 | 0.0067 | 0.0067 | | 1.37 | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.258 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomaszko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:38

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9121696** K1917 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 01, 2017 01:23:22
Instrument : CP18--19846A
Result file : 18EDBS17212001.036.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 98% (46-136) Conc.: 0.065639

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 16050 | 0.065639 |
| **1,2,3-TCP** | 5.37 | 5.38 | 5.43 | 376 | -0.082373 |

## Analysis Report (B)

Injected on : Aug 01, 2017 01:23:22
Instrument : CP18--19846B
Result file : 18EDBS17212001B.036.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.066547

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 23648 | 0.066547 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 1983 | -0.055984 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065639 | | | | 1.37 | |
| ☐ 1,2,3-TCP | | | <0.258 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

Verified by: Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121696 AAK1917 T 172090034A 10398 SW-846 8011

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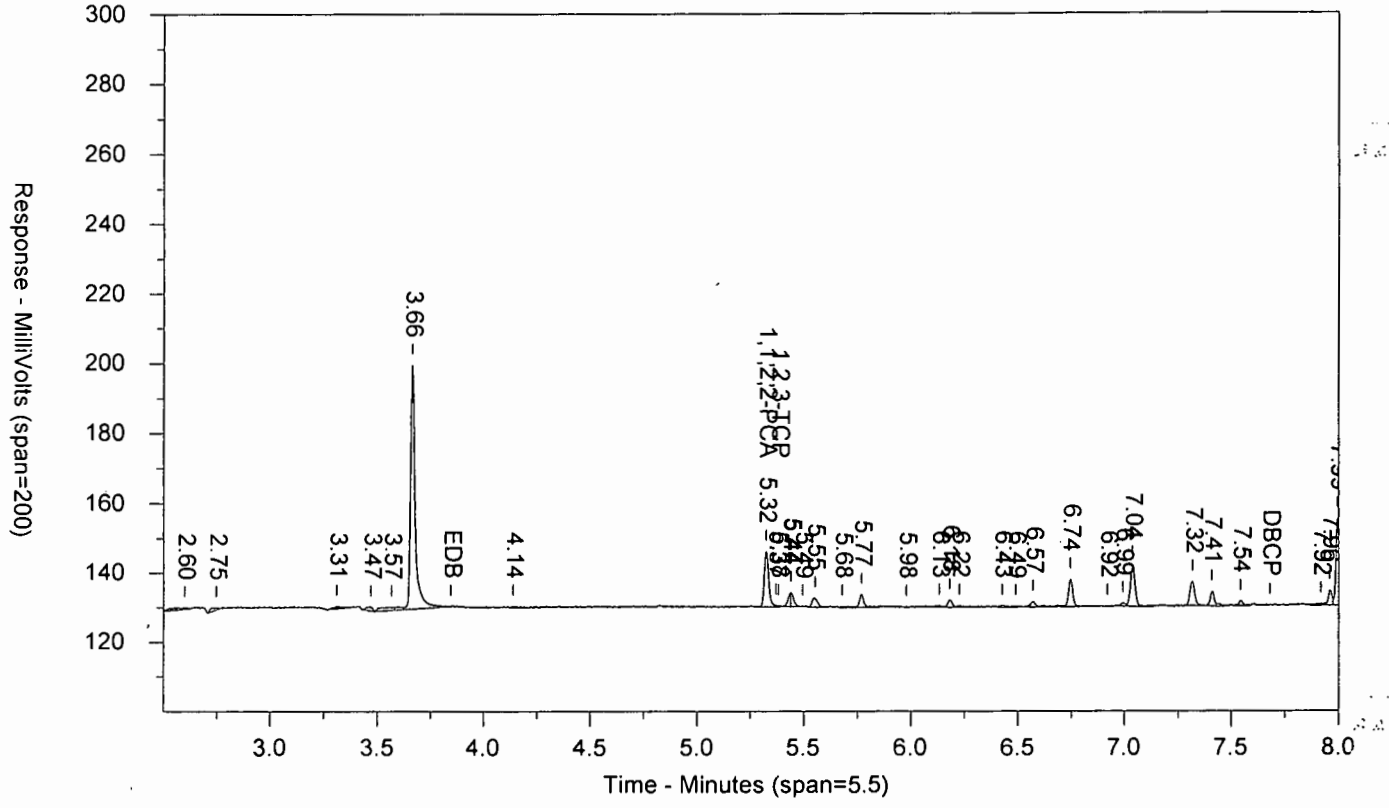


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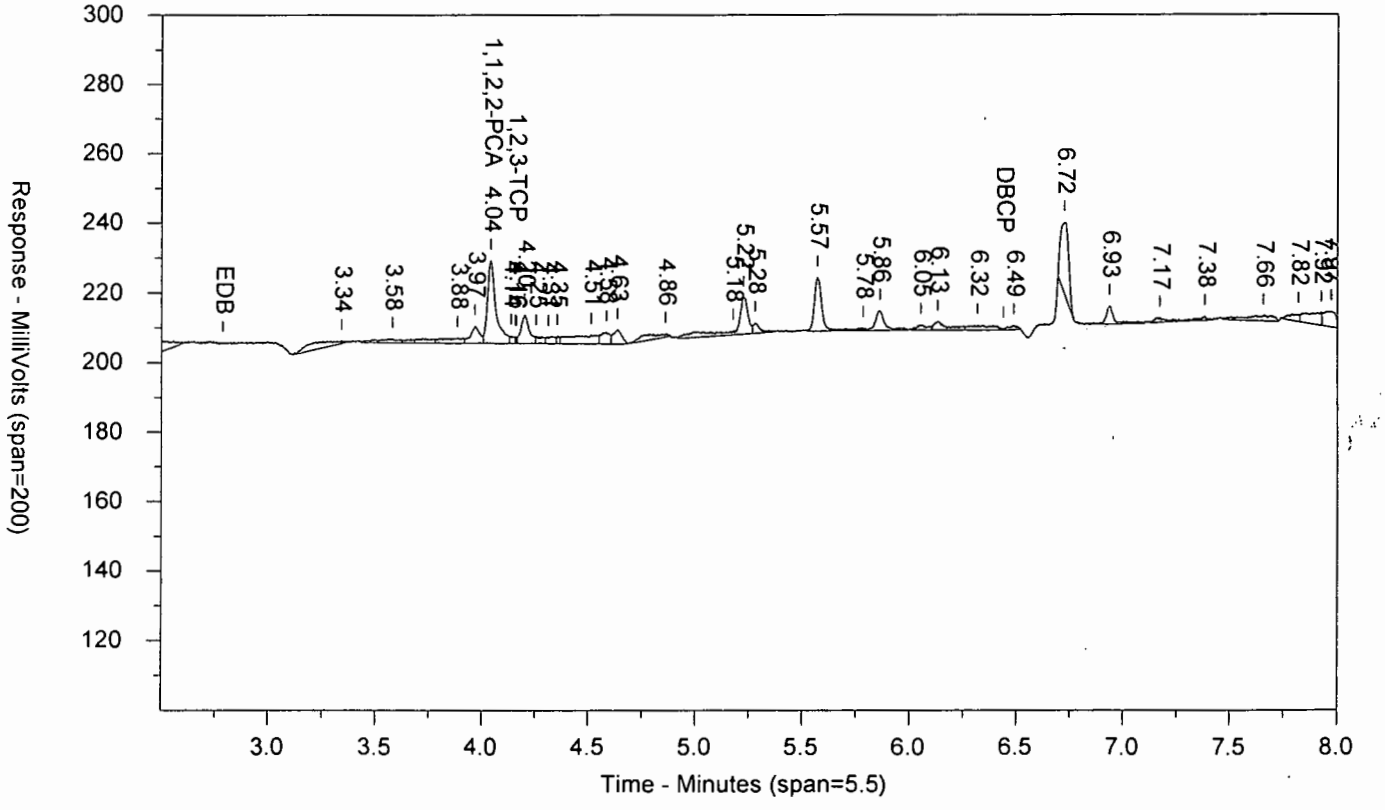

LANCASTER LABORATORIES

Sample Number: 9121696 AAK1917 T 172090034A 10398 SW-846 8011
Injected On: 8/1/2017 1:23:22 AM Sample Weight: 36.63
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 16050 | .066 | 1,1,2,2-PCA | 4.041 | 23648 | .067 | 1,1,2,2-PCA |
| 5.381 | 376 | -.082 | 1,2,3-TCP | 4.157 | 1983 | -.056 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.036.RAW
Area File: 18EDBS17212001B.036.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 8/1/2017 1:31:52 AM
File Reported On: 8/1/2017 at 11:39:23 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18EDBS17212001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 40

| | Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | |
| 2 | CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | |
| 3 | CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | |
| 4 | CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | |
| 5 | EIBKX1724C | 5 | PIBLK | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1721199999 | 10398 |
| 6 | EDB_11724DW | 6 | ICAL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 1 | 1721199999 | 10398 |
| 7 | EDB_21724DW | 7 | ICAL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 2 | 1721199999 | 10398 |
| 8 | EDB_31724DW | 8 | ICAL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 3 | 1721199999 | 10398 |
| 9 | EDB_41724DW | 9 | ICAL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 4 | 1721199999 | 10398 |
| 10 | EDB_51724DW | 10 | ICAL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 5 | 1721199999 | 10398 |
| 11 | EDB_61724DW | 11 | ICAL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 6 | 1721199999 | 10398 |
| 12 | MDEDX1724DW | 12 | ICAL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | 10398 |
| 13 | DBCMX1724B | 13 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | 10398 |
| 14 | EDB_31724DW | 14 | CCAL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | 10398 |
| 15 | EIBKX1724C | 15 | PIBLK | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1721199999 | 10398 |
| 16 | BLANKA 7/31/17 | 16 | BLK | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 172090036A | |
| 17 | LOD 7/31/17 | 17 | CRDL | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 172090036A | |
| 18 | EDB_51724DW | 18 | CCAL | MC | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | 10398 |
| 19 | EIBKX1724C | 19 | PIBLK | XT | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1721199999 | 10398 |
| 20 | BLANKA 7/31/17 | 20 | BLK | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 172090034A | 10398 |
| 21 | LCSA 7/31/17 | 21 | LCS | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 172090034A | 10398 |
| 22 | LCSDA 7/31/17 | 22 | LCSD | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 172090034A | 10398 |
| 23 | 9121674 | 23 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.78 | 2 | 1 | 0 | 172090034A | 10398 |
| 24 | 9121676 | 24 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.37 | 2 | 1 | 0 | 172090034A | 10398 |
| 25 | 9121678 | 25 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.68 | 2 | 1 | 0 | 172090034A | 10398 |
| 26 | 9121680 | 26 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.58 | 2 | 1 | 0 | 172090034A | 10398 |
| 27 | 9121682 | 27 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.42 | 2 | 1 | 0 | 172090034A | 10398 |
| 28 | EDB_41724DW | 28 | CCAL | QV | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | 10398 |
| 29 | EIBKX1724C | 29 | PIBLK | YF | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1721199999 | 10398 |
| 30 | 9121683 | 30 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.55 | 2 | 1 | 0 | 172090034A | 10398 |
| 31 | 9121684MS | 31 | MS | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.44 | 2 | 1 | 0 | 172090034A | 10398 |
| 32 | 9121685MSD | 32 | MSD | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.51 | 2 | 1 | 0 | 172090034A | 10398 |
| 33 | 9121691 | 33 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.52 | 2 | 1 | 0 | 172090034A | 10398 |
| 34 | 9121693 | 34 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.52 | 2 | 1 | 0 | 172090034A | 10398 |
| 35 | 9121695 | 35 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.93 | 2 | 1 | 0 | 172090034A | 10398 |
| 36 | 9121696 | 36 | T | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 36.63 | 2 | 1 | 0 | 172090034A | 10398 |
| 37 | SS1718724B | 37 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 20 | 1 | 0 | 172090034A | 10398 |
| 38 | SS1720824A | 38 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 20 | 1 | 0 | 172090034A | 10398 |
| 39 | EDB_31724DW | 39 | CCAL | QI | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1721199999 | 10398 |
| 40 | EIBKX1724C | 40 | PIBLK | YG | EPT-24\ACTIVE\CP18\18EDBS.MET | 35 | 2 | 1 | 0 | 1721199999 | 10398 |

Set-up by: _____ Date: 7/31/17

7/31/2017

EIBKX1724C AAPIBLKAA PIBLK1721199999 10398 SW-846 8011

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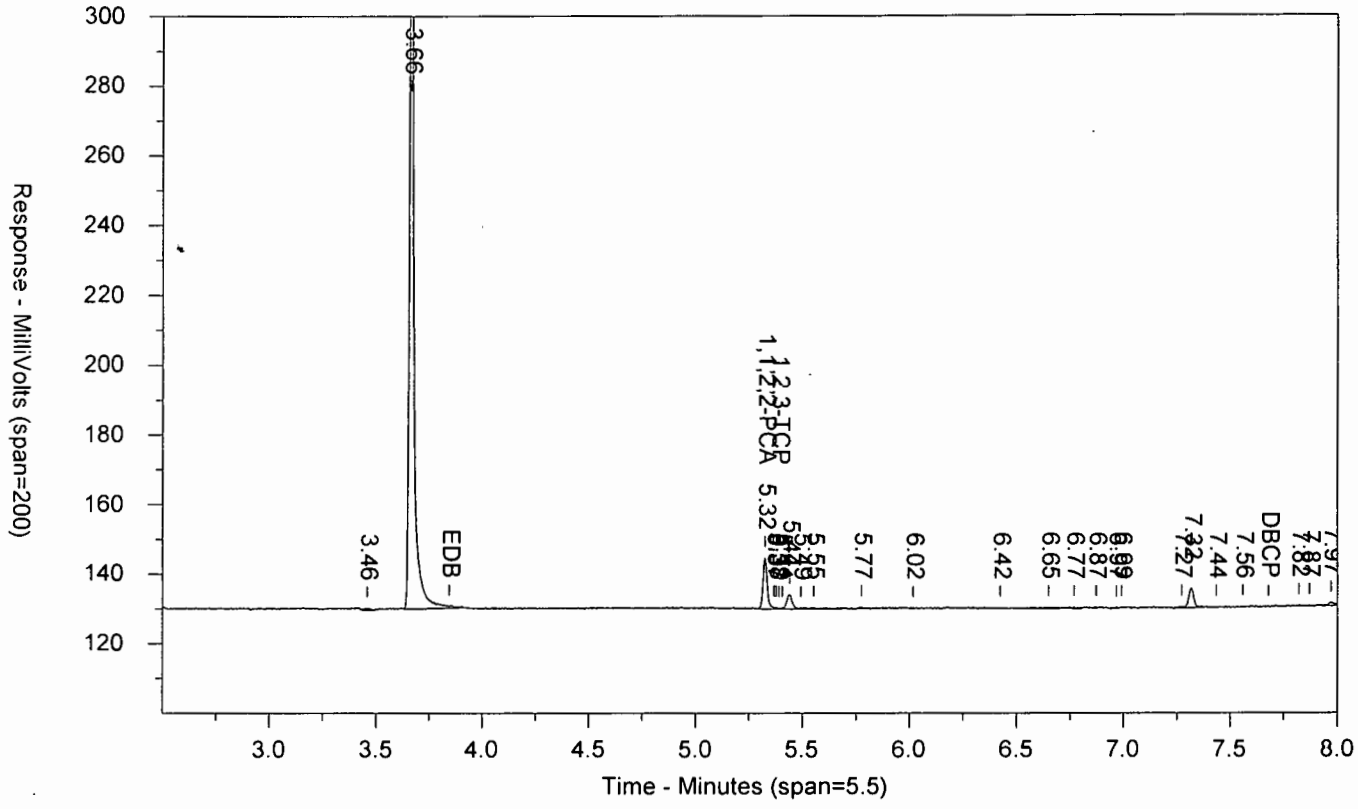


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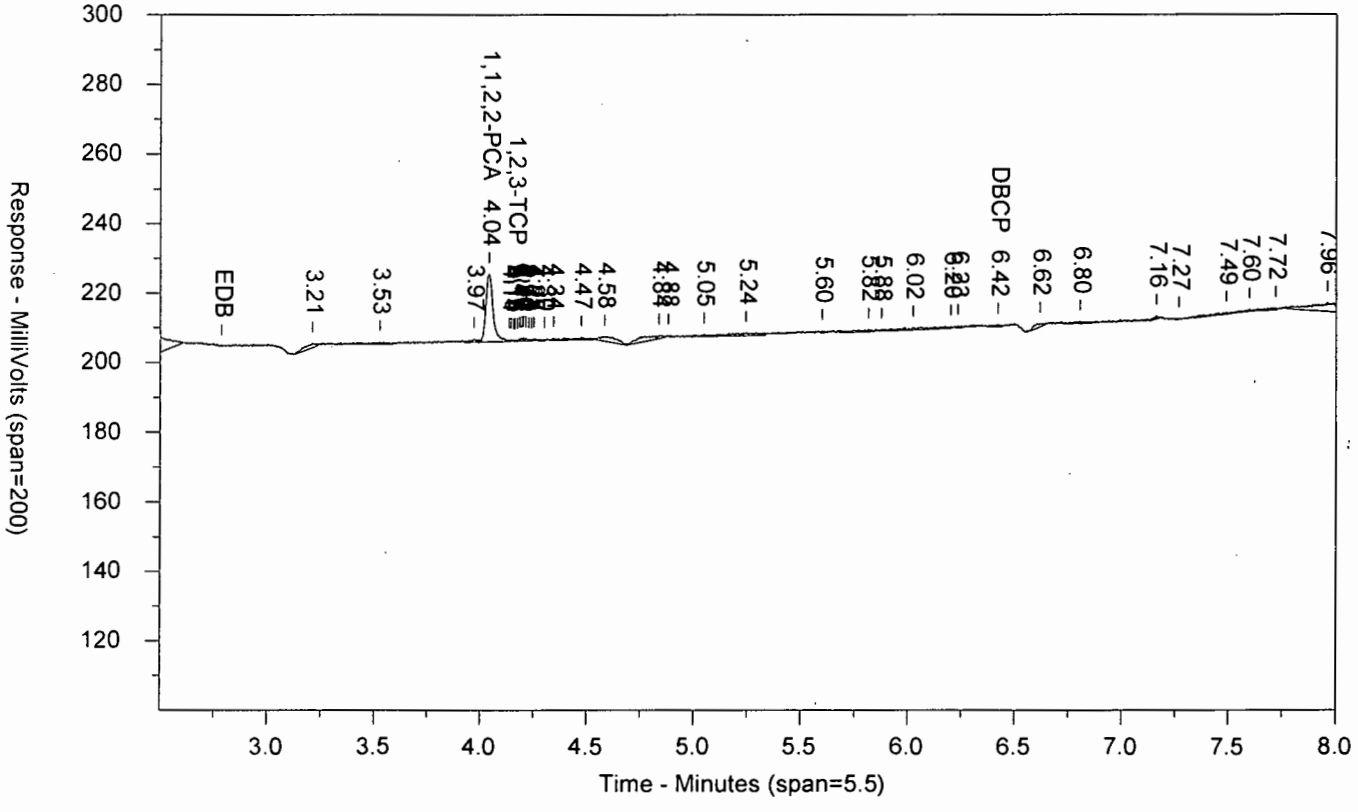

LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1721199999 10398 SW-846 8011
Injected On: 7/31/2017 5:09:22 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.325 | 14723 | .065 | 1,1,2,2-PCA | 4.04 | 19588 | .065 | 1,1,2,2-PCA |
| 5.391 | 419 | -.07 | 1,2,3-TCP | 4.163 | 478 | -.108 | 1,2,3-TCP |
| | 0 | | DBCP | 6.422 | 747 | -.008 | DBCP |

Files:
Area File: 18EDBS17212001.005.RAW
Area File: 18EDBS17212001B.005.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 5:17:56 PM
File Reported On: 8/1/2017 at 11:25:02 AM

EDB_11724DW AAEDB_1AA ICAL 1721199999 10398 SW-846 8011

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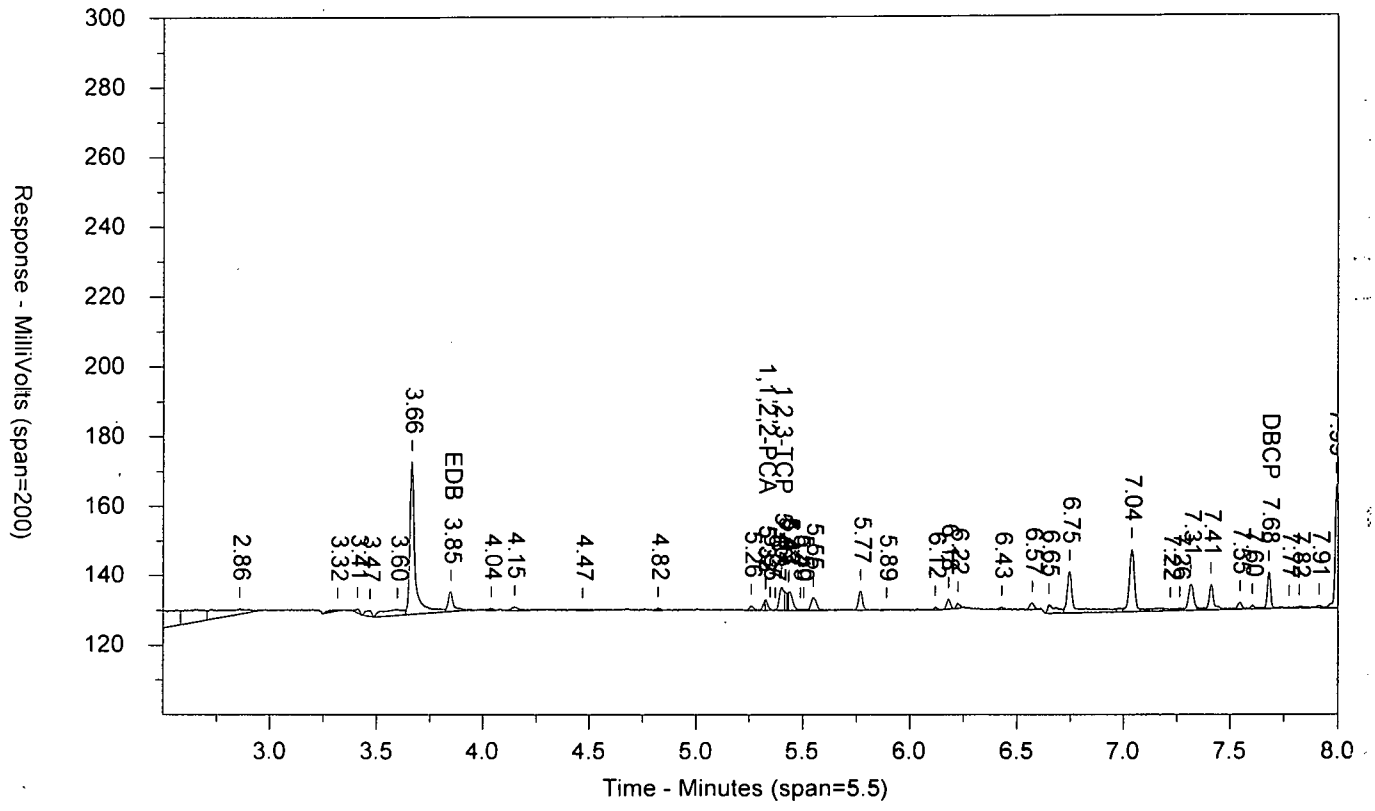


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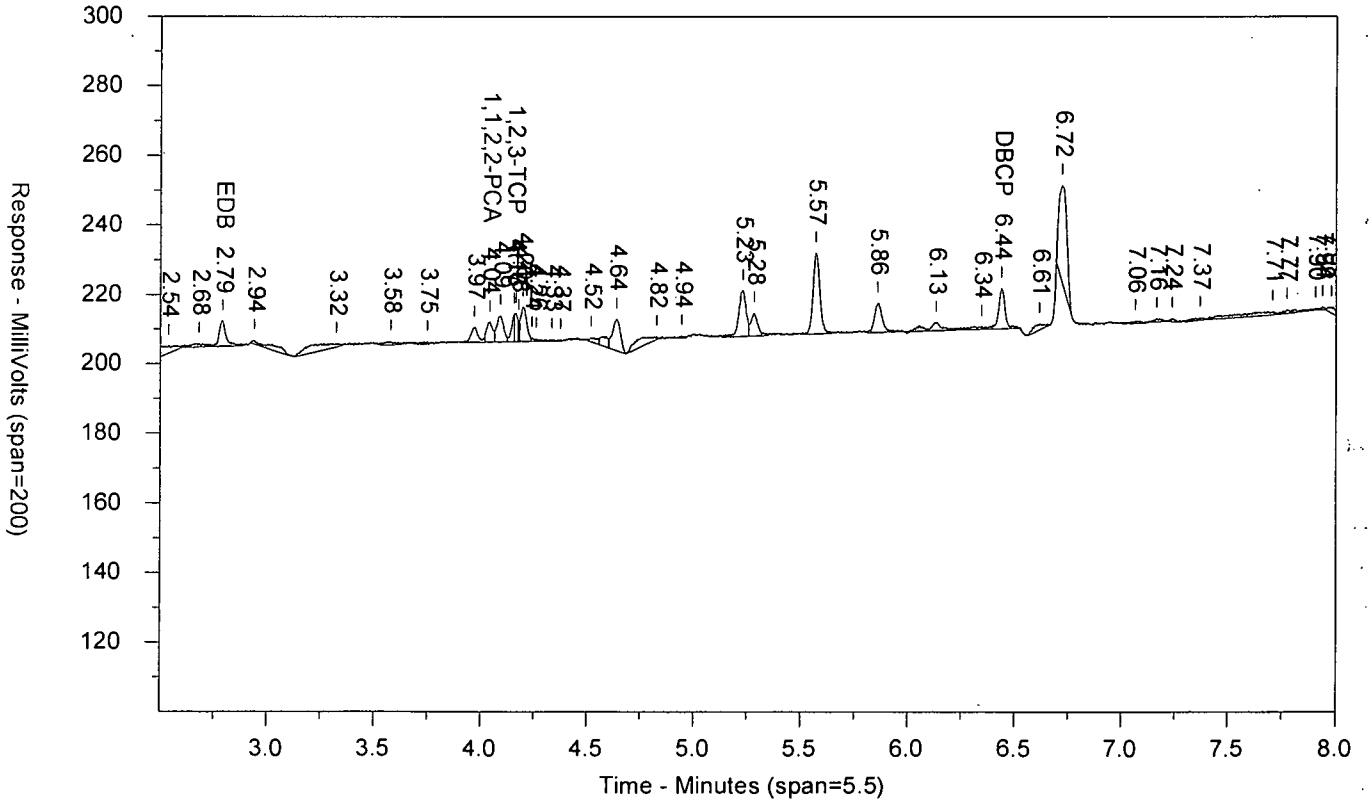


LANCASTER LABORATORIES

Sample Number: EDB_11724DW AAEDB_1AA ICAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 5:25:16 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

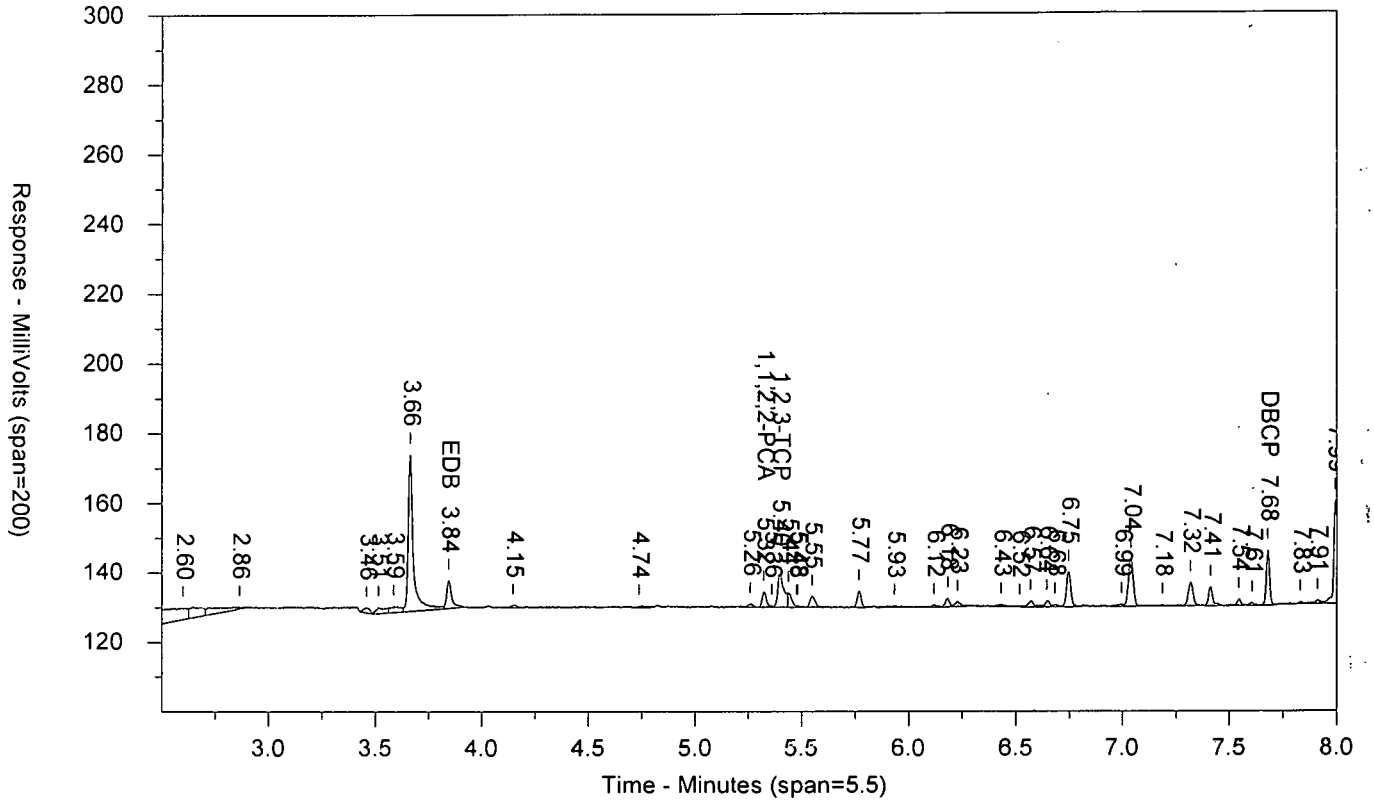
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.847 | 5711 | .399 | EDB | 2.789 | 7423 | .338 | EDB |
| 5.322 | 2947 | .228 | 1,1,2,2-PCA | 4.042 | 5865 | .246 | 1,1,2,2-PCA |
| 5.4 | 6683 | 3.139 | 1,2,3-TCP | 4.156 | 7990 | 2.127 | 1,2,3-TCP |
| 7.678 | 10488 | .458 | DBCP | 6.436 | 11784 | .345 | DBCP |

Files:
Area File: 18EDBS17212001.006.RAW
Area File: 18EDBS17212001B.006.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 5:33:50 PM
File Reported On: 8/1/2017 at 11:25:18 AM

EDB_21724DW AAEDB_2AA ICAL 1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.007.RAW

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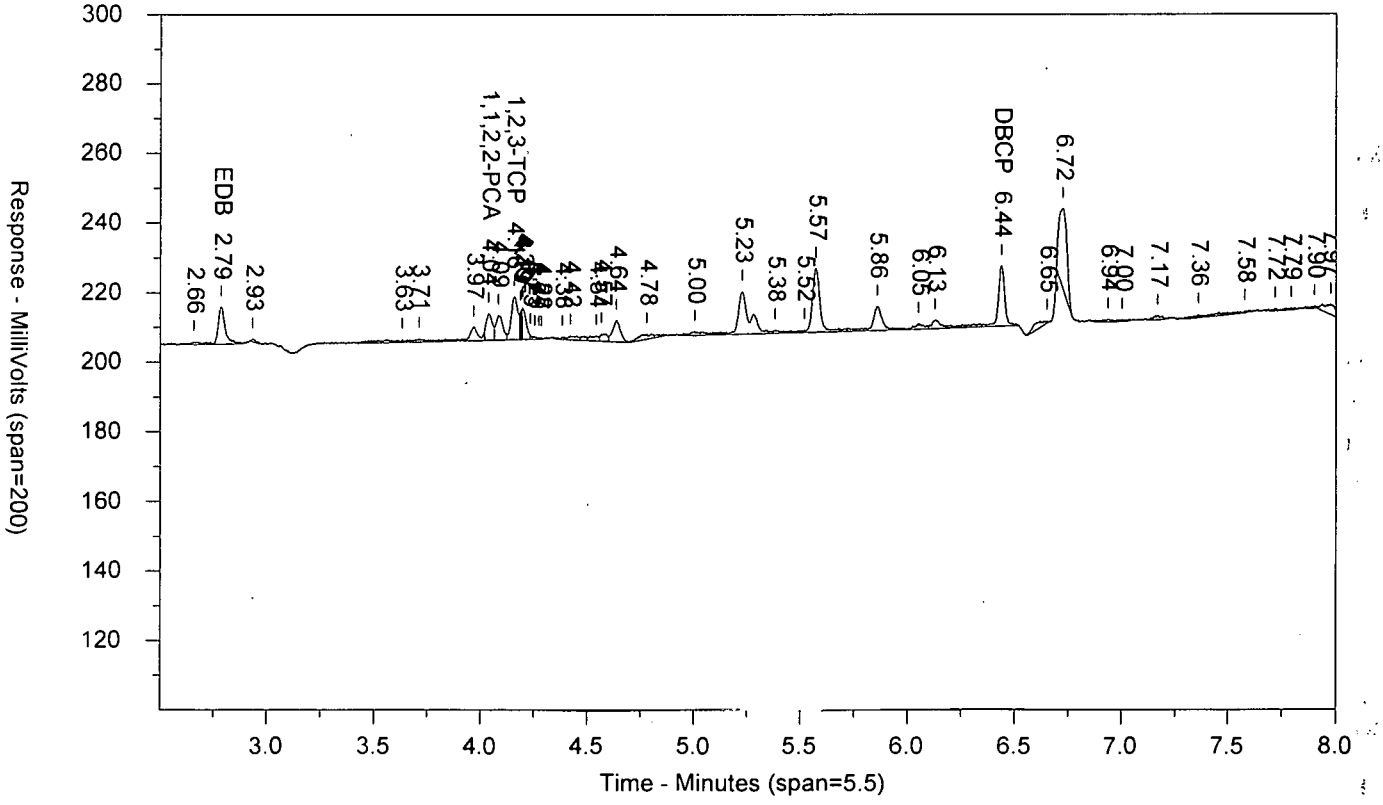


LANCASTER LABORATORIES

Sample Number: EDB_21724DW AAEDB_2AA ICAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 5:41:09 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

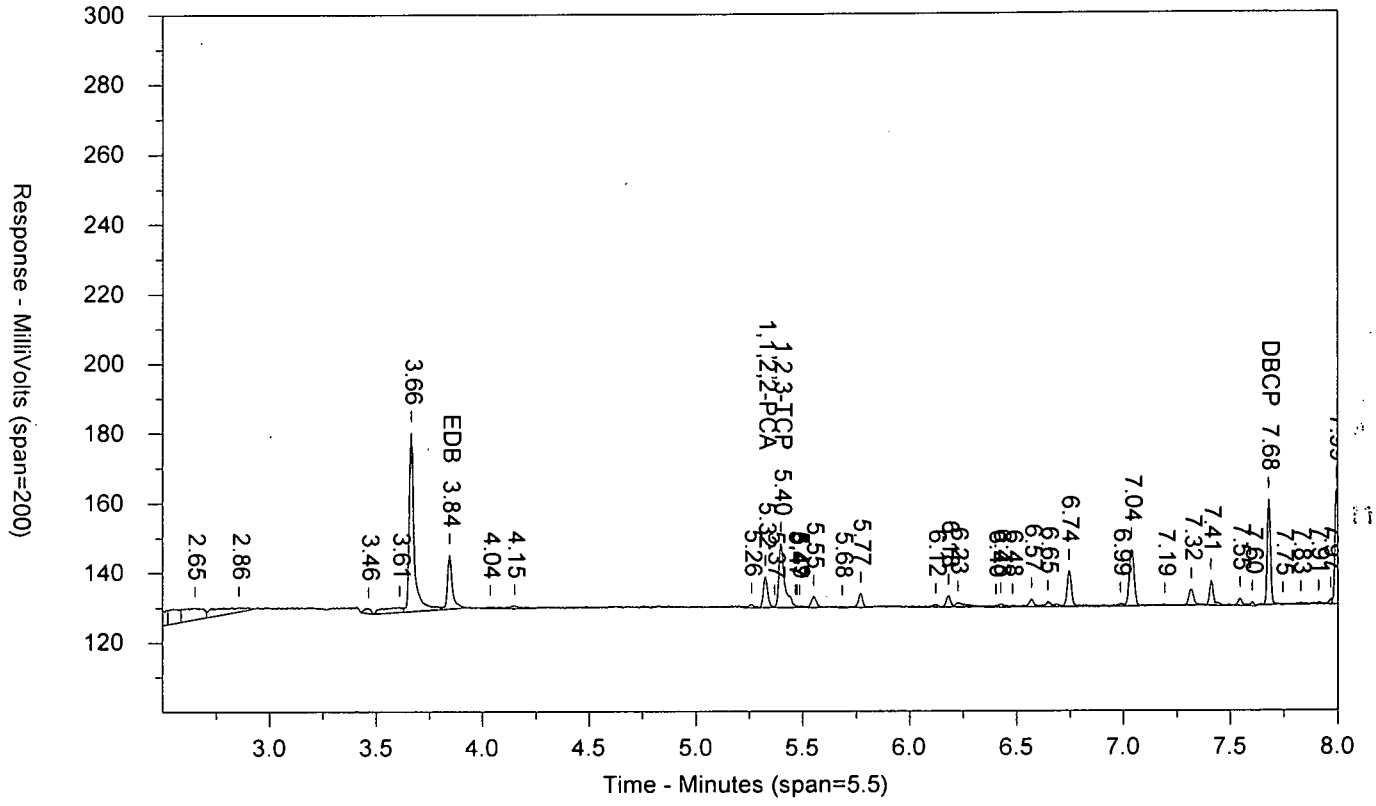
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.842 | 8133 | .626 | EDB | 2.785 | 10726 | .561 | EDB |
| 5.323 | 4446 | .331 | 1,1,2,2-PCA | 4.038 | 7718 | .333 | 1,1,2,2-PCA |
| 5.397 | 9621 | 4.907 | 1,2,3-TCP | 4.158 | 12360 | 4.377 | 1,2,3-TCP |
| 7.679 | 15951 | .667 | DBCP | 6.438 | 17434 | .569 | DBCP |

Files:
Area File: 18EDBS17212001.007.RAW
Area File: 18EDBS17212001B.007.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 5:49:43 PM
File Reported On: 8/1/2017 at 11:25:34 AM

EDB_31724DW AAEDB_3AA ICAL 1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.008.RAW

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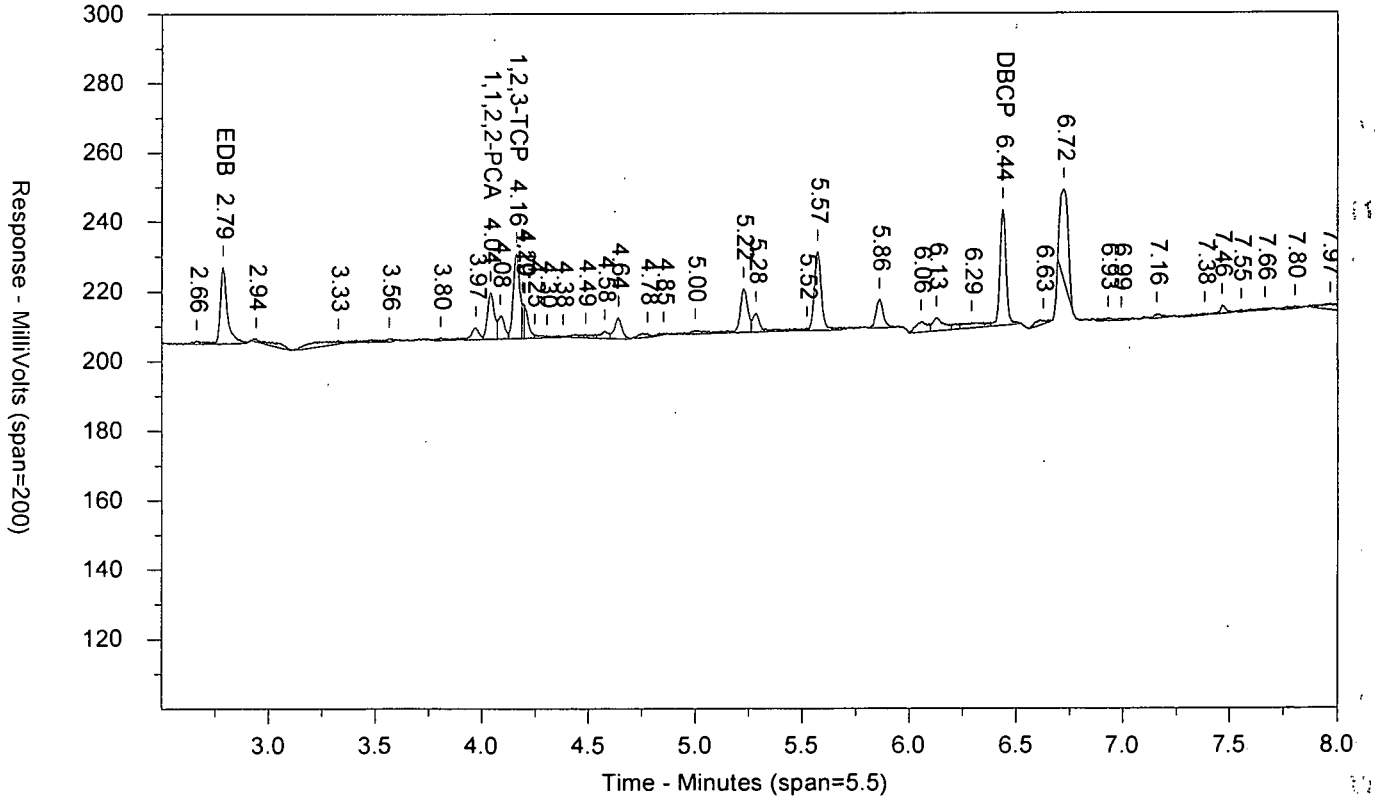


LANCASTER LABORATORIES

Sample Number: EDB_31724DW AAEDB_3AA ICAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 5:57:07 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

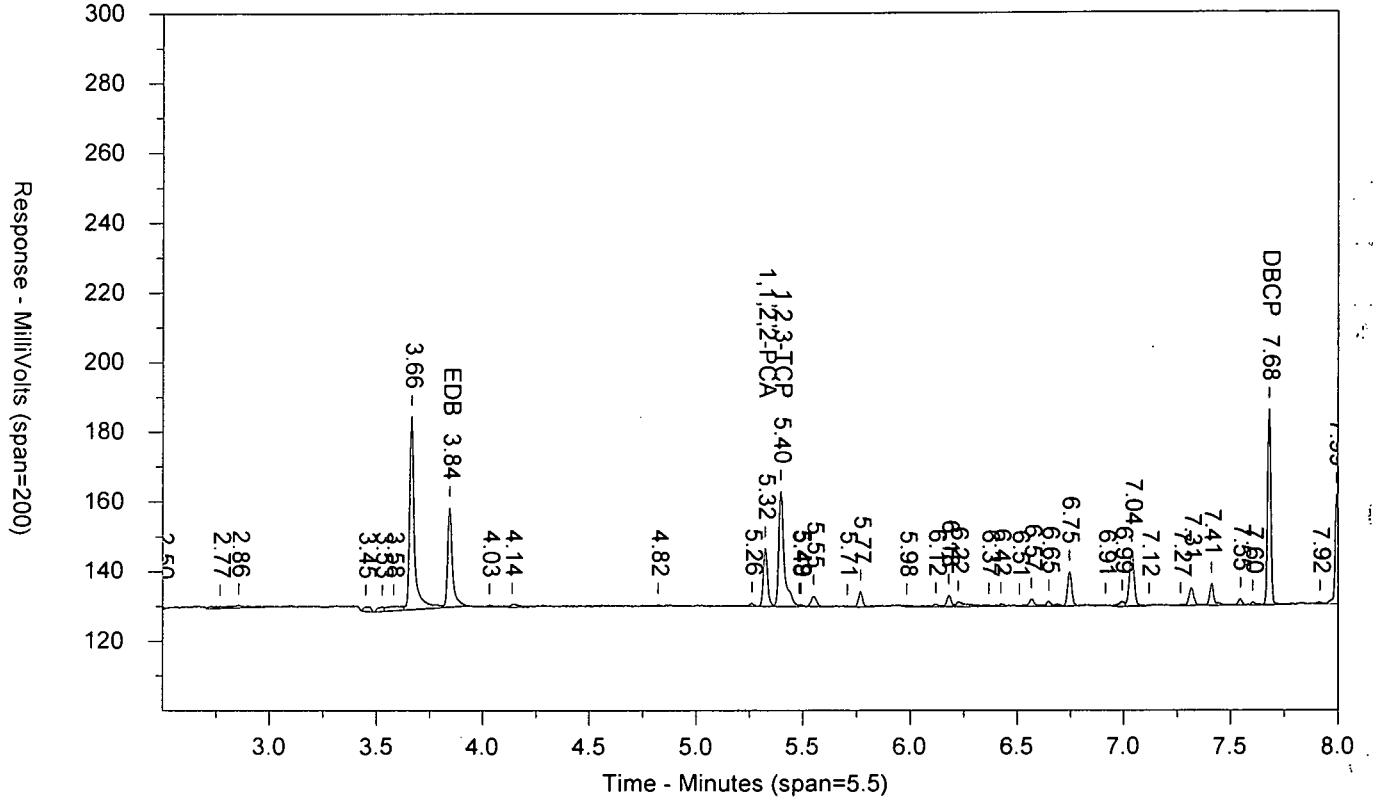
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 15601 | 1.43 | EDB | 2.785 | 21975 | 1.448 | EDB |
| 5.325 | 8939 | .668 | 1,1,2,2-PCA | 4.039 | 13446 | .707 | 1,1,2,2-PCA |
| 5.397 | 18396 | 10.974 | 1,2,3-TCP | 4.16 | 24305 | 10.92 | 1,2,3-TCP |
| 7.679 | 30388 | 1.264 | DBCP | 6.436 | 33426 | 1.288 | DBCP |

Files:
Area File: 18EDBS17212001.008.RAW
Area File: 18EDBS17212001B.008.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 6:05:41 PM
File Reported On: 8/1/2017 at 11:25:48 AM

EDB_41724DW AAEDB_4AA ICAL 1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.009.RAW

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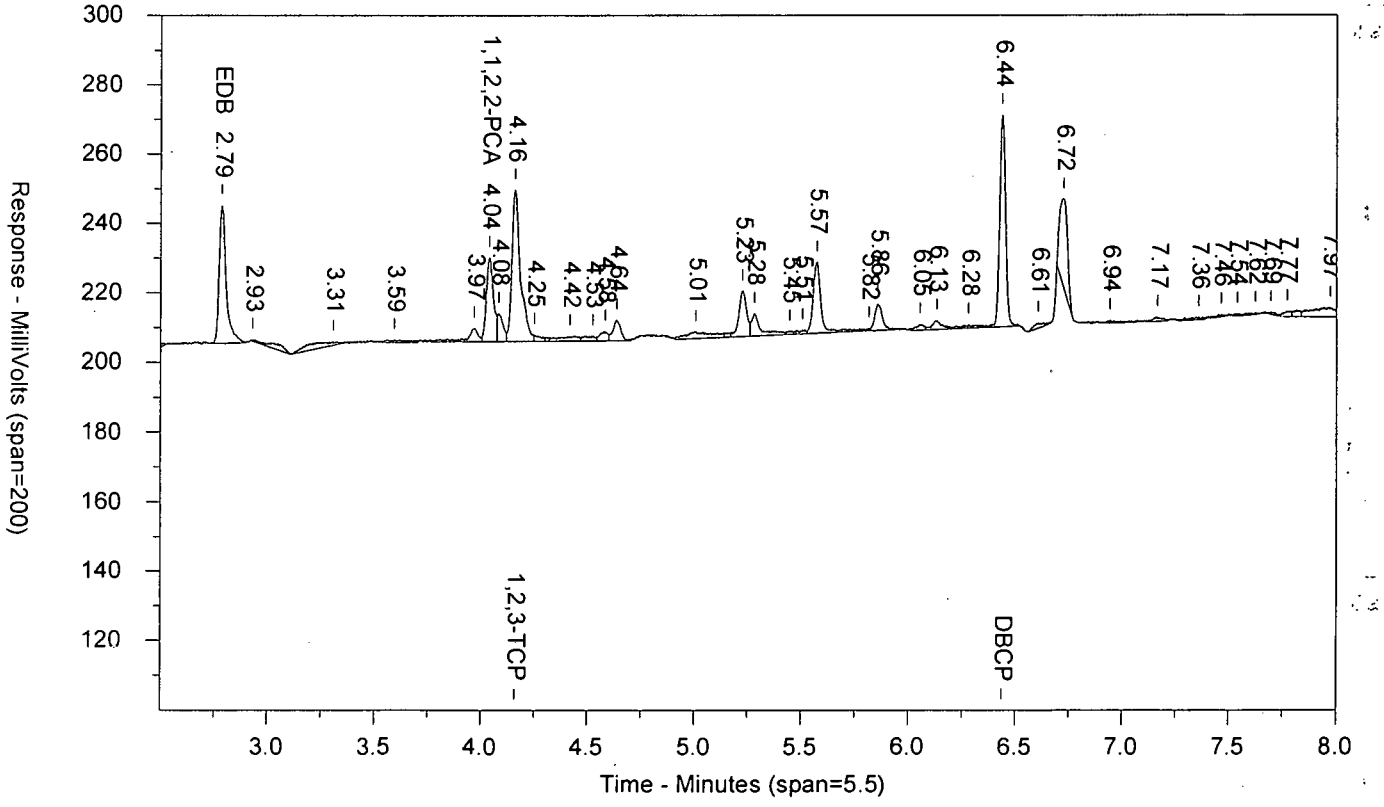


LANCASTER LABORATORIES

Sample Number: EDB_41724DW AAEDB_4AA ICAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 6:13:05 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

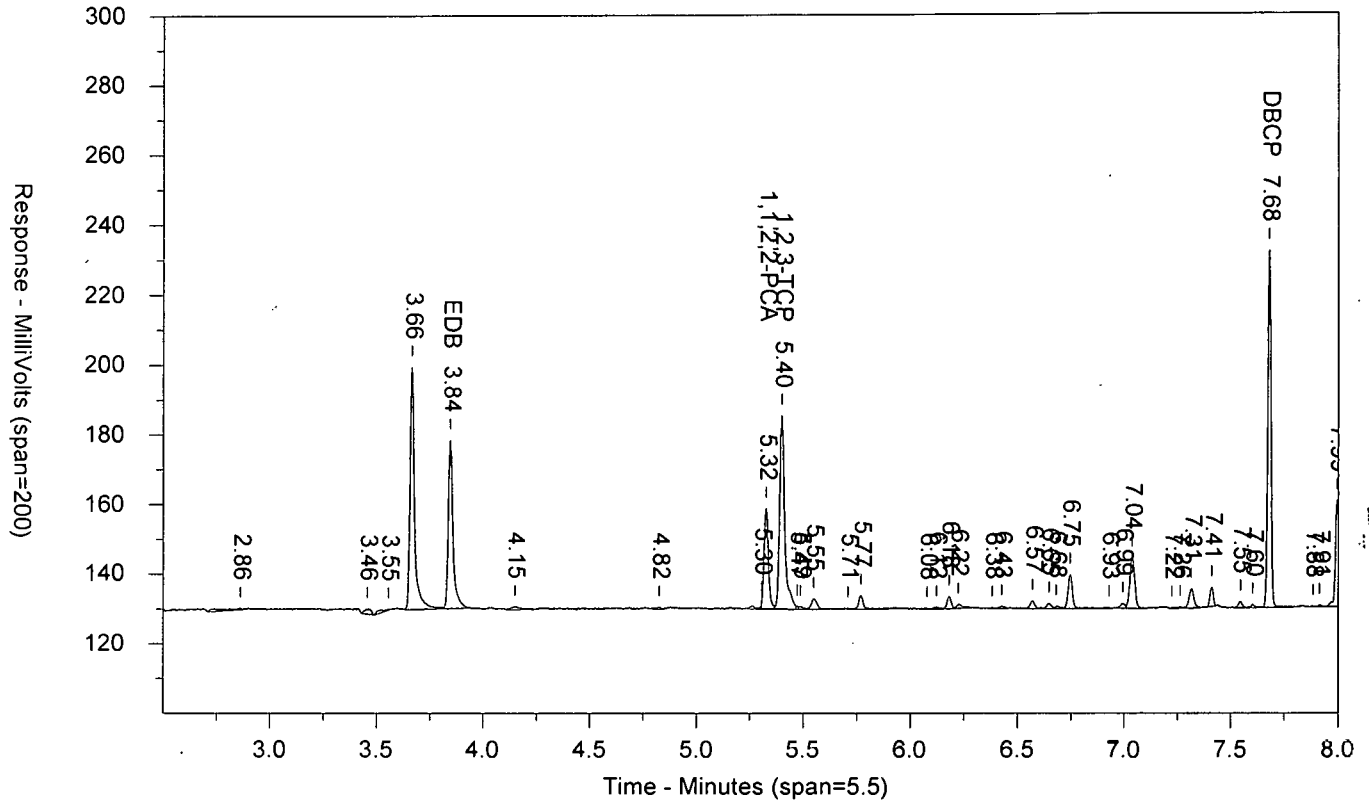
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 28550 | 2.787 | EDB | 2.786 | 39748 | 2.793 | EDB |
| 5.324 | 16762 | 1.23 | 1,1,2,2-PCA | 4.04 | 24123 | 1.394 | 1,1,2,2-PCA |
| 5.397 | 32983 | 21.055 | 1,2,3-TCP | 4.16 | 43652 | 21.101 | 1,2,3-TCP |
| 7.678 | 56145 | 2.326 | DBCP | 6.437 | 61135 | 2.518 | DBCP |

Files:
Area File: 18EDBS17212001.009.RAW
Area File: 18EDBS17212001B.009.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 6:21:38 PM
File Reported On: 8/1/2017 at 11:26:02 AM

EDB_51724DW AAEDB_5AA ICAL 1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.010.RAW

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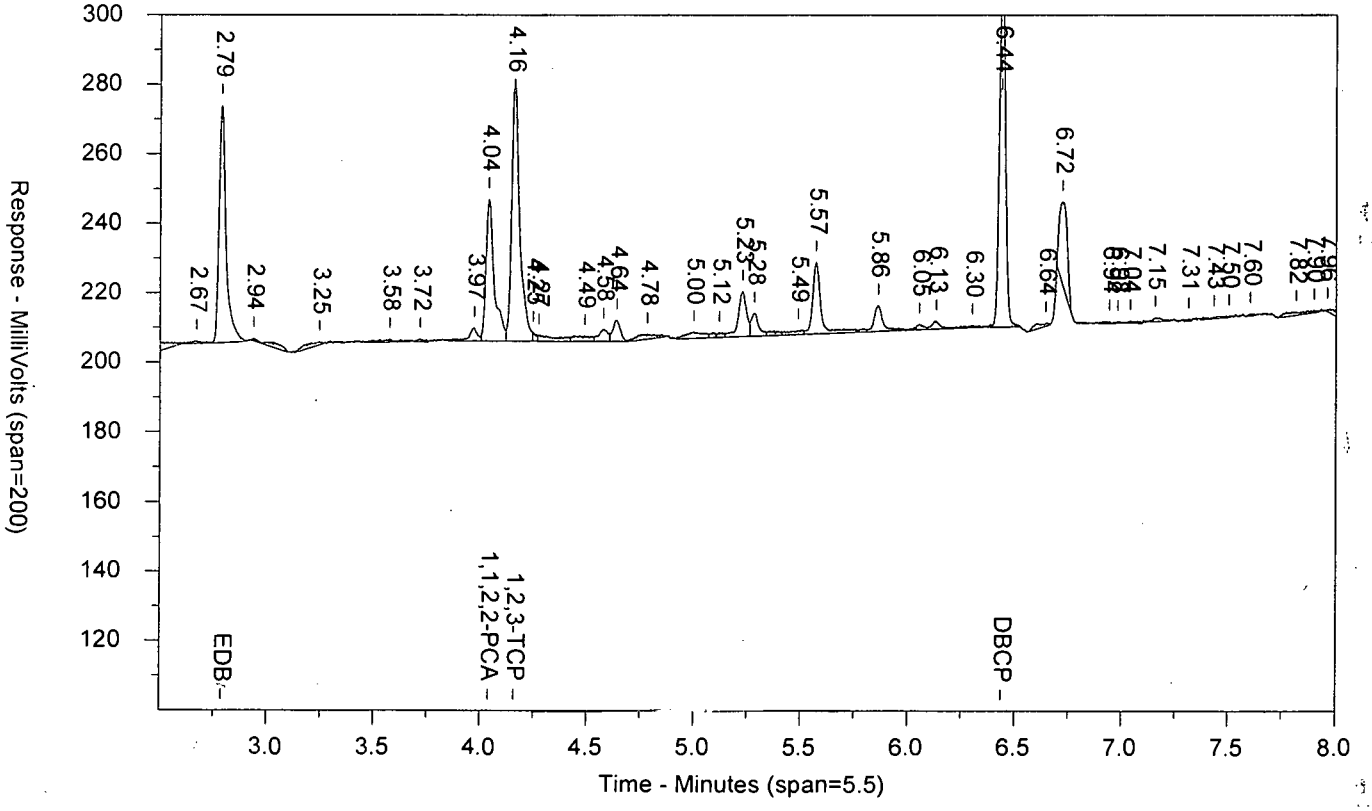


LANCASTER LABORATORIES

Sample Number: EDB_51724DW AAEDB_5AA ICAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 6:29:01 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

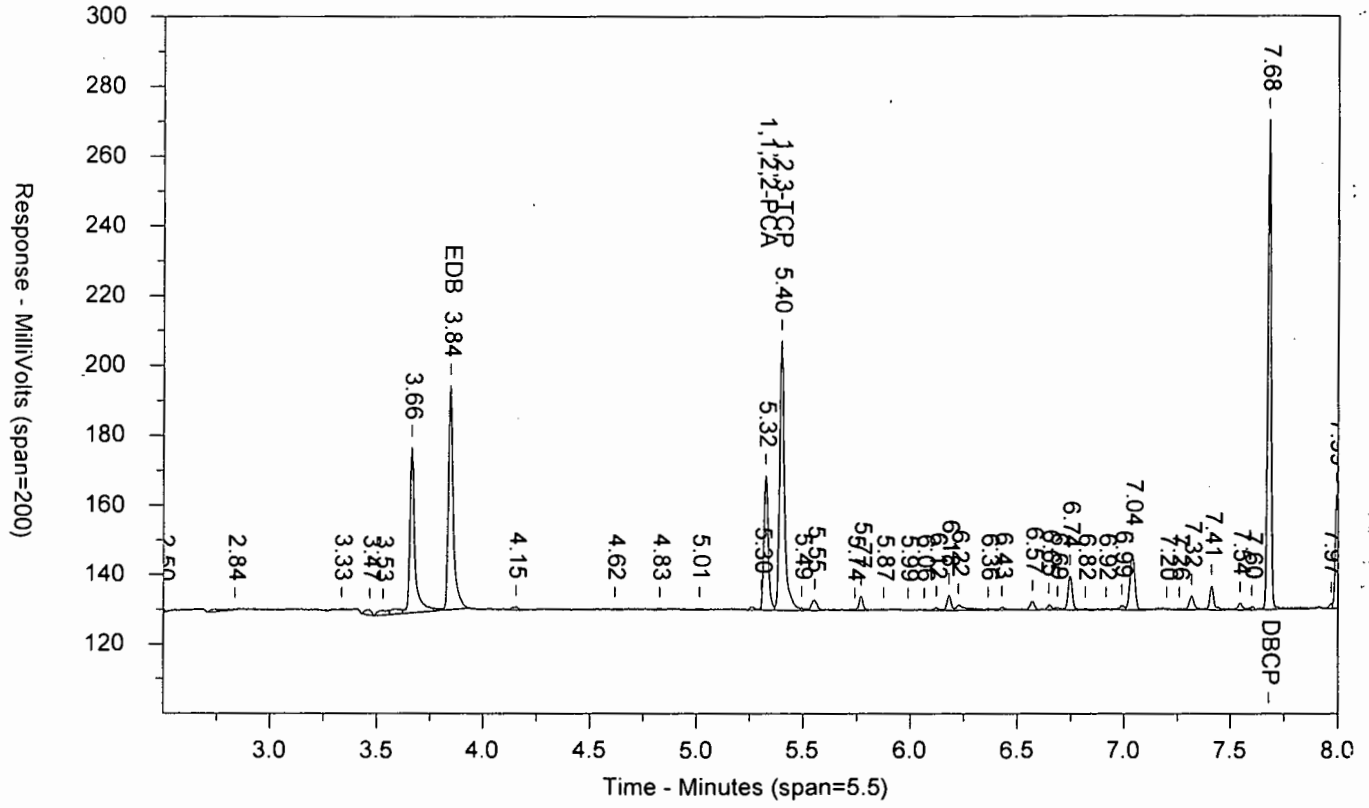
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 48440 | 4.902 | EDB | 2.787 | 68450 | 4.989 | EDB |
| 5.324 | 28915 | 2.097 | 1,1,2,2-PCA | 4.04 | 40932 | 2.487 | 1,1,2,2-PCA |
| 5.397 | 55655 | 36.903 | 1,2,3-TCP | 4.159 | 75408 | 37.924 | 1,2,3-TCP |
| 7.678 | 102244 | 4.229 | DBCP | 6.437 | 104358 | 4.446 | DBCP |

Files:
Area File: 18EDBS17212001.010.RAW
Area File: 18EDBS17212001B.010.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 6:37:36 PM
File Reported On: 8/1/2017 at 11:26:18 AM

EDB_61724DW AAEDB_6AA ICAL 1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.011.RAW

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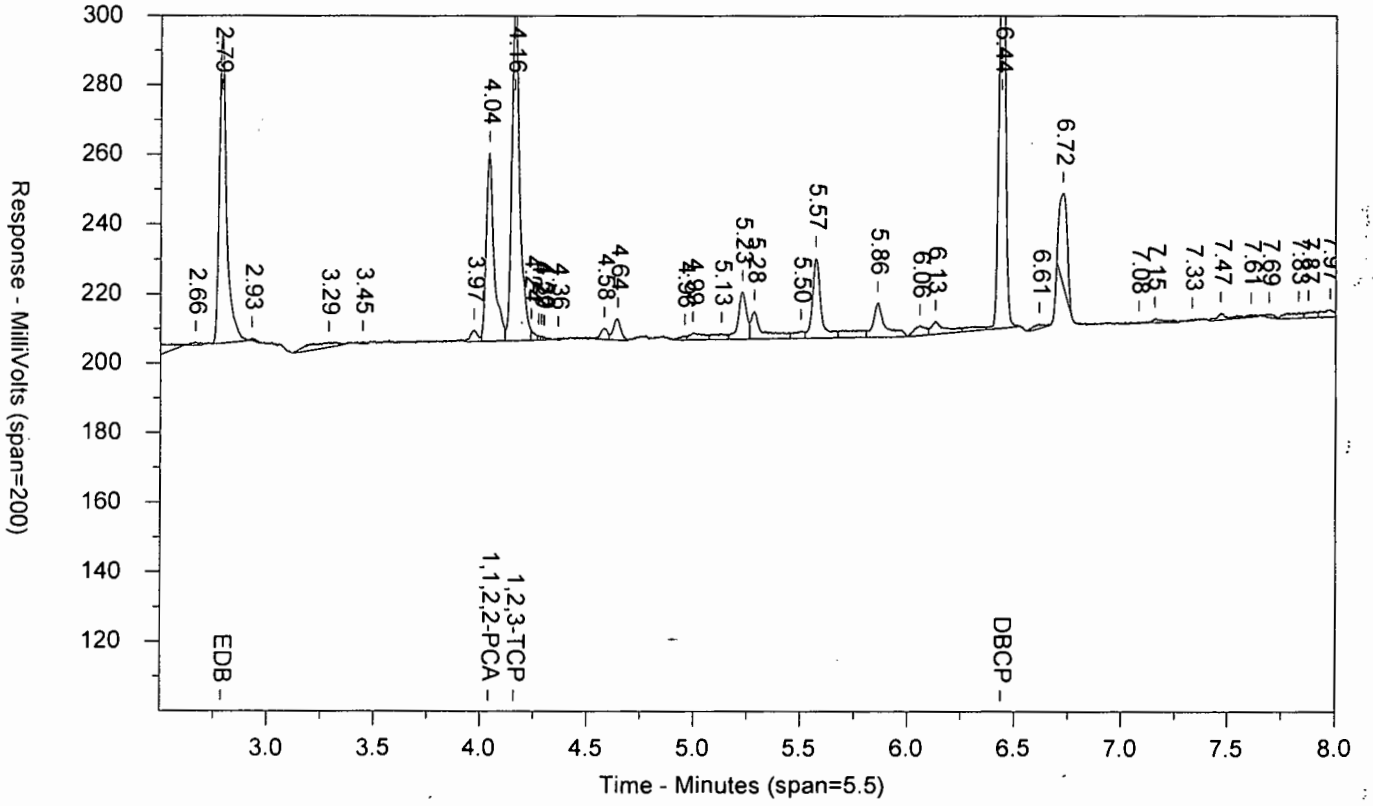


LANCASTER LABORATORIES

Sample Number: EDB_61724DW AAEDB_6AA ICAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 6:44:58 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

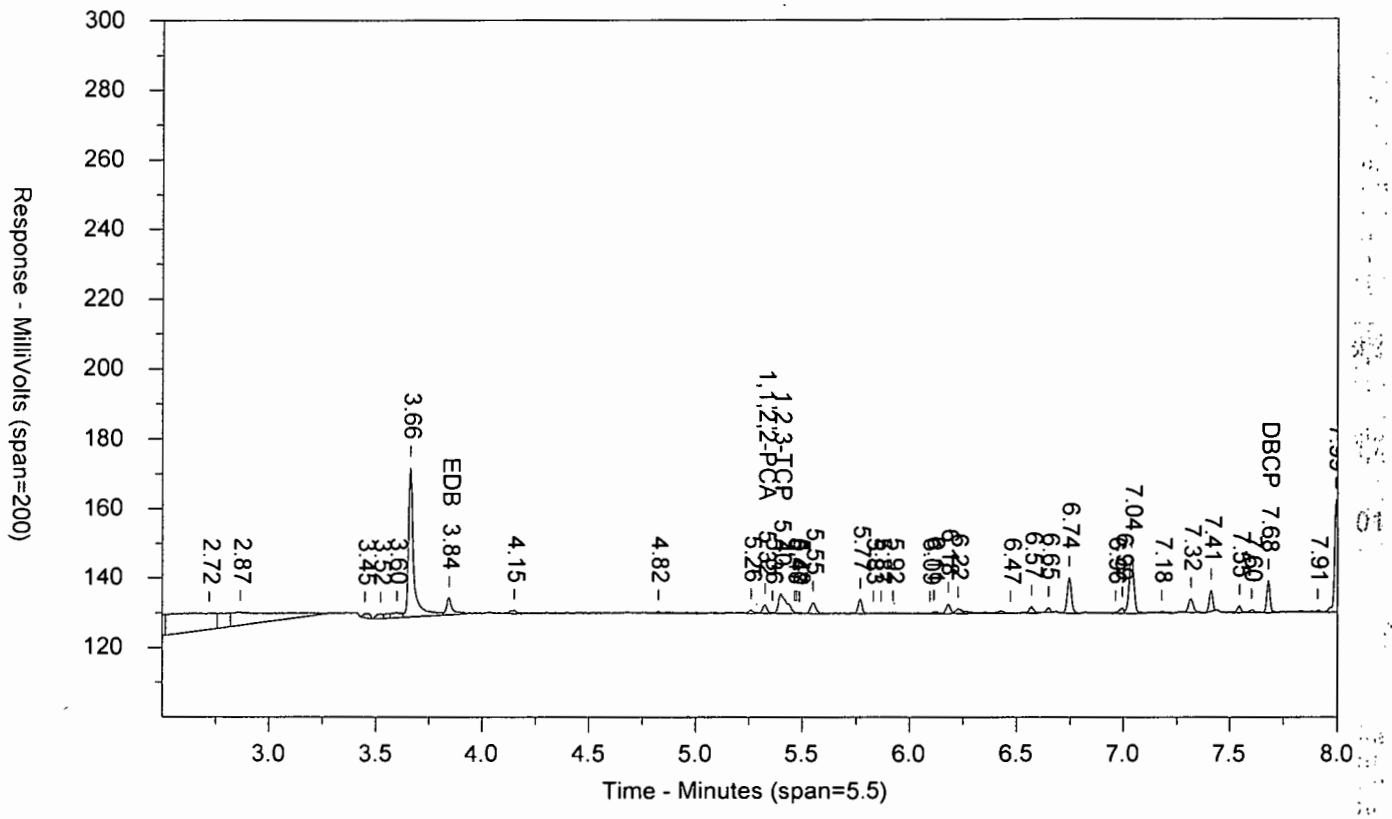
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 64244 | 6.314 | EDB | 2.785 | 89608 | 6.316 | EDB |
| 5.324 | 38710 | 2.74 | 1,1,2,2-PCA | 4.04 | 54102 | 3.145 | 1,1,2,2-PCA |
| 5.397 | 77250 | 49.734 | 1,2,3-TCP | 4.159 | 97278 | 47.006 | 1,2,3-TCP |
| 7.679 | 140486 | 5.67 | DBCP | 6.437 | 139840 | 5.875 | DBCP |

Files:
Area File: 18EDBS17212001.011.RAW
Area File: 18EDBS17212001B.011.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 6:53:31 PM
File Reported On: 8/1/2017 at 11:26:35 AM

MDEDX1724DW AAMDEDXAA ICAL 1721199999 10398 SW-846 801

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.012.RAW

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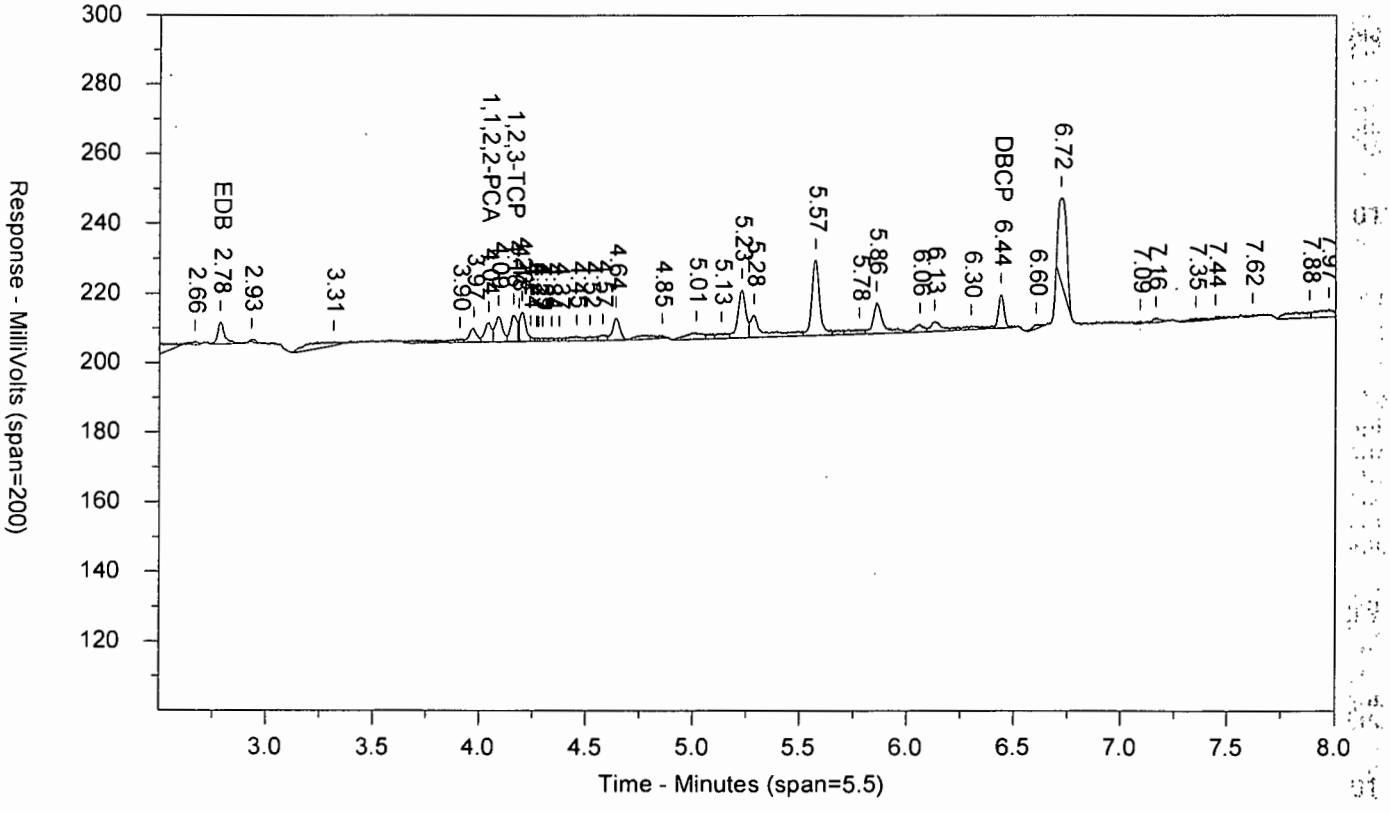


LANCASTER LABORATORIES

Sample Number: MDEDX1724DW AAMDEDXAA ICAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 7:00:54 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

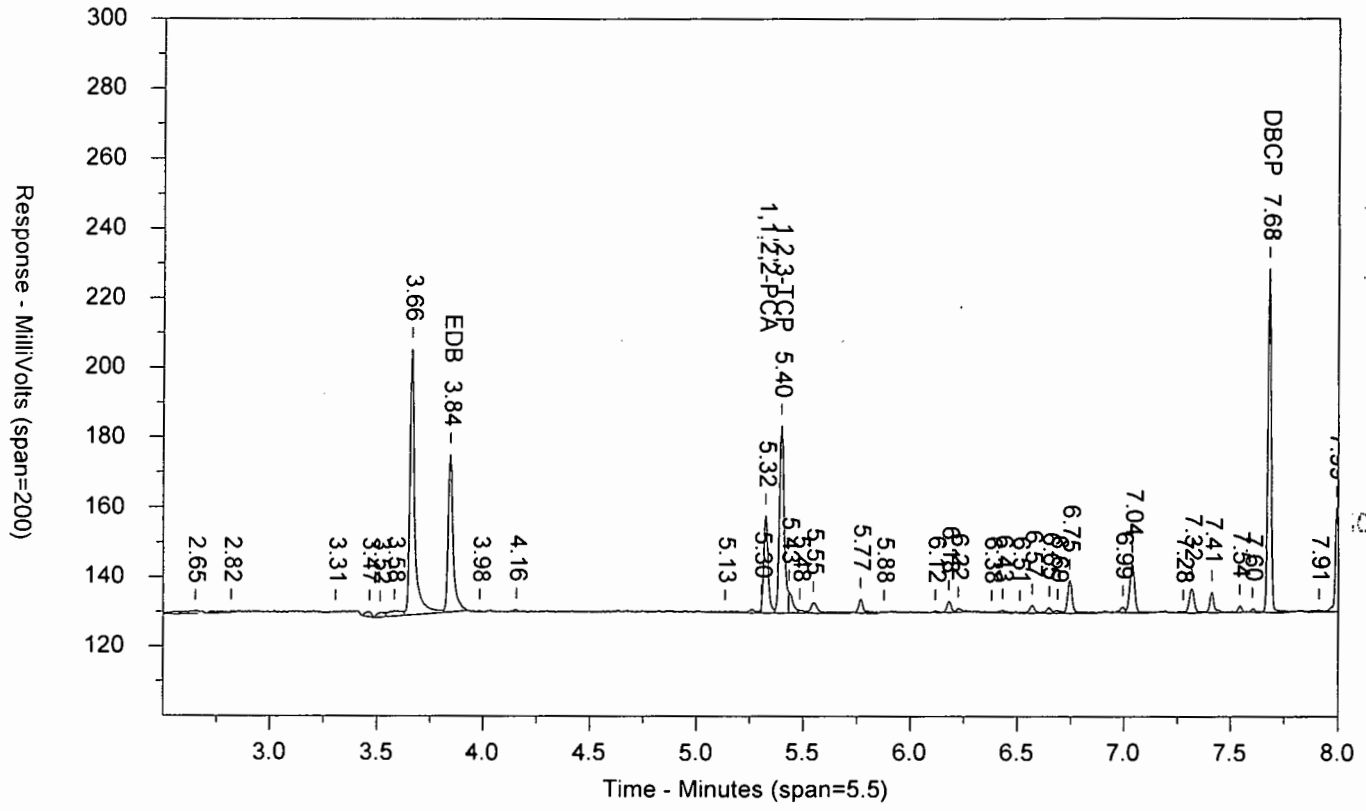
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 4884 | .222 | EDB | 2.784 | 6331 | .213 | EDB |
| 5.325 | 2492 | .115 | 1,1,2,2-PCA | 4.04 | 5537 | .148 | 1,1,2,2-PCA |
| 5.399 | 5668 | 1.854 | 1,2,3-TCP | 4.158 | 7633 | 1.768 | 1,2,3-TCP |
| 7.678 | 9287 | .312 | DBCP | 6.436 | 9601 | .202 | DBCP |

Files:
Area File: 18EDBS17212001.012.RAW
Area File: 18EDBS17212001B.012.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 7:09:28 PM
File Reported On: 8/1/2017 at 11:32:47 AM

EDB_51724DW MCEDB_5MC CCAL 1721199999 10398 SW-846 801

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.018.RAW

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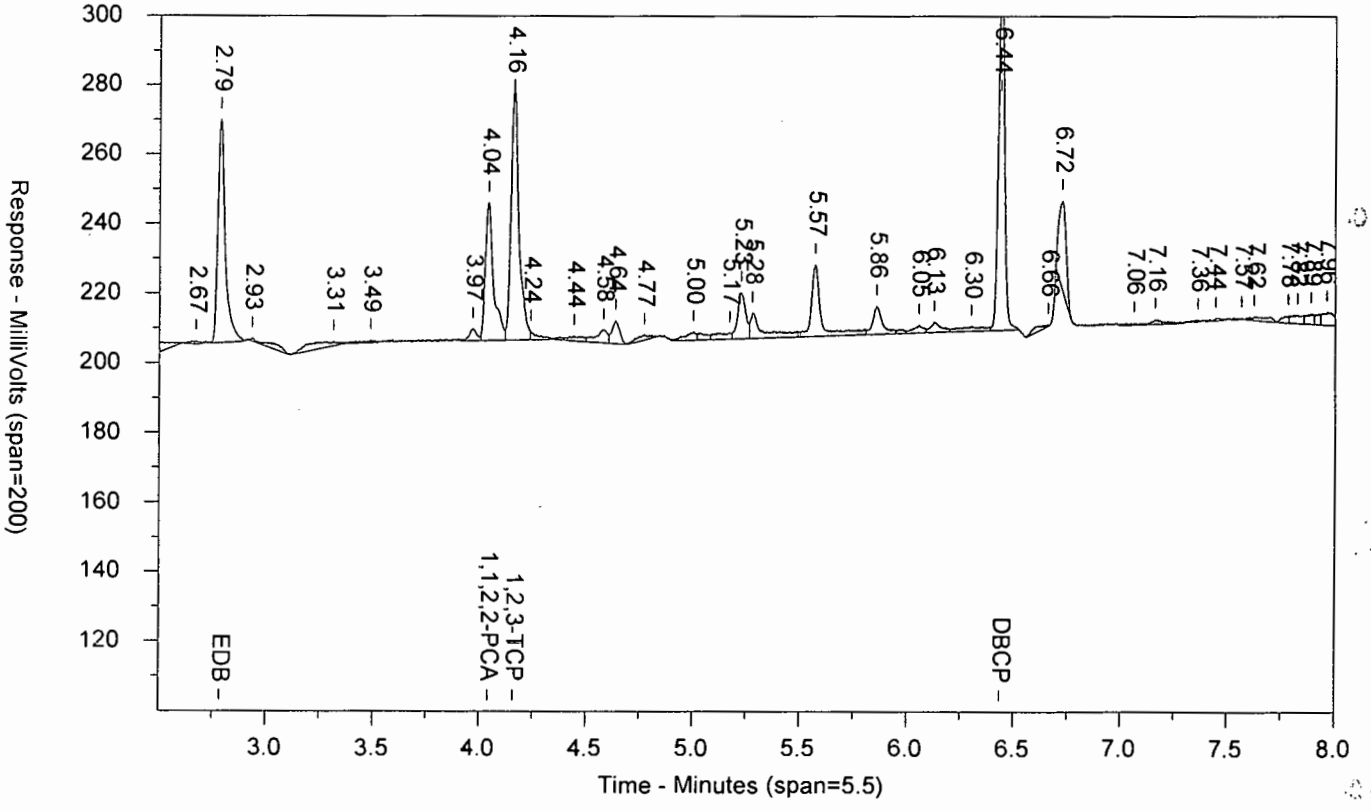


LANCASTER LABORATORIES

Sample Number: EDB_51724DW MCEDB_5MC CCAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 8:36:35 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

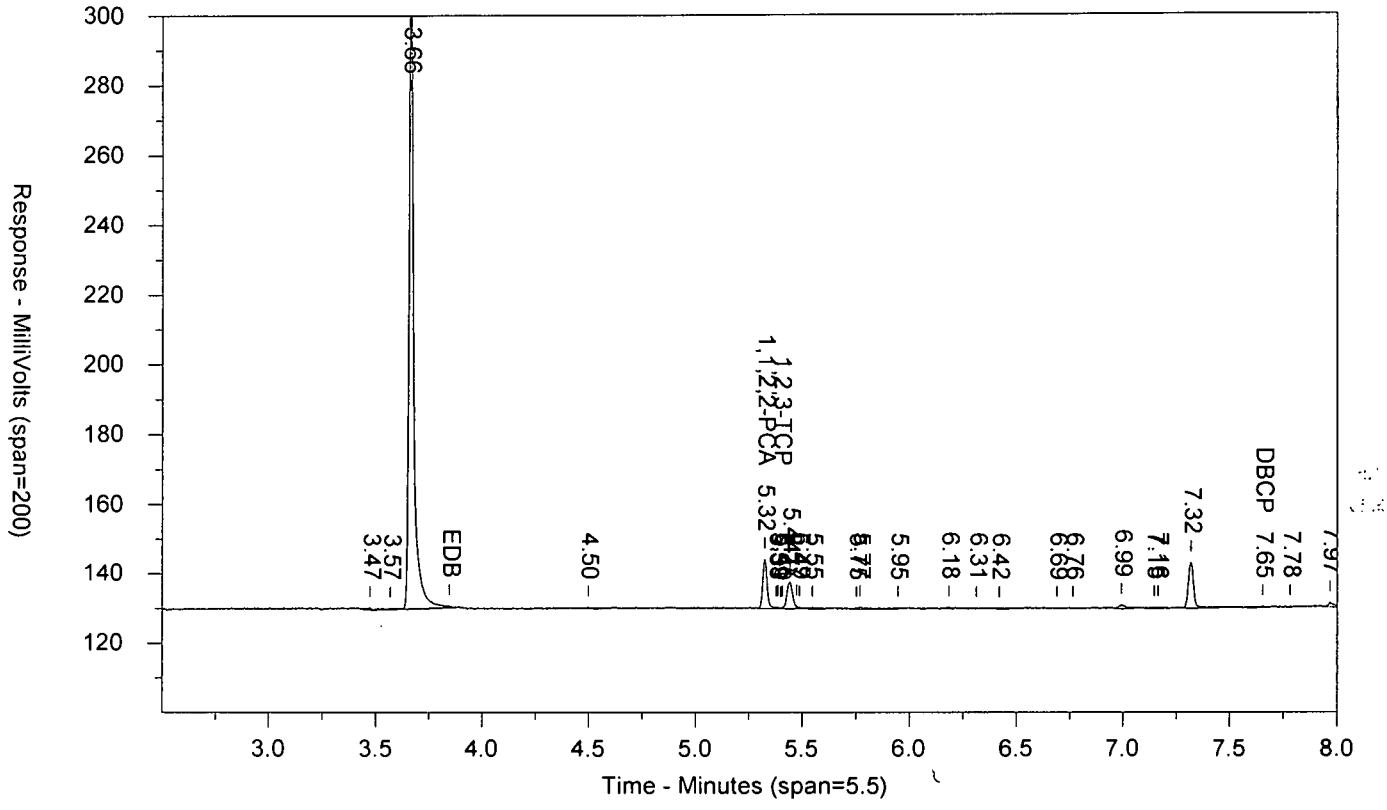
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 45193 | 4.221 | EDB | 2.785 | 64330 | 4.298 | EDB |
| 5.324 | 27948 | 2.156 | 1,1,2,2-PCA | 4.04 | 39654 | 2.166 | 1,1,2,2-PCA |
| 5.397 | 53761 | 32.413 | 1,2,3-TCP | 4.159 | 72430 | 33.798 | 1,2,3-TCP |
| 7.678 | 98688 | 4.305 | DBCP | 6.436 | 103693 | 4.464 | DBCP |

Files:
Area File: 18EDBS17212001.018.RAW
Area File: 18EDBS17212001B.018.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 8:45:09 PM
File Reported On: 8/1/2017 at 11:34:29 AM

EIBKX1724C XTPIBLKXT PIBLK1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.019.RAW

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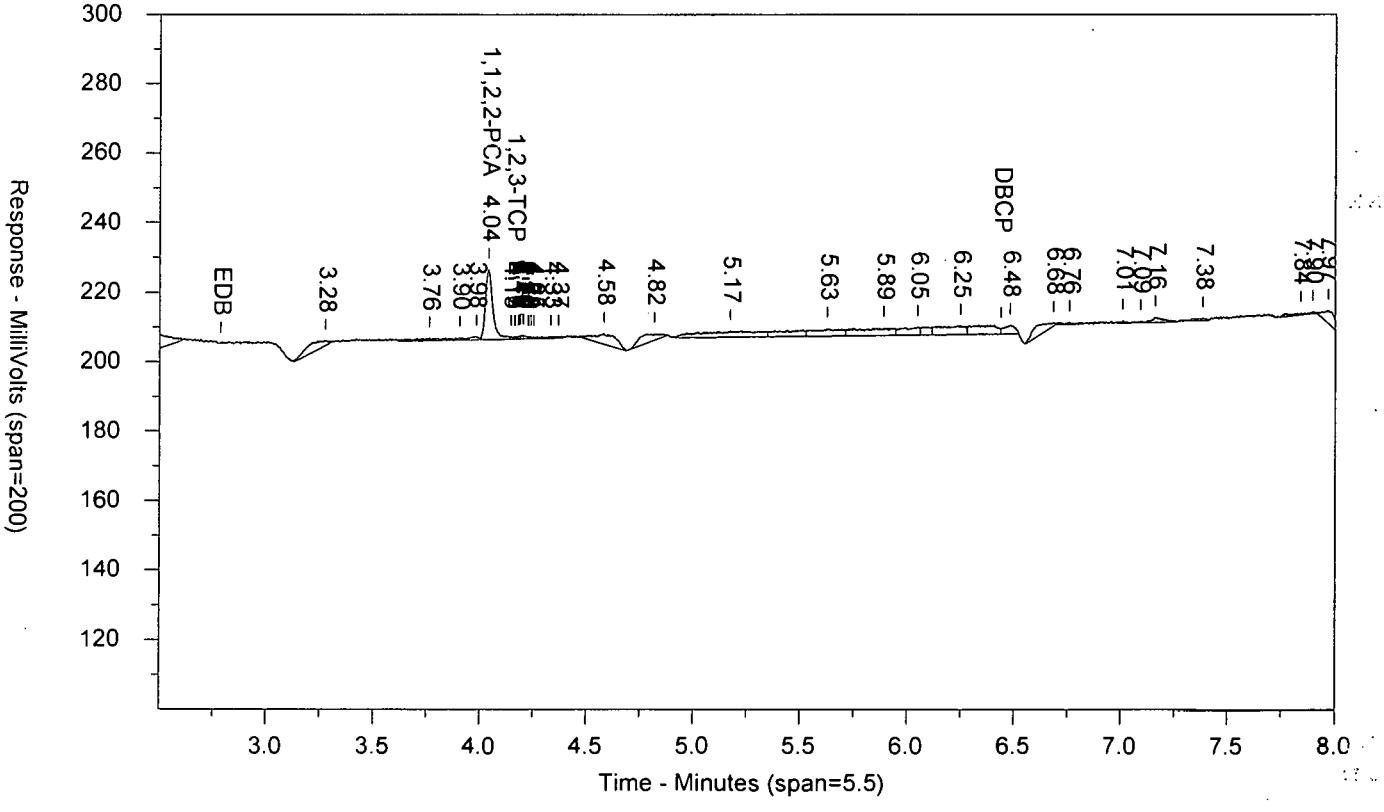


LANCASTER LABORATORIES

Sample Number: EIBKX1724C XTPIBLKXT PIBLK1721199999 10398 SW-846 8011
Injected On: 7/31/2017 8:52:31 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

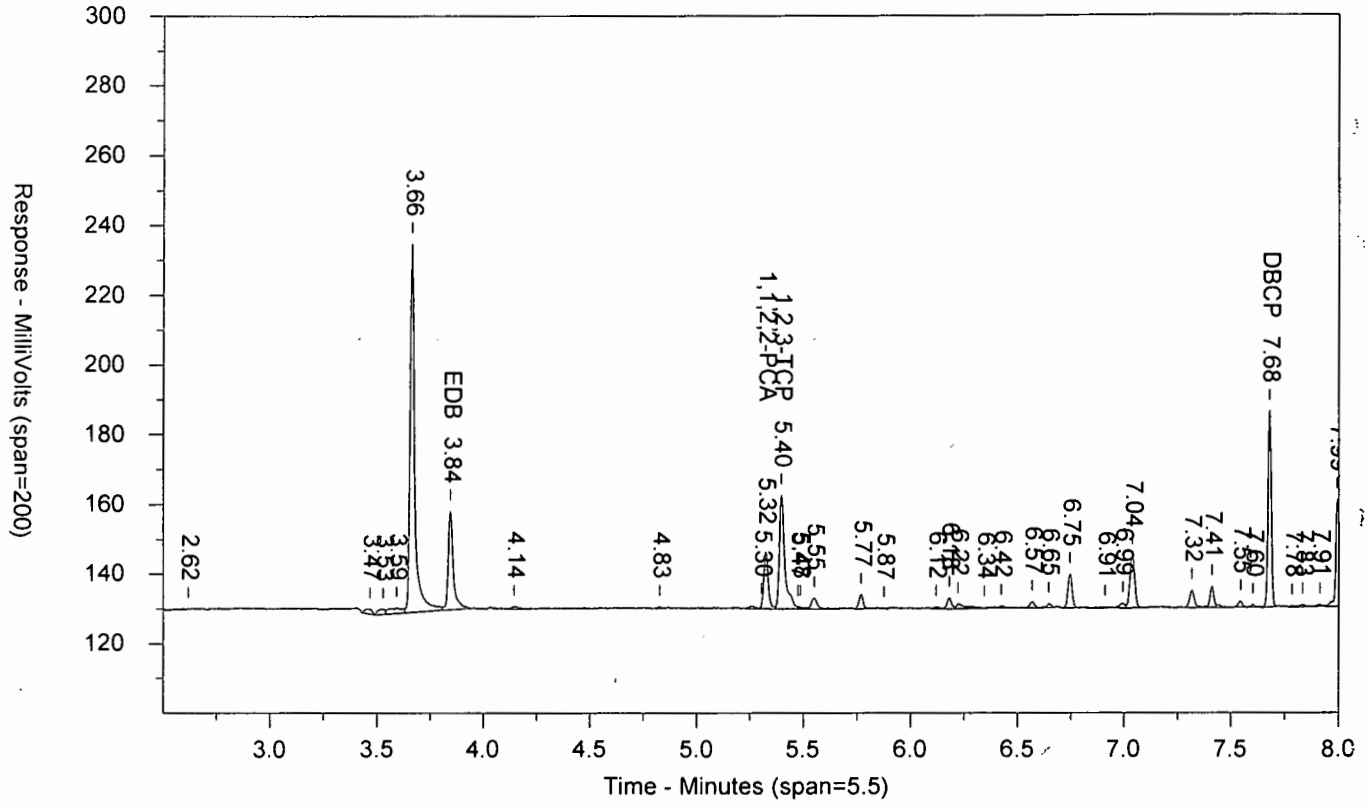
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14269 | .061 | 1,1,2,2-PCA | 4.04 | 20154 | .058 | 1,1,2,2-PCA |
| 5.4 | 301 | -.089 | 1,2,3-TCP | 4.16 | 815 | -.092 | 1,2,3-TCP |
| 7.654 | 443 | -.005 | DBCP | | 0 | | DBCP |

Files:
Area File: 18EDBS17212001.019.RAW
Area File: 18EDBS17212001B.019.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 9:01:06 PM
File Reported On: 8/1/2017 at 11:34:44 AM

EDB_41724DW QVEDB_4QV CCAL 1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.028.RAW

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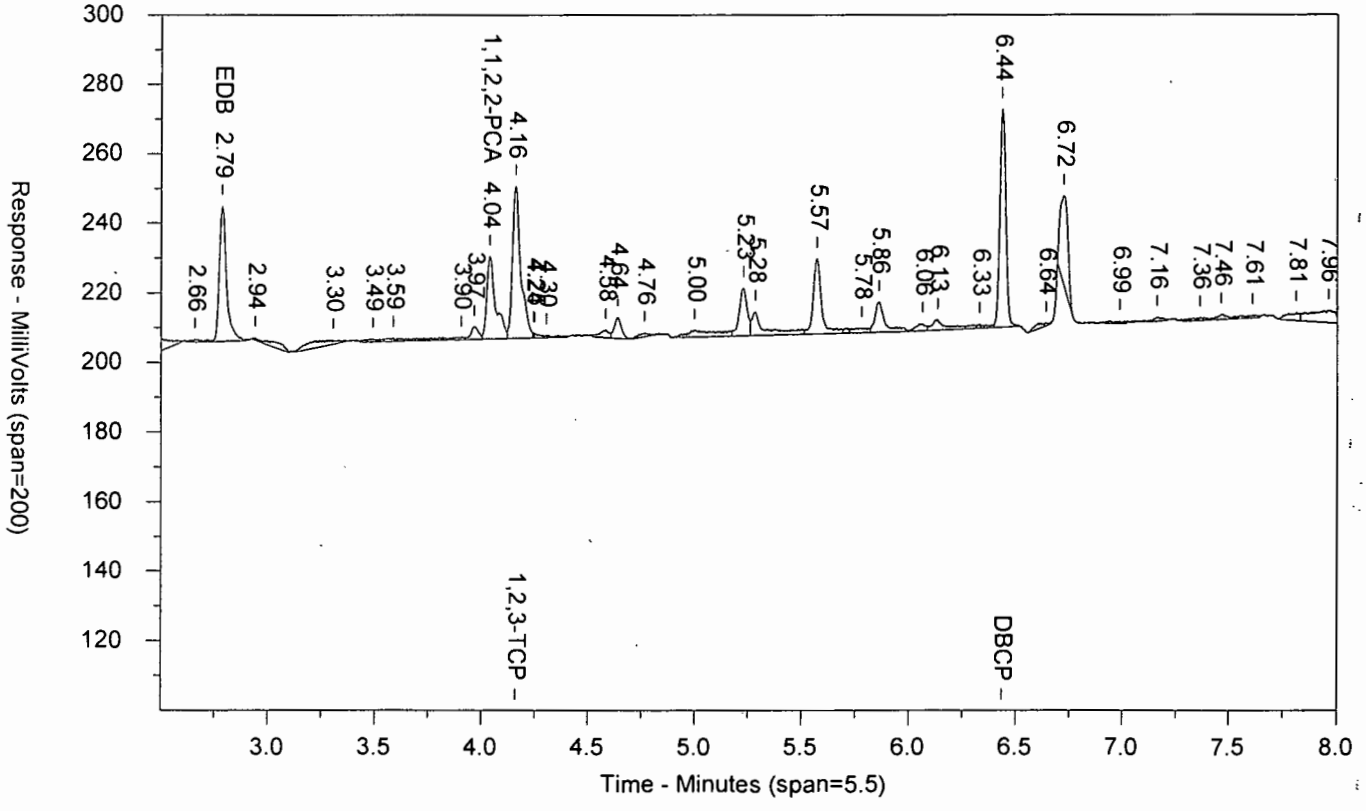


LANCASTER LABORATORIES

Sample Number: EDB_41724DW QVEDB_4QV CCAL 1721199999 10398 SW-846 8011
Injected On: 7/31/2017 11:15:53 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

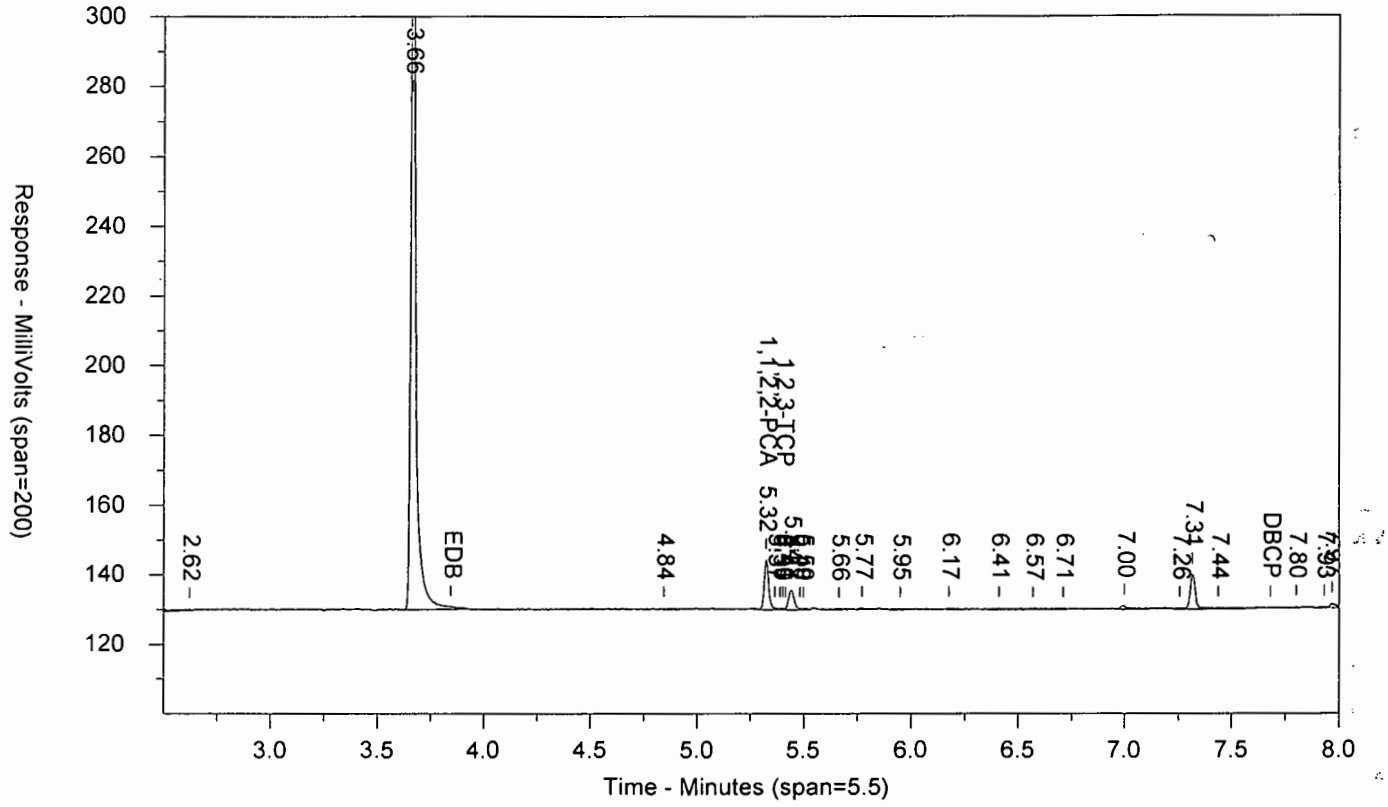
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 28361 | 2.552 | EDB | 2.786 | 39073 | 2.519 | EDB |
| 5.324 | 16352 | 1.226 | 1,1,2,2-PCA | 4.039 | 23747 | 1.225 | 1,1,2,2-PCA |
| 5.397 | 32656 | 19.002 | 1,2,3-TCP | 4.16 | 43794 | 19.643 | 1,2,3-TCP |
| 7.678 | 56314 | 2.412 | DBCP | 6.436 | 62787 | 2.611 | DBCP |

Files:
Area File: 18EDBS17212001.028.RAW
Area File: 18EDBS17212001B.028.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 11:24:27 PM
File Reported On: 8/1/2017 at 11:37:21 AM

EIBKX1724C YFPIBLKYF PIBLK1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.029.RAW

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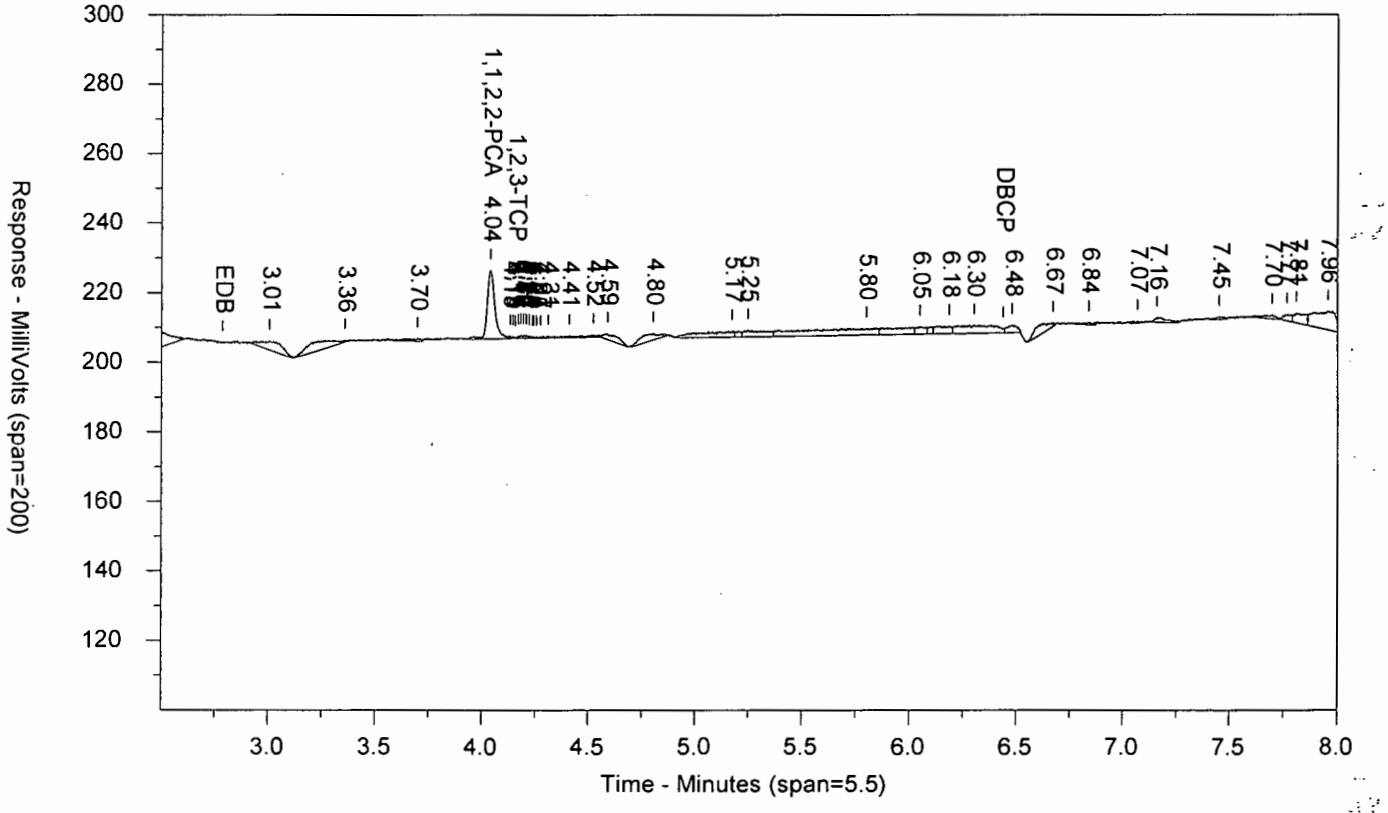


LANCASTER LABORATORIES

Sample Number: EIBKX1724C YFPIBLKYF PIBLK1721199999 10398 SW-846 8011
Injected On: 7/31/2017 11:31:53 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

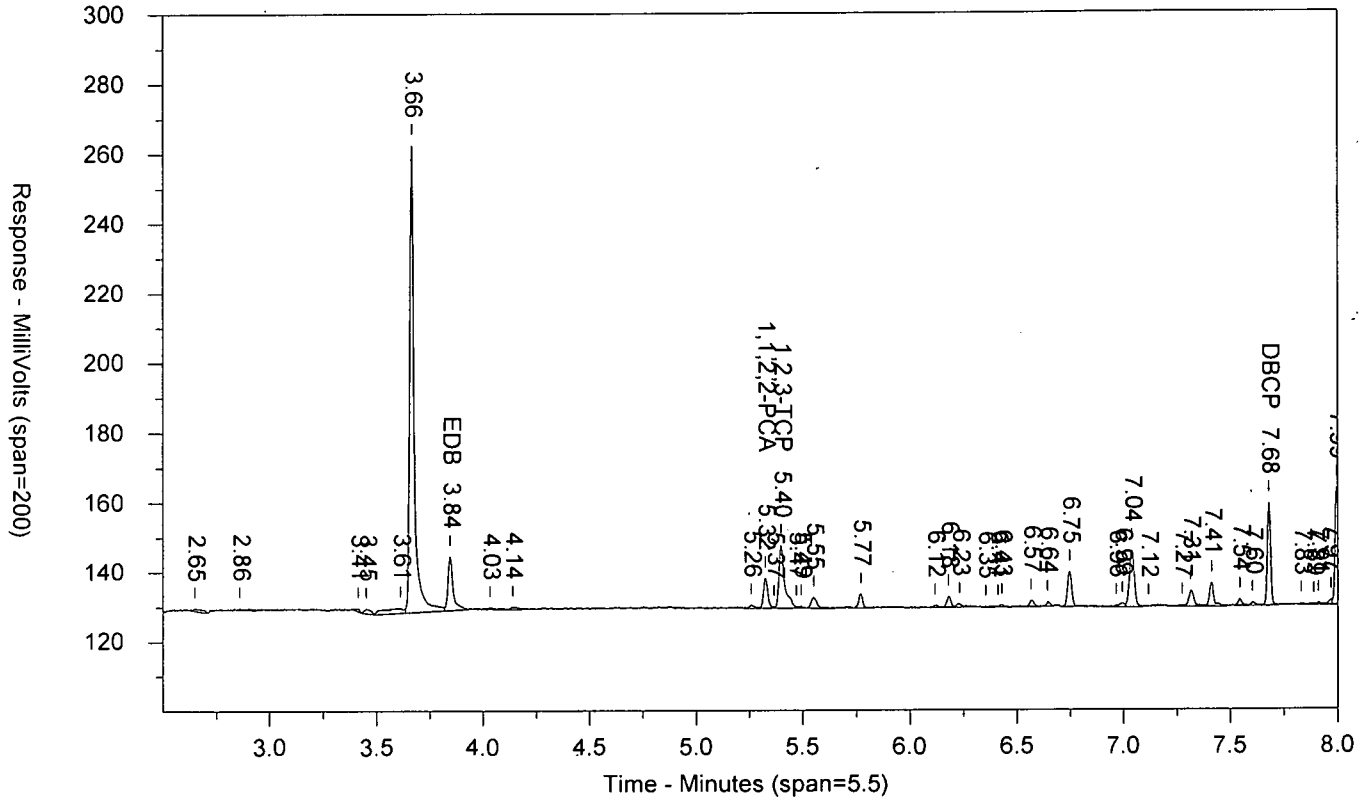
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14349 | .061 | 1,1,2,2-PCA | 4.039 | 19741 | .056 | 1,1,2,2-PCA |
| 5.401 | 585 | -.079 | 1,2,3-TCP | 4.156 | 472 | -.101 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.029.RAW
Area File: 18EDBS17212001B.029.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 11:40:26 PM
File Reported On: 8/1/2017 at 11:37:35 AM

EDB_31724DW QIEDB_3QI CCAL 1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.039.RAW

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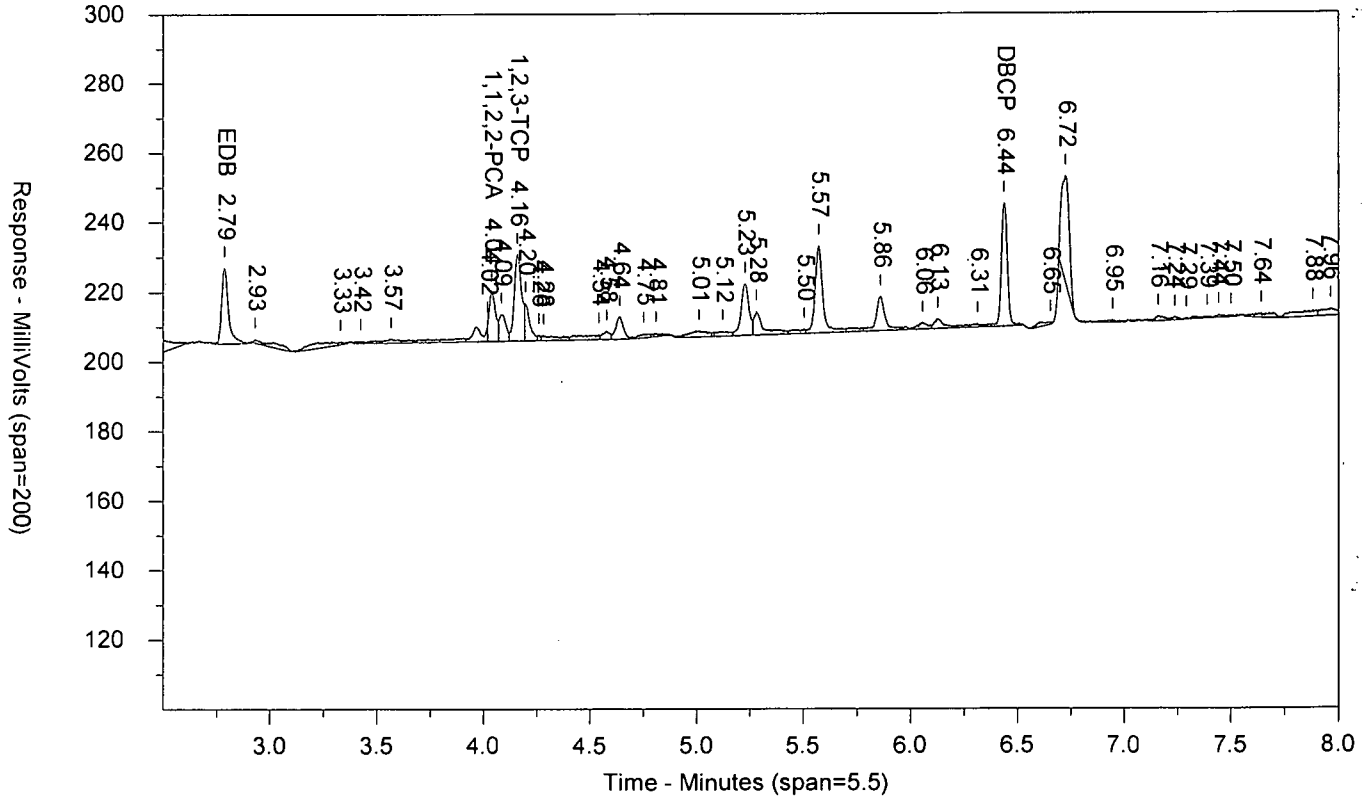


LANCASTER LABORATORIES

Sample Number: EDB_31724DW QIEDB_3QI CCAL 1721199999 10398 SW-846 8011
Injected On: 8/1/2017 2:11:04 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

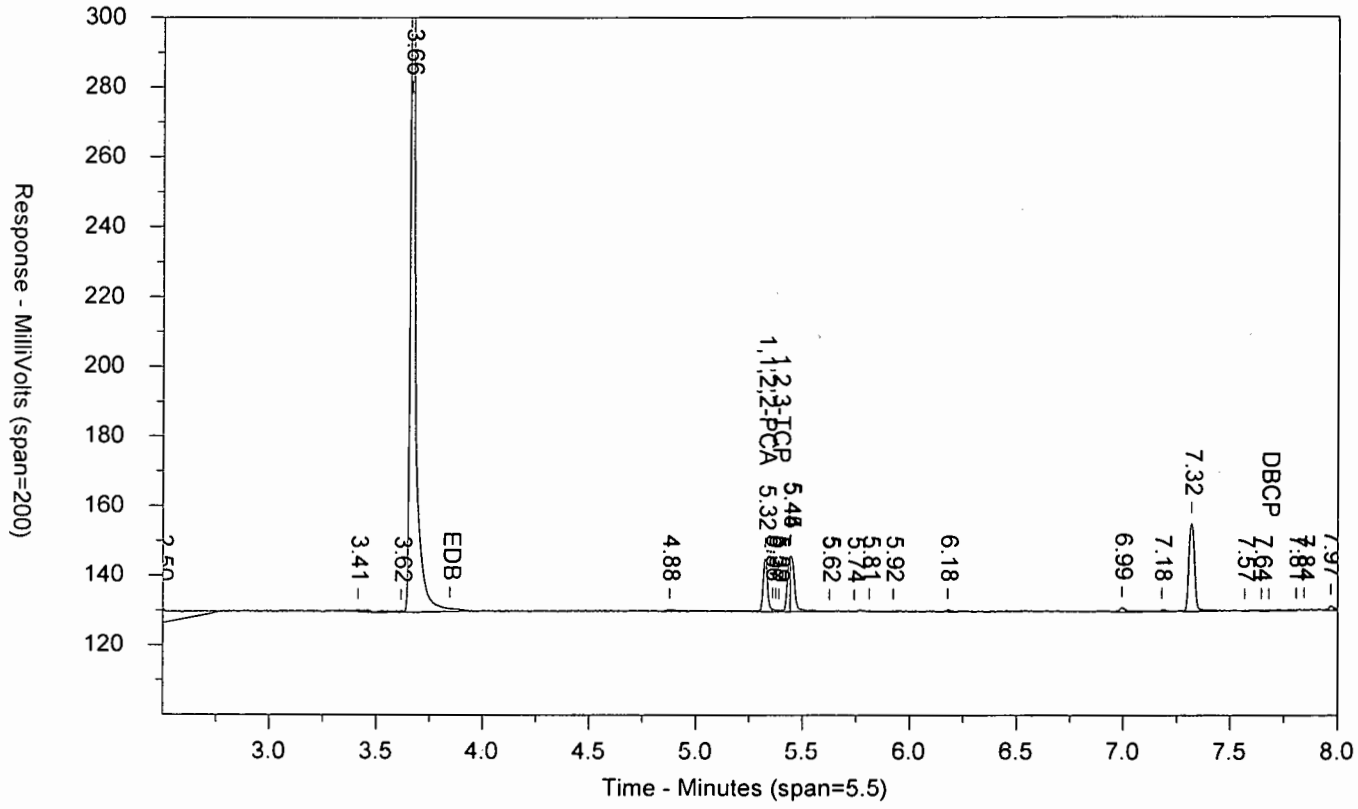
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 15605 | 1.286 | EDB | 2.786 | 21825 | 1.304 | EDB |
| 5.324 | 8812 | .622 | 1,1,2,2-PCA | 4.039 | 13920 | .643 | 1,1,2,2-PCA |
| 5.397 | 18143 | 9.78 | 1,2,3-TCP | 4.159 | 24768 | 10.238 | 1,2,3-TCP |
| 7.679 | 29597 | 1.219 | DBCP | 6.437 | 35311 | 1.366 | DBCP |

Files:
Area File: 18EDBS17212001.039.RAW
Area File: 18EDBS17212001B.039.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 8/1/2017 2:19:39 AM
File Reported On: 8/1/2017 at 11:40:18 AM

EIBKX1724C YGPIBLKYG PIBLK1721199999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.040.RAW

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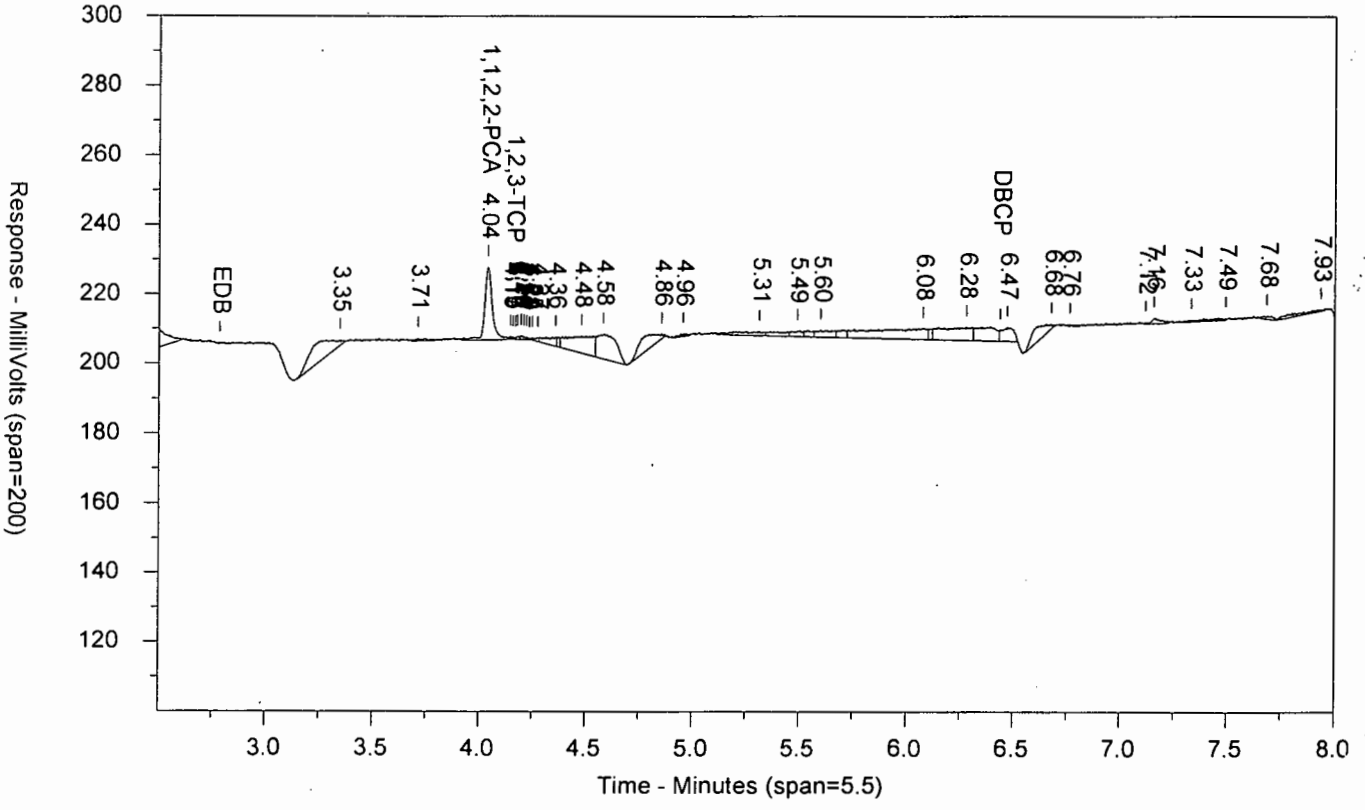

LANCASTER LABORATORIES

Sample Number: EIBKX1724C YGPIBLKYG PIBLK1721199999 10398 SW-846 8011
Injected On: 8/1/2017 2:27:01 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 15186 | .065 | 1,1,2,2-PCA | 4.041 | 21060 | .061 | 1,1,2,2-PCA |
| 5.389 | 497 | -.082 | 1,2,3-TCP | 4.161 | 737 | -.094 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.040.RAW
Area File: 18EDBS17212001B.040.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 8/1/2017 2:37:19 AM
File Reported On: 8/1/2017 at 11:40:34 AM

# Raw QC Data

# EDB/DBCP

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# Data Summary

**Sample Name: BLANKA** 7/31/17 PBLK34209 BLK Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 21:08:26 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.020.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.06291

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 21:08:26 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.020.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 82% ( 46 - 136 ) Conc: 0.057777

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14787 | 0.06291 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 569 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20136 | 0.057777 |
| 1,2,3-Trichloropropane | 4.13 | 4.15 | 4.19 | 762 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.06291 | 0.0035 | 0.007 | 0.007 | | 8.51 | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:13

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 7/31/17 PBLK34209Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 21:08:26
Instrument : CP18--19846A
Result file : 18EDBS17212001.020.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.06291

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14787 | 0.062910 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 569 | -0.079200 |

## Analysis Report (B)

Injected on : Jul 31, 2017 21:08:26
Instrument : CP18--19846B
Result file : 18EDBS17212001B.020.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 82% (46-136) Conc.: 0.057777

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20136 | 0.057777 |
| **1,2,3-TCP** | 4.13 | 4.15 | 4.19 | 762 | -0.093088 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.062910 | | | | 8.51 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 0 2 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 0 2 2017

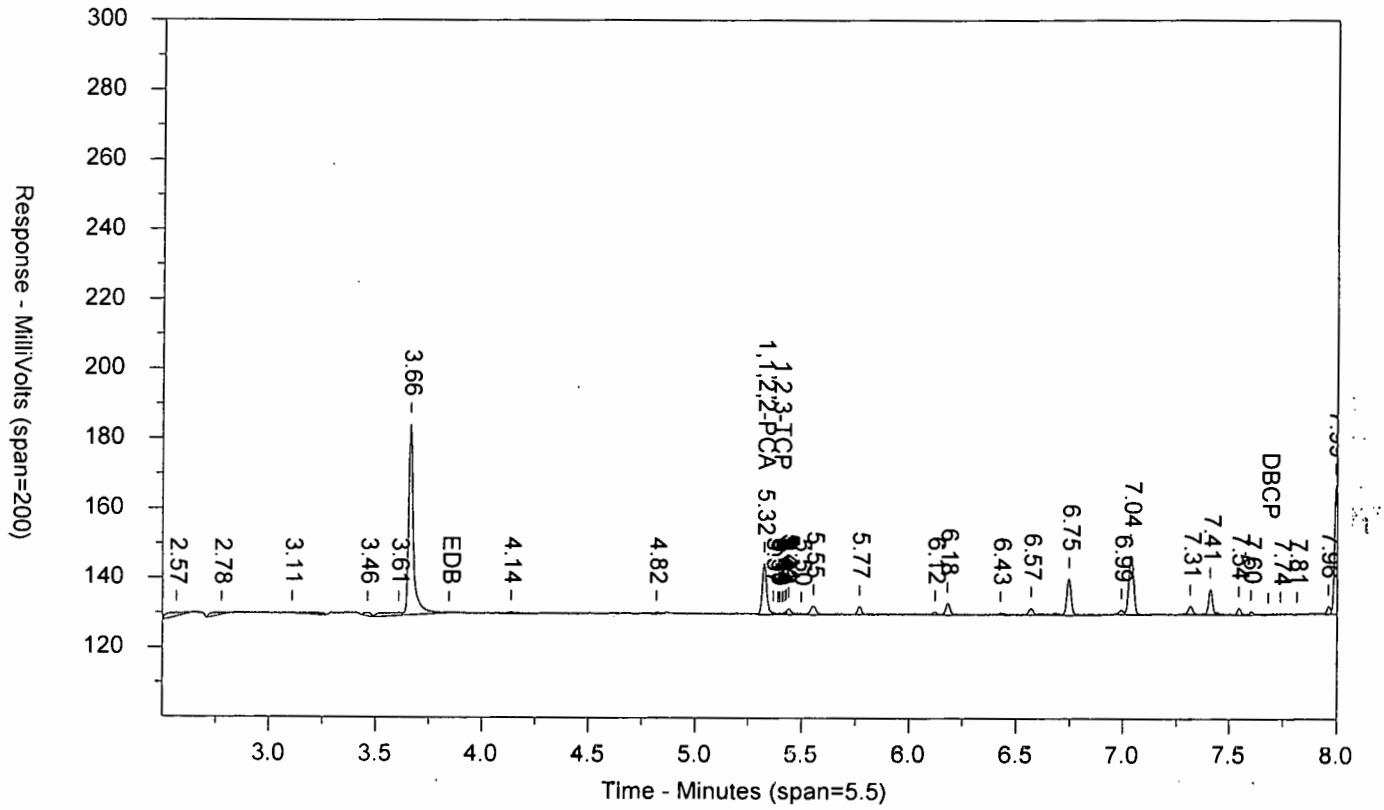
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/1/2017 11:47:24

BLANKA 7/31/17 AAPBLK34209 BLK 172090034A 10398 SW-846 801

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.020.RAW

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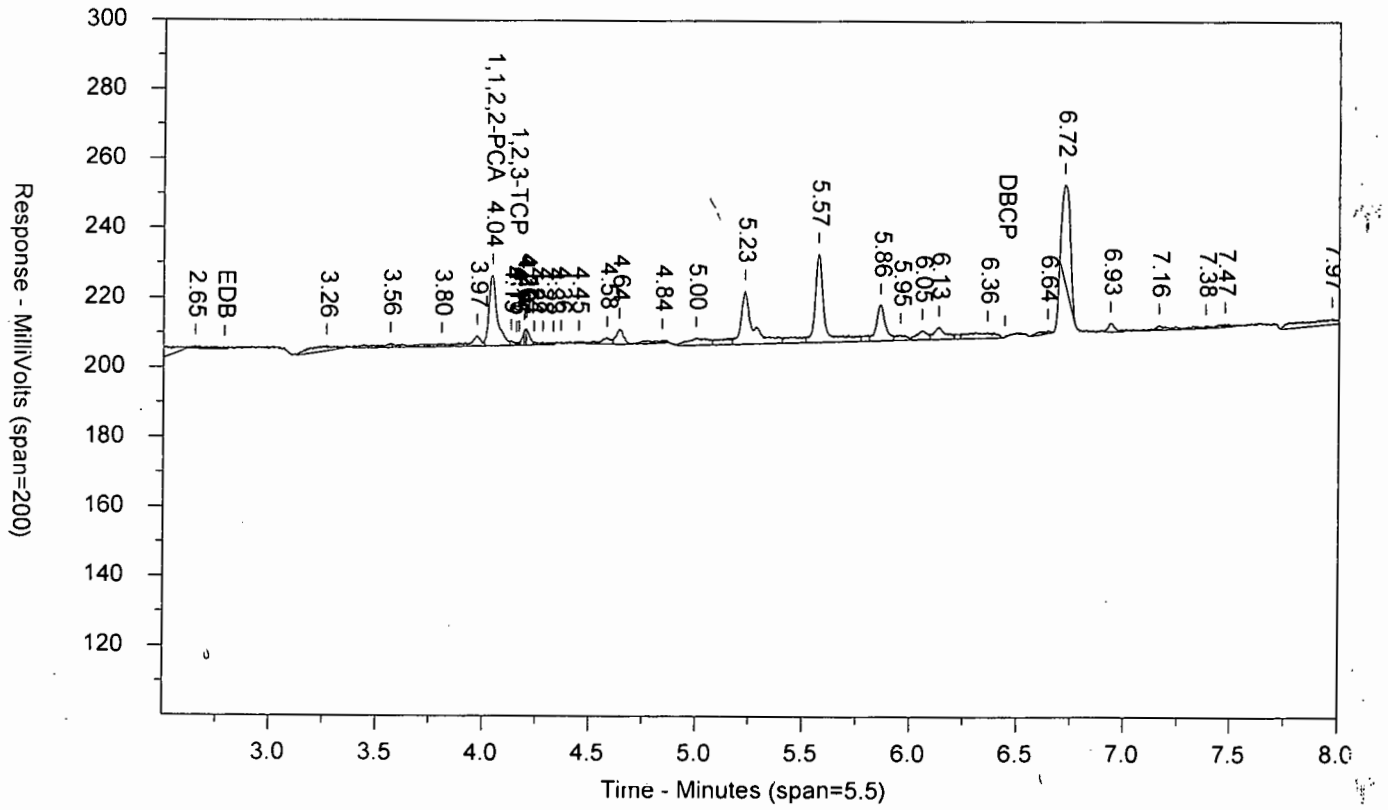

LANCASTER LABORATORIES

Sample Number: BLANKA 7/31/17 AAPBLK34209 BLK 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 9:08:26 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.324 | 14787 | .063 | 1,1,2,2-PCA | 4.042 | 20136 | .058 | 1,1,2,2-PCA |
| 5.396 | 569 | -.079 | 1,2,3-TCP | 4.155 | 762 | -.093 | 1,2,3-TCP |

Files:
Area File: 18EDBS17212001.020.RAW
Area File: 18EDBS17212001B.020.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 9:17:01 PM
File Reported On: 8/1/2017 at 11:35:00 AM

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# Data Summary

**Sample Name: 9121684** MS K1910 MS Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.44 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| Injected on | Aug 01, 2017 00:03:41 |
| Instrument | 19846A |
| Result file | 18EDBS17212001.031.RAW |
| Calibration file | 18EDBS1721201 |
| Method file | 18EDBS |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.066804

## Analysis Report (B)

| | |
|---|---|
| Injected on | Aug 01, 2017 00:03:41 |
| Instrument | 19846B |
| Result file | 18EDBS17212001B.031.RAW |
| Calibration file | 18EDBS1721201B |
| Method file | 18EDBSB |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.063791

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 29312 | 0.145219 | Ethylene dibromide | 2.76 | 2.79 | 2.82 | 41760 | 0.148644 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 16238 | 0.066804 | 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 22692 | 0.063791 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 33352 | 1.067193 | 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 46255 | 1.144841 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 63186 | 0.149247 | 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 72252 | 0.166838 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.145219 | 0.0096 | 0.0192 | 0.0288 | | 2.33 | |
| 1,1,2,2-TETRACHLOROE | A | 0.066804 | 0.0034 | 0.0067 | 0.0067 | | 4.61 | |
| 1,2,3-Trichloropropane | A | 1.067193 | | | 0.2593 | | 7.02 | |
| 1,2-Dibromo-3-chloroprop | A | 0.149247 | 0.0096 | 0.0192 | 0.0288 | | 11.13 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:30

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9121684** MS K1910 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.44 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 01, 2017 00:03:41
Instrument : CP18--19846A
Result file : 18EDBS17212001.031.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.066804

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 29312 | 0.145219 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 16238 | 0.066804 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 33352 | 1.067193 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 63186 | 0.149247 |

## Analysis Report (B)

Injected on : Aug 01, 2017 00:03:41
Instrument : CP18--19846B
Result file : 18EDBS17212001B.031.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063791

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 41760 | 0.148644 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 22692 | 0.063791 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 46255 | 1.144841 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 72252 | 0.166838 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.145219 | 0.0288 | 0.0096 | | 2.33 | |
| ☐ 1,1,2,2-PCA | A | 0.066804 | | | | 4.62 | |
| ☐ 1,2,3-TCP | A | 1.067193 | 0.2593 | 0.096 | | 7.02 | |
| ☐ DBCP | A | 0.149247 | 0.0288 | 0.0096 | | 11.13 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 02 2017

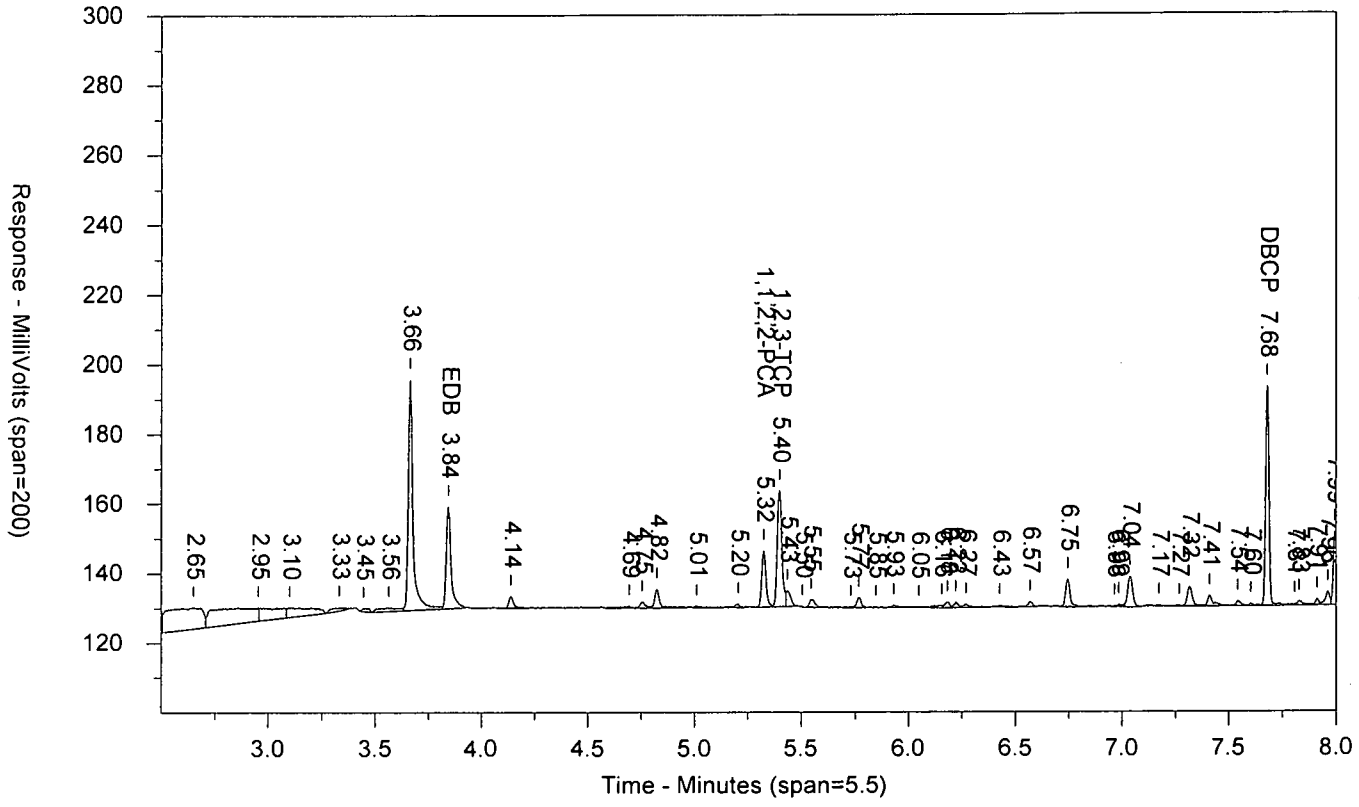
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/1/2017 11:48:45

9121684MS AAK1910 MS 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.031.RAW

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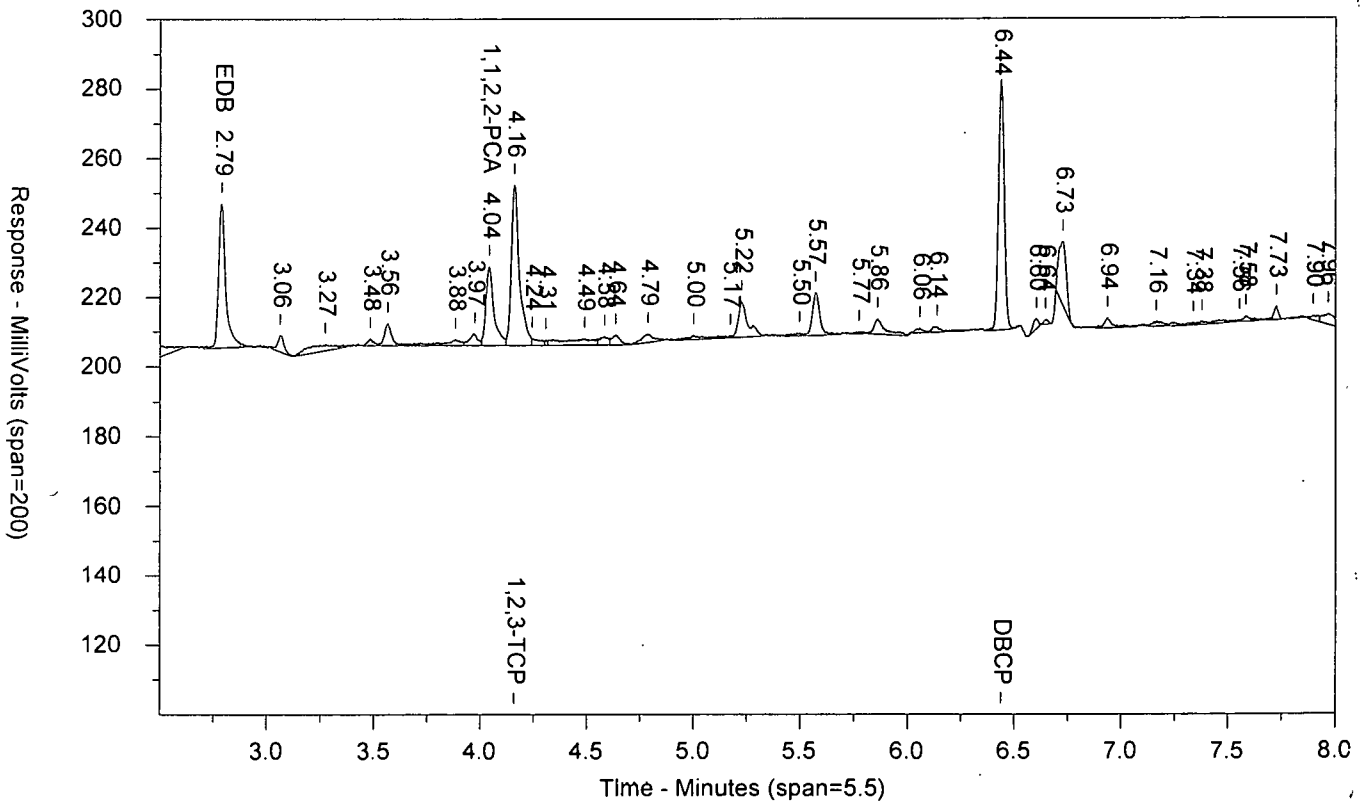


LANCASTER LABORATORIES

Sample Number: 9121684MS AAK1910 MS 172090034A 10398 SW-846 8011
Injected On: 8/1/2017 12:03:41 AM Sample Weight: 36.44
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 29312 | .145 | EDB | 2.786 | 41760 | .149 | EDB |
| 5.324 | 16238 | .067 | 1,1,2,2-PCA | 4.041 | 22692 | .064 | 1,1,2,2-PCA |
| 5.397 | 33352 | 1.067 | 1,2,3-TCP | 4.159 | 46255 | 1.145 | 1,2,3-TCP |
| 7.679 | 63186 | .149 | DBCP | 6.437 | 72252 | .167 | DBCP |

Files:
Area File: 18EDBS17212001.031.RAW
Area File: 18EDBS17212001B.031.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 8/1/2017 12:12:16 AM
File Reported On: 8/1/2017 at 11:38:03 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9121685** MSD K1910 MSD Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.51 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 00:19:38 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.032.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.062364

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 01, 2017 00:19:38 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.032.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 88% ( 46 - 136 ) Conc: 0.059631

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 27936 | 0.137462 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15256 | 0.062364 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 31992 | 1.017825 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 56629 | 0.132919 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 38460 | 0.135625 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21446 | 0.059631 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 42657 | 1.045219 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 65710 | 0.150284 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.137462 | 0.0096 | 0.0192 | 0.0288 | | 1.35 | |
| 1,1,2,2-TETRACHLOROE | A | 0.062364 | 0.0034 | 0.0067 | 0.0067 | | 4.48 | |
| 1,2,3-Trichloropropane | A | 1.017825 | | | 0.2588 | | 2.66 | |
| 1,2-Dibromo-3-chloroprop | A | 0.132919 | 0.0096 | 0.0192 | 0.0288 | | 12.26 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:31

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9121685** MSD K1910 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 36.51 mL Total Volume: 2 ml Analyst: 7848 SDG: KR191 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 01, 2017 00:19:38
Instrument : CP18--19846A
Result file : 18EDBS17212001.032.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.062364

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 27936 | 0.137462 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 15256 | 0.062364 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 31992 | 1.017825 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 56629 | 0.132919 |

## Analysis Report (B)

Injected on : Aug 01, 2017 00:19:38
Instrument : CP18--19846B
Result file : 18EDBS17212001B.032.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 88% (46-136) Conc.: 0.059631

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 38460 | 0.135625 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 21446 | 0.059631 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 42657 | 1.045219 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 65710 | 0.150284 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.137462 | 0.0288 | 0.0096 | | 1.35 | |
| ☐ 1,1,2,2-PCA | A | 0.062364 | | | | 4.48 | |
| ☐ 1,2,3-TCP | A | 1.017825 | 0.2588 | 0.0959 | | 2.66 | |
| ☐ DBCP | A | 0.132919 | 0.0288 | 0.0096 | | 12.26 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

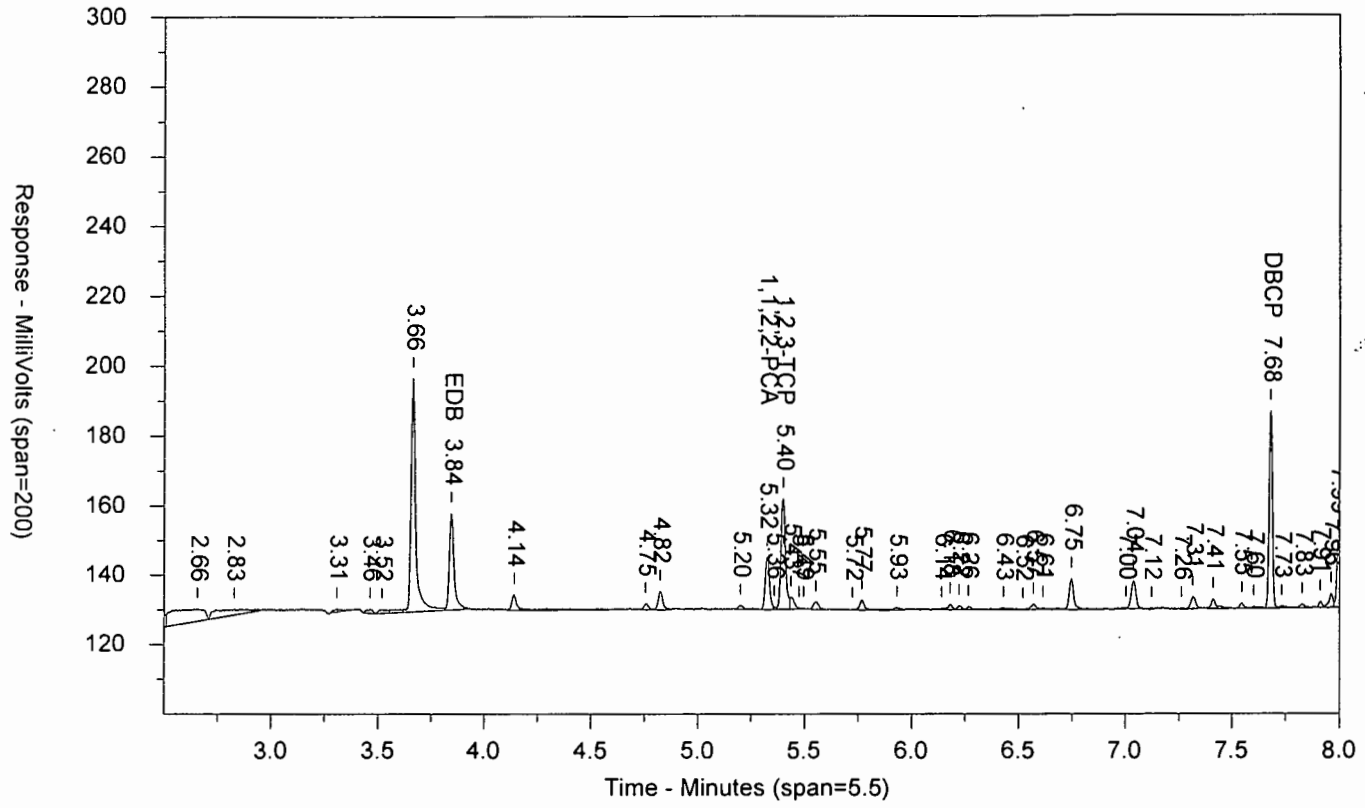
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9121685MSD AAK1910 MSD 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.032.RAW

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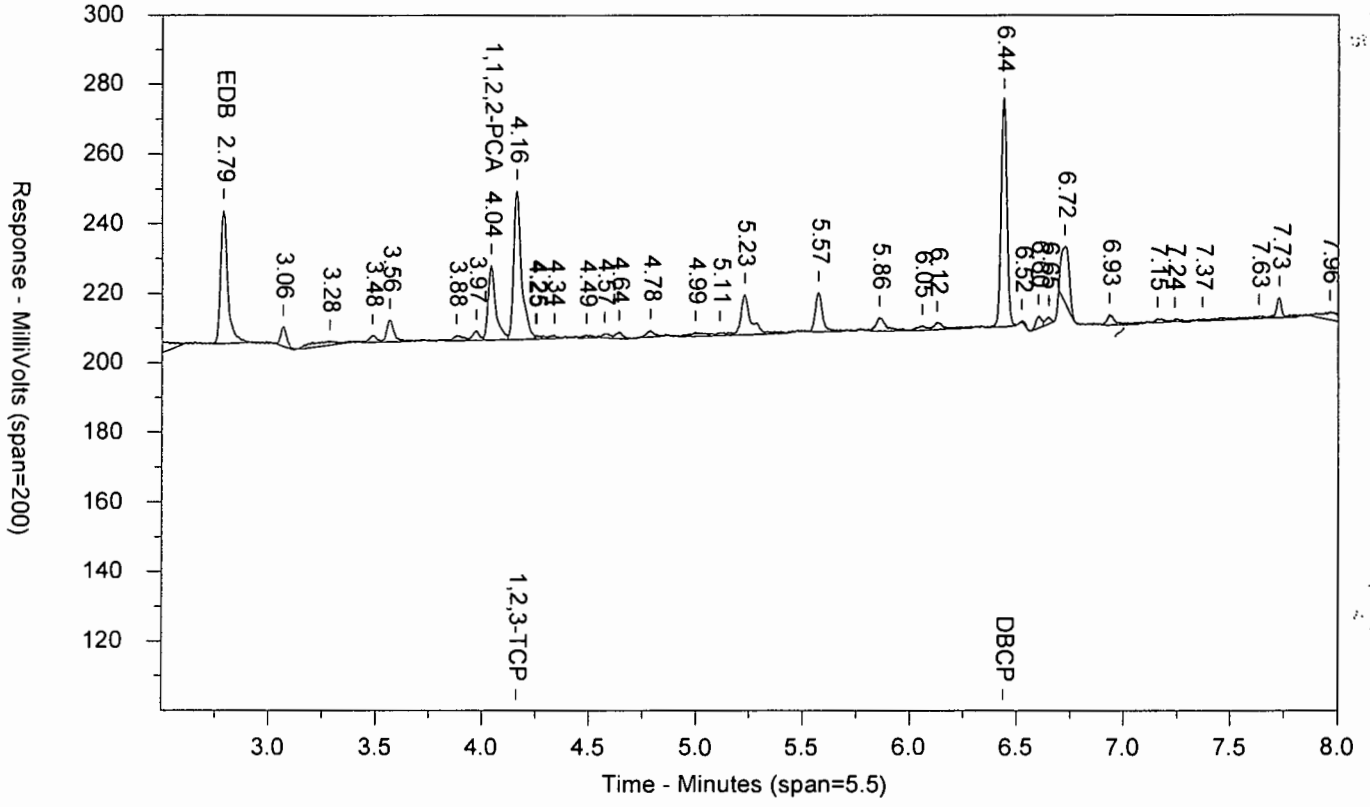

LANCASTER LABORATORIES

Sample Number: 9121685MSD AAK1910 MSD 172090034A 10398 SW-846 8011
Injected On: 8/1/2017 12:19:38 AM Sample Weight: 36.51
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 27936 | .137 | EDB | 2.787 | 38460 | .136 | EDB |
| 5.324 | 15256 | .062 | 1,1,2,2-PCA | 4.041 | 21446 | .06 | 1,1,2,2-PCA |
| 5.398 | 31992 | 1.018 | 1,2,3-TCP | 4.16 | 42657 | 1.045 | 1,2,3-TCP |
| 7.678 | 56629 | .133 | DBCP | 6.437 | 65710 | .15 | DBCP |

Files:
Area File: 18EDBS17212001.032.RAW
Area File: 18EDBS17212001B.032.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 8/1/2017 12:28:11 AM
File Reported On: 8/1/2017 at 11:38:17 AM

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# Data Summary

**Sample Name: LCSA** 7/31/17 LCS34209 LCS Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| Injected on | Jul 31, 2017 21:24:26 |
| Instrument | 19846A |
| Result file | 18EDBS17212001.021.RAW |
| Calibration file | 18EDBS1721201 |
| Method file | 18EDBS |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.06362

## Analysis Report (B)

| | |
|---|---|
| Injected on | Jul 31, 2017 21:24:26 |
| Instrument | 19846B |
| Result file | 18EDBS17212001B.021.RAW |
| Calibration file | 18EDBS1721201B |
| Method file | 18EDBSB |

%SSR(PCA) 86% ( 46 - 136 ) Conc: 0.060438

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 26775 | 0.136812 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 14942 | 0.06362 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 31584 | 1.046922 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 55692 | 0.136261 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 38376 | 0.141137 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 20923 | 0.060438 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 42253 | 1.07889 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 62305 | 0.147954 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.136812 | 0.01 | 0.02 | 0.03 | | 3.11 | |
| 1,1,2,2-TETRACHLOROE | A | 0.06362 | 0.0035 | 0.007 | 0.007 | | 5.13 | |
| 1,2,3-Trichloropropane | A | 1.046922 | | | 0.27 | | 3.01 | |
| 1,2-Dibromo-3-chloropropa | A | 0.136261 | 0.01 | 0.02 | 0.03 | | 8.23 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:15

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 7/31/17 LCS34209 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 21:24:26
Instrument : CP18--19846A
Result file : 18EDBS17212001.021.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.06362

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.81 | 3.84 | 3.87 | 26775 | 0.136812 |
| **1,1,2,2-PCA** | 5.29 | 5.32 | 5.35 | 14942 | 0.063620 |
| **1,2,3-TCP** | 5.37 | 5.40 | 5.43 | 31584 | 1.046922 |
| **DBCP** | 7.65 | 7.68 | 7.71 | 55692 | 0.136261 |

## Analysis Report (B)

Injected on : Jul 31, 2017 21:24:26
Instrument : CP18--19846B
Result file : 18EDBS17212001B.021.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 86% (46-136) Conc.: 0.060438

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.76 | 2.79 | 2.82 | 38376 | 0.141137 |
| **1,1,2,2-PCA** | 4.01 | 4.04 | 4.07 | 20923 | 0.060438 |
| **1,2,3-TCP** | 4.13 | 4.16 | 4.19 | 42253 | 1.078890 |
| **DBCP** | 6.41 | 6.44 | 6.47 | 62305 | 0.147954 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.136812 | 0.03 | 0.01 | | 3.11 | |
| ☐ 1,1,2,2-PCA | A | 0.063620 | | | | 5.13 | |
| ☑ 1,2,3-TCP | A | 1.046922 | 0.27 | 0.1 | | 3.01 | |
| ☑ DBCP | A | 0.136261 | 0.03 | 0.01 | | 8.23 | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist Date: AUG 0 2 2017

Verified by: Valerie L. Tomayko Principal Specialist Date: AUG 0 2 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSA 7/31/17 AALCS34209 LCS 172090034A 10398 SW-846 8011

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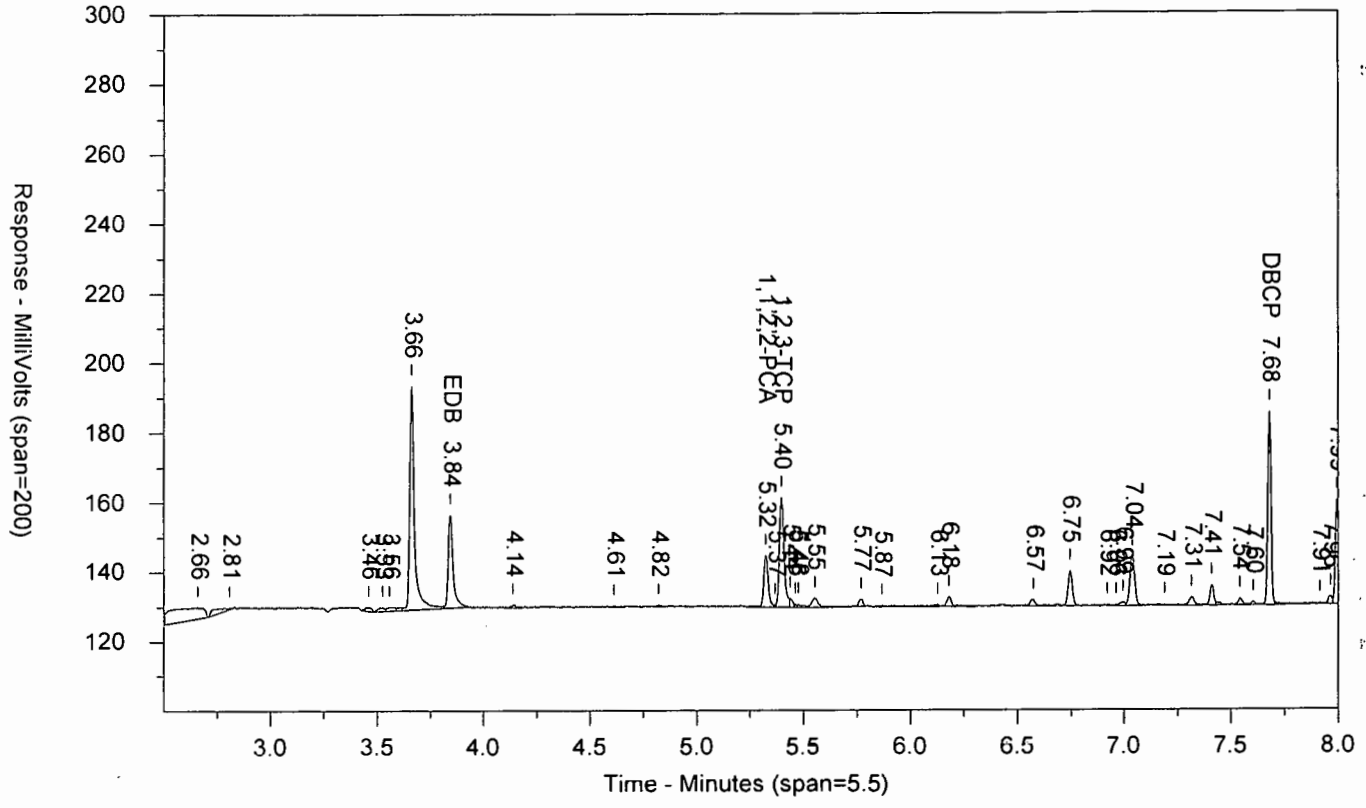


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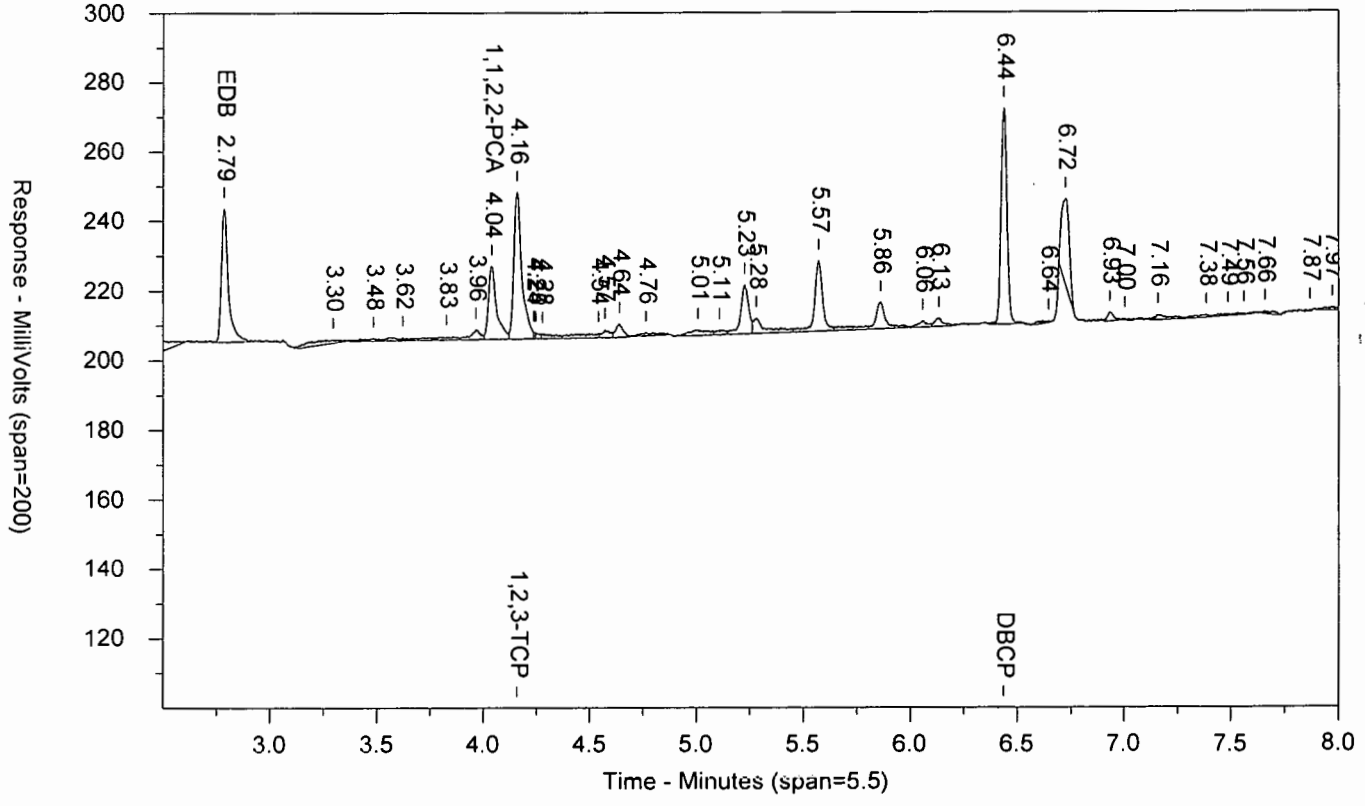

LANCASTER LABORATORIES

Sample Number: LCSA 7/31/17 AALCS34209 LCS 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 9:24:26 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.843 | 26775 | .137 | EDB | 2.785 | 38376 | .141 | EDB |
| 5.324 | 14942 | .064 | 1,1,2,2-PCA | 4.041 | 20923 | .06 | 1,1,2,2-PCA |
| 5.397 | 31584 | 1.047 | 1,2,3-TCP | 4.16 | 42253 | 1.079 | 1,2,3-TCP |
| 7.679 | 55692 | .136 | DBCP | 6.437 | 62305 | .148 | DBCP |

Files:
Area File: 18EDBS17212001.021.RAW
Area File: 18EDBS17212001B.021.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 9:33:00 PM
File Reported On: 8/1/2017 at 11:35:20 AM

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# Data Summary

**Sample Name: LCSDA** 7/31/17 LCSD34209 LCSD Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 21:40:20 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17212001.022.RAW |
| **Calibration file** | 18EDBS1721201 |
| **Method file** | 18EDBS |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.068149

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Jul 31, 2017 21:40:20 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17212001B.022.RAW |
| **Calibration file** | 18EDBS1721201B |
| **Method file** | 18EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.063586

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.81 | 3.84 | 3.87 | 28321 | 0.145575 |
| 1,1,2,2-TETRACHLORO | 5.29 | 5.32 | 5.35 | 15931 | 0.068149 |
| 1,2,3-Trichloropropane | 5.37 | 5.40 | 5.43 | 32235 | 1.07055 |
| 1,2-Dibromo-3-chloropro | 7.65 | 7.68 | 7.71 | 59157 | 0.145104 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.76 | 2.79 | 2.82 | 39864 | 0.147126 |
| 1,1,2,2-TETRACHLORO | 4.01 | 4.04 | 4.07 | 21855 | 0.063586 |
| 1,2,3-Trichloropropane | 4.13 | 4.16 | 4.19 | 43041 | 1.101158 |
| 1,2-Dibromo-3-chloropro | 6.41 | 6.44 | 6.47 | 65838 | 0.157099 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.145575 | 0.01 | 0.02 | 0.03 | | 1.06 | |
| 1,1,2,2-TETRACHLOROE | A | 0.068149 | 0.0035 | 0.007 | 0.007 | | 6.93 | |
| 1,2,3-Trichloropropane | A | 1.07055 | | | 0.27 | | 2.82 | |
| 1,2-Dibromo-3-chloroprop | A | 0.145104 | 0.01 | 0.02 | 0.03 | | 7.94 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 0 2 2017

Reviewed and digitally signed by Heather M Miller on 8/2/2017 09:52:18

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 7/31/17 LCSD34209 Sample ID: AA **Batchnumber: 172090034A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Jul 31, 2017 21:40:20
Instrument : CP18--19846A
Result file : 18EDBS17212001.022.RAW
Calibration file : 18EDBS1721201.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.068149

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.81 | 3.84 | 3.87 | 28321 | 0.145575 |
| 1,1,2,2-PCA | 5.29 | 5.32 | 5.35 | 15931 | 0.068149 |
| 1,2,3-TCP | 5.37 | 5.40 | 5.43 | 32235 | 1.070550 |
| DBCP | 7.65 | 7.68 | 7.71 | 59157 | 0.145104 |

## Analysis Report (B)

Injected on : Jul 31, 2017 21:40:20
Instrument : CP18--19846B
Result file : 18EDBS17212001B.022.RAW
Calibration file : 18EDBS1721201B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.063586

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 2.76 | 2.79 | 2.82 | 39864 | 0.147126 |
| 1,1,2,2-PCA | 4.01 | 4.04 | 4.07 | 21855 | 0.063586 |
| 1,2,3-TCP | 4.13 | 4.16 | 4.19 | 43041 | 1.101158 |
| DBCP | 6.41 | 6.44 | 6.47 | 65838 | 0.157099 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.145575 | 0.03 | 0.01 | | 1.06 | |
| ☐ 1,1,2,2-PCA | A | 0.068149 | | | | 6.93 | |
| ☑ 1,2,3-TCP | A | 1.070550 | 0.27 | 0.1 | | 2.82 | |
| ☑ DBCP | A | 0.145104 | 0.03 | 0.01 | | 7.94 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 02 2017

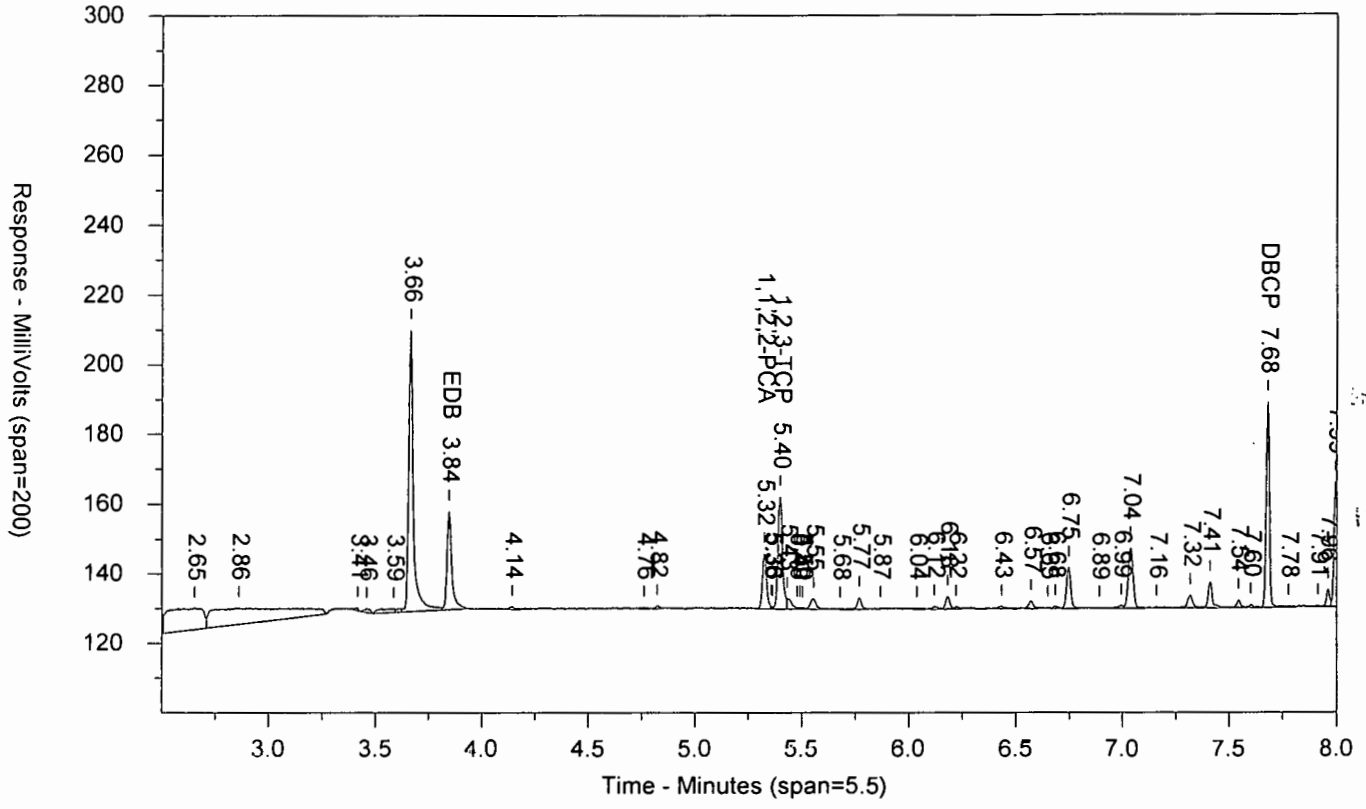
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 02 2017

%RPD = High - Low Amount divided by the Average times 100

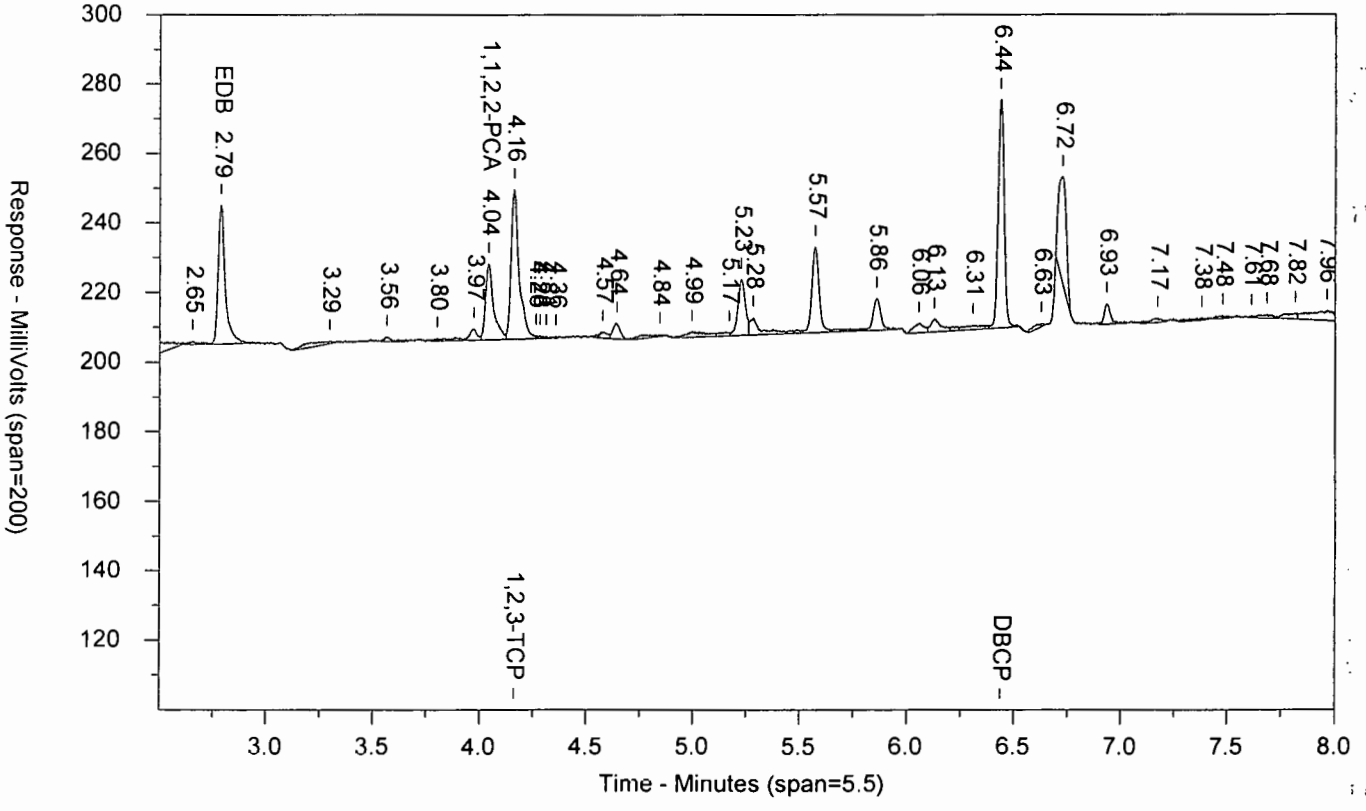
* Recovery outside QC Limits

LCSDA 7/31/17 AALCSD34209 LCSD 172090034A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001.022.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18EDBS17212001B.022.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 7/31/17 AALCSD34209 LCSD 172090034A 10398 SW-846 8011
Injected On: 7/31/2017 9:40:20 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.844 | 28321 | .146 | EDB | 2.787 | 39864 | .147 | EDB |
| 5.324 | 15931 | .068 | 1,1,2,2-PCA | 4.04 | 21855 | .064 | 1,1,2,2-PCA |
| 5.397 | 32235 | 1.071 | 1,2,3-TCP | 4.161 | 43041 | 1.101 | 1,2,3-TCP |
| 7.679 | 59157 | .145 | DBCP | 6.437 | 65838 | .157 | DBCP |

Files:
Area File: 18EDBS17212001.022.RAW
Area File: 18EDBS17212001B.022.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1721201.CAL
Calibration File B: 18EDBS1721201b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 7/31/2017 9:48:55 PM
File Reported On: 8/1/2017 at 11:35:44 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 1703 Kerrie Freeburn Reviewed by: HMM 7/31/17 Start Date: 07/31/2017 Start Time: 10:30

**172090034A** Tech 1: KF1703 Tech 2: _____

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9121684MS | K1910 | 36.44 | (8) ~~SS1720824A~~ | .1 | MS1720824C | .07 | 2 | N | 2 | 057b | clear |
| 9121685MSD | K1910 | 36.51 | (8) ~~SS1720824A~~ | .1 | MS1720824C | .07 | 2 | N | 2 | 057a | clear |
| BLANKA | PBLK34209 | 35 | (8) ~~SS1720824A~~ | .1 | | | 2 | N | 2 | | d.i. water |
| LCSA | LCS34209 | 35 | (8) ~~SS1720824A~~ | .1 | MS1720824C | .07 | 2 | N | 2 | | d.i. water |
| LCSDA | LCSD34209 | 35 | (8) ~~SS1720824A~~ | .1 | MS1720824C | .07 | 2 | N | 2 | | d.i. water |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 185062117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391 |
| Vial Preservative Lot# | 2391F |
| | |

(8) new surr. code SS1718724B KF1703 7-31-17

Spike Solutions: Witness: _____
MS1720824C EDB SPIKE
(8) ~~SS1720824A~~ EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9121674 | K1901 | 36.78 | ~~SS1720824A~~ (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 2 9121676 | K1903 | 36.37 | ~~SS1720824A~~ (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 3 9121678 | K1905 | 36.68 | ~~SS1720824A~~ (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 4 9121680 | K1907 | 36.58 | ~~SS1720824A~~ (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 5 9121682 | K1909 | 36.42 | SS1720824A (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 6 9121683BKG | K1910 | 36.55 | ~~SS1720824A~~ (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 7 9121691 | K1912 | 36.52 | ~~SS1720824A~~ (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 8 9121693 | K1914 | 36.52 | ~~SS1720824A~~ (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 9 9121695 | K1916 | 36.93 | ~~SS1720824A~~ (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |
| 10 9121696 | K1917 | 36.63 | SS1720824A (8) | 0.10 | 2.00 | N | 2 | 057a | clear | 10398 | 17641 | 08/07/2017 | N |

KR191 Page 764 of 1128

KF1703 7-31-17

| Rack ID: | | Work Station | EDB Hood |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | ~~S-bath ID~~ | C | ~~N-Evap~~ | C | ~~M vap~~ | C | 172090034A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor, FV = Final Volume

# Metals in Liquid Data

# Case Narrative/Conformance Summary

# Metals in Liquid

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## ICP Metals

**Fraction: Metals in Liquid**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9121674 | GWTS-EFF1-072517 | X | | 1 | |
| 9121675 | GWTS-EFF1-072517 | X | | 1 | |
| 9121676 | GWTS-EFF1DUP-072517 | X | | 1 | Field Duplicate Sample |
| 9121677 | GWTS-EFF1DUP-072517 | X | | 1 | Field Duplicate Sample |
| 9121679 | GWTS-GAC1-072517 | X | | 1 | |
| 9121680 | GWTS-INF1-072517 | X | | 1 | |
| 9121681 | GWTS-INF1-072517 | X | | 1 | |
| 9121683 | GWTS-EFF2-072517 | X | | 1 | Background/Unspiked |
| 9121684 | GWTS-EFF2-072517MS | X | | 1 | Matrix Spike |
| 9121685 | GWTS-EFF2-072517MSD | X | | 1 | Matrix Spike Duplicate |
| 9121686 | GWTS-EFF2-072517DUP | X | | 1 | Duplicate |
| 9121687 | GWTS-EFF2-072517 | X | | 1 | Background/ |
| 9121688 | GWTS-EFF2-072517MS | X | | 1 | Matrix Spike |
| 9121689 | GWTS-EFF2-072517MSD | X | | 1 | Matrix Spike Duplicate |
| 9121690 | GWTS-EFF2-072517DUP | X | | 1 | Duplicate |
| 9121692 | GWTS-GAC2-072517 | X | | 1 | |
| 9121693 | GWTS-INF2-072517 | X | | 1 | |
| 9121694 | GWTS-INF2-072517 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## ICP Metals

**Fraction: Metals in Liquid**

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**Sample Duplicate**

Batch#: 172091063902A (Sample number(s): 9121675, 9121677, 9121681, 9121687-9121690, 9121694, UNSPK: 9121687, BKG: 9121687)
The duplicate RPD for the following analyte(s) is outside the acceptance window: Chromium

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

**Abbreviation Key**

| | |
|---|---|
| BKG – Background | AF - Cold Vapor Atomic Fluorescence |
| DUP – Duplicate | U - Below MDL |
| MS - Matrix Spike | B - Below LOQ |
| MSD - Matrix Spike Dup | N - Matrix Spike out of specifications |
| B – Blank | * - Duplicate out of specifications |
| Q - Laboratory Control Sample | E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution |
| Y - Laboratory Control Sample Duplicate | A - Post Digestion Spike |
| P - ICP Atomic Emission Spectrometer | L - Serial Dilution |
| MS - ICP Mass Spectrometry | R - Internal Standard Relative Intensity OOS |
| CV - Cold Vapor | NR - Not Required |

# Sample Data

# Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121674 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-97-6 | Mercury | 0.050 | U | | CV |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121675 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 89.4 | U | | P |
| 7440-36-0 | Antimony | 0.45 | U | | MS |
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7440-39-3 | Barium | 95.3 | | | P |
| 7440-41-7 | Beryllium | 0.071 | U | | MS |
| 7440-43-9 | Cadmium | 0.15 | U | | MS |
| 7440-47-3 | Chromium | 2.1 | B | | MS |
| 7440-50-8 | Copper | 4.0 | U | | P |
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-92-1 | Lead | 0.11 | U | | MS |
| 7439-96-5 | Manganese | 1.6 | U | | P |
| 7782-49-2 | Selenium | 1.8 | B | | MS |
| 7440-22-4 | Silver | 0.15 | U | | MS |
| 7440-28-0 | Thallium | 0.12 | U | | MS |
| 7440-61-1 | Uranium | 1.4 | | | MS |
| 7440-66-6 | Zinc | 15.6 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121676 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-97-6 | Mercury | 0.050 | U | | CV |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121677 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 89.4 | U | | P |
| 7440-36-0 | Antimony | 0.45 | U | | MS |
| 7440-38-2 | Arsenic | 0.99 | B | | MS |
| 7440-39-3 | Barium | 94.4 | | | P |
| 7440-41-7 | Beryllium | 0.071 | U | | MS |
| 7440-43-9 | Cadmium | 0.15 | U | | MS |
| 7440-47-3 | Chromium | 1.5 | B | | MS |
| 7440-50-8 | Copper | 4.0 | U | | P |
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-92-1 | Lead | 0.11 | U | | MS |
| 7439-96-5 | Manganese | 1.6 | U | | P |
| 7782-49-2 | Selenium | 1.9 | B | | MS |
| 7440-22-4 | Silver | 0.15 | U | | MS |
| 7440-28-0 | Thallium | 0.12 | U | | MS |
| 7440-61-1 | Uranium | 1.4 | | | MS |
| 7440-66-6 | Zinc | 14.8 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121679 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121680 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-97-6 | Mercury | 0.050 | U | | CV |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121681 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 89.4 | U | | P |
| 7440-36-0 | Antimony | 0.45 | U | | MS |
| 7440-38-2 | Arsenic | 1.1 | B | | MS |
| 7440-39-3 | Barium | 97.0 | | | P |
| 7440-41-7 | Beryllium | 0.071 | U | | MS |
| 7440-43-9 | Cadmium | 0.15 | U | | MS |
| 7440-47-3 | Chromium | 1.5 | B | | MS |
| 7440-50-8 | Copper | 4.0 | U | | P |
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-92-1 | Lead | 0.11 | U | | MS |
| 7439-96-5 | Manganese | 1.6 | U | | P |
| 7782-49-2 | Selenium | 2.0 | B | | MS |
| 7440-22-4 | Silver | 0.15 | U | | MS |
| 7440-28-0 | Thallium | 0.12 | U | | MS |
| 7440-61-1 | Uranium | 1.7 | | | MS |
| 7440-66-6 | Zinc | 12.9 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121683BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-97-6 | Mercury | 0.050 | U | | CV |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121684MS % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-97-6 | Mercury | 0.92 | | | CV |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121685MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-97-6 | Mercury | 0.92 | | | CV |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121686DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-97-6 | Mercury | 0.050 | U | | CV |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121687BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 89.4 | U | | P |
| 7440-36-0 | Antimony | 0.45 | U | | MS |
| 7440-38-2 | Arsenic | 1.1 | B | | MS |
| 7440-39-3 | Barium | 108 | | | P |
| 7440-41-7 | Beryllium | 0.071 | U | | MS |
| 7440-43-9 | Cadmium | 0.15 | U | | MS |
| 7440-47-3 | Chromium | 1.1 | B | | MS |
| 7440-50-8 | Copper | 4.0 | U | | P |
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-92-1 | Lead | 0.11 | U | | MS |
| 7439-96-5 | Manganese | 1.6 | U | | P |
| 7782-49-2 | Selenium | 1.1 | B | | MS |
| 7440-22-4 | Silver | 0.15 | U | | MS |
| 7440-28-0 | Thallium | 0.12 | U | | MS |
| 7440-61-1 | Uranium | 1.2 | | | MS |
| 7440-66-6 | Zinc | 11.9 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121688MS % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 1910 | | | P |
| 7440-36-0 | Antimony | 6.0 | | | MS |
| 7440-38-2 | Arsenic | 11.8 | | | MS |
| 7440-39-3 | Barium | 1960 | | | P |
| 7440-41-7 | Beryllium | 3.9 | | | MS |
| 7440-43-9 | Cadmium | 4.6 | | | MS |
| 7440-47-3 | Chromium | 51.8 | | | MS |
| 7440-50-8 | Copper | 238 | | | P |
| 7439-89-6 | Iron | 931 | | | P |
| 7439-92-1 | Lead | 14.8 | | | MS |
| 7439-96-5 | Manganese | 469 | | | P |
| 7782-49-2 | Selenium | 10.6 | | | MS |
| 7440-22-4 | Silver | 49.5 | | | MS |
| 7440-28-0 | Thallium | 2.1 | | | MS |
| 7440-61-1 | Uranium | 25.5 | | | MS |
| 7440-66-6 | Zinc | 493 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121689MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 1960 | | | P |
| 7440-36-0 | Antimony | 5.1 | | | MS |
| 7440-38-2 | Arsenic | 9.6 | | | MS |
| 7440-39-3 | Barium | 1980 | | | P |
| 7440-41-7 | Beryllium | 3.8 | | | MS |
| 7440-43-9 | Cadmium | 4.9 | | | MS |
| 7440-47-3 | Chromium | 49.6 | | | MS |
| 7440-50-8 | Copper | 240 | | | P |
| 7439-89-6 | Iron | 966 | | | P |
| 7439-92-1 | Lead | 14.7 | | | MS |
| 7439-96-5 | Manganese | 471 | | | P |
| 7782-49-2 | Selenium | 10.4 | | | MS |
| 7440-22-4 | Silver | 50.9 | | | MS |
| 7440-28-0 | Thallium | 1.9 | | | MS |
| 7440-61-1 | Uranium | 25.1 | | | MS |
| 7440-66-6 | Zinc | 494 | | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121690DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 89.4 | U | | P |
| 7440-36-0 | Antimony | 0.45 | U | | MS |
| 7440-38-2 | Arsenic | 1.2 | B | | MS |
| 7440-39-3 | Barium | 109 | | | P |
| 7440-41-7 | Beryllium | 0.071 | U | | MS |
| 7440-43-9 | Cadmium | 0.15 | U | | MS |
| 7440-47-3 | Chromium | 0.87 | U | | MS |
| 7440-50-8 | Copper | 4.0 | U | | P |
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-92-1 | Lead | 0.11 | U | | MS |
| 7439-96-5 | Manganese | 1.6 | U | | P |
| 7782-49-2 | Selenium | 1.2 | B | | MS |
| 7440-22-4 | Silver | 0.15 | U | | MS |
| 7440-28-0 | Thallium | 0.12 | U | | MS |
| 7440-61-1 | Uranium | 1.1 | | | MS |
| 7440-66-6 | Zinc | 12.0 | B | | P |

Comments:

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| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121692 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121693 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-97-6 | Mercury | 0.050 | U | | CV |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9121694 % Solids: 0.0
Concentration Units: UG/L Date Received: 07/26/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 89.4 | U | | P |
| 7440-36-0 | Antimony | 0.45 | U | | MS |
| 7440-38-2 | Arsenic | 0.72 | U | | MS |
| 7440-39-3 | Barium | 109 | | | P |
| 7440-41-7 | Beryllium | 0.071 | U | | MS |
| 7440-43-9 | Cadmium | 0.15 | U | | MS |
| 7440-47-3 | Chromium | 2.1 | B | | MS |
| 7440-50-8 | Copper | 4.0 | U | | P |
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-92-1 | Lead | 0.11 | U | | MS |
| 7439-96-5 | Manganese | 1.6 | U | | P |
| 7782-49-2 | Selenium | 1.1 | B | | MS |
| 7440-22-4 | Silver | 0.15 | U | | MS |
| 7440-28-0 | Thallium | 0.12 | U | | MS |
| 7440-61-1 | Uranium | 1.5 | | | MS |
| 7440-66-6 | Zinc | 15.9 | B | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

# Quality Control and Calibration Summary Forms

# Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR191
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Aluminum | 172091063503 | 9121675 |
| Barium | | 9121677 |
| Copper | | 9121679 |
| Iron | | 9121681 |
| Manganese | | 9121687BKG |
| Zinc | | 9121688MS |
| | | 9121689MSD |
| | | 9121690DUP |
| | | 9121692 |
| | | 9121694 |
| | | P20963CB |
| | | P20963CQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

QUALITY CONTROL REFERENCE LIST

SDG No.: KR191
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Antimony | 172091063902 | 9121675 |
| Arsenic | | 9121677 |
| Beryllium | | 9121681 |
| Cadmium | | 9121687BKG |
| Chromium | | 9121688MS |
| Lead | | 9121689MSD |
| Selenium | | 9121690DUP |
| Silver | | 9121694 |
| Thallium | | P20963BB |
| Uranium | | P20963BQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR191
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Mercury | 172090571309 | 9121674 |
| | | 9121676 |
| | | 9121680 |
| | | 9121683BKG |
| | | 9121684MS |
| | | 9121685MSD |
| | | 9121686DUP |
| | | 9121693 |
| | | P20971IB |
| | | P20971IQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR191

Method: P
Run Name: 1721206T73
Calibration Date(s): 07/31/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Aluminum | | 30000.0 | 30208.85 | 100.7 | 25000.0 | 25630.63 | 102.5 | 25000.0 | 23560.35 | 94.2 |
| Barium | | 600.0 | 594.64 | 99.1 | 500.0 | 498.47 | 99.7 | 500.0 | 465.33 | 93.1 |
| Copper | | 600.0 | 589.77 | 98.3 | 500.0 | 500.21 | 100.0 | 500.0 | 466.77 | 93.4 |
| Iron | | 30000.0 | 30048.47 | 100.2 | 25000.0 | 25581.30 | 102.3 | 25000.0 | 23452.81 | 93.8 |
| Manganese | | 600.0 | 589.86 | 98.3 | 500.0 | 496.91 | 99.4 | 500.0 | 462.48 | 92.5 |
| Zinc | | 600.0 | 601.19 | 100.2 | 500.0 | 505.27 | 101.1 | 500.0 | 498.76 | 99.8 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR191

Method: P
Run Name: 1721206T73
Calibration Date(s): 07/31/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | 25000.0 | 22876.96 | 91.5 | | | |
| Barium | | | | | 500.0 | 453.77 | 90.8 | | | |
| Copper | | | | | 500.0 | 459.02 | 91.8 | | | |
| Iron | | | | | 25000.0 | 22844.52 | 91.4 | | | |
| Manganese | | | | | 500.0 | 454.76 | 91.0 | | | |
| Zinc | | | | | 500.0 | 482.27 | 96.5 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR191

Method: MS
Run Name: 1721308E05
Calibration Date(s): 08/01/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Antimony | 121 | 50.0 | 51.05 | 102.1 | 25.0 | 26.24 | 105.0 | 25.0 | 25.41 | 101.6 |
| Arsenic | 75 | 500.0 | 539.26 | 107.9 | 250.0 | 272.29 | 108.9 | 250.0 | 270.98 | 108.4 |
| Beryllium | 9 | 50.0 | 49.36 | 98.7 | 25.0 | 25.64 | 102.6 | 25.0 | 24.74 | 99.0 |
| Cadmium | 111 | 50.0 | 51.00 | 102.0 | 25.0 | 25.00 | 100.0 | 25.0 | 25.54 | 102.2 |
| Chromium | 52 | 500.0 | 504.28 | 100.9 | 250.0 | 259.08 | 103.6 | 250.0 | 260.02 | 104.0 |
| Lead | 208 | 50.0 | 50.06 | 100.1 | 25.0 | 24.81 | 99.2 | 25.0 | 25.39 | 101.6 |
| Selenium | 78 | 50.0 | 50.20 | 100.4 | 25.0 | 25.62 | 102.5 | 25.0 | 26.41 | 105.6 |
| Silver | 107 | 50.0 | 52.01 | 104.0 | 25.0 | 26.93 | 107.7 | 25.0 | 26.55 | 106.2 |
| Thallium | 203 | 50.0 | 48.95 | 97.9 | 25.0 | 24.07 | 96.3 | 25.0 | 24.68 | 98.7 |
| Uranium | 238 | 50.0 | 50.47 | 100.9 | 25.0 | 24.17 | 96.7 | 25.0 | 24.36 | 97.4 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR191

Method: MS
Run Name: 1721308E05
Calibration Date(s): 08/01/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 121 | | | | 25.0 | 25.14 | 100.6 | | | |
| Arsenic | 75 | | | | 250.0 | 264.46 | 105.8 | | | |
| Beryllium | 9 | | | | 25.0 | 25.04 | 100.2 | | | |
| Cadmium | 111 | | | | 25.0 | 24.84 | 99.4 | | | |
| Chromium | 52 | | | | 250.0 | 254.79 | 101.9 | | | |
| Lead | 208 | | | | 25.0 | 25.06 | 100.2 | | | |
| Selenium | 78 | | | | 25.0 | 25.46 | 101.8 | | | |
| Silver | 107 | | | | 25.0 | 27.01 | 108.0 | | | |
| Thallium | 203 | | | | 25.0 | 24.59 | 98.4 | | | |
| Uranium | 238 | | | | 25.0 | 24.28 | 97.1 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR191

Method: MS
Run Name: 1721504E05
Calibration Date(s): 08/03/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | | |
| Arsenic | 75 | 500.0 | 481.71 | 96.3 | 250.0 | 237.35 | 94.9 | 250.0 | 241.75 | 96.7 |
| Beryllium | | | | | | | | | | |
| Cadmium | | | | | | | | | | |
| Chromium | | | | | | | | | | |
| Lead | | | | | | | | | | |
| Selenium | | | | | | | | | | |
| Silver | | | | | | | | | | |
| Thallium | | | | | | | | | | |
| Uranium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR191

Method: MS
Run Name: 1721504E05
Calibration Date(s): 08/03/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | | |
| Arsenic | 75 | | | | 250.0 | 239.60 | 95.8 | 250.0 | 240.56 | 96.2 |
| Beryllium | | | | | | | | | | |
| Cadmium | | | | | | | | | | |
| Chromium | | | | | | | | | | |
| Lead | | | | | | | | | | |
| Selenium | | | | | | | | | | |
| Silver | | | | | | | | | | |
| Thallium | | | | | | | | | | |
| Uranium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR191

Method: MS
Run Name: 1721504E05
Calibration Date(s): 08/03/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | | |
| Arsenic | 75 | | | | 250.0 | 237.30 | 94.9 | | | |
| Beryllium | | | | | | | | | | |
| Cadmium | | | | | | | | | | |
| Chromium | | | | | | | | | | |
| Lead | | | | | | | | | | |
| Selenium | | | | | | | | | | |
| Silver | | | | | | | | | | |
| Thallium | | | | | | | | | | |
| Uranium | | | | | | | | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR191

Method: CV
Run Name: 1721301M09
Calibration Date(s): 08/01/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Mercury | | 2.5 | 2.45 | 98.0 | 1.0 | 0.99 | 99.0 | 1.0 | 1.00 | 100.0 |

(1) Control Limits: 90 - 110
(2) Control Limits: 80 - 120
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR191

Method: P
Run Name: 1721206T73
Calibration Date(s): 07/31/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Aluminum | | 400.0 | 470.39 | 117.6 | | |
| Barium | | 10.0 | 10.96 | 109.6 | | |
| Copper | | 20.0 | 21.95 | 109.8 | | |
| Iron | | 400.0 | 459.57 | 114.9 | | |
| Manganese | | 10.0 | 11.74 | 117.4 | | |
| Zinc | | 40.0 | 45.93 | 114.8 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: MS
Run Name: 1721308E05
Calibration Date(s): 08/01/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Antimony | 121 | 2.0 | 1.98 | 99.0 | | |
| Arsenic | 75 | 4.0 | 3.81 | 95.3 | | |
| Beryllium | 9 | 1.0 | 1.00 | 100.0 | | |
| Cadmium | 111 | 1.0 | 1.17 | 117.0 | | |
| Chromium | 52 | 4.0 | 4.63 | 115.8 | | |
| Lead | 208 | 2.0 | 2.00 | 100.0 | | |
| Selenium | 78 | 4.0 | 3.62 | 90.5 | | |
| Silver | 107 | 1.0 | 1.03 | 103.0 | | |
| Thallium | 203 | 1.0 | 1.07 | 107.0 | | |
| Uranium | 238 | 1.0 | 0.97 | 97.0 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR191

Method: MS
Run Name: 1721504E05
Calibration Date(s): 08/03/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Antimony | | | | | | |
| Arsenic | 75 | 4.0 | 4.29 | 107.3 | 3.67 | 91.8 |
| Beryllium | | | | | | |
| Cadmium | | | | | | |
| Chromium | | | | | | |
| Lead | | | | | | |
| Selenium | | | | | | |
| Silver | | | | | | |
| Thallium | | | | | | |
| Uranium | | | | | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR191

Method: CV
Run Name: 1721301M09
Calibration Date(s): 08/01/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Mercury | | 0.2 | 0.16 | 80.0 | | |

Control limits: 50% - 150%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR191

Method: P
Run Name: 1721206T73
Calibration Date(s): 07/31/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Aluminum | | 43.3 | U | 43.3 | U | 43.3 | U | 43.3 | U | | 89.400 | U | 172091063503 |
| Barium | | 0.33 | U | 0.33 | U | 0.33 | U | 0.33 | U | | 0.850 | U | 172091063503 |
| Copper | | 1.7 | U | 1.7 | U | 1.7 | U | 1.7 | U | | 4.000 | U | 172091063503 |
| Iron | | 41.1 | U | 41.1 | U | 41.1 | U | 41.1 | U | | 80.500 | U | 172091063503 |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | 0.83 | U | | 1.600 | U | 172091063503 |
| Zinc | | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | | 6.500 | U | 172091063503 |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below IDL/MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR191

Method: MS
Run Name: 1721308E05
Calibration Date(s): 08/01/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Antimony | 121 | 0.35 | U | 0.35 | U | 0.35 | U | 0.35 | U | 121 | 0.450 | U | 172091063902A |
| Arsenic | 75 | 0.60 | U | 0.60 | U | 0.60 | U | 0.60 | U | 75 | 0.720 | U | 172091063902A |
| Beryllium | 9 | 0.054 | U | 0.054 | U | 0.054 | U | 0.054 | U | 9 | 0.071 | U | 172091063902A |
| Cadmium | 111 | 0.15 | U | 0.15 | U | 0.15 | U | 0.15 | U | 111 | 0.150 | U | 172091063902A |
| Chromium | 52 | 0.50 | U | 0.50 | U | 0.56 | B | 0.50 | U | 52 | 0.870 | U | 172091063902A |
| Lead | 208 | 0.088 | U | 0.088 | U | 0.088 | U | 0.088 | U | 208 | 0.110 | U | 172091063902A |
| Selenium | 78 | 0.50 | U | 0.50 | U | 0.50 | U | 0.50 | U | 78 | 0.500 | U | 172091063902A |
| Silver | 107 | 0.12 | U | 0.12 | U | 0.12 | U | 0.12 | U | 107 | 0.150 | U | 172091063902A |
| Thallium | 203 | 0.12 | U | 0.12 | U | 0.12 | U | 0.12 | U | 203 | 0.120 | U | 172091063902A |
| Uranium | 238 | 0.043 | U | 0.043 | U | 0.043 | U | 0.043 | U | 238 | 0.029 | U | 172091063902A |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR191

Method: MS
Run Name: 1721504E05
Calibration Date(s): 08/03/2017

| Analyte | Mass | Initial Calibration Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Preparation Blank (UG/L) Mass | | C | Batch Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | | | | | | | | | | | | | |
| Arsenic | 75 | 0.60 | U | 0.60 | U | 0.60 | U | 0.60 | U | | | | |
| Beryllium | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | |
| Chromium | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | |
| Selenium | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | |
| Thallium | | | | | | | | | | | | | |
| Uranium | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR191

Method: MS
Run Name: 1721504E05
Calibration Date(s): 08/03/2017

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Antimony | | | | | | | | | | | | | |
| Arsenic | 75 | | | 0.60 | U | 0.60 | U | | | | | | |
| Beryllium | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | |
| Chromium | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | |
| Selenium | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | |
| Thallium | | | | | | | | | | | | | |
| Uranium | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR191

Method: CV
Run Name: 1721301M09
Calibration Date(s): 08/01/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Mercury | | -0.055 | B | -0.053 | B | 0.050 | U | | | | -0.052 | B | 172090571309 |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below IDL/MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR191

Instrument ID: 18255
Run Name: 1721206T73
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 495437 | 99.1 | 491409.7 | 98.3 | | | | |
| Barium | 0 | 500 | 0 | | 500.5 | 100.1 | | | | |
| Calcium | 500000 | 500000 | 488827 | 97.8 | 485734.2 | 97.1 | | | | |
| Copper | 0 | 500 | 3 | | 516.9 | 103.4 | | | | |
| Iron | 200000 | 200000 | 199815 | 99.9 | 198543.9 | 99.3 | | | | |
| Magnesium | 500000 | 500000 | 488224 | 97.6 | 484792.7 | 97.0 | | | | |
| Manganese | 0 | 500 | 4 | | 468.7 | 93.7 | | | | |
| Zinc | 0 | 1000 | 8 | | 1003.3 | 100.3 | | | | |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR191

Instrument ID: 19204
Run Name: 1721308E05
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 99422 | 99.4 | 102012.7 | 102.0 |
| Antimony | 121 | 0 | 0 | 2 | | 2.0 | |
| Arsenic | 75 | 0 | 100 | 0 | | 104.8 | 104.8 |
| Beryllium | 9 | 0 | 0 | 0 | | 0.0 | |
| Cadmium | 111 | 0 | 100 | 0 | | 117.7 | 117.7 |
| Calcium | 44 | 300000 | 300000 | 315926 | 105.3 | 319182.9 | 106.4 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Chromium | 52 | 0 | 200 | 1 | | 215.4 | 107.7 |
| Iron | 57 | 250000 | 250000 | 257352 | 102.9 | 261261.0 | 104.5 |
| Lead | 208 | 0 | 0 | 0 | | 0.1 | |
| Magnesium | 24 | 100000 | 100000 | 103423 | 103.4 | 107625.7 | 107.6 |
| Molybdenum | 98 | 2000 | 2000 | 2082 | 104.1 | 2214.1 | 110.7 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 110604 | 110.6 | 114032.0 | 114.0 |
| Selenium | 78 | 0 | 100 | 0 | | 87.0 | 87.0 |
| Silver | 107 | 0 | 50 | 0 | | 50.3 | 100.6 |
| Sodium | 23 | 250000 | 250000 | 261164 | 104.5 | 272779.5 | 109.1 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Thallium | 203 | 0 | 0 | 0 | | 0.1 | |
| Titanium | 47 | 2000 | 2000 | 2321 | 116.1 | 2356.0 | 117.8 |
| Uranium | 238 | 0 | 0 | 0 | | 0.1 | |

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR191

Instrument ID: 19204
Run Name: 1721504E05
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 107167 | 107.2 | 105690.7 | 105.7 |
| Antimony | | | | | | | |
| Arsenic | 75 | 0 | 100 | 0 | | 93.3 | 93.3 |
| Beryllium | | | | | | | |
| Cadmium | | | | | | | |
| Calcium | 44 | 300000 | 300000 | 306474 | 102.2 | 299171.1 | 99.7 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Chromium | | | | | | | |
| Iron | 57 | 250000 | 250000 | 261683 | 104.7 | 258280.4 | 103.3 |
| Lead | | | | | | | |
| Magnesium | 24 | 100000 | 100000 | 109721 | 109.7 | 108375.1 | 108.4 |
| Molybdenum | 98 | 2000 | 2000 | 2098 | 104.9 | 2055.1 | 102.8 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 112964 | 113.0 | 111769.2 | 111.8 |
| Selenium | | | | | | | |
| Silver | | | | | | | |
| Sodium | 23 | 250000 | 250000 | 277280 | 110.9 | 274812.6 | 109.9 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Thallium | | | | | | | |
| Titanium | 47 | 2000 | 2000 | 2279 | 114.0 | 2161.4 | 108.1 |
| Uranium | | | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: KR191

Instrument ID: 19204
Run Name: 1721504E05
Concentration Units: ug/L

| Analyte | Mass | True | | Found | | | |
|---|---|---|---|---|---|---|---|
| | | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R |
| Aluminum | 27 | 100000 | 100000 | 106991 | 107.0 | 106250.5 | 106.3 |
| Antimony | | | | | | | |
| Arsenic | 75 | 0 | 100 | 0 | | 95.4 | 95.4 |
| Beryllium | | | | | | | |
| Cadmium | | | | | | | |
| Calcium | 44 | 300000 | 300000 | 309784 | 103.3 | 310702.0 | 103.6 |
| Carbon | 13 | 20000 | 20000 | NA | | NA | |
| Chloride | 37 | 100000 | 100000 | NA | | NA | |
| Chromium | | | | | | | |
| Iron | 57 | 250000 | 250000 | 261840 | 104.7 | 260256.3 | 104.1 |
| Lead | | | | | | | |
| Magnesium | 24 | 100000 | 100000 | 107927 | 107.9 | 109289.1 | 109.3 |
| Molybdenum | 98 | 2000 | 2000 | 2040 | 102.0 | 2034.2 | 101.7 |
| Phosphorus | 31 | 10000 | 10000 | NA | | NA | |
| Potassium | 39 | 100000 | 100000 | 115295 | 115.3 | 114815.1 | 114.8 |
| Selenium | | | | | | | |
| Silver | | | | | | | |
| Sodium | 23 | 250000 | 250000 | 270686 | 108.3 | 271875.9 | 108.8 |
| Sulfur | 34 | 10000 | 10000 | NA | | NA | |
| Thallium | | | | | | | |
| Titanium | 47 | 2000 | 2000 | 2217 | 110.9 | 2163.1 | 108.2 |
| Uranium | | | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9121683BKG Matrix Spike Lab Sample ID: 9121684MS Matrix Spike Duplicate Lab Sample ID: 9121685MSD
Batch Number(s): 172090571309

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Mercury | | 0.0500 | U | 0.9229 | | 0.9242 | | 1.0000 | 1.0000 | UG/L | 92 | | 92 | | 0 | | 82 - 119 | 20 | CV |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9121687BKG Matrix Spike Lab Sample ID: 9121688MS Matrix Spike Duplicate Lab Sample ID: 9121689MSD
Batch Number(s): 172091063503, 172091063902

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Aluminum | | 89.4000 | U | 1905.9300 | | 1961.1800 | | 2000.0000 | 2000.0000 | UG/L | 95 | | 98 | | 3 | | 86 - 115 | 20 | P |
| Antimony | 121 | 0.4510 | U | 6.0020 | | 5.0940 | | 6.0000 | 6.0000 | UG/L | 100 | | 85 | | 16 | | 85 - 117 | 20 | MS |
| Arsenic | 75 | 1.1420 | B | 11.7690 | | 9.6010 | | 10.0000 | 10.0000 | UG/L | 106 | | 85 | | 20 | | 84 - 116 | 20 | MS |
| Barium | | 108.1200 | | 1964.2300 | | 1977.9100 | | 2000.0000 | 2000.0000 | UG/L | 93 | | 93 | | 1 | | 88 - 113 | 20 | P |
| Beryllium | 9 | 0.0713 | U | 3.8980 | | 3.8310 | | 4.0000 | 4.0000 | UG/L | 97 | | 96 | | 2 | | 83 - 121 | 20 | MS |
| Cadmium | 111 | 0.1520 | U | 4.6440 | | 4.8840 | | 5.0000 | 5.0000 | UG/L | 93 | | 98 | | 5 | | 87 - 115 | 20 | MS |
| Chromium | 52 | 1.1190 | B | 51.7990 | | 49.5820 | | 50.0000 | 50.0000 | UG/L | 101 | | 97 | | 4 | | 85 - 116 | 20 | MS |
| Copper | | 4.0000 | U | 237.8800 | | 239.8500 | | 250.0000 | 250.0000 | UG/L | 95 | | 96 | | 1 | | 86 - 114 | 20 | P |
| Iron | | 80.5000 | U | 930.6000 | | 966.2800 | | 1000.0000 | 1000.0000 | UG/L | 93 | | 97 | | 4 | | 87 - 115 | 20 | P |
| Lead | 208 | 0.1110 | U | 14.7840 | | 14.7310 | | 15.0000 | 15.0000 | UG/L | 99 | | 98 | | 0 | | 88 - 115 | 20 | MS |
| Manganese | | 1.6000 | U | 468.5200 | | 470.6800 | | 500.0000 | 500.0000 | UG/L | 94 | | 94 | | 0 | | 90 - 114 | 20 | P |
| Selenium | 78 | 1.0810 | B | 10.6450 | | 10.4290 | | 10.0000 | 10.0000 | UG/L | 96 | | 93 | | 2 | | 80 - 120 | 20 | MS |
| Silver | 107 | 0.1460 | U | 49.5130 | | 50.8780 | | 50.0000 | 50.0000 | UG/L | 99 | | 102 | | 3 | | 85 - 116 | 20 | MS |
| Thallium | 203 | 0.1170 | U | 2.0690 | | 1.9460 | | 2.0000 | 2.0000 | UG/L | 103 | | 97 | | 6 | | 82 - 116 | 20 | MS |
| Uranium | 238 | 1.1810 | | 25.5380 | | 25.1050 | | 25.0000 | 25.0000 | UG/L | 97 | | 96 | | 2 | | 75 - 125 | 20 | MS |
| Zinc | | 11.8600 | B | 492.5000 | | 494.2700 | | 500.0000 | 500.0000 | UG/L | 96 | | 96 | | 0 | | 87 - 115 | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9121683BKG Duplicate Lab Sample ID: 9121686DUP
Batch Number(s): 172090571309
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | | | -0.0516 | B | -0.0518 | B | 0 | | CV |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9121687BKG Duplicate Lab Sample ID: 9121690DUP
Batch Number(s): 172091063503, 172091063902
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | 89.4000 | U | 89.4000 | U | | | P |
| Antimony | 121 | | 0.4510 | U | 0.4510 | U | | | MS |
| Arsenic | 75 | | 1.1420 | B | 1.2080 | B | 6 | | MS |
| Barium | | | 108.1200 | | 109.3100 | | 1 | | P |
| Beryllium | 9 | | 0.0713 | U | 0.0713 | U | | | MS |
| Cadmium | 111 | | 0.1520 | U | 0.1520 | U | | | MS |
| Chromium | 52 | | 1.1190 | B | 0.8700 | U | 200 | | MS |
| Copper | | | 4.0000 | U | 4.0000 | U | | | P |
| Iron | | | 80.5000 | U | 80.5000 | U | | | P |
| Lead | 208 | | 0.1110 | U | 0.1110 | U | | | MS |
| Manganese | | | 1.6000 | U | 1.6000 | U | | | P |
| Selenium | 78 | | 1.0810 | B | 1.1650 | B | 7 | | MS |
| Silver | 107 | | 0.1460 | U | 0.1460 | U | | | MS |
| Thallium | 203 | | 0.1170 | U | 0.1170 | U | | | MS |
| Uranium | 238 | 1.0 | 1.1810 | | 1.1260 | | 5 | | MS |
| Zinc | | | 11.8600 | B | 11.9600 | B | 1 | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ

FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR191
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | 172091063503 | UG/L | 2000.000 | 1960.650 | | 86 - 115 | 98 | P | Yes |
| Antimony | 121 | 172091063902 | UG/L | 6.000 | 5.611 | | 85 - 117 | 94 | MS | Yes |
| Arsenic | 75 | 172091063902 | UG/L | 10.000 | 9.075 | | 84 - 116 | 91 | MS | Yes |
| Barium | | 172091063503 | UG/L | 2000.000 | 1883.840 | | 88 - 113 | 94 | P | Yes |
| Beryllium | 9 | 172091063902 | UG/L | 4.000 | 4.016 | | 83 - 121 | 100 | MS | Yes |
| Cadmium | 111 | 172091063902 | UG/L | 5.000 | 5.228 | | 87 - 115 | 105 | MS | Yes |
| Chromium | 52 | 172091063902 | UG/L | 50.000 | 53.356 | | 85 - 116 | 107 | MS | Yes |
| Copper | | 172091063503 | UG/L | 250.000 | 240.030 | | 86 - 114 | 96 | P | Yes |
| Iron | | 172091063503 | UG/L | 1000.000 | 966.770 | | 87 - 115 | 97 | P | Yes |
| Lead | 208 | 172091063902 | UG/L | 15.000 | 15.133 | | 88 - 115 | 101 | MS | Yes |
| Manganese | | 172091063503 | UG/L | 500.000 | 477.880 | | 90 - 114 | 96 | P | Yes |
| Mercury | | 172090571309 | UG/L | 1.000 | 0.948 | | 82 - 119 | 95 | CV | Yes |
| Selenium | 78 | 172091063902 | UG/L | 10.000 | 10.175 | | 80 - 120 | 102 | MS | Yes |
| Silver | 107 | 172091063902 | UG/L | 50.000 | 52.178 | | 85 - 116 | 104 | MS | Yes |
| Thallium | 203 | 172091063902 | UG/L | 2.000 | 1.994 | | 82 - 116 | 100 | MS | Yes |
| Uranium | 238 | 172091063902 | UG/L | 25.000 | 24.471 | | 86 - 115 | 98 | MS | Yes |
| Zinc | | 172091063503 | UG/L | 500.000 | 480.480 | | 87 - 115 | 96 | P | Yes |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR191
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9121687BKG Serial Dilution Lab Sample ID: 9121687L
Batch Number(s): 172091063503, 172091063902
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | 89.4000 | U | 447.0000 | U | | | P |
| Antimony | 121 | 0.4510 | U | 2.2550 | U | | | MS |
| Arsenic | 75 | 1.1420 | B | 3.6150 | U | 100 | | MS |
| Barium | | 108.1200 | | 107.2000 | | 1 | | P |
| Beryllium | 9 | 0.0713 | U | 0.3565 | U | | | MS |
| Cadmium | 111 | 0.1520 | U | 0.7600 | U | | | MS |
| Chromium | 52 | 1.1190 | B | 4.3500 | U | 100 | | MS |
| Copper | | 4.0000 | U | 20.0000 | U | | | P |
| Iron | | 80.5000 | U | 402.5000 | U | | | P |
| Lead | 208 | 0.1110 | U | 0.5550 | U | | | MS |
| Manganese | | 1.6000 | U | 8.0000 | U | | | P |
| Selenium | 78 | 1.0810 | B | 2.5000 | U | 100 | | MS |
| Silver | 107 | 0.1460 | U | 0.7300 | U | | | MS |
| Thallium | 203 | 0.1170 | U | 0.5850 | U | | | MS |
| Uranium | 238 | 1.1810 | | 1.0750 | B | 9 | | MS |
| Zinc | | 11.8600 | B | 32.5000 | U | 100 | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS (QUARTERLY)
SDG No.: KR191

Method: P
Instrument ID: 18255
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Aluminum | 308.21 | | 43.3 |
| Barium | 455.40 | | 0.33 |
| Copper | 327.40 | | 1.7 |
| Iron | 261.19 | | 41.1 |
| Manganese | 257.61 | | 0.83 |
| Zinc | 213.86 | | 2.0 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: MS
Instrument ID: 19204
Date: 07/2017

| Analyte | MASS (amu) | Background | IDL (UG/L) |
|---|---|---|---|
| Antimony | 121 | | 0.35 |
| Arsenic | 75 | | 0.60 |
| Beryllium | 9 | | 0.054 |
| Cadmium | 111 | | 0.15 |
| Chromium | 52 | | 0.50 |
| Lead | 208 | | 0.088 |
| Selenium | 78 | | 0.50 |
| Silver | 107 | | 0.12 |
| Thallium | 203 | | 0.12 |
| Uranium | 238 | | 0.043 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: CV
Instrument ID: 23283
Date: 10/2016

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Mercury | | | 0.050 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR191
Matrix: WATER

Method: P
Date: 06/2017

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Aluminum | 308.21 | | 400 | 89.4 |
| Barium | 455.40 | | 10.0 | 0.85 |
| Copper | 327.40 | | 20.0 | 4.0 |
| Iron | 261.19 | | 400 | 80.5 |
| Manganese | 257.61 | | 10.0 | 1.6 |
| Zinc | 213.86 | | 40.0 | 6.5 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR191
Matrix: WATER

Method: MS
Date: 06/2017

| Analyte | Mass | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Antimony | 121 | | 2.0 | 0.45 |
| Arsenic | 75 | | 4.0 | 0.72 |
| Beryllium | 9 | | 1.0 | 0.071 |
| Cadmium | 111 | | 1.0 | 0.15 |
| Chromium | 52 | | 4.0 | 0.87 |
| Lead | 208 | | 2.0 | 0.11 |
| Selenium | 78 | | 4.0 | 0.50 |
| Silver | 107 | | 1.0 | 0.15 |
| Thallium | 203 | | 1.0 | 0.12 |
| Uranium | 238 | | 1.0 | 0.029 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR191
Matrix: WATER

Method: CV
Date: 06/2016

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Mercury | | | 0.20 | 0.050 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 11
ICP INTERELEMENT CORRECTION FACTORS (BIANNUALLY)
SDG No.: KR191

Instrument ID: 18255
Date: 03/2017

| Analyte | Wavelength (nm) | Interelement Correction Factor for: AL | CA | FE | MG | CU |
|---|---|---|---|---|---|---|
| Aluminum | 308.21 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Barium | 455.40 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Copper | 327.40 | 0.0000000 | 0.0000190 | 0.0000000 | 0.0000000 | 0.0000000 |
| Manganese | 257.61 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc | 213.86 | 0.0000000 | 0.0000000 | 0.0001030 | 0.0000000 | 0.0011710 |

Comments:
_____
_____
_____
_____

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QUALITY ASSURANCE SUMMARY
FORM 11
ICP INTERELEMENT CORRECTION FACTORS (BIANNUALLY)
SDG No.: KR191

Instrument ID: 18255
Date: 03/2017

| Analyte | Wavelength (nm) | Interelement Correction Factor for: MO | NI | TI | V | ZR |
|---|---|---|---|---|---|---|
| Aluminum | 308.21 | 0.0165830 | 0.0000000 | 0.0000000 | -0.0111500 | 0.0000000 |
| Barium | 455.40 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0002630 |
| Copper | 327.40 | -0.0009550 | 0.0000000 | -0.0020000 | 0.0000000 | -0.0009470 |
| Manganese | 257.61 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Zinc | 213.86 | 0.0000000 | 0.0059050 | 0.0000000 | 0.0000000 | 0.0000000 |

Comments:
_____
_____
_____
_____

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QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR191

Method: P
Instrument ID: 18255
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Aluminum | 308.21 | 10.00 | 600000.0 |
| Barium | 455.4 | 10.00 | 5000.0 |
| Copper | 327.4 | 10.00 | 20000.0 |
| Iron | 261.19 | 10.00 | 300000.0 |
| Manganese | 257.61 | 10.00 | 20000.0 |
| Zinc | 213.86 | 10.00 | 20000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Batch Number: 172091063503

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9121675 | 07/31/2017 | 50.00 | 50 |
| 9121677 | 07/31/2017 | 50.00 | 50 |
| 9121679 | 07/31/2017 | 50.00 | 50 |
| 9121681 | 07/31/2017 | 50.00 | 50 |
| 9121692 | 07/31/2017 | 50.00 | 50 |
| 9121694 | 07/31/2017 | 50.00 | 50 |
| 9121687BKG | 07/31/2017 | 50.00 | 50 |
| 9121690DUP | 07/31/2017 | 50.00 | 50 |
| 9121689MSD | 07/31/2017 | 50.00 | 50 |
| 9121688MS | 07/31/2017 | 50.00 | 50 |
| P20963CB | 07/31/2017 | 50.00 | 50 |
| P20963CQ | 07/31/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: MS
Batch Number: 172091063902

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9121675 | 07/31/2017 | 50.00 | 50 |
| 9121677 | 07/31/2017 | 50.00 | 50 |
| 9121681 | 07/31/2017 | 50.00 | 50 |
| 9121694 | 07/31/2017 | 50.00 | 50 |
| 9121687BKG | 07/31/2017 | 50.00 | 50 |
| 9121690DUP | 07/31/2017 | 50.00 | 50 |
| 9121689MSD | 07/31/2017 | 50.00 | 50 |
| 9121688MS | 07/31/2017 | 50.00 | 50 |
| P20963BB | 07/31/2017 | 50.00 | 50 |
| P20963BQ | 07/31/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: CV
Batch Number: 172090571309

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9121674 | 07/31/2017 | 40.00 | 40 |
| 9121676 | 07/31/2017 | 40.00 | 40 |
| 9121680 | 07/31/2017 | 40.00 | 40 |
| 9121693 | 07/31/2017 | 40.00 | 40 |
| 9121683BKG | 07/31/2017 | 40.00 | 40 |
| 9121686DUP | 07/31/2017 | 40.00 | 40 |
| 9121685MSD | 07/31/2017 | 40.00 | 40 |
| 9121684MS | 07/31/2017 | 40.00 | 40 |
| P20971IB | 07/31/2017 | 40.00 | 40 |
| P20971IQ | 07/31/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR191

Method: P
Instrument ID: 18255
Run Name: 1721206T73

Run Start Date: 07/31/2017
Run End Date: 07/31/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AL | SB | AS | BA | BE | CD | CR | CU | FE | PB | MN | HG | SE | AG | TL | U | ZN | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 11:02 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:05 | X | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:08 | | | | X | | | | X | | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 11:11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 11:14 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 11:17 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 11:20 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 11:23 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 11:26 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:30 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:33 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| P20963CB | 1.00 | 11:36 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| P20963CQ | 1.00 | 11:39 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121687BKG | 1.00 | 11:42 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121687A | 1.00 | 11:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9121690DUP | 1.00 | 11:48 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121688MS | 1.00 | 11:51 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121689MSD | 1.00 | 11:54 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121687L | 5.00 | 11:57 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121675 | 1.00 | 12:00 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121677 | 1.00 | 12:03 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 12:06 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 12:09 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121679 | 1.00 | 12:12 | | | | | | | | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9121681 | 1.00 | 12:15 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| 9121692 | 1.00 | 12:18 | | | | | | | | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9121694 | 1.00 | 12:21 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 12:24 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 12:27 | X | | | X | | | | X | X | | X | | | | | | X | | | | | | | | | | | | | | | | | | | |

| METHODS: | LEGEND: |
|---|---|
| P = ICP Atomic Emission Spectrometer | BKG = Background |
| MS = ICP Mass Spectrometry | DUP = Duplicate |
| CV = Cold Vapor | MS = Matrix Spike |
| AF = Cold Vapor Atomic Fluorescence | MSD = Matrix Spike Duplicate |
| | A = Post Digest Spike |
| | L = Serial Dilution |
| | B = Blank |
| | Q = Laboratory Control Sample |
| | Y = Laboratory Control Sample Duplicate |

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR191

Method: MS
Instrument ID: 19204
Run Name: 1721308E05

Run Start Date: 08/01/2017
Run End Date: 08/01/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AL | SB | AS | BA | BE | CD | CR | CU | FE | PB | MN | HG | SE | AG | TL | U | ZN | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 16:59 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 17:02 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 17:05 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 17:08 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 17:11 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 17:15 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 17:18 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 17:21 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 17:24 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 17:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 17:30 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 17:33 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| P20963BB | 1.00 | 17:36 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| P20963BQ | 1.00 | 17:39 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121687BKG | 1.00 | 17:42 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121687A | 1.00 | 17:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9121690DUP | 1.00 | 17:48 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121688MS | 1.00 | 17:51 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121689MSD | 1.00 | 17:55 | | X | | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121687L | 5.00 | 17:58 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121675 | 1.00 | 18:01 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121677 | 1.00 | 18:04 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 18:07 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 18:10 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121681 | 1.00 | 18:13 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| 9121694 | 1.00 | 18:16 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 18:19 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 18:22 | | X | X | | X | X | X | | | X | | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | |

| METHODS: | LEGEND: |
|---|---|
| P = ICP Atomic Emission Spectrometer | BKG = Background |
| MS = ICP Mass Spectrometry | DUP = Duplicate |
| CV = Cold Vapor | MS = Matrix Spike |
| AF = Cold Vapor Atomic Fluorescence | MSD = Matrix Spike Duplicate |
| | A = Post Digest Spike |
| | L = Serial Dilution |
| | B = Blank |
| | Q = Laboratory Control Sample |
| | Y = Laboratory Control Sample Duplicate |

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR191

Method: MS
Instrument ID: 19204
Run Name: 1721504E05

Run Start Date: 08/03/2017
Run End Date: 08/03/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AL | SB | AS | BA | BE | CD | CR | CU | FE | PB | MN | HG | SE | AG | TL | U | ZN | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 10:26 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 10:28 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 10:29 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCS | 1.00 | 10:31 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 10:33 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 10:35 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 10:37 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 10:38 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 10:40 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 10:44 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 10:46 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 10:59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 11:00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:06 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:08 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:28 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:30 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 10.00 | 11:31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR191

Method: MS
Instrument ID: 19204
Run Name: 1721504E05

Run Start Date: 08/03/2017
Run End Date: 08/03/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AL | SB | AS | BA | BE | CD | CR | CU | FE | PB | MN | HG | SE | AG | TL | U | ZN | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9121689MSD | 1.00 | 11:46 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:48 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 11:50 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 11:52 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 11:54 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 11:55 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 11:57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 11:59 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 12:01 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR191

Method: CV
Instrument ID: 23283
Run Name: 1721301M09

Run Start Date: 08/01/2017
Run End Date: 08/01/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AL | SB | AS | BA | BE | CD | CR | CU | FE | PB | MN | HG | SE | AG | TL | U | ZN | | | | | | | | | | | | | |
| S0 | 1.00 | 05:55 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| S0.2 | 1.00 | 05:57 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| S0.5 | 1.00 | 05:59 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| S1.0 | 1.00 | 06:01 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| S2.5 | 1.00 | 06:03 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| S5.0 | 1.00 | 06:05 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 06:07 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 06:09 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| CRA | 1.00 | 06:11 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 06:13 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 06:15 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| P20971IB | 1.00 | 06:25 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| P20971IQ | 1.00 | 06:27 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9121683BKG | 1.00 | 06:30 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9121686DUP | 1.00 | 06:32 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9121684MS | 1.00 | 06:35 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9121685MSD | 1.00 | 06:37 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9121674 | 1.00 | 06:40 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9121676 | 1.00 | 06:42 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9121680 | 1.00 | 06:45 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9121693 | 1.00 | 06:48 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 06:50 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 06:53 | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
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Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR191

Instrument ID: 19204
Run Name: 1721308E05

Start Date: 08/01/2017
End Date: 08/01/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| BI-2-209 | PB,TL,U | GE-2-72 | CR |
| IN-1-115 | SE | IN-2-115 | AG,AS |
| SC-3-45 | BE | TB-2-159 | CD,SB |

| Lab Sample ID | Time | Internal Standards %RI For: Element SC-3-45 | Q | Element GE-2-72 | Q | Element IN-1-115 | Q | Element IN-2-115 | Q | Element TB-2-159 | Q | Element BI-2-209 | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S0 | 16:59 | 100 | | 100 | | 100 | | 100 | | 100 | | 100 | | | |
| S | 17:02 | 101 | | 107 | | 101 | | 103 | | 100 | | 102 | | | |
| CCS | 17:05 | 87 | | 94 | | 100 | | 89 | | 93 | | 93 | | | |
| CCS | 17:08 | 92 | | 92 | | 88 | | 85 | | 88 | | 88 | | | |
| ICV | 17:11 | 99 | | 102 | | 98 | | 93 | | 97 | | 98 | | | |
| ICB | 17:15 | 95 | | 102 | | 94 | | 96 | | 96 | | 96 | | | |
| LLC | 17:18 | 94 | | 103 | | 99 | | 96 | | 99 | | 101 | | | |
| ICSA | 17:21 | 100 | | 107 | | 98 | | 102 | | 81 | | 97 | | | |
| ICSAB | 17:24 | 103 | | 107 | | 106 | | 99 | | 80 | | 96 | | | |
| ZZZZZZ | 17:27 | | | | | | | | | | | | | | |
| CCV | 17:30 | 108 | | 110 | | 106 | | 100 | | 103 | | 106 | | | |
| CCB | 17:33 | 105 | | 105 | | 102 | | 94 | | 99 | | 100 | | | |
| P20963BB | 17:36 | 106 | | 106 | | 105 | | 100 | | 102 | | 102 | | | |
| P20963BQ | 17:39 | 106 | | 110 | | 107 | | 101 | | 104 | | 104 | | | |
| 9121687BKG | 17:42 | 104 | | 107 | | 103 | | 97 | | 100 | | 101 | | | |
| 9121687A | 17:45 | 104 | | 105 | | 102 | | 96 | | 99 | | 100 | | | |
| 9121690DUP | 17:48 | 103 | | 107 | | 99 | | 97 | | 101 | | 101 | | | |
| 9121688MS | 17:51 | 103 | | 104 | | 99 | | 100 | | 100 | | 101 | | | |
| 9121689MSD | 17:55 | 102 | | 108 | | 101 | | 95 | | 97 | | 101 | | | |
| 9121687L | 17:58 | 102 | | 103 | | 100 | | 93 | | 99 | | 102 | | | |
| 9121675 | 18:01 | 103 | | 106 | | 101 | | 98 | | 100 | | 101 | | | |
| 9121677 | 18:04 | 98 | | 102 | | 88 | | 93 | | 93 | | 96 | | | |
| CCV | 18:07 | 103 | | 105 | | 99 | | 93 | | 98 | | 99 | | | |
| CCB | 18:10 | 95 | | 99 | | 101 | | 91 | | 91 | | 91 | | | |
| 9121681 | 18:13 | 104 | | 106 | | 98 | | 95 | | 100 | | 101 | | | |
| 9121694 | 18:16 | 102 | | 107 | | 102 | | 98 | | 100 | | 100 | | | |
| CCV | 18:19 | 102 | | 106 | | 100 | | 96 | | 100 | | 101 | | | |
| CCB | 18:22 | 102 | | 104 | | 100 | | 98 | | 99 | | 100 | | | |

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
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MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike

FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR191

Instrument ID: 19204
Run Name: 1721504E05

Start Date: 08/03/2017
End Date: 08/03/2017

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| IN-1-115 | AS | | |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S0 | 10:26 | 100 | | | | | | | | | | | | | |
| S | 10:28 | 101 | | | | | | | | | | | | | |
| CCS | 10:29 | 104 | | | | | | | | | | | | | |
| CCS | 10:31 | 104 | | | | | | | | | | | | | |
| ICV | 10:33 | 106 | | | | | | | | | | | | | |
| ICB | 10:35 | 105 | | | | | | | | | | | | | |
| LLC | 10:37 | 105 | | | | | | | | | | | | | |
| ICSA | 10:38 | 96 | | | | | | | | | | | | | |
| ICSAB | 10:40 | 101 | | | | | | | | | | | | | |
| ZZZZZZ | 10:42 | | | | | | | | | | | | | | |
| CCV | 10:44 | 112 | | | | | | | | | | | | | |
| CCB | 10:46 | 106 | | | | | | | | | | | | | |
| ZZZZZZ | 10:48 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:49 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:51 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:53 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:55 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:57 | | | | | | | | | | | | | | |
| ZZZZZZ | 10:59 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:00 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:02 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:04 | | | | | | | | | | | | | | |
| CCV | 11:06 | 114 | | | | | | | | | | | | | |
| CCB | 11:08 | 115 | | | | | | | | | | | | | |
| ZZZZZZ | 11:10 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:11 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:13 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:15 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:17 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:19 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:21 | | | | | | | | | | | | | | |

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
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Q = Laboratory Control Sample
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MS = Matrix Spike
MSD = Matrix Spike Duplicate
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FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
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HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: KR191

Instrument ID:
Run Name: 15151

Start Date:
End Date:

| Standard | Elements Applies to | Standard | Elements Applies to |
|---|---|---|---|
| IN-1-115 | AS | | |

| Lab Sample ID | Time | Internal Standards %RI For: Element IN-1-115 | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q | Element | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ZZZZZZ | 11:22 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:24 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:26 | | | | | | | | | | | | | | |
| CCV | 11:28 | 117 | | | | | | | | | | | | | |
| CCB | 11:30 | 119 | | | | | | | | | | | | | |
| ZZZZZZ | 11:31 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:33 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:35 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:37 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:39 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:41 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:43 | | | | | | | | | | | | | | |
| ZZZZZZ | 11:44 | | | | | | | | | | | | | | |
| 9121689MSD | 11:46 | 114 | | | | | | | | | | | | | |
| CCV | 11:48 | 113 | | | | | | | | | | | | | |
| CCB | 11:50 | 114 | | | | | | | | | | | | | |
| LLC | 11:52 | 114 | | | | | | | | | | | | | |
| ICSA | 11:54 | 106 | | | | | | | | | | | | | |
| ICSAB | 11:55 | 104 | | | | | | | | | | | | | |
| ZZZZZZ | 11:57 | | | | | | | | | | | | | | |
| CCV | 11:59 | 114 | | | | | | | | | | | | | |
| CCB | 12:01 | 115 | | | | | | | | | | | | | |

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BE = Beryllium
BI = Bismuth
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IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

# Raw Data

# Metals in Liquid

# ICP Data

# Metals in Liquid

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# ICP-AES Run Data Report

Reviewed By
Eric L Eby

Reviewed Date
07/31/2017 1:38PM

Data File Name 1721206T73.TXT
Run Name: 1721206T73

Method Reference Name(s):

Verified By:
Tara L Snyder

Verified Date
08/01/2017 8:20PM

Analyst Employee: 420

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 1 Date/Time: 07/31/2017 11:02

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -28.83580 | 2.612 | -0.00711 | -0.00743 | -0.00710 |
| AL | 0.000 | 7.87133 | 12.759 | 0.03772 | 0.03344 | 0.04314 |
| AS | 0.000 | -2.17645 | 29.593 | -0.03069 | -0.01657 | -0.02445 |
| B | 0.000 | 87.12160 | 2.763 | 0.00044 | 0.00042 | 0.00044 |
| BA | 0.000 | 282.19631 | 5.019 | 0.00146 | 0.00133 | 0.00145 |
| BE | 0.000 | -73.72744 | 6.733 | -0.01944 | -0.01708 | -0.01894 |
| CA | 0.000 | 42.93136 | 3.355 | 0.00400 | 0.00420 | 0.00426 |
| CD | 0.000 | -4.93951 | 41.948 | -0.04630 | -0.08030 | -0.03684 |
| CO | 0.000 | -2.33977 | 50.412 | -0.02756 | -0.03770 | -0.01195 |
| CR | 0.000 | 12.77723 | 14.389 | 0.00006 | 0.00006 | 0.00007 |
| CU | 0.000 | -19.07503 | 60.758 | -0.00330 | -0.00296 | -0.00819 |
| FE | 0.000 | 3.32880 | 65.637 | 0.00048 | 0.00008 | 0.00041 |
| K | 0.000 | 49.41514 | 15.949 | 0.23865 | 0.27640 | 0.20034 |
| LI | 0.000 | 34.50058 | 26.538 | 0.00276 | 0.00291 | 0.00437 |
| MG | 0.000 | 11.11324 | 28.636 | 0.00112 | 0.00135 | 0.00074 |
| MN | 0.000 | 10.20487 | 64.641 | 0.00438 | 0.00215 | 0.00115 |
| MO | 0.000 | -0.18332 | 422.478 | 0.00818 | -0.00856 | -0.00603 |
| NA | 0.000 | 101.73388 | 16.712 | 0.00799 | 0.01113 | 0.01039 |
| NI | 0.000 | 3.62964 | 6.189 | 0.04059 | 0.03726 | 0.04209 |
| P | 0.000 | 0.90658 | 61.133 | 0.00029 | 0.00006 | 0.00025 |
| PB | 0.000 | -0.01667 | 3807.727 | 0.01597 | -0.00723 | -0.00986 |
| S | 0.000 | -0.69993 | 72.653 | -0.00028 | -0.00010 | -0.00008 |
| SB | 0.000 | 2.33310 | 45.188 | 0.00070 | 0.00025 | 0.00058 |
| SE | 0.000 | -0.53884 | 190.407 | -0.01759 | -0.00408 | 0.00428 |
| SI | 0.000 | 1.44808 | 40.819 | 0.00012 | 0.00009 | 0.00020 |
| SN | 0.000 | -0.02000 | 2083.877 | -0.00194 | 0.00467 | -0.00335 |
| SR | 0.000 | 7.93661 | 244.414 | 0.00014 | 0.00004 | -0.00006 |
| TI | 0.000 | 45.04967 | 32.296 | 0.01164 | 0.00755 | 0.01487 |
| TL | 0.000 | 0.09666 | 353.947 | -0.00237 | 0.00033 | 0.00536 |
| V | 0.000 | -9.84568 | 108.629 | 0.00055 | -0.00447 | -0.00335 |
| Y1 | 0.000 | 4538.88011 | 2.002 | 4643.34167 | 4495.32647 | 4477.97220 |
| Y2A | 0.000 | 199724.32935 | 3.433 | 196134.04957 | 207631.54215 | 195407.39633 |
| Y2R | 0.000 | 10343.47373 | 1.651 | 10391.86627 | 10484.82642 | 10153.72851 |
| ZN | 0.000 | 6.58934 | 9.179 | 0.06546 | 0.07863 | 0.07391 |
| ZR | 0.000 | -11.81575 | 32.213 | -0.00141 | -0.00072 | -0.00130 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 2 Date/Time: 07/31/2017 11:05

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 4832.93543 | 0.712 | 23.23474 | 23.43466 | 23.10595 |
| CA | 50.000 | 37203.67990 | 0.497 | 3.59316 | 3.58893 | 3.56044 |
| FE | 50.000 | 7481.20608 | 0.602 | 0.71844 | 0.72498 | 0.71676 |
| K | 50.000 | 21088.54144 | 0.443 | 101.35062 | 101.98956 | 101.12282 |
| MG | 50.000 | 59938.99507 | 0.435 | 5.78322 | 5.78397 | 5.74010 |
| NA | 50.000 | 68777.14188 | 0.390 | 6.62225 | 6.64422 | 6.59278 |
| S | 50.000 | 3061.96714 | 0.959 | 0.68219 | 0.69410 | 0.69316 |
| SI | 50.000 | 5554.46089 | 0.431 | 0.53508 | 0.53664 | 0.53211 |
| Y1 | 50.000 | 4439.01943 | 0.701 | 4474.59854 | 4416.76232 | 4425.69743 |
| Y2R | 50.000 | 10389.79080 | 0.417 | 10362.09549 | 10367.54841 | 10439.72849 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 3 Date/Time: 07/31/2017 11:08

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 12253.62319 | 2.030 | 3.12101 | 3.19170 | 3.25026 |
| AS | 1.000 | 107.20298 | 3.162 | 1.21144 | 1.14085 | 1.19765 |
| B | 1.000 | 7161.91331 | 1.200 | 0.03683 | 0.03722 | 0.03773 |
| BA | 1.000 | 606425.23210 | 1.202 | 3.15776 | 3.11542 | 3.19111 |
| BE | 1.000 | 437634.09392 | 1.022 | 113.39657 | 112.95524 | 115.15509 |
| CD | 1.000 | 6872.62497 | 2.691 | 77.61694 | 73.61822 | 76.33166 |
| CO | 1.000 | 3513.64609 | 2.729 | 39.70596 | 37.62701 | 39.01163 |
| CU | 1.000 | 12371.57625 | 1.909 | 3.16292 | 3.20766 | 3.28437 |
| LI | 1.000 | 8351.16048 | 1.428 | 0.81954 | 0.79903 | 0.80022 |
| MN | 1.000 | 56630.20210 | 1.345 | 14.54290 | 14.71224 | 14.93794 |
| NI | 1.000 | 2177.36872 | 2.630 | 24.60823 | 23.35610 | 24.13206 |
| P | 1.000 | 104.55682 | 3.514 | 0.02380 | 0.02220 | 0.02324 |
| PB | 1.000 | 572.29889 | 2.518 | 6.45999 | 6.14547 | 6.34407 |
| SE | 1.000 | 90.18520 | 4.748 | 1.04796 | 0.95610 | 0.98270 |
| SR | 1.000 | 698768.25398 | 0.987 | 3.60563 | 3.62498 | 3.67517 |
| TL | 1.000 | 96.21532 | 2.736 | 1.08875 | 1.03108 | 1.06606 |
| Y1 | 1.000 | 4531.66775 | 1.973 | 4461.24251 | 4632.24975 | 4501.51098 |
| Y2A | 1.000 | 192233.73222 | 1.144 | 194364.58915 | 192363.12325 | 189973.48424 |
| Y2R | 1.000 | 10358.71017 | 0.894 | 10255.73394 | 10435.18334 | 10385.21323 |
| ZN | 1.000 | 3386.20661 | 2.730 | 38.23236 | 36.24656 | 37.64604 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 4 Date/Time: 07/31/2017 11:11

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 8571.25992 | 2.592 | 0.04188 | 0.04376 | 0.04182 |
| MO | 1.000 | 936.94473 | 3.589 | 10.31184 | 10.29218 | 9.67477 |
| SB | 1.000 | 223.56768 | 3.478 | 0.04920 | 0.04906 | 0.04623 |
| SN | 1.000 | 297.64693 | 3.548 | 3.27194 | 3.27195 | 3.07494 |
| TI | 1.000 | 48041.51425 | 2.470 | 11.75283 | 12.24544 | 11.72067 |
| V | 1.000 | 16330.71655 | 2.351 | 3.99903 | 4.15686 | 3.98583 |
| Y1 | 1.000 | 4644.47207 | 2.595 | 4567.01130 | 4583.04726 | 4783.35766 |
| Y2A | 1.000 | 201815.62383 | 2.039 | 203641.10000 | 197103.67486 | 204702.09665 |
| Y2R | 1.000 | 10420.90902 | 1.285 | 10537.98202 | 10449.89002 | 10274.85503 |
| ZR | 1.000 | 1952.24263 | 2.209 | 0.18395 | 0.18620 | 0.19197 |

LANCASTER LABORATORIES

Run Name: 1721206T73

Instrument ID: 18255

Tube: 5

Date/Time: 07/31/2017 11:14

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.59906 | 7,305.98 | 1.290 | 0.60782 | 0.59323 | 0.59612 |
| ____ AL | 30.20885 | 2,901.85 | 2.619 | 29.47852 | 30.09850 | 31.04954 |
| ____ AS | 0.60717 | 63.07 | 4.240 | 0.60678 | 0.58162 | 0.63310 |
| ____ B | 0.58125 | 4,324.97 | 1.062 | 0.58833 | 0.57699 | 0.57843 |
| ____ BA | 0.59464 | 360,111.63 | 1.363 | 0.60202 | 0.58597 | 0.59592 |
| ____ BE | 0.58239 | 254,453.17 | 1.228 | 0.59052 | 0.57706 | 0.57958 |
| ____ CA | 29.65220 | 21,968.06 | 2.559 | 28.88455 | 29.67000 | 30.40205 |
| ____ CD | 0.60209 | 4,104.85 | 2.310 | 0.60053 | 0.58902 | 0.61672 |
| ____ CO | 0.59330 | 2,067.30 | 2.128 | 0.59096 | 0.58200 | 0.60693 |
| ____ CR | 0.59880 | 4,885.76 | 1.159 | 0.60679 | 0.59424 | 0.59538 |
| ____ CU | 0.58977 | 7,256.19 | 1.443 | 0.59957 | 0.58429 | 0.58545 |
| ____ FE | 30.04847 | 4,486.37 | 2.489 | 29.41197 | 29.86111 | 30.87233 |
| ____ K | 29.92136 | 12,563.88 | 2.187 | 29.32828 | 29.81238 | 30.62342 |
| ____ LI | 0.59485 | 4,954.00 | 2.567 | 0.58202 | 0.59078 | 0.61174 |
| ____ MG | 30.05963 | 36,151.45 | 2.558 | 29.29479 | 30.05182 | 30.83228 |
| ____ MN | 0.58986 | 33,344.78 | 1.150 | 0.59767 | 0.58544 | 0.58645 |
| ____ MO | 0.60685 | 549.28 | 2.145 | 0.60480 | 0.59498 | 0.62077 |
| ____ NA | 29.60547 | 40,519.99 | 2.262 | 29.02506 | 29.45329 | 30.33807 |
| ____ NI | 0.59814 | 1,289.85 | 2.126 | 0.59670 | 0.58621 | 0.61152 |
| ____ P | 0.61022 | 63.53 | 0.755 | 0.61109 | 0.60524 | 0.61433 |
| ____ PB | 0.60376 | 343.17 | 1.878 | 0.60368 | 0.59246 | 0.61514 |
| ____ S | 30.11241 | 1,862.93 | 2.153 | 30.03916 | 29.50391 | 30.79416 |
| ____ SB | 0.60789 | 132.91 | 1.224 | 0.60912 | 0.59992 | 0.61464 |
| ____ SE | 0.60050 | 52.83 | 3.511 | 0.59588 | 0.58212 | 0.62352 |
| ____ SI | 30.57717 | 3,379.69 | 2.312 | 29.88791 | 30.54320 | 31.30038 |
| ____ SN | 0.59594 | 171.15 | 1.616 | 0.59408 | 0.58738 | 0.60637 |
| ____ SR | 0.58515 | 408,104.95 | 1.459 | 0.59327 | 0.57625 | 0.58594 |
| ____ TI | 0.61548 | 28,290.96 | 0.990 | 0.62249 | 0.61155 | 0.61239 |
| ____ TL | 0.60524 | 57.90 | 2.296 | 0.61167 | 0.58929 | 0.61476 |
| ____ V | 0.62198 | 9,659.14 | 1.068 | 0.62966 | 0.61810 | 0.61820 |
| ____ Y1 | 4485.65317 | 4,485.65 | 1.618 | 4489.91914 | 4555.99720 | 4411.04317 |
| ____ Y2A | 191866.54781 | 191,866.55 | 0.960 | 189742.65441 | 193018.58885 | 192838.40016 |
| ____ Y2R | 10330.01078 | 10,330.01 | 1.843 | 10514.12480 | 10342.05430 | 10133.85323 |
| ____ ZN | 0.60119 | 2,028.03 | 2.327 | 0.59951 | 0.58811 | 0.61594 |
| ____ ZR | 0.60791 | 1,171.01 | 2.280 | 0.59831 | 0.60162 | 0.62380 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 6 Date/Time: 07/31/2017 11:17

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00033 | -16.97 | 111.160 | -0.00004 | -0.00021 | -0.00074 |
| ____ AL | 0.00420 | 8.23 | 807.418 | 0.04314 | -0.01852 | -0.01203 |
| ____ AS | -0.00111 | -1.70 | 507.805 | 0.00470 | -0.00148 | -0.00654 |
| ____ B | 0.01956 | 99.36 | 4.421 | 0.01857 | 0.01993 | 0.02018 |
| ____ BA | -0.00008 | 233.53 | 79.406 | -0.00002 | -0.00014 | -0.00007 |
| ____ BE | -0.00015 | -52.09 | 27.833 | -0.00016 | -0.00019 | -0.00011 |
| ____ CA | -0.00402 | 39.77 | 102.759 | -0.00847 | -0.00029 | -0.00332 |
| ____ CD | 0.00039 | -4.09 | 69.764 | 0.00066 | 0.00038 | 0.00012 |
| ____ CO | -0.00017 | -2.68 | 281.058 | -0.00064 | -0.00016 | 0.00030 |
| ____ CR | 0.00051 | 17.07 | 77.666 | 0.00075 | 0.00072 | 0.00005 |
| ____ CU | 0.00023 | -9.90 | 317.173 | 0.00000 | -0.00036 | 0.00106 |
| ____ FE | 0.00048 | 3.41 | 3656.723 | -0.01083 | -0.00855 | 0.02083 |
| ____ K | 0.04236 | 66.75 | 36.273 | 0.03533 | 0.05998 | 0.03176 |
| ____ LI | 0.00817 | 48.55 | 12.072 | 0.00757 | 0.00931 | 0.00764 |
| ____ MG | -0.00536 | 4.51 | 36.969 | -0.00399 | -0.00764 | -0.00447 |
| ____ MN | 0.00006 | 13.43 | 66.836 | 0.00003 | 0.00010 | 0.00003 |
| ____ MO | 0.00084 | 0.58 | 9.043 | 0.00079 | 0.00081 | 0.00093 |
| ____ NA | 0.00309 | 105.38 | 307.252 | 0.01401 | -0.00304 | -0.00171 |
| ____ NI | -0.00057 | 2.39 | 127.267 | -0.00068 | 0.00021 | -0.00124 |
| ____ P | -0.00514 | 0.37 | 37.070 | -0.00425 | -0.00384 | -0.00733 |
| ____ PB | 0.00558 | 0.67 | 21.368 | 0.00575 | 0.00431 | 0.00668 |
| ____ S | 0.01483 | 0.23 | 59.951 | 0.00464 | 0.02103 | 0.01881 |
| ____ SB | 0.00088 | 2.52 | 56.129 | 0.00130 | 0.00034 | 0.00100 |
| ____ SE | 0.00130 | -1.60 | 94.598 | 0.00270 | 0.00081 | 0.00039 |
| ____ SI | 0.01530 | 3.13 | 130.332 | 0.03683 | -0.00251 | 0.01157 |
| ____ SN | 0.00113 | -0.29 | 157.763 | -0.00021 | 0.00045 | 0.00315 |
| ____ SR | 0.00006 | 51.30 | 14.046 | 0.00006 | 0.00007 | 0.00005 |
| ____ TI | 0.00021 | 55.06 | 12.163 | 0.00018 | 0.00024 | 0.00021 |
| ____ TL | 0.00155 | 0.26 | 60.007 | 0.00256 | 0.00138 | 0.00072 |
| ____ V | 0.00038 | -6.68 | 101.352 | 0.00080 | 0.00005 | 0.00028 |
| ____ Y1 | 4539.53105 | 4,539.53 | 1.612 | 4623.55116 | 4505.25590 | 4489.78609 |
| ____ Y2A | 199037.42409 | 199,037.42 | 1.964 | 196330.71015 | 203520.24571 | 197261.31642 |
| ____ Y2R | 10293.59481 | 10,293.59 | 0.885 | 10200.90637 | 10296.93123 | 10382.94682 |
| ____ ZN | -0.00069 | 4.26 | 13.171 | -0.00072 | -0.00059 | -0.00076 |
| ____ ZR | 0.00016 | -13.26 | 1216.741 | -0.00015 | 0.00228 | -0.00164 |

LANCASTER LABORATORIES

Run Name: 1721206T73

Instrument ID: 18255

Tube: 7

Date/Time: 07/31/2017 11:20

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01125 | 134.31 | 4.908 | 0.01079 | 0.01186 | 0.01110 |
| ____ AL | 0.47039 | 53.70 | 5.776 | 0.49640 | 0.47257 | 0.44220 |
| ____ AS | 0.03748 | 2.53 | 24.082 | 0.02819 | 0.03803 | 0.04621 |
| ____ B | 0.11997 | 859.53 | 2.649 | 0.12033 | 0.12295 | 0.11663 |
| ____ BA | 0.01096 | 7,248.42 | 1.710 | 0.01097 | 0.01115 | 0.01077 |
| ____ BE | 0.01074 | 4,928.27 | 2.088 | 0.01077 | 0.01094 | 0.01050 |
| ____ CA | 0.45297 | 383.98 | 3.114 | 0.43674 | 0.45997 | 0.46221 |
| ____ CD | 0.01190 | 76.75 | 1.848 | 0.01172 | 0.01183 | 0.01214 |
| ____ CO | 0.01153 | 39.40 | 2.863 | 0.01164 | 0.01116 | 0.01179 |
| ____ CR | 0.03419 | 304.28 | 2.836 | 0.03356 | 0.03531 | 0.03371 |
| ____ CU | 0.02195 | 269.10 | 3.195 | 0.02246 | 0.02223 | 0.02115 |
| ____ FE | 0.45957 | 73.36 | 5.527 | 0.44057 | 0.48843 | 0.44972 |
| ____ K | 1.10478 | 519.12 | 1.555 | 1.08562 | 1.11881 | 1.10991 |
| ____ LI | 0.04956 | 400.29 | 4.891 | 0.04878 | 0.05228 | 0.04762 |
| ____ MG | 0.22524 | 289.89 | 3.146 | 0.21750 | 0.23141 | 0.22681 |
| ____ MN | 0.01174 | 704.81 | 2.615 | 0.01171 | 0.01205 | 0.01144 |
| ____ MO | 0.02262 | 20.90 | 6.619 | 0.02229 | 0.02130 | 0.02425 |
| ____ NA | 2.25800 | 3,232.30 | 3.010 | 2.18022 | 2.30592 | 2.28785 |
| ____ NI | 0.02300 | 54.72 | 6.130 | 0.02137 | 0.02386 | 0.02377 |
| ____ P | 0.21915 | 24.09 | 3.026 | 0.21279 | 0.21865 | 0.22602 |
| ____ PB | 0.03764 | 19.47 | 11.599 | 0.03480 | 0.03546 | 0.04267 |
| ____ S | 1.09672 | 69.24 | 1.183 | 1.09146 | 1.08720 | 1.11151 |
| ____ SB | 0.04471 | 12.25 | 5.670 | 0.04178 | 0.04623 | 0.04610 |
| ____ SE | 0.05056 | 2.99 | 20.971 | 0.03943 | 0.06054 | 0.05171 |
| ____ SI | 0.11361 | 14.31 | 10.366 | 0.10004 | 0.11964 | 0.12116 |
| ____ SN | 0.04469 | 12.64 | 4.826 | 0.04452 | 0.04262 | 0.04692 |
| ____ SR | 0.01096 | 8,009.21 | 1.957 | 0.01093 | 0.01118 | 0.01075 |
| ____ TI | 0.02288 | 1,142.13 | 2.326 | 0.02291 | 0.02340 | 0.02233 |
| ____ TL | 0.07344 | 7.62 | 9.445 | 0.07122 | 0.06788 | 0.08121 |
| ____ V | 0.01156 | 172.04 | 5.029 | 0.01136 | 0.01222 | 0.01111 |
| ____ Y1 | 4621.92210 | 4,621.92 | 1.377 | 4665.74167 | 4651.11089 | 4548.91376 |
| ____ Y2A | 200939.10578 | 200,939.11 | 1.420 | 201861.79405 | 197739.63415 | 203215.88915 |
| ____ Y2R | 10486.23444 | 10,486.23 | 1.632 | 10683.77649 | 10390.79920 | 10384.12762 |
| ____ ZN | 0.04593 | 164.66 | 3.043 | 0.04466 | 0.04571 | 0.04743 |
| ____ ZR | 0.11160 | 206.89 | 4.388 | 0.10606 | 0.11534 | 0.11341 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 8 Date/Time: 07/31/2017 11:23

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00607 | -158.06 | 5.806 | 0.00631 | 0.00624 | 0.00566 |
| ____ AL | 495.43736 | 46,587.94 | 0.710 | 492.07314 | 495.15169 | 499.08726 |
| ____ AS | -0.00286 | -7.65 | 534.515 | -0.01769 | 0.01280 | -0.00367 |
| ____ B | 0.00805 | 1,181.79 | 12.579 | 0.00815 | 0.00700 | 0.00902 |
| ____ BA | 0.00015 | 337.11 | 29.070 | 0.00012 | 0.00014 | 0.00020 |
| ____ BE | -0.00039 | -142.87 | 0.989 | -0.00039 | -0.00038 | -0.00039 |
| ____ CA | 488.82695 | 336,768.44 | 0.554 | 487.08766 | 487.44469 | 491.94851 |
| ____ CD | 0.00212 | 74.99 | 13.105 | 0.00185 | 0.00210 | 0.00241 |
| ____ CO | 0.00042 | -0.54 | 41.089 | 0.00023 | 0.00057 | 0.00047 |
| ____ CR | 0.00142 | 22.24 | 34.001 | 0.00131 | 0.00195 | 0.00100 |
| ____ CU | 0.00257 | 139.42 | 16.132 | 0.00278 | 0.00209 | 0.00284 |
| ____ FE | 199.81500 | 27,505.46 | 0.955 | 198.38122 | 199.08325 | 201.98053 |
| ____ K | 0.07081 | 75.09 | 31.680 | 0.05316 | 0.09606 | 0.06322 |
| ____ LI | 0.00269 | 60.62 | 60.164 | 0.00214 | 0.00451 | 0.00141 |
| ____ MG | 488.22409 | 441,393.66 | 1.235 | 482.30561 | 488.00906 | 494.35760 |
| ____ MN | 0.00386 | 212.19 | 1.277 | 0.00391 | 0.00381 | 0.00385 |
| ____ MO | -0.00285 | -2.53 | 29.816 | -0.00358 | -0.00192 | -0.00305 |
| ____ NA | 0.07715 | 196.93 | 6.531 | 0.07507 | 0.07349 | 0.08290 |
| ____ NI | 0.00330 | 9.77 | 33.655 | 0.00203 | 0.00412 | 0.00375 |
| ____ P | 0.00891 | 1.65 | 85.663 | 0.00487 | 0.01771 | 0.00414 |
| ____ PB | 0.01127 | 47.81 | 34.477 | 0.01539 | 0.00769 | 0.01071 |
| ____ S | 0.05203 | 2.32 | 27.601 | 0.06828 | 0.04677 | 0.04105 |
| ____ SB | 0.01304 | 8.77 | 24.500 | 0.01558 | 0.00945 | 0.01409 |
| ____ SE | -0.02675 | -5.44 | 69.782 | -0.01991 | -0.04787 | -0.01247 |
| ____ SI | 0.00131 | 1.51 | 789.420 | 0.01319 | -0.00505 | -0.00423 |
| ____ SN | 0.00373 | 0.43 | 20.494 | 0.00397 | 0.00434 | 0.00287 |
| ____ SR | 0.01658 | 10,780.52 | 1.175 | 0.01647 | 0.01646 | 0.01680 |
| ____ TI | -0.00275 | -74.78 | 2.510 | -0.00275 | -0.00268 | -0.00281 |
| ____ TL | -0.01281 | -0.17 | 145.564 | -0.03432 | -0.00147 | -0.00263 |
| ____ V | 0.00042 | -4.30 | 104.268 | 0.00090 | 0.00027 | 0.00007 |
| ____ Y1 | 4099.35940 | 4,099.36 | 0.456 | 4091.29087 | 4120.74193 | 4086.04540 |
| ____ Y2A | 178784.22531 | 178,784.23 | 1.142 | 179650.30901 | 180251.05979 | 176451.30712 |
| ____ Y2R | 9830.31653 | 9,830.32 | 0.556 | 9860.25309 | 9863.49840 | 9767.19809 |
| ____ ZN | 0.00842 | 93.79 | 3.274 | 0.00874 | 0.00829 | 0.00824 |
| ____ ZR | -0.01556 | -41.83 | 18.194 | -0.01877 | -0.01444 | -0.01345 |

LANCASTER LABORATORIES

Run Name: 1721206T73

Instrument ID: 18255

Tube: 9

Date/Time: 07/31/2017 11:26

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.21296 | 2,218.23 | 2.790 | 0.20649 | 0.21423 | 0.21816 |
| ____ AL | 491.40971 | 46,658.40 | 1.802 | 482.15982 | 492.25912 | 499.81020 |
| ____ AS | 0.10379 | 2.91 | 11.953 | 0.09462 | 0.11790 | 0.09884 |
| ____ B | 0.00458 | 1,158.42 | 15.888 | 0.00395 | 0.00538 | 0.00441 |
| ____ BA | 0.50050 | 284,205.57 | 1.764 | 0.49168 | 0.50048 | 0.50933 |
| ____ BE | 0.47443 | 194,380.51 | 2.261 | 0.46247 | 0.47761 | 0.48321 |
| ____ CA | 485.73415 | 338,052.99 | 1.244 | 481.10574 | 483.52370 | 492.57301 |
| ____ CD | 0.94339 | 5,912.25 | 1.096 | 0.94794 | 0.95068 | 0.93156 |
| ____ CO | 0.47681 | 1,509.46 | 0.759 | 0.47521 | 0.48095 | 0.47426 |
| ____ CR | 0.48426 | 3,707.36 | 2.519 | 0.47312 | 0.48237 | 0.49730 |
| ____ CU | 0.51691 | 6,101.42 | 2.415 | 0.50426 | 0.51724 | 0.52922 |
| ____ FE | 198.54389 | 27,610.34 | 1.852 | 194.67835 | 198.95535 | 201.99797 |
| ____ K | 0.03265 | 60.52 | 68.513 | 0.04896 | 0.00715 | 0.04185 |
| ____ LI | 0.00173 | 53.18 | 114.720 | 0.00245 | 0.00324 | -0.00052 |
| ____ MG | 484.79271 | 443,551.04 | 2.035 | 475.95855 | 482.97764 | 495.44194 |
| ____ MN | 0.46871 | 24,848.57 | 2.166 | 0.45749 | 0.47139 | 0.47726 |
| ____ MO | -0.00255 | -2.28 | 31.990 | -0.00244 | -0.00342 | -0.00180 |
| ____ NA | 0.07929 | 201.73 | 11.282 | 0.07418 | 0.08962 | 0.07407 |
| ____ NI | 0.93667 | 1,838.91 | 0.633 | 0.94029 | 0.93990 | 0.92983 |
| ____ P | 0.00925 | 1.68 | 100.131 | 0.00493 | 0.01988 | 0.00294 |
| ____ PB | 0.53080 | 316.52 | 0.302 | 0.52983 | 0.53265 | 0.52991 |
| ____ S | 0.04917 | 2.15 | 23.746 | 0.05091 | 0.05988 | 0.03672 |
| ____ SB | 0.64054 | 132.22 | 1.135 | 0.64884 | 0.63751 | 0.63528 |
| ____ SE | 0.50681 | 38.81 | 2.897 | 0.52246 | 0.49334 | 0.50462 |
| ____ SI | 0.00863 | 2.30 | 190.651 | 0.01142 | -0.00904 | 0.02352 |
| ____ SN | 0.00503 | 0.77 | 35.023 | 0.00684 | 0.00493 | 0.00332 |
| ____ SR | 0.01638 | 10,716.63 | 2.487 | 0.01593 | 0.01648 | 0.01672 |
| ____ TI | -0.00324 | -46.01 | 0.988 | -0.00324 | -0.00328 | -0.00321 |
| ____ TL | 0.09844 | 7.80 | 6.948 | 0.09854 | 0.10524 | 0.09156 |
| ____ V | 0.51519 | 7,641.76 | 2.150 | 0.50352 | 0.51652 | 0.52555 |
| ____ Y1 | 4084.20924 | 4,084.21 | 0.251 | 4074.71253 | 4082.82772 | 4095.08747 |
| ____ Y2A | 179950.90213 | 179,950.90 | 1.701 | 183439.35639 | 178702.56000 | 177710.79000 |
| ____ Y2R | 9929.89099 | 9,929.89 | 1.341 | 10079.08529 | 9887.69430 | 9822.89337 |
| ____ ZN | 1.00328 | 3,121.59 | 0.564 | 1.00074 | 1.00976 | 0.99934 |
| ____ ZR | -0.01437 | -40.08 | 24.290 | -0.01780 | -0.01451 | -0.01082 |

LANCASTER LABORATORIES

Run Name: 1721206T73

Instrument ID: 18255

Tube: 10

Date/Time: 07/31/2017 11:30

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49983 | 6,195.07 | 1.437 | 0.50243 | 0.50535 | 0.49171 |
| ____ AL | 25.63063 | 2,440.70 | 1.039 | 25.34570 | 25.67321 | 25.87299 |
| ____ AS | 0.50100 | 52.55 | 2.230 | 0.50257 | 0.51131 | 0.48913 |
| ____ B | 0.48819 | 3,687.86 | 1.755 | 0.49355 | 0.49272 | 0.47831 |
| ____ BA | 0.49847 | 306,977.58 | 0.180 | 0.49863 | 0.49927 | 0.49750 |
| ____ BE | 0.48545 | 215,632.52 | 1.643 | 0.49089 | 0.48916 | 0.47629 |
| ____ CA | 25.46680 | 18,709.91 | 0.796 | 25.23979 | 25.53062 | 25.62998 |
| ____ CD | 0.50485 | 3,493.24 | 2.087 | 0.51133 | 0.51053 | 0.49269 |
| ____ CO | 0.50326 | 1,779.83 | 2.186 | 0.51026 | 0.50894 | 0.49058 |
| ____ CR | 0.50378 | 4,180.77 | 1.936 | 0.51005 | 0.50874 | 0.49254 |
| ____ CU | 0.50021 | 6,255.20 | 1.601 | 0.50580 | 0.50379 | 0.49104 |
| ____ FE | 25.58130 | 3,789.06 | 1.098 | 25.25761 | 25.72737 | 25.75891 |
| ____ K | 25.25862 | 10,519.36 | 0.620 | 25.07889 | 25.33210 | 25.36489 |
| ____ LI | 0.51496 | 4,247.88 | 1.297 | 0.50790 | 0.51580 | 0.52118 |
| ____ MG | 25.41977 | 30,366.89 | 0.820 | 25.19600 | 25.45480 | 25.60852 |
| ____ MN | 0.49691 | 28,559.80 | 1.703 | 0.50346 | 0.49993 | 0.48735 |
| ____ MO | 0.50622 | 465.12 | 1.981 | 0.51113 | 0.51285 | 0.49468 |
| ____ NA | 25.43597 | 34,517.88 | 0.916 | 25.18482 | 25.47827 | 25.64484 |
| ____ NI | 0.50233 | 1,100.30 | 2.263 | 0.50850 | 0.50928 | 0.48922 |
| ____ P | 0.50279 | 53.29 | 1.958 | 0.51099 | 0.50550 | 0.49187 |
| ____ PB | 0.50206 | 289.32 | 1.567 | 0.50726 | 0.50591 | 0.49301 |
| ____ S | 24.33444 | 1,528.24 | 1.802 | 24.59647 | 24.57877 | 23.82809 |
| ____ SB | 0.50726 | 112.98 | 1.446 | 0.51243 | 0.51049 | 0.49887 |
| ____ SE | 0.51549 | 45.79 | 4.505 | 0.52192 | 0.53481 | 0.48972 |
| ____ SI | 24.73671 | 2,710.19 | 1.052 | 24.46038 | 24.77290 | 24.97684 |
| ____ SN | 0.50032 | 145.76 | 2.107 | 0.50737 | 0.50538 | 0.48820 |
| ____ SR | 0.49782 | 353,006.13 | 0.988 | 0.49696 | 0.50311 | 0.49339 |
| ____ TI | 0.51870 | 24,244.80 | 1.693 | 0.52569 | 0.52157 | 0.50884 |
| ____ TL | 0.50496 | 49.02 | 1.569 | 0.51373 | 0.50282 | 0.49832 |
| ____ V | 0.52102 | 8,224.56 | 1.707 | 0.52682 | 0.52545 | 0.51078 |
| ____ Y1 | 4553.69134 | 4,553.69 | 1.596 | 4518.40816 | 4505.37525 | 4637.29061 |
| ____ Y2A | 195071.31817 | 195,071.32 | 1.165 | 193513.99440 | 194021.47845 | 197678.48164 |
| ____ Y2R | 10235.79081 | 10,235.79 | 0.759 | 10323.56230 | 10208.03589 | 10175.77423 |
| ____ ZN | 0.50527 | 1,731.53 | 2.201 | 0.51400 | 0.50905 | 0.49275 |
| ____ ZR | 0.51468 | 980.52 | 0.813 | 0.51032 | 0.51505 | 0.51866 |

LANCASTER LABORATORIES

Run Name: 1721206T73

Instrument ID: 18255

Tube: 11

Date/Time: 07/31/2017 11:33

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00054 | -20.12 | 62.002 | -0.00019 | -0.00058 | -0.00086 |
| ____ AL | 0.04000 | 11.85 | 97.199 | 0.05139 | -0.00330 | 0.07192 |
| ____ AS | -0.00197 | -1.83 | 179.145 | -0.00562 | 0.00142 | -0.00170 |
| ____ B | 0.01696 | 82.10 | 3.484 | 0.01707 | 0.01749 | 0.01633 |
| ____ BA | -0.00012 | 212.93 | 7.536 | -0.00012 | -0.00011 | -0.00012 |
| ____ BE | -0.00017 | -62.57 | 4.341 | -0.00017 | -0.00018 | -0.00016 |
| ____ CA | 0.01836 | 57.39 | 24.143 | 0.02297 | 0.01413 | 0.01796 |
| ____ CD | 0.00062 | -2.57 | 20.200 | 0.00068 | 0.00070 | 0.00047 |
| ____ CO | 0.00032 | -0.98 | 16.376 | 0.00037 | 0.00027 | 0.00031 |
| ____ CR | 0.00038 | 16.20 | 233.741 | -0.00008 | -0.00018 | 0.00139 |
| ____ CU | -0.00101 | -26.40 | 125.531 | -0.00012 | -0.00247 | -0.00045 |
| ____ FE | 0.00903 | 4.74 | 144.893 | 0.00578 | -0.00212 | 0.02342 |
| ____ K | 0.01093 | 54.82 | 372.250 | 0.05777 | -0.01551 | -0.00948 |
| ____ LI | 0.00290 | 4.46 | 121.251 | -0.00102 | 0.00396 | 0.00576 |
| ____ MG | 0.02067 | 36.83 | 8.171 | 0.01872 | 0.02170 | 0.02159 |
| ____ MN | -0.00007 | 6.36 | 129.462 | -0.00005 | -0.00016 | 0.00001 |
| ____ MO | 0.00047 | 0.24 | 59.660 | 0.00016 | 0.00070 | 0.00054 |
| ____ NA | 0.00672 | 112.58 | 102.669 | 0.00143 | 0.01452 | 0.00420 |
| ____ NI | -0.00012 | 3.47 | 481.019 | -0.00008 | 0.00043 | -0.00071 |
| ____ P | 0.00296 | 1.26 | 361.809 | 0.00464 | 0.01274 | -0.00850 |
| ____ PB | 0.00315 | -0.74 | 108.389 | 0.00710 | 0.00129 | 0.00107 |
| ____ S | 0.01752 | 0.42 | 39.518 | 0.01216 | 0.02534 | 0.01507 |
| ____ SB | 0.00119 | 2.64 | 117.073 | 0.00183 | 0.00214 | -0.00041 |
| ____ SE | -0.00217 | -1.97 | 292.239 | -0.00832 | -0.00250 | 0.00432 |
| ____ SI | 0.00009 | 1.49 | 2130.966 | 0.00193 | -0.00194 | 0.00028 |
| ____ SN | 0.00246 | 0.11 | 12.986 | 0.00211 | 0.00273 | 0.00255 |
| ____ SR | 0.00002 | 19.24 | 70.270 | 0.00003 | 0.00001 | 0.00001 |
| ____ TI | 0.00019 | 55.52 | 51.969 | 0.00011 | 0.00016 | 0.00031 |
| ____ TL | 0.00424 | 0.53 | 145.620 | 0.00278 | -0.00107 | 0.01101 |
| ____ V | 0.00022 | -9.34 | 64.736 | 0.00009 | 0.00020 | 0.00037 |
| ____ Y1 | 4643.18436 | 4,643.18 | 2.707 | 4650.75340 | 4764.93909 | 4513.86060 |
| ____ Y2A | 204236.24250 | 204,236.24 | 3.480 | 211640.69420 | 203597.52791 | 197470.50539 |
| ____ Y2R | 10494.54703 | 10,494.55 | 2.097 | 10641.41434 | 10600.66000 | 10241.56675 |
| ____ ZN | -0.00080 | 4.00 | 28.826 | -0.00065 | -0.00069 | -0.00107 |
| ____ ZR | 0.00035 | -13.18 | 304.055 | -0.00036 | -0.00016 | 0.00156 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 12 Date/Time: 07/31/2017 11:36

Sample Number: **PBW** Class: **** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00039 | -19.20 | 87.836 | -0.00002 | -0.00046 | -0.00070 |
| ____ AL | 0.02947 | 11.65 | 64.266 | 0.04633 | 0.03310 | 0.00898 |
| ____ AS | -0.00385 | -2.15 | 62.995 | -0.00136 | -0.00400 | -0.00620 |
| ____ B | 0.01678 | 84.79 | 1.547 | 0.01691 | 0.01696 | 0.01648 |
| ____ BA | -0.00012 | 224.97 | 4.733 | -0.00012 | -0.00012 | -0.00011 |
| ____ BE | -0.00018 | -67.68 | 10.110 | -0.00016 | -0.00019 | -0.00018 |
| ____ CA | 0.02423 | 66.27 | 46.409 | 0.01456 | 0.02156 | 0.03657 |
| ____ CD | 0.00050 | -3.61 | 9.817 | 0.00049 | 0.00045 | 0.00055 |
| ____ CO | 0.00029 | -1.12 | 242.323 | -0.00051 | 0.00068 | 0.00069 |
| ____ CR | -0.00043 | 9.85 | 104.281 | -0.00003 | -0.00035 | -0.00091 |
| ____ CU | -0.00029 | -17.80 | 226.577 | -0.00073 | -0.00061 | 0.00046 |
| ____ FE | 0.01006 | 5.29 | 129.360 | 0.01556 | 0.01943 | -0.00480 |
| ____ K | 0.02142 | 63.42 | 143.008 | 0.05415 | -0.00655 | 0.01665 |
| ____ LI | 0.00333 | 9.10 | 19.466 | 0.00324 | 0.00402 | 0.00274 |
| ____ MG | 0.02131 | 40.36 | 21.543 | 0.01888 | 0.01845 | 0.02661 |
| ____ MN | 0.00002 | 12.35 | 145.111 | 0.00004 | -0.00001 | 0.00003 |
| ____ MO | -0.00038 | -0.59 | 185.873 | 0.00044 | -0.00077 | -0.00082 |
| ____ NA | 0.00789 | 122.44 | 40.185 | 0.00424 | 0.00947 | 0.00995 |
| ____ NI | -0.00047 | 2.79 | 78.275 | -0.00033 | -0.00089 | -0.00019 |
| ____ P | -0.00593 | 0.31 | 45.993 | -0.00605 | -0.00860 | -0.00315 |
| ____ PB | 0.00519 | 0.47 | 38.175 | 0.00466 | 0.00738 | 0.00352 |
| ____ S | 0.01370 | 0.17 | 52.403 | 0.01152 | 0.02171 | 0.00786 |
| ____ SB | 0.00001 | 2.50 | 3710.746 | -0.00101 | -0.00266 | 0.00371 |
| ____ SE | 0.00971 | -0.88 | 28.975 | 0.00653 | 0.01069 | 0.01190 |
| ____ SI | 0.00722 | 2.45 | 108.857 | 0.01375 | 0.00941 | -0.00150 |
| ____ SN | 0.00176 | -0.10 | 217.769 | 0.00253 | -0.00240 | 0.00515 |
| ____ SR | 0.00002 | 27.48 | 41.571 | 0.00003 | 0.00001 | 0.00002 |
| ____ TI | 0.00007 | 52.12 | 191.292 | -0.00005 | 0.00021 | 0.00005 |
| ____ TL | 0.00409 | 0.54 | 151.618 | 0.01035 | 0.00395 | -0.00204 |
| ____ V | -0.00002 | -13.71 | 619.147 | -0.00010 | 0.00012 | -0.00008 |
| ____ Y1 | 4865.63723 | 4,865.64 | 1.795 | 4798.89488 | 4833.52059 | 4964.49620 |
| ____ Y2A | 214643.67590 | 214,643.68 | 0.095 | 214658.44493 | 214840.06180 | 214432.52097 |
| ____ Y2R | 11255.61813 | 11,255.62 | 0.420 | 11244.00398 | 11307.62695 | 11215.22346 |
| ____ ZN | -0.00064 | 4.79 | 95.343 | -0.00134 | -0.00031 | -0.00026 |
| ____ ZR | 0.00066 | -13.44 | 325.338 | 0.00309 | -0.00098 | -0.00013 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 13 Date/Time: 07/31/2017 11:39

Sample Number: **LCSW** Class: **** Batch: 172091063503

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05149 | 712.89 | 1.441 | 0.05063 | 0.05184 | 0.05198 |
| ____ AL | 1.96065 | 215.73 | 0.342 | 1.95316 | 1.96608 | 1.96270 |
| ____ AS | 0.13659 | 14.96 | 5.972 | 0.14473 | 0.13662 | 0.12842 |
| ____ B | 1.74601 | 13,777.16 | 1.119 | 1.74045 | 1.76774 | 1.72985 |
| ____ BA | 1.88384 | 1,254,517.10 | 1.028 | 1.87225 | 1.90620 | 1.87306 |
| ____ BE | 0.04542 | 21,905.33 | 1.153 | 0.04545 | 0.04593 | 0.04489 |
| ____ CA | 3.82452 | 3,133.15 | 0.470 | 3.80501 | 3.82815 | 3.84039 |
| ____ CD | 0.04874 | 352.12 | 0.577 | 0.04905 | 0.04865 | 0.04851 |
| ____ CO | 0.48744 | 1,840.21 | 0.638 | 0.49096 | 0.48506 | 0.48631 |
| ____ CR | 0.19108 | 1,724.67 | 1.683 | 0.19073 | 0.19445 | 0.18805 |
| ____ CU | 0.24003 | 3,187.74 | 1.018 | 0.23892 | 0.24283 | 0.23834 |
| ____ FE | 0.96677 | 161.70 | 2.002 | 0.98721 | 0.96438 | 0.94872 |
| ____ K | 9.62437 | 4,441.61 | 0.193 | 9.60896 | 9.64503 | 9.61911 |
| ____ LI | 0.94529 | 8,578.92 | 0.346 | 0.94501 | 0.94869 | 0.94216 |
| ____ MG | 1.94535 | 2,594.56 | 0.216 | 1.94271 | 1.95019 | 1.94316 |
| ____ MN | 0.47788 | 29,727.53 | 0.984 | 0.47684 | 0.48301 | 0.47378 |
| ____ MO | 1.95876 | 1,917.96 | 0.520 | 1.97032 | 1.95489 | 1.95108 |
| ____ NA | 9.48960 | 14,233.09 | 0.421 | 9.48241 | 9.53266 | 9.45372 |
| ____ NI | 0.49285 | 1,154.51 | 0.575 | 0.49590 | 0.49238 | 0.49029 |
| ____ P | 0.94157 | 105.47 | 0.470 | 0.94656 | 0.94000 | 0.93813 |
| ____ PB | 0.15105 | 87.48 | 2.615 | 0.14691 | 0.15478 | 0.15145 |
| ____ S | 0.96079 | 63.97 | 1.603 | 0.97474 | 0.96337 | 0.94427 |
| ____ SB | 0.45016 | 98.33 | 0.803 | 0.45416 | 0.44713 | 0.44919 |
| ____ SE | 0.15171 | 13.08 | 8.296 | 0.16620 | 0.14548 | 0.14346 |
| ____ SI | 0.95807 | 126.76 | 2.300 | 0.93294 | 0.97406 | 0.96723 |
| ____ SN | 3.78518 | 1,179.11 | 0.712 | 3.81494 | 3.77824 | 3.76237 |
| ____ SR | 0.92907 | 712,991.21 | 0.982 | 0.92834 | 0.93854 | 0.92034 |
| ____ TI | 0.98159 | 49,359.78 | 1.015 | 0.98049 | 0.99206 | 0.97222 |
| ____ TL | 0.16567 | 15.42 | 1.894 | 0.16395 | 0.16378 | 0.16929 |
| ____ V | 0.49653 | 7,988.29 | 0.870 | 0.49592 | 0.50112 | 0.49254 |
| ____ Y1 | 4850.35202 | 4,850.35 | 0.531 | 4821.39916 | 4870.81843 | 4858.83846 |
| ____ Y2A | 211115.43530 | 211,115.44 | 0.739 | 211487.41768 | 209403.31934 | 212455.56889 |
| ____ Y2R | 11257.34152 | 11,257.34 | 0.165 | 11262.46751 | 11236.72187 | 11272.83520 |
| ____ ZN | 0.48048 | 1,745.30 | 0.411 | 0.48255 | 0.48027 | 0.47862 |
| ____ ZR | 0.96801 | 2,041.38 | 0.401 | 0.96485 | 0.97235 | 0.96684 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 14 Date/Time: 07/31/2017 11:42

Sample Number: **9121687** Class: U*** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00092 | -26.06 | 44.857 | -0.00072 | -0.00064 | -0.00139 |
| ____ AL | 0.00694 | 9.32 | 226.956 | 0.02031 | 0.01091 | -0.01041 |
| ____ AS | 0.00370 | -1.24 | 194.065 | -0.00426 | 0.00967 | 0.00568 |
| ____ B | 0.06519 | 469.14 | 1.340 | 0.06431 | 0.06521 | 0.06605 |
| ____ BA | 0.10812 | 72,675.39 | 0.888 | 0.10711 | 0.10825 | 0.10902 |
| ____ BE | -0.00023 | -91.84 | 6.346 | -0.00022 | -0.00022 | -0.00024 |
| ____ CA | 37.65915 | 30,477.67 | 2.041 | 38.22916 | 37.96310 | 36.78520 |
| ____ CD | 0.00043 | -4.04 | 81.167 | 0.00004 | 0.00053 | 0.00071 |
| ____ CO | -0.00072 | -4.88 | 36.577 | -0.00077 | -0.00096 | -0.00044 |
| ____ CR | 0.00080 | 20.79 | 44.344 | 0.00119 | 0.00050 | 0.00070 |
| ____ CU | -0.00051 | -9.69 | 132.004 | -0.00126 | -0.00032 | 0.00005 |
| ____ FE | 0.01230 | 5.65 | 88.133 | 0.02232 | 0.01379 | 0.00079 |
| ____ K | 2.15710 | 1,040.19 | 1.486 | 2.18506 | 2.16413 | 2.12212 |
| ____ LI | 0.01674 | 131.54 | 6.681 | 0.01545 | 0.01734 | 0.01743 |
| ____ MG | 5.34121 | 7,112.51 | 1.464 | 5.39787 | 5.37379 | 5.25198 |
| ____ MN | 0.00022 | 24.48 | 43.303 | 0.00013 | 0.00032 | 0.00021 |
| ____ MO | 0.00387 | 3.54 | 27.500 | 0.00479 | 0.00411 | 0.00270 |
| ____ NA | 22.78965 | 34,124.28 | 2.022 | 23.04777 | 23.06343 | 22.25775 |
| ____ NI | 0.00018 | 3.34 | 396.975 | 0.00026 | 0.00087 | -0.00058 |
| ____ P | 0.00892 | 1.94 | 15.516 | 0.00979 | 0.00733 | 0.00965 |
| ____ PB | 0.00209 | -1.46 | 191.166 | 0.00668 | 0.00025 | -0.00065 |
| ____ S | 12.55220 | 832.85 | 2.100 | 12.79568 | 12.58859 | 12.27233 |
| ____ SB | 0.00034 | 2.53 | 625.317 | 0.00280 | -0.00080 | -0.00097 |
| ____ SE | 0.01661 | -0.21 | 42.433 | 0.02337 | 0.01715 | 0.00931 |
| ____ SI | 13.63133 | 1,646.69 | 1.698 | 13.78620 | 13.74246 | 13.36533 |
| ____ SN | 0.00221 | 0.04 | 125.542 | -0.00092 | 0.00436 | 0.00319 |
| ____ SR | 0.24046 | 185,562.21 | 0.635 | 0.23880 | 0.24077 | 0.24180 |
| ____ TI | 0.00130 | 113.32 | 21.946 | 0.00113 | 0.00113 | 0.00162 |
| ____ TL | 0.00259 | 0.39 | 288.859 | 0.00654 | -0.00605 | 0.00729 |
| ____ V | 0.00513 | 75.21 | 4.026 | 0.00491 | 0.00532 | 0.00516 |
| ____ Y1 | 4813.71376 | 4,813.71 | 1.841 | 4722.24508 | 4819.70259 | 4899.19361 |
| ____ Y2A | 212281.71149 | 212,281.71 | 0.543 | 213601.40522 | 211779.01456 | 211464.71468 |
| ____ Y2R | 11291.73920 | 11,291.74 | 1.325 | 11183.33999 | 11229.37014 | 11462.50747 |
| ____ ZN | 0.01186 | 49.28 | 3.293 | 0.01220 | 0.01195 | 0.01143 |
| ____ ZR | 0.00147 | -11.79 | 150.627 | 0.00140 | 0.00372 | -0.00071 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 15 Date/Time: 07/31/2017 11:45

Sample Number: **9121687** Class: UP** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.02058 | 292.47 | 1.917 | 0.02077 | 0.02013 | 0.02085 |
| ____ AL | 0.93183 | 106.93 | 2.870 | 0.91254 | 0.96236 | 0.92059 |
| ____ AS | 0.46273 | 51.69 | 1.955 | 0.45790 | 0.47317 | 0.45712 |
| ____ B | 0.23087 | 1,777.31 | 0.618 | 0.23243 | 0.22964 | 0.23055 |
| ____ BA | 0.15059 | 100,488.91 | 0.278 | 0.15069 | 0.15013 | 0.15094 |
| ____ BE | 0.01724 | 8,294.56 | 0.692 | 0.01733 | 0.01710 | 0.01727 |
| ____ CA | 37.28054 | 30,377.05 | 0.744 | 37.08210 | 37.16223 | 37.59728 |
| ____ CD | 0.04610 | 328.80 | 1.135 | 0.04571 | 0.04669 | 0.04589 |
| ____ CO | 0.09224 | 341.90 | 0.983 | 0.09187 | 0.09327 | 0.09157 |
| ____ CR | 0.18252 | 1,644.60 | 0.638 | 0.18355 | 0.18126 | 0.18274 |
| ____ CU | 0.44592 | 6,033.66 | 1.189 | 0.45098 | 0.44040 | 0.44639 |
| ____ FE | 0.44963 | 77.90 | 3.157 | 0.43613 | 0.44832 | 0.46443 |
| ____ K | 3.87729 | 1,839.10 | 0.475 | 3.85606 | 3.88894 | 3.88686 |
| ____ LI | 0.89254 | 8,177.14 | 1.254 | 0.88524 | 0.88696 | 0.90543 |
| ____ MG | 6.01089 | 8,053.99 | 1.315 | 5.95851 | 5.97231 | 6.10183 |
| ____ MN | 0.05392 | 3,356.60 | 0.771 | 0.05432 | 0.05349 | 0.05394 |
| ____ MO | 0.18659 | 180.50 | 1.280 | 0.18775 | 0.18818 | 0.18384 |
| ____ NA | 23.73071 | 35,770.19 | 0.547 | 23.60714 | 23.71923 | 23.86576 |
| ____ NI | 0.13810 | 321.10 | 1.036 | 0.13822 | 0.13947 | 0.13661 |
| ____ P | 0.94016 | 104.15 | 1.391 | 0.94915 | 0.94617 | 0.92516 |
| ____ PB | 0.46342 | 279.19 | 1.160 | 0.46645 | 0.46659 | 0.45721 |
| ____ S | 13.21727 | 874.18 | 1.024 | 13.21438 | 13.35408 | 13.08334 |
| ____ SB | 0.36172 | 84.94 | 1.270 | 0.36664 | 0.36100 | 0.35753 |
| ____ SE | 0.71513 | 67.79 | 1.538 | 0.70323 | 0.71725 | 0.72491 |
| ____ SI | 13.98952 | 1,702.32 | 1.341 | 13.83693 | 13.93268 | 14.19895 |
| ____ SN | 0.54752 | 168.12 | 1.198 | 0.55083 | 0.55177 | 0.53997 |
| ____ SR | 0.25198 | 192,975.17 | 0.361 | 0.25216 | 0.25099 | 0.25278 |
| ____ TI | 0.09419 | 4,774.23 | 0.526 | 0.09459 | 0.09364 | 0.09434 |
| ____ TL | 0.88411 | 94.34 | 0.295 | 0.88301 | 0.88708 | 0.88223 |
| ____ V | 0.09918 | 1,649.72 | 1.183 | 0.10046 | 0.09817 | 0.09890 |
| ____ Y1 | 4797.09310 | 4,797.09 | 1.070 | 4788.81735 | 4750.42515 | 4852.03680 |
| ____ Y2A | 210666.82182 | 210,666.82 | 0.266 | 211030.11964 | 210948.02474 | 210022.32107 |
| ____ Y2R | 11366.72606 | 11,366.73 | 0.699 | 11415.96890 | 11409.17431 | 11275.03498 |
| ____ ZN | 0.12159 | 443.95 | 0.970 | 0.12137 | 0.12286 | 0.12053 |
| ____ ZR | 0.88623 | 1,885.70 | 1.397 | 0.87568 | 0.88315 | 0.89986 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 16 Date/Time: 07/31/2017 11:48

Sample Number: **9121690** Class: D*** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00058 | -21.54 | 143.458 | -0.00134 | -0.00069 | 0.00030 |
| ____ AL | 0.00137 | 8.83 | 2799.258 | 0.04575 | -0.01986 | -0.02177 |
| ____ AS | -0.00218 | -1.93 | 218.043 | -0.00177 | 0.00235 | -0.00712 |
| ____ B | 0.06101 | 439.41 | 0.123 | 0.06094 | 0.06109 | 0.06100 |
| ____ BA | 0.10931 | 74,055.39 | 0.190 | 0.10907 | 0.10943 | 0.10944 |
| ____ BE | -0.00021 | -81.33 | 7.189 | -0.00022 | -0.00021 | -0.00019 |
| ____ CA | 38.34757 | 31,338.86 | 0.320 | 38.41767 | 38.20602 | 38.41901 |
| ____ CD | 0.00027 | -5.26 | 31.864 | 0.00017 | 0.00032 | 0.00031 |
| ____ CO | -0.00042 | -3.77 | 101.906 | 0.00007 | -0.00068 | -0.00066 |
| ____ CR | 0.00087 | 21.64 | 78.187 | 0.00011 | 0.00141 | 0.00110 |
| ____ CU | -0.00009 | -3.73 | 765.563 | -0.00008 | 0.00058 | -0.00076 |
| ____ FE | 0.01899 | 6.83 | 50.812 | 0.01235 | 0.03006 | 0.01456 |
| ____ K | 2.23725 | 1,087.40 | 0.206 | 2.24251 | 2.23523 | 2.23401 |
| ____ LI | 0.01713 | 136.37 | 5.920 | 0.01760 | 0.01783 | 0.01597 |
| ____ MG | 5.44515 | 7,321.47 | 0.207 | 5.45810 | 5.43983 | 5.43751 |
| ____ MN | 0.00030 | 29.52 | 21.717 | 0.00032 | 0.00034 | 0.00022 |
| ____ MO | 0.00370 | 3.40 | 19.873 | 0.00285 | 0.00420 | 0.00403 |
| ____ NA | 23.02599 | 34,816.38 | 0.901 | 23.14104 | 22.78648 | 23.15044 |
| ____ NI | -0.00007 | 2.76 | 731.424 | 0.00019 | -0.00063 | 0.00025 |
| ____ P | 0.00290 | 1.28 | 152.506 | -0.00011 | 0.00083 | 0.00798 |
| ____ PB | 0.00364 | -0.48 | 59.092 | 0.00223 | 0.00611 | 0.00258 |
| ____ S | 12.80397 | 852.08 | 0.661 | 12.75167 | 12.75868 | 12.90158 |
| ____ SB | 0.00015 | 2.50 | 495.272 | -0.00010 | -0.00044 | 0.00100 |
| ____ SE | 0.00745 | -1.10 | 65.314 | 0.00323 | 0.01277 | 0.00635 |
| ____ SI | 13.85431 | 1,690.05 | 0.287 | 13.88364 | 13.80910 | 13.87020 |
| ____ SN | 0.00094 | -0.36 | 132.961 | -0.00043 | 0.00124 | 0.00201 |
| ____ SR | 0.24358 | 189,461.76 | 0.105 | 0.24346 | 0.24387 | 0.24341 |
| ____ TI | 0.00133 | 116.15 | 17.344 | 0.00149 | 0.00107 | 0.00144 |
| ____ TL | 0.00211 | 0.34 | 91.169 | 0.00373 | -0.00002 | 0.00261 |
| ____ V | 0.00542 | 81.00 | 2.634 | 0.00527 | 0.00555 | 0.00543 |
| ____ Y1 | 4826.85129 | 4,826.85 | 0.659 | 4831.37921 | 4856.15369 | 4793.02098 |
| ____ Y2A | 213957.26936 | 213,957.27 | 0.273 | 213290.43339 | 214378.38188 | 214202.99282 |
| ____ Y2R | 11401.05161 | 11,401.05 | 0.280 | 11401.90391 | 11432.59437 | 11368.65657 |
| ____ ZN | 0.01196 | 49.79 | 2.588 | 0.01199 | 0.01164 | 0.01226 |
| ____ ZR | 0.00356 | -7.36 | 12.494 | 0.00386 | 0.00305 | 0.00378 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 17 Date/Time: 07/31/2017 11:51

Sample Number: **9121688** Class: R*** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05102 | 702.94 | 0.254 | 0.05095 | 0.05094 | 0.05117 |
| ____ AL | 1.90593 | 211.68 | 2.464 | 1.85281 | 1.92309 | 1.94190 |
| ____ AS | 0.13701 | 14.75 | 7.499 | 0.13998 | 0.12558 | 0.14547 |
| ____ B | 1.81220 | 14,235.27 | 0.418 | 1.80421 | 1.81928 | 1.81311 |
| ____ BA | 1.96423 | 1,302,031.10 | 0.433 | 1.95440 | 1.96914 | 1.96914 |
| ____ BE | 0.04549 | 21,835.63 | 0.489 | 0.04535 | 0.04574 | 0.04537 |
| ____ CA | 41.70466 | 33,896.21 | 0.857 | 42.01799 | 41.31568 | 41.78032 |
| ____ CD | 0.04832 | 342.74 | 1.603 | 0.04921 | 0.04780 | 0.04796 |
| ____ CO | 0.48322 | 1,791.44 | 1.445 | 0.49128 | 0.47921 | 0.47916 |
| ____ CR | 0.19004 | 1,707.52 | 0.593 | 0.18883 | 0.19106 | 0.19023 |
| ____ CU | 0.23788 | 3,154.78 | 0.471 | 0.23706 | 0.23916 | 0.23741 |
| ____ FE | 0.93060 | 156.95 | 2.114 | 0.95233 | 0.91401 | 0.92545 |
| ____ K | 11.56360 | 5,365.68 | 1.145 | 11.63561 | 11.41082 | 11.64436 |
| ____ LI | 0.94234 | 8,616.27 | 1.025 | 0.94765 | 0.93119 | 0.94817 |
| ____ MG | 7.20746 | 9,629.21 | 0.825 | 7.21050 | 7.14651 | 7.26536 |
| ____ MN | 0.46852 | 29,011.92 | 0.553 | 0.46726 | 0.47150 | 0.46680 |
| ____ MO | 1.99336 | 1,916.67 | 1.478 | 2.02733 | 1.97481 | 1.97795 |
| ____ NA | 32.08067 | 48,211.88 | 1.134 | 32.40657 | 31.68824 | 32.14720 |
| ____ NI | 0.48547 | 1,115.98 | 1.300 | 0.49275 | 0.48155 | 0.48211 |
| ____ P | 0.97962 | 107.72 | 1.486 | 0.99638 | 0.97237 | 0.97011 |
| ____ PB | 0.14653 | 83.09 | 3.993 | 0.15163 | 0.14014 | 0.14783 |
| ____ S | 13.90856 | 913.81 | 1.522 | 14.15281 | 13.77739 | 13.79549 |
| ____ SB | 0.45175 | 96.70 | 1.044 | 0.45609 | 0.44673 | 0.45243 |
| ____ SE | 0.15155 | 12.84 | 6.288 | 0.14980 | 0.14302 | 0.16184 |
| ____ SI | 14.70597 | 1,794.67 | 1.261 | 14.67576 | 14.53752 | 14.90463 |
| ____ SN | 3.87905 | 1,186.59 | 1.593 | 3.95035 | 3.84112 | 3.84568 |
| ____ SR | 1.15654 | 883,473.45 | 0.864 | 1.14786 | 1.16747 | 1.15430 |
| ____ TI | 0.97925 | 49,015.81 | 0.608 | 0.97348 | 0.98536 | 0.97890 |
| ____ TL | 0.16882 | 15.50 | 2.253 | 0.16737 | 0.16595 | 0.17313 |
| ____ V | 0.50177 | 8,030.83 | 0.264 | 0.50245 | 0.50261 | 0.50024 |
| ____ Y1 | 4763.43540 | 4,763.44 | 1.215 | 4698.46676 | 4809.41411 | 4782.42533 |
| ____ Y2A | 210138.08918 | 210,138.09 | 0.352 | 210523.79524 | 209285.66287 | 210604.80942 |
| ____ Y2R | 11342.28853 | 11,342.29 | 0.668 | 11279.87415 | 11426.50879 | 11320.48265 |
| ____ ZN | 0.49250 | 1,756.04 | 1.662 | 0.50186 | 0.48667 | 0.48897 |
| ____ ZR | 0.95346 | 2,025.59 | 0.643 | 0.95643 | 0.94641 | 0.95754 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 18 Date/Time: 07/31/2017 11:54

Sample Number: **9121689** Class: M*** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.05153 | 713.71 | 2.425 | 0.05009 | 0.05217 | 0.05233 |
| ____ AL | 1.96118 | 215.05 | 0.065 | 1.95970 | 1.96196 | 1.96187 |
| ____ AS | 0.14349 | 15.63 | 6.777 | 0.15463 | 0.13911 | 0.13672 |
| ____ B | 1.82344 | 14,390.67 | 0.655 | 1.80987 | 1.82811 | 1.83234 |
| ____ BA | 1.97791 | 1,317,222.17 | 0.297 | 1.97571 | 1.97346 | 1.98456 |
| ____ BE | 0.04558 | 21,979.66 | 0.766 | 0.04517 | 0.04576 | 0.04579 |
| ____ CA | 42.75487 | 34,356.12 | 1.369 | 42.09526 | 43.21312 | 42.95623 |
| ____ CD | 0.04880 | 349.22 | 1.453 | 0.04950 | 0.04880 | 0.04809 |
| ____ CO | 0.48557 | 1,815.87 | 1.106 | 0.48965 | 0.48758 | 0.47949 |
| ____ CR | 0.18994 | 1,714.60 | 0.686 | 0.18844 | 0.19067 | 0.19071 |
| ____ CU | 0.23985 | 3,196.05 | 1.127 | 0.23682 | 0.24201 | 0.24072 |
| ____ FE | 0.96628 | 161.01 | 0.679 | 0.96614 | 0.97291 | 0.95979 |
| ____ K | 11.86258 | 5,441.18 | 1.582 | 11.69601 | 12.06598 | 11.82576 |
| ____ LI | 0.97019 | 8,771.84 | 1.409 | 0.95442 | 0.97861 | 0.97755 |
| ____ MG | 7.42183 | 9,802.68 | 1.508 | 7.31579 | 7.53880 | 7.41091 |
| ____ MN | 0.47068 | 29,281.25 | 0.624 | 0.46742 | 0.47312 | 0.47150 |
| ____ MO | 2.00387 | 1,943.61 | 1.092 | 2.01808 | 2.01484 | 1.97867 |
| ____ NA | 32.76114 | 48,679.47 | 1.251 | 32.28845 | 33.01904 | 32.97592 |
| ____ NI | 0.48835 | 1,132.36 | 1.124 | 0.49156 | 0.49148 | 0.48202 |
| ____ P | 0.98605 | 109.37 | 1.277 | 0.98628 | 0.99851 | 0.97334 |
| ____ PB | 0.14824 | 84.86 | 1.482 | 0.15004 | 0.14887 | 0.14579 |
| ____ S | 13.91646 | 922.32 | 1.230 | 14.01858 | 14.01195 | 13.71884 |
| ____ SB | 0.45715 | 98.77 | 0.894 | 0.46071 | 0.45269 | 0.45806 |
| ____ SE | 0.14663 | 12.46 | 5.324 | 0.15379 | 0.13831 | 0.14777 |
| ____ SI | 15.13575 | 1,826.06 | 1.350 | 14.94294 | 15.34994 | 15.11437 |
| ____ SN | 3.89164 | 1,200.86 | 1.151 | 3.92542 | 3.90871 | 3.84081 |
| ____ SR | 1.16438 | 893,617.82 | 0.379 | 1.16026 | 1.16384 | 1.16904 |
| ____ TI | 0.98068 | 49,316.31 | 0.632 | 0.97447 | 0.98687 | 0.98068 |
| ____ TL | 0.16374 | 15.08 | 3.832 | 0.15735 | 0.16990 | 0.16398 |
| ____ V | 0.50611 | 8,140.27 | 0.761 | 0.50216 | 0.50986 | 0.50630 |
| ____ Y1 | 4804.77387 | 4,804.77 | 0.867 | 4763.48217 | 4804.03356 | 4846.80587 |
| ____ Y2A | 211119.08660 | 211,119.09 | 0.583 | 212514.68706 | 210649.37138 | 210193.20136 |
| ____ Y2R | 11215.32149 | 11,215.32 | 0.998 | 11342.40152 | 11131.33852 | 11172.22444 |
| ____ ZN | 0.49427 | 1,777.82 | 1.014 | 0.49617 | 0.49805 | 0.48858 |
| ____ ZR | 0.97736 | 2,053.36 | 1.407 | 0.96263 | 0.98986 | 0.97959 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 19 Date/Time: 07/31/2017 11:57

Sample Number: **9121687** Class: UL** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00016 | -15.74 | 430.753 | -0.00069 | -0.00037 | 0.00060 |
| ____ AL | 0.00611 | 9.05 | 202.304 | 0.02018 | 0.00119 | -0.00304 |
| ____ AS | -0.00337 | -2.09 | 326.417 | 0.00526 | -0.01577 | 0.00039 |
| ____ B | 0.02983 | 187.35 | 1.166 | 0.02949 | 0.02982 | 0.03019 |
| ____ BA | 0.02144 | 14,630.35 | 0.290 | 0.02138 | 0.02144 | 0.02150 |
| ____ BE | -0.00021 | -84.95 | 5.236 | -0.00020 | -0.00021 | -0.00023 |
| ____ CA | 7.81923 | 6,243.62 | 1.555 | 7.85530 | 7.91867 | 7.68371 |
| ____ CD | 0.00056 | -3.17 | 25.313 | 0.00068 | 0.00040 | 0.00058 |
| ____ CO | -0.00015 | -2.76 | 293.258 | -0.00058 | 0.00028 | -0.00014 |
| ____ CR | 0.00002 | 13.80 | 317.667 | -0.00001 | 0.00011 | -0.00003 |
| ____ CU | 0.00013 | -9.58 | 675.396 | -0.00078 | 0.00103 | 0.00015 |
| ____ FE | -0.00562 | 2.68 | 117.215 | -0.00103 | -0.01316 | -0.00266 |
| ____ K | 0.45976 | 258.68 | 3.761 | 0.44277 | 0.47734 | 0.45919 |
| ____ LI | 0.00821 | 52.48 | 11.046 | 0.00735 | 0.00915 | 0.00813 |
| ____ MG | 1.09696 | 1,442.94 | 1.616 | 1.10516 | 1.10911 | 1.07661 |
| ____ MN | 0.00004 | 13.62 | 226.946 | -0.00005 | 0.00003 | 0.00015 |
| ____ MO | 0.00152 | 1.28 | 30.989 | 0.00173 | 0.00098 | 0.00185 |
| ____ NA | 4.73679 | 7,033.70 | 1.611 | 4.75353 | 4.80336 | 4.65349 |
| ____ NI | -0.00075 | 1.96 | 47.048 | -0.00087 | -0.00035 | -0.00102 |
| ____ P | 0.00165 | 1.15 | 344.310 | 0.00820 | -0.00218 | -0.00106 |
| ____ PB | 0.00270 | -1.06 | 48.261 | 0.00362 | 0.00327 | 0.00121 |
| ____ S | 2.50092 | 166.76 | 0.436 | 2.49330 | 2.49603 | 2.51342 |
| ____ SB | 0.00410 | 3.44 | 102.510 | 0.00148 | 0.00895 | 0.00187 |
| ____ SE | 0.00296 | -1.55 | 163.686 | 0.00804 | -0.00161 | 0.00245 |
| ____ SI | 2.73736 | 325.17 | 1.090 | 2.73375 | 2.76884 | 2.70950 |
| ____ SN | 0.00315 | 0.33 | 1.169 | 0.00320 | 0.00312 | 0.00314 |
| ____ SR | 0.04774 | 36,796.68 | 0.645 | 0.04740 | 0.04784 | 0.04799 |
| ____ TI | 0.00053 | 74.63 | 10.084 | 0.00059 | 0.00050 | 0.00050 |
| ____ TL | 0.00042 | 0.15 | 740.341 | -0.00314 | 0.00186 | 0.00254 |
| ____ V | 0.00109 | 5.31 | 39.278 | 0.00153 | 0.00067 | 0.00108 |
| ____ Y1 | 4853.72693 | 4,853.73 | 0.945 | 4855.89140 | 4898.47615 | 4806.81323 |
| ____ Y2A | 211974.84580 | 211,974.85 | 0.434 | 213036.49890 | 211401.02733 | 211487.01117 |
| ____ Y2R | 11060.31139 | 11,060.31 | 1.377 | 10999.47137 | 10947.86640 | 11233.59640 |
| ____ ZN | 0.00202 | 14.29 | 5.966 | 0.00191 | 0.00215 | 0.00200 |
| ____ ZR | 0.00105 | -12.44 | 306.806 | 0.00283 | 0.00300 | -0.00268 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 20 Date/Time: 07/31/2017 12:00

Sample Number: **9121675** Class: **** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00047 | -20.18 | 138.254 | -0.00119 | 0.00008 | -0.00030 |
| ____ AL | -0.00166 | 8.39 | 2847.829 | 0.05187 | -0.03702 | -0.01981 |
| ____ AS | 0.00072 | -1.60 | 765.958 | -0.00466 | 0.00642 | 0.00041 |
| ____ B | 0.06269 | 453.13 | 1.952 | 0.06364 | 0.06313 | 0.06131 |
| ____ BA | 0.09530 | 64,641.86 | 1.153 | 0.09568 | 0.09615 | 0.09406 |
| ____ BE | -0.00022 | -88.46 | 7.326 | -0.00023 | -0.00020 | -0.00022 |
| ____ CA | 43.95283 | 35,386.45 | 0.911 | 44.28821 | 44.06105 | 43.50924 |
| ____ CD | 0.00043 | -4.06 | 41.471 | 0.00054 | 0.00022 | 0.00052 |
| ____ CO | -0.00050 | -4.08 | 26.493 | -0.00035 | -0.00061 | -0.00055 |
| ____ CR | 0.00151 | 27.44 | 19.886 | 0.00181 | 0.00151 | 0.00121 |
| ____ CU | -0.00012 | -2.53 | 105.565 | 0.00003 | -0.00018 | -0.00021 |
| ____ FE | 0.01510 | 6.09 | 114.804 | 0.02496 | 0.02526 | -0.00492 |
| ____ K | 2.45288 | 1,169.82 | 2.555 | 2.51093 | 2.46127 | 2.38643 |
| ____ LI | 0.01809 | 143.05 | 1.589 | 0.01782 | 0.01839 | 0.01804 |
| ____ MG | 6.16774 | 8,169.49 | 0.373 | 6.19427 | 6.15438 | 6.15456 |
| ____ MN | 0.00009 | 16.66 | 88.693 | 0.00009 | 0.00001 | 0.00017 |
| ____ MO | 0.00417 | 3.86 | 19.913 | 0.00323 | 0.00481 | 0.00448 |
| ____ NA | 23.73339 | 35,366.37 | 0.713 | 23.80989 | 23.85091 | 23.53938 |
| ____ NI | 0.00034 | 3.68 | 196.301 | 0.00083 | -0.00042 | 0.00061 |
| ____ P | 0.00198 | 1.18 | 402.685 | -0.00550 | 0.00107 | 0.01039 |
| ____ PB | 0.00402 | -0.26 | 34.666 | 0.00555 | 0.00368 | 0.00282 |
| ____ S | 15.60419 | 1,036.97 | 1.173 | 15.68145 | 15.73601 | 15.39510 |
| ____ SB | 0.00237 | 3.00 | 154.080 | 0.00649 | 0.00106 | -0.00045 |
| ____ SE | 0.00478 | -1.36 | 95.588 | 0.00978 | 0.00085 | 0.00369 |
| ____ SI | 14.29062 | 1,718.16 | 0.523 | 14.37516 | 14.23354 | 14.26317 |
| ____ SN | 0.00339 | 0.40 | 83.381 | 0.00078 | 0.00639 | 0.00300 |
| ____ SR | 0.27061 | 210,624.11 | 1.107 | 0.27207 | 0.27261 | 0.26717 |
| ____ TI | 0.00128 | 113.79 | 9.968 | 0.00121 | 0.00143 | 0.00121 |
| ____ TL | -0.00117 | -0.02 | 172.328 | 0.00113 | -0.00261 | -0.00203 |
| ____ V | 0.00593 | 89.98 | 5.386 | 0.00608 | 0.00615 | 0.00557 |
| ____ Y1 | 4819.53110 | 4,819.53 | 0.903 | 4801.47956 | 4787.96204 | 4869.15170 |
| ____ Y2A | 214112.21061 | 214,112.21 | 0.974 | 212860.82320 | 212955.27683 | 216520.53179 |
| ____ Y2R | 11237.11568 | 11,237.12 | 0.447 | 11213.62365 | 11202.90303 | 11294.82036 |
| ____ ZN | 0.01561 | 62.76 | 0.830 | 0.01553 | 0.01576 | 0.01555 |
| ____ ZR | 0.00154 | -11.55 | 45.508 | 0.00073 | 0.00191 | 0.00198 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 21 Date/Time: 07/31/2017 12:03

Sample Number: **9121677** Class: **** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00119 | -29.67 | 17.499 | -0.00133 | -0.00095 | -0.00129 |
| ____ AL | 0.00984 | 9.63 | 62.854 | 0.00985 | 0.01602 | 0.00365 |
| ____ AS | -0.00223 | -1.97 | 100.284 | -0.00145 | -0.00475 | -0.00048 |
| ____ B | 0.06077 | 432.89 | 1.463 | 0.05982 | 0.06091 | 0.06158 |
| ____ BA | 0.09441 | 63,359.59 | 0.433 | 0.09395 | 0.09472 | 0.09456 |
| ____ BE | -0.00022 | -87.68 | 3.762 | -0.00023 | -0.00022 | -0.00021 |
| ____ CA | 43.12775 | 34,866.35 | 0.012 | 43.12427 | 43.13388 | 43.12508 |
| ____ CD | 0.00043 | -4.12 | 32.235 | 0.00048 | 0.00027 | 0.00054 |
| ____ CO | -0.00048 | -4.04 | 76.146 | -0.00079 | -0.00057 | -0.00008 |
| ____ CR | 0.00093 | 21.93 | 88.692 | 0.00111 | 0.00165 | 0.00003 |
| ____ CU | 0.00014 | 0.86 | 415.532 | 0.00071 | 0.00017 | -0.00046 |
| ____ FE | -0.00655 | 2.57 | 93.176 | -0.00829 | 0.00023 | -0.01159 |
| ____ K | 2.35631 | 1,130.51 | 1.824 | 2.31345 | 2.39939 | 2.35608 |
| ____ LI | 0.01938 | 155.45 | 6.352 | 0.01874 | 0.02080 | 0.01861 |
| ____ MG | 6.06972 | 8,072.91 | 0.421 | 6.04355 | 6.09458 | 6.07103 |
| ____ MN | 0.00007 | 15.14 | 67.711 | 0.00006 | 0.00012 | 0.00002 |
| ____ MO | 0.00392 | 3.67 | 20.858 | 0.00355 | 0.00335 | 0.00485 |
| ____ NA | 23.23450 | 34,766.65 | 0.148 | 23.23265 | 23.20104 | 23.26981 |
| ____ NI | 0.00006 | 3.07 | 1235.490 | 0.00053 | 0.00038 | -0.00074 |
| ____ P | 0.00773 | 1.84 | 7.801 | 0.00832 | 0.00775 | 0.00711 |
| ____ PB | 0.00461 | 0.10 | 54.109 | 0.00611 | 0.00599 | 0.00173 |
| ____ S | 14.92615 | 1,007.49 | 0.603 | 15.01607 | 14.92625 | 14.83613 |
| ____ SB | -0.00002 | 2.49 | 1404.935 | -0.00322 | 0.00352 | -0.00037 |
| ____ SE | 0.01759 | -0.11 | 40.727 | 0.00971 | 0.02372 | 0.01934 |
| ____ SI | 14.04099 | 1,695.04 | 0.164 | 14.05976 | 14.01533 | 14.04788 |
| ____ SN | 0.00229 | 0.06 | 98.764 | 0.00233 | 0.00001 | 0.00453 |
| ____ SR | 0.26818 | 206,511.17 | 0.335 | 0.26756 | 0.26921 | 0.26778 |
| ____ TI | 0.00139 | 117.78 | 7.302 | 0.00129 | 0.00149 | 0.00139 |
| ____ TL | -0.00519 | -0.46 | 20.701 | -0.00573 | -0.00395 | -0.00588 |
| ____ V | 0.00581 | 86.99 | 4.638 | 0.00551 | 0.00592 | 0.00601 |
| ____ Y1 | 4895.21529 | 4,895.22 | 0.933 | 4856.28037 | 4883.84300 | 4945.52248 |
| ____ Y2A | 211819.57911 | 211,819.58 | 0.403 | 212754.39506 | 211079.89206 | 211624.45022 |
| ____ Y2R | 11282.77547 | 11,282.78 | 0.214 | 11303.57855 | 11288.44927 | 11256.29858 |
| ____ ZN | 0.01482 | 60.85 | 1.844 | 0.01513 | 0.01473 | 0.01460 |
| ____ ZR | 0.00162 | -11.43 | 66.723 | 0.00037 | 0.00219 | 0.00229 |

LANCASTER LABORATORIES

Run Name: 1721206T73

Instrument ID: 18255

Tube: 22

Date/Time: 07/31/2017 12:06

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.46257 | 6,079.10 | 2.552 | 0.45000 | 0.46431 | 0.47341 |
| ____ AL | 23.56035 | 2,408.46 | 0.461 | 23.63666 | 23.43598 | 23.60842 |
| ____ AS | 0.50275 | 53.42 | 0.556 | 0.50061 | 0.50592 | 0.50174 |
| ____ B | 0.45487 | 3,638.14 | 2.298 | 0.44293 | 0.45929 | 0.46238 |
| ____ BA | 0.46533 | 303,892.75 | 2.317 | 0.45476 | 0.46492 | 0.47632 |
| ____ BE | 0.45096 | 212,432.06 | 2.343 | 0.43925 | 0.45385 | 0.45978 |
| ____ CA | 23.49615 | 18,532.80 | 0.654 | 23.59196 | 23.31887 | 23.57762 |
| ____ CD | 0.49910 | 3,492.78 | 0.678 | 0.49647 | 0.49792 | 0.50292 |
| ____ CO | 0.49646 | 1,775.93 | 0.746 | 0.49305 | 0.49593 | 0.50040 |
| ____ CR | 0.46677 | 4,109.14 | 2.226 | 0.45486 | 0.47152 | 0.47394 |
| ____ CU | 0.46677 | 6,188.91 | 2.393 | 0.45433 | 0.47004 | 0.47594 |
| ____ FE | 23.45281 | 3,730.26 | 0.590 | 23.58407 | 23.30847 | 23.46588 |
| ____ K | 23.51331 | 10,513.95 | 0.482 | 23.58722 | 23.38277 | 23.56995 |
| ____ LI | 0.47627 | 4,215.21 | 0.479 | 0.47669 | 0.47380 | 0.47831 |
| ____ MG | 23.42580 | 30,064.72 | 0.642 | 23.50950 | 23.25222 | 23.51568 |
| ____ MN | 0.46248 | 28,189.69 | 2.318 | 0.45055 | 0.46561 | 0.47129 |
| ____ MO | 0.49974 | 464.49 | 0.543 | 0.49865 | 0.49774 | 0.50283 |
| ____ NA | 23.55624 | 34,319.14 | 0.239 | 23.61790 | 23.50723 | 23.54359 |
| ____ NI | 0.49603 | 1,099.26 | 0.711 | 0.49263 | 0.49578 | 0.49967 |
| ____ P | 0.50041 | 53.66 | 1.563 | 0.49141 | 0.50433 | 0.50550 |
| ____ PB | 0.49974 | 291.11 | 0.414 | 0.49852 | 0.49856 | 0.50213 |
| ____ S | 24.06415 | 1,528.75 | 0.721 | 23.90452 | 24.03925 | 24.24869 |
| ____ SB | 0.50138 | 112.97 | 0.316 | 0.49957 | 0.50250 | 0.50206 |
| ____ SE | 0.50122 | 45.01 | 1.566 | 0.50434 | 0.50702 | 0.49229 |
| ____ SI | 22.90885 | 2,694.20 | 0.548 | 22.93283 | 22.77312 | 23.02060 |
| ____ SN | 0.49245 | 145.11 | 1.982 | 0.48610 | 0.48756 | 0.50369 |
| ____ SR | 0.46440 | 349,222.09 | 1.829 | 0.45542 | 0.46547 | 0.47230 |
| ____ TI | 0.48251 | 23,920.28 | 2.318 | 0.46976 | 0.48708 | 0.49068 |
| ____ TL | 0.51235 | 50.37 | 1.367 | 0.52032 | 0.50717 | 0.50957 |
| ____ V | 0.48417 | 8,094.73 | 2.140 | 0.47248 | 0.48781 | 0.49222 |
| ____ Y1 | 4605.66542 | 4,605.67 | 0.669 | 4627.12575 | 4619.53865 | 4570.33187 |
| ____ Y2A | 206899.48354 | 206,899.48 | 1.688 | 210663.09476 | 206269.25230 | 203766.10356 |
| ____ Y2R | 10985.93363 | 10,985.93 | 0.466 | 10971.40295 | 11042.83151 | 10943.56643 |
| ____ ZN | 0.49876 | 1,728.42 | 0.804 | 0.49580 | 0.49716 | 0.50333 |
| ____ ZR | 0.47486 | 969.86 | 0.852 | 0.47135 | 0.47393 | 0.47928 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 23 Date/Time: 07/31/2017 12:09

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00084 | -23.63 | 56.096 | -0.00133 | -0.00039 | -0.00079 |
| ____ AL | -0.00305 | 7.70 | 1113.688 | 0.03596 | -0.02567 | -0.01943 |
| ____ AS | -0.00377 | -2.02 | 59.729 | -0.00239 | -0.00637 | -0.00256 |
| ____ B | 0.01637 | 76.15 | 4.060 | 0.01641 | 0.01702 | 0.01569 |
| ____ BA | -0.00013 | 204.03 | 32.006 | -0.00017 | -0.00012 | -0.00009 |
| ____ BE | -0.00021 | -78.82 | 1.387 | -0.00021 | -0.00021 | -0.00021 |
| ____ CA | 0.00005 | 43.61 | 5226.123 | 0.00293 | -0.00094 | -0.00184 |
| ____ CD | 0.00042 | -3.92 | 33.520 | 0.00036 | 0.00058 | 0.00033 |
| ____ CO | 0.00001 | -2.05 | 7797.612 | -0.00065 | 0.00098 | -0.00029 |
| ____ CR | 0.00027 | 15.12 | 293.331 | -0.00054 | 0.00032 | 0.00103 |
| ____ CU | -0.00008 | -13.99 | 1116.701 | -0.00022 | -0.00087 | 0.00086 |
| ____ FE | 0.00149 | 3.63 | 437.797 | 0.00041 | -0.00441 | 0.00845 |
| ____ K | 0.00593 | 52.75 | 907.981 | -0.00595 | -0.04098 | 0.06472 |
| ____ LI | 0.00456 | 18.79 | 25.055 | 0.00577 | 0.00438 | 0.00351 |
| ____ MG | -0.01057 | -1.86 | 11.089 | -0.00944 | -0.01050 | -0.01178 |
| ____ MN | -0.00006 | 6.85 | 39.755 | -0.00006 | -0.00003 | -0.00008 |
| ____ MO | 0.00055 | 0.31 | 96.998 | 0.00113 | 0.00044 | 0.00008 |
| ____ NA | -0.00447 | 97.09 | 60.671 | -0.00553 | -0.00649 | -0.00139 |
| ____ NI | -0.00057 | 2.42 | 91.486 | 0.00000 | -0.00101 | -0.00069 |
| ____ P | -0.00542 | 0.35 | 113.792 | -0.00878 | 0.00170 | -0.00917 |
| ____ PB | 0.00297 | -0.86 | 39.679 | 0.00302 | 0.00176 | 0.00411 |
| ____ S | 0.00498 | -0.38 | 301.633 | 0.00206 | 0.02124 | -0.00836 |
| ____ SB | -0.00137 | 2.04 | 176.630 | -0.00133 | -0.00381 | 0.00103 |
| ____ SE | 0.00139 | -1.61 | 688.650 | -0.00945 | 0.00874 | 0.00489 |
| ____ SI | 0.00686 | 2.25 | 58.242 | 0.00800 | 0.01016 | 0.00242 |
| ____ SN | 0.00272 | 0.18 | 34.560 | 0.00163 | 0.00322 | 0.00329 |
| ____ SR | 0.00005 | 42.23 | 47.434 | 0.00006 | 0.00006 | 0.00002 |
| ____ TI | 0.00028 | 58.68 | 91.057 | 0.00049 | 0.00000 | 0.00035 |
| ____ TL | 0.00080 | 0.18 | 262.214 | 0.00210 | -0.00162 | 0.00192 |
| ____ V | -0.00012 | -14.83 | 229.529 | 0.00000 | 0.00007 | -0.00045 |
| ____ Y1 | 4597.04742 | 4,597.05 | 0.581 | 4576.84767 | 4627.31127 | 4586.98330 |
| ____ Y2A | 200641.41452 | 200,641.41 | 0.919 | 200974.54527 | 202296.04266 | 198653.65561 |
| ____ Y2R | 10498.67081 | 10,498.67 | 1.051 | 10457.40519 | 10414.94402 | 10623.66321 |
| ____ ZN | -0.00075 | 4.13 | 46.760 | -0.00115 | -0.00055 | -0.00054 |
| ____ ZR | -0.00003 | -13.93 | 4154.952 | -0.00015 | 0.00144 | -0.00140 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 24 Date/Time: 07/31/2017 12:12

Sample Number: **9121679** Class: **** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00111 | -29.04 | 12.275 | -0.00108 | -0.00126 | -0.00100 |
| ____ AL | -0.00239 | 8.31 | 1338.919 | -0.03511 | 0.02896 | -0.00103 |
| ____ AS | -0.00660 | -2.48 | 74.885 | -0.00331 | -0.01228 | -0.00420 |
| ____ B | 0.05801 | 417.38 | 3.132 | 0.05909 | 0.05591 | 0.05903 |
| ____ BA | 0.09744 | 66,376.89 | 0.334 | 0.09711 | 0.09744 | 0.09776 |
| ____ BE | -0.00022 | -88.73 | 5.308 | -0.00023 | -0.00021 | -0.00022 |
| ____ CA | 44.05658 | 35,436.44 | 0.211 | 44.03505 | 43.97616 | 44.15852 |
| ____ CD | 0.00059 | -2.92 | 7.600 | 0.00064 | 0.00057 | 0.00056 |
| ____ CO | 0.00010 | -1.83 | 203.391 | 0.00024 | -0.00014 | 0.00020 |
| ____ CR | 0.00177 | 29.92 | 34.837 | 0.00205 | 0.00219 | 0.00106 |
| ____ CU | 0.00039 | 4.53 | 67.404 | 0.00009 | 0.00049 | 0.00058 |
| ____ FE | 0.01017 | 5.29 | 19.993 | 0.01251 | 0.00913 | 0.00887 |
| ____ K | 2.46787 | 1,175.55 | 1.608 | 2.42690 | 2.47060 | 2.50611 |
| ____ LI | 0.01915 | 152.51 | 9.086 | 0.01720 | 0.02056 | 0.01967 |
| ____ MG | 6.22983 | 8,243.41 | 0.533 | 6.21891 | 6.20347 | 6.26712 |
| ____ MN | 0.00049 | 42.27 | 21.244 | 0.00046 | 0.00061 | 0.00041 |
| ____ MO | 0.00414 | 3.88 | 30.826 | 0.00551 | 0.00390 | 0.00299 |
| ____ NA | 23.71551 | 35,306.58 | 0.256 | 23.74428 | 23.64588 | 23.75637 |
| ____ NI | 0.00026 | 3.53 | 47.769 | 0.00016 | 0.00040 | 0.00021 |
| ____ P | 0.00480 | 1.51 | 61.907 | 0.00618 | 0.00684 | 0.00139 |
| ____ PB | 0.00574 | 0.82 | 34.833 | 0.00804 | 0.00481 | 0.00438 |
| ____ S | 15.21780 | 1,027.34 | 0.712 | 15.10857 | 15.32521 | 15.21962 |
| ____ SB | 0.00569 | 3.84 | 21.088 | 0.00497 | 0.00708 | 0.00503 |
| ____ SE | 0.00241 | -1.61 | 112.597 | 0.00403 | -0.00072 | 0.00392 |
| ____ SI | 14.40234 | 1,729.92 | 0.395 | 14.42733 | 14.33716 | 14.44252 |
| ____ SN | 0.00349 | 0.44 | 55.284 | 0.00315 | 0.00176 | 0.00557 |
| ____ SR | 0.26973 | 210,858.92 | 0.277 | 0.26906 | 0.26959 | 0.27053 |
| ____ TI | 0.00135 | 117.65 | 10.616 | 0.00150 | 0.00134 | 0.00122 |
| ____ TL | 0.00313 | 0.46 | 419.156 | 0.01689 | -0.00918 | 0.00167 |
| ____ V | 0.00575 | 87.11 | 9.664 | 0.00637 | 0.00529 | 0.00558 |
| ____ Y1 | 4895.91647 | 4,895.92 | 0.666 | 4929.50964 | 4864.35165 | 4893.88811 |
| ____ Y2A | 215040.25571 | 215,040.26 | 0.138 | 215225.11484 | 214697.22167 | 215198.43063 |
| ____ Y2R | 11226.36411 | 11,226.36 | 0.423 | 11251.83413 | 11255.73819 | 11171.52000 |
| ____ ZN | 0.02449 | 95.93 | 0.891 | 0.02429 | 0.02444 | 0.02472 |
| ____ ZR | 0.00251 | -9.49 | 46.283 | 0.00166 | 0.00204 | 0.00383 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 25 Date/Time: 07/31/2017 12:15

Sample Number: **9121681** Class: **** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00062 | -22.26 | 85.319 | -0.00093 | -0.00001 | -0.00093 |
| ____ AL | -0.01286 | 7.33 | 83.097 | -0.02389 | -0.00255 | -0.01214 |
| ____ AS | 0.00231 | -1.41 | 199.209 | -0.00300 | 0.00484 | 0.00508 |
| ____ B | 0.05624 | 401.58 | 1.951 | 0.05540 | 0.05583 | 0.05748 |
| ____ BA | 0.09701 | 65,855.70 | 0.158 | 0.09696 | 0.09689 | 0.09718 |
| ____ BE | -0.00022 | -87.28 | 6.530 | -0.00020 | -0.00021 | -0.00023 |
| ____ CA | 43.42581 | 35,477.00 | 0.402 | 43.29175 | 43.36273 | 43.62294 |
| ____ CD | 0.00031 | -4.92 | 38.697 | 0.00018 | 0.00040 | 0.00036 |
| ____ CO | -0.00035 | -3.52 | 87.723 | -0.00071 | -0.00020 | -0.00015 |
| ____ CR | 0.00136 | 26.06 | 17.079 | 0.00134 | 0.00113 | 0.00160 |
| ____ CU | 0.00029 | 3.05 | 439.927 | 0.00034 | -0.00102 | 0.00156 |
| ____ FE | 0.00196 | 4.01 | 427.424 | -0.00758 | 0.00535 | 0.00810 |
| ____ K | 2.38917 | 1,157.69 | 2.322 | 2.45025 | 2.34193 | 2.37534 |
| ____ LI | 0.01767 | 141.31 | 5.648 | 0.01881 | 0.01695 | 0.01725 |
| ____ MG | 6.13842 | 8,250.02 | 0.651 | 6.09326 | 6.15270 | 6.16929 |
| ____ MN | 0.00101 | 74.63 | 4.282 | 0.00102 | 0.00104 | 0.00096 |
| ____ MO | 0.00284 | 2.56 | 13.049 | 0.00270 | 0.00326 | 0.00256 |
| ____ NA | 23.10442 | 34,938.18 | 0.077 | 23.12449 | 23.09847 | 23.09029 |
| ____ NI | 0.00012 | 3.18 | 466.398 | -0.00052 | 0.00044 | 0.00044 |
| ____ P | 0.00288 | 1.27 | 237.597 | -0.00028 | -0.00181 | 0.01072 |
| ____ PB | 0.00671 | 1.39 | 24.975 | 0.00612 | 0.00541 | 0.00861 |
| ____ S | 15.61947 | 1,038.26 | 0.658 | 15.51110 | 15.63191 | 15.71540 |
| ____ SB | -0.00019 | 2.41 | 3196.594 | 0.00525 | -0.00654 | 0.00073 |
| ____ SE | 0.01231 | -0.62 | 62.871 | 0.01409 | 0.01902 | 0.00384 |
| ____ SI | 14.04462 | 1,713.40 | 0.412 | 14.00298 | 14.11065 | 14.02024 |
| ____ SN | 0.00253 | 0.13 | 95.098 | 0.00249 | 0.00014 | 0.00495 |
| ____ SR | 0.26956 | 209,988.98 | 0.388 | 0.27033 | 0.26837 | 0.26998 |
| ____ TI | 0.00119 | 109.24 | 9.941 | 0.00106 | 0.00123 | 0.00128 |
| ____ TL | 0.00205 | 0.33 | 110.823 | 0.00194 | 0.00438 | -0.00016 |
| ____ V | 0.00560 | 84.63 | 6.177 | 0.00596 | 0.00556 | 0.00527 |
| ____ Y1 | 4820.50354 | 4,820.50 | 0.248 | 4830.59882 | 4823.62637 | 4807.28543 |
| ____ Y2A | 214288.60802 | 214,288.61 | 0.206 | 214426.52980 | 214643.65381 | 213795.64046 |
| ____ Y2R | 11402.03302 | 11,402.03 | 0.607 | 11452.61060 | 11430.30092 | 11323.18754 |
| ____ ZN | 0.01288 | 53.01 | 1.112 | 0.01272 | 0.01293 | 0.01300 |
| ____ ZR | 0.00087 | -13.15 | 126.548 | 0.00118 | 0.00179 | -0.00035 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 26 Date/Time: 07/31/2017 12:18

Sample Number: **9121692** Class: **** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00059 | -21.44 | 97.912 | -0.00023 | -0.00126 | -0.00028 |
| ____ AL | 0.00365 | 8.82 | 79.145 | 0.00612 | 0.00048 | 0.00434 |
| ____ AS | -0.00581 | -2.34 | 79.456 | -0.01106 | -0.00242 | -0.00395 |
| ____ B | 0.05946 | 418.05 | 1.389 | 0.05865 | 0.05943 | 0.06030 |
| ____ BA | 0.10901 | 72,338.71 | 0.234 | 0.10930 | 0.10886 | 0.10886 |
| ____ BE | -0.00018 | -65.46 | 47.376 | -0.00023 | -0.00022 | -0.00008 |
| ____ CA | 38.25502 | 30,407.66 | 0.402 | 38.19686 | 38.13876 | 38.42943 |
| ____ CD | 0.00037 | -4.44 | 75.272 | 0.00012 | 0.00032 | 0.00068 |
| ____ CO | -0.00014 | -2.70 | 264.187 | 0.00009 | 0.00006 | -0.00055 |
| ____ CR | 0.00130 | 24.97 | 49.870 | 0.00118 | 0.00072 | 0.00200 |
| ____ CU | 0.00099 | 10.97 | 64.263 | 0.00153 | 0.00116 | 0.00029 |
| ____ FE | -0.00626 | 2.58 | 55.821 | -0.00923 | -0.00713 | -0.00241 |
| ____ K | 2.24077 | 1,059.22 | 0.945 | 2.21720 | 2.25823 | 2.24687 |
| ____ LI | 0.01883 | 147.78 | 7.311 | 0.01766 | 0.01847 | 0.02035 |
| ____ MG | 5.40455 | 7,068.05 | 1.095 | 5.40617 | 5.34455 | 5.46293 |
| ____ MN | 0.00023 | 24.84 | 33.962 | 0.00016 | 0.00021 | 0.00031 |
| ____ MO | 0.00425 | 3.91 | 18.078 | 0.00498 | 0.00434 | 0.00345 |
| ____ NA | 23.10911 | 33,985.60 | 0.148 | 23.12244 | 23.07023 | 23.13467 |
| ____ NI | 0.00078 | 4.70 | 37.018 | 0.00109 | 0.00052 | 0.00072 |
| ____ P | 0.00712 | 1.74 | 89.267 | 0.00307 | 0.00384 | 0.01444 |
| ____ PB | 0.00303 | -0.85 | 56.106 | 0.00128 | 0.00312 | 0.00468 |
| ____ S | 12.66342 | 838.11 | 0.886 | 12.68838 | 12.76099 | 12.54090 |
| ____ SB | 0.00144 | 2.78 | 184.005 | 0.00315 | 0.00279 | -0.00161 |
| ____ SE | 0.00376 | -1.46 | 273.492 | 0.00685 | 0.01214 | -0.00771 |
| ____ SI | 13.80211 | 1,637.59 | 0.889 | 13.76770 | 13.70027 | 13.93836 |
| ____ SN | 0.00097 | -0.35 | 173.047 | -0.00056 | 0.00276 | 0.00070 |
| ____ SR | 0.24086 | 183,519.85 | 0.764 | 0.24236 | 0.24141 | 0.23881 |
| ____ TI | 0.00149 | 121.51 | 17.892 | 0.00135 | 0.00132 | 0.00179 |
| ____ TL | -0.00560 | -0.49 | 33.713 | -0.00416 | -0.00773 | -0.00489 |
| ____ V | 0.00564 | 82.90 | 8.930 | 0.00551 | 0.00521 | 0.00619 |
| ____ Y1 | 4800.58745 | 4,800.59 | 0.873 | 4783.91695 | 4769.58579 | 4848.25961 |
| ____ Y2A | 209587.58352 | 209,587.58 | 0.400 | 209481.06000 | 210473.54055 | 208808.15000 |
| ____ Y2R | 11088.96131 | 11,088.96 | 0.231 | 11086.97563 | 11115.53717 | 11064.37114 |
| ____ ZN | 0.03307 | 124.58 | 0.727 | 0.03324 | 0.03317 | 0.03279 |
| ____ ZR | -0.00034 | -15.34 | 747.621 | -0.00070 | -0.00271 | 0.00238 |

LANCASTER LABORATORIES

Run Name: 1721206T73 Instrument ID: 18255

Tube: 27 Date/Time: 07/31/2017 12:21

Sample Number: **9121694** Class: **** Batch: 172091063503

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00076 | -24.01 | 113.370 | 0.00022 | -0.00110 | -0.00139 |
| ____ AL | 0.03399 | 12.12 | 76.279 | 0.05901 | 0.00724 | 0.03573 |
| ____ AS | -0.00420 | -2.17 | 80.067 | -0.00048 | -0.00509 | -0.00701 |
| ____ B | 0.05560 | 395.58 | 1.916 | 0.05484 | 0.05514 | 0.05682 |
| ____ BA | 0.10872 | 73,589.46 | 1.056 | 0.10754 | 0.10983 | 0.10878 |
| ____ BE | -0.00021 | -84.01 | 5.082 | -0.00020 | -0.00022 | -0.00021 |
| ____ CA | 37.93353 | 30,598.69 | 0.302 | 37.98596 | 38.01265 | 37.80198 |
| ____ CD | 0.00010 | -6.47 | 222.085 | 0.00037 | -0.00004 | -0.00002 |
| ____ CO | -0.00032 | -3.41 | 97.327 | -0.00068 | -0.00018 | -0.00010 |
| ____ CR | 0.00167 | 28.88 | 30.271 | 0.00215 | 0.00114 | 0.00172 |
| ____ CU | 0.00005 | -1.98 | 1300.471 | 0.00007 | 0.00064 | -0.00057 |
| ____ FE | 0.00878 | 5.07 | 79.862 | 0.00150 | 0.00935 | 0.01550 |
| ____ K | 2.19743 | 1,055.12 | 0.267 | 2.19170 | 2.19717 | 2.20342 |
| ____ LI | 0.01792 | 141.69 | 7.098 | 0.01741 | 0.01937 | 0.01698 |
| ____ MG | 5.38481 | 7,146.51 | 0.445 | 5.39722 | 5.39999 | 5.35722 |
| ____ MN | 0.00035 | 32.80 | 10.353 | 0.00031 | 0.00036 | 0.00037 |
| ____ MO | 0.00342 | 3.13 | 5.689 | 0.00342 | 0.00361 | 0.00322 |
| ____ NA | 22.86800 | 34,128.85 | 0.737 | 22.94224 | 22.98679 | 22.67496 |
| ____ NI | 0.00048 | 4.05 | 50.355 | 0.00069 | 0.00052 | 0.00022 |
| ____ P | 0.00468 | 1.48 | 150.322 | 0.01259 | 0.00227 | -0.00083 |
| ____ PB | 0.00300 | -0.88 | 16.310 | 0.00245 | 0.00315 | 0.00340 |
| ____ S | 12.46677 | 832.07 | 0.188 | 12.44112 | 12.48714 | 12.47207 |
| ____ SB | -0.00046 | 2.36 | 704.472 | 0.00028 | 0.00236 | -0.00403 |
| ____ SE | 0.00959 | -0.89 | 77.464 | 0.00754 | 0.01782 | 0.00340 |
| ____ SI | 13.75414 | 1,656.02 | 0.645 | 13.80680 | 13.80384 | 13.65178 |
| ____ SN | 0.00126 | -0.26 | 229.103 | 0.00121 | -0.00160 | 0.00417 |
| ____ SR | 0.23747 | 184,547.94 | 0.972 | 0.23532 | 0.23991 | 0.23717 |
| ____ TI | 0.00124 | 111.17 | 10.483 | 0.00110 | 0.00126 | 0.00135 |
| ____ TL | 0.00161 | 0.28 | 123.873 | 0.00339 | -0.00054 | 0.00196 |
| ____ V | 0.00589 | 89.32 | 9.020 | 0.00645 | 0.00581 | 0.00540 |
| ____ Y1 | 4841.01228 | 4,841.01 | 0.448 | 4864.94852 | 4822.69665 | 4835.39169 |
| ____ Y2A | 213787.30296 | 213,787.30 | 0.792 | 215390.70161 | 212017.74935 | 213953.45793 |
| ____ Y2R | 11252.88975 | 11,252.89 | 0.402 | 11265.88915 | 11202.52646 | 11290.25364 |
| ____ ZN | 0.01585 | 63.88 | 2.718 | 0.01535 | 0.01614 | 0.01606 |
| ____ ZR | 0.00111 | -12.47 | 93.048 | -0.00002 | 0.00200 | 0.00136 |

LANCASTER LABORATORIES

Run Name: 1721206T73

Instrument ID: 18255

Tube: 28

Date/Time: 07/31/2017 12:24

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.46018 | 6,059.46 | 0.500 | 0.45789 | 0.46015 | 0.46249 |
| ____ AL | 22.87696 | 2,368.96 | 1.030 | 22.94158 | 22.61583 | 23.07348 |
| ____ AS | 0.48586 | 52.61 | 1.139 | 0.48946 | 0.47949 | 0.48864 |
| ____ B | 0.44710 | 3,580.42 | 0.870 | 0.44436 | 0.44540 | 0.45155 |
| ____ BA | 0.45377 | 296,898.31 | 0.922 | 0.44959 | 0.45374 | 0.45796 |
| ____ BE | 0.44410 | 209,592.54 | 0.788 | 0.44128 | 0.44300 | 0.44801 |
| ____ CA | 22.79047 | 18,210.45 | 1.255 | 22.77475 | 22.51272 | 23.08394 |
| ____ CD | 0.48007 | 3,427.74 | 0.339 | 0.47841 | 0.48014 | 0.48166 |
| ____ CO | 0.48050 | 1,753.73 | 0.341 | 0.47863 | 0.48118 | 0.48169 |
| ____ CR | 0.45961 | 4,053.77 | 1.013 | 0.45539 | 0.45884 | 0.46461 |
| ____ CU | 0.45902 | 6,097.59 | 0.528 | 0.45732 | 0.45793 | 0.46179 |
| ____ FE | 22.84452 | 3,681.03 | 0.877 | 22.83545 | 22.64893 | 23.04918 |
| ____ K | 22.82018 | 10,337.88 | 0.622 | 22.77452 | 22.70666 | 22.97937 |
| ____ LI | 0.46539 | 4,171.79 | 0.889 | 0.46594 | 0.46101 | 0.46923 |
| ____ MG | 22.74200 | 29,573.87 | 1.226 | 22.76693 | 22.45148 | 23.00759 |
| ____ MN | 0.45476 | 27,771.31 | 0.783 | 0.45199 | 0.45351 | 0.45878 |
| ____ MO | 0.47863 | 453.91 | 0.188 | 0.47777 | 0.47956 | 0.47856 |
| ____ NA | 22.91387 | 33,818.67 | 0.663 | 22.85530 | 22.79988 | 23.08643 |
| ____ NI | 0.47772 | 1,080.34 | 0.541 | 0.47477 | 0.47884 | 0.47955 |
| ____ P | 0.47862 | 52.40 | 1.867 | 0.47930 | 0.46935 | 0.48719 |
| ____ PB | 0.48255 | 286.74 | 0.863 | 0.47951 | 0.48085 | 0.48730 |
| ____ S | 23.25068 | 1,507.08 | 0.293 | 23.18535 | 23.24537 | 23.32132 |
| ____ SB | 0.48158 | 110.80 | 0.200 | 0.48057 | 0.48249 | 0.48170 |
| ____ SE | 0.47989 | 43.89 | 2.020 | 0.48172 | 0.48854 | 0.46941 |
| ____ SI | 22.21358 | 2,646.25 | 1.064 | 22.21731 | 21.97537 | 22.44808 |
| ____ SN | 0.47723 | 143.47 | 1.142 | 0.47112 | 0.47897 | 0.48159 |
| ____ SR | 0.45624 | 343,709.05 | 0.959 | 0.45380 | 0.45363 | 0.46129 |
| ____ TI | 0.47162 | 23,427.24 | 0.876 | 0.46856 | 0.46996 | 0.47632 |
| ____ TL | 0.48629 | 48.74 | 0.426 | 0.48391 | 0.48774 | 0.48721 |
| ____ V | 0.47626 | 7,981.32 | 0.885 | 0.47296 | 0.47481 | 0.48101 |
| ____ Y1 | 4699.16838 | 4,699.17 | 0.195 | 4709.07892 | 4691.02057 | 4697.40563 |
| ____ Y2A | 207240.33365 | 207,240.33 | 0.614 | 208170.33121 | 207760.18593 | 205790.48381 |
| ____ Y2R | 11128.67913 | 11,128.68 | 1.098 | 11114.78677 | 11257.19281 | 11014.05783 |
| ____ ZN | 0.48227 | 1,705.53 | 0.421 | 0.48023 | 0.48429 | 0.48230 |
| ____ ZR | 0.46374 | 959.13 | 0.325 | 0.46515 | 0.46215 | 0.46393 |

LANCASTER LABORATORIES

Run Name: 1721206T73

Instrument ID: 18255

Tube: 29

Date/Time: 07/31/2017 12:27

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00117 | -27.88 | 25.411 | -0.00083 | -0.00126 | -0.00140 |
| ____ AL | 0.00146 | 8.13 | 1417.735 | 0.00838 | 0.01788 | -0.02187 |
| ____ AS | -0.00382 | -2.02 | 74.952 | -0.00672 | -0.00100 | -0.00374 |
| ____ B | 0.01577 | 71.83 | 2.817 | 0.01605 | 0.01526 | 0.01601 |
| ____ BA | -0.00010 | 222.08 | 22.477 | -0.00009 | -0.00012 | -0.00009 |
| ____ BE | -0.00019 | -72.18 | 6.956 | -0.00019 | -0.00021 | -0.00018 |
| ____ CA | 0.00073 | 44.04 | 306.801 | 0.00277 | -0.00167 | 0.00110 |
| ____ CD | 0.00042 | -3.97 | 24.213 | 0.00053 | 0.00035 | 0.00037 |
| ____ CO | -0.00028 | -3.09 | 59.075 | -0.00009 | -0.00037 | -0.00038 |
| ____ CR | 0.00021 | 14.69 | 52.854 | 0.00027 | 0.00027 | 0.00008 |
| ____ CU | -0.00065 | -21.30 | 156.063 | 0.00038 | -0.00069 | -0.00164 |
| ____ FE | 0.00600 | 4.30 | 136.404 | 0.00851 | 0.01264 | -0.00315 |
| ____ K | -0.00835 | 46.47 | 642.558 | -0.05555 | 0.04997 | -0.01945 |
| ____ LI | 0.00492 | 21.92 | 23.497 | 0.00501 | 0.00603 | 0.00372 |
| ____ MG | -0.01131 | -2.76 | 26.174 | -0.00827 | -0.01148 | -0.01418 |
| ____ MN | -0.00010 | 4.11 | 58.349 | -0.00010 | -0.00017 | -0.00005 |
| ____ MO | -0.00064 | -0.79 | 170.154 | -0.00058 | 0.00042 | -0.00175 |
| ____ NA | -0.00345 | 98.28 | 95.599 | -0.00630 | 0.00017 | -0.00422 |
| ____ NI | -0.00067 | 2.19 | 78.921 | -0.00127 | -0.00048 | -0.00026 |
| ____ P | 0.00012 | 0.93 | 5393.936 | -0.00678 | 0.00181 | 0.00532 |
| ____ PB | 0.00327 | -0.67 | 88.506 | 0.00107 | 0.00656 | 0.00219 |
| ____ S | 0.01714 | 0.38 | 72.378 | 0.02118 | 0.00322 | 0.02703 |
| ____ SB | 0.00112 | 2.60 | 292.664 | -0.00266 | 0.00325 | 0.00278 |
| ____ SE | 0.00789 | -1.00 | 78.226 | 0.01134 | 0.01156 | 0.00076 |
| ____ SI | 0.00907 | 2.49 | 172.261 | 0.02088 | 0.01495 | -0.00864 |
| ____ SN | 0.00207 | -0.01 | 103.094 | -0.00013 | 0.00413 | 0.00221 |
| ____ SR | 0.00005 | 41.23 | 46.371 | 0.00002 | 0.00006 | 0.00005 |
| ____ TI | 0.00036 | 62.66 | 44.107 | 0.00018 | 0.00041 | 0.00049 |
| ____ TL | -0.00749 | -0.67 | 86.665 | -0.00002 | -0.01177 | -0.01068 |
| ____ V | 0.00020 | -9.11 | 376.794 | 0.00004 | 0.00100 | -0.00045 |
| ____ Y1 | 4590.76014 | 4,590.76 | 0.396 | 4580.93631 | 4611.72359 | 4579.62053 |
| ____ Y2A | 201232.22074 | 201,232.22 | 1.216 | 202086.71797 | 203138.03436 | 198471.90989 |
| ____ Y2R | 10476.43269 | 10,476.43 | 0.508 | 10476.00598 | 10529.88827 | 10423.40383 |
| ____ ZN | -0.00066 | 4.41 | 29.047 | -0.00057 | -0.00088 | -0.00053 |
| ____ ZR | 0.00095 | -11.93 | 56.739 | 0.00119 | 0.00033 | 0.00133 |

# ICP-MS Data

# Metals in Liquid

eurofins | Lancaster Laboratories Environmental

# ICP-MS Run Data Report

Method Reference Name(s):

Date File Name: 17H01I00.E05

Run Name: 1721308E05

Analyst: 8381

Reviewed By: Scott P Cuff
Reviewed Date: 08/02/2017 09:18

Verified By: Deborah A Krady
Verified Date: 08/03/2017 13:24

Instrument Parameters:

Rinse Time (sec): 25.00

| INTERNAL STD. | ELEMENT | MASS |
|---|---|---|
| **SC-2** | | 45 |
| | NA | 23 |
| | MG | 24 |
| | AL | 27 |
| | K | 39 |
| | CA | 44 |
| | TI | 47 |
| | V | 51 |
| **SC-3** | | 45 |
| | BE | 9 |
| | B | 11 |
| **GE-2** | | 72 |
| | CR | 52 |
| | MN | 55 |
| | FE | 57 |
| **IN-1** | | 115 |
| | SE | 78 |
| **IN-2** | | 115 |
| | CO | 59 |
| | NI | 60 |
| | CU | 63 |
| | ZN | 66 |
| | AS | 75 |
| | RB | 85 |
| | SR | 88 |
| | MO | 98 |
| | AG | 107 |
| **TB-2** | | 159 |
| | CD | 111 |
| | SN | 120 |
| | SB | 121 |
| | BA | 137 |
| **BI-2** | | 209 |
| | TL | 203 |
| | PB | 208 |
| | U | 238 |

Run Name: 1721308E05 Date/Time: 08/01/2017 16:59:39
Tube Number: 1
Sample Number: **S0**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| *BE* | 9 | 0.00000 | 2.67000 | 0.000 | 0.00854 | -0.00427 | -0.00427 |
| *B* | 11 | 0.00000 | 8453.27000 | 0.000 | -0.27648 | 0.09705 | 0.17943 |
| *NA* | 23 | 0.00000 | 2937.03000 | 0.000 | 1.95757 | -5.36541 | 3.40784 |
| *MG* | 24 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *AL* | 27 | 0.00000 | 20.00000 | 0.000 | 5.50063 | -2.82083 | -2.67980 |
| *K* | 39 | 0.00000 | 390.02000 | 0.000 | 34.08643 | -20.65557 | -13.43086 |
| *CA* | 44 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *SC-1* | 45 | 186789.57000 | 0.00000 | 0.000 | 191669.22000 | 185021.91000 | 183677.59000 |
| *SC-2* | 45 | 6604.76000 | 0.00000 | 0.000 | 6591.42000 | 6781.47000 | 6441.38000 |
| *SC-3* | 45 | 761625.64000 | 0.00000 | 0.000 | 768567.41000 | 763969.60000 | 752339.91000 |
| *TI* | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *V* | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *CR* | 52 | 0.00000 | 66.67000 | 0.000 | 0.13299 | -0.23222 | 0.09923 |
| *MN* | 55 | 0.00000 | 20.00000 | 0.000 | -0.12435 | 0.25838 | -0.13402 |
| *FE* | 57 | 0.00000 | 6.67000 | 0.000 | 3.57035 | -1.78517 | -1.78517 |
| *CO* | 59 | 0.00000 | 146.67000 | 0.000 | 0.06803 | -0.01130 | -0.05673 |
| *NI* | 60 | 0.00000 | 3.33000 | 0.000 | 0.05701 | -0.02850 | -0.02850 |
| *CU* | 63 | 0.00000 | 36.67000 | 0.000 | -0.04313 | 0.01211 | 0.03102 |
| *ZN* | 66 | 0.00000 | 6.67000 | 0.000 | 0.07358 | 0.07089 | -0.14448 |
| *GE-1* | 72 | 230958.82000 | 0.00000 | 0.000 | 234404.59000 | 229558.77000 | 228913.10000 |
| *GE-2* | 72 | 19374.48000 | 0.00000 | 0.000 | 18680.27000 | 19301.11000 | 20142.07000 |
| *GE-3* | 72 | 691077.96000 | 0.00000 | 0.000 | 700979.21000 | 697416.55000 | 674838.11000 |
| *AS* | 75 | 0.00000 | 1.33000 | 0.000 | -0.06879 | 0.13758 | -0.06879 |
| *SE* | 78 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *RB* | 85 | 0.00000 | 3.33000 | 0.000 | -0.06701 | -0.06701 | 0.13402 |
| *SR* | 88 | 0.00000 | 3.33000 | 0.000 | -0.04484 | -0.04484 | 0.08968 |
| *MO* | 98 | 0.00000 | 6.67000 | 0.000 | -0.02253 | 0.01239 | 0.01013 |
| *AG* | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *CD* | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *IN-1* | 115 | 241778.61000 | 0.00000 | 0.000 | 245121.51000 | 237828.75000 | 242385.56000 |
| *IN-2* | 115 | 10753.79000 | 0.00000 | 0.000 | 10423.42000 | 10553.74000 | 11284.22000 |
| *SN* | 120 | 0.00000 | 3.33000 | 0.000 | -0.01859 | -0.01859 | 0.03719 |
| *SB* | 121 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *BA* | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *TB-2* | 159 | 77605.21000 | 0.00000 | 0.000 | 75843.42000 | 78686.01000 | 78286.20000 |
| *TL* | 203 | 0.00000 | 13.33000 | 0.000 | -0.01466 | 0.00759 | 0.00708 |
| *PB* | 208 | 0.00000 | 180.00000 | 0.000 | -0.02381 | 0.02162 | 0.00220 |
| *BI-2* | 209 | 70868.21000 | 0.00000 | 0.000 | 69140.45000 | 70898.69000 | 72565.48000 |
| *U* | 238 | 0.00000 | 3.33000 | 0.000 | -0.00090 | 0.00180 | -0.00090 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:02:43
Tube Number: 2
Sample Number: **S1**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6831.55000 | 0.00000 | 0.000 | 7211.72000 | 6741.50000 | 6541.42000 |
| **SC-3** | 45 | 769371.63000 | 0.00000 | 0.000 | 772341.24000 | 771807.49000 | 763966.16000 |
| AL | 27 | 10000.00000 | 37696.21000 | 3.000 | 9675.13759 | 10048.96745 | 10275.89496 |
| B | 11 | 1000.00000 | 628857.04000 | 1.000 | 990.67478 | 999.25796 | 1010.06726 |
| BE | 9 | 100.00000 | 62527.94000 | 0.600 | 99.51517 | 99.87831 | 100.60652 |
| CA | 44 | 10000.00000 | 3970.58000 | 5.400 | 9757.26561 | 10616.60586 | 9626.12854 |
| K | 39 | 10000.00000 | 64190.27000 | 6.100 | 9334.55937 | 10130.05338 | 10535.38725 |
| MG | 24 | 10000.00000 | 161477.72000 | 5.000 | 9423.90127 | 10273.22562 | 10302.87311 |
| NA | 23 | 10000.00000 | 355424.03000 | 5.000 | 9461.06262 | 10079.64705 | 10459.29033 |
| TI | 47 | 1000.00000 | 3017.03000 | 17.400 | 805.43267 | 1055.32709 | 1139.24025 |
| V | 51 | 1000.00000 | 148827.20000 | 6.200 | 932.64018 | 1012.40862 | 1054.95121 |
| **GE-2** | 72 | 20786.21000 | 0.00000 | 0.000 | 19561.90000 | 21343.30000 | 21453.43000 |
| CR | 52 | 1000.00000 | 214963.33000 | 4.700 | 1054.52264 | 976.10737 | 969.36999 |
| FE | 57 | 10000.00000 | 41501.93000 | 4.300 | 10486.64079 | 9846.17529 | 9667.18392 |
| MN | 55 | 1000.00000 | 83410.55000 | 3.400 | 1037.95538 | 972.49913 | 989.54550 |
| **IN-1** | 115 | 244779.11000 | 0.00000 | 0.000 | 240583.12000 | 245866.21000 | 247888.01000 |
| **IN-2** | 115 | 11038.54000 | 0.00000 | 0.000 | 11580.95000 | 10869.44000 | 10665.24000 |
| AG | 107 | 100.00000 | 80524.35000 | 3.700 | 95.69195 | 101.85626 | 102.45178 |
| AS | 75 | 1000.00000 | 20248.17000 | 4.600 | 946.69169 | 1024.51262 | 1028.79569 |
| CO | 59 | 1000.00000 | 423115.44000 | 6.200 | 931.86295 | 1015.49098 | 1052.64607 |
| CU | 63 | 1000.00000 | 373410.19000 | 5.500 | 937.45497 | 1021.49886 | 1041.04617 |
| MO | 98 | 100.00000 | 29913.27000 | 6.400 | 93.07274 | 105.68845 | 101.23881 |
| NI | 60 | 1000.00000 | 123720.16000 | 3.500 | 960.90532 | 1010.01224 | 1029.08244 |
| RB | 85 | 100.00000 | 4867.52000 | 6.300 | 96.90683 | 107.22135 | 95.87182 |
| SE | 78 | 100.00000 | 8688.34000 | 1.300 | 101.00138 | 98.48724 | 100.51138 |
| SR | 88 | 100.00000 | 7275.17000 | 1.200 | 99.59538 | 101.36798 | 99.03664 |
| ZN | 66 | 1000.00000 | 48466.46000 | 7.500 | 914.88370 | 1029.91719 | 1055.19910 |
| **TB-2** | 159 | 77859.85000 | 0.00000 | 0.000 | 76998.91000 | 77943.48000 | 78637.17000 |
| BA | 137 | 1000.00000 | 42110.33000 | 1.400 | 997.59125 | 987.64658 | 1014.76216 |
| CD | 111 | 100.00000 | 8151.30000 | 1.200 | 100.25955 | 98.72590 | 101.01455 |
| SB | 121 | 100.00000 | 11684.46000 | 2.000 | 102.06235 | 98.08699 | 99.85066 |
| SN | 120 | 100.00000 | 17833.35000 | 0.800 | 99.11829 | 100.21695 | 100.66476 |
| **BI-2** | 209 | 72083.58000 | 0.00000 | 0.000 | 69783.28000 | 72013.03000 | 74454.42000 |
| PB | 208 | 100.00000 | 284709.34000 | 2.600 | 102.70035 | 99.83641 | 97.46324 |
| TL | 203 | 100.00000 | 91333.17000 | 4.100 | 104.35045 | 99.53075 | 96.11879 |
| U | 238 | 100.00000 | 375407.31000 | 3.600 | 102.54868 | 101.59455 | 95.85677 |
| *SC-1* | 45 | 188424.63000 | 0.00000 | 0.000 | 187817.42000 | 188234.33000 | 189222.15000 |
| *GE-1* | 72 | 233679.81000 | 0.00000 | 0.000 | 235292.28000 | 229501.13000 | 236246.03000 |
| *GE-3* | 72 | 695708.09000 | 0.00000 | 0.000 | 699203.27000 | 695084.99000 | 692836.01000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:05:48
Tube Number: 3
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6578.13000 | 0.00000 | 0.000 | 6881.54000 | 6861.63000 | 5991.21000 |
| **SC-3** | 45 | 663513.00000 | 0.00000 | 0.000 | 654091.75000 | 669572.88000 | 666874.37000 |
| AL | 27 | 1195.79200 | 4411.93000 | 116.900 | -2.85967 | 2730.90015 | 859.33625 |
| B | 11 | 48.62900 | 33379.43000 | 3.100 | 49.34624 | 49.62383 | 46.91816 |
| BE | 9 | -0.00200 | 1.33000 | 0.000 | -0.00427 | -0.00059 | -0.00058 |
| CA | 44 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| K | 39 | -14.41400 | 300.01000 | 0.000 | -15.06178 | -14.92206 | -13.25838 |
| MG | 24 | 7.09500 | 113.34000 | 132.200 | 0.61379 | 17.85271 | 2.82000 |
| NA | 23 | -1.07100 | 2883.67000 | 0.000 | -5.13297 | -2.07701 | 3.99674 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.04500 | 6.67000 | 173.200 | 0.00000 | 0.13352 | 0.00000 |
| **GE-2** | 72 | 18293.41000 | 0.00000 | 0.000 | 18950.77000 | 18530.34000 | 17399.11000 |
| CR | 52 | 0.70400 | 196.68000 | 65.400 | 0.38120 | 1.23125 | 0.50034 |
| FE | 57 | -0.00600 | 6.67000 | 0.000 | 0.85437 | 0.91425 | -1.78517 |
| MN | 55 | 2.62100 | 210.01000 | 87.500 | 0.26791 | 4.84870 | 2.74774 |
| **IN-1** | 115 | 240923.63000 | 0.00000 | 0.000 | 236552.20000 | 243917.37000 | 242301.31000 |
| **IN-2** | 115 | 9552.66000 | 0.00000 | 0.000 | 9973.18000 | 9452.60000 | 9232.19000 |
| AG | 107 | 0.03300 | 23.33000 | 90.200 | 0.04119 | 0.05795 | 0.00000 |
| AS | 75 | 0.31200 | 6.67000 | 22.600 | 0.25878 | 0.39202 | 0.28507 |
| CO | 59 | 0.05100 | 150.01000 | 192.300 | 0.13945 | -0.05372 | 0.06642 |
| CU | 63 | 0.16900 | 86.67000 | 40.900 | 0.10741 | 0.24376 | 0.15601 |
| MO | 98 | 0.01600 | 10.00000 | 247.100 | 0.01443 | 0.05545 | -0.02253 |
| NI | 60 | 3.97400 | 423.36000 | 122.400 | 0.32899 | 9.49606 | 2.09561 |
| RB | 85 | -0.06700 | 0.00000 | 0.000 | -0.06701 | -0.06701 | -0.06701 |
| SE | 78 | 0.03400 | 2.89000 | 117.300 | 0.02382 | 0.07704 | 0.00000 |
| SR | 88 | 0.06500 | 6.67000 | 293.100 | -0.04484 | -0.04484 | 0.28399 |
| ZN | 66 | 7.82600 | 330.03000 | 130.500 | -0.14448 | 19.33429 | 4.28734 |
| **TB-2** | 159 | 72422.58000 | 0.00000 | 0.000 | 76617.44000 | 73122.44000 | 67527.86000 |
| BA | 137 | 0.33700 | 13.33000 | 173.200 | 0.00000 | 1.01148 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.15000 | 16.67000 | 63.800 | 0.26089 | 0.09112 | 0.09867 |
| SN | 120 | 0.10400 | 20.00000 | 65.000 | 0.09540 | 0.04113 | 0.17542 |
| **BI-2** | 209 | 66061.91000 | 0.00000 | 0.000 | 69502.71000 | 66470.61000 | 62212.42000 |
| PB | 208 | 0.00900 | 190.00000 | 177.400 | -0.00945 | 0.01590 | 0.02137 |
| TL | 203 | 0.02900 | 36.67000 | 40.200 | 0.04207 | 0.02093 | 0.02337 |
| U | 238 | 0.00500 | 20.00000 | 102.900 | 0.00738 | -0.00090 | 0.00835 |
| *SC-1* | 45 | 184811.67000 | 0.00000 | 0.000 | 183849.18000 | 183900.93000 | 186684.90000 |
| *GE-1* | 72 | 226109.99000 | 0.00000 | 0.000 | 226288.63000 | 227535.31000 | 224506.03000 |
| *GE-3* | 72 | 606960.48000 | 0.00000 | 0.000 | 603457.76000 | 608751.90000 | 608671.79000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:08:52
Tube Number: 4
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6201.32000 | 0.00000 | 0.000 | 6021.27000 | 6161.26000 | 6421.43000 |
| **SC-3** | 45 | 700580.53000 | 0.00000 | 0.000 | 702701.47000 | 699577.41000 | 699462.72000 |
| AL | 27 | 0.41700 | 20.00000 | 744.400 | 3.53314 | 0.38807 | -2.67106 |
| B | 11 | 21.31900 | 19819.78000 | 3.900 | 21.94346 | 21.62719 | 20.38701 |
| BE | 9 | -0.00200 | 1.33000 | 0.000 | -0.00077 | -0.00427 | -0.00075 |
| CA | 44 | 9.30700 | 3.33000 | 173.200 | 0.00000 | 27.91982 | 0.00000 |
| K | 39 | -9.74100 | 310.02000 | 0.000 | -8.18080 | -9.43115 | -11.61176 |
| MG | 24 | 0.21900 | 3.33000 | 173.200 | 0.00000 | 0.00000 | 0.65777 |
| NA | 23 | -8.54900 | 2483.59000 | 0.000 | -8.66912 | -2.57563 | -14.40171 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-2** | 72 | 17829.57000 | 0.00000 | 0.000 | 17789.37000 | 17969.88000 | 17729.45000 |
| CR | 52 | 0.53300 | 160.01000 | 39.500 | 0.53636 | 0.74260 | 0.32141 |
| FE | 57 | -1.78500 | 0.00000 | 0.000 | -1.78517 | -1.78517 | -1.78517 |
| MN | 55 | -0.02400 | 16.67000 | 0.000 | -0.11768 | -0.11908 | 0.16368 |
| **IN-1** | 115 | 213419.05000 | 0.00000 | 0.000 | 216525.81000 | 211845.62000 | 211885.71000 |
| **IN-2** | 115 | 9132.66000 | 0.00000 | 0.000 | 9072.60000 | 8982.47000 | 9342.92000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.00900 | 1.33000 | 1509.700 | -0.06879 | -0.06879 | 0.16432 |
| CO | 59 | 0.11700 | 166.68000 | 106.000 | 0.07386 | 0.02018 | 0.25659 |
| CU | 63 | 0.01800 | 36.67000 | 407.500 | 0.06291 | -0.06691 | 0.05820 |
| MO | 98 | -0.02300 | 0.00000 | 0.000 | -0.02253 | -0.02253 | -0.02253 |
| NI | 60 | -0.02900 | 0.00000 | 0.000 | -0.02850 | -0.02850 | -0.02850 |
| RB | 85 | -0.06700 | 0.00000 | 0.000 | -0.06701 | -0.06701 | -0.06701 |
| SE | 78 | 0.00300 | 0.22000 | 173.200 | 0.00000 | 0.00000 | 0.00891 |
| SR | 88 | -0.04500 | 0.00000 | 0.000 | -0.04484 | -0.04484 | -0.04484 |
| ZN | 66 | -0.14400 | 0.00000 | 0.000 | -0.14448 | -0.14448 | -0.14448 |
| **TB-2** | 159 | 67986.69000 | 0.00000 | 0.000 | 66795.17000 | 67357.13000 | 69807.76000 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.06400 | 6.67000 | 173.200 | 0.00000 | 0.00000 | 0.19089 |
| SN | 120 | 0.08900 | 16.67000 | 152.600 | -0.01859 | 0.24074 | 0.04396 |
| **BI-2** | 209 | 62385.97000 | 0.00000 | 0.000 | 62302.22000 | 62794.05000 | 62061.65000 |
| PB | 208 | -0.00700 | 140.00000 | 0.000 | -0.01127 | -0.00361 | -0.00698 |
| TL | 203 | 0.00200 | 13.33000 | 668.200 | -0.01466 | 0.01046 | 0.01075 |
| U | 238 | 0.00600 | 23.33000 | 27.600 | 0.00526 | 0.00826 | 0.00528 |
| *SC-1* | 45 | 162347.14000 | 0.00000 | 0.000 | 162214.37000 | 162773.56000 | 162053.48000 |
| *GE-1* | 72 | 201693.50000 | 0.00000 | 0.000 | 199969.70000 | 203451.09000 | 201659.70000 |
| *GE-3* | 72 | 632908.00000 | 0.00000 | 0.000 | 633554.80000 | 631815.89000 | 633353.31000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:11:57
Tube Number: 5
Sample Number: **ICV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6618.15000 | 0.00000 | 0.000 | 6021.29000 | 7041.62000 | 6791.54000 |
| **SC-3** | 45 | 750607.33000 | 0.00000 | 0.000 | 762508.58000 | 748264.60000 | 741048.82000 |
| AL | 27 | 4951.85500 | 18032.71000 | 8.200 | 5394.31309 | 4591.26116 | 4869.99014 |
| B | 11 | 505.45200 | 314211.08000 | 0.900 | 500.35010 | 507.67687 | 508.32787 |
| BE | 9 | 49.36200 | 30115.28000 | 0.900 | 49.67719 | 48.83091 | 49.57912 |
| CA | 44 | 5454.86500 | 2083.53000 | 13.700 | 6314.31274 | 4984.02398 | 5066.25743 |
| K | 39 | 5027.19200 | 31420.92000 | 6.100 | 5382.07004 | 4848.37732 | 4851.12998 |
| MG | 24 | 4930.04900 | 76923.54000 | 7.900 | 5371.10187 | 4647.06733 | 4771.97672 |
| NA | 23 | 4953.23700 | 171575.56000 | 8.300 | 5421.90120 | 4662.13674 | 4775.67390 |
| TI | 47 | 553.00800 | 1620.14000 | 7.700 | 587.01475 | 505.15648 | 566.85427 |
| V | 51 | 493.72700 | 71097.06000 | 6.200 | 528.75767 | 471.85975 | 480.56316 |
| **GE-2** | 72 | 19788.24000 | 0.00000 | 0.000 | 19791.61000 | 19771.62000 | 19801.50000 |
| CR | 52 | 504.28400 | 103398.46000 | 1.000 | 498.58551 | 505.48290 | 508.78437 |
| FE | 57 | 5076.29300 | 20088.63000 | 2.400 | 4937.09349 | 5154.86113 | 5136.92480 |
| MN | 55 | 508.62600 | 40442.96000 | 2.600 | 501.78065 | 500.13916 | 523.95732 |
| **IN-1** | 115 | 236070.53000 | 0.00000 | 0.000 | 238219.90000 | 232669.81000 | 237321.87000 |
| **IN-2** | 115 | 10029.85000 | 0.00000 | 0.000 | 9984.63000 | 10116.87000 | 9988.06000 |
| AG | 107 | 52.00900 | 38089.60000 | 3.600 | 51.21242 | 50.66480 | 54.14879 |
| AS | 75 | 539.25900 | 9934.81000 | 1.600 | 548.78719 | 537.51842 | 531.47183 |
| CO | 59 | 521.16900 | 200788.99000 | 1.400 | 513.69028 | 521.10638 | 528.70900 |
| CU | 63 | 524.94200 | 178399.30000 | 0.900 | 527.19593 | 519.27136 | 528.35840 |
| MO | 98 | 50.39100 | 13722.55000 | 3.000 | 49.04978 | 52.05440 | 50.06751 |
| NI | 60 | 529.54200 | 59589.93000 | 1.000 | 525.03524 | 528.07681 | 535.51394 |
| RB | 85 | 54.61200 | 2416.94000 | 6.700 | 58.09969 | 50.83615 | 54.89972 |
| SE | 78 | 50.20400 | 4206.28000 | 1.900 | 49.28834 | 51.21487 | 50.10803 |
| SR | 88 | 50.69700 | 3353.80000 | 7.900 | 46.32905 | 54.12750 | 51.63375 |
| ZN | 66 | 539.42000 | 23809.96000 | 0.500 | 537.01212 | 542.59590 | 538.65138 |
| **TB-2** | 159 | 75308.52000 | 0.00000 | 0.000 | 74991.06000 | 75512.15000 | 75422.34000 |
| BA | 137 | 497.05600 | 20242.83000 | 3.700 | 515.17568 | 497.39793 | 478.59493 |
| CD | 111 | 51.00200 | 4021.17000 | 4.000 | 49.73349 | 49.92170 | 53.35059 |
| SB | 121 | 51.05400 | 5771.24000 | 6.700 | 47.89974 | 54.71930 | 50.54245 |
| SN | 120 | 49.69500 | 8572.49000 | 3.200 | 51.41743 | 49.44238 | 48.22606 |
| **BI-2** | 209 | 69270.97000 | 0.00000 | 0.000 | 69402.18000 | 68547.29000 | 69863.44000 |
| PB | 208 | 50.06300 | 137132.15000 | 1.000 | 49.52426 | 50.52460 | 50.13949 |
| TL | 203 | 48.94900 | 43005.24000 | 1.200 | 49.42769 | 49.11059 | 48.30903 |
| U | 238 | 50.47200 | 182189.50000 | 2.500 | 49.91331 | 51.91403 | 49.58930 |
| *SC-1* | 45 | 181090.76000 | 0.00000 | 0.000 | 181111.68000 | 181777.44000 | 180383.16000 |
| *GE-1* | 72 | 223372.73000 | 0.00000 | 0.000 | 227046.09000 | 222817.46000 | 220254.65000 |
| *GE-3* | 72 | 683509.21000 | 0.00000 | 0.000 | 686038.35000 | 682903.27000 | 681586.01000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:15:02
Tube Number: 6
Sample Number: **ICB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6441.43000 | 0.00000 | 0.000 | 6641.47000 | 6171.33000 | 6511.48000 |
| **SC-3** | 45 | 721882.38000 | 0.00000 | 0.000 | 718539.36000 | 721329.21000 | 725778.58000 |
| AL | 27 | -0.84100 | 16.67000 | 0.000 | -0.03709 | -2.55674 | 0.07181 |
| B | 11 | 30.29000 | 25642.11000 | 2.500 | 31.14506 | 29.97623 | 29.74929 |
| BE | 9 | 0.00000 | 2.67000 | 1478.500 | -0.00427 | 0.00255 | 0.00251 |
| CA | 44 | 9.29100 | 3.33000 | 173.200 | 0.00000 | 27.87426 | 0.00000 |
| K | 39 | 5.49800 | 413.36000 | 119.100 | -2.05461 | 9.53371 | 9.01483 |
| MG | 24 | 0.64000 | 10.00000 | 99.300 | 1.27195 | 0.00000 | 0.64867 |
| NA | 23 | -9.29900 | 2553.61000 | 0.000 | -15.90372 | -5.22088 | -6.77240 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.04900 | 6.67000 | 173.200 | 0.00000 | 0.14845 | 0.00000 |
| **GE-2** | 72 | 19721.43000 | 0.00000 | 0.000 | 19420.96000 | 20051.87000 | 19691.45000 |
| CR | 52 | 0.30400 | 130.00000 | 46.300 | 0.31415 | 0.43834 | 0.15814 |
| FE | 57 | -0.92700 | 3.33000 | 0.000 | 0.79046 | -1.78517 | -1.78517 |
| MN | 55 | 0.12400 | 30.00000 | 276.000 | 0.51161 | -0.00929 | -0.13120 |
| **IN-1** | 115 | 226868.49000 | 0.00000 | 0.000 | 227471.37000 | 226319.41000 | 226814.68000 |
| **IN-2** | 115 | 10303.51000 | 0.00000 | 0.000 | 9463.10000 | 10783.80000 | 10663.62000 |
| AG | 107 | 0.00900 | 6.67000 | 86.600 | 0.00000 | 0.01270 | 0.01284 |
| AS | 75 | 0.18600 | 4.67000 | 126.000 | 0.39151 | 0.23415 | -0.06879 |
| CO | 59 | 0.02400 | 150.01000 | 241.700 | 0.05609 | -0.04280 | 0.05846 |
| CU | 63 | 0.09600 | 66.67000 | 108.700 | 0.21215 | 0.00972 | 0.06632 |
| MO | 98 | 0.04900 | 20.00000 | 139.900 | 0.05536 | 0.11417 | -0.02253 |
| NI | 60 | 0.00300 | 3.33000 | 1880.000 | 0.06569 | -0.02850 | -0.02850 |
| RB | 85 | -0.06700 | 0.00000 | 0.000 | -0.06701 | -0.06701 | -0.06701 |
| SE | 78 | 0.02500 | 2.00000 | 66.300 | 0.04124 | 0.02490 | 0.00832 |
| SR | 88 | 0.06200 | 6.67000 | 298.300 | 0.27597 | -0.04484 | -0.04484 |
| ZN | 66 | 0.66800 | 36.67000 | 81.000 | 0.81629 | 1.12017 | 0.06867 |
| **TB-2** | 159 | 74524.29000 | 0.00000 | 0.000 | 75139.91000 | 74317.31000 | 74115.66000 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.09000 | 10.00000 | 173.200 | 0.00000 | 0.00000 | 0.26970 |
| SN | 120 | 0.07900 | 16.67000 | 43.400 | 0.03952 | 0.09893 | 0.09925 |
| **BI-2** | 209 | 68380.52000 | 0.00000 | 0.000 | 68156.54000 | 66840.47000 | 70144.54000 |
| PB | 208 | -0.00400 | 163.34000 | 0.000 | -0.04181 | 0.00030 | 0.02976 |
| TL | 203 | 0.00100 | 13.33000 | 1814.100 | -0.00309 | 0.02074 | -0.01466 |
| U | 238 | 0.00800 | 33.33000 | 38.300 | 0.00473 | 0.01058 | 0.01004 |
| *SC-1* | 45 | 175879.79000 | 0.00000 | 0.000 | 177932.99000 | 173580.25000 | 176126.13000 |
| *GE-1* | 72 | 215397.50000 | 0.00000 | 0.000 | 215215.23000 | 213252.83000 | 217724.45000 |
| *GE-3* | 72 | 654684.12000 | 0.00000 | 0.000 | 651387.33000 | 652160.81000 | 660504.21000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:18:07
Tube Number: 7
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6758.18000 | 0.00000 | 0.000 | 6511.41000 | 6871.63000 | 6891.51000 |
| **SC-3** | 45 | 716457.52000 | 0.00000 | 0.000 | 704242.72000 | 720757.18000 | 724372.65000 |
| AL | 27 | 182.33000 | 700.04000 | 8.100 | 192.03524 | 189.58886 | 165.36715 |
| B | 11 | 114.86000 | 74297.76000 | 1.000 | 116.08086 | 114.82632 | 113.67164 |
| BE | 9 | 0.99900 | 584.01000 | 8.600 | 1.08252 | 0.91080 | 1.00476 |
| CA | 44 | 457.41400 | 180.01000 | 33.300 | 422.72134 | 325.46110 | 624.05818 |
| K | 39 | 400.44400 | 2930.34000 | 10.000 | 414.50805 | 355.23730 | 431.58657 |
| MG | 24 | 201.55900 | 3217.07000 | 12.200 | 229.01405 | 181.96452 | 193.69881 |
| NA | 23 | 379.81900 | 16267.77000 | 4.000 | 383.70268 | 392.62478 | 363.12893 |
| TI | 47 | 28.06400 | 83.34000 | 53.400 | 44.94741 | 16.37997 | 22.86581 |
| V | 51 | 0.92900 | 136.67000 | 18.700 | 1.05530 | 0.99998 | 0.73116 |
| **GE-2** | 72 | 19928.39000 | 0.00000 | 0.000 | 19701.44000 | 19891.83000 | 20191.91000 |
| CR | 52 | 4.63000 | 1023.40000 | 16.300 | 5.40328 | 3.89172 | 4.59428 |
| FE | 57 | 211.05300 | 846.72000 | 17.900 | 249.58773 | 209.45928 | 174.11260 |
| MN | 55 | 3.73900 | 320.02000 | 19.700 | 3.02845 | 4.49920 | 3.68863 |
| **IN-1** | 115 | 239666.58000 | 0.00000 | 0.000 | 238330.01000 | 237014.80000 | 243654.92000 |
| **IN-2** | 115 | 10343.35000 | 0.00000 | 0.000 | 10035.10000 | 10206.68000 | 10788.28000 |
| AG | 107 | 1.02700 | 773.38000 | 12.800 | 1.10537 | 1.10020 | 0.87587 |
| AS | 75 | 3.81200 | 74.00000 | 19.000 | 3.72923 | 3.13193 | 4.57440 |
| CO | 59 | 1.33900 | 670.04000 | 30.400 | 1.35660 | 1.73623 | 0.92303 |
| CU | 63 | 4.57600 | 1636.80000 | 5.600 | 4.87160 | 4.44097 | 4.41509 |
| MO | 98 | 1.08300 | 310.02000 | 12.700 | 1.22615 | 0.95241 | 1.07065 |
| NI | 60 | 4.10800 | 480.02000 | 9.000 | 3.79101 | 4.51284 | 4.02007 |
| RB | 85 | -0.06700 | 0.00000 | 0.000 | -0.06701 | -0.06701 | -0.06701 |
| SE | 78 | 3.62300 | 308.45000 | 8.600 | 3.30192 | 3.64509 | 3.92349 |
| SR | 88 | 2.68500 | 186.68000 | 18.700 | 2.67803 | 2.18610 | 3.19144 |
| ZN | 66 | 31.77500 | 1450.11000 | 6.600 | 33.15400 | 32.81648 | 29.35383 |
| **TB-2** | 159 | 76456.66000 | 0.00000 | 0.000 | 76456.37000 | 76426.35000 | 76487.25000 |
| BA | 137 | 4.03100 | 166.68000 | 12.500 | 3.62790 | 4.59707 | 3.86818 |
| CD | 111 | 1.17400 | 94.00000 | 11.800 | 1.04945 | 1.14985 | 1.32377 |
| SB | 121 | 1.97600 | 226.68000 | 35.400 | 1.30729 | 2.70280 | 1.91655 |
| SN | 120 | 4.05600 | 713.38000 | 16.200 | 4.72253 | 3.41005 | 4.03536 |
| **BI-2** | 209 | 71872.46000 | 0.00000 | 0.000 | 70706.22000 | 71681.37000 | 73229.79000 |
| PB | 208 | 1.99500 | 5844.02000 | 2.300 | 2.04538 | 1.95310 | 1.98652 |
| TL | 203 | 1.06900 | 986.74000 | 10.500 | 1.17890 | 0.95361 | 1.07315 |
| U | 238 | 0.96500 | 3617.22000 | 10.200 | 0.91104 | 1.07802 | 0.90581 |
| *SC-1* | 45 | 181441.75000 | 0.00000 | 0.000 | 177113.10000 | 179961.09000 | 187251.07000 |
| *GE-1* | 72 | 221155.35000 | 0.00000 | 0.000 | 217077.87000 | 223847.81000 | 222540.37000 |
| *GE-3* | 72 | 655409.58000 | 0.00000 | 0.000 | 646626.98000 | 656038.97000 | 663562.80000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:21:11
Tube Number: 8
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6588.12000 | 0.00000 | 0.000 | 6341.38000 | 6891.59000 | 6531.40000 |
| **SC-3** | 45 | 761748.63000 | 0.00000 | 0.000 | 763426.63000 | 765617.33000 | 756201.94000 |
| AL | 27 | 99421.80600 | 361329.21000 | 3.200 | 100709.68222 | 95767.14110 | 101788.59511 |
| B | 11 | 22.51700 | 22285.18000 | 0.300 | 22.58338 | 22.51509 | 22.45125 |
| BE | 9 | 0.00200 | 4.00000 | 293.300 | 0.00218 | -0.00427 | 0.00875 |
| CA | 44 | 315925.99100 | 120896.88000 | 3.800 | 317999.01911 | 303059.31462 | 326719.63910 |
| K | 39 | 110603.96700 | 681616.34000 | 3.900 | 111013.94324 | 106075.25339 | 114722.70544 |
| MG | 24 | 103422.83800 | 1612154.82000 | 2.700 | 104197.26913 | 100330.34049 | 105740.90538 |
| NA | 23 | 261164.12000 | 8886776.53000 | 3.500 | 262084.96027 | 251652.25817 | 269755.14069 |
| TI | 47 | 2320.93100 | 6784.86000 | 4.600 | 2442.89857 | 2244.60273 | 2275.29293 |
| V | 51 | 0.02200 | 3.33000 | 173.200 | 0.00000 | 0.06647 | 0.00000 |
| **GE-2** | 72 | 20672.65000 | 0.00000 | 0.000 | 20222.34000 | 20952.97000 | 20842.63000 |
| CR | 52 | 1.46800 | 386.69000 | 33.200 | 0.95716 | 1.92627 | 1.52118 |
| FE | 57 | 257351.91000 | 1063636.68000 | 1.400 | 255653.61062 | 255042.93181 | 261359.18822 |
| MN | 55 | 3.87600 | 343.35000 | 12.100 | 3.80582 | 4.37713 | 3.44596 |
| **IN-1** | 115 | 236355.56000 | 0.00000 | 0.000 | 236317.82000 | 234688.56000 | 238060.31000 |
| **IN-2** | 115 | 10983.75000 | 0.00000 | 0.000 | 10793.84000 | 10883.78000 | 11273.64000 |
| AG | 107 | 0.40800 | 326.68000 | 41.700 | 0.32986 | 0.60396 | 0.29153 |
| AS | 75 | 0.16300 | 4.67000 | 94.200 | 0.03210 | 0.33142 | 0.12440 |
| CO | 59 | 0.66500 | 430.02000 | 17.000 | 0.68099 | 0.76816 | 0.54439 |
| CU | 63 | 1.01000 | 413.36000 | 11.300 | 0.99414 | 0.90374 | 1.13089 |
| MO | 98 | 2081.85200 | 620534.81000 | 1.100 | 2056.98880 | 2101.69236 | 2086.87514 |
| NI | 60 | 1.05000 | 133.34000 | 41.700 | 0.54954 | 1.36380 | 1.23659 |
| RB | 85 | 0.47500 | 26.67000 | 121.300 | 0.14315 | 0.14141 | 1.14026 |
| SE | 78 | 0.06900 | 5.78000 | 43.700 | 0.10336 | 0.04802 | 0.05526 |
| SR | 88 | 9.87000 | 716.71000 | 21.900 | 8.53411 | 12.36857 | 8.70743 |
| ZN | 66 | 2.19600 | 113.34000 | 34.700 | 2.59326 | 1.31739 | 2.67836 |
| **TB-2** | 159 | 62946.85000 | 0.00000 | 0.000 | 61996.60000 | 62850.01000 | 63993.95000 |
| BA | 137 | 1.46500 | 50.00000 | 33.700 | 0.89475 | 1.76520 | 1.73365 |
| CD | 111 | 0.21300 | 14.00000 | 24.900 | 0.18489 | 0.27357 | 0.17912 |
| SB | 121 | 1.58500 | 150.01000 | 39.700 | 0.96726 | 2.22639 | 1.56188 |
| SN | 120 | 0.09800 | 16.67000 | 108.700 | 0.12229 | 0.18986 | -0.01859 |
| **BI-2** | 209 | 68497.47000 | 0.00000 | 0.000 | 67281.82000 | 69733.26000 | 68477.33000 |
| PB | 208 | 0.16400 | 616.70000 | 11.700 | 0.18053 | 0.16830 | 0.14298 |
| TL | 203 | 0.05000 | 56.67000 | 33.800 | 0.03223 | 0.05320 | 0.06596 |
| U | 238 | 0.05200 | 186.68000 | 19.100 | 0.05899 | 0.04037 | 0.05514 |
| *SC-1* | 45 | 163883.84000 | 0.00000 | 0.000 | 163091.30000 | 164013.28000 | 164546.93000 |
| *GE-1* | 72 | 219396.49000 | 0.00000 | 0.000 | 220194.82000 | 217773.49000 | 220221.17000 |
| *GE-3* | 72 | 758313.66000 | 0.00000 | 0.000 | 756555.61000 | 762210.54000 | 756174.83000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:24:15
Tube Number: 9
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6571.42000 | 0.00000 | 0.000 | 6521.39000 | 6131.22000 | 7061.66000 |
| **SC-3** | 45 | 782365.54000 | 0.00000 | 0.000 | 784496.63000 | 783631.32000 | 778968.66000 |
| AL | 27 | 102012.71700 | 369006.37000 | 6.500 | 100452.43807 | 109300.66072 | 96285.05218 |
| B | 11 | 15.96700 | 18756.68000 | 1.900 | 16.18484 | 15.61915 | 16.09779 |
| BE | 9 | 0.00700 | 7.33000 | 100.100 | 0.01142 | -0.00113 | 0.01153 |
| CA | 44 | 319182.85100 | 121606.94000 | 5.800 | 316411.32572 | 338808.87142 | 302328.35491 |
| K | 39 | 114031.99300 | 699800.51000 | 5.300 | 112871.21761 | 120552.02204 | 108672.73925 |
| MG | 24 | 107625.72900 | 1669840.18000 | 5.900 | 107131.02898 | 114190.70782 | 101555.45154 |
| NA | 23 | 272779.50000 | 9233974.86000 | 7.100 | 272564.49481 | 292153.99639 | 253620.00842 |
| TI | 47 | 2355.97900 | 6848.25000 | 9.000 | 2351.31402 | 2570.71150 | 2145.91177 |
| V | 51 | 226.68500 | 32426.49000 | 6.100 | 228.49409 | 239.44294 | 212.11752 |
| **GE-2** | 72 | 20799.58000 | 0.00000 | 0.000 | 20822.93000 | 21133.46000 | 20442.35000 |
| CR | 52 | 215.40200 | 46437.27000 | 5.300 | 213.51647 | 205.10417 | 227.58641 |
| FE | 57 | 261261.03400 | 1086079.15000 | 2.800 | 256546.40051 | 257569.52493 | 269667.17544 |
| MN | 55 | 218.62300 | 18279.81000 | 2.200 | 216.88980 | 214.87775 | 224.10179 |
| **IN-1** | 115 | 256400.69000 | 0.00000 | 0.000 | 257301.80000 | 253737.59000 | 258162.67000 |
| **IN-2** | 115 | 10616.56000 | 0.00000 | 0.000 | 10703.25000 | 10593.79000 | 10552.64000 |
| AG | 107 | 50.26900 | 38974.81000 | 0.900 | 50.58188 | 50.46988 | 49.75579 |
| AS | 75 | 104.83300 | 2044.79000 | 6.400 | 97.40451 | 106.53325 | 110.56122 |
| CO | 59 | 210.61300 | 85969.25000 | 1.900 | 208.00014 | 208.54917 | 215.29037 |
| CU | 63 | 205.71800 | 74017.08000 | 2.900 | 199.77640 | 205.67441 | 211.70261 |
| MO | 98 | 2214.06100 | 637772.18000 | 2.400 | 2165.78424 | 2206.92129 | 2269.47887 |
| NI | 60 | 208.88500 | 24877.94000 | 4.600 | 197.89187 | 213.92086 | 214.84131 |
| RB | 85 | 0.21800 | 13.33000 | 150.300 | 0.14493 | 0.57537 | -0.06701 |
| SE | 78 | 87.01800 | 7919.98000 | 1.200 | 86.02605 | 86.94556 | 88.08273 |
| SR | 88 | 11.63100 | 816.72000 | 10.300 | 11.58507 | 12.85165 | 10.45646 |
| ZN | 66 | 94.72600 | 4430.71000 | 2.400 | 92.45933 | 94.70348 | 97.01402 |
| **TB-2** | 159 | 62260.05000 | 0.00000 | 0.000 | 59827.41000 | 62919.41000 | 64033.34000 |
| BA | 137 | 1.50800 | 50.00000 | 75.500 | 2.78157 | 0.58775 | 1.15505 |
| CD | 111 | 117.72600 | 7669.07000 | 2.400 | 120.92139 | 116.74069 | 115.51583 |
| SB | 121 | 1.97500 | 183.34000 | 36.500 | 2.45024 | 2.32983 | 1.14460 |
| SN | 120 | 0.09700 | 16.67000 | 38.300 | 0.05440 | 0.12022 | 0.11780 |
| **BI-2** | 209 | 67864.91000 | 0.00000 | 0.000 | 68537.68000 | 67785.18000 | 67271.87000 |
| PB | 208 | 0.14200 | 553.36000 | 45.200 | 0.19452 | 0.07038 | 0.16174 |
| TL | 203 | 0.10900 | 106.67000 | 23.100 | 0.08890 | 0.10168 | 0.13774 |
| U | 238 | 0.05000 | 180.01000 | 16.000 | 0.05789 | 0.05005 | 0.04188 |
| *SC-1* | 45 | 177672.63000 | 0.00000 | 0.000 | 178769.20000 | 177226.79000 | 177021.91000 |
| *GE-1* | 72 | 240266.34000 | 0.00000 | 0.000 | 241895.66000 | 237645.17000 | 241258.20000 |
| *GE-3* | 72 | 783483.92000 | 0.00000 | 0.000 | 782978.66000 | 779309.52000 | 788163.58000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:27:21
Tube Number: 10
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 7641.95000 | 0.00000 | 0.000 | 7681.98000 | 7451.86000 | 7792.01000 |
| **SC-3** | 45 | 853728.53000 | 0.00000 | 0.000 | 853730.46000 | 854768.42000 | 852686.71000 |
| AL | 27 | 2.35000 | 33.33000 | 225.000 | -0.77594 | -0.63030 | 8.45633 |
| B | 11 | 6.36500 | 13857.80000 | 3.100 | 6.35801 | 6.17095 | 6.56604 |
| BE | 9 | -0.00300 | 0.67000 | 0.000 | -0.00427 | -0.00139 | -0.00427 |
| CA | 44 | 14.92900 | 6.67000 | 173.200 | 44.78565 | 0.00000 | 0.00000 |
| K | 39 | -2.35200 | 433.36000 | 0.000 | -6.16419 | 15.67894 | -16.57147 |
| MG | 24 | 2.75600 | 50.00000 | 52.300 | 4.39866 | 1.70043 | 2.16827 |
| NA | 23 | 9.88400 | 3787.20000 | 80.700 | 4.56942 | 19.06120 | 6.02072 |
| TI | 47 | 2.88900 | 10.00000 | 173.200 | 0.00000 | 0.00000 | 8.66712 |
| V | 51 | 0.06000 | 10.00000 | 173.200 | 0.17889 | 0.00000 | 0.00000 |
| **GE-2** | 72 | 21847.48000 | 0.00000 | 0.000 | 21774.13000 | 21283.36000 | 22484.96000 |
| CR | 52 | 0.36800 | 160.00000 | 108.100 | 0.15559 | 0.12146 | 0.82740 |
| FE | 57 | 6.66000 | 36.67000 | 54.300 | 9.70123 | 7.61584 | 2.66414 |
| MN | 55 | -0.14400 | 10.00000 | 0.000 | -0.14329 | -0.14065 | -0.14691 |
| **IN-1** | 115 | 269836.55000 | 0.00000 | 0.000 | 272396.02000 | 266787.55000 | 270326.07000 |
| **IN-2** | 115 | 10389.98000 | 0.00000 | 0.000 | 10613.44000 | 10103.22000 | 10453.28000 |
| AG | 107 | 0.00900 | 6.67000 | 173.200 | 0.00000 | 0.02711 | 0.00000 |
| AS | 75 | -0.03300 | 0.67000 | 0.000 | -0.06879 | 0.03900 | -0.06879 |
| CO | 59 | -0.08000 | 110.01000 | 0.000 | -0.16051 | -0.02165 | -0.05779 |
| CU | 63 | 0.10800 | 73.33000 | 11.800 | 0.12272 | 0.10474 | 0.09789 |
| MO | 98 | 0.73000 | 213.35000 | 55.600 | 1.19283 | 0.56113 | 0.43582 |
| NI | 60 | -0.02900 | 0.00000 | 0.000 | -0.02850 | -0.02850 | -0.02850 |
| RB | 85 | -0.06700 | 0.00000 | 0.000 | -0.06701 | -0.06701 | -0.06701 |
| SE | 78 | 0.02100 | 2.00000 | 87.400 | 0.04137 | 0.00707 | 0.01386 |
| SR | 88 | -0.04500 | 0.00000 | 0.000 | -0.04484 | -0.04484 | -0.04484 |
| ZN | 66 | 0.14100 | 13.33000 | 350.600 | 0.71215 | -0.14448 | -0.14448 |
| **TB-2** | 159 | 79280.27000 | 0.00000 | 0.000 | 79048.94000 | 79038.71000 | 79753.17000 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SN | 120 | 0.03700 | 10.00000 | 261.100 | 0.14714 | -0.01859 | -0.01859 |
| **BI-2** | 209 | 73284.68000 | 0.00000 | 0.000 | 71349.30000 | 74493.13000 | 74011.61000 |
| PB | 208 | -0.00400 | 173.34000 | 0.000 | -0.00022 | -0.01991 | 0.00775 |
| TL | 203 | 0.01700 | 30.00000 | 211.400 | -0.00361 | 0.05945 | -0.00401 |
| U | 238 | 0.00000 | 3.33000 | 0.000 | -0.00090 | 0.00167 | -0.00090 |
| *SC-1* | 45 | 210966.99000 | 0.00000 | 0.000 | 214458.24000 | 208246.66000 | 210196.07000 |
| *GE-1* | 72 | 256070.49000 | 0.00000 | 0.000 | 256833.38000 | 252839.66000 | 258538.43000 |
| *GE-3* | 72 | 766584.44000 | 0.00000 | 0.000 | 758099.36000 | 763896.24000 | 777757.72000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:30:25
Tube Number: 11
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 7004.96000 | 0.00000 | 0.000 | 6561.43000 | 7291.73000 | 7161.71000 |
| **SC-3** | 45 | 820891.71000 | 0.00000 | 0.000 | 797341.24000 | 836835.77000 | 828498.11000 |
| AL | 27 | 2524.31300 | 9746.29000 | 10.300 | 2825.13206 | 2377.59222 | 2370.21495 |
| B | 11 | 253.56500 | 176908.17000 | 1.200 | 256.82504 | 250.88147 | 252.98808 |
| BE | 9 | 25.64400 | 17105.15000 | 2.100 | 26.19287 | 25.14494 | 25.59424 |
| CA | 44 | 2738.58000 | 1106.75000 | 20.500 | 3382.28605 | 2359.26960 | 2474.18461 |
| K | 39 | 2590.06600 | 17328.77000 | 10.000 | 2888.32469 | 2469.49803 | 2412.37384 |
| MG | 24 | 2553.25900 | 42269.20000 | 4.900 | 2698.42429 | 2489.68906 | 2471.66396 |
| NA | 23 | 2587.93300 | 96557.51000 | 6.600 | 2784.93888 | 2481.86428 | 2496.99606 |
| TI | 47 | 264.58900 | 823.39000 | 6.300 | 260.76338 | 250.08610 | 282.91611 |
| V | 51 | 248.14100 | 37847.45000 | 7.100 | 268.30356 | 236.51999 | 239.59873 |
| **GE-2** | 72 | 21279.93000 | 0.00000 | 0.000 | 20762.67000 | 22094.31000 | 20982.80000 |
| CR | 52 | 259.07800 | 57101.14000 | 4.800 | 266.10058 | 244.77970 | 266.35371 |
| FE | 57 | 2534.67700 | 10776.93000 | 5.700 | 2651.64052 | 2373.91672 | 2578.47329 |
| MN | 55 | 255.56400 | 21857.42000 | 3.200 | 251.01860 | 250.53895 | 265.13563 |
| **IN-1** | 115 | 255293.93000 | 0.00000 | 0.000 | 249942.56000 | 259919.35000 | 256019.88000 |
| **IN-2** | 115 | 10801.59000 | 0.00000 | 0.000 | 10449.42000 | 11607.93000 | 10347.42000 |
| AG | 107 | 26.92700 | 21213.63000 | 3.400 | 26.81527 | 26.06472 | 27.90159 |
| AS | 75 | 272.28700 | 5392.85000 | 4.800 | 272.48842 | 258.98654 | 285.38550 |
| CO | 59 | 270.63100 | 112051.63000 | 6.300 | 278.81439 | 250.93028 | 282.14788 |
| CU | 63 | 270.67500 | 98834.80000 | 6.100 | 274.95548 | 252.54573 | 284.52345 |
| MO | 98 | 27.12600 | 7935.49000 | 9.800 | 25.87007 | 25.31892 | 30.18798 |
| NI | 60 | 271.36000 | 32820.91000 | 4.900 | 273.95345 | 256.91407 | 283.21118 |
| RB | 85 | 24.71800 | 1173.42000 | 13.800 | 27.28736 | 20.84418 | 26.02245 |
| SE | 78 | 25.62200 | 2322.82000 | 4.200 | 25.13646 | 26.86718 | 24.86263 |
| SR | 88 | 26.12300 | 1860.18000 | 3.300 | 25.81470 | 25.45726 | 27.09664 |
| ZN | 66 | 271.73100 | 12901.79000 | 4.600 | 267.29068 | 262.15201 | 285.75106 |
| **TB-2** | 159 | 79742.11000 | 0.00000 | 0.000 | 79320.65000 | 79893.12000 | 80012.56000 |
| BA | 137 | 243.76900 | 10513.68000 | 2.900 | 236.45711 | 244.02271 | 250.82608 |
| CD | 111 | 24.99700 | 2086.81000 | 1.100 | 25.09781 | 24.67885 | 25.21517 |
| SB | 121 | 26.23900 | 3140.42000 | 2.800 | 25.95944 | 25.69020 | 27.06759 |
| SN | 120 | 22.69300 | 4147.33000 | 2.600 | 22.33732 | 23.38000 | 22.36248 |
| **BI-2** | 209 | 75147.10000 | 0.00000 | 0.000 | 72706.63000 | 76392.60000 | 76342.07000 |
| PB | 208 | 24.81400 | 73816.83000 | 2.100 | 25.19022 | 24.20454 | 25.04757 |
| TL | 203 | 24.07100 | 22940.49000 | 2.400 | 24.70240 | 23.93379 | 23.57717 |
| U | 238 | 24.16700 | 94599.68000 | 3.300 | 25.01643 | 23.43786 | 24.04798 |
| *SC-1* | 45 | 197185.71000 | 0.00000 | 0.000 | 191243.06000 | 200359.51000 | 199954.57000 |
| *GE-1* | 72 | 241352.93000 | 0.00000 | 0.000 | 238954.22000 | 241349.63000 | 243754.94000 |
| *GE-3* | 72 | 734363.04000 | 0.00000 | 0.000 | 729081.71000 | 742814.13000 | 731193.27000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:33:30
Tube Number: 12
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 7158.33000 | 0.00000 | 0.000 | 7181.65000 | 6971.58000 | 7321.75000 |
| **SC-3** | 45 | 797692.05000 | 0.00000 | 0.000 | 807971.32000 | 801111.94000 | 783992.88000 |
| AL | 27 | -2.14500 | 13.33000 | 0.000 | 2.07491 | -5.49196 | -3.01794 |
| B | 11 | 15.26600 | 18673.28000 | 0.300 | 15.29930 | 15.21348 | 15.28569 |
| BE | 9 | 0.00300 | 4.67000 | 159.800 | -0.00122 | 0.00802 | 0.00201 |
| CA | 44 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| K | 39 | -1.60800 | 413.36000 | 0.000 | 8.22942 | -12.61591 | -0.43646 |
| MG | 24 | 0.39400 | 6.67000 | 86.700 | 0.00000 | 0.60586 | 0.57688 |
| NA | 23 | 7.90000 | 3477.15000 | 29.200 | 6.03873 | 10.48062 | 7.18205 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-2** | 72 | 20248.83000 | 0.00000 | 0.000 | 20852.74000 | 19721.52000 | 20172.24000 |
| CR | 52 | 0.41800 | 156.67000 | 77.500 | 0.13083 | 0.35332 | 0.76887 |
| FE | 57 | -1.78500 | 0.00000 | 0.000 | -1.78517 | -1.78517 | -1.78517 |
| MN | 55 | -0.13100 | 10.00000 | 0.000 | -0.25764 | 0.12112 | -0.25764 |
| **IN-1** | 115 | 246581.32000 | 0.00000 | 0.000 | 246173.57000 | 246184.05000 | 247386.35000 |
| **IN-2** | 115 | 10133.25000 | 0.00000 | 0.000 | 10653.46000 | 10013.23000 | 9733.06000 |
| AG | 107 | 0.00500 | 3.33000 | 173.200 | 0.00000 | 0.00000 | 0.01407 |
| AS | 75 | 0.07200 | 2.67000 | 169.700 | 0.13564 | 0.14872 | -0.06879 |
| CO | 59 | -0.14100 | 83.33000 | 0.000 | -0.18571 | -0.17476 | -0.06246 |
| CU | 63 | 0.02400 | 43.33000 | 274.000 | 0.09418 | 0.01815 | -0.03911 |
| MO | 98 | 0.05200 | 20.00000 | 129.100 | 0.01207 | 0.01428 | 0.12893 |
| NI | 60 | 0.02900 | 6.67000 | 171.800 | 0.05516 | 0.06051 | -0.02850 |
| RB | 85 | 0.01100 | 3.33000 | 1260.000 | -0.06701 | -0.06701 | 0.16605 |
| SE | 78 | 0.03000 | 2.67000 | 90.300 | 0.05344 | 0.00000 | 0.03792 |
| SR | 88 | -0.04500 | 0.00000 | 0.000 | -0.04484 | -0.04484 | -0.04484 |
| ZN | 66 | 0.22900 | 16.67000 | 56.100 | 0.28223 | 0.08252 | 0.32258 |
| **TB-2** | 159 | 76982.26000 | 0.00000 | 0.000 | 76124.70000 | 76606.99000 | 78215.08000 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.11700 | 13.33000 | 114.800 | 0.26258 | 0.08698 | 0.00000 |
| SN | 120 | 0.13300 | 26.67000 | 123.800 | 0.03877 | 0.32344 | 0.03724 |
| **BI-2** | 209 | 70803.92000 | 0.00000 | 0.000 | 68748.35000 | 71500.27000 | 72163.13000 |
| PB | 208 | -0.01800 | 130.00000 | 0.000 | -0.01990 | -0.02160 | -0.01147 |
| TL | 203 | 0.03400 | 43.33000 | 103.000 | 0.06564 | -0.00363 | 0.03998 |
| U | 238 | -0.00100 | 0.00000 | 0.000 | -0.00090 | -0.00090 | -0.00090 |
| *SC-1* | 45 | 191978.98000 | 0.00000 | 0.000 | 190840.74000 | 195377.85000 | 189718.36000 |
| *GE-1* | 72 | 234415.51000 | 0.00000 | 0.000 | 232943.12000 | 237349.45000 | 232953.96000 |
| *GE-3* | 72 | 719121.86000 | 0.00000 | 0.000 | 722161.08000 | 727523.82000 | 707680.69000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:36:35
Tube Number: 13 Batch: 172091063902A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 7365.12000 | 0.00000 | 0.000 | 7381.86000 | 7421.79000 | 7291.70000 |
| **SC-3** | 45 | 807054.05000 | 0.00000 | 0.000 | 817502.64000 | 804307.49000 | 799352.02000 |
| AL | 27 | -0.56300 | 20.00000 | 0.000 | -3.03808 | -0.61061 | 1.96070 |
| B | 11 | 8.54200 | 14518.98000 | 5.400 | 9.03535 | 8.13169 | 8.45998 |
| BE | 9 | -0.00200 | 1.33000 | 0.000 | -0.00126 | -0.00121 | -0.00427 |
| CA | 44 | 15.59000 | 6.67000 | 86.600 | 0.00000 | 23.17787 | 23.59138 |
| K | 39 | -15.33700 | 330.02000 | 0.000 | -16.87586 | -11.36475 | -17.77019 |
| MG | 24 | 1.91200 | 33.33000 | 45.700 | 2.86093 | 1.13822 | 1.73778 |
| NA | 23 | -10.10300 | 2893.68000 | 0.000 | -10.36156 | -9.72643 | -10.21977 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-2** | 72 | 20492.65000 | 0.00000 | 0.000 | 19841.95000 | 20292.45000 | 21343.55000 |
| CR | 52 | 0.17300 | 106.67000 | 132.800 | 0.10575 | 0.42921 | -0.01556 |
| FE | 57 | 4.80100 | 26.67000 | 111.000 | 10.81976 | 0.67985 | 2.90208 |
| MN | 55 | -0.09200 | 13.33000 | 0.000 | -0.00667 | -0.01224 | -0.25764 |
| **IN-1** | 115 | 254259.78000 | 0.00000 | 0.000 | 257787.03000 | 252278.27000 | 252714.04000 |
| **IN-2** | 115 | 10750.13000 | 0.00000 | 0.000 | 10853.72000 | 10493.11000 | 10903.56000 |
| AG | 107 | 0.00800 | 6.67000 | 173.200 | 0.00000 | 0.00000 | 0.02512 |
| AS | 75 | 0.16500 | 4.67000 | 126.600 | 0.33253 | -0.06879 | 0.23083 |
| CO | 59 | -0.27600 | 33.33000 | 0.000 | -0.28487 | -0.28240 | -0.26131 |
| CU | 63 | 0.07500 | 63.33000 | 173.500 | 0.17219 | 0.12527 | -0.07270 |
| MO | 98 | -0.02300 | 0.00000 | 0.000 | -0.02253 | -0.02253 | -0.02253 |
| NI | 60 | -0.02900 | 0.00000 | 0.000 | -0.02850 | -0.02850 | -0.02850 |
| RB | 85 | -0.06700 | 0.00000 | 0.000 | -0.06701 | -0.06701 | -0.06701 |
| SE | 78 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SR | 88 | 0.05200 | 6.67000 | 323.700 | -0.04484 | 0.24448 | -0.04484 |
| ZN | 66 | 0.14200 | 13.33000 | 233.700 | 0.06494 | 0.50536 | -0.14448 |
| **TB-2** | 159 | 79430.55000 | 0.00000 | 0.000 | 78907.48000 | 78777.80000 | 80606.38000 |
| BA | 137 | 0.15300 | 6.67000 | 173.200 | 0.00000 | 0.00000 | 0.45878 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.08400 | 10.00000 | 173.200 | 0.25332 | 0.00000 | 0.00000 |
| SN | 120 | 0.12800 | 26.67000 | 50.300 | 0.20278 | 0.09228 | 0.08976 |
| **BI-2** | 209 | 72451.87000 | 0.00000 | 0.000 | 72485.74000 | 72435.43000 | 72434.45000 |
| PB | 208 | -0.04900 | 43.33000 | 0.000 | -0.04314 | -0.05361 | -0.05012 |
| TL | 203 | 0.00300 | 16.67000 | 650.300 | -0.01466 | -0.00377 | 0.02889 |
| U | 238 | 0.00300 | 13.33000 | 116.300 | 0.00439 | -0.00090 | 0.00440 |
| *SC-1* | 45 | 197786.05000 | 0.00000 | 0.000 | 199328.69000 | 196145.45000 | 197884.02000 |
| *GE-1* | 72 | 237984.56000 | 0.00000 | 0.000 | 239569.55000 | 237004.37000 | 237379.76000 |
| *GE-3* | 72 | 730459.39000 | 0.00000 | 0.000 | 742529.60000 | 727886.86000 | 720961.71000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:39:41
Tube Number: 14 Batch: 172091063902A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 7371.78000 | 0.00000 | 0.000 | 7561.86000 | 7381.78000 | 7171.69000 |
| **SC-3** | 45 | 806279.05000 | 0.00000 | 0.000 | 828586.78000 | 798664.83000 | 791585.54000 |
| AL | 27 | 1917.72600 | 7822.04000 | 3.400 | 1851.46583 | 1918.88129 | 1982.82941 |
| B | 11 | 250.38700 | 171654.77000 | 2.700 | 242.93255 | 252.04334 | 256.18471 |
| BE | 9 | 4.01600 | 2632.87000 | 6.600 | 3.86897 | 3.85998 | 4.32053 |
| CA | 44 | 4007.87800 | 1716.82000 | 5.000 | 4026.85492 | 3798.79537 | 4197.98439 |
| K | 39 | 9736.38800 | 67568.33000 | 3.300 | 9401.39642 | 10034.93669 | 9772.83167 |
| MG | 24 | 1934.97500 | 33758.17000 | 2.300 | 1904.82695 | 1913.47536 | 1986.62320 |
| NA | 23 | 9496.18400 | 364788.27000 | 3.000 | 9220.96407 | 9470.89876 | 9796.68864 |
| TI | 47 | 243.51000 | 796.72000 | 6.100 | 226.26453 | 253.13145 | 251.13312 |
| V | 51 | 47.23600 | 7598.59000 | 3.400 | 46.89802 | 45.80735 | 49.00236 |
| **GE-2** | 72 | 21266.93000 | 0.00000 | 0.000 | 21303.63000 | 21393.77000 | 21103.39000 |
| CR | 52 | 53.35600 | 11824.38000 | 3.100 | 52.40744 | 55.25727 | 52.40439 |
| FE | 57 | 966.60500 | 4117.31000 | 4.600 | 1017.42577 | 938.28108 | 944.10776 |
| MN | 55 | 49.46300 | 4247.33000 | 3.200 | 49.77406 | 50.84420 | 47.77011 |
| **IN-1** | 115 | 258652.59000 | 0.00000 | 0.000 | 254435.62000 | 258404.53000 | 263117.62000 |
| **IN-2** | 115 | 10827.78000 | 0.00000 | 0.000 | 10729.59000 | 10702.01000 | 11051.74000 |
| AG | 107 | 52.17800 | 41260.06000 | 2.100 | 53.14375 | 51.02369 | 52.36513 |
| AS | 75 | 9.07500 | 182.00000 | 8.400 | 9.16690 | 8.27493 | 9.78448 |
| CO | 59 | 260.11800 | 108257.85000 | 1.100 | 263.28977 | 258.04154 | 259.02261 |
| CU | 63 | 52.69200 | 19357.75000 | 3.500 | 53.93396 | 53.57603 | 50.56738 |
| MO | 98 | 49.49500 | 14546.53000 | 1.800 | 49.21780 | 50.51669 | 48.75023 |
| NI | 60 | 54.62800 | 6641.50000 | 4.400 | 56.05852 | 51.86999 | 55.95640 |
| RB | 85 | 0.07200 | 6.67000 | 167.400 | 0.14441 | -0.06701 | 0.13824 |
| SE | 78 | 10.17500 | 934.25000 | 2.200 | 10.00961 | 10.43009 | 10.08619 |
| SR | 88 | 43.48600 | 3103.73000 | 6.800 | 41.83577 | 46.90909 | 41.71417 |
| ZN | 66 | 539.74300 | 25709.13000 | 3.900 | 535.56588 | 562.68397 | 520.98029 |
| **TB-2** | 159 | 80770.15000 | 0.00000 | 0.000 | 80675.84000 | 81168.49000 | 80466.13000 |
| BA | 137 | 47.23100 | 2063.53000 | 6.800 | 47.44768 | 50.34986 | 43.89420 |
| CD | 111 | 5.22800 | 442.01000 | 6.300 | 4.92556 | 5.17810 | 5.57942 |
| SB | 121 | 5.61100 | 680.04000 | 10.600 | 6.19461 | 5.00769 | 5.63104 |
| SN | 120 | 47.25400 | 8742.52000 | 5.300 | 45.30112 | 46.37186 | 50.08930 |
| **BI-2** | 209 | 73563.04000 | 0.00000 | 0.000 | 73870.71000 | 73649.97000 | 73168.45000 |
| PB | 208 | 15.13300 | 44155.52000 | 1.500 | 15.34205 | 15.15401 | 14.90421 |
| TL | 203 | 1.99400 | 1873.51000 | 3.600 | 1.97129 | 2.07363 | 1.93645 |
| U | 238 | 24.47100 | 93817.96000 | 1.600 | 24.01857 | 24.68551 | 24.70824 |
| *SC-1* | 45 | 200765.33000 | 0.00000 | 0.000 | 199328.49000 | 201778.00000 | 201189.51000 |
| *GE-1* | 72 | 240913.86000 | 0.00000 | 0.000 | 242273.26000 | 238072.83000 | 242395.50000 |
| *GE-3* | 72 | 725901.50000 | 0.00000 | 0.000 | 741243.90000 | 724474.75000 | 711985.85000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:42:44
Tube Number: 15 Batch: 172091063902A
Sample Number: **9121687** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6784.88000 | 0.00000 | 0.000 | 6701.52000 | 7011.69000 | 6641.44000 |
| **SC-3** | 45 | 795773.32000 | 0.00000 | 0.000 | 815847.18000 | 777555.46000 | 793917.33000 |
| AL | 27 | 12.33800 | 66.67000 | 26.900 | 16.13203 | 10.00861 | 10.87274 |
| B | 11 | 67.57100 | 52167.67000 | 3.000 | 65.55908 | 69.62272 | 67.53104 |
| BE | 9 | 0.00000 | 2.67000 | 0.000 | 0.00176 | 0.00206 | -0.00427 |
| CA | 44 | 42313.14500 | 16671.57000 | 5.700 | 42426.06549 | 39837.06889 | 44676.30176 |
| K | 39 | 2399.15500 | 15617.26000 | 6.600 | 2325.37220 | 2289.90278 | 2582.18972 |
| MG | 24 | 5842.90500 | 93807.11000 | 3.900 | 5733.86845 | 5689.00689 | 6105.84002 |
| NA | 23 | 24816.81300 | 872484.65000 | 3.500 | 24704.51496 | 24002.23874 | 25743.68608 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 5.92700 | 880.06000 | 12.800 | 5.40024 | 6.79478 | 5.58710 |
| **GE-2** | 72 | 20656.09000 | 0.00000 | 0.000 | 19851.82000 | 21273.50000 | 20842.96000 |
| CR | 52 | 1.11900 | 310.02000 | 22.700 | 1.27316 | 1.25666 | 0.82610 |
| FE | 57 | 38.46700 | 166.68000 | 12.300 | 33.49361 | 42.89269 | 39.01575 |
| MN | 55 | -0.17800 | 6.67000 | 0.000 | -0.25764 | -0.25764 | -0.01872 |
| **IN-1** | 115 | 248475.58000 | 0.00000 | 0.000 | 245448.04000 | 250665.00000 | 249313.70000 |
| **IN-2** | 115 | 10483.62000 | 0.00000 | 0.000 | 10323.50000 | 10643.69000 | 10483.66000 |
| AG | 107 | 0.02200 | 16.67000 | 35.600 | 0.02653 | 0.01287 | 0.02612 |
| AS | 75 | 1.14200 | 23.33000 | 22.100 | 0.88056 | 1.15893 | 1.38542 |
| CO | 59 | -0.26600 | 36.67000 | 0.000 | -0.25594 | -0.23450 | -0.30718 |
| CU | 63 | 0.23100 | 116.67000 | 124.900 | 0.55788 | 0.12209 | 0.01286 |
| MO | 98 | 2.83200 | 813.38000 | 18.700 | 2.58354 | 3.44009 | 2.47342 |
| NI | 60 | 0.11200 | 16.67000 | 155.400 | 0.05784 | 0.30647 | -0.02850 |
| RB | 85 | 3.75700 | 176.68000 | 12.400 | 3.66863 | 3.34313 | 4.26068 |
| SE | 78 | 1.08100 | 95.33000 | 10.100 | 1.03299 | 1.00396 | 1.20534 |
| SR | 88 | 271.45200 | 18754.00000 | 3.900 | 261.67171 | 270.21977 | 282.46438 |
| ZN | 66 | 12.85700 | 600.04000 | 14.400 | 13.06654 | 14.59170 | 10.91322 |
| **TB-2** | 159 | 77622.05000 | 0.00000 | 0.000 | 76638.91000 | 78916.87000 | 77310.36000 |
| BA | 137 | 111.78000 | 4690.84000 | 3.400 | 115.10561 | 107.56372 | 112.67087 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.05800 | 6.67000 | 173.200 | 0.17388 | 0.00000 | 0.00000 |
| SN | 120 | 0.16800 | 33.33000 | 68.500 | 0.03839 | 0.25809 | 0.20735 |
| **BI-2** | 209 | 71272.83000 | 0.00000 | 0.000 | 70094.21000 | 70566.52000 | 73157.75000 |
| PB | 208 | 0.02700 | 256.68000 | 31.500 | 0.03705 | 0.02202 | 0.02243 |
| TL | 203 | 0.00700 | 20.00000 | 299.000 | 0.00784 | -0.01466 | 0.02846 |
| U | 238 | 1.18100 | 4387.46000 | 5.100 | 1.22842 | 1.20114 | 1.11398 |
| *SC-1* | 45 | 193189.29000 | 0.00000 | 0.000 | 192893.34000 | 190700.72000 | 195973.81000 |
| *GE-1* | 72 | 233908.58000 | 0.00000 | 0.000 | 230836.05000 | 234502.83000 | 236386.87000 |
| *GE-3* | 72 | 717128.19000 | 0.00000 | 0.000 | 723109.44000 | 698966.01000 | 729309.13000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:45:47
Tube Number: 16 Batch: 172091063902A
Sample Number: **9121687** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6928.26000 | 0.00000 | 0.000 | 7141.70000 | 6721.53000 | 6921.56000 |
| **SC-3** | 45 | 793322.64000 | 0.00000 | 0.000 | 776063.27000 | 799046.00000 | 804858.66000 |
| AL | 27 | 183.94500 | 723.38000 | 16.300 | 154.31131 | 183.16544 | 214.35753 |
| B | 11 | 160.80700 | 111643.57000 | 1.900 | 163.72303 | 160.95955 | 157.73845 |
| BE | 9 | 0.90700 | 587.35000 | 7.400 | 0.96928 | 0.91662 | 0.83659 |
| CA | 44 | 41593.21000 | 16751.65000 | 0.800 | 41378.29156 | 41428.56628 | 41972.77088 |
| K | 39 | 2617.98900 | 17372.23000 | 2.600 | 2573.63574 | 2695.47548 | 2584.85477 |
| MG | 24 | 5731.89600 | 93958.40000 | 3.300 | 5561.68989 | 5933.43414 | 5700.56325 |
| NA | 23 | 24007.54800 | 862129.73000 | 2.100 | 23548.37383 | 24561.89532 | 23912.37440 |
| TI | 47 | 33.69800 | 103.34000 | 34.800 | 22.06477 | 33.49486 | 45.53308 |
| V | 51 | 6.06200 | 916.73000 | 2.600 | 6.09376 | 6.20202 | 5.89036 |
| **GE-2** | 72 | 20355.68000 | 0.00000 | 0.000 | 20061.98000 | 20943.08000 | 20061.98000 |
| CR | 52 | 5.08100 | 1140.08000 | 5.500 | 5.10765 | 4.78652 | 5.34829 |
| FE | 57 | 255.25500 | 1046.76000 | 15.800 | 210.16350 | 268.13245 | 287.46944 |
| MN | 55 | 4.12200 | 356.68000 | 30.500 | 5.45175 | 2.95252 | 3.96241 |
| **IN-1** | 115 | 247799.34000 | 0.00000 | 0.000 | 247550.52000 | 247952.85000 | 247894.65000 |
| **IN-2** | 115 | 10351.43000 | 0.00000 | 0.000 | 10318.77000 | 11026.64000 | 9708.89000 |
| AG | 107 | 1.07900 | 810.06000 | 18.900 | 1.22098 | 0.84452 | 1.17073 |
| AS | 75 | 4.69800 | 90.00000 | 17.800 | 4.36354 | 4.07900 | 5.65142 |
| CO | 59 | 0.69700 | 420.02000 | 10.400 | 0.67828 | 0.77723 | 0.63598 |
| CU | 63 | 4.05700 | 1453.46000 | 9.700 | 4.39167 | 3.62139 | 4.15694 |
| MO | 98 | 3.85900 | 1086.74000 | 7.800 | 3.87054 | 3.55378 | 4.15313 |
| NI | 60 | 4.22000 | 493.36000 | 22.700 | 5.32731 | 3.69013 | 3.64392 |
| RB | 85 | 15.60200 | 716.71000 | 8.300 | 14.44273 | 17.00889 | 15.35418 |
| SE | 78 | 4.79800 | 422.01000 | 2.700 | 4.93148 | 4.78714 | 4.67462 |
| SR | 88 | 266.18200 | 18106.70000 | 6.900 | 275.78330 | 244.98479 | 277.77753 |
| ZN | 66 | 47.16100 | 2146.87000 | 8.300 | 46.99847 | 43.35387 | 51.13061 |
| **TB-2** | 159 | 76892.26000 | 0.00000 | 0.000 | 78697.33000 | 76547.16000 | 75432.30000 |
| BA | 137 | 114.73600 | 4767.53000 | 5.600 | 107.39340 | 117.66084 | 119.15347 |
| CD | 111 | 0.95500 | 76.67000 | 20.700 | 0.72826 | 1.04820 | 1.08902 |
| SB | 121 | 1.49900 | 173.34000 | 26.400 | 1.60873 | 1.82801 | 1.06005 |
| SN | 120 | 3.63300 | 643.37000 | 19.100 | 4.08804 | 2.83402 | 3.97627 |
| **BI-2** | 209 | 71132.10000 | 0.00000 | 0.000 | 71611.39000 | 70103.43000 | 71681.47000 |
| PB | 208 | 1.82400 | 5303.90000 | 6.500 | 1.91969 | 1.86121 | 1.69166 |
| TL | 203 | 0.98000 | 896.73000 | 15.000 | 1.05366 | 1.07665 | 0.81056 |
| U | 238 | 10.75100 | 39861.86000 | 0.600 | 10.82734 | 10.69256 | 10.73386 |
| *SC-1* | 45 | 190759.75000 | 0.00000 | 0.000 | 187274.41000 | 194964.76000 | 190040.08000 |
| *GE-1* | 72 | 231652.03000 | 0.00000 | 0.000 | 232352.36000 | 233224.88000 | 229378.84000 |
| *GE-3* | 72 | 715242.10000 | 0.00000 | 0.000 | 713664.44000 | 725242.88000 | 706818.97000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:48:52
Tube Number: 17 Batch: 172091063902A
Sample Number: **9121690** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 7051.65000 | 0.00000 | 0.000 | 7011.65000 | 6971.59000 | 7171.70000 |
| **SC-3** | 45 | 782451.53000 | 0.00000 | 0.000 | 779234.99000 | 784309.05000 | 783810.54000 |
| AL | 27 | 7.37800 | 50.00000 | 37.200 | 7.42525 | 10.09777 | 4.61119 |
| B | 11 | 64.81100 | 49576.11000 | 2.600 | 63.06899 | 64.95316 | 66.41216 |
| BE | 9 | -0.00300 | 0.67000 | 0.000 | -0.00427 | -0.00427 | -0.00113 |
| CA | 44 | 39924.22100 | 16368.01000 | 2.800 | 38634.11773 | 40461.44623 | 40677.09930 |
| K | 39 | 2194.69600 | 14900.02000 | 5.900 | 2045.82420 | 2263.53888 | 2274.72525 |
| MG | 24 | 5443.66500 | 90862.66000 | 2.300 | 5433.00232 | 5575.57579 | 5322.41823 |
| NA | 23 | 23218.91700 | 849074.10000 | 1.200 | 22996.01537 | 23533.00554 | 23127.72998 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 5.42600 | 833.39000 | 22.800 | 5.88014 | 6.37386 | 4.02418 |
| **GE-2** | 72 | 20742.71000 | 0.00000 | 0.000 | 20722.65000 | 21183.29000 | 20322.20000 |
| CR | 52 | 0.83400 | 250.01000 | 22.100 | 0.97263 | 0.62513 | 0.90330 |
| FE | 57 | 28.81000 | 126.67000 | 54.100 | 46.49417 | 17.10568 | 22.82894 |
| MN | 55 | 0.22000 | 40.00000 | 91.600 | 0.34313 | 0.33007 | -0.01260 |
| **IN-1** | 115 | 239722.30000 | 0.00000 | 0.000 | 240446.97000 | 237230.65000 | 241489.27000 |
| **IN-2** | 115 | 10383.33000 | 0.00000 | 0.000 | 9952.89000 | 10873.89000 | 10323.22000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 1.20800 | 24.67000 | 47.900 | 0.58768 | 1.73381 | 1.30253 |
| CO | 59 | -0.24900 | 43.33000 | 0.000 | -0.30453 | -0.23709 | -0.20547 |
| CU | 63 | 0.30200 | 140.01000 | 46.600 | 0.34512 | 0.14454 | 0.41494 |
| MO | 98 | 2.53000 | 720.05000 | 9.900 | 2.56950 | 2.75672 | 2.26232 |
| NI | 60 | 0.02800 | 6.67000 | 176.200 | -0.02850 | 0.05347 | 0.05784 |
| RB | 85 | 4.20800 | 196.68000 | 19.400 | 3.80773 | 5.14863 | 3.66873 |
| SE | 78 | 1.16500 | 99.11000 | 12.700 | 1.26537 | 1.23502 | 0.99544 |
| SR | 88 | 271.86000 | 18573.83000 | 5.100 | 279.81712 | 255.97299 | 279.78858 |
| ZN | 66 | 13.67600 | 633.37000 | 10.900 | 12.41662 | 15.32467 | 13.28730 |
| **TB-2** | 159 | 78619.22000 | 0.00000 | 0.000 | 78525.79000 | 77932.54000 | 79399.33000 |
| BA | 137 | 106.47000 | 4527.45000 | 6.600 | 98.44231 | 109.39731 | 111.56981 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.05700 | 6.67000 | 173.200 | 0.16970 | 0.00000 | 0.00000 |
| SN | 120 | 0.11100 | 23.33000 | 58.300 | 0.14824 | 0.14951 | 0.03641 |
| **BI-2** | 209 | 71604.32000 | 0.00000 | 0.000 | 71781.83000 | 70978.20000 | 72052.92000 |
| PB | 208 | 0.01400 | 220.01000 | 132.600 | 0.01351 | 0.03222 | -0.00436 |
| TL | 203 | -0.00700 | 6.67000 | 0.000 | -0.00367 | -0.00355 | -0.01466 |
| U | 238 | 1.12600 | 4204.08000 | 1.800 | 1.14604 | 1.10494 | 1.12575 |
| *SC-1* | 45 | 185654.73000 | 0.00000 | 0.000 | 183001.83000 | 187466.81000 | 186495.56000 |
| *GE-1* | 72 | 224648.09000 | 0.00000 | 0.000 | 222108.49000 | 226691.83000 | 225143.96000 |
| *GE-3* | 72 | 707873.22000 | 0.00000 | 0.000 | 705416.24000 | 701661.55000 | 716541.86000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:51:58
Tube Number: 18 Batch: 172091063902A
Sample Number: **9121688** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 7135.02000 | 0.00000 | 0.000 | 6981.61000 | 7221.75000 | 7201.71000 |
| **SC-3** | 45 | 782271.87000 | 0.00000 | 0.000 | 785134.60000 | 788301.71000 | 773379.29000 |
| AL | 27 | 1836.62100 | 7258.40000 | 2.900 | 1779.96681 | 1886.21562 | 1843.67956 |
| B | 11 | 317.01700 | 208635.17000 | 1.500 | 321.92753 | 312.17183 | 316.95248 |
| BE | 9 | 3.89800 | 2481.51000 | 6.600 | 3.79178 | 4.19179 | 3.70945 |
| CA | 44 | 44192.93900 | 18326.50000 | 1.800 | 45039.75790 | 44067.02370 | 43472.03567 |
| K | 39 | 11973.25900 | 80357.06000 | 0.600 | 11895.76180 | 12027.20915 | 11996.80467 |
| MG | 24 | 7208.96100 | 121771.01000 | 1.500 | 7231.64754 | 7090.60904 | 7304.62553 |
| NA | 23 | 31640.28000 | 1169627.04000 | 1.000 | 31599.73985 | 31359.77027 | 31961.33120 |
| TI | 47 | 229.15500 | 726.71000 | 10.100 | 219.27131 | 255.62353 | 212.56990 |
| V | 51 | 52.35700 | 8158.86000 | 3.600 | 50.27029 | 53.99340 | 52.80742 |
| **GE-2** | 72 | 20105.37000 | 0.00000 | 0.000 | 20862.96000 | 20472.52000 | 18980.63000 |
| CR | 52 | 51.79900 | 10847.02000 | 3.500 | 49.76940 | 53.17969 | 52.44713 |
| FE | 57 | 1092.37800 | 4387.39000 | 7.300 | 1022.16079 | 1075.91274 | 1179.06030 |
| MN | 55 | 51.84400 | 4204.02000 | 6.200 | 53.57677 | 48.15611 | 53.79842 |
| **IN-1** | 115 | 238418.42000 | 0.00000 | 0.000 | 237196.71000 | 238476.21000 | 239582.35000 |
| **IN-2** | 115 | 10737.40000 | 0.00000 | 0.000 | 10703.53000 | 10525.39000 | 10983.27000 |
| AG | 107 | 49.51300 | 38824.50000 | 0.400 | 49.28531 | 49.59807 | 49.65482 |
| AS | 75 | 11.76900 | 233.33000 | 10.400 | 10.51198 | 12.96718 | 11.82884 |
| CO | 59 | 250.38400 | 103340.48000 | 0.900 | 248.24089 | 252.62421 | 250.28675 |
| CU | 63 | 51.72400 | 18843.84000 | 3.200 | 51.11143 | 53.60631 | 50.45287 |
| MO | 98 | 52.70400 | 15360.71000 | 4.300 | 50.19927 | 54.69466 | 53.21907 |
| NI | 60 | 49.79600 | 6004.60000 | 6.800 | 46.11499 | 50.53874 | 52.73294 |
| RB | 85 | 2.53900 | 123.34000 | 26.900 | 3.32407 | 2.08815 | 2.20484 |
| SE | 78 | 10.64500 | 900.91000 | 0.700 | 10.61820 | 10.72673 | 10.59090 |
| SR | 88 | 289.20200 | 20462.62000 | 1.800 | 294.40427 | 283.94122 | 289.26196 |
| ZN | 66 | 519.36800 | 24537.52000 | 2.300 | 508.37549 | 532.33695 | 517.39251 |
| **TB-2** | 159 | 77739.13000 | 0.00000 | 0.000 | 77973.82000 | 76768.12000 | 78475.44000 |
| BA | 137 | 162.25300 | 6821.65000 | 3.000 | 156.78340 | 163.58492 | 166.39055 |
| CD | 111 | 4.64400 | 378.01000 | 5.000 | 4.90024 | 4.45461 | 4.57679 |
| SB | 121 | 6.00200 | 700.04000 | 5.800 | 6.15283 | 6.24946 | 5.60407 |
| SN | 120 | 47.44900 | 8449.07000 | 2.200 | 46.31124 | 48.40551 | 47.62995 |
| **BI-2** | 209 | 71650.89000 | 0.00000 | 0.000 | 70757.26000 | 72203.18000 | 71992.22000 |
| PB | 208 | 14.78400 | 42009.82000 | 2.200 | 15.15286 | 14.56379 | 14.63478 |
| TL | 203 | 2.06900 | 1893.53000 | 7.900 | 1.98064 | 2.25751 | 1.96835 |
| U | 238 | 25.53800 | 95357.26000 | 1.400 | 25.92679 | 25.24979 | 25.43617 |
| *SC-1* | 45 | 182280.39000 | 0.00000 | 0.000 | 182779.39000 | 186150.64000 | 177911.13000 |
| *GE-1* | 72 | 225770.84000 | 0.00000 | 0.000 | 227019.29000 | 228160.66000 | 222132.57000 |
| *GE-3* | 72 | 700242.65000 | 0.00000 | 0.000 | 706442.10000 | 705848.82000 | 688437.02000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:55:01
Tube Number: 19 Batch: 172091063902A
Sample Number: **9121689** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6811.53000 | 0.00000 | 0.000 | 6541.39000 | 7201.66000 | 6691.53000 |
| **SC-3** | 45 | 780020.04000 | 0.00000 | 0.000 | 794104.83000 | 784920.14000 | 761035.14000 |
| AL | 27 | 1895.50100 | 7131.66000 | 7.400 | 2041.41236 | 1760.63781 | 1884.45361 |
| B | 11 | 321.45600 | 210788.13000 | 1.500 | 316.45659 | 321.79750 | 326.11510 |
| BE | 9 | 3.83100 | 2430.84000 | 3.100 | 3.70241 | 3.93393 | 3.85701 |
| CA | 44 | 44747.60500 | 17682.44000 | 6.200 | 47438.61187 | 41870.49613 | 44933.70734 |
| K | 39 | 12251.57100 | 78314.81000 | 6.400 | 12759.59602 | 11350.12902 | 12644.98806 |
| MG | 24 | 7504.28100 | 120827.89000 | 4.900 | 7678.65400 | 7083.26227 | 7750.92643 |
| NA | 23 | 32636.37700 | 1149819.25000 | 4.800 | 33594.60953 | 30836.28113 | 33478.24128 |
| TI | 47 | 274.07200 | 830.06000 | 12.200 | 295.97951 | 290.72740 | 235.50849 |
| V | 51 | 53.31500 | 7908.67000 | 7.400 | 55.40458 | 48.73464 | 55.80533 |
| **GE-2** | 72 | 20956.45000 | 0.00000 | 0.000 | 21603.92000 | 19881.92000 | 21383.51000 |
| CR | 52 | 49.58200 | 10810.30000 | 6.600 | 47.46912 | 53.35984 | 47.91721 |
| FE | 57 | 997.43300 | 4180.64000 | 5.300 | 940.71590 | 1044.99046 | 1006.59366 |
| MN | 55 | 48.74700 | 4113.95000 | 10.900 | 42.85367 | 53.10087 | 50.28570 |
| **IN-1** | 115 | 244161.87000 | 0.00000 | 0.000 | 243234.65000 | 248583.93000 | 240667.03000 |
| **IN-2** | 115 | 10188.05000 | 0.00000 | 0.000 | 10009.16000 | 10297.65000 | 10257.34000 |
| AG | 107 | 50.87800 | 37848.78000 | 1.400 | 51.45672 | 50.10812 | 51.06783 |
| AS | 75 | 12.15400 | 228.67000 | 20.300 | 12.00758 | 9.76579 | 14.68797 |
| CO | 59 | 258.43100 | 101193.54000 | 1.800 | 261.37395 | 253.12864 | 260.79096 |
| CU | 63 | 53.34300 | 18446.79000 | 0.600 | 53.15880 | 53.73274 | 53.13720 |
| MO | 98 | 54.69900 | 15123.79000 | 3.600 | 56.29977 | 52.50141 | 55.29703 |
| NI | 60 | 55.83600 | 6381.38000 | 7.400 | 60.09532 | 55.55327 | 51.85941 |
| RB | 85 | 2.61500 | 120.00000 | 39.000 | 3.78595 | 1.91553 | 2.14447 |
| SE | 78 | 10.42900 | 903.58000 | 4.800 | 10.96464 | 9.98073 | 10.34030 |
| SR | 88 | 312.38700 | 20966.55000 | 1.800 | 317.41571 | 306.30916 | 313.43632 |
| ZN | 66 | 522.56400 | 23429.32000 | 0.000 | 522.73446 | 522.67213 | 522.28655 |
| **TB-2** | 159 | 75526.03000 | 0.00000 | 0.000 | 76286.30000 | 75593.25000 | 74698.53000 |
| BA | 137 | 160.93300 | 6571.54000 | 6.900 | 148.85548 | 170.53098 | 163.41230 |
| CD | 111 | 4.88400 | 386.01000 | 13.600 | 4.93351 | 4.19530 | 5.52430 |
| SB | 121 | 5.09400 | 576.70000 | 19.600 | 4.54202 | 4.49552 | 6.24421 |
| SN | 120 | 48.40200 | 8372.34000 | 3.100 | 47.04998 | 48.11716 | 50.03898 |
| **BI-2** | 209 | 71604.29000 | 0.00000 | 0.000 | 72304.69000 | 71068.15000 | 71440.02000 |
| PB | 208 | 14.73100 | 41839.65000 | 1.300 | 14.64481 | 14.60123 | 14.94721 |
| TL | 203 | 1.94600 | 1780.18000 | 2.300 | 1.98158 | 1.96082 | 1.89535 |
| U | 238 | 25.10500 | 93683.44000 | 1.600 | 24.71758 | 25.08230 | 25.51415 |
| *SC-1* | 45 | 186094.16000 | 0.00000 | 0.000 | 187927.07000 | 187898.16000 | 182457.24000 |
| *GE-1* | 72 | 228191.63000 | 0.00000 | 0.000 | 227633.69000 | 230076.87000 | 226864.33000 |
| *GE-3* | 72 | 715061.29000 | 0.00000 | 0.000 | 728846.00000 | 719937.88000 | 696399.99000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 17:58:06
Tube Number: 20 Batch: 172091063902A
Sample Number: **9121687** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6581.45000 | 0.00000 | 0.000 | 6531.45000 | 6431.37000 | 6781.52000 |
| **SC-3** | 45 | 775085.95000 | 0.00000 | 0.000 | 770819.99000 | 777640.46000 | 776797.41000 |
| AL | 27 | -0.90900 | 16.67000 | 0.000 | -2.71858 | 0.14111 | -0.14974 |
| B | 11 | 27.47700 | 25775.60000 | 0.100 | 27.44480 | 27.51460 | 27.47302 |
| BE | 9 | -0.00200 | 1.33000 | 0.000 | -0.00108 | -0.00427 | -0.00110 |
| CA | 44 | 8041.26000 | 3073.73000 | 5.200 | 8270.96289 | 8292.68035 | 7560.13588 |
| K | 39 | 454.68700 | 3187.08000 | 4.400 | 449.05145 | 476.96202 | 438.04670 |
| MG | 24 | 1113.54800 | 17335.35000 | 5.000 | 1127.74111 | 1160.41575 | 1052.48781 |
| NA | 23 | 4767.48000 | 164991.25000 | 2.000 | 4789.64142 | 4849.39909 | 4663.39856 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.85300 | 123.34000 | 39.000 | 0.56106 | 0.78347 | 1.21591 |
| **GE-2** | 72 | 20052.04000 | 0.00000 | 0.000 | 19641.28000 | 20412.59000 | 20102.24000 |
| CR | 52 | 0.23200 | 116.67000 | 128.200 | 0.30695 | -0.09574 | 0.48445 |
| FE | 57 | 5.59200 | 30.00000 | 157.800 | -1.78517 | 15.36841 | 3.19151 |
| MN | 55 | -0.17500 | 6.67000 | 0.000 | -0.25764 | -0.25764 | -0.00992 |
| **IN-1** | 115 | 241720.64000 | 0.00000 | 0.000 | 245227.55000 | 240108.05000 | 239826.32000 |
| **IN-2** | 115 | 10026.33000 | 0.00000 | 0.000 | 10023.41000 | 10423.06000 | 9632.52000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.07300 | 2.67000 | 168.000 | 0.14849 | 0.14016 | -0.06879 |
| CO | 59 | -0.13700 | 83.34000 | 0.000 | -0.20094 | -0.23191 | 0.02178 |
| CU | 63 | 0.08800 | 63.33000 | 45.500 | 0.10637 | 0.04183 | 0.11474 |
| MO | 98 | 0.75200 | 210.01000 | 13.800 | 0.74960 | 0.64929 | 0.85749 |
| NI | 60 | -0.02900 | 0.00000 | 0.000 | -0.02850 | -0.02850 | -0.02850 |
| RB | 85 | 0.68800 | 33.33000 | 38.400 | 0.38561 | 0.80352 | 0.87496 |
| SE | 78 | 0.23000 | 19.78000 | 17.900 | 0.27571 | 0.19559 | 0.21931 |
| SR | 88 | 54.03400 | 3563.84000 | 9.800 | 51.29990 | 50.64159 | 60.16148 |
| ZN | 66 | 4.63300 | 210.01000 | 13.900 | 4.61780 | 3.99906 | 5.28299 |
| **TB-2** | 159 | 76851.88000 | 0.00000 | 0.000 | 76144.96000 | 77049.35000 | 77361.32000 |
| BA | 137 | 21.41800 | 890.06000 | 9.200 | 21.61381 | 23.27997 | 19.36137 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.02900 | 3.33000 | 173.200 | 0.00000 | 0.00000 | 0.08613 |
| SN | 120 | 0.24700 | 46.67000 | 74.000 | 0.32551 | 0.03808 | 0.37655 |
| **BI-2** | 209 | 72210.43000 | 0.00000 | 0.000 | 73821.82000 | 69481.03000 | 73328.43000 |
| PB | 208 | -0.02200 | 120.01000 | 0.000 | -0.03323 | -0.00943 | -0.02266 |
| TL | 203 | 0.00000 | 13.33000 | 0.000 | 0.02807 | -0.01466 | -0.01466 |
| U | 238 | 0.21500 | 810.05000 | 15.200 | 0.18625 | 0.25042 | 0.20844 |
| *SC-1* | 45 | 181624.43000 | 0.00000 | 0.000 | 184507.34000 | 179171.09000 | 181194.86000 |
| *GE-1* | 72 | 227507.87000 | 0.00000 | 0.000 | 231654.98000 | 225185.64000 | 225683.00000 |
| *GE-3* | 72 | 700035.59000 | 0.00000 | 0.000 | 704931.94000 | 702008.43000 | 693166.40000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 18:01:12
Tube Number: 21 Batch: 172091063902A
Sample Number: **9121675** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6864.87000 | 0.00000 | 0.000 | 6721.47000 | 7231.69000 | 6641.45000 |
| **SC-3** | 45 | 780765.12000 | 0.00000 | 0.000 | 796597.41000 | 774612.18000 | 771085.77000 |
| AL | 27 | 5.83800 | 43.33000 | 59.200 | 5.28794 | 9.53706 | 2.69038 |
| B | 11 | 62.56500 | 48044.78000 | 1.800 | 61.26009 | 63.32200 | 63.11337 |
| BE | 9 | -0.00100 | 2.00000 | 0.000 | -0.00427 | 0.00526 | -0.00427 |
| CA | 44 | 46777.07800 | 18656.90000 | 2.200 | 47807.94188 | 45721.24470 | 46802.04615 |
| K | 39 | 2448.29100 | 16107.78000 | 4.800 | 2488.60470 | 2315.97599 | 2540.29232 |
| MG | 24 | 6177.51600 | 100204.29000 | 6.300 | 6344.04564 | 5730.28859 | 6458.21350 |
| NA | 23 | 23915.16000 | 850099.54000 | 4.700 | 24427.45666 | 22639.23773 | 24678.78452 |
| TI | 47 | 2.23300 | 6.67000 | 173.200 | 6.69836 | 0.00000 | 0.00000 |
| V | 51 | 5.71900 | 853.39000 | 15.800 | 6.54283 | 4.75090 | 5.86298 |
| **GE-2** | 72 | 20539.33000 | 0.00000 | 0.000 | 20562.72000 | 20011.92000 | 21043.36000 |
| CR | 52 | 2.08500 | 513.36000 | 11.200 | 2.15700 | 2.27382 | 1.82474 |
| FE | 57 | 19.28400 | 86.67000 | 37.900 | 27.40870 | 13.21228 | 17.23129 |
| MN | 55 | -0.13600 | 10.00000 | 0.000 | -0.13655 | -0.13322 | -0.13932 |
| **IN-1** | 115 | 245027.48000 | 0.00000 | 0.000 | 244414.95000 | 243992.69000 | 246674.80000 |
| **IN-2** | 115 | 10506.80000 | 0.00000 | 0.000 | 10503.31000 | 10323.38000 | 10693.70000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.66000 | 14.00000 | 104.500 | -0.06879 | 1.30251 | 0.74587 |
| CO | 59 | -0.25700 | 40.00000 | 0.000 | -0.33208 | -0.15500 | -0.28380 |
| CU | 63 | 0.09800 | 70.00000 | 79.700 | 0.04075 | 0.18616 | 0.06585 |
| MO | 98 | 2.95800 | 850.05000 | 2.700 | 2.88983 | 2.94059 | 3.04478 |
| NI | 60 | 0.14200 | 20.00000 | 61.800 | 0.14122 | 0.23052 | 0.05485 |
| RB | 85 | 3.10500 | 146.67000 | 58.100 | 5.11646 | 2.57001 | 1.62998 |
| SE | 78 | 1.80400 | 156.89000 | 2.300 | 1.82885 | 1.75501 | 1.82729 |
| SR | 88 | 293.82900 | 20349.19000 | 3.400 | 297.27194 | 282.43019 | 301.78530 |
| ZN | 66 | 15.92700 | 743.38000 | 10.800 | 17.60147 | 14.16779 | 16.01043 |
| **TB-2** | 159 | 77565.60000 | 0.00000 | 0.000 | 76839.24000 | 76908.43000 | 78949.13000 |
| BA | 137 | 101.80300 | 4267.39000 | 7.500 | 108.54675 | 103.39975 | 93.46333 |
| CD | 111 | 0.00800 | 0.67000 | 173.200 | 0.00000 | 0.00000 | 0.02420 |
| SB | 121 | 0.08500 | 10.00000 | 99.100 | 0.08671 | 0.00000 | 0.16879 |
| SN | 120 | 0.09500 | 20.00000 | 103.500 | 0.15191 | 0.15175 | -0.01859 |
| **BI-2** | 209 | 71279.43000 | 0.00000 | 0.000 | 72072.90000 | 70364.94000 | 71400.45000 |
| PB | 208 | -0.02900 | 100.00000 | 0.000 | -0.02897 | -0.02811 | -0.02864 |
| TL | 203 | 0.00400 | 16.67000 | 338.700 | 0.01817 | -0.00345 | -0.00362 |
| U | 238 | 1.42900 | 5314.43000 | 3.400 | 1.48497 | 1.40644 | 1.39678 |
| *SC-1* | 45 | 185336.26000 | 0.00000 | 0.000 | 185270.33000 | 183908.61000 | 186829.84000 |
| *GE-1* | 72 | 227524.86000 | 0.00000 | 0.000 | 226998.10000 | 223869.00000 | 231707.48000 |
| *GE-3* | 72 | 706295.51000 | 0.00000 | 0.000 | 723769.68000 | 696327.65000 | 698789.21000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 18:04:14
Tube Number: 22 Batch: 172091063902A
Sample Number: **9121677** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6314.64000 | 0.00000 | 0.000 | 6581.41000 | 6081.25000 | 6281.27000 |
| **SC-3** | 45 | 743573.58000 | 0.00000 | 0.000 | 754119.91000 | 736299.29000 | 740301.55000 |
| AL | 27 | 59.15400 | 230.01000 | 111.800 | 132.13270 | 42.17016 | 3.15957 |
| B | 11 | 64.86900 | 47145.85000 | 0.300 | 64.99480 | 64.68544 | 64.92638 |
| BE | 9 | -0.00400 | 0.00000 | 0.000 | -0.00427 | -0.00427 | -0.00427 |
| CA | 44 | 47974.53500 | 17592.35000 | 3.900 | 45999.13417 | 49754.07496 | 48170.39689 |
| K | 39 | 2639.74300 | 15940.71000 | 7.500 | 2411.22131 | 2755.43846 | 2752.56975 |
| MG | 24 | 6458.44900 | 96403.62000 | 5.900 | 6040.33902 | 6788.44804 | 6546.55924 |
| NA | 23 | 25205.79100 | 824283.76000 | 4.200 | 24066.25042 | 26157.75619 | 25393.36493 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 6.03600 | 826.72000 | 25.300 | 4.66352 | 7.68375 | 5.76147 |
| **GE-2** | 72 | 19818.35000 | 0.00000 | 0.000 | 19471.28000 | 19621.44000 | 20362.32000 |
| CR | 52 | 1.46700 | 370.02000 | 14.500 | 1.30453 | 1.39044 | 1.70718 |
| FE | 57 | 15.73300 | 70.00000 | 71.300 | 3.35278 | 18.60937 | 25.23700 |
| MN | 55 | -0.04800 | 16.67000 | 0.000 | 0.12599 | -0.25764 | -0.01308 |
| **IN-1** | 115 | 212352.79000 | 0.00000 | 0.000 | 171612.20000 | 222140.90000 | 243305.27000 |
| **IN-2** | 115 | 9996.58000 | 0.00000 | 0.000 | 9853.06000 | 9793.19000 | 10343.50000 |
| AG | 107 | 0.00400 | 3.33000 | 173.200 | 0.00000 | 0.00000 | 0.01324 |
| AS | 75 | 0.99000 | 19.33000 | 71.700 | 1.81005 | 0.59838 | 0.56289 |
| CO | 59 | -0.30400 | 20.00000 | 0.000 | -0.27756 | -0.30368 | -0.33169 |
| CU | 63 | 0.12600 | 76.67000 | 35.100 | 0.16985 | 0.08108 | 0.12853 |
| MO | 98 | 3.21400 | 873.39000 | 26.700 | 3.71793 | 3.70317 | 2.22218 |
| NI | 60 | 0.33100 | 40.00000 | 119.800 | 0.78575 | 0.06251 | 0.14384 |
| RB | 85 | 2.27900 | 103.34000 | 35.600 | 3.15633 | 1.55440 | 2.12605 |
| SE | 78 | 1.86900 | 140.00000 | 8.000 | 2.01374 | 1.71624 | 1.87575 |
| SR | 88 | 289.69700 | 19074.33000 | 2.000 | 290.05676 | 295.24319 | 283.78983 |
| ZN | 66 | 17.32600 | 766.72000 | 10.900 | 17.85033 | 18.88872 | 15.23868 |
| **TB-2** | 159 | 72465.38000 | 0.00000 | 0.000 | 73081.34000 | 73021.07000 | 71293.73000 |
| BA | 137 | 101.69200 | 3983.94000 | 4.700 | 96.66514 | 102.31681 | 106.09335 |
| CD | 111 | 0.00900 | 0.67000 | 173.200 | 0.00000 | 0.02616 | 0.00000 |
| SB | 121 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SN | 120 | 0.02100 | 6.67000 | 324.800 | 0.10092 | -0.01859 | -0.01859 |
| **BI-2** | 209 | 67868.19000 | 0.00000 | 0.000 | 66840.42000 | 69872.94000 | 66891.21000 |
| PB | 208 | -0.03700 | 73.33000 | 0.000 | -0.02622 | -0.03873 | -0.04517 |
| TL | 203 | -0.00300 | 10.00000 | 0.000 | -0.00286 | -0.00337 | -0.00287 |
| U | 238 | 1.43000 | 5051.02000 | 12.300 | 1.42897 | 1.25429 | 1.60579 |
| *SC-1* | 45 | 163489.55000 | 0.00000 | 0.000 | 129057.32000 | 170885.64000 | 190525.68000 |
| *GE-1* | 72 | 200919.57000 | 0.00000 | 0.000 | 166235.99000 | 206885.15000 | 229637.56000 |
| *GE-3* | 72 | 663854.00000 | 0.00000 | 0.000 | 668655.07000 | 655412.02000 | 667494.91000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 18:07:19
Tube Number: 23
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6978.32000 | 0.00000 | 0.000 | 6901.63000 | 7361.84000 | 6671.48000 |
| **SC-3** | 45 | 784099.65000 | 0.00000 | 0.000 | 784554.91000 | 795235.30000 | 772508.74000 |
| AL | 27 | 2415.01200 | 9312.64000 | 8.700 | 2220.78689 | 2384.40403 | 2639.84613 |
| B | 11 | 250.87200 | 167287.39000 | 1.500 | 249.28589 | 248.22891 | 255.10169 |
| BE | 9 | 24.73800 | 15764.62000 | 1.300 | 24.80520 | 24.39149 | 25.01672 |
| CA | 44 | 2667.03500 | 1080.09000 | 21.100 | 3315.28787 | 2313.48137 | 2372.33521 |
| K | 39 | 2462.02300 | 16461.22000 | 4.900 | 2474.65663 | 2336.36029 | 2575.05228 |
| MG | 24 | 2406.90200 | 39743.95000 | 1.600 | 2411.48008 | 2365.94551 | 2443.28056 |
| NA | 23 | 2417.27700 | 90109.99000 | 5.300 | 2424.17564 | 2285.72663 | 2541.93005 |
| TI | 47 | 271.25400 | 843.39000 | 13.500 | 296.83923 | 287.45956 | 229.46435 |
| V | 51 | 236.75800 | 36020.06000 | 4.900 | 246.36441 | 223.97994 | 239.93012 |
| **GE-2** | 72 | 20325.67000 | 0.00000 | 0.000 | 20042.00000 | 20492.50000 | 20442.50000 |
| CR | 52 | 260.02200 | 54790.79000 | 2.000 | 263.55087 | 253.91889 | 262.59619 |
| FE | 57 | 2583.62700 | 10506.80000 | 2.000 | 2544.76588 | 2642.66614 | 2563.44770 |
| MN | 55 | 259.61400 | 21219.95000 | 3.700 | 248.60779 | 264.54955 | 265.68517 |
| **IN-1** | 115 | 239181.20000 | 0.00000 | 0.000 | 239682.48000 | 237737.39000 | 240123.73000 |
| **IN-2** | 115 | 10044.14000 | 0.00000 | 0.000 | 10410.92000 | 10196.32000 | 9525.19000 |
| AG | 107 | 26.55200 | 19438.27000 | 6.300 | 25.15008 | 26.11014 | 28.39577 |
| AS | 75 | 270.98300 | 4988.73000 | 7.700 | 251.00054 | 269.53210 | 292.41592 |
| CO | 59 | 272.86600 | 105156.86000 | 5.900 | 256.91160 | 272.40483 | 289.28305 |
| CU | 63 | 275.80700 | 93717.77000 | 6.100 | 259.15819 | 275.61655 | 292.64489 |
| MO | 98 | 26.58600 | 7245.11000 | 4.400 | 25.22200 | 27.23619 | 27.29889 |
| NI | 60 | 270.72700 | 30426.59000 | 10.000 | 261.75791 | 249.13856 | 301.28384 |
| RB | 85 | 24.72000 | 1093.41000 | 12.500 | 21.94094 | 24.18413 | 28.03638 |
| SE | 78 | 26.41400 | 2242.59000 | 1.900 | 25.88337 | 26.45858 | 26.89968 |
| SR | 88 | 28.16900 | 1863.50000 | 12.400 | 29.41001 | 24.22311 | 30.87361 |
| ZN | 66 | 275.80800 | 12181.34000 | 3.500 | 268.27835 | 272.59251 | 286.55222 |
| **TB-2** | 159 | 76329.70000 | 0.00000 | 0.000 | 74336.88000 | 75924.85000 | 78727.36000 |
| BA | 137 | 248.61900 | 10256.83000 | 4.200 | 250.56128 | 257.99906 | 237.29559 |
| CD | 111 | 25.54200 | 2040.80000 | 3.600 | 26.34356 | 24.53424 | 25.74813 |
| SB | 121 | 25.40900 | 2912.02000 | 4.100 | 25.54832 | 24.31156 | 26.36657 |
| SN | 120 | 24.11200 | 4220.67000 | 6.000 | 22.48473 | 25.29333 | 24.55853 |
| **BI-2** | 209 | 70234.93000 | 0.00000 | 0.000 | 68115.25000 | 68999.66000 | 73589.87000 |
| PB | 208 | 25.38700 | 70547.14000 | 3.100 | 25.46631 | 26.12096 | 24.57298 |
| TL | 203 | 24.67700 | 21972.49000 | 2.900 | 25.39482 | 24.67965 | 23.95510 |
| U | 238 | 24.35800 | 89082.79000 | 4.000 | 24.41904 | 25.29436 | 23.35984 |
| *SC-1* | 45 | 187612.59000 | 0.00000 | 0.000 | 188746.83000 | 185990.82000 | 188100.11000 |
| *GE-1* | 72 | 225678.03000 | 0.00000 | 0.000 | 223170.45000 | 223706.15000 | 230157.48000 |
| *GE-3* | 72 | 707449.89000 | 0.00000 | 0.000 | 707587.49000 | 708062.10000 | 706700.07000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 18:10:24
Tube Number: 24
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6281.35000 | 0.00000 | 0.000 | 6081.29000 | 6681.48000 | 6081.29000 |
| **SC-3** | 45 | 724561.37000 | 0.00000 | 0.000 | 720263.19000 | 719051.55000 | 734369.36000 |
| AL | 27 | 728.71400 | 2490.63000 | 145.400 | 1946.08366 | 227.67940 | 12.38010 |
| B | 11 | 18.34100 | 18756.03000 | 2.500 | 18.76983 | 18.38616 | 17.86759 |
| BE | 9 | -0.00400 | 0.00000 | 0.000 | -0.00427 | -0.00427 | -0.00427 |
| CA | 44 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| K | 39 | -1.25300 | 360.02000 | 0.000 | 21.15426 | -23.21804 | -1.69377 |
| MG | 24 | 6.84200 | 100.00000 | 135.200 | 17.36461 | 3.16083 | 0.00000 |
| NA | 23 | 4.19800 | 2920.34000 | 267.400 | 15.39494 | -7.05382 | 4.25283 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.02300 | 3.33000 | 173.200 | 0.00000 | 0.06856 | 0.00000 |
| **GE-2** | 72 | 19087.62000 | 0.00000 | 0.000 | 18360.03000 | 19141.24000 | 19761.58000 |
| CR | 52 | 0.56400 | 176.68000 | 60.400 | 0.50936 | 0.92908 | 0.25419 |
| FE | 57 | -0.04300 | 6.67000 | 0.000 | -1.78517 | 3.44137 | -1.78517 |
| MN | 55 | 0.86100 | 83.34000 | 160.600 | 2.45483 | 0.13260 | -0.00565 |
| **IN-1** | 115 | 245251.94000 | 0.00000 | 0.000 | 246841.25000 | 240971.72000 | 247942.85000 |
| **IN-2** | 115 | 9763.13000 | 0.00000 | 0.000 | 9633.13000 | 9713.07000 | 9943.18000 |
| AG | 107 | 0.00500 | 3.33000 | 173.200 | 0.01422 | 0.00000 | 0.00000 |
| AS | 75 | -0.06900 | 0.00000 | 0.000 | -0.06879 | -0.06879 | -0.06879 |
| CO | 59 | -0.08200 | 103.34000 | 0.000 | -0.08644 | -0.14231 | -0.01625 |
| CU | 63 | 0.08200 | 60.00000 | 134.500 | 0.17601 | -0.03899 | 0.10803 |
| MO | 98 | 0.06500 | 23.33000 | 143.800 | 0.05399 | -0.02253 | 0.16279 |
| NI | 60 | 2.46400 | 270.01000 | 140.100 | 6.44883 | 0.52209 | 0.41971 |
| RB | 85 | -0.06700 | 0.00000 | 0.000 | -0.06701 | -0.06701 | -0.06701 |
| SE | 78 | 0.01300 | 1.11000 | 33.200 | 0.01518 | 0.00783 | 0.01511 |
| SR | 88 | 0.00600 | 3.33000 | 1457.400 | -0.04484 | -0.04484 | 0.10782 |
| ZN | 66 | 3.30600 | 146.67000 | 132.400 | 8.35025 | 1.02557 | 0.54131 |
| **TB-2** | 159 | 70898.68000 | 0.00000 | 0.000 | 70430.02000 | 69947.53000 | 72318.50000 |
| BA | 137 | 0.08800 | 3.33000 | 173.200 | 0.26254 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.06400 | 6.67000 | 173.200 | 0.00000 | 0.19051 | 0.00000 |
| SN | 120 | 0.12600 | 23.33000 | 76.500 | 0.04341 | 0.23114 | 0.10218 |
| **BI-2** | 209 | 64336.74000 | 0.00000 | 0.000 | 63737.23000 | 64933.50000 | 64339.49000 |
| PB | 208 | -0.00900 | 140.00000 | 0.000 | 0.02330 | -0.01341 | -0.03655 |
| TL | 203 | 0.02200 | 30.00000 | 54.500 | 0.02246 | 0.03392 | 0.00985 |
| U | 238 | 0.00200 | 10.00000 | 249.300 | -0.00090 | 0.00796 | -0.00090 |
| *SC-1* | 45 | 187286.06000 | 0.00000 | 0.000 | 186514.10000 | 187040.15000 | 188303.94000 |
| *GE-1* | 72 | 229724.44000 | 0.00000 | 0.000 | 229786.70000 | 227567.20000 | 231819.43000 |
| *GE-3* | 72 | 659810.56000 | 0.00000 | 0.000 | 663658.19000 | 654865.85000 | 660907.65000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 18:13:30
Tube Number: 25 Batch: 172091063902A
Sample Number: **9121681** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 7064.96000 | 0.00000 | 0.000 | 7341.71000 | 7061.61000 | 6791.55000 |
| **SC-3** | 45 | 792782.39000 | 0.00000 | 0.000 | 779250.07000 | 804692.88000 | 794404.21000 |
| AL | 27 | -1.24800 | 16.67000 | 0.000 | -0.55736 | -0.36163 | -2.82479 |
| B | 11 | 59.14600 | 46603.94000 | 1.100 | 59.87660 | 59.01884 | 58.54358 |
| BE | 9 | -0.00300 | 0.67000 | 0.000 | -0.00111 | -0.00427 | -0.00427 |
| CA | 44 | 44665.27100 | 18336.49000 | 1.700 | 44073.59856 | 44407.87894 | 45514.33662 |
| K | 39 | 2422.35400 | 16424.75000 | 1.600 | 2407.05772 | 2392.95225 | 2467.05271 |
| MG | 24 | 6140.09200 | 102636.98000 | 2.600 | 6014.58057 | 6088.38153 | 6317.31461 |
| NA | 23 | 23498.01300 | 860373.66000 | 2.500 | 22857.06462 | 23646.98301 | 23989.99094 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 5.53900 | 853.39000 | 14.200 | 5.74051 | 4.67073 | 6.20566 |
| **GE-2** | 72 | 20582.64000 | 0.00000 | 0.000 | 21283.52000 | 21183.40000 | 19280.99000 |
| CR | 52 | 1.50000 | 393.36000 | 40.900 | 2.20886 | 1.17224 | 1.12029 |
| FE | 57 | 12.90400 | 60.00000 | 24.900 | 12.31624 | 10.02155 | 16.37515 |
| MN | 55 | 1.39700 | 136.67000 | 25.500 | 1.02923 | 1.74068 | 1.42129 |
| **IN-1** | 115 | 236565.47000 | 0.00000 | 0.000 | 234320.93000 | 238648.73000 | 236726.74000 |
| **IN-2** | 115 | 10173.19000 | 0.00000 | 0.000 | 10363.53000 | 10272.94000 | 9883.10000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 1.14700 | 22.67000 | 38.100 | 0.66674 | 1.52125 | 1.25342 |
| CO | 59 | -0.22000 | 53.33000 | 0.000 | -0.18092 | -0.25544 | -0.22508 |
| CU | 63 | 0.17000 | 93.34000 | 46.100 | 0.21356 | 0.21630 | 0.07943 |
| MO | 98 | 3.06200 | 850.05000 | 14.800 | 2.53791 | 3.31390 | 3.33364 |
| NI | 60 | 0.08900 | 13.33000 | 60.800 | 0.05750 | 0.05826 | 0.15187 |
| RB | 85 | 2.55800 | 116.67000 | 59.400 | 1.02740 | 2.58274 | 4.06462 |
| SE | 78 | 1.96100 | 164.67000 | 1.900 | 1.92363 | 1.95957 | 1.99928 |
| SR | 88 | 306.37500 | 20536.09000 | 2.100 | 311.98625 | 299.20531 | 307.93304 |
| ZN | 66 | 14.75000 | 666.71000 | 3.600 | 14.33166 | 15.34457 | 14.57517 |
| **TB-2** | 159 | 77461.30000 | 0.00000 | 0.000 | 79128.58000 | 77290.68000 | 75964.65000 |
| BA | 137 | 103.84000 | 4350.75000 | 4.600 | 107.27733 | 98.34032 | 105.90119 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.17300 | 20.00000 | 50.500 | 0.08420 | 0.25862 | 0.17542 |
| SN | 120 | -0.01900 | 0.00000 | 0.000 | -0.01859 | -0.01859 | -0.01859 |
| **BI-2** | 209 | 71527.29000 | 0.00000 | 0.000 | 71470.79000 | 71600.72000 | 71510.35000 |
| PB | 208 | 0.00100 | 183.34000 | 2255.400 | 0.02093 | -0.00398 | -0.01453 |
| TL | 203 | 0.02200 | 33.33000 | 57.600 | 0.00741 | 0.02940 | 0.02945 |
| U | 238 | 1.69500 | 6321.52000 | 5.500 | 1.59147 | 1.77088 | 1.72213 |
| *SC-1* | 45 | 181600.20000 | 0.00000 | 0.000 | 178851.66000 | 182466.95000 | 183481.99000 |
| *GE-1* | 72 | 226068.94000 | 0.00000 | 0.000 | 221502.46000 | 226230.60000 | 230473.75000 |
| *GE-3* | 72 | 714020.14000 | 0.00000 | 0.000 | 703166.94000 | 724754.99000 | 714138.50000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 18:16:34
Tube Number: 26 Batch: 172091063902A
Sample Number: **9121694** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6601.47000 | 0.00000 | 0.000 | 6481.41000 | 6371.41000 | 6951.59000 |
| **SC-3** | 45 | 778317.72000 | 0.00000 | 0.000 | 782746.79000 | 784729.36000 | 767477.02000 |
| AL | 27 | -0.91200 | 16.67000 | 0.000 | -5.49196 | 3.03717 | -0.28044 |
| B | 11 | 59.26400 | 45824.71000 | 2.500 | 59.62690 | 57.65115 | 60.51379 |
| BE | 9 | -0.00400 | 0.00000 | 0.000 | -0.00427 | -0.00427 | -0.00427 |
| CA | 44 | 42338.14400 | 16224.56000 | 4.600 | 42751.35709 | 44056.79871 | 40206.27552 |
| K | 39 | 2349.64200 | 14886.53000 | 4.100 | 2332.20956 | 2454.18345 | 2262.53320 |
| MG | 24 | 5753.84200 | 89834.92000 | 3.500 | 5758.25976 | 5953.67223 | 5549.59518 |
| NA | 23 | 24651.52500 | 842861.44000 | 3.500 | 24895.67327 | 25370.89244 | 23688.01022 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 6.18800 | 890.06000 | 14.600 | 5.44228 | 7.18996 | 5.93094 |
| **GE-2** | 72 | 20709.41000 | 0.00000 | 0.000 | 21023.08000 | 20812.74000 | 20292.42000 |
| CR | 52 | 2.07100 | 513.36000 | 45.400 | 0.99997 | 2.45190 | 2.76129 |
| FE | 57 | 19.20700 | 86.67000 | 28.200 | 17.24964 | 15.03861 | 25.33255 |
| MN | 55 | 0.38300 | 53.33000 | 125.400 | 0.80830 | -0.13801 | 0.47857 |
| **IN-1** | 115 | 247225.21000 | 0.00000 | 0.000 | 247918.18000 | 246895.12000 | 246862.33000 |
| **IN-2** | 115 | 10530.10000 | 0.00000 | 0.000 | 10343.48000 | 10823.50000 | 10423.31000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.65700 | 14.00000 | 29.200 | 0.87873 | 0.53487 | 0.55805 |
| CO | 59 | -0.23400 | 50.00000 | 0.000 | -0.28132 | -0.18839 | -0.23191 |
| CU | 63 | 0.22600 | 116.67000 | 22.000 | 0.18560 | 0.28206 | 0.21174 |
| MO | 98 | 2.84300 | 820.05000 | 12.500 | 2.43599 | 3.07609 | 3.01828 |
| NI | 60 | 0.08200 | 13.33000 | 152.300 | -0.02850 | 0.21855 | 0.05701 |
| RB | 85 | 3.02300 | 143.34000 | 6.000 | 3.22280 | 2.86732 | 2.97998 |
| SE | 78 | 1.09900 | 96.44000 | 7.200 | 1.18939 | 1.06493 | 1.04225 |
| SR | 88 | 263.34400 | 18270.15000 | 0.800 | 265.72165 | 262.08032 | 262.23064 |
| ZN | 66 | 14.19500 | 666.70000 | 22.400 | 11.50257 | 17.70671 | 13.37638 |
| **TB-2** | 159 | 77672.00000 | 0.00000 | 0.000 | 76044.57000 | 78174.39000 | 78797.03000 |
| BA | 137 | 116.03300 | 4874.21000 | 6.200 | 114.05856 | 123.96419 | 110.07508 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.25800 | 30.00000 | 33.400 | 0.26286 | 0.34093 | 0.16912 |
| SN | 120 | 0.05700 | 13.33000 | 115.100 | 0.09626 | -0.01859 | 0.09225 |
| **BI-2** | 209 | 70904.56000 | 0.00000 | 0.000 | 69410.82000 | 71229.16000 | 72073.70000 |
| PB | 208 | -0.02200 | 116.67000 | 0.000 | -0.02032 | -0.02144 | -0.02545 |
| TL | 203 | -0.00300 | 10.00000 | 0.000 | 0.01943 | -0.01466 | -0.01466 |
| U | 238 | 1.46400 | 5414.49000 | 2.700 | 1.47003 | 1.42173 | 1.50092 |
| *SC-1* | 45 | 192290.37000 | 0.00000 | 0.000 | 191324.72000 | 192402.81000 | 193143.59000 |
| *GE-1* | 72 | 234744.21000 | 0.00000 | 0.000 | 231880.27000 | 237078.61000 | 235273.75000 |
| *GE-3* | 72 | 700765.46000 | 0.00000 | 0.000 | 706630.77000 | 699207.80000 | 696457.80000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 18:19:39
Tube Number: 27
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6821.54000 | 0.00000 | 0.000 | 6381.35000 | 7051.65000 | 7031.62000 |
| **SC-3** | 45 | 775583.43000 | 0.00000 | 0.000 | 782922.10000 | 767624.36000 | 776203.82000 |
| AL | 27 | 2436.74000 | 9175.92000 | 6.400 | 2609.60815 | 2307.04728 | 2393.56353 |
| B | 11 | 251.81000 | 166074.72000 | 0.700 | 249.92021 | 251.85447 | 253.65654 |
| BE | 9 | 25.03900 | 15787.98000 | 2.500 | 25.65603 | 24.41232 | 25.04990 |
| CA | 44 | 2463.70700 | 980.07000 | 18.300 | 2210.62541 | 2195.64845 | 2984.84736 |
| K | 39 | 2472.79100 | 16144.38000 | 7.400 | 2671.54979 | 2312.95844 | 2433.86598 |
| MG | 24 | 2479.75400 | 39960.70000 | 5.900 | 2647.87265 | 2375.15347 | 2416.23647 |
| NA | 23 | 2484.96300 | 90436.95000 | 5.700 | 2647.07412 | 2399.68118 | 2408.13428 |
| TI | 47 | 258.06800 | 780.05000 | 9.600 | 278.70513 | 264.98205 | 230.51765 |
| V | 51 | 250.28300 | 37192.62000 | 5.900 | 266.88360 | 244.96457 | 239.00071 |
| **GE-2** | 72 | 20465.74000 | 0.00000 | 0.000 | 19971.90000 | 21143.12000 | 20282.21000 |
| CR | 52 | 254.78800 | 54031.45000 | 3.700 | 257.34574 | 244.39671 | 262.62016 |
| FE | 57 | 2482.92500 | 10156.55000 | 4.900 | 2551.18700 | 2343.50769 | 2554.08113 |
| MN | 55 | 256.38500 | 21072.99000 | 5.300 | 265.08345 | 240.83578 | 263.23666 |
| **IN-1** | 115 | 241942.53000 | 0.00000 | 0.000 | 243990.94000 | 237739.58000 | 244097.07000 |
| **IN-2** | 115 | 10321.30000 | 0.00000 | 0.000 | 10010.50000 | 10189.92000 | 10763.49000 |
| AG | 107 | 27.00500 | 20365.98000 | 2.600 | 26.23884 | 27.17522 | 27.59993 |
| AS | 75 | 264.45500 | 5015.41000 | 2.100 | 267.13725 | 258.04981 | 268.17860 |
| CO | 59 | 268.08100 | 106266.83000 | 3.200 | 273.35305 | 272.83147 | 258.05844 |
| CU | 63 | 269.26800 | 94120.30000 | 3.900 | 269.47295 | 279.77886 | 258.55236 |
| MO | 98 | 26.60400 | 7435.22000 | 12.100 | 29.73123 | 26.78287 | 23.29912 |
| NI | 60 | 278.06600 | 32169.60000 | 4.000 | 286.85676 | 281.71749 | 265.62225 |
| RB | 85 | 25.00500 | 1140.09000 | 5.800 | 24.40792 | 26.64831 | 23.96020 |
| SE | 78 | 25.45500 | 2185.92000 | 1.400 | 25.05684 | 25.69983 | 25.60765 |
| SR | 88 | 30.42000 | 2066.88000 | 8.800 | 32.10500 | 31.83669 | 27.31684 |
| ZN | 66 | 267.32400 | 12134.50000 | 3.600 | 276.05899 | 268.96378 | 256.94800 |
| **TB-2** | 159 | 77585.38000 | 0.00000 | 0.000 | 75552.41000 | 79410.76000 | 77792.97000 |
| BA | 137 | 243.73800 | 10223.48000 | 3.500 | 246.04234 | 234.32230 | 250.84939 |
| CD | 111 | 24.83500 | 2017.47000 | 1.000 | 24.55417 | 24.94905 | 25.00117 |
| SB | 121 | 25.13600 | 2927.04000 | 5.200 | 24.43141 | 24.33571 | 26.64061 |
| SN | 120 | 24.63900 | 4380.74000 | 2.400 | 24.37757 | 24.23753 | 25.30316 |
| **BI-2** | 209 | 71863.04000 | 0.00000 | 0.000 | 71179.21000 | 71772.65000 | 72637.26000 |
| PB | 208 | 25.05800 | 71292.06000 | 2.200 | 25.70334 | 24.74532 | 24.72553 |
| TL | 203 | 24.59400 | 22426.38000 | 1.600 | 24.14517 | 24.70516 | 24.93269 |
| U | 238 | 24.28300 | 90950.60000 | 1.600 | 23.94245 | 24.72052 | 24.18467 |
| *SC-1* | 45 | 186607.54000 | 0.00000 | 0.000 | 191084.31000 | 181120.86000 | 187617.44000 |
| *GE-1* | 72 | 229707.82000 | 0.00000 | 0.000 | 230650.97000 | 228151.19000 | 230321.29000 |
| *GE-3* | 72 | 696731.42000 | 0.00000 | 0.000 | 707523.82000 | 686432.96000 | 696237.49000 |

Run Name: 1721308E05 Date/Time: 08/01/2017 18:22:43
Tube Number: 28
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-2** | 45 | 6638.11000 | 0.00000 | 0.000 | 6721.51000 | 6401.36000 | 6791.47000 |
| **SC-3** | 45 | 775132.46000 | 0.00000 | 0.000 | 755222.41000 | 777986.86000 | 792188.11000 |
| AL | 27 | -3.71400 | 6.67000 | 0.000 | -5.49196 | -5.49196 | -0.15756 |
| B | 11 | 14.58900 | 17717.72000 | 4.200 | 15.23529 | 14.02604 | 14.50565 |
| BE | 9 | -0.00300 | 0.67000 | 0.000 | -0.00427 | -0.00111 | -0.00427 |
| CA | 44 | 8.95800 | 3.33000 | 173.200 | 0.00000 | 26.87261 | 0.00000 |
| K | 39 | 3.54700 | 413.36000 | 308.800 | 5.16782 | 13.59830 | -8.12661 |
| MG | 24 | 0.83400 | 13.33000 | 86.600 | 1.25680 | 0.00000 | 1.24385 |
| NA | 23 | 6.62100 | 3177.08000 | 125.500 | -1.76513 | 14.85534 | 6.77245 |
| TI | 47 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| V | 51 | 0.02400 | 3.33000 | 173.200 | 0.00000 | 0.07156 | 0.00000 |
| **GE-2** | 72 | 20232.16000 | 0.00000 | 0.000 | 20442.51000 | 20232.07000 | 20021.90000 |
| CR | 52 | 0.16200 | 103.34000 | 64.300 | 0.04564 | 0.19282 | 0.24656 |
| FE | 57 | -1.78500 | 0.00000 | 0.000 | -1.78517 | -1.78517 | -1.78517 |
| MN | 55 | -0.21700 | 3.33000 | 0.000 | -0.13584 | -0.25764 | -0.25764 |
| **IN-1** | 115 | 242865.00000 | 0.00000 | 0.000 | 241064.32000 | 243188.03000 | 244342.64000 |
| **IN-2** | 115 | 10550.14000 | 0.00000 | 0.000 | 11073.91000 | 10833.70000 | 9742.81000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | -0.06900 | 0.00000 | 0.000 | -0.06879 | -0.06879 | -0.06879 |
| CO | 59 | 0.13700 | 196.68000 | 150.500 | -0.07456 | 0.14812 | 0.33836 |
| CU | 63 | 0.05000 | 53.33000 | 84.400 | 0.00685 | 0.09095 | 0.05172 |
| MO | 98 | 0.01300 | 10.00000 | 267.100 | -0.02253 | 0.04551 | 0.01530 |
| NI | 60 | 0.11000 | 16.67000 | 81.300 | 0.21296 | 0.05377 | 0.06298 |
| RB | 85 | -0.06700 | 0.00000 | 0.000 | -0.06701 | -0.06701 | -0.06701 |
| SE | 78 | 0.02800 | 2.44000 | 110.000 | 0.00000 | 0.02317 | 0.06145 |
| SR | 88 | -0.04500 | 0.00000 | 0.000 | -0.04484 | -0.04484 | -0.04484 |
| ZN | 66 | -0.14400 | 0.00000 | 0.000 | -0.14448 | -0.14448 | -0.14448 |
| **TB-2** | 159 | 76909.46000 | 0.00000 | 0.000 | 76297.17000 | 75642.77000 | 78788.43000 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.02900 | 3.33000 | 173.200 | 0.08733 | 0.00000 | 0.00000 |
| SN | 120 | 0.15300 | 30.00000 | 100.600 | 0.03864 | 0.32780 | 0.09226 |
| **BI-2** | 209 | 70770.63000 | 0.00000 | 0.000 | 69702.58000 | 69250.97000 | 73358.35000 |
| PB | 208 | -0.03400 | 83.33000 | 0.000 | -0.04230 | -0.02754 | -0.03303 |
| TL | 203 | 0.01900 | 30.00000 | 158.000 | 0.00797 | 0.05367 | -0.00391 |
| U | 238 | 0.00100 | 6.67000 | 338.500 | -0.00090 | 0.00464 | -0.00090 |
| *SC-1* | 45 | 187133.17000 | 0.00000 | 0.000 | 184888.38000 | 184406.87000 | 192104.27000 |
| *GE-1* | 72 | 227423.29000 | 0.00000 | 0.000 | 225914.22000 | 227980.00000 | 228375.64000 |
| *GE-3* | 72 | 704297.44000 | 0.00000 | 0.000 | 695286.08000 | 701724.52000 | 715881.71000 |

# Tune Report

**Batch Folder** D:\Agilent\ICPMH\1\DATA\~EPATUNE.b
**Report Comment** ICP-MS #19204 (E05) Daily Tune Check
**Instrument Name** G3281A JP12071581

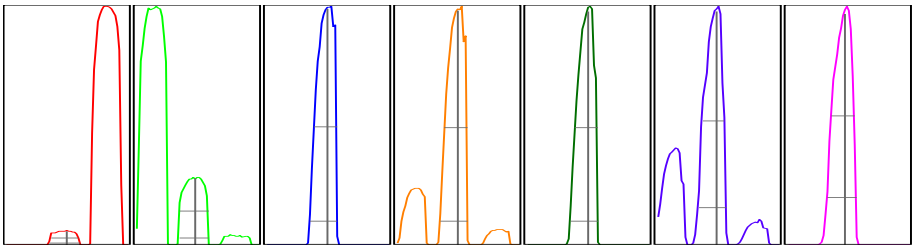
**[No Gas]**

| Mass | Range | Count (Actual) | Response (Actual) [cps/ug/l] | Response (Required) [cps/ug/l] | Response (Flag) | Resp Ratio (Actual) | Resp Ratio (Required) | Resp Ratio (Flag) |
|---|---|---|---|---|---|---|---|---|
| 6 | | 3387 | 3387.37 | | | NaN | - | |
| 24 | | 5371 | 5371.33 | | | NaN | - | |
| 103 | | 23485 | 23485.06 | | | NaN | - | |
| 115 | | 30861 | 30861.09 | | | NaN | - | |
| 140 | | 35067 | 35067.09 | | | NaN | - | |
| 208 | | 28128 | 28128.10 | | | NaN | - | |
| 238 | | 66674 | 66673.80 | | | NaN | - | |

| Mass | RSD% (Actual) | RSD% (Required) | RSD% (Flag) | Background (Actual) | Background (Required) | Background (Flag) |
|---|---|---|---|---|---|---|
| 6 | 3.92 | 5.00 | | | | |
| 24 | 3.37 | 5.00 | | | | |
| 103 | 1.73 | 5.00 | | | | |
| 115 | 1.41 | 5.00 | | | | |
| 140 | 1.75 | 5.00 | | | | |
| 208 | 1.21 | 5.00 | | | | |
| 238 | 1.04 | 5.00 | | | | |

| Mass | Replicate 1 Count | Replicate 2 Count | Replicate 3 Count | Replicate 4 Count | Replicate 5 Count |
|---|---|---|---|---|---|
| 6 | 3464 | 3159 | 3435 | 3392 | 3488 |
| 24 | 5137 | 5282 | 5332 | 5572 | 5533 |
| 103 | 22827 | 23446 | 23524 | 23744 | 23884 |
| 115 | 30391 | 30778 | 30563 | 31093 | 31480 |
| 140 | 34319 | 34881 | 34754 | 35817 | 35564 |
| 208 | 27840 | 27923 | 27878 | 28522 | 28478 |
| 238 | 65681 | 66702 | 66501 | 66874 | 67611 |

**Integration Time [sec]** 0.1



| Mass | Peak Height | Axis (Actual) | Axis (Required) | Axis (Flag) | W-50% | W-X% (Actual) | W-X% (Required) | W-X% (Flag) |
|---|---|---|---|---|---|---|---|---|
| 6 | 525.54 | 6.00 | 5.9 - 6.1 | | 0.67 | 0.771 | 0.900 | |
| 24 | 841.02 | 23.95 | 23.9 - 24.1 | | 0.68 | 0.736 | 0.900 | |
| 103 | 4443.76 | 103.00 | 102.9 - 103.1 | | 0.55 | 0.658 | 0.900 | |
| 115 | 5929.08 | 115.00 | 114.9 - 115.1 | | 0.54 | 0.659 | 0.900 | |
| 140 | 6927.71 | 140.00 | 139.9 - 140.1 | | 0.54 | 0.667 | 0.900 | |
| 208 | 5502.80 | 207.95 | 207.9 - 208.1 | | 0.54 | 0.675 | 0.900 | |
| 238 | 12573.50 | 237.90 | 237.9 - 238.1 | | 0.54 | 0.692 | 0.900 | |

**X =** 10 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 260.8 **Y Axis** Linear

**Tune Parameters**
**## Plasma Paramters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 W | Carrier Gas | 0.25 L/min | S/C Temp | 20 ℃ |
| RF Matching | 0.80 V | Option Gas | 0.0 % | Makeup/Dilution Gas | 0.80 L/min |
| Smpl Depth | 8.0 mm | Nebulizer Pump | 0.10 rps | Gas Switch | Dilution Gas |

**## Lenses Parameters ##**

# Tune Report

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Extract 1 | | 0.0 V | | Omega Lens | | 6.1 V | | Deflect | 16.8 V |
| Extract 2 | | -160.0 V | | Cell Entrance | | -30 V | | Plate Bias | -40 V |
| **Mass** | **Peak Height** | **Axis (Actual)** | **Axis (Required)** | **Axis (Flag)** | **W-50%** | **W-X% (Actual)** | **W-X% (Required)** | **W-X% (Flag)** | |
| Omega Bias | | -75 V | | Cell Exit | | -50 V | | | |

**## Cell Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| OctP Bias | -6.0 V | He Flow | 0.0 mL/min | Energy Discrimination | 5.0 V |
| OctP RF | 200 V | H2 Flow | 0.0 mL/min | | |
| Use Gas | false | 3rd Gas Flow | 0 % | | |

eurofins | Lancaster Laboratories Environmental

# ICP-MS Run Data Report

Method Reference Name(s):

Date File Name: 17H03E01.E05

Run Name: 1721504E05

Analyst: 8381

| Reviewed By: | Reviewed Date |
|---|---|
| Deborah A Krady | 08/03/2017 13:09 |
| Scott P Cuff | 08/03/2017 12:50 |

| Verified By: | Verified Date |
|---|---|
| Deborah A Krady | 08/08/2017 13:20 |
| Nina C Haller | 08/04/2017 12:34 |

Instrument Parameters:

Rinse Time (sec): 25.00

| INTERNAL STD. | ELEMENT | MASS |
|---|---|---|
| **SC-1** | | 45 |
| | NA | 23 |
| | MG | 24 |
| | AL | 27 |
| | K | 39 |
| | CA | 44 |
| | TI | 47 |
| | V | 51 |
| | CR | 52 |
| | MN | 55 |
| | FE | 57 |
| **GE-1** | | 72 |
| | MO | 98 |
| **IN-1** | | 115 |
| | CO | 59 |
| | NI | 60 |
| | CU | 63 |
| | ZN | 66 |
| | AS | 75 |
| | RB | 85 |
| | SR | 88 |
| | AG | 107 |
| | CD | 111 |
| | SN | 120 |
| | SB | 121 |
| | BA | 137 |
| **BI-1** | | 209 |
| | TL | 203 |
| | PB | 208 |
| | U | 238 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:26:14
Tube Number: 1
Sample Number: **S0**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| *NA* | 23 | 0.00000 | 9806.25000 | 0.000 | -3.81041 | 5.97614 | -2.16573 |
| *MG* | 24 | 0.00000 | 33.33000 | 0.000 | -0.80837 | 0.59970 | 0.20867 |
| *AL* | 27 | 0.00000 | 66.67000 | 0.000 | -3.89836 | -3.38577 | 7.28414 |
| *K* | 39 | 0.00000 | 633.37000 | 0.000 | -13.56295 | 6.55562 | 7.00733 |
| *CA* | 44 | 0.00000 | 3.33000 | 0.000 | -4.01410 | -4.01410 | 8.02819 |
| *SC-1* | 45 | 13655.69000 | 0.00000 | 0.000 | 14376.32000 | 13065.21000 | 13525.54000 |
| *TI* | 47 | 0.00000 | 3.33000 | 0.000 | -0.51710 | -0.51710 | 1.03420 |
| *V* | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *CR* | 52 | 0.00000 | 46.67000 | 0.000 | 0.05133 | -0.08796 | 0.03663 |
| *MN* | 55 | 0.00000 | 10.00000 | 0.000 | -0.00390 | 0.06609 | -0.06219 |
| *FE* | 57 | 0.00000 | 30.00000 | 0.000 | -0.21067 | 1.46932 | -1.25865 |
| *CO* | 59 | 0.00000 | 173.34000 | 0.000 | -0.09084 | 0.08337 | 0.00747 |
| *NI* | 60 | 0.00000 | 10.00000 | 0.000 | 0.04479 | -0.00066 | -0.04413 |
| *CU* | 63 | 0.00000 | 96.67000 | 0.000 | 0.02219 | -0.04064 | 0.01845 |
| *ZN* | 66 | 0.00000 | 26.67000 | 0.000 | 0.15387 | -0.29762 | 0.14375 |
| *GE-1* | 72 | 41195.61000 | 0.00000 | 0.000 | 41168.71000 | 41630.10000 | 40788.03000 |
| *AS* | 75 | 0.00000 | 2.67000 | 0.000 | -0.06899 | 0.13797 | -0.06899 |
| *RB* | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *SR* | 88 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *MO* | 98 | 0.00000 | 116.67000 | 0.000 | 0.08105 | 0.04108 | -0.12213 |
| *AG* | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *CD* | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *IN-1* | 115 | 19972.03000 | 0.00000 | 0.000 | 19671.48000 | 20122.23000 | 20122.39000 |
| *SN* | 120 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *SB* | 121 | 0.00000 | 10.00000 | 0.000 | 0.04846 | -0.04774 | -0.00072 |
| *BA* | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| *TB-1* | 159 | 134680.37000 | 0.00000 | 0.000 | 135349.28000 | 135107.32000 | 133584.50000 |
| *TL* | 203 | 0.00000 | 46.67000 | 0.000 | 0.00887 | -0.02616 | 0.01729 |
| *PB* | 208 | 0.00000 | 273.34000 | 0.000 | 0.00274 | -0.00042 | -0.00232 |
| *BI-1* | 209 | 116251.59000 | 0.00000 | 0.000 | 118165.41000 | 115666.83000 | 114922.53000 |
| *U* | 238 | 0.00000 | 10.00000 | 0.000 | -0.00180 | 0.00179 | 0.00001 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:28:03
Tube Number: 2
Sample Number: **S1**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13819.09000 | 0.00000 | 0.000 | 13735.59000 | 13745.76000 | 13975.93000 |
| AL | 27 | 10000.00000 | 75337.59000 | 0.900 | 10044.96519 | 10056.54239 | 9898.49242 |
| CA | 44 | 10000.00000 | 8488.96000 | 4.600 | 10256.06871 | 9466.04079 | 10277.89050 |
| CR | 52 | 1000.00000 | 407152.86000 | 2.800 | 1032.03762 | 987.05618 | 980.90620 |
| FE | 57 | 10000.00000 | 80209.02000 | 2.000 | 10230.13647 | 9884.03039 | 9885.83314 |
| K | 39 | 10000.00000 | 129286.31000 | 1.000 | 9981.47756 | 10110.32443 | 9908.19801 |
| MG | 24 | 10000.00000 | 307318.36000 | 1.800 | 10105.39256 | 10099.20891 | 9795.39853 |
| MN | 55 | 1000.00000 | 164891.69000 | 2.400 | 1018.25422 | 1009.13799 | 972.60778 |
| NA | 23 | 10000.00000 | 667540.04000 | 1.100 | 10091.01838 | 10033.14620 | 9875.83543 |
| TI | 47 | 1000.00000 | 6588.14000 | 3.700 | 1036.95930 | 999.51890 | 963.52180 |
| V | 51 | 1000.00000 | 285227.32000 | 1.300 | 1009.25832 | 1005.18010 | 985.56158 |
| **GE-1** | 72 | 41328.88000 | 0.00000 | 0.000 | 42080.37000 | 40447.25000 | 41459.01000 |
| MO | 98 | 100.00000 | 54218.98000 | 4.100 | 98.81661 | 104.59596 | 96.58743 |
| **IN-1** | 115 | 20084.32000 | 0.00000 | 0.000 | 20176.75000 | 20316.61000 | 19759.60000 |
| AG | 107 | 100.00000 | 138241.98000 | 2.100 | 101.25256 | 97.60100 | 101.14644 |
| AS | 75 | 1000.00000 | 38581.53000 | 0.800 | 999.99968 | 992.13973 | 1007.86059 |
| BA | 137 | 1000.00000 | 75659.98000 | 1.100 | 992.67775 | 995.04387 | 1012.27837 |
| CD | 111 | 100.00000 | 14653.59000 | 1.600 | 101.03250 | 98.17638 | 100.79111 |
| CO | 59 | 1000.00000 | 789102.62000 | 1.900 | 1014.18172 | 978.26010 | 1007.55818 |
| CU | 63 | 1000.00000 | 675652.23000 | 1.100 | 1001.11175 | 988.45661 | 1010.43165 |
| NI | 60 | 1000.00000 | 229606.55000 | 1.900 | 999.17095 | 981.11390 | 1019.71515 |
| RB | 85 | 100.00000 | 9719.68000 | 5.500 | 101.37342 | 93.96210 | 104.66448 |
| SB | 121 | 100.00000 | 21230.61000 | 2.000 | 98.69390 | 98.94513 | 102.36097 |
| SN | 120 | 100.00000 | 31777.02000 | 3.700 | 103.87644 | 99.66917 | 96.45439 |
| SR | 88 | 100.00000 | 14853.52000 | 2.000 | 99.34362 | 98.39291 | 102.26347 |
| ZN | 66 | 1000.00000 | 90485.38000 | 0.400 | 1002.67044 | 1001.70566 | 995.62390 |
| **BI-1** | 209 | 120985.15000 | 0.00000 | 0.000 | 123050.86000 | 119261.71000 | 120642.87000 |
| PB | 208 | 100.00000 | 458193.52000 | 1.500 | 99.04590 | 101.77967 | 99.17443 |
| TL | 203 | 100.00000 | 145557.41000 | 0.700 | 99.33433 | 100.80202 | 99.86366 |
| U | 238 | 100.00000 | 583830.28000 | 1.100 | 99.21190 | 101.31549 | 99.47261 |
| *TB-1* | 159 | 134742.80000 | 0.00000 | 0.000 | 136435.60000 | 133754.52000 | 134038.27000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:29:53
Tube Number: 3
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13365.50000 | 0.00000 | 0.000 | 12855.11000 | 13205.36000 | 14036.03000 |
| AL | 27 | -4.14300 | 36.67000 | 0.000 | -7.57821 | -7.61609 | 2.76520 |
| CA | 44 | 4.32100 | 6.67000 | 167.100 | 8.65623 | 8.32017 | -4.01410 |
| CR | 52 | 0.54000 | 256.68000 | 27.000 | 0.70460 | 0.42584 | 0.49062 |
| FE | 57 | 0.90900 | 36.67000 | 326.500 | 2.89621 | -2.50196 | 2.33223 |
| K | 39 | -1.19600 | 610.03000 | 0.000 | -8.39456 | 6.76695 | -1.96099 |
| MG | 24 | 0.00000 | 33.33000 | 0.000 | -0.42156 | 0.58143 | -0.16006 |
| MN | 55 | 0.31600 | 60.00000 | 42.700 | 0.45931 | 0.19164 | 0.29603 |
| NA | 23 | 7.38300 | 10073.08000 | 25.800 | 9.03471 | 7.81200 | 5.30083 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.03700 | 10.00000 | 100.900 | 0.07537 | 0.03669 | 0.00000 |
| **GE-1** | 72 | 40650.83000 | 0.00000 | 0.000 | 41629.70000 | 41048.22000 | 39274.57000 |
| MO | 98 | -0.13400 | 43.33000 | 0.000 | -0.16070 | -0.12272 | -0.11852 |
| **IN-1** | 115 | 20799.43000 | 0.00000 | 0.000 | 20782.67000 | 20892.90000 | 20722.73000 |
| AG | 107 | 0.03700 | 53.33000 | 57.000 | 0.04194 | 0.05562 | 0.01402 |
| AS | 75 | 0.16500 | 9.33000 | 106.800 | 0.33178 | -0.01916 | 0.18222 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00900 | 1.33000 | 173.200 | 0.00000 | 0.02624 | 0.00000 |
| CO | 59 | 0.02100 | 196.68000 | 271.200 | 0.07372 | -0.03748 | 0.02544 |
| CU | 63 | 0.12300 | 186.68000 | 38.100 | 0.15634 | 0.06939 | 0.14286 |
| NI | 60 | 0.13800 | 43.34000 | 106.600 | -0.00205 | 0.29081 | 0.12469 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.08900 | 30.00000 | 88.900 | 0.17992 | 0.04284 | 0.04358 |
| SN | 120 | 0.14200 | 46.67000 | 81.400 | 0.09126 | 0.06052 | 0.27456 |
| SR | 88 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| ZN | 66 | -0.19100 | 10.00000 | 0.000 | -0.19078 | -0.08507 | -0.29762 |
| **BI-1** | 209 | 117523.16000 | 0.00000 | 0.000 | 117307.89000 | 117247.44000 | 118014.16000 |
| PB | 208 | 0.02800 | 400.01000 | 34.600 | 0.01673 | 0.03254 | 0.03417 |
| TL | 203 | 0.01100 | 63.34000 | 257.500 | 0.04462 | -0.01208 | 0.00188 |
| U | 238 | 0.00400 | 33.33000 | 50.200 | 0.00527 | 0.00527 | 0.00172 |
| *TB-1* | 159 | 135584.60000 | 0.00000 | 0.000 | 137154.15000 | 136530.95000 | 133068.69000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:31:42
Tube Number: 4
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13655.64000 | 0.00000 | 0.000 | 13225.36000 | 14015.90000 | 13725.67000 |
| AL | 27 | -5.84600 | 23.33000 | 0.000 | -3.45383 | -5.07683 | -9.00631 |
| CA | 44 | 7.68900 | 10.00000 | 151.200 | -4.01410 | 19.22786 | 7.85261 |
| CR | 52 | 0.59700 | 283.35000 | 61.000 | 1.01531 | 0.34619 | 0.43013 |
| FE | 57 | 2.52300 | 50.00000 | 55.800 | 4.01167 | 2.34105 | 1.21543 |
| K | 39 | -0.81200 | 626.70000 | 0.000 | 0.99533 | -7.25657 | 3.82570 |
| MG | 24 | -0.34900 | 23.33000 | 0.000 | -0.10115 | -0.47950 | -0.46593 |
| MN | 55 | 0.22600 | 46.67000 | 69.100 | 0.25462 | 0.05739 | 0.36518 |
| NA | 23 | 2.59500 | 9979.74000 | 198.600 | 8.05065 | 1.92653 | -2.19178 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-1** | 72 | 41556.20000 | 0.00000 | 0.000 | 41669.83000 | 40998.26000 | 42000.50000 |
| MO | 98 | -0.19100 | 13.33000 | 0.000 | -0.21573 | -0.15985 | -0.19755 |
| **IN-1** | 115 | 20699.23000 | 0.00000 | 0.000 | 20892.12000 | 20542.62000 | 20662.94000 |
| AG | 107 | 0.00500 | 6.67000 | 86.600 | 0.00695 | 0.00707 | 0.00000 |
| AS | 75 | 0.06500 | 5.33000 | 117.200 | 0.13035 | 0.08306 | -0.01860 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CO | 59 | 0.02200 | 196.67000 | 612.200 | -0.13496 | 0.08955 | 0.11239 |
| CU | 63 | 0.02800 | 120.01000 | 91.900 | 0.01248 | 0.05855 | 0.01420 |
| NI | 60 | 0.11000 | 36.67000 | 95.400 | 0.20705 | -0.00155 | 0.12518 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | -0.00200 | 10.00000 | 0.000 | -0.04774 | 0.04438 | -0.00195 |
| SN | 120 | 0.11200 | 36.67000 | 69.100 | 0.12104 | 0.18465 | 0.03060 |
| SR | 88 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| ZN | 66 | -0.15500 | 13.33000 | 0.000 | -0.19134 | -0.29762 | 0.02475 |
| **BI-1** | 209 | 120062.42000 | 0.00000 | 0.000 | 120230.47000 | 120694.40000 | 119262.40000 |
| PB | 208 | 0.00800 | 316.68000 | 263.400 | -0.00496 | -0.00299 | 0.03094 |
| TL | 203 | -0.01500 | 26.67000 | 0.000 | -0.02643 | -0.00579 | -0.01243 |
| U | 238 | 0.00400 | 33.33000 | 100.500 | 0.00855 | 0.00164 | 0.00168 |
| *TB-1* | 159 | 135536.42000 | 0.00000 | 0.000 | 136808.88000 | 135068.68000 | 134731.69000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:33:31
Tube Number: 5
Sample Number: **ICV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14119.31000 | 0.00000 | 0.000 | 14716.47000 | 14516.21000 | 13125.25000 |
| AL | 27 | 5013.15600 | 38557.61000 | 4.400 | 4810.09862 | 4977.97557 | 5251.39348 |
| CA | 44 | 5006.01300 | 4333.99000 | 5.500 | 4733.73114 | 5001.04815 | 5283.26066 |
| CR | 52 | 500.16700 | 207545.69000 | 6.700 | 479.41546 | 482.15646 | 538.92971 |
| FE | 57 | 4875.12800 | 39888.51000 | 5.200 | 4763.32886 | 4695.78164 | 5166.27281 |
| K | 39 | 5030.29700 | 66605.45000 | 6.800 | 4704.27235 | 5001.55884 | 5385.06005 |
| MG | 24 | 4992.06800 | 156425.69000 | 5.600 | 4782.51361 | 4884.11673 | 5309.57454 |
| MN | 55 | 498.24000 | 83767.92000 | 5.600 | 482.23199 | 482.04603 | 530.44193 |
| NA | 23 | 4885.24100 | 337543.67000 | 6.500 | 4647.25552 | 4765.59840 | 5242.86922 |
| TI | 47 | 467.62800 | 3147.06000 | 2.500 | 458.63844 | 463.52156 | 480.72311 |
| V | 51 | 495.88000 | 144068.70000 | 7.700 | 469.88373 | 478.14433 | 539.61086 |
| **GE-1** | 72 | 42444.98000 | 0.00000 | 0.000 | 42210.96000 | 41980.65000 | 43143.33000 |
| MO | 98 | 47.08800 | 26290.63000 | 1.900 | 47.79544 | 47.38474 | 46.08435 |
| **IN-1** | 115 | 21225.96000 | 0.00000 | 0.000 | 21092.49000 | 21103.99000 | 21481.39000 |
| AG | 107 | 48.64900 | 71076.71000 | 2.100 | 48.73581 | 49.61490 | 47.59646 |
| AS | 75 | 481.71400 | 19641.54000 | 2.300 | 485.26443 | 490.53099 | 469.34509 |
| BA | 137 | 492.10300 | 39353.12000 | 1.400 | 498.16847 | 484.90890 | 493.23125 |
| CD | 111 | 48.36100 | 7488.98000 | 2.700 | 49.70368 | 48.23429 | 47.14438 |
| CO | 59 | 472.08600 | 393819.28000 | 0.900 | 476.72766 | 470.79789 | 468.73152 |
| CU | 63 | 480.89600 | 343443.23000 | 1.300 | 485.58057 | 483.49654 | 473.60980 |
| NI | 60 | 479.76100 | 116435.13000 | 1.100 | 482.97013 | 482.86673 | 473.44601 |
| RB | 85 | 0.22700 | 23.33000 | 23.600 | 0.19584 | 0.19574 | 0.28845 |
| SB | 121 | 51.05200 | 11460.95000 | 2.400 | 52.46245 | 50.54920 | 50.14542 |
| SN | 120 | 47.60400 | 15984.74000 | 2.400 | 48.15984 | 46.30467 | 48.34845 |
| SR | 88 | 45.76500 | 7185.11000 | 1.000 | 45.64583 | 46.26200 | 45.38630 |
| ZN | 66 | 468.76500 | 44840.37000 | 0.200 | 470.00175 | 468.58626 | 467.70681 |
| **BI-1** | 209 | 120693.61000 | 0.00000 | 0.000 | 119877.15000 | 122295.72000 | 119907.96000 |
| PB | 208 | 51.61400 | 236061.45000 | 1.800 | 52.46841 | 50.60508 | 51.76977 |
| TL | 203 | 50.94200 | 73990.61000 | 2.000 | 51.87436 | 49.87069 | 51.08205 |
| U | 238 | 52.22600 | 304195.16000 | 1.100 | 51.95451 | 51.83738 | 52.88475 |
| *TB-1* | 159 | 138614.75000 | 0.00000 | 0.000 | 140025.49000 | 139320.43000 | 136498.34000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:35:19
Tube Number: 6
Sample Number: **ICB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13822.50000 | 0.00000 | 0.000 | 13075.20000 | 14246.27000 | 14146.03000 |
| AL | 27 | -5.52200 | 26.67000 | 0.000 | -7.60225 | -3.85173 | -5.11298 |
| CA | 44 | -0.17600 | 3.33000 | 0.000 | -4.01410 | -4.01410 | 7.49998 |
| CR | 52 | 0.49200 | 246.68000 | 7.900 | 0.48313 | 0.45787 | 0.53391 |
| FE | 57 | -1.74900 | 16.67000 | 0.000 | -2.48896 | -1.38758 | -1.37043 |
| K | 39 | -9.57500 | 523.36000 | 0.000 | -11.56250 | -1.91779 | -15.24571 |
| MG | 24 | -0.89200 | 6.67000 | 0.000 | -0.43334 | -1.12115 | -1.12115 |
| MN | 55 | 0.13800 | 33.33000 | 45.200 | 0.06599 | 0.17310 | 0.17477 |
| NA | 23 | -8.70000 | 9352.74000 | 0.000 | -2.34372 | -7.63083 | -16.12499 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.07100 | 20.00000 | 54.200 | 0.11115 | 0.06801 | 0.03425 |
| **GE-1** | 72 | 41893.89000 | 0.00000 | 0.000 | 41008.17000 | 42542.05000 | 42131.46000 |
| MO | 98 | -0.16700 | 26.67000 | 0.000 | -0.12263 | -0.19778 | -0.17948 |
| **IN-1** | 115 | 20953.32000 | 0.00000 | 0.000 | 20112.37000 | 21554.08000 | 21193.51000 |
| AG | 107 | 0.00900 | 13.33000 | 115.200 | 0.00000 | 0.00674 | 0.02056 |
| AS | 75 | 0.14500 | 8.67000 | 84.000 | 0.03454 | 0.12423 | 0.27489 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00500 | 0.67000 | 173.200 | 0.01363 | 0.00000 | 0.00000 |
| CO | 59 | 0.08300 | 250.01000 | 72.200 | 0.04555 | 0.05139 | 0.15210 |
| CU | 63 | 0.02100 | 116.67000 | 257.200 | 0.01853 | 0.07663 | -0.03184 |
| NI | 60 | 0.04100 | 20.00000 | 186.700 | 0.12982 | -0.00355 | -0.00286 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.04500 | 20.00000 | 186.700 | 0.14045 | -0.00384 | -0.00310 |
| SN | 120 | 0.08100 | 26.67000 | 23.900 | 0.09430 | 0.05866 | 0.08949 |
| SR | 88 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| ZN | 66 | -0.29800 | 0.00000 | 0.000 | -0.29762 | -0.29762 | -0.29762 |
| **BI-1** | 209 | 118359.58000 | 0.00000 | 0.000 | 117005.57000 | 119172.56000 | 118900.60000 |
| PB | 208 | 0.01700 | 353.35000 | 100.100 | 0.00339 | 0.03545 | 0.01123 |
| TL | 203 | 0.00600 | 56.67000 | 333.600 | -0.01203 | 0.00153 | 0.02958 |
| U | 238 | 0.00100 | 16.67000 | 324.600 | -0.00002 | 0.00516 | -0.00180 |
| *TB-1* | 159 | 138541.15000 | 0.00000 | 0.000 | 134005.38000 | 141934.67000 | 139683.39000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:37:08
Tube Number: 7
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13865.85000 | 0.00000 | 0.000 | 14306.17000 | 13785.84000 | 13505.53000 |
| AL | 27 | 197.91000 | 1563.46000 | 3.800 | 200.18103 | 204.08150 | 189.46824 |
| CA | 44 | 344.26000 | 296.68000 | 19.300 | 383.10508 | 267.74062 | 381.93417 |
| CR | 52 | 4.91000 | 2050.21000 | 6.200 | 4.56026 | 5.05689 | 5.11380 |
| FE | 57 | 213.79800 | 1756.84000 | 18.500 | 258.84003 | 197.48414 | 185.06903 |
| K | 39 | 414.33400 | 5987.87000 | 8.400 | 374.13311 | 435.36328 | 433.50551 |
| MG | 24 | 201.74400 | 6251.32000 | 6.400 | 198.51167 | 190.71061 | 216.00951 |
| MN | 55 | 4.57200 | 766.72000 | 1.300 | 4.50700 | 4.61867 | 4.59172 |
| NA | 23 | 381.51500 | 35134.19000 | 1.700 | 375.74778 | 380.05151 | 388.74499 |
| TI | 47 | 29.00400 | 193.34000 | 53.900 | 11.21609 | 40.58011 | 35.21715 |
| V | 51 | 1.05900 | 303.35000 | 7.600 | 1.08366 | 1.12460 | 0.96855 |
| **GE-1** | 72 | 41516.47000 | 0.00000 | 0.000 | 41710.08000 | 40637.62000 | 42201.72000 |
| MO | 98 | 0.69900 | 496.69000 | 34.100 | 0.90103 | 0.76140 | 0.43567 |
| **IN-1** | 115 | 20932.97000 | 0.00000 | 0.000 | 20899.94000 | 20860.56000 | 21038.40000 |
| AG | 107 | 1.00800 | 1453.45000 | 11.700 | 1.04266 | 0.87747 | 1.10485 |
| AS | 75 | 4.29400 | 175.33000 | 20.800 | 4.56382 | 5.02175 | 3.29615 |
| BA | 137 | 3.51000 | 276.68000 | 18.500 | 4.19126 | 3.43560 | 2.90190 |
| CD | 111 | 0.99900 | 152.67000 | 27.000 | 0.69507 | 1.20882 | 1.09438 |
| CO | 59 | 0.99900 | 1003.40000 | 23.300 | 0.76636 | 1.00009 | 1.23177 |
| CU | 63 | 4.72200 | 3427.14000 | 7.700 | 4.42231 | 4.61623 | 5.12721 |
| NI | 60 | 4.01000 | 970.07000 | 13.800 | 4.64312 | 3.77143 | 3.61446 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 2.38000 | 536.70000 | 19.800 | 2.71432 | 2.58340 | 1.84145 |
| SN | 120 | 4.57000 | 1513.46000 | 9.100 | 4.11408 | 4.66744 | 4.92851 |
| SR | 88 | 1.80800 | 280.01000 | 15.100 | 1.61717 | 1.68503 | 2.12066 |
| ZN | 66 | 28.31400 | 2696.97000 | 7.000 | 27.43334 | 30.57324 | 26.93401 |
| **BI-1** | 209 | 122657.50000 | 0.00000 | 0.000 | 122868.58000 | 121388.41000 | 123715.52000 |
| PB | 208 | 2.10000 | 10041.69000 | 3.100 | 2.07976 | 2.04710 | 2.17400 |
| TL | 203 | 0.98200 | 1496.79000 | 9.700 | 1.05617 | 1.01464 | 0.87396 |
| U | 238 | 1.03900 | 6161.49000 | 5.400 | 1.06598 | 1.07730 | 0.97488 |
| *TB-1* | 159 | 139538.80000 | 0.00000 | 0.000 | 140146.39000 | 139291.04000 | 139178.97000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:38:57
Tube Number: 8
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 11910.99000 | 0.00000 | 0.000 | 12154.44000 | 11493.99000 | 12084.53000 |
| AL | 27 | 107166.82200 | 694946.32000 | 3.200 | 103733.69122 | 110633.83187 | 107132.94373 |
| CA | 44 | 306474.27800 | 223997.52000 | 3.000 | 297230.13861 | 315652.45452 | 306540.24145 |
| CR | 52 | 1.66600 | 623.38000 | 15.500 | 1.75718 | 1.86470 | 1.37472 |
| FE | 57 | 261683.23900 | 1807593.10000 | 2.700 | 256805.95619 | 269767.49831 | 258476.26259 |
| K | 39 | 112964.11800 | 1252394.02000 | 3.000 | 110137.82533 | 116741.69737 | 112012.83228 |
| MG | 24 | 109720.71200 | 2904671.83000 | 3.100 | 106371.25205 | 113212.68773 | 109578.19601 |
| MN | 55 | 4.22800 | 610.04000 | 22.800 | 3.38528 | 4.02082 | 5.27766 |
| NA | 23 | 277280.45500 | 15716952.68000 | 3.000 | 269460.65704 | 286124.74211 | 276255.96656 |
| TI | 47 | 2279.42700 | 12931.73000 | 4.200 | 2232.45918 | 2389.98031 | 2215.84127 |
| V | 51 | 0.13600 | 33.33000 | 36.100 | 0.07972 | 0.16859 | 0.16036 |
| **GE-1** | 72 | 38172.16000 | 0.00000 | 0.000 | 39595.40000 | 37019.56000 | 37901.52000 |
| MO | 98 | 2097.72100 | 1047844.05000 | 4.000 | 2010.50664 | 2176.29603 | 2106.35893 |
| **IN-1** | 115 | 19241.23000 | 0.00000 | 0.000 | 19471.53000 | 19281.20000 | 18970.95000 |
| AG | 107 | 0.37200 | 493.36000 | 13.600 | 0.39542 | 0.40686 | 0.31396 |
| AS | 75 | 0.43700 | 18.67000 | 27.100 | 0.30530 | 0.47099 | 0.53470 |
| BA | 137 | 0.92200 | 66.67000 | 32.600 | 0.68158 | 0.82597 | 1.25922 |
| CD | 111 | 0.09000 | 12.67000 | 63.200 | 0.14077 | 0.02843 | 0.10114 |
| CO | 59 | 0.84600 | 806.72000 | 20.800 | 1.04793 | 0.75676 | 0.73248 |
| CU | 63 | 0.75700 | 583.37000 | 8.100 | 0.78729 | 0.79647 | 0.68649 |
| NI | 60 | 0.90800 | 210.01000 | 35.300 | 0.98901 | 1.18066 | 0.55520 |
| RB | 85 | 0.57600 | 53.34000 | 61.600 | 0.31822 | 0.42848 | 0.97995 |
| SB | 121 | 0.80500 | 173.34000 | 2.600 | 0.82707 | 0.78663 | 0.80027 |
| SN | 120 | 0.18600 | 56.67000 | 36.400 | 0.16234 | 0.26230 | 0.13330 |
| SR | 88 | 9.10900 | 1296.76000 | 7.100 | 8.95709 | 9.81684 | 8.55194 |
| ZN | 66 | 1.81000 | 183.34000 | 50.800 | 2.43924 | 2.23594 | 0.75574 |
| **BI-1** | 209 | 104407.08000 | 0.00000 | 0.000 | 104863.13000 | 103363.38000 | 104994.73000 |
| PB | 208 | 0.16800 | 906.72000 | 27.500 | 0.17977 | 0.20628 | 0.11656 |
| TL | 203 | 0.08900 | 153.34000 | 45.700 | 0.13316 | 0.07926 | 0.05376 |
| U | 238 | 0.06800 | 350.02000 | 6.000 | 0.07132 | 0.06837 | 0.06333 |
| *TB-1* | 159 | 102230.28000 | 0.00000 | 0.000 | 102344.12000 | 103622.01000 | 100724.71000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:40:48
Tube Number: 9
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 12257.89000 | 0.00000 | 0.000 | 12494.68000 | 11884.29000 | 12394.70000 |
| AL | 27 | 105690.65400 | 705370.90000 | 3.100 | 103139.37201 | 109361.58955 | 104571.00051 |
| CA | 44 | 299171.08400 | 225054.29000 | 3.100 | 288922.11763 | 306604.79809 | 301986.33745 |
| CR | 52 | 223.77100 | 80791.12000 | 4.800 | 213.61939 | 234.92449 | 222.76774 |
| FE | 57 | 258280.39800 | 1836080.81000 | 3.000 | 251411.13819 | 266792.38158 | 256637.67548 |
| K | 39 | 111769.19300 | 1275202.48000 | 3.600 | 108596.91144 | 116242.20933 | 110468.45968 |
| MG | 24 | 108375.10700 | 2952891.00000 | 2.800 | 105730.87062 | 111686.69884 | 107707.75080 |
| MN | 55 | 227.66800 | 33301.50000 | 1.800 | 223.82117 | 231.92890 | 227.25396 |
| NA | 23 | 274812.61800 | 16032889.34000 | 2.500 | 269736.18245 | 282797.72456 | 271903.94813 |
| TI | 47 | 2161.35700 | 12628.21000 | 3.700 | 2079.22730 | 2164.84291 | 2240.00052 |
| V | 51 | 226.23400 | 57221.33000 | 2.100 | 223.61264 | 231.82540 | 223.26350 |
| **GE-1** | 72 | 38963.67000 | 0.00000 | 0.000 | 37300.07000 | 39013.75000 | 40577.20000 |
| MO | 98 | 2055.08000 | 1047639.07000 | 3.900 | 2137.28609 | 2049.93953 | 1978.01539 |
| **IN-1** | 115 | 20198.52000 | 0.00000 | 0.000 | 19881.58000 | 20291.84000 | 20422.14000 |
| AG | 107 | 45.02100 | 62590.77000 | 1.700 | 45.74154 | 45.10440 | 44.21639 |
| AS | 75 | 93.27300 | 3622.40000 | 2.600 | 90.84929 | 95.63111 | 93.33764 |
| BA | 137 | 1.04600 | 80.00000 | 61.700 | 0.40052 | 1.04645 | 1.68976 |
| CD | 111 | 88.04100 | 12974.90000 | 1.200 | 88.94180 | 86.90010 | 88.27988 |
| CO | 59 | 184.40700 | 146475.19000 | 1.900 | 188.17645 | 183.77466 | 181.26901 |
| CU | 63 | 179.63000 | 122136.76000 | 1.500 | 182.42508 | 177.21514 | 179.25102 |
| NI | 60 | 176.46600 | 40760.57000 | 2.300 | 179.16303 | 171.82409 | 178.41016 |
| RB | 85 | 0.71900 | 70.00000 | 52.900 | 1.14274 | 0.40714 | 0.60681 |
| SB | 121 | 1.12500 | 250.01000 | 17.900 | 1.33263 | 0.93161 | 1.11070 |
| SN | 120 | 0.06200 | 20.00000 | 49.400 | 0.03180 | 0.09346 | 0.06191 |
| SR | 88 | 8.99300 | 1343.43000 | 6.200 | 9.04427 | 9.52771 | 8.40782 |
| ZN | 66 | 86.32900 | 7878.70000 | 3.600 | 87.95132 | 88.24851 | 82.78700 |
| **BI-1** | 209 | 105905.68000 | 0.00000 | 0.000 | 105345.20000 | 105577.50000 | 106794.33000 |
| PB | 208 | 0.18400 | 986.72000 | 3.900 | 0.17616 | 0.18564 | 0.19024 |
| TL | 203 | 0.08400 | 150.01000 | 19.300 | 0.08504 | 0.10053 | 0.06787 |
| U | 238 | 0.05800 | 306.68000 | 20.400 | 0.04541 | 0.06886 | 0.06030 |
| *TB-1* | 159 | 102338.49000 | 0.00000 | 0.000 | 101630.34000 | 101198.73000 | 104186.40000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:42:38
Tube Number: 10
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13775.71000 | 0.00000 | 0.000 | 13725.70000 | 13695.67000 | 13905.76000 |
| AL | 27 | -1.02200 | 60.00000 | 0.000 | -2.31872 | -2.30406 | 1.55528 |
| CA | 44 | 7.75900 | 10.00000 | 151.000 | -4.01410 | 7.87860 | 19.41194 |
| CR | 52 | 0.46800 | 236.68000 | 28.800 | 0.43010 | 0.35695 | 0.61835 |
| FE | 57 | 11.21300 | 120.00000 | 12.200 | 11.26036 | 12.55302 | 9.82589 |
| K | 39 | -2.81800 | 606.70000 | 0.000 | -7.13171 | 11.00370 | -12.32471 |
| MG | 24 | 3.44500 | 140.01000 | 23.900 | 3.13808 | 2.81909 | 4.37640 |
| MN | 55 | 0.12000 | 30.00000 | 1.200 | 0.12097 | 0.12137 | 0.11860 |
| NA | 23 | 23.04300 | 11413.93000 | 15.000 | 21.24572 | 20.85529 | 27.02752 |
| TI | 47 | 1.50100 | 13.33000 | 153.400 | 1.01158 | -0.51710 | 4.00954 |
| V | 51 | 0.02400 | 6.67000 | 173.200 | 0.00000 | 0.07075 | 0.00000 |
| **GE-1** | 72 | 41192.17000 | 0.00000 | 0.000 | 40948.25000 | 40426.95000 | 42201.30000 |
| MO | 98 | 0.65700 | 470.03000 | 19.000 | 0.79128 | 0.63426 | 0.54426 |
| **IN-1** | 115 | 20659.62000 | 0.00000 | 0.000 | 20632.94000 | 20813.40000 | 20532.52000 |
| AG | 107 | 0.00200 | 3.33000 | 173.200 | 0.00000 | 0.00698 | 0.00000 |
| AS | 75 | -0.00200 | 2.67000 | 0.000 | 0.03193 | -0.01897 | -0.01828 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00400 | 0.67000 | 173.200 | 0.01328 | 0.00000 | 0.00000 |
| CO | 59 | -0.06400 | 126.67000 | 0.000 | -0.13388 | -0.01232 | -0.04668 |
| CU | 63 | 0.04800 | 133.34000 | 77.200 | 0.01443 | 0.04162 | 0.08761 |
| NI | 60 | 0.01200 | 13.33000 | 200.100 | -0.00174 | -0.00211 | 0.04106 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.01300 | 13.33000 | 519.500 | 0.08984 | -0.04774 | -0.00166 |
| SN | 120 | 0.01000 | 3.33000 | 173.200 | 0.00000 | 0.03037 | 0.00000 |
| SR | 88 | 0.04400 | 6.67000 | 173.200 | 0.13104 | 0.00000 | 0.00000 |
| ZN | 66 | -0.04600 | 23.33000 | 0.000 | 0.02522 | -0.19094 | 0.02680 |
| **BI-1** | 209 | 118046.83000 | 0.00000 | 0.000 | 115555.44000 | 118173.57000 | 120411.47000 |
| PB | 208 | -0.00600 | 250.01000 | 0.000 | -0.01408 | 0.00050 | -0.00505 |
| TL | 203 | 0.00400 | 53.33000 | 493.600 | 0.00982 | 0.02294 | -0.01954 |
| U | 238 | -0.00100 | 6.67000 | 0.000 | -0.00180 | -0.00004 | -0.00007 |
| *TB-1* | 159 | 135159.40000 | 0.00000 | 0.000 | 136860.06000 | 133825.81000 | 134792.34000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:44:26
Tube Number: 11
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14559.77000 | 0.00000 | 0.000 | 14796.72000 | 14386.17000 | 14496.42000 |
| AL | 27 | 2483.59500 | 19764.58000 | 2.200 | 2432.85672 | 2540.84468 | 2477.08495 |
| CA | 44 | 2482.18200 | 2223.57000 | 8.200 | 2583.10193 | 2249.25446 | 2614.18997 |
| CR | 52 | 247.70100 | 106287.87000 | 2.200 | 243.69883 | 254.02539 | 245.37882 |
| FE | 57 | 2516.73700 | 21283.10000 | 5.400 | 2377.15782 | 2647.79975 | 2525.25469 |
| K | 39 | 2479.84100 | 34289.57000 | 1.400 | 2446.62033 | 2475.23517 | 2517.66718 |
| MG | 24 | 2465.44300 | 79839.23000 | 3.800 | 2387.09816 | 2569.84256 | 2439.38744 |
| MN | 55 | 251.87500 | 43767.39000 | 1.600 | 248.86580 | 256.44050 | 250.31727 |
| NA | 23 | 2424.84000 | 178456.61000 | 1.700 | 2379.00013 | 2453.05945 | 2442.45940 |
| TI | 47 | 260.53600 | 1813.50000 | 11.800 | 295.87867 | 241.61320 | 244.11537 |
| V | 51 | 242.97100 | 73011.57000 | 2.300 | 237.58524 | 242.71173 | 248.61663 |
| **GE-1** | 72 | 42829.27000 | 0.00000 | 0.000 | 41870.64000 | 43714.80000 | 42902.38000 |
| MO | 98 | 23.81700 | 13472.35000 | 4.200 | 24.92499 | 22.99025 | 23.53657 |
| **IN-1** | 115 | 22278.08000 | 0.00000 | 0.000 | 22193.55000 | 22841.77000 | 21798.92000 |
| AG | 107 | 23.70000 | 36322.19000 | 4.400 | 23.83728 | 22.59379 | 24.66994 |
| AS | 75 | 237.34900 | 10156.94000 | 2.800 | 233.75716 | 233.36983 | 244.92000 |
| BA | 137 | 242.37400 | 20339.59000 | 1.400 | 240.30181 | 240.58088 | 246.23824 |
| CD | 111 | 24.26000 | 3941.81000 | 2.900 | 24.25870 | 23.55833 | 24.96197 |
| CO | 59 | 237.30700 | 207772.73000 | 3.300 | 238.20759 | 228.99242 | 244.72024 |
| CU | 63 | 232.08900 | 174003.85000 | 1.500 | 230.85043 | 229.46849 | 235.94920 |
| NI | 60 | 236.03000 | 60111.43000 | 3.300 | 230.39983 | 232.73472 | 244.95604 |
| RB | 85 | 22.99000 | 2480.28000 | 9.500 | 20.47611 | 24.23592 | 24.25828 |
| SB | 121 | 23.09500 | 5451.07000 | 3.700 | 22.42654 | 24.06806 | 22.79020 |
| SN | 120 | 23.93900 | 8432.39000 | 3.300 | 23.47842 | 23.47663 | 24.86104 |
| SR | 88 | 23.77400 | 3917.28000 | 3.000 | 23.02912 | 23.85510 | 24.43860 |
| ZN | 66 | 230.99600 | 23202.35000 | 1.600 | 233.86695 | 226.92917 | 232.19312 |
| **BI-1** | 209 | 123436.17000 | 0.00000 | 0.000 | 122012.41000 | 125064.84000 | 123231.26000 |
| PB | 208 | 25.78500 | 120746.89000 | 2.200 | 26.35689 | 25.19713 | 25.80066 |
| TL | 203 | 25.57000 | 38012.65000 | 1.900 | 25.26333 | 25.31870 | 26.12851 |
| U | 238 | 25.32400 | 150856.91000 | 0.900 | 25.54977 | 25.09661 | 25.32571 |
| *TB-1* | 159 | 141895.84000 | 0.00000 | 0.000 | 141639.23000 | 142881.95000 | 141166.34000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:46:15
Tube Number: 12
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14262.77000 | 0.00000 | 0.000 | 14085.94000 | 14436.41000 | 14265.96000 |
| AL | 27 | -7.30600 | 13.33000 | 0.000 | -9.00631 | -5.19129 | -7.71944 |
| CA | 44 | -0.25300 | 3.33000 | 0.000 | -4.01410 | 7.26838 | -4.01410 |
| CR | 52 | 0.37800 | 206.68000 | 73.800 | 0.27162 | 0.16819 | 0.69502 |
| FE | 57 | -0.99300 | 23.33000 | 0.000 | -2.58354 | -1.41944 | 1.02522 |
| K | 39 | 0.81700 | 676.71000 | 610.900 | 2.44525 | -4.78639 | 4.79309 |
| MG | 24 | -0.38200 | 23.33000 | 0.000 | 0.15577 | -0.80967 | -0.49075 |
| MN | 55 | 0.13400 | 33.33000 | 51.800 | 0.17578 | 0.05390 | 0.17277 |
| NA | 23 | 0.83800 | 10306.55000 | 530.700 | 5.34507 | -3.54948 | 0.71922 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.03400 | 10.00000 | 100.400 | 0.00000 | 0.03356 | 0.06792 |
| **GE-1** | 72 | 42678.77000 | 0.00000 | 0.000 | 44436.21000 | 41629.54000 | 41970.57000 |
| MO | 98 | -0.04100 | 96.67000 | 0.000 | -0.12981 | 0.02274 | -0.01559 |
| **IN-1** | 115 | 21193.67000 | 0.00000 | 0.000 | 21293.79000 | 21464.04000 | 20823.17000 |
| AG | 107 | 0.00700 | 10.00000 | 173.200 | 0.00000 | 0.02030 | 0.00000 |
| AS | 75 | 0.03000 | 4.00000 | 286.400 | 0.07769 | -0.06899 | 0.08101 |
| BA | 137 | 0.12600 | 10.00000 | 101.000 | 0.00000 | 0.12366 | 0.25494 |
| CD | 111 | 0.01700 | 2.67000 | 45.000 | 0.01287 | 0.01277 | 0.02633 |
| CO | 59 | -0.00700 | 176.68000 | 0.000 | -0.04092 | -0.05420 | 0.07315 |
| CU | 63 | 0.02400 | 120.00000 | 198.000 | 0.07933 | -0.00556 | -0.00129 |
| NI | 60 | 0.03900 | 20.00000 | 109.800 | 0.03802 | -0.00338 | 0.08188 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.05600 | 23.33000 | 44.900 | 0.08557 | 0.04043 | 0.04314 |
| SN | 120 | 0.11000 | 36.67000 | 58.400 | 0.08907 | 0.05891 | 0.18216 |
| SR | 88 | 0.06300 | 10.00000 | 173.200 | 0.00000 | 0.18895 | 0.00000 |
| ZN | 66 | -0.19400 | 10.00000 | 0.000 | -0.08907 | -0.19417 | -0.29762 |
| **BI-1** | 209 | 119497.87000 | 0.00000 | 0.000 | 118980.98000 | 120540.69000 | 118971.94000 |
| PB | 208 | -0.00500 | 260.01000 | 0.000 | -0.01768 | 0.00366 | 0.00008 |
| TL | 203 | -0.01200 | 30.00000 | 0.000 | 0.00159 | -0.01266 | -0.02636 |
| U | 238 | 0.00300 | 26.67000 | 141.800 | 0.00517 | 0.00508 | -0.00180 |
| *TB-1* | 159 | 142010.51000 | 0.00000 | 0.000 | 142278.16000 | 142931.31000 | 140822.06000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:48:06
Tube Number: 13 Batch: 172121063903A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15009.96000 | 0.00000 | 0.000 | 15336.94000 | 14286.01000 | 15406.92000 |
| AL | 27 | -1.01300 | 66.67000 | 0.000 | 2.96372 | -7.72125 | 1.71898 |
| CA | 44 | 13.88200 | 16.67000 | 157.600 | -4.01410 | 7.38716 | 38.27299 |
| CR | 52 | 0.61300 | 323.35000 | 23.800 | 0.63853 | 0.45628 | 0.74529 |
| FE | 57 | 2.75000 | 56.67000 | 136.400 | 5.18261 | 4.63755 | -1.56984 |
| K | 39 | -1.95200 | 673.37000 | 0.000 | -13.05472 | 0.20296 | 6.99712 |
| MG | 24 | 1.57900 | 90.00000 | 20.300 | 1.81076 | 1.71168 | 1.21372 |
| MN | 55 | 0.34600 | 73.33000 | 14.100 | 0.37492 | 0.28976 | 0.37294 |
| NA | 23 | 22.14000 | 12351.21000 | 55.700 | 9.31437 | 33.91593 | 23.18972 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.03200 | 10.00000 | 97.700 | 0.06317 | 0.03391 | 0.00000 |
| **GE-1** | 72 | 43771.34000 | 0.00000 | 0.000 | 42471.38000 | 44085.53000 | 44757.12000 |
| MO | 98 | -0.13500 | 46.67000 | 0.000 | -0.14381 | -0.14645 | -0.11337 |
| **IN-1** | 115 | 22164.47000 | 0.00000 | 0.000 | 21303.97000 | 21894.23000 | 23295.22000 |
| AG | 107 | 0.01100 | 16.67000 | 93.200 | 0.00000 | 0.01990 | 0.01247 |
| AS | 75 | 0.00900 | 3.33000 | 291.000 | 0.02875 | -0.02143 | 0.02040 |
| BA | 137 | 0.04000 | 3.33000 | 173.200 | 0.00000 | 0.12123 | 0.00000 |
| CD | 111 | 0.00400 | 0.67000 | 173.200 | 0.00000 | 0.01252 | 0.00000 |
| CO | 59 | -0.12400 | 83.33000 | 0.000 | -0.14855 | -0.08073 | -0.14375 |
| CU | 63 | 0.06700 | 156.68000 | 77.100 | 0.12108 | 0.01889 | 0.06014 |
| NI | 60 | 0.07100 | 30.00000 | 159.000 | -0.04413 | 0.07571 | 0.18114 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.05200 | 23.33000 | 127.800 | -0.00333 | 0.12514 | 0.03350 |
| SN | 120 | 0.12400 | 43.33000 | 49.300 | 0.17805 | 0.05775 | 0.13569 |
| SR | 88 | 0.02100 | 3.33000 | 173.200 | 0.00000 | 0.06175 | 0.00000 |
| ZN | 66 | 0.74500 | 103.34000 | 48.500 | 1.16160 | 0.51368 | 0.56021 |
| **BI-1** | 209 | 125484.99000 | 0.00000 | 0.000 | 125115.32000 | 124066.30000 | 127273.34000 |
| PB | 208 | 0.01200 | 350.02000 | 120.000 | 0.00759 | 0.02734 | 0.00018 |
| TL | 203 | -0.01400 | 30.00000 | 0.000 | -0.02006 | -0.02665 | 0.00585 |
| U | 238 | 0.00000 | 10.00000 | 0.000 | -0.00014 | 0.00154 | -0.00180 |
| *TB-1* | 159 | 142583.84000 | 0.00000 | 0.000 | 140337.68000 | 143142.36000 | 144271.48000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:49:55
Tube Number: 14 Batch: 172121063903A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14943.24000 | 0.00000 | 0.000 | 15516.98000 | 14366.15000 | 14946.58000 |
| AL | 27 | 2139.21900 | 17468.77000 | 4.200 | 2077.86275 | 2242.50675 | 2097.28860 |
| CA | 44 | 4120.06100 | 3780.55000 | 3.300 | 3964.35938 | 4225.57717 | 4170.24601 |
| CR | 52 | 51.62800 | 22751.81000 | 5.600 | 49.89972 | 54.94760 | 50.03541 |
| FE | 57 | 1054.01800 | 9169.32000 | 1.800 | 1050.53169 | 1074.97243 | 1036.54904 |
| K | 39 | 10458.41400 | 145975.03000 | 5.700 | 9842.54122 | 11032.85225 | 10499.84733 |
| MG | 24 | 2061.23700 | 68463.92000 | 4.100 | 1971.94577 | 2141.28519 | 2070.48061 |
| MN | 55 | 53.72400 | 9582.90000 | 3.400 | 51.79838 | 55.42680 | 53.94576 |
| NA | 23 | 10057.46200 | 725414.05000 | 3.100 | 9735.29640 | 10355.00440 | 10082.08515 |
| TI | 47 | 251.65600 | 1800.17000 | 9.700 | 279.41630 | 233.18747 | 242.36418 |
| V | 51 | 50.48300 | 15557.18000 | 3.700 | 48.41450 | 52.09014 | 50.94411 |
| **GE-1** | 72 | 44025.77000 | 0.00000 | 0.000 | 42231.55000 | 45499.66000 | 44346.11000 |
| MO | 98 | 52.51300 | 30404.09000 | 0.600 | 52.26332 | 52.42769 | 52.84828 |
| **IN-1** | 115 | 22037.40000 | 0.00000 | 0.000 | 21186.97000 | 22540.09000 | 22385.14000 |
| AG | 107 | 50.91000 | 77152.77000 | 4.800 | 53.69049 | 49.84553 | 49.19328 |
| AS | 75 | 9.88900 | 420.68000 | 12.000 | 11.03695 | 9.95453 | 8.67512 |
| BA | 137 | 52.09400 | 4324.05000 | 1.900 | 52.87636 | 52.41232 | 50.99473 |
| CD | 111 | 5.38100 | 865.36000 | 2.900 | 5.31728 | 5.26560 | 5.55919 |
| CO | 59 | 247.43600 | 214288.02000 | 2.400 | 254.38023 | 243.64400 | 244.28252 |
| CU | 63 | 50.79700 | 37717.36000 | 5.600 | 54.06022 | 49.26100 | 49.07036 |
| NI | 60 | 51.53600 | 12985.20000 | 3.900 | 53.84854 | 50.34185 | 50.41623 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 6.12700 | 1433.45000 | 18.800 | 7.00974 | 4.82252 | 6.54736 |
| SN | 120 | 50.10400 | 17459.46000 | 3.200 | 50.87162 | 48.26717 | 51.17435 |
| SR | 88 | 39.05900 | 6368.13000 | 0.700 | 38.74022 | 39.29427 | 39.14352 |
| ZN | 66 | 513.03200 | 50906.34000 | 3.800 | 534.41943 | 495.79849 | 508.87898 |
| **BI-1** | 209 | 125969.89000 | 0.00000 | 0.000 | 125165.88000 | 126155.41000 | 126588.37000 |
| PB | 208 | 16.05900 | 76872.69000 | 1.500 | 15.94774 | 16.33622 | 15.89349 |
| TL | 203 | 1.95200 | 3007.07000 | 5.700 | 2.07923 | 1.87808 | 1.89783 |
| U | 238 | 0.00000 | 10.00000 | 0.000 | -0.00014 | -0.00015 | -0.00016 |
| *TB-1* | 159 | 145462.79000 | 0.00000 | 0.000 | 141772.23000 | 149145.92000 | 145470.22000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:51:45
Tube Number: 15 Batch: 172121063903A
Sample Number: **9125956** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13715.69000 | 0.00000 | 0.000 | 13855.78000 | 12584.90000 | 14706.39000 |
| AL | 27 | 87.94700 | 720.04000 | 15.600 | 95.67086 | 96.03177 | 72.13858 |
| CA | 44 | 4749.58700 | 3990.60000 | 6.300 | 4592.99021 | 5096.03062 | 4559.73962 |
| CR | 52 | 1.40400 | 613.37000 | 27.300 | 0.96393 | 1.58522 | 1.66326 |
| FE | 57 | 188.38400 | 1520.12000 | 12.100 | 185.26989 | 212.58172 | 167.30128 |
| K | 39 | 2877.49300 | 37292.35000 | 4.700 | 2846.90996 | 3025.72425 | 2759.84499 |
| MG | 24 | 2978.13200 | 90559.15000 | 6.700 | 2931.07583 | 3196.69809 | 2806.62296 |
| MN | 55 | 6.71200 | 1093.41000 | 27.500 | 6.89351 | 8.46156 | 4.78158 |
| NA | 23 | 4192.62500 | 282216.76000 | 9.200 | 4139.94949 | 4602.53208 | 3835.39265 |
| TI | 47 | 0.59400 | 6.67000 | 323.900 | -0.51710 | 2.81739 | -0.51710 |
| V | 51 | 1.39900 | 396.69000 | 3.300 | 1.43360 | 1.34740 | 1.41656 |
| **GE-1** | 72 | 39468.12000 | 0.00000 | 0.000 | 40447.03000 | 38622.78000 | 39334.55000 |
| MO | 98 | -0.00500 | 110.01000 | 0.000 | 0.06747 | -0.17619 | 0.09489 |
| **IN-1** | 115 | 20255.80000 | 0.00000 | 0.000 | 19551.49000 | 20532.97000 | 20682.93000 |
| AG | 107 | 0.01700 | 23.33000 | 88.300 | 0.02229 | 0.00000 | 0.02809 |
| AS | 75 | 0.49600 | 22.00000 | 7.900 | 0.46352 | 0.53948 | 0.48473 |
| BA | 137 | 130.93500 | 9983.44000 | 6.000 | 138.11525 | 122.45913 | 132.22927 |
| CD | 111 | 0.05000 | 7.33000 | 55.600 | 0.04206 | 0.08009 | 0.02650 |
| CO | 59 | 0.28000 | 396.69000 | 30.600 | 0.37868 | 0.22608 | 0.23515 |
| CU | 63 | 0.75600 | 613.37000 | 25.300 | 0.75306 | 0.56539 | 0.94835 |
| NI | 60 | 1.91400 | 453.36000 | 0.600 | 1.92424 | 1.91534 | 1.90118 |
| RB | 85 | 5.93700 | 583.38000 | 16.500 | 5.17673 | 7.04176 | 5.59257 |
| SB | 121 | 0.07800 | 26.67000 | 139.600 | 0.14585 | 0.13660 | -0.04774 |
| SN | 120 | 0.11400 | 36.67000 | 29.500 | 0.09700 | 0.09237 | 0.15283 |
| SR | 88 | 79.66000 | 11934.47000 | 0.500 | 80.09989 | 79.63086 | 79.24986 |
| ZN | 66 | 4.83500 | 466.69000 | 19.000 | 5.72164 | 4.89324 | 3.88933 |
| **BI-1** | 209 | 116620.25000 | 0.00000 | 0.000 | 116158.22000 | 115556.80000 | 118145.72000 |
| PB | 208 | 0.27700 | 1496.76000 | 14.900 | 0.23131 | 0.28771 | 0.31135 |
| TL | 203 | 0.04500 | 110.01000 | 82.700 | 0.05971 | 0.00263 | 0.07222 |
| U | 238 | 0.03400 | 203.35000 | 42.400 | 0.04994 | 0.03228 | 0.02101 |
| *TB-1* | 159 | 133174.74000 | 0.00000 | 0.000 | 131195.60000 | 132667.70000 | 135660.91000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:53:34
Tube Number: 16 Batch: 172121063903A
Sample Number: **9125956** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14336.16000 | 0.00000 | 0.000 | 14896.49000 | 14095.91000 | 14016.07000 |
| AL | 27 | 263.41400 | 2123.55000 | 13.000 | 241.19205 | 246.28669 | 302.76333 |
| CA | 44 | 5030.14700 | 4427.39000 | 3.800 | 4818.67365 | 5185.03082 | 5086.73685 |
| CR | 52 | 5.54500 | 2383.60000 | 12.900 | 4.73963 | 5.78594 | 6.11023 |
| FE | 57 | 403.87000 | 3387.15000 | 5.400 | 379.19287 | 411.95163 | 420.46425 |
| K | 39 | 3273.57900 | 44341.58000 | 1.800 | 3206.06878 | 3309.24715 | 3305.42231 |
| MG | 24 | 3136.62400 | 99949.78000 | 3.900 | 2995.58996 | 3216.19332 | 3198.08996 |
| MN | 55 | 11.36600 | 1953.51000 | 5.900 | 10.85222 | 12.12599 | 11.11911 |
| NA | 23 | 4482.18300 | 315865.68000 | 3.500 | 4299.91715 | 4589.61830 | 4557.01294 |
| TI | 47 | 22.37000 | 156.68000 | 14.000 | 24.83782 | 18.83523 | 23.43648 |
| V | 51 | 2.18900 | 646.71000 | 9.600 | 1.98393 | 2.40593 | 2.17768 |
| **GE-1** | 72 | 41793.31000 | 0.00000 | 0.000 | 42300.99000 | 40336.61000 | 42742.33000 |
| MO | 98 | 0.82300 | 566.70000 | 22.500 | 0.68685 | 1.03373 | 0.74901 |
| **IN-1** | 115 | 21333.38000 | 0.00000 | 0.000 | 21732.51000 | 21398.02000 | 20869.60000 |
| AG | 107 | 0.93300 | 1370.11000 | 6.000 | 0.93586 | 0.87581 | 0.98848 |
| AS | 75 | 4.28700 | 178.67000 | 11.700 | 4.81750 | 3.82346 | 4.22134 |
| BA | 137 | 133.22600 | 10700.43000 | 5.500 | 125.10856 | 135.38051 | 139.18953 |
| CD | 111 | 0.99400 | 154.67000 | 15.400 | 0.87024 | 1.16565 | 0.94563 |
| CO | 59 | 1.33300 | 1303.43000 | 17.900 | 1.60712 | 1.18359 | 1.20693 |
| CU | 63 | 4.40800 | 3263.77000 | 6.500 | 4.15161 | 4.35767 | 4.71394 |
| NI | 60 | 5.93100 | 1456.79000 | 15.700 | 5.10758 | 6.94587 | 5.73963 |
| RB | 85 | 14.09300 | 1456.79000 | 5.800 | 14.73193 | 14.38327 | 13.16359 |
| SB | 121 | 2.28700 | 526.70000 | 11.500 | 2.26017 | 2.56158 | 2.03815 |
| SN | 120 | 3.69600 | 1246.75000 | 15.900 | 3.20009 | 4.34334 | 3.54442 |
| SR | 88 | 79.87700 | 12598.31000 | 4.000 | 77.91232 | 78.11918 | 83.59804 |
| ZN | 66 | 32.15600 | 3120.40000 | 9.200 | 31.99141 | 35.19496 | 29.28274 |
| **BI-1** | 209 | 121808.24000 | 0.00000 | 0.000 | 120763.12000 | 121762.10000 | 122899.50000 |
| PB | 208 | 2.25500 | 10685.21000 | 1.800 | 2.23306 | 2.30105 | 2.23187 |
| TL | 203 | 1.06600 | 1610.15000 | 3.400 | 1.09582 | 1.02510 | 1.07619 |
| U | 238 | 10.19800 | 59955.76000 | 2.100 | 10.40100 | 9.98258 | 10.20997 |
| *TB-1* | 159 | 139414.97000 | 0.00000 | 0.000 | 141297.37000 | 138786.19000 | 138161.36000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:55:23
Tube Number: 17 Batch: 172121063903A
Sample Number: **9125956** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14559.64000 | 0.00000 | 0.000 | 15076.77000 | 14015.80000 | 14586.35000 |
| AL | 27 | 103.26700 | 890.06000 | 5.500 | 98.15496 | 102.33606 | 109.31077 |
| CA | 44 | 4675.00100 | 4180.64000 | 6.200 | 4760.99571 | 4912.46092 | 4351.54526 |
| CR | 52 | 1.54600 | 713.38000 | 31.500 | 1.37195 | 1.16959 | 2.09677 |
| FE | 57 | 211.34200 | 1813.51000 | 9.800 | 188.24937 | 228.61725 | 217.16047 |
| K | 39 | 2916.02200 | 40134.67000 | 7.300 | 2697.22195 | 3121.00983 | 2929.83321 |
| MG | 24 | 2966.07500 | 96001.52000 | 3.100 | 2877.60830 | 3062.32548 | 2958.29205 |
| MN | 55 | 6.56200 | 1150.08000 | 19.100 | 5.60747 | 6.09650 | 7.98150 |
| NA | 23 | 4102.50400 | 294506.64000 | 3.200 | 3974.48317 | 4235.39721 | 4097.63037 |
| TI | 47 | 1.37000 | 13.33000 | 119.300 | 2.26627 | -0.51710 | 2.35986 |
| V | 51 | 1.01600 | 306.68000 | 17.700 | 1.18897 | 0.82959 | 1.02966 |
| **GE-1** | 72 | 43123.29000 | 0.00000 | 0.000 | 44336.02000 | 42231.22000 | 42802.62000 |
| MO | 98 | -0.09300 | 70.00000 | 0.000 | 0.00818 | -0.14340 | -0.14437 |
| **IN-1** | 115 | 21577.28000 | 0.00000 | 0.000 | 21543.87000 | 20983.40000 | 22204.56000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.84900 | 38.00000 | 21.700 | 0.65591 | 1.02259 | 0.86878 |
| BA | 137 | 126.52800 | 10276.83000 | 9.000 | 115.47750 | 138.30905 | 125.79796 |
| CD | 111 | 0.00800 | 1.33000 | 86.700 | 0.00000 | 0.01306 | 0.01234 |
| CO | 59 | 0.24500 | 393.35000 | 34.900 | 0.16968 | 0.33782 | 0.22687 |
| CU | 63 | 0.77200 | 663.37000 | 19.600 | 0.69769 | 0.94686 | 0.67266 |
| NI | 60 | 1.65800 | 420.02000 | 28.000 | 2.18881 | 1.33143 | 1.45272 |
| RB | 85 | 5.98600 | 623.37000 | 17.400 | 5.84842 | 7.08747 | 5.02319 |
| SB | 121 | 0.10100 | 33.33000 | 127.700 | 0.17187 | 0.17774 | -0.04774 |
| SN | 120 | 0.09700 | 33.33000 | 66.600 | 0.05869 | 0.06026 | 0.17083 |
| SR | 88 | 78.90600 | 12584.99000 | 4.300 | 77.33888 | 82.75759 | 76.62237 |
| ZN | 66 | 5.00900 | 513.36000 | 25.600 | 5.06192 | 6.26333 | 3.70240 |
| **BI-1** | 209 | 122751.84000 | 0.00000 | 0.000 | 120864.03000 | 121862.63000 | 125528.87000 |
| PB | 208 | 0.27000 | 1543.43000 | 7.500 | 0.25705 | 0.29345 | 0.25992 |
| TL | 203 | 0.05900 | 136.67000 | 45.400 | 0.09048 | 0.04171 | 0.04613 |
| U | 238 | 0.02100 | 136.67000 | 66.400 | 0.01878 | 0.00841 | 0.03617 |
| *TB-1* | 159 | 142474.20000 | 0.00000 | 0.000 | 138846.56000 | 142025.51000 | 146550.53000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:57:13
Tube Number: 18 Batch: 172121063903A
Sample Number: **9125956** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14603.02000 | 0.00000 | 0.000 | 14656.38000 | 14806.52000 | 14346.17000 |
| AL | 27 | 2166.46100 | 17302.02000 | 2.500 | 2210.44371 | 2106.03894 | 2182.90024 |
| CA | 44 | 8680.77400 | 7785.27000 | 8.400 | 9466.91720 | 8028.23135 | 8547.17303 |
| CR | 52 | 52.43500 | 22604.94000 | 2.400 | 53.16160 | 50.96830 | 53.17647 |
| FE | 57 | 1221.70700 | 10376.75000 | 6.800 | 1224.22283 | 1137.23384 | 1303.66571 |
| K | 39 | 13261.10900 | 180927.48000 | 1.800 | 13123.43535 | 13122.38116 | 13537.51051 |
| MG | 24 | 5024.17600 | 163191.13000 | 1.500 | 5099.14384 | 4953.07028 | 5020.31368 |
| MN | 55 | 60.52800 | 10560.13000 | 5.600 | 64.45459 | 58.70373 | 58.42662 |
| NA | 23 | 14161.89900 | 994629.75000 | 0.800 | 14216.99688 | 14037.45408 | 14231.24668 |
| TI | 47 | 292.57200 | 2036.87000 | 15.100 | 305.87765 | 243.24318 | 328.59396 |
| V | 51 | 50.74000 | 15293.60000 | 2.200 | 51.85276 | 49.65722 | 50.70971 |
| **GE-1** | 72 | 44420.02000 | 0.00000 | 0.000 | 44847.70000 | 44085.34000 | 44327.03000 |
| MO | 98 | 48.07400 | 28093.51000 | 1.500 | 48.75867 | 48.11329 | 47.34968 |
| **IN-1** | 115 | 22095.31000 | 0.00000 | 0.000 | 22015.99000 | 22178.08000 | 22091.85000 |
| AG | 107 | 48.64200 | 73982.04000 | 2.500 | 49.85184 | 47.42263 | 48.65149 |
| AS | 75 | 10.04700 | 429.34000 | 9.100 | 10.94978 | 10.07120 | 9.12110 |
| BA | 137 | 172.11100 | 14326.60000 | 1.800 | 174.05066 | 168.58701 | 173.69594 |
| CD | 111 | 5.09900 | 822.03000 | 3.900 | 5.26645 | 4.88186 | 5.14911 |
| CO | 59 | 236.83600 | 205767.80000 | 1.000 | 238.19743 | 238.33660 | 233.97384 |
| CU | 63 | 50.59100 | 37710.90000 | 1.700 | 50.28803 | 51.58460 | 49.89974 |
| NI | 60 | 50.41500 | 12748.32000 | 3.800 | 48.20098 | 51.24289 | 51.79970 |
| RB | 85 | 6.32400 | 676.70000 | 11.000 | 6.19207 | 7.07810 | 5.70326 |
| SB | 121 | 7.11700 | 1673.49000 | 13.200 | 6.22817 | 8.10255 | 7.02050 |
| SN | 120 | 49.24100 | 17209.25000 | 4.300 | 51.14121 | 49.62578 | 46.95504 |
| SR | 88 | 117.21600 | 19157.81000 | 2.600 | 114.95468 | 116.06763 | 120.62436 |
| ZN | 66 | 501.65800 | 49950.78000 | 0.400 | 503.05974 | 502.49449 | 499.42048 |
| **BI-1** | 209 | 127405.55000 | 0.00000 | 0.000 | 126930.84000 | 128313.39000 | 126972.41000 |
| PB | 208 | 15.76900 | 76344.62000 | 1.800 | 16.08381 | 15.56120 | 15.66155 |
| TL | 203 | 2.01500 | 3140.43000 | 11.300 | 1.84019 | 2.27367 | 1.93130 |
| U | 238 | 0.02200 | 146.68000 | 4.000 | 0.02106 | 0.02243 | 0.02269 |
| *TB-1* | 159 | 143924.85000 | 0.00000 | 0.000 | 144109.70000 | 143435.15000 | 144229.70000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 10:59:04
Tube Number: 19 Batch: 172121063903A
Sample Number: **9125956** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15413.82000 | 0.00000 | 0.000 | 15537.23000 | 15377.14000 | 15327.10000 |
| AL | 27 | 2053.17400 | 17315.49000 | 2.300 | 2079.93299 | 2080.12536 | 1999.46315 |
| CA | 44 | 8715.94700 | 8252.19000 | 2.700 | 8814.67933 | 8450.72681 | 8882.43625 |
| CR | 52 | 48.94300 | 22274.51000 | 4.300 | 46.90368 | 48.85184 | 51.07429 |
| FE | 57 | 1142.02100 | 10249.97000 | 4.200 | 1197.89076 | 1112.82402 | 1115.34855 |
| K | 39 | 12746.77300 | 183617.27000 | 1.300 | 12558.15719 | 12873.46876 | 12808.69344 |
| MG | 24 | 4760.72600 | 163222.17000 | 1.100 | 4705.81724 | 4814.63354 | 4761.72820 |
| MN | 55 | 55.94400 | 10303.36000 | 3.800 | 58.42292 | 54.55981 | 54.84792 |
| NA | 23 | 13350.20400 | 990305.17000 | 1.600 | 13114.80990 | 13396.88133 | 13538.91941 |
| TI | 47 | 231.44400 | 1703.48000 | 9.000 | 210.16945 | 251.93889 | 232.22466 |
| V | 51 | 48.70500 | 15493.90000 | 3.300 | 46.85410 | 49.35977 | 49.90053 |
| **GE-1** | 72 | 43133.05000 | 0.00000 | 0.000 | 43092.61000 | 43854.69000 | 42451.85000 |
| MO | 98 | 49.98500 | 28357.27000 | 0.400 | 49.77733 | 50.05882 | 50.11749 |
| **IN-1** | 115 | 22801.16000 | 0.00000 | 0.000 | 22323.06000 | 22880.52000 | 23199.89000 |
| AG | 107 | 47.40800 | 74374.07000 | 4.200 | 49.33683 | 47.52895 | 45.35929 |
| AS | 75 | 10.30900 | 454.01000 | 10.000 | 11.49780 | 9.66889 | 9.75922 |
| BA | 137 | 173.59100 | 14910.43000 | 1.100 | 174.63203 | 174.67361 | 171.46864 |
| CD | 111 | 5.02200 | 835.36000 | 2.500 | 5.15718 | 4.91173 | 4.99771 |
| CO | 59 | 236.13600 | 211633.42000 | 3.000 | 244.23693 | 233.10953 | 231.06126 |
| CU | 63 | 48.29600 | 37145.85000 | 3.500 | 49.83370 | 46.45501 | 48.59992 |
| NI | 60 | 47.54800 | 12404.70000 | 2.700 | 48.83152 | 46.26327 | 47.55026 |
| RB | 85 | 5.99400 | 660.04000 | 23.300 | 7.58745 | 4.96506 | 5.43096 |
| SB | 121 | 5.62700 | 1366.78000 | 7.400 | 5.71785 | 5.99099 | 5.17355 |
| SN | 120 | 50.22300 | 18110.30000 | 2.500 | 50.69334 | 51.17239 | 48.80458 |
| SR | 88 | 112.11800 | 18904.12000 | 2.400 | 114.88862 | 111.91163 | 109.55496 |
| ZN | 66 | 491.45500 | 50478.78000 | 3.100 | 507.30916 | 489.58701 | 477.46863 |
| **BI-1** | 209 | 124871.79000 | 0.00000 | 0.000 | 125860.64000 | 123799.14000 | 124955.59000 |
| PB | 208 | 16.09300 | 76347.79000 | 3.600 | 15.68267 | 16.76175 | 15.83465 |
| TL | 203 | 2.27100 | 3460.52000 | 10.700 | 2.33187 | 2.47870 | 2.00294 |
| U | 238 | 0.02500 | 163.34000 | 24.100 | 0.02949 | 0.01829 | 0.02806 |
| *TB-1* | 159 | 143499.04000 | 0.00000 | 0.000 | 144040.12000 | 145391.37000 | 141065.64000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:00:52
Tube Number: 20 Batch: 172121063903A
Sample Number: **9125956** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15103.52000 | 0.00000 | 0.000 | 15036.72000 | 15216.95000 | 15056.90000 |
| AL | 27 | 25.44200 | 283.35000 | 37.400 | 17.85476 | 22.36238 | 36.10896 |
| CA | 44 | 898.57000 | 836.72000 | 20.400 | 1100.94124 | 852.32878 | 742.43862 |
| CR | 52 | 0.67900 | 353.36000 | 43.200 | 0.60841 | 1.00139 | 0.42709 |
| FE | 57 | 62.38900 | 580.03000 | 3.800 | 63.81993 | 59.62012 | 63.72815 |
| K | 39 | 609.19100 | 9269.39000 | 4.700 | 617.24663 | 577.55860 | 632.76641 |
| MG | 24 | 570.38900 | 19193.94000 | 4.200 | 562.58387 | 551.17751 | 597.40641 |
| MN | 55 | 1.21400 | 230.01000 | 15.600 | 1.33111 | 1.31461 | 0.99531 |
| NA | 23 | 769.62300 | 66172.48000 | 1.600 | 783.85726 | 759.90473 | 765.10624 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.27800 | 86.67000 | 26.400 | 0.32221 | 0.31836 | 0.19305 |
| **GE-1** | 72 | 43223.28000 | 0.00000 | 0.000 | 42271.03000 | 43674.38000 | 43724.43000 |
| MO | 98 | -0.11600 | 56.67000 | 0.000 | -0.14347 | -0.11083 | -0.09348 |
| **IN-1** | 115 | 22434.75000 | 0.00000 | 0.000 | 22485.12000 | 22464.41000 | 22354.72000 |
| AG | 107 | 0.02600 | 40.00000 | 24.900 | 0.03230 | 0.01940 | 0.02599 |
| AS | 75 | 0.17900 | 10.67000 | 79.700 | 0.02362 | 0.20909 | 0.30360 |
| BA | 137 | 25.83300 | 2183.57000 | 8.200 | 27.98025 | 23.75150 | 25.76840 |
| CD | 111 | 0.00400 | 0.67000 | 173.200 | 0.00000 | 0.00000 | 0.01226 |
| CO | 59 | 0.01800 | 210.01000 | 167.800 | -0.01646 | 0.04039 | 0.03028 |
| CU | 63 | 0.17800 | 243.35000 | 62.800 | 0.30548 | 0.13385 | 0.09532 |
| NI | 60 | 0.48800 | 136.67000 | 27.800 | 0.50043 | 0.61777 | 0.34711 |
| RB | 85 | 1.62700 | 176.68000 | 28.000 | 1.83722 | 1.10338 | 1.94033 |
| SB | 121 | 0.02200 | 16.67000 | 286.700 | 0.07851 | 0.03650 | -0.04774 |
| SN | 120 | 0.10300 | 36.67000 | 68.600 | 0.02812 | 0.16885 | 0.11312 |
| SR | 88 | 15.64800 | 2596.98000 | 5.500 | 15.69436 | 16.49116 | 14.75760 |
| ZN | 66 | 1.02200 | 133.34000 | 14.500 | 1.18370 | 0.98738 | 0.89427 |
| **BI-1** | 209 | 126269.34000 | 0.00000 | 0.000 | 124340.99000 | 127546.41000 | 126920.61000 |
| PB | 208 | 0.02300 | 406.69000 | 78.100 | 0.02077 | 0.00626 | 0.04198 |
| TL | 203 | -0.00700 | 40.00000 | 0.000 | 0.00008 | -0.00076 | -0.02025 |
| U | 238 | 0.00600 | 46.67000 | 105.300 | 0.00320 | 0.00145 | 0.01290 |
| *TB-1* | 159 | 145604.16000 | 0.00000 | 0.000 | 142688.85000 | 147399.12000 | 146724.50000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:02:42
Tube Number: 21 Batch: 172121063903A
Sample Number: **9125786** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13959.24000 | 0.00000 | 0.000 | 13685.66000 | 14486.35000 | 13705.70000 |
| AL | 27 | 88.53900 | 740.05000 | 14.400 | 102.33912 | 77.17426 | 86.10268 |
| CA | 44 | 42256.94100 | 36183.53000 | 4.700 | 43922.41507 | 40074.51533 | 42773.89185 |
| CR | 52 | 1.20900 | 543.36000 | 15.400 | 1.07653 | 1.12790 | 1.42151 |
| FE | 57 | 890.25100 | 7245.06000 | 2.400 | 870.33698 | 912.47792 | 887.93944 |
| K | 39 | 5269.29400 | 69044.24000 | 5.600 | 5399.50975 | 4928.68032 | 5479.69058 |
| MG | 24 | 12228.38300 | 379315.16000 | 4.000 | 12570.28440 | 11661.82818 | 12453.03610 |
| MN | 55 | 43.01500 | 7171.66000 | 3.200 | 44.46319 | 41.71312 | 42.86936 |
| NA | 23 | 10934.79600 | 735921.13000 | 3.500 | 11236.23048 | 10509.27419 | 11058.88246 |
| TI | 47 | 1.01500 | 10.00000 | 150.900 | 1.01605 | -0.51710 | 2.54471 |
| V | 51 | 0.18500 | 53.33000 | 20.500 | 0.14159 | 0.20065 | 0.21208 |
| **GE-1** | 72 | 42668.92000 | 0.00000 | 0.000 | 43845.03000 | 42371.21000 | 41790.51000 |
| MO | 98 | 2.49000 | 1513.46000 | 14.900 | 2.77996 | 2.07312 | 2.61660 |
| **IN-1** | 115 | 21797.47000 | 0.00000 | 0.000 | 22494.94000 | 21844.37000 | 21053.09000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.15400 | 9.33000 | 116.800 | 0.02358 | 0.35997 | 0.07937 |
| BA | 137 | 35.49400 | 2917.04000 | 7.300 | 38.11798 | 32.93290 | 35.43145 |
| CD | 111 | 0.07200 | 11.33000 | 47.100 | 0.03655 | 0.07529 | 0.10415 |
| CO | 59 | 0.04700 | 226.68000 | 235.300 | -0.05049 | 0.02448 | 0.16669 |
| CU | 63 | 0.53400 | 496.69000 | 15.700 | 0.45065 | 0.61807 | 0.53375 |
| NI | 60 | 0.59700 | 160.01000 | 25.100 | 0.73351 | 0.43633 | 0.62060 |
| RB | 85 | 4.34600 | 460.03000 | 16.300 | 4.68290 | 4.82237 | 3.53195 |
| SB | 121 | 0.17000 | 50.00000 | 67.700 | 0.07845 | 0.29881 | 0.13204 |
| SN | 120 | 0.14500 | 50.00000 | 38.200 | 0.19673 | 0.08682 | 0.15014 |
| SR | 88 | 369.63400 | 59572.20000 | 2.100 | 363.86693 | 366.69185 | 378.34443 |
| ZN | 66 | 3.11700 | 336.68000 | 24.500 | 3.55206 | 3.56507 | 2.23364 |
| **BI-1** | 209 | 123457.09000 | 0.00000 | 0.000 | 123261.77000 | 122757.91000 | 124351.59000 |
| PB | 208 | 0.33700 | 1866.79000 | 12.800 | 0.38159 | 0.29517 | 0.33521 |
| TL | 203 | -0.01800 | 23.33000 | 0.000 | -0.00637 | -0.02658 | -0.01998 |
| U | 238 | 0.07800 | 476.70000 | 10.200 | 0.08731 | 0.07248 | 0.07486 |
| *TB-1* | 159 | 138409.40000 | 0.00000 | 0.000 | 138907.96000 | 137495.05000 | 138825.19000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:04:32
Tube Number: 22 Batch: 172121063903A
Sample Number: **9125787** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14599.64000 | 0.00000 | 0.000 | 14456.29000 | 14716.38000 | 14626.24000 |
| AL | 27 | 9.87700 | 150.01000 | 80.400 | 16.39340 | 12.20207 | 1.03502 |
| CA | 44 | 1847.38500 | 1660.14000 | 8.900 | 1674.88688 | 1866.61575 | 2000.65186 |
| CR | 52 | 0.98600 | 473.36000 | 8.800 | 0.89568 | 0.99317 | 1.06961 |
| FE | 57 | 70.56700 | 630.03000 | 1.600 | 71.30265 | 71.14629 | 69.25278 |
| K | 39 | 1644.80900 | 23035.29000 | 2.600 | 1684.53406 | 1651.70557 | 1598.18841 |
| MG | 24 | 1711.08100 | 55584.46000 | 2.200 | 1754.98812 | 1689.91338 | 1688.34008 |
| MN | 55 | 34.88200 | 6087.94000 | 5.000 | 34.26134 | 33.54112 | 36.84288 |
| NA | 23 | 4478.98400 | 321669.89000 | 1.300 | 4545.62945 | 4435.74222 | 4455.58143 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.11000 | 33.33000 | 95.700 | 0.06702 | 0.23044 | 0.03312 |
| **GE-1** | 72 | 43624.35000 | 0.00000 | 0.000 | 42922.28000 | 44737.32000 | 43213.44000 |
| MO | 98 | 0.22200 | 250.01000 | 23.400 | 0.21124 | 0.17685 | 0.27904 |
| **IN-1** | 115 | 22410.84000 | 0.00000 | 0.000 | 22044.01000 | 22724.24000 | 22464.28000 |
| AG | 107 | 0.00600 | 10.00000 | 173.200 | 0.00000 | 0.00000 | 0.01940 |
| AS | 75 | 0.10000 | 7.33000 | 148.300 | -0.06899 | 0.16009 | 0.20909 |
| BA | 137 | 71.01400 | 5994.64000 | 2.300 | 72.26060 | 69.16287 | 71.61919 |
| CD | 111 | 0.03300 | 5.33000 | 57.400 | 0.03730 | 0.01206 | 0.04881 |
| CO | 59 | 0.59300 | 716.71000 | 15.900 | 0.56502 | 0.69836 | 0.51634 |
| CU | 63 | 1.35600 | 1130.08000 | 8.900 | 1.43386 | 1.21655 | 1.41756 |
| NI | 60 | 1.21800 | 323.35000 | 24.200 | 1.10654 | 0.99508 | 1.55221 |
| RB | 85 | 3.10400 | 336.68000 | 22.500 | 3.56057 | 3.45399 | 2.29863 |
| SB | 121 | -0.02000 | 6.67000 | 0.000 | -0.04774 | 0.03554 | -0.04774 |
| SN | 120 | 0.13200 | 46.67000 | 75.000 | 0.14339 | 0.02782 | 0.22514 |
| SR | 88 | 33.54800 | 5561.08000 | 4.300 | 34.34977 | 34.39286 | 31.90145 |
| ZN | 66 | 2.78100 | 310.02000 | 26.500 | 3.63081 | 2.34061 | 2.37124 |
| **BI-1** | 209 | 126693.03000 | 0.00000 | 0.000 | 126386.93000 | 126496.62000 | 127195.55000 |
| PB | 208 | 0.07200 | 643.37000 | 10.300 | 0.08005 | 0.06531 | 0.07084 |
| TL | 203 | 0.01500 | 73.33000 | 26.100 | 0.01270 | 0.01923 | 0.01241 |
| U | 238 | 0.00800 | 60.00000 | 35.600 | 0.01132 | 0.00640 | 0.00635 |
| *TB-1* | 159 | 143940.21000 | 0.00000 | 0.000 | 144839.02000 | 143184.00000 | 143797.62000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:06:22
Tube Number: 23
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15256.91000 | 0.00000 | 0.000 | 15266.85000 | 15217.04000 | 15286.84000 |
| AL | 27 | 2428.65600 | 20258.49000 | 4.000 | 2538.24914 | 2394.36162 | 2353.35744 |
| CA | 44 | 2608.55300 | 2446.93000 | 7.200 | 2535.41879 | 2822.09122 | 2468.14788 |
| CR | 52 | 245.09700 | 110224.25000 | 2.400 | 250.23512 | 246.45248 | 238.60417 |
| FE | 57 | 2382.15700 | 21123.17000 | 3.700 | 2462.09251 | 2286.47187 | 2397.90662 |
| K | 39 | 2404.42300 | 34864.19000 | 2.200 | 2455.73736 | 2348.70458 | 2408.82650 |
| MG | 24 | 2377.77400 | 80716.40000 | 1.400 | 2375.69545 | 2345.46755 | 2412.15904 |
| MN | 55 | 251.08600 | 45725.70000 | 0.600 | 252.75849 | 249.55608 | 250.94479 |
| NA | 23 | 2265.44100 | 175450.91000 | 2.200 | 2279.91278 | 2305.29672 | 2211.11380 |
| TI | 47 | 240.20700 | 1750.16000 | 8.800 | 231.77018 | 264.24839 | 224.60362 |
| V | 51 | 239.27400 | 75350.82000 | 3.400 | 240.52936 | 246.62446 | 230.66791 |
| **GE-1** | 72 | 44162.44000 | 0.00000 | 0.000 | 46080.56000 | 43233.62000 | 43173.14000 |
| MO | 98 | 24.83800 | 14473.12000 | 4.900 | 23.49017 | 25.82922 | 25.19318 |
| **IN-1** | 115 | 22707.46000 | 0.00000 | 0.000 | 23260.66000 | 22690.77000 | 22170.96000 |
| AG | 107 | 23.58500 | 36853.52000 | 3.300 | 22.71908 | 24.21346 | 23.82243 |
| AS | 75 | 241.74900 | 10540.51000 | 5.000 | 227.82227 | 247.68672 | 249.73686 |
| BA | 137 | 253.67200 | 21684.75000 | 5.300 | 238.18951 | 260.22004 | 262.60794 |
| CD | 111 | 24.53200 | 4061.84000 | 4.500 | 23.35802 | 24.70581 | 25.53243 |
| CO | 59 | 236.24700 | 210855.63000 | 2.600 | 229.51351 | 237.48248 | 241.74634 |
| CU | 63 | 230.92900 | 176436.78000 | 2.500 | 225.09998 | 230.90629 | 236.78119 |
| NI | 60 | 236.15400 | 61315.81000 | 1.700 | 232.27933 | 240.12435 | 236.05728 |
| RB | 85 | 24.24000 | 2666.98000 | 5.400 | 25.04293 | 24.94352 | 22.73295 |
| SB | 121 | 25.50300 | 6124.69000 | 7.200 | 23.38992 | 26.31471 | 26.80466 |
| SN | 120 | 25.72800 | 9242.84000 | 1.200 | 26.04522 | 25.72361 | 25.41392 |
| SR | 88 | 22.99800 | 3860.59000 | 8.400 | 21.15856 | 25.02723 | 22.80850 |
| ZN | 66 | 241.59500 | 24724.33000 | 5.100 | 237.84419 | 231.67553 | 255.26502 |
| **BI-1** | 209 | 129211.83000 | 0.00000 | 0.000 | 128694.72000 | 126969.55000 | 131971.22000 |
| PB | 208 | 25.14000 | 123196.11000 | 4.300 | 25.59406 | 25.92235 | 23.90259 |
| TL | 203 | 25.46100 | 39623.35000 | 0.400 | 25.35506 | 25.45701 | 25.57076 |
| U | 238 | 24.52300 | 152866.75000 | 3.300 | 24.87642 | 25.08604 | 23.60583 |
| *TB-1* | 159 | 147040.69000 | 0.00000 | 0.000 | 145664.77000 | 148432.46000 | 147024.83000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:08:12
Tube Number: 24
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15200.24000 | 0.00000 | 0.000 | 15257.03000 | 15356.95000 | 14986.73000 |
| AL | 27 | -5.35300 | 30.00000 | 0.000 | -5.39649 | -9.00631 | -1.65646 |
| CA | 44 | 3.08000 | 6.67000 | 199.500 | 6.66154 | 6.59208 | -4.01410 |
| CR | 52 | 0.53500 | 290.02000 | 30.000 | 0.64247 | 0.35021 | 0.61082 |
| FE | 57 | -2.28300 | 13.33000 | 0.000 | -3.80705 | -2.68481 | -0.35715 |
| K | 39 | 6.55300 | 803.39000 | 110.100 | 2.63041 | 14.87882 | 2.14863 |
| MG | 24 | -0.13500 | 33.33000 | 0.000 | 0.05775 | -0.24273 | -0.22103 |
| MN | 55 | 0.06500 | 23.33000 | 173.700 | 0.10259 | 0.15608 | -0.06219 |
| NA | 23 | -40.62300 | 7988.67000 | 0.000 | -47.03270 | -33.74769 | -41.08866 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.02100 | 6.67000 | 173.200 | 0.06351 | 0.00000 | 0.00000 |
| **GE-1** | 72 | 44316.23000 | 0.00000 | 0.000 | 44817.60000 | 43694.58000 | 44436.51000 |
| MO | 98 | -0.15300 | 36.67000 | 0.000 | -0.11350 | -0.14583 | -0.19854 |
| **IN-1** | 115 | 23049.38000 | 0.00000 | 0.000 | 23045.95000 | 22976.21000 | 23125.98000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.06700 | 6.00000 | 135.700 | 0.15689 | 0.06695 | -0.02397 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00400 | 0.67000 | 173.200 | 0.01189 | 0.00000 | 0.00000 |
| CO | 59 | -0.08000 | 126.67000 | 0.000 | -0.12084 | -0.02081 | -0.09917 |
| CU | 63 | 0.02400 | 130.00000 | 289.200 | 0.10104 | -0.02761 | -0.00266 |
| NI | 60 | -0.00600 | 10.00000 | 0.000 | 0.03177 | -0.04413 | -0.00631 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.00700 | 13.33000 | 882.900 | -0.00668 | 0.07581 | -0.04774 |
| SN | 120 | 0.11900 | 43.33000 | 57.800 | 0.05486 | 0.11006 | 0.19136 |
| SR | 88 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| ZN | 66 | -0.26500 | 3.33000 | 0.000 | -0.29762 | -0.20098 | -0.29762 |
| **BI-1** | 209 | 123672.48000 | 0.00000 | 0.000 | 123111.97000 | 124401.46000 | 123504.01000 |
| PB | 208 | -0.02400 | 176.67000 | 0.000 | -0.03634 | -0.01962 | -0.01717 |
| TL | 203 | -0.01800 | 23.33000 | 0.000 | -0.00634 | -0.02666 | -0.01988 |
| U | 238 | 0.00400 | 33.33000 | 67.600 | 0.00157 | 0.00320 | 0.00659 |
| *TB-1* | 159 | 145586.75000 | 0.00000 | 0.000 | 148094.01000 | 146794.48000 | 141871.76000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:10:02
Tube Number: 25 Batch: 172121063903A
Sample Number: **9125788** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14166.07000 | 0.00000 | 0.000 | 14386.15000 | 14266.27000 | 13845.78000 |
| AL | 27 | 10.84700 | 153.34000 | 64.200 | 17.79335 | 3.86335 | 10.88378 |
| CA | 44 | 53548.28500 | 46557.52000 | 3.000 | 52087.65013 | 53257.41550 | 55299.78894 |
| CR | 52 | 1.60600 | 720.04000 | 22.500 | 1.91516 | 1.69430 | 1.20984 |
| FE | 57 | 215.89400 | 1806.82000 | 4.000 | 223.82821 | 217.28355 | 206.56930 |
| K | 39 | 21423.30900 | 283124.21000 | 2.700 | 21539.04623 | 20795.19749 | 21935.68454 |
| MG | 24 | 6351.94000 | 200100.50000 | 1.700 | 6294.30423 | 6285.77664 | 6475.73872 |
| MN | 55 | 17.43700 | 2960.36000 | 8.700 | 17.12357 | 19.08937 | 16.09928 |
| NA | 23 | 18848.28500 | 1280685.82000 | 1.100 | 18719.56055 | 18737.20473 | 19088.09080 |
| TI | 47 | 0.45500 | 6.67000 | 369.900 | 2.39989 | -0.51710 | -0.51710 |
| V | 51 | 0.11400 | 33.33000 | 15.900 | 0.13470 | 0.10187 | 0.10497 |
| **GE-1** | 72 | 42678.63000 | 0.00000 | 0.000 | 42852.28000 | 42521.78000 | 42661.82000 |
| MO | 98 | 1.34100 | 870.05000 | 2.700 | 1.29897 | 1.36460 | 1.35941 |
| **IN-1** | 115 | 22635.08000 | 0.00000 | 0.000 | 21974.42000 | 23195.64000 | 22735.19000 |
| AG | 107 | 0.00400 | 6.67000 | 86.700 | 0.00661 | 0.00626 | 0.00000 |
| AS | 75 | 0.14400 | 9.33000 | 71.100 | 0.02577 | 0.20032 | 0.20578 |
| BA | 137 | 127.62000 | 10883.99000 | 1.400 | 127.72158 | 129.35569 | 125.78270 |
| CD | 111 | 0.01200 | 2.00000 | 100.700 | 0.00000 | 0.01182 | 0.02411 |
| CO | 59 | -0.07000 | 133.34000 | 0.000 | -0.09282 | -0.08854 | -0.02990 |
| CU | 63 | 0.28900 | 330.02000 | 32.100 | 0.28887 | 0.38142 | 0.19592 |
| NI | 60 | 2.43900 | 643.37000 | 7.100 | 2.30430 | 2.63317 | 2.37956 |
| RB | 85 | 59.15800 | 6484.80000 | 2.600 | 57.72275 | 58.95911 | 60.79093 |
| SB | 121 | 0.31400 | 86.67000 | 39.600 | 0.21063 | 0.27862 | 0.45176 |
| SN | 120 | 0.14900 | 53.33000 | 13.600 | 0.17262 | 0.13627 | 0.13903 |
| SR | 88 | 1588.99200 | 265924.45000 | 2.700 | 1639.00532 | 1562.55482 | 1565.41725 |
| ZN | 66 | 1.30800 | 163.34000 | 24.500 | 1.42021 | 0.94688 | 1.55805 |
| **BI-1** | 209 | 123601.48000 | 0.00000 | 0.000 | 124442.12000 | 124389.72000 | 121972.60000 |
| PB | 208 | 0.03500 | 453.36000 | 15.100 | 0.03557 | 0.02924 | 0.03971 |
| TL | 203 | -0.02200 | 16.67000 | 0.000 | -0.02667 | -0.01998 | -0.01972 |
| U | 238 | 0.01500 | 100.01000 | 63.200 | 0.00487 | 0.01653 | 0.02369 |
| *TB-1* | 159 | 141837.38000 | 0.00000 | 0.000 | 142354.33000 | 143172.19000 | 139985.61000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:11:52
Tube Number: 26 Batch: 172121063903A
Sample Number: **9125789** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15296.93000 | 0.00000 | 0.000 | 15637.19000 | 14556.29000 | 15697.32000 |
| AL | 27 | 76.88200 | 713.38000 | 32.000 | 48.52415 | 89.37468 | 92.74794 |
| CA | 44 | 692.17900 | 650.04000 | 21.200 | 641.82540 | 857.62657 | 577.08391 |
| CR | 52 | 0.94600 | 476.69000 | 9.800 | 0.90625 | 1.05196 | 0.88072 |
| FE | 57 | 977.70200 | 8702.42000 | 6.800 | 1013.76672 | 1018.23909 | 901.10121 |
| K | 39 | 498.66000 | 7801.97000 | 9.800 | 445.22527 | 540.33032 | 510.42495 |
| MG | 24 | 2685.34700 | 91282.04000 | 4.200 | 2624.48627 | 2815.71450 | 2615.83946 |
| MN | 55 | 22.88400 | 4180.66000 | 7.800 | 22.93164 | 24.63873 | 21.08123 |
| NA | 23 | 4180.97900 | 315082.67000 | 3.400 | 4140.20268 | 4338.69081 | 4064.04450 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 1.01900 | 323.35000 | 21.600 | 1.23933 | 0.79879 | 1.01851 |
| **GE-1** | 72 | 44195.84000 | 0.00000 | 0.000 | 44747.32000 | 44075.91000 | 43764.28000 |
| MO | 98 | -0.02000 | 113.34000 | 0.000 | -0.07922 | 0.07880 | -0.05870 |
| **IN-1** | 115 | 22859.09000 | 0.00000 | 0.000 | 22775.85000 | 22815.61000 | 22985.82000 |
| AG | 107 | 0.00600 | 10.00000 | 100.300 | 0.01276 | 0.00000 | 0.00632 |
| AS | 75 | 0.23500 | 13.33000 | 30.200 | 0.29671 | 0.25044 | 0.15749 |
| BA | 137 | 34.29200 | 2953.71000 | 7.500 | 34.73330 | 31.53121 | 36.61051 |
| CD | 111 | 0.02800 | 4.67000 | 89.200 | 0.04814 | 0.03604 | 0.00000 |
| CO | 59 | 1.65100 | 1680.15000 | 20.300 | 2.03759 | 1.43112 | 1.48532 |
| CU | 63 | 2.09700 | 1723.49000 | 4.800 | 2.20554 | 2.00599 | 2.08059 |
| NI | 60 | 0.78500 | 216.67000 | 28.500 | 0.95433 | 0.53088 | 0.86911 |
| RB | 85 | 0.42300 | 46.67000 | 69.000 | 0.54410 | 0.63368 | 0.08986 |
| SB | 121 | -0.02000 | 6.67000 | 0.000 | -0.04774 | -0.00627 | -0.00658 |
| SN | 120 | 0.16600 | 60.00000 | 16.300 | 0.16654 | 0.13854 | 0.19252 |
| SR | 88 | 19.45800 | 3290.44000 | 4.600 | 19.82789 | 18.42998 | 20.11722 |
| ZN | 66 | 2.48800 | 286.68000 | 10.300 | 2.52971 | 2.71932 | 2.21399 |
| **BI-1** | 209 | 129509.16000 | 0.00000 | 0.000 | 130166.12000 | 130339.67000 | 128021.68000 |
| PB | 208 | 0.75700 | 4013.70000 | 12.300 | 0.82693 | 0.65141 | 0.79229 |
| TL | 203 | -0.00600 | 43.33000 | 0.000 | -0.00141 | -0.00145 | -0.01387 |
| U | 238 | 0.02500 | 166.68000 | 12.600 | 0.02368 | 0.02841 | 0.02248 |
| *TB-1* | 159 | 147579.65000 | 0.00000 | 0.000 | 146580.06000 | 147993.41000 | 148165.48000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:13:43
Tube Number: 27 Batch: 172121063903A
Sample Number: **9125790** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14062.72000 | 0.00000 | 0.000 | 13235.43000 | 14726.62000 | 14226.12000 |
| AL | 27 | 63.22200 | 550.04000 | 18.700 | 75.61140 | 52.08135 | 61.97333 |
| CA | 44 | 42058.18300 | 36230.41000 | 6.900 | 45416.47707 | 40351.61811 | 40406.45490 |
| CR | 52 | 0.85200 | 396.69000 | 33.200 | 1.06576 | 0.53141 | 0.95973 |
| FE | 57 | 463.34900 | 3807.21000 | 4.500 | 485.86201 | 459.69159 | 444.49213 |
| K | 39 | 3954.68100 | 52335.63000 | 5.100 | 4179.46185 | 3793.63219 | 3890.94941 |
| MG | 24 | 10451.27000 | 326124.10000 | 6.500 | 11208.38145 | 9897.39942 | 10248.02916 |
| MN | 55 | 113.87900 | 19087.48000 | 5.400 | 120.93693 | 111.01975 | 109.68030 |
| NA | 23 | 10956.71500 | 741650.93000 | 6.600 | 11747.59152 | 10338.90455 | 10783.65011 |
| TI | 47 | 1.43600 | 13.33000 | 150.500 | 1.06820 | 3.75723 | -0.51710 |
| V | 51 | 0.31700 | 93.34000 | 43.900 | 0.18301 | 0.46058 | 0.30648 |
| **GE-1** | 72 | 43323.85000 | 0.00000 | 0.000 | 43634.39000 | 42982.89000 | 43354.26000 |
| MO | 98 | 1.11800 | 756.72000 | 10.100 | 1.13181 | 1.22331 | 0.99960 |
| **IN-1** | 115 | 23139.28000 | 0.00000 | 0.000 | 23066.06000 | 23055.85000 | 23295.94000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.20000 | 12.00000 | 80.000 | 0.15670 | 0.06648 | 0.37793 |
| BA | 137 | 120.95400 | 10543.69000 | 2.800 | 119.37260 | 124.83942 | 118.65086 |
| CD | 111 | 0.02000 | 3.33000 | 34.400 | 0.02377 | 0.01189 | 0.02353 |
| CO | 59 | -0.09900 | 110.00000 | 0.000 | -0.10989 | -0.08776 | -0.10004 |
| CU | 63 | 0.36200 | 393.35000 | 32.900 | 0.41015 | 0.44909 | 0.22602 |
| NI | 60 | 0.42200 | 123.34000 | 13.100 | 0.37300 | 0.41108 | 0.48152 |
| RB | 85 | 2.23400 | 250.01000 | 26.700 | 2.14912 | 2.86682 | 1.68461 |
| SB | 121 | 0.00700 | 13.33000 | 348.700 | -0.00672 | 0.03434 | -0.00712 |
| SN | 120 | 0.13700 | 50.00000 | 72.400 | 0.24670 | 0.05484 | 0.10855 |
| SR | 88 | 378.29500 | 64746.61000 | 2.300 | 388.32341 | 373.60383 | 372.95648 |
| ZN | 66 | 2.00500 | 240.01000 | 13.800 | 1.72395 | 2.01376 | 2.27587 |
| **BI-1** | 209 | 126391.07000 | 0.00000 | 0.000 | 126661.28000 | 127818.70000 | 124693.24000 |
| PB | 208 | 0.16600 | 1093.39000 | 12.900 | 0.19029 | 0.14874 | 0.16037 |
| TL | 203 | -0.02500 | 13.33000 | 0.000 | -0.02678 | -0.02034 | -0.02668 |
| U | 238 | 0.11300 | 700.05000 | 21.500 | 0.09800 | 0.14087 | 0.09958 |
| *TB-1* | 159 | 142393.58000 | 0.00000 | 0.000 | 146542.53000 | 140358.58000 | 140279.64000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:15:32
Tube Number: 28 Batch: 172121063903A
Sample Number: **9125791** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14719.76000 | 0.00000 | 0.000 | 14346.07000 | 14546.30000 | 15266.90000 |
| AL | 27 | 113.99300 | 983.40000 | 18.500 | 138.16569 | 104.58827 | 99.22539 |
| CA | 44 | 1329.27400 | 1203.43000 | 8.700 | 1313.09680 | 1451.73933 | 1222.98593 |
| CR | 52 | 0.97900 | 473.36000 | 14.800 | 0.90343 | 1.14611 | 0.88653 |
| FE | 57 | 140.05400 | 1226.76000 | 8.300 | 152.37657 | 138.37767 | 129.40881 |
| K | 39 | 1168.16900 | 16678.25000 | 5.100 | 1229.37176 | 1165.91374 | 1109.22188 |
| MG | 24 | 2325.81300 | 76127.47000 | 3.100 | 2340.31859 | 2390.68363 | 2246.43760 |
| MN | 55 | 9.58300 | 1690.14000 | 13.400 | 9.75189 | 10.76921 | 8.22678 |
| NA | 23 | 2771.83800 | 204607.41000 | 3.400 | 2841.50258 | 2809.65493 | 2664.35606 |
| TI | 47 | 1.86400 | 16.67000 | 161.700 | -0.51710 | 5.25265 | 0.85726 |
| V | 51 | 0.62900 | 190.01000 | 23.900 | 0.77672 | 0.63281 | 0.47602 |
| **GE-1** | 72 | 43444.14000 | 0.00000 | 0.000 | 42451.52000 | 44025.73000 | 43855.18000 |
| MO | 98 | -0.05100 | 93.34000 | 0.000 | 0.01812 | -0.09432 | -0.07644 |
| **IN-1** | 115 | 23172.54000 | 0.00000 | 0.000 | 23165.90000 | 23045.72000 | 23306.01000 |
| AG | 107 | 0.00400 | 6.67000 | 86.600 | 0.00627 | 0.00000 | 0.00623 |
| AS | 75 | 0.15600 | 10.00000 | 50.700 | 0.11078 | 0.24725 | 0.10970 |
| BA | 137 | 77.11500 | 6731.60000 | 3.200 | 75.63910 | 79.95135 | 75.75325 |
| CD | 111 | 0.04300 | 7.33000 | 41.900 | 0.02366 | 0.05947 | 0.04704 |
| CO | 59 | 0.17200 | 356.68000 | 98.000 | 0.05447 | 0.36520 | 0.09651 |
| CU | 63 | 1.73800 | 1466.78000 | 11.400 | 1.67827 | 1.95870 | 1.57802 |
| NI | 60 | 1.26500 | 346.69000 | 27.100 | 1.61717 | 1.24628 | 0.93162 |
| RB | 85 | 1.87300 | 210.01000 | 13.000 | 1.69407 | 2.15101 | 1.77251 |
| SB | 121 | 0.04800 | 23.33000 | 131.100 | 0.11565 | 0.03438 | -0.00714 |
| SN | 120 | 0.14600 | 53.34000 | 39.300 | 0.19105 | 0.16459 | 0.08138 |
| SR | 88 | 31.84400 | 5457.73000 | 3.300 | 32.33612 | 32.56376 | 30.63310 |
| ZN | 66 | 3.78800 | 426.69000 | 20.400 | 3.53641 | 3.17102 | 4.65669 |
| **BI-1** | 209 | 127105.98000 | 0.00000 | 0.000 | 128464.12000 | 123807.73000 | 129046.09000 |
| PB | 208 | 0.60600 | 3210.26000 | 7.100 | 0.56517 | 0.65065 | 0.60124 |
| TL | 203 | -0.00700 | 40.00000 | 0.000 | 0.01195 | -0.01992 | -0.01402 |
| U | 238 | 0.02200 | 146.67000 | 43.300 | 0.01595 | 0.03335 | 0.01747 |
| *TB-1* | 159 | 146766.27000 | 0.00000 | 0.000 | 146721.48000 | 144784.71000 | 148792.61000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:17:22
Tube Number: 29 Batch: 172121063903A
Sample Number: **9125792** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14879.98000 | 0.00000 | 0.000 | 14846.67000 | 14145.95000 | 15647.33000 |
| AL | 27 | 8.50500 | 140.01000 | 94.700 | 13.25248 | 13.05729 | -0.79350 |
| CA | 44 | 1198.76600 | 1093.42000 | 14.800 | 1235.77434 | 1354.75799 | 1005.76514 |
| CR | 52 | 1.16500 | 560.03000 | 14.100 | 1.34925 | 1.10980 | 1.03576 |
| FE | 57 | 7.04200 | 93.34000 | 28.100 | 8.96307 | 7.15779 | 5.00428 |
| K | 39 | 1381.47200 | 19814.60000 | 3.600 | 1422.31357 | 1396.43283 | 1325.67100 |
| MG | 24 | 702.58400 | 23231.95000 | 7.800 | 675.92669 | 765.80073 | 666.02459 |
| MN | 55 | 4.40000 | 783.38000 | 37.200 | 3.66328 | 6.27680 | 3.25843 |
| NA | 23 | 4521.32200 | 330397.99000 | 4.400 | 4545.53620 | 4706.33577 | 4312.09312 |
| TI | 47 | -0.07000 | 3.33000 | 0.000 | -0.51710 | -0.51710 | 0.82384 |
| V | 51 | 0.36200 | 110.01000 | 34.900 | 0.42423 | 0.44524 | 0.21673 |
| **GE-1** | 72 | 44025.41000 | 0.00000 | 0.000 | 44677.07000 | 43614.46000 | 43784.69000 |
| MO | 98 | -0.07700 | 80.00000 | 0.000 | -0.06191 | -0.07567 | -0.09365 |
| **IN-1** | 115 | 23189.84000 | 0.00000 | 0.000 | 23657.08000 | 22675.83000 | 23236.60000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | -0.03900 | 1.33000 | 0.000 | -0.06899 | -0.06899 | 0.02062 |
| BA | 137 | 71.01800 | 6204.69000 | 0.900 | 71.48695 | 71.30102 | 70.26569 |
| CD | 111 | 0.02000 | 3.33000 | 67.400 | 0.03476 | 0.01209 | 0.01180 |
| CO | 59 | 1.70100 | 1750.16000 | 2.400 | 1.72749 | 1.72198 | 1.65318 |
| CU | 63 | 0.33900 | 376.69000 | 10.500 | 0.32091 | 0.38036 | 0.31653 |
| NI | 60 | 0.63300 | 180.01000 | 26.000 | 0.65834 | 0.45728 | 0.78397 |
| RB | 85 | 2.49600 | 280.01000 | 10.300 | 2.53196 | 2.73270 | 2.22223 |
| SB | 121 | -0.04800 | 0.00000 | 0.000 | -0.04774 | -0.04774 | -0.04774 |
| SN | 120 | 0.08200 | 30.00000 | 66.600 | 0.02672 | 0.08364 | 0.13603 |
| SR | 88 | 24.75400 | 4244.04000 | 5.900 | 23.14806 | 25.10328 | 26.01060 |
| ZN | 66 | 3.60500 | 406.69000 | 29.500 | 3.55066 | 4.69636 | 2.56920 |
| **BI-1** | 209 | 129779.88000 | 0.00000 | 0.000 | 130105.74000 | 129390.21000 | 129843.70000 |
| PB | 208 | 0.02900 | 446.69000 | 70.500 | 0.01507 | 0.05225 | 0.01930 |
| TL | 203 | 0.02200 | 86.67000 | 83.300 | 0.01138 | 0.01163 | 0.04350 |
| U | 238 | 0.00400 | 36.67000 | 22.800 | 0.00458 | 0.00461 | 0.00299 |
| *TB-1* | 159 | 147906.63000 | 0.00000 | 0.000 | 147934.67000 | 147427.80000 | 148357.42000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:19:12
Tube Number: 30 Batch: 172121063903A
Sample Number: **9125793** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14769.87000 | 0.00000 | 0.000 | 15126.87000 | 14846.51000 | 14336.24000 |
| AL | 27 | 146.01900 | 1246.76000 | 4.400 | 139.06696 | 151.75551 | 147.23562 |
| CA | 44 | 467.51700 | 426.69000 | 15.500 | 383.63713 | 511.64752 | 507.26750 |
| CR | 52 | 0.70900 | 356.69000 | 30.100 | 0.62655 | 0.54906 | 0.95150 |
| FE | 57 | 255.43900 | 2220.24000 | 4.200 | 243.45095 | 258.56642 | 264.30106 |
| K | 39 | 348.44900 | 5471.04000 | 11.800 | 307.07376 | 349.28516 | 388.98923 |
| MG | 24 | 2295.03600 | 75400.85000 | 1.400 | 2267.22521 | 2286.37159 | 2331.50972 |
| MN | 55 | 14.51400 | 2566.95000 | 5.700 | 14.28739 | 13.82443 | 15.42959 |
| NA | 23 | 3566.38300 | 261168.29000 | 3.000 | 3455.32463 | 3577.93790 | 3665.88687 |
| TI | 47 | 0.91300 | 10.00000 | 154.800 | -0.51710 | 2.30944 | 0.94647 |
| V | 51 | 0.63400 | 193.34000 | 30.100 | 0.48042 | 0.84843 | 0.57450 |
| **GE-1** | 72 | 44352.86000 | 0.00000 | 0.000 | 44857.06000 | 44296.18000 | 43905.34000 |
| MO | 98 | -0.04900 | 96.67000 | 0.000 | -0.07955 | -0.00886 | -0.05921 |
| **IN-1** | 115 | 22895.77000 | 0.00000 | 0.000 | 23176.22000 | 23206.03000 | 22305.07000 |
| AG | 107 | 0.00200 | 3.33000 | 173.200 | 0.00000 | 0.00000 | 0.00651 |
| AS | 75 | 0.43000 | 22.00000 | 15.900 | 0.47008 | 0.46939 | 0.35111 |
| BA | 137 | 11.56600 | 996.74000 | 6.600 | 11.45346 | 10.86685 | 12.37703 |
| CD | 111 | 0.02800 | 4.67000 | 27.200 | 0.02365 | 0.02362 | 0.03687 |
| CO | 59 | 0.94100 | 1043.41000 | 5.700 | 0.92210 | 0.89869 | 1.00096 |
| CU | 63 | 1.70500 | 1423.44000 | 5.000 | 1.63897 | 1.67513 | 1.80191 |
| NI | 60 | 1.18300 | 320.02000 | 25.200 | 0.97482 | 1.04889 | 1.52444 |
| RB | 85 | 0.48200 | 53.33000 | 56.900 | 0.17823 | 0.71202 | 0.55559 |
| SB | 121 | -0.03400 | 3.33000 | 0.000 | -0.04774 | -0.00697 | -0.04774 |
| SN | 120 | 0.06500 | 23.33000 | 67.700 | 0.02728 | 0.05448 | 0.11337 |
| SR | 88 | 12.45400 | 2106.88000 | 11.400 | 13.00931 | 10.83660 | 13.51729 |
| ZN | 66 | 2.12500 | 250.02000 | 5.400 | 2.19346 | 2.19026 | 1.99201 |
| **BI-1** | 209 | 128879.38000 | 0.00000 | 0.000 | 128593.85000 | 128845.06000 | 129199.23000 |
| PB | 208 | 0.18500 | 1206.74000 | 17.500 | 0.19061 | 0.21472 | 0.15057 |
| TL | 203 | -0.02500 | 13.33000 | 0.000 | -0.01395 | -0.03335 | -0.02691 |
| U | 238 | 0.01700 | 116.67000 | 5.500 | 0.01754 | 0.01589 | 0.01745 |
| *TB-1* | 159 | 147497.20000 | 0.00000 | 0.000 | 148418.81000 | 148278.58000 | 145794.20000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:21:03
Tube Number: 31 Batch: 172121063903A
Sample Number: **9125794** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14943.47000 | 0.00000 | 0.000 | 15307.06000 | 13956.01000 | 15567.34000 |
| AL | 27 | -3.89900 | 40.00000 | 0.000 | -4.20895 | 1.51857 | -9.00631 |
| CA | 44 | 10.33900 | 13.33000 | 153.500 | -4.01410 | 7.65675 | 27.37440 |
| CR | 52 | 0.51400 | 273.35000 | 34.000 | 0.44042 | 0.71299 | 0.38755 |
| FE | 57 | 2.08800 | 50.00000 | 167.100 | -0.42935 | 6.07212 | 0.62125 |
| K | 39 | -9.14100 | 570.03000 | 0.000 | -11.57874 | -7.07162 | -8.77397 |
| MG | 24 | 2.58200 | 123.34000 | 54.500 | 4.16688 | 2.10087 | 1.47851 |
| MN | 55 | 0.58800 | 113.34000 | 66.200 | 0.48532 | 1.01868 | 0.26079 |
| NA | 23 | -36.53900 | 8125.44000 | 0.000 | -41.46694 | -28.90057 | -39.24810 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.02100 | 6.67000 | 173.200 | 0.00000 | 0.00000 | 0.06224 |
| **GE-1** | 72 | 43236.70000 | 0.00000 | 0.000 | 42962.33000 | 43133.12000 | 43614.66000 |
| MO | 98 | -0.13900 | 43.33000 | 0.000 | -0.16241 | -0.10951 | -0.14570 |
| **IN-1** | 115 | 22758.59000 | 0.00000 | 0.000 | 22184.84000 | 22774.61000 | 23316.32000 |
| AG | 107 | 0.00600 | 10.00000 | 99.100 | 0.00655 | 0.01276 | 0.00000 |
| AS | 75 | -0.05400 | 0.67000 | 0.000 | -0.06899 | -0.06899 | -0.02433 |
| BA | 137 | 0.08000 | 6.67000 | 173.200 | 0.23929 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CO | 59 | -0.16100 | 53.33000 | 0.000 | -0.13993 | -0.19789 | -0.14382 |
| CU | 63 | 0.30600 | 343.35000 | 24.700 | 0.39196 | 0.27366 | 0.25119 |
| NI | 60 | 0.09800 | 36.67000 | 123.800 | 0.23184 | -0.00573 | 0.06840 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.00700 | 13.33000 | 925.200 | -0.04774 | -0.00620 | 0.07401 |
| SN | 120 | 0.09400 | 33.33000 | 106.300 | 0.19948 | 0.08328 | 0.00000 |
| SR | 88 | 0.14100 | 23.33000 | 89.700 | 0.24375 | 0.17808 | 0.00000 |
| ZN | 66 | 0.75300 | 106.67000 | 99.600 | 1.60408 | 0.18984 | 0.46420 |
| **BI-1** | 209 | 130893.25000 | 0.00000 | 0.000 | 130198.93000 | 132324.93000 | 130155.88000 |
| PB | 208 | -0.01400 | 240.01000 | 0.000 | -0.01136 | -0.02416 | -0.00526 |
| TL | 203 | -0.03100 | 3.33000 | 0.000 | -0.03335 | -0.02707 | -0.03335 |
| U | 238 | 0.00000 | 10.00000 | 0.000 | 0.00139 | -0.00023 | -0.00180 |
| *TB-1* | 159 | 148368.28000 | 0.00000 | 0.000 | 145966.52000 | 151104.05000 | 148034.28000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:22:53
Tube Number: 32 Batch: 172121063903A
Sample Number: **9125958** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15266.96000 | 0.00000 | 0.000 | 15727.33000 | 14426.34000 | 15647.21000 |
| AL | 27 | 53.91600 | 526.70000 | 26.600 | 68.04069 | 39.35346 | 54.35364 |
| CA | 44 | 5655.09900 | 5294.33000 | 6.100 | 5506.60295 | 6048.78819 | 5409.90643 |
| CR | 52 | 1.02900 | 516.69000 | 18.700 | 1.05149 | 0.82719 | 1.20930 |
| FE | 57 | 120.36900 | 1096.74000 | 20.000 | 92.63002 | 132.39218 | 136.08378 |
| K | 39 | 3223.77600 | 46493.61000 | 3.100 | 3119.60854 | 3316.69591 | 3235.02291 |
| MG | 24 | 3567.09600 | 120999.49000 | 3.900 | 3503.97602 | 3726.54982 | 3470.76348 |
| MN | 55 | 1.65400 | 313.35000 | 22.600 | 1.37649 | 1.50623 | 2.08013 |
| NA | 23 | 4102.99500 | 308602.13000 | 5.100 | 3997.27254 | 4342.95947 | 3968.75342 |
| TI | 47 | 1.83100 | 16.67000 | 120.200 | -0.51710 | 3.84620 | 2.16480 |
| V | 51 | 0.75200 | 233.35000 | 48.800 | 0.55449 | 1.17544 | 0.52637 |
| **GE-1** | 72 | 44733.85000 | 0.00000 | 0.000 | 45168.23000 | 44937.84000 | 44095.47000 |
| MO | 98 | -0.12500 | 53.34000 | 0.000 | -0.14811 | -0.06279 | -0.16378 |
| **IN-1** | 115 | 23442.84000 | 0.00000 | 0.000 | 22825.70000 | 24337.35000 | 23165.47000 |
| AG | 107 | 0.00600 | 10.00000 | 102.200 | 0.01273 | 0.00597 | 0.00000 |
| AS | 75 | 0.30000 | 16.67000 | 28.900 | 0.34152 | 0.35880 | 0.20067 |
| BA | 137 | 150.92500 | 13322.56000 | 2.900 | 151.58628 | 146.20949 | 154.97988 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CO | 59 | 0.13100 | 323.35000 | 69.500 | 0.22586 | 0.12493 | 0.04349 |
| CU | 63 | 0.55300 | 550.03000 | 20.500 | 0.45507 | 0.52779 | 0.67727 |
| NI | 60 | 1.60900 | 443.36000 | 5.800 | 1.64193 | 1.68095 | 1.50390 |
| RB | 85 | 6.61500 | 750.05000 | 7.200 | 6.51542 | 6.19552 | 7.13322 |
| SB | 121 | 0.00600 | 13.33000 | 383.100 | -0.00629 | -0.00886 | 0.03395 |
| SN | 120 | 0.03600 | 13.33000 | 116.400 | 0.00000 | 0.02598 | 0.08187 |
| SR | 88 | 98.00700 | 16975.48000 | 6.000 | 104.47344 | 93.09105 | 96.45641 |
| ZN | 66 | 3.03200 | 353.35000 | 25.400 | 2.42616 | 3.89935 | 2.76960 |
| **BI-1** | 209 | 129706.86000 | 0.00000 | 0.000 | 130268.96000 | 129511.45000 | 129340.18000 |
| PB | 208 | 0.18000 | 1190.07000 | 28.200 | 0.14072 | 0.23778 | 0.16260 |
| TL | 203 | 0.01400 | 73.33000 | 177.800 | 0.02409 | -0.01409 | 0.03093 |
| U | 238 | 0.01300 | 90.00000 | 37.700 | 0.01729 | 0.01260 | 0.00782 |
| *TB-1* | 159 | 148655.33000 | 0.00000 | 0.000 | 148563.12000 | 150053.36000 | 147349.52000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:24:42
Tube Number: 33 Batch: 172121063903A
Sample Number: **9128454** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14603.03000 | 0.00000 | 0.000 | 14706.54000 | 14306.15000 | 14796.39000 |
| AL | 27 | 56.74600 | 523.36000 | 6.400 | 58.40632 | 52.59352 | 59.23769 |
| CA | 44 | 44786.36200 | 40152.10000 | 1.600 | 44024.82212 | 45439.74440 | 44894.51904 |
| CR | 52 | 0.69000 | 346.68000 | 24.500 | 0.83234 | 0.50293 | 0.73484 |
| FE | 57 | 650.17600 | 5537.70000 | 6.000 | 650.21852 | 689.01559 | 611.29493 |
| K | 39 | 3792.92000 | 52245.32000 | 0.800 | 3825.22278 | 3785.34420 | 3768.19165 |
| MG | 24 | 8822.56400 | 286501.43000 | 1.700 | 8698.30024 | 8984.78362 | 8784.60877 |
| MN | 55 | 52.31900 | 9126.01000 | 5.200 | 49.18298 | 53.90214 | 53.87042 |
| NA | 23 | 9760.54100 | 688657.07000 | 2.000 | 9652.78879 | 9985.23532 | 9643.60017 |
| TI | 47 | 3.29500 | 26.67000 | 89.700 | 6.61651 | 0.94955 | 2.31902 |
| V | 51 | 0.26600 | 80.00000 | 22.300 | 0.19765 | 0.30480 | 0.29467 |
| **GE-1** | 72 | 42775.72000 | 0.00000 | 0.000 | 42501.51000 | 43223.64000 | 42602.01000 |
| MO | 98 | -0.03200 | 103.34000 | 0.000 | -0.08997 | 0.11994 | -0.12611 |
| **IN-1** | 115 | 22815.03000 | 0.00000 | 0.000 | 23015.44000 | 22995.12000 | 22434.52000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.08400 | 6.67000 | 128.900 | 0.02149 | 0.02157 | 0.20946 |
| BA | 137 | 46.55400 | 3997.35000 | 13.400 | 39.90879 | 47.44980 | 52.30366 |
| CD | 111 | 0.01600 | 2.67000 | 115.500 | 0.01191 | 0.00000 | 0.03665 |
| CO | 59 | -0.06800 | 136.68000 | 0.000 | -0.05433 | -0.07633 | -0.07273 |
| CU | 63 | 4.53400 | 3590.50000 | 3.300 | 4.42892 | 4.70448 | 4.46780 |
| NI | 60 | 0.87600 | 240.01000 | 37.000 | 0.56392 | 1.21109 | 0.85256 |
| RB | 85 | 2.56900 | 283.35000 | 17.300 | 2.15384 | 2.51502 | 3.03828 |
| SB | 121 | -0.00600 | 10.00000 | 0.000 | -0.04774 | 0.03456 | -0.00557 |
| SN | 120 | 0.14800 | 53.33000 | 28.100 | 0.19228 | 0.10997 | 0.14090 |
| SR | 88 | 335.73200 | 56645.60000 | 2.600 | 328.76064 | 333.11946 | 345.31637 |
| ZN | 66 | 1.19100 | 153.34000 | 60.700 | 0.86015 | 2.01986 | 0.69209 |
| **BI-1** | 209 | 126437.23000 | 0.00000 | 0.000 | 123946.83000 | 128050.01000 | 127314.86000 |
| PB | 208 | 0.75900 | 3937.03000 | 12.700 | 0.65624 | 0.84782 | 0.77421 |
| TL | 203 | -0.02000 | 20.00000 | 0.000 | -0.01993 | -0.01387 | -0.02682 |
| U | 238 | 0.09000 | 563.37000 | 14.700 | 0.07678 | 0.10340 | 0.09098 |
| *TB-1* | 159 | 145557.23000 | 0.00000 | 0.000 | 146873.61000 | 143970.49000 | 145827.59000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:26:32
Tube Number: 34 Batch: 172121063903A
Sample Number: **9128455** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15240.27000 | 0.00000 | 0.000 | 15246.98000 | 15427.08000 | 15046.75000 |
| AL | 27 | 5.05900 | 116.67000 | 38.400 | 6.64775 | 2.89378 | 5.63475 |
| CA | 44 | 19804.75200 | 18533.49000 | 3.200 | 20507.69325 | 19274.58238 | 19631.98097 |
| CR | 52 | 0.42800 | 243.34000 | 22.900 | 0.53165 | 0.41411 | 0.33723 |
| FE | 57 | 69.64600 | 650.04000 | 11.700 | 75.32104 | 73.28014 | 60.33757 |
| K | 39 | 11601.48900 | 165296.13000 | 1.800 | 11398.00005 | 11582.51032 | 11823.95600 |
| MG | 24 | 8758.73700 | 296879.34000 | 0.600 | 8758.56317 | 8709.16873 | 8808.47938 |
| MN | 55 | 8009.20900 | 1456412.58000 | 2.000 | 7914.81238 | 7922.67391 | 8190.14126 |
| NA | 23 | 9080.42600 | 669434.73000 | 2.200 | 8991.37336 | 8941.39160 | 9308.51204 |
| TI | 47 | -0.05800 | 3.33000 | 0.000 | 0.85905 | -0.51710 | -0.51710 |
| V | 51 | 0.03200 | 10.00000 | 99.600 | 0.06355 | 0.00000 | 0.03220 |
| **GE-1** | 72 | 46090.75000 | 0.00000 | 0.000 | 45208.76000 | 46681.77000 | 46381.72000 |
| MO | 98 | -0.10100 | 70.00000 | 0.000 | -0.18195 | -0.01943 | -0.10049 |
| **IN-1** | 115 | 23492.64000 | 0.00000 | 0.000 | 23265.39000 | 23665.81000 | 23546.73000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 0.02000 | 4.00000 | 224.700 | 0.02051 | -0.02499 | 0.06366 |
| BA | 137 | 621.67000 | 55020.56000 | 0.800 | 627.48550 | 620.25249 | 617.27234 |
| CD | 111 | 0.06200 | 10.67000 | 43.100 | 0.04712 | 0.04633 | 0.09312 |
| CO | 59 | 1.96800 | 2020.20000 | 7.900 | 1.86972 | 2.14634 | 1.88800 |
| CU | 63 | 0.26500 | 323.35000 | 37.500 | 0.16262 | 0.27048 | 0.36096 |
| NI | 60 | 1.39500 | 386.69000 | 14.000 | 1.27169 | 1.61903 | 1.29311 |
| RB | 85 | 18.11500 | 2060.21000 | 15.000 | 17.57944 | 15.71064 | 21.05387 |
| SB | 121 | 0.00600 | 13.33000 | 389.700 | -0.00707 | -0.00776 | 0.03263 |
| SN | 120 | 0.10800 | 40.00000 | 25.700 | 0.13586 | 0.10685 | 0.08054 |
| SR | 88 | 201.72000 | 35055.85000 | 1.700 | 200.61519 | 205.58025 | 198.96395 |
| ZN | 66 | 2.03700 | 246.68000 | 26.700 | 2.66109 | 1.67272 | 1.77698 |
| **BI-1** | 209 | 130364.94000 | 0.00000 | 0.000 | 126194.28000 | 130479.58000 | 134420.95000 |
| PB | 208 | 0.04700 | 540.02000 | 42.400 | 0.02793 | 0.04522 | 0.06762 |
| TL | 203 | 0.14700 | 283.35000 | 26.100 | 0.15113 | 0.10684 | 0.18314 |
| U | 238 | 0.00800 | 60.00000 | 23.100 | 0.00970 | 0.00614 | 0.00745 |
| *TB-1* | 159 | 153485.07000 | 0.00000 | 0.000 | 151544.24000 | 154310.07000 | 154600.91000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:28:21
Tube Number: 35
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15650.67000 | 0.00000 | 0.000 | 15717.32000 | 15707.25000 | 15527.44000 |
| AL | 27 | 2483.27300 | 21246.25000 | 0.700 | 2466.39577 | 2480.84872 | 2502.57469 |
| CA | 44 | 2452.34900 | 2360.25000 | 1.900 | 2493.73610 | 2401.96923 | 2461.34198 |
| CR | 52 | 244.47500 | 112773.35000 | 2.100 | 242.17017 | 240.90926 | 250.34497 |
| FE | 57 | 2495.99900 | 22705.03000 | 3.800 | 2551.71153 | 2548.95225 | 2387.33424 |
| K | 39 | 2520.32900 | 37452.65000 | 1.100 | 2505.16782 | 2551.32654 | 2504.49400 |
| MG | 24 | 2393.69100 | 83355.40000 | 1.600 | 2378.56297 | 2436.44830 | 2366.06232 |
| MN | 55 | 250.52800 | 46798.55000 | 1.800 | 245.46176 | 252.08804 | 254.03481 |
| NA | 23 | 2357.27200 | 186833.81000 | 1.500 | 2357.40923 | 2392.22653 | 2322.18042 |
| TI | 47 | 241.82200 | 1806.84000 | 9.500 | 227.78125 | 229.26478 | 268.42007 |
| V | 51 | 239.82100 | 77473.75000 | 0.800 | 239.58037 | 238.09351 | 241.79050 |
| **GE-1** | 72 | 46291.16000 | 0.00000 | 0.000 | 45098.02000 | 44566.59000 | 49208.88000 |
| MO | 98 | 24.42500 | 14906.94000 | 5.900 | 25.29501 | 25.20466 | 22.77548 |
| **IN-1** | 115 | 23463.72000 | 0.00000 | 0.000 | 23988.37000 | 23796.59000 | 22606.19000 |
| AG | 107 | 24.27500 | 39162.33000 | 5.700 | 23.43212 | 23.51029 | 25.88237 |
| AS | 75 | 239.60200 | 10792.65000 | 4.600 | 229.37749 | 238.18746 | 251.23998 |
| BA | 137 | 252.27500 | 22278.69000 | 4.700 | 242.37362 | 248.90837 | 265.54397 |
| CD | 111 | 24.61200 | 4208.54000 | 6.400 | 24.12370 | 23.33883 | 26.37495 |
| CO | 59 | 236.67400 | 218216.78000 | 3.100 | 232.13318 | 232.64256 | 245.24631 |
| CU | 63 | 234.01700 | 184666.11000 | 4.100 | 226.04973 | 231.43264 | 244.56960 |
| NI | 60 | 238.79100 | 64041.67000 | 2.600 | 237.12064 | 233.64532 | 245.60582 |
| RB | 85 | 25.89500 | 2940.36000 | 3.100 | 24.97203 | 26.21516 | 26.49868 |
| SB | 121 | 24.86400 | 6188.01000 | 8.400 | 26.26967 | 25.84540 | 22.47709 |
| SN | 120 | 26.16100 | 9709.79000 | 2.600 | 25.57160 | 26.89425 | 26.01572 |
| SR | 88 | 25.56600 | 4430.78000 | 7.300 | 23.78649 | 25.39862 | 27.51403 |
| ZN | 66 | 239.39600 | 25305.31000 | 4.600 | 232.93846 | 233.23064 | 252.01899 |
| **BI-1** | 209 | 132250.77000 | 0.00000 | 0.000 | 132557.51000 | 131115.25000 | 133079.55000 |
| PB | 208 | 25.52900 | 128105.16000 | 0.900 | 25.52441 | 25.76888 | 25.29291 |
| TL | 203 | 25.39100 | 40438.78000 | 1.800 | 25.50788 | 25.78885 | 24.87564 |
| U | 238 | 25.17300 | 160676.53000 | 0.300 | 25.13515 | 25.26652 | 25.11805 |
| *TB-1* | 159 | 153739.51000 | 0.00000 | 0.000 | 154120.67000 | 152826.35000 | 154271.50000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:30:10
Tube Number: 36
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15296.98000 | 0.00000 | 0.000 | 14556.33000 | 15937.55000 | 15397.06000 |
| AL | 27 | -1.43400 | 63.33000 | 0.000 | -2.70034 | -0.94305 | -0.66000 |
| CA | 44 | 2.79900 | 6.67000 | 421.600 | -4.01410 | 16.42549 | -4.01410 |
| CR | 52 | 0.34700 | 206.68000 | 25.800 | 0.42238 | 0.24812 | 0.37105 |
| FE | 57 | -0.91100 | 26.67000 | 0.000 | -3.80705 | 3.76247 | -2.68773 |
| K | 39 | -6.31400 | 623.37000 | 0.000 | -1.46985 | -6.36507 | -11.10601 |
| MG | 24 | 0.35100 | 50.00000 | 19.300 | 0.42342 | 0.28956 | 0.33908 |
| MN | 55 | 0.17100 | 43.33000 | 96.200 | 0.05295 | 0.35845 | 0.10109 |
| NA | 23 | -35.76800 | 8372.22000 | 0.000 | -26.42785 | -43.95506 | -36.91971 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-1** | 72 | 45689.37000 | 0.00000 | 0.000 | 45919.91000 | 44836.71000 | 46311.48000 |
| MO | 98 | -0.18200 | 20.00000 | 0.000 | -0.19910 | -0.16464 | -0.18275 |
| **IN-1** | 115 | 23753.66000 | 0.00000 | 0.000 | 23957.39000 | 24027.59000 | 23276.01000 |
| AG | 107 | 0.01400 | 23.33000 | 106.700 | 0.00000 | 0.03023 | 0.01248 |
| AS | 75 | 0.00400 | 3.33000 | 1597.600 | -0.06899 | 0.06100 | 0.02047 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CO | 59 | -0.04500 | 163.34000 | 0.000 | -0.07148 | -0.04013 | -0.02338 |
| CU | 63 | 0.01800 | 130.01000 | 192.200 | 0.01727 | 0.05391 | -0.01634 |
| NI | 60 | 0.04200 | 23.33000 | 102.400 | -0.00762 | 0.06507 | 0.06860 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.07100 | 30.00000 | 192.000 | 0.22874 | -0.00836 | -0.00709 |
| SN | 120 | 0.04400 | 16.67000 | 35.400 | 0.05278 | 0.02631 | 0.05432 |
| SR | 88 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| ZN | 66 | 0.01100 | 33.33000 | 4074.600 | 0.53650 | -0.20521 | -0.29762 |
| **BI-1** | 209 | 127976.16000 | 0.00000 | 0.000 | 125520.21000 | 126860.32000 | 131547.96000 |
| PB | 208 | -0.02400 | 186.67000 | 0.000 | -0.02842 | -0.02877 | -0.01389 |
| TL | 203 | -0.01200 | 33.33000 | 0.000 | -0.00685 | -0.01369 | -0.01439 |
| U | 238 | 0.00500 | 43.33000 | 20.400 | 0.00646 | 0.00474 | 0.00451 |
| *TB-1* | 159 | 149615.50000 | 0.00000 | 0.000 | 152130.12000 | 148740.55000 | 147975.83000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:31:59
Tube Number: 37 Batch: 172121063903A
Sample Number: **9128455** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 10.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15453.82000 | 0.00000 | 0.000 | 14646.50000 | 16147.63000 | 15567.33000 |
| AL | 27 | -3.67700 | 43.33000 | 0.000 | 3.52799 | -6.73249 | -7.82702 |
| CA | 44 | 2062.13500 | 1956.85000 | 5.700 | 2198.08374 | 1983.28358 | 2005.03900 |
| CR | 52 | 0.45000 | 256.68000 | 3.700 | 0.46542 | 0.43258 | 0.45295 |
| FE | 57 | 2.74600 | 60.00000 | 197.300 | -0.27701 | 9.00044 | -0.48582 |
| K | 39 | 1176.48200 | 17612.35000 | 6.700 | 1267.70645 | 1126.54452 | 1135.19420 |
| MG | 24 | 890.53100 | 30569.35000 | 8.700 | 978.80238 | 857.58530 | 835.20662 |
| MN | 55 | 840.25400 | 154673.71000 | 6.000 | 886.06718 | 785.94692 | 848.74834 |
| NA | 23 | 862.10100 | 74369.95000 | 6.900 | 927.14412 | 811.50563 | 847.65350 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.01100 | 3.33000 | 173.200 | 0.03308 | 0.00000 | 0.00000 |
| **GE-1** | 72 | 46669.01000 | 0.00000 | 0.000 | 46170.91000 | 47364.21000 | 46471.92000 |
| MO | 98 | -0.16100 | 33.33000 | 0.000 | -0.18265 | -0.16736 | -0.13357 |
| **IN-1** | 115 | 23256.36000 | 0.00000 | 0.000 | 22996.05000 | 23466.48000 | 23306.55000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | -0.02400 | 2.00000 | 0.000 | 0.02156 | -0.06899 | -0.02432 |
| BA | 137 | 64.54500 | 5651.22000 | 10.600 | 72.27279 | 59.28141 | 62.08060 |
| CD | 111 | 0.01600 | 2.67000 | 86.600 | 0.02384 | 0.02336 | 0.00000 |
| CO | 59 | 0.16700 | 353.35000 | 60.400 | 0.23362 | 0.05095 | 0.21665 |
| CU | 63 | 0.06900 | 166.68000 | 117.000 | 0.03694 | 0.15999 | 0.00902 |
| NI | 60 | 0.11900 | 43.33000 | 48.300 | 0.10800 | 0.06768 | 0.18103 |
| RB | 85 | 1.80900 | 203.34000 | 31.800 | 2.15566 | 1.14428 | 2.12694 |
| SB | 121 | -0.03400 | 3.33000 | 0.000 | -0.04774 | -0.00742 | -0.04774 |
| SN | 120 | 0.02700 | 10.00000 | 99.300 | 0.02749 | 0.05388 | 0.00000 |
| SR | 88 | 21.79700 | 3750.56000 | 4.700 | 21.22560 | 22.99001 | 21.17473 |
| ZN | 66 | 0.53000 | 86.67000 | 9.000 | 0.47481 | 0.55404 | 0.55979 |
| **BI-1** | 209 | 131923.52000 | 0.00000 | 0.000 | 130993.98000 | 130850.48000 | 133926.11000 |
| PB | 208 | -0.01900 | 216.67000 | 0.000 | -0.03587 | -0.00960 | -0.01080 |
| TL | 203 | -0.02100 | 20.00000 | 0.000 | -0.00796 | -0.02699 | -0.02714 |
| U | 238 | 0.00200 | 26.67000 | 137.600 | 0.00611 | -0.00021 | 0.00130 |
| *TB-1* | 159 | 149760.39000 | 0.00000 | 0.000 | 148672.57000 | 151707.53000 | 148901.08000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:33:50
Tube Number: 38 Batch: 172121063903A
Sample Number: **9128456** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15283.59000 | 0.00000 | 0.000 | 15597.10000 | 14976.72000 | 15276.95000 |
| AL | 27 | -0.63600 | 70.00000 | 0.000 | 2.76524 | -2.87734 | -1.79609 |
| CA | 44 | 5361.35400 | 5037.58000 | 4.700 | 5646.65257 | 5173.62043 | 5263.78854 |
| CR | 52 | 0.45600 | 256.68000 | 36.500 | 0.56068 | 0.54332 | 0.26378 |
| FE | 57 | 45.63100 | 436.69000 | 32.500 | 32.65784 | 61.78824 | 42.44810 |
| K | 39 | 2319.01900 | 33678.43000 | 7.000 | 2173.60028 | 2493.51711 | 2289.93947 |
| MG | 24 | 4034.24000 | 137125.18000 | 1.900 | 3980.39062 | 4120.47962 | 4001.84827 |
| MN | 55 | 11.74900 | 2153.54000 | 8.100 | 12.02777 | 12.52851 | 10.68994 |
| NA | 23 | 3291.04400 | 250266.45000 | 3.000 | 3209.79936 | 3400.34623 | 3262.98658 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-1** | 72 | 45569.17000 | 0.00000 | 0.000 | 45458.41000 | 46341.03000 | 44908.06000 |
| MO | 98 | -0.16600 | 30.00000 | 0.000 | -0.18213 | -0.14982 | -0.16472 |
| **IN-1** | 115 | 23433.18000 | 0.00000 | 0.000 | 24337.80000 | 22635.52000 | 23326.23000 |
| AG | 107 | 0.00400 | 6.67000 | 173.200 | 0.00000 | 0.01284 | 0.00000 |
| AS | 75 | -0.02500 | 2.00000 | 0.000 | -0.02621 | -0.06899 | 0.02028 |
| BA | 137 | 114.45900 | 10100.14000 | 2.600 | 111.17152 | 115.19100 | 117.01592 |
| CD | 111 | 0.02000 | 3.33000 | 72.500 | 0.01126 | 0.03633 | 0.01175 |
| CO | 59 | -0.09400 | 116.67000 | 0.000 | -0.04243 | -0.06281 | -0.17659 |
| CU | 63 | 0.10200 | 193.34000 | 42.800 | 0.06360 | 0.09235 | 0.14907 |
| NI | 60 | 1.34000 | 370.02000 | 25.200 | 1.06993 | 1.23103 | 1.71823 |
| RB | 85 | 3.25400 | 370.02000 | 29.000 | 3.14013 | 2.37249 | 4.25038 |
| SB | 121 | -0.04800 | 0.00000 | 0.000 | -0.04774 | -0.04774 | -0.04774 |
| SN | 120 | 0.09900 | 36.67000 | 43.200 | 0.10390 | 0.13965 | 0.05420 |
| SR | 88 | 74.91900 | 12988.65000 | 1.400 | 75.18769 | 73.78875 | 75.77930 |
| ZN | 66 | 1.84800 | 226.68000 | 9.000 | 1.89201 | 1.66431 | 1.98697 |
| **BI-1** | 209 | 131944.66000 | 0.00000 | 0.000 | 131224.14000 | 135379.22000 | 129230.62000 |
| PB | 208 | 0.01600 | 390.01000 | 92.900 | 0.00032 | 0.02963 | 0.01764 |
| TL | 203 | -0.00600 | 43.33000 | 0.000 | 0.02367 | -0.02107 | -0.02048 |
| U | 238 | 0.00200 | 23.33000 | 98.700 | 0.00294 | -0.00026 | 0.00301 |
| *TB-1* | 159 | 150547.72000 | 0.00000 | 0.000 | 149609.06000 | 151807.80000 | 150226.31000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:35:41
Tube Number: 39 Batch: 172121063903A
Sample Number: **9128457** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14806.56000 | 0.00000 | 0.000 | 14756.50000 | 14846.63000 | 14816.54000 |
| AL | 27 | 23.24600 | 260.01000 | 43.000 | 33.29512 | 23.14481 | 13.29774 |
| CA | 44 | 1268.26200 | 1156.76000 | 7.900 | 1166.07487 | 1367.44844 | 1271.26355 |
| CR | 52 | 0.69600 | 353.35000 | 26.800 | 0.78313 | 0.82341 | 0.48168 |
| FE | 57 | 48.57200 | 450.03000 | 3.900 | 47.58437 | 50.75484 | 47.37612 |
| K | 39 | 1148.07600 | 16518.08000 | 4.900 | 1107.05989 | 1211.57763 | 1125.58976 |
| MG | 24 | 750.12300 | 24737.26000 | 0.600 | 745.66438 | 755.07998 | 749.62576 |
| MN | 55 | 8.71100 | 1550.13000 | 11.400 | 8.91105 | 9.59045 | 7.63025 |
| NA | 23 | 4009.86000 | 293188.32000 | 1.500 | 4078.09144 | 3971.56001 | 3979.92738 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.08700 | 26.67000 | 21.700 | 0.09849 | 0.09789 | 0.06539 |
| **GE-1** | 72 | 44820.45000 | 0.00000 | 0.000 | 45348.26000 | 44256.04000 | 44857.06000 |
| MO | 98 | -0.06900 | 86.67000 | 0.000 | 0.05370 | -0.16397 | -0.09657 |
| **IN-1** | 115 | 22645.39000 | 0.00000 | 0.000 | 23567.02000 | 22134.54000 | 22234.61000 |
| AG | 107 | 0.00400 | 6.67000 | 173.200 | 0.01233 | 0.00000 | 0.00000 |
| AS | 75 | 0.02400 | 4.00000 | 518.000 | -0.02481 | 0.16620 | -0.06899 |
| BA | 137 | 69.78300 | 5957.98000 | 3.200 | 72.32361 | 68.48688 | 68.53701 |
| CD | 111 | 0.01200 | 2.00000 | 100.200 | 0.00000 | 0.02477 | 0.01233 |
| CO | 59 | 0.04300 | 233.34000 | 73.300 | 0.01739 | 0.03277 | 0.07743 |
| CU | 63 | 0.26600 | 313.35000 | 14.200 | 0.31007 | 0.24544 | 0.24368 |
| NI | 60 | 0.42600 | 120.01000 | 79.900 | 0.10432 | 0.39056 | 0.78196 |
| RB | 85 | 2.10800 | 230.01000 | 40.000 | 1.66524 | 3.07946 | 1.57924 |
| SB | 121 | -0.04800 | 0.00000 | 0.000 | -0.04774 | -0.04774 | -0.04774 |
| SN | 120 | 0.09300 | 33.33000 | 47.500 | 0.08048 | 0.14281 | 0.05687 |
| SR | 88 | 21.16500 | 3543.83000 | 1.900 | 20.71136 | 21.31870 | 21.46583 |
| ZN | 66 | 1.66900 | 200.01000 | 18.700 | 1.39834 | 2.00965 | 1.59983 |
| **BI-1** | 209 | 130019.16000 | 0.00000 | 0.000 | 131034.93000 | 129532.32000 | 129490.23000 |
| PB | 208 | -0.01900 | 210.01000 | 0.000 | -0.02379 | 0.00929 | -0.04373 |
| TL | 203 | 0.06300 | 150.01000 | 21.300 | 0.04914 | 0.07577 | 0.06297 |
| U | 238 | 0.00500 | 40.00000 | 92.200 | 0.00611 | 0.00780 | -0.00020 |
| *TB-1* | 159 | 149135.48000 | 0.00000 | 0.000 | 149103.59000 | 150638.55000 | 147664.30000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:37:31
Tube Number: 40 Batch: 172121063903A
Sample Number: **9128458** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14299.54000 | 0.00000 | 0.000 | 13965.98000 | 14356.11000 | 14576.53000 |
| AL | 27 | 19.20800 | 220.02000 | 29.400 | 14.65611 | 25.52469 | 17.44333 |
| CA | 44 | 41237.76300 | 36190.31000 | 3.300 | 42818.20754 | 40619.95858 | 40275.12188 |
| CR | 52 | 0.54400 | 276.68000 | 15.600 | 0.63949 | 0.47714 | 0.51477 |
| FE | 57 | 488.72400 | 4087.29000 | 2.800 | 477.53016 | 504.07757 | 484.56483 |
| K | 39 | 3913.67200 | 52740.40000 | 3.600 | 4071.65972 | 3861.25868 | 3808.09842 |
| MG | 24 | 8579.35700 | 272747.05000 | 3.100 | 8885.99727 | 8438.21913 | 8413.85541 |
| MN | 55 | 34.90400 | 5961.23000 | 6.500 | 37.08738 | 35.08481 | 32.54046 |
| NA | 23 | 9784.60900 | 675886.81000 | 2.700 | 10042.04915 | 9792.80955 | 9518.96900 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-1** | 72 | 44022.08000 | 0.00000 | 0.000 | 44536.63000 | 44386.23000 | 43143.39000 |
| MO | 98 | -0.04200 | 100.00000 | 0.000 | -0.04428 | -0.07810 | -0.00333 |
| **IN-1** | 115 | 23162.66000 | 0.00000 | 0.000 | 23866.50000 | 22274.80000 | 23346.69000 |
| AG | 107 | 0.01300 | 20.00000 | 173.200 | 0.00000 | 0.03913 | 0.00000 |
| AS | 75 | -0.04000 | 1.33000 | 0.000 | -0.02536 | -0.06899 | -0.02439 |
| BA | 137 | 35.69200 | 3110.41000 | 7.300 | 32.70120 | 37.42105 | 36.95471 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CO | 59 | -0.12200 | 90.00000 | 0.000 | -0.07092 | -0.14025 | -0.15483 |
| CU | 63 | 0.15300 | 233.35000 | 100.100 | 0.32930 | 0.06949 | 0.05969 |
| NI | 60 | 0.12000 | 43.33000 | 17.700 | 0.10245 | 0.11293 | 0.14318 |
| RB | 85 | 1.24400 | 140.01000 | 44.700 | 1.81742 | 1.20550 | 0.70773 |
| SB | 121 | -0.02100 | 6.67000 | 0.000 | -0.04774 | -0.04774 | 0.03332 |
| SN | 120 | 0.12600 | 46.67000 | 78.400 | 0.23840 | 0.08514 | 0.05416 |
| SR | 88 | 341.32300 | 58444.78000 | 2.700 | 331.92881 | 350.22478 | 341.81400 |
| ZN | 66 | 0.31500 | 63.33000 | 91.900 | -0.01852 | 0.49982 | 0.46321 |
| **BI-1** | 209 | 125516.23000 | 0.00000 | 0.000 | 125681.79000 | 125588.32000 | 125278.57000 |
| PB | 208 | 0.05900 | 576.69000 | 47.600 | 0.08715 | 0.05992 | 0.03070 |
| TL | 203 | -0.02000 | 20.00000 | 0.000 | -0.02012 | -0.01349 | -0.02671 |
| U | 238 | 0.00800 | 60.00000 | 20.500 | 0.00810 | 0.00645 | 0.00978 |
| *TB-1* | 159 | 145673.26000 | 0.00000 | 0.000 | 146793.30000 | 145725.32000 | 144501.16000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:39:22
Tube Number: 41 Batch: 172121063903A
Sample Number: **9128459** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14856.68000 | 0.00000 | 0.000 | 14516.32000 | 15337.24000 | 14716.48000 |
| AL | 27 | 11.60900 | 166.68000 | 14.500 | 11.22968 | 10.14656 | 13.44939 |
| CA | 44 | 14480.43200 | 13211.97000 | 1.200 | 14610.80594 | 14540.46219 | 14290.02872 |
| CR | 52 | 1.11400 | 540.03000 | 26.100 | 0.86812 | 1.43523 | 1.03929 |
| FE | 57 | 63.21900 | 576.70000 | 16.900 | 61.49420 | 53.50312 | 74.66020 |
| K | 39 | 3314.74800 | 46513.73000 | 3.000 | 3416.75958 | 3215.74977 | 3311.73383 |
| MG | 24 | 6831.85400 | 225703.39000 | 1.300 | 6904.58204 | 6737.56399 | 6853.41538 |
| MN | 55 | 16.68800 | 2967.04000 | 21.900 | 14.31348 | 14.85577 | 20.89558 |
| NA | 23 | 4641.43200 | 338699.32000 | 2.300 | 4716.17176 | 4519.20100 | 4688.92338 |
| TI | 47 | -0.03500 | 3.33000 | 0.000 | 0.92832 | -0.51710 | -0.51710 |
| V | 51 | 0.11900 | 36.67000 | 39.500 | 0.06675 | 0.15793 | 0.13168 |
| **GE-1** | 72 | 45024.72000 | 0.00000 | 0.000 | 44005.46000 | 45379.24000 | 45689.46000 |
| MO | 98 | -0.08500 | 76.67000 | 0.000 | -0.05956 | -0.04746 | -0.14888 |
| **IN-1** | 115 | 23860.65000 | 0.00000 | 0.000 | 23386.30000 | 24197.97000 | 23997.69000 |
| AG | 107 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| AS | 75 | 1.07900 | 52.67000 | 8.100 | 1.04399 | 1.17876 | 1.01563 |
| BA | 137 | 120.40900 | 10820.52000 | 2.800 | 124.21075 | 117.74129 | 119.27476 |
| CD | 111 | 0.05400 | 9.33000 | 10.800 | 0.04688 | 0.05664 | 0.05711 |
| CO | 59 | -0.08800 | 123.34000 | 0.000 | -0.02431 | -0.08348 | -0.15660 |
| CU | 63 | 0.45400 | 480.03000 | 43.800 | 0.40256 | 0.28594 | 0.67357 |
| NI | 60 | 0.57900 | 170.01000 | 24.700 | 0.59168 | 0.71493 | 0.42970 |
| RB | 85 | 4.85000 | 560.03000 | 5.100 | 5.12272 | 4.78009 | 4.64786 |
| SB | 121 | 0.00500 | 13.33000 | 982.800 | -0.04774 | 0.03047 | 0.03112 |
| SN | 120 | 0.10600 | 40.00000 | 51.500 | 0.16219 | 0.10450 | 0.05269 |
| SR | 88 | 67.77500 | 11954.43000 | 5.500 | 71.99801 | 65.05392 | 66.27331 |
| ZN | 66 | 2.98200 | 353.35000 | 23.700 | 2.17098 | 3.46464 | 3.31099 |
| **BI-1** | 209 | 128802.72000 | 0.00000 | 0.000 | 127202.43000 | 132122.91000 | 127082.83000 |
| PB | 208 | 0.12500 | 913.38000 | 7.100 | 0.13522 | 0.11787 | 0.12293 |
| TL | 203 | 0.05300 | 133.34000 | 76.300 | 0.01894 | 0.04216 | 0.09750 |
| U | 238 | 0.00800 | 60.00000 | 90.400 | 0.01612 | 0.00291 | 0.00473 |
| *TB-1* | 159 | 151707.34000 | 0.00000 | 0.000 | 149690.21000 | 153128.74000 | 152303.07000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:41:13
Tube Number: 42 Batch: 172121063903A
Sample Number: **9128460** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15163.55000 | 0.00000 | 0.000 | 15737.33000 | 15157.00000 | 14596.31000 |
| AL | 27 | 14.91600 | 196.67000 | 58.800 | 6.15882 | 23.69766 | 14.89201 |
| CA | 44 | 13604.53600 | 12648.17000 | 6.700 | 12772.34506 | 13465.95883 | 14575.30537 |
| CR | 52 | 1.30200 | 633.37000 | 18.900 | 1.50370 | 1.02817 | 1.37435 |
| FE | 57 | 40.05600 | 386.69000 | 9.400 | 44.38030 | 38.26596 | 37.52067 |
| K | 39 | 3513.54400 | 50269.98000 | 3.000 | 3414.61241 | 3503.97720 | 3622.04191 |
| MG | 24 | 7044.59800 | 237335.24000 | 4.800 | 6814.68891 | 6888.08086 | 7431.02539 |
| MN | 55 | 14.42200 | 2613.62000 | 11.600 | 13.09156 | 13.87185 | 16.30190 |
| NA | 23 | 4631.12000 | 344719.48000 | 4.500 | 4432.97424 | 4608.64258 | 4851.74353 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.08300 | 26.67000 | 93.400 | 0.15392 | 0.09589 | 0.00000 |
| **GE-1** | 72 | 45489.24000 | 0.00000 | 0.000 | 45810.31000 | 44947.69000 | 45709.72000 |
| MO | 98 | -0.13200 | 50.00000 | 0.000 | -0.06571 | -0.13079 | -0.19902 |
| **IN-1** | 115 | 23553.50000 | 0.00000 | 0.000 | 23566.89000 | 23196.28000 | 23897.32000 |
| AG | 107 | 0.00200 | 3.33000 | 173.200 | 0.00616 | 0.00000 | 0.00000 |
| AS | 75 | 1.31600 | 62.67000 | 5.700 | 1.38888 | 1.32240 | 1.23802 |
| BA | 137 | 127.48900 | 11314.17000 | 1.700 | 125.51330 | 127.17479 | 129.78008 |
| CD | 111 | 0.05000 | 8.67000 | 14.700 | 0.04652 | 0.05908 | 0.04588 |
| CO | 59 | -0.09800 | 113.34000 | 0.000 | -0.06902 | -0.14343 | -0.08177 |
| CU | 63 | 0.65100 | 630.04000 | 29.400 | 0.86512 | 0.49676 | 0.58992 |
| NI | 60 | 0.48700 | 143.34000 | 23.100 | 0.40121 | 0.44607 | 0.61468 |
| RB | 85 | 4.89500 | 560.04000 | 33.900 | 5.17110 | 3.11658 | 6.39611 |
| SB | 121 | 0.03200 | 20.00000 | 121.000 | 0.03256 | -0.00695 | 0.07105 |
| SN | 120 | 0.04500 | 16.67000 | 91.300 | 0.08048 | 0.05451 | 0.00000 |
| SR | 88 | 74.91300 | 13048.67000 | 2.500 | 75.46523 | 76.43689 | 72.83670 |
| ZN | 66 | 2.44100 | 290.01000 | 43.000 | 3.47117 | 2.47837 | 1.37490 |
| **BI-1** | 209 | 129343.29000 | 0.00000 | 0.000 | 126184.55000 | 129804.01000 | 132041.31000 |
| PB | 208 | 0.07700 | 680.04000 | 30.900 | 0.09912 | 0.05189 | 0.07997 |
| TL | 203 | 0.06800 | 156.68000 | 27.200 | 0.08526 | 0.06914 | 0.04851 |
| U | 238 | 0.01000 | 73.34000 | 64.600 | 0.00642 | 0.01736 | 0.00605 |
| *TB-1* | 159 | 153204.52000 | 0.00000 | 0.000 | 153211.51000 | 151201.95000 | 155200.10000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:43:04
Tube Number: 43 Batch: 172121063903A
Sample Number: **9128461** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15307.10000 | 0.00000 | 0.000 | 15817.64000 | 14746.43000 | 15357.24000 |
| AL | 27 | -1.32800 | 63.33000 | 0.000 | -3.20318 | 3.44305 | -4.22462 |
| CA | 44 | 10.12700 | 13.33000 | 241.900 | -4.01410 | -4.01410 | 38.40979 |
| CR | 52 | 0.51200 | 283.35000 | 21.200 | 0.63712 | 0.46150 | 0.43861 |
| FE | 57 | 4.05000 | 70.00000 | 52.800 | 3.81985 | 2.03648 | 6.29294 |
| K | 39 | -6.90500 | 616.70000 | 0.000 | -8.75004 | -8.65442 | -3.31059 |
| MG | 24 | 2.61800 | 126.67000 | 38.800 | 2.29022 | 3.75806 | 1.80688 |
| MN | 55 | 0.40100 | 83.34000 | 72.600 | 0.09675 | 0.67662 | 0.42891 |
| NA | 23 | -32.94300 | 8592.34000 | 0.000 | -40.08640 | -27.32236 | -31.42017 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-1** | 72 | 44854.26000 | 0.00000 | 0.000 | 43834.80000 | 46151.25000 | 44576.72000 |
| MO | 98 | -0.21000 | 3.33000 | 0.000 | -0.21573 | -0.19918 | -0.21573 |
| **IN-1** | 115 | 23950.53000 | 0.00000 | 0.000 | 23807.09000 | 24257.52000 | 23786.98000 |
| AG | 107 | 0.00600 | 10.00000 | 1.100 | 0.00610 | 0.00599 | 0.00611 |
| AS | 75 | -0.05400 | 0.67000 | 0.000 | -0.02526 | -0.06899 | -0.06899 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00800 | 1.33000 | 173.200 | 0.00000 | 0.02260 | 0.00000 |
| CO | 59 | -0.17100 | 46.67000 | 0.000 | -0.15609 | -0.16778 | -0.18814 |
| CU | 63 | 0.06300 | 166.67000 | 82.500 | 0.09321 | 0.00300 | 0.09341 |
| NI | 60 | 0.30900 | 96.67000 | 53.600 | 0.13956 | 0.31642 | 0.47067 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | -0.04800 | 0.00000 | 0.000 | -0.04774 | -0.04774 | -0.04774 |
| SN | 120 | 0.00900 | 3.33000 | 173.200 | 0.02655 | 0.00000 | 0.00000 |
| SR | 88 | 0.05600 | 10.00000 | 99.400 | 0.00000 | 0.11146 | 0.05683 |
| ZN | 66 | 0.25900 | 60.00000 | 63.400 | 0.16870 | 0.16004 | 0.44913 |
| **BI-1** | 209 | 131974.93000 | 0.00000 | 0.000 | 130477.73000 | 131659.67000 | 133787.38000 |
| PB | 208 | -0.03400 | 140.00000 | 0.000 | -0.02565 | -0.02196 | -0.05419 |
| TL | 203 | -0.02500 | 13.33000 | 0.000 | -0.02698 | -0.01440 | -0.03335 |
| U | 238 | 0.00100 | 16.67000 | 112.400 | 0.00138 | 0.00135 | -0.00025 |
| *TB-1* | 159 | 150079.19000 | 0.00000 | 0.000 | 150629.68000 | 149415.54000 | 150192.34000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:44:55
Tube Number: 44 Batch: 172121063903A
Sample Number: **9128681** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 15066.95000 | 0.00000 | 0.000 | 15617.41000 | 14926.86000 | 14656.59000 |
| AL | 27 | -1.61700 | 60.00000 | 0.000 | -6.65529 | 3.29380 | -1.49090 |
| CA | 44 | 50.59900 | 50.00000 | 59.900 | 27.27376 | 39.63298 | 84.88977 |
| CR | 52 | 0.45800 | 253.35000 | 38.200 | 0.36421 | 0.65921 | 0.34924 |
| FE | 57 | -2.64500 | 10.00000 | 0.000 | -3.80705 | -1.49789 | -2.63118 |
| K | 39 | 4.21000 | 763.38000 | 171.300 | 8.29065 | -4.11891 | 8.45905 |
| MG | 24 | 17.30000 | 613.37000 | 33.500 | 10.68437 | 21.47348 | 19.74252 |
| MN | 55 | 1.08000 | 203.34000 | 56.900 | 0.58170 | 0.89224 | 1.76753 |
| NA | 23 | 187.56400 | 24260.02000 | 7.200 | 172.22785 | 197.18925 | 193.27519 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.22400 | 70.00000 | 40.400 | 0.31020 | 0.12982 | 0.23138 |
| **GE-1** | 72 | 45479.01000 | 0.00000 | 0.000 | 46090.51000 | 44185.91000 | 46160.62000 |
| MO | 98 | -0.21000 | 3.33000 | 0.000 | -0.21573 | -0.21573 | -0.19919 |
| **IN-1** | 115 | 23589.88000 | 0.00000 | 0.000 | 24437.93000 | 23065.23000 | 23266.48000 |
| AG | 107 | 0.00200 | 3.33000 | 173.200 | 0.00000 | 0.00630 | 0.00000 |
| AS | 75 | -0.04100 | 1.33000 | 0.000 | 0.01622 | -0.06899 | -0.06899 |
| BA | 137 | 0.70300 | 63.34000 | 77.700 | 1.19486 | 0.11508 | 0.79858 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CO | 59 | -0.15900 | 56.67000 | 0.000 | -0.14733 | -0.18714 | -0.14366 |
| CU | 63 | 8.46600 | 6841.58000 | 6.700 | 9.11537 | 8.05471 | 8.22656 |
| NI | 60 | 0.12900 | 46.67000 | 20.400 | 0.09903 | 0.14547 | 0.14383 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | -0.04800 | 0.00000 | 0.000 | -0.04774 | -0.04774 | -0.04774 |
| SN | 120 | 0.11500 | 43.33000 | 46.200 | 0.15522 | 0.05482 | 0.13586 |
| SR | 88 | 0.13100 | 23.33000 | 96.100 | 0.27660 | 0.05861 | 0.05810 |
| ZN | 66 | 0.61000 | 96.67000 | 33.500 | 0.70181 | 0.37623 | 0.75222 |
| **BI-1** | 209 | 131067.49000 | 0.00000 | 0.000 | 131195.30000 | 129864.64000 | 132142.53000 |
| PB | 208 | -0.02100 | 203.34000 | 0.000 | -0.03189 | -0.01327 | -0.01811 |
| TL | 203 | -0.02500 | 13.33000 | 0.000 | -0.02067 | -0.03335 | -0.02076 |
| U | 238 | 0.00000 | 13.33000 | 570.500 | 0.00136 | 0.00140 | -0.00180 |
| *TB-1* | 159 | 151077.68000 | 0.00000 | 0.000 | 151231.41000 | 151414.54000 | 150587.10000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:46:44
Tube Number: 45 Batch: 172091063902A
Sample Number: **9121689** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: DOD-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 13852.54000 | 0.00000 | 0.000 | 14716.44000 | 13585.70000 | 13255.49000 |
| AL | 27 | 2007.98000 | 15186.70000 | 5.900 | 1870.50860 | 2070.22578 | 2083.20557 |
| CA | 44 | 44219.27900 | 37549.54000 | 4.500 | 42043.15523 | 44725.90396 | 45888.77689 |
| CR | 52 | 49.94200 | 20412.20000 | 2.300 | 48.60264 | 50.45618 | 50.76722 |
| FE | 57 | 1055.53000 | 8502.31000 | 4.000 | 1009.46482 | 1064.60252 | 1092.52193 |
| K | 39 | 12463.98200 | 161159.92000 | 3.800 | 11953.60295 | 12564.86315 | 12873.47944 |
| MG | 24 | 7556.86500 | 232439.79000 | 4.600 | 7161.42378 | 7696.17160 | 7812.99844 |
| MN | 55 | 49.94300 | 8242.21000 | 8.100 | 45.27599 | 52.31993 | 52.23371 |
| NA | 23 | 32272.79100 | 2133909.81000 | 4.800 | 30499.59423 | 33213.47087 | 33105.30723 |
| TI | 47 | 261.02700 | 1723.49000 | 5.500 | 244.73810 | 271.32689 | 267.01537 |
| V | 51 | 55.92800 | 15977.59000 | 2.500 | 54.34395 | 56.54613 | 56.89371 |
| **GE-1** | 72 | 41793.35000 | 0.00000 | 0.000 | 42171.04000 | 42111.07000 | 41097.95000 |
| MO | 98 | 51.34200 | 28213.81000 | 2.800 | 51.50456 | 49.81663 | 52.70582 |
| **IN-1** | 115 | 22827.53000 | 0.00000 | 0.000 | 23027.79000 | 23467.09000 | 21987.72000 |
| AG | 107 | 43.71500 | 68660.89000 | 3.000 | 42.49352 | 43.53776 | 45.11399 |
| AS | 75 | 9.60100 | 424.01000 | 5.600 | 10.19437 | 9.15929 | 9.44873 |
| BA | 137 | 159.69000 | 13719.39000 | 4.700 | 158.90406 | 152.53540 | 167.63066 |
| CD | 111 | 4.56300 | 759.35000 | 4.300 | 4.48747 | 4.41514 | 4.78700 |
| CO | 59 | 211.12200 | 189409.13000 | 2.800 | 209.43920 | 206.20887 | 217.71940 |
| CU | 63 | 43.60000 | 33552.43000 | 5.700 | 41.91528 | 42.44748 | 46.43751 |
| NI | 60 | 42.37500 | 11057.12000 | 6.000 | 41.14052 | 40.66796 | 45.31795 |
| RB | 85 | 2.84500 | 313.35000 | 28.400 | 1.97331 | 2.99260 | 3.56969 |
| SB | 121 | 5.83400 | 1416.78000 | 13.600 | 6.48658 | 4.95277 | 6.06404 |
| SN | 120 | 47.35700 | 17082.48000 | 4.900 | 47.73969 | 44.85040 | 49.48044 |
| SR | 88 | 270.19900 | 45600.14000 | 2.600 | 265.17558 | 267.02509 | 278.39600 |
| ZN | 66 | 447.59300 | 46013.22000 | 3.700 | 450.68021 | 429.90510 | 462.19244 |
| **BI-1** | 209 | 119784.34000 | 0.00000 | 0.000 | 119557.49000 | 121157.39000 | 118638.13000 |
| PB | 208 | 15.28900 | 69605.79000 | 0.400 | 15.21340 | 15.33287 | 15.32058 |
| TL | 203 | 1.96000 | 2873.70000 | 9.200 | 1.78186 | 2.14227 | 1.95712 |
| U | 238 | 26.40800 | 152658.88000 | 1.300 | 26.69888 | 26.04625 | 26.47800 |
| *TB-1* | 159 | 137344.62000 | 0.00000 | 0.000 | 139482.85000 | 135257.09000 | 137293.92000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:48:33
Tube Number: 46
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14319.47000 | 0.00000 | 0.000 | 14346.10000 | 14716.52000 | 13895.79000 |
| AL | 27 | 2529.54200 | 19771.34000 | 8.000 | 2464.69813 | 2368.74256 | 2755.18524 |
| CA | 44 | 2464.25300 | 2170.22000 | 3.100 | 2550.80716 | 2431.11850 | 2410.83360 |
| CR | 52 | 248.51900 | 104819.49000 | 4.000 | 250.78212 | 237.67281 | 257.10061 |
| FE | 57 | 2509.31700 | 20862.73000 | 4.600 | 2496.47705 | 2401.86280 | 2629.61205 |
| K | 39 | 2522.76800 | 34299.88000 | 1.500 | 2479.31405 | 2550.94993 | 2538.03878 |
| MG | 24 | 2415.17800 | 76857.07000 | 6.100 | 2409.22583 | 2271.58053 | 2564.72909 |
| MN | 55 | 262.20400 | 44803.18000 | 1.600 | 263.94984 | 257.41577 | 265.24741 |
| NA | 23 | 2319.84800 | 168288.42000 | 3.400 | 2348.98972 | 2231.35184 | 2379.20370 |
| TI | 47 | 256.61400 | 1753.50000 | 4.100 | 259.84322 | 244.73534 | 265.26210 |
| V | 51 | 243.17400 | 71854.01000 | 2.100 | 239.35506 | 241.16287 | 249.00354 |
| **GE-1** | 72 | 42845.91000 | 0.00000 | 0.000 | 42722.68000 | 43353.46000 | 42461.60000 |
| MO | 98 | 24.42000 | 13826.04000 | 2.400 | 24.22681 | 25.08759 | 23.94527 |
| **IN-1** | 115 | 22484.80000 | 0.00000 | 0.000 | 22773.11000 | 22171.69000 | 22509.60000 |
| AG | 107 | 22.93100 | 35484.11000 | 3.700 | 21.95258 | 23.34258 | 23.49655 |
| AS | 75 | 240.55600 | 10390.41000 | 3.400 | 231.23755 | 246.67451 | 243.75627 |
| BA | 137 | 253.38400 | 21457.71000 | 3.600 | 243.40605 | 261.39783 | 255.34771 |
| CD | 111 | 24.07000 | 3949.15000 | 2.400 | 23.78582 | 23.68910 | 24.73418 |
| CO | 59 | 226.59200 | 200324.62000 | 1.800 | 225.90588 | 230.95061 | 222.92014 |
| CU | 63 | 224.72000 | 170082.10000 | 1.500 | 227.11603 | 226.25583 | 220.78784 |
| NI | 60 | 230.16500 | 59171.49000 | 2.700 | 227.54021 | 237.19497 | 225.76053 |
| RB | 85 | 22.96800 | 2500.28000 | 7.900 | 21.67811 | 22.17336 | 25.05262 |
| SB | 121 | 24.62700 | 5861.27000 | 5.300 | 24.51545 | 25.99257 | 23.37270 |
| SN | 120 | 24.24800 | 8622.49000 | 2.900 | 24.07511 | 25.01343 | 23.65473 |
| SR | 88 | 23.95000 | 3983.94000 | 6.300 | 25.23350 | 24.33235 | 22.28501 |
| ZN | 66 | 237.43900 | 24070.26000 | 2.100 | 232.69269 | 242.62247 | 237.00161 |
| **BI-1** | 209 | 125053.34000 | 0.00000 | 0.000 | 123988.11000 | 125035.74000 | 126136.16000 |
| PB | 208 | 25.59700 | 121452.99000 | 1.400 | 25.73241 | 25.86578 | 25.19175 |
| TL | 203 | 24.80100 | 37350.98000 | 2.400 | 25.41111 | 24.23162 | 24.75958 |
| U | 238 | 25.06300 | 151268.50000 | 0.200 | 25.11729 | 25.07613 | 24.99625 |
| *TB-1* | 159 | 143082.39000 | 0.00000 | 0.000 | 143554.77000 | 143959.70000 | 141732.70000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:50:22
Tube Number: 47
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14482.94000 | 0.00000 | 0.000 | 14556.35000 | 14416.19000 | 14476.29000 |
| AL | 27 | -7.74300 | 10.00000 | 0.000 | -6.48392 | -9.00631 | -7.73814 |
| CA | 44 | 3.51800 | 6.67000 | 370.800 | -4.01410 | 18.58250 | -4.01410 |
| CR | 52 | 0.39400 | 216.68000 | 6.900 | 0.37574 | 0.38050 | 0.42534 |
| FE | 57 | -1.03000 | 23.33000 | 0.000 | -1.43912 | -1.41609 | -0.23551 |
| K | 39 | 0.53500 | 683.37000 | 2935.800 | -14.75374 | -0.25124 | 16.60892 |
| MG | 24 | -0.91500 | 6.67000 | 0.000 | -0.50333 | -1.12115 | -1.12115 |
| MN | 55 | 0.18900 | 43.33000 | 47.000 | 0.11052 | 0.17032 | 0.28513 |
| NA | 23 | -44.52700 | 7341.71000 | 0.000 | -43.47078 | -46.36187 | -43.74752 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.03300 | 10.00000 | 99.700 | 0.06656 | 0.03360 | 0.00000 |
| **GE-1** | 72 | 41987.34000 | 0.00000 | 0.000 | 42943.23000 | 42381.25000 | 40637.54000 |
| MO | 98 | -0.21000 | 3.33000 | 0.000 | -0.21573 | -0.19771 | -0.21573 |
| **IN-1** | 115 | 22735.08000 | 0.00000 | 0.000 | 22294.55000 | 22515.18000 | 23395.50000 |
| AG | 107 | 0.00600 | 10.00000 | 101.600 | 0.01303 | 0.00000 | 0.00621 |
| AS | 75 | 0.11400 | 8.00000 | 36.300 | 0.07111 | 0.11598 | 0.15352 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CO | 59 | 0.00200 | 200.01000 | 6222.000 | -0.08323 | -0.03934 | 0.12795 |
| CU | 63 | -0.04300 | 76.67000 | 0.000 | 0.02930 | -0.09124 | -0.06782 |
| NI | 60 | -0.00500 | 10.00000 | 0.000 | 0.03433 | -0.00528 | -0.04413 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.00900 | 13.33000 | 569.100 | 0.03714 | 0.03631 | -0.04774 |
| SN | 120 | 0.07500 | 26.67000 | 143.200 | 0.19849 | 0.00000 | 0.02702 |
| SR | 88 | 0.02000 | 3.33000 | 173.200 | 0.06064 | 0.00000 | 0.00000 |
| ZN | 66 | -0.16500 | 13.33000 | 0.000 | 0.00116 | -0.19900 | -0.29762 |
| **BI-1** | 209 | 122151.29000 | 0.00000 | 0.000 | 120431.81000 | 122416.79000 | 123605.26000 |
| PB | 208 | -0.01500 | 220.01000 | 0.000 | -0.03138 | -0.00167 | -0.01080 |
| TL | 203 | 0.00800 | 60.00000 | 239.500 | 0.00117 | 0.02778 | -0.00644 |
| U | 238 | 0.00400 | 36.67000 | 88.900 | 0.00681 | 0.00667 | -0.00012 |
| *TB-1* | 159 | 140701.90000 | 0.00000 | 0.000 | 141861.57000 | 139361.20000 | 140882.93000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:52:11
Tube Number: 48
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14776.57000 | 0.00000 | 0.000 | 14956.58000 | 14776.59000 | 14596.54000 |
| AL | 27 | 172.26400 | 1456.78000 | 20.300 | 134.61565 | 178.61022 | 203.56471 |
| CA | 44 | 407.39200 | 373.35000 | 26.800 | 486.07244 | 282.58805 | 453.51501 |
| CR | 52 | 4.40800 | 1970.19000 | 14.300 | 4.53856 | 4.96279 | 3.72308 |
| FE | 57 | 200.33500 | 1750.16000 | 12.700 | 212.84530 | 171.15600 | 217.00385 |
| K | 39 | 396.47600 | 6144.62000 | 3.300 | 393.04361 | 410.80853 | 385.57602 |
| MG | 24 | 193.95000 | 6408.02000 | 5.200 | 188.62774 | 187.58828 | 205.63463 |
| MN | 55 | 4.09700 | 733.37000 | 2.900 | 4.14016 | 3.96450 | 4.18640 |
| NA | 23 | 328.60800 | 33728.13000 | 2.900 | 320.46614 | 339.02973 | 326.32716 |
| TI | 47 | 26.95100 | 193.34000 | 31.000 | 20.52735 | 36.40322 | 23.92138 |
| V | 51 | 0.67800 | 206.68000 | 29.500 | 0.48589 | 0.88523 | 0.66383 |
| **GE-1** | 72 | 41539.78000 | 0.00000 | 0.000 | 40607.78000 | 41649.87000 | 42361.68000 |
| MO | 98 | 0.84500 | 576.70000 | 13.800 | 0.96897 | 0.73765 | 0.82978 |
| **IN-1** | 115 | 22758.90000 | 0.00000 | 0.000 | 22372.42000 | 23401.63000 | 22502.66000 |
| AG | 107 | 0.86300 | 1350.10000 | 7.100 | 0.92857 | 0.80703 | 0.85218 |
| AS | 75 | 3.66900 | 163.33000 | 5.100 | 3.65393 | 3.49019 | 3.86372 |
| BA | 137 | 3.43400 | 293.35000 | 28.400 | 4.50861 | 2.60885 | 3.18489 |
| CD | 111 | 0.87500 | 145.33000 | 8.100 | 0.80860 | 0.86674 | 0.95008 |
| CO | 59 | 0.87100 | 973.41000 | 26.800 | 0.84936 | 0.65002 | 1.11468 |
| CU | 63 | 3.67900 | 2927.02000 | 5.300 | 3.49712 | 3.65460 | 3.88567 |
| NI | 60 | 3.40700 | 896.72000 | 9.600 | 3.74814 | 3.09546 | 3.37635 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 1.84300 | 453.36000 | 30.400 | 1.64421 | 1.40805 | 2.47550 |
| SN | 120 | 3.80400 | 1366.77000 | 12.000 | 4.18245 | 3.29604 | 3.93347 |
| SR | 88 | 1.74400 | 293.35000 | 11.900 | 1.63159 | 1.61760 | 1.98267 |
| ZN | 66 | 27.89600 | 2890.35000 | 8.900 | 25.40979 | 27.88538 | 30.39287 |
| **BI-1** | 209 | 123699.37000 | 0.00000 | 0.000 | 120320.79000 | 124804.39000 | 125972.93000 |
| PB | 208 | 2.02200 | 9754.86000 | 3.000 | 2.08555 | 2.01476 | 1.96611 |
| TL | 203 | 0.98900 | 1523.47000 | 10.800 | 0.88573 | 1.09924 | 0.98312 |
| U | 238 | 1.01400 | 6064.75000 | 1.200 | 1.02828 | 1.00955 | 1.00511 |
| *TB-1* | 159 | 142725.71000 | 0.00000 | 0.000 | 143989.72000 | 143748.61000 | 140438.81000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:54:00
Tube Number: 49
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 12387.95000 | 0.00000 | 0.000 | 12194.40000 | 13105.20000 | 11864.26000 |
| AL | 27 | 106991.35600 | 720685.46000 | 5.400 | 108305.65167 | 100706.04041 | 111962.37608 |
| CA | 44 | 309784.13200 | 235096.86000 | 6.300 | 315255.71422 | 287972.56909 | 326124.11402 |
| CR | 52 | 1.65400 | 643.38000 | 21.500 | 2.05721 | 1.38830 | 1.51678 |
| FE | 57 | 261840.20800 | 1879018.52000 | 4.800 | 263836.70252 | 248328.43856 | 273355.48285 |
| K | 39 | 115294.76700 | 1327709.72000 | 5.500 | 118285.51938 | 108014.06785 | 119584.71244 |
| MG | 24 | 107927.07500 | 2967572.25000 | 5.700 | 110769.41318 | 100896.27550 | 112115.53680 |
| MN | 55 | 4.18300 | 626.70000 | 13.100 | 4.81723 | 3.83855 | 3.89339 |
| NA | 23 | 270686.03200 | 15932938.51000 | 6.200 | 275906.77625 | 251956.55045 | 284194.76958 |
| TI | 47 | 2216.50300 | 13071.85000 | 8.300 | 2424.86998 | 2072.07281 | 2152.56605 |
| V | 51 | 0.05100 | 13.33000 | 37.700 | 0.03973 | 0.07393 | 0.04083 |
| **GE-1** | 72 | 40216.75000 | 0.00000 | 0.000 | 38933.37000 | 40517.94000 | 41198.93000 |
| MO | 98 | 2039.99500 | 1074204.90000 | 1.800 | 2083.20478 | 2016.80214 | 2019.97695 |
| **IN-1** | 115 | 21079.74000 | 0.00000 | 0.000 | 21113.55000 | 20763.04000 | 21362.62000 |
| AG | 107 | 0.38100 | 553.36000 | 4.000 | 0.37155 | 0.39881 | 0.37402 |
| AS | 75 | 0.19400 | 10.67000 | 13.100 | 0.17757 | 0.18173 | 0.22343 |
| BA | 137 | 0.92500 | 73.33000 | 22.300 | 0.88001 | 1.15054 | 0.74550 |
| CD | 111 | 0.09100 | 14.00000 | 50.200 | 0.07789 | 0.05280 | 0.14114 |
| CO | 59 | 0.71600 | 776.71000 | 23.500 | 0.76843 | 0.52764 | 0.85223 |
| CU | 63 | 0.73500 | 623.37000 | 14.000 | 0.61629 | 0.80093 | 0.78834 |
| NI | 60 | 0.85300 | 216.68000 | 59.100 | 1.40580 | 0.41923 | 0.73379 |
| RB | 85 | 0.55700 | 56.67000 | 28.200 | 0.58694 | 0.69632 | 0.38673 |
| SB | 121 | 1.04500 | 243.35000 | 17.300 | 1.25209 | 0.95496 | 0.92681 |
| SN | 120 | 0.13200 | 43.34000 | 135.700 | 0.05988 | 0.33496 | 0.00000 |
| SR | 88 | 10.60400 | 1653.48000 | 6.700 | 9.79739 | 10.87447 | 11.13887 |
| ZN | 66 | 1.59900 | 180.01000 | 17.600 | 1.91090 | 1.52043 | 1.36547 |
| **BI-1** | 209 | 110470.75000 | 0.00000 | 0.000 | 108828.11000 | 110936.78000 | 111647.37000 |
| PB | 208 | 0.19700 | 1083.40000 | 5.800 | 0.20252 | 0.20463 | 0.18401 |
| TL | 203 | 0.11000 | 190.01000 | 12.500 | 0.11945 | 0.09406 | 0.11559 |
| U | 238 | 0.05800 | 316.68000 | 22.300 | 0.07246 | 0.04864 | 0.05203 |
| *TB-1* | 159 | 109103.25000 | 0.00000 | 0.000 | 111562.01000 | 107437.06000 | 108310.68000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:55:49
Tube Number: 50
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 12601.47000 | 0.00000 | 0.000 | 12985.00000 | 12364.71000 | 12454.69000 |
| AL | 27 | 106250.51900 | 729200.27000 | 1.500 | 104473.51263 | 106907.71833 | 107370.32665 |
| CA | 44 | 310702.01500 | 240306.21000 | 1.900 | 303965.36470 | 313729.46991 | 314411.21148 |
| CR | 52 | 222.50100 | 82616.16000 | 2.400 | 216.33990 | 226.58964 | 224.57241 |
| FE | 57 | 260256.30600 | 1901971.01000 | 3.100 | 251028.38756 | 264558.40226 | 265182.12871 |
| K | 39 | 114815.08100 | 1346972.64000 | 2.300 | 111756.81332 | 115912.68789 | 116775.74228 |
| MG | 24 | 109289.14500 | 3061000.37000 | 3.300 | 105273.63733 | 112038.72478 | 110555.07321 |
| MN | 55 | 233.29400 | 35068.08000 | 4.700 | 224.28943 | 245.52716 | 230.06660 |
| NA | 23 | 271875.89700 | 16305671.01000 | 2.800 | 263405.09324 | 277730.67175 | 274491.92650 |
| TI | 47 | 2163.12500 | 12985.23000 | 4.500 | 2057.31052 | 2182.60910 | 2249.45685 |
| V | 51 | 227.29000 | 59107.22000 | 1.400 | 223.62912 | 229.30496 | 228.93443 |
| **GE-1** | 72 | 41061.63000 | 0.00000 | 0.000 | 39785.33000 | 40286.61000 | 43112.94000 |
| MO | 98 | 2034.24100 | 1093180.95000 | 2.800 | 2083.02733 | 2046.75594 | 1972.94075 |
| **IN-1** | 115 | 20702.56000 | 0.00000 | 0.000 | 20592.07000 | 20782.45000 | 20733.16000 |
| AG | 107 | 44.86200 | 63935.71000 | 1.800 | 44.69410 | 44.15872 | 45.73349 |
| AS | 75 | 95.43000 | 3797.76000 | 2.700 | 97.57327 | 96.17784 | 92.53928 |
| BA | 137 | 0.89600 | 70.00000 | 61.900 | 0.64449 | 1.53274 | 0.51209 |
| CD | 111 | 92.27900 | 13939.65000 | 0.600 | 92.75992 | 92.37225 | 91.70525 |
| CO | 59 | 184.19200 | 149986.02000 | 1.100 | 182.58597 | 186.39382 | 183.59483 |
| CU | 63 | 176.85600 | 123261.35000 | 1.500 | 178.68647 | 173.80597 | 178.07446 |
| NI | 60 | 178.29100 | 42210.37000 | 2.300 | 182.85542 | 177.00323 | 175.01391 |
| RB | 85 | 0.70000 | 70.00000 | 71.800 | 1.20371 | 0.69567 | 0.19924 |
| SB | 121 | 1.07900 | 246.68000 | 12.500 | 0.96328 | 1.22722 | 1.04768 |
| SN | 120 | 0.11200 | 36.67000 | 41.300 | 0.06140 | 0.15210 | 0.12197 |
| SR | 88 | 9.99400 | 1530.13000 | 15.000 | 11.09606 | 10.60411 | 8.28163 |
| ZN | 66 | 81.61900 | 7638.55000 | 3.900 | 78.32552 | 81.77475 | 84.75533 |
| **BI-1** | 209 | 109184.59000 | 0.00000 | 0.000 | 108265.35000 | 110490.56000 | 108797.87000 |
| PB | 208 | 0.18600 | 1026.72000 | 17.800 | 0.15753 | 0.22245 | 0.17831 |
| TL | 203 | 0.08800 | 160.01000 | 22.100 | 0.09721 | 0.10210 | 0.06600 |
| U | 238 | 0.05800 | 316.68000 | 16.800 | 0.06711 | 0.06010 | 0.04772 |
| *TB-1* | 159 | 108066.42000 | 0.00000 | 0.000 | 106721.74000 | 108904.53000 | 108573.00000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:57:38
Tube Number: 51
Sample Number: **RINSE**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14039.25000 | 0.00000 | 0.000 | 13765.65000 | 13845.61000 | 14506.50000 |
| AL | 27 | 1.00400 | 76.67000 | 417.500 | 4.33005 | -3.70257 | 2.38343 |
| CA | 44 | 19.51400 | 20.00000 | 208.800 | -4.01410 | 66.56933 | -4.01410 |
| CR | 52 | 0.44200 | 230.01000 | 14.300 | 0.50249 | 0.37637 | 0.44762 |
| FE | 57 | 14.41100 | 146.68000 | 91.600 | 14.97380 | 27.31401 | 0.94509 |
| K | 39 | 7.79100 | 756.72000 | 54.100 | 12.25413 | 7.23782 | 3.88159 |
| MG | 24 | 2.17900 | 103.34000 | 66.800 | 3.12572 | 0.50270 | 2.90852 |
| MN | 55 | -0.02200 | 6.67000 | 0.000 | -0.06219 | 0.05886 | -0.06219 |
| NA | 23 | -4.67300 | 9769.62000 | 0.000 | 11.12139 | -13.19868 | -11.94178 |
| TI | 47 | -0.00900 | 3.33000 | 0.000 | 1.00714 | -0.51710 | -0.51710 |
| V | 51 | 0.04600 | 13.33000 | 86.700 | 0.07039 | 0.00000 | 0.06679 |
| **GE-1** | 72 | 42672.20000 | 0.00000 | 0.000 | 43654.53000 | 42160.87000 | 42201.19000 |
| MO | 98 | 0.62400 | 470.02000 | 43.700 | 0.78133 | 0.78043 | 0.30901 |
| **IN-1** | 115 | 22224.74000 | 0.00000 | 0.000 | 22464.71000 | 21423.74000 | 22785.78000 |
| AG | 107 | 0.00200 | 3.33000 | 173.200 | 0.00000 | 0.00000 | 0.00638 |
| AS | 75 | -0.05300 | 0.67000 | 0.000 | -0.06899 | -0.02039 | -0.06899 |
| BA | 137 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| CD | 111 | 0.00900 | 1.33000 | 173.200 | 0.00000 | 0.02559 | 0.00000 |
| CO | 59 | -0.06800 | 133.34000 | 0.000 | -0.12960 | -0.07766 | 0.00320 |
| CU | 63 | 0.00400 | 110.00000 | 1121.000 | 0.00151 | 0.05022 | -0.03968 |
| NI | 60 | -0.00500 | 10.00000 | 0.000 | 0.03374 | -0.00330 | -0.04413 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | -0.04800 | 0.00000 | 0.000 | -0.04774 | -0.04774 | -0.04774 |
| SN | 120 | 0.03900 | 13.33000 | 116.800 | 0.00000 | 0.08853 | 0.02774 |
| SR | 88 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| ZN | 66 | -0.06000 | 23.33000 | 0.000 | -0.29762 | 0.22058 | -0.10273 |
| **BI-1** | 209 | 120447.23000 | 0.00000 | 0.000 | 119231.10000 | 122889.16000 | 119221.43000 |
| PB | 208 | -0.00700 | 250.00000 | 0.000 | -0.02886 | -0.01265 | 0.01990 |
| TL | 203 | -0.00800 | 36.67000 | 0.000 | -0.02638 | 0.00048 | 0.00152 |
| U | 238 | 0.00000 | 10.00000 | 0.000 | -0.00180 | -0.00011 | 0.00168 |
| *TB-1* | 159 | 141337.53000 | 0.00000 | 0.000 | 140430.75000 | 144222.19000 | 139359.66000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 11:59:27
Tube Number: 52
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14923.36000 | 0.00000 | 0.000 | 14916.80000 | 15356.95000 | 14496.32000 |
| AL | 27 | 2481.37000 | 20241.78000 | 0.700 | 2468.61772 | 2473.03349 | 2502.45826 |
| CA | 44 | 2493.36800 | 2286.90000 | 2.900 | 2507.65821 | 2414.41567 | 2558.02880 |
| CR | 52 | 242.10500 | 106442.11000 | 2.900 | 243.90923 | 234.31475 | 248.08955 |
| FE | 57 | 2432.51600 | 21096.32000 | 0.200 | 2436.64313 | 2429.63092 | 2431.27305 |
| K | 39 | 2526.60600 | 35786.10000 | 3.500 | 2613.44487 | 2437.53345 | 2528.83850 |
| MG | 24 | 2399.76200 | 79664.95000 | 1.100 | 2388.45656 | 2382.02728 | 2428.80096 |
| MN | 55 | 253.42700 | 45121.23000 | 3.900 | 262.29581 | 242.85316 | 255.13261 |
| NA | 23 | 2342.45600 | 176995.42000 | 3.000 | 2359.69928 | 2265.08885 | 2402.58009 |
| TI | 47 | 227.10700 | 1616.81000 | 8.100 | 238.62924 | 205.81265 | 236.87855 |
| V | 51 | 239.06200 | 73603.32000 | 2.800 | 237.23879 | 233.44744 | 246.50008 |
| **GE-1** | 72 | 43049.92000 | 0.00000 | 0.000 | 44115.89000 | 43213.78000 | 41820.08000 |
| MO | 98 | 25.03700 | 14226.34000 | 4.600 | 23.78421 | 25.27530 | 26.05175 |
| **IN-1** | 115 | 22749.32000 | 0.00000 | 0.000 | 23041.12000 | 23147.06000 | 22059.78000 |
| AG | 107 | 23.26800 | 36422.63000 | 3.400 | 22.46790 | 23.30216 | 24.03510 |
| AS | 75 | 237.29600 | 10368.40000 | 2.600 | 233.38418 | 234.02649 | 244.47881 |
| BA | 137 | 248.40200 | 21277.40000 | 3.400 | 246.22619 | 241.19678 | 257.78226 |
| CD | 111 | 24.06400 | 3993.15000 | 2.100 | 23.77092 | 23.78054 | 24.64194 |
| CO | 59 | 225.34300 | 201469.41000 | 3.400 | 223.51157 | 218.76063 | 233.75632 |
| CU | 63 | 226.07300 | 173030.18000 | 2.900 | 224.30484 | 220.50074 | 233.41482 |
| NI | 60 | 226.04800 | 58756.80000 | 5.100 | 219.10469 | 219.80699 | 239.23382 |
| RB | 85 | 26.60000 | 2927.03000 | 5.700 | 26.17821 | 25.34429 | 28.27885 |
| SB | 121 | 24.41000 | 5874.56000 | 5.300 | 23.44876 | 23.91343 | 25.86729 |
| SN | 120 | 23.99800 | 8625.85000 | 7.300 | 24.06975 | 22.21075 | 25.71398 |
| SR | 88 | 23.92400 | 4027.28000 | 8.200 | 22.18164 | 26.05275 | 23.53629 |
| ZN | 66 | 230.18300 | 23603.00000 | 2.800 | 227.56855 | 225.47182 | 237.50781 |
| **BI-1** | 209 | 126897.32000 | 0.00000 | 0.000 | 127959.05000 | 126445.96000 | 126286.95000 |
| PB | 208 | 25.60100 | 123260.12000 | 1.800 | 25.08511 | 25.79260 | 25.92422 |
| TL | 203 | 25.58300 | 39095.57000 | 1.700 | 25.09084 | 25.75379 | 25.90497 |
| U | 238 | 24.47100 | 149875.65000 | 0.200 | 24.46746 | 24.51481 | 24.43138 |
| *TB-1* | 159 | 146400.48000 | 0.00000 | 0.000 | 147299.08000 | 146997.67000 | 144904.70000 |

Run Name: 1721504E05 Date/Time: 08/03/2017 12:01:16
Tube Number: 53
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

| | | | | | INTEGRATIONS | | |
|---|---|---|---|---|---|---|---|
| Element | MASS | CONC. MEAN (ppb) | CPS MEAN | %RSD | #1 | #2 | #3 |
| **SC-1** | 45 | 14960.00000 | 0.00000 | 0.000 | 15196.87000 | 15056.72000 | 14626.40000 |
| AL | 27 | -2.89300 | 50.00000 | 0.000 | -2.96613 | -0.47135 | -5.24085 |
| CA | 44 | -4.01400 | 0.00000 | 0.000 | -4.01410 | -4.01410 | -4.01410 |
| CR | 52 | 0.34700 | 203.34000 | 7.700 | 0.37744 | 0.33693 | 0.32699 |
| FE | 57 | 2.39200 | 53.33000 | 175.100 | -1.53892 | 1.91605 | 6.79761 |
| K | 39 | -4.91000 | 630.04000 | 0.000 | -8.47078 | -3.08859 | -3.17202 |
| MG | 24 | -0.92400 | 6.67000 | 0.000 | -0.52937 | -1.12115 | -1.12115 |
| MN | 55 | 0.03200 | 16.67000 | 270.700 | -0.06219 | 0.04912 | 0.10969 |
| NA | 23 | -33.25700 | 8388.88000 | 0.000 | -34.58566 | -26.66074 | -38.52404 |
| TI | 47 | -0.51700 | 0.00000 | 0.000 | -0.51710 | -0.51710 | -0.51710 |
| V | 51 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| **GE-1** | 72 | 44105.94000 | 0.00000 | 0.000 | 44707.78000 | 43834.96000 | 43775.09000 |
| MO | 98 | -0.06600 | 86.67000 | 0.000 | -0.07909 | -0.07637 | -0.04128 |
| **IN-1** | 115 | 22999.24000 | 0.00000 | 0.000 | 23016.02000 | 23616.76000 | 22364.93000 |
| AG | 107 | 0.00600 | 10.00000 | 100.900 | 0.01262 | 0.00615 | 0.00000 |
| AS | 75 | 0.05100 | 5.33000 | 133.600 | 0.11195 | 0.06327 | -0.02244 |
| BA | 137 | 0.03800 | 3.33000 | 173.200 | 0.11532 | 0.00000 | 0.00000 |
| CD | 111 | 0.00400 | 0.67000 | 173.200 | 0.00000 | 0.00000 | 0.01226 |
| CO | 59 | 0.00100 | 200.01000 | 5832.900 | 0.06732 | -0.02622 | -0.03813 |
| CU | 63 | 0.02400 | 130.00000 | 283.600 | 0.10136 | -0.03077 | 0.00216 |
| NI | 60 | 0.05700 | 26.67000 | 34.900 | 0.06987 | 0.06697 | 0.03408 |
| RB | 85 | 0.00000 | 0.00000 | 0.000 | 0.00000 | 0.00000 | 0.00000 |
| SB | 121 | 0.00600 | 13.33000 | 948.700 | -0.04774 | 0.07246 | -0.00543 |
| SN | 120 | 0.10200 | 36.67000 | 63.900 | 0.13734 | 0.02677 | 0.14134 |
| SR | 88 | 0.05800 | 10.00000 | 99.100 | 0.05874 | 0.11449 | 0.00000 |
| ZN | 66 | -0.23100 | 6.67000 | 0.000 | -0.29762 | -0.29762 | -0.09906 |
| **BI-1** | 209 | 124837.84000 | 0.00000 | 0.000 | 122769.37000 | 125651.03000 | 126093.11000 |
| PB | 208 | -0.00500 | 270.01000 | 0.000 | -0.01905 | 0.00939 | -0.00552 |
| TL | 203 | 0.00200 | 53.33000 | 169.200 | 0.00051 | 0.00635 | -0.00038 |
| U | 238 | 0.00600 | 46.67000 | 31.000 | 0.00496 | 0.00480 | 0.00806 |
| *TB-1* | 159 | 145069.23000 | 0.00000 | 0.000 | 146691.30000 | 145606.85000 | 142909.54000 |

# Tune Report

**Batch Folder** D:\Agilent\ICPMH\1\DATA\~EPATUNE.b
**Report Comment** ICP-MS #19204 (E05) Daily Tune Check
**Instrument Name** G3281A JP12071581

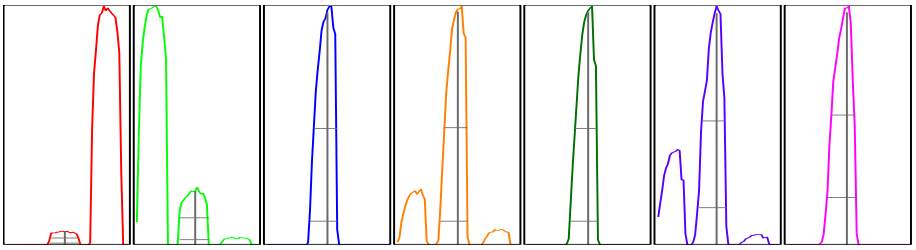
**[No Gas]**

| Mass | Range | Count (Actual) | Response (Actual) [cps/ug/l] | Response (Required) [cps/ug/l] | Response (Flag) | Resp Ratio (Actual) | Resp Ratio (Required) | Resp Ratio (Flag) |
|---|---|---|---|---|---|---|---|---|
| 6 | | 2790 | 2789.80 | | | NaN | - | |
| 24 | | 4977 | 4976.97 | | | NaN | - | |
| 103 | | 19950 | 19950.21 | | | NaN | - | |
| 115 | | 25980 | 25980.10 | | | NaN | - | |
| 140 | | 28595 | 28594.63 | | | NaN | - | |
| 208 | | 20497 | 20496.89 | | | NaN | - | |
| 238 | | 46876 | 46875.56 | | | NaN | - | |

| Mass | RSD% (Actual) | RSD% (Required) | RSD% (Flag) | Background (Actual) | Background (Required) | Background (Flag) |
|---|---|---|---|---|---|---|
| 6 | 2.27 | 5.00 | | | | |
| 24 | 0.98 | 5.00 | | | | |
| 103 | 1.00 | 5.00 | | | | |
| 115 | 0.61 | 5.00 | | | | |
| 140 | 0.22 | 5.00 | | | | |
| 208 | 0.55 | 5.00 | | | | |
| 238 | 1.26 | 5.00 | | | | |

| Mass | Replicate 1 Count | Replicate 2 Count | Replicate 3 Count | Replicate 4 Count | Replicate 5 Count |
|---|---|---|---|---|---|
| 6 | 2713 | 2776 | 2760 | 2880 | 2820 |
| 24 | 4904 | 4958 | 4988 | 5031 | 5004 |
| 103 | 19735 | 20077 | 19745 | 20173 | 20020 |
| 115 | 26245 | 25948 | 25837 | 25892 | 25978 |
| 140 | 28604 | 28503 | 28568 | 28663 | 28634 |
| 208 | 20402 | 20434 | 20440 | 20527 | 20682 |
| 238 | 46153 | 46644 | 47106 | 46731 | 47743 |

**Integration Time [sec]** 0.1



| Mass | Peak Height | Axis (Actual) | Axis (Required) | Axis (Flag) | W-50% | W-X% (Actual) | W-X% (Required) | W-X% (Flag) |
|---|---|---|---|---|---|---|---|---|
| 6 | 426.15 | 5.95 | 5.9 - 6.1 | | 0.68 | 0.775 | 0.900 | |
| 24 | 786.04 | 23.95 | 23.9 - 24.1 | | 0.68 | 0.737 | 0.900 | |
| 103 | 3766.59 | 103.00 | 102.9 - 103.1 | | 0.55 | 0.665 | 0.900 | |
| 115 | 4966.00 | 115.00 | 114.9 - 115.1 | | 0.55 | 0.666 | 0.900 | |
| 140 | 5613.45 | 140.00 | 139.9 - 140.1 | | 0.54 | 0.671 | 0.900 | |
| 208 | 3987.40 | 207.95 | 207.9 - 208.1 | | 0.54 | 0.679 | 0.900 | |
| 238 | 8842.54 | 237.95 | 237.9 - 238.1 | | 0.54 | 0.697 | 0.900 | |

**X =** 10 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 260.8 **Y Axis** Linear

**Tune Parameters**
**## Plasma Paramters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 W | Carrier Gas | 0.25 L/min | S/C Temp | 20 ℃ |
| RF Matching | 0.80 V | Option Gas | 0.0 % | Makeup/Dilution Gas | 0.80 L/min |
| Smpl Depth | 8.0 mm | Nebulizer Pump | 0.10 rps | Gas Switch | Dilution Gas |

**## Lenses Parameters ##**

# Tune Report

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Extract 1 | | 0.0 V | Omega Lens | | 6.1 V | Deflect | | 16.8 V | |
| Extract 2 | | -160.0 V | Cell Entrance | | -30 V | Plate Bias | | -40 V | |
| **Mass** | **Peak Height** | **Axis (Actual)** | **Axis (Required)** | **Axis (Flag)** | **W-50%** | **W-X% (Actual)** | **W-X% (Required)** | **W-X% (Flag)** | |
| Omega Bias | | -75 V | Cell Exit | | | -50 V | | | |

**## Cell Parameters ##**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| OctP Bias | -6.0 V | He Flow | 0.0 mL/min | Energy Discrimination | 5.0 V |
| OctP RF | 200 V | H2 Flow | 0.0 mL/min | | |
| Use Gas | false | 3rd Gas Flow | 0 % | | |

# Mercury Data

# Metals in Liquid

eurofins | Lancaster Laboratories Environmental

# Mercury Run Data Report

Data File Name: 1721301.M09

Run Name: 1721301M09

Instrument No.: 23283

Element: Hg

Analyst Employee ID: 354

Reviewed By
Damary Valentin

Reviewed Date
08/01/2017 11:00AM

Method Reference Name(s):
SW-846 7470A

Verified By:
Parker D Lindstrom

Verified Date
08/01/2017 7:51PM

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Analyst ID: 354.00

Instrument ID: 23283

CV Element: Hg

**1** Burn Date/Time: 08/01/2017 05:55

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| S0 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.0000 | 344.0 |

**2** Burn Date/Time: 08/01/2017 05:57

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| S0.2 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.0000 | 1836.0 |

**3** Burn Date/Time: 08/01/2017 05:59

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| S0.5 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.0000 | 4318.0 |

**4** Burn Date/Time: 08/01/2017 06:01

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| S1.0 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.0000 | 7815.0 |

**5** Burn Date/Time: 08/01/2017 06:03

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| S2.5 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.0000 | 20457.0 |

**6** Burn Date/Time: 08/01/2017 06:05

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| S5.0 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.0000 | 38601.0 |

CorrelationCoefficient = 1.00000
Slope = 7702.7034400000
Y-Intercept = 417.6880700000

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Instrument ID: 23283

Analyst ID: 354.00

CV Element: Hg

**7** Burn Date/Time: 08/01/2017 06:07

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| ICV | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 2.4529 | 19317.0 |

**8** Burn Date/Time: 08/01/2017 06:09

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| ICB | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| -0.0548 | -14.0 |

**9** Burn Date/Time: 08/01/2017 06:11

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CRA | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.1551 | 1604.0 |

**10** Burn Date/Time: 08/01/2017 06:13

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCV 1 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.9893 | 8035.0 |

**11** Burn Date/Time: 08/01/2017 06:15

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCB 1 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| -0.0530 | 0.0 |

**12** Burn Date/Time: 08/01/2017 06:25

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| PBW | ********** | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0518 | 9.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Analyst ID: 354.00

Instrument ID: 23283

CV Element: Hg

**13** Burn Date/Time: 08/01/2017 06:27

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| LCSW | ********** | 1 | 1 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 0.9478 | 7715.0 | | |

**14** Burn Date/Time: 08/01/2017 06:30

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9121683 | U********* | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0516 | 11.0 | | |

**15** Burn Date/Time: 08/01/2017 06:32

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9121686 | D********* | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0518 | 9.0 | | |

**16** Burn Date/Time: 08/01/2017 06:35

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9121684 | R********* | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 0.9229 | 7523.0 | | |

**17** Burn Date/Time: 08/01/2017 06:37

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9121685 | M********* | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 0.9242 | 7533.0 | | |

**18** Burn Date/Time: 08/01/2017 06:40

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9121674 | ********** | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0503 | 21.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Analyst ID: 354.00

Instrument ID: 23283

CV Element: Hg

**19** Burn Date/Time: 08/01/2017 06:42

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9121676 | ********** | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0503 | 21.0 | | |

**20** Burn Date/Time: 08/01/2017 06:45

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9121680 | ********** | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0499 | 24.0 | | |

**21** Burn Date/Time: 08/01/2017 06:48

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9121693 | ********** | 40 | 40 | 1.00 | 172090571309 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0496 | 26.0 | | |

**22** Burn Date/Time: 08/01/2017 06:50

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCV 2 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.9979 | 8101.0 |

**23** Burn Date/Time: 08/01/2017 06:53

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCB 2 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| -0.0429 | 78.0 |

**24** Burn Date/Time: 08/01/2017 06:55

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| PBW | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0507 | 18.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Instrument ID: 23283

Analyst ID: 354.00

CV Element: Hg

**25** Burn Date/Time: 08/01/2017 06:58

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| LCSW | ********** | 1 | 1 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 0.9608 | 7815.0 | | |

**26** Burn Date/Time: 08/01/2017 07:00

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125958 | U********* | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0464 | 51.0 | | |

**27** Burn Date/Time: 08/01/2017 07:03

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125958 | D********* | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0483 | 36.0 | | |

**28** Burn Date/Time: 08/01/2017 07:05

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125958 | R********* | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 0.9766 | 7937.0 | | |

**29** Burn Date/Time: 08/01/2017 07:08

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125958 | M********* | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 0.9524 | 7750.0 | | |

**30** Burn Date/Time: 08/01/2017 07:10

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125786 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0503 | 21.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Instrument ID: 23283

Analyst ID: 354.00

CV Element: Hg

**31** Burn Date/Time: 08/01/2017 07:13

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125787 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 0.0374 | 697.0 | | |

**32** Burn Date/Time: 08/01/2017 07:15

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125788 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0498 | 25.0 | | |

**33** Burn Date/Time: 08/01/2017 07:18

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125789 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0490 | 31.0 | | |

**34** Burn Date/Time: 08/01/2017 07:20

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCV 3 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.9806 | 7968.0 |

**35** Burn Date/Time: 08/01/2017 07:23

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCB 3 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| -0.0470 | 46.0 |

**36** Burn Date/Time: 08/01/2017 07:25

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125790 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0492 | 29.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Analyst ID: 354.00

Instrument ID: 23283

CV Element: Hg

**37** Burn Date/Time: 08/01/2017 07:28

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125791 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0489 | 32.0 | | |

**38** Burn Date/Time: 08/01/2017 07:31

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125792 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0481 | 38.0 | | |

**39** Burn Date/Time: 08/01/2017 07:33

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125793 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0454 | 59.0 | | |

**40** Burn Date/Time: 08/01/2017 07:36

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125794 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0499 | 24.0 | | |

**41** Burn Date/Time: 08/01/2017 07:38

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9125956 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0477 | 41.0 | | |

**42** Burn Date/Time: 08/01/2017 07:41

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128454 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0486 | 34.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Instrument ID: 23283

Analyst ID: 354.00

CV Element: Hg

**43** Burn Date/Time: 08/01/2017 07:43

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128455 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0485 | 35.0 | | |

**44** Burn Date/Time: 08/01/2017 07:46

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128456 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0505 | 19.0 | | |

**45** Burn Date/Time: 08/01/2017 07:48

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128457 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0499 | 24.0 | | |

**46** Burn Date/Time: 08/01/2017 07:51

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCV 4 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.9598 | 7807.0 |

**47** Burn Date/Time: 08/01/2017 07:53

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCB 4 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| -0.0477 | 41.0 |

**48** Burn Date/Time: 08/01/2017 07:56

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128458 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0509 | 16.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Analyst ID: 354.00

Instrument ID: 23283

CV Element: Hg

**49** Burn Date/Time: 08/01/2017 07:58

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128459 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0494 | 28.0 | | |

**50** Burn Date/Time: 08/01/2017 08:01

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128460 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0512 | 14.0 | | |

**51** Burn Date/Time: 08/01/2017 08:03

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128461 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0503 | 21.0 | | |

**52** Burn Date/Time: 08/01/2017 08:06

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9128681 | ********** | 40 | 40 | 1.00 | 172120571302 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0498 | 25.0 | | |

**53** Burn Date/Time: 08/01/2017 08:09

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| PBW | ********** | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0352 | 137.0 | | |

**54** Burn Date/Time: 08/01/2017 08:11

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| LCSW | ********** | 1 | 1 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 0.9691 | 7879.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Instrument ID: 23283

Analyst ID: 354.00

CV Element: Hg

**55** Burn Date/Time: 08/01/2017 08:14

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9124974 | U********* | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0483 | 36.0 | | |

**56** Burn Date/Time: 08/01/2017 08:16

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9124974 | D********* | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0470 | 46.0 | | |

**57** Burn Date/Time: 08/01/2017 08:19

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9124974 | R********* | 4 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 1.6761 | 13329.0 | | |

**58** Burn Date/Time: 08/01/2017 08:21

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCV 5 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.9767 | 7938.0 |

**59** Burn Date/Time: 08/01/2017 08:24

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCB 5 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| -0.0496 | 26.0 |

**60** Burn Date/Time: 08/01/2017 08:26

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9124974 | M********* | 4 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | 1.6559 | 13173.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Analyst ID: 354.00

Instrument ID: 23283

CV Element: Hg

**61** Burn Date/Time: 08/01/2017 08:29

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9123339 | ********** | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0495 | 27.0 | | |

**62** Burn Date/Time: 08/01/2017 08:31

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9124910 | ********** | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0429 | 78.0 | | |

**63** Burn Date/Time: 08/01/2017 08:34

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9124977 | ********** | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0470 | 46.0 | | |

**64** Burn Date/Time: 08/01/2017 08:36

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9126433 | ********** | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0486 | 34.0 | | |

**65** Burn Date/Time: 08/01/2017 08:39

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9126434 | ********** | 1 | 40 | 1.04 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0504 | 20.0 | | |

**66** Burn Date/Time: 08/01/2017 08:42

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9126781 | ********** | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0481 | 38.0 | | |

**LANCASTER LABORATORIES**

Run Name: 1721301M09

Analyst ID: 354.00

Instrument ID: 23283

CV Element: Hg

**67** Burn Date/Time: 08/01/2017 08:44

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9126782 | ********** | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0473 | 44.0 | | |

**68** Burn Date/Time: 08/01/2017 08:47

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF | Batch Number |
|---|---|---|---|---|---|
| 9126906 | ********** | 40 | 40 | 1.00 | 172120571301 |

| V | AVG (ppb) | Intensity | Re-read | Re-digest |
|---|---|---|---|---|
| | -0.0507 | 18.0 | | |

**69** Burn Date/Time: 08/01/2017 08:52

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCV 6 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| 0.9813 | 7973.0 |

**70** Burn Date/Time: 08/01/2017 08:54

| Sample Number | Class | Initial Vol / Wt | Final Vol | DF |
|---|---|---|---|---|
| CCB 6 | | 1 | 1 | 1.00 |

| AVG (ppb) | Intensity |
|---|---|
| -0.0490 | 31.0 |

# Extraction/Distillation/Digestion Logs

# Metals in Liquid

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 209 10635 03

**Start Time:** 7/31/17 4:51 **End Time:** 7/31/17 9:06 **Hot Block:** Deena1

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17182B | 5.00 |
| 1:1 HNO3 | P17182A | 2.00 |
| ICP Spike 1A | 1714623#5 | 1.00 |
| ICP Spike 1B | 1714629#5 | 1.00 |
| LCS A1 | 1714623#5 | 1.00 |
| LCS B1 | 1714629#5 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9121675 | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 4) | 9121677FD | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 5) | 9121679 | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 6) | 9121681 | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 7) | **9121687U** | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 8) | **9121688R** | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 9) | **9121689M** | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 10) | **9121690D** | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 11) | 9121692 | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 12) | 9121694 | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/31/2017

v 1.1.0

# Batch# 17 209 1063 503

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/28/17 19:29 | 1184 |
| 2) | Sample Vol | | 7/31/17 4:51 | 1184 |
| 3) | Final Vol | CLEAR | 7/31/17 4:51 | 1184 |
| 4) | Trial | | 7/31/17 4:51 | 1184 |
| 5) | Upload Prep | US19PCC0669 | 7/31/17 9:07 | 1184 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

Analysis: 0635 SW846 Water

Batch# 17 209 1063 503

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9121675 | 08/07/17 | N8 | K1902 | KR191-02 | 50.0000 | 50.0000 | 1 |
| 9121677FD | 08/07/17 | N8 | K1904 | KR191-04FD | 50.0000 | 50.0000 | 1 |
| 9121679 | 08/07/17 | N8 | K1906 | KR191-06 | 50.0000 | 50.0000 | 1 |
| 9121681 | 08/07/17 | N8 | K1908 | KR191-08 | 50.0000 | 50.0000 | 1 |
| **9121687U** | 08/07/17 | N8 | K1911 | KR191-11BKG | 50.0000 | 50.0000 | 1 |
| **9121688R** | 08/07/17 | N8 | K1911 | KR191-11MS | 50.0000 | 50.0000 | 1 |
| **9121689M** | 08/07/17 | N8 | K1911 | KR191-11MSD | 50.0000 | 50.0000 | 1 |
| **9121690D** | 08/07/17 | N8 | K1911 | KR191-11DUP | 50.0000 | 50.0000 | 1 |
| 9121692 | 08/07/17 | N8 | K1913 | KR191-13 | 50.0000 | 50.0000 | 1 |
| 9121694 | 08/07/17 | N8 | K1915 | KR191-15 | 50.0000 | 50.0000 | 1 |

# LLENS Worksheet for 0639 ICP/MS SW846 Water

Batch# 17 209 10639 02

**Start Time:** 7/31/17 5:00 **End Time:** 7/31/17 9:09 **Hot Block:** 12

**Pipette ID:** JU06758
**Reflux Cap Lot#:** 16101387076NQ

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| HNO3 | 152495 | 3.00 |
| ICP/MS Spike | 1715001#6 | 0.50 |
| LCS | 1715001#6 | 0.50 |
| U spike | P17152B | 0.25 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9121675 | 08/07/17 00:00 | WW | N8 | | | | 008a | 1703076 | |
| 4) | 9121677FD | 08/07/17 00:00 | WW | N8 | | | | 008a | 1703076 | |
| 5) | 9121681 | 08/07/17 00:00 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9121687U** | 08/07/17 00:00 | WW | N8 | | | | 008a | 1703076 | |
| 7) | **9121688R** | 08/07/17 00:00 | WW | N8 | | | | 008a | 1703076 | |
| 8) | **9121689M** | 08/07/17 00:00 | WW | N8 | | | | 008a | 1703076 | |
| 9) | **9121690D** | 08/07/17 00:00 | WW | N8 | | | | 008a | 1703076 | |
| 10) | 9121694 | 08/07/17 00:00 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/31/2017

v 1.1.0

# Batch# 17 209 1063 902

## LLENS Batch Chronology and Change Log - ICP/MS SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/28/17 19:18 | 1184 |
| 2) | Sample Vol | | 7/31/17 5:00 | 1184 |
| 3) | Final Vol | CLEAR | 7/31/17 5:00 | 1184 |
| 4) | Trial | | 7/31/17 5:00 | 1184 |
| 5) | Upload Prep | US19PCC0669 | 7/31/17 9:09 | 1184 |

| | | | | Original Entry | | | | Data Changed | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Analysis | D | Operation | Measurement | Date/Time | Data | Units | Analyst | Date/Time | Analyst Reason |

## Analysis: 0639 ICP/MS SW846 Water

## Batch# 17 209 1063 902

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9121675 | 08/07/17 | N8 | K1902 | KR191-02 | 50.0000 | 50.0000 | 1 |
| 9121677FD | 08/07/17 | N8 | K1904 | KR191-04FD | 50.0000 | 50.0000 | 1 |
| 9121681 | 08/07/17 | N8 | K1908 | KR191-08 | 50.0000 | 50.0000 | 1 |
| **9121687U** | 08/07/17 | N8 | K1911 | KR191-11BKG | 50.0000 | 50.0000 | 1 |
| **9121688R** | 08/07/17 | N8 | K1911 | KR191-11MS | 50.0000 | 50.0000 | 1 |
| **9121689M** | 08/07/17 | N8 | K1911 | KR191-11MSD | 50.0000 | 50.0000 | 1 |
| **9121690D** | 08/07/17 | N8 | K1911 | KR191-11DUP | 50.0000 | 50.0000 | 1 |
| 9121694 | 08/07/17 | N8 | K1915 | KR191-15 | 50.0000 | 50.0000 | 1 |

# LLENS Worksheet for 5713 Hg SW846 Digest Water

Batch# 17 209 05713 09

**Start Time:** 7/31/17 17:50 **End Time:** 7/31/17 19:50 **Hot Block:** 10

**Pipette ID:** W/1000
**Reflux Cap Lot#:** 16101387075NK

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 5%K2S2O8 | P17-206C | 3.20 |
| 5%KMnO4 | P17-202E | 6.00 |
| H2SO4 | 171338 | 2.00 |
| HNO3 | 152495 | 1.00 |
| LCS 40ppb Hg | P17-211B | 1.00 |
| NaCl/NH2OH.HCl | P17-204B | 2.40 |
| Spike 40ppb Hg | P17-211B | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | Batch alone |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9121674 | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 4) | 9121676FD | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 5) | 9121680 | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 6) | **9121683U** | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 7) | **9121684R** | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 8) | **9121685M** | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 9) | **9121686D** | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 10) | 9121693 | 08/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:

7/31/2017

v 1.1.0

# Batch# 17 209 0571 309

## LLENS Batch Chronology and Change Log - Hg SW846 Digest Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 7/28/17 19:40 | 1364 |
| 2) | Sample Vol | | 7/31/17 16:52 | 1364 |
| 3) | Final Vol | CLEAR | 7/31/17 16:52 | 1364 |
| 4) | Trial | | 7/31/17 16:52 | 1364 |
| 5) | Trial | | 7/31/17 16:52 | 1364 |
| 6) | Upload Prep | US19PCC06698 | 7/31/17 18:25 | 1364 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry Date/Time | Data | Units | Analyst | Data Changed Date/Time | Analyst | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|

## Analysis: 5713 Hg SW846 Digest Water

## Batch# 17 209 0571 309

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Dilution | Final Volume | Trial |
|---|---|---|---|---|---|---|---|---|
| PBW | | | | | 40.0000 | | 40.0000 | 1 |
| LCSW | | | | | 1.0000 | | 1.0000 | 1 |
| 9121674 | 08/07/17 | N8 | K1901 | KR191-01 | 40.0000 | | 40.0000 | 1 |
| 9121676FD | 08/07/17 | N8 | K1903 | KR191-03FD | 40.0000 | | 40.0000 | 1 |
| 9121680 | 08/07/17 | N8 | K1907 | KR191-07 | 40.0000 | | 40.0000 | 1 |
| **9121683U** | 08/07/17 | N8 | K1910 | KR191-10BKG | 40.0000 | | 40.0000 | 1 |
| **9121684R** | 08/07/17 | N8 | K1910 | KR191-10MS | 40.0000 | | 40.0000 | 1 |
| **9121685M** | 08/07/17 | N8 | K1910 | KR191-10MSD | 40.0000 | | 40.0000 | 1 |
| **9121686D** | 08/07/17 | N8 | K1910 | KR191-10DUP | 40.0000 | | 40.0000 | 1 |
| 9121693 | 08/07/17 | N8 | K1914 | KR191-14 | 40.0000 | | 40.0000 | 1 |

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| Document Title: Standard/Reagent Preparation Logbook | | |
|---|---|---|
| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
| Effective date : 02 Feb 2017 | Effective | |

| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg-5701 Std Cal | H171910 | Hg-1.0mg/L Cont Cal (3) | 15 | 7-17-17 | H17-191A (36) | 0.50ml | | | |
| 2 | ↓ ↓ | P | | | | | | | | |
| 3 | ↓ ICV | Q | Hg-1.0mg/L Cont | 15 | 7-17-17 | H17-191C | 0.25ml | | | |
| 4 | Aqua Regia | R | | | | | | 15 | 6 | 152495 |
| 5 | Permanganate | S | KMnO4 | 6 | 2-22-18 | 150402 #2 | 100.04g | | | |
| 6 | ↓ | T | ↓ | ↓ | ↓ | ↓ | 1000.6g | | | |
| 7 | Hydroxylamine | H17-191U | NH2OH·HCl | 6 | 6-01-18 | 168409 #2 #8 | 240.03g | | | |
| 8 | ↓ | ↓ | NaCl (3C) | XX | 5-30-18 | 16F285210 | 240.000g | | | |
| 9 | Hg-1.0mg/L InterCal | H171928A | Hg-1.0mg/L Cal | 15 | 7-30-17 | H17-103R | 1.0 ml | | | |
| 10 | 0.1mg/L InterCal | B | 1.0mg/L Cal | 15 | 7-18-17 | H17-192A | ↓ | | | |
| 11 | 1.0mg/L InterCont | C | 1.0mg/L Cont | 16 | 12-05-17 | 12H0585019 | | | | |
| 12 | ↓ 0.1mg/L InterCont | D | ↓ 1.0mg/L Cont | 15 | 7-18-17 | H17-192C | ↓ | | | |
| 13 | Hg-5700 ICV | E | ↓ | ↓ | ↓ | ↓ | 0.25ml | 1 | 6 | 152495 |
| 14 | CCV | F | Hg-1.0mg/L Cal | | | H17-192A | 0.20 | | | |
| 15 | CRA | G | Hg-0.1mg/L Cont | | | H17-192D | 0.20 | | | |
| 16 | Std Cal | H | Hg-0.1mg/L Cal | | | H17-192B | 0.20 | | | |
| 17 | | I | ↓ | | | ↓ | 0.50 | | | |
| 18 | | J | Hg-1.0mg/L Cal | | | H17-192A | 0.20 | | | |
| 19 | | K | | | | | 0.25 | | | |
| 20 | ↓ ↓ | L | ↓ | ↓ | ↓ | ↓ | 0.50 | ↓ | ↓ | ↓ |

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)
XX Omni Pur 7-10-17 DV35Y

a

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Document Title: Standard/Reagent Preparation Logbook

| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
|---|---|---|
| Effective date : 02 Feb 2017 | Effective | |

| | HCl Used | | | Other Used | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
| 1 | | | | 5ml Aqua Regia 15ml KMnO4 | | H17-191R H17-147D | 100 | 5.0ug/L | JJ 1354 | 7-10-17 | 7-17-17 | RT |
| 2 | | | | | | | | 0.0 | | | | |
| 3 | | | | | | | | 2.5 | | | | |
| 4 | 45 | 6 | | | | | 60 | 1:3 | | | 7-10-17 | |
| 5 | | | | | | | 2000 | 5% | | | 1-10-18 | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | 12% | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | To vol w/o 15% HNO3 | | H17-110C | 10 | 1.0 | JJ 1354 | 7-11-17 | 7-18-17 | RT |
| 10 | | | | | | | | 0.1 | | | | |
| 11 | | | | | | | | 1.0 | | | | |
| 12 | | | | | | | | 0.1 | | | | |
| 13 | 2ml $H_2SO_4$ | 4 | 171338 | 3.2ml $K_2S_2O_8$ 6ml KMnO4 | | H17-094A H17-147D | 100 | 2.5ug/L | | | | |
| 14 | | | | | | | 200 | 1.0 | | | | |
| 15 | | | | | | | 100 | 0.2 | | | | |
| 16 | | | | | | | | 0.2 | | | | |
| 17 | | | | | | | | 0.5 | | | | |
| 18 | | | | | | | 200 | 1.0 | | | | |
| 19 | | | | | | | 100 | 2.5 | | | | |
| 20 | | | | | | | | 5.0 | | | | |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = Al $(NO_3)_3$ (40%)
F = Element Specific

RT = Room Temperature Storage

* units are mL unless otherwise specified
** units are mg/L unless otherwise specified

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| Document Title: Standard/Reagent Preparation Logbook | | |
|---|---|---|
| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
| Effective date : 02 Feb 2017 | Effective | |

| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg 5700 Std Cal | H179?M | | | | | | 1 | 6 | 152495 |
| 2 | ICV | N | Hg 1.0 mg/L Cont | 15 | 7-18-17 | H17-192C | 0.25ml | | | |
| 3 | CCV | O | Hg 1.0 mg/L Cal | | | H17-192A | 0.20 | | | |
| 4 | CRA | P | Hg 0.1 mg/L Cont | | | H17-192D | 0.20 | | | |
| 5 | Hg 1.0 mg/L Inter Cal | H179?A | Hg 1.0 mg/L Cal | 15 | 7-30-17 | H17-103R | 1.0 ml | | | |
| 6 | 0.1 mg/L Inter Cal | B | 1.0 mg/L Cal | 15 | 7-22-17 | H17-196A | | | | |
| 7 | 1.0 mg/L Inter Cont | C | 1.0 mg/L Cont | 16 | 12-05-17 | K2H6850PD | | | | |
| 8 | 0.1 mg/L Inter Cont | D | 1.0 mg/L Cont | 15 | 7-22-17 | H17-196C | | | | |
| 9 | Hg 5700 ICV | E | | | | | 0.25 ml | 1 | 6 | 152495 (3) 179151 |
| 10 | CCV | F | Hg 1.0 mg/L Cal | | | H17-196A | 0.20 | | | |
| 11 | CRA | G | Hg 0.1 mg/L Cont | | | H17-196D | 0.20 | | | |
| 12 | Std Cal | H | Hg 0.1 mg/L Cal | | | H17-196B | 0.20 | | | |
| 13 | | I | | | | | 0.50 | | | |
| 14 | | J | Hg 1.0 mg/L Cal | | | H17-196A | 0.20 | | | |
| 15 | | K | | | | | 0.25 | | | |
| 16 | | L | | | | | 0.50 | | | |
| 17 | | m | | | | | | | | |
| 18 | ICV | N | Hg 1.0 mg/L Cont | 15 | 7-22-17 | H17-196C | 0.25ml | | | |
| 19 | CCV | O | Hg 1.0 mg/L Cal | | | H17-196A | 0.20 | | | |
| 20 | CRA | P | Hg 0.1 mg/L Cont | | | H17-196D | 0.20 | | | |

7-15-17 WSG

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)

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Document Title: Standard/Reagent Preparation Logbook

| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
|---|---|---|
| Effective date : 02 Feb 2017 | Effective | |

| | HCl Used | | | Other Used | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
| 1 | 2ml $H_2SO_4$ | 4 | 171338 | 3.2ml $K_2S_2O_8$ 1ml $KMnO_4$ | | H17-094U H17-147D | 100 | 0.04ug/L | JW354 | 7-11-17 | 7-18-17 | RT |
| 2 | | | | | | | 100 | 2.5 | | | | |
| 3 | | | | | | | 200 | 1.0 | | | | |
| 4 | | | | | | | 100 | 0.2 | | | | |
| 5 | | | | To vol w/ 0.15% | $HNO_3$ | H17-110C | 10 | 1.0 | JW354 | 7-15-17 | 7-22-17 | RT |
| 6 | | | | | | | | 0.1 | | | | |
| 7 | | | | | | | | 1.0 | | | | |
| 8 | | | | | | | | 0.1 | | | | |
| 9 | 2ml $H_2SO_4$ | 4 | 171338 | 3.2ml $K_2S_2O_8$ 1ml $KMnO_4$ | | H17-138EE H17-147D | 100 | 2.5ug/L | | | | |
| 10 | | | | | | | 200 | 1.0 | | | | |
| 11 | | | | | | | 100 | 0.2 | | | | |
| 12 | | | | | | | | 0.2 | | | | |
| 13 | | | | | | | | 0.5 | | | | |
| 14 | | | | | | | 200 | 1.0 | | | | |
| 15 | | | | | | | 100 | 2.5 | | | | |
| 16 | | | | | | | | 5.0 | | | | |
| 17 | | | | | | | | 0.0 | | | | |
| 18 | | | | | | | | 2.5 | | | | |
| 19 | | | | | | | 200 | 1.0 | | | | |
| 20 | | | | | | | 100 | 0.2 | | | | |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = Al $(NO_3)_3$ (40%)
F = Element Specific

RT = Room Temperature Storage

* units are mL unless otherwise specified
** units are mg/L unless otherwise specified

| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg 5701 ICV | H17-196D | Hg 1.0 mg/L Cont | 15 | 7-22-17 | H17-196C | 0.25 ml | | | |
| 2 | CCV | B | Hg 1.0 mg/L Cal | | | H17-196A | 0.10 | | | |
| 3 | CCV | S | | | | | 0.10 | | | |
| 4 | CCV | T | | | | | 0.10 | | | |
| 5 | CCV | U | | | | | 0.10 | | | |
| 6 | CRI | V | Hg 0.1 mg/L Cont | | | H17-196D | 0.20 | | | |
| 7 | Std Cal | W | Hg 0.1 mg/L Cal | | | H17-196B | 0.20 | | | |
| 8 | | X | | | | | 0.50 | | | |
| 9 | | Y | Hg 1.0 mg/L Cal | | | H17-196A | 0.10 | | | |
| 10 | | Z | | | | | 0.25 | | | |
| 11 | | AA | | | | | 0.50 | | | |
| 12 | | BB | | | | | | | | |
| 13 | X ICV | CC | Hg 1.0 mg/L Cont | 15 | 7-22-17 | H17-196C | 0.25 ml | | | |
| 14 | Aqua Regia | DD | | | | | | 11.5 | 6 | 175151 |
| 15 | Stannous Chloride | H17198A | $SnCl_2$ | 6 | 5-10-18 | 116502 #12 | 200.01g | | | |
| 16 | | B | | | | #12+13 | 200.00g | | | |
| 17 | | C | | | | #13+14 | 200.05g | | | |
| 18 | | D | | | | #14 | 200.05g | | | |
| 19 | Hg 10 mg/L Cal Inter Std | E | 1000 mg/L Hg Std. Sol. | XX | 10-19-2018 | 1106971 | 1.0 ml | 1.0 | 6 | 175151 |
| 20 | Hg 1.0 mg/L Inter Cal | H17199A | Hg 10 mg/L Cal | 15 | 7-20-17 | H17-103R | 1.0 ml | | | |

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)

xx - CPI International 7-17-17 DVBSY

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| Document Title: Standard/Reagent Preparation Logbook | | |
|---|---|---|
| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
| Effective date : 02 Feb 2017 | Effective | |

| | HCl Used | | | Other Used | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
| 1 | | | ② 7-15-17-DU354 | 5ml Aqua<br>0.15ml KMnO4 | Regia | H17-146 CD<br>H17-147D | 100 | 2.5ug/L | DU354 | 7-15-17 | 7-22-17 | RT |
| 2 | | | | | | | | 1.0 | | | | |
| 3 | | | | | | | | 1.0 | | | | |
| 4 | | | | | | | | 1.0 | | | | |
| 5 | | | | | | | | 1.0 | | | | |
| 6 | | | | | | | | 0.2 | | | | |
| 7 | | | | | | | | 0.2 | | | | |
| 8 | | | | | | | | 0.5 | | | | |
| 9 | | | | | | | | 1.0 | | | | |
| 10 | | | | | | | | 2.5 | | | | |
| 11 | | | | | | | | 5.0 | | | | |
| 12 | | | | | | | | 0.0 | | | | |
| 13 | | | | | | | | 2.5 | | | | |
| 14 | 49.5 | 6 | 1167022 | | | | 66 | 1:3 | | | 7-15-17 | |
| 15 | 200 | 6 | 1167022 | | | | 2000 | 10% | DU354 | 7-17-17 | 1-17-18 | RT |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | 100 | 10mg/L | | | | |
| 20 | | | | To vol w/ 0.15% HNO3 | | H17-116C | 10 | 1.0 | DU354 | 7-18-17 | 7-25-17 | RT |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = Al $(NO_3)_3$ (40%)
F = Element Specific

**RT = Room Temperature Storage**

* units are mL unless otherwise specified
** units are mg/L unless otherwise specified

b

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| Document Title: Standard/Reagent Preparation Logbook | | |
|---|---|---|
| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
| Effective date : 02 Feb 2017 | Effective | |

| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg-0.1mg/L InterCal | H17199B | Hg-1.0mg/L Cal | 15 | 7-25-17 | H17-199A | 1.0ml | | | |
| 2 | 1.0mg/L InterCont | C | 10mg/L Cont | 16 | 12-05-17 | K2HG850192 | | | | |
| 3 | 0.1mg/L InterCont | D | 1.0mg/L Cont | 15 | 7-25-17 | H17-199C | | | | |
| 4 | Hg-5700 ICV | E | | | | | 0.25ml | 1 | 10 | 175151 |
| 5 | CCV | F | Hg-1.0mg/L Cal | | | H17-199A | 0.20 | | | |
| 6 | CRA | G | Hg-0.1mg/L Cont | | | H17-199D | 0.20 | | | |
| 7 | Std Cal | H | Hg-0.1mg/L Cal | | | H17-199B | 0.20 | | | |
| 8 | | I | | | | | 0.50 | | | |
| 9 | | J | Hg-1.0mg/L Cal | | | H17-199A | 0.20 | | | |
| 10 | | K | | | | | 0.25 | | | |
| 11 | | L | | | | | 0.50 | | | |
| 12 | | M | | | | | | | | |
| 13 | ICV | N | Hg-1.0mg/L Cont | 15 | 7-25-17 | H17-199C | 0.25ml | | | |
| 14 | CCV | O | Hg-1.0mg/L Cal | | | H17-199A | 0.20 | | | |
| 15 | CRA | P | Hg-0.1mg/L Cont | | | H17-199D | 0.20 | | | |
| 16 | Hg-1.0mg/L InterCal | Q | Hg-10mg/L Cal | 15 | 1-17-18 | H17-198E | 1.0ml | | | |
| 17 | Hg-5700 CCV | R | Hg-1.0mg/L Cal | 15 | 7-26-17 | H17-199D | 0.20ml | 1 | 10 | 175151 |
| 18 | Hg-1.0mg/L InterCal | H172024 | Hg-10mg/L Cal | 15 | 1-17-18 | H17-198E | 1.0ml | | | |
| 19 | 0.1mg/L InterCal | B | 1.0mg/L Cal | 15 | 7-28-17 | H17-203A | | | | |
| 20 | 1.0mg/L InterCont | C | 10mg/L Cont | 16 | 12-05-17 | K2HG850192 | | | | |

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)

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|---|---|---|
| Effective date : 02 Feb 2017 | Effective | |

| | HCl Used | | | Other Used | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
| 1 | | | | To vol w/ 0.15% HNO3 | | H17-110C | 10 | 0.1 | DJ 354 | 7-18-17 | 7-25-17 | RT |
| 2 | | | | ↓ | ↓ | ↓ | ↓ | 1.0 | | | | |
| 3 | | | | ↓ | ↓ | ↓ | ↓ | 0.1 | | | | |
| 4 | 2ml H2SO4 | 4 | 171338 | 2.2ml K2S2O8 1ml KMnO4 | | H17-138EE H17-1477 | 100 | 2.5 ug/L | | | | |
| 5 | | | | | | | 200 | 1.0 | | | | |
| 6 | | | | | | | 100 | 0.2 | | | | |
| 7 | | | | | | | ↓ | 0.2 | | | | |
| 8 | | | | | | | ↓ | 0.5 | | | | |
| 9 | | | | | | | 200 | 1.0 | | | | |
| 10 | | | | | | | 100 | 2.5 | | | | |
| 11 | | | | | | | ↓ | 5.0 | | | | |
| 12 | | | | | | | ↓ | 0.0 | | | | |
| 13 | | | | | | | ↓ | 2.5 | | | | |
| 14 | | | | | | | 200 | 1.0 | | | | |
| 15 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | 100 | 0.2 ↓ | | | | |
| 16 | | | | To vol w/ 0.15% HNO3 | | H17-110C | 10 | 1.0 | | | | |
| 17 | 2ml H2SO4 | 4 | 171338 | 2.2ml K2S2O8 1ml KMnO4 | | H17-138EE H17-1477 | 200 | 1.0 ug/L | ↓ | ↓ | ↓ | ↓ |
| 18 | | | | To vol w/ 0.15% HNO3 | | H17-110C | 10 | 1.0 | DJ 354 | 7-21-17 | 7-28-17 | RT |
| 19 | | | | ↓ | ↓ | ↓ | ↓ | 0.1 | | | | |
| 20 | | | | ↓ | ↓ | ↓ | ↓ | 1.0 | | | | |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = Al $(NO_3)_3$ (40%)
F = Element Specific

RT = Room Temperature Storage

* units are mL unless otherwise specified
** units are mg/L unless otherwise specified

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| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg-0.1mg/L Intr. Cont | H17202D | Hg-1.0mg/L Cont | 15 | 7-28-17 | H17-202C | 1.0ml | — | — | — |
| 2 | Hg-5700 ICV | E | ↓ | ↓ | ↓ | ↓ | 0.25ml | 1 | 6 | 1524495 |
| 3 | CCV | F | Hg-1.0mg/L Cal | | | H17-202A | 0.20 | ↓ | ↓ | ↓ |
| 4 | CRA | G | Hg-0.1mg/L Cont | | | H17-202D | 0.20 | | | |
| 5 | Std Cal | H | Hg-0.1mg/L Cal | | | H17-202B | 0.20 | | | |
| 6 | ↓ | I | ↓ | | | ↓ | 0.50 | | | |
| 7 | | J | Hg-1.0mg/L Cal | | | H17-202A | 0.20 | | | |
| 8 | | K | ↓ | | | ↓ | 0.25 | | | |
| 9 | | L | ↓ | ↓ | ↓ | ↓ | 0.50 ↓ | | | |
| 10 | ↓ | M | (2) 7-21-17 DV354 | | | | | | | |
| 11 | ICV | N | Hg-1.0mg/L Std Cont (3) | 15 | 7-28-17 | H17-202A (2c) | 0.25ml | | | |
| 12 | CCV | O | Hg-1.0mg/L Cal | | | H17-202A | 0.20 | | | |
| 13 | CRA | P | Hg-0.1mg/L Cont | | | H17-202D | 0.20 ↓ | ↓ | ↓ | ↓ |
| 14 | Hg-5701 ICV | Q | Hg-1.0mg/L Cont | | | H17-202C | 0.25ml | — | — | — |
| 15 | CCV | R | Hg-1.0mg/L Cal | | | H17-202A | 0.10 | | | |
| 16 | CCV | S | ↓ | | | ↓ | 0.10 | | | |
| 17 | CCV | T | | | | | 0.10 | | | |
| 18 | CCV | U | ↓ | | | ↓ (3c) | 0.10 | | | |
| 19 | CRA | V | Hg-0.1mg/L Cont | | | H17-202D | 0.20 | | | |
| 20 | ↓ Std Cal | ↓ W | Hg-0.1mg/L Cal | ↓ | ↓ | H17-202B | 0.20 ↓ | | | |

7-21-17 DV354

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)

a



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|---|---|---|
| Effective date : 02 Feb 2017 | Effective | |

| | HCl Used | | | Other Used | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
| 1 | | | | To vol w/ 0.1% HNO3 | | H17 110C | 10 | 0.1 | DW35 | 7-21-17 | 7-28-17 | RT |
| 2 | 2ml $H_2SO_4$ | 4 | 171338 | 3.2ml $K_2SO_4$ 6ml KMnO4 | | H17 138EC H17-147D | 100 | 2.5ug/L | | | | |
| 3 | | | | | | | 200 | 1.0 | | | | |
| 4 | | | | | | | 100 | 0.2 | | | | |
| 5 | | | | | | | ↓ | 0.2 | | | | |
| 6 | | | | | | | ↓ | 0.5 | | | | |
| 7 | | | | | | | 200 | 1.0 | | | | |
| 8 | | | | | | | 100 | 2.5 | | | | |
| 9 | | | | | | | ↓ | 5.0 | | | | |
| 10 | | | | | | | ↓ | 0.0 | | | | |
| 11 | | | | | | | ↓ | 2.5 | | | | |
| 12 | | | | | | | 200 | 1.0 | | | | |
| 13 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | 100 | 0.2 | | | | |
| 14 | | | | 5ml Aqua Regia 15ml KMnO4 | | H17 202 PD H17-147D | ↓ | 2.5 | | | | |
| 15 | | | | | | | | 1.0 | | | | |
| 16 | | | | | | | | 1.0 | | | | |
| 17 | | | | | | | | 1.0 | | | | |
| 18 | | | | | | | | 1.0 | | | | |
| 19 | | | | | | | | 0.2 | | | | |
| 20 | | | | ↓ | ↓ | ↓ | ↓ | 0.2 | ↓ | ↓ | ↓ | ↓ |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = Al $(NO_3)_3$ (40%)
F = Element Specific

RT = Room Temperature Storage

* units are mL unless otherwise specified
** units are mg/L unless otherwise specified

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| Effective date : 02 Feb 2017 | Effective | |

| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | 7-21-17 DN357 Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg-5701 Std Cal | H17202X | Hg 0.1 mg/L Cal | 15 | 7-28-17 | H17-202B | 0.50ml | | | |
| 2 | | Y | Hg 1.0 mg/L Cal | | | H17-202A | 0.10 | | | |
| 3 | | Z | | | | | 0.25 | | | |
| 4 | | AA | | | | | 0.50 | | | |
| 5 | | BB | | | | | | | | |
| 6 | ICV | CC | Hg 1.0 mg/L Cont | 15 | 7-28-19 | H17-202C | 0.25ml | | | |
| 7 | Aqua Regia | DD | | | | | | 16.5 | 6 | 152495 |
| 8 | Stannous Chloride | H17207A | SnCl2 | 6 | 5-10-18 | 169502 #14 | 200.01g | | | |
| 9 | | B | | | | #14 | 200.01g | | | |
| 10 | | C | | | | #14 #19 | 200.03 | | | |
| 11 | Blank-Soils | D | | | | | | 12.5 | 6 | 152495 |
| 12 | Hg 1.0 mg/L InterCal | H17208A | Hg 1.0 mg/L Cal | 15 7-28-17 DN357 | 1-17-18 | H17-198E | 1.0 ml | | | |
| 13 | 0.1 mg/L InterCal | B | 1.0 mg/L Cal | 15 | 8-04-17 | H17-208A | | | | |
| 14 | 1.0 mg/L InterCont | C | 10 mg/L Cont | 16 | 12-05-17 | K2H685019 | | | | |
| 15 | 0.1 mg/L InterCont | D | 1.0 mg/L Cont | 15 7-28-17 DN357 | 8-04-17 (3) 03 | H17-208C | | | | |
| 16 | Hg-5700 ICV | E | | | | | 0.25ml | 1 | 6 | 152495 |
| 17 | CCV | F | Hg 1.0 mg/L Cal | | | H17-208H | 0.20 | | | |
| 18 | CRA | G | Hg 0.1 mg/L Cont | | | H17-208D | 0.20 | | | |
| 19 | Std Cal | H | Hg 0.1 mg/L Cal | | | H17-208B | 0.20 | | | |
| 20 | | I | | | | | 0.50 | | | |

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)

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| | HCl Used | | | Other Used | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
| 1 | | | | 5ml Aqua Regia 15ml $HNO_3$ | | H17-202 DD H17-147D | 100 | 0.5ug/L | DJ354 | 7-21-17 | 7-28-17 | RT |
| 2 | | | | | | | | 1.0 | | | | |
| 3 | | | | | | | | 2.5 | | | | |
| 4 | | | | | | | | 5.0 | | | | |
| 5 | | | | | | | | 0.0 | | | | |
| 6 | | | | | | | | 2.5 | | | | |
| 7 | 49.5 | 6 | 16,7022 | | | | 66 | 1:3 | | | 7-21-17 | |
| 8 | 200 | 6 | 16,7022 | | | | 2000 | 10:1 | DJ354 | 7-26-17 | 1-26-18 | RT |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | 37.5 | | | 60ml Hydrex 150ml $HNO_3$ | | H17-125G H17-147D | 1000 | 0.0 | | | 11-05-17 | |
| 12 | | | | To vol w/0.15% $HNO_3$ | | H17-110C | 10 | 1.0 | DJ354 | 7-27-17 | 8-04-17 03 | RT |
| 13 | | | | | | | | 0.1 | | | | |
| 14 | | | | | | | | 1.0 | | | | |
| 15 | | | | | | | | 0.1 | | | | |
| 16 | 2ml $H_2SO_4$ | 4 | 171338 | 32ml Reb 8 16ml $HNO_3$ | | H17-186EE H17-191S | 100 | 2.5ml | | | | |
| 17 | | | | | | | 200 | 1.0 | | | | |
| 18 | | | | | | | 100 | 0.2 | | | | |
| 19 | | | | | | | | 0.2 | | | | |
| 20 | | | | | | | | 0.5 | | | | |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = Al $(NO_3)_3$ (40%)
F = Element Specific

**RT = Room Temperature Storage**

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| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg-5701 Std Cal | HI7202X | Hg 10 mg/L Cal | 15 | 7-28-17 | HI7-202B | 0.50ml | | | |
| 2 | | Y | Hg 1.0 mg/L Cal | | | HI7-202A | 0.10 | | | |
| 3 | | Z | | | | | 0.25 | | | |
| 4 | | AA | | | | | 0.50 | | | |
| 5 | | BB | | | | | | | | |
| 6 | ICV | CC | Hg 1.0 mg/L Cont | 15 | 7-28-19 | HI7-202C | 0.25ml | | | |
| 7 | Aqua Regia | DD | | | | | | 16.5 | 6 | 152495 |
| 8 | Stannous Chloride | HI7207A | SnCl2 | 6 | 5-10-18 | 116502 #14 | 200.01g | | | |
| 9 | | B | | | | #14 | 200.01g | | | |
| 10 | | C | | | | #14+19 | 200.03 | | | |
| 11 | Blank - Soils | D | | | | | | 12.5 | 6 | 152495 |
| 12 | Hg 1.0 mg/L InterCal | HI7208A | Hg 10 mg/L Cal | 15 | 1-17-18 | HI7-198E | 1.0 ml | | | |
| 13 | 0.1 mg/L InterCal | B | 1.0 mg/L Cal | 15 | 8-04-17 | HI7-208A | | | | |
| 14 | 1.0 mg/L InterCont | C | 10 mg/L Cont | 16 | 12-05-17 | K2HG85192 | | | | |
| 15 | 0.1 mg/L InterCont | D | 1.0 mg/L Cont | 15 | 8-04-17 | HI7-208C | | | | |
| 16 | Hg-5700 ICV | E | | | 08 | | 0.25ml | 1 | 6 | 152495 |
| 17 | CCV | F | Hg 1.0 mg/L Cal | | | HI7-208A | 0.20 | | | |
| 18 | CRA | G | Hg 0.1 mg/L Cont | | | HI7-208D | 0.20 | | | |
| 19 | Std Cal | H | Hg 0.1 mg/L Cal | | | HI7-208B | 0.20 | | | |
| 20 | | I | | | | | 0.50 | | | |

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
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|---|---|---|
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| | HCl Used | | | Other Used | | | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | | | | | | |
| 1 | | | | 5ml Aqua Regia 15ml HNO3 | | H17-202DD H17-147D | 100 | 0.5 ug/L | DLJ35Y | 7-21-17 | 7-28-17 | RT |
| 2 | | | | | | | | 1.0 | | | | |
| 3 | | | | | | | | 2.5 | | | | |
| 4 | | | | | | | | 5.0 | | | | |
| 5 | | | | | | | | 0.0 | | | | |
| 6 | | | | | | | | 2.5 | | | | |
| 7 | 49.5 | 6 | 16.7022 | | | | 66 | 1:3 | | | 7-21-17 | |
| 8 | 300 | 6 | 16.7022 | | | | 3000 | 10/1 | DLJ35Y | 7-26-17 | 1-26-18 | RT |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | 37.5 | | | 60ml Hydrox 150ml HNO3 | | H17-125G H17-147D | 1000 | 0.0 | | | 11-05-17 | |
| 12 | | | | To vol w/0.15% HNO3 | | H17-110C | 10 | 1.0 | DLJ35Y | 7-27-17 | 8-04-17 03 | RT |
| 13 | | | | | | | | 0.1 | | | | |
| 14 | | | | | | | | 1.0 | | | | |
| 15 | | | | | | | | 0.1 | | | | |
| 16 | 2ml H2SO4 | 4 | 171.338 | 32ml H2O 6ml HNO3 | | H17-188EG H17-191S | 100 | 2.5ml | | | | |
| 17 | | | | | | | 200 | 1.0 | | | | |
| 18 | | | | | | | 100 | 0.2 | | | | |
| 19 | | | | | | | | 0.2 | | | | |
| 20 | | | | | | | | 0.5 | | | | |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = $Al(NO_3)_3$ (40%)
F = Element Specific

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| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
| Effective date : 02 Feb 2017 | Effective | |

| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg 5700 Std Cal | H17208J | Hg 1.0 mg/L Cal | 15 | 8-04-17 | H17-208A | 0.20ml | 1 | 6 | 152495 |
| 2 | ↓ | K | ↓ | ↓ | 8-03 (3) 7-28-17 DV 35y | ↓ | 0.25 | ↓ | ↓ | ↓ |
| 3 | ↓ | L | ↓ | ↓ | ↓ | ↓ | 0.50 | ↓ | ↓ | ↓ |
| 4 | ↓ | m | — | | (3b) 7-28-17 DV 35y | | — | | | |
| 5 | ICV | N | Hg 1.0 mg/L Cont | 15 | 8-04-17 | H17-208C | 0.25ml | | | |
| 6 | CCV | O | Hg 1.0 mg/L Cal | ↓ | ↓ 3 | H17-208A | 0.20 | ↓ | ↓ | ↓ |
| 7 | ↓ CRA | ↓ P | Hg 0.1 mg/L Cont | ↓ | ↓ | H17-208D | 0.20 ↓ | ✓ | ✓ | ✓ |
| 8 | Hg 1.0 mg/L Inter Cal | H17209A | Hg 10 mg/L Cal | 15 | 1-17-18 | H17-198E | 1.0ml | — | | |
| 9 | 0.1 mg/L Inter Cal | B | ↓ 1.0 mg/L Cal | 15 | 8-04-17 | H17-209A | ↓ | ↓ | ↓ | ↓ |
| 10 | 1.0 mg/L Inter Cont | C | 10 mg/L Cont | 16 | 12-05-17 | KaHG850192 | ↓ | ↓ | ↓ | ↓ |
| 11 | ↓ 0.1 mg/L Inter Cont | D | ↓ 1.0 mg/L Cont | 15 | 8-04-17 | H17-209C | ↓ | — | — | — |
| 12 | Hg 5700 ICV | E | ↓ | ↓ | ↓ | ↓ | 0.25ml | 1 | 6 | 152495 |
| 13 | ↓ CCV | F | Hg 1.0 mg/L Cal | ↓ | ↓ | H17-209A | 0.20 | ↓ | ↓ | ↓ |
| 14 | ↓ CRA | G | Hg 0.1 mg/L Cont | ↓ | ↓ | H17-209D | 0.20 | ↓ | ↓ | ↓ |
| 15 | ↓ Std Cal | H | Hg 0.1 mg/L Cal | ↓ | ↓ | H17-209B | 0.20 | ↓ | ↓ | ↓ |
| 16 | ↓ | I | ↓ | ↓ | ↓ | ↓ | 0.50 | ↓ | ↓ | ↓ |
| 17 | ↓ | J | Hg 1.0 mg/L Cal | ↓ | ↓ | H17-209A | 0.20 | ↓ | ↓ | ↓ |
| 18 | ↓ | K | ↓ | ↓ | ↓ | ↓ | 0.25 | ↓ | ↓ | ↓ |
| 19 | ↓ | L | ↓ | ↓ | ↓ | ↓ | 0.50 ↓ | ↓ | ↓ | ↓ |
| 20 | ↓ | ↓ m | — | | | | — | | | |

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)

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| Document Title: Standard/Reagent Preparation Logbook | | |
|---|---|---|
| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
| Effective date : 02 Feb 2017 | Effective | |

| | HCl Used | | | Other Used | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
| 1 | 2ml H2SO4 | 4 | 171339 | 3.2ml K2S2O8 1ml KMnO4 | | HI7-133EE HI7-1915 | 200 | 1.0ug/L | DV354 | 7-27-17 | 8-04-17 | RT |
| 2 | | | | | | | 100 | 2.5 | | | 8-04-17 (B) 7-28-17 DV354 | |
| 3 | | | | | | | | 5.0 | | | | |
| 4 | | | | | | | | 0.0 | | | | |
| 5 | | | | | | | ↓ | 2.5 | | | | |
| 6 | | | | | | | 200 | 1.0 | | | | |
| 7 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | 100 | 0.2 ↓ | ↓ | ↓ | ↓ | ↓ |
| 8 | — | — | — | To vol w/ 0.15% | HNO3 | HI7-110C | 10 | 1.0 | DV354 | 7-28-17 | 8-04-17 | RT |
| 9 | | | | ↓ | ↓ | ↓ | ↓ | 0.1 | | | | |
| 10 | | | | | | | | 1.0 | | | | |
| 11 | — | — | — | ↓ | ↓ | ↓ | ↓ | 0.1 | | | | |
| 12 | 2ml H2SO4 | 4 | 171339 | 3.2ml K2S2O8 1ml KMnO4 | | HI7-133EE HI7-1915 | 100 | 2.5ug/L | | | | |
| 13 | | | | | | | 200 | 1.0 | | | | |
| 14 | | | | | | | 100 | 0.2 | | | | |
| 15 | | | | | | | ↓ | 0.2 | | | | |
| 16 | | | | | | | ↓ | 0.5 | | | | |
| 17 | | | | | | | 200 | 1.0 | | | | |
| 18 | | | | | | | 100 | 2.5 | | | | |
| 19 | | | | | | | ↓ | 5.0 | | | | |
| 20 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | 0.0 | ↓ | ↓ | ↓ | ↓ |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = Al $(NO_3)_3$ (40%)
F = Element Specific

**RT = Room Temperature Storage**

* units are mL unless otherwise specified
** units are mg/L unless otherwise specified



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| Document Title: Standard/Reagent Preparation Logbook | | |
|---|---|---|
| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
| Effective date : 02 Feb 2017 | Effective | |

| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg-5700 ICV | HI7209N | Hg-1.0mg/L Cont | 15 | 8-04-17 | HI7-209C | 0.25ml | 1 | 6 | 152495 |
| 2 | CCV | O | Hg-1.0mg/L Cal | | | HI7-209A | 0.20 | ↓ | ↓ | ↓ |
| 3 | CRA | P | Hg-0.1mg/L Cont | | | HI7-209D | 0.20 | ↓ | ↓ | ↓ |
| 4 | Hg-5701 ICV | Q | Hg-1.0mg/L Cont | | | HI7-209C | 0.25 | | | |
| 5 | CCV | R | Hg-1.0mg/L Cal | | | HI7-209A | 0.10 | | | |
| 6 | CCV | S | ↓ | | | ↓ | 0.10 | | | |
| 7 | CCV | T | | | | | 0.10 | | | |
| 8 | CCV | U | ↓ | | | ↓ | 0.10 | | | |
| 9 | CRA | V | Hg-0.1mg/L Cont | | | HI7-209D | 0.20 | | | |
| 10 | Std Cal | W | Hg-0.1mg/L Cal | | | HI7-209B | 0.20 | | | |
| 11 | ↓ | X | ↓ | | | ↓ | 0.50 | | | |
| 12 | | Y | Hg-1.0mg/L Cal | | | HI7-209A | 0.10 | | | |
| 13 | | Z | ↓ | | | ↓ | 0.25 | | | |
| 14 | | AA | ↓ | ↓ | ↓ | ↓ | 0.50 | | | |
| 15 | ↓ | BB | | | | | | | | |
| 16 | ICV | CC | Hg-1.0mg/L Cont | 15 | 8-04-17 | HI7-209C | 0.25ml | | | |
| 17 | Aqua Regia | ↓ DD | | | | | | 11.5 | 6 | 152495 |
| 18 | Hg-1.0mg/L Inter Cal | HI7213A | Hg-10mg/L Cal | 15 | 1-17-18 | HI7-198E | 1.0ml | | | |
| 19 | 1.0mg/L Inter Cal | B | 1.0mg/L Cal | 15 | 8-08-17 | HI7-213A | ↓ | | | |
| 20 | 1.0mg/L Inter Cont | ↓ C | ↓ 10mg/L Cont | 16 | 12-05-17 | X2HG850192 | ↓ | | | |

**Key – Manufacturer (M•)**

1 – Aldrich Chemical
2 – Conostan Specialty Products
3 – EM Science
4 – Fisher Scientific
5 – High-Purity Standards
6 – J. T. Baker
7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)

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|---|---|---|
| Eurofins Document Reference : T-MET-FRM9079 | Revision: 3 | Historical Reference: 1-P-QM-FOR-9009818; Form 1105 |
| Effective date : 02 Feb 2017 | Effective | |

| | HCl Used | | | Other Used | | | Final Vol (mL) | Final Conc (mg/L**) | Init/ Emp # | Prep Date (MM/DD/YY) | Expire Date (MM/DD/YY) | Storage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vol (mL) | M• | Lot # | Vol (mL*) | •• M• | Lot # | | | | | | |
| 1 | 2ml $H_2SO_4$ | 4 | 171338 | 3.2ml K252 08 1 ml HNO3 | | H17-128EE H17-191S | 100 | 2.5 mg/L | DL 354 | 7-28-17 | 8-04-17 | RT |
| 2 | | | | | | | 300 | 1.0 | | | | |
| 3 | | | | | | | 100 | 0.2 | | | | |
| 4 | | | | 5ml Aqua Regia 5ml HNO3 | | H17-209 H17-191S | | 2.5 | | | | |
| 5 | | | | | | | | 1.0 | | | | |
| 6 | | | | | | | | 1.0 | | | | |
| 7 | | | | | | | | 1.0 | | | | |
| 8 | | | | | | | | 1.0 | | | | |
| 9 | | | | | | | | 0.2 | | | | |
| 10 | | | | | | | | 0.2 | | | | |
| 11 | | | | | | | | 0.5 | | | | |
| 12 | | | | | | | | 1.0 | | | | |
| 13 | | | | | | | | 2.5 | | | | |
| 14 | | | | | | | | 5.0 | | | | |
| 15 | | | | | | | | 0.0 | | | | |
| 16 | | | | | | | | 2.5 | | | | |
| 17 | 49.5 | 6 | 167022 | | | | 66 | 1.3 | | | 7-28-17 | |
| 18 | | | | To vol w/ 1% HNO3 | | H17-116C | 10 | 1.0 | DL 354 | 8-01-17 | 8-08-17 | RT |
| 19 | | | | | | | | 0.1 | | | | |
| 20 | | | | | | | | 1.0 | | | | |

**Footnotes**

**Key (••) – Other Used**

A = $CaCl_2$ (0.053%)
B = CsCl (10%)
C = KCl
D = $La_2O_3$ (10%)
E = Al $(NO_3)_3$ (40%)
F = Element Specific

**RT = Room Temperature Storage**

* units are mL unless otherwise specified
** units are mg/L unless otherwise specified

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| Document Title: Standard/Reagent Preparation Logbook | | |
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| Effective date : 02 Feb 2017 | Effective | |

| | Standard/Reagent Prepared | | Standards/Reagents Used | | | | | $HNO_3$ Used | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Name | Lot # | Identification | M• | Expire Date (MM/YY) | Lot # | Init. Wt/Vol (Write g or mL) | Vol (mL) | M• | Lot # |
| 1 | Hg 0.1mg/L InterCont | H17213D | Hg 1.0mg/L Cont | 15 | 8-08-17 | H17-213C | 1.0 ml | | | |
| 2 | Hg 5700 ICV | E | ↓ | ↓ | ↓ | ↓ | 0.25ml | 1 | 16 | 1524495 |
| 3 | CCV | F | Hg 1.0mg/L Cal | | | H17-213A | 0.20 | ↓ | ↓ | ↓ |
| 4 | CRA | G | Hg 0.1mg/L Cont | | | H17-213D | 0.20 | | | |
| 5 | Std Cal | H | Hg 0.1mg/L Cal | | | H17-213B | 0.20 | | | |
| 6 | ↓ | I | ↓ | | | ↓ | 0.50 | | | |
| 7 | | J | Hg 1.0mg/L Cal | | | H17-213A | 0.20 | | | |
| 8 | | K | ↓ | | | ↓ | 0.25 | | | |
| 9 | | L | ↓ | ↓ | ↓ | ↓ | 0.50 | | | |
| 10 | ↓ | M | | | | | | | | |
| 11 | ICV | N | Hg 1.0mg/L Cont (8-23-17 2nd) | 15 | 8-08-17 | H17-213C | 0.25ml | | | |
| 12 | CCV | O | Hg 1.0mg/L Cal | ↓ | ↓ | H17-213A | 0.20 | | | |
| 13 | ↓ CRA | ↓ P | Hg 0.1mg/L Cont (8-23-17 2nd) | ↓ | ↓ | H17-213D | 0.20 ↓ | ↓ | ↓ | ↓ |
| 14 | Potassium Persulfate | H17215A | $K_2S_2O_8$ ③ | 16 | 4-13-18 | 11666 #3 | 100.03g | | | |
| 15 | Stannous Chloride | B | $SnCl_2$ | 6 | 2-7-18 | 169512 #5 | 200.02g | | | |
| 16 | ↓ | C | ↓ | ↓ | ↓ | ↓ #15216 | 200.03g | | | |
| 17 | ↓ | ↓ D | ↓ | ↓ | ↓ | ↓ #16 | 200.00g | | | |
| 18 | Hg 1.0mg/L InterCal | H17216A | Hg 10mg/L Cal | 15 | 1-17-18 | H17-198E | 1.0 ml | | | |
| 19 | ↓ 0.1mg/L InterCal | ↓ B | ↓ 1.0mg/L Cal | 15 | 8-11-17 | H17-216A | ↓ | | | |
| 20 | ↓ 1.0mg/L InterCont | ↓ C | ↓ 10mg/L Cont | 16 | 12-05-17 | h2HG850192 | ↓ | | | |

**Key – Manufacturer (M•)**

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7 – Johnson Matthey
8 – Leeman Labs
9 – Mallinckrodt
10 – Plasma Pure
11 – Solutions Plus
12 – SPEX Industries
13 – VWR Scientific
14 – EMD
15 – Prepared in house
16-Inorganic Ventures
XX – Other (footnote Manuf.)

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# Instrumental Wet Chemistry Data

# Case Narrative/Conformance Summary

# Instrumental Wet Chemistry

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | Comments |
|---|---|---|---|---|
| 9121674 | GWTS-EFF1-072517 | X | | |
| 9121676 | GWTS-EFF1DUP-072517 | X | | Field Duplicate Sample |
| 9121680 | GWTS-INF1-072517 | X | | |
| 9121683 | GWTS-EFF2-072517 | X | | Background/Unspiked |
| 9121684 | GWTS-EFF2-072517MS | X | | Matrix Spike |
| 9121685 | GWTS-EFF2-072517MSD | X | | Matrix Spike Duplicate |
| 9121686 | GWTS-EFF2-072517DUP | X | | Duplicate |
| 9121693 | GWTS-INF2-072517 | X | | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

Method defined actions are taken for any failed matrix QC.

Batch#: 17218941101A (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121685, 9121693, UNSPK: 9121683)
The relative percent difference(s) for the following analyte(s) in the MS/MSD is outside the acceptance window: Free Cyanide

Batch#: 17214118101B (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693, UNSPK: 9121683, BKG: 9121683)
The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Total Nitrite/Nitrate Nitrogen

Batch#: 17207249213A (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693, UNSPK: 9121683, BKG: 9121683)
The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Chloride, Sulfate

**Sample Duplicate**

Method defined actions are taken for any failed matrix QC.

Batch#: 17207249213A (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693, UNSPK: 9121683, BKG: 9121683)
The duplicate RPD for the following analyte(s) is outside the acceptance window: Fluoride

### SAMPLE ANALYSIS:

| Samples | Chloride | Fluoride | Free Cyanide | Phenols (water) | Sulfate | Total Nitrite/Nitrate Nitrogen |
|---|---|---|---|---|---|---|
| 9121674 | DF20 | DF5 | DF1 | DF1 | DF5 | DF1 |
| 9121676 | DF20 | DF5 | DF1 | DF1 | DF5 | DF1 |
| 9121680 | DF20 | DF5 | DF1 | DF1 | DF5 | DF1 |
| 9121683 | UNSPK/ DF5 | UNSPK/ DF5 | UNSPK/ DF1 | UNSPK/ DF1 | UNSPK/ DF5 | UNSPK/ DF1 |
| 9121684 | MS/ DF5 | MS/ DF5 | MS/ DF1 | MS/ DF1 | MS/ DF5 | MS/ DF1 |
| 9121685 | | | MSD/ DF1 | MSD/ DF1 | | |
| 9121686 | D/ DF5 | D/ DF5 | | | D/ DF5 | D/ DF1 |
| 9121693 | DF5 | DF5 | DF1 | DF1 | DF5 | DF1 |

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| U = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| R = Matrix Spike (MS) | MDL = Method Detection Limit |
| M = Matrix Spike Duplicate (MSD) | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | NA = Not Applicable |
| HS = High Spike | ME = Method |
| LS = Low Spike | CO = Colorimetric |
| SS = Soluble Spike | G = Gravimetric |
| IS = Insoluble Spike | IR = Infrared Spectrophotometry |
| ISD = Insoluble Spike Duplicate | MTR = Meter |
| PDS = Post Digestion Spike | OD = Oven Dried |
| * = Out of Specification | TI = Titration |
| V = Visual | TOC = Total Organic Carbon |
| AK = Alpkem | IC = Ion Chromatography |
| TC = Total Carbon | RA = Rapid Analyzer |

# Quality Control and Calibration Summary Forms

# Instrumental Wet Chemistry

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

**Fraction: Instrumental Wet Chemistry**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| Free Cyanide | 17218941101A | P21841AB | 08/06/2017 17:37:00 |
| | | P21841AQ | 08/06/2017 17:35:00 |
| | | 9121674 | 08/06/2017 17:45:00 |
| | | 9121676 | 08/06/2017 17:47:00 |
| | | 9121680 | 08/06/2017 17:49:00 |
| | | 9121683 UNSPK | 08/06/2017 17:39:00 |
| | | 9121684 MS | 08/06/2017 17:41:00 |
| | | 9121685 MSD | 08/06/2017 17:43:00 |
| | | 9121693 | 08/06/2017 17:51:00 |
| Phenols (water) | 17215125101A | P21525AB | 08/03/2017 02:07:00 |
| | | P21525AQ | 08/03/2017 02:05:00 |
| Phenols (water) | 17215125101B | 9121674 | 08/03/2017 03:00:00 |
| | | 9121676 | 08/03/2017 03:03:00 |
| | | 9121680 | 08/03/2017 03:06:00 |
| | | 9121683 UNSPK | 08/03/2017 02:51:00 |
| | | 9121684 MS | 08/03/2017 02:55:00 |
| | | 9121685 MSD | 08/03/2017 02:58:00 |
| | | 9121693 | 08/03/2017 03:15:00 |
| Total Nitrite/Nitrate Nitrogen | 17214118101A | P21418AB | 08/03/2017 03:29:00 |
| | | P21418AQ | 08/03/2017 03:30:00 |
| Total Nitrite/Nitrate Nitrogen | 17214118101B | 9121674 | 08/03/2017 04:07:00 |
| | | 9121676 | 08/03/2017 04:09:00 |
| | | 9121680 | 08/03/2017 04:11:00 |
| | | 9121683 UNSPK/BKG | 08/03/2017 04:02:00 |
| | | 9121684 MS | 08/03/2017 04:03:00 |
| | | 9121686 DUP | 08/03/2017 04:05:00 |
| | | 9121693 | 08/03/2017 04:13:00 |

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# Quality Control Reference List
## Instrumental Water Quality

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR191**

**Fraction: Instrumental Wet Chemistry**

| Batch Number | Sample Number | Analysis Date | Chloride | Fluoride | Sulfate |
|---|---|---|---|---|---|
| 17207249213A | 9121674 | 07/27/2017 08:24:00 | | X | X |
| | 9121674 | 07/27/2017 08:41:00 | X | | |
| | 9121676 | 07/27/2017 08:59:00 | | X | X |
| | 9121676 | 07/27/2017 09:16:00 | X | | |
| | 9121680 | 07/27/2017 10:43:00 | | X | X |
| | 9121680 | 07/27/2017 11:00:00 | X | | |
| | 9121683 UNSPK/BKG | 07/27/2017 05:30:00 | X | X | X |
| | 9121684 MS | 07/27/2017 07:15:00 | X | X | X |
| | 9121686 DUP | 07/27/2017 06:05:00 | X | X | X |
| | 9121693 | 07/27/2017 09:33:00 | X | X | X |
| | P20749MB | 07/27/2017 04:21:00 | | X | X |
| | P20749MB | 07/27/2017 23:59:00 | X | | |
| | P20749MQ | 07/27/2017 04:04:00 | | X | X |
| | P20749MQ | 07/27/2017 23:11:00 | X | | |

**Quality Control Summary**
**Method Blank**
**Instrumental Water Quality**
**SDG: KR191**
**Matrix: LIQUID**

**Fraction: Instrumental Wet Chemistry**

| 17207249213A / P20749MB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Chloride | IC | 07/27/17 | N.D. | mg/l | 0.20 | 0.40 | 0.40 |
| Fluoride | IC | 07/27/17 | N.D. | mg/l | 0.050 | 0.10 | 0.10 |
| Sulfate | IC | 07/27/17 | N.D. | mg/l | 0.30 | 1.0 | 1.0 |

| 17214118101A / P21418AB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 08/03/17 | N.D. | mg/l | 0.040 | 0.10 | 0.10 |

| 17215125101A / P21525AB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Phenols (water) | AK | 08/03/17 | N.D. | mg/l | 0.010 | 0.020 | 0.030 |

| 17218941101A / P21841AB<br>Parameter | ME | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|---|
| Free Cyanide | OI | 08/06/17 | N.D. | mg/l | 0.0020 | 0.0060 | 0.0060 |

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| UNSPK: 9121683<br>MS: 9121684<br>**Parameter** | Batch: **17207249213A** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693 )<br>**ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | IC | 10 | 22.78 | 34.2 | NA | 114 * | NA | 90-110 | NA | NA |
| Fluoride | IC | 2.50 | 0.789 | 3.26 | NA | 99 | NA | 90-110 | NA | NA |
| Sulfate | IC | 25 | 43.97 | 73.09 | NA | 116 * | NA | 90-110 | NA | NA |

| UNSPK: 9121683<br>MS: 9121684<br>**Parameter** | Batch: **17214118101B** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693 )<br>**ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | AK | 1.00 | 0.405 | 1.61 | NA | 120 * | NA | 90-110 | NA | NA |

| UNSPK: 9121683<br>MS: 9121684<br>MSD: 9121685<br>**Parameter** | Batch: **17215125101B** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121685, 9121693 )<br>**ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|---|---|
| Phenols (water) | AK | 0.200 | N.D. | 0.195 | 0.192 | 98 | 96 | 90-110 | 2 | 6 |

| UNSPK: 9121683<br>MS: 9121684<br>MSD: 9121685<br>**Parameter** | Batch: **17218941101A** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121685, 9121693 )<br>**ME** | **Spike Added mg/l** | **Unspiked Conc mg/l** | **MS Conc mg/l** | **MSD Conc mg/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|---|---|
| Free Cyanide | OI | 0.0200 | N.D. | 0.0194 | 0.0173 | 97 | 86 | 86-132 | 11 * | 3 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| BKG: 9121683<br>DUP: 9121686 | Batch: **17207249213A** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693 ) | | | | |
|---|---|---|---|---|---|
| **Parameter** | **ME** | **Unspiked Conc mg/l** | **DUP Conc mg/l** | **%RPD** | **%RPD Limits** |
| Chloride | IC | 22.78 | 21.56 | 6 | 15 |
| Fluoride | IC | 0.79 | 0.48 J | 48* (1) | 15 |
| Sulfate | IC | 43.97 | 42.58 | 3 | 15 |

| BKG: 9121683<br>DUP: 9121686 | Batch: **17214118101B** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693 ) | | | | |
|---|---|---|---|---|---|
| **Parameter** | **ME** | **Unspiked Conc mg/l** | **DUP Conc mg/l** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 0.4 | 0.41 | 1 (1) | 10 |

Comments:
(1) The sample and/or duplicate result is less than five times the LOQ.
* = Out of Specification

Results are being reported on an as received basis.

## Instrumental Water Quality

**Fraction: Instrumental Wet Chemistry**

| LCS: P20749MQ | Batch: **17207249213A** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Chloride | IC | 3.00 | 2.70 | NA | 90 | NA | 90-110 | NA | NA |
| Fluoride | IC | 0.750 | 0.792 | NA | 106 | NA | 90-110 | NA | NA |
| Sulfate | IC | 7.50 | 7.03 | NA | 94 | NA | 90-110 | NA | NA |

| LCS: P21418AQ | Batch: **17214118101B** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121684, 9121686, 9121693 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Total Nitrite/Nitrate Nitrogen | AK | 2.50 | 2.51 | NA | 100 | NA | 90-110 | NA | NA |

| LCS: P21525AQ | Batch: **17215125101B** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121685, 9121693 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Phenols (water) | AK | 0.250 | 0.230 | NA | 92 | NA | 90-110 | NA | NA |

| LCS: P21841AQ | Batch: **17218941101A** (Sample number(s): 9121674, 9121676, 9121680, 9121683-9121685, 9121693 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **ME** | **Spike Added mg/l** | **LCS Conc mg/l** | **LCSD Conc mg/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Free Cyanide | OI | 0.0400 | 0.0369 | NA | 92 | NA | 86-132 | NA | NA |

Quality Control Summary
Initial And Continuing Calibration
Instrumental Analysis/Anion Scan

SDG: KR191

Instrument ID: 12115
Calibration Date: 07/07/2017

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | $R^2$ | CC |
|---|---|---|---|---|---|---|---|
| Chloride | 1.045200 | 2.310405 | 5.678044 | 12.269198 | 19.157873 | 0.9992 | 0.9996 |

Acceptance Range:
ICV/CCV: 90%-110%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17207249213A
Run Start Dates: 07/27/2017
Run Names: 1720801D15

| | Chloride | | |
|---|---|---|---|
| Sample | True | Result | %Rec |
| ICV | 3 | 2.7491 | 92 |
| ICB | 0 | ND | NA |
| Low Chk | 1.5 | 1.4401 | 96 |
| High Chk | 4.5 | 4.3828 | 97 |
| CCV2 | 3 | 2.8540 | 95 |
| CCB | 0 | ND | NA |
| CCV2 | 3 | 2.7205 | 91 |
| CCB | 0 | ND | NA |
| CCV2 | 3 | 2.6963 | 90 |
| CCB | 0 | ND | NA |

* = Out of Specifications

Instrument ID: 19052
Calibration Date: 07/24/2017

Acceptance Range:
ICV/CCV: 90%-110%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17207249213A
Run Start Dates: 07/26/2017
Run Names: 1720701D13

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | $R^2$ | CC |
|---|---|---|---|---|---|---|---|
| Chloride | 1.073934 | 2.095408 | 5.450996 | 11.204873 | 16.816649 | 0.9991 | 0.9995 |
| Fluoride | 0.294687 | 1.180815 | 3.229450 | 7.106201 | 11.311358 | 0.9982 | 0.9991 |
| Sulfate | 0.778712 | 1.626433 | 4.400597 | 9.435993 | 14.942264 | 0.9990 | 0.9995 |

| | Chloride | | | Sulfate | | | Fluoride | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample | True | Result | %Rec | True | Result | %Rec | True | Result | %Rec |
| ICV | 3 | 2.9000 | 97 | 7.5 | 7.1663 | 96 | 0.75 | 0.7680 | 102 |
| ICB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| Low Chk | 1.5 | 1.4409 | 96 | 3.75 | 3.5971 | 96 | 0.75 | 0.7612 | 101 |
| High Chk | 4.5 | 4.4314 | 98 | 11.25 | 10.9722 | 98 | 2.25 | 2.2579 | 100 |
| CCV2 | 3 | 2.9130 | 97 | 7.5 | 7.1569 | 95 | 0.75 | 0.7884 | 105 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.9079 | 97 | 7.5 | 7.2151 | 96 | 0.75 | 0.7746 | 103 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.9227 | 97 | 7.5 | 7.1842 | 96 | 0.75 | 0.7810 | 104 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |
| CCV2 | 3 | 2.8860 | 96 | 7.5 | 7.1284 | 95 | 0.75 | 0.7974 | 106 |
| CCB | 0 | ND | NA | 0 | ND | NA | 0 | ND | NA |

* = Out of Specifications

Instrument ID: 07411
Calibration Date: 08/03/2017

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | AUTO CAL6 | AUTO CAL7 | CC |
|---|---|---|---|---|---|---|---|---|
| Nitrate/Nitrite Nitrogen | 684893.7000 | 523500.6000 | 178193.8000 | 89063.8000 | 36656.3000 | 18973.4000 | 1631.4000 | 0.9998 |

Acceptance Range:
ICV/CCV: +/- 10%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17214118101B
Run Start Dates: 08/03/2017
Run Names: 1721501C05

| Sample | Nitrate/Nitrite Nitrogen | | |
|---|---|---|---|
| | True | Result | %Rec |
| ICV | 2.5 | 2.71830 | 109 |
| ICB | 0 | ND | NA |
| CCV2 | 2.5 | 2.68560 | 107 |
| CCB 5 | 0 | ND | NA |
| CCV2 | 2.5 | 2.67810 | 107 |
| CCB 6 | 0 | ND | NA |
| CCV2 | 2.5 | 2.65920 | 106 |
| CCB 7 | 0 | ND | NA |
| CCV2 | 2.5 | 2.70170 | 108 |
| CCB 8 | 0 | ND | NA |

* = Out of Specifications

Instrument ID: 22255
Calibration Date: 08/03/2017

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | AUTO CAL6 | AUTO CAL7 | CC |
|---|---|---|---|---|---|---|---|---|
| Phenols | 0.1068 | 0.0772 | 0.0444 | 0.0235 | 0.0126 | 0.0074 | 0.0011 | 0.9998 |

Acceptance Range:
ICV/CCV: +/- 10%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17215125101B
Run Start Dates: 08/03/2017
Run Names: 1721501C06

| | Phenols | | |
|---|---|---|---|
| Sample | True | Result | %Rec |
| CCB 1 | 0 | ND | NA |
| ICV | 0.25 | 0.23000 | 92 |
| ICB | 0 | ND | NA |
| CCV2 | 0.25 | 0.23000 | 92 |
| CCB 2 | 0 | ND | NA |
| CCV2 | 0.25 | 0.23000 | 92 |
| CCB 3 | 0 | ND | NA |
| CCV2 | 0.25 | 0.22900 | 92 |
| CCB 4 | 0 | ND | NA |

* = Out of Specifications

Instrument ID: 19369
Calibration Date: 08/06/2017

| Analysis | AUTO CAL1 | AUTO CAL2 | AUTO CAL3 | AUTO CAL4 | AUTO CAL5 | AUTO CAL6 | AUTO CAL7 | CC |
|---|---|---|---|---|---|---|---|---|
| Free CN | 234.0000 | 2096.0000 | 7373.0000 | 13605.0000 | 24934.0000 | 62223.0000 | 127136.0000 | 0.9999 |

Acceptance Range:
ICV/CCV: +/- 10%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 17218941101A
Run Start Dates: 08/06/2017
Run Names: 1721801C04

| Sample | Free CN | | |
|---|---|---|---|
| | True | Result | %Rec |
| ICV | 0.025 | 0.02319 | 93 |
| ICB | 0 | ND | NA |
| CCV2 | 0.025 | 0.02219 | 89 |
| CCB 1 | 0 | ND | NA |

* = Out of Specifications

# Raw Data

# Instrumental Wet Chemistry

**Fraction: Instrumental Wet Chemistry**

| 00224: Chloride<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Chloride | .2 | .4 | 0.40 | mg/l |

| 01504: Fluoride<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Fluoride | .05 | .1 | 0.10 | mg/l |

| 12941: Free Cyanide<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Free Cyanide | .002 | .006 | 0.0060 | mg/l |

| 14002: Phenols (water)<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Phenols (water) | .01 | .02 | 0.030 | mg/l |

| 00228: Sulfate<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Sulfate | .3 | 1 | 1.0 | mg/l |

| 07882: Total Nitrite/Nitrate Nitrogen<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Total Nitrite/Nitrate Nitrogen | .04 | .1 | 0.10 | mg/l |

# Instrumental Water Quality Report

Analyte: Free CN
Run Start Date/Time: 8/6/2017 5:07:00PM
Instrument Name: 19369

## Calibration Information

Curve Information Location:
Book # 256880
Page # 7

| Sample Names | Volts | Detected Result | True Result |
|---|---|---|---|
| S1 | 234.0000 | 0.00004 | - |
| S2 | 2096.0000 | 0.00152 | 0.002 |
| S3 | 7373.0000 | 0.00569 | 0.005 |
| S4 | 13605.0000 | 0.01062 | 0.01 |
| S5 | 24934.0000 | 0.01959 | 0.02 |
| S6 | 62223.0000 | 0.04909 | 0.05 |
| S7 | 127136.0000 | 0.10045 | 0.1 |

Number of Calibrants: 7

Correlation Coefficient: 0.99986

Y-Intercept: ~~125.44411~~ 1.7975e+2

Slope: ~~1264.64648~~ 1.2639e+3

## QC Information

| QC Names | Units | True Values | QC Ranges |
|---|---|---|---|
| ICV | mg/L | 0.025 | 0.0214 - 0.0296 |
| ICB/CCB | mg/L | 0 | 0 - 0.003 |
| CCV2 | mg/L | 0.025 | 0.0214 - 0.0296 |
| PB Waters | mg/L | 0 | 0 - 0 |
| LCS Waters | mg/L | 0.04 | 0.0342 - 0.0529 |

Analyst: JEmyers Date: 8/6/17

Verifier: SM/347 Date: 8/7/17

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| Sync | 1 | | | 8/6/2017 5:07:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.16661 | | 210747 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| carrove | 2 | | | 8/6/2017 5:09:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00227 | | 3044 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| blank | 3 | | | 8/6/2017 5:11:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00014 | | 0 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S1 | 4 | | | 8/6/2017 5:13:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00004 | | 234 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S2 | 5 | | | 8/6/2017 5:15:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00152 | | 2096 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S3 | 6 | | | 8/6/2017 5:17:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00569 | | 7373 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S4 | 7 | | | 8/6/2017 5:19:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01062 | | 13605 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S5 | 8 | | | 8/6/2017 5:21:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01959 | | 24934 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S6 | 9 | | | 8/6/2017 5:23:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.04909 | | 62223 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S7 | 10 | | | 8/6/2017 5:25:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.10045 | | 127136 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| carryov | 11 | | | 8/6/2017 5:27:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00115 | | 1630 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| blank | 12 | | | 8/6/2017 5:29:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00014 | | 0 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICV | 13 | | | 8/6/2017 5:31:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.02319 | | 29489 | 1.0000 | 1.0 | 1 | 93 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICB | 14 | | | 8/6/2017 5:33:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00014 | | 0 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 15 | Q | 17218941101A | 8/6/2017 5:35:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.03692 | 0.037 | 46837 | 1.0000 | 1.0 | 1 | 92 | 0.04 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 16 | B | 17218941101A | 8/6/2017 5:37:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00075 | -0.001 | -766 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121683 | 17 | U | 17218941101A | 8/6/2017 5:39:00PM | KR191 | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00034 | 0.000 | -253 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121684 | 18 | R | 17218941101A | 8/6/2017 5:41:00PM | KR191 | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.01935 | 0.019 | 24637 | 1.0000 | 1.0 | 1 | 97 | 0.02 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121685 | 19 | M | 17218941101A | 8/6/2017 5:43:00PM | KR191 | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.01730 | 0.017 | 22042 | 1.0000 | 1.0 | 1 | 86 | 0.02 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121674 | 20 | | 17218941101A | 8/6/2017 5:45:00PM | KR191 | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00074 | -0.001 | -761 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121676 | 21 | | 17218941101A | 8/6/2017 5:47:00PM | KR191 | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00119 | -0.001 | -1324 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121680 | 22 | | 17218941101A | 8/6/2017 5:49:00PM | KR191 | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00166 | -0.002 | -1912 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121693 | 23 | | 17218941101A | 8/6/2017 5:51:00PM | KR191 | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00145 | -0.001 | -1655 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9134148 | 24 | | 17218941101A | 8/6/2017 5:53:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00114 | 0.001 | 1622 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 25 | | | 8/6/2017 5:55:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.02219 | | 28218 | 1.0000 | 1.0 | 1 | 89 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 1 | 26 | | | 8/6/2017 5:57:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00014 | | 0 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9135451 | 27 | | 17218941101A | 8/6/2017 5:59:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00320 | 0.003 | 4222 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9135452 | 28 | | 17218941101A | 8/6/2017 6:01:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00136 | 0.001 | 1899 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9139043 | 29 | | 17218941101A | 8/6/2017 6:03:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00132 | 0.001 | 1851 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 30 | | | 8/6/2017 6:05:00PM | | CNF |

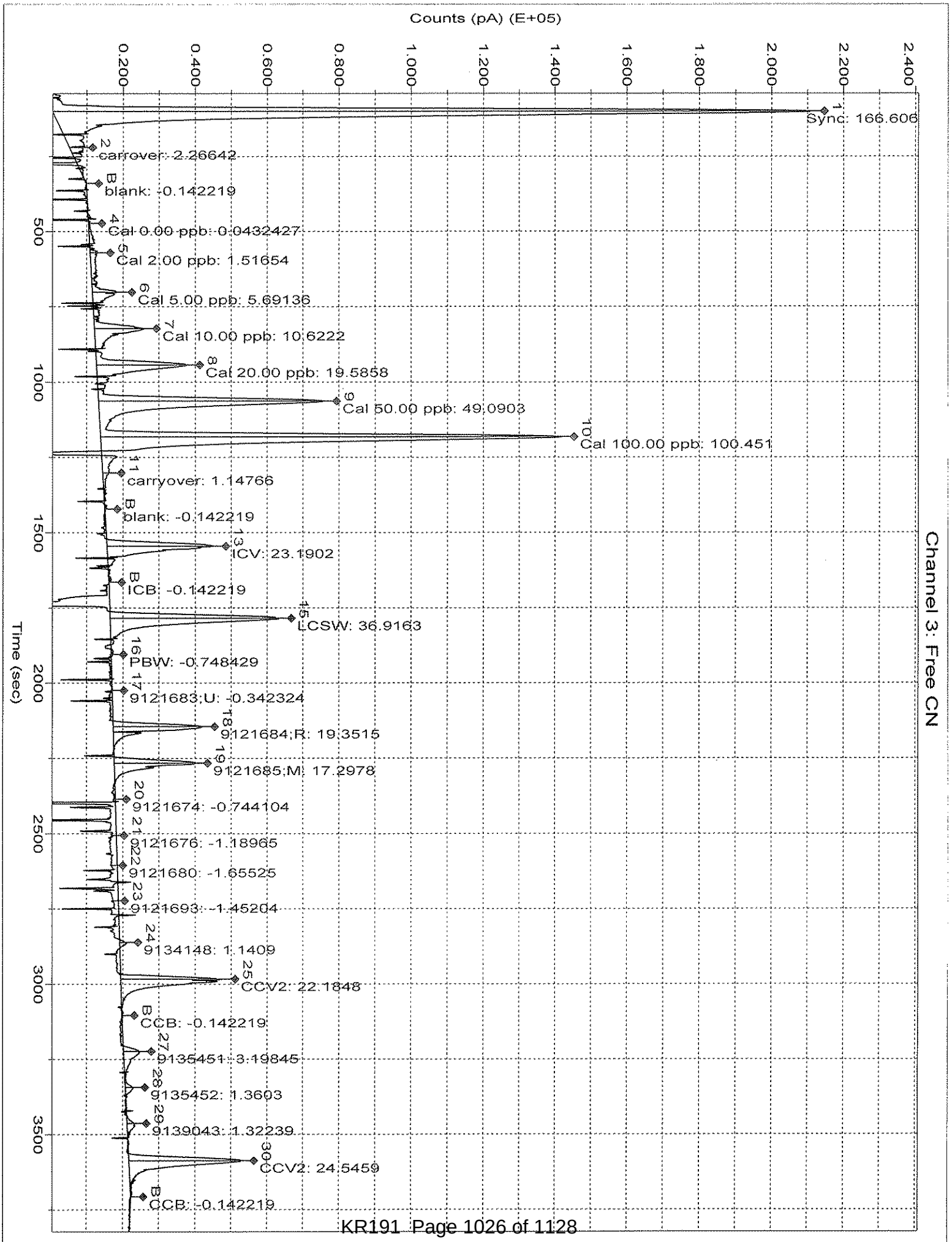
| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.02455 | | 31202 | 1.0000 | 1.0 | 1 | 98 | ☐ |

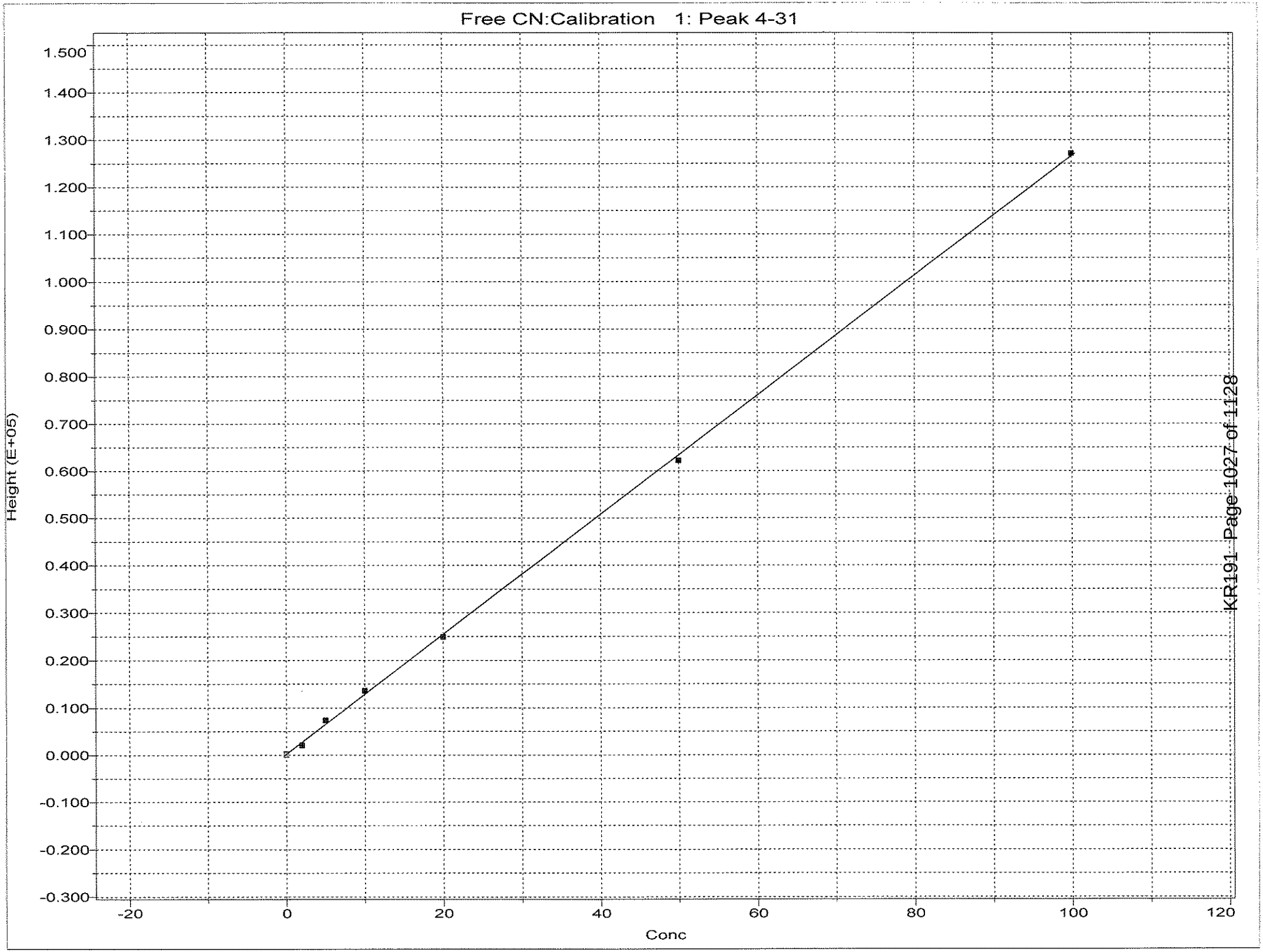
Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 2 | 31 | | | 8/6/2017 6:07:00PM | | CNF |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00014 | | 0 | 1.0000 | 1.0 | 1 | ☐ |

Comments:


Counts (pA) (E+05)
0.200
0.400
0.600
0.800
1.000
1.200
1.400
1.600
1.800
2.000
2.200
2.400
Time (sec)
500
1000
1500
2000
2500
3000
3500
Channel 3: Free CN
1 Sync: 166.606
2 carrover: 2.26642
B blank: -0.142219
4 Cal 0.00 ppb: 0.0432427
5 Cal 2.00 ppb: 1.51654
6 Cal 5.00 ppb: 5.69136
7 Cal 10.00 ppb: 10.6222
8 Cal 20.00 ppb: 19.5858
9 Cal 50.00 ppb: 49.0903
10 Cal 100.00 ppb: 100.451
11 carryover: 1.14766
B blank: -0.142219
13 ICV: 23.1902
B ICB: -0.142219
15 LCSW: 36.9163
16 PBW: -0.748429
17 9121683;U: -0.342324
18 9121684;R: 19.3515
19 9121685;M: 17.2978
20 9121674: -0.744104
21 9121676: -1.18965
22 9121680: -1.65525
23 9121693: -1.45204
24 9134148: 1.1409
25 CCV2: 22.1848
B CCB: -0.142219
27 9135451: 3.19845
28 9135452: 1.3603
29 9139043: 1.32239
30 CCV2: 24.5459
B CCB: -0.142219


Free CN:Calibration 1: Peak 4-31
Height (E+05)
1.500
1.400
1.300
1.200
1.100
1.000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-20
0
20
40
60
80
100
120
Conc
KR191 Page 1027 of 1128

Free CN:Calibration  1: Peak 4-31

File name: C:\FLOW_4\17218FCN.RST
Date: 06-Aug-17
Operator: 2373

| * | Name | Conc | Height |
|---|---|---|---|
| * | Cal 0.00 ppb | 0.000000 | 234.398438 |
| * | Cal 2.00 ppb | 2.000000 | 2096.442383 |
| * | Cal 5.00 ppb | 5.000000 | 7372.846191 |
| * | Cal 10.00 ppb | 10.000000 | 13604.758789 |
| * | Cal 20.00 ppb | 20.000000 | 24933.511719 |
| * | Cal 50.00 ppb | 50.000000 | 62223.125000 |
| * | Cal 100.00 ppb | 100.000000 | 127135.570312 |

Calib Coef:
y=bx+a
a: (intercept)  1.7975e+02
b:  1.2639e+03

Corr Coef:  0.999857

Carryover:  1.44%

No Drift Peaks

# Instrumental Water Quality Report

Analyte: Phenols
Run Start Date/Time: 8/3/2017 1:16:00AM
Instrument Name: 22255

## Calibration Information

Curve Information Location:
Book # 252674
Page # 47

| Sample Names | Volts | Detected Result | True Result |
|---|---|---|---|
| S1 | 0.1068 | 0.49500 | 0.5 |
| S2 | 0.0772 | 0.35600 | 0.35 |
| S3 | 0.0444 | 0.20100 | 0.2 |
| S4 | 0.0235 | 0.10200 | 0.1 |
| S5 | 0.0126 | 0.05100 | 0.05 |
| S6 | 0.0074 | 0.02700 | 0.03 |
| S7 | 0.0011 | -0.00300 | - |

Number of Calibrants: 7

Correlation Coefficient: ~~0.99980~~ 0.99979
Y-Intercept: 0.00170 .001698
Slope: ~~0.21229~~ 0.21224

B ICF-487 8/3/17

## QC Information

| QC Names | Units | True Values | QC Ranges |
|---|---|---|---|
| ICV | mg/L | 0.25 | 0.224 - 0.276 |
| ICB/CCB | mg/L | 0 | 0 - 0.015 |
| CCV2 | mg/L | 0.25 | 0.224 - 0.276 |
| PB Waters | mg/L | 0 | 0 - 0.015 |
| LCS Waters | mg/L | 0.25 | 0.225 - 0.275 |

Analyst: JES 2373 Date: 8/3/17

Verifier: ICF-487 Date: 8/7/17

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| Initial | 0 | | | 8/3/2017 1:16:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| Tracer | 1 | | | 8/3/2017 1:18:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.27000 | | 0.0589 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 2 | | | 8/3/2017 1:20:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.02500 | | 0.0070 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 3 | | | 8/3/2017 1:23:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00100 | | 0.0018 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 4 | | | 8/3/2017 1:27:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.26300 | | 0.0575 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 5 | | | 8/3/2017 1:30:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00100 | | 0.0018 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 1 | 6 | | | 8/3/2017 1:33:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S1 | 7 | | | 8/3/2017 1:36:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.49500 | | 0.1068 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S2 | 8 | | | 8/3/2017 1:39:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.35600 | | 0.0772 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S3 | 9 | | | 8/3/2017 1:42:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.20100 | | 0.0444 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S4 | 10 | | | 8/3/2017 1:45:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.10200 | | 0.0235 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S5 | 11 | | | 8/3/2017 1:48:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.05100 | | 0.0126 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S6 | 12 | | | 8/3/2017 1:50:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.02700 | | 0.0074 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S7 | 13 | | | 8/3/2017 1:53:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00300 | | 0.0011 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 14 | | | 8/3/2017 1:57:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICV | 15 | | | 8/3/2017 1:59:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.23000 | | 0.0506 | 1.0000 | 1.0 | 1 | 92 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICB | 16 | | | 8/3/2017 2:02:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 17 | Q | 17215125101A | 8/3/2017 2:05:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.23000 | 0.230 | 0.0504 | 1.0000 | 1.0 | 1 | 92 | 0.25 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 18 | B | 17215125101A | 8/3/2017 2:07:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00300 | -0.003 | 0.0012 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9127929 | 19 | U | 17215125101A | 8/3/2017 2:11:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | 0.000 | 0.0017 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9127929 | 20 | R | 17215125101A | 8/3/2017 2:14:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.19500 | 0.195 | 0.0430 | 1.0000 | 1.0 | 1 | 98 | 0.2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9127929 | 21 | M | 17215125101A | 8/3/2017 2:17:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.19700 | 0.197 | 0.0434 | 1.0000 | 1.0 | 1 | 99 | 0.2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9132355 | 22 | | 17215125101A | 8/3/2017 2:20:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00600 | 0.006 | 0.0031 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9132356 | 23 | | 17215125101A | 8/3/2017 2:22:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00100 | -0.001 | 0.0015 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9122169 | 24 | | 17215125101A | 8/3/2017 2:25:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00100 | -0.001 | 0.0016 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9123856 | 25 | | 17215125101A | 8/3/2017 2:28:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.02100 | 0.021 | 0.0062 | 1.0000 | 1.0 | 1 | ☐ |

Comments: Analyst Decision Matrix SCC 67

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120291 | 26 | | 17215125101A | 8/3/2017 2:31:00AM | NJQ06 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00400 | -0.004 | 0.0008 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 27 | | | 8/3/2017 2:34:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.23000 | | 0.0505 | 1.0000 | 1.0 | 1 | 92 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 2 | 28 | | | 8/3/2017 2:38:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9123858 | 29 | | 17215125101A | 8/3/2017 2:40:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00400 | 0.004 | 0.0026 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9123859 | 30 | | 17215125101A | 8/3/2017 2:43:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00500 | -0.005 | 0.0007 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9123857 | 31 | | 17215125101A | 8/3/2017 2:46:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.01000 | 0.010 | 0.0037 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120501 | 32 | | 17215125101A | 8/3/2017 2:49:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00200 | 0.002 | 0.0021 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121683 | 33 | U | 17215125101B | 8/3/2017 2:51:00AM | KR191 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00300 | -0.003 | 0.0011 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121684 | 34 | R | 17215125101B | 8/3/2017 2:55:00AM | KR191 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.19500 | 0.195 | 0.0431 | 1.0000 | 1.0 | 1 | 98 | 0.2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121685 | 35 | M | 17215125101B | 8/3/2017 2:58:00AM | KR191 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.19200 | 0.192 | 0.0424 | 1.0000 | 1.0 | 1 | 96 | 0.2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121674 | 36 | | 17215125101B | 8/3/2017 3:00:00AM | KR191 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | -0.008 | 0.0000 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121676 | 37 | | 17215125101B | 8/3/2017 3:03:00AM | KR191 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01000 | -0.010 | -0.0005 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121680 | 38 | | 17215125101B | 8/3/2017 3:06:00AM | KR191 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01000 | -0.010 | -0.0004 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 39 | | | 8/3/2017 3:09:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.23000 | | 0.0506 | 1.0000 | 1.0 | 1 | 92 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 3 | 40 | | | 8/3/2017 3:13:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121693 | 41 | | 17215125101B | 8/3/2017 3:15:00AM | KR191 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00600 | -0.006 | 0.0004 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9125164 | 42 | | 17215125101B | 8/3/2017 3:18:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00300 | -0.003 | 0.0010 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9122625 | 43 | | 17215125101B | 8/3/2017 3:21:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00300 | -0.003 | 0.0010 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120331 | 44 | | 17215125101B | 8/3/2017 3:24:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.03220 | 0.805 | 0.0085 | 1.0000 | 1.0 | 25 | ☑ |

JJ06

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9122627 | 45 | | 17215125101B | 8/3/2017 3:26:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00900 | -0.009 | -0.0002 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120294 | 46 | | 17215125101B | 8/3/2017 3:29:00AM | NJQ06 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01600 | -0.016 | -0.0016 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 47 | Q | 17215125102A | 8/3/2017 3:33:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.22700 | 0.227 | 0.0498 | 1.0000 | 1.0 | 1 | 91 | 0.25 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 48 | B | 17215125102A | 8/3/2017 3:35:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01100 | -0.011 | -0.0006 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 49 | U | 17215125102A | 8/3/2017 3:38:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.07500 | 0.375 | 0.0176 | 1.0000 | 1.0 | 5 | ☐ |

Comments: Analyst Decision confirm 6E

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 50 | R | 17215125102A | 8/3/2017 3:41:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.27060 | 1.353 | 0.0591 | 1.0000 | 1.0 | 5 | 677 | 0.2 | ☐ |

Comments: Analyst Decision 6Y

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 51 | | | 8/3/2017 3:44:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.22900 | | 0.0503 | 1.0000 | 1.0 | 1 | 92 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 4 | 52 | | | 8/3/2017 3:48:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 53 | M | 17215125102A | 8/3/2017 3:50:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.27520 | 1.376 | 0.0601 | 1.0000 | 1.0 | 5 | 688 | 0.2 | ☐ |

Comments: Analyst Decision confirm >C

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120290 | 54 | | 17215125102A | 8/3/2017 3:53:00AM | NJQ06 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00200 | -0.002 | 0.0013 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120292 | 55 | | 17215125102A | 8/3/2017 3:55:00AM | NJQ06 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01100 | -0.011 | -0.0006 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120293 | 56 | | 17215125102A | 8/3/2017 3:59:00AM | NJQ06 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01000 | -0.010 | -0.0005 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9122182 | 57 | | 17215125102A | 8/3/2017 4:02:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.02700 | 0.027 | 0.0073 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9123855 | 58 | | 17215125102A | 8/3/2017 4:05:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00900 | 0.009 | 0.0036 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 59 | Q | 17215126101A | 8/3/2017 4:07:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.25500 | 0.255 | 0.0558 | 1.0000 | 1.0 | 1 | 102 | 0.25 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 60 | B | 17215126101A | 8/3/2017 4:10:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00500 | -0.005 | 0.0006 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 61 | U | 17215126101A | 8/3/2017 4:13:00AM | PTP74 | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09480 | 0.474 | 0.0218 | 1.0000 | 1.0 | 5 | ☐ |

Comments: QC only

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 62 | R | 17215126101A | 8/3/2017 4:16:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.29800 | 1.490 | 0.0649 | 1.0000 | 1.0 | 5 | ~~508~~ 102 | ~~0.2~~ 1.0 | ☐ |

Comments: QC only

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 63 | | | 8/3/2017 4:19:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.24000 | | 0.0527 | 1.0000 | 1.0 | 1 | 96 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 5 | 64 | | | 8/3/2017 4:23:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☑ |

Comments: QC only

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 65 | M | 17215126101A | 8/3/2017 4:25:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.29020 | 1.451 | 0.0633 | 1.0000 | 1.0 | 5 | ~~489~~ 98 | ~~0.2~~ 1.0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9132512 | 66 | | 17215126101A | 8/3/2017 4:27:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00700 | -0.007 | 0.0002 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9123856 | 67 | | 17215125101A | 8/3/2017 4:31:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01000 | -0.050 | -0.0004 | 1.0000 | 1.0 | 5 | ☑ |

Comments: 9706

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 68 | U | 17215125102A | 8/3/2017 4:34:00AM | PTP74 | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.08780 | 0.439 | 0.0204 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 69 | R | 17215125102A | 8/3/2017 4:37:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.29140 | 1.457 | 0.0635 | 1.0000 | 1.0 | 5 | ~~509~~ 102 | ~~0.2~~ 1.0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9131881 | 70 | M | 17215125102A | 8/3/2017 4:40:00AM | | OH_SAN |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.29420 | 1.471 | 0.0641 | 1.0000 | 1.0 | 5 | ~~516~~ 103 | ~~0.2~~ 1.0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 71 | | | 8/3/2017 4:42:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 0.23400 | | 0.0513 | 1.0000 | 1.0 | 1 | 94 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 6 | 72 | | | 8/3/2017 4:46:00AM | | PHE_SAI |

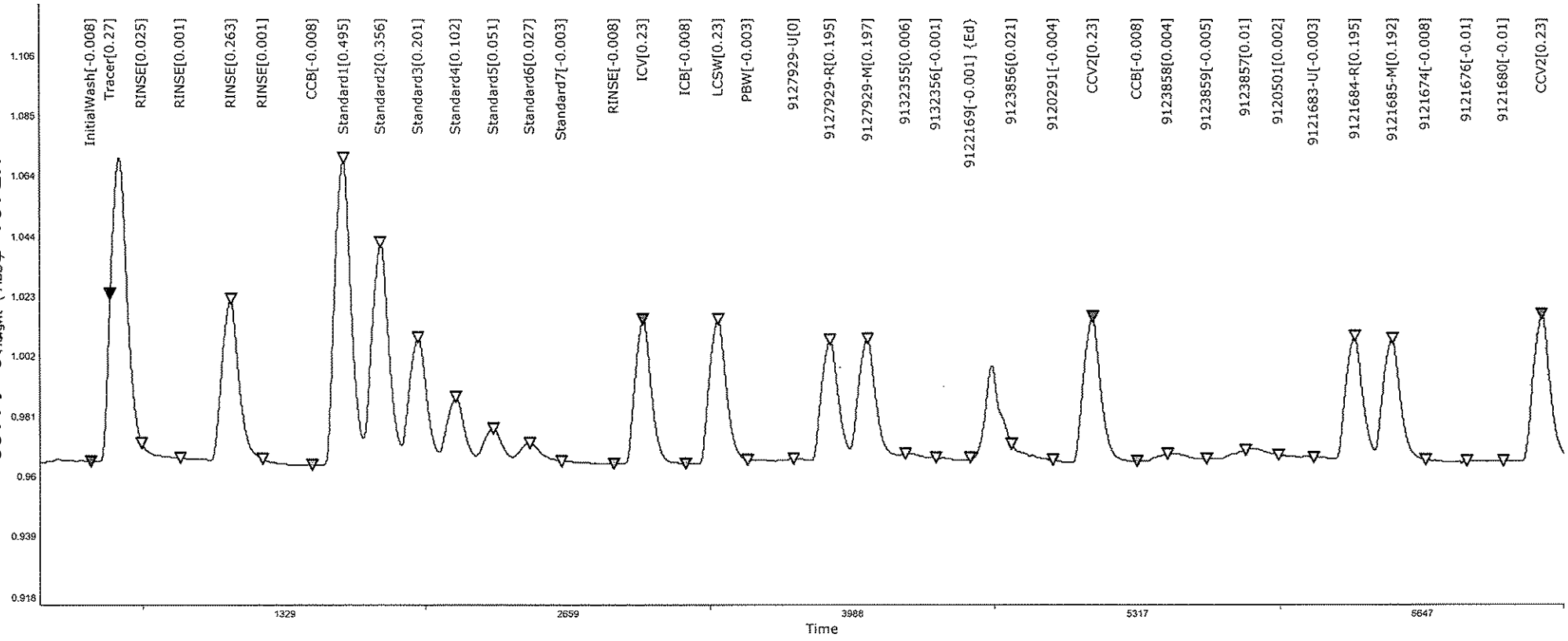
| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 0.0000 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

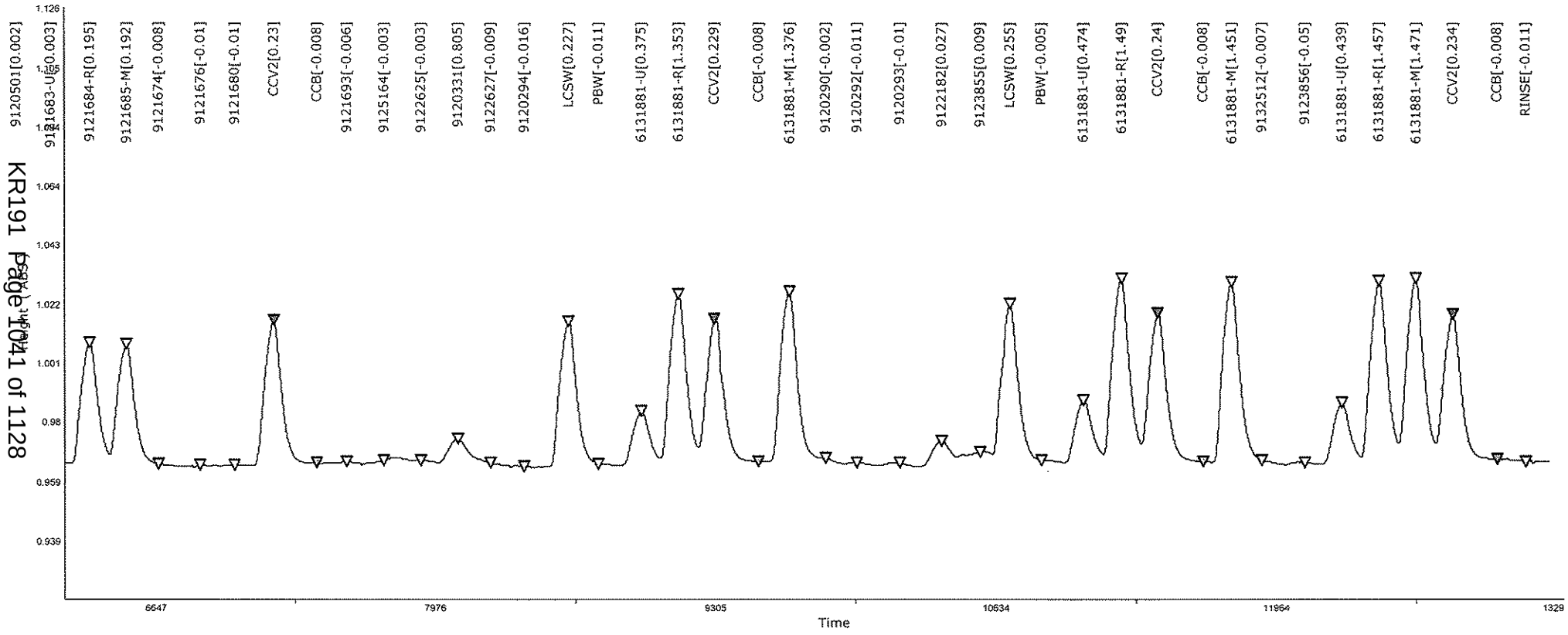
| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 73 | | | 8/3/2017 4:48:00AM | | PHE_SAI |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01100 | | -0.0006 | 1.0000 | 1.0 | 1 | ☐ |

Comments:



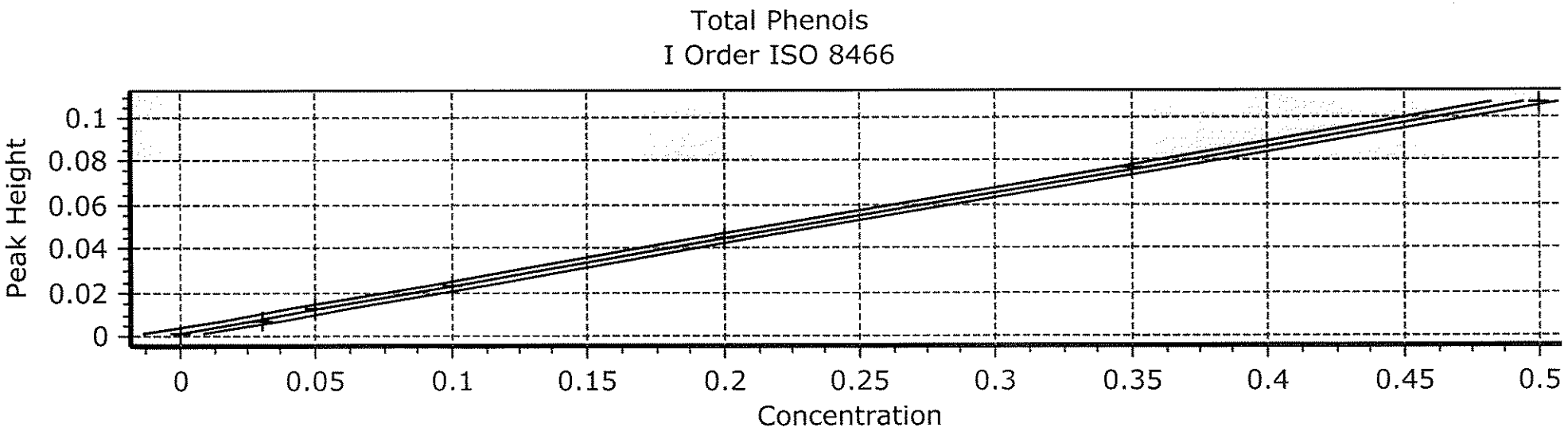

Total Phenols
FlowAccess V3 : Date :8/3/2017 4:55 AM
Run Name : 17215OH. Run Database Reference Name : SKALAR20170803A0
User Name : Dept27 Operator Name : Dept27




Total Phenols
FlowAccess V3 : Date :8/3/2017 4:55 AM
Run Name : 17215OH. Run Database Reference Name : SKALAR20170803A0
User Name : Dept27 Operator Name : Dept27

# FlowAccessV3

Date:8/3/2017 4:55 AM




a = 0.00169819105829 b = 0.21224606714792 RSD = 0.00080397546142

r = 0.99979486132270 R2 = 0.99958976472728 Determination Limit = 0.0313080959330791

Run Name : 17215OH, Run Database Ref : SKALAR20170803A0

User Name : Dept27 Operator Name : Dept27

# Instrumental Water Quality Report

Analyte: Nitrate-N
Run Start Date/Time: 8/3/2017 12:49:37AM
Instrument Name: 07411

## Calibration Information

Curve Information Location:
Book # 256879
Page # 11

| Sample Names | Volts | Detected Result | True Result |
|---|---|---|---|
| S1 | 684893.7000 | ~~4.00000~~ 3.9780 | 4 |
| S2 | 523500.6000 | 3.00000 3.0315 | 3 |
| S3 | 178193.8000 | 1.00000 1.0194 | 1 |
| S4 | 89063.8000 | 0.50000 0.5001 | 0.5 |
| S5 | 36656.3000 | 0.20000 0.1947 | 0.2 |
| S6 | 18973.4000 | 0.10000 0.0917 | 0.1 |
| S7 | 1631.4000 | ~~0.00000~~ -0.0097 | - |

Number of Calibrants: 7
Correlation Coefficient: 0.99985
Y-Intercept: -0.01889
Slope: 0.00001

## QC Information

| QC Names | Units | True Values | QC Ranges |
|---|---|---|---|
| ICV | mg/L | 2.5 | 2.2375 - 2.76 |
| ICB/CCB | mg/L | 0 | 0 - 0.04 |
| CCV2 | mg/L | 2.5 | 2.2375 - 2.76 |
| PB Waters | mg/L | 0 | 0 - 0.04 |
| LCS Waters | mg/L | 2.5 | 2.25 - 2.75 |

Analyst: 2373 Date: 8/3/17

Verifier: SM 8/7 Date: 8/7/17

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| SYNC | 1 | | | 8/3/2017 12:49:37AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 695398.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| Carryov | 2 | | | 8/3/2017 12:51:27AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 1978.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 3 | | | 8/3/2017 12:53:17AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 867.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S1 | 4 | | | 8/3/2017 12:55:07AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 4.00000 | | 684893.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S2 | 5 | | | 8/3/2017 12:56:57AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.00000 | | 523500.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S3 | 6 | | | 8/3/2017 12:58:47AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.00000 | | 178193.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S4 | 7 | | | 8/3/2017 1:00:37AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.50000 | | 89063.80 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S5 | 8 | | | 8/3/2017 1:02:27AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.20000 | | 36656.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S6 | 9 | | | 8/3/2017 1:04:17AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.10000 | | 18973.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| S7 | 10 | | | 8/3/2017 1:06:07AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.00000 | | 1631.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 11 | | | 8/3/2017 1:07:57AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01130 | | 1303.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 12 | | | 8/3/2017 1:09:47AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01270 | | 1058.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 13 | | | 8/3/2017 1:11:37AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.20050 | | 380875.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 14 | | | 8/3/2017 1:13:27AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00810 | | 1852.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 15 | | | 8/3/2017 1:15:17AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.13480 | | 369602.40 | 1.0000 | 1.0 | 1 | 97 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 16 | | | 8/3/2017 1:17:07AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00800 | | 1869.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| W | 17 | | | 8/3/2017 1:18:57AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01070 | | 1413.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICV | 18 | | | 8/3/2017 1:20:47AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.71830 | | 469750.70 | 1.0000 | 1.0 | 1 | 109 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| ICB | 19 | | | 8/3/2017 1:22:37AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01060 | | 1424.00 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 20 | B | 17214106101A | 8/3/2017 1:24:27AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01530 | -0.015 | 623.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 21 | Q | 17214106101A | 8/3/2017 1:26:17AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.67970 | 2.680 | 463121.80 | 1.0000 | 1.0 | 1 | 107 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119539 | 22 | U | 17214106101A | 8/3/2017 1:28:07AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.38255 | 6.765 | 583744.10 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119539 | 23 | D | 17214106101A | 8/3/2017 1:29:57AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 3.36830 | 6.737 | 581293.10 | 1.0000 | 1.0 | 2 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119539 | 24 | R | 17214106101A | 8/3/2017 1:31:47AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 4.31300 | 8.626 | 743419.10 | 1.0000 | 1.0 | 2 | 93 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119544 | 25 | | 17214106101A | 8/3/2017 1:33:37AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.89170 | 2.892 | 499497.80 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119459 | 26 | | 17214106101A | 8/3/2017 1:35:27AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 3.37800 | 6.756 | 582959.10 | 1.0000 | 1.0 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118235 | 27 | | 17214106101A | 8/3/2017 1:37:17AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 3.30010 | 3.300 | 569593.60 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118237 | 28 | | 17214106101A | 8/3/2017 1:39:07AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 4.01280 | 4.013 | 691897.40 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments: Analyst Decision OVS Range IC

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118273 | 29 | | 17214106101A | 8/3/2017 1:40:57AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.24090 | 1.241 | 216202.70 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 30 | | | 8/3/2017 1:42:47AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.71200 | | 468663.20 | 1.0000 | 1.0 | 1 | 108 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 1 | 31 | | | 8/3/2017 1:44:37AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01160 | | 1254.00 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118263 | 32 | | 17214106101A | 8/3/2017 1:46:27AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01060 | -0.011 | 1416.60 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118236 | 33 | | 17214106101A | 8/3/2017 1:48:17AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 2.26830 | 2.268 | 392521.50 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118269 | 34 | | 17214106101A | 8/3/2017 1:50:07AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01400 | -0.014 | 843.70 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118260 | 35 | | 17214106101A | 8/3/2017 1:51:57AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.12460 | 0.125 | 24624.30 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118276 | 36 | U | 17214106101B | 8/3/2017 1:53:47AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.06860 | 0.069 | 15022.80 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118276 | 37 | D | 17214106101B | 8/3/2017 1:55:37AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD |
|---|---|---|---|---|---|---|
| 0.06750 | 0.068 | 14818.50 | 1.0000 | 1.0 | 1 | 2 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118276 | 38 | R | 17214106101B | 8/3/2017 1:57:27AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK |
|---|---|---|---|---|---|---|---|
| 1.12080 | 1.121 | 195587.80 | 1.0000 | 1.0 | 1 | 105 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118271 | 39 | | 17214106101B | 8/3/2017 1:59:17AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01100 | -0.011 | 1347.70 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118261 | 40 | | 17214106101B | 8/3/2017 2:01:07AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.39980 | 6.999 | 243471.30 | 1.0000 | 1.0 | 5 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120254 | 41 | | 17214106101B | 8/3/2017 2:02:57AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.71468 | 8.573 | 297509.50 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 42 | | | 8/3/2017 2:04:47AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.72060 | | 470141.90 | 1.0000 | 1.0 | 1 | 109 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 2 | 43 | | | 8/3/2017 2:06:37AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01320 | | 971.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118239 | 44 | | 17214106101B | 8/3/2017 2:08:27AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.55540 | 1.555 | 270180.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119445 | 45 | | 17214106101B | 8/3/2017 2:10:17AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.32610 | 11.630 | 402436.30 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118234 | 46 | | 17214106101B | 8/3/2017 2:12:07AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.38970 | 6.779 | 584968.20 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130024 | 47 | | 17214106101B | 8/3/2017 2:13:58AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00950 | -0.010 | 1613.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120257 | 48 | | 17214106101B | 8/3/2017 2:15:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 4.00530 | 8.011 | 690617.80 | 1.0000 | 1.0 | 2 | ☑ |

Comments: Analyst Decision OVS Range 191

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130206 | 49 | | 17214106101B | 8/3/2017 2:17:38AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 4.67700 | 9.354 | 805886.20 | 1.0000 | 1.0 | 2 | ☐ |

Comments: Analyst Decision Over Range 122

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 50 | B | 17214106102A | 8/3/2017 2:19:28AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00790 | -0.008 | 1887.20 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 51 | Q | 17214106102A | 8/3/2017 2:21:18AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.70630 | 2.706 | 467681.10 | 1.0000 | 1.0 | 1 | 108 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130196 | 52 | U | 17214106102A | 8/3/2017 2:23:08AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02730 | -0.027 | -1445.30 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130196 | 53 | D | 17214106102A | 8/3/2017 2:24:58AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| -0.03160 | -0.032 | -2189.10 | 1.0000 | 1.0 | 1 | 0 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 54 | | | 8/3/2017 2:26:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.60970 | | 451110.50 | 1.0000 | 1.0 | 1 | 104 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 3 | 55 | | | 8/3/2017 2:28:38AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01470 | | 723.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130196 | 56 | R | 17214106102A | 8/3/2017 2:30:28AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 0.98820 | 0.988 | 172836.30 | 1.0000 | 1.0 | 1 | 99 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130129 | 57 | | 17214106102A | 8/3/2017 2:32:18AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.35220 | 4.704 | 406918.90 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130186 | 58 | | 17214106102A | 8/3/2017 2:34:08AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.43155 | 4.863 | 420533.50 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130184 | 59 | | 17214106102A | 8/3/2017 2:35:58AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.78730 | 0.787 | 138362.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130026 | 60 | | 17214106102A | 8/3/2017 2:37:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.16640 | 0.166 | 31794.00 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130176 | 61 | | 17214106102A | 8/3/2017 2:39:38AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 5.80315 | 11.606 | 999155.60 | 1.0000 | 1.0 | 2 | ☐ |

Comments: Analyst Decision Over Range (12)

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120250 | 62 | | 17214106102A | 8/3/2017 2:41:28AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00060 | -0.001 | 3140.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118846 | 63 | | 17214106102A | 8/3/2017 2:43:18AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 3.86340 | 7.727 | 666260.20 | 1.0000 | 1.0 | 2 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118303 | 64 | U | 17214106102B | 8/3/2017 2:45:08AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.77360 | 1.774 | 307613.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118303 | 65 | D | 17214106102B | 8/3/2017 2:46:58AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 1.75110 | 1.751 | 303763.10 | 1.0000 | 1.0 | 1 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 66 | | | 8/3/2017 2:48:48AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.66990 | | 461439.30 | 1.0000 | 1.0 | 1 | 107 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 4 | 67 | | | 8/3/2017 2:50:38AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01280 | | 1044.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118303 | 68 | R | 17214106102B | 8/3/2017 2:52:28AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.77780 | 2.778 | 479954.80 | 1.0000 | 1.0 | 1 | 100 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118305 | 69 | | 17214106102B | 8/3/2017 2:54:18AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.78630 | 1.786 | 309793.20 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118307 | 70 | | 17214106102B | 8/3/2017 2:56:08AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.12260 | 1.123 | 195896.10 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118309 | 71 | | 17214106102B | 8/3/2017 2:57:58AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.82270 | 2.823 | 487657.70 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120151 | 72 | | 17214106102B | 8/3/2017 2:59:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.19569 | 23.914 | 208440.90 | 1.0000 | 1.0 | 20 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120091 | 73 | | 17214106102B | 8/3/2017 3:01:38AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.05270 | 0.053 | 12282.00 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119541 | 74 | | 17214106102B | 8/3/2017 3:03:28AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01420 | -0.014 | 807.10 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119540 | 75 | | 17214106102B | 8/3/2017 3:05:18AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.00510 | 0.005 | 4121.70 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120265 | 76 | | 17214106102B | 8/3/2017 3:07:08AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 0.04310 | 0.043 | 10632.30 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120263 | 77 | | 17214106102B | 8/3/2017 3:08:58AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 1.84960 | 1.850 | 320669.10 | 1.0000 | 1.0 | 1 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 78 | | | 8/3/2017 3:10:48AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec |
|---|---|---|---|---|---|---|
| 2.68560 | | 464131.50 | 1.0000 | 1.0 | 1 | 107 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 5 | 79 | | | 8/3/2017 3:12:38AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| -0.01420 | | 797.10 | 1.0000 | 1.0 | 1 |

Verified ☐

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120264 | 80 | | 17214106102B | 8/3/2017 3:14:28AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF |
|---|---|---|---|---|---|
| 3.15024 | 31.502 | 543874.40 | 1.0000 | 1.0 | 10 |

Verified ☑

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120266 | 81 | | 17214106102B | 8/3/2017 3:16:18AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01620 | -0.016 | 459.40 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 82 | B | 17214106103A | 8/3/2017 3:18:08AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01480 | -0.015 | 694.50 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 83 | Q | 17214106103A | 8/3/2017 3:19:58AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.53440 | 2.534 | 438187.90 | 1.0000 | 1.0 | 1 | 101 | 2.5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120202 | 84 | U | 17214106103A | 8/3/2017 3:21:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.18446 | 10.922 | 378130.80 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120202 | 85 | D | 17214106103A | 8/3/2017 3:23:38AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 2.16794 | 10.840 | 375296.20 | 1.0000 | 1.0 | 5 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120202 | 86 | R | 17214106103A | 8/3/2017 3:25:28AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 3.08398 | 15.420 | 532503.70 | 1.0000 | 1.0 | 5 | 90 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120143 | 87 | | 17214106103A | 8/3/2017 3:27:18AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.09660 | 0.097 | 19823.60 | 1.0000 | 1.0 | 1 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| PB | 88 | B | 17214118101A | 8/3/2017 3:29:08AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02040 | -0.020 | -252.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| LCS | 89 | Q | 17214118101A | 8/3/2017 3:30:58AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 2.50960 | 2.510 | 433922.00 | 1.0000 | 1.0 | 1 | 100 | 2.5 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 90 | | | 8/3/2017 3:32:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.67810 | | 462853.20 | 1.0000 | 1.0 | 1 | 107 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 6 | 91 | | | 8/3/2017 3:34:38AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01270 | | 1066.20 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119649 | 92 | U | 17214118101A | 8/3/2017 3:36:28AM | BWN11 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.34360 | 0.344 | 62202.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119650 | 93 | R | 17214118101A | 8/3/2017 3:38:18AM | BWN11 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.61230 | 1.612 | 279936.00 | 1.0000 | 1.0 | 1 | 127 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119652 | 94 | D | 17214118101A | 8/3/2017 3:40:08AM | BWN11 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 0.34510 | 0.345 | 62468.50 | 1.0000 | 1.0 | 1 | 0 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119647 | 95 | | 17214118101A | 8/3/2017 3:41:58AM | BWN11 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.27220 | 0.272 | 49962.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119657 | 96 | | 17214118101A | 8/3/2017 3:43:48AM | BWN11 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.24540 | 0.245 | 45353.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119659 | 97 | | 17214118101A | 8/3/2017 3:45:38AM | BWN11 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.25010 | 0.250 | 46166.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119661 | 98 | | 17214118101A | 8/3/2017 3:47:28AM | BWN12 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.27230 | 0.272 | 49980.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119220 | 99 | | 17214118101A | 8/3/2017 3:49:18AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.90260 | 1.903 | 329757.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119221 | 100 | | 17214118101A | 8/3/2017 3:51:08AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.81780 | 1.818 | 315202.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118290 | 101 | | 17214118101A | 8/3/2017 3:52:58AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.06850 | 0.068 | 14994.70 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 102 | | | 8/3/2017 3:54:48AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.65920 | | 459607.10 | 1.0000 | 1.0 | 1 | 106 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 7 | 103 | | | 8/3/2017 3:56:38AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01000 | | 1522.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118295 | 104 | | 17214118101A | 8/3/2017 3:58:28AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.96120 | 1.961 | 339811.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118312 | 105 | | 17214118101A | 8/3/2017 4:00:18AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.16900 | 0.169 | 32240.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121683 | 106 | U | 17214118101B | 8/3/2017 4:02:08AM | KR191 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.40480 | 0.405 | 72710.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121684 | 107 | R | 17214118101B | 8/3/2017 4:03:58AM | KR191 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | SPK | Verified |
|---|---|---|---|---|---|---|---|---|
| 1.60920 | 1.609 | 279412.10 | 1.0000 | 1.0 | 1 | 120 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121686 | 108 | D | 17214118101B | 8/3/2017 4:05:48AM | KR191 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | RPD | Verified |
|---|---|---|---|---|---|---|---|
| 0.41000 | 0.410 | 73604.50 | 1.0000 | 1.0 | 1 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121674 | 109 | | 17214118101B | 8/3/2017 4:07:38AM | KR191 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.73340 | 0.733 | 129104.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121676 | 110 | | 17214118101B | 8/3/2017 4:09:28AM | KR191 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.72770 | 0.728 | 128123.30 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121680 | 111 | | 17214118101B | 8/3/2017 4:11:18AM | KR191 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.77500 | 0.775 | 136241.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121693 | 112 | | 17214118101B | 8/3/2017 4:13:08AM | KR191 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.45860 | 0.459 | 81951.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9119537 | 113 | | 17214118101B | 8/3/2017 4:14:58AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.24360 | 4.487 | 388282.60 | 1.0000 | 1.0 | 2 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 114 | | | 8/3/2017 4:16:49AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.70170 | | 466892.40 | 1.0000 | 1.0 | 1 | 108 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 8 | 115 | | | 8/3/2017 4:18:39AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01220 | | 1141.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120498 | 116 | | 17214118101B | 8/3/2017 4:20:29AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.02010 | -0.020 | -212.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120449 | 117 | | 17214118101B | 8/3/2017 4:22:19AM | BIR07 | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.00360 | -0.004 | 2616.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121948 | 118 | | 17214118101B | 8/3/2017 4:24:09AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.91024 | 4.551 | 159452.70 | 1.0000 | 1.0 | 5 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9121949 | 119 | | 17214118101B | 8/3/2017 4:25:59AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.88130 | 2.881 | 497719.60 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9118237 | 120 | | 17214106101A | 8/3/2017 4:27:49AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 0.90554 | 4.528 | 158648.10 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9120257 | 121 | | 17214106101B | 8/3/2017 4:29:39AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 1.68562 | 8.428 | 292519.90 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130206 | 122 | | 17214106101B | 8/3/2017 4:31:29AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.02802 | 10.140 | 351283.20 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| 9130176 | 123 | | 17214106102A | 8/3/2017 4:33:19AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.65182 | 13.259 | 458336.50 | 1.0000 | 1.0 | 5 | ☑ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCV2 | 124 | | | 8/3/2017 4:35:09AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.71480 | | 469142.70 | 1.0000 | 1.0 | 1 | 109 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| CCB 9 | 125 | | | 8/3/2017 4:36:59AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01280 | | 1037.50 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO2 | 126 | | | 8/3/2017 4:38:50AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| 2.21850 | | 383976.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 127 | | | 8/3/2017 4:40:40AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01420 | | 801.10 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| REDNO3 | 128 | | | 8/3/2017 4:42:30AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | %Rec | Verified |
|---|---|---|---|---|---|---|---|
| 2.21890 | | 384041.30 | 1.0000 | 1.0 | 1 | 100 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 129 | | | 8/3/2017 4:44:20AM | | TNO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01280 | | 1037.40 | 1.0000 | 1.0 | 1 | ☐ |

Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 130 | | | 8/3/2017 4:46:11AM | | NO3 |

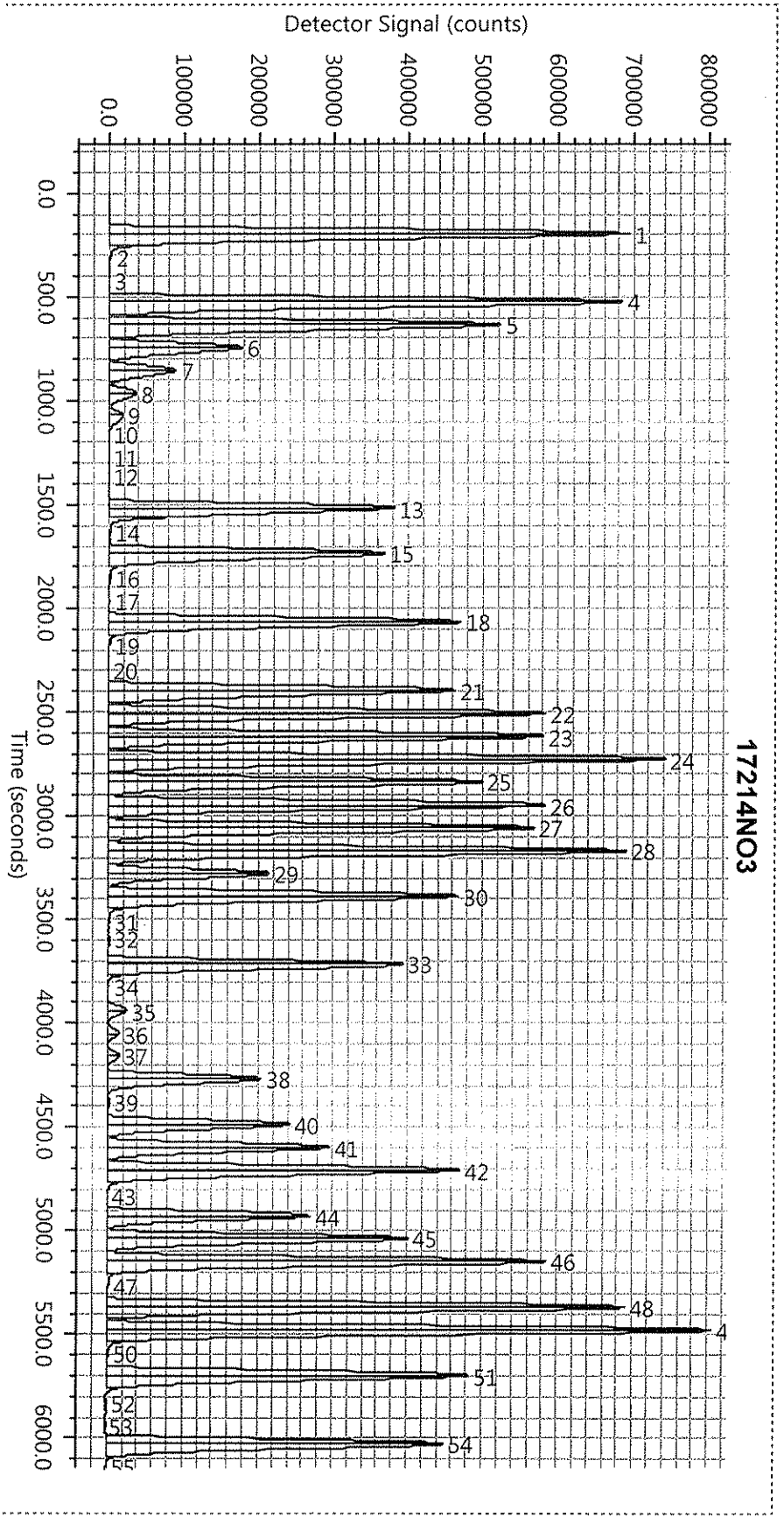
| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01680 | | 359.40 | 1.0000 | 1.0 | 1 | ☐ |

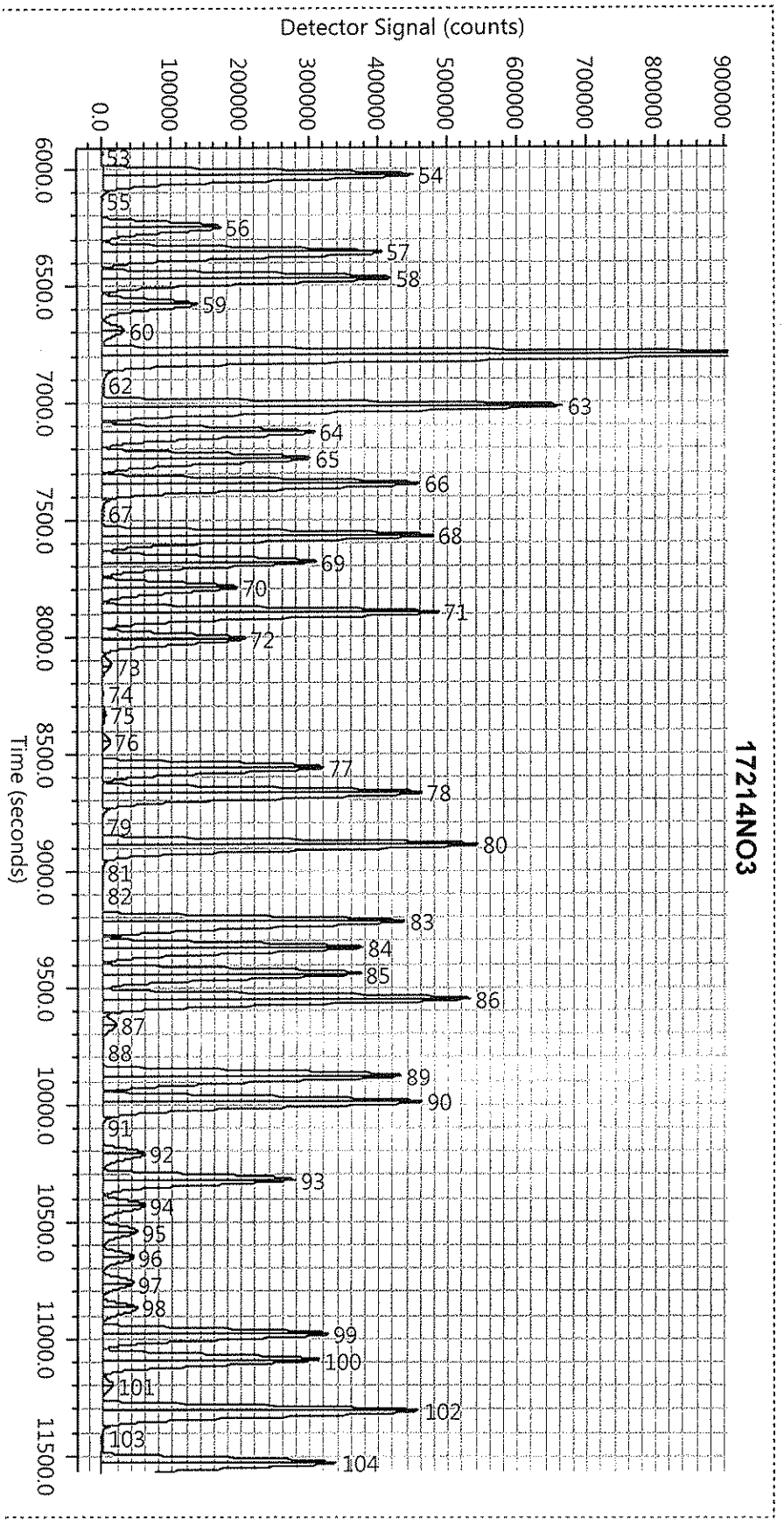
Comments:

| Sample | Cup | QC? | Batch Number | Analysis Date/Time | SDG | Analyte |
|---|---|---|---|---|---|---|
| RINSE | 131 | | | 8/3/2017 4:48:01AM | | NO3 |

| Raw Result | Calc Result | Volts | Init Vol | Fin Vol | DF | Verified |
|---|---|---|---|---|---|---|
| -0.01720 | | 287.90 | 1.0000 | 1.0 | 1 | ☐ |

Comments:


Detector Signal (counts)
0.0
100000
200000
300000
400000
500000
600000
700000
800000
Time (seconds)
0.0
500.0
1000.0
1500.0
2000.0
2500.0
3000.0
3500.0
4000.0
4500.0
5000.0
5500.0
6000.0
17214NO3


Detector Signal (counts)
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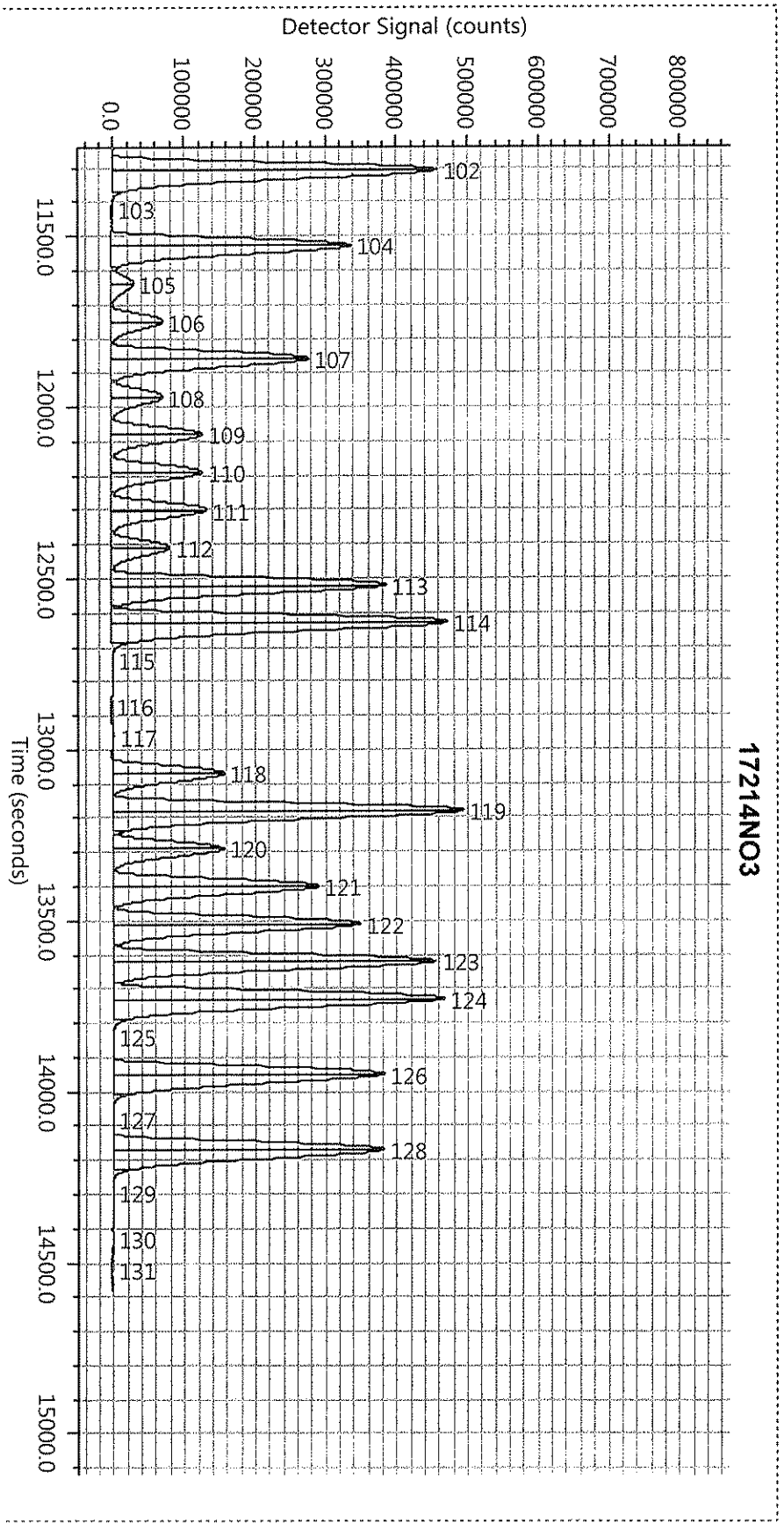
100000
200000
300000
400000
500000
600000
700000
800000
900000
Time (seconds)
6000.0
6500.0
7000.0
7500.0
8000.0
8500.0
9000.0
9500.0
10000.0
10500.0
11000.0
11500.0
17214NO3


Detector Signal (counts)
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100000
200000
300000
400000
500000
600000
700000
800000
Time (seconds)
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12000.0
12500.0
13000.0
13500.0
14000.0
14500.0
15000.0
102
103
104
105
106
107
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122
123
124
125
126
127
128
129
130
131
17214NO3

# FlowView - Result

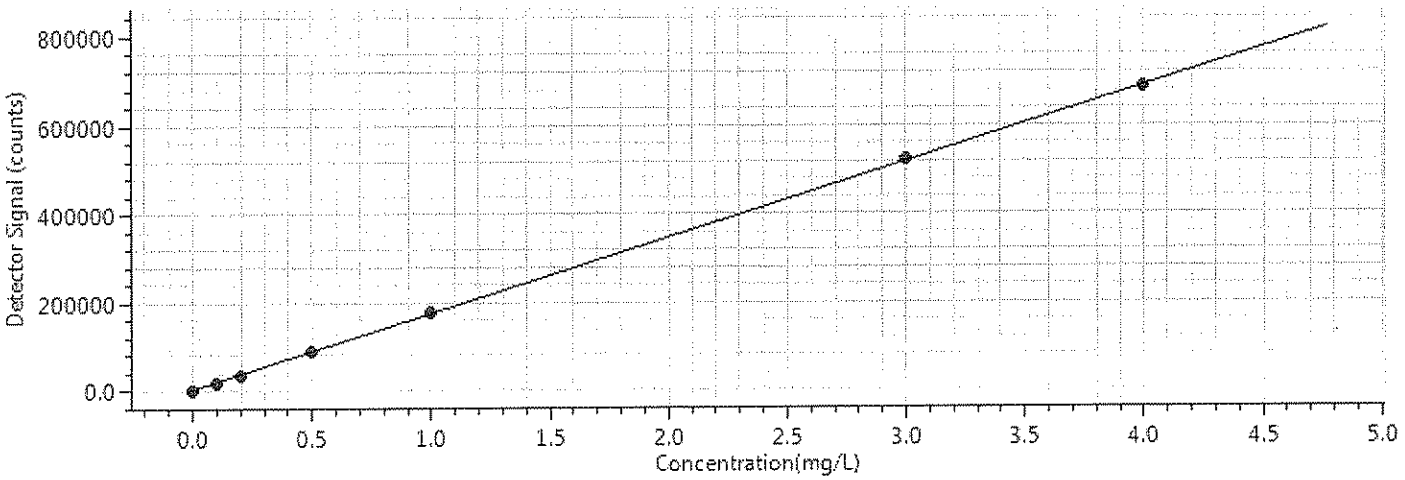
InstrumentID: A452837411
Operator ID: 2373
File Version: 110
Created On: 8/3/2017 12:49:23 AM
Last Modified On: 8/3/2017 4:56:27 AM
Exported on 8/3/2017 5:00:26 AM

## Calibration Results - Channel2

### Calibration Summary

| | | | |
|---|---|---|---|
| Curve Fit: = | Linear | | |
| $R^2$: = | 0.99984621 | a: = | n/a |
| RF: = | 5.826956E-006 | b: = | n/a |
| Offset: | -0.01888816 | c: | n/a |
| HLCAVG: | 0.00000000 | LHCAVG: | 0.00000000 |

### Calibration Details




| Name | Type | Std Conc(mg/L) | Avg Height | Calc Avg Conc(mg/L) | %RSD | Flags | Date/Time |
|---|---|---|---|---|---|---|---|
| S1 | STD1 | 4.0000 | 684893.7 | 3.9720 | 0.0 | | 08/03/2017 12:55:07 AM |
| S2 | STD2 | 3.0000 | 523500.6 | 3.0315 | 0.0 | | 08/03/2017 12:56:57 AM |
| S3 | STD3 | 1.0000 | 178193.8 | 1.0194 | 0.0 | | 08/03/2017 12:58:47 AM |
| S4 | STD4 | 0.5000 | 89063.8 | 0.5001 | 0.0 | | 08/03/2017 1:00:37 AM |
| S5 | STD5 | 0.2000 | 36656.3 | 0.1947 | 0.0 | | 08/03/2017 1:02:27 AM |
| S6 | STD6 | 0.1000 | 18973.4 | 0.0917 | 0.0 | | 08/03/2017 1:04:17 AM |
| S7 | STD7 | 0.0000 | 1631.4 | -0.0094 | 0.0 | | 08/03/2017 1:06:07 AM |

eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-2000 Analyst CW7987

Instrument ID 12115 Run Start Date 7-7-17

IDAT Run Number 171880 1015 Run Name 171881SC (ICAL)

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 255405 | 34

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: ———

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | < 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1718815C

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TEST | | 93 | Check Standard | | 07/07/2017 10:03:35 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 2 | CAL 0 | | 1 | Calibration Standard | 01 | 07/07/2017 10:19:48 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 3 | CAL 1 | | 2 | Calibration Standard | 02 | 07/07/2017 10:36:00 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 4 | CAL 2 | | 3 | Calibration Standard | 03 | 07/07/2017 10:52:12 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 5 | CAL 3 | | 4 | Calibration Standard | 04 | 07/07/2017 11:08:24 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 6 | CAL 4 | | 5 | Calibration Standard | 05 | 07/07/2017 11:24:36 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 7 | CAL 5 | | 6 | Calibration Standard | 06 | 07/07/2017 11:40:49 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 8 | ICV | | 7 | Check Standard | | 07/07/2017 11:57:02 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 9 | ICB | | 8 | Check Standard | | 07/07/2017 12:13:14 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 10 | QRS | | 2 | Check Standard | | 07/07/2017 12:29:27 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 11 | CRDL | | 2 | Check Standard | | 07/07/2017 12:45:39 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

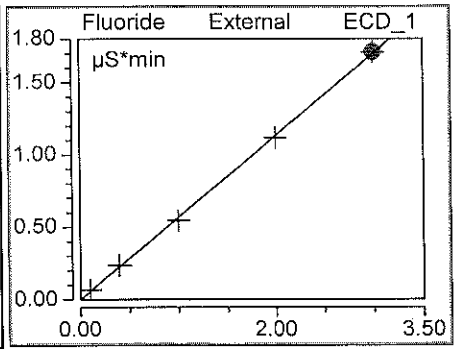
# Calibration Batch Report

| | | | |
|---|---|---|---|
| *Sequence:* | **1718815C** | *Injection Volu A* | **75.00** |
| *Instrument Method:* | **AnionsAS** | *Channel:* | **ECD_1** |
| *Instrument Number:* | **12115** | *Run Time (min):* | **15** |
| *Inj. Date / Time:* | **07-Jul-2017 / 11:40** | *Column Type-Serial #:* | AG14-170304242, AS14-160520235 |

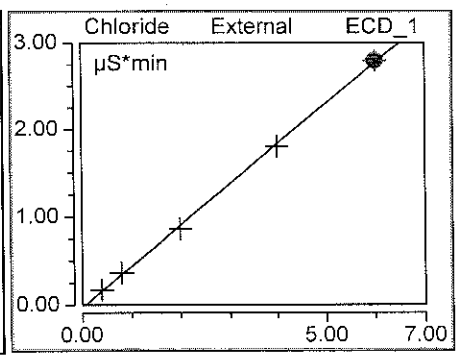
**Calibration Summary**

| Peak Name | Eval.Type | Cal.Type | Points | Offset (C0) | Slope (C1) | Curve (C2) | R-Squared % | r= |
|---|---|---|---|---|---|---|---|---|
| Fluoride | Area | Lin, WithOffset | 5.000 | -0.002 | 0.566 | 0.000 | 99.9510479 | 0.999755 |
| Chloride | Area | Lin, WithOffset | 5.000 | -0.034 | 0.467 | 0.000 | 99.9224708 | 0.999612 |
| Nitrite | Area | Lin, WithOffset | 5.000 | -0.035 | 0.967 | 0.000 | 99.9780968 | 0.999895 |
| Bromide | Area | Lin, WithOffset | 5.000 | -0.039 | 0.194 | 0.000 | 99.9723145 | 0.999861 |
| Nitrate | Area | Lin, WithOffset | 5.000 | -0.039 | 1.052 | 0.000 | 99.9716811 | 0.999858 |
| Phosphate | Area | Lin, WithOffset | 4.000 | -0.516 | 0.342 | 0.000 | 99.5751782 | 0.997873 |
| Sulfate | Area | Lin, WithOffset | 5.000 | -0.067 | 0.329 | 0.000 | 99.9740265 | 0.999870 |
| | | **AVERAGE:** | | -0.1045 | 0.5595 | 0.0000 | 99.9064 | |

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Fluoride | Fluoride | Fluoride | Fluoride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 3.160 | 0.0664 | 0.241 | 0.120 |
| CAL 2 | 3.157 | 0.2324 | 0.991 | 0.413 |
| CAL 3 | 3.157 | 0.5437 | 2.699 | 0.963 |
| CAL 4 | 3.160 | 1.1204 | 5.811 | 1.981 |
| CAL 5 | 3.163 | 1.7099 | 9.004 | 3.022 |
| **Average** | 3.159 | | | |
| **Rel. Std. Dev.** | 0.088 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Chloride | Chloride | Chloride | Chloride |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 4.560 | 0.1689 | 1.045 | 0.434 |
| CAL 2 | 4.560 | 0.3618 | 2.310 | 0.848 |
| CAL 3 | 4.567 | 0.8631 | 5.678 | 1.922 |
| CAL 4 | 4.577 | 1.8037 | 12.269 | 3.937 |
| CAL 5 | 4.583 | 2.7940 | 19.158 | 6.059 |
| **Average** | 4.569 | | | |
| **Rel. Std. Dev.** | 0.227 % | | | |

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JUL 10 2017

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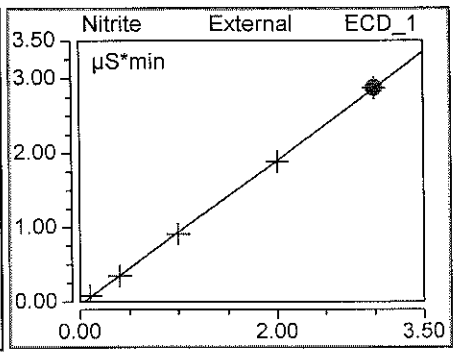
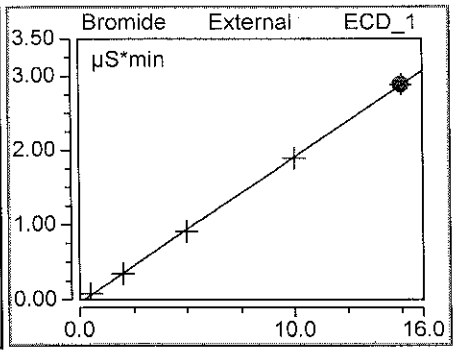
Chemist
JUL 11 2017

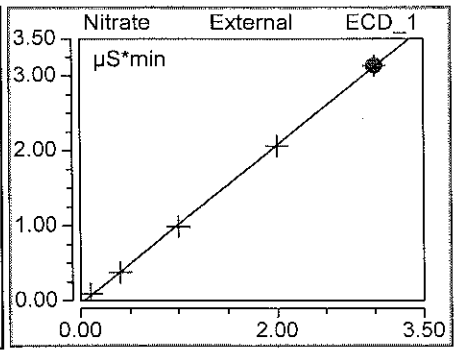
| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrite | Nitrite | Nitrite | Nitrite |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 5.540 | 0.0828 | 0.411 | 0.122 |
| CAL 2 | 5.537 | 0.3477 | 1.723 | 0.396 |
| CAL 3 | 5.533 | 0.9094 | 4.545 | 0.977 |
| CAL 4 | 5.537 | 1.8899 | 9.537 | 1.992 |
| CAL 5 | 5.537 | 2.8769 | 14.561 | 3.013 |
| **Average** | 5.537 | | | |
| **Rel. Std. Dev.** | 0.043 % | | | |



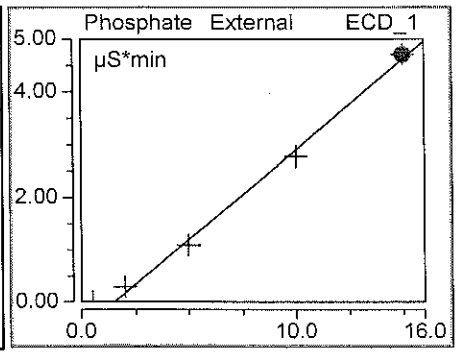

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Bromide | Bromide | Bromide | Bromide |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 7.173 | 0.0814 | 0.315 | 0.619 |
| CAL 2 | 7.157 | 0.3470 | 1.356 | 1.988 |
| CAL 3 | 7.137 | 0.9051 | 3.618 | 4.864 |
| CAL 4 | 7.123 | 1.8939 | 7.696 | 9.959 |
| CAL 5 | 7.103 | 2.8859 | 12.009 | 15.070 |
| **Average** | 7.139 | | | |
| **Rel. Std. Dev.** | 0.384 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Nitrate | Nitrate | Nitrate | Nitrate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 8.500 | 0.0908 | 0.277 | 0.123 |
| CAL 2 | 8.447 | 0.3815 | 1.178 | 0.399 |
| CAL 3 | 8.393 | 0.9841 | 3.097 | 0.972 |
| CAL 4 | 8.353 | 2.0564 | 6.480 | 1.991 |
| CAL 5 | 8.310 | 3.1337 | 9.987 | 3.015 |
| **Average** | 8.401 | | | |
| **Rel. Std. Dev.** | 0.893 % | | | |




| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Phosphate | Phosphate | Phosphate | Phosphate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | n.a. | n.a. | n.a. | n.a. |
| CAL 2 | 10.643 | 0.2904 | 0.449 | 2.362 |
| CAL 3 | 10.537 | 1.0903 | 2.090 | 4.703 |
| CAL 4 | 10.467 | 2.7815 | 6.025 | 9.654 |
| CAL 5 | 10.430 | 4.7040 | 10.736 | 15.282 |
| **Average** | 10.519 | | | |
| **Rel. Std. Dev.** | 0.892 % | | | |

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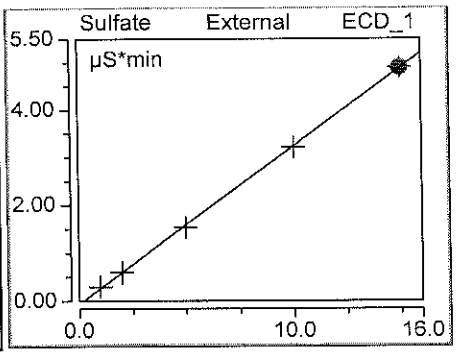
JUL 11 2017

| Injection Name | Ret.Time min ECD_1 | Area µS*min ECD_1 | Height µS ECD_1 | Amount ECD_1 |
|---|---|---|---|---|
| | Sulfate | Sulfate | Sulfate | Sulfate |
| CAL 0 | n.a. | n.a. | n.a. | n.a. |
| CAL 1 | 12.680 | 0.2951 | 0.663 | 1.101 |
| CAL 2 | 12.677 | 0.5953 | 1.360 | 2.014 |
| CAL 3 | 12.670 | 1.5338 | 3.529 | 4.867 |
| CAL 4 | 12.650 | 3.2047 | 7.416 | 9.948 |
| CAL 5 | 12.643 | 4.8893 | 11.393 | 15.070 |
| **Average** | 12.664 | | | |
| **Rel. Std. Dev.** | 0.129 % | | | |

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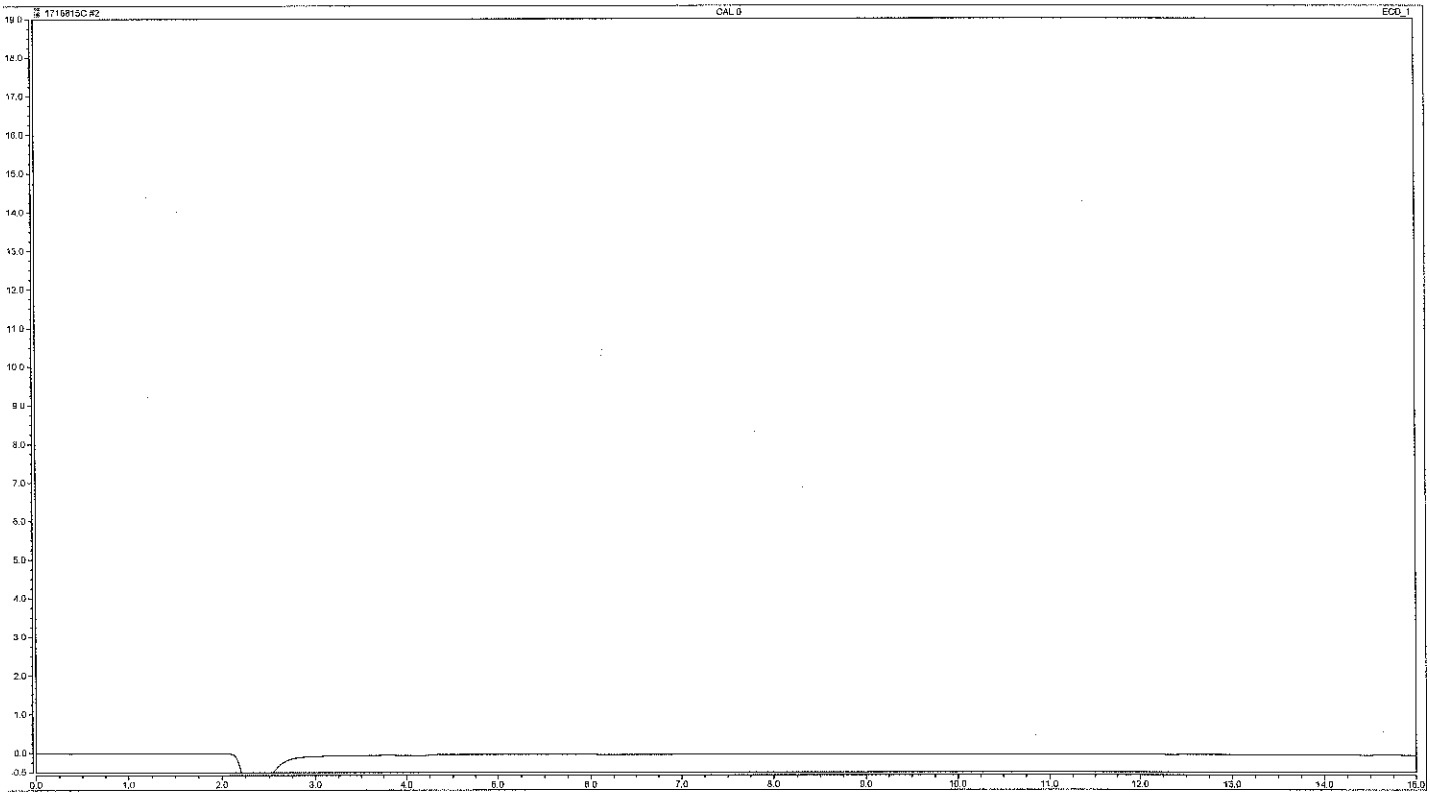
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 0** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:19** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **002** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:**

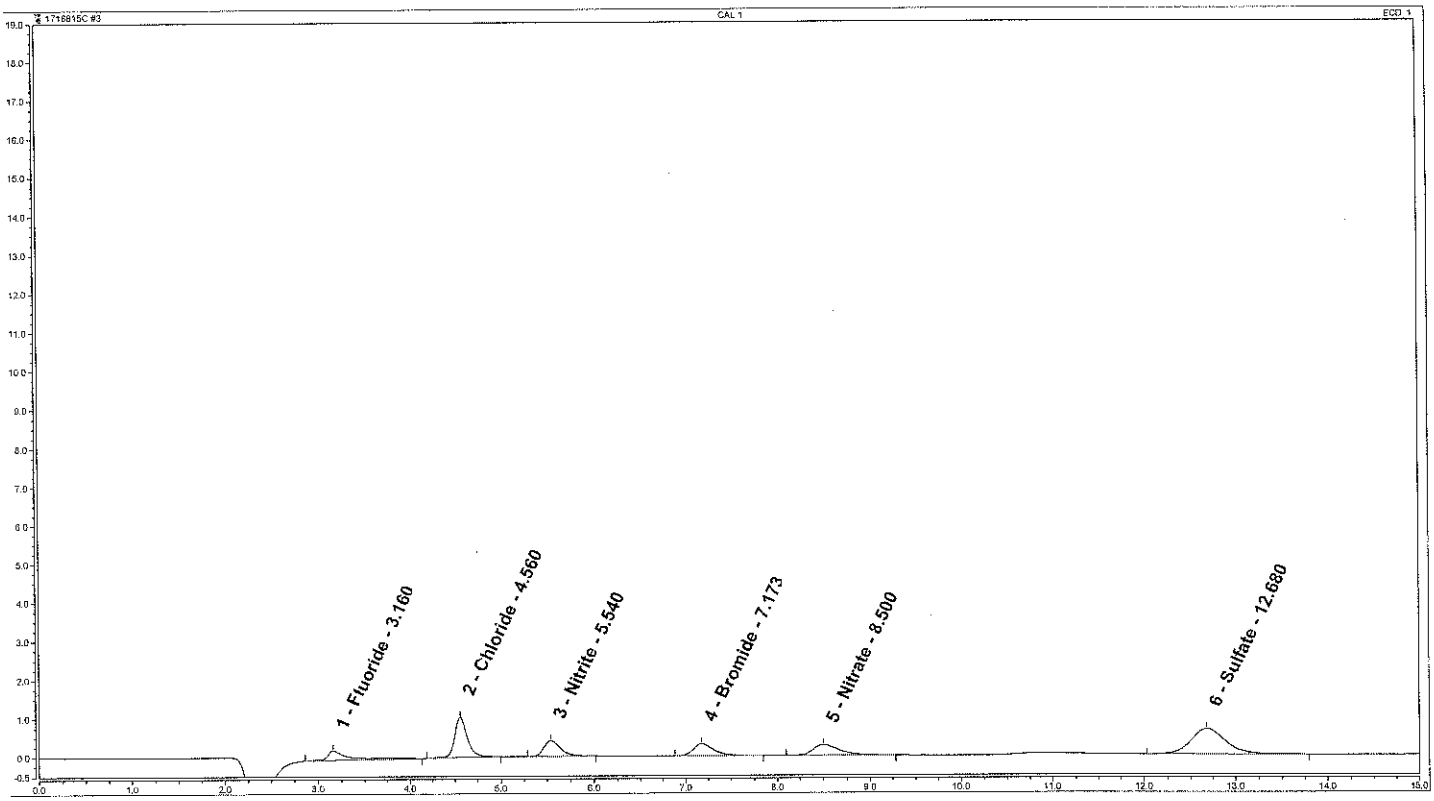
**Date:** Sandra J. Miller, Chemist JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 1** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:36** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **003** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.066 | 0.241 | 0.1201 |
| 2 | 4.56 | Chloride | M | 0.169 | 1.045 | 0.4342 |
| 3 | 5.54 | Nitrite | M | 0.083 | 0.411 | 0.1220 |
| 4 | 7.17 | Bromide | M | 0.081 | 0.315 | 0.6192 |
| 5 | 8.50 | Nitrate | M | 0.091 | 0.277 | 0.1231 |
| 6 | 12.68 | Sulfate | M | 0.295 | 0.663 | 1.1008 |
| | | TOTAL: | | 0.79 | 2.95 | 2.52 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist

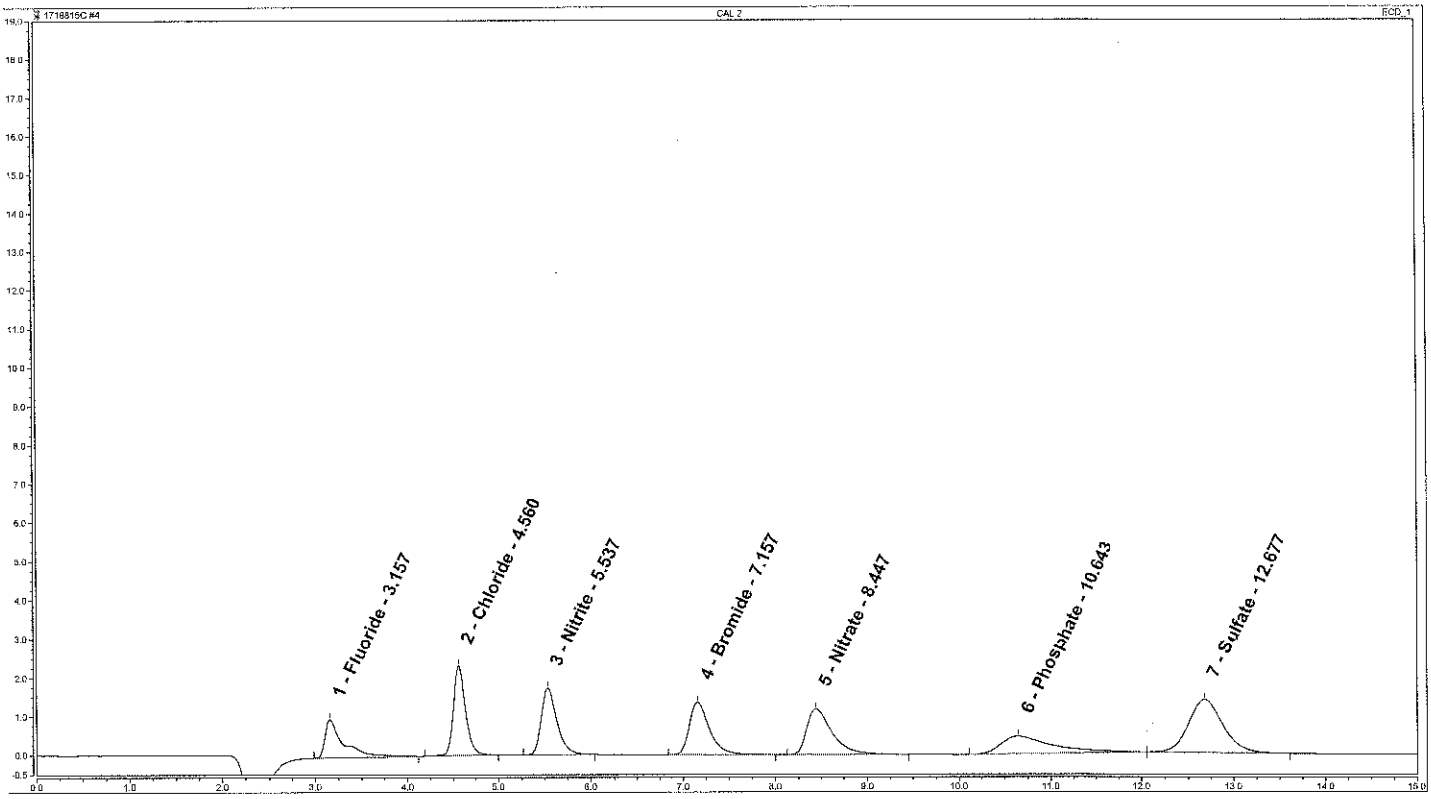
**Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 10:52** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **004** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.232 | 0.991 | 0.4132 |
| 2 | 4.56 | Chloride | M | 0.362 | 2.310 | 0.8476 |
| 3 | 5.54 | Nitrite | M | 0.348 | 1.723 | 0.3961 |
| 4 | 7.16 | Bromide | M | 0.347 | 1.356 | 1.9877 |
| 5 | 8.45 | Nitrate | M | 0.382 | 1.178 | 0.3993 |
| 6 | 10.64 | Phosphate | M | 0.290 | 0.449 | 2.3616 |
| 7 | 12.68 | Sulfate | M | 0.595 | 1.360 | 2.0137 |
| | | TOTAL: | | 2.56 | 9.37 | 8.42 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 10 2017

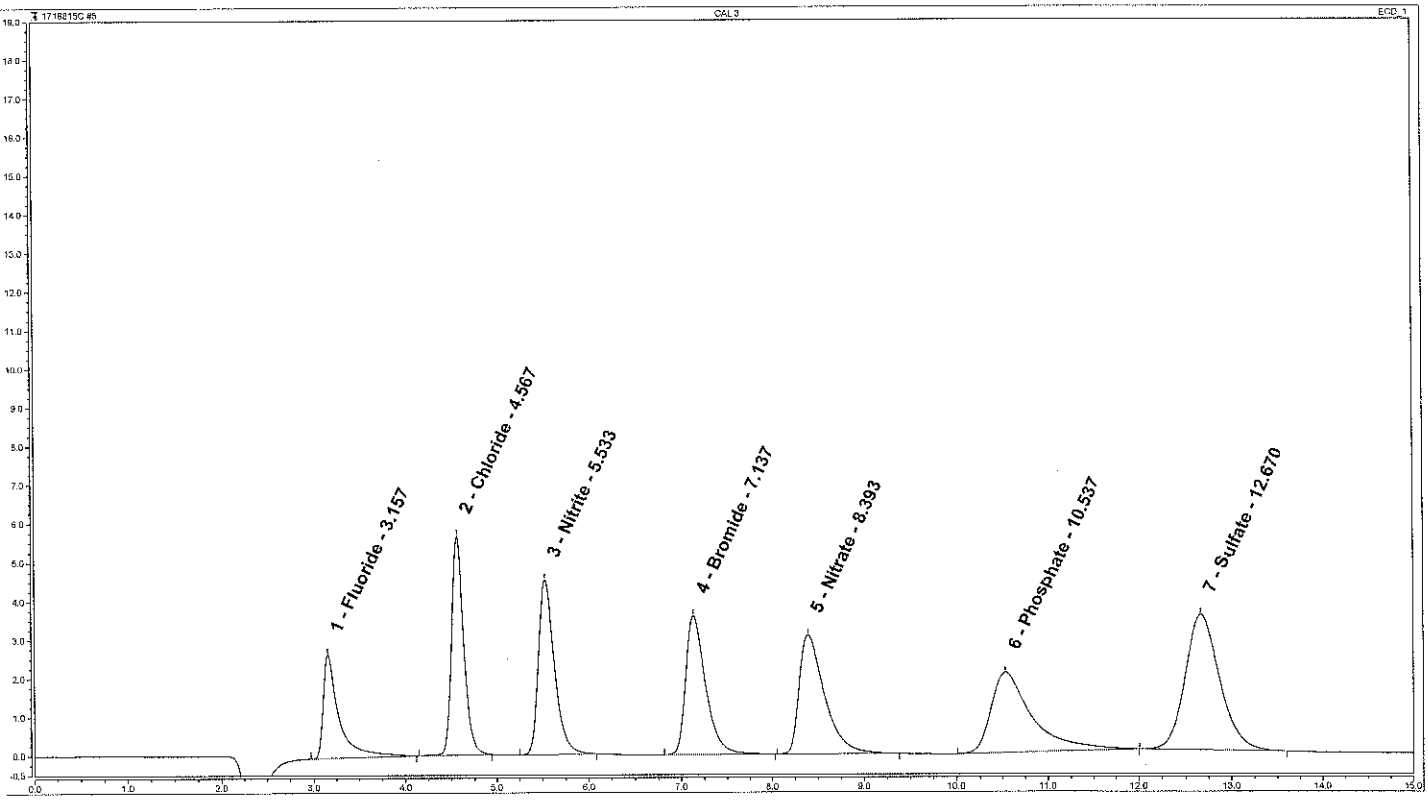
**Verifier:** Sandra J. Miller, Chemist — **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 3** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:08** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **005** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.544 | 2.699 | 0.9630 |
| 2 | 4.57 | Chloride | M | 0.863 | 5.678 | 1.9217 |
| 3 | 5.53 | Nitrite | M | 0.909 | 4.545 | 0.9773 |
| 4 | 7.14 | Bromide | M | 0.905 | 3.618 | 4.8636 |
| 5 | 8.39 | Nitrate | M | 0.984 | 3.097 | 0.9719 |
| 6 | 10.54 | Phosphate | M | 1.090 | 2.090 | 4.7031 |
| 7 | 12.67 | Sulfate | M | 1.534 | 3.529 | 4.8672 |
| | | TOTAL: | | 6.83 | 25.26 | 19.27 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

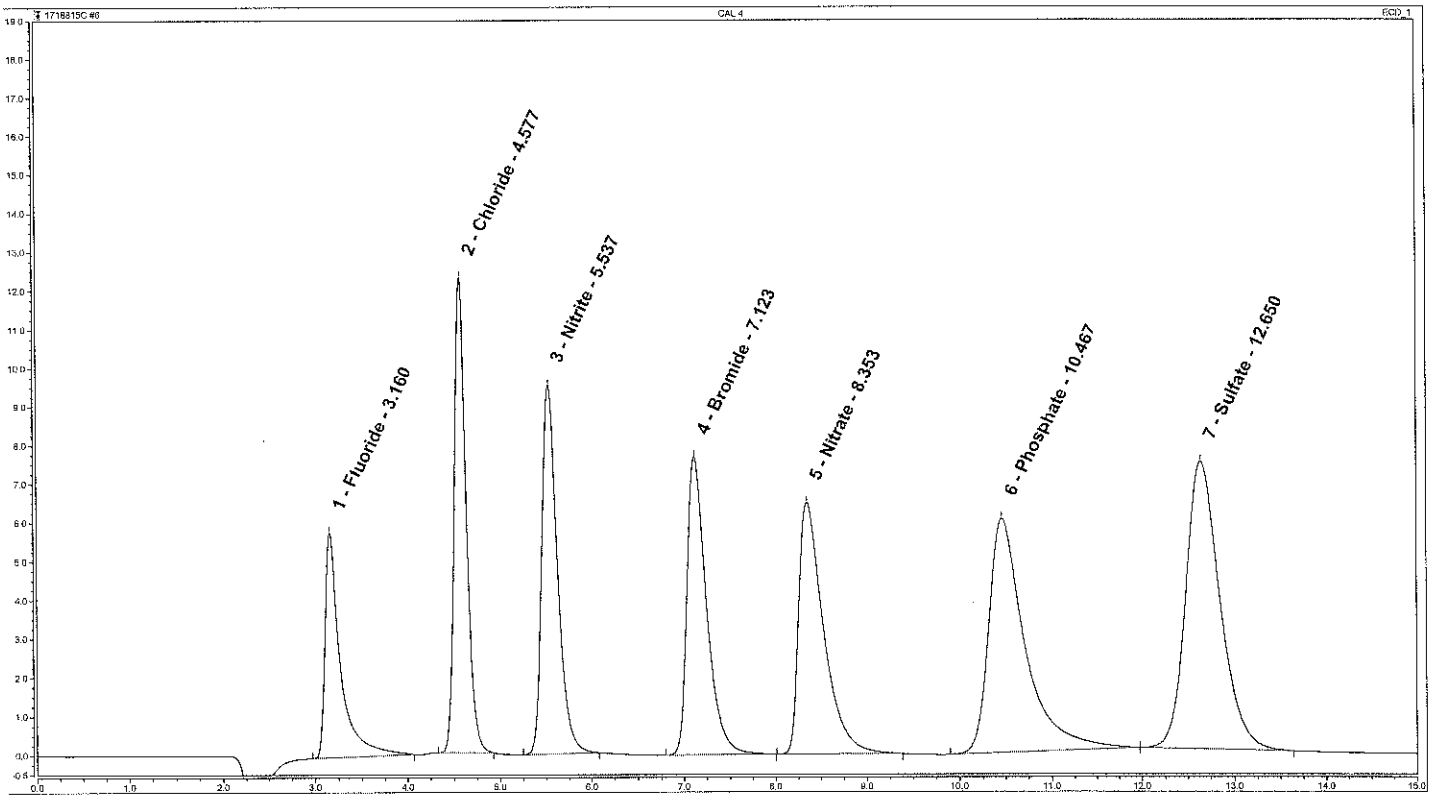
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 4** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:24** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **006** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 1.120 | 5.811 | 1.9813 |
| 2 | 4.58 | Chloride | M | 1.804 | 12.269 | 3.9372 |
| 3 | 5.54 | Nitrite | M | 1.890 | 9.537 | 1.9917 |
| 4 | 7.12 | Bromide | M | 1.894 | 7.696 | 9.9590 |
| 5 | 8.35 | Nitrate | M | 2.056 | 6.480 | 1.9909 |
| 6 | 10.47 | Phosphate | M | 2.781 | 6.025 | 9.6537 |
| 7 | 12.65 | Sulfate | M | 3.205 | 7.416 | 9.9480 |
| | | TOTAL: | | 14.75 | 55.23 | 39.46 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

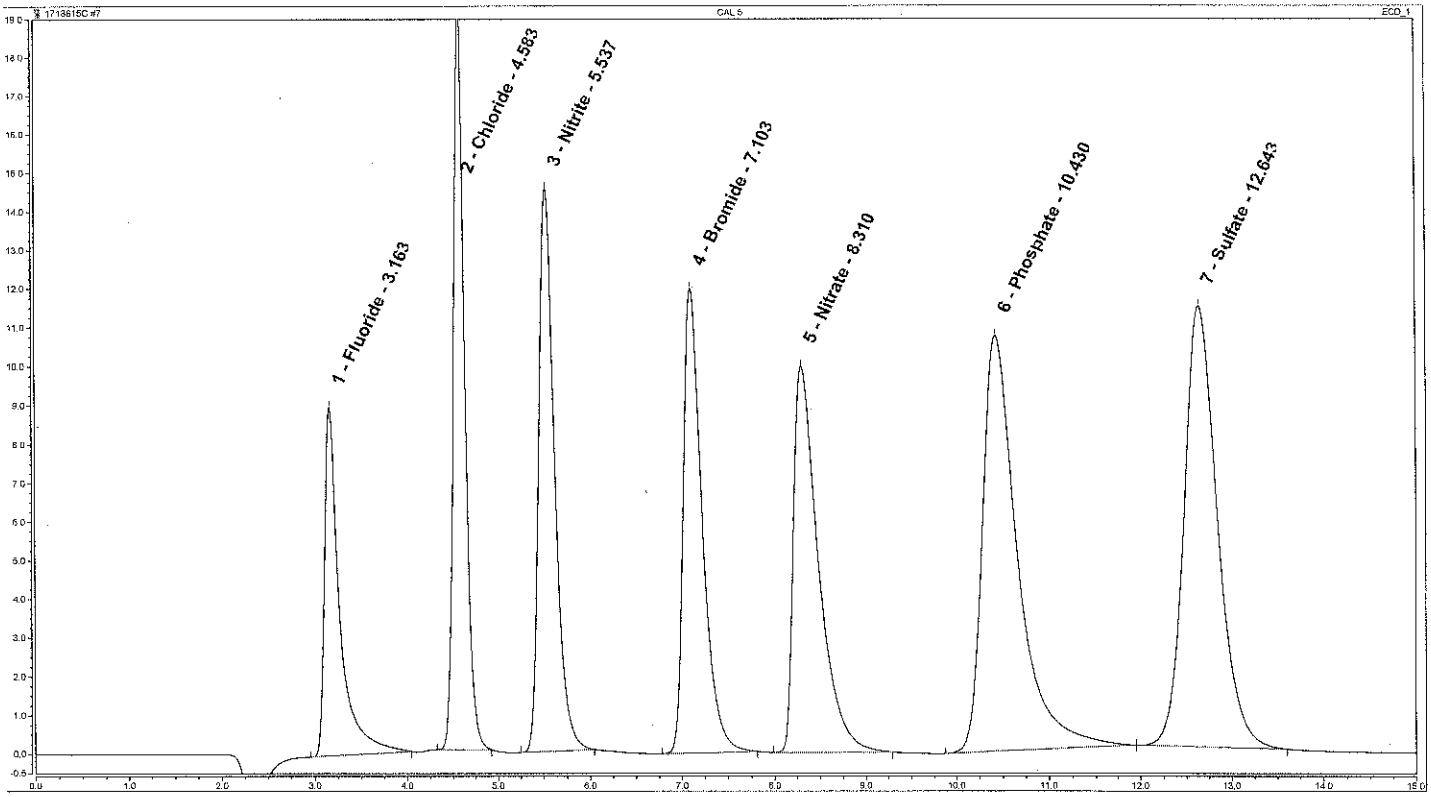
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL 5** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:40** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **007** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 1.710 | 9.004 | 3.0224 |
| 2 | 4.58 | Chloride | M | 2.794 | 19.158 | 6.0593 |
| 3 | 5.54 | Nitrite | M | 2.877 | 14.561 | 3.0129 |
| 4 | 7.10 | Bromide | M | 2.886 | 12.009 | 15.0705 |
| 5 | 8.31 | Nitrate | M | 3.134 | 9.987 | 3.0147 |
| 6 | 10.43 | Phosphate | M | 4.704 | 10.736 | 15.2816 |
| 7 | 12.64 | Sulfate | M | 4.889 | 11.393 | 15.0704 |
| | | TOTAL: | | 22.99 | 86.85 | 60.53 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist

**Date:** JUL 11 2017

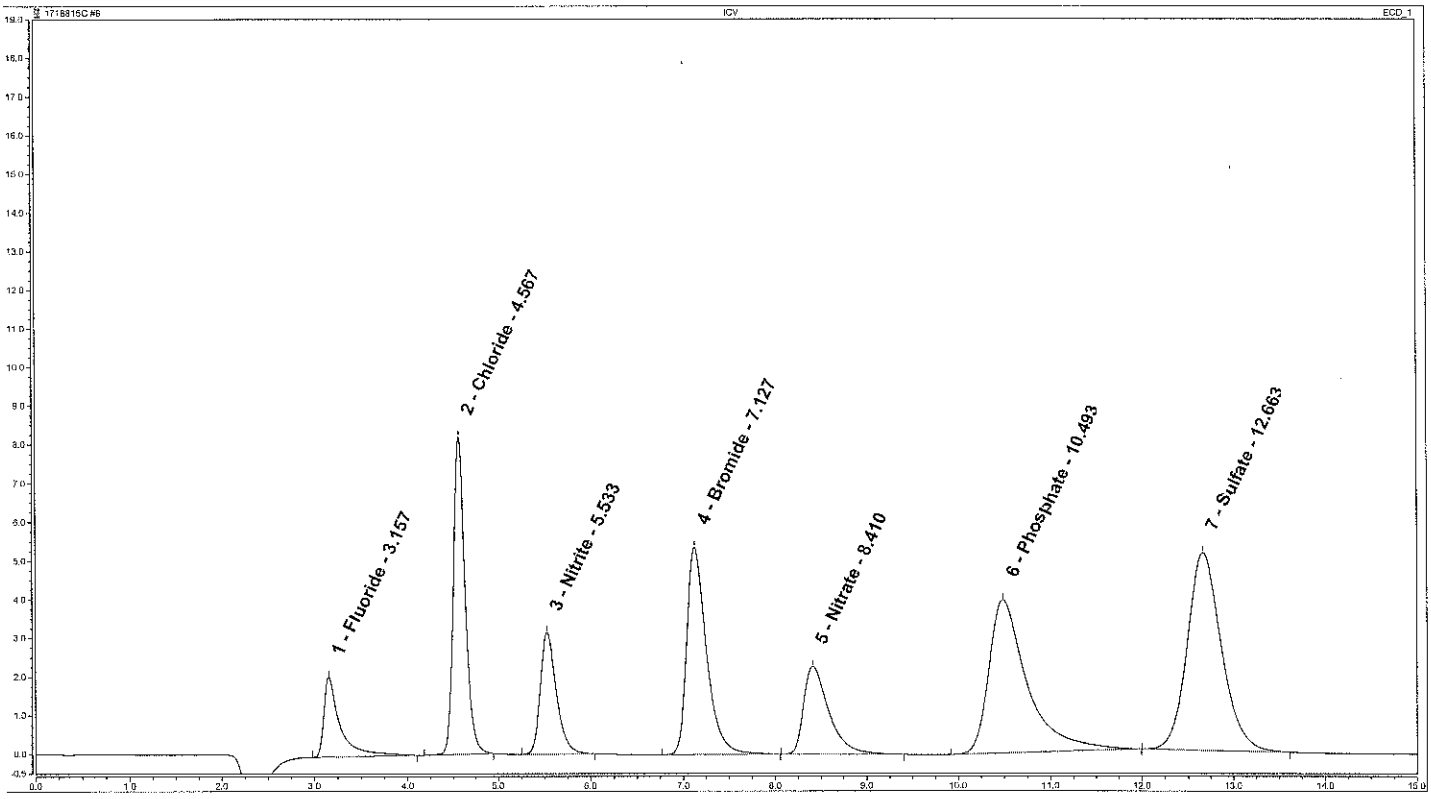
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 11:57** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **008** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.16 | Fluoride | M | 0.418 | 2.068 | 0.7411 |
| 2 | 4.57 | Chloride | M | 1.249 | 8.207 | 2.7491 |
| 3 | 5.53 | Nitrite | M | 0.640 | 3.158 | 0.6988 |
| 4 | 7.13 | Bromide | M | 1.353 | 5.379 | 7.1737 |
| 5 | 8.41 | Nitrate | M | 0.736 | 2.285 | 0.7359 |
| 6 | 10.49 | Phosphate | M | 1.922 | 3.980 | 7.1372 |
| 7 | 12.66 | Sulfate | M | 2.248 | 5.134 | 7.0390 |
| | | TOTAL: | | 8.57 | 30.21 | 26.27 |

Cl, $NO_2$ SCu
OS SW




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 10 2017

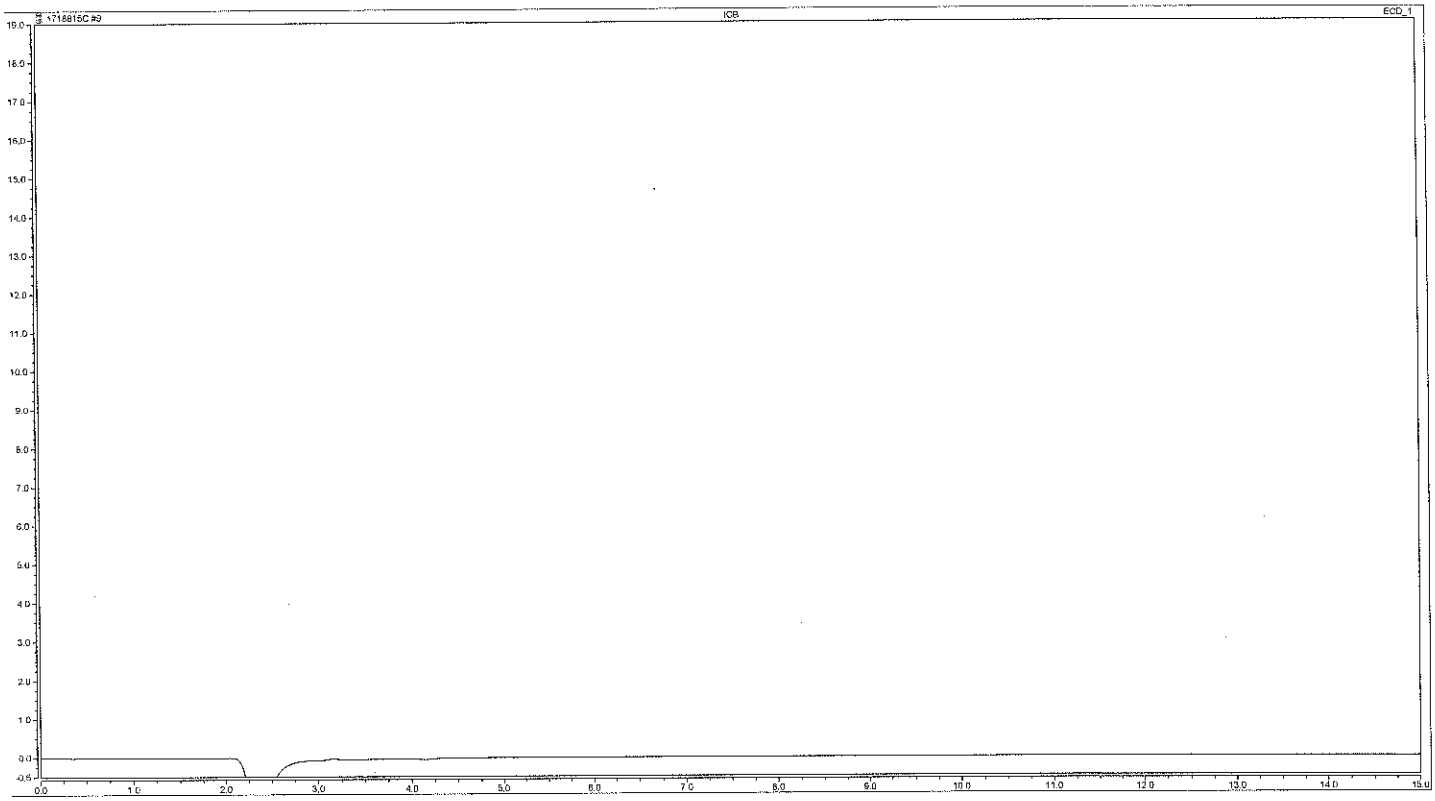
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 11 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/07/2017 / 12:13** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **009** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1718815C** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist — Date: JUL 10 2017

**Verifier:** Sandra J. Miller, Chemist — Date: JUL 11 2017

eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-2000 Analyst ZWE 24932

Instrument ID 12115 Run Start Date 7-27-17

IDAT Run Number 172080101S Run Name 1720815

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 258205|3

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: ———

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | < 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | Br, P, $SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1720815

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LOQ | | 88 | Check Standard | | 07/27/2017 10:40:28 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 2 | LOW | | 89 | Check Standard | | 07/27/2017 10:56:40 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 3 | HIGH | | 90 | Check Standard | | 07/27/2017 11:12:51 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 4 | CCV2 | | 91 | Check Standard | | 07/27/2017 11:29:04 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 5 | CCB | | 92 | Check Standard | | 07/27/2017 11:45:16 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 6 | LCSW | | 93 | Unknown | | 07/27/2017 12:01:28 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 7 | PBW | | 94 | Unknown | | 07/27/2017 12:17:39 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 8 | 9124373-D | 17208972117A-9972 | 1 | Unknown | | 07/27/2017 12:37:27 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 9 | CCV2 | | 91 | Check Standard | | 07/27/2017 12:53:38 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 10 | CCB | | 92 | Check Standard | | 07/27/2017 13:09:51 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 11 | CCV2 | | 91 | Check Standard | | 07/27/2017 20:09:22 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 12 | CCB | | 92 | Check Standard | | 07/27/2017 20:25:33 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 13 | 9115103-R | 17205249113B-24932 | 3 | Unknown | | 07/27/2017 20:45:16 | 75.00 | AnionsAS | Anions | 1.00 | 10 | Finished |
| 14 | 9117720 | 17205249213A-24932 | 4 | Unknown | | 07/27/2017 21:01:29 | 75.00 | AnionsAS | Anions | 1.00 | 10 | Finished |
| 15 | 9115103-U | 17205249113B-24932 | 2 | Unknown | | 07/27/2017 21:17:41 | 75.00 | AnionsAS | Anions | 1.00 | 10 | Finished |
| 16 | 9115103-D | 17205249113B-24932 | 2 | Unknown | | 07/27/2017 21:33:54 | 75.00 | AnionsAS | Anions | 1.00 | 10 | Finished |
| 17 | 9117730 | 17205249213B-24932 | 5 | Unknown | | 07/27/2017 21:50:06 | 75.00 | AnionsAS | Anions | 1.00 | 100 | Finished |
| 18 | 9117736 | 17205249213B-24932 | 6 | Unknown | | 07/27/2017 22:06:18 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 19 | 9117736 | 17205249213B-24932 | 6 | Unknown | | 07/27/2017 22:22:30 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 20 | 9118226 | 17206249212A-24932 | 7 | Unknown | | 07/27/2017 22:38:42 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 21 | 9120879 | 17207249112A-24932 | 8 | Unknown | | 07/27/2017 22:54:54 | 75.00 | AnionsAS | Anions | 1.00 | 200 | Finished |
| 22 | LCSW | 17207249213A-24932 | 93 | Unknown | | 07/27/2017 23:11:06 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 23 | CCV2 | | 91 | Check Standard | | 07/27/2017 23:27:18 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 24 | CCB | | 92 | Check Standard | | 07/27/2017 23:43:30 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 25 | PBW | 17207249213A-24932 | 94 | Unknown | | 07/27/2017 23:59:42 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 26 | LCSW | 17208249115A-24932 | 93 | Unknown | | 07/28/2017 00:15:54 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 27 | LSCD | 17208249115A-24932 | 93 | Unknown | | 07/28/2017 00:32:06 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 28 | PBW | 17208249115A-24932 | 94 | Unknown | | 07/28/2017 00:48:18 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 29 | 9124485-U | 17208249115A-24932 | 9 | Unknown | | 07/28/2017 01:04:30 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 30 | 9124485-D | 17208249115A-24932 | 9 | Unknown | | 07/28/2017 01:20:42 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 31 | 9124485-R | 17208249115A-24932 | 10 | Unknown | | 07/28/2017 01:36:54 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 32 | 9124485-U | 17208249115A-24932 | 11 | Unknown | | 07/28/2017 01:53:05 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 33 | 9124485-D | 17208249115A-24932 | 11 | Unknown | | 07/28/2017 02:09:17 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 34 | 9124485-R | 17208249115A-24932 | 12 | Unknown | | 07/28/2017 02:25:28 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 35 | CCV2 | | 91 | Check Standard | | 07/28/2017 02:41:40 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 36 | CCB | | 92 | Check Standard | | 07/28/2017 02:57:52 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 37 | 9124480 | 17208249115A-24932 | 13 | Unknown | | 07/28/2017 03:14:04 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 38 | 9124480 | 17208249115A-24932 | 14 | Unknown | | 07/28/2017 03:30:16 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 39 | 9124481 | 17208249115A-24932 | 15 | Unknown | | 07/28/2017 03:46:29 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 40 | 9124481 | 17208249115A-24932 | 16 | Unknown | | 07/28/2017 04:02:42 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 41 | 9124482 | 17208249115A-24932 | 17 | Unknown | | 07/28/2017 04:18:53 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |

# Sequence Overview: 1720815

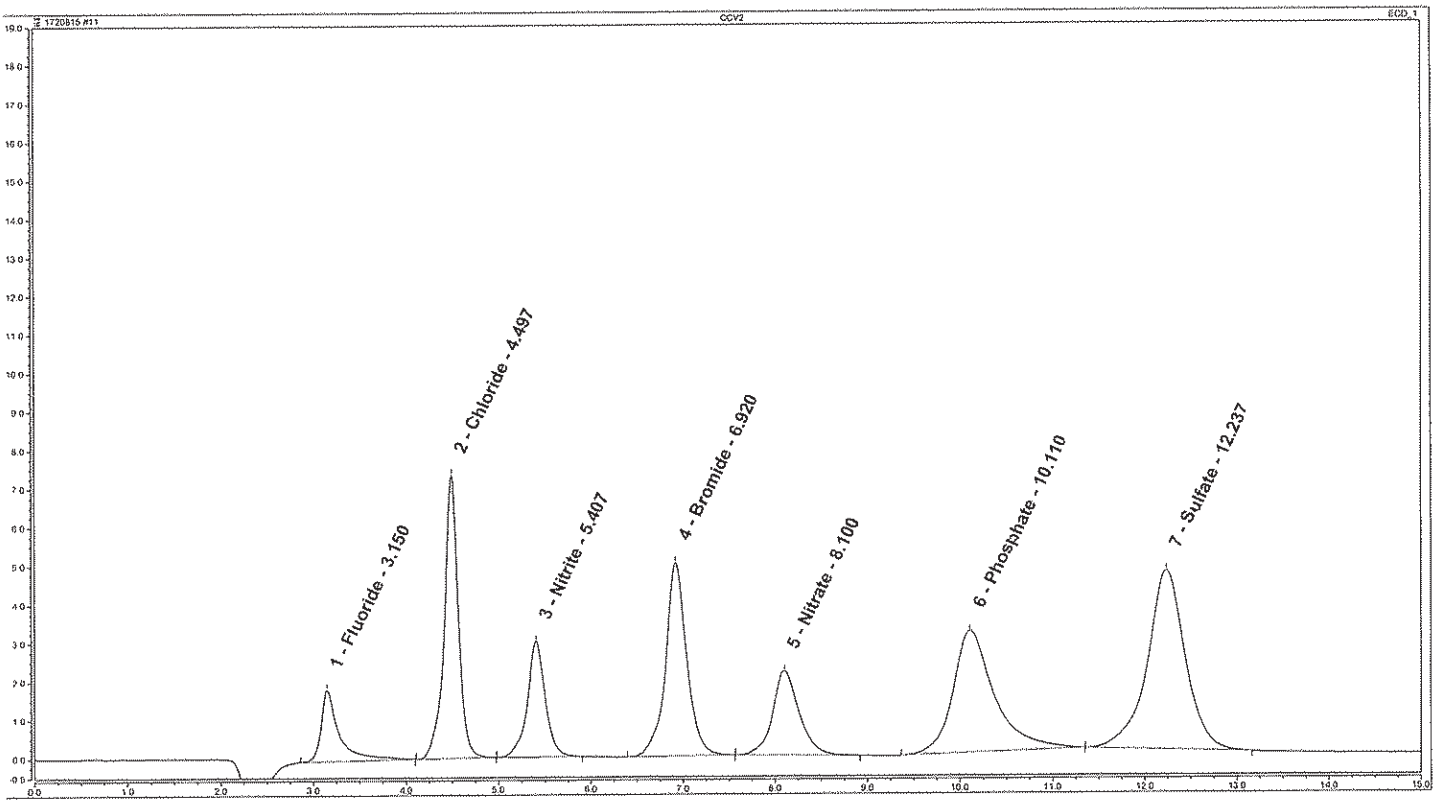
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 9124483 | 17208249115A-24932 | 18 | Unknown | | 07/28/2017 04:35:06 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 43 | 9124483 | 17208249115A-24932 | 19 | Unknown | | 07/28/2017 04:51:18 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 44 | 9124484 | 17208249115A-24932 | 20 | Unknown | | 07/28/2017 05:07:31 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 45 | 9124484 | 17208249115A-24932 | 21 | Unknown | | 07/28/2017 05:23:43 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 46 | 9124488 | 17208249115A-24932 | 22 | Unknown | | 07/28/2017 05:39:55 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 47 | CCV2 | | 91 | Check Standard | | 07/28/2017 05:56:07 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 48 | CCB | | 92 | Check Standard | | 07/28/2017 06:12:18 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 49 | 9124488 | 17208249115A-24932 | 23 | Unknown | | 07/28/2017 06:28:30 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 50 | 9124489 | 17208249115A-24932 | 24 | Unknown | | 07/28/2017 06:44:42 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 51 | 9124489 | 17208249115A-24932 | 25 | Unknown | | 07/28/2017 07:00:54 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 52 | 9124489 | 17208249115A-24932 | 26 | Unknown | | 07/28/2017 07:17:05 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 53 | 9125167 | 17208249115A-24932 | 27 | Unknown | | 07/28/2017 07:33:17 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 54 | 9125167 | 17208249115A-24932 | 28 | Unknown | | 07/28/2017 07:49:30 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 55 | 9125168 | 17208249115A-24932 | 29 | Unknown | | 07/28/2017 08:05:42 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 56 | 9125168 | 17208249115A-24932 | 30 | Unknown | | 07/28/2017 08:21:55 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 57 | 9125748-U | 17208249115B-24932 | 31 | Unknown | | 07/28/2017 08:38:07 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 58 | 9125748-D | 17208249115B-24932 | 31 | Unknown | | 07/28/2017 08:54:19 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 59 | CCV2 | | 91 | Check Standard | | 07/28/2017 09:10:31 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 60 | CCB | | 92 | Check Standard | | 07/28/2017 09:26:44 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 61 | 9125748-R | 17208249115B-24932 | 32 | Unknown | | 07/28/2017 09:42:56 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 62 | 9125750 | 17208249115B-24932 | 33 | Unknown | | 07/28/2017 09:59:09 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 63 | 9125169 | 17208249115B-24932 | 34 | Unknown | | 07/28/2017 10:15:20 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 64 | 9125169 | 17208249115B-24932 | 35 | Unknown | | 07/28/2017 10:31:32 | 75.00 | AnionsAS | Anions | 1.00 | 50 | Finished |
| 65 | 9125012 | 17208249115B-24932 | 36 | Unknown | | 07/28/2017 10:47:44 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 66 | 9125013 | 17208249115B-24932 | 37 | Unknown | | 07/28/2017 11:03:56 | 75.00 | AnionsAS | Anions | 1.00 | 200 | Finished |
| 67 | 9125014 | 17208249115B-24932 | 38 | Unknown | | 07/28/2017 11:20:09 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 68 | 9125015 | 17208249115B-24932 | 39 | Unknown | | 07/28/2017 11:36:20 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 69 | 9125016 | 17208249115B-24932 | 40 | Unknown | | 07/28/2017 11:52:32 | 75.00 | AnionsAS | Anions | 1.00 | 5 | Finished |
| 70 | 9125017 | 17208249115B-24932 | 41 | Unknown | | 07/28/2017 12:08:44 | 75.00 | AnionsAS | Anions | 1.00 | 20 | Finished |
| 71 | CCV2 | | 91 | Check Standard | | 07/28/2017 12:24:56 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 72 | CCB | | 92 | Check Standard | | 07/28/2017 12:41:09 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 73 | 9125018 | 17208249115B-24932 | 42 | Unknown | | 07/28/2017 12:57:20 | 75.00 | AnionsAS | Anions | 1.00 | 500 | Finished |
| 74 | 9112502-U | 17205205201B-9972 | 43 | Unknown | | 07/28/2017 13:13:32 | 75.00 | AnionsAS | Anions | 5.00 | 50 | Finished |
| 75 | CCV2 | | 91 | Check Standard | | 07/28/2017 13:29:44 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |
| 76 | CCB | | 92 | Check Standard | | 07/28/2017 13:45:57 | 75.00 | AnionsAS | Anions | 1.00 | 1 | Finished |

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 20:09** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **011** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720815** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.426 | 1.856 | 0.7544 |
| 2 | 4.50 | Chloride | M | 1.298 | 7.341 | 2.8540 |
| 3 | 5.41 | Nitrite | M | 0.673 | 3.011 | 0.7323 |
| 4 | 6.92 | Bromide | M | 1.353 | 5.038 | 7.1734 |
| 5 | 8.10 | Nitrate | M | 0.732 | 2.205 | 0.7326 |
| 6 | 10.11 | Phosphate | M | 1.640 | 3.187 | 6.3136 |
| 7 | 12.24 | Sulfate | M | 2.241 | 4.675 | 7.0165 |
| | | TOTAL: | | 8.36 | 27.31 | 25.58 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 28 2017

**Verifier:** Sandra J. Miller, Chemist

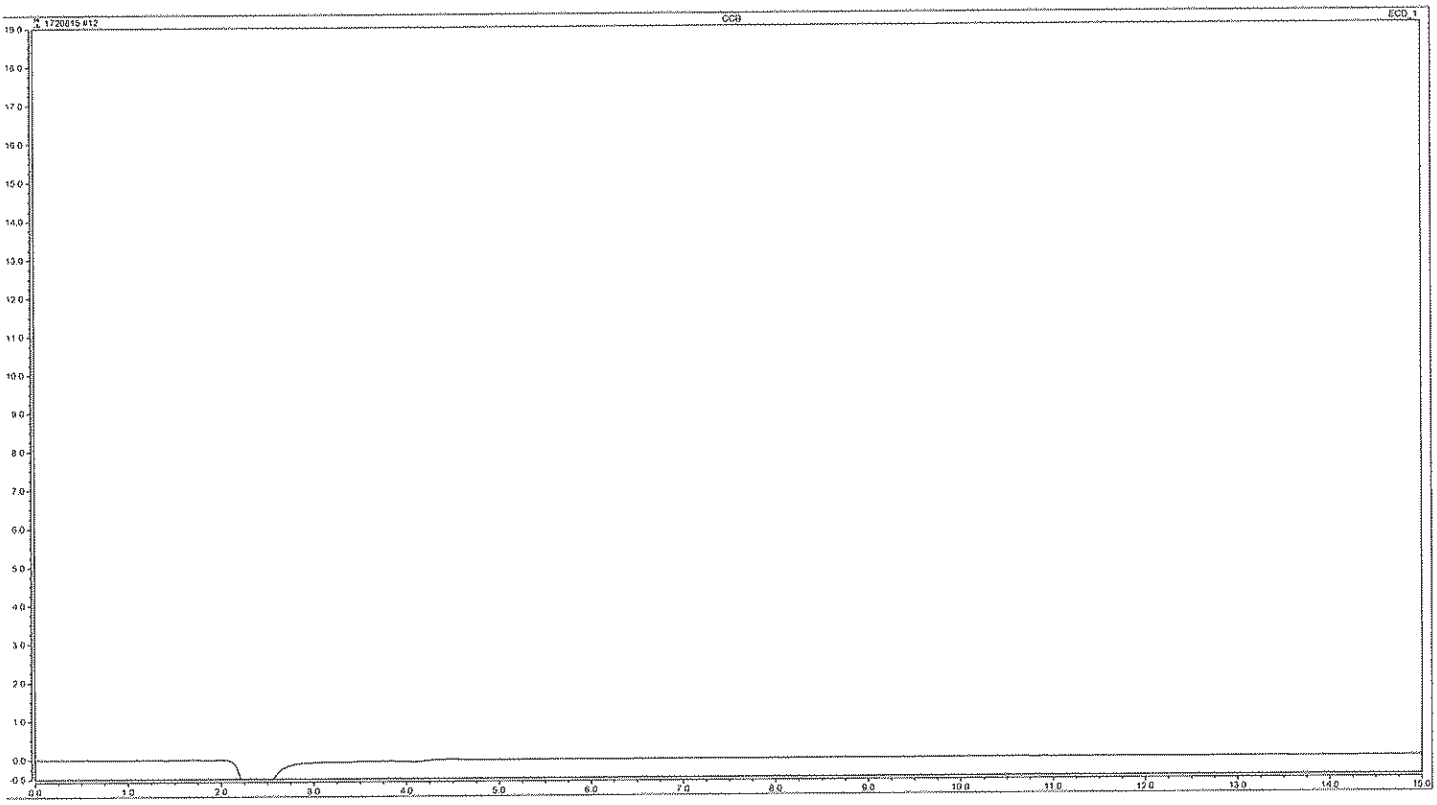
**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 20:25** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **012** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720815** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson
Chemist

**Date:** JUL 28 2017

**Verifier:**

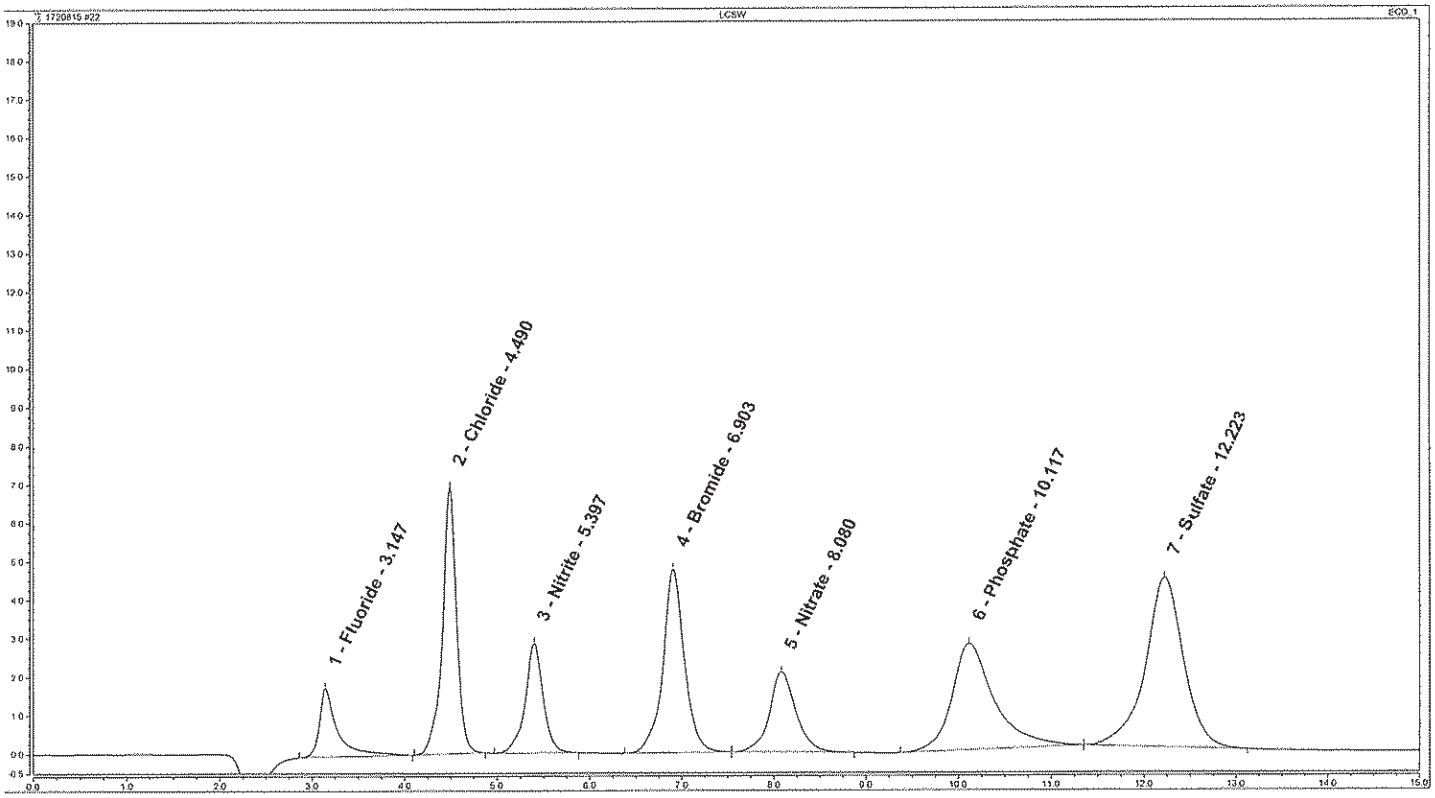
**Date:** Sandra J. Miller
Chemist
JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **LCSW** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 23:11** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **022** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720815** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.409 | 1.786 | 0.7246 |
| 2 | 4.49 | Chloride | M | 1.226 | 6.915 | 2.6994 |
| 3 | 5.40 | Nitrite | M | 0.640 | 2.854 | 0.6984 |
| 4 | 6.90 | Bromide | M | 1.290 | 4.776 | 6.8480 |
| 5 | 8.08 | Nitrate | M | 0.698 | 2.098 | 0.7003 |
| 6 | 10.12 | Phosphate | M | 1.466 | 2.782 | 5.8030 |
| 7 | 12.22 | Sulfate | M | 2.128 | 4.423 | 6.6750 |
| | | TOTAL: | | 7.86 | 25.63 | 24.15 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 28 2017

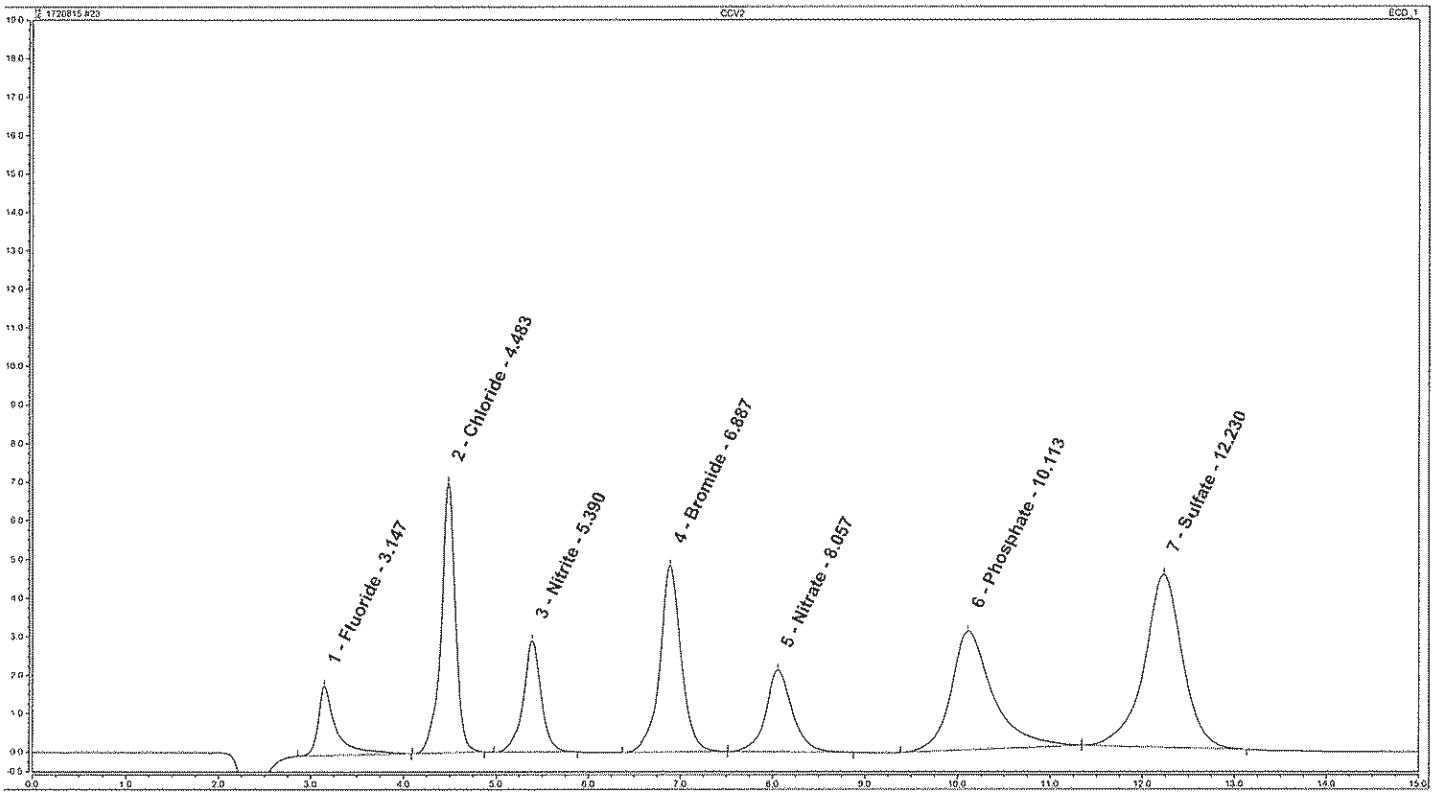
**Verifier:** Sandra J. Miller, Chemist — **Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 23:27** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **023** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720815** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.15 | Fluoride | M | 0.408 | 1.792 | 0.7240 |
| 2 | 4.48 | Chloride | M | 1.236 | 6.990 | 2.7205 |
| 3 | 5.39 | Nitrite | M | 0.645 | 2.881 | 0.7040 |
| 4 | 6.89 | Bromide | M | 1.296 | 4.824 | 6.8789 |
| 5 | 8.06 | Nitrate | M | 0.702 | 2.118 | 0.7037 |
| 6 | 10.11 | Phosphate | M | 1.597 | 3.066 | 6.1863 |
| 7 | 12.23 | Sulfate | M | 2.145 | 4.458 | 6.7258 |
| | | TOTAL: | | 8.03 | 26.13 | 24.64 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 28 2017

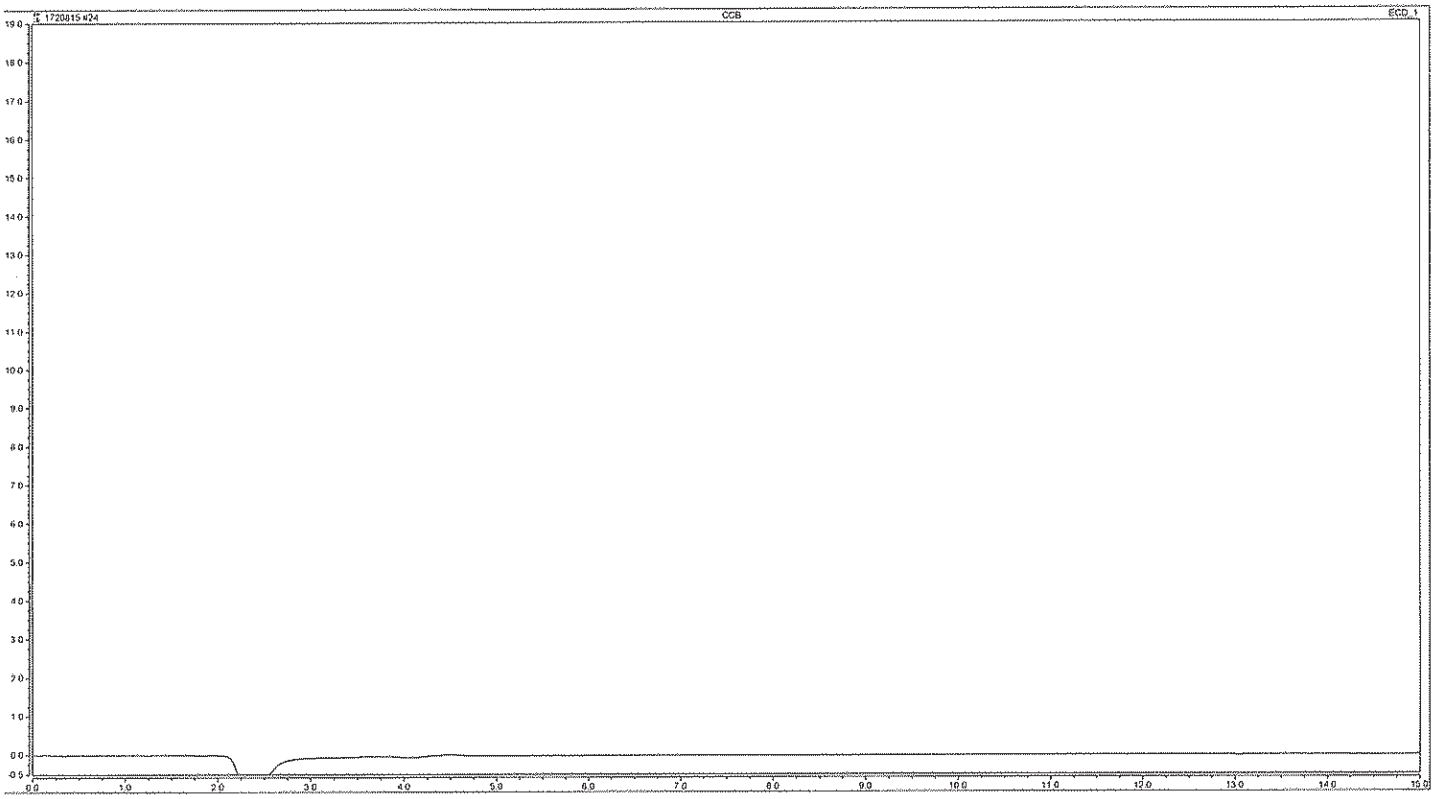
**Verifier:** Sandra J. Miller, Chemist — **Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 23:43** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **024** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720815** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist — JUL 28 2017

**Date:**

**Verifier:** Sandra J. Miller, Chemist — JUL 31 2017

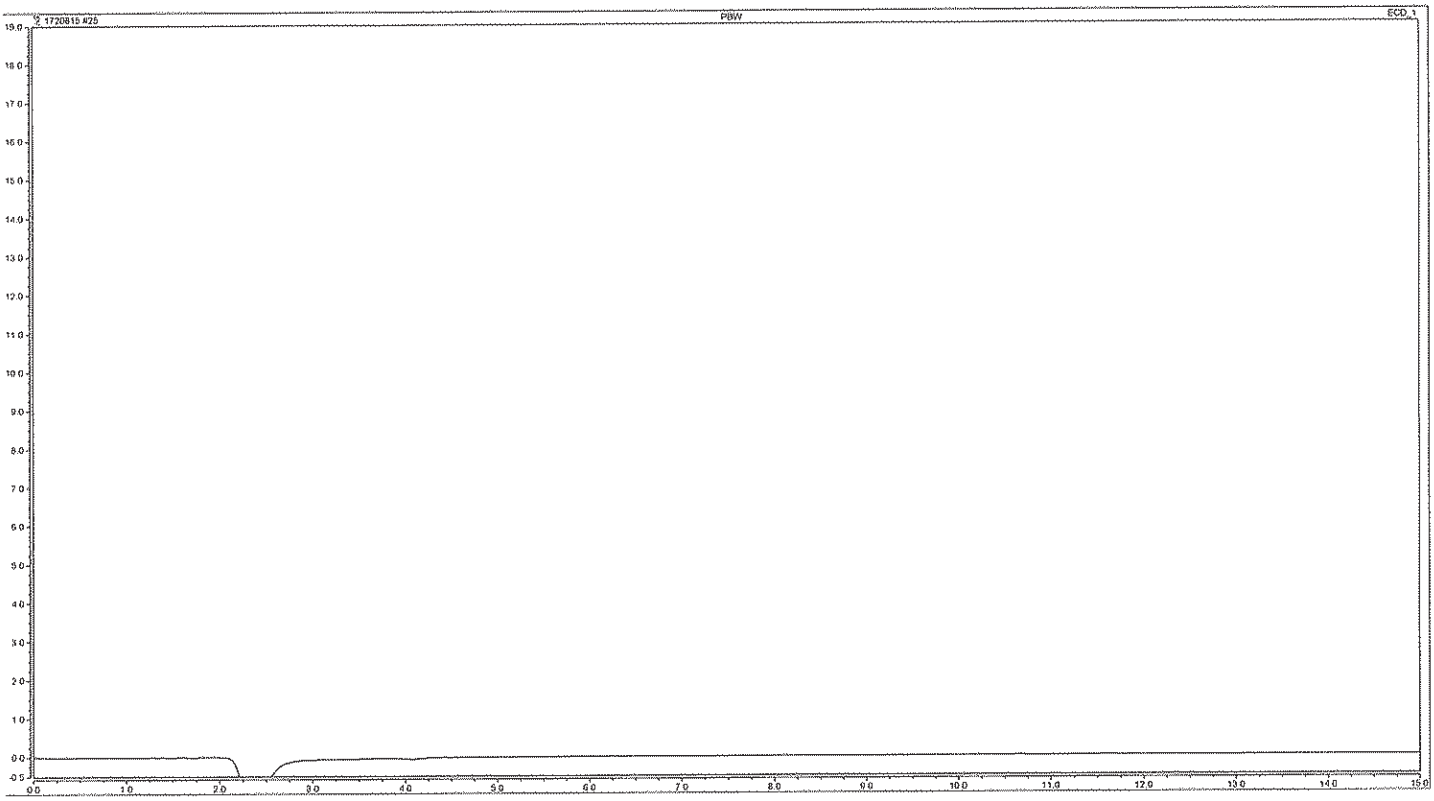
**Date:**

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **PBW** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 23:59** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **025** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720815** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 28 2017

**Verifier:** Sandra J. Miller, Chemist

**Date:** JUL 31 2017

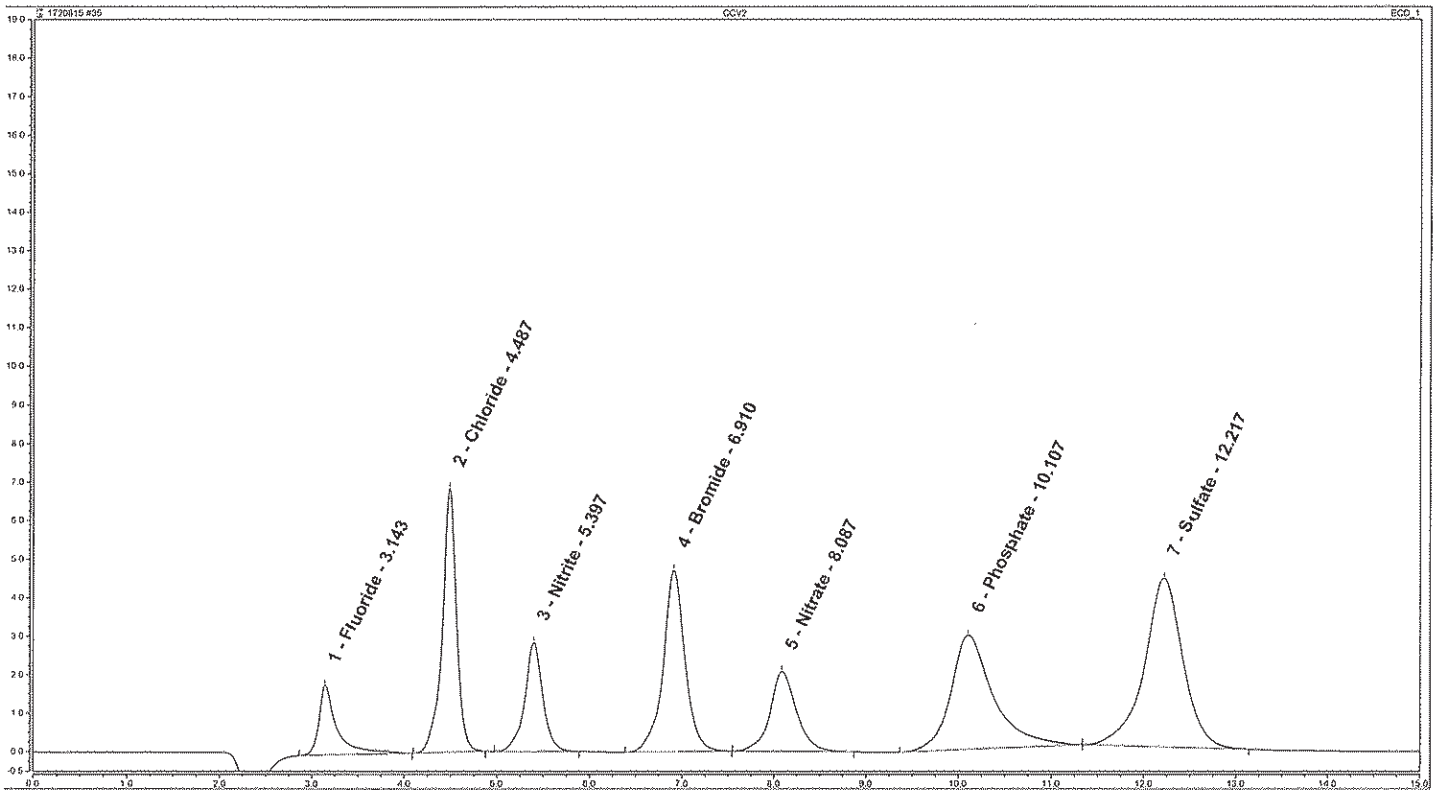
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/28/2017 / 02:41** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **035** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720815** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.14 | Fluoride | M | 0.413 | 1.814 | 0.7320 |
| 2 | 4.49 | Chloride | M | 1.225 | 6.856 | 2.6963 |
| 3 | 5.40 | Nitrite | M | 0.640 | 2.834 | 0.6986 |
| 4 | 6.91 | Bromide | M | 1.289 | 4.727 | 6.8394 |
| 5 | 8.09 | Nitrate | M | 0.694 | 2.078 | 0.6963 |
| 6 | 10.11 | Phosphate | M | 1.582 | 2.985 | 6.1424 |
| 7 | 12.22 | Sulfate | M | 2.129 | 4.404 | 6.6773 |
| | | TOTAL: | | 7.97 | 25.70 | 24.48 |

COS




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 28 2017

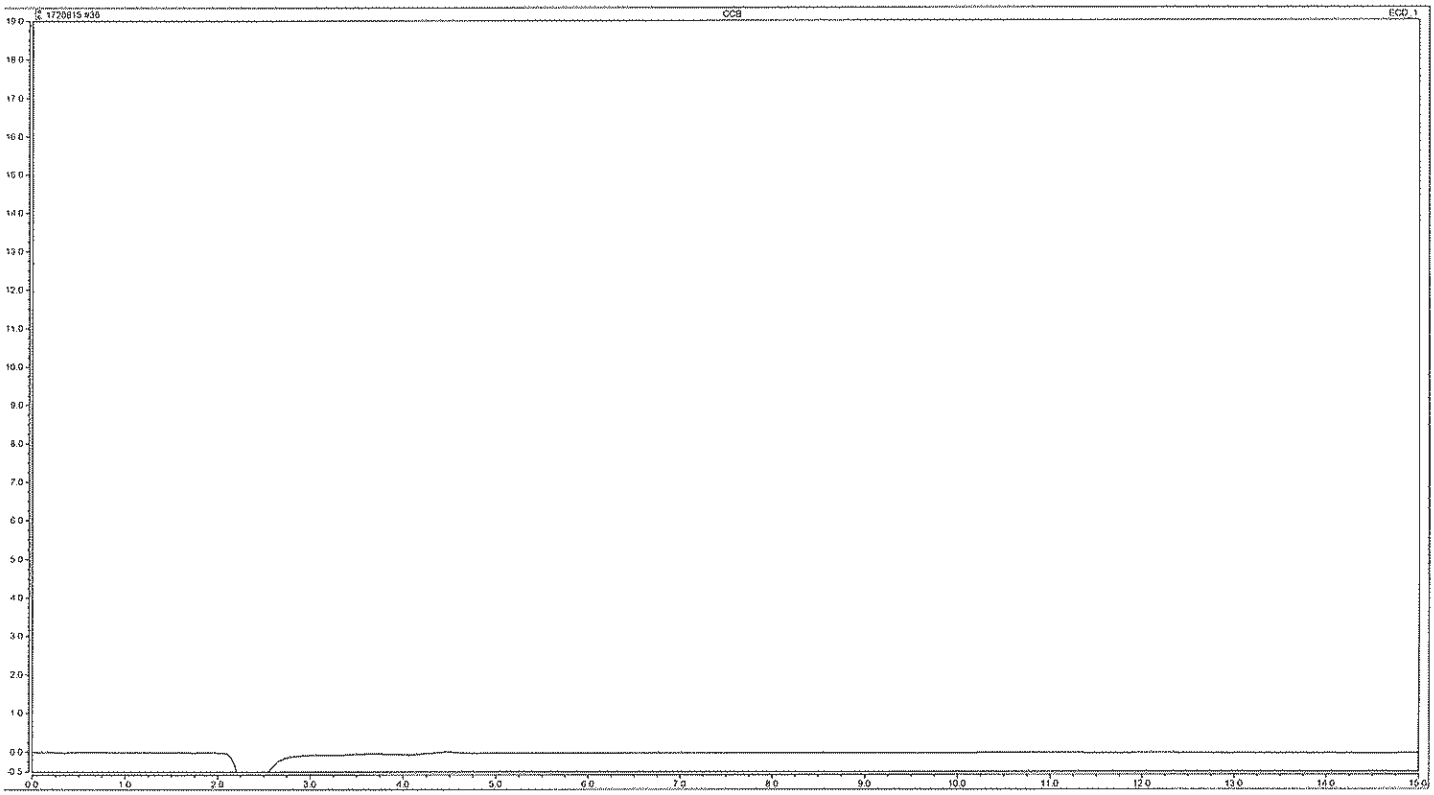
**Verifier:** Sandra J. Miller, Chemist **Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **75.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/28/2017 / 02:57** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **AnionsAS** | *Injection Number:* | **036** |
| *Instrument Number:* | **12115** | *Calibration Date:* | **7/7/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720815** |
| *Column Type-Serial #:* | **AG14-170304242, AS14-160520235** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Carolyn M. Winton Chemist

**Date:** JUL 28 2017

**Verifier:**

**Date:**

Sandra J. Miller Chemist

JUL 31 2017

eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-1100 Analyst HAB 12074

Instrument ID 19052 Run Start Date 7-24-17

IDAT Run Number 172050 1013 Run Name 172513C (ICAC)

**ICV/CCV/LCSW (mg/L)** @ 2151 7-24-17

Prep Book/Page: 222405/D & A 238579/44

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <0.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: ———

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | $Br, P, SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1720513C

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TEST | | G1 | Unknown | | 07/24/2017 13:34:13 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 2 | TEST | | G8 | Check Standard | | 07/24/2017 13:51:34 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 3 | Cal 0 | | GA1 | Calibration Standard | 01 | 07/24/2017 14:08:54 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 4 | Cal 1 | | GA2 | Calibration Standard | 02 | 07/24/2017 14:26:14 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 5 | Cal 2 | | GA3 | Calibration Standard | 03 | 07/24/2017 14:43:35 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 6 | Cal 3 | | GA4 | Calibration Standard | 04 | 07/24/2017 15:00:56 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 7 | Cal 4 | | GA5 | Calibration Standard | 05 | 07/24/2017 15:18:16 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 8 | Cal 5 | | GA6 | Calibration Standard | 06 | 07/24/2017 15:35:36 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 9 | ICV | | GA7 | Check Standard | | 07/24/2017 15:52:57 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 10 | ICB | | GA8 | Check Standard | | 07/24/2017 16:10:18 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 11 | QCS | | GA2 | Check Standard | | 07/24/2017 16:27:40 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 12 | CRDL | | GA2 | Check Standard | | 07/24/2017 16:45:00 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |

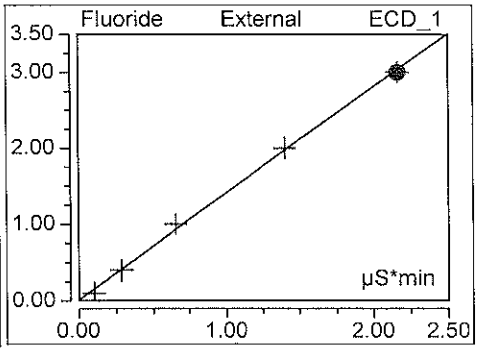
# Calibration Batch Report

| | | | |
|---|---|---|---|
| *Sequence:* | **1720513C** | *Injection Volu A* | **100.00** |
| *Instrument Method:* | **Anions** | *Channel:* | **ECD_1** |
| *Instrument Number:* | **19052** | *Run Time (min):* | **15** |
| *Inj. Date / Time:* | **24-Jul-2017 / 15:35** | *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** |

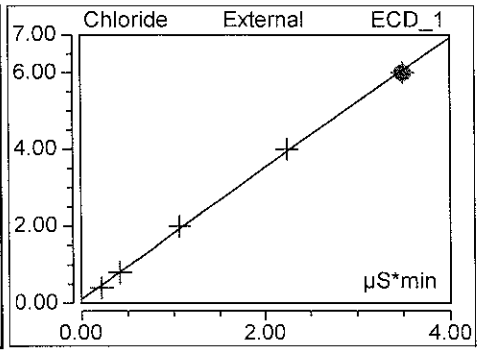
**Calibration Summary**

| Peak Name | Eval.Type | Cal.Type | Points | Offset (C0) | Slope (C1) | Curve (C2) | Coeff.Det. % |
|---|---|---|---|---|---|---|---|
| Fluoride | Area | Lin, WithOffset | 5.000 | 0.010 | 1.398 | 0.000 | 99.8182 |
| Chloride | Area | Lin, WithOffset | 5.000 | 0.103 | 1.702 | 0.000 | 99.9088 |
| Nitrite | Area | Lin, WithOffset | 5.000 | 0.047 | 0.835 | 0.000 | 99.9284 |
| Bromide | Area | Lin, WithOffset | 5.000 | 0.256 | 3.939 | 0.000 | 99.8752 |
| Nitrate | Area | Lin, WithOffset | 5.000 | 0.057 | 0.716 | 0.000 | 99.8821 |
| Phosphate | Area | Lin, WithOffset | 4.000 | 1.315 | 2.005 | 0.000 | 99.5955 |
| Sulfate | Area | Lin, WithOffset | 5.000 | 0.354 | 2.331 | 0.000 | 99.8985 |
| | | **AVERAGE:** | | 0.3063 | 1.8466 | 0.0000 | 99.8438 |

| Injection Name **Fluoride** | Ret.Time min Fluoride | Area µS*min Fluoride | Height µS Fluoride | Amount Fluoride |
|---|---|---|---|---|
| | ECD_1 | ECD_1 | ECD_1 | ECD_1 |
| Cal 0 | n.a. | n.a. | n.a. | n.a. |
| Cal 1 | 3.087 | 0.1037 | 0.295 | 0.155 |
| Cal 2 | 3.073 | 0.2853 | 1.181 | 0.409 |
| Cal 3 | 3.073 | 0.6571 | 3.229 | 0.928 |
| Cal 4 | 3.073 | 1.4033 | 7.106 | 1.971 |
| Cal 5 | 3.073 | 2.1655 | 11.311 | 3.037 |
| **Average** | 3.076 | | | |
| **Rel. Std. Dev.** | 0.194 % | | | |



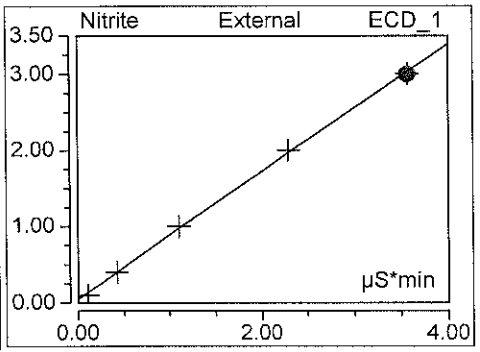

| Injection Name **Chloride** | Ret.Time min Chloride | Area µS*min Chloride | Height µS Chloride | Amount Chloride |
|---|---|---|---|---|
| | ECD_1 | ECD_1 | ECD_1 | ECD_1 |
| Cal 0 | n.a. | n.a. | n.a. | n.a. |
| Cal 1 | 4.387 | 0.2180 | 1.074 | 0.474 |
| Cal 2 | 4.387 | 0.4150 | 2.095 | 0.810 |
| Cal 3 | 4.397 | 1.0692 | 5.451 | 1.923 |
| Cal 4 | 4.423 | 2.2487 | 11.205 | 3.931 |
| Cal 5 | 4.437 | 3.5002 | 16.817 | 6.062 |
| **Average** | 4.406 | | | |
| **Rel. Std. Dev.** | 0.517 % | | | |



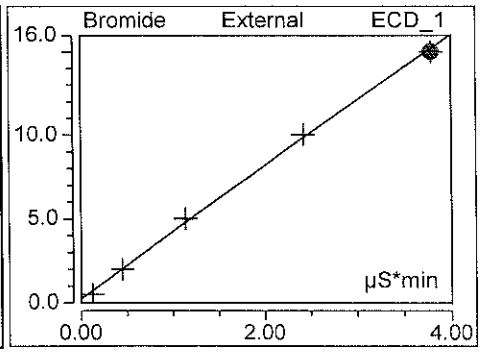

Clinton M. Wilson
Chemist

JUL 24 2017

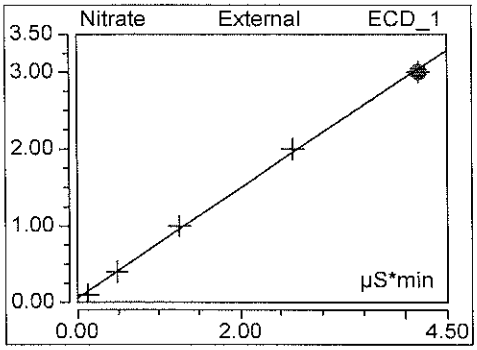
| Injection Name<br>**Nitrite** | Ret.Time<br>min<br>Nitrite | Area<br>µS*min<br>Nitrite | Height<br>µS<br>Nitrite | Amount<br>Nitrite |
|---|---|---|---|---|
| | ECD_1 | ECD_1 | ECD_1 | ECD_1 |
| Cal 0 | n.a. | n.a. | n.a. | n.a. |
| Cal 1 | 5.250 | 0.1039 | 0.450 | 0.134 |
| Cal 2 | 5.247 | 0.4208 | 1.868 | 0.399 |
| Cal 3 | 5.250 | 1.1058 | 4.969 | 0.971 |
| Cal 4 | 5.270 | 2.2967 | 10.538 | 1.966 |
| Cal 5 | 5.270 | 3.5712 | 16.541 | 3.030 |
| **Average** | 5.257 | | | |
| **Rel. Std. Dev.** | 0.221 % | | | |



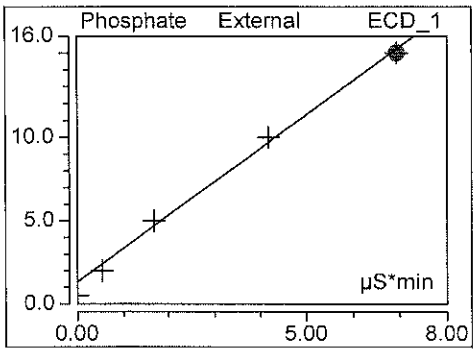

| Injection Name<br>**Bromide** | Ret.Time<br>min<br>Bromide | Area<br>µS*min<br>Bromide | Height<br>µS<br>Bromide | Amount<br>Bromide |
|---|---|---|---|---|
| | ECD_1 | ECD_1 | ECD_1 | ECD_1 |
| Cal 0 | n.a. | n.a. | n.a. | n.a. |
| Cal 1 | 6.773 | 0.1213 | 0.424 | 0.734 |
| Cal 2 | 6.743 | 0.4439 | 1.654 | 2.005 |
| Cal 3 | 6.740 | 1.1452 | 4.398 | 4.767 |
| Cal 4 | 6.753 | 2.4258 | 9.395 | 9.811 |
| Cal 5 | 6.730 | 3.7896 | 14.962 | 15.183 |
| **Average** | 6.748 | | | |
| **Rel. Std. Dev.** | 0.244 % | | | |




| Injection Name<br>**Nitrate** | Ret.Time<br>min<br>Nitrate | Area<br>µS*min<br>Nitrate | Height<br>µS<br>Nitrate | Amount<br>Nitrate |
|---|---|---|---|---|
| | ECD_1 | ECD_1 | ECD_1 | ECD_1 |
| Cal 0 | n.a. | n.a. | n.a. | n.a. |
| Cal 1 | 7.890 | 0.1186 | 0.379 | 0.142 |
| Cal 2 | 7.853 | 0.4816 | 1.534 | 0.402 |
| Cal 3 | 7.827 | 1.2626 | 4.032 | 0.962 |
| Cal 4 | 7.823 | 2.6494 | 8.445 | 1.955 |
| Cal 5 | 7.777 | 4.1617 | 13.289 | 3.039 |
| **Average** | 7.834 | | | |
| **Rel. Std. Dev.** | 0.533 % | | | |




| Injection Name<br>**Phosphate** | Ret.Time<br>min<br>Phosphate | Area<br>µS*min<br>Phosphate | Height<br>µS<br>Phosphate | Amount<br>Phosphate |
|---|---|---|---|---|
| | ECD_1 | ECD_1 | ECD_1 | ECD_1 |
| Cal 0 | n.a. | n.a. | n.a. | n.a. |
| Cal 1 | n.a. | n.a. | n.a. | n.a. |
| Cal 2 | 9.587 | 0.5366 | 1.236 | 2.391 |
| Cal 3 | 9.560 | 1.6788 | 4.163 | 4.681 |
| Cal 4 | 9.523 | 4.1824 | 10.426 | 9.700 |
| Cal 5 | 9.503 | 6.9395 | 17.765 | 15.228 |
| **Average** | 9.543 | | | |
| **Rel. Std. Dev.** | 0.390 % | | | |

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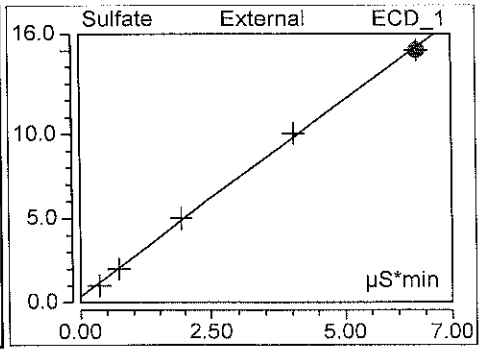
JUL 24 2017

| Injection Name<br>**Sulfate** | Ret.Time<br>min<br>Sulfate | Area<br>µS*min<br>Sulfate | Height<br>µS<br>Sulfate | Amount<br><br>Sulfate |
|---|---|---|---|---|
| | ECD_1 | ECD_1 | ECD_1 | ECD_1 |
| Cal 0 | n.a. | n.a. | n.a. | n.a. |
| Cal 1 | 11.753 | 0.3503 | 0.779 | 1.171 |
| Cal 2 | 11.740 | 0.7191 | 1.626 | 2.030 |
| Cal 3 | 11.727 | 1.9296 | 4.401 | 4.852 |
| Cal 4 | 11.710 | 4.0380 | 9.436 | 9.766 |
| Cal 5 | 11.707 | 6.3609 | 14.942 | 15.180 |
| **Average** | 11.727 | | | |
| **Rel. Std. Dev.** | 0.169 % | | | |

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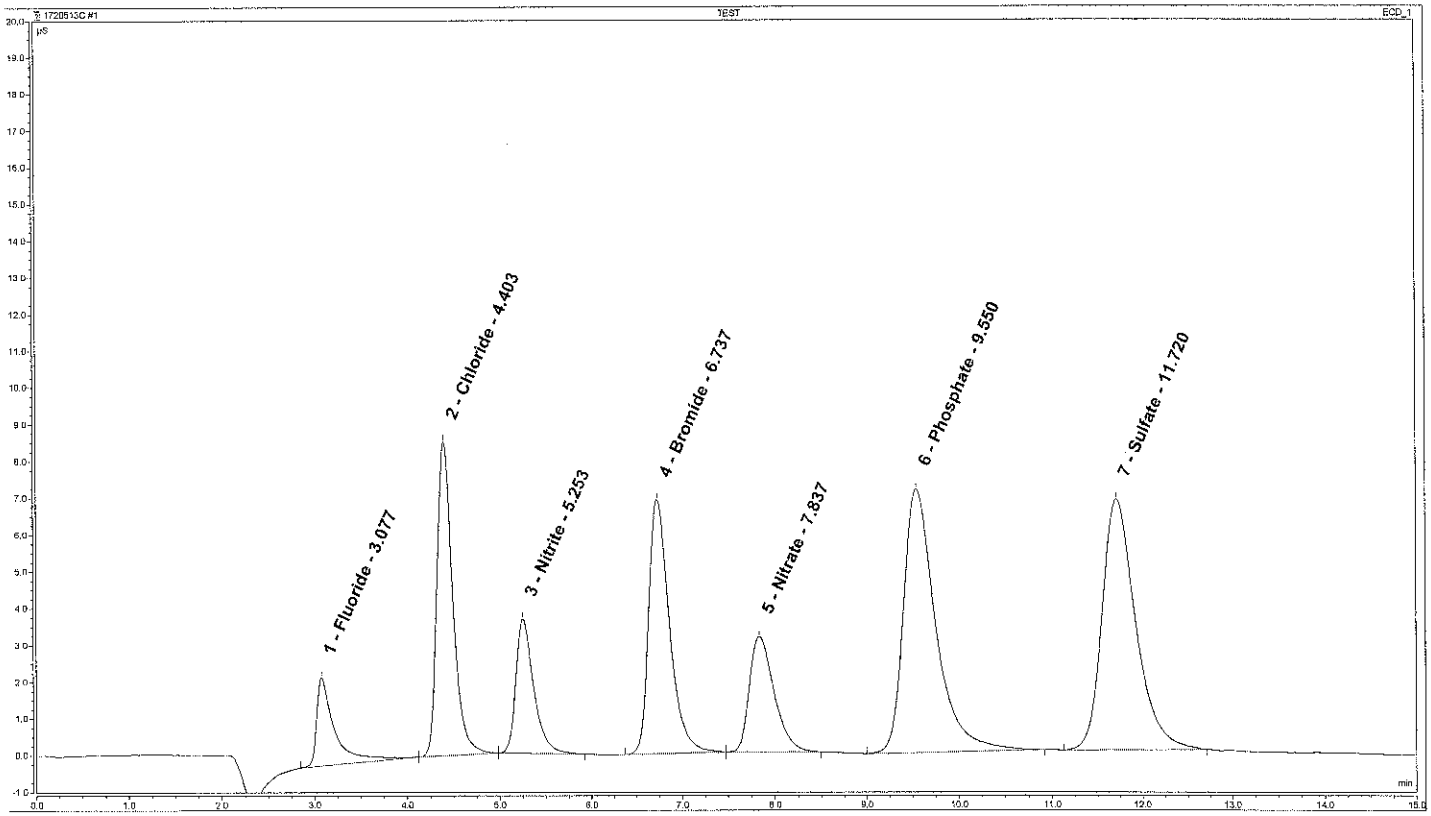
JUL 24 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **TEST** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 13:34** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **001** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.08 | Fluoride | BMB | 0.546 | 2.405 | 0.7733 |
| 2 | 4.40 | Chloride | BMB | 1.684 | 8.538 | 2.9705 |
| 3 | 5.25 | Nitrite | BMB | 0.812 | 3.644 | 0.7260 |
| 4 | 6.74 | Bromide | BMB | 1.793 | 6.910 | 7.3198 |
| 5 | 7.84 | Nitrate | BMB | 0.954 | 3.125 | 0.7407 |
| 6 | 9.55 | Phosphate | BMB | 2.898 | 7.165 | 7.1255 |
| 7 | 11.72 | Sulfate | BMB | 2.938 | 6.813 | 7.2016 |
| | | TOTAL: | | 11.63 | 38.60 | 26.86 |




**Analyst:** Clinton M. Wilson
Chemist

**Date:** JUL 24 2017

**Verifier:**

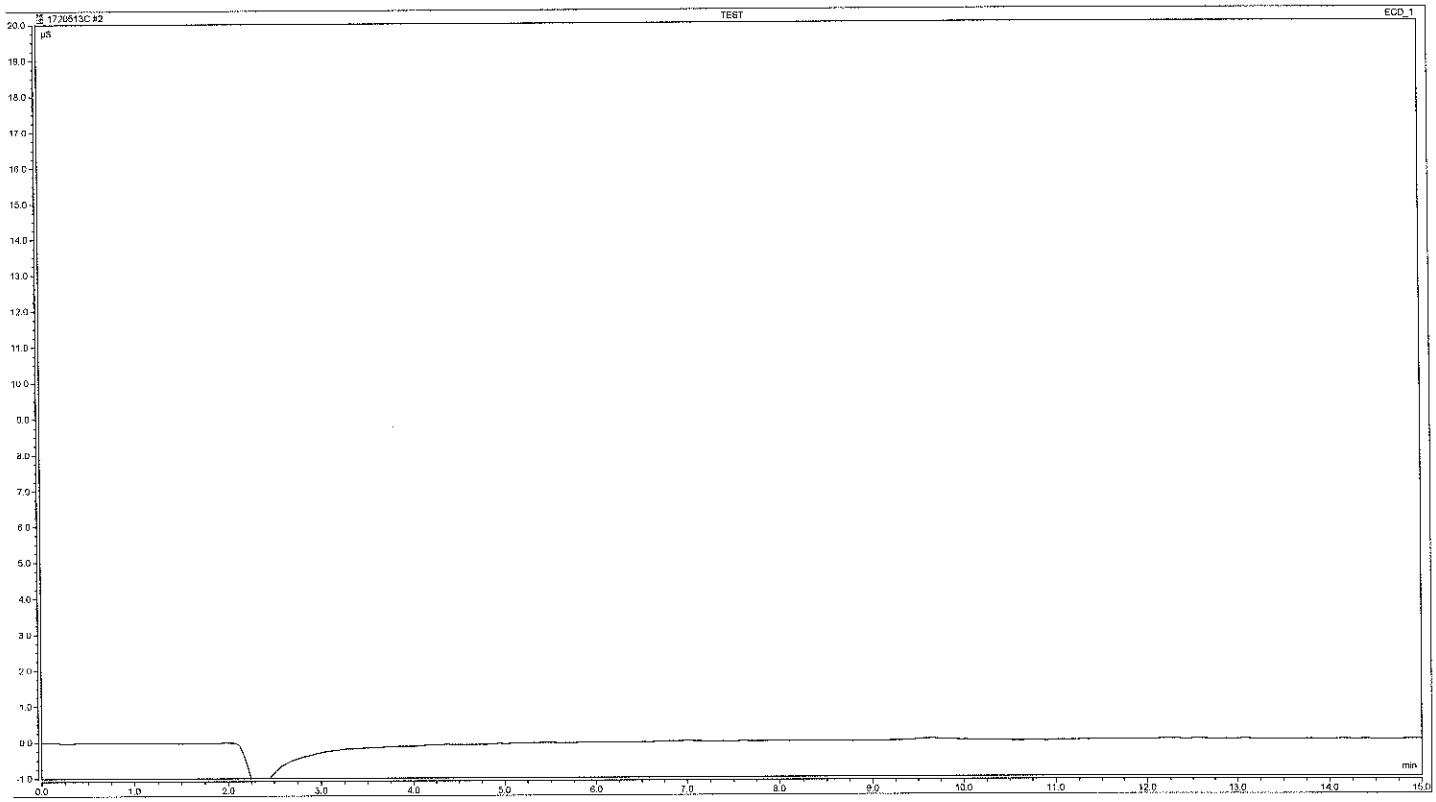
**Date:**

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **TEST** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 13:51** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **002** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 24 2017

**Verifier:**

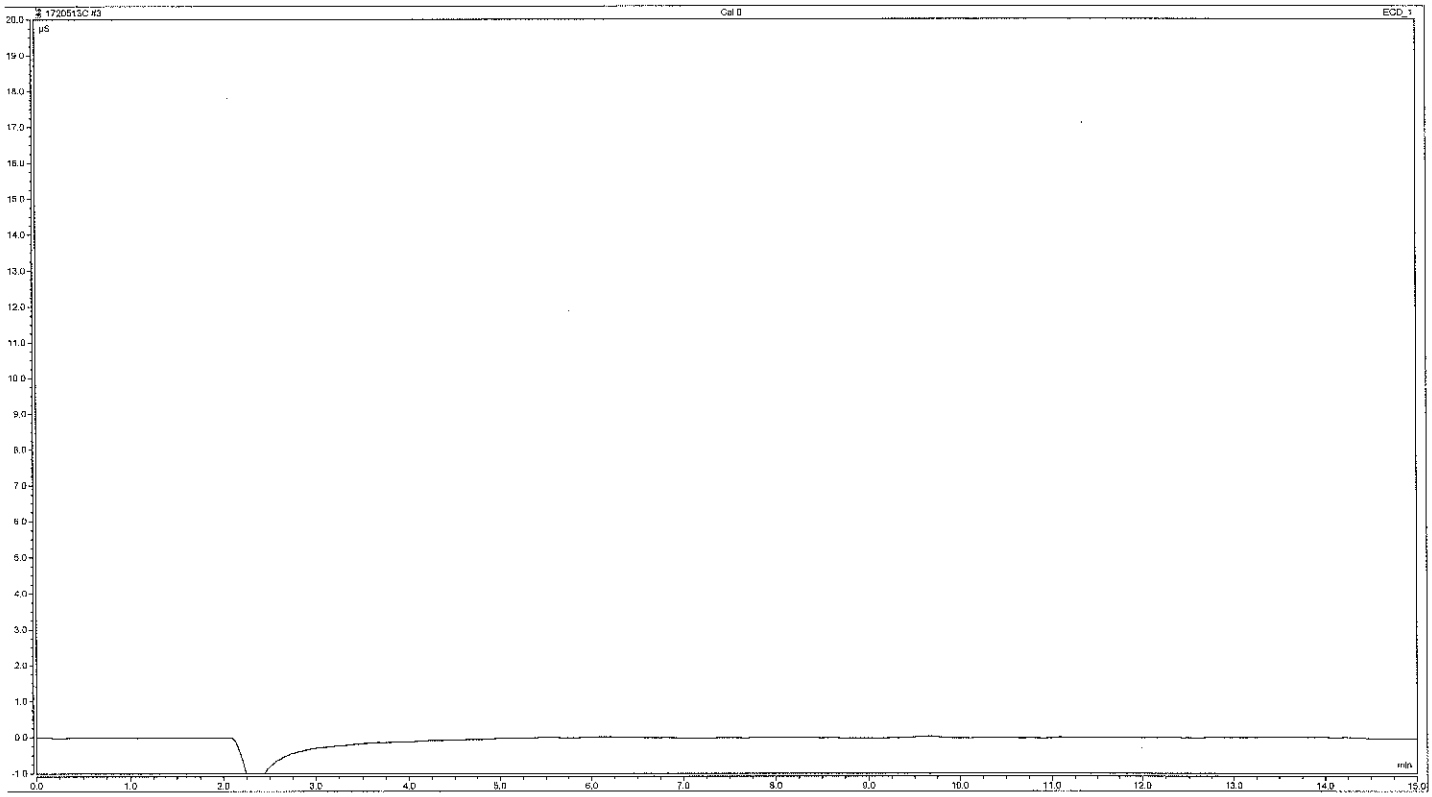
**Date:**

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **Cal 0** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 14:08** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **003** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 24 2017

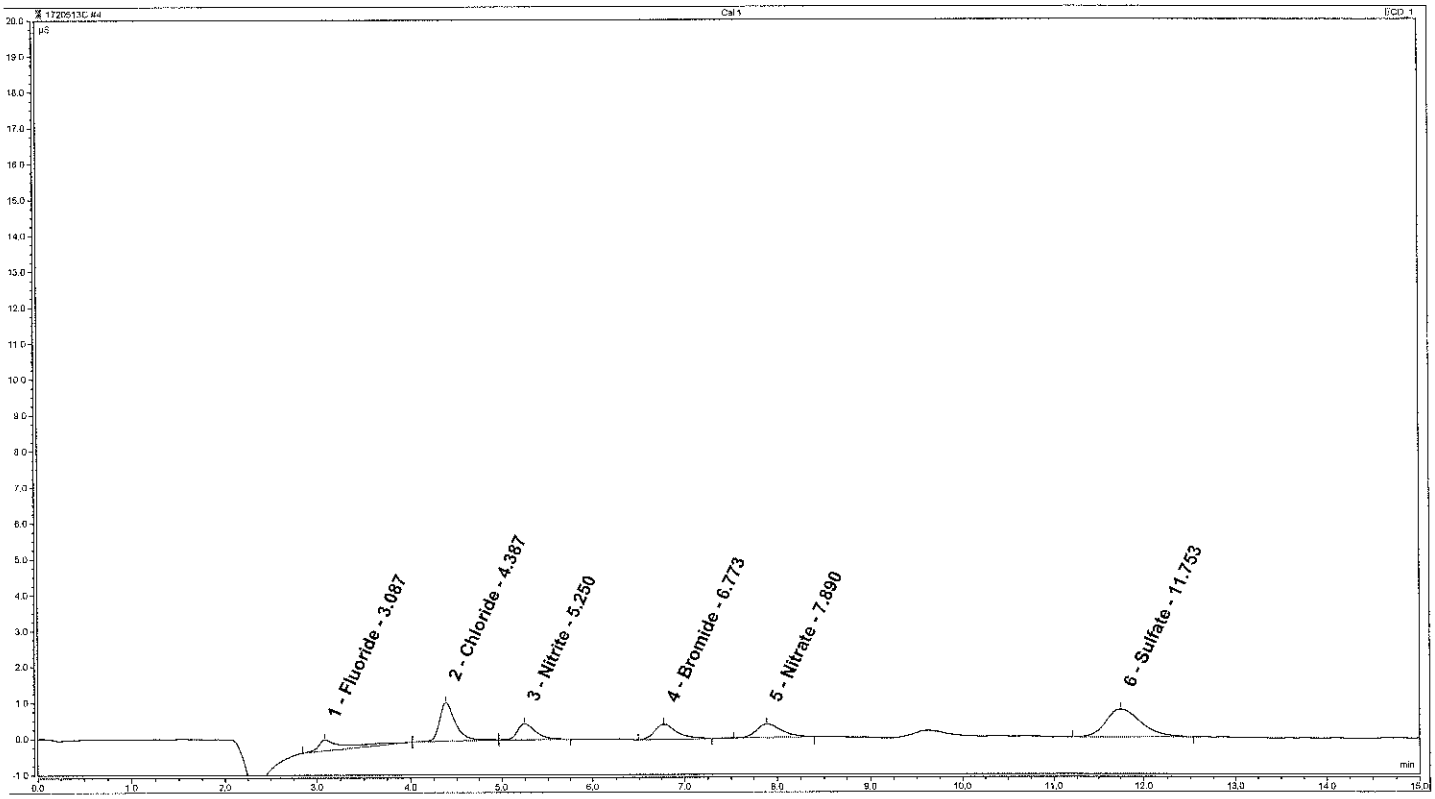
**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **Cal 1** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 14:26** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **004** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.09 | Fluoride | BMB | 0.104 | 0.295 | 0.1550 |
| 2 | 4.39 | Chloride | BMB | 0.218 | 1.074 | 0.4741 |
| 3 | 5.25 | Nitrite | BMB | 0.104 | 0.450 | 0.1342 |
| 4 | 6.77 | Bromide | BMB | 0.121 | 0.424 | 0.7341 |
| 5 | 7.89 | Nitrate | BMB | 0.119 | 0.379 | 0.1422 |
| 6 | 11.75 | Sulfate | BMB | 0.350 | 0.779 | 1.1709 |
| | | TOTAL: | | 1.02 | 3.40 | 2.81 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 24 2017

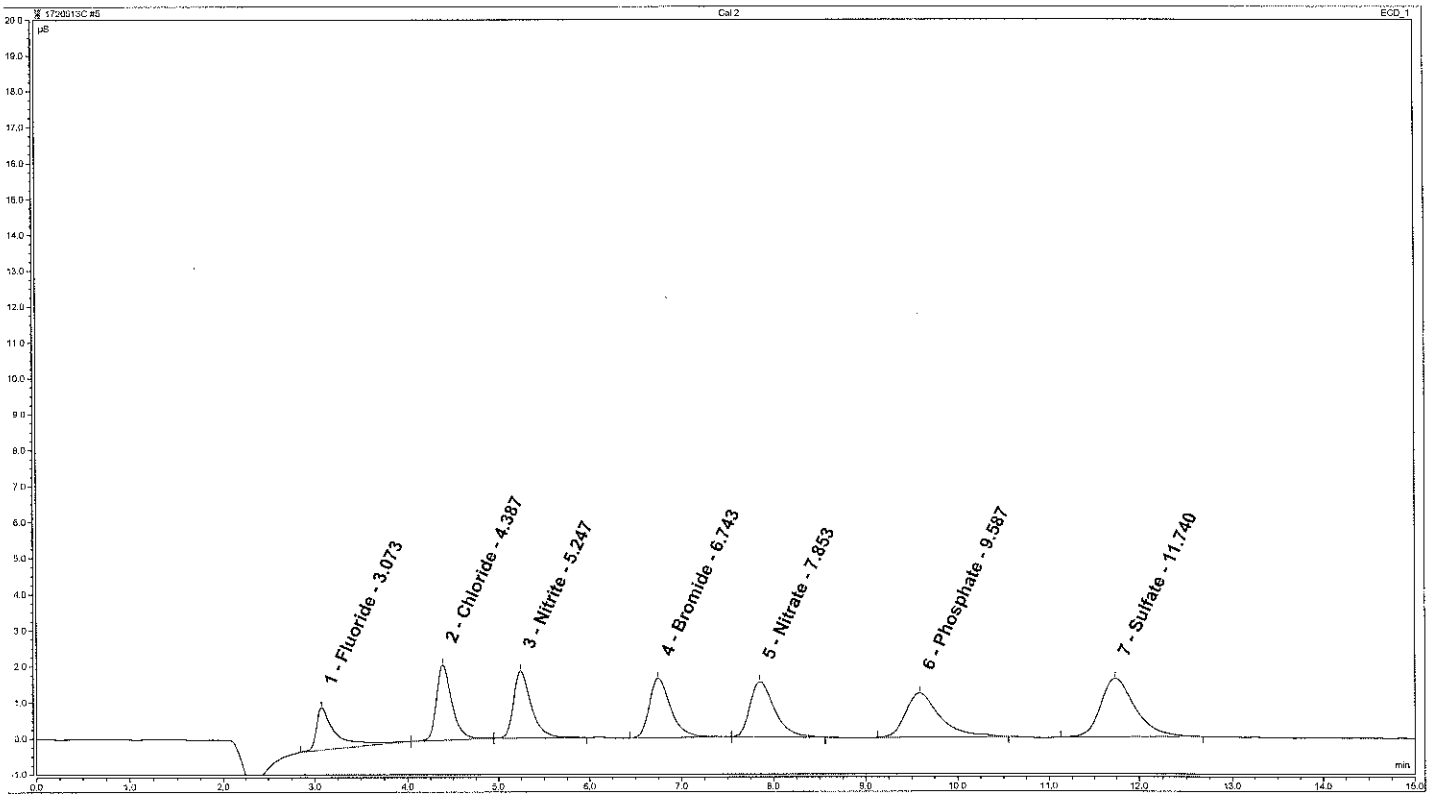
**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **Cal 2** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 14:43** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **005** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 0.285 | 1.181 | 0.4088 |
| 2 | 4.39 | Chloride | BMB | 0.415 | 2.095 | 0.8095 |
| 3 | 5.25 | Nitrite | BMB | 0.421 | 1.868 | 0.3989 |
| 4 | 6.74 | Bromide | BMB | 0.444 | 1.654 | 2.0046 |
| 5 | 7.85 | Nitrate | BMB | 0.482 | 1.534 | 0.4022 |
| 6 | 9.59 | Phosphate | BMB | 0.537 | 1.236 | 2.3911 |
| 7 | 11.74 | Sulfate | BMB | 0.719 | 1.626 | 2.0305 |
| | | TOTAL: | | 3.30 | 11.19 | 8.45 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 24 2017

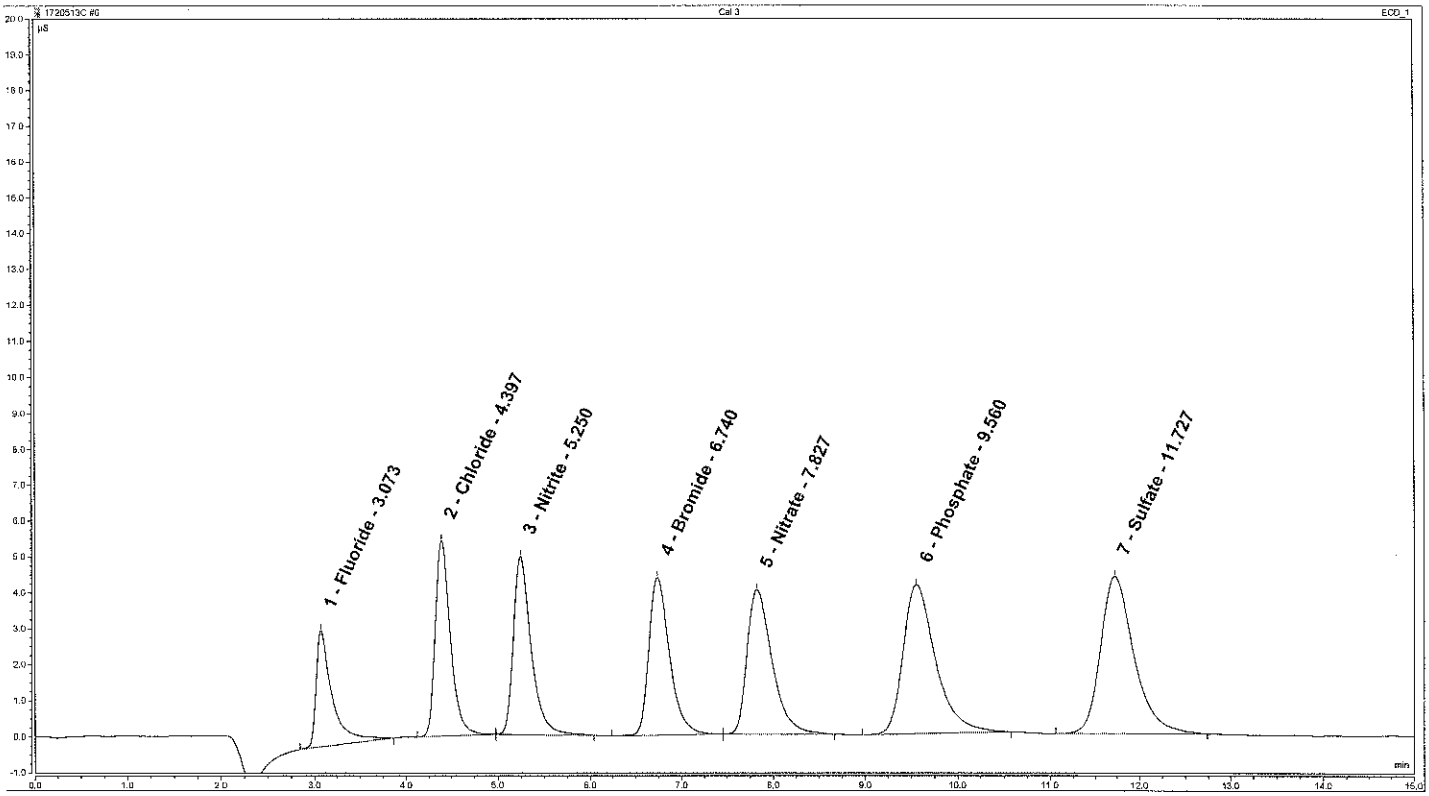
**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **Cal 3** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 15:00** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **006** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 0.657 | 3.229 | 0.9283 |
| 2 | 4.40 | Chloride | BMB | 1.069 | 5.451 | 1.9232 |
| 3 | 5.25 | Nitrite | BMB | 1.106 | 4.969 | 0.9710 |
| 4 | 6.74 | Bromide | BMB | 1.145 | 4.398 | 4.7669 |
| 5 | 7.83 | Nitrate | BMB | 1.263 | 4.032 | 0.9617 |
| 6 | 9.56 | Phosphate | BMB | 1.679 | 4.163 | 4.6810 |
| 7 | 11.73 | Sulfate | BMB | 1.930 | 4.401 | 4.8519 |
| | | TOTAL: | | 8.85 | 30.64 | 19.08 |




**Analyst:** Clinton M. Wilson
Chemist

**Date:** JUL 24 2017

**Verifier:** James Mathiot
Group Leader

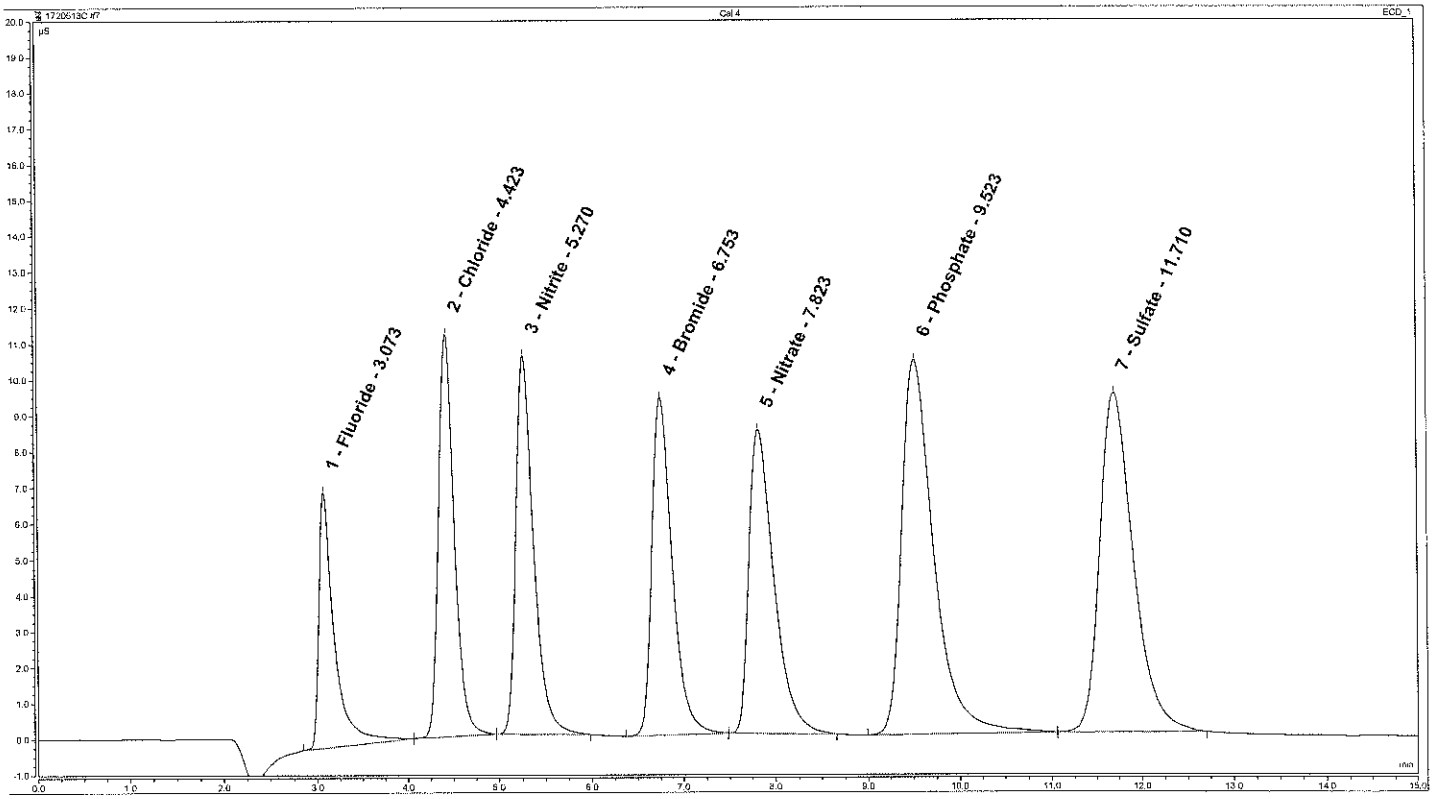
**Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **Cal 4** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 15:18** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **007** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 1.403 | 7.106 | 1.9713 |
| 2 | 4.42 | Chloride | BMB | 2.249 | 11.205 | 3.9313 |
| 3 | 5.27 | Nitrite | BMB | 2.297 | 10.538 | 1.9657 |
| 4 | 6.75 | Bromide | BMB | 2.426 | 9.395 | 9.8111 |
| 5 | 7.82 | Nitrate | BMB | 2.649 | 8.445 | 1.9553 |
| 6 | 9.52 | Phosphate | BMB | 4.182 | 10.426 | 9.7003 |
| 7 | 11.71 | Sulfate | BMB | 4.038 | 9.436 | 9.7663 |
| | | TOTAL: | | 19.24 | 66.55 | 39.10 |




**Analyst:** Clinton M. Wilson, Chemist **Date:** JUL 24 2017

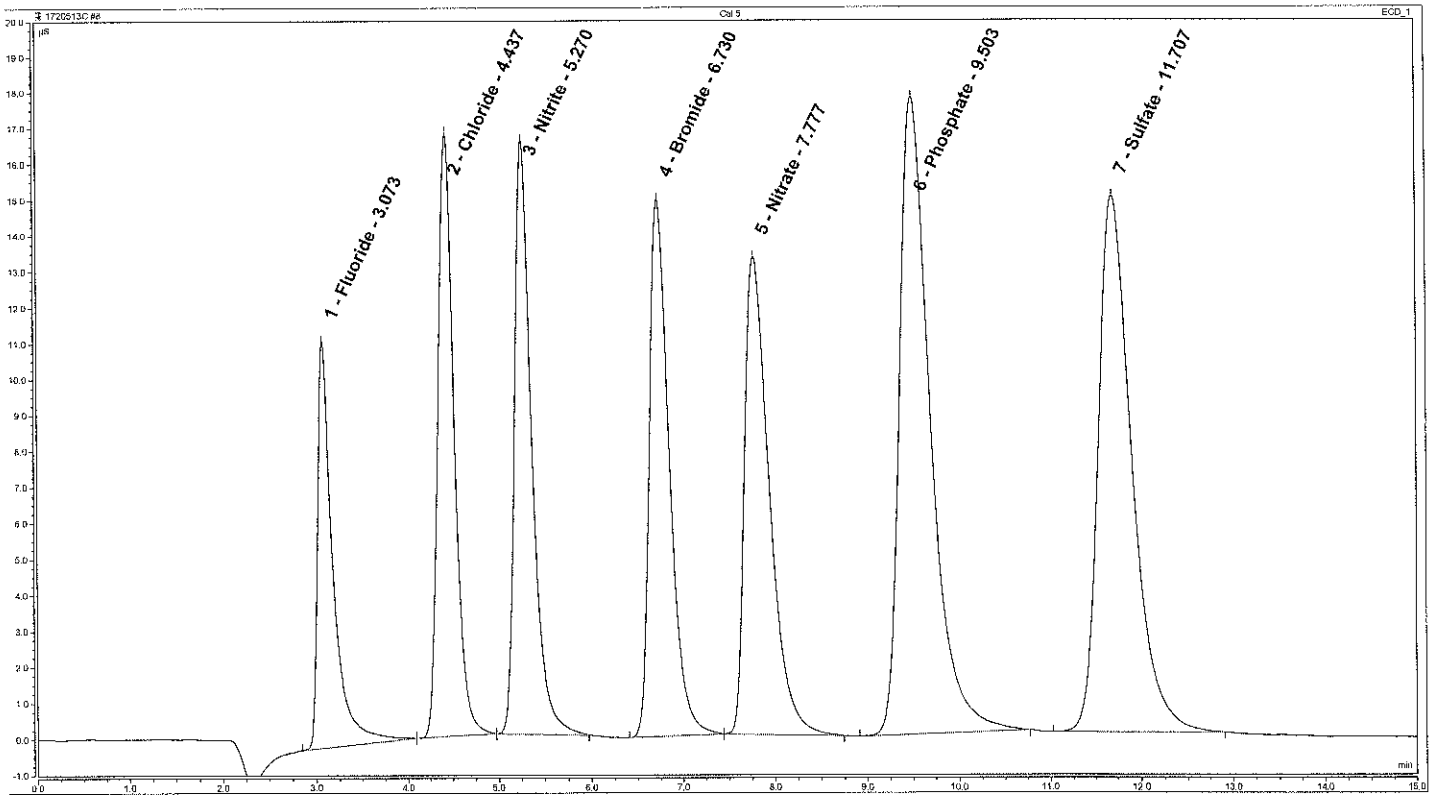
**Verifier:** James Mathiot, Group Leader **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **Cal 5** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 15:35** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Calibration Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **008** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 2.166 | 11.311 | 3.0365 |
| 2 | 4.44 | Chloride | BMB | 3.500 | 16.817 | 6.0619 |
| 3 | 5.27 | Nitrite | BMB | 3.571 | 16.541 | 3.0302 |
| 4 | 6.73 | Bromide | BMB | 3.790 | 14.962 | 15.1833 |
| 5 | 7.78 | Nitrate | BMB | 4.162 | 13.289 | 3.0386 |
| 6 | 9.50 | Phosphate | BMB | 6.940 | 17.765 | 15.2276 |
| 7 | 11.71 | Sulfate | BMB | 6.361 | 14.942 | 15.1804 |
| | | TOTAL: | | 30.49 | 105.63 | 60.76 |




**Analyst:** Clinton M. Wilson, Chemist

**Date:** JUL 24 2017

**Verifier:** James Mathiot, Group Leader

**Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 15:52** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **009** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 0.542 | 2.463 | 0.7680 |
| 2 | 4.40 | Chloride | BMB | 1.643 | 8.314 | 2.9000 |
| 3 | 5.25 | Nitrite | BMB | 0.787 | 3.565 | 0.7045 |
| 4 | 6.74 | Bromide | BMB | 1.782 | 6.770 | 7.2745 |
| 5 | 7.85 | Nitrate | BMB | 0.952 | 3.047 | 0.7389 |
| 6 | 9.54 | Phosphate | BMB | 3.038 | 7.599 | 7.4058 |
| 7 | 11.72 | Sulfate | BMB | 2.923 | 6.762 | 7.1663 |
| | | TOTAL: | | 11.67 | 38.52 | 26.96 |

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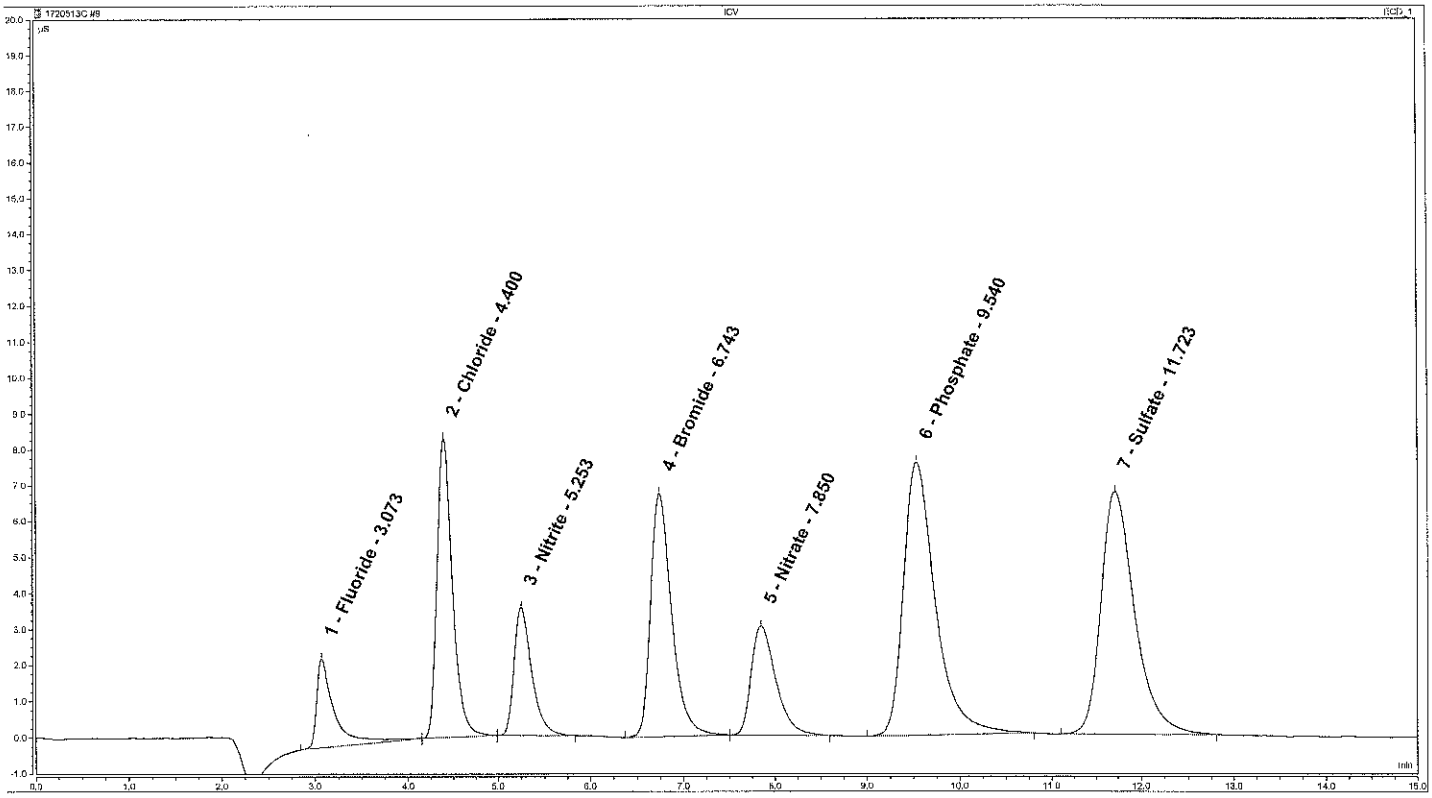



**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 24 2017

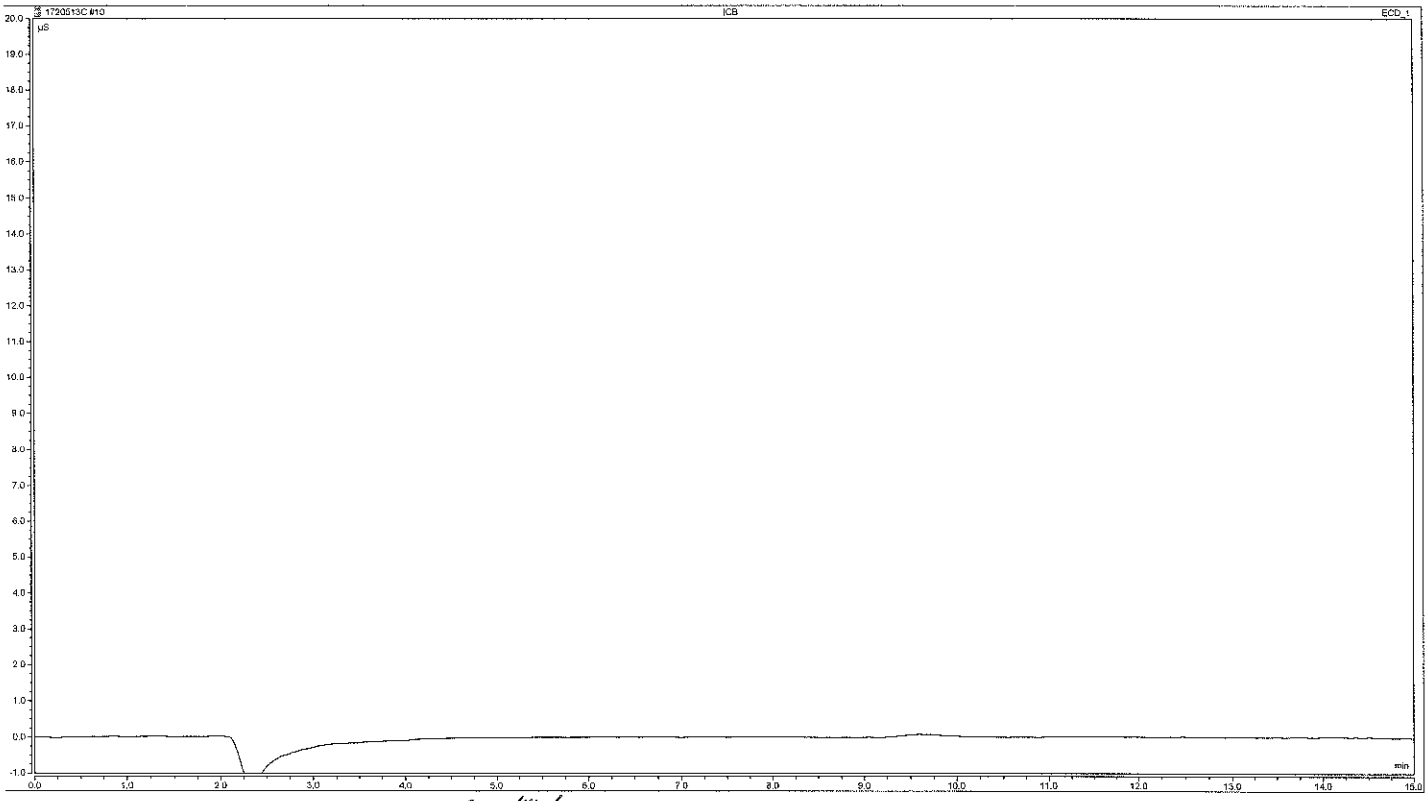
**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 16:10** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **010** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




Clinton M. Wilson
Chemist

**Analyst:**

JUL 24 2017

**Date:**

**Verifier:**

James Mathiot
Group Leader

**Date:**

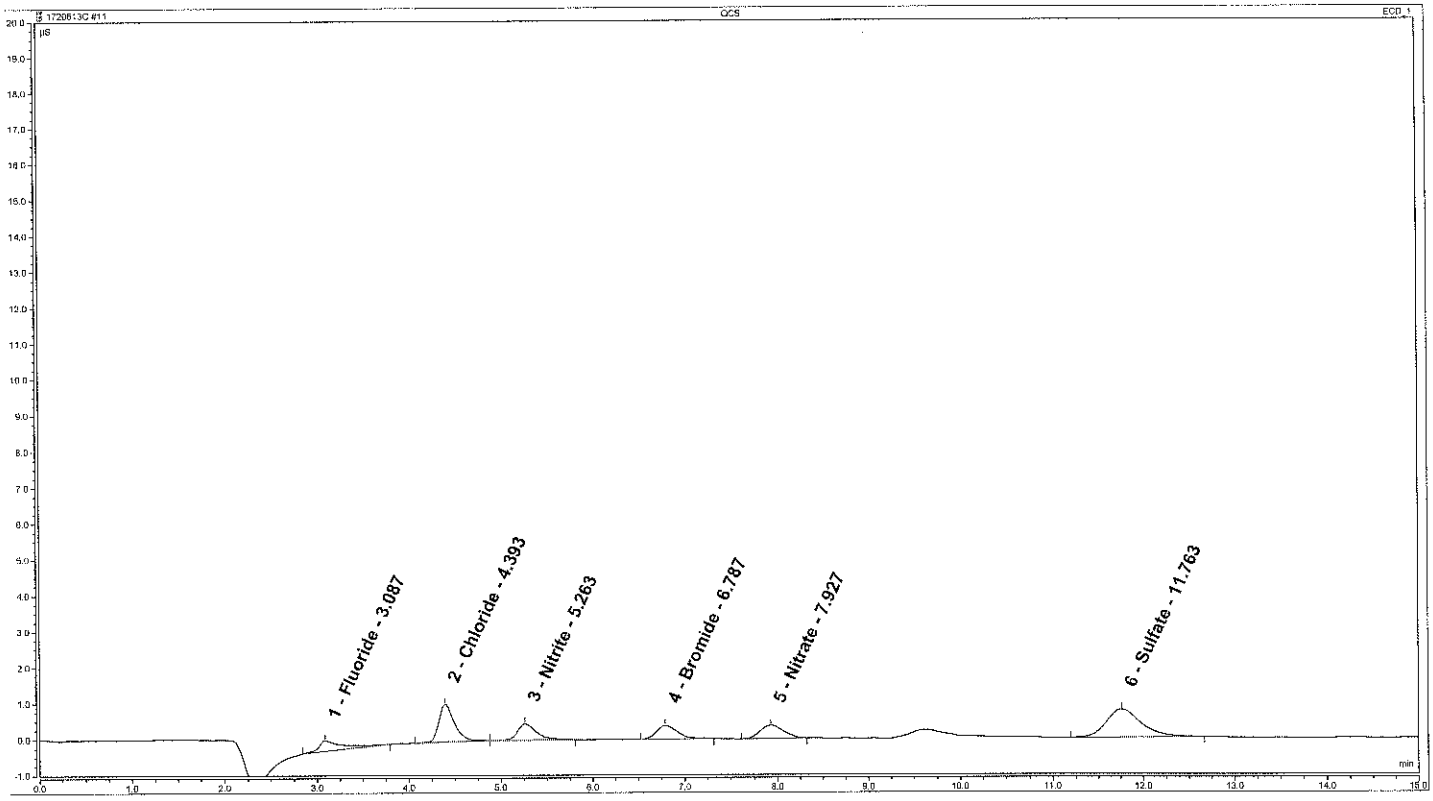
JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **QCS** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 16:27** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **011** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.09 | Fluoride | BMB | 0.088 | 0.288 | 0.1334 |
| 2 | 4.39 | Chloride | BMB | 0.208 | 1.052 | 0.4572 |
| 3 | 5.26 | Nitrite | BMB | 0.110 | 0.454 | 0.1396 |
| 4 | 6.79 | Bromide | BMB | 0.102 | 0.380 | 0.6582 |
| 5 | 7.93 | Nitrate | BMB | 0.108 | 0.369 | 0.1344 |
| 6 | 11.76 | Sulfate | BMB | 0.356 | 0.785 | 1.1852 |
| | | TOTAL: | | 0.97 | 3.33 | 2.71 |




**Analyst:** Clinton M. Wilson, Chemist — **Date:** JUL 24 2017

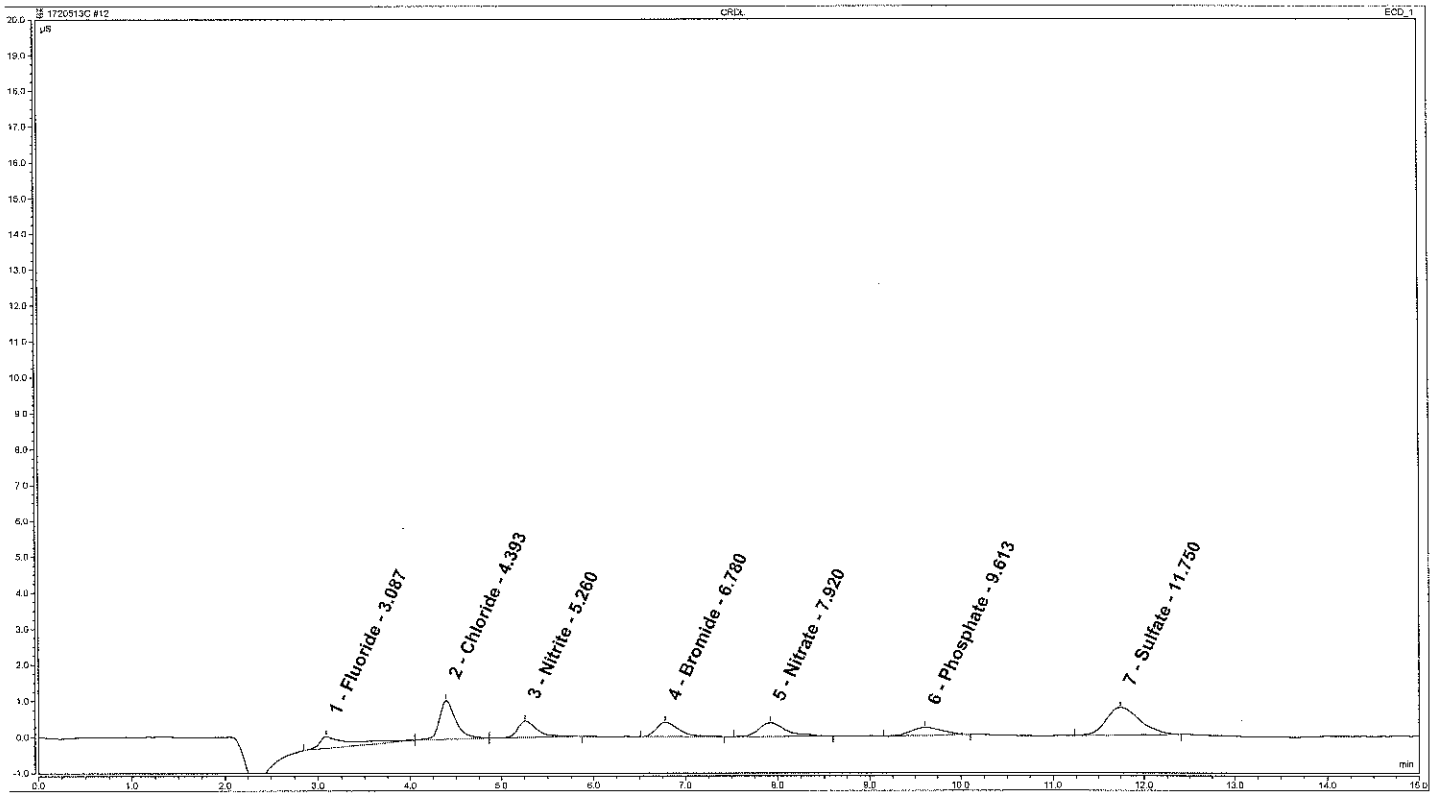
**Verifier:** James Mathiot, Group Leader — **Date:** JUL 25 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CRDL** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/24/2017 / 16:45** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **012** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720513C** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.09 | Fluoride | BMB | 0.124 | 0.327 | 0.1830 |
| 2 | 4.39 | Chloride | BMB | 0.220 | 1.070 | 0.4769 |
| 3 | 5.26 | Nitrite | BMB | 0.111 | 0.452 | 0.1398 |
| 4 | 6.78 | Bromide | BMB | 0.114 | 0.400 | 0.7069 |
| 5 | 7.92 | Nitrate | BMB | 0.132 | 0.383 | 0.1520 |
| 6 | 9.61 | Phosphate | BMB | 0.088 | 0.223 | 1.4912 |
| 7 | 11.75 | Sulfate | BMB | 0.332 | 0.770 | 1.1285 |
| | | TOTAL: | | 1.12 | 3.63 | 4.28 |




**Analyst:** Clinton M. Wilson Chemist

**Date:** JUL 24 2017

**Verifier:** James Mathiot Group Leader

**Date:** JUL 25 2017

eurofins | Lancaster Laboratories

# Inorganic Anions by Ion Chromatography

System Name ICS-1100 Analyst ZWE 24932

Instrument ID 19052 Run Start Date 7-26-17

IDAT Run Number ~~1720701D12~~ 1720701D13 Run Name 1720713

**ICV/CCV/LCSW (mg/L)**

Prep Book/Page: 258205/2

| Anion | T.V. | LCSW /ICV/CCV2 | DOD LCSW |
|---|---|---|---|
| Fluoride | .75 | .6713 - 0.828 | 0.66-0.84 |
| Chloride | 3.0 | 2.685 - 3.312 | 2.61-3.33 |
| Nitrite-N | .75 | .6713 - 0.828 | .6525-.8325 |
| Bromide | 7.5 | 6.71 - 8.28 | 6.825-8.25 |
| Nitrate-N | .75 | .6713 - 0.828 | 0.66-0.8325 |
| O-Phos as P | 7.5 | 6.71 - 8.28 | 6.0-8.7 |
| Sulfate | 7.5 | 6.71 - 8.28 | 6.525-8.4 |

**CCB/PBW (mg/L)**

| $F, NO_2$ | $NO_3$ | Cl | P | Br | $SO_4$ |
|---|---|---|---|---|---|
| < 0.05 | < 0.05 | <0.2 | < 0.2 | < 0.25 | < 0.3 |

**LCSS (mg/kg)**

Prep Book/Page: ———

| Anion | T.V. | Acceptance Range |
|---|---|---|
| Fluoride | 10 | 8.95 - 11.0 |
| Chloride | 20 | 17.9 - 22.08 |
| Nitrite-N | 10 | 8.95 - 11.0 |
| Bromide | 50 | 44.75 - 55.2 |
| Nitrate-N | 10 | 8.95 - 11.0 |
| O-Phos as P | 50 | 44.75 - 55.2 |
| Sulfate | 50 | 44.75 - 55.2 |

**CCB/PBS (mg/kg)**

| $F, NO_2, NO_3$ | Cl | Br | $P, SO_4$ |
|---|---|---|---|
| < 0.5 | < 5.0 | < 2.5 | 5.0 |

**Calibration Information – (mg/L)**

| Standard | $F, NO_2, NO_3$ | Cl | Br,P | $SO_4$ |
|---|---|---|---|---|
| Cal 1 | 0.1 | 0.4 | 0.5 | 1.0 |
| Cal 2 | 0.4 | 0.8 | 2.0 | 2.0 |
| Cal 3 | 1.0 | 2.0 | 5.0 | 5.0 |
| Cal 4 | 2.0 | 4.0 | 10.0 | 10.0 |
| Cal 5 | 3.0 | 6.0 | 15.0 | 15.0 |

**Check Standards True Values (mg/L)**

| | $F, NO_2, NO_3$ | Cl | $Br, P, SO_4$ |
|---|---|---|---|
| Low | 0.75 | 1.5 | 3.75 |
| High | 2.25 | 4.5 | 11.25 |

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

# Sequence Overview: 1720713

| No. | Injection Name | Batch Number | Position | Type | Level | Inject Time | Volume µL | Instrumentation Method | Processing Method | Weight | Dilution | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TEST | | G1 | Check Standard | | 07/26/2017 15:55:07 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 2 | LOW | | GE4 | Check Standard | | 07/26/2017 16:12:32 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 3 | HIGH | | GE5 | Check Standard | | 07/26/2017 16:29:58 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 4 | CCV2 | | G1 | Check Standard | | 07/26/2017 16:47:19 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 5 | CCB | | G8 | Check Standard | | 07/26/2017 17:04:39 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 6 | LCSW | 17207249113A-24932 | GE1 | Unknown | | 07/26/2017 17:22:00 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 7 | PBW | 17207249113A-24932 | GE8 | Unknown | | 07/26/2017 17:39:20 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 8 | 9119290-U | 17207249113A-24932 | BA1 | Unknown | | 07/26/2017 17:56:45 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 9 | 9119290-D | 17207249113A-24932 | BA1 | Unknown | | 07/26/2017 18:14:05 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 10 | 9119290-R | 17207249113A-24932 | BA2 | Unknown | | 07/26/2017 18:31:26 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 11 | 9119291 | 17207249113A-24932 | BA3 | Unknown | | 07/26/2017 18:48:48 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 12 | 9119292 | 17207249113A-24932 | BA4 | Unknown | | 07/26/2017 19:06:08 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 13 | 9119293 | 17207249113A-24932 | BA5 | Unknown | | 07/26/2017 19:23:30 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 14 | 9119294 | 17207249113A-24932 | BA6 | Unknown | | 07/26/2017 19:40:51 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 15 | 9119295 | 17207249113A-24932 | BA7 | Unknown | | 07/26/2017 19:58:12 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 16 | CCV2 | | G1 | Check Standard | | 07/26/2017 20:15:33 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 17 | CCB | | G8 | Check Standard | | 07/26/2017 20:32:54 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 18 | 9119296 | 17207249113A-24932 | BA8 | Unknown | | 07/26/2017 20:50:16 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 19 | 9119297 | 17207249113A-24932 | BB1 | Unknown | | 07/26/2017 21:07:37 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 20 | 9119298 | 17207249113A-24932 | BB2 | Unknown | | 07/26/2017 21:25:01 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 21 | 9119299 | 17207249113A-24932 | BB3 | Unknown | | 07/26/2017 21:42:22 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 22 | 9119300-U | 17207249113B-24932 | BB4 | Unknown | | 07/26/2017 21:59:42 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 23 | 9119300-D | 17207249113B-24932 | BB4 | Unknown | | 07/26/2017 22:17:03 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 24 | 9119300-R | 17207249113B-24932 | BB5 | Unknown | | 07/26/2017 22:34:23 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 25 | 9119301 | 17207249113B-24932 | BB6 | Unknown | | 07/26/2017 22:51:49 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 26 | 9120736 | 17207249113B-24932 | BB7 | Unknown | | 07/26/2017 23:09:10 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 27 | 9120736 | 17207249113B-24932 | BB8 | Unknown | | 07/26/2017 23:26:30 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 28 | CCV2 | | G1 | Check Standard | | 07/26/2017 23:43:52 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 29 | CCB | | G8 | Check Standard | | 07/27/2017 00:01:13 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 30 | 9120737 | 17207249113B-24932 | BC1 | Unknown | | 07/27/2017 00:18:34 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 31 | 9120737 | 17207249113B-24932 | BC2 | Unknown | | 07/27/2017 00:35:55 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 32 | 9120738 | 17207249113B-24932 | BC3 | Unknown | | 07/27/2017 00:53:15 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 33 | 9120738 | 17207249113B-24932 | BC4 | Unknown | | 07/27/2017 01:10:35 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 34 | 9120740 | 17207249113B-24932 | BC5 | Unknown | | 07/27/2017 01:27:55 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 35 | 9120740 | 17207249113B-24932 | BC6 | Unknown | | 07/27/2017 01:45:15 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 36 | 9120741 | 17207249113B-24932 | BC7 | Unknown | | 07/27/2017 02:02:35 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 37 | 9120741 | 17207249113B-24932 | BC8 | Unknown | | 07/27/2017 02:19:56 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 38 | 9120290 | 17207249113B-24932 | BD1 | Unknown | | 07/27/2017 02:37:17 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 39 | 9120291 | 17207249113B-24932 | BD2 | Unknown | | 07/27/2017 02:54:38 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 40 | CCV2 | | G1 | Check Standard | | 07/27/2017 03:12:00 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 41 | CCB | | G8 | Check Standard | | 07/27/2017 03:29:21 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |

# Sequence Overview: 1720713

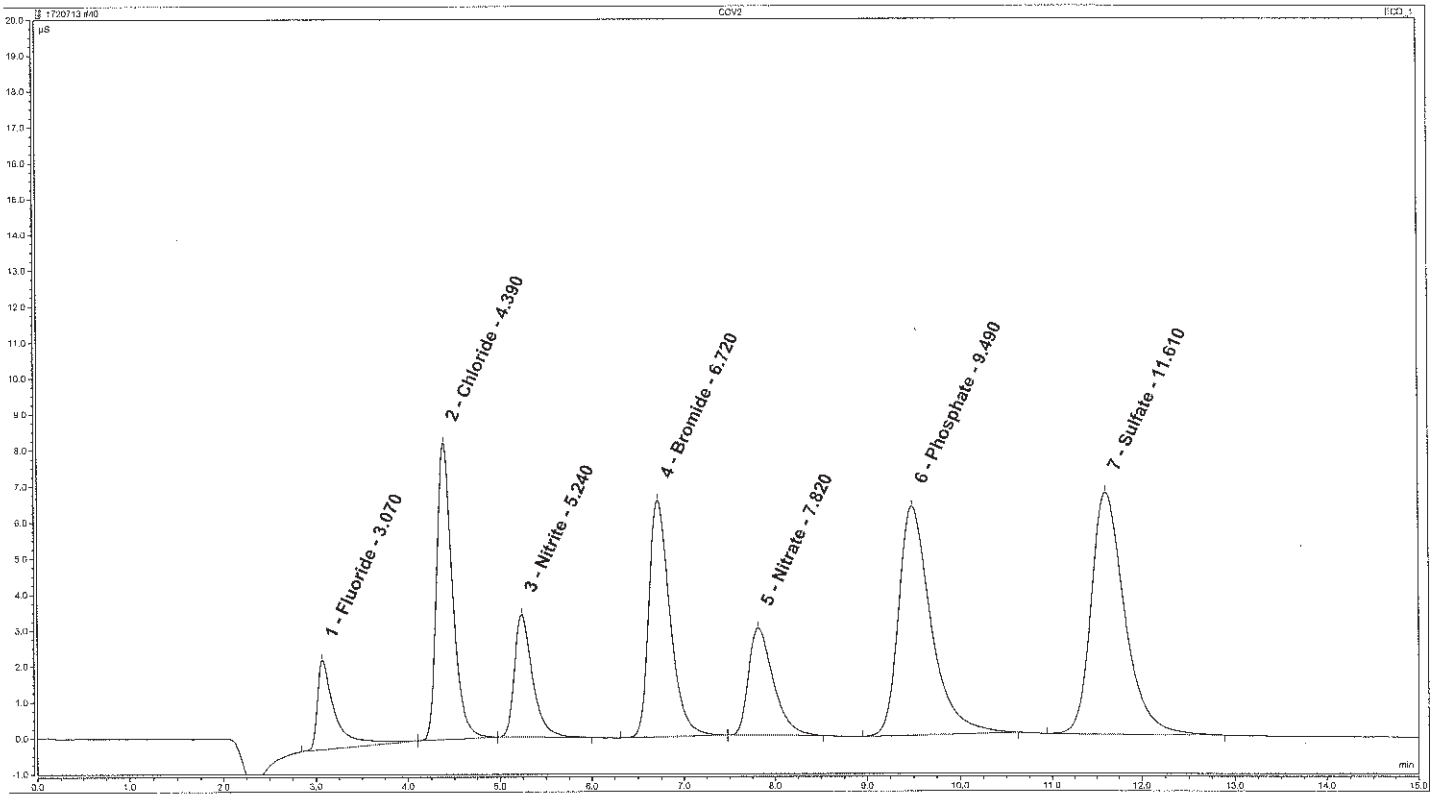
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 9120292 | 17207249113B-24932 | BD3 | Unknown | | 07/27/2017 03:46:42 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 43 | LCSW | 17207249213A-24932 | GE1 | Unknown | | 07/27/2017 04:04:07 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 44 | PBW | 17207249213A-24932 | GE8 | Unknown | | 07/27/2017 04:21:27 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 45 | 9120999-U | 17207249213B-24932 | RA1 | Unknown | | 07/27/2017 04:38:52 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 46 | 9120999-D | 17207249213B-24932 | RA1 | Unknown | | 07/27/2017 04:56:14 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 47 | 9120999-R | 17207249213B-24932 | RA2 | Unknown | | 07/27/2017 05:13:34 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 48 | 9121683-U | 17207249213A-24932 | RA3 | Unknown | | 07/27/2017 05:30:55 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 49 | 9121683-U | 17207249213A-24932 | RA4 | Unknown | | 07/27/2017 05:48:17 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 50 | ~~9121683-D~~ 9121684-D | 17207249213A-24932 | RA5 | Unknown | | 07/27/2017 06:05:38 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 51 | ~~9121683-D~~ 9121684-D | 17207249213A-24932 | RA6 | Unknown | | 07/27/2017 06:22:59 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 52 | CCV2 @ 5m/317 7/31/17 | | G1 | Check Standard | | 07/27/2017 06:40:19 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 53 | CCB | | G8 | Check Standard | | 07/27/2017 06:57:40 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 54 | 9121684-R | 17207249213A-24932 | RA7 | Unknown | | 07/27/2017 07:15:01 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 55 | 9121684-R | 17207249213A-24932 | RA8 | Unknown | | 07/27/2017 07:32:22 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 56 | 9122180 | 17207249213A-24932 | RB1 | Unknown | | 07/27/2017 07:49:42 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 57 | 9122180 | 17207249213A-24932 | RB2 | Unknown | | 07/27/2017 08:07:03 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 58 | 9121674 | 17207249213A-24932 | RB3 | Unknown | | 07/27/2017 08:24:23 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 59 | 9121674 | 17207249213A-24932 | RB4 | Unknown | | 07/27/2017 08:41:44 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 60 | 9121676 | 17207249213A-24932 | RB5 | Unknown | | 07/27/2017 08:59:04 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 61 | 9121676 | 17207249213A-24932 | RB6 | Unknown | | 07/27/2017 09:16:25 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 62 | 9121693 | 17207249213A-24932 | RB7 | Unknown | | 07/27/2017 09:33:45 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 63 | 9121693 | 17207249213A-24932 | RB8 | Unknown | | 07/27/2017 09:51:06 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 64 | CCV2 | | G1 | Check Standard | | 07/27/2017 10:08:26 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 65 | CCB | | G8 | Check Standard | | 07/27/2017 10:25:46 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 66 | 9121680 | 17207249213A-24932 | RC1 | Unknown | | 07/27/2017 10:43:07 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 67 | 9121680 | 17207249213A-24932 | RC2 | Unknown | | 07/27/2017 11:00:27 | 100.00 | Anions | Anions | 1.00 | 20 | Finished |
| 68 | 9120293 | 17207249213A-24932 | RC3 | Unknown | | 07/27/2017 11:17:48 | 100.00 | Anions | Anions | 1.00 | 5 | Finished |
| 69 | 9120294 | 17207249213A-24932 | RC4 | Unknown | | 07/27/2017 11:35:08 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 70 | CCV2 | | G1 | Check Standard | | 07/27/2017 11:52:29 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |
| 71 | CCB | | G8 | Check Standard | | 07/27/2017 12:09:50 | 100.00 | Anions | Anions | 1.00 | 1 | Finished |

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 03:12** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **040** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 0.557 | 2.489 | 0.7884 |
| 2 | 4.39 | Chloride | BMB | 1.651 | 8.233 | 2.9130 |
| 3 | 5.24 | Nitrite | BMB | 0.789 | 3.424 | 0.7062 |
| 4 | 6.72 | Bromide | BMB | 1.749 | 6.569 | 7.1447 |
| 5 | 7.82 | Nitrate | BMB | 0.946 | 2.992 | 0.7349 |
| 6 | 9.49 | Phosphate | BMB | 2.585 | 6.347 | 6.4968 |
| 7 | 11.61 | Sulfate | BMB | 2.919 | 6.710 | 7.1569 |
| | | TOTAL: | | 11.19 | 36.76 | 25.94 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

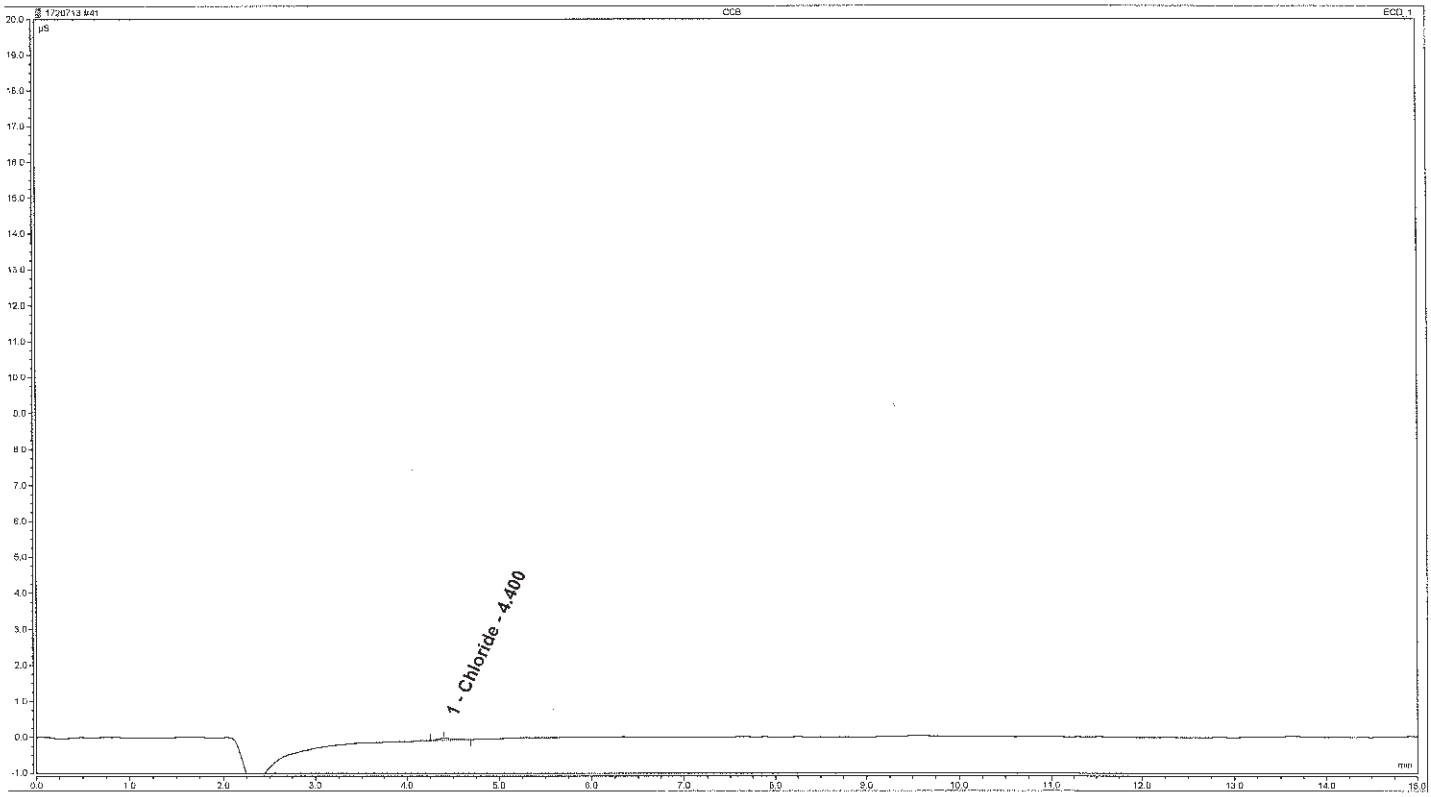
**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 03:29** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **041** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.40 | Chloride | BMB | 0.011 | 0.057 | 0.1219 |
| | | TOTAL: | | 0.01 | 0.06 | 0.12 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:**

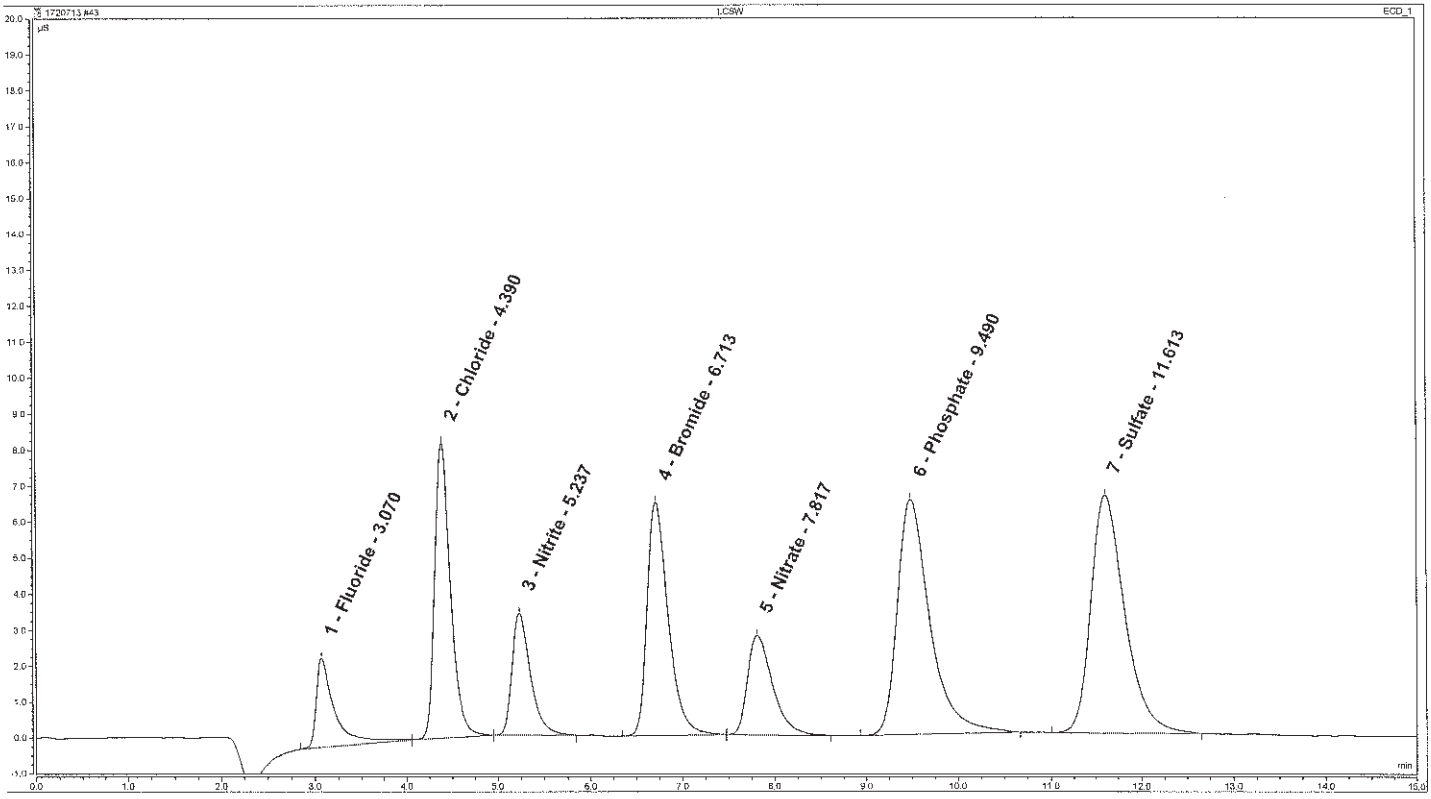
**Date:** Sandra J. Miller
Chemist
JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **LCSW** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 04:04** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **043** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 0.560 | 2.491 | 0.7921 |
| 2 | 4.39 | Chloride | BMB | 1.643 | 8.218 | 2.9002 |
| 3 | 5.24 | Nitrite | BMB | 0.777 | 3.399 | 0.6962 |
| 4 | 6.71 | Bromide | BMB | 1.726 | 6.491 | 7.0552 |
| 5 | 7.82 | Nitrate | BMB | 0.876 | 2.762 | 0.6849 |
| 6 | 9.49 | Phosphate | BMB | 2.675 | 6.535 | 6.6773 |
| 7 | 11.61 | Sulfate | BMB | 2.864 | 6.617 | 7.0297 |
| | | TOTAL: | | 11.12 | 36.51 | 25.84 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

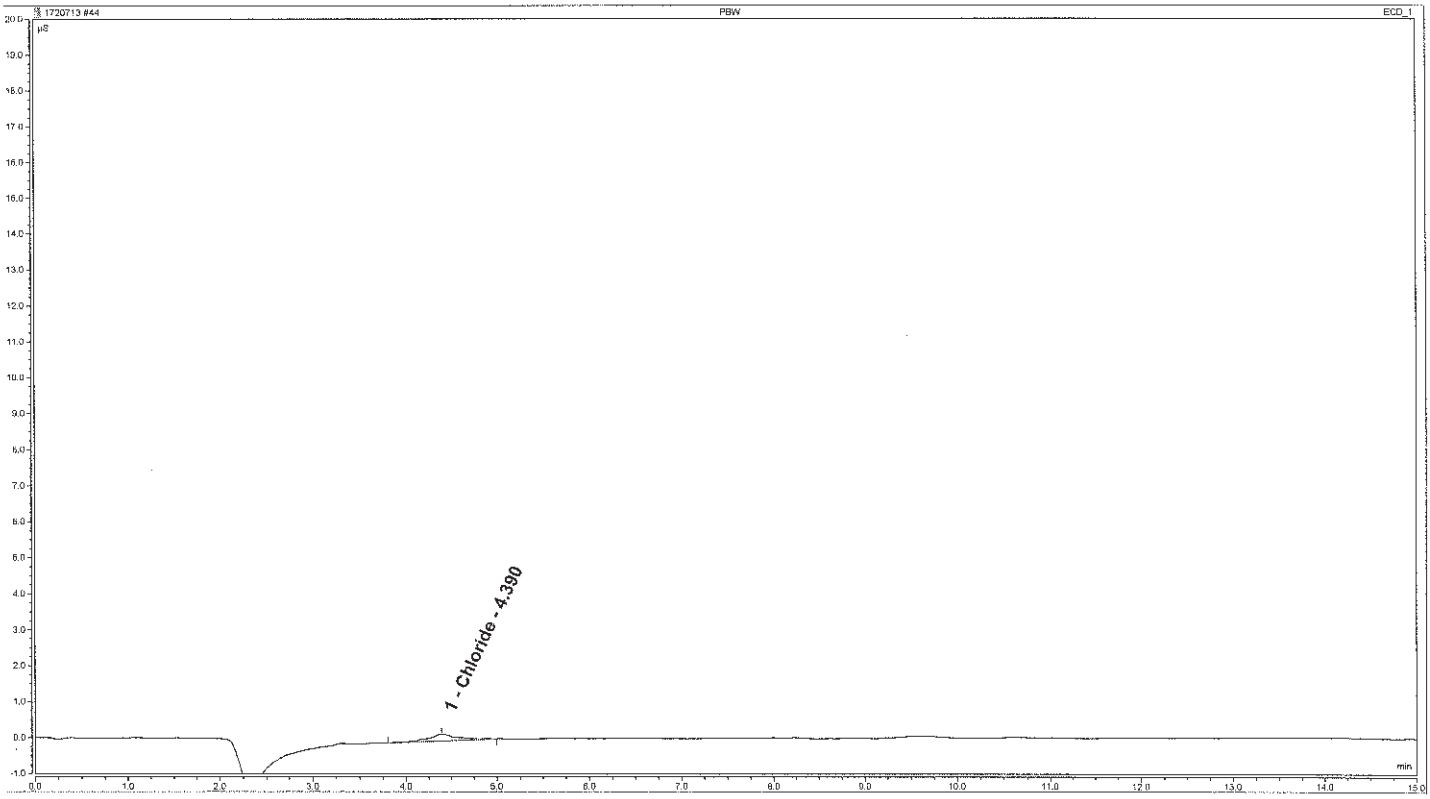
**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **PBW** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 04:21** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **044** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.39 | Chloride | BMB | 0.071 | 0.194 | 0.2236 |
| | | TOTAL: | | 0.07 | 0.19 | 0.22 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

**Date:** JUL 31 2017

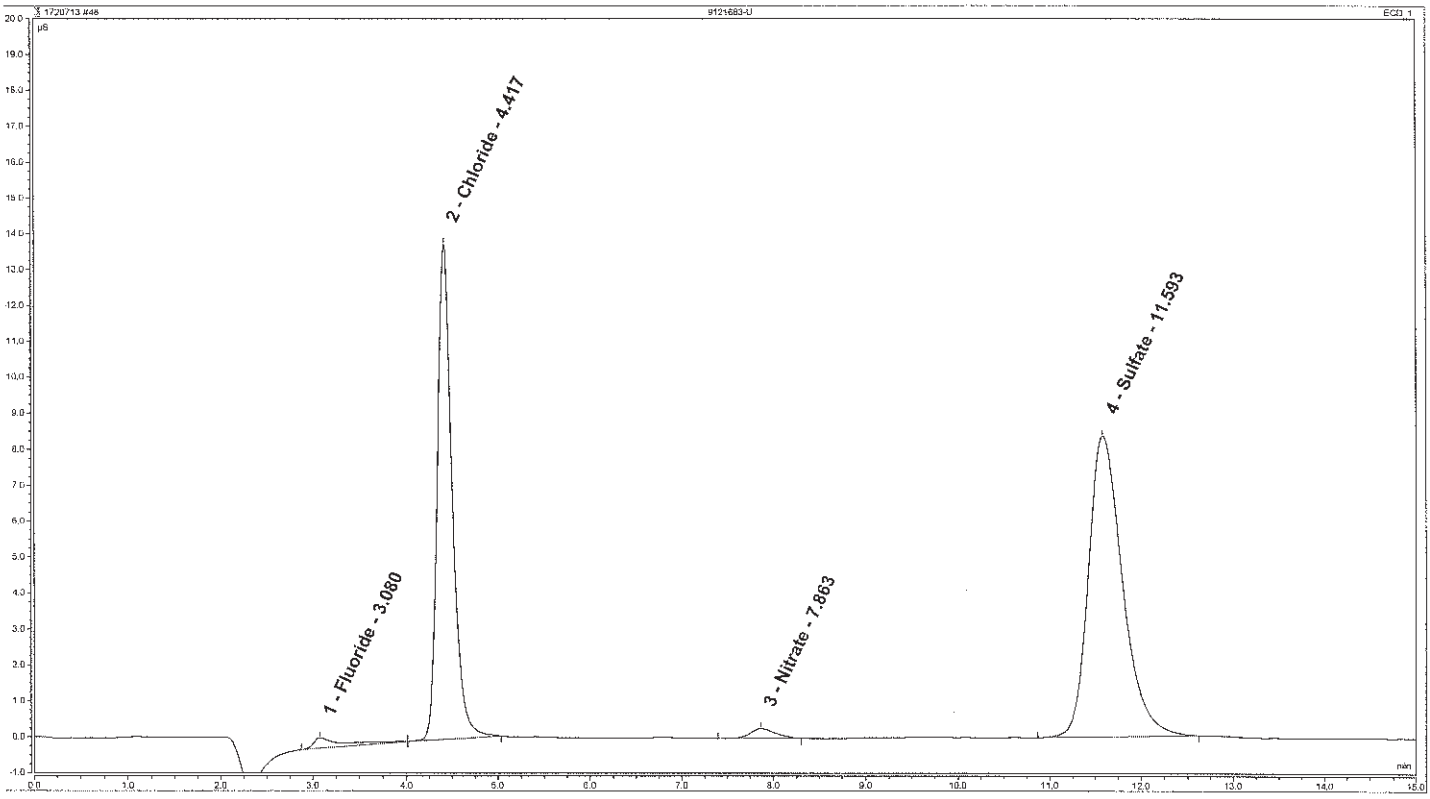
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121683-U** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 05:30** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **048** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.08 | Fluoride | BMB | 0.106 | 0.295 | 0.7888 |
| 2 | 4.42 | Chloride | BMB | 2.616 | 13.785 | 22.7795 |
| 3 | 7.86 | Nitrate | BMB | 0.084 | 0.273 | 0.5874 |
| 4 | 11.59 | Sulfate | BMB | 3.621 | 8.373 | 43.9705 |
| | | TOTAL: | | 6.43 | 22.73 | 68.13 |

$Cl, NO_3, F, SO_4$




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

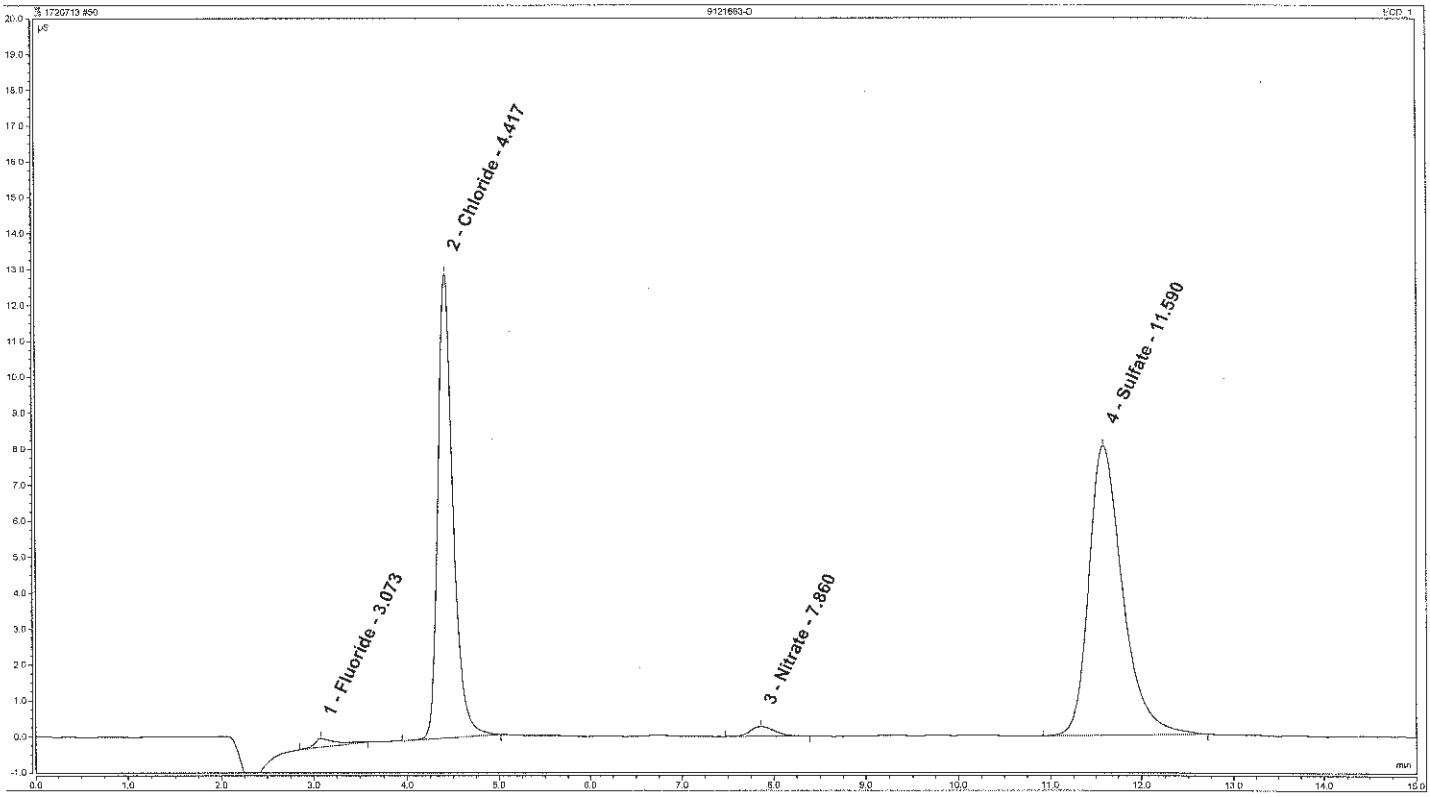
@ SM1847 7/31/17

| | | | |
|---|---|---|---|
| *Sample Name:* | ~~9121683-D~~ 9121686-D | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 06:05** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **050** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

Cl, $NO_3$, F, $SO_4$

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 0.062 | 0.245 | 0.4845 |
| 2 | 4.42 | Chloride | BMB | 2.472 | 12.959 | 21.5566 |
| 3 | 7.86 | Nitrate | BMB | 0.085 | 0.273 | 0.5887 |
| 4 | 11.59 | Sulfate | BMB | 3.501 | 8.051 | 42.5770 |
| | | TOTAL: | | 6.12 | 21.53 | 65.21 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:**
Sandra J. Miller
Chemist

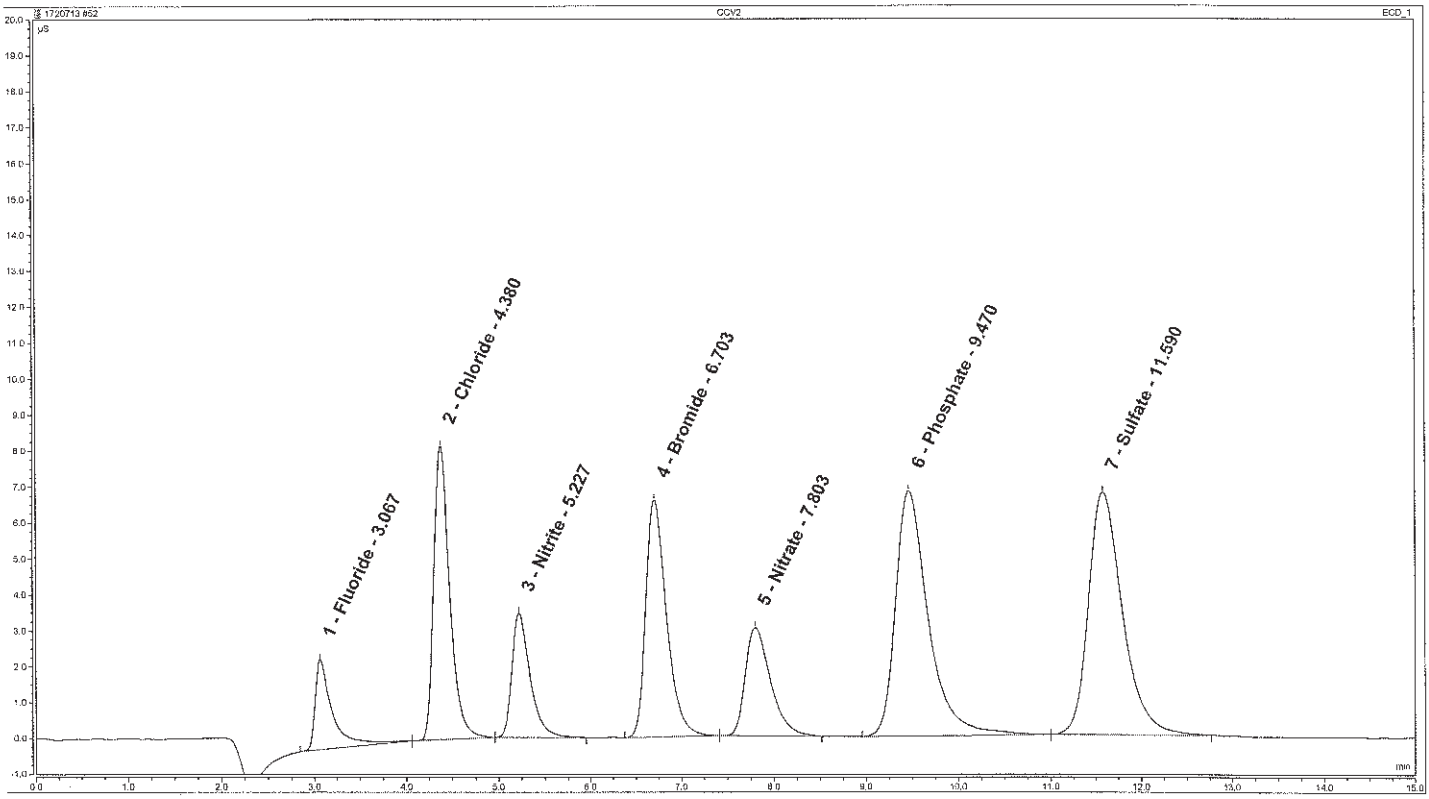
**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 06:40** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **052** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 0.547 | 2.516 | 0.7746 |
| 2 | 4.38 | Chloride | BMB | 1.648 | 8.184 | 2.9079 |
| 3 | 5.23 | Nitrite | BMB | 0.792 | 3.461 | 0.7092 |
| 4 | 6.70 | Bromide | BMB | 1.759 | 6.612 | 7.1852 |
| 5 | 7.80 | Nitrate | BMB | 0.962 | 3.021 | 0.7466 |
| 6 | 9.47 | Phosphate | BMB | 2.811 | 6.848 | 6.9506 |
| 7 | 11.59 | Sulfate | BMB | 2.943 | 6.780 | 7.2151 |
| | | TOTAL: | | 11.46 | 37.42 | 26.49 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

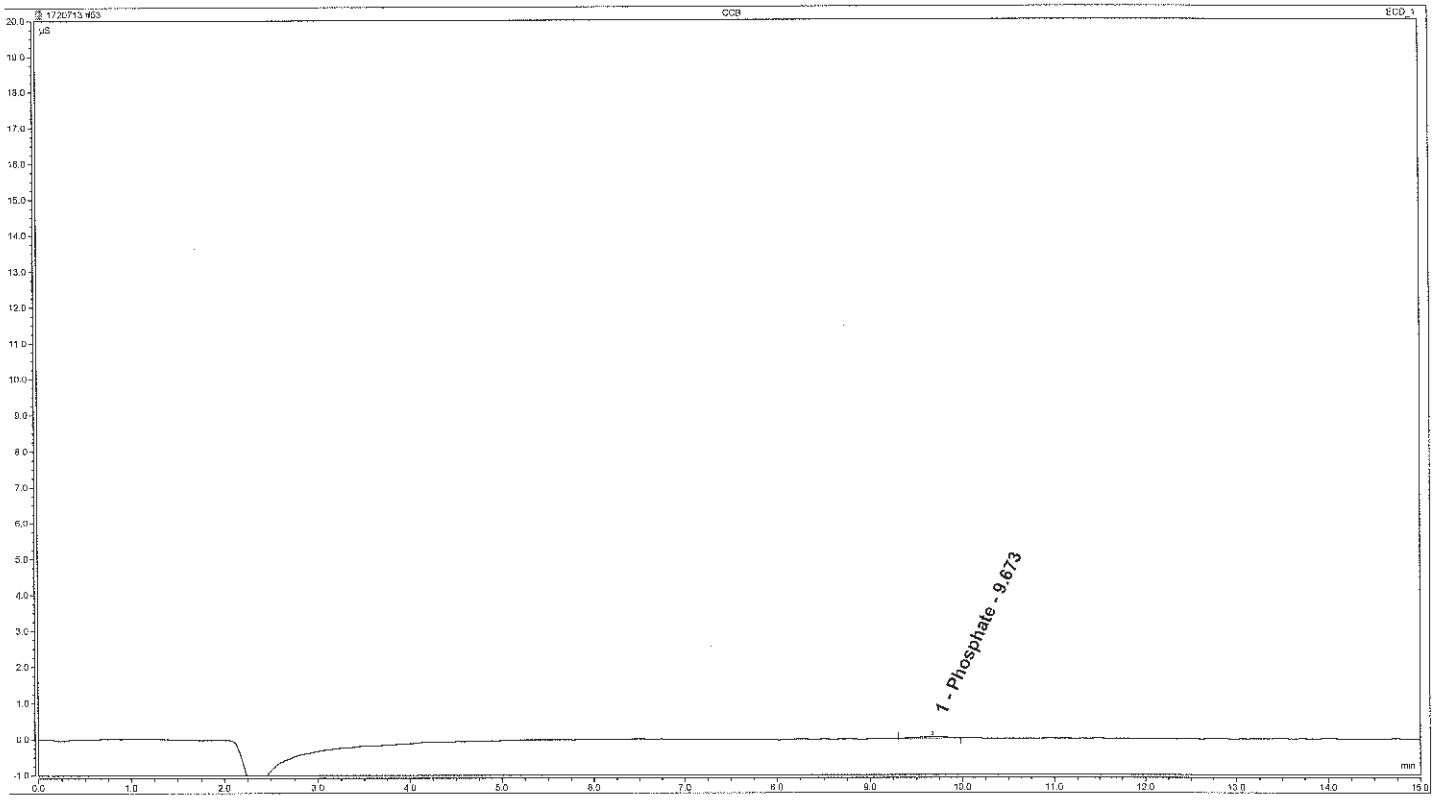
**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 06:57** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **053** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 9.67 | Phosphate | BMB | 0.015 | 0.041 | 1.3463 |
| | | TOTAL: | | 0.02 | 0.04 | 1.35 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:**

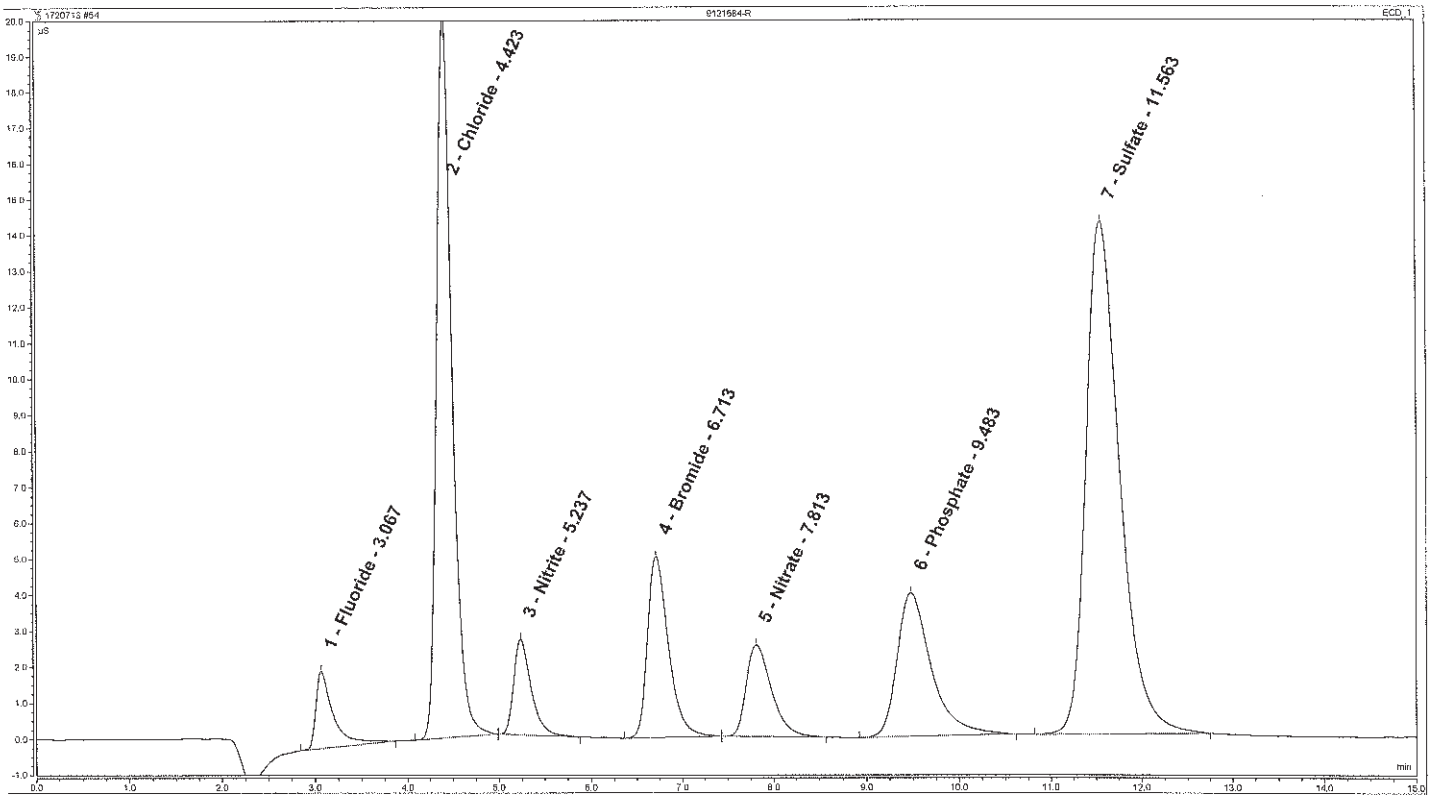
**Date:** Sandra J. Miller
Chemist
JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121684-R** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 07:15** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **054** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.07 | Fluoride | BMB | 0.460 | 2.141 | 3.2637 |
| 2 | 4.42 | Chloride | BMB | 3.957 | 20.154 | 34.2000 |
| 3 | 5.24 | Nitrite | BMB | 0.596 | 2.655 | 2.7254 |
| 4 | 6.71 | Bromide | BMB | 1.343 | 5.041 | 27.7250 |
| 5 | 7.81 | Nitrate | BMB | 0.808 | 2.541 | 3.1806 |
| 6 | 9.48 | Phosphate | BMB | 1.683 | 3.993 | 23.4424 |
| 7 | 11.56 | Sulfate | BMB | 6.120 | 14.263 | 73.0908 |
| | | TOTAL: | | 14.97 | 50.79 | 167.63 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
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Chemist

**Date:** JUL 31 2017

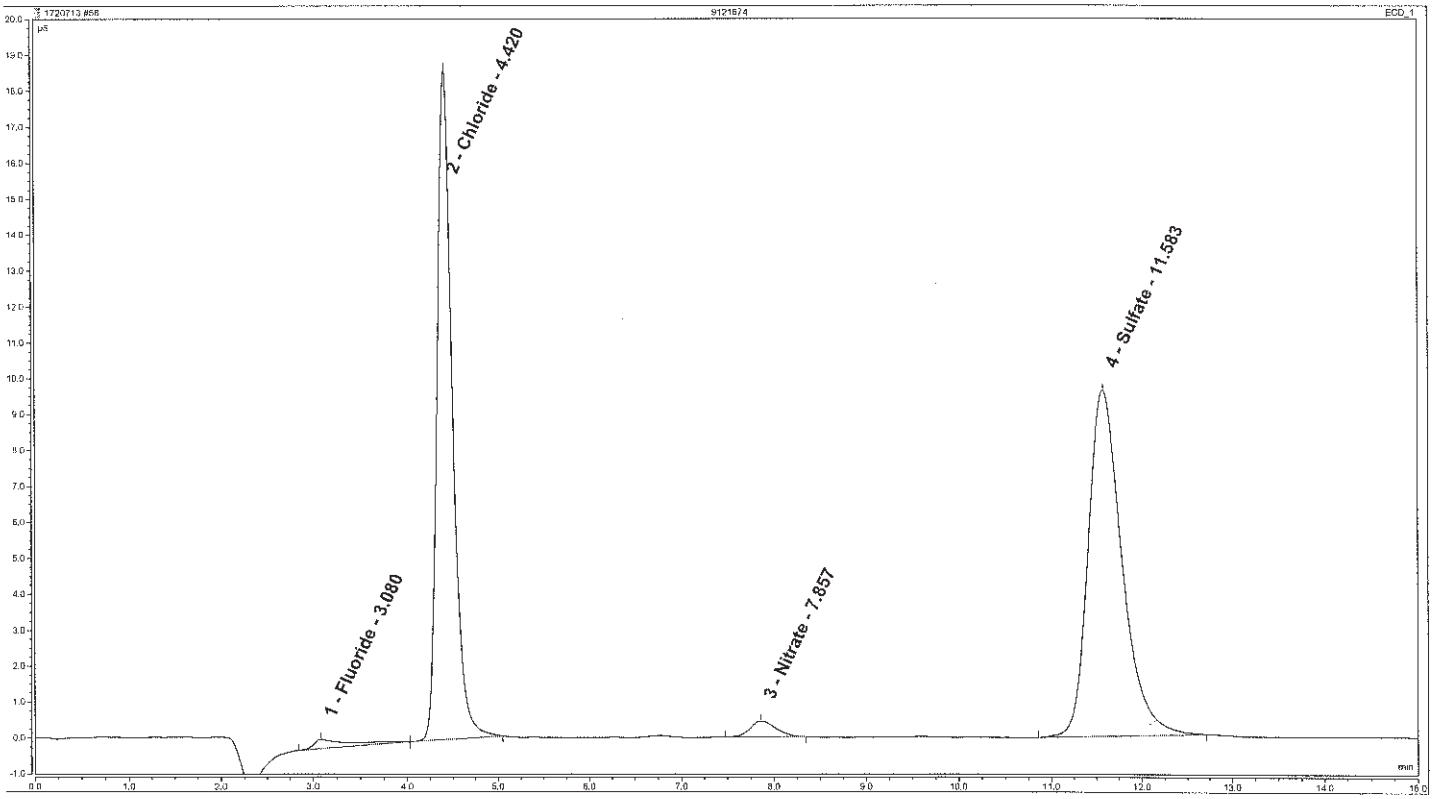
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121674** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 08:24** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **058** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

SO4, F

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.08 | Fluoride | BMB | 0.110 | 0.259 | 0.8210 |
| 2 | 4.42 | Chloride | BMB | 3.639 | 18.663 | 31.4935 |
| 3 | 7.86 | Nitrate | BMB | 0.140 | 0.437 | 0.7867 |
| 4 | 11.58 | Sulfate | BMB | 4.175 | 9.646 | 50.4299 |
| | | TOTAL: | | 8.06 | 29.00 | 83.53 |




**Analyst:** Zachary W. Enck
Zachery W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

**Date:** JUL 31 2017

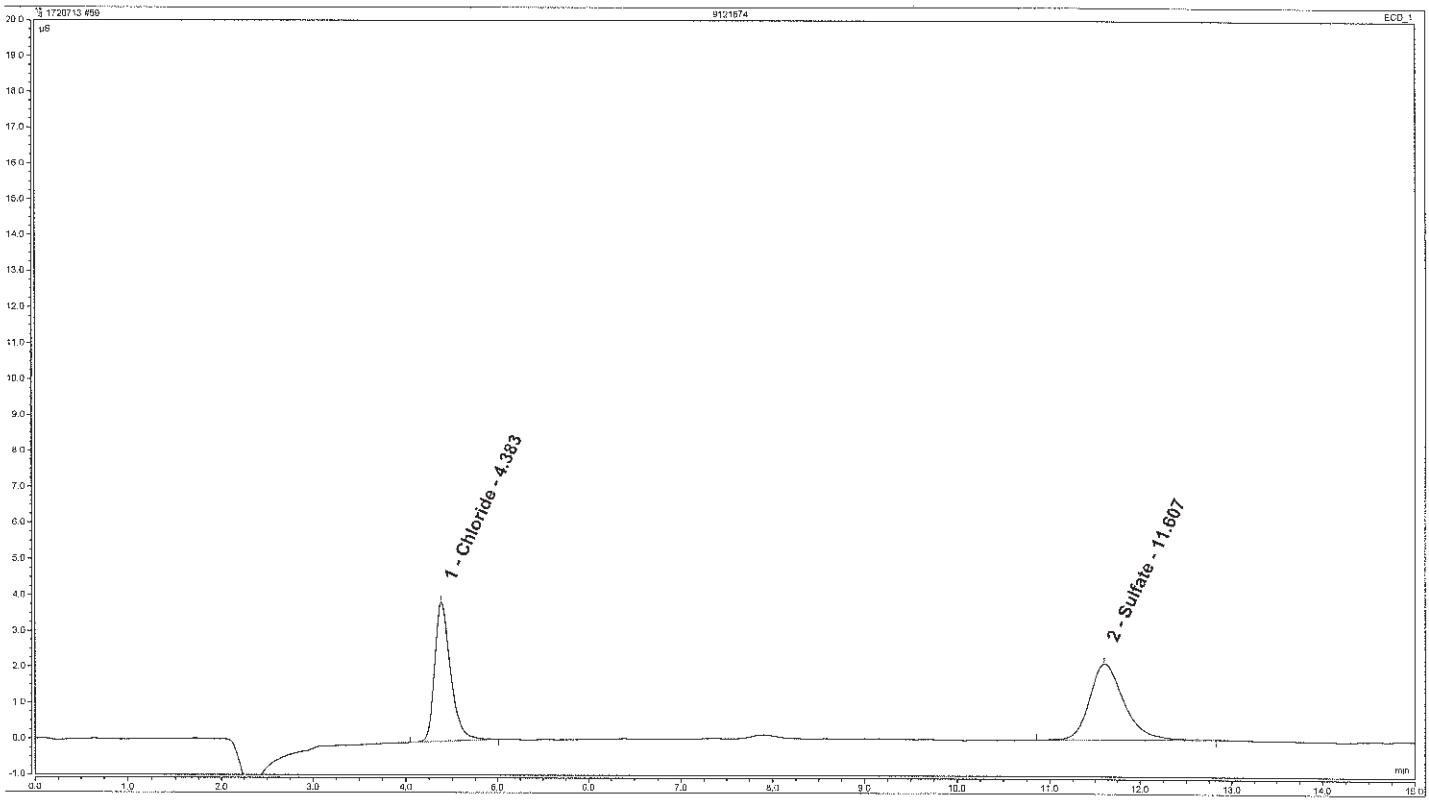
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121674** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 08:41** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **059** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

Cl

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.38 | Chloride | BMB | 0.769 | 3.866 | 28.2346 |
| 2 | 11.61 | Sulfate | BMB | 0.952 | 2.121 | 51.4458 |
| | | TOTAL: | | 1.72 | 5.99 | 79.68 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:**

**Date:** Sandra J. Miller
Chemist
JUL 31 2017

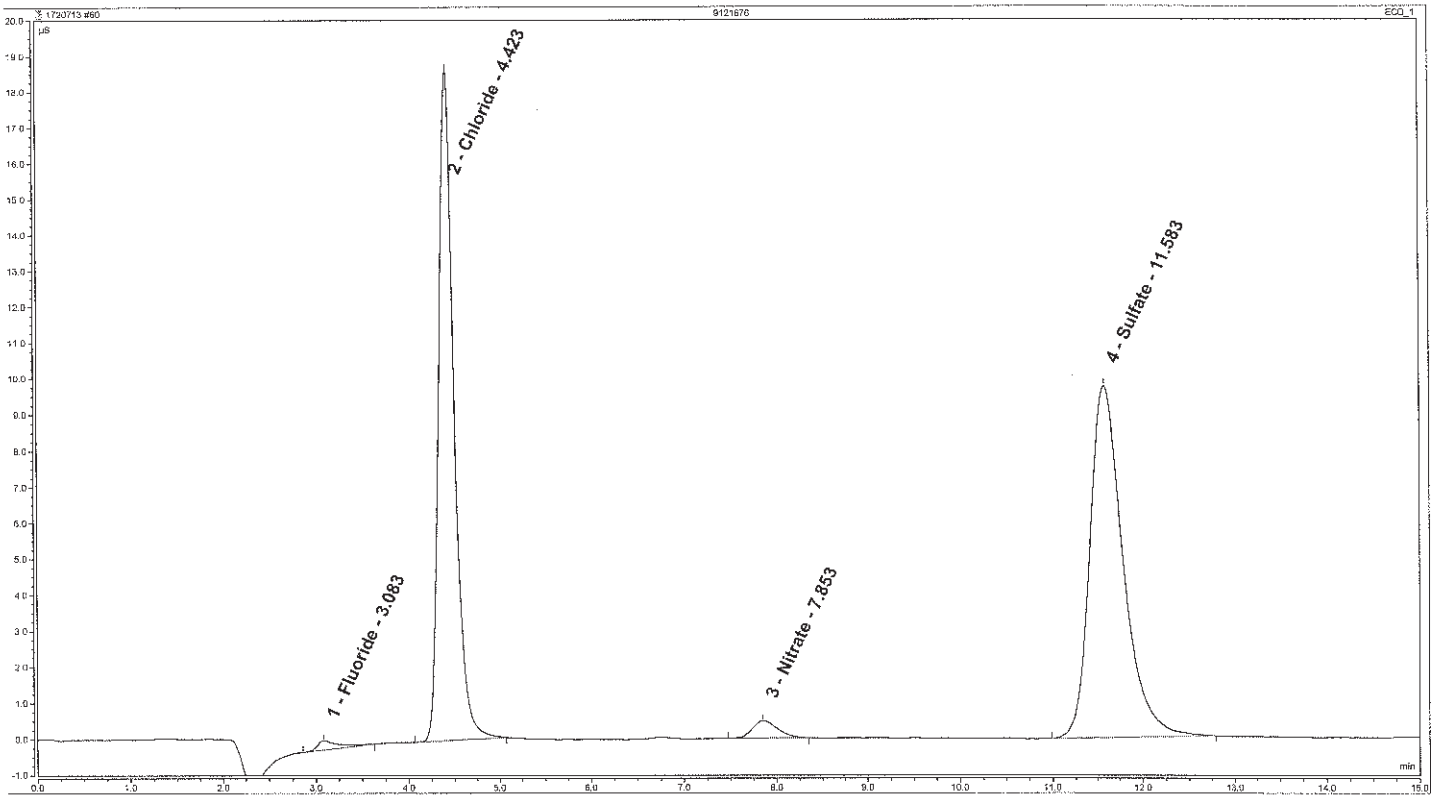
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121676** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 08:59** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **060** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

SO4, F

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.08 | Fluoride | BMB | 0.067 | 0.256 | 0.5189 |
| 2 | 4.42 | Chloride | BMB | 3.626 | 18.652 | 31.3819 |
| 3 | 7.85 | Nitrate | BMB | 0.152 | 0.485 | 0.8305 |
| 4 | 11.58 | Sulfate | BMB | 4.223 | 9.787 | 50.9858 |
| | | TOTAL: | | 8.07 | 29.18 | 83.72 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
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Chemist

**Date:** JUL 31 2017

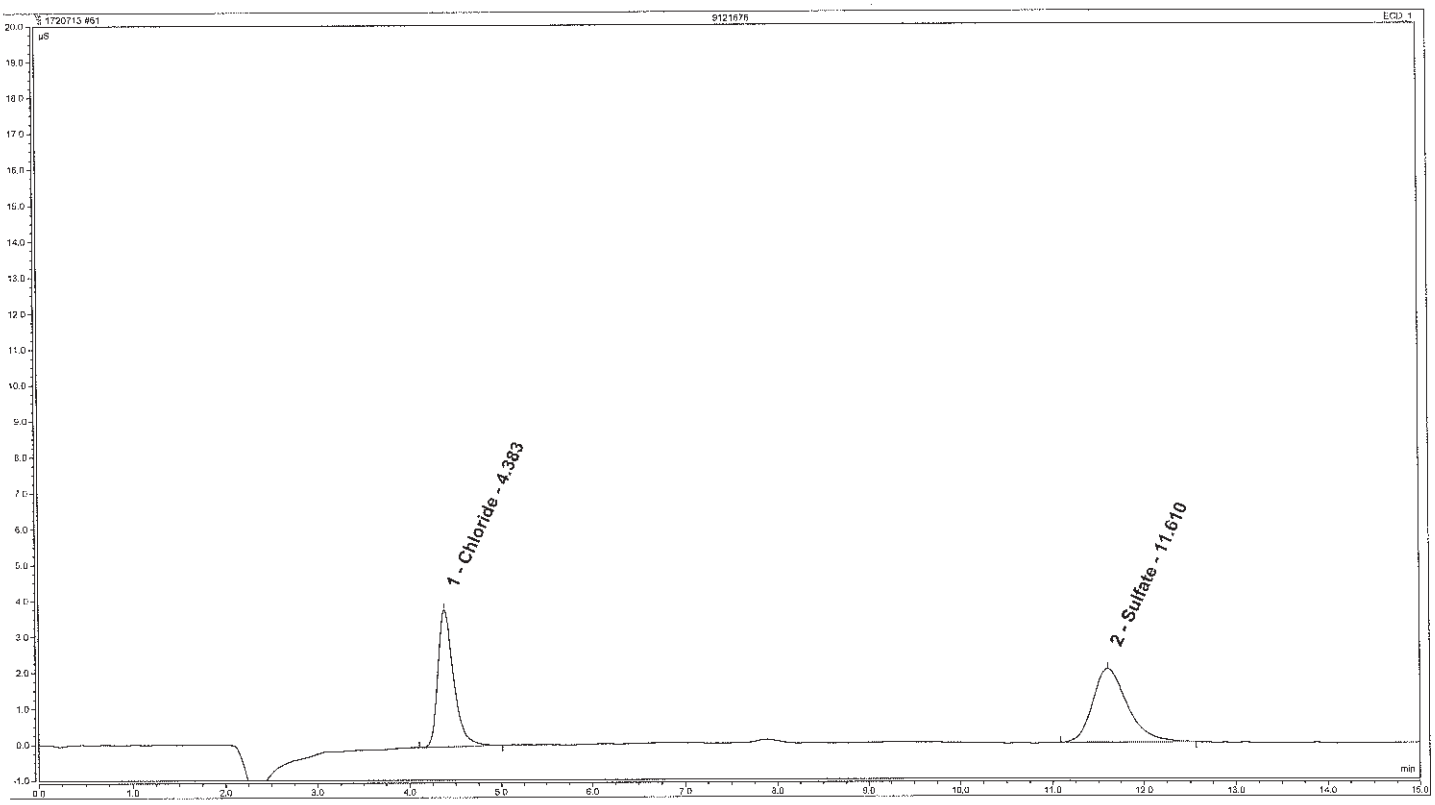
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121676** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 09:16** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **061** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

Cl

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.38 | Chloride | BMB | 0.760 | 3.804 | 27.9468 |
| 2 | 11.61 | Sulfate | BMB | 0.905 | 2.058 | 49.2844 |
| | | TOTAL: | | 1.67 | 5.86 | 77.23 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:**

**Date:** Sandra J. Miller
Chemist
JUL 31 2017

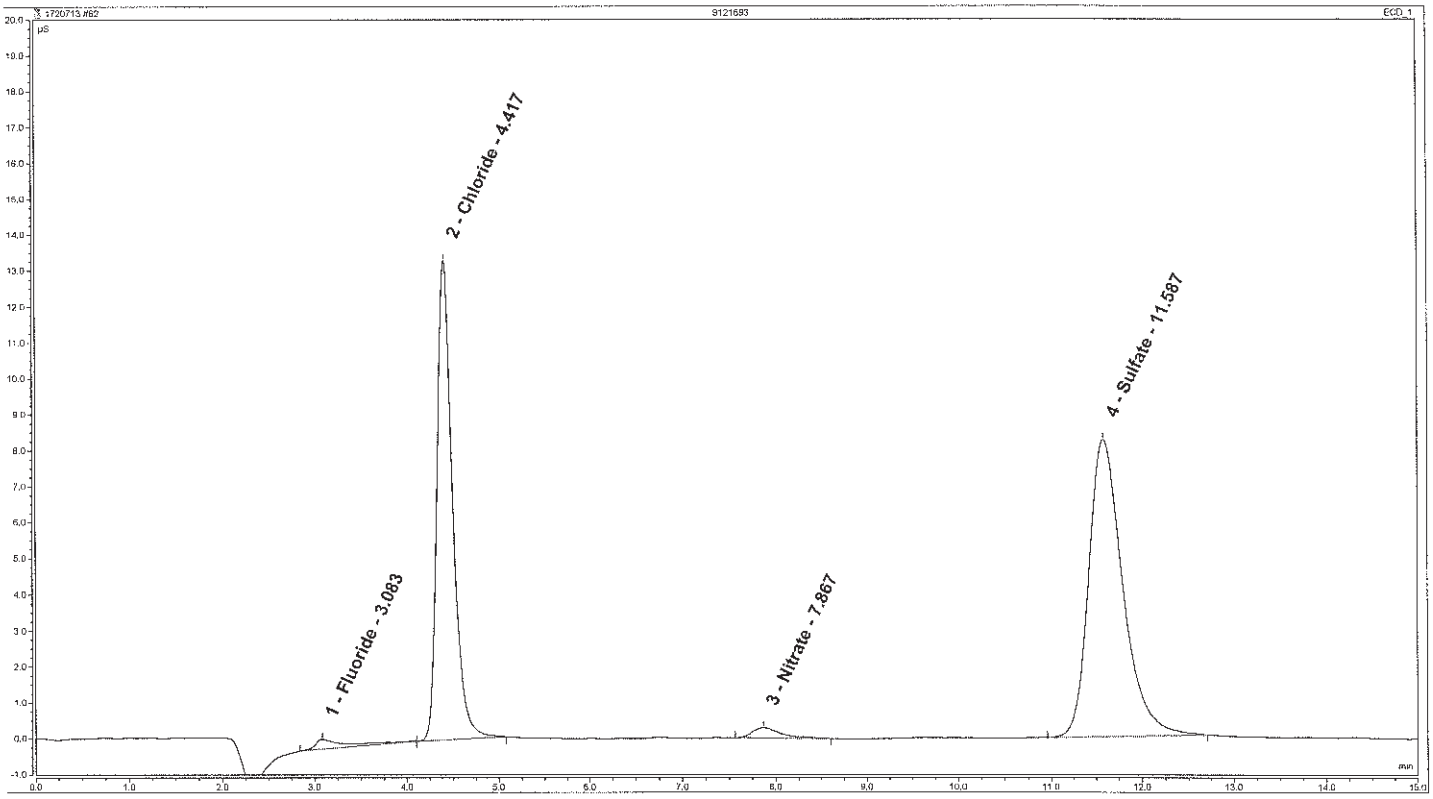
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121693** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 09:33** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **062** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

SO4, F

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.08 | Fluoride | BMB | 0.102 | 0.274 | 0.7608 |
| 2 | 4.42 | Chloride | BMB | 2.552 | 13.328 | 22.2387 |
| 3 | 7.87 | Nitrate | BMB | 0.100 | 0.285 | 0.6460 |
| 4 | 11.59 | Sulfate | BMB | 3.581 | 8.278 | 43.5072 |
| | | TOTAL: | | 6.34 | 22.16 | 67.15 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

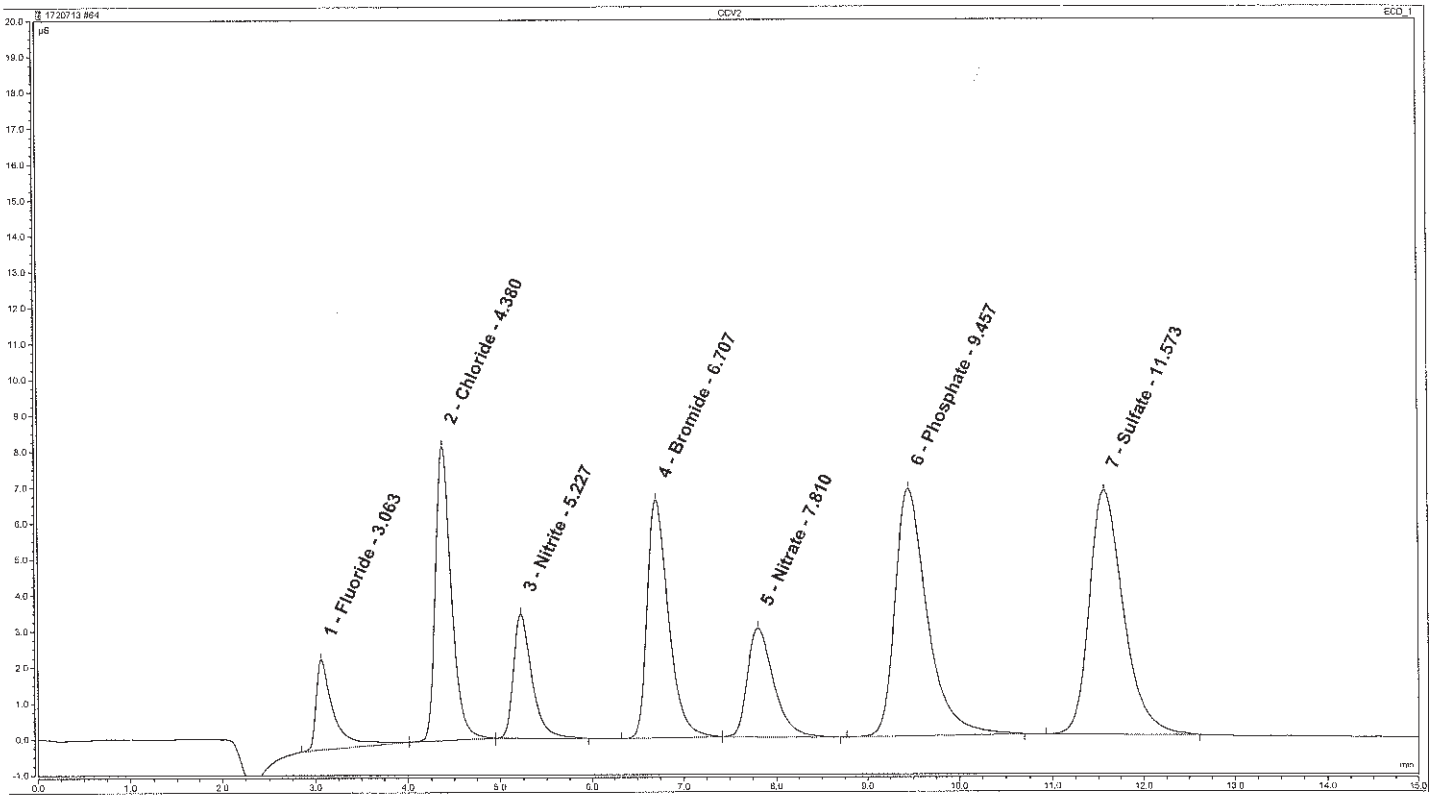
**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 10:08** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **064** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.06 | Fluoride | BMB | 0.552 | 2.522 | 0.7810 |
| 2 | 4.38 | Chloride | BMB | 1.656 | 8.186 | 2.9227 |
| 3 | 5.23 | Nitrite | BMB | 0.799 | 3.449 | 0.7144 |
| 4 | 6.71 | Bromide | BMB | 1.768 | 6.614 | 7.2192 |
| 5 | 7.81 | Nitrate | BMB | 0.981 | 3.028 | 0.7600 |
| 6 | 9.46 | Phosphate | BMB | 2.794 | 6.871 | 6.9172 |
| 7 | 11.57 | Sulfate | BMB | 2.930 | 6.776 | 7.1842 |
| | | TOTAL: | | 11.48 | 37.45 | 26.50 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
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Chemist

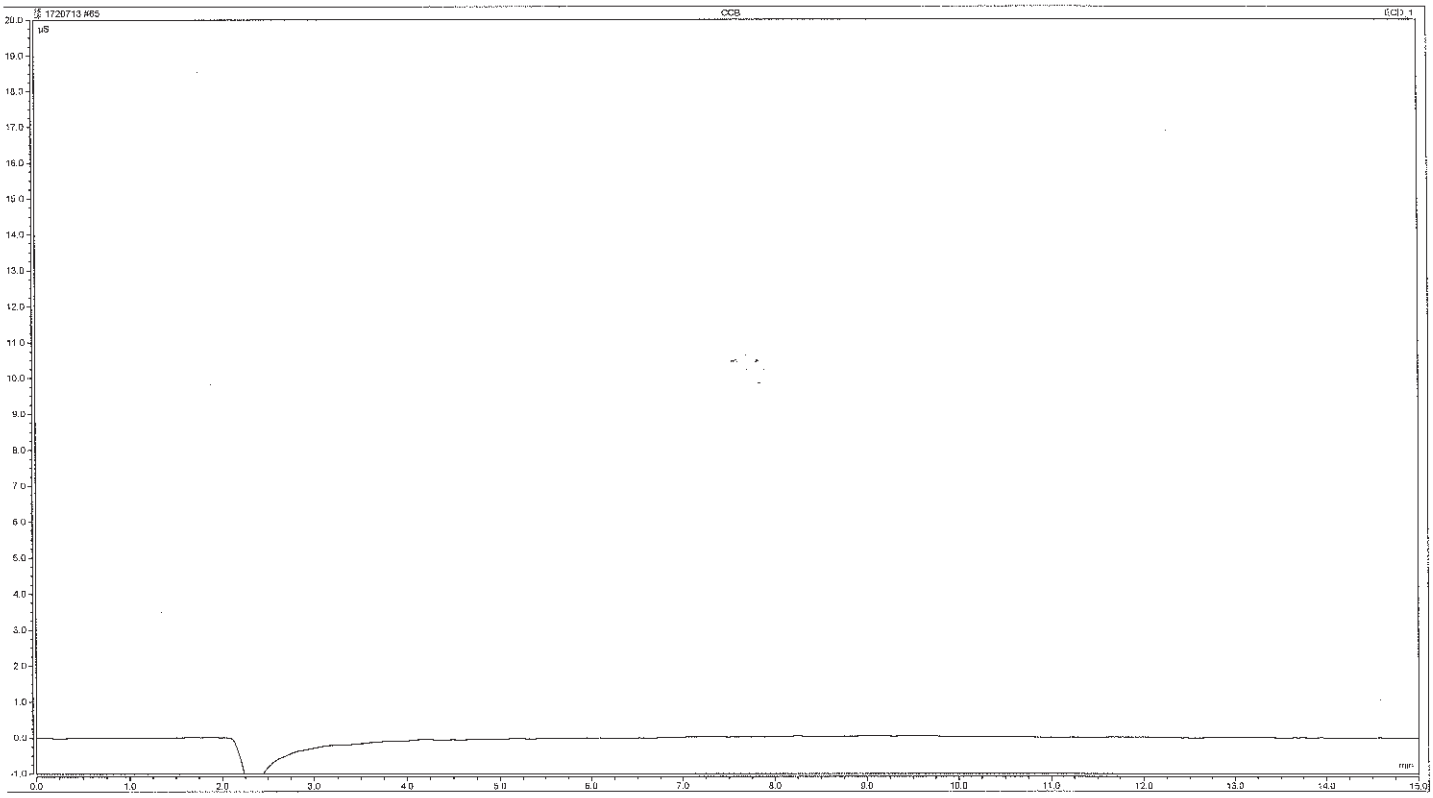
**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 10:25** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **065** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time | Peak Name | Peak Type | Area | Height | Amount |
|---|---|---|---|---|---|---|
| | min | | | µS*min | µS | n.a. |
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:**

**Date:** Sandra J. Miller
Chemist
JUL 31 2017

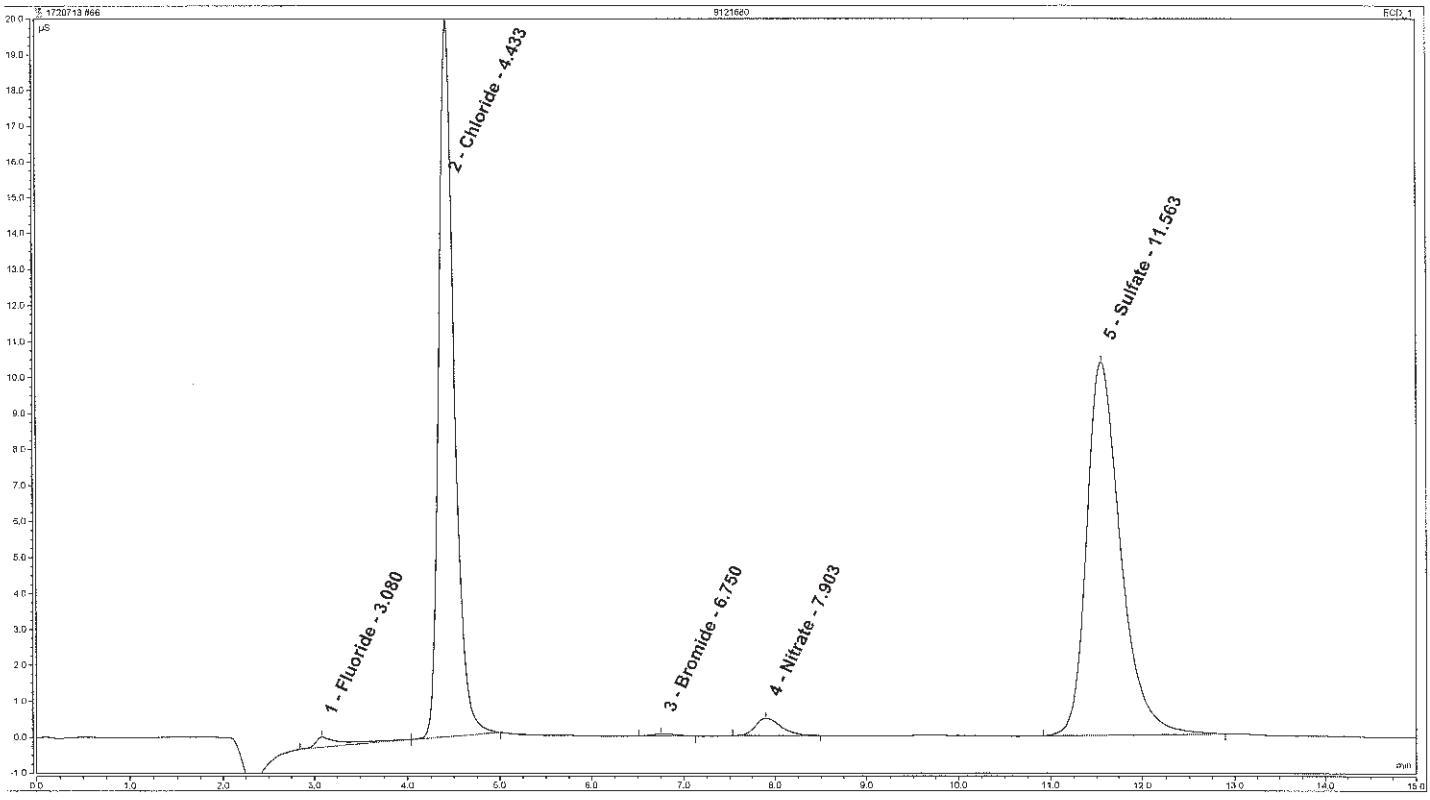
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121680** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 10:43** | *Dilution Factor:* | **5** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **066** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

SO4, F

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.08 | Fluoride | BMB | 0.096 | 0.278 | 0.7176 |
| 2 | 4.43 | Chloride | BMB | 3.900 | 19.960 | 33.7115 |
| 3 | 6.75 | Bromide | BMB | 0.018 | 0.061 | 1.6370 |
| 4 | 7.90 | Nitrate | BMB | 0.157 | 0.483 | 0.8492 |
| 5 | 11.56 | Sulfate | BMB | 4.522 | 10.395 | 54.4685 |
| | | TOTAL: | | 8.69 | 31.18 | 91.38 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

**Date:** JUL 31 2017

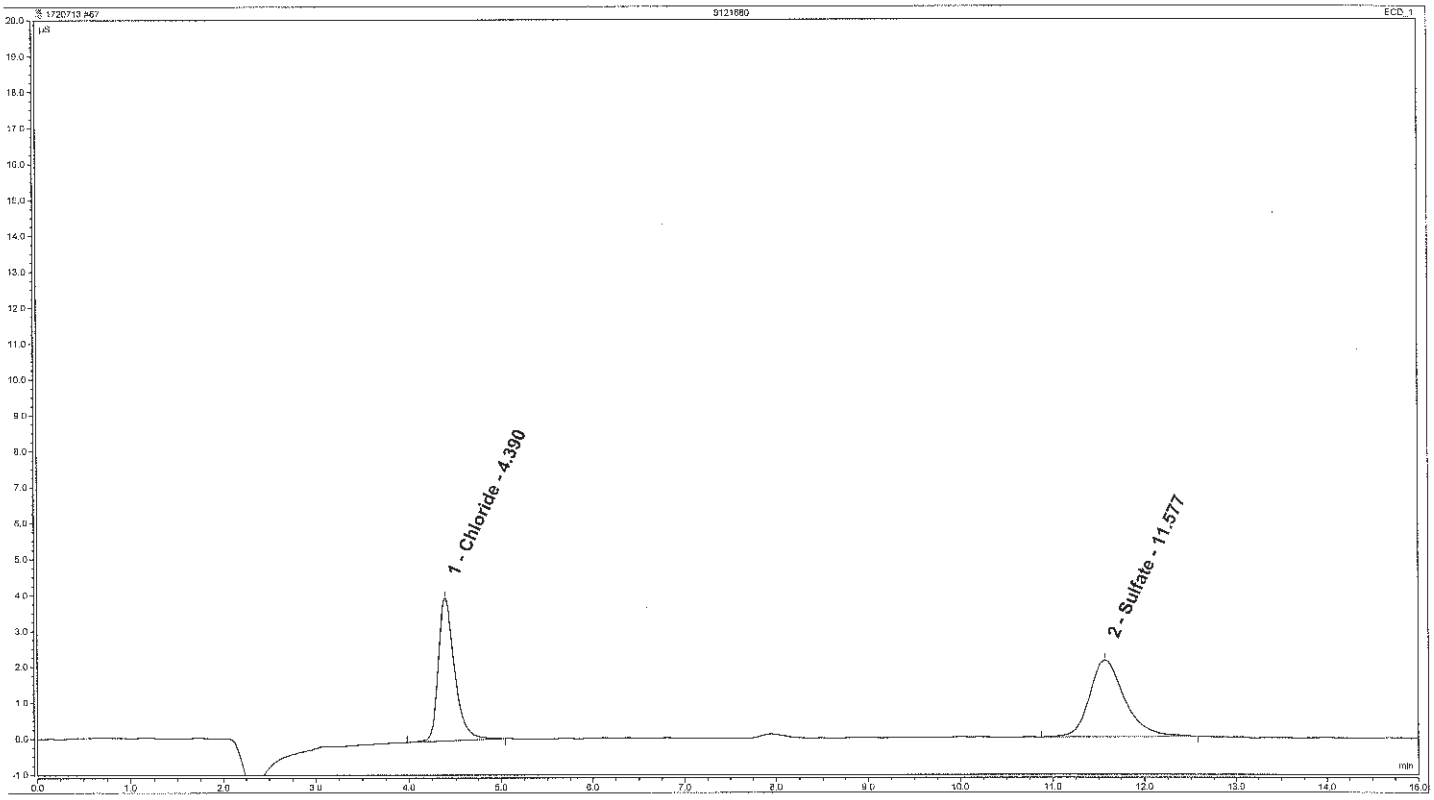
# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **9121680** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | **17207249213A-24932** | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 11:00** | *Dilution Factor:* | **20** |
| *Injection Type:* | **Unknown** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **067** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

Cl

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 4.39 | Chloride | BMB | 0.809 | 3.998 | 29.6138 |
| 2 | 11.58 | Sulfate | BMB | 0.947 | 2.146 | 51.2562 |
| | | TOTAL: | | 1.76 | 6.14 | 80.87 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:**

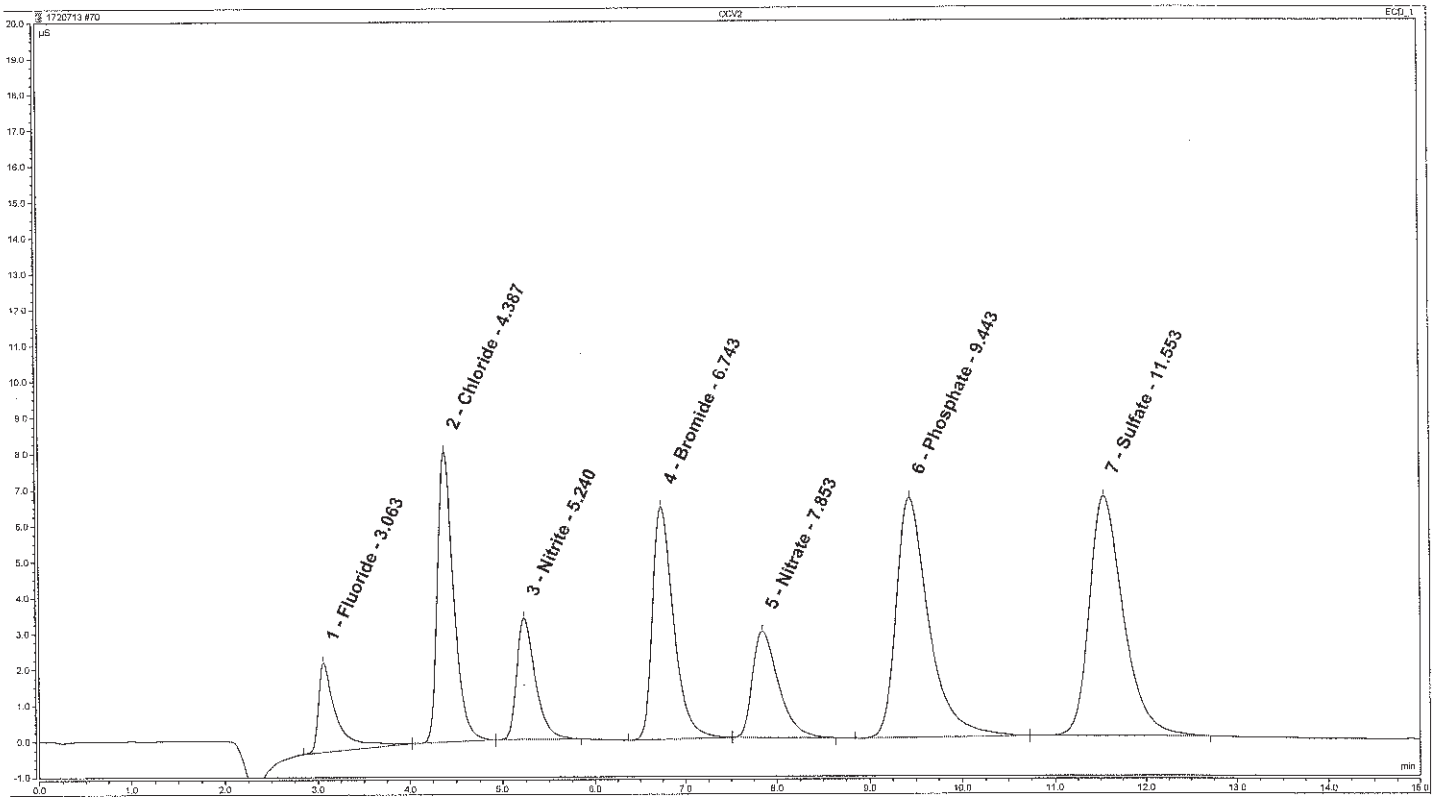
**Date:** Sandra J. Miller
Chemist
JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV2** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 11:52** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **070** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount |
|---|---|---|---|---|---|---|
| 1 | 3.06 | Fluoride | BMB | 0.563 | 2.488 | 0.7974 |
| 2 | 4.39 | Chloride | BMB | 1.635 | 8.075 | 2.8860 |
| 3 | 5.24 | Nitrite | BMB | 0.779 | 3.392 | 0.6981 |
| 4 | 6.74 | Bromide | BMB | 1.755 | 6.487 | 7.1709 |
| 5 | 7.85 | Nitrate | BMB | 0.962 | 2.966 | 0.7467 |
| 6 | 9.44 | Phosphate | BMB | 2.744 | 6.696 | 6.8171 |
| 7 | 11.55 | Sulfate | BMB | 2.906 | 6.684 | 7.1284 |
| | | TOTAL: | | 11.35 | 36.79 | 26.24 |




**Analyst:** Zachary W. Enek
Zachary W. Enek
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

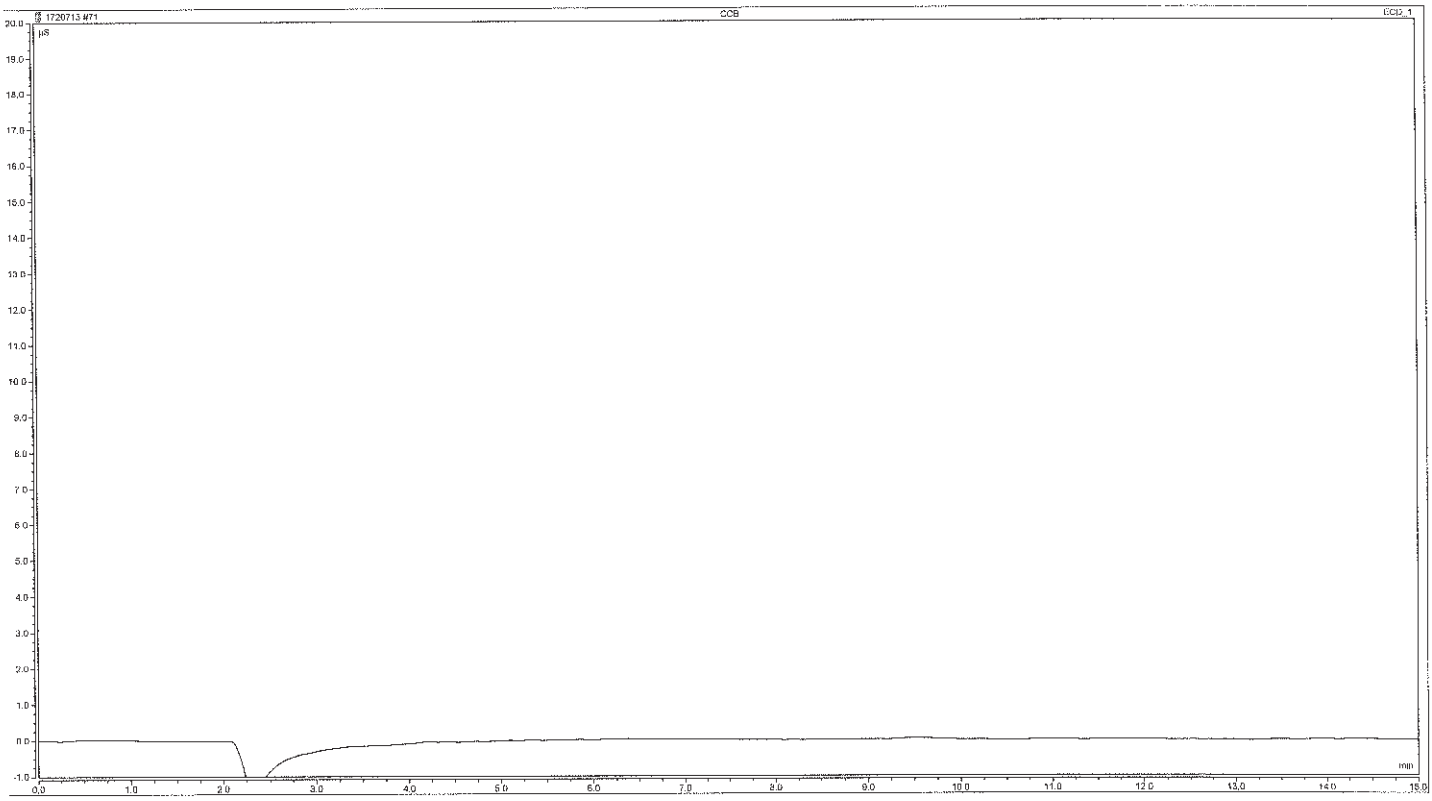
**Date:** JUL 31 2017

# Peak Integration Report: Anions by IC

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Inj. Vol.:* | **100.00** |
| *Batch Number-Analyst:* | | *Run Time:* | **15.00** |
| *Inj. Date / Time:* | **07/27/2017 / 12:09** | *Dilution Factor:* | **1** |
| *Injection Type:* | **Check Standard** | *Sample Weight:* | **1.00** |
| *Program:* | **Anions** | *Injection Number:* | **071** |
| *Instrument Number:* | **19052** | *Calibration Date:* | **7/24/2017** |
| *Channel:* | **ECD_1** | *Sequence File Name:* | **1720713** |
| *Column Type-Serial #:* | **AG14-170404416, AS14-160812218** | | |

**Peak Properties: All Components**

| No. | Time min | Peak Name | Peak Type | Area µS*min | Height µS | Amount n.a. |
|---|---|---|---|---|---|---|
| | | TOTAL: | | 0.00 | 0.00 | 0.00 |




**Analyst:** Zachary W. Enck
Zachary W. Enck
Chemist

**Date:** JUL 27 2017

**Verifier:** Sandra J. Miller
Sandra J. Miller
Chemist

**Date:** JUL 31 2017

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 07/27/17

# SDG# KR192

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1831410 | 9127589-9127592 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **08/16/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR192
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9127589 | GW228-173 | 07/27/2017 09:05 | 07/28/2017 14:10 |
| 9127590 | GW233-173 | 07/27/2017 10:08 | 07/28/2017 14:10 |
| 9127591 | GW234-173 | 07/27/2017 09:59 | 07/28/2017 14:10 |
| 9127592 | GWTS-TB01-072717 | 07/27/2017 14:10 | 07/28/2017 14:10 |

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

### 10398 8011 Master Master

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

### 07786 EDB Extraction (8011)

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

# Analysis Reports / Field Chain of Custody

**ANALYSIS REPORT**

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: August 10, 2017

**Project: Kirtland AFB**

Account #: 31675
Group Number: 1831410
SDG: KR192
PO Number: 14800
State of Sample Origin: NM

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

Respectfully Submitted,

Kay Hower

(717) 556-7364

**SAMPLE INFORMATION**

| Client Sample Description | Collection Information | ELLE# |
|---|---|---|
| GW228-173 Water | 07/27/2017 09:05 | 9127589 |
| GW233-173 Water | 07/27/2017 10:08 | 9127590 |
| GW234-173 Water | 07/27/2017 09:59 | 9127591 |
| GWTS-TB01-072717 Water | 07/27/2017 14:10 | 9127592 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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# Analysis Report

**Sample Description: GW228-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9127589**
**ELLE Group # 1831410**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/27/2017 09:05 by PF

Submitted: 07/28/2017 14:10
Reported: 08/10/2017 13:58

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1921 SDG#: KR192-01

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.056 D1 | 0.0097 | 0.019 | 0.029 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172150023A | 08/08/2017 18:57 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172150023A | 08/04/2017 10:00 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW233-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9127590**
**ELLE Group # 1831410**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/27/2017 10:08 by PF

Submitted: 07/28/2017 14:10
Reported: 08/10/2017 13:58

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1922 SDG#: KR192-02

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.048 | D1 | 0.0097 | 0.019 | 0.029 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172150023A | 08/08/2017 19:29 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172150023A | 08/04/2017 10:00 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GW234-173 Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9127591**
**ELLE Group # 1831410**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/27/2017 09:59 by PF

Submitted: 07/28/2017 14:10
Reported: 08/10/2017 13:58

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1923 SDG#: KR192-03

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.064 | D1 | 0.0097 | 0.019 | 0.029 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172150023A | 08/08/2017 19:44 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172150023A | 08/04/2017 10:00 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GWTS-TB01-072717 Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9127592**
**ELLE Group # 1831410**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 07/27/2017 14:10

Submitted: 07/28/2017 14:10
Reported: 08/10/2017 13:58

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

K1924 SDG#: KR192-04TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.020 | UD1 | 0.0098 | 0.020 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172150023A | 08/08/2017 20:00 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172150023A | 08/04/2017 10:00 | Olivia Arosemena | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 08/10/2017 13:58

Group Number: 1831410

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | DL** | LOD | LOQ |
|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l |
| Batch number: 172150023A | Sample number(s): 9127589-9127592 | | | |
| Ethylene dibromide | 0.020 U | 0.010 | 0.020 | 0.030 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172150023A | Sample number(s): 9127589-9127592 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.127 | 0.128 | 0.128 | 99 | 100 | 60-140 | 1 | 20 |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172150023A | Sample number(s): 9127589-9127592 UNSPK: 9127589 | | | | | | | | | |
| Ethylene dibromide | 0.0557 | 0.124 | 0.184 | | | 104 | | 60-140 | | |

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | ug/l | ug/l | | |
| Batch number: 172150023A | Sample number(s): 9127589-9127592 BKG: 9127592 | | | |
| Ethylene dibromide | 0.020 U | 0.019 U | 0 (1) | 30 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Group Number: 1831410
Reported: 08/10/2017 13:58

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: EDB 8011 Water
Batch number: 172150023A

| | 1,1,2,2-Tetrachloroethane-D1 | | 1,1,2,2-Tetrachloroethane-D2 | |
|---|---|---|---|---|
| | %Rec | LOD | %Rec | LOD |
| 9127589 | 89 | 0.0068 | 77 | 0.0068 |
| 9127590 | 75 | 0.0068 | 75 | 0.0068 |
| 9127591 | 98 | 0.0068 | 92 | 0.0068 |
| 9127592 | 84 | 0.0069 | 89 | 0.0069 |
| Blank | 77 | 0.0070 | 81 | 0.0070 |
| DUP | 75 | 0.0068 | 76 | 0.0068 |
| LCS | 70 | 0.0070 | 71 | 0.0070 |
| LCSD | 73 | 0.0070 | 80 | 0.0070 |
| MS | 769* | 0.0068 | 493* | 0.0068 |
| Limits: | 46-136 | | 46-136 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 | 1831410 | 9127589-92

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS1-072717

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: Q3 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8270D) SVOCs | (8011) EDB | (6010C/6020A) Total As, Pb, Ca, K, NA, Mg | (6010C) *Dissolved Fe, Mn | (300.0) Chloride, Fluoride, Sulfate | (353.2) Nitrate-Nitrite | (7470A) Total Mercury | (420.4) Total Phenol | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | |
| 1 | GW228-173 | 07/27/17 | 0905 | 2 | -- | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 2 | GW233-173 | 07/27/17 | 1008 | 2 | -- | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 3 | GW234-173 | 07/27/17 | 0959 | 2 | -- | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 4 | GWTS-TB01-072717 | 07/27/17 | 1410 | 2 | -- | -- | 2 | -- | -- | -- | -- | -- | -- | |
| 5 | | PT | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Metals aliquot was field filtered.

SAMPLER(S): Pete Ferrari

COURIER AND SHIPPING NUMBER: Fedex: 811156738133

| RELINQUISHED BY: Printed Name and Signature | DATE | TIME | RECEIVED BY: Printed Name and Signature | DATE | TIME |
|---|---|---|---|---|---|
| Pete Ferrari | 7-27-17 | 1600 | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | Tanya Brasch | 7/28/17 | 1410 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 190127

Group Number(s): 1831410

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 07/28/2017 14:10 |
| Number of Packages: | 1 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 2 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Tanya Brasch (24906) at 15:49 on 07/28/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT42-01 | 0.5 | DT | Wet | Y | Loose | N |



2425 New Holland Pike
Lancaster, PA 17601-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | non-detect |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| D1 | Indicates for dual column analyses that the result is reported from column 1 |
| D2 | Indicates for dual column analyses that the result is reported from column 2 |
| E | Concentration exceeds the calibration range |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR192**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9127589 | GW228-173 | X | | 1 | |
| 9127590 | GW233-173 | X | | 1 | |
| 9127591 | GW234-173 | X | | 1 | |
| 9127592 | GWTS-TB01-072717 | X | | 1 | Trip Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9127589-9127592: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR192**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**Surrogate**

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted. For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

Batch#: 172150023A (Sample number(s): 9127589-9127592, UNSPK: 9127589, BKG: 9127592)
The recovery(ies) for the following surrogate(s) exceeded the acceptance window: 1,1,2,2-Tetrachloroethane-D1 (9127589 MS), 1,1,2,2-Tetrachloroethane-D2 (9127589 MS)

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

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# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR192**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172150023A | PBLK23215 | 08/08/2017 18:11:00 |
| | | LCS23215 | 08/08/2017 18:26:00 |
| | | LCSD23215 | 08/08/2017 18:42:00 |
| | | 9127589 UNSPK | 08/08/2017 18:57:00 |
| | | 9127589 MS | 08/08/2017 19:13:00 |
| | | 9127590 | 08/08/2017 19:29:00 |
| | | 9127591 | 08/08/2017 19:44:00 |
| | | 9127592 BKG | 08/08/2017 20:00:00 |
| | | 9127592 DUP | 08/08/2017 20:15:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR192**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172150023A / PBLK23215<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 08/08/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR192**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172150023A | 1,1,2,2-Tetrachloroethane-D1 | | 1,1,2,2-Tetrachloroethane-D2 | |
|---|---|---|---|---|
| | Spike Added | 0.0704 ug/l | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits |
| PBLK23215 | 77 | 46 - 136 | 81 | 46 - 136 |
| LCS23215 | 70 | 46 - 136 | 71 | 46 - 136 |
| LCSD23215 | 73 | 46 - 136 | 80 | 46 - 136 |
| 9127589 UNSPK | 89 | 46 - 136 | 77 | 46 - 136 |
| 9127589 MS | 769 * | 46 - 136 | 493 * | 46 - 136 |
| 9127590 | 75 | 46 - 136 | 75 | 46 - 136 |
| 9127591 | 98 | 46 - 136 | 92 | 46 - 136 |
| 9127592 BKG | 84 | 46 - 136 | 89 | 46 - 136 |
| 9127592 DUP | 75 | 46 - 136 | 76 | 46 - 136 |

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted. For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| UNSPK: 9127589<br>MS: 9127589<br><br>**Analyte** | Batch: **172150023A** (Sample number(s): 9127589-9127592 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.124 | 0.0557 | 0.184 | NA | 104 | NA | 60-140 | NA | NA |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR192**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS23215<br>LCSD: LCSD23215<br><br>**Analyte** | Batch: **172150023A** (Sample number(s): 9127589-9127592 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.127 | 0.128 | 99 | 100 | 60-140 | 1 | 20 |

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Calibration File: 16EDBS1722001

GC Column (1) : DB CLP1 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 8/8/2017 8/8/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.02 | 3.08 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.46 | 4.52 |
| 1,2,3-Trichloropropane | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.53 | 4.59 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.85 | 6.91 |

HMM 7663 8/9/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1722001

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 8/8/2017  8/8/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 2.00E+04 | 1.86E+04 | 1.82E+04 | 1.86E+04 | 1.78E+04 | 1.77E+04 | 1.84E+04 | 5 |
| 1,1,2,2-TETRACHLOROETHANE | 2.63E+04 | 2.19E+04 | 2.19E+04 | 2.23E+04 | 2.09E+04 | 2.13E+04 | 2.24E+04 | 9 |
| 1,2,3-Trichloropropane | 6.33E+03 | 4.42E+03 | 3.83E+03 | 3.58E+03 | 3.00E+03 | 2.88E+03 | 4.01E+03 | 32 |
| 1,2-DIBROMO-3-CHLOROPROPA | 3.26E+04 | 3.23E+04 | 2.96E+04 | 3.15E+04 | 2.99E+04 | 2.86E+04 | 3.07E+04 | 5 |
| | | | | | | Average % RSD: | | 13 |

linear fit 8/9/17

File Name: V:\CP16\16edbs1722001.CAL
Version: 14

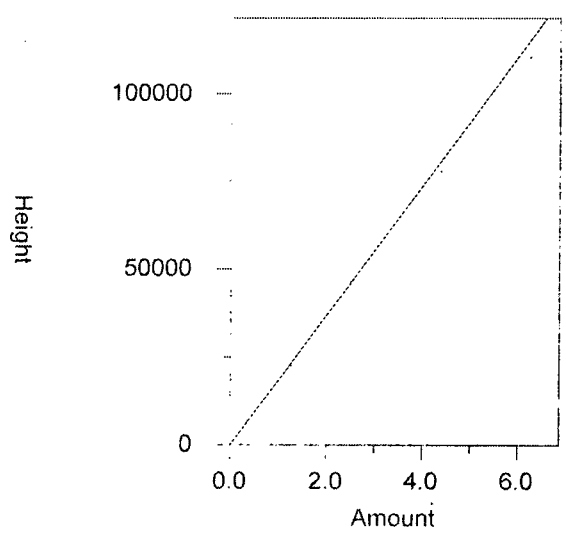
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.05 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

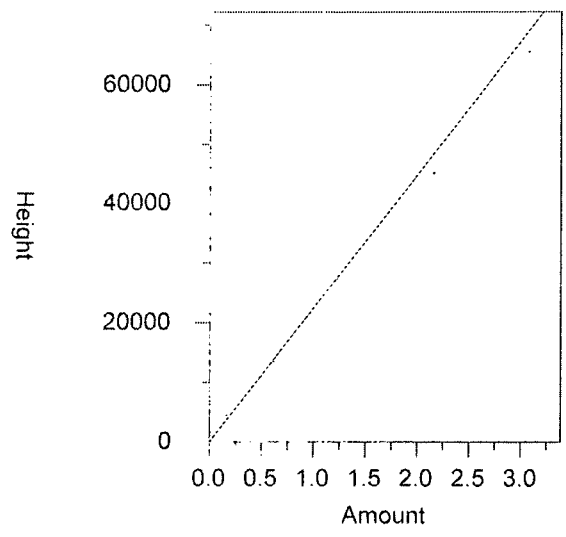
Single peak quantification by height

Y = 18449.16 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9961001
Average error: 3.149%
Average CF: 18449.16
RSD: 4.511%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 6986.079 | 19960.23 | 8.190 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0006.B |
| 2 | 0.63 | 11691.32 | 18557.65 | 0.588 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0007.B |
| 3 | 1.25 | 22714.24 | 18171.39 | -1.506 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0008.B |
| 4 | 2.5 | 46431.05 | 18572.42 | 0.668 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0009.B |
| 5 | 4.38 | 77747.09 | 17750.48 | -3.787 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0010.B |
| 6 | 6.25 | 110517.6 | 17682.82 | -4.154 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0011.B |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.493 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

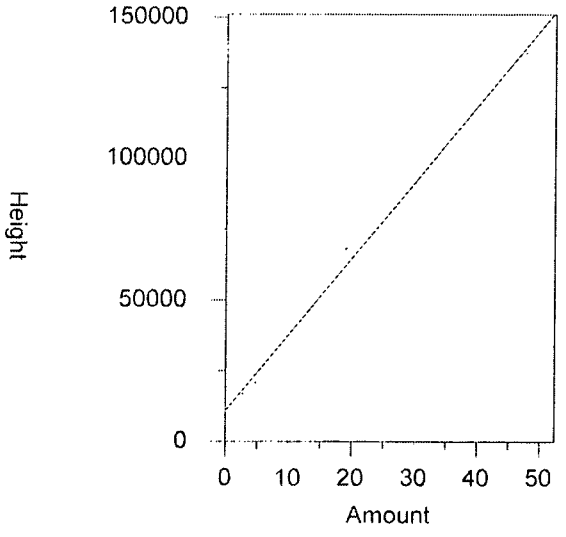
Y = 22432.28 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9918957 |
| Average error: | 5.716% |
| Average CF: | 22432.28 |
| RSD: | 8.689% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 4467.458 | 26279.16 | 17.149 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 2 | 0.31 | 6796.612 | 21924.55 | -2.263 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 3 | 0.62 | 13566.38 | 21881.26 | -2.456 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 4 | 1.23 | 27435.35 | 22305.16 | -0.567 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 5 | 2.16 | 45144.98 | 20900.45 | -6.829 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 6 | 3.08 | 65613.57 | 21303.11 | -5.034 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.559 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

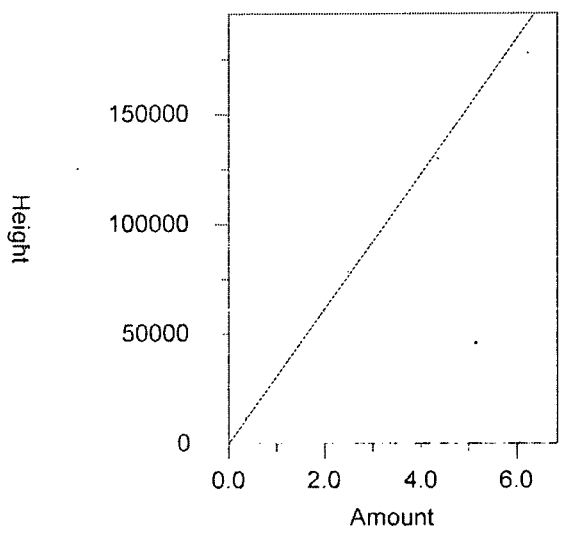
Y = 2692.105 X + 10889.98

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9957644 |
| Average error: | 4.880% |
| Average CF: | 4009.438 |
| RSD: | 31.624% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 16896.03 | 6328.101 | -6.538 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 2 | 4.76 | 21059.54 | 4424.272 | -11.158 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 3 | 9.53 | 36526.21 | 3832.761 | -0.053 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 4 | 19.05 | 68261.13 | 3583.262 | 9.789 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 5 | 33.34 | 100176.8 | 3004.703 | -0.465 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 6 | 47.63 | 137342.6 | 2883.531 | -1.274 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.878 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 30740.32 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9911132 |
| Average error: | 4.504% |
| Average CF: | 30740.32 |
| RSD: | 5.246% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 11408.71 | 32596.31 | 6.038 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 2 | 0.62 | 20003.26 | 32263.32 | 4.954 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 3 | 1.24 | 36673.3 | 29575.24 | -3.790 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 4 | 2.49 | 78471.91 | 31514.82 | 2.520 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 5 | 4.35 | 129999.5 | 29884.94 | -2.783 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |
| 6 | 6.22 | 177937.2 | 28607.27 | -6.939 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0( |

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1722001B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 8/8/2017  8/8/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT (initial) RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.27 | 4.33 |
| 1,1,2,2-TETRACHLOROETHANE | 5.61 | 5.60 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.58 | 5.64 |
| 1,2,3-Trichloropropane | 5.74 | 5.73 | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.71 | 5.77 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.89 | 7.95 |

HMM 8/9/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Calibration File: 16EDBS1722001B

GC Column (2) : DB CLP2 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 8/8/2017 8/8/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 5.97E+03 | 5.20E+03 | 4.76E+03 | 4.96E+03 | 4.80E+03 | 4.67E+03 | 5.06E+03 | 10 |
| 1,1,2,2-TETRACHLOROETHANE | 9.78E+03 | 7.51E+03 | 7.53E+03 | 8.16E+03 | 7.55E+03 | 7.33E+03 | 7.98E+03 | 12 |
| 1,2,3-Trichloropropane | 1.30E+03 | 1.16E+03 | 1.14E+03 | 1.12E+03 | 1.04E+03 | 1.01E+03 | 1.13E+03 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPA | 1.33E+04 | 1.22E+04 | 1.17E+04 | 1.17E+04 | 1.07E+04 | 1.05E+04 | 1.17E+04 | 9 |

Average % RSD: 10

Elmer 9/19/17

File Name: V:\CP16\16edbs1722001b.CAL
Version: 16

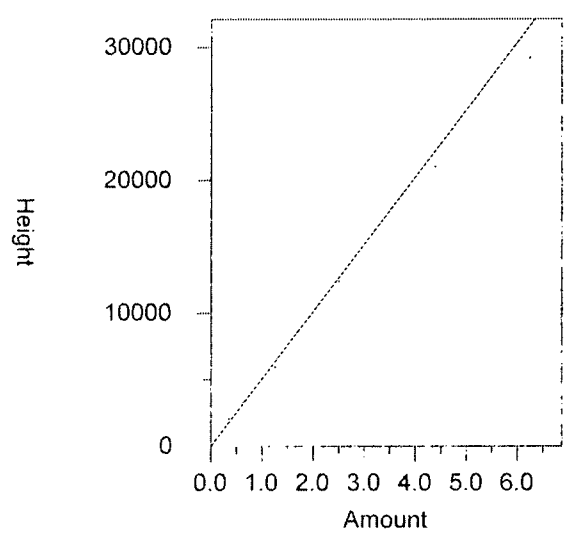
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 4.301 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

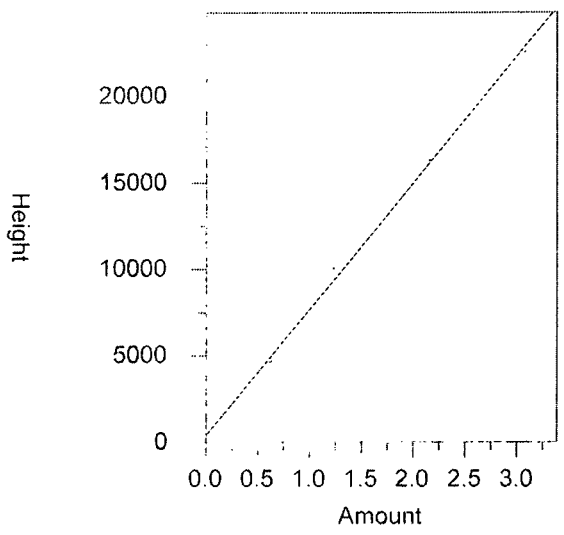
Single peak quantification by height

Y = 5060.381 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9871964
Average error: 6.929%
Average CF: 5060.381
RSD: 9.568%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 2090.809 | 5973.74 | 18.049 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0006 |
| 2 | 0.63 | 3275.369 | 5198.998 | 2.739 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0007 |
| 3 | 1.25 | 5954.658 | 4763.727 | -5.862 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0008 |
| 4 | 2.5 | 12390.82 | 4956.328 | -2.056 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0009 |
| 5 | 4.38 | 21010.76 | 4796.977 | -5.205 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0010 |
| 6 | 6.25 | 29203.22 | 4672.515 | -7.665 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0011 |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.608 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

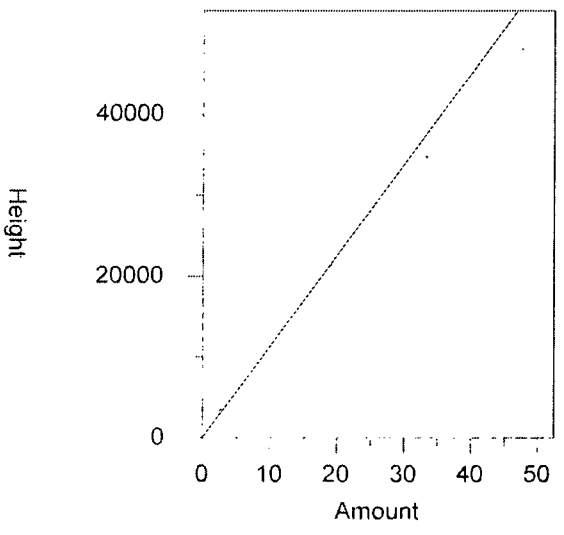
Single peak quantification by height

Y = 7298.659 X + 387.0319

| | |
|---|---|
| Linear fit with equal weighting | |
| Coefficient of determination: | 0.9979438 |
| Average error: | 4.775% |
| Average CF: | 7977.217 |
| RSD: | 11.645% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 1663.123 | 9783.076 | 2.170 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 2 | 0.31 | 2329.506 | 7514.536 | -12.081 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 3 | 0.62 | 4667.872 | 7528.826 | -4.974 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 4 | 1.23 | 10036.96 | 8160.13 | 7.182 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 5 | 2.16 | 16305.08 | 7548.648 | 0.947 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 6 | 3.08 | 22570.5 | 7328.084 | -1.296 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.736 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

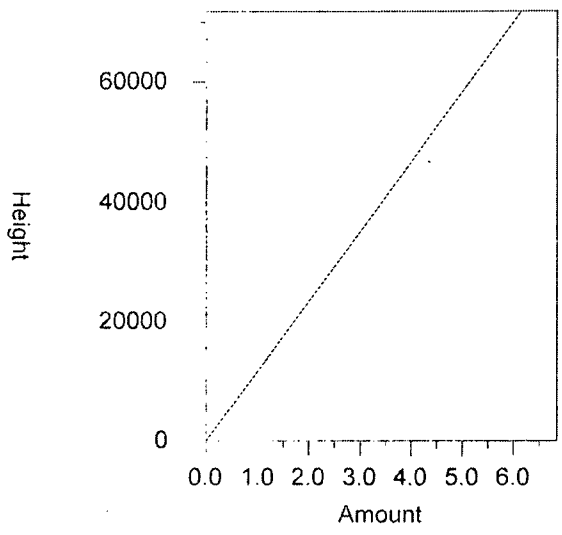
Single peak quantification by height

Y = 1128.418 X + 0

| | |
|---|---|
| Average CF fit with equal weighting, forced to origin | |
| Coefficient of determination: | 0.9743709 |
| Average error: | 6.150% |
| Average CF: | 1128.418 |
| RSD: | 8.919% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 3460.331 | 1296.004 | 14.851 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 2 | 4.76 | 5522.389 | 1160.166 | 2.813 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 3 | 9.53 | 10838.3 | 1137.282 | 0.786 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 4 | 19.05 | 21428.37 | 1124.849 | -0.316 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 5 | 33.34 | 34749.39 | 1042.273 | -7.634 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 6 | 47.63 | 48103.14 | 1009.934 | -10.500 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.917 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 11686.73 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9750182 |
| Average error: | 6.110% |
| Average CF: | 11686.73 |
| RSD: | 8.602% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 4637.879 | 13251.08 | 13.386 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 2 | 0.62 | 7575.76 | 12218.97 | 4.554 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 3 | 1.24 | 14540.11 | 11725.9 | 0.335 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 4 | 2.49 | 29115.59 | 11693.01 | 0.054 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 5 | 4.35 | 46677.71 | 10730.51 | -8.182 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |
| 6 | 6.22 | 65315.78 | 10500.93 | -10.147 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B. |

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 08/08/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 17:39

Lab File ID: 16EDBS17220001.0035.RAW Initial Calibration: 16EDBS1722001

Lab Standard ID: EDB_4QZ Init. Calib Date(s): 01/01/00 01/01/00

Calibration: 16EDBS1722001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.02 | 3.08 | 2.52 | 2.50 | 1 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.46 | 4.52 | 1.21 | 1.23 | -2 |
| 1,2,3-Trichloropropane | 4.56 | 4.53 | 4.59 | 20.04 | 19.05 | 5 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.88 | 6.85 | 6.91 | 2.68 | 2.49 | 8 |

Compounds 4 Average of %D: 4

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 08/08/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 17:39

Lab File ID: 16EDBS17220001B.0035.RAW Initial Calibration: 16EDBS1722001B

Lab Standard ID: EDB_4QZ Init. Calib Date(s): 08/08/17 08/08/17

Calibration: 16EDBS1722001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.27 | 4.33 | 2.53 | 2.50 | 1 |
| 1,1,2,2-TETRACHLOROETHANE | 5.61 | 5.58 | 5.64 | 1.31 | 1.23 | 6 |
| 1,2,3-Trichloropropane | 5.74 | 5.71 | 5.77 | 19.20 | 19.05 | 1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.92 | 7.89 | 7.95 | 2.67 | 2.49 | 7 |

Compounds 4 Average of %D: 4

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKCW Sample ID: CW **Batchnumber: 1721899999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Aug 08, 2017 17:55:26
Instrument : CP16--19853A
Result file : 16EDBS17220001.0036.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Aug 08, 2017 17:55:26
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0036.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.06 | 3.08 | 492 | 0.001524 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 24388 | 0.062125 |
| 1,2,3-TCP | 4.53 | 4.55 | 4.59 | 6858 | -0.085576 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 9025 | 0.067626 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062125 | | | | 8.48 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: AUG 09 2017

Verified by: DD12316
Date: 08/09/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 08/08/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 20:31

Lab File ID: 16EDBS17220001.0046.RAW Initial Calibration: 16EDBS1722001

Lab Standard ID: EDB_3QV Init. Calib Date(s): 01/01/00 01/01/00

Calibration: 16EDBS1722001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.02 | 3.08 | 1.28 | 1.25 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.46 | 4.52 | 0.63 | 0.62 | 3 |
| 1,2,3-Trichloropropane | 4.56 | 4.53 | 4.59 | 9.79 | 9.53 | 3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.88 | 6.85 | 6.91 | 1.37 | 1.24 | 10 |

Compounds 4 Average of %D: 5

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 08/08/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 20:31

Lab File ID: 16EDBS17220001B.0046.RAW Initial Calibration: 16EDBS1722001B

Lab Standard ID: EDB_3QV Init. Calib Date(s): 08/08/17 08/08/17

Calibration: 16EDBS1722001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.27 | 4.33 | 1.29 | 1.25 | 3 |
| 1,1,2,2-TETRACHLOROETHANE | 5.61 | 5.58 | 5.64 | 0.63 | 0.62 | 2 |
| 1,2,3-Trichloropropane | 5.73 | 5.71 | 5.77 | 10.07 | 9.53 | 6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.92 | 7.89 | 7.95 | 1.45 | 1.24 | 17 |

Compounds 4 Average of %D: 7

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKCY Sample ID: CY **Batchnumber: 1721899999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

Analysis Report (A)

Injected on : Aug 08, 2017 20:47:04
Instrument : CP16--19853A
Result file : 16EDBS17220001.0047.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

Analysis Report (B)

Injected on : Aug 08, 2017 20:47:04
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0047.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 25510 | 0.064984 |
| 1,2,3-TCP | 4.53 | 4.55 | 4.59 | 10951 | 0.001292 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 9284 | 0.069653 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064984 | | | | 6.94 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 09 2017

Verified by: SDR 8/16
Date: 08/09/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 16EDBS17220001
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17220001.0001 | CONDITIONER | | 8/8/17 8:49 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0002 | CONDITIONER | | 8/8/17 9:04 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0003 | CONDITIONER | | 8/8/17 9:20 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0004 | CONDITIONER | | 8/8/17 9:35 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0005 | EIBKX1724C | PIBLKAA | 8/8/17 9:51 | 1721899999 | 2.00 |
| Administra16EDBS17220001.0006 | EDB_11724DY | EDB_1AA | 8/8/17 10:07 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0007 | EDB_21724DY | EDB_2AA | 8/8/17 10:22 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0008 | EDB_31724DY | EDB_3AA | 8/8/17 10:38 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0009 | EDB_41724DY | EDB_4AA | 8/8/17 10:53 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0010 | EDB_51724DY | EDB_5AA | 8/8/17 11:09 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0011 | EDB_61724DY | EDB_6AA | 8/8/17 11:25 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0012 | MDEDX1724DY | MDEDXAA | 8/8/17 11:40 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0013 | DBCMX1724B | DBCMXAA | 8/8/17 11:56 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0014 | EDB_31724DY | EDB_3AA | 8/8/17 12:11 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0015 | EIBKX1724C | PIBLKAA | 8/8/17 12:27 | 1721899999 | 2.00 |
| Administra16EDBS17220001.0016 | BLANKA 8/4/17 | PBLK22215 | 8/8/17 12:43 | 172150022A | 2.00 |
| Administra16EDBS17220001.0017 | LCSA 8/4/17 | LCS22215 | 8/8/17 12:58 | 172150022A | 2.00 |
| Administra16EDBS17220001.0018 | LCSDA 8/4/17 | LCSD22215 | 8/8/17 13:14 | 172150022A | 2.00 |
| Administra16EDBS17220001.0019 | 9122195 | OSFTB | 8/8/17 13:29 | 172150022A | 2.00 |
| Administra16EDBS17220001.0020 | 9128183 | 43441 | 8/8/17 13:45 | 172150022A | 2.00 |
| Administra16EDBS17220001.0021 | 9128184 | 43442 | 8/8/17 14:01 | 172150022A | 2.00 |
| Administra16EDBS17220001.0022 | 9128185 | 43443 | 8/8/17 14:16 | 172150022A | 2.00 |
| Administra16EDBS17220001.0023 | 9132527 | W1501 | 8/8/17 14:32 | 172150022A | 2.00 |
| Administra16EDBS17220001.0024 | 9132528 | W1502 | 8/8/17 14:47 | 172150022A | 2.00 |
| Administra16EDBS17220001.0025 | 9132529 | W1503 | 8/8/17 15:03 | 172150022A | 2.00 |
| Administra16EDBS17220001.0026 | EDB_51724DY | EDB_5ML | 8/8/17 15:19 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0027 | EIBKX1724C | PIBLKCV | 8/8/17 15:34 | 1721899999 | 2.00 |
| Administra16EDBS17220001.0028 | 9132529 | W1503DUP | 8/8/17 15:50 | 172150022A | 2.00 |
| Administra16EDBS17220001.0029 | 9132530 | W1504 | 8/8/17 16:06 | 172150022A | 2.00 |
| Administra16EDBS17220001.0030 | 9132530MS | W1504MS | 8/8/17 16:21 | 172150022A | 2.00 |
| Administra16EDBS17220001.0031 | 9134129 | MAG-1 | 8/8/17 16:37 | 172150022A | 2.00 |
| Administra16EDBS17220001.0032 | 9134130 | MAG-2 | 8/8/17 16:52 | 172150022A | 2.00 |
| Administra16EDBS17220001.0033 | 9134131 | MAG-3 | 8/8/17 17:08 | 172150022A | 2.00 |
| Administra16EDBS17220001.0034 | 9134132 | MAG3D | 8/8/17 17:24 | 172150022A | 2.00 |
| Administra16EDBS17220001.0035 | EDB_41724DY | EDB_4QZ | 8/8/17 17:39 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0036 | EIBKX1724C | PIBLKCW | 8/8/17 17:55 | 1721899999 | 2.00 |
| Administra16EDBS17220001.0037 | BLANKA 8/4/17 | PBLK23215 | 8/8/17 18:11 | 172150023A | 2.00 |
| Administra16EDBS17220001.0038 | LCSA 8/4/17 | LCS23215 | 8/8/17 18:26 | 172150023A | 2.00 |
| Administra16EDBS17220001.0039 | LCSDA 8/4/17 | LCSD23215 | 8/8/17 18:42 | 172150023A | 2.00 |
| Administra16EDBS17220001.0040 | 9127589 | K1921 | 8/8/17 18:57 | 172150023A | 2.00 |
| Administra16EDBS17220001.0041 | 9127589MS | K1921MS | 8/8/17 19:13 | 172150023A | 2.00 |
| Administra16EDBS17220001.0042 | 9127590 | K1922 | 8/8/17 19:29 | 172150023A | 2.00 |
| Administra16EDBS17220001.0043 | 9127591 | K1923 | 8/8/17 19:44 | 172150023A | 2.00 |
| Administra16EDBS17220001.0044 | 9127592 | K1924 | 8/8/17 20:00 | 172150023A | 2.00 |
| Administra16EDBS17220001.0045 | 9127592 | K1924DUP | 8/8/17 20:15 | 172150023A | 2.00 |
| Administra16EDBS17220001.0046 | EDB_31724DY | EDB_3QV | 8/8/17 20:31 | 1721899999 | 1.00 |
| Administra16EDBS17220001.0047 | EIBKX1724C | PIBLKCY | 8/8/17 20:47 | 1721899999 | 2.00 |

# Sample Data

# EDB/DBCP

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

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# Data Summary

**Sample Name: 9127589** K1921 Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 36.17 mL Total Volume: 2 ml Analyst: 7848 SDG: KR192 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 18:57:52 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0040.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.060775

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 18:57:52 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0040.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 77% ( 46 - 136 ) Conc: 0.05238

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 18584 | 0.055698 | Ethylene dibromide | 4.27 | 4.30 | 4.33 | 5133 | 0.05609 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.50 | 4.52 | 24656 | 0.060775 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 7301 | 0.05238 |
| 1,2,3-Trichloropropane | 4.53 | 4.57 | 4.59 | 6482 | 0 | 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 3736 | 0.183092 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.86 | 6.91 | 558 | 0.001003 | | | | | | |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.055698 | 0.0097 | 0.0194 | 0.029 | D1 | 0.70 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.060775 | 0.0034 | 0.0068 | 0.0068 | | 14.84 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.060775 | 0.0034 | 0.0068 | 0.0068 | | 14.84 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.05238 | 0.0034 | 0.0068 | 0.0068 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2613 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0097 | <0.0194 | <0.029 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomeyko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:06

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9127589** K1921 Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 36.17 mL Total Volume: 2 ml Analyst: Administr SDG: KR192 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 18:57:52
Instrument : CP16--19853A
Result file : 16EDBS17220001.0040.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.060775

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.05 | 3.08 | 18584 | 0.055698 |
| **1,1,2,2-PCA** | 4.46 | 4.50 | 4.52 | 24656 | 0.060775 |
| **1,2,3-TCP** | 4.53 | 4.57 | 4.59 | 6482 | -0.090542 |
| **DBCP** | 6.85 | 6.86 | 6.91 | 558 | 0.001003 |

## Analysis Report (B)

Injected on : Aug 08, 2017 18:57:52
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0040.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 77% (46-136) Conc.: 0.05238

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.27 | 4.30 | 4.33 | 5133 | 0.056090 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 7301 | 0.052380 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 3736 | 0.183092 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.055698 | 0.029 | 0.0097 | | 0.70 | |
| ☐ 1,1,2,2-PCA | A | 0.060775 | | | | 14.84 | |
| ☐ 1,2,3-TCP | | | <0.2613 | <0.0968 | | | |
| ☐ DBCP | | | <0.029 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: AUG 09 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 10 2017

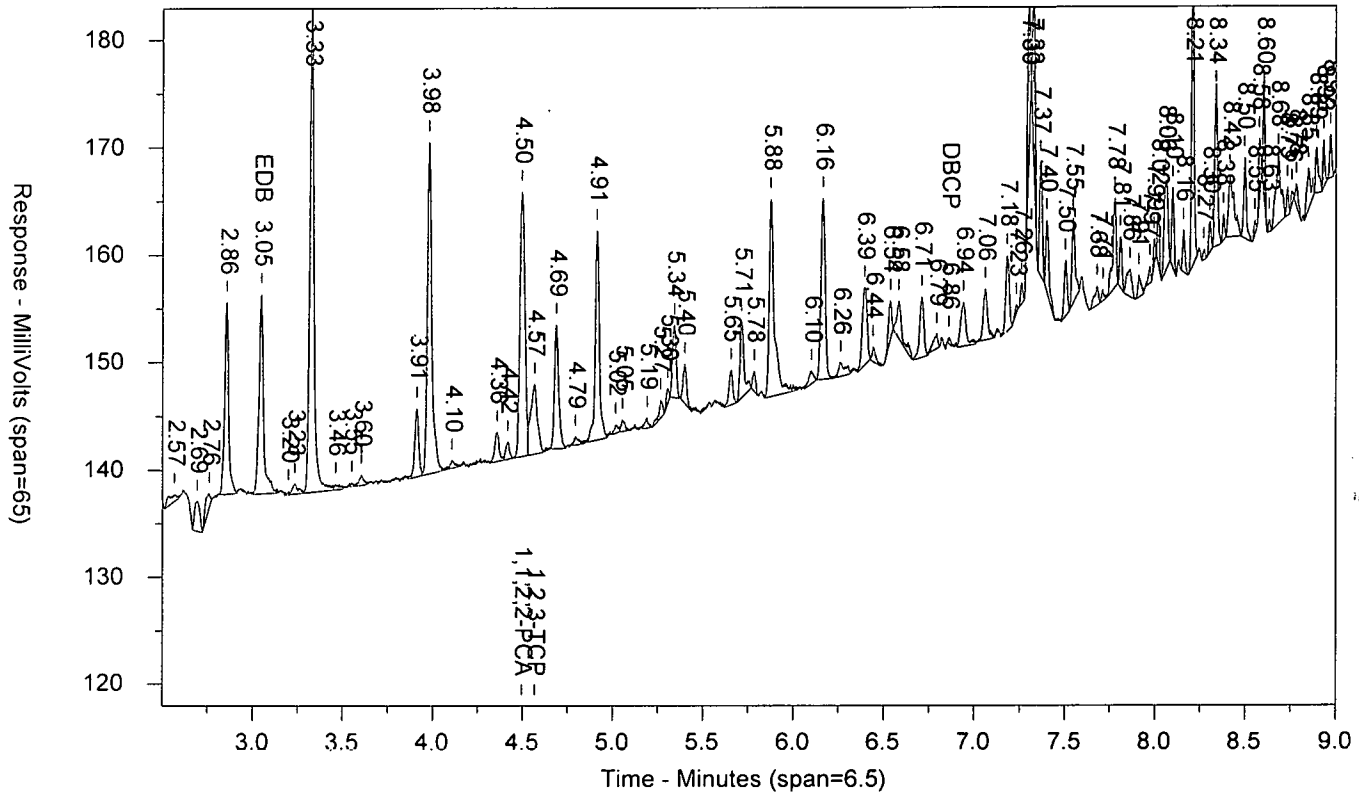
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/9/2017 11:29:43

9127589 AAK1921 T 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0040.RAW

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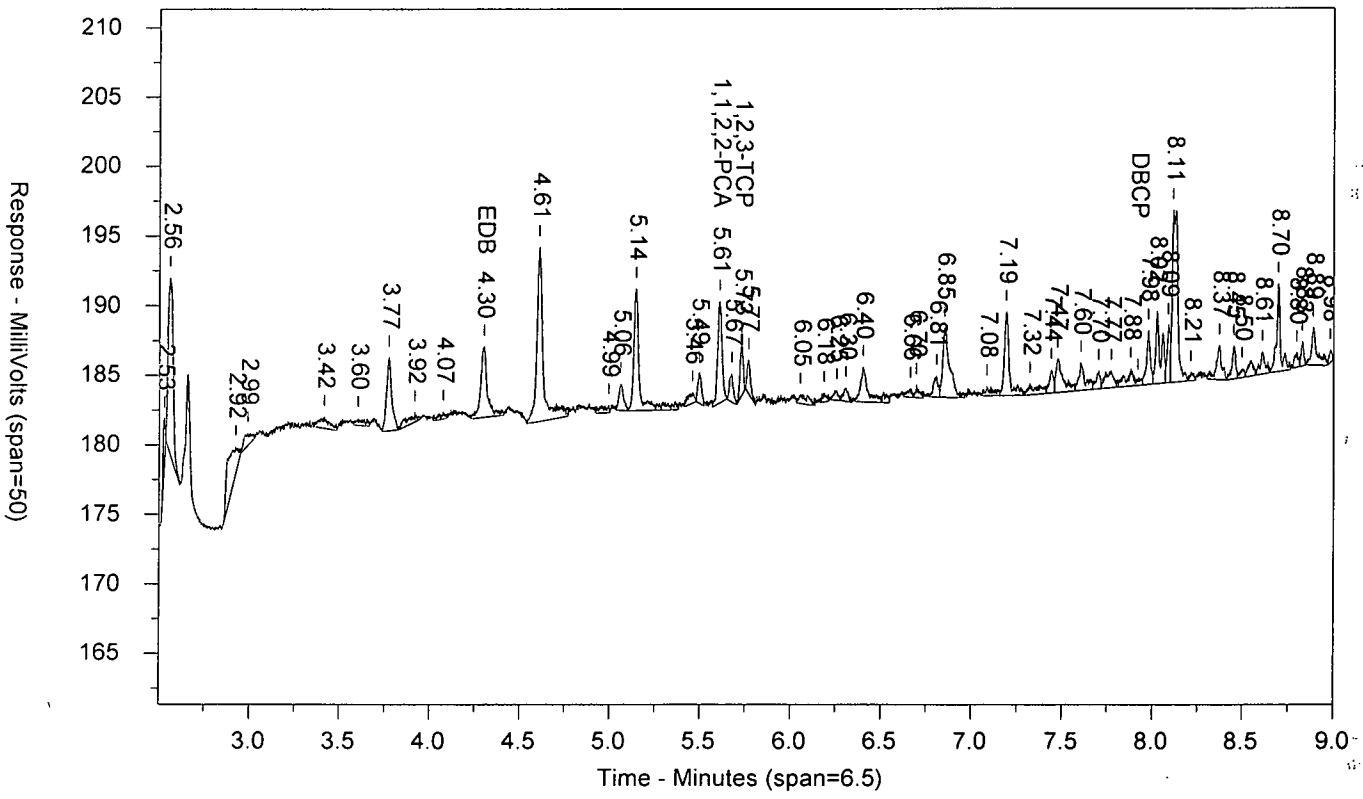

LANCASTER LABORATORIES

Sample Number: 9127589 AAK1921 T 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 6:57:52 PM Sample Weight: 36.17
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 18584 | .056 | EDB | 4.3 | 5133 | .056 | EDB |
| 4.495 | 24656 | .061 | 1,1,2,2-PCA | 5.607 | 7301 | .052 | 1,1,2,2-PCA |
| 4.567 | 6482 | -.091 | 1,2,3-TCP | 5.728 | 3736 | .183 | 1,2,3-TCP |
| 6.858 | 558 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 16EDBS17220001.0040.RAW
Area File: 16EDBS17220001B.0040.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 7:06:53 PM
File Reported On: 8/9/2017 at 11:25:33 AM

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# Data Summary

**Sample Name: 9127590** K1922 Sample ID: AA **Batchnumber: 172150023A**

Sample Amount: 35.98 mL Total Volume: 2 ml Analyst: 7848 SDG: KR192 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 19:29:05 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0042.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.051423

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 19:29:05 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0042.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.051253

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 15903 | 0.047916 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 20752 | 0.051423 |
| 1,2,3-Trichloropropane | 4.53 | 4.57 | 4.59 | 6418 | 0 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.89 | 6.91 | 14003 | 0.02532 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 4563 | 0.050125 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 7117 | 0.051253 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 6227 | 0.306721 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.047916 | 0.0097 | 0.0195 | 0.0292 | D1 | 4.51 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.051423 | 0.0034 | 0.0068 | 0.0068 | | 0.33 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.051423 | 0.0034 | 0.0068 | 0.0068 | | 0.33 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.051253 | 0.0034 | 0.0068 | 0.0068 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2626 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0097 | <0.0195 | <0.0292 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:09

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9127590** K1922 Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35.98 mL Total Volume: 2 · ml Analyst: Administr SDG: KR192 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 19:29:05
Instrument : CP16--19853A
Result file : 16EDBS17220001.0042.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.051423

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 15903 | 0.047916 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 20752 | 0.051423 |
| 1,2,3-TCP | 4.53 | 4.57 | 4.59 | 6418 | -0.092327 |
| DBCP | 6.85 | 6.89 | 6.91 | 14003 | 0.025320 |

## Analysis Report (B)

Injected on : Aug 08, 2017 19:29:05
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0042.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.051253

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 4.27 | 4.30 | 4.33 | 4563 | 0.050125 |
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 7117 | 0.051253 |
| 1,2,3-TCP | 5.71 | 5.73 | 5.77 | 6227 | 0.306721 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.047916 | 0.0292 | 0.0097 | | 4.51 | |
| ☐ 1,1,2,2-PCA | A | 0.051423 | | | | 0.33 | |
| ☐ 1,2,3-TCP | | | <0.2626 | <0.0973 | | | |
| ☐ DBCP | | | <0.0292 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: AUG 09 2017

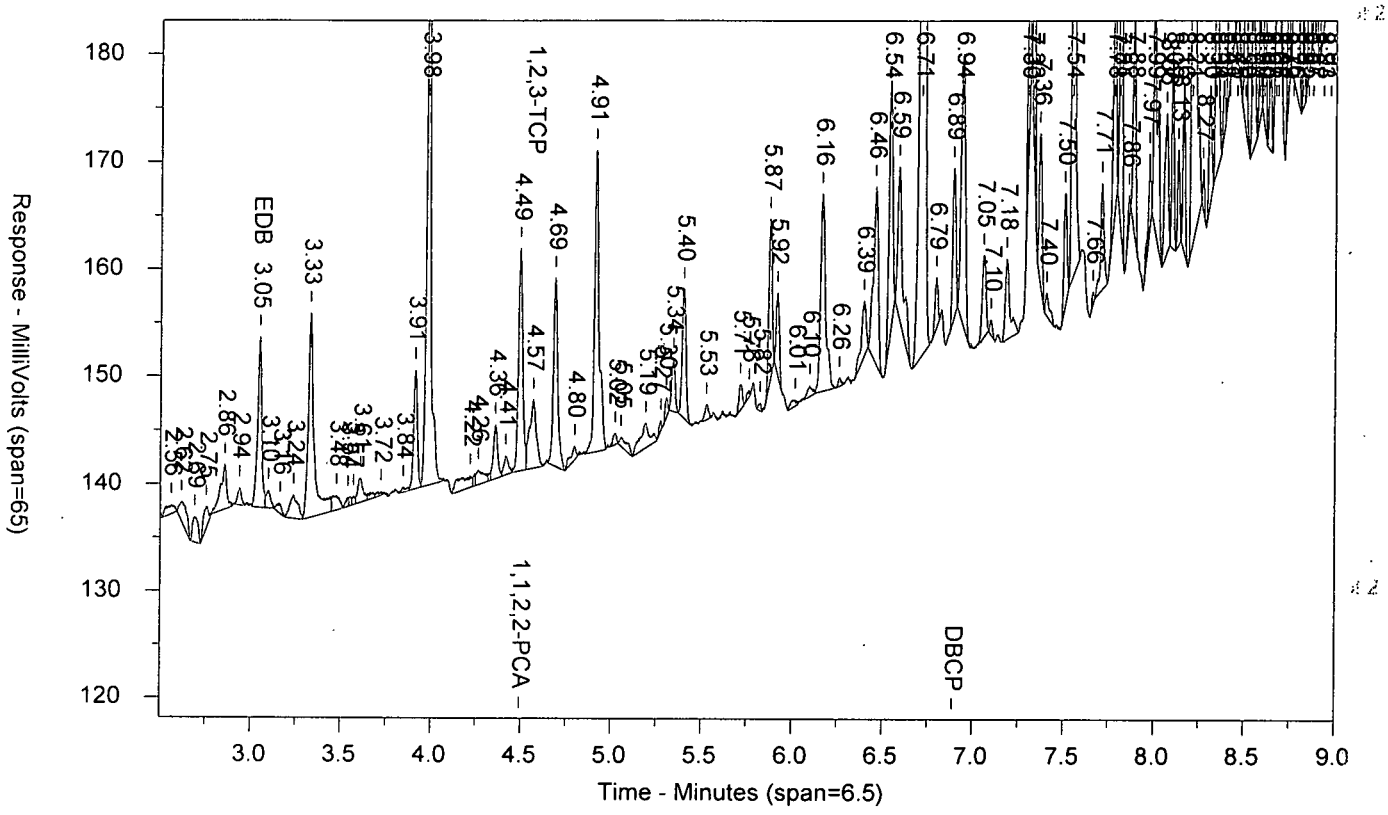
Verified by: Valerie L. Tomayko
Principal Specialist
Date: AUG 10 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9127590 AAK1922 T 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0042.RAW

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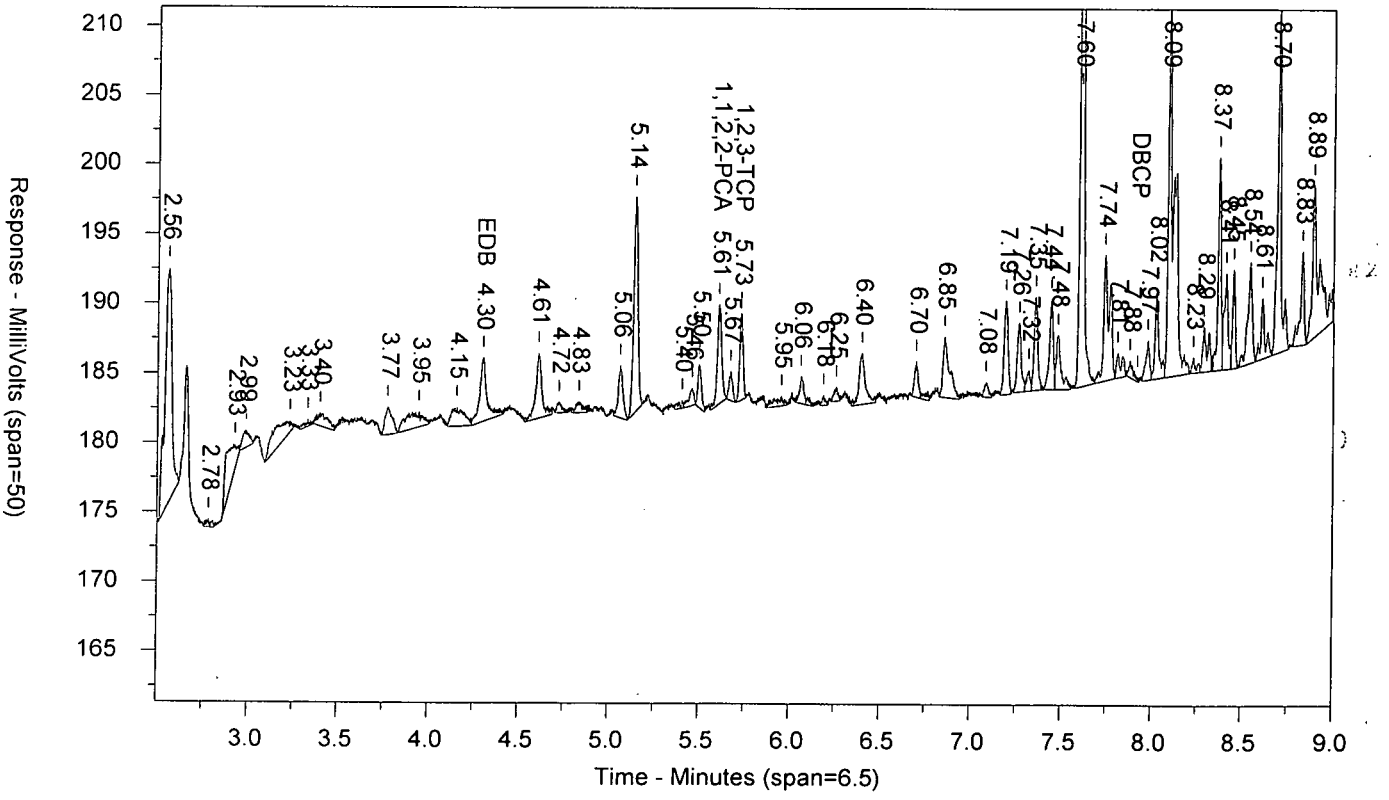

LANCASTER LABORATORIES

Sample Number: 9127590 AAK1922 T 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 7:29:05 PM Sample Weight: 35.98
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 15903 | .048 | EDB | 4.3 | 4563 | .05 | EDB |
| 4.493 | 20752 | .051 | 1,1,2,2-PCA | 5.606 | 7117 | .051 | 1,1,2,2-PCA |
| 4.567 | 6418 | -.092 | 1,2,3-TCP | 5.729 | 6227 | .307 | 1,2,3-TCP |
| 6.889 | 14003 | .025 | DBCP | | 0 | | DBCP |

Files:
Area File: 16EDBS17220001.0042.RAW
Area File: 16EDBS17220001B.0042.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 7:38:07 PM
File Reported On: 8/9/2017 at 11:26:03 AM

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# Data Summary

**Sample Name: 9127591** K1923 Sample ID: AA **Batchnumber: 172150023A**

Sample Amount: 36.04 mL Total Volume: 2 ml Analyst: 7848 SDG: KR192 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 19:44:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0043.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) 98% ( 46 - 136 ) Conc: 0.066971

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 19:44:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0043.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.062815

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 21227 | 0.063848 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 27072 | 0.066971 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 7695 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 5657 | 0.062038 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 8649 | 0.062815 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 4400 | 0.216402 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.063848 | 0.0097 | 0.0194 | 0.0291 | D1 | 2.88 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.066971 | 0.0034 | 0.0068 | 0.0068 | | 6.40 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.066971 | 0.0034 | 0.0068 | 0.0068 | | 6.40 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.062815 | 0.0034 | 0.0068 | 0.0068 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2622 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0097 | <0.0194 | <0.0291 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:11

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9127591** K1923 Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 36.04 mL Total Volume: 2 ml Analyst: Administr SDG: KR192 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 19:44:40
Instrument : CP16--19853A
Result file : 16EDBS17220001.0043.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 98% (46-136) Conc.: 0.066971

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 21227 | 0.063848 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 27072 | 0.066971 |
| 1,2,3-TCP | 4.53 | 4.56 | 4.59 | 7695 | -0.065866 |

## Analysis Report (B)

Injected on : Aug 08, 2017 19:44:40
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0043.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.062815

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 4.27 | 4.30 | 4.33 | 5657 | 0.062038 |
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 8649 | 0.062815 |
| 1,2,3-TCP | 5.71 | 5.73 | 5.77 | 4400 | 0.216402 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.063848 | 0.0291 | 0.0097 | | 2.88 | |
| ☐ 1,1,2,2-PCA | A | 0.066971 | | | | 6.40 | |
| ☐ 1,2,3-TCP | | | <0.2622 | <0.0971 | | | |
| ☐ DBCP | | | <0.0291 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 09 2017

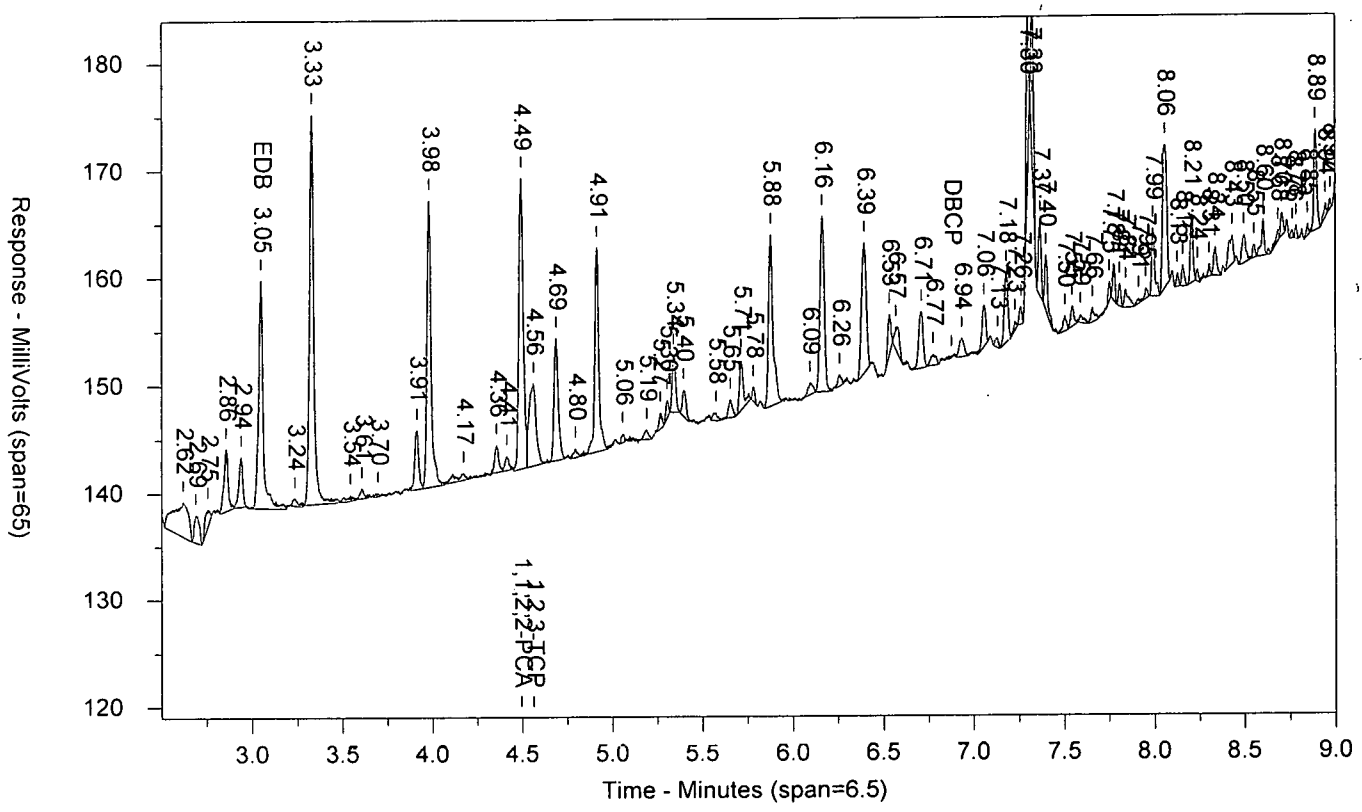
Verified by: Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 10 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9127591 AAK1923 T 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0043.RAW

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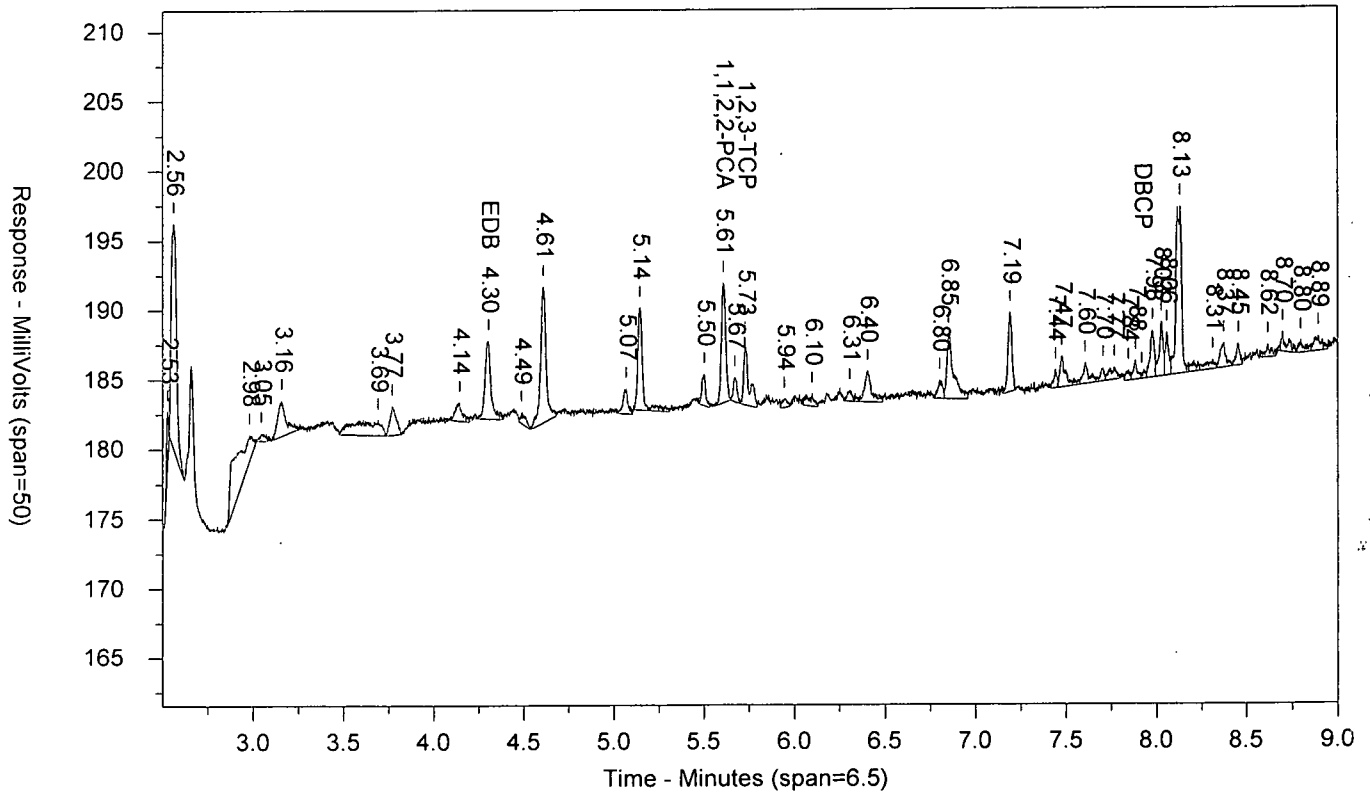


LANCASTER LABORATORIES

Sample Number: 9127591 AAK1923 T 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 7:44:40 PM Sample Weight: 36.04
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.049 | 21227 | .064 | EDB | 4.304 | 5657 | .062 | EDB |
| 4.494 | 27072 | .067 | 1,1,2,2-PCA | 5.607 | 8649 | .063 | 1,1,2,2-PCA |
| 4.562 | 7695 | -.066 | 1,2,3-TCP | 5.727 | 4400 | .216 | 1,2,3-TCP |

Files:
Area File: 16EDBS17220001.0043.RAW
Area File: 16EDBS17220001B.0043.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 7:53:42 PM
File Reported On: 8/9/2017 at 11:26:22 AM

# Data Summary

**Sample Name: 9127592** K1924 Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35.72 mL Total Volume: 2 ml Analyst: 7848 SDG: KR192 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 20:00:14 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0044.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.058169

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 20:00:14 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0044.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.061158

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 23305 | 0.058169 |
| 1,2,3-Trichloropropane | 4.53 | 4.55 | 4.59 | 8373 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 8359 | 0.061158 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 3810 | 0.189031 |
| 1,2-Dibromo-3-chloropro | 7.89 | 7.89 | 7.95 | 615 | 0.002946 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0098 | <0.0196 | <0.0294 | D1 | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.058169 | 0.0034 | 0.0069 | 0.0069 | | 5.01 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.058169 | 0.0034 | 0.0069 | 0.0069 | | 5.01 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.061158 | 0.0034 | 0.0069 | 0.0069 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2646 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0098 | <0.0196 | <0.0294 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:13

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9127592** K1924 Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35.72 mL Total Volume: 2 ml Analyst: Administr SDG: KR192 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 20:00:14
Instrument : CP16--19853A
Result file : 16EDBS17220001.0044.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.058169

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 23305 | 0.058169 |
| 1,2,3-TCP | 4.53 | 4.55 | 4.59 | 8373 | -0.052354 |

## Analysis Report (B)

Injected on : Aug 08, 2017 20:00:14
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0044.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.061158

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 8359 | 0.061158 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 3810 | 0.189031 |
| **DBCP** | 7.89 | 7.89 | 7.95 | 615 | 0.002946 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0294 | <0.0098 | | | |
| ☐ 1,1,2,2-PCA | A | 0.058169 | | | | 5.01 | |
| ☐ 1,2,3-TCP | | | <0.2646 | <0.098 | | | |
| ☐ DBCP | | | <0.0294 | <0.0098 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 09 2017

Verified by: Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 10 2017

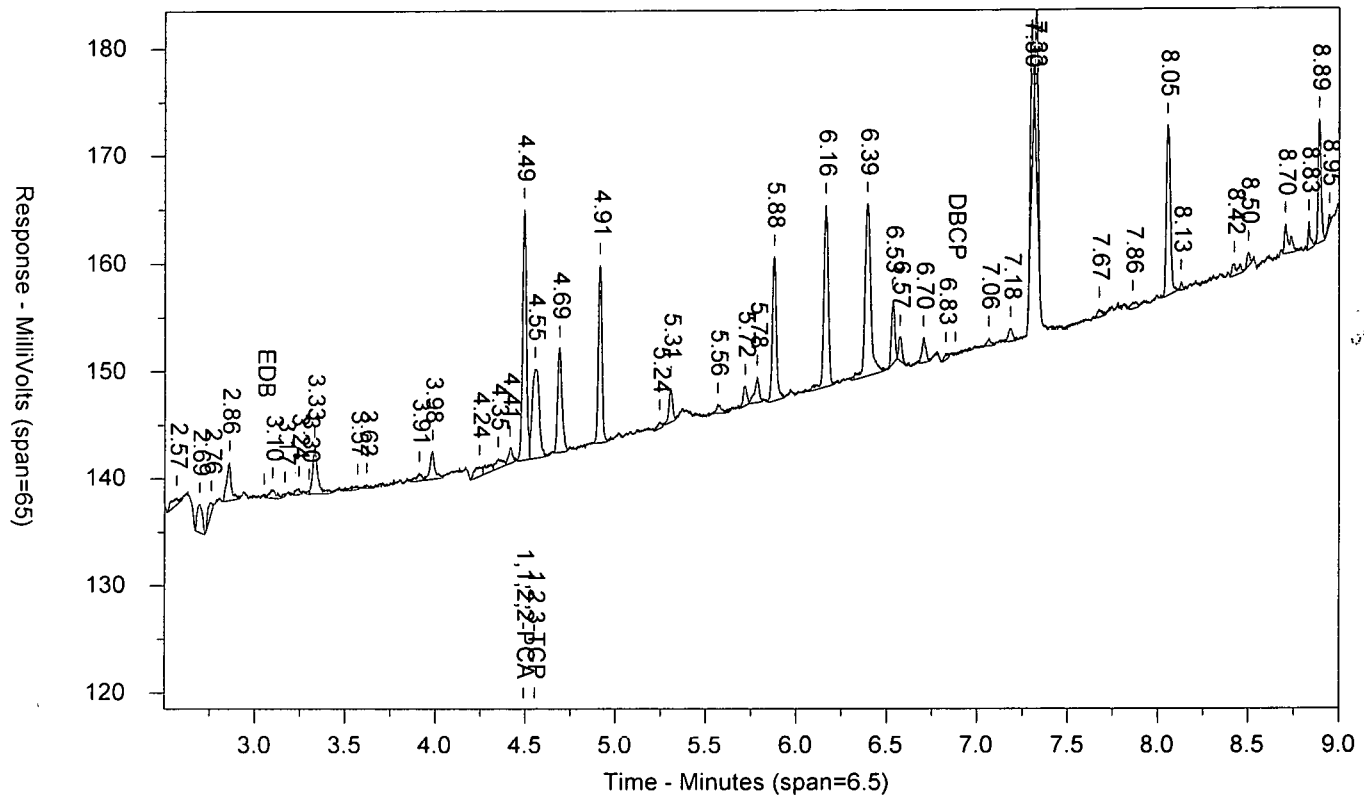
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/9/2017 11:30:20

9127592 AAK1924 T 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0044.RAW

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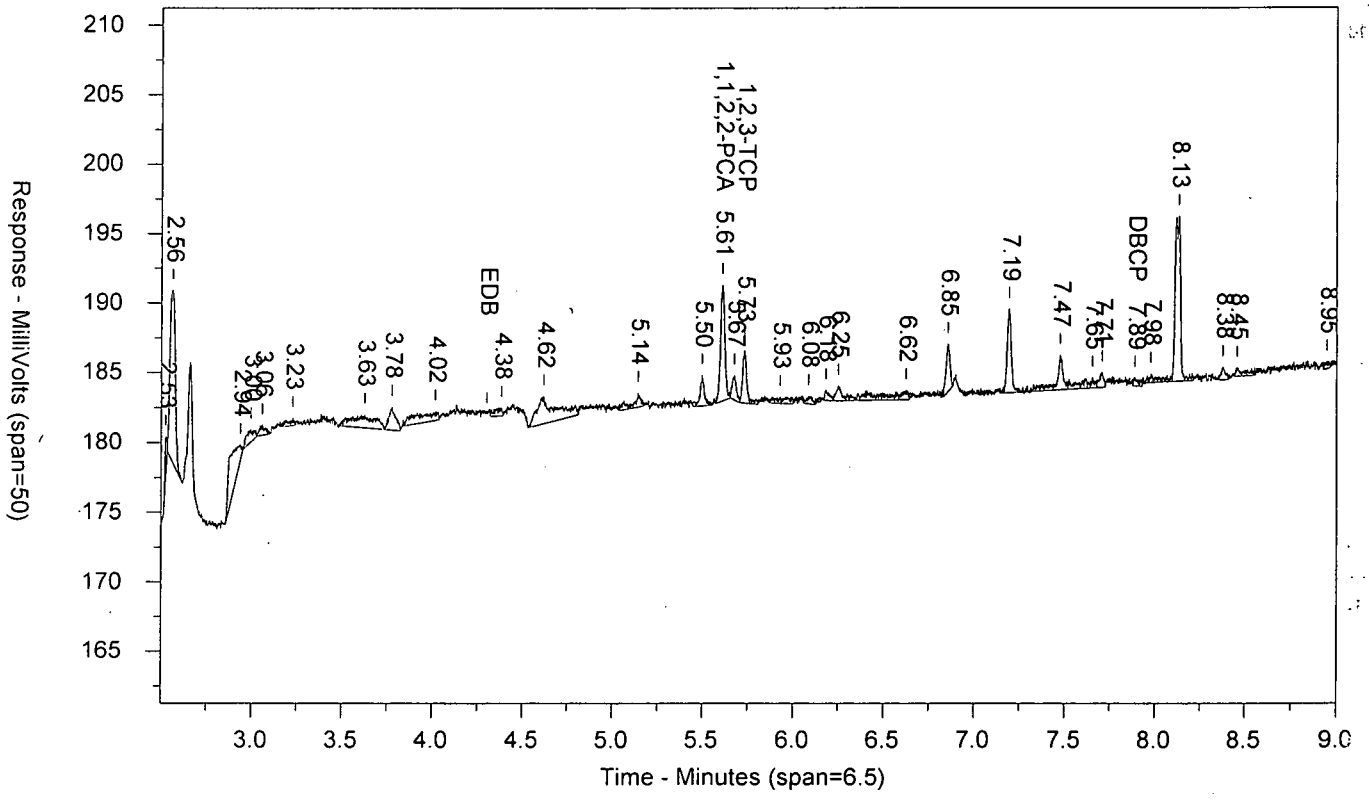


LANCASTER LABORATORIES

Sample Number: 9127592 AAK1924 T 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 8:00:14 PM Sample Weight: 35.72
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.492 | 23305 | .058 | 1,1,2,2-PCA | 5.607 | 8359 | .061 | 1,1,2,2-PCA |
| 4.553 | 8373 | -.052 | 1,2,3-TCP | 5.73 | 3810 | .189 | 1,2,3-TCP |
| | 0 | | DBCP | 7.887 | 615 | .003 | DBCP |

Files:
Area File: 16EDBS17220001.0044.RAW
Area File: 16EDBS17220001B.0044.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 8:09:15 PM
File Reported On: 8/9/2017 at 11:26:40 AM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperf\chromperfect-data\Dept-24\Active\CP16\16EDBS17220001.seq

Chromatography Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 47

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 4 CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 5 EIBKX1724C | 5 | PIBLK | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 1721899999 | |
| 6 EDB_11724DY | 6 | ICAL | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 1 | 1721899999 | |
| 7 EDB_21724DY | 7 | ICAL | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 2 | 1721899999 | |
| 8 EDB_31724DY | 8 | ICAL | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 3 | 1721899999 | |
| 9 EDB_41724DY | 9 | ICAL | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 4 | 1721899999 | |
| 10 EDB_51724DY | 10 | ICAL | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 5 | 1721899999 | |
| 11 EDB_61724DY | 11 | ICAL | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 6 | 1721899999 | |
| 12 MDEDX1724DY | 12 | ICAL | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 13 DBCMX1724B | 13 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 14 EDB_31724DY | 14 | CCAL | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 15 EIBKX1724C | 15 | PIBLK | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 1721899999 | |
| 16 BLANKA 8/4/17 | 16 | BLK | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 172150022A | 10398 |
| 17 LCSA 8/4/17 | 17 | LCS | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 172150022A | 10398 |
| 18 LCSDA 8/4/17 | 18 | LCSD | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 172150022A | 10398 |
| 19 9122195 | 19 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.19 | 2 | 1 | 0 | 172150022A | 10398 |
| 20 9128183 | 20 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 36.09 | 2 | 1 | 0 | 172150022A | 10398 |
| 21 9128184 | 21 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 36.02 | 2 | 1 | 0 | 172150022A | 10398 |
| 22 9128185 | 22 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 36.23 | 2 | 1 | 0 | 172150022A | 10398 |
| 23 9132527 | 23 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.92 | 2 | 1 | 0 | 172150022A | 10398 |
| 24 9132528 | 24 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.59 | 2 | 1 | 0 | 172150022A | 10398 |
| 25 9132529 | 25 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.63 | 2 | 1 | 0 | 172150022A | 10398 |
| 26 EDB_51724DY | 26 | CCAL | ML | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 27 EIBKX1724C | 27 | PIBLK | CV | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 1721899999 | |
| 28 9132529 | 28 | DUP | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.77 | 2 | 1 | 0 | 172150022A | 10398 |
| 29 9132530 | 29 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.86 | 2 | 1 | 0 | 172150022A | 10398 |
| 30 9132530MS | 30 | MS | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.9 | 2 | 1 | 0 | 172150022A | 10398 |
| 31 9134129 | 31 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 36.09 | 2 | 1 | 0 | 172150022A | 10398 |
| 32 9134130 | 32 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.98 | 2 | 1 | 0 | 172150022A | 10398 |
| 33 9134131 | 33 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.68 | 2 | 1 | 0 | 172150022A | 10398 |
| 34 9134132 | 34 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 36.28 | 2 | 1 | 0 | 172150022A | 10398 |
| 35 EDB_41724DY | 35 | CCAL | QZ | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 36 EIBKX1724C | 36 | PIBLK | CW | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 1721899999 | |
| 37 BLANKA 8/4/17 | 37 | BLK | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 172150023A | 10398 |
| 38 LCSA 8/4/17 | 38 | LCS | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 172150023A | 10398 |
| 39 LCSDA 8/4/17 | 39 | LCSD | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 172150023A | 10398 |
| 40 9127589 | 40 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 36.17 | 2 | 1 | 0 | 172150023A | 10398 |
| 41 9127589MS | 41 | MS | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 36.1 | 2 | 1 | 0 | 172150023A | 10398 |
| 42 9127590 | 42 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.98 | 2 | 1 | 0 | 172150023A | 10398 |
| 43 9127591 | 43 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 36.04 | 2 | 1 | 0 | 172150023A | 10398 |
| 44 9127592 | 44 | T | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.72 | 2 | 1 | 0 | 172150023A | 10398 |
| 45 9127592 | 45 | DUP | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 35.92 | 2 | 1 | 0 | 172150023A | 10398 |
| 46 EDB_31724DY | 46 | CCAL | QV | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1721899999 | |
| 47 EIBKX1724C | 47 | PIBLK | CY | EPT-24\ACTIVE\CP16\16EDBS.MET | 35 | 2 | 1 | 0 | 1721899999 | |

JMB 126691 8/9/17

Heather Miller

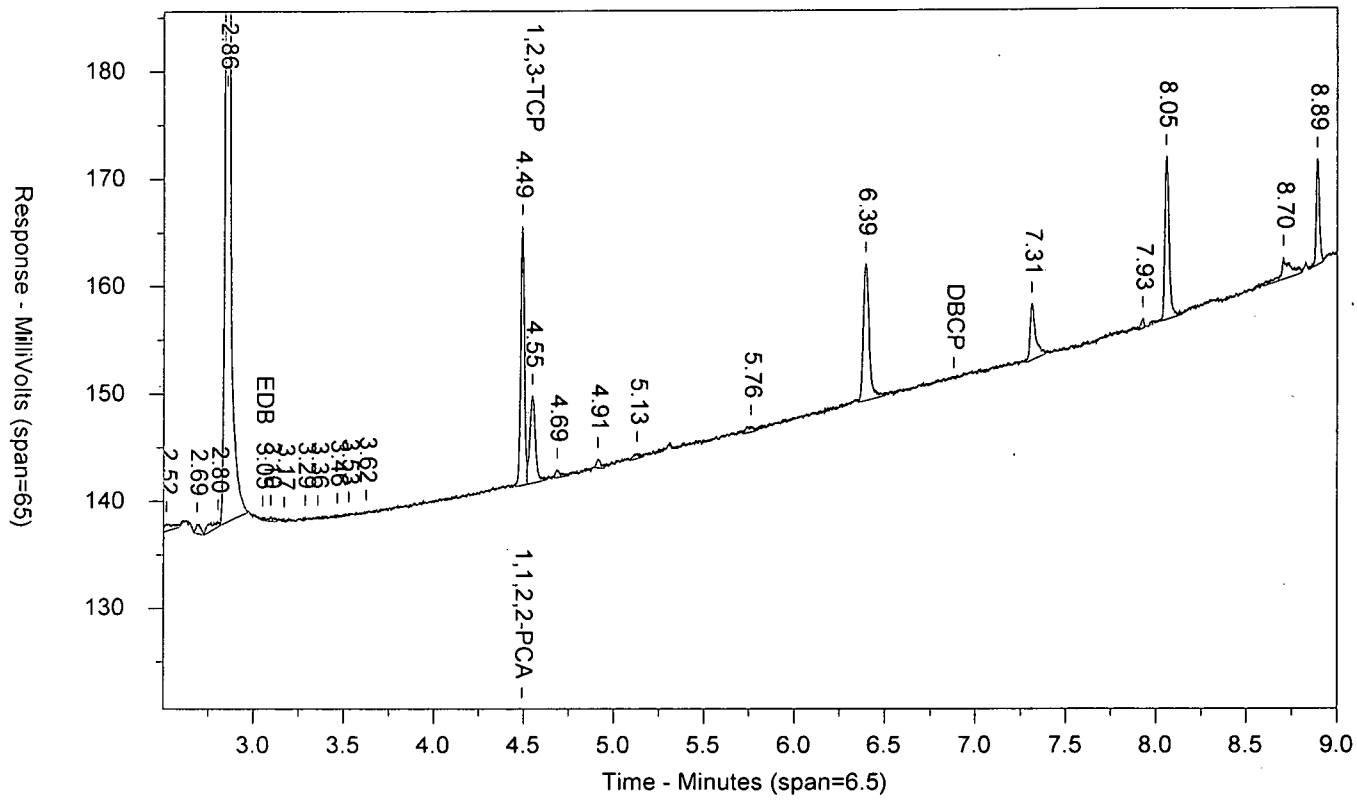
Heather M. Miller
Chemist

Set-up by: _____ Date: 8/9/2017

AUG 09 2017

EIBKX1724C AAPIBLKAA PIBLK1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0005.RAW

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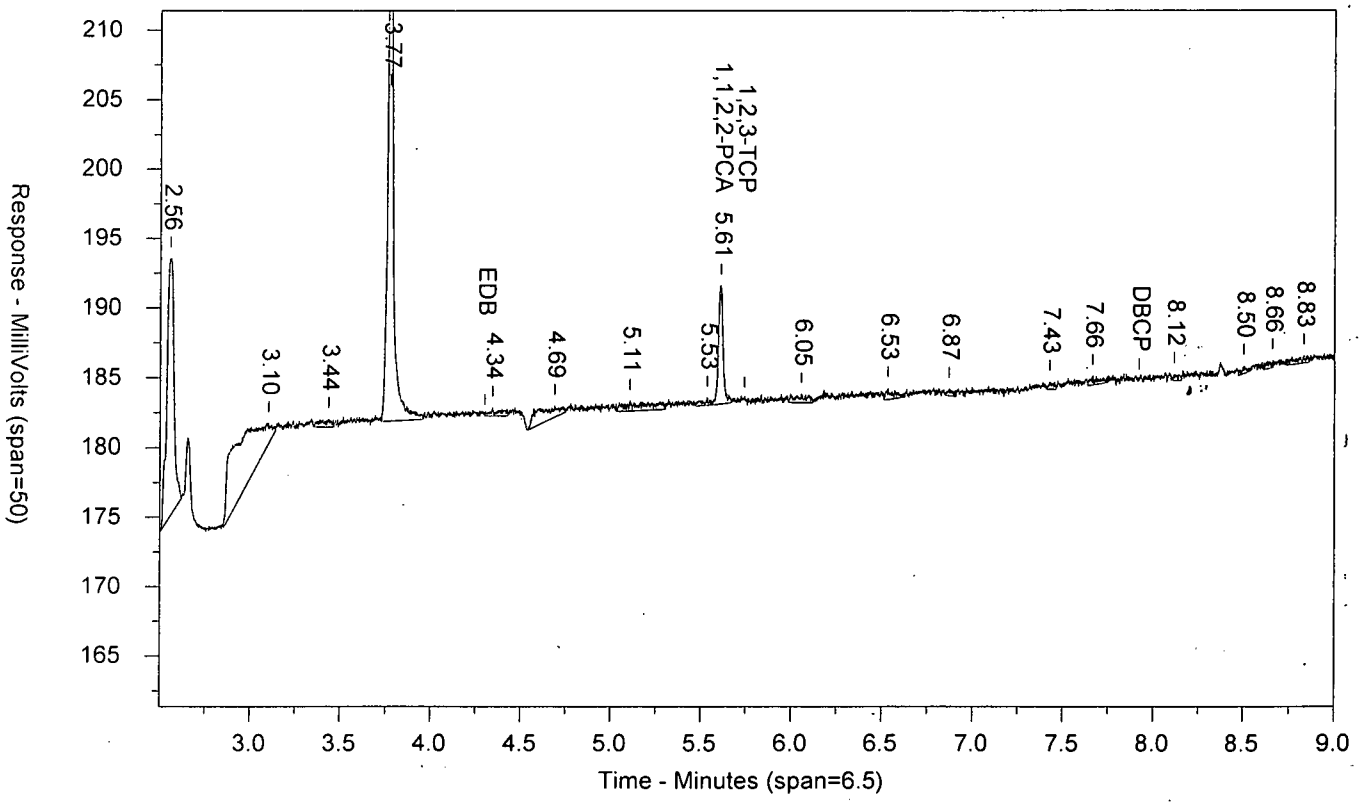


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1721899999 SW-846 8011
Injected On: 8/8/2017 9:51:31 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

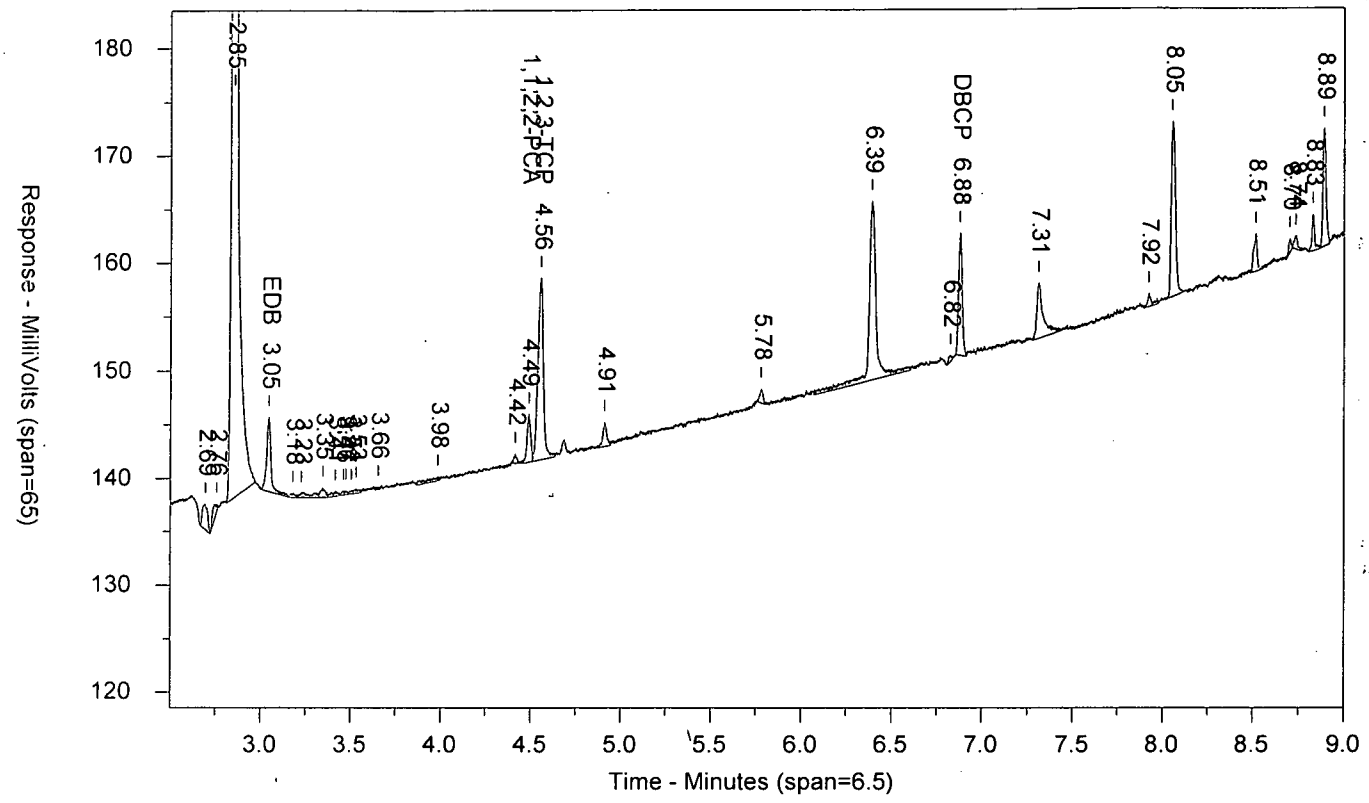
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.052 | 312 | .001 | EDB | | 0 | | EDB |
| 4.492 | 24151 | .062 | 1,1,2,2-PCA | 5.608 | 8494 | .247 | 1,1,2,2-PCA |
| 4.548 | 8170 | -.058 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17220001.0005.RAW
Area File: 16EDBS17220001B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 10:00:32 AM
File Reported On: 8/8/2017 at 4:16:50 PM

EDB_11724DY AAEDB_1AA ICAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0006.RAW

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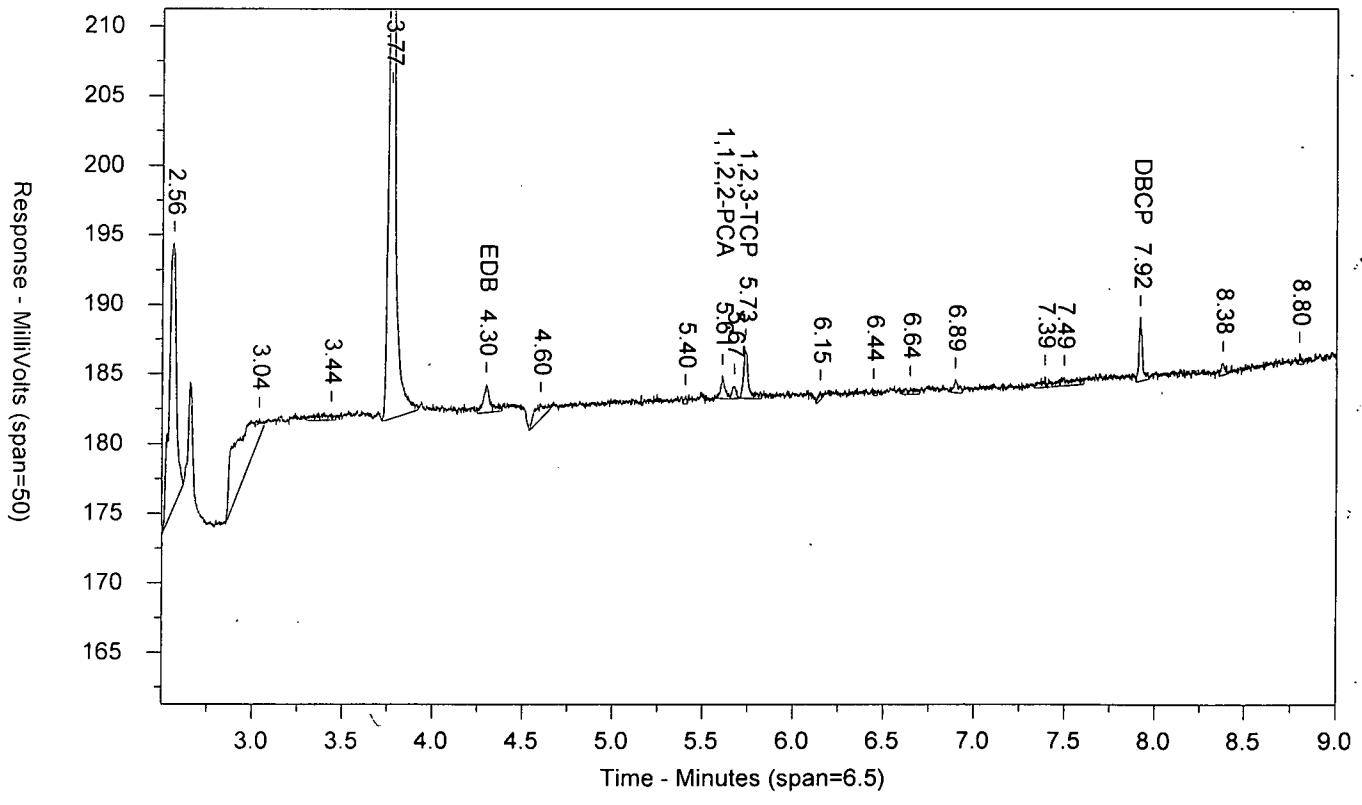


LANCASTER LABORATORIES

Sample Number: EDB_11724DY AAEDB_1AA ICAL 1721899999 SW-846 8011
Injected On: 8/8/2017 10:07:03 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

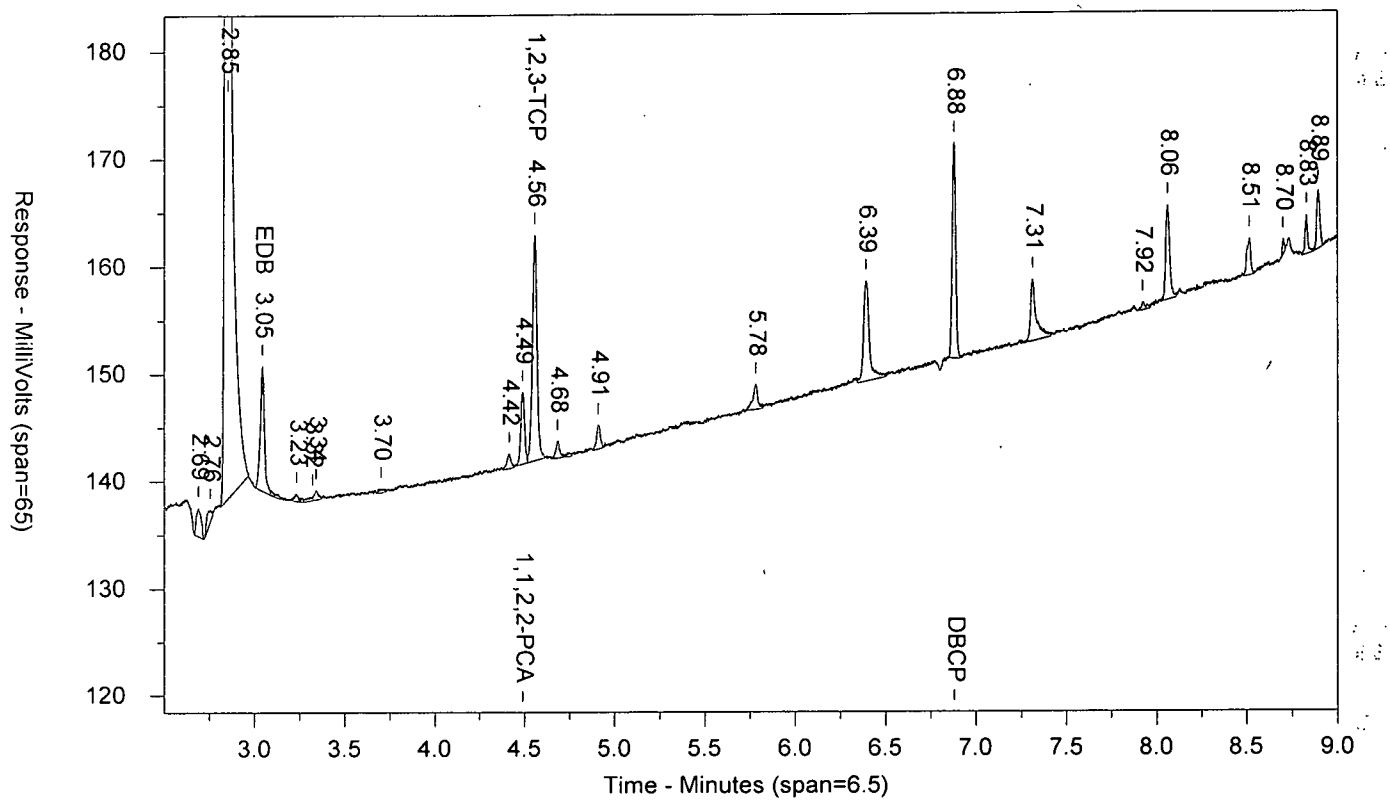
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 6986 | .379 | EDB | 4.298 | 2091 | | EDB |
| 4.491 | 4467 | .199 | 1,1,2,2-PCA | 5.605 | 1663 | .847 | 1,1,2,2-PCA |
| 4.557 | 16896 | 2.231 | 1,2,3-TCP | 5.735 | 3460 | | 1,2,3-TCP |
| 6.878 | 11409 | .371 | DBCP | 7.917 | 4638 | | DBCP |

Files:
Area File: 16EDBS17220001.0006.RAW
Area File: 16EDBS17220001B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 10:16:05 AM
File Reported On: 8/8/2017 at 4:17:06 PM

EDB_21724DY AAEDB_2AA ICAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0007.RAW

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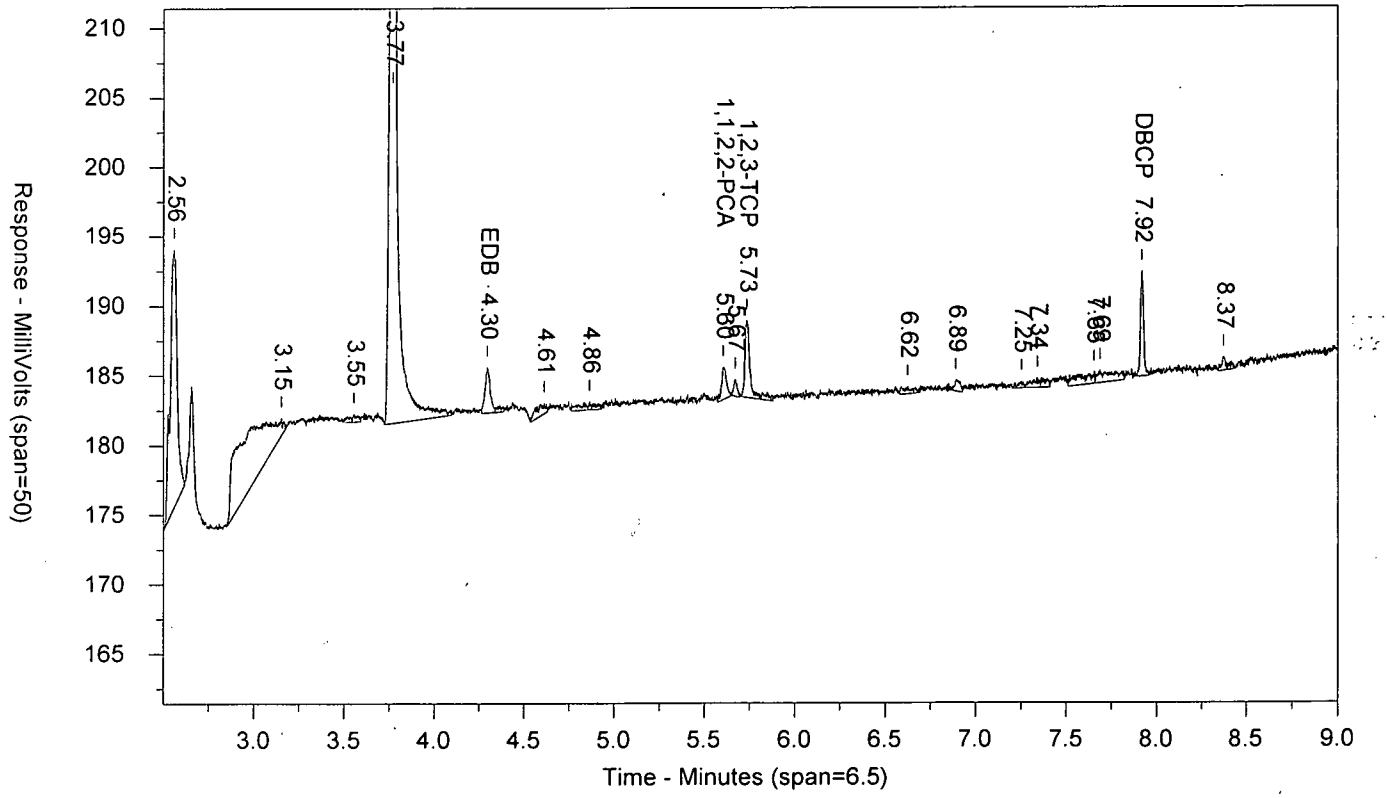


LANCASTER LABORATORIES

Sample Number: EDB_21724DY AAEDB_2AA ICAL 1721899999 SW-846 8011
Injected On: 8/8/2017 10:22:40 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

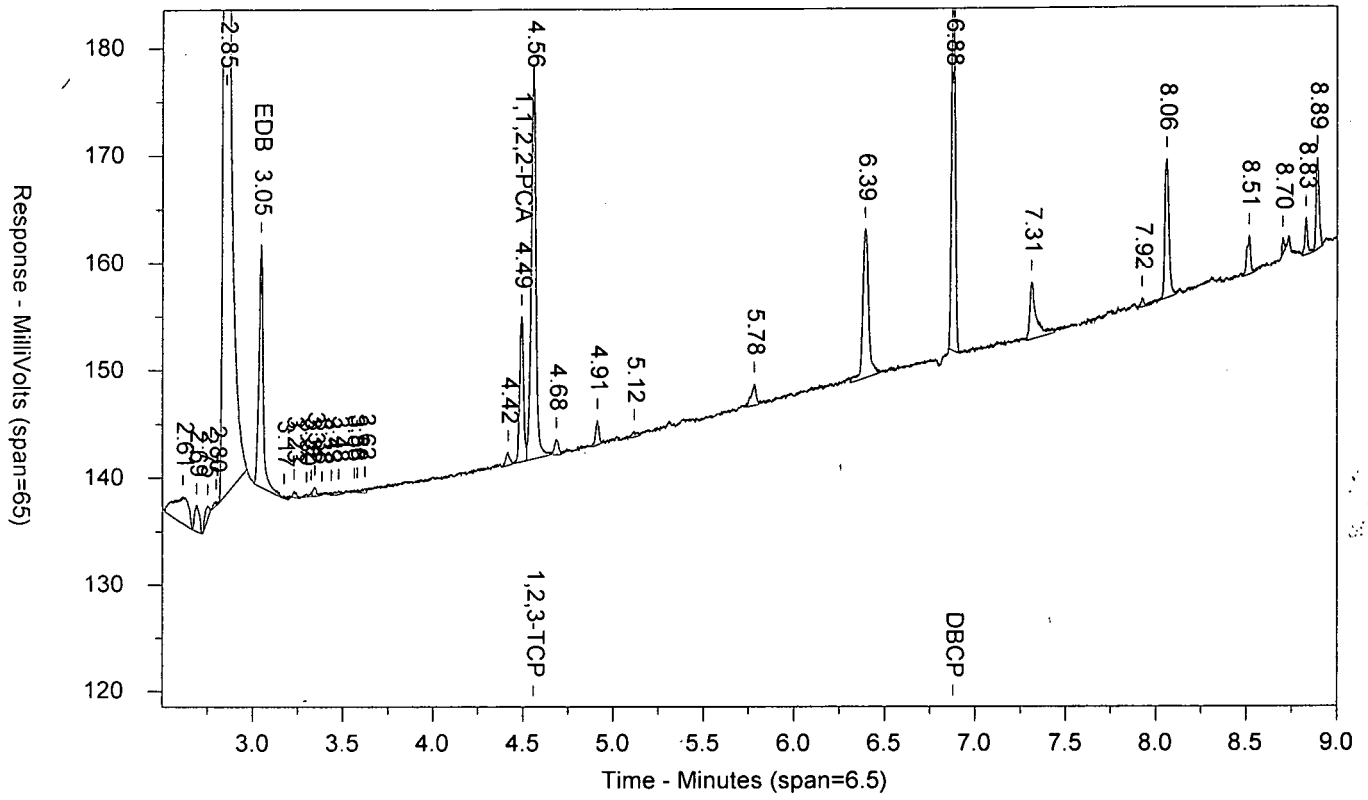
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 11691 | .634 | EDB | 4.297 | 3275 | -14.706 | EDB |
| 4.489 | 6797 | .303 | 1,1,2,2-PCA | 5.603 | 2330 | .876 | 1,1,2,2-PCA |
| 4.558 | 21060 | 3.778 | 1,2,3-TCP | 5.732 | 5522 | -114.959 | 1,2,3-TCP |
| 6.879 | 20003 | .651 | DBCP | 7.917 | 7576 | -15.493 | DBCP |

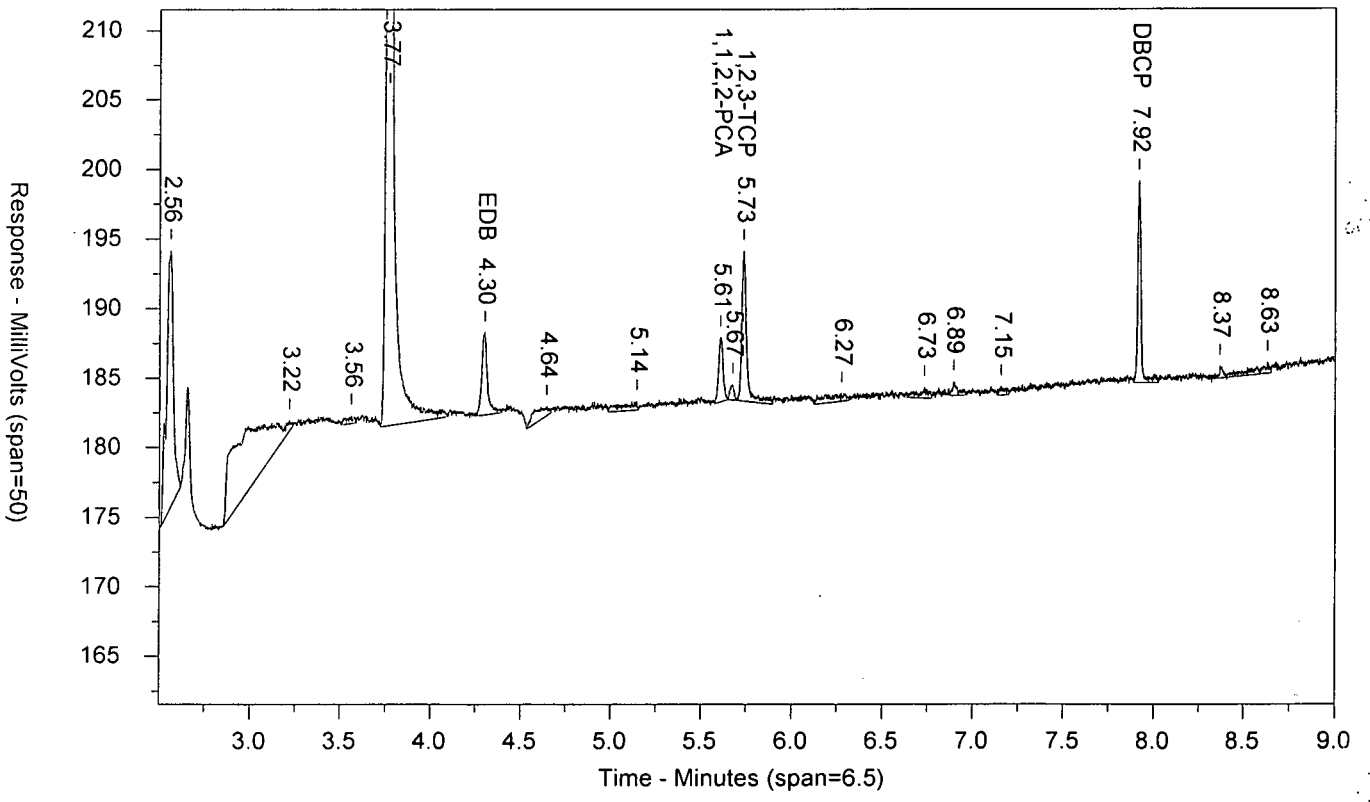
Files:
Area File: 16EDBS17220001.0007.RAW
Area File: 16EDBS17220001B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 10:31:41 AM
File Reported On: 8/8/2017 at 4:17:22 PM

EDB_31724DY AAEDB_3AA ICAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0008.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0008.RAW



LANCASTER LABORATORIES

Sample Number: EDB_31724DY AAEDB_3AA ICAL 1721899999 SW-846 8011
Injected On: 8/8/2017 10:38:15 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

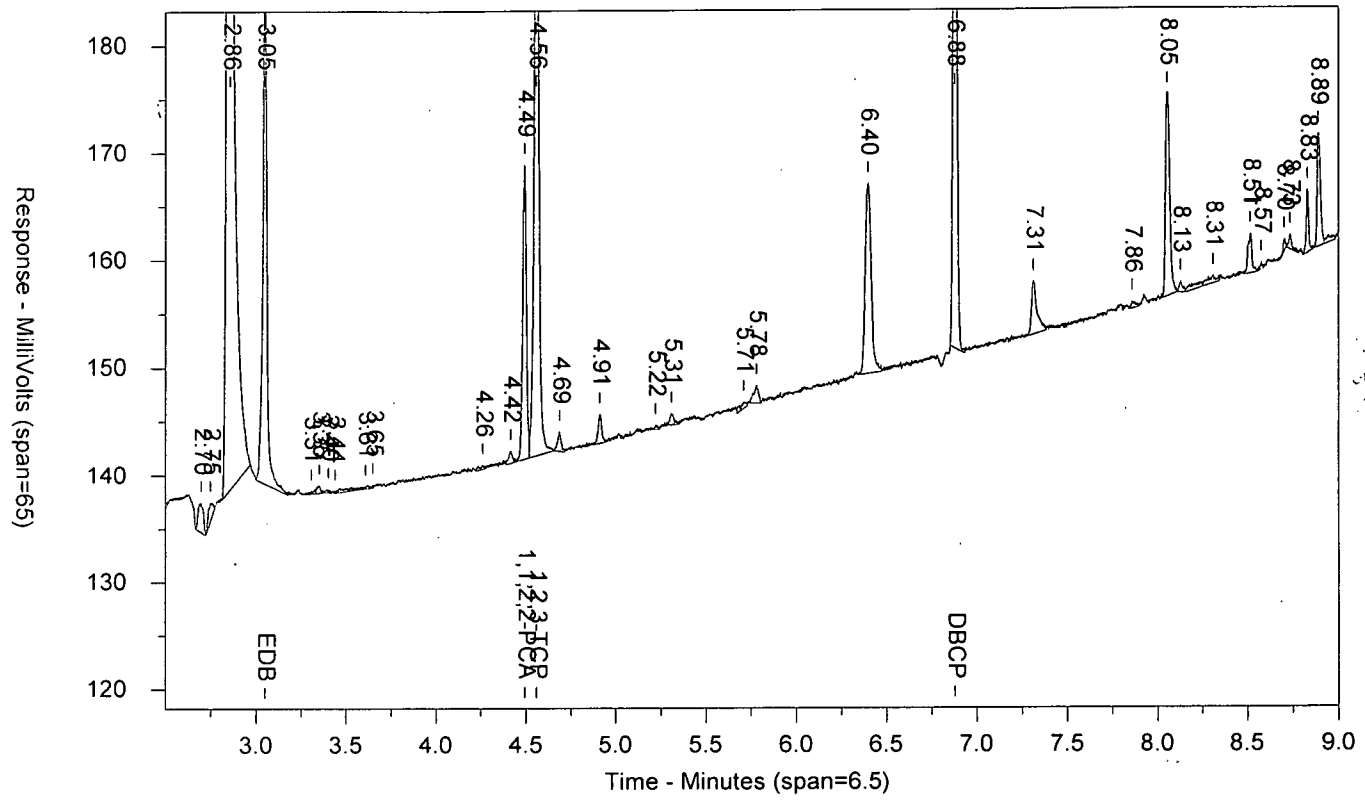
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 22714 | 1.231 | EDB | 4.301 | 5955 | -10.045 | EDB |
| 4.49 | 13566 | .605 | 1,1,2,2-PCA | 5.606 | 4668 | 1.434 | 1,1,2,2-PCA |
| 4.557 | 36526 | 9.523 | 1,2,3-TCP | 5.735 | 10838 | -86.42 | 1,2,3-TCP |
| 6.877 | 36673 | 1.193 | DBCP | 7.917 | 14540 | -11.085 | DBCP |

Files:
Area File: 16EDBS17220001.0008.RAW
Area File: 16EDBS17220001B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 10:47:16 AM
File Reported On: 8/8/2017 at 4:17:44 PM

EDB_41724DY AAEDB_4AA ICAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0009.RAW

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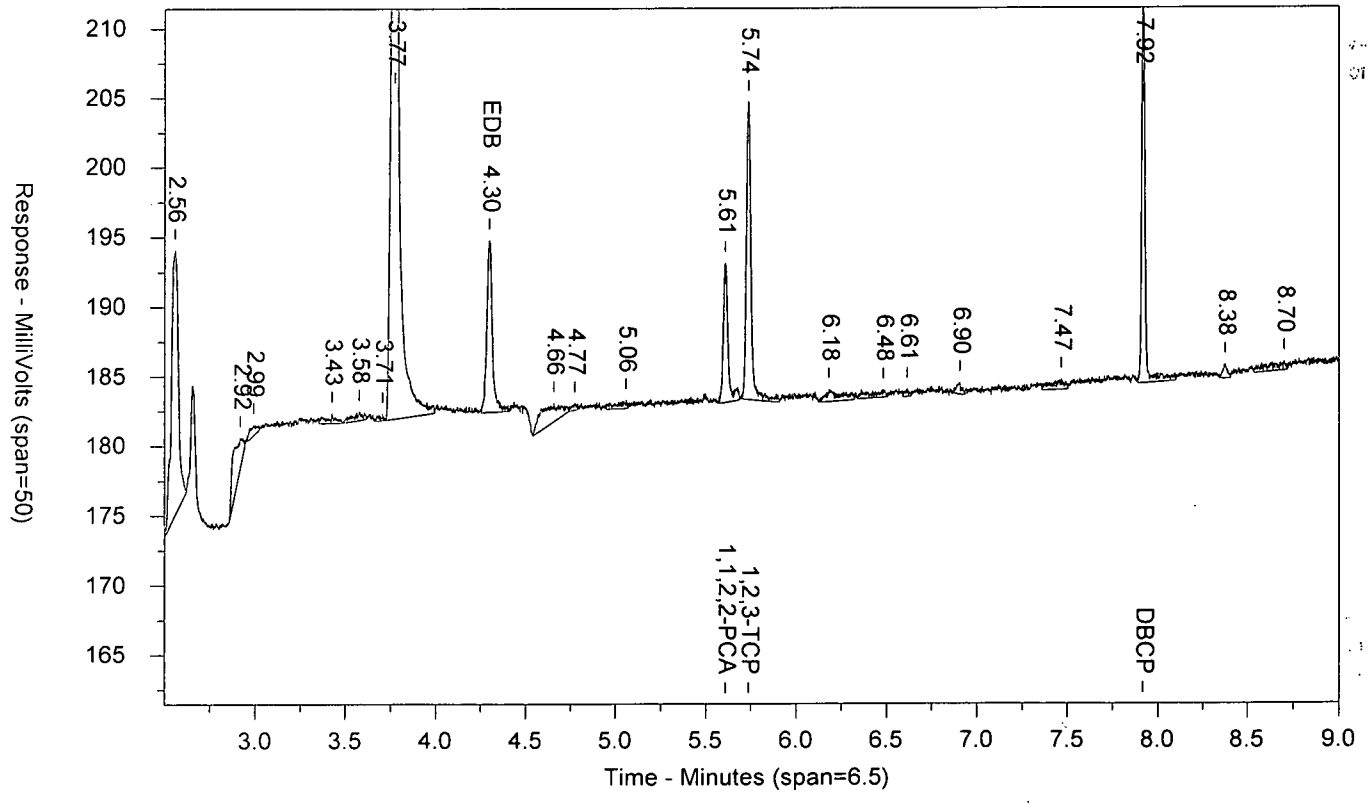


LANCASTER LABORATORIES

Sample Number: EDB_41724DY AAEDB_4AA ICAL 1721899999 SW-846 8011
Injected On: 8/8/2017 10:53:53 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

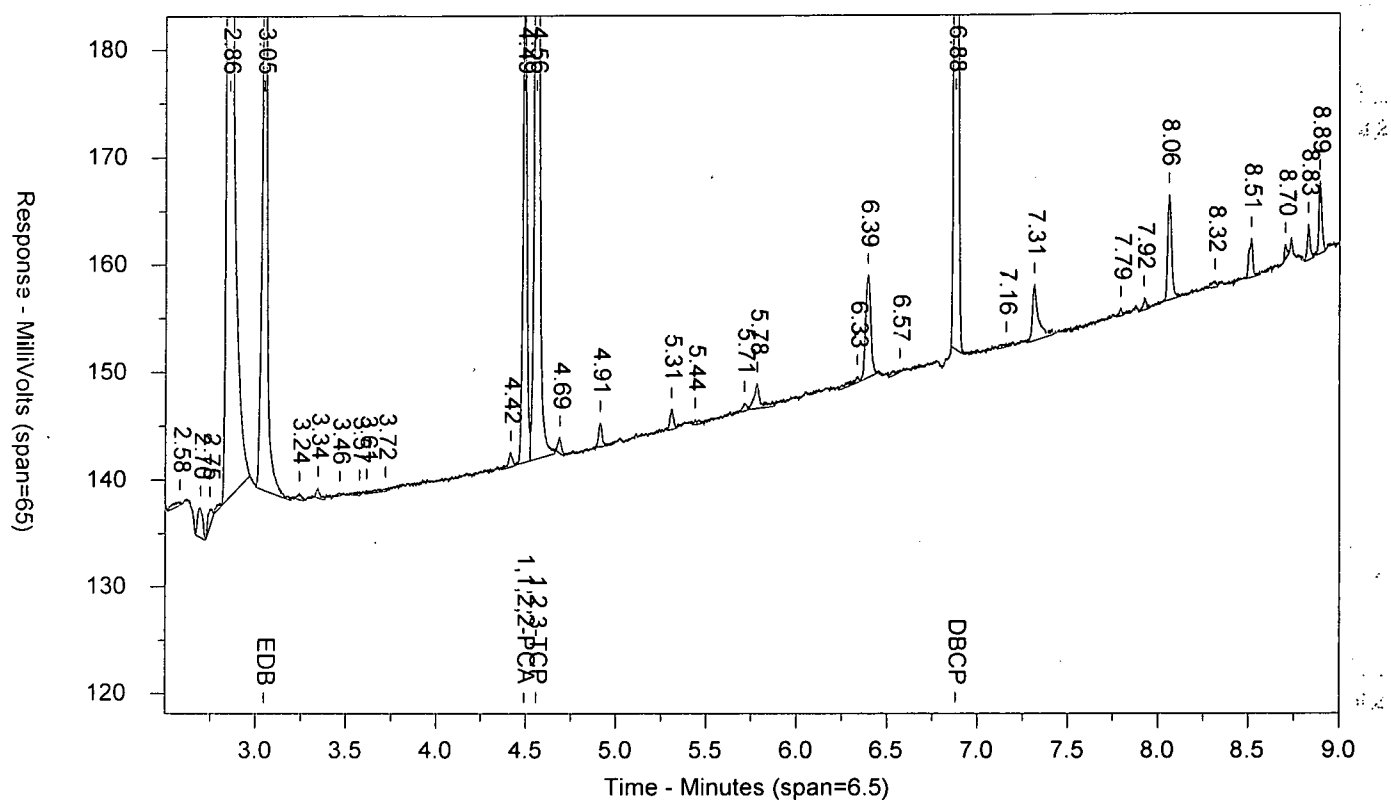
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.049 | 46431 | 2.517 | EDB | 4.3 | 12391 | -12.716 | EDB |
| 4.493 | 27435 | 1.223 | 1,1,2,2-PCA | 5.607 | 10037 | 2.389 | 1,1,2,2-PCA |
| 4.559 | 68261 | 21.311 | 1,2,3-TCP | 5.736 | 21428 | -96.366 | 1,2,3-TCP |
| 6.877 | 78472 | 2.553 | DBCP | 7.917 | 29116 | -12.672 | DBCP |

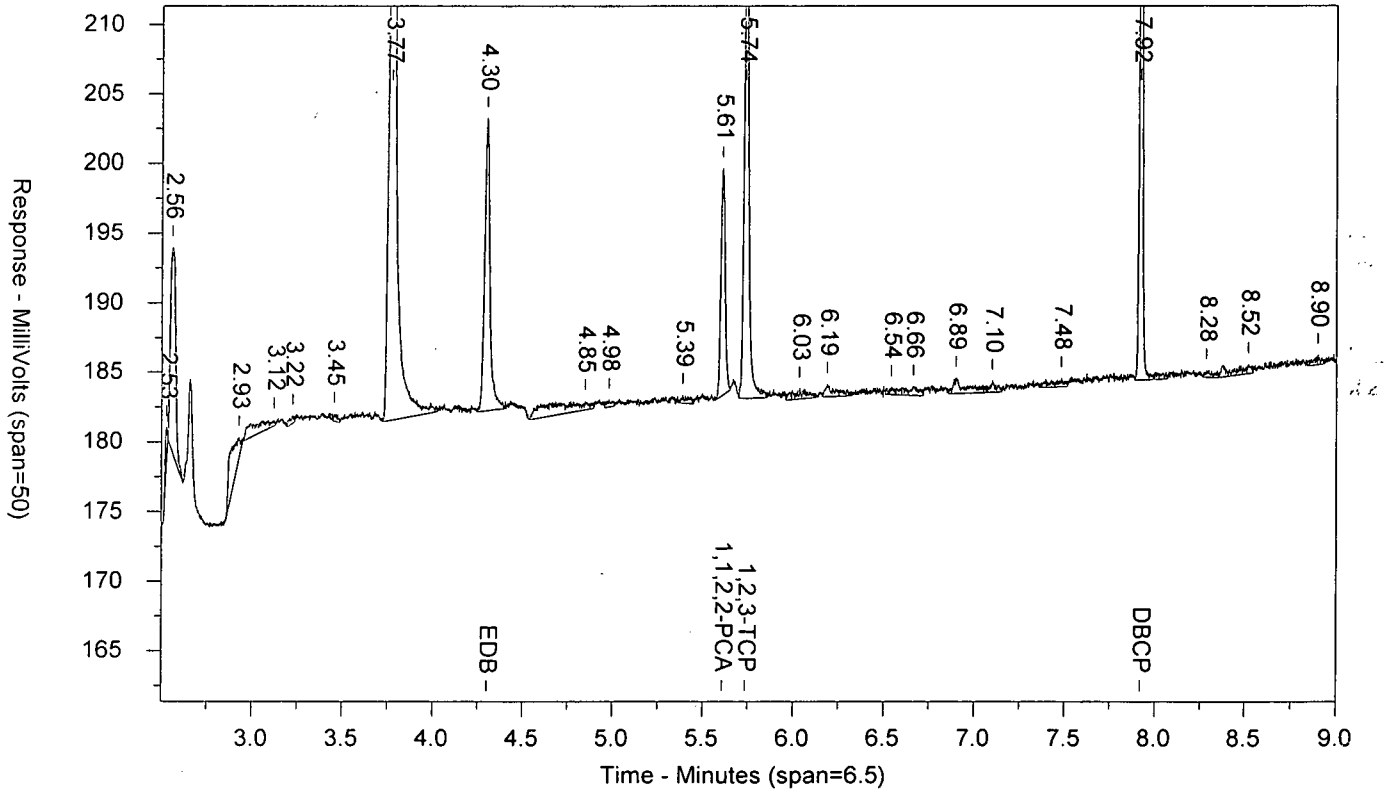
Files:
Area File: 16EDBS17220001.0009.RAW
Area File: 16EDBS17220001B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 11:02:54 AM
File Reported On: 8/8/2017 at 4:18:02 PM

EDB_51724DY AAEDB_5AA ICAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0010.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0010.RAW



LANCASTER LABORATORIES

Sample Number: EDB_51724DY AAEDB_5AA ICAL 1721899999 SW-846 8011
Injected On: 8/8/2017 11:09:28 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

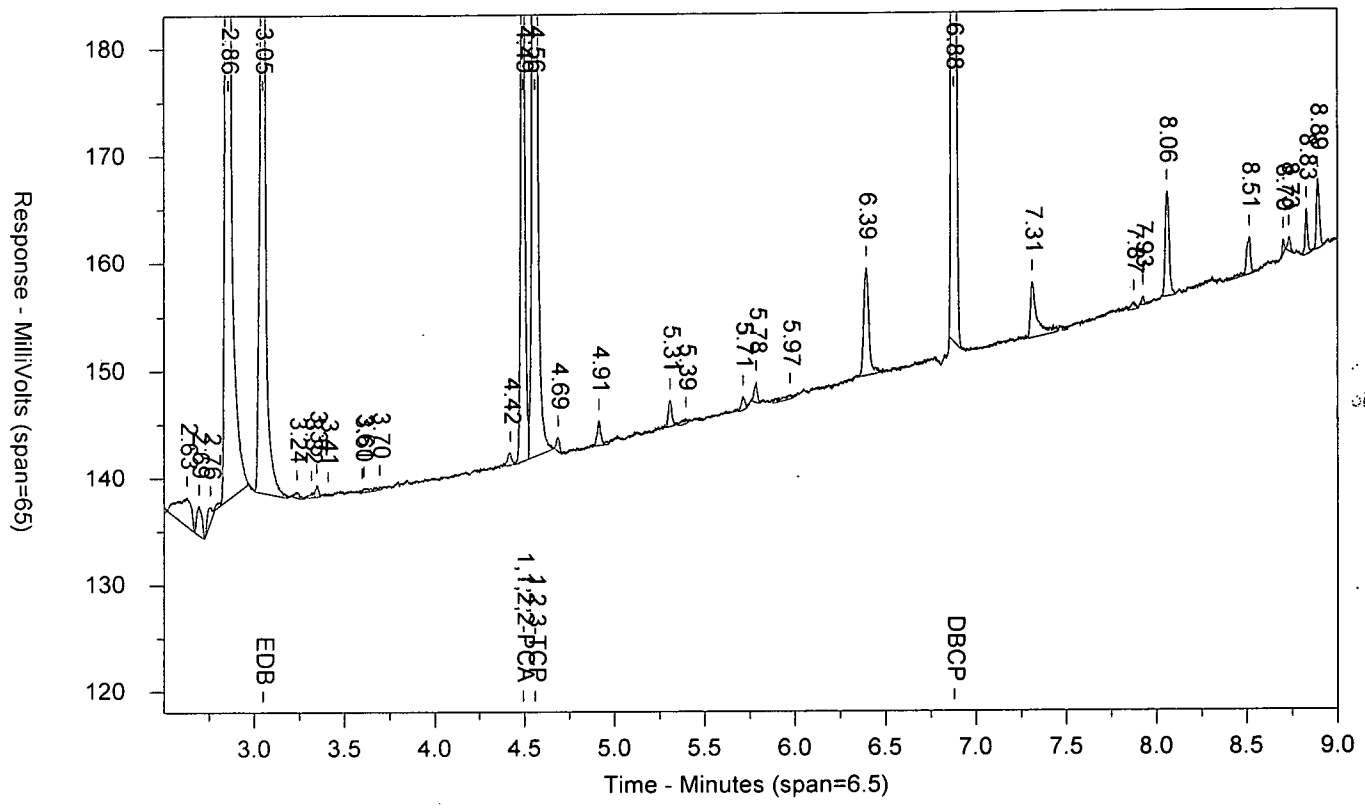
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 77747 | 4.214 | EDB | 4.301 | 21011 | -21.302 | EDB |
| 4.492 | 45145 | 2.013 | 1,1,2,2-PCA | 5.608 | 16305 | 2.932 | 1,1,2,2-PCA |
| 4.559 | 100177 | 33.166 | 1,2,3-TCP | 5.735 | 34749 | -152.059 | 1,2,3-TCP |
| 6.878 | 130000 | 4.229 | DBCP | 7.917 | 46678 | -19.701 | DBCP |

Files:
Area File: 16EDBS17220001.0010.RAW
Area File: 16EDBS17220001B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 11:18:29 AM
File Reported On: 8/8/2017 at 4:18:22 PM

EDB_61724DY AAEDB_6AA ICAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0011.RAW

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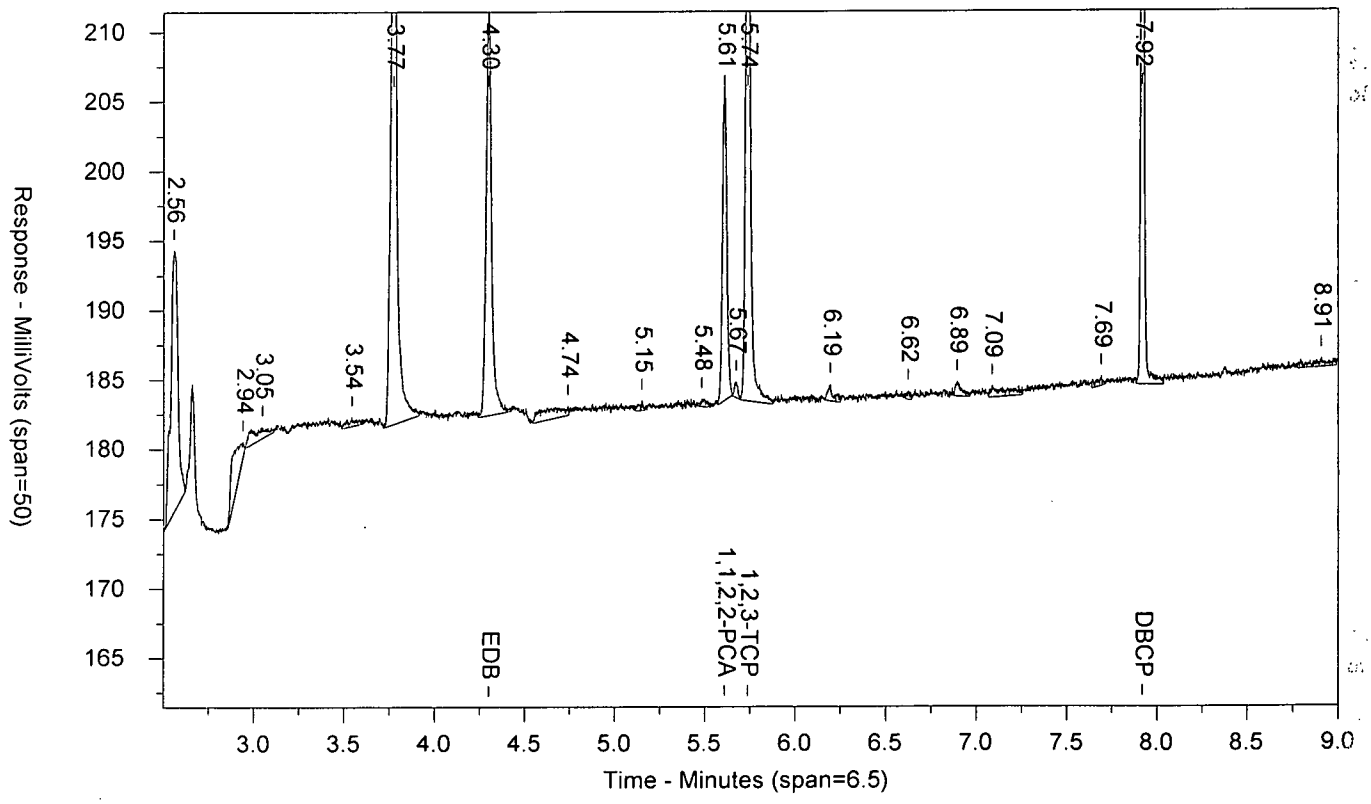


LANCASTER LABORATORIES

Sample Number: EDB_61724DY AAEDB_6AA ICAL 1721899999 SW-846 8011
Injected On: 8/8/2017 11:25:06 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

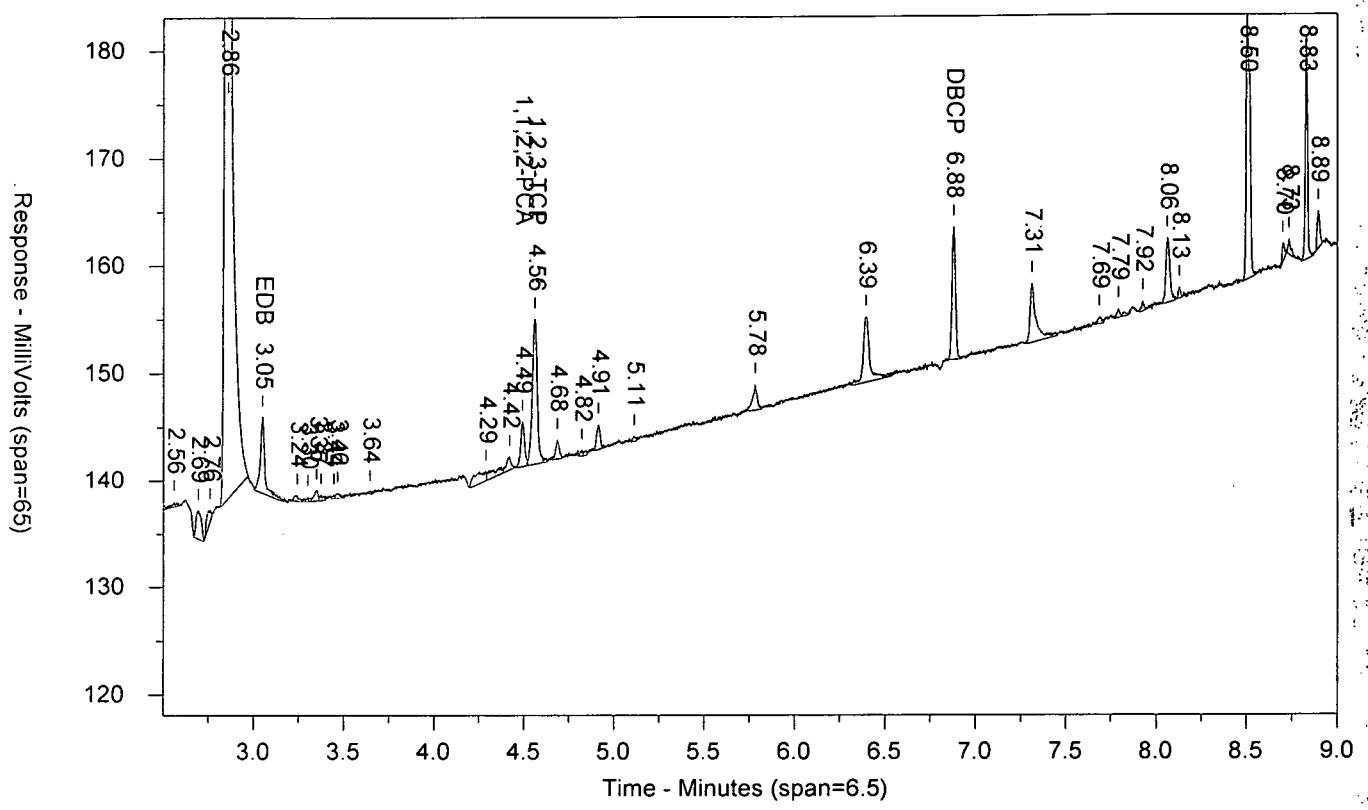
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.05 | 110518 | 5.99 | EDB | 4.301 | 29203 | 34.172 | EDB |
| 4.493 | 65614 | 2.925 | 1,1,2,2-PCA | 5.608 | 22571 | 3.31 | 1,1,2,2-PCA |
| 4.559 | 137343 | 46.972 | 1,2,3-TCP | 5.736 | 48103 | 270.092 | 1,2,3-TCP |
| 6.878 | 177937 | 5.788 | DBCP | 7.917 | 65316 | 35.997 | DBCP |

Files:
Area File: 16EDBS17220001.0011.RAW
Area File: 16EDBS17220001B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 11:34:08 AM
File Reported On: 8/8/2017 at 4:18:40 PM

MDEDX1724DY AAMDEDXAA ICAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0012.RAW

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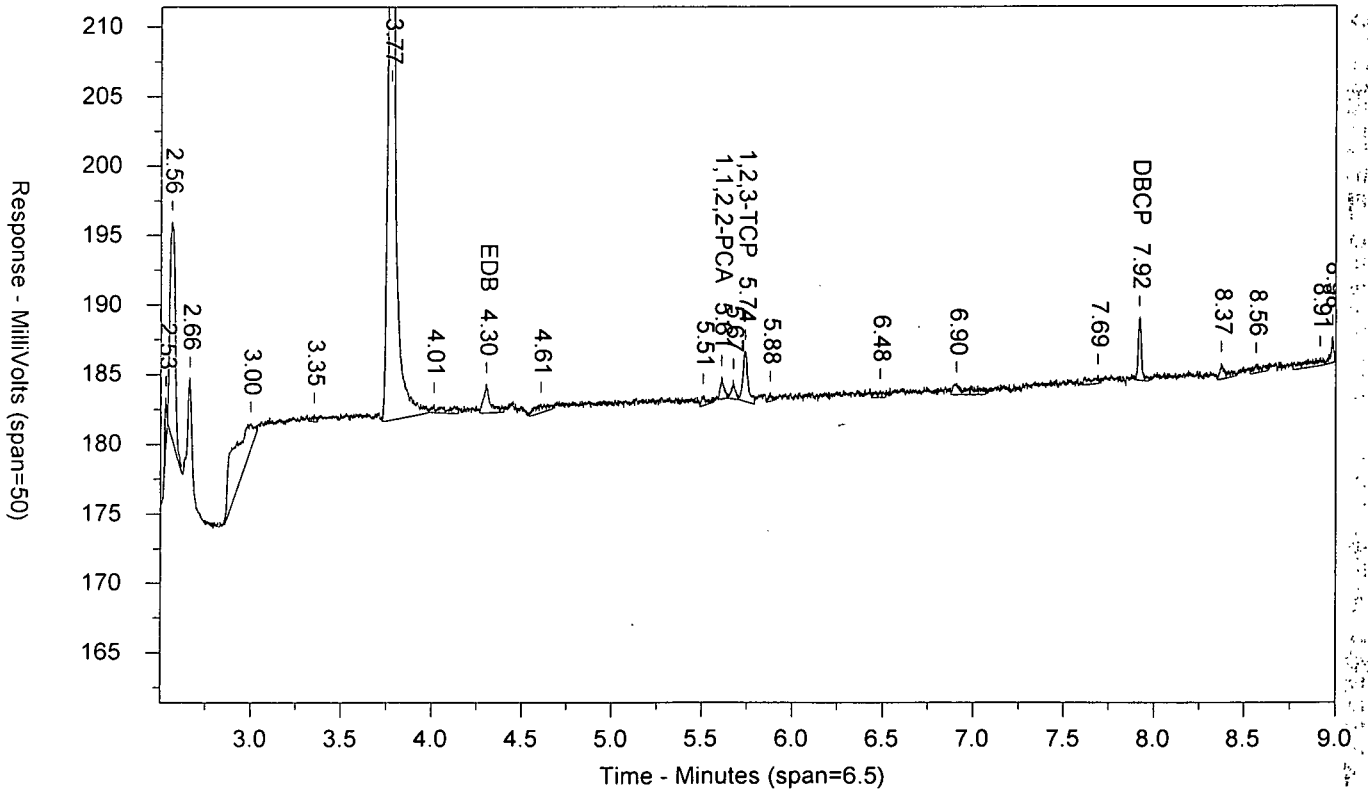


LANCASTER LABORATORIES

Sample Number: MDEDX1724DY AAMDEDXAA ICAL 1721899999 SW-846 8011
Injected On: 8/8/2017 11:40:42 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

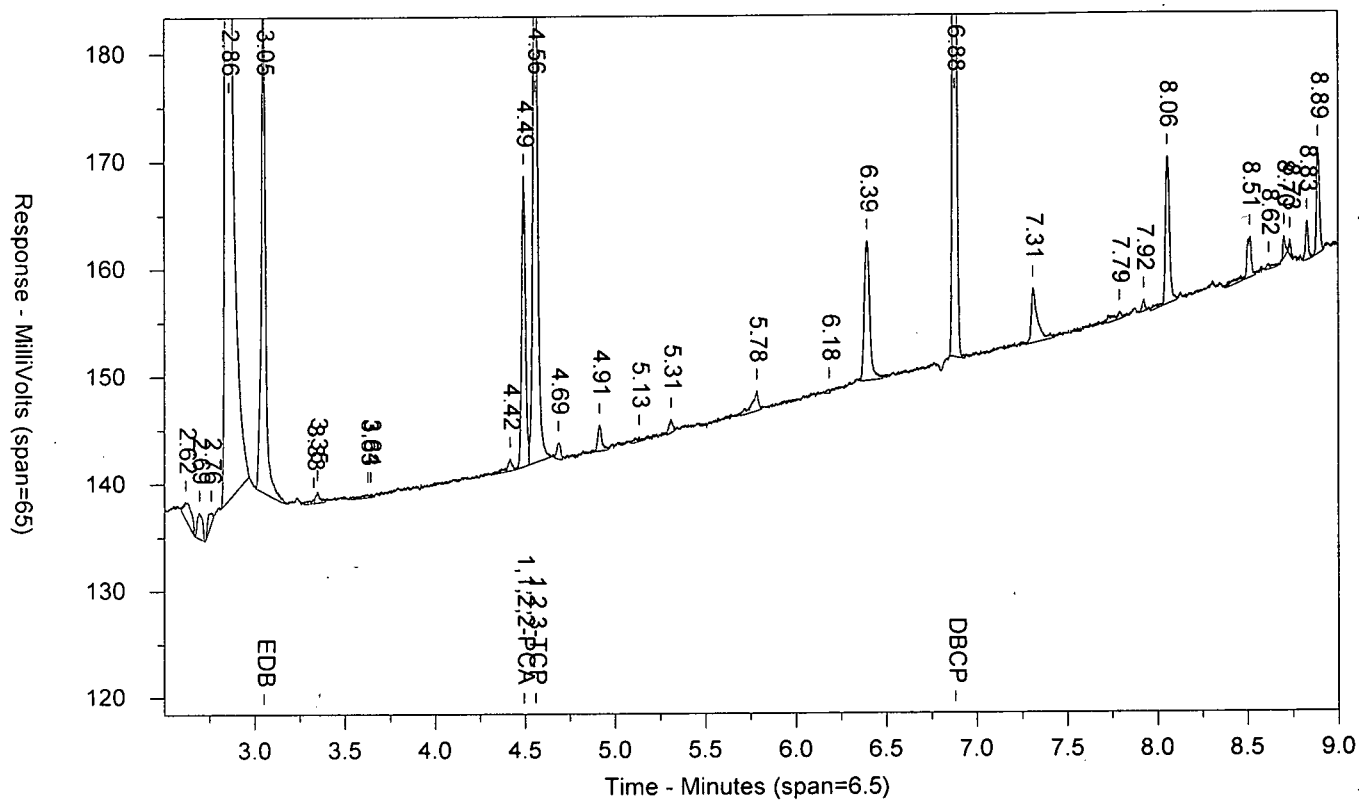
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.05 | 7181 | .389 | EDB | 4.302 | 2090 | .413 | EDB |
| 4.491 | 4231 | .189 | 1,1,2,2-PCA | 5.608 | 1584 | .164 | 1,1,2,2-PCA |
| 4.561 | 13474 | .96 | 1,2,3-TCP | 5.739 | 3649 | 3.234 | 1,2,3-TCP |
| 6.878 | 12312 | .401 | DBCP | 7.919 | 4552 | .39 | DBCP |

Files:
Area File: 16EDBS17220001.0012.RAW
Area File: 16EDBS17220001B.0012.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 11:49:43 AM
File Reported On: 8/8/2017 at 4:25:19 PM

EDB_41724DY QZEDB_4QZ CCAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0035.RAW

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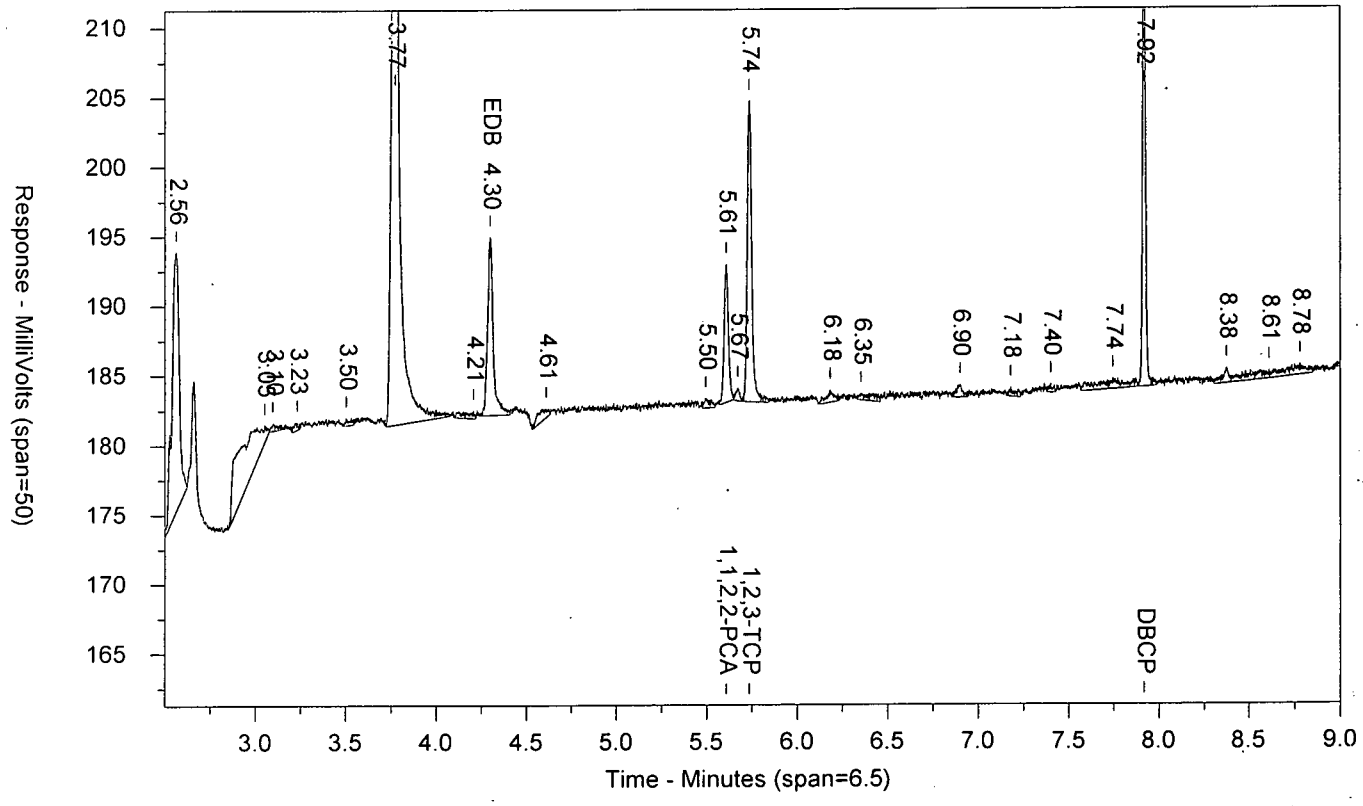


LANCASTER LABORATORIES

Sample Number: EDB_41724DY QZEDB_4QZ CCAL 1721899999 SW-846 8011
Injected On: 8/8/2017 5:39:55 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

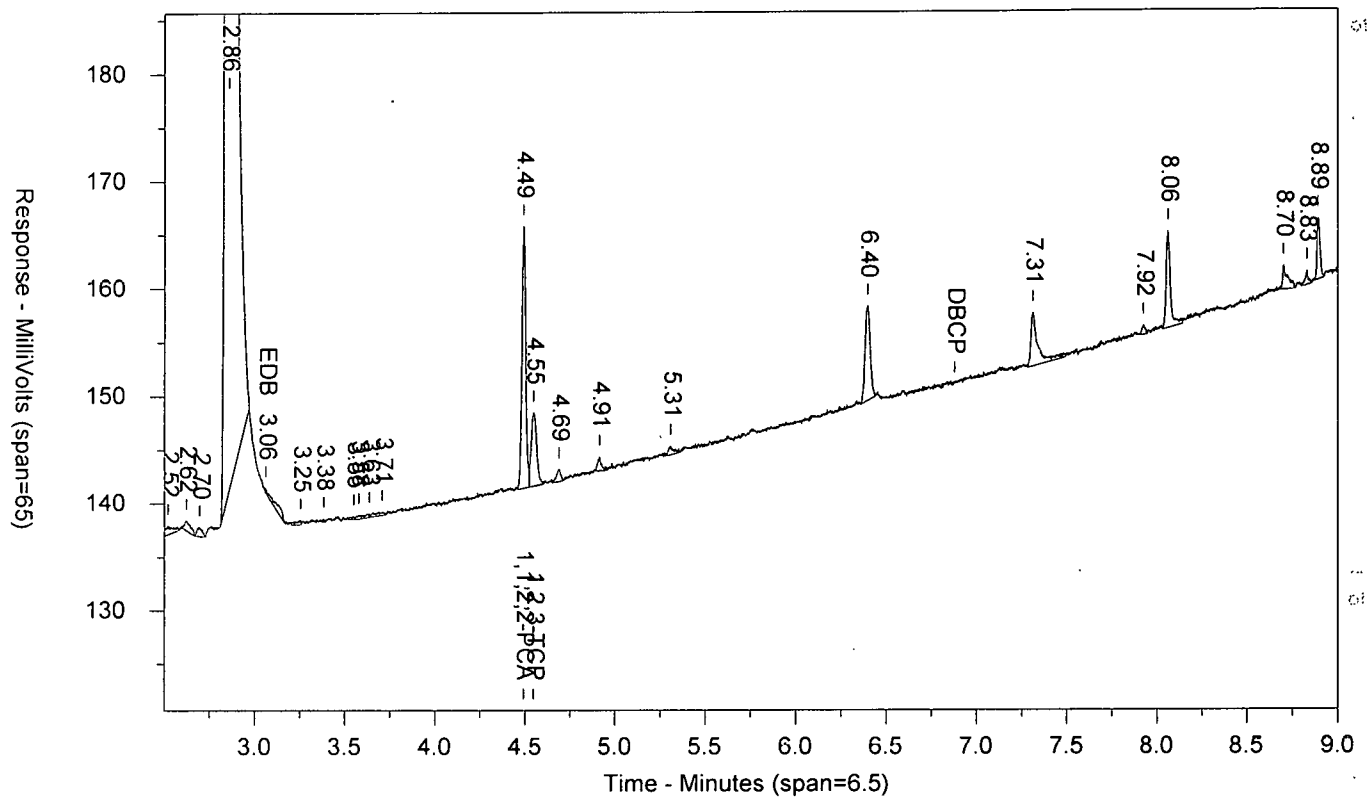
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.05 | 46542 | 2.523 | EDB | 4.302 | 12815 | 2.532 | EDB |
| 4.493 | 27152 | 1.21 | 1,1,2,2-PCA | 5.607 | 9944 | 1.309 | 1,1,2,2-PCA |
| 4.56 | 64851 | 20.044 | 1,2,3-TCP | 5.736 | 21660 | 19.195 | 1,2,3-TCP |
| 6.88 | 82458 | 2.682 | DBCP | 7.917 | 31209 | 2.67 | DBCP |

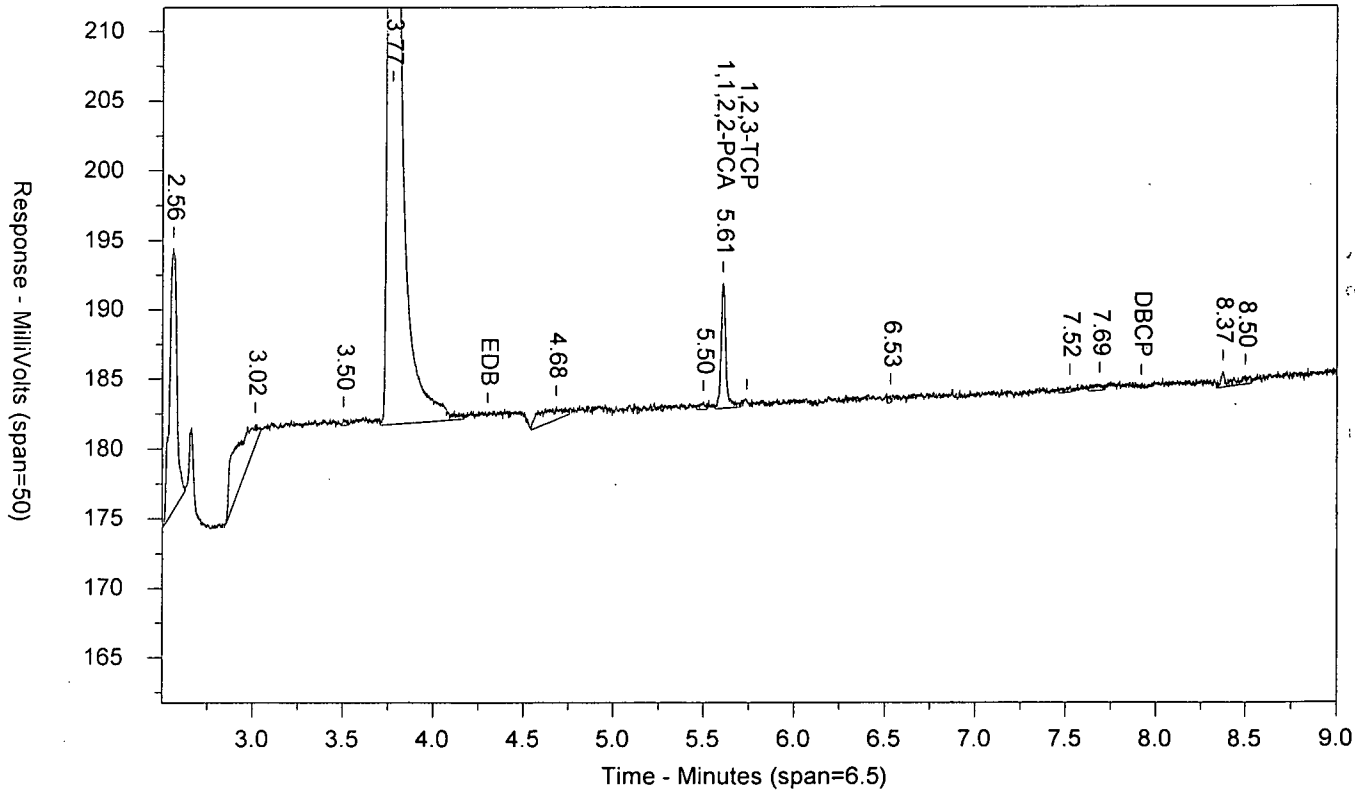
Files:
Area File: 16EDBS17220001.0035.RAW
Area File: 16EDBS17220001B.0035.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 5:48:56 PM
File Reported On: 8/9/2017 at 11:24:17 AM

EIBKX1724C CWPIBLKCW PIBLK1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0036.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0036.RAW



LANCASTER LABORATORIES

Sample Number: EIBKX1724C CWPIBLKCW PIBLK1721899999 SW-846 8011
Injected On: 8/8/2017 5:55:26 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

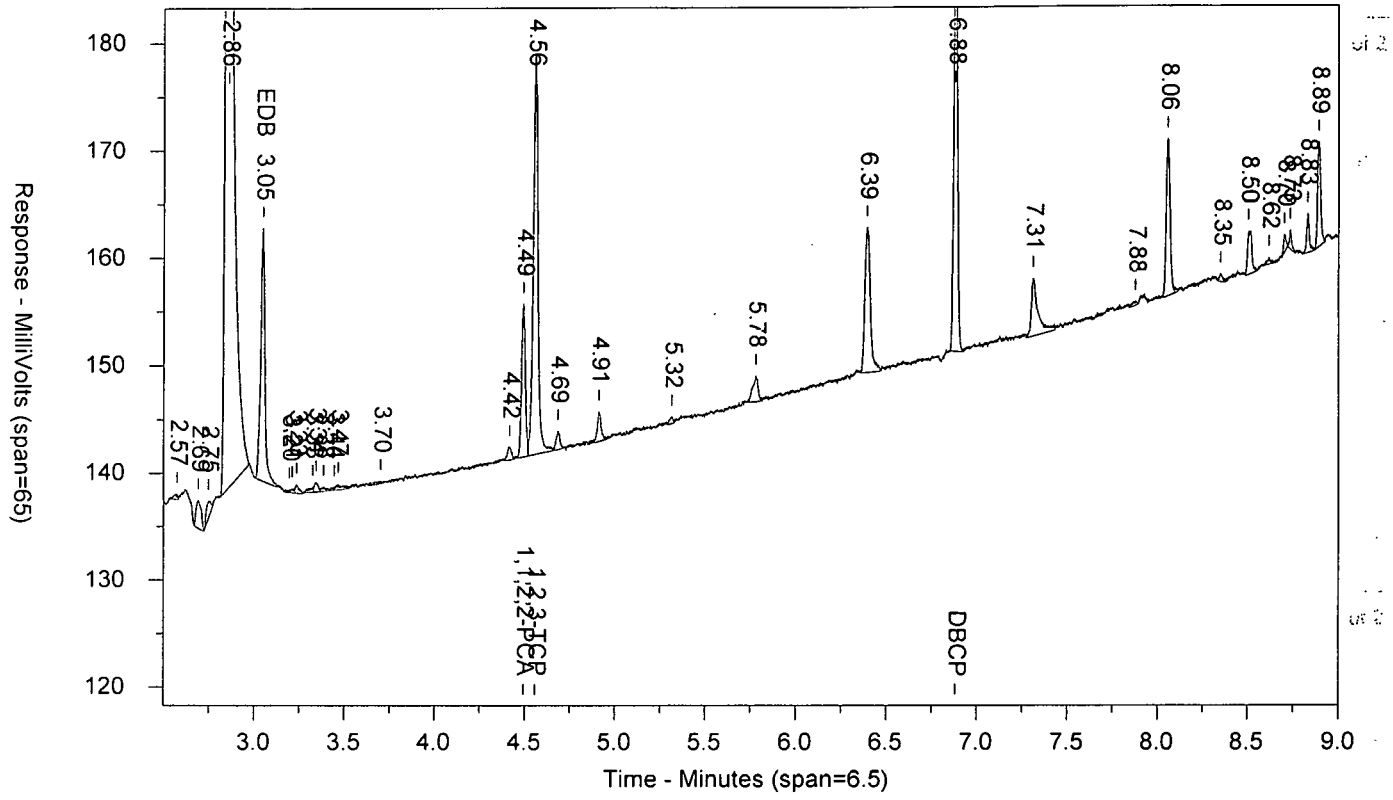
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.061 | 492 | .002 | EDB | | 0 | | EDB |
| 4.492 | 24388 | .062 | 1,1,2,2-PCA | 5.605 | 9025 | .068 | 1,1,2,2-PCA |
| 4.547 | 6858 | -.086 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17220001.0036.RAW
Area File: 16EDBS17220001B.0036.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 6:04:27 PM
File Reported On: 8/9/2017 at 11:24:33 AM

EDB_31724DY QVEDB_3QV CCAL 1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0046.RAW

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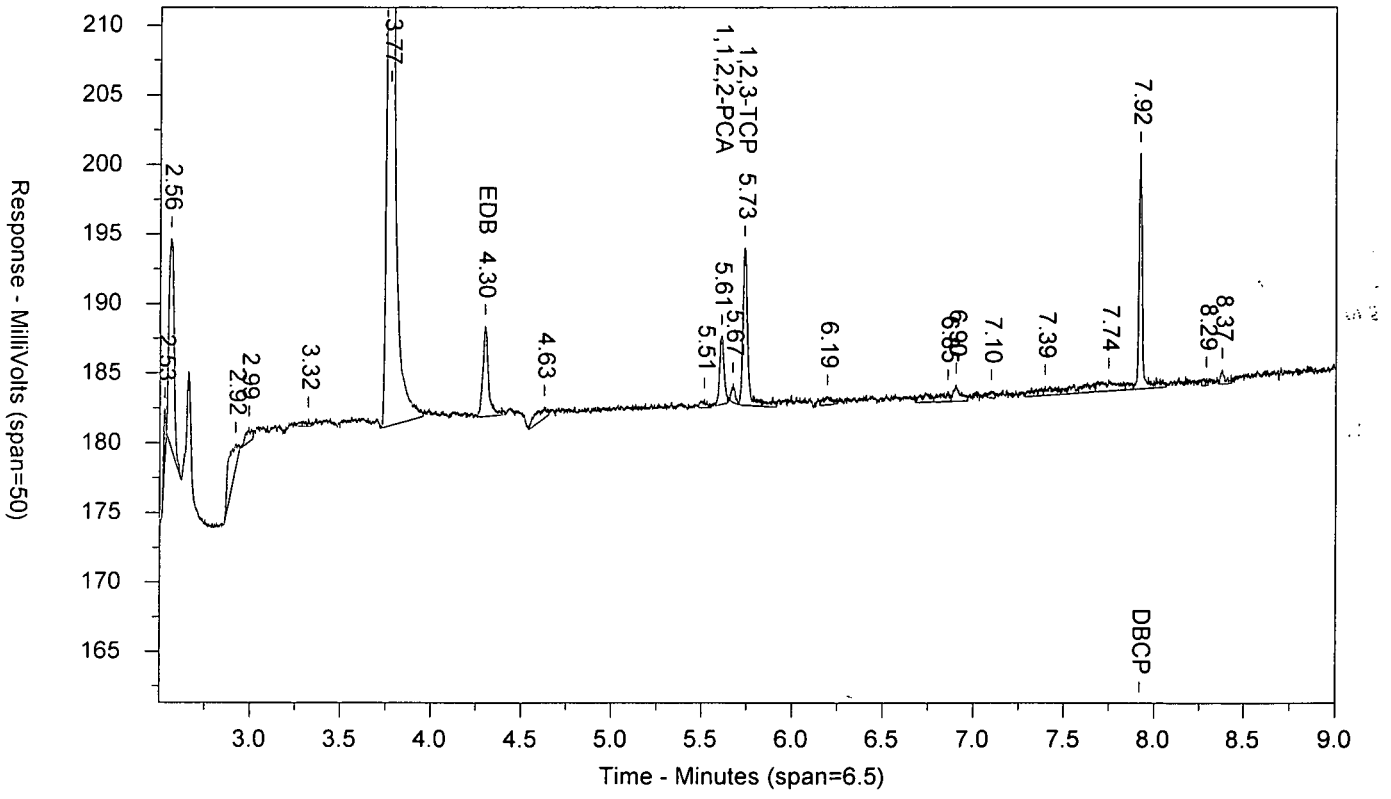


LANCASTER LABORATORIES

Sample Number: EDB_31724DY QVEDB_3QV CCAL 1721899999 SW-846 8011
Injected On: 8/8/2017 8:31:25 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

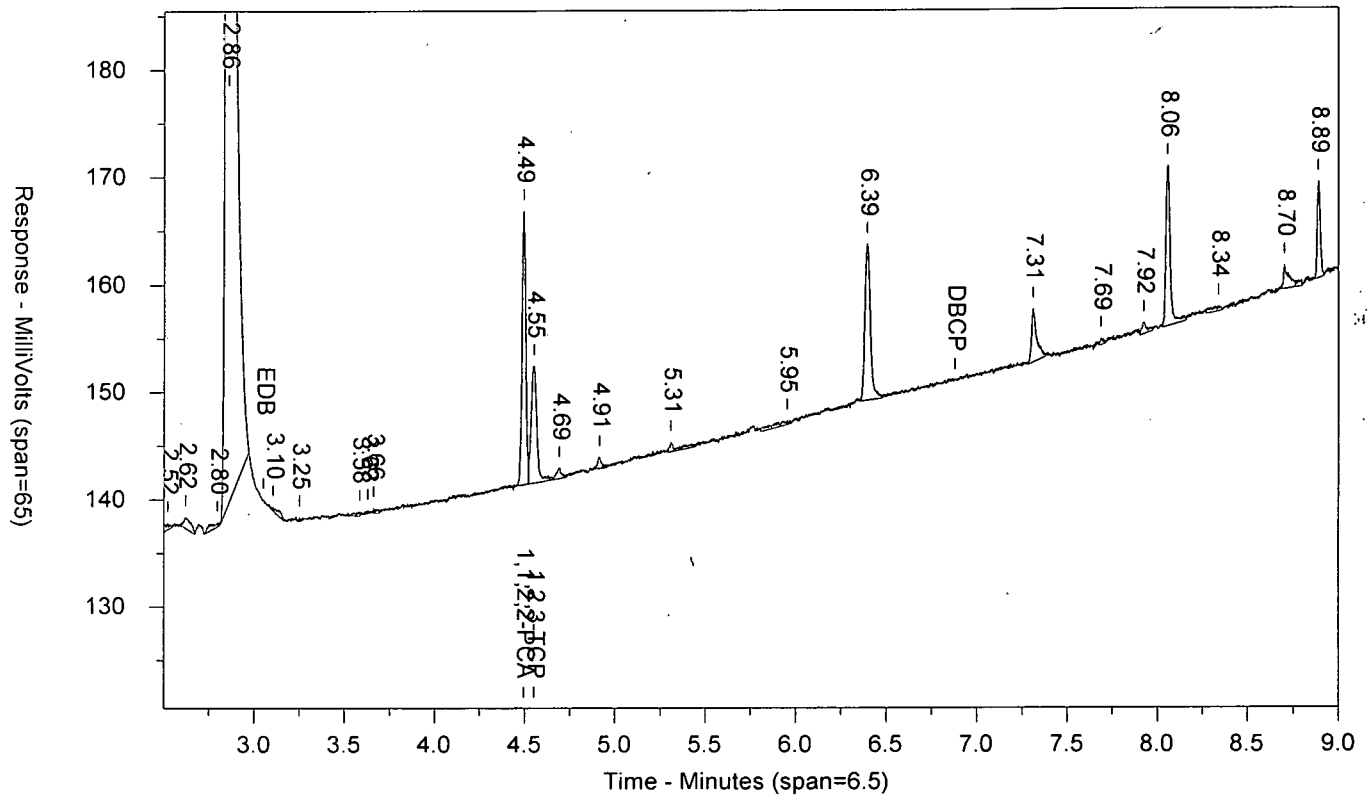
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 23548 | 1.276 | EDB | 4.298 | 6520 | 1.288 | EDB |
| 4.493 | 14213 | .634 | 1,1,2,2-PCA | 5.607 | 4954 | .626 | 1,1,2,2-PCA |
| 4.559 | 37239 | 9.787 | 1,2,3-TCP | 5.735 | 11360 | 10.067 | 1,2,3-TCP |
| 6.879 | 42028 | 1.367 | DBCP | 7.918 | 16942 | 1.45 | DBCP |

Files:
Area File: 16EDBS17220001.0046.RAW
Area File: 16EDBS17220001B.0046.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 8:40:27 PM
File Reported On: 8/9/2017 at 11:27:12 AM

EIBKX1724C CYPIBLKCY PIBLK1721899999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0047.RAW

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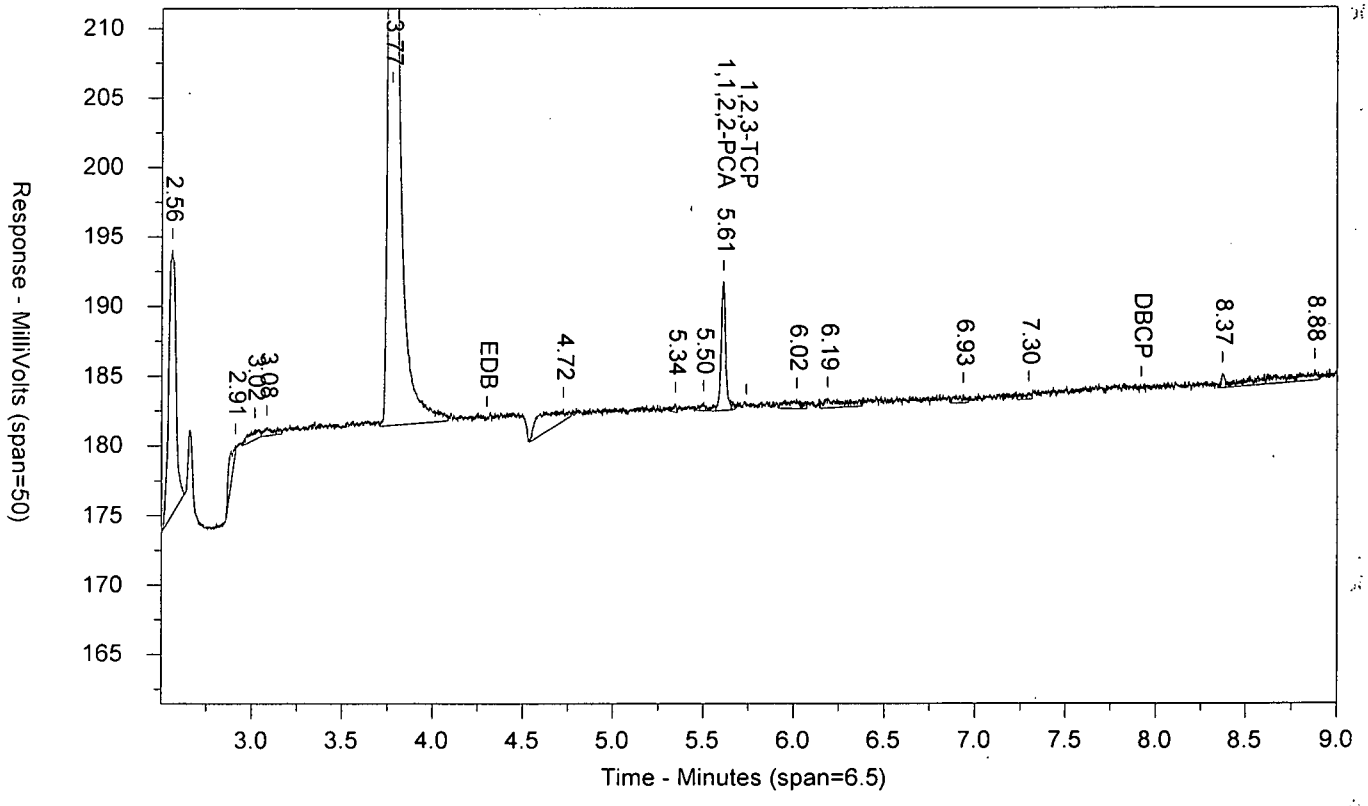


LANCASTER LABORATORIES

Sample Number: EIBKX1724C CYPIBLKCY PIBLK1721899999 SW-846 8011
Injected On: 8/8/2017 8:47:04 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.494 | 25510 | .065 | 1,1,2,2-PCA | 5.609 | 9284 | .07 | 1,1,2,2-PCA |
| 4.55 | 10951 | .001 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17220001.0047.RAW
Area File: 16EDBS17220001B.0047.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 8:56:05 PM
File Reported On: 8/9/2017 at 11:27:30 AM

# Raw QC Data

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: BLANKA** 8/4/17 PBLK23215 BLK Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 18:11:06 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0037.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) 77% ( 46 - 136 ) Conc: 0.054065

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 18:11:06 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0037.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 81% ( 46 - 136 ) Conc: 0.057251

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 359 | 0.001112 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 21224 | 0.054065 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 7170 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.58 | 5.60 | 5.64 | 7700 | 0.057251 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 3911 | 0.198053 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☐ Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.054065 | 0.0035 | 0.007 | 0.007 | | 5.72 | |
| ☐ 1,1,2,2-TETRACHLOROE | A | 0.054065 | 0.0035 | 0.007 | 0.007 | | 5.72 | |
| ☐ 1,1,2,2-TETRACHLOROE | B | 0.057251 | 0.0035 | 0.007 | 0.007 | | | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:00

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 8/4/17 PBLK23215Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 18:11:06
Instrument : CP16--19853A
Result file : 16EDBS17220001.0037.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 77% (46-136) Conc.: 0.054065

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 359 | 0.001112 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 21224 | 0.054065 |
| 1,2,3-TCP | 4.53 | 4.56 | 4.59 | 7170 | -0.078953 |

## Analysis Report (B)

Injected on : Aug 08, 2017 18:11:06
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0037.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 81% (46-136) Conc.: 0.057251

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.58 | 5.60 | 5.64 | 7700 | 0.057251 |
| 1,2,3-TCP | 5.71 | 5.73 | 5.77 | 3911 | 0.198053 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.054065 | | | | 5.73 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Valeria L. Tomayko
Principal Specialist

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: AUG 09 2017

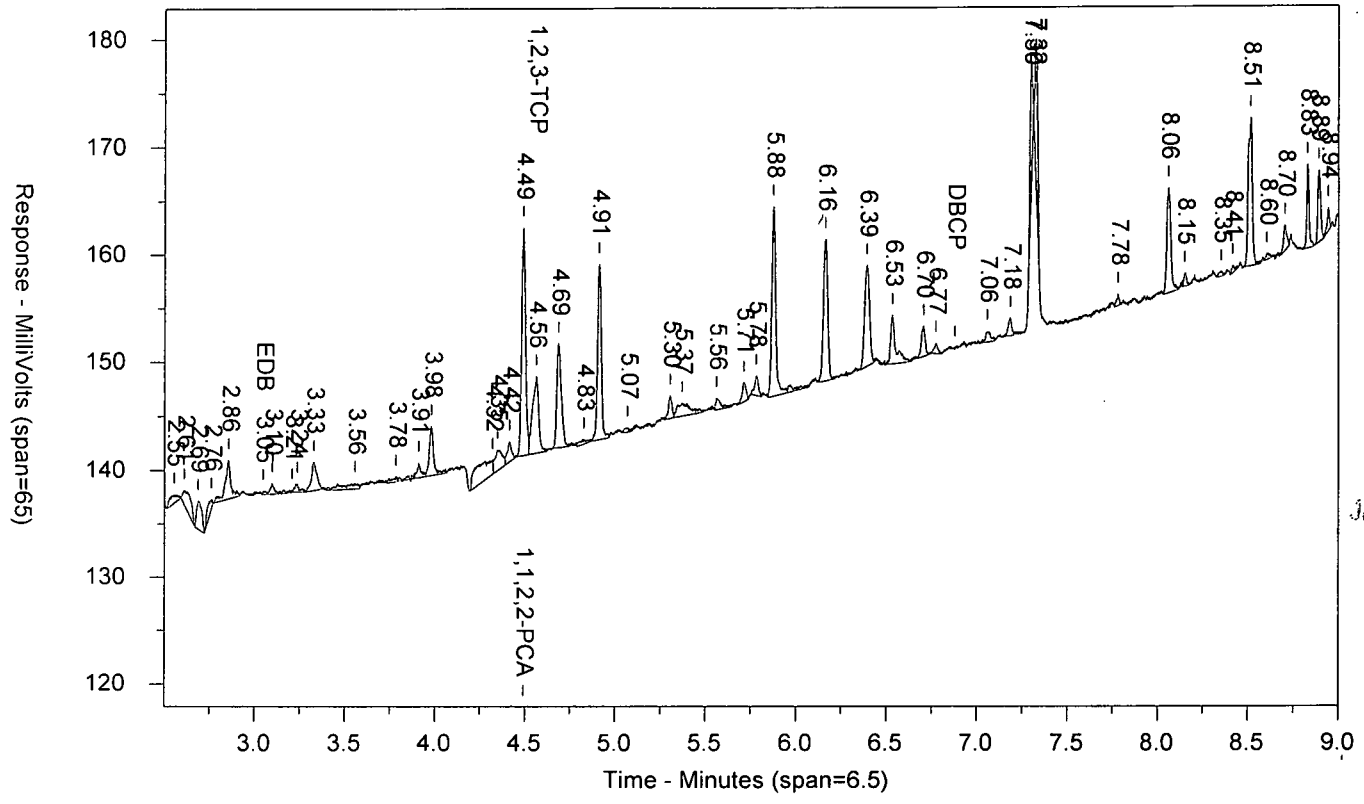
Verified by:
Date: AUG 10 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

BLANKA 8/4/17 AAPBLK23215 BLK 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0037.RAW

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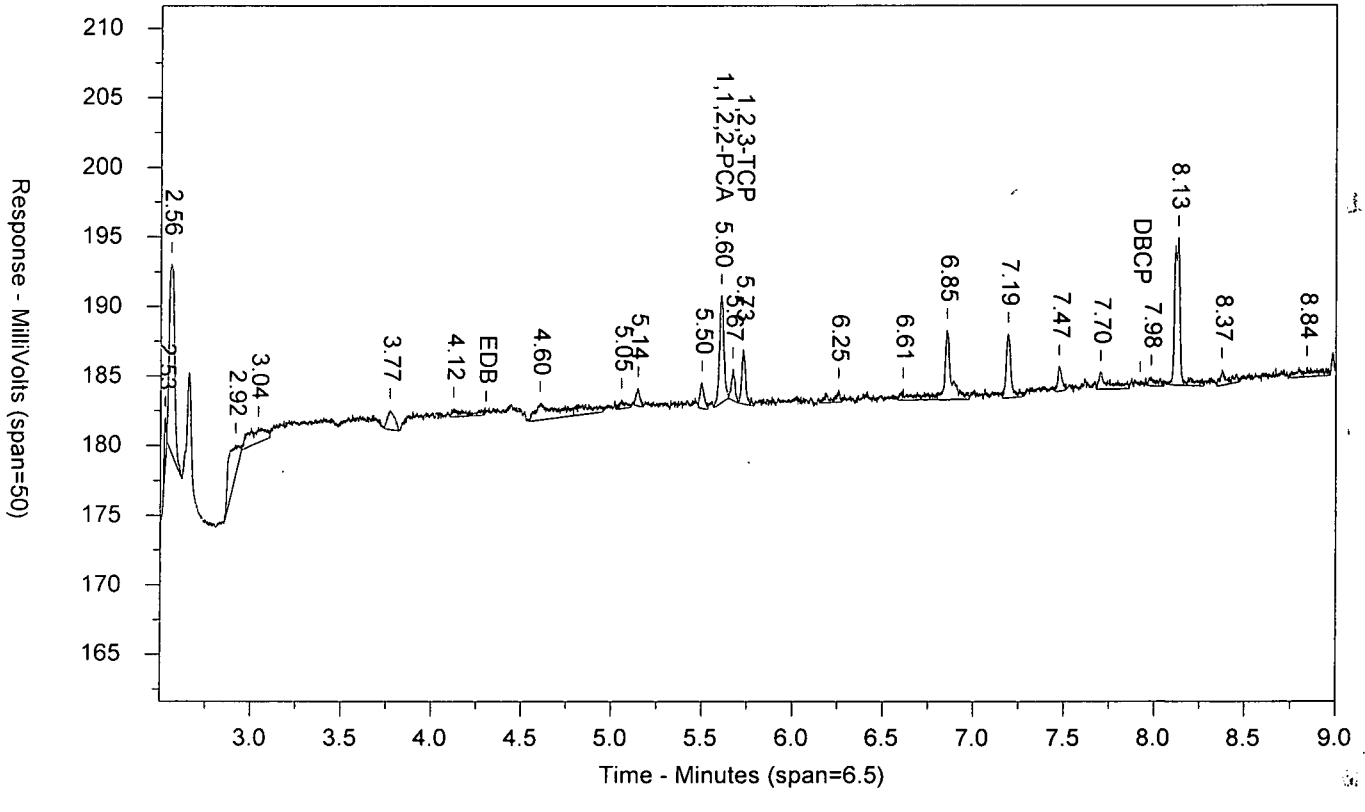

LANCASTER LABORATORIES

Sample Number: BLANKA 8/4/17 AAPBLK23215 BLK 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 6:11:06 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 359 | .001 | EDB | | 0 | | EDB |
| 4.492 | 21224 | .054 | 1,1,2,2-PCA | 5.605 | 7700 | .057 | 1,1,2,2-PCA |
| 4.563 | 7170 | -.079 | 1,2,3-TCP | 5.725 | 3911 | .198 | 1,2,3-TCP |

Files:
Area File: 16EDBS17220001.0037.RAW
Area File: 16EDBS17220001B.0037.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 6:20:07 PM
File Reported On: 8/9/2017 at 11:24:49 AM

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# Data Summary

**Sample Name: 9127592** K1924DUP DUP Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35.92 mL Total Volume: 2 ml Analyst: 7848 SDG: KR192 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 20:15:50 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0045.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) 75% ( 46 - 136 ) Conc: 0.051408

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 20:15:50 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0045.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 76% ( 46 - 136 ) Conc: 0.052226

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 20712 | 0.051408 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 7233 | 0.052226 |
| 1,2,3-Trichloropropane | 4.53 | 4.55 | 4.59 | 10568 | 0 | 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 3845 | 0.189704 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.0097 | <0.0195 | <0.0292 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.051408 | 0.0034 | 0.0068 | 0.0068 | | 1.58 | |
| 1,1,2,2-TETRACHLOROE | A | 0.051408 | 0.0034 | 0.0068 | 0.0068 | | 1.58 | |
| 1,1,2,2-TETRACHLOROE | B | 0.052226 | 0.0034 | 0.0068 | 0.0068 | | | |
| 1,2,3-Trichloropropane | | | | | <0.2631 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.0097 | <0.0195 | <0.0292 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomzyko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:14

# Eurofins Lancaster Laboratories Single Component Data Summary

**Sample Name: 9127592** K1924DUP Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35.92 mL Total Volume: 2 ml Analyst: Administr SDG: KR192 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 20:15:50
Instrument : CP16--19853A
Result file : 16EDBS17220001.0045.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 75% (46-136) Conc.: 0.051408

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 20712 | 0.051408 |
| **1,2,3-TCP** | 4.53 | 4.55 | 4.59 | 10568 | -0.006655 |

## Analysis Report (B)

Injected on : Aug 08, 2017 20:15:50
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0045.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 76% (46-136) Conc.: 0.052226

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 7233 | 0.052226 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 3845 | 0.189704 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0292 | <0.0097 | | | |
| ☐ 1,1,2,2-PCA | A | 0.051408 | | | | 1.58 | |
| ☐ 1,2,3-TCP | | | <0.2631 | <0.0974 | | | |
| ☐ DBCP | | | <0.0292 | <0.0097 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: AUG 09 2017

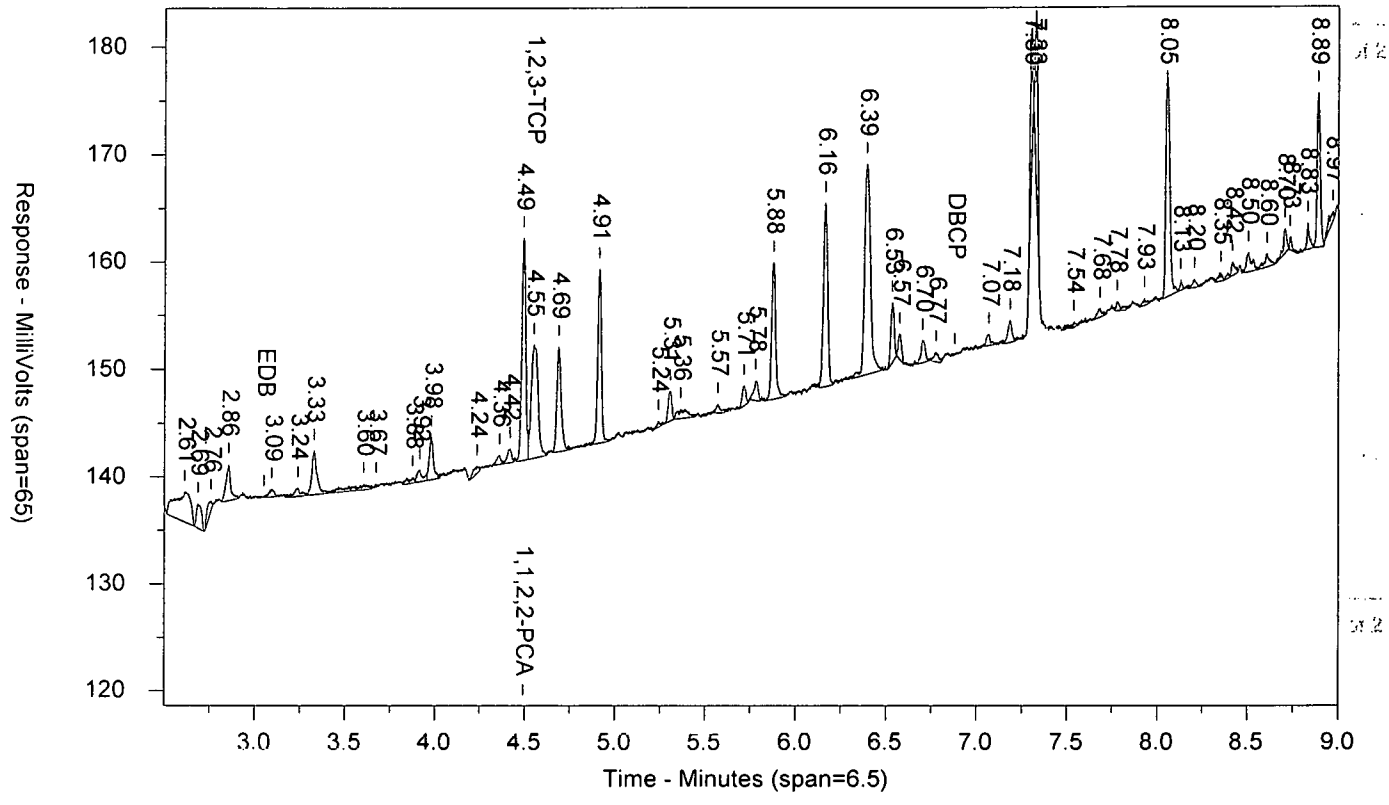
Verified by: Valerie L. Tomczyko Principal Specialist
Date: AUG 10 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9127592 AAK1924DUP DUP 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0045.RAW

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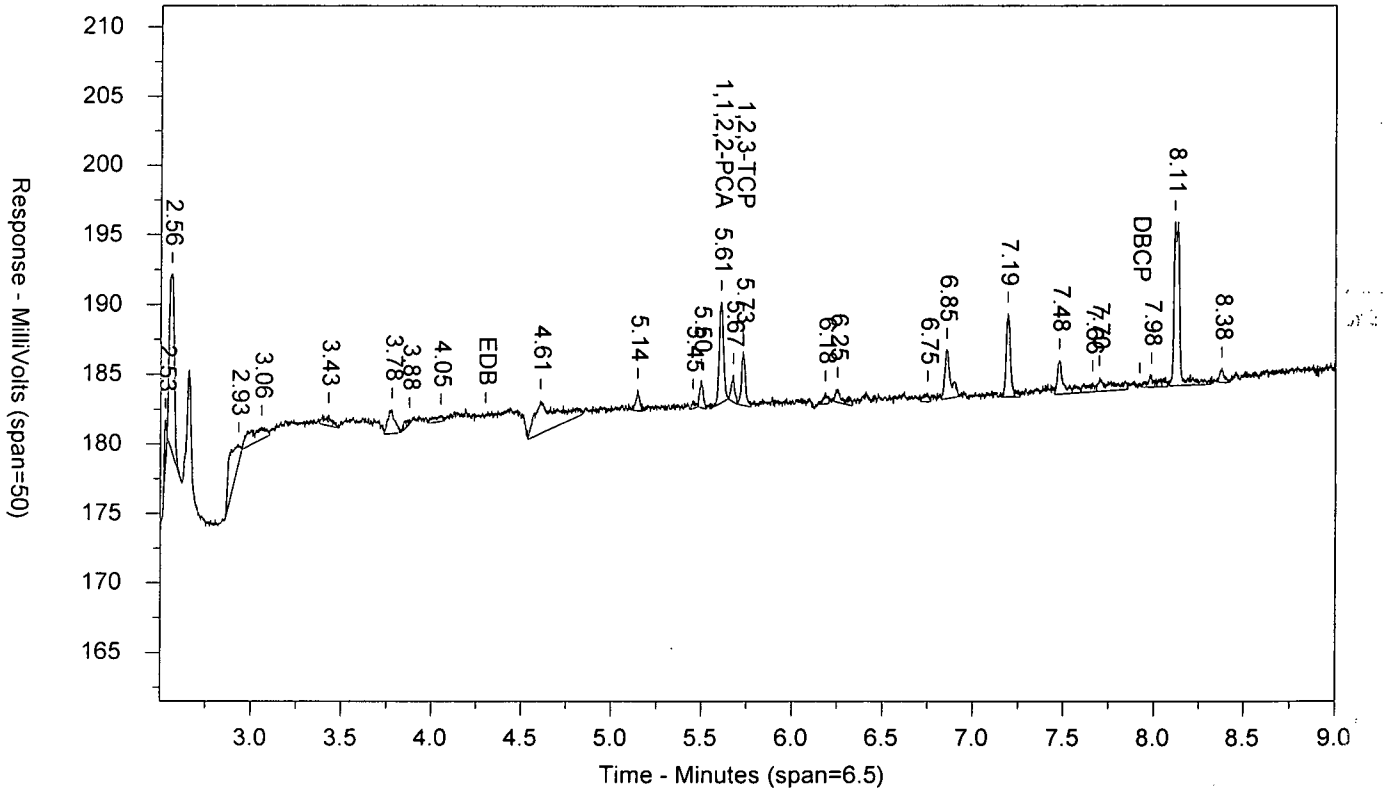

LANCASTER LABORATORIES

Sample Number: 9127592 AAK1924DUP DUP 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 8:15:50 PM Sample Weight: 35.92
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.492 | 20712 | .051 | 1,1,2,2-PCA | 5.608 | 7233 | .052 | 1,1,2,2-PCA |
| 4.549 | 10568 | -.007 | 1,2,3-TCP | 5.727 | 3845 | .19 | 1,2,3-TCP |

Files:
Area File: 16EDBS17220001.0045.RAW
Area File: 16EDBS17220001B.0045.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 8:24:50 PM
File Reported On: 8/9/2017 at 11:26:56 AM

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# Data Summary

**Sample Name: 9127589** MS K1921MS MS Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 36.1 mL Total Volume: 2 ml Analyst: 7848 SDG: KR192 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 19:13:29 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0041.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) * 769% ( 46 - 136 ) Conc: 0.052496

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 19:13:29 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0041.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) * 493% ( 46 - 136 ) Conc: 0.033691

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 61335 | 0.184184 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.50 | 4.52 | 21256 | 0.052496 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 64271 | 1.098548 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 81073 | 0.146113 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 16651 | 0.182297 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 4825 | 0.033691 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 23068 | 1.132555 |
| 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 31031 | 0.147105 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.184184 | 0.0097 | 0.0194 | 0.0291 | | 1.03 | |
| 1,1,2,2-TETRACHLOROE | A | 0.052496 | 0.0034 | 0.0068 | 0.0068 | | 43.64 | |
| 1,1,2,2-TETRACHLOROE | A | 0.052496 | 0.0034 | 0.0068 | 0.0068 | | 43.64 | |
| 1,1,2,2-TETRACHLOROE | B | 0.033691 | 0.0034 | 0.0068 | 0.0068 | | | |
| 1,2,3-Trichloropropane | A | 1.098548 | | | 0.2618 | | 3.05 | |
| 1,2-Dibromo-3-chloroprop | A | 0.146113 | 0.0097 | 0.0194 | 0.0291 | | 0.68 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:08

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9127589** MS K1921MS Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 36.1 mL Total Volume: 2 ml Analyst: Administr SDG: KR192 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 19:13:29
Instrument : CP16--19853A
Result file : 16EDBS17220001.0041.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : *769% (46-136) Conc.: 0.052496

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.05 | 3.08 | 61335 | 0.184184 |
| **1,1,2,2-PCA** | 4.46 | 4.50 | 4.52 | 21256 | 0.052496 |
| **1,2,3-TCP** | 4.53 | 4.58 | 4.59 | 64271 | 1.098548 |
| **DBCP** | 6.85 | 6.88 | 6.91 | 81073 | 0.146113 |

## Analysis Report (B)

Injected on : Aug 08, 2017 19:13:29
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0041.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : *493% (46-136) Conc.: 0.033691

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.27 | 4.30 | 4.33 | 16651 | 0.182297 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 4825 | 0.033691 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 23068 | 1.132555 |
| **DBCP** | 7.89 | 7.92 | 7.95 | 31031 | 0.147105 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.184184 | 0.0291 | 0.0097 | | 1.03 | |
| ☐ 1,1,2,2-PCA | A | 0.052496 | | | | 43.64 | |
| ☐ 1,2,3-TCP | A | 1.098548 | 0.2618 | 0.097 | | 3.05 | |
| ☐ DBCP | A | 0.146113 | 0.0291 | 0.0097 | | 0.68 | |

Units: ug/l

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist

Date: AUG 09 2017

Verified by: Valerie L. Tomayko
Principal Specialist

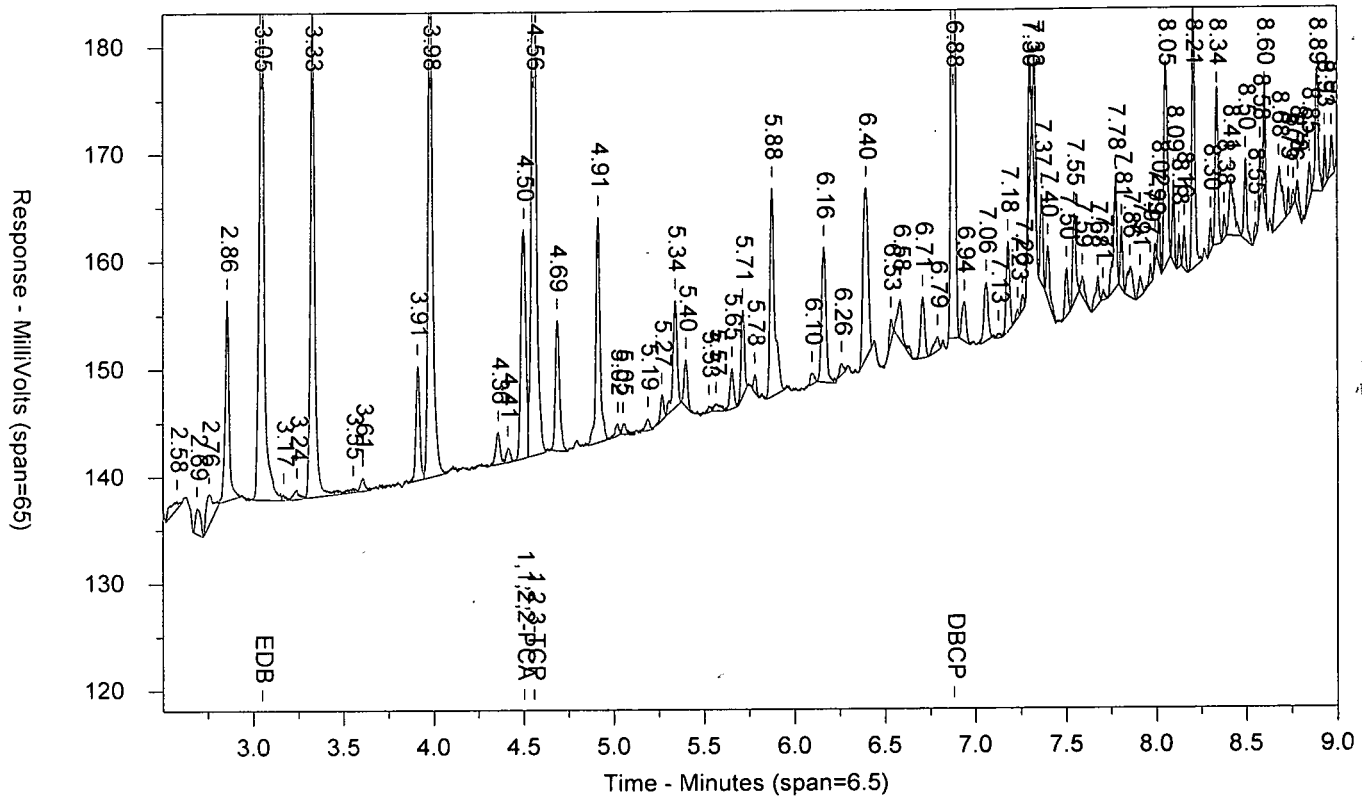
Date: AUG 10 2017

%RPD = High - Low Amount divided by the Average times 100

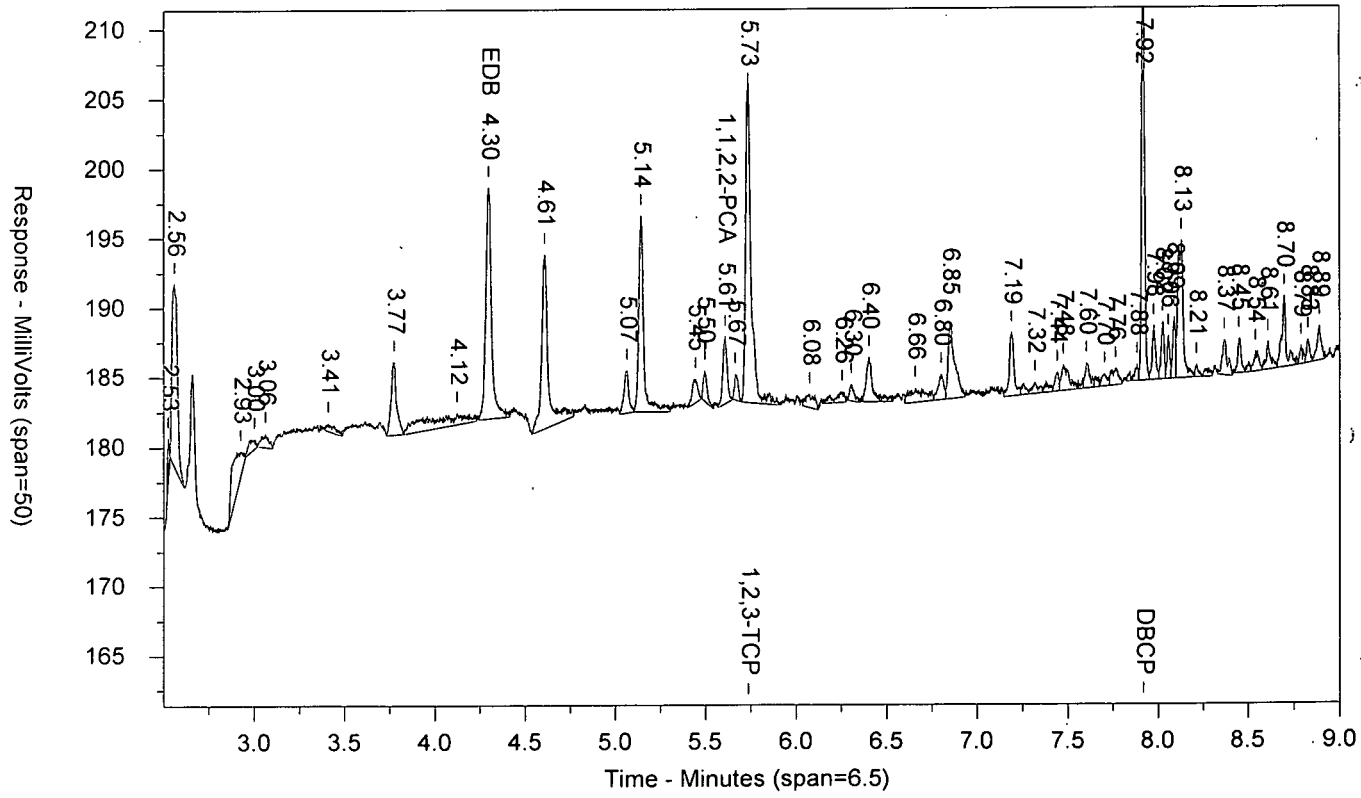
* Recovery outside QC Limits

9127589MS AAK1921MS MS 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0041.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001B.0041.RAW



LANCASTER LABORATORIES

Sample Number: 9127589MS AAK1921MS MS 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 7:13:29 PM Sample Weight: 36.1
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.049 | 61335 | .184 | EDB | 4.299 | 16651 | .182 | EDB |
| 4.501 | 21256 | .052 | 1,1,2,2-PCA | 5.608 | 4825 | .034 | 1,1,2,2-PCA |
| 4.559 | 64271 | 1.099 | 1,2,3-TCP | 5.735 | 23068 | 1.133 | 1,2,3-TCP |
| 6.879 | 81073 | .146 | DBCP | 7.918 | 31031 | .147 | DBCP |

Files:
Area File: 16EDBS17220001.0041.RAW
Area File: 16EDBS17220001B.0041.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 7:22:31 PM
File Reported On: 8/9/2017 at 11:25:47 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSA** 8/4/17 LCS23215 LCS Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 18:26:46 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0038.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) 70% ( 46 - 136 ) Conc: 0.049337

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 18:26:46 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0038.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 71% ( 46 - 136 ) Conc: 0.050017

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 40962 | 0.126872 | Ethylene dibromide | 4.27 | 4.30 | 4.33 | 11019 | 0.124423 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 19368 | 0.049337 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 6776 | 0.050017 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 54737 | 0.930704 | 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 21340 | 1.08067 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 73156 | 0.135989 | 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 28608 | 0.139881 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.126872 | 0.01 | 0.02 | 0.03 | | 1.95 | |
| 1,1,2,2-TETRACHLOROE | A | 0.049337 | 0.0035 | 0.007 | 0.007 | | 1.37 | |
| 1,1,2,2-TETRACHLOROE | A | 0.049337 | 0.0035 | 0.007 | 0.007 | | 1.37 | |
| 1,1,2,2-TETRACHLOROE | B | 0.050017 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | A | 0.930704 | | | 0.27 | | 14.91 | |
| 1,2-Dibromo-3-chloroprop | A | 0.135989 | 0.01 | 0.02 | 0.03 | | 2.82 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valeria L. Tomayko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:02

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 8/4/17 LCS23215 Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 18:26:46
Instrument : CP16--19853A
Result file : 16EDBS17220001.0038.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 70% (46-136) Conc.: 0.049337

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.05 | 3.08 | 40962 | 0.126872 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 19368 | 0.049337 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 54737 | 0.930704 |
| **DBCP** | 6.85 | 6.88 | 6.91 | 73156 | 0.135989 |

## Analysis Report (B)

Injected on : Aug 08, 2017 18:26:46
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0038.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 71% (46-136) Conc.: 0.050017

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.27 | 4.30 | 4.33 | 11019 | 0.124423 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 6776 | 0.050017 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 21340 | 1.080670 |
| **DBCP** | 7.89 | 7.92 | 7.95 | 28608 | 0.139881 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.126872 | 0.03 | 0.01 | | 1.95 | |
| ☐ 1,1,2,2-PCA | A | 0.049337 | | | | 1.37 | |
| ☑ 1,2,3-TCP | A | 0.930704 | 0.27 | 0.1 | | 14.91 | |
| ☑ DBCP | A | 0.135989 | 0.03 | 0.01 | | 2.82 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 09 2017

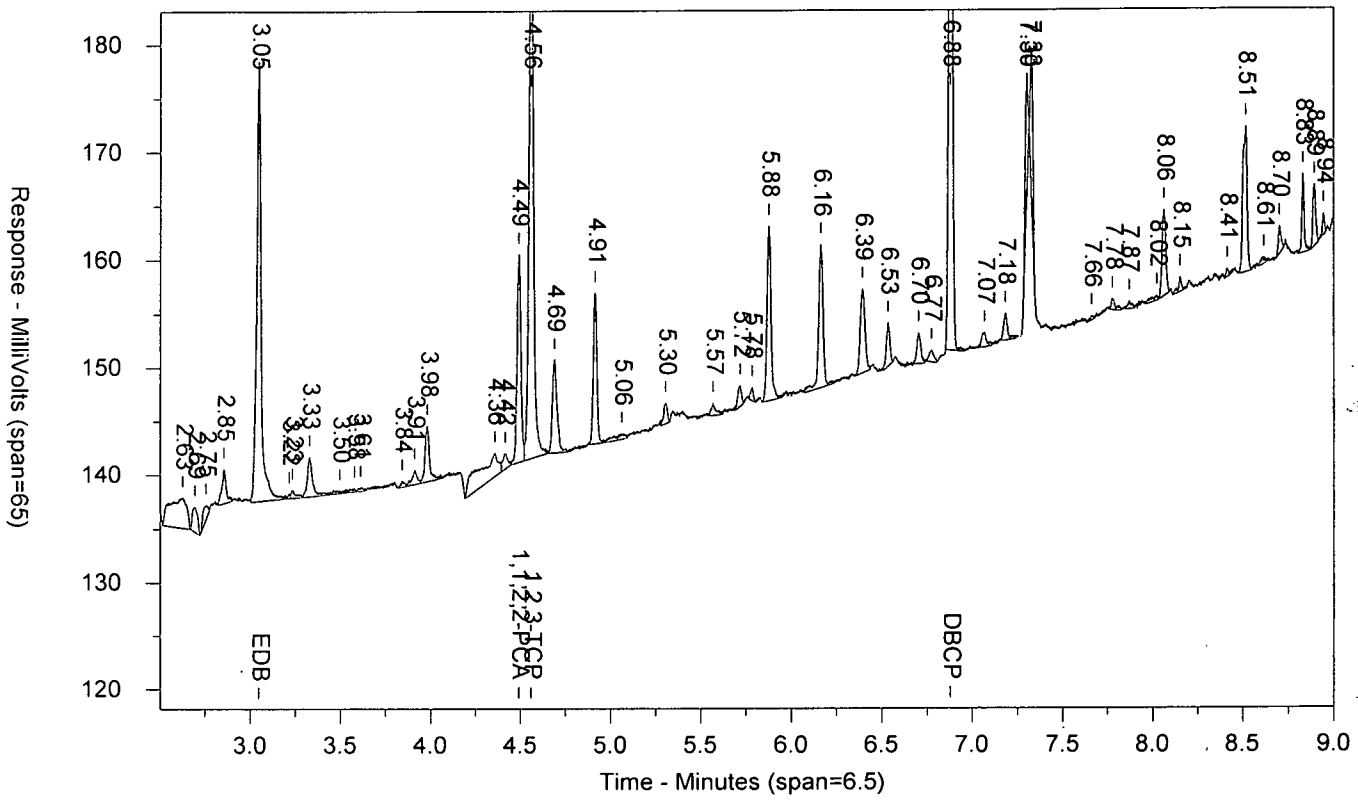
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 10 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSA 8/4/17 AALCS23215 LCS 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0038.RAW

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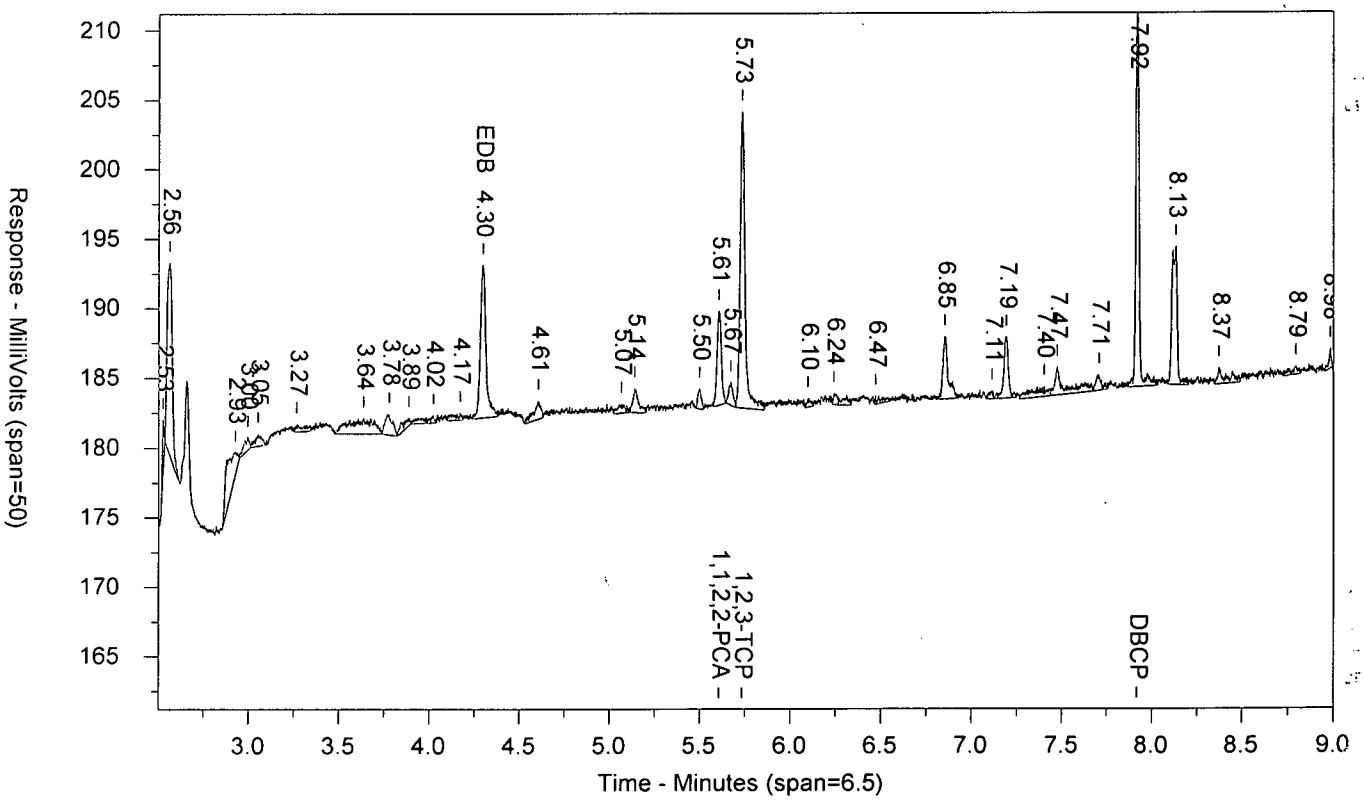


LANCASTER LABORATORIES

Sample Number: LCSA 8/4/17 AALCS23215 LCS 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 6:26:46 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 40962 | .127 | EDB | 4.297 | 11019 | .124 | EDB |
| 4.492 | 19368 | .049 | 1,1,2,2-PCA | 5.606 | 6776 | .05 | 1,1,2,2-PCA |
| 4.559 | 54737 | .931 | 1,2,3-TCP | 5.733 | 21340 | 1.081 | 1,2,3-TCP |
| 6.878 | 73156 | .136 | DBCP | 7.917 | 28608 | .14 | DBCP |

Files:
Area File: 16EDBS17220001.0038.RAW
Area File: 16EDBS17220001B.0038.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 6:35:46 PM
File Reported On: 8/9/2017 at 11:25:03 AM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 8/4/17 LCSD23215 LCSD Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 18:42:19 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17220001.0039.RAW |
| **Calibration file** | 16EDBS1722001 |
| **Method file** | 16EDBS |

%SSR(PCA) 73% ( 46 - 136 ) Conc: 0.051411

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 08, 2017 18:42:19 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17220001B.0039.RAW |
| **Calibration file** | 16EDBS1722001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 80% ( 46 - 136 ) Conc: 0.056206

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 41399 | 0.128226 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 20182 | 0.051411 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 60924 | 1.062027 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 78093 | 0.145166 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 11367 | 0.128354 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 7566 | 0.056206 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 21790 | 1.103437 |
| 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 29312 | 0.143321 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.128226 | 0.01 | 0.02 | 0.03 | | 0.10 | |
| 1,1,2,2-TETRACHLOROE | A | 0.051411 | 0.0035 | 0.007 | 0.007 | | 8.91 | |
| 1,1,2,2-TETRACHLOROE | A | 0.051411 | 0.0035 | 0.007 | 0.007 | | 8.91 | |
| 1,1,2,2-TETRACHLOROE | B | 0.056206 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | A | 1.062027 | | | 0.27 | | 3.82 | |
| 1,2-Dibromo-3-chloroprop | A | 0.145166 | 0.01 | 0.02 | 0.03 | | 1.28 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 10 2017

Reviewed and digitally signed by Heather M Miller on 8/10/2017 10:22:04

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 8/4/17 LCSD23215 Sample ID: AA **Batchnumber: 172150023A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 08, 2017 18:42:19
Instrument : CP16--19853A
Result file : 16EDBS17220001.0039.RAW
Calibration file : 16EDBS1722001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 73% (46-136) Conc.: 0.051411

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.05 | 3.08 | 41399 | 0.128226 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 20182 | 0.051411 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 60924 | 1.062027 |
| **DBCP** | 6.85 | 6.88 | 6.91 | 78093 | 0.145166 |

## Analysis Report (B)

Injected on : Aug 08, 2017 18:42:19
Instrument : CP16--19853B
Result file : 16EDBS17220001B.0039.RAW
Calibration file : 16EDBS1722001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 80% (46-136) Conc.: 0.056206

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.27 | 4.30 | 4.33 | 11367 | 0.128354 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 7566 | 0.056206 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 21790 | 1.103437 |
| **DBCP** | 7.89 | 7.92 | 7.95 | 29312 | 0.143321 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.128226 | 0.03 | 0.01 | | 0.10 | |
| ☐ 1,1,2,2-PCA | A | 0.051411 | | | | 8.91 | |
| ☑ 1,2,3-TCP | A | 1.062027 | 0.27 | 0.1 | | 3.82 | |
| ☑ DBCP | A | 0.145166 | 0.03 | 0.01 | | 1.28 | |

Units: ug/l

Reviewed by: Heather M. Miller
Chemist
Date: AUG 09 2017

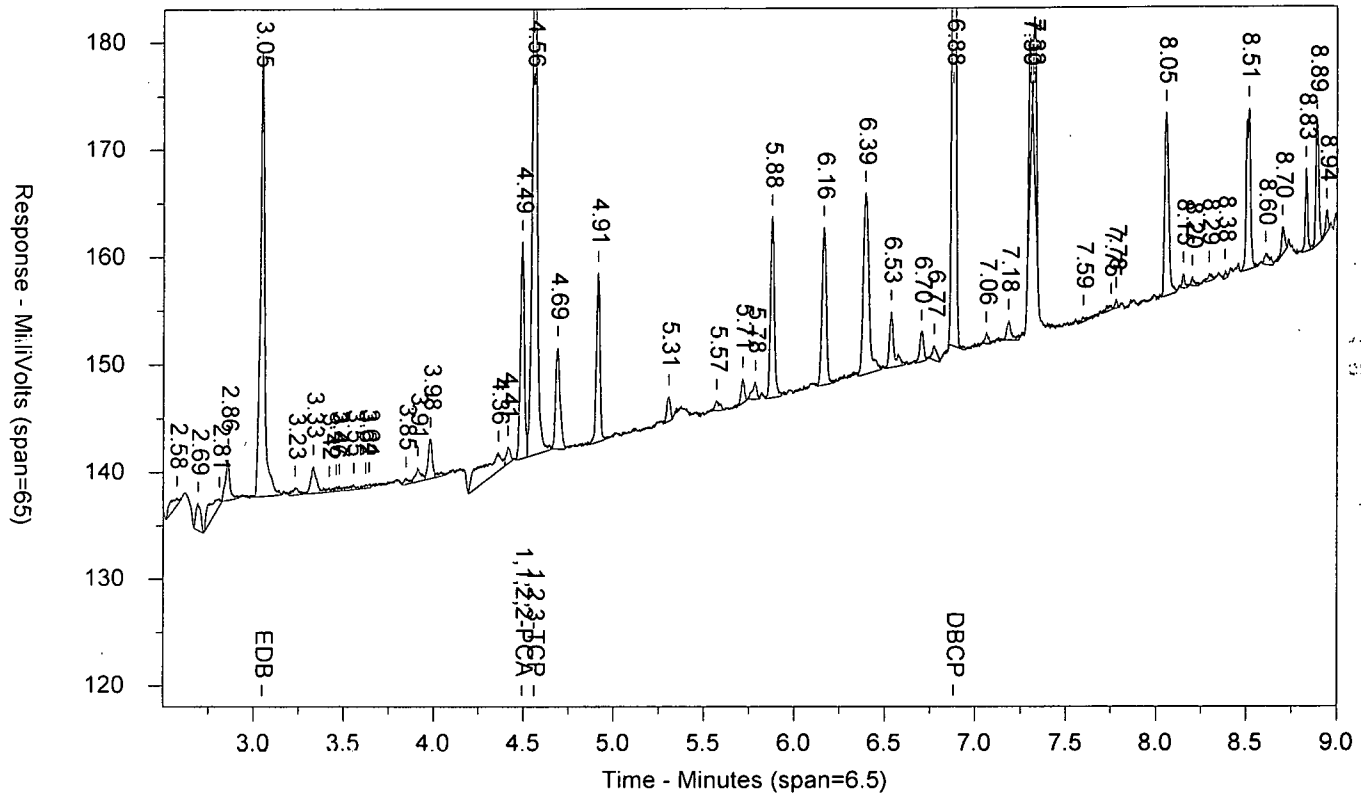
Verified by: Valerie L. Tomayko
Principal Specialist
Date: AUG 10 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSDA 8/4/17 AALCSD23215 LCSD 172150023A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17220001.0039.RAW

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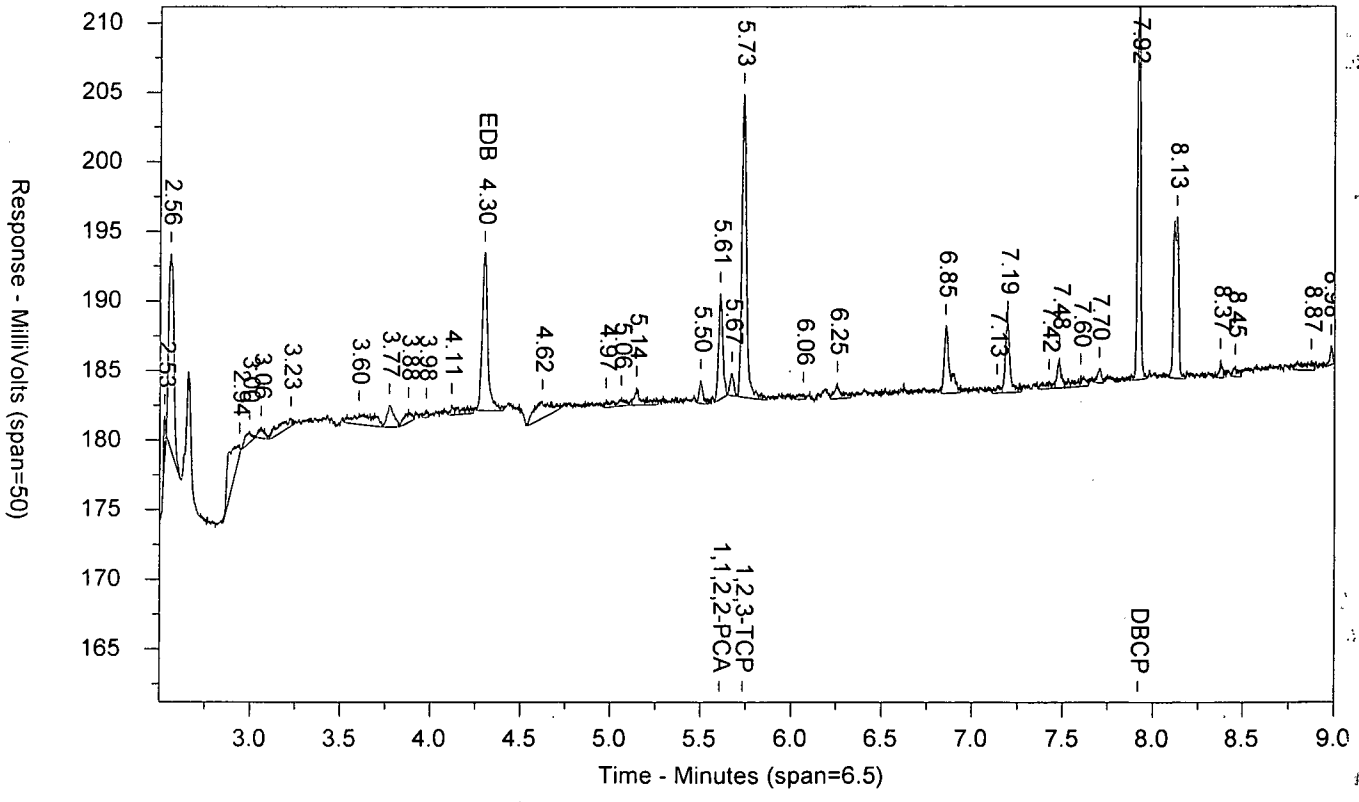

LANCASTER LABORATORIES

Sample Number: LCSDA 8/4/17 AALCSD23215 LCSD 172150023A 10398 SW-846 8011
Injected On: 8/8/2017 6:42:19 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.049 | 41399 | .128 | EDB | 4.3 | 11367 | .128 | EDB |
| 4.492 | 20182 | .051 | 1,1,2,2-PCA | 5.606 | 7566 | .056 | 1,1,2,2-PCA |
| 4.559 | 60924 | 1.062 | 1,2,3-TCP | 5.734 | 21790 | 1.103 | 1,2,3-TCP |
| 6.879 | 78093 | .145 | DBCP | 7.917 | 29312 | .143 | DBCP |

Files:
Area File: 16EDBS17220001.0039.RAW
Area File: 16EDBS17220001B.0039.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1722001.CAL
Calibration File B: 16edbs1722001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/8/2017 6:51:19 PM
File Reported On: 8/9/2017 at 11:25:17 AM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 898 Olivia Arosemena Reviewed by: [illegible] Start Date: Start Time: 10:00

**172150023A**

Tech 1: 02898 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9127589MS | K1921MS | 36.10 | SS1718724B | .04 0.1 | MS1720824C | .07 | 2 | N | <2 | 57A | clear, slightly dirty |
| 9127592DUP | K1924DUP | 35.92 | SS1718724B | .1 | | | 2 | N | <2 | 57A | ↓ |
| BLANKA | PBLK23215 | 35 | SS1718724B | .1 | | | 2 | Z | Z | NA | DI H2O |
| LCSA | LCS23215 | 35 | SS1718724B | .1 | MS1720824C | .07 | 2 | Z | Z | ↓ | ↓ |
| LCSDA | LCSD23215 | 35 | SS1718724B | .1 | MS1720824C | .07 | 2 | Z | Z | ↓ | ↓ |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 173905 |
| NaCl | 1850692117A |
| Sodium Sulfate | 17198A |
| Vial Lot# | 2391F |
| Vial Preservative Lot# | 2391 |
| | |

Spike Solutions: Witness: _____

MS1720824C EDB SPIKE

SS1718724B EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9127589 | K1921 | 36.17 | | 0.1 | 2 | N | <2 | 57B | clear slightly dirty | 10398 | 17641 | 08/09/2017 | N |
| 2 9127590 | K1922 | 35.98 | SS1718724B | 0.10 | 2 | N | <2 | 57A | | 10398 | 17641 | 08/09/2017 | N |
| 3 9127591 | K1923 | 36.04 | SS1718724B | 0.10 | 2 | N | <2 | 57A | | 10398 | 17641 | 08/09/2017 | N |
| 4 9127592 | K1924 | 35.72 | SS1718724B | 0.10 | 2 | N | <2 | 57B | | 10398 | 17641 | 08/09/2017 | N |

KR192 Page 111 of 111

| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

DF = Dilution Factor FV = Final Volume

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172150023A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

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2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 08/24/17

# SDG# KR194

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1842456 | 9175047-9175058 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **09/15/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR194
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**

Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9175047 | GWTS-EFF1-082417 | 08/24/2017 09:17 | 08/25/2017 09:30 |
| 9175048 | GWTS-GAC1-082417 | 08/24/2017 09:57 | 08/25/2017 09:30 |
| 9175049 | GWTS-INF1-082417 | 08/24/2017 10:30 | 08/25/2017 09:30 |
| 9175050 | GWTS-TB01-082417 | 08/24/2017 14:15 | 08/25/2017 09:30 |
| 9175051 | GWTS-FB01-082417 | 08/24/2017 09:17 | 08/25/2017 09:30 |
| 9175052 | GWTS-EFF2-082417 | 08/24/2017 09:32 | 08/25/2017 09:30 |
| 9175053 | GWTS-EFF2-082417 MS | 08/24/2017 09:32 | 08/25/2017 09:30 |
| 9175054 | GWTS-EFF2-082417 MSD | 08/24/2017 09:32 | 08/25/2017 09:30 |
| 9175055 | GWTS-EFF2-082417 DUP | 08/24/2017 09:32 | 08/25/2017 09:30 |
| 9175056 | GWTS-EFF2DUP-082417 | 08/24/2017 09:32 | 08/25/2017 09:30 |
| 9175057 | GWTS-GAC2-082417 | 08/24/2017 10:10 | 08/25/2017 09:30 |
| 9175058 | GWTS-INF2-082417 | 08/24/2017 10:40 | 08/25/2017 09:30 |

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# Sample pH Log

**SDG: KR194**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9175047 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:07:24PM | 11043 |
| 9175047 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:50AM | 9052 |
| 9175048 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:03:20PM | 11043 |
| 9175048 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175049 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:03:17PM | 11043 |
| 9175049 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175050 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175051 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175052 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:03:15PM | 11043 |
| 9175052 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175053 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:03:16PM | 11043 |
| 9175053 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175054 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:03:14PM | 11043 |
| 9175054 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175056 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:07:23PM | 11043 |
| 9175056 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175057 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:07:21PM | 11043 |
| 9175057 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |
| 9175058 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 8/25/2017 6:03:17PM | 11043 |
| 9175058 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/6/2017 10:26:48AM | 9052 |

| Check Code Key |
|---|
| **PK** = Original container checked - pH is within the correct range. (No preservative was added) |
| **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) |
| **PV** = Volatile container checked |
| **PC** = pH checked (unpreserved container) |
| **SPK** = Subsampled from an original container. Original container checked - pH is within correct range |
| **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. |
| **SPC** = Subsampled from an original container. pH checked (unpreserved container). |
| **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. |
| **UP** = Unable to preserve due to matrix of the sample. |
| **NA** = Not applicable |

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

**01163 GC/MS VOA Water Prep**

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

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**11997 VOCs- 5ml Water by 8260C**

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

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**10635 ICP-WW, 3005A (tot rec) - U4**

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

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**01754 Iron**
**07058 Manganese**

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

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**10398 8011 Master Master**

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

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**07786 EDB Extraction (8011)**

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

# Analysis Reports / Field Chain of Custody

**ANALYSIS REPORT**

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: September 08, 2017

**Project: Kirtland AFB**

Account #: 31675
Group Number: 1842456
SDG: KR194
PO Number: 14800
State of Sample Origin: NM

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

Respectfully Submitted,

Kay Hower

(717) 556-7364

**SAMPLE INFORMATION**

| Client Sample Description | Collection Information | ELLE# |
|---|---|---|
| GWTS-EFF1-082417 Grab Water | 08/24/2017 09:17 | 9175047 |
| GWTS-GAC1-082417 Grab Water | 08/24/2017 09:57 | 9175048 |
| GWTS-INF1-082417 Grab Water | 08/24/2017 10:30 | 9175049 |
| GWTS-TB01-082417 Water | 08/24/2017 14:15 | 9175050 |
| GWTS-FB01-082417 Water | 08/24/2017 09:17 | 9175051 |
| GWTS-EFF2-082417 Grab Water | 08/24/2017 09:32 | 9175052 |
| GWTS-EFF2-082417 MS Grab Water | 08/24/2017 09:32 | 9175053 |
| GWTS-EFF2-082417 MSD Grab Water | 08/24/2017 09:32 | 9175054 |
| GWTS-EFF2-082417 DUP Grab Water | 08/24/2017 09:32 | 9175055 |
| GWTS-EFF2DUP-082417 Grab Water | 08/24/2017 09:32 | 9175056 |
| GWTS-GAC2-082417 Grab Water | 08/24/2017 10:10 | 9175057 |
| GWTS-INF2-082417 Grab Water | 08/24/2017 10:40 | 9175058 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Project Name: Kirtland AFB
LL Group #: 1842456

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

No additional comments are necessary.

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# Analysis Report

**Sample Description: GWTS-EFF1-082417 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175047**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 09:17 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KEFF1 SDG#: KR194-01

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/05/2017 23:39 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/05/2017 23:39 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 02:57 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:46 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:46 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-GAC1-082417 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175048**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 09:57 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KGAC1 SDG#: KR194-02

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/06/2017 00:01 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/06/2017 00:01 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 03:13 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:50 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:50 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-INF1-082417 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175049**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 10:30 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KINF1 SDG#: KR194-03

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.062 | D1 | 0.0095 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/06/2017 00:23 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/06/2017 00:23 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 03:28 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:53 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:53 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-TB01-082417 Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175050**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 14:15

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KTB01 SDG#: KR194-04TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0095 | 0.019 | 0.029 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/05/2017 21:50 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/05/2017 21:50 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 03:44 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-FB01-082417 Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175051**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 09:17 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KFB01 SDG#: KR194-05FB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0095 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/05/2017 22:11 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/05/2017 22:11 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 03:59 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-082417 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175052**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 09:32 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KEFF2 SDG#: KR194-06BKG

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0095 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/05/2017 22:33 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/05/2017 22:33 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 04:46 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:09 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:09 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-082417 MS Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175053**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 09:32 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KEFF2 SDG#: KR194-06MS

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 21 | | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 21 | | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 21 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 63 | | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.14 | D1 | 0.0094 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 1.05 | | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.525 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/05/2017 22:55 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/05/2017 22:55 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 05:02 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:19 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:19 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-082417 MSD Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175054**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 09:32 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KEFF2 SDG#: KR194-06MSD

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 65 | | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.14 | D1 | 0.0094 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 1.11 | | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.533 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/05/2017 23:17 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/05/2017 23:17 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 05:17 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:22 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:22 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

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# Analysis Report

**Sample Description: GWTS-EFF2-082417 DUP Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175055**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 09:32 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KEFF2 SDG#: KR194-06DUP

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:16 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:16 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2DUP-082417 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175056**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 09:32 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KEF2D SDG#: KR194-07FD

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0095 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/06/2017 00:45 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/06/2017 00:45 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 05:33 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:56 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 06:56 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-GAC2-082417 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175057**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 10:10 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KGAC2 SDG#: KR194-08

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0094 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/06/2017 01:07 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/06/2017 01:07 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172370044A | 08/29/2017 05:48 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172370044A | 08/28/2017 10:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 07:00 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 07:00 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-INF2-082417 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9175058**
**ELLE Group # 1842456**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 08/24/2017 10:40 by SS

Submitted: 08/25/2017 09:30
Reported: 09/08/2017 18:29

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

KINF2 SDG#: KR194-09

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.058 | D1 | 0.0097 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172483AA | 09/06/2017 01:29 | Kevin D Kelly | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172483AA | 09/06/2017 01:29 | Kevin D Kelly | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172480013A | 09/06/2017 22:33 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172480013A | 09/06/2017 09:37 | Olivia Arosemena | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172391063501 | 08/30/2017 07:03 | Jonathan J Allen | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172391063501 | 08/30/2017 07:03 | Jonathan J Allen | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172391063501 | 08/28/2017 06:14 | James L Mertz | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 09/08/2017 18:29

Group Number: 1842456

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Batch number: L172483AA | Sample number(s): 9175047-9175054,9175056-9175058 | | | | |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Ethylbenzene | 1 | U | 0.5 | 1 | 1 |
| Toluene | 1 | U | 0.5 | 1 | 1 |
| Xylene (Total) | 1 | U | 0.5 | 1 | 1 |
| Batch number: 172370044A | Sample number(s): 9175047-9175054,9175056-9175057 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| Batch number: 172480013A | Sample number(s): 9175058 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| | mg/l | | mg/l | mg/l | mg/l |
| Batch number: 172391063501 | Sample number(s): 9175047-9175049,9175052-9175058 | | | | |
| Iron | 0.200 | U | 0.0805 | 0.200 | 0.400 |
| Manganese | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L172483AA | Sample number(s): 9175047-9175054,9175056-9175058 | | | | | | | | |
| Benzene | 20 | 19.04 | 20 | 19.13 | 95 | 96 | 79-120 | 0 | 20 |
| Ethylbenzene | 20 | 18.87 | 20 | 19.03 | 94 | 95 | 79-121 | 1 | 20 |
| Toluene | 20 | 18.71 | 20 | 18.83 | 94 | 94 | 80-121 | 1 | 20 |
| Xylene (Total) | 60 | 56.46 | 60 | 56.92 | 94 | 95 | 79-121 | 1 | 20 |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172370044A | Sample number(s): 9175047-9175054,9175056-9175057 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.131 | 0.128 | 0.135 | 102 | 105 | 60-140 | 3 | 20 |
| Batch number: 172480013A | Sample number(s): 9175058 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.139 | 0.128 | 0.135 | 108 | 106 | 60-140 | 3 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172391063501 | Sample number(s): 9175047-9175049,9175052-9175058 | | | | | | | | |
| Iron | 1.00 | 1.06 | | | 106 | | 87-115 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 09/08/2017 18:29

Group Number: 1842456

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Manganese | 0.500 | 0.532 | | | 106 | | 90-114 | | |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L172483AA | Sample number(s): 9175047-9175054,9175056-9175058 UNSPK: 9175052 | | | | | | | | | |
| Benzene | 1 U | 20 | 21.46 | 20 | 22.11 | 107 | 111 | 79-120 | 3 | 20 |
| Ethylbenzene | 1 U | 20 | 21.37 | 20 | 21.8 | 107 | 109 | 79-121 | 2 | 20 |
| Toluene | 1 U | 20 | 21.22 | 20 | 21.66 | 106 | 108 | 80-121 | 2 | 20 |
| Xylene (Total) | 1 U | 60 | 63.24 | 60 | 64.81 | 105 | 108 | 79-121 | 2 | 20 |
| | ug/l | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172370044A | Sample number(s): 9175047-9175054,9175056-9175057 UNSPK: 9175052 | | | | | | | | | |
| Ethylene dibromide | 0.019 U | 0.121 | 0.140 | 0.121 | 0.140 | 116 | 115 | 60-140 | 0 | 20 |
| Batch number: 172480013A | Sample number(s): 9175058 UNSPK: P177881 | | | | | | | | | |
| Ethylene dibromide | 0.020 U | 0.127 | 0.139 | | | 110 | | 60-140 | | |
| | mg/l | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172391063501 | Sample number(s): 9175047-9175049,9175052-9175058 UNSPK: 9175052 | | | | | | | | | |
| Iron | 0.200 U | 1.00 | 1.05 | 1.00 | 1.11 | 105 | 111 | 87-115 | 6 | 20 |
| Manganese | 0.0050 U | 0.500 | 0.525 | 0.500 | 0.533 | 105 | 107 | 90-114 | 1 | 20 |

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | ug/l | ug/l | | |
| Batch number: 172480013A | Sample number(s): 9175058 BKG: P177887 | | | |
| Ethylene dibromide | 0.019 U | 0.020 U | 0 (1) | 30 |
| | mg/l | mg/l | | |
| Batch number: 172391063501 | Sample number(s): 9175047-9175049,9175052-9175058 BKG: 9175052 | | | |
| Iron | 0.200 U | 0.200 U | 0 (1) | 20 |
| Manganese | 0.0050 U | 0.0050 U | 0 (1) | 20 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 09/08/2017 18:29

Group Number: 1842456

## Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc mg/l | DUP Conc mg/l | DUP RPD | DUP RPD Max |
|---|---|---|---|---|

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: BTEX 8260C Water
Batch number: L172483AA

| | Dibromofluoromethane %Rec | LOD (ug/l) | 1,2-Dichloroethane-d4 %Rec | LOD (ug/l) | Toluene-d8 %Rec | LOD (ug/l) | 4-Bromofluorobenzene %Rec | LOD (ug/l) |
|---|---|---|---|---|---|---|---|---|
| 9175047 | 96 | 1 | 100 | 1 | 101 | 1 | 97 | 1 |
| 9175048 | 96 | 1 | 101 | 1 | 100 | 1 | 98 | 1 |
| 9175049 | 95 | 1 | 99 | 1 | 99 | 1 | 98 | 1 |
| 9175050 | 95 | 1 | 100 | 1 | 100 | 1 | 98 | 1 |
| 9175051 | 96 | 1 | 99 | 1 | 99 | 1 | 97 | 1 |
| 9175052 | 97 | 1 | 101 | 1 | 100 | 1 | 97 | 1 |
| 9175053 | 97 | 1 | 99 | 1 | 101 | 1 | 98 | 1 |
| 9175054 | 97 | 1 | 100 | 1 | 101 | 1 | 99 | 1 |
| 9175056 | 96 | 1 | 101 | 1 | 100 | 1 | 97 | 1 |
| 9175057 | 96 | 1 | 99 | 1 | 100 | 1 | 98 | 1 |
| 9175058 | 96 | 1 | 99 | 1 | 100 | 1 | 97 | 1 |
| Blank | 96 | 1 | 101 | 1 | 100 | 1 | 98 | 1 |
| LCS | 98 | 1 | 100 | 1 | 101 | 1 | 100 | 1 |
| LCSD | 98 | 1 | 100 | 1 | 100 | 1 | 99 | 1 |
| MS | 97 | 1 | 99 | 1 | 101 | 1 | 98 | 1 |
| MSD | 97 | 1 | 100 | 1 | 101 | 1 | 99 | 1 |
| Limits: | 80-119 | | 81-118 | | 89-112 | | 85-114 | |

Analysis Name: EDB 8011 Water
Batch number: 172370044A

| | 1,1,2,2-Tetrachloroethane-D1 %Rec | LOD | 1,1,2,2-Tetrachloroethane-D2 %Rec | LOD |
|---|---|---|---|---|
| 9175047 | 107 | 0.0067 | 108 | 0.0067 |
| 9175048 | 101 | 0.0067 | 103 | 0.0067 |
| 9175049 | 100 | 0.0066 | 106 | 0.0066 |
| 9175050 | 95 | 0.0067 | 97 | 0.0067 |
| 9175051 | 101 | 0.0066 | 104 | 0.0066 |
| 9175052 | 94 | 0.0066 | 100 | 0.0066 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Group Number: 1842456
Reported: 09/08/2017 18:29

## Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: EDB 8011 Water
Batch number: 172370044A

| | 1,1,2,2-Tetrachloroethane-D1 | | 1,1,2,2-Tetrachloroethane-D2 | |
|---|---|---|---|---|
| | %Rec | LOD | %Rec | LOD |
| 9175053 | 101 | 0.0066 | 101 | 0.0066 |
| 9175054 | 97 | 0.0066 | 99 | 0.0066 |
| 9175056 | 93 | 0.0066 | 99 | 0.0066 |
| 9175057 | 103 | 0.0066 | 104 | 0.0066 |
| Blank | 97 | 0.0070 | 102 | 0.0070 |
| LCS | 89 | 0.0070 | 95 | 0.0070 |
| LCSD | 92 | 0.0070 | 92 | 0.0070 |
| MS | 101 | 0.0066 | 101 | 0.0066 |
| MSD | 97 | 0.0066 | 99 | 0.0066 |
| Limits: | 46-136 | | 46-136 | |

Analysis Name: EDB 8011 Water
Batch number: 172480013A

| | 1,1,2,2-Tetrachloroethane-D1 | | 1,1,2,2-Tetrachloroethane-D2 | |
|---|---|---|---|---|
| | %Rec | LOD | %Rec | LOD |
| 9175058 | 71 | 0.0068 | 65 | 0.0068 |
| Blank | 67 | 0.0070 | 69 | 0.0070 |
| DUP | 54 | 0.0070 | 55 | 0.0070 |
| LCS | 76 | 0.0070 | 72 | 0.0070 |
| LCSD | 81 | 0.0070 | 84 | 0.0070 |
| MS | 74 | 0.0069 | 74 | 0.0069 |
| Limits: | 46-136 | | 46-136 | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

31675 1842456 9175047-58

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS1-082417

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA<br>Amanda Smith: asmith@eaest.com EA<br>FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | YEAR: 2017<br>QUARTER: Q2 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | (8260C) VOCs | (8260C) BTEX | (8260C) BTEXN | (8011) EDB | (6020A/6010C) Total As,Pb,Ca,K,Na,Mg | (6010C) Dissolved Fe, Mn | (300.0) Chloride, bromide, sulfate | (353.2) Nitrate-Nitrite | (SM4500NH3) Ammonia | (SM4500S2CF) Sulfide | (SM2320B) Alkalinity | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | | |
| 1 | GWTS-EFF1-082417 | 08/24/17 | 0917 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 2 | GWTS-GAC1-082417 | 08/24/17 | 0957 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-INF1-082417 | 08/24/17 | 1030 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-TB01-082417 | 08/24/17 | 1415 | 4 | -- | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | -- | |
| 5 | GWTS-FB01-082417 | 08/24/17 | 0917 | 5 | -- | 3 | -- | 2 | -- | -- | -- | -- | -- | -- | -- | Collected simultaneously with GWTS-EFF1-082417 |
| 6 | | | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: Fedex: 8111 5673 8122

| RELINQUISHED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA | 8/24/17 | 1515 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: Wyatt Shiffler | 8/25/17 | 930 |

31675 1842456 9175047-58

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

# CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-GWTS2-082417

| | | | | |
|---|---|---|---|---|
| PROJECT NAME: Kirtland AFB Bulk Fuels Facility | PROJECT NUMBER: 62599DM01 | LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601 | FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA; Amanda Smith: asmith@eaest.com EA | YEAR: 2017 |
| | | | FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA | QUARTER: Q2 |
| PROJECT SITE AND PHASE: ST106/SS110 | | LAB PO NUMBER: 14800 | LAB CONTACT: Natalie Luciano NatalieLuciano@eurofinsUS.com Eurofins 1 (717) 556-7258 | |

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Ammonia (SM4500NH3) | Sulfide (SM4500S2CF) | Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | | |
| 1 | GWTS-EFF2-082417 | 08/24/17 | 0932 | 18 | -- | 9 | -- | 6 | -- | 3* | -- | -- | -- | -- | -- | Additional Volume Provided for MSMSD |
| 2 | GWTS-EFF2DUP-082417 | 08/24/17 | 0932 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-GAC2-082417 | 08/24/17 | 1010 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-INF2-082417 | 08/24/17 | 1040 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 5 | ~~GWTS-TB02-082417~~ SS | SS ~~08/24/17~~ | — | - | -- | 2 | -- | 2 | SS-- | -- | -- | -- | -- | -- | -- | |
| 6 | GWTS-TB01-082417 | 8/24/17 | 1415 | 4 | - | 2 | - | 2 | - | - | - | - | - | - | - | *See COC-GWTS1-082417 |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: Fedex: 811156738122

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| SHARMIN SULTANA Shar Sulta | 8/24/17 | 1515 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: Wyatt Shiffler | 8/25/17 | 930 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 192570

Group Number(s): 1842456

Client: EA

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 08/25/2017 9:30 |
| Number of Packages: | 1 | Number of Projects: | 1 |
| State/Province of Origin: | MD | | |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 4 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Wyatt Shiffler (12792) at 14:52 on 08/25/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | 32170023 | 2.7 | IR | Wet | Y | Loose | N |



2425 New Holland Pike
Lancaster, PA 17601-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | non-detect |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| D1 | Indicates for dual column analyses that the result is reported from column 1 |
| D2 | Indicates for dual column analyses that the result is reported from column 2 |
| E | Concentration exceeds the calibration range |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# Volatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Volatiles by GC/MS

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR194**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9175047 | GWTS-EFF1-082417 | X | | 1 | |
| 9175048 | GWTS-GAC1-082417 | X | | 1 | |
| 9175049 | GWTS-INF1-082417 | X | | 1 | |
| 9175050 | GWTS-TB01-082417 | X | | 1 | Trip Blank |
| 9175051 | GWTS-FB01-082417 | X | | 1 | Field Blank |
| 9175052 | GWTS-EFF2-082417 | X | | 1 | Unspiked |
| 9175053 | GWTS-EFF2-082417 MS | X | | 1 | Matrix Spike |
| 9175054 | GWTS-EFF2-082417 MSD | X | | 1 | Matrix Spike Duplicate |
| 9175056 | GWTS-EFF2DUP-082417 | X | | 1 | Field Duplicate Sample |
| 9175057 | GWTS-GAC2-082417 | X | | 1 | |
| 9175058 | GWTS-INF2-082417 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR194**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Volatiles by GC/MS

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# Quality Control Reference List
## GC/MS Volatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR194**

**Fraction: Volatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| BTEX 8260C Water | L172483AA | VBLKL92 | 09/05/2017 21:14:00 |
| | | LCSL92 | 09/05/2017 20:30:00 |
| | | LCDL92 | 09/05/2017 20:52:00 |
| | | 9175047 | 09/05/2017 23:39:00 |
| | | 9175048 | 09/06/2017 00:01:00 |
| | | 9175049 | 09/06/2017 00:23:00 |
| | | 9175050 | 09/05/2017 21:50:00 |
| | | 9175051 | 09/05/2017 22:11:00 |
| | | 9175052 UNSPK | 09/05/2017 22:33:00 |
| | | 9175053 MS | 09/05/2017 22:55:00 |
| | | 9175054 MSD | 09/05/2017 23:17:00 |
| | | 9175056 | 09/06/2017 00:45:00 |
| | | 9175057 | 09/06/2017 01:07:00 |
| | | 9175058 | 09/06/2017 01:29:00 |

**Quality Control Summary**
**Method Blank**
**GC/MS Volatiles**
**SDG: KR194**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172483AA / VBLKL92<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Benzene | 09/05/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Toluene | 09/05/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Ethylbenzene | 09/05/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Xylene (Total) | 09/05/17 | N.D. | ug/l | 0.5 | 1 | 1 |

**Quality Control Summary**
**Surrogates**
**GC/MS Volatiles**
**SDG: KR194**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172483AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKL92 | 101 | 81 - 118 | 98 | 85 - 114 | 96 | 80 - 119 | 100 | 89 - 112 |
| LCSL92 | 100 | 81 - 118 | 100 | 85 - 114 | 98 | 80 - 119 | 101 | 89 - 112 |
| LCDL92 | 100 | 81 - 118 | 99 | 85 - 114 | 98 | 80 - 119 | 100 | 89 - 112 |
| 9175047 | 100 | 81 - 118 | 97 | 85 - 114 | 96 | 80 - 119 | 101 | 89 - 112 |
| 9175048 | 101 | 81 - 118 | 98 | 85 - 114 | 96 | 80 - 119 | 100 | 89 - 112 |
| 9175049 | 99 | 81 - 118 | 98 | 85 - 114 | 95 | 80 - 119 | 99 | 89 - 112 |
| 9175050 | 100 | 81 - 118 | 98 | 85 - 114 | 95 | 80 - 119 | 100 | 89 - 112 |
| 9175051 | 99 | 81 - 118 | 97 | 85 - 114 | 96 | 80 - 119 | 99 | 89 - 112 |
| 9175052 UNSPK | 101 | 81 - 118 | 97 | 85 - 114 | 97 | 80 - 119 | 100 | 89 - 112 |
| 9175053 MS | 99 | 81 - 118 | 98 | 85 - 114 | 97 | 80 - 119 | 101 | 89 - 112 |
| 9175054 MSD | 100 | 81 - 118 | 99 | 85 - 114 | 97 | 80 - 119 | 101 | 89 - 112 |
| 9175056 | 101 | 81 - 118 | 97 | 85 - 114 | 96 | 80 - 119 | 100 | 89 - 112 |
| 9175057 | 99 | 81 - 118 | 98 | 85 - 114 | 96 | 80 - 119 | 100 | 89 - 112 |
| 9175058 | 99 | 81 - 118 | 97 | 85 - 114 | 96 | 80 - 119 | 100 | 89 - 112 |

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| UNSPK: 9175052<br>MS: 9175053<br>MSD: 9175054<br>**Analyte** | Batch: **L172483AA** (Sample number(s): 9175047-9175054, 9175056-9175058 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | N.D. | 21.46 | 22.11 | 107 | 111 | 79-120 | 3 | 20 |
| Toluene | 20 | N.D. | 21.22 | 21.66 | 106 | 108 | 80-121 | 2 | 20 |
| Ethylbenzene | 20 | N.D. | 21.37 | 21.8 | 107 | 109 | 79-121 | 2 | 20 |
| Xylene (Total) | 60 | N.D. | 63.24 | 64.81 | 105 | 108 | 79-121 | 2 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR194**
**Matrix: LIQUID**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSL92<br>LCSD: LCDL92<br><br>**Analyte** | Batch: **L172483AA** (Sample number(s): 9175047-9175054, 9175056-9175058 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | 19.04 | 19.13 | 95 | 96 | 79-120 | 0 | 20 |
| Toluene | 20 | 18.71 | 18.83 | 94 | 94 | 80-121 | 1 | 20 |
| Ethylbenzene | 20 | 18.87 | 19.03 | 94 | 95 | 79-121 | 1 | 20 |
| Xylene (Total) | 60 | 56.46 | 56.92 | 94 | 95 | 79-121 | 1 | 20 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR194___

Lab File ID: lg21t01.d  BFB Injection Date: 08/21/17

Instrument ID: HP09915  BFB Injection Time: 09:03

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.97 |
| 75 | 30.0 - 60.0% of mass 95 | 46.18 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.85 |
| 173 | Less than 2.0% of mass 174 | 0.42 ( 0.49)1 |
| 174 | Greater than 50.0% of mass 95 | 85.39 |
| 175 | 5.0 - 9.0% of mass 174 | 5.75 ( 6.73)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 81.97 (96.00)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.62 ( 6.85)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | lg21i01.d | 08/21/17 | 09:40 |
| 02 | VSTD100 | lg21i02.d | 08/21/17 | 10:02 |
| 03 | VSTD50 | lg21i03.d | 08/21/17 | 10:24 |
| 04 | VSTD20 | lg21i04.d | 08/21/17 | 10:46 |
| 05 | VSTD10 | lg21i05.d | 08/21/17 | 11:08 |
| 06 | VSTD4 | lg21i06.d | 08/21/17 | 11:30 |
| 07 | VSTD1 | lg21i07.d | 08/21/17 | 11:51 |
| 08 | MDL0.5 - MDL0.5 | lg21m01.d | 08/21/17 | 12:13 |
| 09 | LGCICV | lg21v01.d | 08/21/17 | 12:35 |
| 10 | VSTD300 | lg21i11.d | 08/21/17 | 13:45 |
| 11 | VSTD100 | lg21i12.d | 08/21/17 | 14:07 |
| 12 | VSTD50 | lg21i13.d | 08/21/17 | 14:29 |
| 13 | VSTD20 | lg21i14.d | 08/21/17 | 14:51 |
| 14 | VSTD10 | lg21i15.d | 08/21/17 | 15:13 |
| 15 | VSTD4 | lg21i16.d | 08/21/17 | 15:35 |
| 16 | MDL001 - MDL001 | lg21m11.d | 08/21/17 | 15:56 |
| 17 | SMCICV | lg21v11.d | 08/21/17 | 16:18 |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR194___

Lab File ID: ls05t13.d  BFB Injection Date: 09/05/17

Instrument ID: HP09915  BFB Injection Time: 19:27

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 16.68 |
| 75 | 30.0 - 60.0% of mass 95 | 45.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.75 |
| 173 | Less than 2.0% of mass 174 | 0.38 ( 0.45)1 |
| 174 | Greater than 50.0% of mass 95 | 84.07 |
| 175 | 5.0 - 9.0% of mass 174 | 5.65 ( 6.72)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 82.10 (97.66)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.50 ( 6.70)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | ls05c10.d | 09/05/17 | 20:08 |
| 02 | LCSL92 | ls05s61.d | 09/05/17 | 20:30 |
| 03 | LCSL93 | ls05s81.d | 09/05/17 | 20:30 |
| 04 | LCDL92 | ls05s62.d | 09/05/17 | 20:52 |
| 05 | LCDL93 | ls05s82.d | 09/05/17 | 20:52 |
| 06 | VBLKL92 | ls05b10.d | 09/05/17 | 21:14 |
| 07 | VBLKL93 | ls05b15.d | 09/05/17 | 21:14 |
| 08 | 9175050 | ls05s63.d | 09/05/17 | 21:50 |
| 09 | 9175051 | ls05s64.d | 09/05/17 | 22:11 |
| 10 | 9175052 | ls05s65.d | 09/05/17 | 22:33 |
| 11 | 9175053MS | ls05s66.d | 09/05/17 | 22:55 |
| 12 | 9175054MSD | ls05s67.d | 09/05/17 | 23:17 |
| 13 | 9175047 | ls05s68.d | 09/05/17 | 23:39 |
| 14 | 9175048 | ls05s69.d | 09/06/17 | 00:01 |
| 15 | 9175049 | ls05s70.d | 09/06/17 | 00:23 |
| 16 | 9175056 | ls05s71.d | 09/06/17 | 00:45 |
| 17 | 9175057 | ls05s72.d | 09/06/17 | 01:07 |
| 18 | 9175058 | ls05s73.d | 09/06/17 | 01:29 |
| 19 | SECC050 | ls05ec8.d | 09/06/17 | 01:51 |
| 20 | 9175103 | ls05s83.d | 09/06/17 | 02:13 |
| 21 | 9175104 | ls05s84.d | 09/06/17 | 02:35 |
| 22 | 9175105 | ls05s85.d | 09/06/17 | 02:57 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR194___

Lab File ID: ls05t13.d  BFB Injection Date: 09/05/17

Instrument ID: HP09915  BFB Injection Time: 19:27

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 16.68 |
| 75 | 30.0 - 60.0% of mass 95 | 45.97 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.75 |
| 173 | Less than 2.0% of mass 174 | 0.38 ( 0.45)1 |
| 174 | Greater than 50.0% of mass 95 | 84.07 |
| 175 | 5.0 - 9.0% of mass 174 | 5.65 ( 6.72)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 82.10 (97.66)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.50 ( 6.70)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 9176028 | ls05s86.d | 09/06/17 | 03:19 |
| 24 | 9176029 | ls05s87.d | 09/06/17 | 03:41 |
| 25 | 9175102 | ls05s88.d | 09/06/17 | 04:02 |
| 26 | 9175102DL | ls05s89.d | 09/06/17 | 04:24 |
| 27 | 9176031 | ls05s90.d | 09/06/17 | 04:46 |
| 28 | 9176031DL | ls05s91.d | 09/06/17 | 05:08 |
| 29 | 9176023 | ls05s92.d | 09/06/17 | 05:30 |
| 30 | 9176023DL | ls05s93.d | 09/06/17 | 05:52 |
| 31 | 9176030 | ls05s94.d | 09/06/17 | 06:14 |
| 32 | 9176030DL | ls05s95.d | 09/06/17 | 06:36 |

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 08/21/17  08/21/17

Heated Purge: (Y/N) Y  Calibration Times: 09:40  11:51

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = lg21i07.d  RRF 4 = lg21i06.d  RRF 10= lg21i05.d
RRF 20= lg21i04.d  RRF 50= lg21i03.d  RRF100= lg21i02.d  RRF300= lg21i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | #0.2554 | 0.3276 | 0.3147 | 0.3168 | 0.3311 | 0.3370 | 0.3295 | 0.3160 | 9 | AVG | # |
| Chloromethane | #0.2854 | 0.3087 | 0.3090 | 0.3072 | 0.3007 | 0.3054 | 0.2879 | 0.3006 | 3 | AVG | # |
| 1,3-Butadiene | 0.2042 | 0.2091 | 0.2126 | 0.2165 | 0.2141 | 0.2146 | 0.2010 | 0.2103 | 3 | AVG | |
| Vinyl Chloride | #0.2629 | 0.3036 | 0.2984 | 0.3006 | 0.3032 | 0.3073 | 0.2904 | 0.2952 | 5 | AVG | # |
| Bromomethane | #0.2263 | 0.2308 | 0.2276 | 0.2272 | 0.2192 | 0.2155 | 0.1861 | 0.2190 | 7 | AVG | # |
| Chloroethane | #0.1552 | 0.1708 | 0.1707 | 0.1695 | 0.1655 | 0.1682 | 0.1451 | 0.1636 | 6 | AVG | # |
| Dichlorofluoromethane | 0.3769 | 0.3721 | 0.3873 | 0.3754 | 0.3562 | 0.3661 | 0.3478 | 0.3688 | 4 | AVG | |
| n-Pentane | 0.2832 | 0.3000 | 0.3015 | 0.3403 | 0.3325 | 0.3213 | 0.3024 | 0.3116 | 7 | AVG | |
| Trichlorofluoromethane | #0.3196 | 0.3811 | 0.3719 | 0.3728 | 0.3843 | 0.3925 | 0.3838 | 0.3723 | 7 | AVG | # |
| Ethyl ether | 0.1699 | 0.1813 | 0.1878 | 0.2007 | 0.2002 | 0.2003 | 0.1847 | 0.1893 | 6 | AVG | |
| Freon 123a | 0.2763 | 0.2573 | 0.2465 | 0.2535 | 0.2458 | 0.2443 | 0.2351 | 0.2512 | 5 | AVG | |
| Acrolein | 1.8947 | 1.6594 | 1.8088 | 1.8307 | 1.7928 | 1.9810 | 1.9086 | 1.8394 | 6 | AVG | |
| 1,1-Dichloroethene | #0.1470 | 0.1763 | 0.1864 | 0.1965 | 0.1942 | 0.1995 | 0.1966 | 0.1852 | 10 | AVG | # |
| 1,1-Dichloroethene(2) | #0.0729 | 0.0833 | 0.0878 | 0.0937 | 0.0906 | 0.0926 | 0.0899 | 0.0873 | 8 | AVG | #<- |
| Acetone | #0.7928 | 0.5752 | 0.7941 | 0.7663 | 0.7360 | 0.7700 | 0.7718 | 0.7437 | 10 | AVG | # |
| Freon 113 | #0.1375 | 0.1826 | 0.1889 | 0.2165 | 0.2167 | 0.2185 | 0.2140 | 0.1964 | 15 | AVG | # |
| 2-Propanol | 0.6248 | 0.5468 | 0.4986 | 0.5220 | 0.5259 | 0.5421 | 0.5129 | 0.5390 | 8 | AVG | |
| Methyl Iodide | 0.3205 | 0.3634 | 0.3957 | 0.4150 | 0.4049 | 0.4145 | 0.4013 | 0.3879 | 9 | AVG | |
| Carbon Disulfide | #0.5120 | 0.5910 | 0.6416 | 0.6822 | 0.6732 | 0.6875 | 0.6579 | 0.6350 | 10 | AVG | # |
| Allyl Chloride | 0.2547 | 0.2842 | 0.3136 | 0.3269 | 0.3219 | 0.3258 | 0.3071 | 0.3049 | 9 | AVG | |
| Methyl Acetate | #0.2210 | 0.2002 | 0.2202 | 0.2201 | 0.2252 | 0.2246 | 0.2133 | 0.2178 | 4 | AVG | # |
| Methylene Chloride | #0.2155 | 0.2116 | 0.2260 | 0.2352 | 0.2283 | 0.2301 | 0.2206 | 0.2239 | 4 | AVG | # |
| t-Butyl alcohol | 1.0777 | 0.9557 | 0.9832 | 1.0679 | 0.9819 | 0.9851 | 0.9523 | 1.0005 | 5 | AVG | |
| Acrylonitrile | 0.1151 | 0.1103 | 0.1260 | 0.1241 | 0.1200 | 0.1231 | 0.1160 | 0.1192 | 5 | AVG | |
| trans-1,2-Dichloroethene | #0.1798 | 0.2078 | 0.2211 | 0.2342 | 0.2274 | 0.2318 | 0.2286 | 0.2187 | 9 | AVG | # |
| Methyl Tertiary Butyl Ether | #0.6301 | 0.6536 | 0.7029 | 0.7376 | 0.7227 | 0.7210 | 0.6677 | 0.6908 | 6 | AVG | # |
| n-Hexane | 0.2543 | 0.2889 | 0.2873 | 0.3387 | 0.3360 | 0.3360 | 0.3238 | 0.3093 | 11 | AVG | |
| 1,1-Dichloroethane | #0.3174 | 0.3585 | 0.3808 | 0.3991 | 0.3898 | 0.3925 | 0.3765 | 0.3735 | 8 | AVG | # |
| di-Isopropyl ether | 0.5968 | 0.6235 | 0.6871 | 0.7103 | 0.6988 | 0.6997 | 0.6524 | 0.6669 | 7 | AVG | |
| 2-Chloro-1,3-butadiene | 0.2648 | 0.3139 | 0.3297 | 0.3495 | 0.3449 | 0.3465 | 0.3341 | 0.3262 | 9 | AVG | |
| Ethyl t-butyl ether | 0.6157 | 0.6331 | 0.7020 | 0.7290 | 0.7082 | 0.7059 | 0.6485 | 0.6775 | 6 | AVG | |
| cis-1,2-Dichloroethene | #0.2109 | 0.2326 | 0.2527 | 0.2634 | 0.2586 | 0.2637 | 0.2592 | 0.2487 | 8 | AVG | # |
| 2-Butanone | #0.1695 | 0.1489 | 0.1551 | 0.1554 | 0.1530 | 0.1586 | 0.1464 | 0.1553 | 5 | AVG | # |
| 2,2-Dichloropropane | 0.2762 | 0.3049 | 0.3221 | 0.3454 | 0.3373 | 0.3394 | 0.3281 | 0.3219 | 8 | AVG | |
| Propionitrile | 1.0611 | 1.0744 | 1.1992 | 1.2411 | 1.2050 | 1.2766 | 1.2425 | 1.1857 | 7 | AVG | |
| Methacrylonitrile | 0.1190 | 0.1199 | 0.1310 | 0.1368 | 0.1376 | 0.1387 | 0.1334 | 0.1309 | 6 | AVG | |
| Bromochloromethane | 0.1091 | 0.1214 | 0.1373 | 0.1384 | 0.1368 | 0.1398 | 0.1370 | 0.1314 | 9 | AVG | |
| Tetrahydrofuran | 1.0051 | 1.0108 | 1.1417 | 1.1512 | 1.1263 | 1.2271 | 1.2206 | 1.1261 | 8 | AVG | |
| Chloroform | #0.3166 | 0.3536 | 0.3934 | 0.4074 | 0.4008 | 0.4015 | 0.3856 | 0.3798 | 9 | AVG | # |
| 1,1,1-Trichloroethane | #0.3425 | 0.3977 | 0.3728 | 0.4001 | 0.3745 | 0.3786 | 0.3673 | 0.3762 | 5 | AVG | # |
| Cyclohexane | #0.3076 | 0.3452 | 0.3444 | 0.4017 | 0.3975 | 0.3956 | 0.3825 | 0.3678 | 10 | AVG | # |
| Cyclohexane(2) | #0.2475 | 0.2981 | 0.3042 | 0.3548 | 0.3521 | 0.3492 | 0.3446 | 0.3215 | 12 | AVG | # |
| Cyclohexane(3) | #0.0856 | 0.1107 | 0.1096 | 0.1260 | 0.1249 | 0.1244 | 0.1223 | 0.1148 | 13 | AVG | # |
| 1,1-Dichloropropene | 0.2408 | 0.2838 | 0.2916 | 0.3149 | 0.3178 | 0.3194 | 0.3161 | 0.2978 | 10 | AVG | |
| Carbon Tetrachloride | #0.2226 | 0.2601 | 0.2784 | 0.3068 | 0.3110 | 0.3172 | 0.3174 | 0.2876 | 12 | AVG | # |
| Isobutyl Alcohol | 0.3525 | 0.2946 | 0.3174 | 0.3243 | 0.3119 | 0.3111 | 0.3052 | 0.3167 | 6 | AVG | |
| Benzene | #0.7497 | 0.8220 | 0.8970 | 0.9361 | 0.9149 | 0.9214 | 0.8943 | 0.8765 | 8 | AVG | # |
| 1,2-Dichloroethane | #0.3168 | 0.2944 | 0.3123 | 0.3193 | 0.3149 | 0.3151 | 0.2985 | 0.3102 | 3 | AVG | # |
| 1,2-Dichloroethane(2) | #0.0282 | 0.0295 | 0.0303 | 0.0313 | 0.0310 | 0.0315 | 0.0303 | 0.0303 | 4 | AVG | #<- |
| t-Amyl methyl ether | 0.6232 | 0.6510 | 0.7240 | 0.7515 | 0.7378 | 0.7326 | 0.6735 | 0.6991 | 7 | AVG | |
| n-Heptane | 0.3023 | 0.2986 | 0.2886 | 0.3435 | 0.3450 | 0.3399 | 0.3257 | 0.3205 | 7 | AVG | |
| n-Butanol | 0.2216 | 0.2372 | 0.2639 | 0.2776 | 0.2702 | 0.2792 | 0.2758 | 0.2608 | 9 | AVG | |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 08/21/17  08/21/17

Heated Purge: (Y/N) Y  Calibration Times: 09:40  11:51

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = lg21i07.d  RRF 4 = lg21i06.d  RRF 10= lg21i05.d
RRF 20= lg21i04.d  RRF 50= lg21i03.d  RRF100= lg21i02.d  RRF300= lg21i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | #0.1903 | 0.2259 | 0.2378 | 0.2535 | 0.2466 | 0.2518 | 0.2505 | 0.2366 | 10 | AVG # |
| Methylcyclohexane | #0.2896 | 0.3381 | 0.3744 | 0.4202 | 0.4284 | 0.4331 | 0.4296 | 0.3876 | 14 | AVG # |
| Methylcyclohexane(2) | #0.1397 | 0.1583 | 0.1771 | 0.1956 | 0.2008 | 0.2052 | 0.2054 | 0.1832 | 14 | AVG # |
| 1,2-Dichloropropane | #0.1945 | 0.2097 | 0.2264 | 0.2381 | 0.2381 | 0.2416 | 0.2356 | 0.2263 | 8 | AVG # |
| Dibromomethane | 0.1385 | 0.1479 | 0.1610 | 0.1683 | 0.1694 | 0.1721 | 0.1689 | 0.1609 | 8 | AVG |
| 1,4-Dioxane | 0.0707 | 0.0755 | 0.0868 | 0.0816 | 0.0869 | 0.0865 | 0.0850 | 0.0818 | 8 | AVG |
| Methyl Methacrylate | 0.1883 | 0.1926 | 0.2114 | 0.2148 | 0.2232 | 0.2268 | 0.2229 | 0.2114 | 7 | AVG |
| Bromodichloromethane | #0.2377 | 0.2593 | 0.2911 | 0.3110 | 0.3147 | 0.3210 | 0.3129 | 0.2925 | 11 | AVG # |
| 2-Nitropropane | 0.0917 | 0.0757 | 0.0832 | 0.0806 | 0.0845 | 0.0894 | 0.0836 | 0.0841 | 6 | AVG |
| 2-Chloroethyl Vinyl Ether | 0.1466 | 0.1606 | 0.1706 | 0.1863 | 0.1882 | 0.1913 | 0.1870 | 0.1758 | 10 | AVG |
| cis-1,3-Dichloropropene | #0.2939 | 0.3264 | 0.3683 | 0.3915 | 0.3951 | 0.4050 | 0.3984 | 0.3684 | 12 | AVG # |
| 4-Methyl-2-pentanone | #0.3072 | 0.2977 | 0.3361 | 0.3336 | 0.3313 | 0.3473 | 0.3169 | 0.3243 | 5 | AVG # |
| Toluene | #0.6131 | 0.6888 | 0.7375 | 0.7755 | 0.7600 | 0.7692 | 0.7470 | 0.7273 | 8 | AVG # |
| trans-1,3-Dichloropropene | #0.3298 | 0.3704 | 0.4281 | 0.4556 | 0.4656 | 0.4755 | 0.4676 | 0.4275 | 13 | AVG # |
| Ethyl Methacrylate | 0.3809 | 0.4187 | 0.4745 | 0.4942 | 0.4972 | 0.4987 | 0.4783 | 0.4632 | 10 | AVG |
| 1,1,2-Trichloroethane | #0.2446 | 0.2639 | 0.2886 | 0.3019 | 0.2958 | 0.2969 | 0.2902 | 0.2831 | 7 | AVG # |
| Tetrachloroethene | #0.2520 | 0.3007 | 0.3117 | 0.3488 | 0.3426 | 0.3485 | 0.3549 | 0.3227 | 12 | AVG # |
| 1,3-Dichloropropane | 0.4051 | 0.4257 | 0.4740 | 0.4871 | 0.4821 | 0.4868 | 0.4711 | 0.4617 | 7 | AVG |
| 2-Hexanone | #0.2924 | 0.2776 | 0.3123 | 0.3103 | 0.3058 | 0.3212 | 0.2854 | 0.3007 | 5 | AVG # |
| Dibromochloromethane | #0.2278 | 0.2597 | 0.3088 | 0.3329 | 0.3460 | 0.3559 | 0.3531 | 0.3120 | 16 | AVG # |
| 1,2-Dibromoethane | #0.2657 | 0.2875 | 0.3268 | 0.3357 | 0.3383 | 0.3395 | 0.3309 | 0.3177 | 9 | AVG # |
| 1-Chlorohexane | 0.4110 | 0.3869 | 0.3819 | 0.4398 | 0.4368 | 0.4415 | 0.4375 | 0.4193 | 6 | AVG |
| Chlorobenzene | #0.7050 | 0.7762 | 0.8468 | 0.8988 | 0.8964 | 0.9135 | 0.9027 | 0.8485 | 9 | AVG # |
| 1,1,1,2-Tetrachloroethane | 0.2235 | 0.2606 | 0.2898 | 0.3175 | 0.3254 | 0.3350 | 0.3322 | 0.2977 | 14 | AVG |
| Ethylbenzene | #1.1765 | 1.2958 | 1.3867 | 1.5206 | 1.4956 | 1.5052 | 1.4151 | 1.3994 | 9 | AVG # |
| m+p-Xylene | #0.4468 | 0.5179 | 0.5549 | 0.6120 | 0.6053 | 0.6155 | 0.5783 | 0.5616 | 11 | AVG # |
| o-Xylene | #0.4556 | 0.5199 | 0.5554 | 0.6147 | 0.6079 | 0.6163 | 0.5876 | 0.5653 | 11 | AVG # |
| Styrene | #0.7288 | 0.8502 | 0.9339 | 1.0268 | 1.0307 | 1.0432 | 0.9797 | 0.9419 | 12 | AVG # |
| Bromoform | #0.1655 | 0.1837 | 0.2219 | 0.2467 | 0.2630 | 0.2763 | 0.2822 | 0.2342 | 19 | AVG # |
| Isopropylbenzene | #1.1105 | 1.3090 | 1.3836 | 1.5709 | 1.5444 | 1.5429 | 1.4538 | 1.4164 | 12 | AVG # |
| Cyclohexanone | 0.2971 | 0.2893 | 0.3187 | 0.3046 | 0.3297 | 0.3420 | 0.3337 | 0.3164 | 6 | AVG |
| Bromobenzene | 0.5851 | 0.6454 | 0.7050 | 0.7502 | 0.7587 | 0.7811 | 0.7791 | 0.7150 | 10 | AVG |
| 1,1,2,2-Tetrachloroethane | #0.7570 | 0.7797 | 0.8830 | 0.9049 | 0.9029 | 0.8908 | 0.8510 | 0.8528 | 7 | AVG # |
| 1,2,3-Trichloropropane | 0.2306 | 0.2431 | 0.2688 | 0.2709 | 0.2697 | 0.2715 | 0.2616 | 0.2595 | 6 | AVG |
| trans-1,4-Dichloro-2-butene | 0.1915 | 0.2105 | 0.2337 | 0.2424 | 0.2409 | 0.2390 | 0.2111 | 0.2242 | 9 | AVG |
| n-Propylbenzene | 2.4105 | 2.8035 | 2.9919 | 3.2828 | 3.2653 | 3.2380 | 2.9509 | 2.9918 | 11 | AVG |
| 2-Chlorotoluene | 0.5161 | 0.5845 | 0.6495 | 0.6912 | 0.6975 | 0.6995 | 0.6992 | 0.6482 | 11 | AVG |
| 4-Chlorotoluene | 0.5366 | 0.6128 | 0.6658 | 0.7233 | 0.7286 | 0.7403 | 0.7314 | 0.6770 | 11 | AVG |
| 1,3,5-Trimethylbenzene | 1.8428 | 2.0641 | 2.2014 | 2.4400 | 2.4555 | 2.4682 | 2.3157 | 2.2554 | 10 | AVG |
| tert-Butylbenzene | 0.4092 | 0.4186 | 0.4413 | 0.5205 | 0.5254 | 0.5393 | 0.5412 | 0.4851 | 12 | AVG |
| Pentachloroethane | 0.2718 | 0.3281 | 0.4055 | 0.4286 | 0.4598 | 0.4865 | 0.4841 | 0.4092 | 20 | AVG |
| 1,2,4-Trimethylbenzene | 1.8988 | 2.1241 | 2.2932 | 2.5033 | 2.5272 | 2.5425 | 2.3613 | 2.3215 | 10 | AVG |
| sec-Butylbenzene | 2.2524 | 2.5546 | 2.7067 | 3.0775 | 3.0984 | 3.0698 | 2.8303 | 2.7985 | 11 | AVG |
| 1,3-Dichlorobenzene | #1.1327 | 1.2459 | 1.3391 | 1.4421 | 1.4511 | 1.4640 | 1.3832 | 1.3512 | 9 | AVG # |
| p-Isopropyltoluene | 1.9338 | 2.2545 | 2.3924 | 2.7216 | 2.7634 | 2.7675 | 2.5690 | 2.4860 | 13 | AVG |
| 1,4-Dichlorobenzene | #1.1737 | 1.2987 | 1.3899 | 1.5037 | 1.5032 | 1.5198 | 1.3781 | 1.3953 | 9 | AVG # |
| 1,2,3-Trimethylbenzene | 2.0216 | 2.1962 | 2.5205 | 2.5764 | 2.6092 | 2.6442 | 2.3594 | 2.4182 | 10 | AVG |
| Benzyl Chloride | 1.2812 | 1.4778 | 1.7047 | 1.8702 | 1.9282 | 1.9529 | 1.8406 | 1.7222 | 15 | AVG |
| 1,3-Diethylbenzene | 1.1720 | 1.3589 | 1.5815 | 1.6044 | 1.6432 | 1.6502 | 1.5524 | 1.5089 | 12 | AVG |
| 1,4-Diethylbenzene | 1.2459 | 1.4315 | 1.6507 | 1.6780 | 1.7042 | 1.7155 | 1.5904 | 1.5737 | 11 | AVG |
| 1,2-Dichlorobenzene | #1.1277 | 1.2390 | 1.3365 | 1.4307 | 1.4405 | 1.4468 | 1.3756 | 1.3424 | 9 | AVG # |
| n-Butylbenzene | 0.9824 | 1.1387 | 1.1887 | 1.3269 | 1.3508 | 1.3309 | 1.2088 | 1.2181 | 11 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 08/21/17 08/21/17

Heated Purge: (Y/N) Y Calibration Times: 09:40 11:51

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = lg21i07.d RRF 4 = lg21i06.d RRF 10= lg21i05.d
RRF 20= lg21i04.d RRF 50= lg21i03.d RRF100= lg21i02.d RRF300= lg21i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diethylbenzene | 0.9771 | 1.1313 | 1.3216 | 1.3287 | 1.3664 | 1.3768 | 1.2988 | 1.2572 | 12 | AVG |
| 1,2-Dibromo-3-chloropropane | #0.1546 | 0.1660 | 0.1842 | 0.1953 | 0.2045 | 0.2035 | 0.1925 | 0.1858 | 10 | AVG # |
| 1,3,5-Trichlorobenzene | 0.9071 | 0.9521 | 0.9826 | 1.0750 | 1.0786 | 1.0834 | 1.0653 | 1.0206 | 7 | AVG |
| 1,2,4-Trichlorobenzene | #0.9728 | 0.9498 | 0.9709 | 1.0502 | 1.0557 | 1.0590 | 1.0302 | 1.0127 | 5 | AVG # |
| Hexachlorobutadiene | 0.4372 | 0.3999 | 0.4120 | 0.4483 | 0.4545 | 0.4488 | 0.4272 | 0.4326 | 5 | AVG |
| Naphthalene | 3.0737 | 3.0251 | 3.1961 | 3.4198 | 3.3899 | 3.3501 | 2.9344 | 3.1985 | 6 | AVG |
| 1,2,3-Trichlorobenzene | 0.9739 | 0.9064 | 0.9362 | 1.0099 | 1.0035 | 1.0047 | 0.9658 | 0.9715 | 4 | AVG |
| 2-Methylnaphthalene | 2.2967 | 2.0640 | 2.2196 | 2.2261 | 2.2141 | 2.2062 | 1.8627 | 2.1556 | 7 | AVG |
| Dibromofluoromethane | 0.2528 | 0.2535 | 0.2550 | 0.2564 | 0.2539 | 0.2553 | 0.2540 | 0.2544 | 0 | AVG |
| Dibromofluoromethane(2) | 0.2607 | 0.2605 | 0.2602 | 0.2619 | 0.2598 | 0.2607 | 0.2600 | 0.2605 | 0 | AVG |
| 1,2-Dichloroethane-d4 | 0.0612 | 0.0617 | 0.0624 | 0.0620 | 0.0614 | 0.0618 | 0.0619 | 0.0618 | 1 | AVG |
| 1,2-Dichloroethane-d4(2) | 0.2909 | 0.2913 | 0.2879 | 0.2877 | 0.2882 | 0.2861 | 0.2805 | 0.2875 | 1 | AVG |
| 1,2-Dichloroethane-d4(3) | 0.0397 | 0.0395 | 0.0391 | 0.0393 | 0.0395 | 0.0402 | 0.0400 | 0.0396 | 1 | AVG |
| Toluene-d8 | 1.2522 | 1.2549 | 1.2596 | 1.2541 | 1.2413 | 1.2336 | 1.2186 | 1.2449 | 1 | AVG |
| Toluene-d8(2) | 0.8185 | 0.8225 | 0.8250 | 0.8224 | 0.8171 | 0.8138 | 0.8066 | 0.8180 | 1 | AVG |
| 4-Bromofluorobenzene | 0.4801 | 0.4772 | 0.4762 | 0.4813 | 0.4755 | 0.4719 | 0.4695 | 0.4759 | 1 | AVG |
| 4-Bromofluorobenzene(2) | 0.4175 | 0.4149 | 0.4111 | 0.4154 | 0.4137 | 0.4072 | 0.4062 | 0.4123 | 1 | AVG |

Average %RSD 8

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

| | |
|---|---|
| /chem/HP09915.i/17aug21i.b/lg21i01.d | VSTD300 |
| /chem/HP09915.i/17aug21i.b/lg21i02.d | VSTD100 |
| /chem/HP09915.i/17aug21i.b/lg21i03.d | VSTD050 |
| /chem/HP09915.i/17aug21i.b/lg21i04.d | VSTD020 |
| /chem/HP09915.i/17aug21i.b/lg21i05.d | VSTD010 |
| /chem/HP09915.i/17aug21i.b/lg21i06.d | VSTD004 |
| /chem/HP09915.i/17aug21i.b/lg21i07.d | VSTD001 |

Area Summary

File ID:

| Internal Standard Name | lg21i01.d | lg21i02.d | lg21i03.d | lg21i04.d | lg21i05.d | lg21i06.d | lg21i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 244314 | 244820 | 258273 | 249018 | 254929 | 261323 | 248975 | 251665 | 3 | Yes |
| Fluorobenzene | 1371560 | 1322168 | 1319240 | 1291613 | 1293715 | 1288157 | 1255839 | 1306042 | 3 | Yes |
| Chlorobenzene-d5 | 1100857 | 1055218 | 1045640 | 1021687 | 1010789 | 1014165 | 990561 | 1034131 | 4 | Yes |
| 1,4-Dichlorobenzene-d4 | 609070 | 577199 | 571675 | 565404 | 545387 | 553830 | 548017 | 567226 | 4 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | lg21i01.d | lg21i02.d | lg21i03.d | lg21i04.d | lg21i05.d | lg21i06.d | lg21i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 3.574 | 3.571 | 3.568 | 3.568 | 3.581 | 3.581 | 3.574 | 3.574 |
| Fluorobenzene | 7.057 | 7.050 | 7.050 | 7.050 | 7.054 | 7.050 | 7.050 | 7.052 |
| Chlorobenzene-d5 | 10.712 | 10.709 | 10.709 | 10.709 | 10.709 | 10.709 | 10.709 | 10.710 |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.638 | 12.638 | 12.638 | 12.639 | 12.639 | 12.638 | 12.639 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 08/21/2017 at 12:22.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 08/21/17 Time: 12:35

Lab File ID: lg21v01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.3160 | 0.2939 | 18.60 | 20 | -7 | # |
| # | Chloromethane | 0.3006 | 0.2977 | 19.80 | 20 | -1 | # |
| | 1,3-Butadiene | 0.2103 | 0.2547 | 24.22 | 20 | 21 | |
| # | Vinyl Chloride | 0.2952 | 0.3004 | 20.35 | 20 | 2 | # |
| # | Bromomethane | 0.2190 | 0.2217 | 20.25 | 20 | 1 | # |
| # | Chloroethane | 0.1636 | 0.1656 | 20.24 | 20 | 1 | # |
| | Dichlorofluoromethane | 0.3688 | 0.3815 | 20.69 | 20 | 3 | |
| | n-Pentane | 0.3116 | 0.3436 | 22.06 | 20 | 10 | |
| # | Trichlorofluoromethane | 0.3723 | 0.3920 | 21.06 | 20 | 5 | # |
| | Ethyl ether | 0.1893 | 0.1916 | 20.24 | 20 | 1 | |
| | Freon 123a | 0.2512 | 0.2409 | 19.18 | 20 | -4 | |
| | Acrolein | 1.8394 | 1.6740 | 136.51 | 150 | -9 | |
| # | 1,1-Dichloroethene | 0.1852 | 0.2040 | 22.03 | 20 | 10 | # |
| # | Acetone | 0.7437 | 0.7034 | 141.86 | 150 | -5 | # |
| # | Freon 113 | 0.1964 | 0.2072 | 21.11 | 20 | 6 | # |
| | 2-Propanol | 0.5390 | 0.4864 | 135.36 | 150 | -10 | |
| | Methyl Iodide | 0.3879 | 0.3946 | 20.35 | 20 | 2 | |
| # | Carbon Disulfide | 0.6350 | 0.6574 | 20.70 | 20 | 4 | # |
| | Allyl Chloride | 0.3049 | 0.3209 | 21.05 | 20 | 5 | |
| # | Methyl Acetate | 0.2178 | 0.2221 | 20.40 | 20 | 2 | # |
| # | Methylene Chloride | 0.2239 | 0.2311 | 20.64 | 20 | 3 | # |
| | t-Butyl alcohol | 1.0005 | 0.9677 | 193.44 | 200 | -3 | |
| | Acrylonitrile | 0.1192 | 0.1147 | 96.23 | 100 | -4 | |
| # | trans-1,2-Dichloroethene | 0.2187 | 0.2322 | 21.23 | 20 | 6 | # |
| # | Methyl Tertiary Butyl Ether | 0.6908 | 0.6997 | 20.26 | 20 | 1 | # |
| | n-Hexane | 0.3093 | 0.3125 | 20.21 | 20 | 1 | |
| # | 1,1-Dichloroethane | 0.3735 | 0.3786 | 20.27 | 20 | 1 | # |
| | di-Isopropyl ether | 0.6669 | 0.6846 | 20.53 | 20 | 3 | |
| | 2-Chloro-1,3-butadiene | 0.3262 | 0.3238 | 19.85 | 20 | -1 | |
| | Ethyl t-butyl ether | 0.6775 | 0.6812 | 20.11 | 20 | 1 | |
| # | cis-1,2-Dichloroethene | 0.2487 | 0.2589 | 20.82 | 20 | 4 | # |
| # | 2-Butanone | 0.1553 | 0.1489 | 143.86 | 150 | -4 | # |
| | 2,2-Dichloropropane | 0.3219 | 0.3289 | 20.43 | 20 | 2 | |
| | Propionitrile | 1.1857 | 1.1821 | 149.55 | 150 | 0 | |
| | Methacrylonitrile | 0.1309 | 0.1308 | 149.85 | 150 | 0 | |
| | Bromochloromethane | 0.1314 | 0.1396 | 21.25 | 20 | 6 | |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 08/21/17 Time: 12:35

Lab File ID: lg21v01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.1261 | 1.1129 | 98.82 | 100 | -1 | |
| # | Chloroform | 0.3798 | 0.3877 | 20.41 | 20 | 2 | # |
| # | 1,1,1-Trichloroethane | 0.3762 | 0.3633 | 19.31 | 20 | -3 | # |
| # | Cyclohexane | 0.3678 | 0.3552 | 19.32 | 20 | -3 | # |
| | 1,1-Dichloropropene | 0.2978 | 0.2989 | 20.08 | 20 | 0 | |
| # | Carbon Tetrachloride | 0.2876 | 0.2898 | 20.15 | 20 | 1 | # |
| | Isobutyl Alcohol | 0.3167 | 0.3080 | 486.20 | 500 | -3 | |
| # | Benzene | 0.8765 | 0.8912 | 20.34 | 20 | 2 | # |
| # | 1,2-Dichloroethane | 0.3102 | 0.3059 | 19.73 | 20 | -1 | # |
| | t-Amyl methyl ether | 0.6991 | 0.6995 | 20.01 | 20 | 0 | |
| | n-Heptane | 0.3205 | 0.3176 | 19.82 | 20 | -1 | |
| | n-Butanol | 0.2608 | 0.2609 | 1000.26 | 1000 | 0 | |
| # | Trichloroethene | 0.2366 | 0.2379 | 20.11 | 20 | 1 | # |
| # | Methylcyclohexane | 0.3876 | 0.4240 | 21.88 | 20 | 9 | # |
| # | 1,2-Dichloropropane | 0.2263 | 0.2295 | 20.28 | 20 | 1 | # |
| | Dibromomethane | 0.1609 | 0.1628 | 20.24 | 20 | 1 | |
| | 1,4-Dioxane | 0.0818 | 0.0831 | 507.70 | 500 | 2 | |
| | Methyl Methacrylate | 0.2114 | 0.2083 | 19.71 | 20 | -1 | |
| # | Bromodichloromethane | 0.2925 | 0.2870 | 19.62 | 20 | -2 | # |
| | 2-Nitropropane | 0.0841 | 0.0763 | 18.14 | 20 | -9 | |
| | 2-Chloroethyl Vinyl Ether | 0.1758 | 0.1757 | 19.98 | 20 | 0 | |
| # | cis-1,3-Dichloropropene | 0.3684 | 0.3684 | 20.00 | 20 | 0 | # |
| # | 4-Methyl-2-pentanone | 0.3243 | 0.3202 | 98.73 | 100 | -1 | # |
| # | Toluene | 0.7273 | 0.7370 | 20.27 | 20 | 1 | # |
| # | trans-1,3-Dichloropropene | 0.4275 | 0.4265 | 19.95 | 20 | 0 | # |
| | Ethyl Methacrylate | 0.4632 | 0.4814 | 20.78 | 20 | 4 | |
| # | 1,1,2-Trichloroethane | 0.2831 | 0.2948 | 20.82 | 20 | 4 | # |
| # | Tetrachloroethene | 0.3227 | 0.3329 | 20.63 | 20 | 3 | # |
| | 1,3-Dichloropropane | 0.4617 | 0.4640 | 20.10 | 20 | 1 | |
| # | 2-Hexanone | 0.3007 | 0.2964 | 98.57 | 100 | -1 | # |
| # | Dibromochloromethane | 0.3120 | 0.3114 | 19.96 | 20 | 0 | # |
| # | 1,2-Dibromoethane | 0.3177 | 0.3223 | 20.29 | 20 | 1 | # |
| | 1-Chlorohexane | 0.4193 | 0.4130 | 19.70 | 20 | -2 | |
| # | Chlorobenzene | 0.8485 | 0.8552 | 20.16 | 20 | 1 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2977 | 0.2983 | 20.04 | 20 | 0 | |
| # | Ethylbenzene | 1.3994 | 1.4279 | 20.41 | 20 | 2 | # |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 08/21/17 Time: 12:35

Lab File ID: lg21v01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | m+p-Xylene | 0.5616 | 0.5821 | 41.47 | 40 | 4 | # |
| # | o-Xylene | 0.5653 | 0.5728 | 20.26 | 20 | 1 | # |
| # | Styrene | 0.9419 | 0.9769 | 20.74 | 20 | 4 | # |
| # | Bromoform | 0.2342 | 0.2228 | 19.03 | 20 | -5 | # |
| # | Isopropylbenzene | 1.4164 | 1.4848 | 20.96 | 20 | 5 | # |
| | Cyclohexanone | 0.3164 | 0.3127 | 494.15 | 500 | -1 | |
| | Bromobenzene | 0.7150 | 0.7241 | 20.26 | 20 | 1 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8528 | 0.8638 | 20.26 | 20 | 1 | # |
| | 1,2,3-Trichloropropane | 0.2595 | 0.2685 | 20.70 | 20 | 3 | |
| | trans-1,4-Dichloro-2-butene | 0.2242 | 0.2454 | 109.49 | 100 | 9 | |
| | n-Propylbenzene | 2.9918 | 3.1424 | 21.01 | 20 | 5 | |
| | 2-Chlorotoluene | 0.6482 | 0.6629 | 20.45 | 20 | 2 | |
| | 4-Chlorotoluene | 0.6770 | 0.6863 | 20.28 | 20 | 1 | |
| | 1,3,5-Trimethylbenzene | 2.2554 | 2.3207 | 20.58 | 20 | 3 | |
| | tert-Butylbenzene | 0.4851 | 0.4998 | 20.61 | 20 | 3 | |
| | Pentachloroethane | 0.4092 | 0.4225 | 20.65 | 20 | 3 | |
| | 1,2,4-Trimethylbenzene | 2.3215 | 2.3925 | 20.61 | 20 | 3 | |
| | sec-Butylbenzene | 2.7985 | 2.9908 | 21.37 | 20 | 7 | |
| # | 1,3-Dichlorobenzene | 1.3512 | 1.3556 | 20.07 | 20 | 0 | # |
| | p-Isopropyltoluene | 2.4860 | 2.6498 | 21.32 | 20 | 7 | |
| # | 1,4-Dichlorobenzene | 1.3953 | 1.4377 | 20.61 | 20 | 3 | # |
| | 1,2,3-Trimethylbenzene | 2.4182 | 2.6010 | 21.51 | 20 | 8 | |
| | Benzyl Chloride | 1.7222 | 1.7679 | 20.53 | 20 | 3 | |
| | 1,3-Diethylbenzene | 1.5089 | 1.5796 | 20.94 | 20 | 5 | |
| | 1,4-Diethylbenzene | 1.5737 | 1.6732 | 21.26 | 20 | 6 | |
| # | 1,2-Dichlorobenzene | 1.3424 | 1.3671 | 20.37 | 20 | 2 | # |
| | n-Butylbenzene | 1.2181 | 1.2791 | 21.00 | 20 | 5 | |
| | 1,2-Diethylbenzene | 1.2572 | 1.3424 | 21.36 | 20 | 7 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1858 | 0.1894 | 20.38 | 20 | 2 | # |
| | 1,3,5-Trichlorobenzene | 1.0206 | 1.0293 | 20.17 | 20 | 1 | |
| # | 1,2,4-Trichlorobenzene | 1.0127 | 0.9818 | 19.39 | 20 | -3 | # |
| | Hexachlorobutadiene | 0.4326 | 0.4173 | 19.30 | 20 | -4 | |
| | Naphthalene | 3.1985 | 3.2104 | 20.07 | 20 | 0 | |
| | 1,2,3-Trichlorobenzene | 0.9715 | 0.9368 | 19.29 | 20 | -4 | |
| | 2-Methylnaphthalene | 2.1556 | 1.9870 | 18.44 | 20 | -8 | |

Average %Drift 3

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

page 3 of 3 FORM VII VOA

# Lancaster Laboratories

## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09915.i/17aug21i.b/lg21i07.d
/chem/HP09915.i/17aug21i.b/lg21i06.d
/chem/HP09915.i/17aug21i.b/lg21i05.d
/chem/HP09915.i/17aug21i.b/lg21i04.d
/chem/HP09915.i/17aug21i.b/lg21i03.d
/chem/HP09915.i/17aug21i.b/lg21i02.d
/chem/HP09915.i/17aug21i.b/lg21i01.d

File /chem/HP09915.i/17aug21i.b/lg21i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP09915.i/17sep05c.b/ls05c10.d

RT Summary

| Internal Standard Name | File ID: ls05c10.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 3.584 | 3.568 | Yes |
| Fluorobenzene | 7.050 | 7.050 | Yes |
| Chlorobenzene-d5 | 10.709 | 10.709 | Yes |
| 1,4-Dichlorobenzene-d4 | 12.638 | 12.638 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

| Internal Standard Name | File ID: ls05c10.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 185096 | 258273 | 129136 | 516546 | Yes |
| Fluorobenzene | 1127775 | 1319240 | 659620 | 2638480 | Yes |
| Chlorobenzene-d5 | 907883 | 1045640 | 522820 | 2091280 | Yes |
| 1,4-Dichlorobenzene-d4 | 497842 | 571675 | 285838 | 1143350 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 09/05/2017 at 20:31

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 09/05/17 Time: 20:08

Lab File ID: ls05c10.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.3160 | 0.3234 | 51.17 | 50 | 2 | # |
| # | Chloromethane | 0.3006 | 0.2974 | 49.47 | 50 | -1 | # |
| | 1,3-Butadiene | 0.2103 | 0.2209 | 52.52 | 50 | 5 | |
| # | Vinyl Chloride | 0.2952 | 0.2941 | 49.82 | 50 | 0 | # |
| # | Bromomethane | 0.2190 | 0.2250 | 51.38 | 50 | 3 | # |
| # | Chloroethane | 0.1636 | 0.1669 | 51.01 | 50 | 2 | # |
| | n-Pentane | 0.3116 | 0.2796 | 44.87 | 50 | -10 | |
| # | Trichlorofluoromethane | 0.3723 | 0.3766 | 50.58 | 50 | 1 | # |
| | Ethyl ether | 0.1893 | 0.1552 | 41.00 | 50 | -18 | |
| | Freon 123a | 0.2512 | 0.2315 | 46.08 | 50 | -8 | |
| | Acrolein | 1.8394 | 2.1252 | 577.68 | 500 | 16 | |
| # | 1,1-Dichloroethene | 0.1852 | 0.1738 | 46.93 | 50 | -6 | # |
| # | 1,1-Dichloroethene(2) | 0.0873 | 0.0812 | 46.55 | 50 | -7 | #<- |
| # | Acetone | 0.7437 | 0.9903 | 133.15 | 100 | 33 | #<- |
| # | Freon 113 | 0.1964 | 0.1919 | 48.85 | 50 | -2 | # |
| | 2-Propanol | 0.5390 | 0.6126 | 284.14 | 250 | 14 | |
| | Methyl Iodide | 0.3879 | 0.3558 | 45.87 | 50 | -8 | |
| # | Carbon Disulfide | 0.6350 | 0.5728 | 45.10 | 50 | -10 | # |
| | Allyl Chloride | 0.3049 | 0.2949 | 48.36 | 50 | -3 | |
| # | Methyl Acetate | 0.2178 | 0.2259 | 51.85 | 50 | 4 | # |
| # | Methylene Chloride | 0.2239 | 0.2174 | 48.55 | 50 | -3 | # |
| | t-Butyl alcohol | 1.0005 | 1.1141 | 278.36 | 250 | 11 | |
| | Acrylonitrile | 0.1192 | 0.1224 | 51.33 | 50 | 3 | |
| # | trans-1,2-Dichloroethene | 0.2187 | 0.2110 | 48.24 | 50 | -4 | # |
| # | Methyl Tertiary Butyl Ether | 0.6908 | 0.6655 | 48.17 | 50 | -4 | # |
| | n-Hexane | 0.3093 | 0.3019 | 48.81 | 50 | -2 | |
| # | 1,1-Dichloroethane | 0.3735 | 0.3603 | 48.23 | 50 | -4 | # |
| | di-Isopropyl ether | 0.6669 | 0.6557 | 49.15 | 50 | -2 | |
| | 2-Chloro-1,3-butadiene | 0.3262 | 0.3071 | 47.06 | 50 | -6 | |
| | Ethyl t-butyl ether | 0.6775 | 0.6374 | 47.04 | 50 | -6 | |
| # | cis-1,2-Dichloroethene | 0.2487 | 0.2453 | 49.31 | 50 | -1 | # |
| # | 2-Butanone | 0.1553 | 0.1599 | 102.96 | 100 | 3 | # |
| | 2,2-Dichloropropane | 0.3219 | 0.2763 | 42.91 | 50 | -14 | |
| | Propionitrile | 1.1857 | 1.4776 | 311.55 | 250 | 25 | <- |
| | Methacrylonitrile | 0.1309 | 0.1350 | 128.89 | 125 | 3 | |
| | Bromochloromethane | 0.1314 | 0.1360 | 51.77 | 50 | 4 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 09/05/17 Time: 20:08

Lab File ID: ls05c10.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| Tetrahydrofuran | 1.1261 | 1.3513 | 120.00 | 100 | 20 | |
| # Chloroform | 0.3798 | 0.3755 | 49.43 | 50 | -1 | # |
| # 1,1,1-Trichloroethane | 0.3762 | 0.3273 | 43.50 | 50 | -13 | # |
| # Cyclohexane | 0.3678 | 0.3551 | 48.28 | 50 | -3 | # |
| # Cyclohexane(2) | 0.3215 | 0.3148 | 48.96 | 50 | -2 | # |
| # Cyclohexane(3) | 0.1148 | 0.1115 | 48.58 | 50 | -3 | # |
| 1,1-Dichloropropene | 0.2978 | 0.2890 | 48.53 | 50 | -3 | |
| # Carbon Tetrachloride | 0.2876 | 0.2503 | 43.50 | 50 | -13 | # |
| Isobutyl Alcohol | 0.3167 | 0.3871 | 763.92 | 625 | 22 | <- |
| # Benzene | 0.8765 | 0.8758 | 49.96 | 50 | 0 | # |
| # 1,2-Dichloroethane | 0.3102 | 0.2991 | 48.21 | 50 | -4 | # |
| # 1,2-Dichloroethane(2) | 0.0303 | 0.0298 | 49.20 | 50 | -2 | #<- |
| t-Amyl methyl ether | 0.6991 | 0.6691 | 47.85 | 50 | -4 | |
| n-Heptane | 0.3205 | 0.3295 | 51.39 | 50 | 3 | |
| n-Butanol | 0.2608 | 0.3254 | 1559.55 | 1250 | 25 | <- |
| # Trichloroethene | 0.2366 | 0.2344 | 49.53 | 50 | -1 | # |
| # Methylcyclohexane | 0.3876 | 0.4110 | 53.01 | 50 | 6 | # |
| # Methylcyclohexane(2) | 0.1832 | 0.1904 | 51.98 | 50 | 4 | # |
| # 1,2-Dichloropropane | 0.2263 | 0.2293 | 50.67 | 50 | 1 | # |
| Dibromomethane | 0.1609 | 0.1648 | 51.21 | 50 | 2 | |
| 1,4-Dioxane | 0.0818 | 0.1120 | 855.32 | 625 | 37 | <- |
| Methyl Methacrylate | 0.2114 | 0.2177 | 51.48 | 50 | 3 | |
| # Bromodichloromethane | 0.2925 | 0.2801 | 47.88 | 50 | -4 | # |
| 2-Nitropropane | 0.0841 | 0.0512 | 60.92 | 100 | -39 | <- |
| 2-Chloroethyl Vinyl Ether | 0.1758 | 0.1849 | 52.57 | 50 | 5 | |
| # cis-1,3-Dichloropropene | 0.3684 | 0.3569 | 48.44 | 50 | -3 | # |
| # 4-Methyl-2-pentanone | 0.3243 | 0.3560 | 109.78 | 100 | 10 | # |
| # Toluene | 0.7273 | 0.7184 | 49.39 | 50 | -1 | # |
| # trans-1,3-Dichloropropene | 0.4275 | 0.4011 | 46.90 | 50 | -6 | # |
| Ethyl Methacrylate | 0.4632 | 0.4763 | 51.41 | 50 | 3 | |
| # 1,1,2-Trichloroethane | 0.2831 | 0.2921 | 51.58 | 50 | 3 | # |
| # Tetrachloroethene | 0.3227 | 0.3133 | 48.54 | 50 | -3 | # |
| 1,3-Dichloropropane | 0.4617 | 0.4712 | 51.03 | 50 | 2 | |
| # 2-Hexanone | 0.3007 | 0.3313 | 110.16 | 100 | 10 | # |
| # Dibromochloromethane | 0.3120 | 0.2949 | 47.26 | 50 | -5 | # |
| # 1,2-Dibromoethane | 0.3177 | 0.3255 | 51.22 | 50 | 2 | # |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 09/05/17 Time: 20:08

Lab File ID: ls05c10.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1-Chlorohexane | 0.4193 | 0.4040 | 48.17 | 50 | -4 | |
| # | Chlorobenzene | 0.8485 | 0.8520 | 50.21 | 50 | 0 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2977 | 0.2876 | 48.31 | 50 | -3 | |
| # | Ethylbenzene | 1.3994 | 1.4197 | 50.73 | 50 | 1 | # |
| # | m+p-Xylene | 0.5616 | 0.5729 | 102.03 | 100 | 2 | # |
| # | o-Xylene | 0.5653 | 0.5772 | 51.05 | 50 | 2 | # |
| # | Styrene | 0.9419 | 0.9692 | 51.45 | 50 | 3 | # |
| # | Bromoform | 0.2342 | 0.2060 | 43.98 | 50 | -12 | # |
| # | Isopropylbenzene | 1.4164 | 1.4576 | 51.45 | 50 | 3 | # |
| | Cyclohexanone | 0.3164 | 0.3535 | 698.26 | 625 | 12 | |
| | Bromobenzene | 0.7150 | 0.7201 | 50.36 | 50 | 1 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8528 | 0.8945 | 52.45 | 50 | 5 | # |
| | 1,2,3-Trichloropropane | 0.2595 | 0.2706 | 52.15 | 50 | 4 | |
| | trans-1,4-Dichloro-2-butene | 0.2242 | 0.1840 | 102.62 | 125 | -18 | |
| | n-Propylbenzene | 2.9918 | 3.1041 | 51.88 | 50 | 4 | |
| | 2-Chlorotoluene | 0.6482 | 0.6516 | 50.26 | 50 | 1 | |
| | 4-Chlorotoluene | 0.6770 | 0.6828 | 50.43 | 50 | 1 | |
| | 1,3,5-Trimethylbenzene | 2.2554 | 2.3233 | 51.51 | 50 | 3 | |
| | tert-Butylbenzene | 0.4851 | 0.5344 | 55.09 | 50 | 10 | |
| | Pentachloroethane | 0.4092 | 0.3912 | 47.80 | 50 | -4 | |
| | 1,2,4-Trimethylbenzene | 2.3215 | 2.3926 | 51.53 | 50 | 3 | |
| | sec-Butylbenzene | 2.7985 | 2.9511 | 52.73 | 50 | 5 | |
| # | 1,3-Dichlorobenzene | 1.3512 | 1.3637 | 50.46 | 50 | 1 | # |
| | p-Isopropyltoluene | 2.4860 | 2.6274 | 52.84 | 50 | 6 | |
| # | 1,4-Dichlorobenzene | 1.3953 | 1.4369 | 51.49 | 50 | 3 | # |
| | 1,2,3-Trimethylbenzene | 2.4182 | 2.5447 | 52.62 | 50 | 5 | |
| | Benzyl Chloride | 1.7222 | 1.5157 | 44.00 | 50 | -12 | |
| | 1,3-Diethylbenzene | 1.5089 | 1.5550 | 51.53 | 50 | 3 | |
| | 1,4-Diethylbenzene | 1.5737 | 1.6191 | 51.44 | 50 | 3 | |
| # | 1,2-Dichlorobenzene | 1.3424 | 1.3651 | 50.84 | 50 | 2 | # |
| | n-Butylbenzene | 1.2181 | 1.2902 | 52.96 | 50 | 6 | |
| | 1,2-Diethylbenzene | 1.2572 | 1.2916 | 51.37 | 50 | 3 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1858 | 0.1803 | 48.51 | 50 | -3 | # |
| | 1,3,5-Trichlorobenzene | 1.0206 | 0.9821 | 48.12 | 50 | -4 | |
| # | 1,2,4-Trichlorobenzene | 1.0127 | 0.9540 | 47.10 | 50 | -6 | # |
| | Hexachlorobutadiene | 0.4326 | 0.3686 | 42.61 | 50 | -15 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 09/05/17 Time: 20:08

Lab File ID: ls05c10.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Naphthalene | 3.1985 | 3.2221 | 50.37 | 50 | 1 |
| 1,2,3-Trichlorobenzene | 0.9715 | 0.9030 | 46.48 | 50 | -7 |
| 2-Methylnaphthalene | 2.1556 | 1.9390 | 44.98 | 50 | -10 |
| Dibromofluoromethane | 0.2544 | 0.2503 | 49.20 | 50 | -2 |
| Dibromofluoromethane(2) | 0.2605 | 0.2556 | 49.04 | 50 | -2 |
| 1,2-Dichloroethane-d4 | 0.0618 | 0.0621 | 50.25 | 50 | 1 |
| 1,2-Dichloroethane-d4(2) | 0.2875 | 0.2834 | 49.28 | 50 | -1 |
| 1,2-Dichloroethane-d4(3) | 0.0396 | 0.0398 | 50.20 | 50 | 0 |
| Toluene-d8 | 1.2449 | 1.2372 | 49.69 | 50 | -1 |
| Toluene-d8(2) | 0.8180 | 0.8083 | 49.41 | 50 | -1 |
| 4-Bromofluorobenzene | 0.4759 | 0.4712 | 49.50 | 50 | -1 |
| 4-Bromofluorobenzene(2) | 0.4123 | 0.4009 | 48.63 | 50 | -3 |

Average %Drift 6

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem/HP09915.i/17sep05c.b/ls05ec8.d
Report Date: 09/06/2017 07:49

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i
Client ID: SECC050
Lab Sample ID: SECC050
Sublist used: 17639.sub

Injection Date and Time: 06-SEP-2017 01:51
Initial Calibration Date(s): 21-AUG-2017 21-AUG-2017
Initial Calibration Time(s): 09:40 15:35
Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Benzene | 0.87650 | 0.85259 | 0.01 | -2.7 | 50.0 |
| Toluene | 0.72729 | 0.70268 | 0.01 | -3.4 | 50.0 |
| Ethylbenzene | 1.39936 | 1.38380 | 0.01 | -1.1 | 50.0 |
| m+p-Xylene | 0.56155 | 0.55965 | 0.01 | -0.3 | 50.0 |
| o-Xylene | 0.56534 | 0.55958 | 0.01 | -1.0 | 50.0 |
| Xylene (Total) | 0.56282 | 0.55963 | 0.01 | -0.6 | 50.0 |

| Surrogate Standards | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Dibromofluoromethane | 0.25442 | 0.24892 | 0.01 | -2.2 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06177 | 0.06185 | 0.01 | 0.1 | 20.5 |
| Toluene-d8 | 1.24489 | 1.24747 | 0.01 | 0.2 | 20.5 |
| 4-Bromofluorobenzene | 0.47595 | 0.47040 | 0.01 | -1.2 | 20.5 |

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR194___

Lab File ID (Standard): ls05c10.d Date Analyzed: 09/05/17

Instrument ID: HP09915 Time Analyzed: 20:08

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 185096 | 3.584 | 1127775 | 7.050 | 907883 | 10.709 | 497842 | 12.638 |
| UPPER LIMIT | 370192 | 4.084 | 2255550 | 7.550 | 1815766 | 11.209 | 995684 | 13.138 |
| LOWER LIMIT | 92548 | 3.084 | 563888 | 6.550 | 453942 | 10.209 | 248921 | 12.138 |
| LAB SAMPLE ID | | | | | | | | |
| 01 LCSL92 | 186853 | 3.581 | 1148316 | 7.047 | 910753 | 10.706 | 500662 | 12.638 |
| 02 LCSL93 | 186853 | 3.581 | 1148316 | 7.047 | 910753 | 10.706 | 500662 | 12.638 |
| 03 LCDL92 | 180081 | 3.578 | 1143853 | 7.047 | 908485 | 10.706 | 492549 | 12.638 |
| 04 LCDL93 | 180081 | 3.578 | 1143853 | 7.047 | 908485 | 10.706 | 492549 | 12.638 |
| 05 VBLKL92 | 184160 | 3.571 | 1107427 | 7.047 | 880126 | 10.709 | 463989 | 12.638 |
| 06 VBLKL93 | 184160 | 3.571 | 1107427 | 7.047 | 880126 | 10.709 | 463989 | 12.638 |
| 07 9175050 | 197023 | 3.574 | 1170725 | 7.047 | 920571 | 10.709 | 494206 | 12.638 |
| 08 9175051 | 175892 | 3.571 | 1088269 | 7.050 | 868195 | 10.706 | 460198 | 12.638 |
| 09 9175052 | 179608 | 3.584 | 1088966 | 7.054 | 865229 | 10.706 | 468167 | 12.638 |
| 10 9175053MS | 181865 | 3.581 | 1146969 | 7.053 | 911580 | 10.709 | 492927 | 12.638 |
| 11 9175054MSD | 189241 | 3.578 | 1139412 | 7.050 | 906977 | 10.709 | 494916 | 12.638 |
| 12 9175047 | 177354 | 3.578 | 1100619 | 7.050 | 863257 | 10.709 | 456341 | 12.638 |
| 13 9175048 | 176929 | 3.574 | 1093894 | 7.050 | 865964 | 10.706 | 460786 | 12.638 |
| 14 9175049 | 176881 | 3.581 | 1089677 | 7.050 | 868209 | 10.706 | 468255 | 12.638 |
| 15 9175056 | 176595 | 3.584 | 1074667 | 7.050 | 849473 | 10.709 | 453667 | 12.638 |
| 16 9175057 | 175484 | 3.578 | 1080892 | 7.050 | 858156 | 10.709 | 467392 | 12.638 |
| 17 9175058 | 168411 | 3.571 | 1060329 | 7.047 | 840719 | 10.706 | 450258 | 12.638 |
| 18 SECC050 | 179597 | 3.581 | 1139496 | 7.053 | 909488 | 10.709 | 496414 | 12.638 |
| 19 9175103 | 192362 | 3.578 | 1113607 | 7.053 | 881690 | 10.709 | 472304 | 12.638 |
| 20 9175104 | 189233 | 3.574 | 1081108 | 7.053 | 862836 | 10.709 | 464126 | 12.638 |
| 21 9175105 | 192356 | 3.584 | 1080717 | 7.050 | 867730 | 10.709 | 463567 | 12.638 |
| 22 9176028 | 190942 | 3.574 | 1092531 | 7.050 | 864770 | 10.706 | 465272 | 12.638 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR194___

Lab File ID (Standard): ls05c10.d Date Analyzed: 09/05/17

Instrument ID: HP09915 Time Analyzed: 20:08

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 185096 | 3.584 | 1127775 | 7.050 | 907883 | 10.709 | 497842 | 12.638 |
| UPPER LIMIT | 370192 | 4.084 | 2255550 | 7.550 | 1815766 | 11.209 | 995684 | 13.138 |
| LOWER LIMIT | 92548 | 3.084 | 563888 | 6.550 | 453942 | 10.209 | 248921 | 12.138 |
| | LAB SAMPLE ID | | | | | | | |
| 23 | 9176029 | 189040 | 3.574 | 1073267 | 7.050 | 851272 | 10.709 | 460762 | 12.638 |
| 24 | 9175102 | 180929 | 3.565 | 1067521 | 7.050 | 856738 | 10.709 | 484531 | 12.638 |
| 25 | 9175102DL | 186654 | 3.571 | 1097624 | 7.050 | 871026 | 10.706 | 475334 | 12.638 |
| 26 | 9176031 | 252789 | 3.558 | 1169955 | 7.050 | 931661 | 10.706 | 510492 | 12.638 |
| 27 | 9176031DL | 201242 | 3.581 | 1140332 | 7.050 | 887540 | 10.706 | 477833 | 12.638 |
| 28 | 9176023 | 255759 | 3.578 | 1185473 | 7.050 | 944862 | 10.709 | 512128 | 12.638 |
| 29 | 9176023DL | 203885 | 3.584 | 1205042 | 7.050 | 941923 | 10.709 | 508613 | 12.638 |
| 30 | 9176030 | 253886 | 3.587 | 1214466 | 7.054 | 963851 | 10.709 | 525963 | 12.638 |
| 31 | 9176030DL | 208825 | 3.578 | 1207024 | 7.053 | 953963 | 10.709 | 514210 | 12.638 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

# Sample Data

# Volatiles by GC/MS

**Fraction: Volatiles by GC/MS**

| 11997: BTEX 8260C Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Benzene | .5 | 1 | 1 | ug/l |
| Toluene | .5 | 1 | 1 | ug/l |
| Ethylbenzene | .5 | 1 | 1 | ug/l |
| Xylene (Total) | .5 | 1 | 1 | ug/l |

KEFF1 Lancaster Laboratories 9175047
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep05c.b/ls05s68.d Injection date and time: **05-SEP-2017 23:39**
Data file Sample Info. Line: KEFF1;9175047;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 23:57 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.578( 0.006) | 652 | 65 | 177354 ( -4) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.000) | 1732 | 96 | 1100619 ( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 863257 ( -5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 456341 ( -8) | 50.00 | |

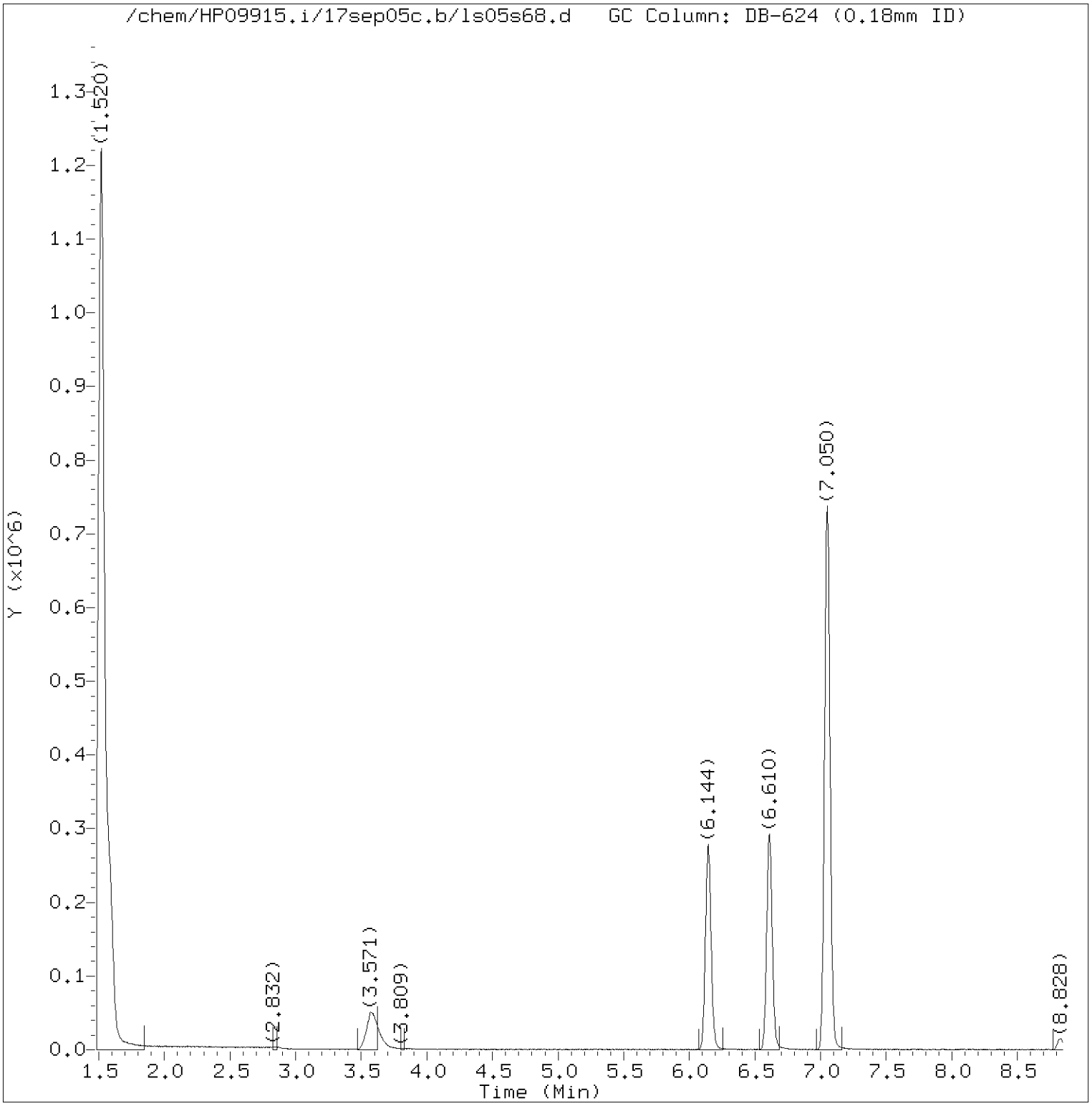
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 268743 | 47.987 | 96% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 67937 | 49.963 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1080124 | 50.254 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 398296 | 48.471 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:01. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

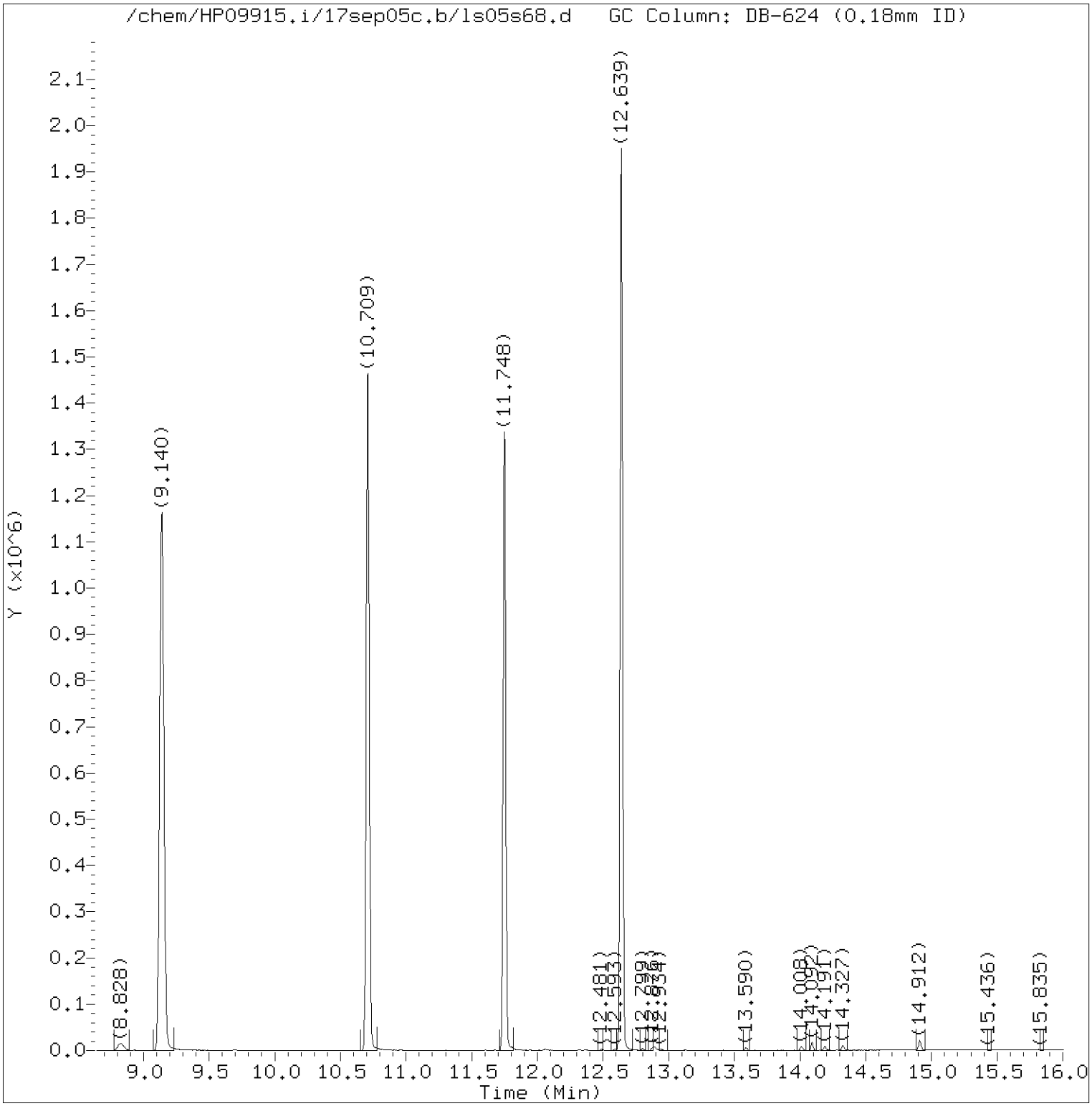
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s68.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 23:39 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:57 Automation

Sample Name: KEFF1 Lab Sample ID: 9175047

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s68.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 23:39 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:57 Automation

Sample Name: KEFF1 Lab Sample ID: 9175047

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s68.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 23:39 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:57 Automation

Sample Name: KEFF1 Lab Sample ID: 9175047

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 177354 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 268743 | 47.987 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 67937 | 49.963 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1100619 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1080124 | 50.254 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 863257 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 398296 | 48.471 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 456341 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

KGAC1 Lancaster Laboratories 9175048
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep05c.b/ls05s69.d Injection date and time: **06-SEP-2017 00:01**
Data file Sample Info. Line: KGAC1;9175048;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 06-Sep-2017 00:19 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.574( 0.010) | 651 | 65 | 176929 ( -4) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.000) | 1732 | 96 | 1093894 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.003) | 2869 | 117 | 865964 ( -5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 460786 ( -7) | 50.00 | |

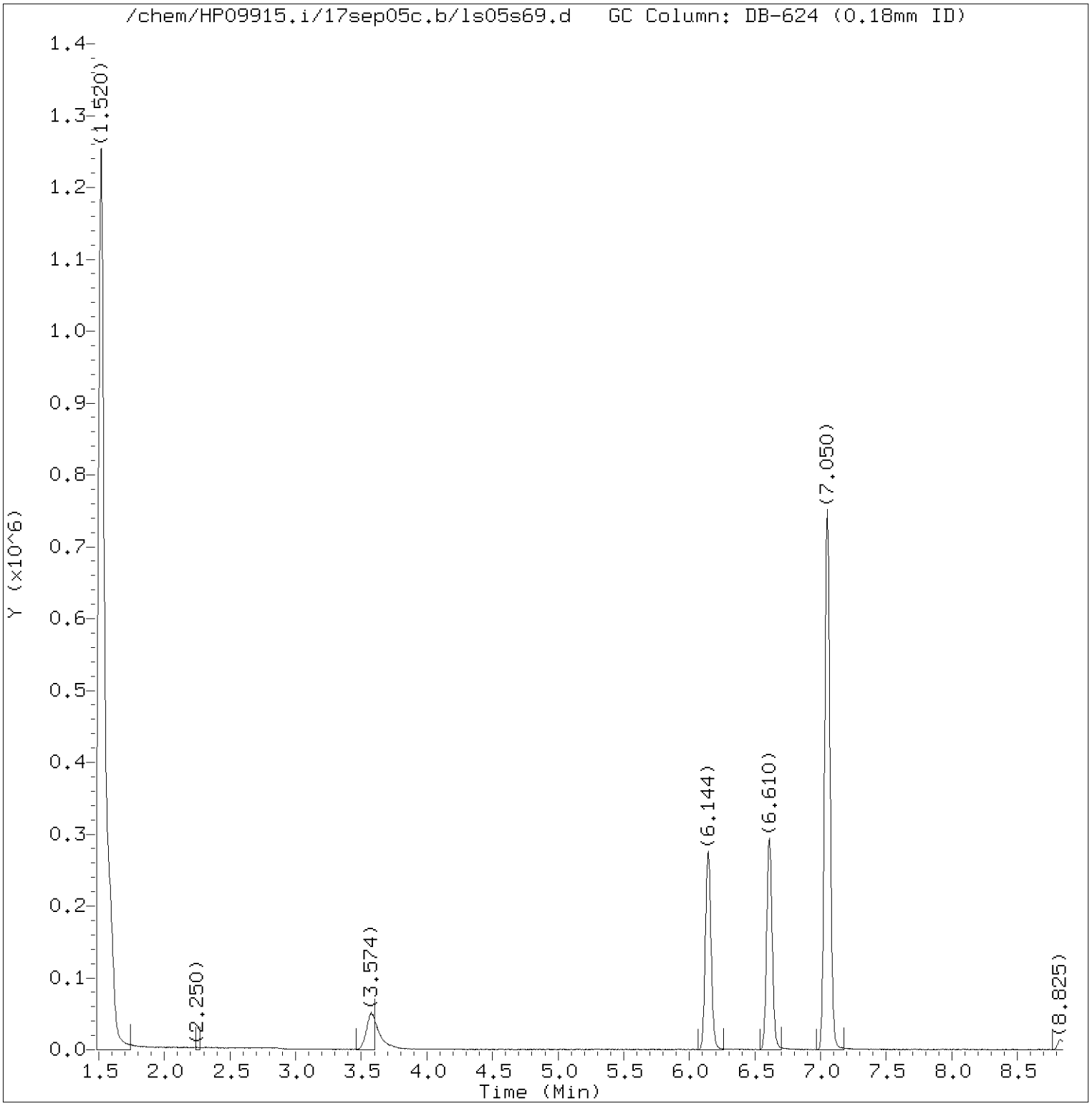
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 265929 | 47.776 | 96% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.001) | 102 | 67973 | 50.297 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1075535 | 49.884 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 402566 | 48.837 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:01. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

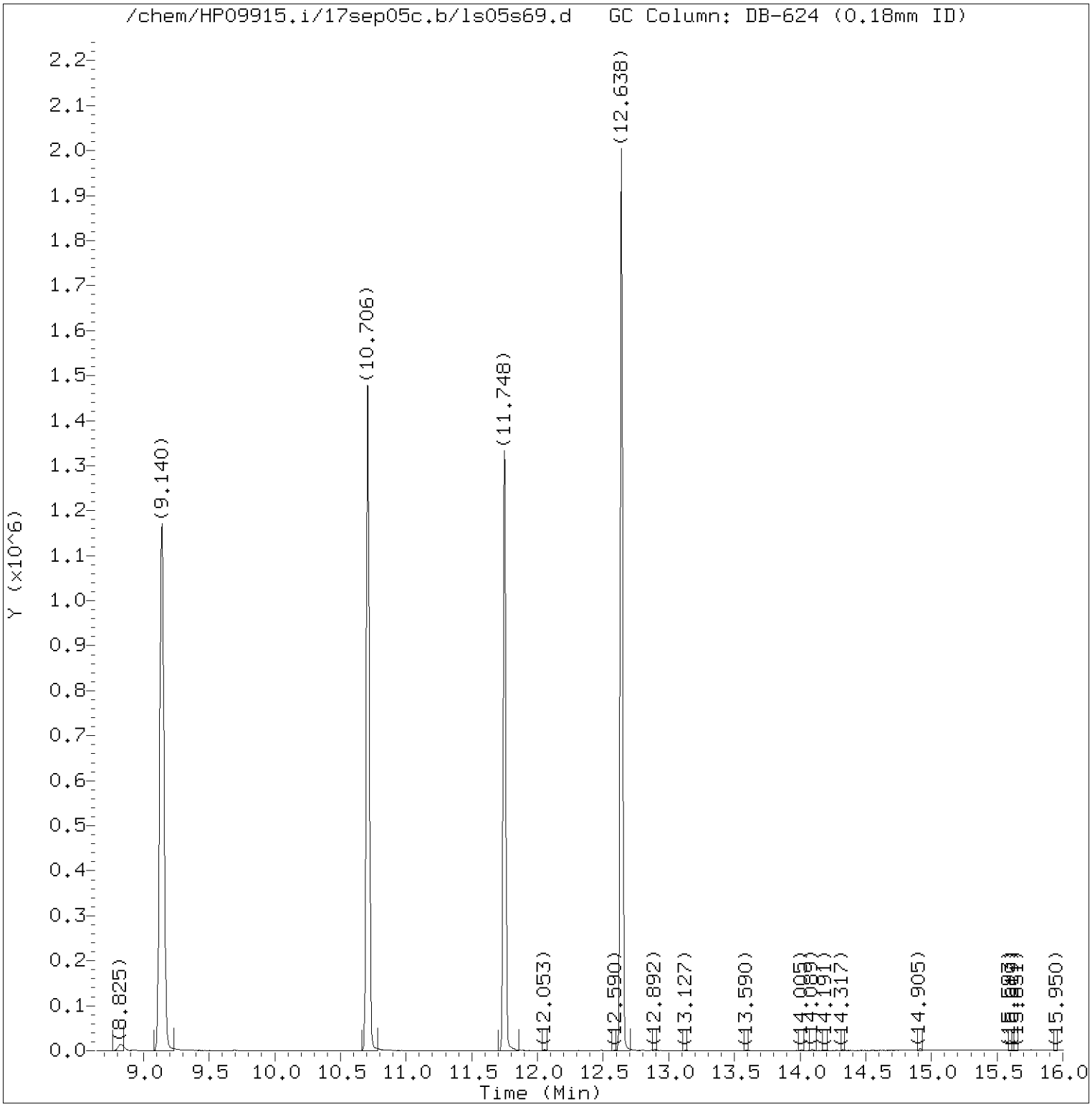
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s69.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:01 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 00:19 Automation

Sample Name: KGAC1 Lab Sample ID: 9175048

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s69.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:01 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 00:19 Automation

Sample Name: KGAC1 Lab Sample ID: 9175048

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s69.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:01 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 00:19 Automation

Sample Name: KGAC1 Lab Sample ID: 9175048

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 176929 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 265929 | 47.776 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 67973 | 50.297 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1093894 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1075535 | 49.884 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 865964 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 402566 | 48.837 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 460786 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

KINF1 Lancaster Laboratories 9175049
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep05c.b/ls05s70.d Injection date and time: **06-SEP-2017 00:23**
Data file Sample Info. Line: KINF1;9175049;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 06-Sep-2017 00:41 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.003) | 653 | 65 | 176881 ( -4) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.000) | 1732 | 96 | 1089677 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.003) | 2869 | 117 | 868209 ( -4) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 468255 ( -6) | 50.00 | |

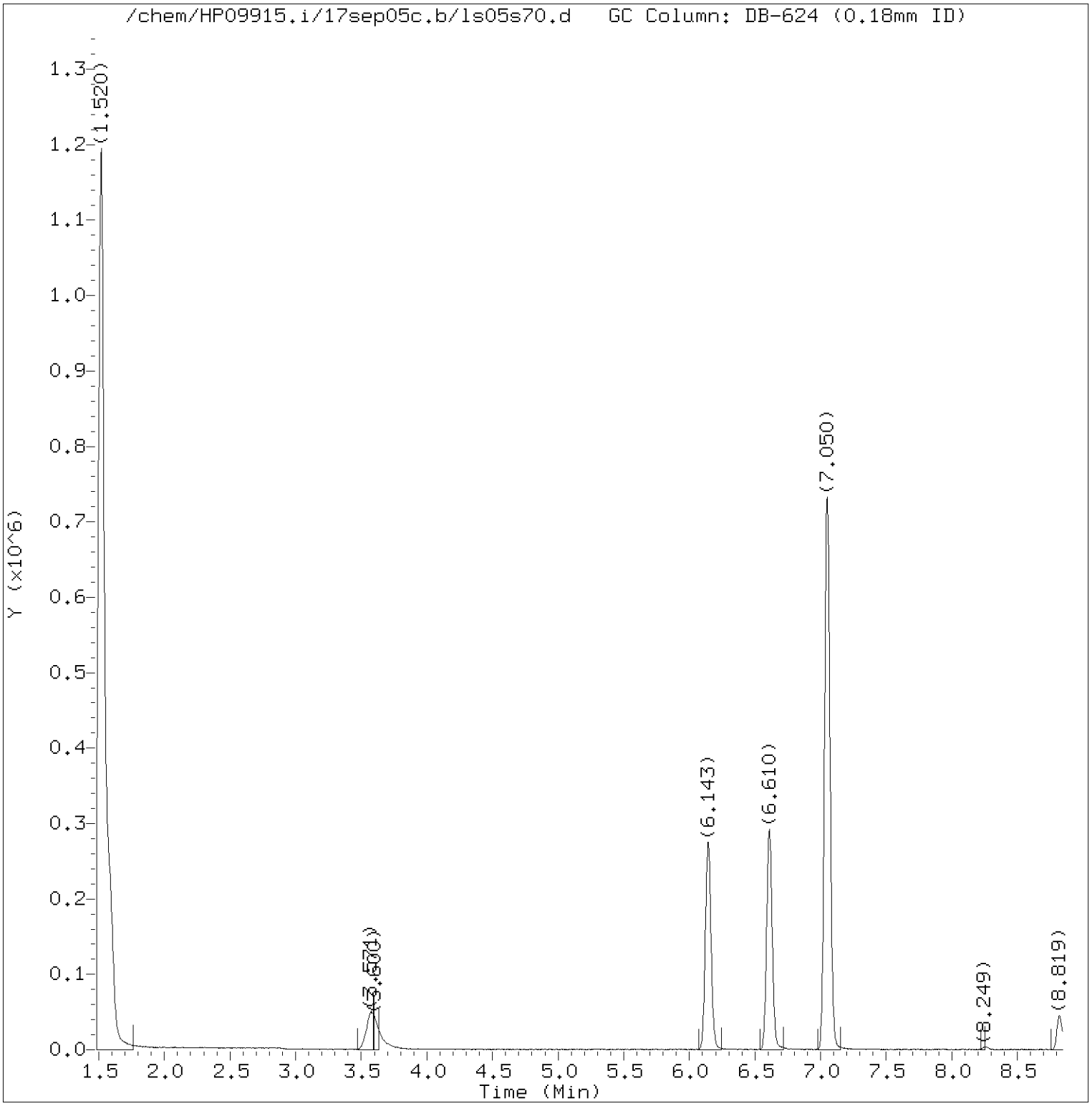
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 263898 | 47.595 | 95% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 66565 | 49.445 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1073124 | 49.644 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 404214 | 48.910 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:01. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

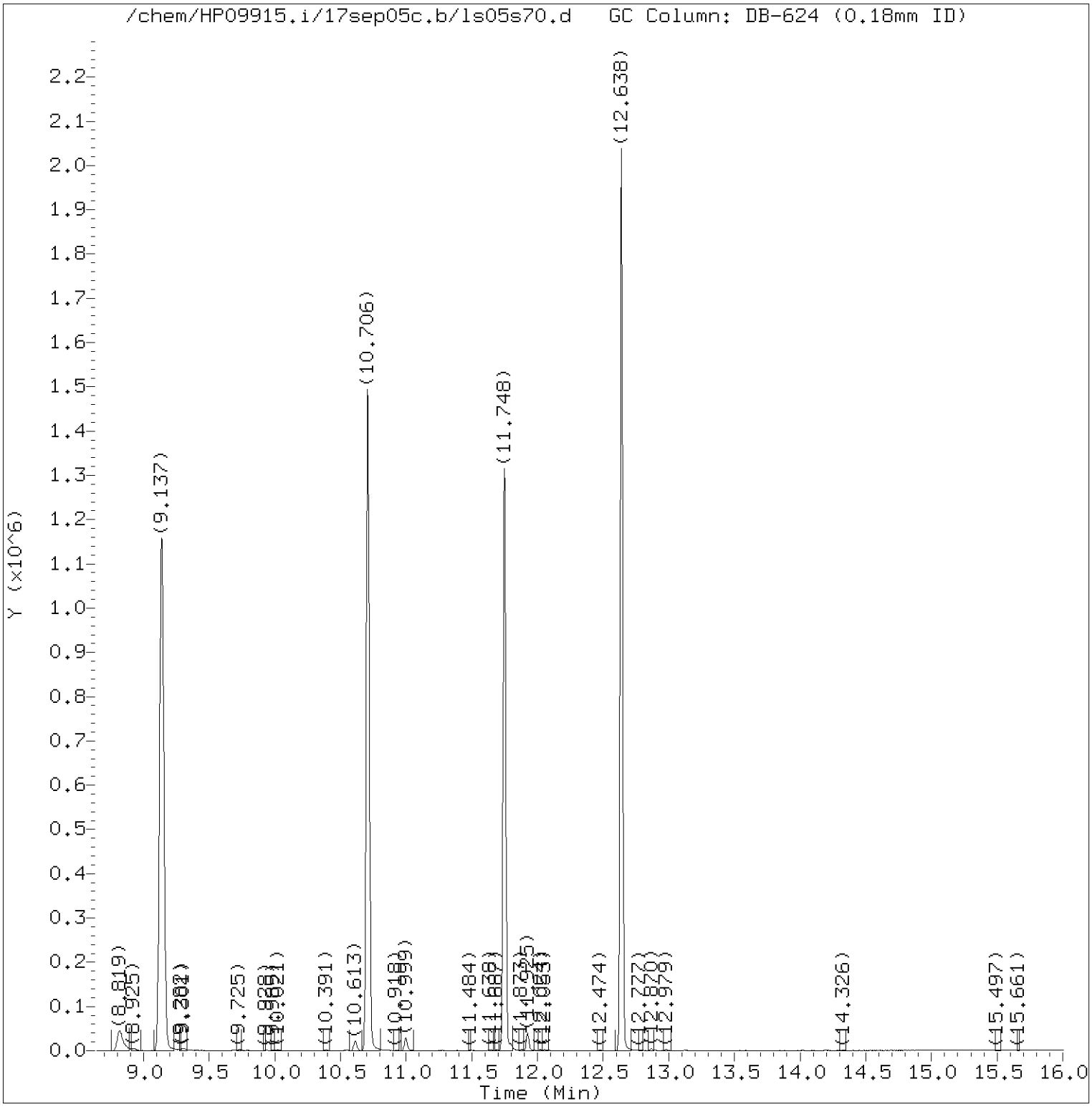
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s70.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:23 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 00:41 Automation

Sample Name: KINF1 Lab Sample ID: 9175049

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s70.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:23 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 00:41 Automation

Sample Name: KINF1 Lab Sample ID: 9175049

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s70.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:23 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 00:41 Automation

Sample Name: KINF1 Lab Sample ID: 9175049

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 176881 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 263898 | 47.595 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 66565 | 49.445 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1089677 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1073124 | 49.644 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 868209 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 404214 | 48.910 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 468255 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

KTB01 Lancaster Laboratories 9175050
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep05c.b/ls05s63.d Injection date and time: **05-SEP-2017 21:50**
Data file Sample Info. Line: KTB01;9175050;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 22:07 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.575( 0.010) | 651 | 65 | 197023 ( 6) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.003) | 1731 | 96 | 1170725 ( 4) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 920571 ( 1) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 494206 ( -1) | 50.00 | |

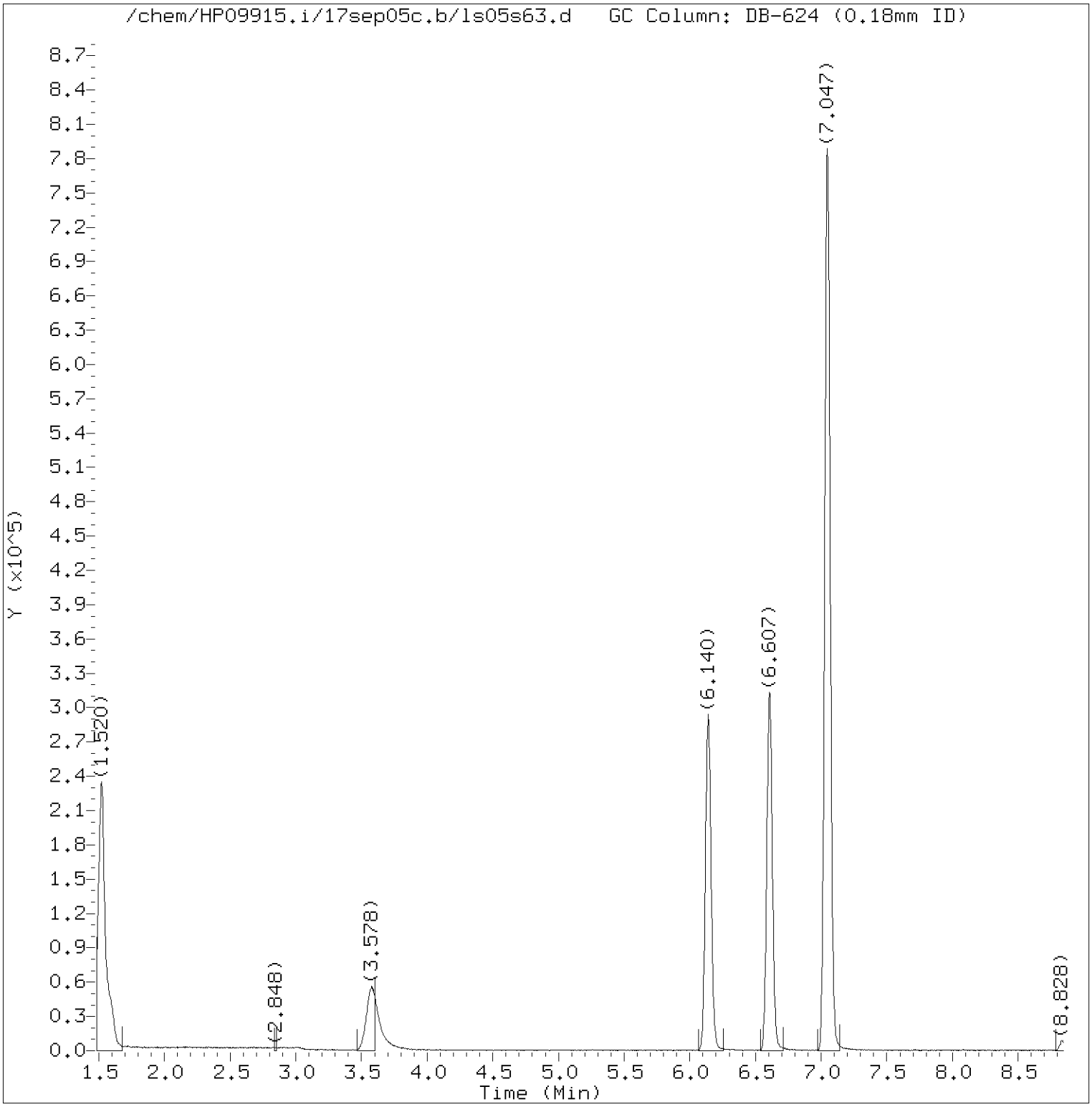
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 283491 | 47.589 | 95% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 72283 | 49.975 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1150955 | 50.216 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 428391 | 48.887 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:00. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

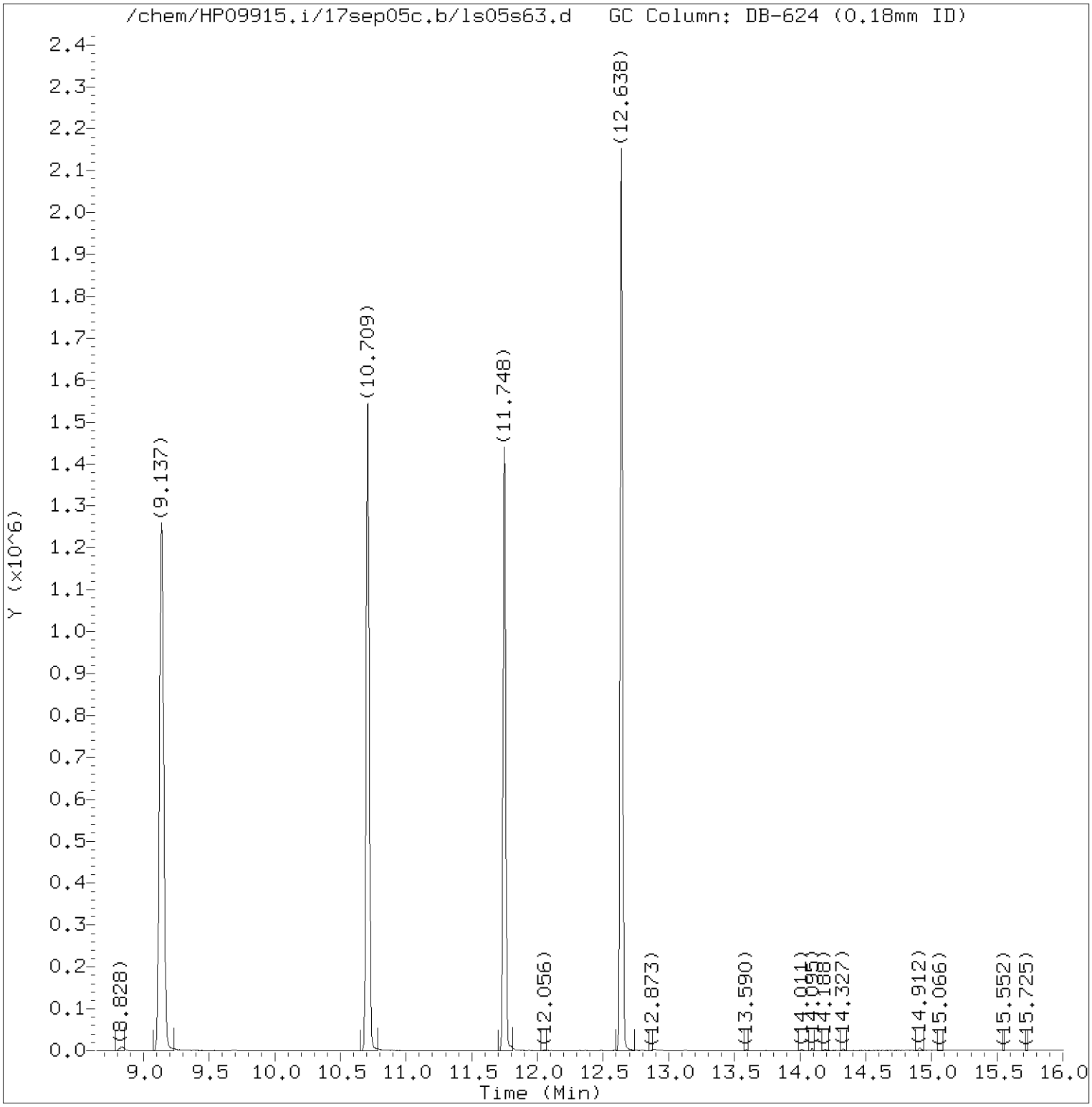
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s63.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 21:50 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:07 Automation

Sample Name: KTB01 Lab Sample ID: 9175050

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s63.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 21:50 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:07 Automation

Sample Name: KTB01 Lab Sample ID: 9175050

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s63.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 21:50 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:07 Automation

Sample Name: KTB01 Lab Sample ID: 9175050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.575 | 65 | 197023 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 283491 | 47.589 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 72283 | 49.975 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1170725 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1150955 | 50.216 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 920571 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 428391 | 48.887 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 494206 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep05c.b/ls05s64.d Injection date and time: **05-SEP-2017 22:11**
Data file Sample Info. Line: KFB01;9175051;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 22:29 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.013) | 650 | 65 | 175892 ( -5) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.000) | 1732 | 96 | 1088269 ( -4) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.003) | 2869 | 117 | 868195 ( -4) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 460198 ( -8) | 50.00 | |

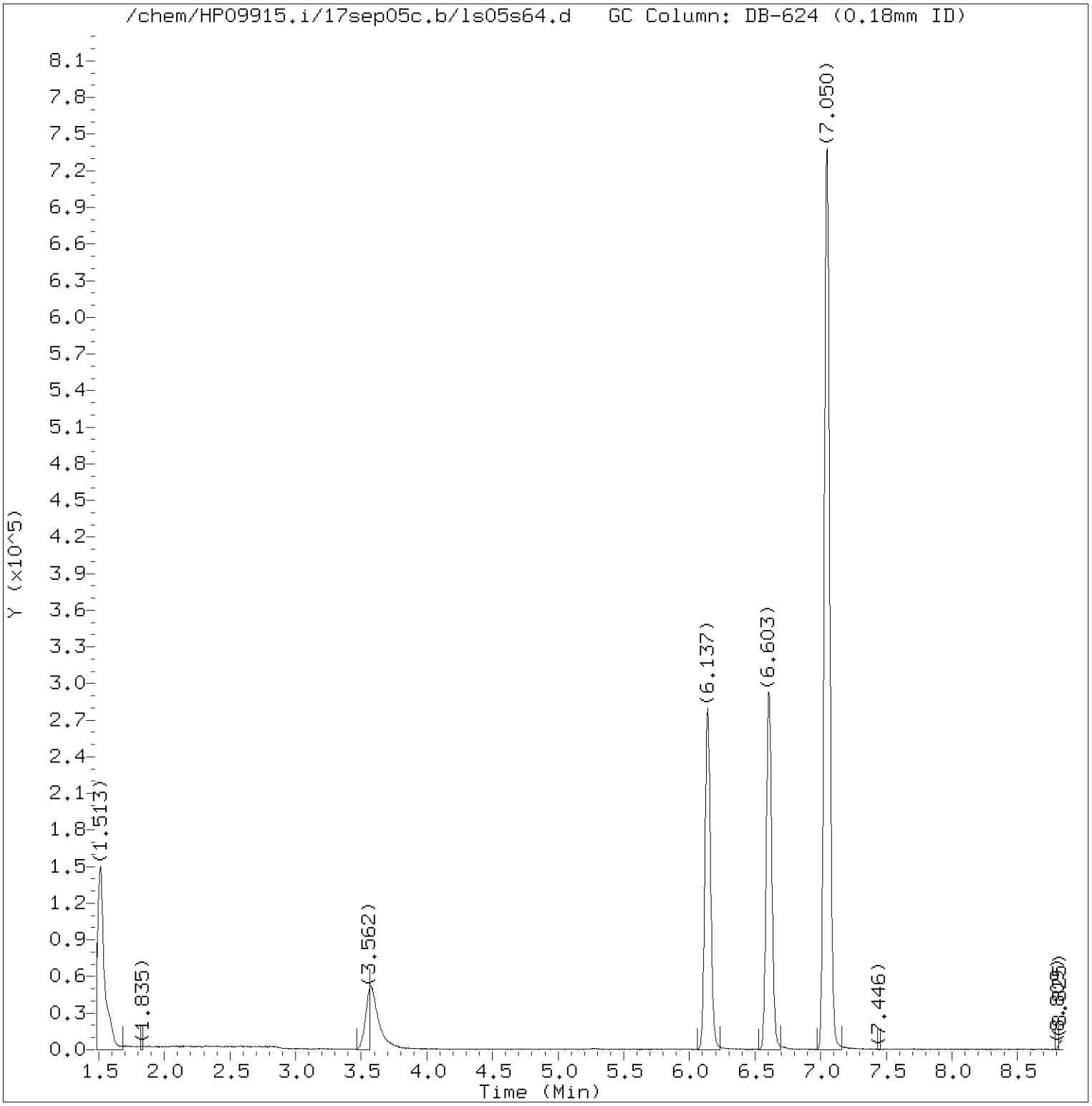
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.001) | 113 | 265239 | 47.899 | 96% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 66769 | 49.661 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1074642 | 49.715 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 400021 | 48.404 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:00. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

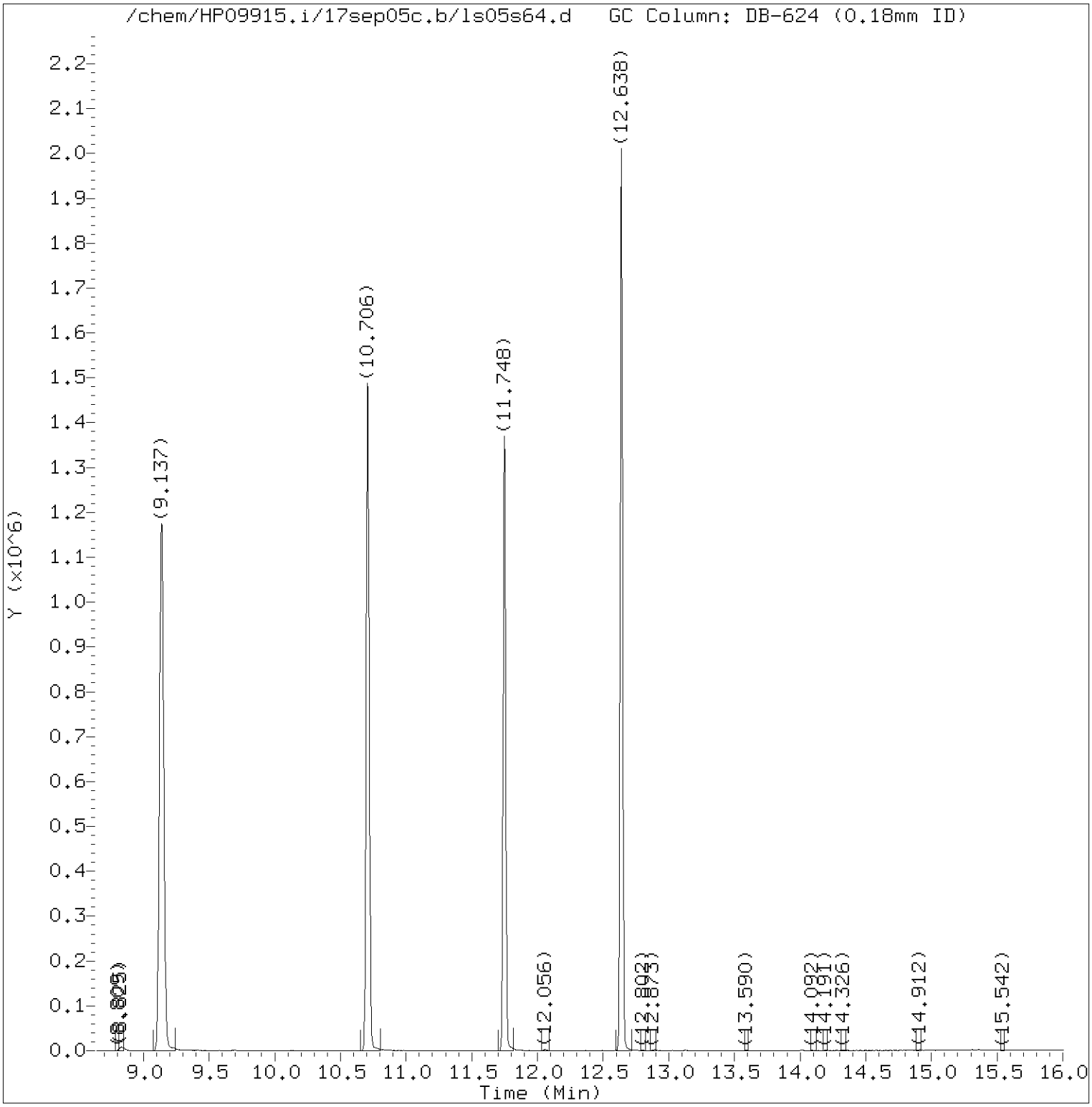
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s64.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:29 Automation

Sample Name: KFB01 Lab Sample ID: 9175051

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s64.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:29 Automation

Sample Name: KFB01 Lab Sample ID: 9175051

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s64.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:11 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:29 Automation

Sample Name: KFB01 Lab Sample ID: 9175051

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 175892 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 265239 | 47.899 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 66769 | 49.661 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1088269 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1074642 | 49.715 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 868195 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 400021 | 48.404 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 460198 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052

KEFF2

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9175052

Data file: /chem/HP09915.i/17sep05c.b/ls05s65.d Injection date and time: **05-SEP-2017 22:33**
Data file Sample Info. Line: KEFF2;9175052;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 22:51 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.584( 0.000) | 654 | 65 | 179608 ( -3) | 250.00 | |
| 66) Fluorobenzene | 7.054(-0.003) | 1733 | 96 | 1088966 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.003) | 2869 | 117 | 865229 ( -5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 468167 ( -6) | 50.00 | |

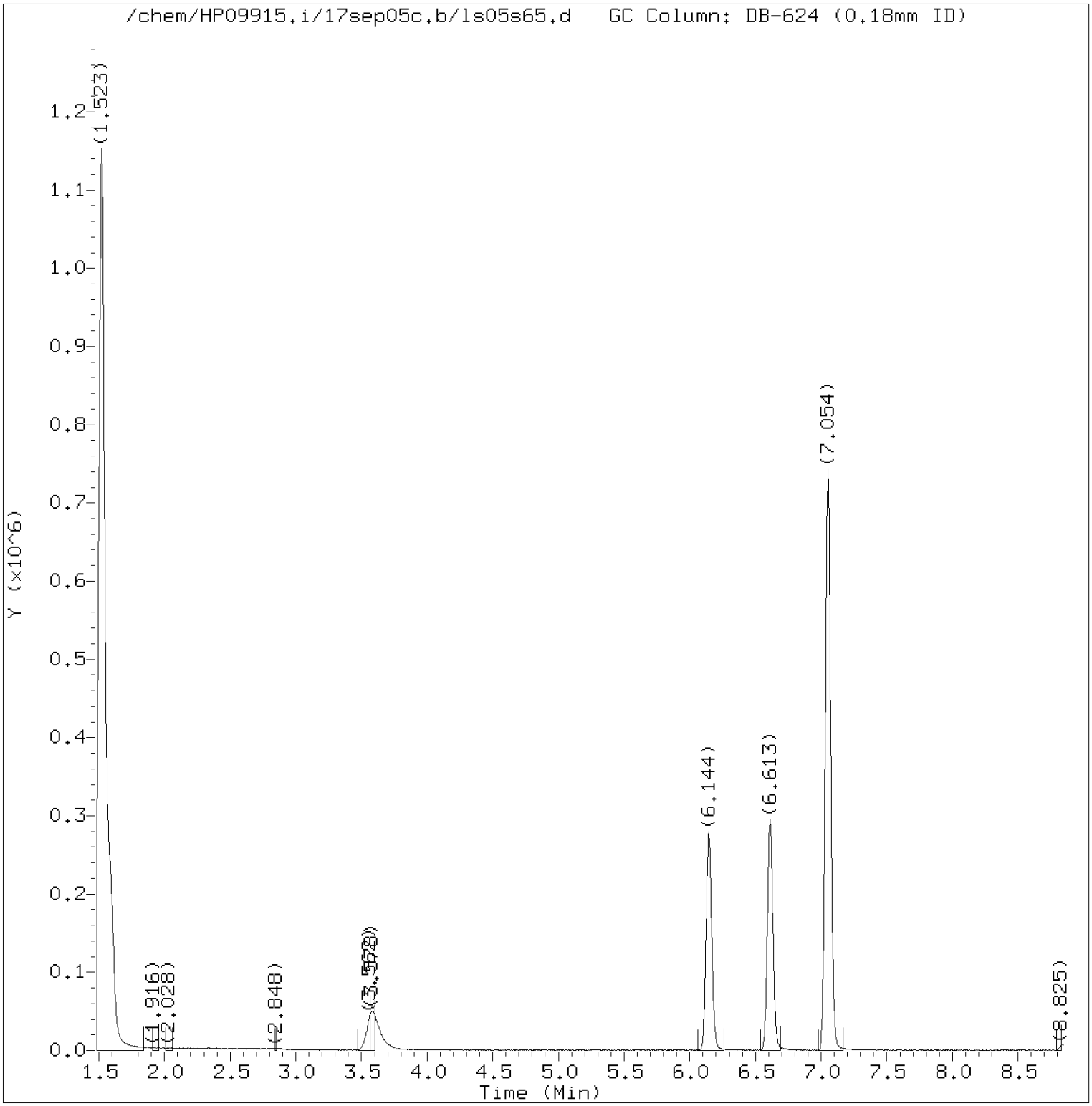
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 267762 | 48.323 | 97% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613( 0.000) | 102 | 67713 | 50.331 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1073645 | 49.839 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 401364 | 48.733 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:00. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

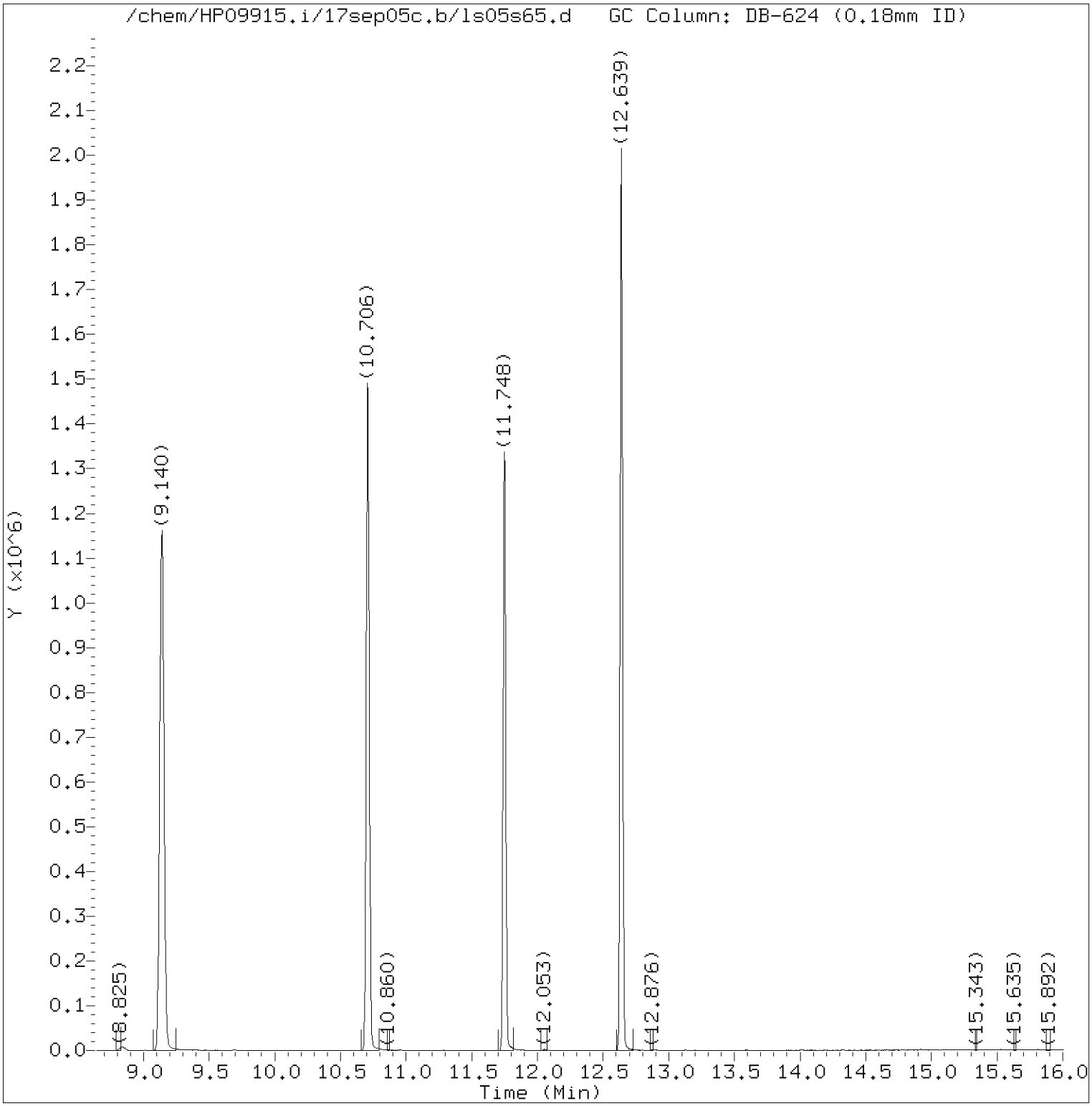
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s65.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:51 Automation

Sample Name: KEFF2 Lab Sample ID: 9175052

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s65.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:51 Automation

Sample Name: KEFF2 Lab Sample ID: 9175052

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s65.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:33 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 22:51 Automation

Sample Name: KEFF2 Lab Sample ID: 9175052

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 179608 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 267762 | 48.323 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 67713 | 50.331 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 1088966 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1073645 | 49.839 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 865229 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 401364 | 48.733 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 468167 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052

KEF2D

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9175056

Data file: /chem/HP09915.i/17sep05c.b/ls05s71.d Injection date and time: **06-SEP-2017 00:45**
Data file Sample Info. Line: KEF2D;9175056;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 06-Sep-2017 01:03 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.584( 0.000) | 654 | 65 | 176595 ( -5) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.000) | 1732 | 96 | 1074667 ( -5) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 849473 ( -6) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 453667 ( -9) | 50.00 | |

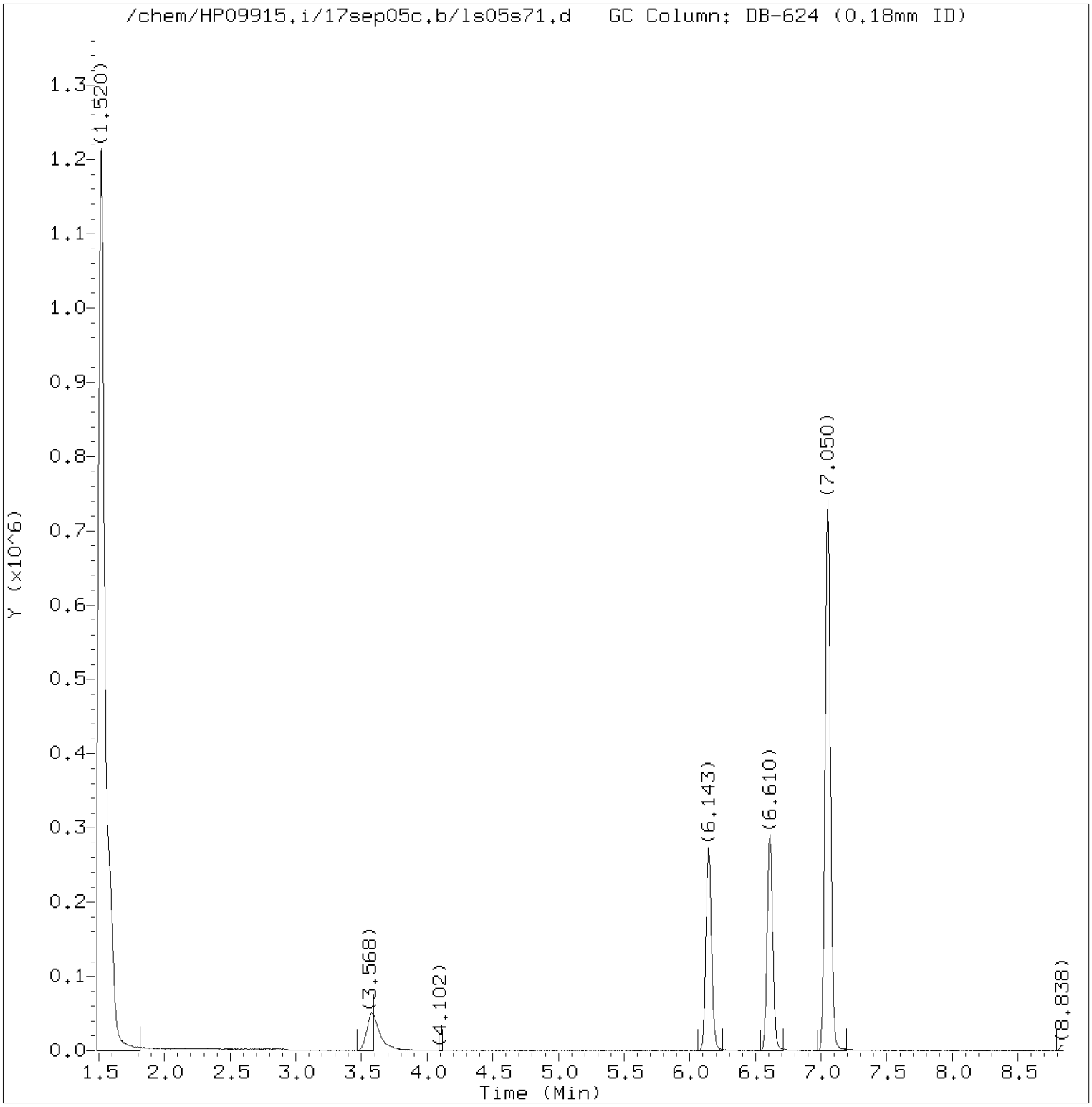
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 262080 | 47.927 | 96% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613( 0.000) | 102 | 67031 | 50.487 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1059564 | 50.098 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 393956 | 48.721 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:01. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

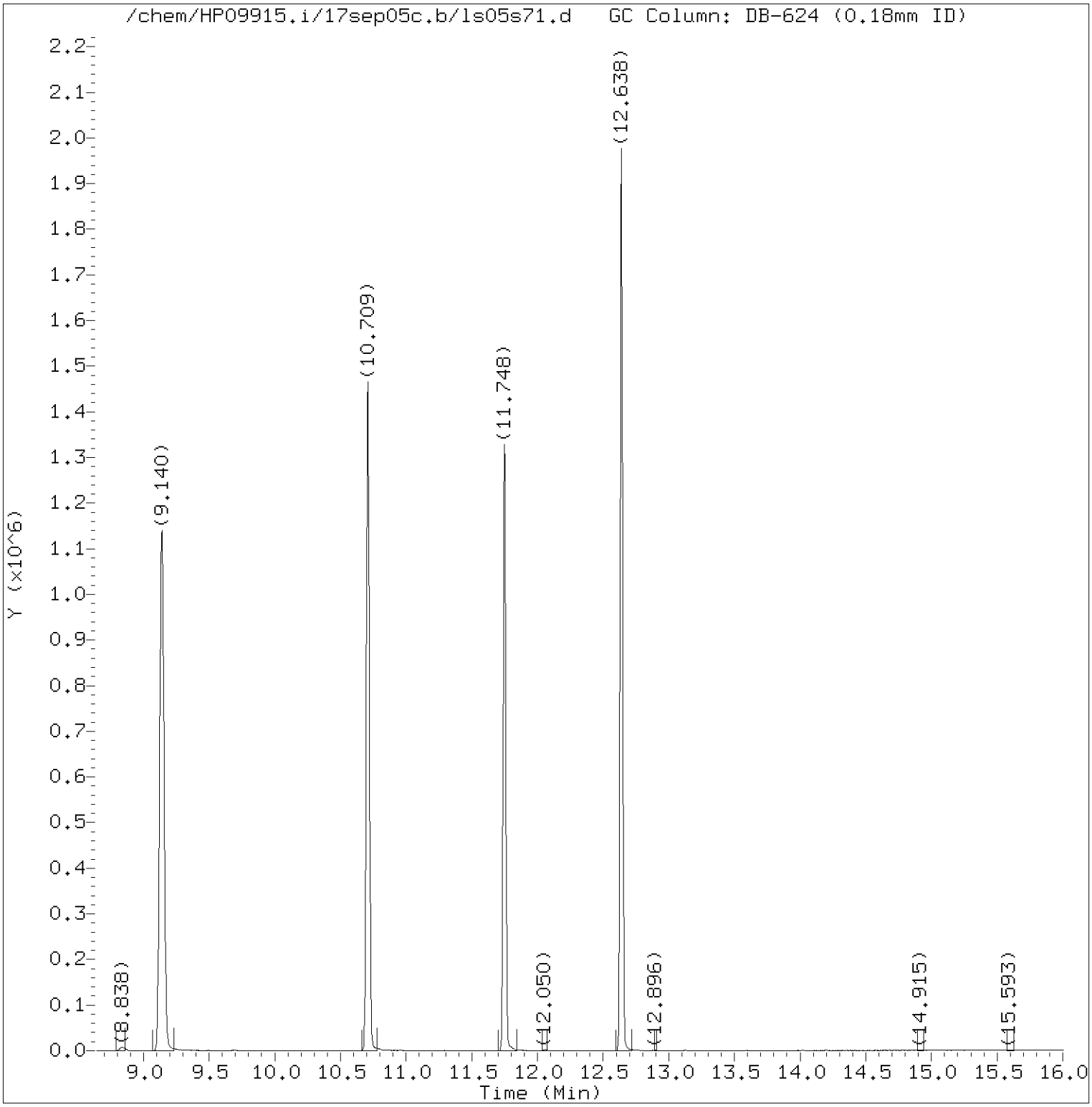
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s71.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:45 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:03 Automation

Sample Name: KEF2D Lab Sample ID: 9175056

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s71.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:45 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:03 Automation

Sample Name: KEF2D Lab Sample ID: 9175056

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s71.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 00:45 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:03 Automation

Sample Name: KEF2D Lab Sample ID: 9175056

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 176595 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 262080 | 47.927 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 67031 | 50.487 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1074667 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1059564 | 50.098 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 849473 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 393956 | 48.721 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 453667 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

KGAC2

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles 9175057

Data file: /chem/HP09915.i/17sep05c.b/ls05s72.d Injection date and time: **06-SEP-2017 01:07**
Data file Sample Info. Line: KGAC2;9175057;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 06-Sep-2017 01:25 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.578( 0.006) | 652 | 65 | 175484 ( -5) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.000) | 1732 | 96 | 1080892 ( -4) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 858156 ( -5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 467392 ( -6) | 50.00 | |

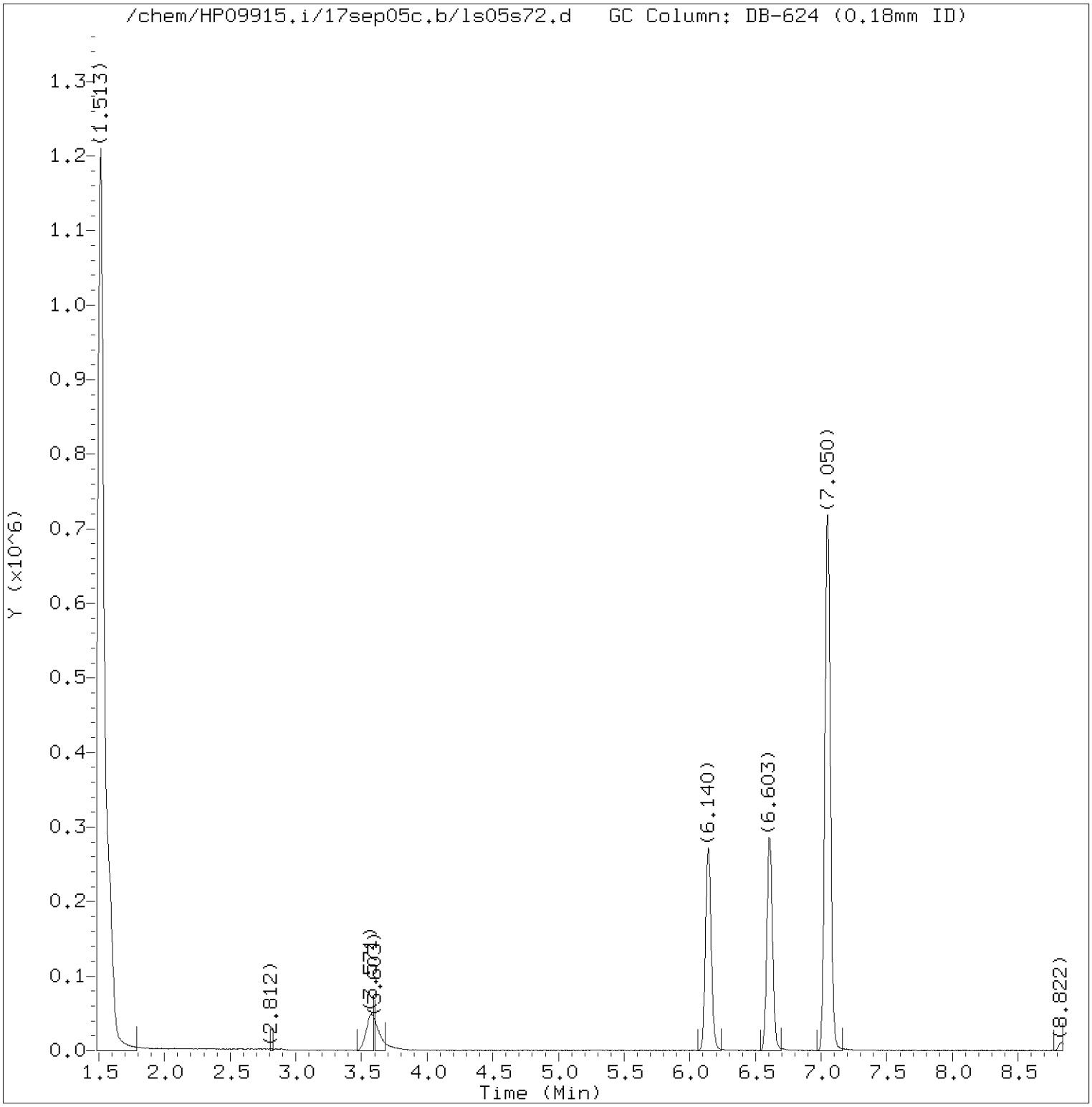
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 264916 | 48.167 | 96% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.001) | 102 | 66212 | 49.583 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1065327 | 49.860 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 398733 | 48.812 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:01. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

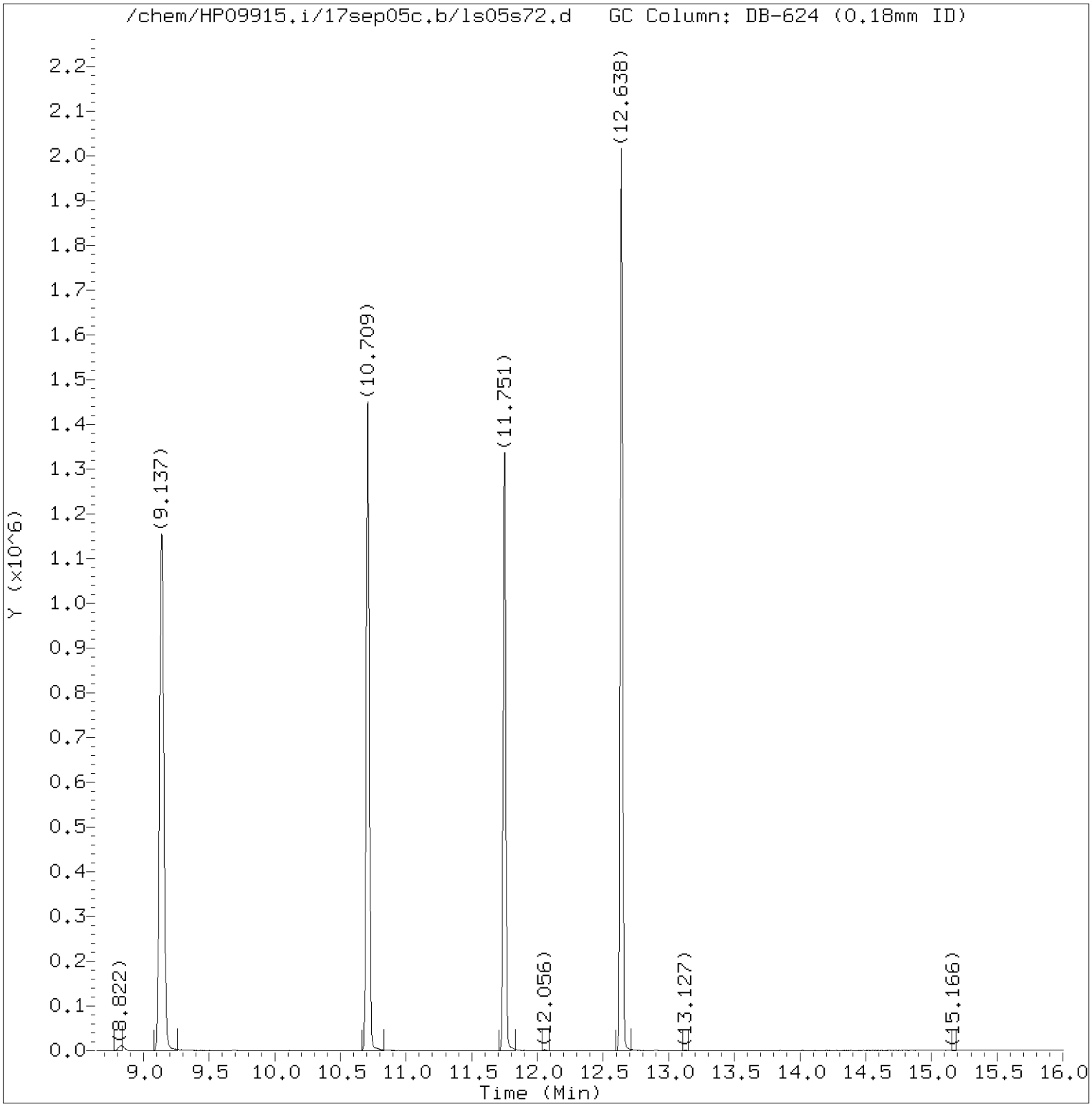
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s72.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:07 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:25 Automation

Sample Name: KGAC2 Lab Sample ID: 9175057

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s72.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:07 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:25 Automation

Sample Name: KGAC2 Lab Sample ID: 9175057

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s72.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:07 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:25 Automation

Sample Name: KGAC2 Lab Sample ID: 9175057

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 175484 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 264916 | 48.167 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 66212 | 49.583 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1080892 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1065327 | 49.860 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 858156 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 398733 | 48.812 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 467392 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

KINF2 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 9175058

Data file: /chem/HP09915.i/17sep05c.b/ls05s73.d Injection date and time: **06-SEP-2017 01:29**
Data file Sample Info. Line: KINF2;9175058;1;0;;KR194;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 06-Sep-2017 01:47 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.013) | 650 | 65 | 168411 ( -9) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.003) | 1731 | 96 | 1060329 ( -6) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.003) | 2869 | 117 | 840719 ( -7) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 450258 ( -10) | 50.00 | |

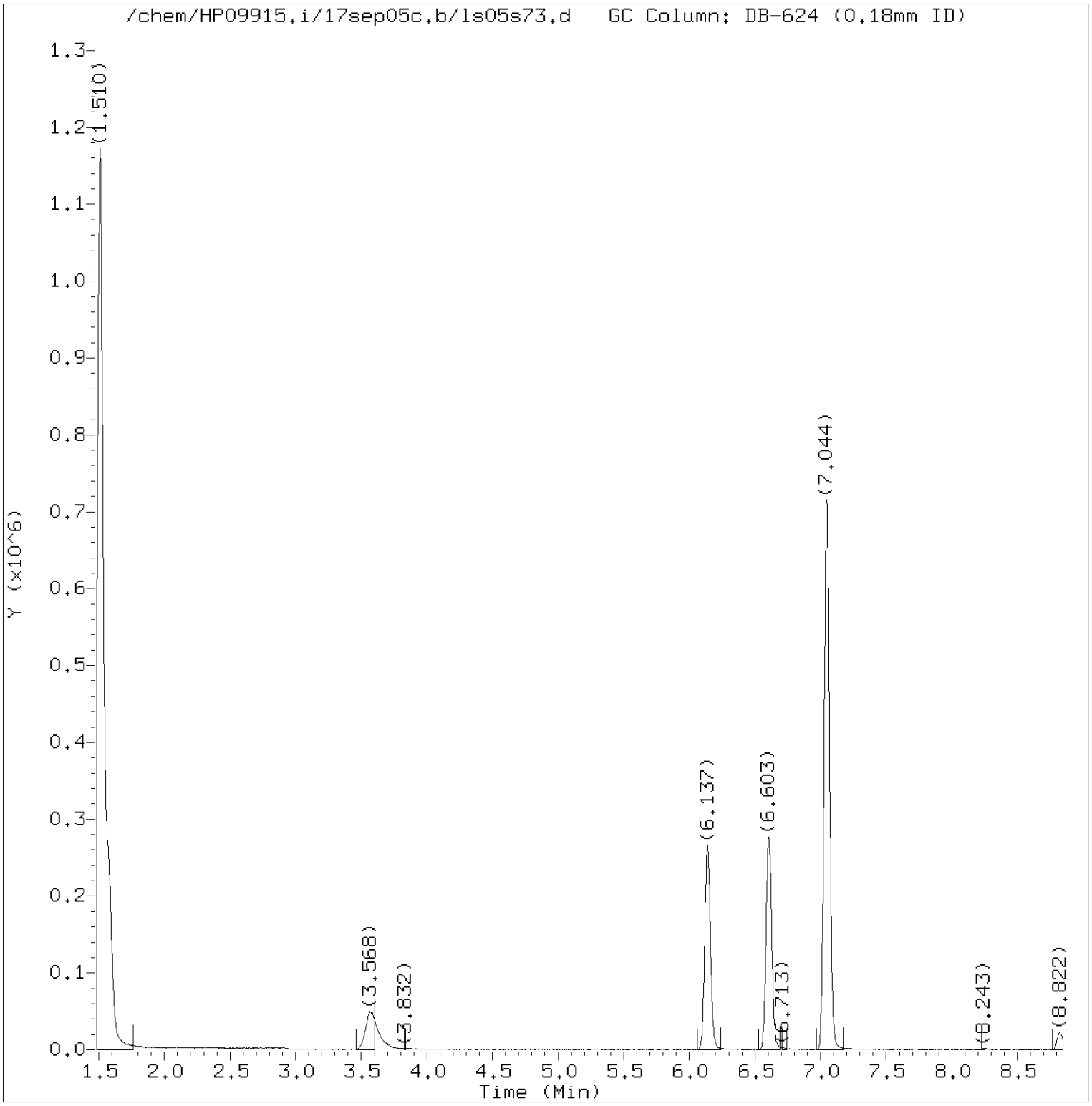
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.001) | 113 | 257719 | 47.767 | 96% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 64890 | 49.535 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1042474 | 49.803 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 389438 | 48.663 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit | LOQ (in sample) |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:01. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

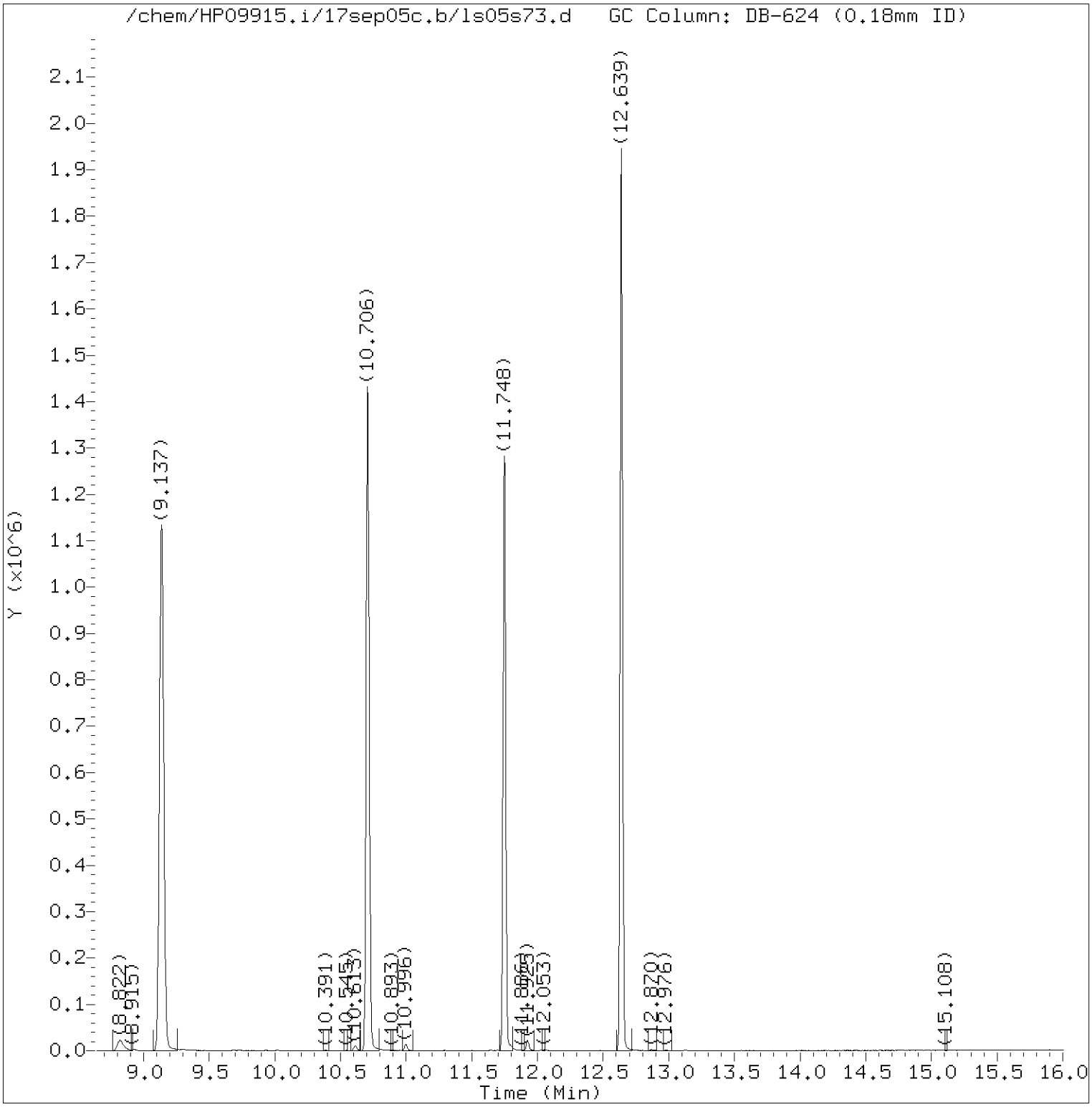
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s73.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:29 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:47 Automation

Sample Name: KINF2 Lab Sample ID: 9175058

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s73.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:29 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:47 Automation

Sample Name: KINF2 Lab Sample ID: 9175058

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s73.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:29 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 01:47 Automation

Sample Name: KINF2 Lab Sample ID: 9175058

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 168411 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 257719 | 47.767 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 64890 | 49.535 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1060329 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1042474 | 49.803 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 840719 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 389438 | 48.663 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 450258 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

# Standards Data

# Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - D:\DATA\17AUG21i\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| kas02648 | LG21T01.D | 50NG BFB | 08/21/2017 | 09:03 | | |
| KAS02648 | LG21X11.D | BLK | 08/21/2017 | 09:18 | | |
| KAS02648 | LG21I01.D | VSTD300 | 08/21/2017 | 09:40 | | |
| KAS02648 | LG21I02.D | VSTD100 | 08/21/2017 | 10:02 | | |
| KAS02648 | LG21I03.D | VSTD050 | 08/21/2017 | 10:24 | | |
| KAS02648 | LG21I04.D | VSTD020 | 08/21/2017 | 10:46 | | |
| KAS02648 | LG21I05.D | VSTD010 | 08/21/2017 | 11:08 | | |
| KAS02648 | LG21I06.D | VSTD004 | 08/21/2017 | 11:30 | | |
| KAS02648 | LG21I07.D | VSTD001 | 08/21/2017 | 11:51 | | |
| KAS02648 | LG21M01.D | MDL0.5 | 08/21/2017 | 12:13 | | |
| KAS02648 | LG21V01.D | LGCICV | 08/21/2017 | 12:35 | | |
| KAS02648 | LG21X21.D | BLK | 08/21/2017 | 13:24 | | |
| KAS02648 | LG21I11.D | VSTD300 | 08/21/2017 | 13:45 | | |
| KAS02648 | LG21I12.D | VSTD100 | 08/21/2017 | 14:07 | | |
| KAS02648 | LG21I13.D | VSTD050 | 08/21/2017 | 14:29 | | |
| KAS02648 | LG21I14.D | VSTD020 | 08/21/2017 | 14:51 | | |
| KAS02648 | LG21I15.D | VSTD010 | 08/21/2017 | 15:13 | | |
| KAS02648 | LG21I16.D | VSTD004 | 08/21/2017 | 15:35 | | |
| KAS02648 | LG21M11.D | MDL001 | 08/21/2017 | 15:56 | | |
| KAS02648 | LG21V11.D | SMCICV | 08/21/2017 | 16:18 | | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - d:\data\17sep05c\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| kk10002 | LS05T13.D | 50NGBFB | 09/05/2017 | 19:27 | L172483AA | |
| kk10002 | LS05X15.D | CBLKL93 | 09/05/2017 | 19:46 | L172483AA | |
| kk10002 | LS05C10.D | VSTD050 | 09/05/2017 | 20:08 | L172483AA | |
| kk10002 | LS05S61.D | LCSL92 | 09/05/2017 | 20:30 | L172483AA | |
| kk10002 | LS05S62.D | LCDL92 | 09/05/2017 | 20:52 | L172483AA | |
| kk10002 | LS05B10.D | VBLKL92 | 09/05/2017 | 21:14 | L172483AA | |
| kk10002 | LS05S63.D | 9175050 | 09/05/2017 | 21:50 | L172483AA | |
| kk10002 | LS05S64.D | 9175051 | 09/05/2017 | 22:11 | L172483AA | |
| kk10002 | LS05S65.D | 9175052 | 09/05/2017 | 22:33 | L172483AA | |
| kk10002 | LS05S66.D | 9175053MS | 09/05/2017 | 22:55 | L172483AA | |
| kk10002 | LS05S67.D | 9175054MSD | 09/05/2017 | 23:17 | L172483AA | |
| kk10002 | LS05S68.D | 9175047 | 09/05/2017 | 23:39 | L172483AA | |
| kk10002 | LS05S69.D | 9175048 | 09/06/2017 | 00:01 | L172483AA | |
| kk10002 | LS05S70.D | 9175049 | 09/06/2017 | 00:23 | L172483AA | |
| kk10002 | LS05S71.D | 9175056 | 09/06/2017 | 00:45 | L172483AA | |
| kk10002 | LS05S72.D | 9175057 | 09/06/2017 | 01:07 | L172483AA | |
| kk10002 | LS05S73.D | 9175058 | 09/06/2017 | 01:29 | L172483AA | |
| kk10002 | LS05EC8.D | SECC050 | 09/06/2017 | 01:51 | L172483AA | |
| kk10002 | LS05S83.D | 9175103 | 09/06/2017 | 02:13 | L172484AA | |
| kk10002 | LS05S84.D | 9175104 | 09/06/2017 | 02:35 | L172484AA | |
| kk10002 | LS05S85.D | 9175105 | 09/06/2017 | 02:57 | L172484AA | |
| kk10002 | LS05S86.D | 9176028 | 09/06/2017 | 03:19 | L172484AA | |
| kk10002 | LS05S87.D | 9176029 | 09/06/2017 | 03:41 | L172484AA | |
| kk10002 | LS05S88.D | 9175102 | 09/06/2017 | 04:02 | L172484AA | |
| kk10002 | LS05S89.D | 9175102DL | 09/06/2017 | 04:24 | L172484AA | 10 |
| kk10002 | LS05S90.D | 9176031 | 09/06/2017 | 04:46 | L172484AA | |
| kk10002 | LS05S91.D | 9176031DL | 09/06/2017 | 05:08 | L172484AA | 10 |
| kk10002 | LS05S92.D | 9176023 | 09/06/2017 | 05:30 | L172484AA | 2 |
| kk10002 | LS05S93.D | 9176023DL | 09/06/2017 | 05:52 | L172484AA | 20 |
| kk10002 | LS05S94.D | 9176030 | 09/06/2017 | 06:14 | L172484AA | 2 |
| kk10002 | LS05S95.D | 9176030DL | 09/06/2017 | 06:36 | L172484AA | 20 |

Data File: /chem/HP09915.i/17aug21i.b/lg21t01.d



Date : 21-AUG-2017 09:03

Client ID: BFB aug 14 2017

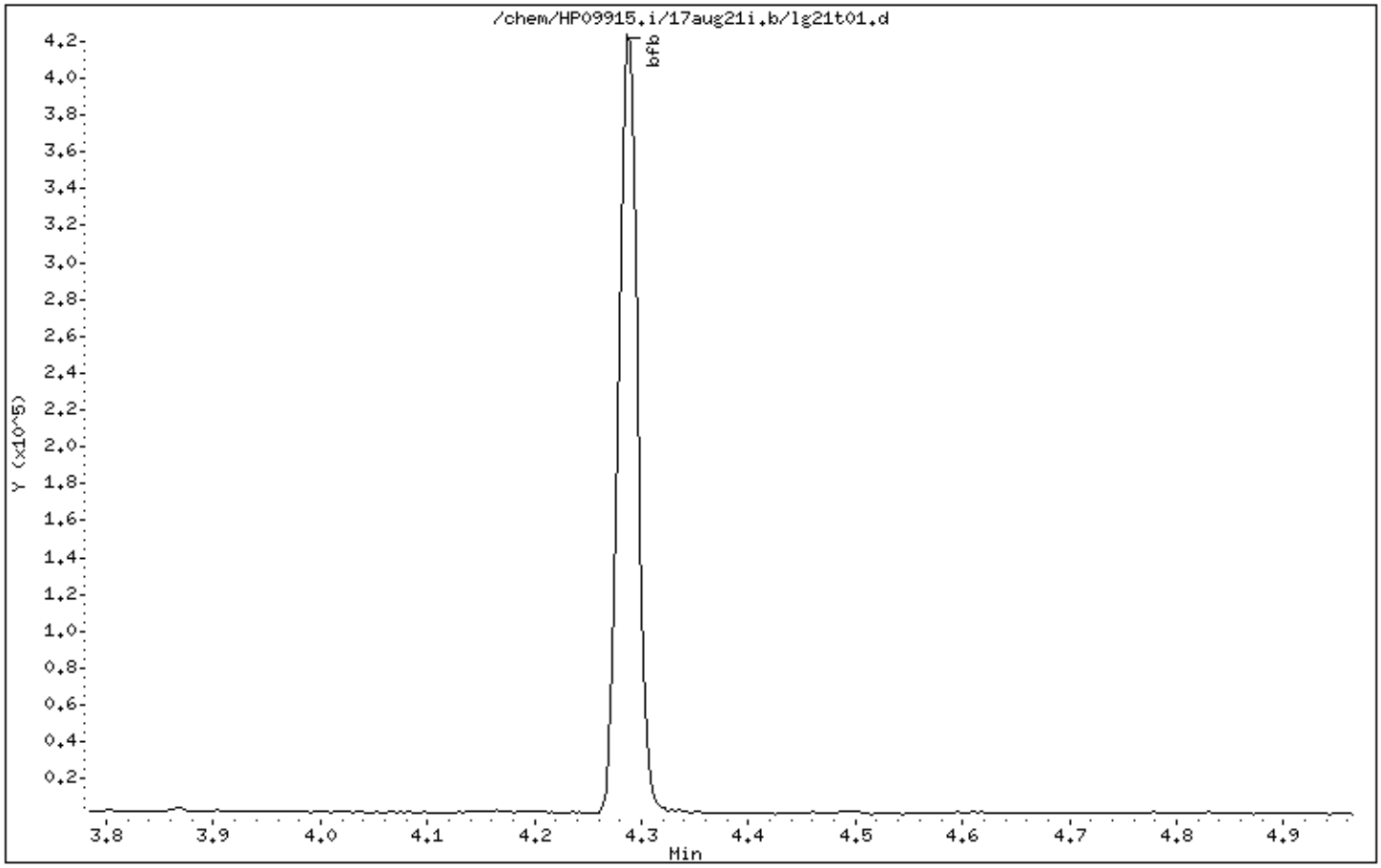
Instrument: HP09915.i

Sample Info: BFB aug 14 2017;50NG BFB;1;3;;;;;;

Operator: kas02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin A. Sposito on 08/21/2017 at 09:13.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17aug21i.b/lg21t01.d

Date : 21-AUG-2017 09:03

Client ID: BFB aug 14 2017

Instrument: HP09915.i

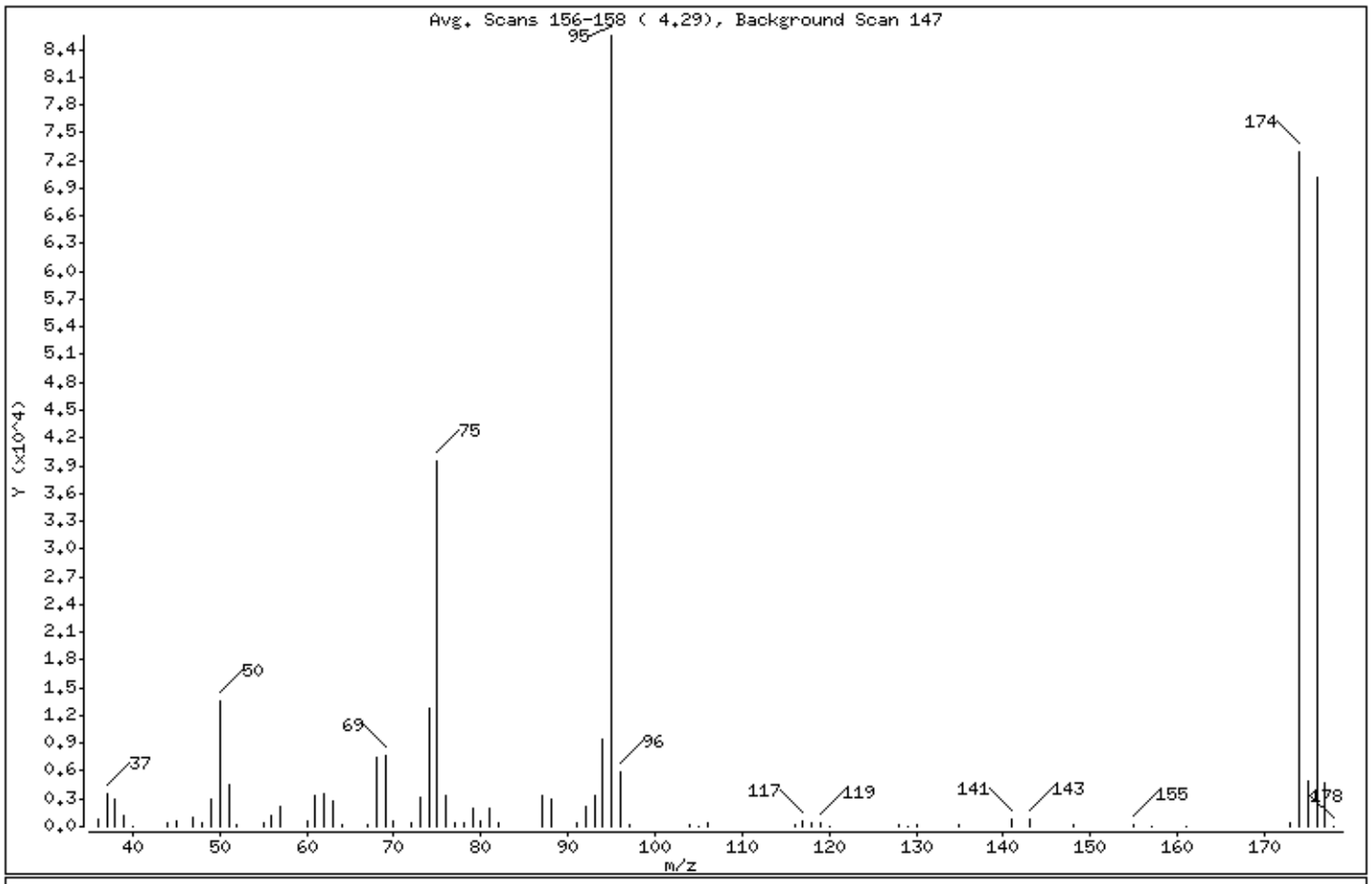
Sample Info: BFB aug 14 2017;50NG BFB;1;3;;;;;;

Operator: kas02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 15.97 |
| 75 | 30.00 - 60.00% of mass 95 | 46.18 |
| 96 | 5.00 - 9.00% of mass 95 | 6.85 |
| 173 | Less than 2.00% of mass 174 | 0.42 ( 0.49) |
| 174 | 50.00 - 100.00% of mass 95 | 85.39 |
| 175 | 5.00 - 9.00% of mass 174 | 5.75 ( 6.73) |
| 176 | 95.00 - 101.00% of mass 174 | 81.97 ( 96.00) |
| 177 | 5.00 - 9.00% of mass 176 | 5.62 ( 6.85) |

Digitally signed by Kevin A. Sposito on 08/21/2017 at 09:13.
Target 3.5 esignature user ID: kas02648

Date : 21-AUG-2017 09:03

Client ID: BFB aug 14 2017 Instrument: HP09915.i

Sample Info: BFB aug 14 2017;50NG BFB;1;3;;;;;;

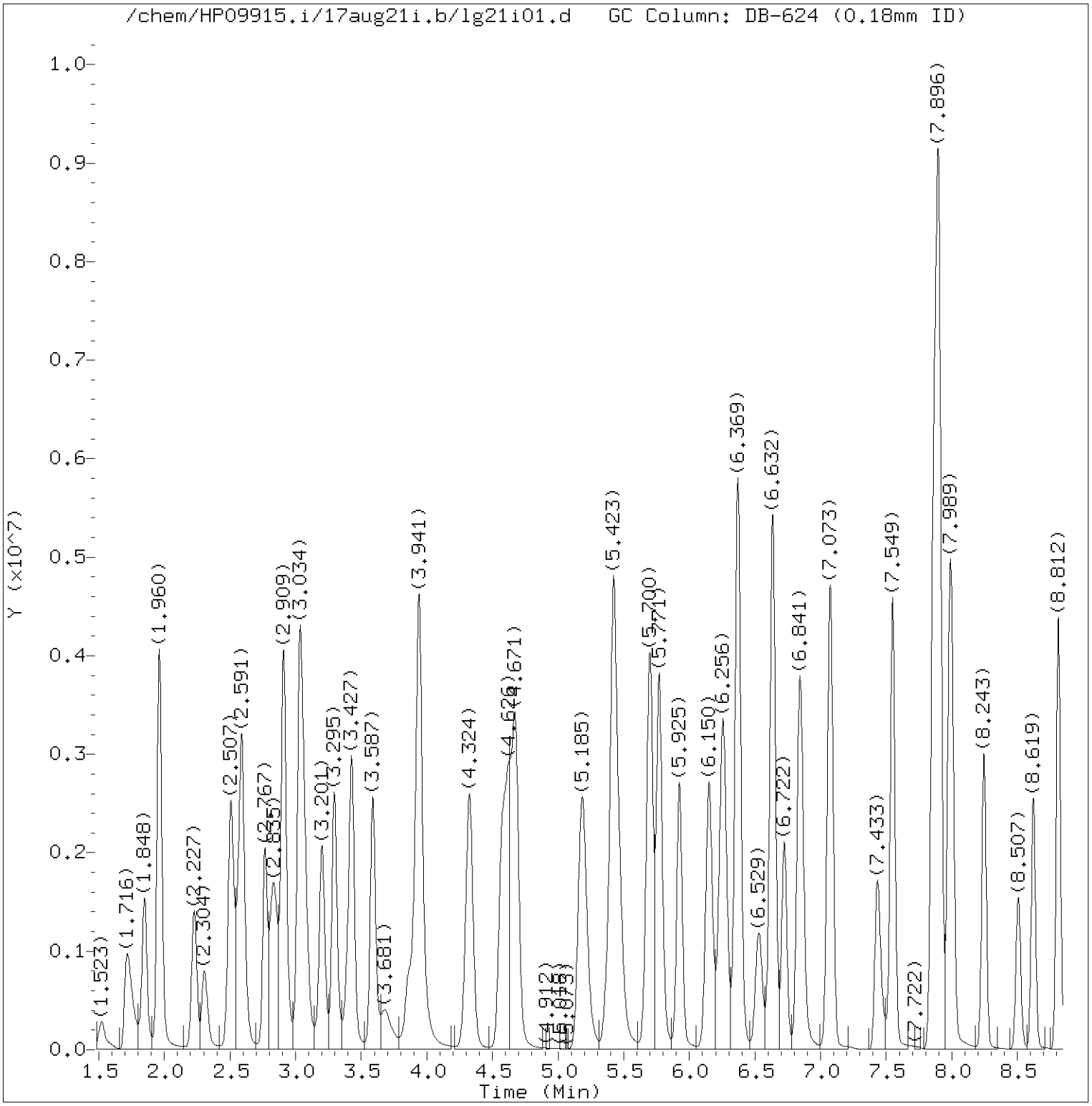
Operator: kas02648

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: lg21t01.d
Spectrum: Avg. Scans 156-158 ( 4.29), Background Scan 147
Location of Maximum: 95.00
Number of points: 69

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 705 | 62.00 | 3465 | 87.00 | 3421 | 129.00 | 70 |
| 37.00 | 3525 | 63.00 | 2725 | 88.00 | 2929 | 130.00 | 291 |
| 38.00 | 3022 | 64.00 | 249 | 91.00 | 370 | 135.00 | 114 |
| 39.00 | 1153 | 67.00 | 246 | 92.00 | 2133 | 141.00 | 717 |
| 40.00 | 12 | 68.00 | 7407 | 93.00 | 3353 | 143.00 | 709 |
| 44.00 | 344 | 69.00 | 7645 | 94.00 | 9371 | 148.00 | 139 |
| 45.00 | 667 | 70.00 | 542 | 95.00 | 85488 | 155.00 | 189 |
| 47.00 | 891 | 72.00 | 441 | 96.00 | 5856 | 157.00 | 71 |
| 48.00 | 463 | 73.00 | 3148 | 97.00 | 204 | 161.00 | 59 |
| 49.00 | 2965 | 74.00 | 12679 | 104.00 | 263 | 173.00 | 357 |
| 50.00 | 13652 | 75.00 | 39480 | 105.00 | 59 | 174.00 | 73000 |
| 51.00 | 4552 | 76.00 | 3432 | 106.00 | 336 | 175.00 | 4916 |
| 52.00 | 272 | 77.00 | 455 | 116.00 | 266 | 176.00 | 70072 |
| 55.00 | 302 | 78.00 | 303 | 117.00 | 517 | 177.00 | 4801 |
| 56.00 | 1143 | 79.00 | 2018 | 118.00 | 299 | 178.00 | 61 |
| 57.00 | 2232 | 80.00 | 577 | 119.00 | 321 | | |
| 60.00 | 578 | 81.00 | 2038 | 120.00 | 55 | | |
| 61.00 | 3429 | 82.00 | 438 | 128.00 | 274 | | |

Digitally signed by Kevin A. Sposito on 08/21/2017 at 09:13.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

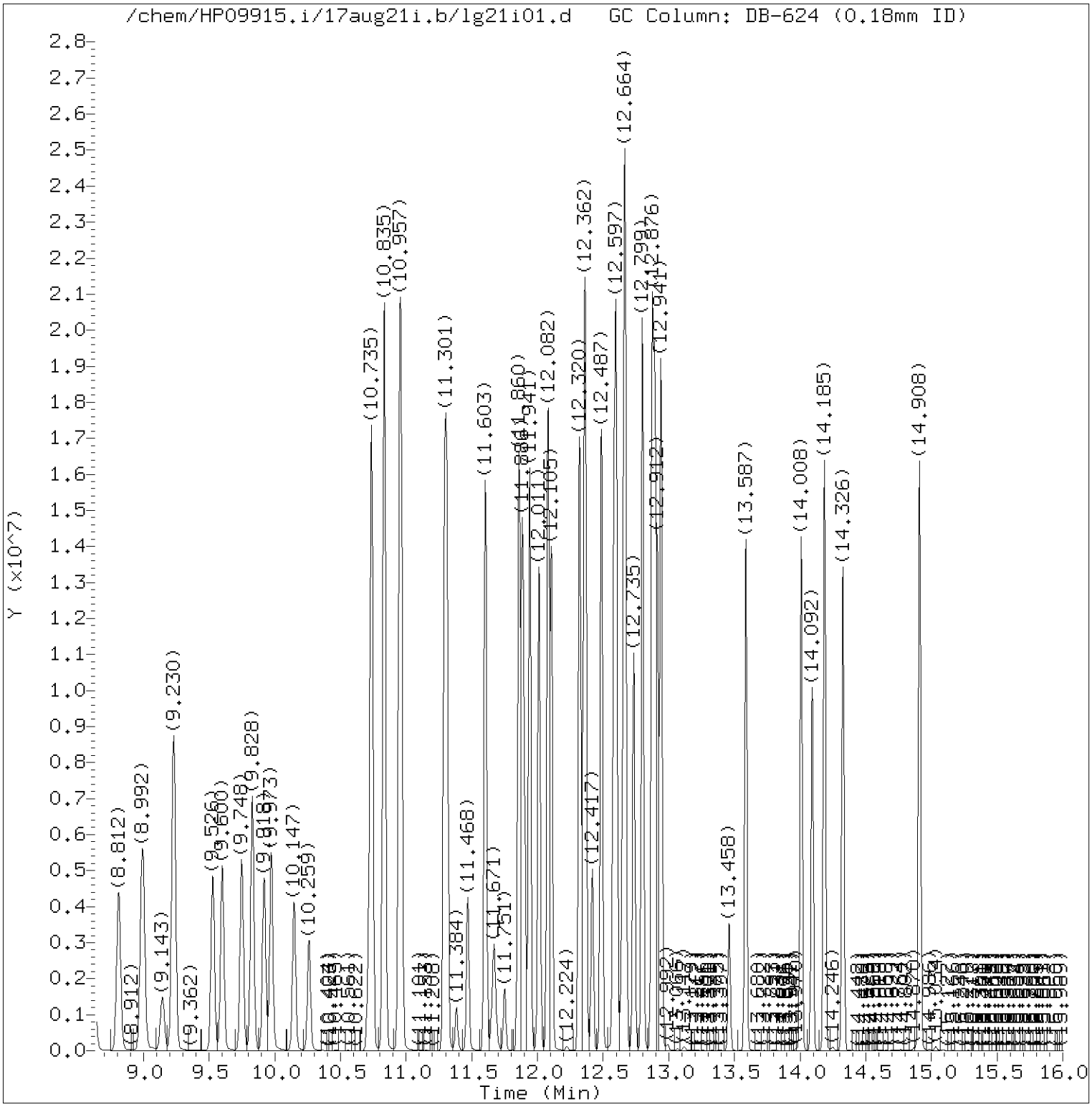
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716 | 85 | 2711210 | 303.062 |
| 4) Chloromethane | (2) | 1.848 | 50 | 2368911 | 284.868 |
| 6) Vinyl Chloride | (2) | 1.960 | 62 | 2389651 | 289.827 |
| 5) 1,3-Butadiene | (2) | 1.964 | 39 | 1654471 | 301.747 |
| 8) Bromomethane | (2) | 2.227 | 94 | 1531223 | 266.724 |
| 9) Chloroethane | (2) | 2.304 | 64 | 1194243 | 263.914 |
| 10) Dichlorofluoromethane | (2) | 2.504 | 67 | 2861811 | 283.903 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 3158825 | 301.722 |
| 11) n-Pentane | (2) | 2.591 | 43 | 2488188 | 286.752 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 1519725 | 287.787 |
| 15) Freon 123a | (2) | 2.832 | 67 | 1934361 | 285.402 |
| 16) Acrolein | (1) | 2.909 | 56 | 5595689 | 3128.537 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 1618135 | 307.896 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 739668 | 300.799 |
| 18) Acetone | (1) | 3.044 | 58 | 452537 | 629.545 |
| 19) Freon 113 | (2) | 3.060 | 101 | 1760702 | 311.316 |
| 21) 2-Propanol | (1) | 3.182 | 45 | 751841 | 1556.710 |
| 22) Methyl Iodide | (2) | 3.201 | 142 | 3302095 | 301.619 |
| 23) Carbon Disulfide | (2) | 3.295 | 76 | 5413789 | 301.053 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 1755405 | 294.519 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 2527577 | 294.145 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 244314M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 1815782 | 293.783 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 1396023 | 1549.616 |
| 31) Acrylonitrile | (2) | 3.857 | 53 | 954825 | 290.289 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 5495029 | 285.796 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 1881055 | 304.565 |
| 34) n-Hexane | (2) | 4.324 | 57 | 2664915 | 305.080 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 3098751 | 295.053 |
| 38) di-Isopropyl ether | (2) | 4.626 | 45 | 5368834 | 288.405 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 2749817 | 297.943 |
| 40) Ethyl t-butyl ether | (2) | 5.182 | 59 | 5337062 | 282.881 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 2409110 | 574.365 |
| 42) cis-1,2-Dichloroethene | (2) | 5.423 | 96 | 2133385 | 304.937 |
| 45) 2,2-Dichloropropane | (2) | 5.443 | 77 | 2699957 | 323.392 |
| 47) Propionitrile | (1) | 5.471 | 54 | 1821310 | 1544.761 |
| 48) Methacrylonitrile | (2) | 5.697 | 67 | 2743761 | 752.558 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 1127801 | 304.287 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.777 | 71 | 715678 | 638.873 |
| 51) Chloroform | (2) | 5.925 | 83 | 3172949 | 296.296 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 348310 | 49.855 |
| 52)$Dibromofluoromethane | (2) | 6.150 | 111 | 356568 | 49.895 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 3023016 | 288.607 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4014440 | 609.502 |
| 54) Cyclohexane | (2) | 6.256 | 56 | 3147479 | 303.707 |
| 54) Cyclohexane | (2) | 6.256 | 84 | 2835607 | 309.645 |
| 54) Cyclohexane | (2) | 6.256 | 69 | 1006054 | 306.570 |
| 56) Carbon Tetrachloride | (2) | 6.369 | 117 | 2611986 | 319.005 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2601272 | 308.616 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 1118522 | 3683.074 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 84940 | 50.051 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 384768 | 48.881 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.619 | 104 | 54895 | 50.512 |
| 60) Benzene | (2) | 6.635 | 78 | 7359151 | 298.875 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 2456729 | 289.775 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 249361 | 296.787 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 5542089 | 283.871 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1371560 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 2680072 | 301.975 |
| 69) n-Butanol | (1) | 7.433 | 56 | 2021463 | 7737.409 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 2061464 | 307.570 |
| 72) Methylcyclohexane | (2) | 7.864 | 83 | 3535345 | 319.041 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 1690060 | 323.566 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 1938875 | 305.184 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 311473 | 4716.091 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 1834179 | 325.221 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 1389988 | 307.834 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 2575033 | 311.178 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 1376138 | 605.692 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 1539240 | 310.551 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 3278597 | 313.891 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 5216212 | 581.235 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1341481 | 48.991 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 887999 | 49.312 |
| 88) Toluene | (3) | 9.230 | 92 | 4934084 | 300.273 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 3088280 | 316.055 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 3159378 | 300.871 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 1916845 | 300.669 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 2344138 | 318.265 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 3111362 | 299.943 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 3770352 | 566.863 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 6366877 | 629.946 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 2332241 | 324.866 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 2185430 | 304.079 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 1100857 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 2889958 | 311.983 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 5962448 | 310.416 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 2194006 | 321.360 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 9347012 | 295.534 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 7639733 | 597.570 |
| 107) o-Xylene | (3) | 11.291 | 106 | 3881245 | 302.043 |
| 109) Styrene | (3) | 11.310 | 104 | 6470842 | 300.693 |
| 110) Bromoform | (3) | 11.468 | 173 | 1863802 | 344.640 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 9602814 | 297.221 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 1223014 | 4580.961 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 516814 | 49.390 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 447160 | 49.367 |
| 108) Xylene (Total) | (3) | | 106 | 11520978 | 899.613 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 3110044 | 293.890 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 2847085 | 317.306 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 1928848 | 689.622 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 956013 | 296.964 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 10783890 | 286.613 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 2555050 | 312.955 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 8462516 | 298.909 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 2672721 | 313.280 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 1977719M | 310.313 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1769120 | 336.094 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 8629184 | 296.158 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 10343070 | 293.847 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 5054696 | 299.052 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 9388129 | 298.942 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 609070 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 5036329 | 288.670 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 8622303 | 284.917 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 6726320 | 307.498 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 5673132 | 297.562 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 5811928 | 293.001 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 4417297 | 288.385 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 5026905 | 299.429 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 4746247 | 298.813 |
| 141) Diethylbenzene (total) | (4) | | 100 | 16231307 | 889.377 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 703543 | 302.396 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 3892982 | 307.441 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 3764683 | 303.200 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 1561288 | 296.830 |
| 148) Naphthalene | (4) | 14.185 | 128 | 10723609 | 273.457 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 3529441 | 298.373 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 6806954 | 262.087 |



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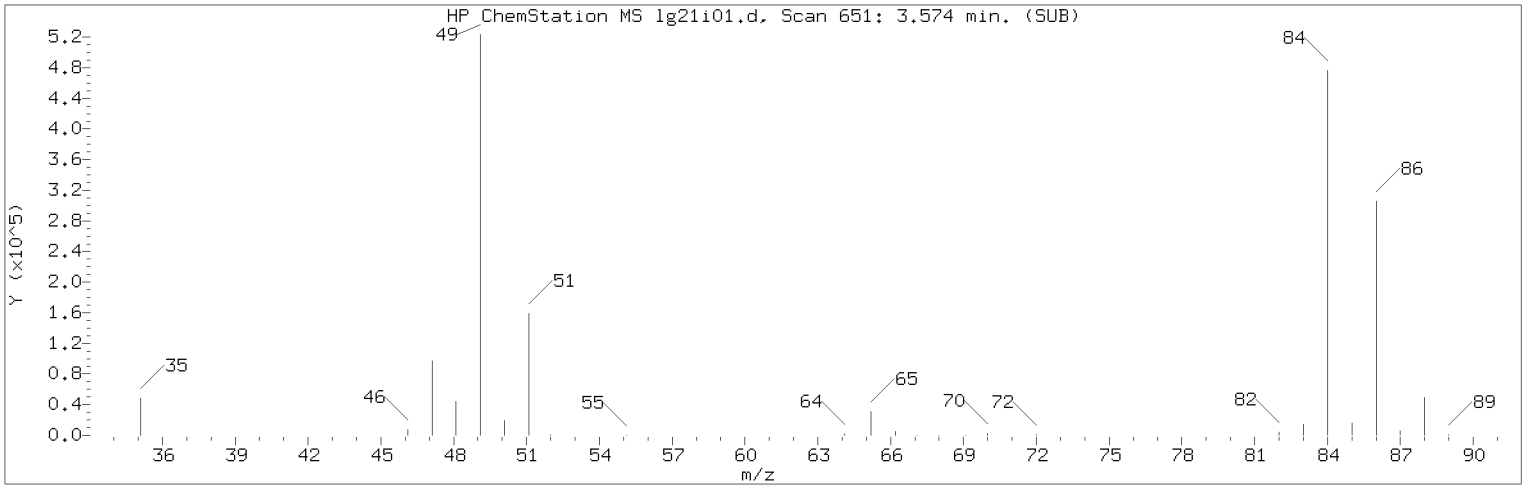
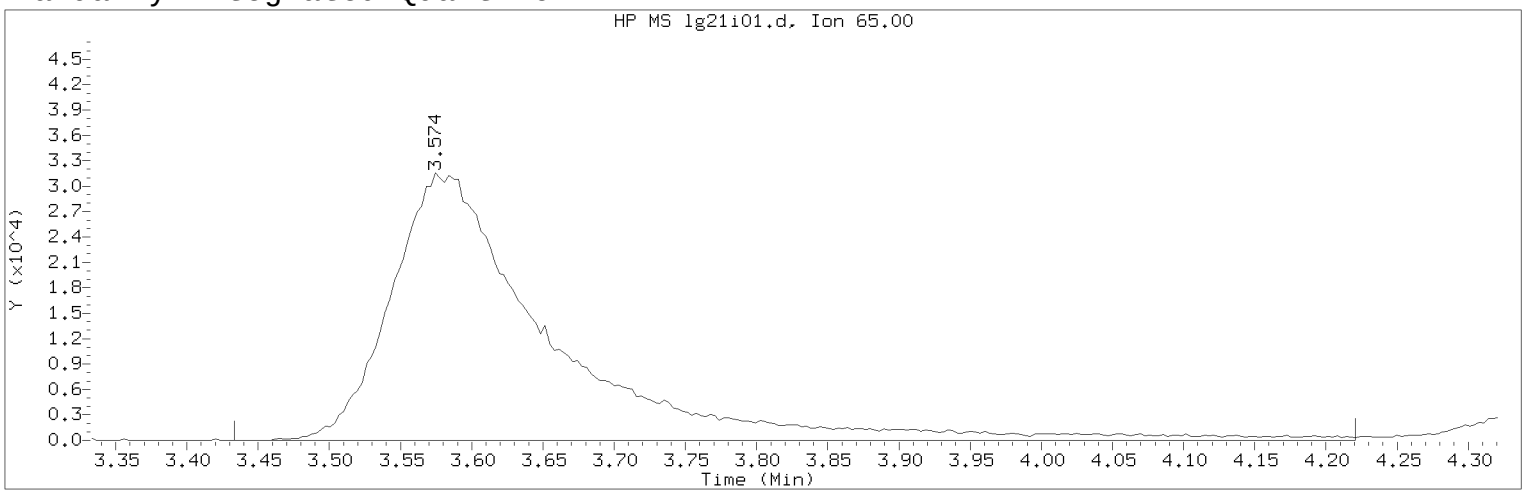
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

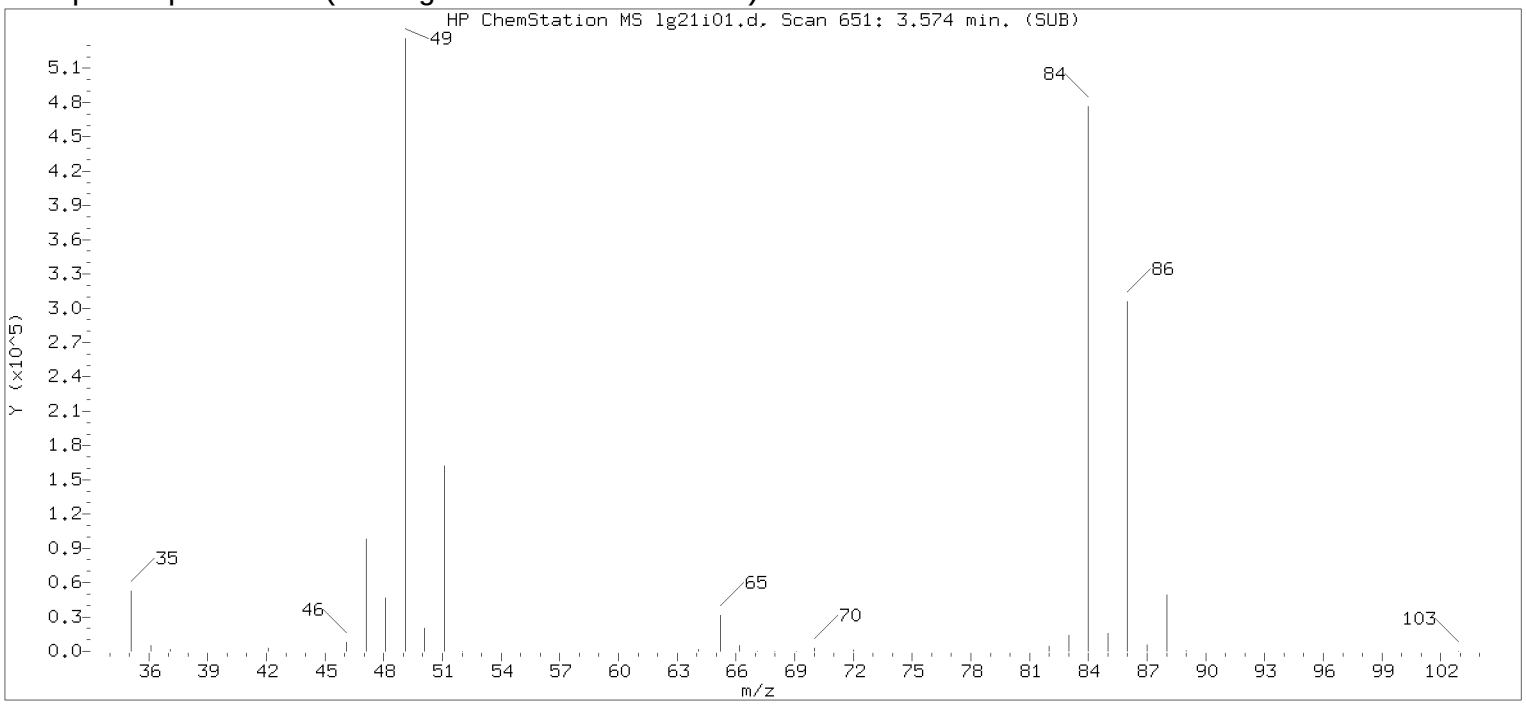
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 244314M
On-Column Amount (ng) : 250.0000
Integration start scan : 606 Integration stop scan: 851
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

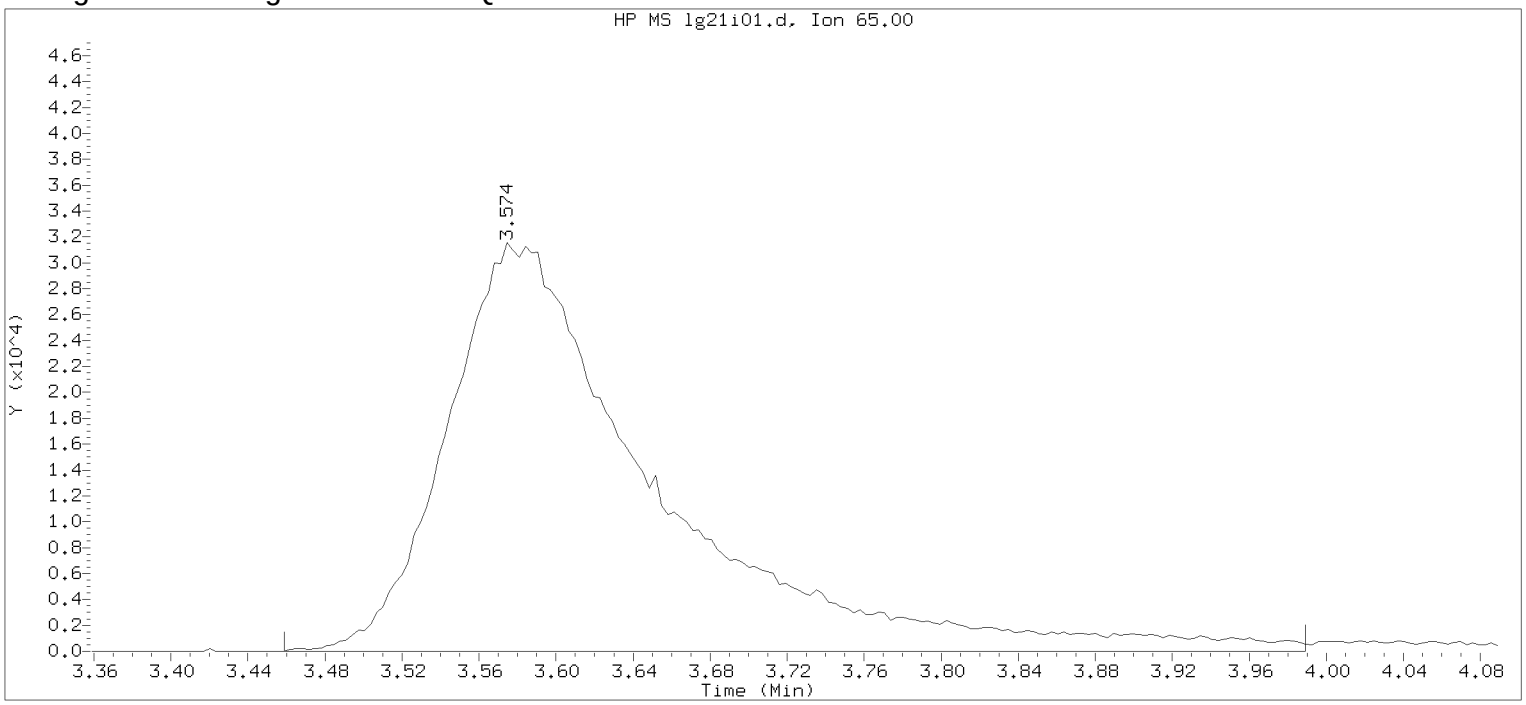
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area : 236617
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 779
Y at integration start : 0 Y at integration end: 0

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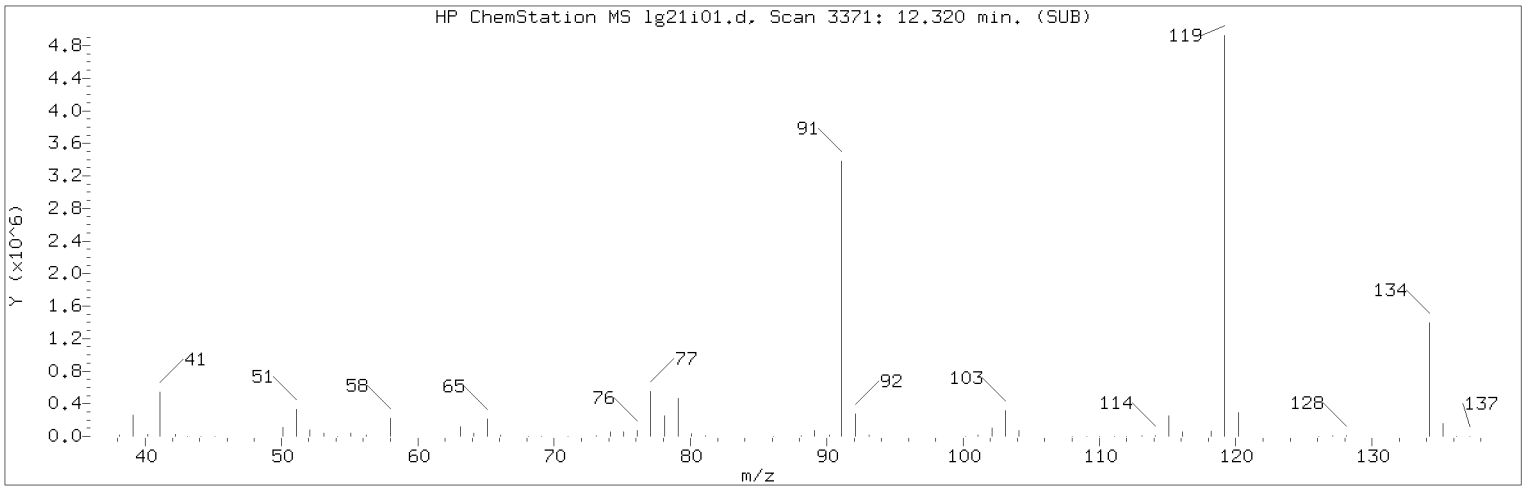
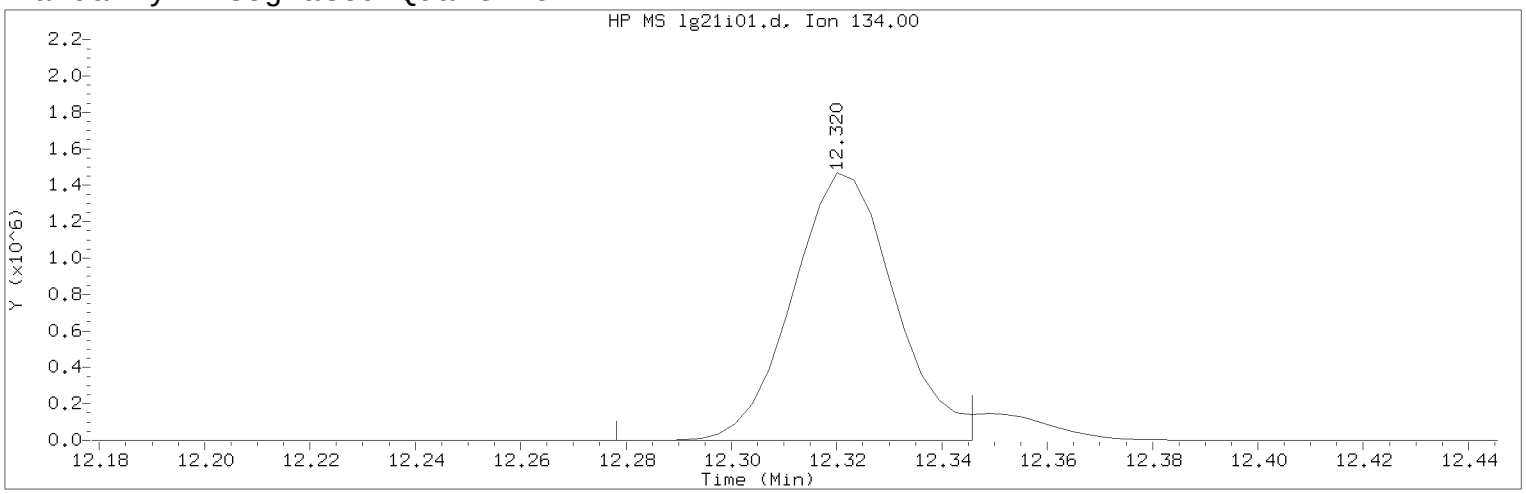
Target 3.5 esignature userKAS02648 Page 148 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d  Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300  Lab Sample ID: VSTD300

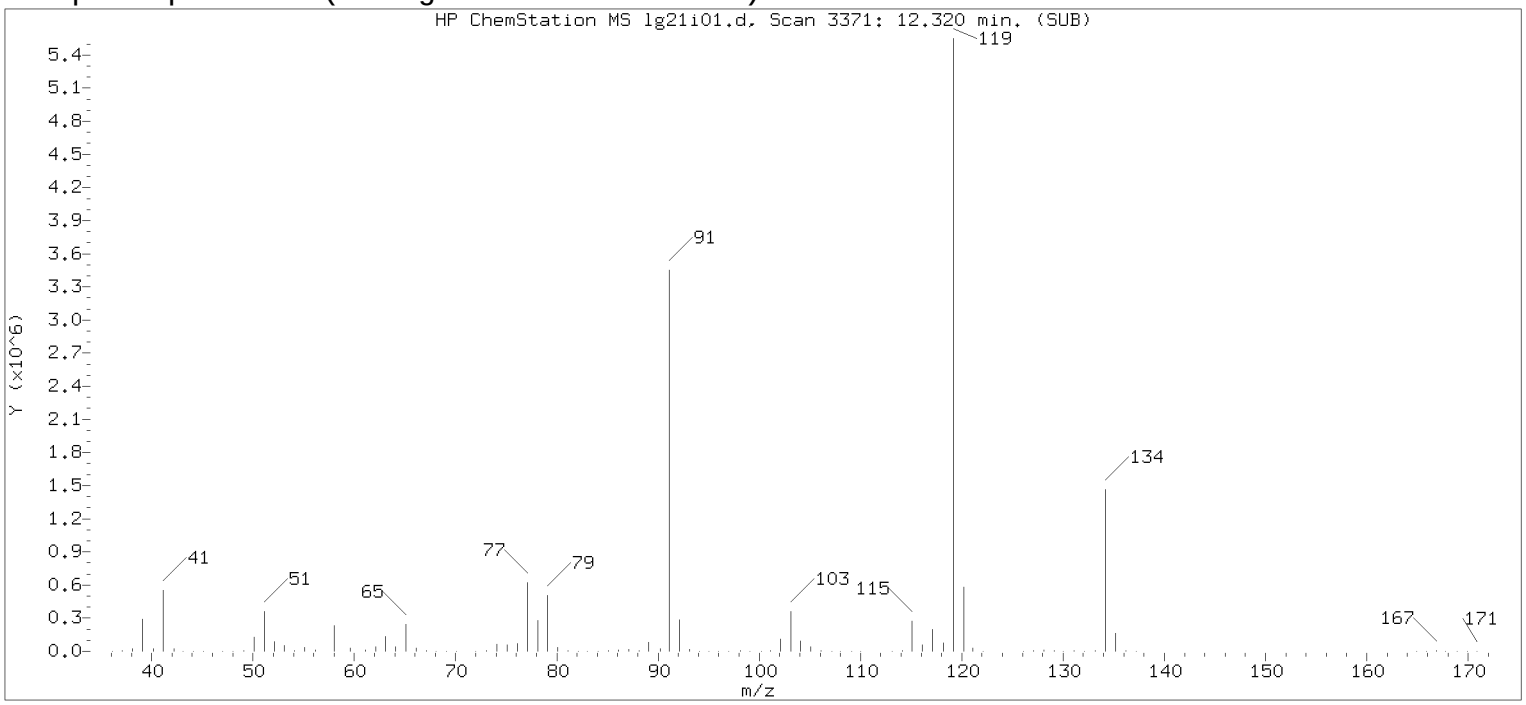
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 1977719M
On-Column Amount (ng) : 310.3135
Integration start scan : 3357  Integration stop scan: 3378
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

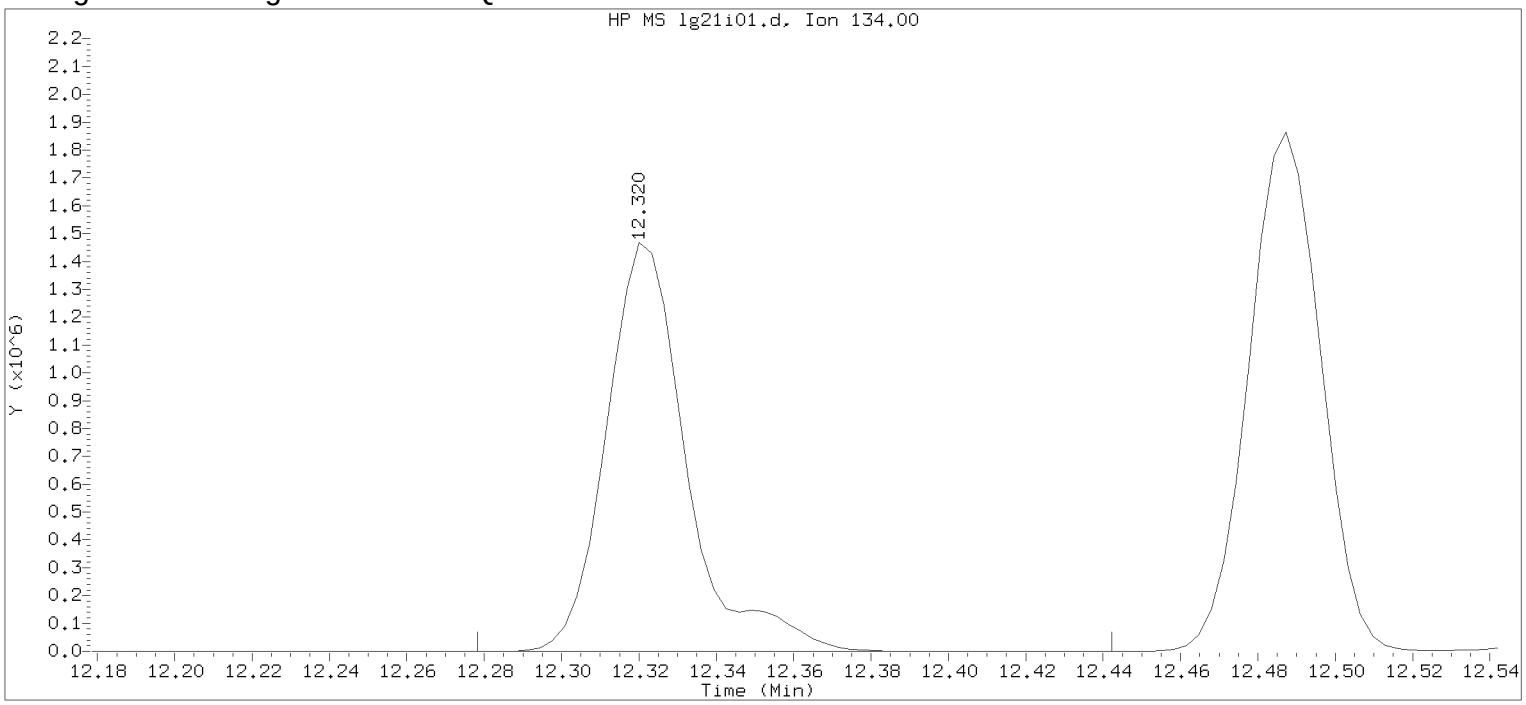
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 2110897
On-column Amount (ng) : 314.1931
Integration start scan : 3357 Integration stop scan: 3408
Y at integration start : 0 Y at integration end: 0

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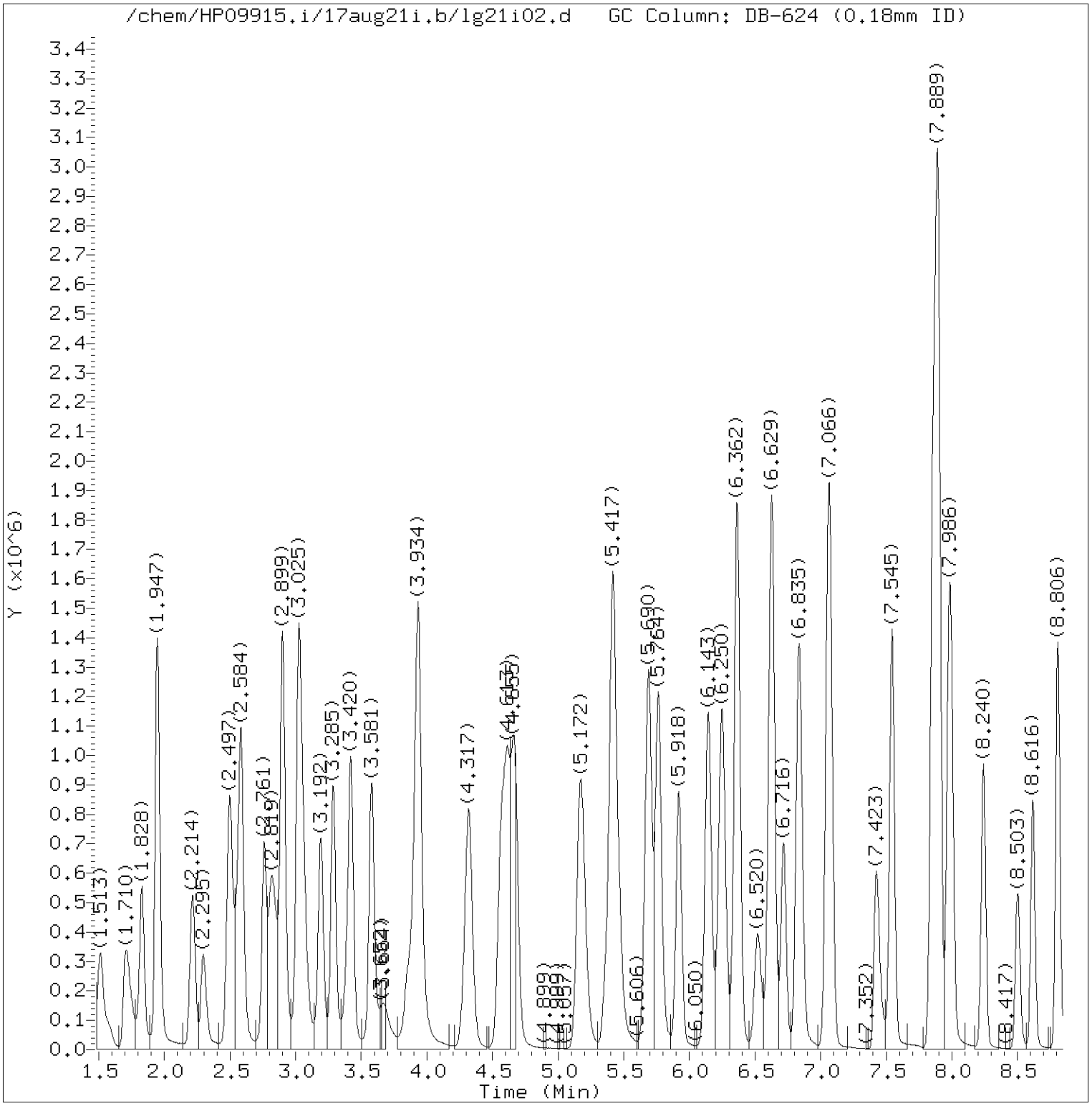
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

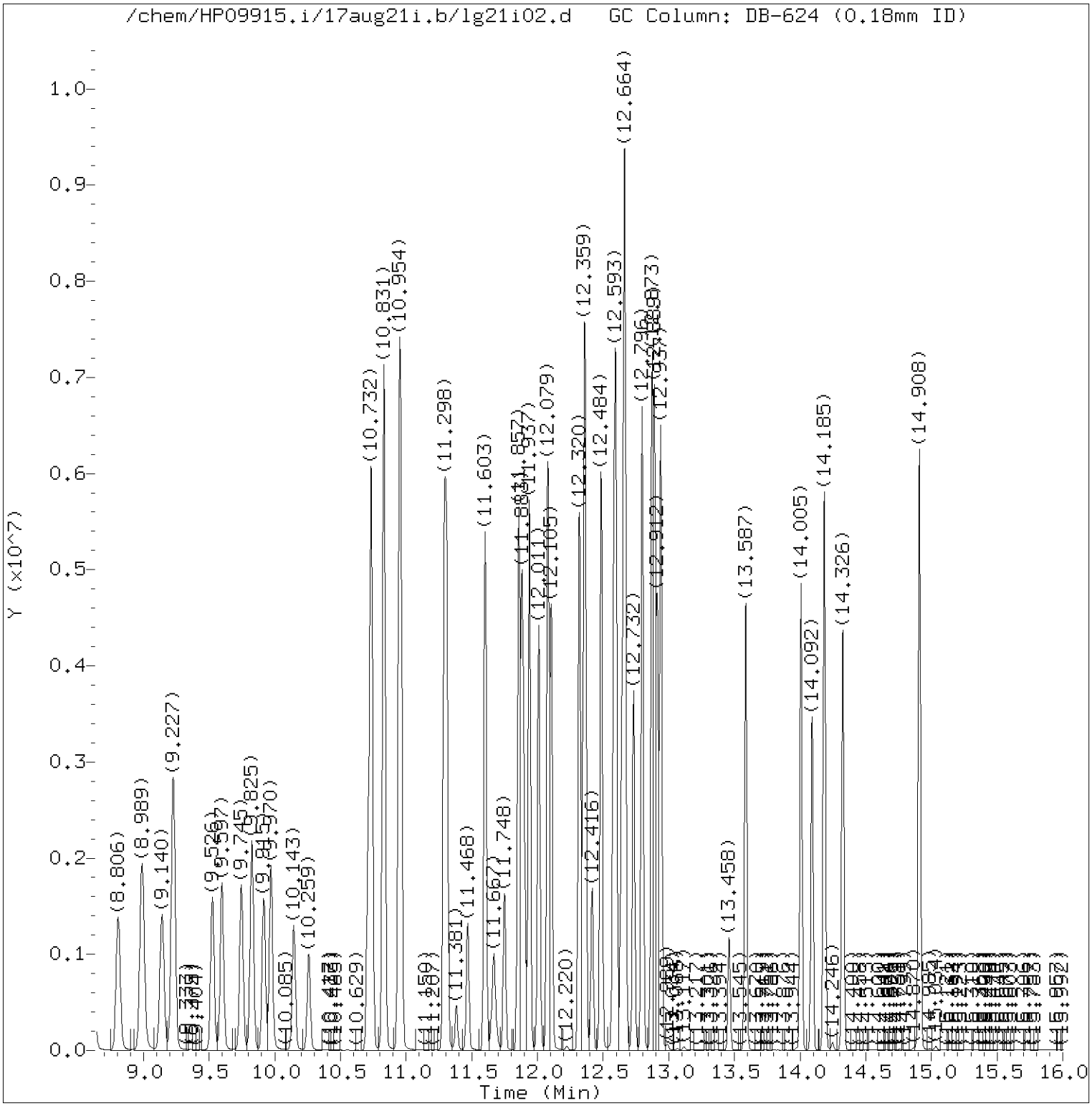
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 891224 | 103.344 |
| 4) Chloromethane | (2) | 1.828 | 50 | 807531 | 100.735 |
| 6) Vinyl Chloride | (2) | 1.941 | 62 | 812636 | 102.242 |
| 5) 1,3-Butadiene | (2) | 1.947 | 39 | 567549 | 107.378 |
| 8) Bromomethane | (2) | 2.214 | 94 | 569766 | 102.955 |
| 9) Chloroethane | (2) | 2.295 | 64 | 444688 | 101.942 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 967997 | 99.616 |
| 12) Trichlorofluoromethane | (2) | 2.555 | 101 | 1037819 | 102.833 |
| 11) n-Pentane | (2) | 2.587 | 43 | 849650 | 101.576 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 529752 | 104.066 |
| 15) Freon 123a | (2) | 2.819 | 67 | 646019 | 98.876 |
| 16) Acrolein | (1) | 2.899 | 56 | 1939966 | 1082.389 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 527641 | 104.149 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 63 | 244733 | 103.243 |
| 18) Acetone | (1) | 3.037 | 58 | 150806 | 209.359 |
| 19) Freon 113 | (2) | 3.047 | 101 | 577717 | 105.964 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 265443 | 548.472 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 1095980 | 103.848 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 1818042 | 104.875 |
| 27) Methyl Acetate | (2) | 3.388 | 43 | 594050 | 103.392 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 861577 | 104.011 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 244820M | 250.000 |
| 28) Methylene Chloride | (2) | 3.574 | 84 | 608447 | 102.121 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 482340 | 534.301 |
| 31) Acrylonitrile | (2) | 3.851 | 53 | 325415 | 102.630 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 1906597 | 102.866 |
| 32) trans-1,2-Dichloroethene | (2) | 3.934 | 96 | 613071 | 102.972 |
| 34) n-Hexane | (2) | 4.317 | 57 | 888434 | 105.508 |
| 36) 1,1-Dichloroethane | (2) | 4.561 | 63 | 1037829 | 102.510 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 1850130 | 103.099 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 916230 | 102.982 |
| 40) Ethyl t-butyl ether | (2) | 5.172 | 59 | 1866572 | 102.630 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 839048 | 207.513 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 697408 | 103.409 |
| 45) 2,2-Dichloropropane | (2) | 5.426 | 77 | 897586 | 111.526 |
| 47) Propionitrile | (1) | 5.462 | 54 | 625095 | 529.084 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 917150 | 260.953 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 369755 | 103.489 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 240330 | 214.095 |
| 51) Chloroform | (2) | 5.922 | 83 | 1061657 | 102.843 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 337561 | 50.122 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 344713 | 50.038 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 1001248 | 99.160 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 1310479 | 206.380 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 1046028 | 104.704 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 923535 | 104.616 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 328959 | 103.987 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 838840 | 106.276 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 844565 | 103.943 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 380877 | 1251.561 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 81645 | 49.907 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 378225 | 49.845 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 53197 | 50.778 |
| 60) Benzene | (2) | 6.629 | 78 | 2436601 | 102.654 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 833152 | 101.943 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 83177 | 102.695 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 1937218 | 102.933 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1322168 | 50.000 |
| 67) n-Heptane | (2) | 7.069 | 43 | 898860 | 105.062 |
| 69) n-Butanol | (1) | 7.423 | 56 | 683607 | 2611.186 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 665770 | 103.044 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 1145349 | 107.221 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 542663 | 107.775 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 638990 | 104.336 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 105830M | 1448.538 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 599738 | 110.313 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 455052 | 104.543 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 848930 | 106.421 |
| 79) 2-Nitropropane | (2) | 8.503 | 41 | 472703 | 215.827 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 505992 | 105.901 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 1070915 | 106.359 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 1836988 | 212.340 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1301689 | 49.594 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 858708 | 49.747 |
| 88) Toluene | (3) | 9.227 | 92 | 1623244 | 103.058 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 1003605 | 107.151 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 1052443 | 104.560 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 626659 | 102.547 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 735389 | 104.163 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 1027284 | 103.316 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 1355695 | 212.641 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 2074520 | 213.510 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 751209 | 109.164 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 716486 | 104.003 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1055218 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 931675 | 104.928 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 1927883 | 104.710 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 707102 | 108.050 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 3176665 | 104.784 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 2598120 | 212.011 |
| 107) o-Xylene | (3) | 11.291 | 106 | 1300696 | 105.600 |
| 109) Styrene | (3) | 11.307 | 104 | 2201696 | 106.735 |
| 110) Bromoform | (3) | 11.468 | 173 | 583136 | 112.493 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 3256107 | 105.140 |
| 112) Cyclohexanone | (1) | 11.667 | 55 | 418694 | 1565.033 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 498002 | 49.651 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 429642 | 49.484 |
| 108) Xylene (Total) | (3) | | 106 | 3898816 | 317.611 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 1028375 | 102.544 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 901651 | 106.037 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 689874 | 260.270 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 313429 | 102.736 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 3737933 | 104.832 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 807521 | 104.371 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 2849308 | 106.199 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 854562 | 105.697 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 622580M | 104.263 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 561638 | 112.590 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 2935009 | 106.293 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 3543772 | 106.238 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580 | 146 | 1690018 | 105.508 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 3194798 | 107.348 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 577199 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 1754430 | 106.112 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 3052510 | 106.437 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 2254453 | 108.755 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 1905039 | 105.439 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 1980314 | 105.348 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 1536334 | 105.838 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 1670211 | 104.980 |
| 140) 1,2-Diethylbenzene | (4) | 12.937 | 119 | 1589353 | 105.587 |
| 141) Diethylbenzene (total) | (4) | | 100 | 5474706 | 316.374 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 234890 | 106.535 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 1250706 | 104.226 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.005 | 180 | 1222488 | 103.893 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 518118 | 103.943 |
| 148) Naphthalene | (4) | 14.185 | 128 | 3867330 | 104.064 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 1159781 | 103.460 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 2546847 | 103.476 |



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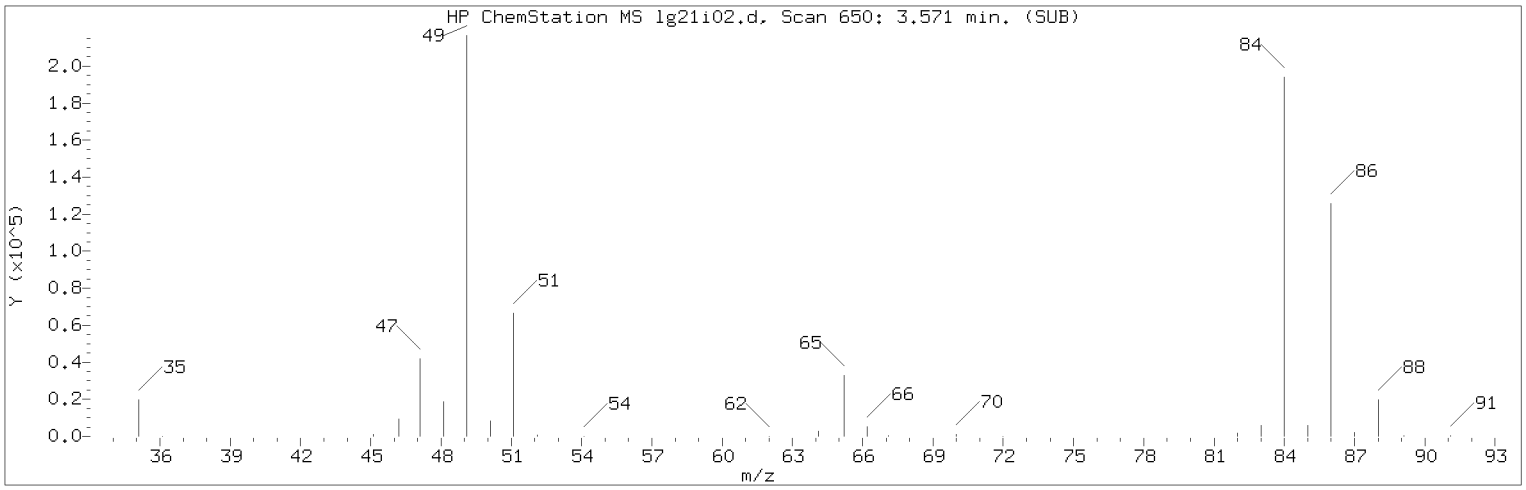
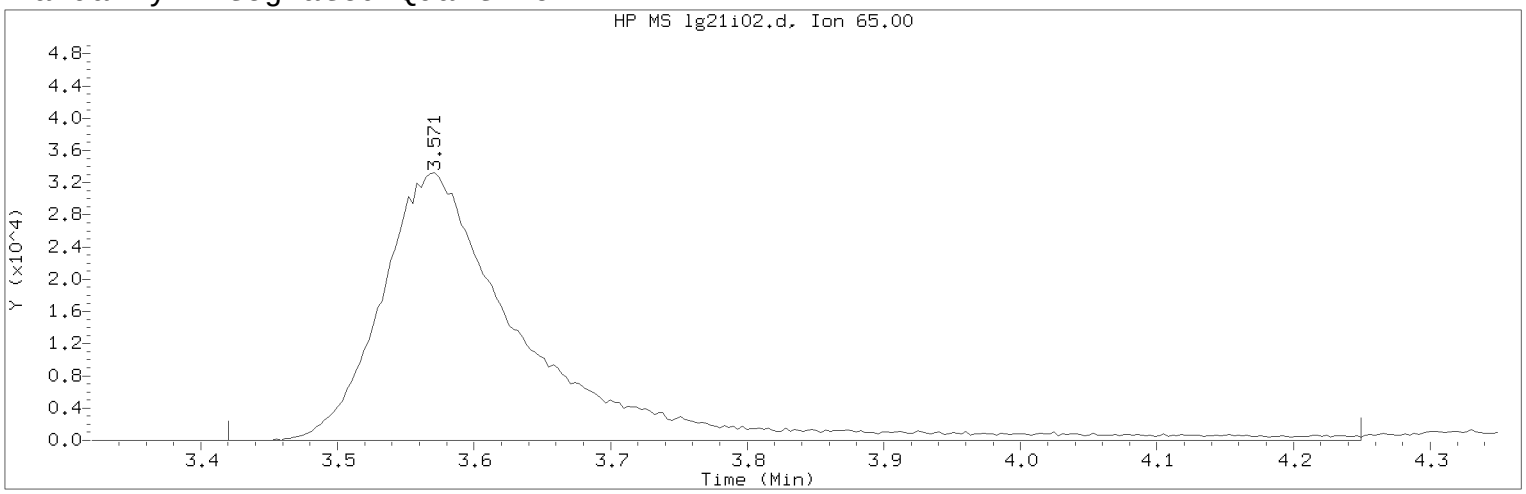
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

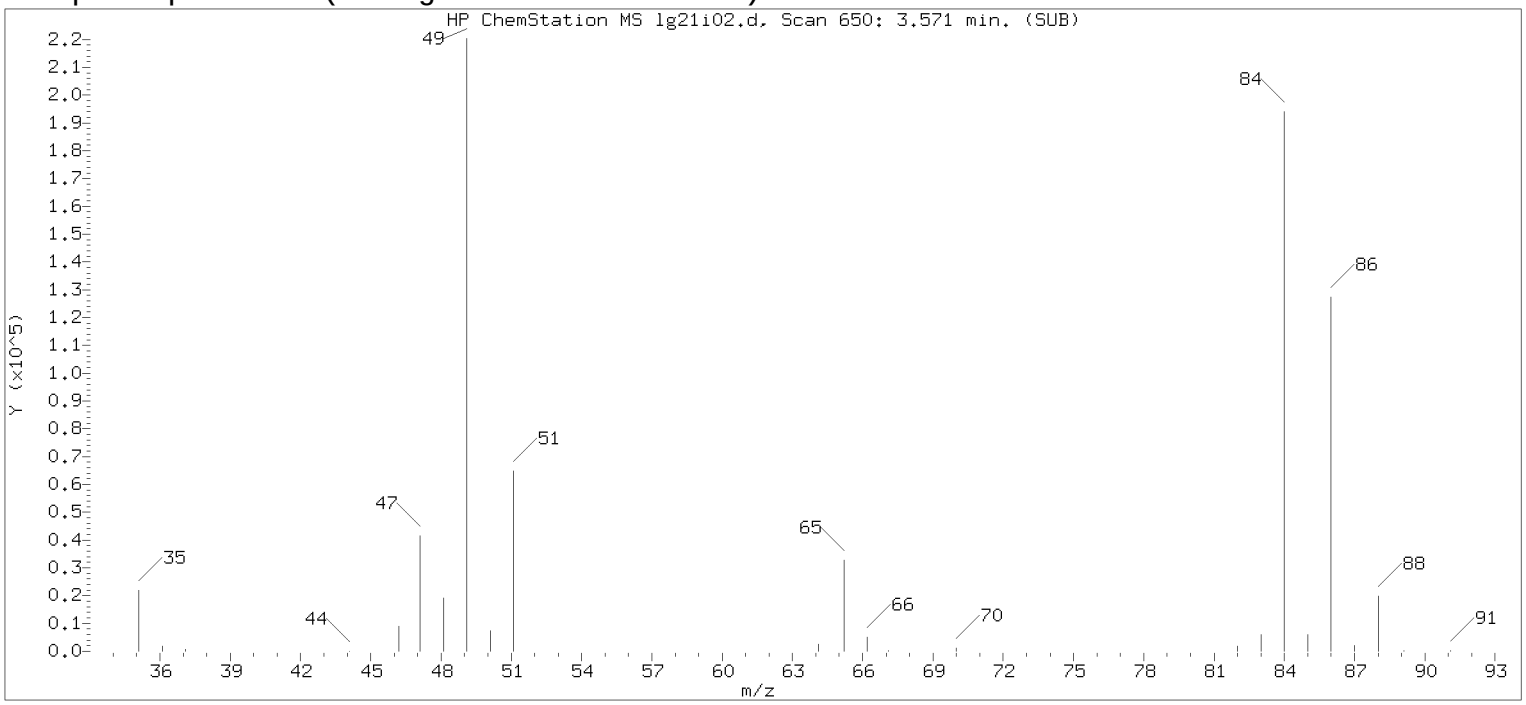
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area (flag) : 244820M
On-Column Amount (ng) : 250.0000
Integration start scan : 602 Integration stop scan: 860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

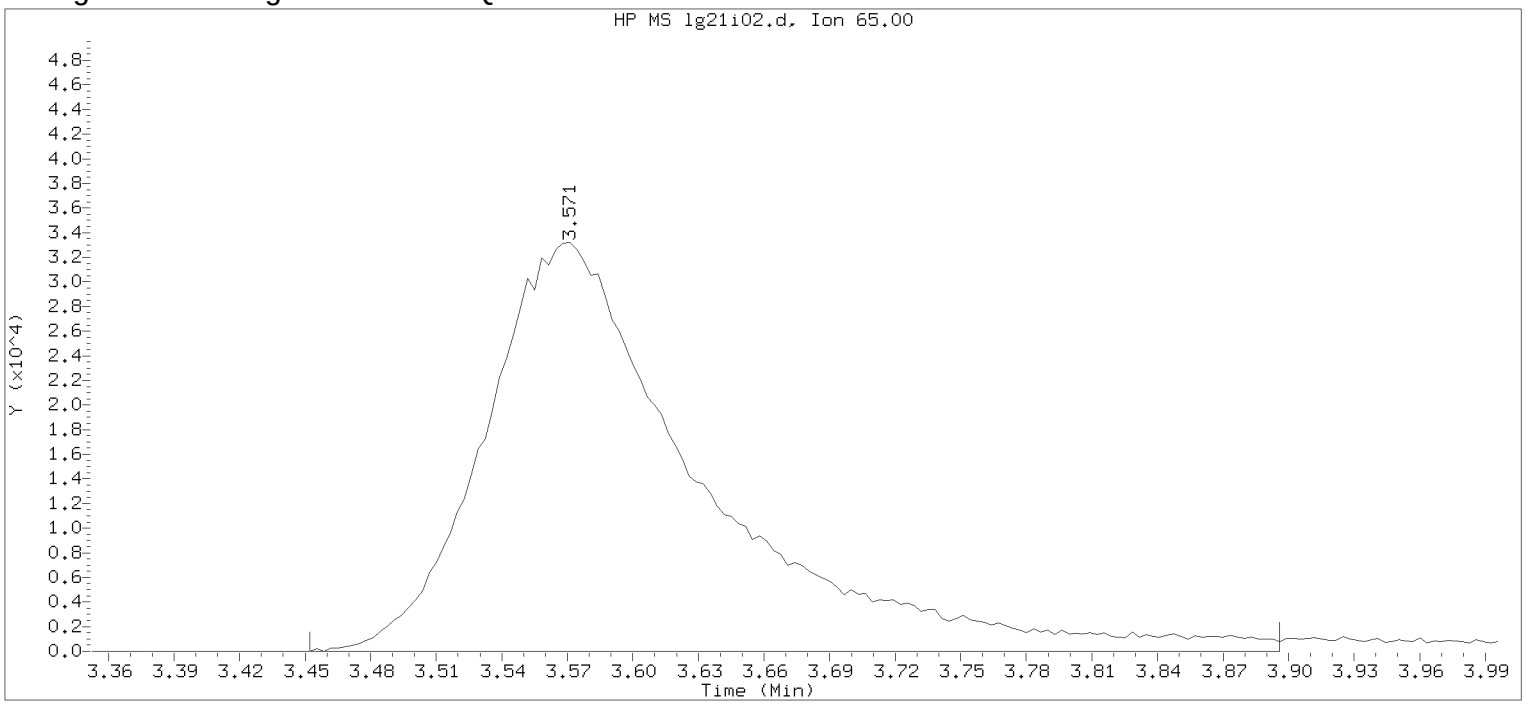
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area : 230129
On-column Amount (ng) : 250.0000
Integration start scan : 612 Integration stop scan: 750
Y at integration start : 0 Y at integration end: 0

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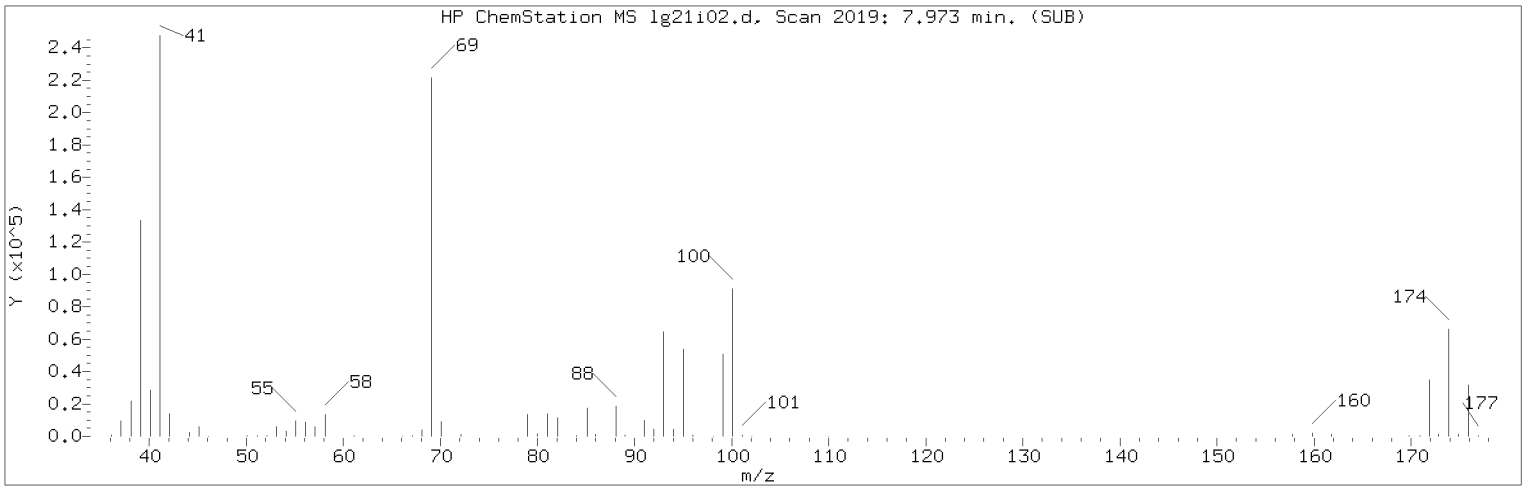
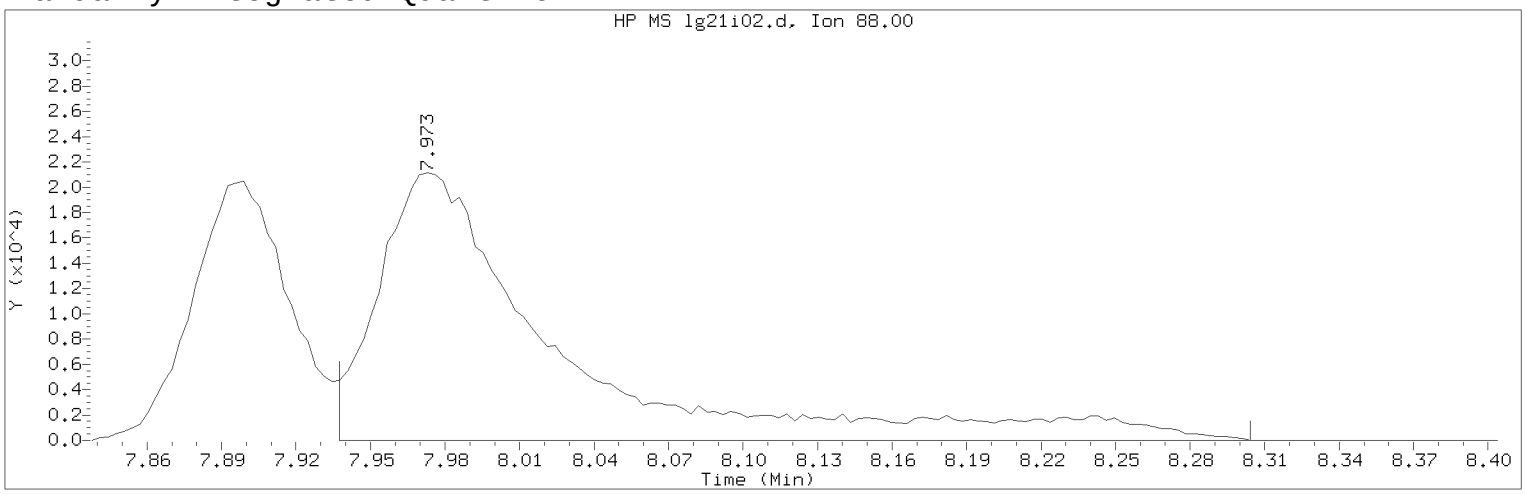
Target 3.5 esignature userKAS02648 Page 121 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
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Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

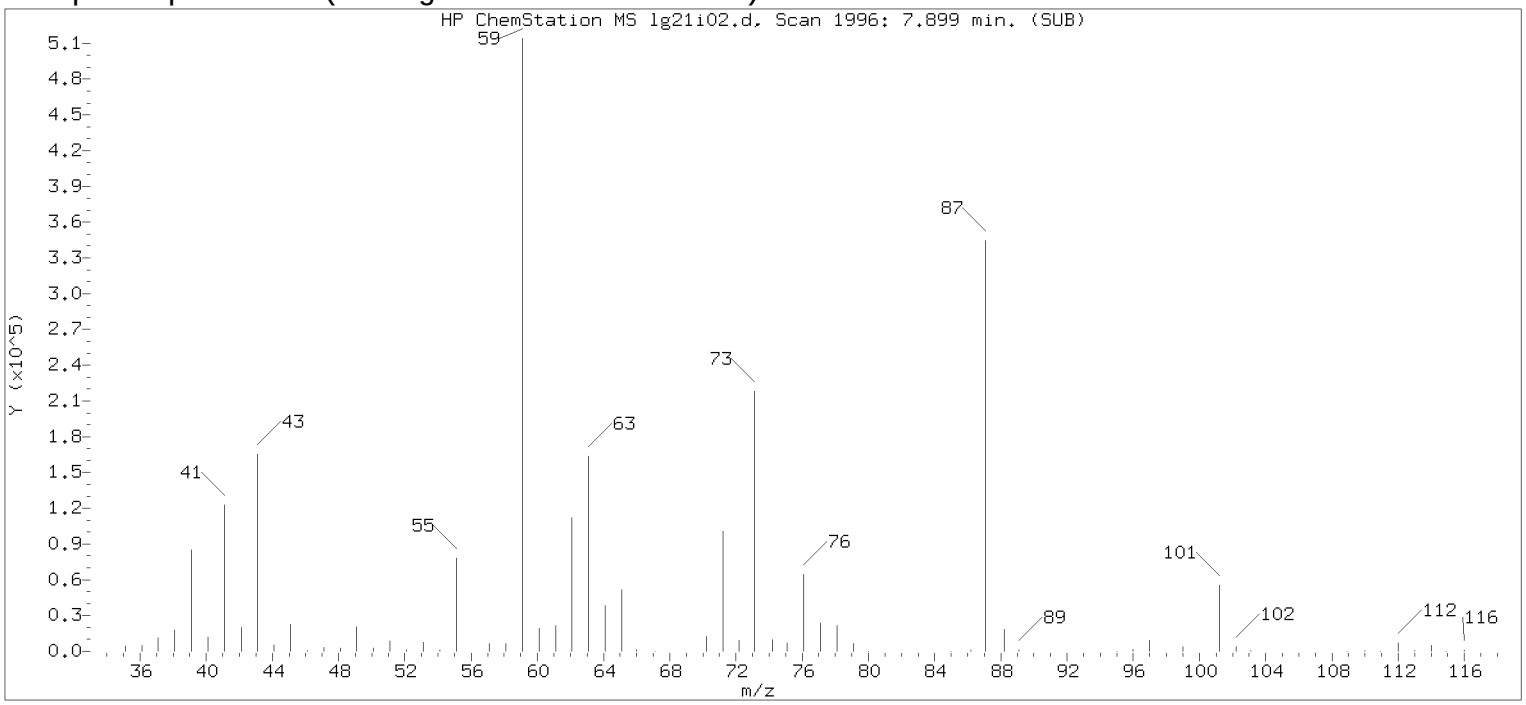
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 105830M
On-Column Amount (ng) : 1448.5377
Integration start scan : 2007 Integration stop scan: 2121
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

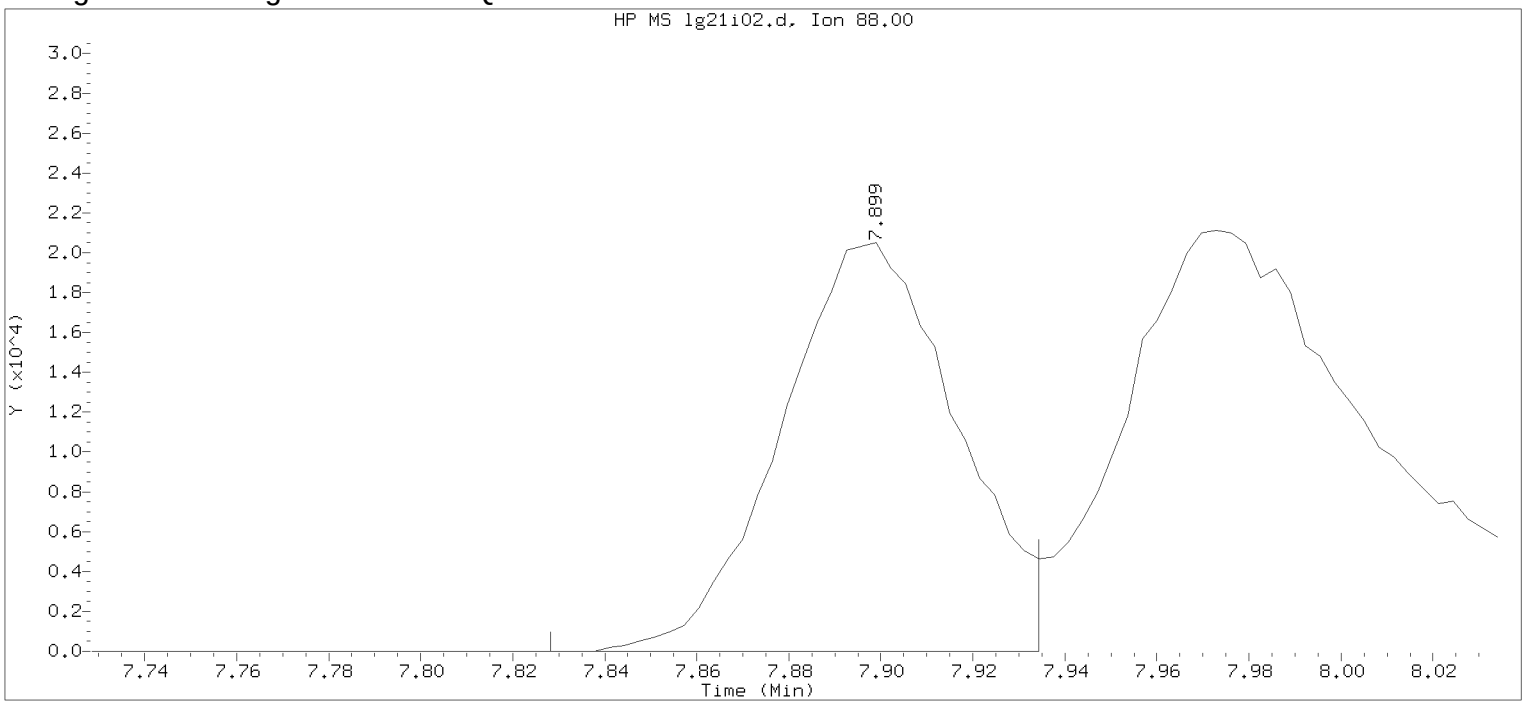
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
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Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1996
Retention Time (minutes): 7.899
Quant Ion : 88.00
Area : 54240
On-column Amount (ng) : 782.6587
Integration start scan : 1973 Integration stop scan: 2006
Y at integration start : 0 Y at integration end: 0

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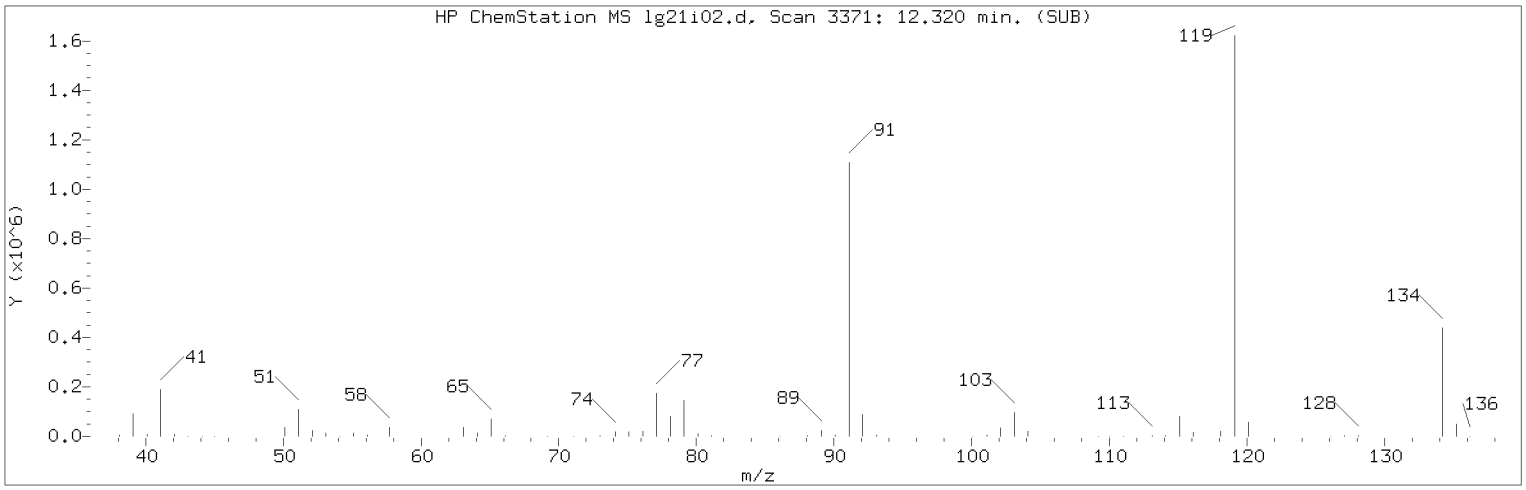
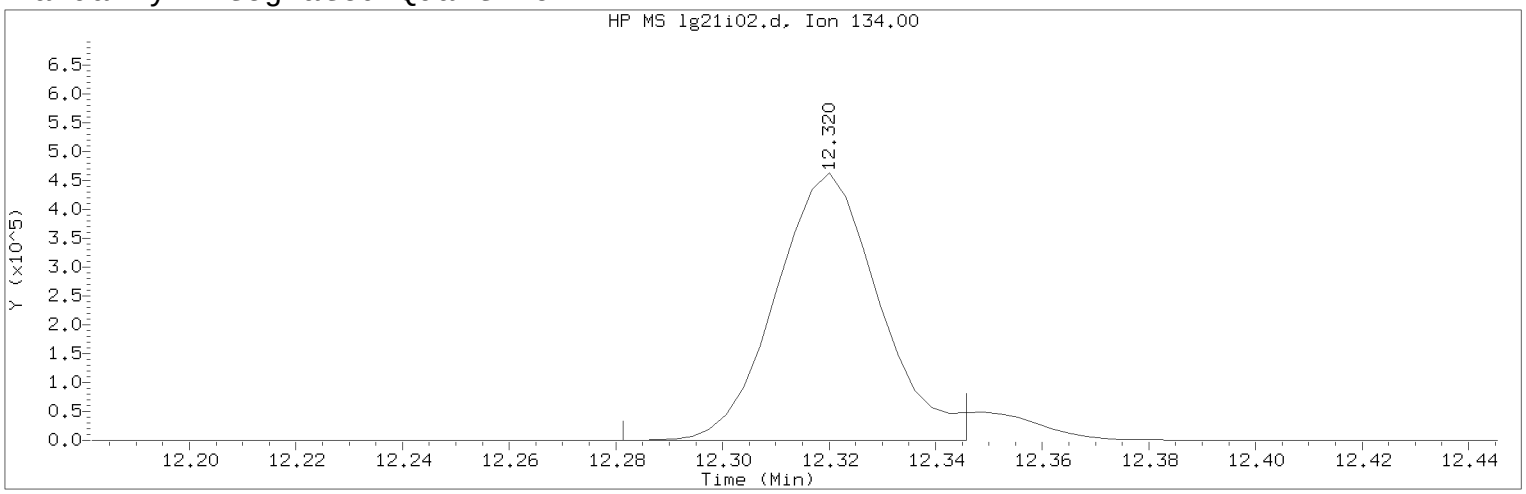
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

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Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

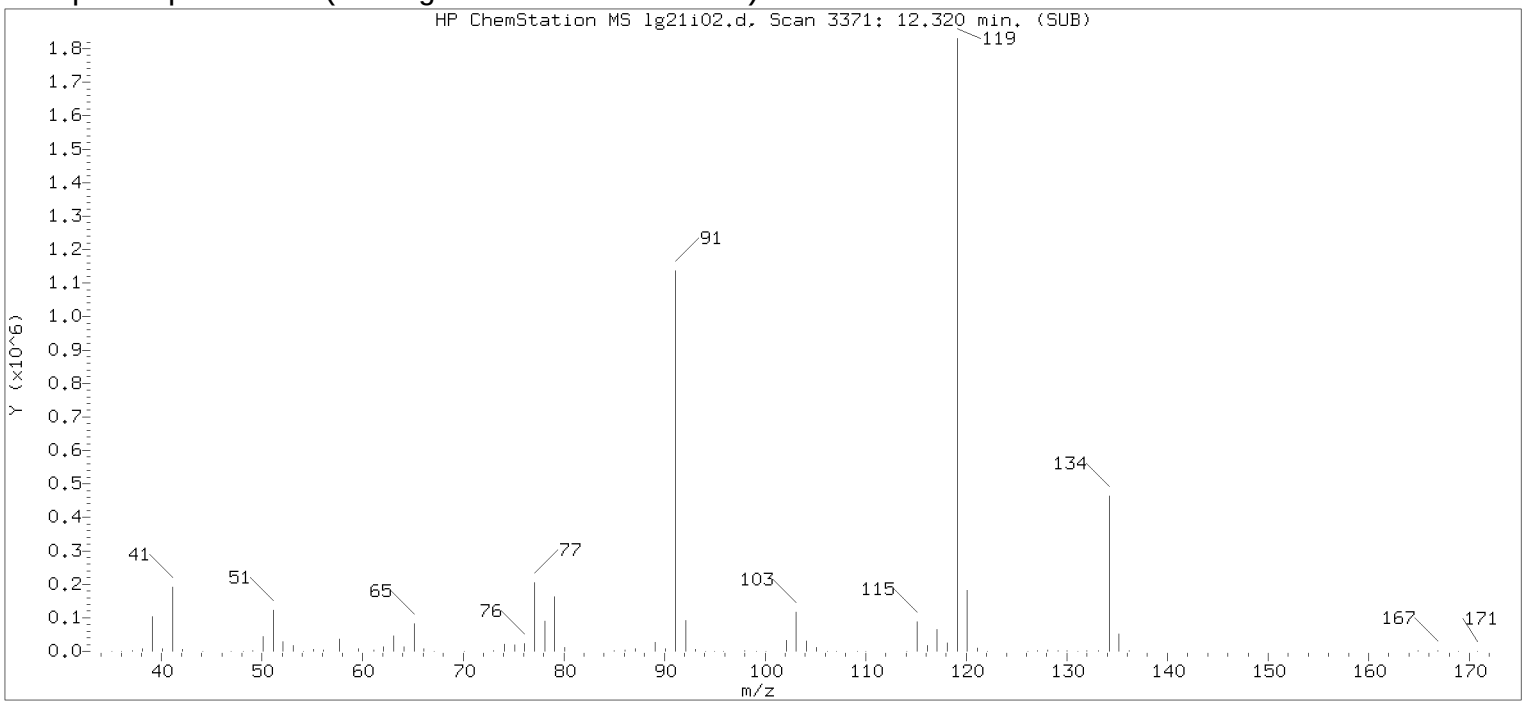
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 622580M
On-Column Amount (ng) : 104.2632
Integration start scan : 3358 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

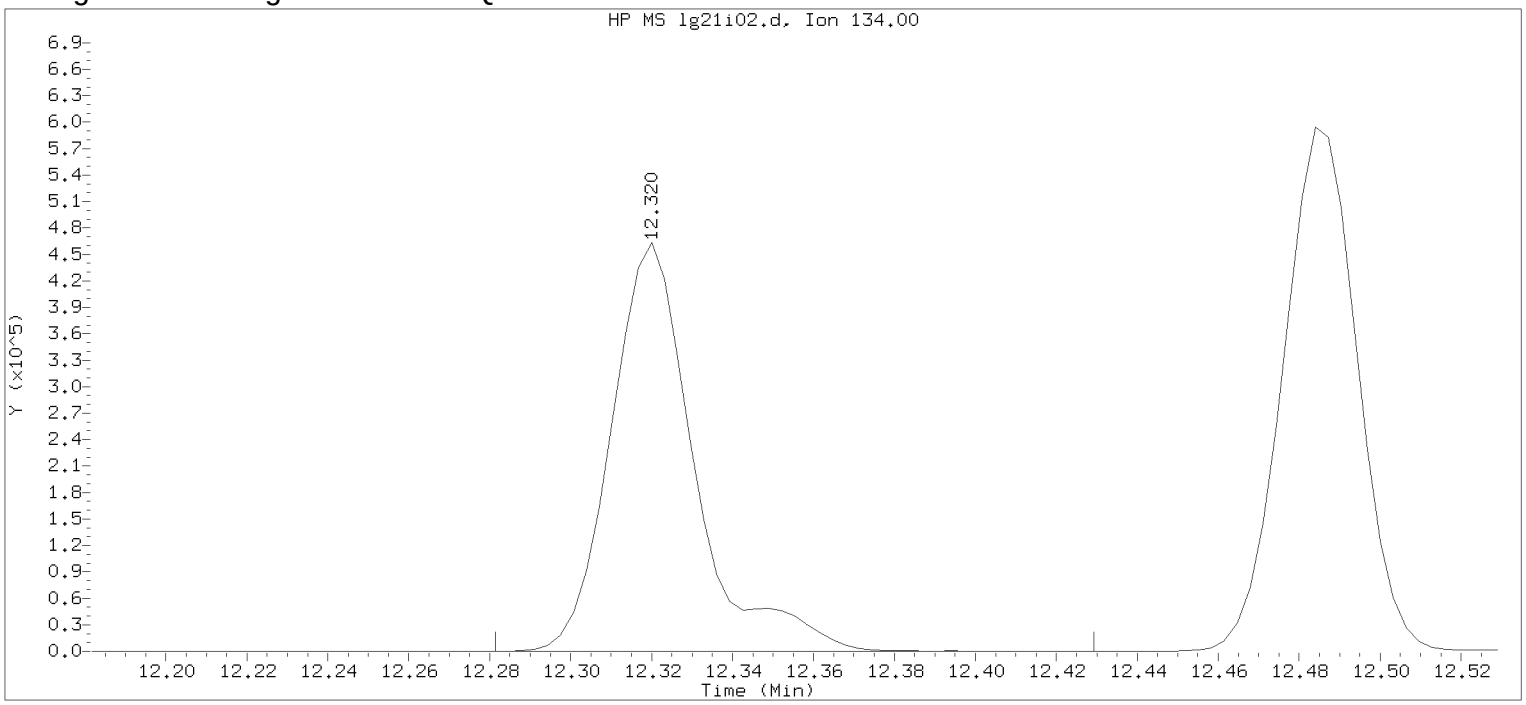
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 663714
On-column Amount (ng) : 102.7900
Integration start scan : 3358 Integration stop scan: 3404
Y at integration start : 0 Y at integration end: 0

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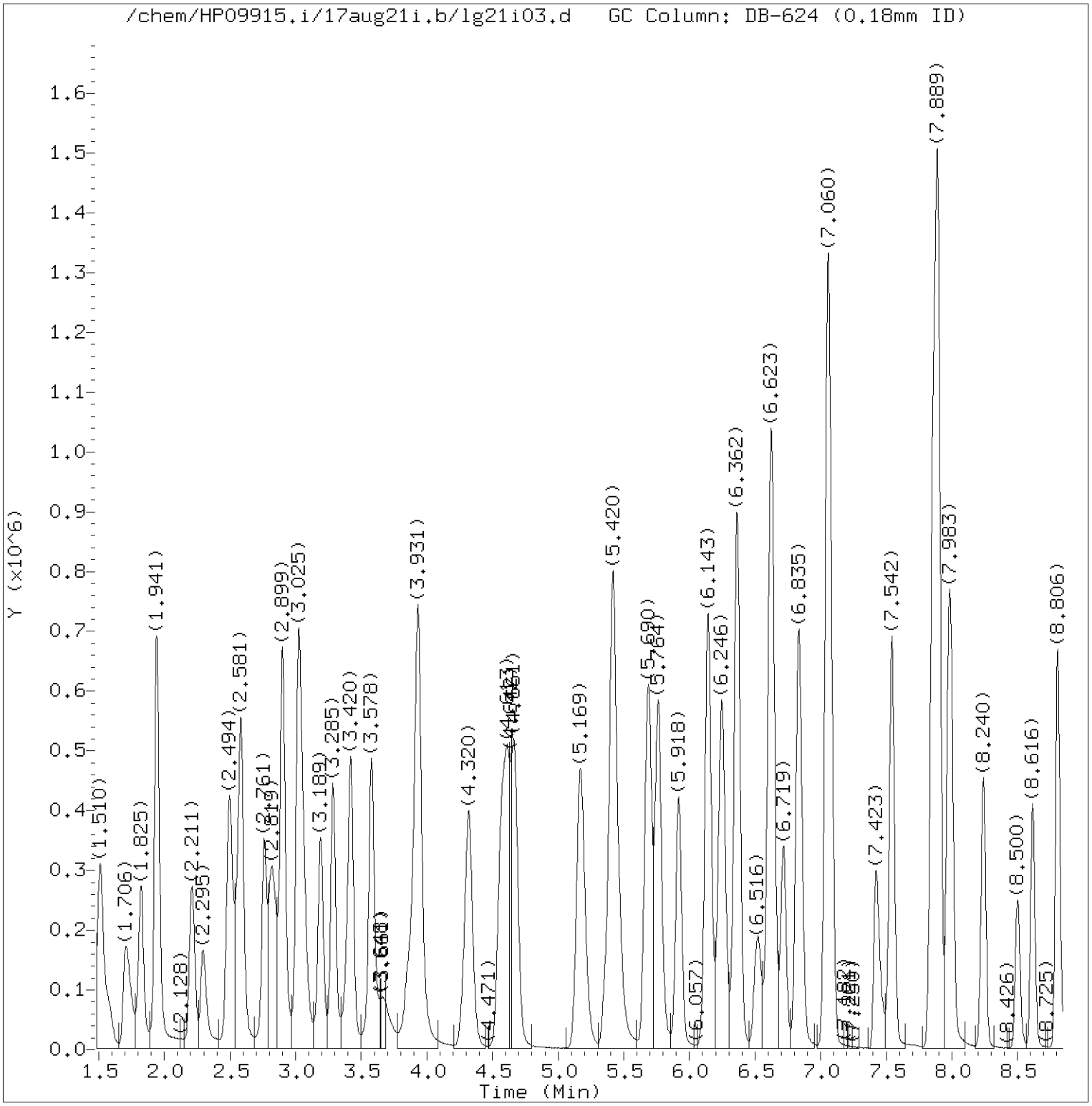
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

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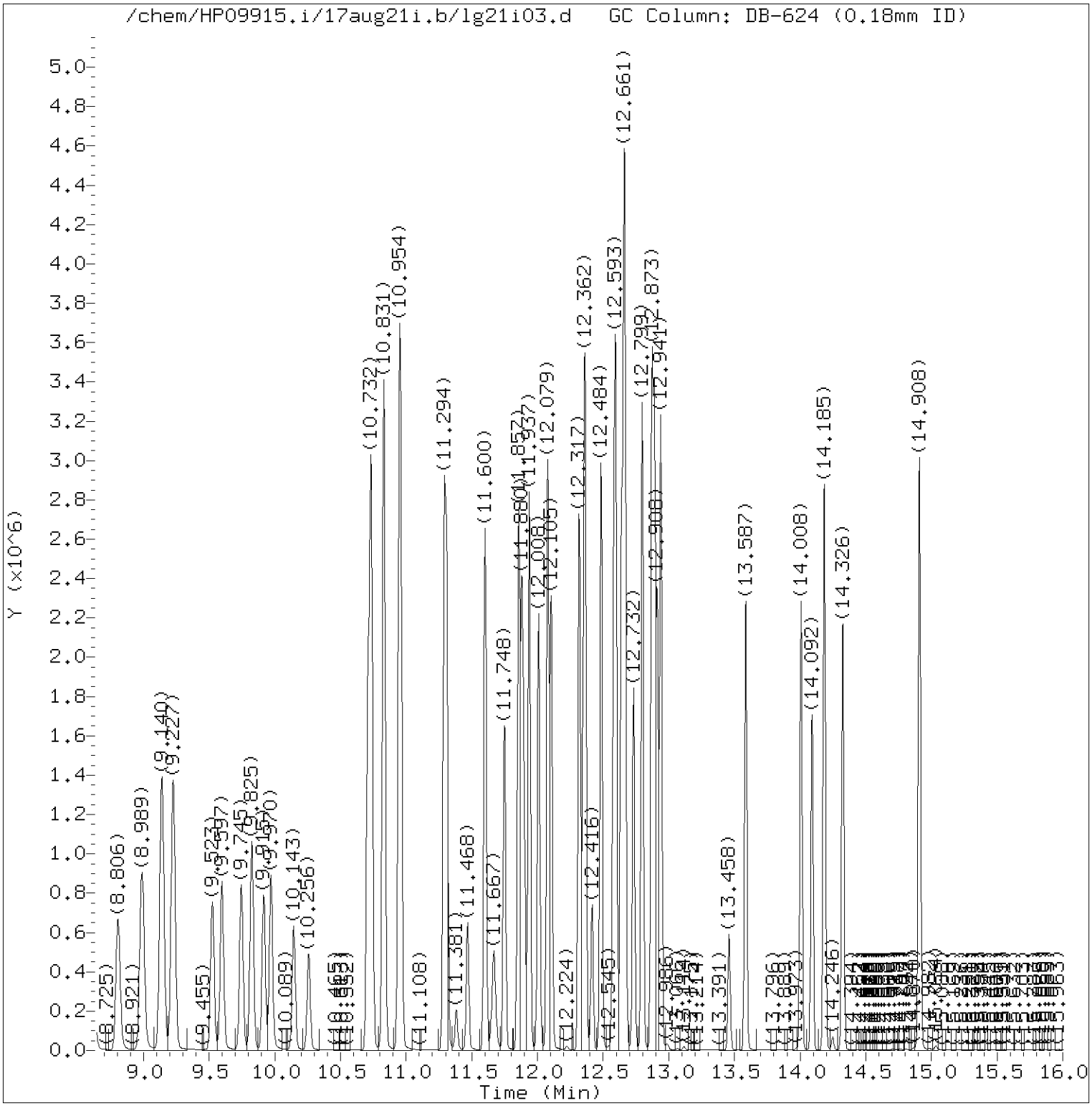
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 436839 | 50.767 |
| 4) Chloromethane | (2) | 1.825 | 50 | 396740 | 49.601 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 399944 | 50.431 |
| 5) 1,3-Butadiene | (2) | 1.944 | 39 | 282420 | 53.551 |
| 8) Bromomethane | (2) | 2.211 | 94 | 289233 | 52.380 |
| 9) Chloroethane | (2) | 2.295 | 64 | 218327 | 50.161 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 469892 | 48.464 |
| 12) Trichlorofluoromethane | (2) | 2.552 | 101 | 506952 | 50.343 |
| 11) n-Pentane | (2) | 2.587 | 43 | 438616 | 52.553 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 264070 | 51.990 |
| 15) Freon 123a | (2) | 2.816 | 67 | 324237 | 49.736 |
| 16) Acrolein | (1) | 2.899 | 56 | 926042 | 486.398 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 256234 | 50.689 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 119484 | 50.517 |
| 18) Acetone | (1) | 3.041 | 58 | 76036 | 99.354 |
| 19) Freon 113 | (2) | 3.050 | 101 | 285842 | 52.545 |
| 21) 2-Propanol | (1) | 3.172 | 45 | 135837 | 264.213 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 534112 | 50.722 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 888066 | 51.343 |
| 27) Methyl Acetate | (2) | 3.388 | 43 | 297035 | 51.813 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 424615 | 51.374 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 258273M | 250.000 |
| 28) Methylene Chloride | (2) | 3.578 | 84 | 301239 | 50.672 |
| 30) t-Butyl alcohol | (1) | 3.674 | 59 | 253602 | 264.356 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 158250 | 50.020 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 953365 | 51.551 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 299953 | 50.492 |
| 34) n-Hexane | (2) | 4.320 | 57 | 443201 | 52.750 |
| 36) 1,1-Dichloroethane | (2) | 4.562 | 63 | 514205 | 50.903 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 921880 | 51.486 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 455052 | 51.260 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 934276 | 51.483 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 403757 | 100.079 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 341128 | 50.693 |
| 45) 2,2-Dichloropropane | (2) | 5.426 | 77 | 444985 | 55.413 |
| 47) Propionitrile | (1) | 5.462 | 54 | 311223 | 247.959 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 453833 | 129.414 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 180418 | 50.608 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 116361 | 97.584 |
| 51) Chloroform | (2) | 5.918 | 83 | 528693 | 51.328 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 334948 | 49.844 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 342720 | 49.859 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 494021 | 49.035 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 641081 | 101.185 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 524378 | 52.605 |
| 54) Cyclohexane | (2) | 6.243 | 84 | 464439 | 52.728 |
| 54) Cyclohexane | (2) | 6.253 | 69 | 164765 | 52.199 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 410323 | 52.101 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 419212 | 51.708 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 201401 | 622.844 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 81053 | 49.655 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 65 | 380246 | 50.222 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 52164 | 49.902 |
| 60) Benzene | (2) | 6.629 | 78 | 1207027 | 50.965 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 415389 | 50.939 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 98 | 40845 | 50.541 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 973284 | 51.830 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1319240 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 455090 | 53.311 |
| 69) n-Butanol | (1) | 7.423 | 56 | 348979 | 1254.732 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 325351 | 50.468 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 565141 | 53.023 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 264947 | 52.736 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 314153 | 51.410 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 56129M | 798.113 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 294477 | 54.285 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 223421 | 51.442 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 415225 | 52.168 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 222909 | 102.002 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 248293 | 52.081 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 521217 | 51.880 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 874231 | 101.278 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1297905 | 49.903 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 854383 | 49.950 |
| 88) Toluene | (3) | 9.227 | 92 | 794671 | 50.915 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 486801 | 52.450 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.597 | 69 | 519885 | 52.124 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 309284 | 51.075 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 358242 | 51.207 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 504118 | 51.165 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 639605 | 101.241 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1008018 | 104.330 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 361740 | 53.049 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 353721 | 51.815 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1045640 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 456706 | 51.907 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 937280 | 51.373 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 340226 | 52.465 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1563820 | 52.056 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 1265885 | 104.245 |
| 107) o-Xylene | (3) | 11.291 | 106 | 635681 | 52.082 |
| 109) Styrene | (3) | 11.307 | 104 | 1077690 | 52.724 |
| 110) Bromoform | (3) | 11.468 | 173 | 275033 | 53.543 |
| 111) Isopropylbenzene | (3) | 11.600 | 105 | 1614868 | 52.622 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 212881A | 749.302 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 497221 | 50.027 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 432616 | 50.283 |
| 108) Xylene (Total) | (3) | | 106 | 1901566 | 156.326 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 516173 | 51.968 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 433747 | 51.503 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 344305 | 131.152 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 154193 | 51.030 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 1866710 | 52.859 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 398722 | 52.032 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 1403723 | 52.825 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 416517 | 52.015 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 300382M | 49.638 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 262838 | 53.200 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 1444764 | 52.829 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 1771298 | 53.614 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580 | 146 | 829534 | 52.288 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1579787 | 53.595 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 571675 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 859334 | 52.477 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 1491620 | 52.513 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 1102283 | 53.688 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 939382 | 52.495 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 974263 | 52.329 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 772200 | 53.711 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 823480 | 52.259 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 781151 | 52.397 |
| 141) Diethylbenzene (total) | (4) | | 100 | 2694796 | 157.220 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 116905 | 53.535 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 616596 | 51.880 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 603519 | 51.786 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 259818 | 52.627 |
| 148) Naphthalene | (4) | 14.185 | 128 | 1937926 | 52.651 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 573688 | 51.671 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 1265774 | 51.924 |



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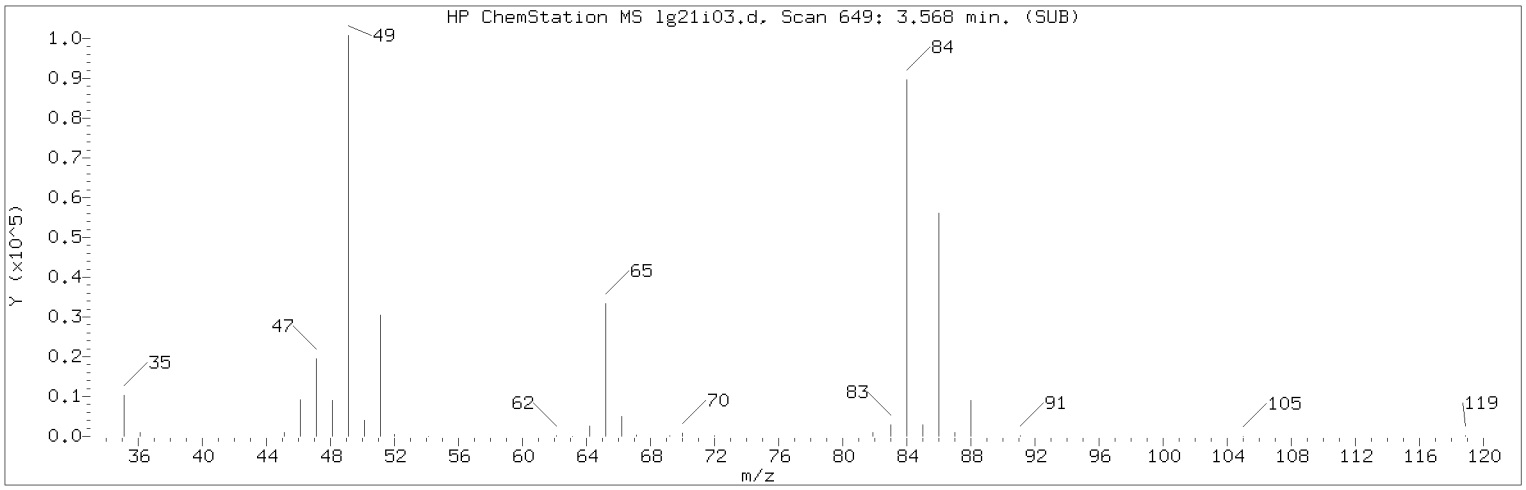
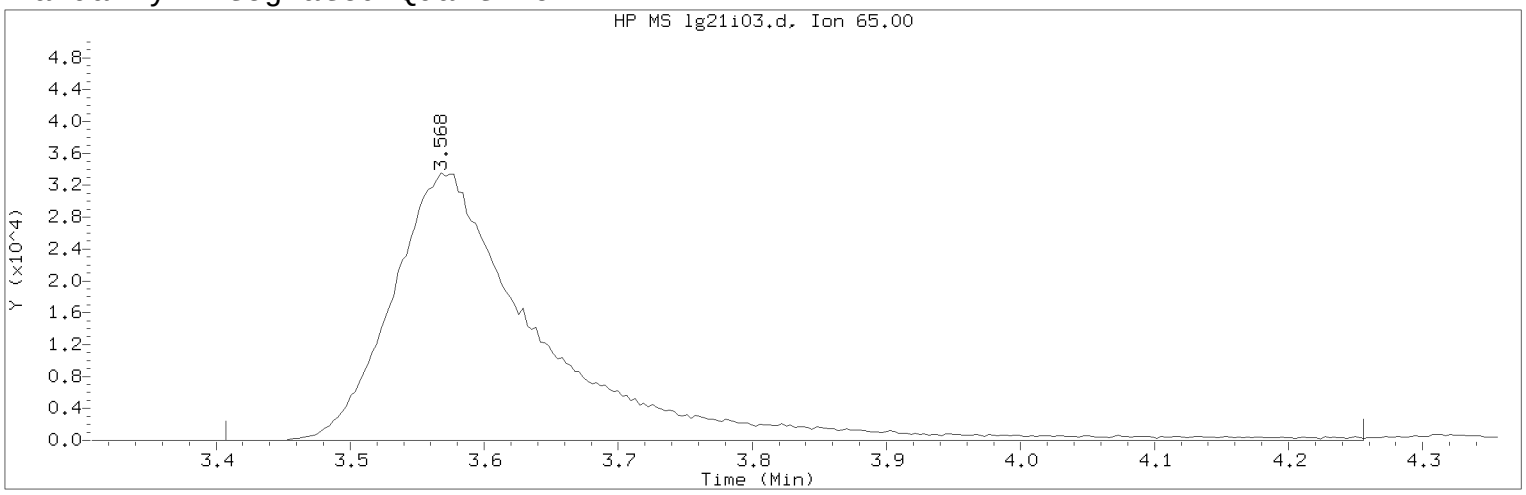
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

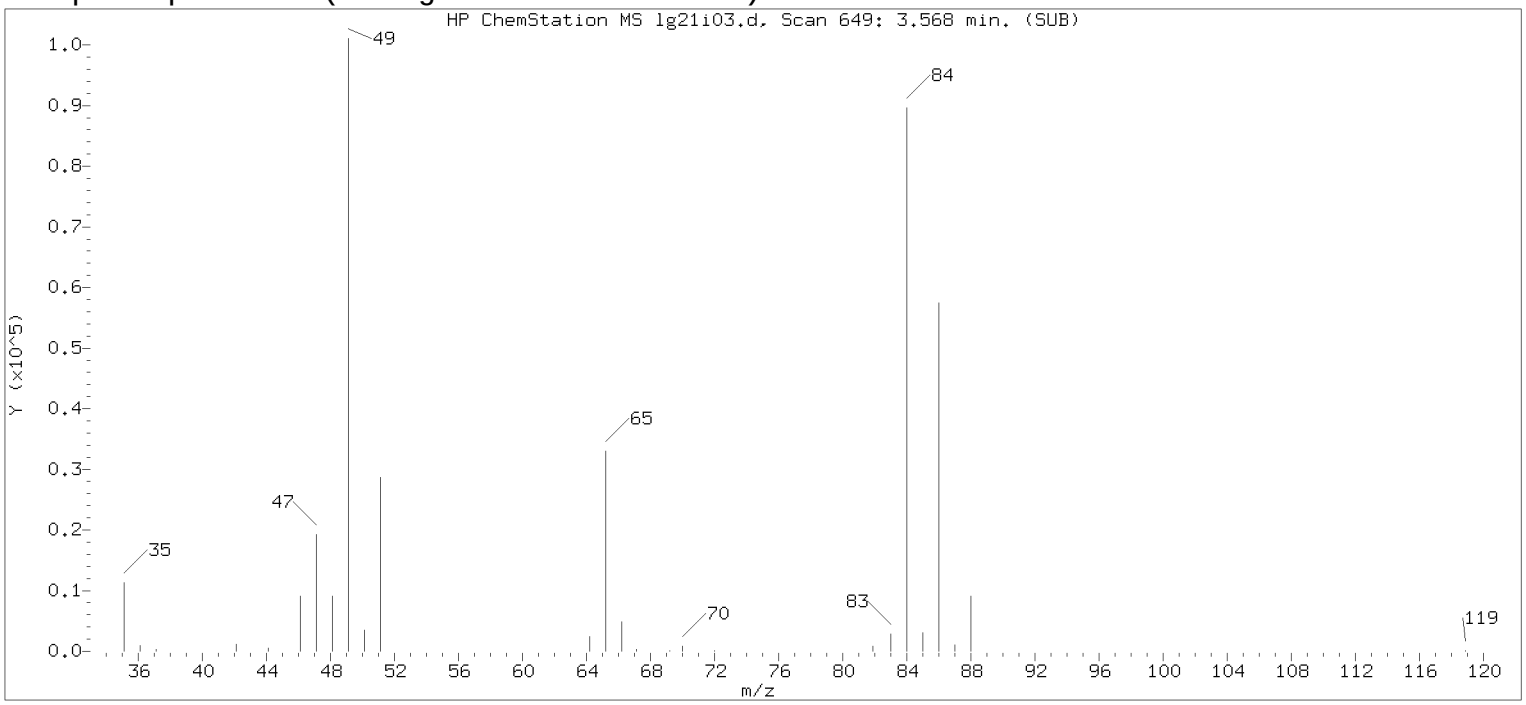
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 649
Retention Time (minutes): 3.568
Quant Ion : 65.00
Area (flag) : 258273M
On-Column Amount (ng) : 250.0000
Integration start scan : 598 Integration stop scan: 862
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

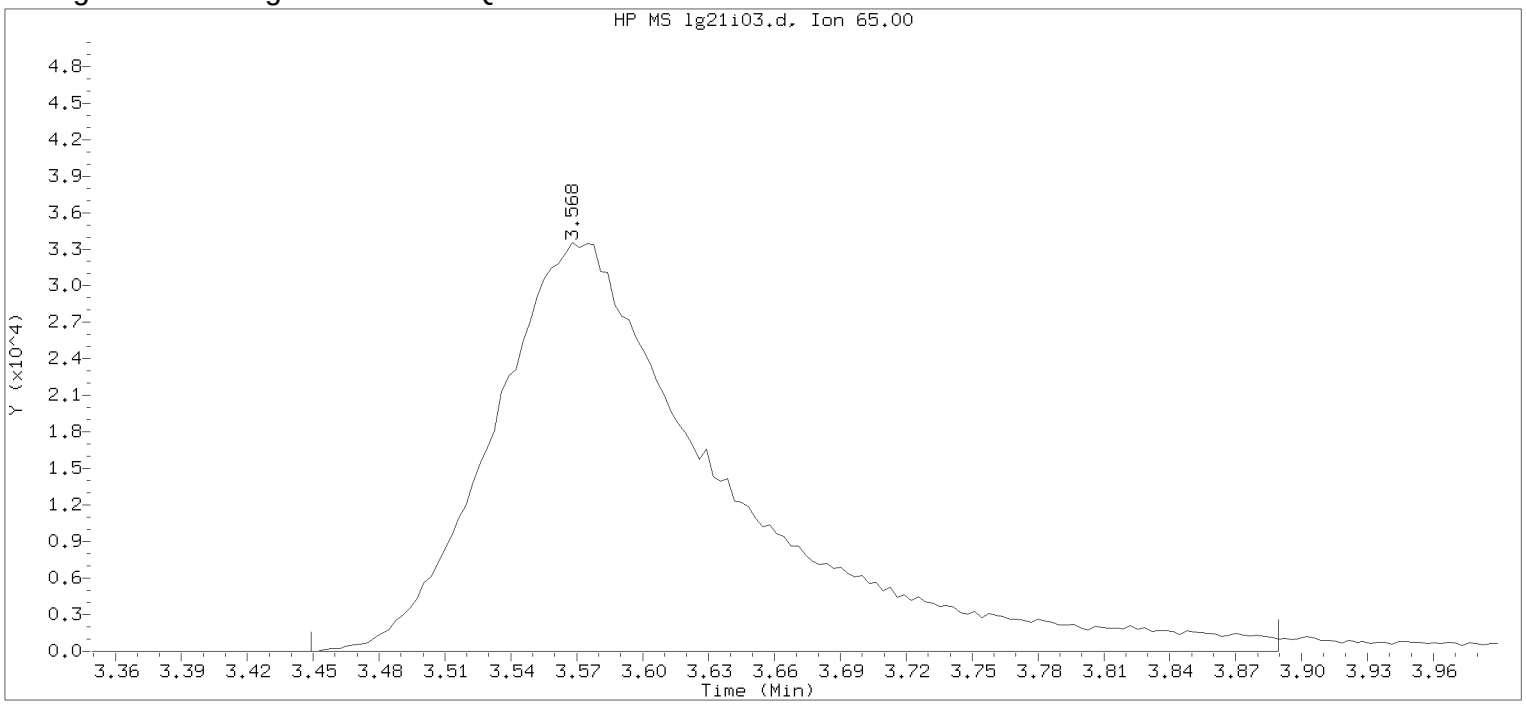
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

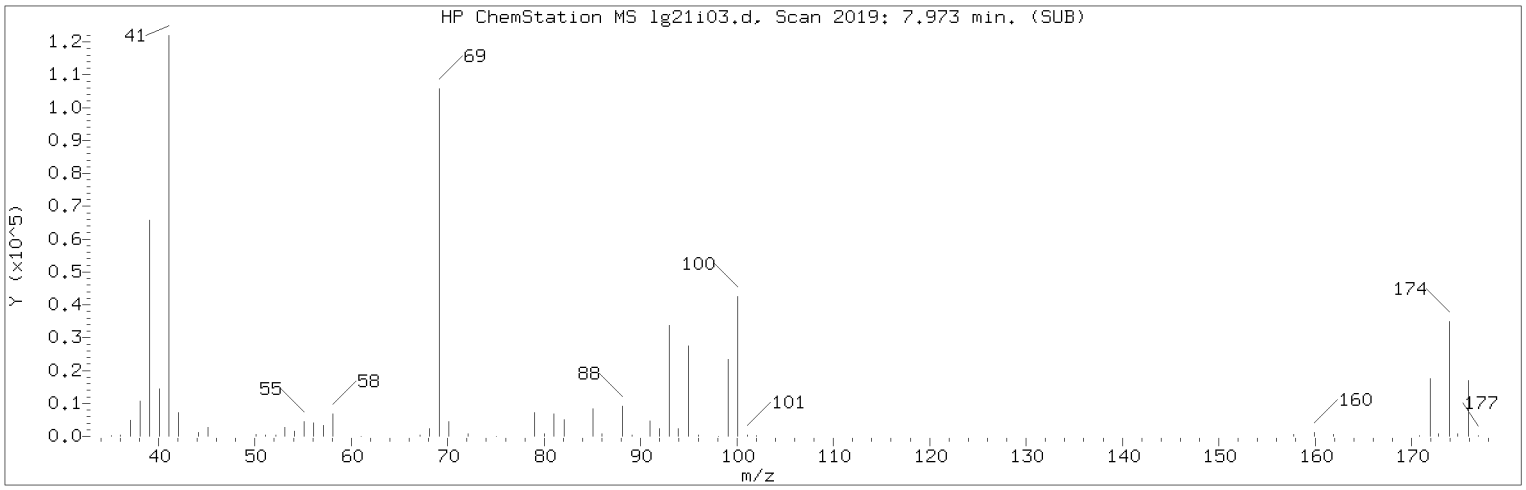
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 10:42
Date, time and analyst ID of latest file update: 21-Aug-2017 10:42 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

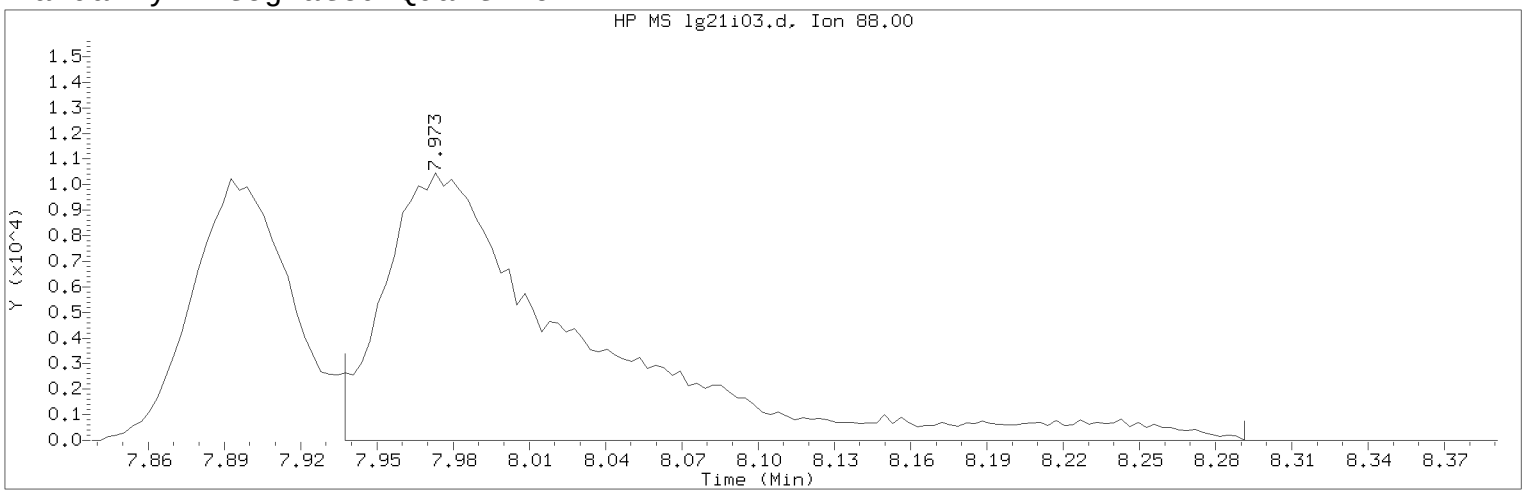
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 649
Retention Time (minutes): 3.568
Quant Ion : 65.00
Area : 246821
On-column Amount (ng) : 250.0000
Integration start scan : 611 Integration stop scan: 748
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

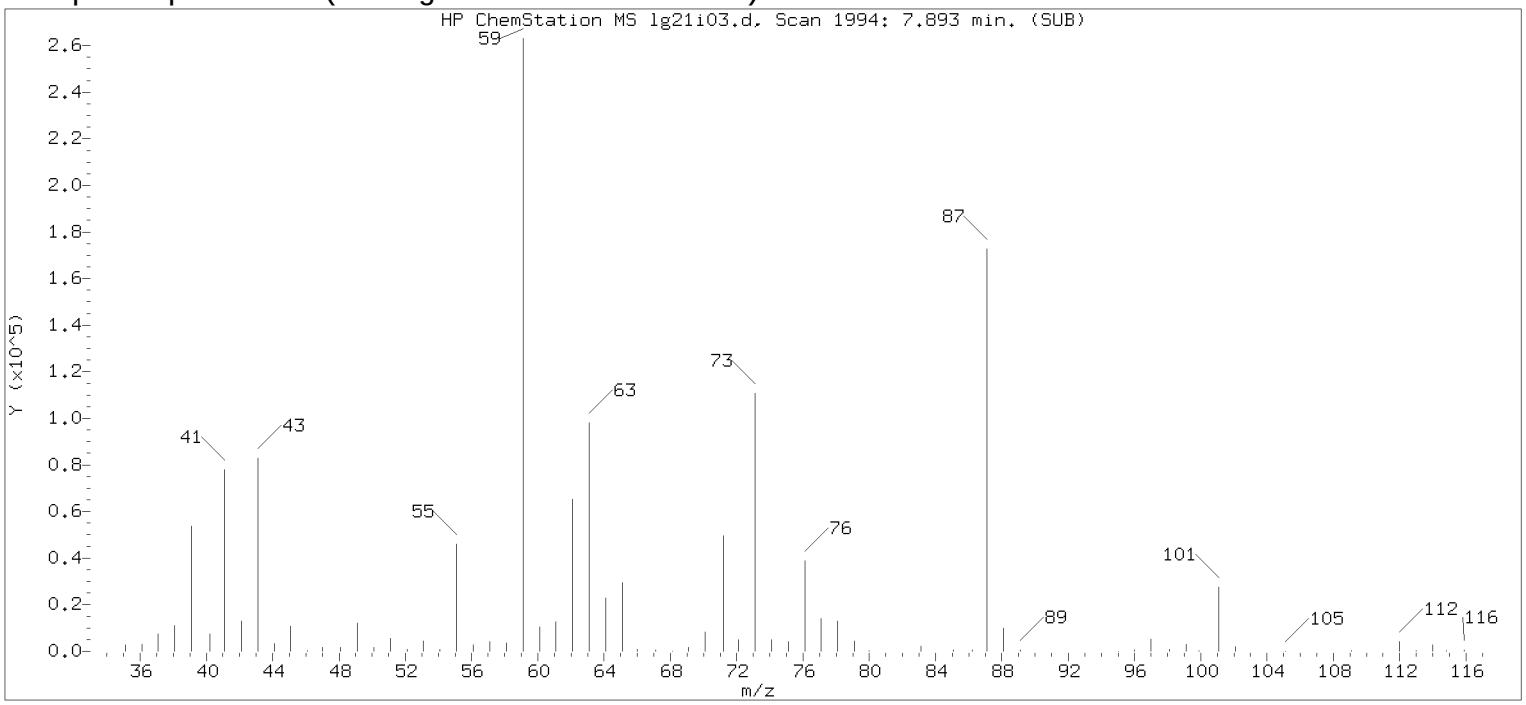
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 56129M
On-Column Amount (ng) : 798.1131
Integration start scan : 2007 Integration stop scan: 2117
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

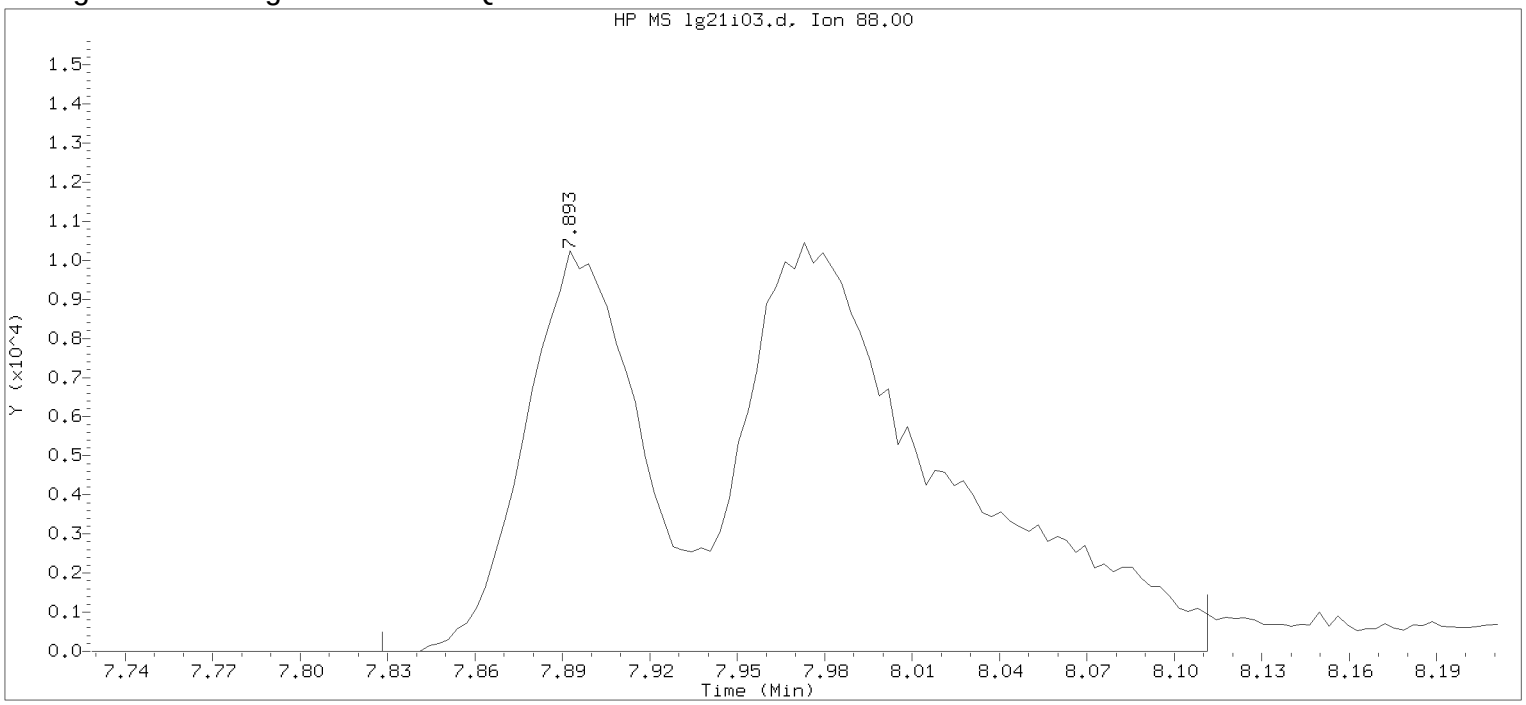
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 10:42
Date, time and analyst ID of latest file update: 21-Aug-2017 10:42 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1994
Retention Time (minutes): 7.893
Quant Ion : 88.00
Area : 76888
On-column Amount (ng) : 851.9555
Integration start scan : 1973 Integration stop scan: 2061
Y at integration start : 0 Y at integration end: 0

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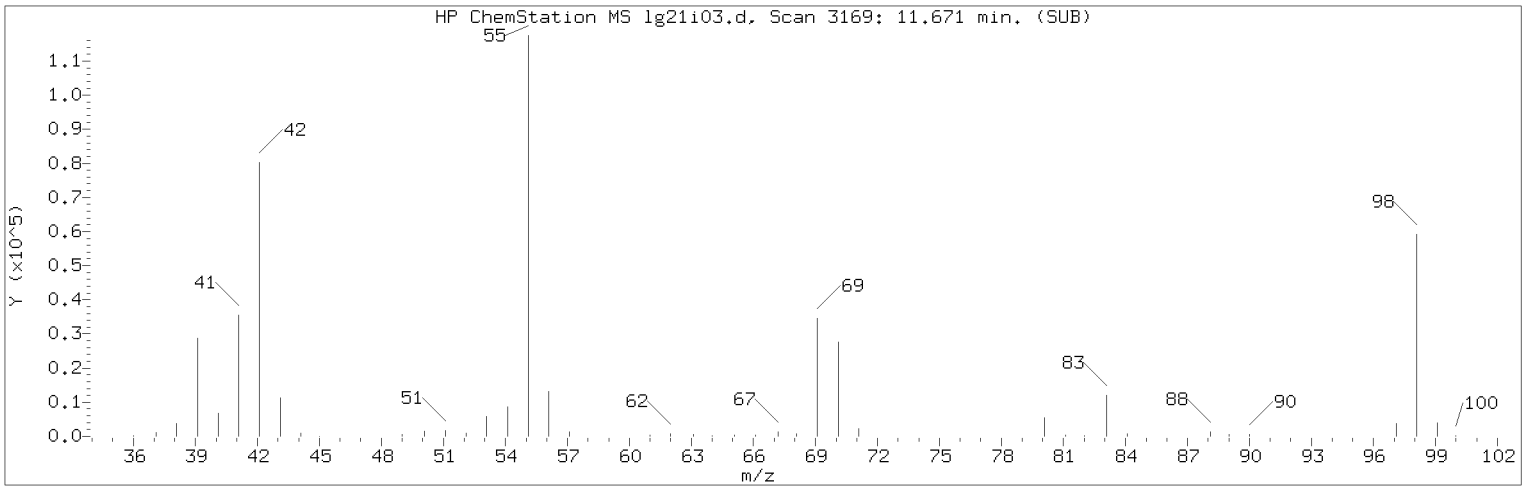
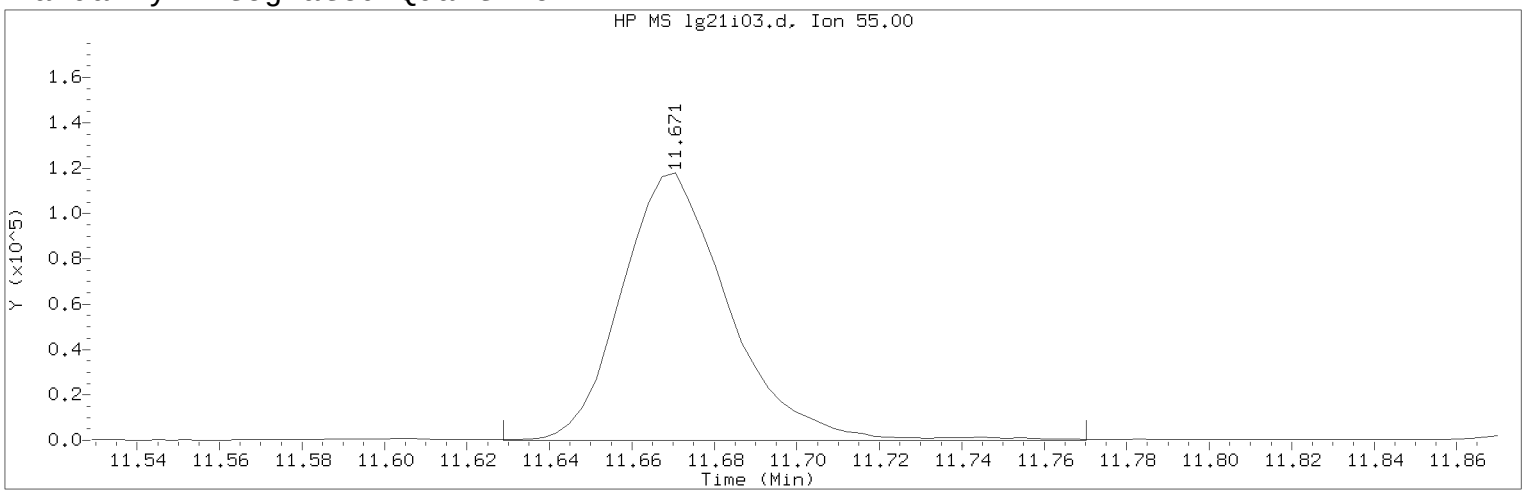
Target 3.5 esignature userKAS02648 RD194kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

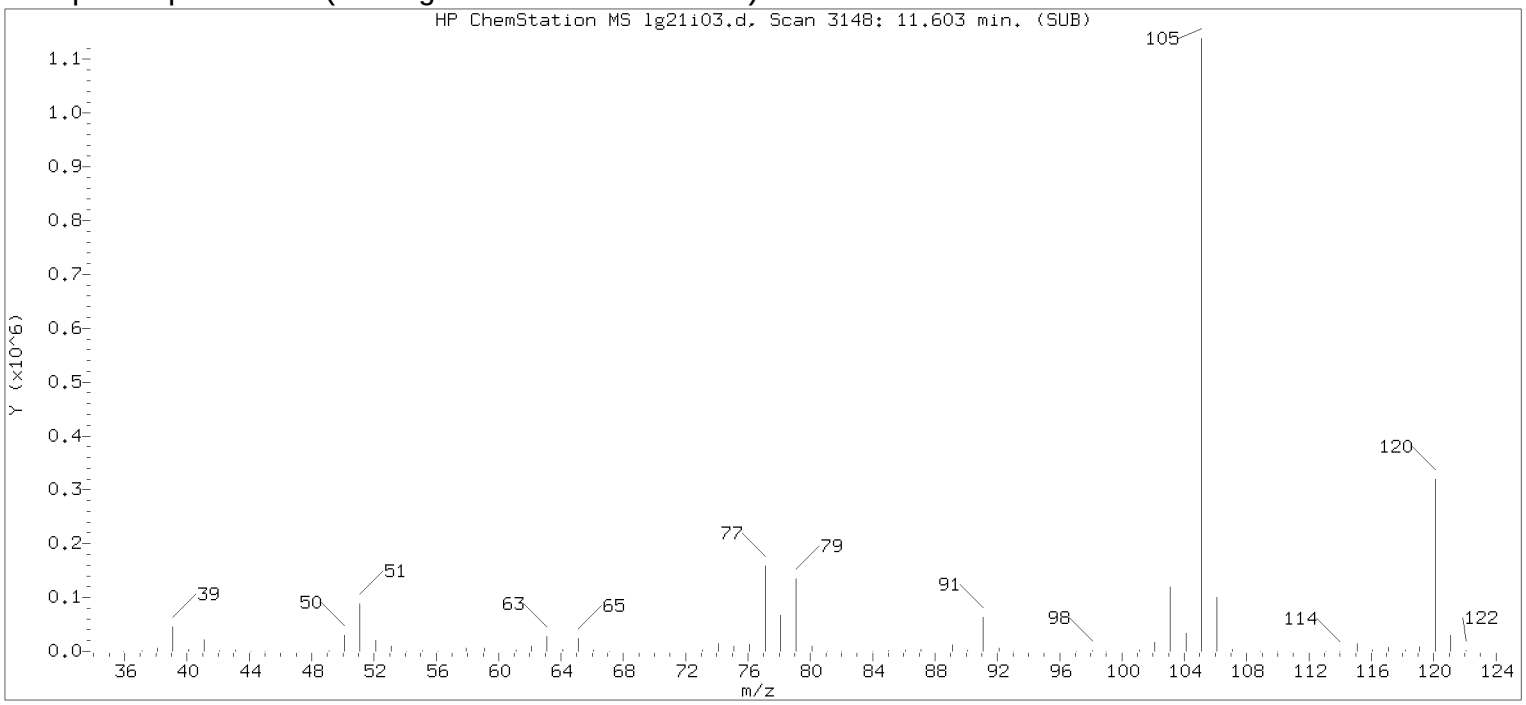
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3169
Retention Time (minutes): 11.671
Quant Ion : 55.00
Area (flag) : 212881A
On-Column Amount (ng) : 749.3015
Integration start scan : 3155 Integration stop scan: 3199
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

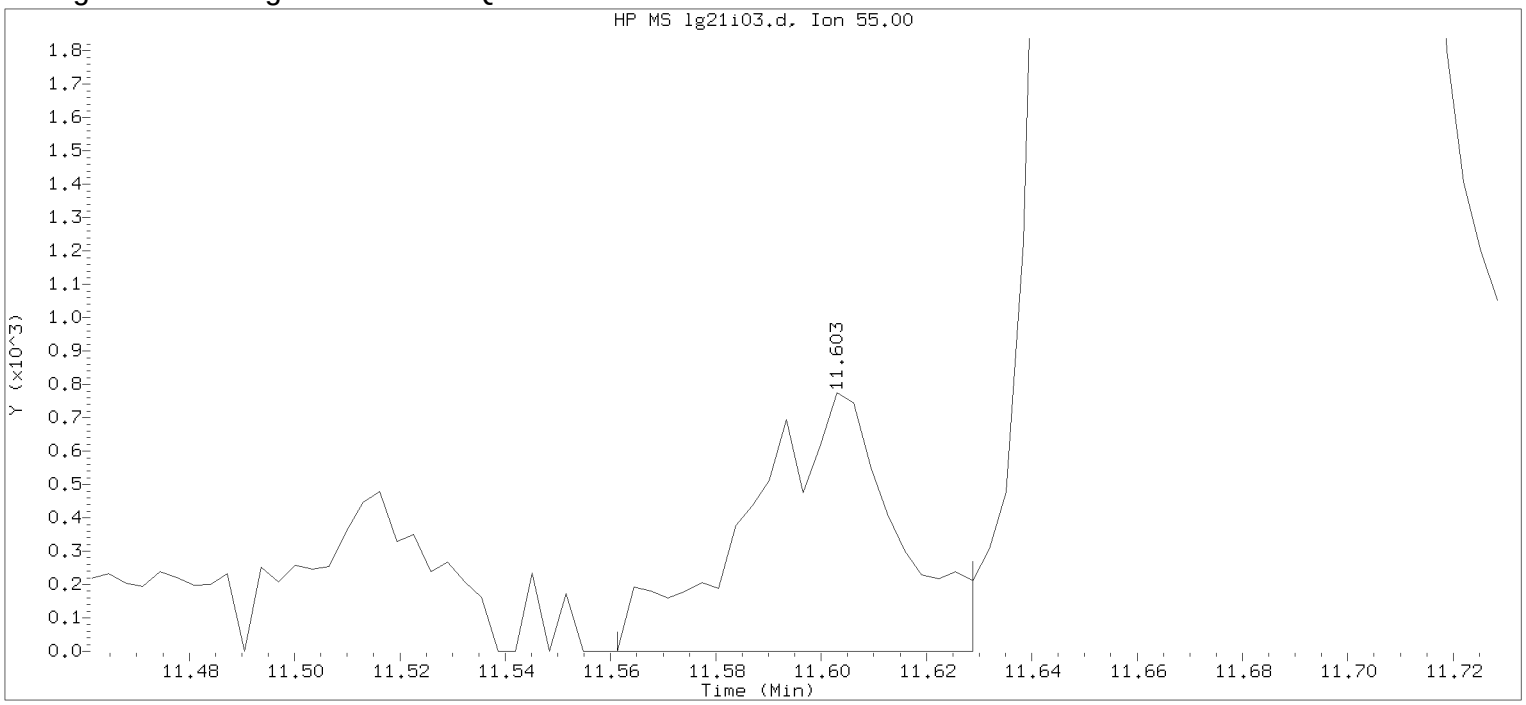
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 10:42
Date, time and analyst ID of latest file update: 21-Aug-2017 10:42 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3148
Retention Time (minutes): 11.603
Quant Ion : 55.00
Area : 1503
On-column Amount (ng) : 5.3606
Integration start scan : 3134 Integration stop scan: 3155
Y at integration start : 0 Y at integration end: 0

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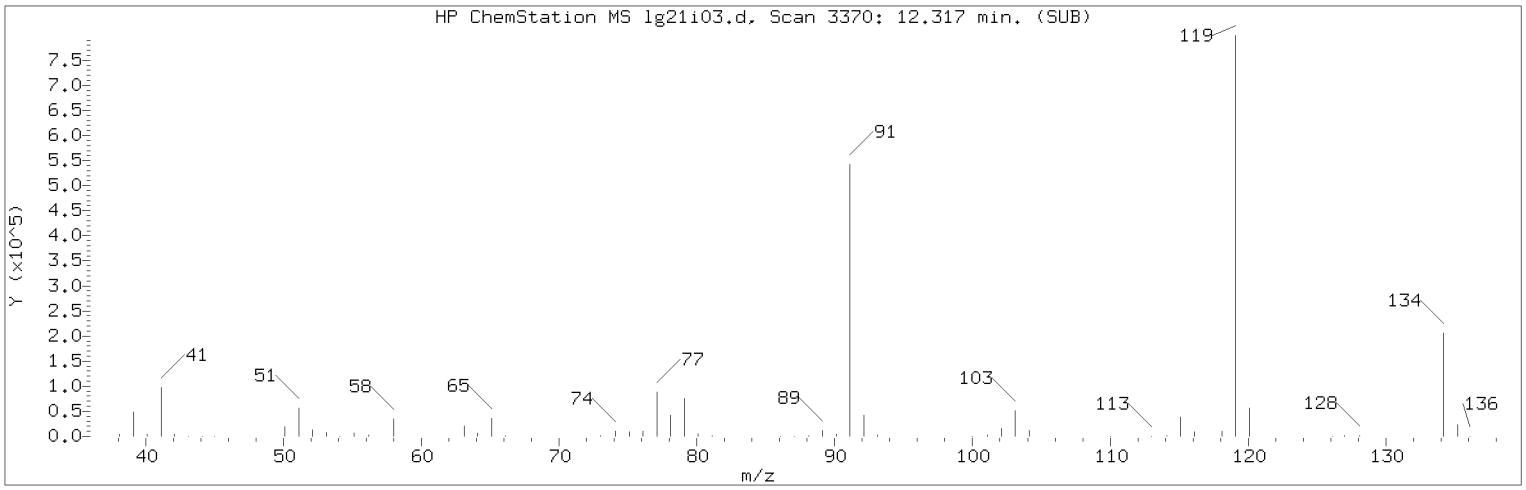
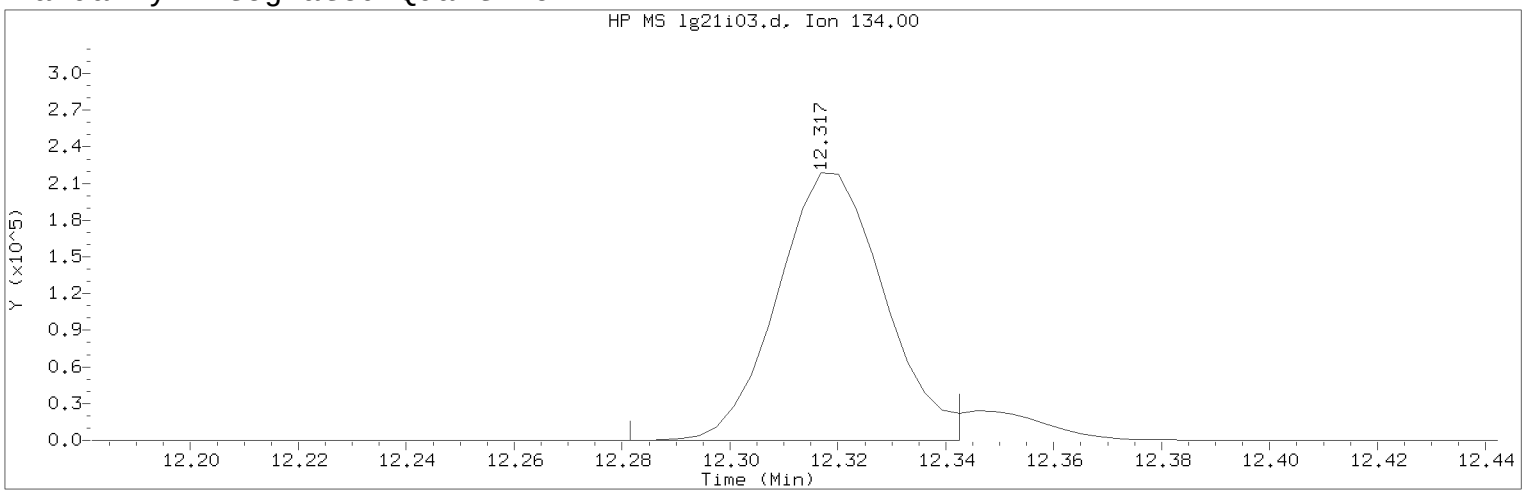
Target 3.5 esignature userKAS02648 Page 138 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

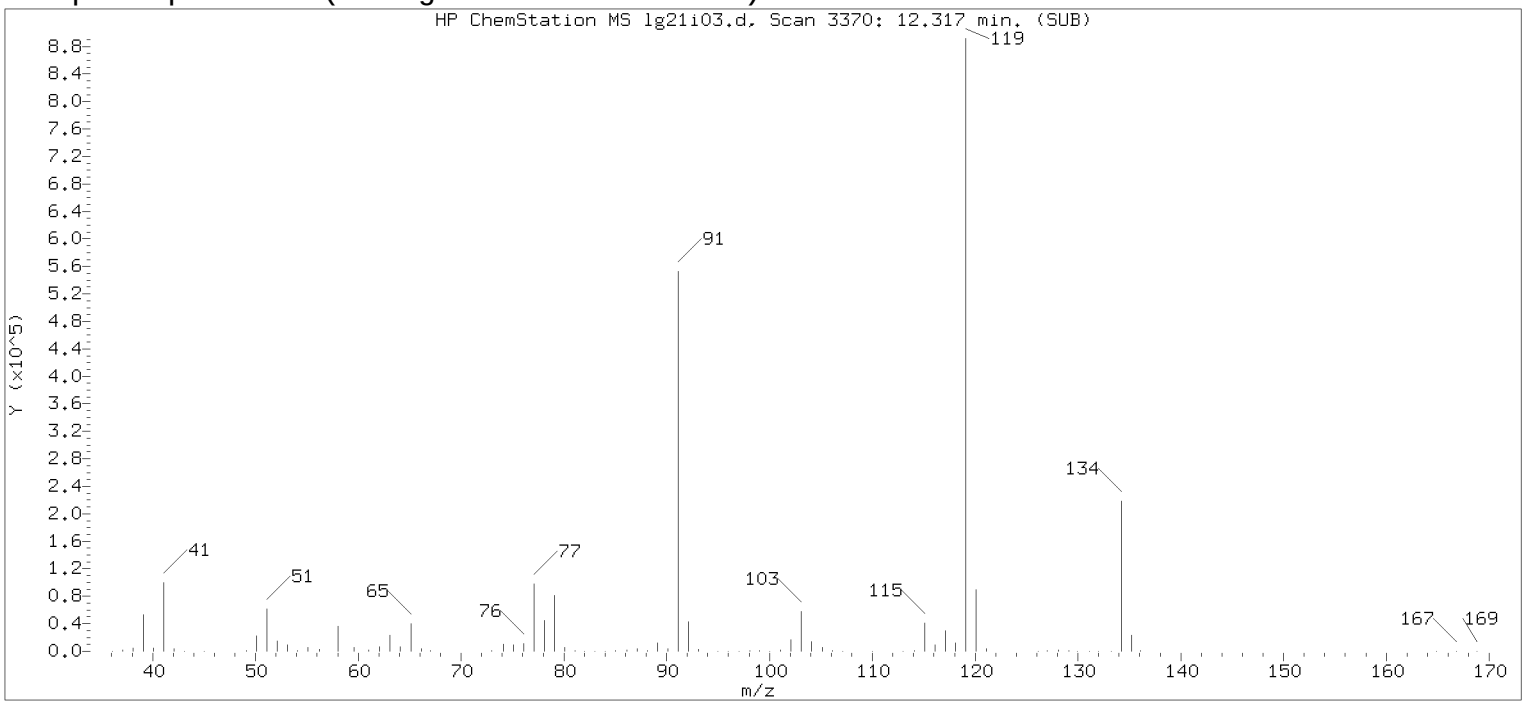
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area (flag) : 300382M
On-Column Amount (ng) : 49.6381
Integration start scan : 3358 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

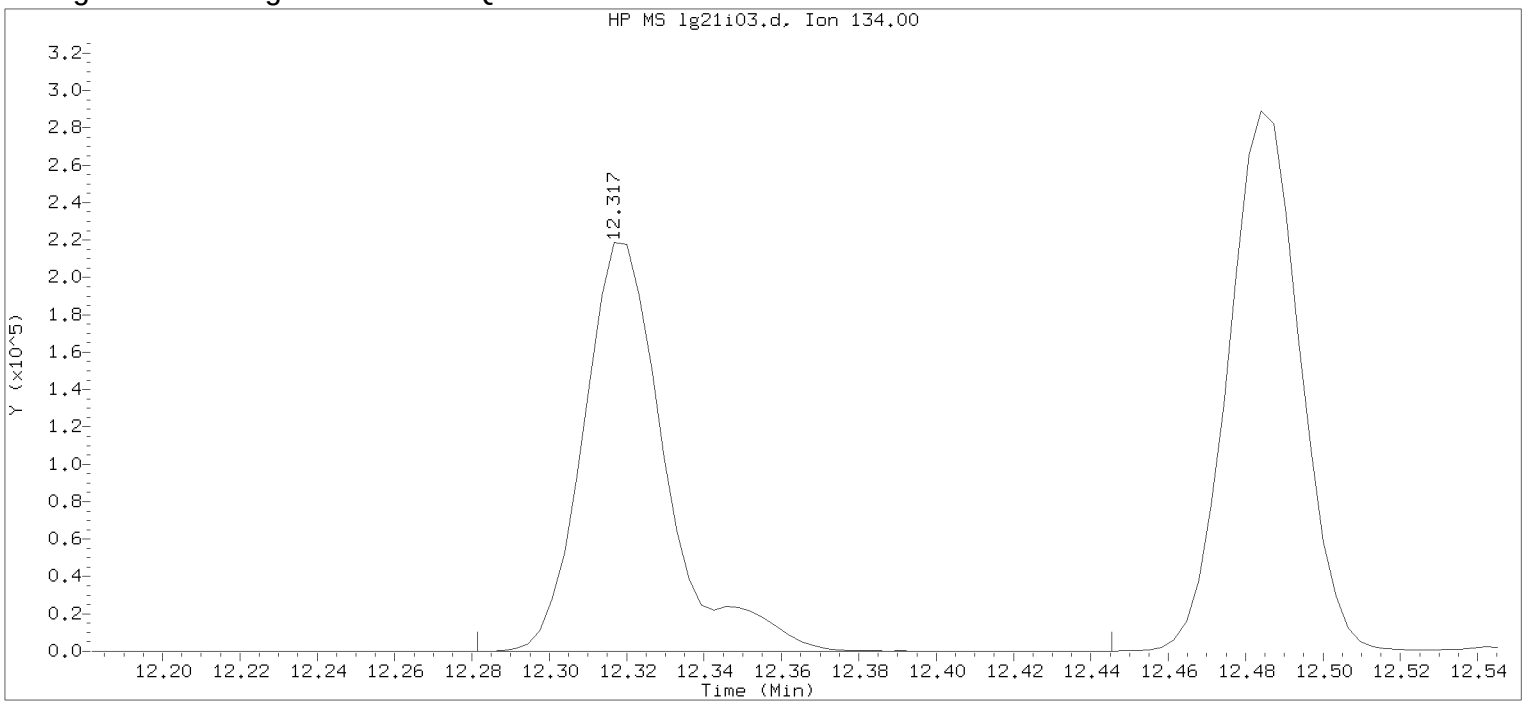
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

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Calibration date and time: 21-AUG-2017 10:42
Date, time and analyst ID of latest file update: 21-Aug-2017 10:42 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area : 323634
On-column Amount (ng) : 55.0966
Integration start scan : 3358 Integration stop scan: 3409
Y at integration start : 0 Y at integration end: 0

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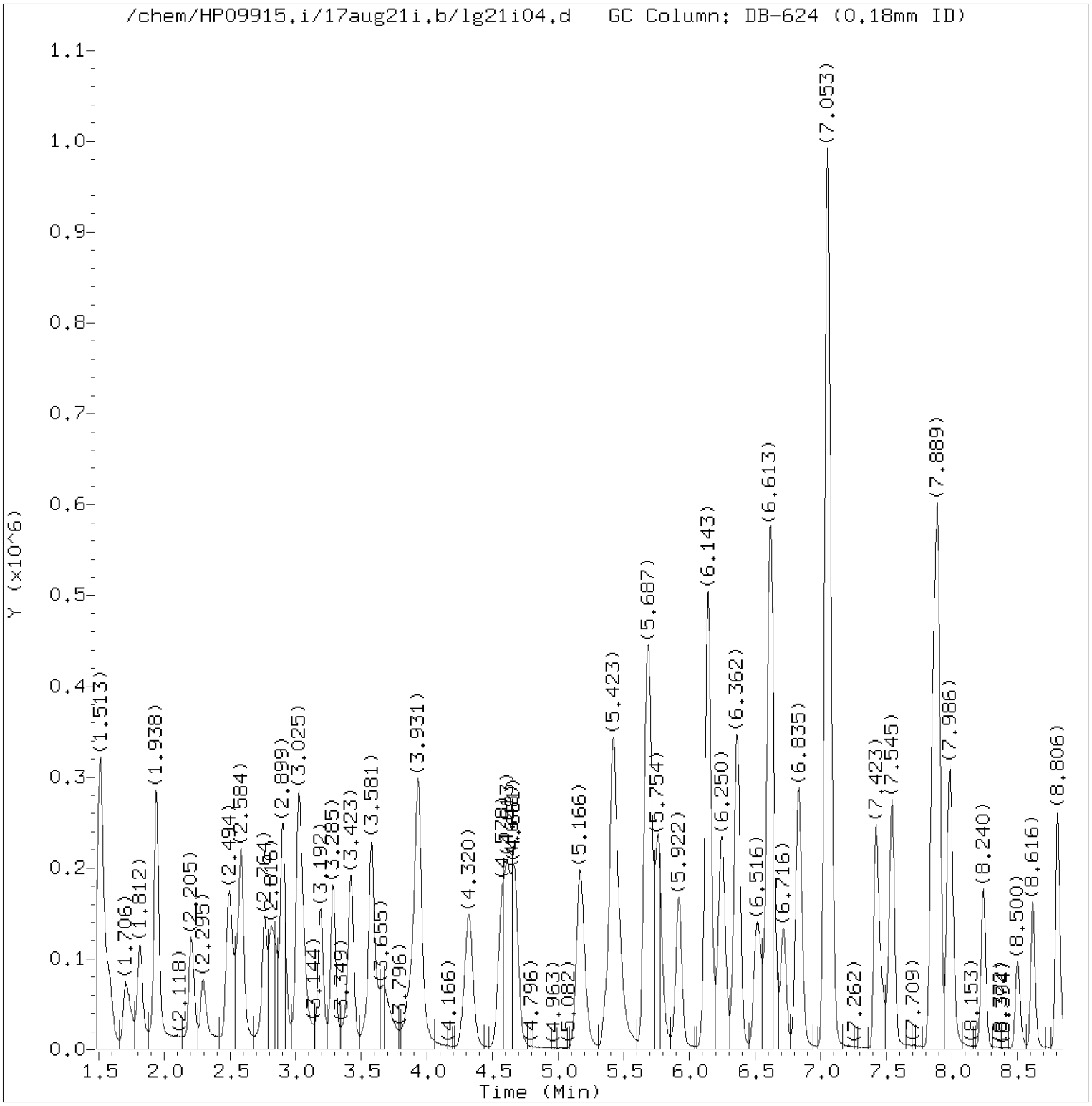
Target 3.5 esignature userKAS02648 Page 139




Total Ion Chromatogram (TIC)

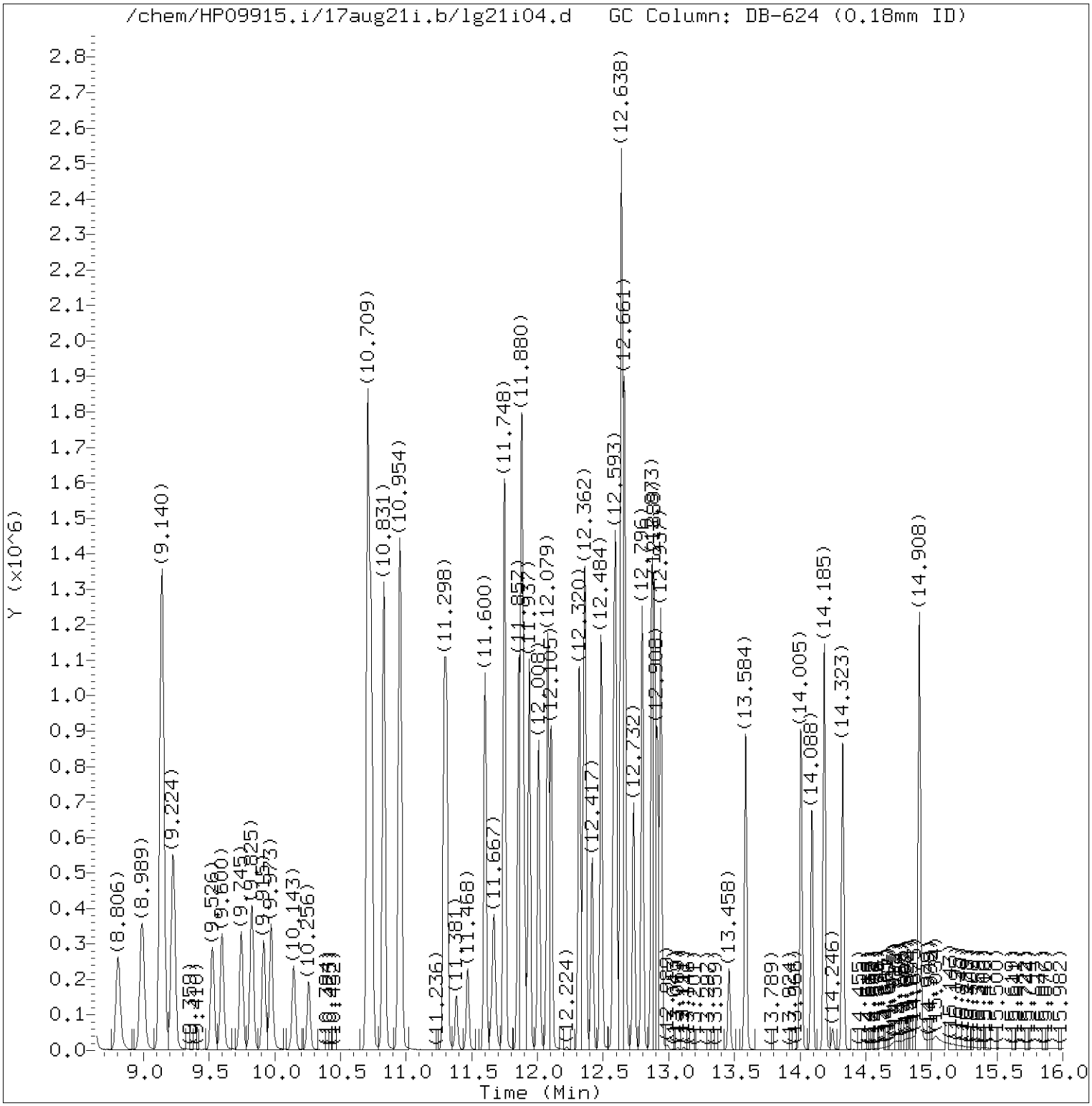
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
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Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 163676 | 19.428 |
| 4) Chloromethane | (2) | 1.812 | 50 | 158710 | 20.267 |
| 6) Vinyl Chloride | (2) | 1.928 | 62 | 155284 | 19.999 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 111876 | 21.667 |
| 8) Bromomethane | (2) | 2.205 | 94 | 117400 | 21.716 |
| 9) Chloroethane | (2) | 2.298 | 64 | 87589 | 20.554 |
| 10) Dichlorofluoromethane | (2) | 2.488 | 67 | 193958 | 20.432 |
| 12) Trichlorofluoromethane | (2) | 2.542 | 101 | 192622 | 19.538 |
| 11) n-Pentane | (2) | 2.587 | 43 | 175805 | 21.515 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 103713 | 20.856 |
| 15) Freon 123a | (2) | 2.816 | 67 | 130978 | 20.521 |
| 16) Acrolein | (1) | 2.906 | 56 | 364701 | 200.052 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 96 | 101522 | 20.513 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 63 | 48415 | 20.907 |
| 18) Acetone | (1) | 3.041 | 58 | 30532 | 41.672 |
| 19) Freon 113 | (2) | 3.050 | 101 | 111858 | 21.002 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 103981 | 211.229 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 214404 | 20.796 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 352477 | 20.814 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 113739 | 20.264 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 168876 | 20.869 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 249018M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 121514 | 20.877 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 212734 | 231.679 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 64129 | 20.703 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 381079 | 21.047 |
| 32) trans-1,2-Dichloroethene | (2) | 3.938 | 96 | 120984 | 20.801 |
| 34) n-Hexane | (2) | 4.314 | 57 | 174964 | 21.270 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 206180 | 20.847 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 366975 | 20.933 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 180559 | 20.775 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 376658 | 21.200 |
| 44) 2-Butanone | (2) | 5.378 | 43 | 160528 | 40.641 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 136110 | 20.659 |
| 45) 2,2-Dichloropropane | (2) | 5.423 | 77 | 178460 | 22.698 |
| 47) Propionitrile | (1) | 5.465 | 54 | 247245 | 205.742 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 353495 | 102.958 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 71507 | 20.487 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 45869 | 40.173 |
| 51) Chloroform | (2) | 5.922 | 83 | 210507 | 20.874 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 331218 | 50.343 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 338333 | 50.274 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 206722 | 20.957 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 257094 | 41.460 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 207526 | 21.264 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 183306 | 21.256 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 65076 | 21.058 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 158506 | 20.557 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 162709 | 20.499 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 161490 | 521.710 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 80041 | 50.084 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 371567 | 50.126 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 104 | 50799 | 49.636 |
| 60) Benzene | (2) | 6.632 | 78 | 483623 | 20.857 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 164958 | 20.661 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 98 | 16165 | 20.430 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 388253 | 21.118 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1291613 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 177475 | 21.235 |
| 69) n-Butanol | (1) | 7.423 | 56 | 276516 | 1038.407 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 130968 | 20.750 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 217075 | 20.802 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 101074 | 20.549 |
| 73) 1,2-Dichloropropane | (2) | 7.880 | 63 | 122999 | 20.559 |
| 75) 1,4-Dioxane | (1) | 7.970 | 88 | 40615M | 562.877 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 110974M | 20.288 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 86972 | 20.453 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 160662 | 20.617 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 83247 | 38.908 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 96240 | 20.619 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 202280 | 20.565 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 344719 | 40.789 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1281247 | 50.417 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 840185 | 50.272 |
| 88) Toluene | (3) | 9.227 | 92 | 316940 | 20.783 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 186211 | 20.534 |

M = Compound was manually integrated.
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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 201955 | 20.723 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 123371 | 20.851 |
| 93) Tetrachloroethene | (3) | 9.822 | 166 | 142557 | 20.855 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 199083 | 20.679 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 253602 | 41.083 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 388491 | 41.098 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 136035 | 20.417 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 137178 | 20.566 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1021687 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 179753 | 20.909 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 367310 | 20.605 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 129753 | 20.478 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 621425 | 21.171 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 500186 | 42.156 |
| 107) o-Xylene | (3) | 11.288 | 106 | 251221 | 21.065 |
| 109) Styrene | (3) | 11.307 | 104 | 419616 | 21.010 |
| 110) Bromoform | (3) | 11.468 | 173 | 100829 | 20.089 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 641985 | 21.410 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 151699 | 557.475 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 491688 | 50.630 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 424387 | 50.483 |
| 108) Xylene (Total) | (3) | | 106 | 751407 | 63.221 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 204654 | 20.833 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 169673 | 20.370 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 274052 | 105.549 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 61265 | 20.500 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 742444 | 21.257 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 156332 | 20.627 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 551843 | 20.997 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 163590 | 20.656 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 117726M | 20.343 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 96942 | 19.839 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 566154 | 20.931 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 696004 | 21.301 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 326158 | 20.787 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 615520 | 21.113 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 565404 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 340071 | 20.997 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

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Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

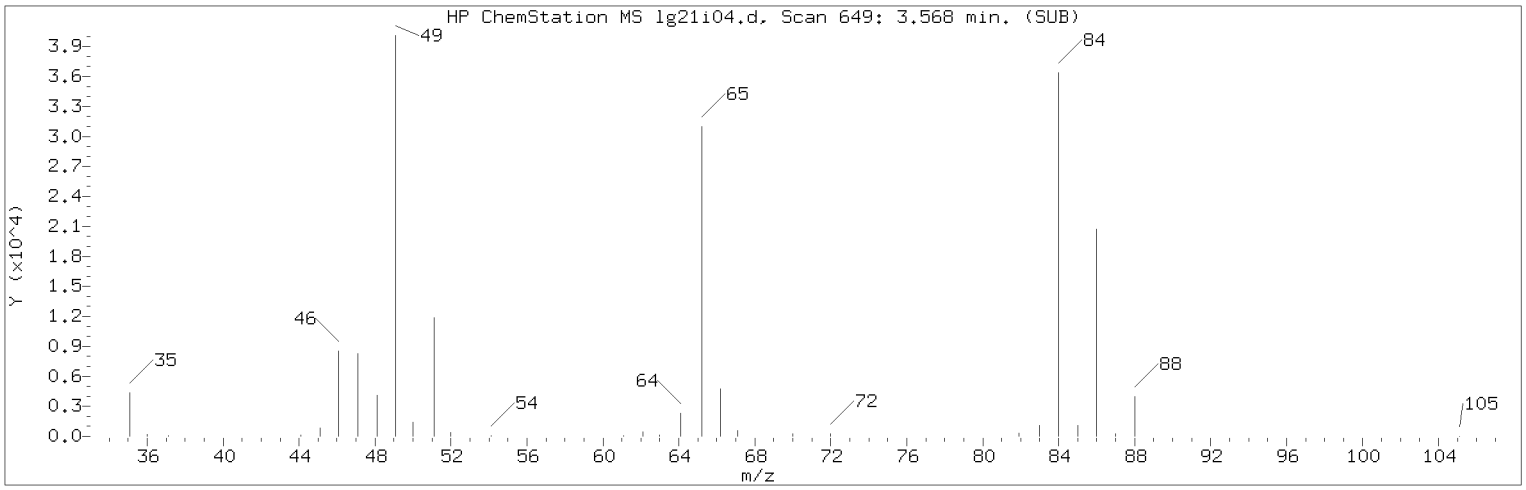
Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 582693 | 20.742 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 422966 | 20.829 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 362851 | 20.502 |
| 137) 1,4-Diethylbenzene | (4) | 12.870 | 119 | 379488 | 20.609 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 300101 | 21.105 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 323576 | 20.762 |
| 140) 1,2-Diethylbenzene | (4) | 12.937 | 119 | 300501 | 20.380 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1042840 | 61.491 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 44162 | 20.448 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.584 | 180 | 243125 | 20.683 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 237520 | 20.607 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 101394 | 20.766 |
| 148) Naphthalene | (4) | 14.185 | 128 | 773433 | 21.246 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.323 | 180 | 228391 | 20.799 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 503448 | 20.881 |

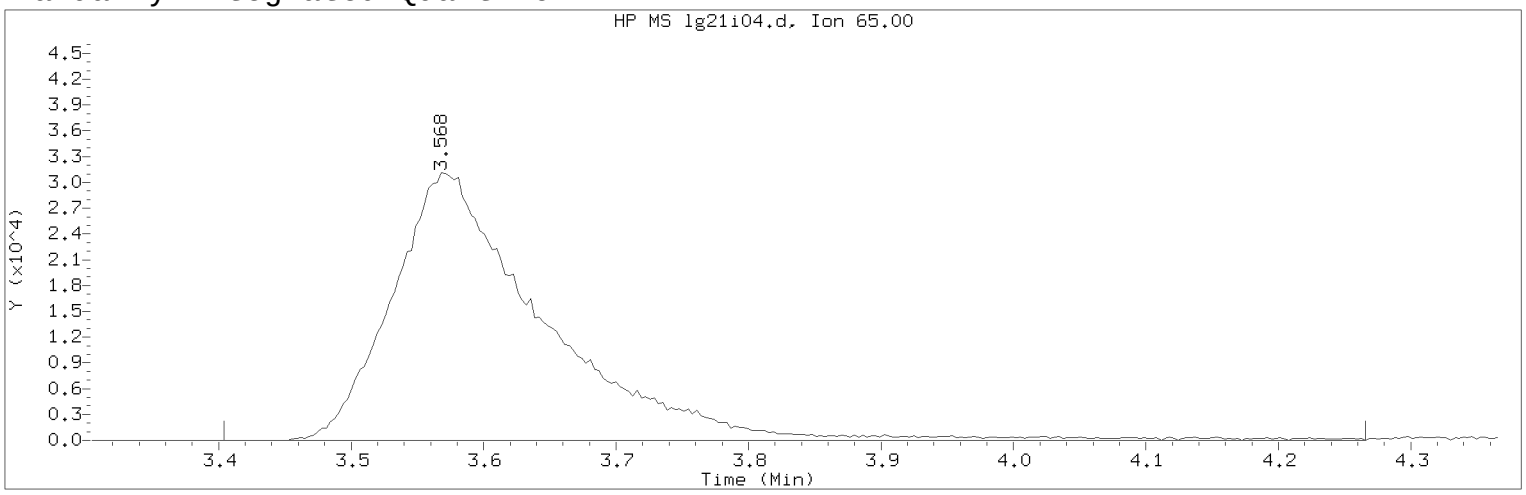


Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d  Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020  Lab Sample ID: VSTD020

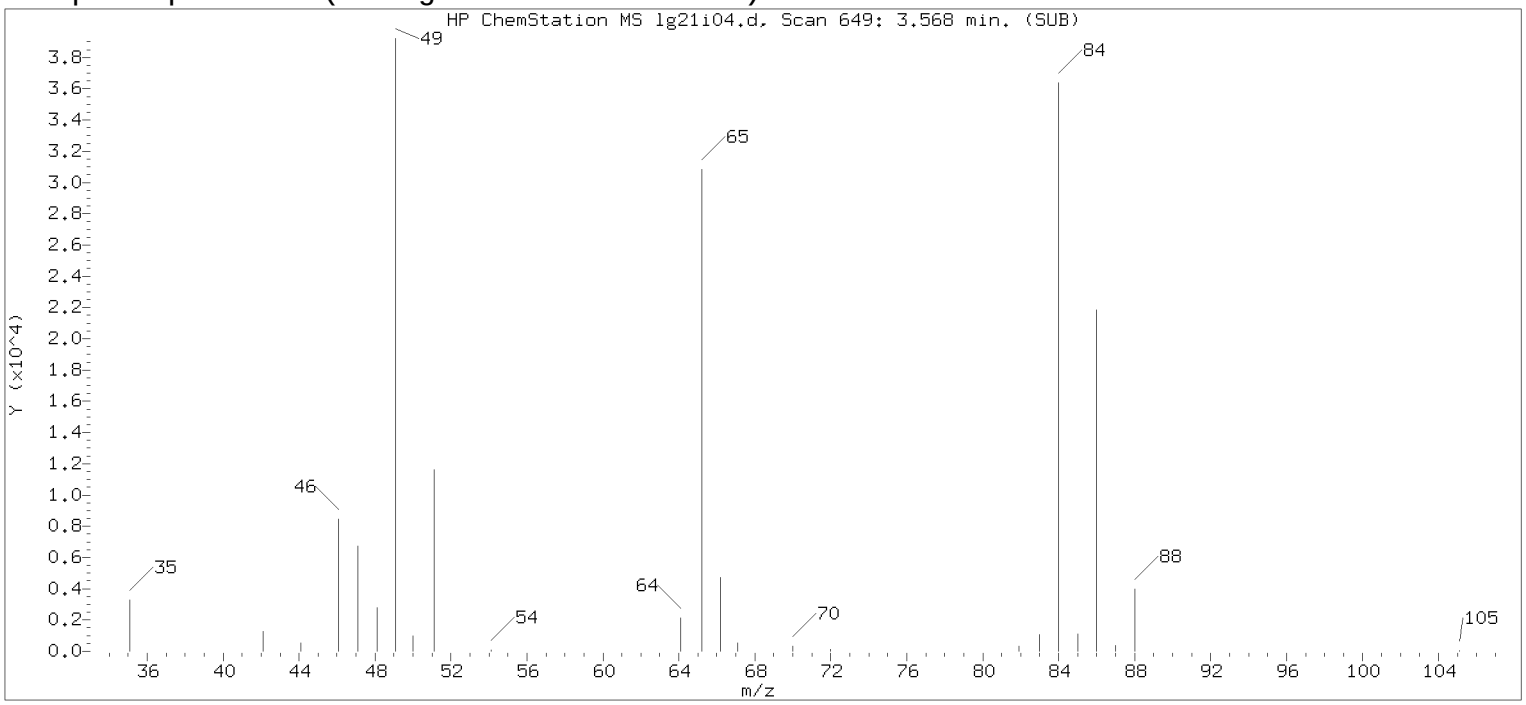
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 649
Retention Time (minutes): 3.568
Quant Ion : 65.00
Area (flag) : 249018M
On-Column Amount (ng) : 250.0000
Integration start scan : 597  Integration stop scan: 865
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

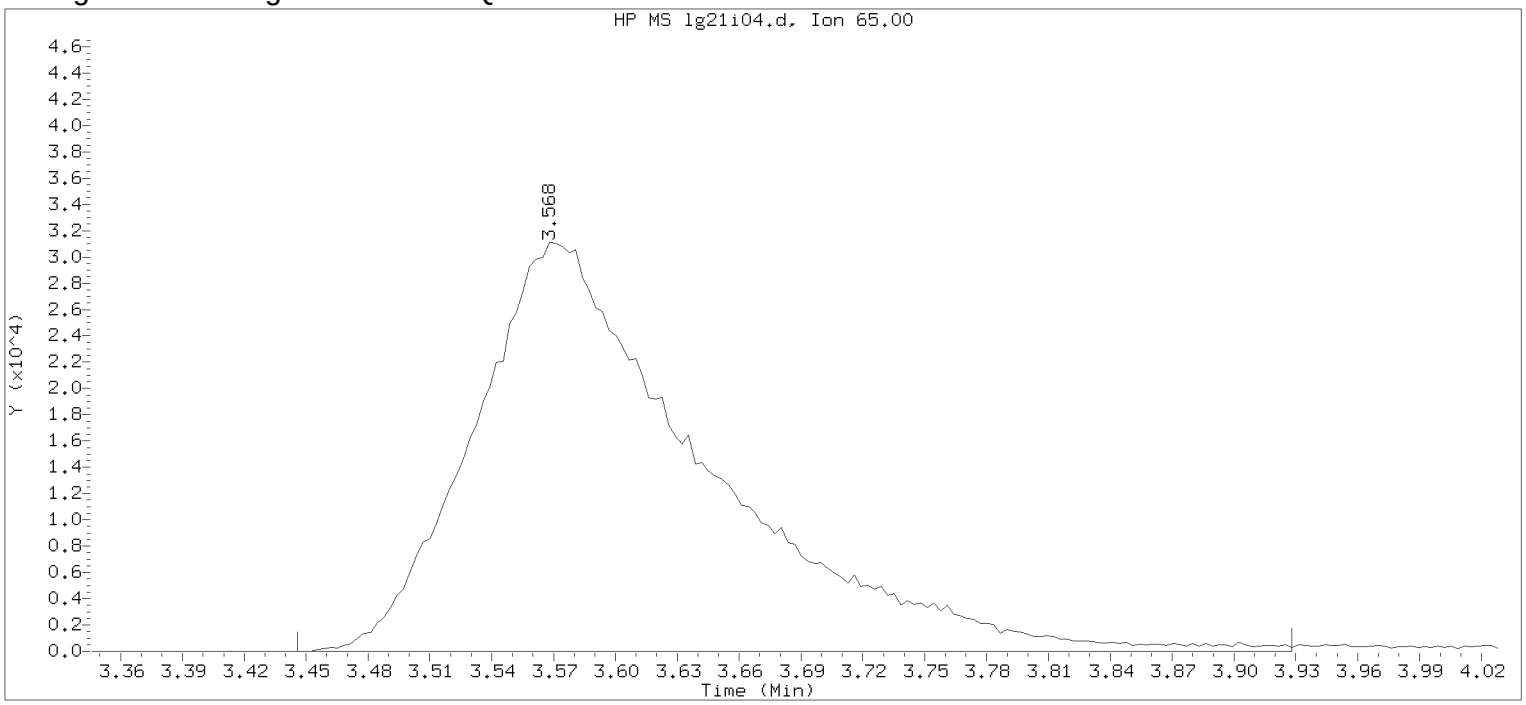
Analyst responsible for change: Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 649
Retention Time (minutes): 3.568
Quant Ion : 65.00
Area : 243450
On-column Amount (ng) : 250.0000
Integration start scan : 610 Integration stop scan: 760
Y at integration start : 0 Y at integration end: 0

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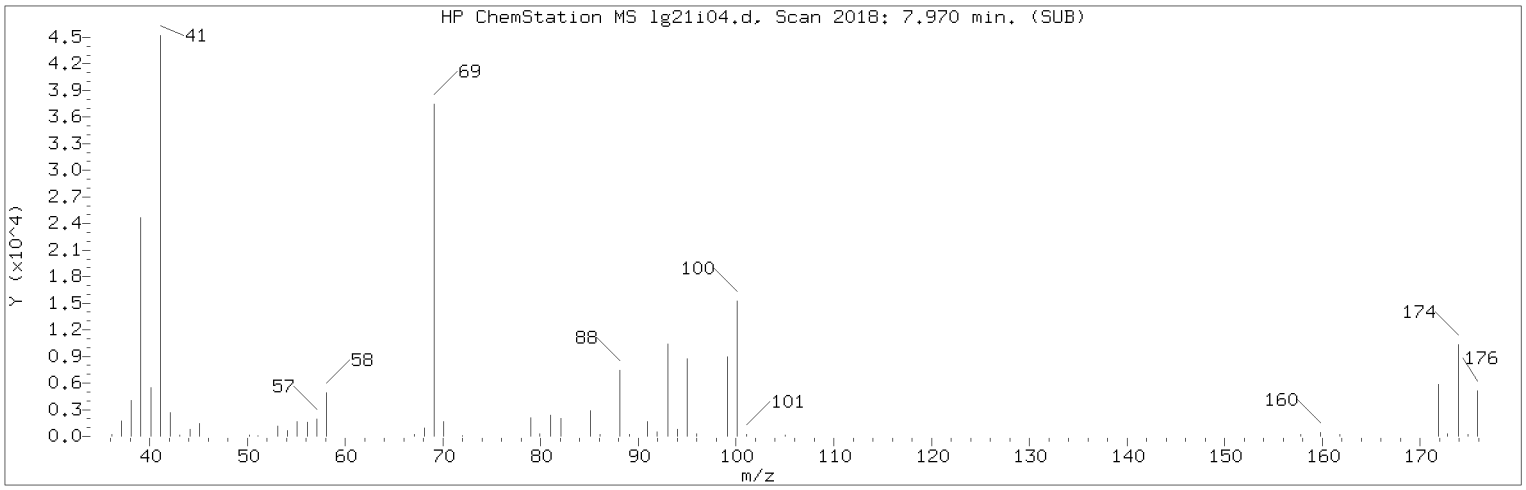
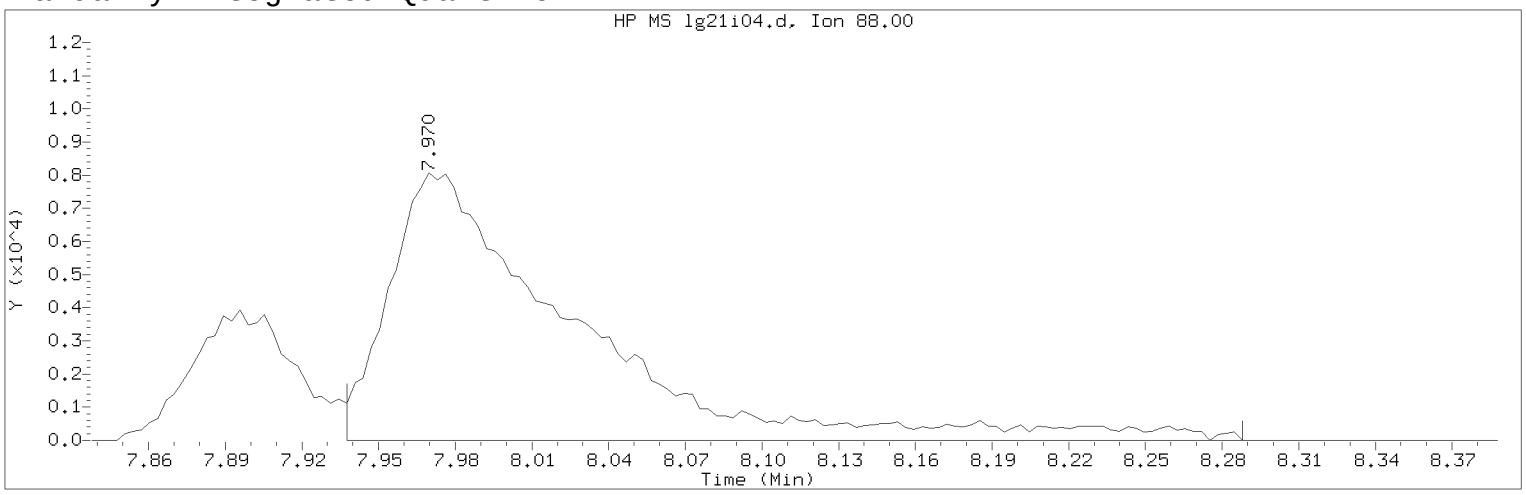
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

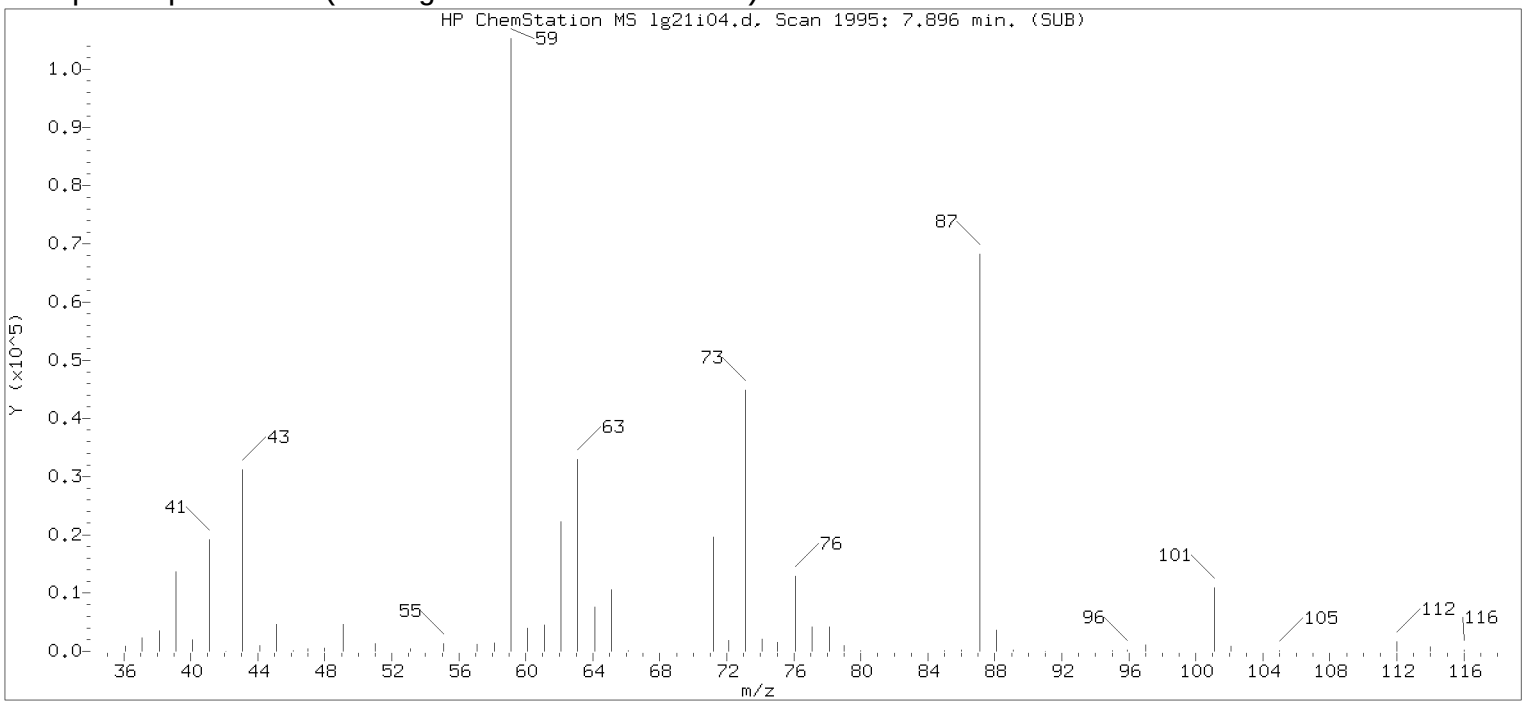
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2018
Retention Time (minutes): 7.970
Quant Ion : 88.00
Area (flag) : 40615M
On-Column Amount (ng) : 562.8770
Integration start scan : 2007 Integration stop scan: 2116
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

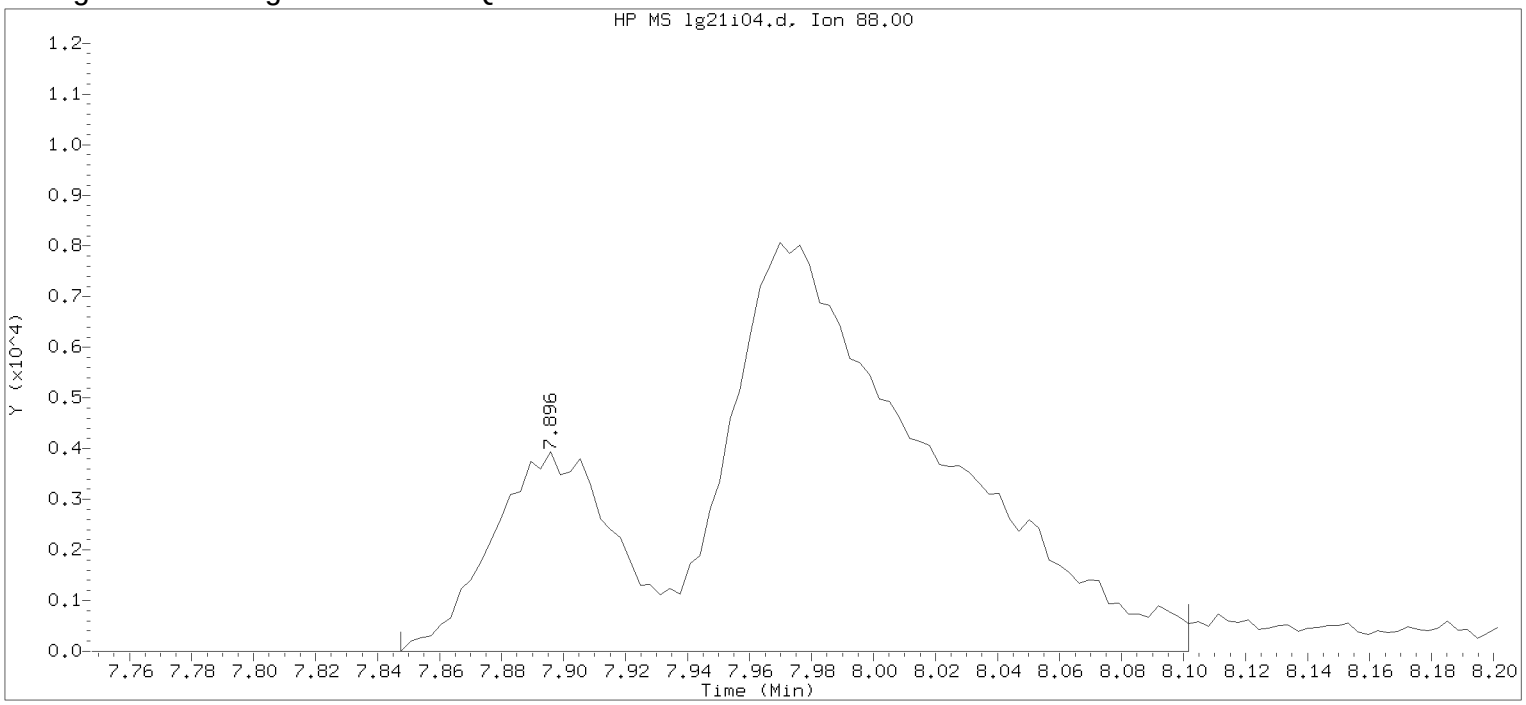
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 47082
On-column Amount (ng) : 599.5761
Integration start scan : 1979 Integration stop scan: 2058
Y at integration start : 0 Y at integration end: 0

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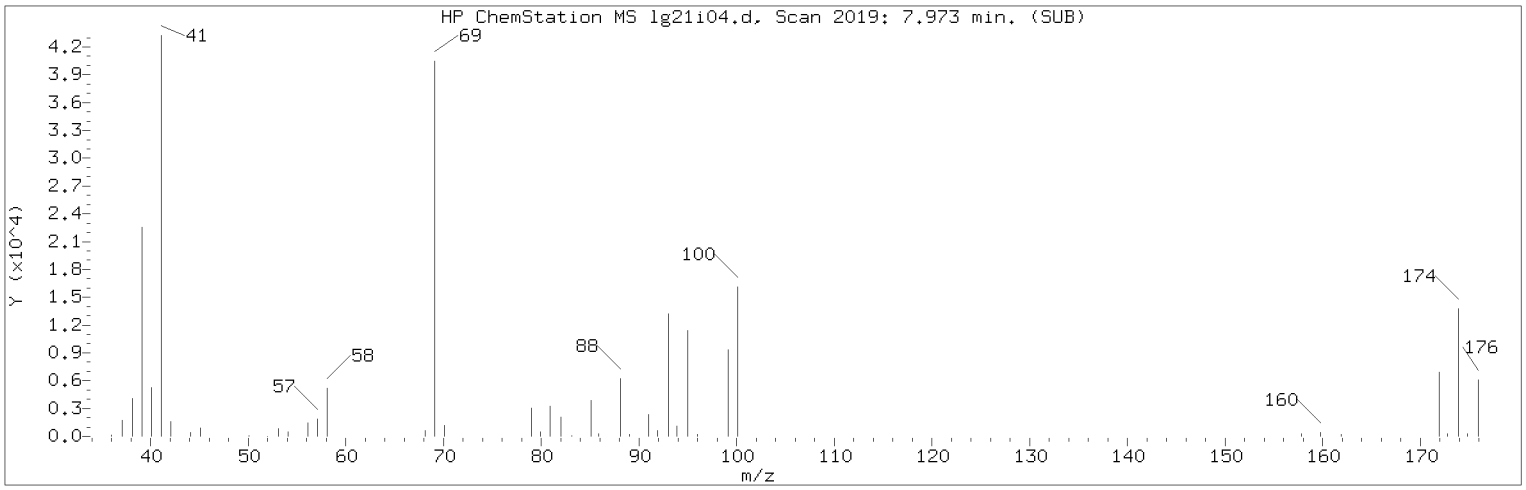
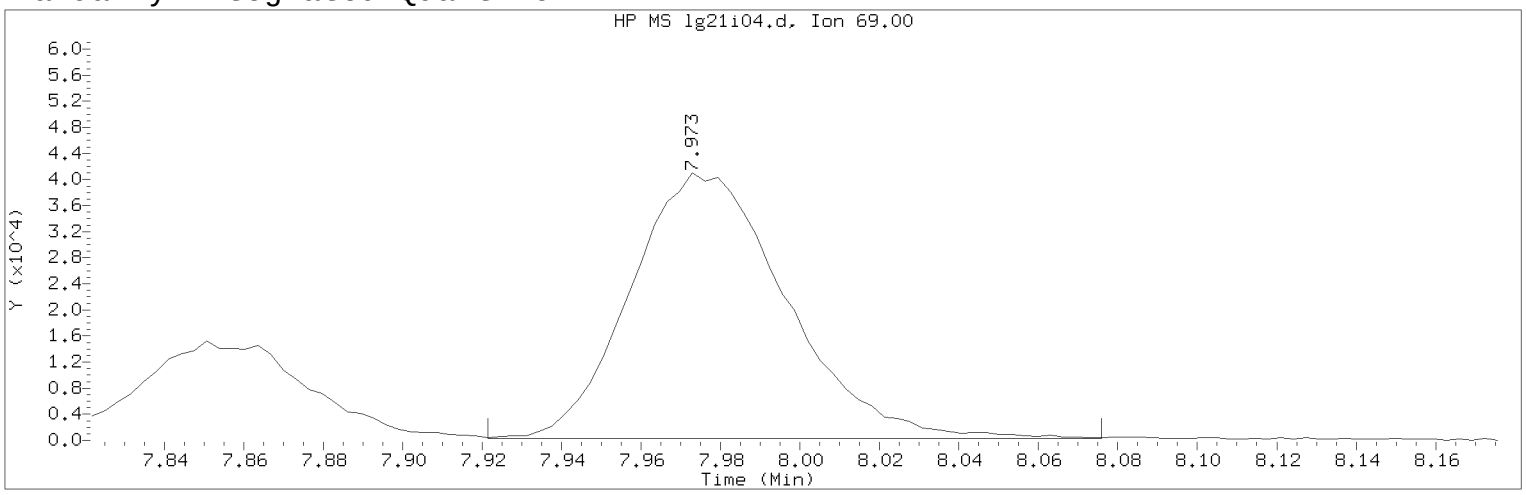
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

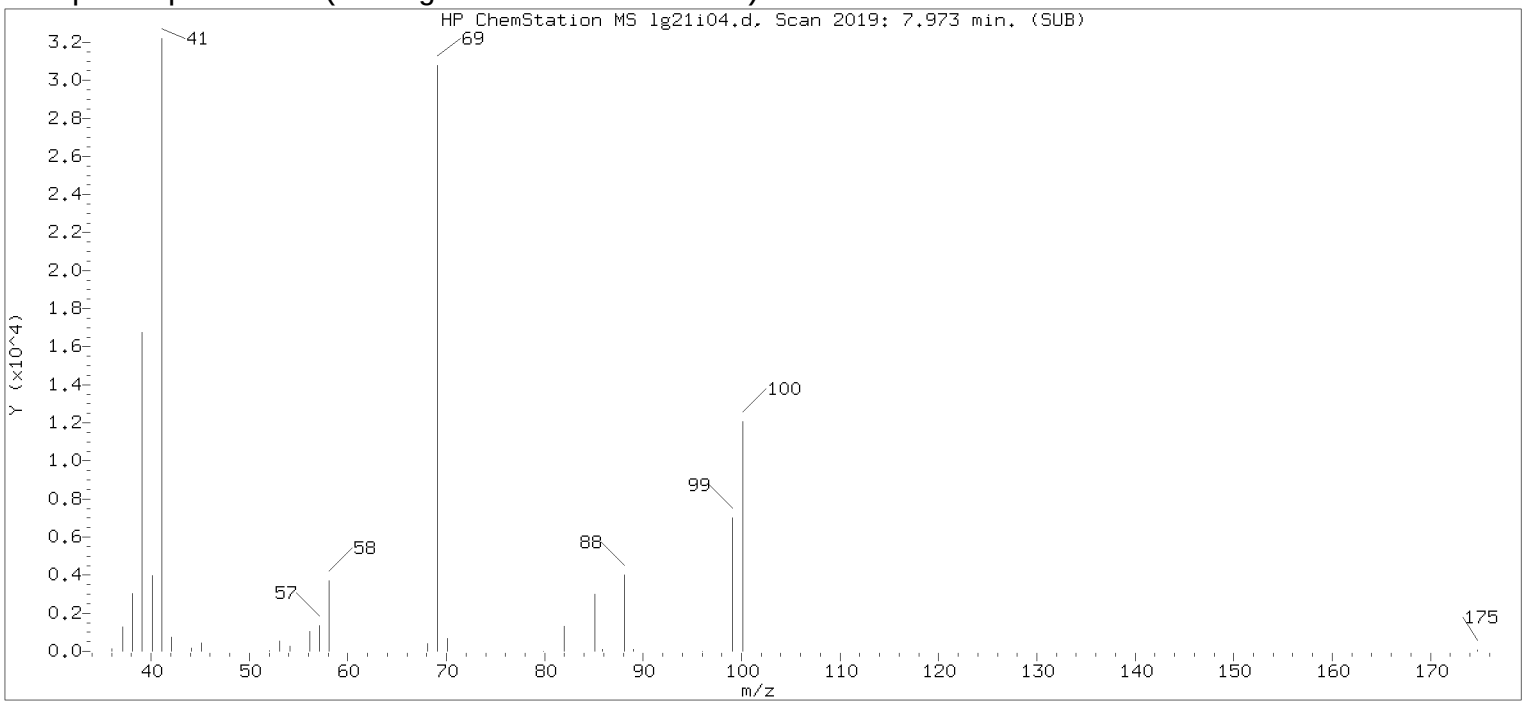
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area (flag) : 110974M
On-Column Amount (ng) : 20.2885
Integration start scan : 2002 Integration stop scan: 2050
Y at integration start : 276 Y at integration end: 276

Reason for manual integration: improper integration

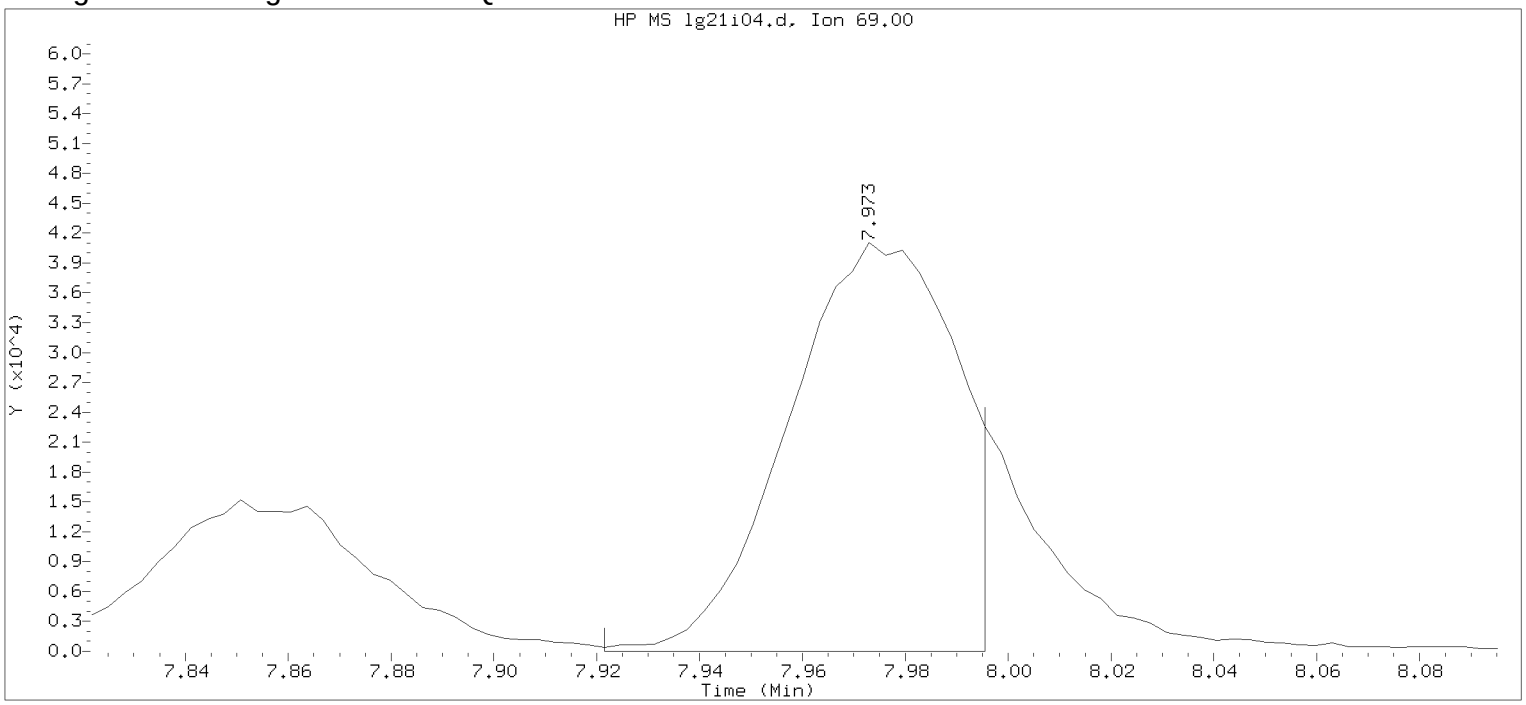
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area : 91920
On-column Amount (ng) : 16.7291
Integration start scan : 2002 Integration stop scan: 2025
Y at integration start : 0 Y at integration end: 0

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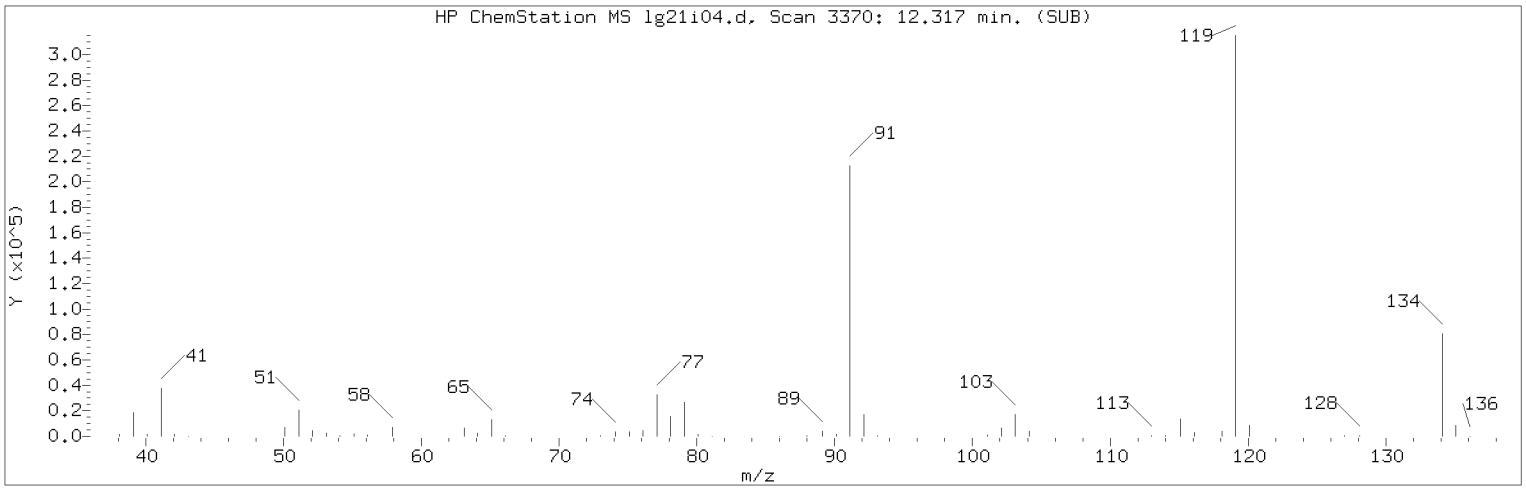
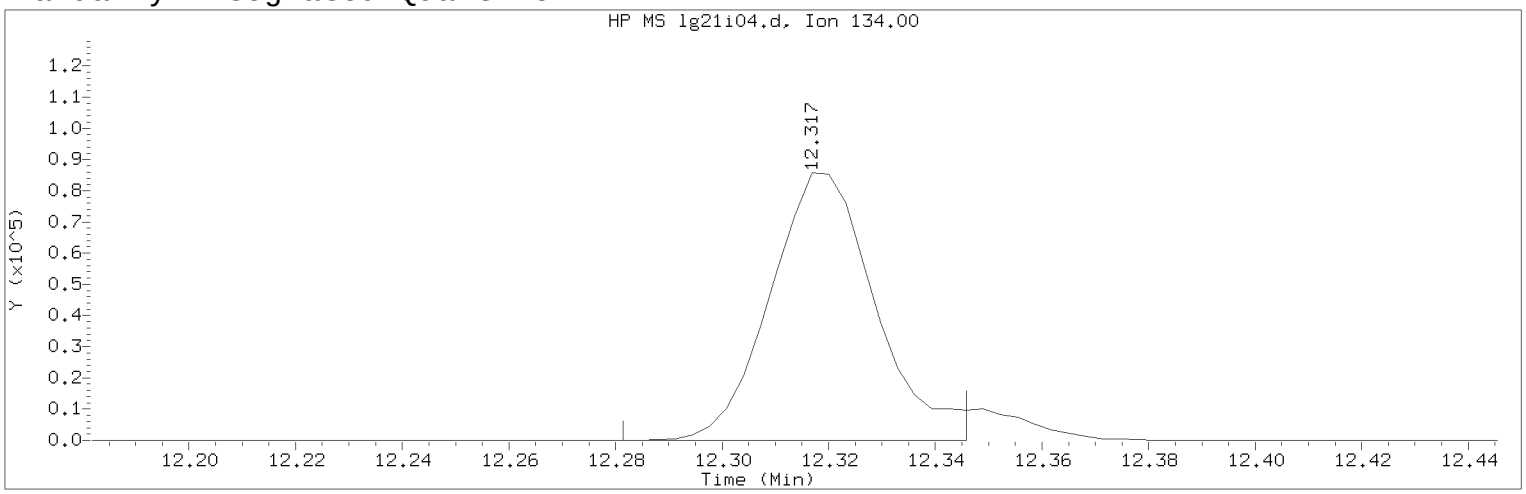
Target 3.5 esignature userKAS02648 Page 151 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d  Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020  Lab Sample ID: VSTD020

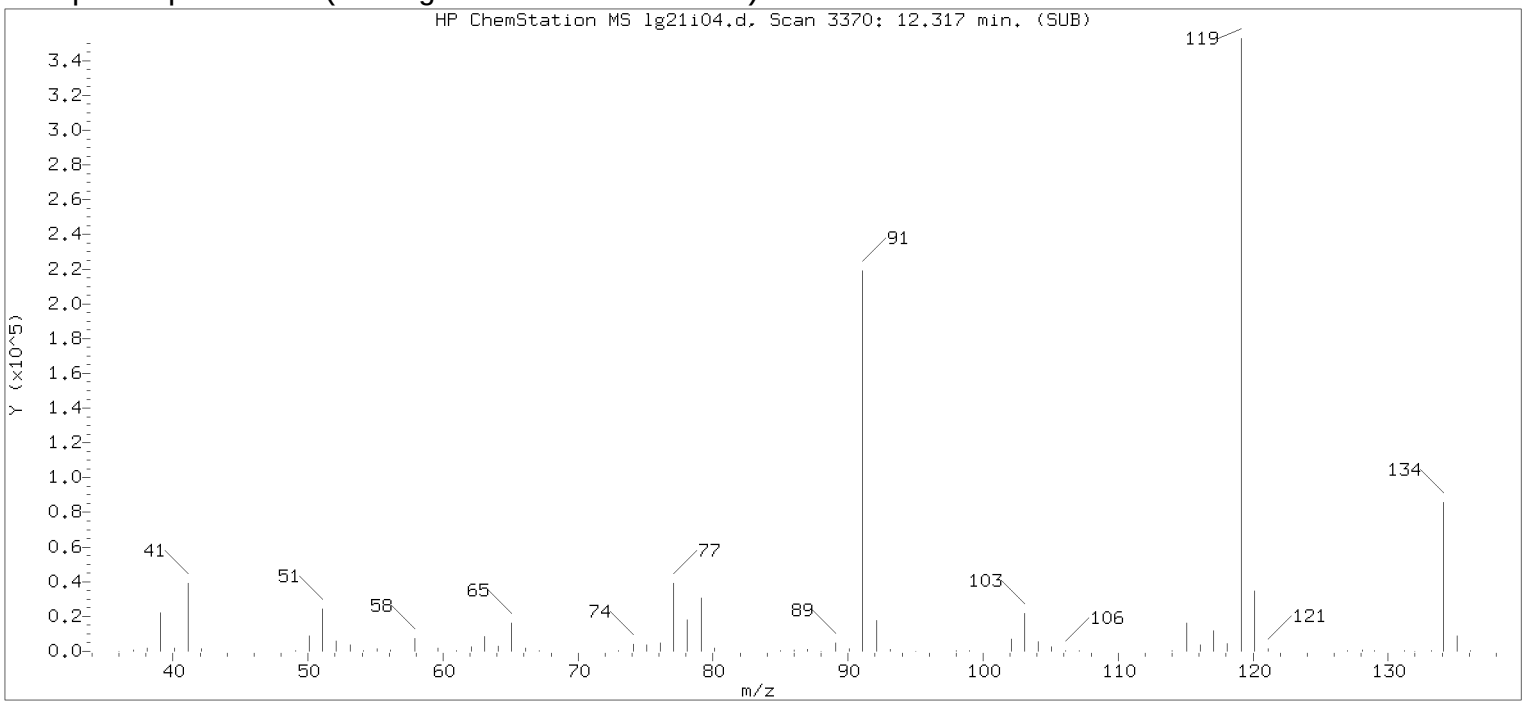
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area (flag) : 117726M
On-Column Amount (ng) : 20.3432
Integration start scan : 3358  Integration stop scan: 3378
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

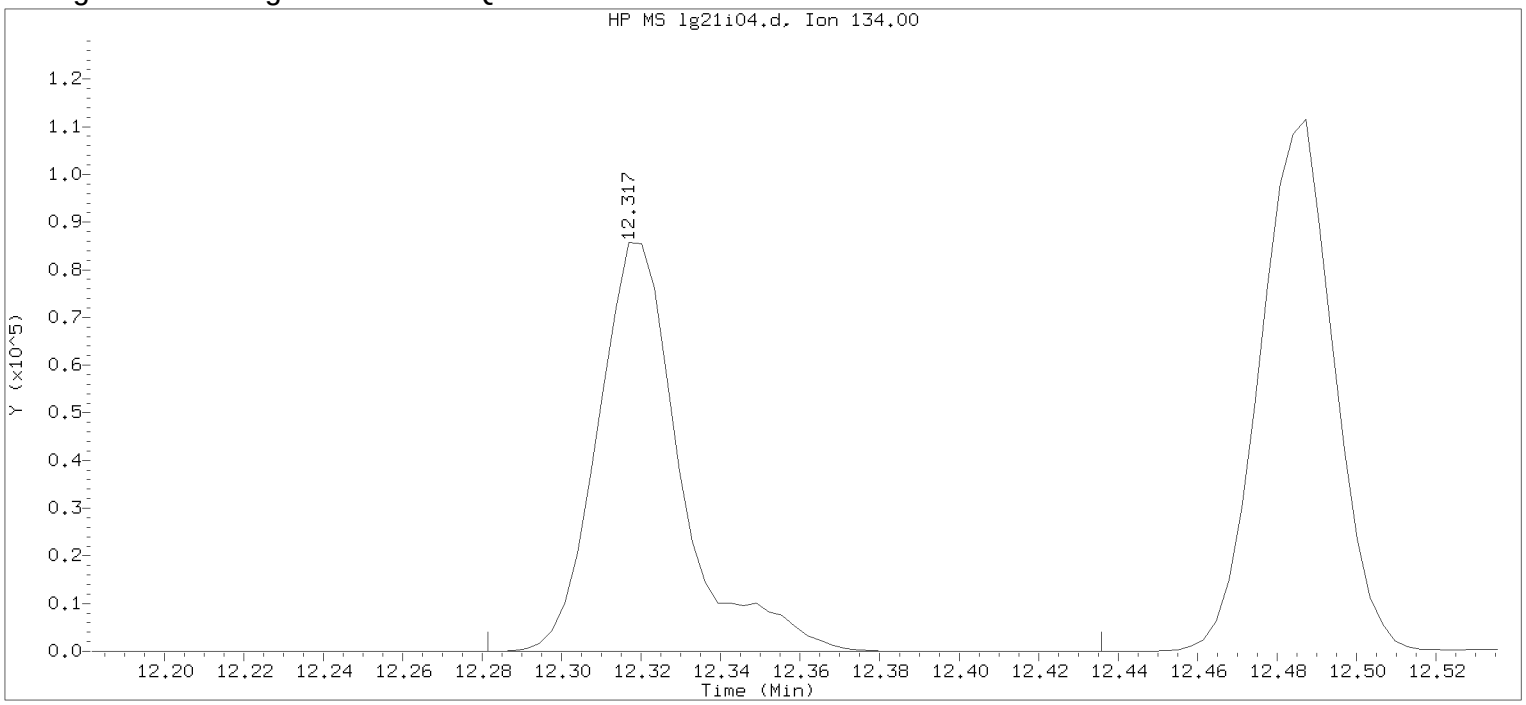
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



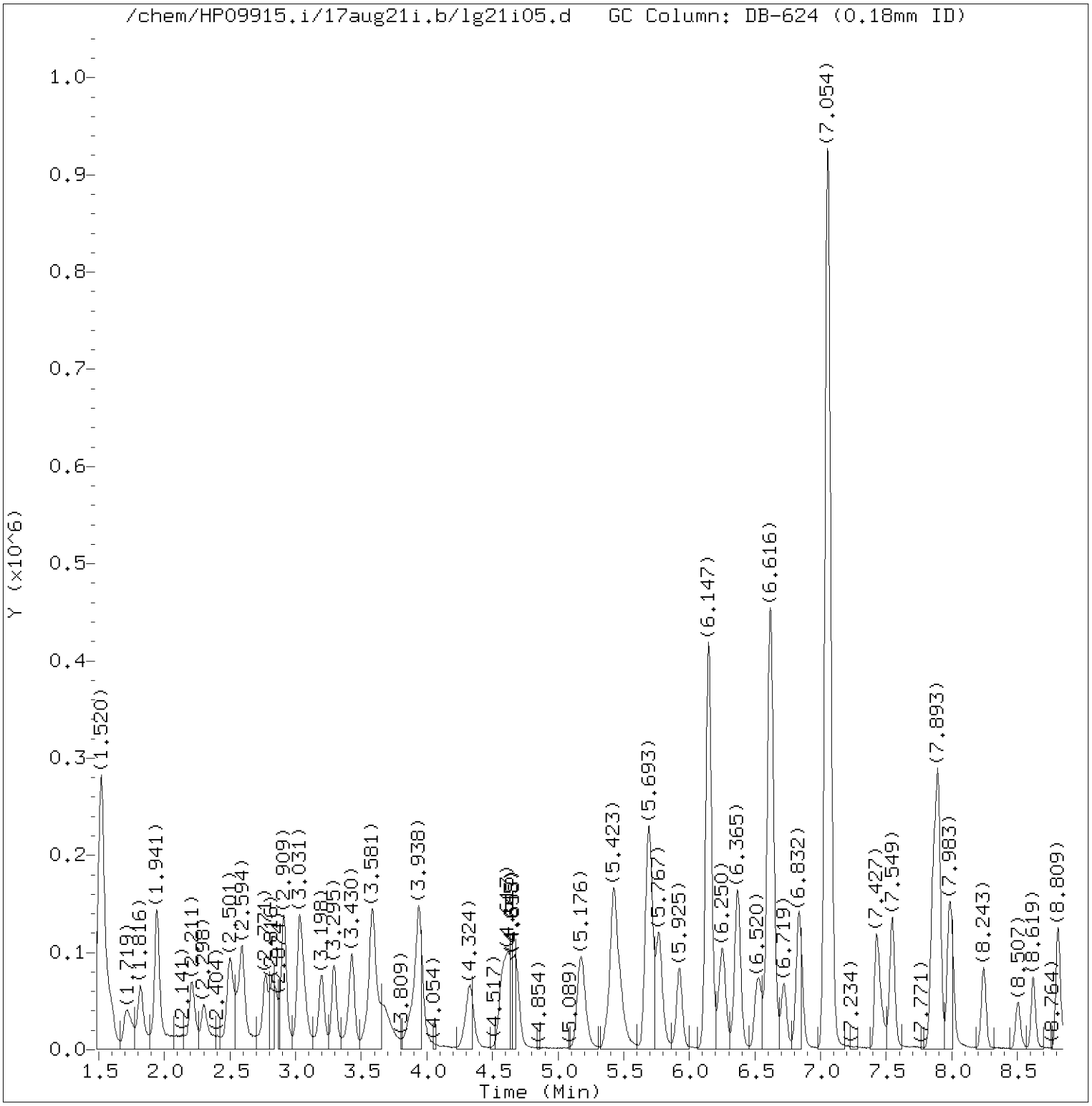

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area : 125188
On-column Amount (ng) : 19.8440
Integration start scan : 3358 Integration stop scan: 3406
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

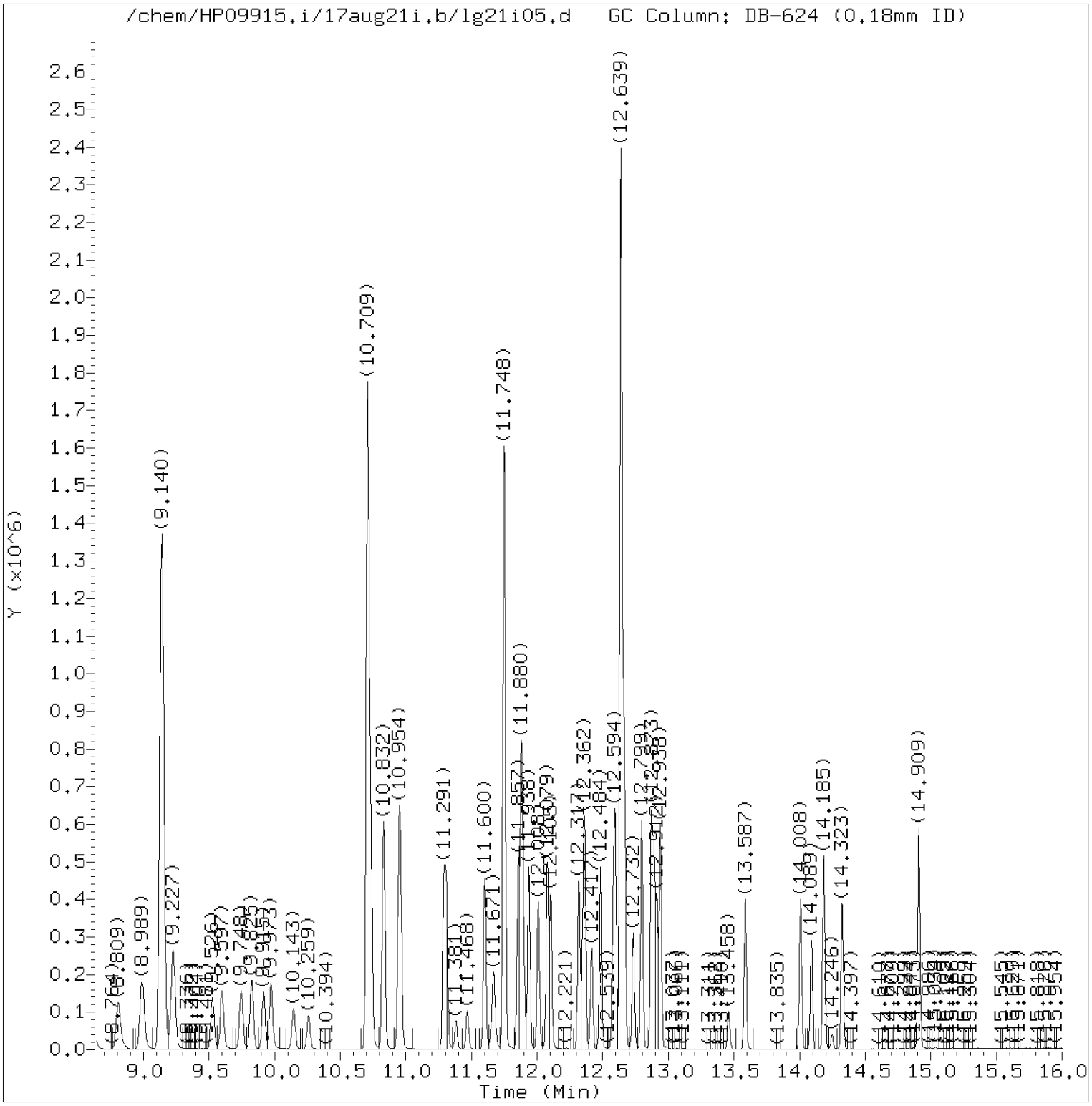
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716 | 85 | 81439 | 9.651 |
| 4) Chloromethane | (2) | 1.819 | 50 | 79954 | 10.193 |
| 6) Vinyl Chloride | (2) | 1.935 | 62 | 77217 | 9.929 |
| 5) 1,3-Butadiene | (2) | 1.948 | 39 | 55001 | 10.635 |
| 8) Bromomethane | (2) | 2.211 | 94 | 58899 | 10.877 |
| 9) Chloroethane | (2) | 2.301 | 64 | 44156 | 10.345 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 100214 | 10.540 |
| 12) Trichlorofluoromethane | (2) | 2.555 | 101 | 96232M | 9.760 |
| 11) n-Pentane | (2) | 2.594 | 43 | 78014 | 9.532 |
| 14) Ethyl ether | (2) | 2.768 | 59 | 48601 | 9.757 |
| 15) Freon 123a | (2) | 2.829 | 67 | 63792 | 9.978 |
| 16) Acrolein | (1) | 2.912 | 56 | 184445 | 98.829 |
| 17) 1,1-Dichloroethene | (2) | 3.031 | 96 | 48218 | 9.727 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 22730 | 9.800 |
| 18) Acetone | (1) | 3.041 | 58 | 16195 | 21.591 |
| 19) Freon 113 | (2) | 3.054 | 101 | 48868 | 9.160 |
| 21) 2-Propanol | (1) | 3.189 | 45 | 50848 | 100.899 |
| 22) Methyl Iodide | (2) | 3.198 | 142 | 102382 | 9.914 |
| 23) Carbon Disulfide | (2) | 3.295 | 76 | 166012 | 9.787 |
| 27) Methyl Acetate | (2) | 3.407 | 43 | 56971 | 10.134 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 81153 | 10.012 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 254929M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 58475 | 10.030 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 100254 | 106.650 |
| 31) Acrylonitrile | (2) | 3.864 | 53 | 32593 | 10.505 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.919 | 73 | 181882 | 10.029 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 57215 | 9.821 |
| 34) n-Hexane | (2) | 4.330 | 57 | 74340 | 9.023 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 98538 | 9.947 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 177778 | 10.125 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.681 | 53 | 85319 | 9.801 |
| 40) Ethyl t-butyl ether | (2) | 5.173 | 59 | 181629 | 10.206 |
| 44) 2-Butanone | (2) | 5.391 | 43 | 80280 | 20.292 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 65385 | 9.908 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 83337 | 10.582 |
| 47) Propionitrile | (1) | 5.475 | 54 | 122280 | 99.394 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 169447 | 49.272 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 35519 | 10.160 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 23284 | 19.920 |
| 51) Chloroform | (2) | 5.925 | 83 | 101797 | 10.078 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 329919 | 50.064 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 336658 | 49.944 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 96464 | 9.764 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 122600 | 19.729 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 89121 | 9.117 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 78720 | 9.113 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 28362 | 9.163 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 72030 | 9.326 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 75457 | 9.491 |
| 58) Isobutyl Alcohol | (1) | 6.529 | 41 | 80922 | 255.365 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 80717 | 50.425 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 372451 | 50.163 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 50558 | 49.320 |
| 60) Benzene | (2) | 6.636 | 78 | 232095 | 9.993 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 80798 | 10.104 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 98 | 7835 | 9.886 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 187333 | 10.173 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 1293715 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 74665 | 8.919 |
| 69) n-Butanol | (1) | 7.427 | 56 | 134567 | 493.625 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 61518 | 9.731 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 96879 | 9.269 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 45836 | 9.303 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 58591 | 9.777 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 22115M | 259.118 |
| 76) Methyl Methacrylate | (2) | 7.980 | 69 | 54693 | 9.983 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 41664 | 9.782 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 75312 | 9.649 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 43075 | 20.100 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 44149 | 9.443 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 95285 | 9.671 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 173904 | 20.544 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1273236 | 50.642 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 833923 | 50.435 |
| 88) Toluene | (3) | 9.227 | 92 | 149099 | 9.882 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 86550 | 9.647 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.597 | 69 | 95927 | 9.949 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 58343 | 9.967 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 63015 | 9.318 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 95833 | 10.062 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 126253 | 20.673 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 181835 | 19.318 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 62428 | 9.471 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 66063 | 10.011 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1010789 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 77195 | 9.076 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 171197 | 9.707 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 58594 | 9.347 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 280333 | 9.653 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 224374 | 19.114 |
| 107) o-Xylene | (3) | 11.291 | 106 | 112271 | 9.516 |
| 109) Styrene | (3) | 11.307 | 104 | 188798 | 9.555 |
| 110) Bromoform | (3) | 11.468 | 173 | 44850 | 9.032 |
| 111) Isopropylbenzene | (3) | 11.600 | 105 | 279703 | 9.429 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 81243 | 291.635 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 481371 | 50.102 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 415490 | 49.958 |
| 108) Xylene (Total) | (3) | | 106 | 336645 | 28.630 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 96311 | 10.164 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 76902 | 9.571 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 127449 | 50.888 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 29325 | 10.173 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 326351 | 9.687 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 70841 | 9.690 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 240122 | 9.472 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 72624 | 9.507 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 48131M | 8.772 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 44232 | 9.384 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 250138 | 9.587 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 295245 | 9.367 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 146064 | 9.651 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 260961 | 9.280 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 545387 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.655 | 146 | 151608 | 9.704 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 274926 | 10.145 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 185941 | 9.493 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 172509 | 10.105 |
| 137) 1,4-Diethylbenzene | (4) | 12.870 | 119 | 180052 | 10.137 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 129656 | 9.453 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 145787 | 9.698 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 144160 | 10.136 |
| 141) Diethylbenzene (total) | (4) | | 100 | 496721 | 30.378 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 20087 | 9.642 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 107178 | 9.453 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 105904 | 9.525 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 44936 | 9.541 |
| 148) Naphthalene | (4) | 14.185 | 128 | 348627 | 9.928 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 102115 | 9.641 |
| 150) 2-Methylnaphthalene | (4) | 14.909 | 142 | 242110 | 10.410 |



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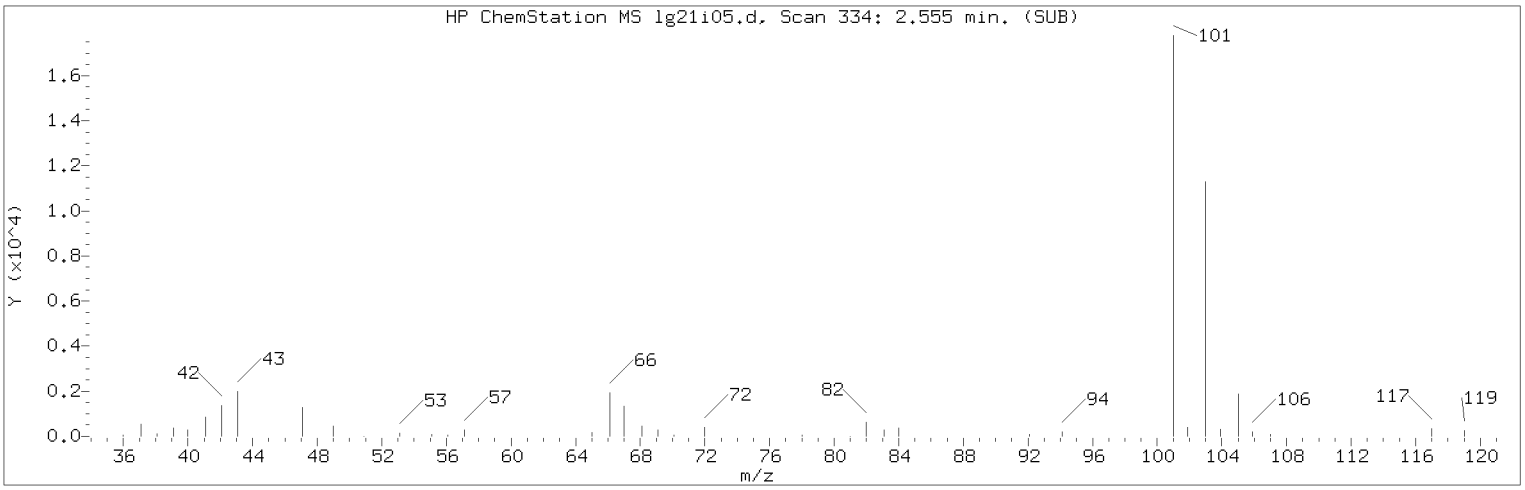
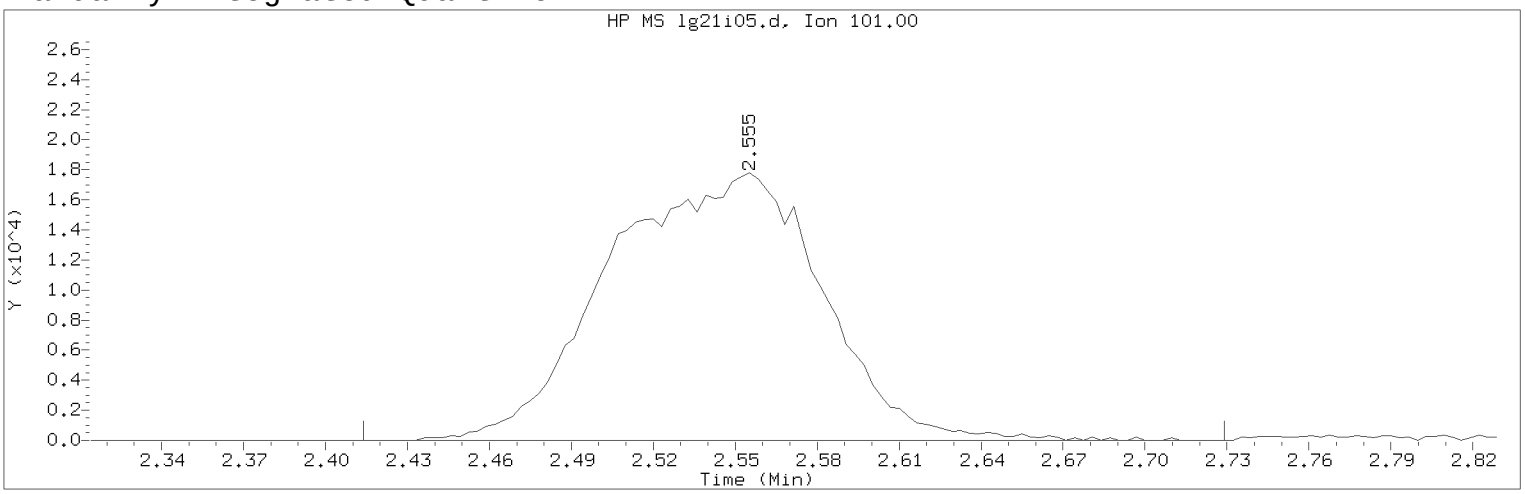
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

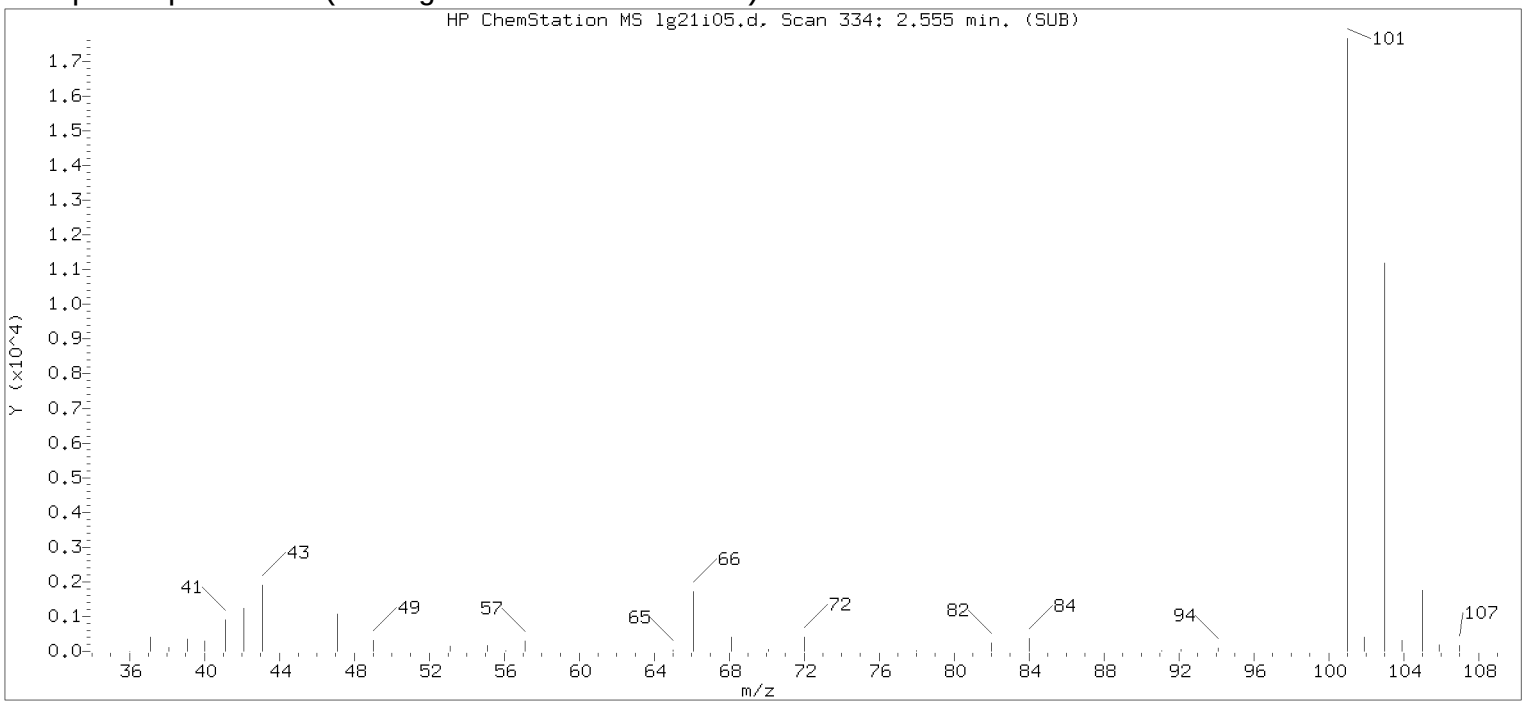
Compound Number : 12
Compound Name : Trichlorofluoromethane
Scan Number : 334
Retention Time (minutes): 2.555
Quant Ion : 101.00
Area (flag) : 96232M
On-Column Amount (ng) : 9.7600
Integration start scan : 289 Integration stop scan: 387
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

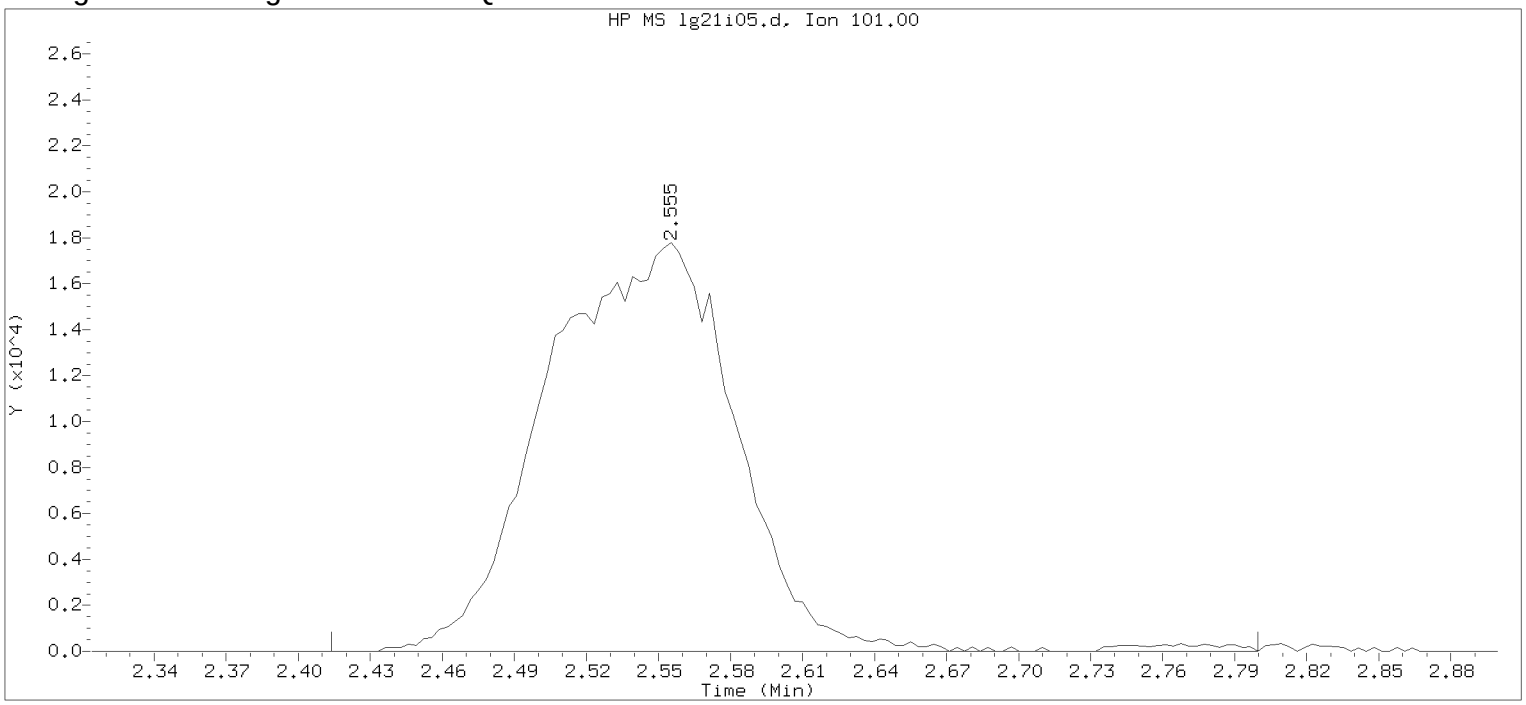
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 12
Compound Name : Trichlorofluoromethane
Scan Number : 334
Retention Time (minutes): 2.555
Quant Ion : 101.00
Area : 97149
On-column Amount (ng) : 9.8347
Integration start scan : 289 Integration stop scan: 409
Y at integration start : 0 Y at integration end: 0

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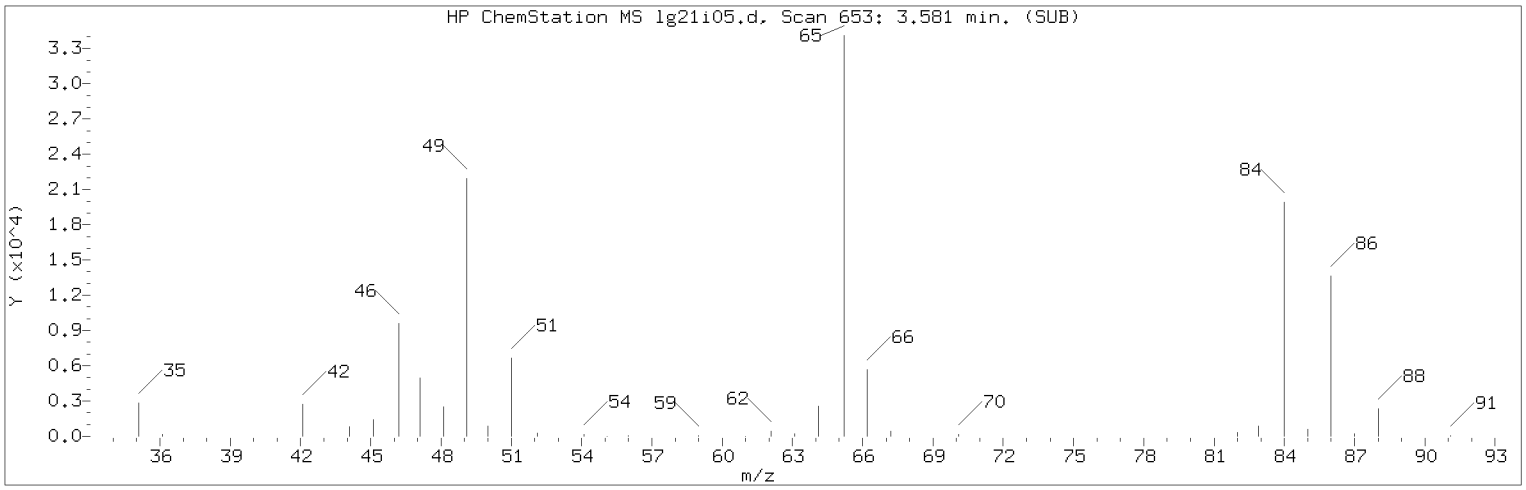
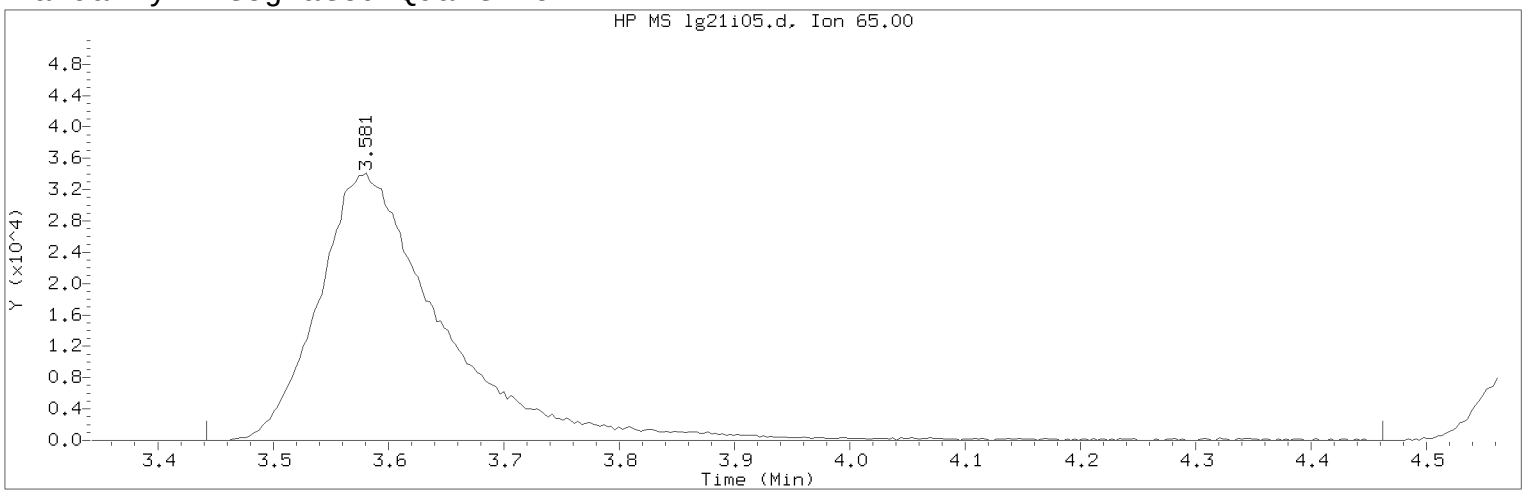
Target 3.5 esignature userKAS02648 Page 141 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

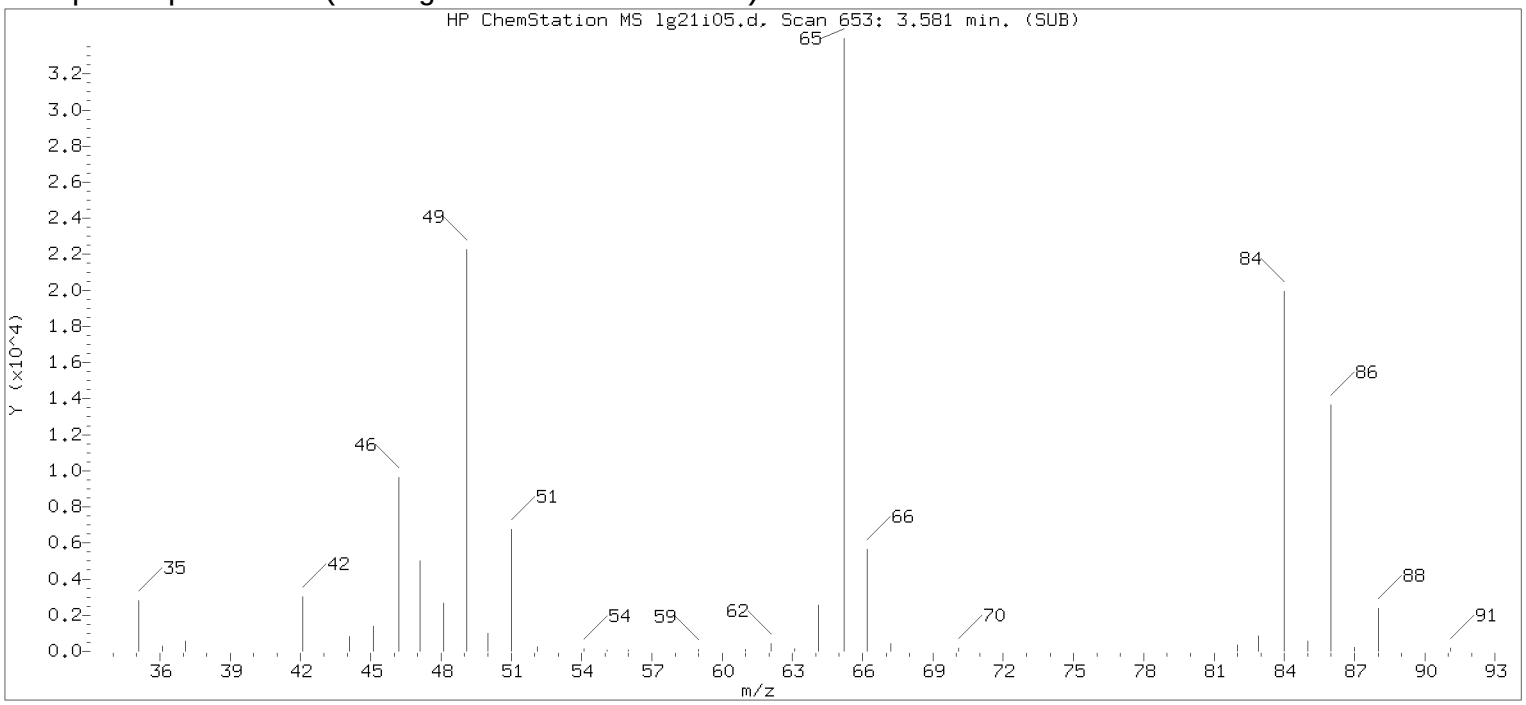
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 254929M
On-Column Amount (ng) : 250.0000
Integration start scan : 609 Integration stop scan: 926
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

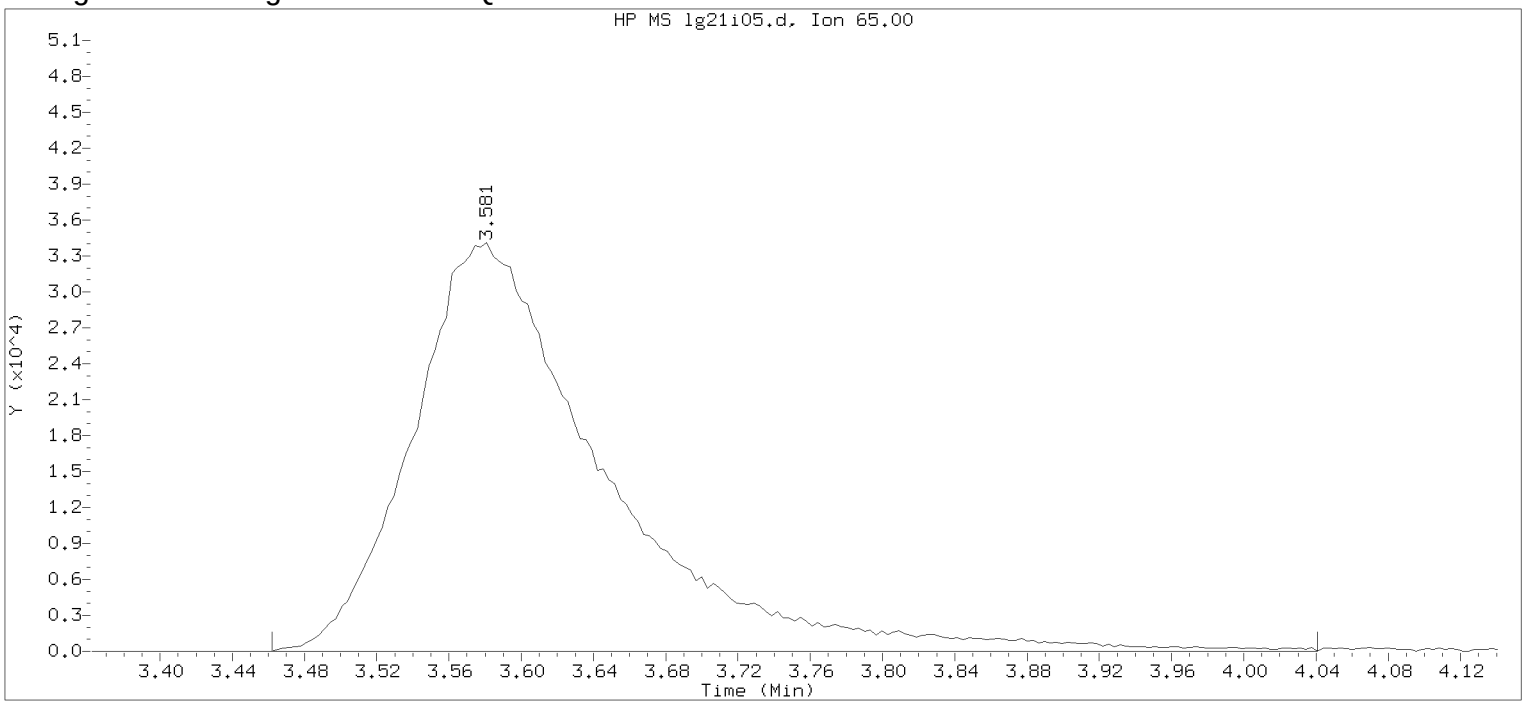
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 251894
On-column Amount (ng) : 250.0000
Integration start scan : 615 Integration stop scan: 795
Y at integration start : 0 Y at integration end: 0

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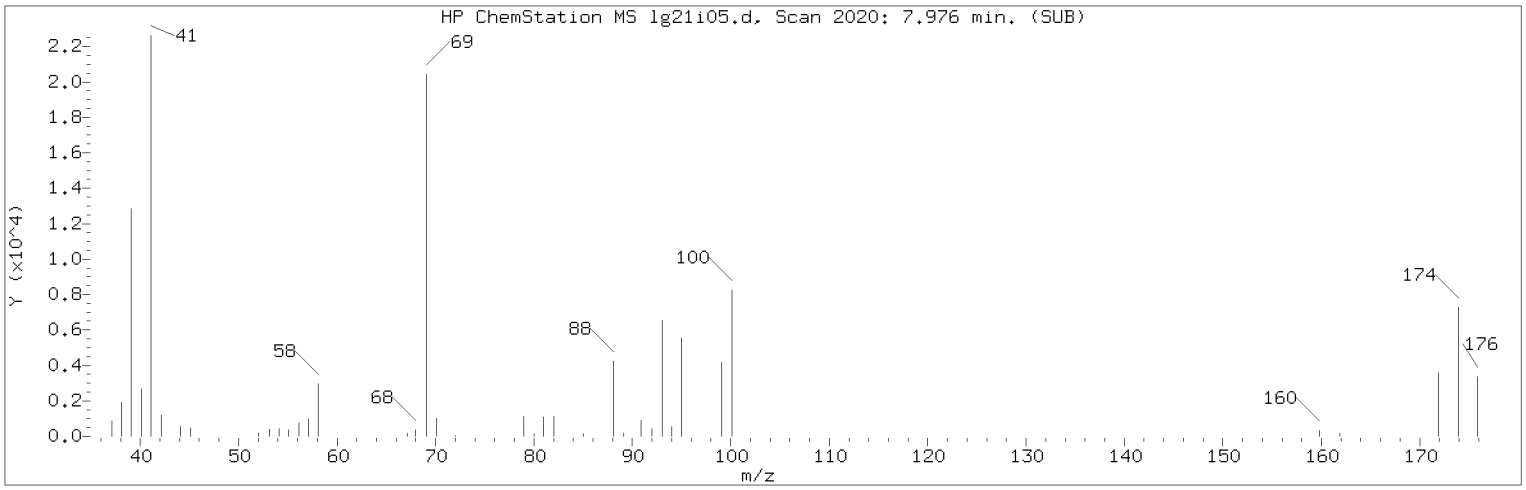
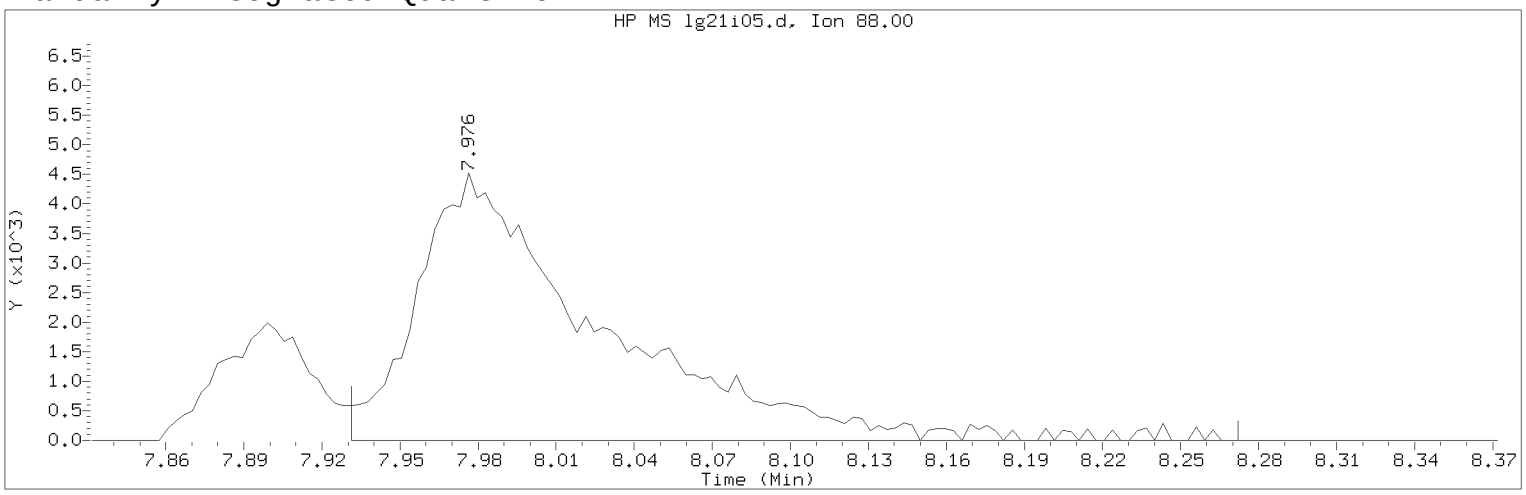
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

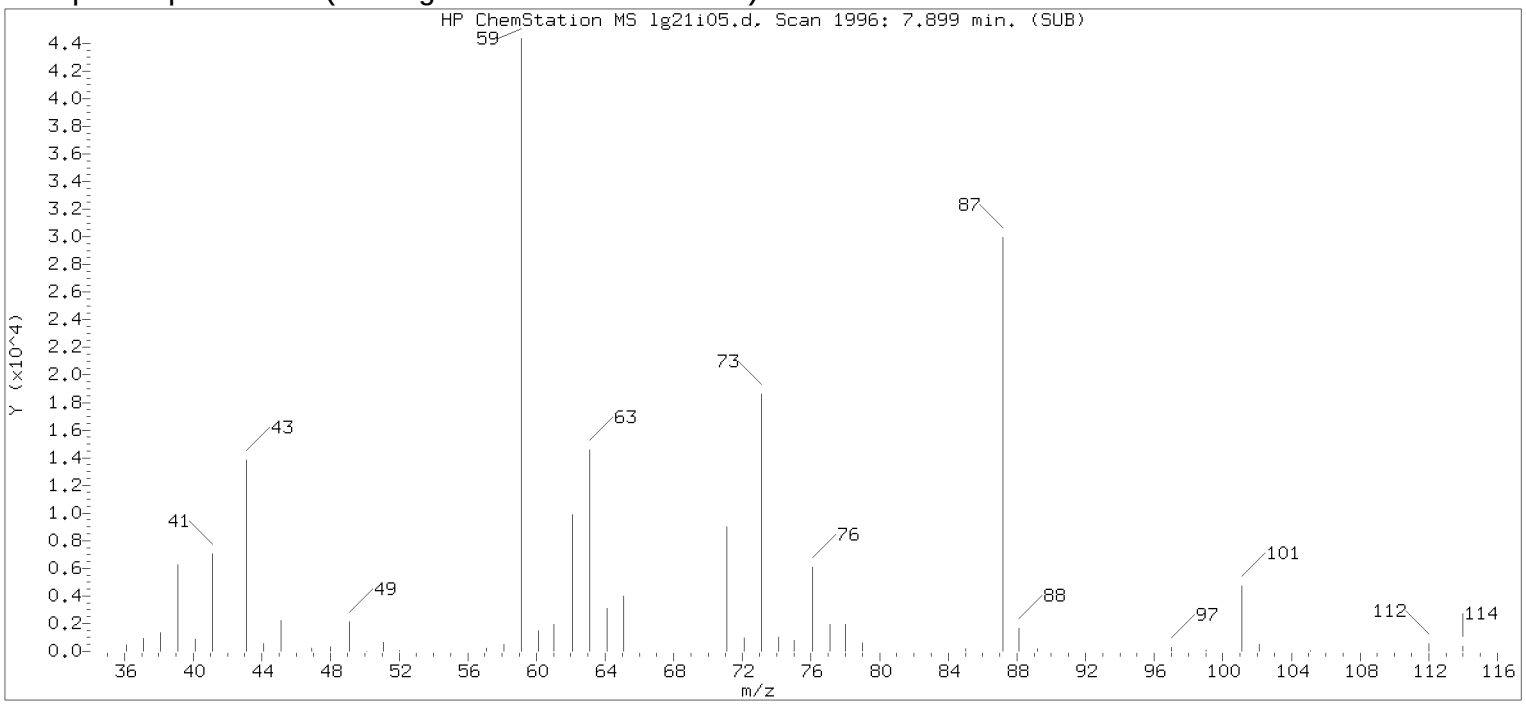
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 22115M
On-Column Amount (ng) : 259.1183
Integration start scan : 2005 Integration stop scan: 2111
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

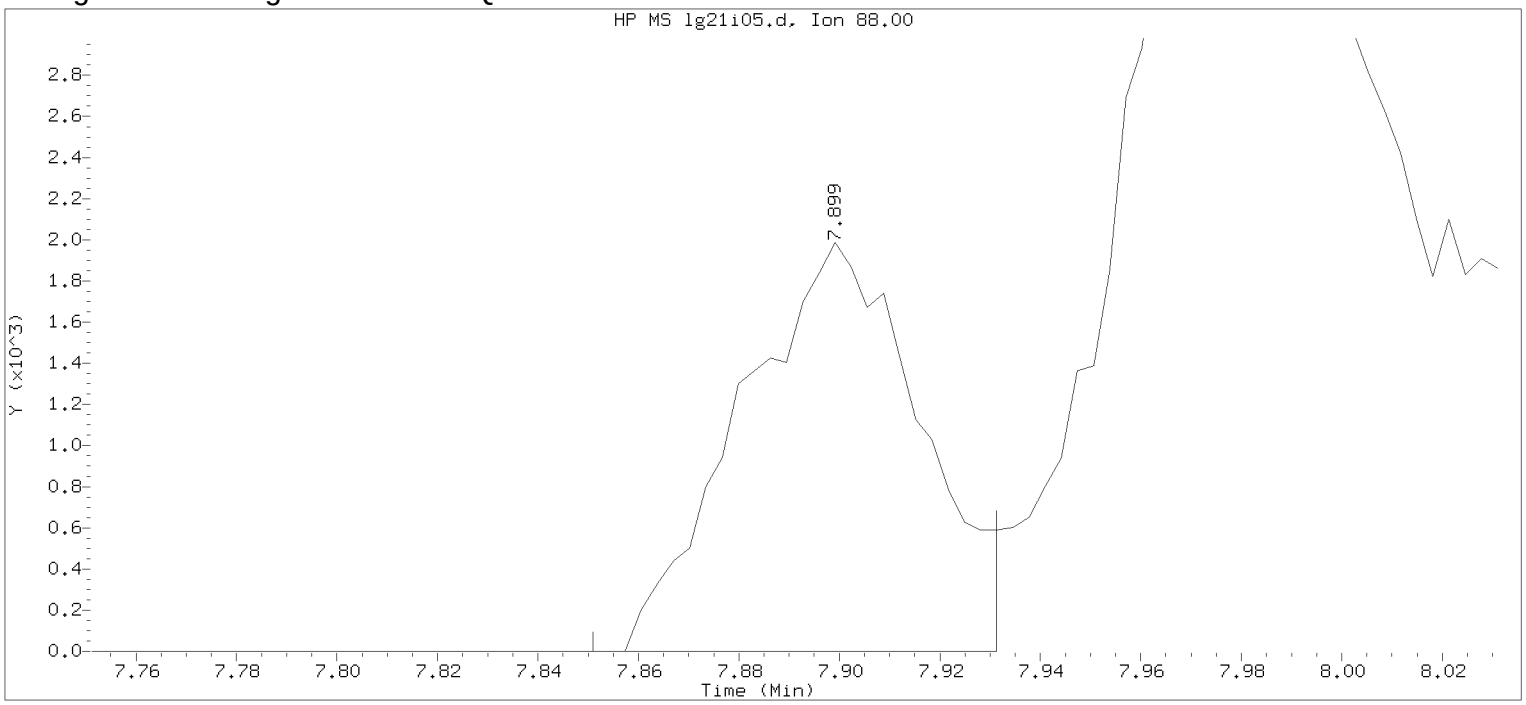
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1996
Retention Time (minutes): 7.899
Quant Ion : 88.00
Area : 4898
On-column Amount (ng) : 71.0727
Integration start scan : 1980 Integration stop scan: 2005
Y at integration start : 0 Y at integration end: 0

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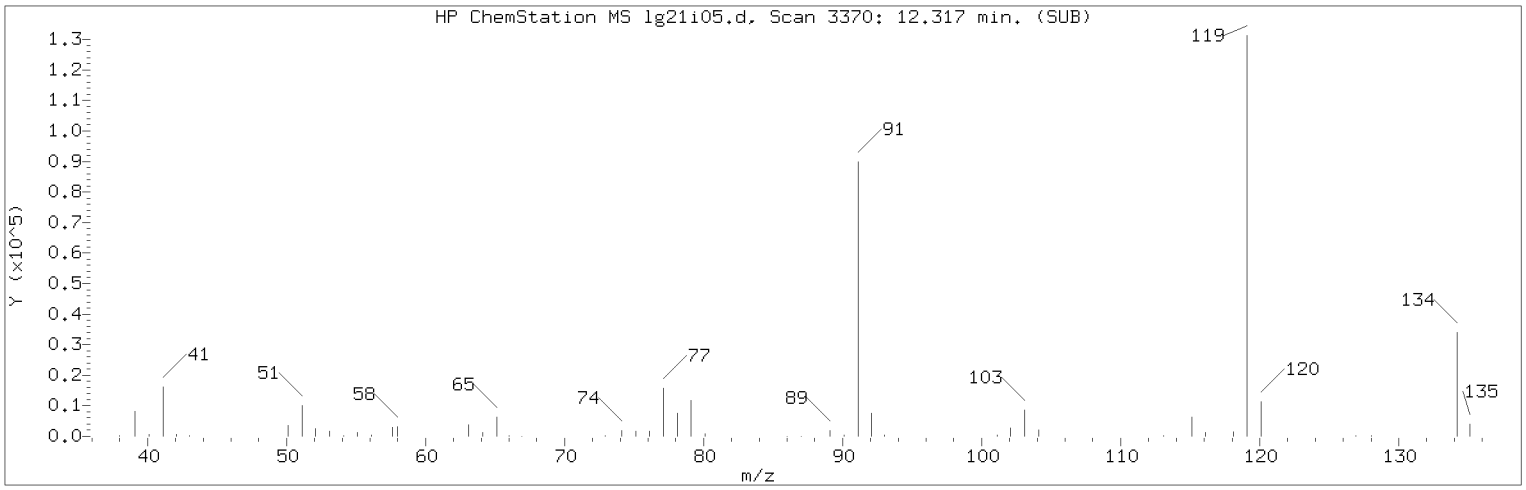
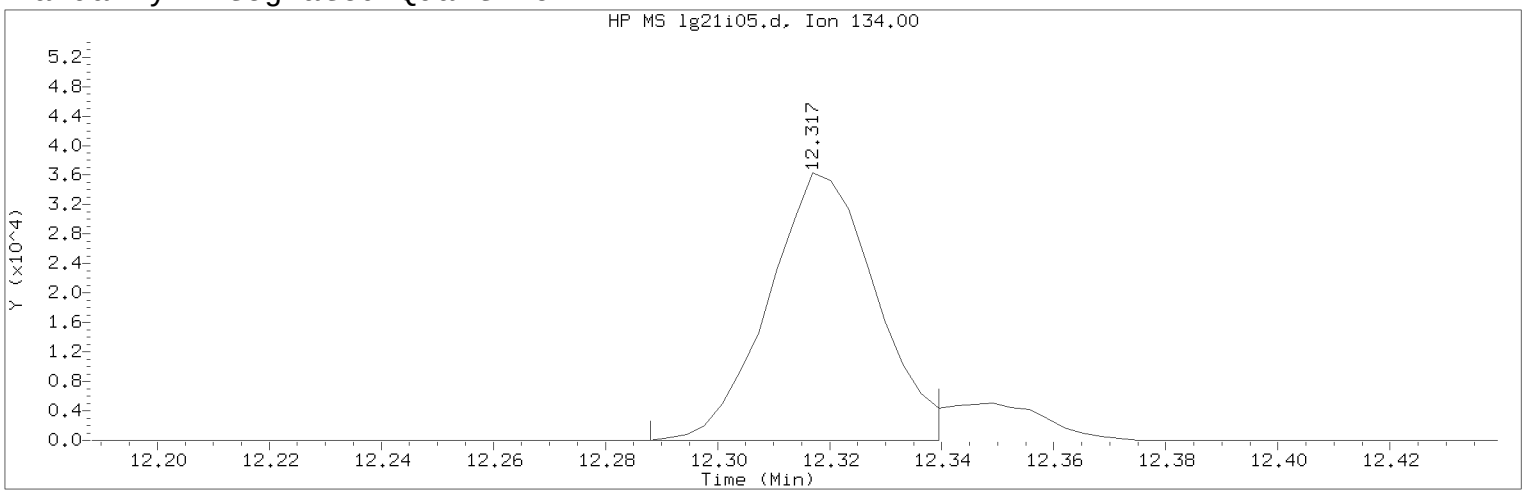
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

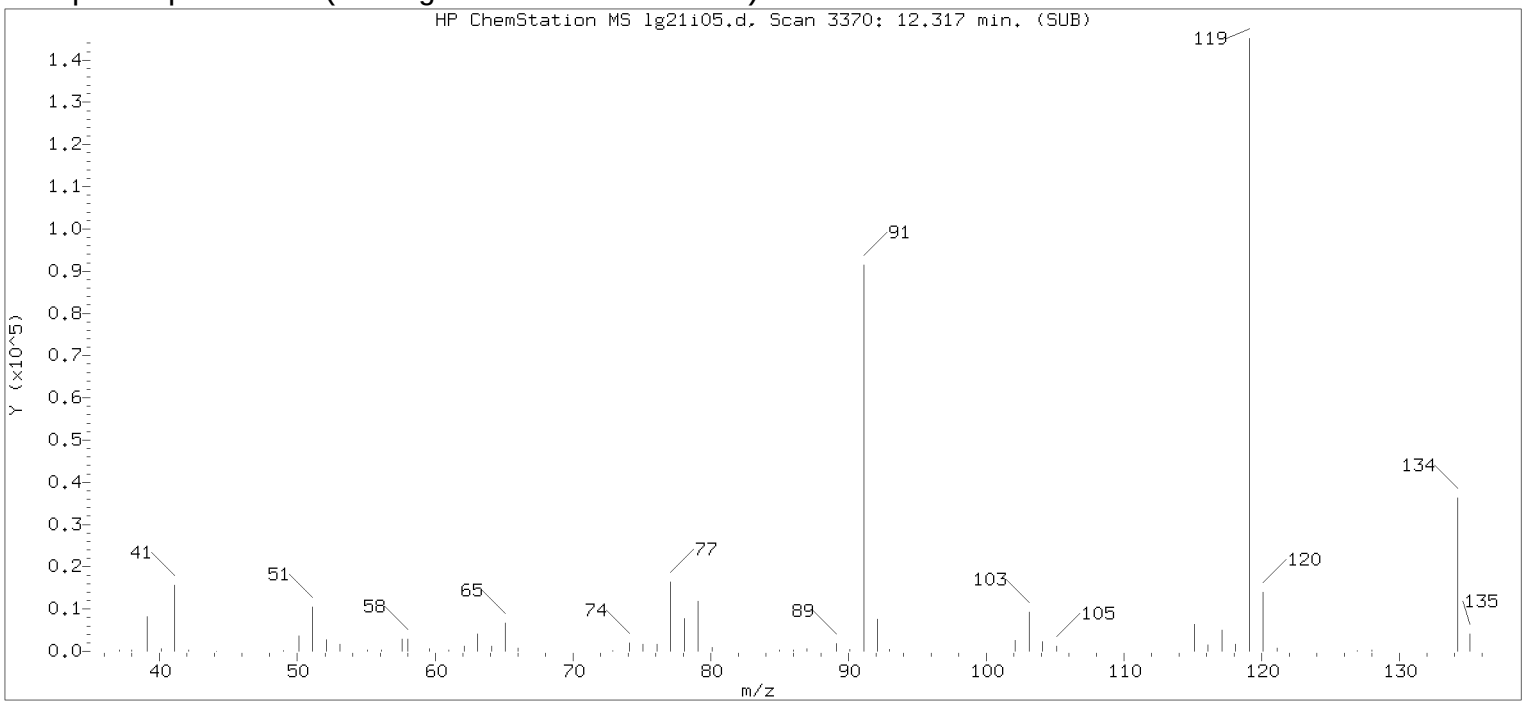
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area (flag) : 48131M
On-Column Amount (ng) : 8.7717
Integration start scan : 3360 Integration stop scan: 3376
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

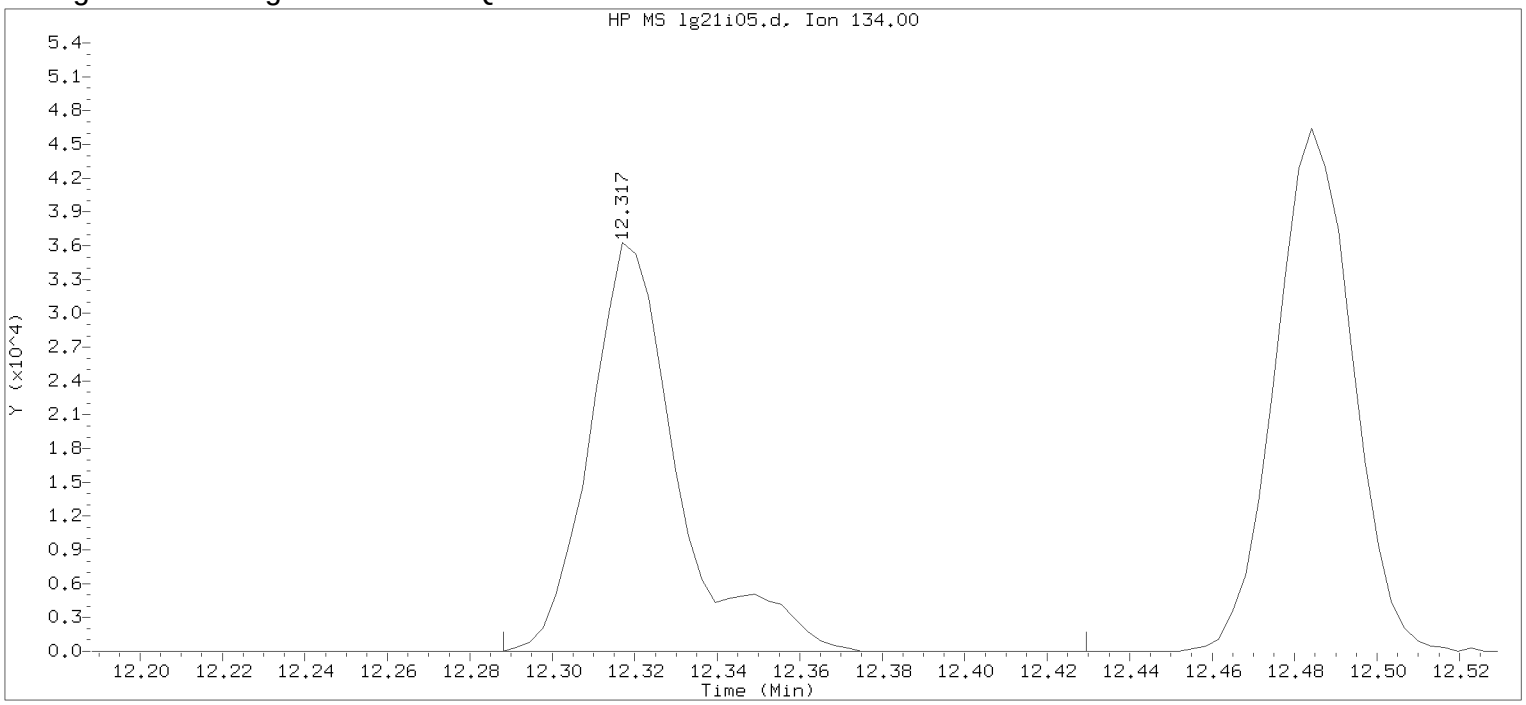
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



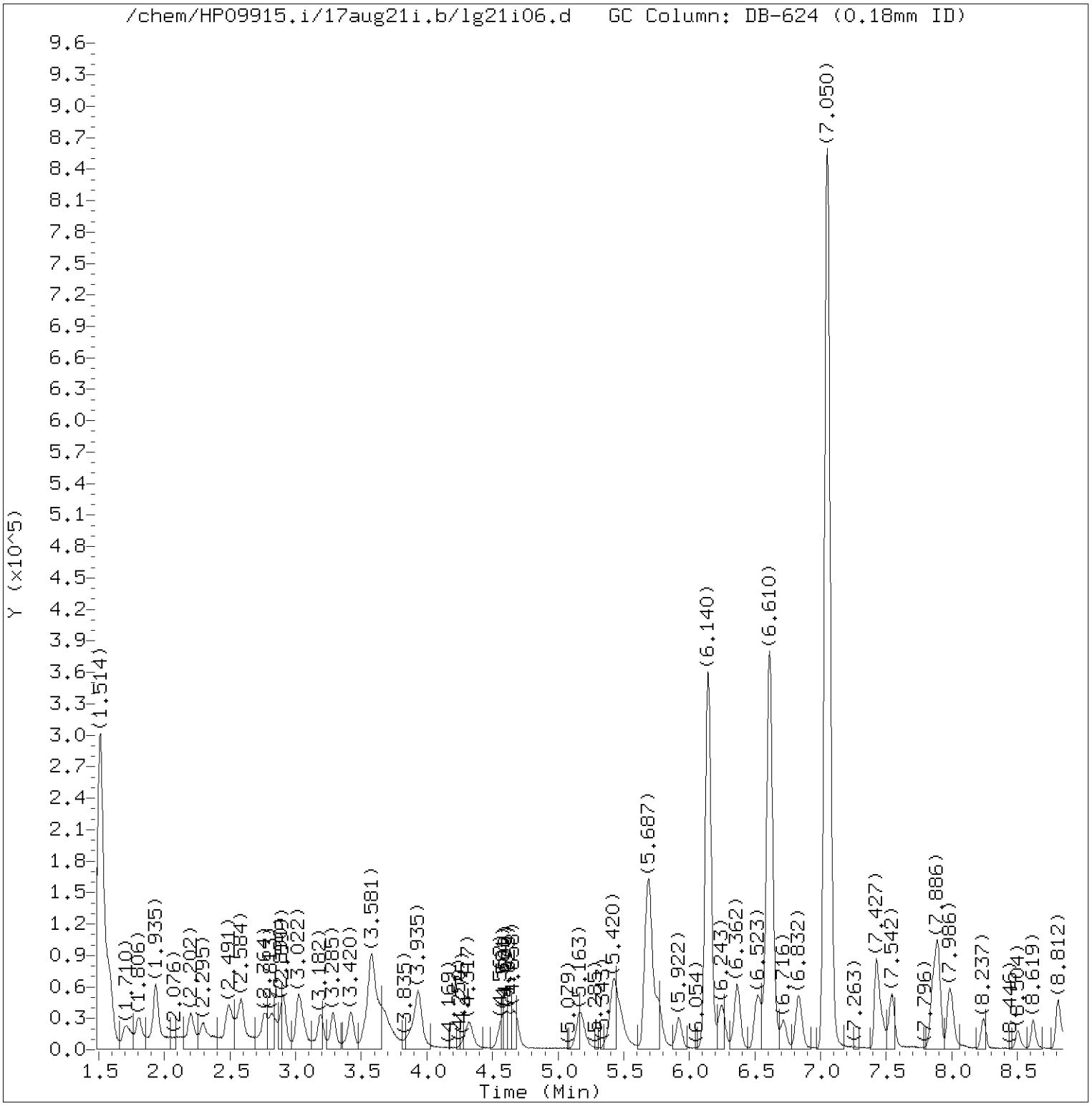

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area : 53837
On-column Amount (ng) : 9.0559
Integration start scan : 3360 Integration stop scan: 3404
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

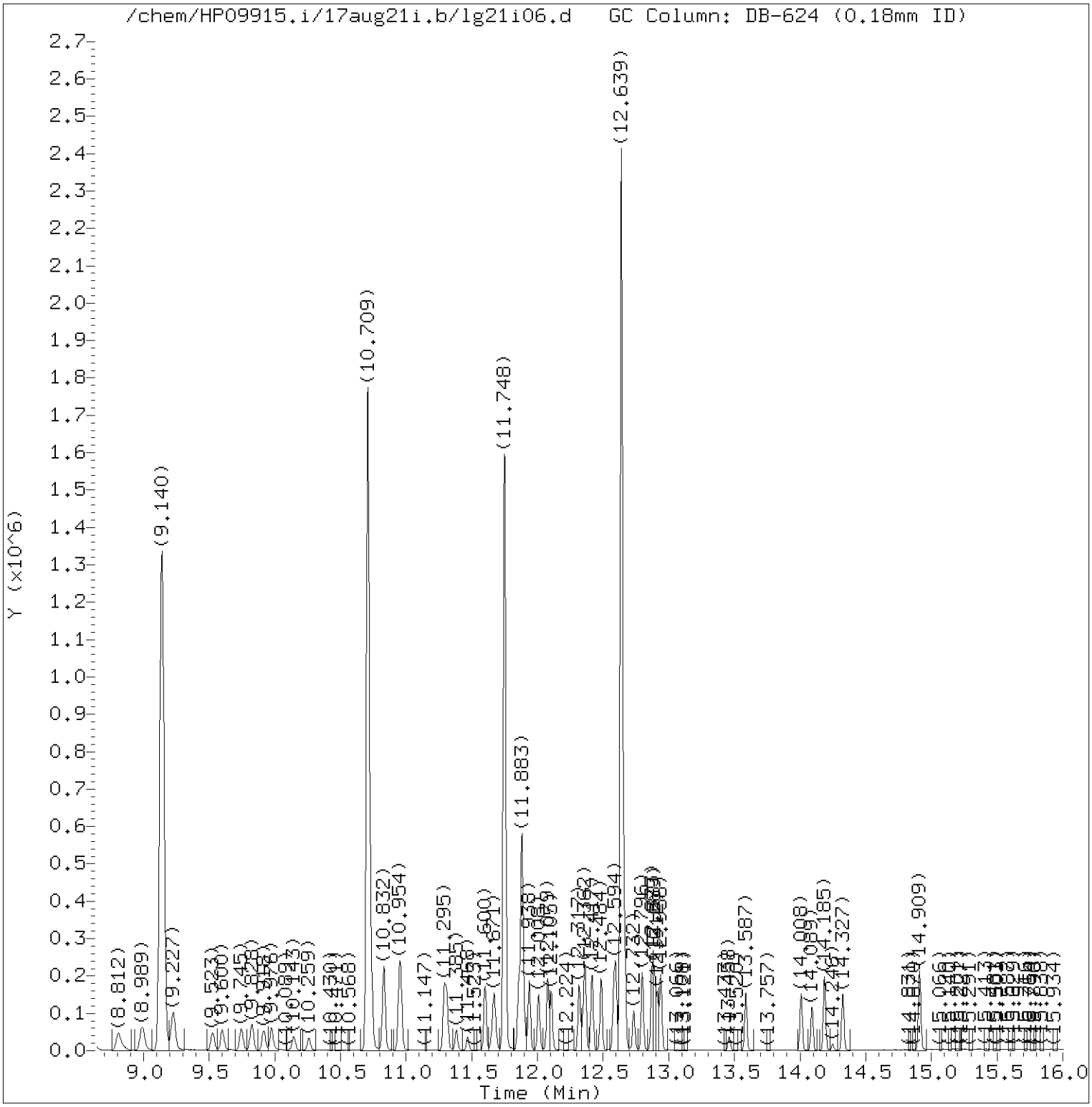
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 33759 | 4.018 |
| 4) Chloromethane | (2) | 1.806 | 50 | 31816 | 4.074 |
| 6) Vinyl Chloride | (2) | 1.925 | 62 | 31286 | 4.040 |
| 5) 1,3-Butadiene | (2) | 1.935 | 39 | 21551M | 3.958 |
| 8) Bromomethane | (2) | 2.198 | 94 | 23782M | 4.240 |
| 9) Chloroethane | (2) | 2.295 | 64 | 17602 | 4.142 |
| 10) Dichlorofluoromethane | (2) | 2.485 | 67 | 38347 | 4.050 |
| 12) Trichlorofluoromethane | (2) | 2.549 | 101 | 39269 | 4.000 |
| 11) n-Pentane | (2) | 2.587 | 43 | 30917 | 3.794 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 18683 | 3.767 |
| 15) Freon 123a | (2) | 2.819 | 67 | 26513 | 4.165 |
| 16) Acrolein | (1) | 2.903 | 56 | 69384 | 36.268 |
| 17) 1,1-Dichloroethene | (2) | 3.022 | 96 | 18165 | 3.680 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 8584 | 3.717 |
| 18) Acetone | (1) | 3.041 | 58 | 4810 | 6.256 |
| 19) Freon 113 | (2) | 3.047 | 101 | 18816 | 3.542 |
| 21) 2-Propanol | (1) | 3.182 | 45 | 45726M | 83.368 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 37445 | 3.642 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 60901 | 3.606 |
| 27) Methyl Acetate | (2) | 3.404 | 43 | 20634 | 3.686 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 29287 | 3.629 |
| 28) Methylene Chloride | (2) | 3.578 | 84 | 21808 | 3.757 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 261323M | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.687 | 59 | 79916M | 77.408 |
| 31) Acrylonitrile | (2) | 3.861 | 53 | 11368 | 3.680 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.906 | 73 | 67352 | 3.730 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 21417 | 3.692 |
| 34) n-Hexane | (2) | 4.317 | 57 | 29772 | 3.629 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 36941 | 3.745 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 64257 | 3.675 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 32351 | 3.732 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 65243 | 3.682 |
| 44) 2-Butanone | (2) | 5.385 | 43 | 30688 | 7.790 |
| 42) cis-1,2-Dichloroethene | (2) | 5.411 | 96 | 23965 | 3.647 |
| 45) 2,2-Dichloropropane | (2) | 5.427 | 77 | 31425M | 3.701 |
| 47) Propionitrile | (1) | 5.465 | 54 | 89845 | 71.243 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 123606 | 36.098 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 12508 | 3.593 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 8453 | 7.055 |
| 51) Chloroform | (2) | 5.922 | 83 | 36442 | 3.623 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 326581 | 49.772 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 335514 | 49.989 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 40982 | 4.166 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 45382 | 7.339 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 35570 | 3.654 |
| 54) Cyclohexane | (2) | 6.243 | 84 | 30722 | 3.572 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 11405 | 3.700 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 26804 | 3.486 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 29248 | 3.695 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 61588 | 189.598 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 79499 | 49.878 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 65 | 375291 | 50.764 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 50883 | 49.852 |
| 60) Benzene | (2) | 6.629 | 78 | 84709 | 3.663 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 30335 | 3.810 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 3039 | 3.851 |
| 65) t-Amyl methyl ether | (2) | 6.832 | 73 | 67087 | 3.659 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1288157 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 30773 | 3.692 |
| 69) n-Butanol | (1) | 7.427 | 56 | 99188 | 354.944 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 23276 | 3.698 |
| 72) Methylcyclohexane | (2) | 7.851 | 83 | 34839 | 3.348 |
| 72) Methylcyclohexane | (2) | 7.848 | 98 | 16310 | 3.325 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 21612 | 3.622 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 15786 | 180.435 |
| 76) Methyl Methacrylate | (2) | 7.980 | 69 | 19843M | 3.578 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 15245 | 3.595 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 26719 | 3.438 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 15597 | 7.309 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 16552 | 3.556 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 33633 | 3.428 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 61352 | 7.279 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1272723 | 50.453 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 834198 | 50.284 |
| 88) Toluene | (3) | 9.227 | 92 | 55881 | 3.691 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 30052 | 3.338 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 33973 | 3.512 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 21415 | 3.646 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 24395 | 3.595 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 34540 | 3.614 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 45043 | 7.351 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 63685 | 6.767 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 21073 | 3.186 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 23324 | 3.523 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1014165 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 31390 | 3.678 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 62979 | 3.559 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 21143 | 3.362 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 105133 | 3.608 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 84043 | 7.136 |
| 107) o-Xylene | (3) | 11.291 | 106 | 42178 | 3.563 |
| 109) Styrene | (3) | 11.311 | 104 | 68981 | 3.479 |
| 110) Bromoform | (3) | 11.471 | 173 | 14901 | 2.991 |
| 111) Isopropylbenzene | (3) | 11.600 | 105 | 106205 | 3.568 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 60483A | 181.002 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 483911 | 50.199 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 420778 | 50.425 |
| 108) Xylene (Total) | (3) | | 106 | 126221 | 10.699 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 34547 | 3.590 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 28596 | 3.505 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 93284 | 36.678 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 10771 | 3.679 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 124213 | 3.631 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 25897 | 3.488 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 91451 | 3.552 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 27152 | 3.500 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 18548M | 3.364 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 14539 | 3.038 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 94110 | 3.552 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 113185 | 3.536 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 55202 | 3.592 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 99887 | 3.498 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 553830 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 57542 | 3.627 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 97304 | 3.536 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 65474 | 3.292 |
| 136) 1,3-Diethylbenzene | (4) | 12.796 | 119 | 60210 | 3.473 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 63426 | 3.516 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 50450 | 3.622 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 54896 | 3.596 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 50122 | 3.470 |
| 141) Diethylbenzene (total) | (4) | | 100 | 173758 | 10.460 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 7357 | 3.478 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 42184 | 3.664 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 42083 | 3.727 |
| 147) Hexachlorobutadiene | (4) | 14.089 | 225 | 17720 | 3.705 |
| 148) Naphthalene | (4) | 14.188 | 128 | 134032 | 3.759 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 40159 | 3.734 |
| 150) 2-Methylnaphthalene | (4) | 14.909 | 142 | 91447 | 3.872 |



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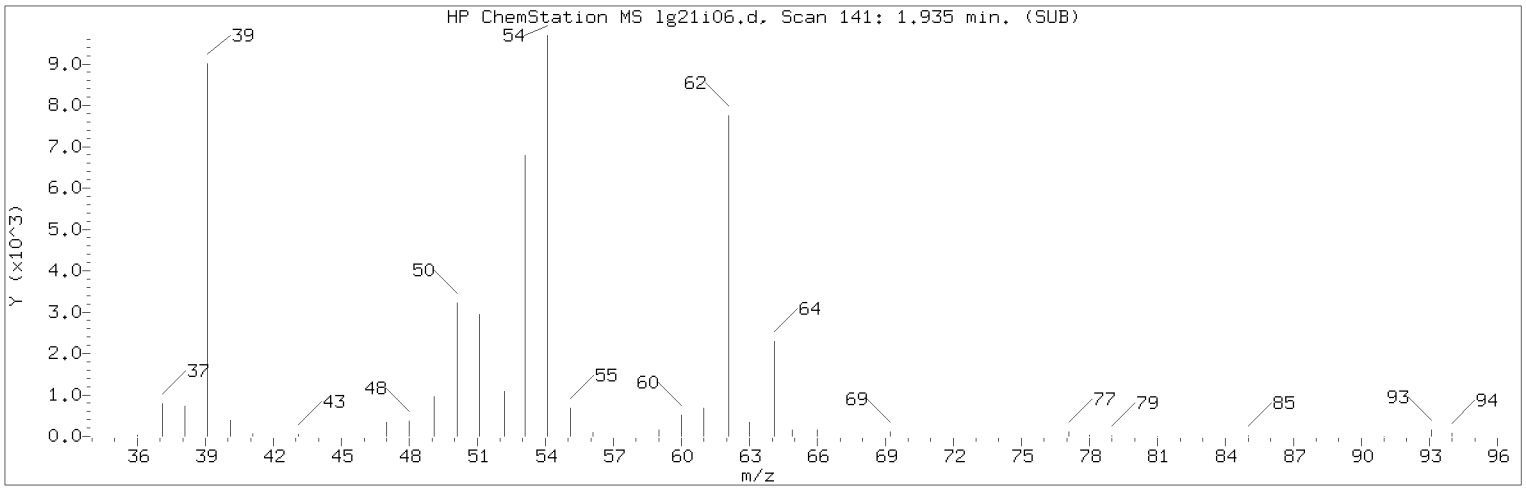
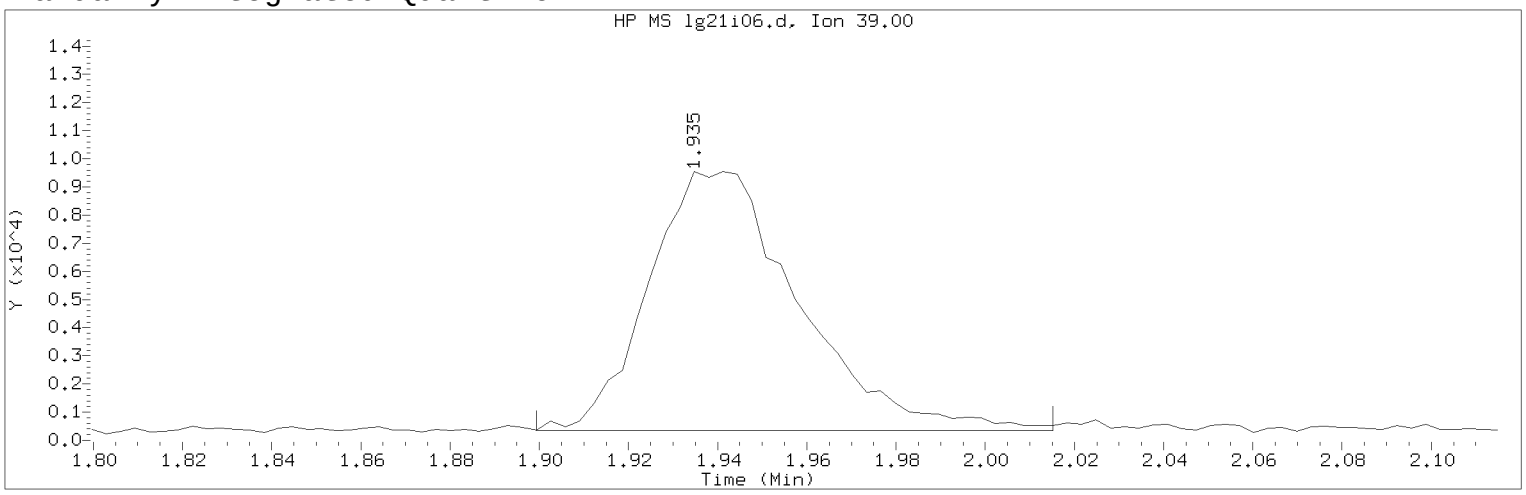
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

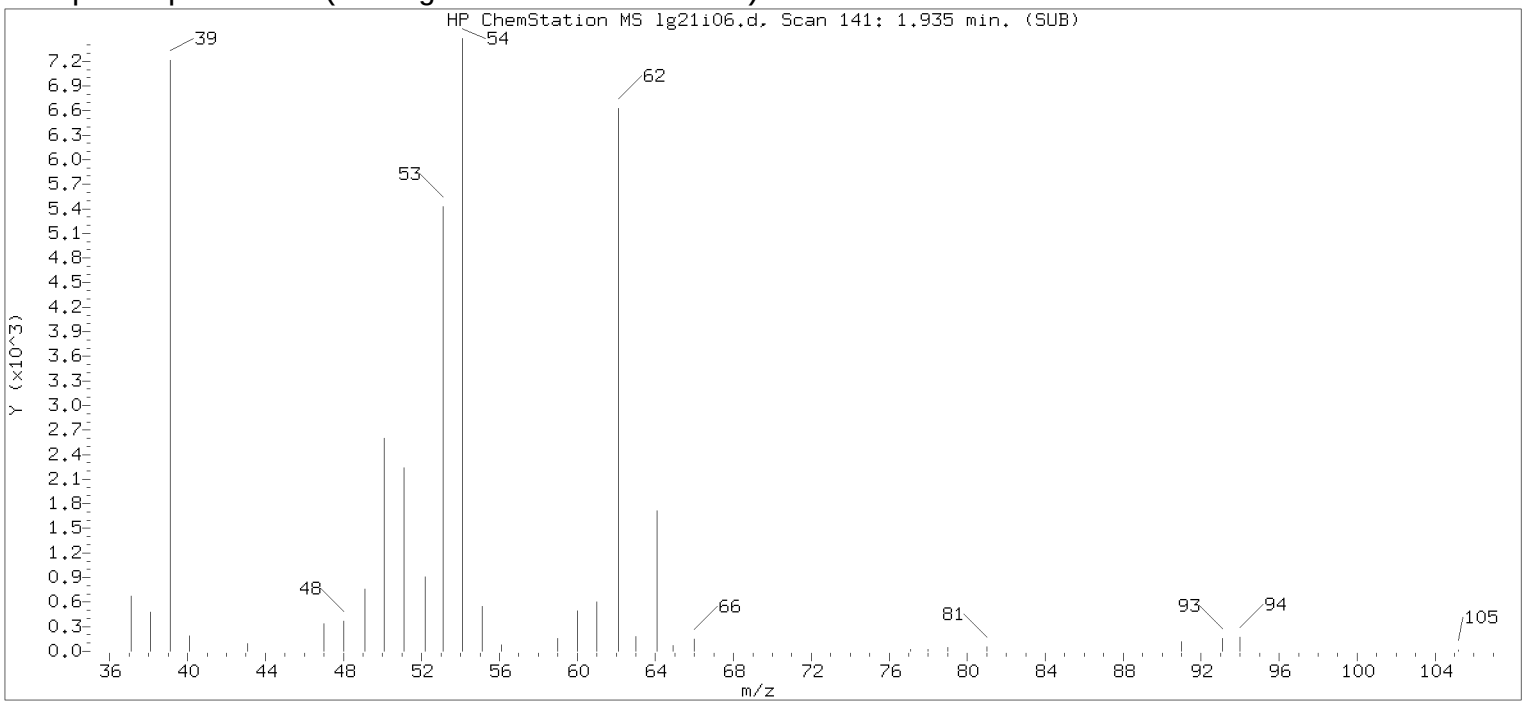
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 141
Retention Time (minutes): 1.935
Quant Ion : 39.00
Area (flag) : 21551M
On-Column Amount (ng) : 3.9584
Integration start scan : 129 Integration stop scan: 165
Y at integration start : 346 Y at integration end: 346

Reason for manual integration: improper integration

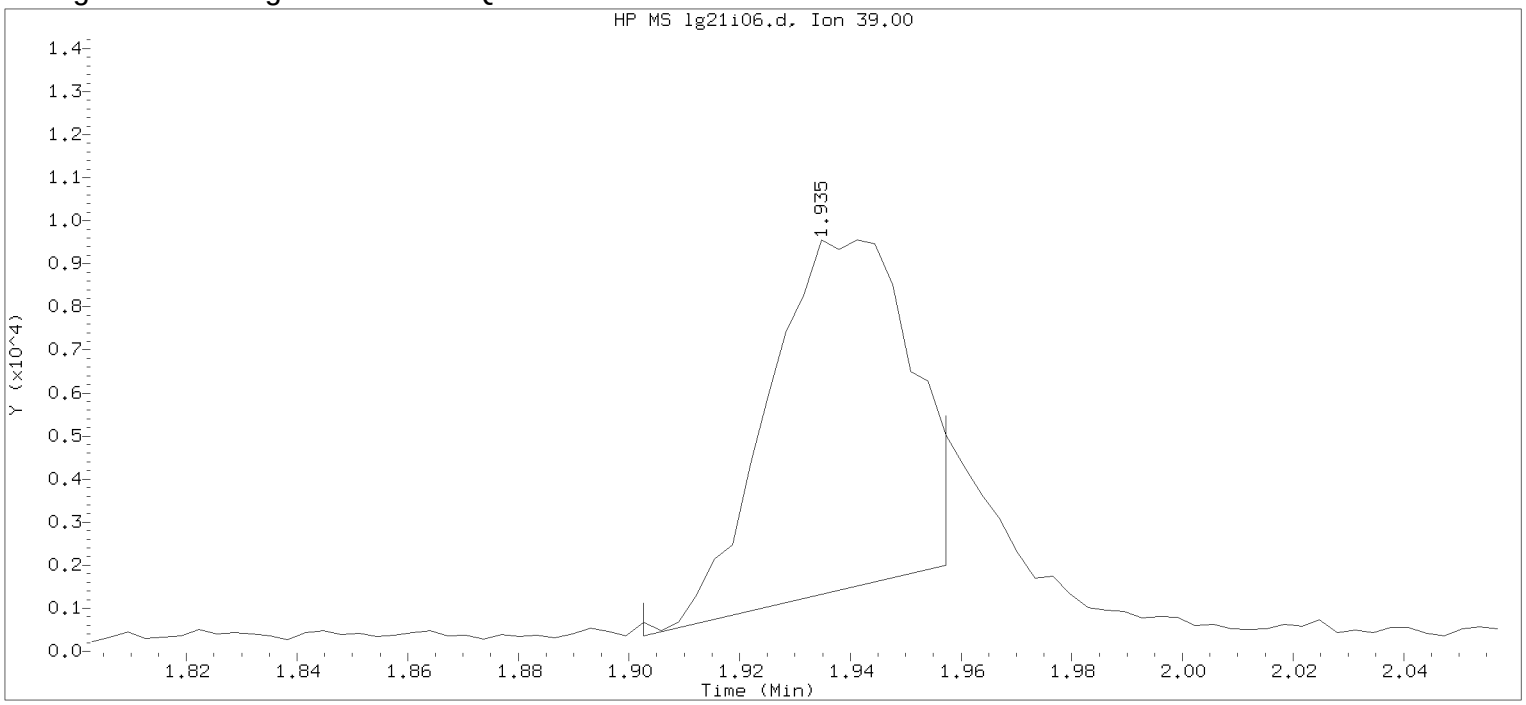
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 141
Retention Time (minutes): 1.935
Quant Ion : 39.00
Area : 14471
On-column Amount (ng) : 2.8103
Integration start scan : 130 Integration stop scan: 147
Y at integration start : 364 Y at integration end: 1998

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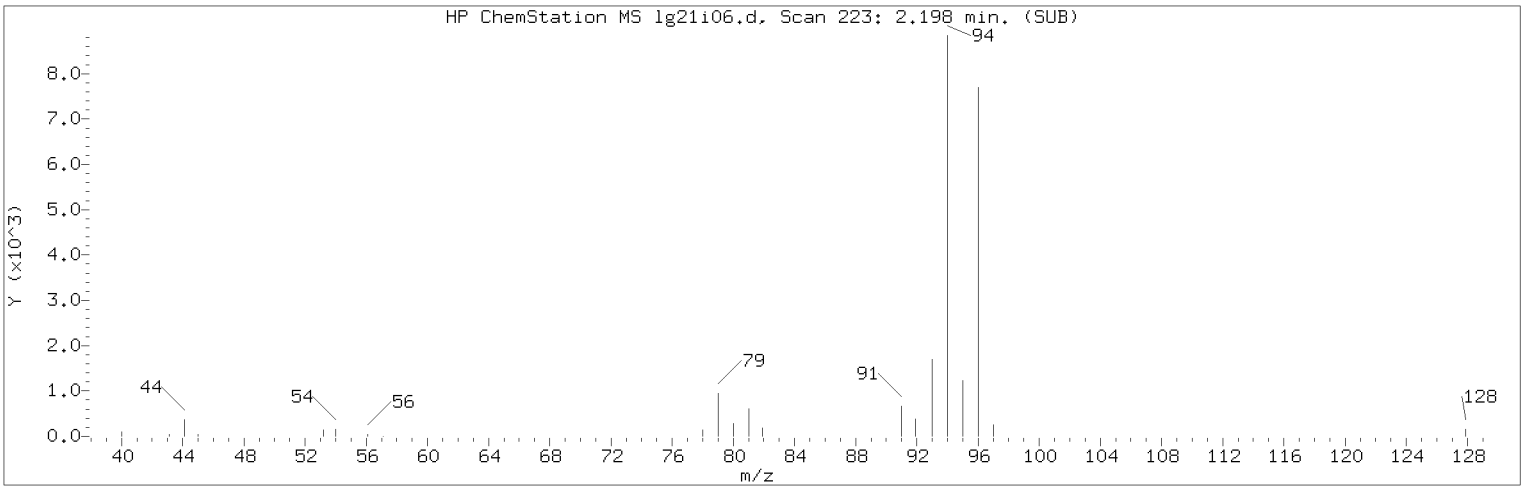
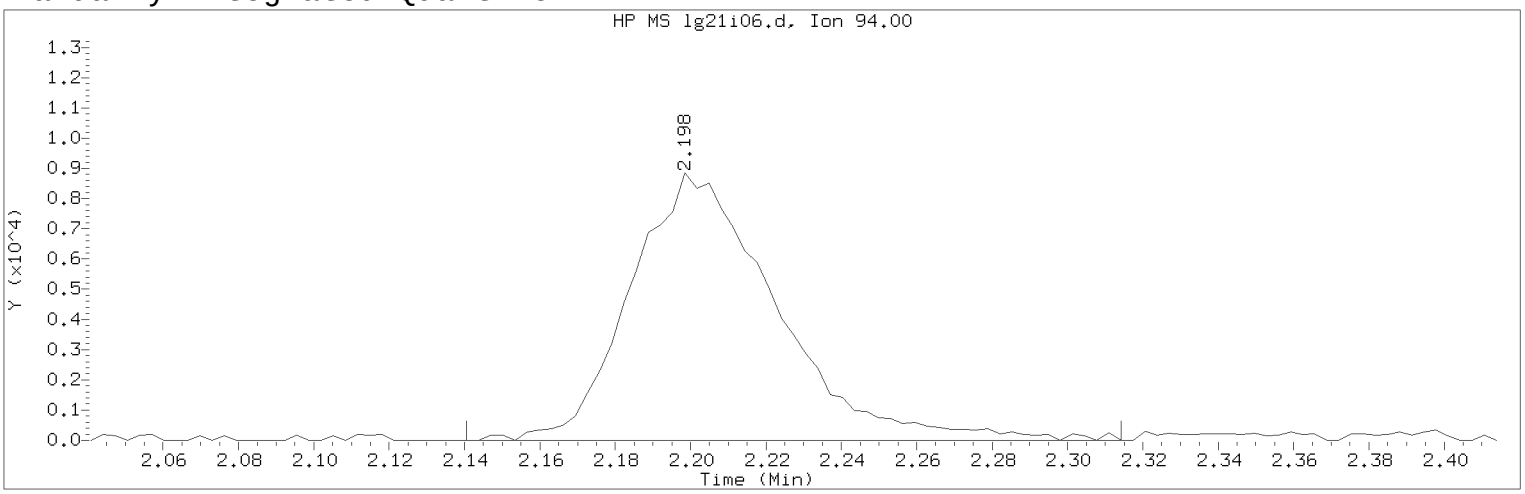
Target 3.5 esignature userKAS02648 RD194 Page 148

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

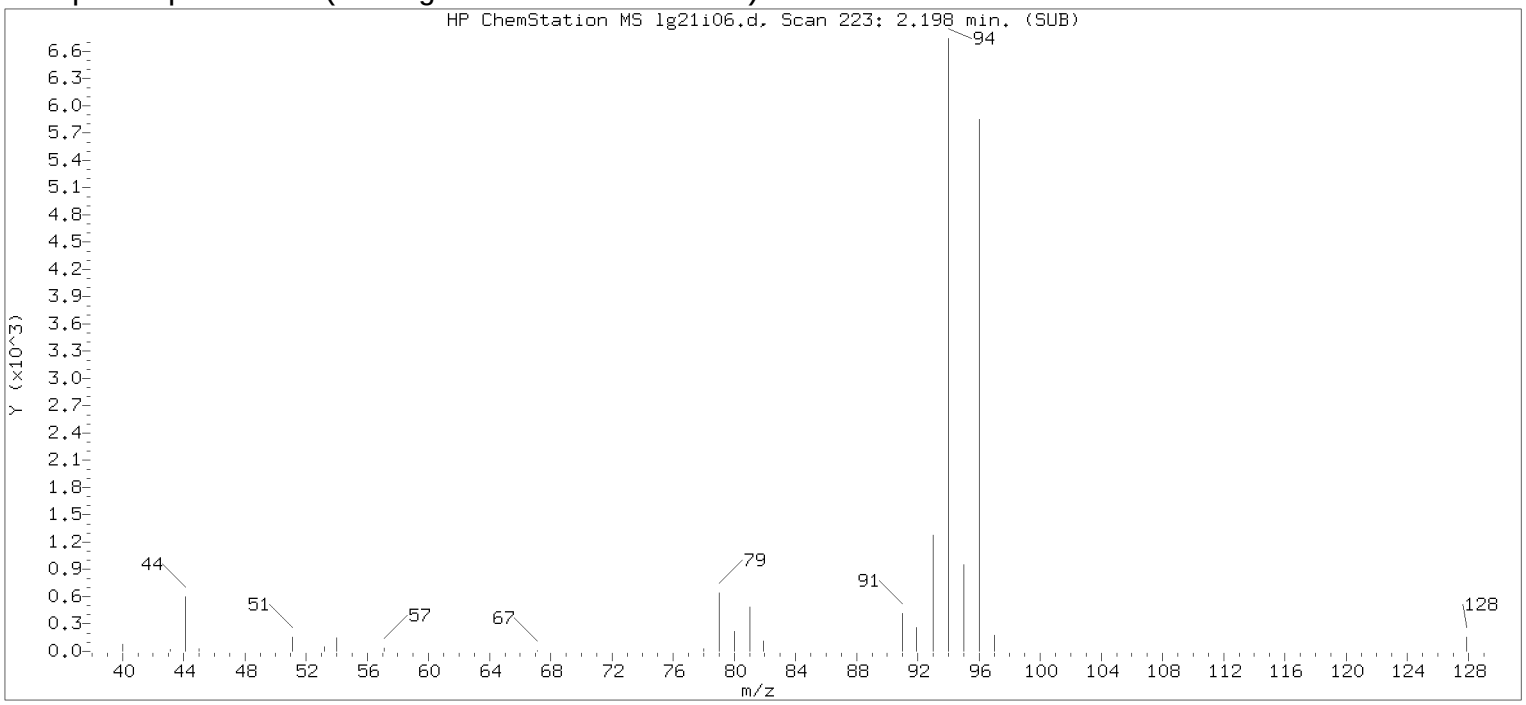
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area (flag) : 23782M
On-Column Amount (ng) : 4.2397
Integration start scan : 204 Integration stop scan: 258
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

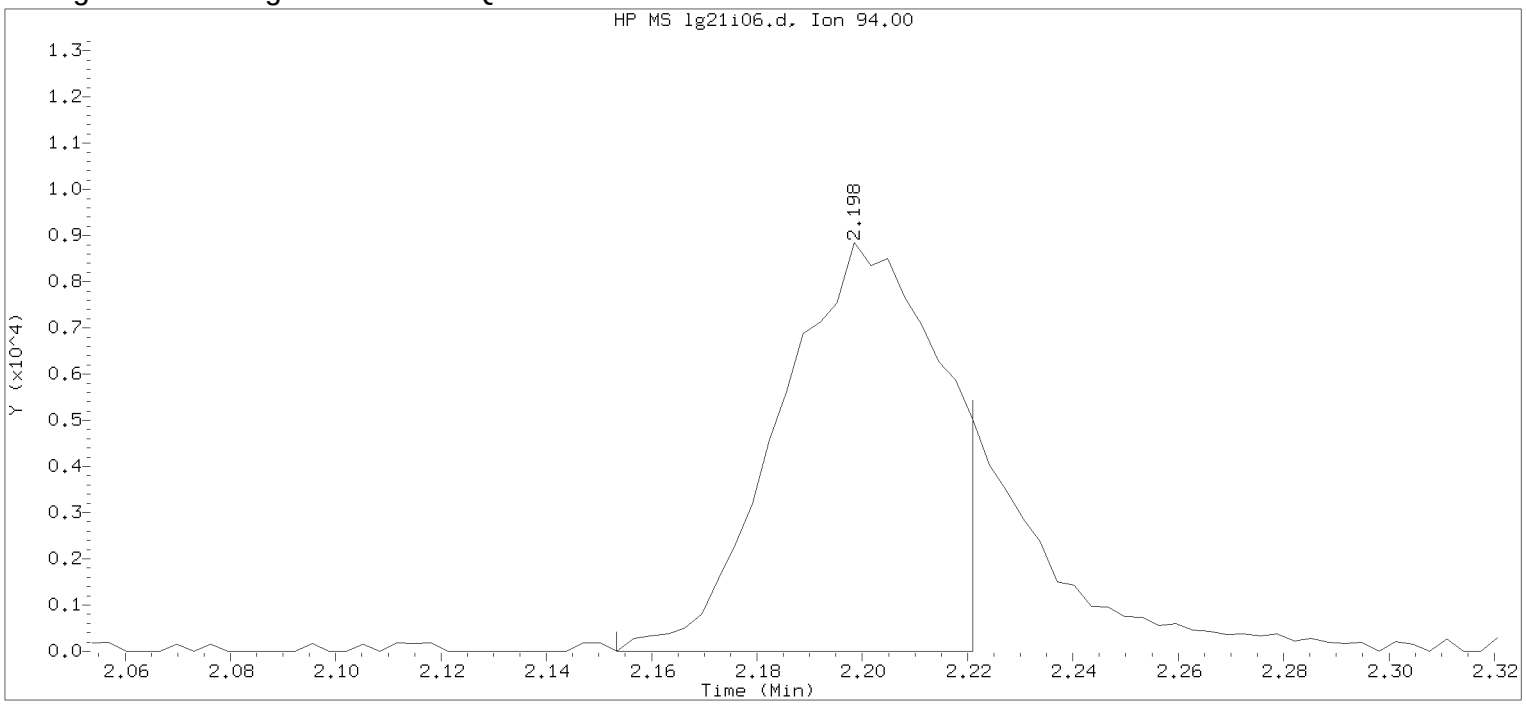
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area : 18554
On-column Amount (ng) : 3.4413
Integration start scan : 208 Integration stop scan: 229
Y at integration start : 0 Y at integration end: 0

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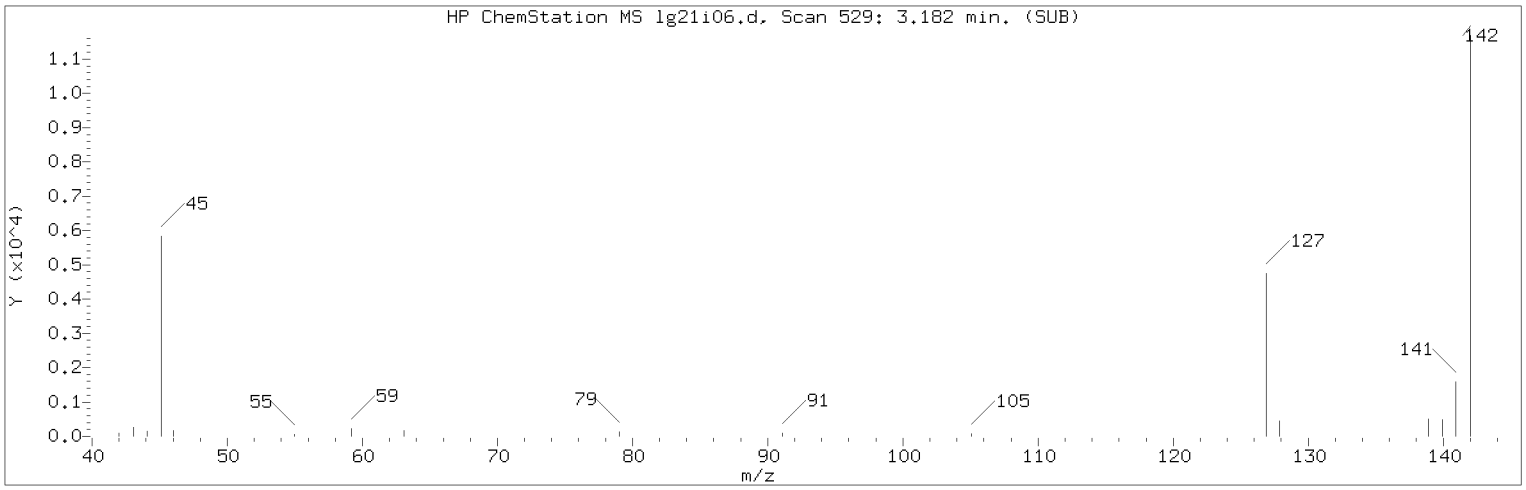
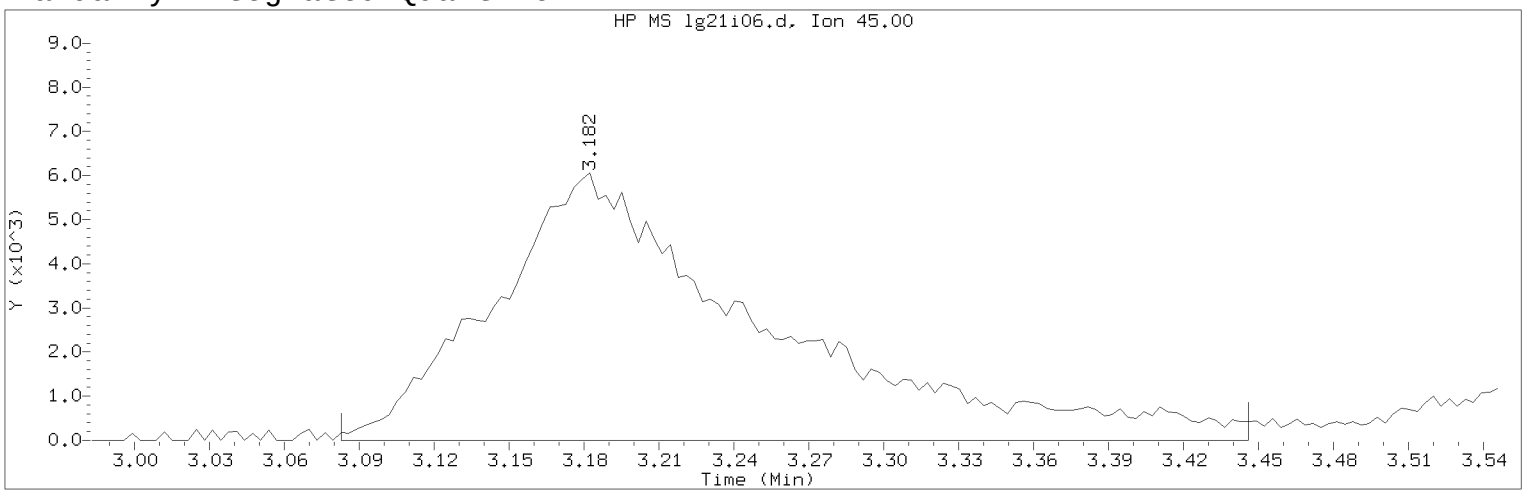
Target 3.5 esignature userKAS02648 Page 148

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

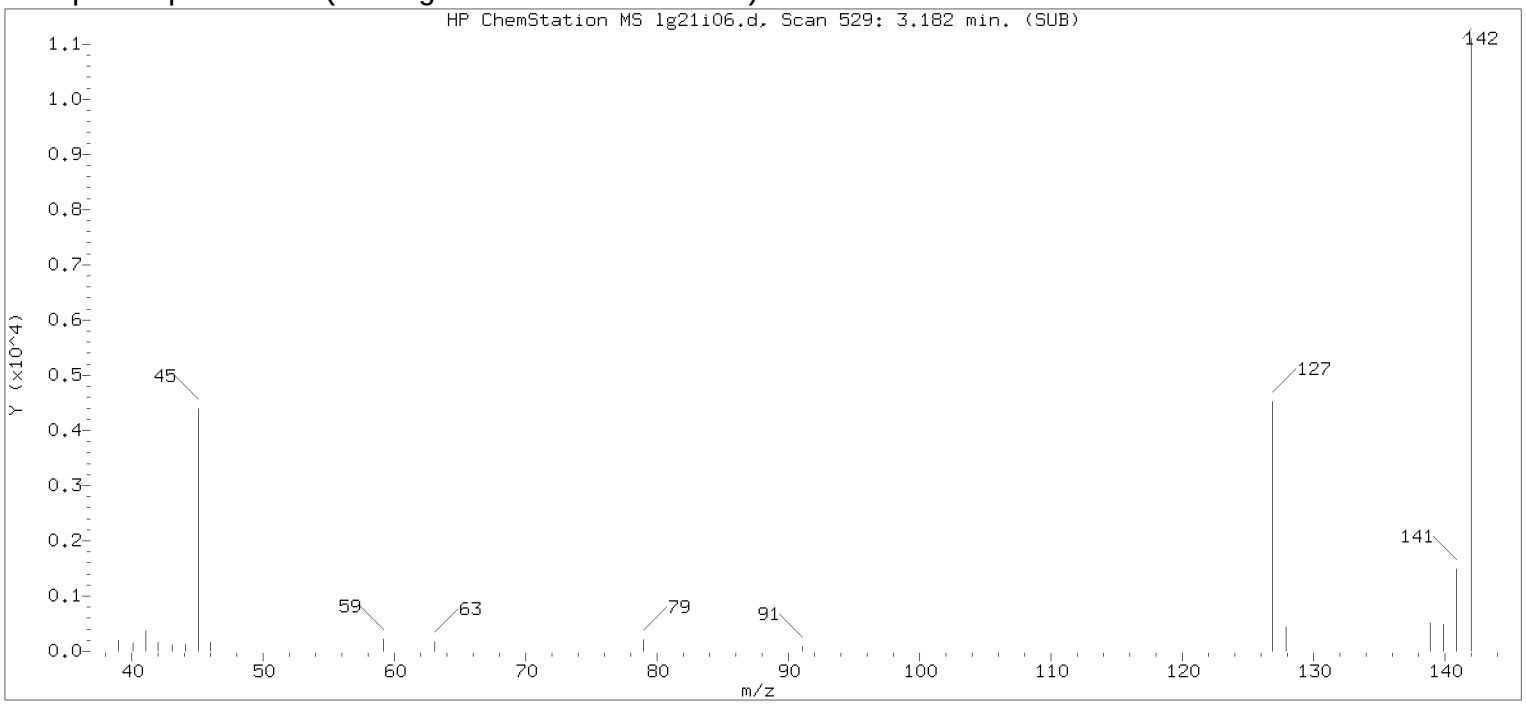
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area (flag) : 45726M
On-Column Amount (ng) : 83.3675
Integration start scan : 497 Integration stop scan: 610
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

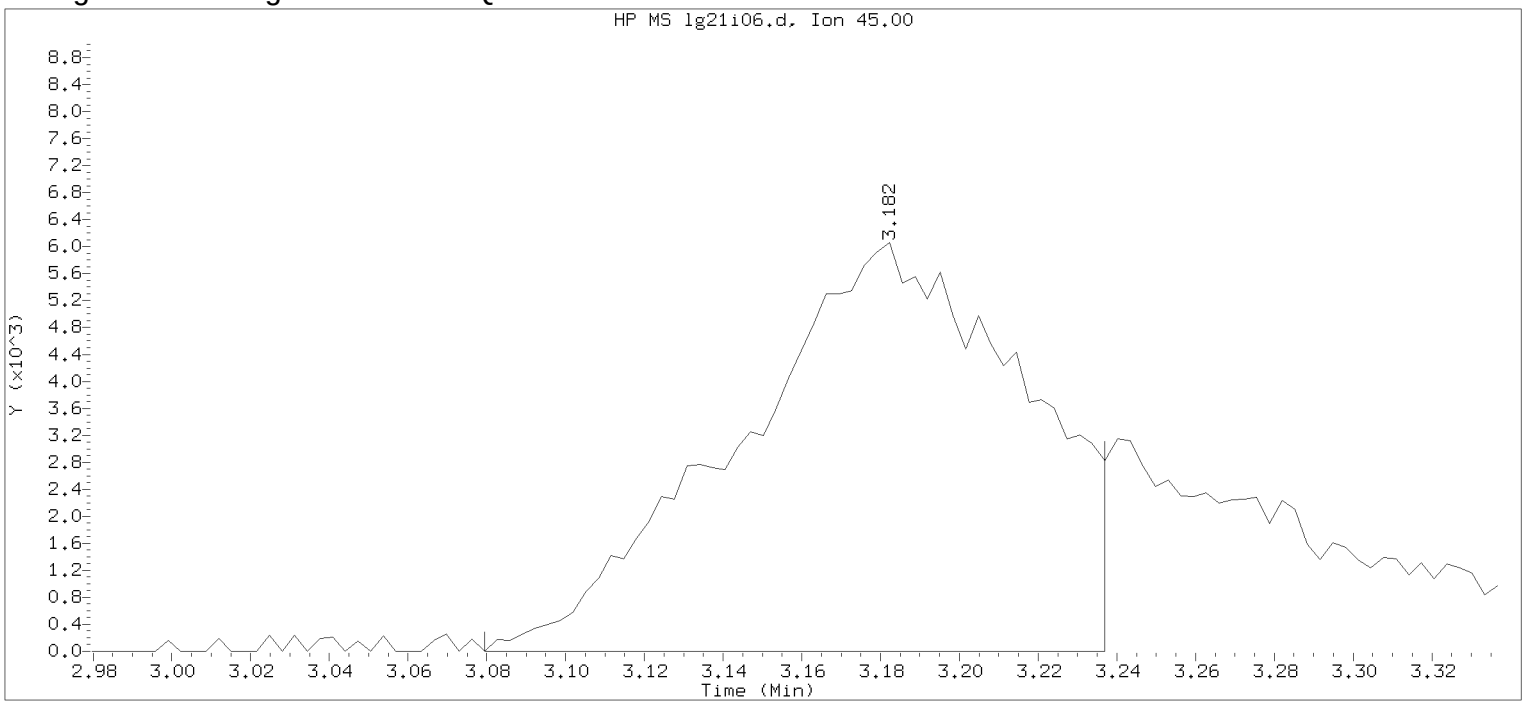
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

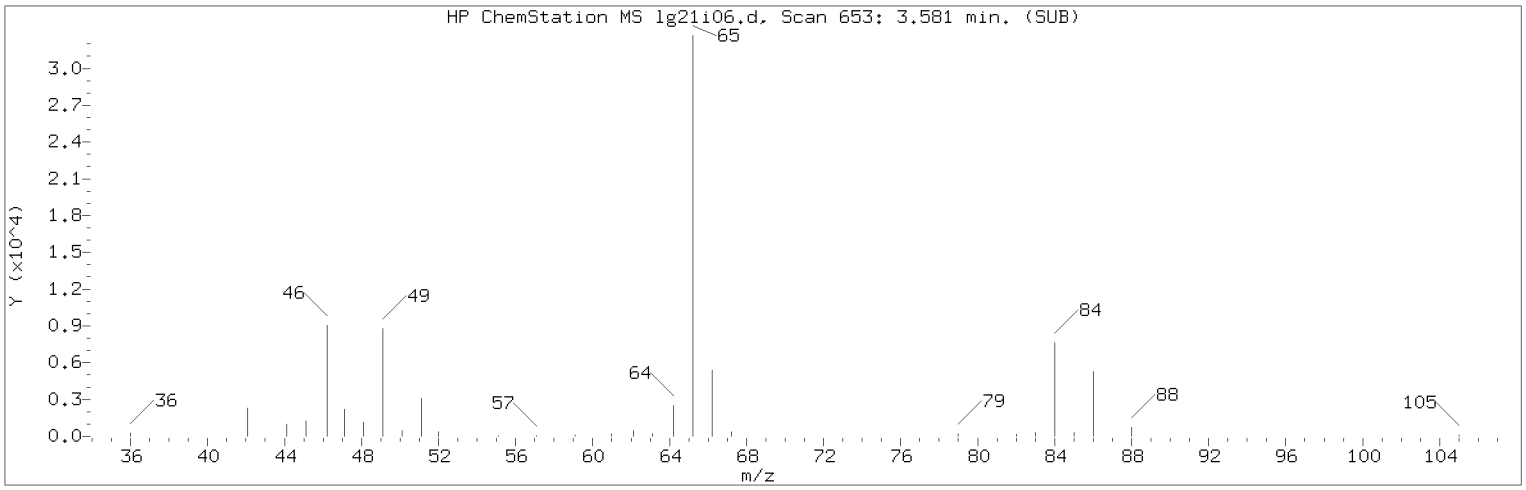
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

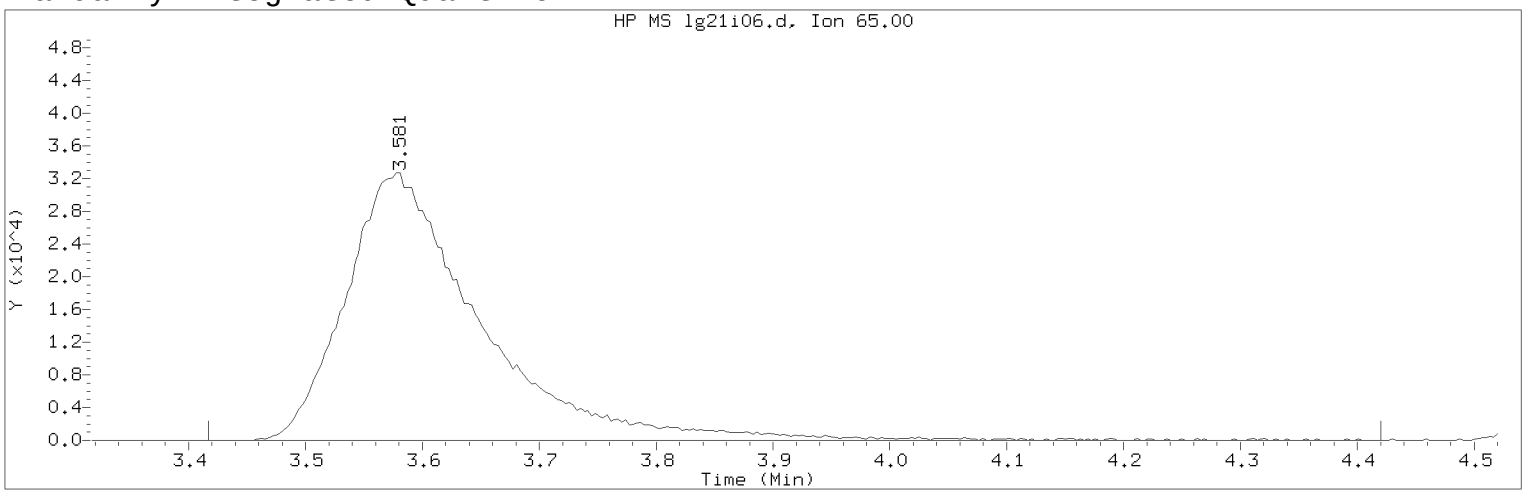
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area : 30413
On-column Amount (ng) : 57.4437
Integration start scan : 496 Integration stop scan: 545
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

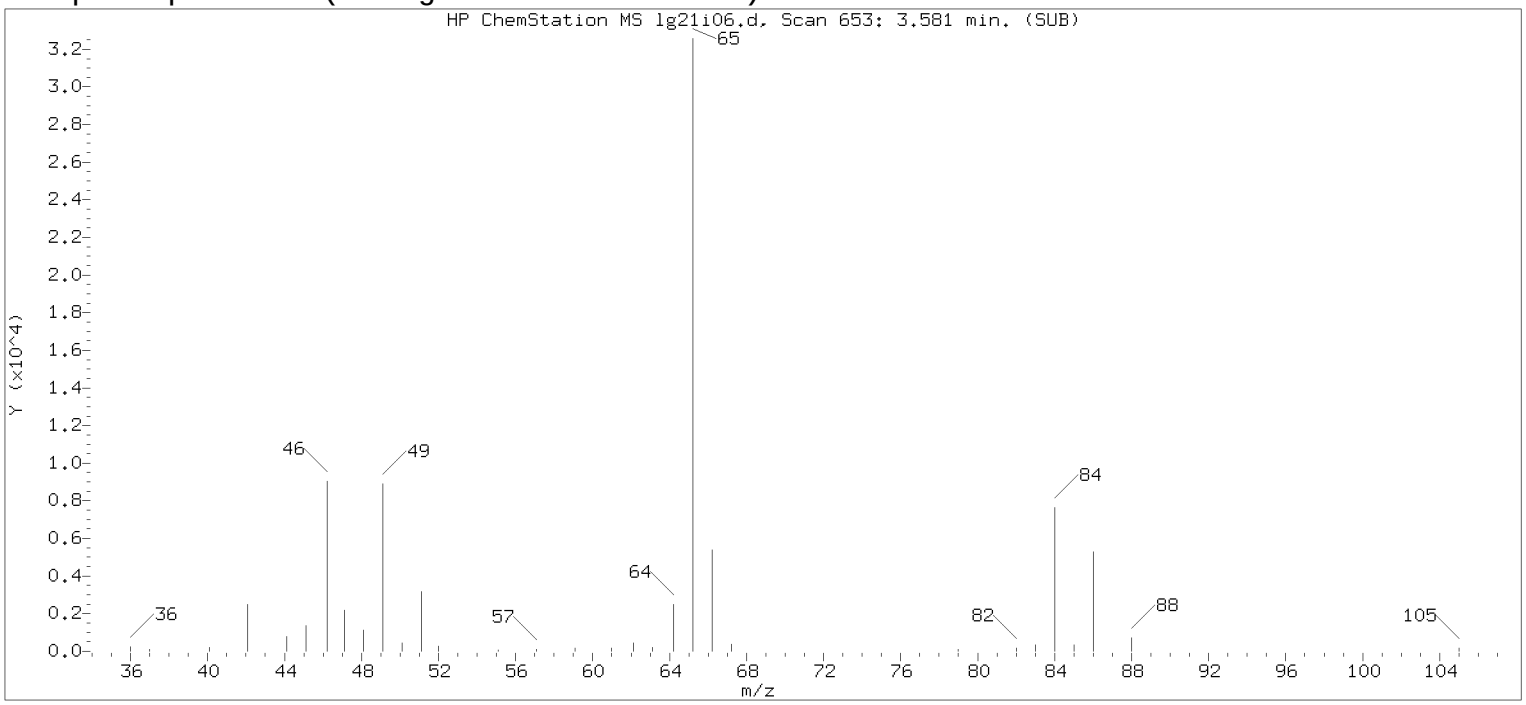
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 261323M
On-Column Amount (ng) : 250.0000
Integration start scan : 601 Integration stop scan: 913
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

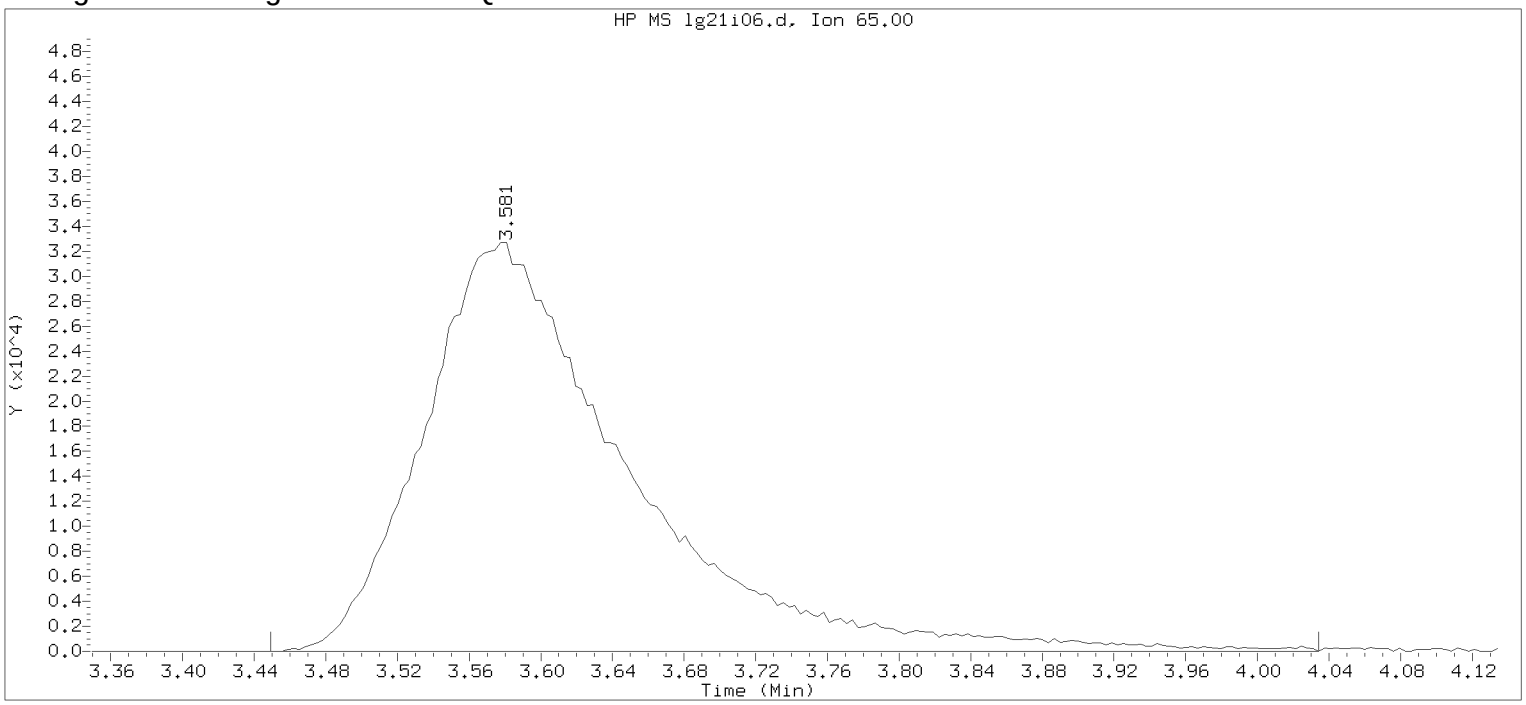
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

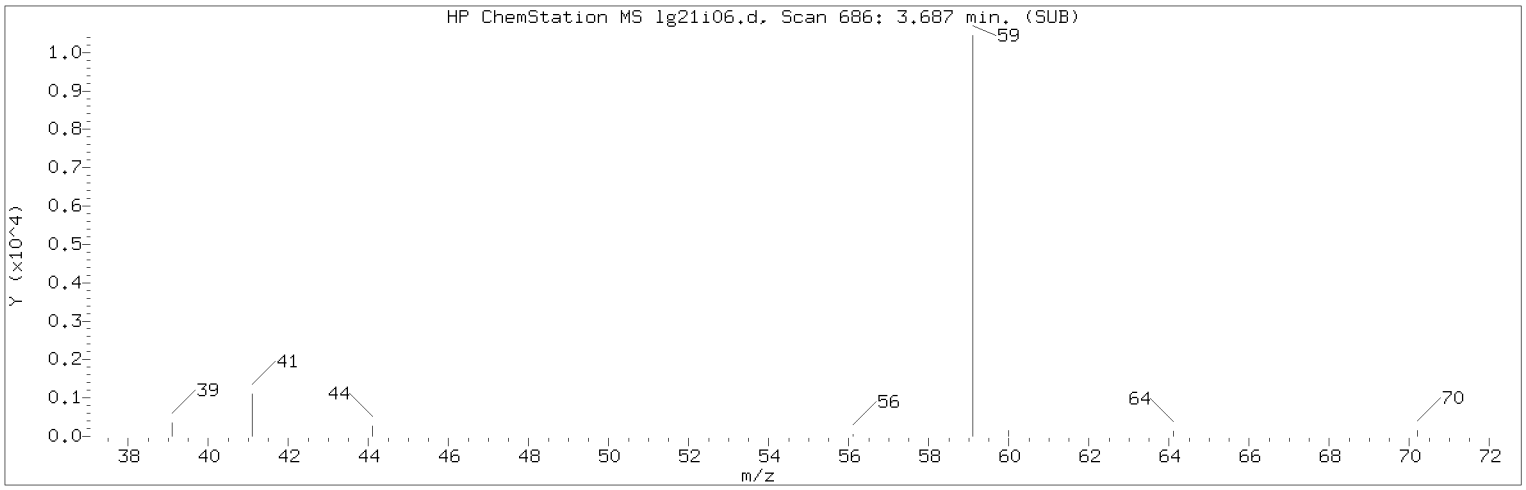
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

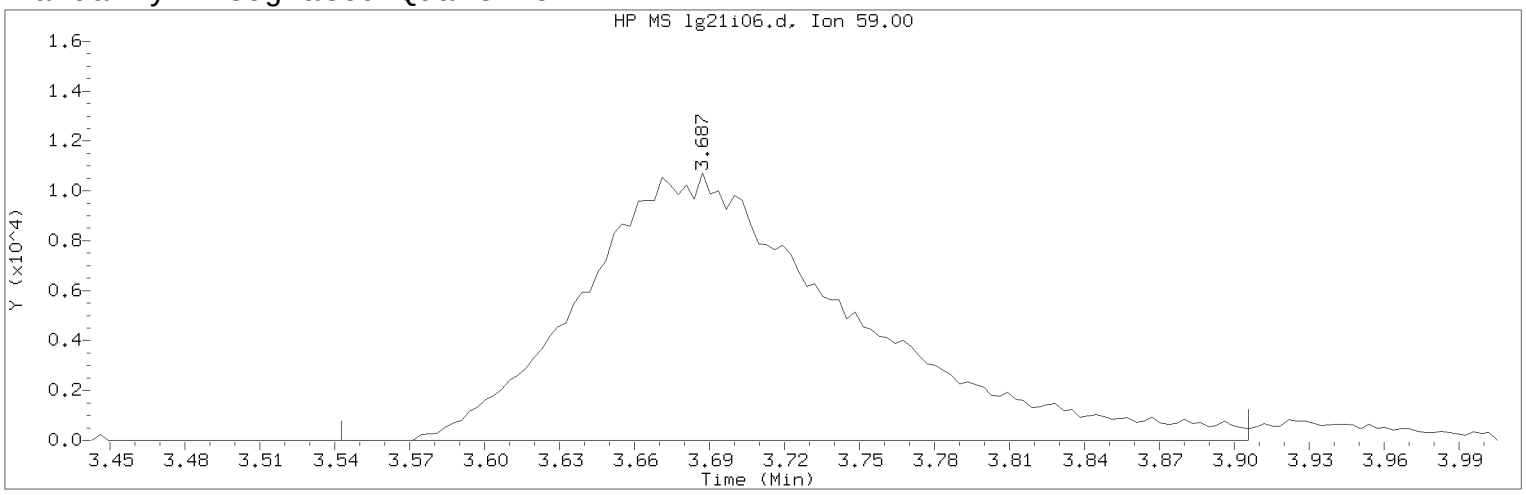
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 259395
On-column Amount (ng) : 250.0000
Integration start scan : 611 Integration stop scan: 793
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648 Page 181 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

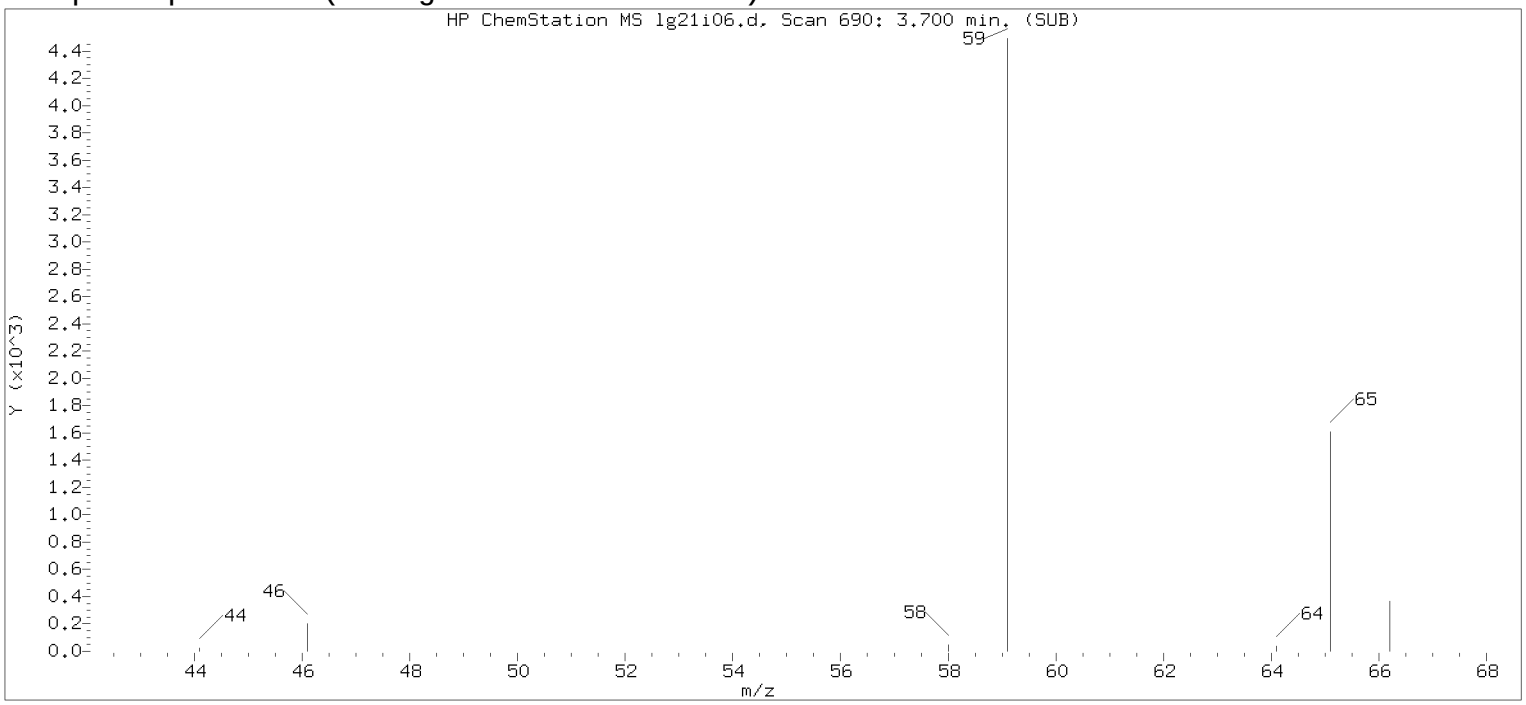
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area (flag) : 79916M
On-Column Amount (ng) : 77.4082
Integration start scan : 640 Integration stop scan: 753
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

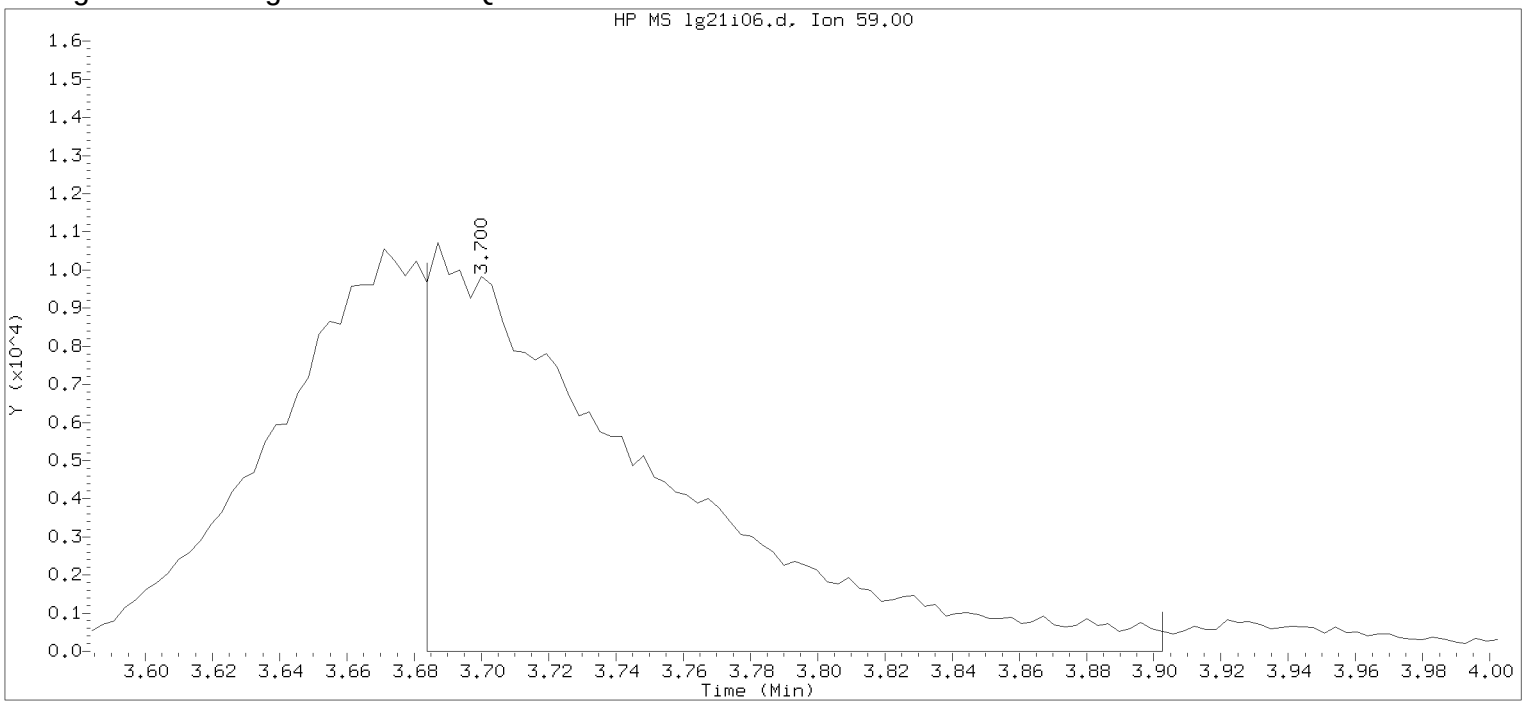
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

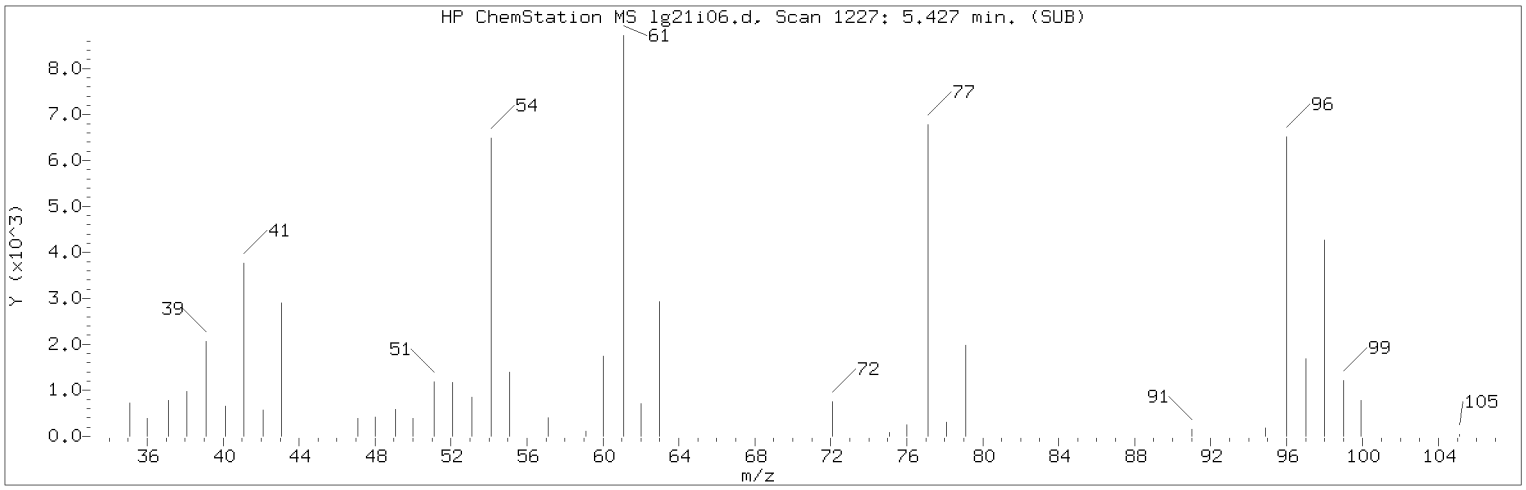
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

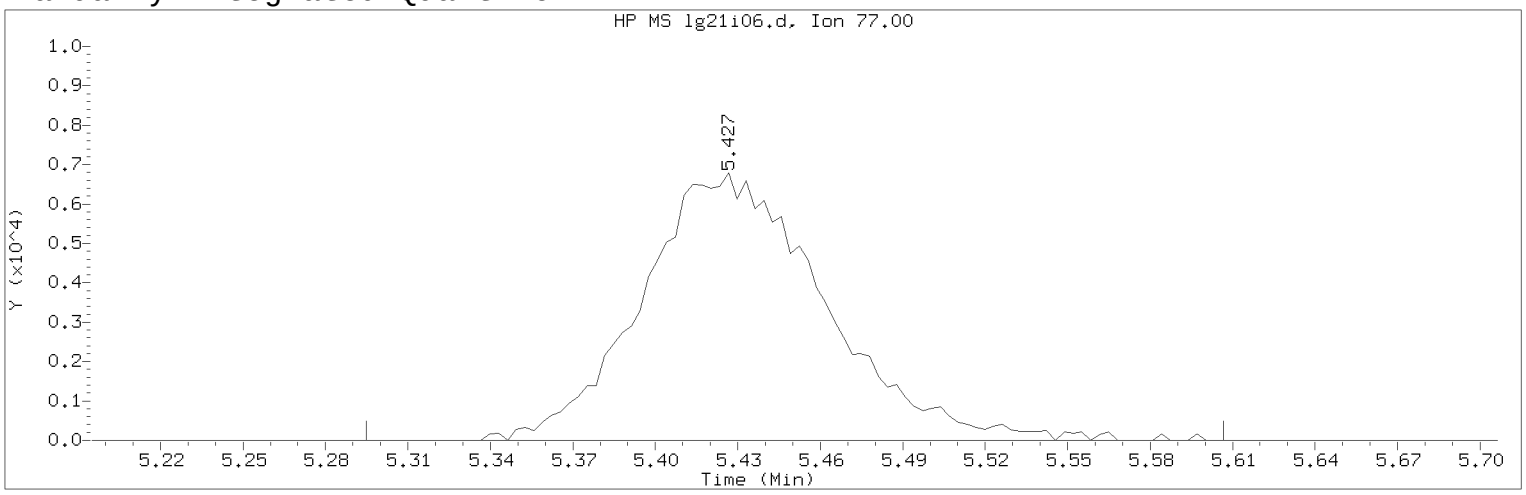
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 690
Retention Time (minutes): 3.700
Quant Ion : 59.00
Area : 46890
On-column Amount (ng) : 47.4796
Integration start scan : 684 Integration stop scan: 752
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

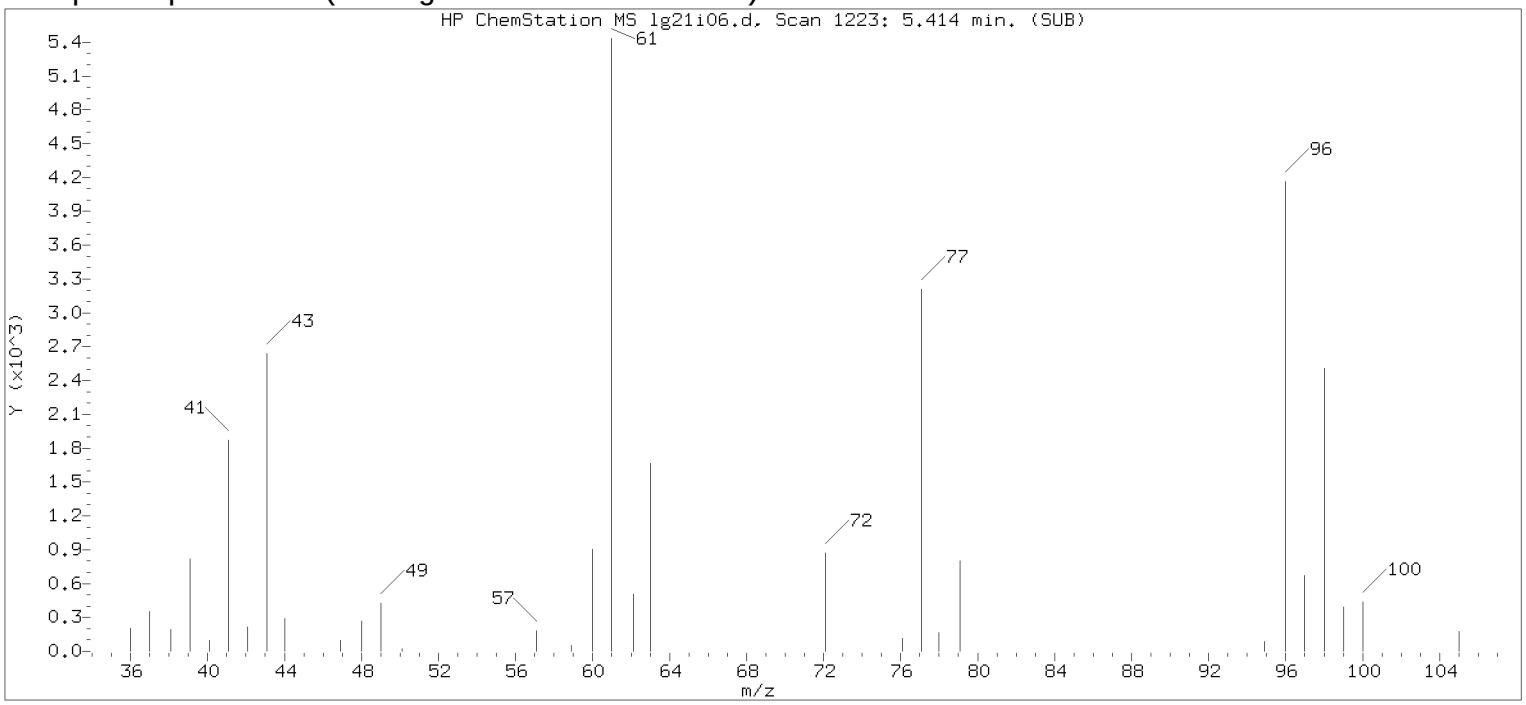
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1227
Retention Time (minutes): 5.427
Quant Ion : 77.00
Area (flag) : 31425M
On-Column Amount (ng) : 3.7014
Integration start scan : 1185 Integration stop scan: 1282
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

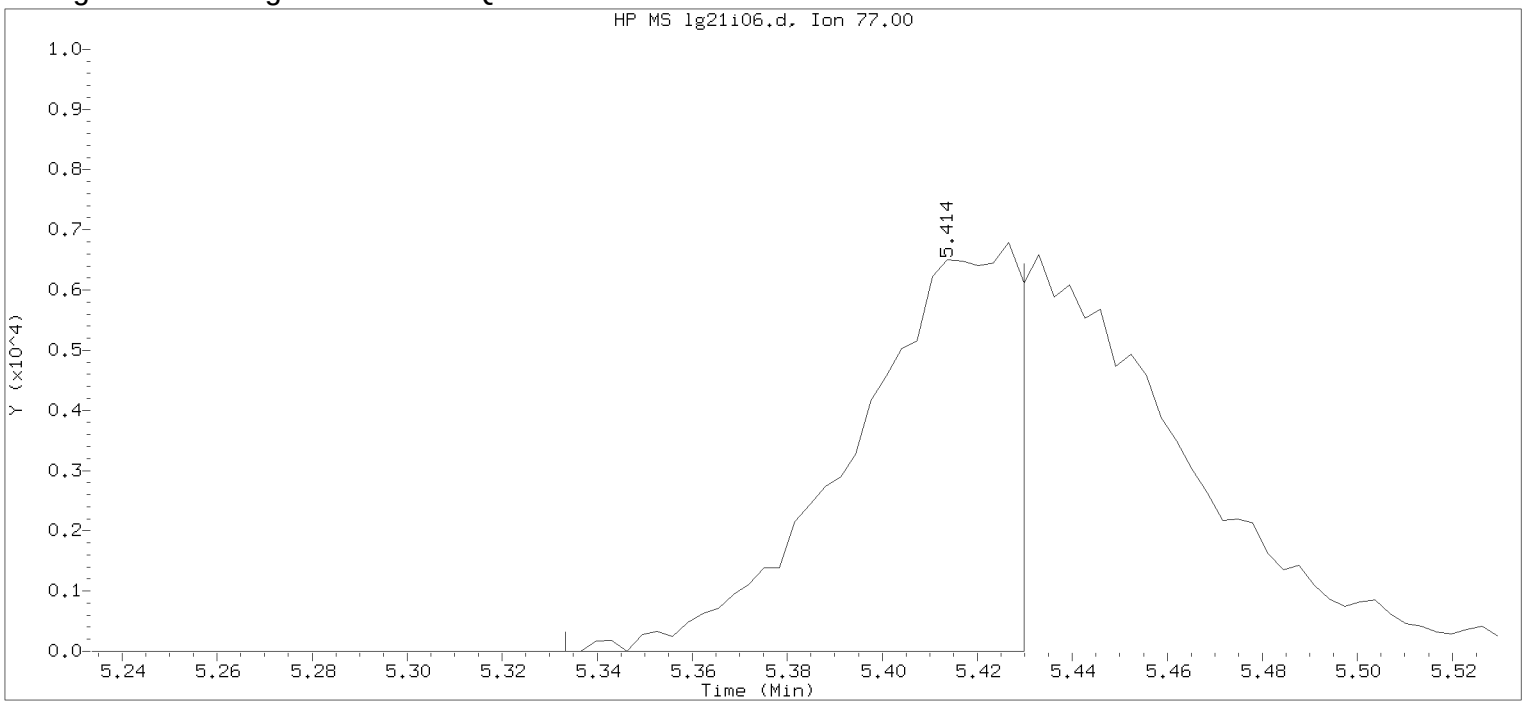
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

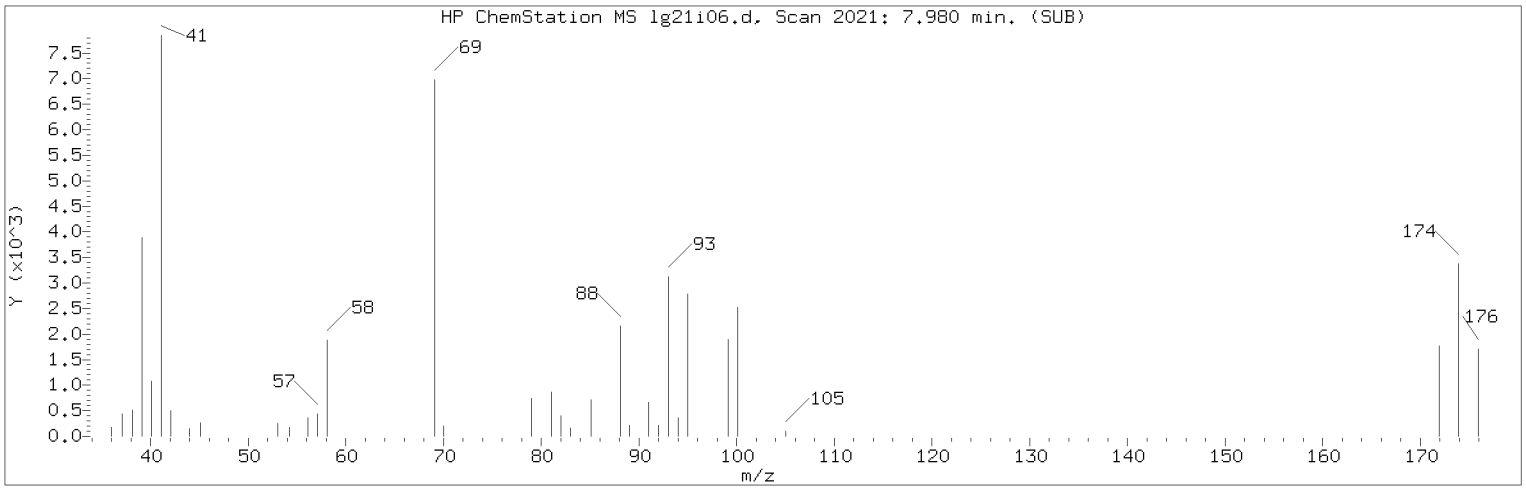
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

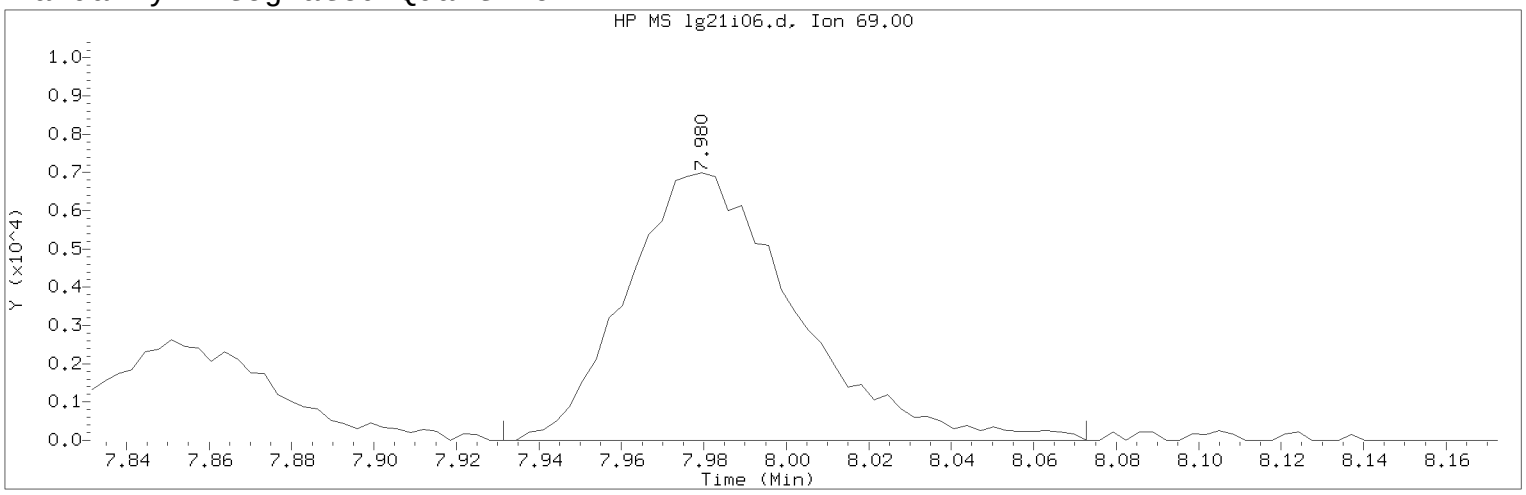
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1223
Retention Time (minutes): 5.414
Quant Ion : 77.00
Area : 15850
On-column Amount (ng) : 2.0215
Integration start scan : 1197 Integration stop scan: 1227
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

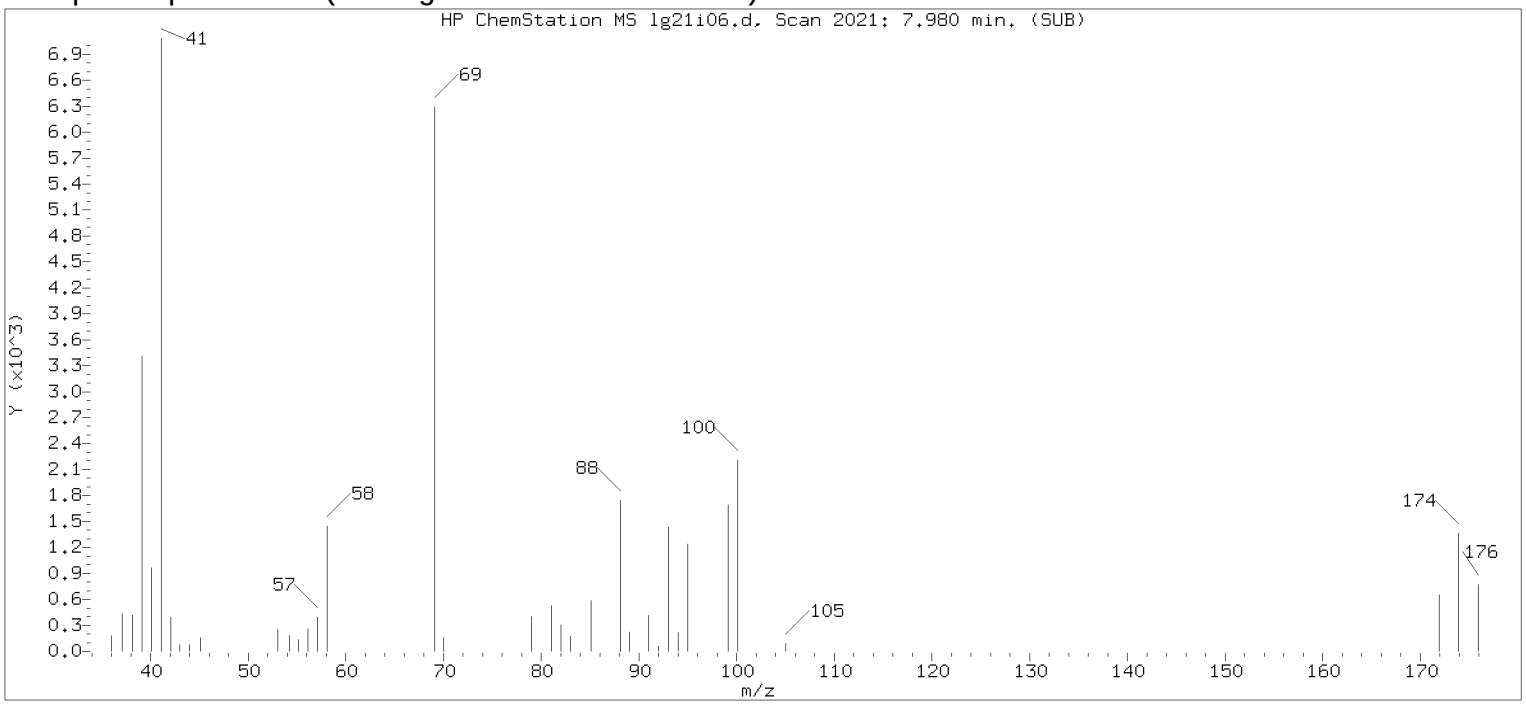
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 69.00
Area (flag) : 19843M
On-Column Amount (ng) : 3.5779
Integration start scan : 2005 Integration stop scan: 2049
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

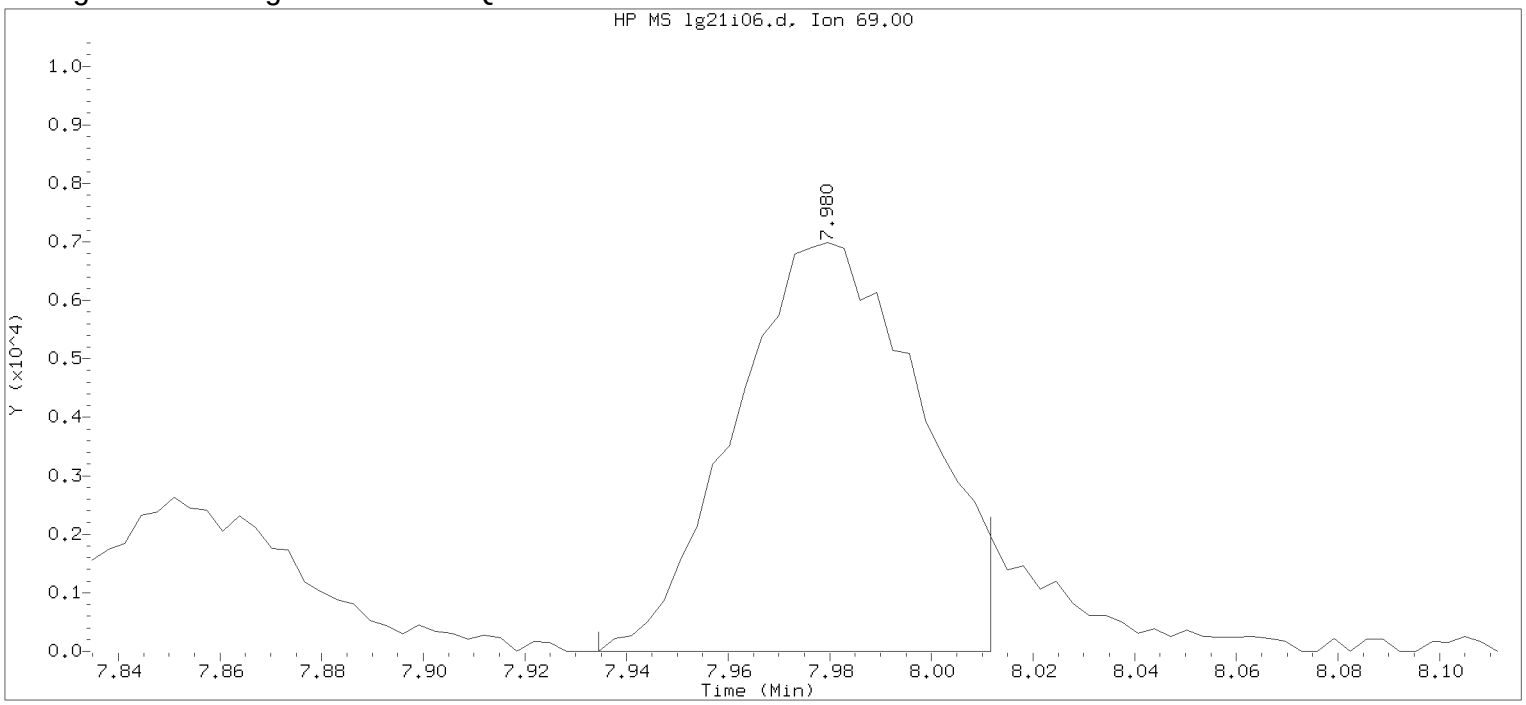
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

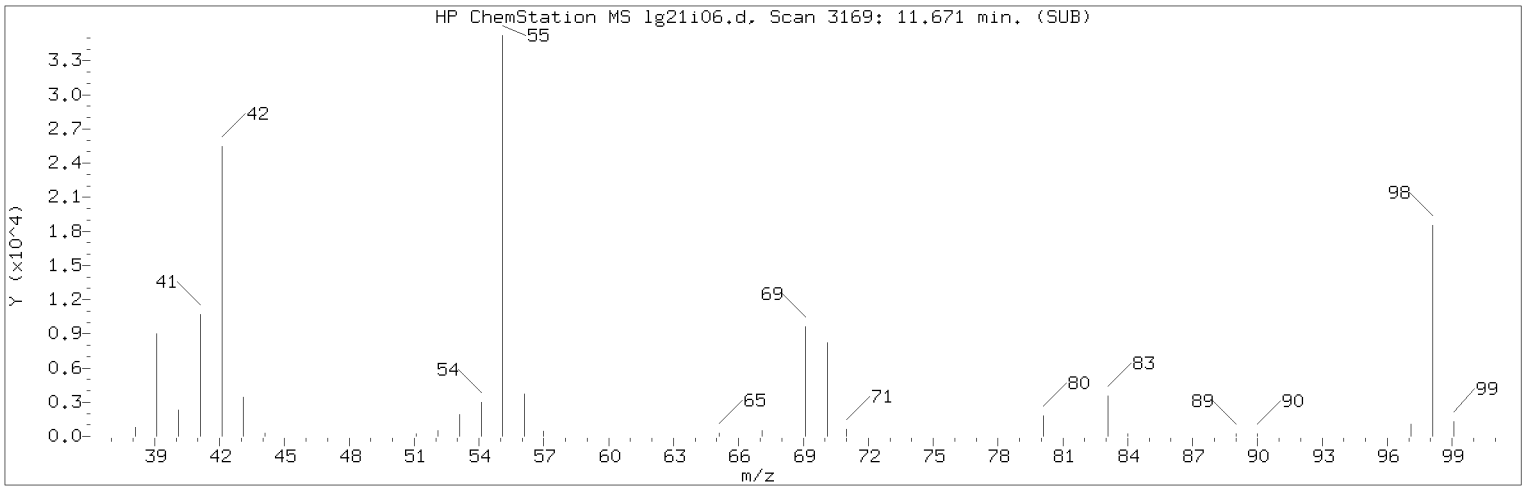
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

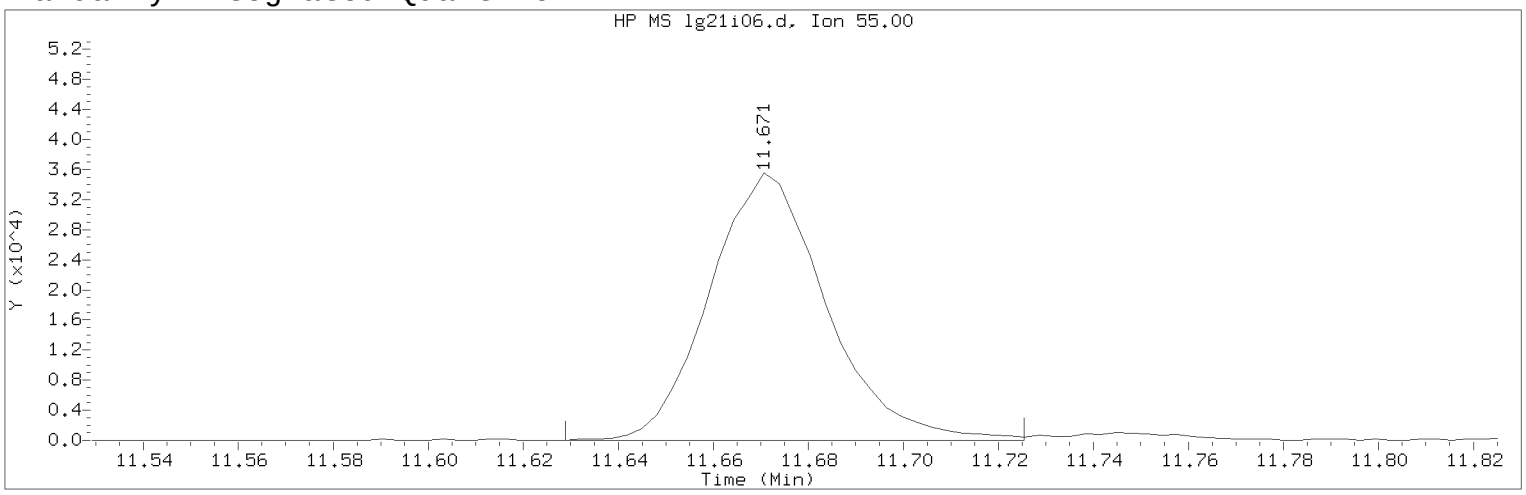
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 69.00
Area : 17662
On-column Amount (ng) : 3.3345
Integration start scan : 2006 Integration stop scan: 2030
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

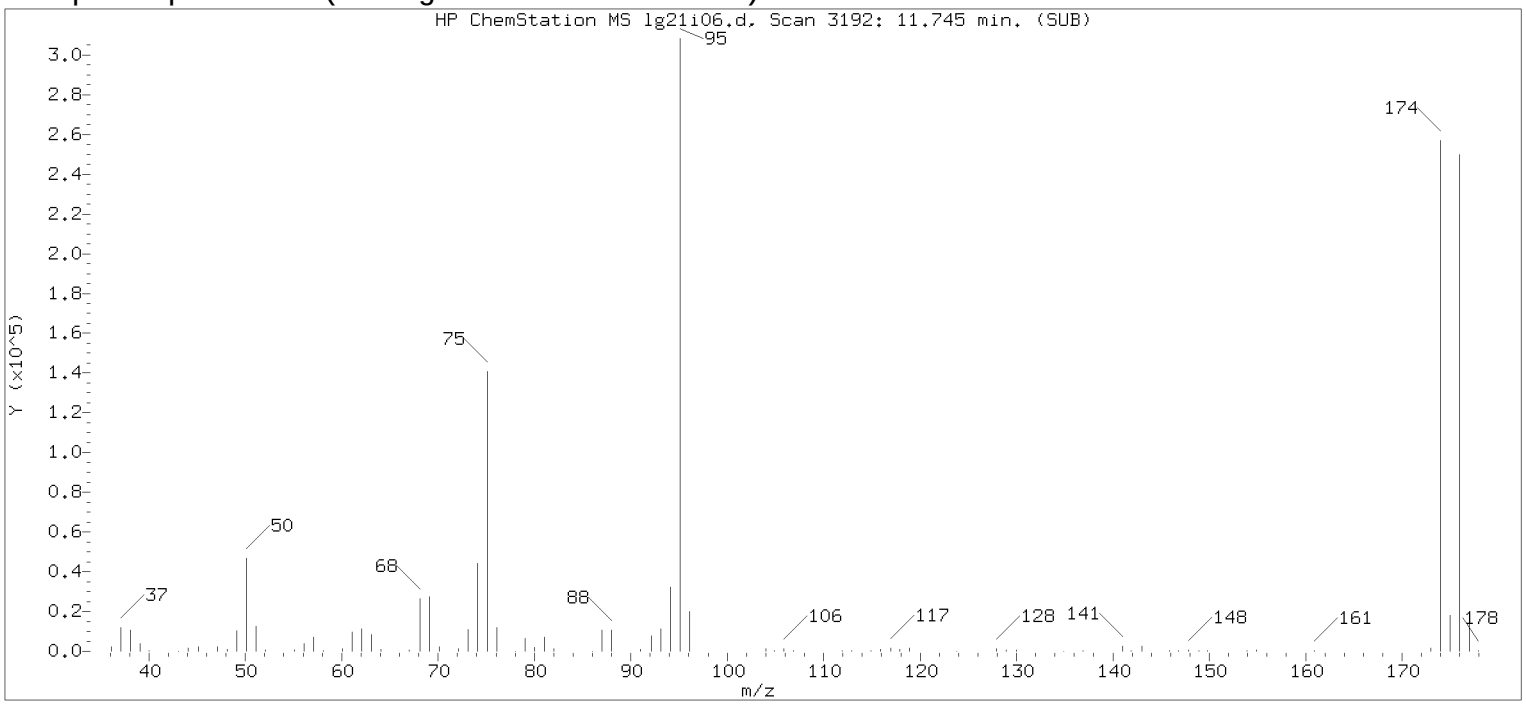
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3169
Retention Time (minutes): 11.671
Quant Ion : 55.00
Area (flag) : 60483A
On-Column Amount (ng) : 181.0022
Integration start scan : 3155 Integration stop scan: 3185
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

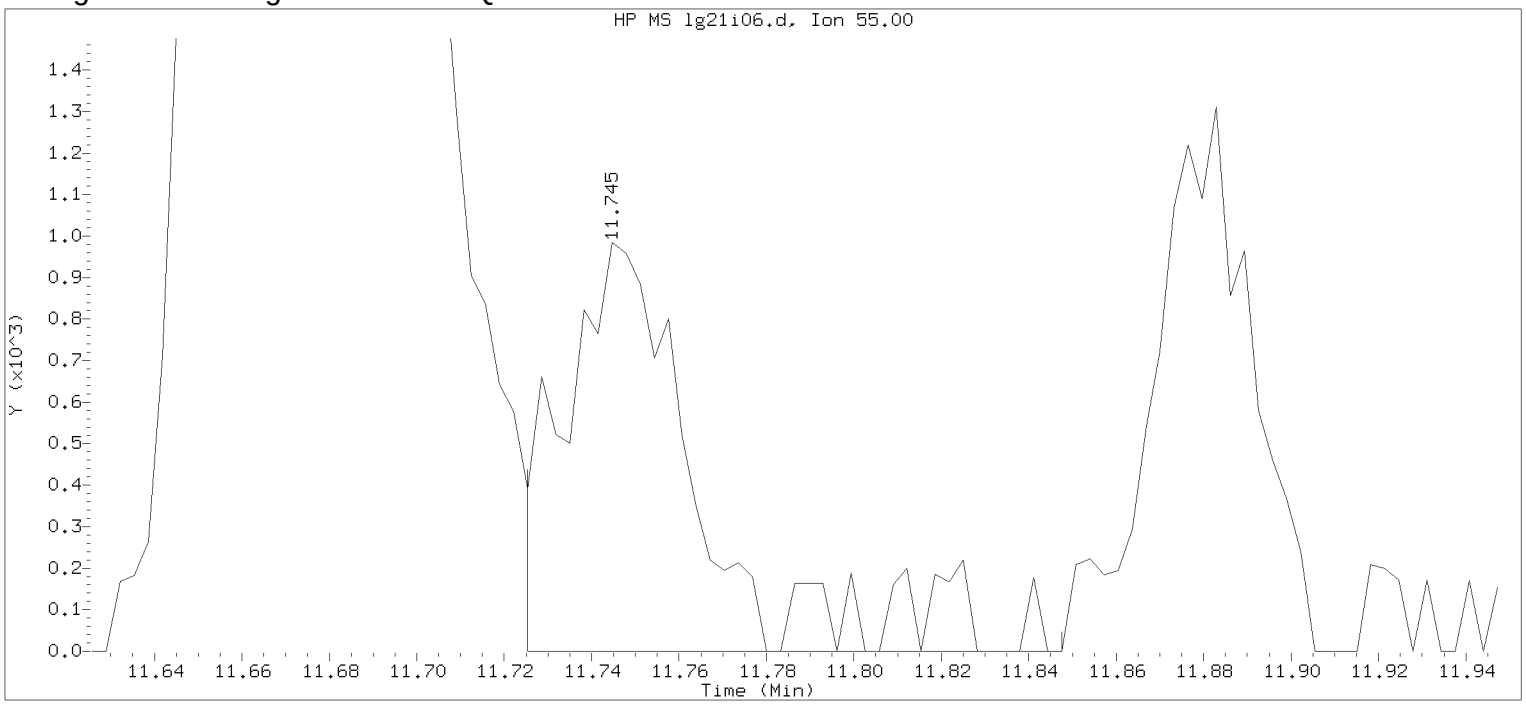
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

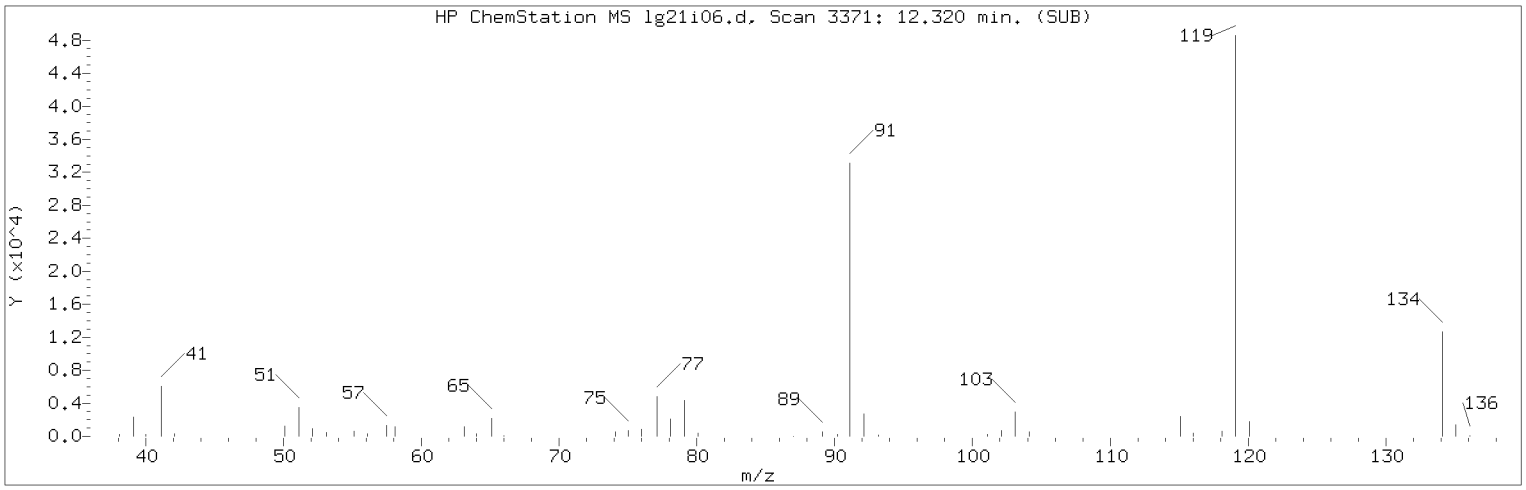
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

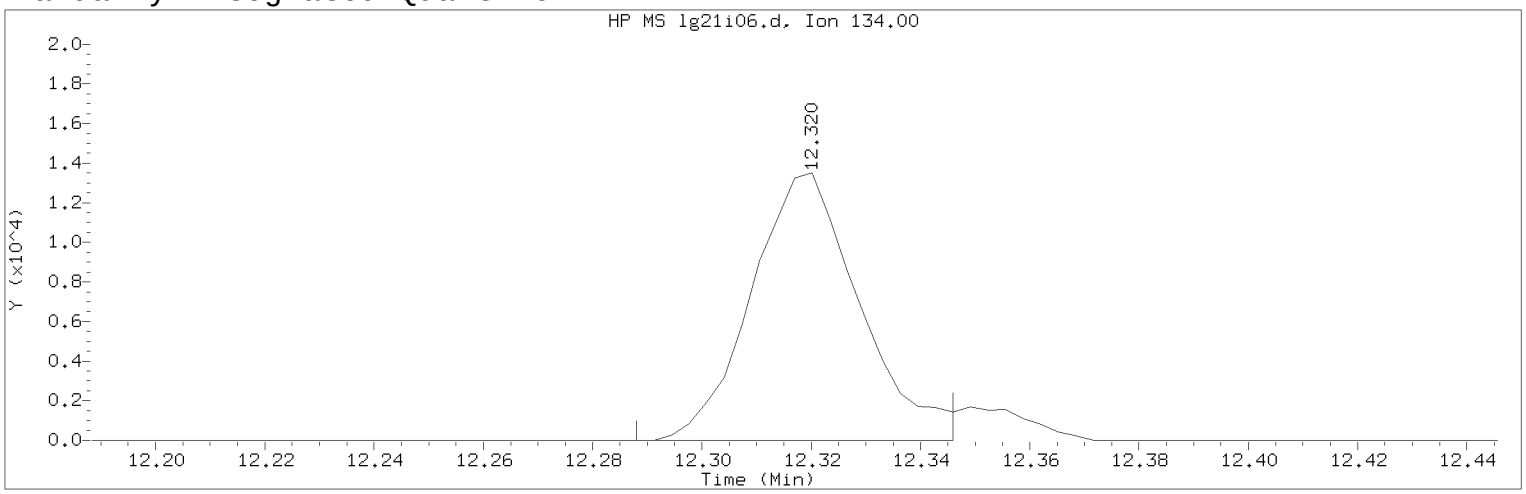
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3192
Retention Time (minutes): 11.745
Quant Ion : 55.00
Area : 2173
On-column Amount (ng) : 7.4013
Integration start scan : 3185 Integration stop scan: 3223
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648 Page 149 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

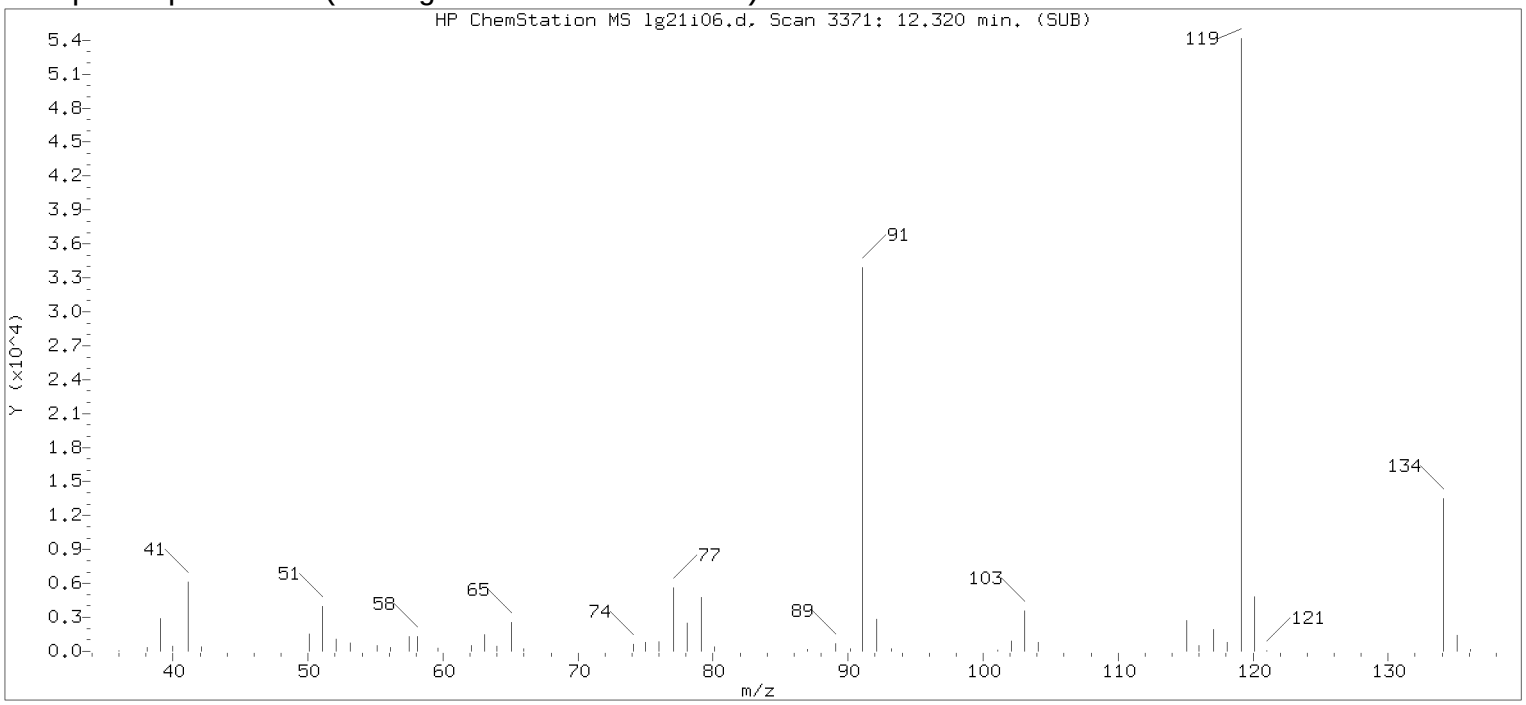
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 18548M
On-Column Amount (ng) : 3.3643
Integration start scan : 3360 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

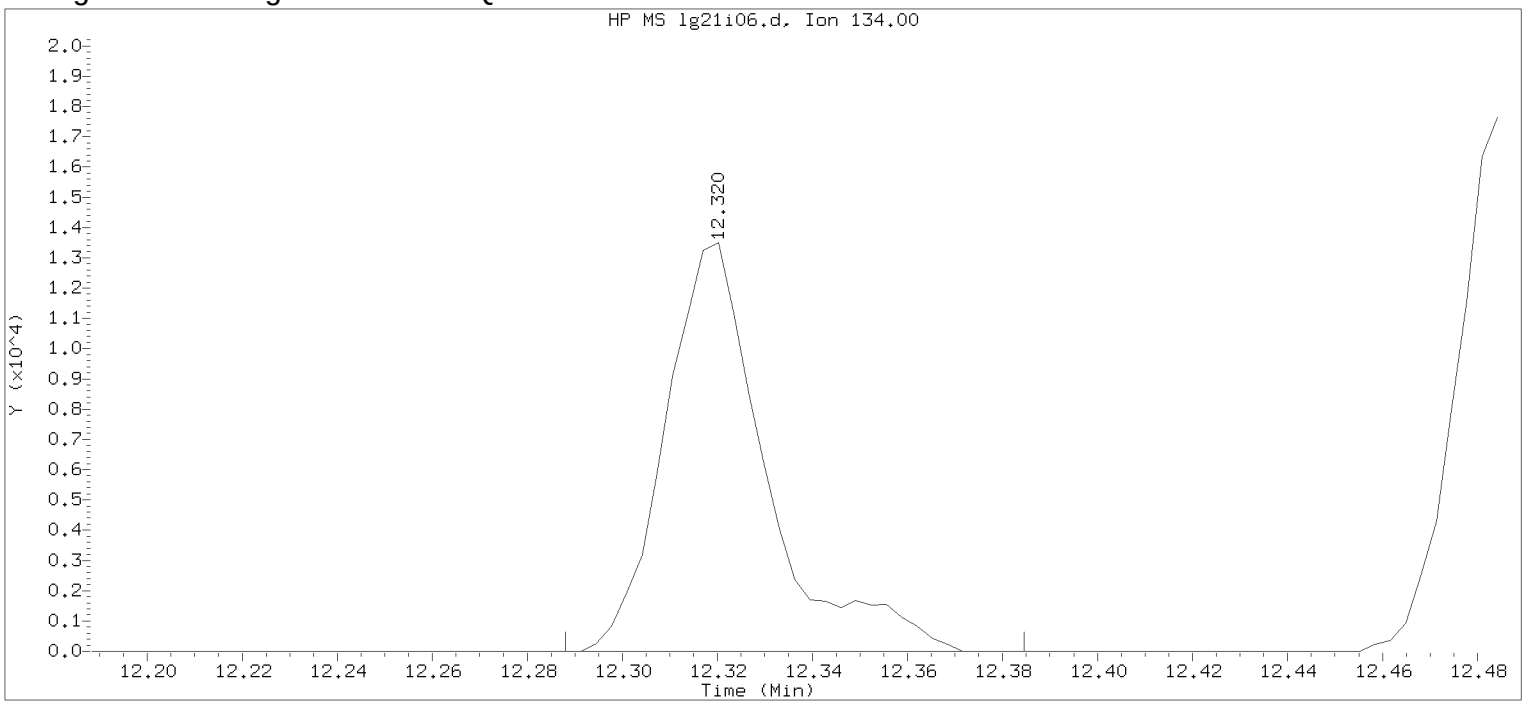
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



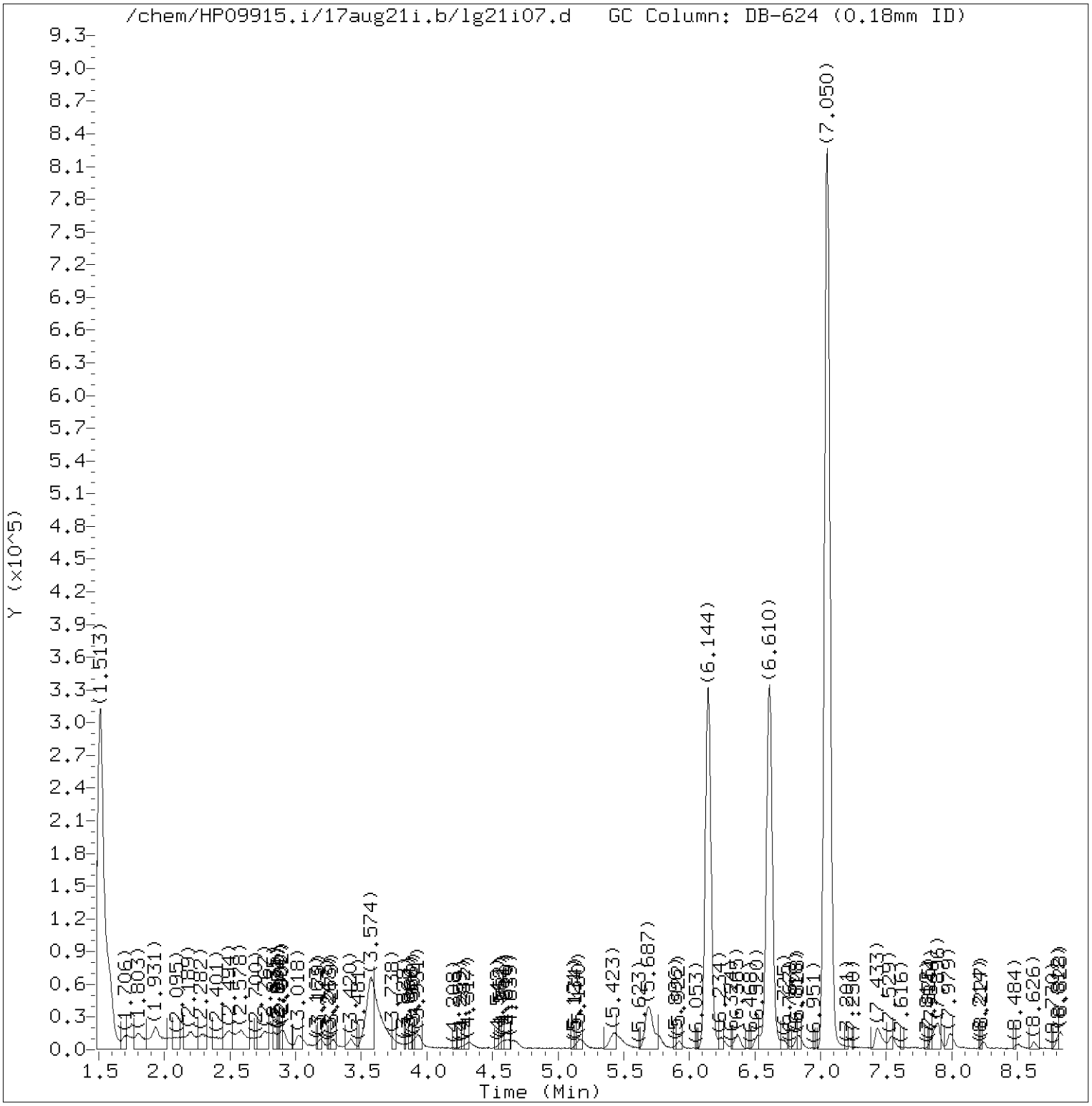

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 19961
On-column Amount (ng) : 3.4049
Integration start scan : 3360 Integration stop scan: 3390
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

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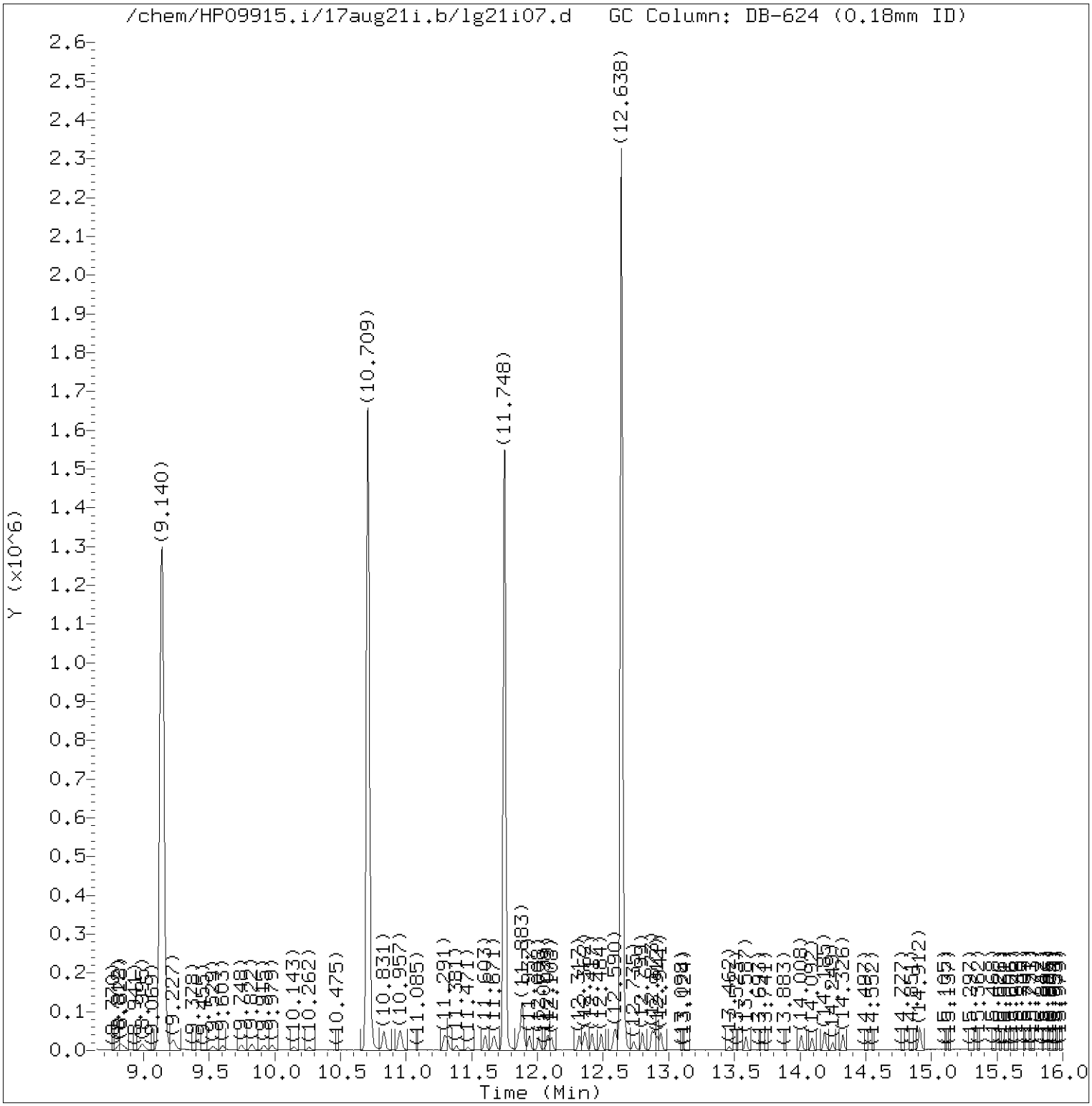
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.700 | 85 | 6416 | 0.808 |
| 4) Chloromethane | (2) | 1.803 | 50 | 7168 | 0.949 |
| 6) Vinyl Chloride | (2) | 1.919 | 62 | 6603 | 0.891 |
| 5) 1,3-Butadiene | (2) | 1.935 | 39 | 5130M | 0.971 |
| 8) Bromomethane | (2) | 2.198 | 94 | 5684M | 1.034 |
| 9) Chloroethane | (2) | 2.298 | 64 | 3898 | 0.949 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 9467 | 1.022 |
| 12) Trichlorofluoromethane | (2) | 2.536 | 101 | 8027 | 0.858 |
| 11) n-Pentane | (2) | 2.584 | 43 | 7113 | 0.909 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 4268 | 0.898 |
| 15) Freon 123a | (2) | 2.832 | 67 | 6939 | 1.100 |
| 16) Acrolein | (1) | 2.909 | 56 | 18869 | 10.300 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 96 | 3691 | 0.793 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 1832 | 0.836 |
| 18) Acetone | (1) | 3.044 | 58 | 1579M | 2.132 |
| 19) Freon 113 | (2) | 3.054 | 101 | 3454 | 0.700 |
| 21) 2-Propanol | (1) | 3.189 | 45 | 12445M | 23.183 |
| 22) Methyl Iodide | (2) | 3.189 | 142 | 8049 | 0.826 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 12860 | 0.806 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 5552 | 1.015 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 6397 | 0.835 |
| 28) Methylene Chloride | (2) | 3.574 | 84 | 5412 | 0.962 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 248975M | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.677 | 59 | 21466M | 21.543 |
| 31) Acrylonitrile | (2) | 3.864 | 53 | 2892 | 0.966 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 15826 | 0.912 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 4516 | 0.822 |
| 34) n-Hexane | (2) | 4.330 | 57 | 6387M | 0.822 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 7971 | 0.850 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 14990M | 0.895 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 6652 | 0.812 |
| 40) Ethyl t-butyl ether | (2) | 5.172 | 59 | 15465 | 0.909 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 8517 | 2.184 |
| 42) cis-1,2-Dichloroethene | (2) | 5.414 | 96 | 5298 | 0.848 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 6938M | 0.858 |
| 47) Propionitrile | (1) | 5.475 | 54 | 21134 | 17.898 |
| 48) Methacrylonitrile | (2) | 5.687 | 67 | 29879 | 9.087 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 2741 | 0.831 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.783 | 71 | 2002 | 1.785 |
| 51) Chloroform | (2) | 5.922 | 83 | 7951 | 0.833 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 317461 | 49.680 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 327454 | 50.037 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 8602M | 0.910 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 9814 | 1.670 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 7725 | 0.836 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 6217 | 0.770 |
| 54) Cyclohexane | (2) | 6.234 | 69 | 2151 | 0.746 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 5590 | 0.774 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 6048 | 0.809 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 17554 | 55.651 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 76875 | 49.548 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 365300 | 50.585 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 49912 | 50.136 |
| 60) Benzene | (2) | 6.632 | 78 | 18831 | 0.855 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 7956 | 1.021 |
| 61) 1,2-Dichloroethane | (2) | 6.732 | 98 | 709M | 0.933 |
| 65) t-Amyl methyl ether | (2) | 6.825 | 73 | 15653 | 0.891 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1255839 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 7594 | 0.943 |
| 69) n-Butanol | (1) | 7.430 | 56 | 22067 | 84.961 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 4779 | 0.804 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 7273 | 0.747 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 3509 | 0.763 |
| 73) 1,2-Dichloropropane | (2) | 7.880 | 63 | 4885 | 0.859 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 3521 | 43.199 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 4729M | 0.891 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 3478 | 0.861 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 5971 | 0.813 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 4605 | 2.180 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 3683 | 0.834 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 7383 | 0.798 |
| 82) 4-Methyl-2-pentanone | (2) | 8.995 | 43 | 15433 | 1.895 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1240347 | 50.292 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 810778 | 50.031 |
| 88) Toluene | (3) | 9.227 | 92 | 12146 | 0.843 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 6534 | 0.771 |

M = Compound was manually integrated.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.603 | 69 | 7547 | 0.822 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 4845 | 0.864 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 4993 | 0.781 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 8025 | 0.877 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 11584 | 1.945 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 13917 | 1.569 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 4513 | 0.730 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 5263 | 0.836 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 990561 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 8142 | 0.980 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 13966 | 0.831 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.825 | 131 | 4427 | 0.751 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 23308 | 0.841 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 17705 | 1.591 |
| 107) o-Xylene | (3) | 11.291 | 106 | 9026 | 0.806 |
| 109) Styrene | (3) | 11.310 | 104 | 14439 | 0.774 |
| 110) Bromoform | (3) | 11.471 | 173 | 3278 | 0.707 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 22001 | 0.784 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 14793 | 46.939 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 475525 | 50.432 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 413544 | 50.632 |
| 108) Xylene (Total) | (3) | | 106 | 26731 | 2.397 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 8297 | 0.888 |
| 115) Bromobenzene | (4) | 11.857 | 156 | 6413 | 0.818 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 20989 | 8.543 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 2527 | 0.889 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 26420 | 0.806 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 5657 | 0.796 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 20198 | 0.817 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 5881 | 0.793 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 4485 | 0.844 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 2979 | 0.664 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 20811 | 0.818 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 24687 | 0.805 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 12415 | 0.838 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 21195 | 0.778 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 548017 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 12864 | 0.841 |

* = Compound is an internal standard.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 22157 | 0.836 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 14042 | 0.744 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 12845 | 0.777 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 13655 | 0.792 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 10767 | 0.806 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 12360 | 0.840 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 10709 | 0.777 |
| 141) Diethylbenzene (total) | (4) | | 100 | 37209 | 2.345 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 1695 | 0.832 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.584 | 180 | 9942 | 0.889 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 10662 | 0.961 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 4792 | 1.011 |
| 148) Naphthalene | (4) | 14.188 | 128 | 33689 | 0.961 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 10674 | 1.002 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 25173 | 1.065 |



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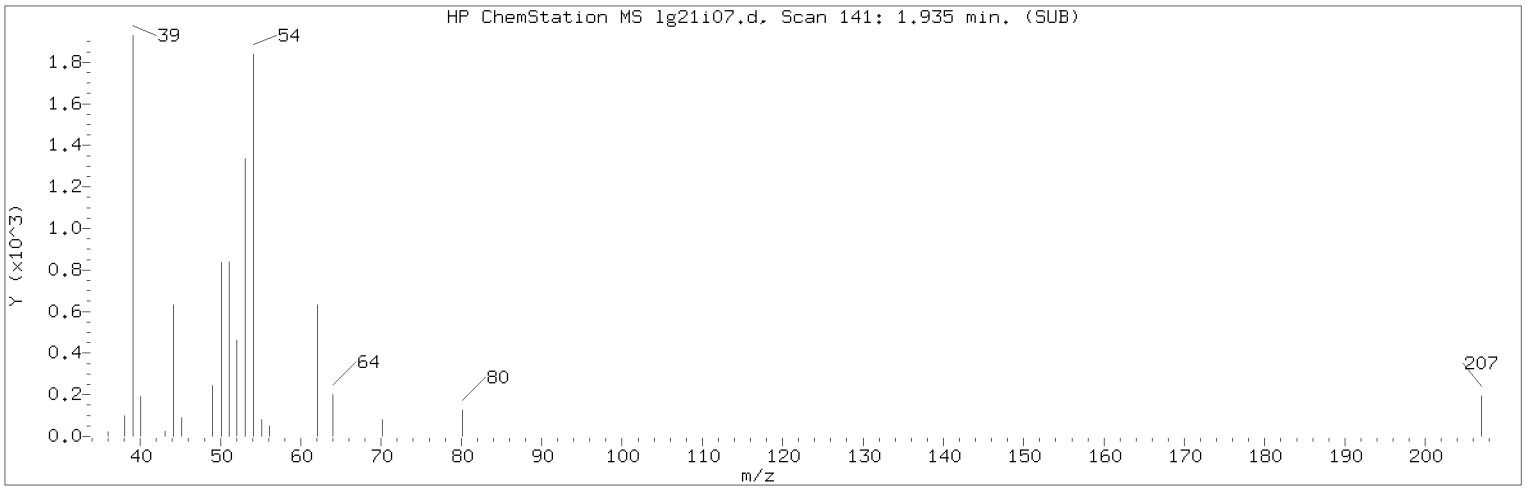
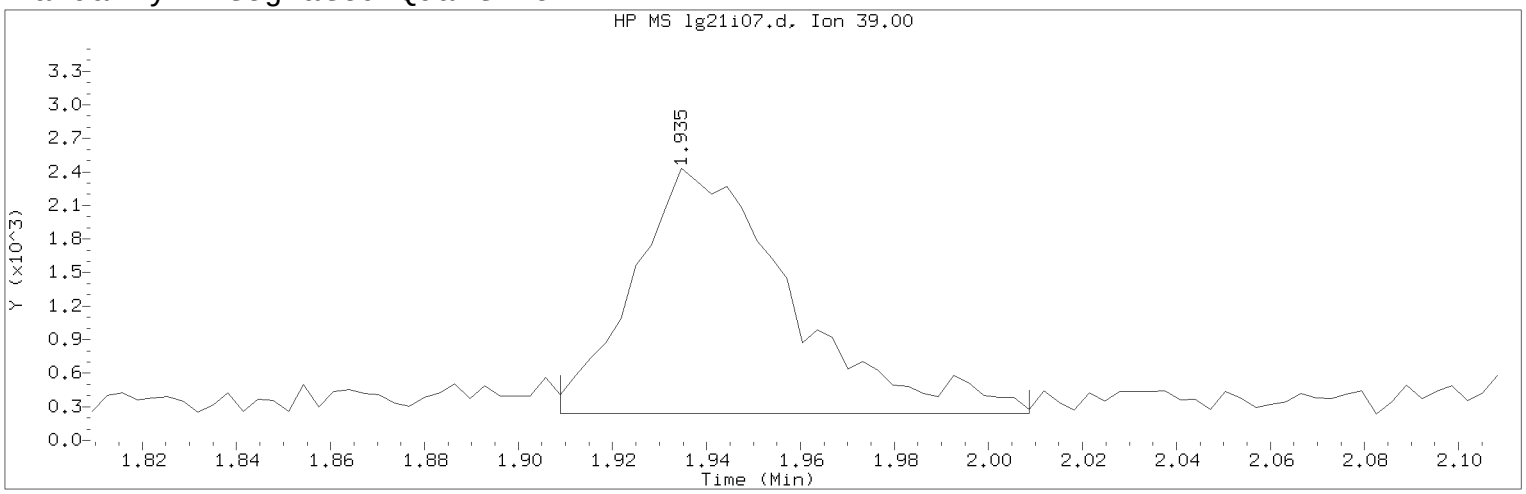
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

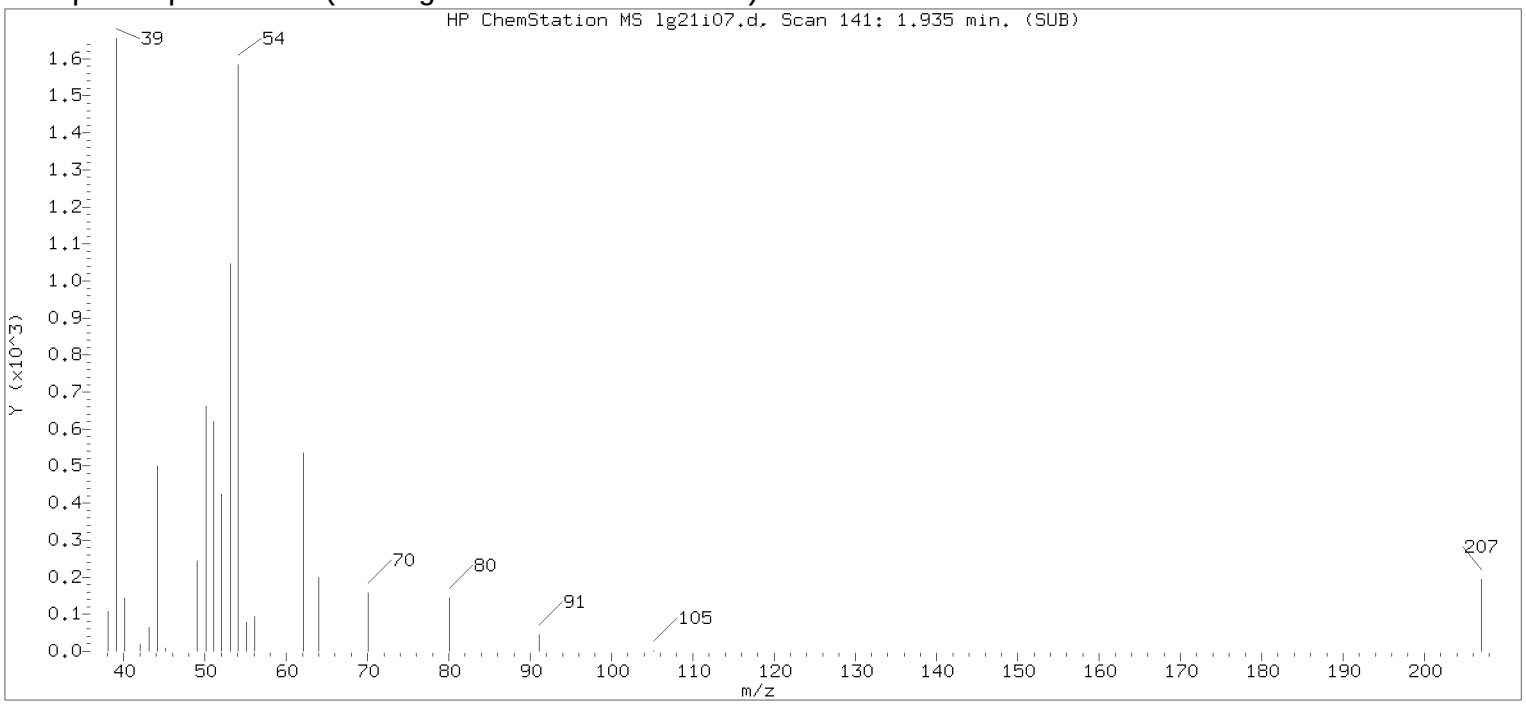
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 141
Retention Time (minutes): 1.935
Quant Ion : 39.00
Area (flag) : 5130M
On-Column Amount (ng) : 0.9711
Integration start scan : 132 Integration stop scan: 163
Y at integration start : 241 Y at integration end: 241

Reason for manual integration: improper integration

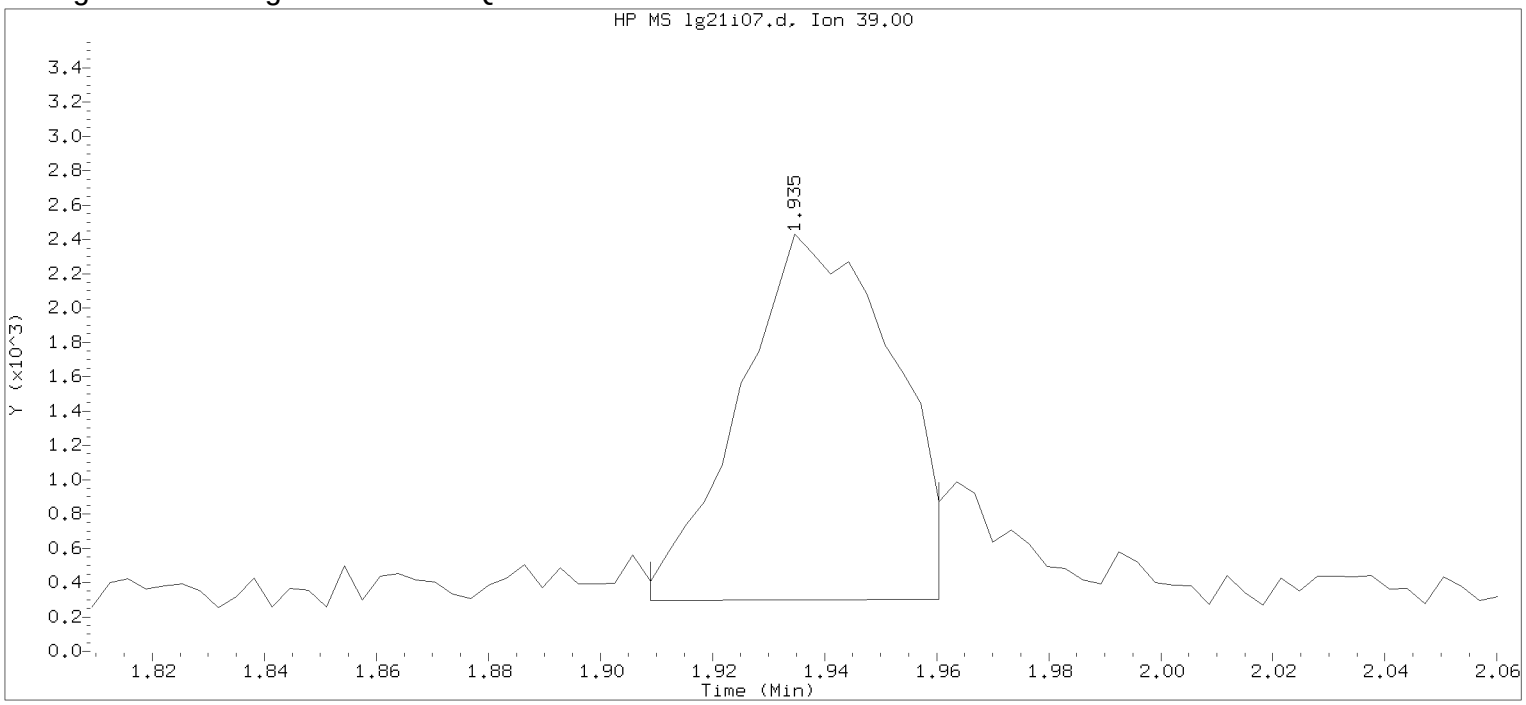
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 141
Retention Time (minutes): 1.935
Quant Ion : 39.00
Area : 3991
On-column Amount (ng) : 0.7796
Integration start scan : 132 Integration stop scan: 148
Y at integration start : 294 Y at integration end: 303

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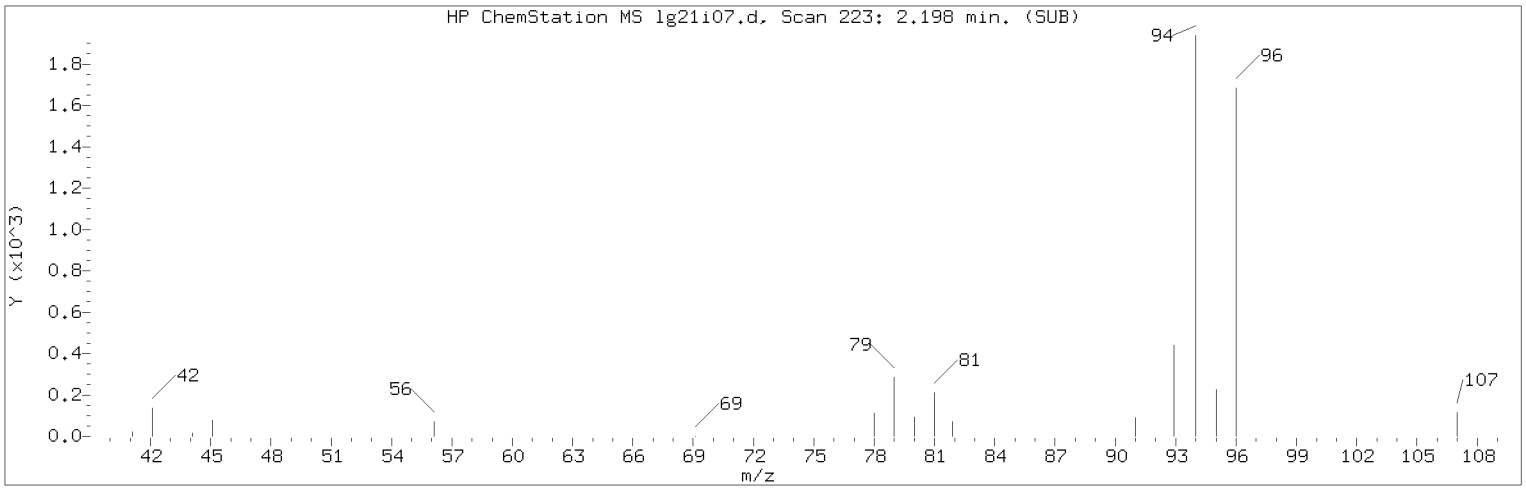
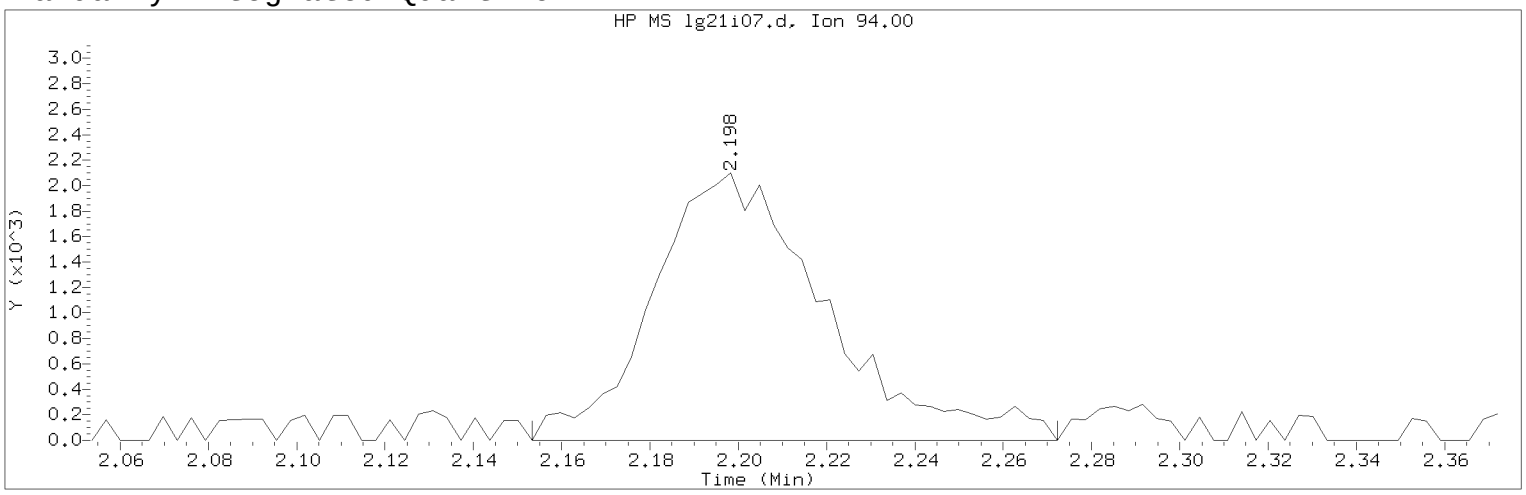
Target 3.5 esignature userKAS02648 Page 149

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

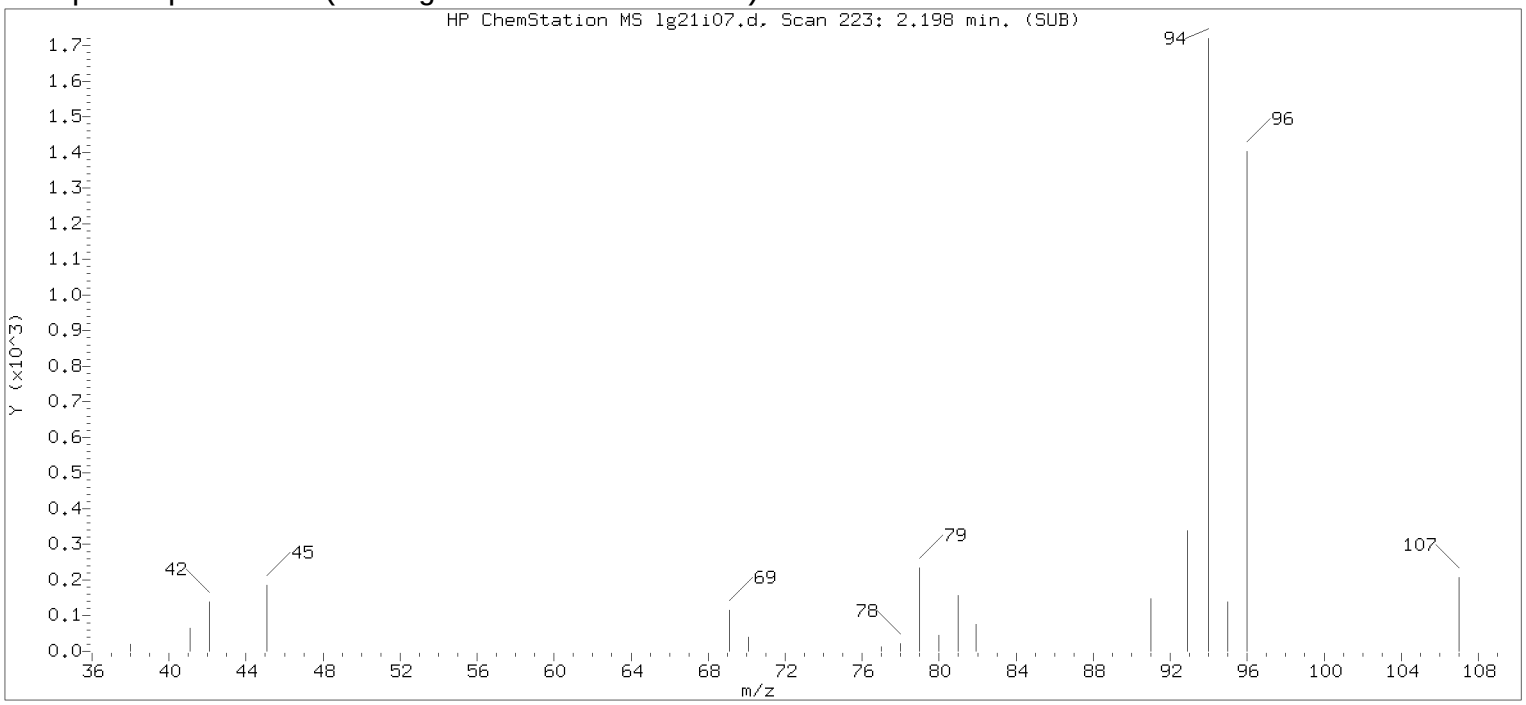
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area (flag) : 5684M
On-Column Amount (ng) : 1.0335
Integration start scan : 208 Integration stop scan: 245
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

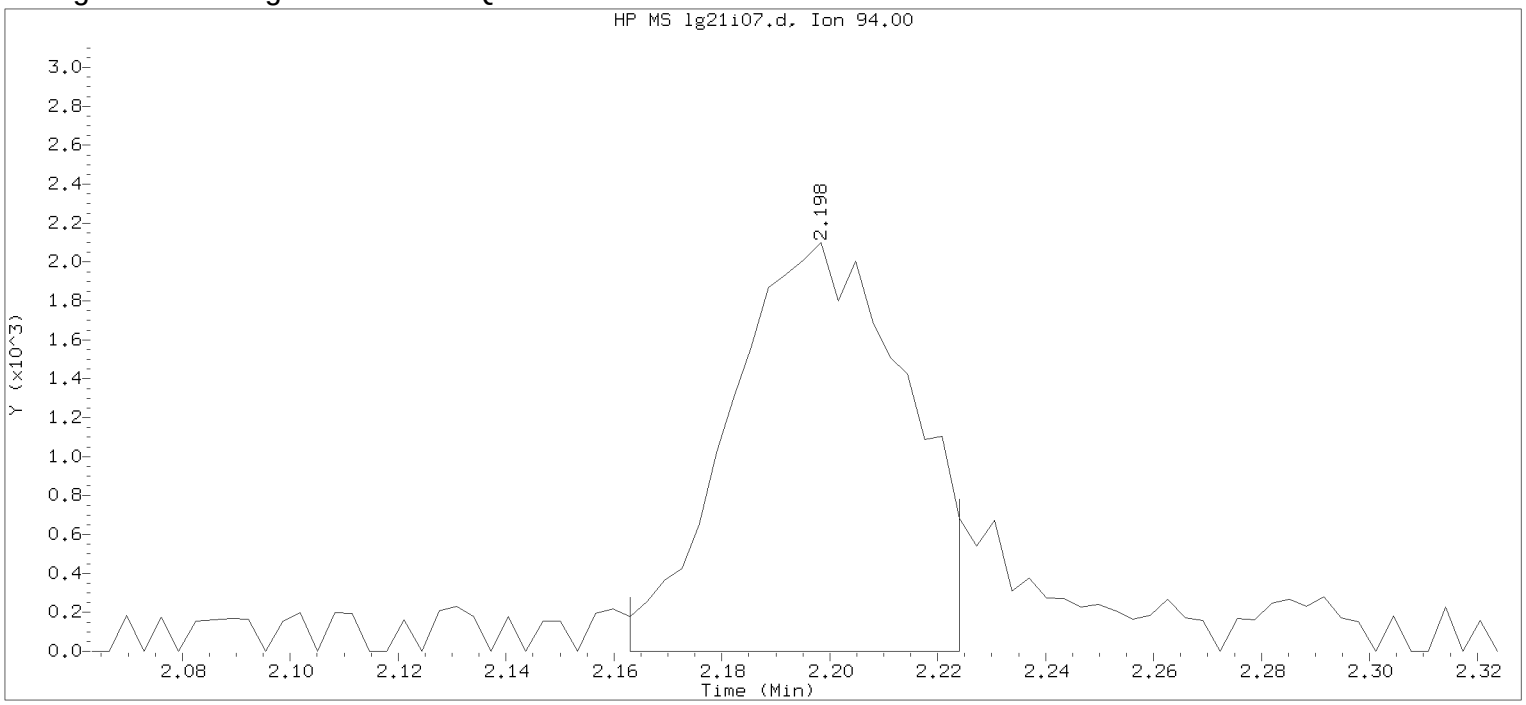
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

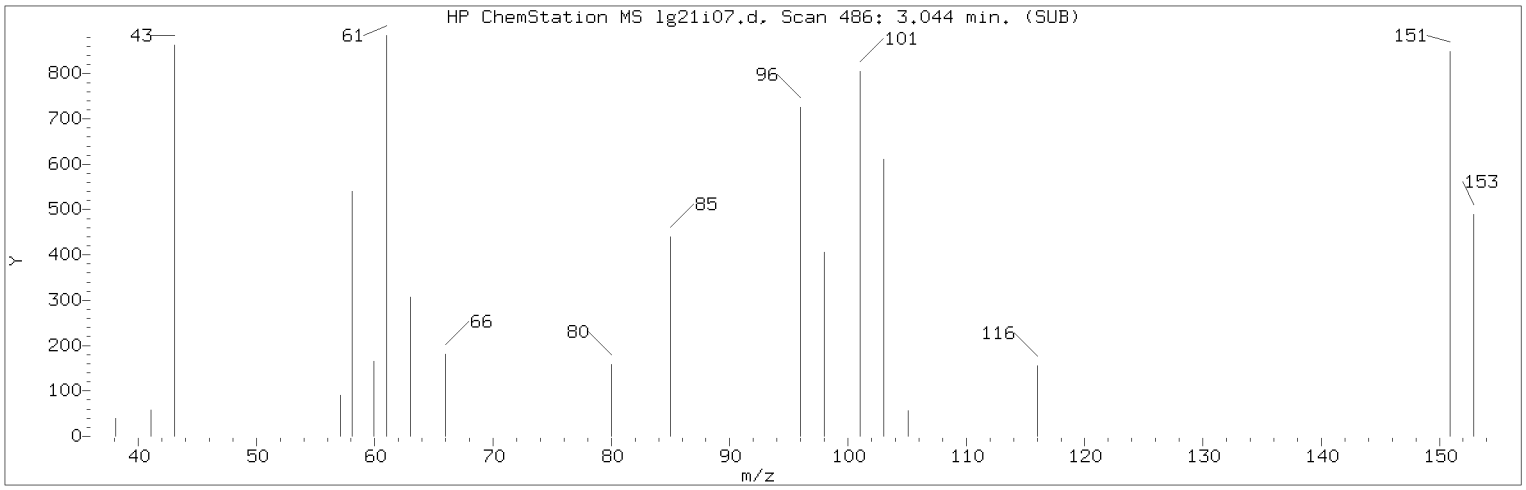
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

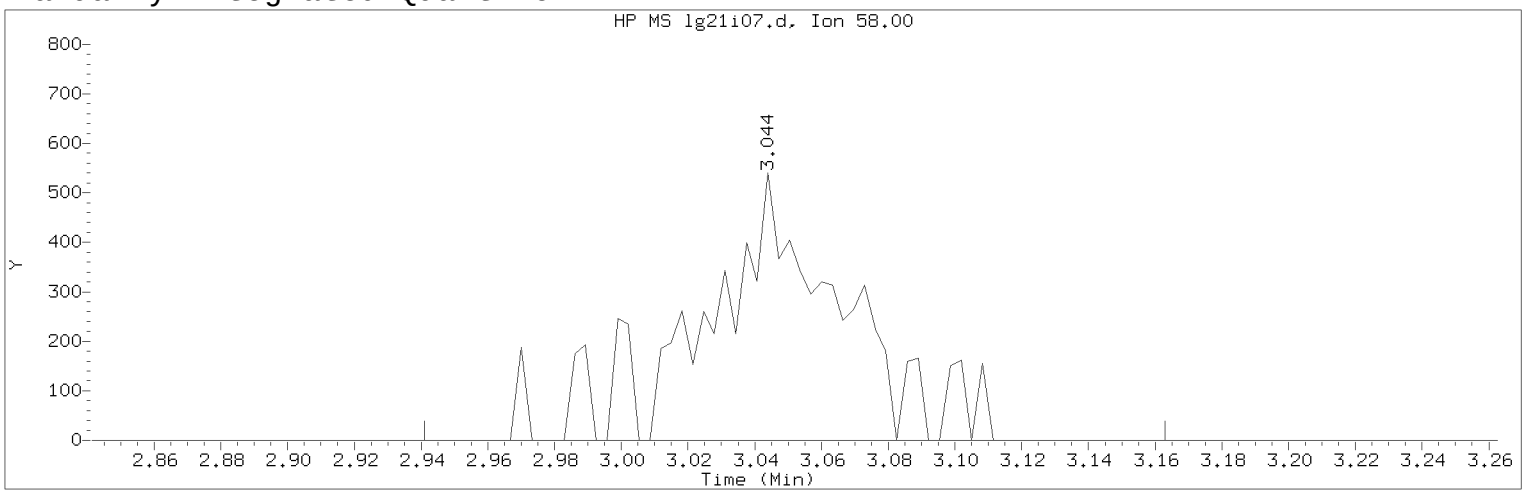
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area : 4737
On-column Amount (ng) : 0.8832
Integration start scan : 211 Integration stop scan: 230
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

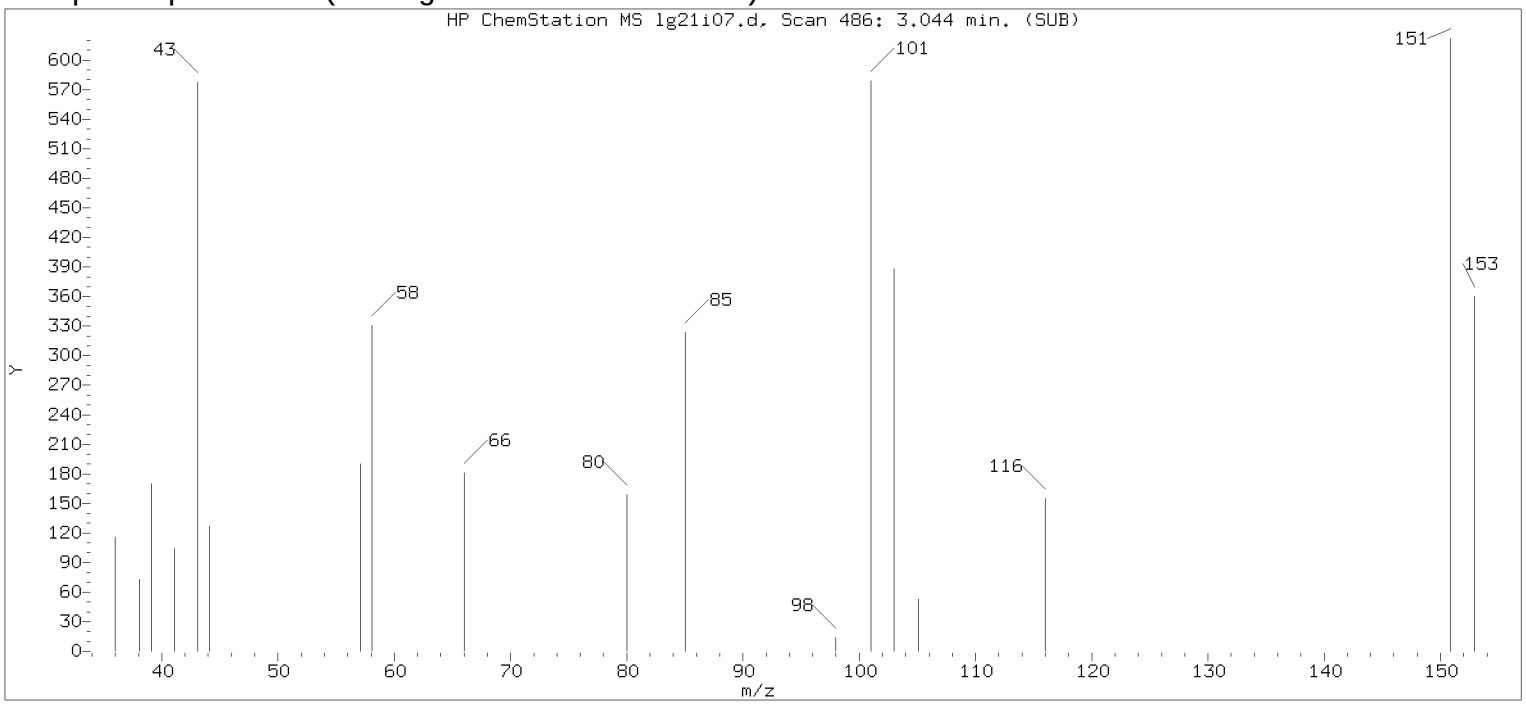
Compound Number : 18
Compound Name : Acetone
Scan Number : 486
Retention Time (minutes): 3.044
Quant Ion : 58.00
Area (flag) : 1579M
On-Column Amount (ng) : 2.1318
Integration start scan : 453 Integration stop scan: 522
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

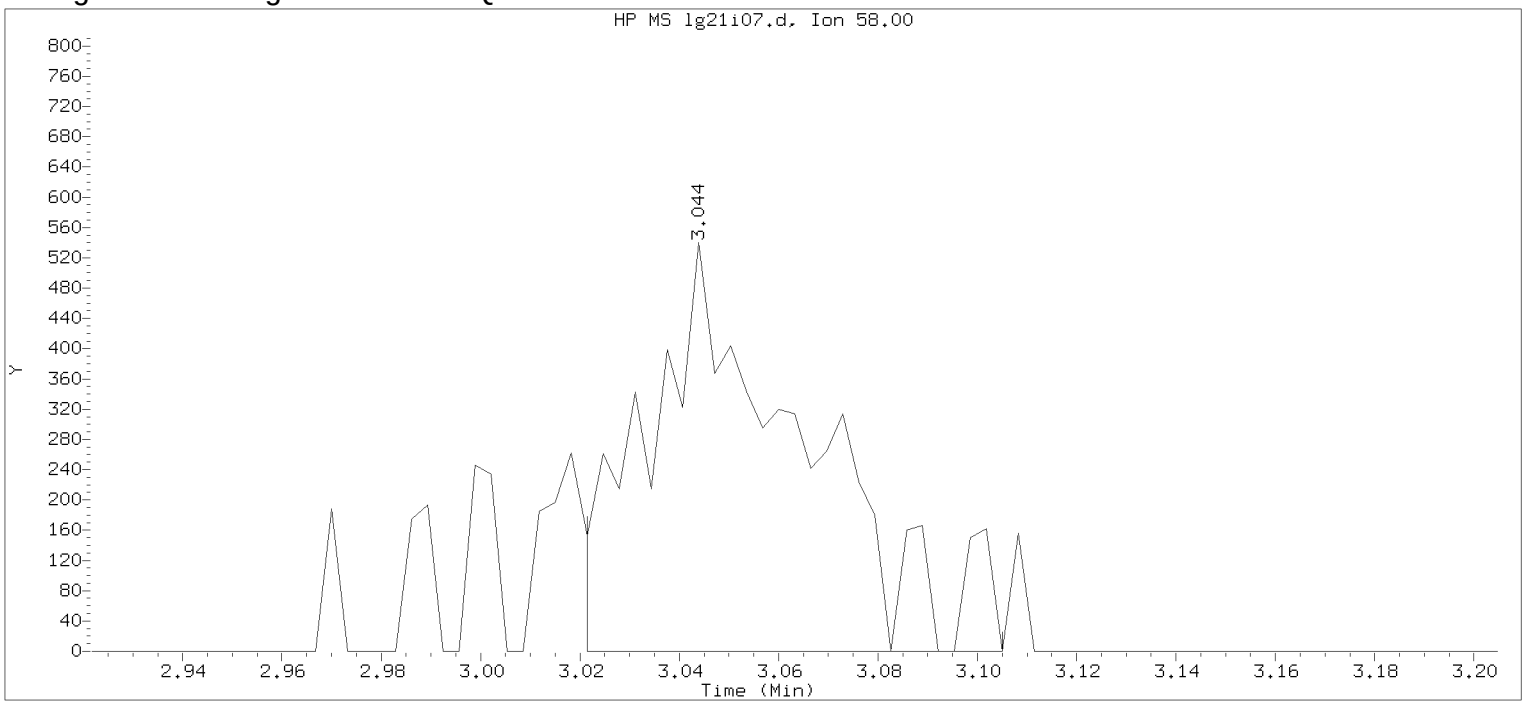
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

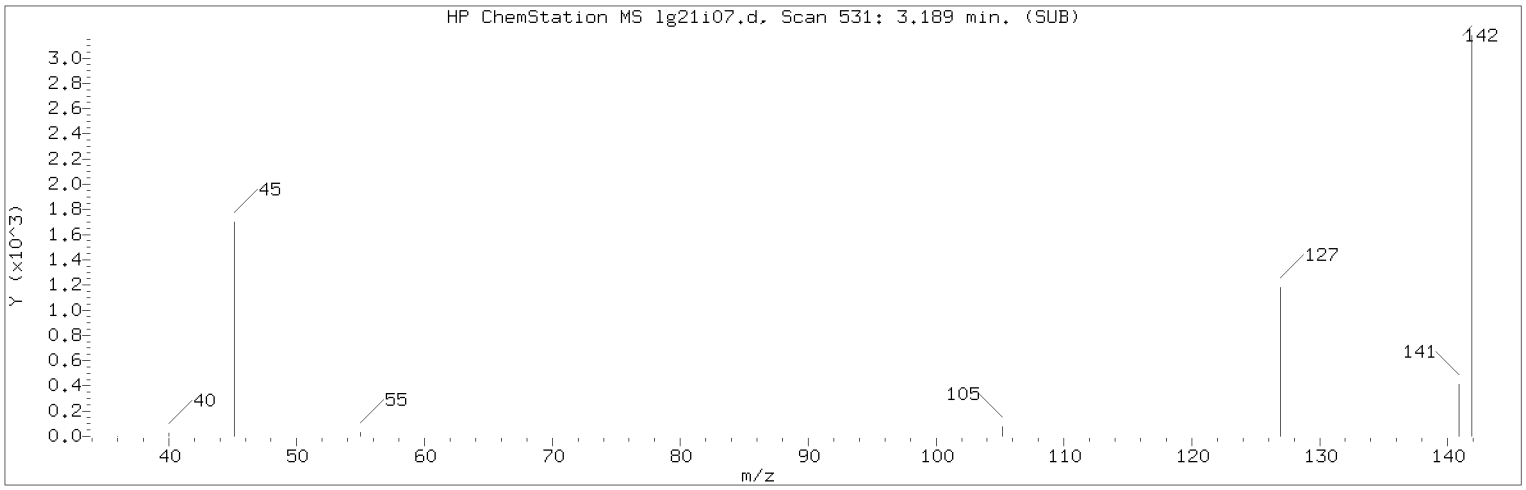
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

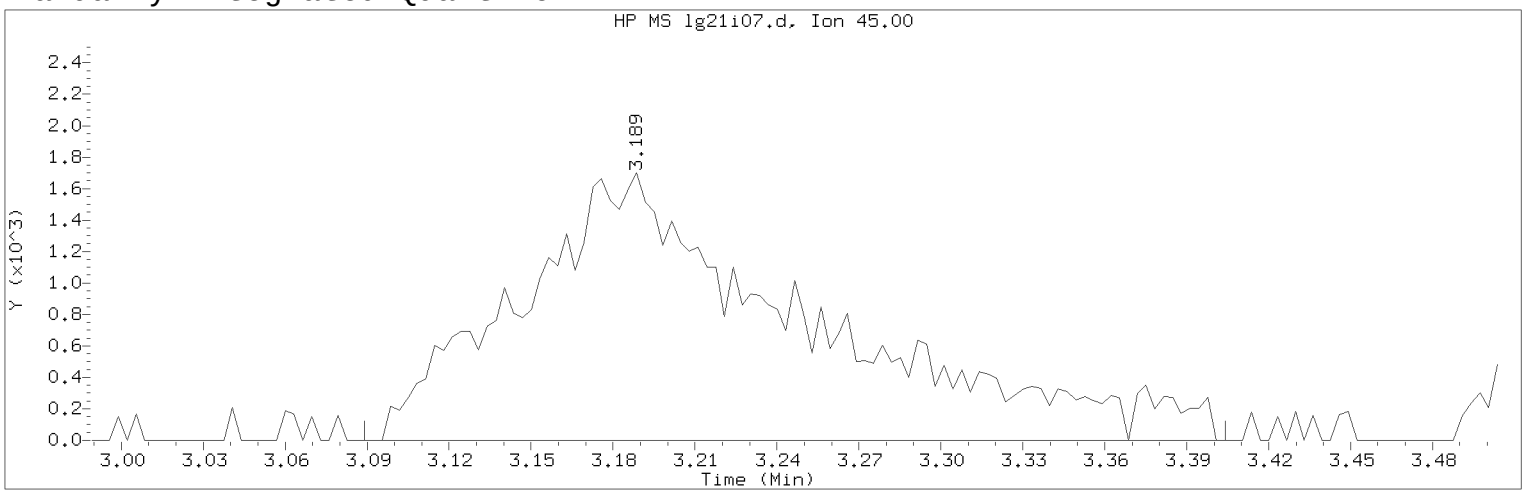
Compound Number : 18
Compound Name : Acetone
Scan Number : 486
Retention Time (minutes): 3.044
Quant Ion : 58.00
Area : 1211
On-column Amount (ng) : 1.7084
Integration start scan : 478 Integration stop scan: 504
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

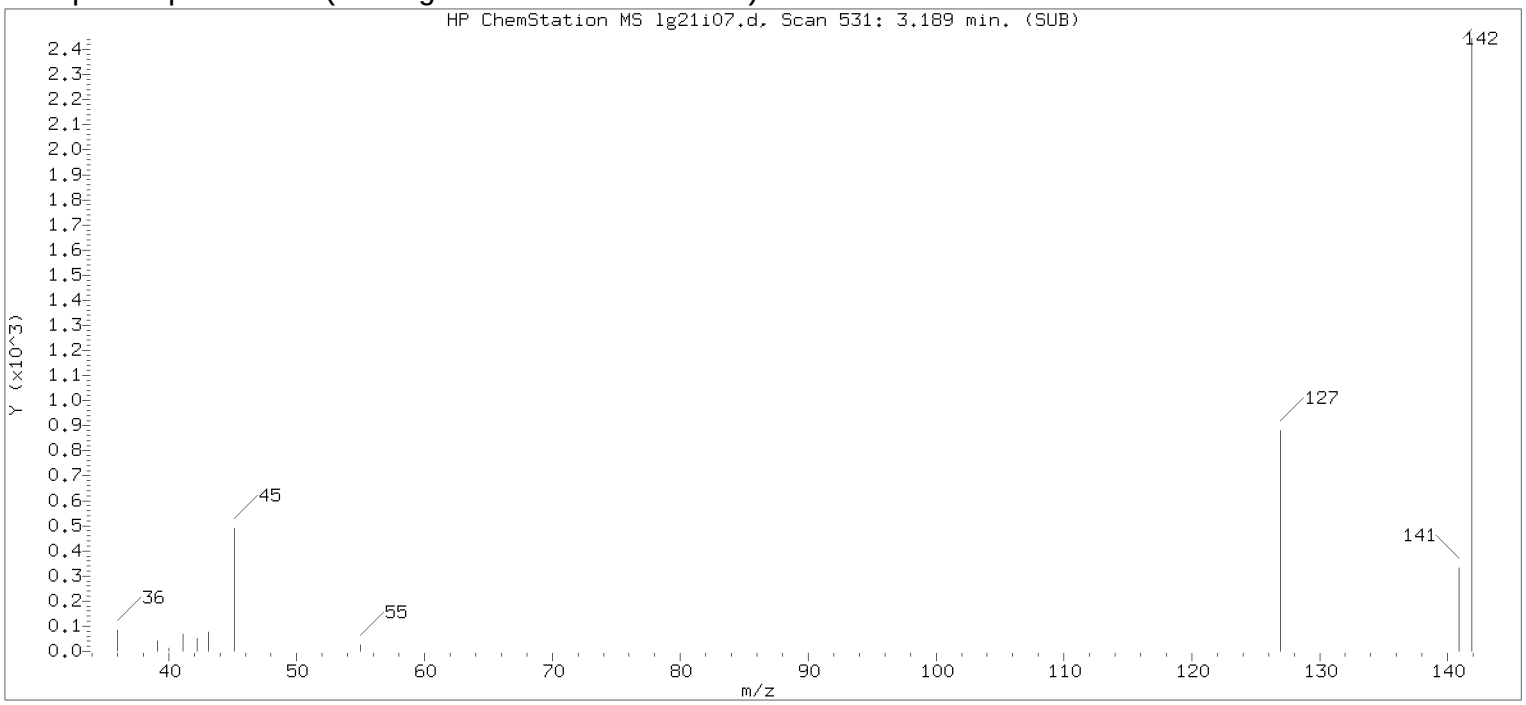
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area (flag) : 12445M
On-Column Amount (ng) : 23.1830
Integration start scan : 499 Integration stop scan: 597
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

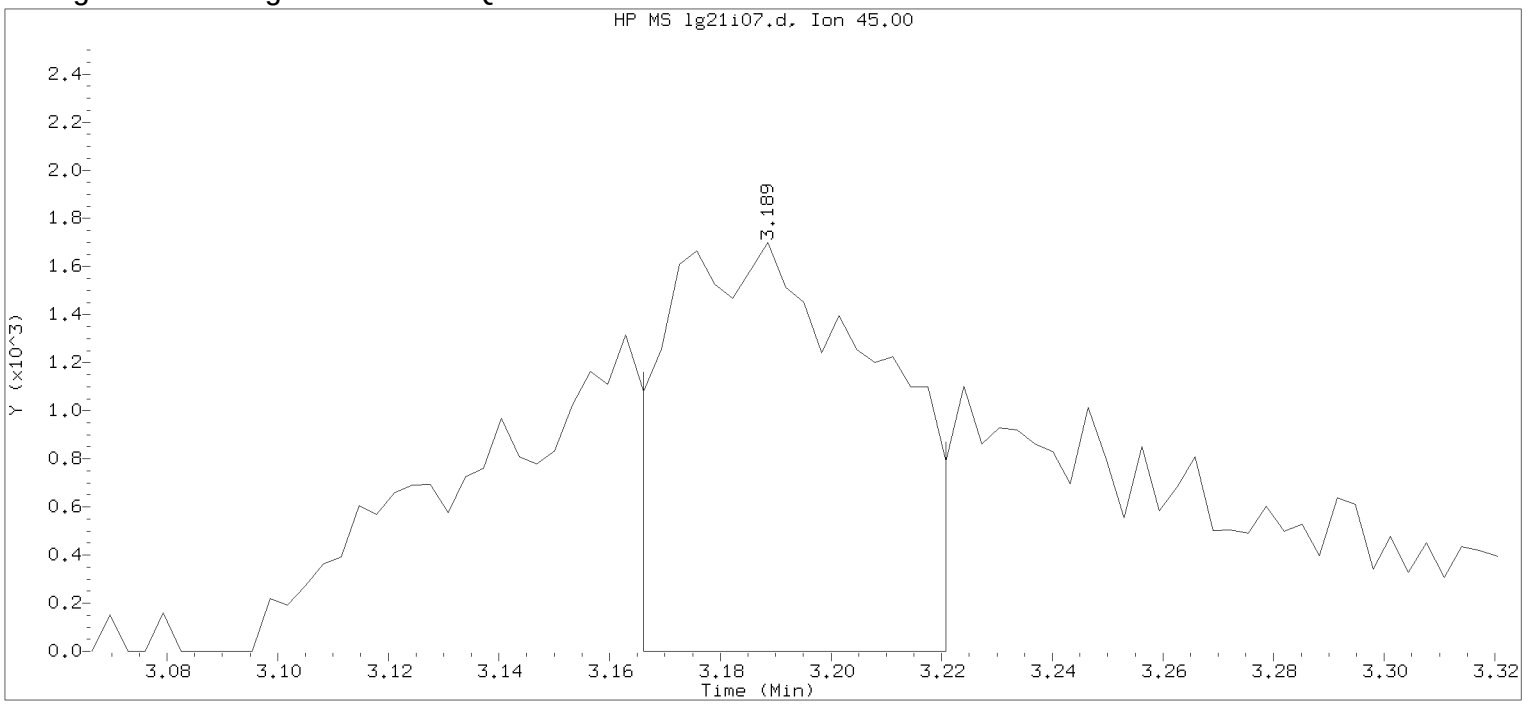
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

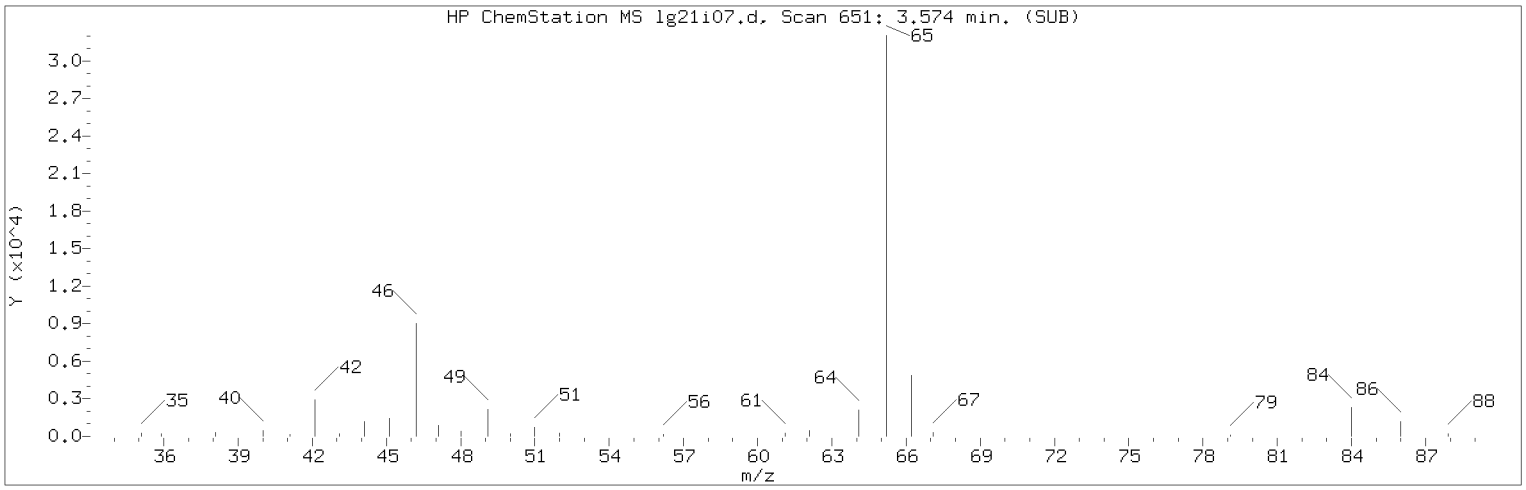
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

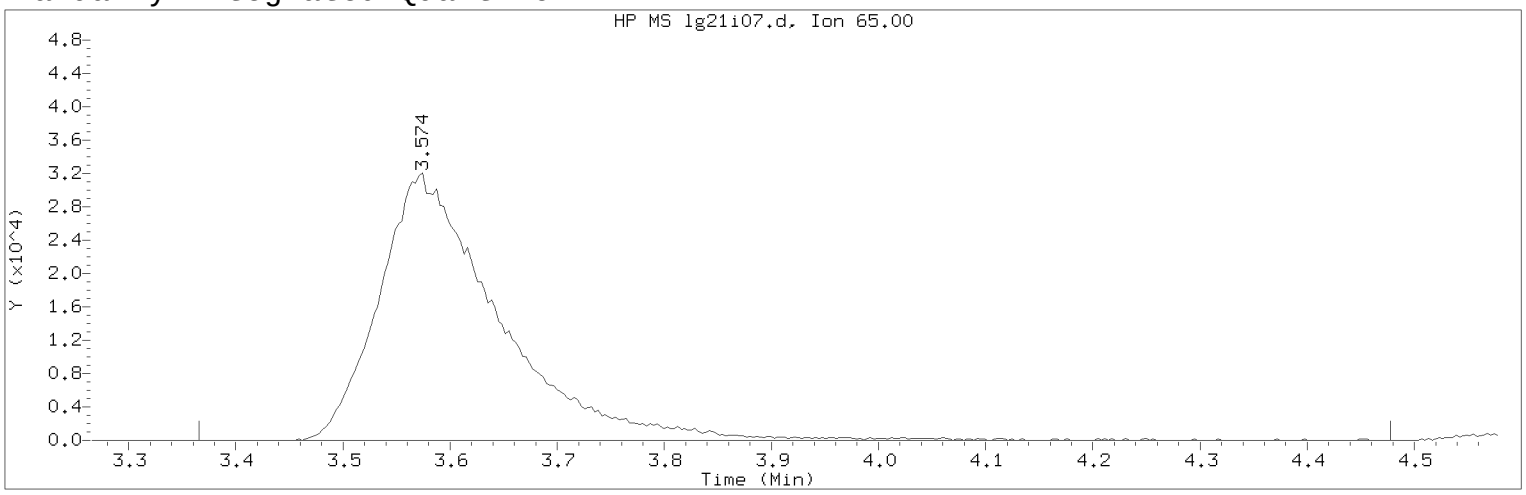
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area : 4480
On-column Amount (ng) : 9.4128
Integration start scan : 523 Integration stop scan: 540
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

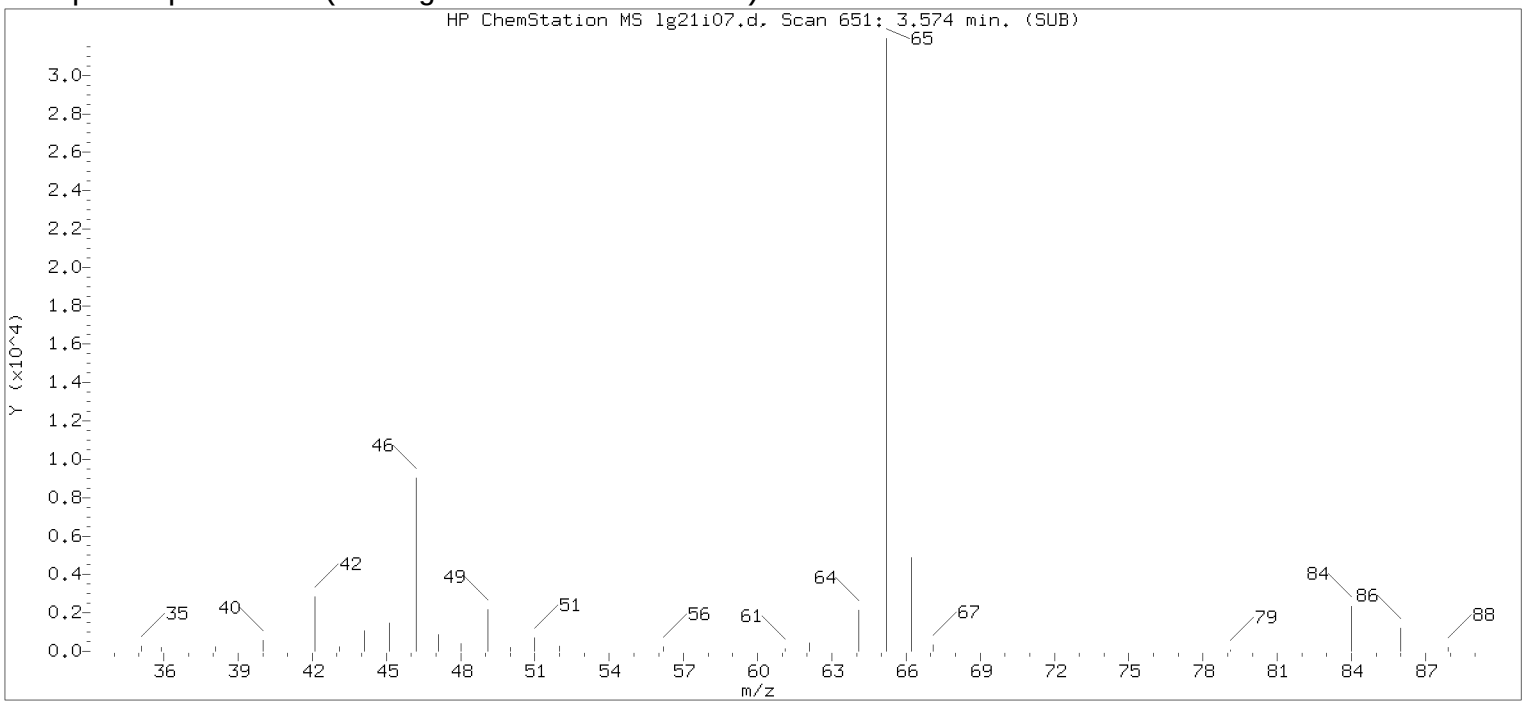
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 248975M
On-Column Amount (ng) : 250.0000
Integration start scan : 585 Integration stop scan: 931
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

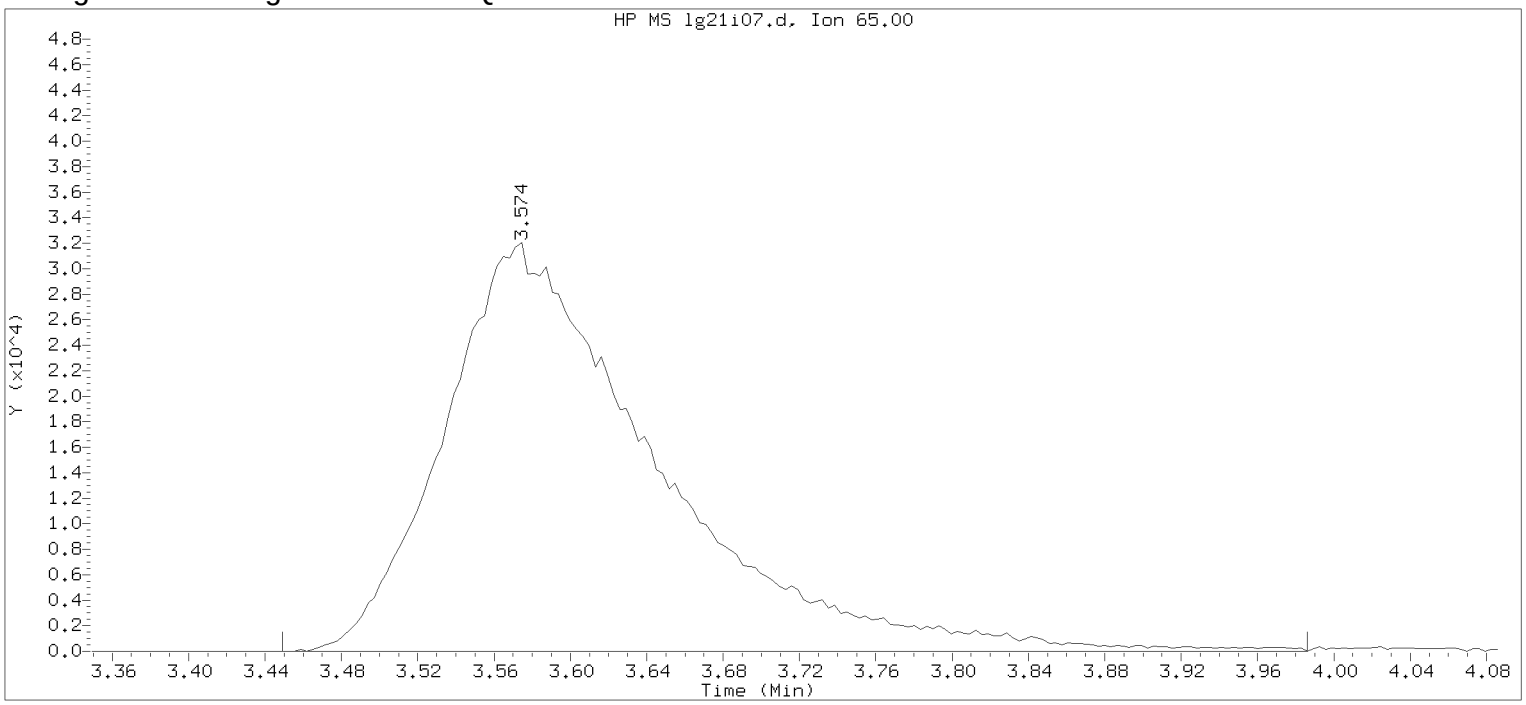
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

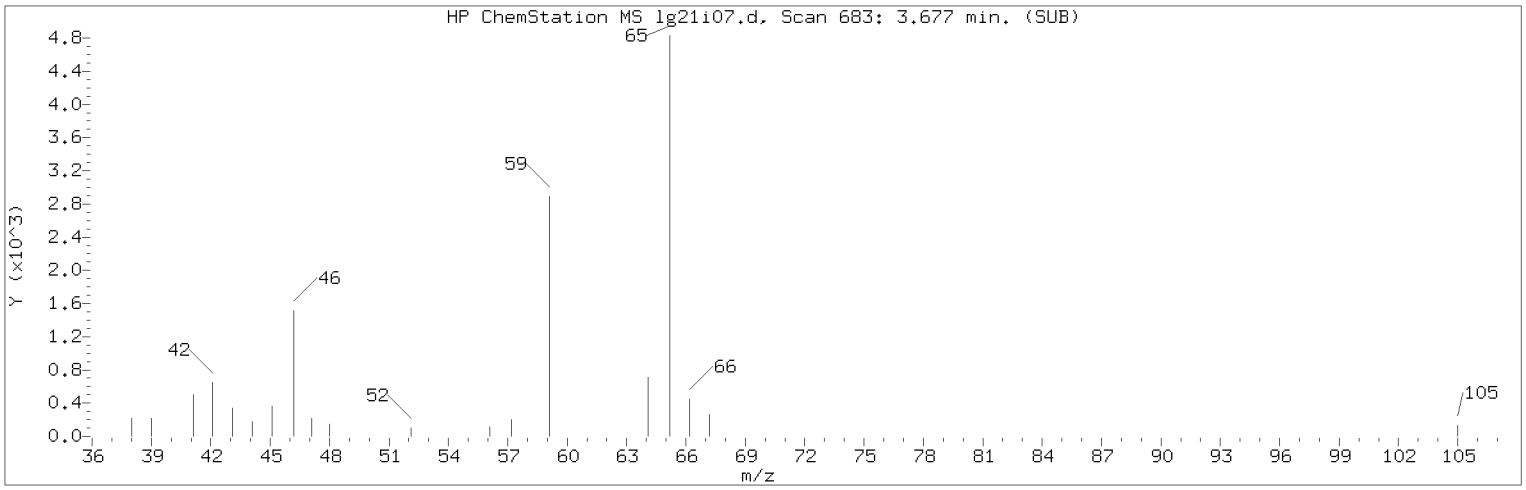
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

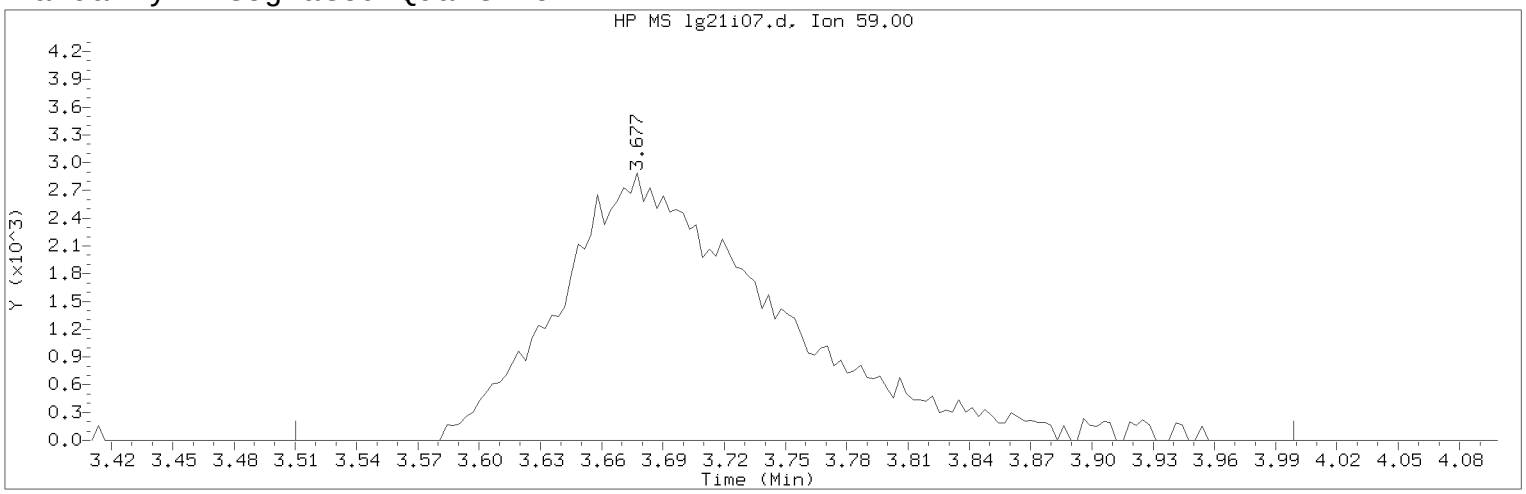
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area : 246788
On-column Amount (ng) : 250.0000
Integration start scan : 611 Integration stop scan: 778
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

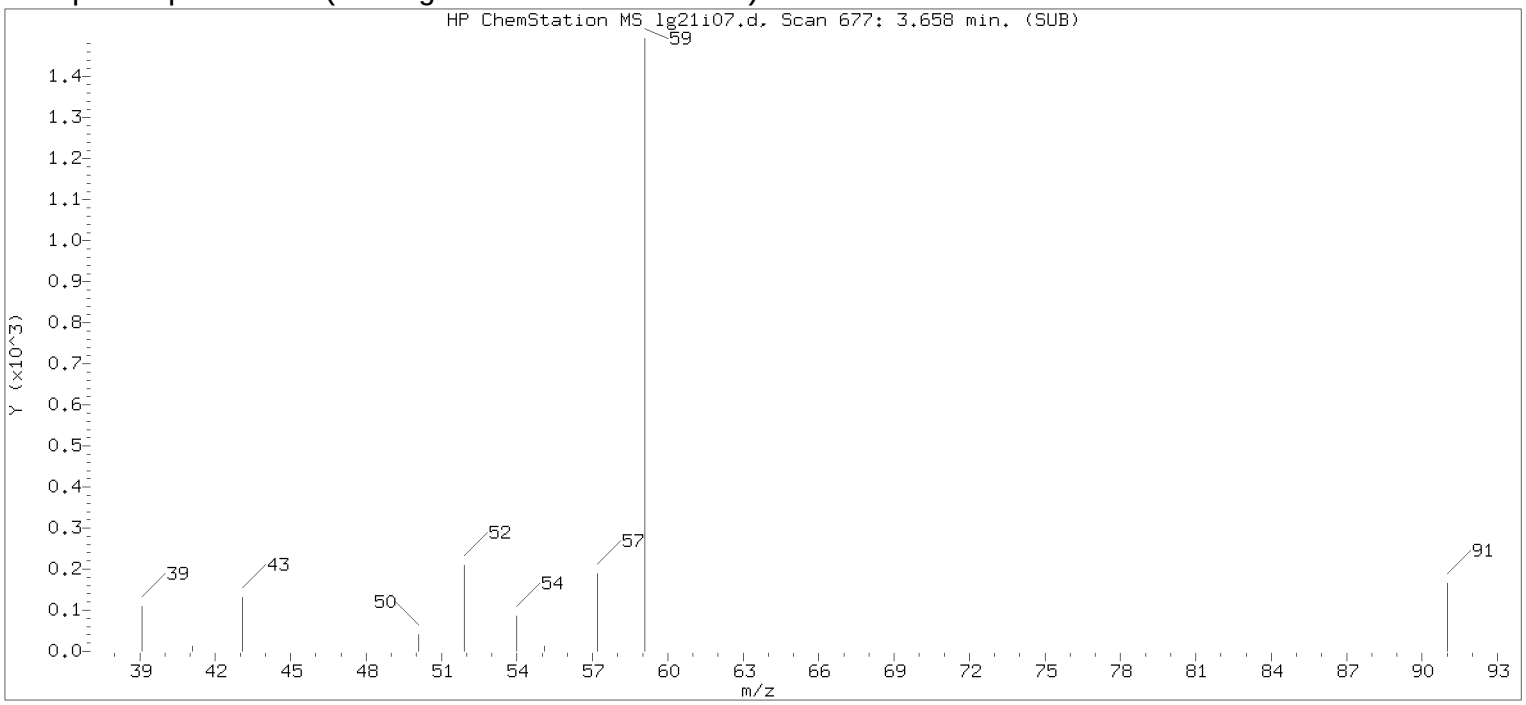
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 683
Retention Time (minutes): 3.677
Quant Ion : 59.00
Area (flag) : 21466M
On-Column Amount (ng) : 21.5428
Integration start scan : 630 Integration stop scan: 782
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

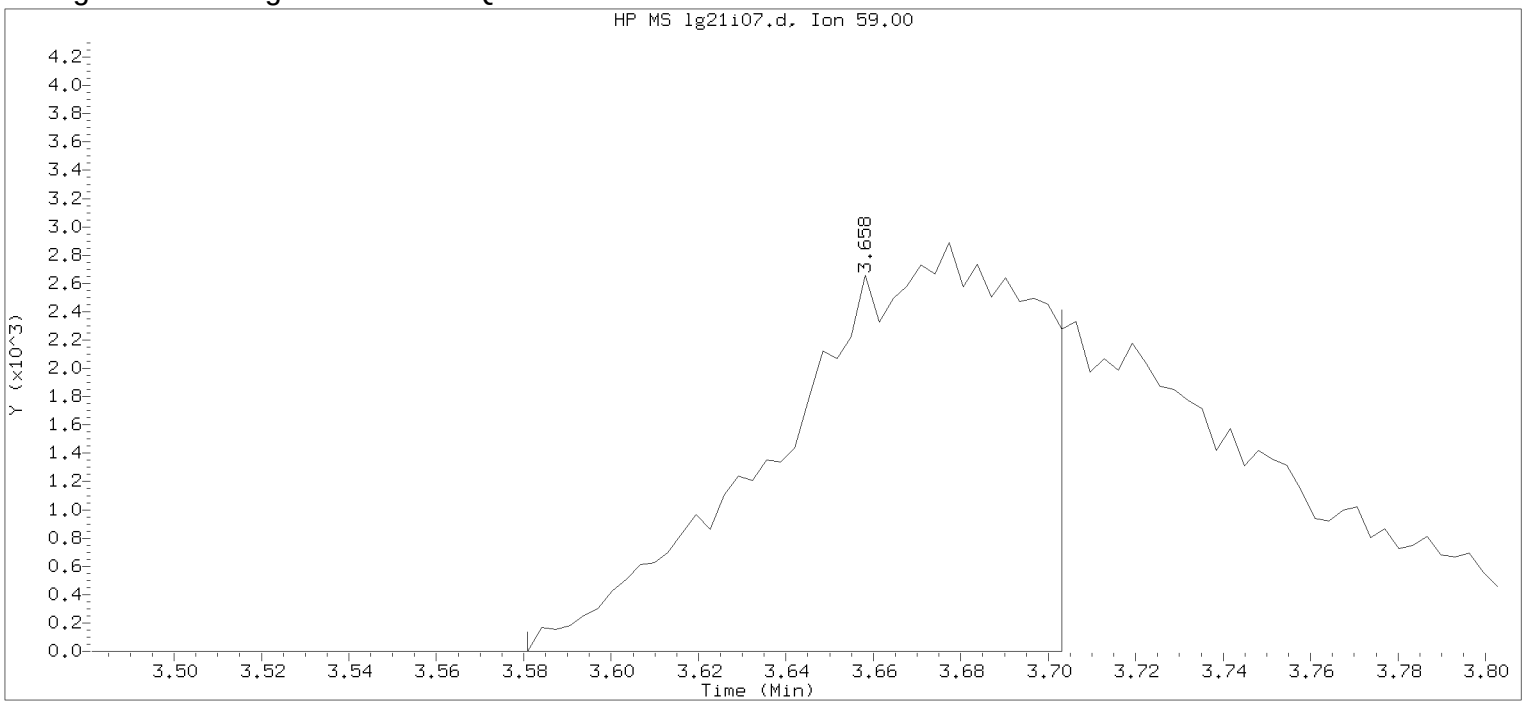
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

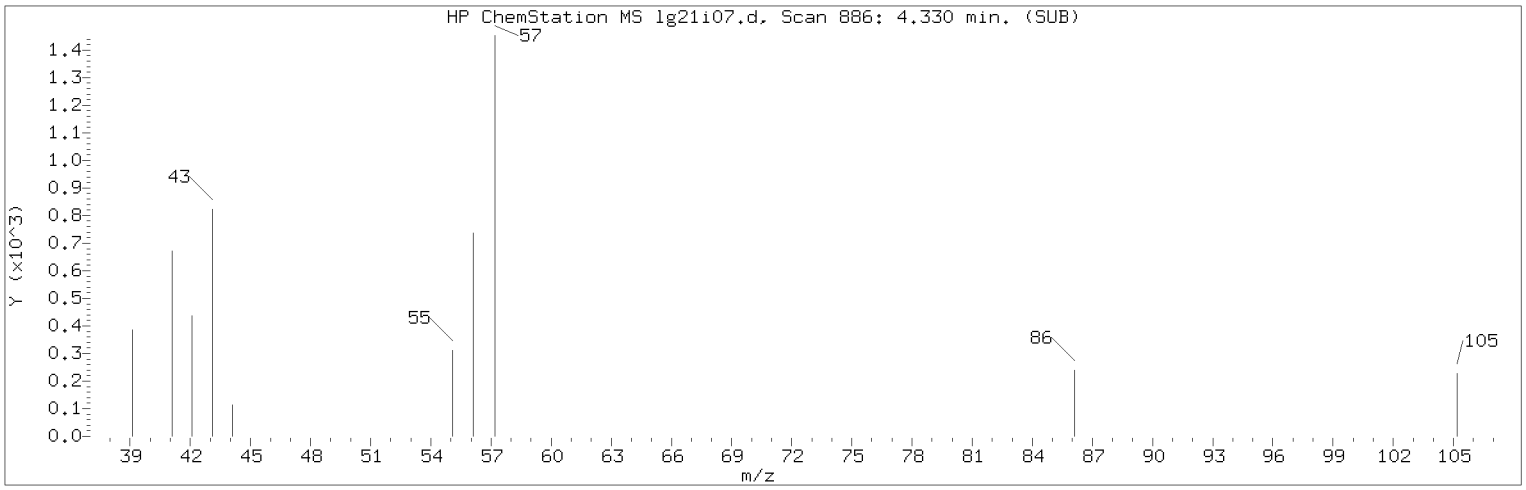
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

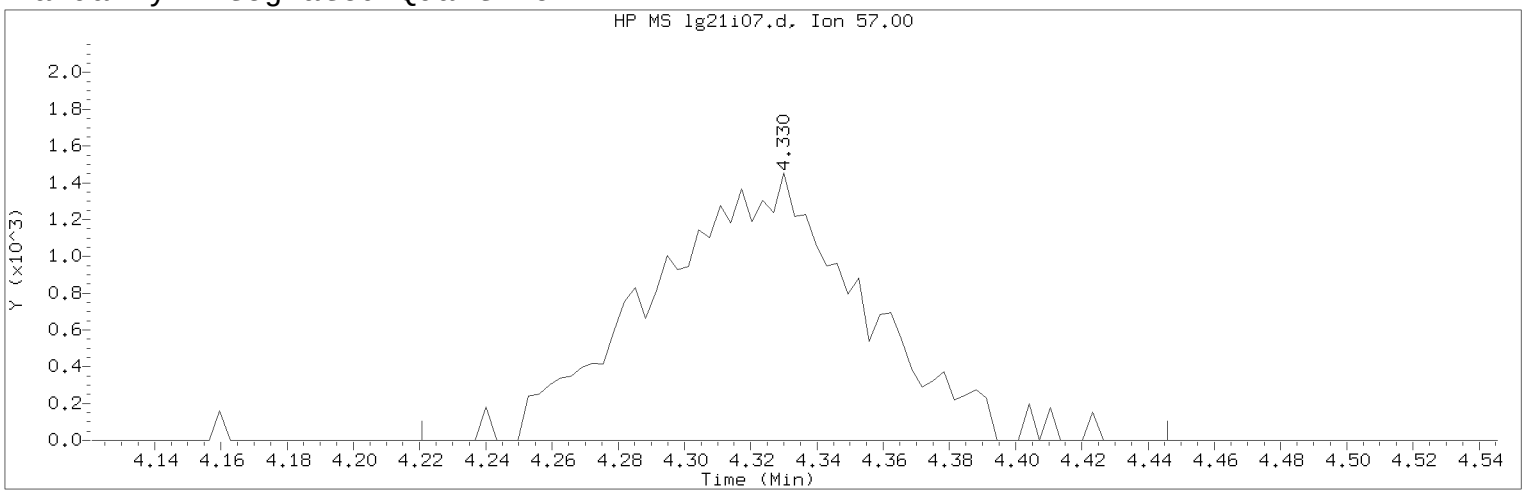
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 677
Retention Time (minutes): 3.658
Quant Ion : 59.00
Area : 11543
On-column Amount (ng) : 12.5723
Integration start scan : 652 Integration stop scan: 690
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

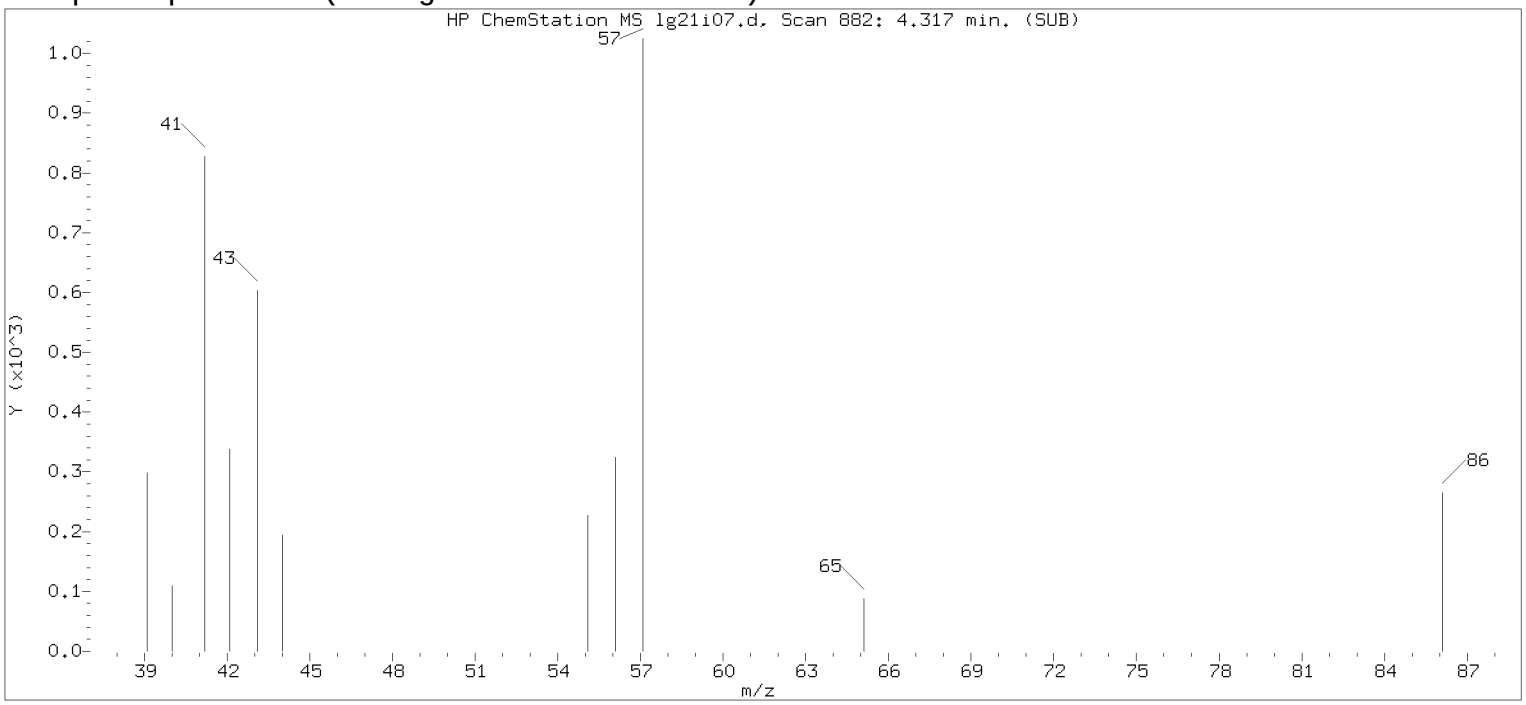
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 886
Retention Time (minutes): 4.330
Quant Ion : 57.00
Area (flag) : 6387M
On-Column Amount (ng) : 0.8222
Integration start scan : 851 Integration stop scan: 921
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

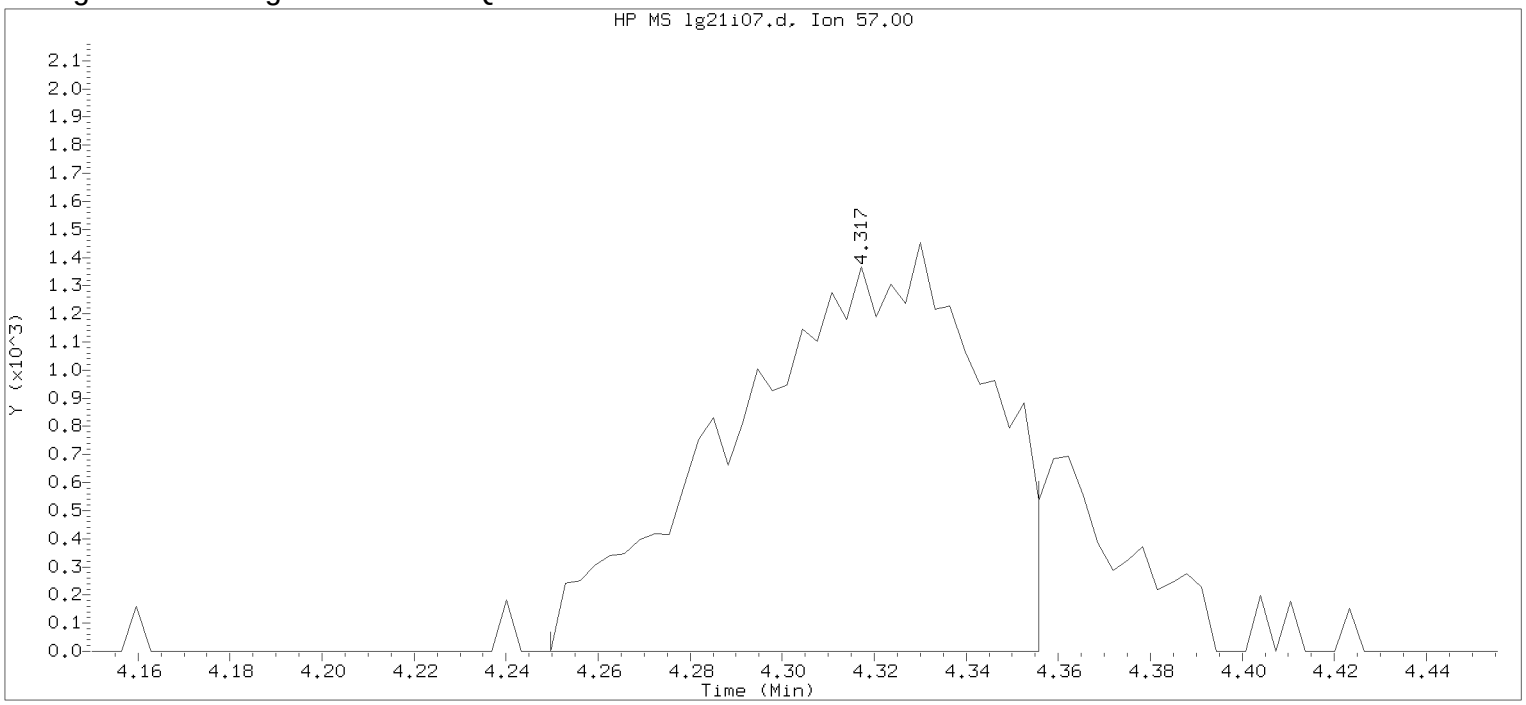
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

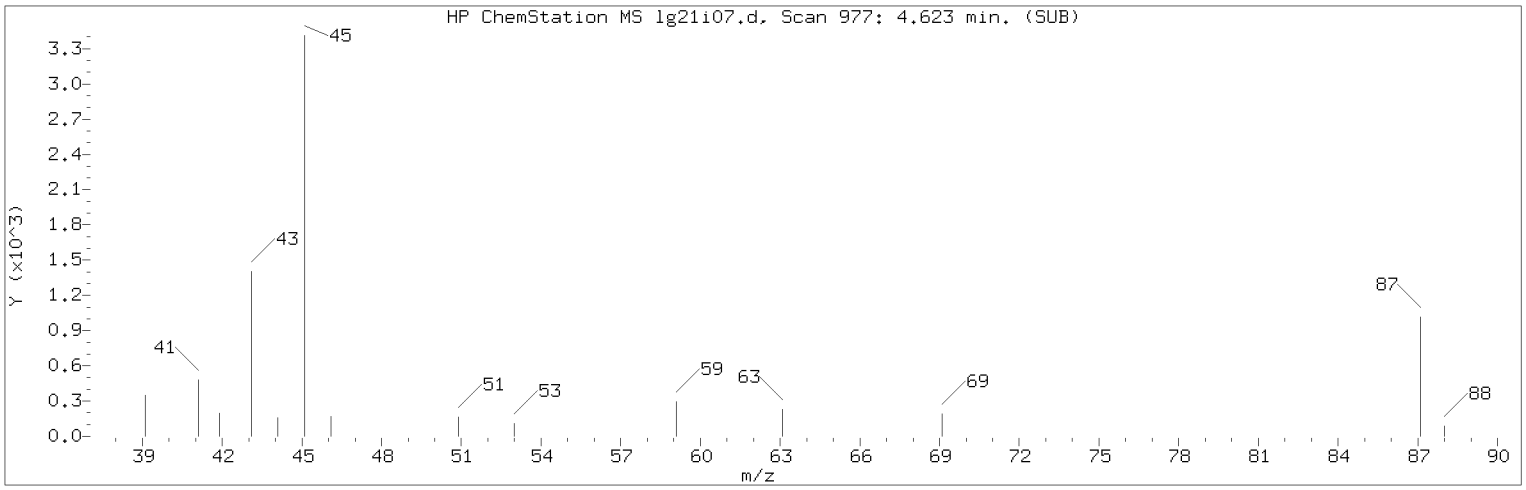
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

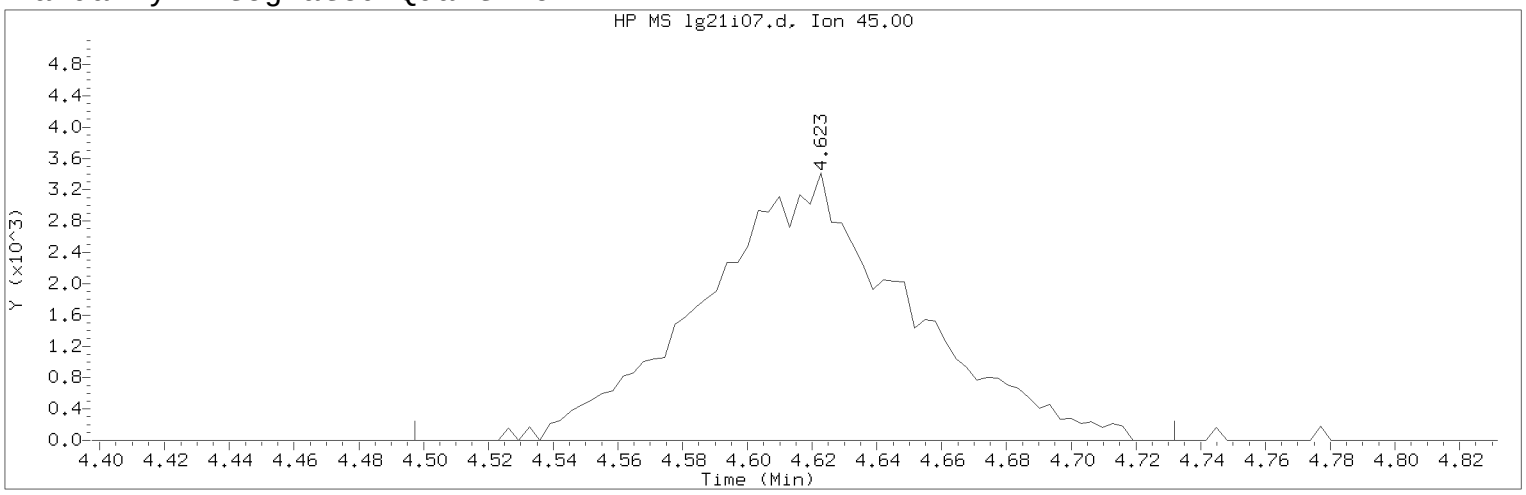
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area : 5374
On-column Amount (ng) : 0.7050
Integration start scan : 860 Integration stop scan: 893
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

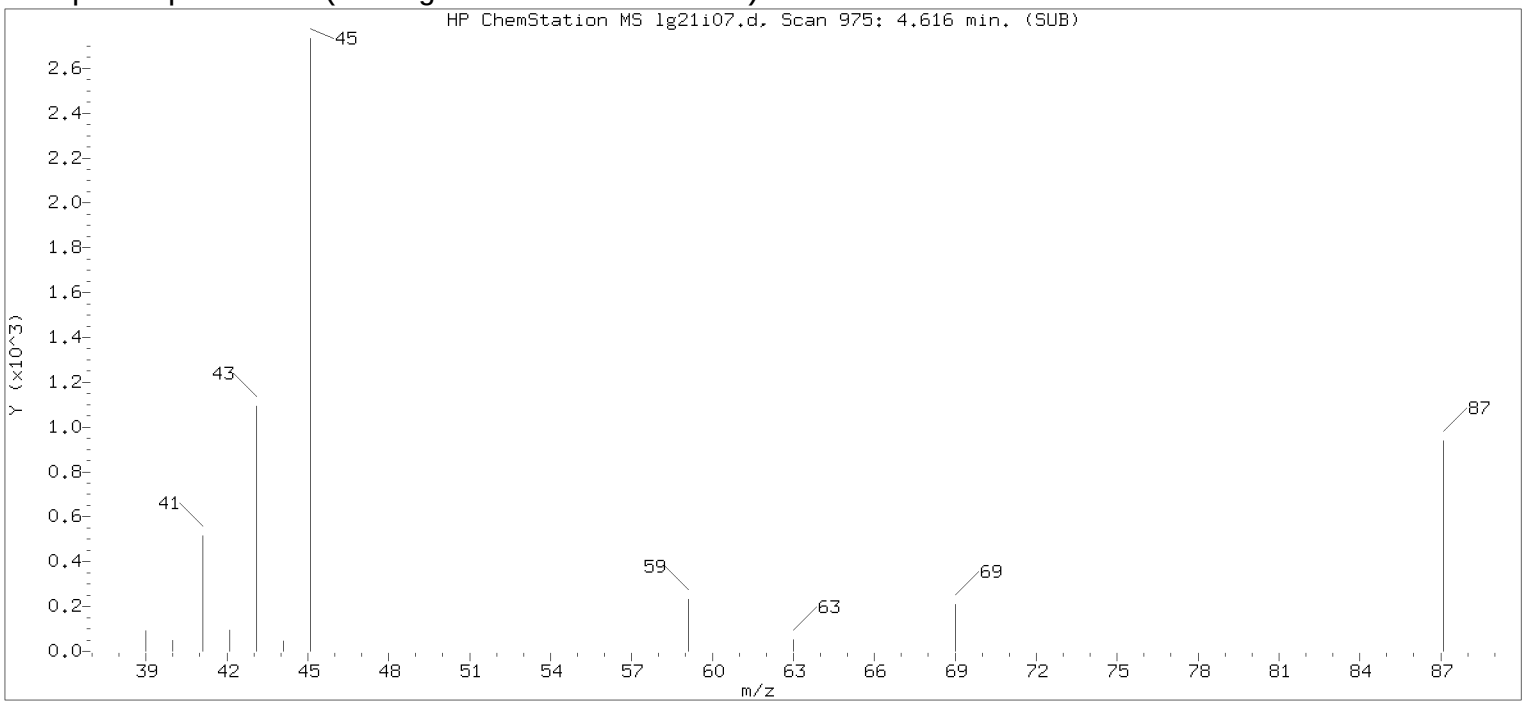
Compound Number : 38
Compound Name : di-Isopropyl ether
Scan Number : 977
Retention Time (minutes): 4.623
Quant Ion : 45.00
Area (flag) : 14990M
On-Column Amount (ng) : 0.8948
Integration start scan : 937 Integration stop scan: 1010
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

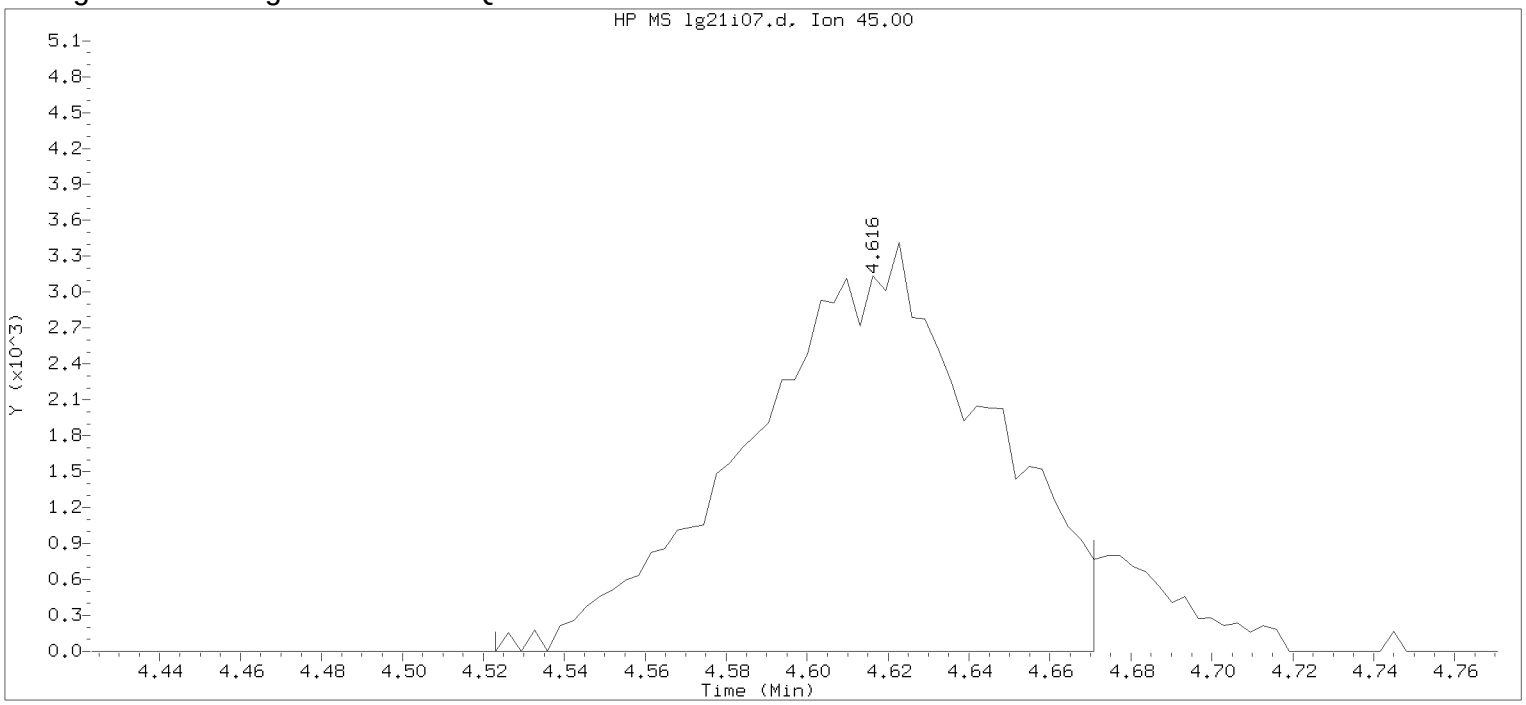
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

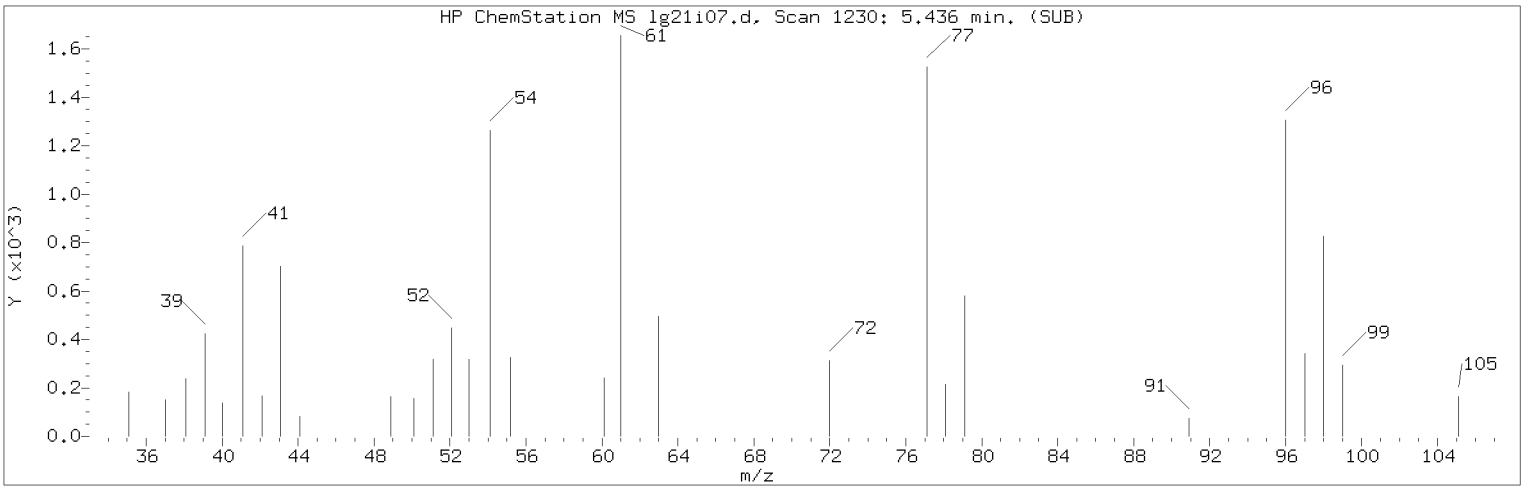
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

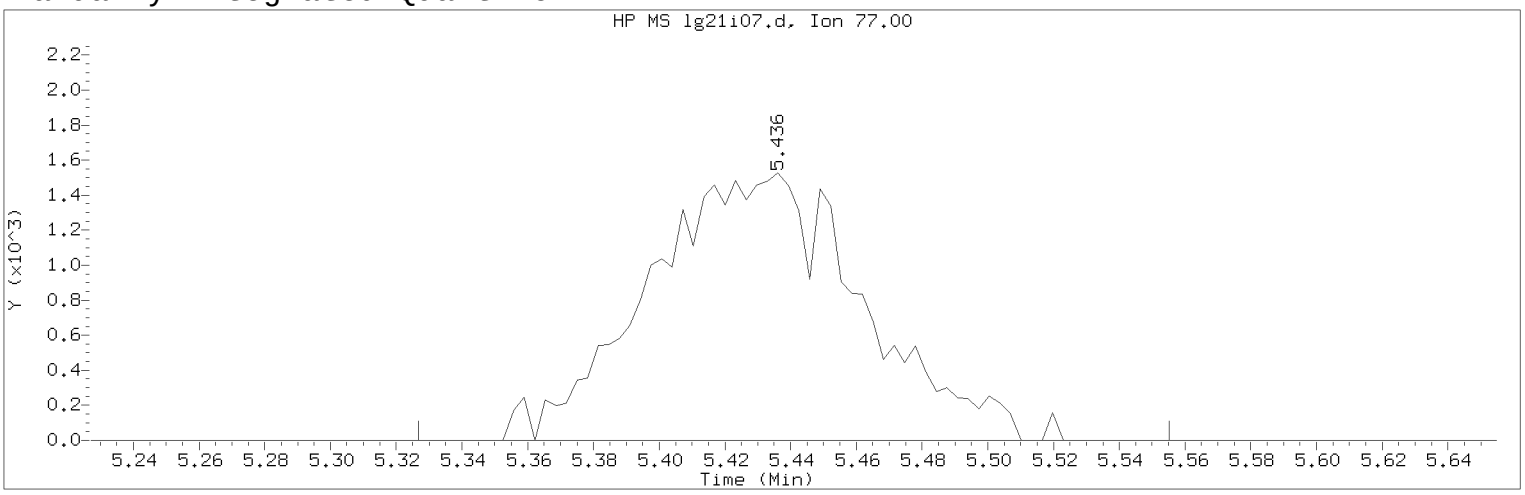
Compound Number : 38
Compound Name : di-Isopropyl ether
Scan Number : 975
Retention Time (minutes): 4.616
Quant Ion : 45.00
Area : 13772
On-column Amount (ng) : 0.8308
Integration start scan : 945 Integration stop scan: 991
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

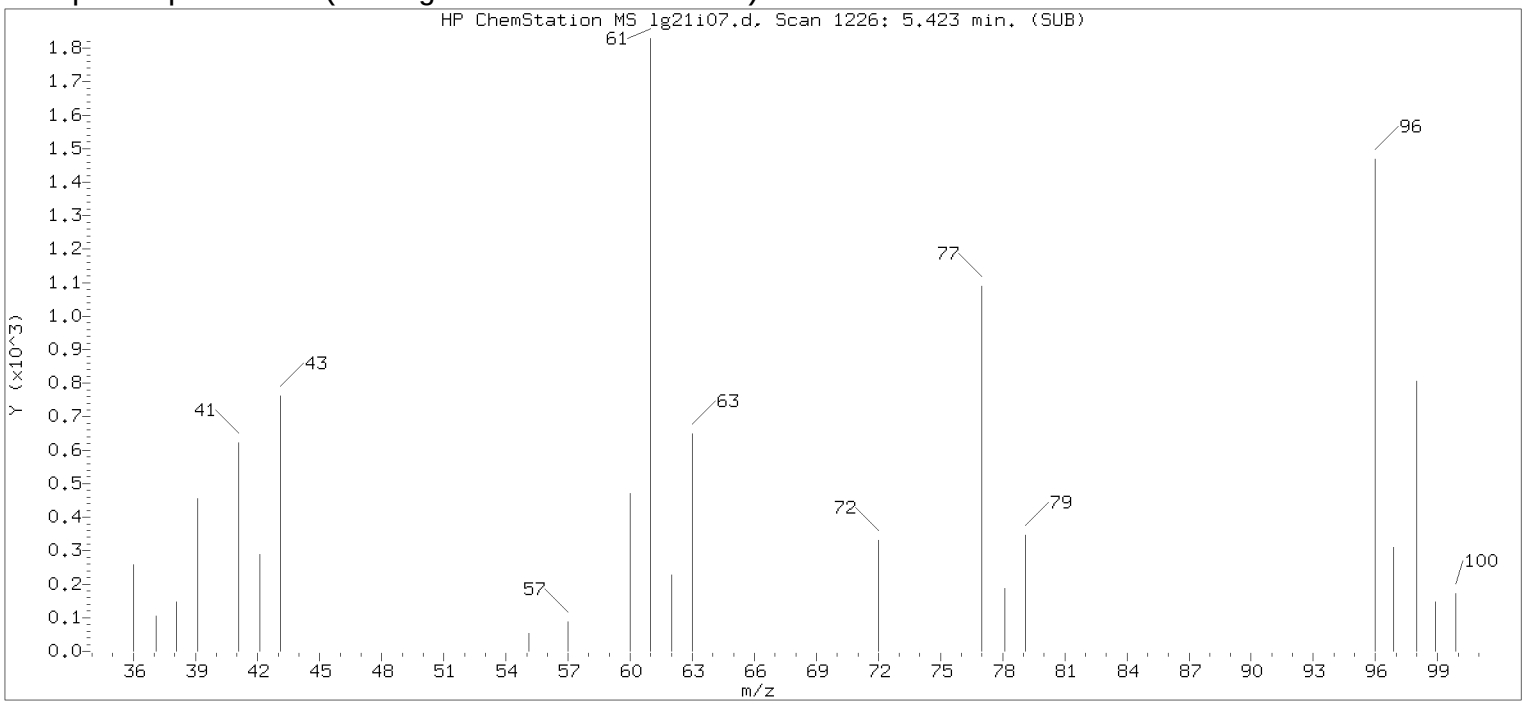
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1230
Retention Time (minutes): 5.436
Quant Ion : 77.00
Area (flag) : 6938M
On-Column Amount (ng) : 0.8580
Integration start scan : 1195 Integration stop scan: 1266
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

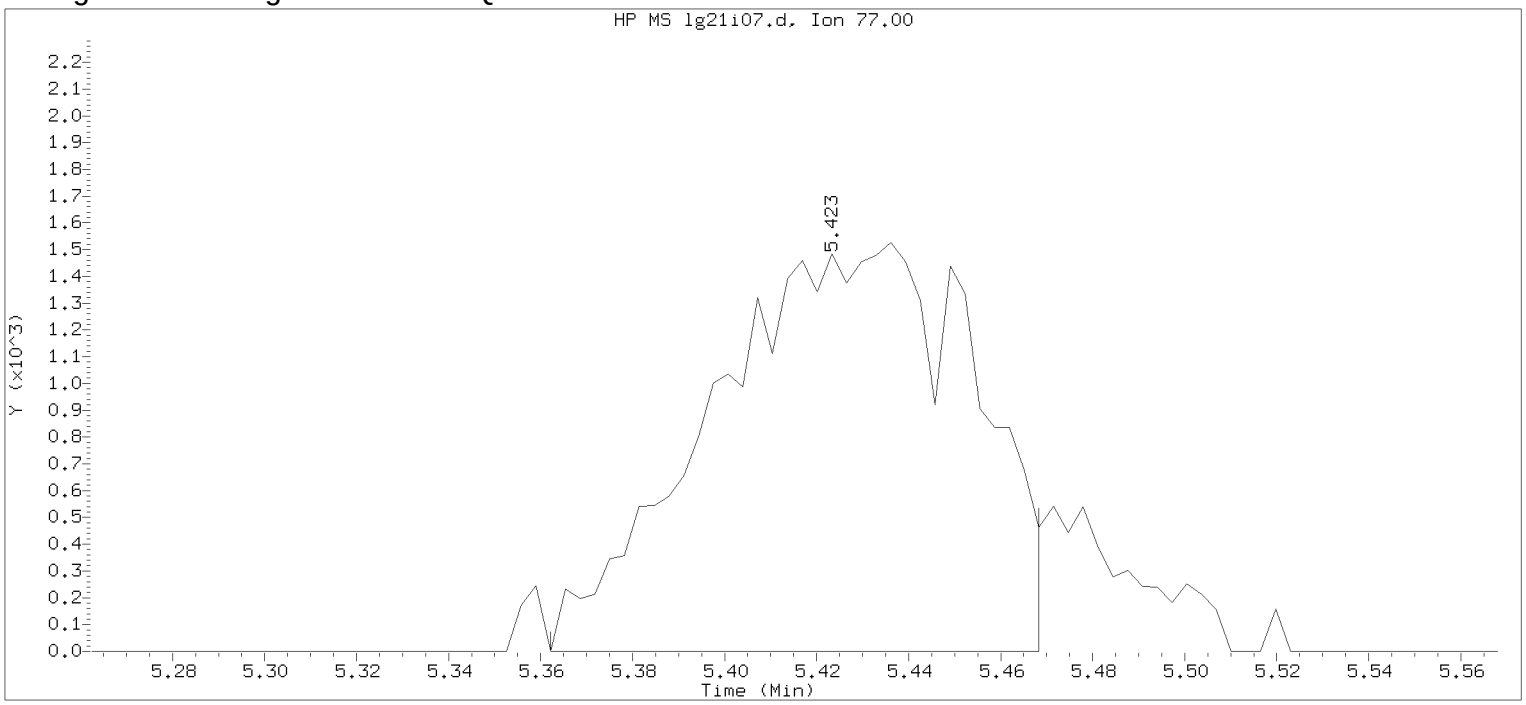
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

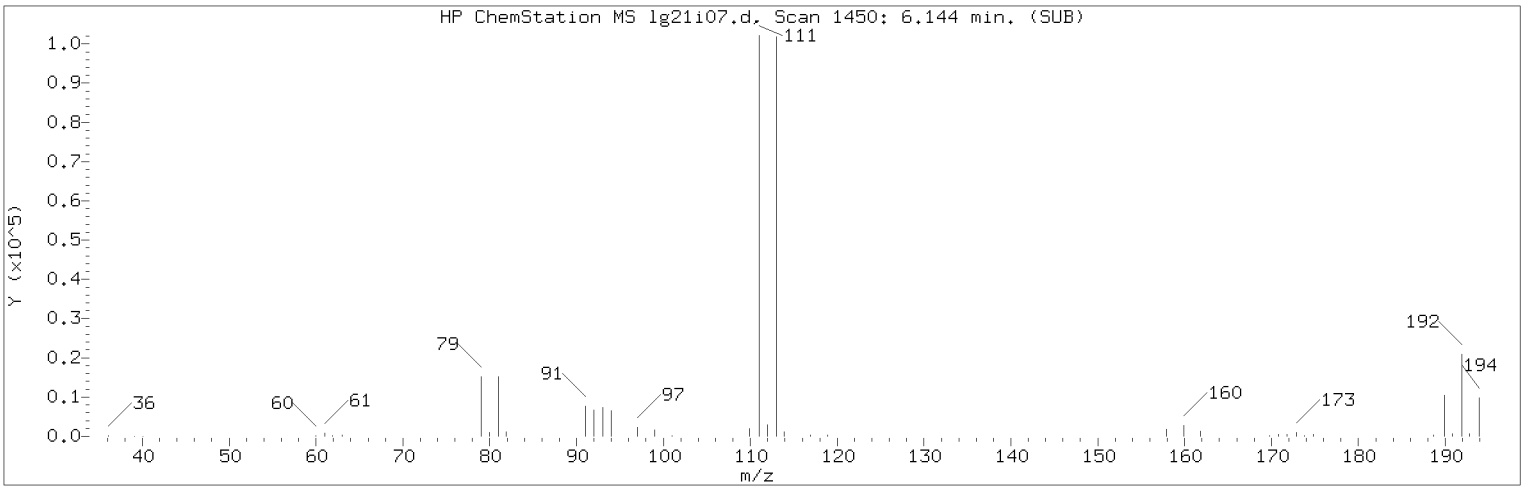
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

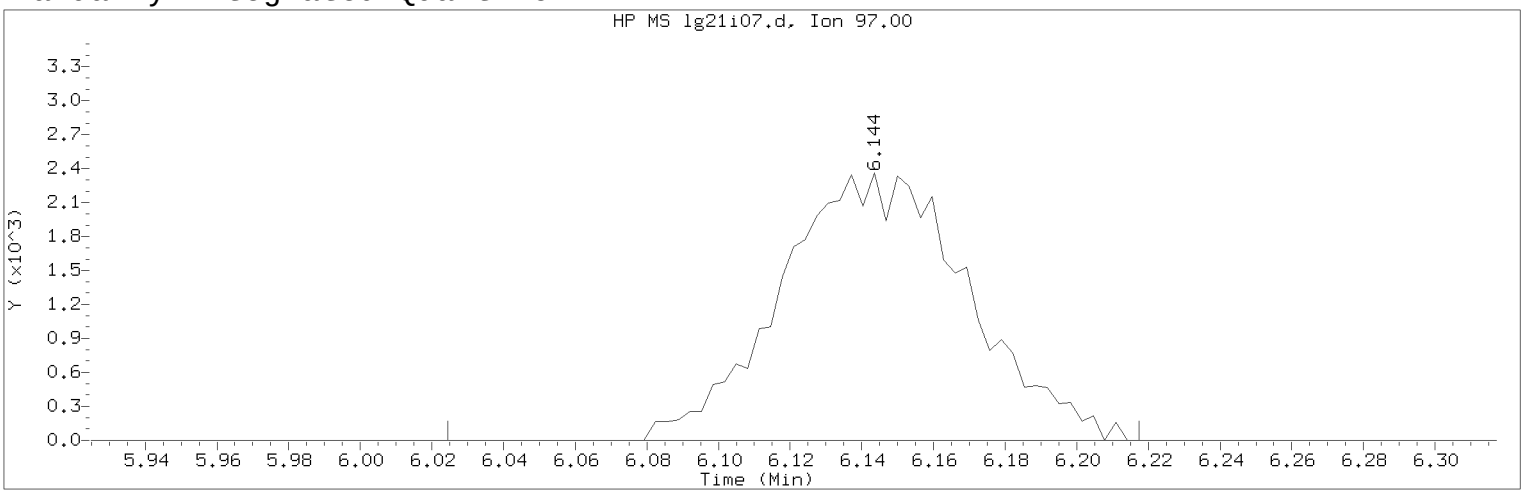
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1226
Retention Time (minutes): 5.423
Quant Ion : 77.00
Area : 6054
On-column Amount (ng) : 0.7607
Integration start scan : 1206 Integration stop scan: 1239
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

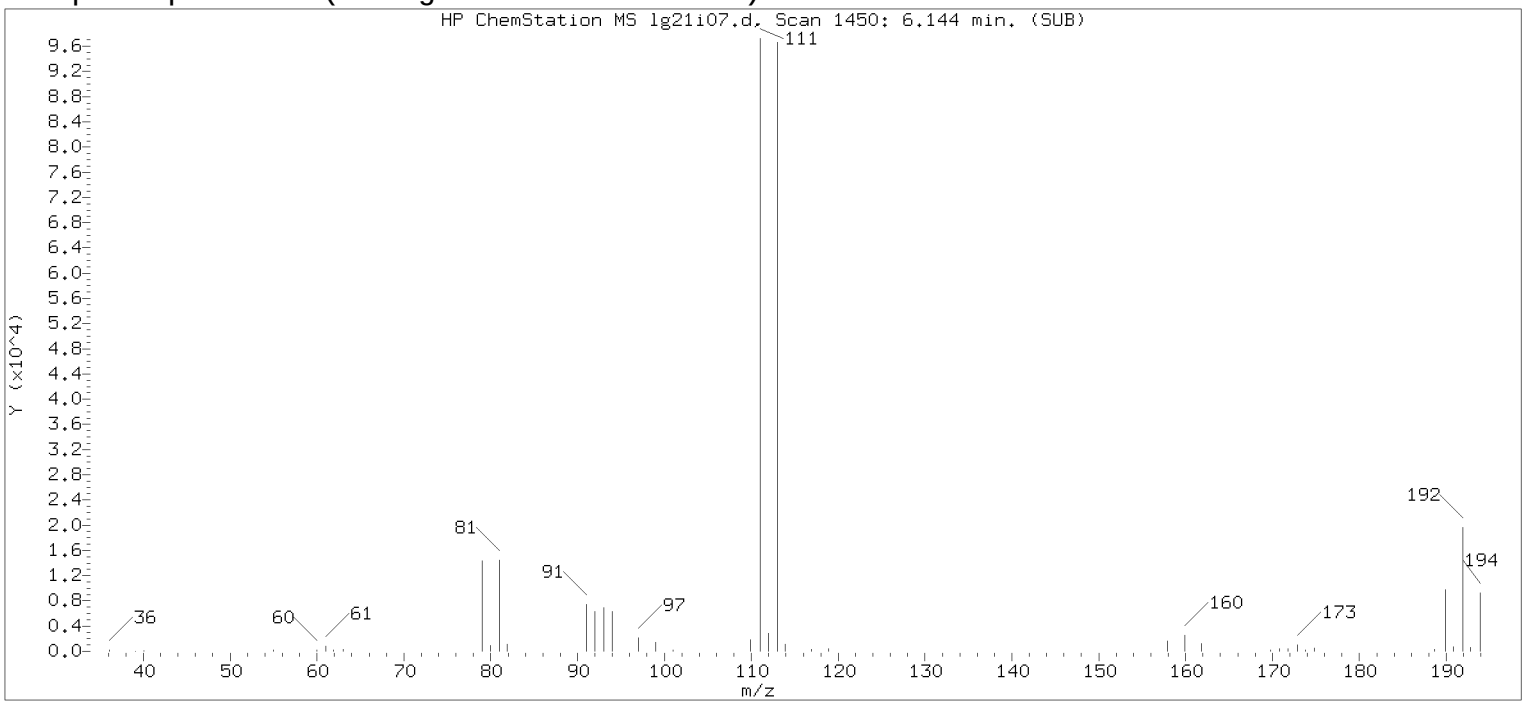
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1450
Retention Time (minutes): 6.144
Quant Ion : 97.00
Area (flag) : 8602M
On-Column Amount (ng) : 0.9103
Integration start scan : 1412 Integration stop scan: 1472
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

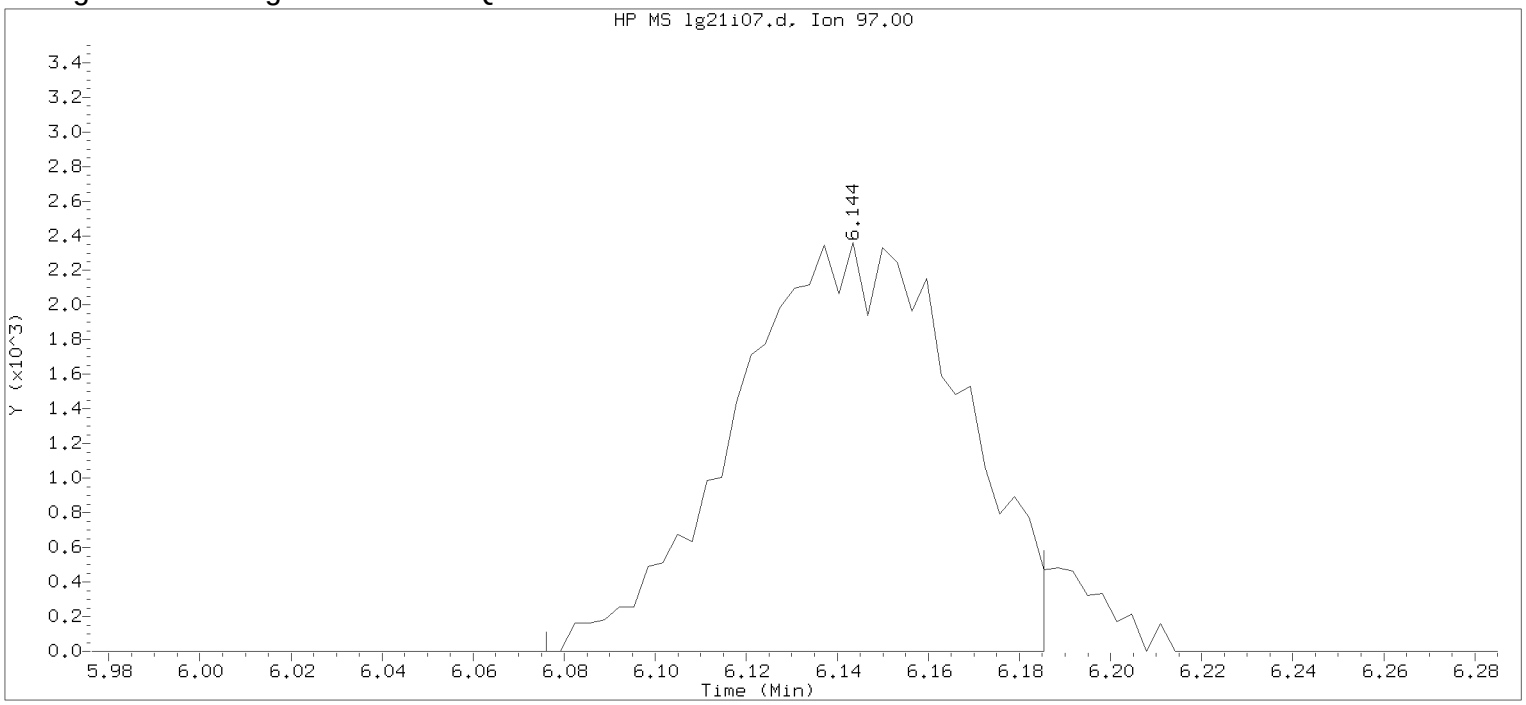
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

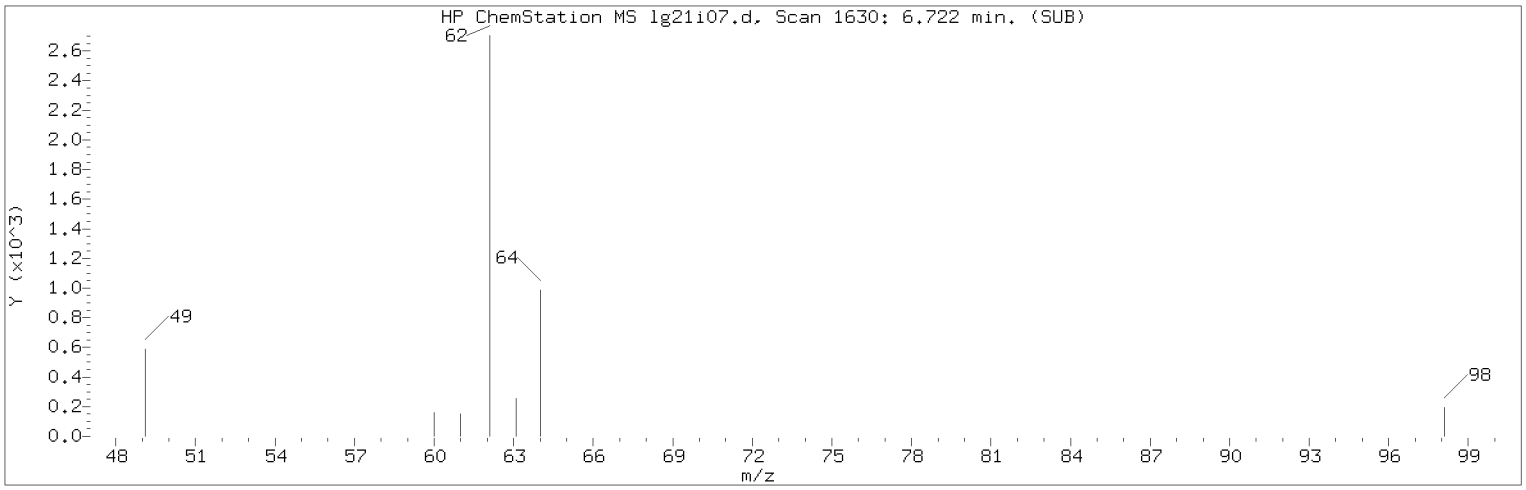
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

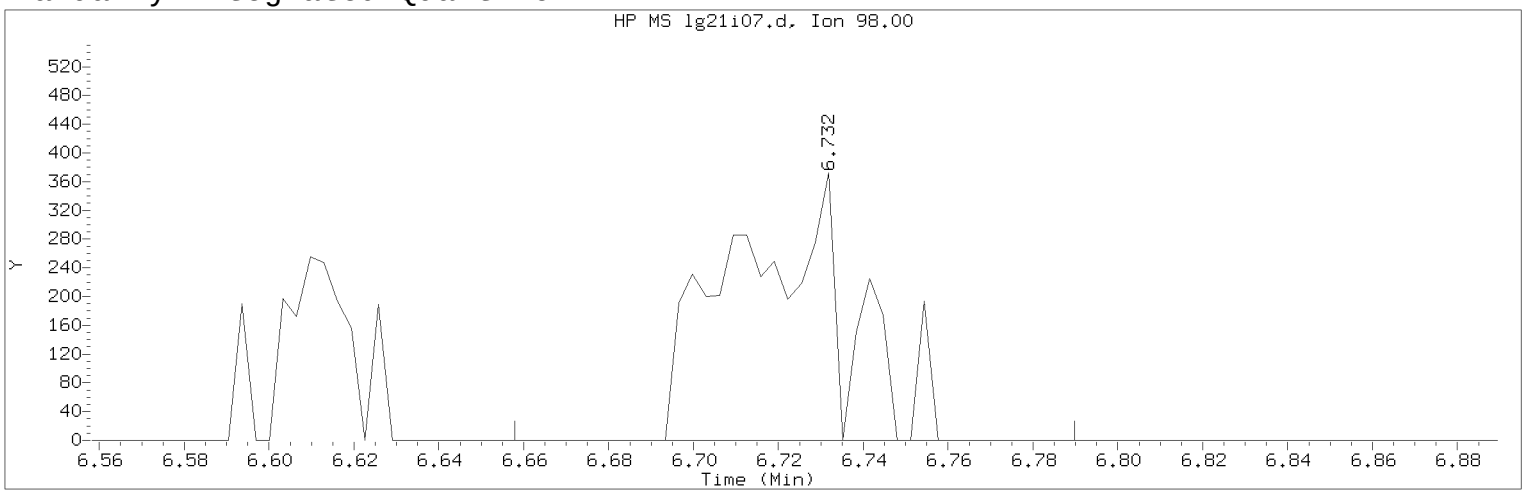
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1450
Retention Time (minutes): 6.144
Quant Ion : 97.00
Area : 8143
On-column Amount (ng) : 0.8678
Integration start scan : 1428 Integration stop scan: 1462
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

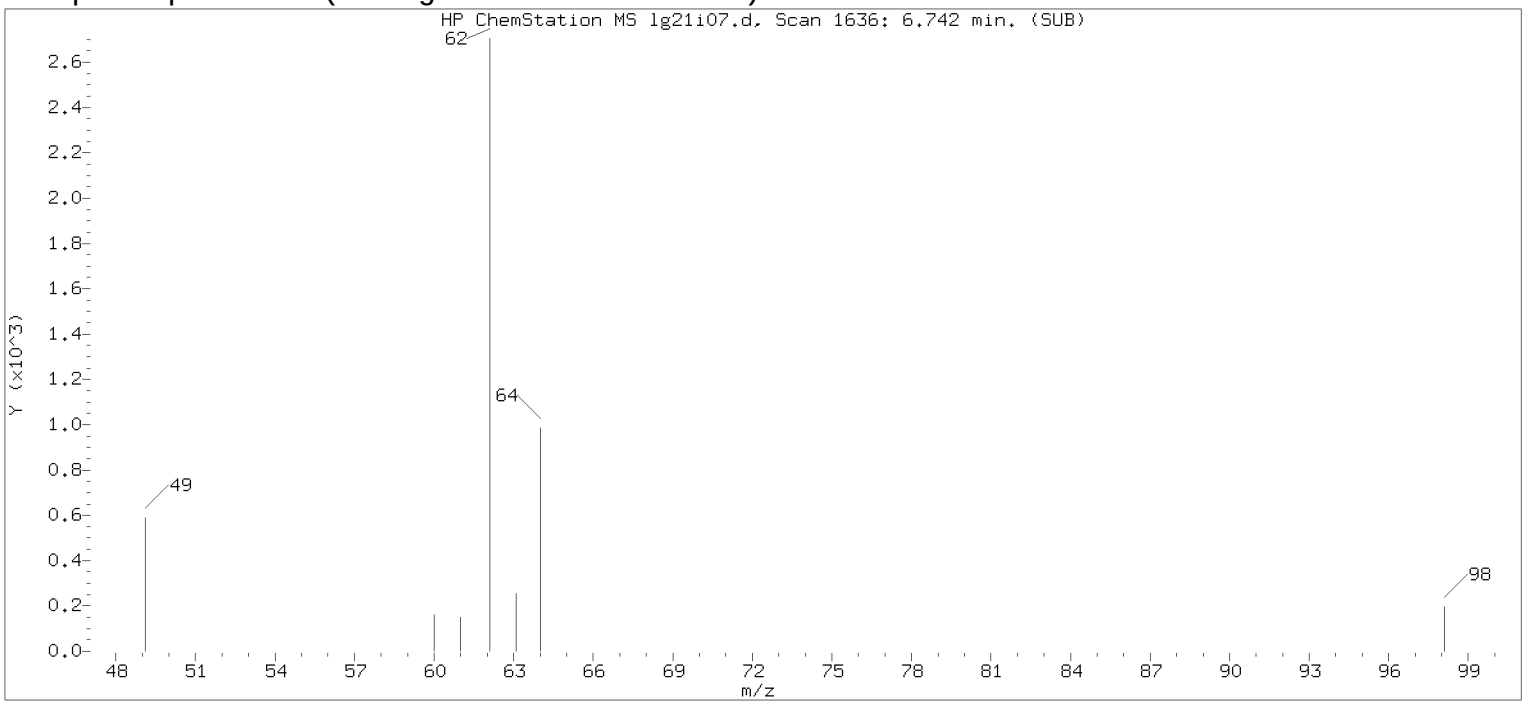
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1633
Retention Time (minutes): 6.732
Quant Ion : 98.00
Area (flag) : 709M
On-Column Amount (ng) : 0.9329
Integration start scan : 1609 Integration stop scan: 1650
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

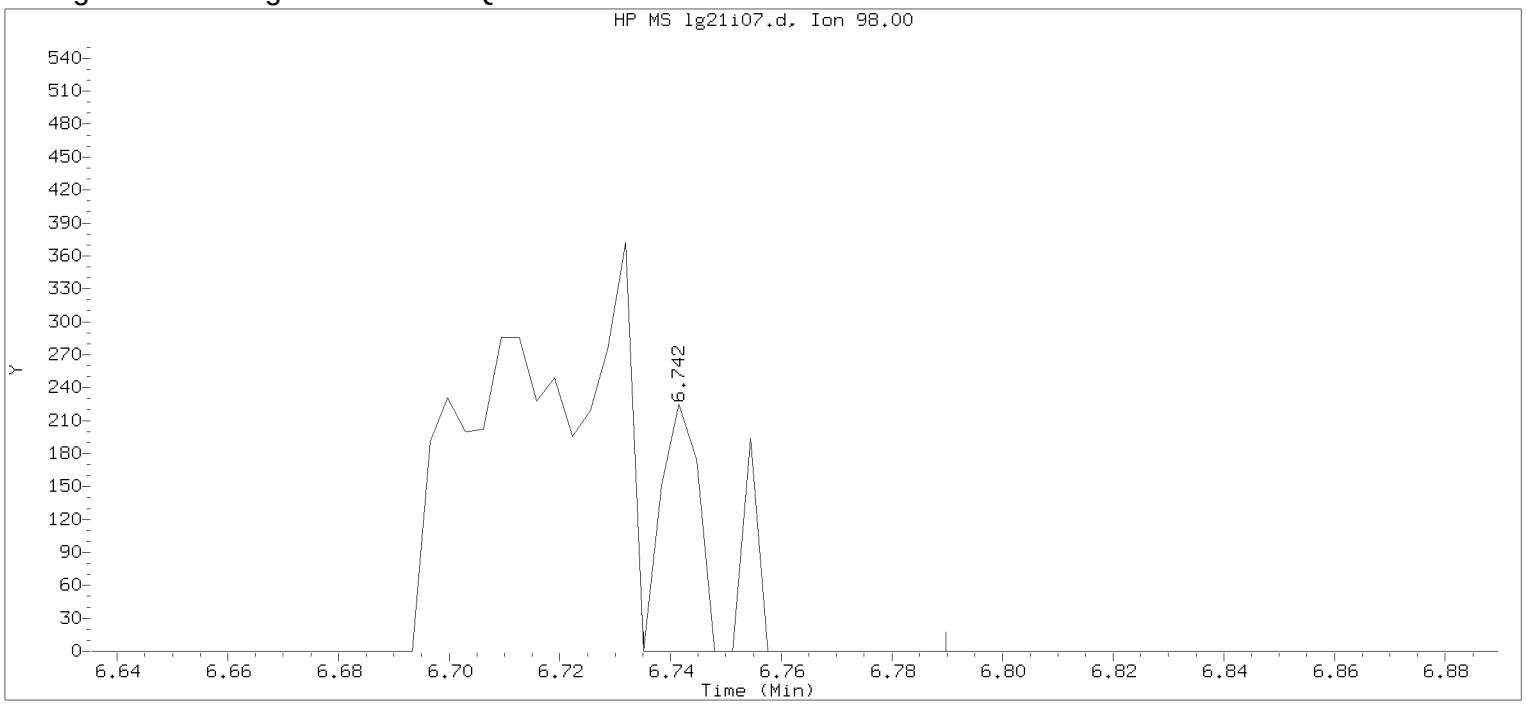
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1636
Retention Time (minutes): 6.742
Quant Ion : 98.00
Area : 143
On-column Amount (ng) : 0.2111
Integration start scan : 1633 Integration stop scan: 1650
Y at integration start : 0 Y at integration end: 0

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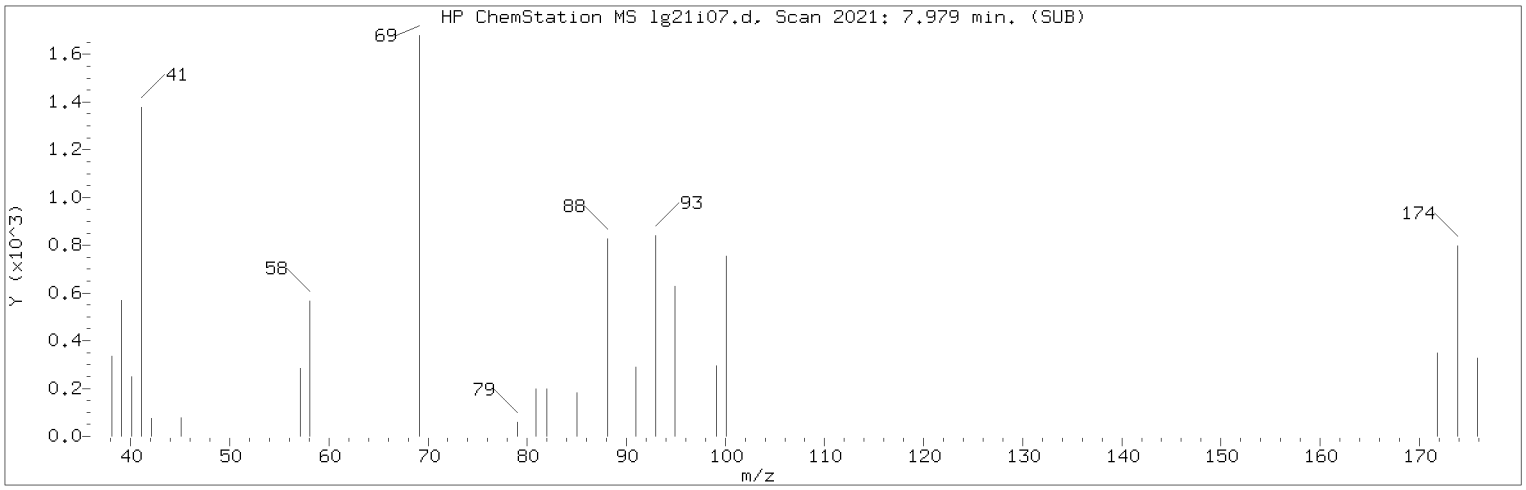
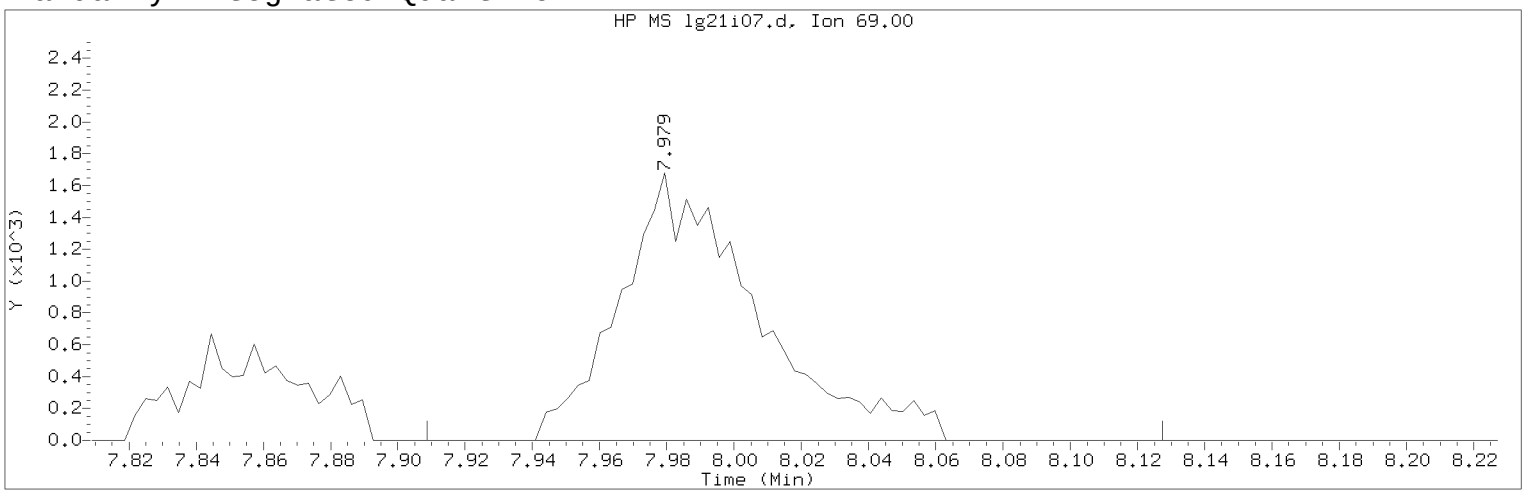
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

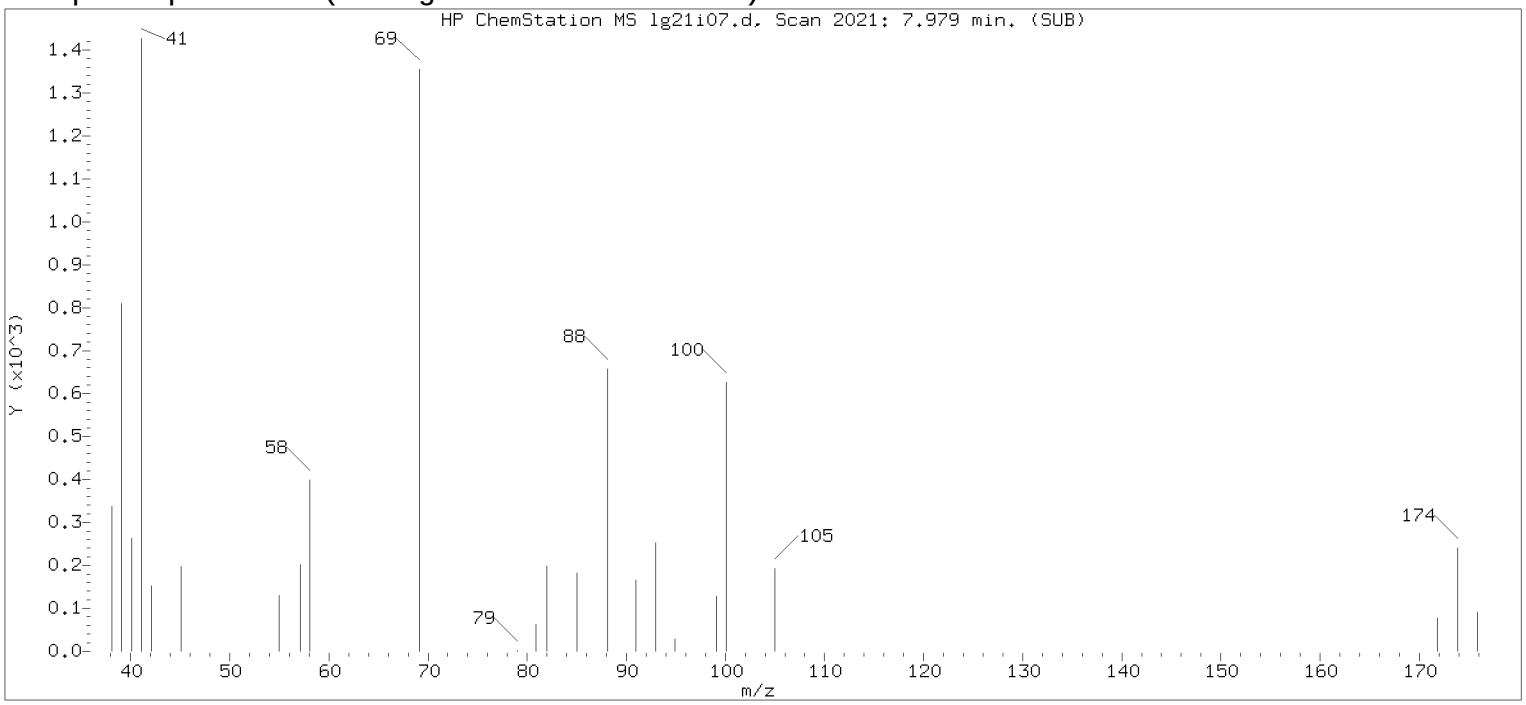
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 69.00
Area (flag) : 4729M
On-Column Amount (ng) : 0.8906
Integration start scan : 1998 Integration stop scan: 2066
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

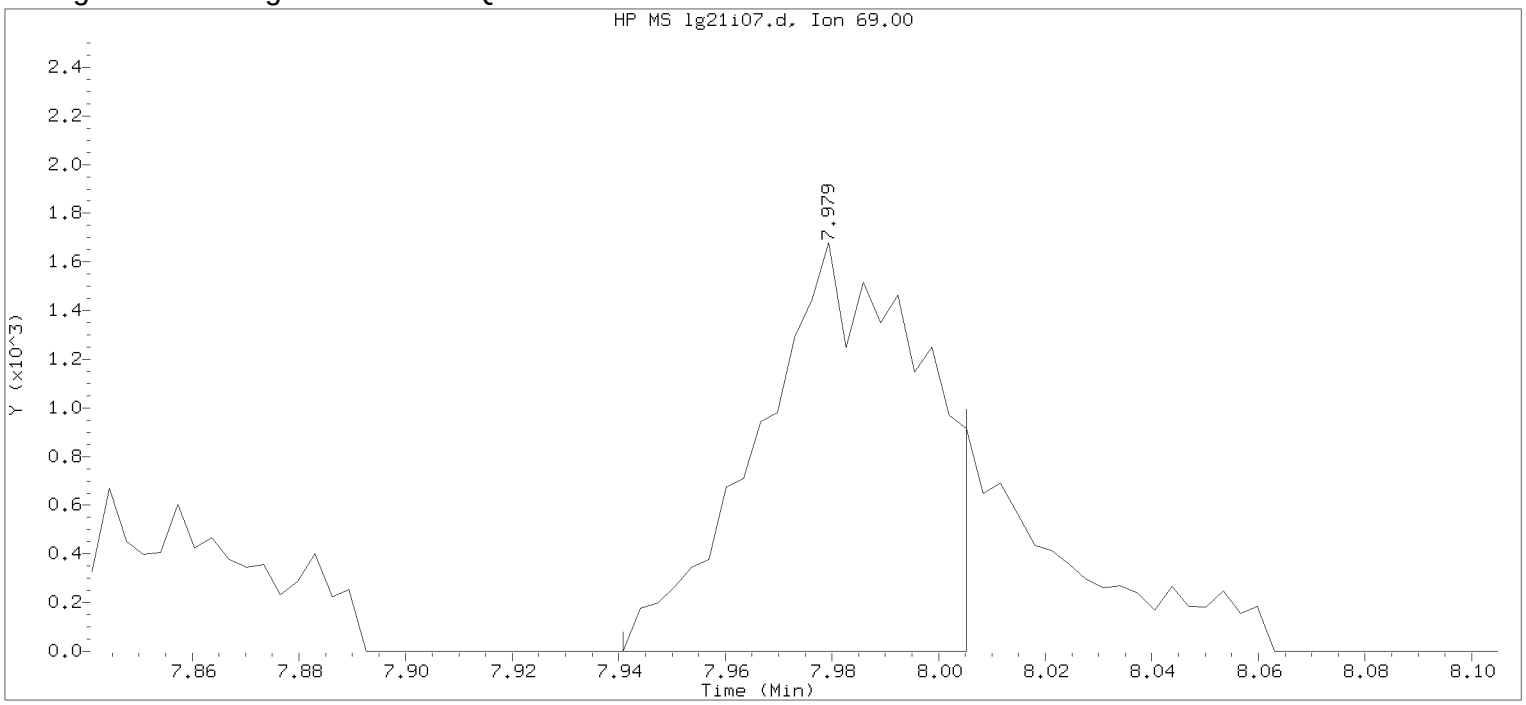
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 69.00
Area : 3568
On-column Amount (ng) : 0.6936
Integration start scan : 2008 Integration stop scan: 2028
Y at integration start : 0 Y at integration end: 0

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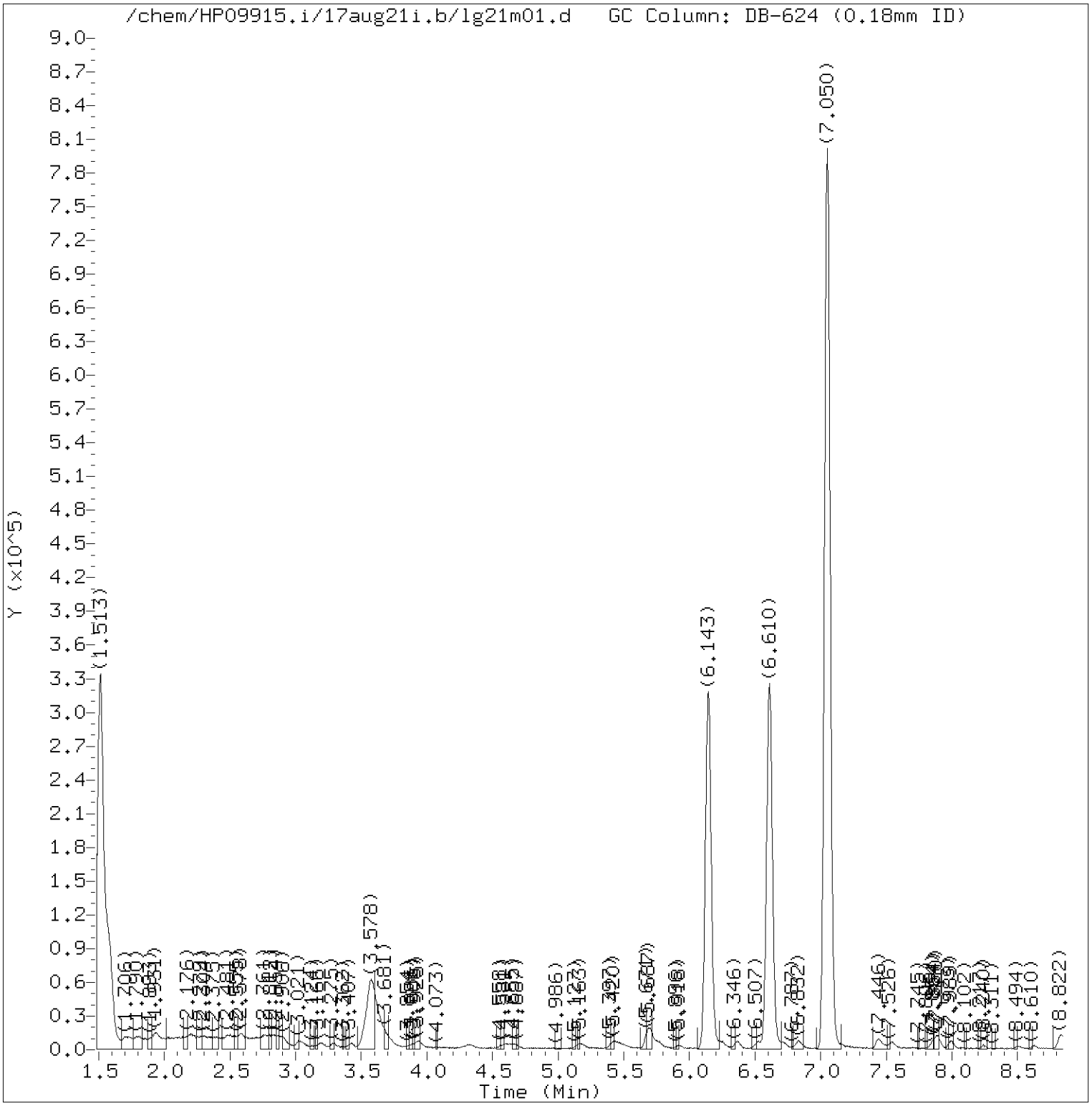
Target 3.5 esignature userKAS02648 Page 221




Total Ion Chromatogram (TIC)

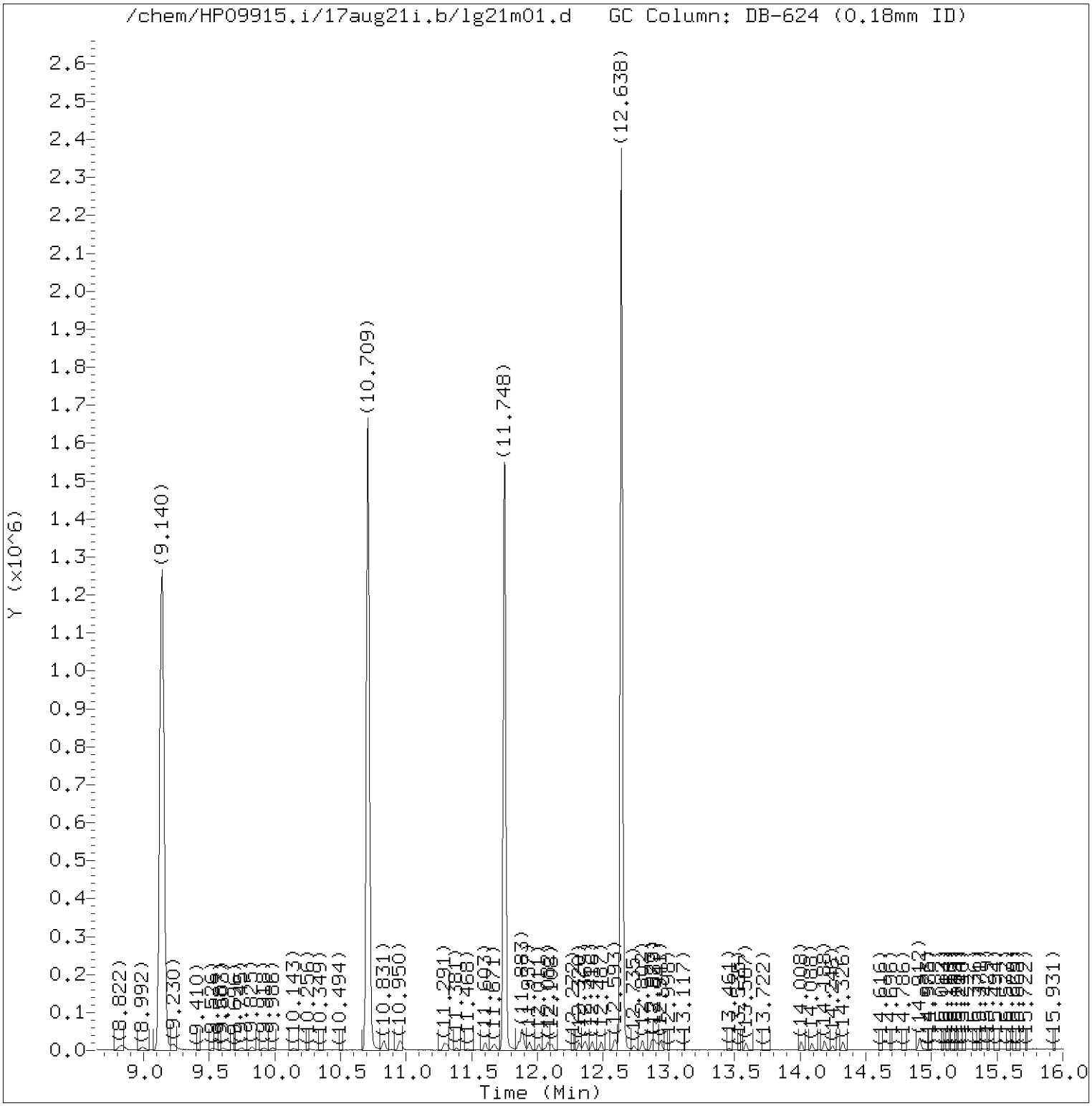
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.719 | 85 | 3300 | 0.424 |
| 4) Chloromethane | (2) | 1.796 | 50 | 4014 | 0.542 |
| 6) Vinyl Chloride | (2) | 1.919 | 62 | 3439 | 0.472 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 2255M | 0.435 |
| 8) Bromomethane | (2) | 2.208 | 94 | 3142M | 0.582 |
| 9) Chloroethane | (2) | 2.295 | 64 | 2073 | 0.514 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 5773 | 0.635 |
| 12) Trichlorofluoromethane | (2) | 2.523 | 101 | 3839 | 0.418 |
| 11) n-Pentane | (2) | 2.584 | 43 | 3900 | 0.508 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 2201 | 0.472 |
| 15) Freon 123a | (2) | 2.819 | 67 | 4152 | 0.670 |
| 16) Acrolein | (1) | 2.902 | 56 | 8806 | 5.124 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 2033 | 0.445 |
| 19) Freon 113 | (2) | 3.034 | 101 | 1648 | 0.340 |
| 18) Acetone | (1) | 3.057 | 58 | 724M | 1.043 |
| 21) 2-Propanol | (1) | 3.185 | 45 | 7490M | 14.873 |
| 22) Methyl Iodide | (2) | 3.189 | 142 | 4006 | 0.419 |
| 23) Carbon Disulfide | (2) | 3.291 | 76 | 6684 | 0.427 |
| 27) Methyl Acetate | (2) | 3.404 | 43 | 2563M | 0.477 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 4941 | 0.657 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 233573 | 250.000 |
| 28) Methylene Chloride | (2) | 3.578 | 84 | 3060 | 0.554 |
| 30) t-Butyl alcohol | (1) | 3.684 | 59 | 10509M | 11.243 |
| 31) Acrylonitrile | (2) | 3.867 | 53 | 1159 | 0.394 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 7909 | 0.464 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 2196 | 0.407 |
| 34) n-Hexane | (2) | 4.317 | 57 | 3483M | 0.457 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 3921 | 0.426 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 7769 | 0.472 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.674 | 53 | 3273 | 0.407 |
| 40) Ethyl t-butyl ether | (2) | 5.160 | 59 | 7421 | 0.444 |
| 44) 2-Butanone | (2) | 5.410 | 43 | 4299 | 1.123 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 2565 | 0.418 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 3581M | 0.451 |
| 47) Propionitrile | (1) | 5.494 | 54 | 10369 | 9.360 |
| 48) Methacrylonitrile | (2) | 5.687 | 67 | 14225 | 4.407 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 1398 | 0.431 |
| 50) Tetrahydrofuran | (1) | 5.777 | 71 | 912 | 0.867 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.925 | 83 | 3993 | 0.426 |
| 53) 1,1,1-Trichloroethane | (2) | 6.137 | 97 | 4426 | 0.477 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 312527 | 49.820 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4761 | 0.826 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 4257 | 0.469 |
| 56) Carbon Tetrachloride | (2) | 6.352 | 117 | 2733 | 0.385 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 2755 | 0.375 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 6931 | 23.422 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 76061 | 49.938 |
| 60) Benzene | (2) | 6.635 | 78 | 9389 | 0.434 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 62 | 4876 | 0.638 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 7554 | 0.438 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1232828 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 4464 | 0.565 |
| 69) n-Butanol | (1) | 7.436 | 56 | 11616 | 47.672 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 2556 | 0.438 |
| 72) Methylcyclohexane | (2) | 7.864 | 83 | 3892 | 0.407 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 2487 | 0.446 |
| 75) 1,4-Dioxane | (1) | 7.983 | 88 | 1226 | 16.034 |
| 76) Methyl Methacrylate | (2) | 7.989 | 69 | 2174M | 0.417 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 1725 | 0.435 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 2963 | 0.411 |
| 79) 2-Nitropropane | (2) | 8.503 | 41 | 2472M | 1.192 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.629 | 63 | 1652 | 0.381 |
| 81) cis-1,3-Dichloropropene | (2) | 8.822 | 75 | 3597 | 0.396 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 7807 | 0.976 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1216395 | 50.393 |
| 88) Toluene | (3) | 9.230 | 92 | 6141 | 0.435 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 3261 | 0.393 |
| 91) Ethyl Methacrylate | (3) | 9.603 | 69 | 3681 | 0.410 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 2508 | 0.457 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 2635 | 0.421 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 3902 | 0.436 |
| 96) 2-Hexanone | (3) | 9.986 | 43 | 5996 | 1.028 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 6858 | 0.789 |
| 97) Dibromochloromethane | (3) | 10.146 | 129 | 2374 | 0.392 |
| 99) 1,2-Dibromoethane | (3) | 10.265 | 107 | 2708 | 0.440 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 969500 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.728 | 91 | 5559 | 0.684 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 7205 | 0.438 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.825 | 131 | 2203 | 0.382 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 11821 | 0.436 |
| 106) m+p-Xylene | (3) | 10.960 | 106 | 9466 | 0.869 |
| 107) o-Xylene | (3) | 11.291 | 106 | 4603 | 0.420 |
| 109) Styrene | (3) | 11.314 | 104 | 7232 | 0.396 |
| 110) Bromoform | (3) | 11.471 | 173 | 1417 | 0.312 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 12794 | 0.466 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 6764 | 22.878 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 460399 | 49.888 |
| 108) Xylene (Total) | (3) | | 106 | 14069 | 1.289 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 3874 | 0.429 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 3275 | 0.432 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 9963 | 4.195 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 1240 | 0.451 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 14150 | 0.446 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 2882 | 0.420 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 10906 | 0.456 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 3007 | 0.419 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 2260 | 0.440 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1422 | 0.328 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 11614 | 0.472 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 13248 | 0.447 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580 | 146 | 6274 | 0.438 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 11927 | 0.453 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 529748 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 6927 | 0.469 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 12596 | 0.492 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 6800 | 0.373 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 7130 | 0.446 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 7702 | 0.462 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 5912 | 0.458 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 6702 | 0.471 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 5695 | 0.428 |
| 141) Diethylbenzene (total) | (4) | | 100 | 20527 | 1.335 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.455 | 75 | 900 | 0.457 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 5459 | 0.505 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 6073 | 0.566 |
| 147) Hexachlorobutadiene | (4) | 14.088 | 225 | 2594 | 0.566 |
| 148) Naphthalene | (4) | 14.188 | 128 | 17969 | 0.530 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 6025 | 0.585 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 14364 | 0.629 |



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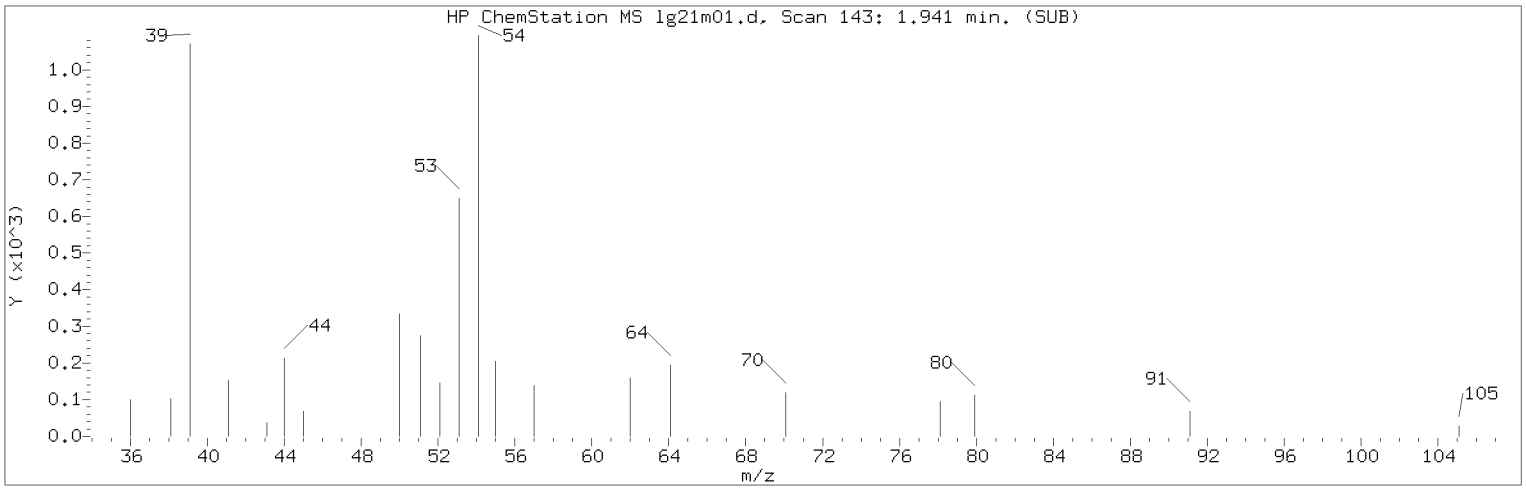
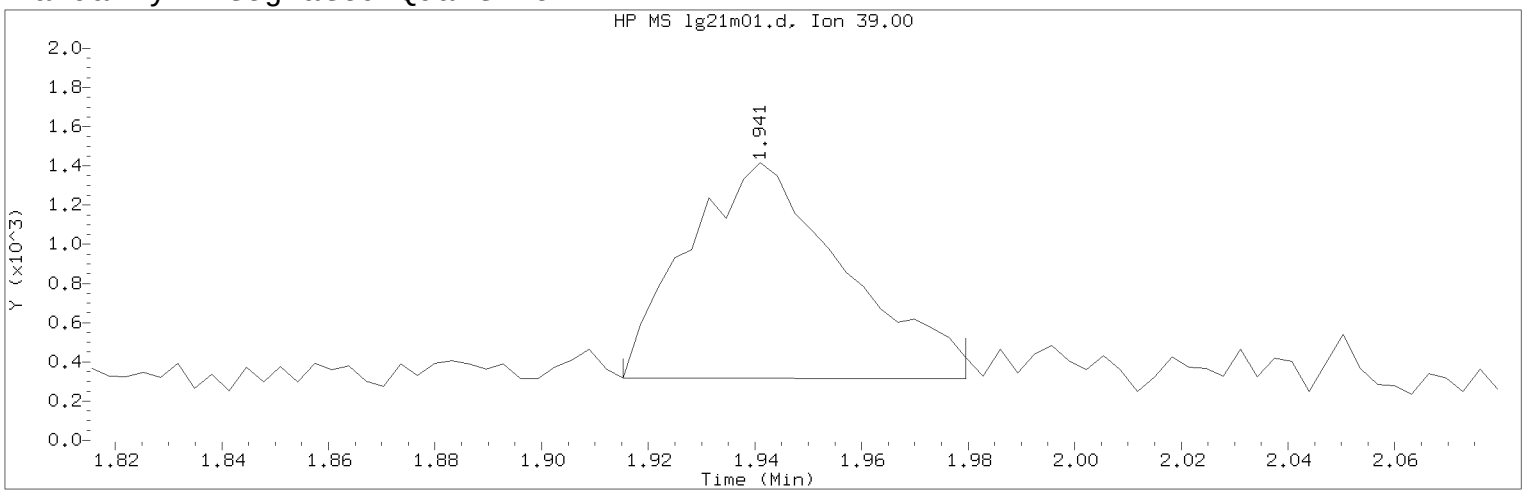
Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

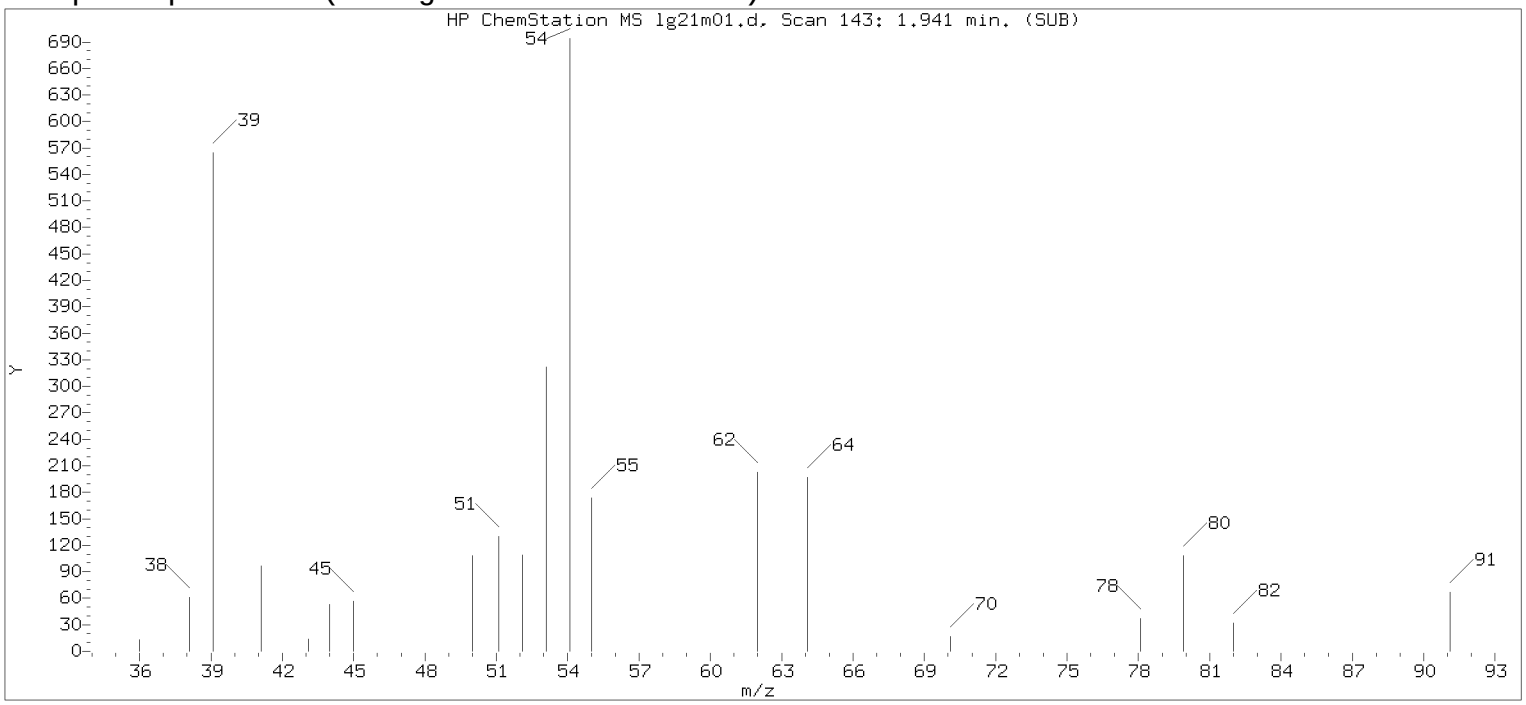
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 2255M
On-Column Amount (ng) : 0.4349
Integration start scan : 134 Integration stop scan: 154
Y at integration start : 316 Y at integration end: 315

Reason for manual integration: improper integration

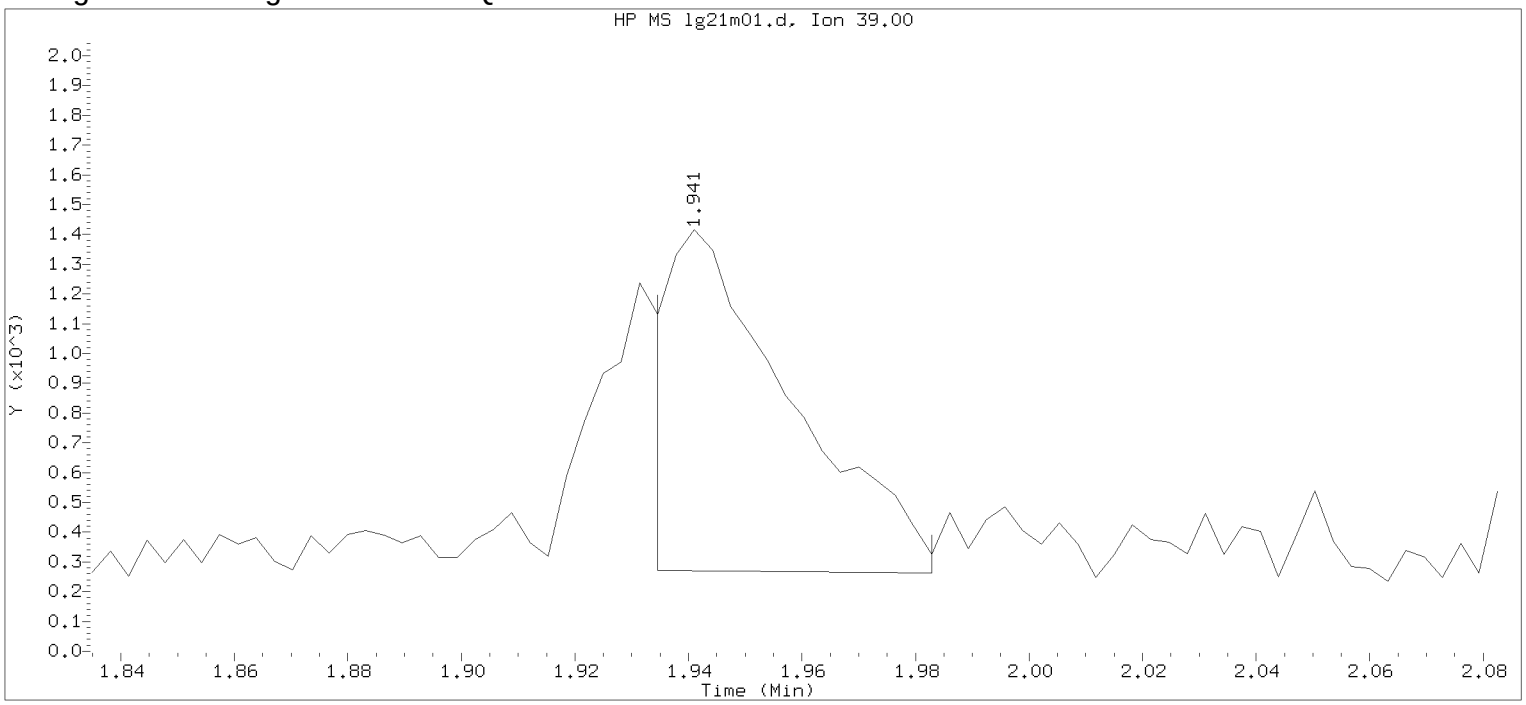
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 1750
On-column Amount (ng) : 0.3376
Integration start scan : 140 Integration stop scan: 155
Y at integration start : 272 Y at integration end: 263

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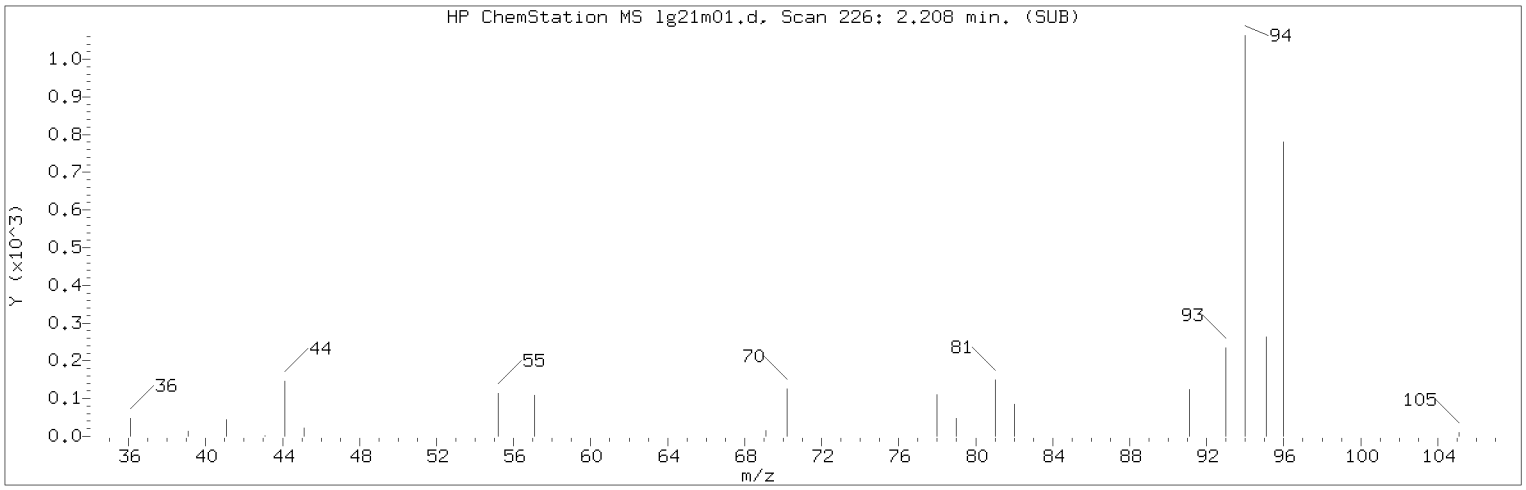
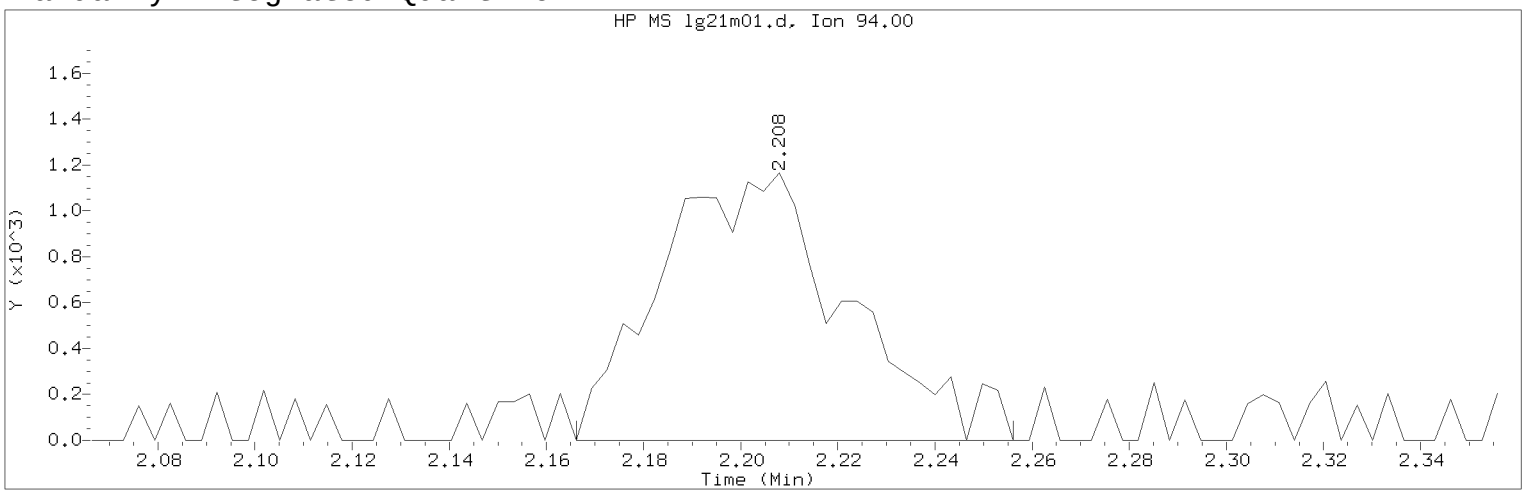
Target 3.5 esignature userKAS02648 Page 229

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

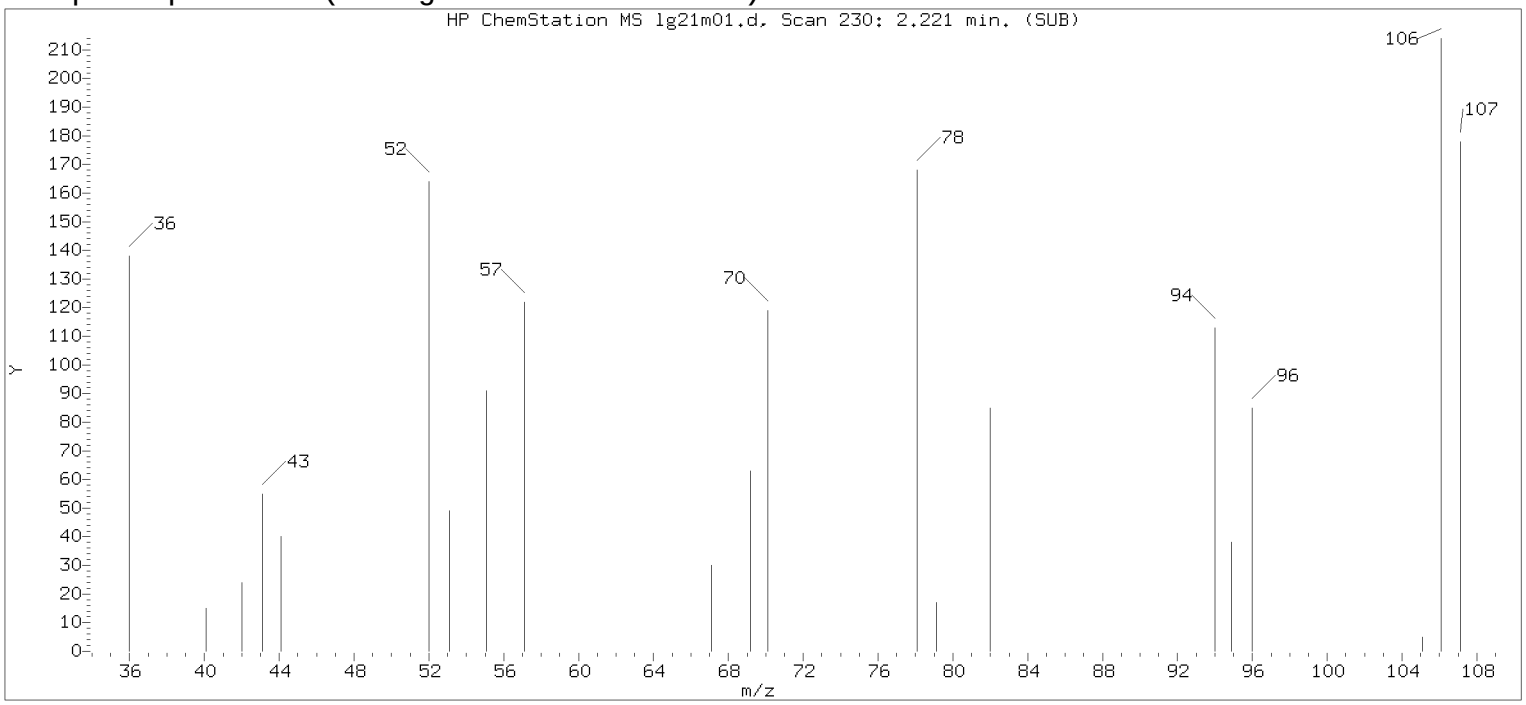
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 226
Retention Time (minutes): 2.208
Quant Ion : 94.00
Area (flag) : 3142M
On-Column Amount (ng) : 0.5820
Integration start scan : 212 Integration stop scan: 240
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

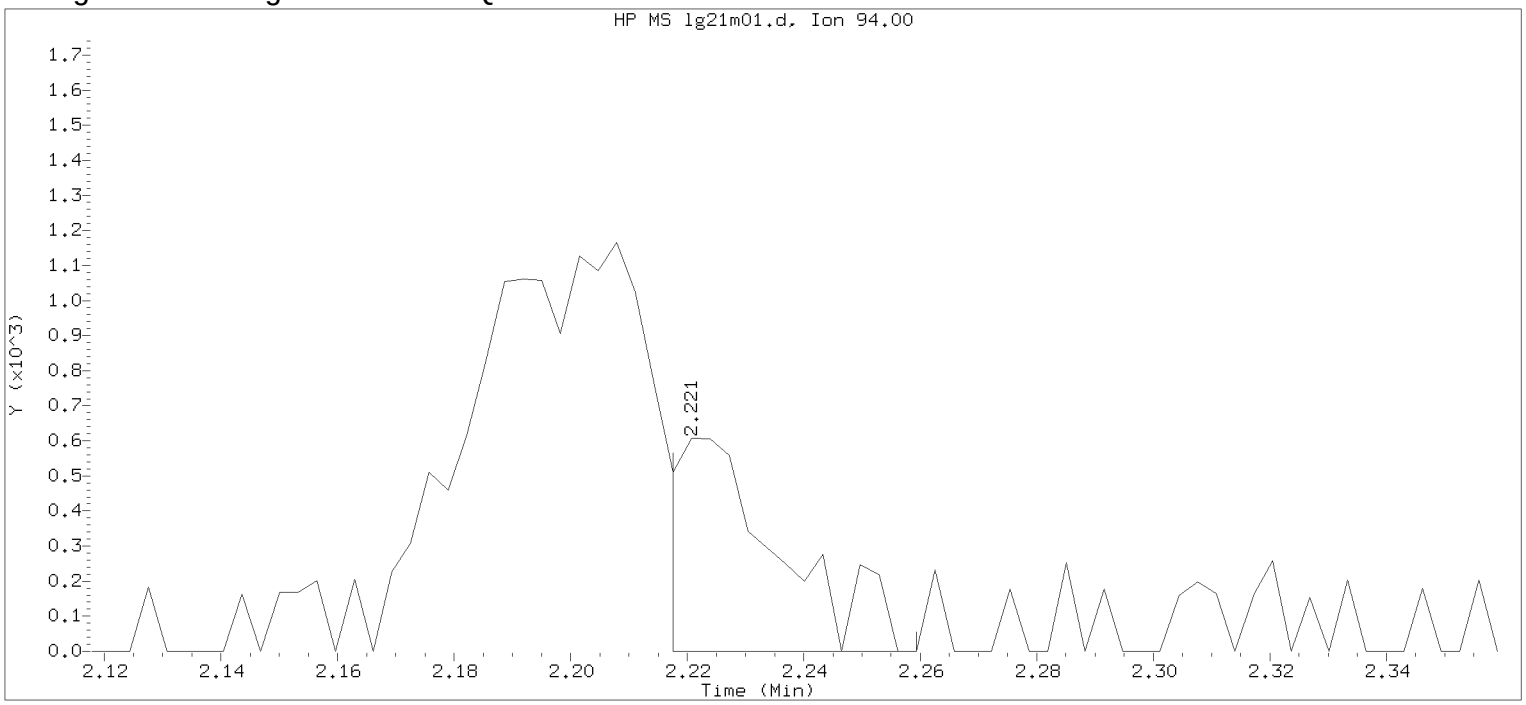
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 230
Retention Time (minutes): 2.221
Quant Ion : 94.00
Area : 744
On-column Amount (ng) : 0.1378
Integration start scan : 228 Integration stop scan: 241
Y at integration start : 0 Y at integration end: 0

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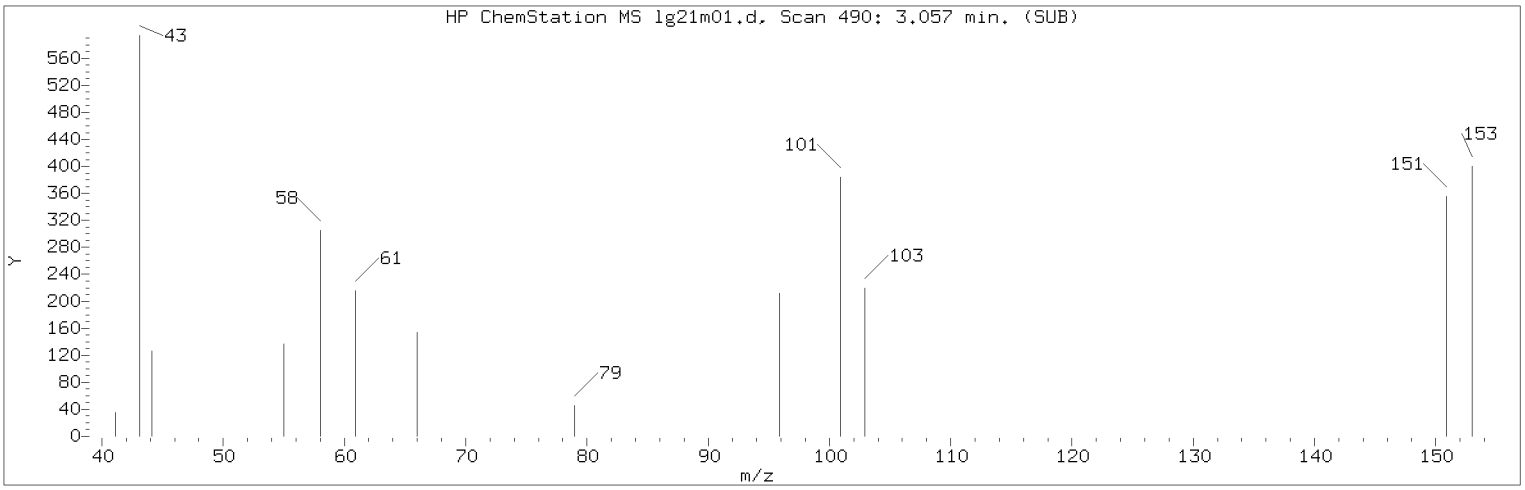
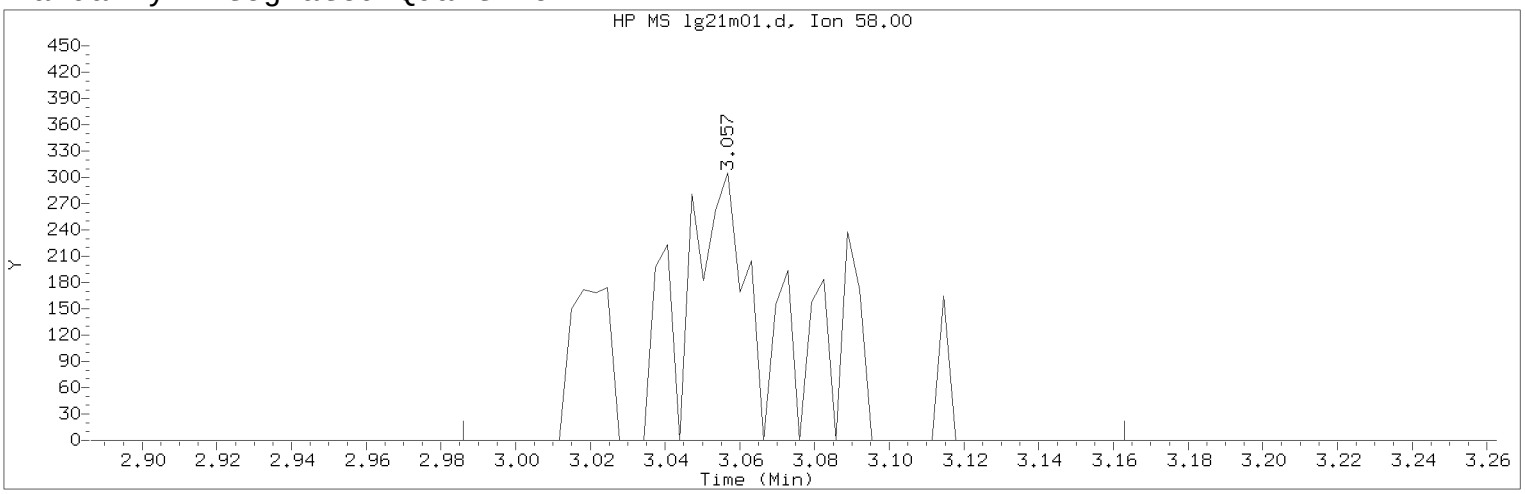
Target 3.5 esignature userKAS02648 Page 238

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

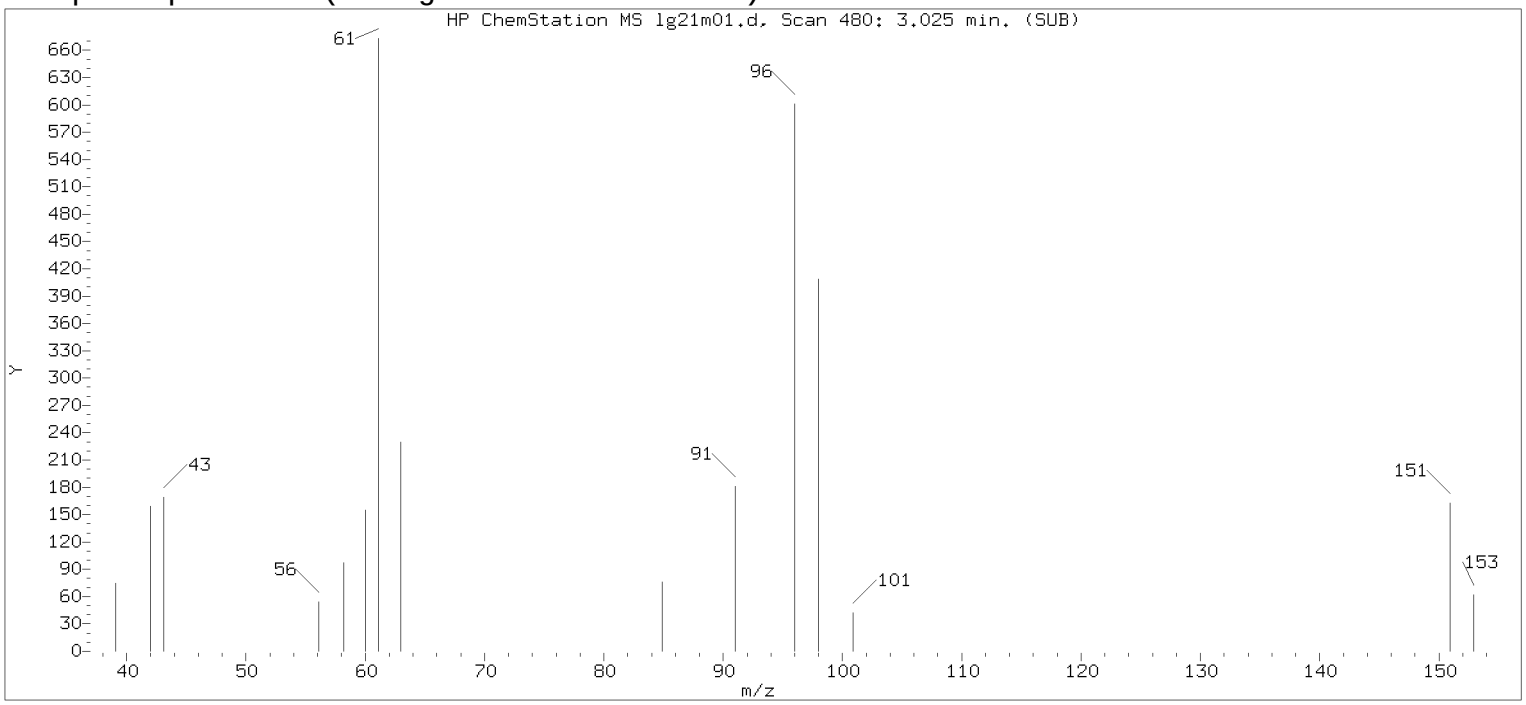
Compound Number : 18
Compound Name : Acetone
Scan Number : 490
Retention Time (minutes): 3.057
Quant Ion : 58.00
Area (flag) : 724M
On-Column Amount (ng) : 1.0425
Integration start scan : 467 Integration stop scan: 522
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

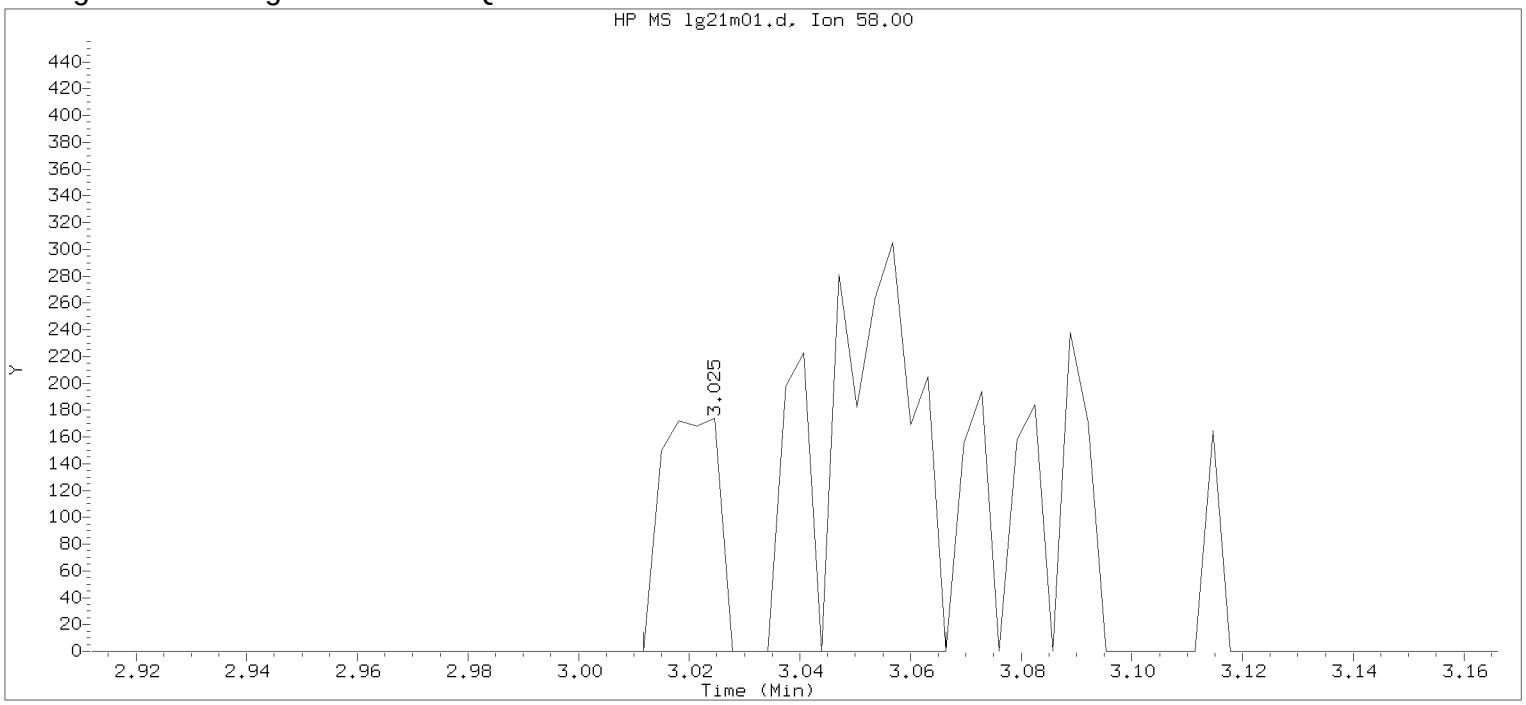
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 18
Compound Name : Acetone
Scan Number : 480
Retention Time (minutes): 3.025
Quant Ion : 58.00
Area : 480
On-column Amount (ng) : 0.6913
Integration start scan : 475 Integration stop scan: 492
Y at integration start : 0 Y at integration end: 0

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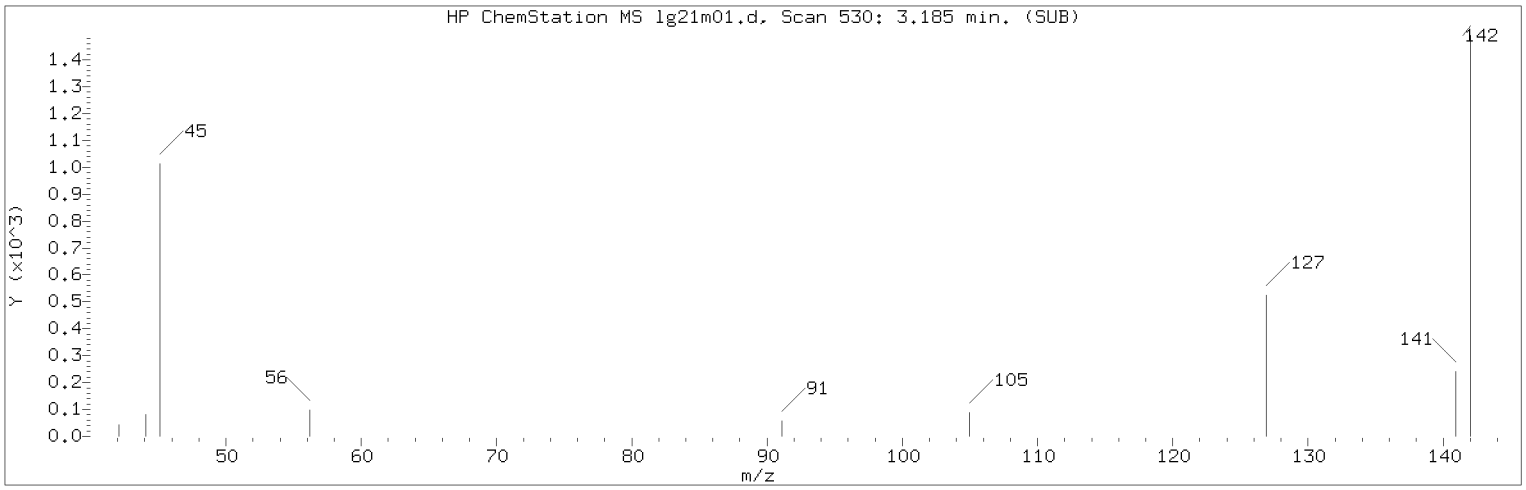
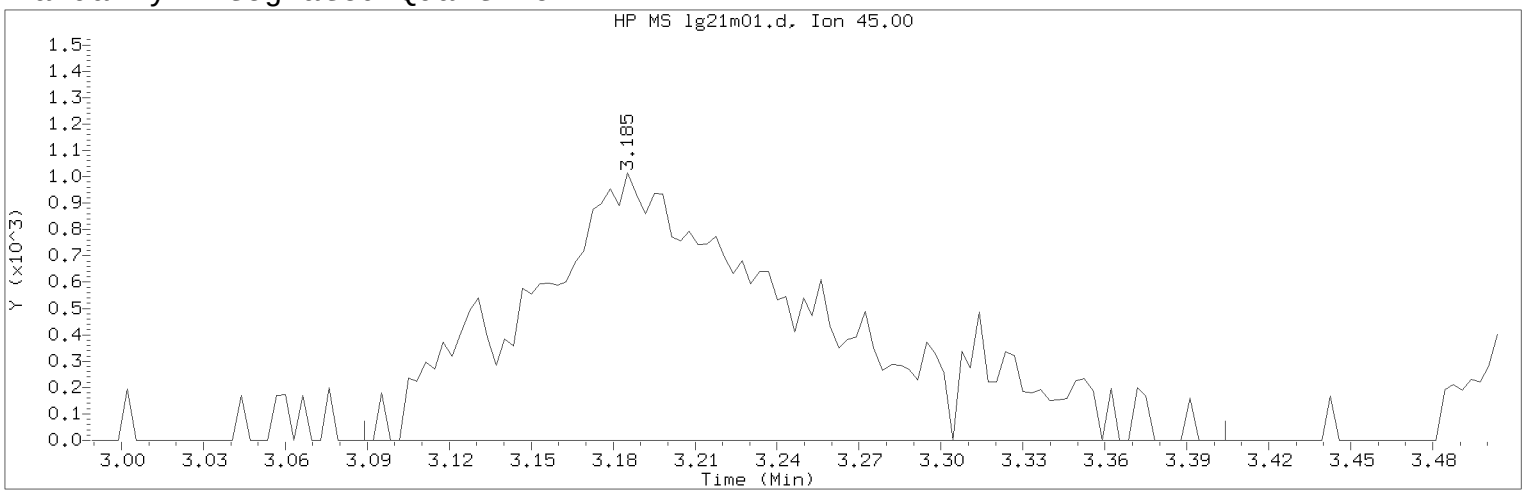
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

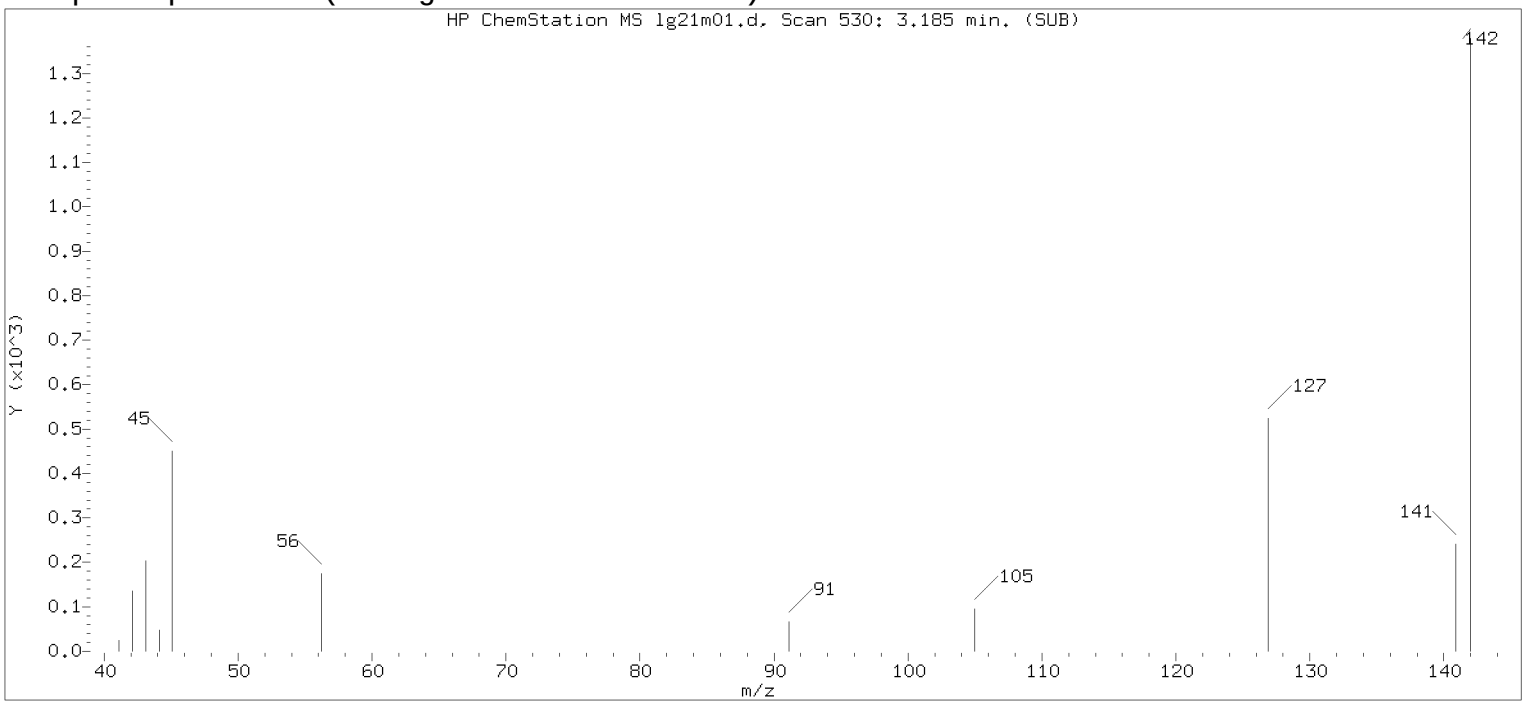
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 530
Retention Time (minutes): 3.185
Quant Ion : 45.00
Area (flag) : 7490M
On-Column Amount (ng) : 14.8734
Integration start scan : 499 Integration stop scan: 597
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

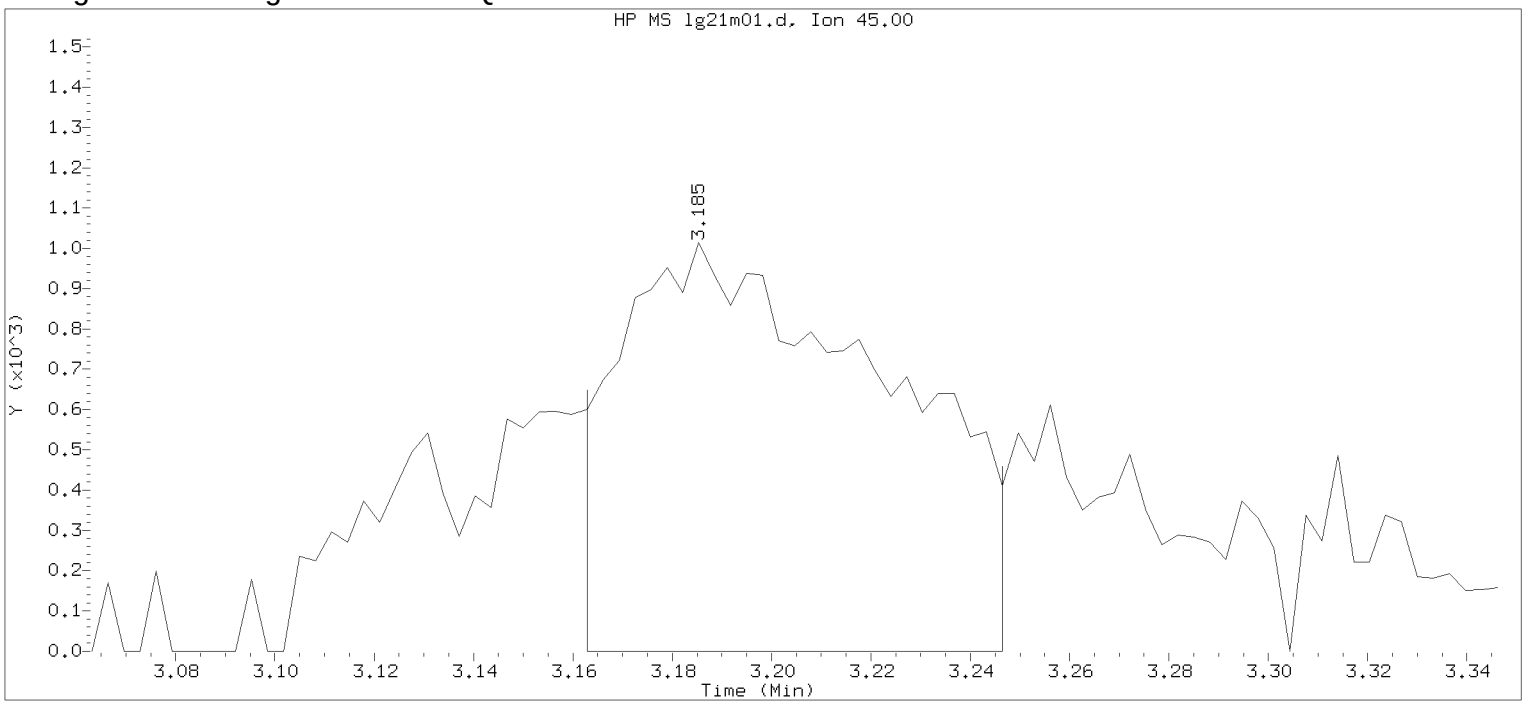
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 530
Retention Time (minutes): 3.185
Quant Ion : 45.00
Area : 3807
On-column Amount (ng) : 7.5613
Integration start scan : 522 Integration stop scan: 548
Y at integration start : 0 Y at integration end: 0

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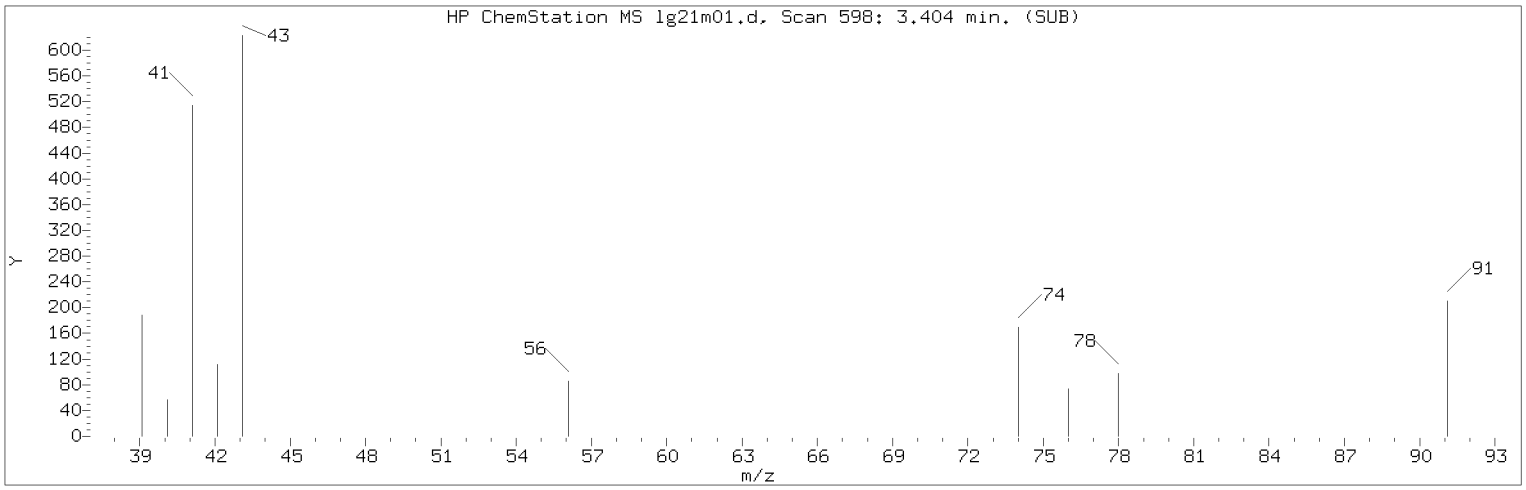
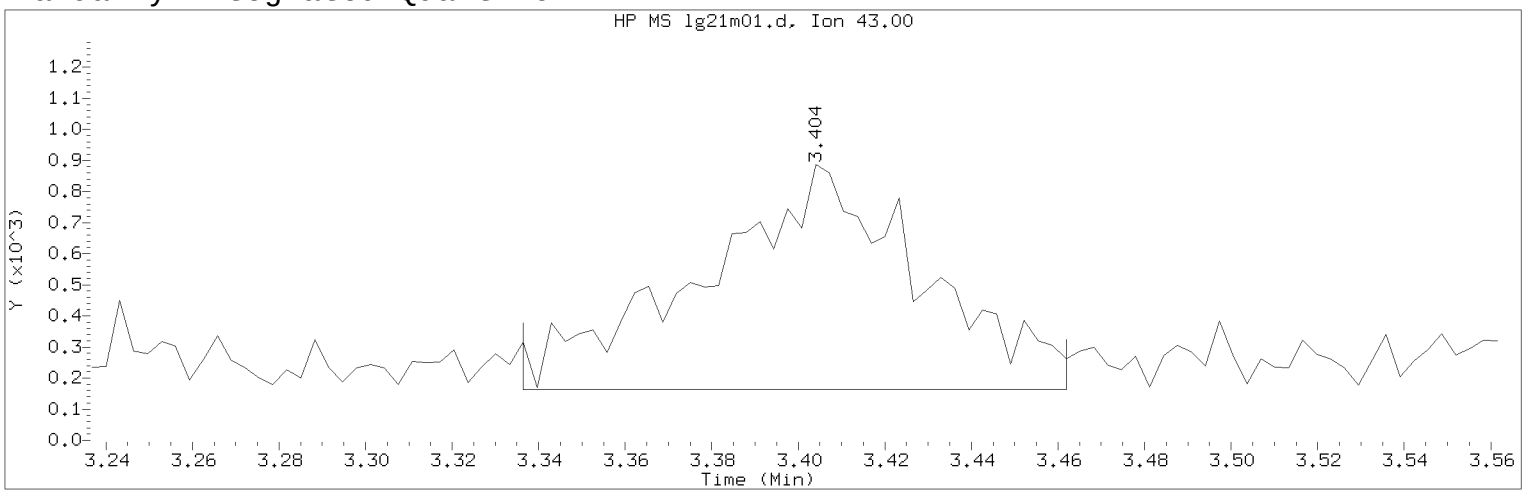
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

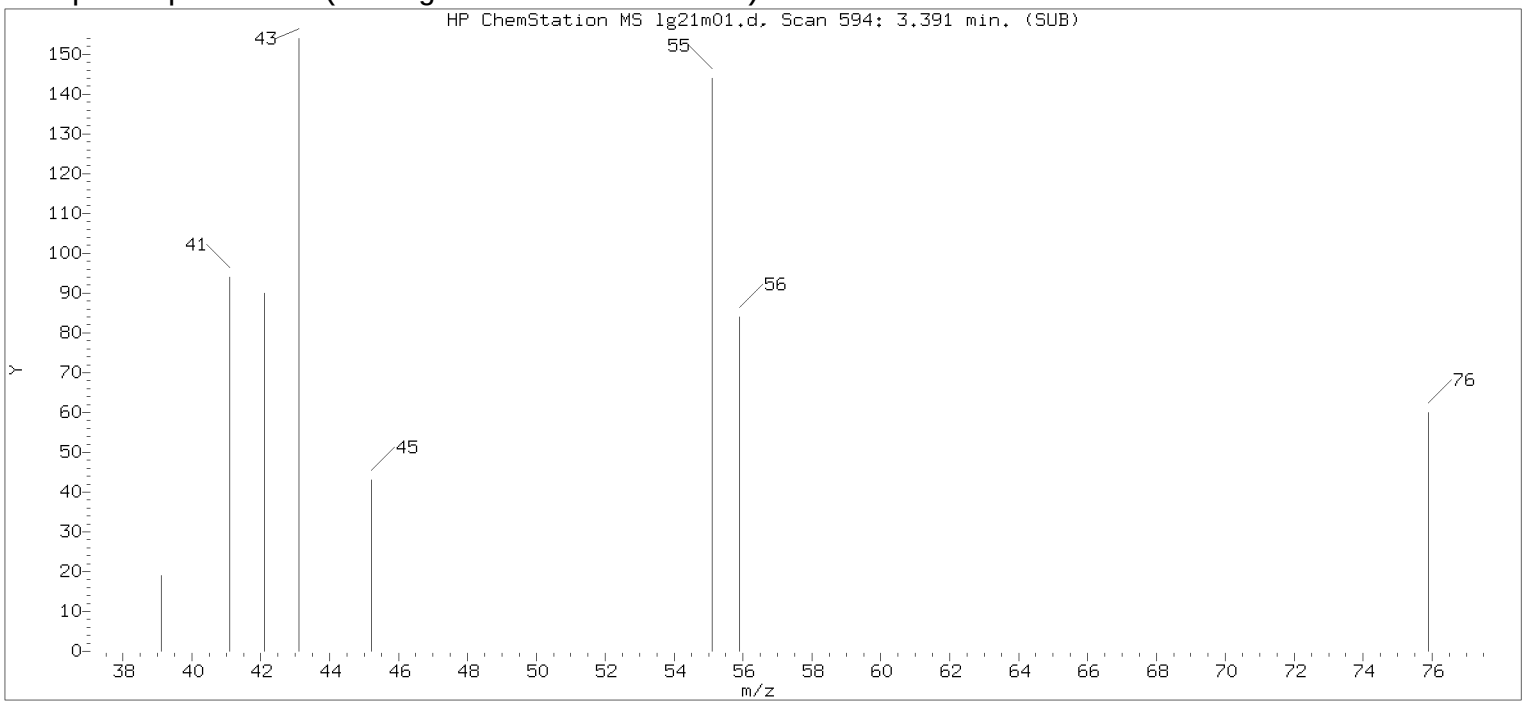
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 598
Retention Time (minutes): 3.404
Quant Ion : 43.00
Area (flag) : 2563M
On-Column Amount (ng) : 0.4774
Integration start scan : 576 Integration stop scan: 615
Y at integration start : 164 Y at integration end: 164

Reason for manual integration: improper integration

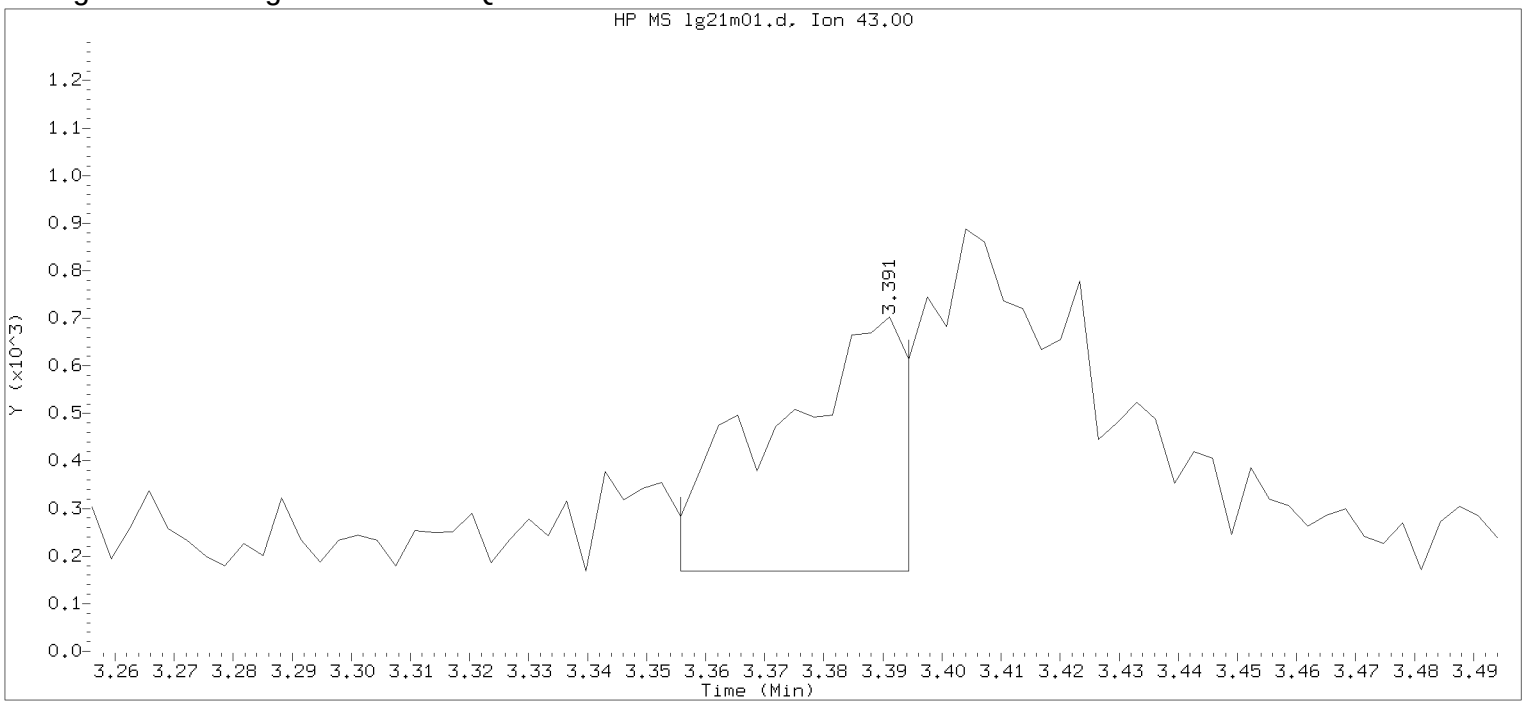
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 594
Retention Time (minutes): 3.391
Quant Ion : 43.00
Area : 801
On-column Amount (ng) : 0.1493
Integration start scan : 582 Integration stop scan: 594
Y at integration start : 169 Y at integration end: 169

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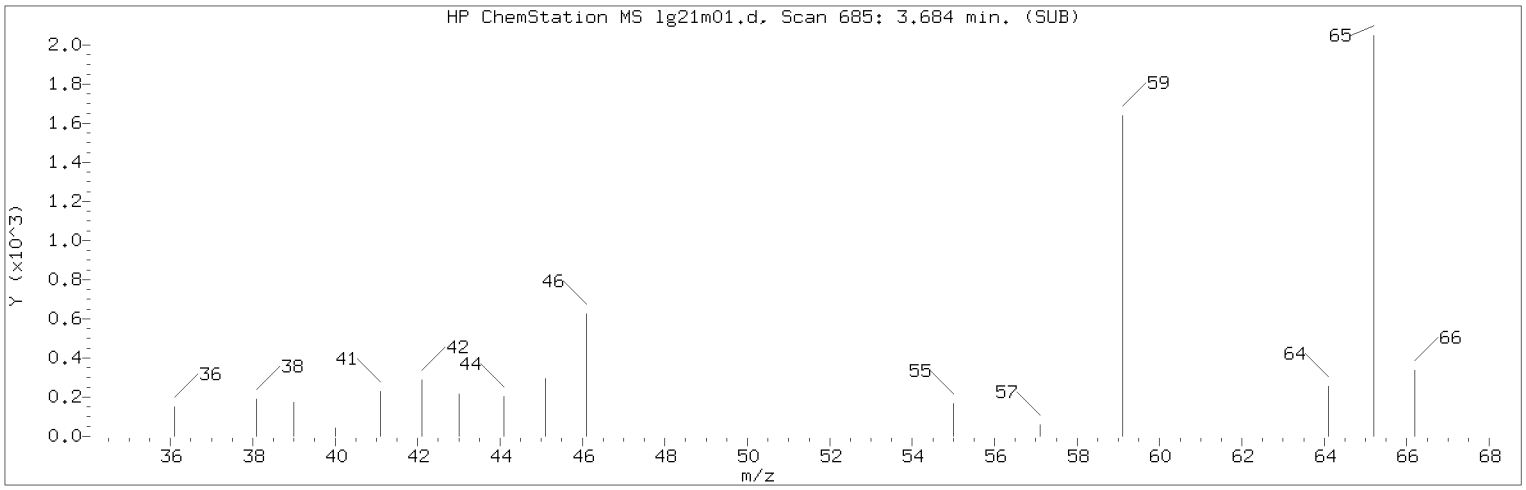
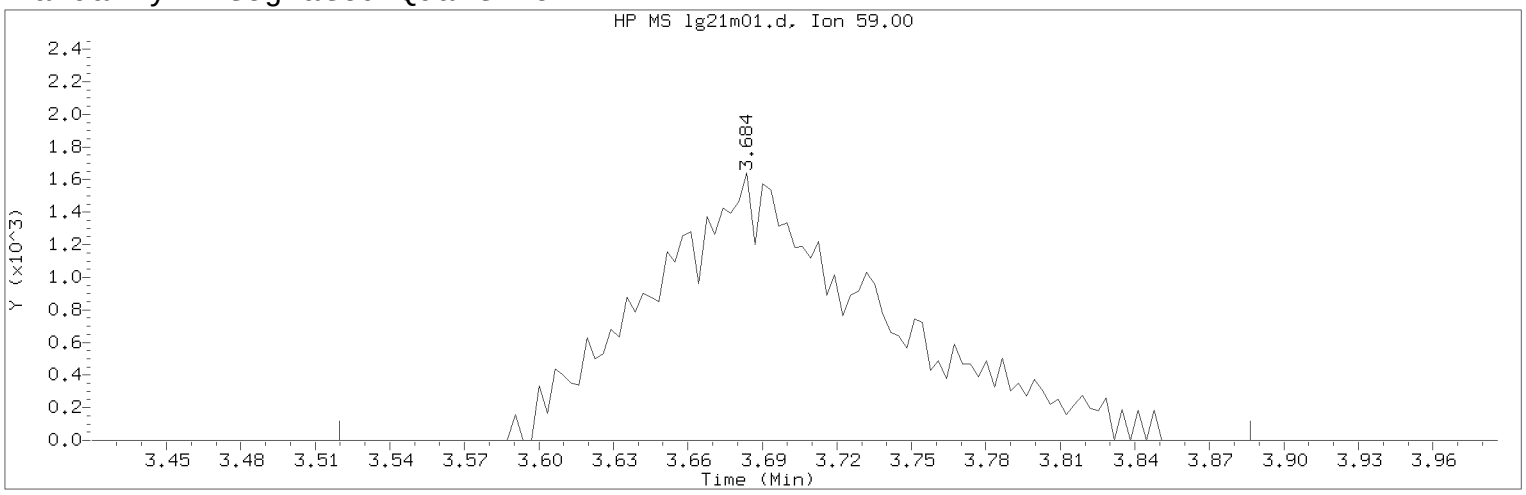
Target 3.5 esignature userKAS02648 Page 238 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d  Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

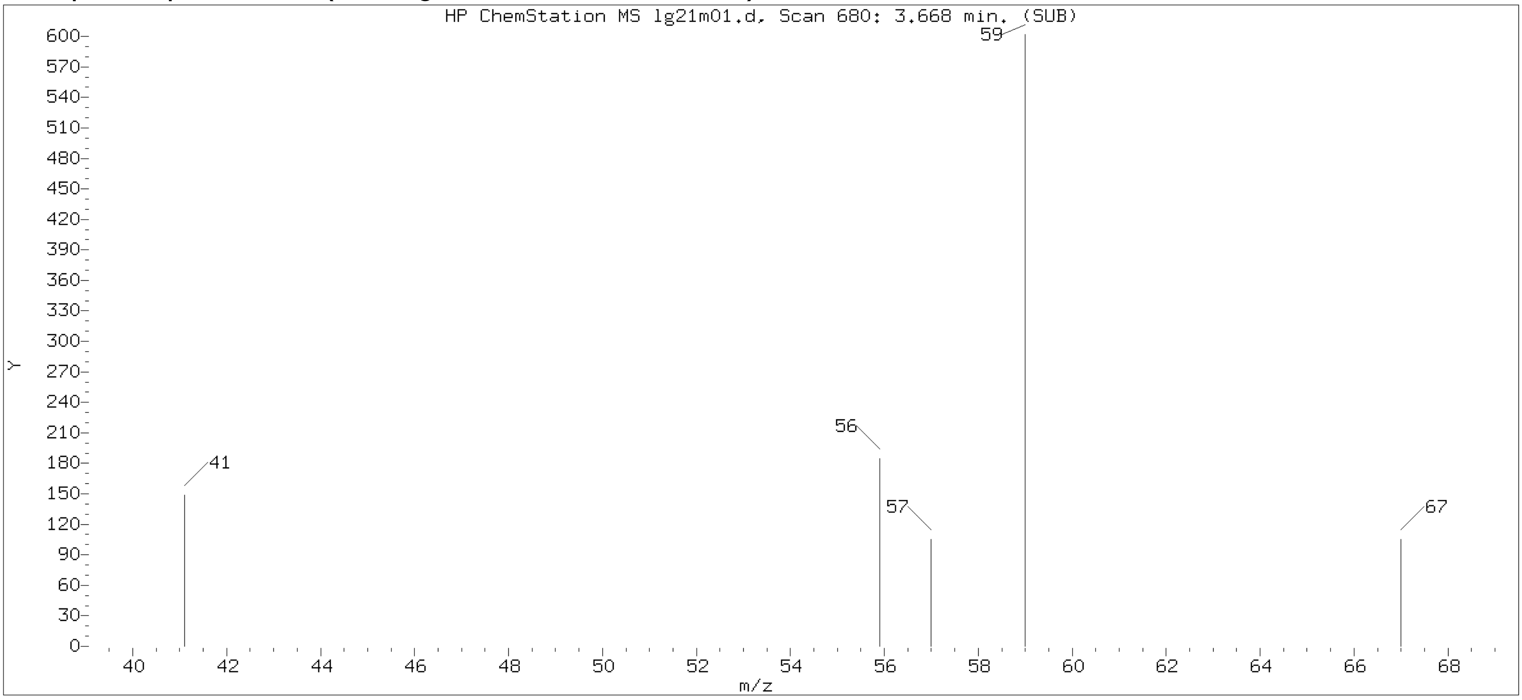
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 685
Retention Time (minutes): 3.684
Quant Ion : 59.00
Area (flag) : 10509M
On-Column Amount (ng) : 11.2426
Integration start scan : 633  Integration stop scan: 747
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

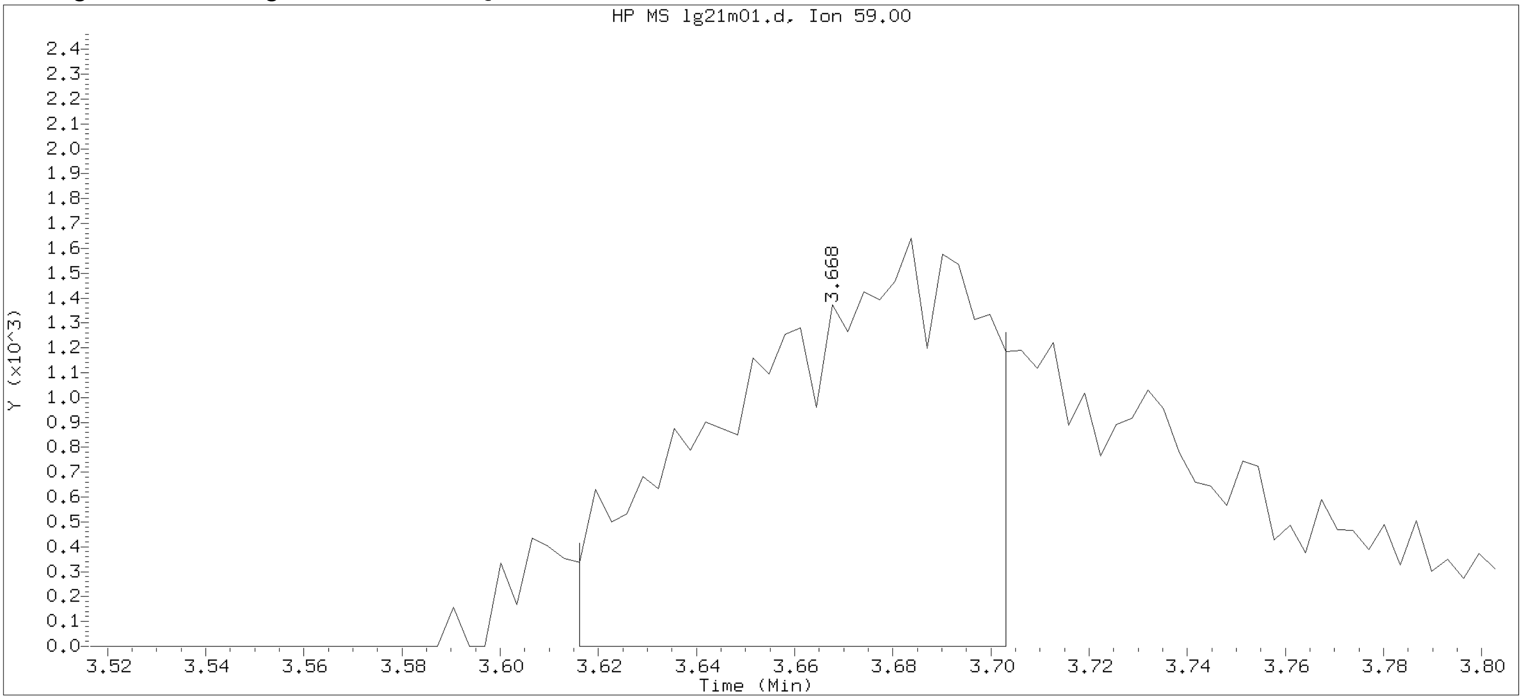
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d    Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13    Analyst ID: KAS02648

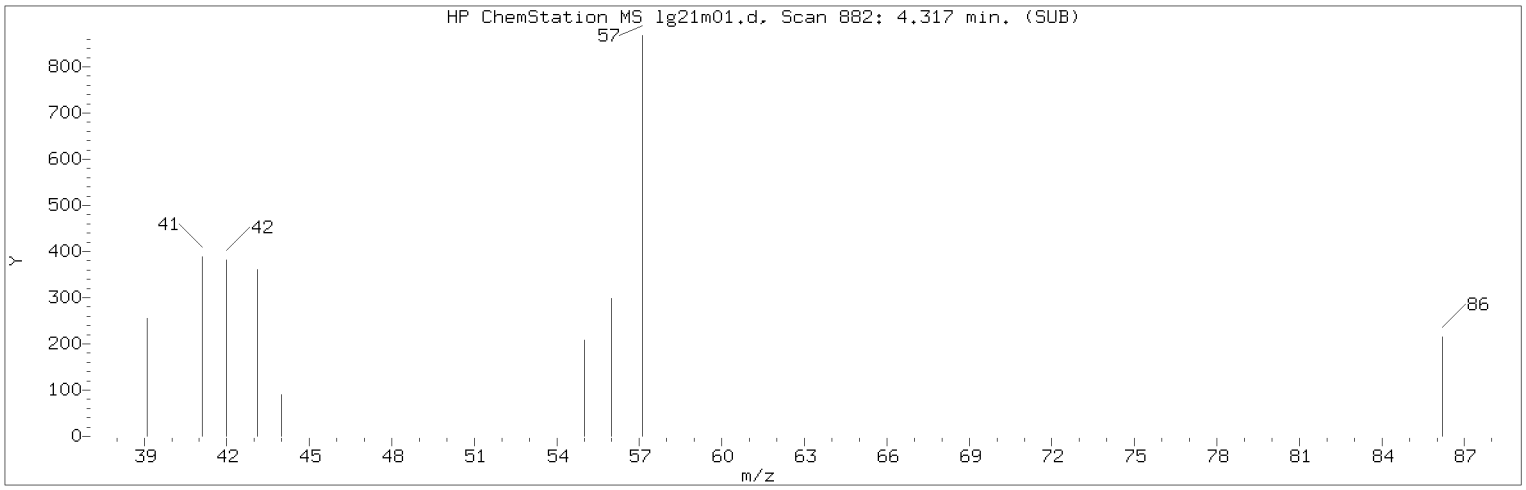
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m    Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5    Lab Sample ID: MDL0.5

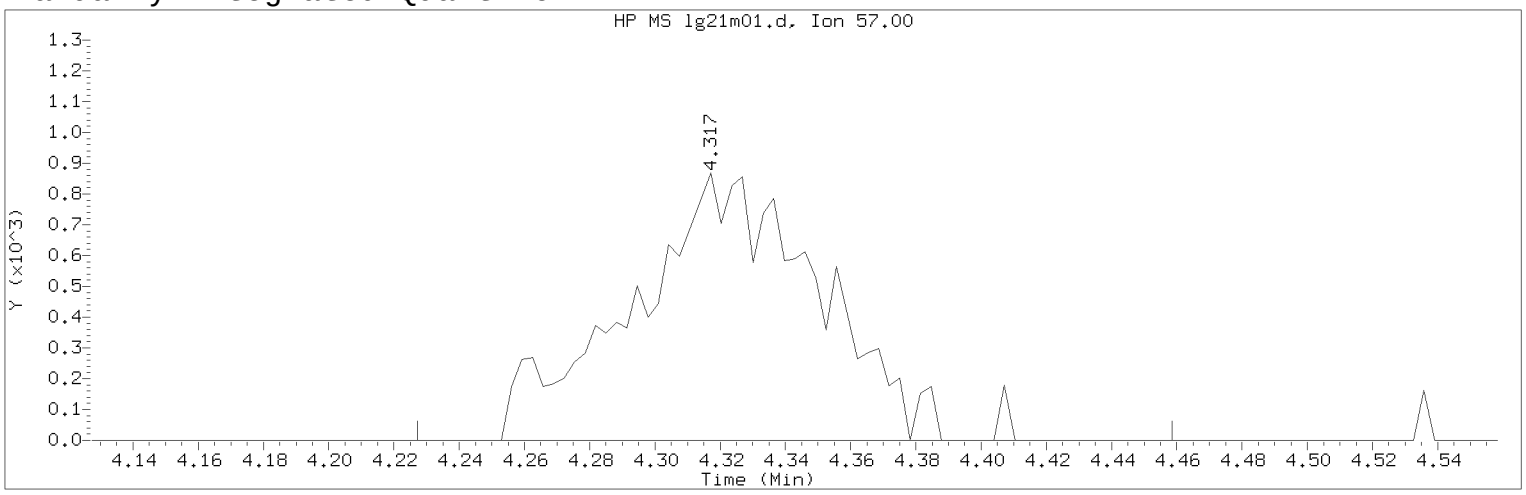
| | |
|---|---|
| Compound Number | : 30 |
| Compound Name | : t-Butyl alcohol |
| Scan Number | : 680 |
| Retention Time (minutes) | : 3.668 |
| Quant Ion | : 59.00 |
| Area | : 5652 |
| On-column Amount (ng) | : 6.0473 |
| Integration start scan | : 663 Integration stop scan: 690 |
| Y at integration start | : 0 Y at integration end: 0 |

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

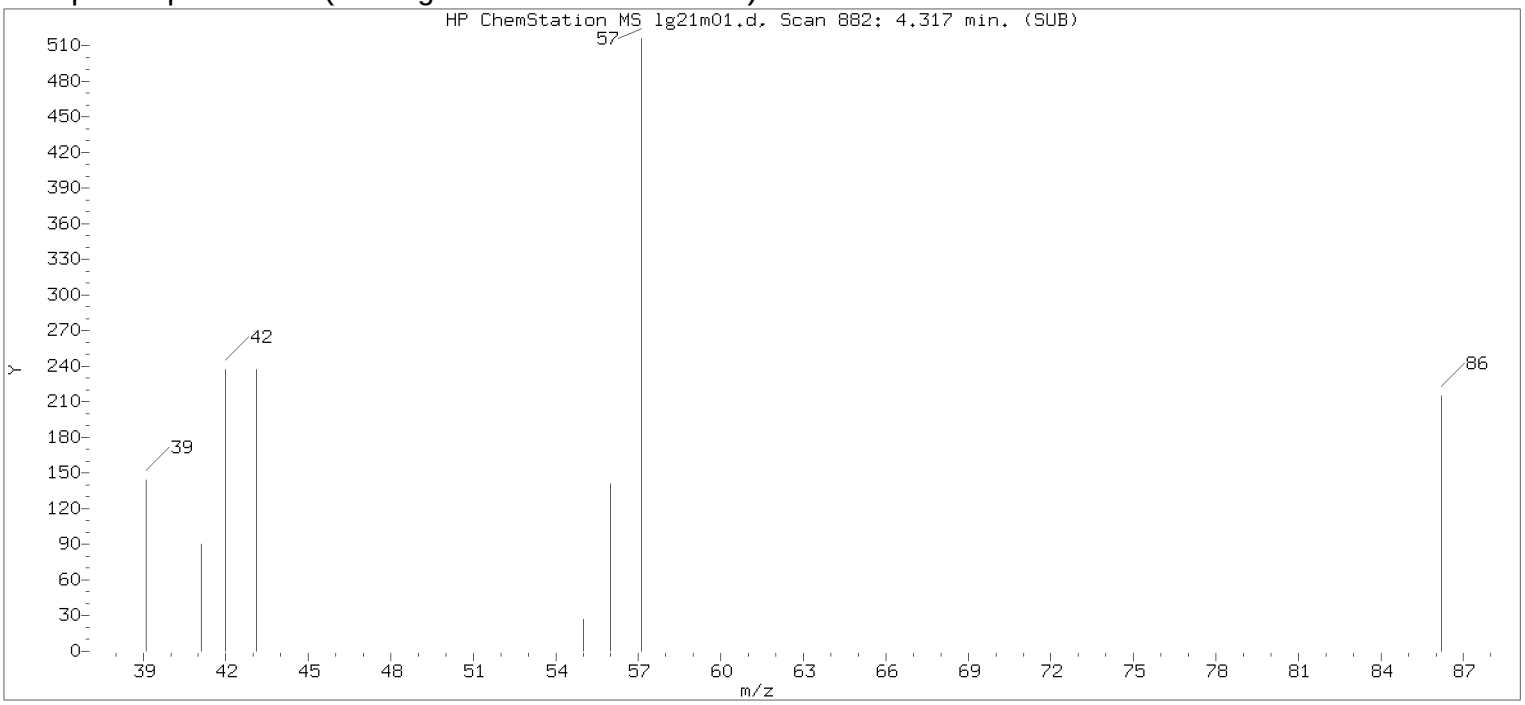
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area (flag) : 3483M
On-Column Amount (ng) : 0.4568
Integration start scan : 853 Integration stop scan: 925
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

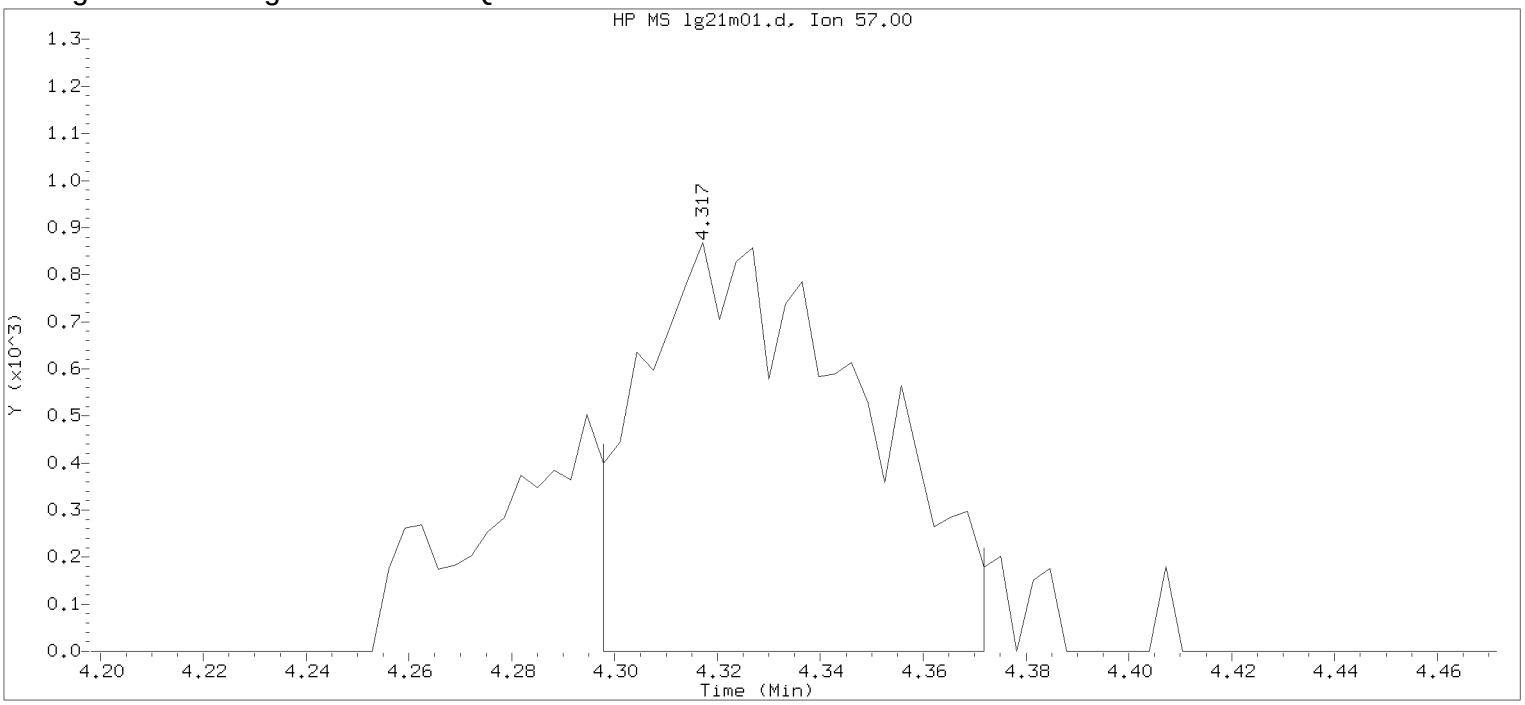
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

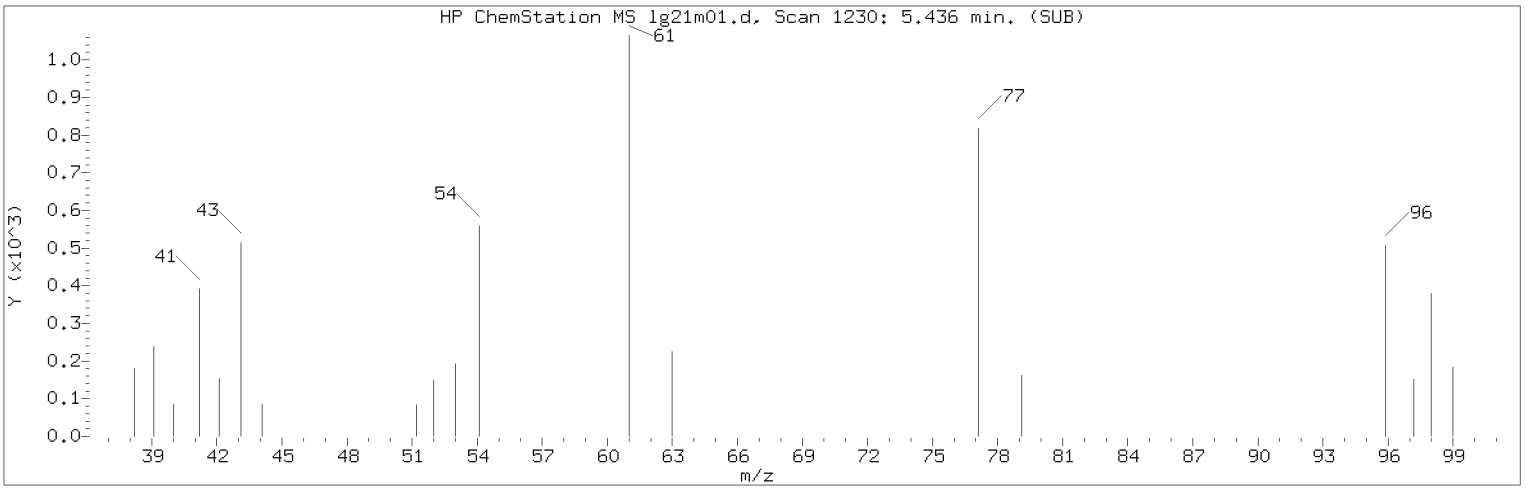
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

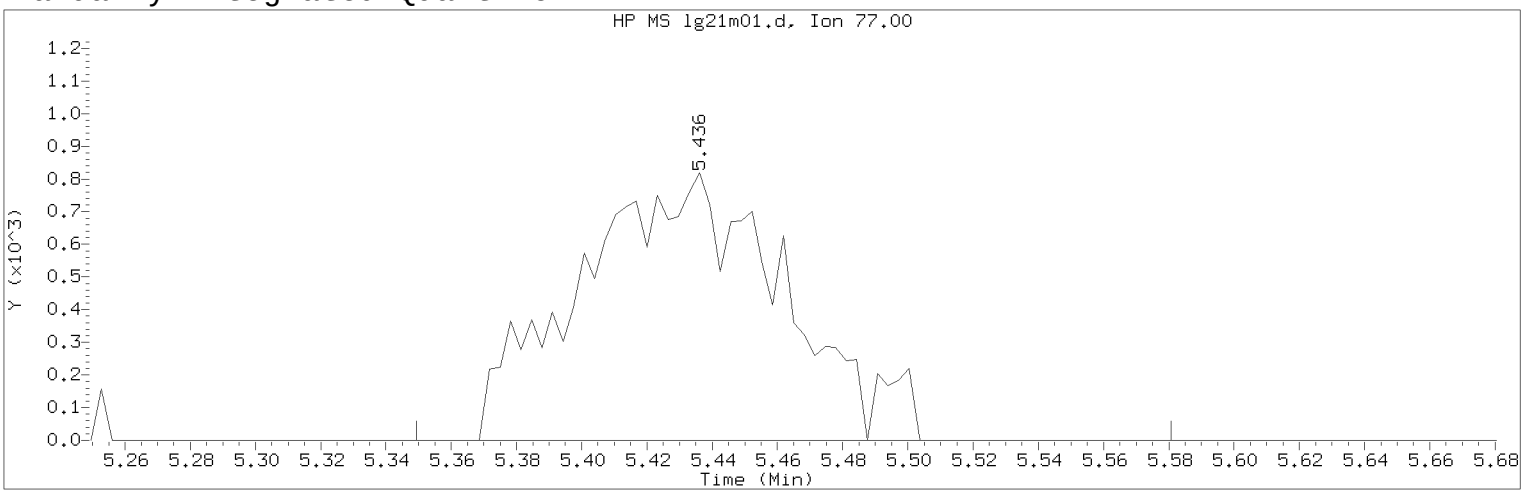
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area : 2562
On-column Amount (ng) : 0.3361
Integration start scan : 875 Integration stop scan: 898
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

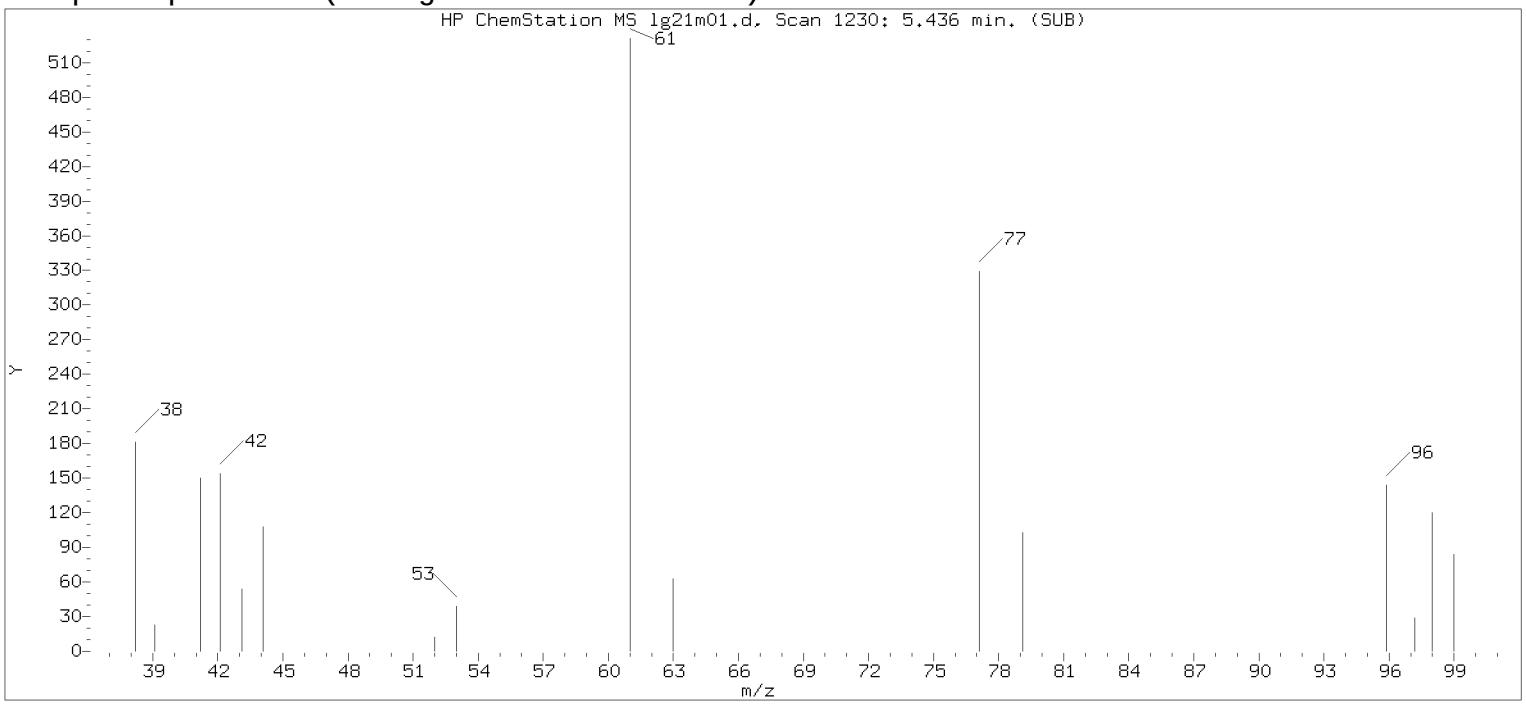
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1230
Retention Time (minutes): 5.436
Quant Ion : 77.00
Area (flag) : 3581M
On-Column Amount (ng) : 0.4512
Integration start scan : 1202 Integration stop scan: 1274
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

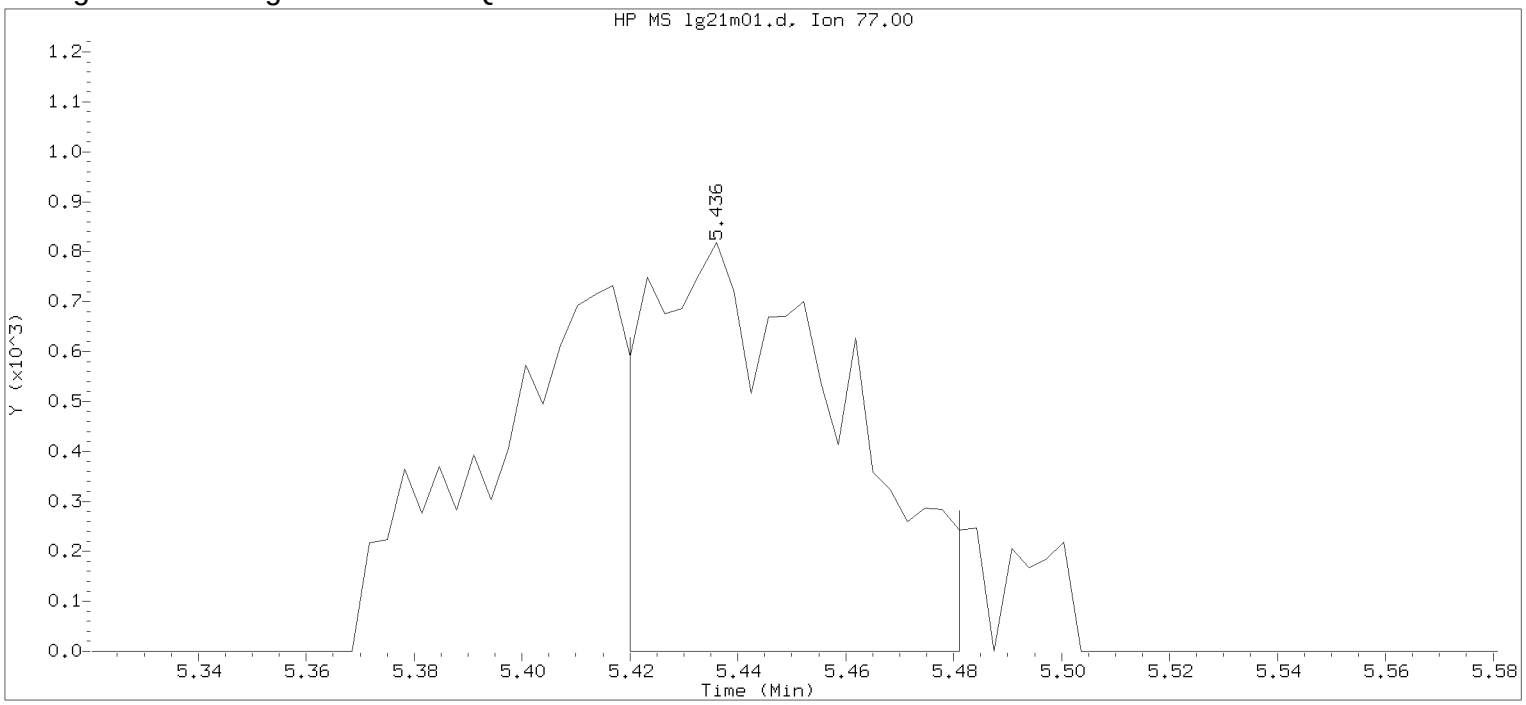
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1230
Retention Time (minutes): 5.436
Quant Ion : 77.00
Area : 2019
On-column Amount (ng) : 0.2545
Integration start scan : 1224 Integration stop scan: 1243
Y at integration start : 0 Y at integration end: 0

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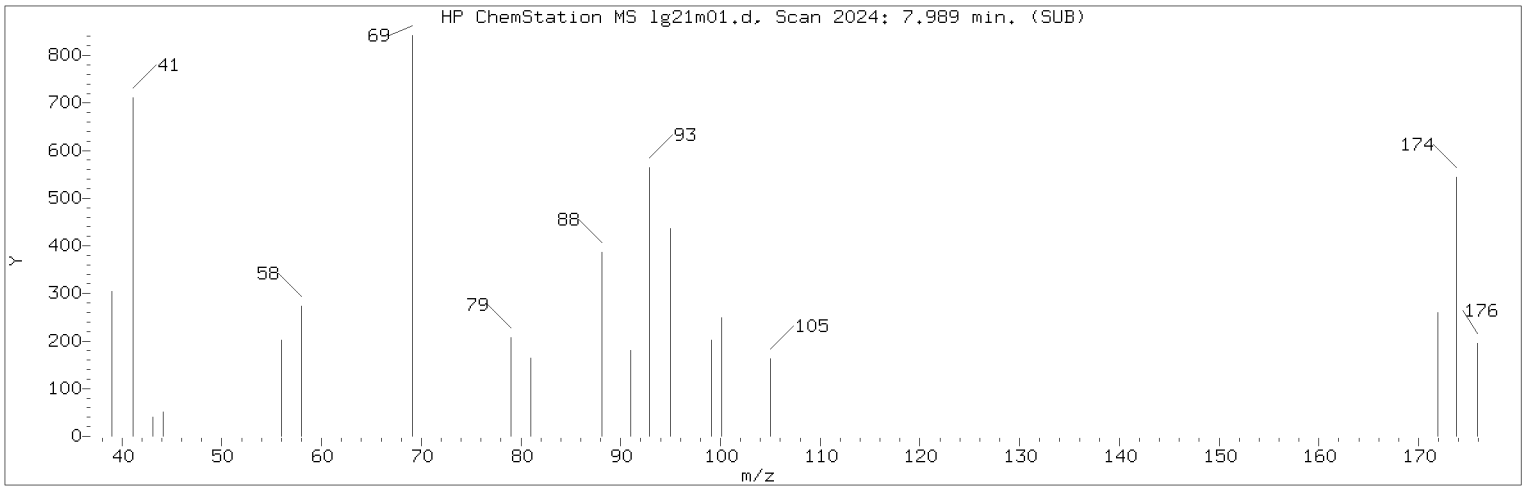
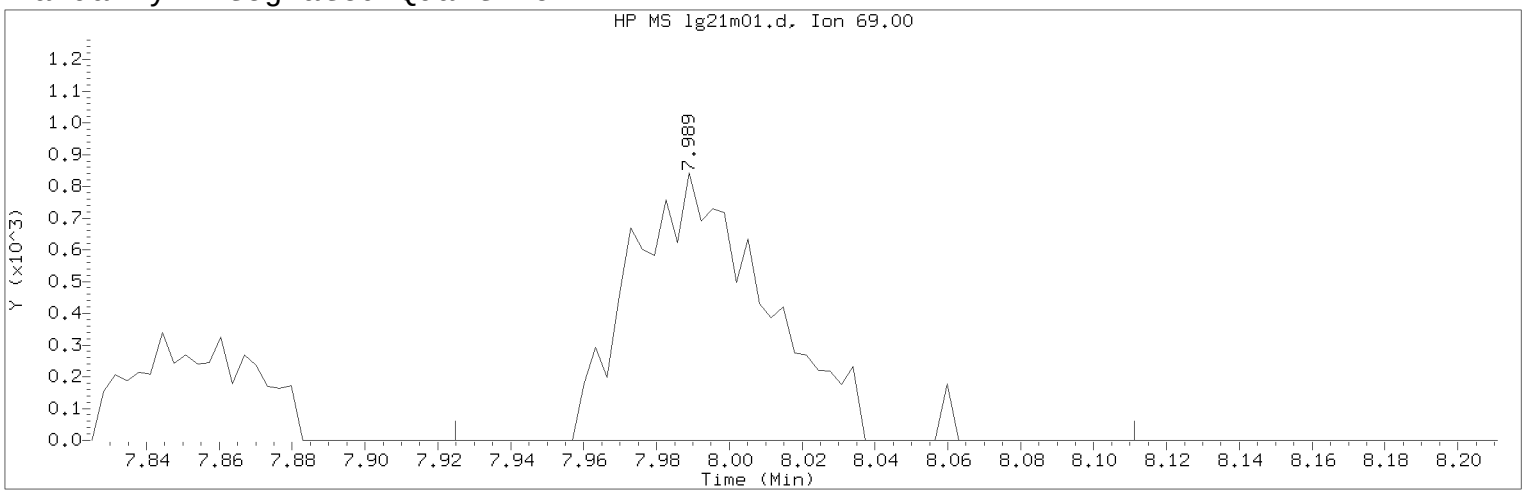
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

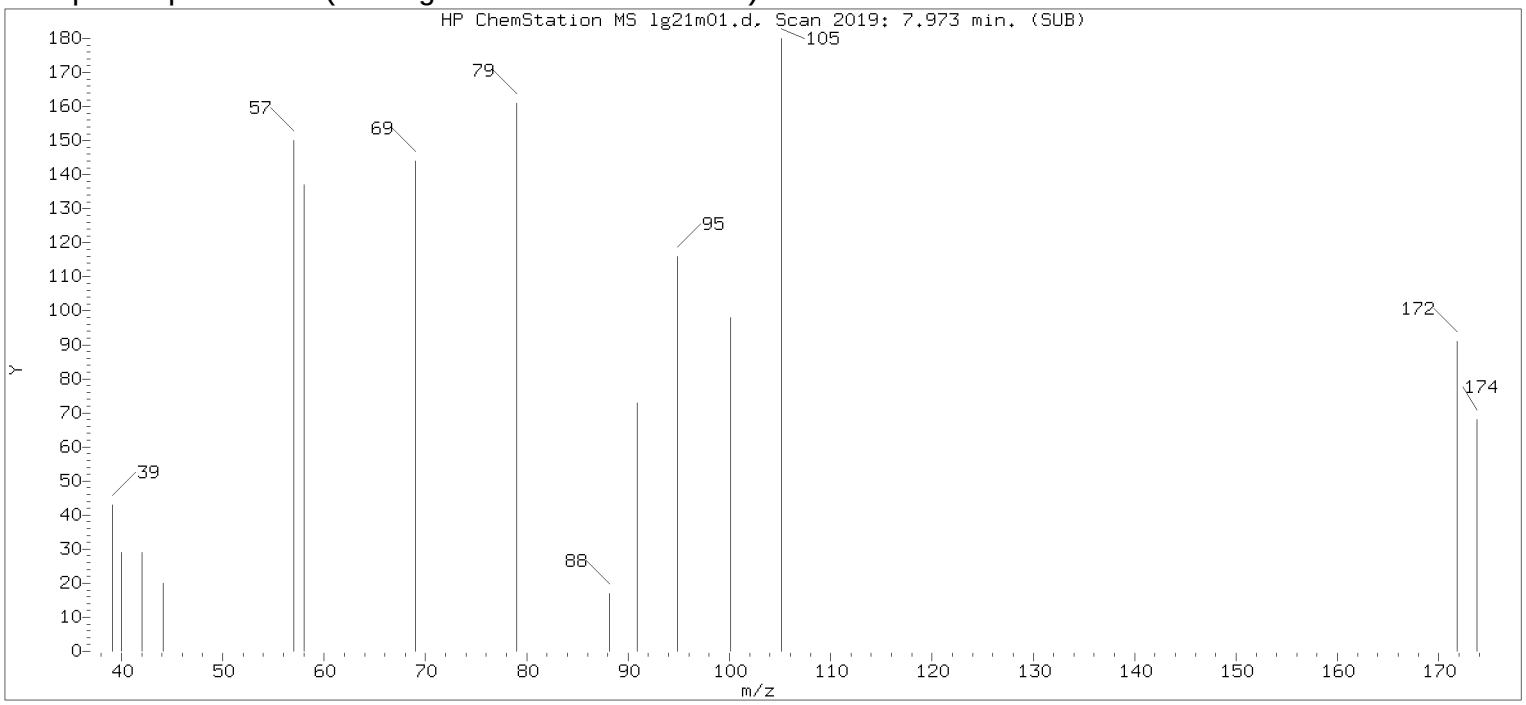
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2024
Retention Time (minutes): 7.989
Quant Ion : 69.00
Area (flag) : 2174M
On-Column Amount (ng) : 0.4172
Integration start scan : 2003 Integration stop scan: 2061
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

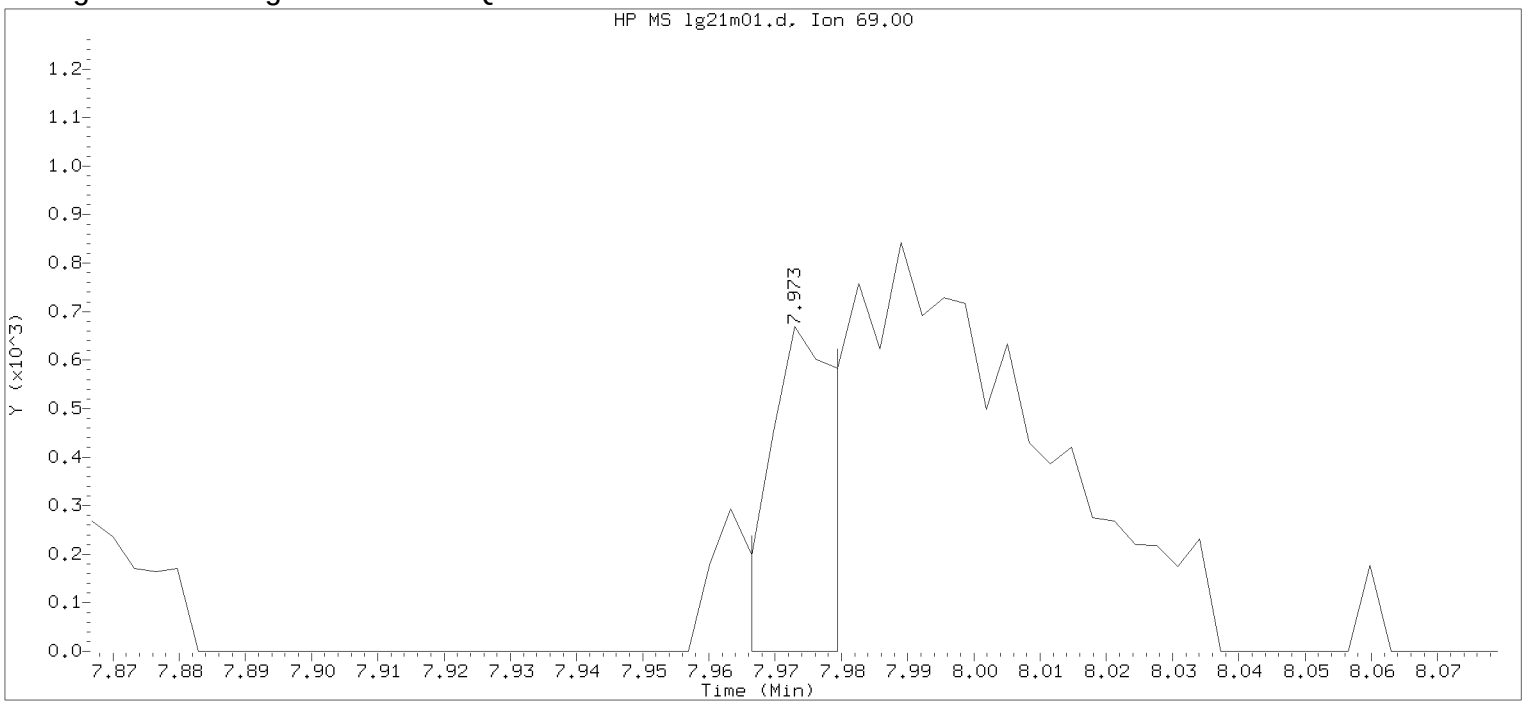
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

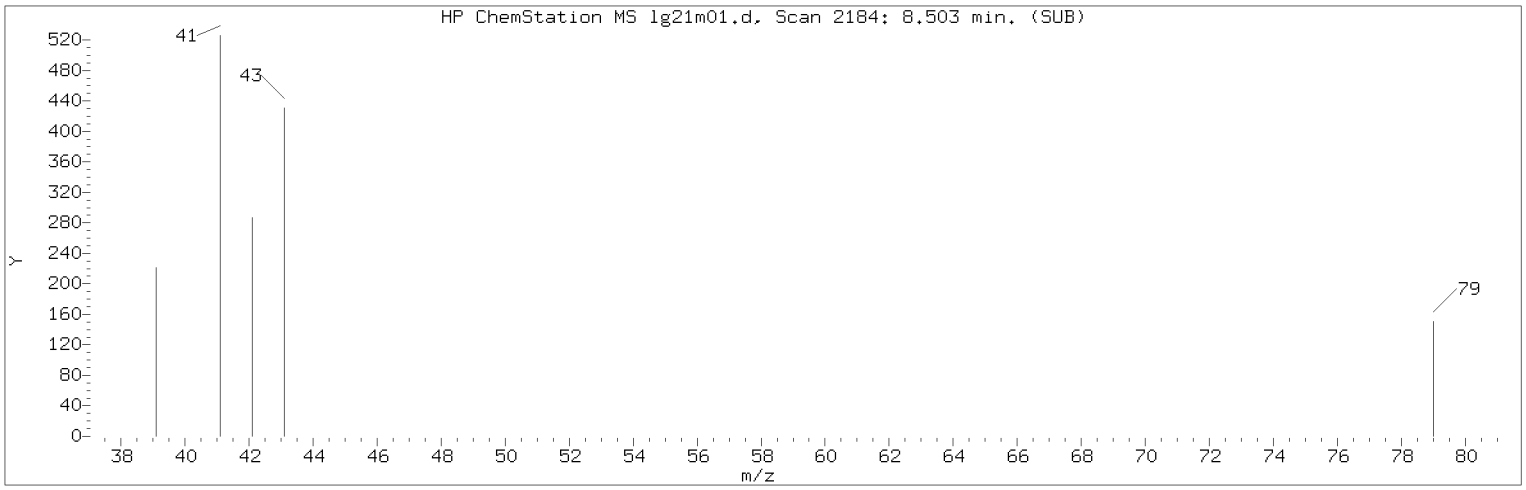
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

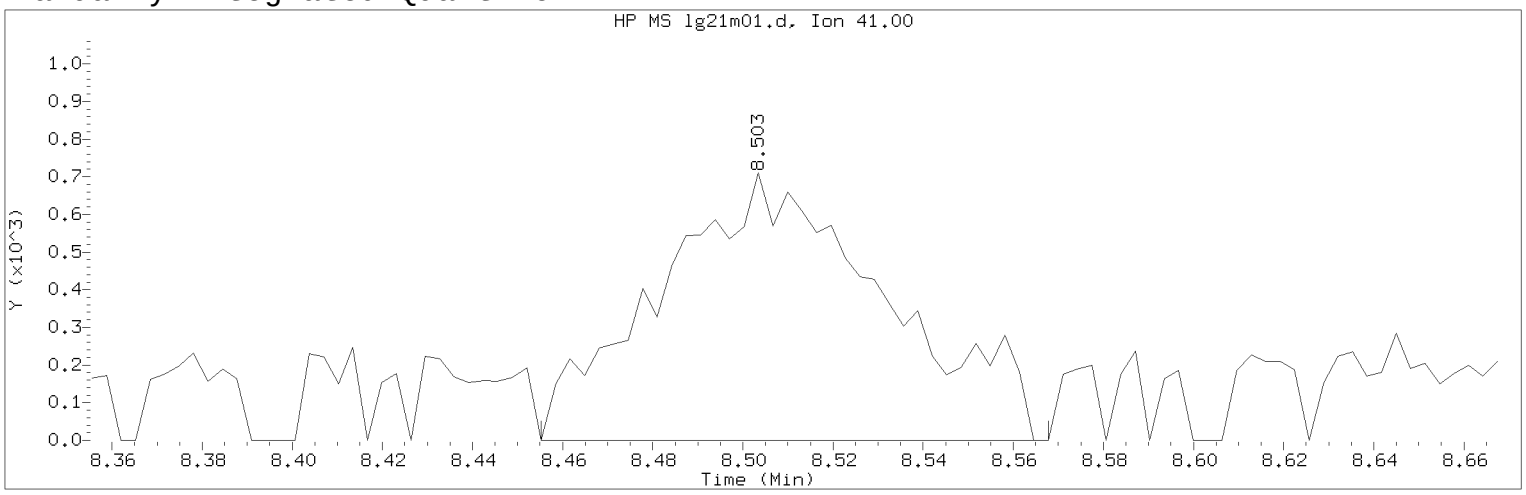
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area : 408
On-column Amount (ng) : 0.0783
Integration start scan : 2016 Integration stop scan: 2020
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

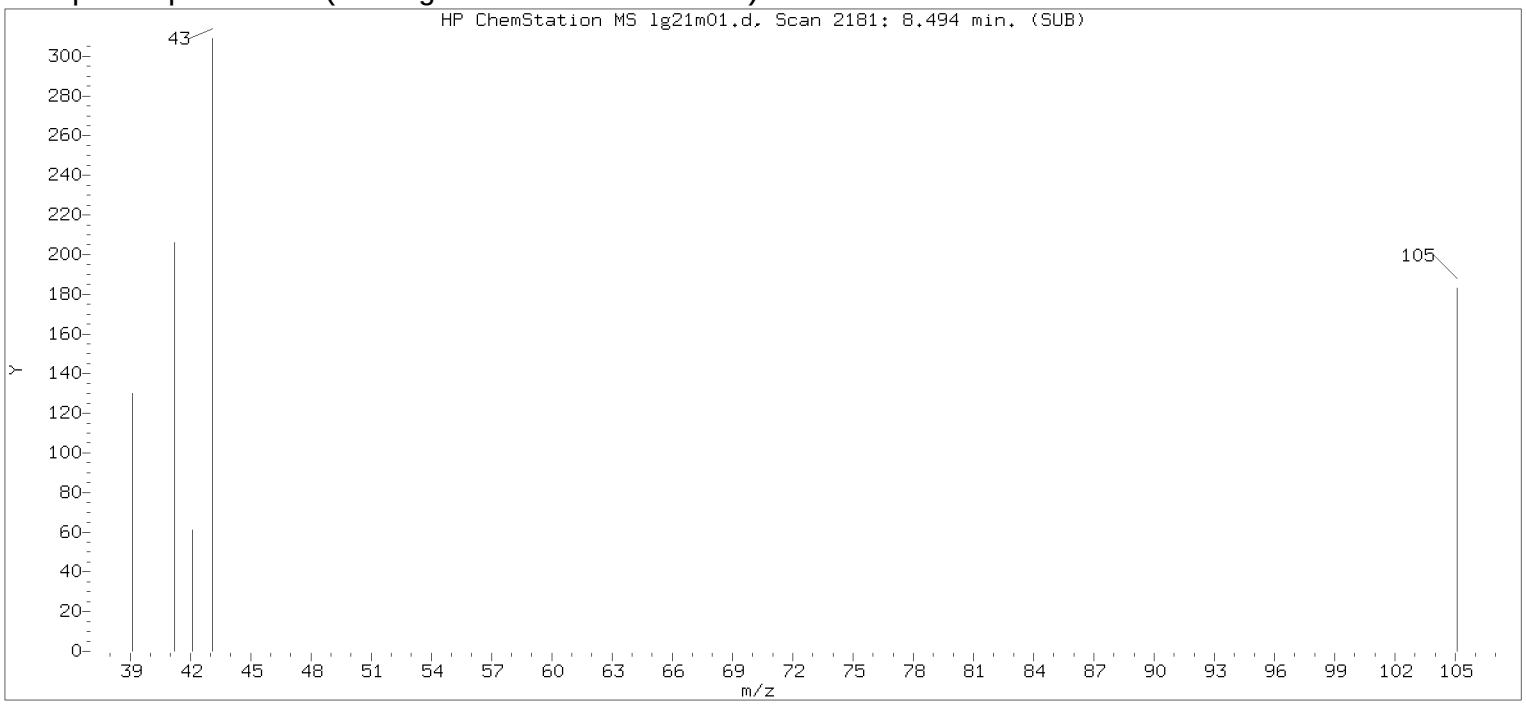
Compound Number : 79
Compound Name : 2-Nitropropane
Scan Number : 2184
Retention Time (minutes): 8.503
Quant Ion : 41.00
Area (flag) : 2472M
On-Column Amount (ng) : 1.1923
Integration start scan : 2168 Integration stop scan: 2203
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

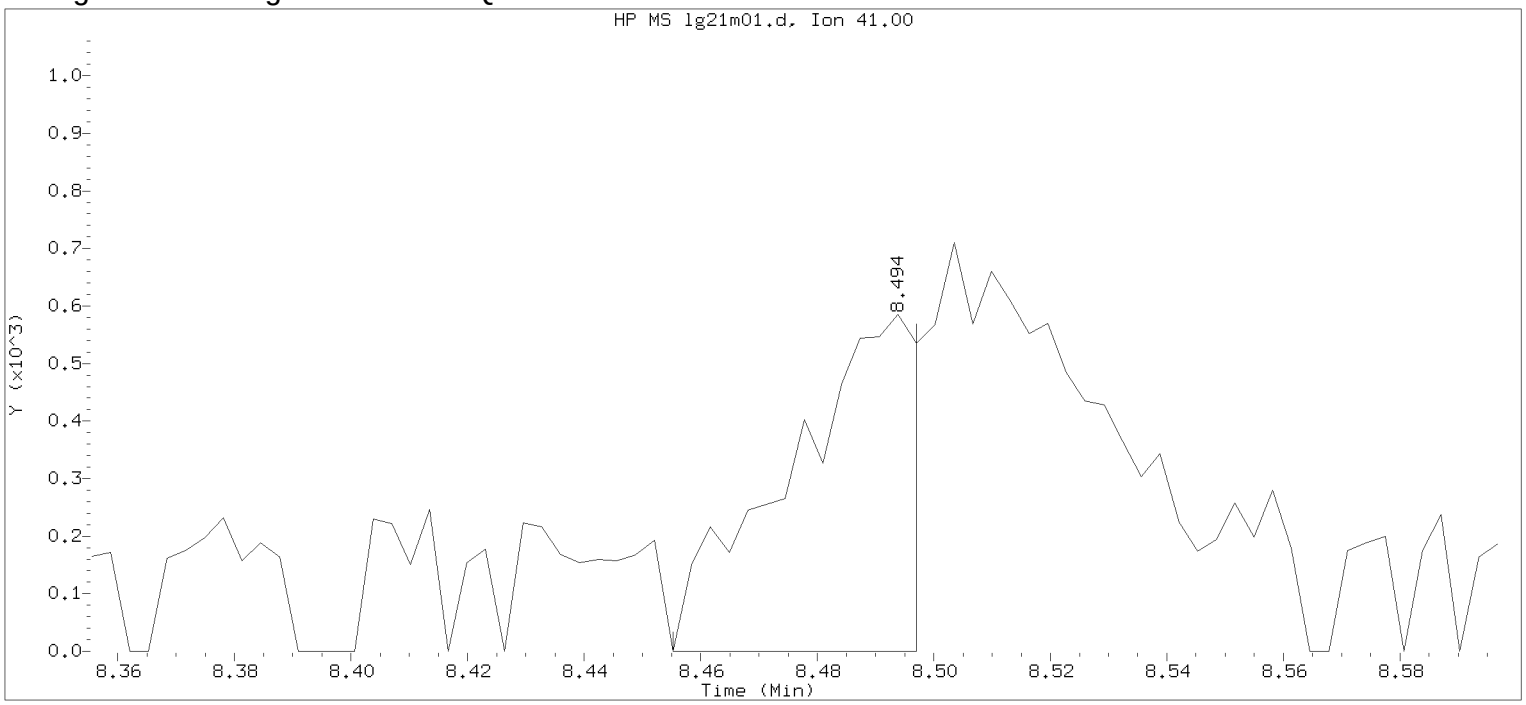
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



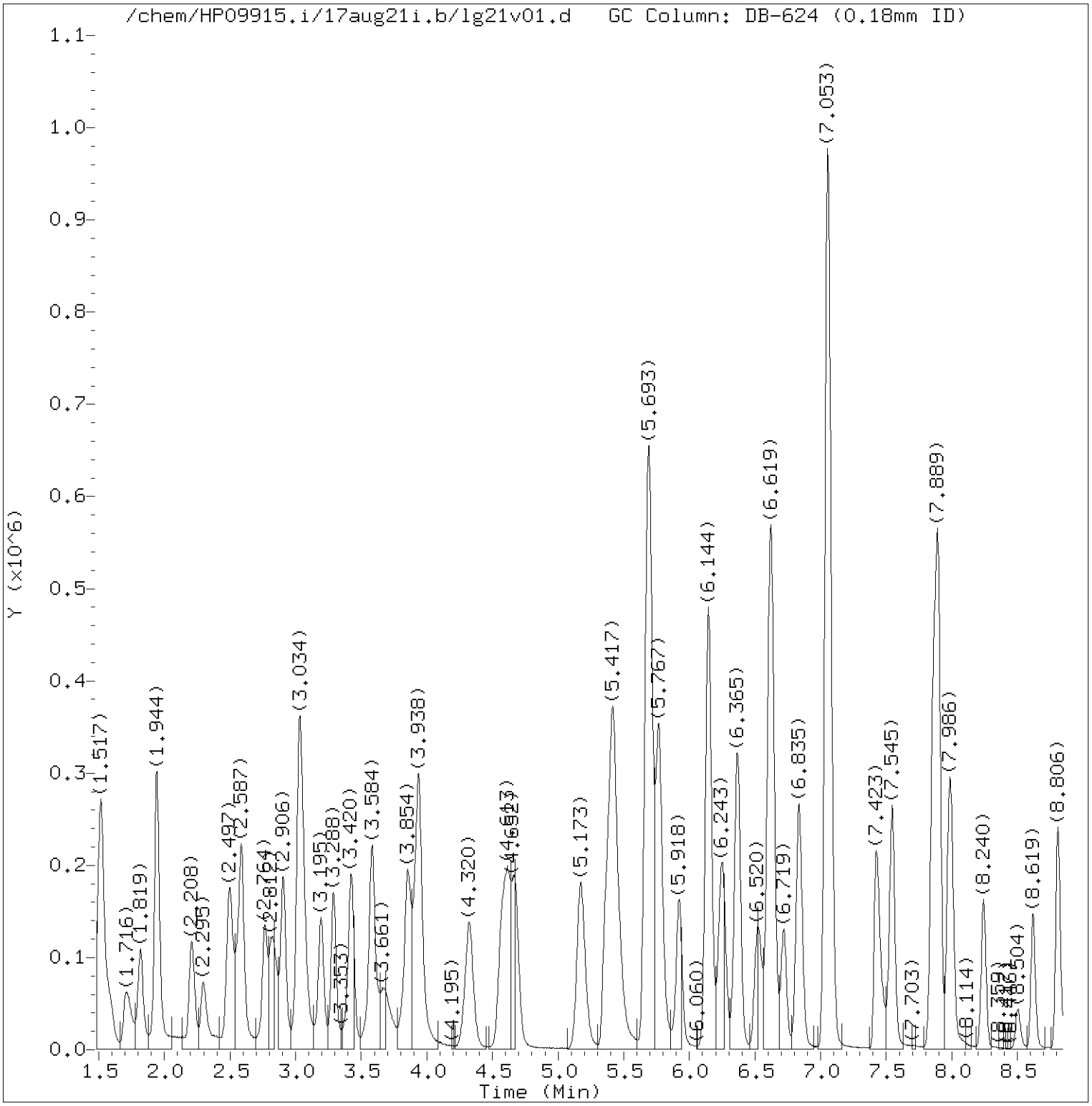

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 79
Compound Name : 2-Nitropropane
Scan Number : 2181
Retention Time (minutes): 8.494
Quant Ion : 41.00
Area : 856
On-column Amount (ng) : 0.4132
Integration start scan : 2168 Integration stop scan: 2181
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

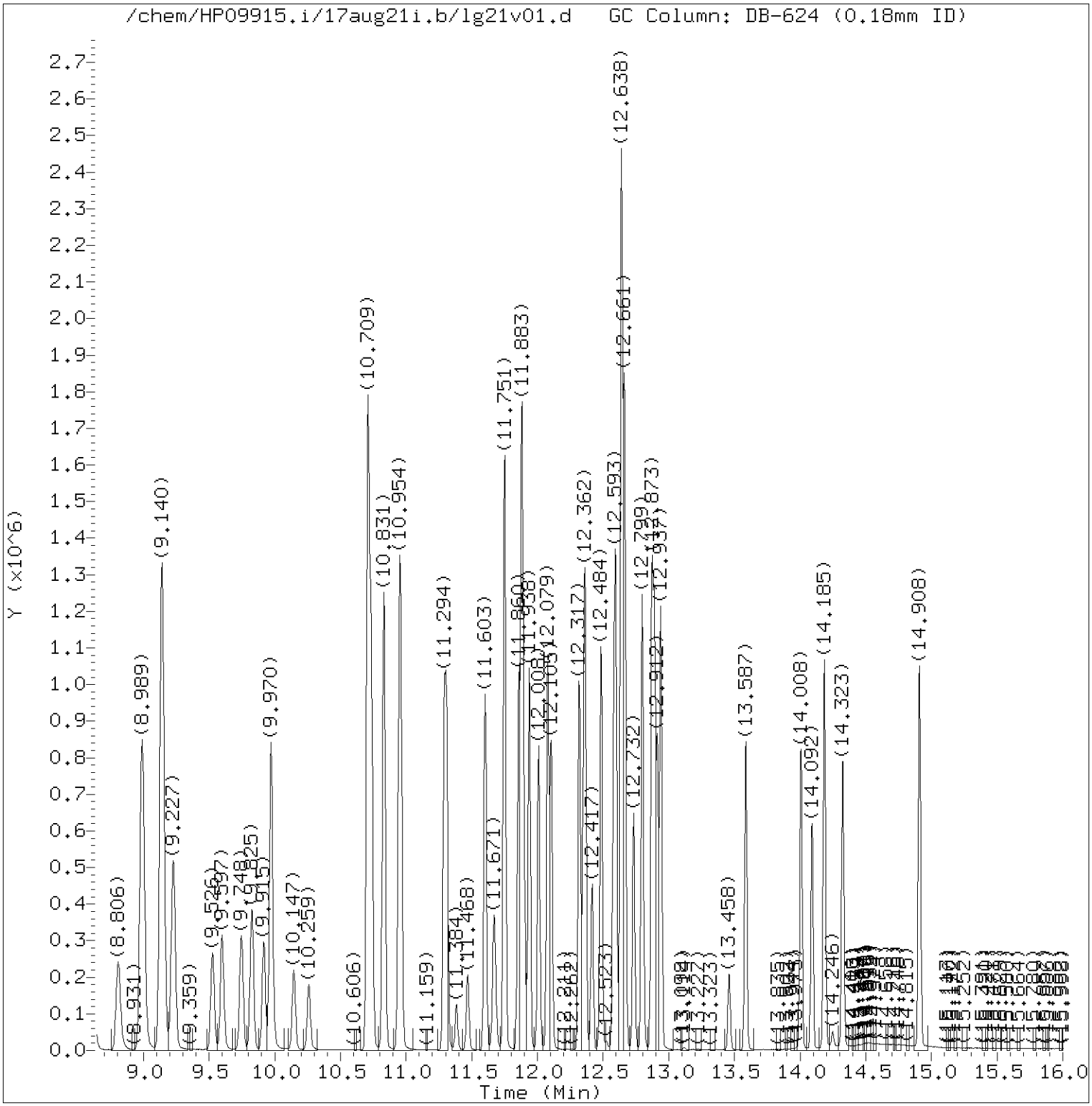
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 149904 | 18.598 |
| 4) Chloromethane | (2) | 1.822 | 50 | 151846 | 19.805 |
| 6) Vinyl Chloride | (2) | 1.935 | 62 | 153220 | 20.351 |
| 5) 1,3-Butadiene | (2) | 1.944 | 39 | 129921 | 24.220 |
| 8) Bromomethane | (2) | 2.208 | 94 | 113071 | 20.247 |
| 9) Chloroethane | (2) | 2.301 | 64 | 84451 | 20.243 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 194604 | 20.687 |
| 12) Trichlorofluoromethane | (2) | 2.552 | 101 | 199950 | 21.058 |
| 11) n-Pentane | (2) | 2.591 | 43 | 175286 | 22.056 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 97733 | 20.244 |
| 15) Freon 123a | (2) | 2.819 | 67 | 122904 | 19.179 |
| 16) Acrolein | (1) | 2.906 | 56 | 250669 | 136.512 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 104050 | 22.027 |
| 18) Acetone | (1) | 3.044 | 58 | 105323 | 141.861 |
| 19) Freon 113 | (2) | 3.057 | 101 | 105709 | 21.106 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 72838 | 135.364 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 201282 | 20.347 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 335316 | 20.702 |
| 27) Methyl Acetate | (2) | 3.391 | 43 | 113304 | 20.395 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 163695 | 21.051 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 249565M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 117886 | 20.642 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 193210M | 193.443 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 292619 | 96.228 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 356933 | 20.258 |
| 32) trans-1,2-Dichloroethene | (2) | 3.941 | 96 | 118430 | 21.234 |
| 34) n-Hexane | (2) | 4.327 | 57 | 159390 | 20.206 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 193136 | 20.274 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 349208 | 20.529 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.674 | 53 | 165152 | 19.849 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 347480 | 20.109 |
| 44) 2-Butanone | (2) | 5.372 | 43 | 569750 | 143.858 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 132064 | 20.817 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 167773 | 20.433 |
| 47) Propionitrile | (1) | 5.468 | 54 | 177012 | 149.550 |
| 48) Methacrylonitrile | (2) | 5.687 | 67 | 500368 | 149.852 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 71224 | 21.252 |
| 50) Tetrahydrofuran | (1) | 5.771 | 71 | 111094 | 98.823 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.925 | 83 | 197767 | 20.414 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 325300 | 50.131 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 185337 | 19.315 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 250494 | 42.051 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 181206 | 19.318 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 147817 | 20.149 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 152469 | 20.075 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 153726 | 486.203 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 79315 | 50.342 |
| 60) Benzene | (2) | 6.632 | 78 | 454614 | 20.336 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 156042 | 19.725 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 356832 | 20.013 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1275255 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 162022 | 19.820 |
| 69) n-Butanol | (1) | 7.423 | 56 | 260416 | 1000.259 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 121353 | 20.109 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 216297 | 21.878 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 117061 | 20.281 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 41479 | 507.697 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 106268 | 19.708 |
| 74) Dibromomethane | (2) | 7.996 | 93 | 83047 | 20.240 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 146386 | 19.620 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 38906 | 18.140 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 89604 | 19.981 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 187936 | 20.003 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 816674 | 98.733 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1265761 | 50.387 |
| 88) Toluene | (3) | 9.227 | 92 | 297428 | 20.266 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 172119 | 19.951 |
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 194285 | 20.785 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 118963 | 20.822 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 134358 | 20.630 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 187271 | 20.100 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 598101 | 98.568 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 360055 | 39.954 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 125684 | 19.961 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 130074 | 20.286 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1008955 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 166667 | 19.696 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 345134 | 20.158 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 120396 | 20.041 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 576287 | 20.408 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 469867 | 41.465 |
| 107) o-Xylene | (3) | 11.291 | 106 | 231178 | 20.264 |
| 109) Styrene | (3) | 11.311 | 104 | 394245 | 20.742 |
| 110) Bromoform | (3) | 11.468 | 173 | 89935 | 19.032 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 599220 | 20.965 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 156101 | 494.148 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 479817 | 49.959 |
| 108) Xylene (Total) | (3) | | 106 | 701045 | 61.730 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 191556 | 20.260 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 160574 | 20.257 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 272118 | 109.486 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 59539 | 20.697 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 696820 | 21.006 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 147003 | 20.454 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 514613 | 20.579 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 152181 | 20.275 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 110820M | 20.605 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 93698 | 20.652 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 530536 | 20.612 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 663194 | 21.374 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 300596 | 20.065 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 587594 | 21.318 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 554369 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 318799 | 20.607 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 576765 | 21.512 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 392037 | 20.531 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 350267 | 20.936 |
| 137) 1,4-Diethylbenzene | (4) | 12.870 | 119 | 371022 | 21.264 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 283643 | 21.001 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 303144 | 20.367 |
| 140) 1,2-Diethylbenzene | (4) | 12.937 | 119 | 297685 | 21.356 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1018974 | 63.556 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 41994 | 20.385 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 228252 | 20.172 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 217703 | 19.390 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 92540 | 19.295 |
| 148) Naphthalene | (4) | 14.185 | 128 | 711908 | 20.075 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 207731 | 19.286 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 440615 | 18.436 |



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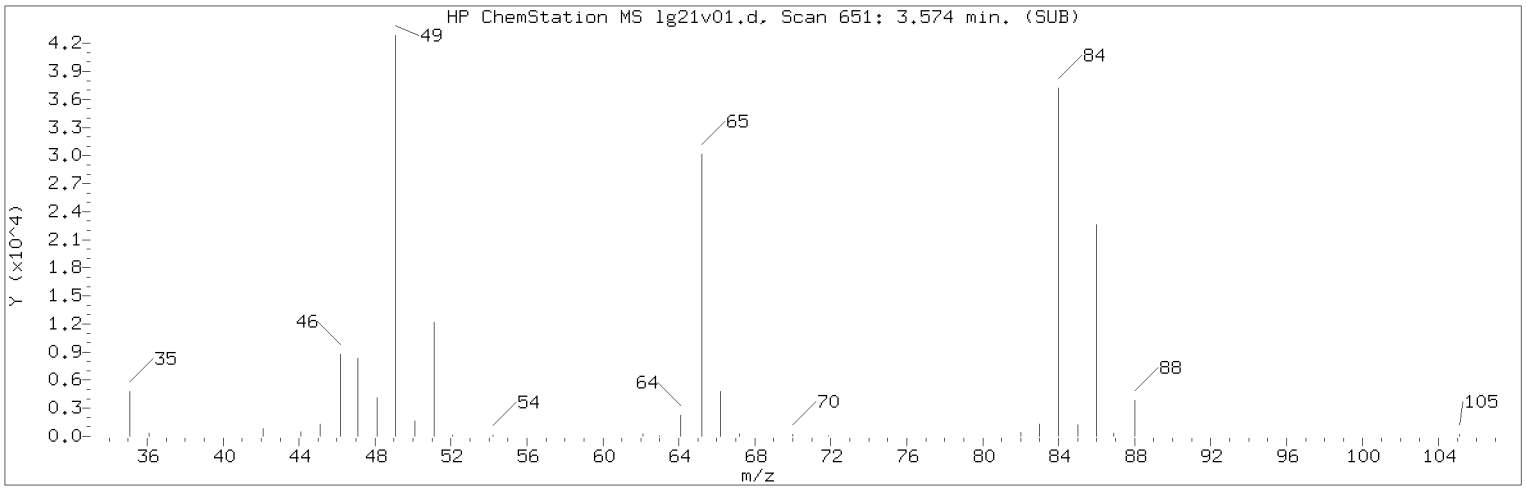
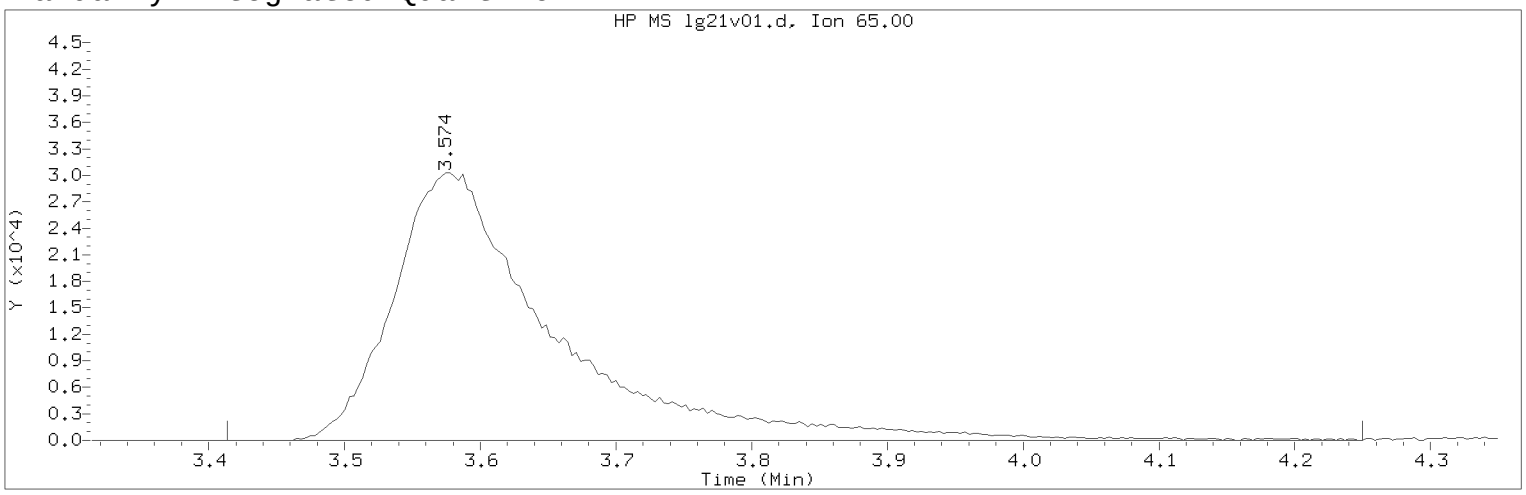
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

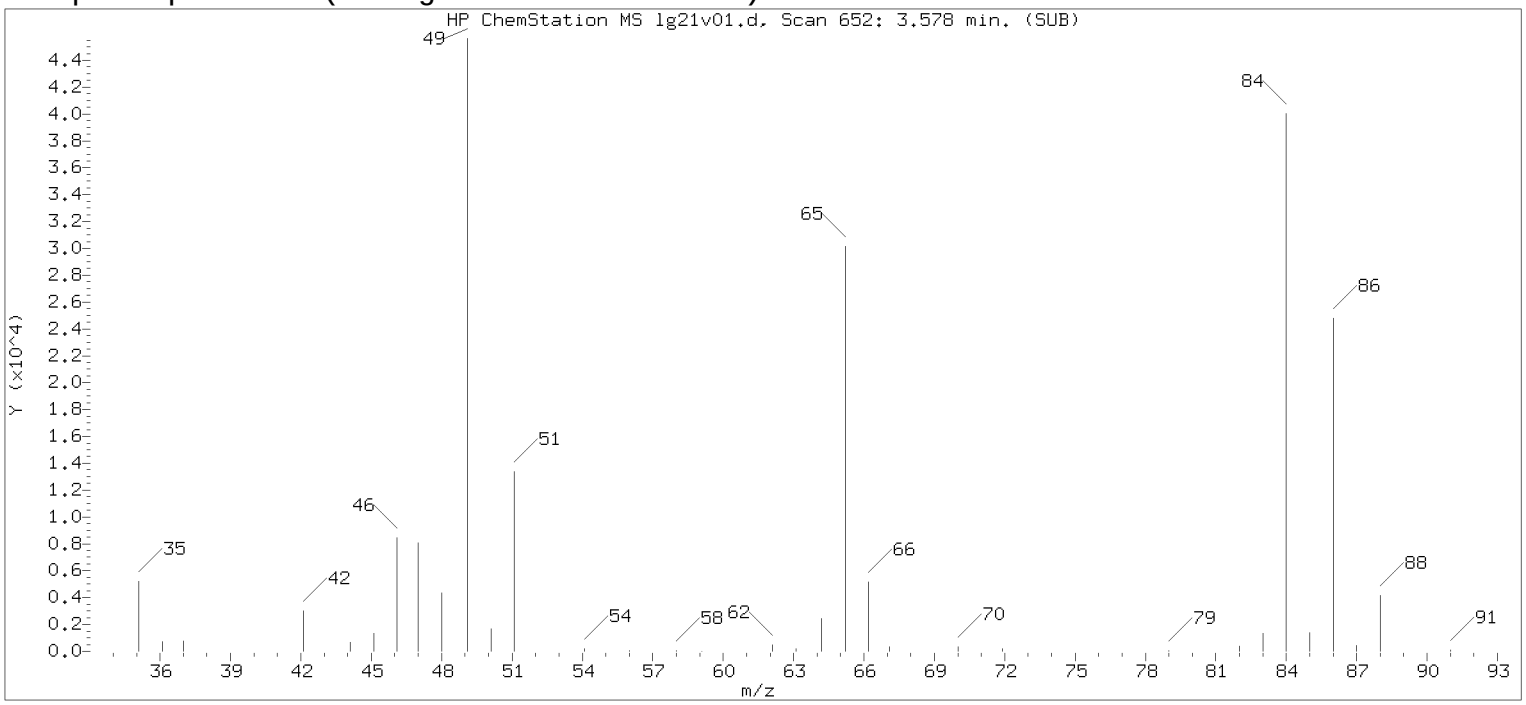
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 249565M
On-Column Amount (ng) : 250.0000
Integration start scan : 600 Integration stop scan: 860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

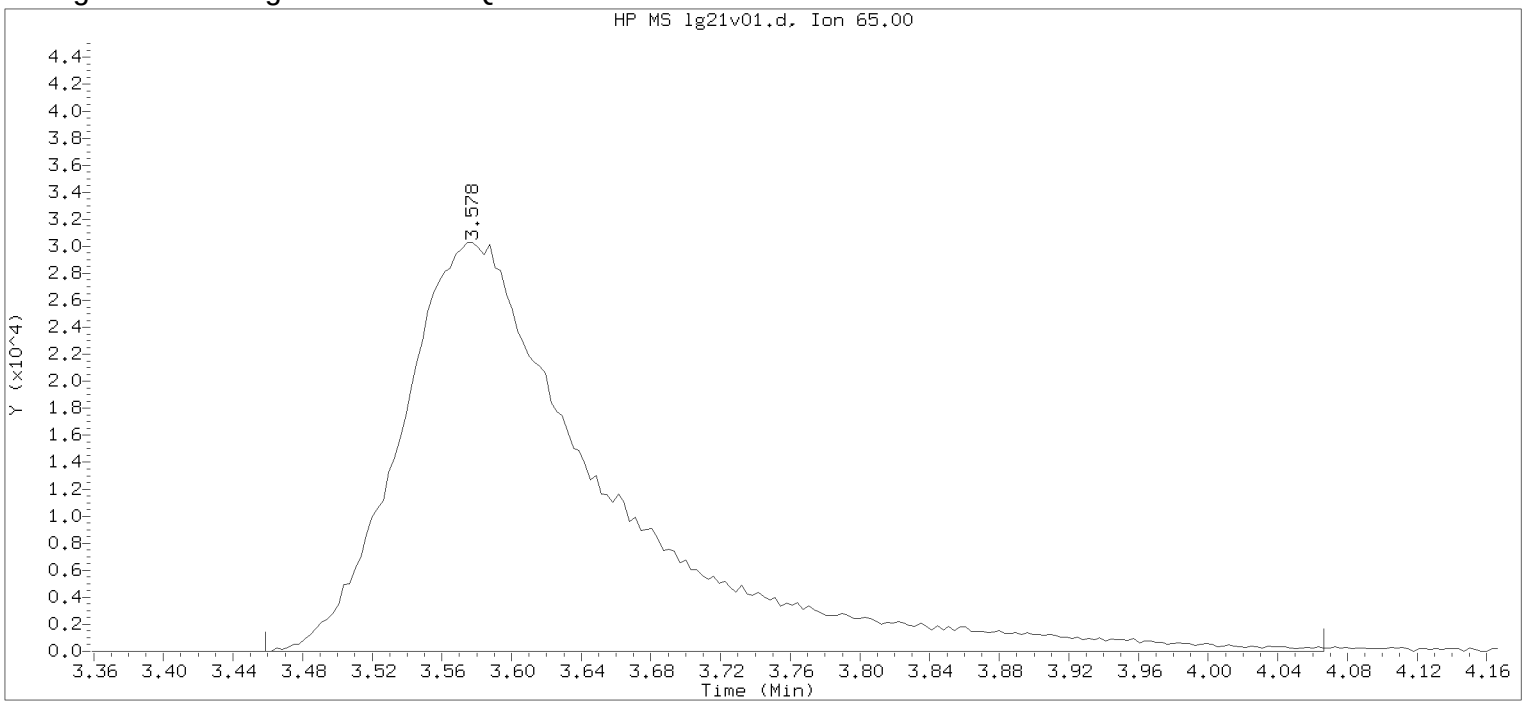
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:53 Automation

Sample Name: LGCICV Lab Sample ID: LGCICV

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 247827
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 803
Y at integration start : 0 Y at integration end: 0

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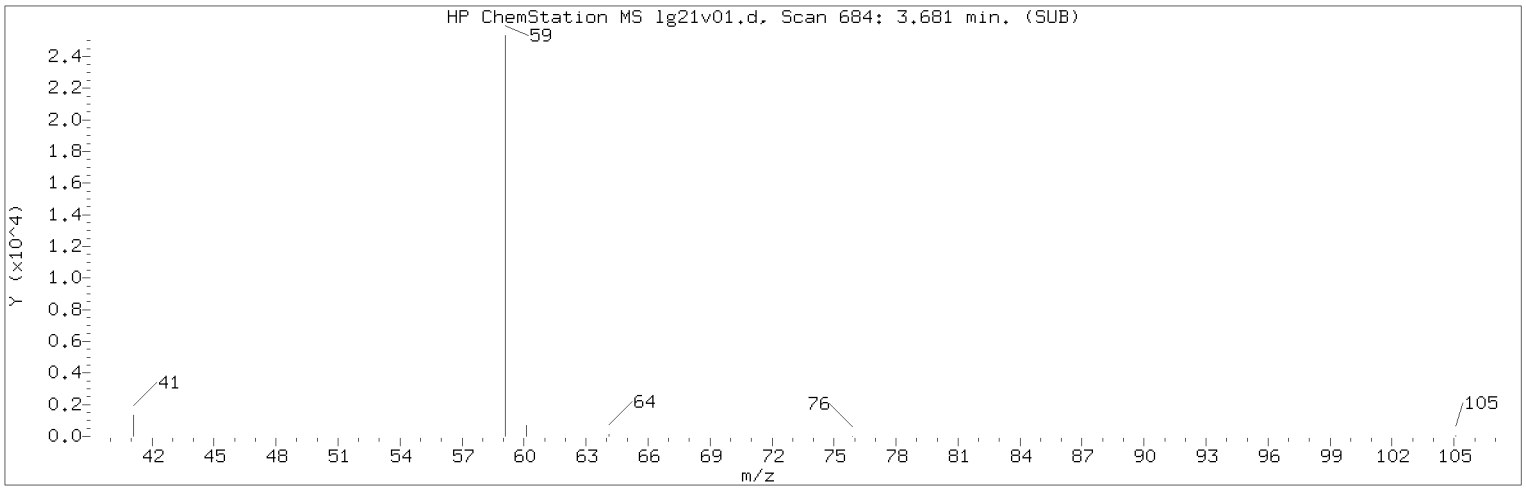
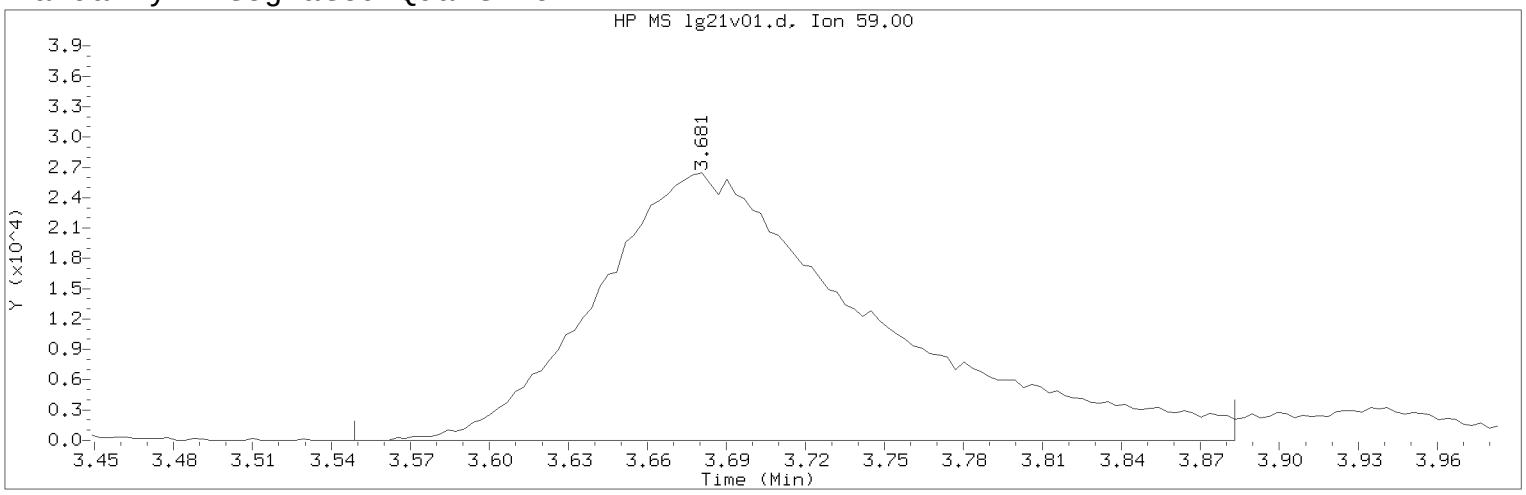
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

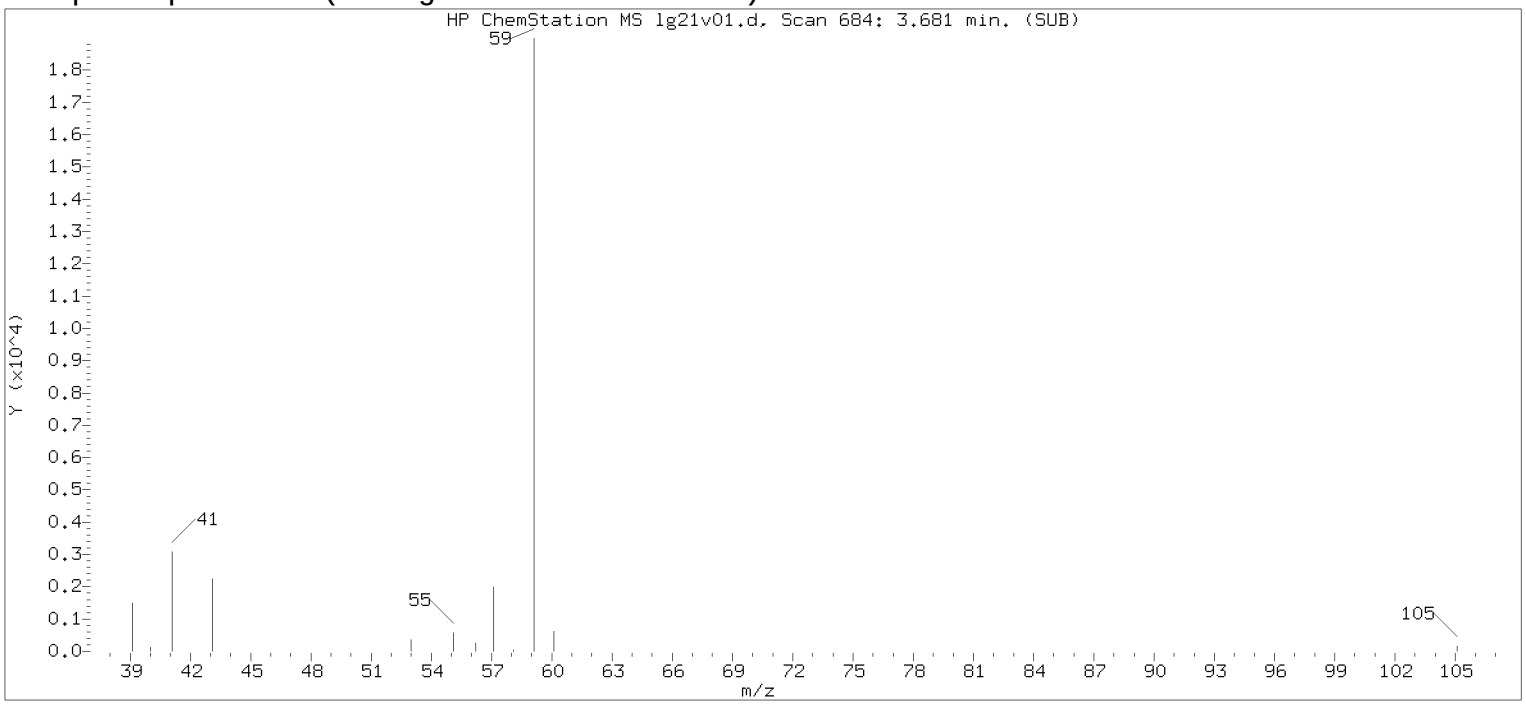
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 684
Retention Time (minutes): 3.681
Quant Ion : 59.00
Area (flag) : 193210M
On-Column Amount (ng) : 193.4429
Integration start scan : 642 Integration stop scan: 746
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

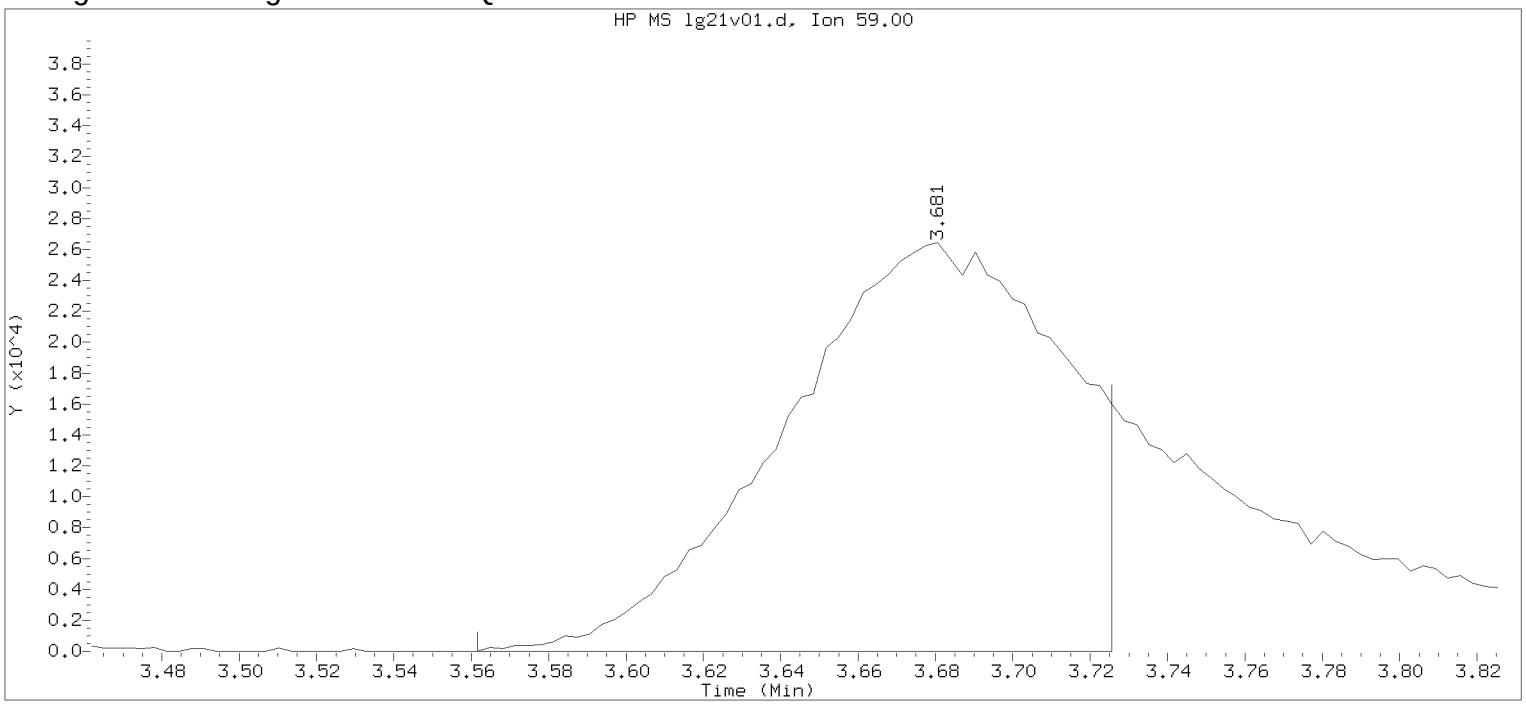
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:53 Automation

Sample Name: LGCICV Lab Sample ID: LGCICV

Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 684
Retention Time (minutes): 3.681
Quant Ion : 59.00
Area : 131226
On-column Amount (ng) : 132.3065
Integration start scan : 646 Integration stop scan: 697
Y at integration start : 0 Y at integration end: 0

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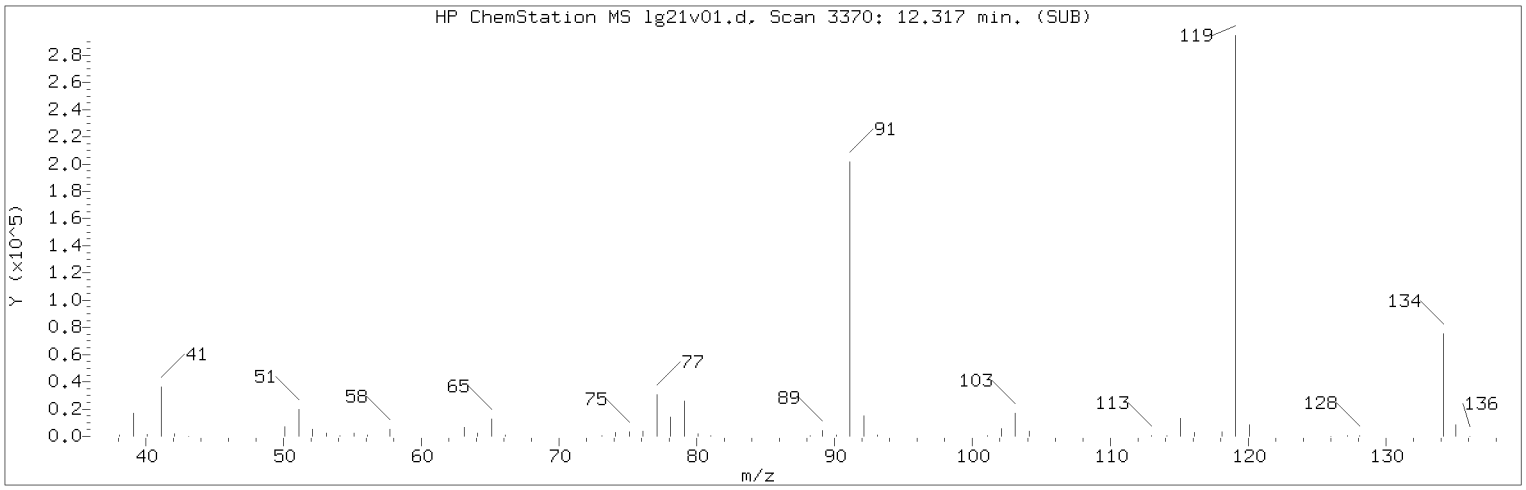
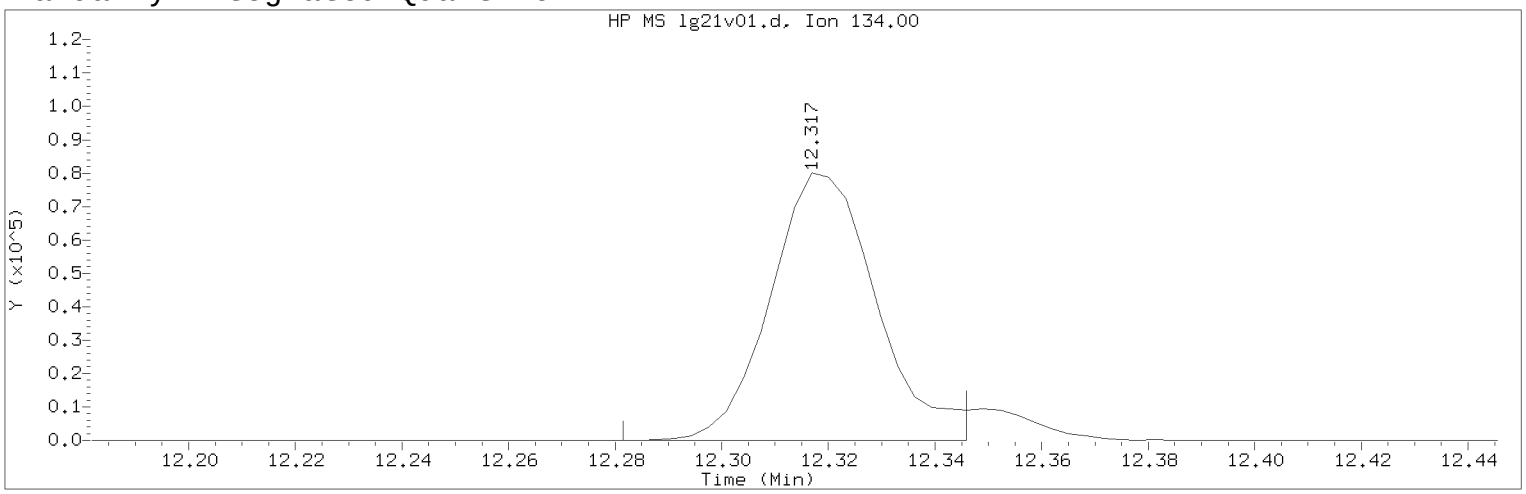
Target 3.5 esignature userKAS02648 Page 248 of 555

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

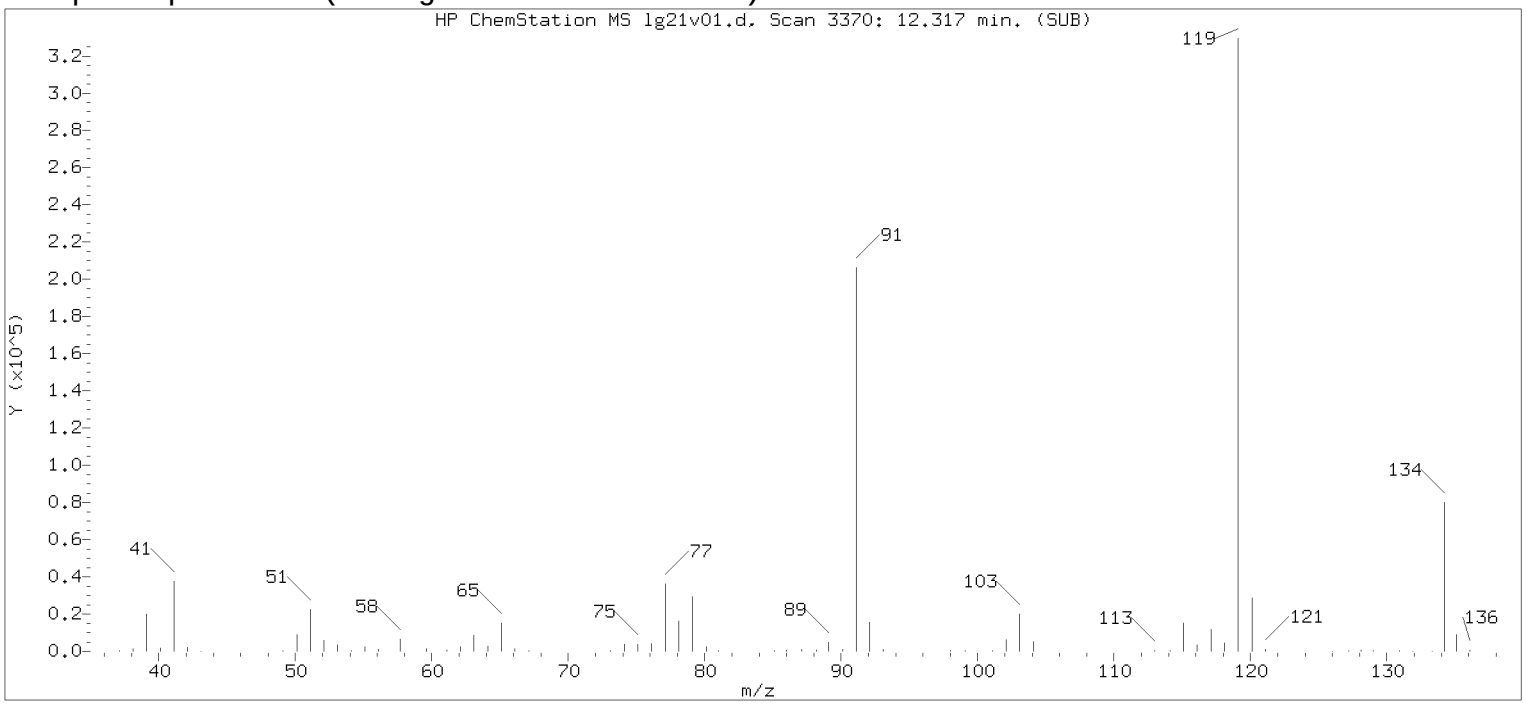
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area (flag) : 110820M
On-Column Amount (ng) : 20.6051
Integration start scan : 3358 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

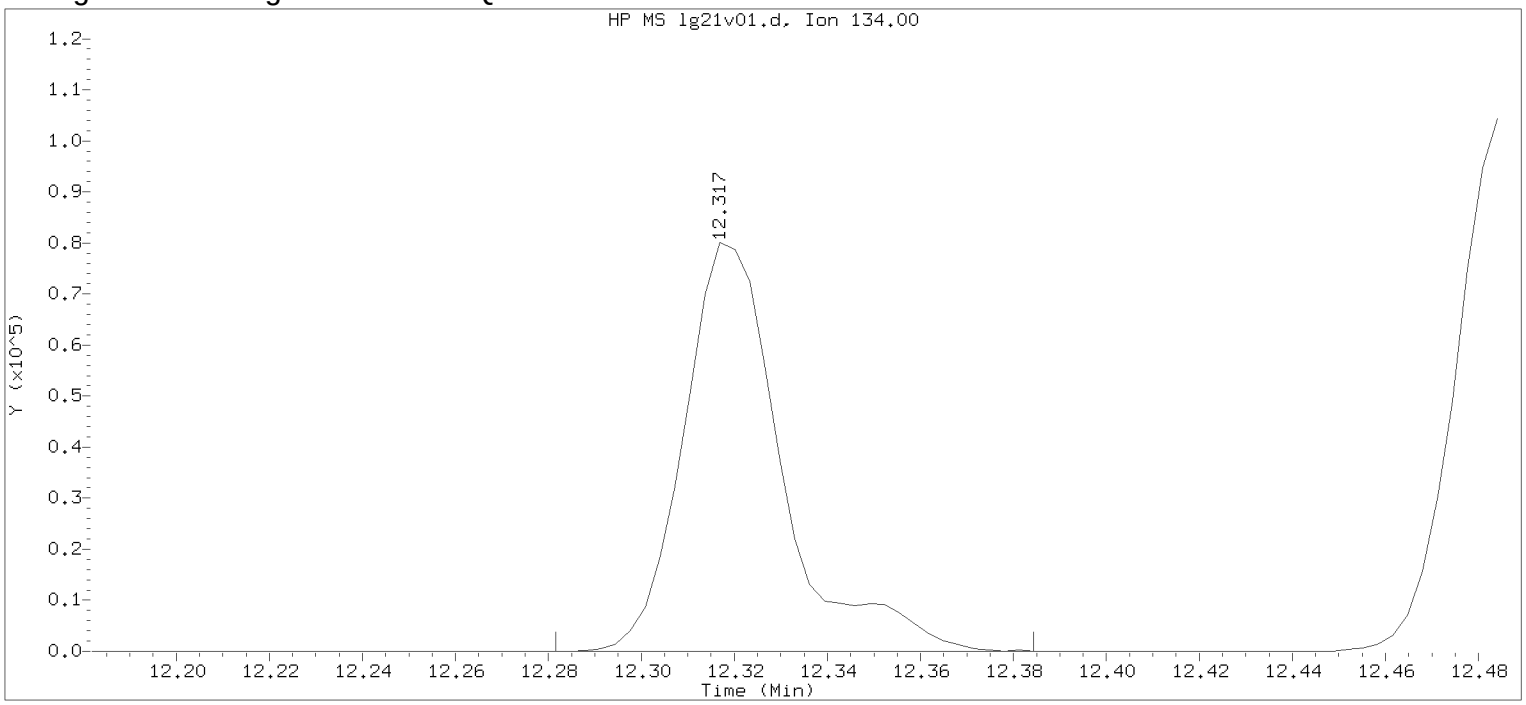
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:53 Automation

Sample Name: LGCICV Lab Sample ID: LGCICV

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area : 118362
On-column Amount (ng) : 22.0075
Integration start scan : 3358 Integration stop scan: 3390
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:05.
Target 3.5 esignature userKAS02648

Data File: /chem/HP09915.i/17sep05c.b/ls05t13.d

Page 1

Date : 05-SEP-2017 19:27

Client ID: BFBAug14-17

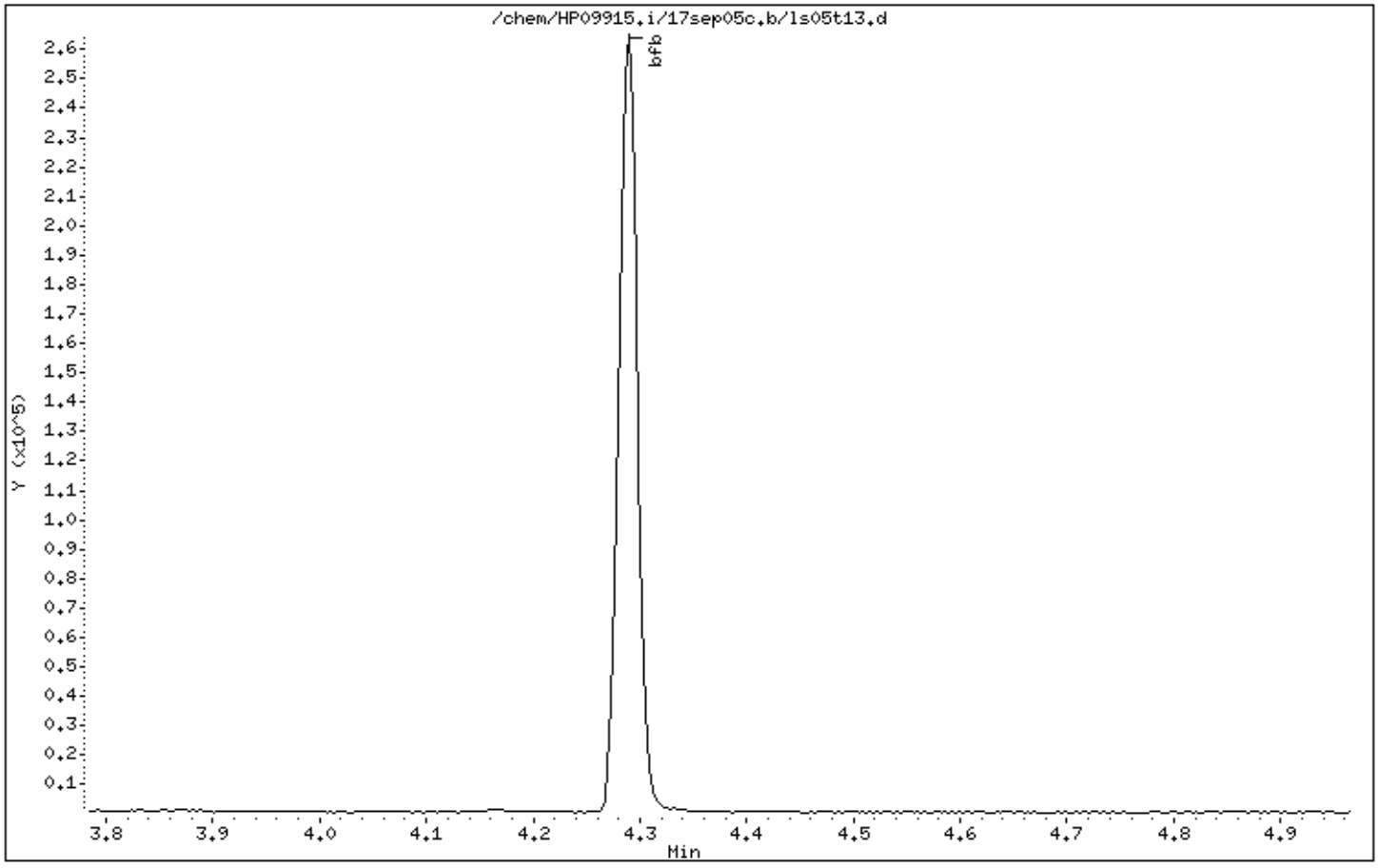
Instrument: HP09915.i

Sample Info: BFBAug14-17;50NGBFB;1;3;;;;;;

Operator: kk10002

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin Kelly on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002

Data File: /chem/HP09915.i/17sep05c.b/ls05t13.d

Date : 05-SEP-2017 19:27

Client ID: BFBAug14-17

Instrument: HP09915.i

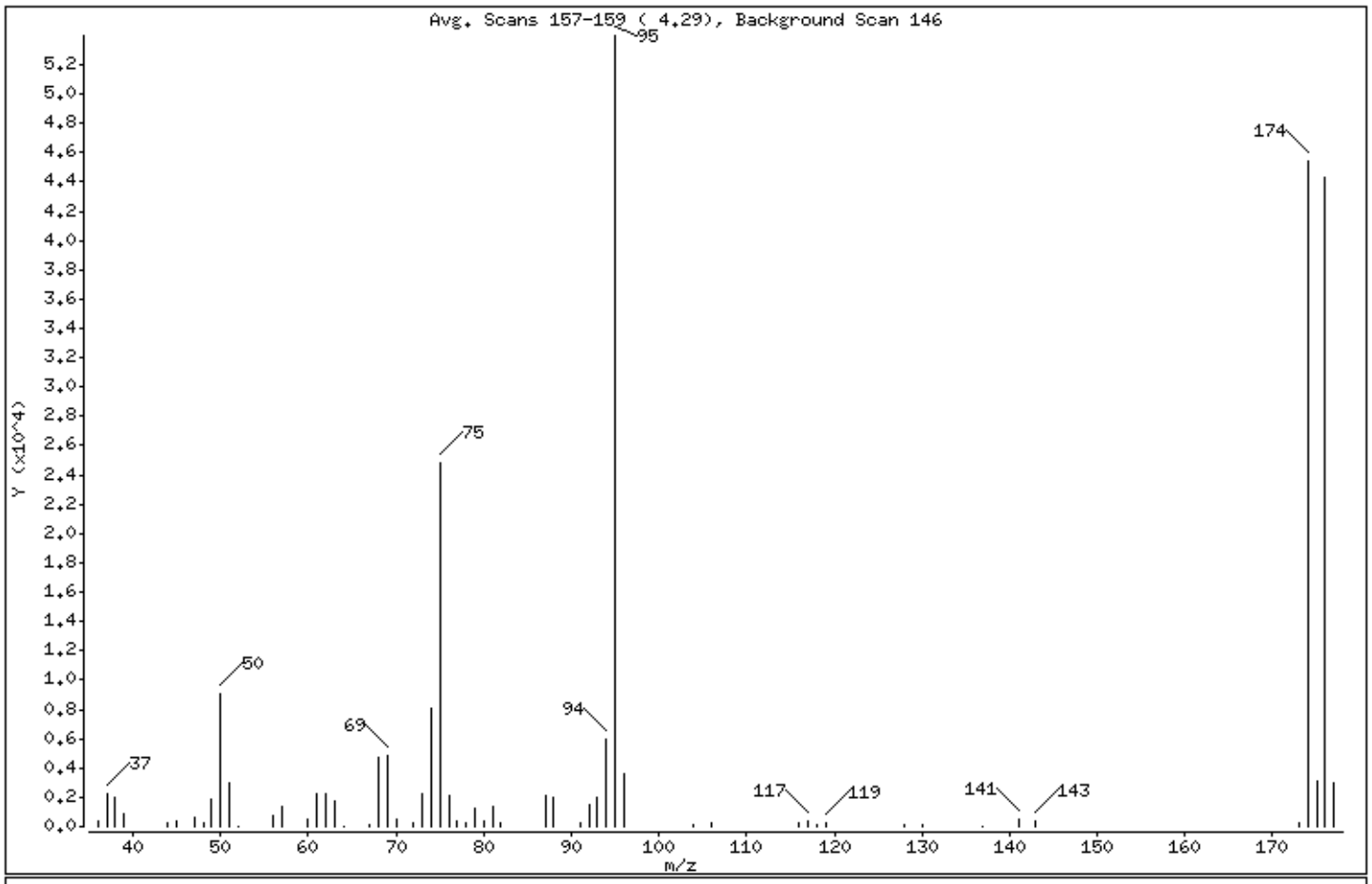
Sample Info: BFBAug14-17;50NGBFB;1;3;;;;;;

Operator: kk10002

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 16.68 |
| 75 | 30.00 - 60.00% of mass 95 | 45.97 |
| 96 | 5.00 - 9.00% of mass 95 | 6.75 |
| 173 | Less than 2.00% of mass 174 | 0.38 ( 0.45) |
| 174 | 50.00 - 100.00% of mass 95 | 84.07 |
| 175 | 5.00 - 9.00% of mass 174 | 5.65 ( 6.72) |
| 176 | 95.00 - 101.00% of mass 174 | 82.10 ( 97.66) |
| 177 | 5.00 - 9.00% of mass 176 | 5.50 ( 6.70) |

Digitally signed by Kevin Kelly on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002

Date : 05-SEP-2017 19:27

Client ID: BFBAug14-17 Instrument: HP09915.i

Sample Info: BFBAug14-17;50NGBFB;1;3;;;;;;

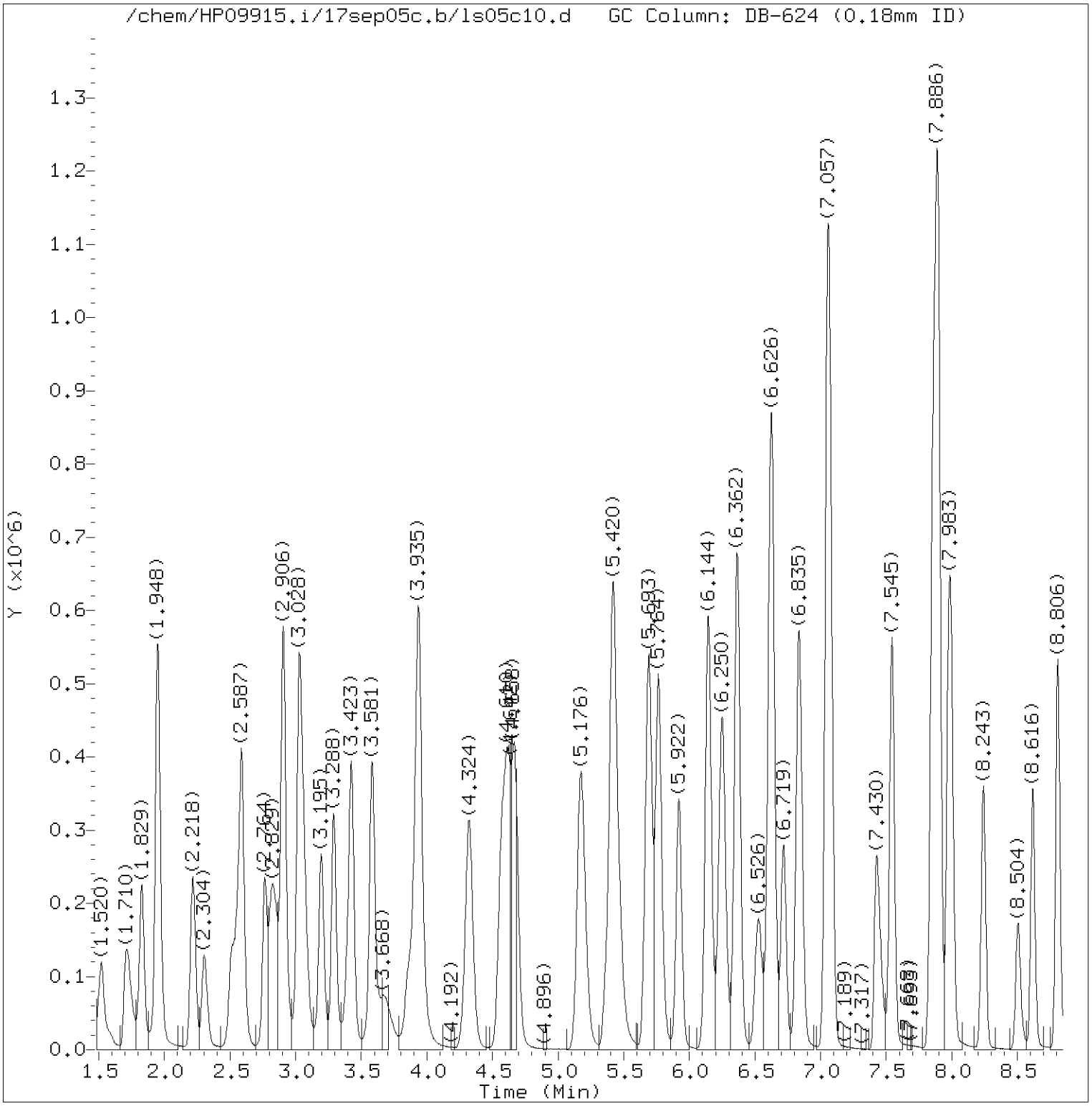
Operator: kk10002

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: ls05t13.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 146
Location of Maximum: 95.00
Number of points: 58

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 426 | 61.00 | 2259 | 79.00 | 1289 | 117.00 | 344 |
| 37.00 | 2288 | 62.00 | 2211 | 80.00 | 340 | 118.00 | 168 |
| 38.00 | 2011 | 63.00 | 1730 | 81.00 | 1329 | 119.00 | 240 |
| 39.00 | 846 | 64.00 | 51 | 82.00 | 278 | 128.00 | 185 |
| 44.00 | 207 | 67.00 | 70 | 87.00 | 2134 | 130.00 | 175 |
| 45.00 | 432 | 68.00 | 4679 | 88.00 | 1986 | 137.00 | 54 |
| 47.00 | 603 | 69.00 | 4852 | 91.00 | 200 | 141.00 | 463 |
| 48.00 | 254 | 70.00 | 439 | 92.00 | 1509 | 143.00 | 425 |
| 49.00 | 1828 | 72.00 | 295 | 93.00 | 2040 | 173.00 | 204 |
| 50.00 | 9004 | 73.00 | 2197 | 94.00 | 5903 | 174.00 | 45376 |
| 51.00 | 2925 | 74.00 | 8020 | 95.00 | 53976 | 175.00 | 3050 |
| 52.00 | 62 | 75.00 | 24808 | 96.00 | 3641 | 176.00 | 44312 |
| 56.00 | 698 | 76.00 | 2160 | 104.00 | 132 | 177.00 | 2971 |
| 57.00 | 1374 | 77.00 | 338 | 106.00 | 213 | | |
| 60.00 | 448 | 78.00 | 217 | 116.00 | 198 | | |

Digitally signed by Kevin Kelly on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

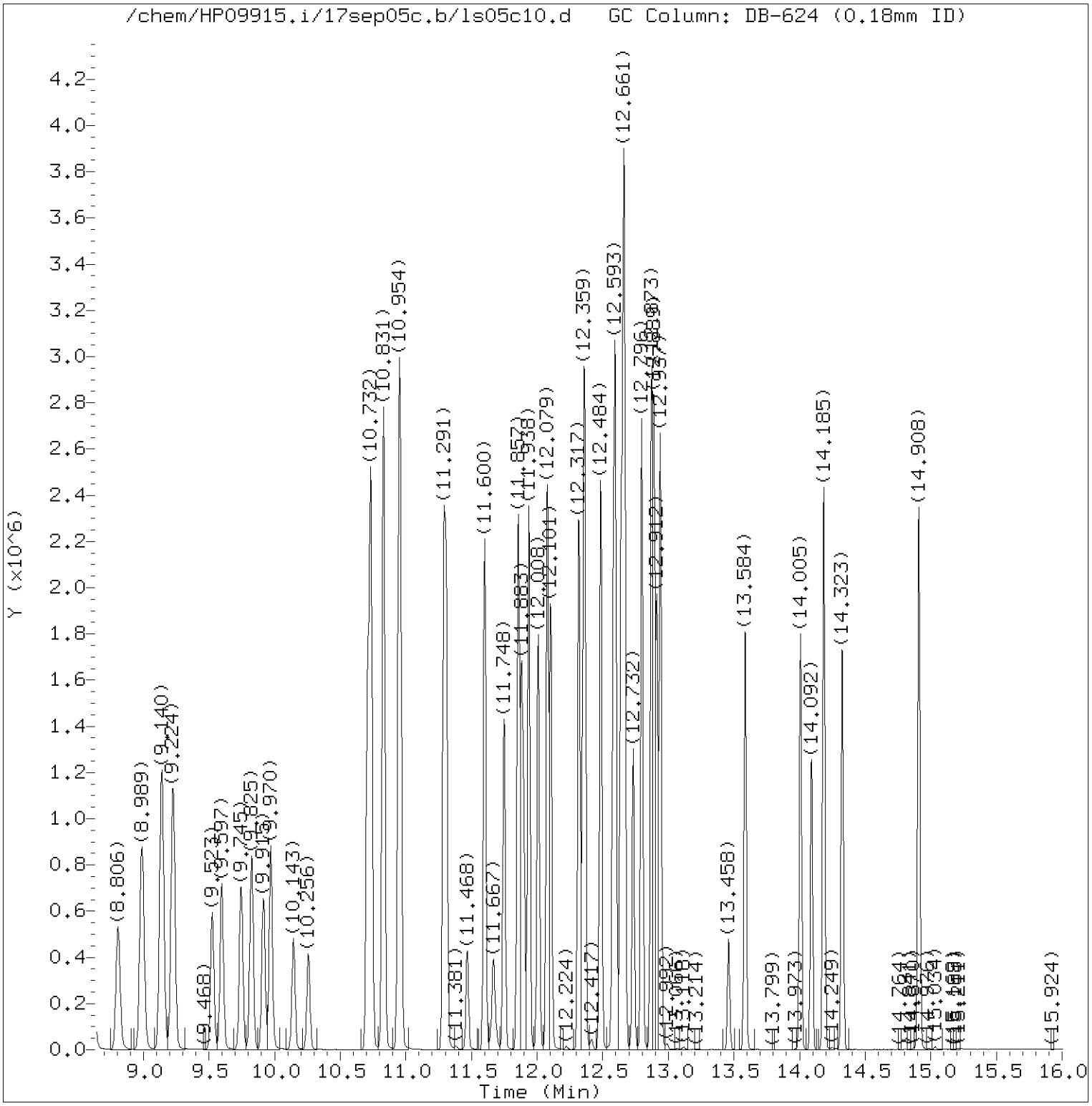
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05c10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:08 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 20:28 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin Kelly
on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05c10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:08 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 20:28 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin Kelly
on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05c10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:08 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 20:28 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 364753 | 51.170 |
| 4) Chloromethane | (2) | 1.829 | 50 | 335416 | 49.468 |
| 6) Vinyl Chloride | (2) | 1.944 | 62 | 331682 | 49.816 |
| 5) 1,3-Butadiene | (2) | 1.954 | 39 | 249130 | 52.516 |
| 8) Bromomethane | (2) | 2.218 | 94 | 253750 | 51.379 |
| 9) Chloroethane | (2) | 2.304 | 64 | 188202 | 51.012 |
| 12) Trichlorofluoromethane | (2) | 2.558 | 101 | 424694 | 50.576 |
| 11) n-Pentane | (2) | 2.591 | 43 | 315320 | 44.866 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 175053 | 41.002 |
| 15) Freon 123a | (2) | 2.822 | 67 | 261129 | 46.079 |
| 16) Acrolein | (1) | 2.906 | 56 | 786728 | 577.676 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 196044 | 46.928 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 91622 | 46.553 |
| 18) Acetone | (1) | 3.044 | 58 | 73317 | 133.147 |
| 19) Freon 113 | (2) | 3.057 | 101 | 216377 | 48.853 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 113395 | 284.137 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 401309 | 45.871 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 645997 | 45.099 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 254739 | 51.850 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 332598 | 48.364 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 245189 | 48.548 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.584 | 65 | 185096 | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 206207 | 278.364 |
| 31) Acrylonitrile | (2) | 3.851 | 53 | 138029 | 51.327 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 750484 | 48.165 |
| 32) trans-1,2-Dichloroethene | (2) | 3.938 | 96 | 237920 | 48.237 |
| 34) n-Hexane | (2) | 4.320 | 57 | 340478 | 48.808 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 406301 | 48.228 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 739433 | 49.154 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.674 | 53 | 346295 | 47.063 |
| 40) Ethyl t-butyl ether | (2) | 5.176 | 59 | 718829 | 47.040 |
| 44) 2-Butanone | (2) | 5.381 | 43 | 360608 | 102.958 |
| 42) cis-1,2-Dichloroethene | (2) | 5.414 | 96 | 276645 | 49.308 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 311597 | 42.912 |
| 47) Propionitrile | (1) | 5.465 | 54 | 273503 | 311.554 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 380607 | 128.891 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 153430 | 51.767 |
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 100050 | 119.998 |

* = Compound is an internal standard.



Digitally signed by Kevin Kelly
on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05c10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:08 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 20:28 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.918 | 83 | 423470 | 49.428 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 282337 | 49.200 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 288225 | 49.044 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 369162 | 43.503 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 514565 | 97.546 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 400504 | 48.282 |
| 54) Cyclohexane | (2) | 6.246 | 84 | 355065 | 48.962 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 125756 | 48.576 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 282235 | 43.502 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 325921 | 48.526 |
| 58) Isobutyl Alcohol | (1) | 6.529 | 41 | 179139 | 763.921 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 70016 | 50.251 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 319562 | 49.276 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 104 | 44884 | 50.205 |
| 60) Benzene | (2) | 6.632 | 78 | 987760 | 49.963 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 337299 | 48.214 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 33610 | 49.200 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 754539 | 47.853 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1127775 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 371548 | 51.394 |
| 69) n-Butanol | (1) | 7.430 | 56 | 301139 | 1559.552 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 264363 | 49.535 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 463463 | 53.010 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 214755 | 51.980 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 258628 | 50.668 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 51827M | 855.319 |
| 76) Methyl Methacrylate | (2) | 7.976 | 69 | 245483 | 51.479 |
| 74) Dibromomethane | (2) | 7.996 | 93 | 185826 | 51.212 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 315916 | 47.879 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 115537 | 60.915 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 208500 | 52.575 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 402501 | 48.443 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 803045 | 109.781 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1123250 | 49.692 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 733842 | 49.408 |
| 88) Toluene | (3) | 9.227 | 92 | 652236 | 49.390 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 364111 | 46.905 |
| 91) Ethyl Methacrylate | (3) | 9.597 | 69 | 432404 | 51.409 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05c10.d  Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:08  Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 20:28 kk10002

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 265178 | 51.581 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 284471 | 48.542 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 427840 | 51.034 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 601495 | 110.162 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 766612 | 95.348 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 267745 | 47.257 |
| 99) 1,2-Dibromoethane | (3) | 10.256 | 107 | 295503 | 51.218 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 907883 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.729 | 91 | 366780 | 48.171 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 773515 | 50.207 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 261128 | 48.305 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1288952 | 50.728 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 1040320 | 102.028 |
| 107) o-Xylene | (3) | 11.288 | 106 | 524040 | 51.050 |
| 109) Styrene | (3) | 11.307 | 104 | 879882 | 51.447 |
| 110) Bromoform | (3) | 11.468 | 173 | 187007 | 43.981 |
| 111) Isopropylbenzene | (3) | 11.600 | 105 | 1323364 | 51.454 |
| 112) Cyclohexanone | (1) | 11.667 | 55 | 163597 | 698.256 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 427761 | 49.498 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 174 | 364010 | 48.626 |
| 108) Xylene (Total) | (3) | | 106 | 1564360 | 153.077 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 445318 | 52.447 |
| 115) Bromobenzene | (4) | 11.857 | 156 | 358480 | 50.358 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 229039 | 102.617 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 134717 | 52.147 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 1545374 | 51.877 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 324397 | 50.262 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 1156629 | 51.505 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 339947 | 50.434 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 266063 | 55.087 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 194775 | 47.804 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 1191120 | 51.531 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 1469175 | 52.726 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 678909 | 50.464 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1308009 | 52.842 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 497842 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 715349 | 51.491 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 1266863 | 52.615 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05c10.d  Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:08  Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 20:28 kk10002

Sample Name: VSTD050  Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 754578 | 44.004 |
| 136) 1,3-Diethylbenzene | (4) | 12.796 | 119 | 774133 | 51.525 |
| 137) 1,4-Diethylbenzene | (4) | 12.870 | 119 | 806049 | 51.441 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 642313 | 52.958 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 679592 | 50.844 |
| 140) 1,2-Diethylbenzene | (4) | 12.937 | 119 | 642997 | 51.366 |
| 141) Diethylbenzene (total) | (4) | | 100 | 2223179 | 154.332 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 89737 | 48.507 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 488938 | 48.115 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.005 | 180 | 474927 | 47.102 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 183503 | 42.606 |
| 148) Naphthalene | (4) | 14.185 | 128 | 1604120 | 50.370 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 449549 | 46.476 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 965319 | 44.975 |



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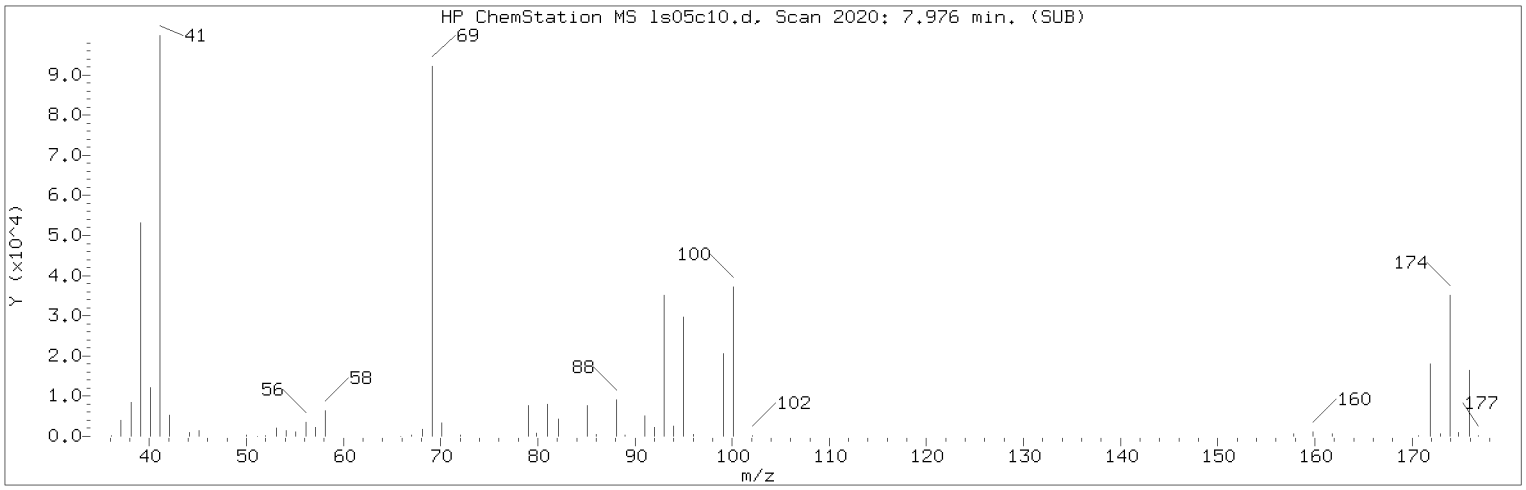
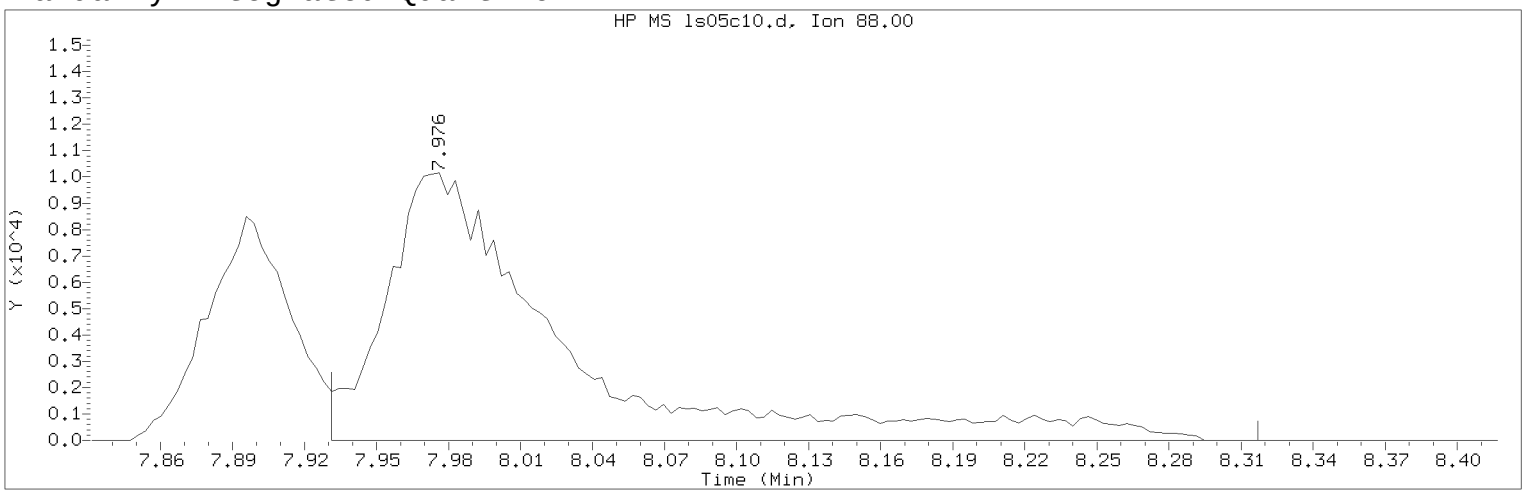
on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17sep05c.b/ls05c10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:08 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 20:28 kk10002

Sample Name: VSTD050 Lab Sample ID: VSTD050

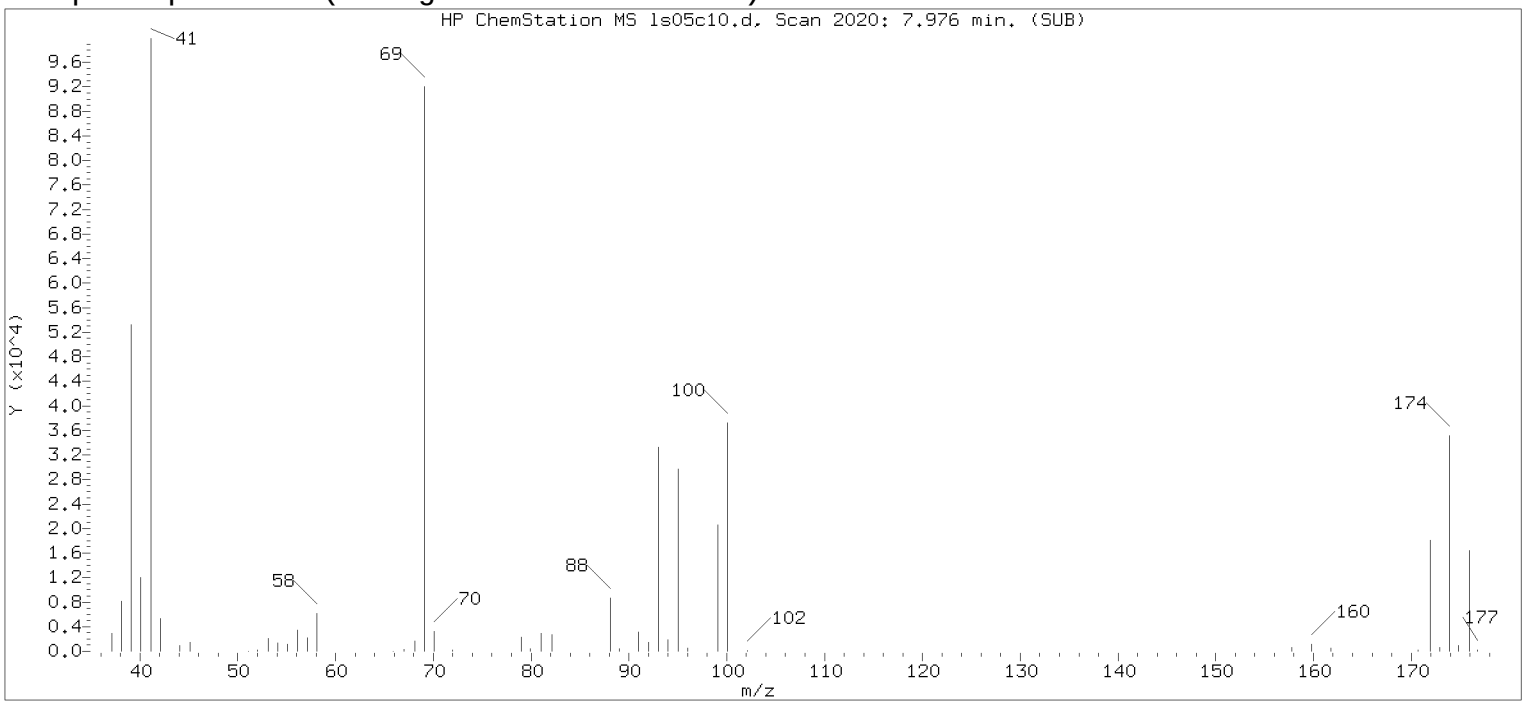
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 51827M
On-Column Amount (ng) : 855.3191
Integration start scan : 2005 Integration stop scan: 2125
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

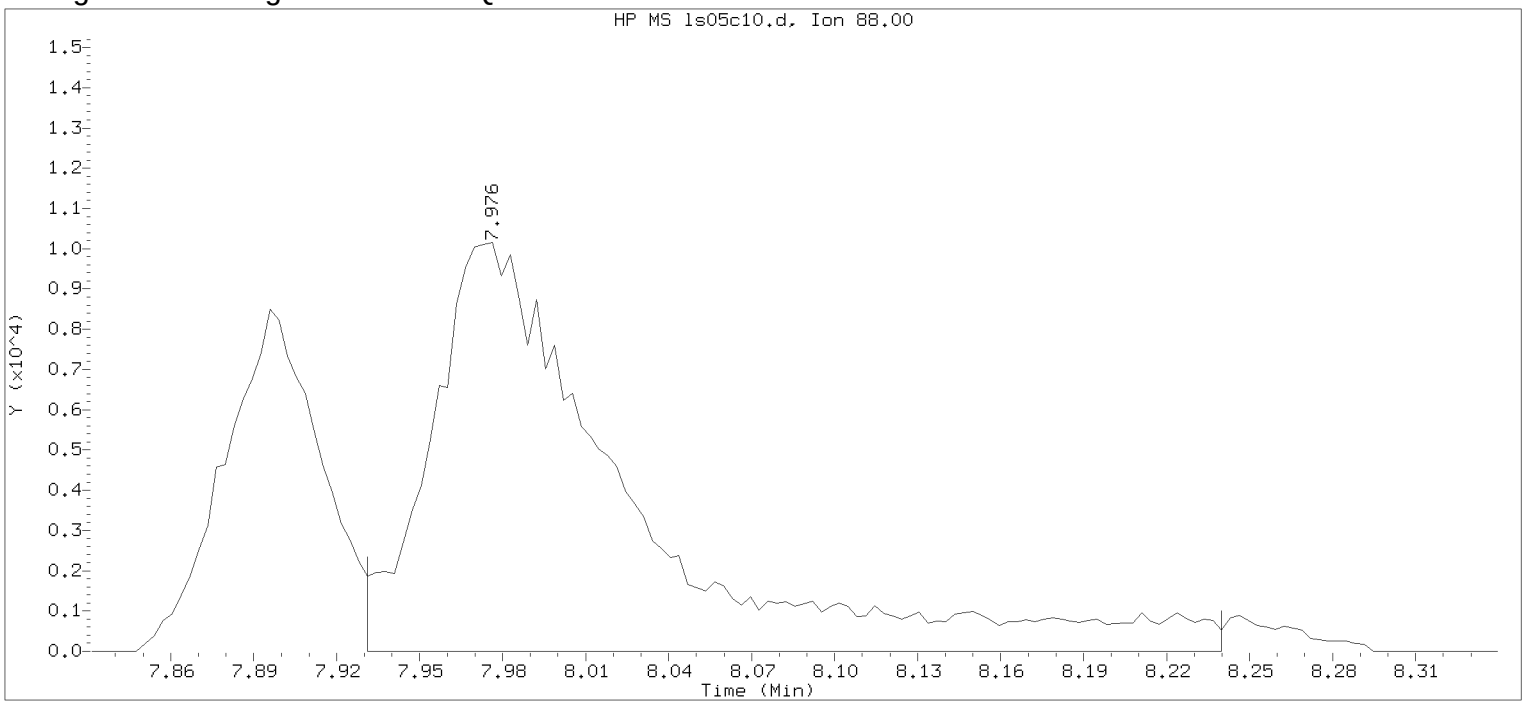
Analyst responsible for change: Digitally signed by Kevin Kelly
on 09/05/2017 at 20:28.
Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17sep05c.b/ls05c10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:08 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 20:26 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area : 50104
On-column Amount (ng) : 826.8774
Integration start scan : 2005 Integration stop scan: 2101
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin Kelly on 09/05/2017 at 20:28.
Target 3.5 esignature userKK194kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep05c.b/ls05ec8.d Injection date and time: **06-SEP-2017 01:51**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 06-Sep-2017 02:09 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.003) | 653 | 65 | 179597 ( -3) | 250.00 | |
| 66) Fluorobenzene | 7.053(-0.003) | 1733 | 96 | 1139496 ( 1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 909488 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 496414 ( 0) | 50.00 | |

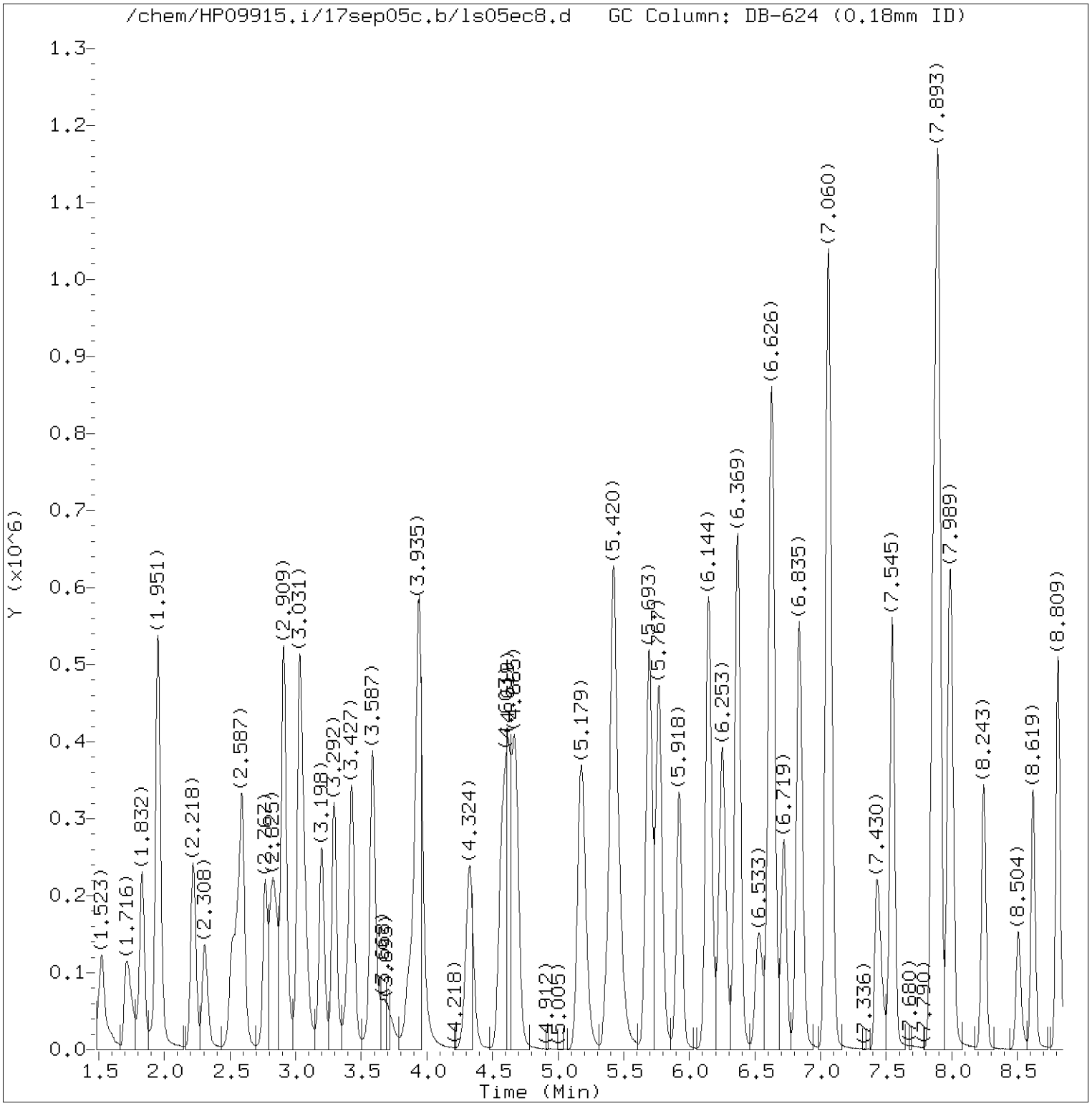
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 283638 | 48.919 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 70483 | 50.066 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1134561 | 50.104 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 427825 | 49.418 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.632( 0.000) | 78 | 971527 | 48.637 | 48.64 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227(-0.000) | 92 | 639078 | 48.308 | 48.31 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831(-0.000) | 91 | 1258545 | 49.444 | 49.44 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954(-0.000) | 106 | 1017993 | 99.662 | 99.66 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288( 0.000) | 106 | 508932 | 49.490 | 49.49 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 1526925 | 149.152 | 149.15 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:24. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

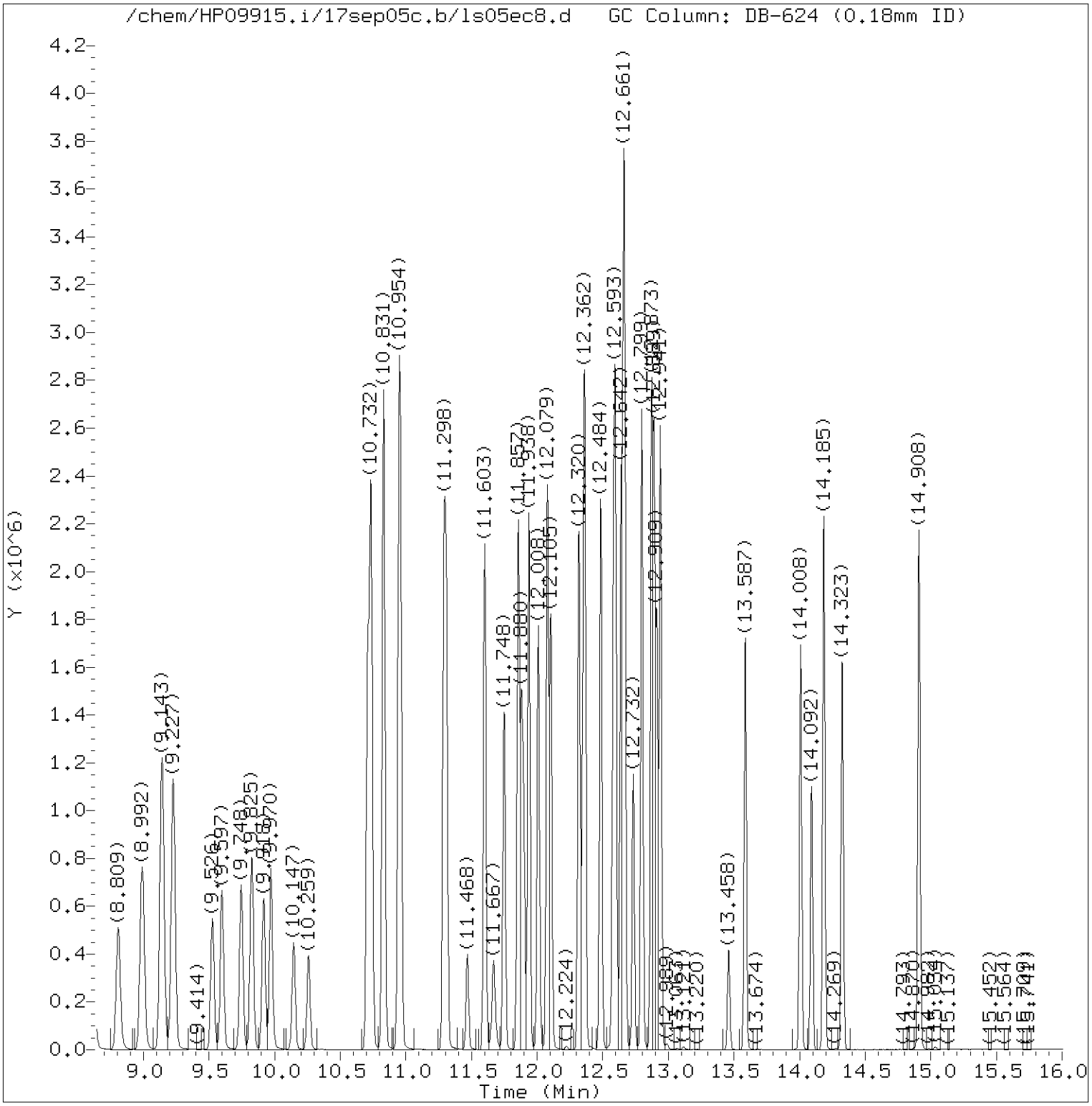
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05ec8.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:51 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 02:09 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:24.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05ec8.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:51 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 02:09 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:24.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05ec8.d Instrument ID: HP09915.i
Injection date and time: 06-SEP-2017 01:51 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 06-Sep-2017 02:09 Automation

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 179597 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 283638 | 48.919 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 70483 | 50.066 |
| 60) Benzene | (2) | 6.632 | 78 | 971527 | 48.637 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1139496 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1134561 | 50.104 |
| 88) Toluene | (3) | 9.227 | 92 | 639078 | 48.308 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 909488 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1258545 | 49.444 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 1017993 | 99.662 |
| 107) o-Xylene | (3) | 11.288 | 106 | 508932 | 49.490 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 427825 | 49.418 |
| 108) Xylene (Total) | (3) | | 106 | 1526925 | 149.152 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 496414 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:24.
Target 3.5 esignature user ID: jkh09052

# Raw QC Data

# Volatiles by GC/MS

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

VBLKL92

Data file: /chem/HP09915.i/17sep05c.b/ls05b10.d  Injection date and time: **05-SEP-2017 21:14**
Data file Sample Info. Line: VBLKL92;VBLKL92;1;3;;;DODWW;;;  Instrument ID: **HP09915.i**  Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 21:31 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m  Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code:  Matrix: WATER  Level: Low

On-Column Amount units: ng  In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo)  VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml  Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.013) | 650 | 65 | 184160 ( -1) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.003) | 1731 | 96 | 1107427 ( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 880126 ( -3) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 463989 ( -7) | 50.00 | |

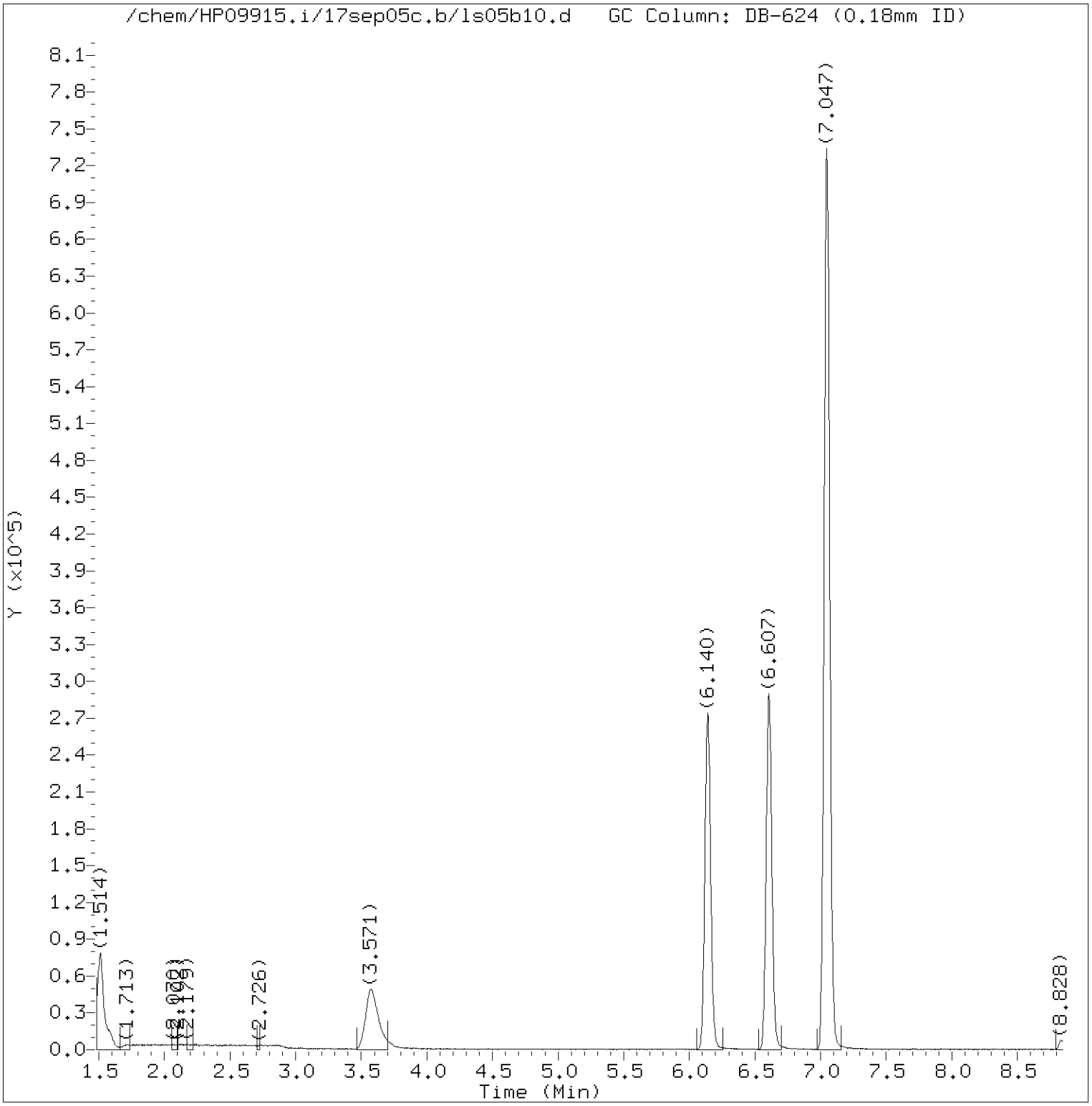
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 271690 | 48.215 | 96% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 68816 | 50.297 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1092670 | 49.864 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 409125 | 48.834 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Kevin Kelly on 09/05/2017 at 21:35. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

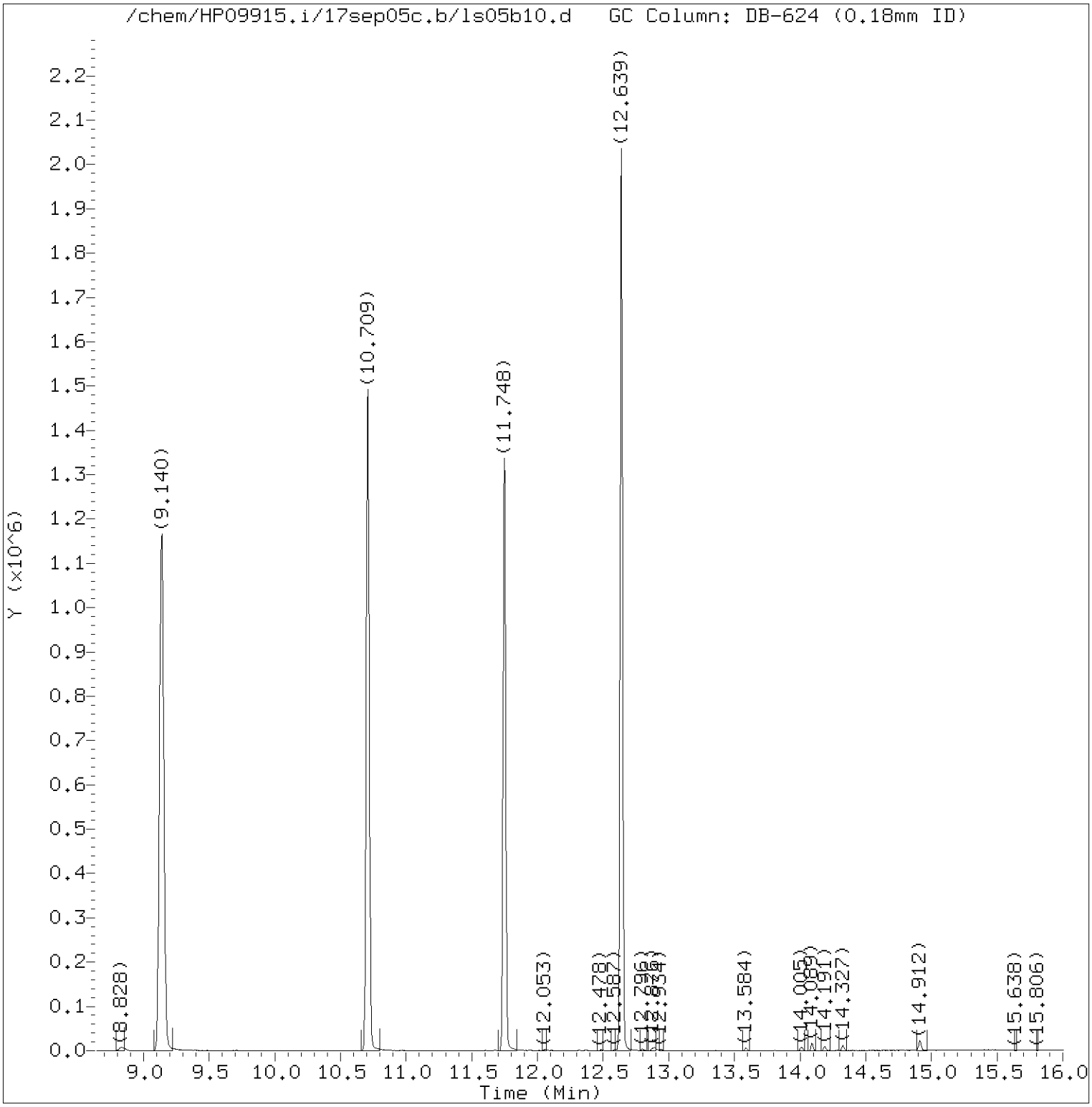
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05b10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 21:14 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:31 Automation

Sample Name: VBLKL92 Lab Sample ID: VBLKL92

Digitally signed by Kevin Kelly
on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05b10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 21:14 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:31 Automation

Sample Name: VBLKL92 Lab Sample ID: VBLKL92

Digitally signed by Kevin Kelly
on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05b10.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 21:14 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:31 Automation

Sample Name: VBLKL92 Lab Sample ID: VBLKL92

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 184160 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 271690 | 48.215 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 68816 | 50.297 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1107427 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1092670 | 49.864 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 880126 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 409125 | 48.834 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 463989 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002

KEFF2MS

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9175053MS

Data file: /chem/HP09915.i/17sep05c.b/ls05s66.d Injection date and time: **05-SEP-2017 22:55**
Data file Sample Info. Line: KEFF2MS;9175053MS;1;3;MS;KR194;DODWW;;ls05b10 Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 23:13 Automation

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.003) | 653 | 65 | 181865 ( -2) | 250.00 | |
| 66) Fluorobenzene | 7.053(-0.003) | 1733 | 96 | 1146969 ( 2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 911580 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 492927 ( -1) | 50.00 | |

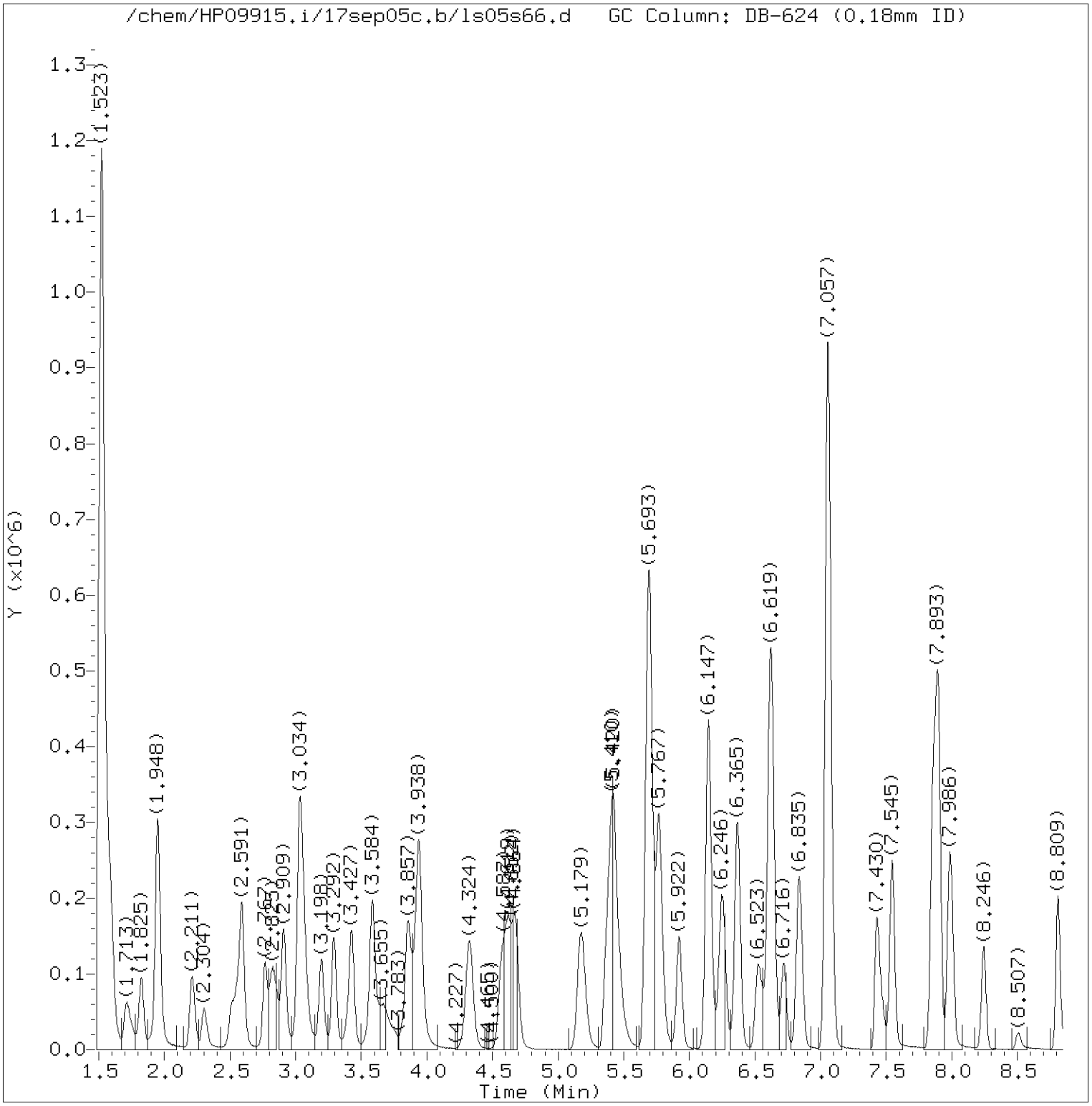
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.147( 0.000) | 113 | 281996 | 48.319 | 97% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.606( 0.001) | 102 | 69822 | 49.274 | 99% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1141072 | 50.276 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 424762 | 48.951 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.632( 0.000) | 78 | 431492 | 21.461 | 21.46 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227(-0.000) | 92 | 281356 | 21.219 | 21.22 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831(-0.000) | 91 | 545238 | 21.371 | 21.37 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954(-0.000) | 106 | 437079 | 42.692 | 42.69 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288(-0.000) | 106 | 211820 | 20.551 | 20.55 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 648899 | 63.243 | 63.24 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:00. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

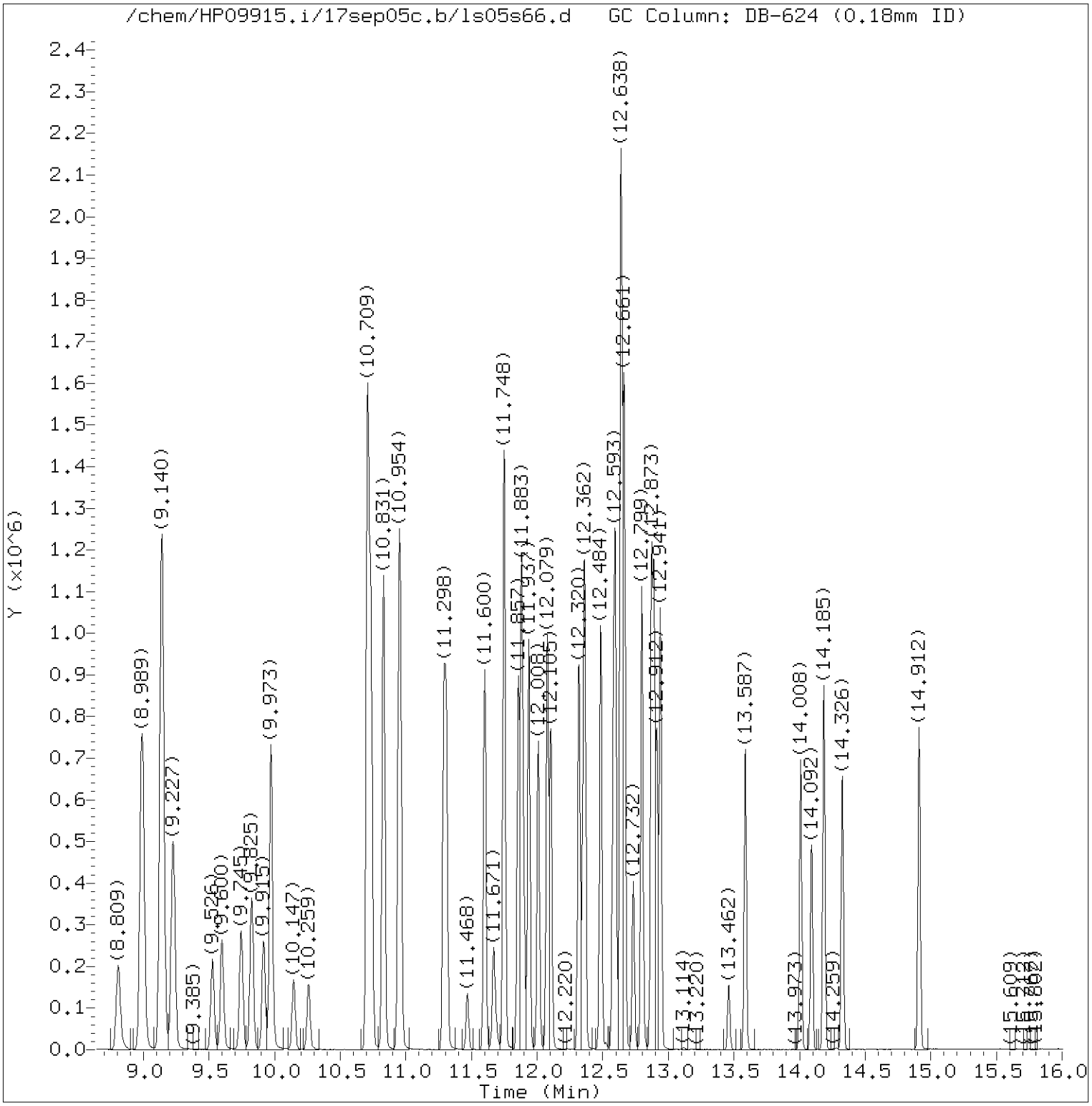
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s66.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:55 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:13 Automation

Sample Name: KEFF2MS Lab Sample ID: 9175053MS

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s66.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:55 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:13 Automation

Sample Name: KEFF2MS Lab Sample ID: 9175053MS

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s66.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 22:55 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:13 Automation

Sample Name: KEFF2MS Lab Sample ID: 9175053MS

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 181865 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 281996 | 48.319 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 69822 | 49.274 |
| 60) Benzene | (2) | 6.632 | 78 | 431492 | 21.461 |
| 66)*Fluorobenzene | (2) | 7.053 | 96 | 1146969 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1141072 | 50.276 |
| 88) Toluene | (3) | 9.227 | 92 | 281356 | 21.219 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 911580 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 545238 | 21.371 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 437079 | 42.692 |
| 107) o-Xylene | (3) | 11.288 | 106 | 211820 | 20.551 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 424762 | 48.951 |
| 108) Xylene (Total) | (3) | | 106 | 648899 | 63.243 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 492927 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:00.
Target 3.5 esignature user ID: jkh09052

KEFF2MSD

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9175054MSD

Data file: /chem/HP09915.i/17sep05c.b/ls05s67.d Injection date and time: **05-SEP-2017 23:17**
Data file Sample Info. Line: KEFF2MSD;9175054MSD;1;3;MSD;KR194;DODWW;;ls05 Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 23:35 Automation

Blank Data file reference: **Does not exist or can't be found**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.578( 0.006) | 652 | 65 | 189241 ( 2) | 250.00 | |
| 66) Fluorobenzene | 7.050( 0.000) | 1732 | 96 | 1139412 ( 1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709( 0.000) | 2870 | 117 | 906977 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 494916 ( -1) | 50.00 | |

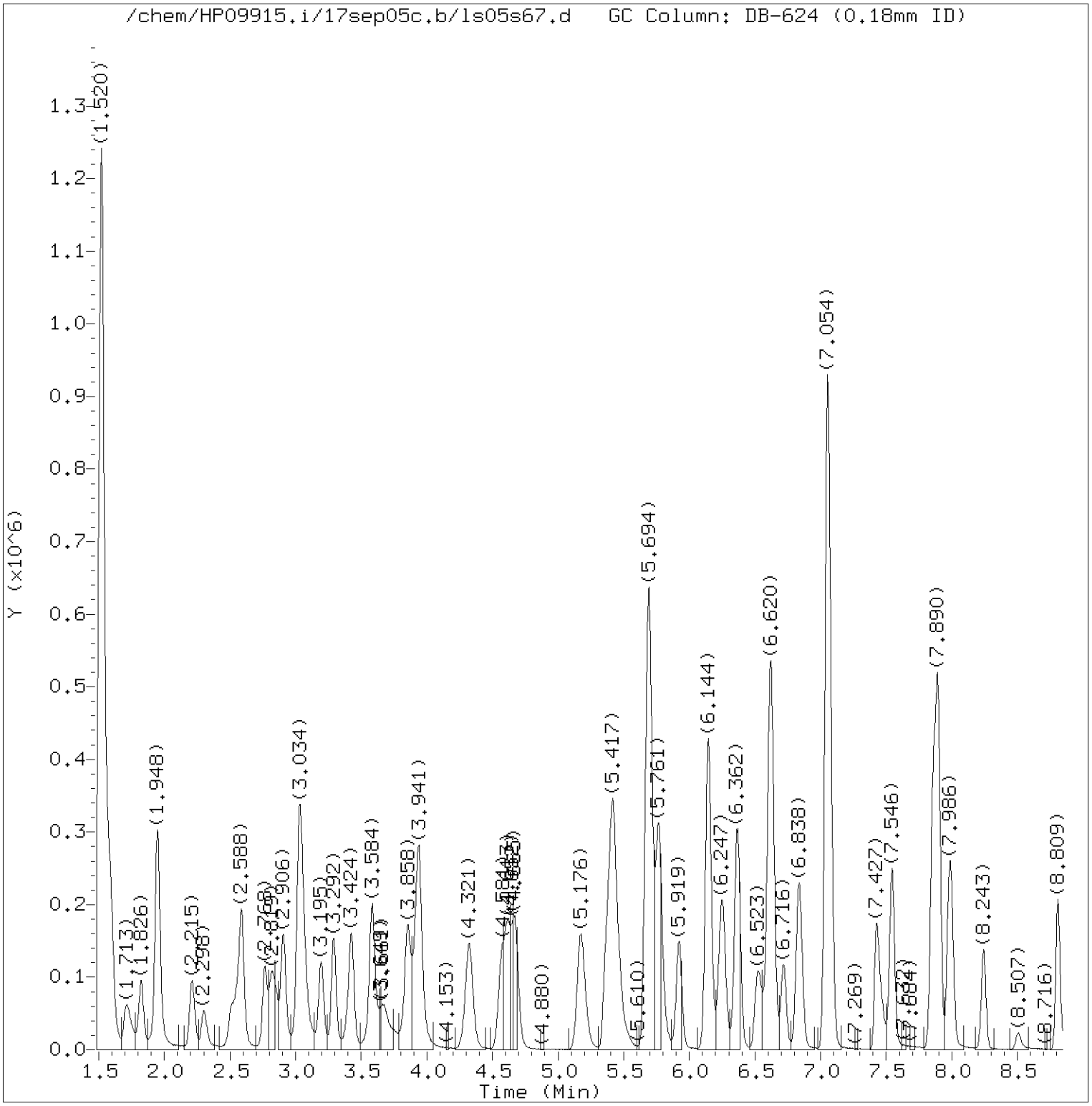
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 281634 | 48.577 | 97% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 70251 | 49.905 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.140( 0.000) | 98 | 1134764 | 50.251 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 427426 | 49.508 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.629( 0.000) | 78 | 441579 | 22.108 | 22.11 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227(-0.000) | 92 | 285788 | 21.662 | 21.66 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.832( 0.000) | 91 | 553272 | 21.796 | 21.80 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.950( 0.000) | 106 | 445816 | 43.766 | 43.77 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.291(-0.000) | 106 | 215758 | 21.039 | 21.04 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 661574 | 64.806 | 64.81 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Jennifer K. Howe on 09/06/2017 at 10:01. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

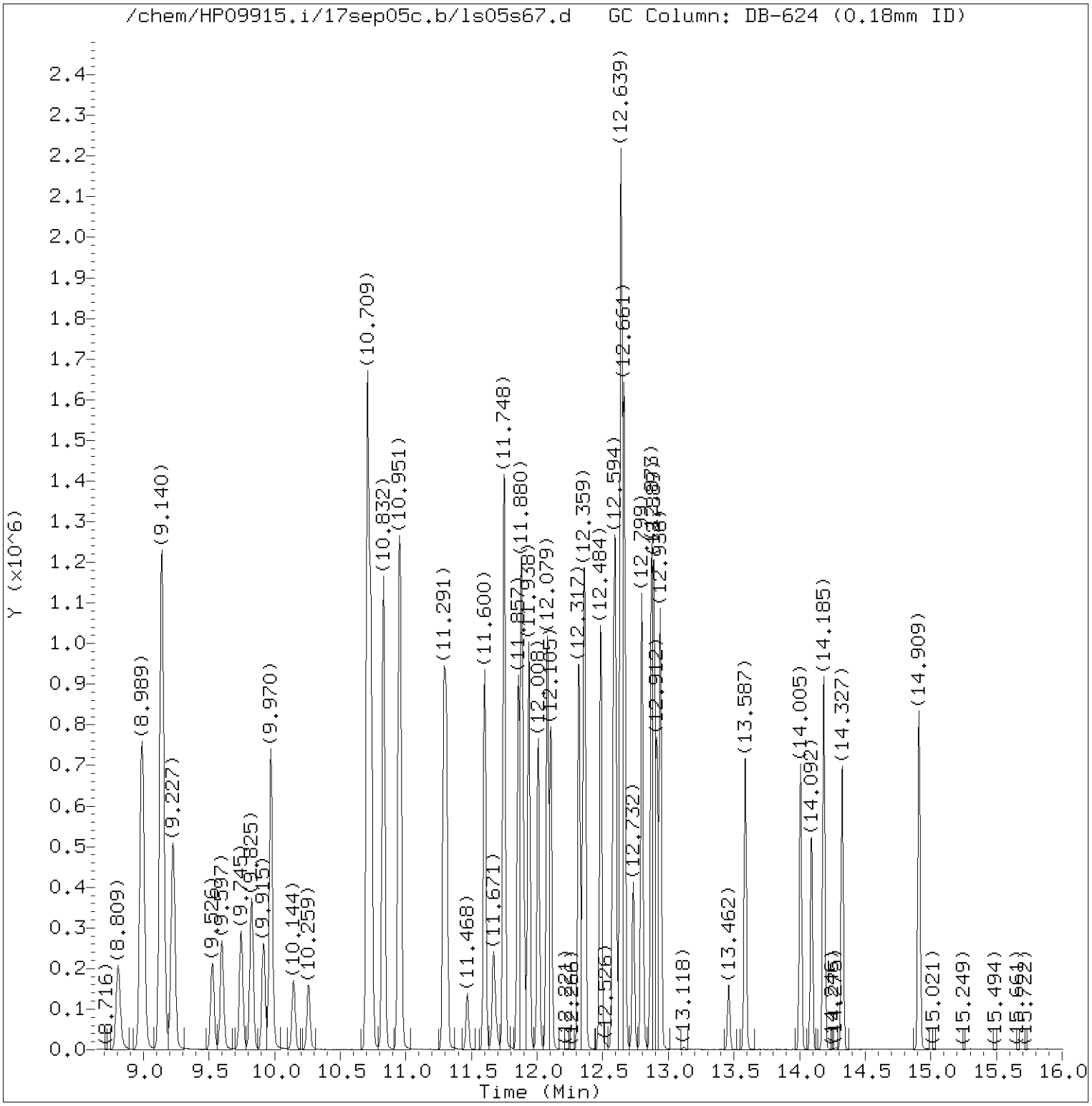
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s67.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 23:17 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:35 Automation

Sample Name: KEFF2MSD Lab Sample ID: 9175054MSD

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s67.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 23:17 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:35 Automation

Sample Name: KEFF2MSD Lab Sample ID: 9175054MSD

Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s67.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 23:17 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 23:35 Automation

Sample Name: KEFF2MSD Lab Sample ID: 9175054MSD

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 189241 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 281634 | 48.577 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 70251 | 49.905 |
| 60) Benzene | (2) | 6.629 | 78 | 441579 | 22.108 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1139412 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1134764 | 50.251 |
| 88) Toluene | (3) | 9.227 | 92 | 285788 | 21.662 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 906977 | 50.000 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 553272 | 21.796 |
| 106) m+p-Xylene | (3) | 10.951 | 106 | 445816 | 43.766 |
| 107) o-Xylene | (3) | 11.291 | 106 | 215758 | 21.039 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 427426 | 49.508 |
| 108) Xylene (Total) | (3) | | 106 | 661574 | 64.806 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 494916 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Jennifer K. Howe
on 09/06/2017 at 10:01.
Target 3.5 esignature user ID: jkh09052

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep05c.b/ls05s61.d Injection date and time: **05-SEP-2017 20:30**
Data file Sample Info. Line: LCSL92;LCSL92;1;3;LCS;;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 21:34 kk10002

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.581( 0.003) | 653 | 65 | 186853 ( 1) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.003) | 1731 | 96 | 1148316 ( 2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.003) | 2869 | 117 | 910753 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 500662 ( 1) | 50.00 | |

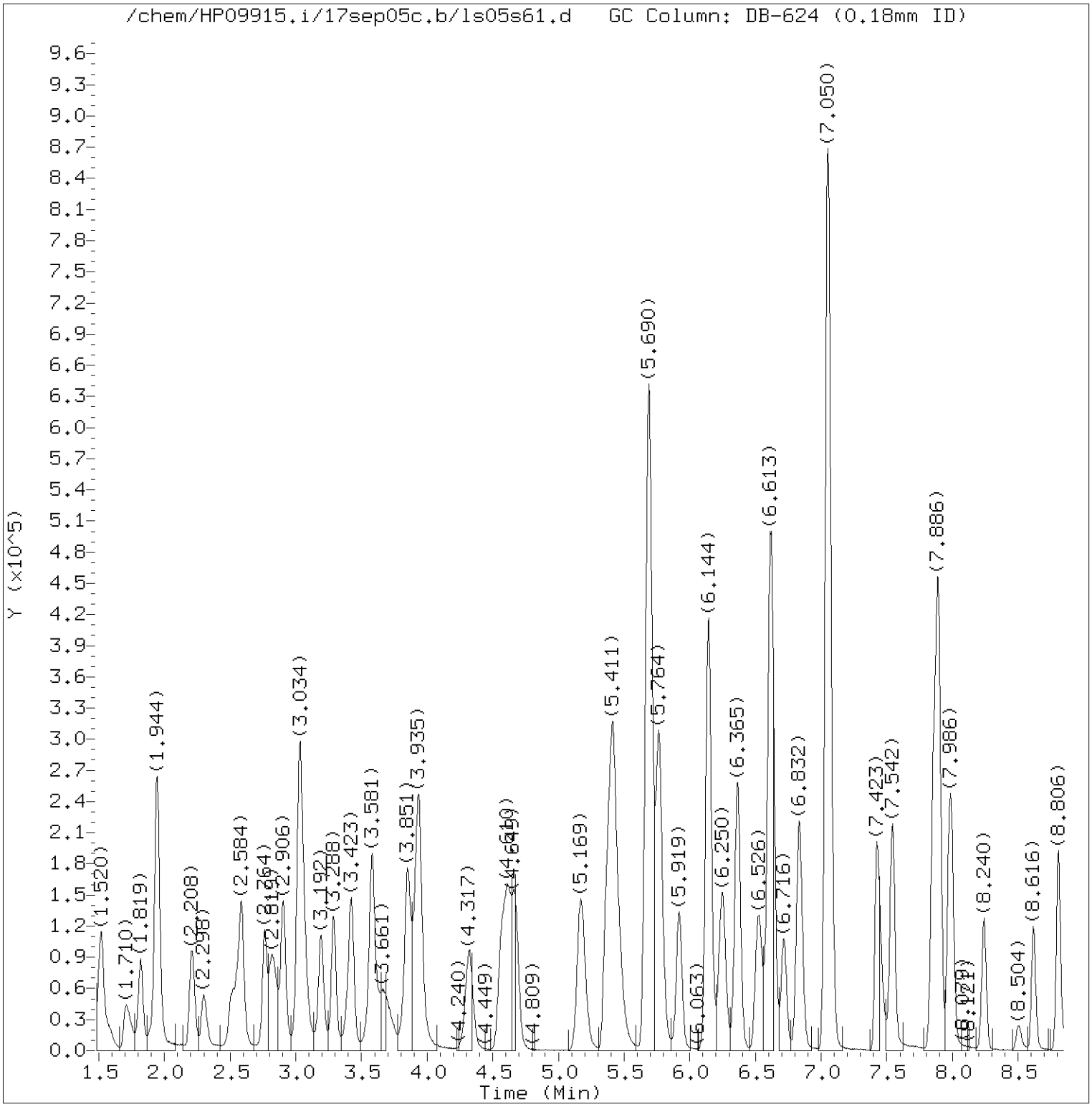
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144( 0.000) | 113 | 285315 | 48.830 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 71276 | 50.240 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1144317 | 50.464 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 432308 | 49.866 | 100% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.632(-0.000) | 78 | 383245 | 19.039 | 19.04 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.227(-0.000) | 92 | 247844 | 18.708 | 18.71 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.832(-0.000) | 91 | 481078 | 18.874 | 18.87 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954(-0.000) | 106 | 389440 | 38.073 | 38.07 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288(-0.000) | 106 | 189315 | 18.384 | 18.38 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 578755 | 56.457 | 56.46 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Kevin Kelly on 09/05/2017 at 21:35. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

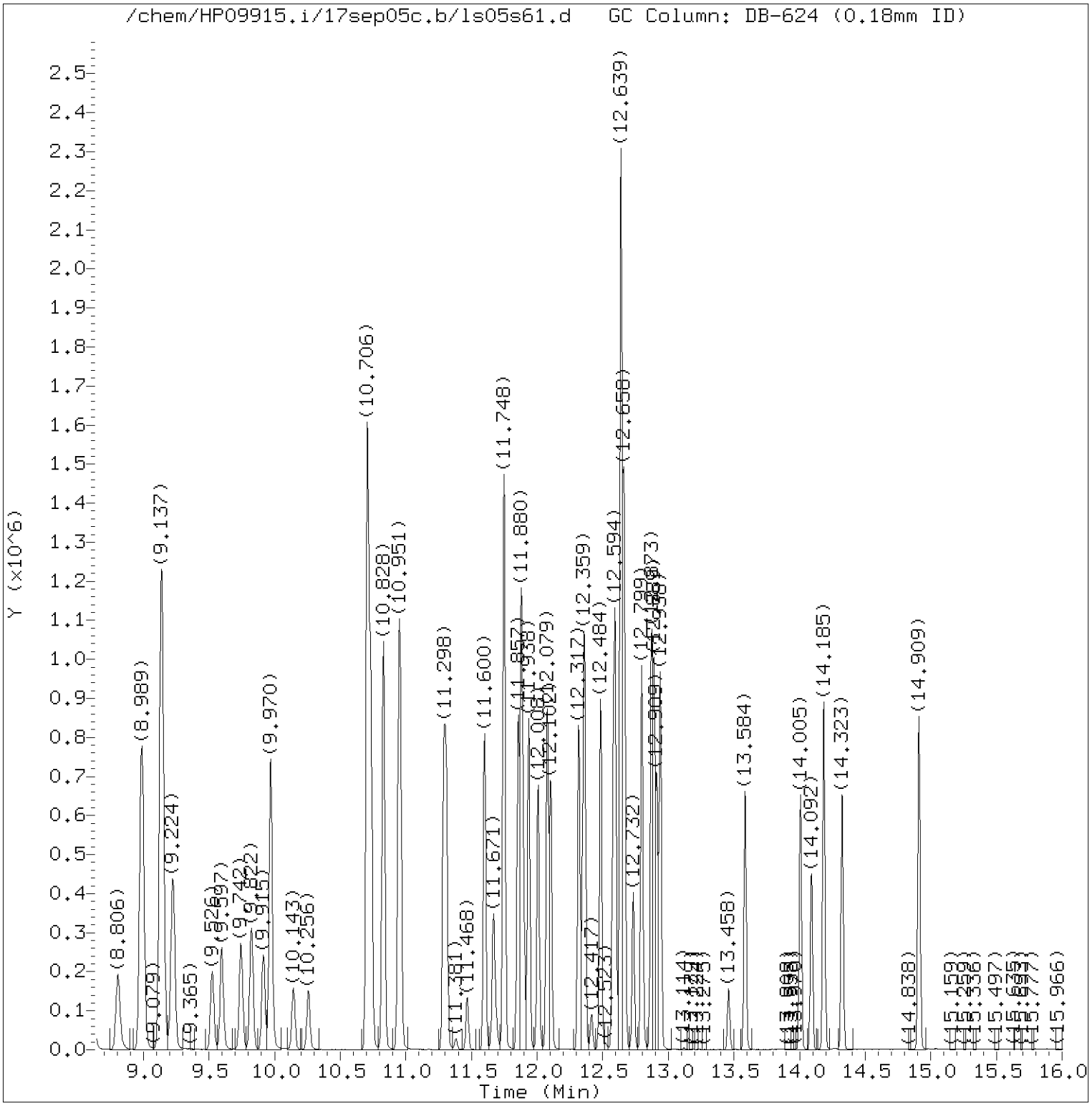
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s61.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:34 kk10002

Sample Name: LCSL92 Lab Sample ID: LCSL92

Digitally signed by Kevin Kelly
on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s61.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:34 kk10002

Sample Name: LCSL92 Lab Sample ID: LCSL92

Digitally signed by Kevin Kelly
on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s61.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:30 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:34 kk10002

Sample Name: LCSL92 Lab Sample ID: LCSL92

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 186853 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 285315 | 48.830 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 71276 | 50.240 |
| 60) Benzene | (2) | 6.632 | 78 | 383245 | 19.039 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1148316 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1144317 | 50.464 |
| 88) Toluene | (3) | 9.227 | 92 | 247844 | 18.708 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 910753 | 50.000 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 481078 | 18.874 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 389440 | 38.073 |
| 107) o-Xylene | (3) | 11.288 | 106 | 189315 | 18.384 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 432308 | 49.866 |
| 108) Xylene (Total) | (3) | | 106 | 578755 | 56.457 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 500662 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep05c.b/ls05s62.d Injection date and time: **05-SEP-2017 20:52**
Data file Sample Info. Line: LCDL92;LCDL92;1;3;LCSD;;DODWW;;ls05b10; Instrument ID: **HP09915.i** Batch: **L172483AA**
Date, time and analyst ID of latest file update: 05-Sep-2017 21:34 kk10002

Blank Data file reference: **/chem/HP09915.i/17sep05c.b/ls05b10.d**

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 05-SEP-2017 20:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep05c.b/ls05c10.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.578( 0.006) | 652 | 65 | 180081 ( -3) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.003) | 1731 | 96 | 1143853 ( 1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.003) | 2869 | 117 | 908485 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 492549 ( -1) | 50.00 | |

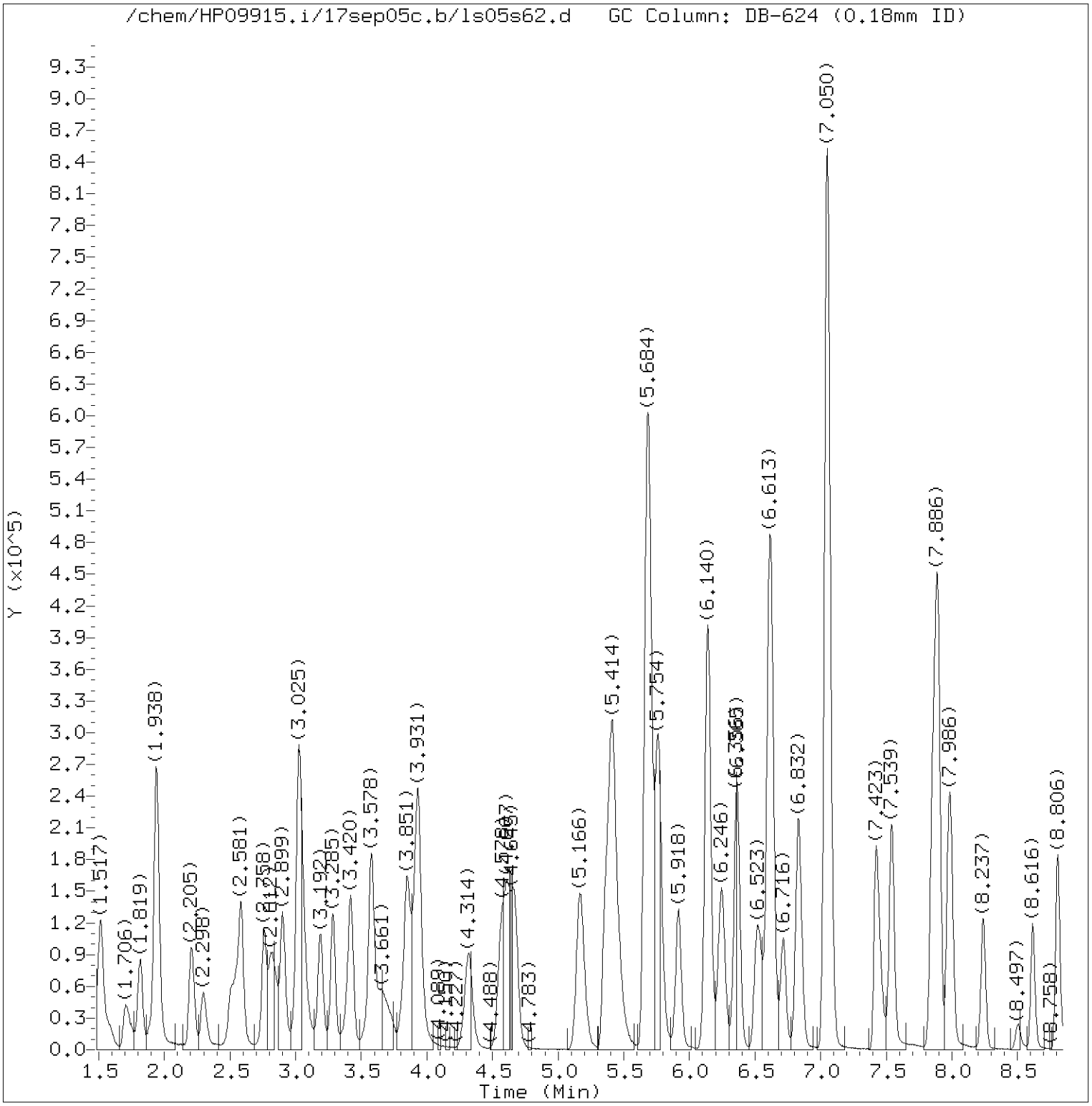
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 285408 | 49.036 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 70683 | 50.017 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1134574 | 50.160 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 428550 | 49.556 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.629( 0.000) | 78 | 383588 | 19.130 | 19.13 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.224( 0.000) | 92 | 248788 | 18.827 | 18.83 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.831(-0.000) | 91 | 483737 | 19.025 | 19.03 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954(-0.000) | 106 | 390317 | 38.254 | 38.25 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288(-0.000) | 106 | 191711 | 18.663 | 18.66 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 582028 | 56.918 | 56.92 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Kevin Kelly on 09/05/2017 at 21:35. Target 3.5 esignature user ID: kk10002

Secondary review performed and digitally signed by Joshua E. Berrios on 09/06/2017 at 21:18. PARALLAX ID: jeb12641




Total Ion Chromatogram (TIC)

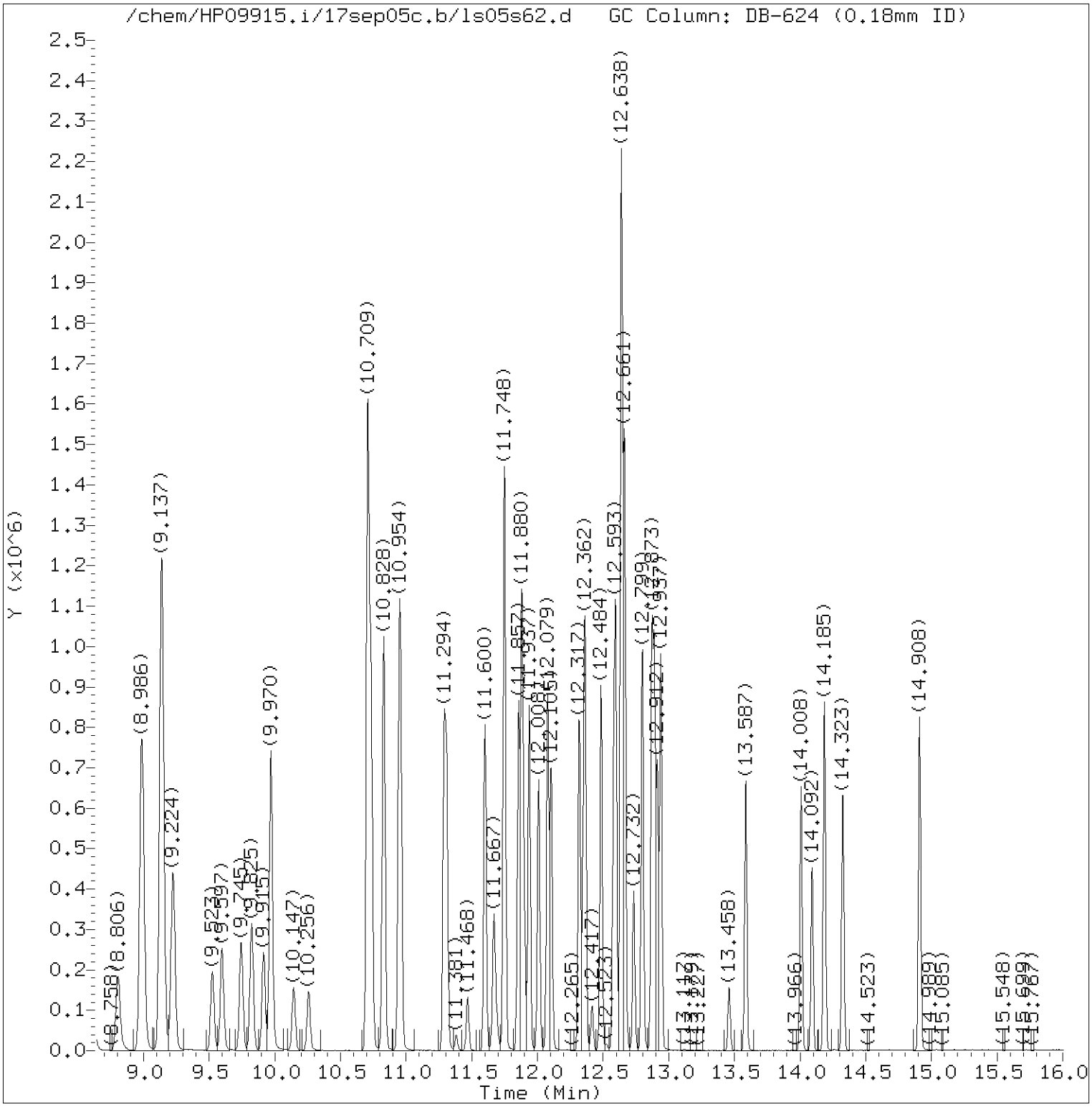
Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s62.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:52 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:34 kk10002

Sample Name: LCDL92 Lab Sample ID: LCDL92

Digitally signed by Kevin Kelly
on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s62.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:52 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:34 kk10002

Sample Name: LCDL92 Lab Sample ID: LCDL92

Digitally signed by Kevin Kelly
on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep05c.b/ls05s62.d Instrument ID: HP09915.i
Injection date and time: 05-SEP-2017 20:52 Analyst ID: kk10002

Method used: /chem/HP09915.i/17sep05c.b/m8260c5.m Sublist used: 17639
Calibration date and time: 05-SEP-2017 20:26
Date, time and analyst ID of latest file update: 05-Sep-2017 21:34 kk10002

Sample Name: LCDL92 Lab Sample ID: LCDL92

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 180081 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 285408 | 49.036 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 70683 | 50.017 |
| 60) Benzene | (2) | 6.629 | 78 | 383588 | 19.130 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1143853 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1134574 | 50.160 |
| 88) Toluene | (3) | 9.224 | 92 | 248788 | 18.827 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 908485 | 50.000 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 483737 | 19.025 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 390317 | 38.254 |
| 107) o-Xylene | (3) | 11.288 | 106 | 191711 | 18.663 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 428550 | 49.556 |
| 108) Xylene (Total) | (3) | | 106 | 582028 | 56.918 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 492549 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin Kelly
on 09/05/2017 at 21:35.
Target 3.5 esignature user ID: kk10002

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR194**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9175047 | GWTS-EFF1-082417 | X | | 1 | |
| 9175048 | GWTS-GAC1-082417 | X | | 1 | |
| 9175049 | GWTS-INF1-082417 | X | | 1 | |
| 9175050 | GWTS-TB01-082417 | X | | 1 | Trip Blank |
| 9175051 | GWTS-FB01-082417 | X | | 1 | Field Blank |
| 9175052 | GWTS-EFF2-082417 | X | | 1 | Unspiked |
| 9175053 | GWTS-EFF2-082417 MS | X | | 1 | Matrix Spike |
| 9175054 | GWTS-EFF2-082417 MSD | X | | 1 | Matrix Spike Duplicate |
| 9175056 | GWTS-EFF2DUP-082417 | X | | 1 | Field Duplicate Sample |
| 9175057 | GWTS-GAC2-082417 | X | | 1 | |
| 9175058 | GWTS-INF2-082417 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9175047-9175054, 9175056-9175058: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR194**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

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# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR194**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172370044A | PBLK44237 | 08/28/2017 22:33:00 |
| | | LCS44237 | 08/28/2017 22:48:00 |
| | | LCSD44237 | 08/28/2017 23:04:00 |
| | | 9175047 | 08/29/2017 02:57:00 |
| | | 9175048 | 08/29/2017 03:13:00 |
| | | 9175049 | 08/29/2017 03:28:00 |
| | | 9175050 | 08/29/2017 03:44:00 |
| | | 9175051 | 08/29/2017 03:59:00 |
| | | 9175052 UNSPK | 08/29/2017 04:46:00 |
| | | 9175053 MS | 08/29/2017 05:02:00 |
| | | 9175054 MSD | 08/29/2017 05:17:00 |
| | | 9175056 | 08/29/2017 05:33:00 |
| | | 9175057 | 08/29/2017 05:48:00 |
| EDB 8011 Water | 172480013A | PBLK13248 | 09/06/2017 21:46:00 |
| | | LCS13248 | 09/06/2017 22:02:00 |
| | | LCSD13248 | 09/06/2017 22:17:00 |
| | | 9175058 | 09/06/2017 22:33:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR194**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172370044A / PBLK44237<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 08/28/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

| 172480013A / PBLK13248<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 09/06/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR194**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172370044A | 1,1,2,2-Tetrachloroethane-D1 | | 1,1,2,2-Tetrachloroethane-D2 | |
|---|---|---|---|---|
| | Spike Added | 0.0704 ug/l | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits |
| PBLK44237 | 97 | 46 - 136 | 102 | 46 - 136 |
| LCS44237 | 89 | 46 - 136 | 95 | 46 - 136 |
| LCSD44237 | 92 | 46 - 136 | 92 | 46 - 136 |
| 9175047 | 107 | 46 - 136 | 108 | 46 - 136 |
| 9175048 | 101 | 46 - 136 | 103 | 46 - 136 |
| 9175049 | 100 | 46 - 136 | 106 | 46 - 136 |
| 9175050 | 95 | 46 - 136 | 97 | 46 - 136 |
| 9175051 | 101 | 46 - 136 | 104 | 46 - 136 |
| 9175052 UNSPK | 94 | 46 - 136 | 100 | 46 - 136 |
| 9175053 MS | 101 | 46 - 136 | 101 | 46 - 136 |
| 9175054 MSD | 97 | 46 - 136 | 99 | 46 - 136 |
| 9175056 | 93 | 46 - 136 | 99 | 46 - 136 |
| 9175057 | 103 | 46 - 136 | 104 | 46 - 136 |

| 172480013A | 1,1,2,2-Tetrachloroethane-D1 | | 1,1,2,2-Tetrachloroethane-D2 | |
|---|---|---|---|---|
| | Spike Added | 0.0704 ug/l | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits |
| PBLK13248 | 67 | 46 - 136 | 69 | 46 - 136 |
| LCS13248 | 76 | 46 - 136 | 72 | 46 - 136 |
| LCSD13248 | 81 | 46 - 136 | 84 | 46 - 136 |
| 9175058 | 71 | 46 - 136 | 65 | 46 - 136 |

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| UNSPK: 9175052<br>MS: 9175053<br>MSD: 9175054<br>**Analyte** | Batch: **172370044A** (Sample number(s): 9175047-9175054, 9175056-9175057 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.121 | N.D. | 0.140 | 0.140 | 116 | 115 | 60-140 | 0 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR194**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS44237<br>LCSD: LCSD44237 | Batch: **172370044A** (Sample number(s): 9175047-9175054, 9175056-9175057 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.131 | 0.135 | 102 | 105 | 60-140 | 3 | 20 |

| LCS: LCS13248<br>LCSD: LCSD13248 | Batch: **172480013A** (Sample number(s): 9175058 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.128 | 0.139 | 0.135 | 108 | 106 | 60-140 | 3 | 20 |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1724001

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 8/28/2017  8/28/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.02 | 3.08 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.46 | 4.52 |
| 1,2,3-Trichloropropane | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.53 | 4.59 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.85 | 6.91 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1724001

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 8/28/2017  8/28/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 2.19E+04 | 2.14E+04 | 2.02E+04 | 2.04E+04 | 1.96E+04 | 1.96E+04 | 2.05E+04 | 5 |
| 1,1,2,2-TETRACHLOROETHANE | 2.56E+04 | 2.46E+04 | 2.27E+04 | 2.34E+04 | 2.18E+04 | 2.19E+04 | 2.33E+04 | 6 |
| 1,2,3-Trichloropropane | 5.68E+03 | 4.69E+03 | 3.54E+03 | 3.59E+03 | 3.04E+03 | 2.92E+03 | 3.91E+03 | 27 |
| 1,2-DIBROMO-3-CHLOROPROPA | 3.46E+04 | 3.49E+04 | 3.33E+04 | 3.40E+04 | 3.11E+04 | 3.07E+04 | 3.31E+04 | 5 |
| | | | | | | Average % RSD: | | 11 |

Reviewed 3/30/17

File Name: V:\CP16\16edbs1724001.CAL
Version: 9

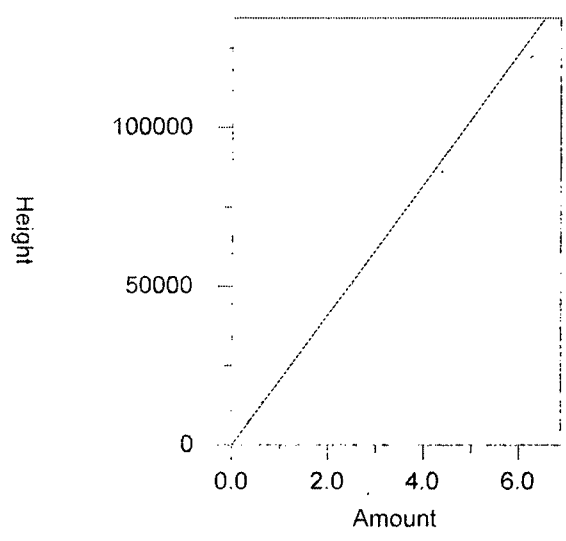
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data.
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.047 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

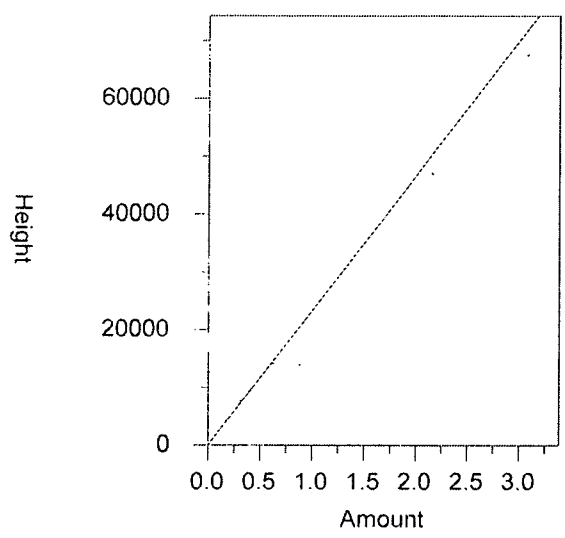
Single peak quantification by height

Y = 20516.79 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9949991
Average error: 3.649%
Average CF: 20516.79
RSD: 4.580%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 7654.087 | 21868.82 | 6.590 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001.0006.B |
| 2 | 0.63 | 13488.69 | 21410.62 | 4.357 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001.0007.B |
| 3 | 1.25 | 25310.81 | 20248.65 | -1.307 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001.0008.B |
| 4 | 2.5 | 50950.57 | 20380.23 | -0.666 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001.0009.B |
| 5 | 4.38 | 85960.52 | 19625.69 | -4.343 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001.0010.B |
| 6 | 6.25 | 122291.9 | 19566.7 | -4.631 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001.0011.B |

2 1,1,2,2-PCA




Expected retention time: 4.491 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

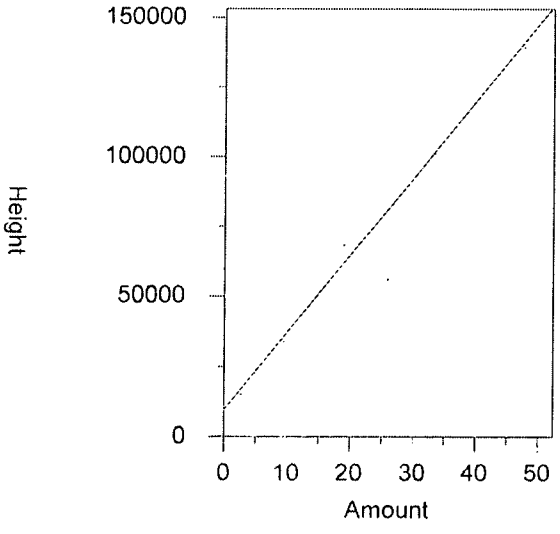
Single peak quantification by height

Y = 23342.04 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9902026
Average error: 5.080%
Average CF: 23342.04
RSD: 6.451%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 4349.991 | 25588.18 | 9.623 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 2 | 0.31 | 7623.145 | 24590.79 | 5.350 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 3 | 0.62 | 14095.77 | 22735.11 | -2.600 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 4 | 1.23 | 28787.57 | 23404.53 | 0.268 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 5 | 2.16 | 47086.19 | 21799.16 | -6.610 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 6 | 3.08 | 67558.09 | 21934.45 | -6.030 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |

3 1,2,3-TCP




Expected retention time: 4.558 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

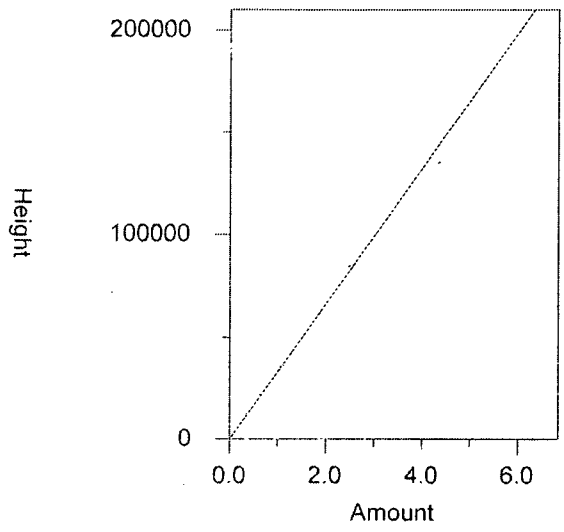
Single peak quantification by height

Y = 2758.427 X + 9574.934

Linear fit with equal weighting
Coefficient of determination: 0.9958453
Average error: 4.929%
Average CF: 3910.53
RSD: 27.338%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 15168.54 | 5681.101 | -10.457 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 2 | 4.76 | 22316.87 | 4688.417 | -1.710 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 3 | 9.53 | 33759.39 | 3542.434 | -5.865 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 4 | 19.05 | 68382.75 | 3589.646 | 10.076 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 5 | 33.34 | 101367 | 3040.402 | -0.171 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 6 | 47.63 | 139135.8 | 2921.18 | -1.293 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.878 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 33098.26 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9876006 |
| Average error: | 4.446% |
| Average CF: | 33098.26 |
| RSD: | 5.422% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 12109.49 | 34598.54 | 4.533 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 2 | 0.62 | 21627.04 | 34882.32 | 5.390 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 3 | 1.24 | 41352.59 | 33348.86 | 0.757 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 4 | 2.49 | 84604.66 | 33977.77 | 2.657 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 5 | 4.35 | 135304 | 31104.37 | -6.024 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |
| 6 | 6.22 | 190815.2 | 30677.69 | -7.313 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0( |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1724001B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 8/28/2017  8/28/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.27 | 4.33 |
| 1,1,2,2-TETRACHLOROETHANE | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.61 | 5.58 | 5.64 |
| 1,2,3-Trichloropropane | 5.73 | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.74 | 5.71 | 5.77 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.89 | 7.95 |

HMM 7C4 9/30/17

6E

# INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Calibration File: 16EDBS1724001B

GC Column (2) : DB CLP2 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 8/28/2017 8/28/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 6.19E+03 | 5.89E+03 | 5.43E+03 | 5.53E+03 | 5.16E+03 | 5.18E+03 | 5.56E+03 | 7 |
| 1,1,2,2-TETRACHLOROETHANE | 8.62E+03 | 8.45E+03 | 7.99E+03 | 8.20E+03 | 7.81E+03 | 7.79E+03 | 8.14E+03 | 4 |
| 1,2,3-Trichloropropane | 2.18E+03 | 1.84E+03 | 1.34E+03 | 1.24E+03 | 1.11E+03 | 1.07E+03 | 1.46E+03 | 31 |
| 1,2-DIBROMO-3-CHLOROPROPA | 1.43E+04 | 1.40E+04 | 1.29E+04 | 1.29E+04 | 1.17E+04 | 1.15E+04 | 1.29E+04 | 9 |
| | | | | | | Average % RSD: | | 13 |

liner HWM 2648 9130117

File Name: V:\CP16\16edbs1724001b.CAL
Version: 8

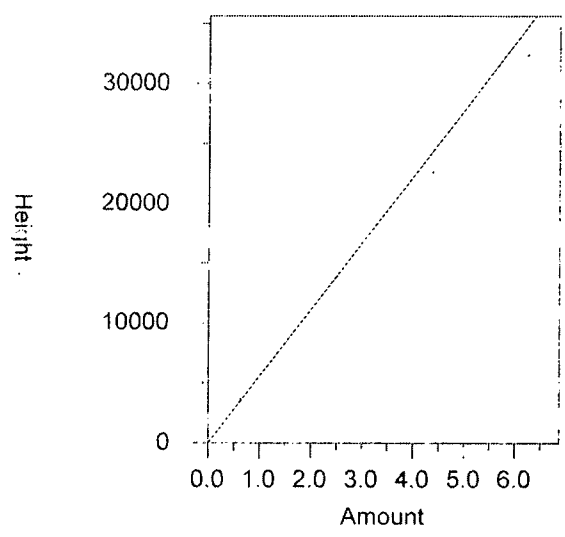
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 4.302 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

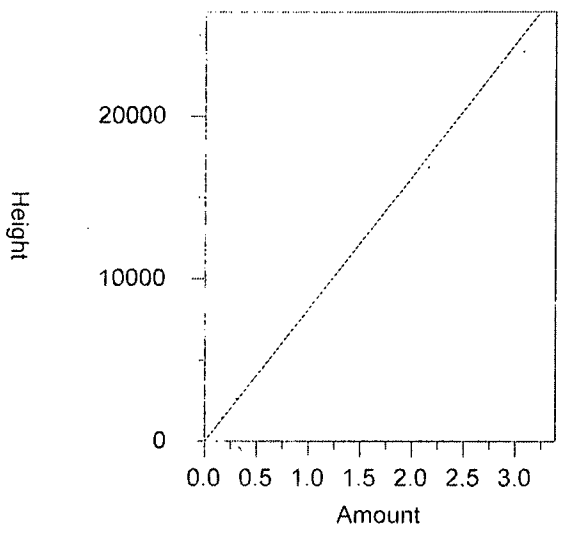
Single peak quantification by height

$Y = 5564.589\ X + 0$

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9873688
Average error: 5.735%
Average CF: 5564.589
RSD: 7.338%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 2168.129 | 6194.654 | 11.323 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001B.0006 |
| 2 | 0.63 | 3711.895 | 5891.897 | 5.882 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001B.0007 |
| 3 | 1.25 | 6784.271 | 5427.417 | -2.465 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001B.0008 |
| 4 | 2.5 | 13827.44 | 5530.976 | -0.604 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001B.0009 |
| 5 | 4.38 | 22597.73 | 5159.299 | -7.283 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001B.0010 |
| 6 | 6.25 | 32395.57 | 5183.291 | -6.852 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724001B.0011 |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.611 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

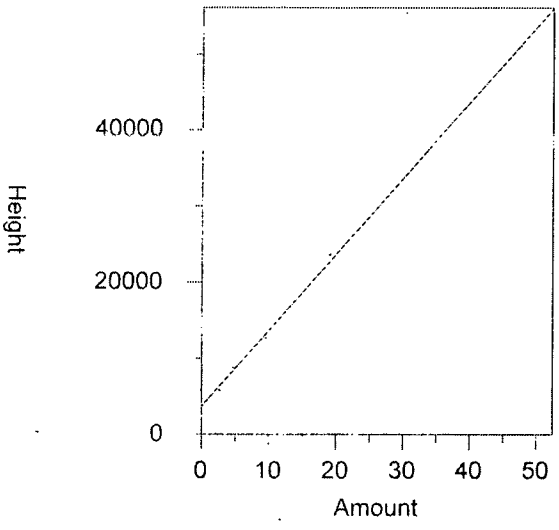
Y = 8142.606 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9956548 |
| Average error: | 3.429% |
| Average CF: | 8142.606 |
| RSD: | 4.189% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 1465.174 | 8618.67 | 5.847 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 2 | 0.31 | 2619.081 | 8448.648 | 3.759 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 3 | 0.62 | 4954.301 | 7990.808 | -1.864 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 4 | 1.23 | 10083.74 | 8198.163 | 0.682 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 5 | 2.16 | 16864.21 | 7807.505 | -4.115 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 6 | 3.08 | 23998.87 | 7791.841 | -4.308 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.739 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

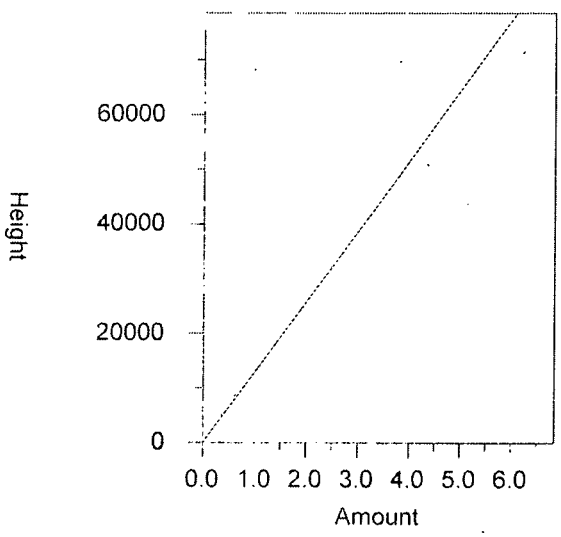
Y = 999.2883 X + 3682.023

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9990886 |
| Average error: | 3.335% |
| Average CF: | 1464.776 |
| RSD: | 30.681% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 5832.216 | 2184.35 | -8.156 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 2 | 4.76 | 8780.046 | 1844.547 | 4.046 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 3 | 9.53 | 12771.13 | 1340.098 | -3.287 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 4 | 19.05 | 23614.07 | 1239.584 | 3.942 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 5 | 33.34 | 36969.73 | 1108.87 | -0.077 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 6 | 47.63 | 51021.68 | 1071.209 | -0.500 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.921 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 12891.25 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.969487 |
| Average error: | 6.743% |
| Average CF: | 12891.25 |
| RSD: | 8.995% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5004.465 | 14298.47 | 10.916 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 2 | 0.62 | 8704.899 | 14040.16 | 8.912 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 3 | 1.24 | 15993.72 | 12898.16 | 0.054 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 4 | 2.49 | 32210.43 | 12935.92 | 0.346 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 5 | 4.35 | 50851.72 | 11690.05 | -9.318 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |
| 6 | 6.22 | 71435.18 | 11484.76 | -10.910 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B. |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1724901

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 9/6/2017  9/6/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.05 | 3.05 | 3.04 | 3.04 | 3.04 | 3.04 | 3.01 | 3.07 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.49 | 4.46 | 4.52 |
| 1,2,3-Trichloropropane | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.56 | 4.53 | 4.59 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.88 | 6.85 | 6.91 |

HMM 9/8/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853A  Calibration File: 16EDBS1724901

GC Column (1) : DB CLP1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 9/6/2017  9/6/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 2.06E+04 | 2.29E+04 | 2.27E+04 | 2.10E+04 | 1.94E+04 | | 2.13E+04 | 7 |
| 1,1,2,2-TETRACHLOROETHANE | 2.48E+04 | 2.61E+04 | 2.51E+04 | 2.41E+04 | 2.23E+04 | | 2.45E+04 | 6 |
| 1,2,3-Trichloropropane | 6.69E+03 | 5.72E+03 | 4.43E+03 | 3.64E+03 | 3.14E+03 | | 4.72E+03 | 31 |
| 1,2-DIBROMO-3-CHLOROPROPA | 3.47E+04 | 3.69E+04 | 3.62E+04 | 3.45E+04 | 3.06E+04 | | 3.46E+04 | 7 |

Average % RSD: 13

(over HMM 9/8/17

File Name: V:\CP16\16edbs1724901.CAL
Version: 8

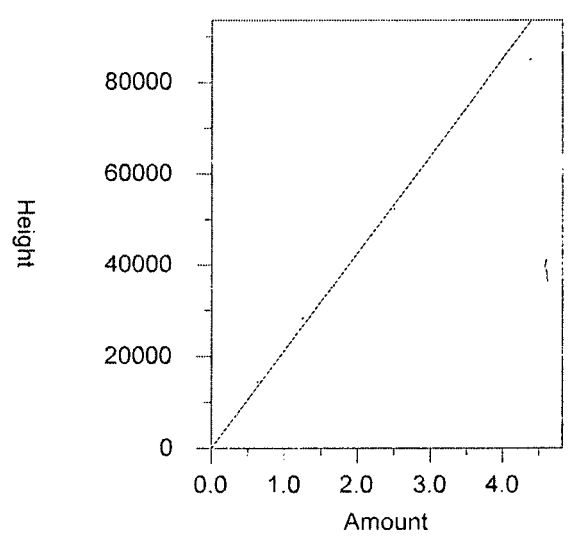
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.044 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

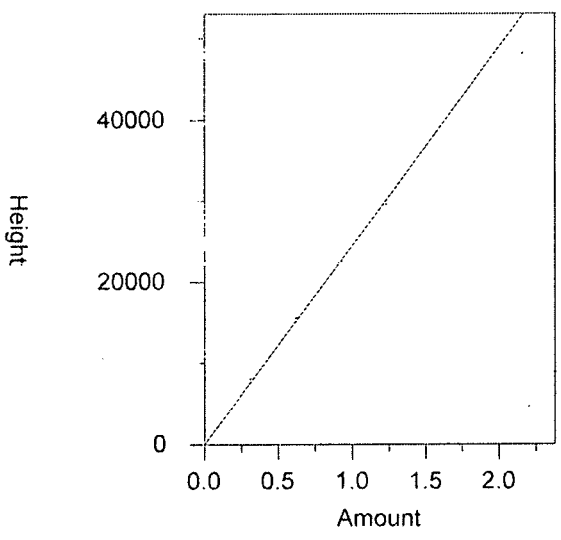
Single peak quantification by height

Y = 21320.57 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9817035
Average error: 5.517%
Average CF: 21320.57
RSD: 6.853%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 7222.551 | 20635.86 | -3.211 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0006.BND |
| 2 | 0.63 | 14433.4 | 22910.16 | 7.456 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0007.BND |
| 3 | 1.25 | 28339.38 | 22671.5 | 6.336 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0008.BND |
| 4 | 2.5 | 52396.54 | 20958.62 | -1.698 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0009.BND |
| 5 | 4.38 | 85088.98 | 19426.71 | -8.883 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0010.BND |
| 6 | (6.25) | (102373.1) | -- | -- | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0011.BND |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 4.489 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

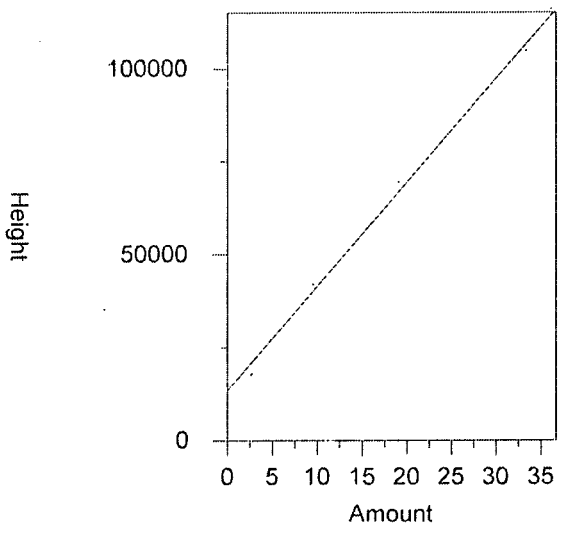
Y = 24477.29 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.982651 |
| Average error: | 4.221% |
| Average CF: | 24477.29 |
| RSD: | 5.746% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 4217.106 | 24806.51 | 1.345 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0006. |
| 2 | 0.31 | 8080.754 | 26066.95 | 6.494 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0007. |
| 3 | 0.62 | 15587.56 | 25141.22 | 2.712 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0008. |
| 4 | 1.23 | 29584.32 | 24052.29 | -1.736 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0009. |
| 5 | 2.16 | 48210.08 | 22319.48 | -8.816 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0010. |
| 6 | (3.08) | (59061.78) | -- | -- | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0011. |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 4.557 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

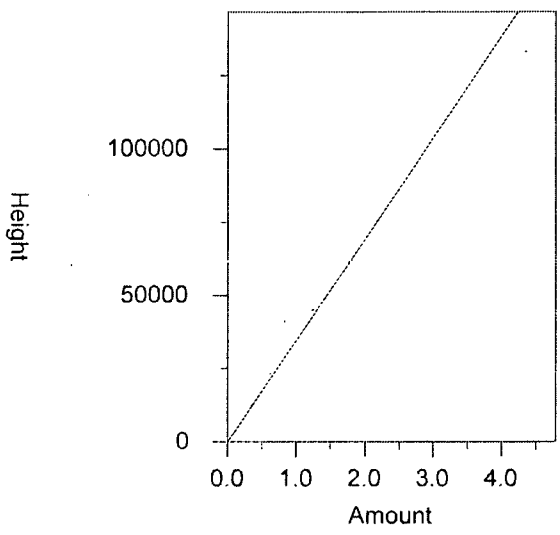
Y = 2793.28 X + 13531.51

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.9951798 |
| Average error: | 5.387% |
| Average CF: | 4723.178 |
| RSD: | 31.084% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 17864.51 | 6690.828 | -14.889 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0006. |
| 2 | 4.76 | 27216.42 | 5717.735 | 1.450 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0007. |
| 3 | 9.53 | 42179.35 | 4425.955 | 5.051 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0008. |
| 4 | 19.05 | 69294.05 | 3637.483 | 3.821 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0009. |
| 5 | 33.34 | 104817.2 | 3143.887 | -1.727 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0010. |
| 6 | (47.63) | (125236.9) | -- | -- | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0011. |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.877 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 34591.37 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9695821 |
| Average error: | 4.727% |
| Average CF: | 34591.37 |
| RSD: | 7.036% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 12153.11 | 34723.17 | 0.381 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0006. |
| 2 | 0.62 | 22873.61 | 36892.92 | 6.654 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0007. |
| 3 | 1.24 | 44944.48 | 36245.55 | 4.782 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0008. |
| 4 | 2.49 | 85797.2 | 34456.71 | -0.389 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0009. |
| 5 | 4.35 | 133277.4 | 30638.48 | -11.427 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0010. |
| 6 | (6.22) | (161636.7) | -- | -- | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0011. |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1724901B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 9/6/2017  9/6/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 | 4.27 | 4.33 |
| 1,1,2,2-TETRACHLOROETHANE | 5.60 | 5.61 | 5.61 | 5.61 | 5.60 | 5.61 | 5.61 | 5.58 | 5.64 |
| 1,2,3-Trichloropropane | 5.73 | 5.73 | 5.73 | 5.73 | 5.73 | 5.73 | 5.73 | 5.70 | 5.76 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.92 | 7.89 | 7.95 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19853B  Calibration File: 16EDBS1724901B

GC Column (2) : DB CLP2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 9/6/2017  9/6/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 6.25E+03 | 6.18E+03 | 6.12E+03 | 5.50E+03 | 5.06E+03 | | 5.82E+03 | 9 |
| 1,1,2,2-TETRACHLOROETHANE | 8.77E+03 | 9.50E+03 | 9.17E+03 | 8.53E+03 | 7.72E+03 | | 8.74E+03 | 8 |
| 1,2,3-Trichloropropane | 2.95E+03 | 2.46E+03 | 1.75E+03 | 1.41E+03 | 1.16E+03 | | 1.95E+03 | 38 |
| 1,2-DIBROMO-3-CHLOROPROPA | 1.35E+04 | 1.43E+04 | 1.33E+04 | 1.21E+04 | 1.10E+04 | | 1.28E+04 | 10 |

Average % RSD: 16

File Name: V:\CP16\16edbs1724901b.CAL
Version: 8

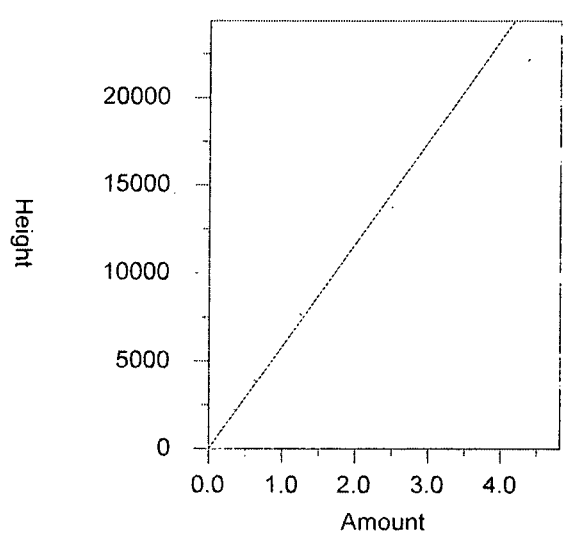
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 4.297 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

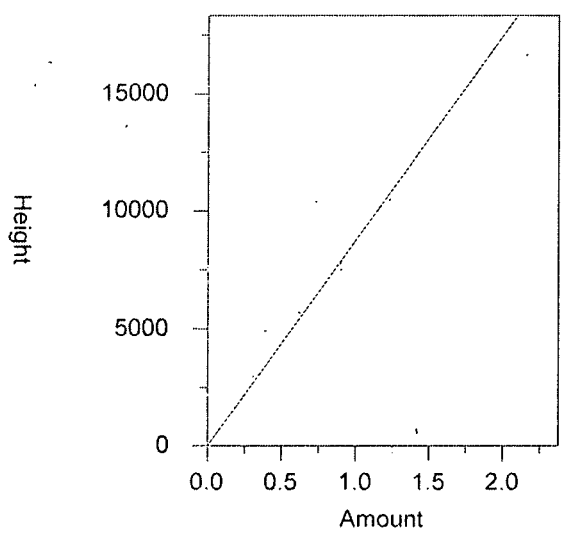
Single peak quantification by height

Y = 5822.39 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9545941
Average error: 7.440%
Average CF: 5822.39
RSD: 8.946%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 2187.328 | 6249.508 | 7.336 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724901B.0006.BNI |
| 2 | 0.63 | 3892.621 | 6178.764 | 6.121 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724901B.0007.BNI |
| 3 | 1.25 | 7652.368 | 6121.895 | 5.144 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724901B.0008.BNI |
| 4 | 2.5 | 13760.03 | 5504.012 | -5.468 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724901B.0009.BNI |
| 5 | 4.38 | 22153.04 | 5057.771 | -13.132 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724901B.0010.BNI |
| 6 | (6.25) | (27080.82) | -- | -- | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS1724901B.0011.BNI |

2 1,1,2,2-PCA




| | |
|---|---|
| Expected retention time: | 5.605 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

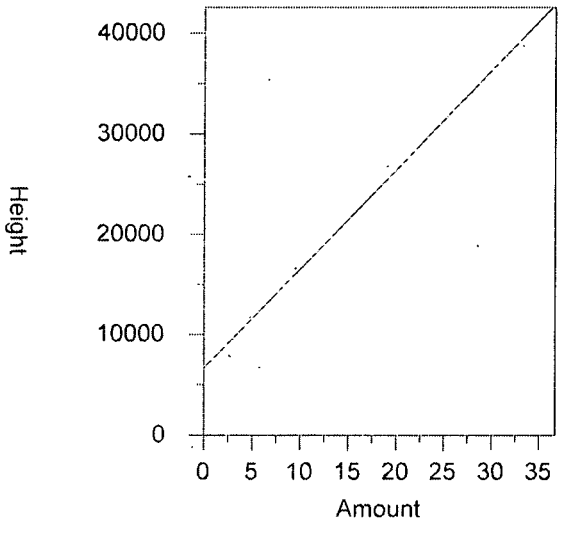
Y = 8738.323 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9672034 |
| Average error: | 5.615% |
| Average CF: | 8738.323 |
| RSD: | 7.767% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.17 | 1491.534 | 8773.729 | 0.405 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 2 | 0.31 | 2943.671 | 9495.713 | 8.667 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 3 | 0.62 | 5686.741 | 9172.163 | 4.965 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 4 | 1.23 | 10491.37 | 8529.569 | -2.389 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 5 | 2.16 | 16676.15 | 7720.439 | -11.649 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.001 |
| 6 | (3.08) | (20101.65) | -- | -- | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.001 |

3 1,2,3-TCP




| | |
|---|---|
| Expected retention time: | 5.733 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

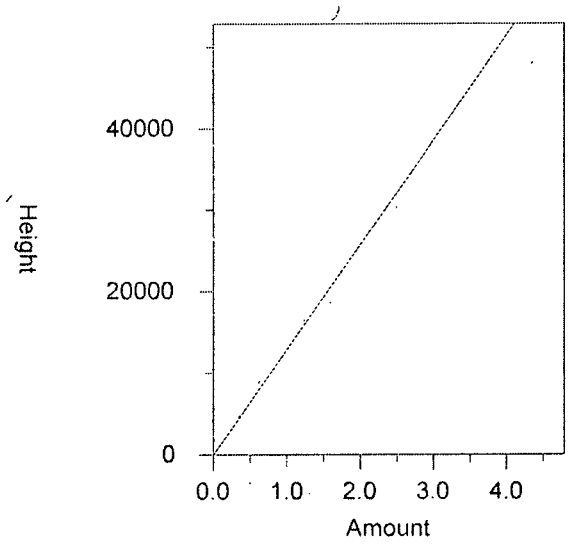
Y = 987.5054 X + 6656.947

Linear fit with equal weighting

| | |
|---|---|
| Coefficient of determination: | 0.991991 |
| Average error: | 5.883% |
| Average CF: | 1945.995 |
| RSD: | 38.334% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 7883.014 | 2952.44 | -15.178 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 2 | 4.76 | 11721.77 | 2462.556 | 3.208 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 3 | 9.53 | 16647.75 | 1746.878 | 3.609 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 4 | 19.05 | 26801.59 | 1406.908 | 5.233 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 5 | 33.34 | 38714.11 | 1161.191 | -2.189 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.001 |
| 6 | (47.63) | (45564.42) | -- | -- | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.001 |

4 DBCP




Expected retention time: 7.916 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by height

Y = 12847.41 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9469835
Average error: 7.847%
Average CF: 12847.41
RSD: 9.850%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 4711.294 | 13460.84 | 4.775 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 2 | 0.62 | 8846.981 | 14269.33 | 11.068 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 3 | 1.24 | 16532.02 | 13332.27 | 3.774 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 4 | 2.49 | 30211.85 | 12133.27 | -5.559 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.000 |
| 5 | 4.35 | 48029.77 | 11041.33 | -14.058 | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.001 |
| 6 | (6.22) | (58762.39) | -- | -- | \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.001 |

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKAA Sample ID: AA **Batchnumber: 1723999999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Aug 28, 2017 22:01:58
Instrument : CP16--19853A
Result file : 16EDBS17240001.0014.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Aug 28, 2017 22:01:58
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0014.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 309 | 0.000859 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 26526 | 0.064937 |
| 1,2,3-TCP | 4.53 | 4.55 | 4.59 | 9094 | -0.009966 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 9576 | 0.067204 |
| 1,2,3-TCP | 5.71 | 5.74 | 5.77 | 839 | -0.162551 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.064937 | | | | 3.43 | |
| ☐ 1,2,3-TCP | A | -0.009966 | | | | 176.89 | ** |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: AUG 30 2017

Verified by: SDV 8/30/17
Date: 08/30/17

%RPD = High - Low Amount divided by the Average times 100 unless RPD > 40
** %Difference > 40, lower amount found reported
* Recovery outside QC Limits



Printed on: 8/29/2017 12:49:05

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A

GC Column (1) : DB CLP1 ID: .32 (mm)

Lab File ID: 16EDBS17240001.0015.RAW

Lab Standard ID: EDB_3AA

Calibration: 16EDBS1724001

Date Analyzed: 08/28/17

Time Analyzed: 22:17

Initial Calibration: 16EDBS1724001

Init. Calib Date(s): 08/28/17 08/28/17

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.02 | 3.08 | 1.27 | 1.25 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.46 | 4.52 | 0.63 | 0.62 | 3 |
| 1,2,3-Trichloropropane | 4.56 | 4.53 | 4.59 | 9.48 | 9.53 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.88 | 6.85 | 6.91 | 1.29 | 1.24 | 4 |

Compounds 4 Average of %D: 2

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 08/28/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 22:17

Lab File ID: 16EDBS17240001B.0015.RAW Initial Calibration: 16EDBS1724001B

Lab Standard ID: EDB_3AA Init. Calib Date(s): 08/28/17 08/28/17

Calibration: 16EDBS1724001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.27 | 4.33 | 1.25 | 1.25 | 0 |
| 1,1,2,2-TETRACHLOROETHANE | 5.61 | 5.58 | 5.64 | 0.63 | 0.62 | 2 |
| 1,2,3-Trichloropropane | 5.74 | 5.71 | 5.77 | 9.95 | 9.53 | 4 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.92 | 7.89 | 7.95 | 1.30 | 1.24 | 5 |

Compounds 4 Average of %D: 3

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKPG Sample ID: PG **Batchnumber: 1723999999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Aug 29, 2017 01:08:42
Instrument : CP16--19853A
Result file : 16EDBS17240001.0026.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Aug 29, 2017 01:08:42
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0026.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 409 | 0.001139 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 27306 | 0.066847 |
| **1,2,3-TCP** | 4.53 | 4.55 | 4.59 | 7454 | -0.043943 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10374 | 0.072805 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 1192 | -0.142373 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.066847 | | | | 8.53 | |
| ☐ 1,2,3-TCP | A | -0.043943 | | | | 105.66 | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

Verified by: SD12316
Date: 08/30/17 08/29 SD12316 08/30/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E
# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 08/29/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 1:24

Lab File ID: 16EDBS17240001.0027.RAW Initial Calibration: 16EDBS1724001

Lab Standard ID: EDB_5NK Init. Calib Date(s): 08/28/17 08/28/17

Calibration: 16EDBS1724001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.02 | 3.08 | 4.24 | 4.38 | -3 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.46 | 4.52 | 2.01 | 2.16 | -7 |
| 1,2,3-Trichloropropane | 4.56 | 4.53 | 4.59 | 33.97 | 33.34 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.88 | 6.85 | 6.91 | 4.55 | 4.35 | 5 |

Compounds 4 Average of %D: 4

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 08/29/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 1:24

Lab File ID: 16EDBS17240001B.0027.RAW Initial Calibration: 16EDBS1724001B

Lab Standard ID: EDB_5NK Init. Calib Date(s): 08/28/17 08/28/17

Calibration: 16EDBS1724001B

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.31 | 4.27 | 4.33 | 4.40 | 4.38 | 1 |
| 1,1,2,2-TETRACHLOROETHANE | 5.61 | 5.58 | 5.64 | 2.13 | 2.16 | -1 |
| 1,2,3-Trichloropropane | 5.74 | 5.71 | 5.77 | 33.95 | 33.34 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.92 | 7.89 | 7.95 | 4.62 | 4.35 | 6 |

Compounds 4 Average of %D: 3

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKPH Sample ID: PH **Batchnumber: 1723999999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Aug 29, 2017 04:15:23
Instrument : CP16--19853A
Result file : 16EDBS17240001.0038.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Aug 29, 2017 04:15:23
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0038.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.02 | 3.08 | 309 | 0.000860 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 27792 | 0.068036 |
| **1,2,3-TCP** | 4.53 | 4.55 | 4.59 | 10930 | 0.028080 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10400 | 0.072986 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.068036 | | | | 7.02 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

Verified by: SD 12316
Date: 08/30/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 08/29/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 4:30

Lab File ID: 16EDBS17240001.0039.RAW Initial Calibration: 16EDBS1724001

Lab Standard ID: EDB_4RW Init. Calib Date(s): 08/28/17 08/28/17

Calibration: 16EDBS1724001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.02 | 3.08 | 2.71 | 2.50 | 8 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.46 | 4.52 | 1.23 | 1.23 | 0 |
| 1,2,3-Trichloropropane | 4.56 | 4.53 | 4.59 | 20.60 | 19.05 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.88 | 6.85 | 6.91 | 2.88 | 2.49 | 16 |

Compounds 4 Average of %D: 8

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 08/29/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 4:30

Lab File ID: 16EDBS17240001B.0039.RAW Initial Calibration: 16EDBS1724001B

Lab Standard ID: EDB_4RW Init. Calib Date(s): 08/28/17 08/28/17

Calibration: 16EDBS1724001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.27 | 4.33 | 2.87 | 2.50 | 15 |
| 1,1,2,2-TETRACHLOROETHANE | 5.61 | 5.58 | 5.64 | 1.33 | 1.23 | 8 |
| 1,2,3-Trichloropropane | 5.74 | 5.71 | 5.77 | 20.37 | 19.05 | 7 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.92 | 7.89 | 7.95 | 3.09 | 2.49 | 24 |

Compounds 4 Average of %D: 14

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKPI Sample ID: PI **Batchnumber: 1723999999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Aug 29, 2017 07:22:03
Instrument : CP16--19853A
Result file : 16EDBS17240001.0050.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Aug 29, 2017 07:22:03
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0050.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 27720 | 0.067860 |
| **1,2,3-TCP** | 4.53 | 4.55 | 4.59 | 6368 | -0.066429 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10413 | 0.073073 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.067860 | | | | 7.40 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather M. Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

Verified by: SDM236
Date: 08/30/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/29/2017 12:53:45

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 08/29/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 7:37

Lab File ID: 16EDBS17240001.0051.RAW Initial Calibration: 16EDBS1724001

Lab Standard ID: EDB_3TF Init. Calib Date(s): 08/28/17 08/28/17

Calibration: 16EDBS1724001

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.05 | 3.02 | 3.08 | 1.45 | 1.25 | 16 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.46 | 4.52 | 0.67 | 0.62 | 9 |
| 1,2,3-Trichloropropane | 4.56 | 4.53 | 4.59 | 9.80 | 9.53 | 3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.88 | 6.85 | 6.91 | 1.52 | 1.24 | 22 |

Compounds 4 Average of %D: 13

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 08/29/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 7:37

Lab File ID: 16EDBS17240001B.0051.RAW Initial Calibration: 16EDBS1724001B

Lab Standard ID: EDB_3TF Init. Calib Date(s): 08/28/17 08/28/17

Calibration: 16EDBS1724001B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.27 | 4.33 | 1.56 | 1.25 | 25 |
| 1,1,2,2-TETRACHLOROETHANE | 5.61 | 5.58 | 5.64 | 0.67 | 0.62 | 9 |
| 1,2,3-Trichloropropane | 5.74 | 5.71 | 5.77 | 11.30 | 9.53 | 19 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.92 | 7.89 | 7.95 | 1.68 | 1.24 | 35 |

Compounds 4 Average of %D: 22

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 09/06/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 21:15

Lab File ID: 16EDBS17249001.0014.RAW Initial Calibration: 16EDBS1724901

Lab Standard ID: EDB_3AA Init. Calib Date(s): 09/06/17 09/06/17

Calibration: 16EDBS1724901

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.04 | 3.01 | 3.07 | 1.28 | 1.25 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.46 | 4.52 | 0.63 | 0.62 | 3 |
| 1,2,3-Trichloropropane | 4.56 | 4.53 | 4.59 | 9.50 | 9.53 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.88 | 6.85 | 6.91 | 1.25 | 1.24 | 0 |

Compounds 4 Average of %D: 1

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 09/06/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 21:15

Lab File ID: 16EDBS17249001B.0014.RAW Initial Calibration: 16EDBS1724901B

Lab Standard ID: EDB_3AA Init. Calib Date(s): 09/06/17 09/06/17

Calibration: 16EDBS1724901B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.27 | 4.33 | 1.27 | 1.25 | 2 |
| 1,1,2,2-TETRACHLOROETHANE | 5.60 | 5.58 | 5.64 | 0.63 | 0.62 | 3 |
| 1,2,3-Trichloropropane | 5.73 | 5.70 | 5.76 | 9.69 | 9.53 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.92 | 7.89 | 7.95 | 1.25 | 1.24 | 0 |

Compounds 4 Average of %D: 2

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKAA Sample ID: AA **Batchnumber: 1724899999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Sep 06, 2017 21:30:55
Instrument : CP16--19853A
Result file : 16EDBS17249001.0015.RAW
Calibration file : 16EDBS1724901.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Sep 06, 2017 21:30:55
Instrument : CP16--19853B
Result file : 16EDBS17249001B.0015.RAW
Calibration file : 16EDBS1724901B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.01 | 3.04 | 3.07 | 296 | 0.000792 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 27914 | 0.065166 |
| 1,2,3-TCP | 4.53 | 4.54 | 4.59 | 2440 | -0.226900 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 10261 | 0.067103 |
| 1,2,3-TCP | 5.70 | 5.74 | 5.76 | 756 | -0.341482 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.065166 | | | | 2.93 | |
| ☐ 1,2,3-TCP | A | -0.226900 | | | | 40.32 | ** |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: SEP 08 2017

Verified by: SD123116
Date: 09/08/17

%RPD = High - Low Amount divided by the Average times 100 unless RPD > 40
** %Difference > 40, lower amount found reported
* Recovery outside QC Limits



Printed on: 9/7/2017 14:01:57

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853A Date Analyzed: 09/07/17

GC Column (1) : DB CLP1 ID: .32 (mm) Time Analyzed: 0:22

Lab File ID: 16EDBS17249001.0026.RAW Initial Calibration: 16EDBS1724901

Lab Standard ID: EDB_5NY Init. Calib Date(s): 09/06/17 09/06/17

Calibration: 16EDBS1724901

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.04 | 3.01 | 3.07 | 4.09 | 4.38 | -7 |
| 1,1,2,2-TETRACHLOROETHANE | 4.49 | 4.46 | 4.52 | 1.96 | 2.16 | -9 |
| 1,2,3-Trichloropropane | 4.55 | 4.53 | 4.59 | 33.45 | 33.34 | 0 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.88 | 6.85 | 6.91 | 3.99 | 4.35 | -8 |

Compounds 4 Average of %D: 6

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19853B Date Analyzed: 09/07/17

GC Column (2) : DB CLP2 ID: .32 (mm) Time Analyzed: 0:22

Lab File ID: 16EDBS17249001B.0026.RAW Initial Calibration: 16EDBS1724901B

Lab Standard ID: EDB_5NY Init. Calib Date(s): 09/06/17 09/06/17

Calibration: 16EDBS1724901B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 4.30 | 4.27 | 4.33 | 4.09 | 4.38 | -6 |
| 1,1,2,2-TETRACHLOROETHANE | 5.60 | 5.58 | 5.64 | 1.96 | 2.16 | -9 |
| 1,2,3-Trichloropropane | 5.73 | 5.70 | 5.76 | 32.23 | 33.34 | -3 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.92 | 7.89 | 7.95 | 3.91 | 4.35 | -10 |

Compounds 4 Average of %D: 7

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX17** 24C PIBLKUV Sample ID: UV **Batchnumber: 1724899999**
Sample Amount: 35 Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses:

## Analysis Report (A)

Injected on : Sep 07, 2017 00:38:16
Instrument : CP16--19853A
Result file : 16EDBS17249001.0027.RAW
Calibration file : 16EDBS1724901.CAL
Method file : 16EDBS.MET

## Analysis Report (B)

Injected on : Sep 07, 2017 00:38:16
Instrument : CP16--19853B
Result file : 16EDBS17249001B.0027.RAW
Calibration file : 16EDBS1724901B.CAL
Method file : 16EDBSB.MET

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 26601 | 0.062100 |
| **1,2,3-TCP** | 4.53 | 4.55 | 4.59 | 2179 | -0.232246 |

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 9891 | 0.064680 |

**Summary Report**

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☐ EDB | | | | | | | |
| ☐ 1,1,2,2-PCA | A | 0.062100 | | | | 4.07 | |
| ☐ 1,2,3-TCP | | | | | | | |
| ☐ DBCP | | | | | | | |

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: SEP 08 2017

Verified by: SD123116
Date: 09/08/17

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 16EDBS17240001
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17240001.0001 | CONDITIONER | | 8/28/17 18:39 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0002 | CONDITIONER | | 8/28/17 18:55 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0003 | CONDITIONER | | 8/28/17 19:10 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0004 | CONDITIONER | | 8/28/17 19:26 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0005 | EIBKX1724C | PIBLKAA | 8/28/17 19:41 | 1723999999 | 2.00 |
| Administra16EDBS17240001.0006 | EDB_11724EJ | EDB_1AA | 8/28/17 19:57 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0007 | EDB_21724EJ | EDB_2AA | 8/28/17 20:13 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0008 | EDB_31724EJ | EDB_3AA | 8/28/17 20:28 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0009 | EDB_41724EJ | EDB_4AA | 8/28/17 20:44 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0010 | EDB_51724EJ | EDB_5AA | 8/28/17 20:59 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0011 | EDB_61724EJ | EDB_6AA | 8/28/17 21:15 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0012 | MDEDX1724EJ | MDEDXAA | 8/28/17 21:30 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0013 | DBCMX1724B | DBCMXAA | 8/28/17 21:46 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0014 | EIBKX1724C | PIBLKAA | 8/28/17 22:01 | 1723999999 | 2.00 |
| Administra16EDBS17240001.0015 | EDB_31724EJ | EDB_3AA | 8/28/17 22:17 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0016 | BLANKA 8/28/17 | PBLK44237 | 8/28/17 22:33 | 172370044A | 2.00 |
| Administra16EDBS17240001.0017 | LCSA 8/28/17 | LCS44237 | 8/28/17 22:48 | 172370044A | 2.00 |
| Administra16EDBS17240001.0018 | LCSDA 8/28/17 | LCSD44237 | 8/28/17 23:04 | 172370044A | 2.00 |
| Administra16EDBS17240001.0019 | 9166773R | 28T06 | 8/28/17 23:19 | 172370044A | 2.00 |
| Administra16EDBS17240001.0020 | 9168657R | 10804 | 8/28/17 23:35 | 172370044A | 2.00 |
| Administra16EDBS17240001.0021 | 9168661R | 10812 | 8/28/17 23:51 | 172370044A | 2.00 |
| Administra16EDBS17240001.0022 | 9171210 | 10809 | 8/29/17 0:06 | 172370044A | 2.00 |
| Administra16EDBS17240001.0023 | 9171211 | 10819 | 8/29/17 0:22 | 172370044A | 2.00 |
| Administra16EDBS17240001.0024 | 9171212 | 10818 | 8/29/17 0:37 | 172370044A | 2.00 |
| Administra16EDBS17240001.0025 | 9171213 | 10813 | 8/29/17 0:53 | 172370044A | 2.00 |
| Administra16EDBS17240001.0026 | EIBKX1724C | PIBLKPG | 8/29/17 1:08 | 1723999999 | 2.00 |
| Administra16EDBS17240001.0027 | EDB_51724EJ | EDB_5NK | 8/29/17 1:24 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0028 | 9171214 | 10807 | 8/29/17 1:39 | 172370044A | 2.00 |
| Administra16EDBS17240001.0029 | 9171215 | 10806 | 8/29/17 1:55 | 172370044A | 2.00 |
| Administra16EDBS17240001.0030 | 9171216 | 10805 | 8/29/17 2:10 | 172370044A | 2.00 |
| Administra16EDBS17240001.0031 | 9171217 | 10810 | 8/29/17 2:26 | 172370044A | 2.00 |
| Administra16EDBS17240001.0032 | 9171218 | 108FD | 8/29/17 2:42 | 172370044A | 2.00 |
| Administra16EDBS17240001.0033 | 9175047 | KEFF1 | 8/29/17 2:57 | 172370044A | 2.00 |
| Administra16EDBS17240001.0034 | 9175048 | KGAC1 | 8/29/17 3:13 | 172370044A | 2.00 |
| Administra16EDBS17240001.0035 | 9175049 | KINF1 | 8/29/17 3:28 | 172370044A | 2.00 |
| Administra16EDBS17240001.0036 | 9175050 | KTB01 | 8/29/17 3:44 | 172370044A | 2.00 |
| Administra16EDBS17240001.0037 | 9175051 | KFB01 | 8/29/17 3:59 | 172370044A | 2.00 |
| Administra16EDBS17240001.0038 | EIBKX1724C | PIBLKPH | 8/29/17 4:15 | 1723999999 | 2.00 |
| Administra16EDBS17240001.0039 | EDB_41724EJ | EDB_4RW | 8/29/17 4:30 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0040 | 9175052 | KEFF2 | 8/29/17 4:46 | 172370044A | 2.00 |
| Administra16EDBS17240001.0041 | 9175053MS | KEFF2 | 8/29/17 5:02 | 172370044A | 2.00 |
| Administra16EDBS17240001.0042 | 9175054MSD | KEFF2 | 8/29/17 5:17 | 172370044A | 2.00 |
| Administra16EDBS17240001.0043 | 9175056 | KEF2D | 8/29/17 5:33 | 172370044A | 2.00 |
| Administra16EDBS17240001.0044 | 9175057 | KGAC2 | 8/29/17 5:48 | 172370044A | 2.00 |
| Administra16EDBS17240001.0045 | BLANKA 8/28/17 | PBLK43237 | 8/29/17 6:04 | 172370043A | 2.00 |
| Administra16EDBS17240001.0046 | LCSA 8/28/17 | LCS43237 | 8/29/17 6:19 | 172370043A | 2.00 |
| Administra16EDBS17240001.0047 | LCSDA 8/28/17 | LCSD43237 | 8/29/17 6:35 | 172370043A | 2.00 |
| Administra16EDBS17240001.0048 | 9159786 | 72B01 | 8/29/17 6:50 | 172370043A | 2.00 |
| Administra16EDBS17240001.0049 | 9159786MS | 72B01MS | 8/29/17 7:06 | 172370043A | 2.00 |
| Administra16EDBS17240001.0050 | EIBKX1724C | PIBLKPI | 8/29/17 7:22 | 1723999999 | 2.00 |
| Administra16EDBS17240001.0051 | EDB_31724EJ | EDB_3TF | 8/29/17 7:37 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0052 | 9159787 | 72B02 | 8/29/17 7:53 | 172370043A | 2.00 |
| Administra16EDBS17240001.0053 | 9159787 | 72B02DUP | 8/29/17 8:08 | 172370043A | 2.00 |
| Administra16EDBS17240001.0054 | 9159788 | 72B03 | 8/29/17 9:36 | 172370043A | 2.00 |
| Administra16EDBS17240001.0055 | 9159789 | 72B04 | 8/29/17 9:51 | 172370043A | 2.00 |
| Administra16EDBS17240001.0056 | 9159790 | 72B05 | 8/29/17 10:07 | 172370043A | 2.00 |

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17240001.0057 | 9159791 | 72B06 | 8/29/17 10:22 | 172370043A | 2.00 |
| Administra16EDBS17240001.0058 | 9159792 | 72B07 | 8/29/17 10:38 | 172370043A | 2.00 |
| Administra16EDBS17240001.0059 | 9159793 | 72B08 | 8/29/17 10:53 | 172370043A | 2.00 |
| Administra16EDBS17240001.0060 | 9159794 | 72B09 | 8/29/17 11:09 | 172370043A | 2.00 |
| Administra16EDBS17240001.0061 | 9159795 | 72B10 | 8/29/17 11:24 | 172370043A | 2.00 |
| Administra16EDBS17240001.0062 | EIBKX1724C | PIBLKPJ | 8/29/17 11:40 | 1723999999 | 2.00 |
| Administra16EDBS17240001.0063 | EDB_51724EJ | EDB_5NL | 8/29/17 11:56 | 1723999999 | 1.00 |
| Administra16EDBS17240001.0064 | 9170924 | B7319 | 8/29/17 12:11 | 172370043A | 2.00 |
| Administra16EDBS17240001.0065 | 9170925 | B7320 | 8/29/17 12:27 | 172370043A | 2.00 |
| Administra16EDBS17240001.0066 | 9170926 | B7401 | 8/29/17 12:42 | 172370043A | 2.00 |
| Administra16EDBS17240001.0067 | 9170927 | B7402 | 8/29/17 12:58 | 172370043A | 2.00 |
| Administra16EDBS17240001.0068 | 9171384 | 32W01 | 8/29/17 13:14 | 172370043A | 2.00 |
| Administra16EDBS17240001.0069 | 9171385 | 32W02 | 8/29/17 13:29 | 172370043A | 2.00 |
| Administra16EDBS17240001.0070 | 9171386 | 32W03 | 8/29/17 13:45 | 172370043A | 2.00 |
| Administra16EDBS17240001.0071 | 9171387 | 32W04 | 8/29/17 14:00 | 172370043A | 2.00 |
| Administra16EDBS17240001.0072 | EIBKX1724C | PIBLKPK | 8/29/17 14:16 | 1723999999 | 2.00 |
| Administra16EDBS17240001.0073 | EDB_41724EJ | EDB_4RX | 8/29/17 14:32 | 1723999999 | 1.00 |

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 16EDBS17249001
Instrument CP16--19853A

Data Directory Path is - \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17249001.0001 | CONDITIONER | | 9/6/17 17:52 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0002 | CONDITIONER | | 9/6/17 18:08 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0003 | CONDITIONER | | 9/6/17 18:23 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0004 | CONDITIONER | | 9/6/17 18:39 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0005 | EIBKX1724C | PIBLKAA | 9/6/17 18:54 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0006 | EDB_11724EN | EDB_1AA | 9/6/17 19:10 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0007 | EDB_21724EN | EDB_2AA | 9/6/17 19:26 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0008 | EDB_31724EN | EDB_3AA | 9/6/17 19:41 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0009 | EDB_41724EN | EDB_4AA | 9/6/17 19:57 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0010 | EDB_51724EN | EDB_5AA | 9/6/17 20:12 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0011 | EDB_61724EN | EDB_6AA | 9/6/17 20:28 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0012 | MDEDX1724EN | MDEDXAA | 9/6/17 20:44 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0013 | DBCMX1724B | DBCMXAA | 9/6/17 20:59 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0014 | EDB_31724EN | EDB_3AA | 9/6/17 21:15 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0015 | EIBKX1724C | PIBLKAA | 9/6/17 21:30 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0016 | BLANKA 9/6/17 | PBLK13248 | 9/6/17 21:46 | 172480013A | 2.00 |
| Administra16EDBS17249001.0017 | LCSA 9/6/17 | LCS13248 | 9/6/17 22:02 | 172480013A | 2.00 |
| Administra16EDBS17249001.0018 | LCSDA 9/6/17 | LCSD13248 | 9/6/17 22:17 | 172480013A | 2.00 |
| Administra16EDBS17249001.0019 | 9175058 | KINF2 | 9/6/17 22:33 | 172480013A | 2.00 |
| Administra16EDBS17249001.0020 | 9177881 | 35202 | 9/6/17 22:49 | 172480013A | 2.00 |
| Administra16EDBS17249001.0021 | 9177881MS | 35202MS | 9/6/17 23:04 | 172480013A | 2.00 |
| Administra16EDBS17249001.0022 | 9177882 | 35203 | 9/6/17 23:20 | 172480013A | 2.00 |
| Administra16EDBS17249001.0023 | 9177883 | 5203B | 9/6/17 23:35 | 172480013A | 2.00 |
| Administra16EDBS17249001.0024 | 9177884 | 33901 | 9/6/17 23:51 | 172480013A | 2.00 |
| Administra16EDBS17249001.0025 | 9177885 | 33902 | 9/7/17 0:07 | 172480013A | 2.00 |
| Administra16EDBS17249001.0026 | EDB_51724EN | EDB_5NY | 9/7/17 0:22 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0027 | EIBKX1724C | PIBLKUV | 9/7/17 0:38 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0028 | 9177886 | 35204 | 9/7/17 0:53 | 172480013A | 2.00 |
| Administra16EDBS17249001.0029 | 9177887 | 35201 | 9/7/17 1:09 | 172480013A | 2.00 |
| Administra16EDBS17249001.0030 | 9177887 | 35201DUP | 9/7/17 1:25 | 172480013A | 2.00 |
| Administra16EDBS17249001.0031 | 9177888 | 60135 | 9/7/17 1:40 | 172480013A | 2.00 |
| Administra16EDBS17249001.0032 | 9177889 | 60235 | 9/7/17 1:56 | 172480013A | 2.00 |
| Administra16EDBS17249001.0033 | 9177890 | 602B3 | 9/7/17 2:11 | 172480013A | 2.00 |
| Administra16EDBS17249001.0034 | 9177891 | 60335 | 9/7/17 2:27 | 172480013A | 2.00 |
| Administra16EDBS17249001.0035 | 9181790 | 55951 | 9/7/17 2:43 | 172480013A | 2.00 |
| Administra16EDBS17249001.0036 | 9181791 | 25603 | 9/7/17 2:58 | 172480013A | 2.00 |
| Administra16EDBS17249001.0037 | 9181792 | 25604 | 9/7/17 3:14 | 172480013A | 2.00 |
| Administra16EDBS17249001.0038 | EDB_41724EN | EDB_4SF | 9/7/17 3:29 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0039 | EIBKX1724C | PIBLKUW | 9/7/17 3:45 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0040 | 9181793 | 25605 | 9/7/17 4:00 | 172480013A | 2.00 |
| Administra16EDBS17249001.0041 | 9181794 | 25606 | 9/7/17 4:16 | 172480013A | 2.00 |
| Administra16EDBS17249001.0042 | 9181795 | 25607 | 9/7/17 4:32 | 172480013A | 2.00 |
| Administra16EDBS17249001.0043 | 9181796 | 25608 | 9/7/17 4:47 | 172480013A | 2.00 |
| Administra16EDBS17249001.0044 | 9181797 | 25609 | 9/7/17 5:03 | 172480013A | 2.00 |
| Administra16EDBS17249001.0045 | BLANKA 9/6/17 | PBLK37248 | 9/7/17 5:18 | 172480037A | 2.00 |
| Administra16EDBS17249001.0046 | LCSA 9/6/17 | LCS37248 | 9/7/17 5:34 | 172480037A | 2.00 |
| Administra16EDBS17249001.0047 | LCSDA 9/6/17 | LCSD37248 | 9/7/17 5:49 | 172480037A | 2.00 |
| Administra16EDBS17249001.0048 | 9182942 | W3601 | 9/7/17 6:05 | 172480037A | 2.00 |
| Administra16EDBS17249001.0049 | 9182942MS | W3601MS | 9/7/17 6:21 | 172480037A | 2.00 |
| Administra16EDBS17249001.0050 | EDB_31724EN | EDB_3UM | 9/7/17 6:36 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0051 | EIBKX1724C | PIBLKUX | 9/7/17 6:52 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0052 | 9182943 | W3602 | 9/7/17 7:07 | 172480037A | 2.00 |
| Administra16EDBS17249001.0053 | 9182943 | W3602DUP | 9/7/17 7:23 | 172480037A | 2.00 |
| Administra16EDBS17249001.0054 | 9182944 | W3603 | 9/7/17 7:38 | 172480037A | 2.00 |
| Administra16EDBS17249001.0055 | 9182945 | W3604 | 9/7/17 7:54 | 172480037A | 2.00 |
| Administra16EDBS17249001.0056 | 9182946 | W3605 | 9/7/17 8:10 | 172480037A | 2.00 |

| Operator File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|
| Administra16EDBS17249001.0057 | 9182947 | W3606 | 9/7/17 8:25 | 172480037A | 2.00 |
| Administra16EDBS17249001.0058 | 9182948 | W3607 | 9/7/17 8:41 | 172480037A | 2.00 |
| Administra16EDBS17249001.0059 | 9182949 | W3608 | 9/7/17 8:56 | 172480037A | 2.00 |
| Administra16EDBS17249001.0060 | 9182954 | LCK01 | 9/7/17 9:12 | 172480037A | 2.00 |
| Administra16EDBS17249001.0061 | 9182955 | LCK02 | 9/7/17 9:28 | 172480037A | 2.00 |
| Administra16EDBS17249001.0062 | EDB_51724EN | EDB_5NZ | 9/7/17 9:43 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0063 | EIBKX1724C | PIBLKUY | 9/7/17 9:59 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0064 | 9182956 | LCK03 | 9/7/17 10:14 | 172480037A | 2.00 |
| Administra16EDBS17249001.0065 | 9182957 | LCK04 | 9/7/17 10:30 | 172480037A | 2.00 |
| Administra16EDBS17249001.0066 | 9182958 | LCK05 | 9/7/17 10:45 | 172480037A | 2.00 |
| Administra16EDBS17249001.0067 | 9182959 | LCK06 | 9/7/17 11:01 | 172480037A | 2.00 |
| Administra16EDBS17249001.0068 | 9182960 | LCK07 | 9/7/17 11:17 | 172480037A | 2.00 |
| Administra16EDBS17249001.0069 | 9182961 | LCK08 | 9/7/17 11:32 | 172480037A | 2.00 |
| Administra16EDBS17249001.0070 | 9182962 | LCK09 | 9/7/17 11:48 | 172480037A | 2.00 |
| Administra16EDBS17249001.0071 | 9182963 | LCK10 | 9/7/17 12:03 | 172480037A | 2.00 |
| Administra16EDBS17249001.0072 | 9182964 | LCK-A | 9/7/17 12:19 | 172480037A | 2.00 |
| Administra16EDBS17249001.0073 | 9182965 | LCK-B | 9/7/17 12:35 | 172480037A | 2.00 |
| Administra16EDBS17249001.0074 | EDB_41724EN | EDB_4SG | 9/7/17 12:50 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0075 | EIBKX1724C | PIBLKUZ | 9/7/17 13:06 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0076 | BLANKA 9/6/17 | PBLK38248 | 9/7/17 13:21 | 172480038A | 2.00 |
| Administra16EDBS17249001.0077 | LCSA 9/6/17 | LCS38248 | 9/7/17 13:37 | 172480038A | 2.00 |
| Administra16EDBS17249001.0078 | LCSDA 9/6/17 | LCSD38248 | 9/7/17 13:52 | 172480038A | 2.00 |
| Administra16EDBS17249001.0079 | 9182966 | LCK-C | 9/7/17 14:08 | 172480038A | 2.00 |
| Administra16EDBS17249001.0080 | 9185291 | C2901 | 9/7/17 14:24 | 172480038A | 2.00 |
| Administra16EDBS17249001.0081 | 9185292 | C2902 | 9/7/17 14:39 | 172480038A | 2.00 |
| Administra16EDBS17249001.0082 | 9185293 | C2903 | 9/7/17 14:55 | 172480038A | 2.00 |
| Administra16EDBS17249001.0083 | 9185294MS | C2903 | 9/7/17 15:10 | 172480038A | 2.00 |
| Administra16EDBS17249001.0084 | 9185295MSD | C2903 | 9/7/17 15:26 | 172480038A | 2.00 |
| Administra16EDBS17249001.0085 | 9185296 | C2904 | 9/7/17 15:42 | 172480038A | 2.00 |
| Administra16EDBS17249001.0086 | EDB_31724EN | EDB_3UP | 9/7/17 15:57 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0087 | EIBKX1724C | PIBLKVA | 9/7/17 16:13 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0088 | 9185297 | C2905 | 9/7/17 16:28 | 172480038A | 2.00 |
| Administra16EDBS17249001.0089 | 9185298 | C2906 | 9/7/17 16:44 | 172480038A | 2.00 |
| Administra16EDBS17249001.0090 | 9185299 | C2907 | 9/7/17 17:00 | 172480038A | 2.00 |
| Administra16EDBS17249001.0091 | 9185300 | C2908 | 9/7/17 17:15 | 172480038A | 2.00 |
| Administra16EDBS17249001.0092 | 9185301 | C2909 | 9/7/17 17:31 | 172480038A | 2.00 |
| Administra16EDBS17249001.0093 | 9185817 | C1809 | 9/7/17 17:46 | 172480038A | 2.00 |
| Administra16EDBS17249001.0094 | 9185818 | C1810 | 9/7/17 18:02 | 172480038A | 2.00 |
| Administra16EDBS17249001.0095 | 9185819 | C1811 | 9/7/17 18:17 | 172480038A | 2.00 |
| Administra16EDBS17249001.0096 | 9185855 | C1901 | 9/7/17 18:33 | 172480038A | 2.00 |
| Administra16EDBS17249001.0097 | 9185856 | C1902 | 9/7/17 18:49 | 172480038A | 2.00 |
| Administra16EDBS17249001.0098 | EDB_51724EN | EDB_5OA | 9/7/17 19:04 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0099 | EIBKX1724C | PIBLKVB | 9/7/17 19:20 | 1724899999 | 2.00 |
| Administra16EDBS17249001.0100 | 9185857 | C1903 | 9/7/17 19:36 | 172480038A | 2.00 |
| Administra16EDBS17249001.0101 | 9186393 | GBP01 | 9/7/17 19:51 | 172480038A | 2.00 |
| Administra16EDBS17249001.0102 | 9186394 | GBP02 | 9/7/17 20:07 | 172480038A | 2.00 |
| Administra16EDBS17249001.0103 | 9186395 | GBP03 | 9/7/17 20:22 | 172480038A | 2.00 |
| Administra16EDBS17249001.0104 | 9186396 | GBP04 | 9/7/17 20:38 | 172480038A | 2.00 |
| Administra16EDBS17249001.0105 | EDB_41724EN | EDB_4SH | 9/7/17 20:54 | 1724899999 | 1.00 |
| Administra16EDBS17249001.0106 | EIBKX1724C | PIBLKVC | 9/7/17 21:09 | 1724899999 | 2.00 |

# Sample Data

# EDB/DBCP

**LOQ/MDL Summary**
**Pesticide Residue Analysis**

**SDG: KR194**

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9175047** KEFF1 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 02:57:37 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0033.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 107% ( 46 - 136 ) Conc: 0.071726

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 02:57:37 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0033.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 108% ( 46 - 136 ) Conc: 0.072754

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.07 | 3.08 | 471 | 0.001255 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 30663 | 0.071726 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 10020 | 0.008815 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 10850 | 0.072754 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 4611 | 0.050748 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | D1 | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.071726 | 0.0033 | 0.0067 | 0.0067 | | 1.42 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.071726 | 0.0033 | 0.0067 | 0.0067 | | 1.42 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.072754 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.258 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomaylla
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:11

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175047** KEFF1 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.63 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 02:57:37
Instrument : CP16--19853A
Result file : 16EDBS17240001.0033.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 107% (46-136) Conc.: 0.071726

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.07 | 3.08 | 471 | 0.001255 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 30663 | 0.071726 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 10020 | 0.008815 |

## Analysis Report (B)

Injected on : Aug 29, 2017 02:57:37
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0033.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 108% (46-136) Conc.: 0.072754

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10850 | 0.072754 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 4611 | 0.050748 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.071726 | | | | 1.42 | |
| ☐ 1,2,3-TCP | | | <0.258 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: AUG 30 2017

Verified by: Valerie L. Tomayko
Principal Specialist

Date: AUG 31 2017

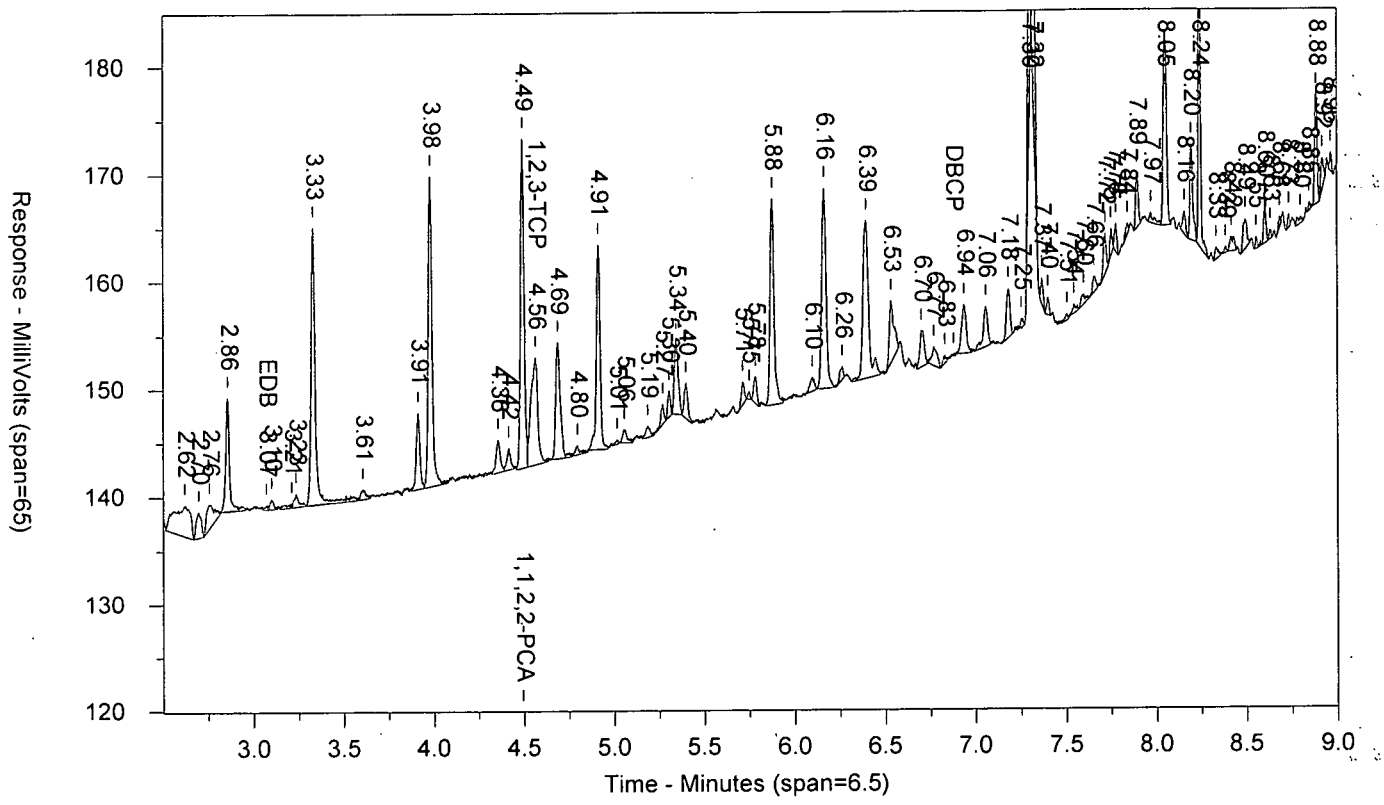
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/29/2017 12:51:25

9175047 AAKEFF1 T 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0033.RAW

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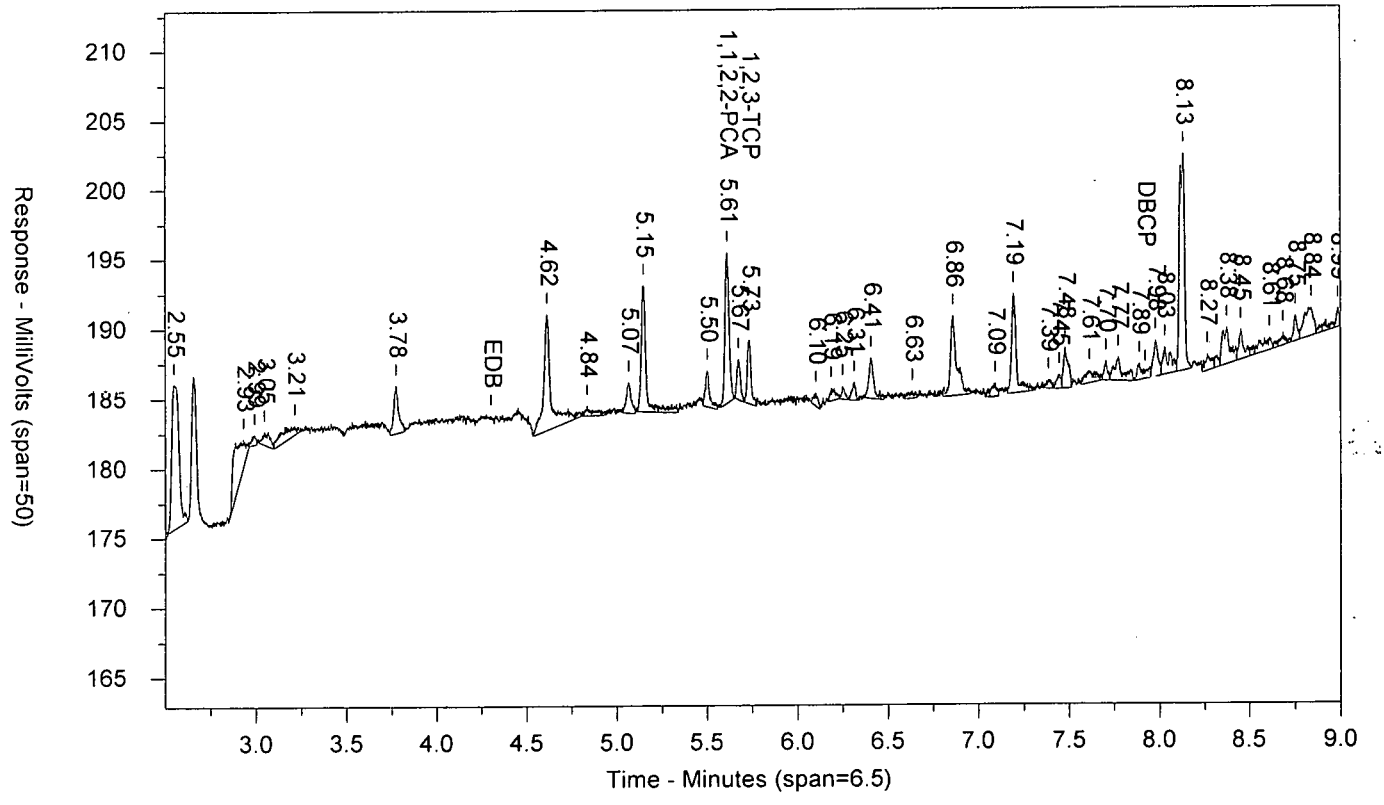


LANCASTER LABORATORIES

Sample Number: 9175047 AAKEFF1 T 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 2:57:37 AM Sample Weight: 36.63
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.071 | 471 | .001 | EDB | | 0 | | EDB |
| 4.492 | 30663 | .072 | 1,1,2,2-PCA | 5.612 | 10850 | .073 | 1,1,2,2-PCA |
| 4.565 | 10020 | .009 | 1,2,3-TCP | 5.735 | 4611 | .051 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0033.RAW
Area File: 16EDBS17240001B.0033.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:00:08 AM
File Reported On: 8/29/2017 at 12:36:41 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9175048** KGAC1 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.71 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 03:13:10 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0034.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.06784

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 03:13:10 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0034.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.068964

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.03 | 3.08 | 399 | 0.00106 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 10307 | 0.068964 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 29065 | 0.06784 | 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 4337 | 0.035736 |
| 1,2,3-Trichloropropane | 4.53 | 4.57 | 4.59 | 8740 | 0 | | | | | | |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☑ Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | D1 | | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.06784 | 0.0033 | 0.0067 | 0.0067 | | 1.64 | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.06784 | 0.0033 | 0.0067 | 0.0067 | | 1.64 | |
| ☑ 1,1,2,2-TETRACHLOROE | B | 0.068964 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.2574 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valeria L Tomayko
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:13

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175048** KGAC1 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.71 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 03:13:10
Instrument : CP16--19853A
Result file : 16EDBS17240001.0034.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.06784

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.03 | 3.08 | 399 | 0.001060 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 29065 | 0.067840 |
| 1,2,3-TCP | 4.53 | 4.57 | 4.59 | 8740 | -0.016483 |

## Analysis Report (B)

Injected on : Aug 29, 2017 03:13:10
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0034.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.068964

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10307 | 0.068964 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 4337 | 0.035736 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.067840 | | | | 1.64 | |
| ☐ 1,2,3-TCP | | | <0.2574 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: AUG 30 2017

Verified by: Valerie L. Tomeyko
Principal Specialist

Date: AUG 31 2017

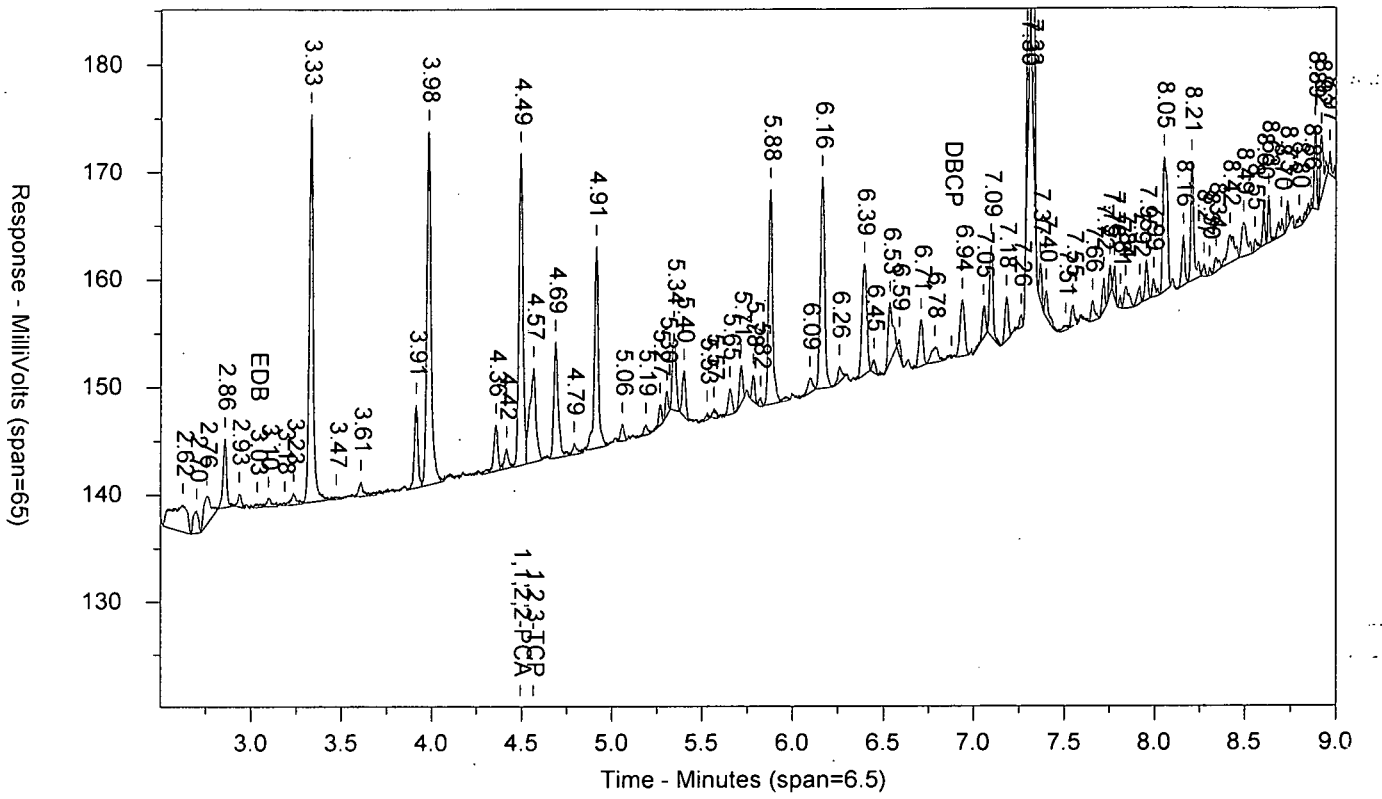
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

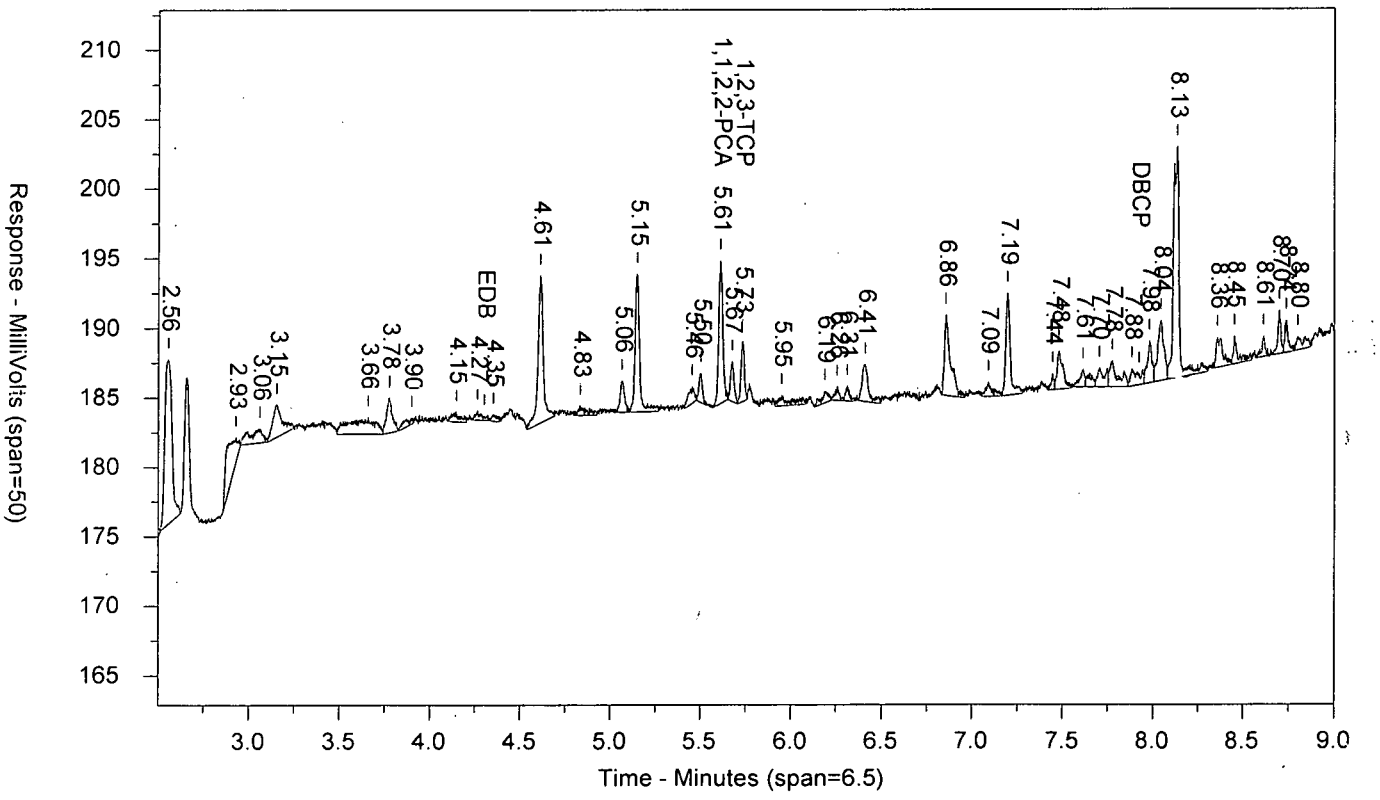
Printed on: 8/29/2017 12:51:34

9175048 AAKGAC1 T 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0034.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B.0034.RAW



LANCASTER LABORATORIES

Sample Number: 9175048 AAKGAC1 T 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 3:13:10 AM Sample Weight: 36.71
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.034 | 399 | .001 | EDB | | 0 | | EDB |
| 4.493 | 29065 | .068 | 1,1,2,2-PCA | 5.611 | 10307 | .069 | 1,1,2,2-PCA |
| 4.566 | 8740 | -.016 | 1,2,3-TCP | 5.732 | 4337 | .036 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0034.RAW
Area File: 16EDBS17240001B.0034.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:00:08 AM
File Reported On: 8/29/2017 at 12:36:57 PM

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# Data Summary

**Sample Name: 9175049** KINF1 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.97 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 03:28:45 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0035.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | .16EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.066729

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 03:28:45 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0035.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 106% ( 46 - 136 ) Conc: 0.070634

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 23533 | 0.062052 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 28792 | 0.066729 |
| 1,2,3-Trichloropropane | 4.53 | 4.57 | 4.59 | 9082 | 0 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.89 | 6.91 | 4675 | 0.007642 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 6634 | 0.064493 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 10632 | 0.070634 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 5589 | 0.103229 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.062052 | 0.0095 | 0.0189 | 0.0284 | D1 | 3.86 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.066729 | 0.0033 | 0.0066 | 0.0066 | | 5.69 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.066729 | 0.0033 | 0.0066 | 0.0066 | | 5.69 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.070634 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2556 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0189 | <0.0284 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 31 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:15

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175049** KINF1 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.97 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 03:28:45
Instrument : CP16--19853A
Result file : 16EDBS17240001.0035.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.066729

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 23533 | 0.062052 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 28792 | 0.066729 |
| 1,2,3-TCP | 4.53 | 4.57 | 4.59 | 9082 | -0.009670 |
| DBCP | 6.85 | 6.89 | 6.91 | 4675 | 0.007642 |

## Analysis Report (B)

Injected on : Aug 29, 2017 03:28:45
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0035.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 106% (46-136) Conc.: 0.070634

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 4.27 | 4.30 | 4.33 | 6634 | 0.064493 |
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 10632 | 0.070634 |
| 1,2,3-TCP | 5.71 | 5.73 | 5.77 | 5589 | 0.103229 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.062052 | 0.0284 | 0.0095 | | 3.86 | |
| ☐ 1,1,2,2-PCA | A | 0.066729 | | | | 5.69 | |
| ☐ 1,2,3-TCP | | | <0.2556 | <0.0947 | | | |
| ☐ DBCP | | | <0.0284 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

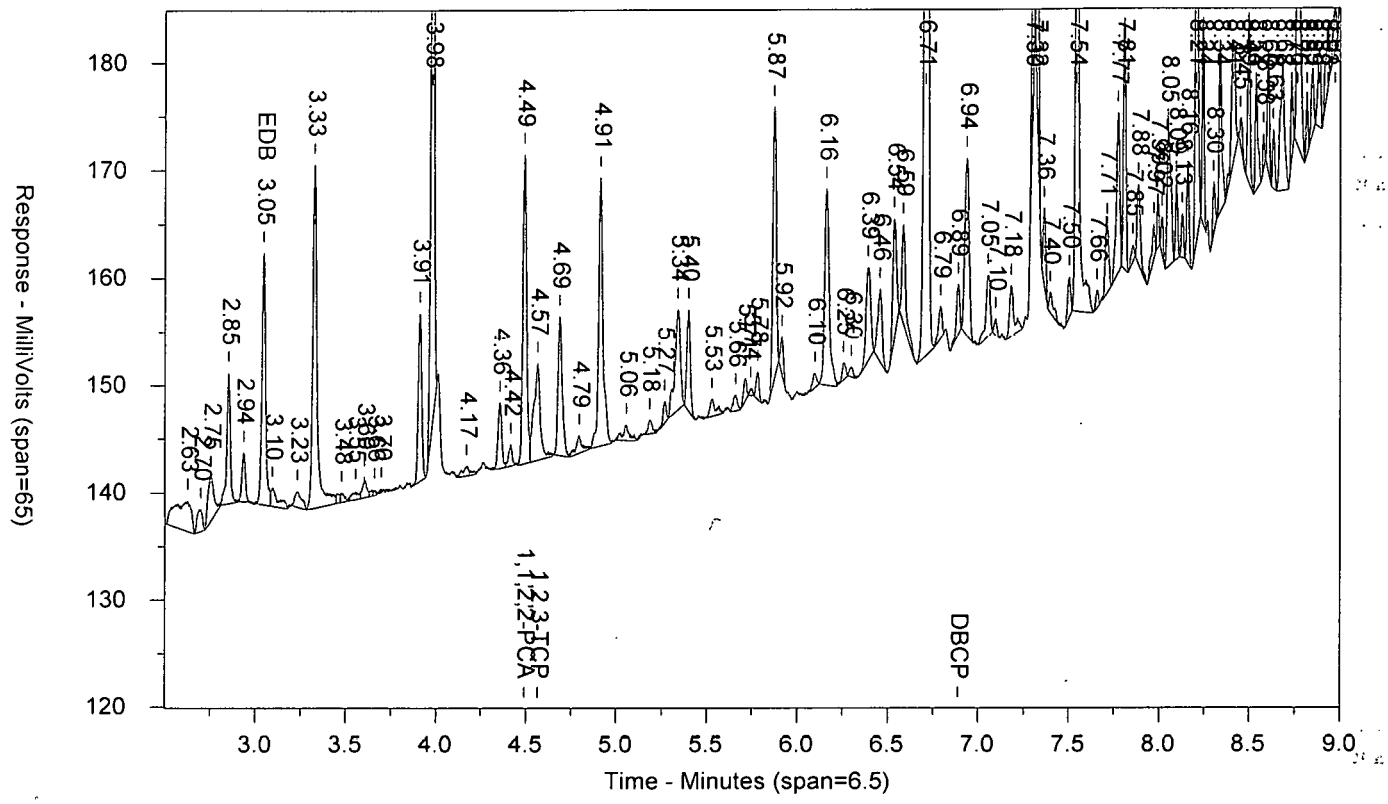
Verified by: Valerie L. Tomayko
Principal Specialist
Date: AUG 31 2017

%RPD = High - Low Amount divided by the Average times 100

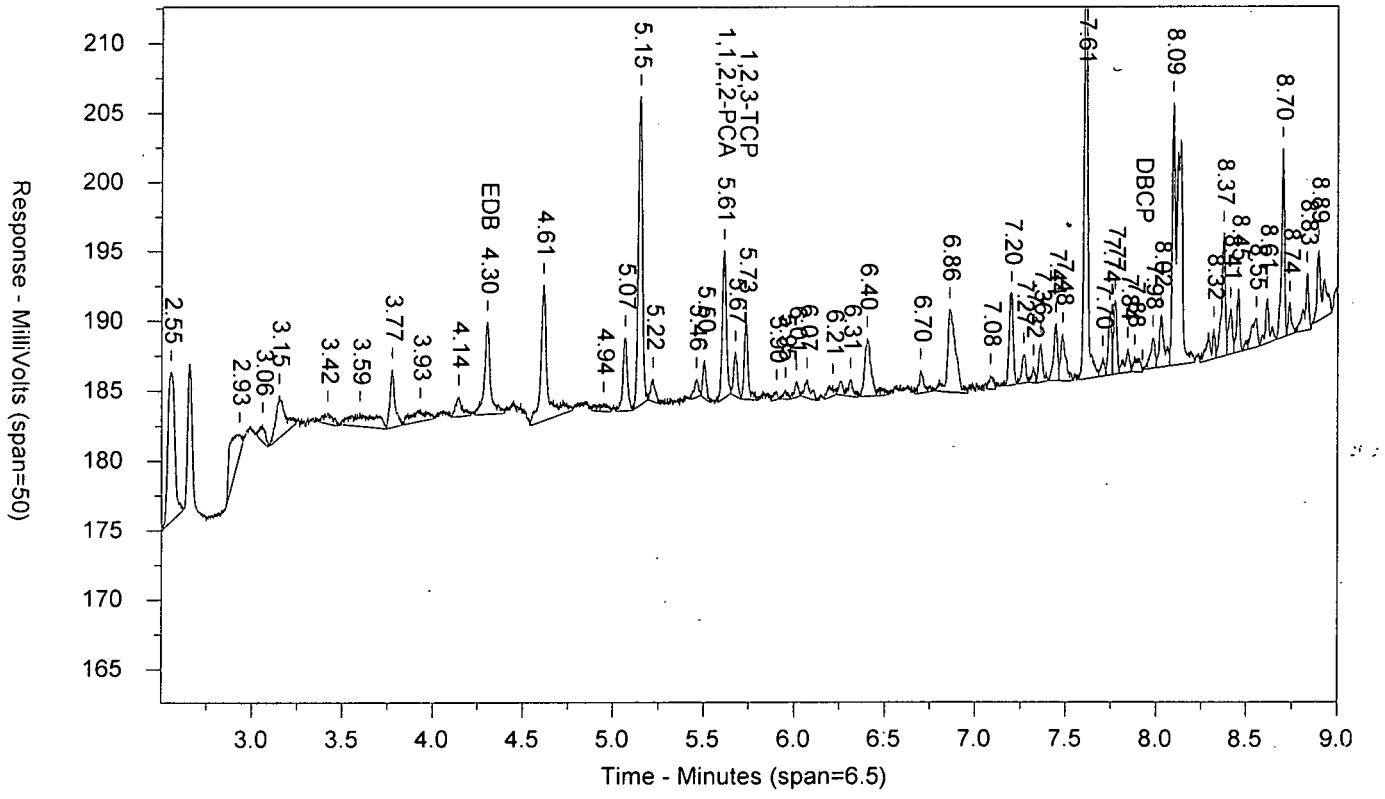
* Recovery outside QC Limits

9175049 AAKINF1 T 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0035.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B.0035.RAW



LANCASTER LABORATORIES

Sample Number: 9175049 AAKINF1 T 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 3:28:45 AM Sample Weight: 36.97
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 23533 | .062 | EDB | 4.303 | 6634 | .064 | EDB |
| 4.492 | 28792 | .067 | 1,1,2,2-PCA | 5.61 | 10632 | .071 | 1,1,2,2-PCA |
| 4.566 | 9082 | -.01 | 1,2,3-TCP | 5.733 | 5589 | .103 | 1,2,3-TCP |
| 6.889 | 4675 | .008 | DBCP | | 0 | | DBCP |

Files:
Area File: 16EDBS17240001.0035.RAW
Area File: 16EDBS17240001B.0035.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:00:08 AM
File Reported On: 8/29/2017 at 12:37:19 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name:** 9175050 KTB01 Sample ID: AA **Batchnumber:** 172370044A
Sample Amount: 36.72 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 03:44:16 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0036.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.063535

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 03:44:16 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0036.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.064974

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 27228 | 0.063535 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 8194 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 9713 | 0.064974 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 4655 | 0.053023 |
| 1,2-Dibromo-3-chloropro | 7.89 | 7.90 | 7.95 | 757 | 0.003198 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | D1 | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063535 | 0.0033 | 0.0067 | 0.0067 | | 2.24 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063535 | 0.0033 | 0.0067 | 0.0067 | | 2.24 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.064974 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2574 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:17

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175050** KTB01 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.72 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 03:44:16
Instrument : CP16--19853A
Result file : 16EDBS17240001.0036.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.063535

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 27228 | 0.063535 |
| 1,2,3-TCP | 4.53 | 4.56 | 4.59 | 8194 | -0.027258 |

## Analysis Report (B)

Injected on : Aug 29, 2017 03:44:16
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0036.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.064974

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 9713 | 0.064974 |
| 1,2,3-TCP | 5.71 | 5.73 | 5.77 | 4655 | 0.053023 |
| DBCP | 7.89 | 7.90 | 7.95 | 757 | 0.003198 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063535 | | | | 2.24 | |
| ☐ 1,2,3-TCP | | | <0.2574 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

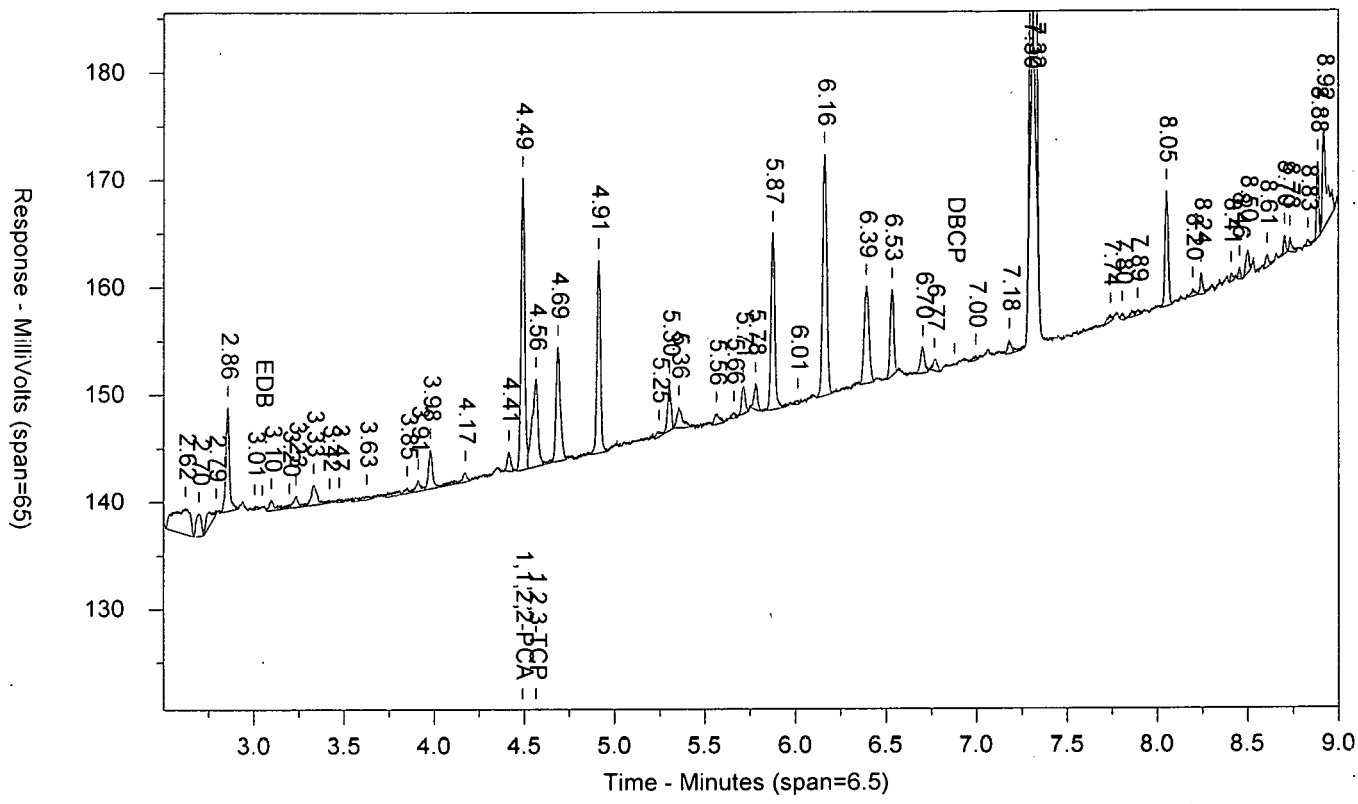
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 31 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9175050 AAKTB01 T 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0036.RAW

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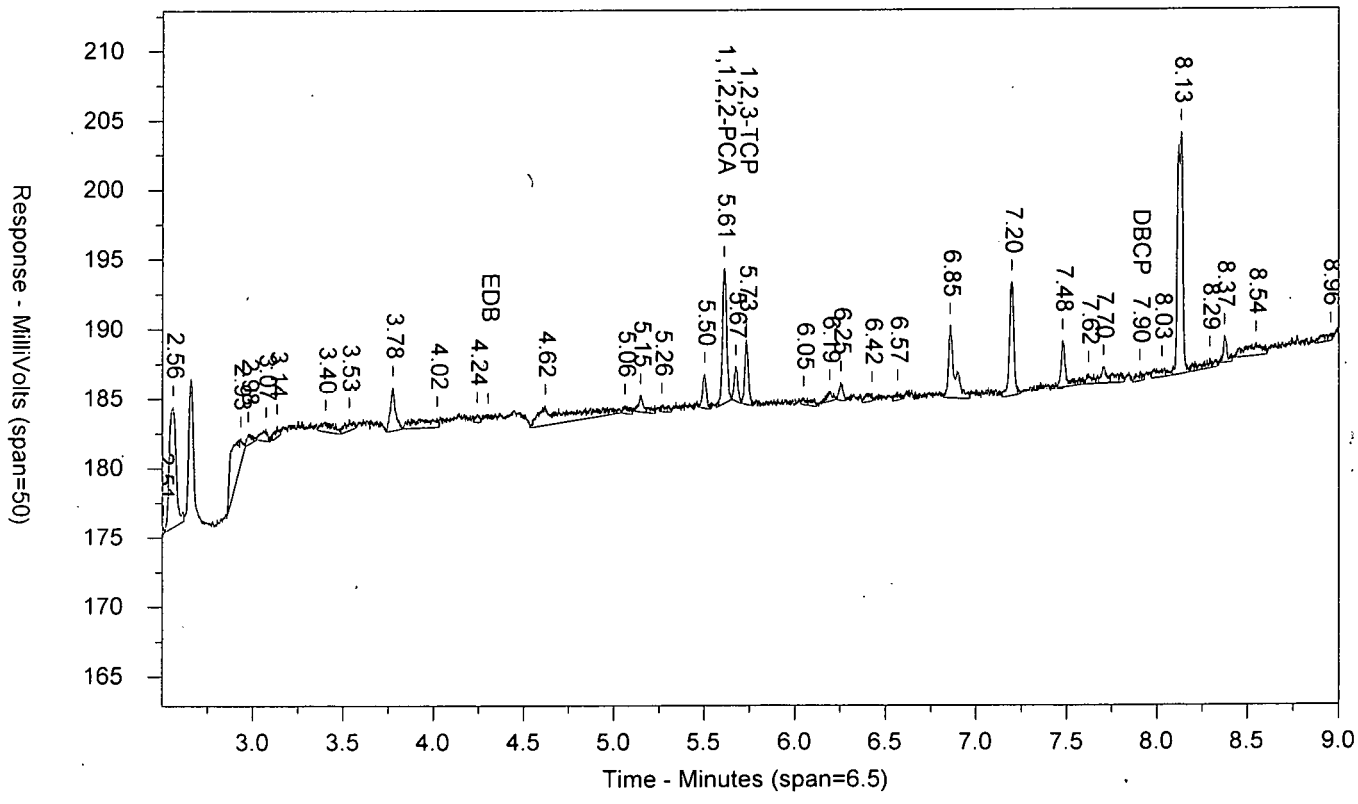

LANCASTER LABORATORIES

Sample Number: 9175050 AAKTB01 T 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 3:44:16 AM Sample Weight: 36.72
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.492 | 27228 | .064 | 1,1,2,2-PCA | 5.609 | 9713 | .065 | 1,1,2,2-PCA |
| 4.564 | 8194 | -.027 | 1,2,3-TCP | 5.732 | 4655 | .053 | 1,2,3-TCP |
| | 0 | | DBCP | 7.905 | 757 | .003 | DBCP |

Files:
Area File: 16EDBS17240001.0036.RAW
Area File: 16EDBS17240001B.0036.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:00:08 AM
File Reported On: 8/29/2017 at 12:37:36 PM

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# Data Summary

**Sample Name: 9175051** KFB01 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.86 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 03:59:50 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0037.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.067208

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 03:59:50 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0037.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 104% ( 46 - 136 ) Conc: 0.069567

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.06 | 3.08 | 382 | 0.001009 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 10440 | 0.069567 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 28912 | 0.067208 | 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 4436 | 0.040937 |
| 1,2,3-Trichloropropane | 4.53 | 4.55 | 4.59 | 13774 | 0.082601 | | | | | | |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | D1 | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.067208 | 0.0033 | 0.0066 | 0.0066 | | 3.45 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.067208 | 0.0033 | 0.0066 | 0.0066 | | 3.45 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.069567 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2564 | | | |
| ☐ | 1,2-Dibromo-3-chloroprope | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tornayko
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:19

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175051** KFB01 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.86 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 03:59:50
Instrument : CP16--19853A
Result file : 16EDBS17240001.0037.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.067208

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.06 | 3.08 | 382 | 0.001009 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 28912 | 0.067208 |
| **1,2,3-TCP** | 4.53 | 4.55 | 4.59 | 13774 | 0.082601 |

## Analysis Report (B)

Injected on : Aug 29, 2017 03:59:50
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0037.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 104% (46-136) Conc.: 0.069567

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10440 | 0.069567 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 4436 | 0.040937 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.067208 | | | | 3.45 | |
| ☐ 1,2,3-TCP | | | <0.2564 | <0.095 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: AUG 30 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist

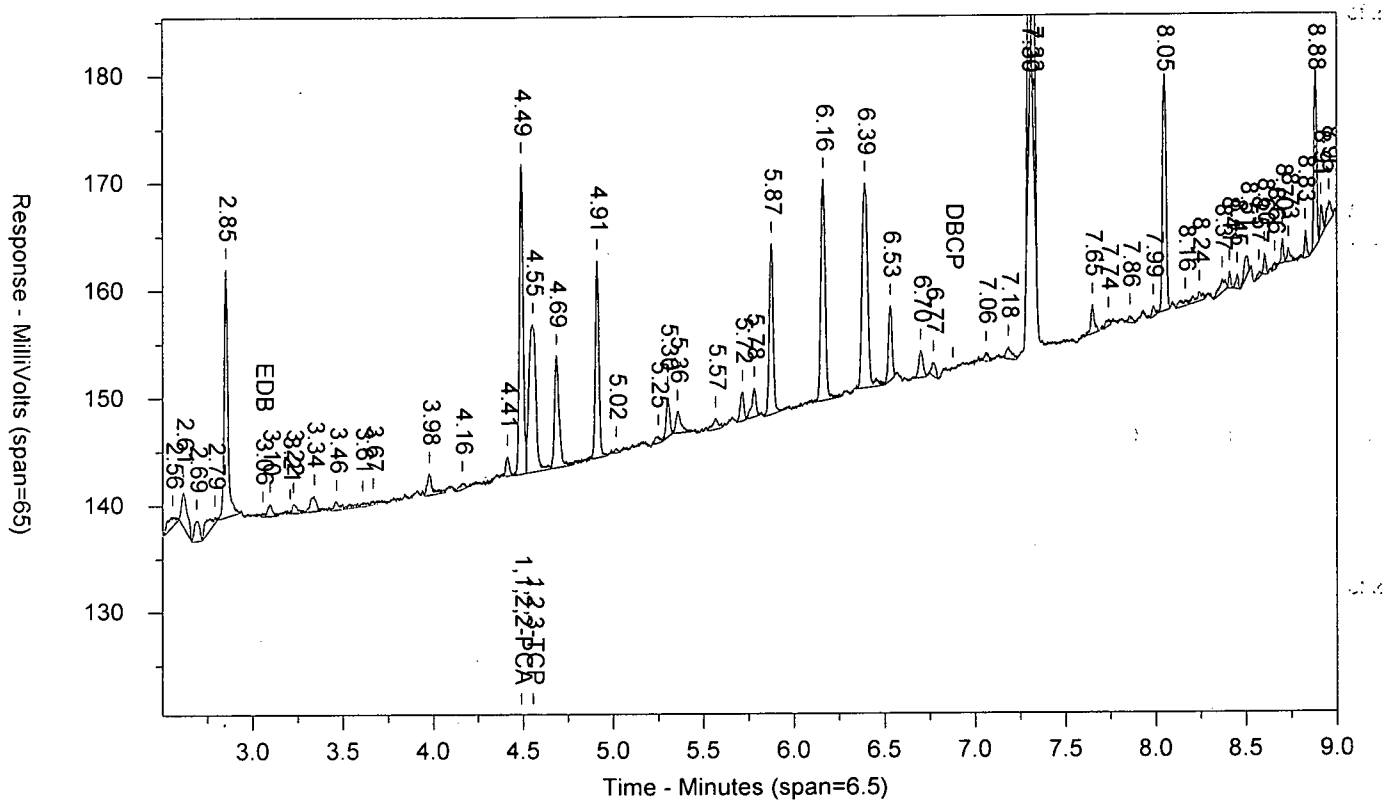
Date: AUG 31 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9175051 AAKFB01 T 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0037.RAW

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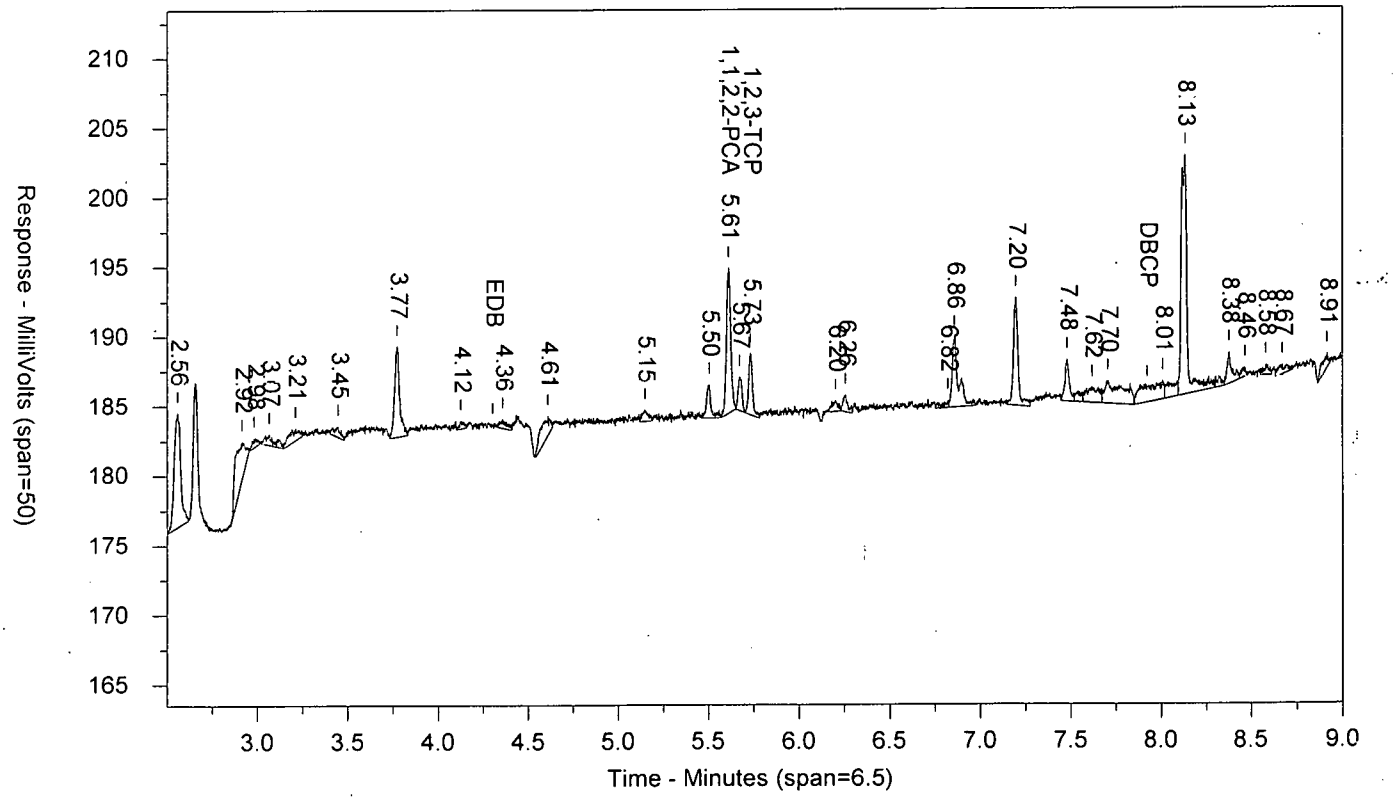

LANCASTER LABORATORIES

Sample Number: 9175051 AAKFB01 T 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 3:59:50 AM Sample Weight: 36.86
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.056 | 382 | .001 | EDB | | 0 | | EDB |
| 4.49 | 28912 | .067 | 1,1,2,2-PCA | 5.61 | 10440 | .07 | 1,1,2,2-PCA |
| 4.554 | 13774 | .083 | 1,2,3-TCP | 5.731 | 4436 | .041 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0037.RAW
Area File: 16EDBS17240001B.0037.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:00:08 AM
File Reported On: 8/29/2017 at 12:37:54 PM

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# Data Summary

**Sample Name: 9175052** KEFF2 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.87 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 04:46:28 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0040.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.063151

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 04:46:28 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0040.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.067078

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.03 | 3.08 | 386 | 0.00102 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 10069 | 0.067078 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 27174 | 0.063151 | 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 4741 | 0.057503 |
| 1,2,3-Trichloropropane | 4.53 | 4.57 | 4.59 | 9094 | 0 | | | | | | |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| ☑ Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | D1 | | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.063151 | 0.0033 | 0.0066 | 0.0066 | | 6.03 | |
| ☑ 1,1,2,2-TETRACHLOROE | A | 0.063151 | 0.0033 | 0.0066 | 0.0066 | | 6.03 | |
| ☑ 1,1,2,2-TETRACHLOROE | B | 0.067078 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ 1,2,3-Trichloropropane | | | | | <0.2563 | | | |
| ☐ 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:21

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175052** KEFF2 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.87 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 04:46:28
Instrument : CP16--19853A
Result file : 16EDBS17240001.0040.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063151

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.03 | 3.08 | 386 | 0.001020 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 27174 | 0.063151 |
| **1,2,3-TCP** | 4.53 | 4.57 | 4.59 | 9094 | -0.009451 |

## Analysis Report (B)

Injected on : Aug 29, 2017 04:46:28
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0040.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.067078

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10069 | 0.067078 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 4741 | 0.057503 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | DL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063151 | 0.0066 | 0.0033 | | 6.03 | |
| ☐ 1,2,3-TCP | A | -0.009451 | <0.2563 | | | 278.68 | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 31 2017

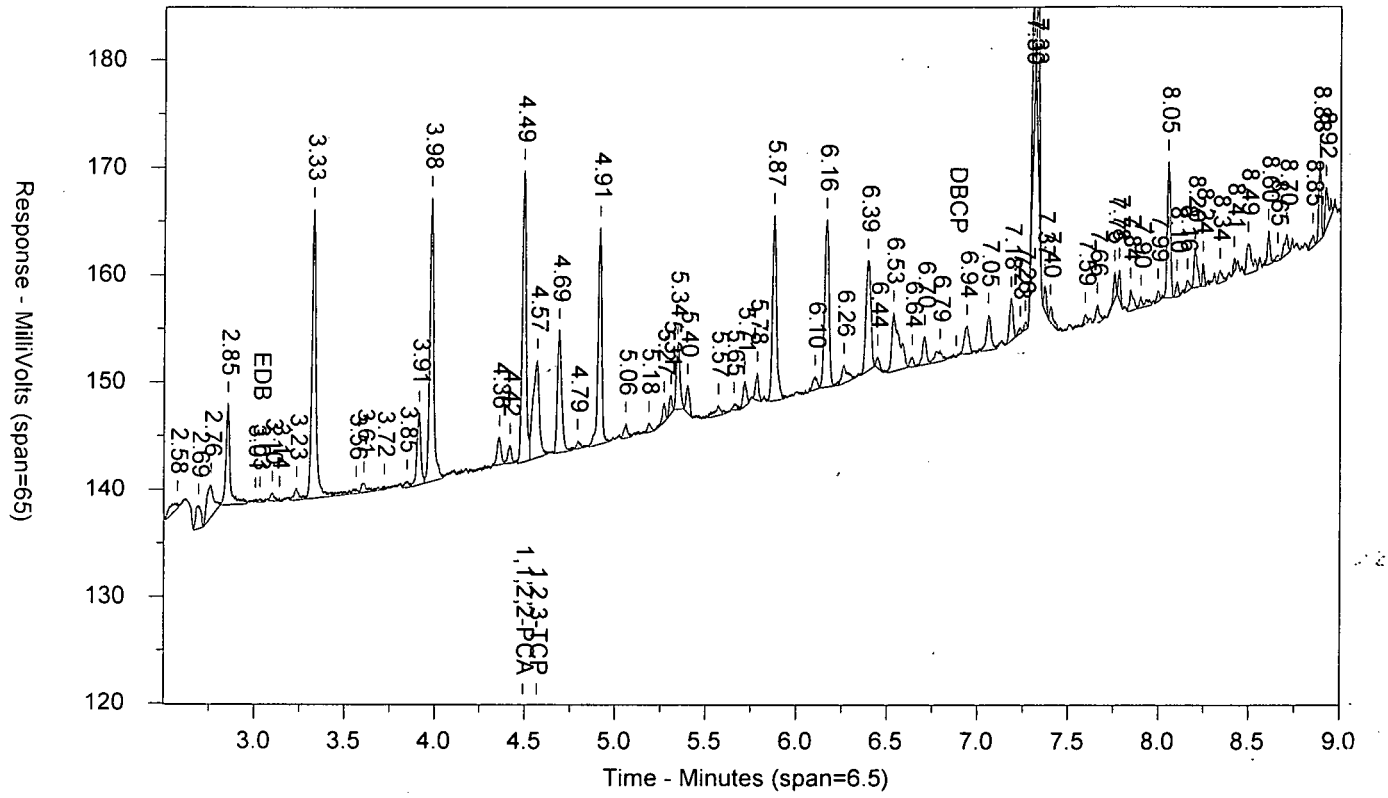
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/29/2017 12:52:21

9175052 AAKEFF2 T 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0040.RAW

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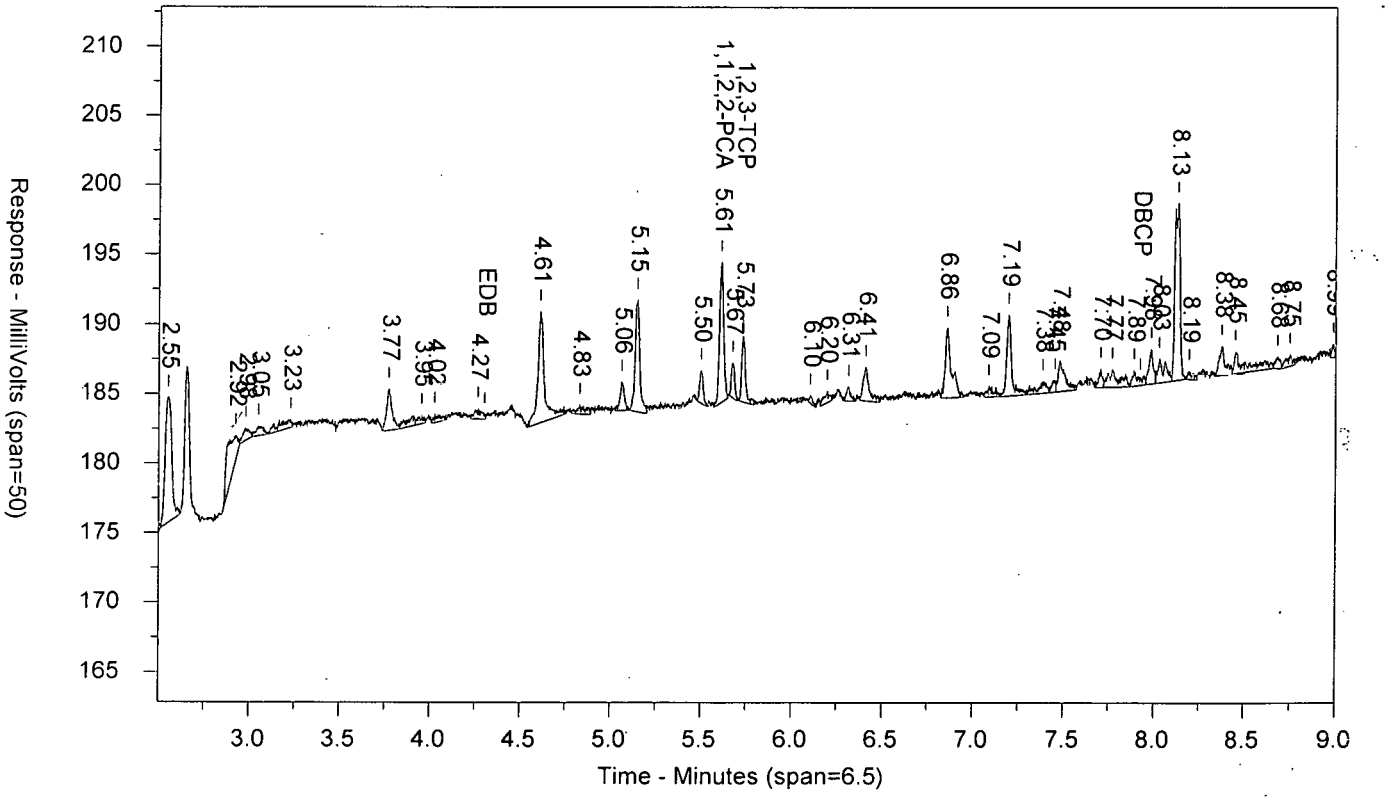


LANCASTER LABORATORIES

Sample Number: 9175052 AAKEFF2 T 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 4:46:28 AM Sample Weight: 36.87
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.032 | 386 | .001 | EDB | | 0 | | EDB |
| 4.492 | 27174 | .063 | 1,1,2,2-PCA | 5.611 | 10069 | .067 | 1,1,2,2-PCA |
| 4.566 | 9094 | -.009 | 1,2,3-TCP | 5.731 | 4741 | .058 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0040.RAW
Area File: 16EDBS17240001B.0040.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:00:09 AM
File Reported On: 8/29/2017 at 12:38:46 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9175056** KEF2D Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.97 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 05:33:08 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0043.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 93% ( 46 - 136 ) Conc: 0.062057

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 05:33:08 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0043.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.065808

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 390 | 0.001029 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 26776 | 0.062057 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 9016 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 9905 | 0.065808 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 5157 | 0.079869 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0189 | <0.0284 | D1 | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.062057 | 0.0033 | 0.0066 | 0.0066 | | 5.87 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.062057 | 0.0033 | 0.0066 | 0.0066 | | 5.87 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.065808 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2556 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0189 | <0.0284 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomeyko
Principal Specialist

AUG 31 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:28

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175056** KEF2D Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 36.97 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 05:33:08
Instrument : CP16--19853A
Result file : 16EDBS17240001.0043.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 93% (46-136) Conc.: 0.062057

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 390 | 0.001029 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 26776 | 0.062057 |
| 1,2,3-TCP | 4.53 | 4.56 | 4.59 | 9016 | -0.010961 |

## Analysis Report (B)

Injected on : Aug 29, 2017 05:33:08
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0043.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.065808

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 9905 | 0.065808 |
| 1,2,3-TCP | 5.71 | 5.73 | 5.77 | 5157 | 0.079869 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0284 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.062057 | | | | 5.87 | |
| ☐ 1,2,3-TCP | | | <0.2556 | <0.0947 | | | |
| ☐ DBCP | | | <0.0284 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

Verified by: Valerie L. Tomeyko
Principal Specialist
Date: AUG 31 2017

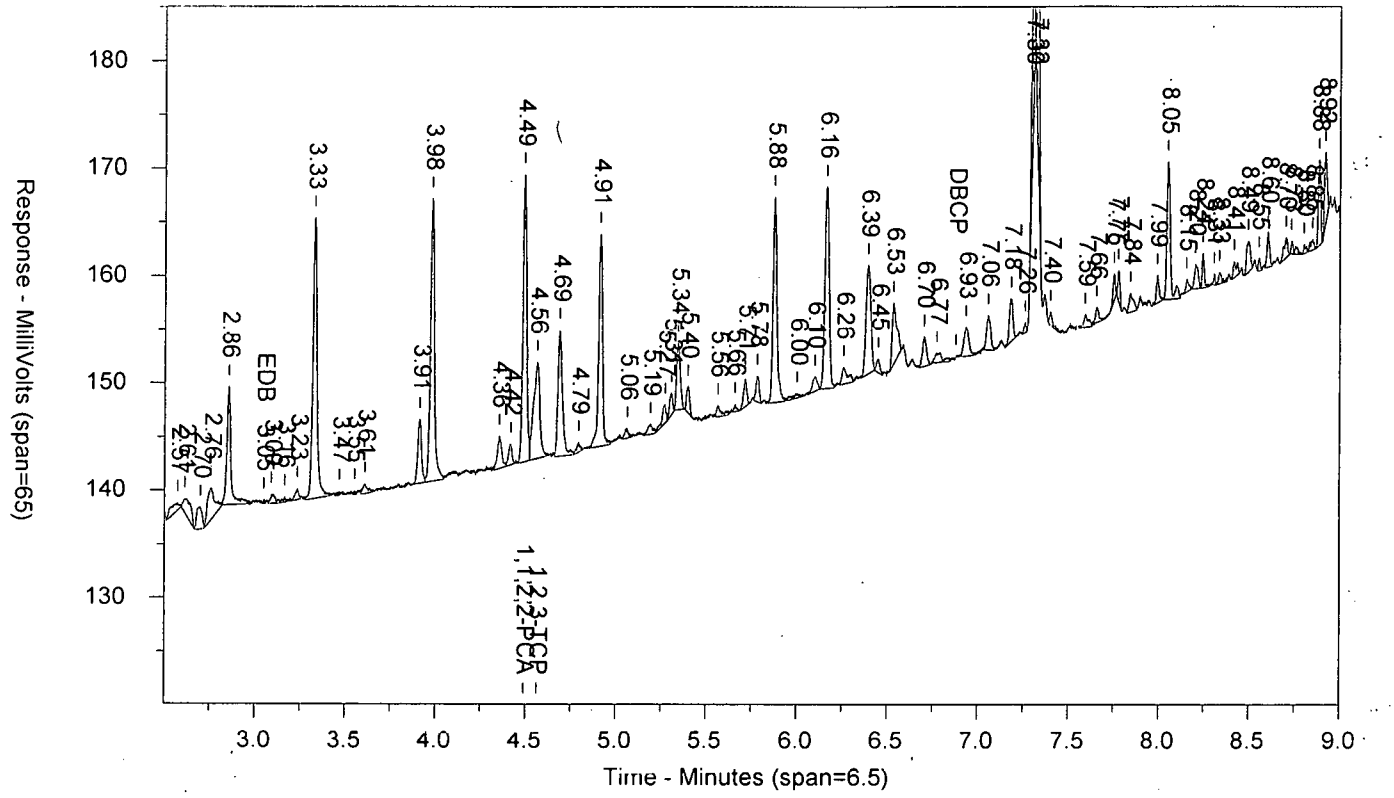
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/29/2017 12:52:56

9175056 AAKEF2D T 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0043.RAW

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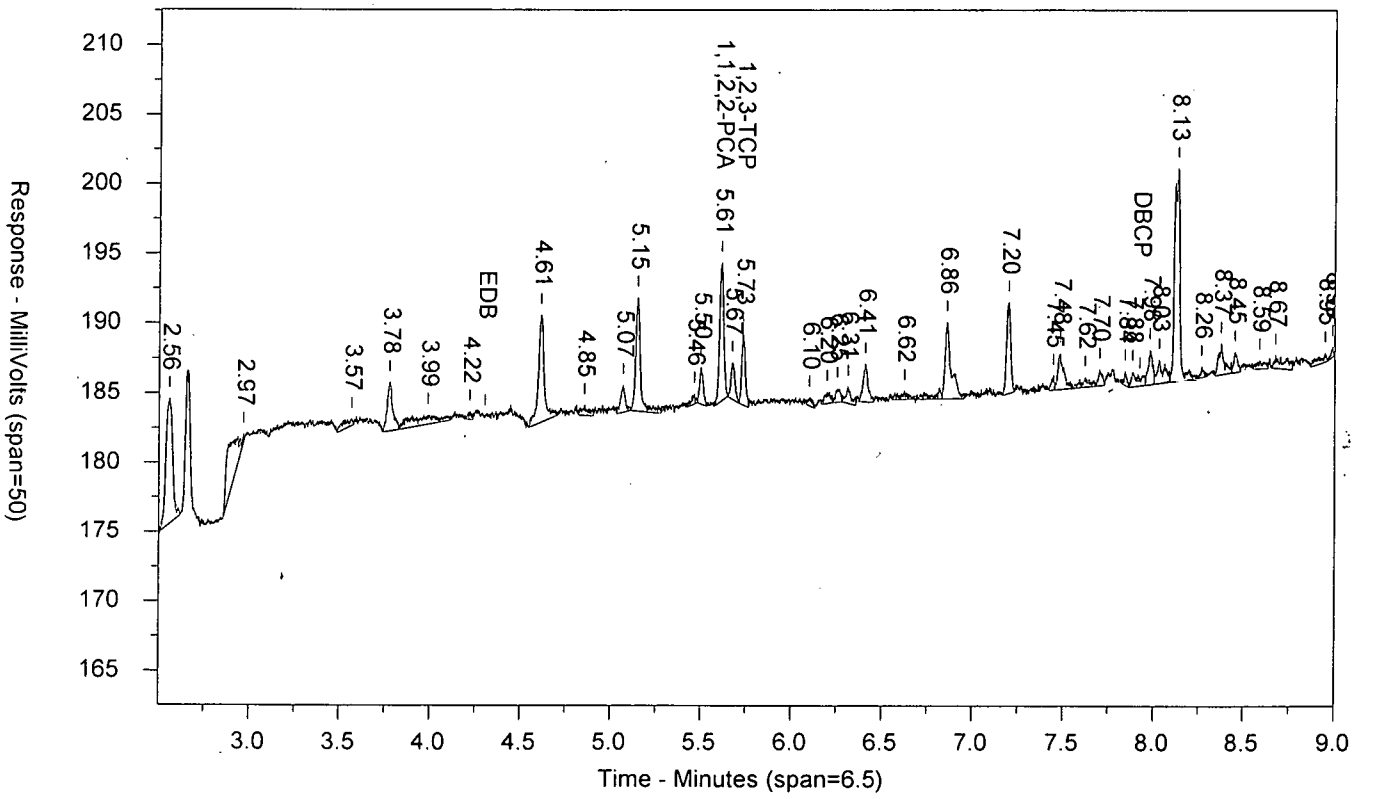

LANCASTER LABORATORIES

Sample Number: 9175056 AAKEF2D T 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 5:33:08 AM Sample Weight: 36.97
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.05 | 390 | .001 | EDB | | 0 | | EDB |
| 4.491 | 26776 | .062 | 1,1,2,2-PCA | 5.613 | 9905 | .066 | 1,1,2,2-PCA |
| 4.562 | 9016 | -.011 | 1,2,3-TCP | 5.731 | 5157 | .08 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0043.RAW
Area File: 16EDBS17240001B.0043.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:42:11 AM
File Reported On: 8/29/2017 at 12:39:38 PM

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# Data Summary

**Sample Name: 9175057** KGAC2 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 37.04 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 05:48:43 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0044.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 103% ( 46 - 136 ) Conc: 0.068801

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 05:48:43 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0044.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 104% ( 46 - 136 ) Conc: 0.069281

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.03 | 3.08 | 508 | 0.001336 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 29742 | 0.068801 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 6481 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 10448 | 0.069281 |
| 1,2,3-Trichloropropane | 5.71 | 5.73 | 5.77 | 3979 | 0.016039 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0094 | <0.0189 | <0.0283 | D1 | | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.068801 | 0.0033 | 0.0066 | 0.0066 | | 0.70 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.068801 | 0.0033 | 0.0066 | 0.0066 | | 0.70 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.069281 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2551 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0094 | <0.0189 | <0.0283 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:30

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175057** KGAC2 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 37.04 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 05:48:43
Instrument : CP16--19853A
Result file : 16EDBS17240001.0044.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 103% (46-136) Conc.: 0.068801

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.03 | 3.08 | 508 | 0.001336 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 29742 | 0.068801 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 6481 | -0.060556 |

## Analysis Report (B)

Injected on : Aug 29, 2017 05:48:43
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0044.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 104% (46-136) Conc.: 0.069281

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10448 | 0.069281 |
| **1,2,3-TCP** | 5.71 | 5.73 | 5.77 | 3979 | 0.016039 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0283 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.068801 | | | | 0.70 | |
| ☐ 1,2,3-TCP | | | <0.2551 | <0.0945 | | | |
| ☐ DBCP | | | <0.0283 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

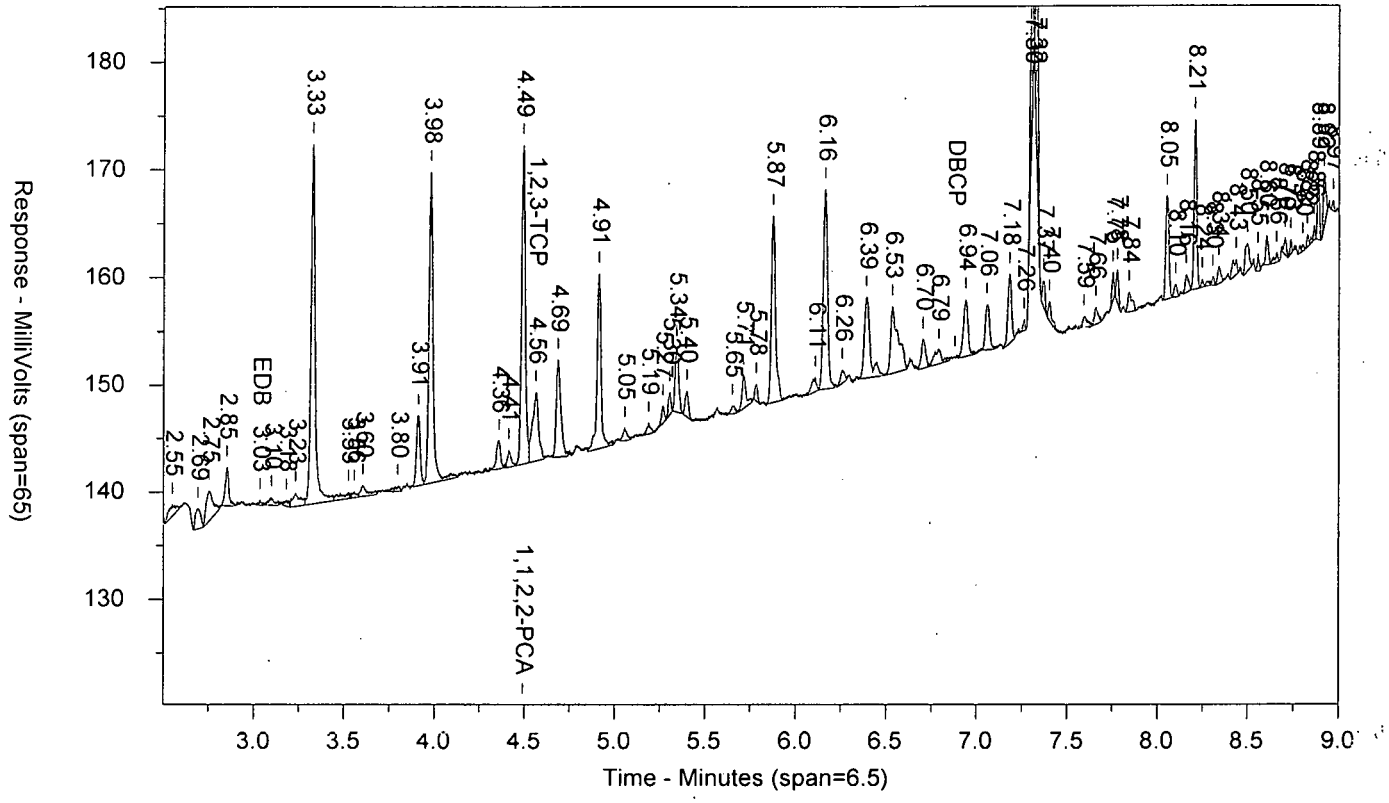
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 31 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9175057 AAKGAC2 T 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0044.RAW

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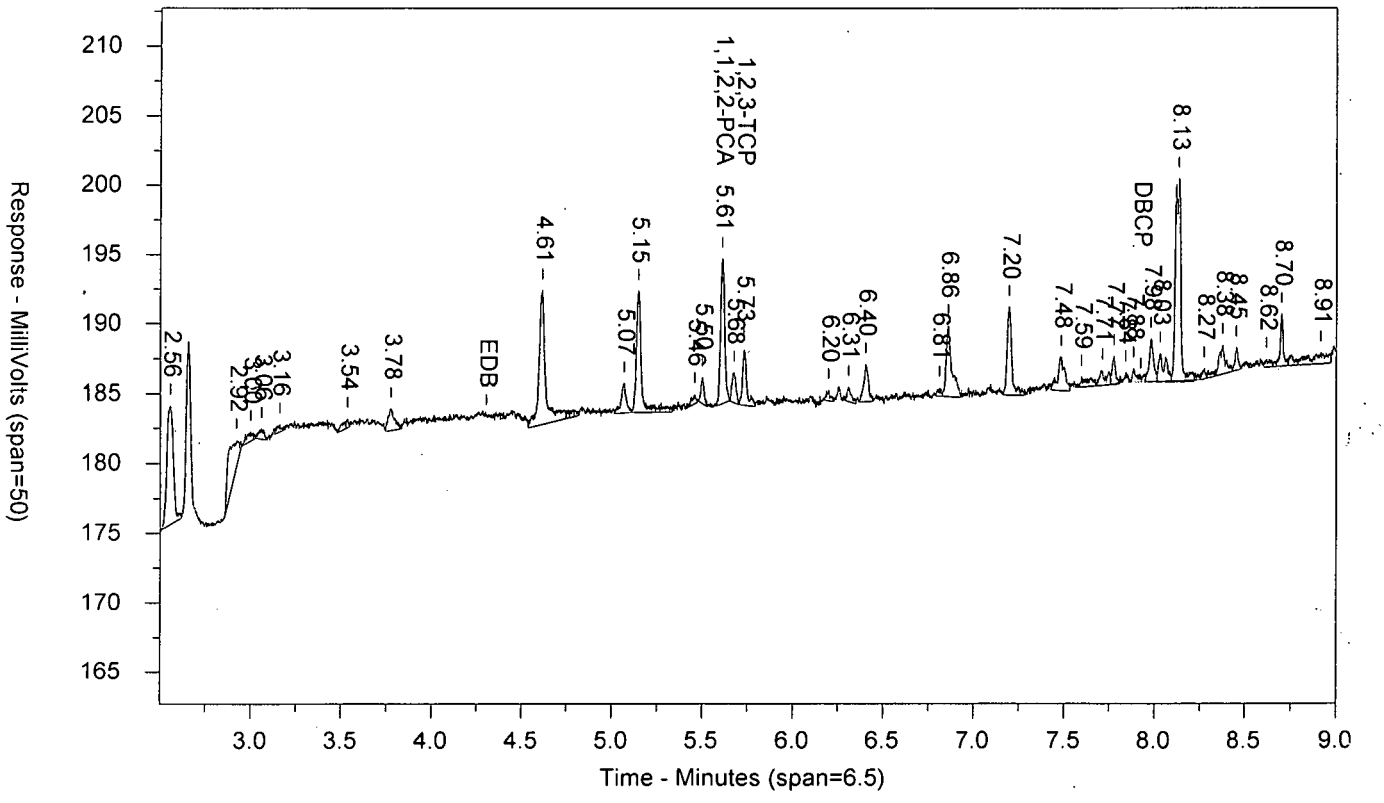

LANCASTER LABORATORIES

Sample Number: 9175057 AAKGAC2 T 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 5:48:43 AM Sample Weight: 37.04
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.034 | 508 | .001 | EDB | | 0 | | EDB |
| 4.492 | 29742 | .069 | 1,1,2,2-PCA | 5.609 | 10448 | .069 | 1,1,2,2-PCA |
| 4.563 | 6481 | -.061 | 1,2,3-TCP | 5.73 | 3979 | .016 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0044.RAW
Area File: 16EDBS17240001B.0044.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:57:46 AM
File Reported On: 8/29/2017 at 12:40:00 PM

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# Data Summary

**Sample Name: 9175058** KINF2 Sample ID: AA **Batchnumber: 172480013A**

Sample Amount: 36.14 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 06, 2017 22:33:28 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17249001.0019.RAW |
| **Calibration file** | 16EDBS1724901 |
| **Method file** | 16EDBS |

%SSR(PCA) 71% ( 46 - 136 ) Conc: 0.048654

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 06, 2017 22:33:28 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17249001B.0019.RAW |
| **Calibration file** | 16EDBS1724901B |
| **Method file** | 16EDBSB |

%SSR(PCA) 65% ( 46 - 136 ) Conc: 0.044184

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.01 | 3.04 | 3.07 | 22294 | 0.057868 | Ethylene dibromide | 4.27 | 4.30 | 4.33 | 6227 | 0.059182 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 21520 | 0.048654 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 6977 | 0.044184 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 14478 | 0.018755 | 1,2,3-Trichloropropane | 5.70 | 5.73 | 5.76 | 6560 | 0 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.89 | 6.91 | 2324 | 0.003717 | | | | | | |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.057868 | 0.0097 | 0.0194 | 0.0291 | D1 | 2.25 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.048654 | 0.0034 | 0.0068 | 0.0068 | | 9.63 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.048654 | 0.0034 | 0.0068 | 0.0068 | | 9.63 | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.044184 | 0.0034 | 0.0068 | 0.0068 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2615 | | | |
| ☐ | 1,2-Dibromo-3-chloroprope | | | <0.0097 | <0.0194 | <0.0291 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Michelle R. Hamilton
Group Leader

SEP 08 2017

Reviewed and digitally signed by Heather M Miller on 9/8/2017 13:42:28

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: 9175058** KINF2 Sample ID: AA **Batchnumber: 172480013A**
Sample Amount: 36.14 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 06, 2017 22:33:28
Instrument : CP16--19853A
Result file : 16EDBS17249001.0019.RAW
Calibration file : 16EDBS1724901.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 71% (46-136) Conc.: 0.048654

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.01 | 3.04 | 3.07 | 22294 | 0.057868 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 21520 | 0.048654 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 14478 | 0.018755 |
| **DBCP** | 6.85 | 6.89 | 6.91 | 2324 | 0.003717 |

## Analysis Report (B)

Injected on : Sep 06, 2017 22:33:28
Instrument : CP16--19853B
Result file : 16EDBS17249001B.0019.RAW
Calibration file : 16EDBS1724901B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 65% (46-136) Conc.: 0.044184

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.27 | 4.30 | 4.33 | 6227 | 0.059182 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 6977 | 0.044184 |
| **1,2,3-TCP** | 5.70 | 5.73 | 5.76 | 6560 | -0.005446 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.057868 | 0.0291 | 0.0097 | | 2.24 | |
| ☐ 1,1,2,2-PCA | A | 0.048654 | | | | 9.63 | |
| ☐ 1,2,3-TCP | | | <0.2615 | <0.0968 | | | |
| ☐ DBCP | | | <0.0291 | <0.0097 | | | |

Units: ug/l

Michelle D. Hamilton
Group Leader

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: SEP 08 2017

Verified by:

Date: SEP 08 2017

SEP 08 2017

%RPD = High - Low Amount divided by the Average times 100

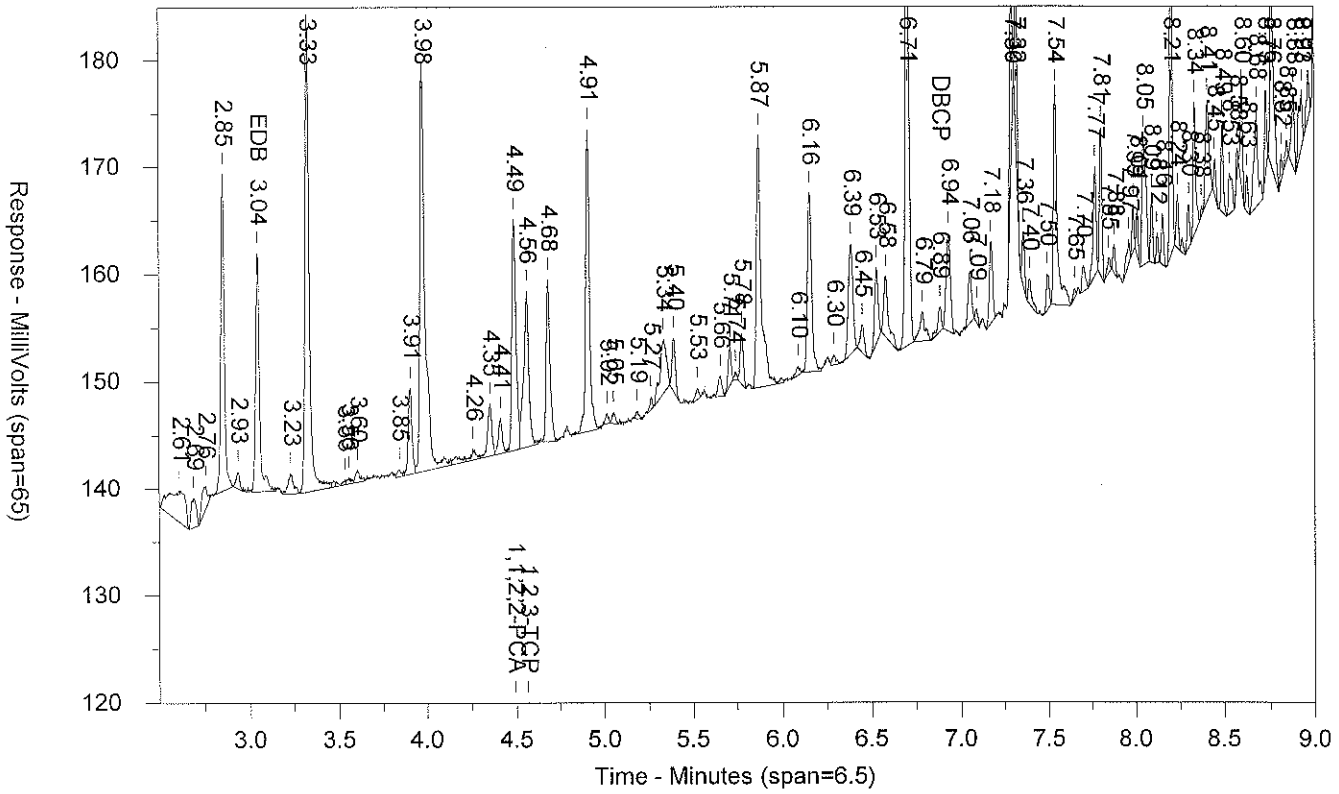
* Recovery outside QC Limits



Printed on: 9/7/2017 14:02:37

9175058 AAKINF2 T 172480013A 10398 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0019.RAW

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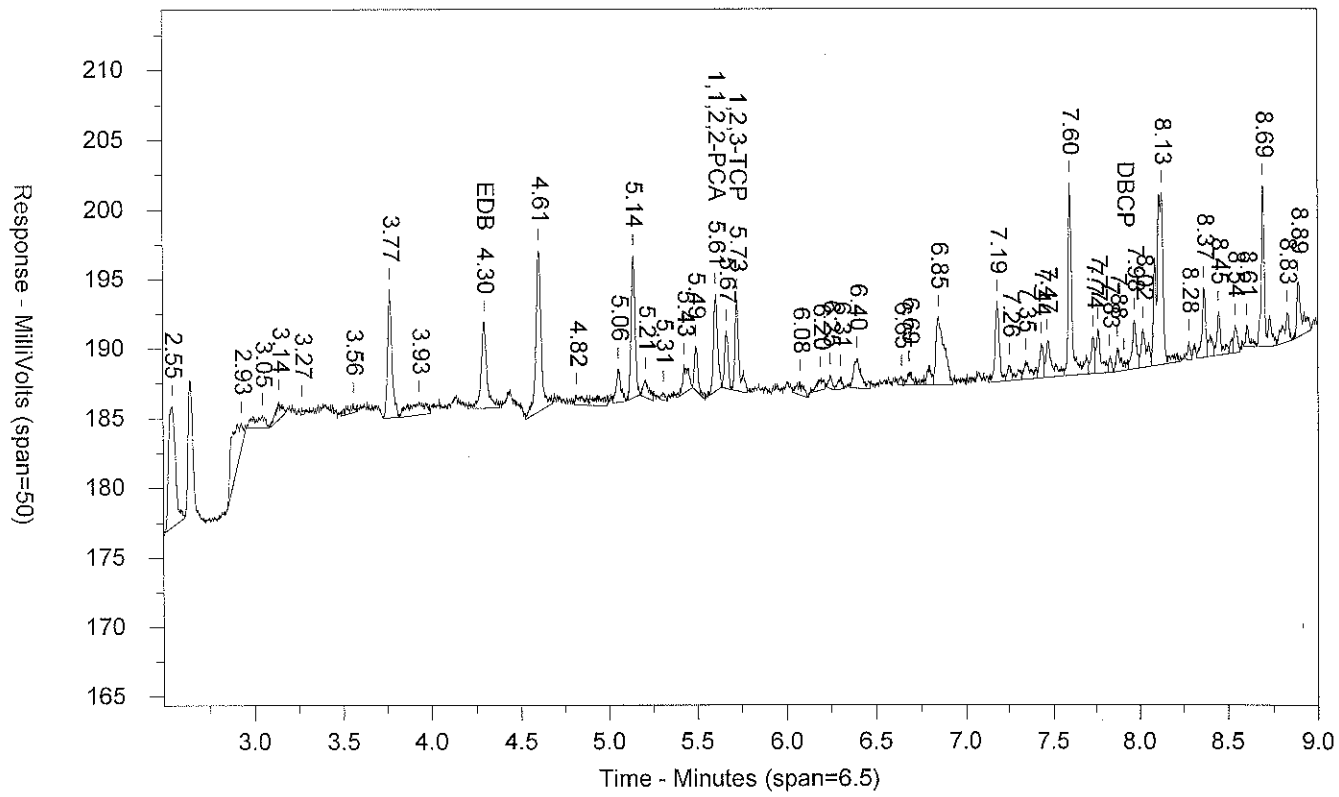

LANCASTER LABORATORIES

Sample Number: 9175058 AAKINF2 T 172480013A 10398 SW-846 8011
Injected On: 9/6/2017 10:33:28 PM Sample Weight: 36.14
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.045 | 22294 | .058 | EDB | 4.298 | 6227 | .059 | EDB |
| 4.491 | 21520 | .049 | 1,1,2,2-PCA | 5.606 | 6977 | .044 | 1,1,2,2-PCA |
| 4.564 | 14478 | .019 | 1,2,3-TCP | 5.728 | 6560 | -.005 | 1,2,3-TCP |
| 6.888 | 2324 | .004 | DBCP | | 0 | | DBCP |

Files:
Area File: 16EDBS17249001.0019.RAW
Area File: 16EDBS17249001B.0019.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 10:42:30 PM
File Reported On: 9/7/2017 at 1:41:08 PM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17240001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 73

| | Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 2 | CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 3 | CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 4 | CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 5 | EIBKX1724C | 5 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1723999999 | |
| 6 | EDB_11724EJ | 6 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 1 | 1723999999 | |
| 7 | EDB_21724EJ | 7 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 2 | 1723999999 | |
| 8 | EDB_31724EJ | 8 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 3 | 1723999999 | |
| 9 | EDB_41724EJ | 9 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 4 | 1723999999 | |
| 10 | EDB_51724EJ | 10 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 5 | 1723999999 | |
| 11 | EDB_61724EJ | 11 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 6 | 1723999999 | |
| 12 | MDEDX1724EJ | 12 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 13 | DBCMX1724B | 13 | MISC | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 14 | EIBKX1724C | 14 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1723999999 | |
| 15 | EDB_31724EJ | 15 | CCAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 16 | BLANKA 8/28/17 | 16 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172370044A | 10398 |
| 17 | LCSA 8/28/17 | 17 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172370044A | 10398 |
| 18 | LCSDA 8/28/17 | 18 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172370044A | 10398 |
| 19 | 9166773R | 19 | T | AA | 16EDBS.MET | 35.66 | 2 | 1 | 0 | 172370044A | 10398 |
| 20 | 9168657R | 20 | T | AA | 16EDBS.MET | 36.34 | 2 | 1 | 0 | 172370044A | 10398 |
| 21 | 9168661R | 21 | T | AA | 16EDBS.MET | 35.91 | 2 | 1 | 0 | 172370044A | 10398 |
| 22 | 9171210 | 22 | T | AA | 16EDBS.MET | 35.76 | 2 | 1 | 0 | 172370044A | 10398 |
| 23 | 9171211 | 23 | T | AA | 16EDBS.MET | 35.84 | 2 | 1 | 0 | 172370044A | 10398 |
| 24 | 9171212 | 24 | T | AA | 16EDBS.MET | 36.05 | 2 | 1 | 0 | 172370044A | 10398 |
| 25 | 9171213 | 25 | T | AA | 16EDBS.MET | 35.85 | 2 | 1 | 0 | 172370044A | 10398 |
| 26 | EIBKX1724C | 26 | PIBLK | PG | 16EDBS.MET | 35 | 2 | 1 | 0 | 1723999999 | |
| 27 | EDB_51724EJ | 27 | CCAL | NK | 16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 28 | 9171214 | 28 | T | AA | 16EDBS.MET | 35.99 | 2 | 1 | 0 | 172370044A | 10398 |
| 29 | 9171215 | 29 | T | AA | 16EDBS.MET | 35.77 | 2 | 1 | 0 | 172370044A | 10398 |
| 30 | 9171216 | 30 | T | AA | 16EDBS.MET | 35.98 | 2 | 1 | 0 | 172370044A | 10398 |
| 31 | 9171217 | 31 | T | AA | 16EDBS.MET | 36.29 | 2 | 1 | 0 | 172370044A | 10398 |
| 32 | 9171218 | 32 | T | AA | 16EDBS.MET | 36 | 2 | 1 | 0 | 172370044A | 10398 |
| 33 | 9175047 | 33 | T | AA | 16EDBS.MET | 36.63 | 2 | 1 | 0 | 172370044A | 10398 |
| 34 | 9175048 | 34 | T | AA | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172370044A | 10398 |
| 35 | 9175049 | 35 | T | AA | 16EDBS.MET | 36.97 | 2 | 1 | 0 | 172370044A | 10398 |
| 36 | 9175050 | 36 | T | AA | 16EDBS.MET | 36.72 | 2 | 1 | 0 | 172370044A | 10398 |
| 37 | 9175051 | 37 | T | AA | 16EDBS.MET | 36.86 | 2 | 1 | 0 | 172370044A | 10398 |
| 38 | EIBKX1724C | 38 | PIBLK | PH | 16EDBS.MET | 35 | 2 | 1 | 0 | 1723999999 | |
| 39 | EDB_41724EJ | 39 | CCAL | RW | 16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 40 | 9175052 | 40 | T | AA | 16EDBS.MET | 36.87 | 2 | 1 | 0 | 172370044A | 10398 |
| 41 | 9175053MS | 41 | MS | AA | 16EDBS.MET | 37.04 | 2 | 1 | 0 | 172370044A | 10398 |
| 42 | 9175054MSD | 42 | MSD | AA | 16EDBS.MET | 37.04 | 2 | 1 | 0 | 172370044A | 10398 |
| 43 | 9175056 | 43 | T | AA | 16EDBS.MET | 36.97 | 2 | 1 | 0 | 172370044A | 10398 |
| 44 | 9175057 | 44 | T | AA | 16EDBS.MET | 37.04 | 2 | 1 | 0 | 172370044A | 10398 |
| 45 | BLANKA 8/28/17 | 45 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172370043A | 10398 |
| 46 | LCSA 8/28/17 | 46 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172370043A | 10398 |
| 47 | LCSDA 8/28/17 | 47 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172370043A | 10398 |
| 48 | 9159786 | 48 | T | AA | 16EDBS.MET | 36.03 | 2 | 1 | 0 | 172370043A | 10398 |
| 49 | 9159786MS | 49 | MS | AA | 16EDBS.MET | 36.02 | 2 | 1 | 0 | 172370043A | 10398 |
| 50 | EIBKX1724C | 50 | PIBLK | PI | 16EDBS.MET | 35 | 2 | 1 | 0 | 1723999999 | |

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP16\16EDBS17240001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 73

| | Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | EDB_31724EJ | 51 | CCAL | TF | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 52 | 9159787 | 52 | T | AA | | 16EDBS.MET | 35.9 | 2 | 1 | 0 | 172370043A | 10398 |
| 53 | 9159787 | 53 | DUP | AA | | 16EDBS.MET | 36.21 | 2 | 1 | 0 | 172370043A | 10398 |
| 54 | 9159788 | 54 | T | AA | | 16EDBS.MET | 36.25 | 2 | 1 | 0 | 172370043A | 10398 |
| 55 | 9159789 | 55 | T | AA | | 16EDBS.MET | 35.71 | 2 | 1 | 0 | 172370043A | 10398 |
| 56 | 9159790 | 56 | T | AA | | 16EDBS.MET | 34.96 | 2 | 1 | 0 | 172370043A | 10398 |
| 57 | 9159791 | 57 | T | AA | | 16EDBS.MET | 36.12 | 2 | 1 | 0 | 172370043A | 10398 |
| 58 | 9159792 | 58 | T | AA | | 16EDBS.MET | 35.79 | 2 | 1 | 0 | 172370043A | 10398 |
| 59 | 9159793 | 59 | T | AA | | 16EDBS.MET | 35.72 | 2 | 1 | 0 | 172370043A | 10398 |
| 60 | 9159794 | 60 | T | AA | | 16EDBS.MET | 35.57 | 2 | 1 | 0 | 172370043A | 10398 |
| 61 | 9159795 | 61 | T | AA | | 16EDBS.MET | 36.15 | 2 | 1 | 0 | 172370043A | 10398 |
| 62 | EIBKX1724C | 62 | PIBLK | PJ | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1723999999 | |
| 63 | EDB_51724EJ | 63 | CCAL | NL | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |
| 64 | 9170924 | 64 | T | AA | | 16EDBS.MET | 37.18 | 2 | 1 | 0 | 172370043A | 10398 |
| 65 | 9170925 | 65 | T | AA | | 16EDBS.MET | 35.67 | 2 | 1 | 0 | 172370043A | 10398 |
| 66 | 9170926 | 66 | T | AA | | 16EDBS.MET | 36.52 | 2 | 1 | 0 | 172370043A | 10398 |
| 67 | 9170927 | 67 | T | AA | | 16EDBS.MET | 36.88 | 2 | 1 | 0 | 172370043A | 10398 |
| 68 | 9171384 | 68 | T | AA | | 16EDBS.MET | 37.12 | 2 | 1 | 0 | 172370043A | 10398 |
| 69 | 9171385 | 69 | T | AA | | 16EDBS.MET | 37.06 | 2 | 1 | 0 | 172370043A | 10398 |
| 70 | 9171386 | 70 | T | AA | | 16EDBS.MET | 36.84 | 2 | 1 | 0 | 172370043A | 10398 |
| 71 | 9171387 | 71 | T | AA | | 16EDBS.MET | 36.65 | 2 | 1 | 0 | 172370043A | 10398 |
| 72 | EIBKX1724C | 72 | PIBLK | PK | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1723999999 | |
| 73 | EDB_41724EJ | 73 | CCAL | RX | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1723999999 | |

KO 23046 8/29/17

Set-up by: _____ Date: 8/28/17

8/28/2017

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperf\chromperfect-data\Dept-24\Active\CP16\16EDBS17249001.seq

Chromatography Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 106

| Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 2 CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 3 CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 4 CONDITIONER | 4 | MISC | AA | EPT-24\ACTIVE\CP16\16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 5 EIBKX1724C | 5 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 6 EDB_11724EN | 6 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 1 | 1724899999 | |
| 7 EDB_21724EN | 7 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 2 | 1724899999 | |
| 8 EDB_31724EN | 8 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 3 | 1724899999 | |
| 9 EDB_41724EN | 9 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 4 | 1724899999 | |
| 10 EDB_51724EN | 10 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 5 | 1724899999 | |
| 11 EDB_61724EN | 11 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 6 | 1724899999 | |
| 12 MDEDX1724EN | 12 | ICAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 13 DBCMX1724B | 13 | MISC | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 14 EDB_31724EN | 14 | CCAL | AA | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 15 EIBKX1724C | 15 | PIBLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 16 BLANKA 9/6/17 | 16 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480013A | 10398 |
| 17 LCSA 9/6/17 | 17 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480013A | 10398 |
| 18 LCSDA 9/6/17 | 18 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480013A | 10398 |
| 19 9175058 | 19 | T | AA | 16EDBS.MET | 36.14 | 2 | 1 | 0 | 172480013A | 10398 |
| 20 9177881 | 20 | T | AA | 16EDBS.MET | 35.45 | 2 | 1 | 0 | 172480013A | 10398 |
| 21 9177881MS | 21 | MS | AA | 16EDBS.MET | 35.3 | 2 | 1 | 0 | 172480013A | 10398 |
| 22 9177882 | 22 | T | AA | 16EDBS.MET | 35.29 | 2 | 1 | 0 | 172480013A | 10398 |
| 23 9177883 | 23 | T | AA | 16EDBS.MET | 35.61 | 2 | 1 | 0 | 172480013A | 10398 |
| 24 9177884 | 24 | T | AA | 16EDBS.MET | 36.09 | 2 | 1 | 0 | 172480013A | 10398 |
| 25 9177885 | 25 | T | AA | 16EDBS.MET | 35.56 | 2 | 1 | 0 | 172480013A | 10398 |
| 26 EDB_51724EN | 26 | CCAL | NY | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 27 EIBKX1724C | 27 | PIBLK | UV | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 28 9177886 | 28 | T | AA | 16EDBS.MET | 36.04 | 2 | 1 | 0 | 172480013A | 10398 |
| 29 9177887 | 29 | T | AA | 16EDBS.MET | 36.01 | 2 | 1 | 0 | 172480013A | 10398 |
| 30 9177887 | 30 | DUP | AA | 16EDBS.MET | 34.96 | 2 | 1 | 0 | 172480013A | 10398 |
| 31 9177888 | 31 | T | AA | 16EDBS.MET | 35.31 | 2 | 1 | 0 | 172480013A | 10398 |
| 32 9177889 | 32 | T | AA | 16EDBS.MET | 35.93 | 2 | 1 | 0 | 172480013A | 10398 |
| 33 9177890 | 33 | T | AA | 16EDBS.MET | 35.85 | 2 | 1 | 0 | 172480013A | 10398 |
| 34 9177891 | 34 | T | AA | 16EDBS.MET | 36.09 | 2 | 1 | 0 | 172480013A | 10398 |
| 35 9181790 | 35 | T | AA | 16EDBS.MET | 35.83 | 2 | 1 | 0 | 172480013A | 10398 |
| 36 9181791 | 36 | T | AA | 16EDBS.MET | 35.61 | 2 | 1 | 0 | 172480013A | 10398 |
| 37 9181792 | 37 | T | AA | 16EDBS.MET | 36.15 | 2 | 1 | 0 | 172480013A | 10398 |
| 38 EDB_41724EN | 38 | CCAL | SF | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 39 EIBKX1724C | 39 | PIBLK | UW | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 40 9181793 | 40 | T | AA | 16EDBS.MET | 35.49 | 2 | 1 | 0 | 172480013A | 10398 |
| 41 9181794 | 41 | T | AA | 16EDBS.MET | 35.53 | 2 | 1 | 0 | 172480013A | 10398 |
| 42 9181795 | 42 | T | AA | 16EDBS.MET | 35.92 | 2 | 1 | 0 | 172480013A | 10398 |
| 43 9181796 | 43 | T | AA | 16EDBS.MET | 35.46 | 2 | 1 | 0 | 172480013A | 10398 |
| 44 9181797 | 44 | T | AA | 16EDBS.MET | 35.22 | 2 | 1 | 0 | 172480013A | 10398 |
| 45 BLANKA 9/6/17 | 45 | BLK | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480037A | 10398 |
| 46 LCSA 9/6/17 | 46 | LCS | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480037A | 10398 |
| 47 LCSDA 9/6/17 | 47 | LCSD | AA | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480037A | 10398 |
| 48 9182942 | 48 | T | AA | 16EDBS.MET | 36.26 | 2 | 1 | 0 | 172480037A | 10398 |
| 49 9182942MS | 49 | MS | AA | 16EDBS.MET | 36.05 | 2 | 1 | 0 | 172480037A | 10398 |
| 50 EDB_31724EN | 50 | CCAL | UM | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |

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## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperf\chromperfect-data\Dept-24\Active\CP16\16EDBS17249001.seq

Chromatography Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 106

| Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 EIBKX1724C | 51 | PIBLK | UX | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 52 9182943 | 52 | T | AA | | 16EDBS.MET | 36.27 | 2 | 1 | 0 | 172480037A | 10398 |
| 53 9182943 | 53 | DUP | AA | | 16EDBS.MET | 36.16 | 2 | 1 | 0 | 172480037A | 10398 |
| 54 9182944 | 54 | T | AA | | 16EDBS.MET | 36.06 | 2 | 1 | 0 | 172480037A | 10398 |
| 55 9182945 | 55 | T | AA | | 16EDBS.MET | 36.58 | 2 | 1 | 0 | 172480037A | 10398 |
| 56 9182946 | 56 | T | AA | | 16EDBS.MET | 36.22 | 2 | 1 | 0 | 172480037A | 10398 |
| 57 9182947 | 57 | T | AA | | 16EDBS.MET | 36.45 | 2 | 1 | 0 | 172480037A | 10398 |
| 58 9182948 | 58 | T | AA | | 16EDBS.MET | 36.3 | 2 | 1 | 0 | 172480037A | 10398 |
| 59 9182949 | 59 | T | AA | | 16EDBS.MET | 36.46 | 2 | 1 | 0 | 172480037A | 10398 |
| 60 9182954 | 60 | T | AA | | 16EDBS.MET | 36.09 | 2 | 1 | 0 | 172480037A | 10398 |
| 61 9182955 | 61 | T | AA | | 16EDBS.MET | 36.45 | 2 | 1 | 0 | 172480037A | 10398 |
| 62 EDB_51724EN | 62 | CCAL | NZ | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 63 EIBKX1724C | 63 | PIBLK | UY | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 64 9182956 | 64 | T | AA | | 16EDBS.MET | 36.02 | 2 | 1 | 0 | 172480037A | 10398 |
| 65 9182957 | 65 | T | AA | | 16EDBS.MET | 36.43 | 2 | 1 | 0 | 172480037A | 10398 |
| 66 9182958 | 66 | T | AA | | 16EDBS.MET | 36.15 | 2 | 1 | 0 | 172480037A | 10398 |
| 67 9182959 | 67 | T | AA | | 16EDBS.MET | 36.31 | 2 | 1 | 0 | 172480037A | 10398 |
| 68 9182960 | 68 | T | AA | | 16EDBS.MET | 35.98 | 2 | 1 | 0 | 172480037A | 10398 |
| 69 9182961 | 69 | T | AA | | 16EDBS.MET | 36.1 | 2 | 1 | 0 | 172480037A | 10398 |
| 70 9182962 | 70 | T | AA | | 16EDBS.MET | 36.08 | 2 | 1 | 0 | 172480037A | 10398 |
| 71 9182963 | 71 | T | AA | | 16EDBS.MET | 36.05 | 2 | 1 | 0 | 172480037A | 10398 |
| 72 9182964 | 72 | T | AA | | 16EDBS.MET | 36.49 | 2 | 1 | 0 | 172480037A | 10398 |
| 73 9182965 | 73 | T | AA | | 16EDBS.MET | 36.15 | 2 | 1 | 0 | 172480037A | 10398 |
| 74 EDB_41724EN | 74 | CCAL | SG | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 75 EIBKX1724C | 75 | PIBLK | UZ | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 76 BLANKA 9/6/17 | 76 | BLK | AA | | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480038A | 10398 |
| 77 LCSA 9/6/17 | 77 | LCS | AA | | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480038A | 10398 |
| 78 LCSDA 9/6/17 | 78 | LCSD | AA | | 16EDBS.MET | 35 | 2 | 1 | 0 | 172480038A | 10398 |
| 79 9182966 | 79 | T | AA | | 16EDBS.MET | 36.2 | 2 | 1 | 0 | 172480038A | 10398 |
| 80 9185291 | 80 | T | AA | | 16EDBS.MET | 35.04 | 2 | 1 | 0 | 172480038A | 10398 |
| 81 9185292 | 81 | T | AA | | 16EDBS.MET | 35.2 | 2 | 1 | 0 | 172480038A | 10398 |
| 82 9185293 | 82 | T | AA | | 16EDBS.MET | 35.16 | 2 | 1 | 0 | 172480038A | 10398 |
| 83 9185294MS | 83 | MS | AA | | 16EDBS.MET | 35.19 | 2 | 1 | 0 | 172480038A | 10398 |
| 84 9185295MSD | 84 | MSD | AA | | 16EDBS.MET | 35.2 | 2 | 1 | 0 | 172480038A | 10398 |
| 85 9185296 | 85 | T | AA | | 16EDBS.MET | 35.71 | 2 | 1 | 0 | 172480038A | 10398 |
| 86 EDB_31724EN | 86 | CCAL | UP | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 87 EIBKX1724C | 87 | PIBLK | VA | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 88 9185297 | 88 | T | AA | | 16EDBS.MET | 34.91 | 2 | 1 | 0 | 172480038A | 10398 |
| 89 9185298 | 89 | T | AA | | 16EDBS.MET | 35.41 | 2 | 1 | 0 | 172480038A | 10398 |
| 90 9185299 | 90 | T | AA | | 16EDBS.MET | 35.54 | 2 | 1 | 0 | 172480038A | 10398 |
| 91 9185300 | 91 | T | AA | | 16EDBS.MET | 35.35 | 2 | 1 | 0 | 172480038A | 10398 |
| 92 9185301 | 92 | T | AA | | 16EDBS.MET | 35.78 | 2 | 1 | 0 | 172480038A | 10398 |
| 93 9185817 | 93 | T | AA | | 16EDBS.MET | 35.71 | 2 | 1 | 0 | 172480038A | 10398 |
| 94 9185818 | 94 | T | AA | | 16EDBS.MET | 36.44 | 2 | 1 | 0 | 172480038A | 10398 |
| 95 9185819 | 95 | T | AA | | 16EDBS.MET | 36.69 | 2 | 1 | 0 | 172480038A | 10398 |
| 96 9185855 | 96 | T | AA | | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172480038A | 10398 |
| 97 9185856 | 97 | T | AA | | 16EDBS.MET | 36.66 | 2 | 1 | 0 | 172480038A | 10398 |
| 98 EDB_51724EN | 98 | CCAL | OA | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 99 EIBKX1724C | 99 | PIBLK | VB | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |
| 100 9185857 | 100 | T | AA | | 16EDBS.MET | 36.54 | 2 | 1 | 0 | 172480038A | 10398 |

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperf\chromperfect-data\Dept-24\Active\CP16\16EDBS17249001.seq

Chromatography Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Method Directory: \\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16

Number of Entries: 106

| Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 9186393 | 101 | T | AA | | 16EDBS.MET | 36.46 | 2 | 1 | 0 | 172480038A | 10398 |
| 102 9186394 | 102 | T | AA | | 16EDBS.MET | 36.35 | 2 | 1 | 0 | 172480038A | 10398 |
| 103 9186395 | 103 | T | AA | | 16EDBS.MET | 36.71 | 2 | 1 | 0 | 172480038A | 10398 |
| 104 9186396 | 104 | T | AA | | 16EDBS.MET | 35.79 | 2 | 1 | 0 | 172480038A | 10398 |
| 105 EDB_41724EN | 105 | CCAL | SH | | 16EDBS.MET | 1 | 1 | 1 | 0 | 1724899999 | |
| 106 EIBKX1724C | 106 | PIBLK | VC | | 16EDBS.MET | 35 | 2 | 1 | 0 | 1724899999 | |

DB 126 ee9

9/8/17

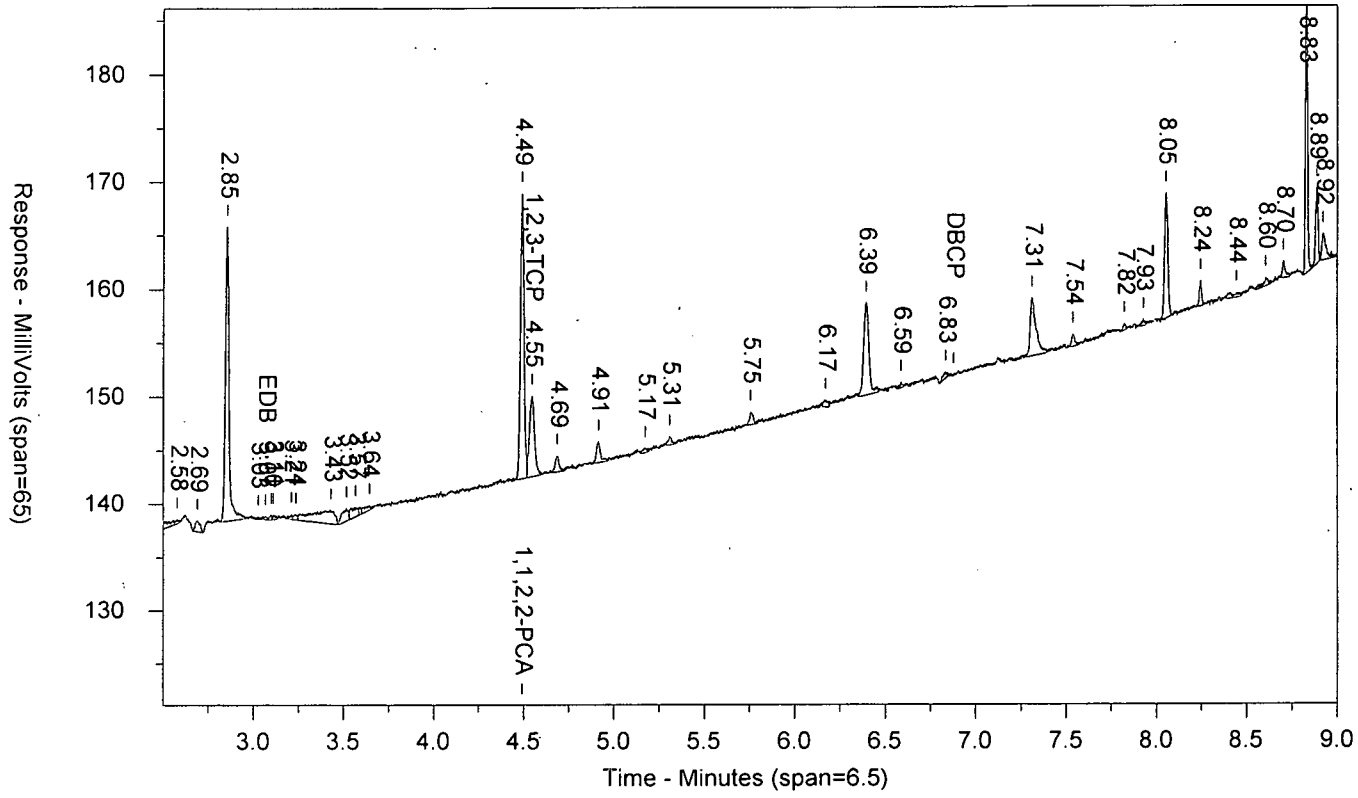
Heather Miller
Heather M. Miller
Chemist

Set-up by: SEP 06 2017 Date:

9/6/2017

EIBKX1724C AAPIBLKAA PIBLK1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0005.RAW

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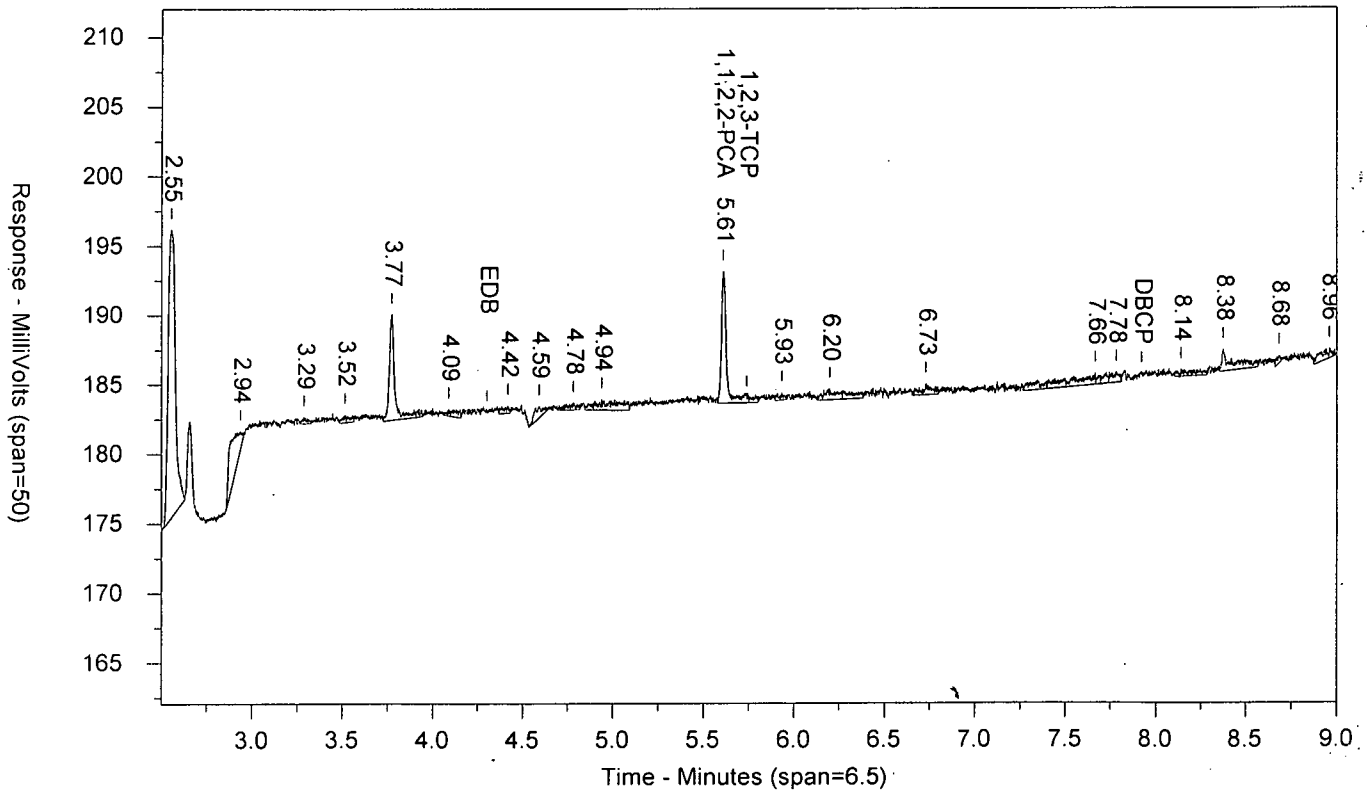

LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1723999999 SW-846 8011
Injected On: 8/28/2017 7:41:56 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.068 | 352 | .001 | EDB | | 0 | | EDB |
| 4.491 | 26655 | .068 | 1,1,2,2-PCA | 5.609 | 9484 | .068 | 1,1,2,2-PCA |
| 4.547 | 7592 | .045 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0005.RAW
Area File: 16EDBS17240001B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 7:50:57 PM
File Reported On: 8/29/2017 at 12:17:56 PM

EDB_11724EJ AAEDB_1AA ICAL 1723999999 SW-846 8011

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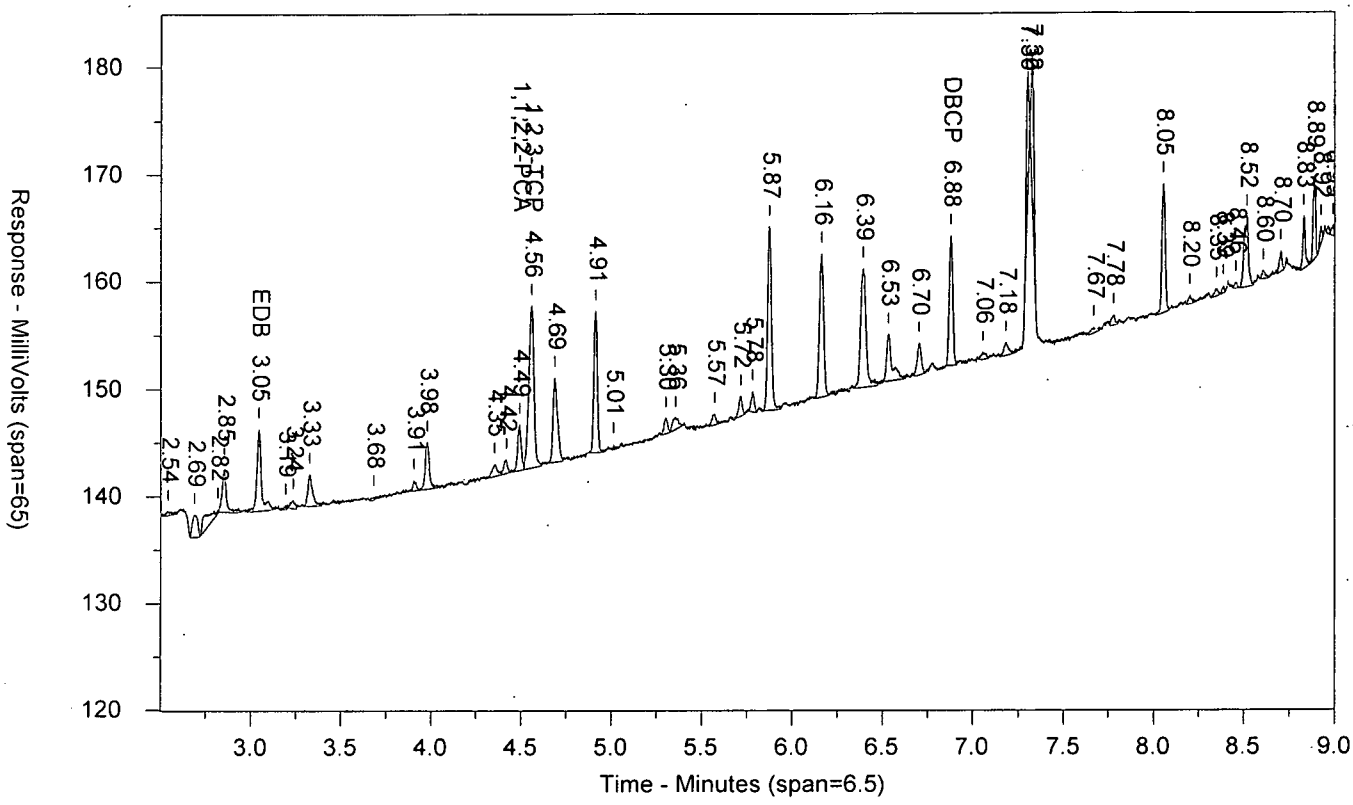


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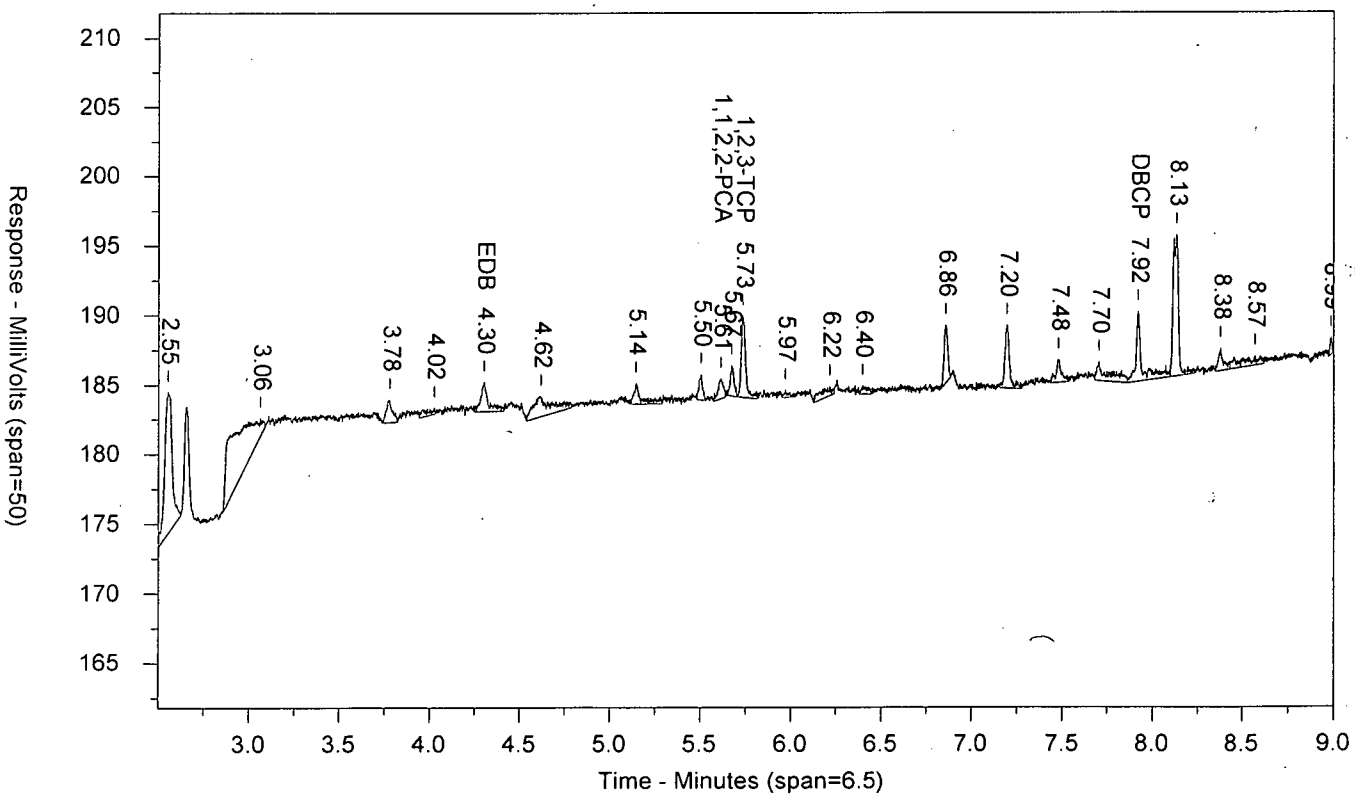

LANCASTER LABORATORIES

Sample Number: EDB_11724EJ AAEDB_1AA ICAL 1723999999 SW-846 8011
Injected On: 8/28/2017 7:57:31 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 7654 | .315 | EDB | 4.304 | 2168 | .324 | EDB |
| 4.493 | 4350 | .193 | 1,1,2,2-PCA | 5.613 | 1465 | .183 | 1,1,2,2-PCA |
| 4.56 | 15169 | 3.515 | 1,2,3-TCP | 5.734 | 5832 | 5.846 | 1,2,3-TCP |
| 6.878 | 12109 | .304 | DBCP | 7.92 | 5004 | .306 | DBCP |

Files:
Area File: 16EDBS17240001.0006.RAW
Area File: 16EDBS17240001B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 8:06:34 PM
File Reported On: 8/29/2017 at 12:18:12 PM

EDB_21724EJ AAEDB_2AA ICAL 1723999999 SW-846 8011

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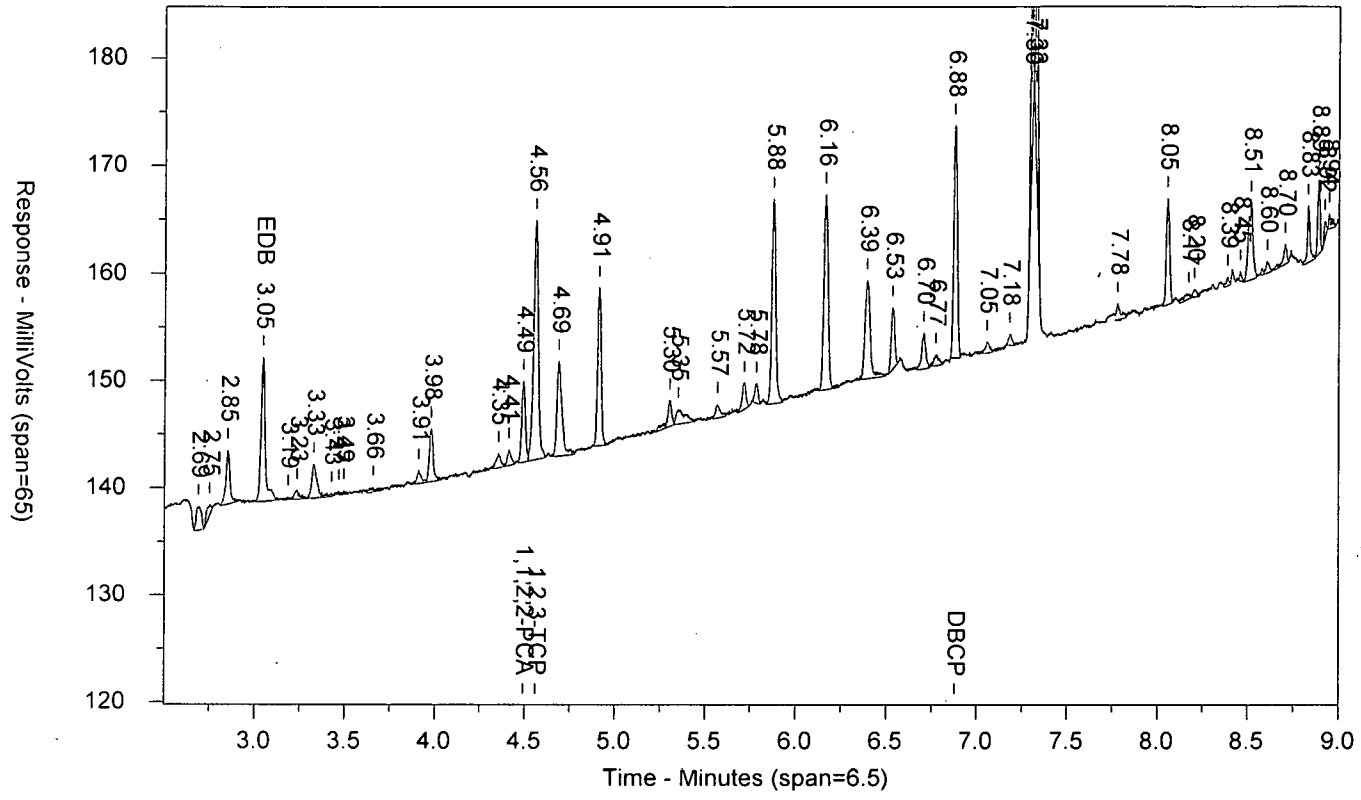


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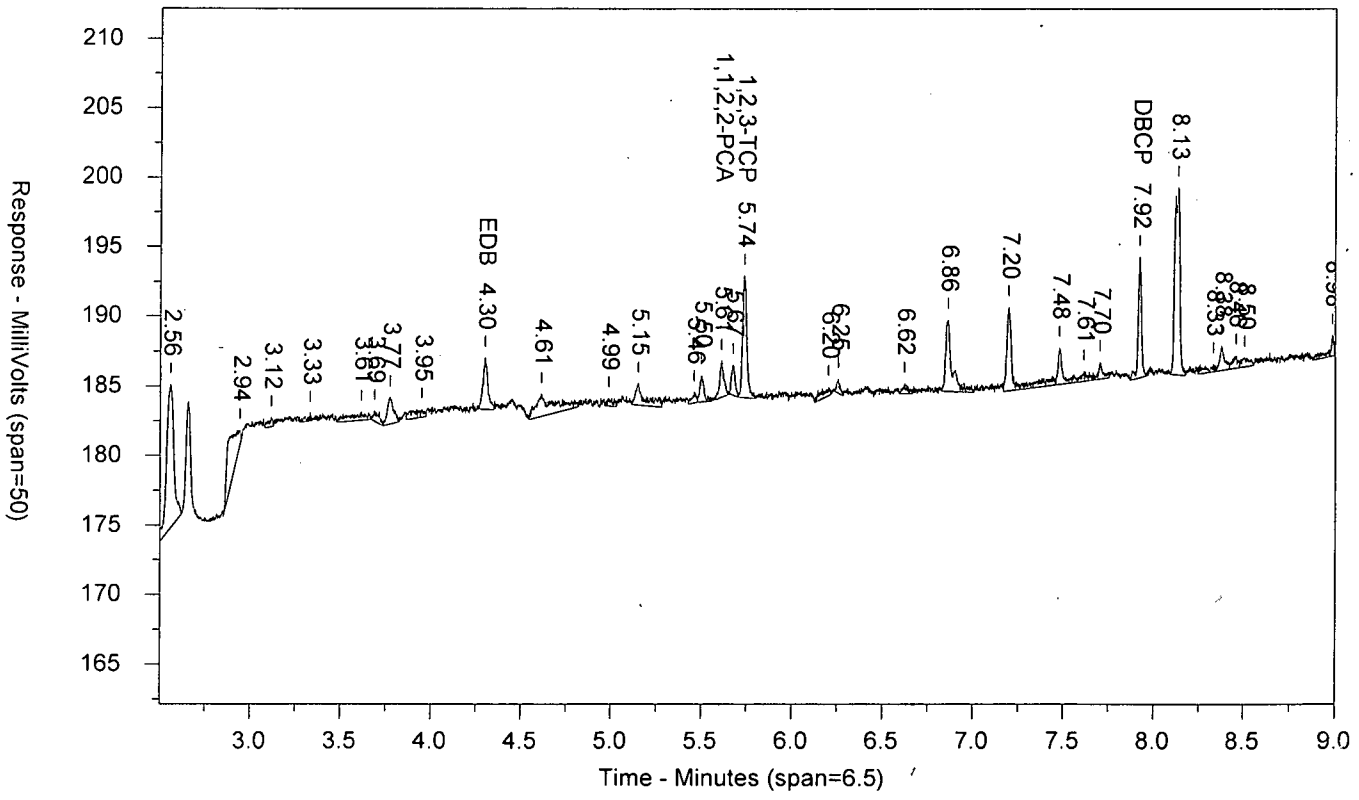


LANCASTER LABORATORIES

Sample Number: EDB_21724EJ AAEDB_2AA ICAL 1723999999 SW-846 8011
Injected On: 8/28/2017 8:13:04 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

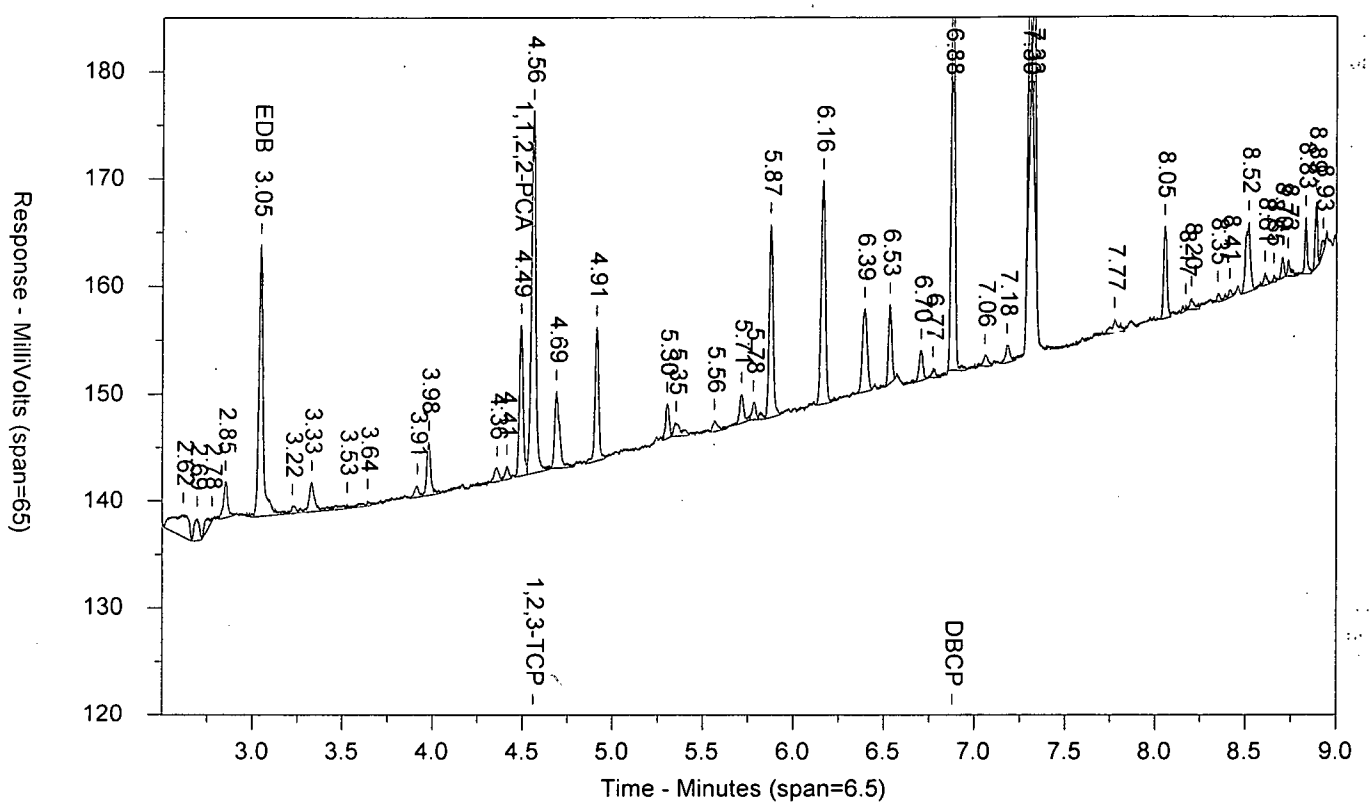
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 13489 | .57 | EDB | 4.301 | 3712 | .564 | EDB |
| 4.491 | 7623 | .337 | 1,1,2,2-PCA | 5.61 | 2619 | .328 | 1,1,2,2-PCA |
| 4.56 | 22317 | 5.674 | 1,2,3-TCP | 5.736 | 8780 | 7.321 | 1,2,3-TCP |
| 6.878 | 21627 | .558 | DBCP | 7.919 | 8705 | .55 | DBCP |

Files:
Area File: 16EDBS17240001.0007.RAW
Area File: 16EDBS17240001B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 8:22:05 PM
File Reported On: 8/29/2017 at 12:18:29 PM

EDB_31724EJ AAEDB_3AA ICAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0008.RAW

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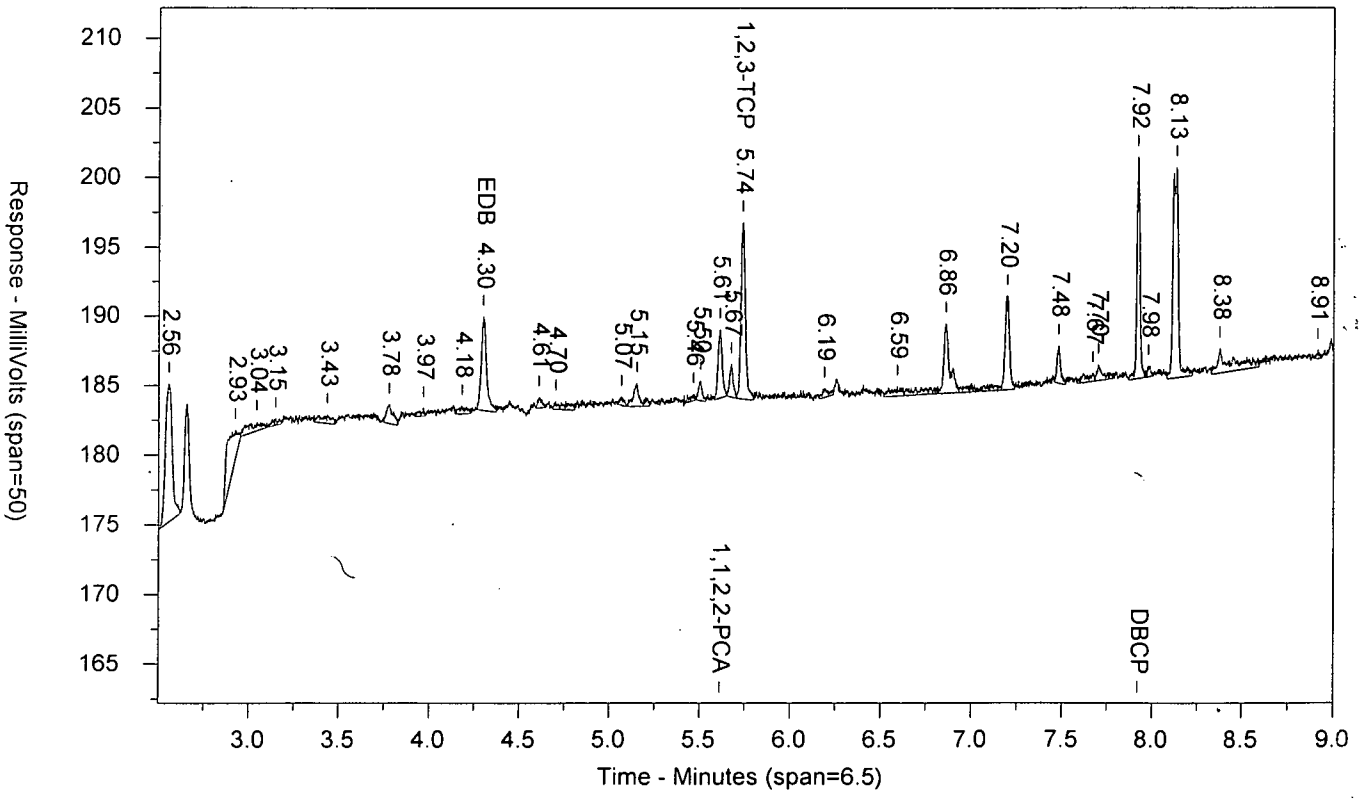


LANCASTER LABORATORIES

Sample Number: EDB_31724EJ AAEDB_3AA ICAL 1723999999 SW-846 8011
Injected On: 8/28/2017 8:28:35 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

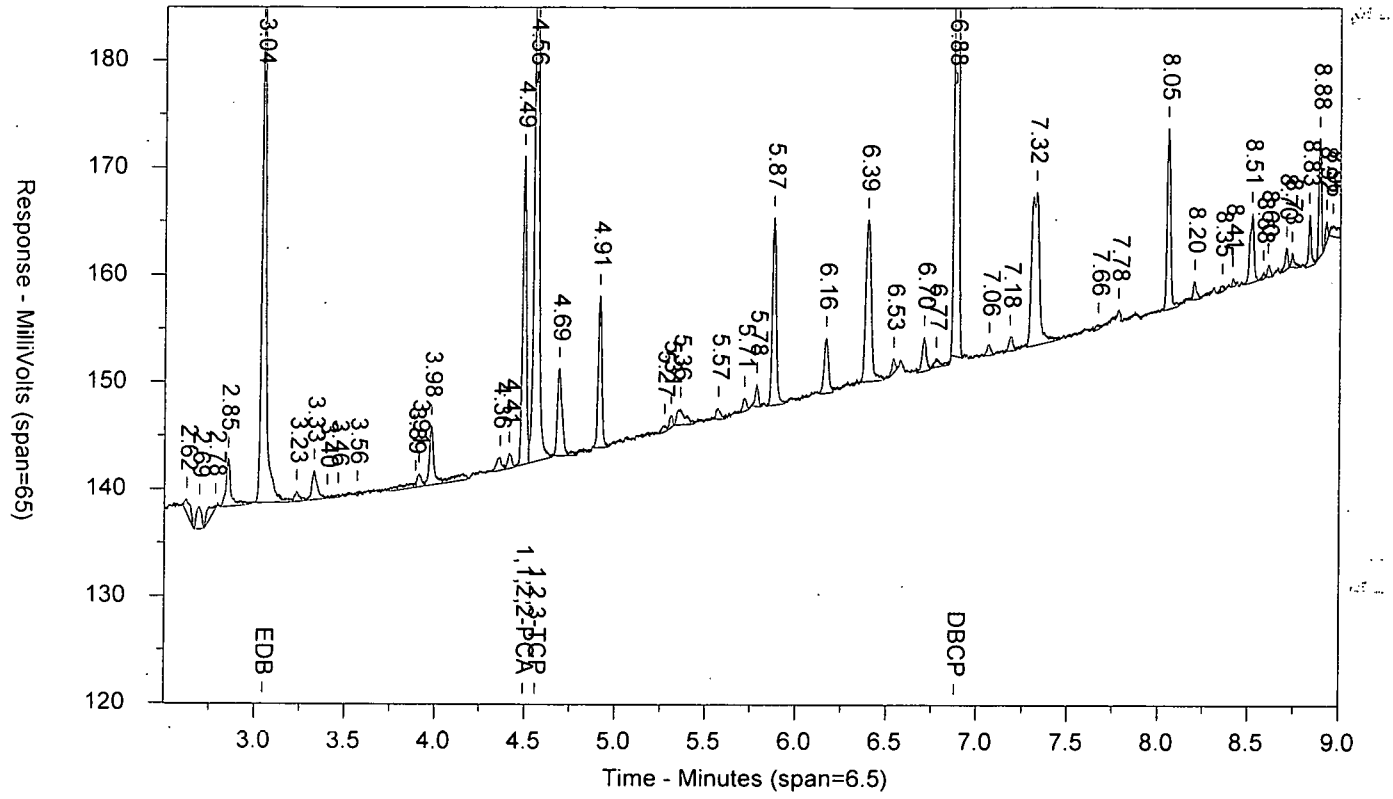
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.045 | 25311 | 1.11 | EDB | 4.3 | 6784 | 1.063 | EDB |
| 4.491 | 14096 | .627 | 1,1,2,2-PCA | 5.611 | 4954 | .624 | 1,1,2,2-PCA |
| 4.559 | 33759 | 9.551 | 1,2,3-TCP | 5.737 | 12771 | 9.522 | 1,2,3-TCP |
| 6.878 | 41353 | 1.107 | DBCP | 7.92 | 15994 | 1.054 | DBCP |

Files:
Area File: 16EDBS17240001.0008.RAW
Area File: 16EDBS17240001B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 8:37:36 PM
File Reported On: 8/29/2017 at 12:18:45 PM

EDB_41724EJ AAEDB_4AA ICAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0009.RAW

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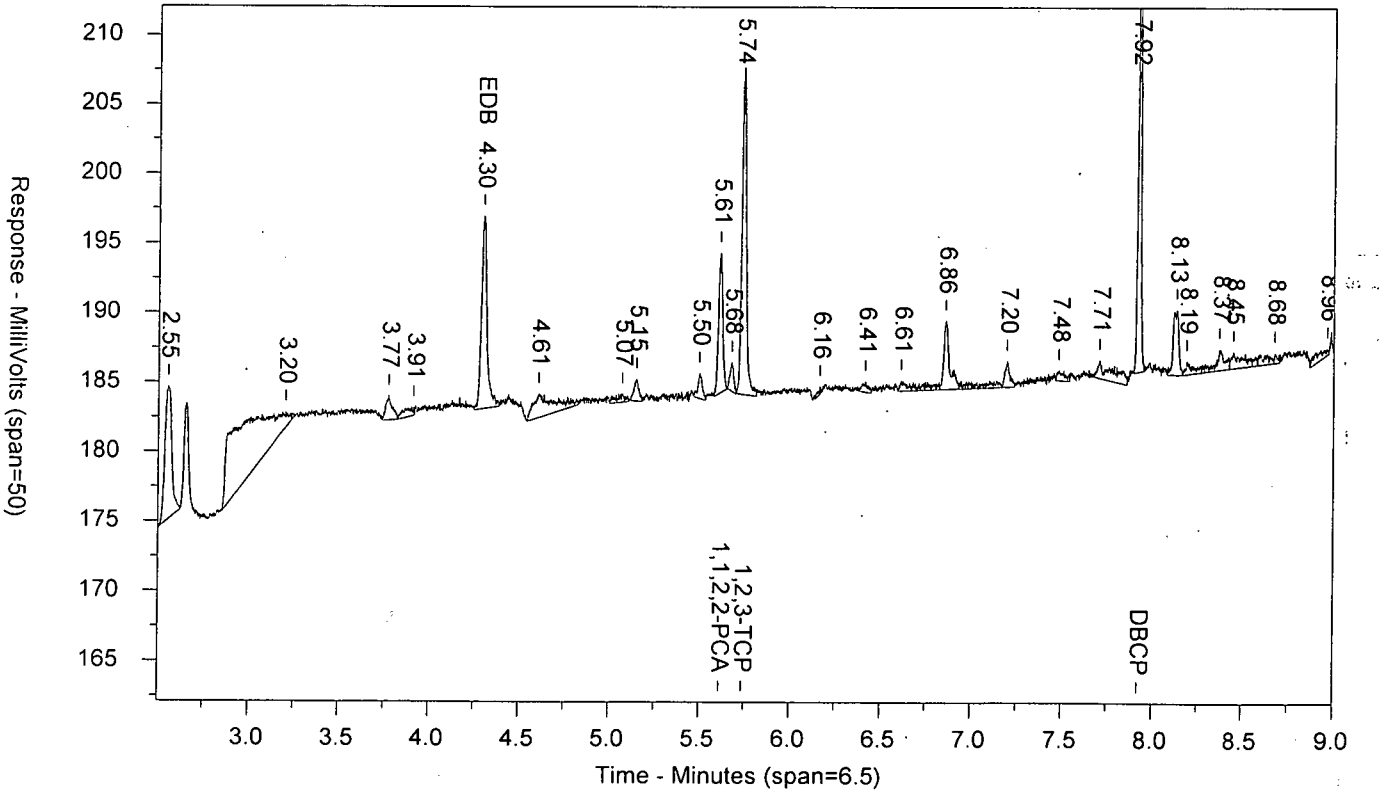


LANCASTER LABORATORIES

Sample Number: EDB_41724EJ AAEDB_4AA ICAL 1723999999 SW-846 8011
Injected On: 8/28/2017 8:44:08 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

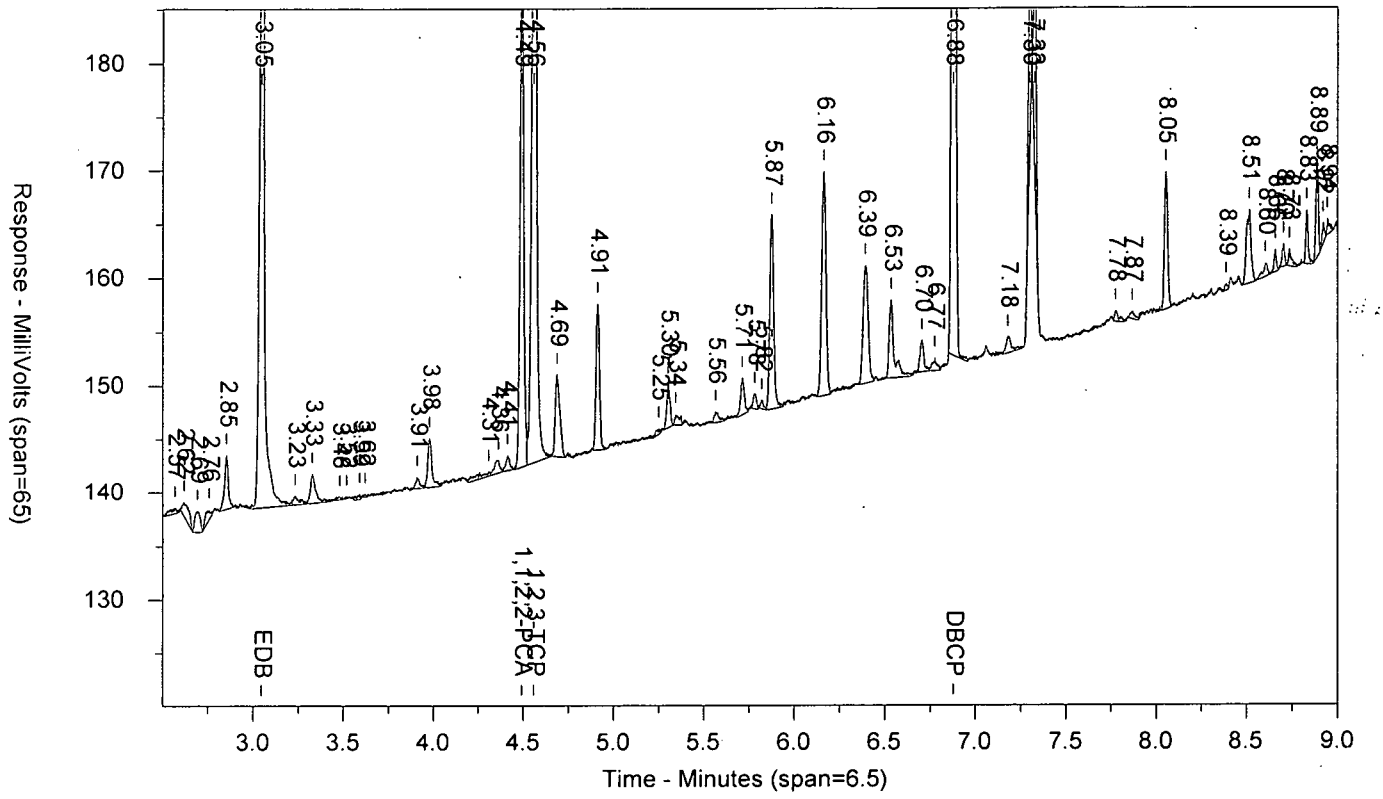
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.045 | 50951 | 2.297 | EDB | 4.301 | 13827 | 2.221 | EDB |
| 4.491 | 28788 | 1.281 | 1,1,2,2-PCA | 5.611 | 10084 | 1.257 | 1,1,2,2-PCA |
| 4.557 | 68383 | 22.158 | 1,2,3-TCP | 5.737 | 23614 | 16.808 | 1,2,3-TCP |
| 6.878 | 84605 | 2.329 | DBCP | 7.921 | 32210 | 2.216 | DBCP |

Files:
Area File: 16EDBS17240001.0009.RAW
Area File: 16EDBS17240001B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 8:53:10 PM
File Reported On: 8/29/2017 at 12:19:01 PM

EDB_51724EJ AAEDB_5AA ICAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0010.RAW

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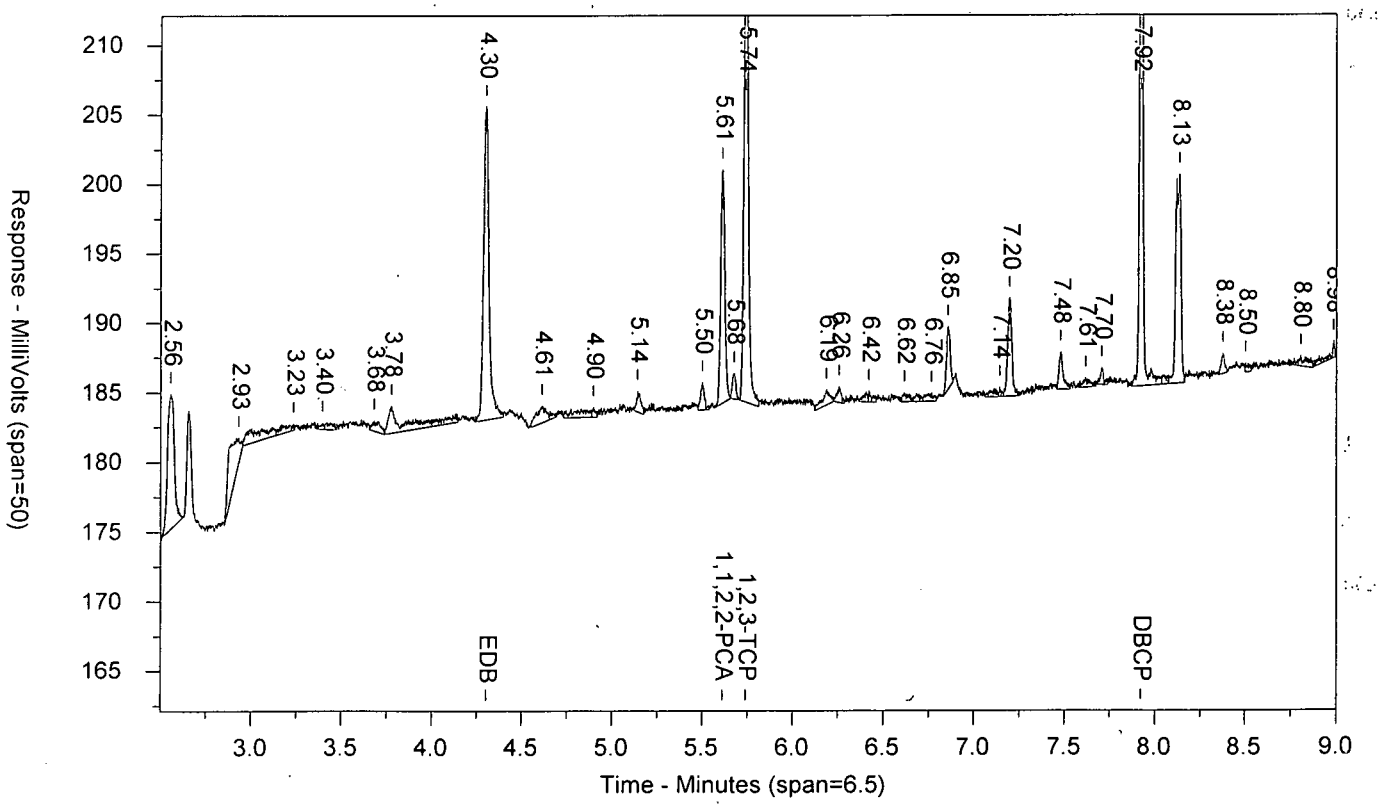


LANCASTER LABORATORIES

Sample Number: EDB_51724EJ AAEDB_5AA ICAL 1723999999 SW-846 8011
Injected On: 8/28/2017 8:59:40 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

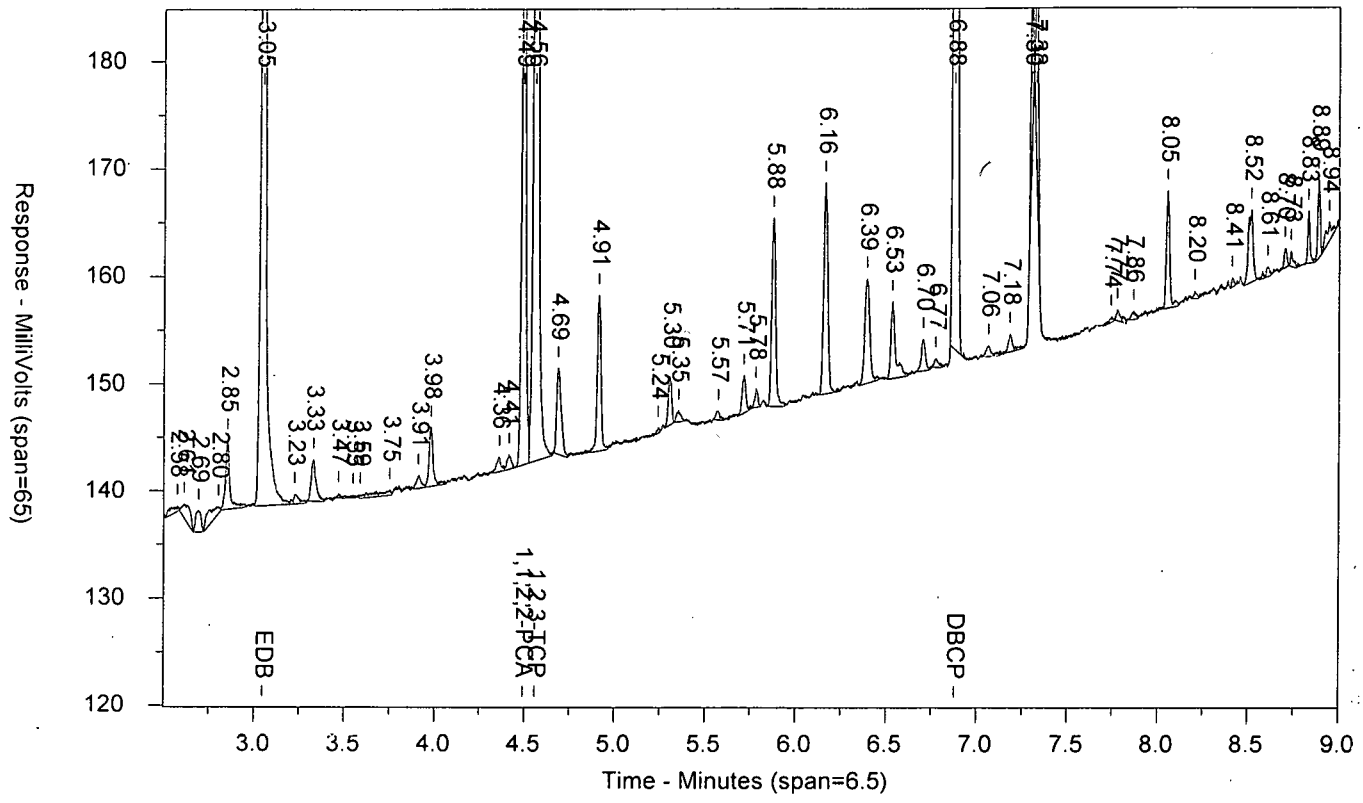
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 85961 | 3.977 | EDB | 4.303 | 22598 | 3.755 | EDB |
| 4.491 | 47086 | 2.066 | 1,1,2,2-PCA | 5.611 | 16864 | 2.085 | 1,1,2,2-PCA |
| 4.558 | 101367 | 33.864 | 1,2,3-TCP | 5.739 | 36970 | 25.703 | 1,2,3-TCP |
| 6.878 | 135304 | 3.822 | DBCP | 7.921 | 50852 | 3.623 | DBCP |

Files:
Area File: 16EDBS17240001.0010.RAW
Area File: 16EDBS17240001B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 9:08:41 PM
File Reported On: 8/29/2017 at 12:19:19 PM

EDB_61724EJ AAEDB_6AA ICAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0011.RAW

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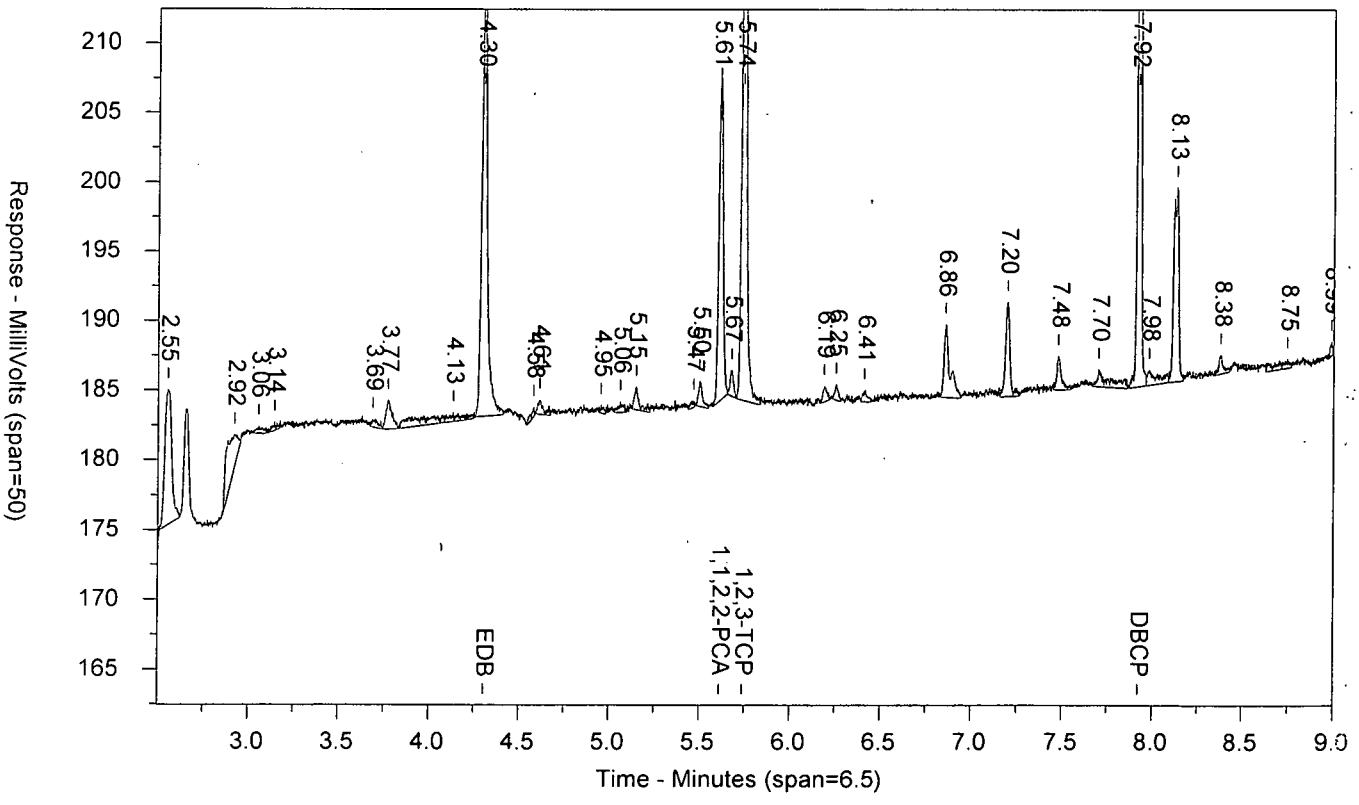


LANCASTER LABORATORIES

Sample Number: EDB_61724EJ AAEDB_6AA ICAL 1723999999 SW-846 8011
Injected On: 8/28/2017 9:15:14 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

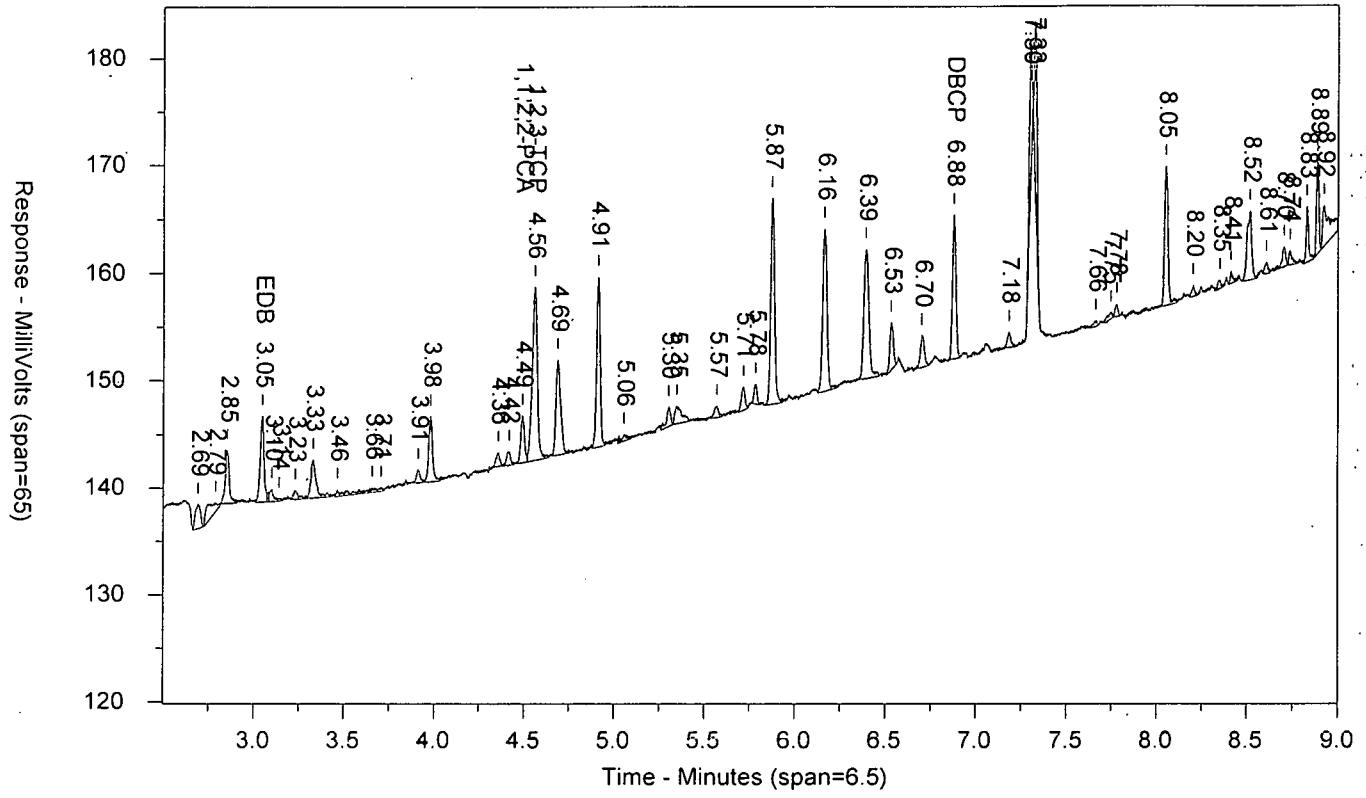
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.047 | 122292 | 5.825 | EDB | 4.302 | 32396 | 5.622 | EDB |
| 4.491 | 67558 | 2.93 | 1,1,2,2-PCA | 5.611 | 23999 | 2.968 | 1,1,2,2-PCA |
| 4.558 | 139136 | 47.9 | 1,2,3-TCP | 5.739 | 51022 | 35.203 | 1,2,3-TCP |
| 6.878 | 190815 | 5.601 | DBCP | 7.921 | 71435 | 5.326 | DBCP |

Files:
Area File: 16EDBS17240001.0011.RAW
Area File: 16EDBS17240001B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 9:24:15 PM
File Reported On: 8/29/2017 at 12:19:39 PM

MDEDX1724EJ AAMDEDXAA ICAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0012.RAW

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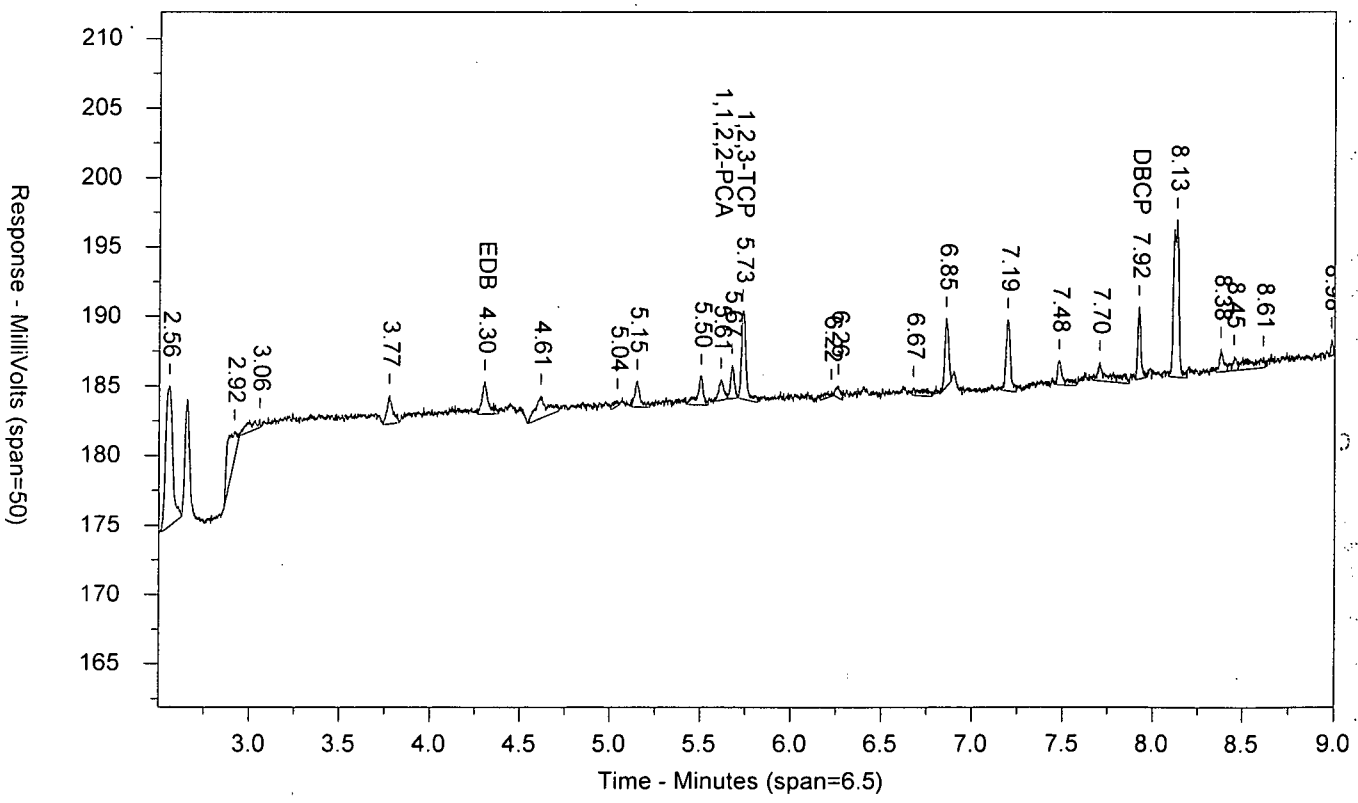


LANCASTER LABORATORIES

Sample Number: MDEDX1724EJ AAMDEDXAA ICAL 1723999999 SW-846 8011
Injected On: 8/28/2017 9:30:46 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

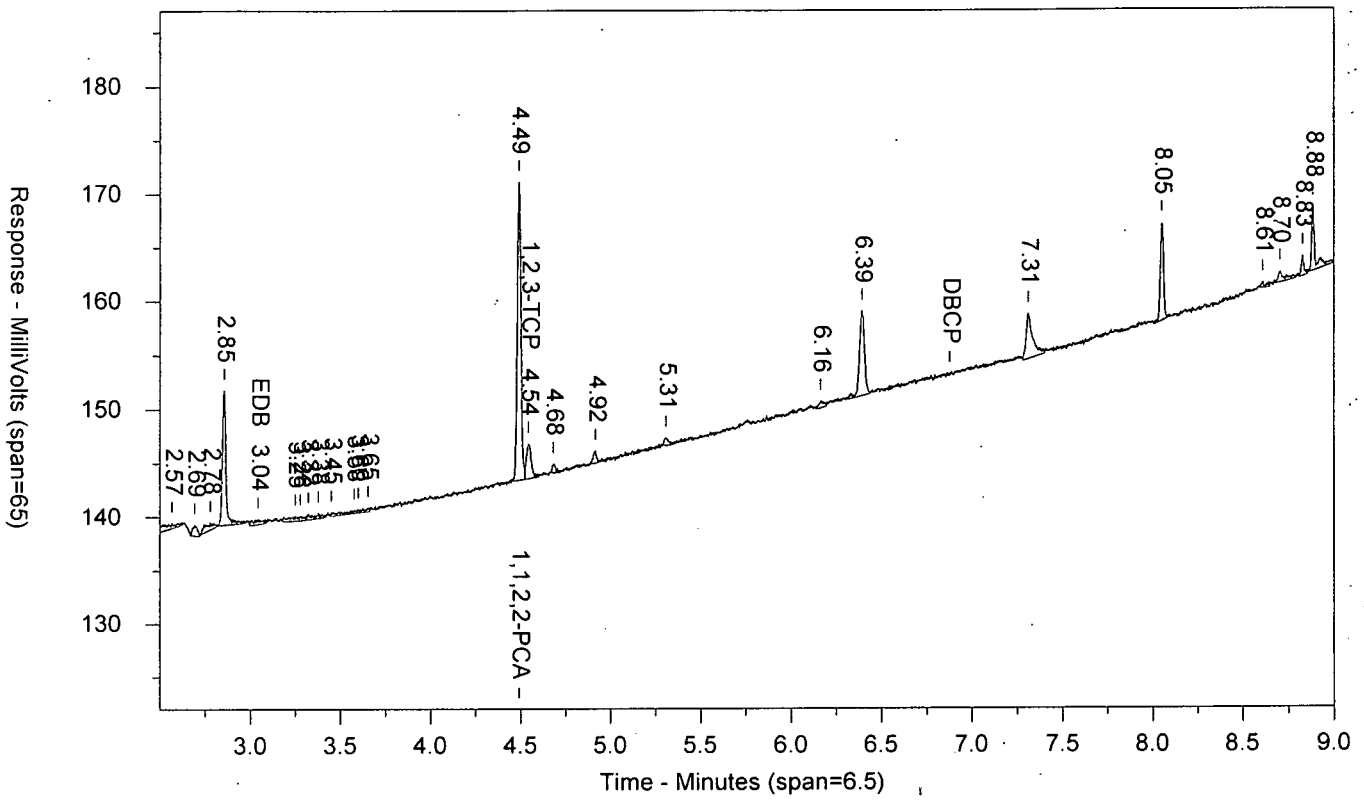
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 8099 | .395 | EDB | 4.303 | 2352 | .423 | EDB |
| 4.491 | 4435 | .19 | 1,1,2,2-PCA | 5.612 | 1480 | .182 | 1,1,2,2-PCA |
| 4.56 | 16153 | 2.385 | 1,2,3-TCP | 5.732 | 6371 | 2.691 | 1,2,3-TCP |
| 6.878 | 13357 | .404 | DBCP | 7.921 | 5223 | .405 | DBCP |

Files:
Area File: 16EDBS17240001.0012.RAW
Area File: 16EDBS17240001B.0012.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 9:39:48 PM
File Reported On: 8/29/2017 at 12:30:53 PM

EIBKX1724C AAPIBLKAA PIBLK1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0005.RAW

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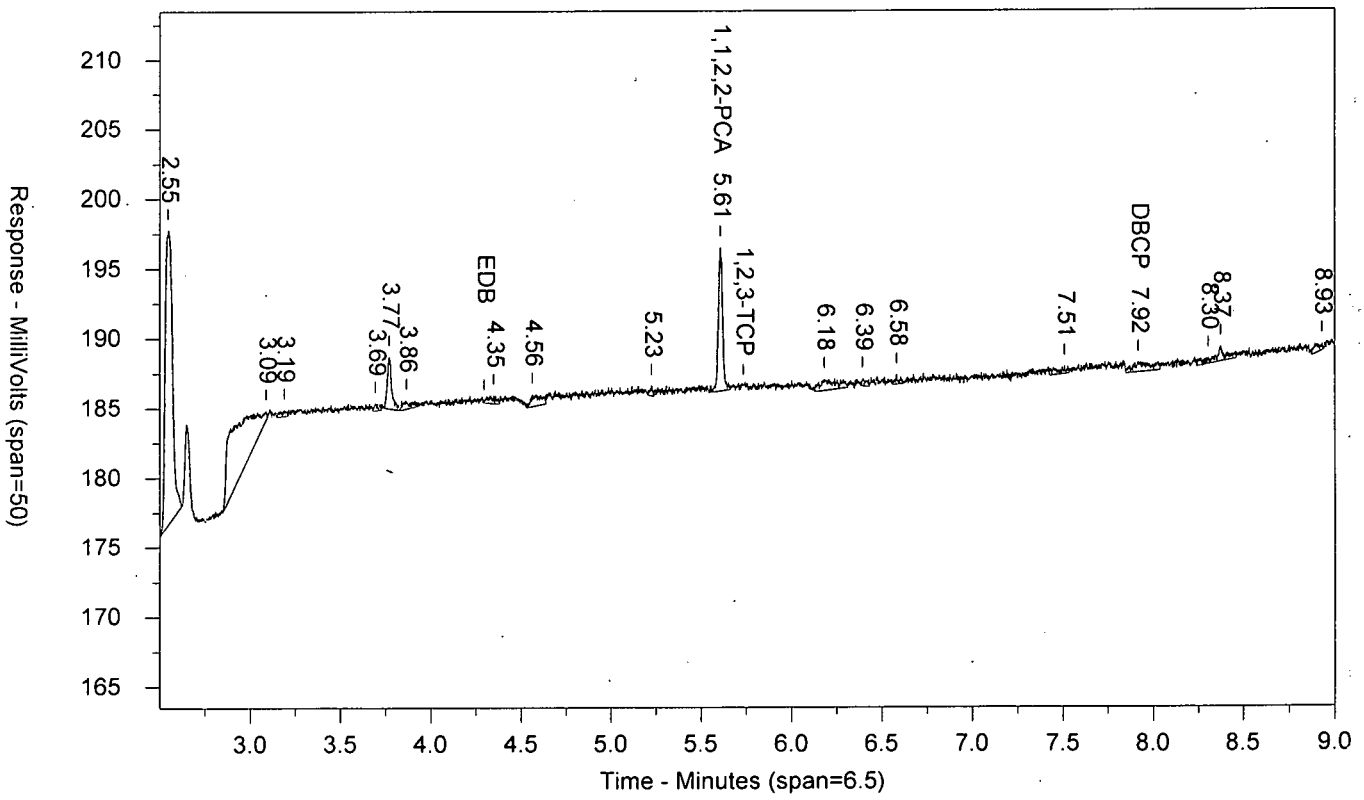


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1724899999 SW-846 8011
Injected On: 9/6/2017 6:54:58 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

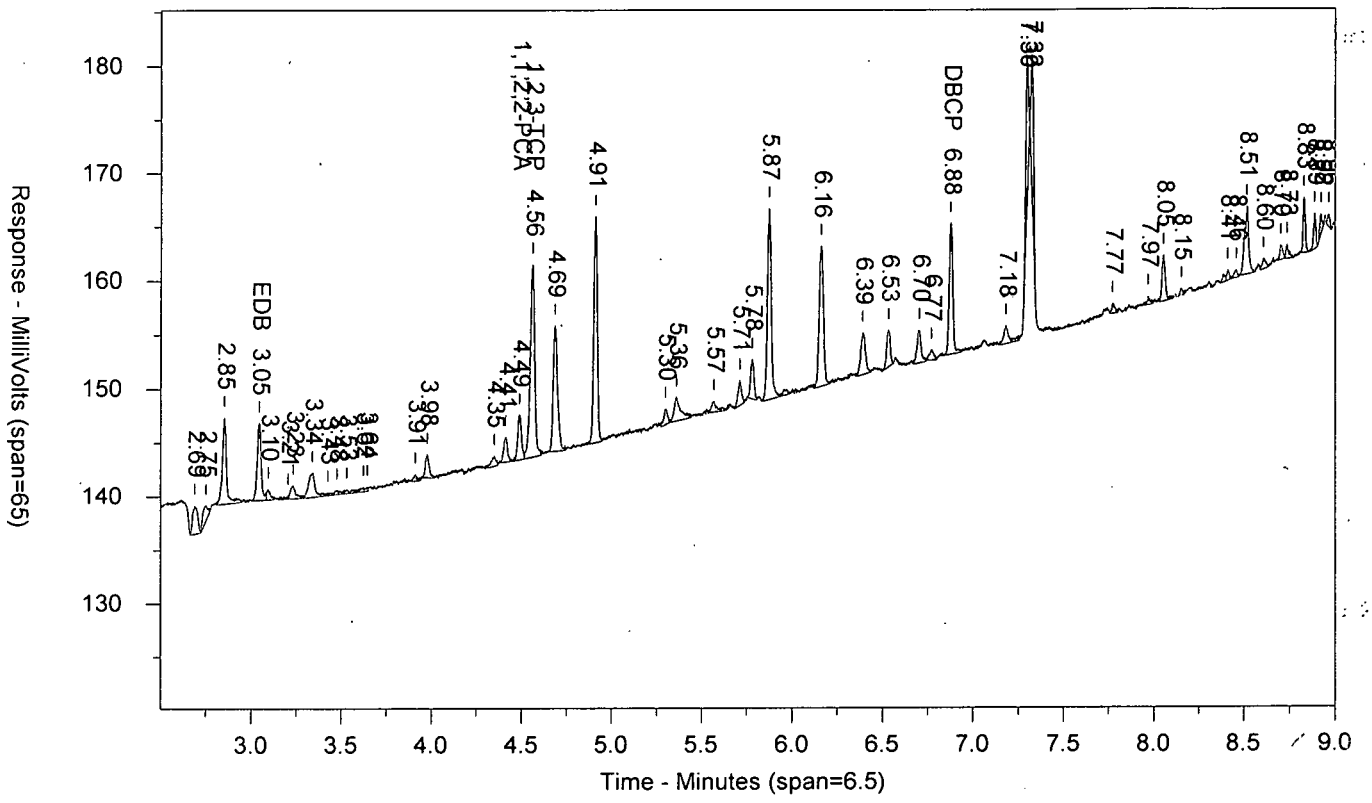
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.043 | 529 | .001 | EDB | | 0 | | EDB |
| 4.491 | 27770 | .069 | 1,1,2,2-PCA | 5.606 | 10307 | .068 | 1,1,2,2-PCA |
| 4.543 | 3253 | -.09 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |
| | 0 | | DBCP | 7.917 | 726 | .003 | DBCP |

Files:
Area File: 16EDBS17249001.0005.RAW
Area File: 16EDBS17249001B.0005.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 7:03:59 PM
File Reported On: 9/7/2017 at 1:08:58 PM

EDB_11724EN AAEDB_1AA ICAL 1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0006.RAW

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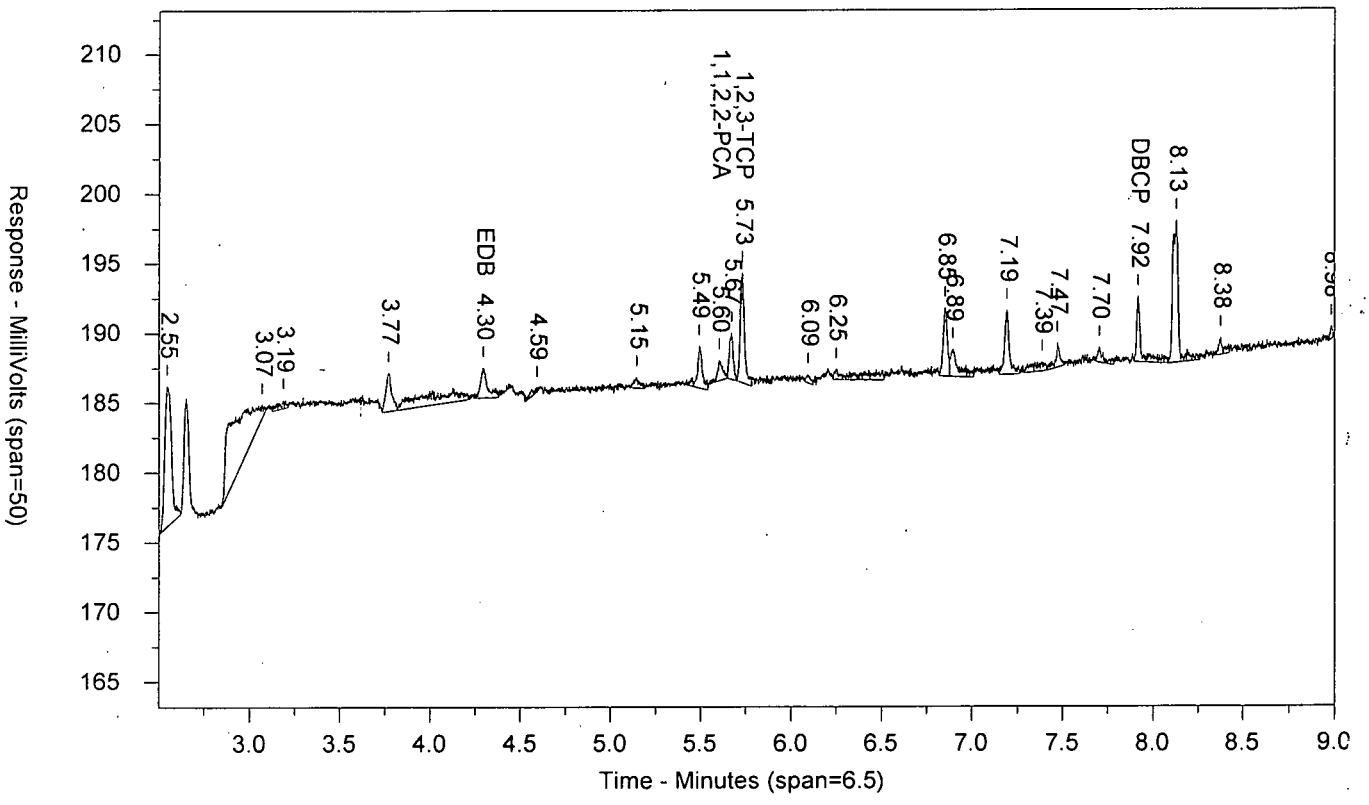

LANCASTER LABORATORIES

Sample Number: EDB_11724EN AAEDB_1AA ICAL 1724899999 SW-846 8011
Injected On: 9/6/2017 7:10:30 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 7223 | .344 | EDB | 4.296 | 2187 | .371 | EDB |
| 4.49 | 4217 | .184 | 1,1,2,2-PCA | 5.604 | 1492 | .172 | 1,1,2,2-PCA |
| 4.561 | 17865 | 3.569 | 1,2,3-TCP | 5.731 | 7883 | 6.882 | 1,2,3-TCP |
| 6.877 | 12153 | .328 | DBCP | 7.917 | 4711 | .315 | DBCP |

Files:
Area File: 16EDBS17249001.0006.RAW
Area File: 16EDBS17249001B.0006.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 7:19:32 PM
File Reported On: 9/7/2017 at 1:09:18 PM

EDB_21724EN AAEDB_2AA ICAL 1724899999 SW-846 8011

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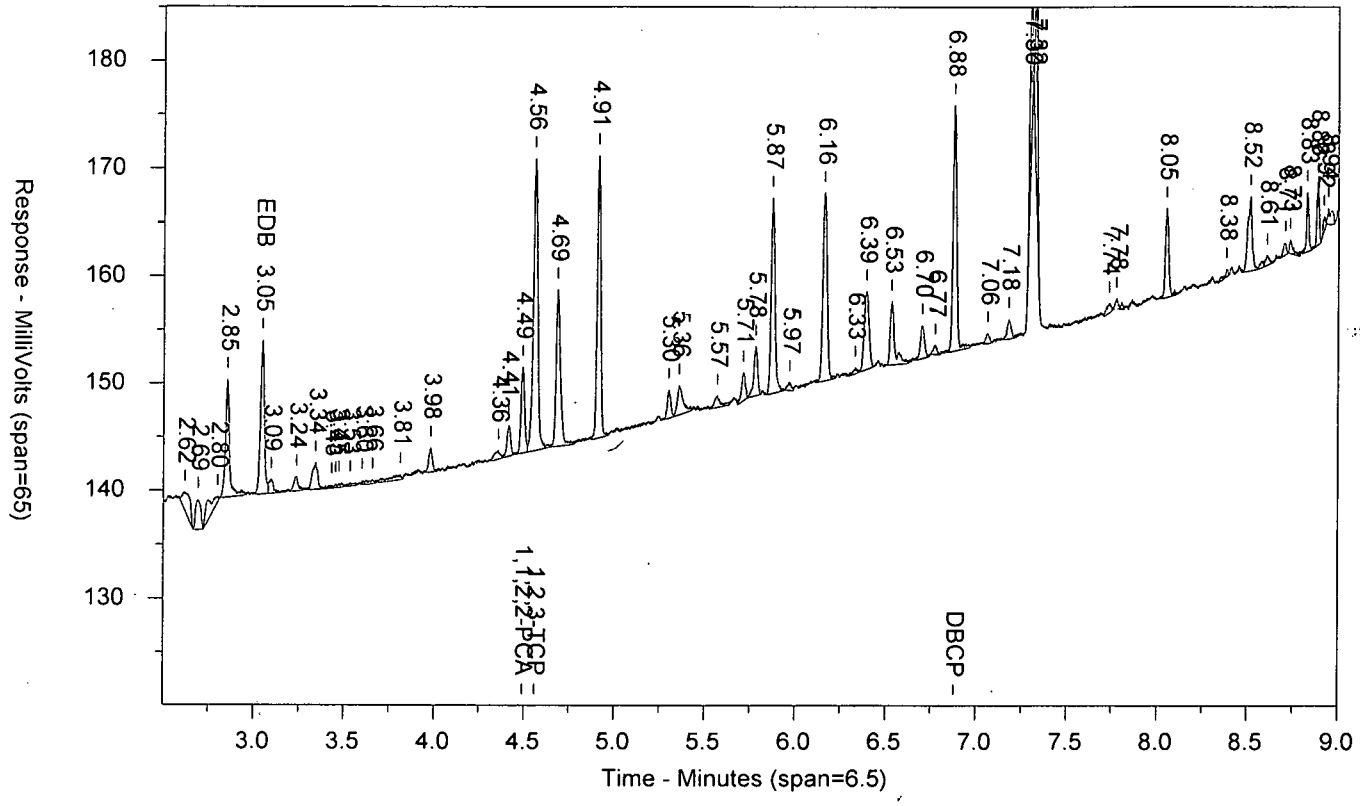


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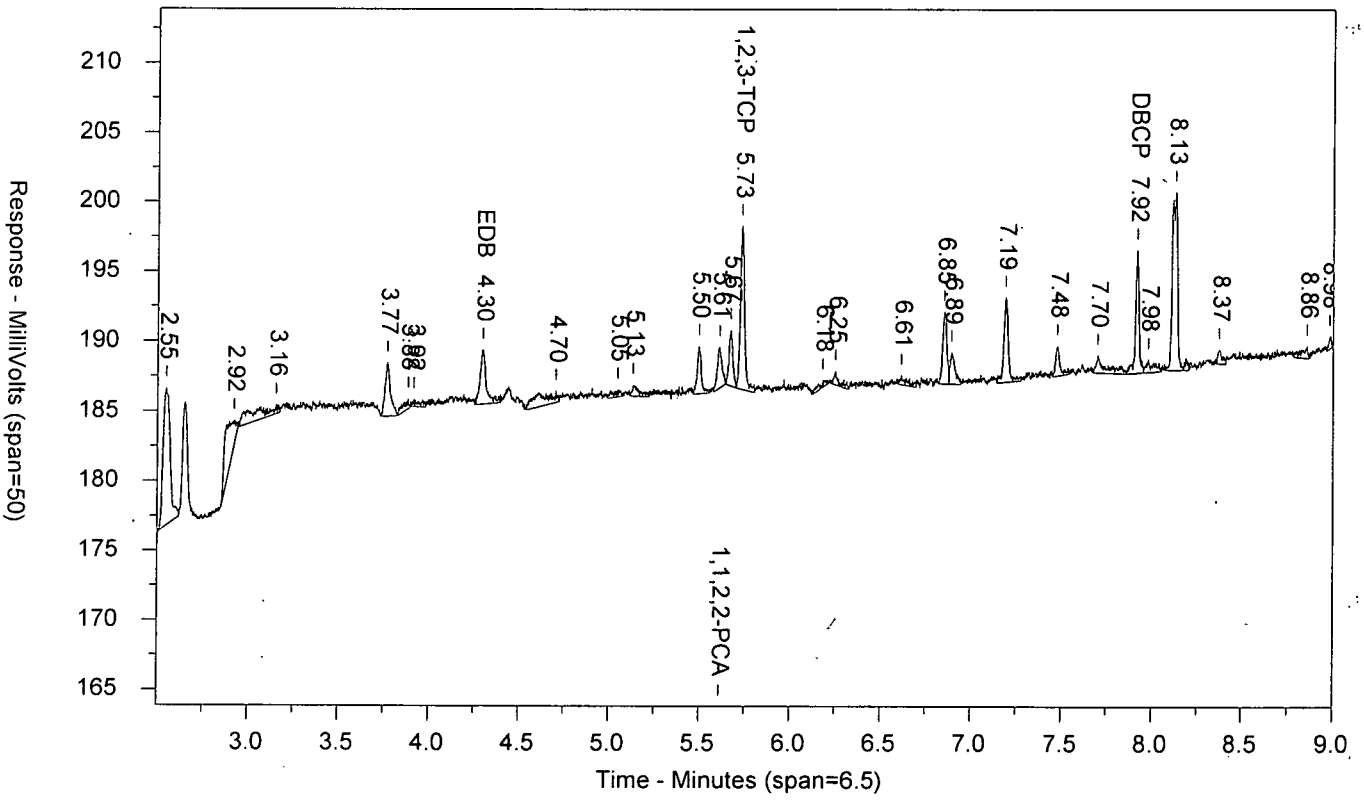

LANCASTER LABORATORIES

Sample Number: EDB_21724EN AAEDB_2AA ICAL 1724899999 SW-846 8011
Injected On: 9/6/2017 7:26:07 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.047 | 14433 | .687 | EDB | 4.299 | 3893 | .655 | EDB |
| 4.492 | 8081 | .346 | 1,1,2,2-PCA | 5.609 | 2944 | .345 | 1,1,2,2-PCA |
| 4.56 | 27216 | 6.381 | 1,2,3-TCP | 5.732 | 11722 | 8.199 | 1,2,3-TCP |
| 6.877 | 22874 | .628 | DBCP | 7.917 | 8847 | .61 | DBCP |

Files:
Area File: 16EDBS17249001.0007.RAW
Area File: 16EDBS17249001B.0007.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 7:35:08 PM
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EDB_31724EN AAEDB_3AA ICAL 1724899999 SW-846 8011

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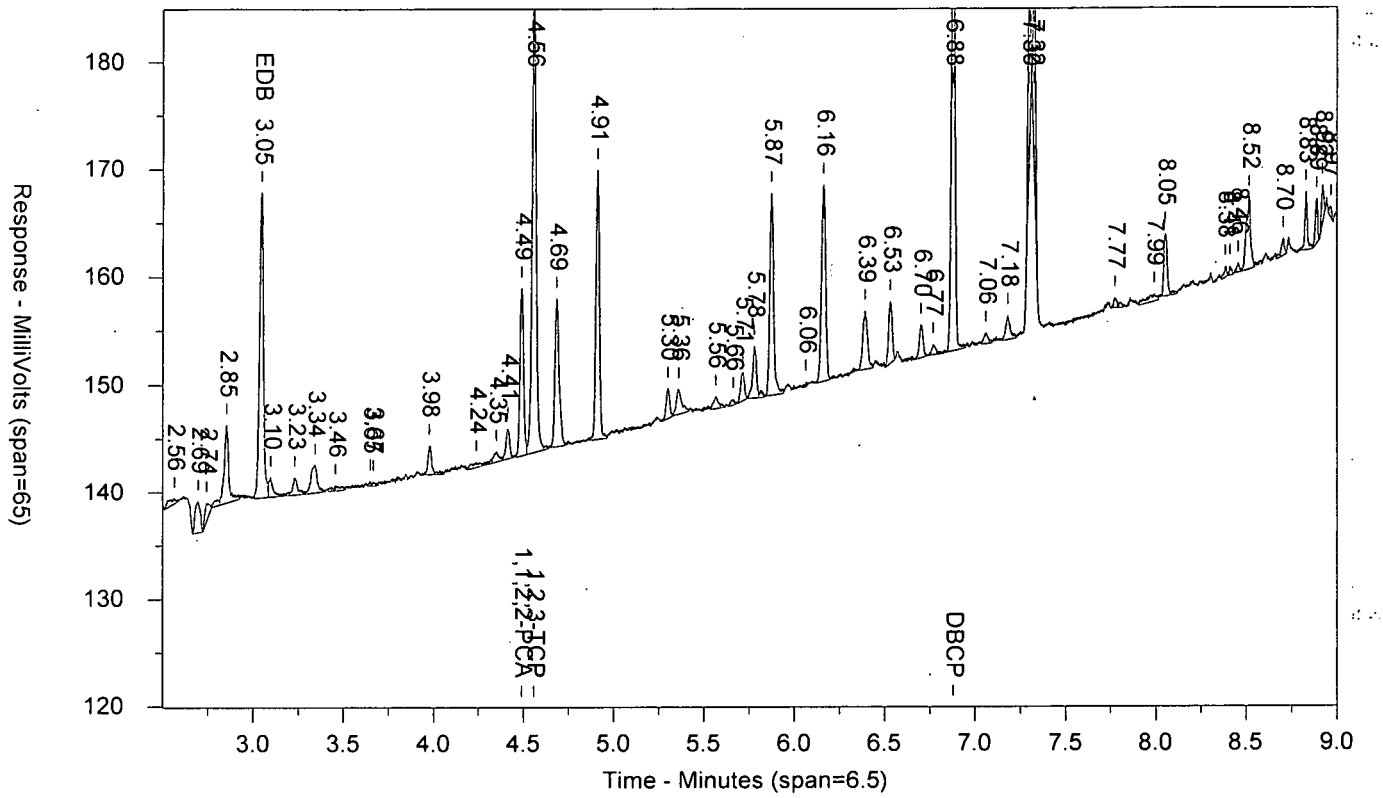


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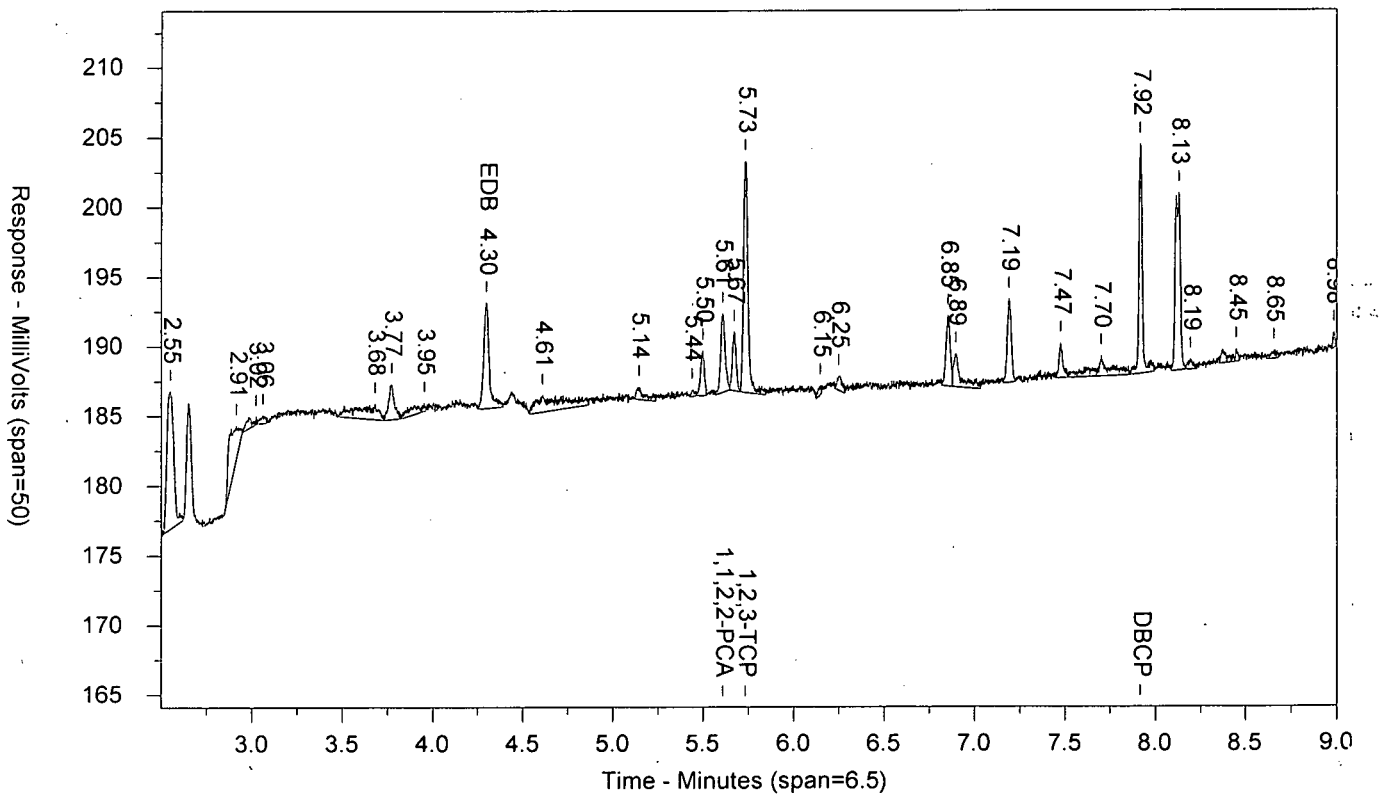


LANCASTER LABORATORIES

Sample Number: EDB_31724EN AAEDB_3AA ICAL 1724899999 SW-846 8011
Injected On: 9/6/2017 7:41:43 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

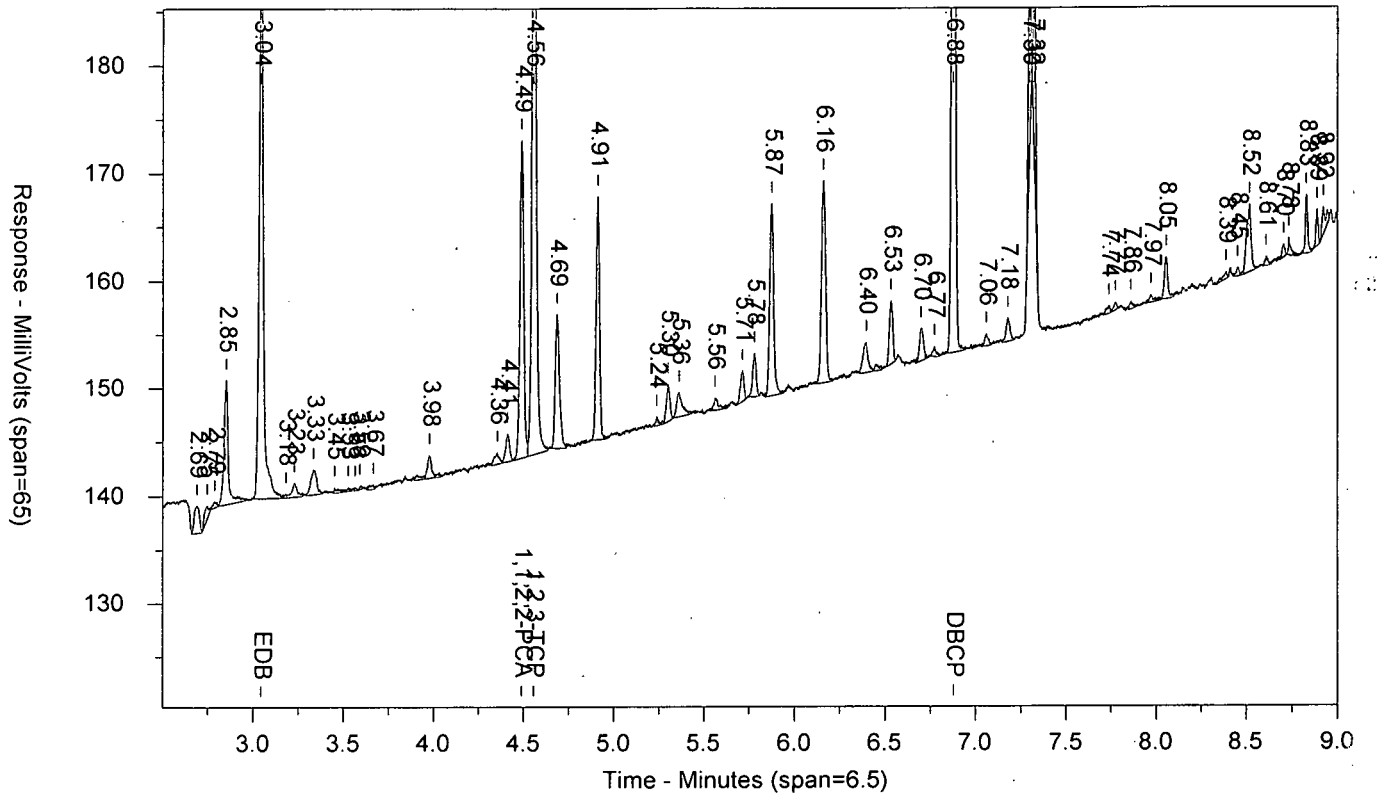
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.047 | 28339 | 1.34 | EDB | 4.3 | 7652 | 1.302 | EDB |
| 4.49 | 15588 | .659 | 1,1,2,2-PCA | 5.607 | 5687 | .66 | 1,1,2,2-PCA |
| 4.559 | 42179 | 11.162 | 1,2,3-TCP | 5.732 | 16648 | 10.151 | 1,2,3-TCP |
| 6.877 | 44944 | 1.243 | DBCP | 7.917 | 16532 | 1.171 | DBCP |

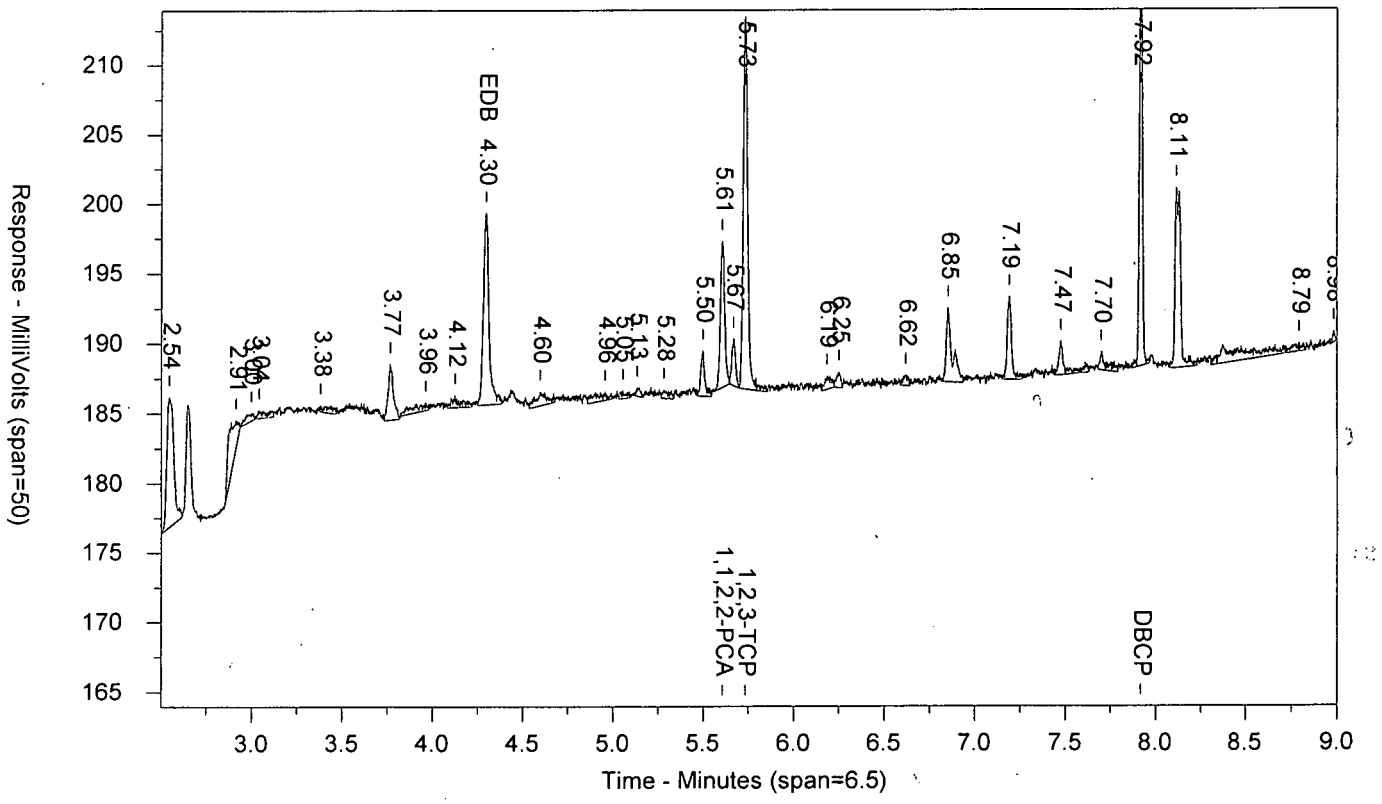
Files:
Area File: 16EDBS17249001.0008.RAW
Area File: 16EDBS17249001B.0008.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Callbration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 7:50:43 PM
File Reported On: 9/7/2017 at 1:09:53 PM

EDB_41724EN AAEDB_4AA ICAL 1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0009.RAW




\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.0009.RAW



LANCASTER LABORATORIES

Sample Number: EDB_41724EN AAEDB_4AA ICAL 1724899999 SW-846 8011
Injected On: 9/6/2017 7:57:17 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

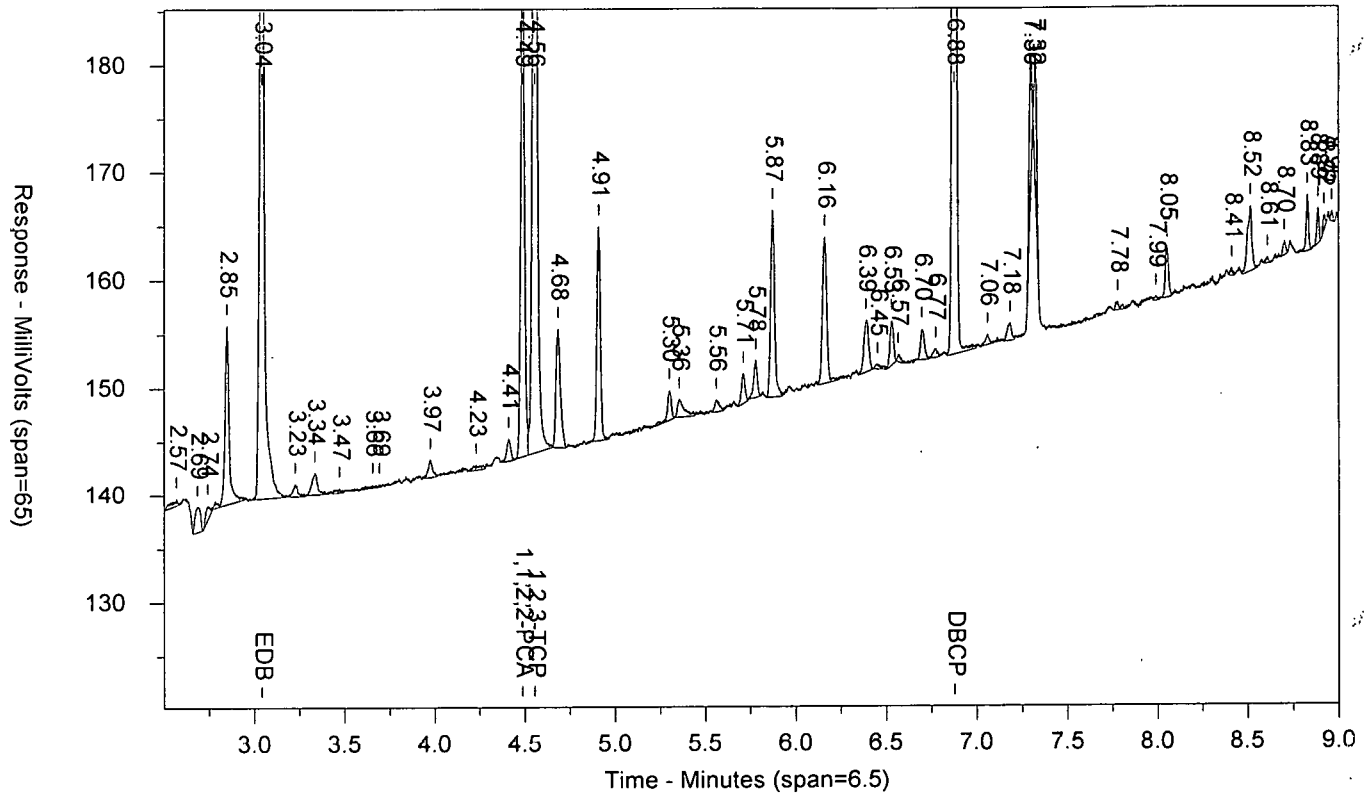
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.044 | 52397 | 2.451 | EDB | 4.298 | 13760 | 2.316 | EDB |
| 4.49 | 29584 | 1.232 | 1,1,2,2-PCA | 5.606 | 10491 | 1.204 | 1,1,2,2-PCA |
| 4.556 | 69294 | 20.633 | 1,2,3-TCP | 5.733 | 26802 | 15.444 | 1,2,3-TCP |
| 6.877 | 85797 | 2.393 | DBCP | 7.917 | 30212 | 2.187 | DBCP |

Files:
Area File: 16EDBS17249001.0009.RAW
Area File: 16EDBS17249001B.0009.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 8:06:22 PM
File Reported On: 9/7/2017 at 1:10:11 PM

EDB_51724EN AAEDB_5AA ICAL 1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0010.RAW

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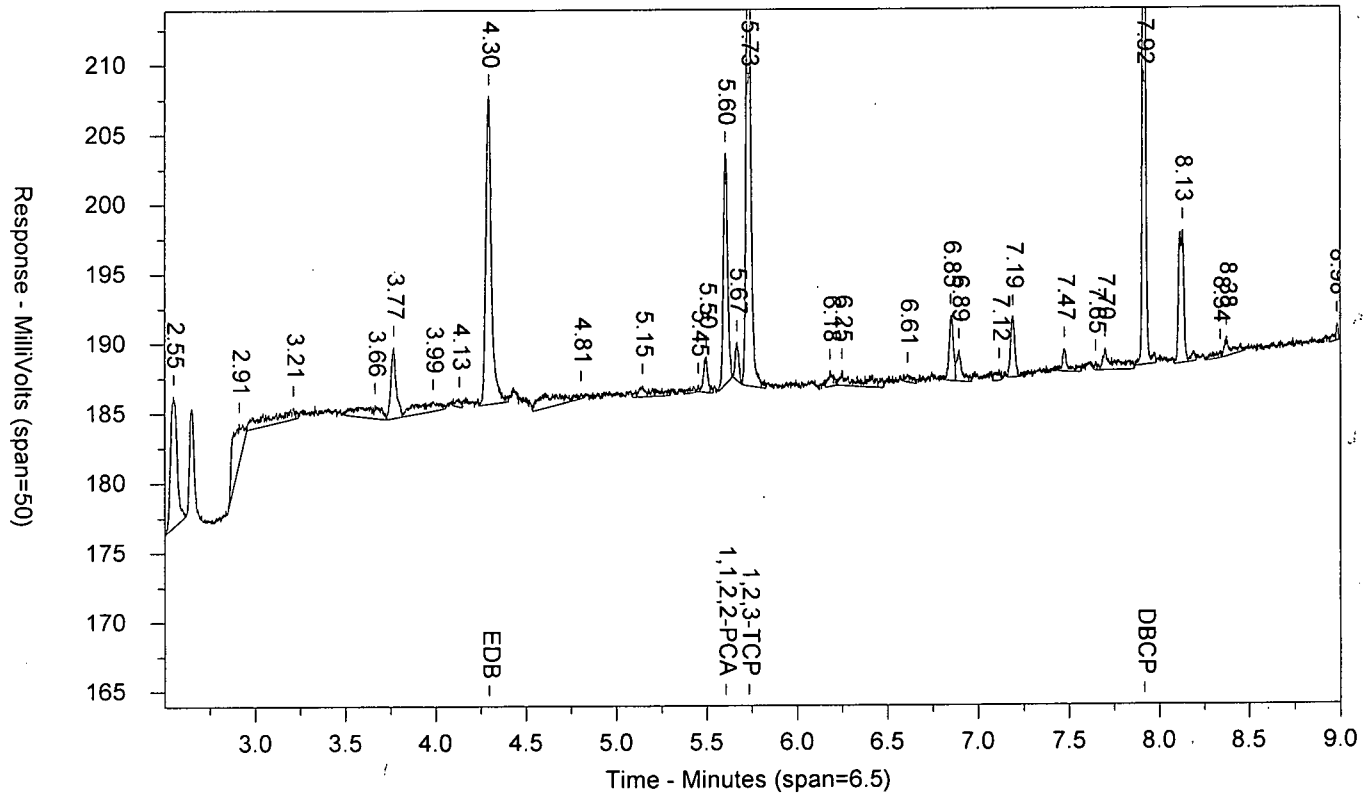

LANCASTER LABORATORIES

Sample Number: EDB_51724EN AAEDB_5AA ICAL 1724899999 SW-846 8011
Injected On: 9/6/2017 8:12:56 PM
Instrument ID: CP16-19853
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Sample Weight: 1
Dilution Factor: 1

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.041 | 85089 | 3.996 | EDB | 4.296 | 22153 | 3.782 | EDB |
| 4.488 | 48210 | 2.005 | 1,1,2,2-PCA | 5.604 | 16676 | 1.923 | 1,1,2,2-PCA |
| 4.555 | 104817 | 33.65 | 1,2,3-TCP | 5.733 | 38714 | 21.818 | 1,2,3-TCP |
| 6.877 | 133277 | 3.81 | DBCP | 7.917 | 48030 | 3.616 | DBCP |

Files:
Area File: 16EDBS17249001.0010.RAW
Area File: 16EDBS17249001B.0010.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 8:21:57 PM
File Reported On: 9/7/2017 at 1:10:27 PM

EDB_61724EN AAEDB_6AA ICAL 1724899999 SW-846 8011

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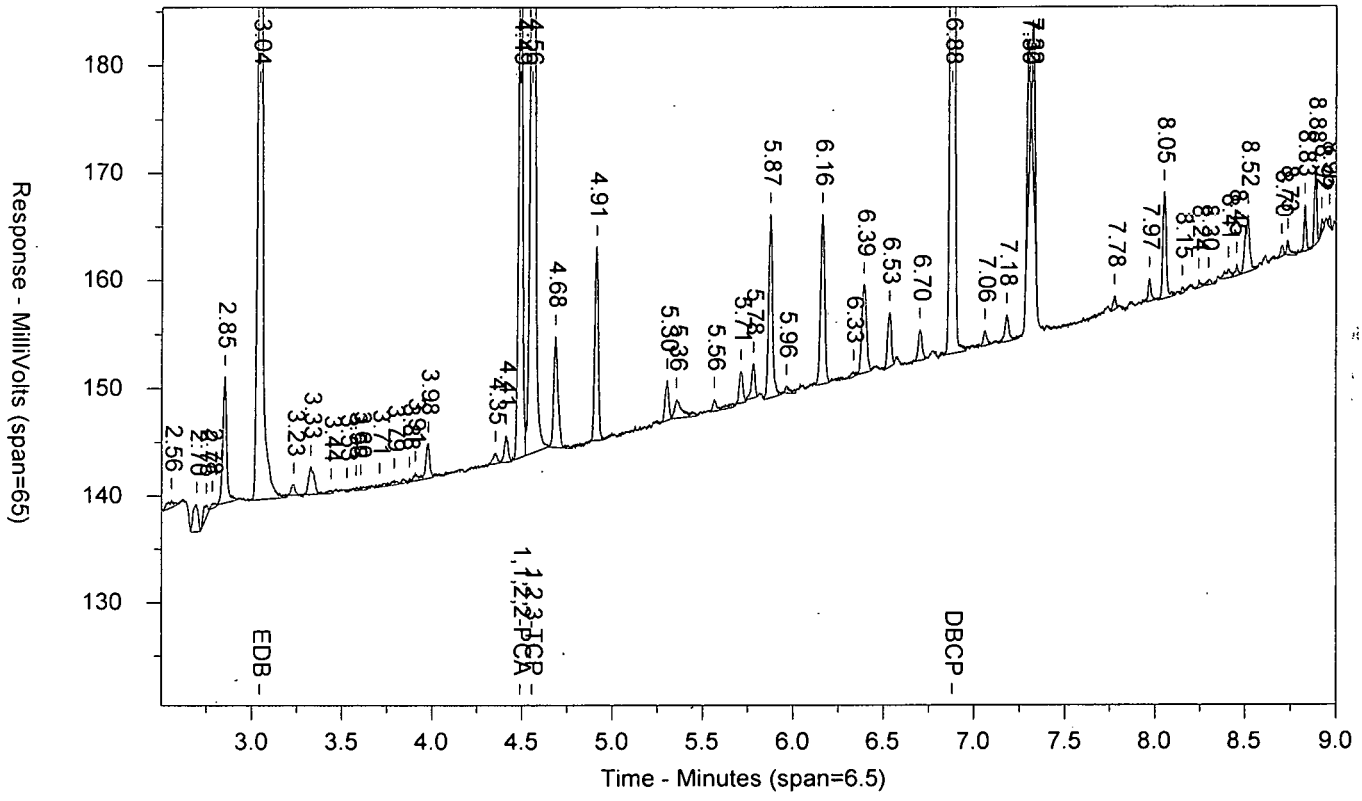
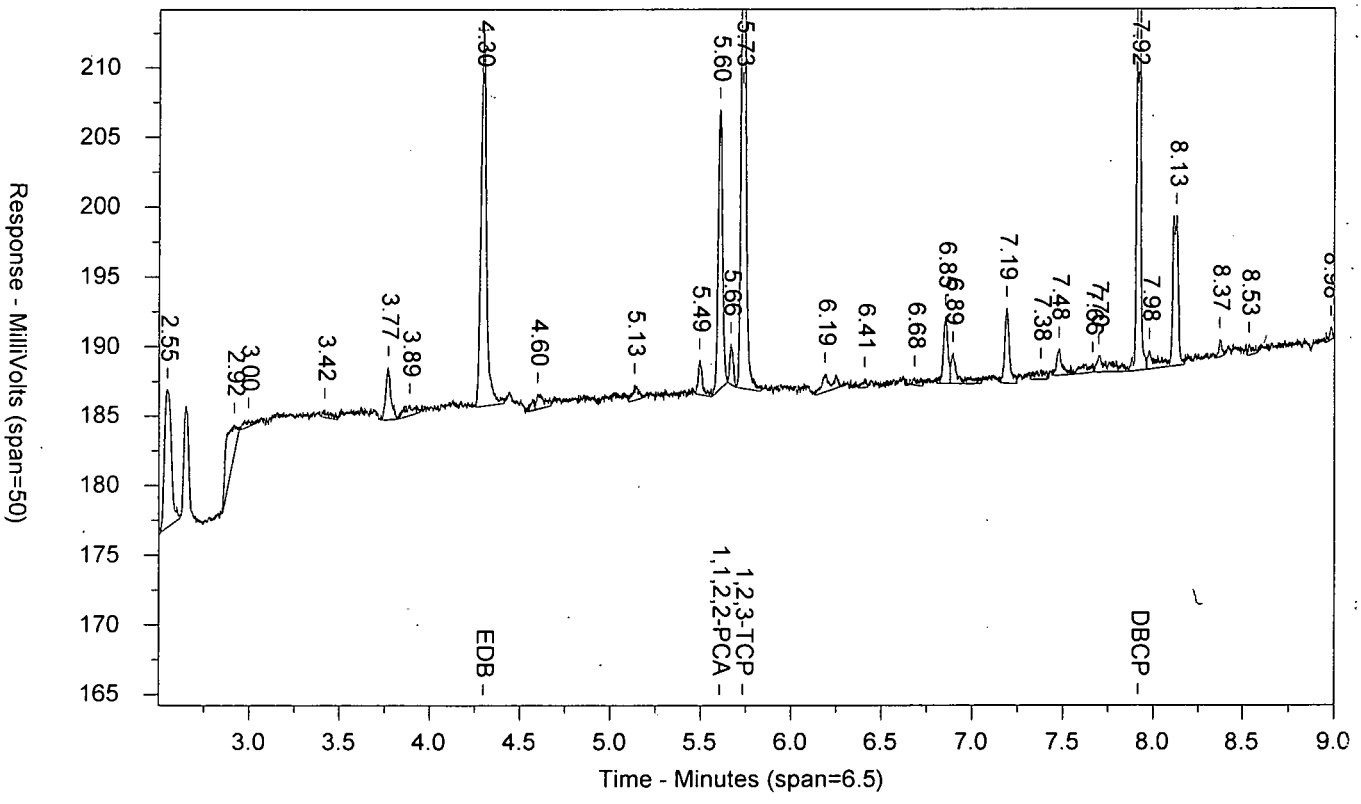



\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.0011.RAW



LANCASTER LABORATORIES

Sample Number: EDB_61724EN AAEDB_6AA ICAL 1724899999 SW-846 8011
Injected On: 9/6/2017 8:28:29 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

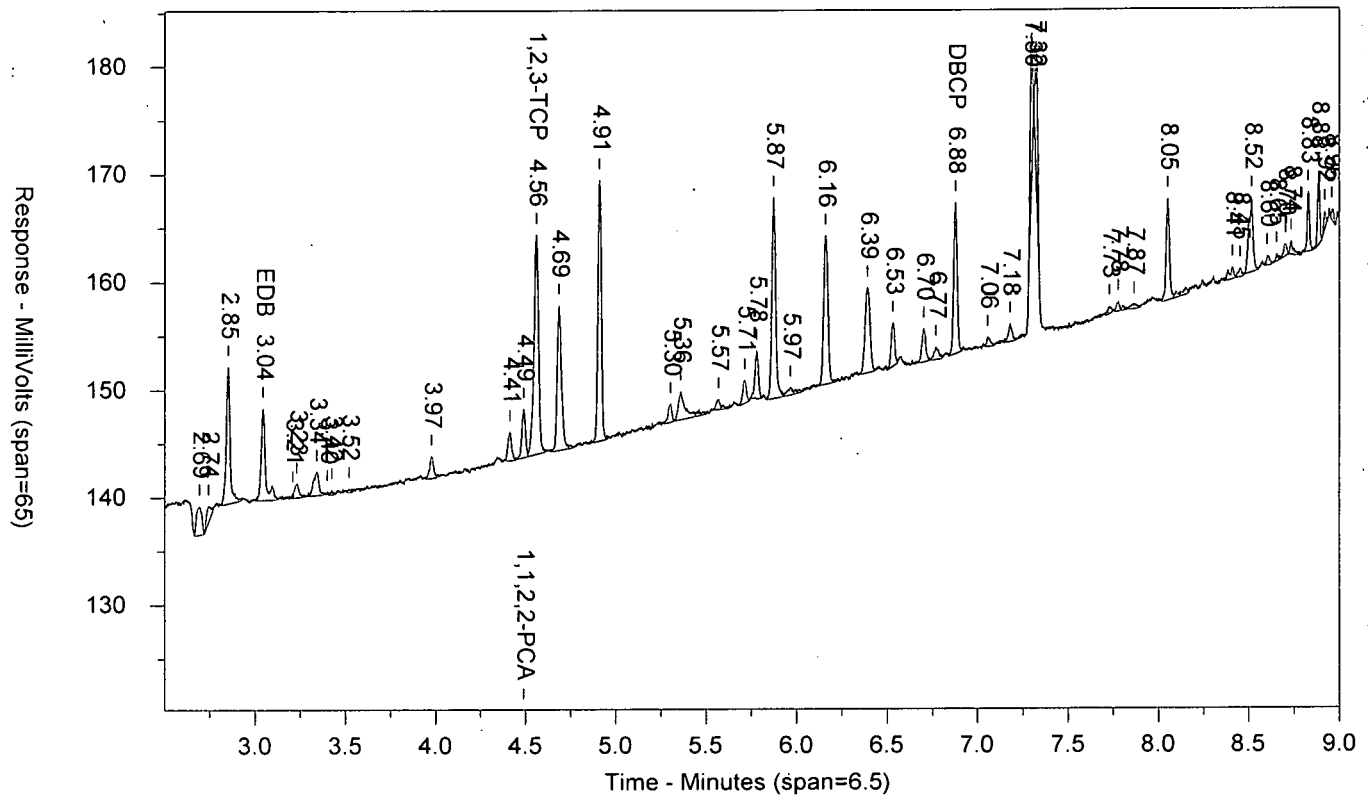
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.044 | 102373 | 4.843 | EDB | 4.297 | 27081 | 4.703 | EDB |
| 4.489 | 59062 | 2.451 | 1,1,2,2-PCA | 5.605 | 20102 | 2.341 | 1,1,2,2-PCA |
| 4.557 | 125237 | 41.048 | 1,2,3-TCP | 5.733 | 45564 | 25.45 | 1,2,3-TCP |
| 6.877 | 161637 | 4.693 | DBCP | 7.916 | 58762 | 4.573 | DBCP |

Files:
Area File: 16EDBS17249001.0011.RAW
Area File: 16EDBS17249001B.0011.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 8:37:30 PM
File Reported On: 9/7/2017 at 1:10:41 PM

MDEDX1724EN AAMDEDXAA ICAL 1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0012.RAW

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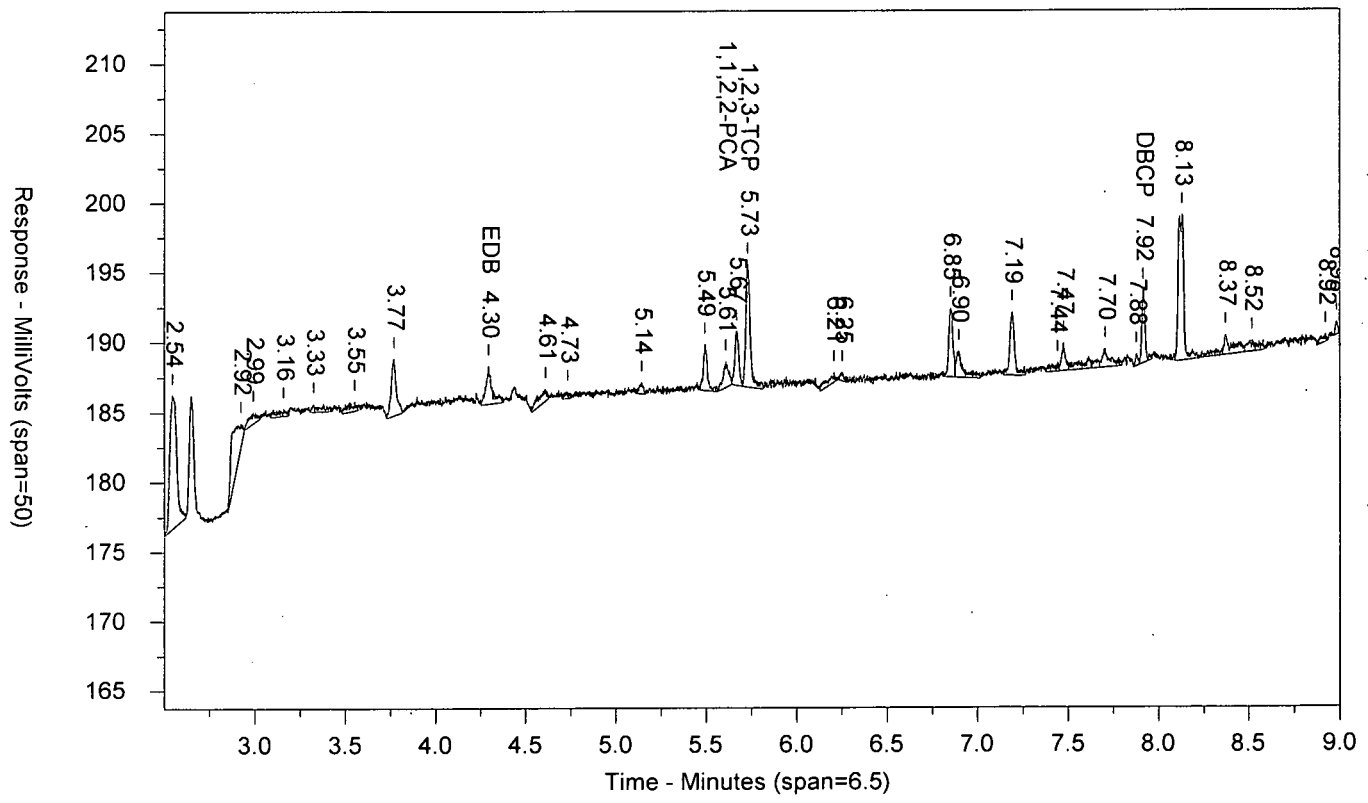


LANCASTER LABORATORIES

Sample Number: MDEDX1724EN AAMDEDXAA ICAL 1724899999 SW-846 8011
Injected On: 9/6/2017 8:44:05 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

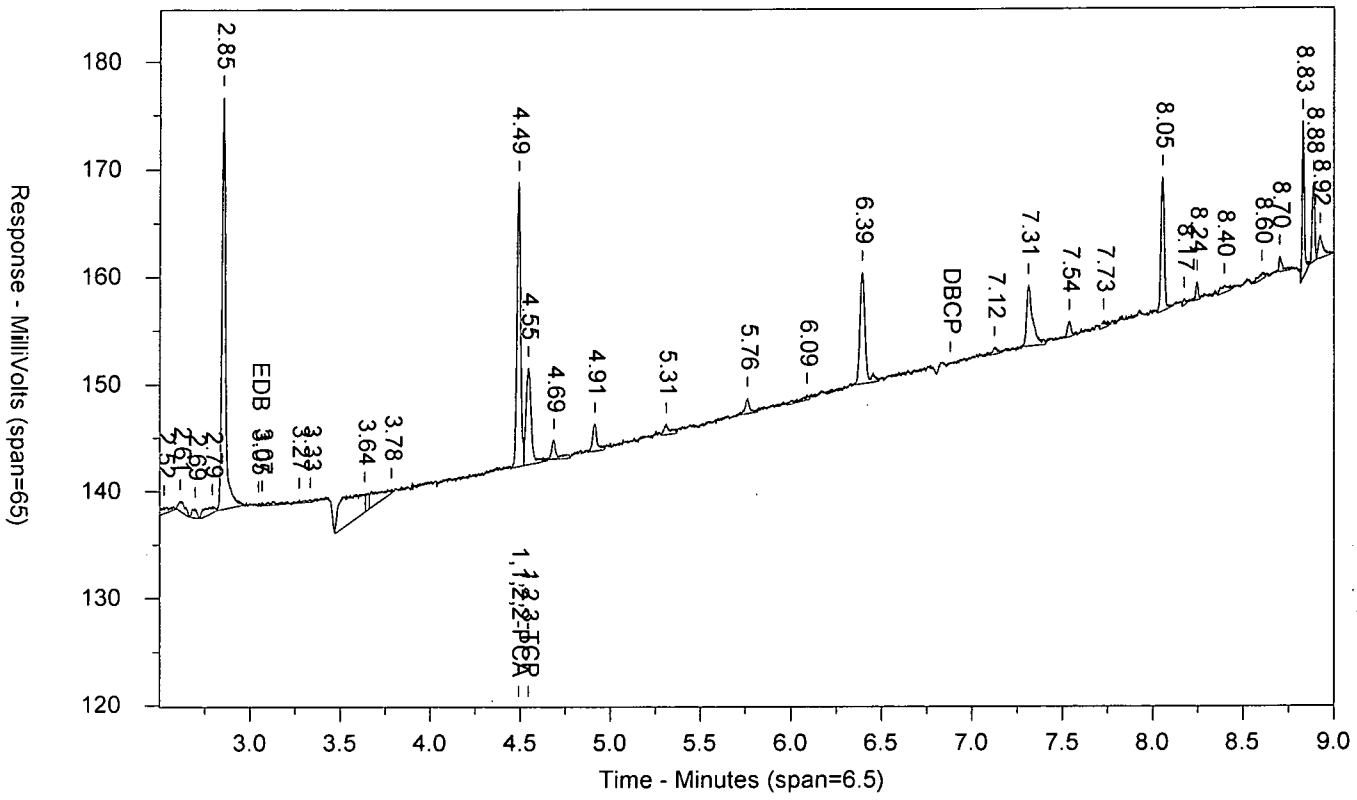
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.044 | 8609 | .404 | EDB | 4.296 | 2726 | .468 | EDB |
| 4.49 | 4558 | .186 | 1,1,2,2-PCA | 5.607 | 1872 | .214 | 1,1,2,2-PCA |
| 4.56 | 20500 | 2.495 | 1,2,3-TCP | 5.728 | 8784 | 2.154 | 1,2,3-TCP |
| 6.877 | 14048 | .406 | DBCP | 7.915 | 5260 | .409 | DBCP |

Files:
Area File: 16EDBS17249001.0012.RAW
Area File: 16EDBS17249001B.0012.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 8:53:07 PM
File Reported On: 9/7/2017 at 1:38:39 PM

EIBKX1724C AAPIBLKAA PIBLK1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0014.RAW

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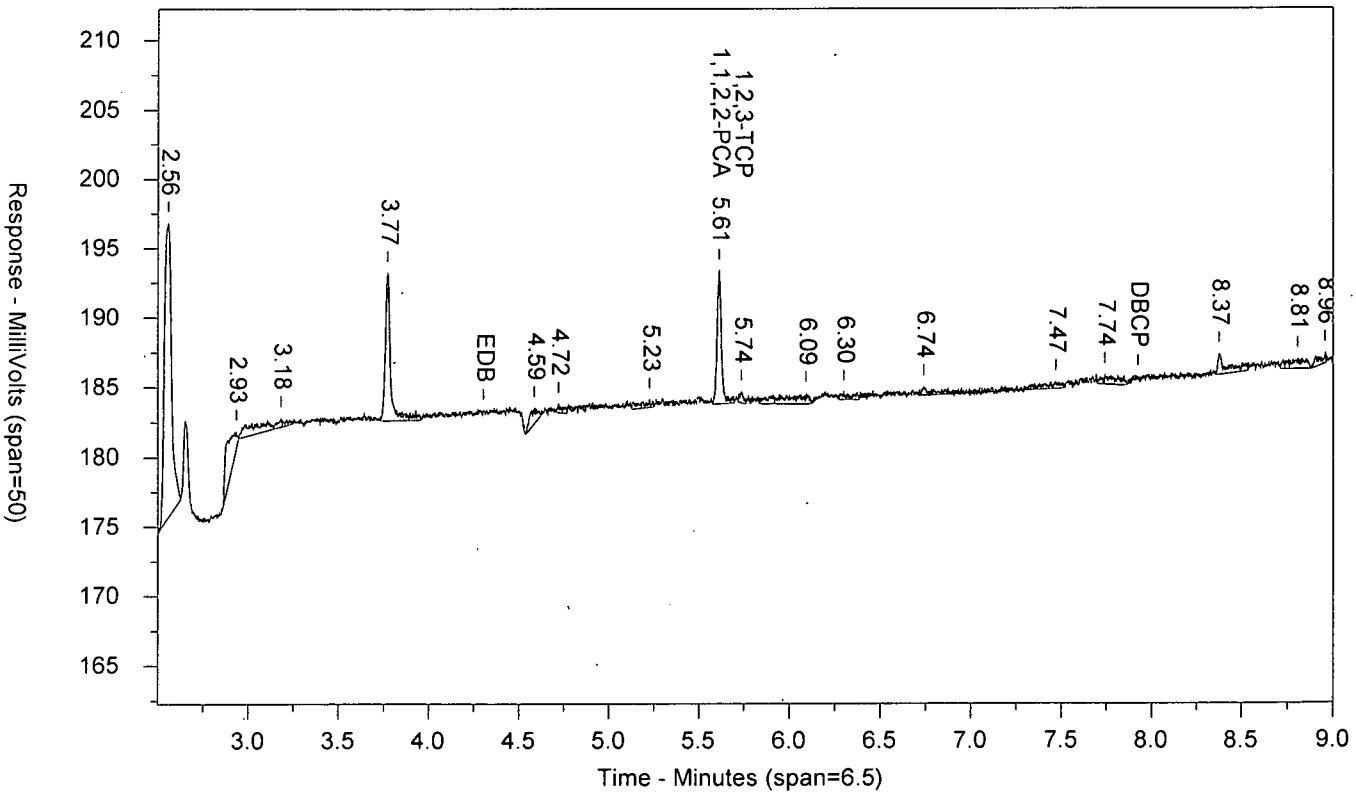


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1723999999 SW-846 8011
Injected On: 8/28/2017 10:01:58 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

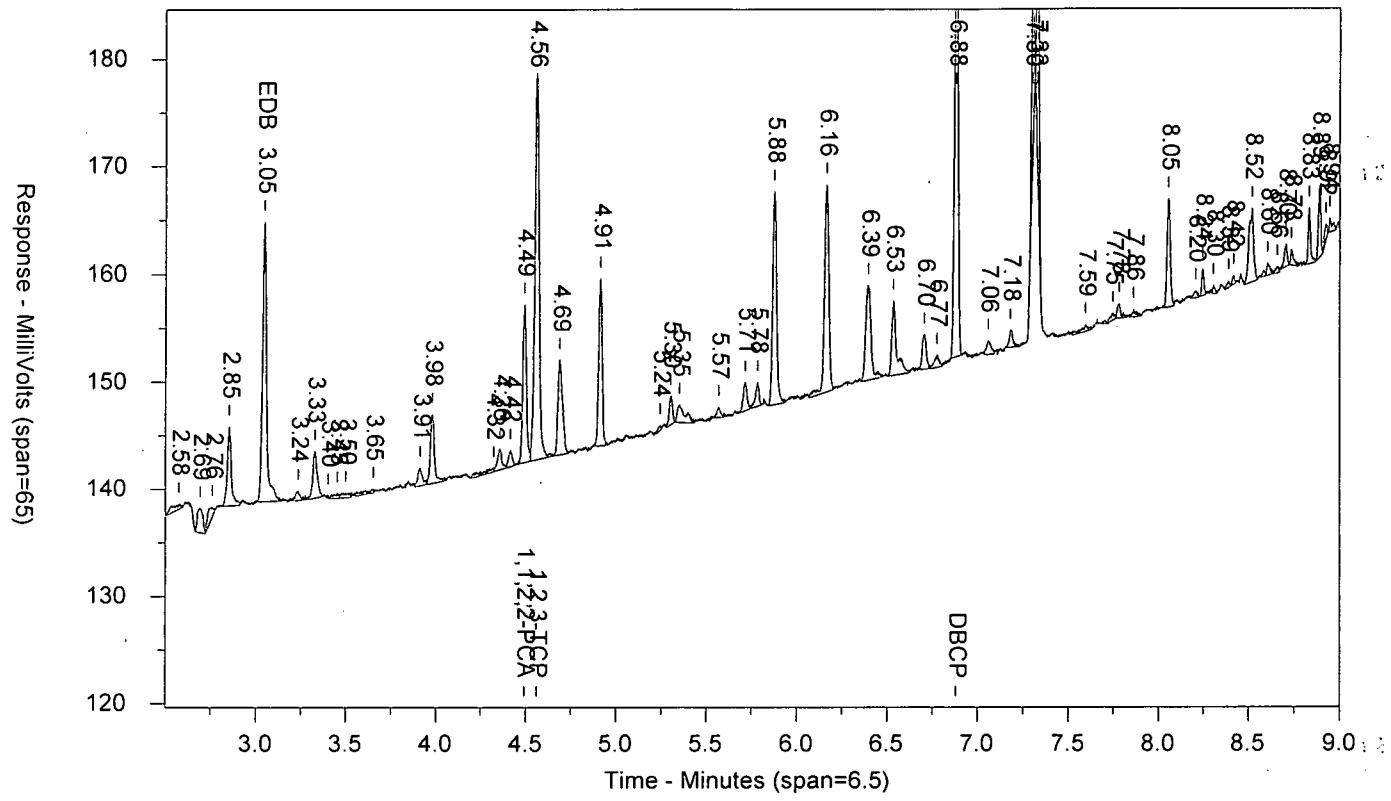
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 309 | .001 | EDB | | 0 | | EDB |
| 4.491 | 26526 | .065 | 1,1,2,2-PCA | 5.612 | 9576 | .067 | 1,1,2,2-PCA |
| 4.546 | 9094 | -.01 | 1,2,3-TCP | 5.735 | 839 | -.163 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0014.RAW
Area File: 16EDBS17240001B.0014.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 10:11:01 PM
File Reported On: 8/29/2017 at 12:31:33 PM

EDB_31724EJ AAEDB_3AA CCAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0015.RAW

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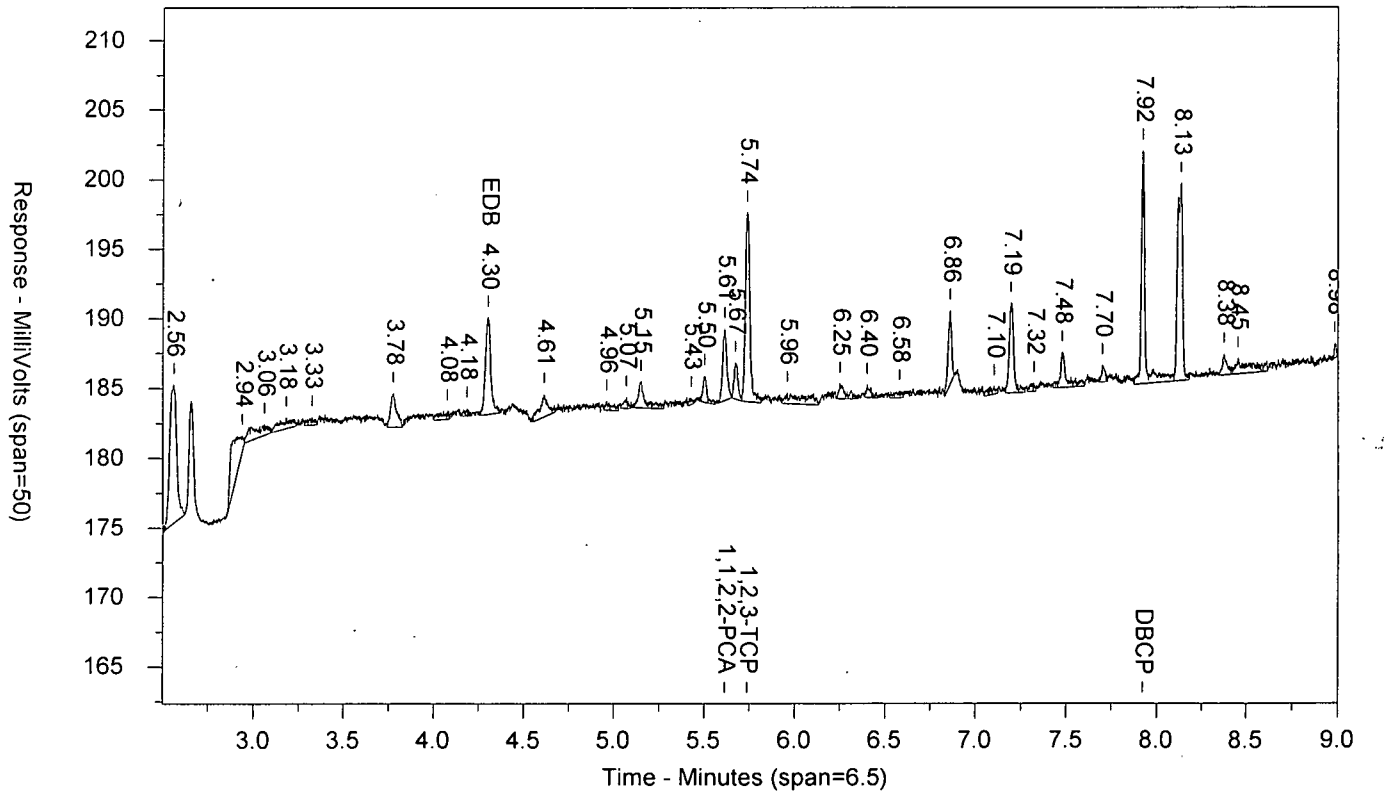


LANCASTER LABORATORIES

Sample Number: EDB_31724EJ AAEDB_3AA CCAL 1723999999 SW-846 8011
Injected On: 8/28/2017 10:17:30 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

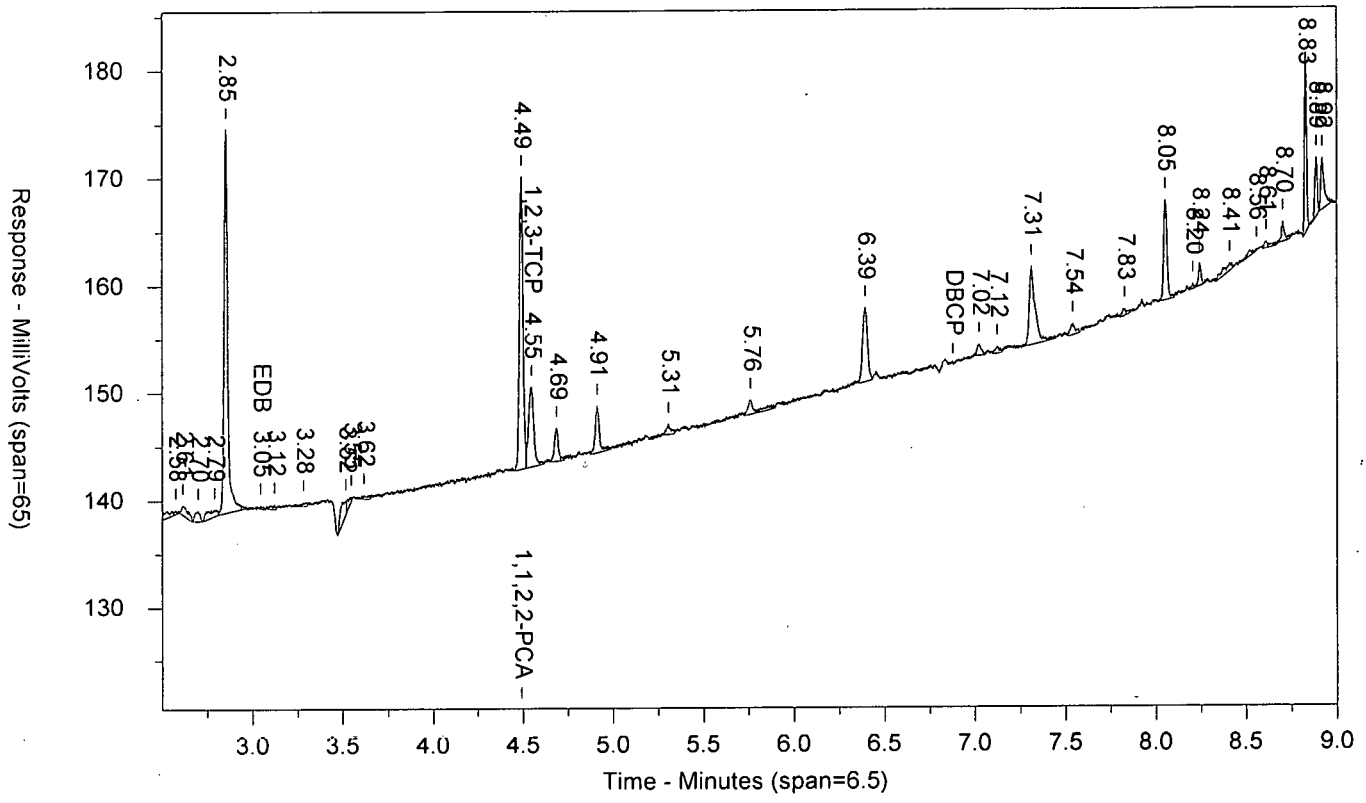
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.047 | 26085 | 1.271 | EDB | 4.304 | 6954 | 1.25 | EDB |
| 4.492 | 14800 | .634 | 1,1,2,2-PCA | 5.612 | 5129 | .63 | 1,1,2,2-PCA |
| 4.559 | 35736 | 9.484 | 1,2,3-TCP | 5.737 | 13623 | 9.948 | 1,2,3-TCP |
| 6.879 | 42635 | 1.288 | DBCP | 7.921 | 16807 | 1.304 | DBCP |

Files:
Area File: 16EDBS17240001.0015.RAW
Area File: 16EDBS17240001B.0015.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 10:26:32 PM
File Reported On: 8/29/2017 at 12:31:47 PM

EIBKX1724C PGPIBLKPG PIBLK1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0026.RAW

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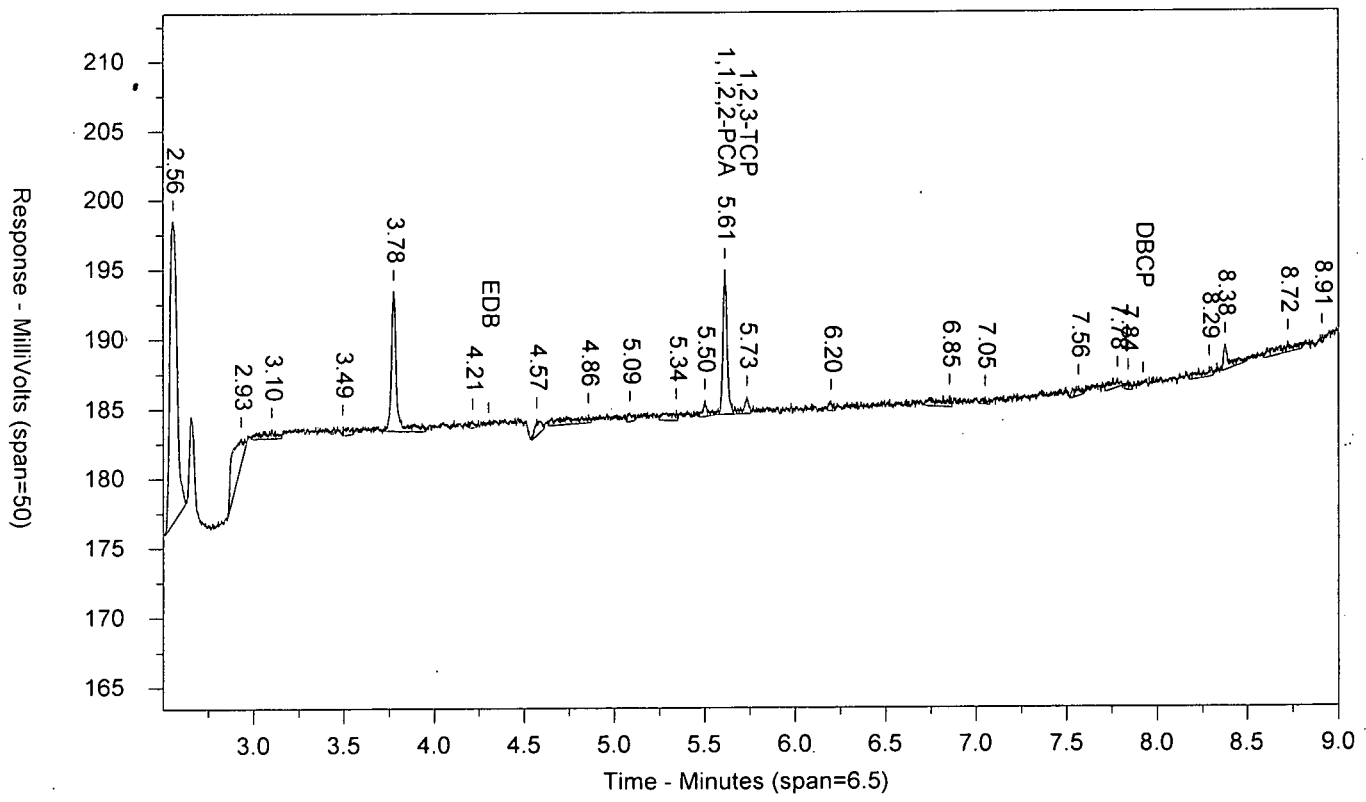


LANCASTER LABORATORIES

Sample Number: EIBKX1724C PGPIBLKPG PIBLK1723999999 SW-846 8011
Injected On: 8/29/2017 1:08:42 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

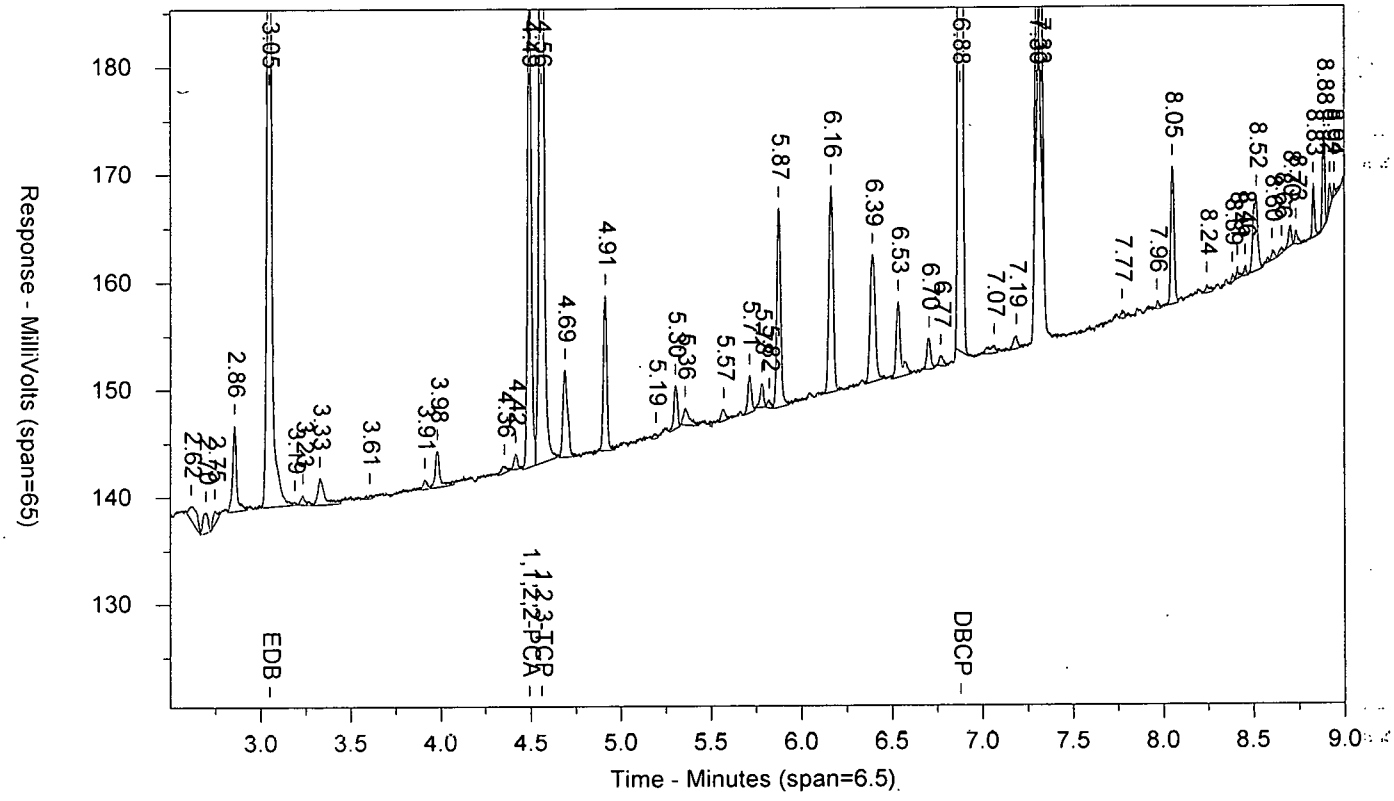
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 409 | .001 | EDB | | 0 | | EDB |
| 4.492 | 27306 | .067 | 1,1,2,2-PCA | 5.611 | 10374 | .073 | 1,1,2,2-PCA |
| 4.548 | 7454 | -.044 | 1,2,3-TCP | 5.733 | 1192 | -.142 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0026.RAW
Area File: 16EDBS17240001B.0026.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 1:17:45 AM
File Reported On: 8/29/2017 at 12:34:45 PM

EDB_51724EJ NKEDB_5NK CCAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0027.RAW

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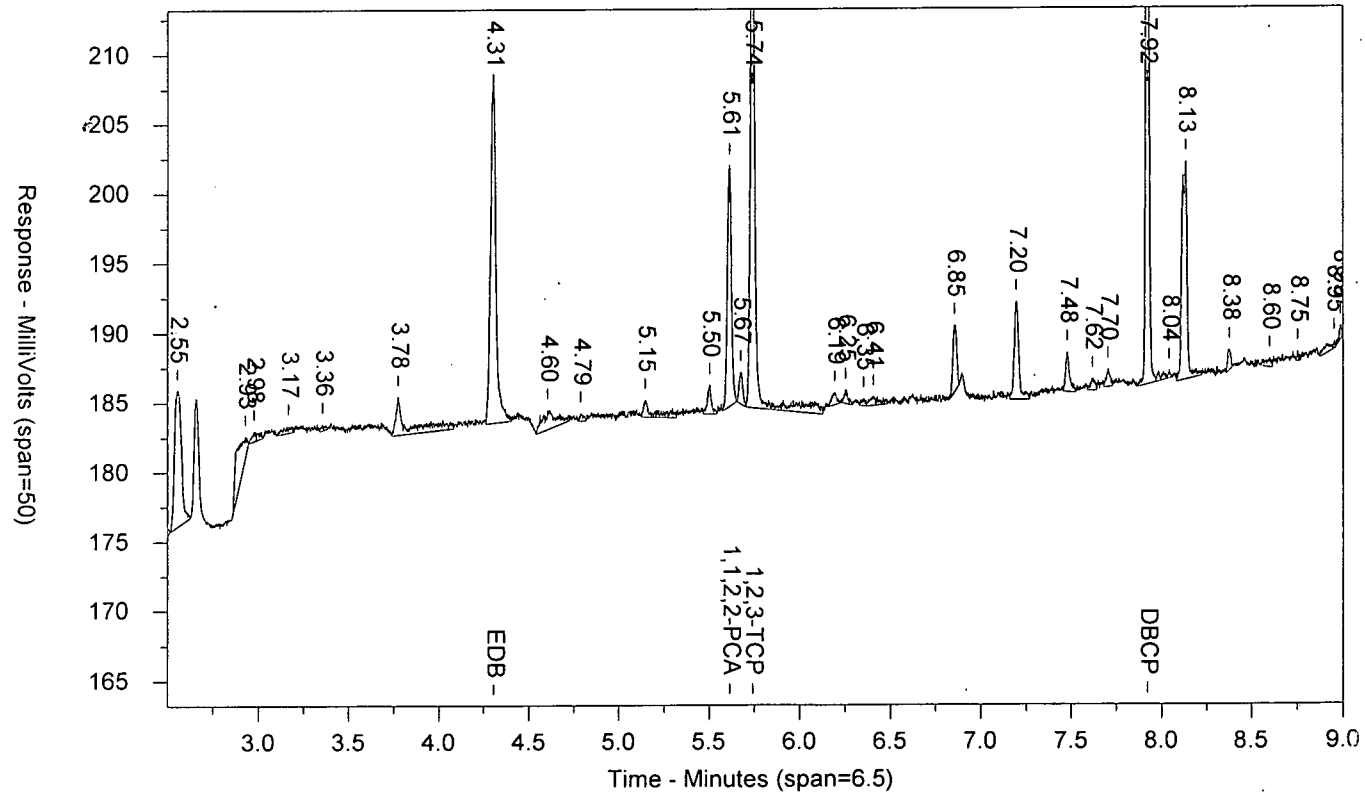


LANCASTER LABORATORIES

Sample Number: EDB_51724EJ NKEDB_5NK CCAL 1723999999 SW-846 8011
Injected On: 8/29/2017 1:24:16 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

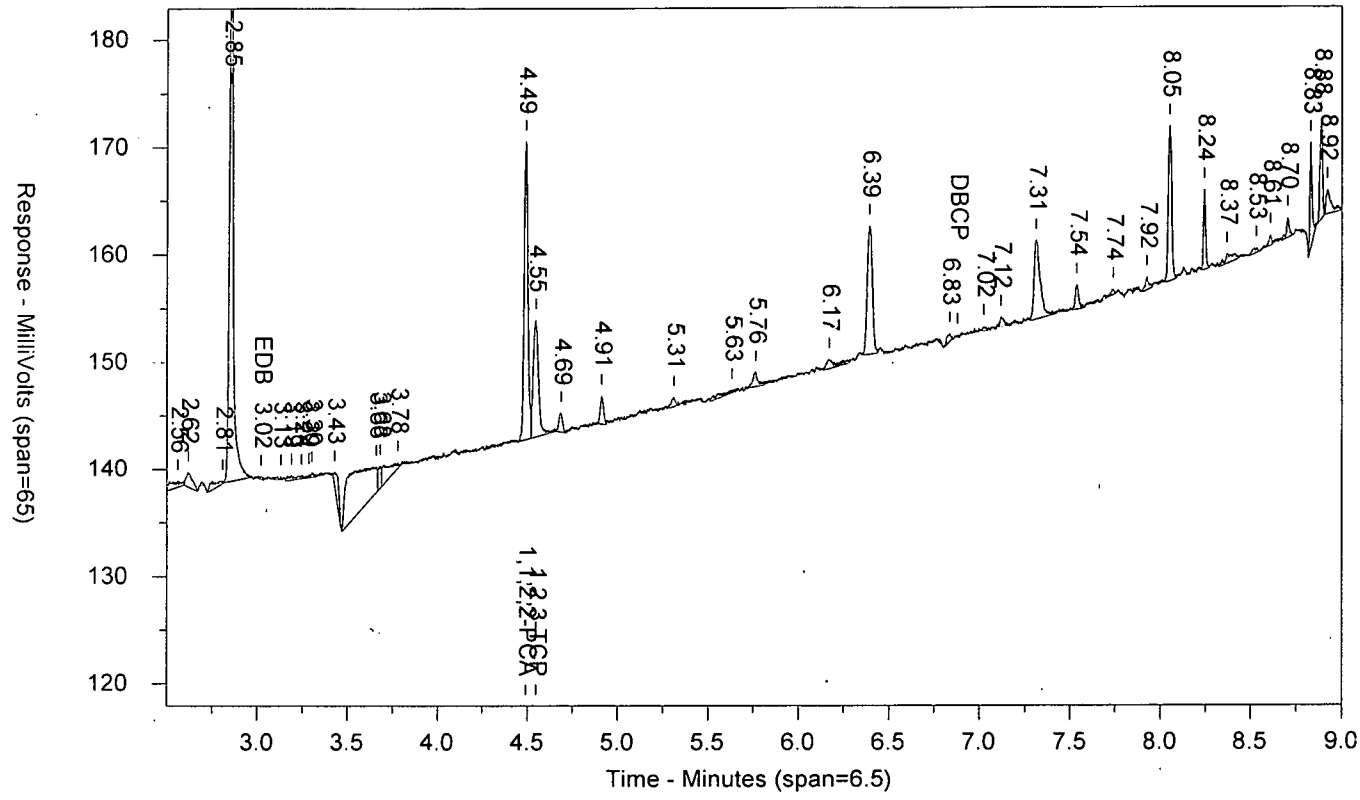
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 86966 | 4.239 | EDB | 4.307 | 24484 | 4.4 | EDB |
| 4.492 | 47004 | 2.014 | 1,1,2,2-PCA | 5.613 | 17324 | 2.128 | 1,1,2,2-PCA |
| 4.559 | 103291 | 33.974 | 1,2,3-TCP | 5.74 | 37606 | 33.948 | 1,2,3-TCP |
| 6.878 | 150728 | 4.554 | DBCP | 7.921 | 59610 | 4.624 | DBCP |

Files:
Area File: 16EDBS17240001.0027.RAW
Area File: 16EDBS17240001B.0027.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 1:33:18 AM
File Reported On: 8/29/2017 at 12:34:59 PM

EIBKX1724C PHPIBLKPH PIBLK1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0038.RAW

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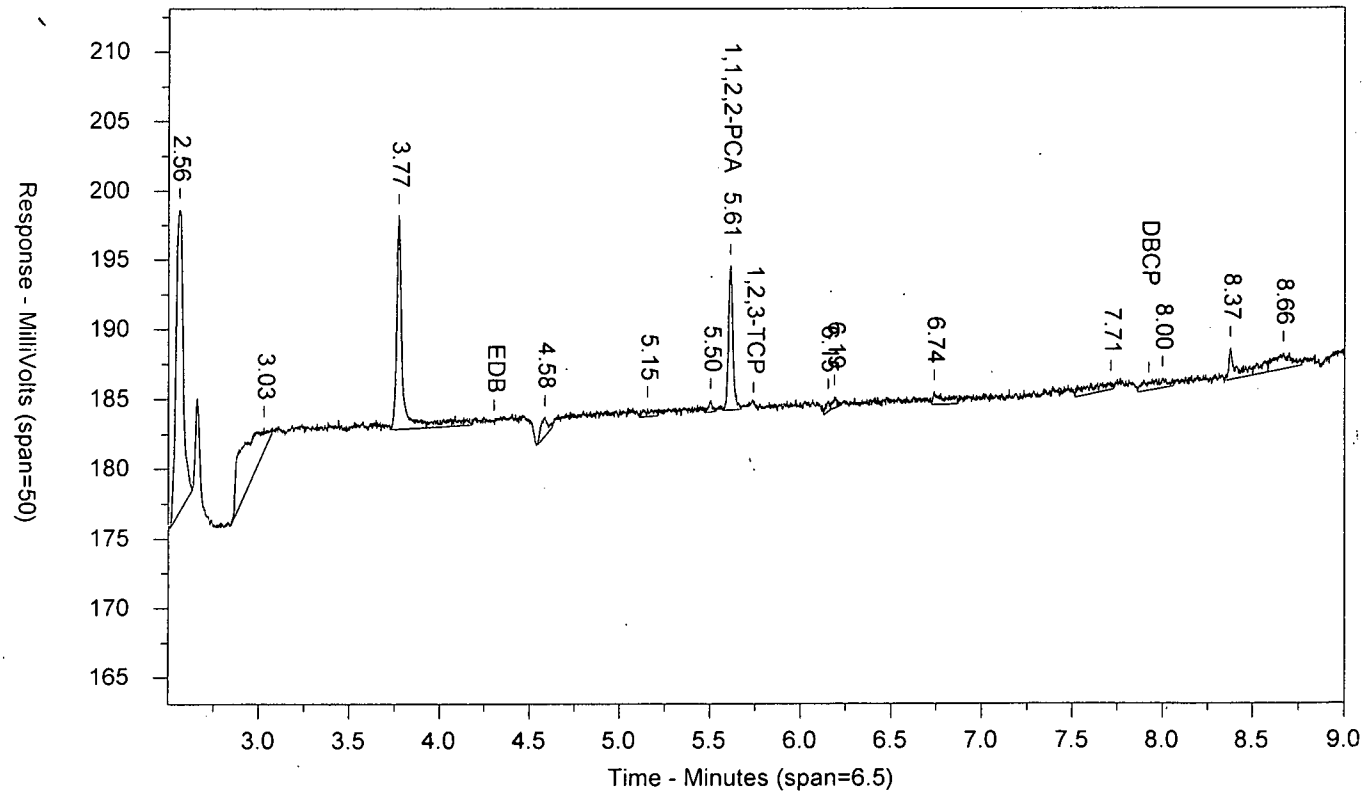


LANCASTER LABORATORIES

Sample Number: EIBKX1724C PHPIBLKPH PIBLK1723999999 SW-846 8011
Injected On: 8/29/2017 4:15:23 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

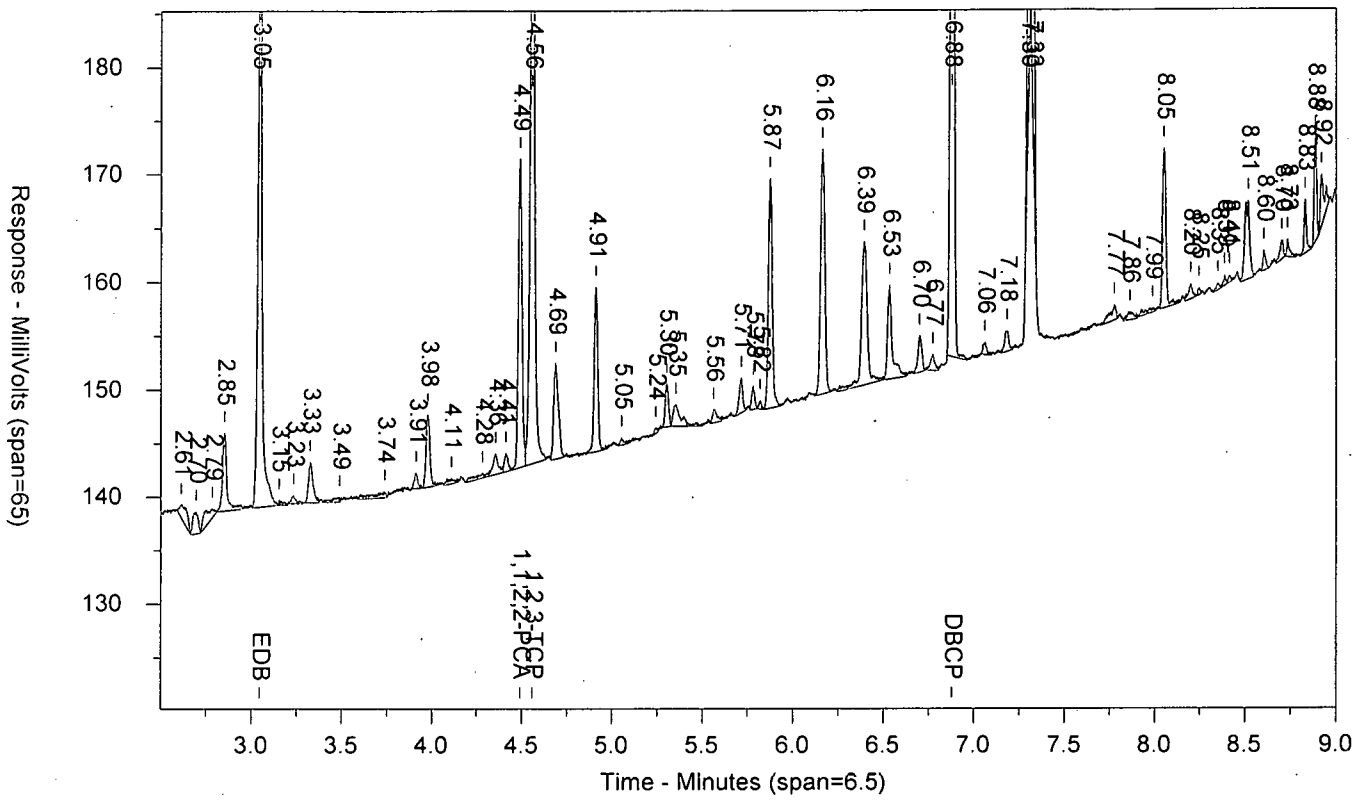
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.022 | 309 | .001 | EDB | | 0 | | EDB |
| 4.491 | 27792 | .068 | 1,1,2,2-PCA | 5.611 | 10400 | .073 | 1,1,2,2-PCA |
| 4.547 | 10930 | .028 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0038.RAW
Area File: 16EDBS17240001B.0038.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:00:09 AM
File Reported On: 8/29/2017 at 12:38:12 PM

EDB_41724EJ RWEDB_4RW CCAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0039.RAW

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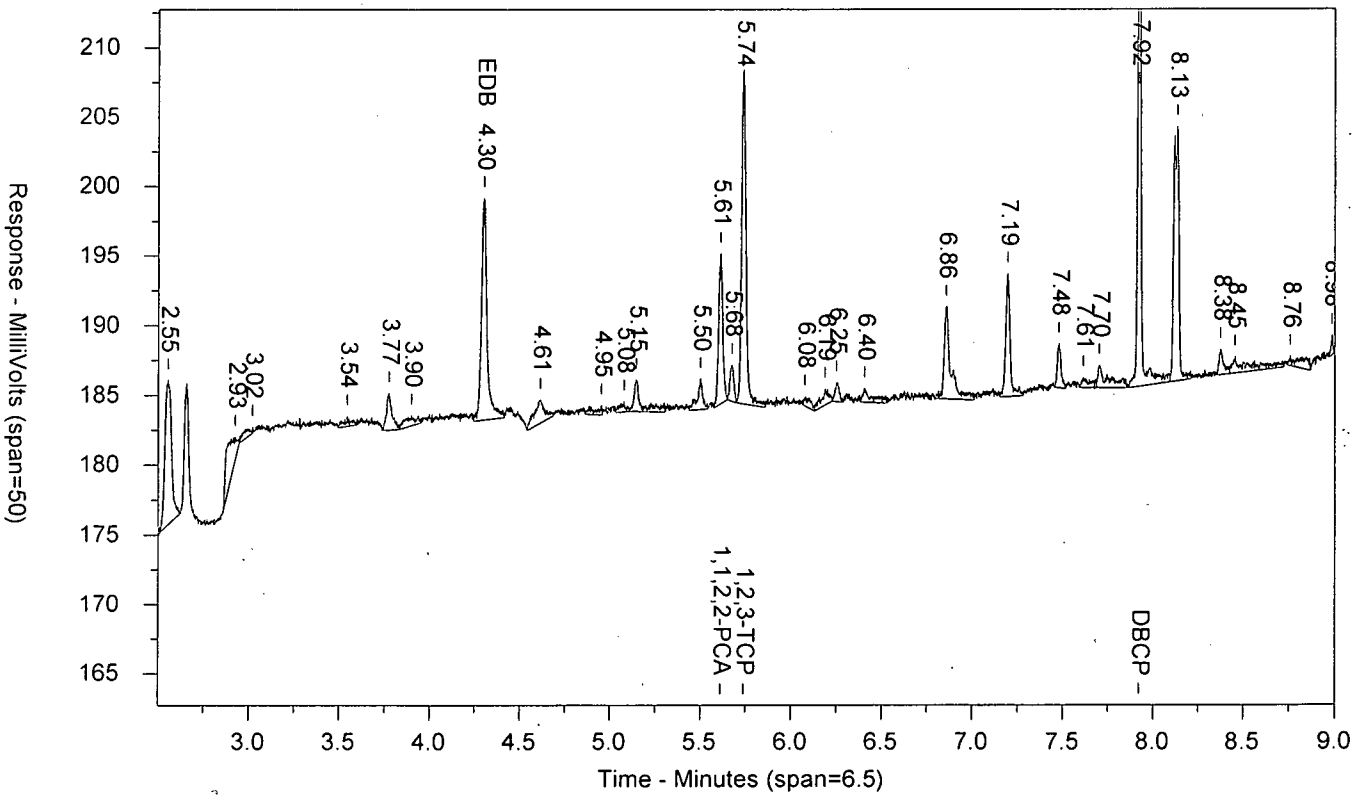


LANCASTER LABORATORIES

Sample Number: EDB_41724EJ RWEDB_4RW CCAL 1723999999 SW-846 8011
Injected On: 8/29/2017 4:30:55 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

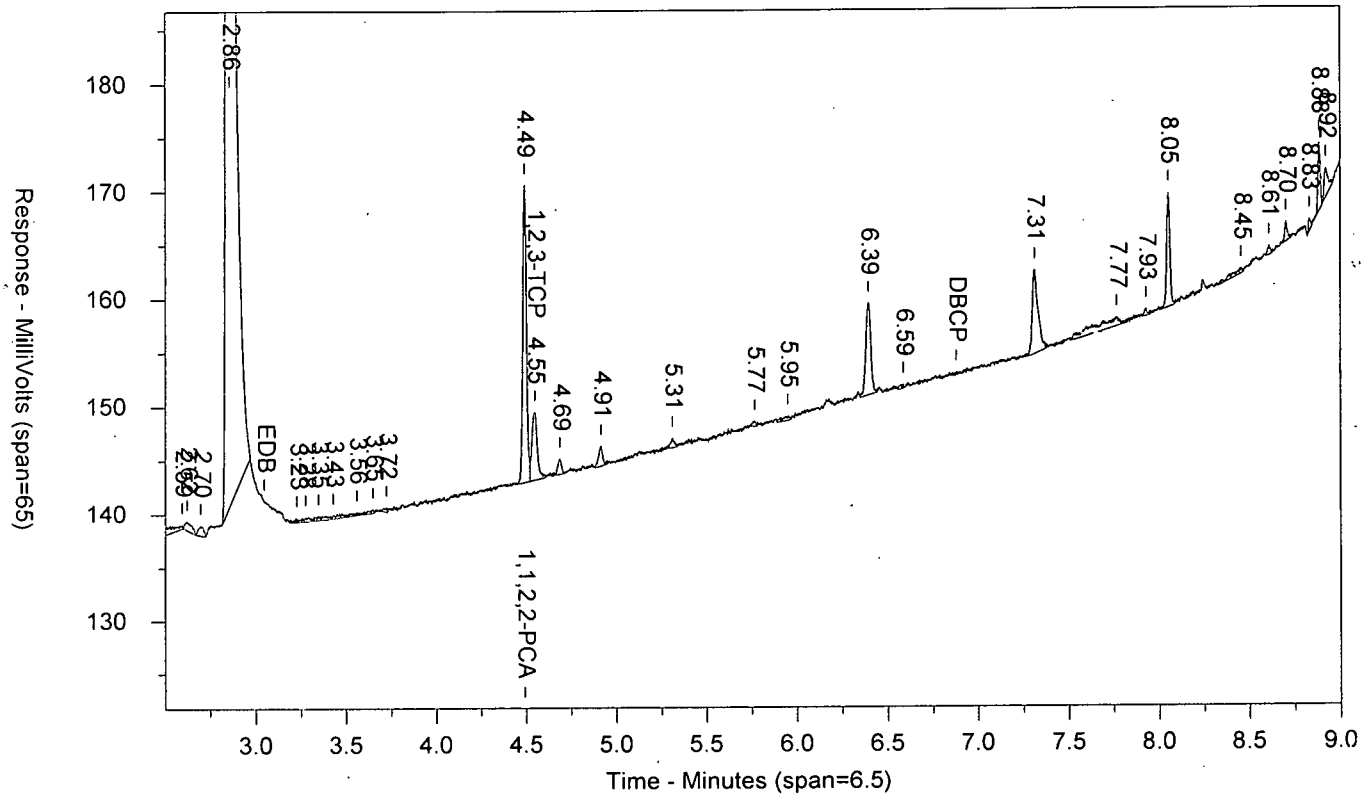
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 55566 | 2.708 | EDB | 4.303 | 15969 | 2.87 | EDB |
| 4.491 | 28738 | 1.231 | 1,1,2,2-PCA | 5.611 | 10819 | 1.329 | 1,1,2,2-PCA |
| 4.558 | 66395 | 20.599 | 1,2,3-TCP | 5.738 | 24040 | 20.372 | 1,2,3-TCP |
| 6.878 | 95236 | 2.877 | DBCP | 7.92 | 39878 | 3.093 | DBCP |

Files:
Area File: 16EDBS17240001.0039.RAW
Area File: 16EDBS17240001B.0039.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:00:09 AM
File Reported On: 8/29/2017 at 12:38:30 PM

EIBKX1724C PIPIBLKPI PIBLK1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0050.RAW

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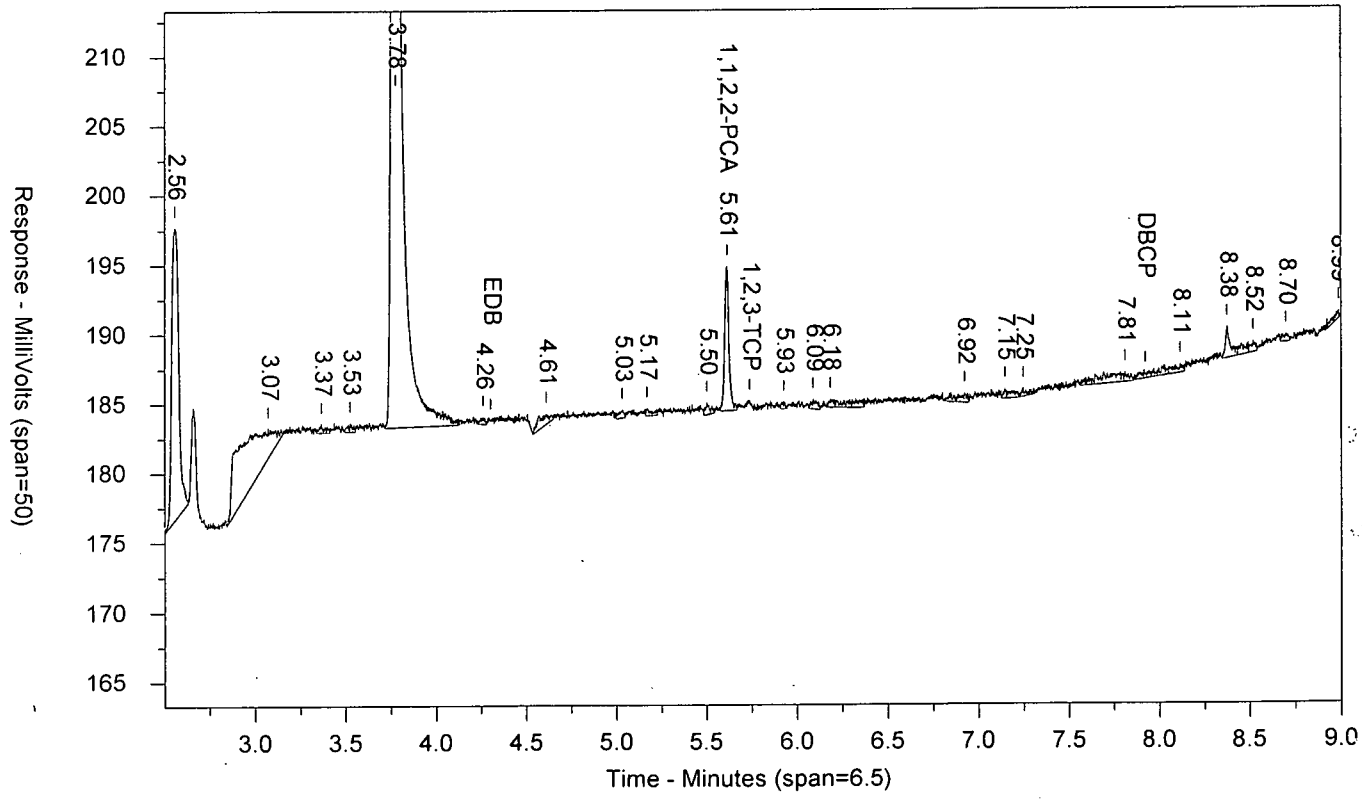


LANCASTER LABORATORIES

Sample Number: EIBKX1724C PIPIBLKPI PIBLK1723999999 SW-846 8011
Injected On: 8/29/2017 7:22:03 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

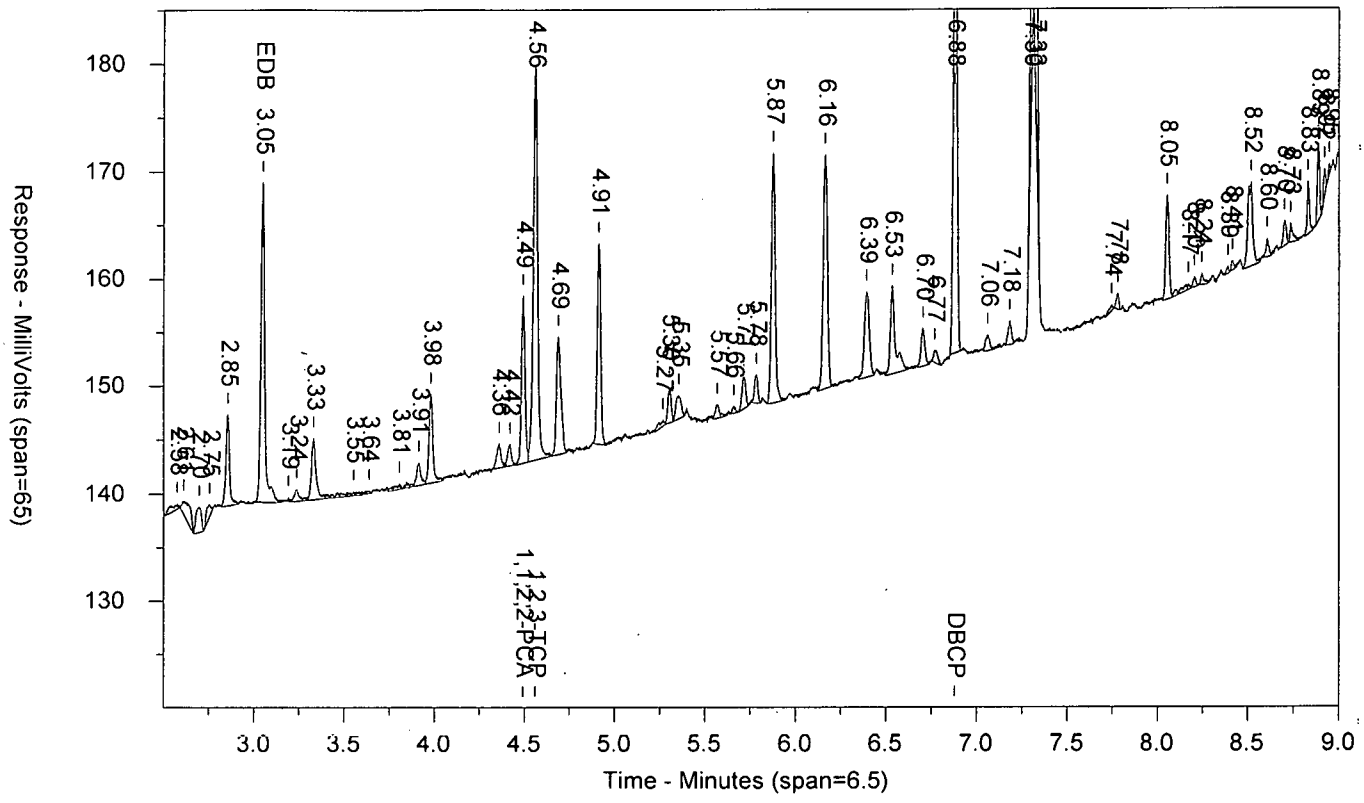
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.492 | 27720 | .068 | 1,1,2,2-PCA | 5.614 | 10413 | .073 | 1,1,2,2-PCA |
| 4.548 | 6368 | -.066 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0050.RAW
Area File: 16EDBS17240001B.0050.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 7:31:06 AM
File Reported On: 8/29/2017 at 12:41:59 PM

EDB_31724EJ TFEDB_3TF CCAL 1723999999 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0051.RAW

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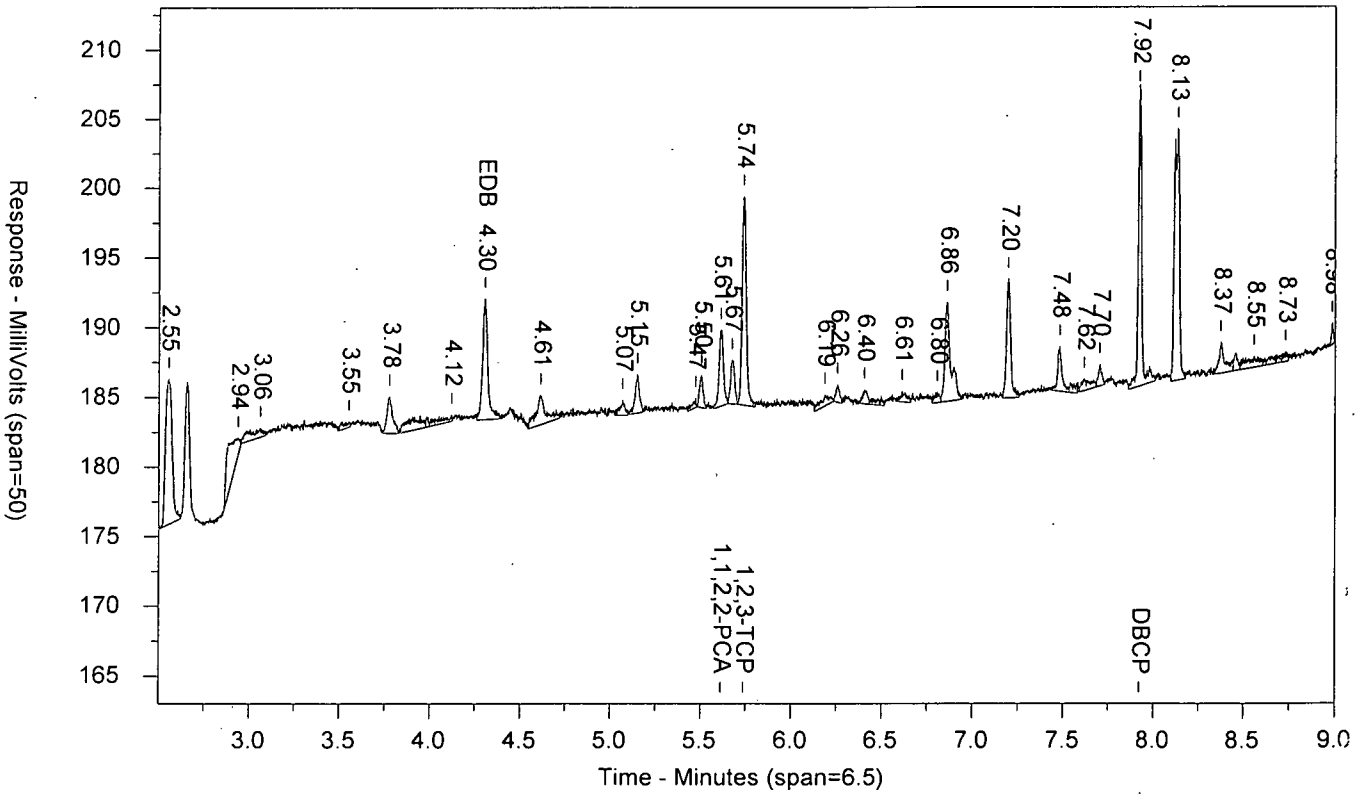


LANCASTER LABORATORIES

Sample Number: EDB_31724EJ TFEDB_3TF CCAL 1723999999 SW-846 8011
Injected On: 8/29/2017 7:37:39 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

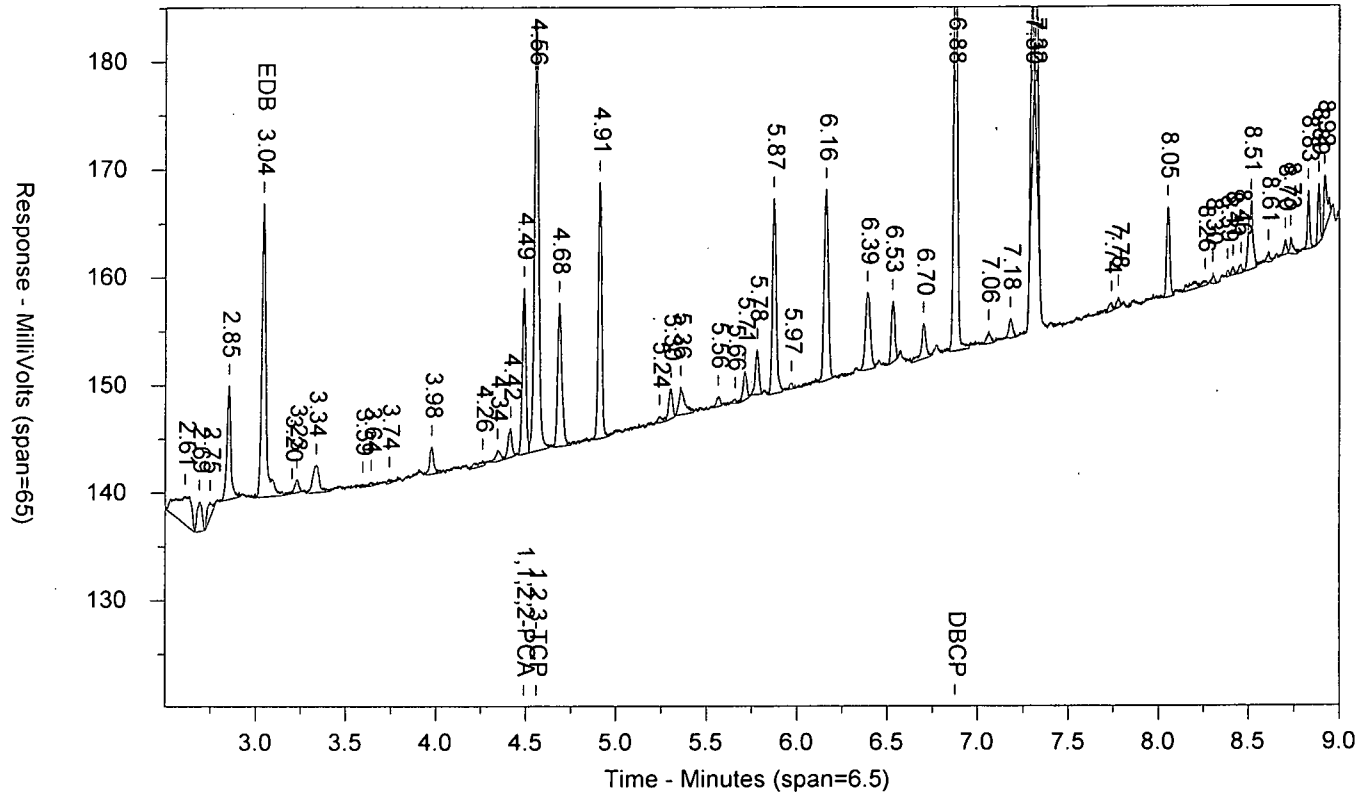
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 29798 | 1.452 | EDB | 4.304 | 8677 | 1.559 | EDB |
| 4.492 | 15625 | .669 | 1,1,2,2-PCA | 5.611 | 5455 | .67 | 1,1,2,2-PCA |
| 4.559 | 36618 | 9.804 | 1,2,3-TCP | 5.736 | 14969 | 11.295 | 1,2,3-TCP |
| 6.878 | 50234 | 1.518 | DBCP | 7.92 | 21702 | 1.683 | DBCP |

Files:
Area File: 16EDBS17240001.0051.RAW
Area File: 16EDBS17240001B.0051.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 7:46:41 AM
File Reported On: 8/29/2017 at 12:42:15 PM

EDB_31724EN AAEDB_3AA CCAL 1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0014.RAW

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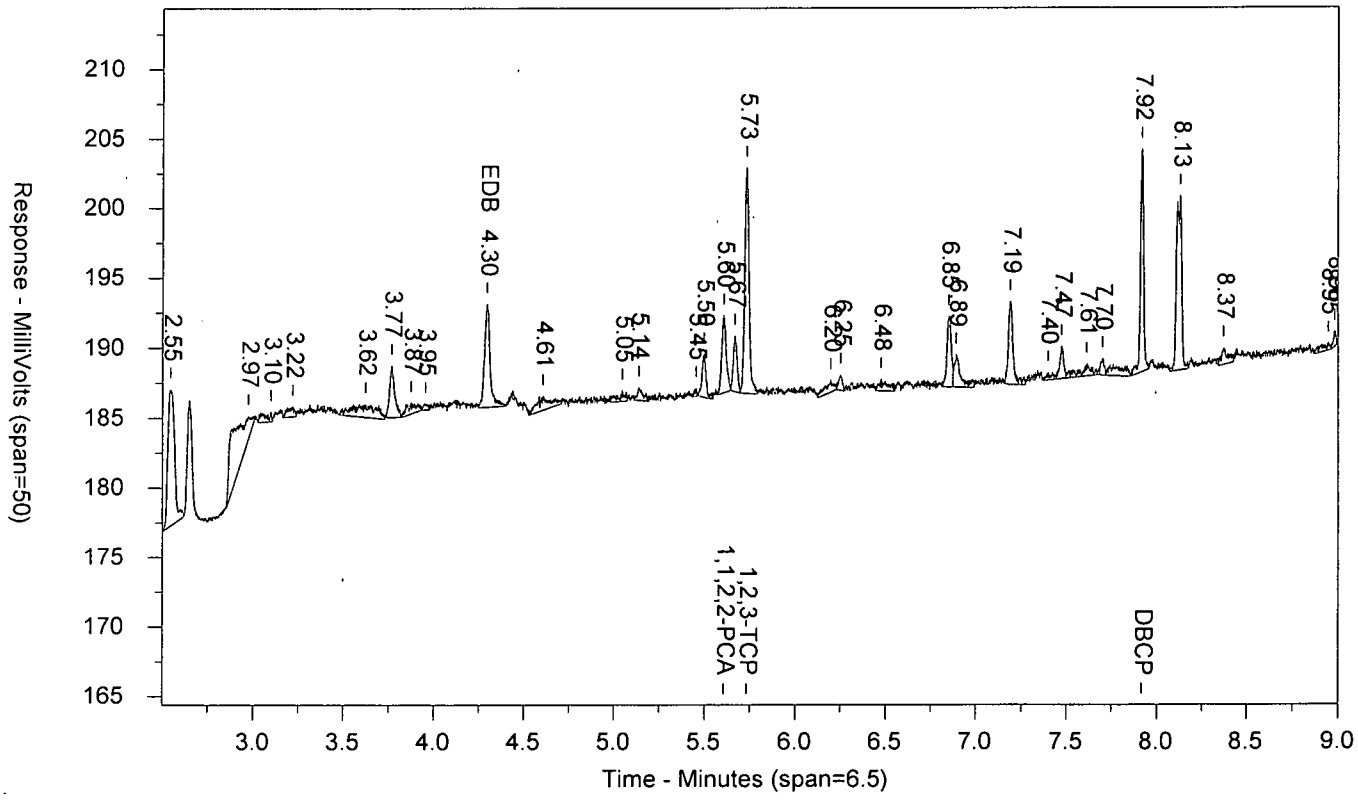


LANCASTER LABORATORIES

Sample Number: EDB_31724EN AAEDB_3AA CCAL 1724899999 SW-846 8011
Injected On: 9/6/2017 9:15:22 PM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

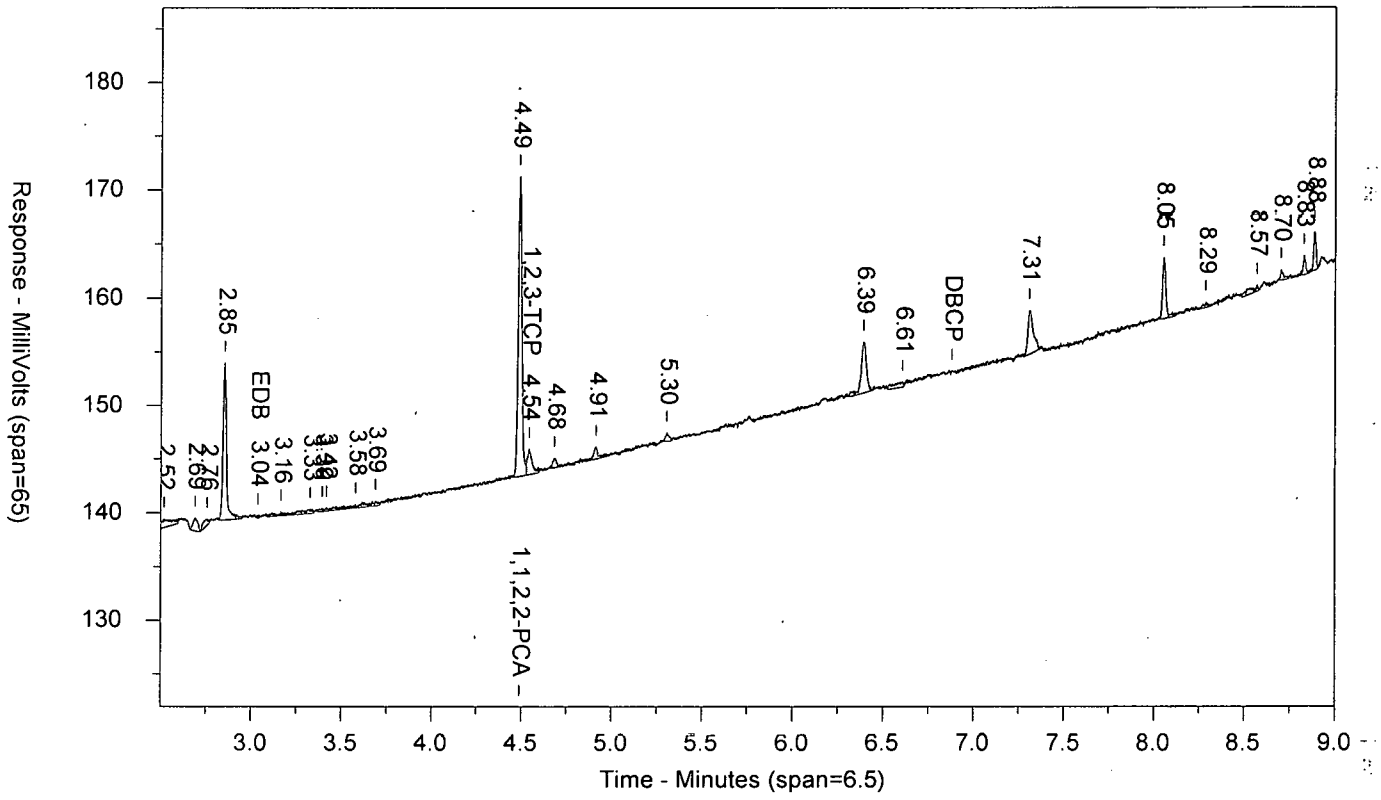
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.044 | 27271 | 1.279 | EDB | 4.296 | 7400 | 1.271 | EDB |
| 4.49 | 15477 | .632 | 1,1,2,2-PCA | 5.605 | 5542 | .634 | 1,1,2,2-PCA |
| 4.558 | 40082 | 9.505 | 1,2,3-TCP | 5.731 | 16228 | 9.692 | 1,2,3-TCP |
| 6.877 | 43145 | 1.247 | DBCP | 7.916 | 16044 | 1.249 | DBCP |

Files:
Area File: 16EDBS17249001.0014.RAW
Area File: 16EDBS17249001B.0014.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 9:24:24 PM
File Reported On: 9/7/2017 at 1:39:31 PM

EIBKX1724C AAPIBLKAA PIBLK1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0015.RAW

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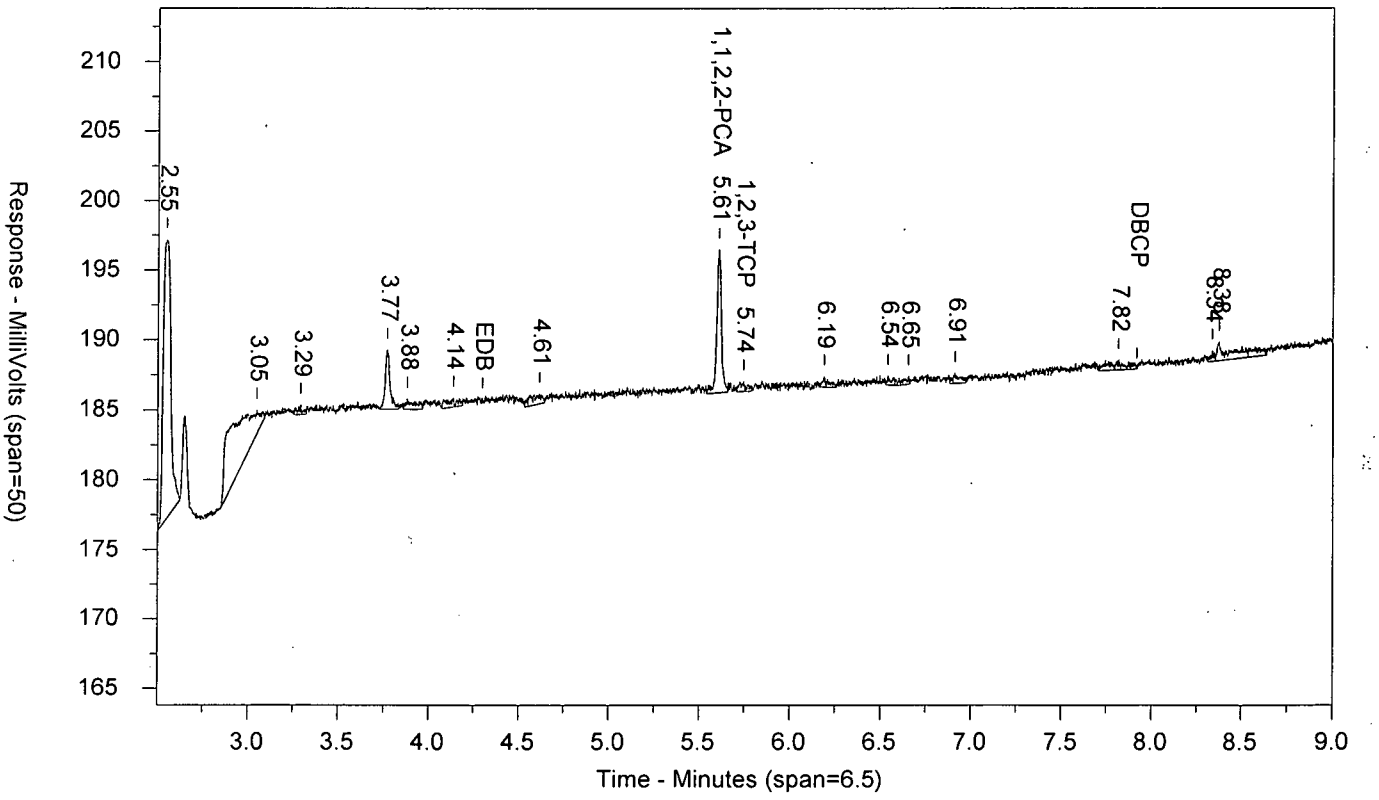


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1724899999 SW-846 8011
Injected On: 9/6/2017 9:30:55 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

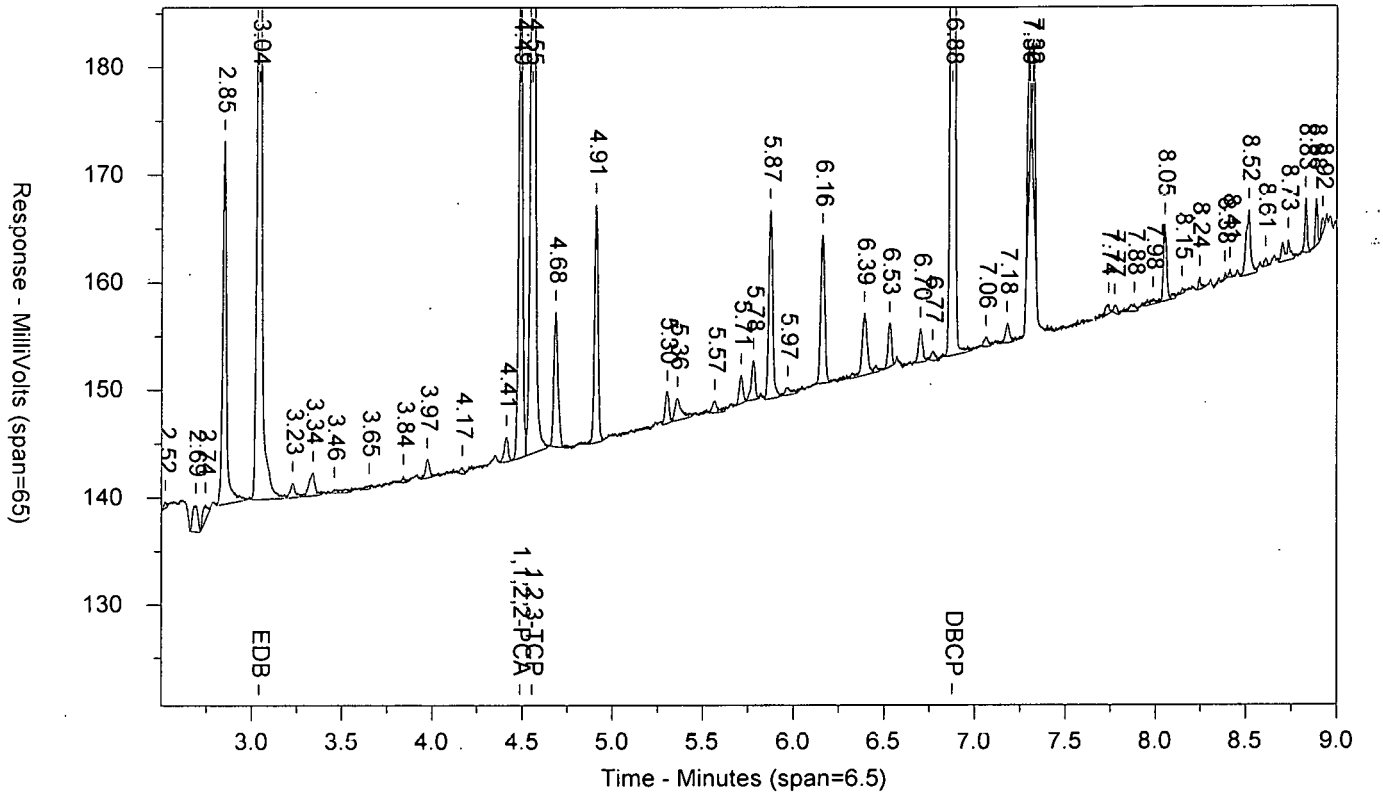
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.038 | 296 | .001 | EDB | | 0 | | EDB |
| 4.49 | 27914 | .065 | 1,1,2,2-PCA | 5.605 | 10261 | .067 | 1,1,2,2-PCA |
| 4.543 | 2440 | -.227 | 1,2,3-TCP | 5.744 | 756 | -.341 | 1,2,3-TCP |

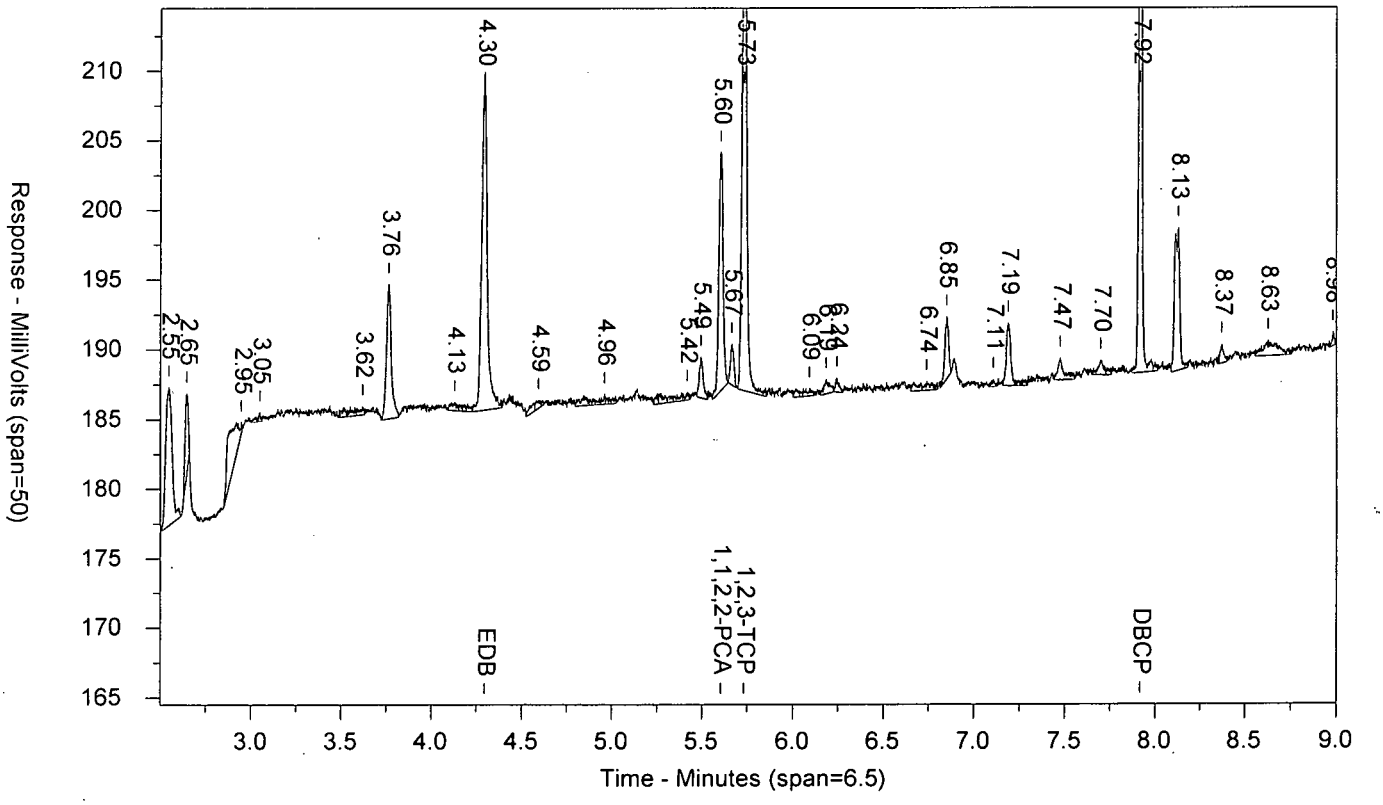
Files:
Area File: 16EDBS17249001.0015.RAW
Area File: 16EDBS17249001B.0015.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 9:39:56 PM
File Reported On: 9/7/2017 at 1:39:51 PM

EDB_51724EN NYEDB_5NY CCAL 1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0026.RAW




\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.0026.RAW



LANCASTER LABORATORIES

Sample Number: EDB_51724EN NYEDB_5NY CCAL 1724899999 SW-846 8011
Injected On: 9/7/2017 12:22:40 AM Sample Weight: 1
Instrument ID: CP16-19853 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

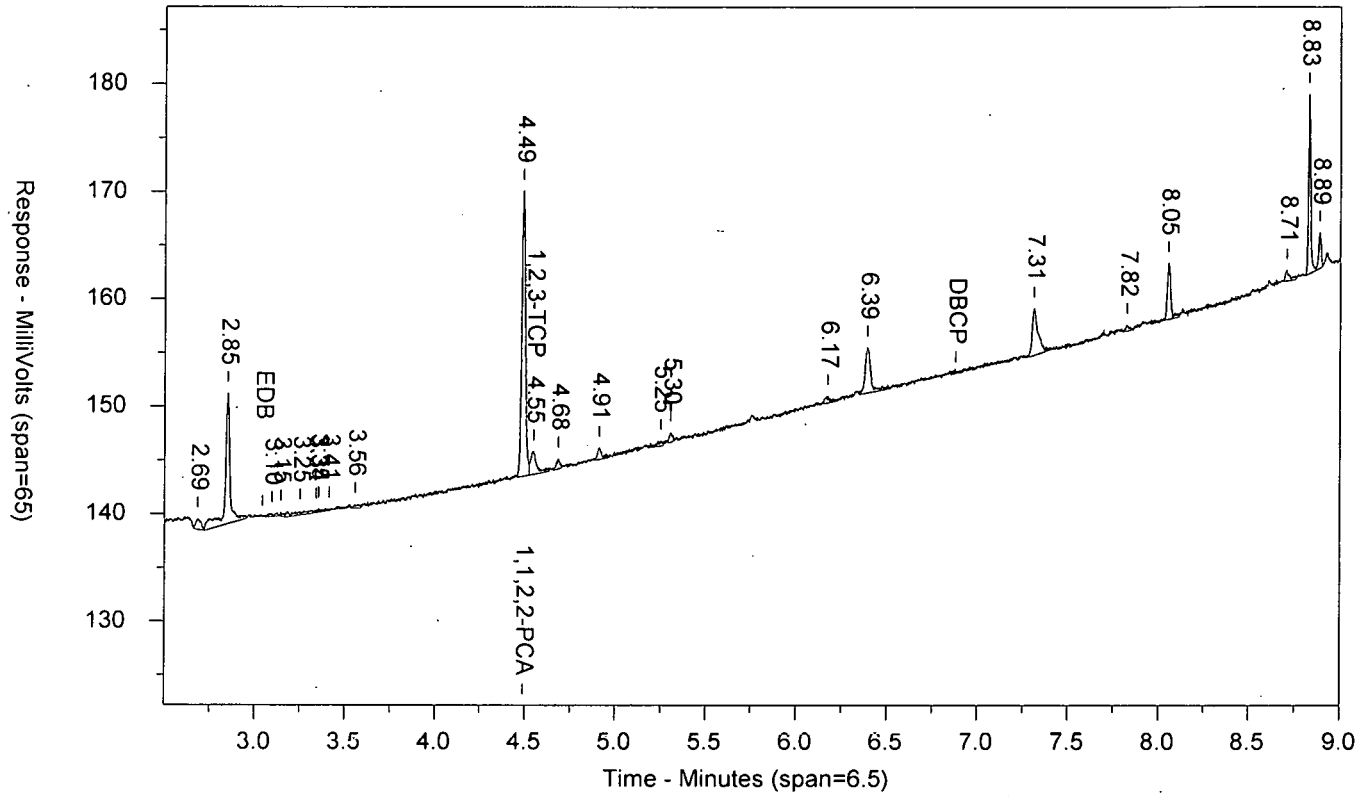
Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.041 | 87125 | 4.086 | EDB | 4.295 | 23832 | 4.093 | EDB |
| 4.487 | 47896 | 1.957 | 1,1,2,2-PCA | 5.604 | 17152 | 1.963 | 1,1,2,2-PCA |
| 4.554 | 106962 | 33.448 | 1,2,3-TCP | 5.731 | 38483 | 32.229 | 1,2,3-TCP |
| 6.876 | 138099 | 3.992 | DBCP | 7.916 | 50246 | 3.911 | DBCP |

Files:
Area File: 16EDBS17249001.0026.RAW
Area File: 16EDBS17249001B.0026.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/7/2017 12:31:42 AM
File Reported On: 9/7/2017 at 1:43:10 PM

EIBKX1724C UVPIBLKUV PIBLK1724899999 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0027.RAW

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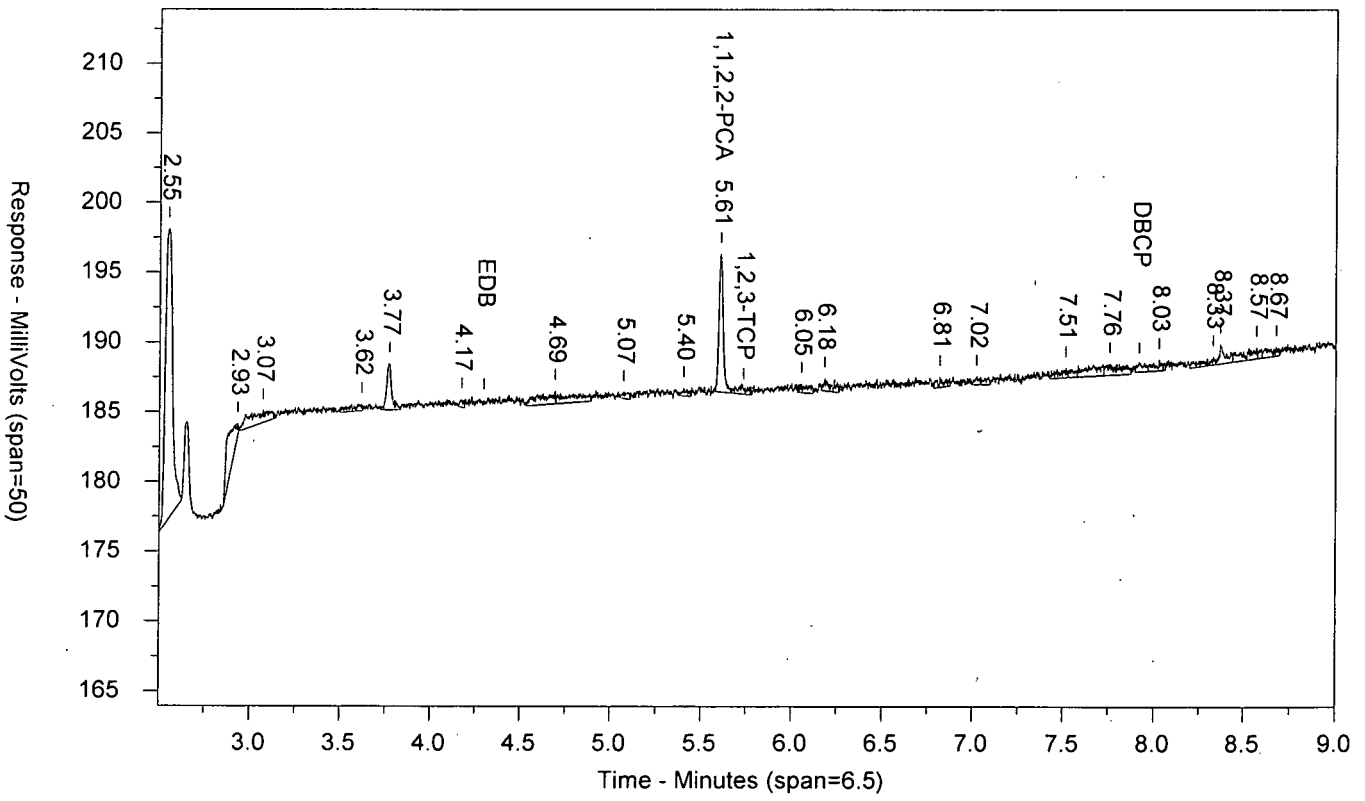


LANCASTER LABORATORIES

Sample Number: EIBKX1724C UVPIBLKUV PIBLK1724899999 SW-846 8011
Injected On: 9/7/2017 12:38:16 AM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.489 | 26601 | .062 | 1,1,2,2-PCA | 5.605 | 9891 | .065 | 1,1,2,2-PCA |
| 4.547 | 2179 | -.232 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 16EDBS17249001.0027.RAW
Area File: 16EDBS17249001B.0027.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/7/2017 12:47:18 AM
File Reported On: 9/7/2017 at 1:43:30 PM

# Raw QC Data

# EDB/DBCP

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: BLANKA** 8/28/17 PBLK44237 BLK Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 28, 2017 22:33:00 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0016.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.068464

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 28, 2017 22:33:00 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0016.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.071545

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 27966 | 0.068464 |
| 1,2,3-Trichloropropane | 4.53 | 4.57 | 4.59 | 5571 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 10195 | 0.071545 |
| 1,2,3-Trichloropropane | 5.71 | 5.74 | 5.77 | 3171 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.068464 | 0.0035 | 0.007 | 0.007 | | 4.40 | |
| 1,1,2,2-TETRACHLOROE | A | 0.068464 | 0.0035 | 0.007 | 0.007 | | 4.40 | |
| 1,1,2,2-TETRACHLOROE | B | 0.071545 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:17:38

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **BLANKA** 8/28/17 PBLK44237Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 28, 2017 22:33:00
Instrument : CP16--19853A
Result file : 16EDBS17240001.0016.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.068464

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 27966 | 0.068464 |
| **1,2,3-TCP** | 4.53 | 4.57 | 4.59 | 5571 | -0.082937 |

## Analysis Report (B)

Injected on : Aug 28, 2017 22:33:00
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0016.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.071545

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10195 | 0.071545 |
| **1,2,3-TCP** | 5.71 | 5.74 | 5.77 | 3171 | -0.029209 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | DL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☑ 1,1,2,2-PCA | A | 0.068464 | 0.007 | 0.0035 | | 4.40 | |
| ☐ 1,2,3-TCP | A | -0.082937 | <0.27 | | | 95.82 | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

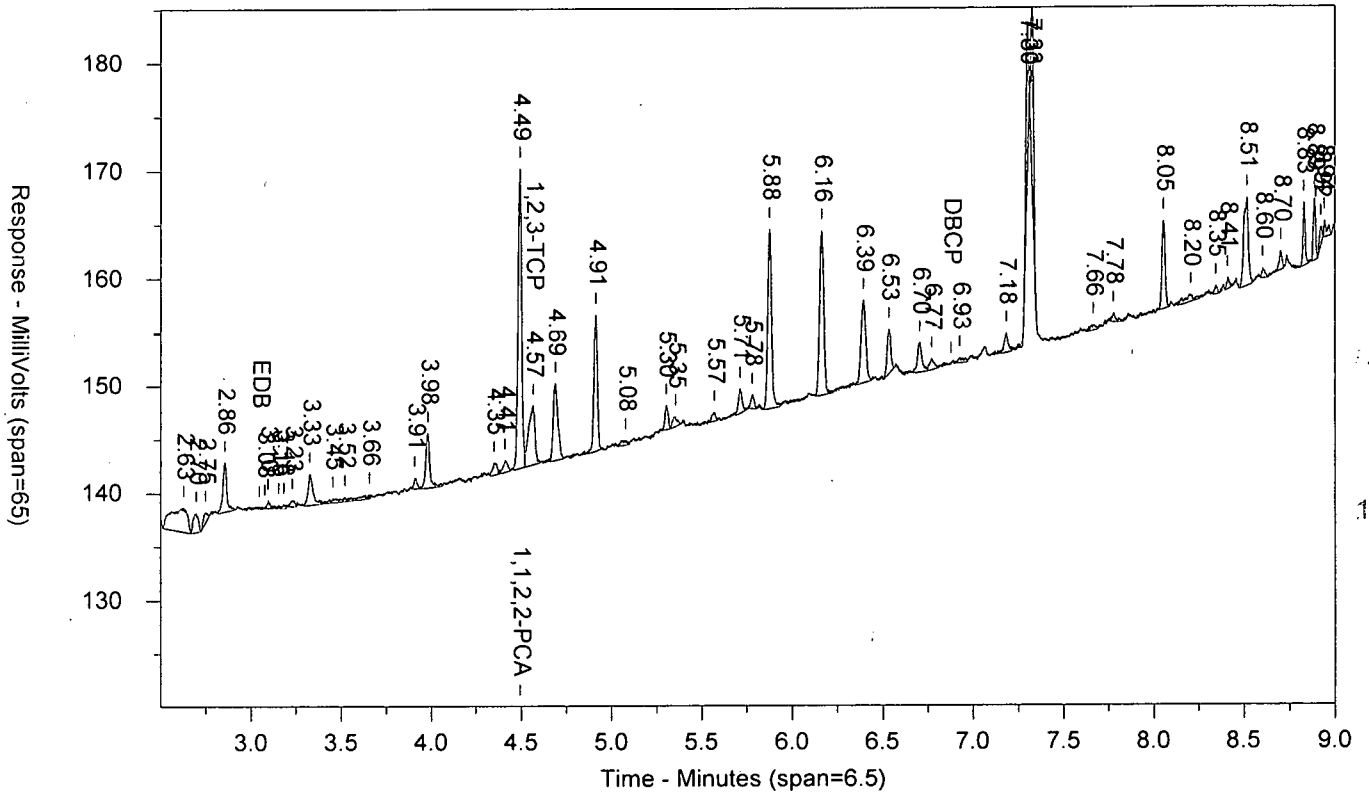
Verified by: Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 31 2017

%RPD = High - Low Amount divided by the Average times 100

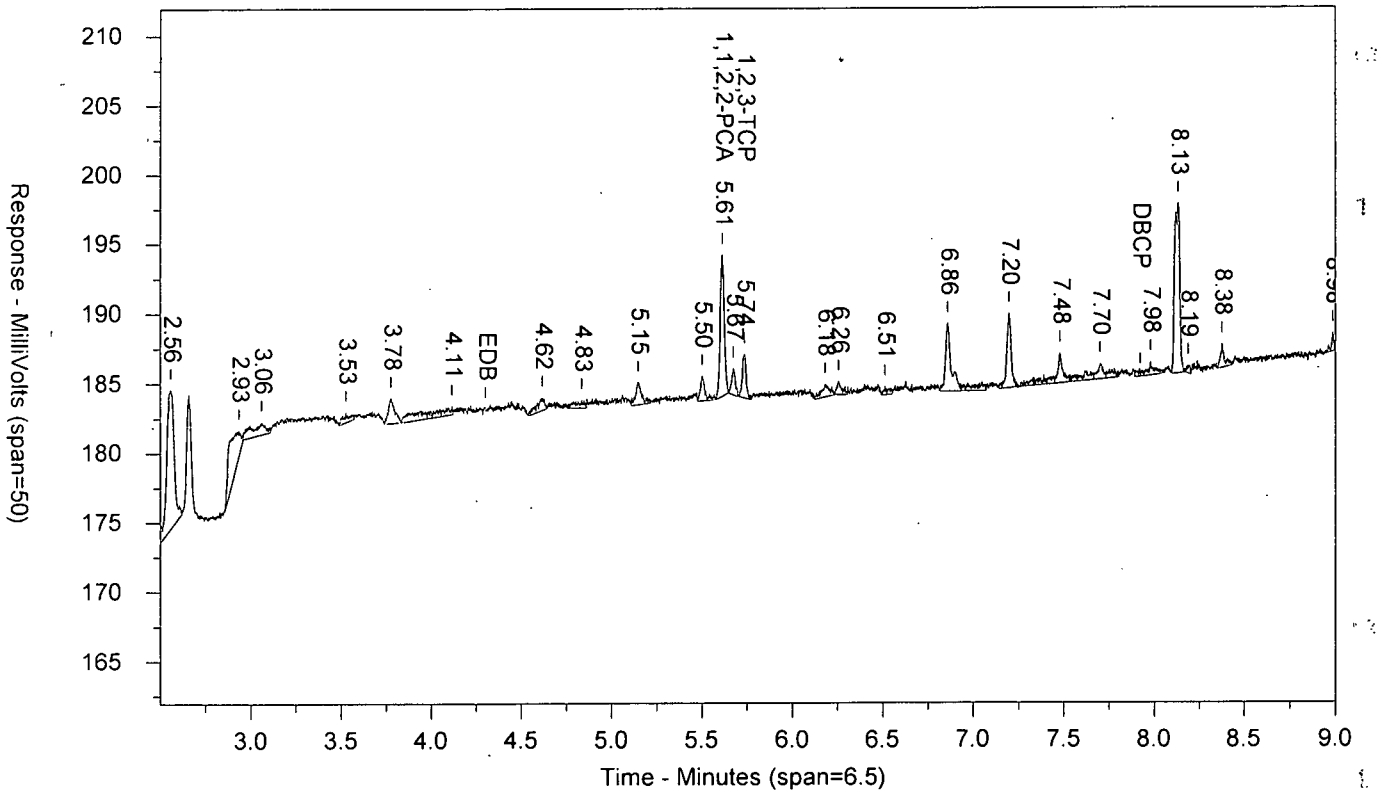
* Recovery outside QC Limits

BLANKA 8/28/17 AAPBLK44237 BLK 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0016.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B.0016.RAW



LANCASTER LABORATORIES

Sample Number: BLANKA 8/28/17 AAPBLK44237 BLK 172370044A 10398 SW-846 8011
Injected On: 8/28/2017 10:33:00 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 4.493 | 27966 | .068 | 1,1,2,2-PCA | 5.613 | 10195 | .072 | 1,1,2,2-PCA |
| 4.567 | 5571 | -.083 | 1,2,3-TCP | 5.736 | 3171 | -.029 | 1,2,3-TCP |

Files:
Area File: 16EDBS17240001.0016.RAW
Area File: 16EDBS17240001B.0016.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 10:42:02 PM
File Reported On: 8/29/2017 at 12:32:06 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9175053** MS KEFF2 MS Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 37.04 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 05:02:06 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0041.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.067275

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 05:02:06 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0041.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 101% ( 46 - 136 ) Conc: 0.0671

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 53217 | 0.140057 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 29082 | 0.067275 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 65396 | 1.092687 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 96045 | 0.156685 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 15422 | 0.14965 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 10119 | 0.0671 |
| 1,2,3-Trichloropropane | 5.71 | 5.74 | 5.77 | 25352 | 1.170891 |
| 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 40195 | 0.168359 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.140057 | 0.0094 | 0.0189 | 0.0283 | | 6.62 | |
| 1,1,2,2-TETRACHLOROE | A | 0.067275 | 0.0033 | 0.0066 | 0.0066 | | 0.26 | |
| 1,1,2,2-TETRACHLOROE | A | 0.067275 | 0.0033 | 0.0066 | 0.0066 | | 0.26 | |
| 1,1,2,2-TETRACHLOROE | B | 0.0671 | 0.0033 | 0.0066 | 0.0066 | | | |
| 1,2,3-Trichloropropane | A | 1.092687 | | | 0.2551 | | 6.91 | |
| 1,2-Dibromo-3-chloroprope | A | 0.156685 | 0.0094 | 0.0189 | 0.0283 | | 7.18 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 31 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:23

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9175053** MS KEFF2 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 37.04 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 05:02:06
Instrument : CP16--19853A
Result file : 16EDBS17240001.0041.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.067275

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 53217 | 0.140057 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 29082 | 0.067275 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 65396 | 1.092687 |
| DBCP | 6.85 | 6.88 | 6.91 | 96045 | 0.156685 |

## Analysis Report (B)

Injected on : Aug 29, 2017 05:02:06
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0041.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 101% (46-136) Conc.: 0.0671

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 4.27 | 4.30 | 4.33 | 15422 | 0.149650 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 10119 | 0.067100 |
| **1,2,3-TCP** | 5.71 | 5.74 | 5.77 | 25352 | 1.170891 |
| DBCP | 7.89 | 7.92 | 7.95 | 40195 | 0.168359 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | DL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.140057 | 0.0283 | 0.0094 | | 6.62 | |
| ☐ 1,1,2,2-PCA | A | 0.067275 | 0.0066 | 0.0033 | | 0.26 | |
| ☐ 1,2,3-TCP | A | 1.092687 | 0.2551 | | | 6.91 | |
| ☐ DBCP | A | 0.156685 | 0.0283 | 0.0094 | | 7.18 | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: AUG 30 2017

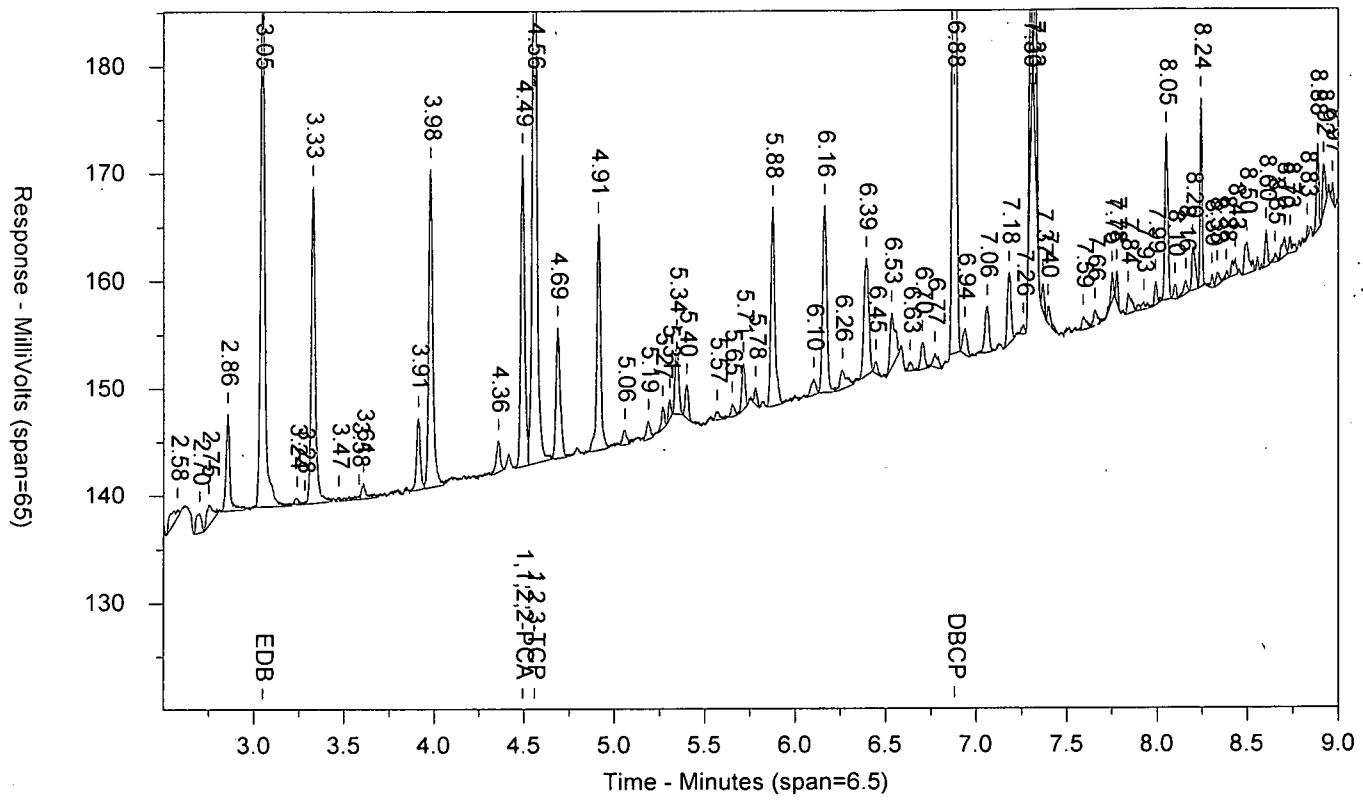
Verified by: Valerie L. Tomayko Principal Specialist
Date: AUG 31 2017

%RPD = High - Low Amount divided by the Average times 100

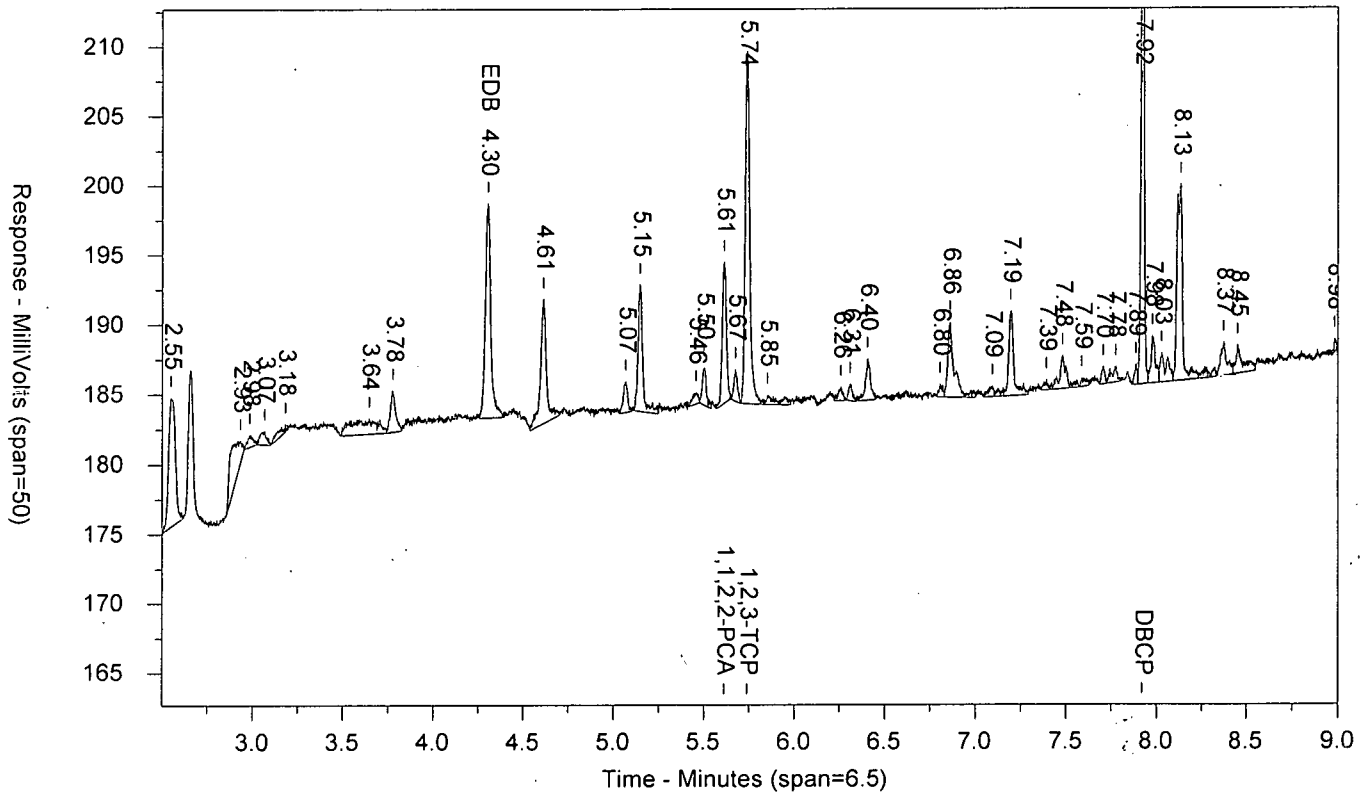
* Recovery outside QC Limits

9175053MS AAKEFF2 MS 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0041.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B.0041.RAW



LANCASTER LABORATORIES

Sample Number: 9175053MS AAKEFF2 MS 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 5:02:06 AM
Instrument ID: CP16-19853
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul
Sample Weight: 37.04
Dilution Factor: 2

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 53217 | .14 | EDB | 4.304 | 15422 | .15 | EDB |
| 4.493 | 29082 | .067 | 1,1,2,2-PCA | 5.612 | 10119 | .067 | 1,1,2,2-PCA |
| 4.559 | 65396 | 1.093 | 1,2,3-TCP | 5.738 | 25352 | 1.171 | 1,2,3-TCP |
| 6.879 | 96045 | .157 | DBCP | 7.921 | 40195 | .168 | DBCP |

Files:
Area File: 16EDBS17240001.0041.RAW
Area File: 16EDBS17240001B.0041.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:11:09 AM
File Reported On: 8/29/2017 at 12:39:02 PM

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# Data Summary

**Sample Name: 9175054** MSD KEFF2 MSD Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 37.04 mL Total Volume: 2 ml Analyst: 7848 SDG: KR194 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 05:17:40 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0042.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.064556

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 29, 2017 05:17:40 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0042.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 99% ( 46 - 136 ) Conc: 0.065823

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 53085 | 0.139709 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 27907 | 0.064556 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 64280 | 1.070838 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 94067 | 0.153458 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 15402 | 0.149455 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 9926 | 0.065823 |
| 1,2,3-Trichloropropane | 5.71 | 5.74 | 5.77 | 24753 | 1.138576 |
| 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 39310 | 0.164653 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.139709 | 0.0094 | 0.0189 | 0.0283 | | 6.74 | |
| 1,1,2,2-TETRACHLOROE | A | 0.064556 | 0.0033 | 0.0066 | 0.0066 | | 1.94 | |
| 1,1,2,2-TETRACHLOROE | A | 0.064556 | 0.0033 | 0.0066 | 0.0066 | | 1.94 | |
| 1,1,2,2-TETRACHLOROE | B | 0.065823 | 0.0033 | 0.0066 | 0.0066 | | | |
| 1,2,3-Trichloropropane | A | 1.070838 | | | 0.2551 | | 6.13 | |
| 1,2-Dibromo-3-chloroprop | A | 0.153458 | 0.0094 | 0.0189 | 0.0283 | | 7.04 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:18:26

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9175054** MSD KEFF2 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 37.04 mL Total Volume: 2 ml Analyst: Administr SDG: KR194 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 29, 2017 05:17:40
Instrument : CP16--19853A
Result file : 16EDBS17240001.0042.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.064556

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.02 | 3.05 | 3.08 | 53085 | 0.139709 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 27907 | 0.064556 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 64280 | 1.070838 |
| **DBCP** | 6.85 | 6.88 | 6.91 | 94067 | 0.153458 |

## Analysis Report (B)

Injected on : Aug 29, 2017 05:17:40
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0042.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 99% (46-136) Conc.: 0.065823

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.27 | 4.30 | 4.33 | 15402 | 0.149456 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 9926 | 0.065823 |
| **1,2,3-TCP** | 5.71 | 5.74 | 5.77 | 24753 | 1.138576 |
| **DBCP** | 7.89 | 7.92 | 7.95 | 39310 | 0.164653 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | DL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.139709 | 0.0283 | 0.0094 | | 6.74 | |
| ☐ 1,1,2,2-PCA | A | 0.064556 | 0.0066 | 0.0033 | | 1.94 | |
| ☐ 1,2,3-TCP | A | 1.070838 | 0.2551 | | | 6.13 | |
| ☐ DBCP | A | 0.153458 | 0.0283 | 0.0094 | | 7.04 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

Verified by: Valerie L. Tomaylo
Valerie L. Tomaylo
Principal Specialist
Date: AUG 31 2017

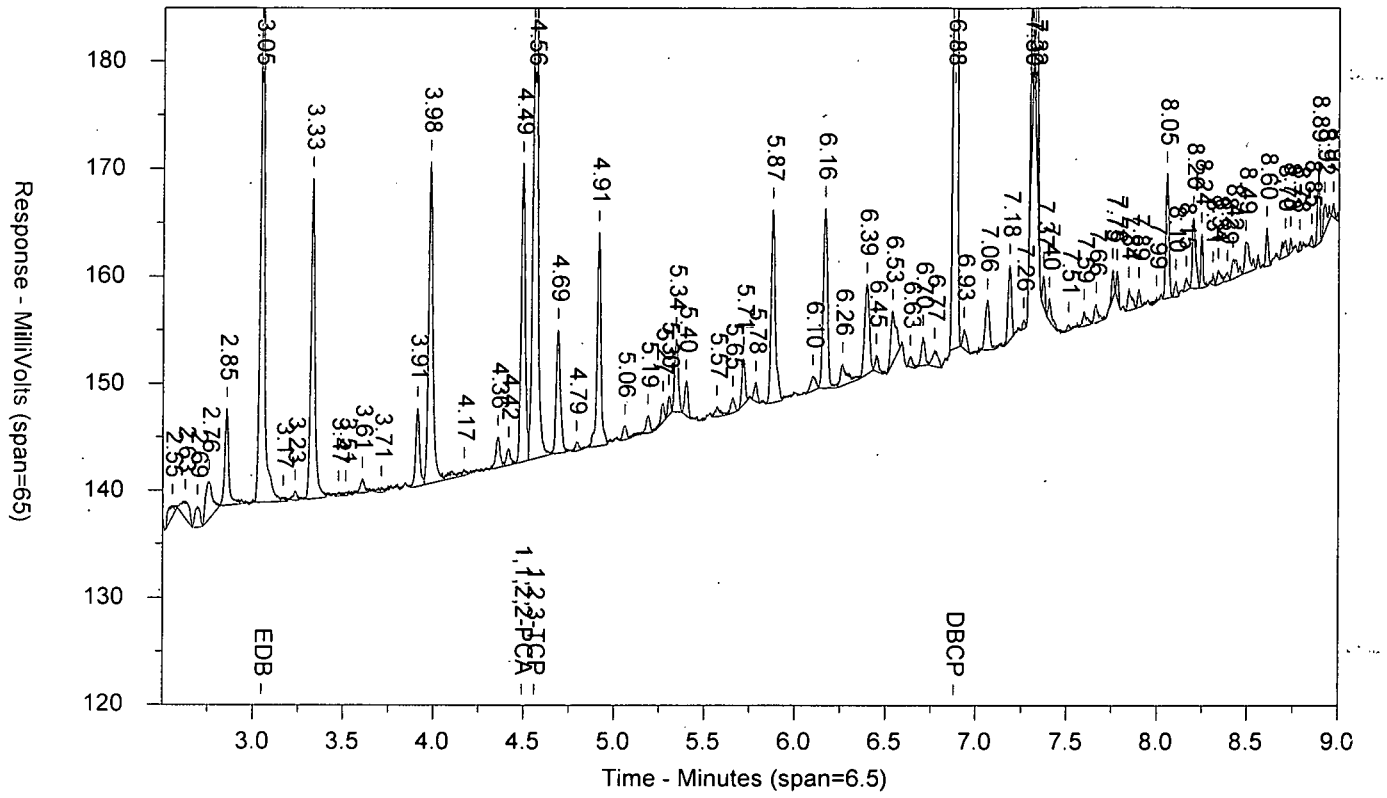
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

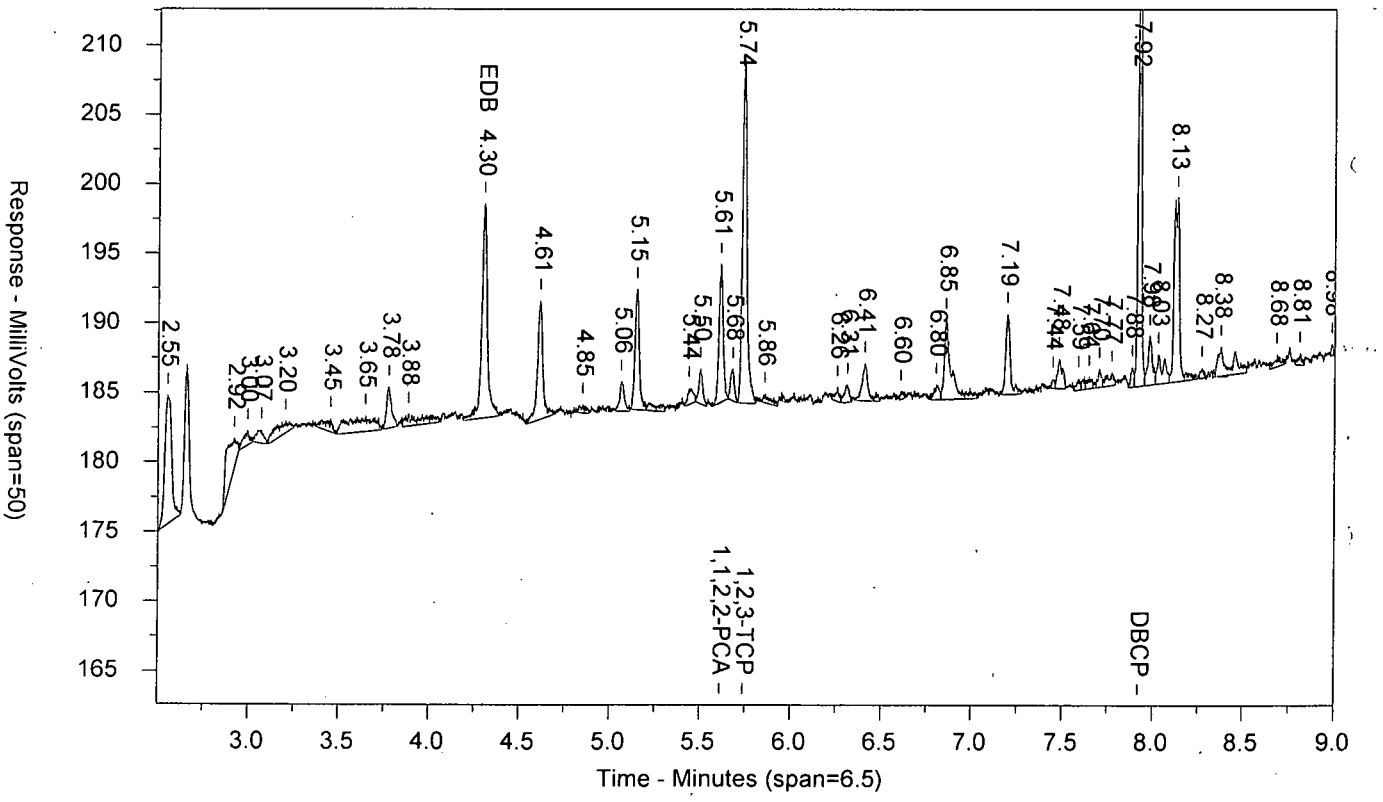
Printed on: 8/29/2017 12:52:45

9175054MSD AAKEFF2 MSD 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0042.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001B.0042.RAW



LANCASTER LABORATORIES

Sample Number: 9175054MSD AAKEFF2 MSD 172370044A 10398 SW-846 8011
Injected On: 8/29/2017 5:17:40 AM Sample Weight: 37.04
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.048 | 53085 | .14 | EDB | 4.304 | 15402 | .149 | EDB |
| 4.492 | 27907 | .065 | 1,1,2,2-PCA | 5.611 | 9926 | .066 | 1,1,2,2-PCA |
| 4.559 | 64280 | 1.071 | 1,2,3-TCP | 5.738 | 24753 | 1.139 | 1,2,3-TCP |
| 6.878 | 94067 | .153 | DBCP | 7.92 | 39310 | .165 | DBCP |

Files:
Area File: 16EDBS17240001.0042.RAW
Area File: 16EDBS17240001B.0042.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/29/2017 5:26:43 AM
File Reported On: 8/29/2017 at 12:39:16 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSA** 8/28/17 LCS44237 LCS Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 28, 2017 22:48:38 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0017.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.062367

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 28, 2017 22:48:38 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0017.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.066646

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 47001 | 0.130905 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 25476 | 0.062367 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 64401 | 1.135753 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 79791 | 0.137757 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 13038 | 0.133883 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 9497 | 0.066646 |
| 1,2,3-Trichloropropane | 5.71 | 5.74 | 5.77 | 23272 | 1.120228 |
| 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 30645 | 0.135841 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.130905 | 0.01 | 0.02 | 0.03 | | 2.25 | |
| 1,1,2,2-TETRACHLOROE | A | 0.062367 | 0.0035 | 0.007 | 0.007 | | 6.63 | |
| 1,1,2,2-TETRACHLOROE | A | 0.062367 | 0.0035 | 0.007 | 0.007 | | 6.63 | |
| 1,1,2,2-TETRACHLOROE | B | 0.066646 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | A | 1.135753 | | | 0.27 | | 1.38 | |
| 1,2-Dibromo-3-chloroprope | A | 0.137757 | 0.01 | 0.02 | 0.03 | | 1.40 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 31 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:17:40

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 8/28/17 LCS44237 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 28, 2017 22:48:38
Instrument : CP16--19853A
Result file : 16EDBS17240001.0017.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.062367

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 47001 | 0.130905 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 25476 | 0.062367 |
| 1,2,3-TCP | 4.53 | 4.56 | 4.59 | 64401 | 1.135753 |
| DBCP | 6.85 | 6.88 | 6.91 | 79791 | 0.137757 |

## Analysis Report (B)

Injected on : Aug 28, 2017 22:48:38
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0017.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.066646

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 4.27 | 4.30 | 4.33 | 13038 | 0.133883 |
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 9497 | 0.066646 |
| 1,2,3-TCP | 5.71 | 5.74 | 5.77 | 23272 | 1.120228 |
| DBCP | 7.89 | 7.92 | 7.95 | 30645 | 0.135841 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | DL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.130905 | 0.03 | 0.01 | | 2.25 | |
| ☑ 1,1,2,2-PCA | A | 0.062367 | 0.007 | 0.0035 | | 6.63 | |
| ☐ 1,2,3-TCP | A | 1.135753 | 0.27 | | | 1.38 | |
| ☑ DBCP | A | 0.137757 | 0.03 | 0.01 | | 1.40 | |

Units: ug/l

Valerie L. Tomayko
Principal Specialist

Reviewed by: _____ Verified by: _____

Date: Heather M. Miller 8/30/17 Date: AUG 31 2017
Heather M. Miller
Chemist

AUG 30 2017

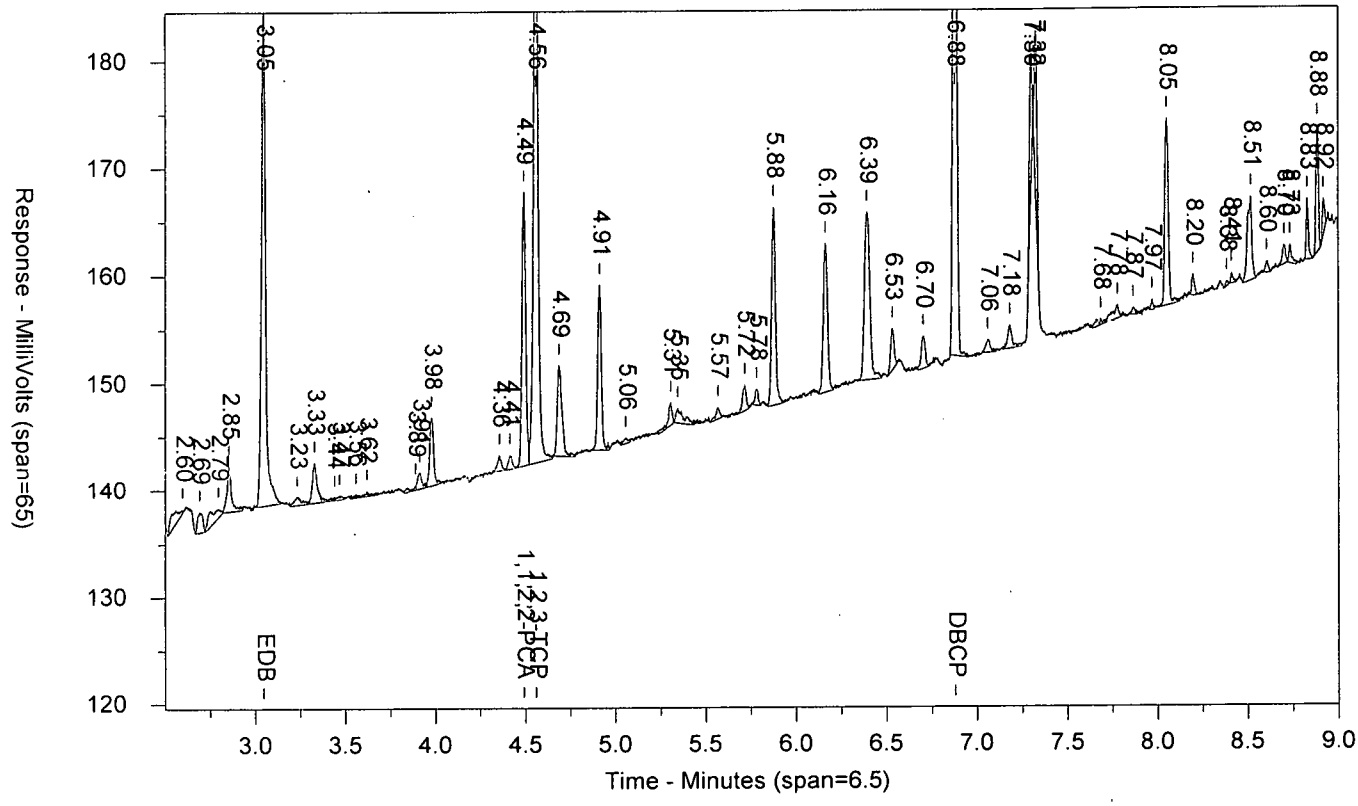
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 8/29/2017 12:49:21

LCSA 8/28/17 AALCS44237 LCS 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0017.RAW

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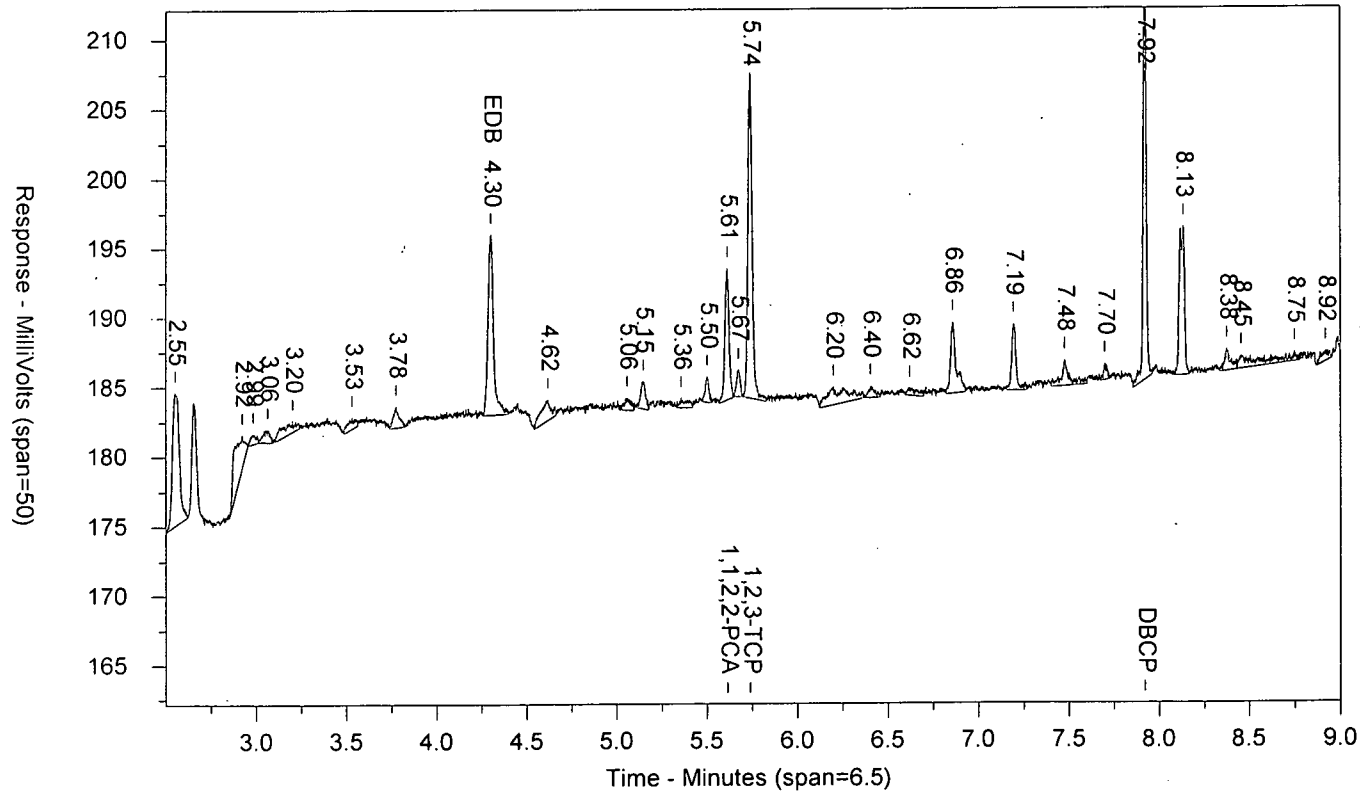


LANCASTER LABORATORIES

Sample Number: LCSA 8/28/17 AALCS44237 LCS 172370044A 10398 SW-846 8011
Injected On: 8/28/2017 10:48:38 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.047 | 47001 | .131 | EDB | 4.304 | 13038 | .134 | EDB |
| 4.492 | 25476 | .062 | 1,1,2,2-PCA | 5.613 | 9497 | .067 | 1,1,2,2-PCA |
| 4.559 | 64401 | 1.136 | 1,2,3-TCP | 5.739 | 23272 | 1.12 | 1,2,3-TCP |
| 6.878 | 79791 | .138 | DBCP | 7.921 | 30645 | .136 | DBCP |

Files:
Area File: 16EDBS17240001.0017.RAW
Area File: 16EDBS17240001B.0017.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 10:57:42 PM
File Reported On: 8/29/2017 at 12:32:24 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 8/28/17 LCSD44237 LCSD Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Aug 28, 2017 23:04:14 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17240001.0018.RAW |
| **Calibration file** | 16EDBS1724001 |
| **Method file** | 16EDBS |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.065008

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Aug 28, 2017 23:04:14 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17240001B.0018.RAW |
| **Calibration file** | 16EDBS1724001B |
| **Method file** | 16EDBSB |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.065017

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.02 | 3.05 | 3.08 | 48304 | 0.134535 | Ethylene dibromide | 4.27 | 4.30 | 4.33 | 13132 | 0.134848 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 26555 | 0.065008 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 9265 | 0.065017 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 61858 | 1.083084 | 1,2,3-Trichloropropane | 5.71 | 5.74 | 5.77 | 23165 | 1.114088 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 82629 | 0.142656 | 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 31004 | 0.137431 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.134535 | 0.01 | 0.02 | 0.03 | | 0.23 | |
| 1,1,2,2-TETRACHLOROE | A | 0.065008 | 0.0035 | 0.007 | 0.007 | | 0.01 | |
| 1,1,2,2-TETRACHLOROE | A | 0.065008 | 0.0035 | 0.007 | 0.007 | | 0.01 | |
| 1,1,2,2-TETRACHLOROE | B | 0.065017 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | A | 1.083084 | | | 0.27 | | 2.82 | |
| 1,2-Dibromo-3-chloropropa | A | 0.142656 | 0.01 | 0.02 | 0.03 | | 3.73 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

AUG 3 1 2017

Reviewed and digitally signed by Heather M Miller on 8/31/2017 14:17:42

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 8/28/17 LCSD44237 Sample ID: AA **Batchnumber: 172370044A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Aug 28, 2017 23:04:14
Instrument : CP16--19853A
Result file : 16EDBS17240001.0018.RAW
Calibration file : 16EDBS1724001.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.065008

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.02 | 3.05 | 3.08 | 48304 | 0.134535 |
| 1,1,2,2-PCA | 4.46 | 4.49 | 4.52 | 26555 | 0.065008 |
| 1,2,3-TCP | 4.53 | 4.56 | 4.59 | 61858 | 1.083084 |
| DBCP | 6.85 | 6.88 | 6.91 | 82629 | 0.142656 |

## Analysis Report (B)

Injected on : Aug 28, 2017 23:04:14
Instrument : CP16--19853B
Result file : 16EDBS17240001B.0018.RAW
Calibration file : 16EDBS1724001B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.065017

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 4.27 | 4.30 | 4.33 | 13132 | 0.134848 |
| 1,1,2,2-PCA | 5.58 | 5.61 | 5.64 | 9265 | 0.065017 |
| 1,2,3-TCP | 5.71 | 5.74 | 5.77 | 23165 | 1.114088 |
| DBCP | 7.89 | 7.92 | 7.95 | 31004 | 0.137431 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | DL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.134535 | 0.03 | 0.01 | | 0.23 | |
| ☑ 1,1,2,2-PCA | A | 0.065008 | 0.007 | 0.0035 | | 0.01 | |
| ☐ 1,2,3-TCP | A | 1.083084 | 0.27 | | | 2.82 | |
| ☑ DBCP | A | 0.142656 | 0.03 | 0.01 | | 3.73 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: AUG 30 2017

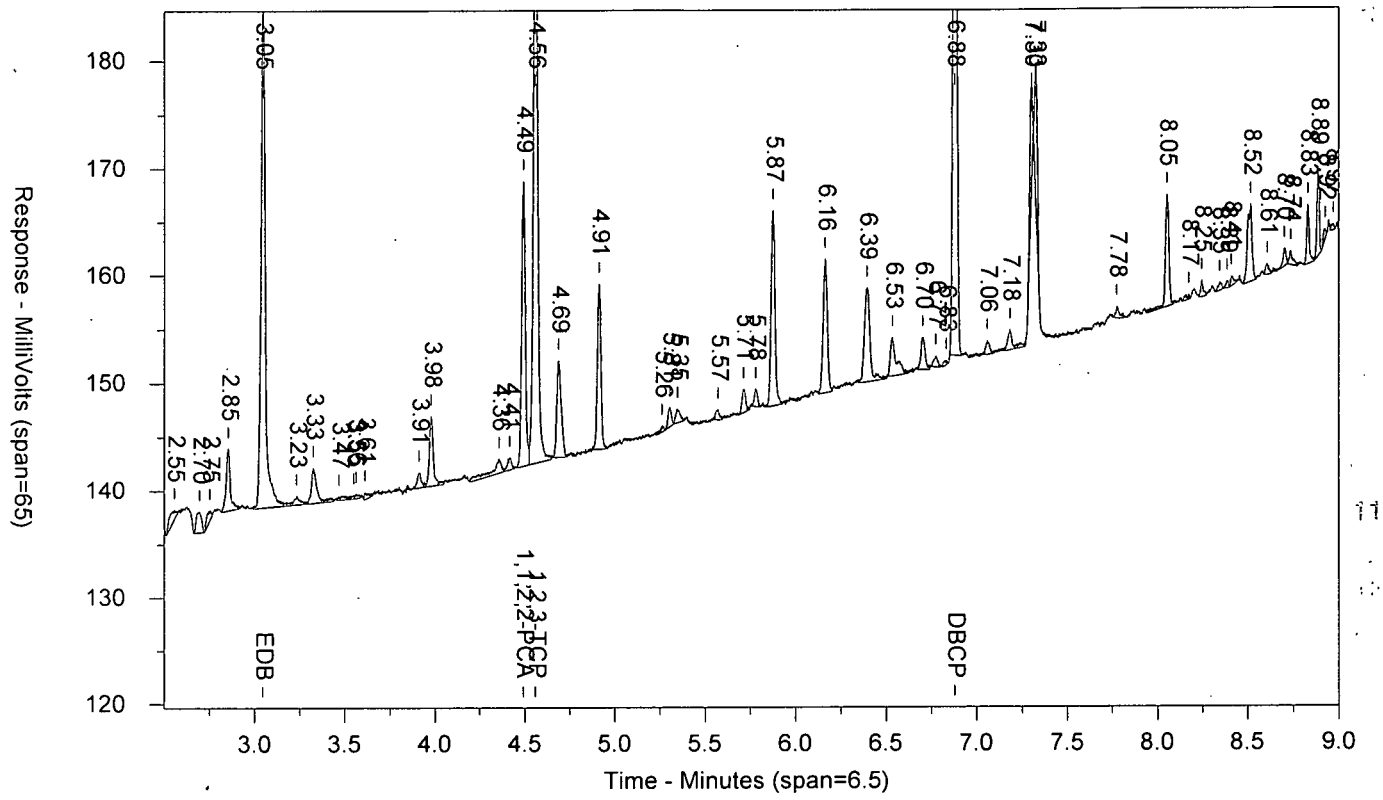
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: AUG 31 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSDA 8/28/17 AALCSD44237 LCSD 172370044A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17240001.0018.RAW

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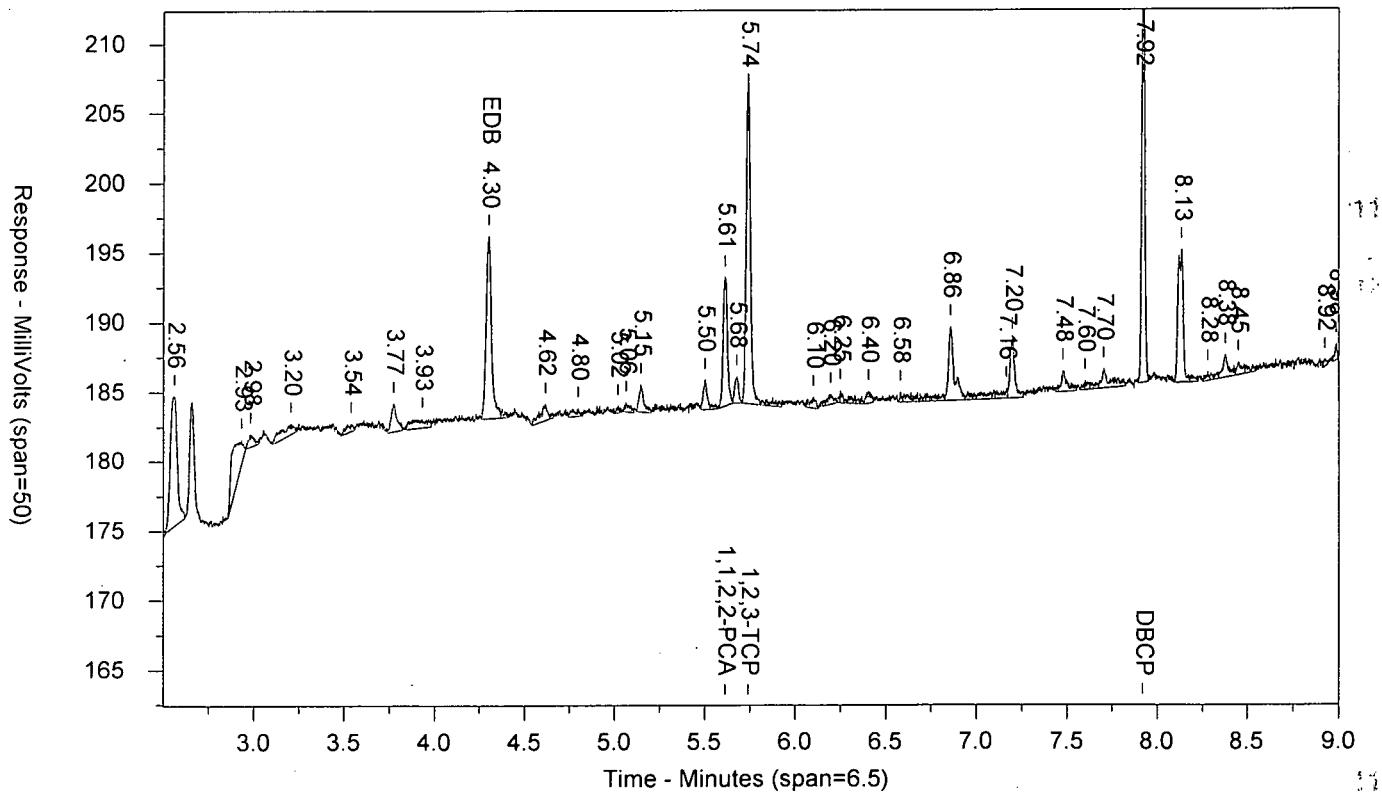


LANCASTER LABORATORIES

Sample Number: LCSDA 8/28/17 AALCSD44237 LCSD 172370044A 10398 SW-846 8011
Injected On: 8/28/2017 11:04:14 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.046 | 48304 | .135 | EDB | 4.303 | 13132 | .135 | EDB |
| 4.492 | 26555 | .065 | 1,1,2,2-PCA | 5.61 | 9265 | .065 | 1,1,2,2-PCA |
| 4.559 | 61858 | 1.083 | 1,2,3-TCP | 5.738 | 23165 | 1.114 | 1,2,3-TCP |
| 6.878 | 82629 | .143 | DBCP | 7.921 | 31004 | .137 | DBCP |

Files:
Area File: 16EDBS17240001.0018.RAW
Area File: 16EDBS17240001B.0018.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724001.CAL
Calibration File B: 16edbs1724001b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 8/28/2017 11:13:15 PM
File Reported On: 8/29/2017 at 12:32:40 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: BLANKA** 9/6/17 PBLK13248 BLK Sample ID: AA **Batchnumber: 172480013A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 06, 2017 21:46:33 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17249001.0016.RAW |
| **Calibration file** | 16EDBS1724901 |
| **Method file** | 16EDBS |

%SSR(PCA) 67% ( 46 - 136 ) Conc: 0.047491

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 06, 2017 21:46:33 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17249001B.0016.RAW |
| **Calibration file** | 16EDBS1724901B |
| **Method file** | 16EDBSB |

%SSR(PCA) 69% ( 46 - 136 ) Conc: 0.048298

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.01 | 3.05 | 3.07 | 422 | 0.00113 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 20343 | 0.047491 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 11121 | 0 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 7386 | 0.048298 |
| 1,2,3-Trichloropropane | 5.70 | 5.73 | 5.76 | 5243 | 0 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.047491 | 0.0035 | 0.007 | 0.007 | | 1.68 | |
| 1,1,2,2-TETRACHLOROE | A | 0.047491 | 0.0035 | 0.007 | 0.007 | | 1.68 | |
| 1,1,2,2-TETRACHLOROE | B | 0.048298 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloropropa | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Michelle B. Hamilton
Group Leader

SEP 08 2017

Reviewed and digitally signed by Heather M Miller on 9/8/2017 13:42:22

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: BLANKA** 9/6/17 PBLK13248Sample ID: AA **Batchnumber: 172480013A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 06, 2017 21:46:33
Instrument : CP16--19853A
Result file : 16EDBS17249001.0016.RAW
Calibration file : 16EDBS1724901.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 67% (46-136) Conc.: 0.047491

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.01 | 3.05 | 3.07 | 422 | 0.001130 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 20343 | 0.047491 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 11121 | -0.049303 |

## Analysis Report (B)

Injected on : Sep 06, 2017 21:46:33
Instrument : CP16--19853B
Result file : 16EDBS17249001B.0016.RAW
Calibration file : 16EDBS1724901B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 69% (46-136) Conc.: 0.048298

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 7386 | 0.048298 |
| **1,2,3-TCP** | 5.70 | 5.73 | 5.76 | 5243 | -0.081818 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.047491 | | | | 1.69 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: SEP 08 2017

Verified by:
Date: SEP 08 2017

%RPD = High - Low Amount divided by the Average times 100

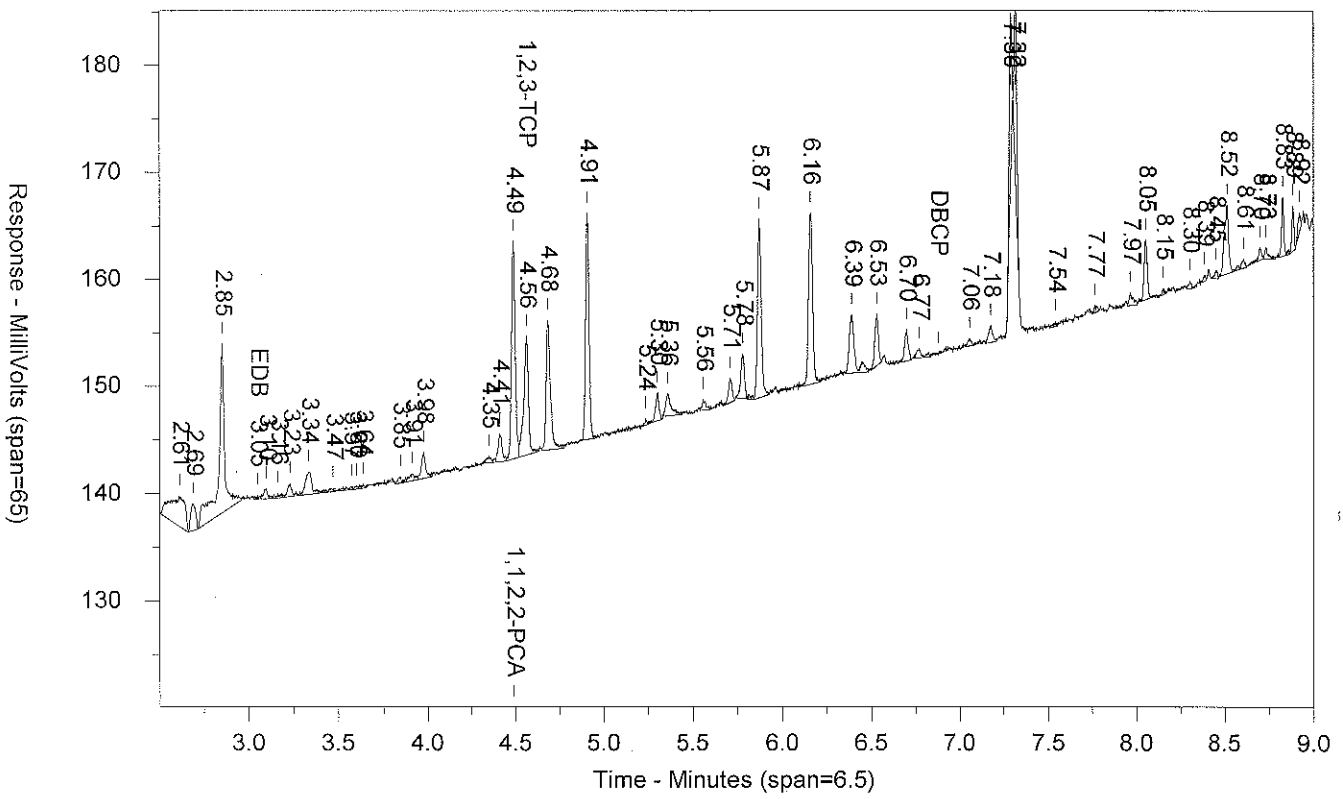
* Recovery outside QC Limits



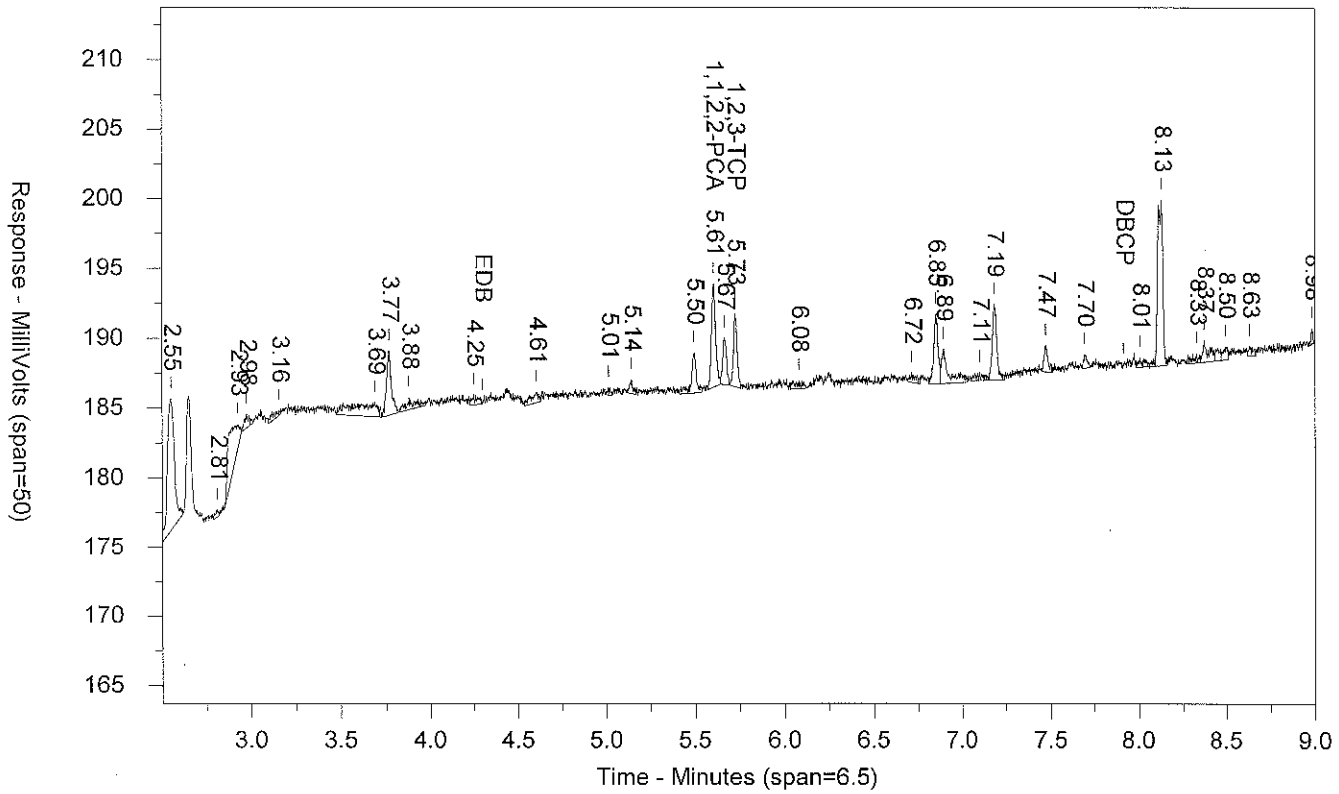
Printed on: 9/7/2017 14:02:06

BLANKA 9/6/17 AAPBLK13248 BLK 172480013A 10398 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0016.RAW




\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.0016.RAW



LANCASTER LABORATORIES

Sample Number: BLANKA 9/6/17 AAPBLK13248 BLK 172480013A 10398 SW-846 8011
Injected On: 9/6/2017 9:46:33 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.047 | 422 | .001 | EDB | | 0 | | EDB |
| 4.489 | 20343 | .047 | 1,1,2,2-PCA | 5.606 | 7386 | .048 | 1,1,2,2-PCA |
| 4.563 | 11121 | -.049 | 1,2,3-TCP | 5.726 | 5243 | -.082 | 1,2,3-TCP |

Files:
Area File: 16EDBS17249001.0016.RAW
Area File: 16EDBS17249001B.0016.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 9:55:35 PM
File Reported On: 9/7/2017 at 1:40:11 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSA** 9/6/17 LCS13248 LCS Sample ID: AA **Batchnumber: 172480013A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

**Injected on** Sep 06, 2017 22:02:17
**Instrument** 19853A
**Result file** 16EDBS17249001.0017.RAW
**Calibration file** 16EDBS1724901
**Method file** 16EDBS

%SSR(PCA) 76% ( 46 - 136 ) Conc: 0.05327

## Analysis Report (B)

**Injected on** Sep 06, 2017 22:02:17
**Instrument** 19853B
**Result file** 16EDBS17249001B.0017.RAW
**Calibration file** 16EDBS1724901B
**Method file** 16EDBSB

%SSR(PCA) 72% ( 46 - 136 ) Conc: 0.050505

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.01 | 3.04 | 3.07 | 51800 | 0.138832 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 22819 | 0.05327 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 72511 | 1.206563 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 83867 | 0.138543 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 4.27 | 4.30 | 4.33 | 14037 | 0.137759 |
| 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 7723 | 0.050505 |
| 1,2,3-Trichloropropane | 5.70 | 5.73 | 5.76 | 27053 | 1.180212 |
| 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 31672 | 0.14087 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.138832 | 0.01 | 0.02 | 0.03 | | 0.78 | |
| 1,1,2,2-TETRACHLOROE | A | 0.05327 | 0.0035 | 0.007 | 0.007 | | 5.33 | |
| 1,1,2,2-TETRACHLOROE | A | 0.05327 | 0.0035 | 0.007 | 0.007 | | 5.33 | |
| 1,1,2,2-TETRACHLOROE | B | 0.050505 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | A | 1.206563 | | | 0.27 | | 2.21 | |
| 1,2-Dibromo-3-chloropropa | A | 0.138543 | 0.01 | 0.02 | 0.03 | | 1.67 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Reviewed and digitally signed by Heather M Miller on 9/8/2017 13:42:24

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 9/6/17 LCS13248 Sample ID: AA **Batchnumber: 172480013A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 06, 2017 22:02:17
Instrument : CP16--19853A
Result file : 16EDBS17249001.0017.RAW
Calibration file : 16EDBS1724901.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 76% (46-136) Conc.: 0.05327

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.01 | 3.04 | 3.07 | 51800 | 0.138832 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 22819 | 0.053270 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 72511 | 1.206563 |
| **DBCP** | 6.85 | 6.88 | 6.91 | 83867 | 0.138543 |

## Analysis Report (B)

Injected on : Sep 06, 2017 22:02:17
Instrument : CP16--19853B
Result file : 16EDBS17249001B.0017.RAW
Calibration file : 16EDBS1724901B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 72% (46-136) Conc.: 0.050505

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.27 | 4.30 | 4.33 | 14037 | 0.137759 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 7723 | 0.050505 |
| **1,2,3-TCP** | 5.70 | 5.73 | 5.76 | 27053 | 1.180212 |
| **DBCP** | 7.89 | 7.92 | 7.95 | 31672 | 0.140870 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.138832 | 0.03 | 0.01 | | 0.78 | |
| ☐ 1,1,2,2-PCA | A | 0.053270 | | | | 5.33 | |
| ☑ 1,2,3-TCP | A | 1.206563 | 0.27 | 0.1 | | 2.21 | |
| ☑ DBCP | A | 0.138543 | 0.03 | 0.01 | | 1.67 | |

Michelle B. Hamilton
Group Leader

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: SEP 08 2017

Verified by: SEP 08 2017
Date:

%RPD = High - Low Amount divided by the Average times 100

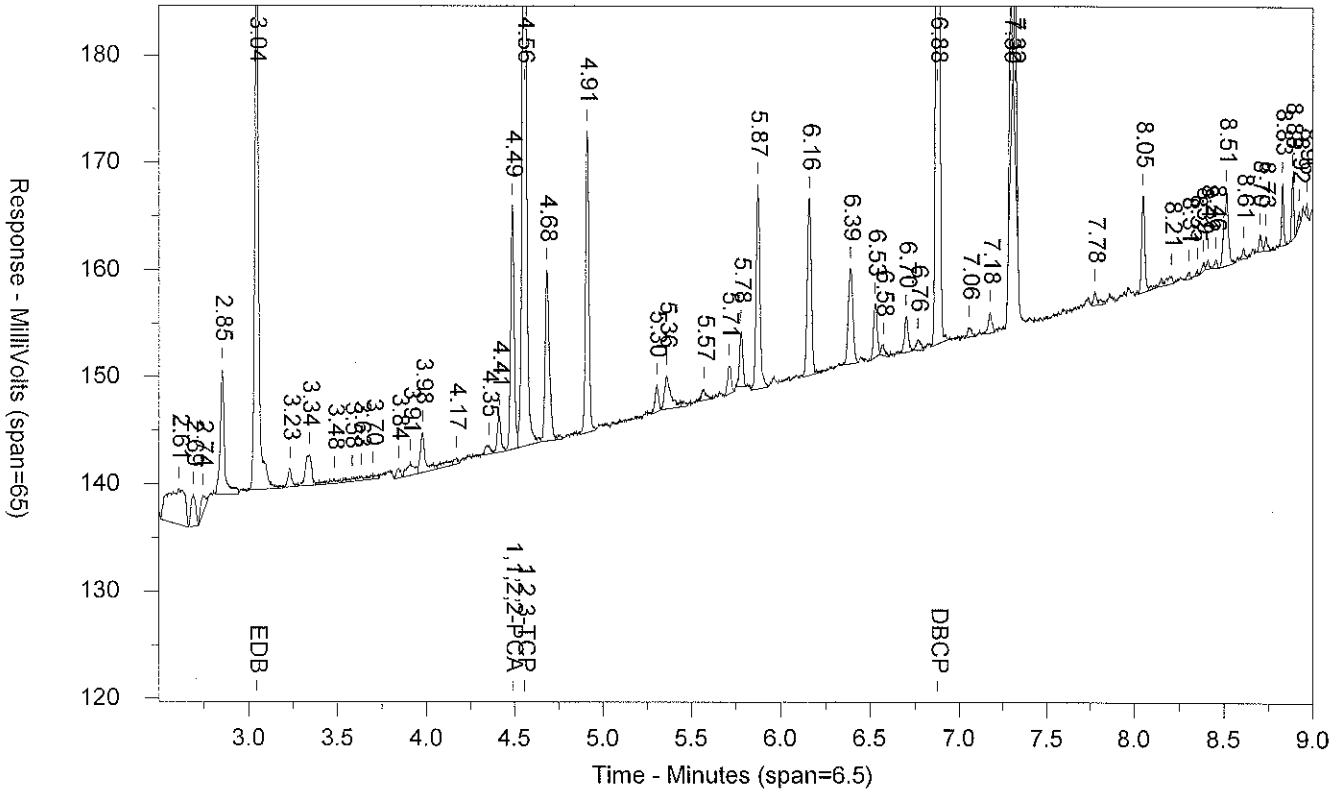
* Recovery outside QC Limits



Printed on: 9/7/2017 14:02:14

LCSA 9/6/17 AALCS13248 LCS 172480013A 10398 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0017.RAW

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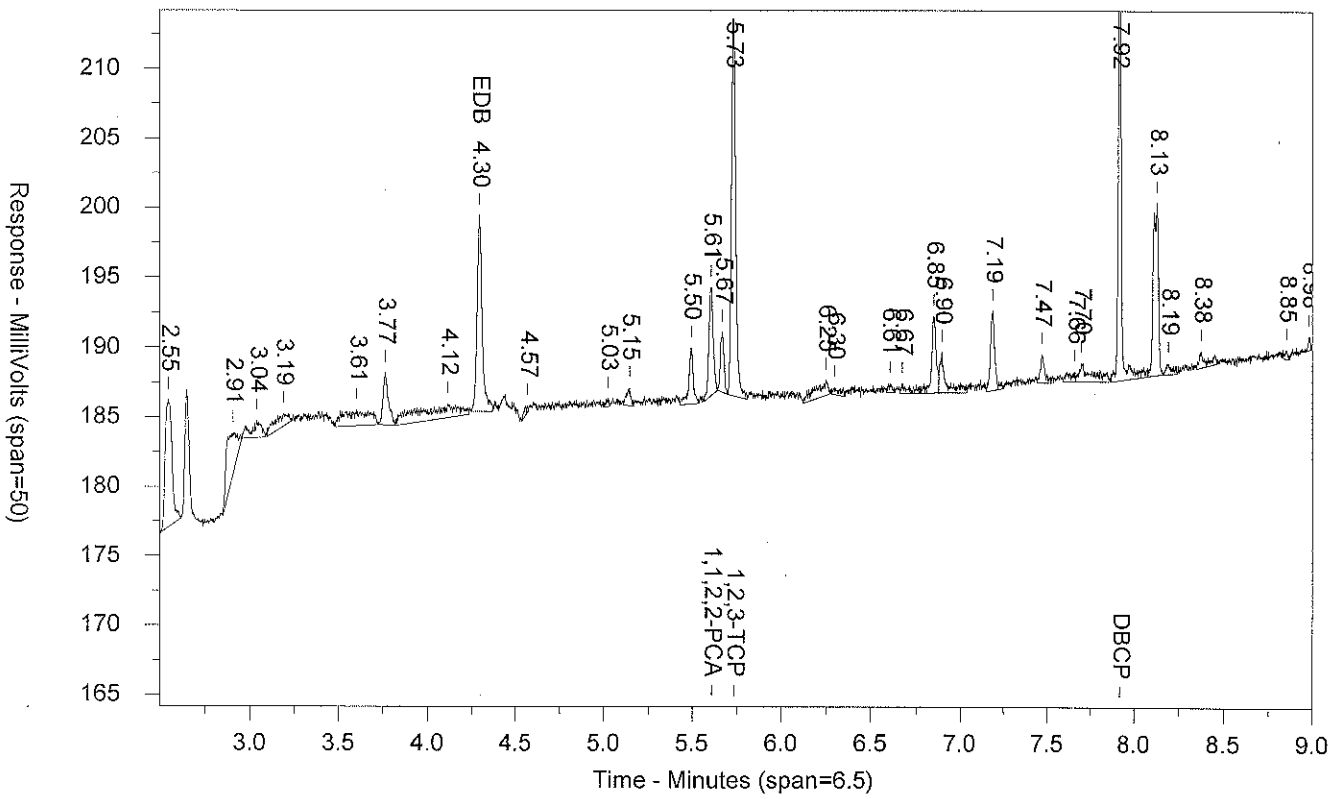


LANCASTER LABORATORIES

Sample Number: LCSA 9/6/17 AALCS13248 LCS 172480013A 10398 SW-846 8011
Injected On: 9/6/2017 10:02:17 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.044 | 51800 | .139 | EDB | 4.296 | 14037 | .138 | EDB |
| 4.49 | 22819 | .053 | 1,1,2,2-PCA | 5.608 | 7723 | .051 | 1,1,2,2-PCA |
| 4.558 | 72511 | 1.207 | 1,2,3-TCP | 5.733 | 27053 | 1.18 | 1,2,3-TCP |
| 6.877 | 83867 | .139 | DBCP | 7.917 | 31672 | .141 | DBCP |

Files:
Area File: 16EDBS17249001.0017.RAW
Area File: 16EDBS17249001B.0017.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 10:11:18 PM
File Reported On: 9/7/2017 at 1:40:31 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 9/6/17 LCSD13248 LCSD Sample ID: AA **Batchnumber: 172480013A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 06, 2017 22:17:51 |
| **Instrument** | 19853A |
| **Result file** | 16EDBS17249001.0018.RAW |
| **Calibration file** | 16EDBS1724901 |
| **Method file** | 16EDBS. |

%SSR(PCA) 81% ( 46 - 136 ) Conc: 0.057374

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 06, 2017 22:17:51 |
| **Instrument** | 19853B |
| **Result file** | 16EDBS17249001B.0018.RAW |
| **Calibration file** | 16EDBS1724901B |
| **Method file** | 16EDBSB |

%SSR(PCA) 84% ( 46 - 136 ) Conc: 0.058992

## Single Component Data

| Compound | Min | RT | Max | Height | Amount | Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 3.01 | 3.04 | 3.07 | 50410 | 0.135109 | Ethylene dibromide | 4.27 | 4.30 | 4.33 | 13666 | 0.134122 |
| 1,1,2,2-TETRACHLORO | 4.46 | 4.49 | 4.52 | 24576 | 0.057374 | 1,1,2,2-TETRACHLORO | 5.58 | 5.61 | 5.64 | 9021 | 0.058992 |
| 1,2,3-Trichloropropane | 4.53 | 4.56 | 4.59 | 71079 | 1.177268 | 1,2,3-Trichloropropane | 5.70 | 5.73 | 5.76 | 26597 | 1.153845 |
| 1,2-Dibromo-3-chloropro | 6.85 | 6.88 | 6.91 | 88246 | 0.145777 | 1,2-Dibromo-3-chloropro | 7.89 | 7.92 | 7.95 | 32387 | 0.144049 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.135109 | 0.01 | 0.02 | 0.03 | | 0.73 | |
| 1,1,2,2-TETRACHLOROE | A | 0.057374 | 0.0035 | 0.007 | 0.007 | | 2.78 | |
| 1,1,2,2-TETRACHLOROE | A | 0.057374 | 0.0035 | 0.007 | 0.007 | | 2.78 | |
| 1,1,2,2-TETRACHLOROE | B | 0.058992 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | A | 1.177268 | | | 0.27 | | 2.01 | |
| 1,2-Dibromo-3-chloroprope | A | 0.145777 | 0.01 | 0.02 | 0.03 | | 1.19 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Michelle B. Hamilton
Group Leader

SEP 08 2017

Reviewed and digitally signed by Heather M Miller on 9/8/2017 13:42:26

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name: LCSDA** 9/6/17 LCSD13248 Sample ID: AA **Batchnumber: 172480013A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: Administr SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 06, 2017 22:17:51
Instrument : CP16--19853A
Result file : 16EDBS17249001.0018.RAW
Calibration file : 16EDBS1724901.CAL
Method file : 16EDBS.MET

%SSR(1,1,2,2-PCA) : 81% (46-136) Conc.: 0.057374

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.01 | 3.04 | 3.07 | 50410 | 0.135109 |
| **1,1,2,2-PCA** | 4.46 | 4.49 | 4.52 | 24576 | 0.057374 |
| **1,2,3-TCP** | 4.53 | 4.56 | 4.59 | 71079 | 1.177268 |
| **DBCP** | 6.85 | 6.88 | 6.91 | 88246 | 0.145777 |

## Analysis Report (B)

Injected on : Sep 06, 2017 22:17:51
Instrument : CP16--19853B
Result file : 16EDBS17249001B.0018.RAW
Calibration file : 16EDBS1724901B.CAL
Method file : 16EDBSB.MET

%SSR(1,1,2,2-PCA) : 84% (46-136) Conc.: 0.058992

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 4.27 | 4.30 | 4.33 | 13666 | 0.134122 |
| **1,1,2,2-PCA** | 5.58 | 5.61 | 5.64 | 9021 | 0.058992 |
| **1,2,3-TCP** | 5.70 | 5.73 | 5.76 | 26597 | 1.153845 |
| **DBCP** | 7.89 | 7.92 | 7.95 | 32387 | 0.144050 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.135109 | 0.03 | 0.01 | | 0.73 | |
| ☐ 1,1,2,2-PCA | A | 0.057374 | | | | 2.78 | |
| ☑ 1,2,3-TCP | A | 1.177268 | 0.27 | 0.1 | | 2.01 | |
| ☑ DBCP | A | 0.145777 | 0.03 | 0.01 | | 1.19 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: SEP 08 2017

Verified by: Michele D. Hamilton
Michele D. Hamilton
Date: SEP 08 2017

%RPD = High - Low Amount divided by the Average times 100

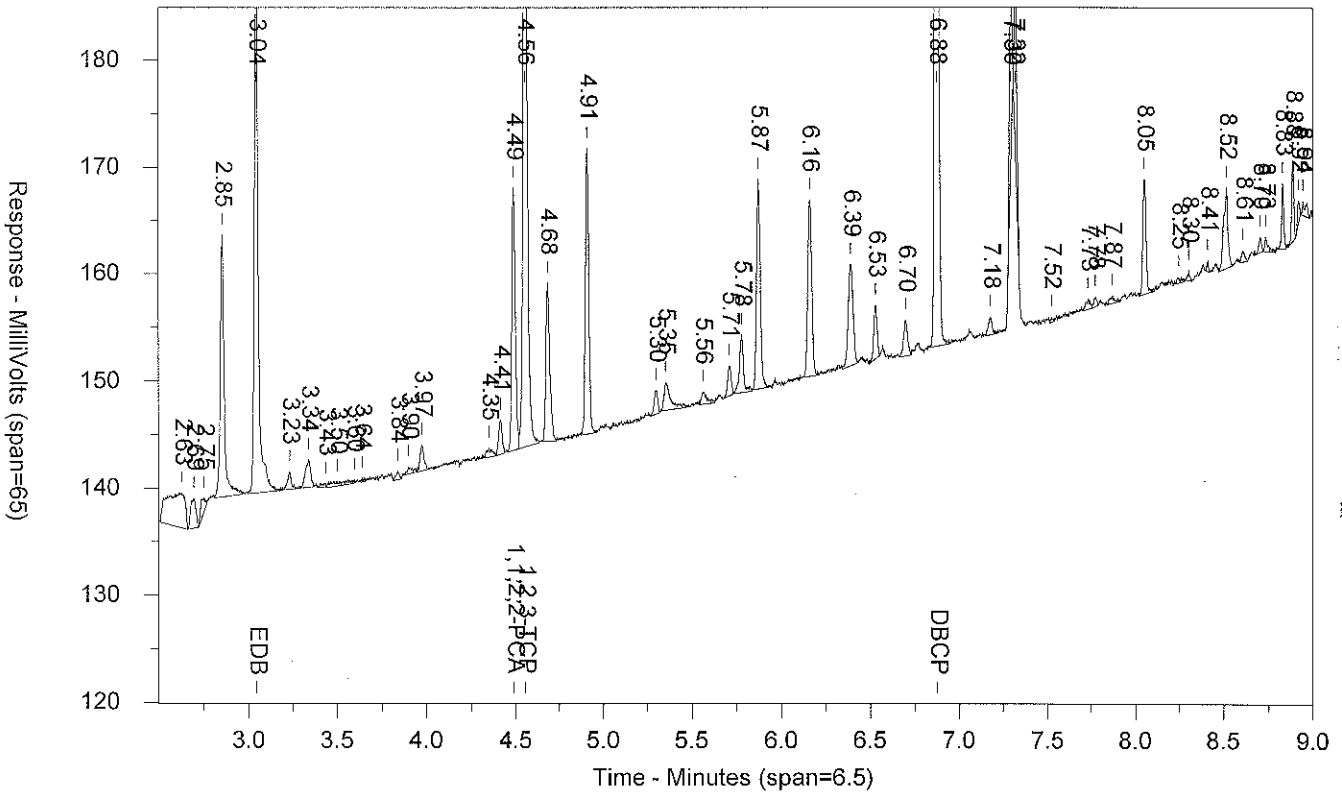
* Recovery outside QC Limits



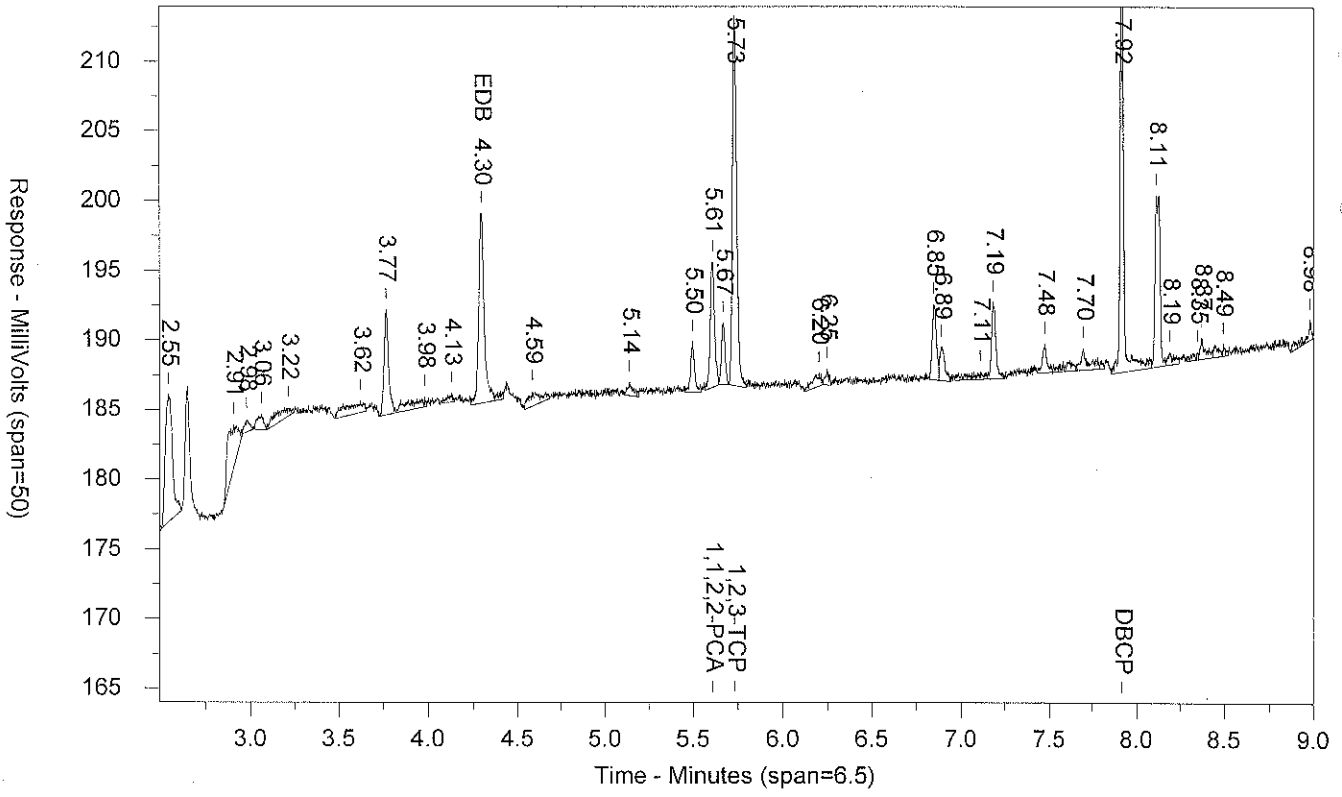
Printed on: 9/7/2017 14:02:25

LCSDA 9/6/17 AALCSD13248 LCSD 172480013A 10398 SW-846 8011

\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001.0018.RAW




\\USLAN-CHROMPERF\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP16\16EDBS17249001B.0018.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 9/6/17 AALCSD13248 LCSD 172480013A 10398 SW-846 8011
Injected On: 9/6/2017 10:17:51 PM Sample Weight: 35
Instrument ID: CP16-19853 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 280 @ 12c/min, hold for 2 min
Column A ID: MR-1 30m x 0.32mm x 0.5um
Column B ID: MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 3
Calibration Type: external
Quantitation: Height

Analyst: 0

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.043 | 50410 | .135 | EDB | 4.296 | 13666 | .134 | EDB |
| 4.489 | 24576 | .057 | 1,1,2,2-PCA | 5.607 | 9021 | .059 | 1,1,2,2-PCA |
| 4.557 | 71079 | 1.177 | 1,2,3-TCP | 5.732 | 26597 | 1.154 | 1,2,3-TCP |
| 6.876 | 88246 | .146 | DBCP | 7.916 | 32387 | .144 | DBCP |

Files:
Area File: 16EDBS17249001.0018.RAW
Area File: 16EDBS17249001B.0018.RAW
Method A: 16EDBS.MET
Method B: 16EDBSB.MET
Calibration File A: 16edbs1724901.CAL
Calibration File B: 16edbs1724901b.CAL
Format A: EDB16.FMTA
Format B: EDB16.FMTB
Area File Created On: 9/6/2017 10:26:52 PM
File Reported On: 9/7/2017 at 1:40:49 PM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 9874 Kayla Yuditsky Reviewed by: HMM 7/24/18 Start Date: 08/28/2017 Start Time: 10:00

**172370044A** Tech 1: Ky 9874 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9175053MS | KEFF2 | 37.04 | SS1720824A | .1 | MS1720824C | .07 | 2 | N | 2 | 057a | CLEAR |
| 9175054MSD | KEFF2 | 37.04 | SS1720824A | .1 | MS1720824C | .07 | 2 | N | 2 | 057a | CLEAR |
| BLANKA | PBLK44237 | 35 | SS1720824A | .1 | | | 2 | N | 2 | | DI H2O |
| LCSA | LCS44237 | 35 | SS1720824A | .1 | MS1720824C | .07 | 2 | N | 2 | | DI H2O |
| LCSDA | LCSD44237 | 35 | SS1720824A | .1 | MS1720824C | .07 | 2 | N | 2 | | DI H2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 174465 |
| NaCl | 185070317A |
| Sodium Sulfate | 17233A |
| Vial Lot# | 2391 |
| Vial Preservative Lot# | 2391F |
| | |

Spike Solutions: Witness: _____

MS1720824C EDB SPIKE

SS1720824A EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9166773 R | 28T06 | 35.66 | SS1720824A | 0.10 | 2.00 | N | 2 | 057b | CLEAR | 10398 | 16602 | 08/30/2017 | P |
| 2 9168657 R | 10804 | 36.34 | SS1720824A | 0.10 | 2.00 | N | 2 | 057b | CLEAR | 10398 | 16602 | 08/31/2017 | P |
| 3 9168661 R | 10812 | 35.91 | SS1720824A | 0.10 | 2.00 | N | 2 | 057b | CLEAR | 10398 | 16602 | 08/31/2017 | P |
| 4 9171210 | 10809 | 35.76 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 16602 | 09/01/2017 | P |
| 5 9171211 | 10819 | 35.84 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 16602 | 09/01/2017 | P |
| 6 9171212 | 10818 | 36.05 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 16602 | 09/01/2017 | P |
| 7 9171213 | 10813 | 35.85 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 16602 | 09/01/2017 | P |
| 8 9171214 | 10807 | 35.99 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 16602 | 09/01/2017 | P |
| 9 9171215 | 10806 | 35.77 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 16602 | 09/01/2017 | P |
| 10 9171216 | 10805 | 35.98 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 16602 | 09/01/2017 | P |
| 11 9171217 | 10810 | 36.29 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR W SED | 10398 | 16602 | 09/01/2017 | P |
| 12 9171218 | 108FD | 36.00 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 16602 | 09/01/2017 | P |
| 13 9175047 | KEFF1 | 36.63 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 09/07/2017 | N |
| 14 9175048 | KGAC1 | 36.71 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 09/07/2017 | N |
| 15 9175049 | KINF1 | 36.97 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 09/07/2017 | N |
| 16 9175050 | KTB01 | 36.72 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 09/07/2017 | N |
| 17 9175051 | KFB01 | 36.86 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 09/07/2017 | N |
| 18 9175052BKG | KEFF2 | 36.87 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 09/07/2017 | N |
| 19 9175056 | KEF2D | 36.97 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 09/07/2017 | N |
| 20 9175057 | KGAC2 | 37.04 | SS1720824A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 09/07/2017 | N |

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| Rack ID: | | Work Station | edb area |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172370044A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

**Organic Extraction Batchlog** Assigned to: 898 Olivia Arosemena Reviewed by: HMM7/6/17 Start Date: 09/06/2017 Start Time: 09:37

**172480013A** Tech 1: sa 898 Tech 2: _____

| Dept: 24 | Prep Analysis: 07786 EDB Extraction (8011) | | | | | | | | | 8011 Master Master | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
| 9177881MS | 35202MS | 35.3 | SS1723724A | .1 | MS1723724A | .07 | 2 | N | <2 | 057a | clear;slightly dirty |
| 9177887DUP | 35201DUP | 34.96 | SS1723724A | .1 | | | 2 | N | <2 | 057a | clear;slightly dirty |
| BLANKA | PBLK13248 | 35 | SS1723724A | .1 | | | 2 | Z | Z | | DI H2O |
| LCSA | LCS13248 | 35 | SS1723724A | .1 | MS1723724A | .07 | 2 | Z | Z | | DI H2O |
| LCSDA | LCSD13248 | 35 | SS1723724A | .1 | MS1723724A | .07 | 2 | Z | Z | | DI H2O |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 174465 |
| NaCl | 185072817A |
| Sodium Sulfate | 17233A |
| Vial Lot# | 24006 |
| Vial Preservative Lot# | 2400 |
| | |

Spike Solutions: Witness:_____
MS1723724A EDB SPIKE
SS1723724A EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt ( mL ) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9175058 | KINF2 | 36.14 | SS1723724A | 0.10 | 2.00 | N | <2 | 057b | clear;slightly dirty | 10398 | 17641 | 09/07/2017 | N |
| 2 9177881 | 35202 | 35.45 | SS1723724A | 0.10 | 2.00 | N | <2 | 057b | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 3 9177882 | 35203 | 35.29 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 4 9177883 | 5203B | 35.61 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 5 9177884 | 33901 | 36.09 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 6 9177885 | 33902 | 35.56 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 7 9177886 | 35204 | 36.04 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 8 9177887 | 35201 | 36.01 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 9 9177888 | 60135 | 35.31 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 10 9177889 | 60235 | 35.93 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 11 9177890 | 602B3 | 35.85 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 12 9177891 | 60335 | 36.09 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/08/2017 | N |
| 13 9181790 | 55951 | 35.83 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/12/2017 | N |
| 14 9181791 | 25603 | 35.61 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/12/2017 | N |
| 15 9181792 | 25604 | 36.15 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/12/2017 | N |
| 16 9181793 | 25605 | 35.49 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/12/2017 | N |
| 17 9181794 | 25606 | 35.53 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/12/2017 | N |
| 18 9181795 | 25607 | 35.92 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/12/2017 | N |
| 19 9181796 | 25608 | 35.46 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/12/2017 | N |
| 20 9181797 | 25609 | 35.22 | SS1723724A | 0.10 | 2.00 | N | <2 | 057a | clear;slightly dirty | 10398 | 301 | 09/12/2017 | N |

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| Rack ID: | | Work Station | |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172480013A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

# Metals in Liquid Data

# Case Narrative/Conformance Summary

# Metals in Liquid

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR194**

## ICP Metals

**Fraction: Metals in Liquid**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9175047 | GWTS-EFF1-082417 | X | | 1 | |
| 9175048 | GWTS-GAC1-082417 | X | | 1 | |
| 9175049 | GWTS-INF1-082417 | X | | 1 | |
| 9175052 | GWTS-EFF2-082417 | X | | 1 | Background/Unspiked |
| 9175053 | GWTS-EFF2-082417 MS | X | | 1 | Matrix Spike |
| 9175054 | GWTS-EFF2-082417 MSD | X | | 1 | Matrix Spike Duplicate |
| 9175055 | GWTS-EFF2-082417 DUP | X | | 1 | Duplicate |
| 9175056 | GWTS-EFF2DUP-082417 | X | | 1 | Field Duplicate Sample |
| 9175057 | GWTS-GAC2-082417 | X | | 1 | |
| 9175058 | GWTS-INF2-082417 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR194**

## ICP Metals

**Fraction: Metals in Liquid**

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

**Abbreviation Key**

| | |
|---|---|
| BKG – Background | AF - Cold Vapor Atomic Fluorescence |
| DUP – Duplicate | U - Below MDL |
| MS - Matrix Spike | B - Below LOQ |
| MSD - Matrix Spike Dup | N - Matrix Spike out of specifications |
| B – Blank | * - Duplicate out of specifications |
| Q - Laboratory Control Sample | E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution |
| Y - Laboratory Control Sample Duplicate | A - Post Digestion Spike |
| P - ICP Atomic Emission Spectrometer | L - Serial Dilution |
| MS - ICP Mass Spectrometry | R - Internal Standard Relative Intensity OOS |
| CV - Cold Vapor | NR - Not Required |

# Sample Data

# Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175047 % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175048 % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175049 % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175052BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175053MS % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 1050 | | | P |
| 7439-96-5 | Manganese | 525 | | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175054MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 1110 | | | P |
| 7439-96-5 | Manganese | 533 | | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175055DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175056 % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175057 % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9175058 % Solids: 0.0
Concentration Units: UG/L Date Received: 08/25/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

# Quality Control and Calibration Summary Forms

# Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR194
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Iron | 172391063501 | 9175047 |
| Manganese | | 9175048 |
| | | 9175049 |
| | | 9175052BKG |
| | | 9175053MS |
| | | 9175054MSD |
| | | 9175055DUP |
| | | 9175056 |
| | | 9175057 |
| | | 9175058 |
| | | P23963AB |
| | | P23963AQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

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QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR194

Method: P
Run Name: 1724202T70
Calibration Date(s): 08/30/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Iron | | 30000.0 | 29194.01 | 97.3 | 25000.0 | 24824.18 | 99.3 | 25000.0 | 24851.94 | 99.4 |
| Manganese | | 600.0 | 594.80 | 99.1 | 500.0 | 502.29 | 100.5 | 500.0 | 499.42 | 99.9 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR194

Method: P
Run Name: 1724202T70
Calibration Date(s): 08/30/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Iron | | | | | 25000.0 | 24735.00 | 98.9 | | | |
| Manganese | | | | | 500.0 | 501.59 | 100.3 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR194

Method: P
Run Name: 1724202T70
Calibration Date(s): 08/30/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Iron | | 400.0 | 414.22 | 103.6 | | |
| Manganese | | 10.0 | 10.02 | 100.2 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR194

Method: P
Run Name: 1724202T70
Calibration Date(s): 08/30/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Iron | | 33.4 | U | 33.4 | U | 33.4 | U | 33.4 | U | | 80.500 | U | 172391063501 |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | 0.83 | U | | 1.600 | U | 172391063501 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below IDL/MDL
B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR194

Instrument ID: 11016
Run Name: 1724202T70
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | 500000 | 496982 | 99.4 | 497082.8 | 99.4 | | | | |
| Calcium | 500000 | 500000 | 501373 | 100.3 | 498013.3 | 99.6 | | | | |
| Iron | 200000 | 200000 | 198804 | 99.4 | 198341.1 | 99.2 | | | | |
| Magnesium | 500000 | 500000 | 536519 | 107.3 | 535262.1 | 107.1 | | | | |
| Manganese | 0 | 500 | 4 | | 492.6 | 98.5 | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9175052BKG Matrix Spike Lab Sample ID: 9175053MS Matrix Spike Duplicate Lab Sample ID: 9175054MSD
Batch Number(s): 172391063501

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Iron | | 80.5000 | U | 1047.2100 | | 1109.6900 | | 1000.0000 | 1000.0000 | UG/L | 105 | | 111 | | 6 | | 87 - 115 | 20 | P |
| Manganese | | 1.6000 | U | 525.3300 | | 532.7200 | | 500.0000 | 500.0000 | UG/L | 105 | | 107 | | 1 | | 90 - 114 | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9175052BKG Duplicate Lab Sample ID: 9175055DUP
Batch Number(s): 172391063501
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Iron | | | 80.5000 | U | 80.5000 | U | | | P |
| Manganese | | | 1.6000 | U | 1.6000 | U | | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | FLAGS: |
| AF = Cold Vapor Atomic Fluorescence | * = Duplicate Out of Spec |

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR194
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Iron | | 172391063501 | UG/L | 1000.000 | 1055.800 | | 87 - 115 | 106 | P | Yes |
| Manganese | | 172391063501 | UG/L | 500.000 | 532.420 | | 90 - 114 | 106 | P | Yes |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR194
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9175052BKG Serial Dilution Lab Sample ID: 9175052L
Batch Number(s): 172391063501
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Iron | | 80.5000 | U | 402.5000 | U | | | P |
| Manganese | | 1.6000 | U | 8.0000 | U | | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Method: P
Instrument ID: 11016
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Iron | 261.19 | | 33.4 |
| Manganese | 257.61 | | 0.83 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR194
Matrix: WATER

Method: P
Date: 06/2017

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Iron | 261.19 | | 400 | 80.5 |
| Manganese | 257.61 | | 10.0 | 1.6 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 11
ICP INTERELEMENT CORRECTION FACTORS (BIANNUALLY)
SDG No.: KR194

Instrument ID: 11016
Date: 06/2017

| Analyte | Wavelength (nm) | Interelement Correction Factor for: AL | CA | FE | MG | TH |
|---|---|---|---|---|---|---|
| Manganese | 257.61 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |

Comments:

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QUALITY ASSURANCE SUMMARY
FORM 11
ICP INTERELEMENT CORRECTION FACTORS (BIANNUALLY)
SDG No.: KR194

Instrument ID: 11016
Date: 06/2017

| Analyte | Wavelength (nm) | Interelement Correction Factor for: W | -- | -- | -- | -- |
|---|---|---|---|---|---|---|
| Manganese | 257.61 | 0.0000000 | | | | |

Comments:

_____
_____
_____
_____

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QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR194

Method: P
Instrument ID: 11016
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Iron | 261.19 | 10.00 | 300000.0 |
| Manganese | 257.61 | 10.00 | 20000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Batch Number: 172391063501

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9175047 | 08/28/2017 | 50.00 | 50 |
| 9175048 | 08/28/2017 | 50.00 | 50 |
| 9175049 | 08/28/2017 | 50.00 | 50 |
| 9175056 | 08/28/2017 | 50.00 | 50 |
| 9175057 | 08/28/2017 | 50.00 | 50 |
| 9175058 | 08/28/2017 | 50.00 | 50 |
| 9175052BKG | 08/28/2017 | 50.00 | 50 |
| 9175055DUP | 08/28/2017 | 50.00 | 50 |
| 9175054MSD | 08/28/2017 | 50.00 | 50 |
| 9175053MS | 08/28/2017 | 50.00 | 50 |
| P23963AB | 08/28/2017 | 50.00 | 50 |
| P23963AQ | 08/28/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR194

Method: P
Instrument ID: 11016
Run Name: 1724202T70

Run Start Date: 08/30/2017
Run End Date: 08/30/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FE | MN | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 05:20 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 05:23 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 05:26 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 05:30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 05:33 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 05:37 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 05:40 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 05:43 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSAB | 1.00 | 05:47 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 05:50 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 05:54 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P23963AB | 1.00 | 05:57 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P23963AQ | 1.00 | 06:05 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175052BKG | 1.00 | 06:09 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175052A | 1.00 | 06:12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175055DUP | 1.00 | 06:16 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175053MS | 1.00 | 06:19 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175054MSD | 1.00 | 06:22 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175052L | 5.00 | 06:26 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 06:29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 06:33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 06:36 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 06:39 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 06:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175047 | 1.00 | 06:46 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175048 | 1.00 | 06:50 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175049 | 1.00 | 06:53 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175056 | 1.00 | 06:56 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175057 | 1.00 | 07:00 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9175058 | 1.00 | 07:03 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 07:07 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 07:10 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

# Raw Data

# Metals in Liquid

# ICP Data

# Metals in Liquid

eurofins | Lancaster Laboratories Environmental

# ICP-AES Run Data Report

Reviewed By
Eric L Eby

Reviewed Date
08/30/2017 7:37AM

Data File Name 1724202T70.TXT
Run Name: 1724202T70

Method Reference Name(s):

Verified By:
Nina C Haller

Verified Date
08/30/2017 2:39PM

Analyst Employee: 12403

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 1 Date/Time: 08/30/2017 05:20

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -82.87385 | 10.810 | -0.02316 | -0.02064 | -0.02564 |
| AL | 0.000 | -16.31667 | 36.451 | -0.09978 | -0.05448 | -0.05647 |
| AS | 0.000 | 1.91314 | 57.634 | 0.02960 | 0.01905 | 0.00788 |
| B | 0.000 | -12.48856 | 86.879 | -0.00002 | -0.00006 | -0.00014 |
| BA | 0.000 | 326.09762 | 8.185 | 0.00181 | 0.00168 | 0.00198 |
| BE | 0.000 | -59.93816 | 30.760 | -0.01649 | -0.02200 | -0.01171 |
| CA | 0.000 | 37.16667 | 6.136 | 0.00331 | 0.00297 | 0.00331 |
| CD | 0.000 | -10.04566 | 13.263 | -0.09235 | -0.09051 | -0.11412 |
| CO | 0.000 | -5.27614 | 48.654 | -0.03777 | -0.03701 | -0.08120 |
| CR | 0.000 | -17.50497 | 28.907 | -0.00011 | -0.00007 | -0.00012 |
| CU | 0.000 | -39.11158 | 7.506 | -0.00999 | -0.01128 | -0.01151 |
| FE | 0.000 | -16.40000 | 11.072 | -0.00130 | -0.00134 | -0.00159 |
| K | 0.000 | 287.26667 | 3.185 | 1.27672 | 1.23384 | 1.19808 |
| LI | 0.000 | 80.31667 | 25.491 | 0.00495 | 0.00836 | 0.00743 |
| MG | 0.000 | -33.60000 | 13.928 | -0.00243 | -0.00318 | -0.00306 |
| MN | 0.000 | 18.40171 | 20.254 | 0.00538 | 0.00604 | 0.00400 |
| MO | 0.000 | 0.55828 | 107.239 | 0.00580 | 0.01125 | -0.00054 |
| NA | 0.000 | -415.35000 | 1.612 | -0.03588 | -0.03512 | -0.03625 |
| NI | 0.000 | 14.38190 | 12.656 | 0.14173 | 0.12378 | 0.15965 |
| P | 0.000 | 0.02333 | 3223.731 | 0.00030 | -0.00006 | -0.00023 |
| PB | 0.000 | -4.94951 | 21.924 | -0.03705 | -0.05133 | -0.05798 |
| S | 0.000 | 8.54581 | 18.744 | 0.00149 | 0.00205 | 0.00151 |
| SB | 0.000 | 0.71660 | 146.406 | 0.00029 | 0.00023 | -0.00009 |
| SE | 0.000 | 0.86991 | 146.287 | 0.02301 | 0.00158 | 0.00108 |
| SI | 0.000 | 1.66667 | 67.727 | 0.00019 | 0.00021 | 0.00003 |
| SN | 0.000 | 0.80659 | 91.248 | 0.01397 | -0.00010 | 0.00995 |
| SR | 0.000 | 8.20437 | 256.883 | 0.00005 | -0.00007 | 0.00016 |
| TE | 0.000 | 5.42279 | 14.491 | 0.00113 | 0.00118 | 0.00089 |
| TH | 0.000 | -18.65000 | 15.738 | -0.00187 | -0.00159 | -0.00136 |
| TI | 0.000 | 68.57458 | 3.994 | 0.02001 | 0.01855 | 0.01889 |
| TL | 0.000 | -1.73649 | 22.894 | -0.02115 | -0.01333 | -0.01685 |
| V | 0.000 | -37.73318 | 17.137 | -0.00983 | -0.00919 | -0.01259 |
| W | 0.000 | 1.44986 | 84.565 | 0.00043 | 0.00042 | 0.00001 |
| Y1 | 0.000 | 5073.83262 | 0.179 | 5083.22168 | 5065.07349 | 5073.20268 |
| Y2A | 0.000 | 179030.72417 | 0.094 | 179146.70122 | 179108.73356 | 178836.73774 |
| Y2R | 0.000 | 11618.85833 | 0.282 | 11600.05000 | 11656.67500 | 11599.85000 |
| ZN | 0.000 | 5.71610 | 5.800 | 0.06009 | 0.05429 | 0.05460 |
| ZR | 0.000 | 24.96667 | 13.174 | 0.00247 | 0.00196 | 0.00202 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 2 Date/Time: 08/30/2017 05:23

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 4304.99258 | 0.231 | 18.87447 | 18.80603 | 18.88672 |
| CA | 50.000 | 43626.83026 | 0.027 | 3.82204 | 3.82050 | 3.82246 |
| FE | 50.000 | 11395.31791 | 0.390 | 0.99488 | 1.00249 | 0.99725 |
| K | 50.000 | 11051.15545 | 0.288 | 48.56451 | 48.31017 | 48.33747 |
| MG | 50.000 | 71585.26470 | 0.011 | 6.27113 | 6.26999 | 6.27127 |
| NA | 50.000 | 36031.13382 | 0.145 | 3.15131 | 3.16032 | 3.15718 |
| S | 50.000 | 2704.78619 | 0.359 | 0.54652 | 0.54888 | 0.55043 |
| SI | 50.000 | 7614.66189 | 0.233 | 0.66659 | 0.66575 | 0.66876 |
| Y1 | 50.000 | 4930.23531 | 0.070 | 4926.26737 | 4932.09679 | 4932.34177 |
| Y2R | 50.000 | 11415.65944 | 0.604 | 11337.42760 | 11467.72745 | 11441.82327 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 3 Date/Time: 08/30/2017 05:26

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 8125.54882 | 0.465 | 2.28885 | 2.31022 | 2.29980 |
| AS | 1.000 | 104.14292 | 0.944 | 1.03597 | 1.05307 | 1.03609 |
| B | 1.000 | 4354.82061 | 0.037 | 0.02465 | 0.02464 | 0.02466 |
| BA | 1.000 | 335349.22737 | 0.378 | 1.89144 | 1.89731 | 1.90571 |
| BE | 1.000 | 321135.87221 | 0.247 | 90.77466 | 90.73682 | 91.14380 |
| CD | 1.000 | 6086.80465 | 0.244 | 60.71337 | 60.97837 | 60.96300 |
| CO | 1.000 | 3283.40833 | 0.261 | 32.74415 | 32.88967 | 32.89578 |
| CU | 1.000 | 6551.79204 | 0.247 | 1.84920 | 1.85817 | 1.85533 |
| LI | 1.000 | 4314.13986 | 1.402 | 0.36794 | 0.37496 | 0.37820 |
| MN | 1.000 | 33073.49783 | 0.084 | 9.36928 | 9.35542 | 9.35582 |
| NI | 1.000 | 2178.78545 | 0.131 | 21.77542 | 21.82658 | 21.77944 |
| P | 1.000 | 122.37776 | 0.441 | 0.02461 | 0.02441 | 0.02443 |
| PB | 1.000 | 498.78901 | 0.537 | 4.95939 | 4.99742 | 5.01110 |
| SE | 1.000 | 57.24428 | 1.260 | 0.56877 | 0.58092 | 0.56811 |
| SR | 1.000 | 505483.46605 | 0.145 | 2.86023 | 2.85753 | 2.86569 |
| TH | 1.000 | 49.40134 | 0.431 | 0.00429 | 0.00426 | 0.00429 |
| TL | 1.000 | 68.92311 | 1.694 | 0.69697 | 0.69528 | 0.67595 |
| W | 1.000 | 377.98054 | 0.235 | 0.07557 | 0.07547 | 0.07581 |
| Y1 | 1.000 | 4998.63180 | 0.279 | 5011.20388 | 5001.08489 | 4983.60664 |
| Y2A | 1.000 | 176671.36349 | 0.013 | 176691.84826 | 176645.29188 | 176676.95032 |
| Y2R | 1.000 | 11544.68988 | 0.322 | 11587.62707 | 11522.63662 | 11523.80596 |
| ZN | 1.000 | 2631.12355 | 0.096 | 26.28926 | 26.33415 | 26.33201 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 4 Date/Time: 08/30/2017 05:30

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 7594.50107 | 0.255 | 0.04176 | 0.04189 | 0.04197 |
| MO | 1.000 | 635.72776 | 0.180 | 6.23711 | 6.24693 | 6.22459 |
| SB | 1.000 | 164.65020 | 0.365 | 0.03217 | 0.03235 | 0.03239 |
| SN | 1.000 | 289.53105 | 0.108 | 2.84241 | 2.83668 | 2.84143 |
| TE | 1.000 | 298.37016 | 0.123 | 0.05848 | 0.05851 | 0.05862 |
| TI | 1.000 | 34151.88385 | 0.304 | 9.38369 | 9.42199 | 9.43979 |
| V | 1.000 | 11466.54520 | 0.323 | 3.15289 | 3.15801 | 3.17257 |
| Y1 | 1.000 | 5097.06529 | 0.092 | 5102.03480 | 5096.46535 | 5092.69573 |
| Y2A | 1.000 | 181366.90060 | 0.161 | 181482.79565 | 181583.90616 | 181034.00000 |
| Y2R | 1.000 | 11713.16594 | 0.150 | 11699.32500 | 11732.92282 | 11707.25000 |
| ZR | 1.000 | 1869.91387 | 0.600 | 0.16026 | 0.15854 | 0.16013 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 5

Date/Time: 08/30/2017 05:33

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.59972 | 4,830.19 | 0.875 | 0.59717 | 0.60575 | 0.59623 |
| ____ AL | 29.89410 | 2,589.73 | 0.309 | 29.80644 | 29.99050 | 29.88535 |
| ____ AS | 0.59511 | 62.28 | 2.353 | 0.60876 | 0.58078 | 0.59579 |
| ____ B | 0.58773 | 2,671.02 | 0.105 | 0.58710 | 0.58833 | 0.58775 |
| ____ BA | 0.60806 | 203,796.13 | 0.630 | 0.60527 | 0.61243 | 0.60648 |
| ____ BE | 0.57488 | 184,353.78 | 0.360 | 0.57254 | 0.57648 | 0.57562 |
| ____ CA | 29.96978 | 26,331.17 | 0.402 | 29.83797 | 29.99717 | 30.07419 |
| ____ CD | 0.59405 | 3,607.28 | 0.044 | 0.59397 | 0.59435 | 0.59384 |
| ____ CO | 0.58479 | 1,913.82 | 0.254 | 0.58651 | 0.58393 | 0.58394 |
| ____ CR | 0.59374 | 4,373.82 | 0.622 | 0.59048 | 0.59775 | 0.59298 |
| ____ CU | 0.60007 | 3,859.53 | 0.538 | 0.59906 | 0.60368 | 0.59747 |
| ____ FE | 29.19401 | 6,718.85 | 0.802 | 29.01462 | 29.10847 | 29.45895 |
| ____ K | 30.00192 | 6,772.47 | 0.182 | 29.94171 | 30.01597 | 30.04808 |
| ____ LI | 0.60650 | 2,629.45 | 0.906 | 0.60648 | 0.60101 | 0.61200 |
| ____ MG | 29.66735 | 42,895.60 | 0.434 | 29.53768 | 29.66912 | 29.79526 |
| ____ MN | 0.59480 | 19,644.52 | 0.483 | 0.59224 | 0.59790 | 0.59424 |
| ____ MO | 0.59834 | 372.38 | 0.425 | 0.59859 | 0.59567 | 0.60074 |
| ____ NA | 29.50836 | 20,929.71 | 0.317 | 29.40824 | 29.59365 | 29.52319 |
| ____ NI | 0.59667 | 1,295.92 | 0.165 | 0.59651 | 0.59578 | 0.59773 |
| ____ P | 0.60362 | 73.71 | 1.574 | 0.61457 | 0.59873 | 0.59757 |
| ____ PB | 0.59544 | 295.97 | 0.697 | 0.59821 | 0.59744 | 0.59066 |
| ____ S | 29.02079 | 1,586.15 | 0.089 | 29.04651 | 28.99483 | 29.02105 |
| ____ SB | 0.60812 | 98.34 | 2.968 | 0.60571 | 0.62725 | 0.59140 |
| ____ SE | 0.61108 | 35.05 | 1.259 | 0.61353 | 0.60246 | 0.61725 |
| ____ SI | 29.86566 | 4,571.18 | 0.310 | 29.75926 | 29.92680 | 29.91093 |
| ____ SN | 0.59236 | 168.13 | 0.251 | 0.59404 | 0.59121 | 0.59183 |
| ____ SR | 0.59924 | 302,335.55 | 0.467 | 0.59637 | 0.60196 | 0.59939 |
| ____ TE | 0.58231 | 173.10 | 1.336 | 0.57464 | 0.59020 | 0.58208 |
| ____ TH | 0.62968 | 26.22 | 4.579 | 0.64343 | 0.64905 | 0.59654 |
| ____ TI | 0.61692 | 20,543.45 | 0.437 | 0.61399 | 0.61929 | 0.61748 |
| ____ TL | 0.61477 | 39.13 | 1.472 | 0.60679 | 0.61291 | 0.62460 |
| ____ V | 0.60950 | 6,804.12 | 0.450 | 0.60671 | 0.61219 | 0.60960 |
| ____ W | 0.59468 | 224.81 | 0.477 | 0.59268 | 0.59792 | 0.59343 |
| ____ Y1 | 4986.98963 | 4,986.99 | 0.275 | 4984.98150 | 5001.58484 | 4974.40256 |
| ____ Y2A | 176364.70981 | 176,364.71 | 0.162 | 176397.77944 | 176063.15000 | 176633.20000 |
| ____ Y2R | 11463.79576 | 11,463.80 | 0.648 | 11549.09018 | 11412.79649 | 11429.50060 |
| ____ ZN | 0.58864 | 1,555.27 | 0.110 | 0.58918 | 0.58792 | 0.58882 |
| ____ ZR | 0.62302 | 1,188.95 | 0.070 | 0.62252 | 0.62335 | 0.62318 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 6

Date/Time: 08/30/2017 05:37

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00028 | -77.32 | 779.726 | 0.00212 | -0.00211 | 0.00082 |
| ____ AL | 0.14950 | -21.20 | 39.574 | 0.20882 | 0.09050 | 0.14916 |
| ____ AS | 0.00177 | 2.09 | 781.536 | -0.00325 | 0.01738 | -0.00883 |
| ____ B | 0.00088 | -4.65 | 33.687 | 0.00064 | 0.00121 | 0.00078 |
| ____ BA | 0.00006 | 347.96 | 106.423 | -0.00001 | 0.00010 | 0.00009 |
| ____ BE | 0.00012 | -52.23 | 24.786 | 0.00013 | 0.00009 | 0.00014 |
| ____ CA | -0.00222 | 35.13 | 142.519 | -0.00560 | -0.00174 | 0.00068 |
| ____ CD | -0.00001 | -9.79 | 317.502 | 0.00003 | -0.00001 | -0.00005 |
| ____ CO | 0.00110 | -5.40 | 50.073 | 0.00160 | 0.00051 | 0.00120 |
| ____ CR | 0.00044 | -24.16 | 97.013 | 0.00008 | 0.00090 | 0.00033 |
| ____ CU | 0.00403 | -28.71 | 54.574 | 0.00468 | 0.00584 | 0.00158 |
| ____ FE | 0.02551 | -14.38 | 20.020 | 0.01962 | 0.02827 | 0.02863 |
| ____ K | 0.01760 | 290.60 | 738.714 | -0.08525 | 0.16368 | -0.02564 |
| ____ LI | 0.00356 | 95.31 | 132.785 | 0.00730 | 0.00515 | -0.00176 |
| ____ MG | 0.00721 | -36.04 | 83.322 | 0.01227 | 0.00057 | 0.00880 |
| ____ MN | -0.00022 | 11.32 | 29.837 | -0.00019 | -0.00017 | -0.00029 |
| ____ MO | -0.00220 | -0.83 | 99.599 | -0.00055 | -0.00136 | -0.00469 |
| ____ NA | 0.75098 | -481.13 | 6.400 | 0.69827 | 0.79239 | 0.76227 |
| ____ NI | -0.00040 | 13.46 | 132.639 | -0.00099 | -0.00022 | 0.00002 |
| ____ P | 0.00335 | 0.44 | 294.874 | -0.00802 | 0.00821 | 0.00986 |
| ____ PB | 0.00015 | -6.47 | 2017.789 | -0.00293 | 0.00047 | 0.00290 |
| ____ S | 0.05795 | 0.76 | 33.698 | 0.07593 | 0.03717 | 0.06076 |
| ____ SB | -0.00154 | 0.47 | 781.022 | -0.00821 | -0.00870 | 0.01230 |
| ____ SE | -0.00555 | 0.55 | 307.713 | 0.01101 | -0.00456 | -0.02312 |
| ____ SI | 0.01343 | 3.74 | 163.284 | -0.00582 | 0.03730 | 0.00881 |
| ____ SN | -0.00237 | 0.12 | 27.780 | -0.00284 | -0.00162 | -0.00266 |
| ____ SR | 0.00022 | 7.64 | 20.690 | 0.00028 | 0.00020 | 0.00019 |
| ____ TE | -0.00645 | 3.54 | 73.438 | -0.01187 | -0.00313 | -0.00435 |
| ____ TH | -0.01028 | -19.56 | 293.015 | 0.02334 | -0.03476 | -0.01941 |
| ____ TI | 0.00024 | 76.96 | 187.121 | 0.00005 | -0.00008 | 0.00075 |
| ____ TL | 0.00643 | -1.38 | 197.792 | 0.01488 | -0.00819 | 0.01261 |
| ____ V | -0.00030 | -37.13 | 235.941 | -0.00057 | 0.00050 | -0.00083 |
| ____ W | 0.00216 | 2.26 | 69.267 | 0.00380 | 0.00180 | 0.00088 |
| ____ Y1 | 5056.35936 | 5,056.36 | 0.198 | 5055.71943 | 5066.65333 | 5046.70533 |
| ____ Y2A | 179956.09345 | 179,956.09 | 0.574 | 181145.85410 | 179433.93782 | 179288.48842 |
| ____ Y2R | 11599.89159 | 11,599.89 | 0.286 | 11626.27500 | 11562.64976 | 11610.75000 |
| ____ ZN | -0.00053 | 4.31 | 16.445 | -0.00058 | -0.00058 | -0.00043 |
| ____ ZR | 0.00007 | 24.40 | 3493.639 | -0.00509 | 0.00151 | 0.00379 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 7

Date/Time: 08/30/2017 05:40

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00872 | -0.86 | 6.084 | 0.00814 | 0.00886 | 0.00917 |
| ____ AL | 0.59967 | 18.82 | 12.221 | 0.52001 | 0.61476 | 0.66424 |
| ____ AS | 0.04785 | 6.90 | 10.814 | 0.05316 | 0.04282 | 0.04755 |
| ____ B | 0.09112 | 402.86 | 0.647 | 0.09116 | 0.09169 | 0.09051 |
| ____ BA | 0.00991 | 3,746.84 | 0.412 | 0.00990 | 0.00996 | 0.00988 |
| ____ BE | 0.00963 | 3,075.40 | 0.139 | 0.00964 | 0.00961 | 0.00963 |
| ____ CA | 0.39176 | 390.05 | 0.548 | 0.39422 | 0.39026 | 0.39079 |
| ____ CD | 0.01038 | 54.74 | 3.575 | 0.01059 | 0.01060 | 0.00995 |
| ____ CO | 0.01109 | 28.19 | 1.380 | 0.01123 | 0.01111 | 0.01093 |
| ____ CR | 0.03036 | 203.14 | 0.514 | 0.03021 | 0.03034 | 0.03052 |
| ____ CU | 0.02432 | 101.72 | 2.168 | 0.02467 | 0.02371 | 0.02457 |
| ____ FE | 0.41422 | 78.08 | 0.503 | 0.41182 | 0.41525 | 0.41559 |
| ____ K | 0.92656 | 494.68 | 9.901 | 1.02994 | 0.89490 | 0.85485 |
| ____ LI | 0.04648 | 280.70 | 14.829 | 0.05267 | 0.03905 | 0.04770 |
| ____ MG | 0.21132 | 268.30 | 0.668 | 0.20970 | 0.21226 | 0.21200 |
| ____ MN | 0.01002 | 357.94 | 0.726 | 0.01009 | 0.01001 | 0.00995 |
| ____ MO | 0.01868 | 12.41 | 5.385 | 0.01853 | 0.01775 | 0.01975 |
| ____ NA | 2.69135 | 990.58 | 0.751 | 2.71213 | 2.67178 | 2.69013 |
| ____ NI | 0.01950 | 57.35 | 4.749 | 0.02013 | 0.01843 | 0.01992 |
| ____ P | 0.20080 | 25.04 | 1.139 | 0.19821 | 0.20162 | 0.20256 |
| ____ PB | 0.03493 | 11.42 | 6.495 | 0.03370 | 0.03755 | 0.03355 |
| ____ S | 0.99547 | 53.15 | 0.403 | 0.99250 | 0.99387 | 1.00003 |
| ____ SB | 0.04728 | 8.48 | 22.692 | 0.05964 | 0.04040 | 0.04180 |
| ____ SE | 0.03458 | 2.85 | 53.680 | 0.01408 | 0.05025 | 0.03940 |
| ____ SI | 0.08306 | 14.78 | 4.939 | 0.08780 | 0.08085 | 0.08054 |
| ____ SN | 0.03953 | 12.21 | 9.590 | 0.04390 | 0.03749 | 0.03718 |
| ____ SR | 0.01011 | 5,122.34 | 0.541 | 0.01013 | 0.01015 | 0.01005 |
| ____ TE | 0.00111 | 5.79 | 536.482 | -0.00568 | 0.00530 | 0.00369 |
| ____ TH | -0.02127 | -20.42 | 135.016 | 0.00931 | -0.02546 | -0.04766 |
| ____ TI | 0.02014 | 754.17 | 1.293 | 0.02044 | 0.02003 | 0.01996 |
| ____ TL | 0.05912 | 2.37 | 19.545 | 0.07117 | 0.05805 | 0.04814 |
| ____ V | 0.00906 | 68.45 | 19.737 | 0.00749 | 0.00867 | 0.01100 |
| ____ W | 0.02226 | 10.06 | 1.684 | 0.02268 | 0.02213 | 0.02197 |
| ____ Y1 | 5090.77592 | 5,090.78 | 0.211 | 5083.69163 | 5103.15468 | 5085.48145 |
| ____ Y2A | 180843.03715 | 180,843.04 | 0.377 | 180068.85467 | 181350.61950 | 181109.63729 |
| ____ Y2R | 11721.10000 | 11,721.10 | 0.581 | 11689.15000 | 11799.30000 | 11674.85000 |
| ____ ZN | 0.04010 | 112.71 | 0.714 | 0.03977 | 0.04025 | 0.04028 |
| ____ ZR | 0.09974 | 207.90 | 6.381 | 0.09994 | 0.09327 | 0.10600 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 8 Date/Time: 08/30/2017 05:43

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00316 | -226.05 | 84.294 | -0.00529 | -0.00401 | -0.00017 |
| ____ AL | 496.98213 | 42,395.15 | 0.158 | 496.87822 | 497.81247 | 496.25571 |
| ____ AS | 0.00072 | -0.69 | 1344.985 | 0.00255 | 0.00934 | -0.00973 |
| ____ B | 0.07695 | 1,174.72 | 1.974 | 0.07526 | 0.07821 | 0.07737 |
| ____ BA | 0.00072 | 520.90 | 21.301 | 0.00087 | 0.00071 | 0.00057 |
| ____ BE | -0.00132 | -473.49 | 3.792 | -0.00135 | -0.00134 | -0.00126 |
| ____ CA | 501.37330 | 408,927.17 | 0.728 | 505.46984 | 498.46287 | 500.18718 |
| ____ CD | 0.00458 | 40.59 | 9.015 | 0.00433 | 0.00506 | 0.00435 |
| ____ CO | 0.00121 | -4.62 | 43.682 | 0.00094 | 0.00087 | 0.00182 |
| ____ CR | -0.00080 | -30.44 | 8.854 | -0.00082 | -0.00086 | -0.00072 |
| ____ CU | 0.02381 | 131.29 | 6.760 | 0.02205 | 0.02521 | 0.02417 |
| ____ FE | 198.80351 | 42,430.35 | 0.413 | 199.50188 | 197.90030 | 199.00835 |
| ____ K | 0.09525 | 297.76 | 44.269 | 0.14371 | 0.07508 | 0.06696 |
| ____ LI | 0.02103 | 164.18 | 19.429 | 0.02221 | 0.01649 | 0.02440 |
| ____ MG | 536.51862 | 645,297.71 | 0.608 | 539.98501 | 536.06717 | 533.50367 |
| ____ MN | 0.00382 | 134.15 | 8.998 | 0.00407 | 0.00395 | 0.00343 |
| ____ MO | -0.00326 | -1.38 | 45.114 | -0.00241 | -0.00241 | -0.00496 |
| ____ NA | 1.05430 | -244.48 | 2.223 | 1.04284 | 1.08125 | 1.03879 |
| ____ NI | -0.00134 | -15.19 | 119.891 | -0.00274 | -0.00167 | 0.00041 |
| ____ P | 0.00260 | 0.32 | 65.802 | 0.00437 | 0.00096 | 0.00247 |
| ____ PB | 0.08997 | 62.76 | 5.398 | 0.09085 | 0.09432 | 0.08473 |
| ____ S | 0.02344 | -1.06 | 38.153 | 0.03191 | 0.01409 | 0.02432 |
| ____ SB | 0.00272 | 1.07 | 422.061 | -0.00493 | 0.01589 | -0.00282 |
| ____ SE | 0.03032 | 1.30 | 45.409 | 0.04598 | 0.02011 | 0.02487 |
| ____ SI | -0.00973 | 0.16 | 114.624 | -0.00576 | -0.02232 | -0.00110 |
| ____ SN | -0.00467 | -0.49 | 119.995 | -0.01062 | 0.00051 | -0.00391 |
| ____ SR | 0.01704 | 7,877.98 | 0.292 | 0.01708 | 0.01705 | 0.01698 |
| ____ TE | 0.01734 | 14.96 | 51.811 | 0.00702 | 0.02160 | 0.02341 |
| ____ TH | -0.02985 | -8.75 | 116.020 | -0.06861 | -0.01896 | -0.00197 |
| ____ TI | 0.00603 | 247.90 | 5.086 | 0.00634 | 0.00573 | 0.00602 |
| ____ TL | -0.01202 | -2.49 | 113.321 | -0.01127 | 0.00121 | -0.02601 |
| ____ V | 0.00188 | -11.38 | 13.275 | 0.00178 | 0.00216 | 0.00169 |
| ____ W | 0.00293 | 2.34 | 31.561 | 0.00197 | 0.00381 | 0.00300 |
| ____ Y1 | 4660.07733 | 4,660.08 | 0.657 | 4672.27277 | 4682.72173 | 4625.23748 |
| ____ Y2A | 163617.15770 | 163,617.16 | 0.812 | 162500.07494 | 163265.24208 | 165086.15608 |
| ____ Y2R | 11227.55449 | 11,227.55 | 0.236 | 11198.48530 | 11250.27495 | 11233.90322 |
| ____ ZN | -0.00228 | 48.33 | 17.990 | -0.00274 | -0.00213 | -0.00196 |
| ____ ZR | 0.00545 | 31.93 | 80.765 | 0.01016 | 0.00473 | 0.00145 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 9 Date/Time: 08/30/2017 05:47

Sample Number: **ICSAB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.20501 | 1,354.54 | 1.037 | 0.20453 | 0.20317 | 0.20734 |
| ____ AL | 497.08283 | 41,749.56 | 0.216 | 497.89898 | 497.48556 | 495.86395 |
| ____ AS | 0.09438 | 8.14 | 3.382 | 0.09569 | 0.09670 | 0.09074 |
| ____ B | 0.07645 | 1,152.11 | 7.833 | 0.07667 | 0.07035 | 0.08232 |
| ____ BA | 0.52018 | 159,152.45 | 0.378 | 0.51994 | 0.51835 | 0.52225 |
| ____ BE | 0.49440 | 144,759.75 | 0.068 | 0.49476 | 0.49410 | 0.49435 |
| ____ CA | 498.01330 | 399,980.49 | 0.922 | 503.16292 | 494.34003 | 496.53695 |
| ____ CD | 0.94397 | 5,315.70 | 0.218 | 0.94331 | 0.94627 | 0.94232 |
| ____ CO | 0.46828 | 1,412.07 | 0.217 | 0.46717 | 0.46917 | 0.46850 |
| ____ CR | 0.48367 | 3,248.89 | 0.153 | 0.48310 | 0.48339 | 0.48451 |
| ____ CU | 0.53321 | 3,125.52 | 0.639 | 0.53620 | 0.52950 | 0.53394 |
| ____ FE | 198.34110 | 41,677.09 | 0.236 | 197.83625 | 198.76306 | 198.42400 |
| ____ K | 0.03315 | 280.26 | 339.450 | -0.09446 | 0.07582 | 0.11808 |
| ____ LI | 0.01880 | 152.57 | 5.698 | 0.01979 | 0.01766 | 0.01894 |
| ____ MG | 535.26213 | 633,996.13 | 0.520 | 538.46944 | 533.86656 | 533.45040 |
| ____ MN | 0.49263 | 14,871.22 | 0.359 | 0.49289 | 0.49075 | 0.49426 |
| ____ MO | -0.00096 | -0.04 | 141.538 | -0.00052 | -0.00247 | 0.00013 |
| ____ NA | 1.01283 | -270.37 | 3.921 | 0.98098 | 1.05732 | 1.00019 |
| ____ NI | 0.92985 | 1,842.36 | 0.225 | 0.92893 | 0.93224 | 0.92836 |
| ____ P | 0.00661 | 0.77 | 234.789 | 0.00159 | -0.00578 | 0.02402 |
| ____ PB | 0.59951 | 299.18 | 0.519 | 0.60243 | 0.59624 | 0.59985 |
| ____ S | 0.00254 | -2.11 | 360.733 | 0.00117 | -0.00587 | 0.01233 |
| ____ SB | 0.61999 | 93.29 | 1.722 | 0.63190 | 0.61677 | 0.61130 |
| ____ SE | 0.51145 | 26.06 | 5.736 | 0.53385 | 0.47824 | 0.52225 |
| ____ SI | -0.02860 | -2.60 | 55.609 | -0.04660 | -0.01644 | -0.02276 |
| ____ SN | 0.00112 | 1.02 | 415.050 | -0.00426 | 0.00365 | 0.00398 |
| ____ SR | 0.01707 | 7,769.38 | 0.389 | 0.01714 | 0.01705 | 0.01701 |
| ____ TE | 0.00754 | 12.66 | 58.514 | 0.01261 | 0.00455 | 0.00546 |
| ____ TH | -0.05990 | -10.59 | 63.614 | -0.10339 | -0.03237 | -0.04395 |
| ____ TI | 0.00675 | 275.12 | 10.892 | 0.00697 | 0.00593 | 0.00734 |
| ____ TL | 0.08087 | 1.79 | 31.671 | 0.10023 | 0.09056 | 0.05183 |
| ____ V | 0.52200 | 5,346.51 | 0.032 | 0.52195 | 0.52185 | 0.52218 |
| ____ W | 0.00554 | 6.75 | 50.594 | 0.00258 | 0.00588 | 0.00815 |
| ____ Y1 | 4604.78286 | 4,604.78 | 0.215 | 4612.23378 | 4593.54565 | 4608.56914 |
| ____ Y2A | 161042.30617 | 161,042.31 | 0.222 | 160645.80841 | 161342.03297 | 161139.07714 |
| ____ Y2R | 11052.03104 | 11,052.03 | 0.606 | 10975.32928 | 11081.83363 | 11098.93021 |
| ____ ZN | 0.96007 | 2,373.69 | 0.292 | 0.96092 | 0.96235 | 0.95693 |
| ____ ZR | 0.01171 | 40.49 | 61.480 | 0.01762 | 0.01383 | 0.00369 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 10

Date/Time: 08/30/2017 05:50

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49656 | 3,952.94 | 0.252 | 0.49792 | 0.49629 | 0.49546 |
| ____ AL | 25.43514 | 2,181.76 | 0.392 | 25.34975 | 25.41083 | 25.54484 |
| ____ AS | 0.51026 | 53.47 | 4.181 | 0.51363 | 0.48744 | 0.52971 |
| ____ B | 0.49530 | 2,232.77 | 0.459 | 0.49321 | 0.49772 | 0.49497 |
| ____ BA | 0.50473 | 167,865.17 | 0.253 | 0.50470 | 0.50601 | 0.50346 |
| ____ BE | 0.47635 | 151,519.00 | 0.130 | 0.47577 | 0.47699 | 0.47627 |
| ____ CA | 25.21790 | 22,009.66 | 0.329 | 25.12288 | 25.25466 | 25.27616 |
| ____ CD | 0.49823 | 3,012.43 | 0.229 | 0.49933 | 0.49829 | 0.49706 |
| ____ CO | 0.49667 | 1,617.83 | 0.316 | 0.49753 | 0.49485 | 0.49761 |
| ____ CR | 0.48651 | 3,550.50 | 0.364 | 0.48475 | 0.48649 | 0.48829 |
| ____ CU | 0.50413 | 3,208.01 | 1.104 | 0.49825 | 0.50931 | 0.50482 |
| ____ FE | 24.82418 | 5,676.11 | 0.756 | 24.61349 | 24.97383 | 24.88523 |
| ____ K | 25.24990 | 5,702.21 | 0.223 | 25.18615 | 25.29250 | 25.27105 |
| ____ LI | 0.50956 | 2,205.41 | 0.469 | 0.51189 | 0.50969 | 0.50711 |
| ____ MG | 25.06582 | 36,017.09 | 0.404 | 24.94908 | 25.11959 | 25.12880 |
| ____ MN | 0.50229 | 16,459.73 | 0.377 | 0.50152 | 0.50445 | 0.50091 |
| ____ MO | 0.49666 | 308.02 | 0.475 | 0.49783 | 0.49394 | 0.49820 |
| ____ NA | 25.29043 | 17,658.79 | 0.279 | 25.21291 | 25.30772 | 25.35066 |
| ____ NI | 0.50140 | 1,087.05 | 0.105 | 0.50191 | 0.50086 | 0.50142 |
| ____ P | 0.49494 | 60.21 | 0.322 | 0.49417 | 0.49677 | 0.49388 |
| ____ PB | 0.49649 | 244.81 | 1.019 | 0.50004 | 0.49070 | 0.49872 |
| ____ S | 24.59414 | 1,338.76 | 0.236 | 24.63122 | 24.62400 | 24.52720 |
| ____ SB | 0.50005 | 80.67 | 1.120 | 0.50628 | 0.49841 | 0.49545 |
| ____ SE | 0.49519 | 28.46 | 2.452 | 0.49114 | 0.50884 | 0.48558 |
| ____ SI | 25.31276 | 3,845.91 | 0.455 | 25.19210 | 25.32448 | 25.42170 |
| ____ SN | 0.49105 | 138.98 | 0.793 | 0.49013 | 0.48770 | 0.49533 |
| ____ SR | 0.50551 | 252,989.01 | 0.185 | 0.50493 | 0.50658 | 0.50500 |
| ____ TE | 0.49512 | 147.40 | 1.915 | 0.49516 | 0.48561 | 0.50457 |
| ____ TH | 0.52498 | 18.65 | 5.647 | 0.54424 | 0.53985 | 0.49084 |
| ____ TI | 0.51376 | 16,982.52 | 0.304 | 0.51263 | 0.51555 | 0.51311 |
| ____ TL | 0.50817 | 31.91 | 1.240 | 0.50090 | 0.51219 | 0.51140 |
| ____ V | 0.50515 | 5,588.53 | 0.278 | 0.50385 | 0.50664 | 0.50495 |
| ____ W | 0.49625 | 187.13 | 0.650 | 0.49268 | 0.49896 | 0.49710 |
| ____ Y1 | 4968.11485 | 4,968.11 | 0.188 | 4957.97920 | 4976.36736 | 4969.99800 |
| ____ Y2A | 174954.56414 | 174,954.56 | 0.308 | 174548.87725 | 174748.90110 | 175565.91407 |
| ____ Y2R | 11379.02117 | 11,379.02 | 0.200 | 11404.71209 | 11361.33866 | 11371.01276 |
| ____ ZN | 0.49402 | 1,301.31 | 0.151 | 0.49478 | 0.49329 | 0.49398 |
| ____ ZR | 0.51499 | 980.04 | 0.745 | 0.51147 | 0.51908 | 0.51443 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 11

Date/Time: 08/30/2017 05:54

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00116 | -70.60 | 164.731 | -0.00102 | 0.00252 | 0.00196 |
| ____ AL | 0.15797 | -20.32 | 55.275 | 0.19100 | 0.05896 | 0.22396 |
| ____ AS | 0.00954 | 2.88 | 33.812 | 0.01326 | 0.00761 | 0.00774 |
| ____ B | 0.00029 | -7.36 | 357.854 | 0.00147 | -0.00026 | -0.00035 |
| ____ BA | 0.00013 | 368.48 | 21.188 | 0.00015 | 0.00010 | 0.00014 |
| ____ BE | 0.00009 | -60.33 | 4.319 | 0.00009 | 0.00009 | 0.00010 |
| ____ CA | -0.00239 | 34.85 | 194.429 | 0.00297 | -0.00528 | -0.00486 |
| ____ CD | 0.00020 | -8.46 | 104.495 | 0.00001 | 0.00017 | 0.00042 |
| ____ CO | 0.00089 | -6.09 | 65.507 | 0.00035 | 0.00080 | 0.00151 |
| ____ CR | 0.00159 | -15.31 | 39.017 | 0.00229 | 0.00136 | 0.00112 |
| ____ CU | 0.00373 | -29.17 | 29.315 | 0.00317 | 0.00499 | 0.00302 |
| ____ FE | 0.00319 | -19.57 | 489.693 | -0.01452 | 0.00906 | 0.01504 |
| ____ K | -0.01512 | 282.43 | 263.384 | -0.02694 | 0.02927 | -0.04770 |
| ____ LI | 0.00391 | 96.53 | 233.850 | 0.00781 | 0.01045 | -0.00654 |
| ____ MG | 0.01076 | -30.70 | 29.577 | 0.00715 | 0.01317 | 0.01196 |
| ____ MN | 0.00000 | 18.25 | 3972.113 | -0.00001 | 0.00011 | -0.00011 |
| ____ MO | -0.00041 | 0.30 | 34.831 | -0.00039 | -0.00028 | -0.00056 |
| ____ NA | 0.75206 | -478.32 | 9.031 | 0.71267 | 0.83049 | 0.71302 |
| ____ NI | -0.00096 | 12.17 | 115.534 | -0.00191 | 0.00026 | -0.00125 |
| ____ P | 0.00162 | 0.22 | 488.665 | -0.00738 | 0.00737 | 0.00486 |
| ____ PB | 0.00531 | -3.81 | 52.675 | 0.00812 | 0.00530 | 0.00252 |
| ____ S | -0.00154 | -2.53 | 958.517 | -0.01730 | 0.01196 | 0.00073 |
| ____ SB | -0.00119 | 0.52 | 372.982 | 0.00260 | -0.00010 | -0.00607 |
| ____ SE | 0.01529 | 1.72 | 60.715 | 0.01089 | 0.00903 | 0.02595 |
| ____ SI | 0.00708 | 2.76 | 150.641 | 0.01802 | 0.00653 | -0.00330 |
| ____ SN | -0.00233 | 0.13 | 112.019 | -0.00336 | -0.00428 | 0.00064 |
| ____ SR | 0.00018 | -13.24 | 21.549 | 0.00021 | 0.00020 | 0.00014 |
| ____ TE | 0.00264 | 6.14 | 99.446 | -0.00022 | 0.00320 | 0.00493 |
| ____ TH | -0.00046 | -18.82 | 3691.003 | -0.02548 | 0.03381 | -0.00970 |
| ____ TI | 0.00016 | 73.73 | 33.361 | 0.00011 | 0.00014 | 0.00021 |
| ____ TL | 0.00223 | -1.67 | 607.099 | 0.01171 | -0.01328 | 0.00826 |
| ____ V | 0.00006 | -32.56 | 1654.217 | 0.00091 | -0.00112 | 0.00040 |
| ____ W | 0.00246 | 2.36 | 63.562 | 0.00388 | 0.00078 | 0.00273 |
| ____ Y1 | 5034.95650 | 5,034.96 | 0.198 | 5045.61044 | 5033.41666 | 5025.84242 |
| ____ Y2A | 178728.59324 | 178,728.59 | 0.656 | 179493.00979 | 177378.86110 | 179313.90884 |
| ____ Y2R | 11555.77500 | 11,555.78 | 0.430 | 11568.77500 | 11597.70000 | 11500.85000 |
| ____ ZN | -0.00020 | 5.13 | 50.384 | -0.00010 | -0.00022 | -0.00030 |
| ____ ZR | -0.00472 | 16.17 | 207.625 | -0.00305 | -0.01526 | 0.00414 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 12 Date/Time: 08/30/2017 05:57

Sample Number: **PBW** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00015 | -81.68 | 42.255 | -0.00022 | -0.00015 | -0.00009 |
| ____ AL | 0.17794 | -19.00 | 36.468 | 0.14195 | 0.25285 | 0.13902 |
| ____ AS | -0.00027 | 1.90 | 1404.926 | -0.00460 | 0.00149 | 0.00230 |
| ____ B | 0.00086 | -4.82 | 86.827 | 0.00140 | 0.00001 | 0.00116 |
| ____ BA | 0.00009 | 361.72 | 22.599 | 0.00008 | 0.00008 | 0.00011 |
| ____ BE | 0.00014 | -45.66 | 30.785 | 0.00009 | 0.00015 | 0.00018 |
| ____ CA | 0.00427 | 41.58 | 160.172 | -0.00334 | 0.00990 | 0.00625 |
| ____ CD | 0.00017 | -8.79 | 132.274 | 0.00042 | 0.00000 | 0.00008 |
| ____ CO | 0.00051 | -7.47 | 153.182 | 0.00136 | -0.00020 | 0.00039 |
| ____ CR | 0.00238 | -9.54 | 37.313 | 0.00171 | 0.00338 | 0.00204 |
| ____ CU | 0.00421 | -27.85 | 33.316 | 0.00287 | 0.00409 | 0.00567 |
| ____ FE | 0.01309 | -17.58 | 39.900 | 0.00813 | 0.01260 | 0.01855 |
| ____ K | -0.02829 | 285.15 | 184.953 | -0.05526 | -0.06163 | 0.03202 |
| ____ LI | 0.00473 | 101.90 | 30.022 | 0.00380 | 0.00636 | 0.00401 |
| ____ MG | 0.01393 | -26.55 | 20.122 | 0.01195 | 0.01714 | 0.01271 |
| ____ MN | 0.00035 | 30.73 | 36.490 | 0.00035 | 0.00048 | 0.00022 |
| ____ MO | -0.00105 | -0.11 | 104.170 | -0.00014 | -0.00075 | -0.00227 |
| ____ NA | 0.76129 | -480.98 | 0.921 | 0.76834 | 0.76121 | 0.75431 |
| ____ NI | -0.00059 | 13.21 | 163.393 | -0.00167 | 0.00020 | -0.00031 |
| ____ P | 0.00391 | 0.51 | 40.345 | 0.00277 | 0.00571 | 0.00325 |
| ____ PB | 0.00513 | -3.97 | 115.348 | 0.01061 | 0.00594 | -0.00115 |
| ____ S | -0.00417 | -2.72 | 252.309 | 0.00564 | -0.01529 | -0.00287 |
| ____ SB | 0.00317 | 1.25 | 431.481 | -0.00459 | -0.00485 | 0.01893 |
| ____ SE | -0.00881 | 0.37 | 185.084 | 0.00596 | -0.00608 | -0.02630 |
| ____ SI | 0.01268 | 3.68 | 24.595 | 0.01611 | 0.01001 | 0.01193 |
| ____ SN | 0.00021 | 0.87 | 1354.878 | 0.00205 | -0.00301 | 0.00158 |
| ____ SR | 0.00026 | 23.88 | 6.604 | 0.00025 | 0.00027 | 0.00024 |
| ____ TE | -0.00236 | 4.79 | 273.385 | -0.00975 | 0.00210 | 0.00057 |
| ____ TH | -0.01063 | -19.90 | 256.731 | 0.01424 | -0.00631 | -0.03982 |
| ____ TI | -0.00047 | 53.53 | 58.122 | -0.00075 | -0.00020 | -0.00047 |
| ____ TL | 0.01413 | -0.84 | 116.500 | 0.01863 | -0.00411 | 0.02786 |
| ____ V | -0.00030 | -37.63 | 79.404 | -0.00010 | -0.00056 | -0.00023 |
| ____ W | 0.00054 | 1.67 | 415.319 | 0.00234 | 0.00121 | -0.00195 |
| ____ Y1 | 5124.69253 | 5,124.69 | 0.108 | 5124.76752 | 5130.19198 | 5119.11809 |
| ____ Y2A | 181734.79506 | 181,734.80 | 0.543 | 181295.96871 | 182865.03587 | 181043.38059 |
| ____ Y2R | 11788.16667 | 11,788.17 | 0.236 | 11774.90000 | 11820.15000 | 11769.45000 |
| ____ ZN | 0.00015 | 6.17 | 129.548 | 0.00031 | -0.00006 | 0.00019 |
| ____ ZR | 0.00142 | 27.30 | 225.937 | -0.00036 | 0.00513 | -0.00050 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 13 Date/Time: 08/30/2017 06:05

Sample Number: **LCSW** Class: **** Batch: 172391063501

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04365 | 284.09 | 5.009 | 0.04518 | 0.04463 | 0.04115 |
| ____ AL | 2.12436 | 172.08 | 3.343 | 2.05656 | 2.19820 | 2.11832 |
| ____ AS | 0.15526 | 18.39 | 5.278 | 0.16444 | 0.15263 | 0.14870 |
| ____ B | 1.95394 | 8,781.11 | 0.393 | 1.94612 | 1.95421 | 1.96148 |
| ____ BA | 2.05645 | 705,156.63 | 0.752 | 2.04165 | 2.07250 | 2.05518 |
| ____ BE | 0.05035 | 16,535.78 | 0.314 | 0.05025 | 0.05028 | 0.05053 |
| ____ CA | 4.15600 | 3,759.86 | 0.215 | 4.14965 | 4.16624 | 4.15211 |
| ____ CD | 0.05294 | 319.03 | 0.412 | 0.05271 | 0.05313 | 0.05299 |
| ____ CO | 0.53162 | 1,780.83 | 0.403 | 0.53407 | 0.53011 | 0.53069 |
| ____ CR | 0.20584 | 1,535.56 | 0.410 | 0.20638 | 0.20487 | 0.20627 |
| ____ CU | 0.27612 | 1,754.30 | 0.668 | 0.27480 | 0.27533 | 0.27823 |
| ____ FE | 1.05580 | 229.88 | 1.756 | 1.03684 | 1.07389 | 1.05666 |
| ____ K | 10.23294 | 2,541.72 | 1.419 | 10.07269 | 10.35582 | 10.27031 |
| ____ LI | 1.05412 | 4,593.00 | 0.620 | 1.04992 | 1.06165 | 1.05080 |
| ____ MG | 2.11033 | 3,088.35 | 0.504 | 2.09901 | 2.12008 | 2.11191 |
| ____ MN | 0.53242 | 18,020.96 | 0.221 | 0.53209 | 0.53373 | 0.53144 |
| ____ MO | 2.10597 | 1,336.38 | 0.443 | 2.11238 | 2.11025 | 2.09527 |
| ____ NA | 10.86892 | 7,183.11 | 0.254 | 10.83805 | 10.89124 | 10.87748 |
| ____ NI | 0.54666 | 1,219.16 | 0.410 | 0.54842 | 0.54743 | 0.54413 |
| ____ P | 1.03324 | 128.76 | 0.856 | 1.04325 | 1.02647 | 1.03002 |
| ____ PB | 0.15834 | 75.03 | 3.861 | 0.15340 | 0.16518 | 0.15645 |
| ____ S | 1.00172 | 53.23 | 1.902 | 0.98401 | 1.02187 | 0.99927 |
| ____ SB | 0.55103 | 87.68 | 1.227 | 0.55713 | 0.54376 | 0.55219 |
| ____ SE | 0.14744 | 9.37 | 7.732 | 0.13494 | 0.15011 | 0.15727 |
| ____ SI | 1.09011 | 175.73 | 0.372 | 1.08576 | 1.09076 | 1.09380 |
| ____ SN | 4.12630 | 1,190.53 | 0.620 | 4.15575 | 4.11340 | 4.10974 |
| ____ SR | 1.03009 | 532,543.32 | 0.285 | 1.02943 | 1.03330 | 1.02754 |
| ____ TE | 0.21034 | 67.61 | 4.101 | 0.20039 | 0.21484 | 0.21578 |
| ____ TH | 0.52638 | 18.26 | 17.770 | 0.56813 | 0.59179 | 0.41924 |
| ____ TI | 1.05574 | 35,919.45 | 0.175 | 1.05360 | 1.05675 | 1.05686 |
| ____ TL | 0.17336 | 8.39 | 2.507 | 0.17286 | 0.17794 | 0.16929 |
| ____ V | 0.51476 | 5,712.89 | 0.344 | 0.51302 | 0.51468 | 0.51656 |
| ____ W | 0.21696 | 85.90 | 0.920 | 0.21471 | 0.21768 | 0.21850 |
| ____ Y1 | 5090.18098 | 5,090.18 | 0.462 | 5063.17868 | 5106.13439 | 5101.22988 |
| ____ Y2A | 180691.76254 | 180,691.76 | 0.447 | 181459.39124 | 179849.76010 | 180766.13627 |
| ____ Y2R | 11670.64526 | 11,670.65 | 0.190 | 11696.19370 | 11656.89362 | 11658.84845 |
| ____ ZN | 0.52294 | 1,403.81 | 0.573 | 0.52638 | 0.52149 | 0.52094 |
| ____ ZR | 1.06318 | 2,012.83 | 0.714 | 1.05458 | 1.06892 | 1.06603 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 14 Date/Time: 08/30/2017 06:09

Sample Number: **9175052** Class: U*** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00048 | -76.44 | 463.174 | 0.00219 | 0.00124 | -0.00201 |
| ____ AL | 0.16221 | -19.97 | 9.765 | 0.17369 | 0.14414 | 0.16880 |
| ____ AS | 0.00378 | 2.29 | 262.335 | -0.00054 | 0.01513 | -0.00324 |
| ____ B | 0.06725 | 283.02 | 0.993 | 0.06751 | 0.06776 | 0.06650 |
| ____ BA | 0.11222 | 38,480.80 | 0.671 | 0.11236 | 0.11289 | 0.11140 |
| ____ BE | -0.00003 | -99.37 | 56.823 | -0.00002 | -0.00002 | -0.00005 |
| ____ CA | 40.96058 | 36,537.85 | 0.138 | 40.99834 | 40.98789 | 40.89550 |
| ____ CD | -0.00010 | -10.28 | 276.613 | 0.00010 | 0.00002 | -0.00042 |
| ____ CO | 0.00125 | -6.10 | 23.440 | 0.00158 | 0.00102 | 0.00115 |
| ____ CR | 0.00107 | -19.31 | 93.266 | 0.00034 | 0.00220 | 0.00066 |
| ____ CU | 0.00566 | -13.12 | 16.525 | 0.00638 | 0.00460 | 0.00599 |
| ____ FE | 0.02545 | -14.46 | 21.166 | 0.02079 | 0.02421 | 0.03135 |
| ____ K | 2.29936 | 793.94 | 1.374 | 2.32615 | 2.26454 | 2.30740 |
| ____ LI | 0.02338 | 180.56 | 58.305 | 0.03828 | 0.01155 | 0.02030 |
| ____ MG | 5.73294 | 8,451.53 | 0.467 | 5.75621 | 5.73890 | 5.70371 |
| ____ MN | 0.00061 | 39.01 | 15.790 | 0.00051 | 0.00064 | 0.00069 |
| ____ MO | 0.00271 | 2.25 | 56.712 | 0.00422 | 0.00114 | 0.00277 |
| ____ NA | 24.52449 | 17,510.74 | 0.271 | 24.58270 | 24.45220 | 24.53857 |
| ____ NI | -0.00001 | 12.87 | 2531.658 | -0.00038 | 0.00030 | 0.00004 |
| ____ P | 0.00693 | 0.88 | 89.476 | 0.00372 | 0.01408 | 0.00299 |
| ____ PB | 0.00012 | -6.17 | 2912.259 | 0.00152 | -0.00381 | 0.00266 |
| ____ S | 13.14641 | 723.83 | 0.444 | 13.09643 | 13.13228 | 13.21053 |
| ____ SB | -0.00015 | 0.68 | 3154.318 | -0.00286 | -0.00273 | 0.00516 |
| ____ SE | 0.00307 | 1.03 | 105.879 | 0.00320 | -0.00025 | 0.00624 |
| ____ SI | 14.56486 | 2,266.23 | 0.309 | 14.61448 | 14.55328 | 14.52683 |
| ____ SN | 0.00287 | 1.62 | 98.204 | -0.00017 | 0.00539 | 0.00338 |
| ____ SR | 0.26264 | 134,653.63 | 0.352 | 0.26341 | 0.26289 | 0.26161 |
| ____ TE | 0.00447 | 6.67 | 55.074 | 0.00396 | 0.00715 | 0.00231 |
| ____ TH | -0.00031 | -18.98 | 3289.561 | 0.02602 | 0.02097 | -0.04793 |
| ____ TI | 0.00414 | 208.03 | 4.755 | 0.00403 | 0.00436 | 0.00401 |
| ____ TL | 0.00182 | -1.72 | 420.502 | -0.00511 | 0.01001 | 0.00054 |
| ____ V | 0.00568 | 31.43 | 9.767 | 0.00507 | 0.00582 | 0.00616 |
| ____ W | 0.00005 | 1.52 | 3198.330 | -0.00136 | 0.00182 | -0.00030 |
| ____ Y1 | 5030.52861 | 5,030.53 | 0.193 | 5028.11719 | 5041.22588 | 5022.24278 |
| ____ Y2A | 179299.20779 | 179,299.21 | 0.534 | 178630.05000 | 178872.35423 | 180395.21912 |
| ____ Y2R | 11657.10314 | 11,657.10 | 0.337 | 11661.22754 | 11615.88100 | 11694.20088 |
| ____ ZN | 0.01480 | 44.53 | 0.940 | 0.01482 | 0.01492 | 0.01465 |
| ____ ZR | -0.00091 | 23.35 | 347.038 | -0.00390 | 0.00241 | -0.00124 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 15 Date/Time: 08/30/2017 06:12

Sample Number: **9175052** Class: UP** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01234 | 23.62 | 15.496 | 0.01454 | 0.01136 | 0.01111 |
| ____ AL | 1.14382 | 73.47 | 1.633 | 1.15240 | 1.12240 | 1.15666 |
| ____ AS | 0.50204 | 53.55 | 1.309 | 0.49520 | 0.50831 | 0.50260 |
| ____ B | 0.25526 | 1,111.37 | 0.385 | 0.25444 | 0.25635 | 0.25498 |
| ____ BA | 0.15812 | 54,008.79 | 0.443 | 0.15772 | 0.15772 | 0.15893 |
| ____ BE | 0.01931 | 6,189.71 | 0.147 | 0.01934 | 0.01928 | 0.01930 |
| ____ CA | 40.33597 | 36,019.28 | 0.461 | 40.13270 | 40.37791 | 40.49730 |
| ____ CD | 0.04982 | 296.05 | 0.528 | 0.04971 | 0.04963 | 0.05012 |
| ____ CO | 0.10096 | 324.94 | 0.509 | 0.10037 | 0.10117 | 0.10133 |
| ____ CR | 0.19937 | 1,467.60 | 0.499 | 0.19921 | 0.19846 | 0.20043 |
| ____ CU | 0.50026 | 3,272.98 | 0.768 | 0.49590 | 0.50313 | 0.50177 |
| ____ FE | 0.52763 | 104.63 | 2.454 | 0.54161 | 0.51604 | 0.52524 |
| ____ K | 4.15487 | 1,203.21 | 0.678 | 4.16388 | 4.17744 | 4.12329 |
| ____ LI | 1.00642 | 4,388.07 | 0.384 | 1.00218 | 1.00734 | 1.00975 |
| ____ MG | 6.49843 | 9,593.65 | 0.221 | 6.48185 | 6.50750 | 6.50595 |
| ____ MN | 0.06069 | 2,035.76 | 0.106 | 0.06062 | 0.06072 | 0.06073 |
| ____ MO | 0.20219 | 127.29 | 0.429 | 0.20232 | 0.20298 | 0.20126 |
| ____ NA | 25.59754 | 18,341.01 | 0.444 | 25.54494 | 25.51982 | 25.72786 |
| ____ NI | 0.15111 | 341.99 | 0.793 | 0.14994 | 0.15105 | 0.15233 |
| ____ P | 1.00771 | 124.09 | 1.376 | 1.00875 | 0.99335 | 1.02103 |
| ____ PB | 0.50302 | 249.59 | 1.134 | 0.50021 | 0.49926 | 0.50958 |
| ____ S | 13.62336 | 749.81 | 0.284 | 13.59262 | 13.61066 | 13.66680 |
| ____ SB | 0.40261 | 65.80 | 1.508 | 0.39993 | 0.40956 | 0.39833 |
| ____ SE | 0.75664 | 43.51 | 0.646 | 0.76224 | 0.75325 | 0.75443 |
| ____ SI | 14.94859 | 2,329.23 | 0.220 | 14.95222 | 14.91400 | 14.97956 |
| ____ SN | 0.59669 | 170.81 | 0.640 | 0.59265 | 0.60024 | 0.59719 |
| ____ SR | 0.27209 | 138,807.27 | 0.135 | 0.27236 | 0.27167 | 0.27223 |
| ____ TE | 0.20065 | 63.27 | 1.456 | 0.20321 | 0.20126 | 0.19747 |
| ____ TH | 0.49023 | 15.69 | 9.392 | 0.54079 | 0.47919 | 0.45072 |
| ____ TI | 0.10665 | 3,644.52 | 0.106 | 0.10654 | 0.10676 | 0.10665 |
| ____ TL | 1.01236 | 69.81 | 1.036 | 1.00064 | 1.02086 | 1.01557 |
| ____ V | 0.10579 | 1,168.69 | 0.163 | 0.10570 | 0.10598 | 0.10568 |
| ____ W | 0.20949 | 80.50 | 1.383 | 0.20686 | 0.20900 | 0.21260 |
| ____ Y1 | 5029.99033 | 5,029.99 | 0.312 | 5032.23678 | 5044.43056 | 5013.30367 |
| ____ Y2A | 178406.83027 | 178,406.83 | 0.504 | 177395.95793 | 179119.66068 | 178704.87220 |
| ____ Y2R | 11668.68595 | 11,668.69 | 0.247 | 11701.71760 | 11648.56986 | 11655.77038 |
| ____ ZN | 0.13203 | 355.85 | 0.607 | 0.13123 | 0.13201 | 0.13284 |
| ____ ZR | 1.00871 | 1,910.10 | 0.541 | 1.00422 | 1.00711 | 1.01479 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 16 Date/Time: 08/30/2017 06:16

Sample Number: **9175055** Class: D*** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00010 | -79.78 | 1382.859 | -0.00042 | -0.00100 | 0.00173 |
| ____ AL | 0.16143 | -20.08 | 29.325 | 0.21535 | 0.12673 | 0.14220 |
| ____ AS | -0.00570 | 1.32 | 119.281 | -0.00417 | -0.01314 | 0.00020 |
| ____ B | 0.06702 | 282.16 | 2.829 | 0.06860 | 0.06492 | 0.06753 |
| ____ BA | 0.11284 | 38,736.33 | 0.218 | 0.11288 | 0.11307 | 0.11258 |
| ____ BE | -0.00002 | -94.91 | 167.318 | 0.00001 | -0.00003 | -0.00004 |
| ____ CA | 41.21299 | 36,888.60 | 0.273 | 41.34284 | 41.14497 | 41.15117 |
| ____ CD | -0.00002 | -9.85 | 1375.717 | -0.00016 | -0.00011 | 0.00023 |
| ____ CO | 0.00050 | -8.69 | 50.500 | 0.00064 | 0.00021 | 0.00065 |
| ____ CR | 0.00326 | -2.82 | 23.469 | 0.00239 | 0.00354 | 0.00384 |
| ____ CU | 0.00473 | -19.05 | 11.884 | 0.00461 | 0.00423 | 0.00534 |
| ____ FE | 0.02873 | -13.74 | 41.010 | 0.03083 | 0.03931 | 0.01603 |
| ____ K | 2.25188 | 786.21 | 3.154 | 2.26197 | 2.17634 | 2.31732 |
| ____ LI | 0.01795 | 157.77 | 34.268 | 0.02226 | 0.02069 | 0.01091 |
| ____ MG | 5.76520 | 8,528.60 | 0.360 | 5.78877 | 5.74957 | 5.75724 |
| ____ MN | 0.00057 | 37.65 | 15.762 | 0.00060 | 0.00047 | 0.00064 |
| ____ MO | 0.00284 | 2.36 | 49.201 | 0.00419 | 0.00293 | 0.00140 |
| ____ NA | 24.66242 | 17,675.77 | 0.412 | 24.77062 | 24.56911 | 24.64752 |
| ____ NI | -0.00031 | 12.34 | 54.627 | -0.00037 | -0.00012 | -0.00044 |
| ____ P | 0.00555 | 0.71 | 49.151 | 0.00272 | 0.00577 | 0.00817 |
| ____ PB | 0.00369 | -4.39 | 124.432 | 0.00563 | -0.00155 | 0.00700 |
| ____ S | 13.20285 | 734.10 | 0.336 | 13.21914 | 13.15264 | 13.23677 |
| ____ SB | 0.00436 | 1.43 | 121.106 | -0.00168 | 0.00814 | 0.00663 |
| ____ SE | -0.00597 | 0.53 | 234.057 | -0.01905 | -0.00758 | 0.00874 |
| ____ SI | 14.60434 | 2,280.20 | 0.527 | 14.69057 | 14.57955 | 14.54290 |
| ____ SN | 0.00040 | 0.92 | 546.699 | 0.00054 | 0.00248 | -0.00183 |
| ____ SR | 0.26434 | 135,676.68 | 0.118 | 0.26455 | 0.26398 | 0.26450 |
| ____ TE | -0.00091 | 5.17 | 645.534 | 0.00586 | -0.00471 | -0.00388 |
| ____ TH | 0.00080 | -18.95 | 5632.342 | -0.01853 | -0.03130 | 0.05223 |
| ____ TI | 0.00424 | 211.86 | 3.461 | 0.00429 | 0.00436 | 0.00408 |
| ____ TL | -0.00036 | -1.90 | 2606.430 | 0.00224 | 0.00755 | -0.01087 |
| ____ V | 0.00701 | 46.76 | 1.395 | 0.00712 | 0.00692 | 0.00700 |
| ____ W | 0.00321 | 2.73 | 25.679 | 0.00411 | 0.00249 | 0.00303 |
| ____ Y1 | 5080.04699 | 5,080.05 | 0.182 | 5071.66283 | 5078.48215 | 5089.99600 |
| ____ Y2A | 179495.22650 | 179,495.23 | 0.148 | 179765.09566 | 179488.17365 | 179232.41018 |
| ____ Y2R | 11697.36759 | 11,697.37 | 0.453 | 11646.30313 | 11693.75249 | 11752.04713 |
| ____ ZN | 0.01476 | 44.87 | 3.211 | 0.01425 | 0.01519 | 0.01484 |
| ____ ZR | -0.00242 | 20.74 | 152.329 | -0.00063 | -0.00666 | 0.00003 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 17 Date/Time: 08/30/2017 06:19

Sample Number: **9175053** Class: R*** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04562 | 290.72 | 5.177 | 0.04568 | 0.04323 | 0.04795 |
| ____ AL | 2.17160 | 175.65 | 4.227 | 2.13826 | 2.27540 | 2.10115 |
| ____ AS | 0.15510 | 18.22 | 6.761 | 0.16714 | 0.15020 | 0.14796 |
| ____ B | 2.04878 | 9,053.81 | 0.332 | 2.04186 | 2.05546 | 2.04902 |
| ____ BA | 2.16694 | 731,305.61 | 0.506 | 2.17324 | 2.17329 | 2.15428 |
| ____ BE | 0.05057 | 16,346.31 | 0.189 | 0.05046 | 0.05062 | 0.05063 |
| ____ CA | 45.57934 | 40,388.70 | 0.320 | 45.41321 | 45.63836 | 45.68645 |
| ____ CD | 0.05192 | 309.96 | 0.191 | 0.05204 | 0.05187 | 0.05186 |
| ____ CO | 0.51420 | 1,706.15 | 0.067 | 0.51446 | 0.51434 | 0.51381 |
| ____ CR | 0.20669 | 1,517.66 | 0.521 | 0.20710 | 0.20750 | 0.20547 |
| ____ CU | 0.27542 | 1,733.42 | 0.481 | 0.27393 | 0.27647 | 0.27586 |
| ____ FE | 1.04721 | 226.21 | 1.408 | 1.03036 | 1.05778 | 1.05348 |
| ____ K | 12.61088 | 3,043.36 | 0.241 | 12.63911 | 12.61481 | 12.57872 |
| ____ LI | 1.04662 | 4,528.18 | 0.407 | 1.04483 | 1.04354 | 1.05149 |
| ____ MG | 7.86036 | 11,528.05 | 0.184 | 7.84511 | 7.86208 | 7.87388 |
| ____ MN | 0.52533 | 17,499.83 | 0.231 | 0.52407 | 0.52649 | 0.52544 |
| ____ MO | 2.11193 | 1,328.43 | 0.161 | 2.11578 | 2.10937 | 2.11063 |
| ____ NA | 34.74403 | 25,093.70 | 0.435 | 34.58241 | 34.76778 | 34.88191 |
| ____ NI | 0.53020 | 1,171.15 | 0.237 | 0.53130 | 0.52883 | 0.53047 |
| ____ P | 1.04386 | 128.94 | 1.315 | 1.05254 | 1.02803 | 1.05100 |
| ____ PB | 0.15709 | 74.01 | 1.588 | 0.15974 | 0.15478 | 0.15675 |
| ____ S | 14.32596 | 791.06 | 0.179 | 14.33950 | 14.34195 | 14.29643 |
| ____ SB | 0.56079 | 88.49 | 1.337 | 0.56621 | 0.55223 | 0.56392 |
| ____ SE | 0.13538 | 8.61 | 20.984 | 0.11114 | 0.16664 | 0.12837 |
| ____ SI | 15.81937 | 2,450.81 | 0.343 | 15.77099 | 15.80908 | 15.87804 |
| ____ SN | 4.15708 | 1,188.91 | 0.181 | 4.16410 | 4.15803 | 4.14910 |
| ____ SR | 1.28803 | 655,420.10 | 0.062 | 1.28714 | 1.28830 | 1.28865 |
| ____ TE | 0.19673 | 63.09 | 2.104 | 0.19456 | 0.19412 | 0.20150 |
| ____ TH | 0.58427 | 22.09 | 5.872 | 0.60907 | 0.54512 | 0.59861 |
| ____ TI | 1.06523 | 35,670.25 | 0.123 | 1.06465 | 1.06674 | 1.06431 |
| ____ TL | 0.16512 | 7.70 | 4.994 | 0.16953 | 0.17022 | 0.15560 |
| ____ V | 0.52244 | 5,711.40 | 0.442 | 0.52175 | 0.52502 | 0.52055 |
| ____ W | 0.21601 | 84.80 | 0.575 | 0.21463 | 0.21638 | 0.21702 |
| ____ Y1 | 5045.56211 | 5,045.56 | 0.227 | 5047.60024 | 5055.85941 | 5033.22668 |
| ____ Y2A | 177841.05524 | 177,841.06 | 0.249 | 177941.42343 | 177356.35746 | 178225.38485 |
| ____ Y2R | 11586.89804 | 11,586.90 | 0.186 | 11604.68251 | 11562.86113 | 11593.15048 |
| ____ ZN | 0.52758 | 1,403.50 | 0.121 | 0.52788 | 0.52685 | 0.52801 |
| ____ ZR | 1.06191 | 1,999.74 | 0.849 | 1.05284 | 1.07088 | 1.06202 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 18 Date/Time: 08/30/2017 06:22

Sample Number: **9175054** Class: M*** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04633 | 301.13 | 2.500 | 0.04713 | 0.04500 | 0.04685 |
| ____ AL | 2.25459 | 174.83 | 7.766 | 2.13261 | 2.17594 | 2.45522 |
| ____ AS | 0.17117 | 19.75 | 3.831 | 0.17092 | 0.16473 | 0.17784 |
| ____ B | 2.08611 | 9,181.27 | 0.088 | 2.08441 | 2.08587 | 2.08804 |
| ____ BA | 2.21553 | 744,683.19 | 0.626 | 2.20685 | 2.23153 | 2.20822 |
| ____ BE | 0.05101 | 16,422.10 | 0.349 | 0.05107 | 0.05115 | 0.05081 |
| ____ CA | 48.69193 | 41,171.03 | 10.387 | 45.68847 | 45.85603 | 54.53129 |
| ____ CD | 0.05235 | 310.51 | 0.367 | 0.05257 | 0.05224 | 0.05222 |
| ____ CO | 0.52205 | 1,720.85 | 0.268 | 0.52314 | 0.52253 | 0.52047 |
| ____ CR | 0.20858 | 1,525.55 | 0.761 | 0.20723 | 0.20818 | 0.21032 |
| ____ CU | 0.28051 | 1,754.24 | 0.688 | 0.28237 | 0.28064 | 0.27852 |
| ____ FE | 1.10969 | 229.87 | 10.351 | 1.03707 | 1.04988 | 1.24211 |
| ____ K | 13.48236 | 3,088.12 | 10.738 | 12.78725 | 12.51330 | 15.14653 |
| ____ LI | 1.13063 | 4,662.56 | 10.790 | 1.06698 | 1.05362 | 1.27129 |
| ____ MG | 8.38300 | 11,736.59 | 10.423 | 7.88784 | 7.86932 | 9.39183 |
| ____ MN | 0.53272 | 17,674.12 | 0.473 | 0.53274 | 0.53019 | 0.53523 |
| ____ MO | 2.13684 | 1,335.26 | 0.565 | 2.15066 | 2.13152 | 2.12835 |
| ____ NA | 37.04323 | 25,605.26 | 9.974 | 34.98208 | 34.83903 | 41.30858 |
| ____ NI | 0.53628 | 1,176.56 | 0.103 | 0.53691 | 0.53589 | 0.53604 |
| ____ P | 1.05732 | 129.75 | 0.664 | 1.05006 | 1.06408 | 1.05782 |
| ____ PB | 0.16174 | 75.91 | 2.147 | 0.16524 | 0.15830 | 0.16168 |
| ____ S | 14.48763 | 794.76 | 0.386 | 14.51356 | 14.52585 | 14.42350 |
| ____ SB | 0.55910 | 87.59 | 0.669 | 0.56312 | 0.55573 | 0.55844 |
| ____ SE | 0.13387 | 8.47 | 10.077 | 0.13425 | 0.12020 | 0.14717 |
| ____ SI | 16.93263 | 2,503.50 | 10.586 | 15.88331 | 15.91214 | 19.00245 |
| ____ SN | 4.20294 | 1,194.13 | 0.294 | 4.21487 | 4.20381 | 4.19016 |
| ____ SR | 1.30184 | 659,757.23 | 0.433 | 1.30292 | 1.29575 | 1.30686 |
| ____ TE | 0.20607 | 65.37 | 0.553 | 0.20672 | 0.20673 | 0.20475 |
| ____ TH | 0.55626 | 19.25 | 8.754 | 0.51242 | 0.54769 | 0.60867 |
| ____ TI | 1.07936 | 35,995.94 | 0.040 | 1.07966 | 1.07956 | 1.07886 |
| ____ TL | 0.15729 | 7.06 | 8.836 | 0.17210 | 0.14453 | 0.15524 |
| ____ V | 0.52993 | 5,769.67 | 0.305 | 0.52834 | 0.53157 | 0.52986 |
| ____ W | 0.21981 | 85.68 | 1.686 | 0.22328 | 0.22025 | 0.21591 |
| ____ Y1 | 5012.47875 | 5,012.48 | 0.343 | 4995.30547 | 5012.42376 | 5029.70703 |
| ____ Y2A | 177119.69737 | 177,119.70 | 0.287 | 177422.58097 | 177404.38824 | 176532.12291 |
| ____ Y2R | 11132.68654 | 11,132.69 | 9.373 | 11678.92059 | 11789.59039 | 9929.54863 |
| ____ ZN | 0.53201 | 1,406.00 | 0.433 | 0.53181 | 0.53441 | 0.52981 |
| ____ ZR | 1.13571 | 2,035.63 | 10.682 | 1.06336 | 1.06801 | 1.27576 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 19 Date/Time: 08/30/2017 06:26

Sample Number: **9175052** Class: UL** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00014 | -77.55 | 1187.414 | -0.00122 | -0.00039 | 0.00203 |
| ____ AL | 0.14464 | -21.90 | 52.032 | 0.14361 | 0.22041 | 0.06990 |
| ____ AS | 0.00409 | 2.36 | 215.163 | -0.00533 | 0.01208 | 0.00551 |
| ____ B | 0.01994 | 79.46 | 1.498 | 0.02027 | 0.01986 | 0.01969 |
| ____ BA | 0.02136 | 7,658.88 | 0.542 | 0.02141 | 0.02144 | 0.02122 |
| ____ BE | 0.00009 | -63.37 | 31.006 | 0.00012 | 0.00007 | 0.00007 |
| ____ CA | 7.82525 | 7,057.44 | 0.175 | 7.82162 | 7.81372 | 7.84041 |
| ____ CD | -0.00014 | -10.71 | 59.224 | -0.00023 | -0.00012 | -0.00007 |
| ____ CO | 0.00115 | -5.54 | 77.557 | 0.00208 | 0.00108 | 0.00029 |
| ____ CR | 0.00143 | -16.68 | 99.881 | -0.00018 | 0.00192 | 0.00256 |
| ____ CU | 0.00709 | -9.84 | 42.306 | 0.00914 | 0.00847 | 0.00365 |
| ____ FE | 0.01608 | -16.74 | 62.071 | 0.02755 | 0.01128 | 0.00941 |
| ____ K | 0.45228 | 388.87 | 47.161 | 0.57275 | 0.20600 | 0.57809 |
| ____ LI | 0.00960 | 121.96 | 20.165 | 0.01180 | 0.00815 | 0.00886 |
| ____ MG | 1.10788 | 1,602.63 | 0.143 | 1.10606 | 1.10891 | 1.10868 |
| ____ MN | 0.00025 | 27.51 | 67.771 | 0.00031 | 0.00006 | 0.00039 |
| ____ MO | -0.00021 | 0.43 | 310.593 | -0.00076 | -0.00039 | 0.00052 |
| ____ NA | 5.27083 | 2,946.60 | 1.113 | 5.32290 | 5.28229 | 5.20729 |
| ____ NI | -0.00141 | 11.12 | 60.995 | -0.00071 | -0.00237 | -0.00115 |
| ____ P | 0.00371 | 0.49 | 135.492 | 0.00949 | 0.00038 | 0.00126 |
| ____ PB | 0.00182 | -5.62 | 410.257 | -0.00465 | 0.00014 | 0.00996 |
| ____ S | 2.48436 | 137.14 | 0.892 | 2.46224 | 2.50654 | 2.48430 |
| ____ SB | 0.00315 | 1.24 | 100.675 | 0.00047 | 0.00664 | 0.00232 |
| ____ SE | 0.00353 | 1.08 | 330.149 | -0.00362 | -0.00276 | 0.01696 |
| ____ SI | 2.75772 | 431.80 | 0.673 | 2.75542 | 2.74043 | 2.77732 |
| ____ SN | 0.00206 | 1.41 | 111.817 | 0.00324 | -0.00059 | 0.00353 |
| ____ SR | 0.05004 | 25,805.02 | 0.182 | 0.05011 | 0.05008 | 0.04994 |
| ____ TE | 0.00178 | 5.99 | 147.847 | 0.00480 | 0.00066 | -0.00010 |
| ____ TH | -0.02249 | -20.55 | 258.324 | -0.04615 | -0.06503 | 0.04371 |
| ____ TI | 0.00079 | 96.34 | 69.170 | 0.00037 | 0.00060 | 0.00141 |
| ____ TL | 0.00758 | -1.31 | 106.273 | 0.01352 | 0.01083 | -0.00159 |
| ____ V | 0.00073 | -25.97 | 97.739 | 0.00014 | 0.00153 | 0.00054 |
| ____ W | 0.00300 | 2.62 | 71.658 | 0.00313 | 0.00507 | 0.00078 |
| ____ Y1 | 5117.50658 | 5,117.51 | 0.146 | 5113.49865 | 5112.91871 | 5126.10239 |
| ____ Y2A | 180953.27634 | 180,953.28 | 0.332 | 180303.45755 | 181070.39343 | 181485.97804 |
| ____ Y2R | 11693.42896 | 11,693.43 | 0.609 | 11617.54438 | 11703.95655 | 11758.78594 |
| ____ ZN | 0.00287 | 13.44 | 15.670 | 0.00339 | 0.00262 | 0.00261 |
| ____ ZR | 0.00522 | 33.30 | 63.901 | 0.00796 | 0.00151 | 0.00619 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 20 Date/Time: 08/30/2017 06:29

Sample Number: **9168294** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00036 | -71.37 | 673.947 | -0.00009 | -0.00181 | 0.00298 |
| ____ AL | 0.19817 | -17.88 | 11.127 | 0.18287 | 0.18819 | 0.22344 |
| ____ AS | 0.00427 | 2.37 | 268.512 | 0.01736 | -0.00066 | -0.00390 |
| ____ B | 0.00459 | 11.99 | 15.996 | 0.00394 | 0.00539 | 0.00445 |
| ____ BA | 0.00063 | 547.66 | 14.990 | 0.00069 | 0.00067 | 0.00052 |
| ____ BE | 0.00011 | -54.26 | 21.425 | 0.00014 | 0.00010 | 0.00010 |
| ____ CA | 0.10614 | 134.97 | 31.786 | 0.08727 | 0.08606 | 0.14509 |
| ____ CD | 0.00019 | -8.62 | 54.492 | 0.00026 | 0.00007 | 0.00024 |
| ____ CO | 0.00098 | -5.90 | 14.453 | 0.00096 | 0.00112 | 0.00084 |
| ____ CR | 0.00254 | -8.34 | 30.592 | 0.00272 | 0.00321 | 0.00169 |
| ____ CU | 0.00642 | -22.82 | 34.039 | 0.00400 | 0.00701 | 0.00824 |
| ____ FE | 0.02616 | -14.58 | 62.334 | 0.01235 | 0.04416 | 0.02198 |
| ____ K | -0.12350 | 266.27 | 106.252 | -0.10283 | -0.00384 | -0.26383 |
| ____ LI | 0.00509 | 104.35 | 48.929 | 0.00221 | 0.00653 | 0.00652 |
| ____ MG | 0.02520 | -9.70 | 35.378 | 0.02410 | 0.01689 | 0.03462 |
| ____ MN | 0.00076 | 45.99 | 33.866 | 0.00048 | 0.00099 | 0.00082 |
| ____ MO | -0.00090 | -0.01 | 183.918 | -0.00211 | 0.00099 | -0.00158 |
| ____ NA | 0.87360 | -398.43 | 3.785 | 0.89458 | 0.83548 | 0.89074 |
| ____ NI | -0.00024 | 13.90 | 141.668 | -0.00042 | 0.00015 | -0.00046 |
| ____ P | 0.00117 | 0.17 | 225.707 | 0.00364 | 0.00151 | -0.00163 |
| ____ PB | -0.00188 | -7.57 | 133.556 | -0.00458 | 0.00038 | -0.00143 |
| ____ S | -0.01682 | -3.42 | 35.966 | -0.01977 | -0.00986 | -0.02084 |
| ____ SB | 0.00232 | 1.11 | 219.850 | 0.00541 | 0.00511 | -0.00357 |
| ____ SE | 0.00769 | 1.31 | 14.688 | 0.00677 | 0.00735 | 0.00895 |
| ____ SI | 0.25167 | 41.63 | 3.643 | 0.24173 | 0.25350 | 0.25979 |
| ____ SN | 0.00149 | 1.24 | 52.911 | 0.00225 | 0.00157 | 0.00067 |
| ____ SR | 0.00038 | 87.58 | 13.854 | 0.00044 | 0.00035 | 0.00035 |
| ____ TE | 0.00274 | 6.25 | 159.554 | 0.00122 | -0.00067 | 0.00767 |
| ____ TH | -0.07584 | -24.65 | 46.023 | -0.05729 | -0.11610 | -0.05413 |
| ____ TI | 0.00029 | 79.77 | 46.153 | 0.00045 | 0.00020 | 0.00024 |
| ____ TL | -0.00275 | -2.05 | 263.354 | -0.00927 | -0.00401 | 0.00504 |
| ____ V | -0.00025 | -39.19 | 287.807 | -0.00018 | 0.00043 | -0.00099 |
| ____ W | 0.00186 | 2.17 | 72.348 | 0.00241 | 0.00033 | 0.00284 |
| ____ Y1 | 5103.69963 | 5,103.70 | 0.597 | 5138.39616 | 5091.25087 | 5081.45185 |
| ____ Y2A | 181942.50736 | 181,942.51 | 0.399 | 182422.55598 | 181106.76823 | 182298.19788 |
| ____ Y2R | 11891.34167 | 11,891.34 | 0.241 | 11913.97500 | 11859.20000 | 11900.85000 |
| ____ ZN | 0.00236 | 12.06 | 19.291 | 0.00203 | 0.00288 | 0.00218 |
| ____ ZR | 0.00050 | 21.55 | 1052.890 | -0.00425 | 0.00615 | -0.00040 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 21 Date/Time: 08/30/2017 06:33

Sample Number: **9170838** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00043 | -81.06 | 388.401 | -0.00103 | 0.00225 | 0.00007 |
| ____ AL | 0.13267 | -22.67 | 39.946 | 0.16985 | 0.15618 | 0.07199 |
| ____ AS | -0.00010 | 1.93 | 4318.589 | -0.00323 | 0.00488 | -0.00195 |
| ____ B | 0.00215 | 0.80 | 54.312 | 0.00280 | 0.00080 | 0.00284 |
| ____ BA | 0.00049 | 503.09 | 12.250 | 0.00055 | 0.00043 | 0.00050 |
| ____ BE | 0.00011 | -54.96 | 20.774 | 0.00014 | 0.00009 | 0.00011 |
| ____ CA | 0.07410 | 104.50 | 10.034 | 0.07556 | 0.06604 | 0.08070 |
| ____ CD | 0.00004 | -9.61 | 428.237 | -0.00014 | 0.00023 | 0.00004 |
| ____ CO | 0.00164 | -3.69 | 74.292 | 0.00174 | 0.00038 | 0.00281 |
| ____ CR | 0.00131 | -17.80 | 41.958 | 0.00100 | 0.00195 | 0.00099 |
| ____ CU | 0.00592 | -10.36 | 51.642 | 0.00943 | 0.00393 | 0.00438 |
| ____ FE | 0.00523 | -19.42 | 495.890 | 0.01457 | -0.02407 | 0.02518 |
| ____ K | -0.03213 | 283.60 | 870.508 | -0.04940 | -0.30276 | 0.25578 |
| ____ LI | 0.00257 | 92.38 | 172.522 | -0.00248 | 0.00584 | 0.00436 |
| ____ MG | 0.02402 | -11.38 | 13.491 | 0.02631 | 0.02031 | 0.02543 |
| ____ MN | 0.00066 | 40.61 | 21.942 | 0.00079 | 0.00068 | 0.00050 |
| ____ MO | -0.00047 | 0.27 | 270.304 | -0.00030 | 0.00070 | -0.00180 |
| ____ NA | 0.85239 | -410.17 | 1.500 | 0.86509 | 0.83953 | 0.85254 |
| ____ NI | -0.00103 | 12.25 | 34.704 | -0.00062 | -0.00120 | -0.00127 |
| ____ P | 0.00186 | 0.26 | 307.304 | 0.00816 | 0.00038 | -0.00296 |
| ____ PB | 0.00178 | -5.72 | 305.669 | 0.00727 | -0.00361 | 0.00168 |
| ____ S | -0.02208 | -3.74 | 82.795 | -0.00303 | -0.03947 | -0.02374 |
| ____ SB | 0.00088 | 0.87 | 460.018 | 0.00122 | -0.00331 | 0.00472 |
| ____ SE | 0.00145 | 0.96 | 1057.045 | -0.01621 | 0.01044 | 0.01011 |
| ____ SI | 0.26808 | 43.73 | 4.793 | 0.25339 | 0.27361 | 0.27724 |
| ____ SN | -0.00255 | 0.07 | 64.712 | -0.00246 | -0.00095 | -0.00425 |
| ____ SR | 0.00033 | 64.93 | 6.445 | 0.00035 | 0.00031 | 0.00035 |
| ____ TE | 0.00611 | 7.29 | 41.859 | 0.00754 | 0.00316 | 0.00764 |
| ____ TH | 0.03212 | -16.87 | 239.834 | -0.02227 | -0.00164 | 0.12026 |
| ____ TI | -0.00002 | 69.20 | 2067.411 | -0.00042 | 0.00050 | -0.00014 |
| ____ TL | 0.00914 | -1.20 | 112.695 | 0.01379 | -0.00267 | 0.01631 |
| ____ V | -0.00046 | -38.37 | 152.829 | -0.00127 | -0.00015 | 0.00003 |
| ____ W | 0.00213 | 2.29 | 45.909 | 0.00286 | 0.00102 | 0.00251 |
| ____ Y1 | 5139.41773 | 5,139.42 | 0.137 | 5146.91531 | 5138.42116 | 5132.91671 |
| ____ Y2A | 182656.21212 | 182,656.21 | 0.529 | 181867.27626 | 182366.50558 | 183734.85452 |
| ____ Y2R | 11756.43333 | 11,756.43 | 0.437 | 11699.20000 | 11771.45000 | 11798.65000 |
| ____ ZN | 0.00132 | 9.32 | 35.983 | 0.00077 | 0.00162 | 0.00156 |
| ____ ZR | 0.00236 | 31.68 | 160.149 | 0.00667 | 0.00076 | -0.00036 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 22

Date/Time: 08/30/2017 06:36

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49351 | 3,972.80 | 0.825 | 0.49726 | 0.48918 | 0.49410 |
| ____ AL | 25.06909 | 2,171.91 | 0.263 | 25.06326 | 25.13768 | 25.00633 |
| ____ AS | 0.49543 | 52.44 | 0.559 | 0.49226 | 0.49741 | 0.49661 |
| ____ B | 0.49203 | 2,242.47 | 0.613 | 0.49254 | 0.48878 | 0.49475 |
| ____ BA | 0.50268 | 168,967.23 | 0.412 | 0.50427 | 0.50034 | 0.50344 |
| ____ BE | 0.47566 | 152,910.36 | 0.409 | 0.47667 | 0.47341 | 0.47689 |
| ____ CA | 25.15052 | 22,177.09 | 0.360 | 25.13057 | 25.24940 | 25.07160 |
| ____ CD | 0.49596 | 3,026.31 | 0.275 | 0.49730 | 0.49458 | 0.49599 |
| ____ CO | 0.49507 | 1,627.45 | 0.330 | 0.49679 | 0.49353 | 0.49488 |
| ____ CR | 0.48562 | 3,581.68 | 0.497 | 0.48594 | 0.48306 | 0.48786 |
| ____ CU | 0.50491 | 3,242.17 | 0.442 | 0.50578 | 0.50238 | 0.50658 |
| ____ FE | 24.85194 | 5,740.95 | 0.711 | 24.65518 | 24.99696 | 24.90368 |
| ____ K | 25.00162 | 5,706.93 | 0.856 | 25.01176 | 25.21037 | 24.78272 |
| ____ LI | 0.50643 | 2,214.92 | 0.190 | 0.50731 | 0.50658 | 0.50540 |
| ____ MG | 25.03313 | 36,340.79 | 0.413 | 24.93741 | 25.14262 | 25.01935 |
| ____ MN | 0.49942 | 16,540.38 | 0.434 | 0.50063 | 0.49691 | 0.50070 |
| ____ MO | 0.49545 | 310.11 | 0.547 | 0.49851 | 0.49449 | 0.49336 |
| ____ NA | 25.13522 | 17,724.85 | 0.229 | 25.08212 | 25.19658 | 25.12696 |
| ____ NI | 0.50026 | 1,094.60 | 0.616 | 0.50290 | 0.49688 | 0.50101 |
| ____ P | 0.50191 | 61.62 | 0.727 | 0.50314 | 0.50478 | 0.49780 |
| ____ PB | 0.49870 | 248.17 | 0.552 | 0.50112 | 0.49927 | 0.49570 |
| ____ S | 24.43210 | 1,342.18 | 0.215 | 24.49252 | 24.39750 | 24.40629 |
| ____ SB | 0.49572 | 80.71 | 0.341 | 0.49382 | 0.49626 | 0.49708 |
| ____ SE | 0.48590 | 28.20 | 2.815 | 0.49286 | 0.49470 | 0.47014 |
| ____ SI | 25.13791 | 3,858.65 | 0.554 | 25.14557 | 25.27331 | 24.99486 |
| ____ SN | 0.48668 | 139.02 | 0.692 | 0.48575 | 0.49041 | 0.48387 |
| ____ SR | 0.50443 | 255,138.27 | 0.377 | 0.50599 | 0.50231 | 0.50499 |
| ____ TE | 0.49399 | 148.43 | 1.215 | 0.49645 | 0.48714 | 0.49836 |
| ____ TH | 0.48783 | 16.32 | 4.379 | 0.50731 | 0.46498 | 0.49119 |
| ____ TI | 0.51109 | 17,074.30 | 0.470 | 0.51223 | 0.50833 | 0.51270 |
| ____ TL | 0.51555 | 32.73 | 2.019 | 0.52748 | 0.50832 | 0.51085 |
| ____ V | 0.50333 | 5,626.37 | 0.402 | 0.50552 | 0.50154 | 0.50292 |
| ____ W | 0.49354 | 187.84 | 0.732 | 0.49754 | 0.49051 | 0.49258 |
| ____ Y1 | 5013.89528 | 5,013.90 | 0.376 | 4997.02530 | 5034.22658 | 5010.43396 |
| ____ Y2A | 176818.66261 | 176,818.66 | 0.573 | 175649.02695 | 177382.83590 | 177424.12500 |
| ____ Y2R | 11496.32806 | 11,496.33 | 0.771 | 11525.70373 | 11396.73046 | 11566.55000 |
| ____ ZN | 0.49259 | 1,309.55 | 0.390 | 0.49454 | 0.49070 | 0.49253 |
| ____ ZR | 0.51005 | 978.82 | 1.325 | 0.50331 | 0.51682 | 0.51002 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 23

Date/Time: 08/30/2017 06:39

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00090 | -86.08 | 267.866 | 0.00056 | 0.00043 | -0.00369 |
| ____ AL | 0.19844 | -17.00 | 30.720 | 0.16733 | 0.15932 | 0.26868 |
| ____ AS | 0.00327 | 2.24 | 299.863 | 0.00057 | 0.01415 | -0.00491 |
| ____ B | 0.00166 | -1.15 | 11.696 | 0.00181 | 0.00144 | 0.00174 |
| ____ BA | 0.00003 | 337.15 | 325.618 | 0.00000 | -0.00005 | 0.00014 |
| ____ BE | 0.00011 | -56.45 | 32.949 | 0.00007 | 0.00014 | 0.00011 |
| ____ CA | -0.01274 | 25.82 | 27.874 | -0.01053 | -0.01683 | -0.01085 |
| ____ CD | 0.00031 | -7.78 | 69.275 | 0.00029 | 0.00053 | 0.00011 |
| ____ CO | 0.00149 | -4.10 | 44.466 | 0.00112 | 0.00110 | 0.00226 |
| ____ CR | 0.00143 | -16.60 | 71.011 | 0.00136 | 0.00248 | 0.00045 |
| ____ CU | 0.00458 | -26.31 | 71.903 | 0.00802 | 0.00145 | 0.00428 |
| ____ FE | 0.02412 | -14.73 | 36.129 | 0.03275 | 0.02428 | 0.01533 |
| ____ K | -0.02569 | 281.57 | 668.498 | -0.05137 | 0.15743 | -0.18312 |
| ____ LI | 0.00829 | 115.55 | 52.514 | 0.00989 | 0.01160 | 0.00336 |
| ____ MG | 0.00270 | -42.78 | 179.238 | -0.00176 | 0.00201 | 0.00783 |
| ____ MN | -0.00026 | 10.07 | 65.873 | -0.00044 | -0.00023 | -0.00010 |
| ____ MO | -0.00028 | 0.38 | 352.284 | -0.00025 | 0.00070 | -0.00130 |
| ____ NA | 0.70162 | -519.13 | 3.755 | 0.67446 | 0.72707 | 0.70331 |
| ____ NI | -0.00026 | 13.71 | 270.972 | 0.00056 | -0.00076 | -0.00060 |
| ____ P | -0.00134 | -0.14 | 135.338 | -0.00342 | -0.00050 | -0.00010 |
| ____ PB | 0.00103 | -5.99 | 669.721 | 0.00897 | -0.00350 | -0.00238 |
| ____ S | -0.01481 | -3.27 | 97.289 | -0.02567 | 0.00153 | -0.02028 |
| ____ SB | -0.00169 | 0.44 | 273.208 | 0.00323 | -0.00594 | -0.00236 |
| ____ SE | 0.00404 | 1.09 | 364.445 | 0.01907 | 0.00341 | -0.01036 |
| ____ SI | 0.00322 | 2.18 | 101.336 | 0.00151 | 0.00117 | 0.00699 |
| ____ SN | -0.00077 | 0.58 | 56.259 | -0.00046 | -0.00127 | -0.00059 |
| ____ SR | 0.00022 | 5.02 | 5.378 | 0.00023 | 0.00022 | 0.00021 |
| ____ TE | 0.00075 | 5.60 | 1852.189 | -0.00059 | -0.01243 | 0.01527 |
| ____ TH | -0.01993 | -20.27 | 342.348 | -0.03532 | 0.05468 | -0.07914 |
| ____ TI | -0.00018 | 62.53 | 128.410 | -0.00041 | 0.00005 | -0.00018 |
| ____ TL | -0.00172 | -1.95 | 77.277 | -0.00246 | -0.00018 | -0.00250 |
| ____ V | -0.00100 | -45.63 | 89.075 | -0.00199 | -0.00027 | -0.00075 |
| ____ W | 0.00271 | 2.45 | 35.688 | 0.00227 | 0.00204 | 0.00381 |
| ____ Y1 | 5042.36243 | 5,042.36 | 0.348 | 5043.75562 | 5059.14909 | 5024.18258 |
| ____ Y2A | 179291.07679 | 179,291.08 | 0.890 | 181057.23042 | 177956.26997 | 178859.72997 |
| ____ Y2R | 11619.91667 | 11,619.92 | 0.492 | 11584.90000 | 11588.95000 | 11685.90000 |
| ____ ZN | -0.00063 | 4.04 | 103.809 | -0.00094 | 0.00012 | -0.00107 |
| ____ ZR | -0.00023 | 23.32 | 3017.278 | -0.00313 | -0.00524 | 0.00768 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 24 Date/Time: 08/30/2017 06:43

Sample Number: **9172758** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00026 | -80.51 | 639.058 | -0.00212 | 0.00032 | 0.00102 |
| ____ AL | 0.18171 | -18.91 | 68.797 | 0.14206 | 0.08133 | 0.32173 |
| ____ AS | 0.00586 | 2.56 | 187.265 | 0.01098 | 0.01335 | -0.00674 |
| ____ B | 0.00232 | 1.69 | 15.329 | 0.00191 | 0.00250 | 0.00255 |
| ____ BA | 0.00063 | 553.26 | 2.408 | 0.00064 | 0.00062 | 0.00064 |
| ____ BE | 0.00011 | -55.23 | 34.011 | 0.00007 | 0.00011 | 0.00015 |
| ____ CA | 0.07612 | 106.91 | 5.903 | 0.07752 | 0.07109 | 0.07974 |
| ____ CD | 0.00005 | -9.58 | 992.822 | 0.00045 | 0.00019 | -0.00049 |
| ____ CO | 0.00092 | -6.13 | 83.046 | 0.00009 | 0.00109 | 0.00160 |
| ____ CR | 0.00059 | -23.32 | 164.619 | 0.00003 | 0.00003 | 0.00172 |
| ____ CU | 0.00852 | -3.23 | 4.476 | 0.00814 | 0.00890 | 0.00851 |
| ____ FE | 0.02685 | -14.33 | 30.809 | 0.02819 | 0.03438 | 0.01799 |
| ____ K | -0.04248 | 282.77 | 299.508 | 0.07131 | -0.01890 | -0.17986 |
| ____ LI | -0.00145 | 75.41 | 358.890 | -0.00100 | -0.00688 | 0.00352 |
| ____ MG | 0.02159 | -15.10 | 20.641 | 0.02238 | 0.01679 | 0.02559 |
| ____ MN | 0.00087 | 49.29 | 12.828 | 0.00077 | 0.00099 | 0.00086 |
| ____ MO | -0.00067 | 0.14 | 103.672 | -0.00111 | 0.00013 | -0.00103 |
| ____ NA | 0.84825 | -415.57 | 0.403 | 0.84529 | 0.84746 | 0.85198 |
| ____ NI | -0.00011 | 14.31 | 1172.198 | 0.00022 | 0.00097 | -0.00152 |
| ____ P | 0.00118 | 0.17 | 395.790 | 0.00507 | -0.00398 | 0.00244 |
| ____ PB | 0.00523 | -3.93 | 91.499 | 0.01044 | 0.00106 | 0.00417 |
| ____ S | -0.01686 | -3.45 | 27.375 | -0.01714 | -0.02133 | -0.01211 |
| ____ SB | -0.00286 | 0.25 | 255.117 | 0.00382 | -0.01065 | -0.00176 |
| ____ SE | -0.01017 | 0.30 | 3.540 | -0.01045 | -0.01030 | -0.00976 |
| ____ SI | 0.29010 | 47.44 | 4.355 | 0.29090 | 0.27708 | 0.30232 |
| ____ SN | -0.00072 | 0.61 | 123.386 | 0.00029 | -0.00106 | -0.00140 |
| ____ SR | 0.00036 | 79.11 | 10.677 | 0.00034 | 0.00034 | 0.00040 |
| ____ TE | 0.00410 | 6.71 | 230.914 | -0.00117 | 0.01504 | -0.00156 |
| ____ TH | -0.03745 | -21.82 | 33.948 | -0.05077 | -0.03612 | -0.02545 |
| ____ TI | 0.00029 | 80.09 | 140.108 | 0.00030 | 0.00070 | -0.00012 |
| ____ TL | 0.00620 | -1.42 | 65.720 | 0.00354 | 0.00417 | 0.01089 |
| ____ V | 0.00053 | -29.12 | 101.595 | 0.00019 | 0.00025 | 0.00114 |
| ____ W | 0.00153 | 2.06 | 27.034 | 0.00107 | 0.00186 | 0.00166 |
| ____ Y1 | 5146.13705 | 5,146.14 | 0.169 | 5139.09609 | 5155.83442 | 5143.48065 |
| ____ Y2A | 182852.75015 | 182,852.75 | 0.258 | 182402.33673 | 182813.39677 | 183342.51694 |
| ____ Y2R | 11820.79754 | 11,820.80 | 0.149 | 11818.30000 | 11804.60000 | 11839.49261 |
| ____ ZN | 0.00071 | 7.74 | 55.112 | 0.00075 | 0.00030 | 0.00108 |
| ____ ZR | 0.00288 | 28.34 | 105.437 | 0.00297 | 0.00587 | -0.00020 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 25 Date/Time: 08/30/2017 06:46

Sample Number: **9175047** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00060 | -75.01 | 112.709 | 0.00125 | 0.00067 | -0.00011 |
| ____ AL | 0.21583 | -15.49 | 37.455 | 0.12574 | 0.28203 | 0.23972 |
| ____ AS | 0.00661 | 2.61 | 23.336 | 0.00837 | 0.00548 | 0.00599 |
| ____ B | 0.05176 | 215.30 | 2.137 | 0.05049 | 0.05227 | 0.05251 |
| ____ BA | 0.10128 | 35,104.96 | 0.262 | 0.10154 | 0.10130 | 0.10101 |
| ____ BE | -0.00003 | -100.57 | 120.188 | -0.00007 | -0.00001 | -0.00001 |
| ____ CA | 47.73232 | 43,127.84 | 0.296 | 47.58711 | 47.74059 | 47.86926 |
| ____ CD | 0.00003 | -9.59 | 490.222 | 0.00022 | -0.00005 | -0.00007 |
| ____ CO | 0.00057 | -8.52 | 135.808 | -0.00007 | 0.00143 | 0.00035 |
| ____ CR | 0.00277 | -6.51 | 32.590 | 0.00275 | 0.00188 | 0.00369 |
| ____ CU | 0.00580 | -13.22 | 21.565 | 0.00555 | 0.00470 | 0.00716 |
| ____ FE | 0.01566 | -17.01 | 58.225 | 0.01031 | 0.02619 | 0.01048 |
| ____ K | 2.66228 | 885.84 | 3.595 | 2.59885 | 2.77237 | 2.61563 |
| ____ LI | 0.01883 | 163.19 | 50.271 | 0.02302 | 0.00799 | 0.02546 |
| ____ MG | 6.61110 | 9,885.20 | 0.321 | 6.61478 | 6.58826 | 6.63025 |
| ____ MN | 0.00030 | 28.98 | 50.457 | 0.00045 | 0.00014 | 0.00031 |
| ____ MO | 0.00197 | 1.81 | 87.341 | 0.00384 | 0.00047 | 0.00158 |
| ____ NA | 25.41457 | 18,435.04 | 0.197 | 25.46281 | 25.36288 | 25.41802 |
| ____ NI | 0.00023 | 13.52 | 559.950 | 0.00111 | -0.00127 | 0.00086 |
| ____ P | 0.00609 | 0.78 | 116.515 | -0.00066 | 0.00544 | 0.01348 |
| ____ PB | 0.00785 | -2.24 | 17.671 | 0.00637 | 0.00912 | 0.00805 |
| ____ S | 16.33222 | 911.48 | 0.125 | 16.32166 | 16.35570 | 16.31929 |
| ____ SB | -0.00453 | -0.02 | 257.886 | 0.00656 | -0.01672 | -0.00343 |
| ____ SE | -0.00781 | 0.43 | 206.059 | -0.00064 | 0.00345 | -0.02625 |
| ____ SI | 15.32841 | 2,417.84 | 0.238 | 15.36865 | 15.29763 | 15.31895 |
| ____ SN | 0.00297 | 1.67 | 107.110 | 0.00276 | -0.00010 | 0.00626 |
| ____ SR | 0.29793 | 154,262.32 | 0.137 | 0.29828 | 0.29802 | 0.29748 |
| ____ TE | 0.00640 | 7.32 | 66.043 | 0.00805 | 0.00956 | 0.00160 |
| ____ TH | -0.01062 | -19.95 | 467.395 | 0.04400 | -0.02284 | -0.05303 |
| ____ TI | 0.00481 | 232.92 | 2.199 | 0.00493 | 0.00476 | 0.00473 |
| ____ TL | 0.00273 | -1.68 | 351.736 | 0.00818 | -0.00837 | 0.00839 |
| ____ V | 0.00655 | 41.53 | 1.513 | 0.00646 | 0.00665 | 0.00654 |
| ____ W | 0.00350 | 2.85 | 17.505 | 0.00417 | 0.00297 | 0.00335 |
| ____ Y1 | 5095.66710 | 5,095.67 | 0.224 | 5108.14919 | 5093.12569 | 5085.72643 |
| ____ Y2A | 181059.80540 | 181,059.81 | 0.530 | 179954.26465 | 181561.57869 | 181663.57285 |
| ____ Y2R | 11817.84562 | 11,817.85 | 0.293 | 11796.95609 | 11857.84901 | 11798.73178 |
| ____ ZN | 0.01655 | 49.76 | 1.722 | 0.01665 | 0.01622 | 0.01677 |
| ____ ZR | 0.00069 | 25.99 | 1056.715 | -0.00741 | 0.00292 | 0.00655 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 26 Date/Time: 08/30/2017 06:50

Sample Number: **9175048** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00022 | -78.42 | 1032.338 | -0.00183 | -0.00015 | 0.00263 |
| ____ AL | 0.20830 | -16.13 | 31.620 | 0.24209 | 0.25041 | 0.13240 |
| ____ AS | 0.00199 | 2.12 | 505.545 | 0.00228 | -0.00821 | 0.01190 |
| ____ B | 0.04890 | 201.77 | 2.613 | 0.04961 | 0.04967 | 0.04742 |
| ____ BA | 0.10400 | 35,909.03 | 0.599 | 0.10396 | 0.10464 | 0.10340 |
| ____ BE | -0.00007 | -112.01 | 15.170 | -0.00007 | -0.00006 | -0.00007 |
| ____ CA | 46.67697 | 42,055.33 | 0.359 | 46.82988 | 46.49750 | 46.70354 |
| ____ CD | 0.00003 | -9.55 | 560.066 | 0.00023 | -0.00003 | -0.00011 |
| ____ CO | 0.00110 | -6.70 | 42.829 | 0.00147 | 0.00125 | 0.00057 |
| ____ CR | 0.00331 | -2.43 | 14.613 | 0.00277 | 0.00344 | 0.00371 |
| ____ CU | 0.00624 | -9.41 | 22.829 | 0.00784 | 0.00581 | 0.00509 |
| ____ FE | 0.01388 | -17.39 | 50.842 | 0.02194 | 0.00881 | 0.01089 |
| ____ K | 2.52793 | 853.31 | 2.310 | 2.55737 | 2.46066 | 2.56575 |
| ____ LI | 0.02117 | 173.02 | 23.105 | 0.01866 | 0.01805 | 0.02681 |
| ____ MG | 6.45332 | 9,620.04 | 0.460 | 6.48748 | 6.43356 | 6.43892 |
| ____ MN | 0.00041 | 32.40 | 23.609 | 0.00049 | 0.00044 | 0.00030 |
| ____ MO | 0.00142 | 1.46 | 192.250 | 0.00326 | -0.00172 | 0.00272 |
| ____ NA | 25.06156 | 18,110.59 | 0.191 | 25.09724 | 25.08042 | 25.00701 |
| ____ NI | -0.00080 | 11.22 | 106.489 | -0.00160 | -0.00090 | 0.00010 |
| ____ P | 0.00921 | 1.17 | 69.865 | 0.00900 | 0.00288 | 0.01575 |
| ____ PB | 0.00382 | -4.31 | 5.887 | 0.00367 | 0.00408 | 0.00372 |
| ____ S | 15.90823 | 883.86 | 0.446 | 15.87238 | 15.98989 | 15.86243 |
| ____ SB | -0.00513 | -0.12 | 269.472 | 0.00761 | -0.01982 | -0.00317 |
| ____ SE | 0.00292 | 1.04 | 341.013 | -0.00815 | 0.00581 | 0.01109 |
| ____ SI | 14.98995 | 2,357.52 | 0.278 | 15.03013 | 14.94700 | 14.99273 |
| ____ SN | -0.00229 | 0.15 | 90.834 | -0.00468 | -0.00134 | -0.00086 |
| ____ SR | 0.29363 | 151,488.13 | 0.316 | 0.29317 | 0.29469 | 0.29302 |
| ____ TE | 0.00402 | 6.60 | 120.167 | 0.00788 | -0.00139 | 0.00556 |
| ____ TH | -0.00446 | -19.44 | 1336.722 | -0.05325 | -0.02215 | 0.06202 |
| ____ TI | 0.00430 | 214.80 | 2.529 | 0.00421 | 0.00442 | 0.00426 |
| ____ TL | -0.00008 | -1.87 | 1476.251 | 0.00379 | 0.00951 | -0.01355 |
| ____ V | 0.00512 | 25.10 | 9.002 | 0.00459 | 0.00534 | 0.00542 |
| ____ W | 0.00550 | 3.64 | 48.244 | 0.00727 | 0.00679 | 0.00245 |
| ____ Y1 | 5073.34433 | 5,073.34 | 0.104 | 5074.67253 | 5067.53325 | 5077.82722 |
| ____ Y2A | 180412.68194 | 180,412.68 | 0.543 | 180052.51096 | 179663.49800 | 181522.03685 |
| ____ Y2R | 11783.06359 | 11,783.06 | 0.827 | 11677.03552 | 11803.63193 | 11868.52332 |
| ____ ZN | 0.02619 | 75.05 | 0.716 | 0.02597 | 0.02632 | 0.02627 |
| ____ ZR | 0.00304 | 30.69 | 95.669 | 0.00263 | 0.00612 | 0.00035 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 27 Date/Time: 08/30/2017 06:53

Sample Number: **9175049** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00014 | -84.81 | 2387.046 | -0.00389 | 0.00200 | 0.00148 |
| ____ AL | 0.19235 | -16.88 | 13.429 | 0.22114 | 0.17119 | 0.18474 |
| ____ AS | 0.00242 | 2.13 | 300.047 | 0.00993 | -0.00453 | 0.00185 |
| ____ B | 0.04808 | 195.92 | 1.685 | 0.04880 | 0.04825 | 0.04720 |
| ____ BA | 0.10855 | 37,036.11 | 0.091 | 0.10852 | 0.10865 | 0.10846 |
| ____ BE | -0.00008 | -114.43 | 50.602 | -0.00004 | -0.00012 | -0.00007 |
| ____ CA | 48.50764 | 42,981.99 | 0.838 | 48.42371 | 48.94937 | 48.14984 |
| ____ CD | 0.00011 | -8.92 | 183.032 | -0.00013 | 0.00022 | 0.00025 |
| ____ CO | 0.00171 | -4.61 | 41.897 | 0.00089 | 0.00207 | 0.00218 |
| ____ CR | 0.00324 | -2.93 | 8.139 | 0.00354 | 0.00310 | 0.00307 |
| ____ CU | 0.00353 | -20.45 | 77.954 | 0.00300 | 0.00650 | 0.00108 |
| ____ FE | 0.02471 | -14.54 | 36.374 | 0.03033 | 0.01434 | 0.02945 |
| ____ K | 2.60510 | 856.13 | 4.381 | 2.60151 | 2.72100 | 2.49281 |
| ____ LI | 0.02164 | 171.91 | 25.491 | 0.02335 | 0.02609 | 0.01547 |
| ____ MG | 6.69975 | 9,825.78 | 0.683 | 6.69781 | 6.74647 | 6.65497 |
| ____ MN | 0.00119 | 57.38 | 11.120 | 0.00132 | 0.00106 | 0.00119 |
| ____ MO | 0.00250 | 2.11 | 42.452 | 0.00278 | 0.00133 | 0.00340 |
| ____ NA | 25.43046 | 18,093.29 | 0.554 | 25.34950 | 25.59318 | 25.34868 |
| ____ NI | 0.00044 | 13.71 | 34.980 | 0.00043 | 0.00059 | 0.00029 |
| ____ P | 0.01123 | 1.40 | 59.532 | 0.00832 | 0.01888 | 0.00650 |
| ____ PB | 0.00219 | -5.07 | 109.388 | 0.00113 | 0.00494 | 0.00051 |
| ____ S | 16.35675 | 896.27 | 0.395 | 16.42436 | 16.29568 | 16.35022 |
| ____ SB | -0.00512 | -0.12 | 35.536 | -0.00620 | -0.00614 | -0.00302 |
| ____ SE | -0.00068 | 0.82 | 2765.091 | 0.00206 | -0.02071 | 0.01661 |
| ____ SI | 15.30725 | 2,368.13 | 0.702 | 15.30510 | 15.41575 | 15.20092 |
| ____ SN | -0.00209 | 0.20 | 219.208 | 0.00221 | -0.00157 | -0.00692 |
| ____ SR | 0.30370 | 154,899.97 | 0.083 | 0.30398 | 0.30350 | 0.30362 |
| ____ TE | 0.00443 | 6.62 | 58.377 | 0.00691 | 0.00464 | 0.00175 |
| ____ TH | 0.04033 | -16.06 | 153.153 | 0.06893 | -0.03055 | 0.08260 |
| ____ TI | 0.00456 | 221.10 | 6.280 | 0.00425 | 0.00461 | 0.00482 |
| ____ TL | 0.00720 | -1.33 | 168.294 | 0.00517 | 0.02019 | -0.00378 |
| ____ V | 0.00523 | 27.40 | 8.885 | 0.00492 | 0.00576 | 0.00500 |
| ____ W | 0.00024 | 1.57 | 1056.372 | -0.00194 | 0.00294 | -0.00030 |
| ____ Y1 | 5003.07303 | 5,003.07 | 0.229 | 5000.92491 | 4992.82572 | 5015.46845 |
| ____ Y2A | 178350.79470 | 178,350.79 | 0.191 | 178284.64457 | 178047.80439 | 178719.93513 |
| ____ Y2R | 11591.46059 | 11,591.46 | 1.142 | 11564.98700 | 11474.29113 | 11735.10363 |
| ____ ZN | 0.01253 | 38.37 | 4.071 | 0.01311 | 0.01218 | 0.01230 |
| ____ ZR | -0.00104 | 25.56 | 627.467 | -0.00758 | 0.00545 | -0.00099 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 28 Date/Time: 08/30/2017 06:56

Sample Number: **9175056** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00065 | -73.34 | 322.172 | -0.00128 | 0.00288 | 0.00036 |
| ____ AL | 0.22826 | -14.04 | 21.602 | 0.17284 | 0.24467 | 0.26727 |
| ____ AS | 0.00048 | 1.95 | 1947.271 | -0.00616 | 0.01118 | -0.00357 |
| ____ B | 0.06510 | 270.73 | 2.214 | 0.06350 | 0.06629 | 0.06552 |
| ____ BA | 0.11314 | 38,444.13 | 0.941 | 0.11206 | 0.11316 | 0.11419 |
| ____ BE | -0.00004 | -101.59 | 22.376 | -0.00004 | -0.00003 | -0.00005 |
| ____ CA | 41.53672 | 36,672.80 | 0.201 | 41.57112 | 41.59752 | 41.44151 |
| ____ CD | -0.00004 | -9.89 | 393.521 | 0.00003 | -0.00020 | 0.00007 |
| ____ CO | 0.00127 | -6.04 | 40.313 | 0.00160 | 0.00154 | 0.00068 |
| ____ CR | 0.00222 | -10.56 | 46.244 | 0.00150 | 0.00176 | 0.00339 |
| ____ CU | 0.00640 | -9.75 | 7.592 | 0.00644 | 0.00590 | 0.00687 |
| ____ FE | 0.01728 | -16.23 | 41.708 | 0.02382 | 0.00955 | 0.01846 |
| ____ K | 2.22960 | 770.70 | 1.939 | 2.22737 | 2.18753 | 2.27390 |
| ____ LI | 0.01293 | 134.37 | 48.744 | 0.01670 | 0.01643 | 0.00565 |
| ____ MG | 5.80948 | 8,477.89 | 0.080 | 5.81304 | 5.81114 | 5.80426 |
| ____ MN | 0.00064 | 39.87 | 13.323 | 0.00063 | 0.00074 | 0.00057 |
| ____ MO | 0.00231 | 2.00 | 5.000 | 0.00243 | 0.00220 | 0.00231 |
| ____ NA | 24.81137 | 17,547.83 | 0.402 | 24.87888 | 24.69677 | 24.85847 |
| ____ NI | 0.00085 | 14.74 | 27.847 | 0.00064 | 0.00111 | 0.00080 |
| ____ P | 0.00223 | 0.30 | 468.382 | -0.00400 | -0.00358 | 0.01427 |
| ____ PB | 0.00622 | -3.06 | 7.965 | 0.00652 | 0.00564 | 0.00649 |
| ____ S | 13.32408 | 733.60 | 0.166 | 13.34014 | 13.29893 | 13.33315 |
| ____ SB | -0.00028 | 0.67 | 3845.645 | -0.00066 | 0.01047 | -0.01064 |
| ____ SE | 0.01245 | 1.56 | 216.620 | -0.00675 | 0.04328 | 0.00082 |
| ____ SI | 14.77725 | 2,275.92 | 0.137 | 14.78125 | 14.75537 | 14.79512 |
| ____ SN | -0.00148 | 0.38 | 84.059 | -0.00006 | -0.00238 | -0.00200 |
| ____ SR | 0.26602 | 135,164.33 | 0.511 | 0.26453 | 0.26634 | 0.26719 |
| ____ TE | 0.00101 | 5.68 | 285.186 | -0.00193 | 0.00114 | 0.00383 |
| ____ TH | -0.01149 | -19.53 | 762.668 | -0.11263 | 0.03984 | 0.03833 |
| ____ TI | 0.00429 | 211.21 | 3.567 | 0.00417 | 0.00446 | 0.00423 |
| ____ TL | -0.01002 | -2.57 | 52.999 | -0.00406 | -0.01426 | -0.01175 |
| ____ V | 0.00646 | 39.64 | 8.656 | 0.00709 | 0.00605 | 0.00622 |
| ____ W | 0.00132 | 1.99 | 186.373 | -0.00040 | 0.00022 | 0.00414 |
| ____ Y1 | 5030.19698 | 5,030.20 | 0.176 | 5020.19298 | 5037.04130 | 5033.35666 |
| ____ Y2A | 177690.89974 | 177,690.90 | 0.721 | 179128.98565 | 177274.50199 | 176669.21158 |
| ____ Y2R | 11538.78233 | 11,538.78 | 0.501 | 11480.68862 | 11539.42384 | 11596.23452 |
| ____ ZN | 0.01457 | 43.95 | 2.071 | 0.01490 | 0.01431 | 0.01450 |
| ____ ZR | -0.00360 | 17.51 | 161.782 | 0.00312 | -0.00710 | -0.00683 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 29 Date/Time: 08/30/2017 07:00

Sample Number: **9175057** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00042 | -81.64 | 337.650 | 0.00117 | -0.00148 | -0.00093 |
| ____ AL | 0.16849 | -19.29 | 44.832 | 0.08235 | 0.22344 | 0.19966 |
| ____ AS | 0.00699 | 2.59 | 17.982 | 0.00677 | 0.00586 | 0.00834 |
| ____ B | 0.05525 | 226.19 | 0.799 | 0.05515 | 0.05486 | 0.05573 |
| ____ BA | 0.11743 | 39,735.54 | 0.582 | 0.11743 | 0.11674 | 0.11811 |
| ____ BE | -0.00001 | -92.49 | 211.354 | -0.00001 | -0.00004 | 0.00001 |
| ____ CA | 42.09293 | 37,082.72 | 0.146 | 42.06450 | 42.16331 | 42.05098 |
| ____ CD | -0.00010 | -10.16 | 219.707 | 0.00013 | -0.00029 | -0.00012 |
| ____ CO | 0.00095 | -7.04 | 67.673 | 0.00143 | 0.00022 | 0.00121 |
| ____ CR | 0.00351 | -0.85 | 39.622 | 0.00206 | 0.00365 | 0.00483 |
| ____ CU | 0.00519 | -17.81 | 49.650 | 0.00278 | 0.00791 | 0.00487 |
| ____ FE | 0.01822 | -15.97 | 50.779 | 0.02073 | 0.02596 | 0.00797 |
| ____ K | 2.27063 | 777.91 | 5.740 | 2.29614 | 2.12943 | 2.38632 |
| ____ LI | 0.02121 | 169.08 | 25.315 | 0.01502 | 0.02396 | 0.02464 |
| ____ MG | 5.84500 | 8,511.95 | 0.297 | 5.86370 | 5.84197 | 5.82932 |
| ____ MN | 0.00030 | 28.26 | 107.713 | 0.00060 | 0.00034 | -0.00004 |
| ____ MO | 0.00126 | 1.33 | 136.297 | 0.00169 | 0.00271 | -0.00063 |
| ____ NA | 24.91889 | 17,591.13 | 0.118 | 24.91963 | 24.94797 | 24.88906 |
| ____ NI | -0.00108 | 10.43 | 16.279 | -0.00089 | -0.00124 | -0.00109 |
| ____ P | 0.00622 | 0.78 | 2.788 | 0.00621 | 0.00639 | 0.00605 |
| ____ PB | 0.00392 | -4.18 | 28.802 | 0.00391 | 0.00506 | 0.00280 |
| ____ S | 13.42524 | 732.05 | 0.315 | 13.43388 | 13.46256 | 13.37926 |
| ____ SB | -0.01204 | -1.22 | 21.026 | -0.01348 | -0.01352 | -0.00912 |
| ____ SE | -0.00396 | 0.63 | 379.945 | 0.01246 | -0.00723 | -0.01712 |
| ____ SI | 14.84431 | 2,281.40 | 0.139 | 14.85459 | 14.82063 | 14.85772 |
| ____ SN | -0.00315 | -0.10 | 111.328 | -0.00705 | -0.00209 | -0.00029 |
| ____ SR | 0.26893 | 136,109.96 | 0.439 | 0.26901 | 0.26770 | 0.27006 |
| ____ TE | -0.00018 | 5.28 | 2960.632 | 0.00593 | -0.00303 | -0.00343 |
| ____ TH | -0.01421 | -19.68 | 533.047 | 0.06362 | -0.08774 | -0.01852 |
| ____ TI | 0.00404 | 202.24 | 6.524 | 0.00431 | 0.00403 | 0.00379 |
| ____ TL | 0.00613 | -1.40 | 29.874 | 0.00492 | 0.00824 | 0.00524 |
| ____ V | 0.00669 | 42.14 | 9.506 | 0.00655 | 0.00614 | 0.00739 |
| ____ W | 0.00202 | 2.37 | 59.792 | 0.00340 | 0.00122 | 0.00142 |
| ____ Y1 | 4981.66017 | 4,981.66 | 0.172 | 4987.19128 | 4971.76282 | 4986.02640 |
| ____ Y2A | 176999.79520 | 176,999.80 | 0.916 | 175719.58450 | 178822.65469 | 176457.14641 |
| ____ Y2R | 11514.35054 | 11,514.35 | 0.487 | 11562.07500 | 11528.46016 | 11452.51648 |
| ____ ZN | 0.04911 | 133.27 | 1.761 | 0.04941 | 0.04978 | 0.04814 |
| ____ ZR | -0.00270 | 18.97 | 116.172 | 0.00084 | -0.00513 | -0.00381 |

LANCASTER LABORATORIES

Run Name: 1724202T70 Instrument ID: 11016

Tube: 30 Date/Time: 08/30/2017 07:03

Sample Number: **9175058** Class: **** Batch: 172391063501

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00001 | -79.09 | 3274.474 | 0.00133 | 0.00161 | -0.00296 |
| ____ AL | 0.18804 | -17.71 | 36.029 | 0.26609 | 0.15357 | 0.14445 |
| ____ AS | 0.00904 | 2.84 | 71.654 | 0.00439 | 0.01643 | 0.00628 |
| ____ B | 0.04936 | 203.25 | 2.677 | 0.05033 | 0.04988 | 0.04785 |
| ____ BA | 0.12171 | 41,823.02 | 0.330 | 0.12194 | 0.12193 | 0.12124 |
| ____ BE | -0.00001 | -93.67 | 343.803 | -0.00004 | 0.00004 | -0.00003 |
| ____ CA | 42.48073 | 37,721.37 | 0.211 | 42.55505 | 42.38132 | 42.50582 |
| ____ CD | 0.00006 | -9.33 | 195.504 | 0.00000 | 0.00020 | -0.00001 |
| ____ CO | 0.00147 | -5.44 | 28.053 | 0.00161 | 0.00100 | 0.00179 |
| ____ CR | 0.00395 | 2.45 | 16.430 | 0.00393 | 0.00331 | 0.00461 |
| ____ CU | 0.00616 | -11.91 | 22.558 | 0.00776 | 0.00538 | 0.00533 |
| ____ FE | 0.01135 | -17.72 | 90.878 | 0.02276 | 0.00267 | 0.00863 |
| ____ K | 2.36626 | 805.12 | 4.530 | 2.48604 | 2.33335 | 2.27938 |
| ____ LI | 0.01896 | 160.98 | 28.698 | 0.01870 | 0.02453 | 0.01366 |
| ____ MG | 5.90548 | 8,668.97 | 0.357 | 5.89473 | 5.89191 | 5.92979 |
| ____ MN | 0.00059 | 38.54 | 42.811 | 0.00031 | 0.00079 | 0.00066 |
| ____ MO | 0.00133 | 1.39 | 138.674 | 0.00335 | -0.00023 | 0.00086 |
| ____ NA | 25.12069 | 17,883.74 | 0.517 | 24.98342 | 25.13676 | 25.24189 |
| ____ NI | 0.00000 | 12.92 | 1380.539 | 0.00085 | -0.00068 | -0.00017 |
| ____ P | 0.01325 | 1.66 | 28.404 | 0.01057 | 0.01163 | 0.01755 |
| ____ PB | 0.00722 | -2.56 | 26.533 | 0.00921 | 0.00704 | 0.00540 |
| ____ S | 13.46835 | 744.51 | 0.299 | 13.49118 | 13.49197 | 13.42188 |
| ____ SB | -0.00300 | 0.23 | 50.359 | -0.00334 | -0.00134 | -0.00430 |
| ____ SE | -0.00057 | 0.83 | 660.246 | -0.00402 | -0.00115 | 0.00346 |
| ____ SI | 14.95069 | 2,316.09 | 0.377 | 14.96982 | 14.88729 | 14.99495 |
| ____ SN | -0.00042 | 0.68 | 288.968 | 0.00093 | -0.00137 | -0.00081 |
| ____ SR | 0.27144 | 139,555.44 | 0.320 | 0.27207 | 0.27181 | 0.27045 |
| ____ TE | 0.00253 | 6.14 | 115.691 | -0.00080 | 0.00468 | 0.00370 |
| ____ TH | -0.01548 | -19.92 | 264.698 | 0.01507 | 0.00053 | -0.06203 |
| ____ TI | 0.00385 | 198.85 | 1.959 | 0.00378 | 0.00393 | 0.00384 |
| ____ TL | 0.00278 | -1.66 | 99.758 | -0.00041 | 0.00465 | 0.00409 |
| ____ V | 0.00694 | 45.66 | 8.958 | 0.00624 | 0.00714 | 0.00744 |
| ____ W | 0.00234 | 2.39 | 68.399 | 0.00373 | 0.00059 | 0.00269 |
| ____ Y1 | 5050.14999 | 5,050.15 | 0.101 | 5055.24948 | 5050.18498 | 5045.01550 |
| ____ Y2A | 179793.68950 | 179,793.69 | 0.577 | 179470.38163 | 178956.56188 | 180954.12500 |
| ____ Y2R | 11606.38077 | 11,606.38 | 0.274 | 11595.51487 | 11642.24138 | 11581.38606 |
| ____ ZN | 0.01722 | 51.09 | 2.576 | 0.01691 | 0.01703 | 0.01773 |
| ____ ZR | 0.00402 | 31.31 | 55.444 | 0.00637 | 0.00373 | 0.00195 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 31

Date/Time: 08/30/2017 07:07

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49429 | 3,963.76 | 0.818 | 0.49049 | 0.49853 | 0.49384 |
| ____ AL | 25.17308 | 2,178.46 | 0.905 | 25.12694 | 25.42030 | 24.97199 |
| ____ AS | 0.50252 | 52.86 | 0.748 | 0.50325 | 0.49845 | 0.50586 |
| ____ B | 0.49381 | 2,242.39 | 0.864 | 0.49523 | 0.49718 | 0.48901 |
| ____ BA | 0.50308 | 168,566.18 | 0.598 | 0.50214 | 0.50645 | 0.50066 |
| ____ BE | 0.47493 | 152,196.00 | 0.189 | 0.47540 | 0.47550 | 0.47390 |
| ____ CA | 25.21376 | 22,204.72 | 0.432 | 25.11234 | 25.32884 | 25.20011 |
| ____ CD | 0.49638 | 3,011.13 | 0.194 | 0.49555 | 0.49744 | 0.49614 |
| ____ CO | 0.49577 | 1,620.24 | 0.511 | 0.49622 | 0.49805 | 0.49304 |
| ____ CR | 0.48444 | 3,561.60 | 0.440 | 0.48531 | 0.48601 | 0.48202 |
| ____ CU | 0.50639 | 3,246.36 | 0.816 | 0.50623 | 0.51059 | 0.50234 |
| ____ FE | 24.73500 | 5,706.93 | 0.284 | 24.65869 | 24.79678 | 24.74953 |
| ____ K | 24.94883 | 5,688.44 | 0.802 | 24.75898 | 25.15764 | 24.92987 |
| ____ LI | 0.51068 | 2,230.12 | 1.697 | 0.51547 | 0.50067 | 0.51589 |
| ____ MG | 24.98904 | 36,231.63 | 0.213 | 24.94770 | 25.04895 | 24.97047 |
| ____ MN | 0.50159 | 16,559.08 | 0.509 | 0.50111 | 0.50435 | 0.49931 |
| ____ MO | 0.49283 | 306.67 | 0.311 | 0.49395 | 0.49347 | 0.49109 |
| ____ NA | 25.12365 | 17,693.83 | 0.189 | 25.09291 | 25.17826 | 25.09979 |
| ____ NI | 0.50164 | 1,091.20 | 0.157 | 0.50218 | 0.50074 | 0.50202 |
| ____ P | 0.48853 | 59.63 | 0.467 | 0.48626 | 0.48849 | 0.49083 |
| ____ PB | 0.49930 | 247.03 | 1.150 | 0.49289 | 0.50397 | 0.50103 |
| ____ S | 24.51265 | 1,338.72 | 0.238 | 24.47909 | 24.58008 | 24.47877 |
| ____ SB | 0.50326 | 81.45 | 1.516 | 0.49456 | 0.50881 | 0.50641 |
| ____ SE | 0.47865 | 27.63 | 3.330 | 0.49245 | 0.46121 | 0.48229 |
| ____ SI | 25.15311 | 3,856.19 | 0.439 | 25.04350 | 25.26426 | 25.15157 |
| ____ SN | 0.48864 | 138.76 | 0.200 | 0.48941 | 0.48896 | 0.48754 |
| ____ SR | 0.50383 | 254,029.41 | 0.324 | 0.50393 | 0.50541 | 0.50215 |
| ____ TE | 0.49132 | 146.80 | 1.476 | 0.48678 | 0.49968 | 0.48749 |
| ____ TH | 0.52430 | 18.76 | 5.150 | 0.55288 | 0.52081 | 0.49922 |
| ____ TI | 0.51325 | 17,092.01 | 0.336 | 0.51234 | 0.51524 | 0.51217 |
| ____ TL | 0.50858 | 32.05 | 3.037 | 0.50147 | 0.52630 | 0.49797 |
| ____ V | 0.50358 | 5,612.89 | 0.225 | 0.50302 | 0.50489 | 0.50284 |
| ____ W | 0.49842 | 188.55 | 0.176 | 0.49878 | 0.49743 | 0.49906 |
| ____ Y1 | 4984.51655 | 4,984.52 | 0.137 | 4978.08219 | 4983.78662 | 4991.68083 |
| ____ Y2A | 176259.91023 | 176,259.91 | 0.571 | 175747.20559 | 175613.34429 | 177419.18082 |
| ____ Y2R | 11481.74362 | 11,481.74 | 0.804 | 11436.13995 | 11421.12887 | 11587.96204 |
| ____ ZN | 0.49150 | 1,299.05 | 0.462 | 0.49104 | 0.49396 | 0.48949 |
| ____ ZR | 0.51441 | 987.87 | 1.648 | 0.50915 | 0.50988 | 0.52418 |

LANCASTER LABORATORIES

Run Name: 1724202T70

Instrument ID: 11016

Tube: 32

Date/Time: 08/30/2017 07:10

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00038 | -74.95 | 372.249 | -0.00107 | 0.00172 | 0.00048 |
| ____ AL | 0.18315 | -18.42 | 4.967 | 0.17446 | 0.19260 | 0.18237 |
| ____ AS | 0.01115 | 3.05 | 126.714 | 0.01800 | -0.00510 | 0.02054 |
| ____ B | 0.00091 | -4.48 | 145.451 | -0.00061 | 0.00185 | 0.00149 |
| ____ BA | 0.00009 | 359.30 | 67.485 | 0.00009 | 0.00016 | 0.00003 |
| ____ BE | 0.00013 | -47.62 | 26.992 | 0.00012 | 0.00017 | 0.00011 |
| ____ CA | -0.00919 | 28.95 | 55.140 | -0.00964 | -0.00391 | -0.01401 |
| ____ CD | 0.00019 | -8.55 | 51.656 | 0.00021 | 0.00027 | 0.00008 |
| ____ CO | 0.00131 | -4.69 | 38.591 | 0.00133 | 0.00080 | 0.00181 |
| ____ CR | 0.00098 | -20.02 | 99.724 | 0.00066 | 0.00209 | 0.00021 |
| ____ CU | 0.00613 | -17.51 | 17.916 | 0.00663 | 0.00487 | 0.00689 |
| ____ FE | 0.01582 | -16.67 | 138.361 | 0.02883 | -0.00945 | 0.02808 |
| ____ K | 0.02687 | 292.93 | 411.877 | 0.11084 | 0.06829 | -0.09853 |
| ____ LI | 0.00660 | 108.30 | 32.948 | 0.00498 | 0.00574 | 0.00907 |
| ____ MG | 0.00043 | -46.10 | 922.415 | 0.00439 | 0.00049 | -0.00359 |
| ____ MN | -0.00002 | 18.23 | 606.156 | 0.00012 | -0.00006 | -0.00013 |
| ____ MO | -0.00094 | -0.03 | 86.506 | -0.00003 | -0.00160 | -0.00119 |
| ____ NA | 0.68756 | -529.27 | 3.817 | 0.66008 | 0.69022 | 0.71237 |
| ____ NI | -0.00099 | 12.12 | 144.095 | -0.00253 | -0.00073 | 0.00029 |
| ____ P | -0.00028 | -0.01 | 1253.380 | 0.00071 | 0.00267 | -0.00423 |
| ____ PB | 0.00383 | -4.57 | 44.141 | 0.00194 | 0.00521 | 0.00433 |
| ____ S | -0.02494 | -3.83 | 52.813 | -0.02395 | -0.03859 | -0.01229 |
| ____ SB | 0.00003 | 0.72 | 1856.546 | 0.00057 | -0.00022 | -0.00028 |
| ____ SE | -0.01034 | 0.28 | 48.819 | -0.01464 | -0.00478 | -0.01161 |
| ____ SI | 0.01282 | 3.66 | 205.278 | 0.04227 | 0.00454 | -0.00836 |
| ____ SN | 0.00128 | 1.17 | 46.006 | 0.00131 | 0.00067 | 0.00185 |
| ____ SR | 0.00026 | 23.64 | 6.758 | 0.00027 | 0.00024 | 0.00027 |
| ____ TE | 0.00122 | 5.74 | 82.344 | 0.00217 | 0.00132 | 0.00017 |
| ____ TH | -0.02795 | -20.78 | 116.700 | 0.00858 | -0.05417 | -0.03828 |
| ____ TI | 0.00003 | 70.09 | 122.938 | 0.00001 | 0.00008 | 0.00001 |
| ____ TL | 0.00104 | -1.75 | 488.692 | 0.00510 | 0.00273 | -0.00469 |
| ____ V | -0.00105 | -46.47 | 80.783 | -0.00086 | -0.00031 | -0.00197 |
| ____ W | 0.00093 | 1.79 | 400.370 | 0.00366 | -0.00331 | 0.00244 |
| ____ Y1 | 5043.43566 | 5,043.44 | 0.372 | 5061.52885 | 5024.05259 | 5044.72553 |
| ____ Y2A | 179995.90345 | 179,995.90 | 0.604 | 178781.54369 | 180330.89264 | 180875.27401 |
| ____ Y2R | 11608.57500 | 11,608.58 | 0.310 | 11650.00000 | 11590.47500 | 11585.25000 |
| ____ ZN | -0.00010 | 5.42 | 412.793 | -0.00021 | -0.00046 | 0.00036 |
| ____ ZR | -0.00187 | 19.75 | 149.352 | -0.00484 | -0.00147 | 0.00070 |

# Extraction/Distillation/Digestion Logs

# Metals in Liquid

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 239 10635 01

**Start Time:** 8/28/17 6:14 **End Time:** 8/28/17 10:05 **Hot Block:** deena4

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | p17182b | 5.00 |
| 1:1 HNO3 | p17204c | 2.00 |
| ICP Spike 1A | 1714623#11 | 1.00 |
| ICP Spike 1B | 1714629#11 | 1.00 |
| LCS A1 | 1714623#11 | 1.00 |
| LCS B1 | 1714629#11 | 1.00 |
| new spike | i17234a | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1703076 | |
| 2) | LCSW | . | | | | | | | 1703076 | |
| 3) | 9168294EB | 09/01/17 00:00 | WW | N8 | | | | | 1703076 | |
| 4) | 9170838EB | 09/05/17 00:00 | WW | N8 | | | | 008a | 1703076 | |
| 5) | 9172758EB | 09/06/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 6) | 9175047 | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 7) | 9175048 | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 8) | 9175049 | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 9) | **9175052U** | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 10) | **9175053R** | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 11) | **9175054M** | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 12) | **9175055D** | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 13) | 9175056FD | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 14) | 9175057 | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |
| 15) | 9175058 | 09/07/17 09:30 | WW | N8 | | | | 008a | 1703076 | |

Prep Employee:1184 D/I _____

8/28/2017

v 1.1.0

# Batch# 17 239 1063 501

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 8/27/17 10:40 | 1184 |
| 2) | Sample Vol | | 8/28/17 6:14 | 1184 |
| 3) | Final Vol | CLEAR | 8/28/17 6:14 | 1184 |
| 4) | Trial | | 8/28/17 6:14 | 1184 |
| 5) | Upload Prep | US19PCC0669 | 8/28/17 10:06 | 1184 |

| | | | | Original Entry | | | | Data Changed | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Analysis | D | Operation | Measurement | Date/Time | Data | Units | Analyst | Date/Time | Analyst Reason |

Analysis: 0635 SW846 Water

Batch# 17 239 1063 501

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9168294EB | 09/01/17 | N8 | M1-07 | MRQ01-07EB* | 50.0000 | 50.0000 | 1 |
| 9170838EB | 09/05/17 | N8 | 02M10 | MRQ02-10EB | 50.0000 | 50.0000 | 1 |
| 9172758EB | 09/06/17 | N8 | 03M07 | MRQ03-07EB | 50.0000 | 50.0000 | 1 |
| 9175047 | 09/07/17 | N8 | KEFF1 | KR194-01 | 50.0000 | 50.0000 | 1 |
| 9175048 | 09/07/17 | N8 | KGAC1 | KR194-02 | 50.0000 | 50.0000 | 1 |
| 9175049 | 09/07/17 | N8 | KINF1 | KR194-03 | 50.0000 | 50.0000 | 1 |
| **9175052U** | 09/07/17 | N8 | KEFF2 | KR194-06BKG | 50.0000 | 50.0000 | 1 |
| **9175053R** | 09/07/17 | N8 | KEFF2 | KR194-06MS | 50.0000 | 50.0000 | 1 |
| **9175054M** | 09/07/17 | N8 | KEFF2 | KR194-06MSD | 50.0000 | 50.0000 | 1 |
| **9175055D** | 09/07/17 | N8 | KEFF2 | KR194-06DUP | 50.0000 | 50.0000 | 1 |
| 9175056FD | 09/07/17 | N8 | KEF2D | KR194-07FD | 50.0000 | 50.0000 | 1 |
| 9175057 | 09/07/17 | N8 | KGAC2 | KR194-08 | 50.0000 | 50.0000 | 1 |
| 9175058 | 09/07/17 | N8 | KINF2 | KR194-09* | 50.0000 | 50.0000 | 1 |

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# DoD Type I Data Package

**Prepared for:**

**EA Engineering, Science & Tech**
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Project: Kirtland AFB
Water Samples
Collected on 09/21/17

# SDG# KR195

| GROUP | SAMPLE NUMBERS |
|---|---|
| 1854119 | 9224669-9224680 |

A2LA (DoD) Cert. # 0001.01
PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

**Authorized by:** Dana M Kauffman **Date:** **10/06/2017**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Kay Hower at (717) 556-7364.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

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## Sample Reference List for SDG Number KR195
## with a Data Package Type of I-DOD

**31675 - EA Engineering, Science & Tech**
Project: Kirtland AFB

| Lab Sample Number | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| 9224669 | GWTS-EFF1-092117 | 09/21/2017 13:45 | 09/22/2017 09:50 |
| 9224670 | GWTS-EFF1DUP-092117 | 09/21/2017 13:45 | 09/22/2017 09:50 |
| 9224671 | GWTS-GAC1-092117 | 09/21/2017 14:00 | 09/22/2017 09:50 |
| 9224672 | GWTS-INF1-092117 | 09/21/2017 14:07 | 09/22/2017 09:50 |
| 9224673 | GWTS-TB01-092117 | 09/21/2017 15:15 | 09/22/2017 09:50 |
| 9224674 | GWTS-EFF2-092117 | 09/21/2017 14:15 | 09/22/2017 09:50 |
| 9224675 | GWTS-EFF2-092117 MS | 09/21/2017 14:15 | 09/22/2017 09:50 |
| 9224676 | GWTS-EFF2-092117 MSD | 09/21/2017 14:15 | 09/22/2017 09:50 |
| 9224677 | GWTS-EFF2-092117 DUP | 09/21/2017 14:15 | 09/22/2017 09:50 |
| 9224678 | GWTS-GAC2-092117 | 09/21/2017 14:35 | 09/22/2017 09:50 |
| 9224679 | GWTS-INF2-092117 | 09/21/2017 14:45 | 09/22/2017 09:50 |
| 9224680 | GWTS-FB02-092117 | 09/21/2017 14:15 | 09/22/2017 09:50 |

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# Sample pH Log

**SDG: KR195**

| LLI Sample Number | Bottle Code | Actual pH | Exp. pH | pH Check Code | Adj. pH | Adjusted Date | Adjusted Time | Preservative Added | Preservative Lot # | LLI Supplied Bottle? | Sulfide Present? | Corrective Substance | CS Lot # | Res. Cl. Present? | Corrective Substance | CS Lot # | Record Date | Employee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9224669 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:02:53PM | 12665 |
| 9224669 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:20PM | 7970 |
| 9224670 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:02:07PM | 12665 |
| 9224670 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224671 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:03:07PM | 12665 |
| 9224671 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224672 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:01:40PM | 12665 |
| 9224672 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224673 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224674 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:01:53PM | 12665 |
| 9224674 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224675 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:02:22PM | 12665 |
| 9224675 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224676 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:01:26PM | 12665 |
| 9224676 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224678 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:03:38PM | 12665 |
| 9224678 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224679 | 008A | <2 | <2 | PK | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/23/2017 1:02:37PM | 12665 |
| 9224679 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |
| 9224680 | 038A | <2 | <2 | NA | NA | NA | NA | NA | NA | Y | NA | NA | NA | NA | NA | NA | 9/26/2017 3:33:18PM | 7970 |

| Check Code Key |
|---|
| **PK** = Original container checked - pH is within the correct range. (No preservative was added) |
| **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) |
| **PV** = Volatile container checked |
| **PC** = pH checked (unpreserved container) |
| **SPK** = Subsampled from an original container. Original container checked - pH is within correct range |
| **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. |
| **SPC** = Subsampled from an original container. pH checked (unpreserved container). |
| **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. |
| **UP** = Unable to preserve due to matrix of the sample. |
| **NA** = Not applicable |

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**01163 GC/MS VOA Water Prep**

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

---

**11997 VOCs- 5ml Water by 8260C**

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

---

**10635 ICP-WW, 3005A (tot rec) - U4**

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

---

**01754 Iron**
**07058 Manganese**

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

---

**10398 8011 Master Master**

The sample is extracted with hexane using micro-extraction technique. The extract is analyzed using gas chromatography on two capillary columns (primary and confirmation) with electron capture detectors.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

---

**07786 EDB Extraction (8011)**

A 35ml aliquot of sample is extracted in the 40 ml sampling vial with 2 ml hexane (micro-extraction). The solvent layer is drawn off and ready for analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW846 Method 8011, July 1992.

# Analysis Reports / Field Chain of Custody

**ANALYSIS REPORT**

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

Report Date: October 02, 2017

**Project: Kirtland AFB**

Account #: 31675
Group Number: 1854119
SDG: KR195
PO Number: 14800
State of Sample Origin: NM

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

| | | |
|---|---|---|
| Electronic Copy To | EA Science & Technology | Attn: Amanda Smith |
| Electronic Copy To | EA Science & Technology | Attn: Tara Lamond |
| Electronic Copy To | EA Engineering, Science & Tech | Attn: Pamela Moss |

Respectfully Submitted,

Kay Hower

(717) 556-7364

**SAMPLE INFORMATION**

| Client Sample Description | Collection Information | ELLE# |
|---|---|---|
| GWTS-EFF1-092117 Grab Water | 09/21/2017 13:45 | 9224669 |
| GWTS-EFF1DUP-092117 Grab Water | 09/21/2017 13:45 | 9224670 |
| GWTS-GAC1-092117 Grab Water | 09/21/2017 14:00 | 9224671 |
| GWTS-INF1-092117 Grab Water | 09/21/2017 14:07 | 9224672 |
| GWTS-TB01-092117 Water | 09/21/2017 15:15 | 9224673 |
| GWTS-EFF2-092117 Grab Water | 09/21/2017 14:15 | 9224674 |
| GWTS-EFF2-092117 MS Grab Water | 09/21/2017 14:15 | 9224675 |
| GWTS-EFF2-092117 MSD Grab Water | 09/21/2017 14:15 | 9224676 |
| GWTS-EFF2-092117 DUP Grab Water | 09/21/2017 14:15 | 9224677 |
| GWTS-GAC2-092117 Grab Water | 09/21/2017 14:35 | 9224678 |
| GWTS-INF2-092117 Grab Water | 09/21/2017 14:45 | 9224679 |
| GWTS-FB02-092117 Water | 09/21/2017 14:15 | 9224680 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Project Name: Kirtland AFB
LL Group #: 1854119

**General Comments:**

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

For dual column analyses, the surrogate (for multi-surrogate tests, at least one surrogate) must be within the acceptance limits on at least one of the two columns.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

No additional comments are necessary.

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# Analysis Report

**Sample Description: GWTS-EFF1-092117 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224669**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 13:45 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

EFF1- SDG#: KR195-01

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0094 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 10:46 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 10:46 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 20:08 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:20 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:20 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF1DUP-092117 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224670**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 13:45 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

EFF1D SDG#: KR195-02FD

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 11:08 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 11:08 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 20:24 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:23 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:23 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GWTS-GAC1-092117 Grab Water
Kirtland AFB Bulk Fuels Facility

**ELLE Sample # WW 9224671**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:00 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

GAC1- SDG#: KR195-03

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 11:30 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 11:30 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 20:40 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:32 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:32 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-INF1-092117 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224672**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:07 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

IN1-- SDG#: KR195-04

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.047 | D1 | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 11:52 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 11:52 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 20:56 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:35 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:35 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-TB01-092117 Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224673**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 15:15

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

TB01- SDG#: KR195-05TB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0094 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 12:14 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 12:14 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 21:12 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-092117 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224674**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:15 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

EF2-- SDG#: KR195-06BKG

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0095 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 13:41 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 13:41 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 22:00 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:01 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:01 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-092117 MS Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224675**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:15 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

EF2-- SDG#: KR195-06MS

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 23 | | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 65 | | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.13 | D1 | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.945 | | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.510 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 10:03 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 10:03 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 22:16 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:10 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:10 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-092117 MSD Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224676**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:15 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

EF2-- SDG#: KR195-06MSD

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 22 | | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 64 | | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.13 | D1 | 0.0095 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 1.01 | | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.504 | | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 10:25 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 10:25 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 22:32 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:13 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:13 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-EFF2-092117 DUP Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224677**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:15 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

EF2-- SDG#: KR195-06DUP

| CAT No. | Analysis Name | CAS Number | Result | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|
| **Metals Dissolved** | **SW-846 6010C** | | mg/l | mg/l | mg/l | mg/l | |
| 01754 | Iron | 7439-89-6 | 0.200 U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:07 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:07 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-GAC2-092117 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224678**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:35 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

GC2-- SDG#: KR195-07

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0096 | 0.019 | 0.029 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 12:36 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 12:36 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 22:47 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:39 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:39 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-INF2-092117 Grab Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224679**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:45 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

IN2-- SDG#: KR195-08

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.054 | D1 | 0.0095 | 0.019 | 0.028 | 1 |
| **Metals Dissolved** | **SW-846 6010C** | | **mg/l** | | **mg/l** | **mg/l** | **mg/l** | |
| 01754 | Iron | 7439-89-6 | 0.200 | U | 0.0805 | 0.200 | 0.400 | 1 |
| 07058 | Manganese | 7439-96-5 | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 | 1 |

## Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 12:58 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 12:58 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 23:03 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:42 | Elaine F Stoltzfus | 1 |
| 07058 | Manganese | SW-846 6010C | 1 | 172701063504 | 10/01/2017 13:42 | Elaine F Stoltzfus | 1 |
| 10635 | ICP-WW, 3005A (tot rec) - U4 | SW-846 3005A | 1 | 172701063504 | 09/28/2017 23:07 | Annamaria Kuhns | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: GWTS-FB02-092117 Water**
**Kirtland AFB Bulk Fuels Facility**

**ELLE Sample # WW 9224680**
**ELLE Group # 1854119**
**Account # 31675**

**Project Name: Kirtland AFB**

Collected: 09/21/2017 14:15 by SS

Submitted: 09/22/2017 09:50
Reported: 10/02/2017 12:51

EA Engineering, Science & Tech
Building C, Suite 100
405 State Highway 121 Bypass
Lewisville TX 75067-8192

FB2-- SDG#: KR195-09FB

| CAT No. | Analysis Name | CAS Number | Result | | Detection Limit* | Limit of Detection | Limit of Quantitation | DF |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Benzene | 71-43-2 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 1 | U | 0.5 | 1 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 0.5 | 1 | 1 | 1 |
| **Volatiles by Extraction** | **SW-846 8011** | | **ug/l** | | **ug/l** | **ug/l** | **ug/l** | |
| 10398 | Ethylene dibromide | 106-93-4 | 0.019 | UD1 | 0.0095 | 0.019 | 0.028 | 1 |

## Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | BTEX 8260C Water | SW-846 8260C | 1 | L172691AA | 09/26/2017 13:20 | Linda C Pape | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | L172691AA | 09/26/2017 13:20 | Linda C Pape | 1 |
| 10398 | EDB 8011 Water | SW-846 8011 | 1 | 172690027A | 09/28/2017 23:19 | Heather M Miller | 1 |
| 07786 | EDB Extraction (8011) | SW-846 8011 | 1 | 172690027A | 09/27/2017 08:00 | Kayla A Yuditsky | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 10/02/2017 12:51

Group Number: 1854119

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | DL** | LOD | LOQ |
|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l |
| Batch number: L172691AA | Sample number(s): 9224669-9224676,9224678-9224680 | | | | |
| Benzene | 1 | U | 0.5 | 1 | 1 |
| Ethylbenzene | 1 | U | 0.5 | 1 | 1 |
| Toluene | 1 | U | 0.5 | 1 | 1 |
| Xylene (Total) | 1 | U | 0.5 | 1 | 1 |
| Batch number: 172690027A | Sample number(s): 9224669-9224676,9224678-9224680 | | | | |
| Ethylene dibromide | 0.020 | U | 0.010 | 0.020 | 0.030 |
| | mg/l | | mg/l | mg/l | mg/l |
| Batch number: 172701063504 | Sample number(s): 9224669-9224672,9224674-9224679 | | | | |
| Iron | 0.200 | U | 0.0805 | 0.200 | 0.400 |
| Manganese | 0.0050 | U | 0.0016 | 0.0050 | 0.0100 |

## LCS/LCSD

| Analysis Name | LCS Spike Added | LCS Conc | LCSD Spike Added | LCSD Conc | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L172691AA | Sample number(s): 9224669-9224676,9224678-9224680 | | | | | | | | |
| Benzene | 20 | 22.04 | | | 110 | | 79-120 | | |
| Ethylbenzene | 20 | 21.61 | | | 108 | | 79-121 | | |
| Toluene | 20 | 21.48 | | | 107 | | 80-121 | | |
| Xylene (Total) | 60 | 63.81 | | | 106 | | 79-121 | | |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172690027A | Sample number(s): 9224669-9224676,9224678-9224680 | | | | | | | | |
| Ethylene dibromide | 0.128 | 0.138 | 0.128 | 0.139 | 108 | 109 | 60-140 | 1 | 20 |
| | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172701063504 | Sample number(s): 9224669-9224672,9224674-9224679 | | | | | | | | |
| Iron | 1.00 | 0.983 | | | 98 | | 87-115 | | |
| Manganese | 0.500 | 0.504 | | | 101 | | 90-114 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 10/02/2017 12:51

Group Number: 1854119

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc | | MS Spike Added | MS Conc | MSD Spike Added | MSD Conc | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ug/l | | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: L172691AA | Sample number(s): 9224669-9224676,9224678-9224680 UNSPK: 9224674 | | | | | | | | | | |
| Benzene | 1 | U | 20 | 22.56 | 20 | 22.47 | 113 | 112 | 79-120 | 0 | 20 |
| Ethylbenzene | 1 | U | 20 | 22.19 | 20 | 22.11 | 111 | 111 | 79-121 | 0 | 20 |
| Toluene | 1 | U | 20 | 22.47 | 20 | 22.41 | 112 | 112 | 80-121 | 0 | 20 |
| Xylene (Total) | 1 | U | 60 | 64.94 | 60 | 64.22 | 108 | 107 | 79-121 | 1 | 20 |
| | ug/l | | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 172690027A | Sample number(s): 9224669-9224676,9224678-9224680 UNSPK: 9224674 | | | | | | | | | | |
| Ethylene dibromide | 0.019 | U | 0.123 | 0.131 | 0.122 | 0.128 | 107 | 105 | 60-140 | 2 | 20 |
| | mg/l | | mg/l | mg/l | mg/l | mg/l | | | | | |
| Batch number: 172701063504 | Sample number(s): 9224669-9224672,9224674-9224679 UNSPK: 9224674 | | | | | | | | | | |
| Iron | 0.200 | U | 1.00 | 0.945 | 1.00 | 1.01 | 94 | 101 | 87-115 | 7 | 20 |
| Manganese | 0.0050 | U | 0.500 | 0.510 | 0.500 | 0.504 | 102 | 101 | 90-114 | 1 | 20 |

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | | DUP Conc | | DUP RPD | DUP RPD Max |
|---|---|---|---|---|---|---|
| | mg/l | | mg/l | | | |
| Batch number: 172701063504 | Sample number(s): 9224669-9224672,9224674-9224679 BKG: 9224674 | | | | | |
| Iron | 0.200 | U | 0.200 | U | 0 (1) | 20 |
| Manganese | 0.0050 | U | 0.0050 | U | 0 (1) | 20 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: BTEX 8260C Water
Batch number: L172691AA

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Reported: 10/02/2017 12:51

Group Number: 1854119

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: BTEX 8260C Water
Batch number: L172691AA

| | Dibromofluoromethane | | 1,2-Dichloroethane-d4 | | Toluene-d8 | | 4-Bromofluorobenzene | |
|---|---|---|---|---|---|---|---|---|
| | %Rec | LOD (ug/l) | %Rec | LOD (ug/l) | %Rec | LOD (ug/l) | %Rec | LOD (ug/l) |
| 9224669 | 97 | 1 | 101 | 1 | 100 | 1 | 99 | 1 |
| 9224670 | 98 | 1 | 102 | 1 | 100 | 1 | 98 | 1 |
| 9224671 | 99 | 1 | 103 | 1 | 100 | 1 | 97 | 1 |
| 9224672 | 97 | 1 | 100 | 1 | 101 | 1 | 98 | 1 |
| 9224673 | 98 | 1 | 100 | 1 | 100 | 1 | 97 | 1 |
| 9224674 | 98 | 1 | 103 | 1 | 100 | 1 | 97 | 1 |
| 9224675 | 99 | 1 | 102 | 1 | 100 | 1 | 99 | 1 |
| 9224676 | 100 | 1 | 101 | 1 | 100 | 1 | 99 | 1 |
| 9224678 | 98 | 1 | 101 | 1 | 99 | 1 | 96 | 1 |
| 9224679 | 98 | 1 | 102 | 1 | 100 | 1 | 97 | 1 |
| 9224680 | 98 | 1 | 102 | 1 | 100 | 1 | 97 | 1 |
| Blank | 98 | 1 | 102 | 1 | 100 | 1 | 97 | 1 |
| LCS | 99 | 1 | 100 | 1 | 101 | 1 | 100 | 1 |
| MS | 99 | 1 | 102 | 1 | 100 | 1 | 99 | 1 |
| MSD | 100 | 1 | 101 | 1 | 100 | 1 | 99 | 1 |
| Limits: | 80-119 | | 81-118 | | 89-112 | | 85-114 | |

Analysis Name: EDB 8011 Water
Batch number: 172690027A

| | 1,1,2,2-Tetrachloroethane-D1 | | 1,1,2,2-Tetrachloroethane-D2 | |
|---|---|---|---|---|
| | %Rec | LOD | %Rec | LOD |
| 9224669 | 104 | 0.0066 | 95 | 0.0066 |
| 9224670 | 100 | 0.0067 | 93 | 0.0067 |
| 9224671 | 87 | 0.0067 | 83 | 0.0067 |
| 9224672 | 97 | 0.0067 | 89 | 0.0067 |
| 9224673 | 92 | 0.0066 | 86 | 0.0066 |
| 9224674 | 92 | 0.0067 | 88 | 0.0067 |
| 9224675 | 102 | 0.0067 | 90 | 0.0067 |
| 9224676 | 110 | 0.0066 | 90 | 0.0066 |
| 9224678 | 94 | 0.0067 | 89 | 0.0067 |
| 9224679 | 111 | 0.0066 | 90 | 0.0066 |
| 9224680 | 90 | 0.0066 | 89 | 0.0066 |
| Blank | 93 | 0.0070 | 90 | 0.0070 |
| LCS | 86 | 0.0070 | 82 | 0.0070 |
| LCSD | 90 | 0.0070 | 85 | 0.0070 |
| MS | 102 | 0.0067 | 90 | 0.0067 |
| MSD | 110 | 0.0066 | 90 | 0.0066 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: EA Engineering, Science & Tech
Group Number: 1854119
Reported: 10/02/2017 12:51

## Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: EDB 8011 Water
Batch number: 172690027A

| | | |
|---|---|---|
| Limits: | 46-136 | 46-136 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
(3) The surrogate spike amount was less than the LOD.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

A-31675
G-1854119
S-9224669-80

# CHAIN-OF-CUSTODY RECORD

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

COC NUMBER: COC-GWTS1-092117

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: Q3

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Kay Hower KayHower@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Ammonia (SM4500NH3) | Sulfide (SM4500S2CF) | Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GWTS-EFF1-092117 | 09/21/17 | 1345 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 2 | GWTS-EFF1DUP-092117 | 09/21/17 | 1345 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-GAC1-092117 | 09/21/17 | 1400 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-INF1-092117 | 09/21/17 | 1407 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 5 | GWTS-TB01-092117 | 09/21/17 | 1515 | 4 | -- | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | -- | |
| 6 | | | | | | | | | | | | | | | | |

ANALYSIS REQUIRED (Specify number of bottles)

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: Fedex: 811156735270

| RELINQUISHED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| SHARMIN SULTANA Sharmin Sultana | 9-21-17 | 1530 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: Printed Name and Signature: | DATE | TIME |
|---|---|---|
| | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: Lauren Dean | 9/22/17 | 0950 |

A-31675
G-1854119
S-9224669-80

# CHAIN-OF-CUSTODY RECORD

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

COC NUMBER: COC-GWTS2-092117

PROJECT NAME: Kirtland AFB Bulk Fuels Facility

PROJECT NUMBER: 62599DM01

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories, 2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: Tara Lamond: tlamond@eaest.com EA
Amanda Smith: asmith@eaest.com EA

FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2017

QUARTER: Q3

PROJECT SITE AND PHASE: ST106/SS110

LAB PO NUMBER: 14800

LAB CONTACT: Natalie Luciano NatalieLuciano@eurofinsUS.com Eurofins 1 (717) 556-7258

| ITEM | SAMPLE IDENTIFIER | DATE COLLECTED | TIME COLLECTED | Total Number of Bottles | VOCs (8260C) | BTEX (8260C) | BTEXN (8260C) | EDB (8011) | Total As,Pb,Ca,K,Na,Mg (6020A/6010C) | Dissolved Fe, Mn (6010C) | Chloride, bromide, sulfate (300.0) | Nitrate-Nitrite (353.2) | Ammonia (SM4500NH3) | Sulfide (SM4500S2CF) | Alkalinity (SM2320B) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ANALYSIS REQUIRED (Specify number of bottles) | | | | | | | | | | | | |
| 1 | GWTS-EFF2-092117 | 09/21/17 | 1415 | 18 | -- | 9 | -- | 6 | -- | 3* | -- | -- | -- | -- | -- | Additional Volume Provided for MSMSD |
| 2 | GWTS-GAC2-092117 | 09/21/17 | 1435 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 3 | GWTS-INF2-092117 | 09/21/17 | 1445 | 6 | -- | 3 | -- | 2 | -- | 1* | -- | -- | -- | -- | -- | |
| 4 | GWTS-FB02-092117 | 09/21/17 | 1415 | 5 | -- | 3 | -- | 2 | -- | | -- | -- | -- | -- | -- | Collected simultaneously with GWTS-EFF1-092117 |
| 5 | ~~GWTS-TB02-092117~~ | 09/21/17 | >> | | -- | 2 | -- | 2 | -- | -- | -- | -- | -- | -- | -- | Please see COC GWTS1-092117 |
| 6 | | | | | | | | | | | | | | | | |

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered.

SAMPLER(S): SHARMIN SULTANA

COURIER AND SHIPPING NUMBER: Fedex: 811156735270

| RELINQUISHED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: SHARMIN SULTANA | 9-21-17 | 1530 |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |

| RECEIVED BY: | DATE | TIME |
|---|---|---|
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | | |
| Printed Name and Signature: | 9/22/17 | 0935 |

eurofins | Lancaster Laboratories Environmental

# Sample Administration Receipt Documentation Log

Doc Log ID: 195263

Group Number(s): 1854119

Client: ES

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 09/22/2017 9:50 |
| Number of Packages: | 1 | Number of Projects: | 1 |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 4 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCl |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Karen Diem (3060) at 15:23 on 09/22/2017*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT42-02 | 0.7 | DT | Wet | Y | Bagged | N |



2425 New Holland Pike
Lancaster, PA 17601-2422
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mg** | milligram(s) |
| **C** | degrees Celsius | **mL** | milliliter(s) |
| **cfu** | colony forming units | **MPN** | Most Probable Number |
| **CP Units** | cobalt-chloroplatinate units | **N.D.** | non-detect |
| **F** | degrees Fahrenheit | **ng** | nanogram(s) |
| **g** | gram(s) | **NTU** | nephelometric turbidity units |
| **IU** | International Units | **pg/L** | picogram/liter |
| **kg** | kilogram(s) | **RL** | Reporting Limit |
| **L** | liter(s) | **TNTC** | Too Numerous To Count |
| **lb.** | pound(s) | **µg** | microgram(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| **meq** | milliequivalents | **umhos/cm** | micromhos/cm |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| D1 | Indicates for dual column analyses that the result is reported from column 1 |
| D2 | Indicates for dual column analyses that the result is reported from column 2 |
| E | Concentration exceeds the calibration range |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# Volatiles by GC/MS Data

# Case Narrative/Conformance Summary

# Volatiles by GC/MS

eurofins | Lancaster Laboratories Environmental

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR195**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9224669 | GWTS-EFF1-092117 | X | | 1 | |
| 9224670 | GWTS-EFF1DUP-092117 | X | | 1 | Field Duplicate Sample |
| 9224671 | GWTS-GAC1-092117 | X | | 1 | |
| 9224672 | GWTS-INF1-092117 | X | | 1 | |
| 9224673 | GWTS-TB01-092117 | X | | 1 | Trip Blank |
| 9224674 | GWTS-EFF2-092117 | X | | 1 | Unspiked |
| 9224675 | GWTS-EFF2-092117 MS | X | | 1 | Matrix Spike |
| 9224676 | GWTS-EFF2-092117 MSD | X | | 1 | Matrix Spike Duplicate |
| 9224678 | GWTS-GAC2-092117 | X | | 1 | |
| 9224679 | GWTS-INF2-092117 | X | | 1 | |
| 9224680 | GWTS-FB02-092117 | X | | 1 | Field Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR195**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# Volatiles by GC/MS

eurofins | Lancaster Laboratories Environmental

# Quality Control Reference List
## GC/MS Volatiles

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR195**

**Fraction: Volatiles by GC/MS**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| BTEX 8260C Water | L172691AA | VBLKL72 | 09/26/2017 08:29:00 |
| | | LCSL72 | 09/26/2017 08:51:00 |
| | | 9224669 | 09/26/2017 10:46:00 |
| | | 9224670 | 09/26/2017 11:08:00 |
| | | 9224671 | 09/26/2017 11:30:00 |
| | | 9224672 | 09/26/2017 11:52:00 |
| | | 9224673 | 09/26/2017 12:14:00 |
| | | 9224674 UNSPK | 09/26/2017 13:41:00 |
| | | 9224675 MS | 09/26/2017 10:03:00 |
| | | 9224676 MSD | 09/26/2017 10:25:00 |
| | | 9224678 | 09/26/2017 12:36:00 |
| | | 9224679 | 09/26/2017 12:58:00 |
| | | 9224680 | 09/26/2017 13:20:00 |

**Quality Control Summary**
**Method Blank**
**GC/MS Volatiles**
**SDG: KR195**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172691AA / VBLKL72<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Benzene | 09/26/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Toluene | 09/26/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Ethylbenzene | 09/26/17 | N.D. | ug/l | 0.5 | 1 | 1 |
| Xylene (Total) | 09/26/17 | N.D. | ug/l | 0.5 | 1 | 1 |

**Quality Control Summary**
**Surrogates**
**GC/MS Volatiles**
**SDG: KR195**
**Matrix: LIQUID**

**Fraction: Volatiles by GC/MS**

| L172691AA | 1,2-Dichloroethane-d4 | | 4-Bromofluorobenzene | | Dibromofluoromethane | | Toluene-d8 | |
|---|---|---|---|---|---|---|---|---|
| | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l | Spike Added | 50 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits | % Recovery | Limits |
| VBLKL72 | 102 | 81 - 118 | 97 | 85 - 114 | 98 | 80 - 119 | 100 | 89 - 112 |
| LCSL72 | 100 | 81 - 118 | 100 | 85 - 114 | 99 | 80 - 119 | 101 | 89 - 112 |
| 9224669 | 101 | 81 - 118 | 99 | 85 - 114 | 97 | 80 - 119 | 100 | 89 - 112 |
| 9224670 | 102 | 81 - 118 | 98 | 85 - 114 | 98 | 80 - 119 | 100 | 89 - 112 |
| 9224671 | 103 | 81 - 118 | 97 | 85 - 114 | 99 | 80 - 119 | 100 | 89 - 112 |
| 9224672 | 100 | 81 - 118 | 98 | 85 - 114 | 97 | 80 - 119 | 101 | 89 - 112 |
| 9224673 | 100 | 81 - 118 | 97 | 85 - 114 | 98 | 80 - 119 | 100 | 89 - 112 |
| 9224674 UNSPK | 103 | 81 - 118 | 97 | 85 - 114 | 98 | 80 - 119 | 100 | 89 - 112 |
| 9224675 MS | 102 | 81 - 118 | 99 | 85 - 114 | 99 | 80 - 119 | 100 | 89 - 112 |
| 9224676 MSD | 101 | 81 - 118 | 99 | 85 - 114 | 100 | 80 - 119 | 100 | 89 - 112 |
| 9224678 | 101 | 81 - 118 | 96 | 85 - 114 | 98 | 80 - 119 | 99 | 89 - 112 |
| 9224679 | 102 | 81 - 118 | 97 | 85 - 114 | 98 | 80 - 119 | 100 | 89 - 112 |
| 9224680 | 102 | 81 - 118 | 97 | 85 - 114 | 98 | 80 - 119 | 100 | 89 - 112 |

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| UNSPK: 9224674<br>MS: 9224675<br>MSD: 9224676<br>**Analyte** | Batch: **L172691AA** (Sample number(s): 9224669-9224676, 9224678-9224680 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | N.D. | 22.56 | 22.47 | 113 | 112 | 79-120 | 0 | 20 |
| Toluene | 20 | N.D. | 22.47 | 22.41 | 112 | 112 | 80-121 | 0 | 20 |
| Ethylbenzene | 20 | N.D. | 22.19 | 22.11 | 111 | 111 | 79-121 | 0 | 20 |
| Xylene (Total) | 60 | N.D. | 64.94 | 64.22 | 108 | 107 | 79-121 | 1 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR195**
**Matrix: LIQUID**

## GC/MS Volatiles

**Fraction: Volatiles by GC/MS**

| LCS: LCSL72 | Batch: **L172691AA** (Sample number(s): 9224669-9224676, 9224678-9224680 ) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Benzene | 20 | 22.04 | NA | 110 | NA | 79-120 | NA | NA |
| Toluene | 20 | 21.48 | NA | 107 | NA | 80-121 | NA | NA |
| Ethylbenzene | 20 | 21.61 | NA | 108 | NA | 79-121 | NA | NA |
| Xylene (Total) | 60 | 63.81 | NA | 106 | NA | 79-121 | NA | NA |

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR195___

Lab File ID: lg21t01.d  BFB Injection Date: 08/21/17

Instrument ID: HP09915  BFB Injection Time: 09:03

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 15.97 |
| 75 | 30.0 - 60.0% of mass 95 | 46.18 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.85 |
| 173 | Less than 2.0% of mass 174 | 0.42 ( 0.49)1 |
| 174 | Greater than 50.0% of mass 95 | 85.39 |
| 175 | 5.0 - 9.0% of mass 174 | 5.75 ( 6.73)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 81.97 (96.00)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.62 ( 6.85)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD300 | lg21i01.d | 08/21/17 | 09:40 |
| 02 | VSTD100 | lg21i02.d | 08/21/17 | 10:02 |
| 03 | VSTD50 | lg21i03.d | 08/21/17 | 10:24 |
| 04 | VSTD20 | lg21i04.d | 08/21/17 | 10:46 |
| 05 | VSTD10 | lg21i05.d | 08/21/17 | 11:08 |
| 06 | VSTD4 | lg21i06.d | 08/21/17 | 11:30 |
| 07 | VSTD1 | lg21i07.d | 08/21/17 | 11:51 |
| 08 | MDL0.5 - MDL0.5 | lg21m01.d | 08/21/17 | 12:13 |
| 09 | LGCICV | lq21v01.d | 08/21/17 | 12:35 |
| 10 | VSTD300 | lg21i11.d | 08/21/17 | 13:45 |
| 11 | VSTD100 | lg21i12.d | 08/21/17 | 14:07 |
| 12 | VSTD50 | lg21i13.d | 08/21/17 | 14:29 |
| 13 | VSTD20 | lg21i14.d | 08/21/17 | 14:51 |
| 14 | VSTD10 | lg21i15.d | 08/21/17 | 15:13 |
| 15 | VSTD4 | lg21i16.d | 08/21/17 | 15:35 |
| 16 | MDL001 - MDL001 | lg21m11.d | 08/21/17 | 15:56 |
| 17 | SMCICV | lg21v11.d | 08/21/17 | 16:18 |

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# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR195___

Lab File ID: ls26t01.d  BFB Injection Date: 09/26/17

Instrument ID: HP09915  BFB Injection Time: 07:19

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.48 |
| 75 | 30.0 - 60.0% of mass 95 | 48.09 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.46 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.56)1 |
| 174 | Greater than 50.0% of mass 95 | 86.60 |
| 175 | 5.0 - 9.0% of mass 174 | 7.01 ( 8.10)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 85.62 (98.87)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.29 ( 6.18)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 01 | VSTD50 | ls26c01.d | 09/26/17 | 08:07 |
| 02 | VBLKL72 | ls26b01.d | 09/26/17 | 08:29 |
| 03 | VBLKL73 | ls26b05.d | 09/26/17 | 08:29 |
| 04 | LCSL72 | ls26s01.d | 09/26/17 | 08:51 |
| 05 | LCSL73 | ls26s31.d | 09/26/17 | 08:51 |
| 06 | 9224675MS | ls26s03.d | 09/26/17 | 10:03 |
| 07 | 9224676MSD | ls26s04.d | 09/26/17 | 10:25 |
| 08 | 9224669 | ls26s05.d | 09/26/17 | 10:46 |
| 09 | 9224670 | ls26s06.d | 09/26/17 | 11:08 |
| 10 | 9224671 | ls26s07.d | 09/26/17 | 11:30 |
| 11 | 9224672 | ls26s08.d | 09/26/17 | 11:52 |
| 12 | 9224673 | ls26s09.d | 09/26/17 | 12:14 |
| 13 | 9224678 | ls26s10.d | 09/26/17 | 12:36 |
| 14 | 9224679 | ls26s11.d | 09/26/17 | 12:58 |
| 15 | 9224680 | ls26s12.d | 09/26/17 | 13:20 |
| 16 | 9224674 | ls26sa2.d | 09/26/17 | 13:41 |
| 17 | SECC050 | ls26ec1.d | 09/26/17 | 14:03 |
| 18 | 9223837 | ls26s32.d | 09/26/17 | 14:25 |
| 19 | 9223837MS | ls26s33.d | 09/26/17 | 14:47 |
| 20 | 9223837MSD | ls26s34.d | 09/26/17 | 15:09 |
| 21 | 9223839 | ls26s35.d | 09/26/17 | 15:31 |
| 22 | 9223841 | ls26s36.d | 09/26/17 | 15:53 |

5A

# VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_KR195___

Lab File ID: ls26t01.d  BFB Injection Date: 09/26/17

Instrument ID: HP09915  BFB Injection Time: 07:19

Matrix: (soil/water) WATER  Level: (low/med) LOW  Column: (pack/cap) CAP

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.48 |
| 75 | 30.0 - 60.0% of mass 95 | 48.09 |
| 95 | Base peak, 100% relative abundance | 100.00 |
| 96 | 5.0 - 9.0% of mass 95 | 6.46 |
| 173 | Less than 2.0% of mass 174 | 0.49 ( 0.56)1 |
| 174 | Greater than 50.0% of mass 95 | 86.60 |
| 175 | 5.0 - 9.0% of mass 174 | 7.01 ( 8.10)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 85.62 (98.87)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.29 ( 6.18)2 |

1-Value is % mass 174  2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| 23 | 9223843 | ls26s37.d | 09/26/17 | 16:15 |
| 24 | 9223844 | ls26s38.d | 09/26/17 | 16:37 |
| 25 | 9223845 | ls26s39.d | 09/26/17 | 16:59 |
| 26 | 9223846 | ls26s40.d | 09/26/17 | 17:21 |
| 27 | 9223847 | ls26s41.d | 09/26/17 | 17:43 |
| 28 | 9223848 | ls26s42.d | 09/26/17 | 18:05 |
| 29 | 9223849 | ls26s43.d | 09/26/17 | 18:27 |
| 30 | 9223850 | ls26s44.d | 09/26/17 | 18:49 |

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 08/21/17  08/21/17

Heated Purge: (Y/N) Y  Calibration Times: 09:40  11:51

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = lg21i07.d  RRF 4 = lg21i06.d  RRF 10= lg21i05.d
RRF 20= lg21i04.d  RRF 50= lg21i03.d  RRF100= lg21i02.d  RRF300= lg21i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | #0.2554 | 0.3276 | 0.3147 | 0.3168 | 0.3311 | 0.3370 | 0.3295 | 0.3160 | 9 | AVG | # |
| Chloromethane | #0.2854 | 0.3087 | 0.3090 | 0.3072 | 0.3007 | 0.3054 | 0.2879 | 0.3006 | 3 | AVG | # |
| 1,3-Butadiene | 0.2042 | 0.2091 | 0.2126 | 0.2165 | 0.2141 | 0.2146 | 0.2010 | 0.2103 | 3 | AVG | |
| Vinyl Chloride | #0.2629 | 0.3036 | 0.2984 | 0.3006 | 0.3032 | 0.3073 | 0.2904 | 0.2952 | 5 | AVG | # |
| Bromomethane | #0.2263 | 0.2308 | 0.2276 | 0.2272 | 0.2192 | 0.2155 | 0.1861 | 0.2190 | 7 | AVG | # |
| Chloroethane | #0.1552 | 0.1708 | 0.1707 | 0.1695 | 0.1655 | 0.1682 | 0.1451 | 0.1636 | 6 | AVG | # |
| Dichlorofluoromethane | 0.3769 | 0.3721 | 0.3873 | 0.3754 | 0.3562 | 0.3661 | 0.3478 | 0.3688 | 4 | AVG | |
| n-Pentane | 0.2832 | 0.3000 | 0.3015 | 0.3403 | 0.3325 | 0.3213 | 0.3024 | 0.3116 | 7 | AVG | |
| Trichlorofluoromethane | #0.3196 | 0.3811 | 0.3719 | 0.3728 | 0.3843 | 0.3925 | 0.3838 | 0.3723 | 7 | AVG | # |
| Ethyl ether | 0.1699 | 0.1813 | 0.1878 | 0.2007 | 0.2002 | 0.2003 | 0.1847 | 0.1893 | 6 | AVG | |
| Freon 123a | 0.2763 | 0.2573 | 0.2465 | 0.2535 | 0.2458 | 0.2443 | 0.2351 | 0.2512 | 5 | AVG | |
| Acrolein | 1.8947 | 1.6594 | 1.8088 | 1.8307 | 1.7928 | 1.9810 | 1.9086 | 1.8394 | 6 | AVG | |
| 1,1-Dichloroethene | #0.1470 | 0.1763 | 0.1864 | 0.1965 | 0.1942 | 0.1995 | 0.1966 | 0.1852 | 10 | AVG | # |
| 1,1-Dichloroethene(2) | #0.0729 | 0.0833 | 0.0878 | 0.0937 | 0.0906 | 0.0926 | 0.0899 | 0.0873 | 8 | AVG | #<- |
| Acetone | #0.7928 | 0.5752 | 0.7941 | 0.7663 | 0.7360 | 0.7700 | 0.7718 | 0.7437 | 10 | AVG | # |
| Freon 113 | #0.1375 | 0.1826 | 0.1889 | 0.2165 | 0.2167 | 0.2185 | 0.2140 | 0.1964 | 15 | AVG | # |
| 2-Propanol | 0.6248 | 0.5468 | 0.4986 | 0.5220 | 0.5259 | 0.5421 | 0.5129 | 0.5390 | 8 | AVG | |
| Methyl Iodide | 0.3205 | 0.3634 | 0.3957 | 0.4150 | 0.4049 | 0.4145 | 0.4013 | 0.3879 | 9 | AVG | |
| Carbon Disulfide | #0.5120 | 0.5910 | 0.6416 | 0.6822 | 0.6732 | 0.6875 | 0.6579 | 0.6350 | 10 | AVG | # |
| Allyl Chloride | 0.2547 | 0.2842 | 0.3136 | 0.3269 | 0.3219 | 0.3258 | 0.3071 | 0.3049 | 9 | AVG | |
| Methyl Acetate | #0.2210 | 0.2002 | 0.2202 | 0.2201 | 0.2252 | 0.2246 | 0.2133 | 0.2178 | 4 | AVG | # |
| Methylene Chloride | #0.2155 | 0.2116 | 0.2260 | 0.2352 | 0.2283 | 0.2301 | 0.2206 | 0.2239 | 4 | AVG | # |
| t-Butyl alcohol | 1.0777 | 0.9557 | 0.9832 | 1.0679 | 0.9819 | 0.9851 | 0.9523 | 1.0005 | 5 | AVG | |
| Acrylonitrile | 0.1151 | 0.1103 | 0.1260 | 0.1241 | 0.1200 | 0.1231 | 0.1160 | 0.1192 | 5 | AVG | |
| trans-1,2-Dichloroethene | #0.1798 | 0.2078 | 0.2211 | 0.2342 | 0.2274 | 0.2318 | 0.2286 | 0.2187 | 9 | AVG | # |
| Methyl Tertiary Butyl Ether | #0.6301 | 0.6536 | 0.7029 | 0.7376 | 0.7227 | 0.7210 | 0.6677 | 0.6908 | 6 | AVG | # |
| n-Hexane | 0.2543 | 0.2889 | 0.2873 | 0.3387 | 0.3360 | 0.3360 | 0.3238 | 0.3093 | 11 | AVG | |
| 1,1-Dichloroethane | #0.3174 | 0.3585 | 0.3808 | 0.3991 | 0.3898 | 0.3925 | 0.3765 | 0.3735 | 8 | AVG | # |
| di-Isopropyl ether | 0.5968 | 0.6235 | 0.6871 | 0.7103 | 0.6988 | 0.6997 | 0.6524 | 0.6669 | 7 | AVG | |
| 2-Chloro-1,3-butadiene | 0.2648 | 0.3139 | 0.3297 | 0.3495 | 0.3449 | 0.3465 | 0.3341 | 0.3262 | 9 | AVG | |
| Ethyl t-butyl ether | 0.6157 | 0.6331 | 0.7020 | 0.7290 | 0.7082 | 0.7059 | 0.6485 | 0.6775 | 6 | AVG | |
| cis-1,2-Dichloroethene | #0.2109 | 0.2326 | 0.2527 | 0.2634 | 0.2586 | 0.2637 | 0.2592 | 0.2487 | 8 | AVG | # |
| 2-Butanone | #0.1695 | 0.1489 | 0.1551 | 0.1554 | 0.1530 | 0.1586 | 0.1464 | 0.1553 | 5 | AVG | # |
| 2,2-Dichloropropane | 0.2762 | 0.3049 | 0.3221 | 0.3454 | 0.3373 | 0.3394 | 0.3281 | 0.3219 | 8 | AVG | |
| Propionitrile | 1.0611 | 1.0744 | 1.1992 | 1.2411 | 1.2050 | 1.2766 | 1.2425 | 1.1857 | 7 | AVG | |
| Methacrylonitrile | 0.1190 | 0.1199 | 0.1310 | 0.1368 | 0.1376 | 0.1387 | 0.1334 | 0.1309 | 6 | AVG | |
| Bromochloromethane | 0.1091 | 0.1214 | 0.1373 | 0.1384 | 0.1368 | 0.1398 | 0.1370 | 0.1314 | 9 | AVG | |
| Tetrahydrofuran | 1.0051 | 1.0108 | 1.1417 | 1.1512 | 1.1263 | 1.2271 | 1.2206 | 1.1261 | 8 | AVG | |
| Chloroform | #0.3166 | 0.3536 | 0.3934 | 0.4074 | 0.4008 | 0.4015 | 0.3856 | 0.3798 | 9 | AVG | # |
| 1,1,1-Trichloroethane | #0.3425 | 0.3977 | 0.3728 | 0.4001 | 0.3745 | 0.3786 | 0.3673 | 0.3762 | 5 | AVG | # |
| Cyclohexane | #0.3076 | 0.3452 | 0.3444 | 0.4017 | 0.3975 | 0.3956 | 0.3825 | 0.3678 | 10 | AVG | # |
| Cyclohexane(2) | #0.2475 | 0.2981 | 0.3042 | 0.3548 | 0.3521 | 0.3492 | 0.3446 | 0.3215 | 12 | AVG | # |
| Cyclohexane(3) | #0.0856 | 0.1107 | 0.1096 | 0.1260 | 0.1249 | 0.1244 | 0.1223 | 0.1148 | 13 | AVG | # |
| 1,1-Dichloropropene | 0.2408 | 0.2838 | 0.2916 | 0.3149 | 0.3178 | 0.3194 | 0.3161 | 0.2978 | 10 | AVG | |
| Carbon Tetrachloride | #0.2226 | 0.2601 | 0.2784 | 0.3068 | 0.3110 | 0.3172 | 0.3174 | 0.2876 | 12 | AVG | # |
| Isobutyl Alcohol | 0.3525 | 0.2946 | 0.3174 | 0.3243 | 0.3119 | 0.3111 | 0.3052 | 0.3167 | 6 | AVG | |
| Benzene | #0.7497 | 0.8220 | 0.8970 | 0.9361 | 0.9149 | 0.9214 | 0.8943 | 0.8765 | 8 | AVG | # |
| 1,2-Dichloroethane | #0.3168 | 0.2944 | 0.3123 | 0.3193 | 0.3149 | 0.3151 | 0.2985 | 0.3102 | 3 | AVG | # |
| 1,2-Dichloroethane(2) | #0.0282 | 0.0295 | 0.0303 | 0.0313 | 0.0310 | 0.0315 | 0.0303 | 0.0303 | 4 | AVG | #<- |
| t-Amyl methyl ether | 0.6232 | 0.6510 | 0.7240 | 0.7515 | 0.7378 | 0.7326 | 0.6735 | 0.6991 | 7 | AVG | |
| n-Heptane | 0.3023 | 0.2986 | 0.2886 | 0.3435 | 0.3450 | 0.3399 | 0.3257 | 0.3205 | 7 | AVG | |
| n-Butanol | 0.2216 | 0.2372 | 0.2639 | 0.2776 | 0.2702 | 0.2792 | 0.2758 | 0.2608 | 9 | AVG | |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories  Contract:_____

Lab Code: LANCAS  Case No.:_____  SAS No.:_____  SDG No.:_____

Instrument ID: HP09915  Calibration Date(s): 08/21/17  08/21/17

Heated Purge: (Y/N) Y  Calibration Times: 09:40  11:51

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = lg21i07.d  RRF 4 = lg21i06.d  RRF 10= lg21i05.d
RRF 20= lg21i04.d  RRF 50= lg21i03.d  RRF100= lg21i02.d  RRF300= lg21i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | #0.1903 | 0.2259 | 0.2378 | 0.2535 | 0.2466 | 0.2518 | 0.2505 | 0.2366 | 10 | AVG # |
| Methylcyclohexane | #0.2896 | 0.3381 | 0.3744 | 0.4202 | 0.4284 | 0.4331 | 0.4296 | 0.3876 | 14 | AVG # |
| Methylcyclohexane(2) | #0.1397 | 0.1583 | 0.1771 | 0.1956 | 0.2008 | 0.2052 | 0.2054 | 0.1832 | 14 | AVG # |
| 1,2-Dichloropropane | #0.1945 | 0.2097 | 0.2264 | 0.2381 | 0.2381 | 0.2416 | 0.2356 | 0.2263 | 8 | AVG # |
| Dibromomethane | 0.1385 | 0.1479 | 0.1610 | 0.1683 | 0.1694 | 0.1721 | 0.1689 | 0.1609 | 8 | AVG |
| 1,4-Dioxane | 0.0707 | 0.0755 | 0.0868 | 0.0816 | 0.0869 | 0.0865 | 0.0850 | 0.0818 | 8 | AVG |
| Methyl Methacrylate | 0.1883 | 0.1926 | 0.2114 | 0.2148 | 0.2232 | 0.2268 | 0.2229 | 0.2114 | 7 | AVG |
| Bromodichloromethane | #0.2377 | 0.2593 | 0.2911 | 0.3110 | 0.3147 | 0.3210 | 0.3129 | 0.2925 | 11 | AVG # |
| 2-Nitropropane | 0.0917 | 0.0757 | 0.0832 | 0.0806 | 0.0845 | 0.0894 | 0.0836 | 0.0841 | 6 | AVG |
| 2-Chloroethyl Vinyl Ether | 0.1466 | 0.1606 | 0.1706 | 0.1863 | 0.1882 | 0.1913 | 0.1870 | 0.1758 | 10 | AVG |
| cis-1,3-Dichloropropene | #0.2939 | 0.3264 | 0.3683 | 0.3915 | 0.3951 | 0.4050 | 0.3984 | 0.3684 | 12 | AVG # |
| 4-Methyl-2-pentanone | #0.3072 | 0.2977 | 0.3361 | 0.3336 | 0.3313 | 0.3473 | 0.3169 | 0.3243 | 5 | AVG # |
| Toluene | #0.6131 | 0.6888 | 0.7375 | 0.7755 | 0.7600 | 0.7692 | 0.7470 | 0.7273 | 8 | AVG # |
| trans-1,3-Dichloropropene | #0.3298 | 0.3704 | 0.4281 | 0.4556 | 0.4656 | 0.4755 | 0.4676 | 0.4275 | 13 | AVG # |
| Ethyl Methacrylate | 0.3809 | 0.4187 | 0.4745 | 0.4942 | 0.4972 | 0.4987 | 0.4783 | 0.4632 | 10 | AVG |
| 1,1,2-Trichloroethane | #0.2446 | 0.2639 | 0.2886 | 0.3019 | 0.2958 | 0.2969 | 0.2902 | 0.2831 | 7 | AVG # |
| Tetrachloroethene | #0.2520 | 0.3007 | 0.3117 | 0.3488 | 0.3426 | 0.3485 | 0.3549 | 0.3227 | 12 | AVG # |
| 1,3-Dichloropropane | 0.4051 | 0.4257 | 0.4740 | 0.4871 | 0.4821 | 0.4868 | 0.4711 | 0.4617 | 7 | AVG |
| 2-Hexanone | #0.2924 | 0.2776 | 0.3123 | 0.3103 | 0.3058 | 0.3212 | 0.2854 | 0.3007 | 5 | AVG # |
| Dibromochloromethane | #0.2278 | 0.2597 | 0.3088 | 0.3329 | 0.3460 | 0.3559 | 0.3531 | 0.3120 | 16 | AVG # |
| 1,2-Dibromoethane | #0.2657 | 0.2875 | 0.3268 | 0.3357 | 0.3383 | 0.3395 | 0.3309 | 0.3177 | 9 | AVG # |
| 1-Chlorohexane | 0.4110 | 0.3869 | 0.3819 | 0.4398 | 0.4368 | 0.4415 | 0.4375 | 0.4193 | 6 | AVG |
| Chlorobenzene | #0.7050 | 0.7762 | 0.8468 | 0.8988 | 0.8964 | 0.9135 | 0.9027 | 0.8485 | 9 | AVG # |
| 1,1,1,2-Tetrachloroethane | 0.2235 | 0.2606 | 0.2898 | 0.3175 | 0.3254 | 0.3350 | 0.3322 | 0.2977 | 14 | AVG |
| Ethylbenzene | #1.1765 | 1.2958 | 1.3867 | 1.5206 | 1.4956 | 1.5052 | 1.4151 | 1.3994 | 9 | AVG # |
| m+p-Xylene | #0.4468 | 0.5179 | 0.5549 | 0.6120 | 0.6053 | 0.6155 | 0.5783 | 0.5616 | 11 | AVG # |
| o-Xylene | #0.4556 | 0.5199 | 0.5554 | 0.6147 | 0.6079 | 0.6163 | 0.5876 | 0.5653 | 11 | AVG # |
| Styrene | #0.7288 | 0.8502 | 0.9339 | 1.0268 | 1.0307 | 1.0432 | 0.9797 | 0.9419 | 12 | AVG # |
| Bromoform | #0.1655 | 0.1837 | 0.2219 | 0.2467 | 0.2630 | 0.2763 | 0.2822 | 0.2342 | 19 | AVG # |
| Isopropylbenzene | #1.1105 | 1.3090 | 1.3836 | 1.5709 | 1.5444 | 1.5429 | 1.4538 | 1.4164 | 12 | AVG # |
| Cyclohexanone | 0.2971 | 0.2893 | 0.3187 | 0.3046 | 0.3297 | 0.3420 | 0.3337 | 0.3164 | 6 | AVG |
| Bromobenzene | 0.5851 | 0.6454 | 0.7050 | 0.7502 | 0.7587 | 0.7811 | 0.7791 | 0.7150 | 10 | AVG |
| 1,1,2,2-Tetrachloroethane | #0.7570 | 0.7797 | 0.8830 | 0.9049 | 0.9029 | 0.8908 | 0.8510 | 0.8528 | 7 | AVG # |
| 1,2,3-Trichloropropane | 0.2306 | 0.2431 | 0.2688 | 0.2709 | 0.2697 | 0.2715 | 0.2616 | 0.2595 | 6 | AVG |
| trans-1,4-Dichloro-2-butene | 0.1915 | 0.2105 | 0.2337 | 0.2424 | 0.2409 | 0.2390 | 0.2111 | 0.2242 | 9 | AVG |
| n-Propylbenzene | 2.4105 | 2.8035 | 2.9919 | 3.2828 | 3.2653 | 3.2380 | 2.9509 | 2.9918 | 11 | AVG |
| 2-Chlorotoluene | 0.5161 | 0.5845 | 0.6495 | 0.6912 | 0.6975 | 0.6995 | 0.6992 | 0.6482 | 11 | AVG |
| 4-Chlorotoluene | 0.5366 | 0.6128 | 0.6658 | 0.7233 | 0.7286 | 0.7403 | 0.7314 | 0.6770 | 11 | AVG |
| 1,3,5-Trimethylbenzene | 1.8428 | 2.0641 | 2.2014 | 2.4400 | 2.4555 | 2.4682 | 2.3157 | 2.2554 | 10 | AVG |
| tert-Butylbenzene | 0.4092 | 0.4186 | 0.4413 | 0.5205 | 0.5254 | 0.5393 | 0.5412 | 0.4851 | 12 | AVG |
| Pentachloroethane | 0.2718 | 0.3281 | 0.4055 | 0.4286 | 0.4598 | 0.4865 | 0.4841 | 0.4092 | 20 | AVG |
| 1,2,4-Trimethylbenzene | 1.8988 | 2.1241 | 2.2932 | 2.5033 | 2.5272 | 2.5425 | 2.3613 | 2.3215 | 10 | AVG |
| sec-Butylbenzene | 2.2524 | 2.5546 | 2.7067 | 3.0775 | 3.0984 | 3.0698 | 2.8303 | 2.7985 | 11 | AVG |
| 1,3-Dichlorobenzene | #1.1327 | 1.2459 | 1.3391 | 1.4421 | 1.4511 | 1.4640 | 1.3832 | 1.3512 | 9 | AVG # |
| p-Isopropyltoluene | 1.9338 | 2.2545 | 2.3924 | 2.7216 | 2.7634 | 2.7675 | 2.5690 | 2.4860 | 13 | AVG |
| 1,4-Dichlorobenzene | #1.1737 | 1.2987 | 1.3899 | 1.5037 | 1.5032 | 1.5198 | 1.3781 | 1.3953 | 9 | AVG # |
| 1,2,3-Trimethylbenzene | 2.0216 | 2.1962 | 2.5205 | 2.5764 | 2.6092 | 2.6442 | 2.3594 | 2.4182 | 10 | AVG |
| Benzyl Chloride | 1.2812 | 1.4778 | 1.7047 | 1.8702 | 1.9282 | 1.9529 | 1.8406 | 1.7222 | 15 | AVG |
| 1,3-Diethylbenzene | 1.1720 | 1.3589 | 1.5815 | 1.6044 | 1.6432 | 1.6502 | 1.5524 | 1.5089 | 12 | AVG |
| 1,4-Diethylbenzene | 1.2459 | 1.4315 | 1.6507 | 1.6780 | 1.7042 | 1.7155 | 1.5904 | 1.5737 | 11 | AVG |
| 1,2-Dichlorobenzene | #1.1277 | 1.2390 | 1.3365 | 1.4307 | 1.4405 | 1.4468 | 1.3756 | 1.3424 | 9 | AVG # |
| n-Butylbenzene | 0.9824 | 1.1387 | 1.1887 | 1.3269 | 1.3508 | 1.3309 | 1.2088 | 1.2181 | 11 | AVG |

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date(s): 08/21/17 08/21/17

Heated Purge: (Y/N) Y Calibration Times: 09:40 11:51

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF 1 = lg21i07.d RRF 4 = lg21i06.d RRF 10= lg21i05.d
RRF 20= lg21i04.d RRF 50= lg21i03.d RRF100= lg21i02.d RRF300= lg21i01.d

| COMPOUND | RRF 1 | RRF 4 | RRF 10 | RRF 20 | RRF 50 | RRF100 | RRF300 | RRF | % RSD | CAL. METHOD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Diethylbenzene | 0.9771 | 1.1313 | 1.3216 | 1.3287 | 1.3664 | 1.3768 | 1.2988 | 1.2572 | 12 | AVG |
| 1,2-Dibromo-3-chloropropane | #0.1546 | 0.1660 | 0.1842 | 0.1953 | 0.2045 | 0.2035 | 0.1925 | 0.1858 | 10 | AVG # |
| 1,3,5-Trichlorobenzene | 0.9071 | 0.9521 | 0.9826 | 1.0750 | 1.0786 | 1.0834 | 1.0653 | 1.0206 | 7 | AVG |
| 1,2,4-Trichlorobenzene | #0.9728 | 0.9498 | 0.9709 | 1.0502 | 1.0557 | 1.0590 | 1.0302 | 1.0127 | 5 | AVG # |
| Hexachlorobutadiene | 0.4372 | 0.3999 | 0.4120 | 0.4483 | 0.4545 | 0.4488 | 0.4272 | 0.4326 | 5 | AVG |
| Naphthalene | 3.0737 | 3.0251 | 3.1961 | 3.4198 | 3.3899 | 3.3501 | 2.9344 | 3.1985 | 6 | AVG |
| 1,2,3-Trichlorobenzene | 0.9739 | 0.9064 | 0.9362 | 1.0099 | 1.0035 | 1.0047 | 0.9658 | 0.9715 | 4 | AVG |
| 2-Methylnaphthalene | 2.2967 | 2.0640 | 2.2196 | 2.2261 | 2.2141 | 2.2062 | 1.8627 | 2.1556 | 7 | AVG |
| Dibromofluoromethane | 0.2528 | 0.2535 | 0.2550 | 0.2564 | 0.2539 | 0.2553 | 0.2540 | 0.2544 | 0 | AVG |
| Dibromofluoromethane(2) | 0.2607 | 0.2605 | 0.2602 | 0.2619 | 0.2598 | 0.2607 | 0.2600 | 0.2605 | 0 | AVG |
| 1,2-Dichloroethane-d4 | 0.0612 | 0.0617 | 0.0624 | 0.0620 | 0.0614 | 0.0618 | 0.0619 | 0.0618 | 1 | AVG |
| 1,2-Dichloroethane-d4(2) | 0.2909 | 0.2913 | 0.2879 | 0.2877 | 0.2882 | 0.2861 | 0.2805 | 0.2875 | 1 | AVG |
| 1,2-Dichloroethane-d4(3) | 0.0397 | 0.0395 | 0.0391 | 0.0393 | 0.0395 | 0.0402 | 0.0400 | 0.0396 | 1 | AVG |
| Toluene-d8 | 1.2522 | 1.2549 | 1.2596 | 1.2541 | 1.2413 | 1.2336 | 1.2186 | 1.2449 | 1 | AVG |
| Toluene-d8(2) | 0.8185 | 0.8225 | 0.8250 | 0.8224 | 0.8171 | 0.8138 | 0.8066 | 0.8180 | 1 | AVG |
| 4-Bromofluorobenzene | 0.4801 | 0.4772 | 0.4762 | 0.4813 | 0.4755 | 0.4719 | 0.4695 | 0.4759 | 1 | AVG |
| 4-Bromofluorobenzene(2) | 0.4175 | 0.4149 | 0.4111 | 0.4154 | 0.4137 | 0.4072 | 0.4062 | 0.4123 | 1 | AVG |

Average %RSD 8

# Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.



FORM VI VOA

# Internal Standard Area and Retention Time Summary

## Initial Calibration Standards:

| | |
|---|---|
| /chem/HP09915.i/17aug21i.b/lg21i01.d | VSTD300 |
| /chem/HP09915.i/17aug21i.b/lg21i02.d | VSTD100 |
| /chem/HP09915.i/17aug21i.b/lg21i03.d | VSTD050 |
| /chem/HP09915.i/17aug21i.b/lg21i04.d | VSTD020 |
| /chem/HP09915.i/17aug21i.b/lg21i05.d | VSTD010 |
| /chem/HP09915.i/17aug21i.b/lg21i06.d | VSTD004 |
| /chem/HP09915.i/17aug21i.b/lg21i07.d | VSTD001 |

Area Summary

File ID:

| Internal Standard Name | lg21i01.d | lg21i02.d | lg21i03.d | lg21i04.d | lg21i05.d | lg21i06.d | lg21i07.d | Avg. Area | %RSD | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 244314 | 244820 | 258273 | 249018 | 254929 | 261323 | 248975 | 251665 | 3 | Yes |
| Fluorobenzene | 1371560 | 1322168 | 1319240 | 1291613 | 1293715 | 1288157 | 1255839 | 1306042 | 3 | Yes |
| Chlorobenzene-d5 | 1100857 | 1055218 | 1045640 | 1021687 | 1010789 | 1014165 | 990561 | 1034131 | 4 | Yes |
| 1,4-Dichlorobenzene-d4 | 609070 | 577199 | 571675 | 565404 | 545387 | 553830 | 548017 | 567226 | 4 | Yes |

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

| Internal Standard Name | lg21i01.d | lg21i02.d | lg21i03.d | lg21i04.d | lg21i05.d | lg21i06.d | lg21i07.d | Avg. RT |
|---|---|---|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 3.574 | 3.571 | 3.568 | 3.568 | 3.581 | 3.581 | 3.574 | 3.574 |
| Fluorobenzene | 7.057 | 7.050 | 7.050 | 7.050 | 7.054 | 7.050 | 7.050 | 7.052 |
| Chlorobenzene-d5 | 10.712 | 10.709 | 10.709 | 10.709 | 10.709 | 10.709 | 10.709 | 10.710 |
| 1,4-Dichlorobenzene-d4 | 12.642 | 12.638 | 12.638 | 12.638 | 12.639 | 12.639 | 12.638 | 12.639 |

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 08/21/2017 at 12:22.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 08/21/17 Time: 12:35

Lab File ID: lg21v01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | Dichlorodifluoromethane | 0.3160 | 0.2939 | 18.60 | 20 | -7 | # |
| # | Chloromethane | 0.3006 | 0.2977 | 19.80 | 20 | -1 | # |
| | 1,3-Butadiene | 0.2103 | 0.2547 | 24.22 | 20 | 21 | |
| # | Vinyl Chloride | 0.2952 | 0.3004 | 20.35 | 20 | 2 | # |
| # | Bromomethane | 0.2190 | 0.2217 | 20.25 | 20 | 1 | # |
| # | Chloroethane | 0.1636 | 0.1656 | 20.24 | 20 | 1 | # |
| | Dichlorofluoromethane | 0.3688 | 0.3815 | 20.69 | 20 | 3 | |
| | n-Pentane | 0.3116 | 0.3436 | 22.06 | 20 | 10 | |
| # | Trichlorofluoromethane | 0.3723 | 0.3920 | 21.06 | 20 | 5 | # |
| | Ethyl ether | 0.1893 | 0.1916 | 20.24 | 20 | 1 | |
| | Freon 123a | 0.2512 | 0.2409 | 19.18 | 20 | -4 | |
| | Acrolein | 1.8394 | 1.6740 | 136.51 | 150 | -9 | |
| # | 1,1-Dichloroethene | 0.1852 | 0.2040 | 22.03 | 20 | 10 | # |
| # | Acetone | 0.7437 | 0.7034 | 141.86 | 150 | -5 | # |
| # | Freon 113 | 0.1964 | 0.2072 | 21.11 | 20 | 6 | # |
| | 2-Propanol | 0.5390 | 0.4864 | 135.36 | 150 | -10 | |
| | Methyl Iodide | 0.3879 | 0.3946 | 20.35 | 20 | 2 | |
| # | Carbon Disulfide | 0.6350 | 0.6574 | 20.70 | 20 | 4 | # |
| | Allyl Chloride | 0.3049 | 0.3209 | 21.05 | 20 | 5 | |
| # | Methyl Acetate | 0.2178 | 0.2221 | 20.40 | 20 | 2 | # |
| # | Methylene Chloride | 0.2239 | 0.2311 | 20.64 | 20 | 3 | # |
| | t-Butyl alcohol | 1.0005 | 0.9677 | 193.44 | 200 | -3 | |
| | Acrylonitrile | 0.1192 | 0.1147 | 96.23 | 100 | -4 | |
| # | trans-1,2-Dichloroethene | 0.2187 | 0.2322 | 21.23 | 20 | 6 | # |
| # | Methyl Tertiary Butyl Ether | 0.6908 | 0.6997 | 20.26 | 20 | 1 | # |
| | n-Hexane | 0.3093 | 0.3125 | 20.21 | 20 | 1 | |
| # | 1,1-Dichloroethane | 0.3735 | 0.3786 | 20.27 | 20 | 1 | # |
| | di-Isopropyl ether | 0.6669 | 0.6846 | 20.53 | 20 | 3 | |
| | 2-Chloro-1,3-butadiene | 0.3262 | 0.3238 | 19.85 | 20 | -1 | |
| | Ethyl t-butyl ether | 0.6775 | 0.6812 | 20.11 | 20 | 1 | |
| # | cis-1,2-Dichloroethene | 0.2487 | 0.2589 | 20.82 | 20 | 4 | # |
| # | 2-Butanone | 0.1553 | 0.1489 | 143.86 | 150 | -4 | # |
| | 2,2-Dichloropropane | 0.3219 | 0.3289 | 20.43 | 20 | 2 | |
| | Propionitrile | 1.1857 | 1.1821 | 149.55 | 150 | 0 | |
| | Methacrylonitrile | 0.1309 | 0.1308 | 149.85 | 150 | 0 | |
| | Bromochloromethane | 0.1314 | 0.1396 | 21.25 | 20 | 6 | |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 08/21/17 Time: 12:35

Lab File ID: lg21v01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | Tetrahydrofuran | 1.1261 | 1.1129 | 98.82 | 100 | -1 | |
| # | Chloroform | 0.3798 | 0.3877 | 20.41 | 20 | 2 | # |
| # | 1,1,1-Trichloroethane | 0.3762 | 0.3633 | 19.31 | 20 | -3 | # |
| # | Cyclohexane | 0.3678 | 0.3552 | 19.32 | 20 | -3 | # |
| | 1,1-Dichloropropene | 0.2978 | 0.2989 | 20.08 | 20 | 0 | |
| # | Carbon Tetrachloride | 0.2876 | 0.2898 | 20.15 | 20 | 1 | # |
| | Isobutyl Alcohol | 0.3167 | 0.3080 | 486.20 | 500 | -3 | |
| # | Benzene | 0.8765 | 0.8912 | 20.34 | 20 | 2 | # |
| # | 1,2-Dichloroethane | 0.3102 | 0.3059 | 19.73 | 20 | -1 | # |
| | t-Amyl methyl ether | 0.6991 | 0.6995 | 20.01 | 20 | 0 | |
| | n-Heptane | 0.3205 | 0.3176 | 19.82 | 20 | -1 | |
| | n-Butanol | 0.2608 | 0.2609 | 1000.26 | 1000 | 0 | |
| # | Trichloroethene | 0.2366 | 0.2379 | 20.11 | 20 | 1 | # |
| # | Methylcyclohexane | 0.3876 | 0.4240 | 21.88 | 20 | 9 | # |
| # | 1,2-Dichloropropane | 0.2263 | 0.2295 | 20.28 | 20 | 1 | # |
| | Dibromomethane | 0.1609 | 0.1628 | 20.24 | 20 | 1 | |
| | 1,4-Dioxane | 0.0818 | 0.0831 | 507.70 | 500 | 2 | |
| | Methyl Methacrylate | 0.2114 | 0.2083 | 19.71 | 20 | -1 | |
| # | Bromodichloromethane | 0.2925 | 0.2870 | 19.62 | 20 | -2 | # |
| | 2-Nitropropane | 0.0841 | 0.0763 | 18.14 | 20 | -9 | |
| | 2-Chloroethyl Vinyl Ether | 0.1758 | 0.1757 | 19.98 | 20 | 0 | |
| # | cis-1,3-Dichloropropene | 0.3684 | 0.3684 | 20.00 | 20 | 0 | # |
| # | 4-Methyl-2-pentanone | 0.3243 | 0.3202 | 98.73 | 100 | -1 | # |
| # | Toluene | 0.7273 | 0.7370 | 20.27 | 20 | 1 | # |
| # | trans-1,3-Dichloropropene | 0.4275 | 0.4265 | 19.95 | 20 | 0 | # |
| | Ethyl Methacrylate | 0.4632 | 0.4814 | 20.78 | 20 | 4 | |
| # | 1,1,2-Trichloroethane | 0.2831 | 0.2948 | 20.82 | 20 | 4 | # |
| # | Tetrachloroethene | 0.3227 | 0.3329 | 20.63 | 20 | 3 | # |
| | 1,3-Dichloropropane | 0.4617 | 0.4640 | 20.10 | 20 | 1 | |
| # | 2-Hexanone | 0.3007 | 0.2964 | 98.57 | 100 | -1 | # |
| # | Dibromochloromethane | 0.3120 | 0.3114 | 19.96 | 20 | 0 | # |
| # | 1,2-Dibromoethane | 0.3177 | 0.3223 | 20.29 | 20 | 1 | # |
| | 1-Chlorohexane | 0.4193 | 0.4130 | 19.70 | 20 | -2 | |
| # | Chlorobenzene | 0.8485 | 0.8552 | 20.16 | 20 | 1 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2977 | 0.2983 | 20.04 | 20 | 0 | |
| # | Ethylbenzene | 1.3994 | 1.4279 | 20.41 | 20 | 2 | # |

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 ICV Date: 08/21/17 Time: 12:35

Lab File ID: lg21v01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | $\overline{RRF}$ | RRF | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| # | m+p-Xylene | 0.5616 | 0.5821 | 41.47 | 40 | 4 | # |
| # | o-Xylene | 0.5653 | 0.5728 | 20.26 | 20 | 1 | # |
| # | Styrene | 0.9419 | 0.9769 | 20.74 | 20 | 4 | # |
| # | Bromoform | 0.2342 | 0.2228 | 19.03 | 20 | -5 | # |
| # | Isopropylbenzene | 1.4164 | 1.4848 | 20.96 | 20 | 5 | # |
| | Cyclohexanone | 0.3164 | 0.3127 | 494.15 | 500 | -1 | |
| | Bromobenzene | 0.7150 | 0.7241 | 20.26 | 20 | 1 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8528 | 0.8638 | 20.26 | 20 | 1 | # |
| | 1,2,3-Trichloropropane | 0.2595 | 0.2685 | 20.70 | 20 | 3 | |
| | trans-1,4-Dichloro-2-butene | 0.2242 | 0.2454 | 109.49 | 100 | 9 | |
| | n-Propylbenzene | 2.9918 | 3.1424 | 21.01 | 20 | 5 | |
| | 2-Chlorotoluene | 0.6482 | 0.6629 | 20.45 | 20 | 2 | |
| | 4-Chlorotoluene | 0.6770 | 0.6863 | 20.28 | 20 | 1 | |
| | 1,3,5-Trimethylbenzene | 2.2554 | 2.3207 | 20.58 | 20 | 3 | |
| | tert-Butylbenzene | 0.4851 | 0.4998 | 20.61 | 20 | 3 | |
| | Pentachloroethane | 0.4092 | 0.4225 | 20.65 | 20 | 3 | |
| | 1,2,4-Trimethylbenzene | 2.3215 | 2.3925 | 20.61 | 20 | 3 | |
| | sec-Butylbenzene | 2.7985 | 2.9908 | 21.37 | 20 | 7 | |
| # | 1,3-Dichlorobenzene | 1.3512 | 1.3556 | 20.07 | 20 | 0 | # |
| | p-Isopropyltoluene | 2.4860 | 2.6498 | 21.32 | 20 | 7 | |
| # | 1,4-Dichlorobenzene | 1.3953 | 1.4377 | 20.61 | 20 | 3 | # |
| | 1,2,3-Trimethylbenzene | 2.4182 | 2.6010 | 21.51 | 20 | 8 | |
| | Benzyl Chloride | 1.7222 | 1.7679 | 20.53 | 20 | 3 | |
| | 1,3-Diethylbenzene | 1.5089 | 1.5796 | 20.94 | 20 | 5 | |
| | 1,4-Diethylbenzene | 1.5737 | 1.6732 | 21.26 | 20 | 6 | |
| # | 1,2-Dichlorobenzene | 1.3424 | 1.3671 | 20.37 | 20 | 2 | # |
| | n-Butylbenzene | 1.2181 | 1.2791 | 21.00 | 20 | 5 | |
| | 1,2-Diethylbenzene | 1.2572 | 1.3424 | 21.36 | 20 | 7 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1858 | 0.1894 | 20.38 | 20 | 2 | # |
| | 1,3,5-Trichlorobenzene | 1.0206 | 1.0293 | 20.17 | 20 | 1 | |
| # | 1,2,4-Trichlorobenzene | 1.0127 | 0.9818 | 19.39 | 20 | -3 | # |
| | Hexachlorobutadiene | 0.4326 | 0.4173 | 19.30 | 20 | -4 | |
| | Naphthalene | 3.1985 | 3.2104 | 20.07 | 20 | 0 | |
| | 1,2,3-Trichlorobenzene | 0.9715 | 0.9368 | 19.29 | 20 | -4 | |
| | 2-Methylnaphthalene | 2.1556 | 1.9870 | 18.44 | 20 | -8 | |

Average %Drift 3

# Compounds with required minimum RRF.
Maximum % Drift = 30 %

# Lancaster Laboratories
## Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP09915.i/17aug21i.b/lg21i07.d
/chem/HP09915.i/17aug21i.b/lg21i06.d
/chem/HP09915.i/17aug21i.b/lg21i05.d
/chem/HP09915.i/17aug21i.b/lg21i04.d
/chem/HP09915.i/17aug21i.b/lg21i03.d
/chem/HP09915.i/17aug21i.b/lg21i02.d
/chem/HP09915.i/17aug21i.b/lg21i01.d

File /chem/HP09915.i/17aug21i.b/lg21i03.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP09915.i/17sep26a.b/ls26c01.d

RT Summary

File ID:

| Internal Standard Name | ls26c01.d | ICAL RT | In Spec |
|---|---|---|---|
| t-Butyl alcohol-d10 | 3.578 | 3.568 | Yes |
| Fluorobenzene | 7.044 | 7.050 | Yes |
| Chlorobenzene-d5 | 10.706 | 10.709 | Yes |
| 1,4-Dichlorobenzene-d4 | 12.639 | 12.638 | Yes |

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

File ID:

| Internal Standard Name | ls26c01.d | ICAL Area | Low Limit | High Limit | In Spec |
|---|---|---|---|---|---|
| t-Butyl alcohol-d10 | 190652 | 258273 | 129136 | 516546 | Yes |
| Fluorobenzene | 1032450 | 1319240 | 659620 | 2638480 | Yes |
| Chlorobenzene-d5 | 828047 | 1045640 | 522820 | 2091280 | Yes |
| 1,4-Dichlorobenzene-d4 | 466525 | 571675 | 285838 | 1143350 | Yes |

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 09/26/2017 at 08:32

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 09/26/17 Time: 08:07

Lab File ID: ls26c01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| # Dichlorodifluoromethane | 0.3160 | 0.3329 | 52.67 | 50 | 5 | # |
| # Chloromethane | 0.3006 | 0.2858 | 47.54 | 50 | -5 | # |
| 1,3-Butadiene | 0.2103 | 0.2320 | 55.15 | 50 | 10 | |
| # Vinyl Chloride | 0.2952 | 0.2794 | 47.33 | 50 | -5 | # |
| # Bromomethane | 0.2190 | 0.2000 | 45.67 | 50 | -9 | # |
| # Chloroethane | 0.1636 | 0.1562 | 47.75 | 50 | -4 | # |
| n-Pentane | 0.3116 | 0.3026 | 48.55 | 50 | -3 | |
| # Trichlorofluoromethane | 0.3723 | 0.3739 | 50.22 | 50 | 0 | # |
| Ethyl ether | 0.1893 | 0.1973 | 52.11 | 50 | 4 | |
| Freon 123a | 0.2512 | 0.2391 | 47.59 | 50 | -5 | |
| Acrolein | 1.8394 | 1.9623 | 533.40 | 500 | 7 | |
| # 1,1-Dichloroethene | 0.1852 | 0.1845 | 49.80 | 50 | 0 | # |
| # 1,1-Dichloroethene(2) | 0.0873 | 0.0913 | 52.32 | 50 | 5 | #<- |
| # Acetone | 0.7437 | 0.8917 | 119.89 | 100 | 20 | # |
| # Freon 113 | 0.1964 | 0.2051 | 52.22 | 50 | 4 | # |
| 2-Propanol | 0.5390 | 0.6098 | 282.84 | 250 | 13 | |
| Methyl Iodide | 0.3879 | 0.3698 | 47.68 | 50 | -5 | |
| # Carbon Disulfide | 0.6350 | 0.6254 | 49.24 | 50 | -2 | # |
| Allyl Chloride | 0.3049 | 0.3309 | 54.27 | 50 | 9 | |
| # Methyl Acetate | 0.2178 | 0.2504 | 57.49 | 50 | 15 | # |
| # Methylene Chloride | 0.2239 | 0.2281 | 50.94 | 50 | 2 | # |
| t-Butyl alcohol | 1.0005 | 1.0493 | 262.18 | 250 | 5 | |
| Acrylonitrile | 0.1192 | 0.1340 | 56.18 | 50 | 12 | |
| # trans-1,2-Dichloroethene | 0.2187 | 0.2213 | 50.61 | 50 | 1 | # |
| # Methyl Tertiary Butyl Ether | 0.6908 | 0.7192 | 52.06 | 50 | 4 | # |
| n-Hexane | 0.3093 | 0.3337 | 53.95 | 50 | 8 | |
| # 1,1-Dichloroethane | 0.3735 | 0.3960 | 53.01 | 50 | 6 | # |
| di-Isopropyl ether | 0.6669 | 0.7531 | 56.46 | 50 | 13 | |
| 2-Chloro-1,3-butadiene | 0.3262 | 0.3484 | 53.40 | 50 | 7 | |
| Ethyl t-butyl ether | 0.6775 | 0.7011 | 51.74 | 50 | 3 | |
| # cis-1,2-Dichloroethene | 0.2487 | 0.2530 | 50.86 | 50 | 2 | # |
| # 2-Butanone | 0.1553 | 0.1758 | 113.20 | 100 | 13 | # |
| 2,2-Dichloropropane | 0.3219 | 0.2981 | 46.31 | 50 | -7 | |
| Propionitrile | 1.1857 | 1.4302 | 301.55 | 250 | 21 | <- |
| Methacrylonitrile | 0.1309 | 0.1401 | 133.81 | 125 | 7 | |
| Bromochloromethane | 0.1314 | 0.1309 | 49.79 | 50 | 0 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 09/26/17 Time: 08:07

Lab File ID: ls26c01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | | | ACTUAL | TRUE | % | |
|---|---|---|---|---|---|---|
| COMPOUND | RRF | RRF50 | CONC. | CONC. | DRIFT | |
| Tetrahydrofuran | 1.1261 | 1.2132 | 107.73 | 100 | 8 | |
| # Chloroform | 0.3798 | 0.3967 | 52.22 | 50 | 4 | # |
| # 1,1,1-Trichloroethane | 0.3762 | 0.3445 | 45.78 | 50 | -8 | # |
| # Cyclohexane | 0.3678 | 0.3985 | 54.18 | 50 | 8 | # |
| # Cyclohexane(2) | 0.3215 | 0.3384 | 52.62 | 50 | 5 | # |
| # Cyclohexane(3) | 0.1148 | 0.1191 | 51.89 | 50 | 4 | # |
| 1,1-Dichloropropene | 0.2978 | 0.3147 | 52.84 | 50 | 6 | |
| # Carbon Tetrachloride | 0.2876 | 0.2651 | 46.09 | 50 | -8 | # |
| Isobutyl Alcohol | 0.3167 | 0.3670 | 724.17 | 625 | 16 | |
| # Benzene | 0.8765 | 0.9259 | 52.82 | 50 | 6 | # |
| # 1,2-Dichloroethane | 0.3102 | 0.3232 | 52.10 | 50 | 4 | # |
| # 1,2-Dichloroethane(2) | 0.0303 | 0.0304 | 50.20 | 50 | 0 | #<- |
| t-Amyl methyl ether | 0.6991 | 0.6998 | 50.05 | 50 | 0 | |
| n-Heptane | 0.3205 | 0.3651 | 56.96 | 50 | 14 | |
| n-Butanol | 0.2608 | 0.2912 | 1395.89 | 1250 | 12 | |
| # Trichloroethene | 0.2366 | 0.2424 | 51.23 | 50 | 2 | # |
| # Methylcyclohexane | 0.3876 | 0.4124 | 53.19 | 50 | 6 | # |
| # Methylcyclohexane(2) | 0.1832 | 0.1897 | 51.78 | 50 | 4 | # |
| # 1,2-Dichloropropane | 0.2263 | 0.2469 | 54.55 | 50 | 9 | # |
| Dibromomethane | 0.1609 | 0.1681 | 52.26 | 50 | 5 | |
| 1,4-Dioxane | 0.0818 | 0.1075 | 821.18 | 625 | 31 | <- |
| Methyl Methacrylate | 0.2114 | 0.2250 | 53.22 | 50 | 6 | |
| # Bromodichloromethane | 0.2925 | 0.2947 | 50.37 | 50 | 1 | # |
| 2-Nitropropane | 0.0841 | 0.0418 | 49.69 | 100 | -50 | <- |
| 2-Chloroethyl Vinyl Ether | 0.1758 | 0.1916 | 54.49 | 50 | 9 | |
| # cis-1,3-Dichloropropene | 0.3684 | 0.3786 | 51.39 | 50 | 3 | # |
| # 4-Methyl-2-pentanone | 0.3243 | 0.3621 | 111.64 | 100 | 12 | # |
| # Toluene | 0.7273 | 0.7397 | 50.85 | 50 | 2 | # |
| # trans-1,3-Dichloropropene | 0.4275 | 0.4238 | 49.57 | 50 | -1 | # |
| Ethyl Methacrylate | 0.4632 | 0.4847 | 52.31 | 50 | 5 | |
| # 1,1,2-Trichloroethane | 0.2831 | 0.2941 | 51.94 | 50 | 4 | # |
| # Tetrachloroethene | 0.3227 | 0.3364 | 52.12 | 50 | 4 | # |
| 1,3-Dichloropropane | 0.4617 | 0.4926 | 53.35 | 50 | 7 | |
| # 2-Hexanone | 0.3007 | 0.3302 | 109.81 | 100 | 10 | # |
| # Dibromochloromethane | 0.3120 | 0.3010 | 48.24 | 50 | -4 | # |
| # 1,2-Dibromoethane | 0.3177 | 0.3309 | 52.06 | 50 | 4 | # |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 09/26/17 Time: 08:07

Lab File ID: ls26c01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| | COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT | |
|---|---|---|---|---|---|---|---|
| | 1-Chlorohexane | 0.4193 | 0.4119 | 49.12 | 50 | -2 | |
| # | Chlorobenzene | 0.8485 | 0.8645 | 50.94 | 50 | 2 | # |
| | 1,1,1,2-Tetrachloroethane | 0.2977 | 0.2944 | 49.44 | 50 | -1 | |
| # | Ethylbenzene | 1.3994 | 1.4725 | 52.61 | 50 | 5 | # |
| # | m+p-Xylene | 0.5616 | 0.5852 | 104.22 | 100 | 4 | # |
| # | o-Xylene | 0.5653 | 0.5836 | 51.61 | 50 | 3 | # |
| # | Styrene | 0.9419 | 0.9711 | 51.55 | 50 | 3 | # |
| # | Bromoform | 0.2342 | 0.2086 | 44.54 | 50 | -11 | # |
| # | Isopropylbenzene | 1.4164 | 1.4752 | 52.07 | 50 | 4 | # |
| | Cyclohexanone | 0.3164 | 0.3716 | 733.94 | 625 | 17 | |
| | Bromobenzene | 0.7150 | 0.7176 | 50.18 | 50 | 0 | |
| # | 1,1,2,2-Tetrachloroethane | 0.8528 | 0.8542 | 50.08 | 50 | 0 | # |
| | 1,2,3-Trichloropropane | 0.2595 | 0.2589 | 49.89 | 50 | 0 | |
| | trans-1,4-Dichloro-2-butene | 0.2242 | 0.2034 | 113.44 | 125 | -9 | |
| | n-Propylbenzene | 2.9918 | 3.0732 | 51.36 | 50 | 3 | |
| | 2-Chlorotoluene | 0.6482 | 0.6369 | 49.13 | 50 | -2 | |
| | 4-Chlorotoluene | 0.6770 | 0.6700 | 49.48 | 50 | -1 | |
| | 1,3,5-Trimethylbenzene | 2.2554 | 2.2524 | 49.93 | 50 | 0 | |
| | tert-Butylbenzene | 0.4851 | 0.4862 | 50.12 | 50 | 0 | |
| | Pentachloroethane | 0.4092 | 0.3797 | 46.40 | 50 | -7 | |
| | 1,2,4-Trimethylbenzene | 2.3215 | 2.3317 | 50.22 | 50 | 0 | |
| | sec-Butylbenzene | 2.7985 | 2.8810 | 51.47 | 50 | 3 | |
| # | 1,3-Dichlorobenzene | 1.3512 | 1.3630 | 50.44 | 50 | 1 | # |
| | p-Isopropyltoluene | 2.4860 | 2.5592 | 51.47 | 50 | 3 | |
| # | 1,4-Dichlorobenzene | 1.3953 | 1.4173 | 50.79 | 50 | 2 | # |
| | 1,2,3-Trimethylbenzene | 2.4182 | 2.4119 | 49.87 | 50 | 0 | |
| | Benzyl Chloride | 1.7222 | 1.4196 | 41.22 | 50 | -18 | |
| | 1,3-Diethylbenzene | 1.5089 | 1.4859 | 49.23 | 50 | -2 | |
| | 1,4-Diethylbenzene | 1.5737 | 1.5401 | 48.93 | 50 | -2 | |
| # | 1,2-Dichlorobenzene | 1.3424 | 1.3393 | 49.89 | 50 | 0 | # |
| | n-Butylbenzene | 1.2181 | 1.2287 | 50.43 | 50 | 1 | |
| | 1,2-Diethylbenzene | 1.2572 | 1.2468 | 49.59 | 50 | -1 | |
| # | 1,2-Dibromo-3-chloropropane | 0.1858 | 0.1766 | 47.54 | 50 | -5 | # |
| | 1,3,5-Trichlorobenzene | 1.0206 | 0.9808 | 48.05 | 50 | -4 | |
| # | 1,2,4-Trichlorobenzene | 1.0127 | 0.9432 | 46.57 | 50 | -7 | # |
| | Hexachlorobutadiene | 0.4326 | 0.3850 | 44.50 | 50 | -11 | |

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP09915 Calibration Date: 09/26/17 Time: 08:07

Lab File ID: ls26c01.d Init. Calib. Date(s): 08/21/17 08/21/17

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

| COMPOUND | RRF | RRF50 | ACTUAL CONC. | TRUE CONC. | % DRIFT |
|---|---|---|---|---|---|
| Naphthalene | 3.1985 | 3.1213 | 48.79 | 50 | -2 |
| 1,2,3-Trichlorobenzene | 0.9715 | 0.9037 | 46.51 | 50 | -7 |
| 2-Methylnaphthalene | 2.1556 | 1.8972 | 44.01 | 50 | -12 |
| Dibromofluoromethane | 0.2544 | 0.2528 | 49.68 | 50 | -1 |
| Dibromofluoromethane(2) | 0.2605 | 0.2588 | 49.66 | 50 | -1 |
| 1,2-Dichloroethane-d4 | 0.0618 | 0.0630 | 51.03 | 50 | 2 |
| 1,2-Dichloroethane-d4(2) | 0.2875 | 0.3023 | 52.57 | 50 | 5 |
| 1,2-Dichloroethane-d4(3) | 0.0396 | 0.0393 | 49.60 | 50 | -1 |
| Toluene-d8 | 1.2449 | 1.2367 | 49.67 | 50 | -1 |
| Toluene-d8(2) | 0.8180 | 0.8035 | 49.11 | 50 | -2 |
| 4-Bromofluorobenzene | 0.4759 | 0.4672 | 49.08 | 50 | -2 |
| 4-Bromofluorobenzene(2) | 0.4123 | 0.4189 | 50.80 | 50 | 2 |

Average %Drift 6

# Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Data File: /chem/HP09915.i/17sep26a.b/ls26ec1.d
Report Date: 09/26/2017 15:32

Lancaster Laboratories, Inc.
Shift Ending Continuing Calibration Check Report

Instrument ID: HP09915.i
Client ID: SECC050
Lab Sample ID: SECC050
Sublist used: 17639.sub

Injection Date and Time: 26-SEP-2017 14:03
Initial Calibration Date(s): 21-AUG-2017 21-AUG-2017
Initial Calibration Time(s): 09:40 15:35
Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m

| Target Compounds | ICAL Avg. RRF | SECC RRF | Min. RRF | % Diff. | Max. %Diff. |
|---|---|---|---|---|---|
| Benzene | 0.87650 | 0.95066 | 0.01 | 8.5 | 50.0 |
| Toluene | 0.72729 | 0.77043 | 0.01 | 5.9 | 50.0 |
| Ethylbenzene | 1.39936 | 1.52900 | 0.01 | 9.3 | 50.0 |
| m+p-Xylene | 0.56155 | 0.60436 | 0.01 | 7.6 | 50.0 |
| o-Xylene | 0.56534 | 0.60221 | 0.01 | 6.5 | 50.0 |
| Xylene (Total) | 0.56282 | 0.60365 | 0.01 | 7.3 | 50.0 |
| **Surrogate Standards** | **ICAL Avg. RRF** | **SECC RRF** | **Min. RRF** | **% Diff.** | **Max. %Diff.** |
| Dibromofluoromethane | 0.25442 | 0.25517 | 0.01 | 0.3 | 20.5 |
| 1,2-Dichloroethane-d4 | 0.06177 | 0.06300 | 0.01 | 2.0 | 20.5 |
| Toluene-d8 | 1.24489 | 1.24931 | 0.01 | 0.4 | 20.5 |
| 4-Bromofluorobenzene | 0.47595 | 0.47738 | 0.01 | 0.3 | 20.5 |

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR195___

Lab File ID (Standard): ls26c01.d Date Analyzed: 09/26/17

Instrument ID: HP09915 Time Analyzed: 08:07

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 190652 | 3.578 | 1032450 | 7.044 | 828047 | 10.706 | 466525 | 12.638 |
| UPPER LIMIT | 381304 | 4.078 | 2064900 | 7.544 | 1656094 | 11.206 | 933050 | 13.138 |
| LOWER LIMIT | 95326 | 3.078 | 516225 | 6.544 | 414024 | 10.206 | 233262 | 12.138 |
| LAB SAMPLE ID | | | | | | | | |
| 01 VBLKL72 | 185960 | 3.571 | 1004054 | 7.044 | 786698 | 10.706 | 430214 | 12.638 |
| 02 VBLKL73 | 185960 | 3.571 | 1004054 | 7.044 | 786698 | 10.706 | 430214 | 12.638 |
| 03 LCSL72 | 190580 | 3.565 | 1020974 | 7.047 | 799684 | 10.706 | 448783 | 12.638 |
| 04 LCSL73 | 190580 | 3.565 | 1020974 | 7.047 | 799684 | 10.706 | 448783 | 12.638 |
| 05 9224675MS | 193442 | 3.571 | 1011364 | 7.044 | 801121 | 10.706 | 440818 | 12.638 |
| 06 9224676MSD | 200222 | 3.571 | 1046317 | 7.047 | 834089 | 10.706 | 460824 | 12.638 |
| 07 9224669 | 199273 | 3.558 | 1038575 | 7.044 | 811346 | 10.706 | 448485 | 12.638 |
| 08 9224670 | 193261 | 3.568 | 1042198 | 7.047 | 818423 | 10.706 | 453766 | 12.638 |
| 09 9224671 | 184835 | 3.574 | 1002483 | 7.050 | 786855 | 10.706 | 426386 | 12.638 |
| 10 9224672 | 186678 | 3.568 | 1011299 | 7.047 | 790947 | 10.706 | 430711 | 12.638 |
| 11 9224673 | 180468 | 3.574 | 998642 | 7.047 | 777791 | 10.709 | 422566 | 12.638 |
| 12 9224678 | 181614 | 3.562 | 996716 | 7.044 | 786164 | 10.706 | 423134 | 12.638 |
| 13 9224679 | 175616 | 3.574 | 959385 | 7.050 | 754356 | 10.706 | 410535 | 12.638 |
| 14 9224680 | 179427 | 3.568 | 972189 | 7.047 | 767706 | 10.706 | 418752 | 12.638 |
| 15 9224674 | 174974 | 3.565 | 964525 | 7.047 | 758069 | 10.706 | 408092 | 12.638 |
| 16 SECC050 | 182603 | 3.558 | 995360 | 7.047 | 793367 | 10.706 | 449444 | 12.638 |
| 17 9223837 | 202144 | 3.568 | 1004240 | 7.047 | 796295 | 10.706 | 426291 | 12.638 |
| 18 9223837MS | 203215 | 3.578 | 1004801 | 7.044 | 794367 | 10.706 | 445177 | 12.638 |
| 19 9223837MSD | 207924 | 3.581 | 1027134 | 7.050 | 810855 | 10.706 | 448103 | 12.638 |
| 20 9223839 | 198247 | 3.571 | 1038445 | 7.047 | 822653 | 10.709 | 449819 | 12.638 |
| 21 9223841 | 208516 | 3.581 | 1018250 | 7.050 | 801007 | 10.706 | 442795 | 12.638 |
| 22 9223843 | 196376 | 3.581 | 1036010 | 7.050 | 806210 | 10.706 | 432446 | 12.638 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_KR195___

Lab File ID (Standard): ls26c01.d Date Analyzed: 09/26/17

Instrument ID: HP09915 Time Analyzed: 08:07

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

| | IS1(TBA) | | IS2(FBZ) | | IS3(CBZ) | | IS4(DCB) | |
|---|---|---|---|---|---|---|---|---|
| | AREA # | RT # | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| 12 HOUR STD | 190652 | 3.578 | 1032450 | 7.044 | 828047 | 10.706 | 466525 | 12.638 |
| UPPER LIMIT | 381304 | 4.078 | 2064900 | 7.544 | 1656094 | 11.206 | 933050 | 13.138 |
| LOWER LIMIT | 95326 | 3.078 | 516225 | 6.544 | 414024 | 10.206 | 233262 | 12.138 |
| LAB SAMPLE ID | | | | | | | | |
| 23 9223844 | 206587 | 3.571 | 1030628 | 7.047 | 814689 | 10.706 | 444287 | 12.638 |
| 24 9223845 | 206536 | 3.571 | 1040628 | 7.047 | 822356 | 10.706 | 454603 | 12.638 |
| 25 9223846 | 216082 | 3.571 | 1057976 | 7.044 | 832199 | 10.706 | 454574 | 12.638 |
| 26 9223847 | 208597 | 3.578 | 1065961 | 7.047 | 843921 | 10.706 | 465574 | 12.638 |
| 27 9223848 | 206689 | 3.574 | 1108846 | 7.047 | 872399 | 10.706 | 480270 | 12.638 |
| 28 9223849 | 218723 | 3.565 | 1127025 | 7.047 | 897345 | 10.706 | 487377 | 12.638 |
| 29 9223850 | 223631 | 3.571 | 1125912 | 7.047 | 889080 | 10.706 | 481950 | 12.638 |

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

# Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.



FORM VIII VOA

# Sample Data

# Volatiles by GC/MS

**Fraction: Volatiles by GC/MS**

| 11997: BTEX 8260C Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Benzene | .5 | 1 | 1 | ug/l |
| Toluene | .5 | 1 | 1 | ug/l |
| Ethylbenzene | .5 | 1 | 1 | ug/l |
| Xylene (Total) | .5 | 1 | 1 | ug/l |

EFF1- Lancaster Laboratories 9224669
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep26a.b/ls26s05.d Injection date and time: **26-SEP-2017 10:46**
Data file Sample Info. Line: EFF1-;9224669;1;0;;KR195;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 11:04 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.558( 0.019) | 646 | 65 | 199273 ( 5) | 250.00 | |
| 66) Fluorobenzene | 7.044( 0.000) | 1730 | 96 | 1038575 ( 1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 811346 ( -2) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 448485 ( -4) | 50.00 | |

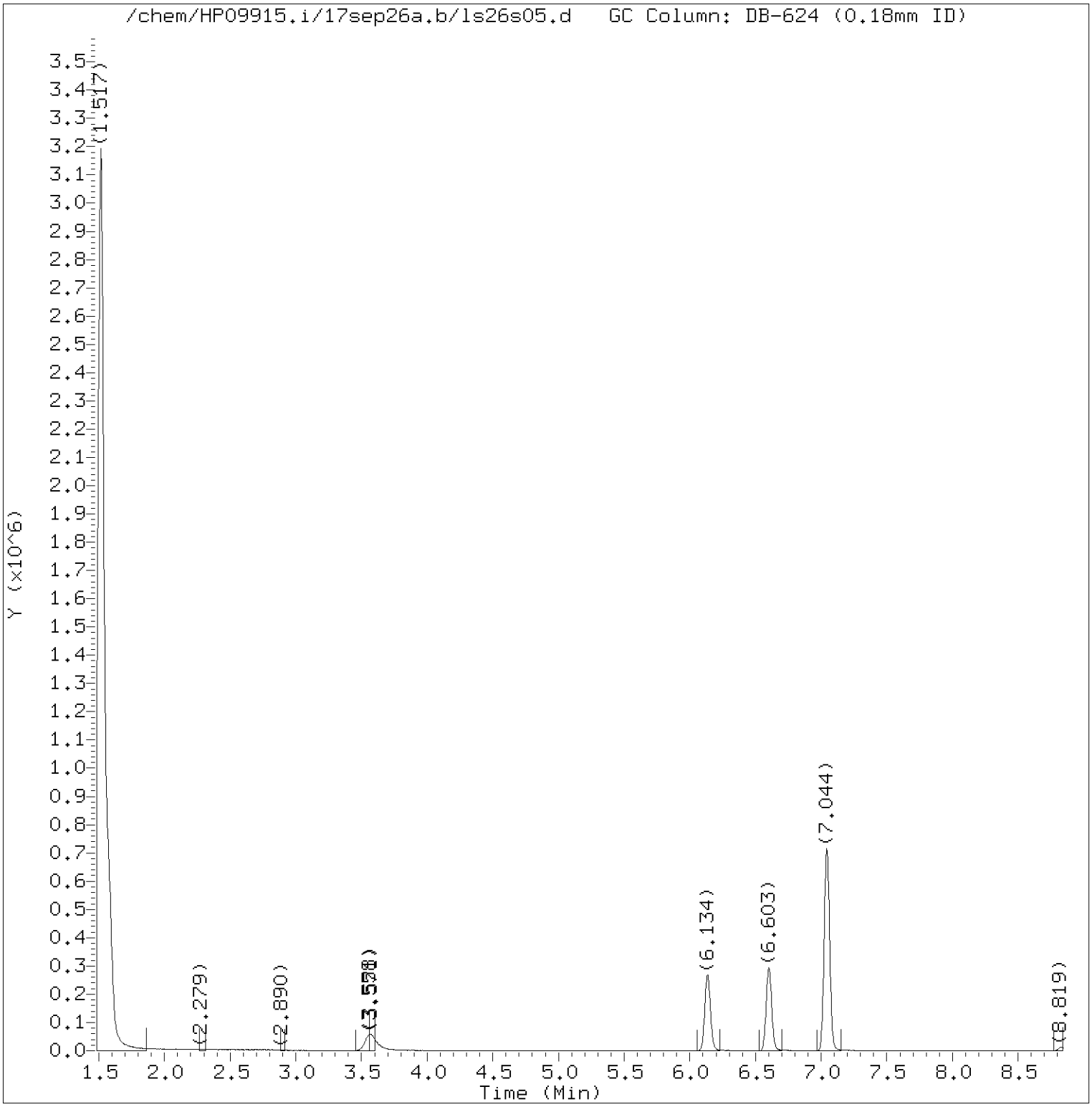
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.134( 0.000) | 113 | 256926 | 48.618 | 97% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 64477 | 50.251 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.134( 0.000) | 98 | 1008992 | 49.948 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 381402 | 49.384 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:14. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:47. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

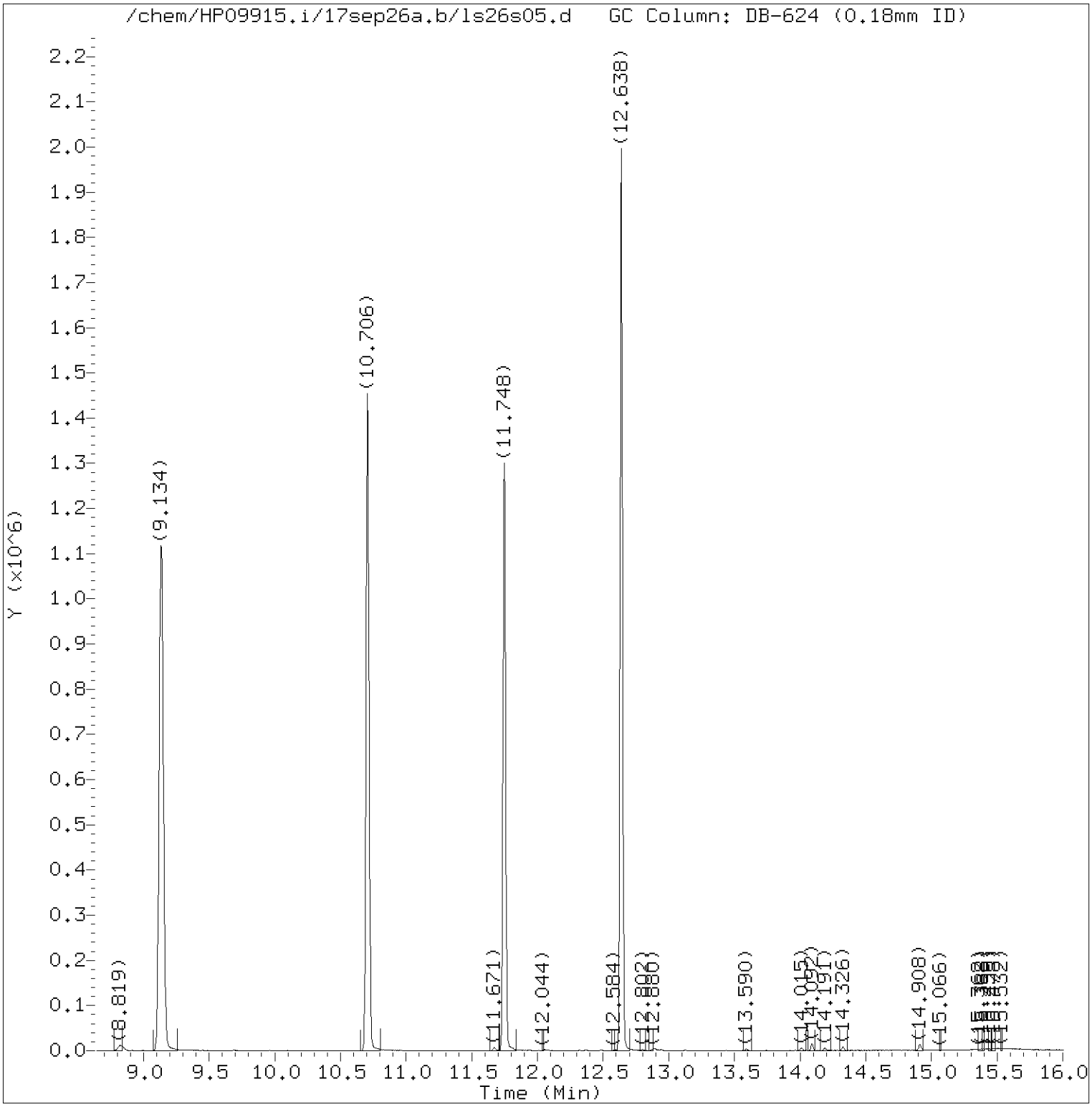
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s05.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:46 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:04 Automation

Sample Name: EFF1- Lab Sample ID: 9224669

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:14.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s05.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:46 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:04 Automation

Sample Name: EFF1- Lab Sample ID: 9224669

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:14.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s05.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:46 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:04 Automation

Sample Name: EFF1- Lab Sample ID: 9224669

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.558 | 65 | 199273 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.134 | 113 | 256926 | 48.618 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 64477 | 50.251 |
| 66)*Fluorobenzene | (2) | 7.044 | 96 | 1038575 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.134 | 98 | 1008992 | 49.948 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 811346 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 381402 | 49.384 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 448485 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:14.
Target 3.5 esignature user ID: lcp00895

EFF1D

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9224670

Data file: /chem/HP09915.i/17sep26a.b/ls26s06.d Injection date and time: **26-SEP-2017 11:08**
Data file Sample Info. Line: EFF1D;9224670;1;0;;KR195;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 11:26 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.010) | 649 | 65 | 193261 ( 1) | 250.00 | |
| 66) Fluorobenzene | 7.047(-0.003) | 1731 | 96 | 1042198 ( 1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 818423 ( -1) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 453766 ( -3) | 50.00 | |

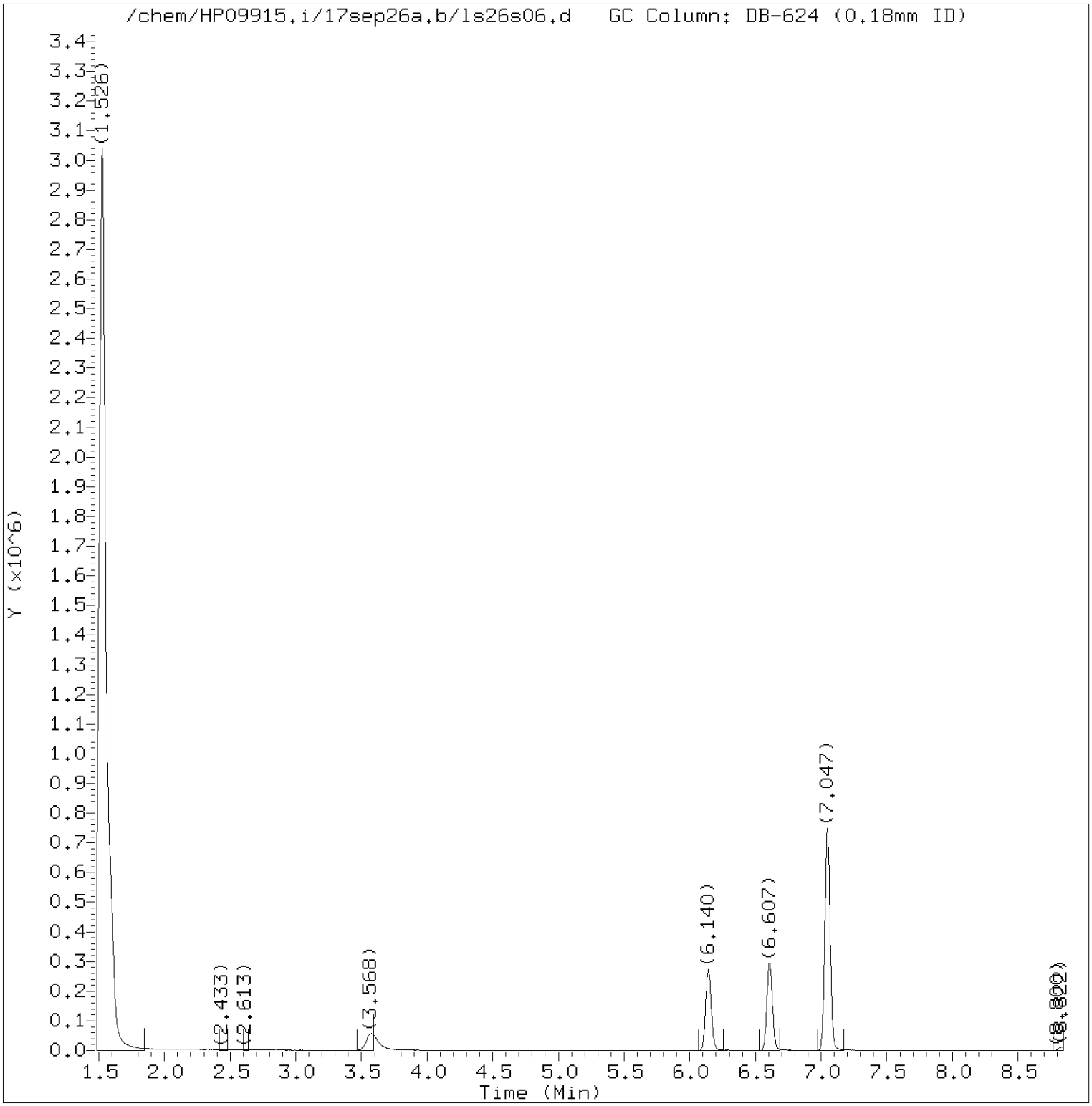
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140(-0.001) | 113 | 259549 | 48.943 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 65617 | 50.962 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1015501 | 49.836 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 381130 | 48.922 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:16. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:47. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

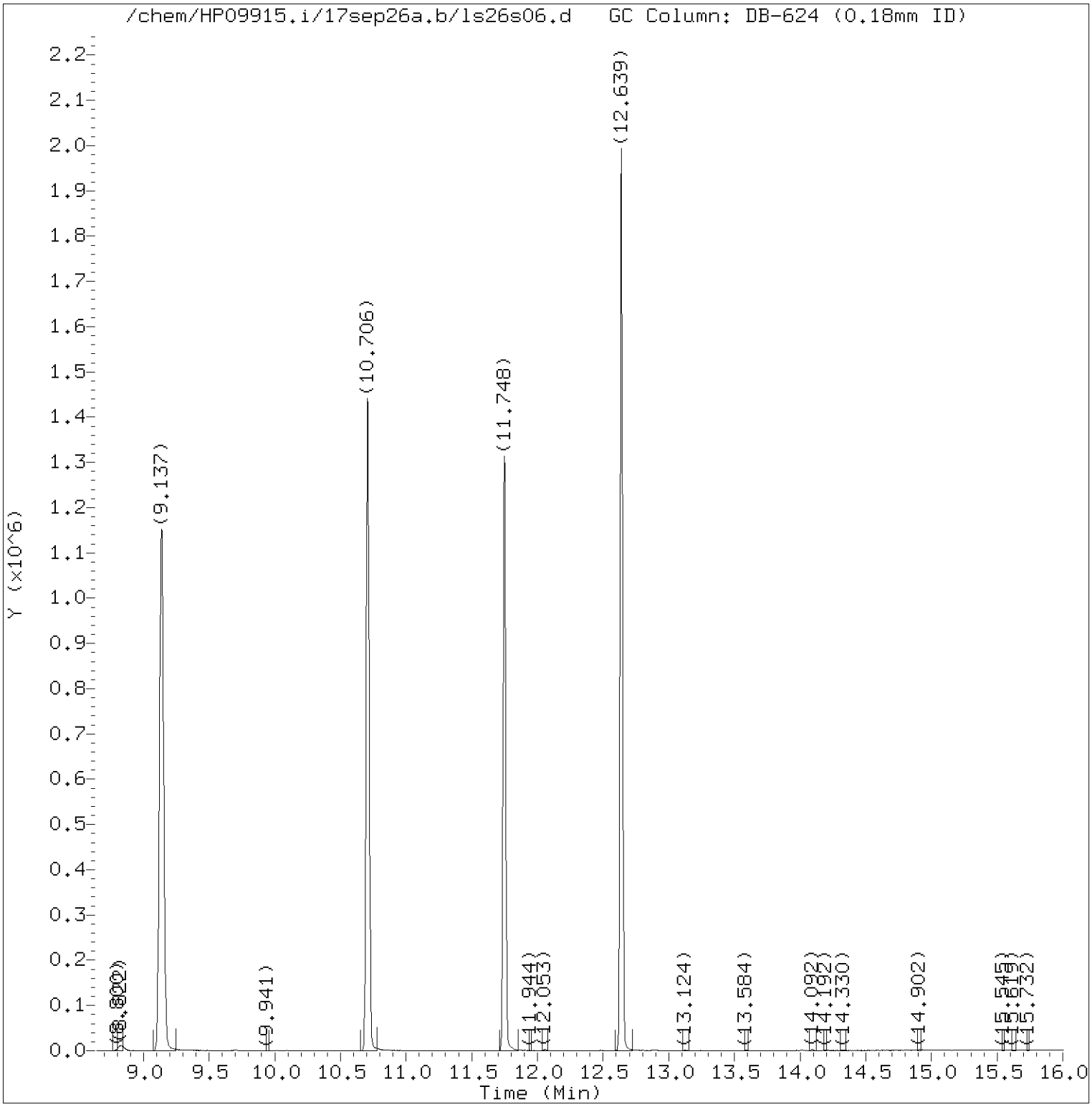
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s06.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:08 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:26 Automation

Sample Name: EFF1D Lab Sample ID: 9224670

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s06.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:08 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:26 Automation

Sample Name: EFF1D Lab Sample ID: 9224670

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s06.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:08 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:26 Automation

Sample Name: EFF1D Lab Sample ID: 9224670

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 193261 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 259549 | 48.943 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 65617 | 50.962 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1042198 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1015501 | 49.836 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 818423 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 381130 | 48.922 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 453766 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895

GAC1- Lancaster Laboratories 9224671
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep26a.b/ls26s07.d Injection date and time: **26-SEP-2017 11:30**
Data file Sample Info. Line: GAC1-;9224671;1;0;;KR195;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 11:48 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.574( 0.003) | 651 | 65 | 184835 ( -3) | 250.00 | |
| 66) Fluorobenzene | 7.050(-0.006) | 1732 | 96 | 1002483 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 786855 ( -5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 426386 ( -9) | 50.00 | |

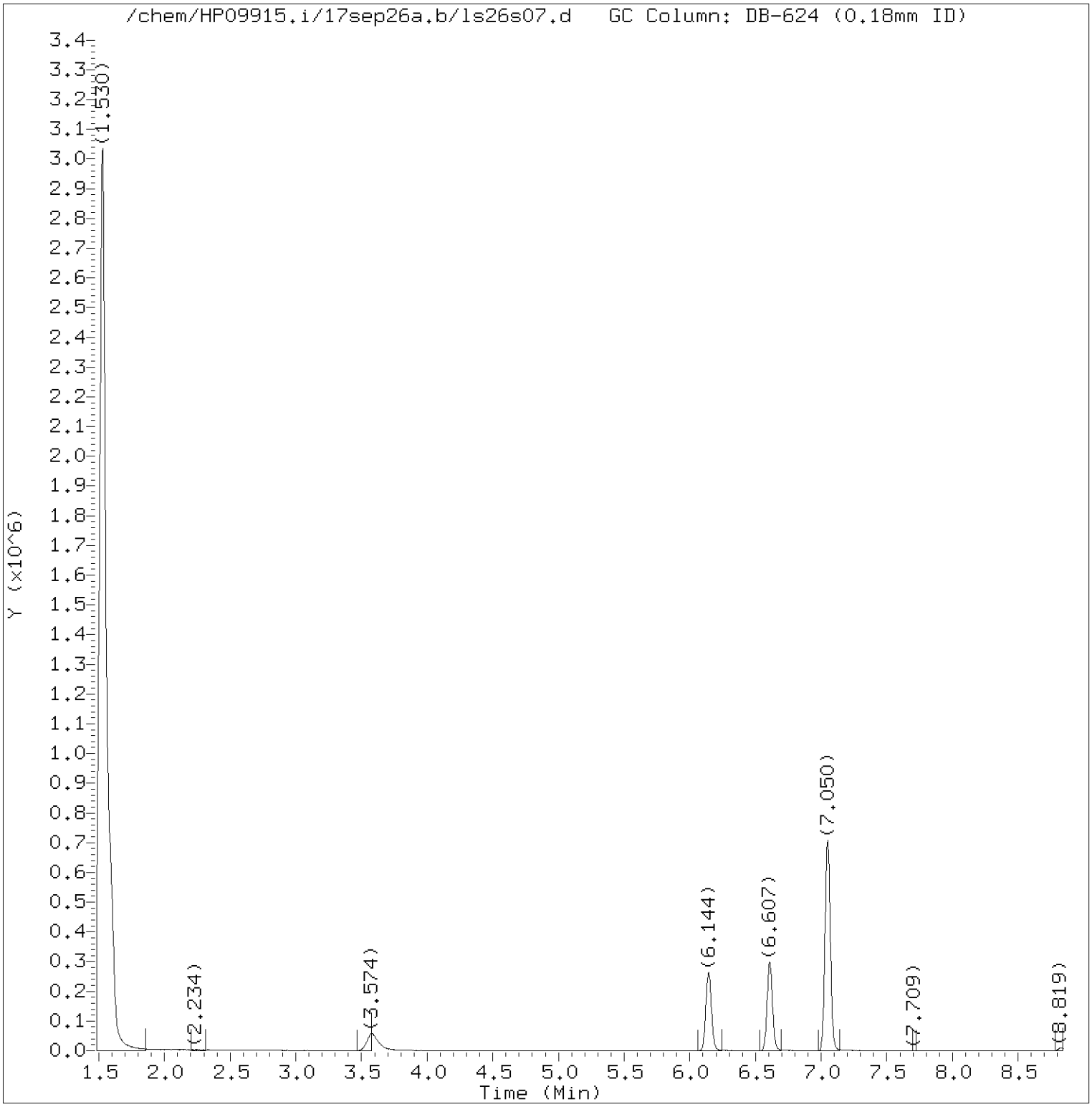
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144(-0.001) | 113 | 251392 | 49.283 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 63682 | 51.418 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 979158 | 49.980 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 364462 | 48.660 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:16. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:47. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

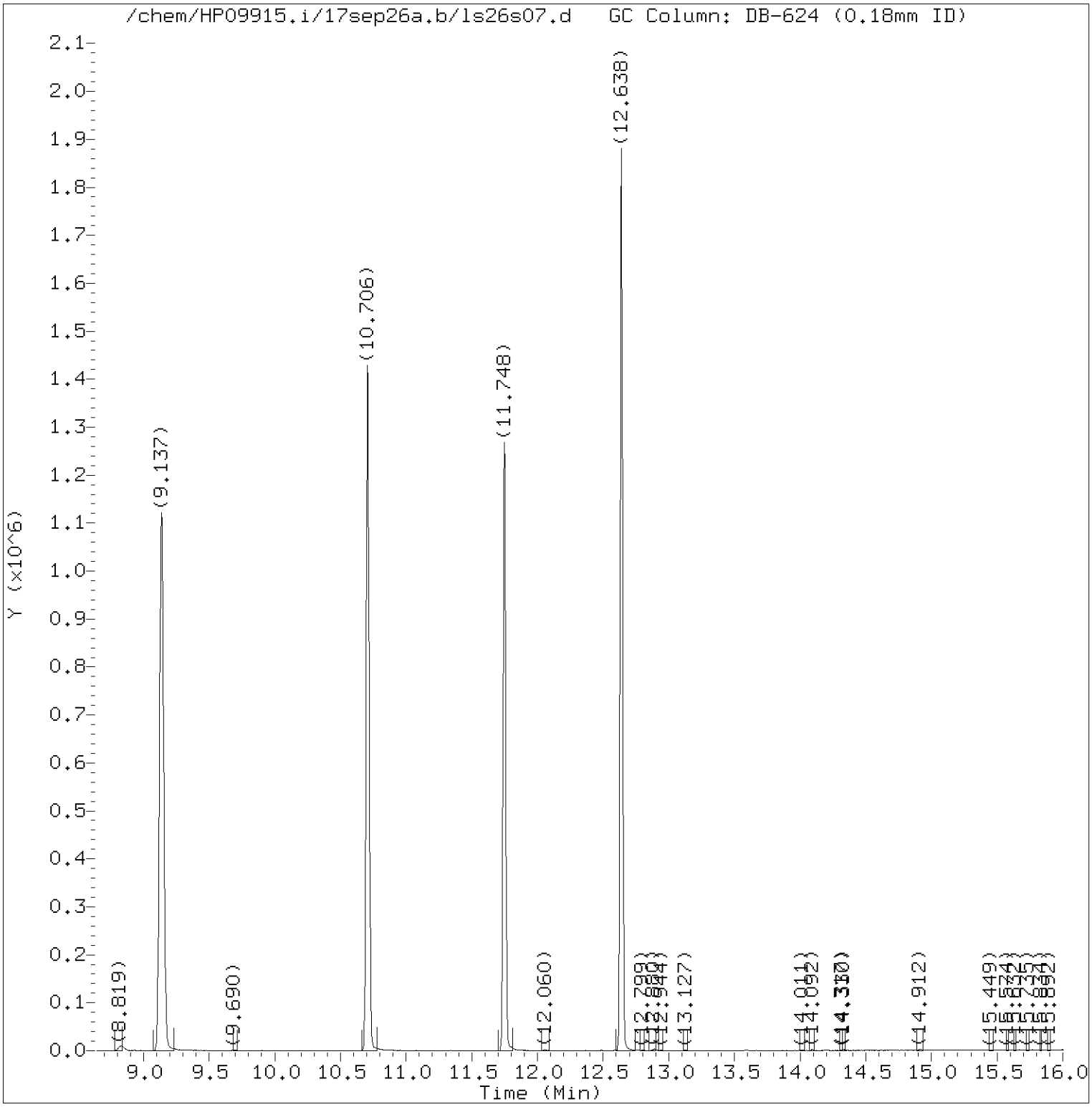
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s07.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:30 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:48 Automation

Sample Name: GAC1- Lab Sample ID: 9224671

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s07.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:30 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:48 Automation

Sample Name: GAC1- Lab Sample ID: 9224671

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s07.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:30 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 11:48 Automation

Sample Name: GAC1- Lab Sample ID: 9224671

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 184835 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 251392 | 49.283 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 63682 | 51.418 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1002483 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 979158 | 49.980 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 786855 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 364462 | 48.660 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 426386 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895

IN1--

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

9224672

Data file: /chem/HP09915.i/17sep26a.b/ls26s08.d  Injection date and time: **26-SEP-2017 11:52**
Data file Sample Info. Line: IN1--;9224672;1;0;;KR195;DODWW;;ls26b01;  Instrument ID: **HP09915.i**  Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 12:10 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m  Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A**  Matrix: WATER  Level: Low

On-Column Amount units: ng  In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo)  VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml  Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.010) | 649 | 65 | 186678 ( -2) | 250.00 | |
| 66) Fluorobenzene | 7.047(-0.003) | 1731 | 96 | 1011299 ( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 790947 ( -4) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 430711 ( -8) | 50.00 | |

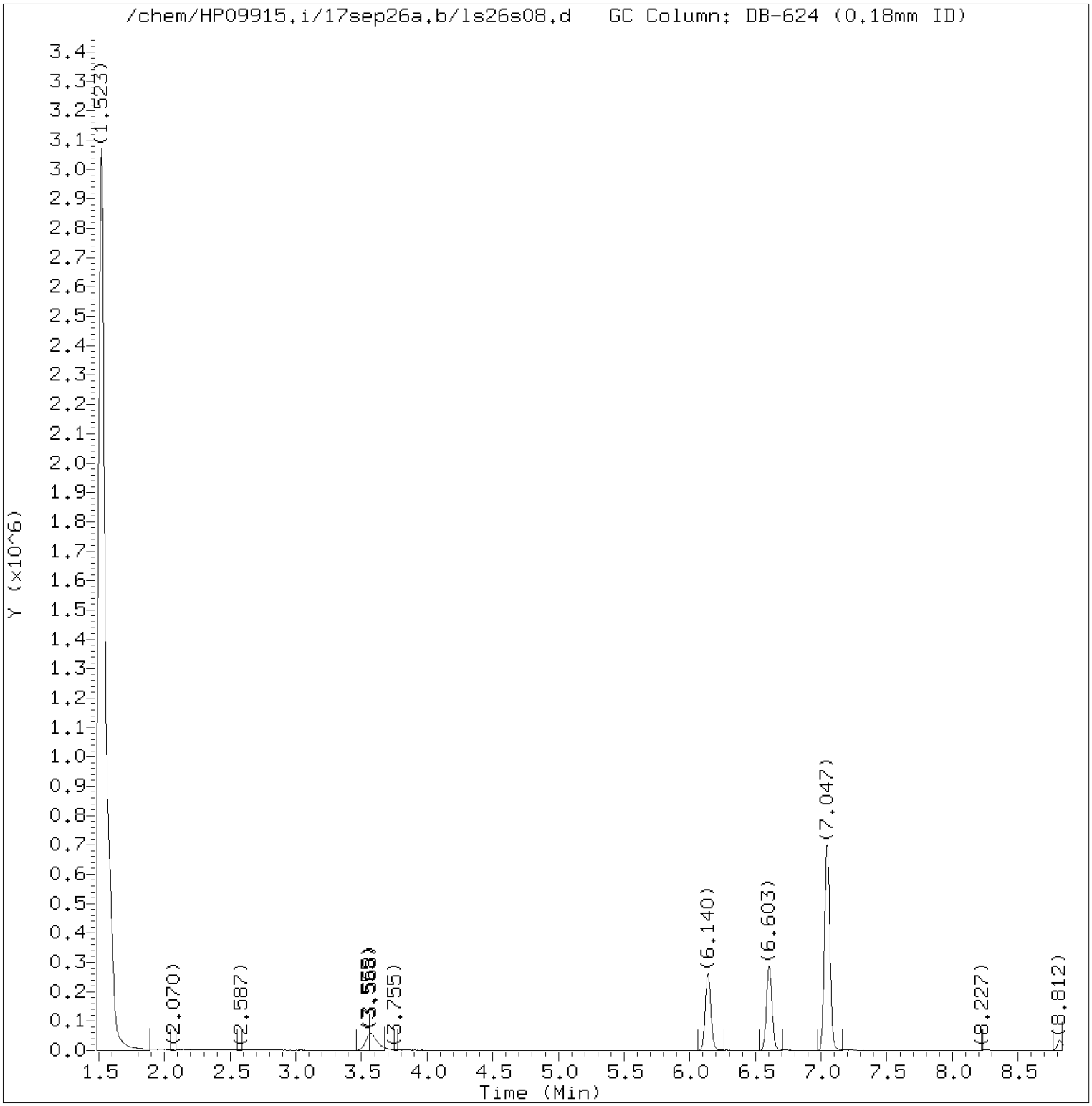
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140(-0.001) | 113 | 249363 | 48.459 | 97% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 62159 | 49.751 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 994487 | 50.500 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 369381 | 49.061 | 98% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:16. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:55. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

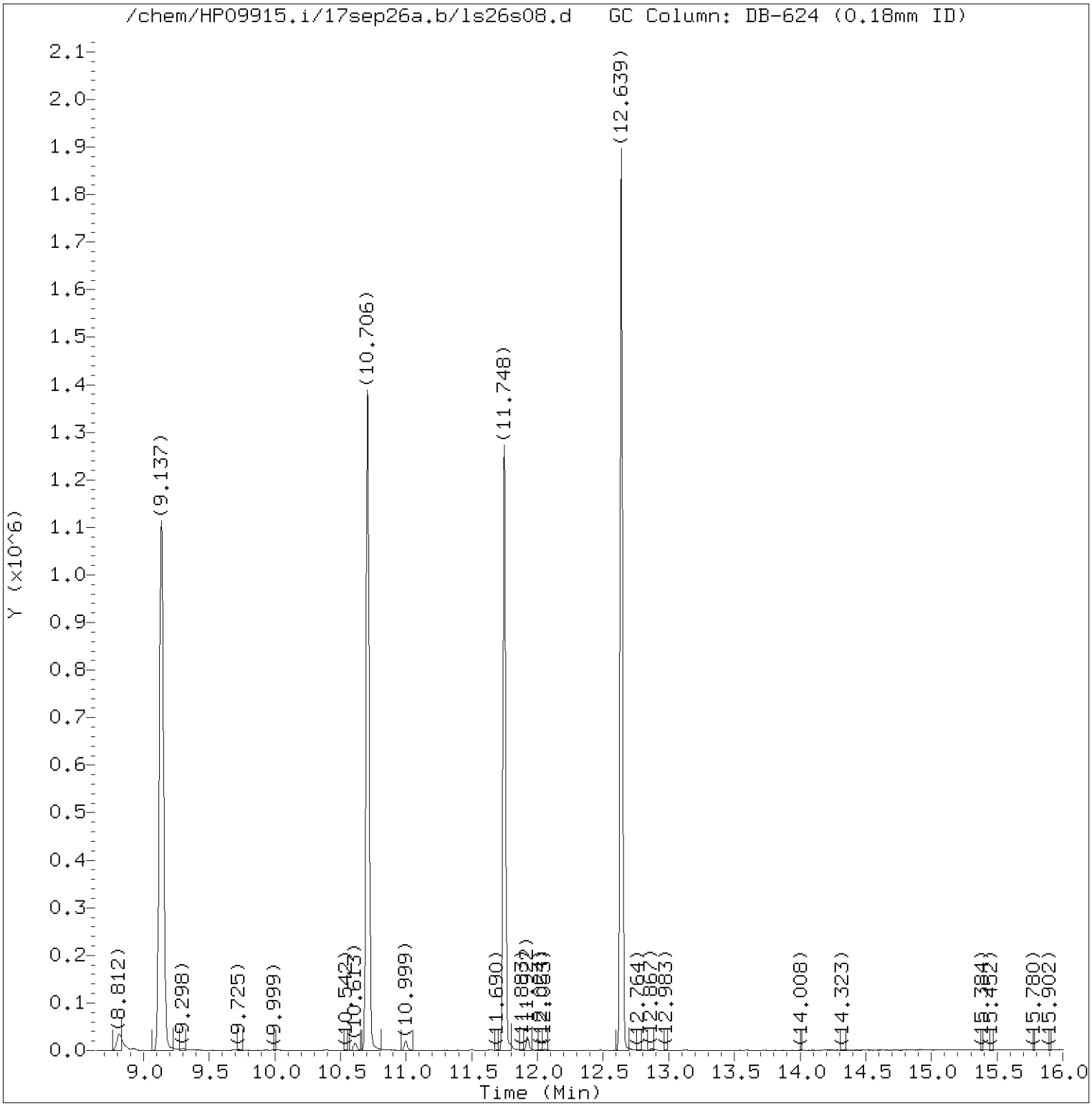
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s08.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:52 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:10 Automation

Sample Name: IN1-- Lab Sample ID: 9224672

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s08.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:52 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:10 Automation

Sample Name: IN1-- Lab Sample ID: 9224672

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s08.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 11:52 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:10 Automation

Sample Name: IN1-- Lab Sample ID: 9224672

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 186678 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 249363 | 48.459 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 62159 | 49.751 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1011299 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 994487 | 50.500 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 790947 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 369381 | 49.061 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 430711 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895

TB01- Lancaster Laboratories 9224673
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep26a.b/ls26s09.d Injection date and time: **26-SEP-2017 12:14**
Data file Sample Info. Line: TB01-;9224673;1;0;;KR195;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 12:32 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.574( 0.003) | 651 | 65 | 180468 ( -5) | 250.00 | |
| 66) Fluorobenzene | 7.047(-0.003) | 1731 | 96 | 998642 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.709(-0.003) | 2870 | 117 | 777791 ( -6) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 422566 ( -9) | 50.00 | |

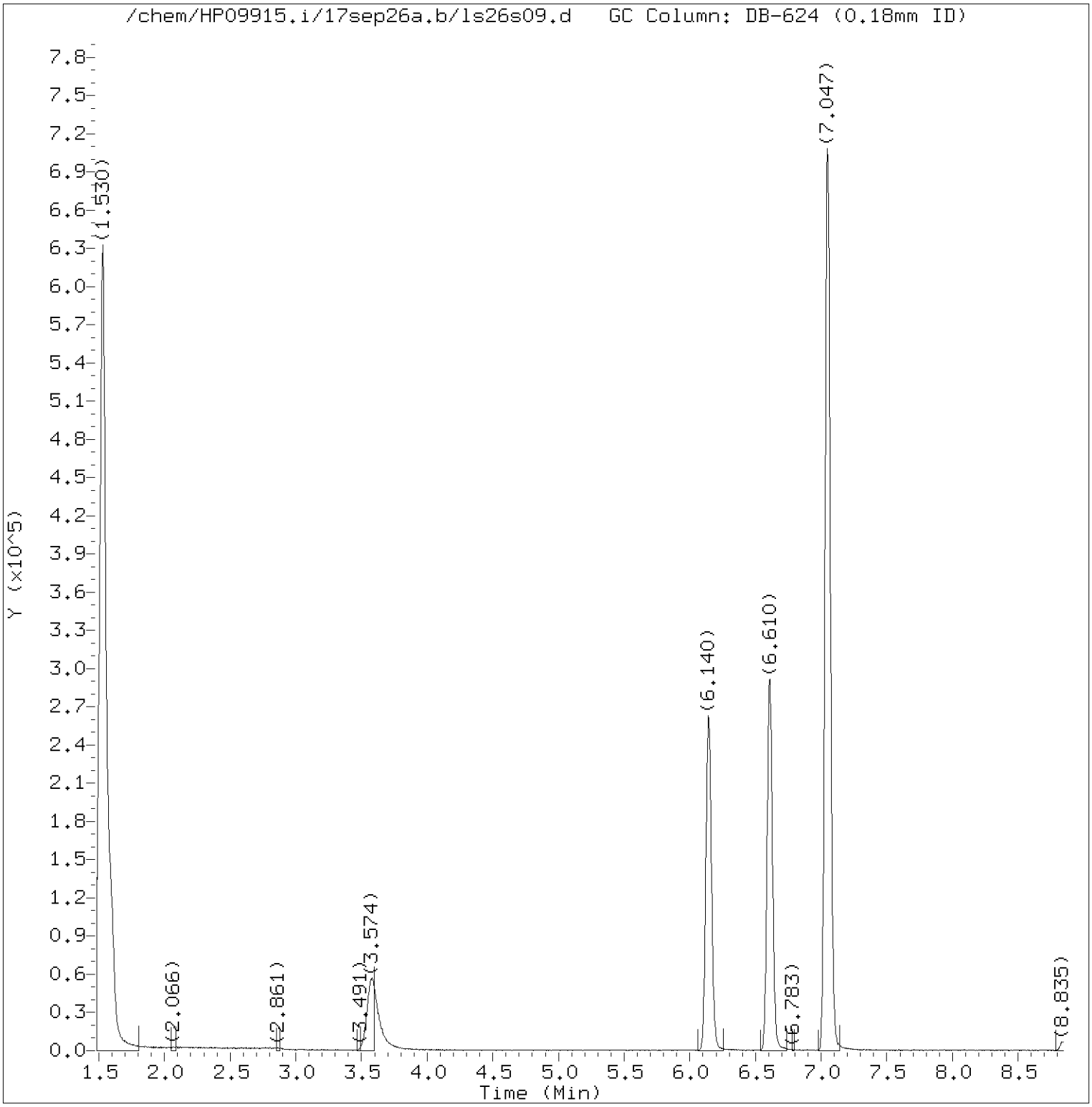
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 248668 | 48.937 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.610( 0.000) | 102 | 61918 | 50.186 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 973070 | 50.248 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 360643 | 48.711 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:16. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:55. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

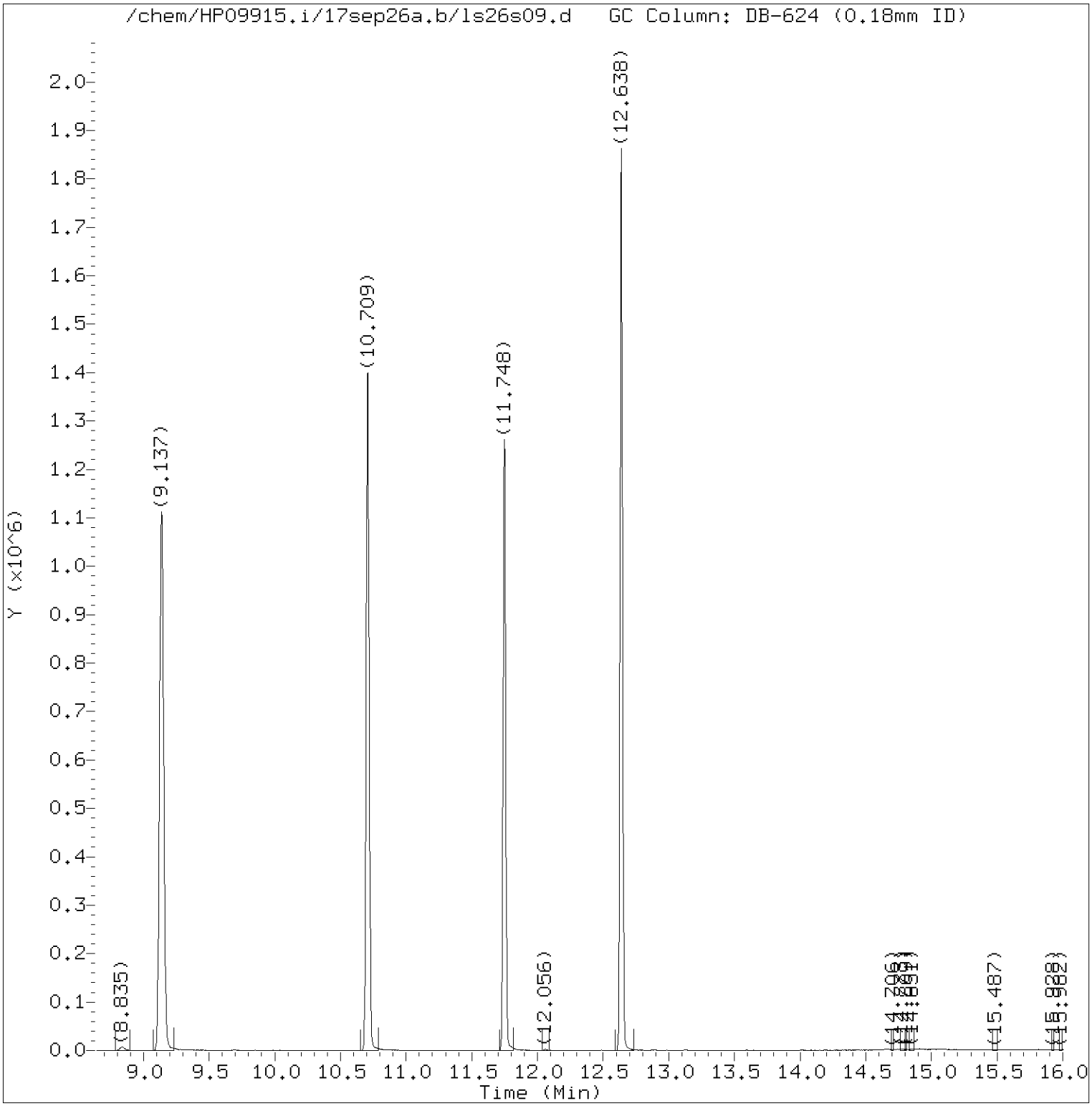
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s09.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:14 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:32 Automation

Sample Name: TB01- Lab Sample ID: 9224673

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s09.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:14 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:32 Automation

Sample Name: TB01- Lab Sample ID: 9224673

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s09.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:14 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:32 Automation

Sample Name: TB01- Lab Sample ID: 9224673

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 180468 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 248668 | 48.937 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 61918 | 50.186 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 998642 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 973070 | 50.248 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 777791 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 360643 | 48.711 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 422566 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:16.
Target 3.5 esignature user ID: lcp00895

EF2--

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

9224674

Data file: /chem/HP09915.i/17sep26a.b/ls26sa2.d Injection date and time: **26-SEP-2017 13:41**
Data file Sample Info. Line: EF2--;9224674;1;0;;KR195;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 13:59 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.565( 0.013) | 648 | 65 | 174974 ( -8) | 250.00 | |
| 66) Fluorobenzene | 7.047(-0.003) | 1731 | 96 | 964525 ( -7) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 758069 ( -8) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 408092 ( -13) | 50.00 | |

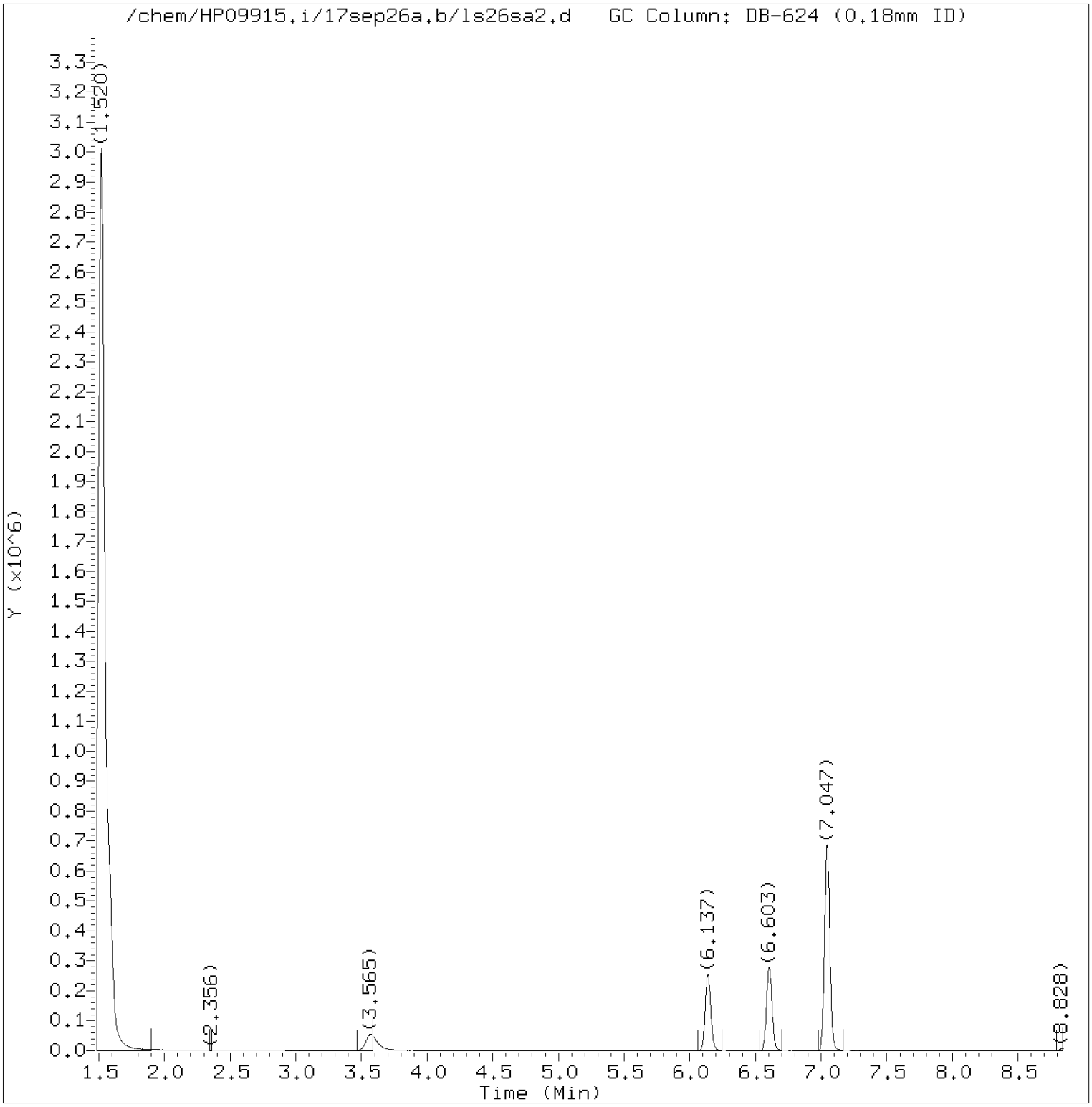
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 240068 | 48.915 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.607( 0.000) | 102 | 61376 | 51.507 | 103% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 941720 | 49.895 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 349913 | 48.491 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 14:02. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:56. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

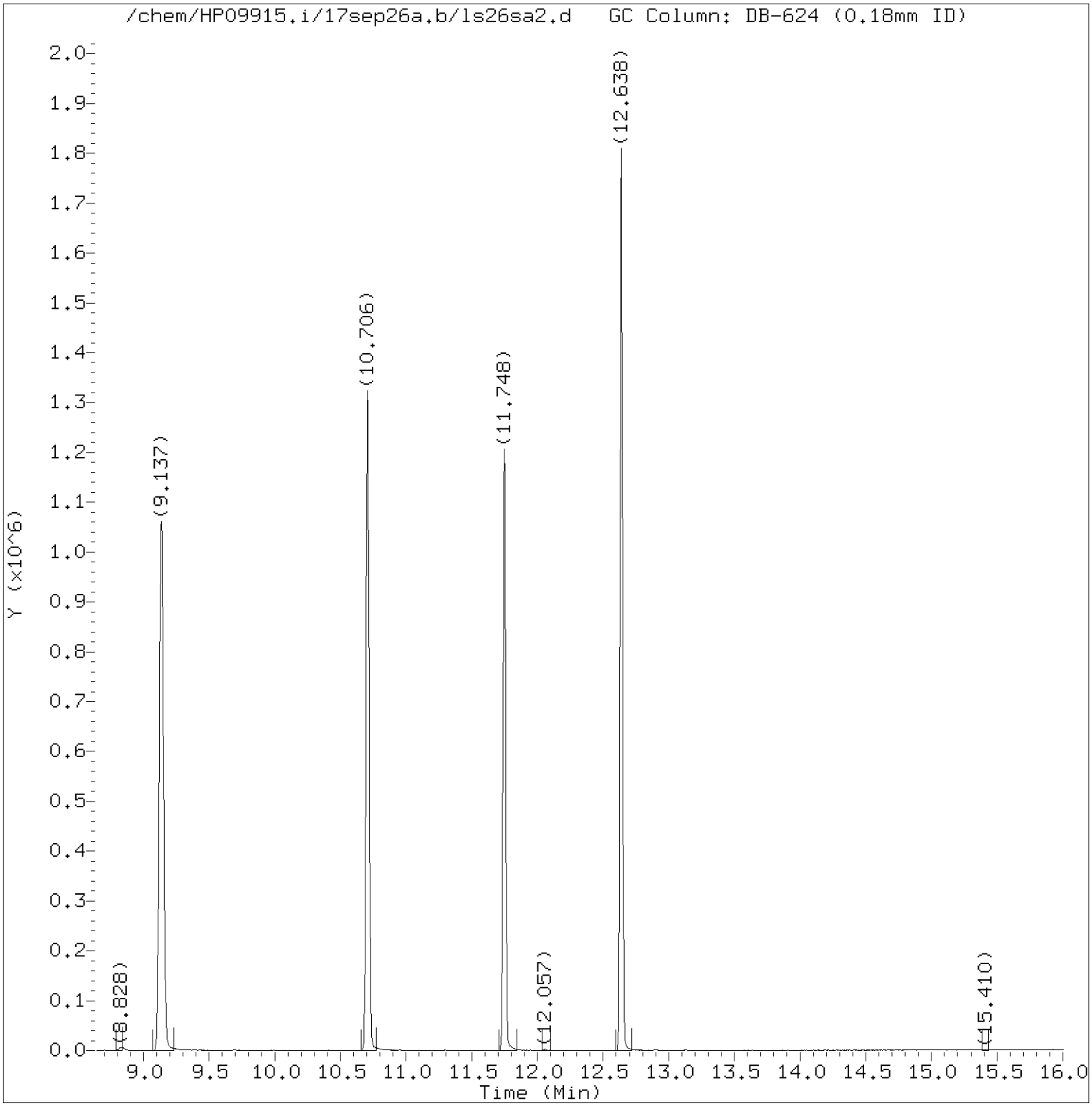
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26sa2.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 13:41 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:59 Automation

Sample Name: EF2-- Lab Sample ID: 9224674

Digitally signed by Linda C. Pape
on 09/26/2017 at 14:02.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26sa2.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 13:41 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:59 Automation

Sample Name: EF2-- Lab Sample ID: 9224674

Digitally signed by Linda C. Pape
on 09/26/2017 at 14:02.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26sa2.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 13:41 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:59 Automation

Sample Name: EF2-- Lab Sample ID: 9224674

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 174974 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 240068 | 48.915 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 102 | 61376 | 51.507 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 964525 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 941720 | 49.895 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 758069 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 349913 | 48.491 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 408092 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 14:02.
Target 3.5 esignature user ID: lcp00895

GC2--

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

9224678

Data file: /chem/HP09915.i/17sep26a.b/ls26s10.d Injection date and time: **26-SEP-2017 12:36**
Data file Sample Info. Line: GC2--;9224678;1;0;;KR195;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 12:53 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.562( 0.016) | 647 | 65 | 181614 ( -5) | 250.00 | |
| 66) Fluorobenzene | 7.044( 0.000) | 1730 | 96 | 996716 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 786164 ( -5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 423134 ( -9) | 50.00 | |

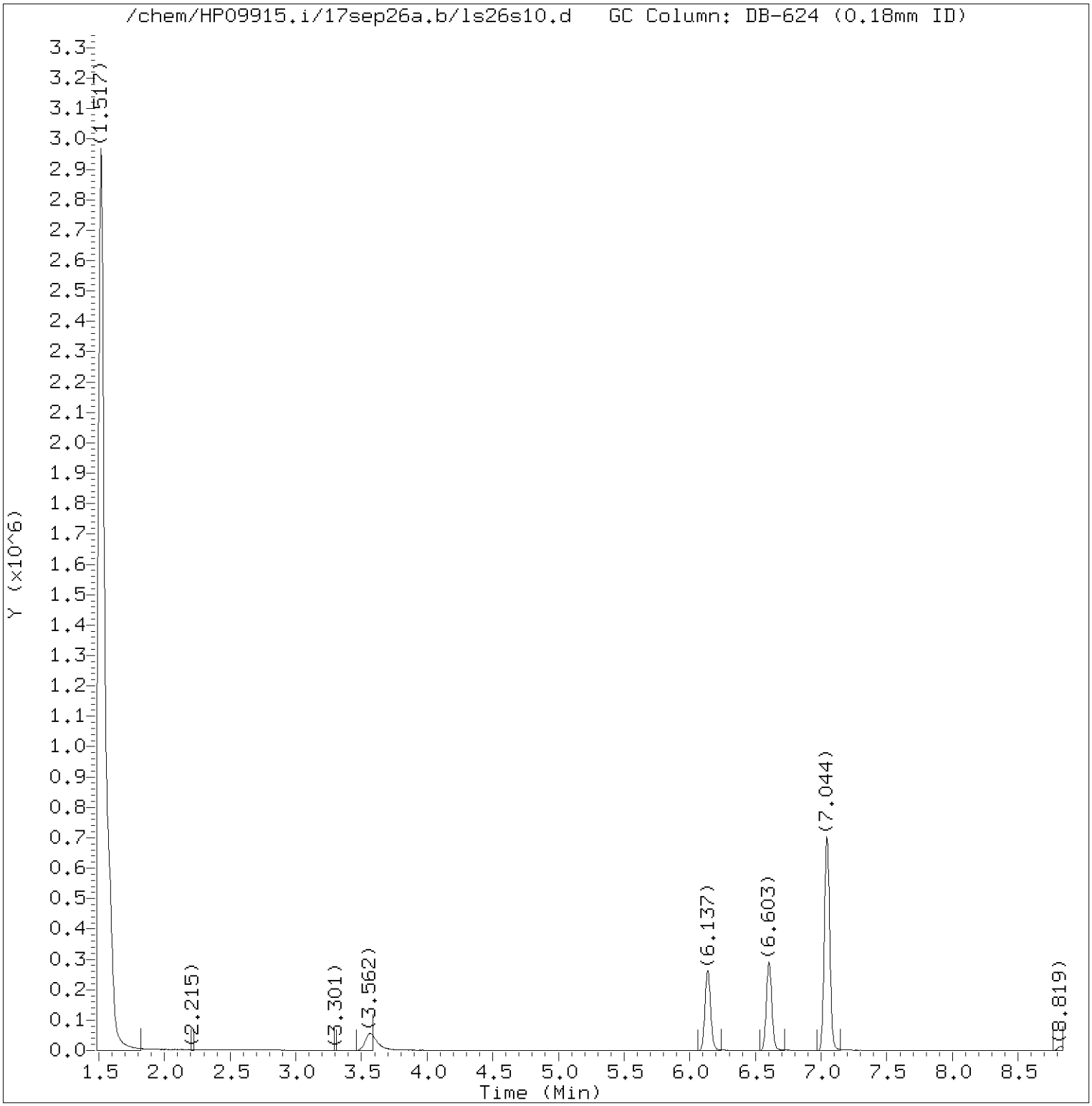
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 248474 | 48.993 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.600( 0.000) | 102 | 62453 | 50.717 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.134( 0.000) | 98 | 972714 | 49.695 | 99% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 359270 | 48.009 | 96% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:17. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:55. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

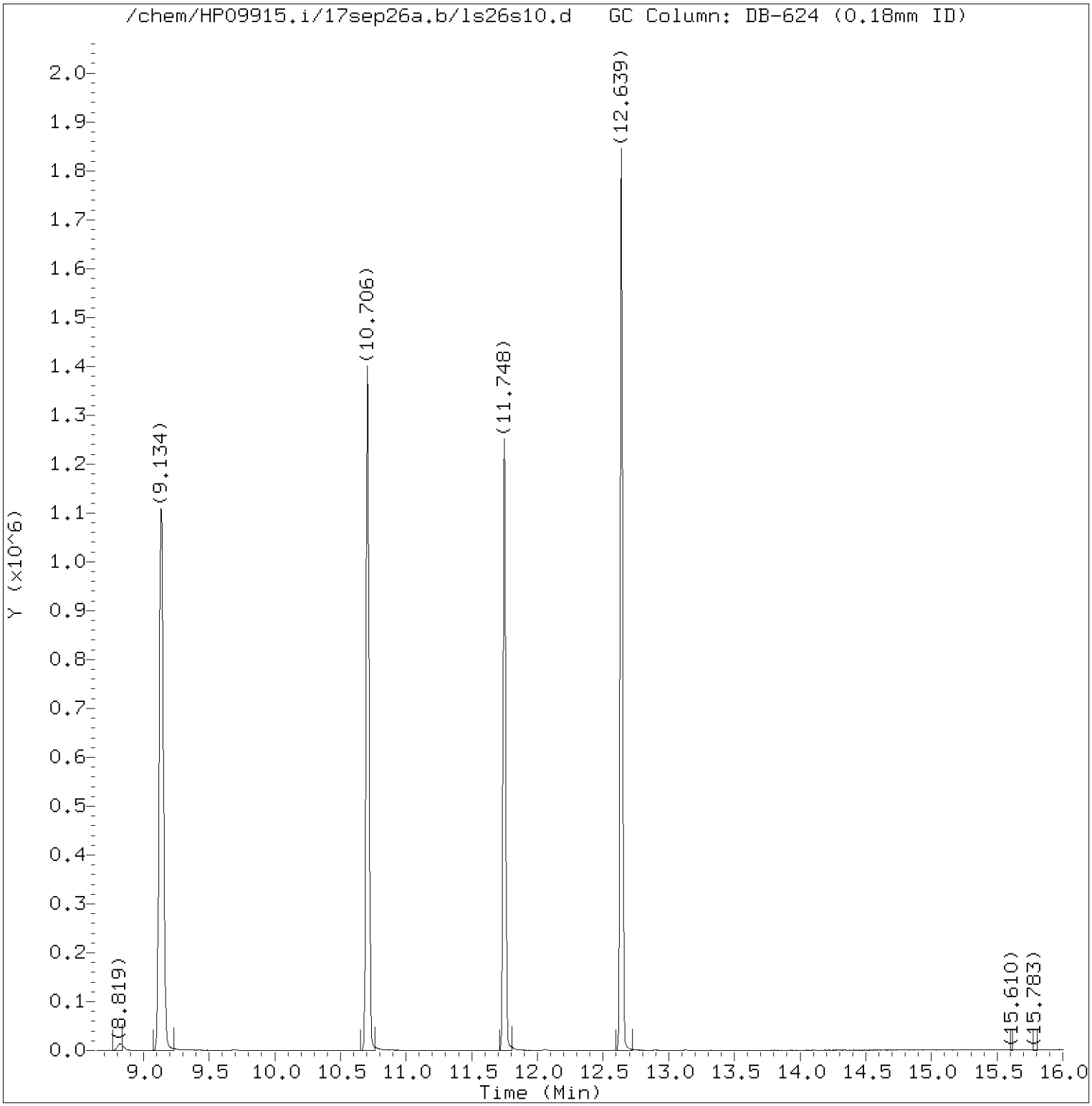
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s10.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:36 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:53 Automation

Sample Name: GC2-- Lab Sample ID: 9224678

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:17.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s10.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:36 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:53 Automation

Sample Name: GC2-- Lab Sample ID: 9224678

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:17.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s10.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:36 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 12:53 Automation

Sample Name: GC2-- Lab Sample ID: 9224678

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.562 | 65 | 181614 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 248474 | 48.993 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.600 | 102 | 62453 | 50.717 |
| 66)*Fluorobenzene | (2) | 7.044 | 96 | 996716 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.134 | 98 | 972714 | 49.695 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 786164 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 359270 | 48.009 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 423134 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:17.
Target 3.5 esignature user ID: lcp00895

IN2--

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

9224679

Data file: /chem/HP09915.i/17sep26a.b/ls26s11.d Injection date and time: **26-SEP-2017 12:58**
Data file Sample Info. Line: IN2--;9224679;1;0;;KR195;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 13:15 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.574( 0.003) | 651 | 65 | 175616 ( -8) | 250.00 | |
| 66) Fluorobenzene | 7.050(-0.006) | 1732 | 96 | 959385 ( -7) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 754356 ( -9) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 410535 ( -12) | 50.00 | |

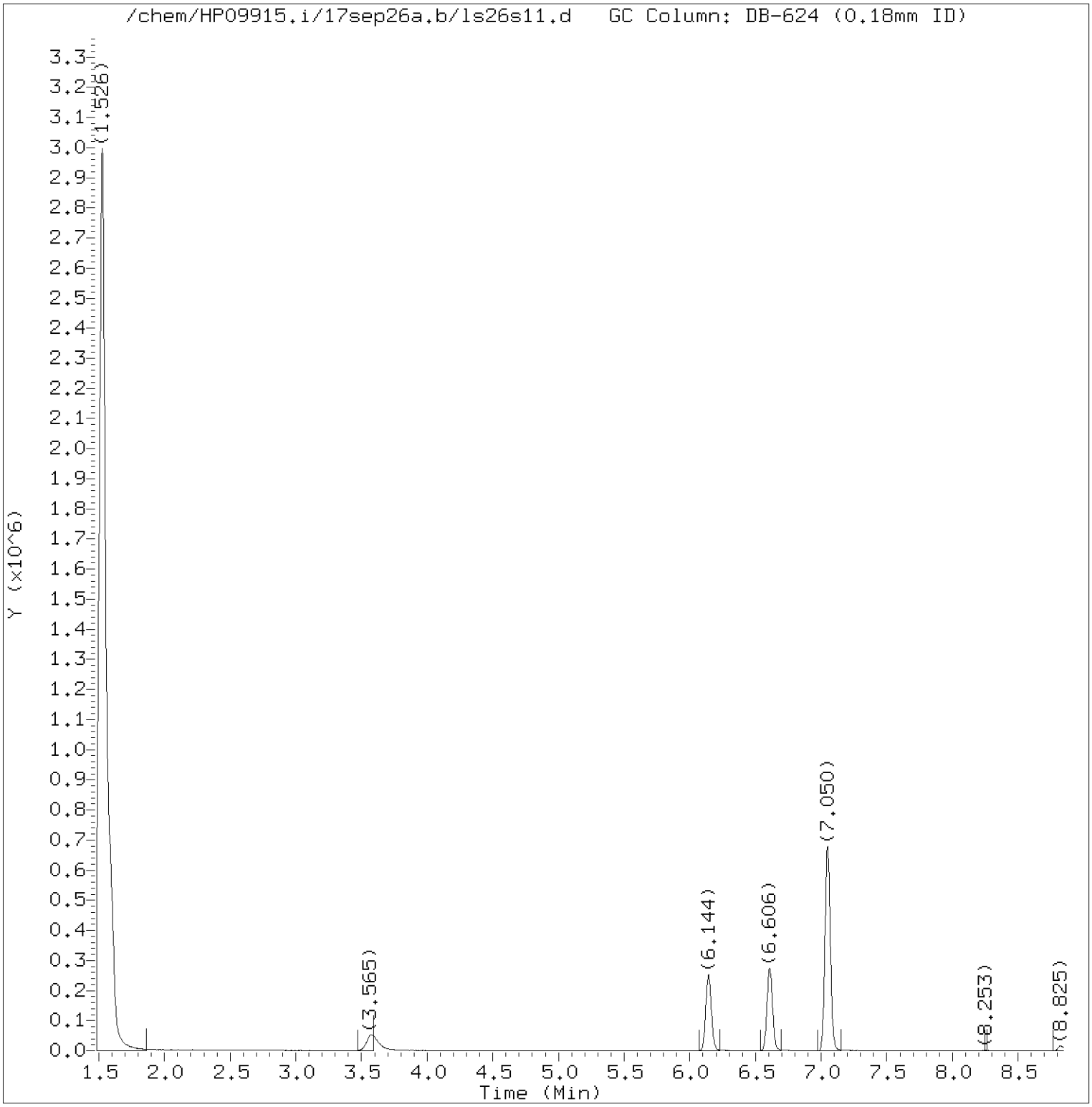
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.144(-0.001) | 113 | 238626 | 48.882 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.613(-0.001) | 102 | 60652 | 51.172 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 942299 | 50.171 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 348344 | 48.512 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:17. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:56. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

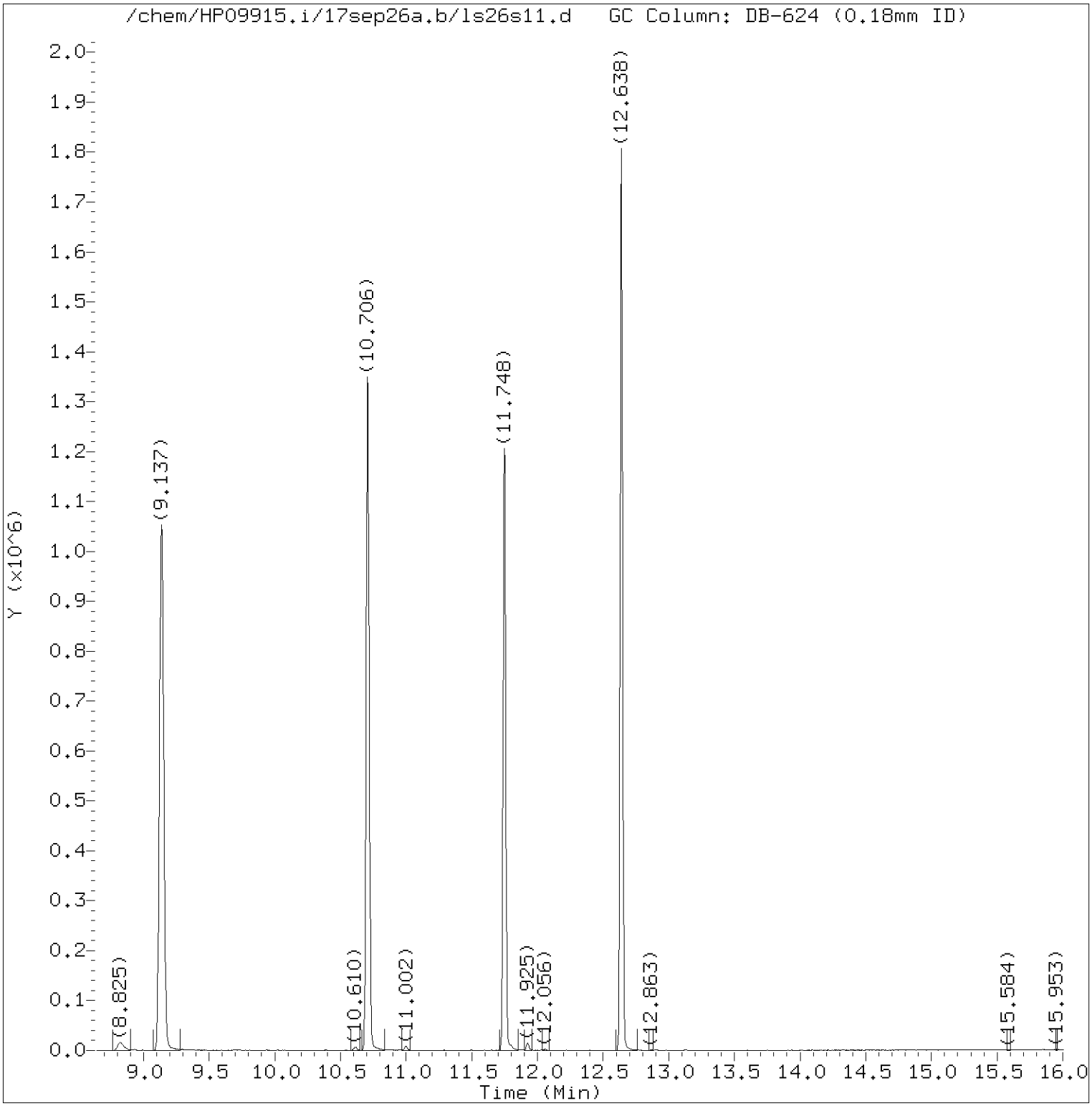
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s11.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:58 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:15 Automation

Sample Name: IN2-- Lab Sample ID: 9224679

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:17.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s11.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:58 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:15 Automation

Sample Name: IN2-- Lab Sample ID: 9224679

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:17.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s11.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 12:58 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:15 Automation

Sample Name: IN2-- Lab Sample ID: 9224679

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 175616 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 238626 | 48.882 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 60652 | 51.172 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 959385 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 942299 | 50.171 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 754356 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 348344 | 48.512 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 410535 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:17.
Target 3.5 esignature user ID: lcp00895

FB2--

# Lancaster Laboratories
## Analysis Summary for GC/MS Volatiles

9224680

Data file: /chem/HP09915.i/17sep26a.b/ls26s12.d Injection date and time: **26-SEP-2017 13:20**
Data file Sample Info. Line: FB2--;9224680;1;0;;KR195;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 13:37 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.568( 0.010) | 649 | 65 | 179427 ( -6) | 250.00 | |
| 66) Fluorobenzene | 7.047(-0.003) | 1731 | 96 | 972189 ( -6) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 767706 ( -7) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 418752 ( -10) | 50.00 | |

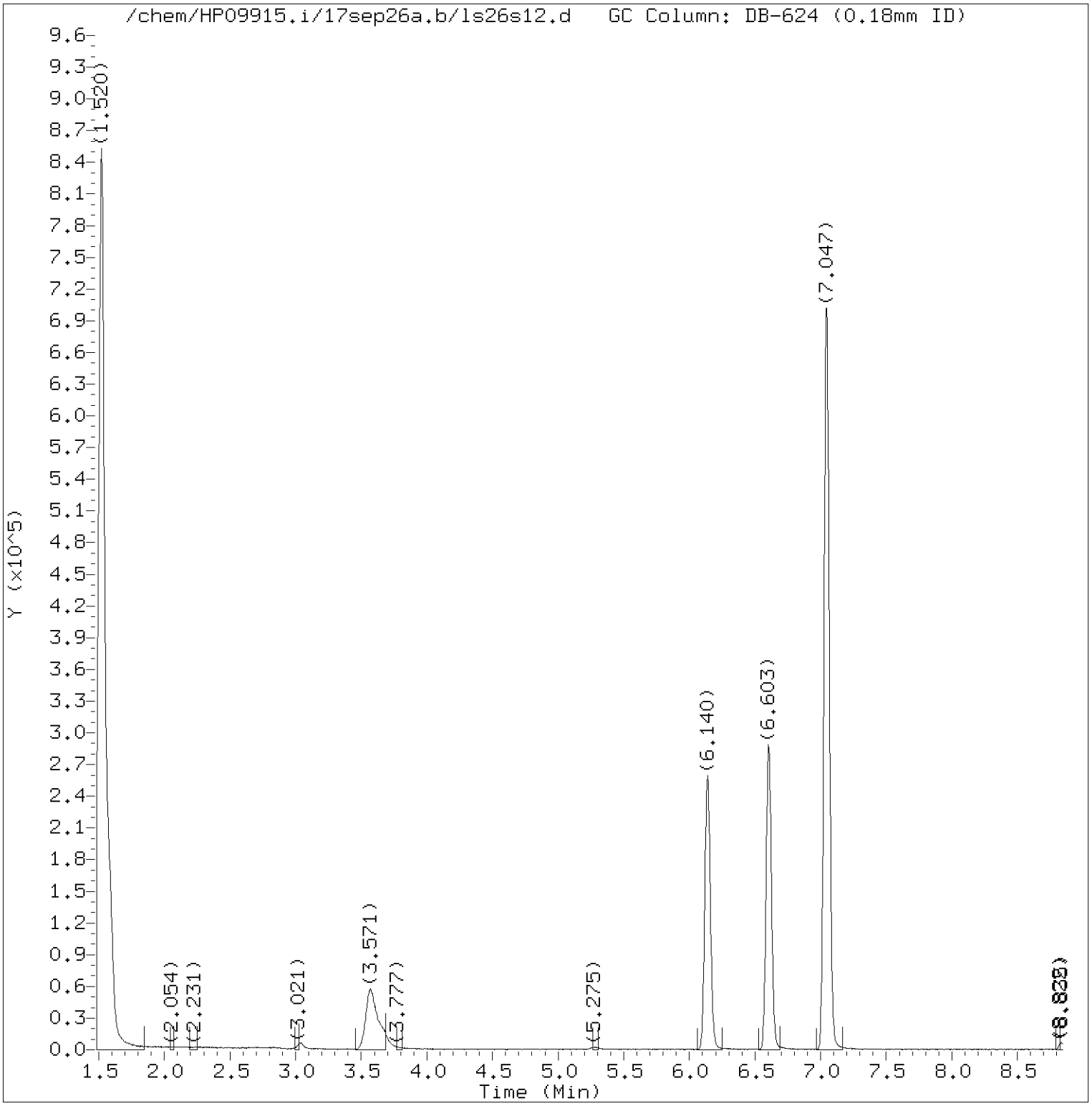
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140( 0.000) | 113 | 242206 | 48.962 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.600( 0.001) | 102 | 61253 | 50.998 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 954354 | 49.929 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 354141 | 48.461 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:43. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:56. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

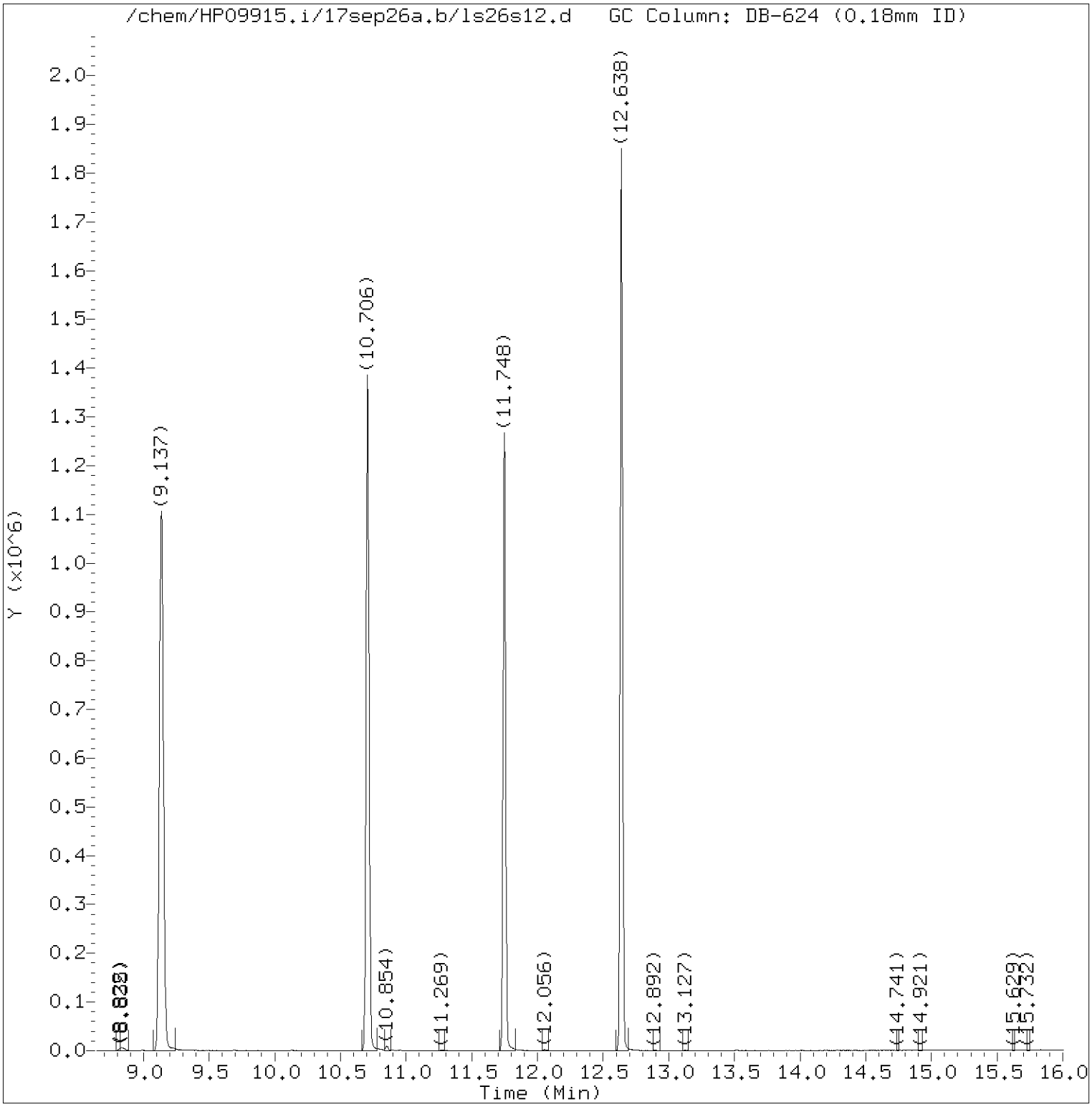
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s12.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 13:20 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:37 Automation

Sample Name: FB2-- Lab Sample ID: 9224680

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:43.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s12.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 13:20 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:37 Automation

Sample Name: FB2-- Lab Sample ID: 9224680

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:43.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s12.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 13:20 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 13:37 Automation

Sample Name: FB2-- Lab Sample ID: 9224680

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 179427 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 242206 | 48.962 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.600 | 102 | 61253 | 50.998 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 972189 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 954354 | 49.929 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 767706 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 354141 | 48.461 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 418752 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:43.
Target 3.5 esignature user ID: lcp00895

# Standards Data

# Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - D:\DATA\17AUG21i\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| kas02648 | LG21T01.D | 50NG BFB | 08/21/2017 | 09:03 | | |
| KAS02648 | LG21X11.D | BLK | 08/21/2017 | 09:18 | | |
| KAS02648 | LG21I01.D | VSTD300 | 08/21/2017 | 09:40 | | |
| KAS02648 | LG21I02.D | VSTD100 | 08/21/2017 | 10:02 | | |
| KAS02648 | LG21I03.D | VSTD050 | 08/21/2017 | 10:24 | | |
| KAS02648 | LG21I04.D | VSTD020 | 08/21/2017 | 10:46 | | |
| KAS02648 | LG21I05.D | VSTD010 | 08/21/2017 | 11:08 | | |
| KAS02648 | LG21I06.D | VSTD004 | 08/21/2017 | 11:30 | | |
| KAS02648 | LG21I07.D | VSTD001 | 08/21/2017 | 11:51 | | |
| KAS02648 | LG21M01.D | MDL0.5 | 08/21/2017 | 12:13 | | |
| KAS02648 | LG21V01.D | LGCICV | 08/21/2017 | 12:35 | | |
| KAS02648 | LG21X21.D | BLK | 08/21/2017 | 13:24 | | |
| KAS02648 | LG21I11.D | VSTD300 | 08/21/2017 | 13:45 | | |
| KAS02648 | LG21I12.D | VSTD100 | 08/21/2017 | 14:07 | | |
| KAS02648 | LG21I13.D | VSTD050 | 08/21/2017 | 14:29 | | |
| KAS02648 | LG21I14.D | VSTD020 | 08/21/2017 | 14:51 | | |
| KAS02648 | LG21I15.D | VSTD010 | 08/21/2017 | 15:13 | | |
| KAS02648 | LG21I16.D | VSTD004 | 08/21/2017 | 15:35 | | |
| KAS02648 | LG21M11.D | MDL001 | 08/21/2017 | 15:56 | | |
| KAS02648 | LG21V11.D | SMCICV | 08/21/2017 | 16:18 | | |

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP09915 **HP #23**

Data Directory Path is - D:\DATA\17SEP26A\

| OPERATOR | FILE | LLI# | DATE | TIME | BATCH | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| lcp00895 | LS26T01.D | 50NG BFB | 09/26/2017 | 07:19 | | |
| LCP00895 | LS26X01.D | CBLKL73 | 09/26/2017 | 07:45 | L172692AA | |
| LCP00895 | LS26C01.D | VSTD050 | 09/26/2017 | 08:07 | L172691AA | |
| LCP00895 | LS26B01.D | VBLKL72 | 09/26/2017 | 08:29 | L172691AA | |
| LCP00895 | LS26S01.D | LCSL72 | 09/26/2017 | 08:51 | L172691AA | |
| LCP00895 | LS26S02.D | 9224674 | 09/26/2017 | 09:41 | L172691AA | |
| LCP00895 | LS26S03.D | 9224675MS | 09/26/2017 | 10:03 | L172691AA | |
| LCP00895 | LS26S04.D | 9224676MSD | 09/26/2017 | 10:25 | L172691AA | |
| LCP00895 | LS26S05.D | 9224669 | 09/26/2017 | 10:46 | L172691AA | |
| LCP00895 | LS26S06.D | 9224670 | 09/26/2017 | 11:08 | L172691AA | |
| LCP00895 | LS26S07.D | 9224671 | 09/26/2017 | 11:30 | L172691AA | |
| LCP00895 | LS26S08.D | 9224672 | 09/26/2017 | 11:52 | L172691AA | |
| LCP00895 | LS26S09.D | 9224673 | 09/26/2017 | 12:14 | L172691AA | |
| LCP00895 | LS26S10.D | 9224678 | 09/26/2017 | 12:36 | L172691AA | |
| LCP00895 | LS26S11.D | 9224679 | 09/26/2017 | 12:58 | L172691AA | |
| LCP00895 | LS26S12.D | 9224680 | 09/26/2017 | 13:20 | L172691AA | |
| LCP00895 | LS26SA2.D | 9224674 | 09/26/2017 | 13:41 | L172691AA | |
| LCP00895 | LS26EC1.D | SECC050 | 09/26/2017 | 14:03 | L172691AA | |
| LCP00895 | LS26S32.D | 9223837 | 09/26/2017 | 14:25 | L172692AA | |
| LCP00895 | LS26S33.D | 9223837MS | 09/26/2017 | 14:47 | L172692AA | |
| LCP00895 | LS26S34.D | 9223837MSD | 09/26/2017 | 15:09 | L172692AA | |
| LCP00895 | LS26S35.D | 9223839 | 09/26/2017 | 15:31 | L172692AA | |
| LCP00895 | LS26S36.D | 9223841 | 09/26/2017 | 15:53 | L172692AA | |
| LCP00895 | LS26S37.D | 9223843 | 09/26/2017 | 16:15 | L172692AA | |
| LCP00895 | LS26S38.D | 9223844 | 09/26/2017 | 16:37 | L172692AA | |
| LCP00895 | LS26S39.D | 9223845 | 09/26/2017 | 16:59 | L172692AA | |
| LCP00895 | LS26S40.D | 9223846 | 09/26/2017 | 17:21 | L172692AA | |
| LCP00895 | LS26S41.D | 9223847 | 09/26/2017 | 17:43 | L172692AA | |
| LCP00895 | LS26S42.D | 9223848 | 09/26/2017 | 18:05 | L172692AA | |
| LCP00895 | LS26S43.D | 9223849 | 09/26/2017 | 18:27 | L172692AA | |
| LCP00895 | LS26S44.D | 9223850 | 09/26/2017 | 18:49 | L172692AA | |

Data File: /chem/HP09915.i/17aug21i.b/lg21t01.d



Date : 21-AUG-2017 09:03

Client ID: BFB aug 14 2017

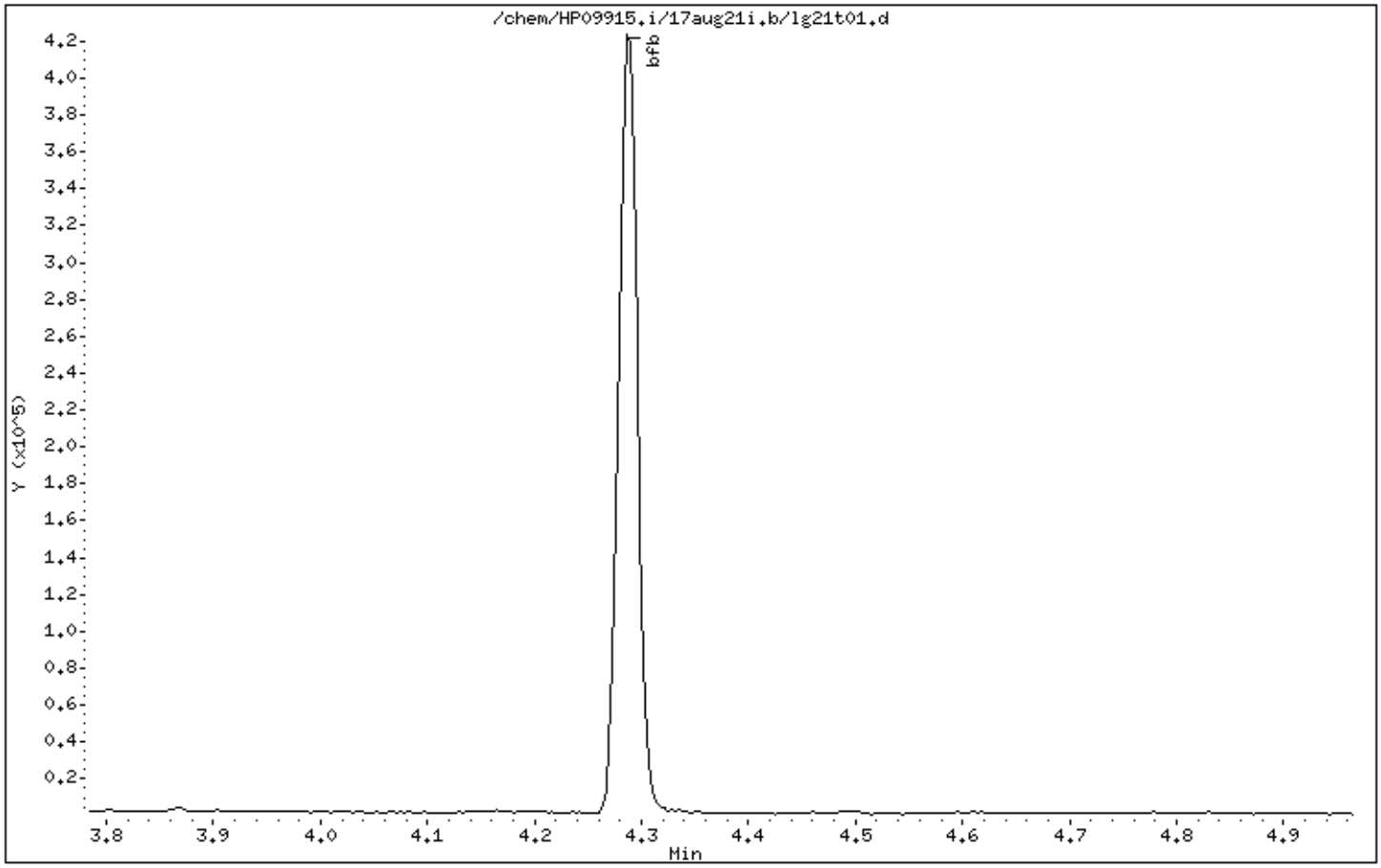
Instrument: HP09915.i

Sample Info: BFB aug 14 2017;50NG BFB;1;3;;;;;;

Operator: kas02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Kevin A. Sposito on 08/21/2017 at 09:13.
Target 3.5 esignature user ID: kas02648

Data File: /chem/HP09915.i/17aug21i.b/lg21t01.d



Date : 21-AUG-2017 09:03

Client ID: BFB aug 14 2017

Instrument: HP09915.i

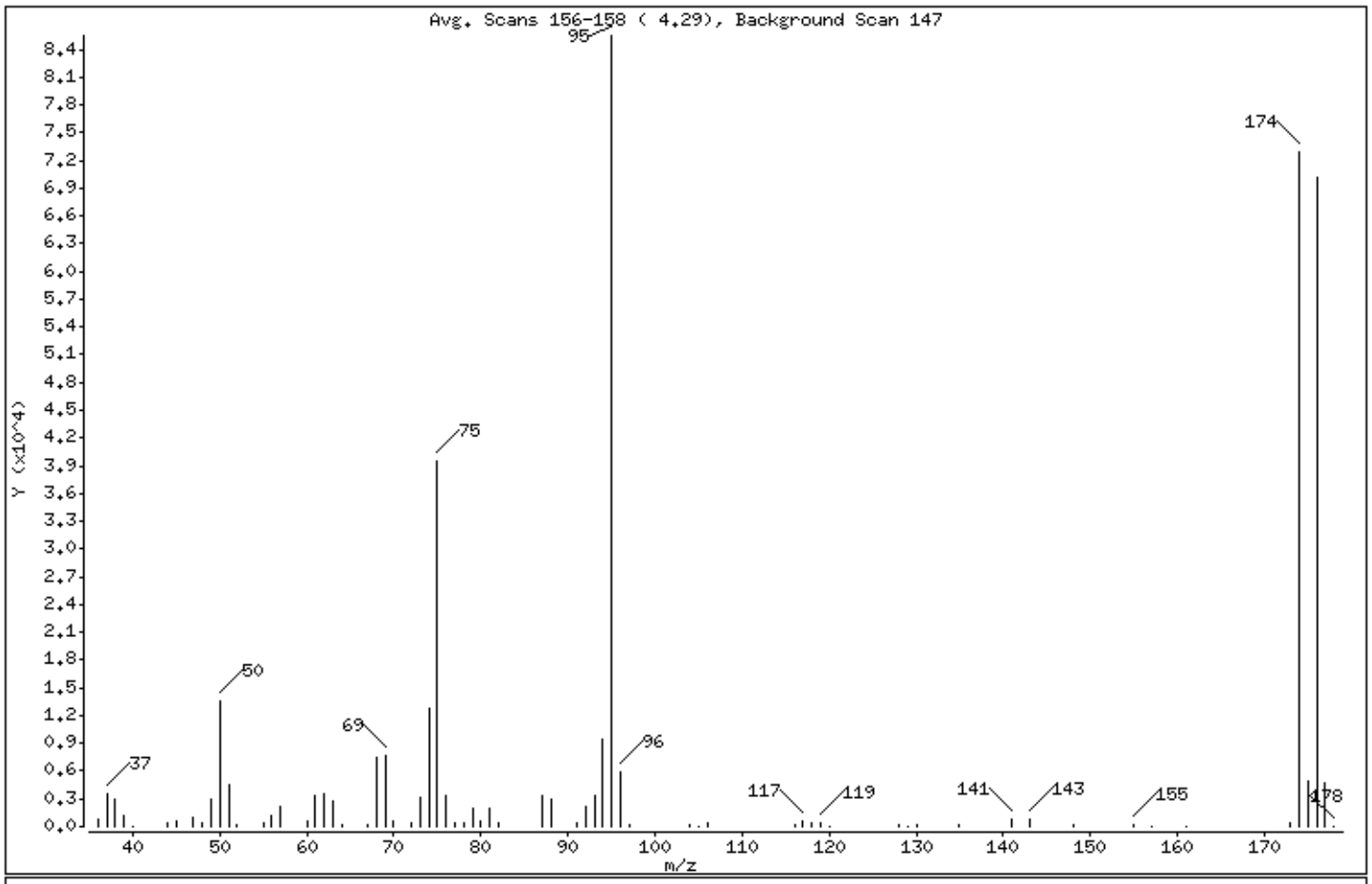
Sample Info: BFB aug 14 2017;50NG BFB;1;3;;;;;;

Operator: kas02648

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 15.97 |
| 75 | 30.00 - 60.00% of mass 95 | 46.18 |
| 96 | 5.00 - 9.00% of mass 95 | 6.85 |
| 173 | Less than 2.00% of mass 174 | 0.42 ( 0.49) |
| 174 | 50.00 - 100.00% of mass 95 | 85.39 |
| 175 | 5.00 - 9.00% of mass 174 | 5.75 ( 6.73) |
| 176 | 95.00 - 101.00% of mass 174 | 81.97 ( 96.00) |
| 177 | 5.00 - 9.00% of mass 176 | 5.62 ( 6.85) |

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Target 3.5 esignature user ID: kas02648

Date : 21-AUG-2017 09:03

Client ID: BFB aug 14 2017 Instrument: HP09915.i

Sample Info: BFB aug 14 2017;50NG BFB;1;3;;;;;;

Operator: kas02648

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: lg21t01.d
Spectrum: Avg. Scans 156-158 ( 4.29), Background Scan 147
Location of Maximum: 95.00
Number of points: 69

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 705 | 62.00 | 3465 | 87.00 | 3421 | 129.00 | 70 |
| 37.00 | 3525 | 63.00 | 2725 | 88.00 | 2929 | 130.00 | 291 |
| 38.00 | 3022 | 64.00 | 249 | 91.00 | 370 | 135.00 | 114 |
| 39.00 | 1153 | 67.00 | 246 | 92.00 | 2133 | 141.00 | 717 |
| 40.00 | 12 | 68.00 | 7407 | 93.00 | 3353 | 143.00 | 709 |
| 44.00 | 344 | 69.00 | 7645 | 94.00 | 9371 | 148.00 | 139 |
| 45.00 | 667 | 70.00 | 542 | 95.00 | 85488 | 155.00 | 189 |
| 47.00 | 891 | 72.00 | 441 | 96.00 | 5856 | 157.00 | 71 |
| 48.00 | 463 | 73.00 | 3148 | 97.00 | 204 | 161.00 | 59 |
| 49.00 | 2965 | 74.00 | 12679 | 104.00 | 263 | 173.00 | 357 |
| 50.00 | 13652 | 75.00 | 39480 | 105.00 | 59 | 174.00 | 73000 |
| 51.00 | 4552 | 76.00 | 3432 | 106.00 | 336 | 175.00 | 4916 |
| 52.00 | 272 | 77.00 | 455 | 116.00 | 266 | 176.00 | 70072 |
| 55.00 | 302 | 78.00 | 303 | 117.00 | 517 | 177.00 | 4801 |
| 56.00 | 1143 | 79.00 | 2018 | 118.00 | 299 | 178.00 | 61 |
| 57.00 | 2232 | 80.00 | 577 | 119.00 | 321 | | |
| 60.00 | 578 | 81.00 | 2038 | 120.00 | 55 | | |
| 61.00 | 3429 | 82.00 | 438 | 128.00 | 274 | | |

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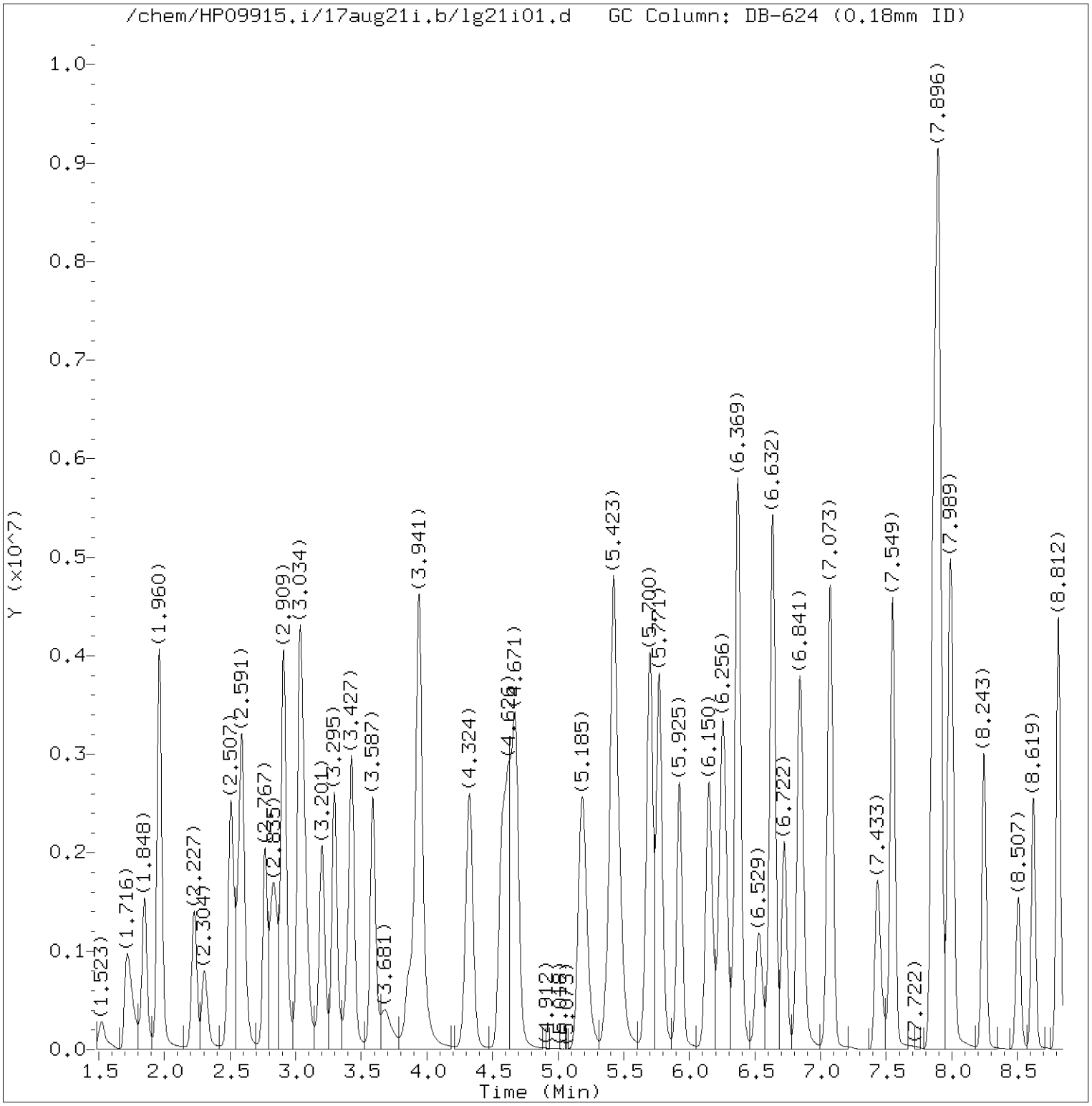
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

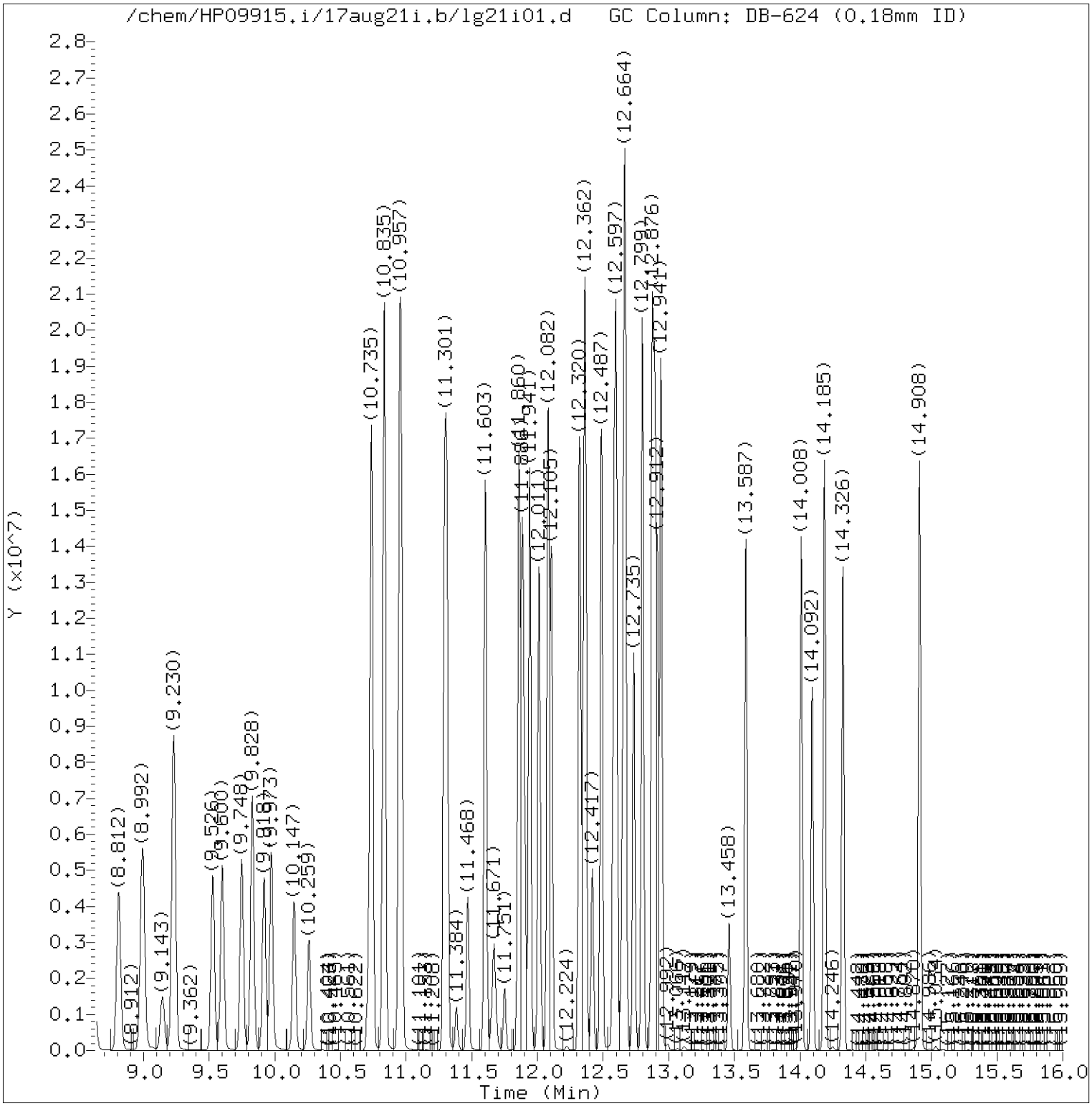
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716 | 85 | 2711210 | 303.062 |
| 4) Chloromethane | (2) | 1.848 | 50 | 2368911 | 284.868 |
| 6) Vinyl Chloride | (2) | 1.960 | 62 | 2389651 | 289.827 |
| 5) 1,3-Butadiene | (2) | 1.964 | 39 | 1654471 | 301.747 |
| 8) Bromomethane | (2) | 2.227 | 94 | 1531223 | 266.724 |
| 9) Chloroethane | (2) | 2.304 | 64 | 1194243 | 263.914 |
| 10) Dichlorofluoromethane | (2) | 2.504 | 67 | 2861811 | 283.903 |
| 12) Trichlorofluoromethane | (2) | 2.565 | 101 | 3158825 | 301.722 |
| 11) n-Pentane | (2) | 2.591 | 43 | 2488188 | 286.752 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 1519725 | 287.787 |
| 15) Freon 123a | (2) | 2.832 | 67 | 1934361 | 285.402 |
| 16) Acrolein | (1) | 2.909 | 56 | 5595689 | 3128.537 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 96 | 1618135 | 307.896 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 739668 | 300.799 |
| 18) Acetone | (1) | 3.044 | 58 | 452537 | 629.545 |
| 19) Freon 113 | (2) | 3.060 | 101 | 1760702 | 311.316 |
| 21) 2-Propanol | (1) | 3.182 | 45 | 751841 | 1556.710 |
| 22) Methyl Iodide | (2) | 3.201 | 142 | 3302095 | 301.619 |
| 23) Carbon Disulfide | (2) | 3.295 | 76 | 5413789 | 301.053 |
| 27) Methyl Acetate | (2) | 3.398 | 43 | 1755405 | 294.519 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 2527577 | 294.145 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 244314M | 250.000 |
| 28) Methylene Chloride | (2) | 3.587 | 84 | 1815782 | 293.783 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 1396023 | 1549.616 |
| 31) Acrylonitrile | (2) | 3.857 | 53 | 954825 | 290.289 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 5495029 | 285.796 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 1881055 | 304.565 |
| 34) n-Hexane | (2) | 4.324 | 57 | 2664915 | 305.080 |
| 36) 1,1-Dichloroethane | (2) | 4.571 | 63 | 3098751 | 295.053 |
| 38) di-Isopropyl ether | (2) | 4.626 | 45 | 5368834 | 288.405 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 2749817 | 297.943 |
| 40) Ethyl t-butyl ether | (2) | 5.182 | 59 | 5337062 | 282.881 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 2409110 | 574.365 |
| 42) cis-1,2-Dichloroethene | (2) | 5.423 | 96 | 2133385 | 304.937 |
| 45) 2,2-Dichloropropane | (2) | 5.443 | 77 | 2699957 | 323.392 |
| 47) Propionitrile | (1) | 5.471 | 54 | 1821310 | 1544.761 |
| 48) Methacrylonitrile | (2) | 5.697 | 67 | 2743761 | 752.558 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 1127801 | 304.287 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.777 | 71 | 715678 | 638.873 |
| 51) Chloroform | (2) | 5.925 | 83 | 3172949 | 296.296 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 348310 | 49.855 |
| 52)$Dibromofluoromethane | (2) | 6.150 | 111 | 356568 | 49.895 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 3023016 | 288.607 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4014440 | 609.502 |
| 54) Cyclohexane | (2) | 6.256 | 56 | 3147479 | 303.707 |
| 54) Cyclohexane | (2) | 6.256 | 84 | 2835607 | 309.645 |
| 54) Cyclohexane | (2) | 6.256 | 69 | 1006054 | 306.570 |
| 56) Carbon Tetrachloride | (2) | 6.369 | 117 | 2611986 | 319.005 |
| 55) 1,1-Dichloropropene | (2) | 6.369 | 75 | 2601272 | 308.616 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 1118522 | 3683.074 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 102 | 84940 | 50.051 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.616 | 65 | 384768 | 48.881 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.619 | 104 | 54895 | 50.512 |
| 60) Benzene | (2) | 6.635 | 78 | 7359151 | 298.875 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 2456729 | 289.775 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 249361 | 296.787 |
| 65) t-Amyl methyl ether | (2) | 6.841 | 73 | 5542089 | 283.871 |
| 66)*Fluorobenzene | (2) | 7.057 | 96 | 1371560 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 2680072 | 301.975 |
| 69) n-Butanol | (1) | 7.433 | 56 | 2021463 | 7737.409 |
| 71) Trichloroethene | (2) | 7.549 | 95 | 2061464 | 307.570 |
| 72) Methylcyclohexane | (2) | 7.864 | 83 | 3535345 | 319.041 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 1690060 | 323.566 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 1938875 | 305.184 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 311473 | 4716.091 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 1834179 | 325.221 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 1389988 | 307.834 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 2575033 | 311.178 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 1376138 | 605.692 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 1539240 | 310.551 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 3278597 | 313.891 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 5216212 | 581.235 |
| 83)$Toluene-d8 | (3) | 9.143 | 98 | 1341481 | 48.991 |
| 83)$Toluene-d8 | (3) | 9.143 | 100 | 887999 | 49.312 |
| 88) Toluene | (3) | 9.230 | 92 | 4934084 | 300.273 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 3088280 | 316.055 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 3159378 | 300.871 |
| 92) 1,1,2-Trichloroethane | (3) | 9.748 | 97 | 1916845 | 300.669 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 2344138 | 318.265 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 3111362 | 299.943 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 3770352 | 566.863 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 6366877 | 629.946 |
| 97) Dibromochloromethane | (3) | 10.147 | 129 | 2332241 | 324.866 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 2185430 | 304.079 |
| 100)*Chlorobenzene-d5 | (3) | 10.712 | 117 | 1100857 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 2889958 | 311.983 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 5962448 | 310.416 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.831 | 131 | 2194006 | 321.360 |
| 104) Ethylbenzene | (3) | 10.835 | 91 | 9347012 | 295.534 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 7639733 | 597.570 |
| 107) o-Xylene | (3) | 11.291 | 106 | 3881245 | 302.043 |
| 109) Styrene | (3) | 11.310 | 104 | 6470842 | 300.693 |
| 110) Bromoform | (3) | 11.468 | 173 | 1863802 | 344.640 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 9602814 | 297.221 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 1223014 | 4580.961 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 516814 | 49.390 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 447160 | 49.367 |
| 108) Xylene (Total) | (3) | | 106 | 11520978 | 899.613 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 3110044 | 293.890 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 2847085 | 317.306 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 1928848 | 689.622 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 956013 | 296.964 |
| 119) n-Propylbenzene | (4) | 11.941 | 91 | 10783890 | 286.613 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 2555050 | 312.955 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.082 | 105 | 8462516 | 298.909 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 2672721 | 313.280 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 1977719M | 310.313 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1769120 | 336.094 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 8629184 | 296.158 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 10343070 | 293.847 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 5054696 | 299.052 |
| 130) p-Isopropyltoluene | (4) | 12.600 | 119 | 9388129 | 298.942 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.642 | 152 | 609070 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 5036329 | 288.670 |

M = Compound was manually integrated.
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on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.671 | 105 | 8622303 | 284.917 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 6726320 | 307.498 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 5673132 | 297.562 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 5811928 | 293.001 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 4417297 | 288.385 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 5026905 | 299.429 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 4746247 | 298.813 |
| 141) Diethylbenzene (total) | (4) | | 100 | 16231307 | 889.377 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 703543 | 302.396 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 3892982 | 307.441 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 3764683 | 303.200 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 1561288 | 296.830 |
| 148) Naphthalene | (4) | 14.185 | 128 | 10723609 | 273.457 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 3529441 | 298.373 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 6806954 | 262.087 |



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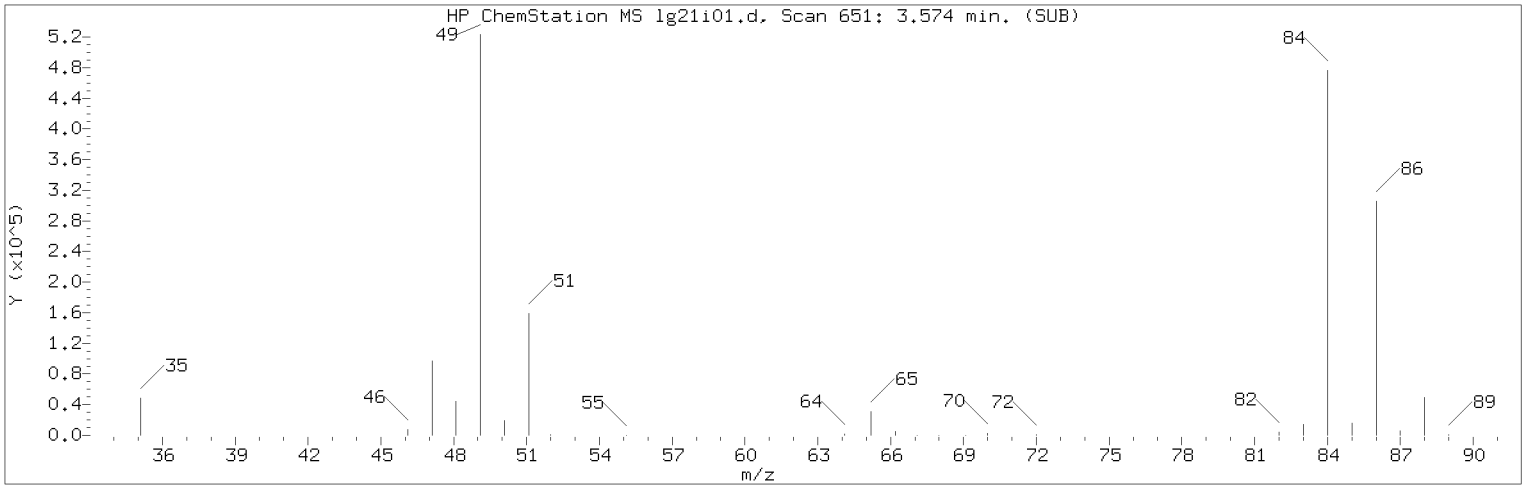
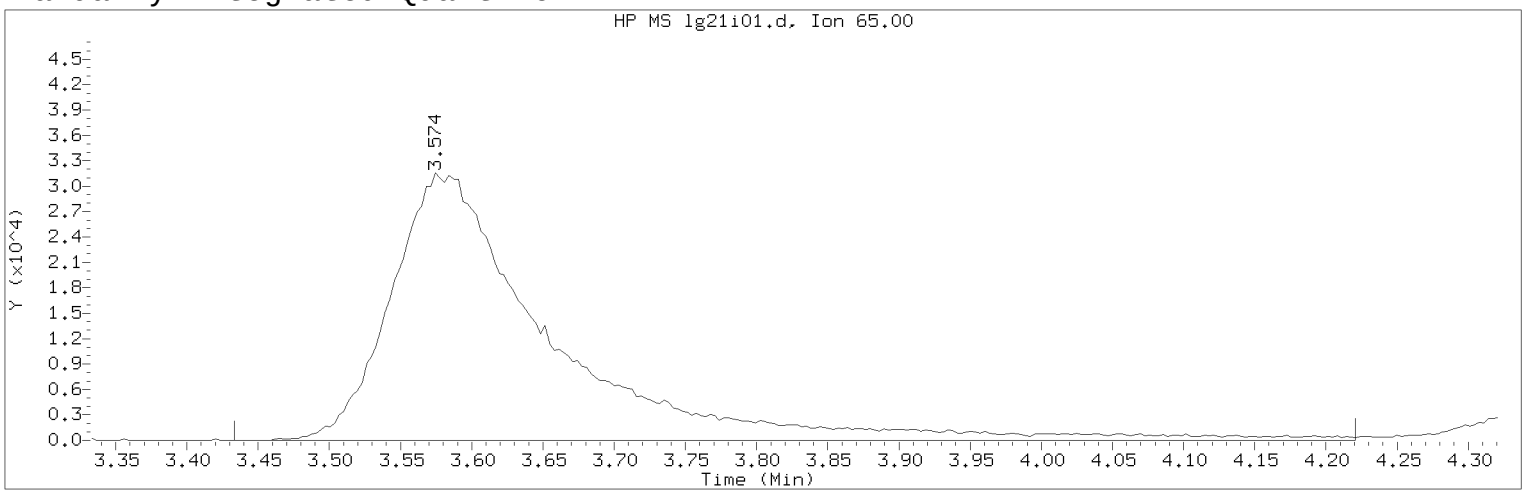
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

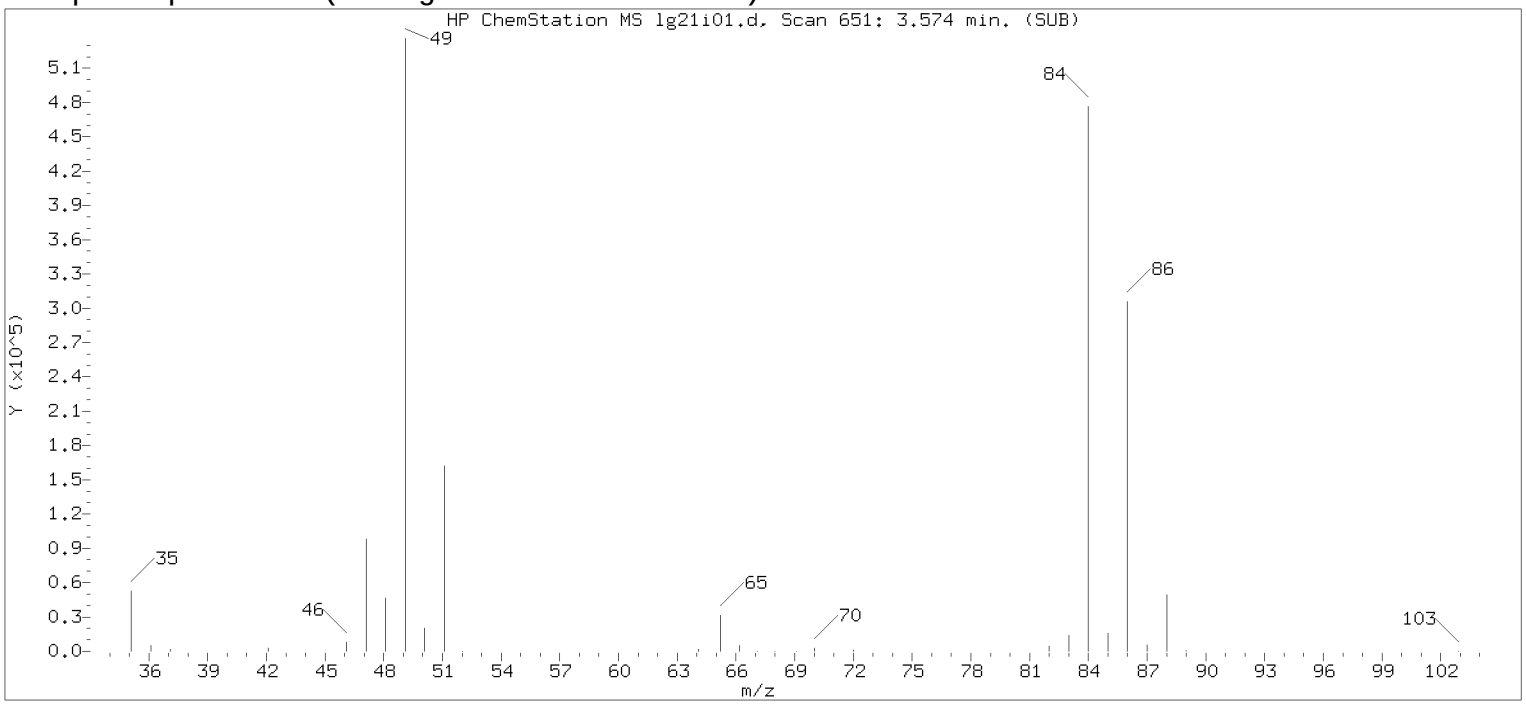
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 244314M
On-Column Amount (ng) : 250.0000
Integration start scan : 606 Integration stop scan: 851
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

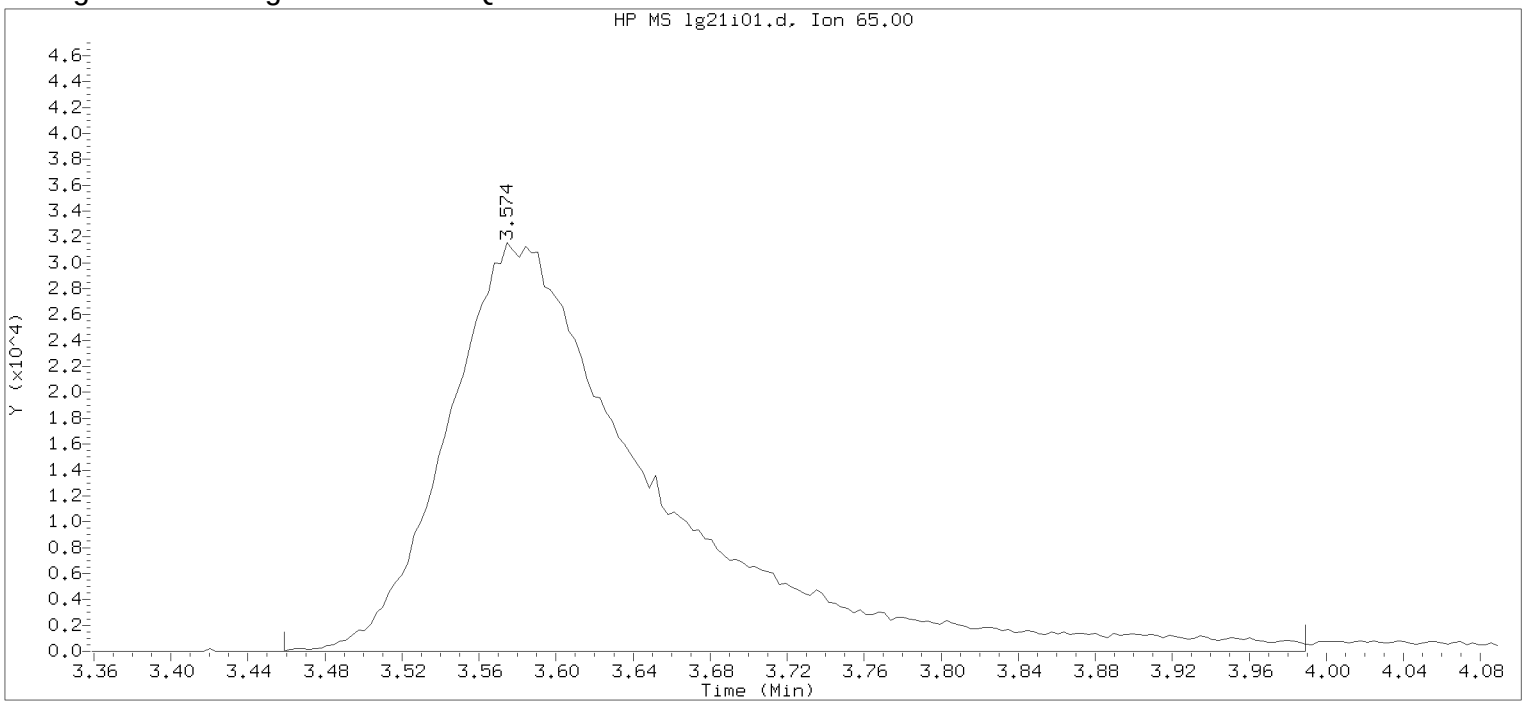
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

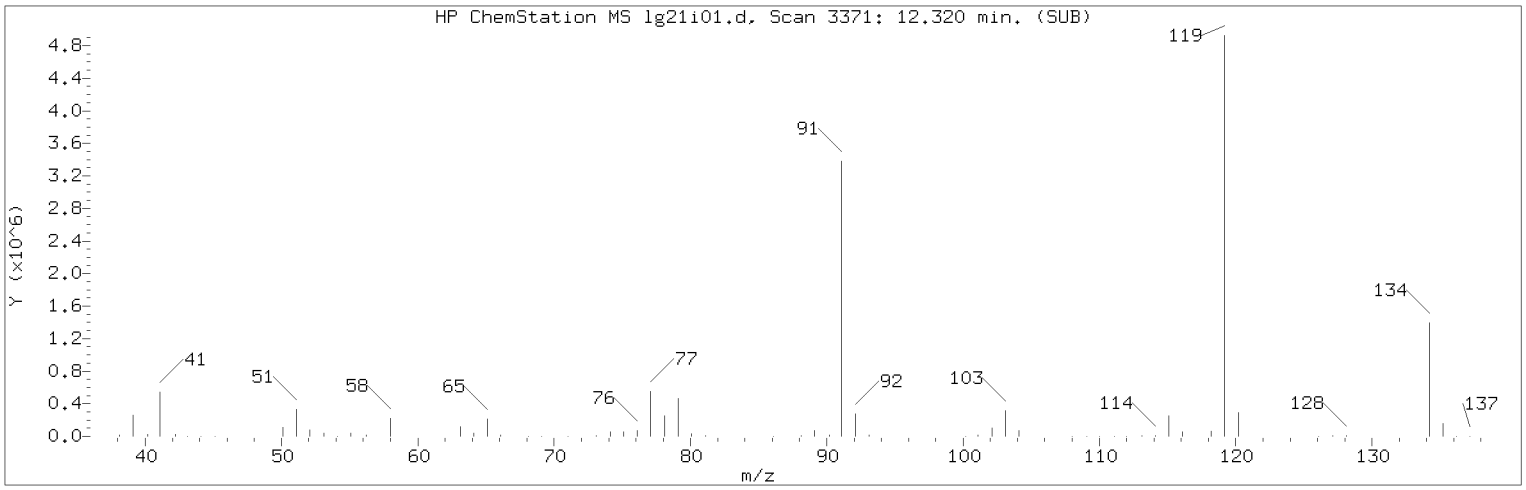
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

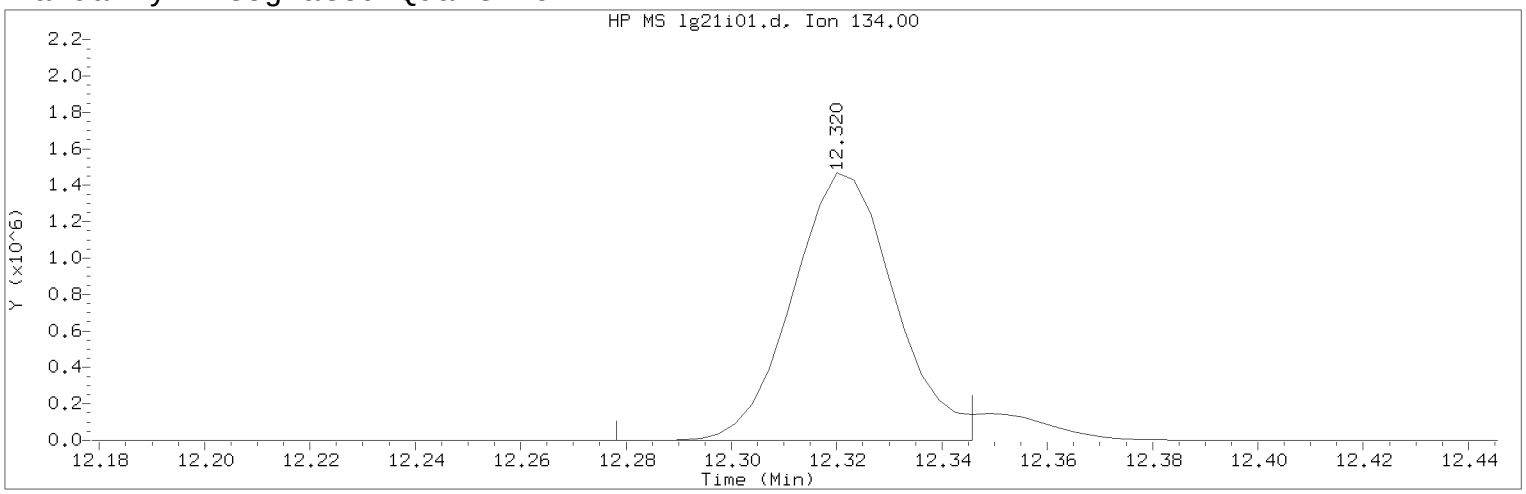
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area : 236617
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 779
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:58 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

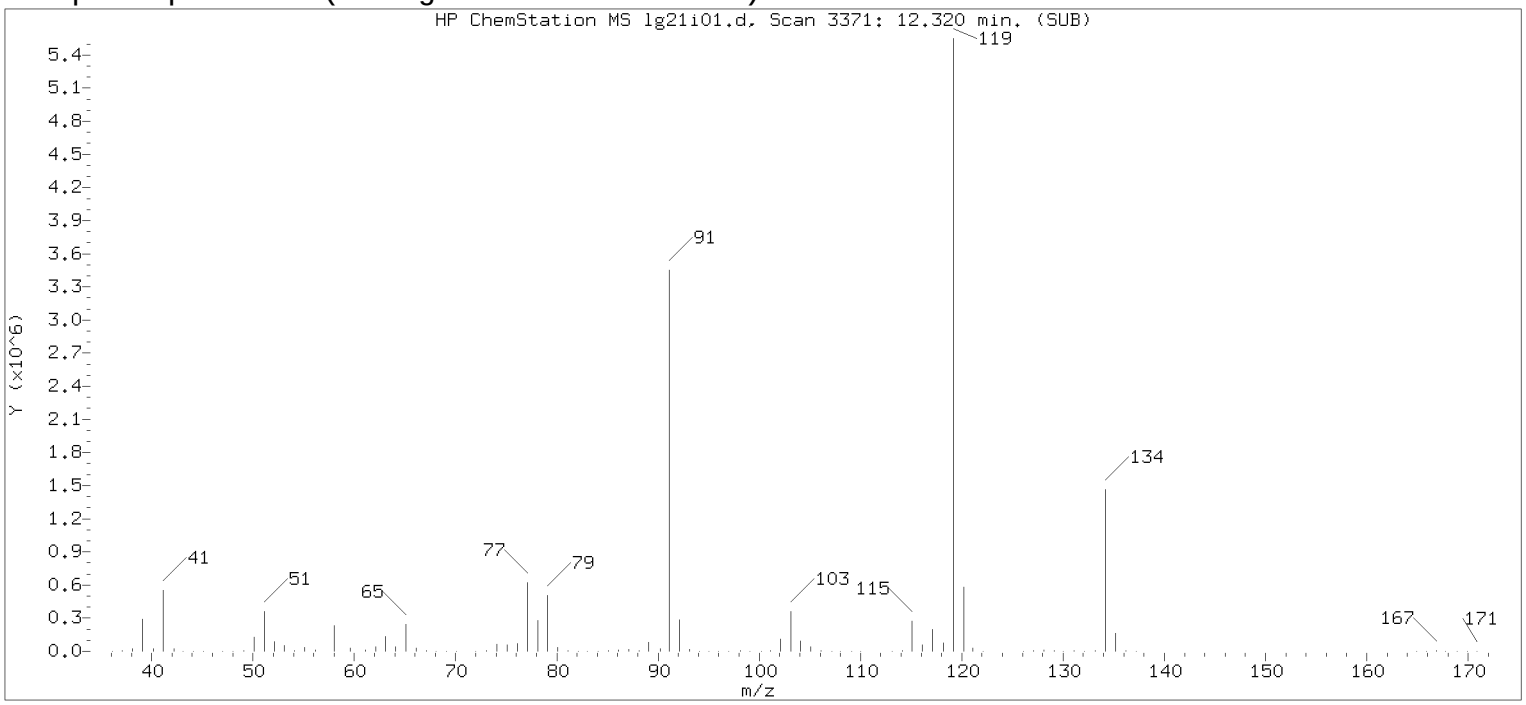
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 1977719M
On-Column Amount (ng) : 310.3135
Integration start scan : 3357 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

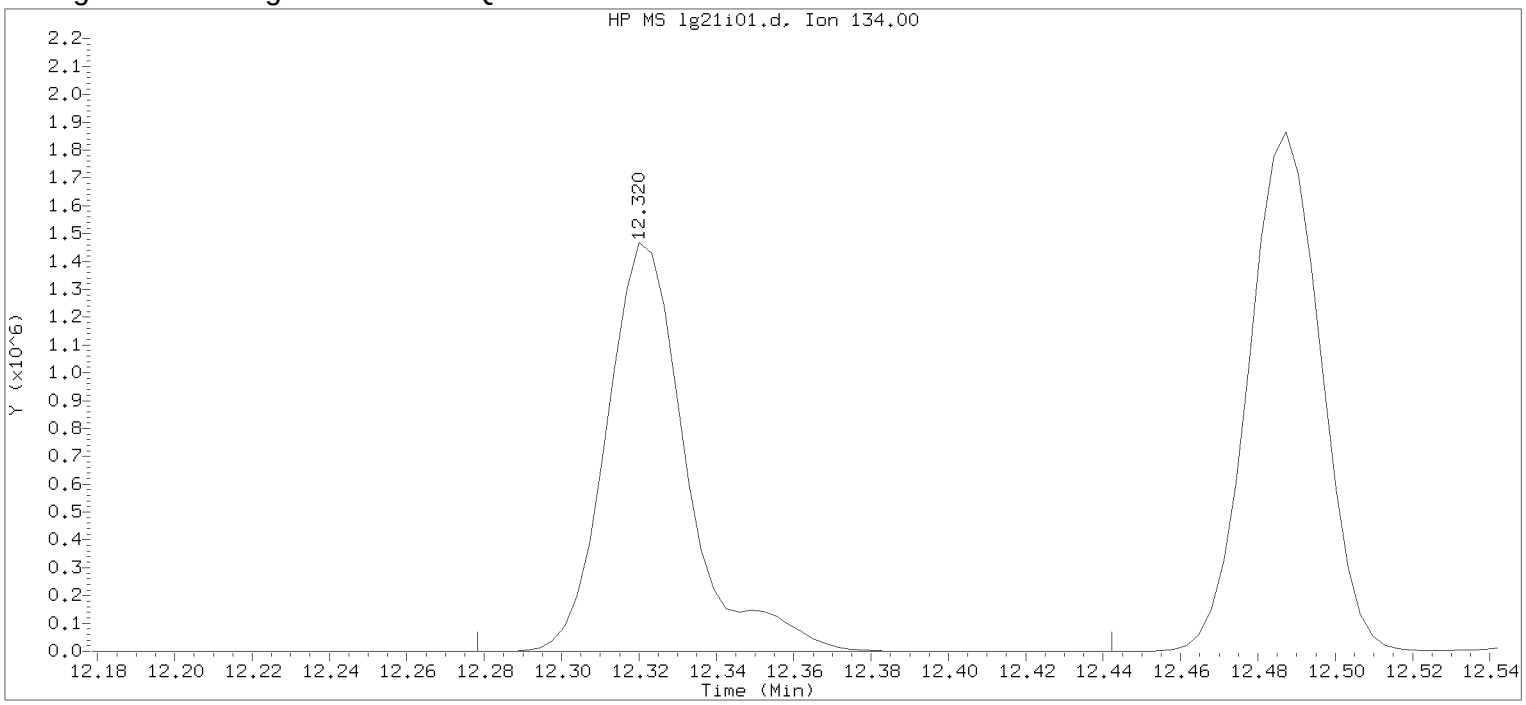
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 09:40 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD300 Lab Sample ID: VSTD300

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 2110897
On-column Amount (ng) : 314.1931
Integration start scan : 3357 Integration stop scan: 3408
Y at integration start : 0 Y at integration end: 0

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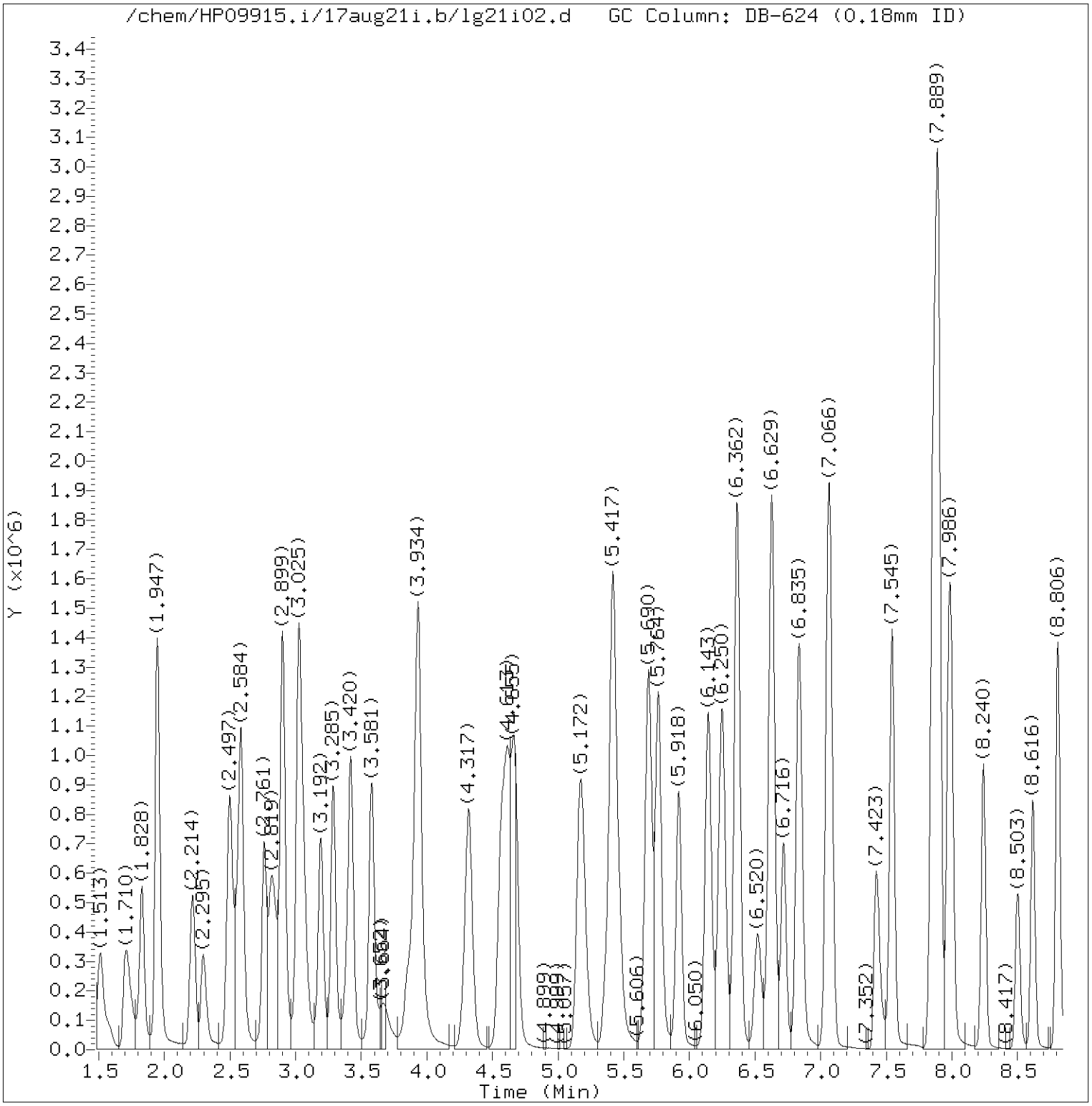
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

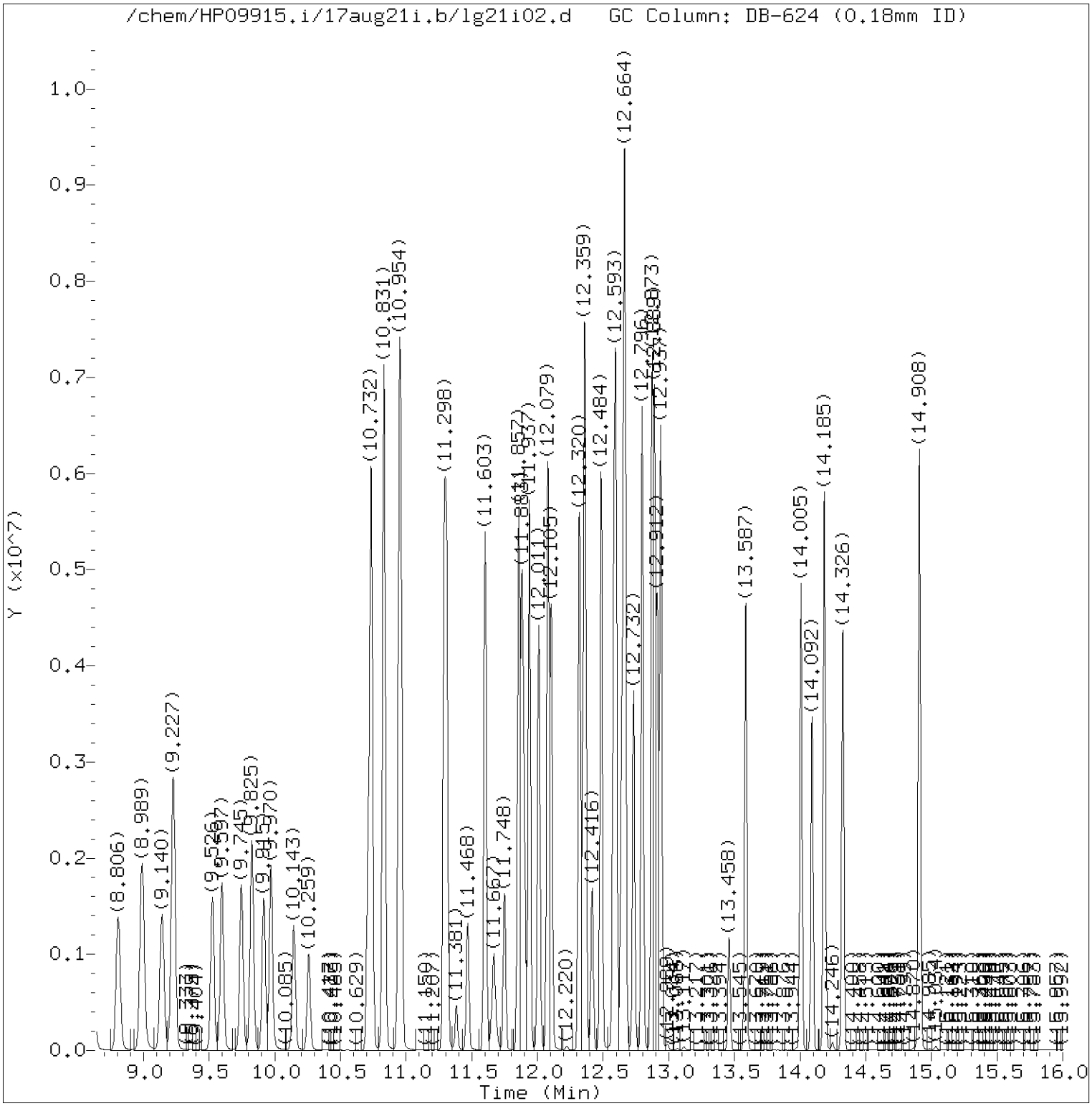
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 891224 | 103.344 |
| 4) Chloromethane | (2) | 1.828 | 50 | 807531 | 100.735 |
| 6) Vinyl Chloride | (2) | 1.941 | 62 | 812636 | 102.242 |
| 5) 1,3-Butadiene | (2) | 1.947 | 39 | 567549 | 107.378 |
| 8) Bromomethane | (2) | 2.214 | 94 | 569766 | 102.955 |
| 9) Chloroethane | (2) | 2.295 | 64 | 444688 | 101.942 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 967997 | 99.616 |
| 12) Trichlorofluoromethane | (2) | 2.555 | 101 | 1037819 | 102.833 |
| 11) n-Pentane | (2) | 2.587 | 43 | 849650 | 101.576 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 529752 | 104.066 |
| 15) Freon 123a | (2) | 2.819 | 67 | 646019 | 98.876 |
| 16) Acrolein | (1) | 2.899 | 56 | 1939966 | 1082.389 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 527641 | 104.149 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 63 | 244733 | 103.243 |
| 18) Acetone | (1) | 3.037 | 58 | 150806 | 209.359 |
| 19) Freon 113 | (2) | 3.047 | 101 | 577717 | 105.964 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 265443 | 548.472 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 1095980 | 103.848 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 1818042 | 104.875 |
| 27) Methyl Acetate | (2) | 3.388 | 43 | 594050 | 103.392 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 861577 | 104.011 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 244820M | 250.000 |
| 28) Methylene Chloride | (2) | 3.574 | 84 | 608447 | 102.121 |
| 30) t-Butyl alcohol | (1) | 3.671 | 59 | 482340 | 534.301 |
| 31) Acrylonitrile | (2) | 3.851 | 53 | 325415 | 102.630 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 1906597 | 102.866 |
| 32) trans-1,2-Dichloroethene | (2) | 3.934 | 96 | 613071 | 102.972 |
| 34) n-Hexane | (2) | 4.317 | 57 | 888434 | 105.508 |
| 36) 1,1-Dichloroethane | (2) | 4.561 | 63 | 1037829 | 102.510 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 1850130 | 103.099 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 916230 | 102.982 |
| 40) Ethyl t-butyl ether | (2) | 5.172 | 59 | 1866572 | 102.630 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 839048 | 207.513 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 697408 | 103.409 |
| 45) 2,2-Dichloropropane | (2) | 5.426 | 77 | 897586 | 111.526 |
| 47) Propionitrile | (1) | 5.462 | 54 | 625095 | 529.084 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 917150 | 260.953 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 369755 | 103.489 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 240330 | 214.095 |
| 51) Chloroform | (2) | 5.922 | 83 | 1061657 | 102.843 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 337561 | 50.122 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 344713 | 50.038 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 1001248 | 99.160 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 1310479 | 206.380 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 1046028 | 104.704 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 923535 | 104.616 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 328959 | 103.987 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 838840 | 106.276 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 844565 | 103.943 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 380877 | 1251.561 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 81645 | 49.907 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 378225 | 49.845 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 53197 | 50.778 |
| 60) Benzene | (2) | 6.629 | 78 | 2436601 | 102.654 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 833152 | 101.943 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 98 | 83177 | 102.695 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 1937218 | 102.933 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1322168 | 50.000 |
| 67) n-Heptane | (2) | 7.069 | 43 | 898860 | 105.062 |
| 69) n-Butanol | (1) | 7.423 | 56 | 683607 | 2611.186 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 665770 | 103.044 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 1145349 | 107.221 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 542663 | 107.775 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 638990 | 104.336 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 105830M | 1448.538 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 599738 | 110.313 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 455052 | 104.543 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 848930 | 106.421 |
| 79) 2-Nitropropane | (2) | 8.503 | 41 | 472703 | 215.827 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 505992 | 105.901 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 1070915 | 106.359 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 1836988 | 212.340 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1301689 | 49.594 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 858708 | 49.747 |
| 88) Toluene | (3) | 9.227 | 92 | 1623244 | 103.058 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 1003605 | 107.151 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 1052443 | 104.560 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 626659 | 102.547 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 735389 | 104.163 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 1027284 | 103.316 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 1355695 | 212.641 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 2074520 | 213.510 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 751209 | 109.164 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 716486 | 104.003 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1055218 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 931675 | 104.928 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 1927883 | 104.710 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 707102 | 108.050 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 3176665 | 104.784 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 2598120 | 212.011 |
| 107) o-Xylene | (3) | 11.291 | 106 | 1300696 | 105.600 |
| 109) Styrene | (3) | 11.307 | 104 | 2201696 | 106.735 |
| 110) Bromoform | (3) | 11.468 | 173 | 583136 | 112.493 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 3256107 | 105.140 |
| 112) Cyclohexanone | (1) | 11.667 | 55 | 418694 | 1565.033 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 498002 | 49.651 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 429642 | 49.484 |
| 108) Xylene (Total) | (3) | | 106 | 3898816 | 317.611 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 1028375 | 102.544 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 901651 | 106.037 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 689874 | 260.270 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 313429 | 102.736 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 3737933 | 104.832 |
| 120) 2-Chlorotoluene | (4) | 12.011 | 126 | 807521 | 104.371 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 2849308 | 106.199 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 854562 | 105.697 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 622580M | 104.263 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 561638 | 112.590 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 2935009 | 106.293 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 3543772 | 106.238 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580 | 146 | 1690018 | 105.508 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 3194798 | 107.348 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 577199 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 1754430 | 106.112 |

M = Compound was manually integrated.
* = Compound is an internal standard.
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Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 3052510 | 106.437 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 2254453 | 108.755 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 1905039 | 105.439 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 1980314 | 105.348 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 1536334 | 105.838 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 1670211 | 104.980 |
| 140) 1,2-Diethylbenzene | (4) | 12.937 | 119 | 1589353 | 105.587 |
| 141) Diethylbenzene (total) | (4) | | 100 | 5474706 | 316.374 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 234890 | 106.535 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 1250706 | 104.226 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.005 | 180 | 1222488 | 103.893 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 518118 | 103.943 |
| 148) Naphthalene | (4) | 14.185 | 128 | 3867330 | 104.064 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 1159781 | 103.460 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 2546847 | 103.476 |



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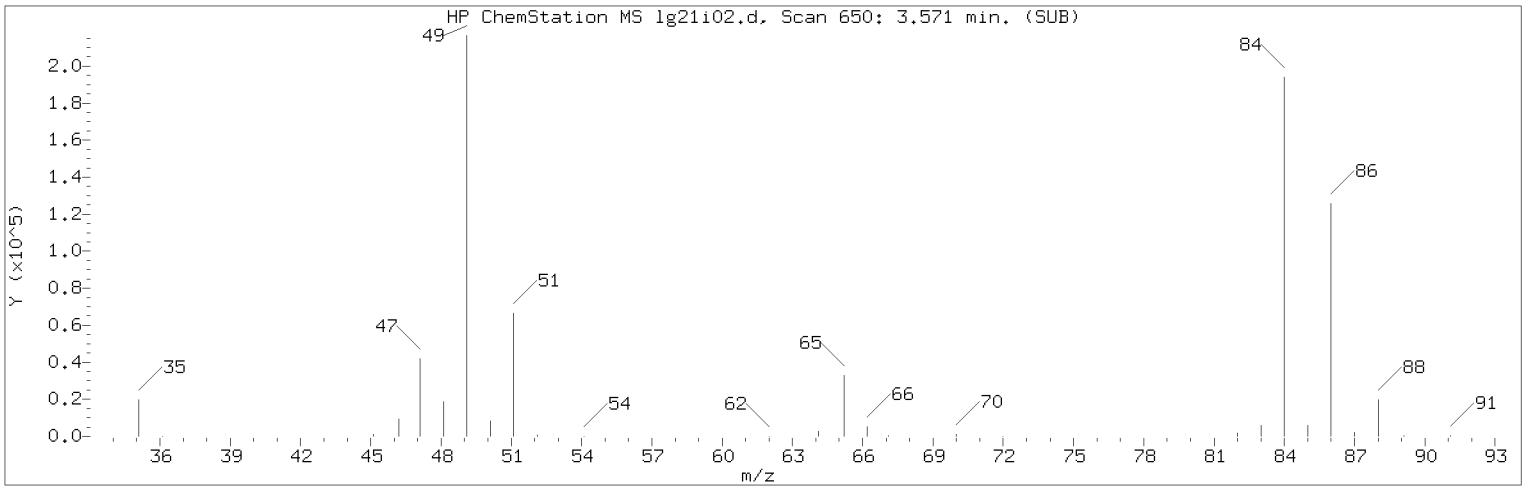
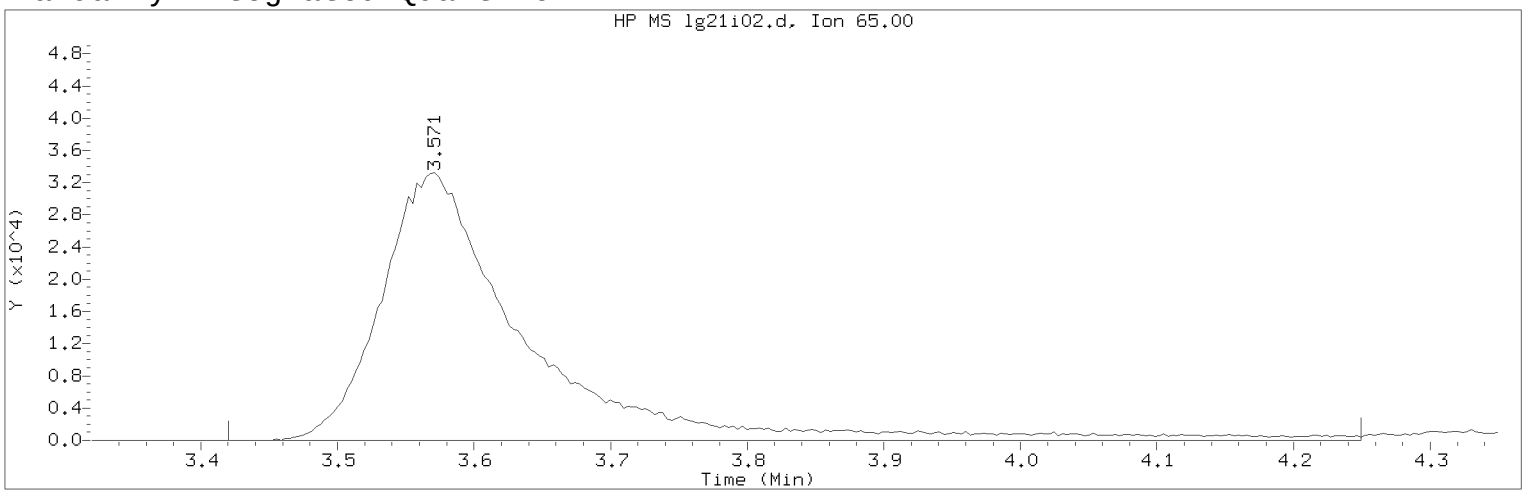
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

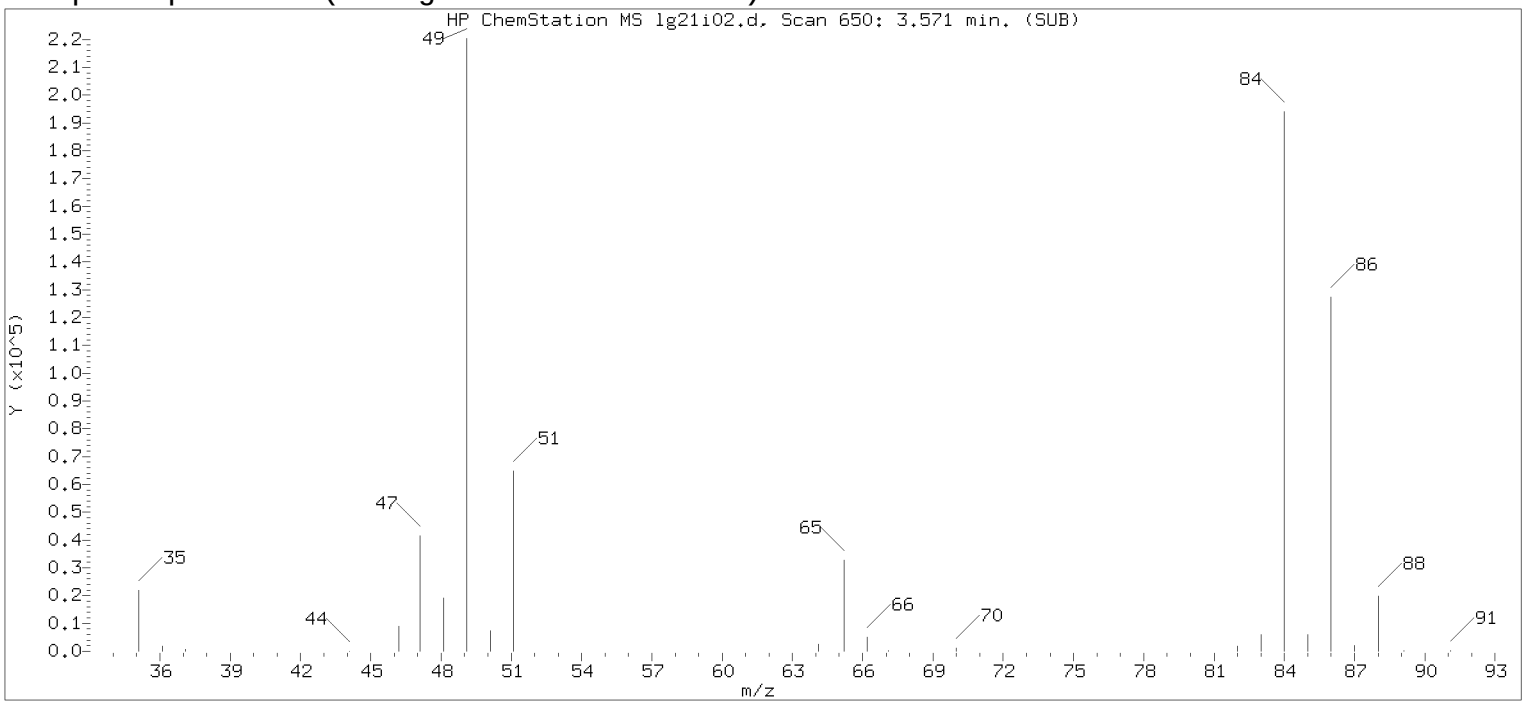
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area (flag) : 244820M
On-Column Amount (ng) : 250.0000
Integration start scan : 602 Integration stop scan: 860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

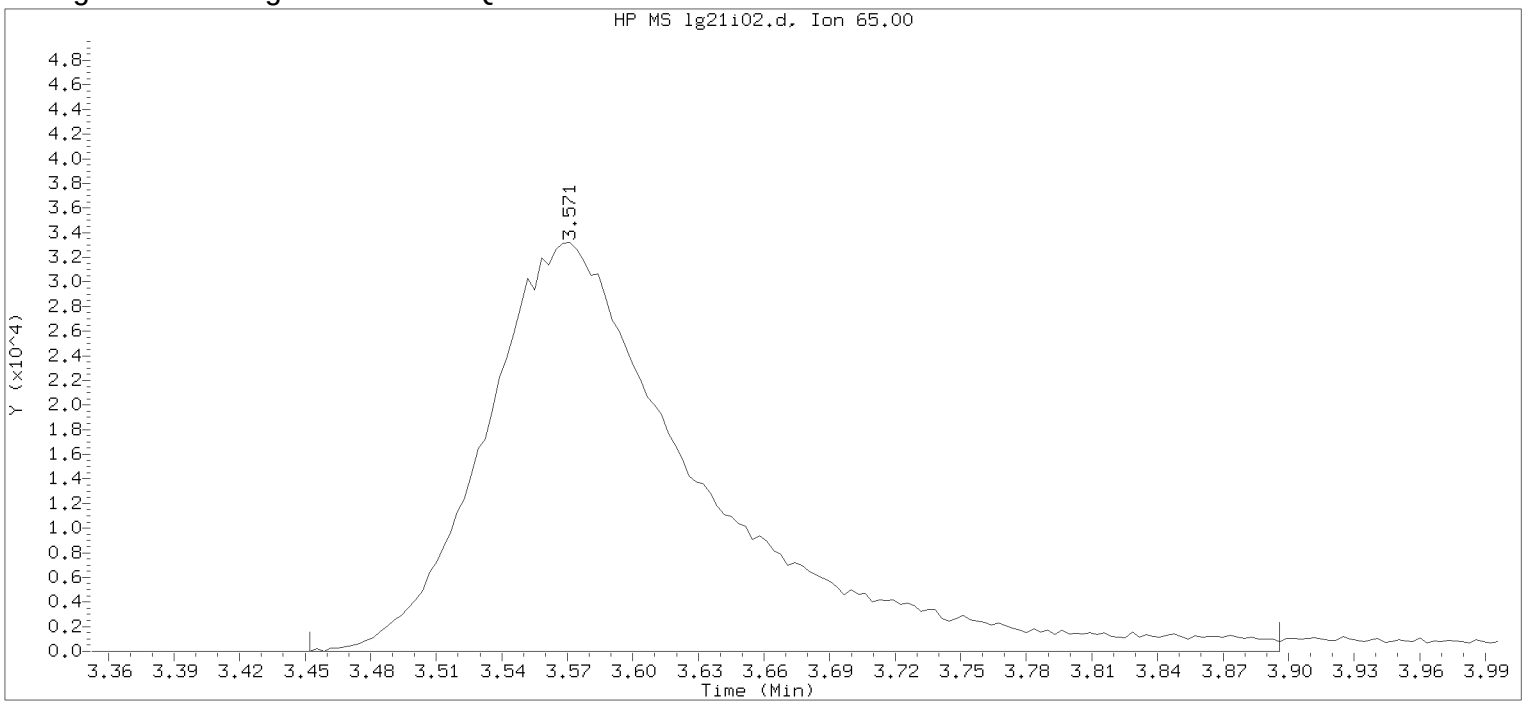
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

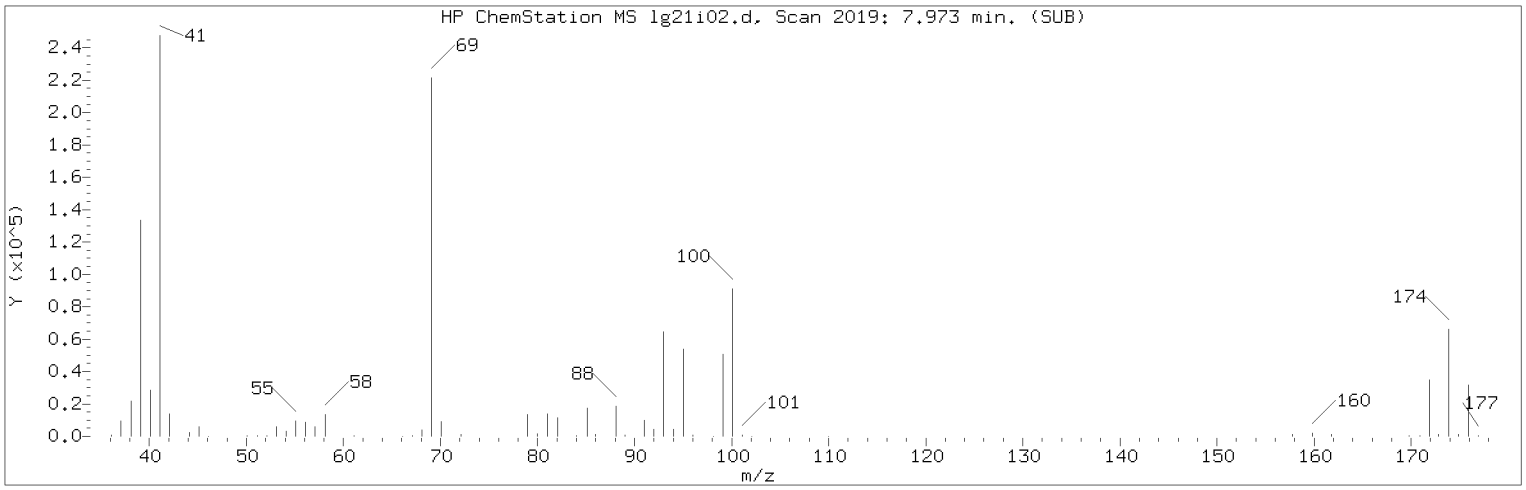
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

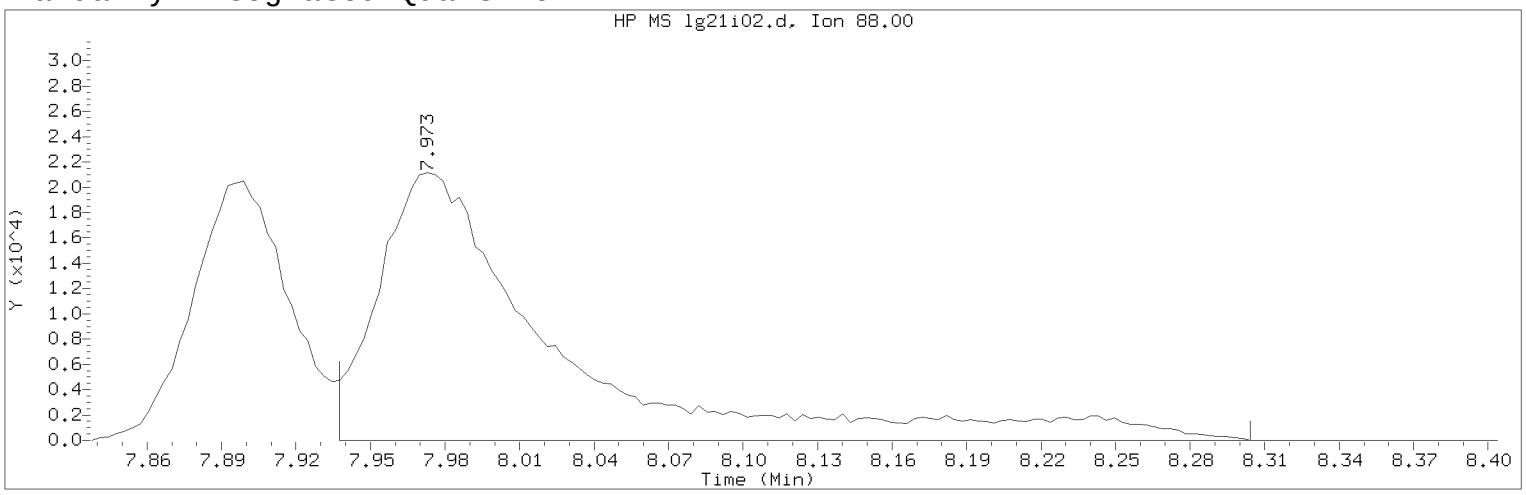
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 650
Retention Time (minutes): 3.571
Quant Ion : 65.00
Area : 230129
On-column Amount (ng) : 250.0000
Integration start scan : 612 Integration stop scan: 750
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:23.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

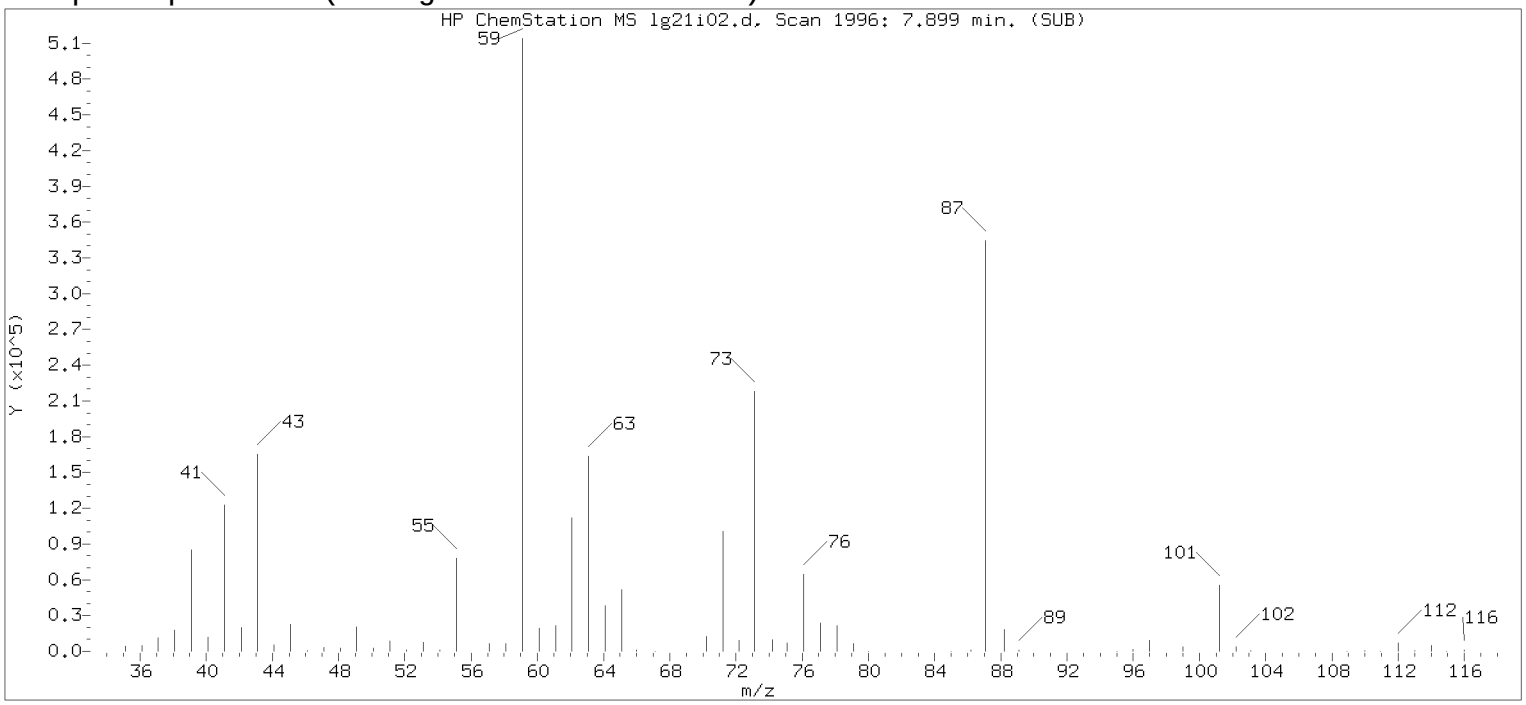
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 105830M
On-Column Amount (ng) : 1448.5377
Integration start scan : 2007 Integration stop scan: 2121
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

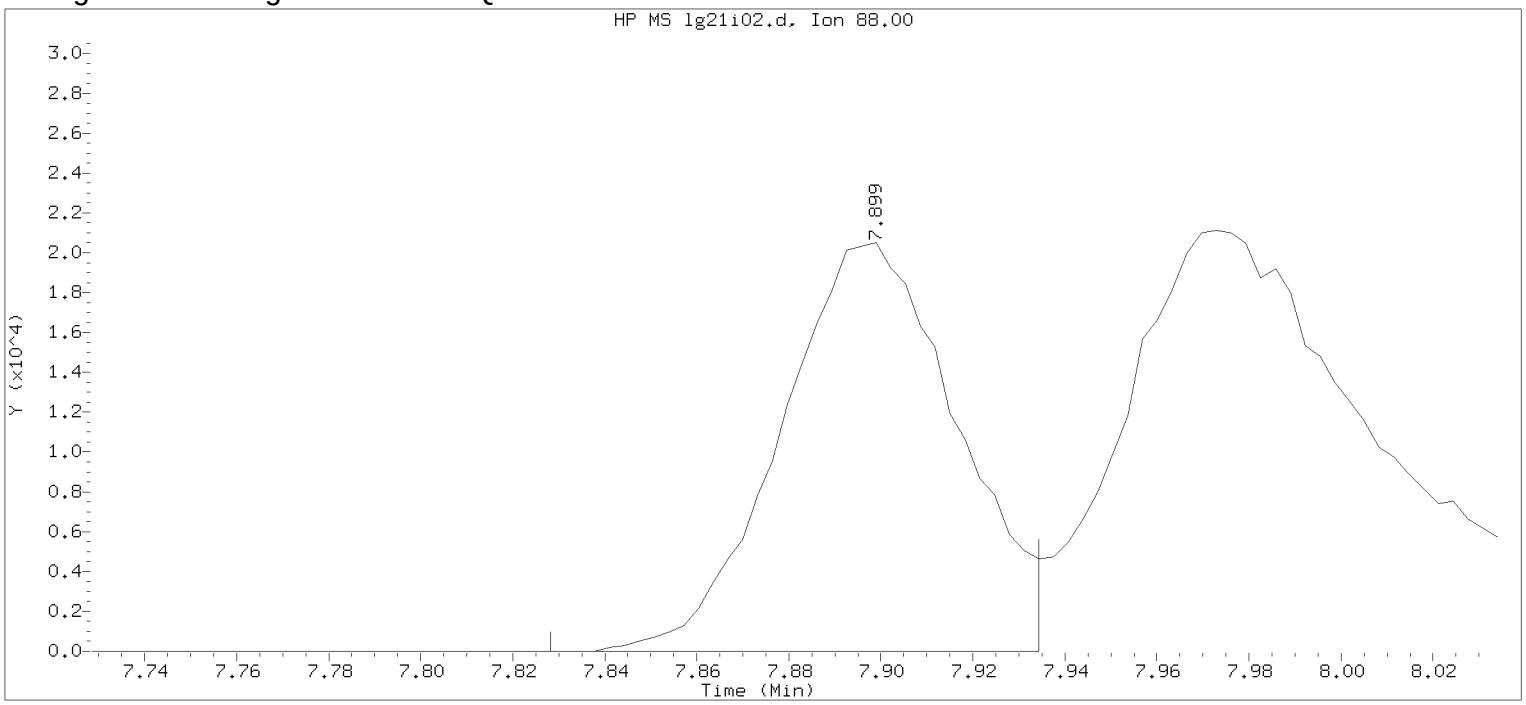
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1996
Retention Time (minutes): 7.899
Quant Ion : 88.00
Area : 54240
On-column Amount (ng) : 782.6587
Integration start scan : 1973 Integration stop scan: 2006
Y at integration start : 0 Y at integration end: 0

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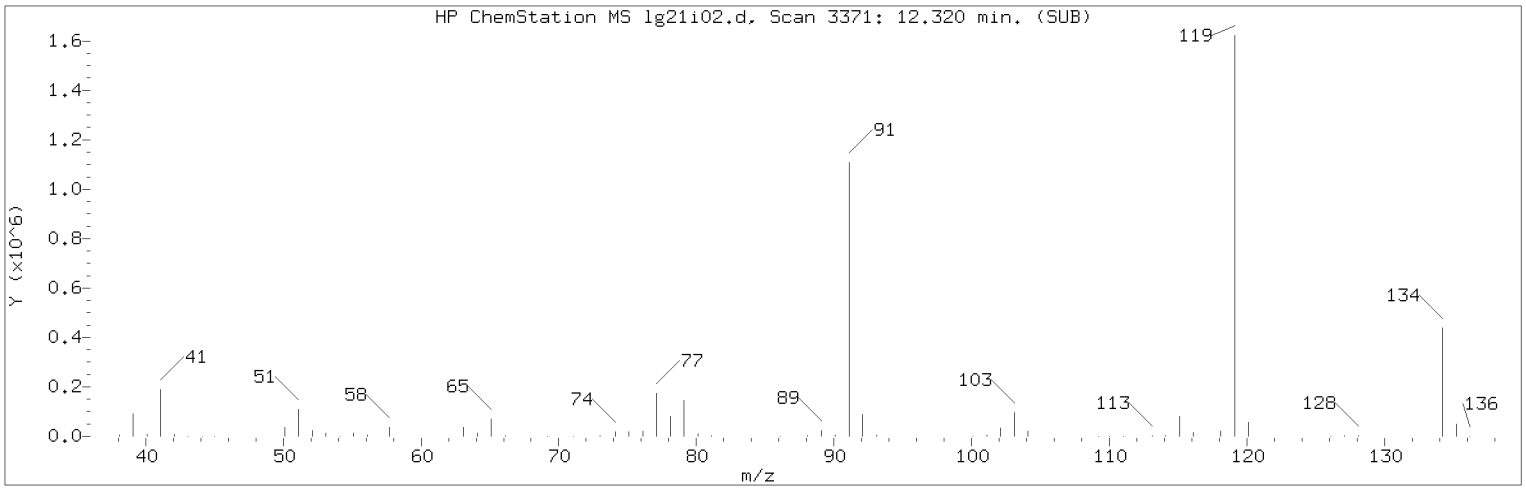
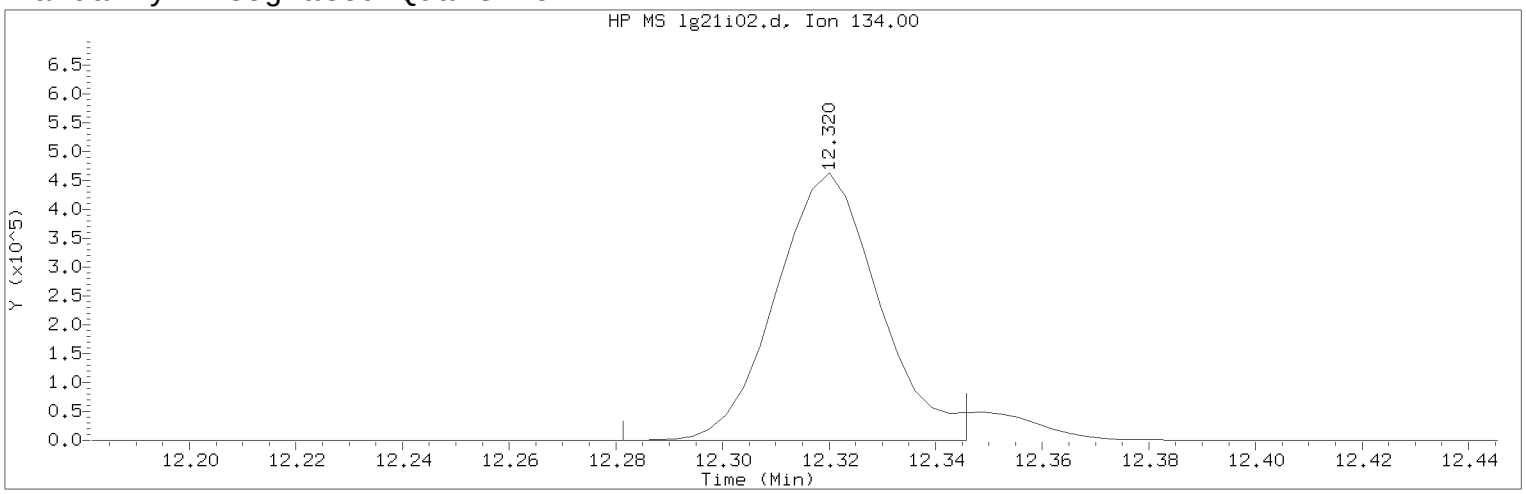
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:59 kas02648

Sample Name: VSTD100 Lab Sample ID: VSTD100

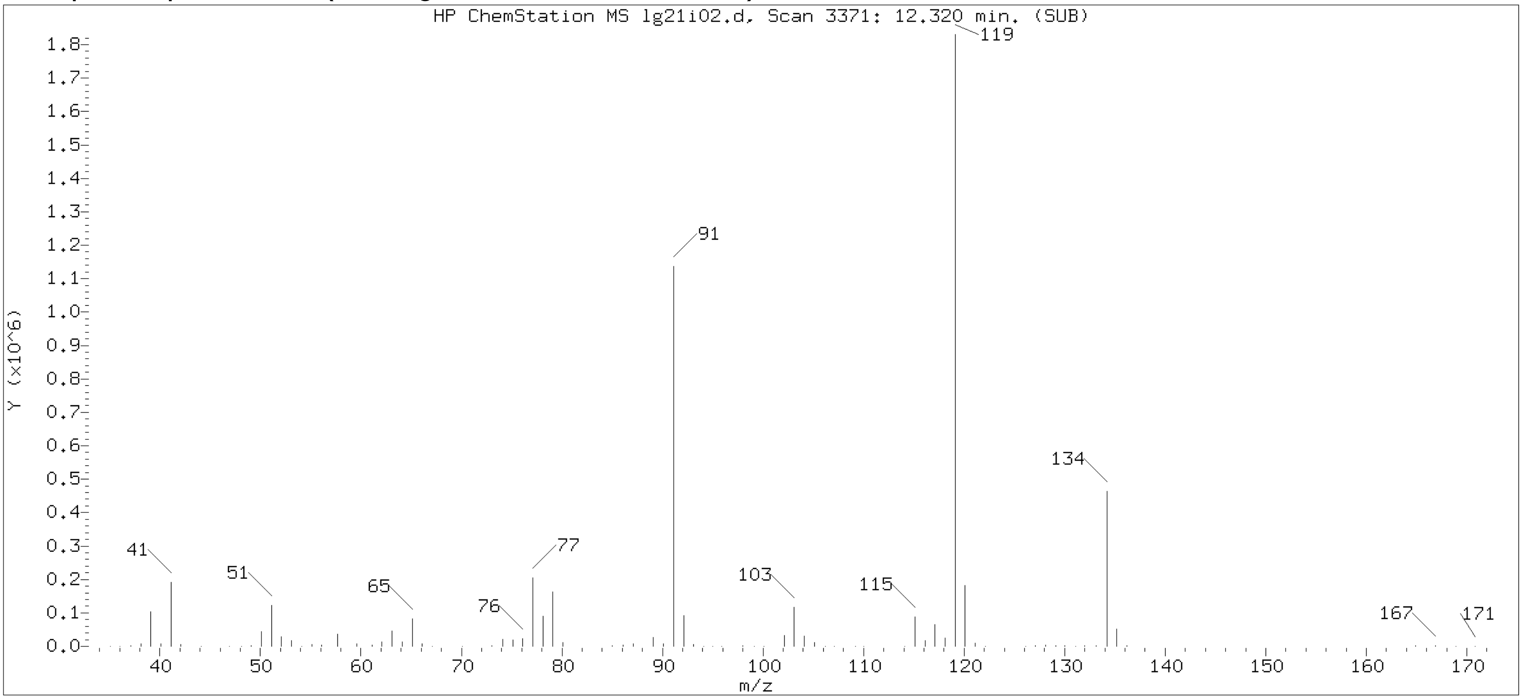
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 622580M
On-Column Amount (ng) : 104.2632
Integration start scan : 3358 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

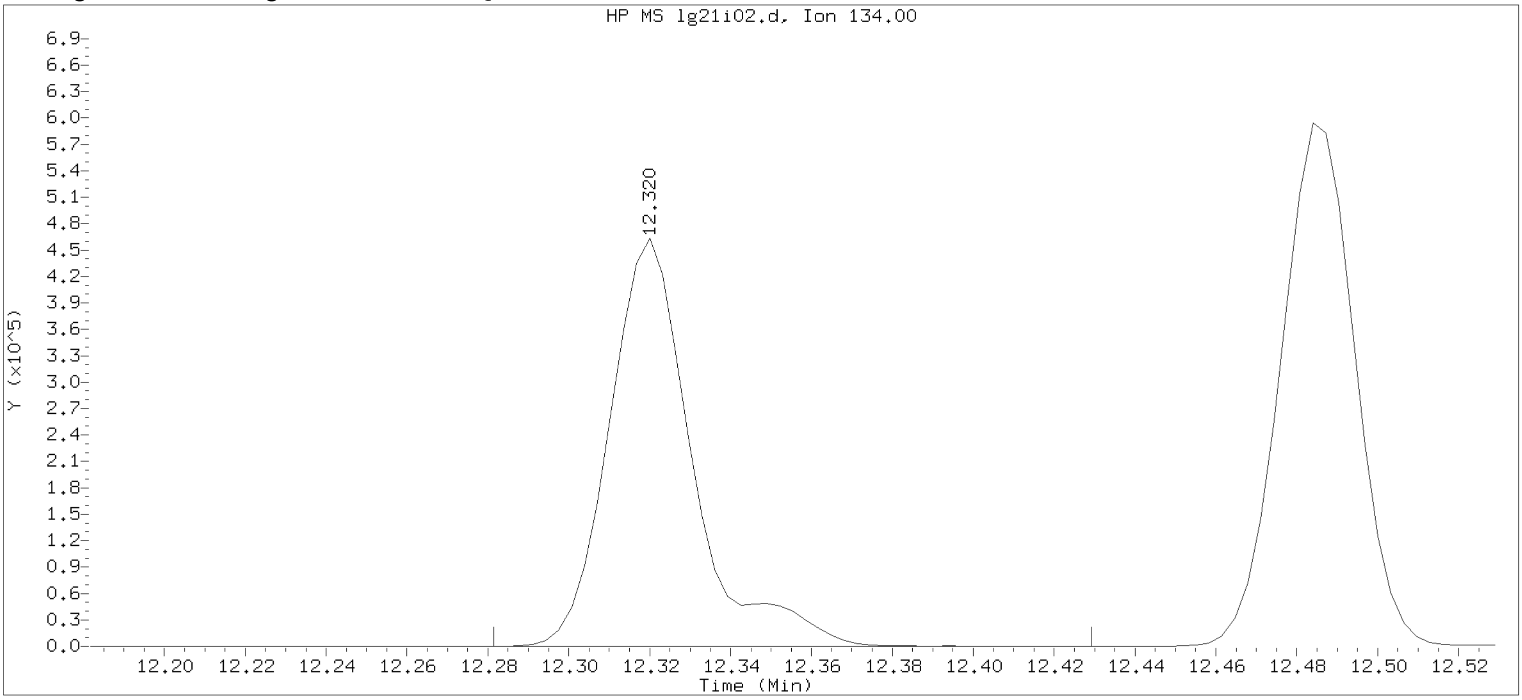
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



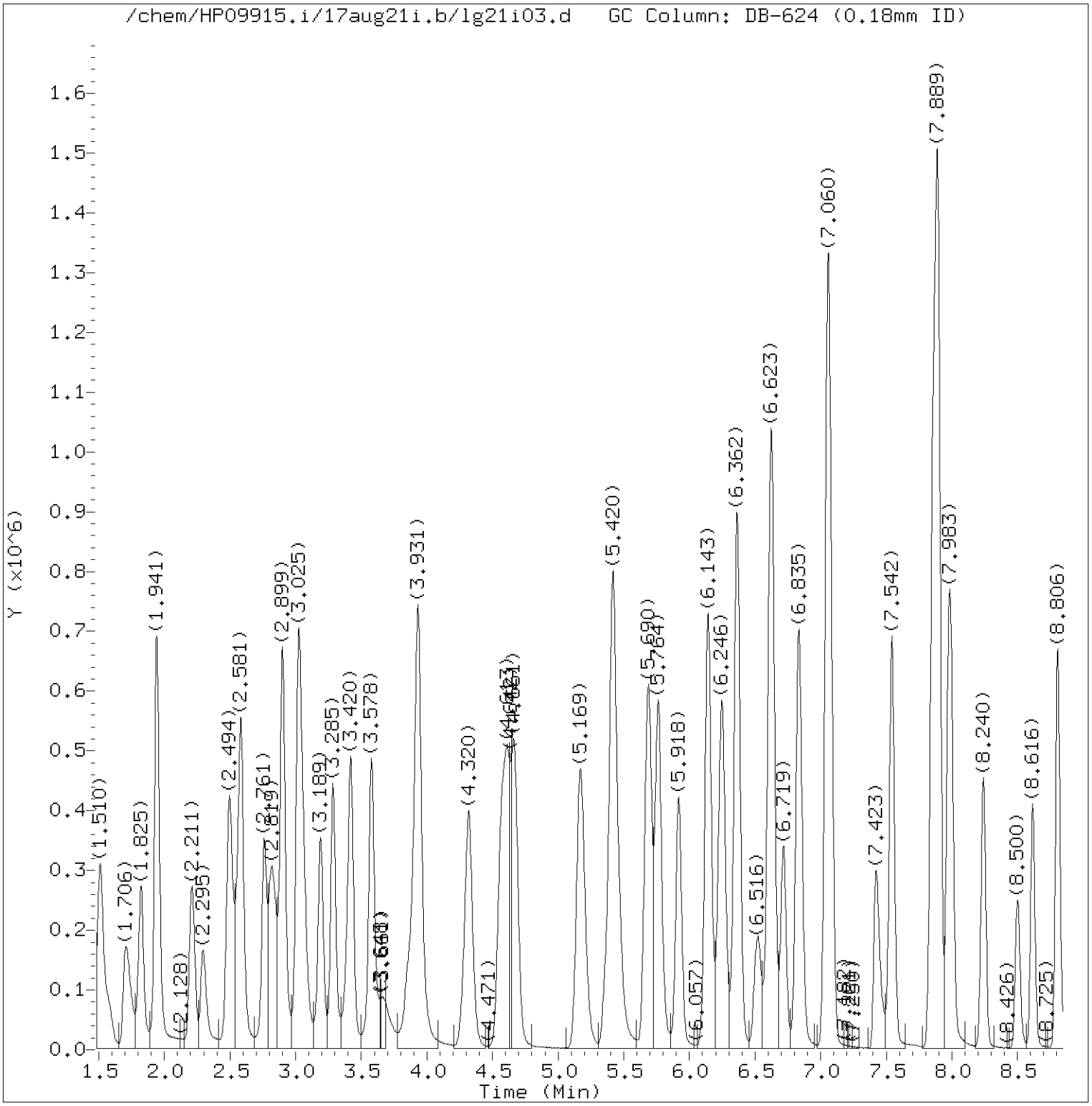

Data File: /chem/HP09915.i/17aug21i.b/lg21i02.d        Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:02        Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m        Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD100        Lab Sample ID: VSTD100

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 663714
On-column Amount (ng) : 102.7900
Integration start scan : 3358        Integration stop scan: 3404
Y at integration start : 0        Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:23.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

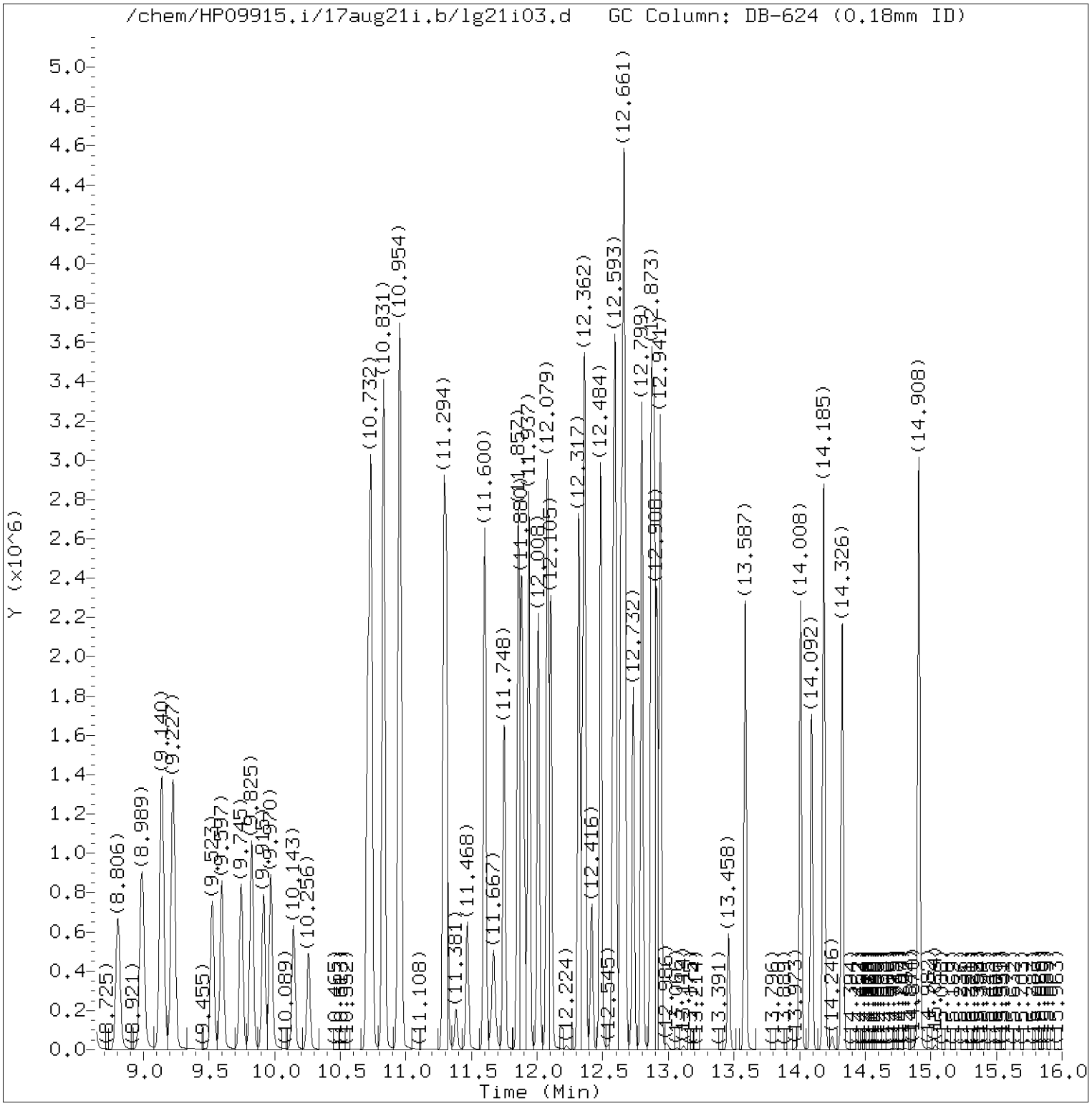
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 436839 | 50.767 |
| 4) Chloromethane | (2) | 1.825 | 50 | 396740 | 49.601 |
| 6) Vinyl Chloride | (2) | 1.938 | 62 | 399944 | 50.431 |
| 5) 1,3-Butadiene | (2) | 1.944 | 39 | 282420 | 53.551 |
| 8) Bromomethane | (2) | 2.211 | 94 | 289233 | 52.380 |
| 9) Chloroethane | (2) | 2.295 | 64 | 218327 | 50.161 |
| 10) Dichlorofluoromethane | (2) | 2.491 | 67 | 469892 | 48.464 |
| 12) Trichlorofluoromethane | (2) | 2.552 | 101 | 506952 | 50.343 |
| 11) n-Pentane | (2) | 2.587 | 43 | 438616 | 52.553 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 264070 | 51.990 |
| 15) Freon 123a | (2) | 2.816 | 67 | 324237 | 49.736 |
| 16) Acrolein | (1) | 2.899 | 56 | 926042 | 486.398 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 96 | 256234 | 50.689 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 119484 | 50.517 |
| 18) Acetone | (1) | 3.041 | 58 | 76036 | 99.354 |
| 19) Freon 113 | (2) | 3.050 | 101 | 285842 | 52.545 |
| 21) 2-Propanol | (1) | 3.172 | 45 | 135837 | 264.213 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 534112 | 50.722 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 888066 | 51.343 |
| 27) Methyl Acetate | (2) | 3.388 | 43 | 297035 | 51.813 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 424615 | 51.374 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 258273M | 250.000 |
| 28) Methylene Chloride | (2) | 3.578 | 84 | 301239 | 50.672 |
| 30) t-Butyl alcohol | (1) | 3.674 | 59 | 253602 | 264.356 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 158250 | 50.020 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 953365 | 51.551 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 299953 | 50.492 |
| 34) n-Hexane | (2) | 4.320 | 57 | 443201 | 52.750 |
| 36) 1,1-Dichloroethane | (2) | 4.562 | 63 | 514205 | 50.903 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 921880 | 51.486 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 455052 | 51.260 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 934276 | 51.483 |
| 44) 2-Butanone | (2) | 5.375 | 43 | 403757 | 100.079 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 341128 | 50.693 |
| 45) 2,2-Dichloropropane | (2) | 5.426 | 77 | 444985 | 55.413 |
| 47) Propionitrile | (1) | 5.462 | 54 | 311223 | 247.959 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 453833 | 129.414 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 180418 | 50.608 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.767 | 71 | 116361 | 97.584 |
| 51) Chloroform | (2) | 5.918 | 83 | 528693 | 51.328 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 334948 | 49.844 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 342720 | 49.859 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 494021 | 49.035 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 641081 | 101.185 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 524378 | 52.605 |
| 54) Cyclohexane | (2) | 6.243 | 84 | 464439 | 52.728 |
| 54) Cyclohexane | (2) | 6.253 | 69 | 164765 | 52.199 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 410323 | 52.101 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 419212 | 51.708 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 201401 | 622.844 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 81053 | 49.655 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 65 | 380246 | 50.222 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 52164 | 49.902 |
| 60) Benzene | (2) | 6.629 | 78 | 1207027 | 50.965 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 415389 | 50.939 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 98 | 40845 | 50.541 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 973284 | 51.830 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1319240 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 455090 | 53.311 |
| 69) n-Butanol | (1) | 7.423 | 56 | 348979 | 1254.732 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 325351 | 50.468 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 565141 | 53.023 |
| 72) Methylcyclohexane | (2) | 7.854 | 98 | 264947 | 52.736 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 314153 | 51.410 |
| 75) 1,4-Dioxane | (1) | 7.973 | 88 | 56129M | 798.113 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 294477 | 54.285 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 223421 | 51.442 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 415225 | 52.168 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 222909 | 102.002 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 248293 | 52.081 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 521217 | 51.880 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 874231 | 101.278 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1297905 | 49.903 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 854383 | 49.950 |
| 88) Toluene | (3) | 9.227 | 92 | 794671 | 50.915 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 486801 | 52.450 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.597 | 69 | 519885 | 52.124 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 309284 | 51.075 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 358242 | 51.207 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 504118 | 51.165 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 639605 | 101.241 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 1008018 | 104.330 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 361740 | 53.049 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 353721 | 51.815 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1045640 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 456706 | 51.907 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 937280 | 51.373 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 340226 | 52.465 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 1563820 | 52.056 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 1265885 | 104.245 |
| 107) o-Xylene | (3) | 11.291 | 106 | 635681 | 52.082 |
| 109) Styrene | (3) | 11.307 | 104 | 1077690 | 52.724 |
| 110) Bromoform | (3) | 11.468 | 173 | 275033 | 53.543 |
| 111) Isopropylbenzene | (3) | 11.600 | 105 | 1614868 | 52.622 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 212881A | 749.302 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 497221 | 50.027 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 432616 | 50.283 |
| 108) Xylene (Total) | (3) | | 106 | 1901566 | 156.326 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 516173 | 51.968 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 433747 | 51.503 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 344305 | 131.152 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 154193 | 51.030 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 1866710 | 52.859 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 398722 | 52.032 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 1403723 | 52.825 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 416517 | 52.015 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 300382M | 49.638 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 262838 | 53.200 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 1444764 | 52.829 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 1771298 | 53.614 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580 | 146 | 829534 | 52.288 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1579787 | 53.595 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 571675 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 859334 | 52.477 |

M = Compound was manually integrated.
A = User selected an alternate hit.
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Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 1491620 | 52.513 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 1102283 | 53.688 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 939382 | 52.495 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 974263 | 52.329 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 772200 | 53.711 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 823480 | 52.259 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 781151 | 52.397 |
| 141) Diethylbenzene (total) | (4) | | 100 | 2694796 | 157.220 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 116905 | 53.535 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 616596 | 51.880 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 603519 | 51.786 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 259818 | 52.627 |
| 148) Naphthalene | (4) | 14.185 | 128 | 1937926 | 52.651 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 573688 | 51.671 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 1265774 | 51.924 |



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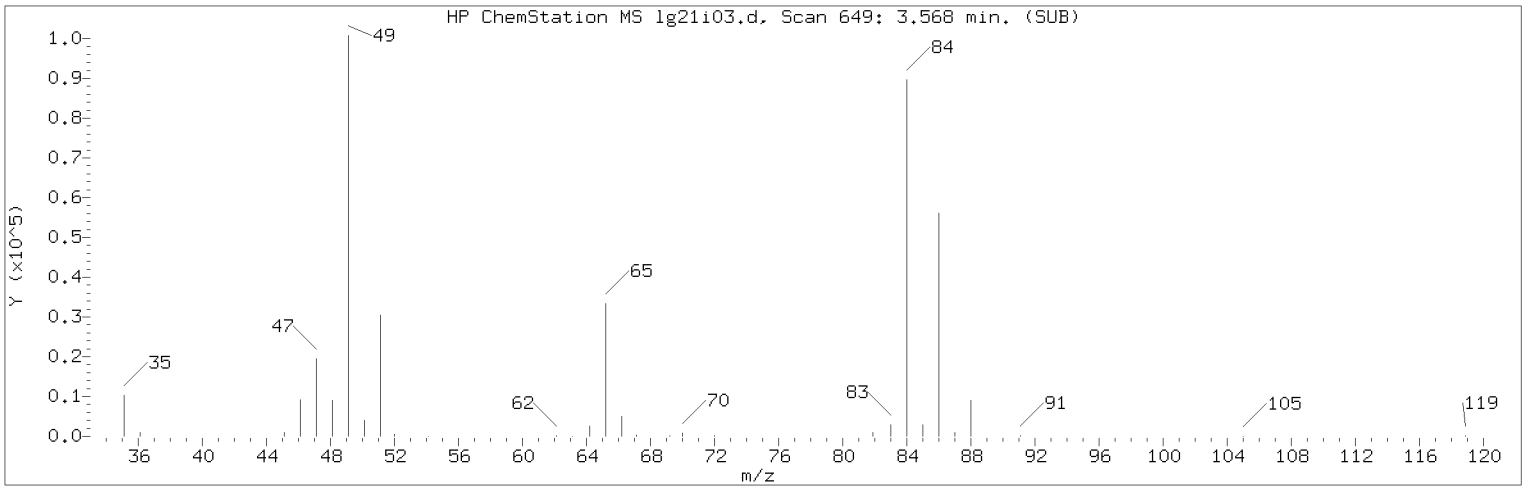
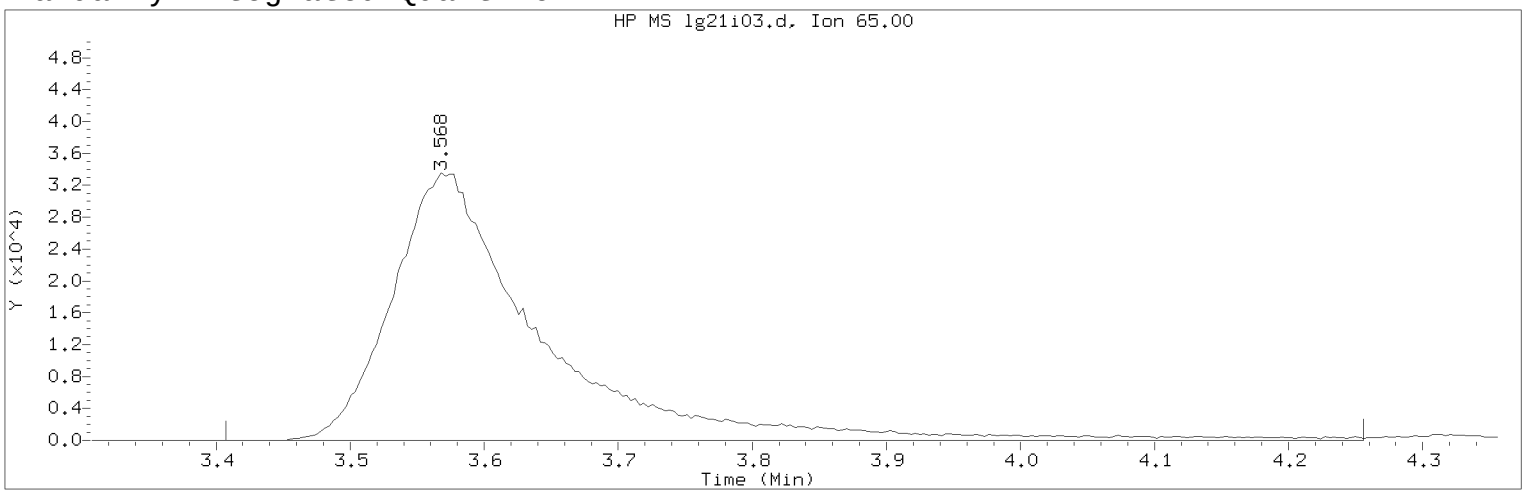
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

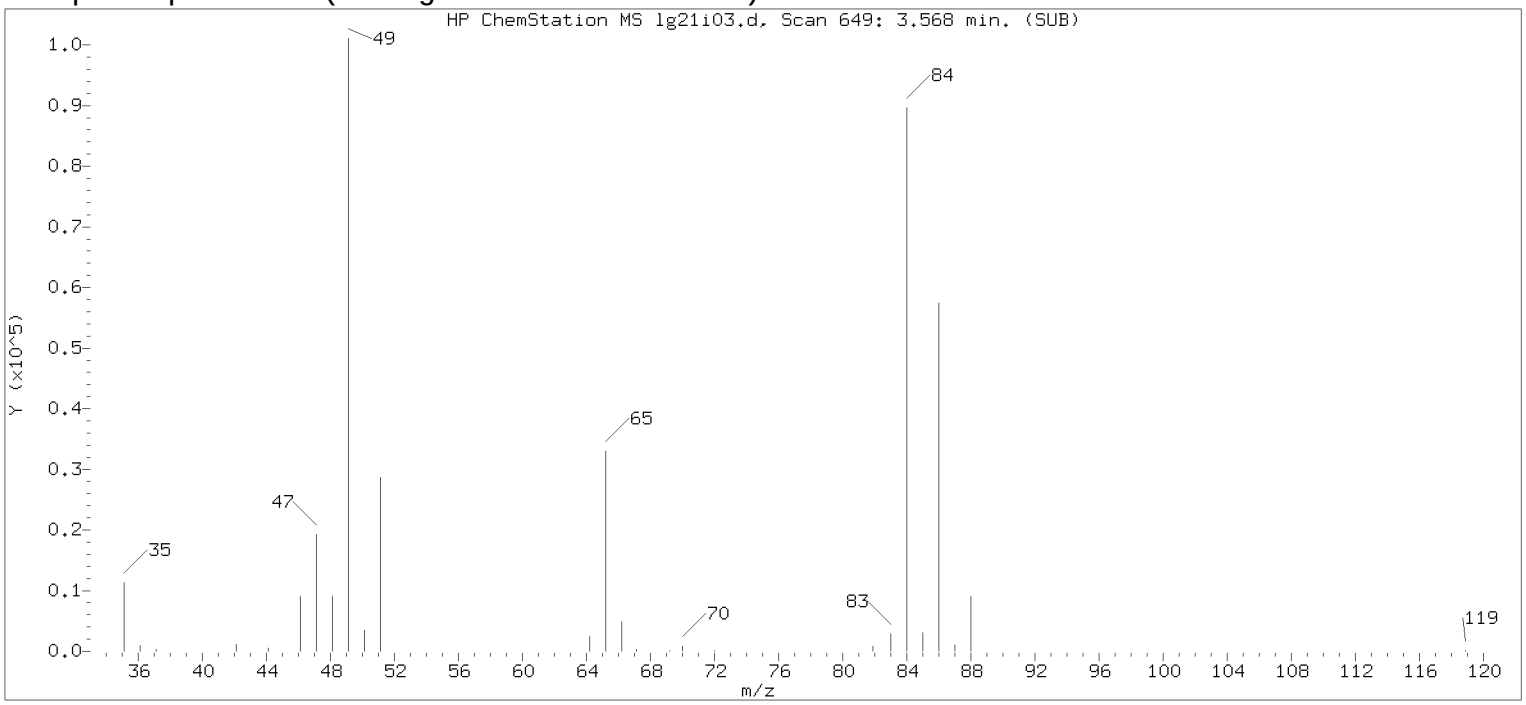
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 649
Retention Time (minutes): 3.568
Quant Ion : 65.00
Area (flag) : 258273M
On-Column Amount (ng) : 250.0000
Integration start scan : 598 Integration stop scan: 862
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

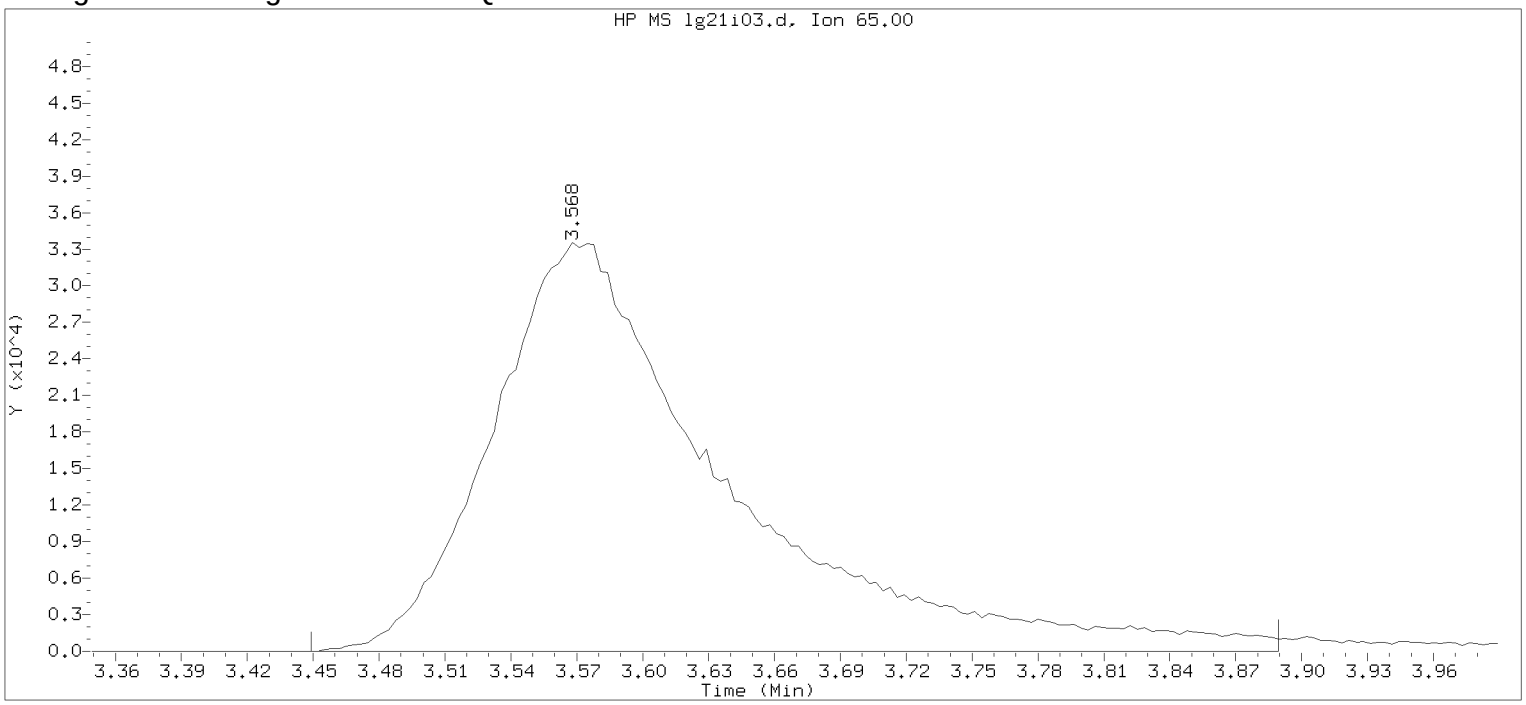
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

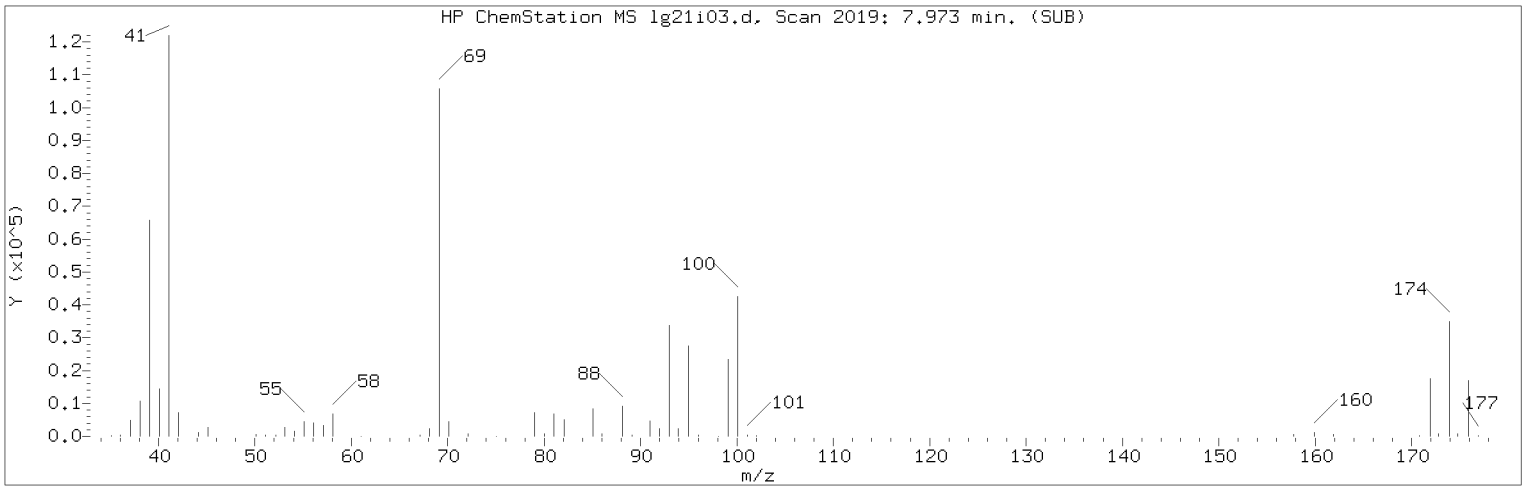
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 10:42
Date, time and analyst ID of latest file update: 21-Aug-2017 10:42 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

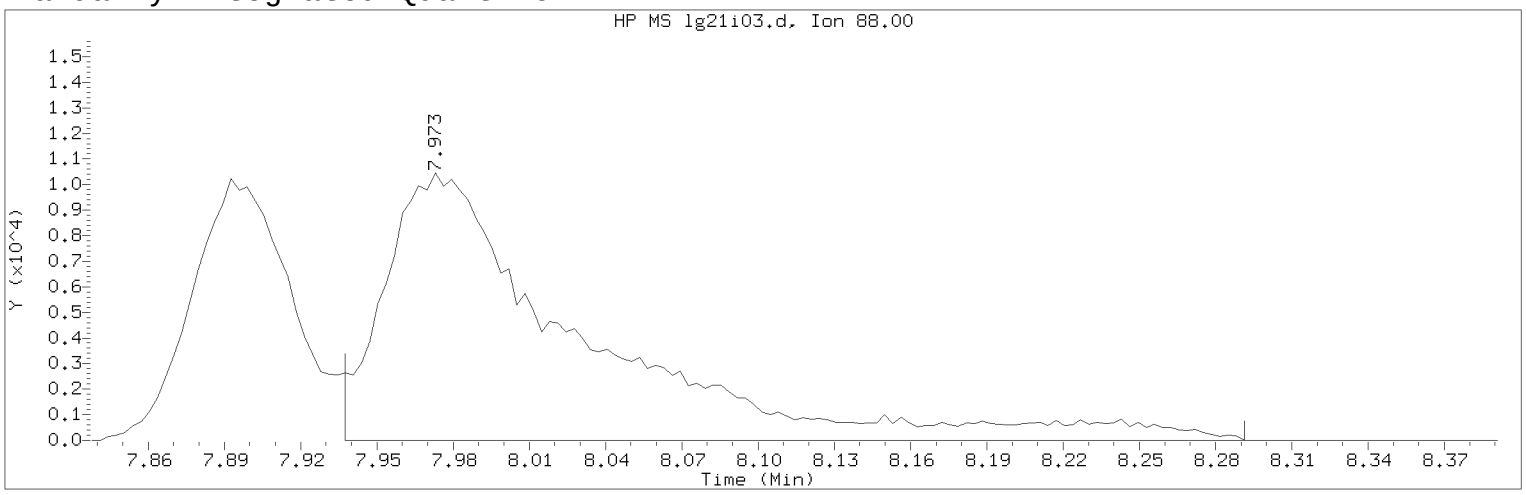
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 649
Retention Time (minutes): 3.568
Quant Ion : 65.00
Area : 246821
On-column Amount (ng) : 250.0000
Integration start scan : 611 Integration stop scan: 748
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

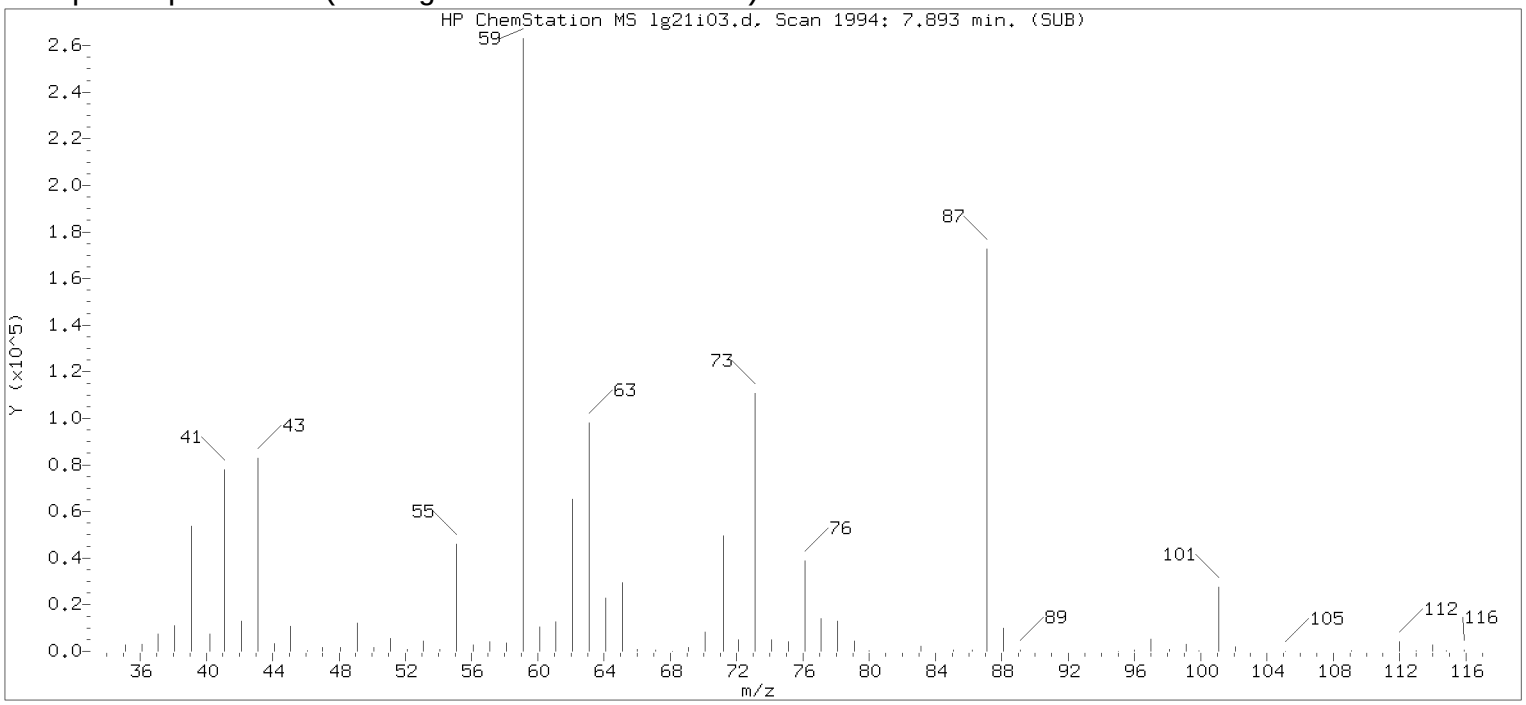
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 88.00
Area (flag) : 56129M
On-Column Amount (ng) : 798.1131
Integration start scan : 2007 Integration stop scan: 2117
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

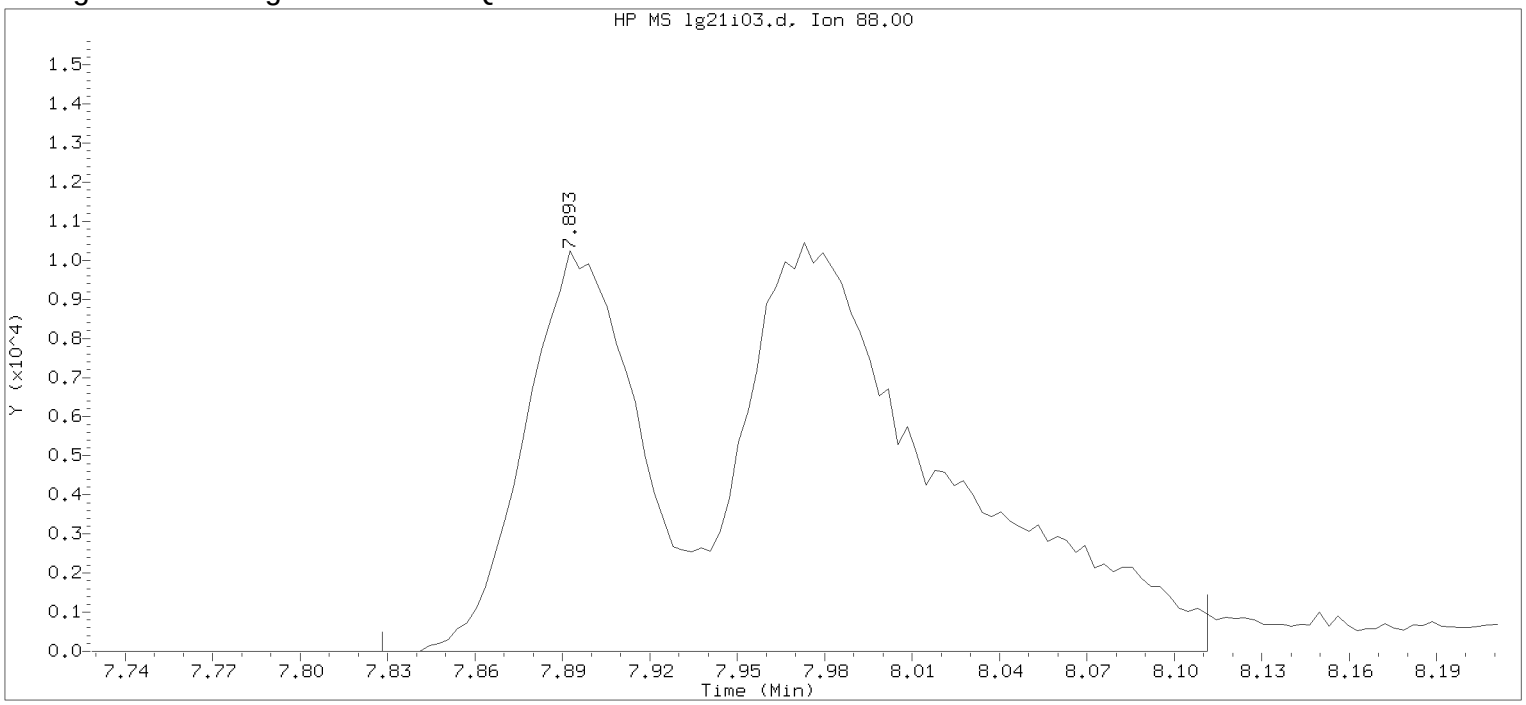
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

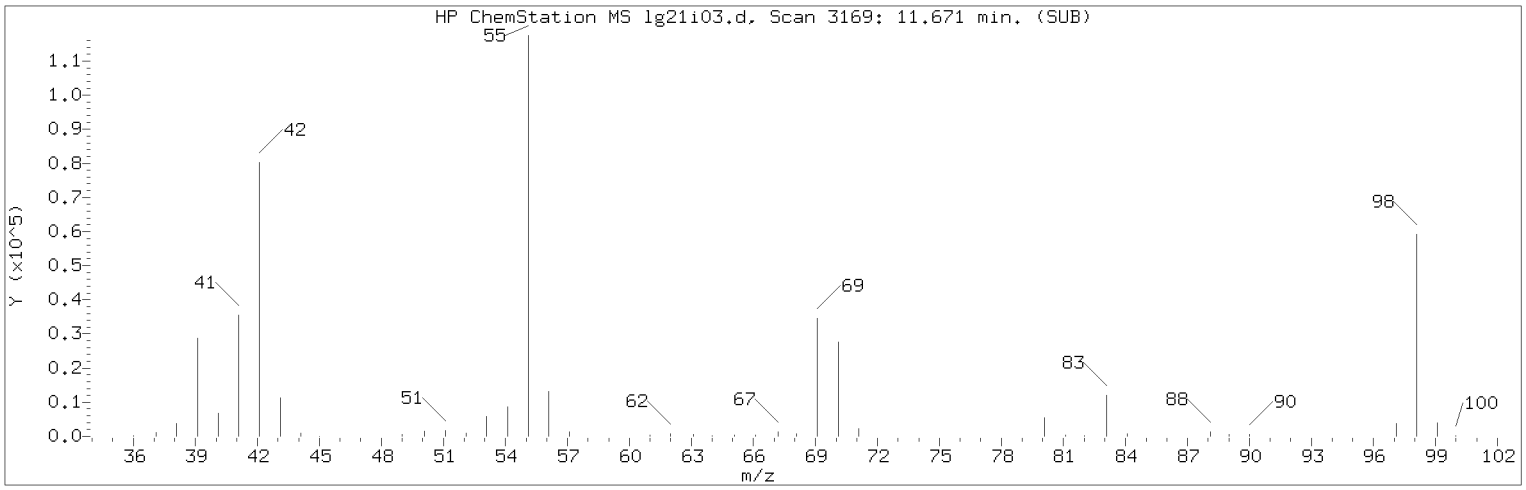
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 10:42
Date, time and analyst ID of latest file update: 21-Aug-2017 10:42 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

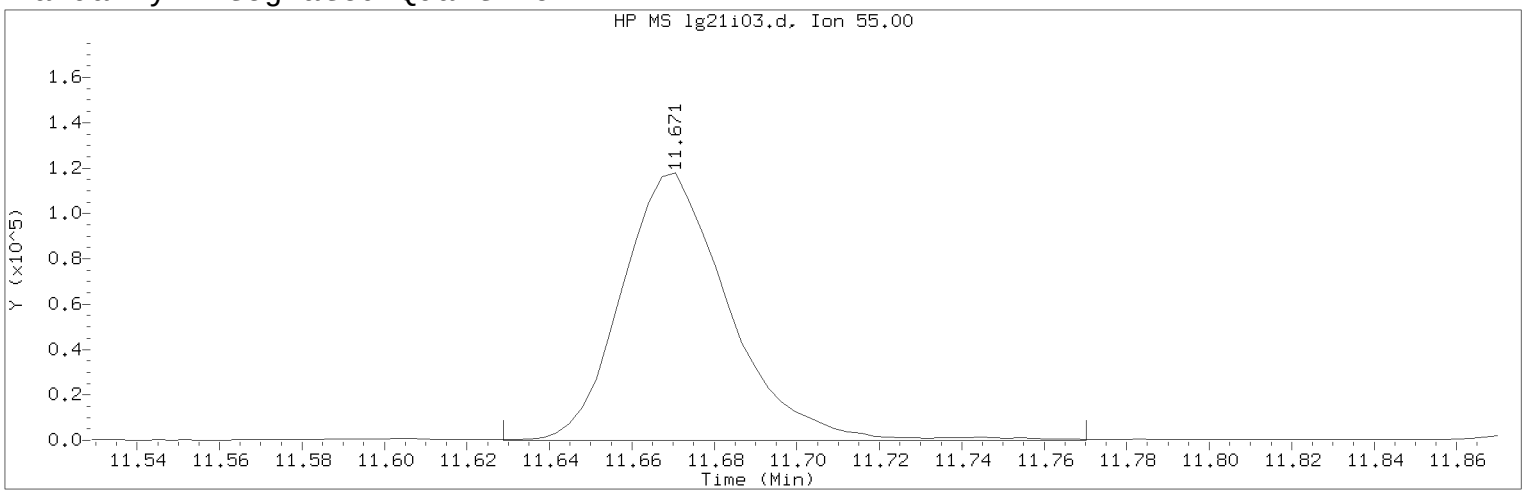
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1994
Retention Time (minutes): 7.893
Quant Ion : 88.00
Area : 76888
On-column Amount (ng) : 851.9555
Integration start scan : 1973 Integration stop scan: 2061
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

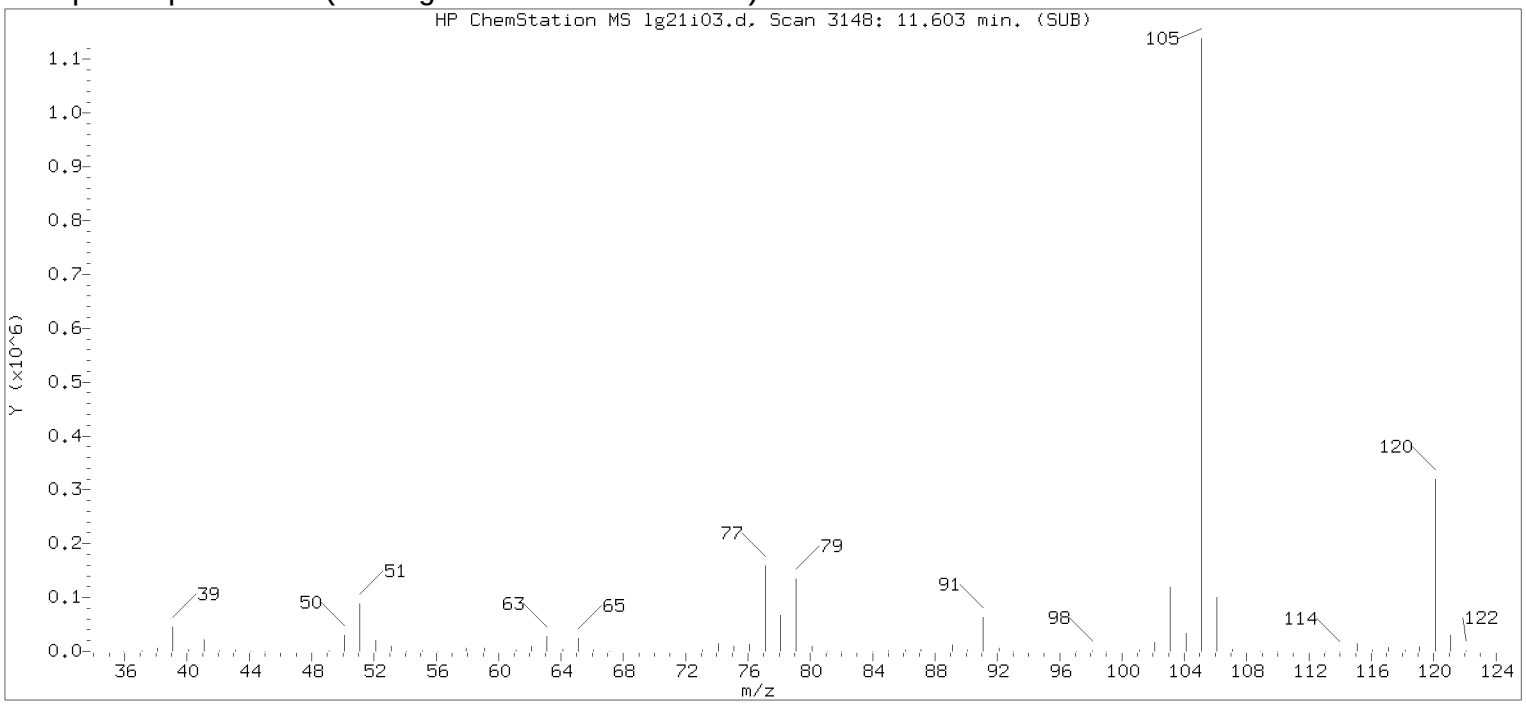
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3169
Retention Time (minutes): 11.671
Quant Ion : 55.00
Area (flag) : 212881A
On-Column Amount (ng) : 749.3015
Integration start scan : 3155 Integration stop scan: 3199
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

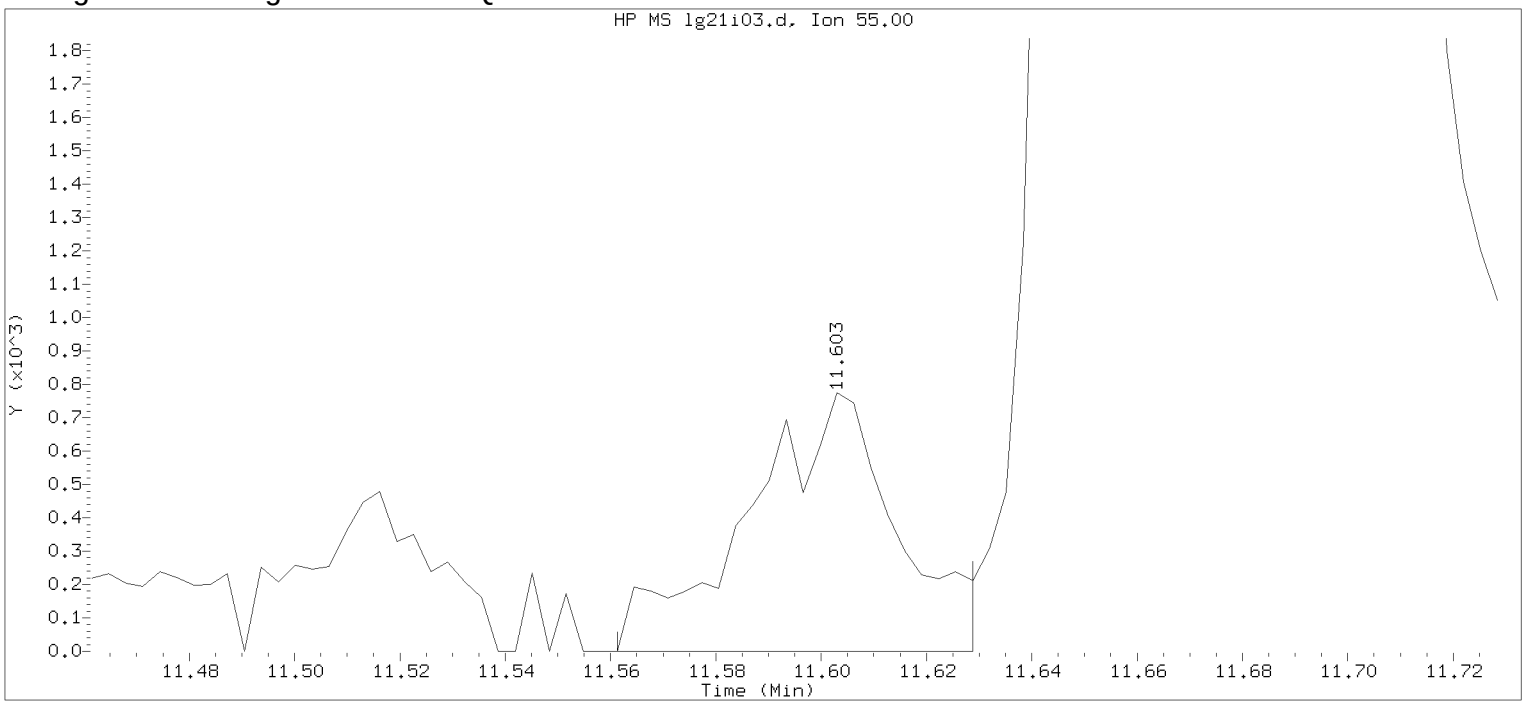
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

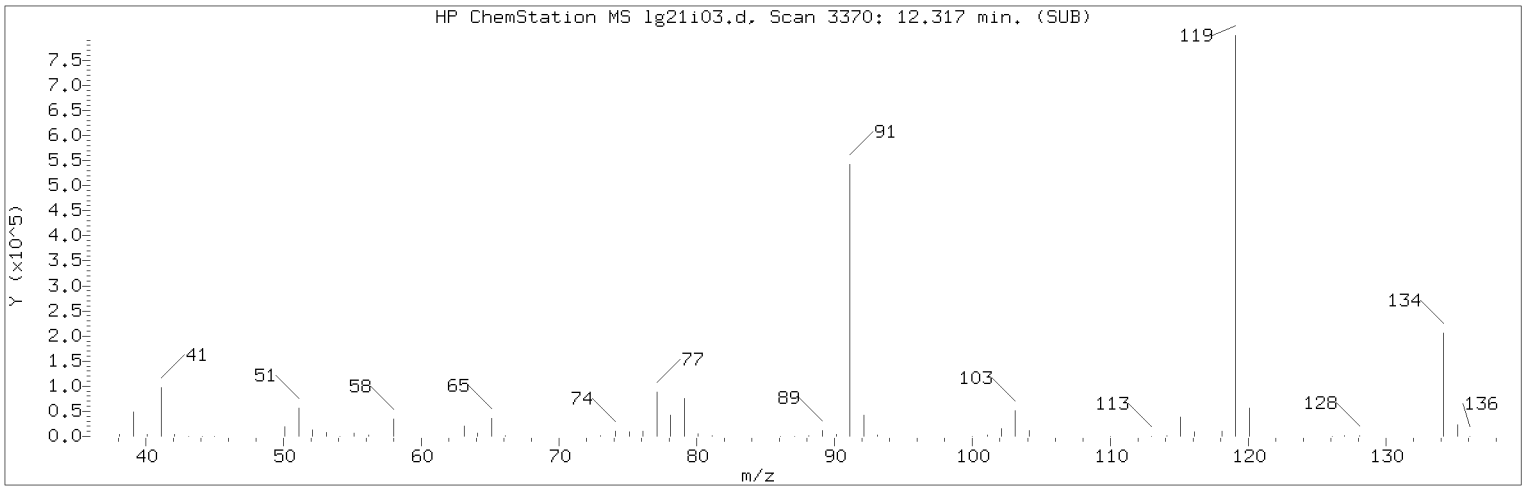
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 10:42
Date, time and analyst ID of latest file update: 21-Aug-2017 10:42 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

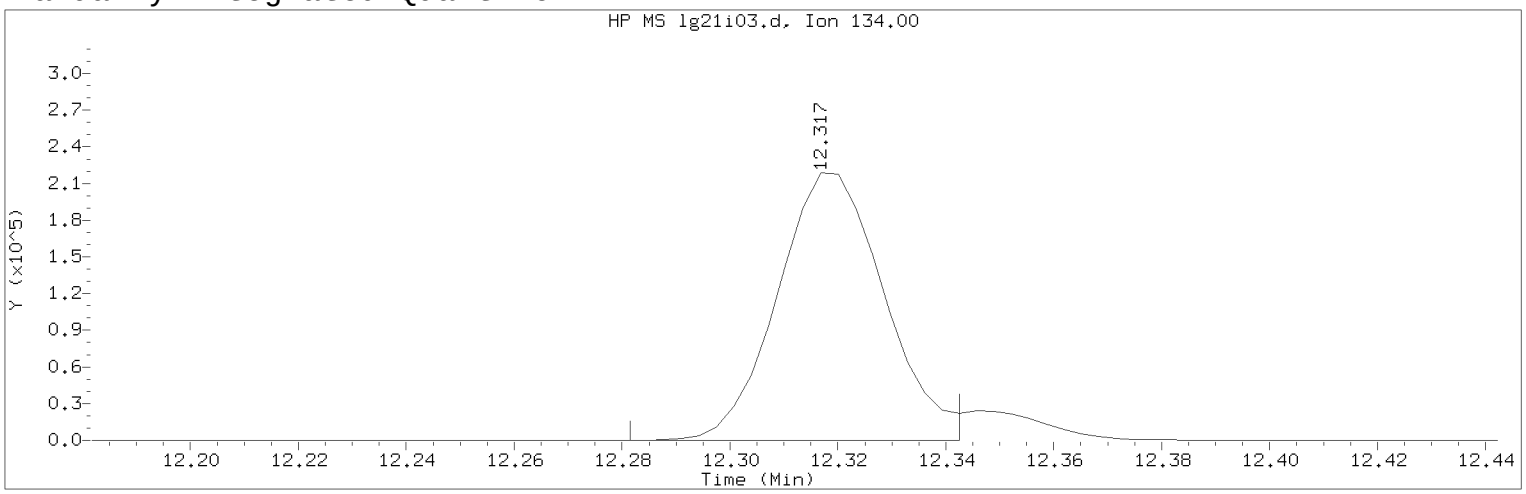
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3148
Retention Time (minutes): 11.603
Quant Ion : 55.00
Area : 1503
On-column Amount (ng) : 5.3606
Integration start scan : 3134 Integration stop scan: 3155
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:54
Date, time and analyst ID of latest file update: 21-Aug-2017 11:56 kas02648

Sample Name: VSTD050 Lab Sample ID: VSTD050

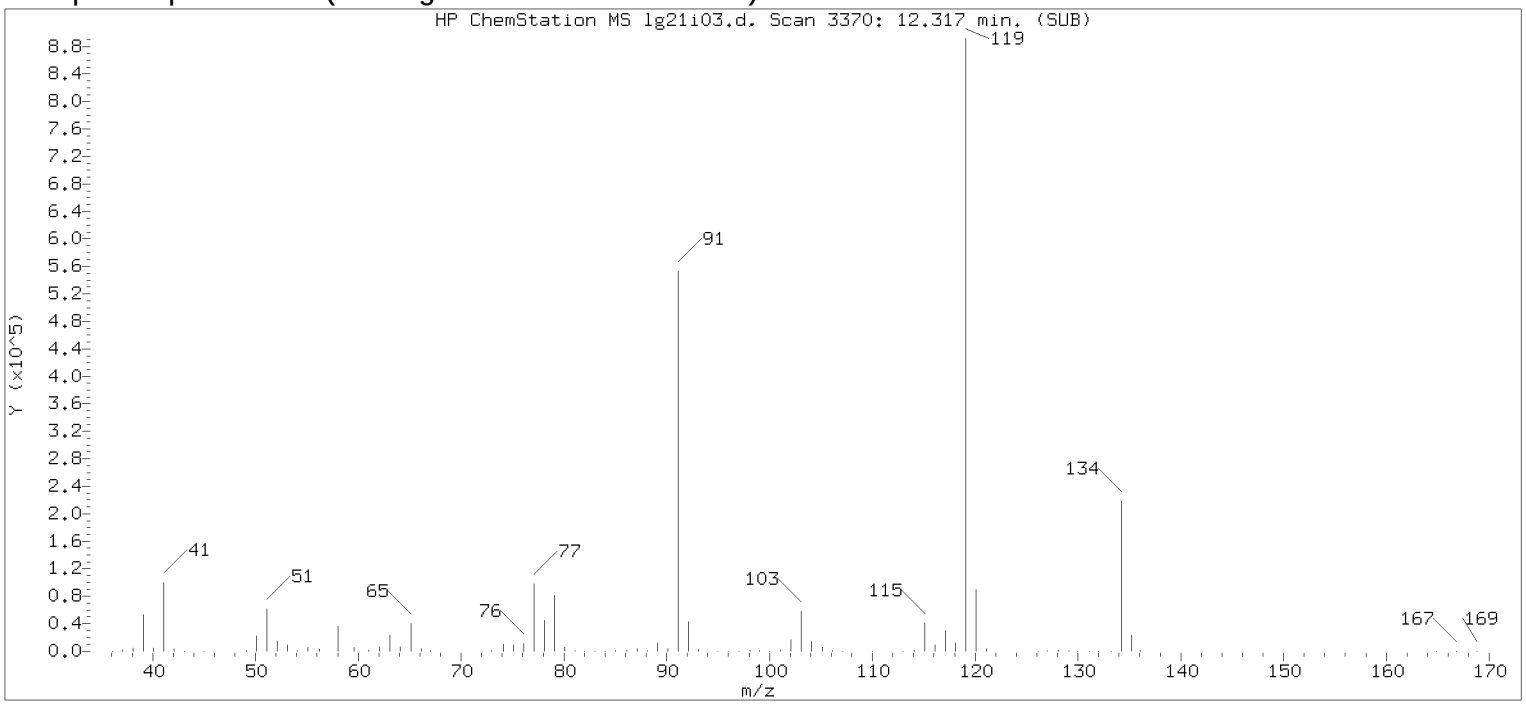
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area (flag) : 300382M
On-Column Amount (ng) : 49.6381
Integration start scan : 3358 Integration stop scan: 3377
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

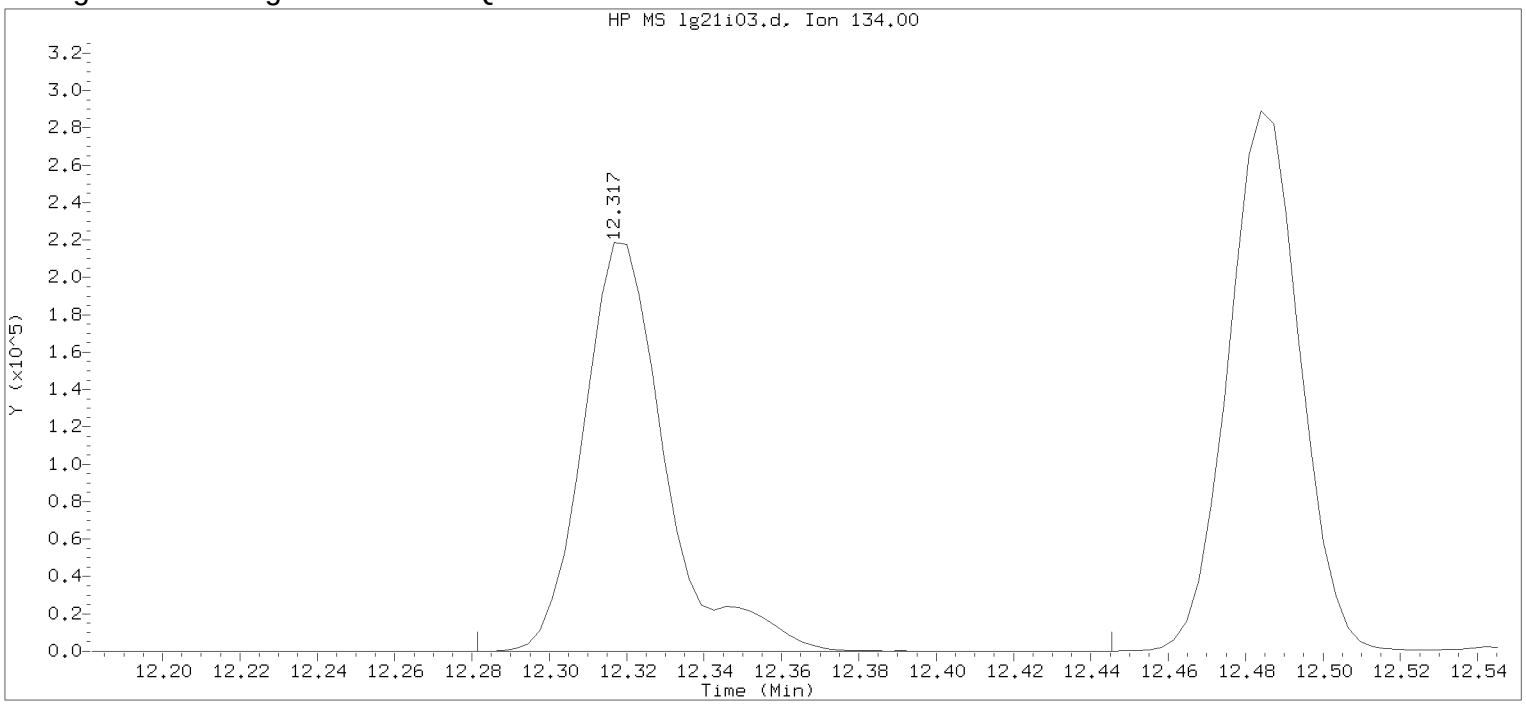
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



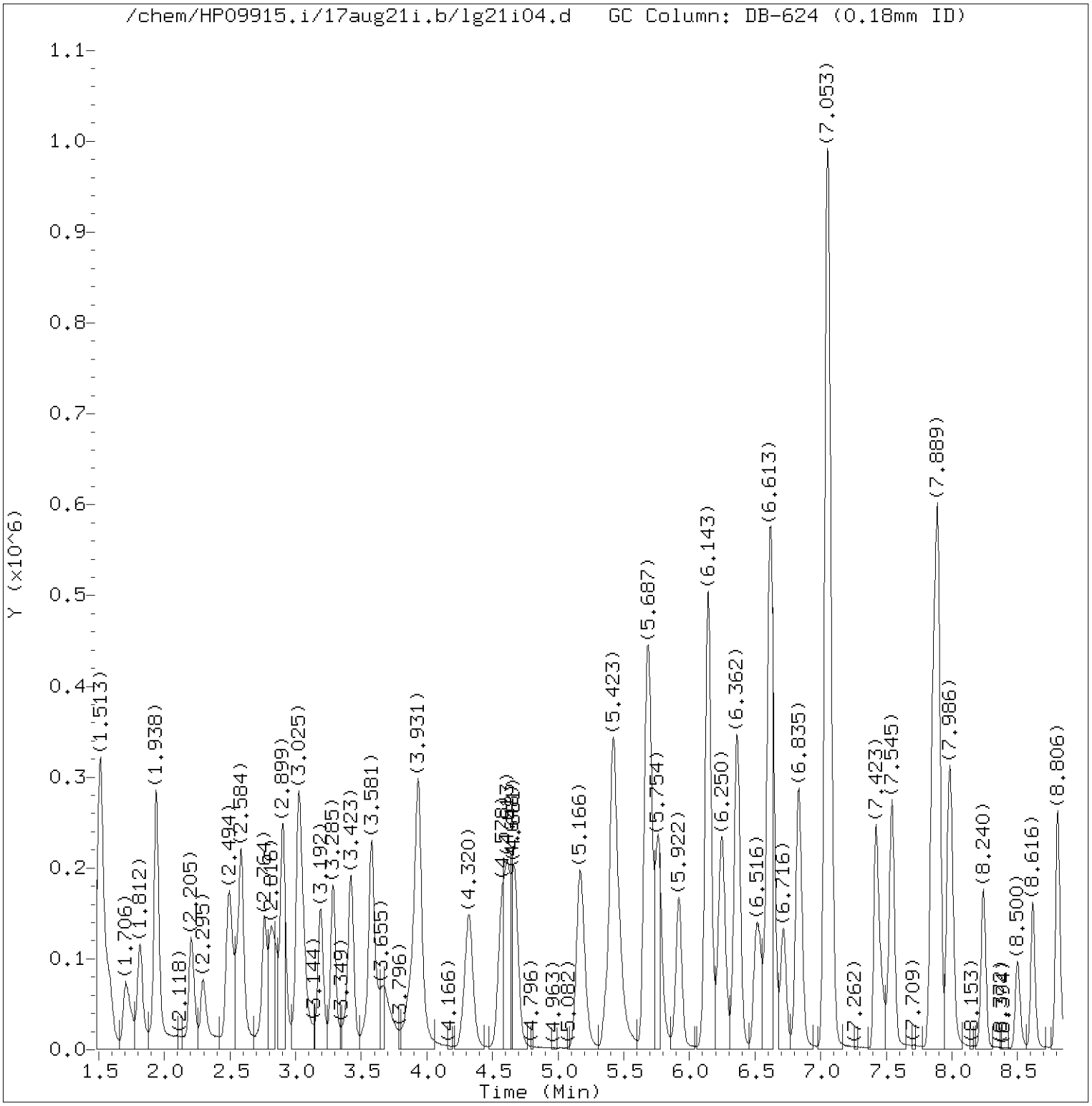

Data File: /chem/HP09915.i/17aug21i.b/lg21i03.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:24 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 10:42
Date, time and analyst ID of latest file update: 21-Aug-2017 10:42 Automation

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area : 323634
On-column Amount (ng) : 55.0966
Integration start scan : 3358 Integration stop scan: 3409
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

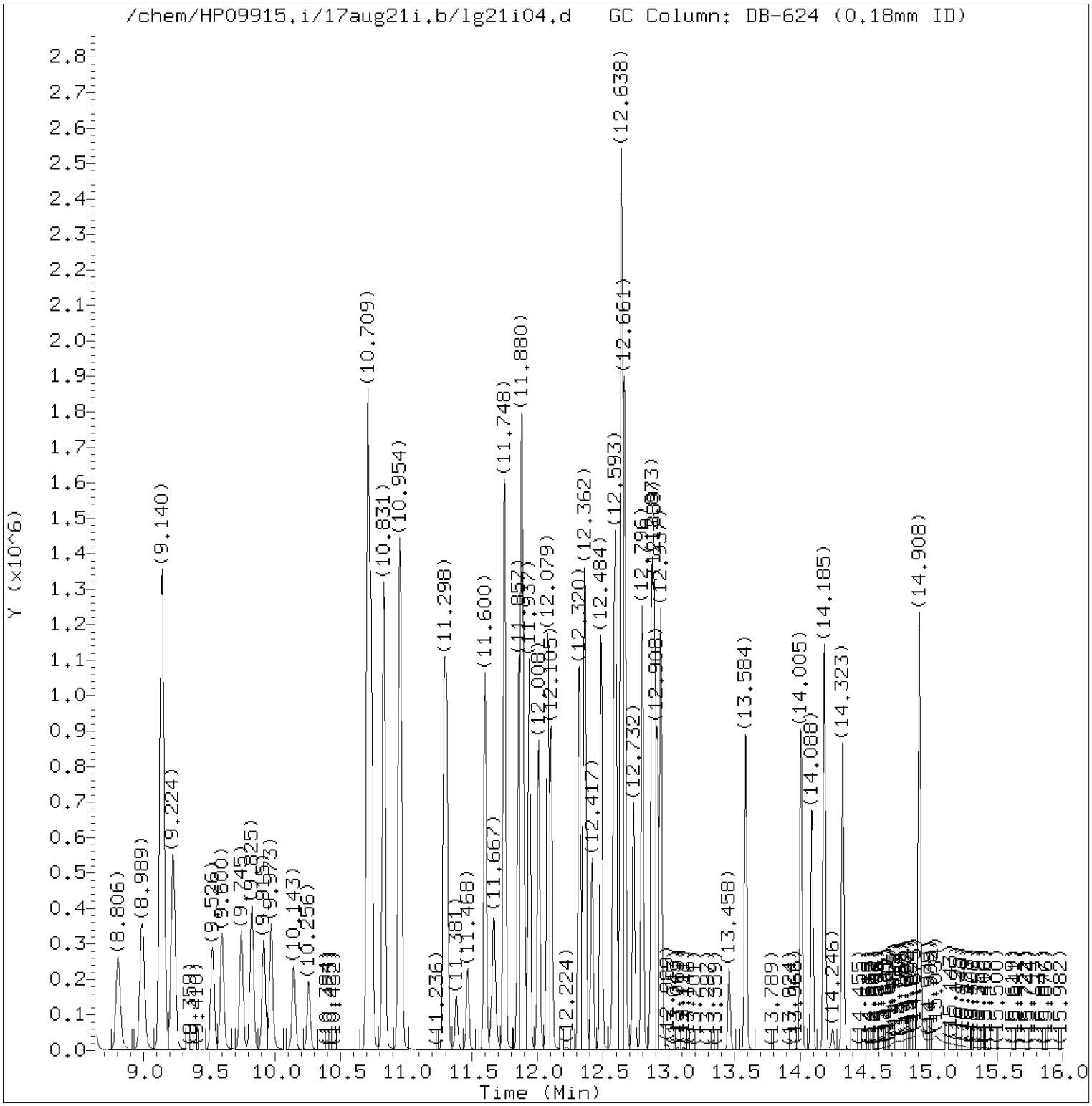
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.706 | 85 | 163676 | 19.428 |
| 4) Chloromethane | (2) | 1.812 | 50 | 158710 | 20.267 |
| 6) Vinyl Chloride | (2) | 1.928 | 62 | 155284 | 19.999 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 111876 | 21.667 |
| 8) Bromomethane | (2) | 2.205 | 94 | 117400 | 21.716 |
| 9) Chloroethane | (2) | 2.298 | 64 | 87589 | 20.554 |
| 10) Dichlorofluoromethane | (2) | 2.488 | 67 | 193958 | 20.432 |
| 12) Trichlorofluoromethane | (2) | 2.542 | 101 | 192622 | 19.538 |
| 11) n-Pentane | (2) | 2.587 | 43 | 175805 | 21.515 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 103713 | 20.856 |
| 15) Freon 123a | (2) | 2.816 | 67 | 130978 | 20.521 |
| 16) Acrolein | (1) | 2.906 | 56 | 364701 | 200.052 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 96 | 101522 | 20.513 |
| 17) 1,1-Dichloroethene | (2) | 3.021 | 63 | 48415 | 20.907 |
| 18) Acetone | (1) | 3.041 | 58 | 30532 | 41.672 |
| 19) Freon 113 | (2) | 3.050 | 101 | 111858 | 21.002 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 103981 | 211.229 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 214404 | 20.796 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 352477 | 20.814 |
| 27) Methyl Acetate | (2) | 3.394 | 43 | 113739 | 20.264 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 168876 | 20.869 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.568 | 65 | 249018M | 250.000 |
| 28) Methylene Chloride | (2) | 3.581 | 84 | 121514 | 20.877 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 212734 | 231.679 |
| 31) Acrylonitrile | (2) | 3.848 | 53 | 64129 | 20.703 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.922 | 73 | 381079 | 21.047 |
| 32) trans-1,2-Dichloroethene | (2) | 3.938 | 96 | 120984 | 20.801 |
| 34) n-Hexane | (2) | 4.314 | 57 | 174964 | 21.270 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 206180 | 20.847 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 366975 | 20.933 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.671 | 53 | 180559 | 20.775 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 376658 | 21.200 |
| 44) 2-Butanone | (2) | 5.378 | 43 | 160528 | 40.641 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 136110 | 20.659 |
| 45) 2,2-Dichloropropane | (2) | 5.423 | 77 | 178460 | 22.698 |
| 47) Propionitrile | (1) | 5.465 | 54 | 247245 | 205.742 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 353495 | 102.958 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 71507 | 20.487 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.774 | 71 | 45869 | 40.173 |
| 51) Chloroform | (2) | 5.922 | 83 | 210507 | 20.874 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 331218 | 50.343 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 338333 | 50.274 |
| 53) 1,1,1-Trichloroethane | (2) | 6.143 | 97 | 206722 | 20.957 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 257094 | 41.460 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 207526 | 21.264 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 183306 | 21.256 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 65076 | 21.058 |
| 56) Carbon Tetrachloride | (2) | 6.359 | 117 | 158506 | 20.557 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 162709 | 20.499 |
| 58) Isobutyl Alcohol | (1) | 6.520 | 41 | 161490 | 521.710 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 80041 | 50.084 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 371567 | 50.126 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 104 | 50799 | 49.636 |
| 60) Benzene | (2) | 6.632 | 78 | 483623 | 20.857 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 164958 | 20.661 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 98 | 16165 | 20.430 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 388253 | 21.118 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1291613 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 177475 | 21.235 |
| 69) n-Butanol | (1) | 7.423 | 56 | 276516 | 1038.407 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 130968 | 20.750 |
| 72) Methylcyclohexane | (2) | 7.857 | 83 | 217075 | 20.802 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 101074 | 20.549 |
| 73) 1,2-Dichloropropane | (2) | 7.880 | 63 | 122999 | 20.559 |
| 75) 1,4-Dioxane | (1) | 7.970 | 88 | 40615M | 562.877 |
| 76) Methyl Methacrylate | (2) | 7.973 | 69 | 110974M | 20.288 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 86972 | 20.453 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 160662 | 20.617 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 83247 | 38.908 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 96240 | 20.619 |
| 81) cis-1,3-Dichloropropene | (2) | 8.806 | 75 | 202280 | 20.565 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 344719 | 40.789 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1281247 | 50.417 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 840185 | 50.272 |
| 88) Toluene | (3) | 9.227 | 92 | 316940 | 20.783 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 186211 | 20.534 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 201955 | 20.723 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 123371 | 20.851 |
| 93) Tetrachloroethene | (3) | 9.822 | 166 | 142557 | 20.855 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 199083 | 20.679 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 253602 | 41.083 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 388491 | 41.098 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 136035 | 20.417 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 137178 | 20.566 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1021687 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 179753 | 20.909 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 367310 | 20.605 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 129753 | 20.478 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 621425 | 21.171 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 500186 | 42.156 |
| 107) o-Xylene | (3) | 11.288 | 106 | 251221 | 21.065 |
| 109) Styrene | (3) | 11.307 | 104 | 419616 | 21.010 |
| 110) Bromoform | (3) | 11.468 | 173 | 100829 | 20.089 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 641985 | 21.410 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 151699 | 557.475 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 491688 | 50.630 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 424387 | 50.483 |
| 108) Xylene (Total) | (3) | | 106 | 751407 | 63.221 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 204654 | 20.833 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 169673 | 20.370 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 274052 | 105.549 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 61265 | 20.500 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 742444 | 21.257 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 156332 | 20.627 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 551843 | 20.997 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 163590 | 20.656 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 117726M | 20.343 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 96942 | 19.839 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 566154 | 20.931 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 696004 | 21.301 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 326158 | 20.787 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 615520 | 21.113 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 565404 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 340071 | 20.997 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 582693 | 20.742 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 422966 | 20.829 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 362851 | 20.502 |
| 137) 1,4-Diethylbenzene | (4) | 12.870 | 119 | 379488 | 20.609 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 300101 | 21.105 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 323576 | 20.762 |
| 140) 1,2-Diethylbenzene | (4) | 12.937 | 119 | 300501 | 20.380 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1042840 | 61.491 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 44162 | 20.448 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.584 | 180 | 243125 | 20.683 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 237520 | 20.607 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 101394 | 20.766 |
| 148) Naphthalene | (4) | 14.185 | 128 | 773433 | 21.246 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.323 | 180 | 228391 | 20.799 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 503448 | 20.881 |



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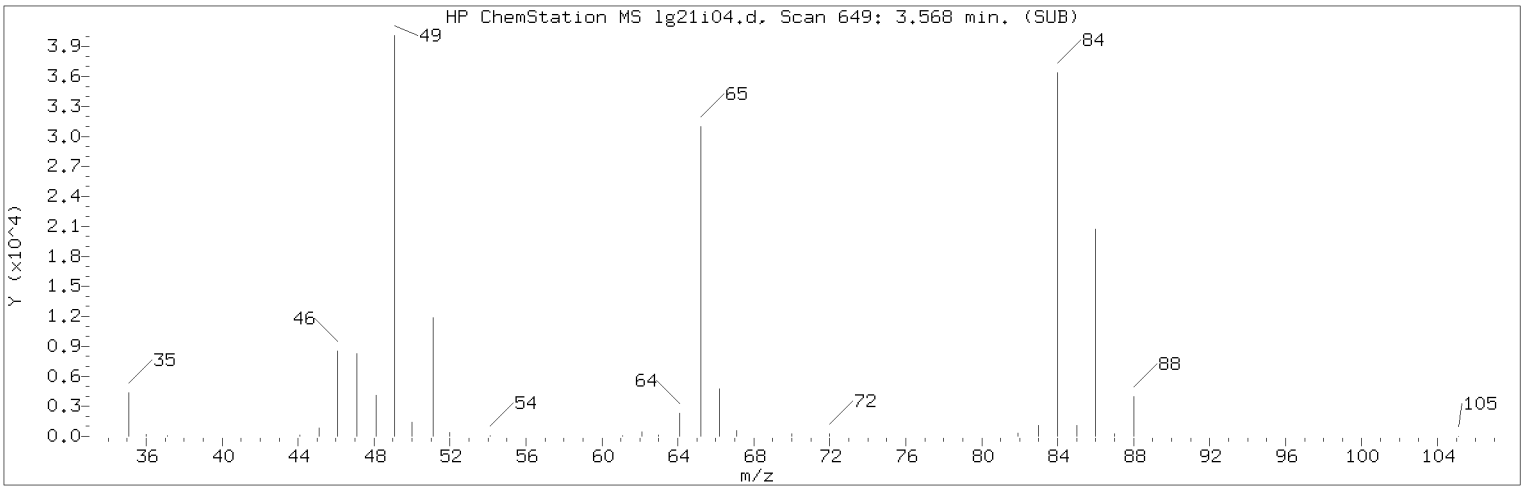
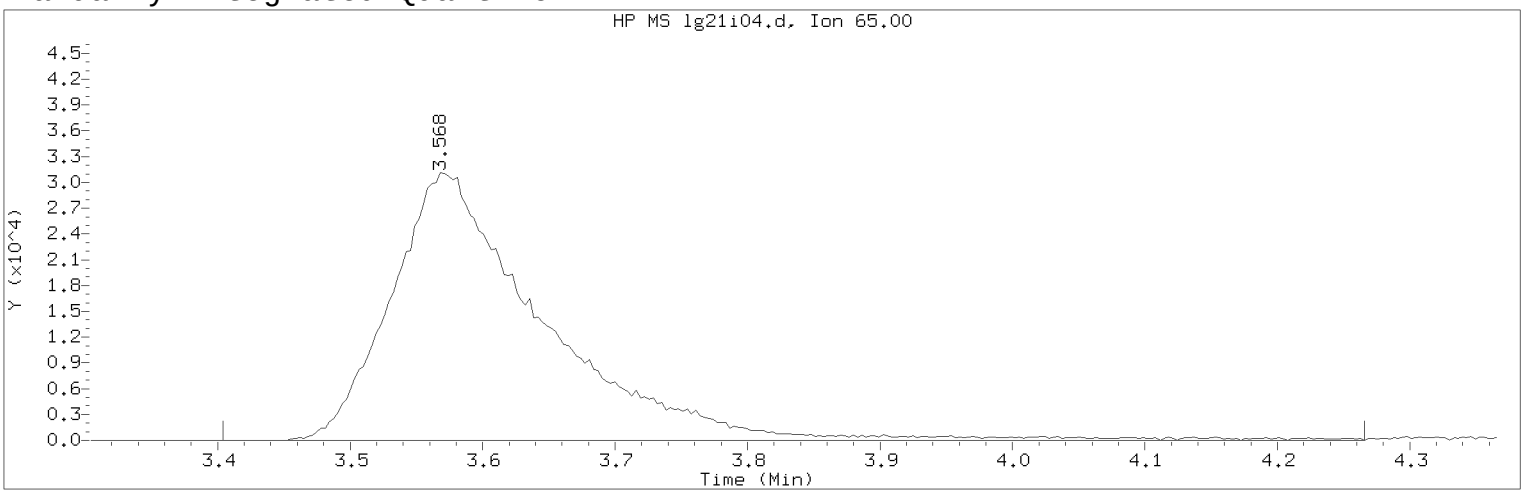
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

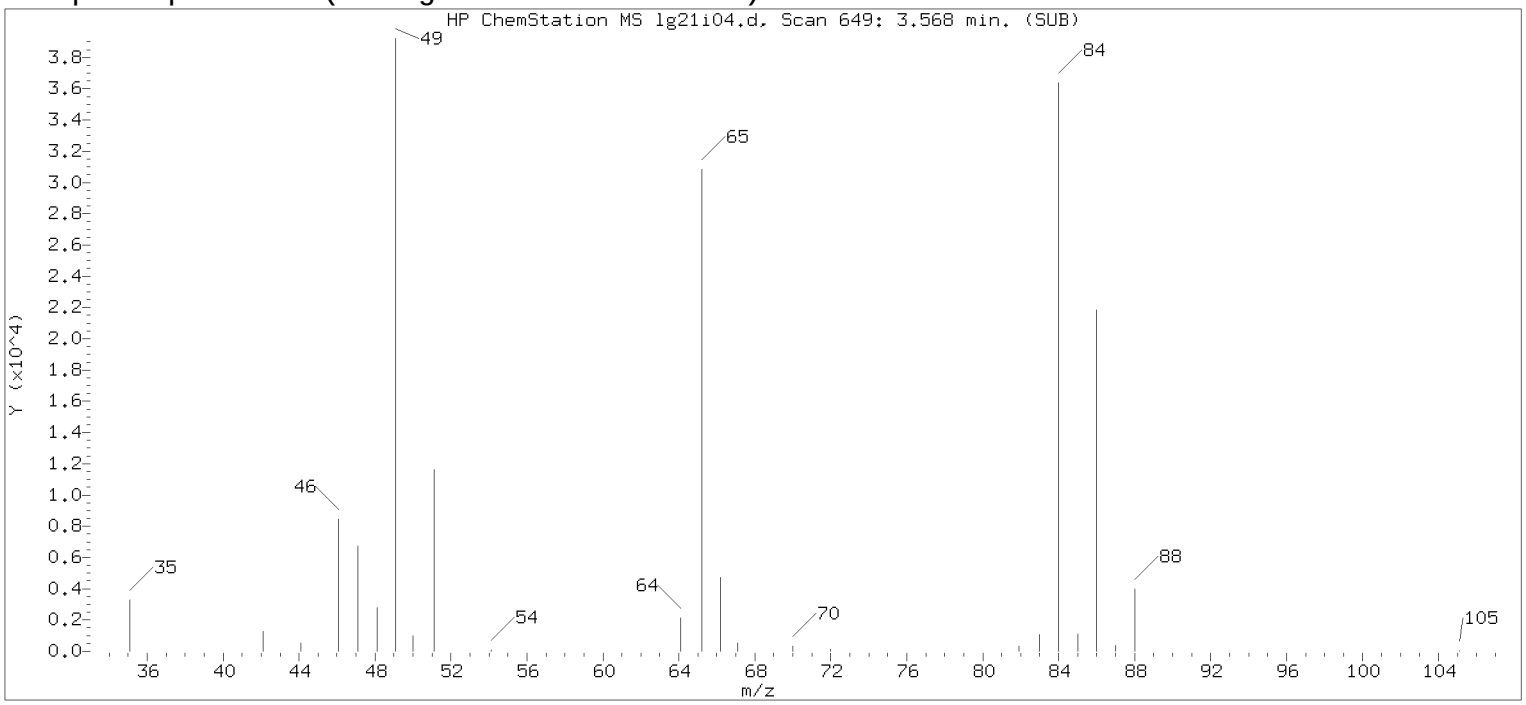
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 649
Retention Time (minutes): 3.568
Quant Ion : 65.00
Area (flag) : 249018M
On-Column Amount (ng) : 250.0000
Integration start scan : 597 Integration stop scan: 865
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

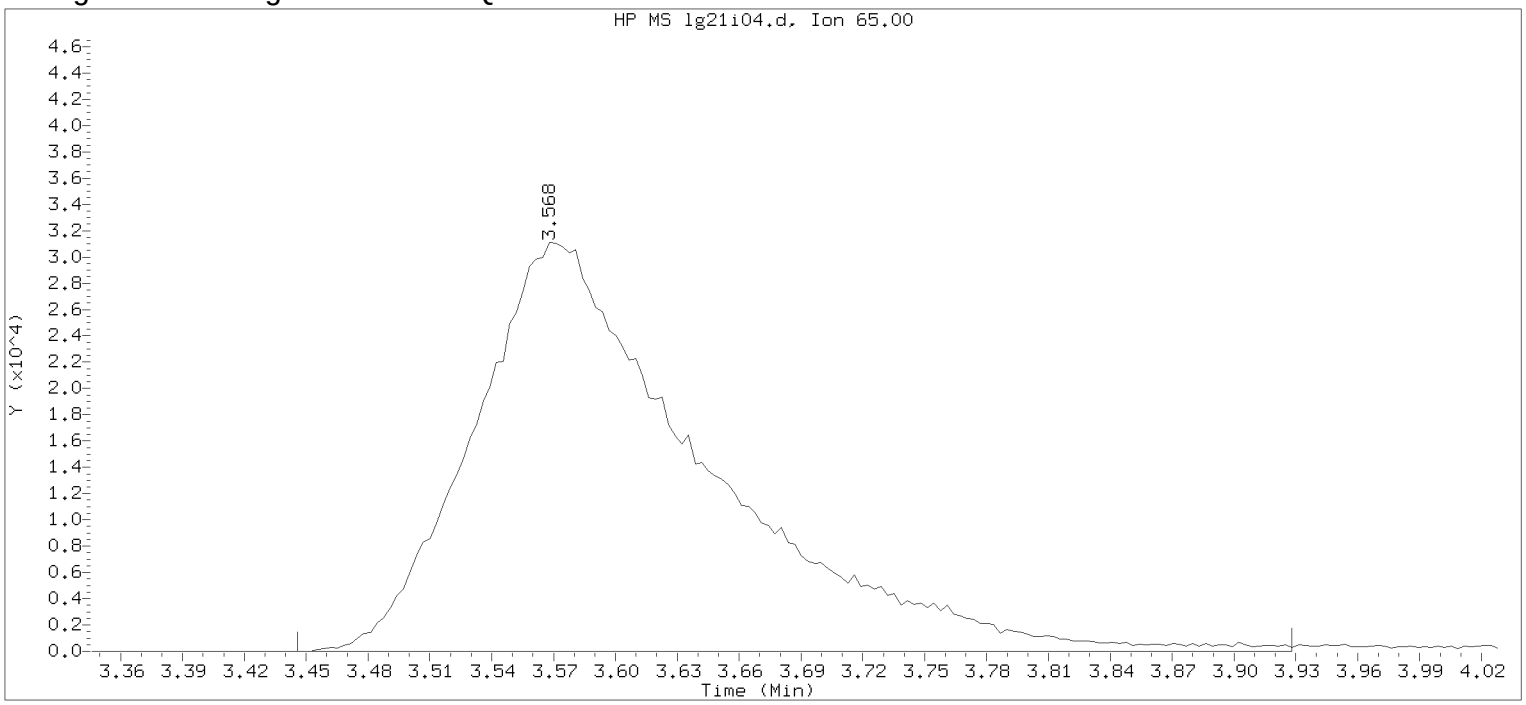
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

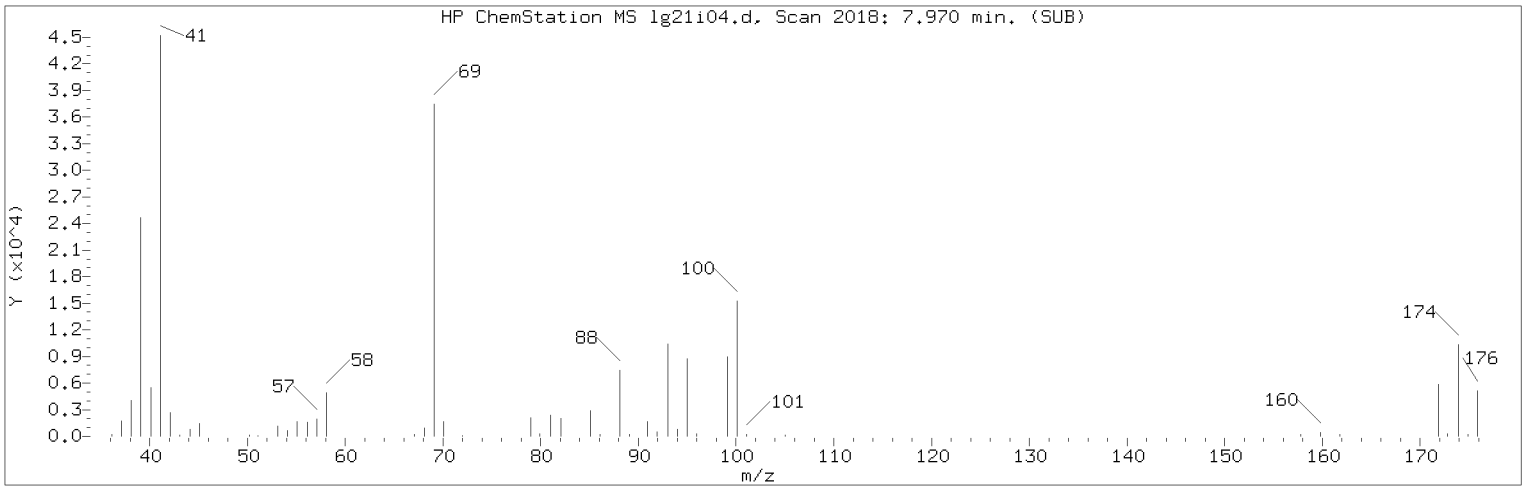
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

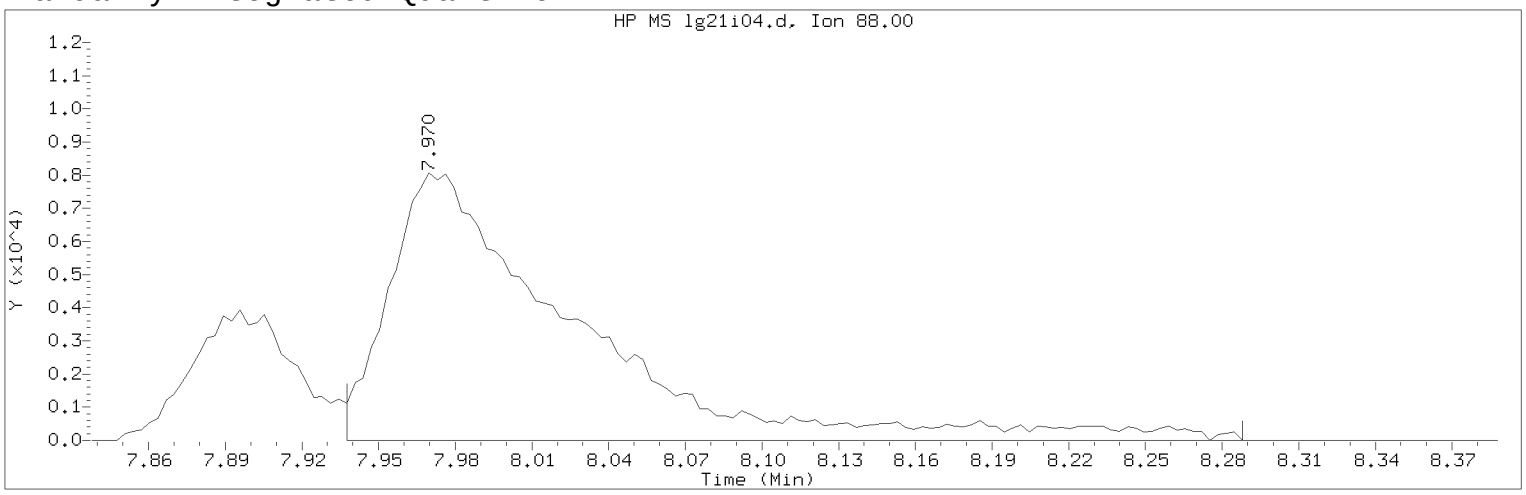
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 649
Retention Time (minutes): 3.568
Quant Ion : 65.00
Area : 243450
On-column Amount (ng) : 250.0000
Integration start scan : 610 Integration stop scan: 760
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

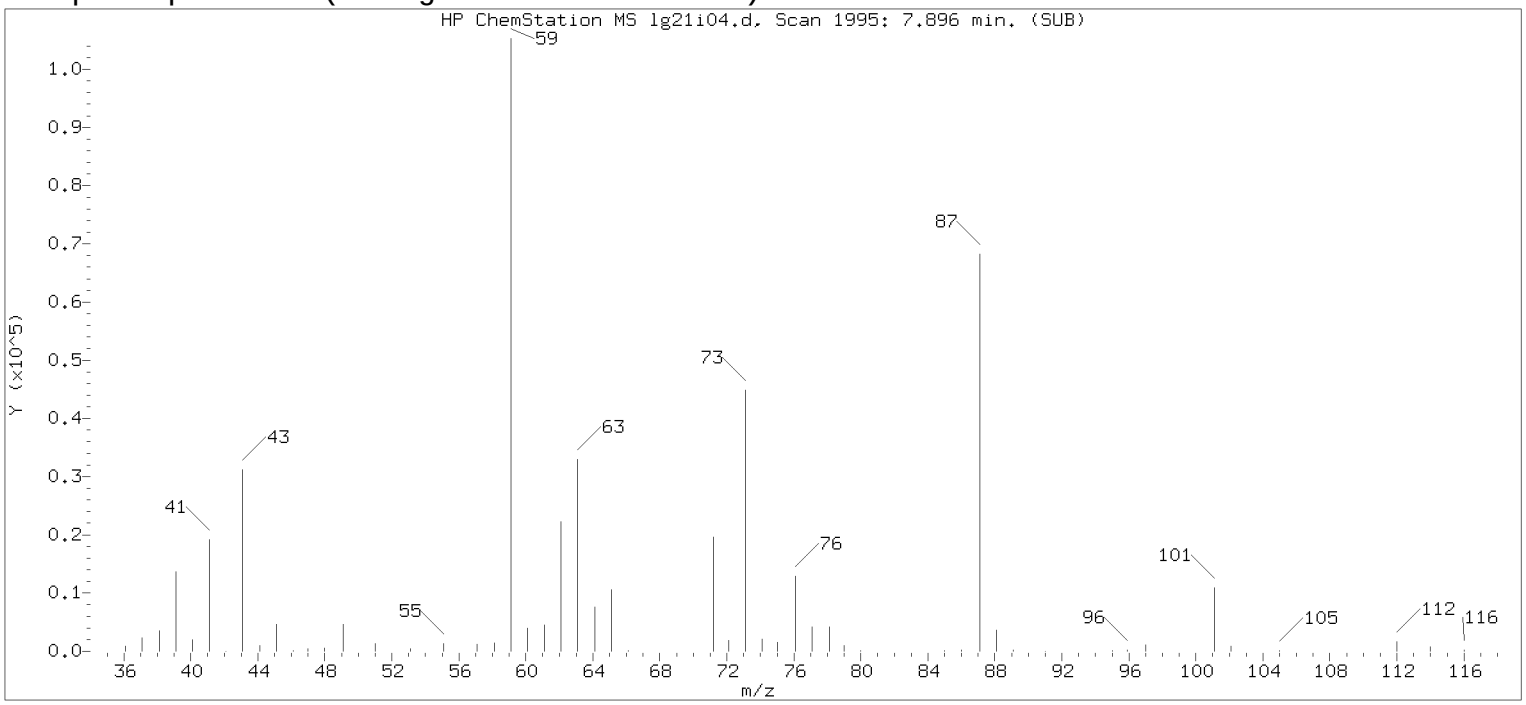
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2018
Retention Time (minutes): 7.970
Quant Ion : 88.00
Area (flag) : 40615M
On-Column Amount (ng) : 562.8770
Integration start scan : 2007 Integration stop scan: 2116
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

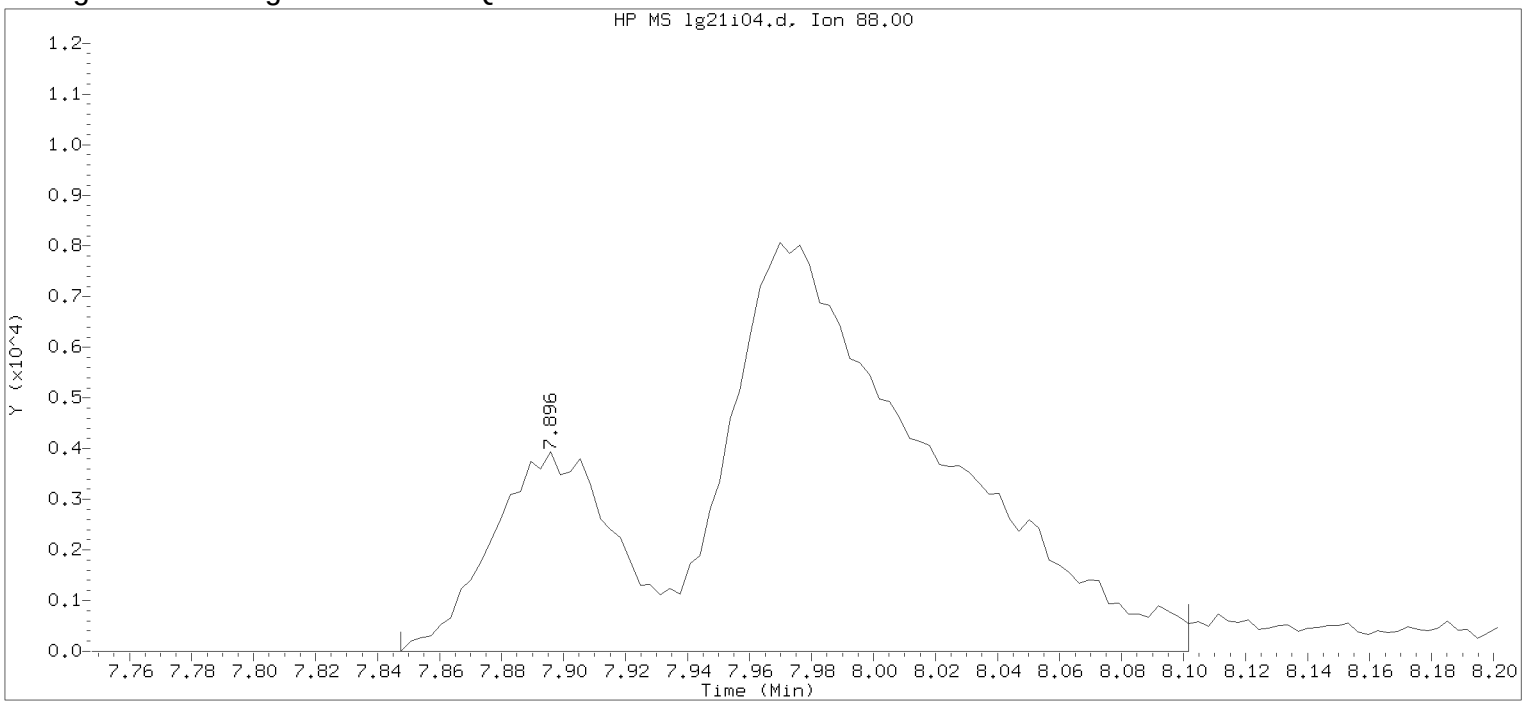
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1995
Retention Time (minutes): 7.896
Quant Ion : 88.00
Area : 47082
On-column Amount (ng) : 599.5761
Integration start scan : 1979 Integration stop scan: 2058
Y at integration start : 0 Y at integration end: 0

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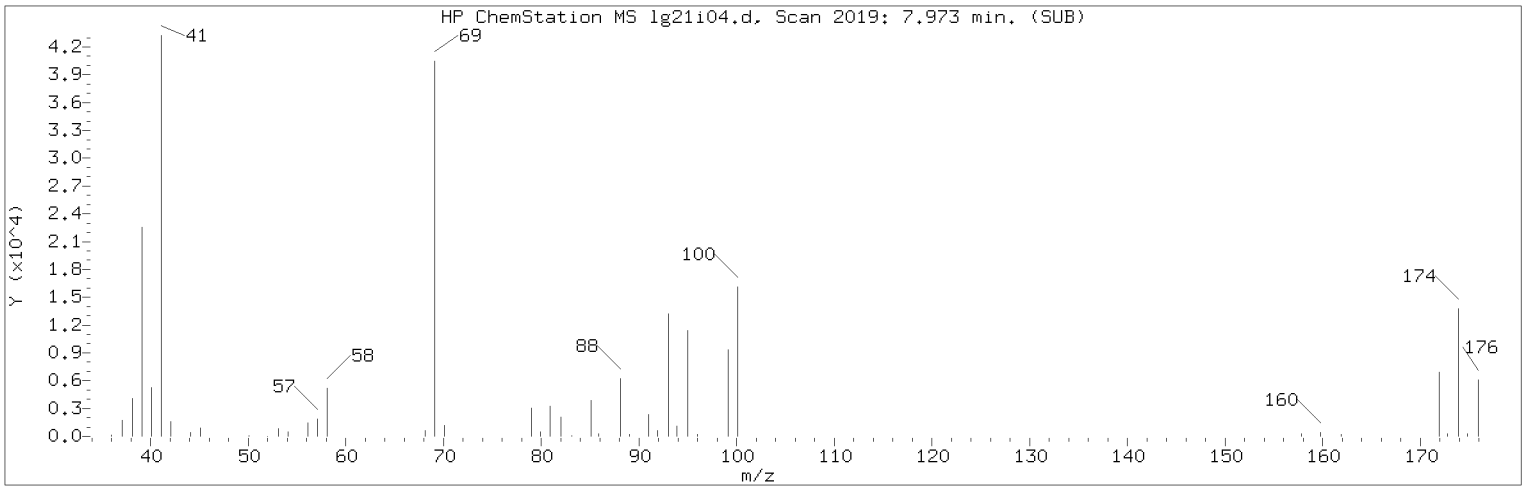
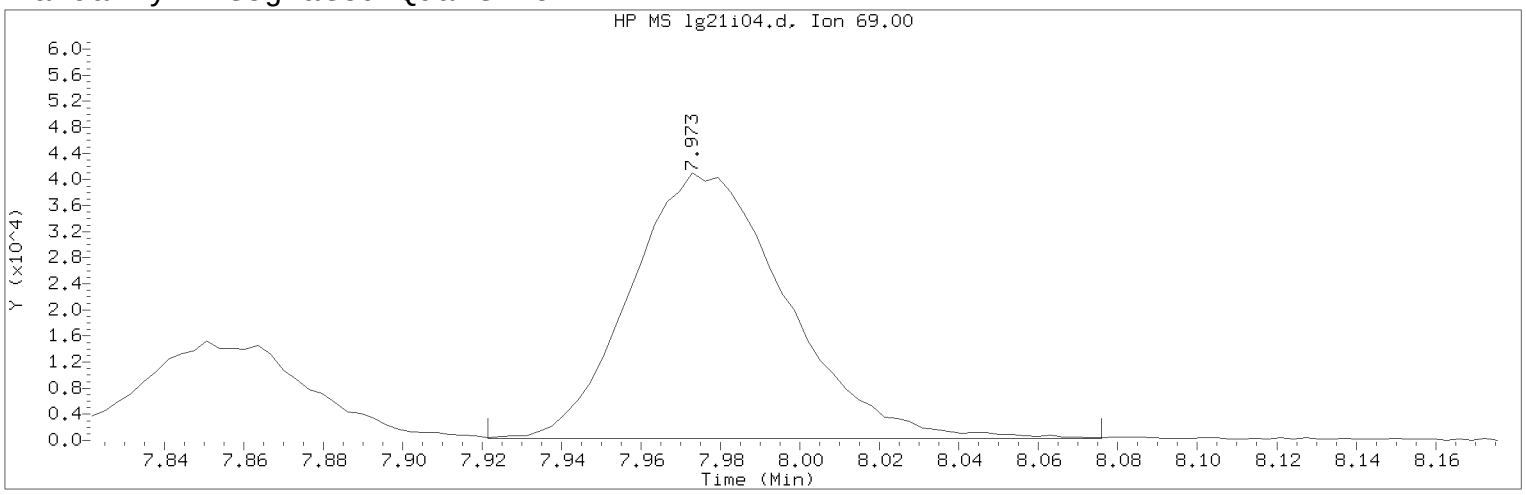
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

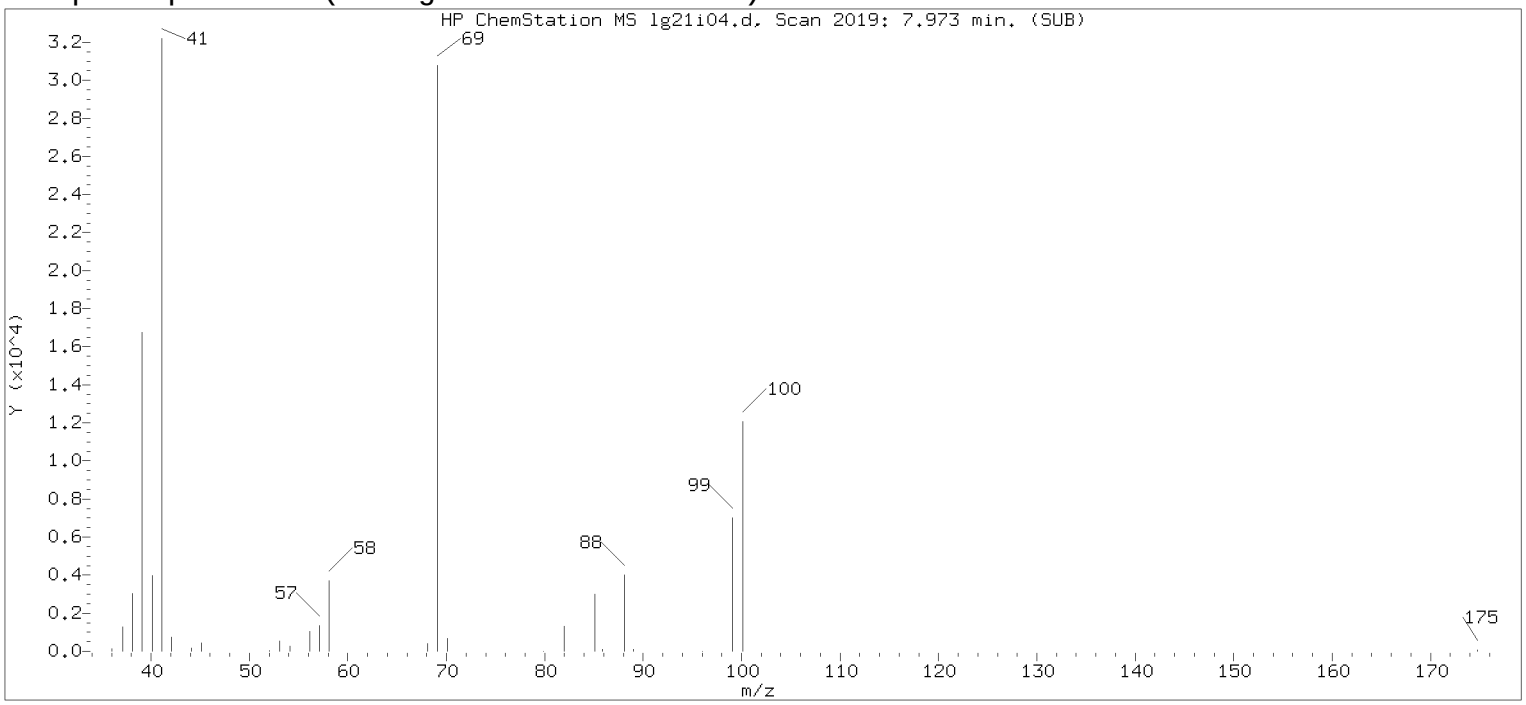
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area (flag) : 110974M
On-Column Amount (ng) : 20.2885
Integration start scan : 2002 Integration stop scan: 2050
Y at integration start : 276 Y at integration end: 276

Reason for manual integration: improper integration

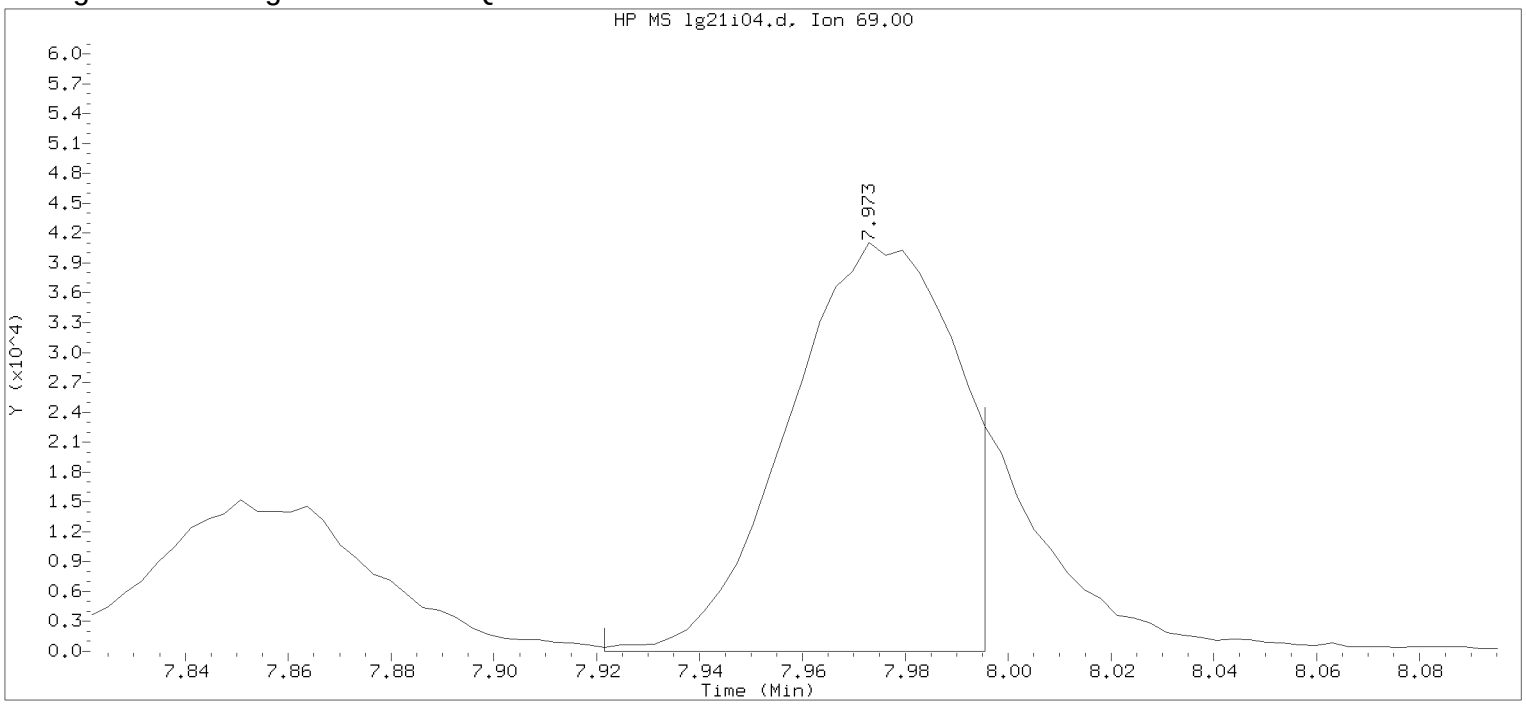
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

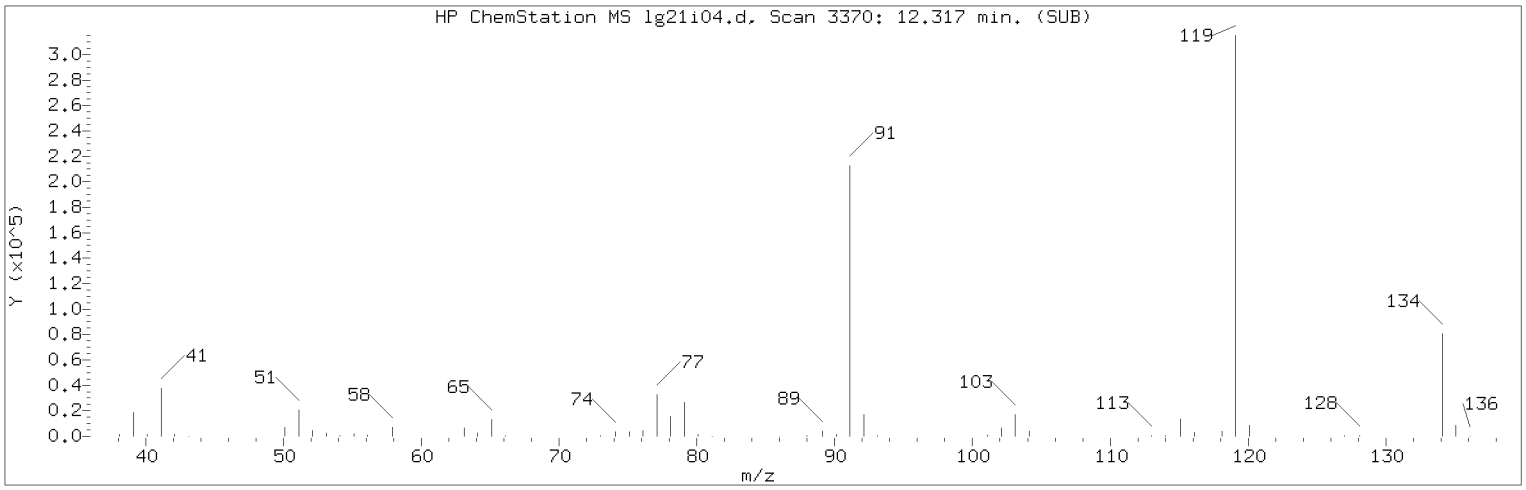
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

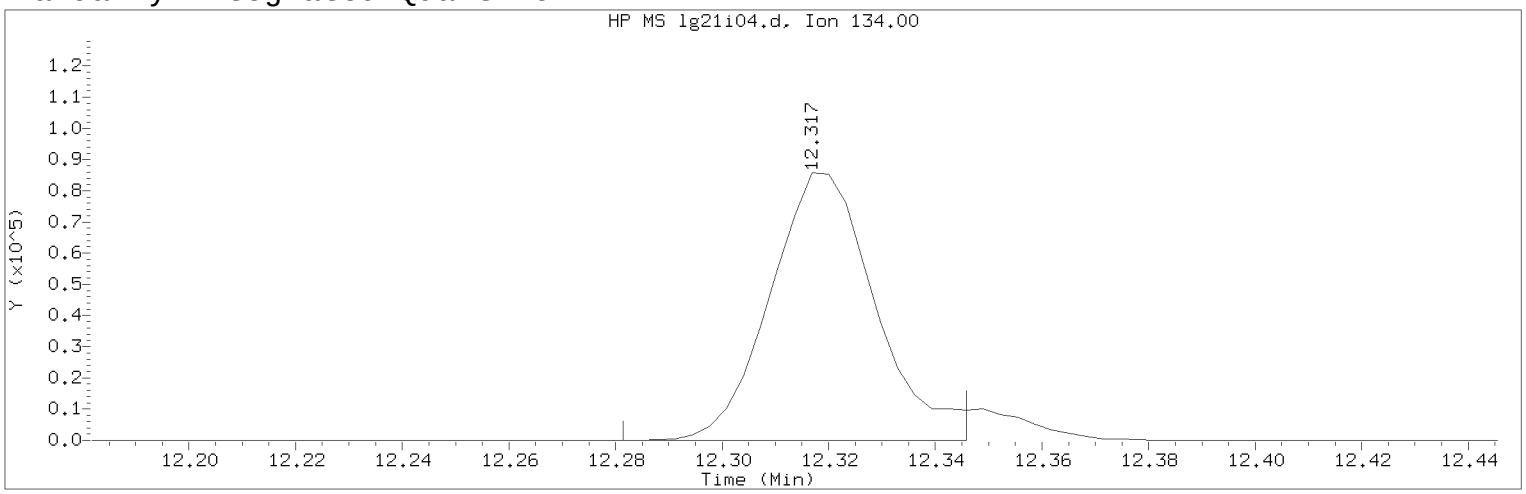
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area : 91920
On-column Amount (ng) : 16.7291
Integration start scan : 2002 Integration stop scan: 2025
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:00 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

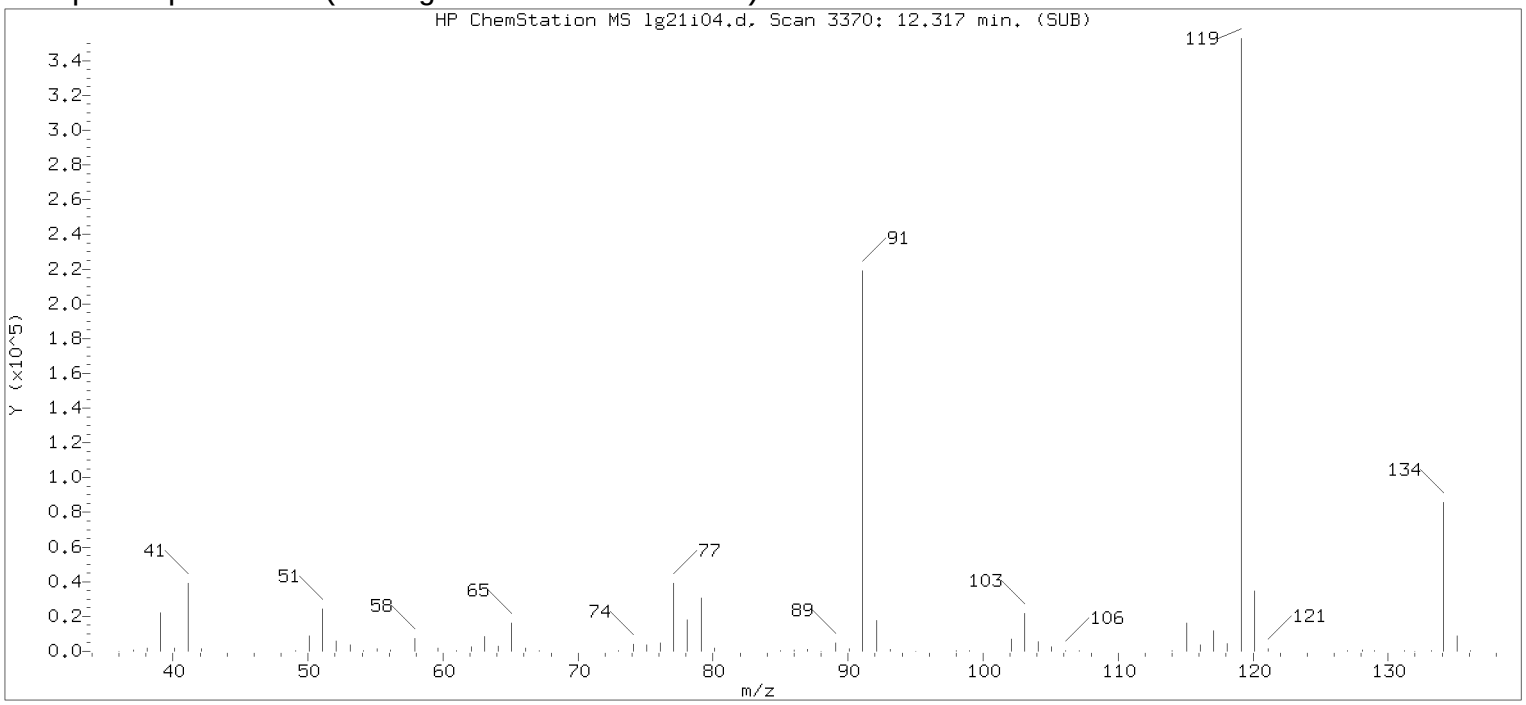
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area (flag) : 117726M
On-Column Amount (ng) : 20.3432
Integration start scan : 3358 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

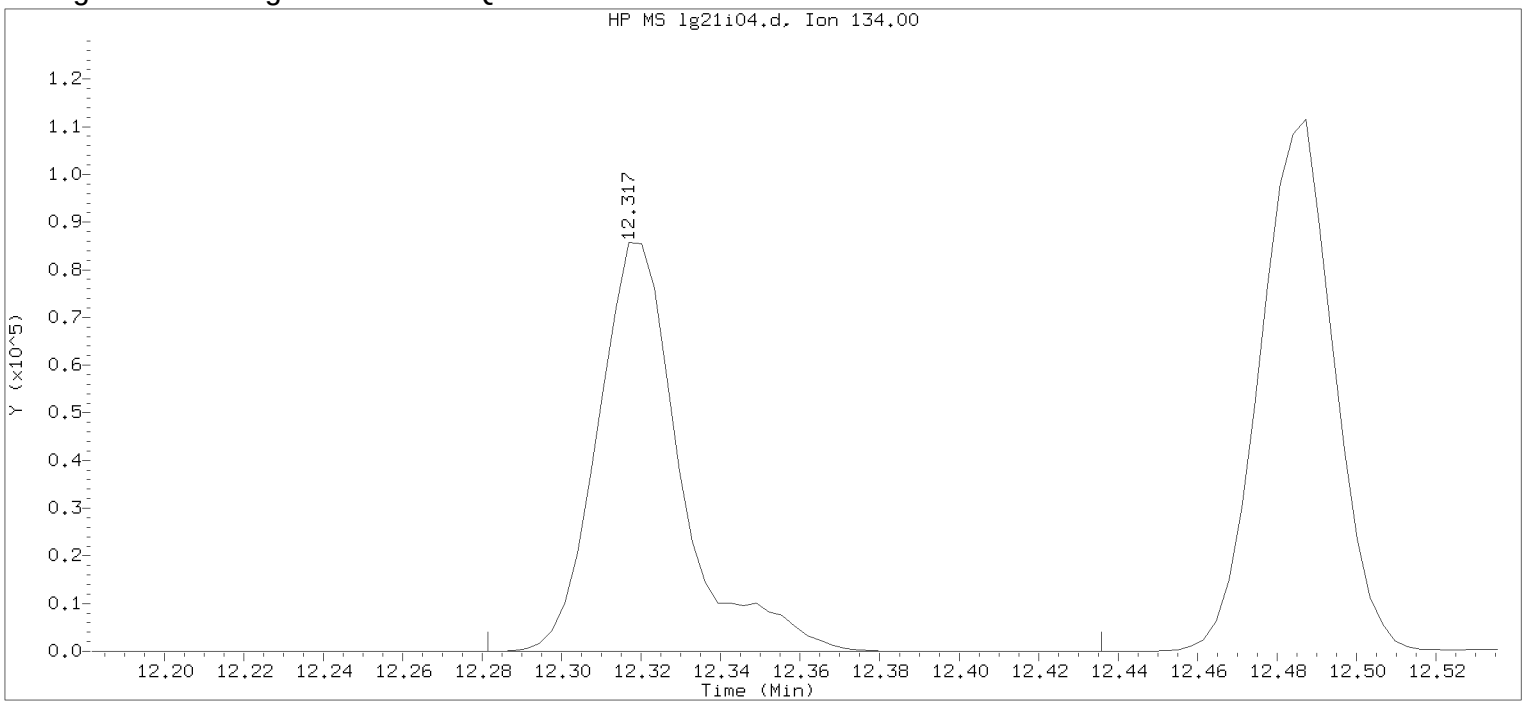
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



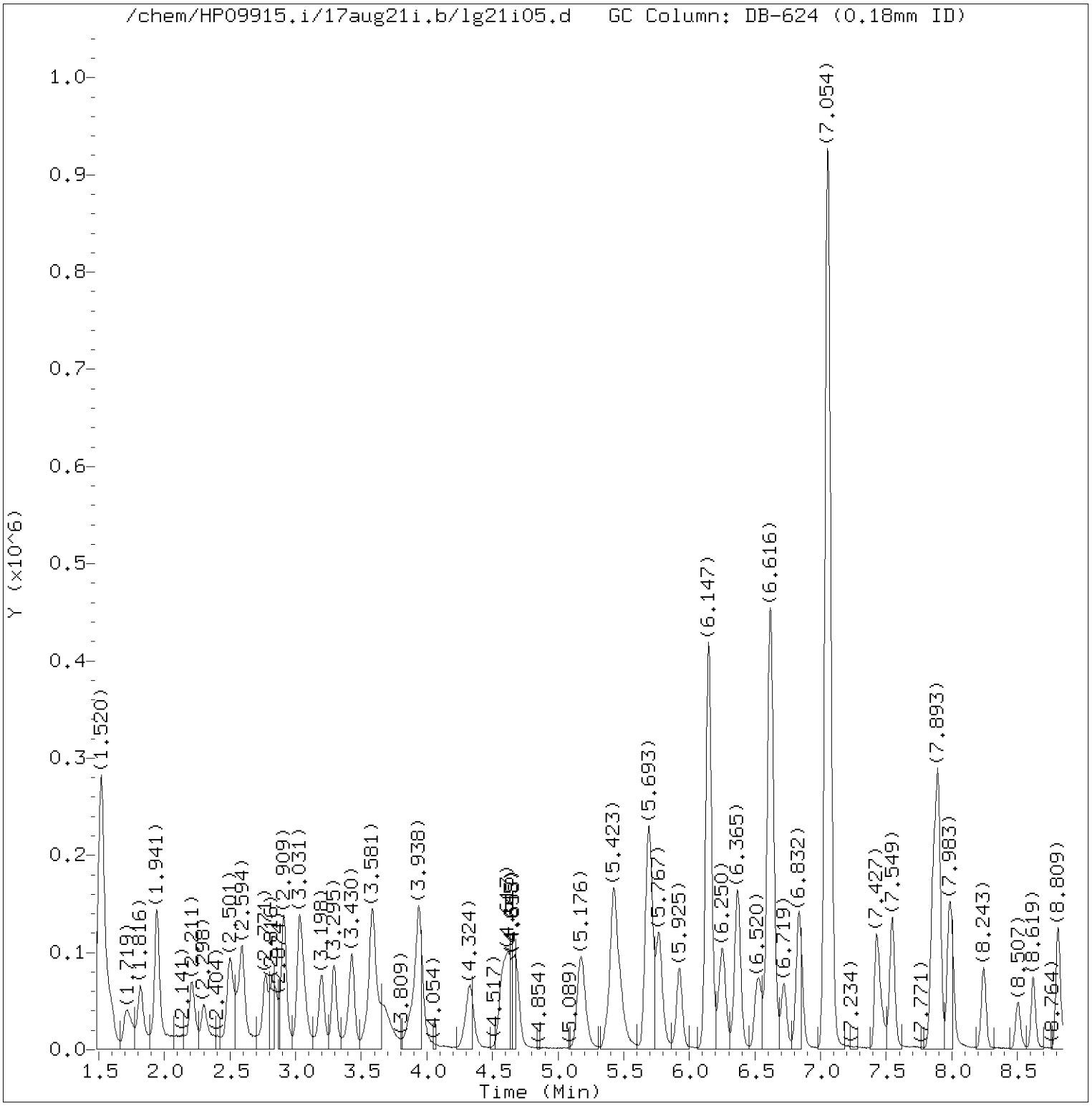

Data File: /chem/HP09915.i/17aug21i.b/lg21i04.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 10:46 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD020 Lab Sample ID: VSTD020

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area : 125188
On-column Amount (ng) : 19.8440
Integration start scan : 3358 Integration stop scan: 3406
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

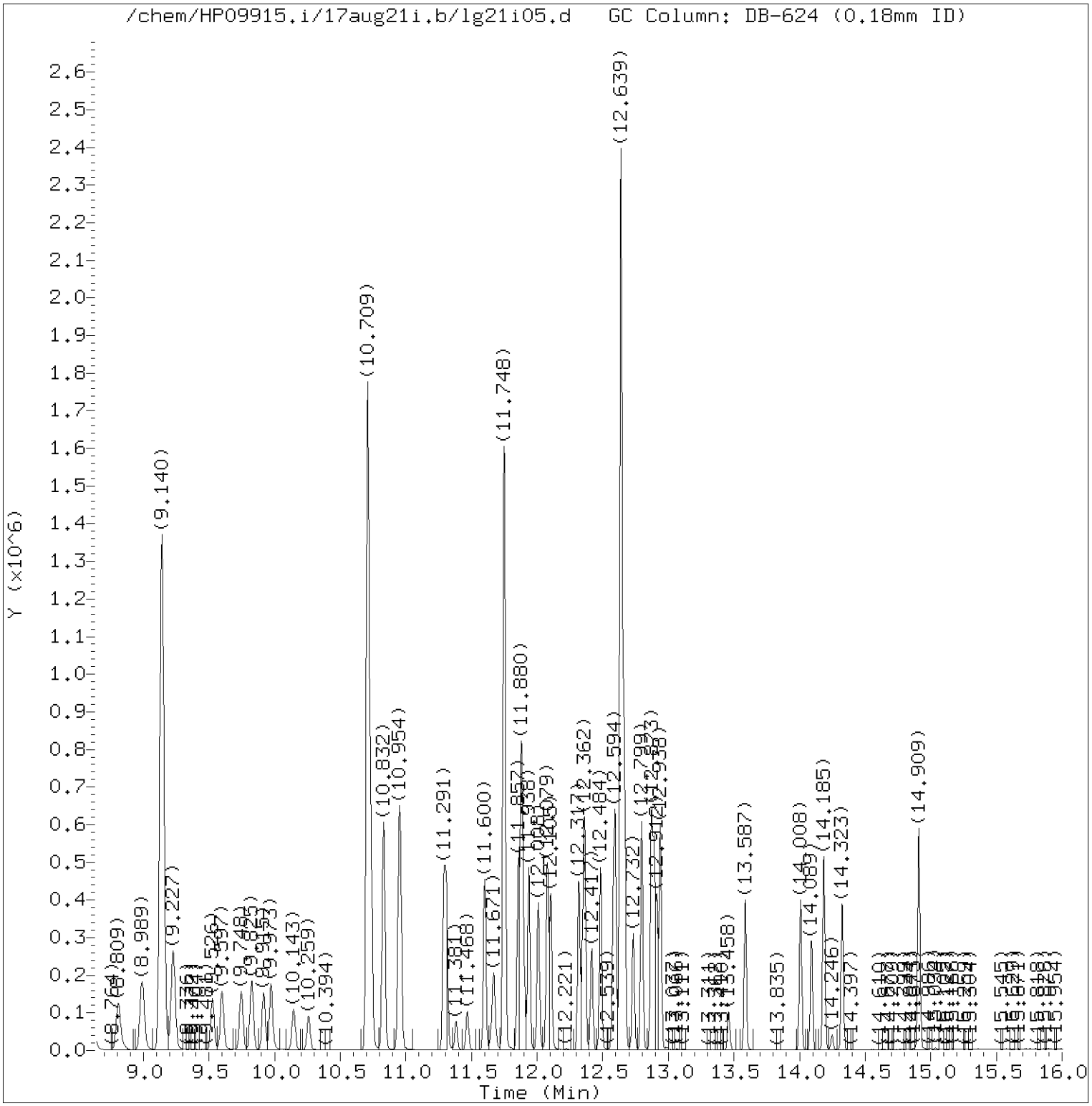
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716 | 85 | 81439 | 9.651 |
| 4) Chloromethane | (2) | 1.819 | 50 | 79954 | 10.193 |
| 6) Vinyl Chloride | (2) | 1.935 | 62 | 77217 | 9.929 |
| 5) 1,3-Butadiene | (2) | 1.948 | 39 | 55001 | 10.635 |
| 8) Bromomethane | (2) | 2.211 | 94 | 58899 | 10.877 |
| 9) Chloroethane | (2) | 2.301 | 64 | 44156 | 10.345 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 100214 | 10.540 |
| 12) Trichlorofluoromethane | (2) | 2.555 | 101 | 96232M | 9.760 |
| 11) n-Pentane | (2) | 2.594 | 43 | 78014 | 9.532 |
| 14) Ethyl ether | (2) | 2.768 | 59 | 48601 | 9.757 |
| 15) Freon 123a | (2) | 2.829 | 67 | 63792 | 9.978 |
| 16) Acrolein | (1) | 2.912 | 56 | 184445 | 98.829 |
| 17) 1,1-Dichloroethene | (2) | 3.031 | 96 | 48218 | 9.727 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 22730 | 9.800 |
| 18) Acetone | (1) | 3.041 | 58 | 16195 | 21.591 |
| 19) Freon 113 | (2) | 3.054 | 101 | 48868 | 9.160 |
| 21) 2-Propanol | (1) | 3.189 | 45 | 50848 | 100.899 |
| 22) Methyl Iodide | (2) | 3.198 | 142 | 102382 | 9.914 |
| 23) Carbon Disulfide | (2) | 3.295 | 76 | 166012 | 9.787 |
| 27) Methyl Acetate | (2) | 3.407 | 43 | 56971 | 10.134 |
| 25) Allyl Chloride | (2) | 3.430 | 41 | 81153 | 10.012 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 254929M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 58475 | 10.030 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 100254 | 106.650 |
| 31) Acrylonitrile | (2) | 3.864 | 53 | 32593 | 10.505 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.919 | 73 | 181882 | 10.029 |
| 32) trans-1,2-Dichloroethene | (2) | 3.944 | 96 | 57215 | 9.821 |
| 34) n-Hexane | (2) | 4.330 | 57 | 74340 | 9.023 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 98538 | 9.947 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 177778 | 10.125 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.681 | 53 | 85319 | 9.801 |
| 40) Ethyl t-butyl ether | (2) | 5.173 | 59 | 181629 | 10.206 |
| 44) 2-Butanone | (2) | 5.391 | 43 | 80280 | 20.292 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 65385 | 9.908 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 83337 | 10.582 |
| 47) Propionitrile | (1) | 5.475 | 54 | 122280 | 99.394 |
| 48) Methacrylonitrile | (2) | 5.693 | 67 | 169447 | 49.272 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 35519 | 10.160 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.780 | 71 | 23284 | 19.920 |
| 51) Chloroform | (2) | 5.925 | 83 | 101797 | 10.078 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 113 | 329919 | 50.064 |
| 52)$Dibromofluoromethane | (2) | 6.147 | 111 | 336658 | 49.944 |
| 53) 1,1,1-Trichloroethane | (2) | 6.150 | 97 | 96464 | 9.764 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 122600 | 19.729 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 89121 | 9.117 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 78720 | 9.113 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 28362 | 9.163 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 72030 | 9.326 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 75457 | 9.491 |
| 58) Isobutyl Alcohol | (1) | 6.529 | 41 | 80922 | 255.365 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 80717 | 50.425 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 65 | 372451 | 50.163 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 104 | 50558 | 49.320 |
| 60) Benzene | (2) | 6.636 | 78 | 232095 | 9.993 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 62 | 80798 | 10.104 |
| 61) 1,2-Dichloroethane | (2) | 6.719 | 98 | 7835 | 9.886 |
| 65) t-Amyl methyl ether | (2) | 6.838 | 73 | 187333 | 10.173 |
| 66)*Fluorobenzene | (2) | 7.054 | 96 | 1293715 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 74665 | 8.919 |
| 69) n-Butanol | (1) | 7.427 | 56 | 134567 | 493.625 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 61518 | 9.731 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 96879 | 9.269 |
| 72) Methylcyclohexane | (2) | 7.857 | 98 | 45836 | 9.303 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 58591 | 9.777 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 22115M | 259.118 |
| 76) Methyl Methacrylate | (2) | 7.980 | 69 | 54693 | 9.983 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 41664 | 9.782 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 75312 | 9.649 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 43075 | 20.100 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.623 | 63 | 44149 | 9.443 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 95285 | 9.671 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 173904 | 20.544 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1273236 | 50.642 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 833923 | 50.435 |
| 88) Toluene | (3) | 9.227 | 92 | 149099 | 9.882 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 86550 | 9.647 |

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Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.597 | 69 | 95927 | 9.949 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 58343 | 9.967 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 63015 | 9.318 |
| 94) 1,3-Dichloropropane | (3) | 9.915 | 76 | 95833 | 10.062 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 126253 | 20.673 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 181835 | 19.318 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 62428 | 9.471 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 66063 | 10.011 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1010789 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 77195 | 9.076 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 171197 | 9.707 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 58594 | 9.347 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 280333 | 9.653 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 224374 | 19.114 |
| 107) o-Xylene | (3) | 11.291 | 106 | 112271 | 9.516 |
| 109) Styrene | (3) | 11.307 | 104 | 188798 | 9.555 |
| 110) Bromoform | (3) | 11.468 | 173 | 44850 | 9.032 |
| 111) Isopropylbenzene | (3) | 11.600 | 105 | 279703 | 9.429 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 81243 | 291.635 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 481371 | 50.102 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 415490 | 49.958 |
| 108) Xylene (Total) | (3) | | 106 | 336645 | 28.630 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 96311 | 10.164 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 76902 | 9.571 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 127449 | 50.888 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 29325 | 10.173 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 326351 | 9.687 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 70841 | 9.690 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 240122 | 9.472 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 72624 | 9.507 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 48131M | 8.772 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 44232 | 9.384 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 250138 | 9.587 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 295245 | 9.367 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 146064 | 9.651 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 260961 | 9.280 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 545387 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.655 | 146 | 151608 | 9.704 |

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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 274926 | 10.145 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 185941 | 9.493 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 172509 | 10.105 |
| 137) 1,4-Diethylbenzene | (4) | 12.870 | 119 | 180052 | 10.137 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 129656 | 9.453 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 145787 | 9.698 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 144160 | 10.136 |
| 141) Diethylbenzene (total) | (4) | | 100 | 496721 | 30.378 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 20087 | 9.642 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 107178 | 9.453 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 105904 | 9.525 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 44936 | 9.541 |
| 148) Naphthalene | (4) | 14.185 | 128 | 348627 | 9.928 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 102115 | 9.641 |
| 150) 2-Methylnaphthalene | (4) | 14.909 | 142 | 242110 | 10.410 |



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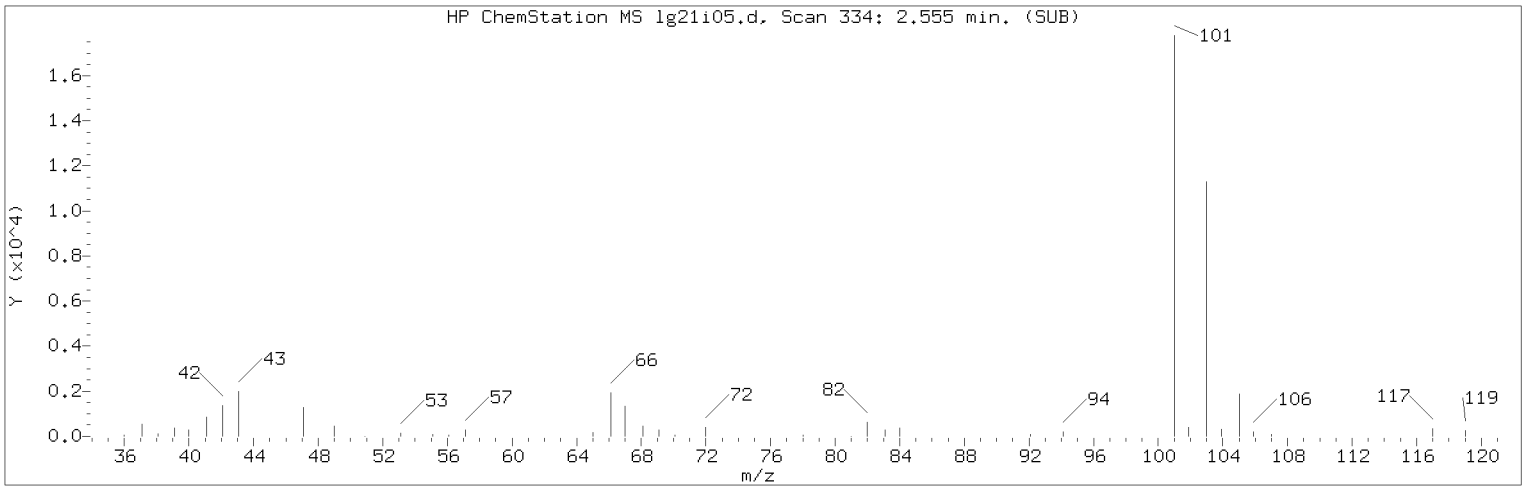
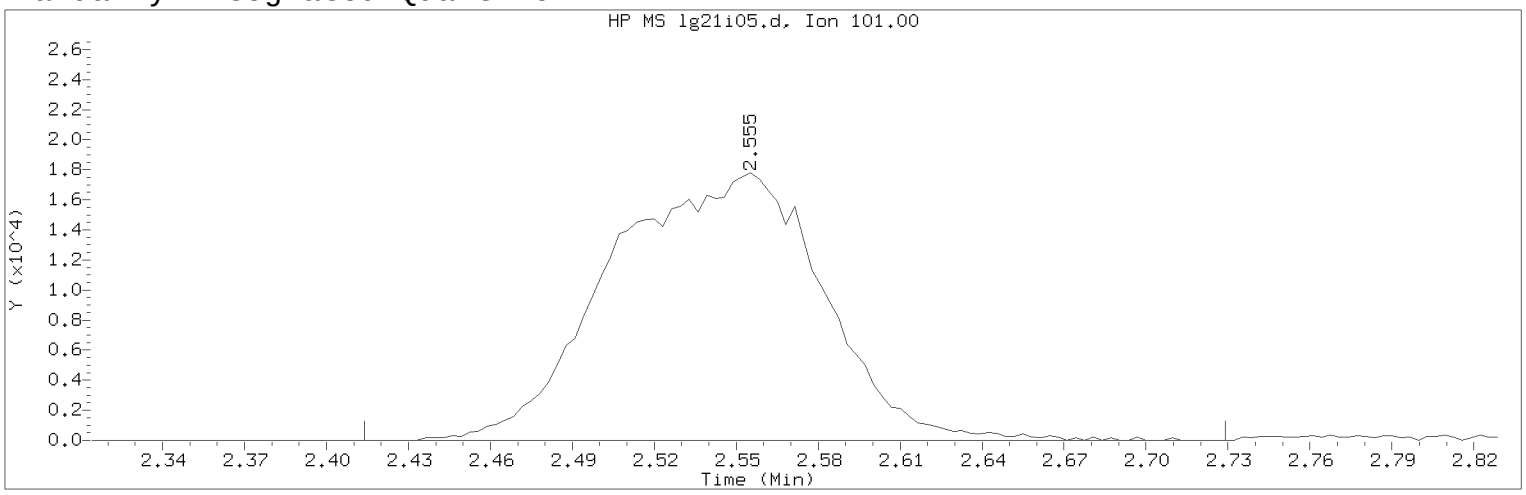
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

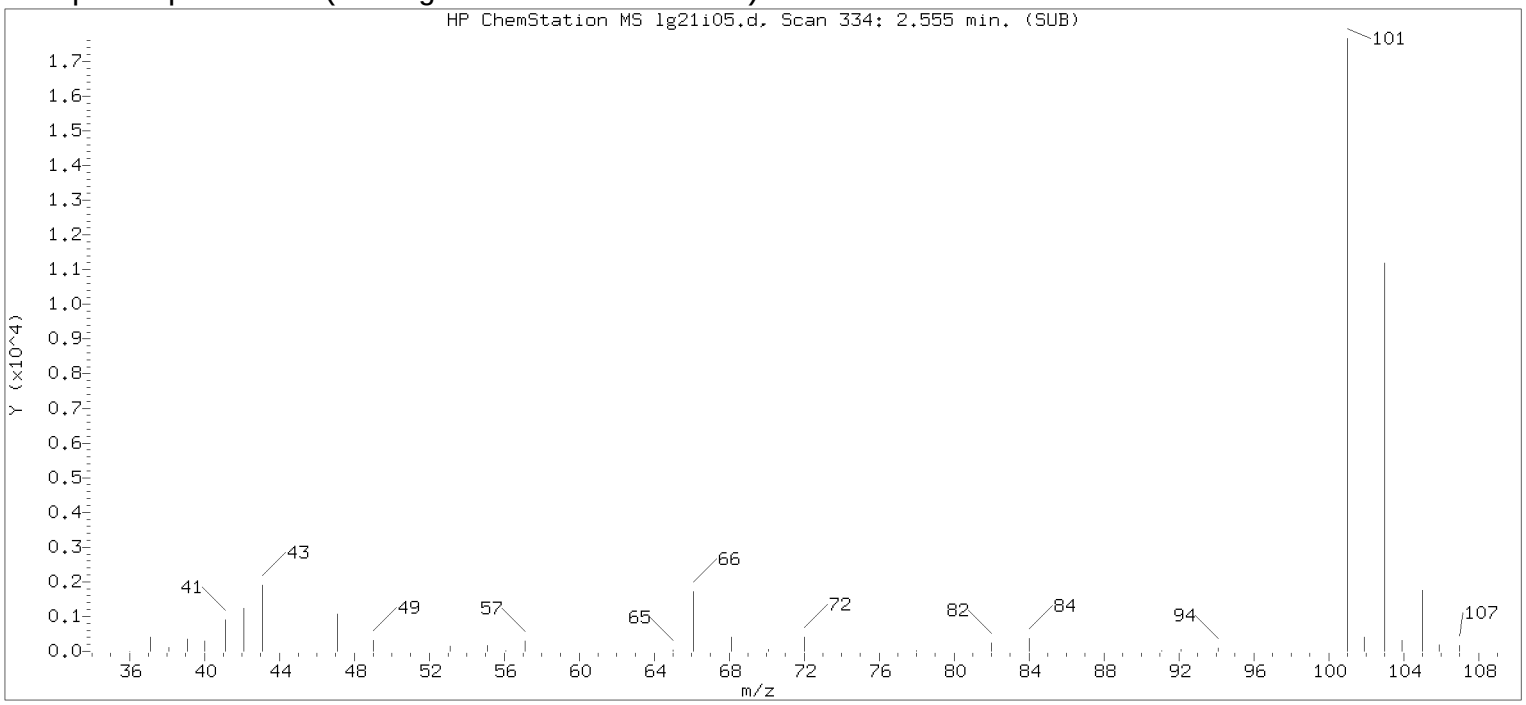
Compound Number : 12
Compound Name : Trichlorofluoromethane
Scan Number : 334
Retention Time (minutes): 2.555
Quant Ion : 101.00
Area (flag) : 96232M
On-Column Amount (ng) : 9.7600
Integration start scan : 289 Integration stop scan: 387
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

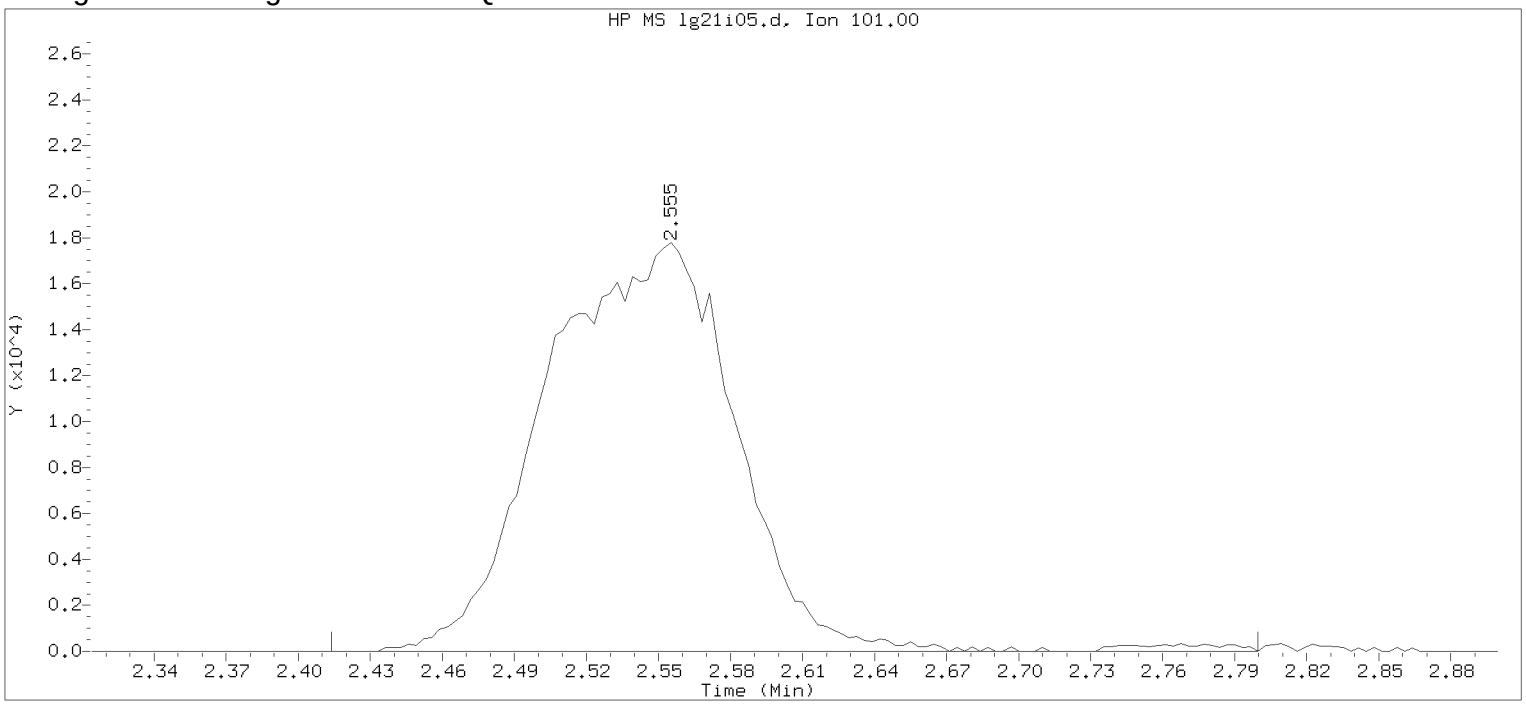
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 12
Compound Name : Trichlorofluoromethane
Scan Number : 334
Retention Time (minutes): 2.555
Quant Ion : 101.00
Area : 97149
On-column Amount (ng) : 9.8347
Integration start scan : 289 Integration stop scan: 409
Y at integration start : 0 Y at integration end: 0

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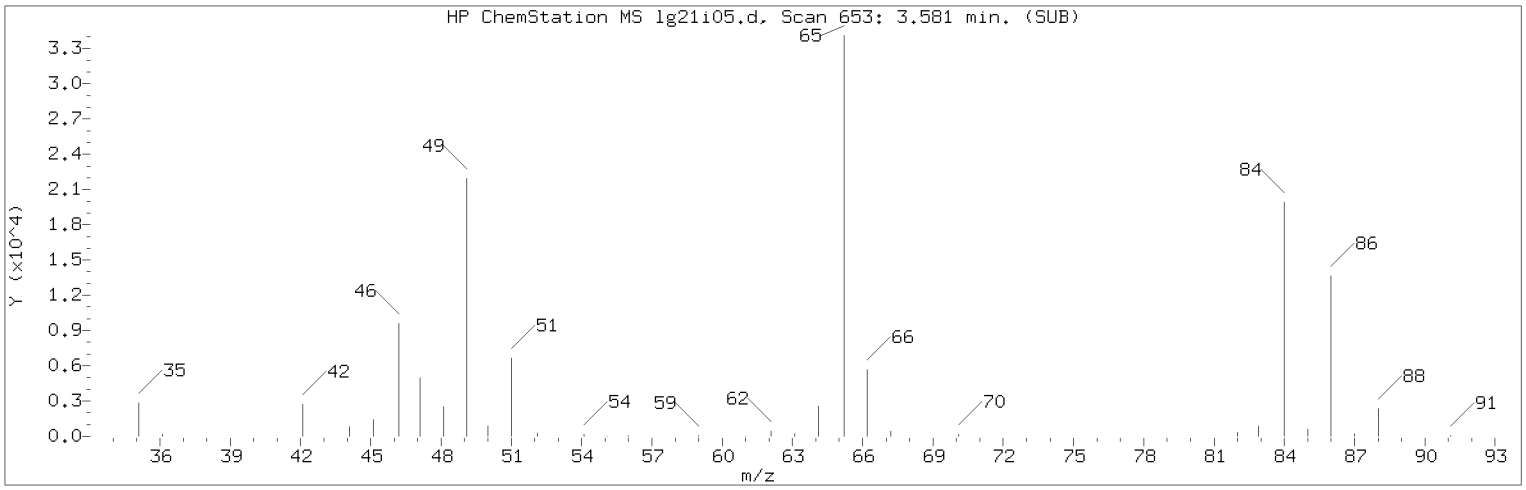
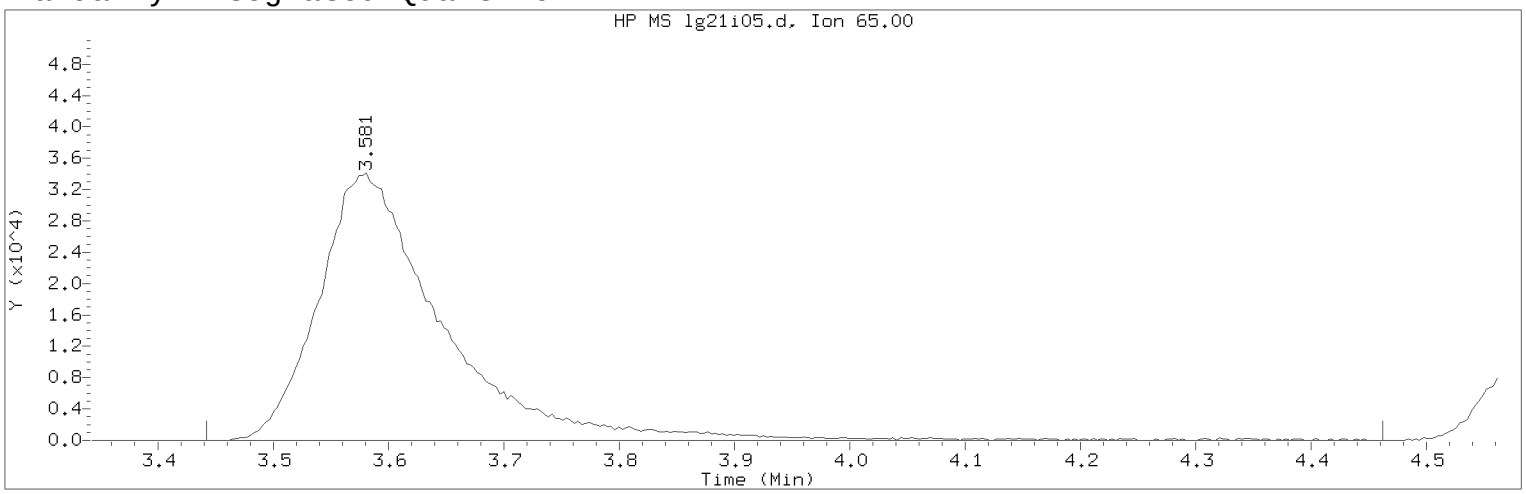
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
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Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

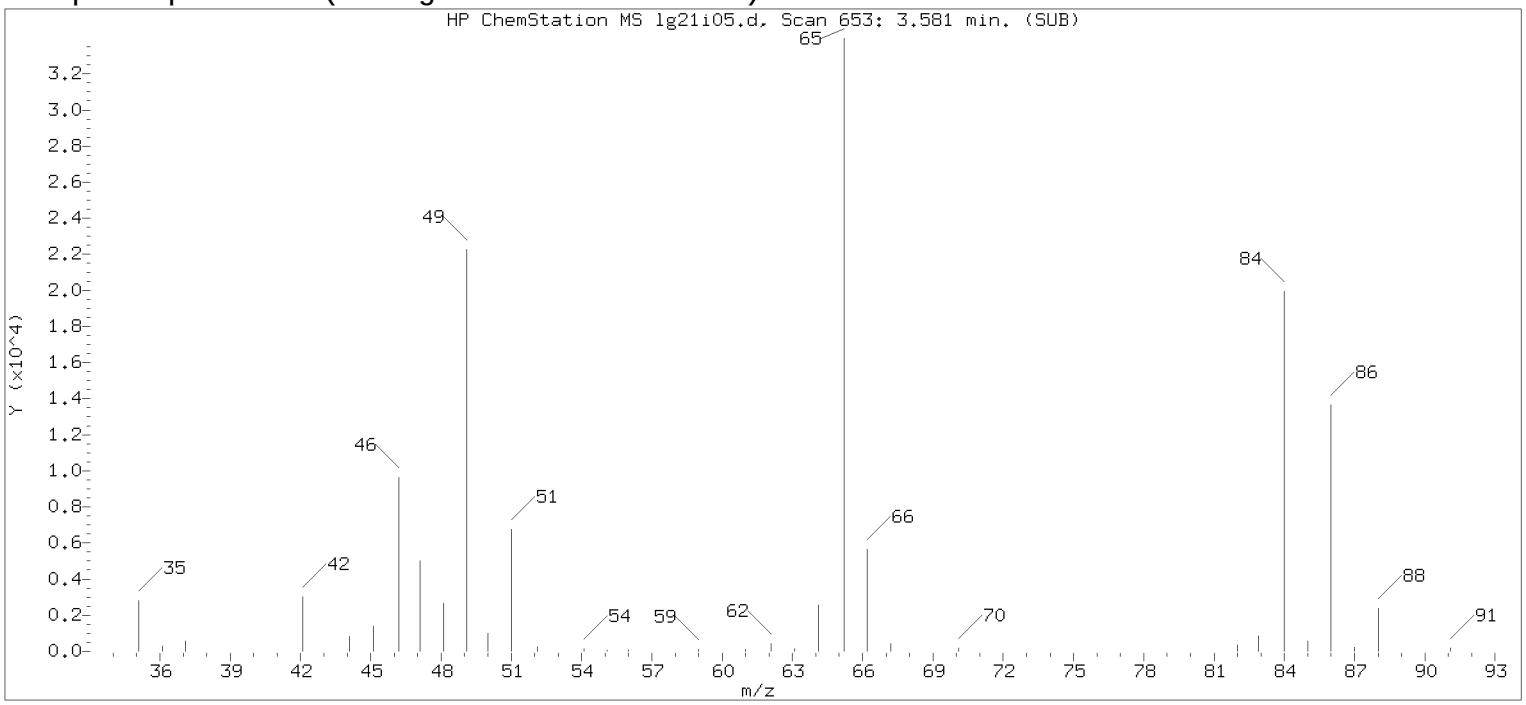
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 254929M
On-Column Amount (ng) : 250.0000
Integration start scan : 609 Integration stop scan: 926
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

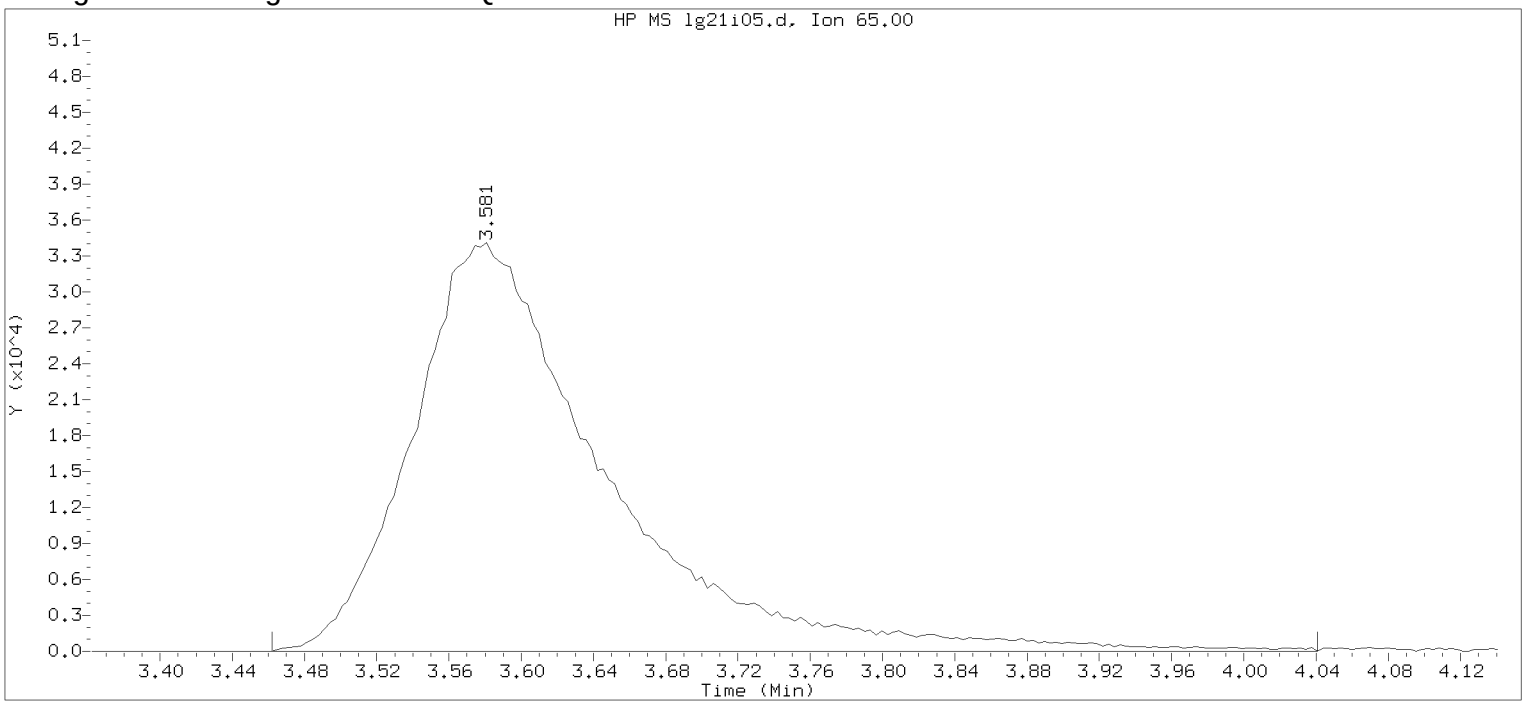
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion

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Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

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Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 251894
On-column Amount (ng) : 250.0000
Integration start scan : 615 Integration stop scan: 795
Y at integration start : 0 Y at integration end: 0

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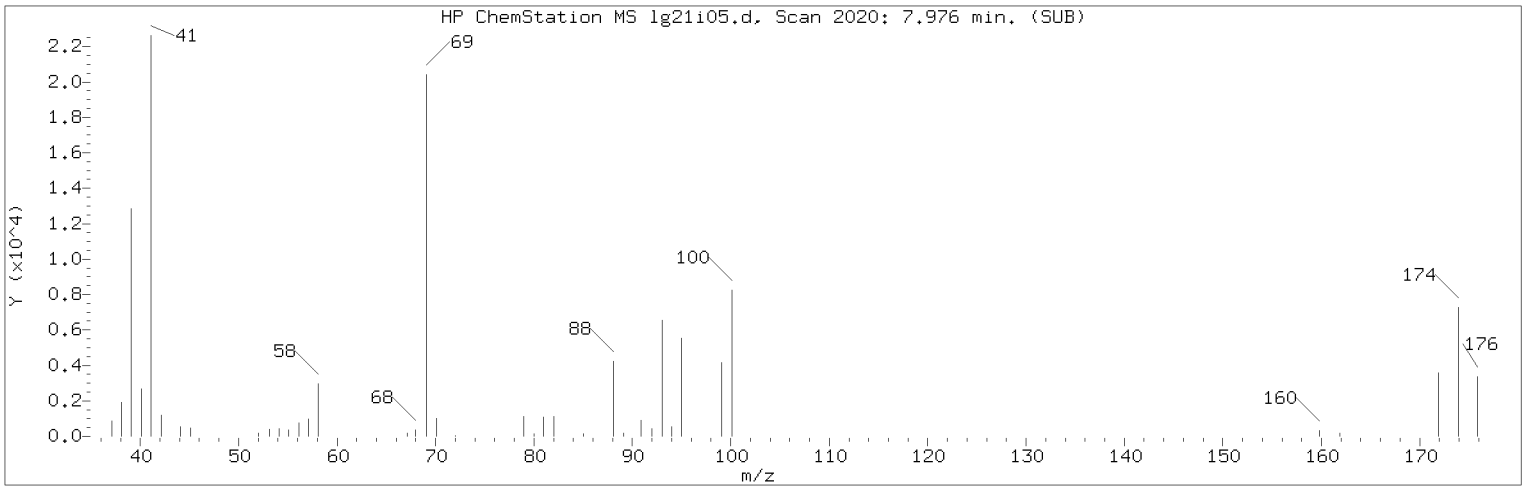
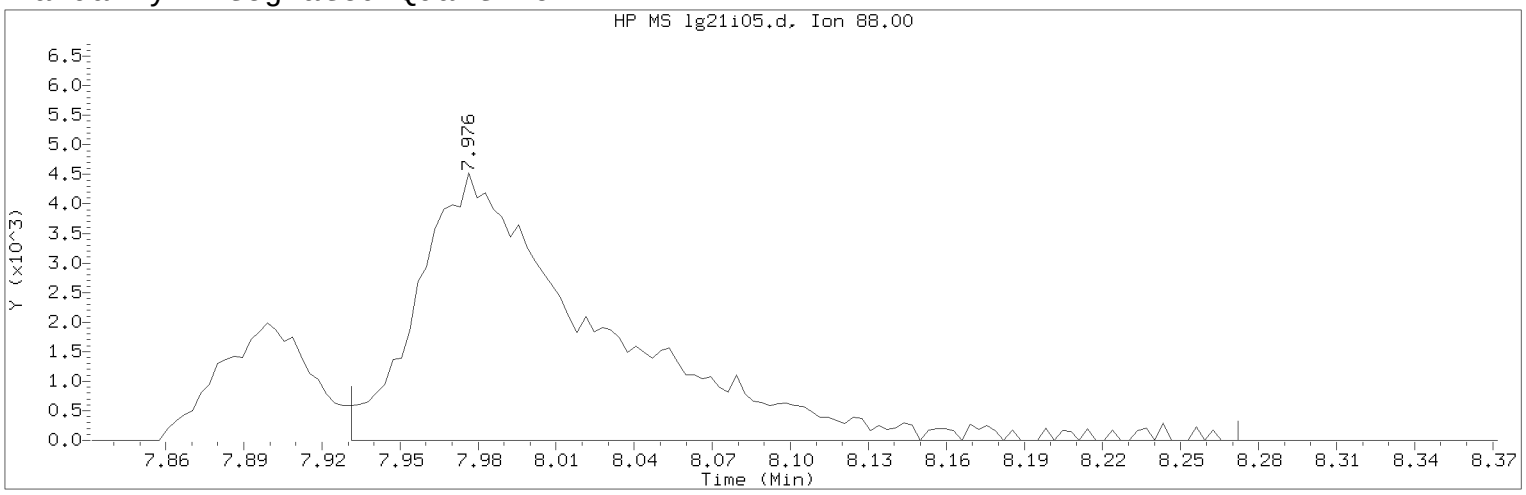
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion

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Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

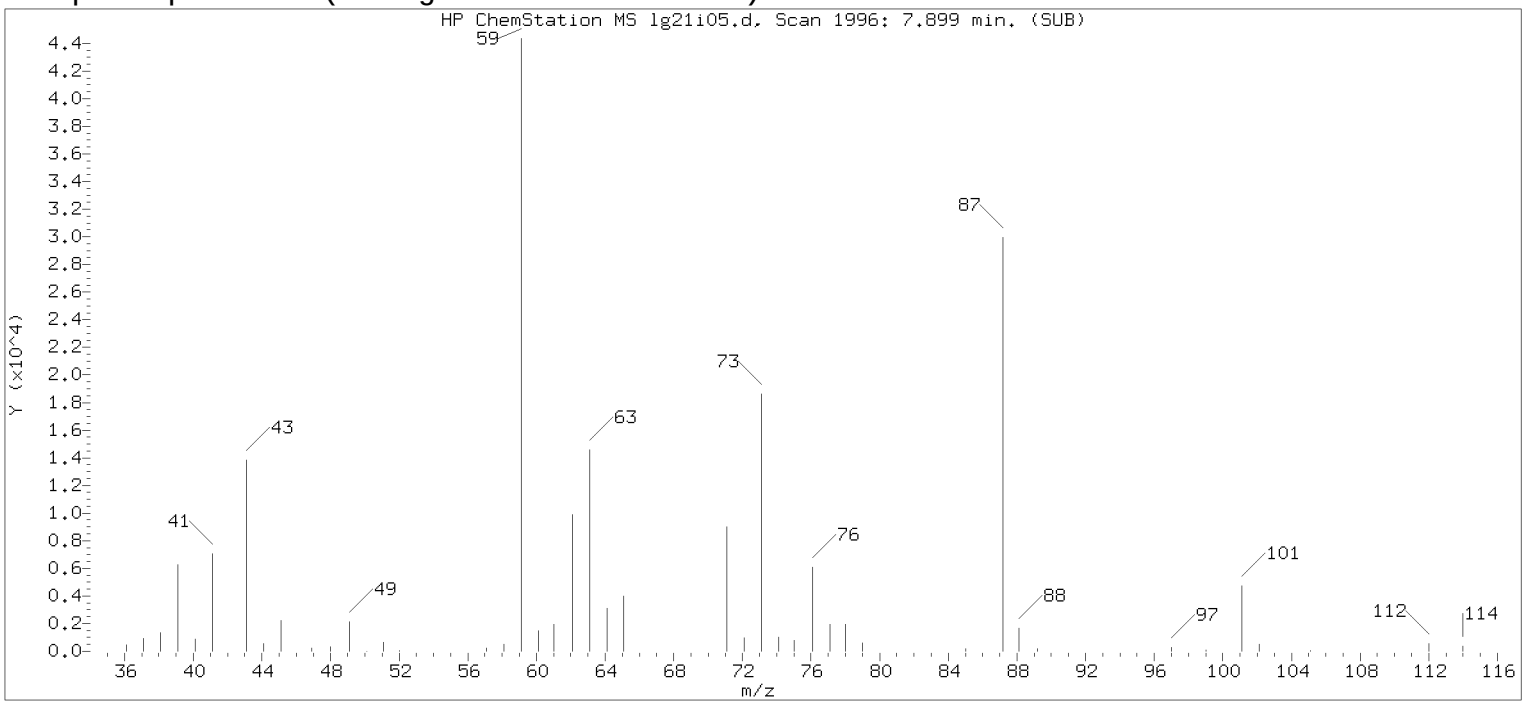
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 22115M
On-Column Amount (ng) : 259.1183
Integration start scan : 2005 Integration stop scan: 2111
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

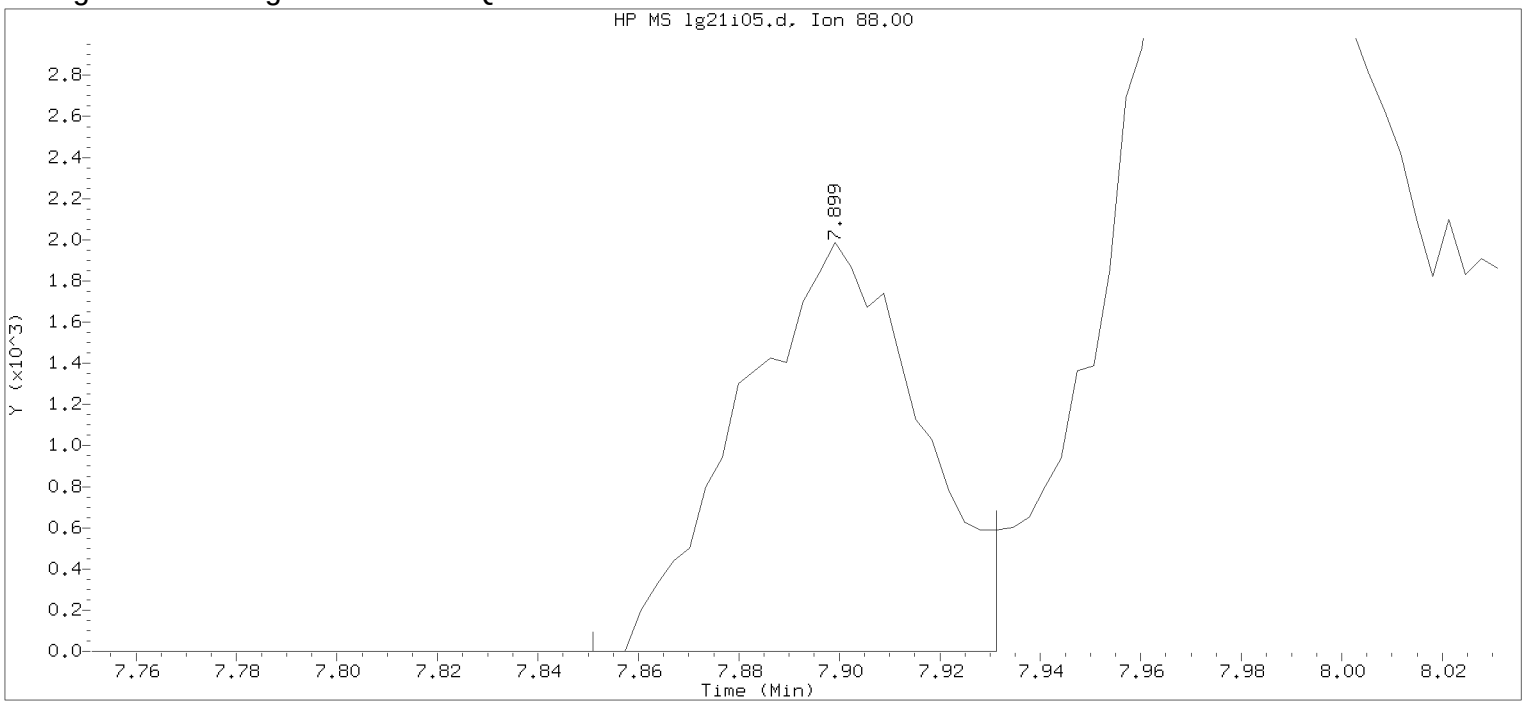
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion

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Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1996
Retention Time (minutes): 7.899
Quant Ion : 88.00
Area : 4898
On-column Amount (ng) : 71.0727
Integration start scan : 1980 Integration stop scan: 2005
Y at integration start : 0 Y at integration end: 0

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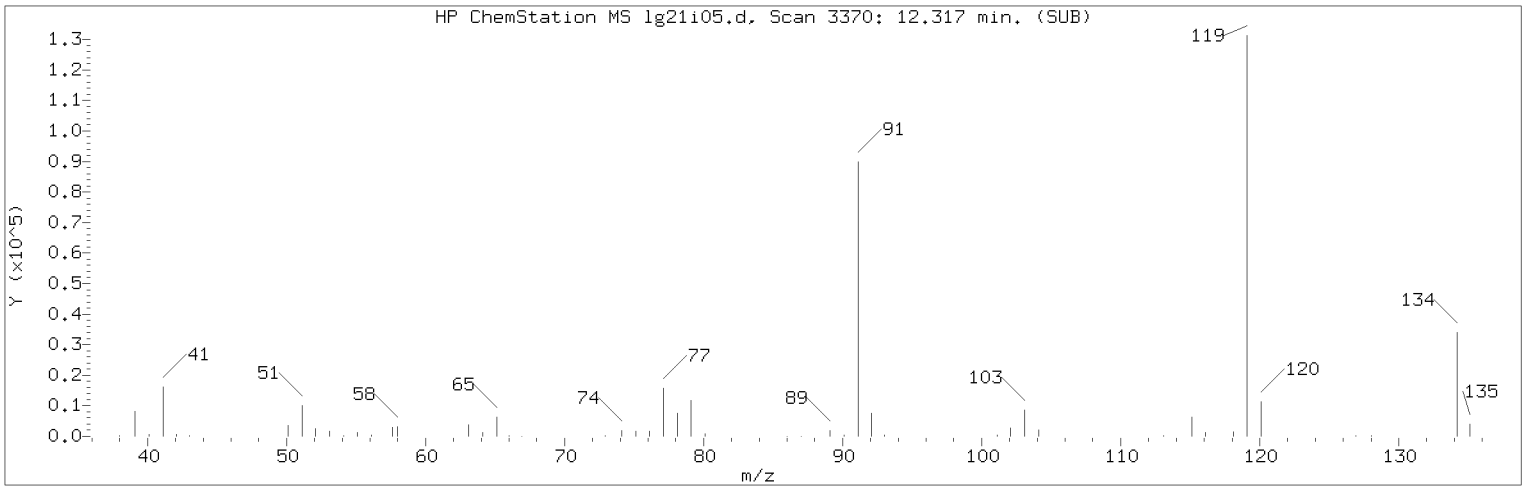
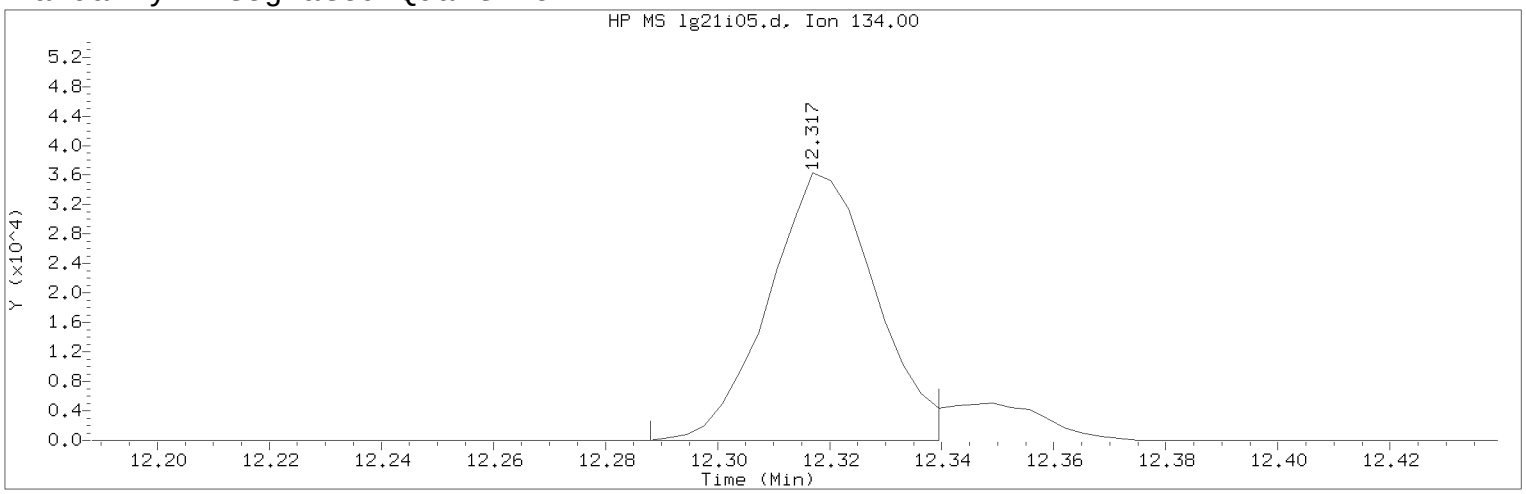
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:02 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

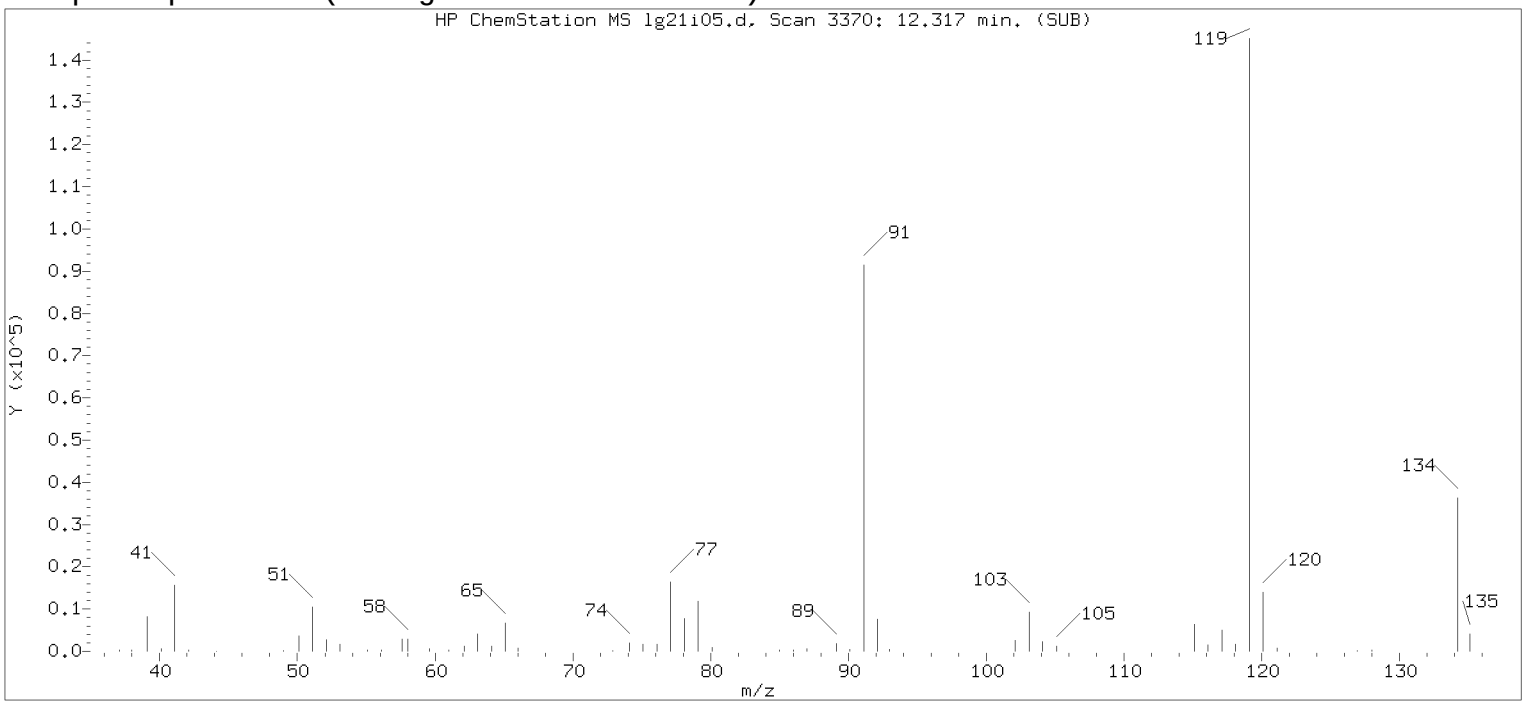
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area (flag) : 48131M
On-Column Amount (ng) : 8.7717
Integration start scan : 3360 Integration stop scan: 3376
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

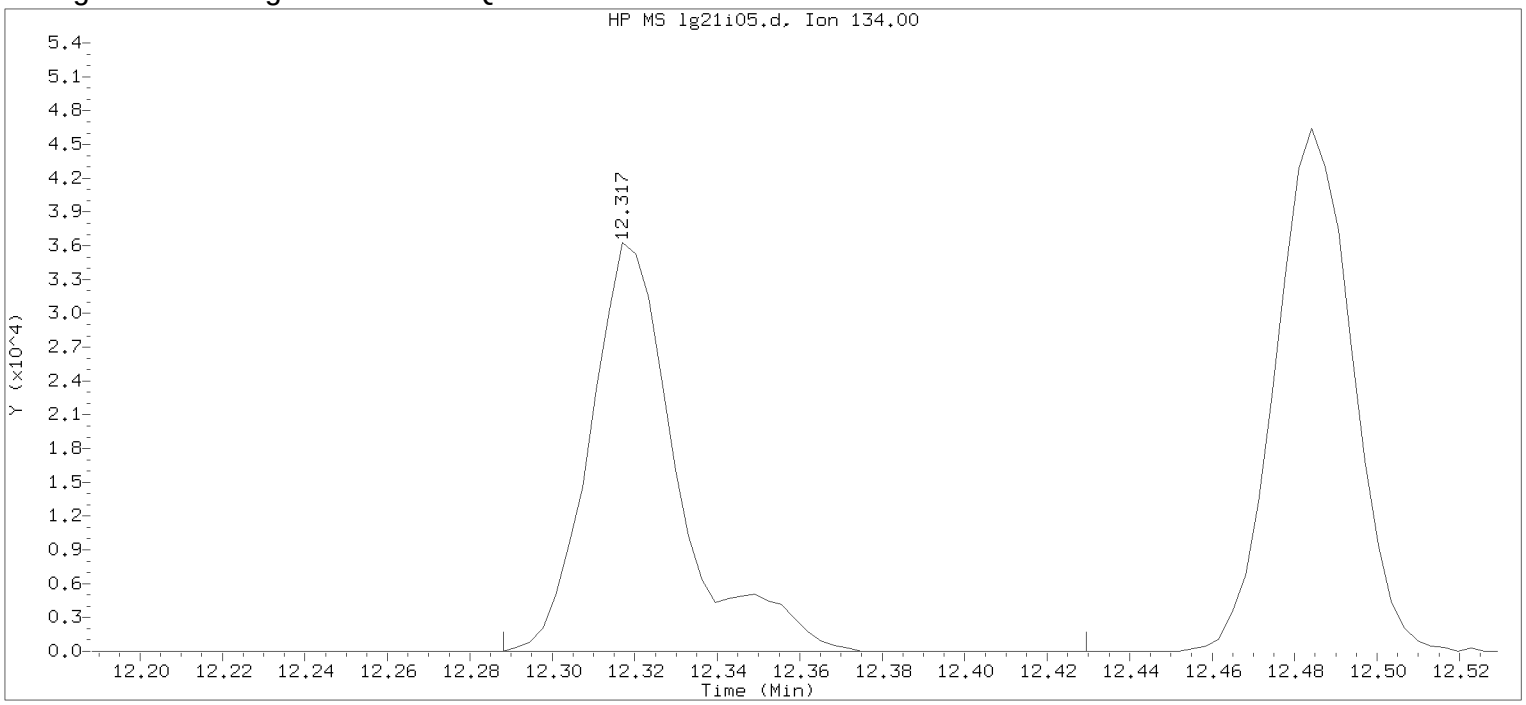
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i05.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:08 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area : 53837
On-column Amount (ng) : 9.0559
Integration start scan : 3360 Integration stop scan: 3404
Y at integration start : 0 Y at integration end: 0

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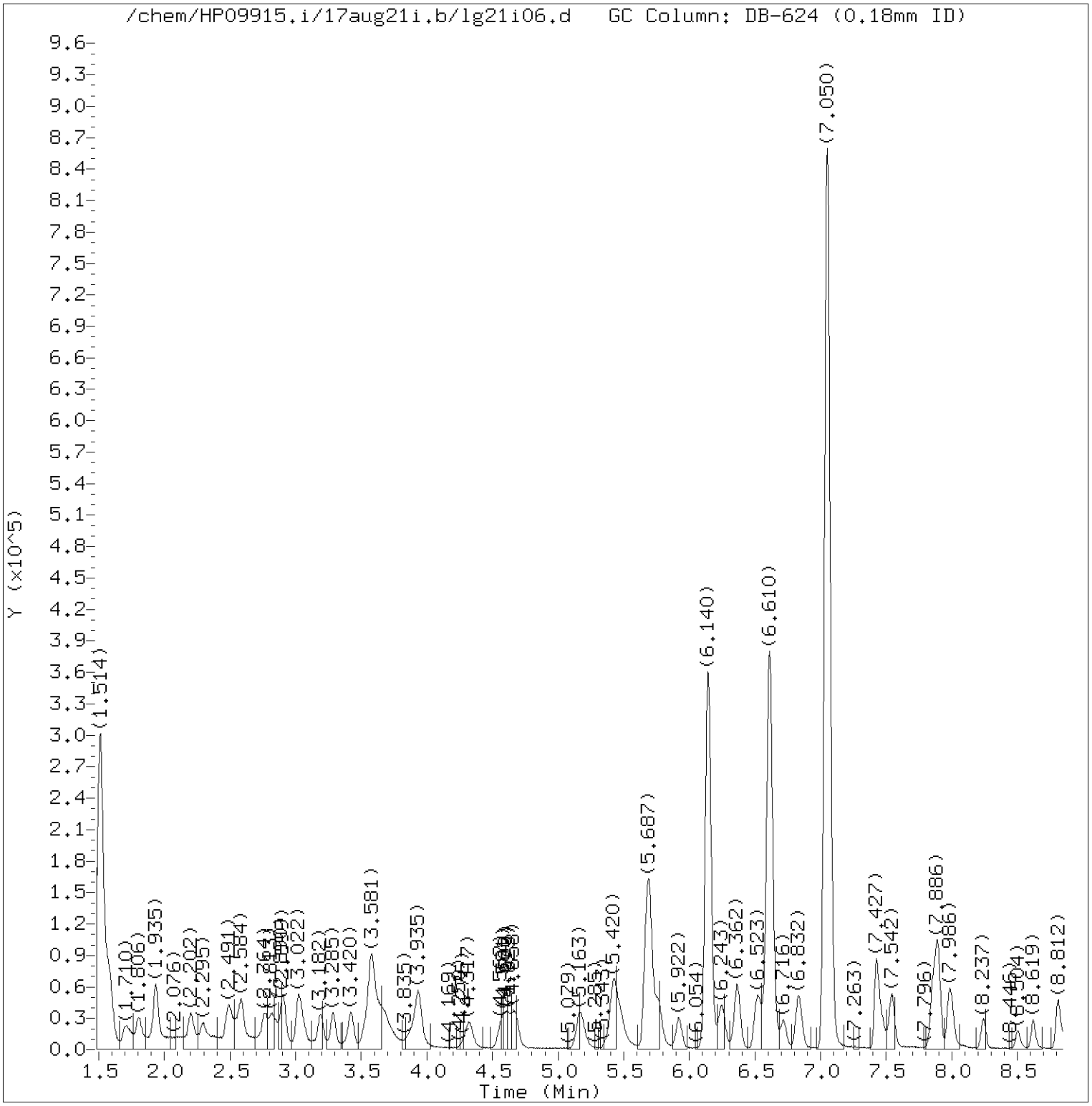
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

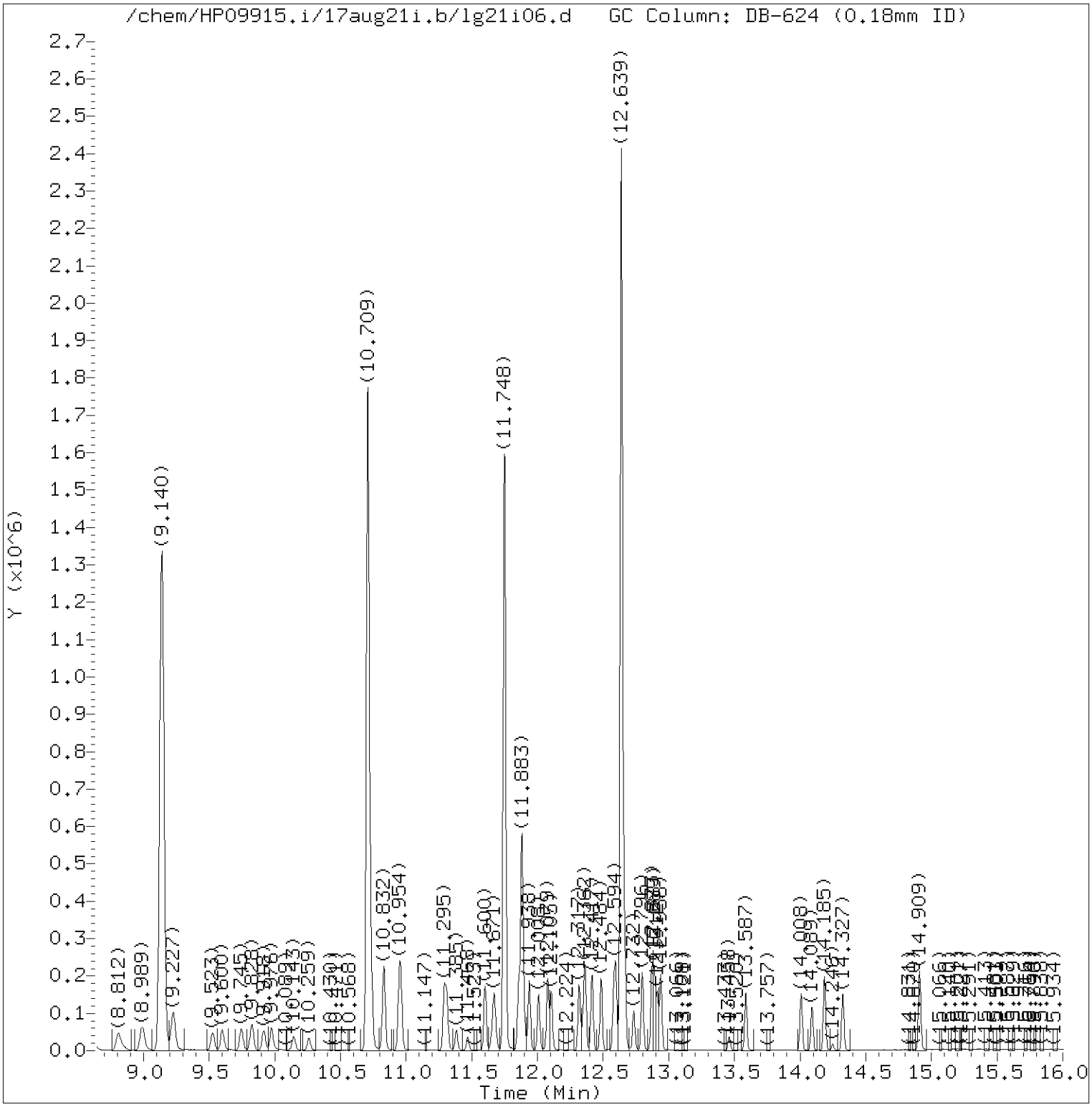
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 33759 | 4.018 |
| 4) Chloromethane | (2) | 1.806 | 50 | 31816 | 4.074 |
| 6) Vinyl Chloride | (2) | 1.925 | 62 | 31286 | 4.040 |
| 5) 1,3-Butadiene | (2) | 1.935 | 39 | 21551M | 3.958 |
| 8) Bromomethane | (2) | 2.198 | 94 | 23782M | 4.240 |
| 9) Chloroethane | (2) | 2.295 | 64 | 17602 | 4.142 |
| 10) Dichlorofluoromethane | (2) | 2.485 | 67 | 38347 | 4.050 |
| 12) Trichlorofluoromethane | (2) | 2.549 | 101 | 39269 | 4.000 |
| 11) n-Pentane | (2) | 2.587 | 43 | 30917 | 3.794 |
| 14) Ethyl ether | (2) | 2.761 | 59 | 18683 | 3.767 |
| 15) Freon 123a | (2) | 2.819 | 67 | 26513 | 4.165 |
| 16) Acrolein | (1) | 2.903 | 56 | 69384 | 36.268 |
| 17) 1,1-Dichloroethene | (2) | 3.022 | 96 | 18165 | 3.680 |
| 17) 1,1-Dichloroethene | (2) | 3.028 | 63 | 8584 | 3.717 |
| 18) Acetone | (1) | 3.041 | 58 | 4810 | 6.256 |
| 19) Freon 113 | (2) | 3.047 | 101 | 18816 | 3.542 |
| 21) 2-Propanol | (1) | 3.182 | 45 | 45726M | 83.368 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 37445 | 3.642 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 60901 | 3.606 |
| 27) Methyl Acetate | (2) | 3.404 | 43 | 20634 | 3.686 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 29287 | 3.629 |
| 28) Methylene Chloride | (2) | 3.578 | 84 | 21808 | 3.757 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.581 | 65 | 261323M | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.687 | 59 | 79916M | 77.408 |
| 31) Acrylonitrile | (2) | 3.861 | 53 | 11368 | 3.680 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.906 | 73 | 67352 | 3.730 |
| 32) trans-1,2-Dichloroethene | (2) | 3.931 | 96 | 21417 | 3.692 |
| 34) n-Hexane | (2) | 4.317 | 57 | 29772 | 3.629 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 36941 | 3.745 |
| 38) di-Isopropyl ether | (2) | 4.613 | 45 | 64257 | 3.675 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 32351 | 3.732 |
| 40) Ethyl t-butyl ether | (2) | 5.166 | 59 | 65243 | 3.682 |
| 44) 2-Butanone | (2) | 5.385 | 43 | 30688 | 7.790 |
| 42) cis-1,2-Dichloroethene | (2) | 5.411 | 96 | 23965 | 3.647 |
| 45) 2,2-Dichloropropane | (2) | 5.427 | 77 | 31425M | 3.701 |
| 47) Propionitrile | (1) | 5.465 | 54 | 89845 | 71.243 |
| 48) Methacrylonitrile | (2) | 5.690 | 67 | 123606 | 36.098 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 12508 | 3.593 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.787 | 71 | 8453 | 7.055 |
| 51) Chloroform | (2) | 5.922 | 83 | 36442 | 3.623 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 326581 | 49.772 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 335514 | 49.989 |
| 53) 1,1,1-Trichloroethane | (2) | 6.140 | 97 | 40982 | 4.166 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 45382 | 7.339 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 35570 | 3.654 |
| 54) Cyclohexane | (2) | 6.243 | 84 | 30722 | 3.572 |
| 54) Cyclohexane | (2) | 6.250 | 69 | 11405 | 3.700 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 26804 | 3.486 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 29248 | 3.695 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 61588 | 189.598 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 79499 | 49.878 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 65 | 375291 | 50.764 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 50883 | 49.852 |
| 60) Benzene | (2) | 6.629 | 78 | 84709 | 3.663 |
| 61) 1,2-Dichloroethane | (2) | 6.716 | 62 | 30335 | 3.810 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 98 | 3039 | 3.851 |
| 65) t-Amyl methyl ether | (2) | 6.832 | 73 | 67087 | 3.659 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1288157 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 30773 | 3.692 |
| 69) n-Butanol | (1) | 7.427 | 56 | 99188 | 354.944 |
| 71) Trichloroethene | (2) | 7.542 | 95 | 23276 | 3.698 |
| 72) Methylcyclohexane | (2) | 7.851 | 83 | 34839 | 3.348 |
| 72) Methylcyclohexane | (2) | 7.848 | 98 | 16310 | 3.325 |
| 73) 1,2-Dichloropropane | (2) | 7.890 | 63 | 21612 | 3.622 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 15786 | 180.435 |
| 76) Methyl Methacrylate | (2) | 7.980 | 69 | 19843M | 3.578 |
| 74) Dibromomethane | (2) | 7.999 | 93 | 15245 | 3.595 |
| 78) Bromodichloromethane | (2) | 8.243 | 83 | 26719 | 3.438 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 15597 | 7.309 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 16552 | 3.556 |
| 81) cis-1,3-Dichloropropene | (2) | 8.812 | 75 | 33633 | 3.428 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 61352 | 7.279 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1272723 | 50.453 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 834198 | 50.284 |
| 88) Toluene | (3) | 9.227 | 92 | 55881 | 3.691 |
| 89) trans-1,3-Dichloropropene | (3) | 9.529 | 75 | 30052 | 3.338 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 33973 | 3.512 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 21415 | 3.646 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 24395 | 3.595 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 34540 | 3.614 |
| 96) 2-Hexanone | (3) | 9.973 | 43 | 45043 | 7.351 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 63685 | 6.767 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 21073 | 3.186 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 23324 | 3.523 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1014165 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 31390 | 3.678 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 62979 | 3.559 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 21143 | 3.362 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 105133 | 3.608 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 84043 | 7.136 |
| 107) o-Xylene | (3) | 11.291 | 106 | 42178 | 3.563 |
| 109) Styrene | (3) | 11.311 | 104 | 68981 | 3.479 |
| 110) Bromoform | (3) | 11.471 | 173 | 14901 | 2.991 |
| 111) Isopropylbenzene | (3) | 11.600 | 105 | 106205 | 3.568 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 60483A | 181.002 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 483911 | 50.199 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 420778 | 50.425 |
| 108) Xylene (Total) | (3) | | 106 | 126221 | 10.699 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 34547 | 3.590 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 28596 | 3.505 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 93284 | 36.678 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 10771 | 3.679 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 124213 | 3.631 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 25897 | 3.488 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 91451 | 3.552 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 27152 | 3.500 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 18548M | 3.364 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 14539 | 3.038 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 94110 | 3.552 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 113185 | 3.536 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 55202 | 3.592 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 99887 | 3.498 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 553830 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 57542 | 3.627 |

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 97304 | 3.536 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 65474 | 3.292 |
| 136) 1,3-Diethylbenzene | (4) | 12.796 | 119 | 60210 | 3.473 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 63426 | 3.516 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 50450 | 3.622 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 54896 | 3.596 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 50122 | 3.470 |
| 141) Diethylbenzene (total) | (4) | | 100 | 173758 | 10.460 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 7357 | 3.478 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 42184 | 3.664 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 42083 | 3.727 |
| 147) Hexachlorobutadiene | (4) | 14.089 | 225 | 17720 | 3.705 |
| 148) Naphthalene | (4) | 14.188 | 128 | 134032 | 3.759 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 40159 | 3.734 |
| 150) 2-Methylnaphthalene | (4) | 14.909 | 142 | 91447 | 3.872 |



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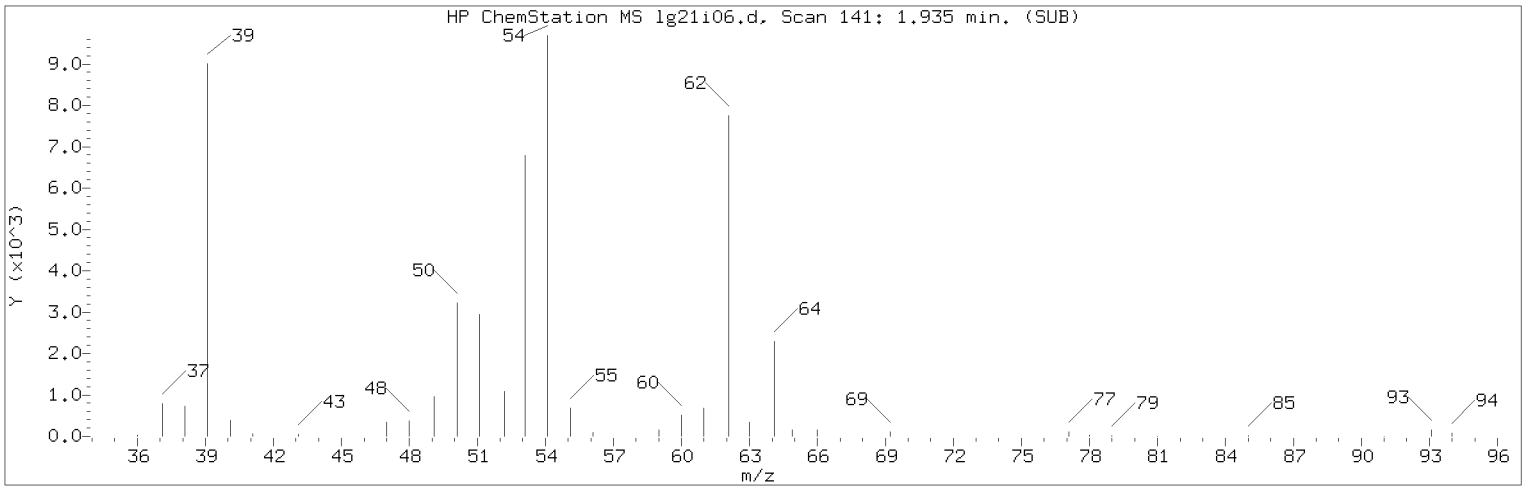
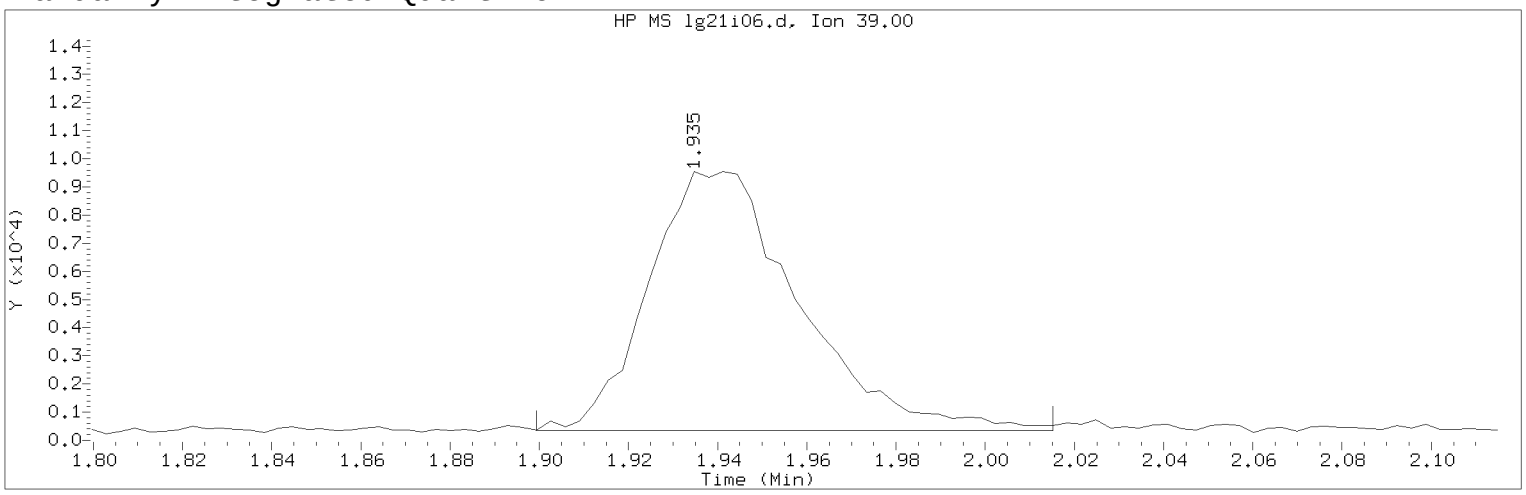
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

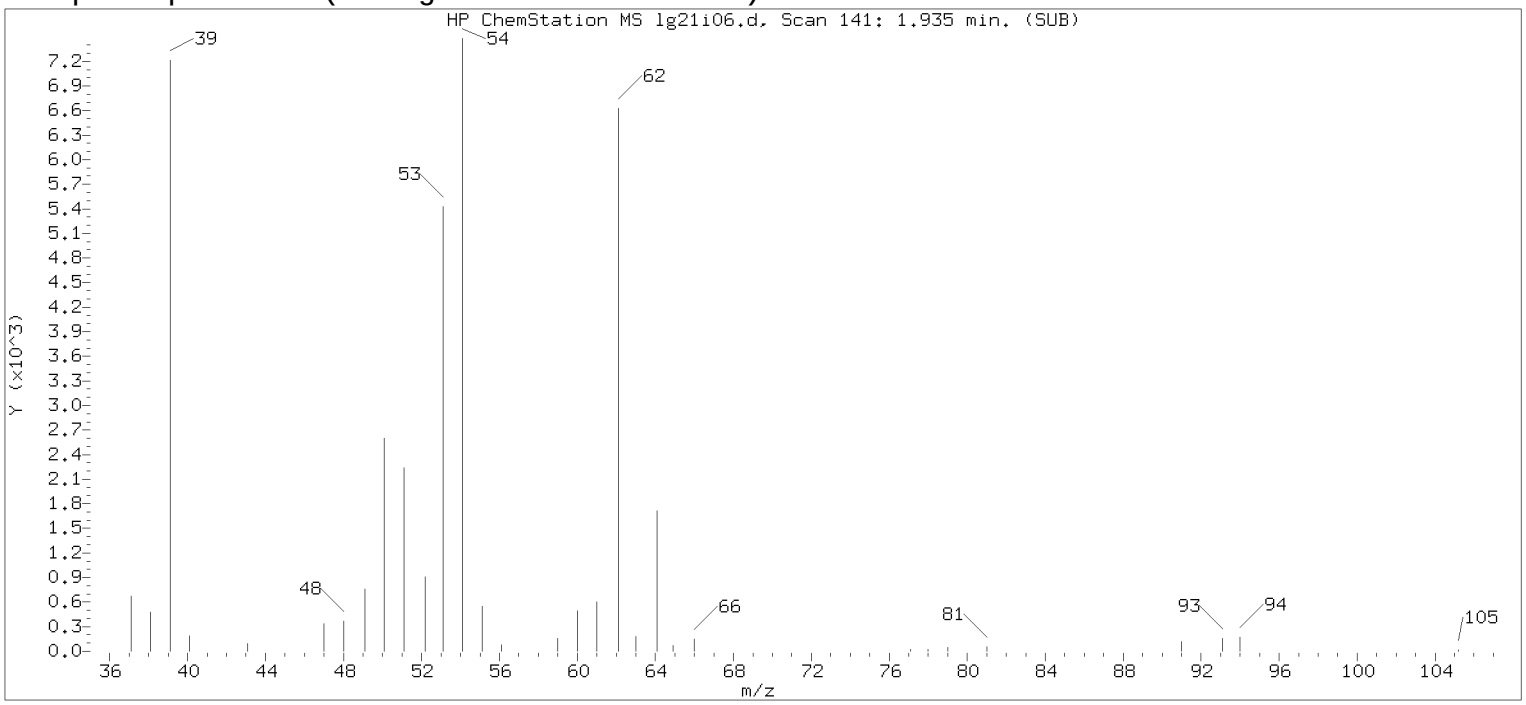
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 141
Retention Time (minutes): 1.935
Quant Ion : 39.00
Area (flag) : 21551M
On-Column Amount (ng) : 3.9584
Integration start scan : 129 Integration stop scan: 165
Y at integration start : 346 Y at integration end: 346

Reason for manual integration: improper integration

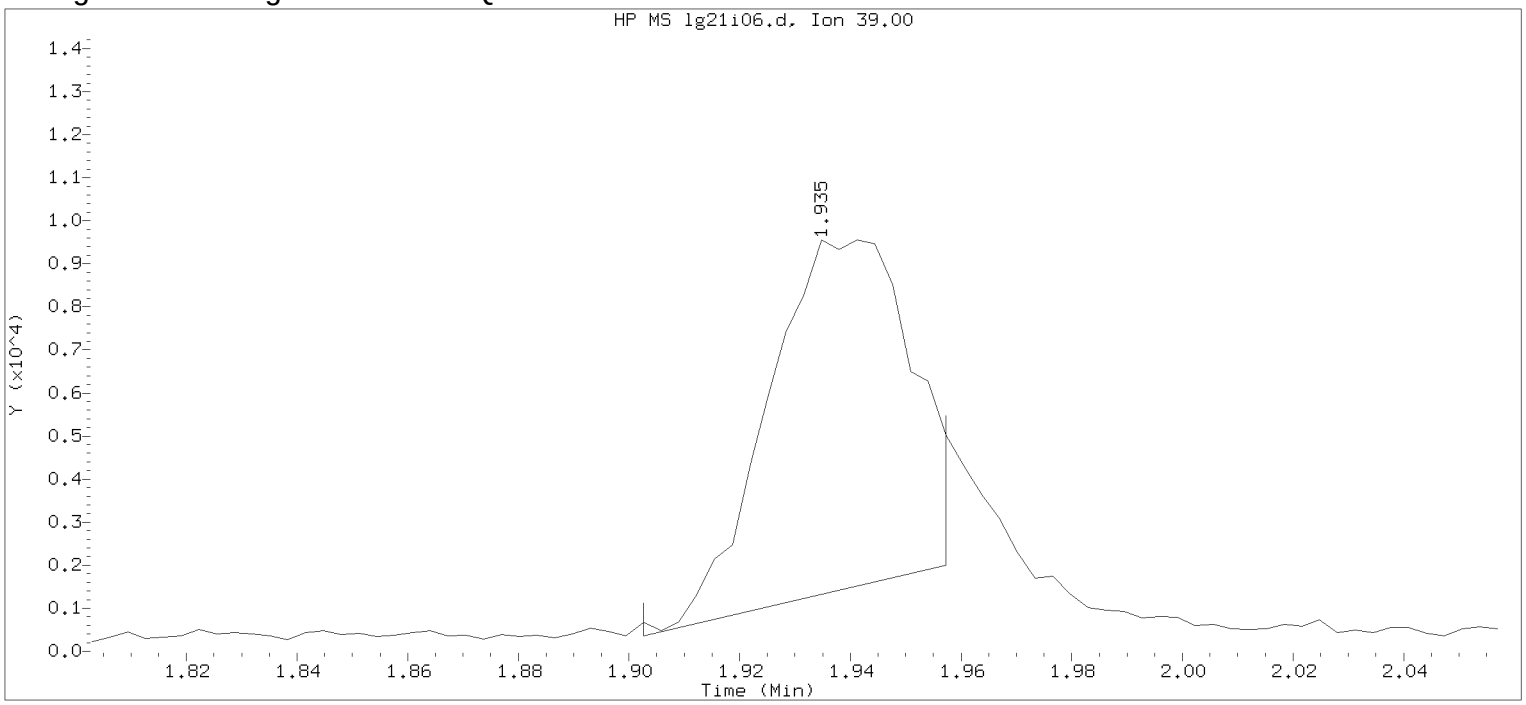
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

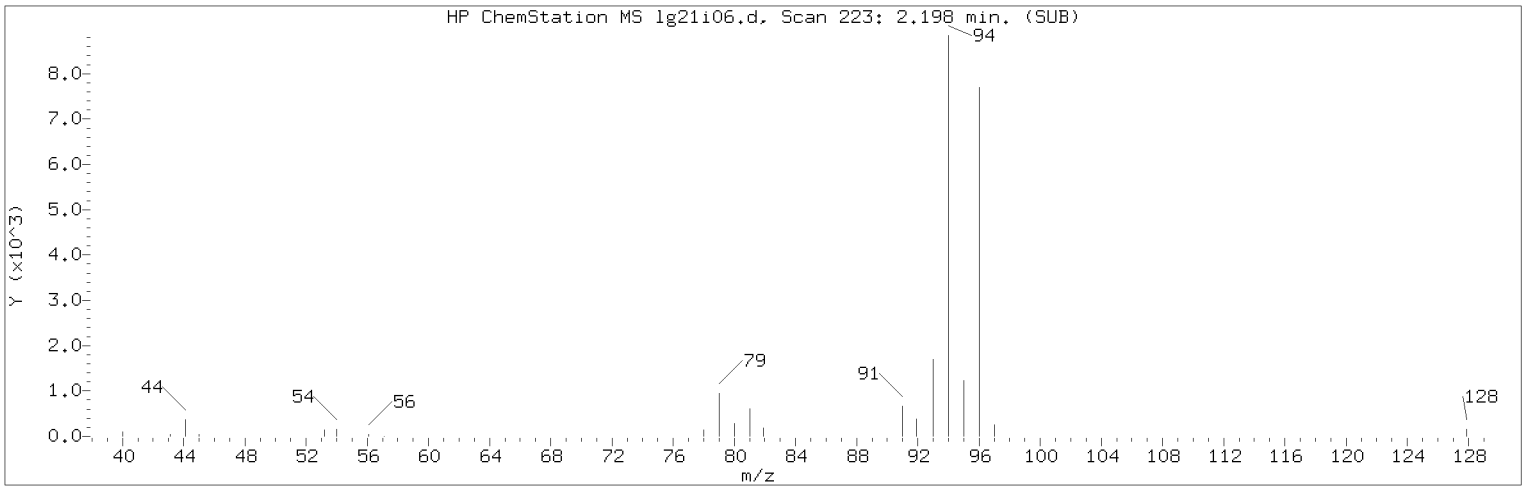
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

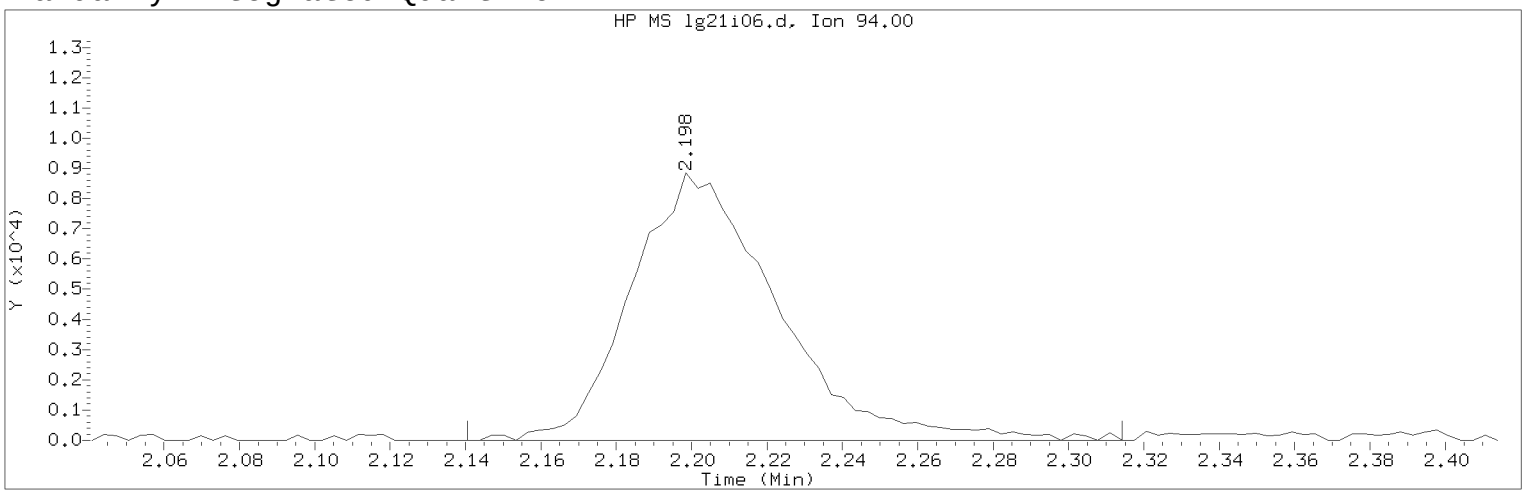
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 141
Retention Time (minutes): 1.935
Quant Ion : 39.00
Area : 14471
On-column Amount (ng) : 2.8103
Integration start scan : 130 Integration stop scan: 147
Y at integration start : 364 Y at integration end: 1998

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

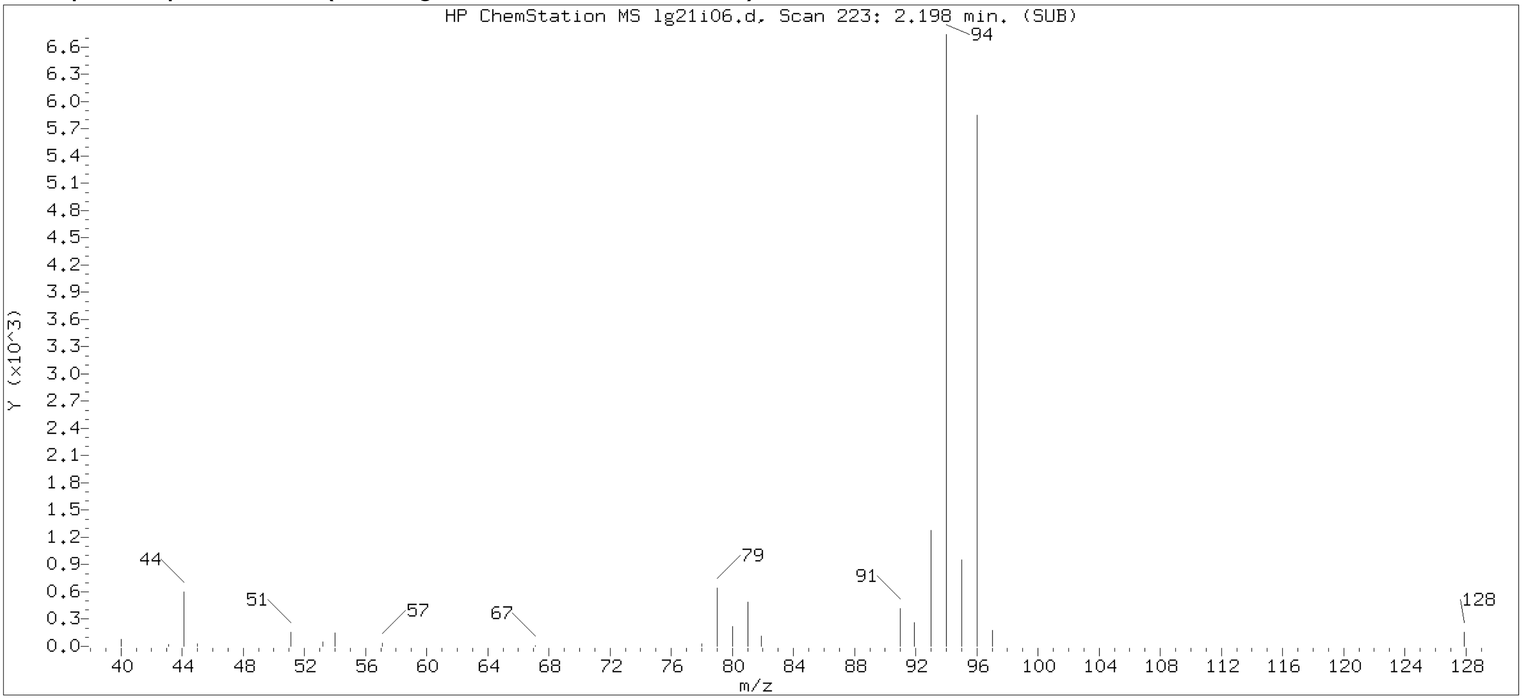
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area (flag) : 23782M
On-Column Amount (ng) : 4.2397
Integration start scan : 204 Integration stop scan: 258
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

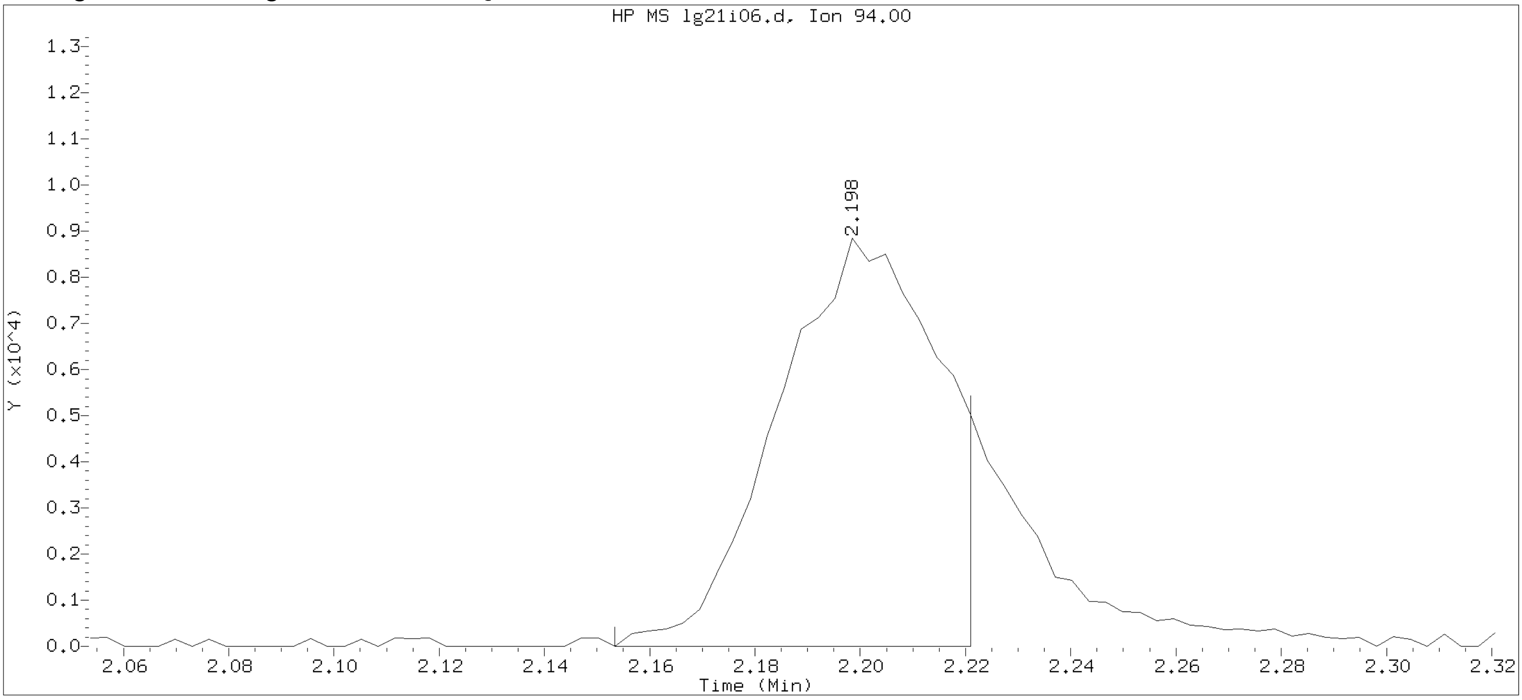
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

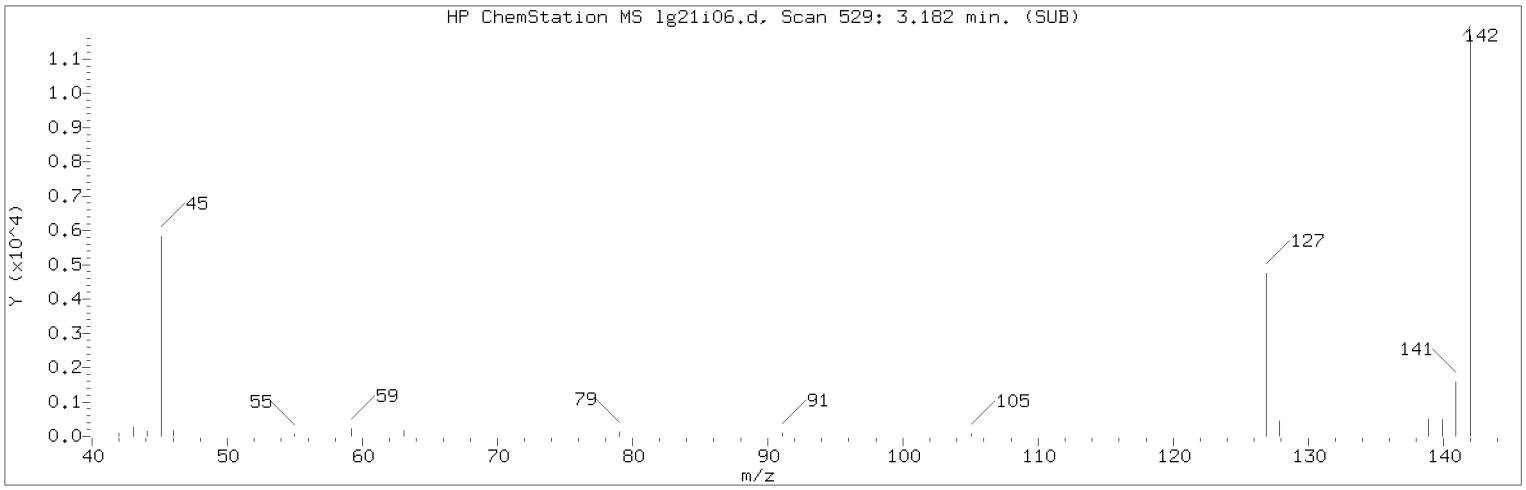
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

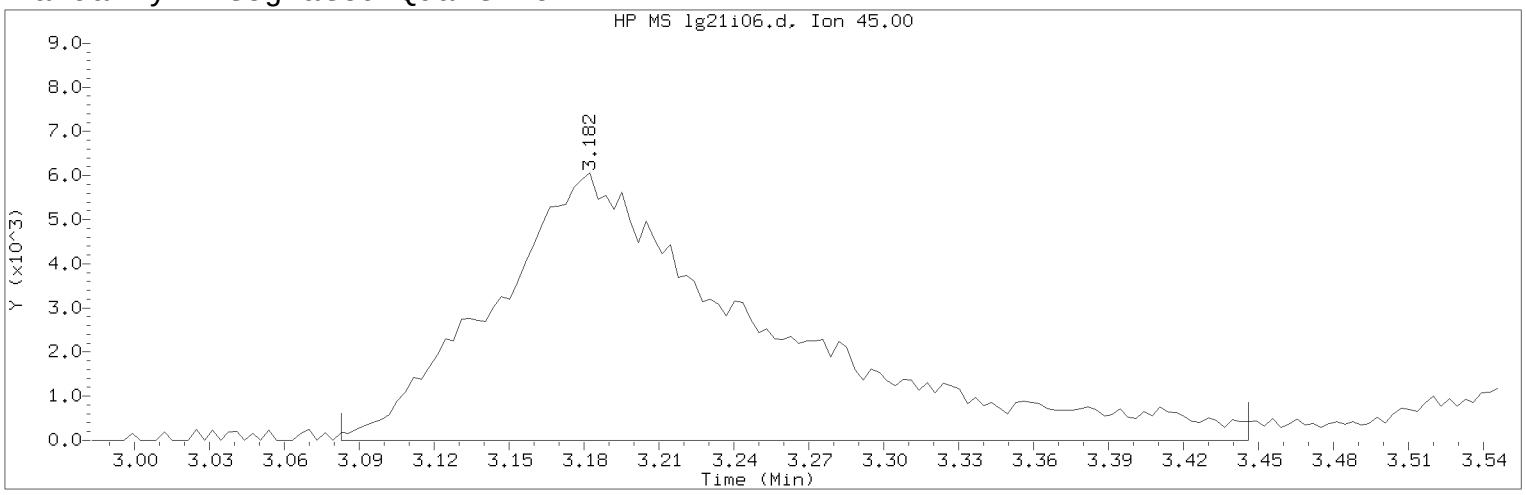
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area : 18554
On-column Amount (ng) : 3.4413
Integration start scan : 208 Integration stop scan: 229
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

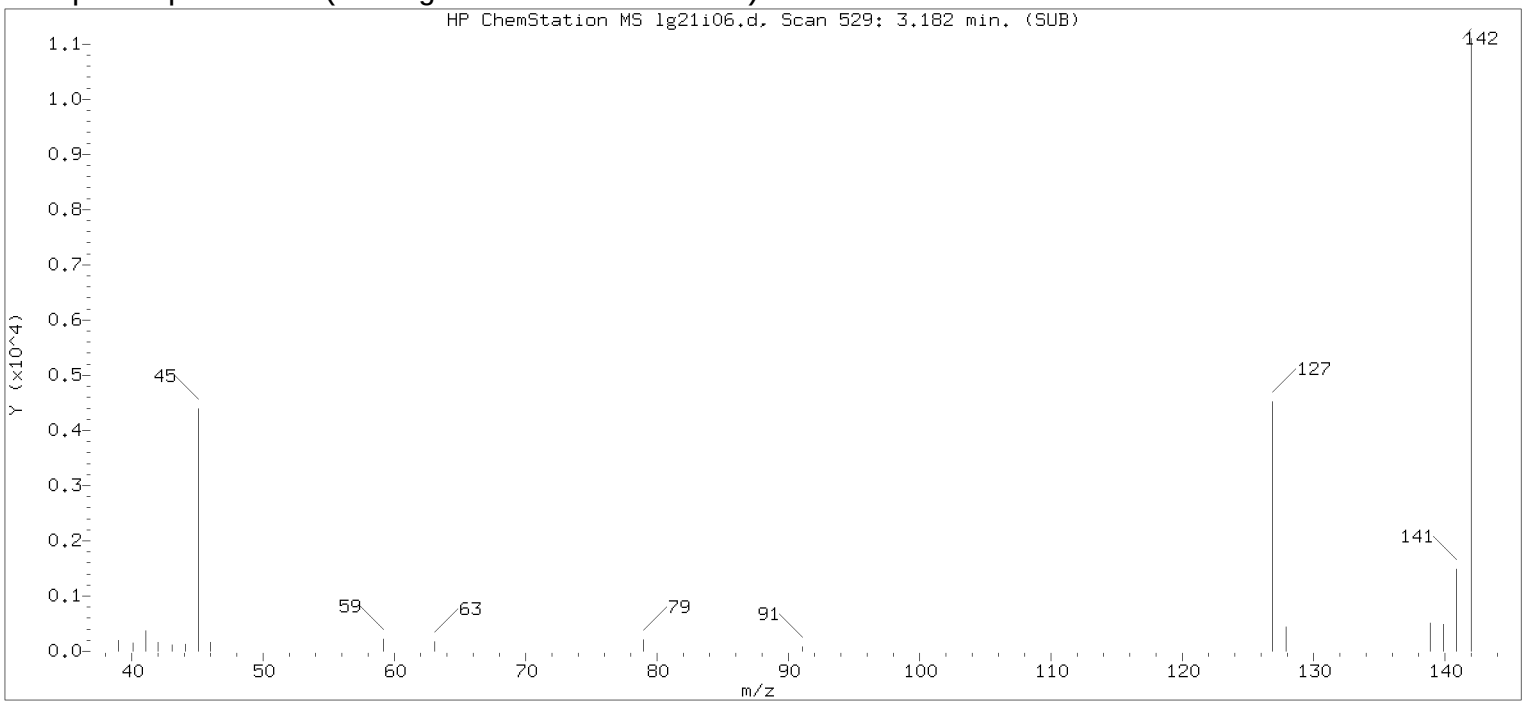
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area (flag) : 45726M
On-Column Amount (ng) : 83.3675
Integration start scan : 497 Integration stop scan: 610
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

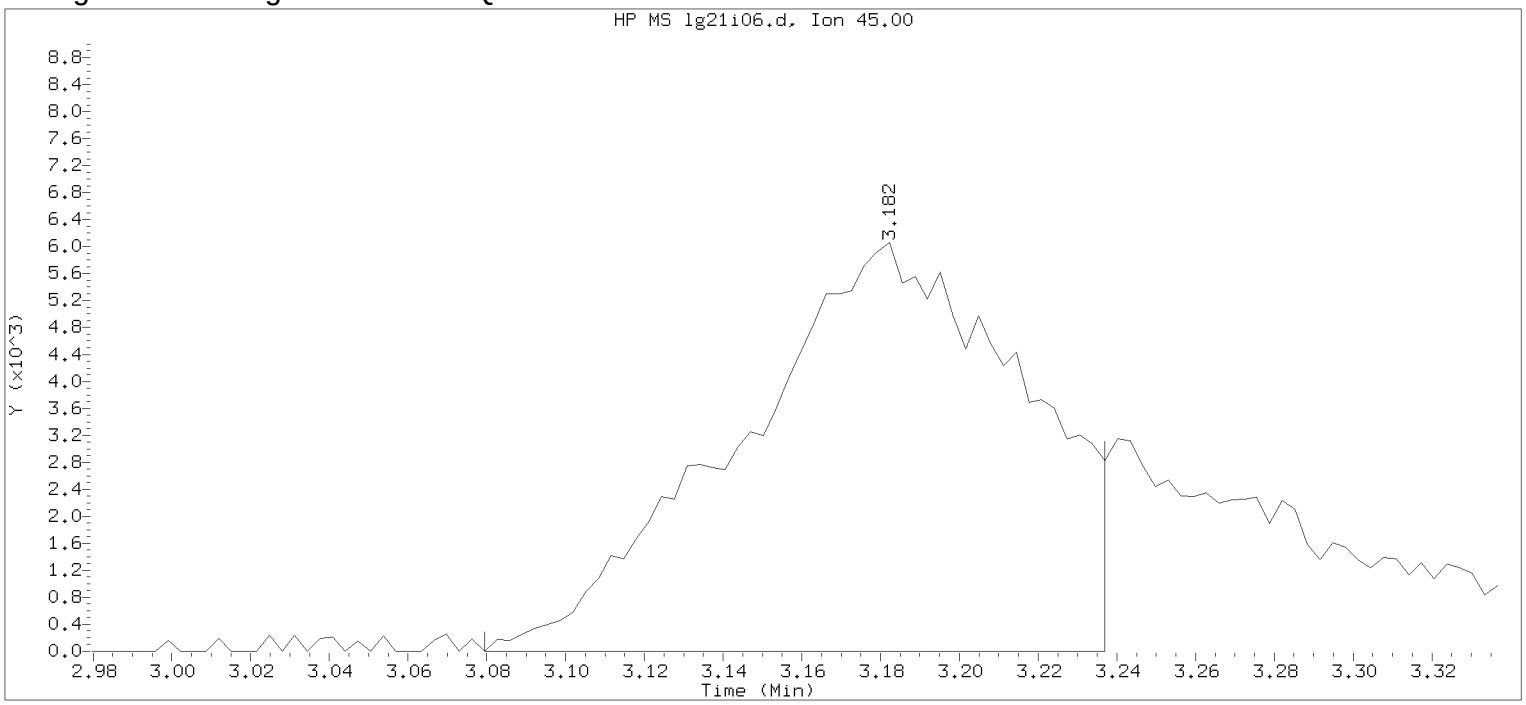
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

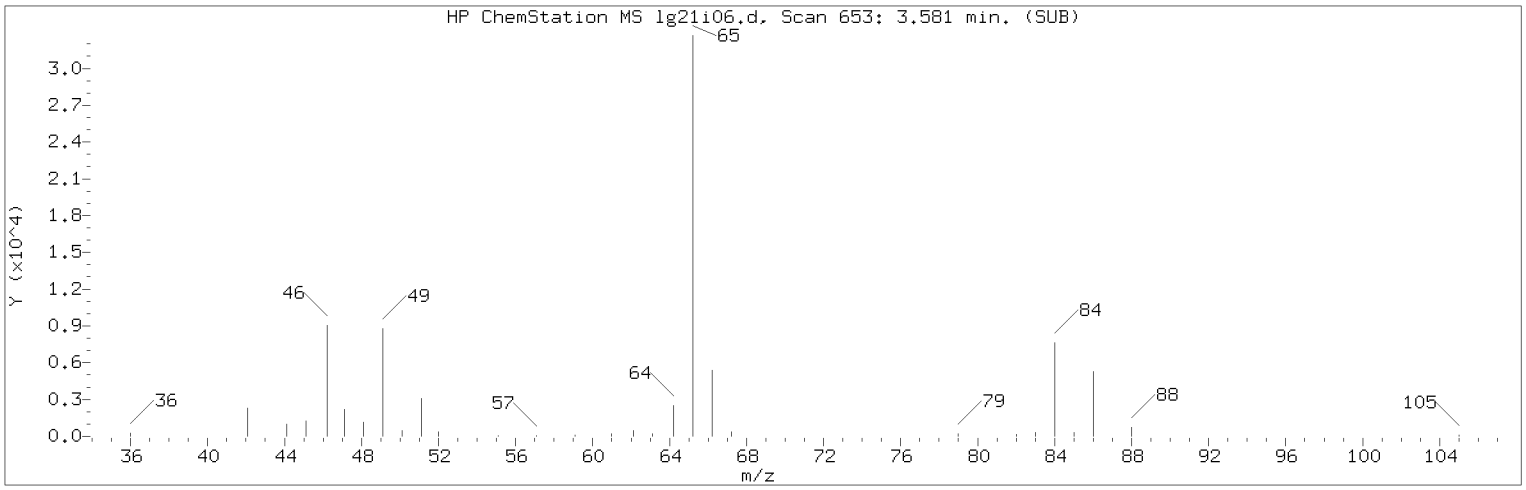
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

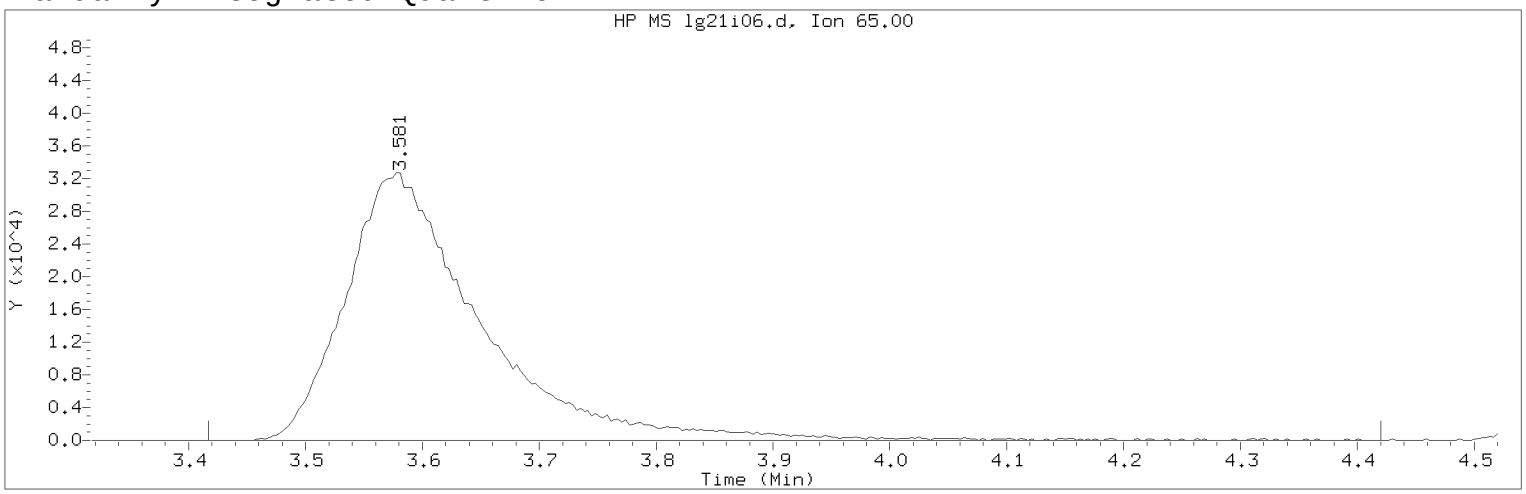
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 529
Retention Time (minutes): 3.182
Quant Ion : 45.00
Area : 30413
On-column Amount (ng) : 57.4437
Integration start scan : 496 Integration stop scan: 545
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

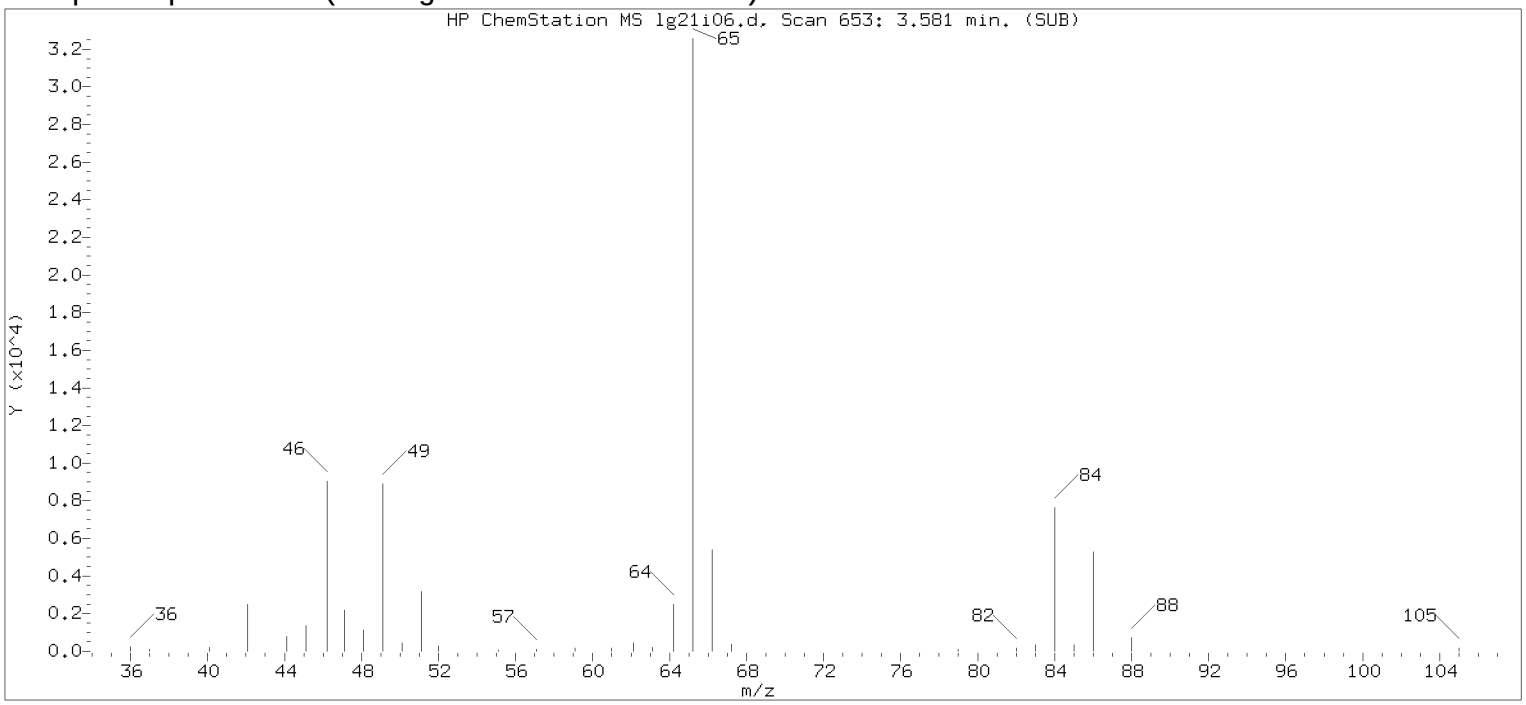
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area (flag) : 261323M
On-Column Amount (ng) : 250.0000
Integration start scan : 601 Integration stop scan: 913
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

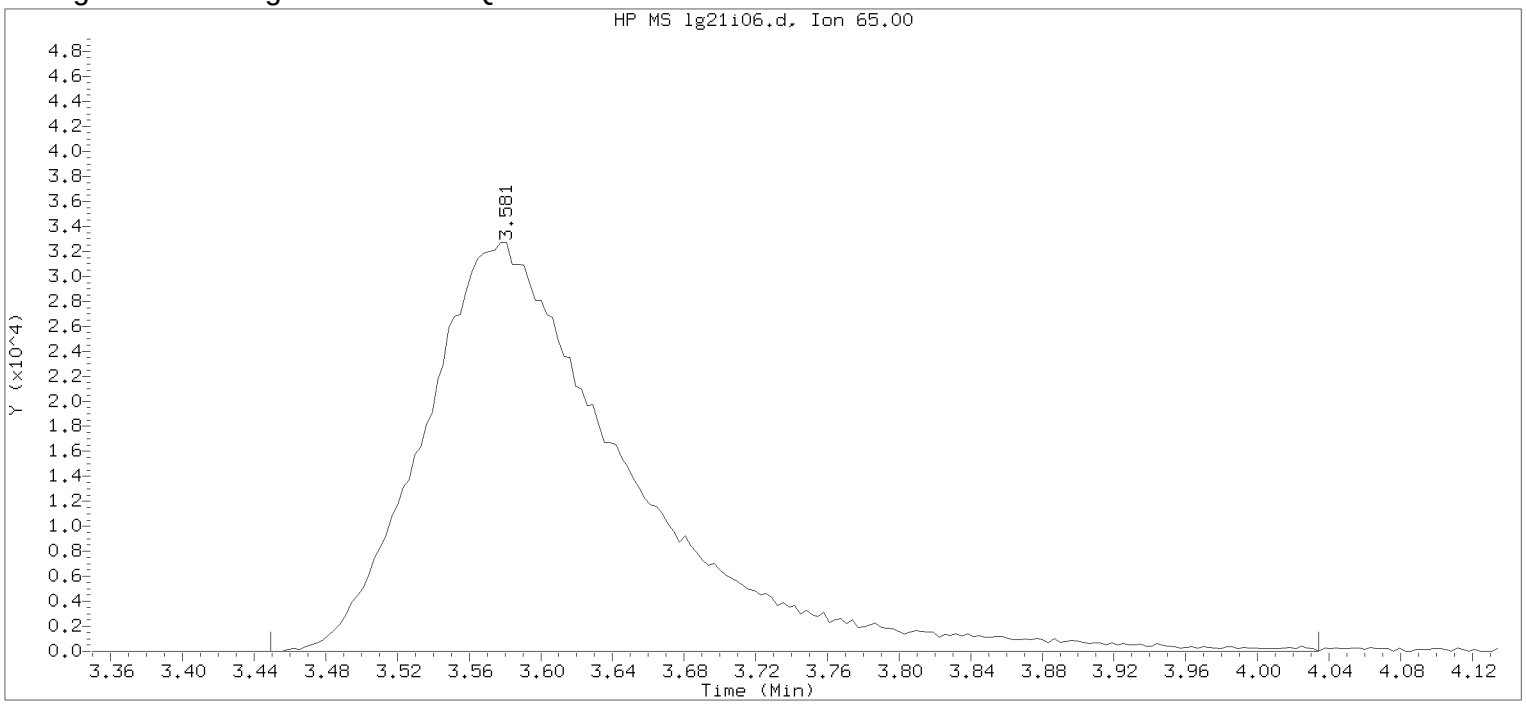
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

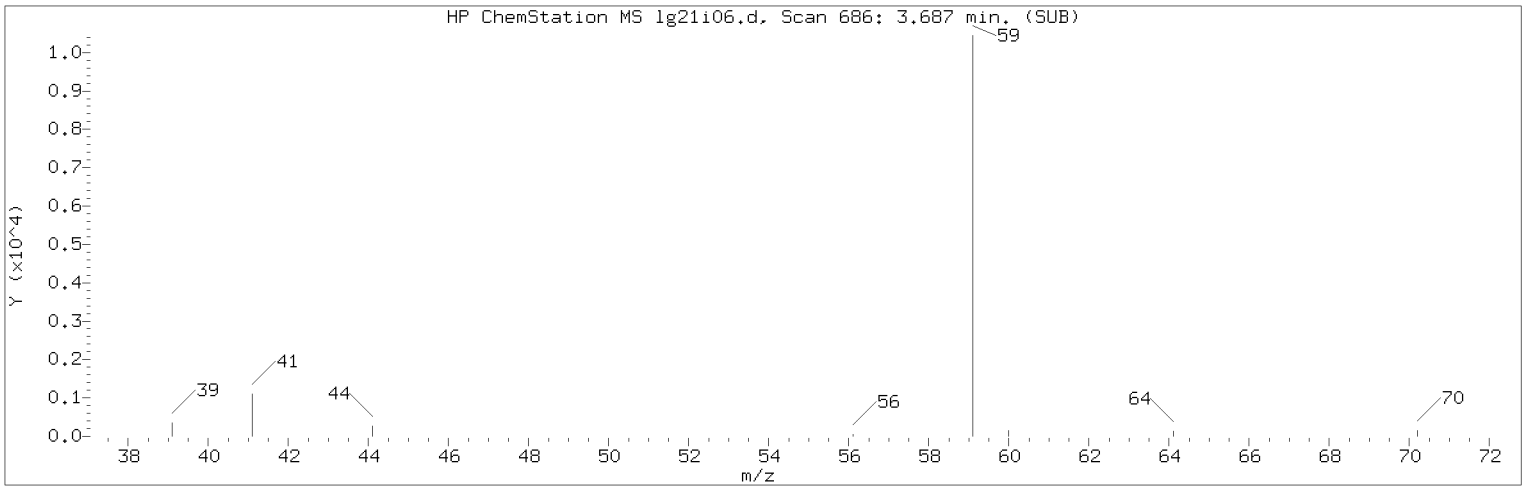
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

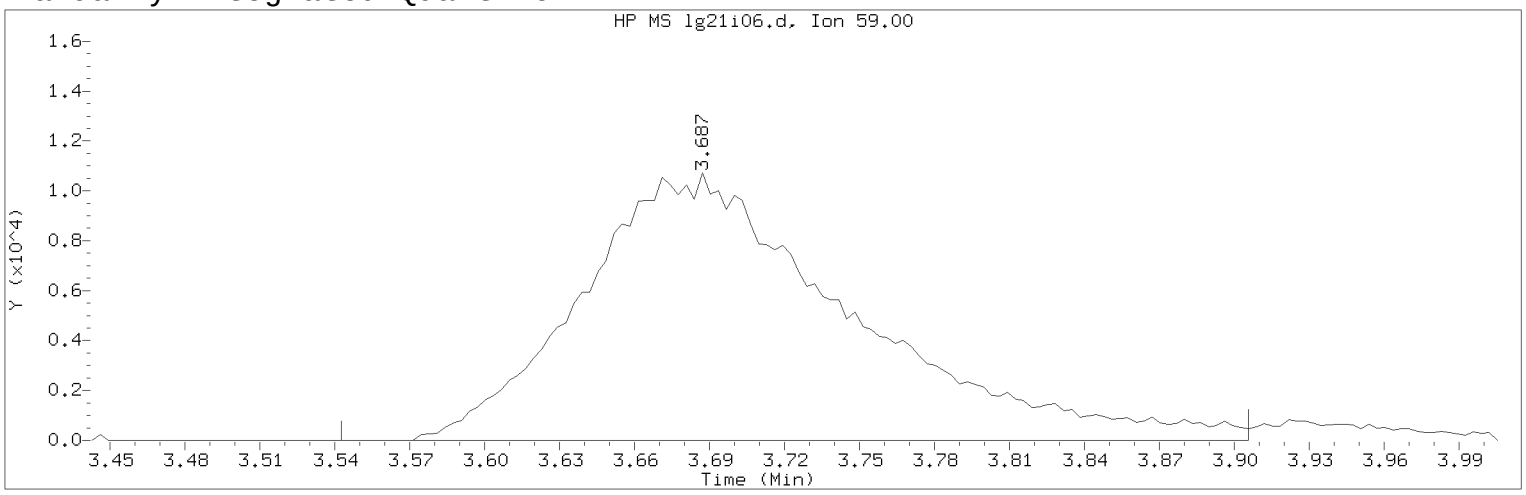
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 653
Retention Time (minutes): 3.581
Quant Ion : 65.00
Area : 259395
On-column Amount (ng) : 250.0000
Integration start scan : 611 Integration stop scan: 793
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

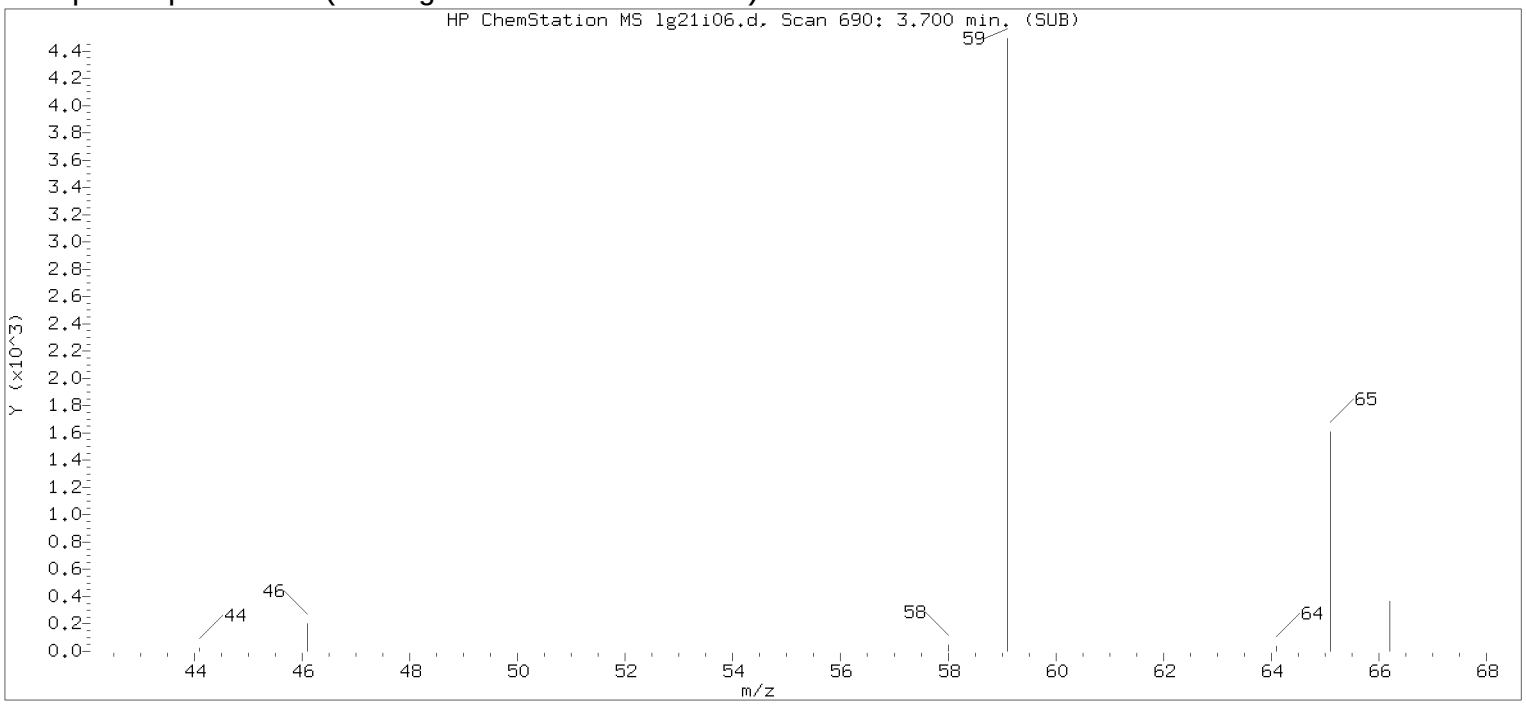
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 686
Retention Time (minutes): 3.687
Quant Ion : 59.00
Area (flag) : 79916M
On-Column Amount (ng) : 77.4082
Integration start scan : 640 Integration stop scan: 753
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

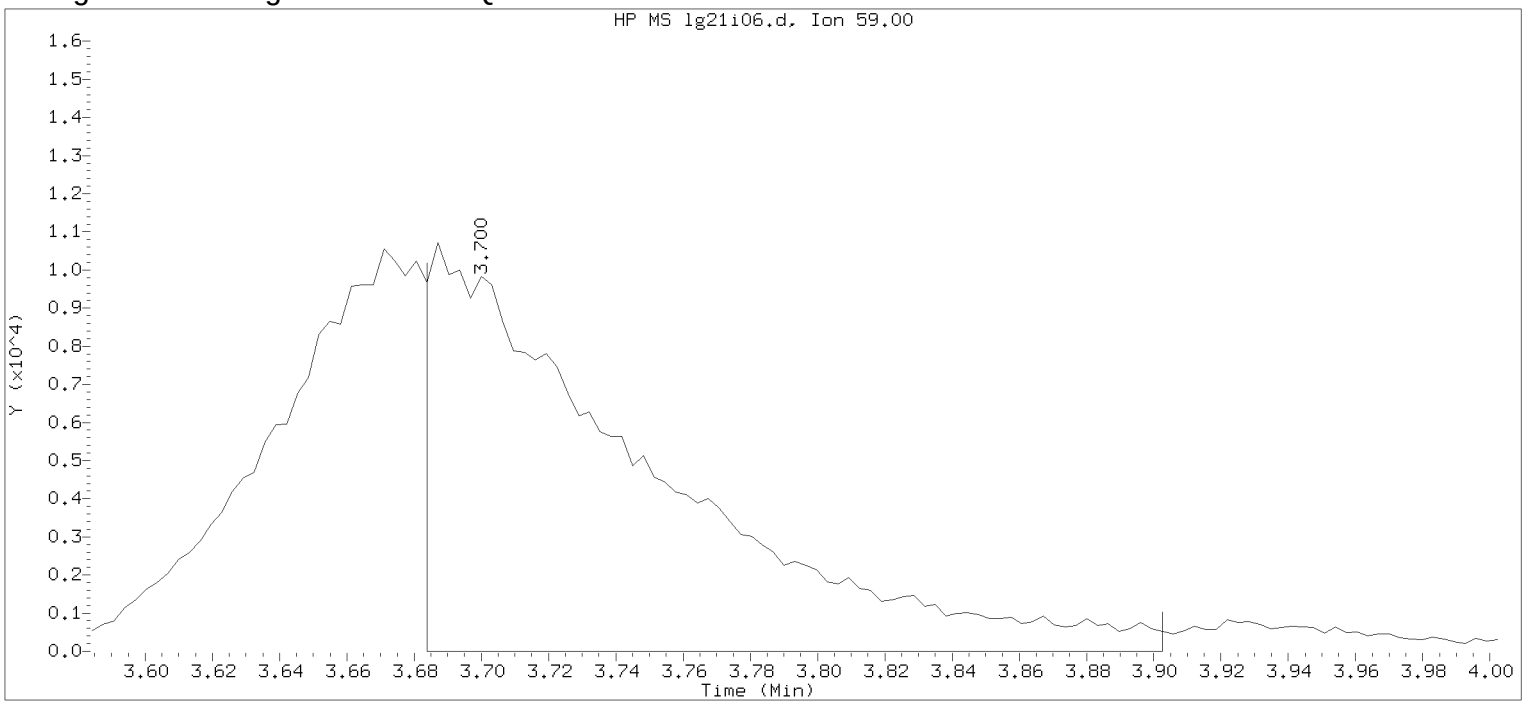
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

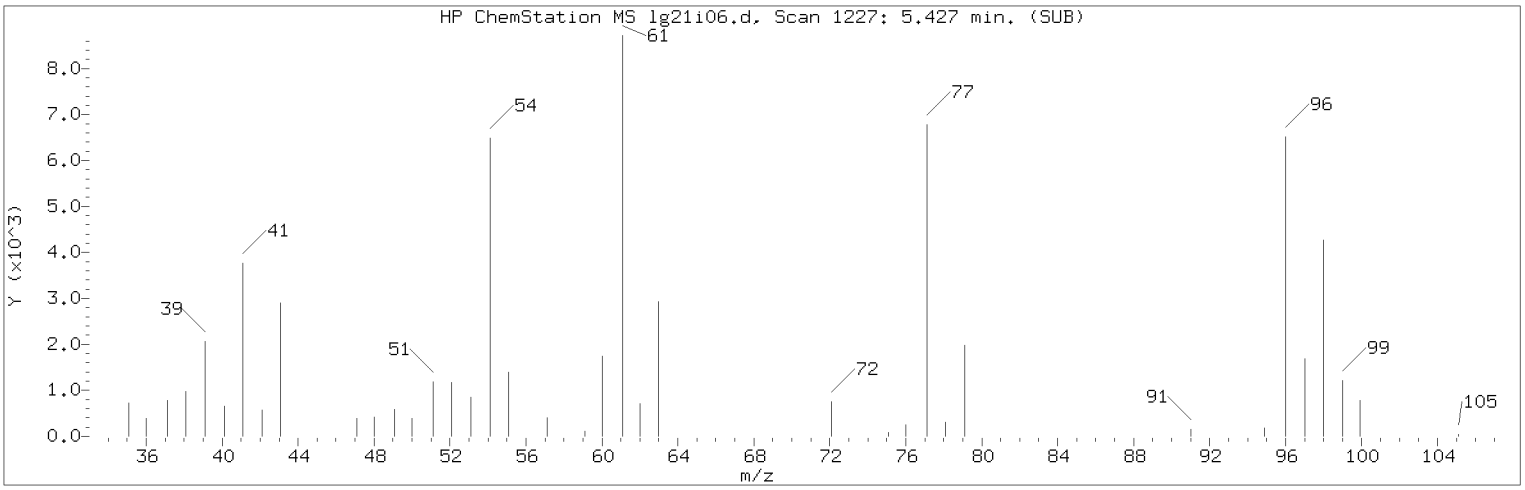
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

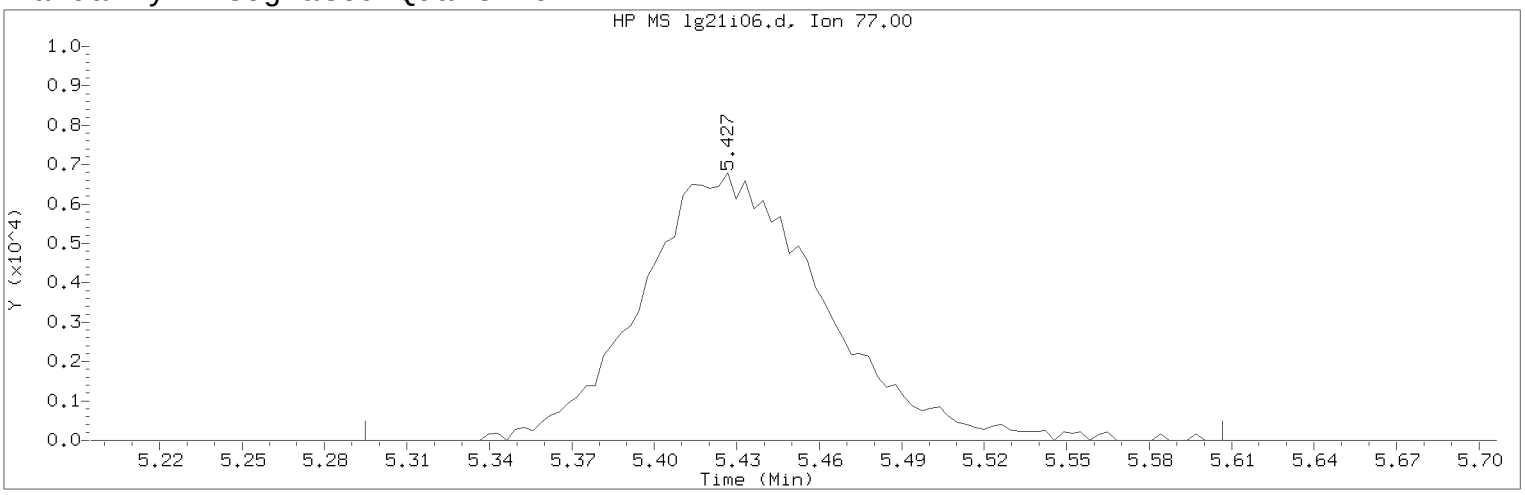
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 690
Retention Time (minutes): 3.700
Quant Ion : 59.00
Area : 46890
On-column Amount (ng) : 47.4796
Integration start scan : 684 Integration stop scan: 752
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

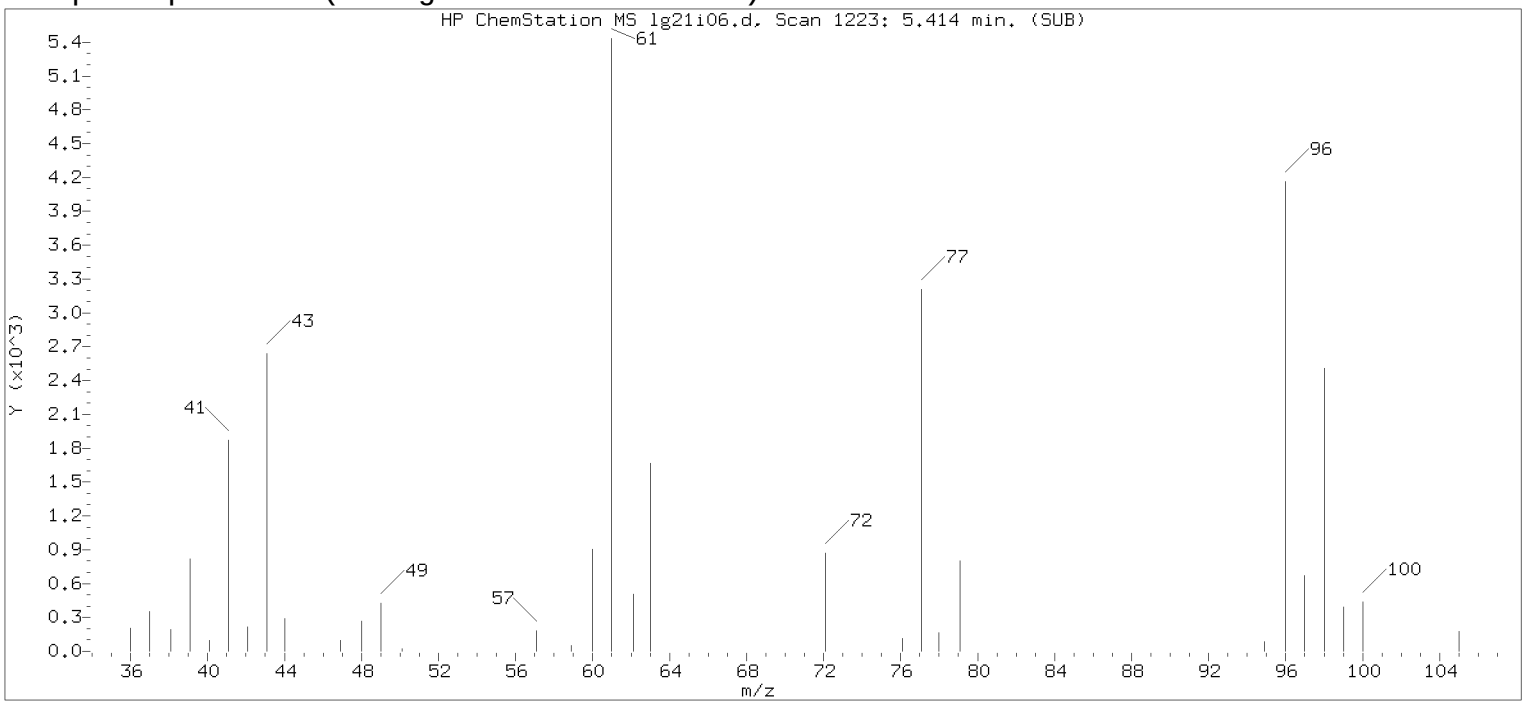
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1227
Retention Time (minutes): 5.427
Quant Ion : 77.00
Area (flag) : 31425M
On-Column Amount (ng) : 3.7014
Integration start scan : 1185 Integration stop scan: 1282
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

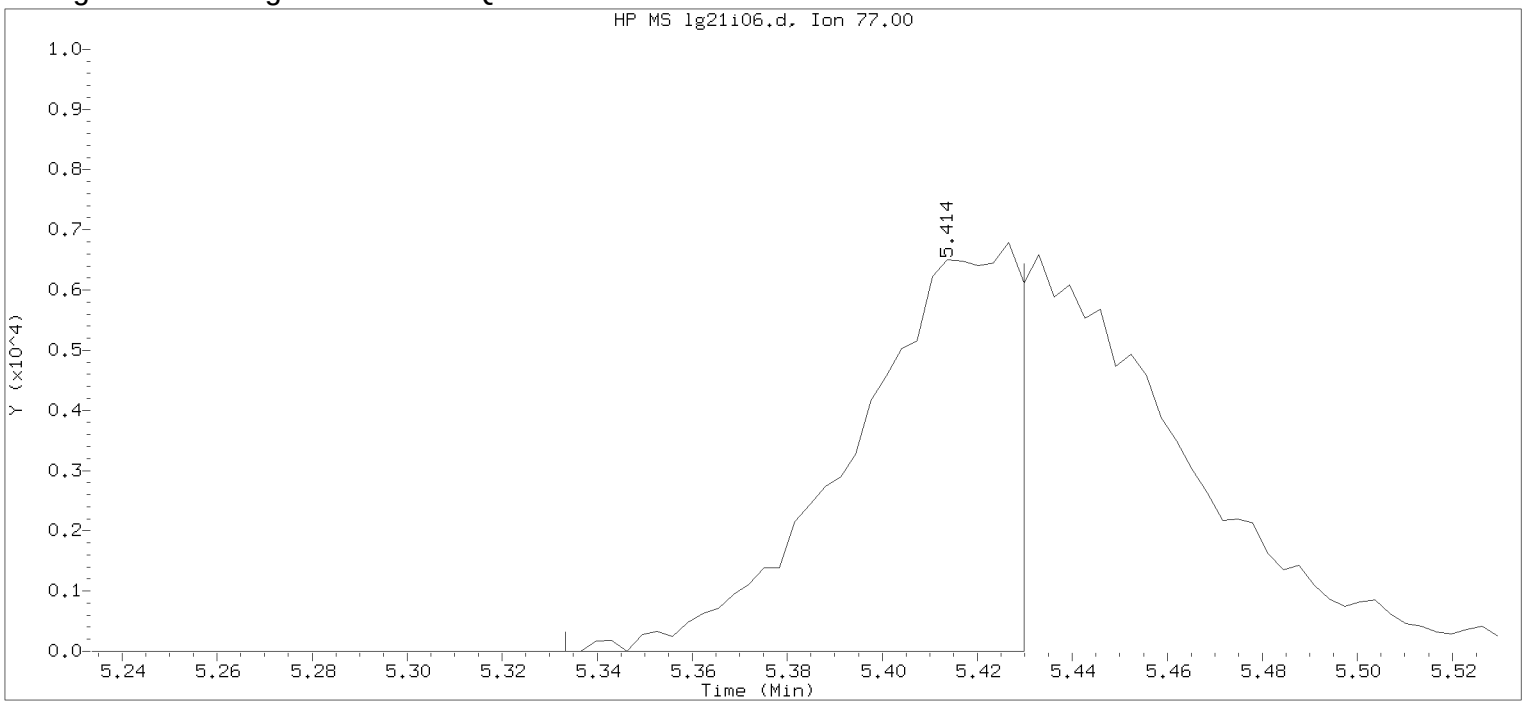
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

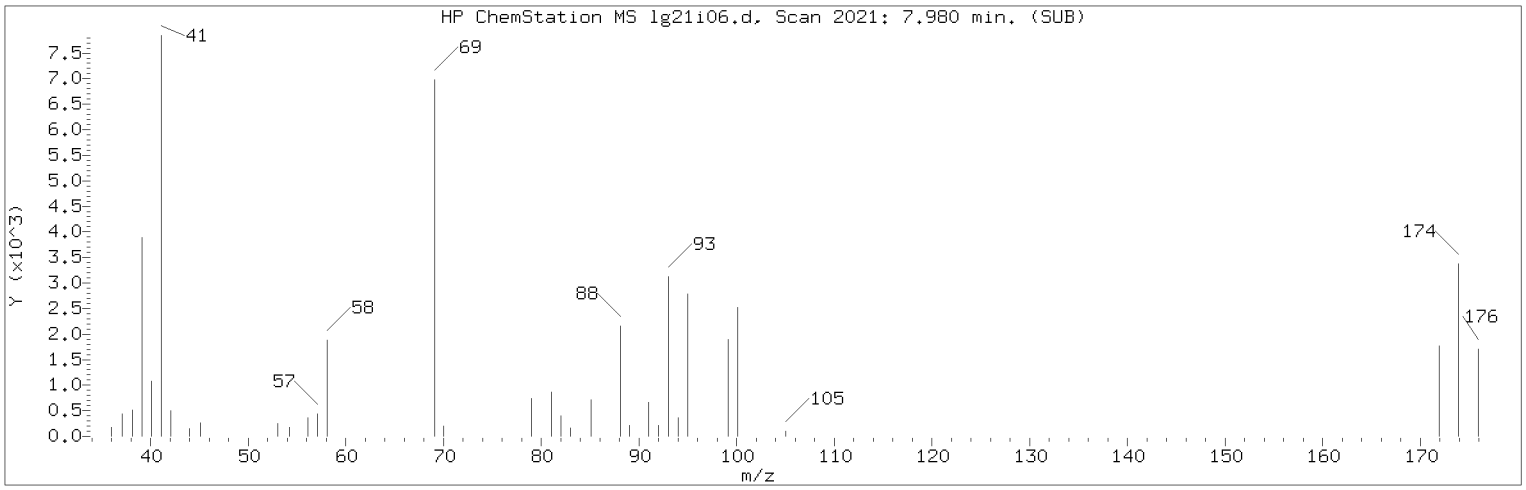
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

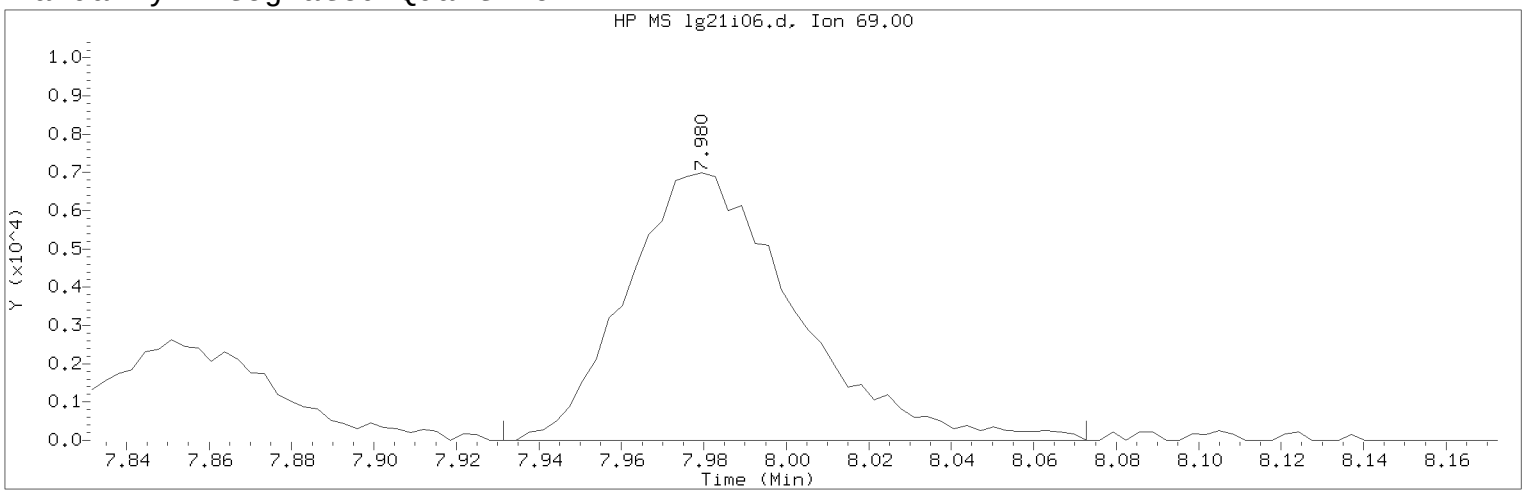
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1223
Retention Time (minutes): 5.414
Quant Ion : 77.00
Area : 15850
On-column Amount (ng) : 2.0215
Integration start scan : 1197 Integration stop scan: 1227
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

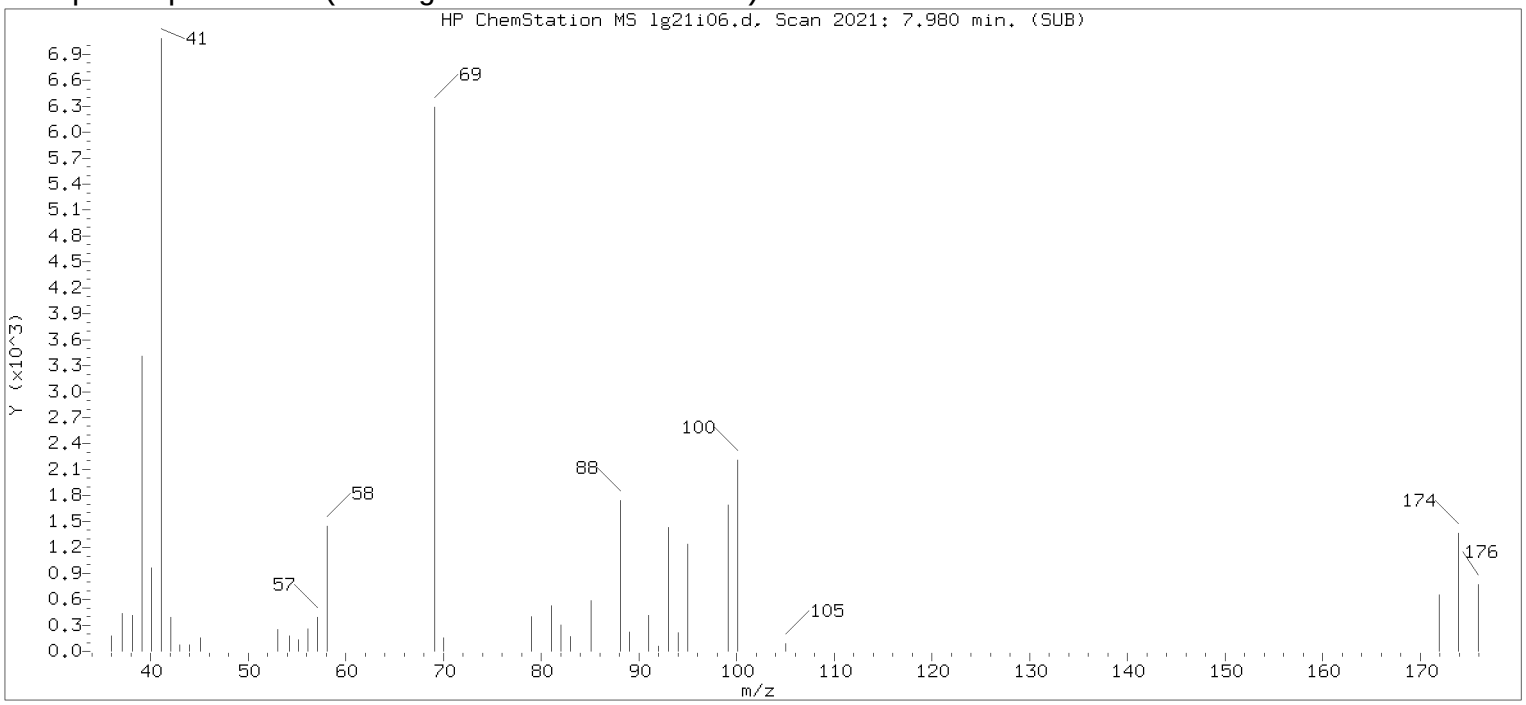
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 69.00
Area (flag) : 19843M
On-Column Amount (ng) : 3.5779
Integration start scan : 2005 Integration stop scan: 2049
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

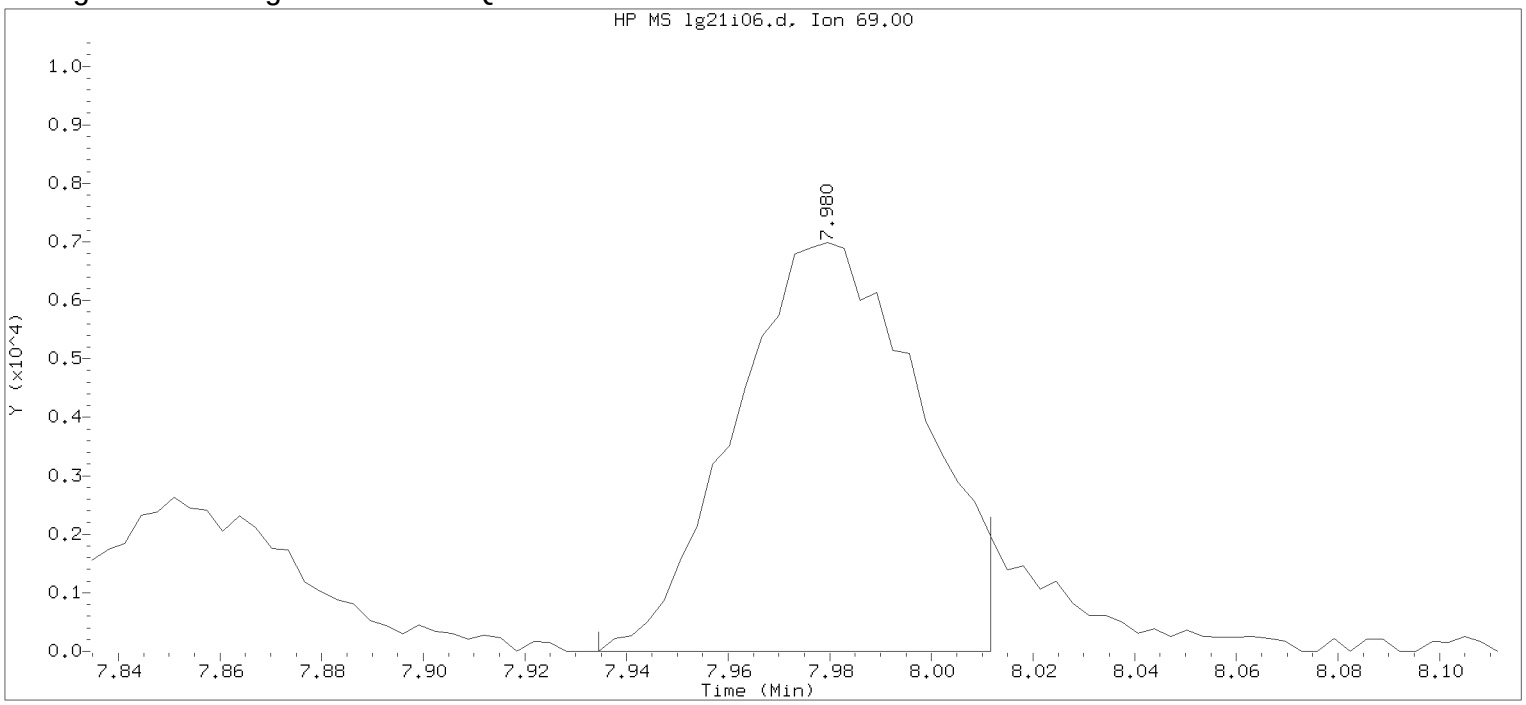
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

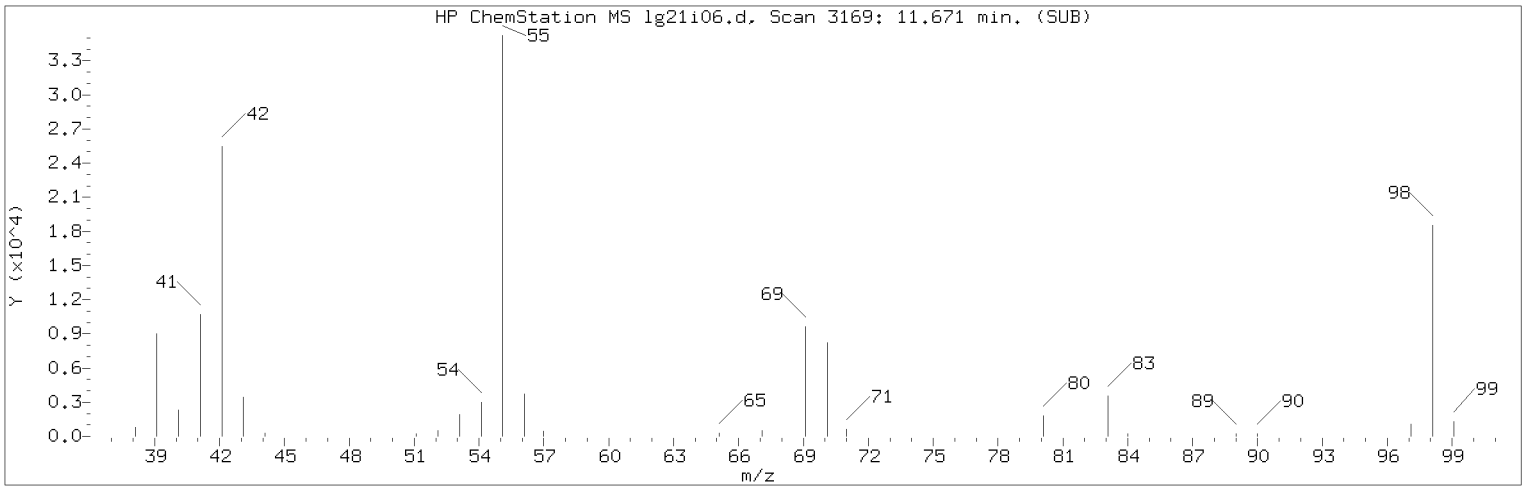
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

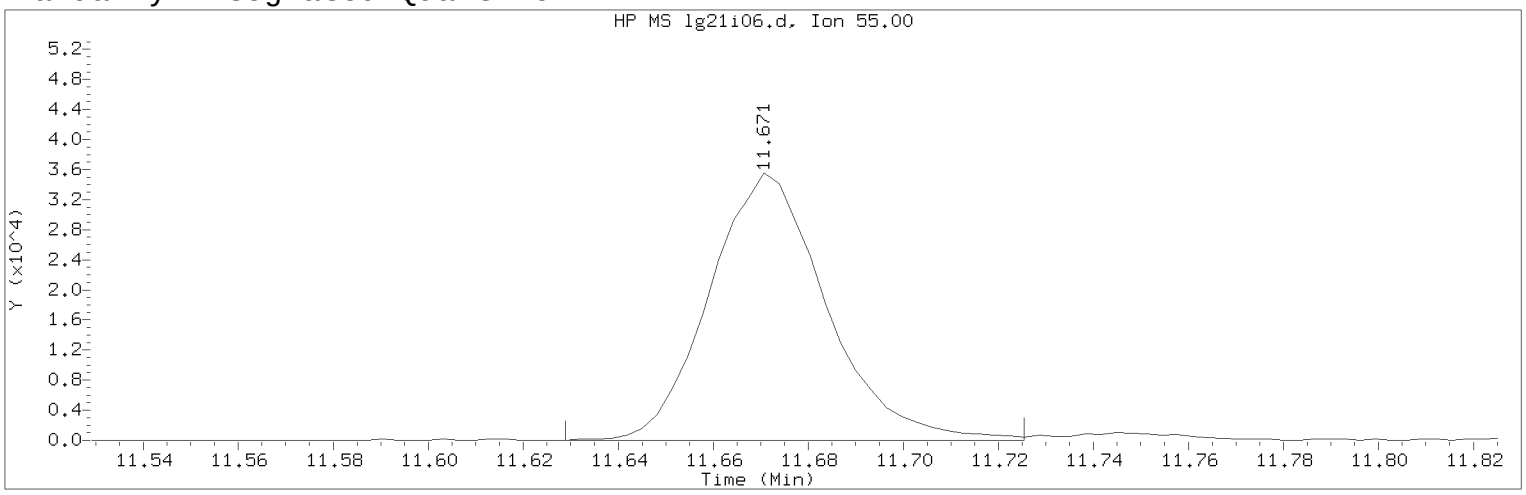
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2021
Retention Time (minutes): 7.980
Quant Ion : 69.00
Area : 17662
On-column Amount (ng) : 3.3345
Integration start scan : 2006 Integration stop scan: 2030
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

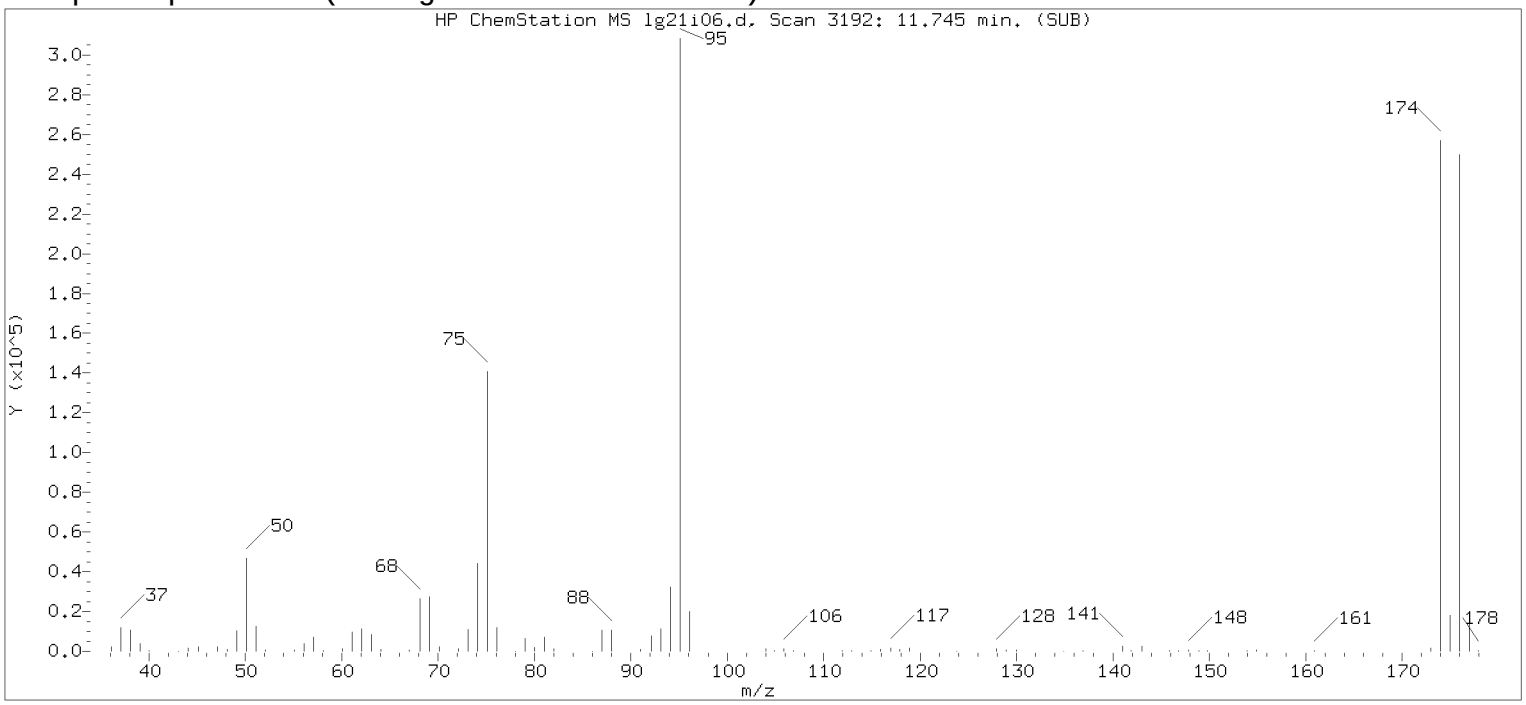
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3169
Retention Time (minutes): 11.671
Quant Ion : 55.00
Area (flag) : 60483A
On-Column Amount (ng) : 181.0022
Integration start scan : 3155 Integration stop scan: 3185
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

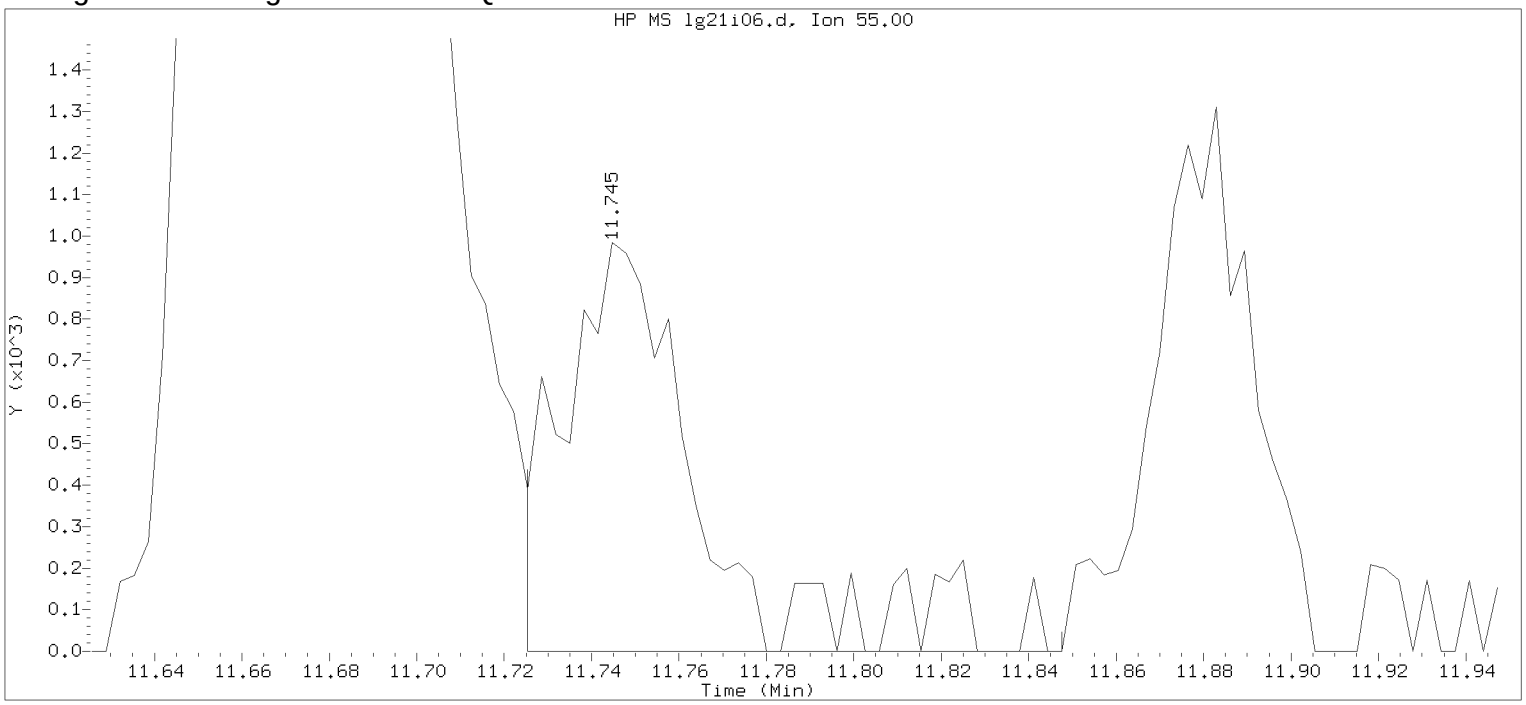
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 3192
Retention Time (minutes): 11.745
Quant Ion : 55.00
Area : 2173
On-column Amount (ng) : 7.4013
Integration start scan : 3185 Integration stop scan: 3223
Y at integration start : 0 Y at integration end: 0

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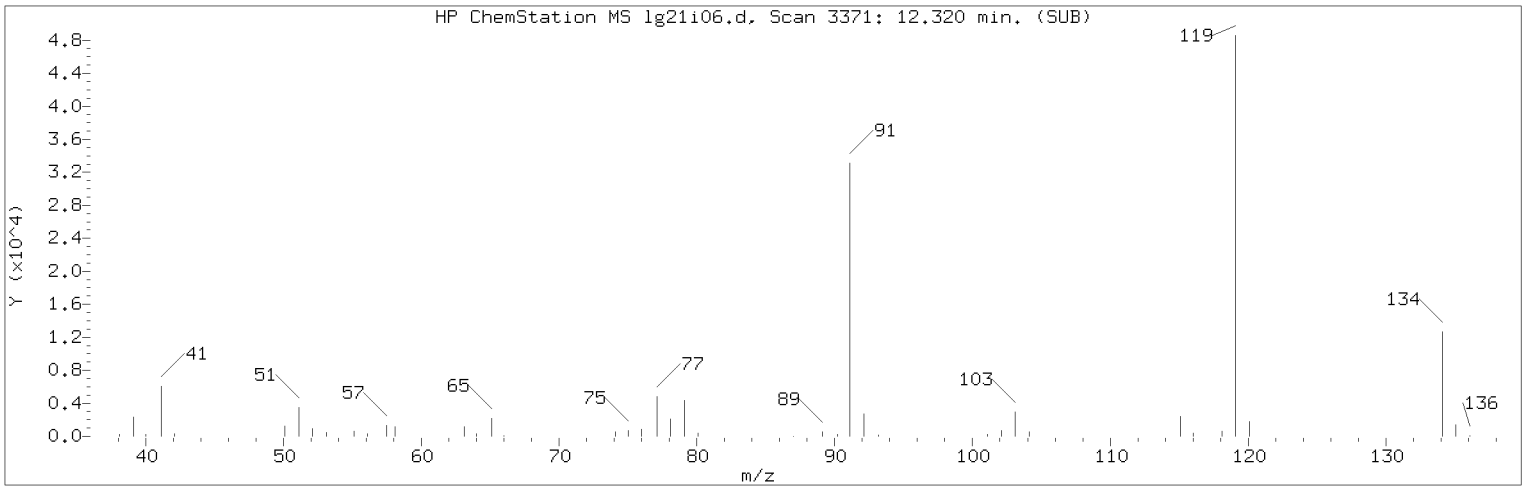
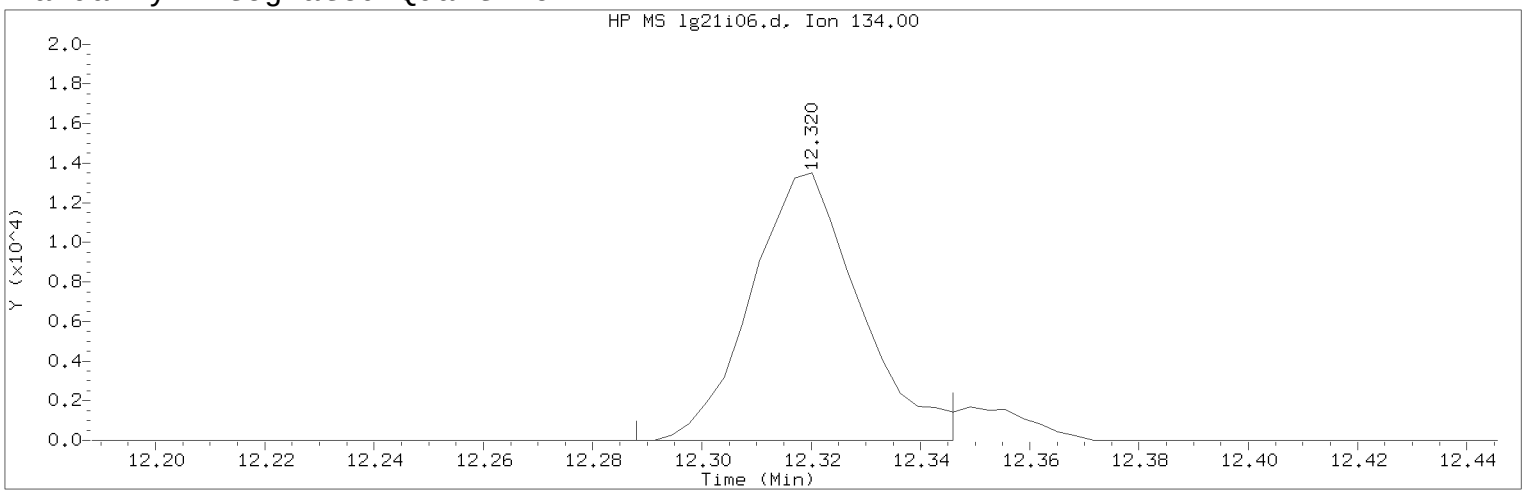
Target 3.5 esignature userKAS02648 Page 149

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 12:04 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

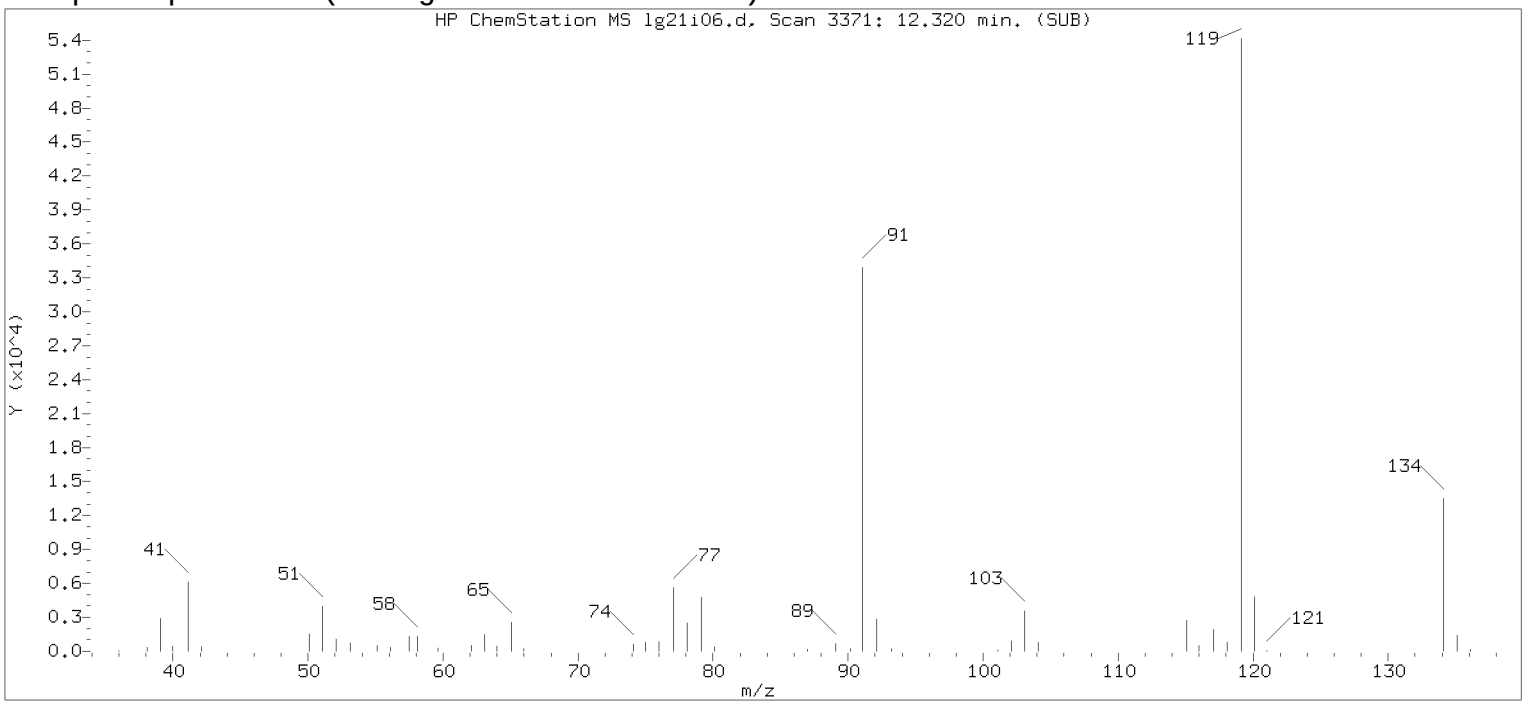
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 18548M
On-Column Amount (ng) : 3.3643
Integration start scan : 3360 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

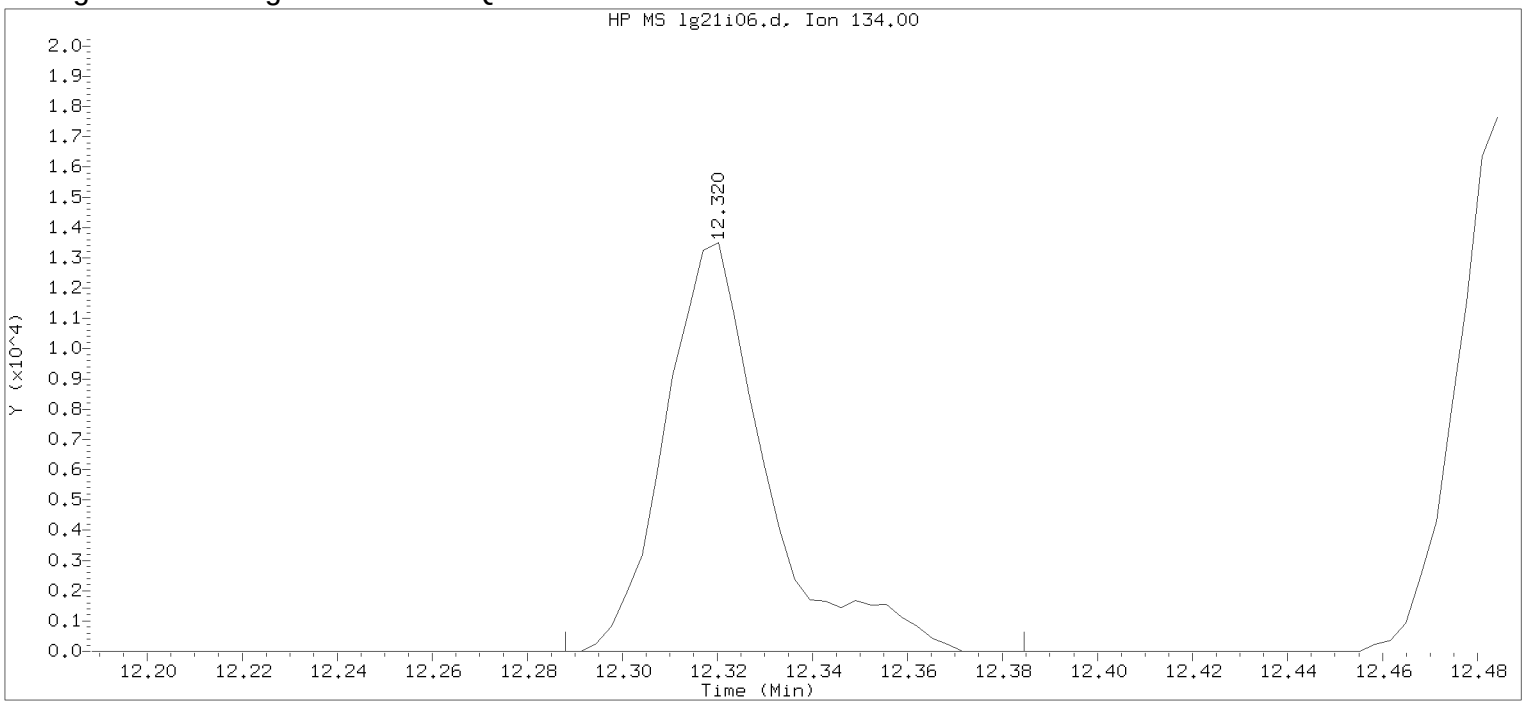
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i06.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:30 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 11:55
Date, time and analyst ID of latest file update: 21-Aug-2017 11:55 kas02648

Sample Name: VSTD004 Lab Sample ID: VSTD004

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 19961
On-column Amount (ng) : 3.4049
Integration start scan : 3360 Integration stop scan: 3390
Y at integration start : 0 Y at integration end: 0

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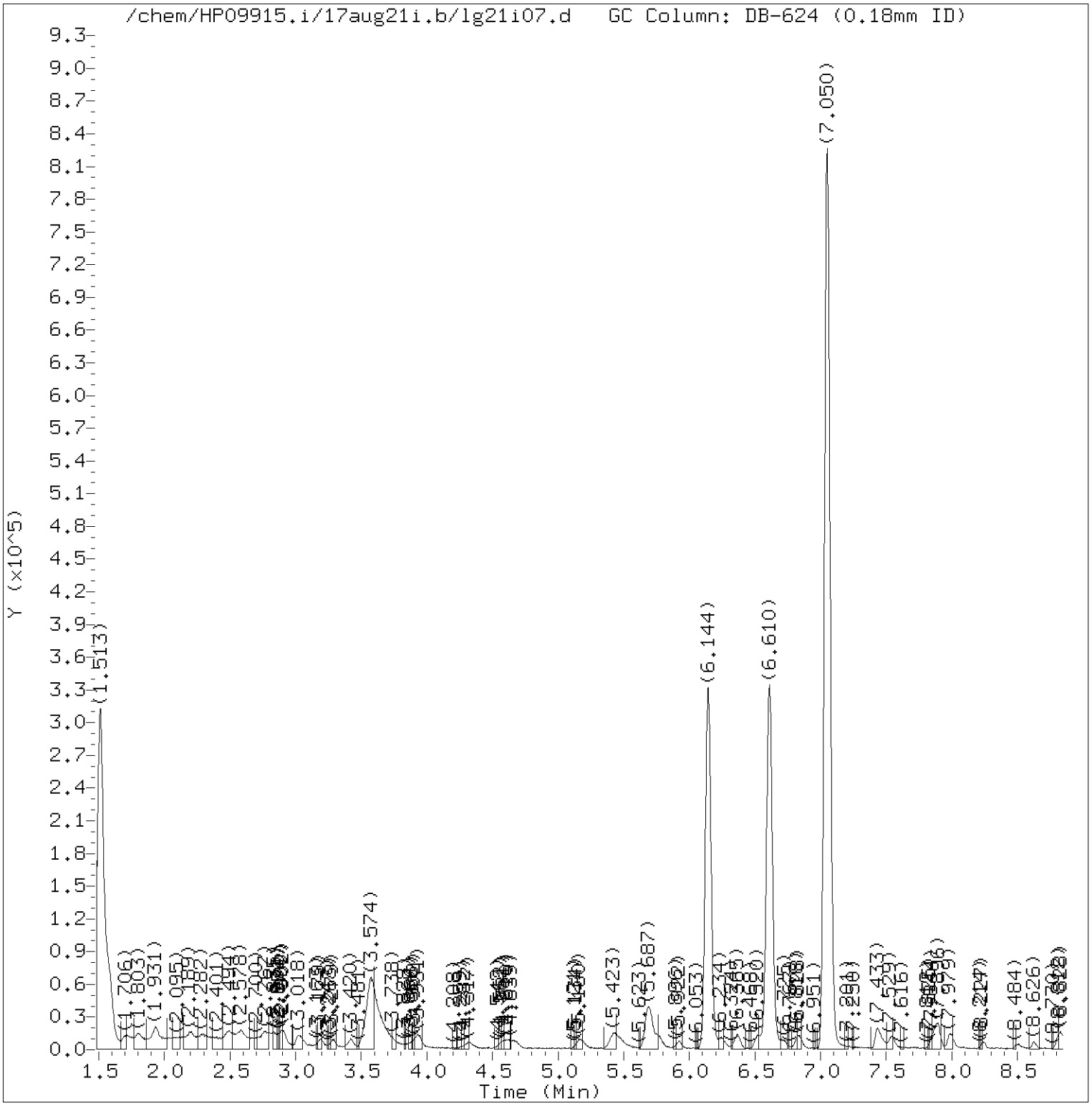
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

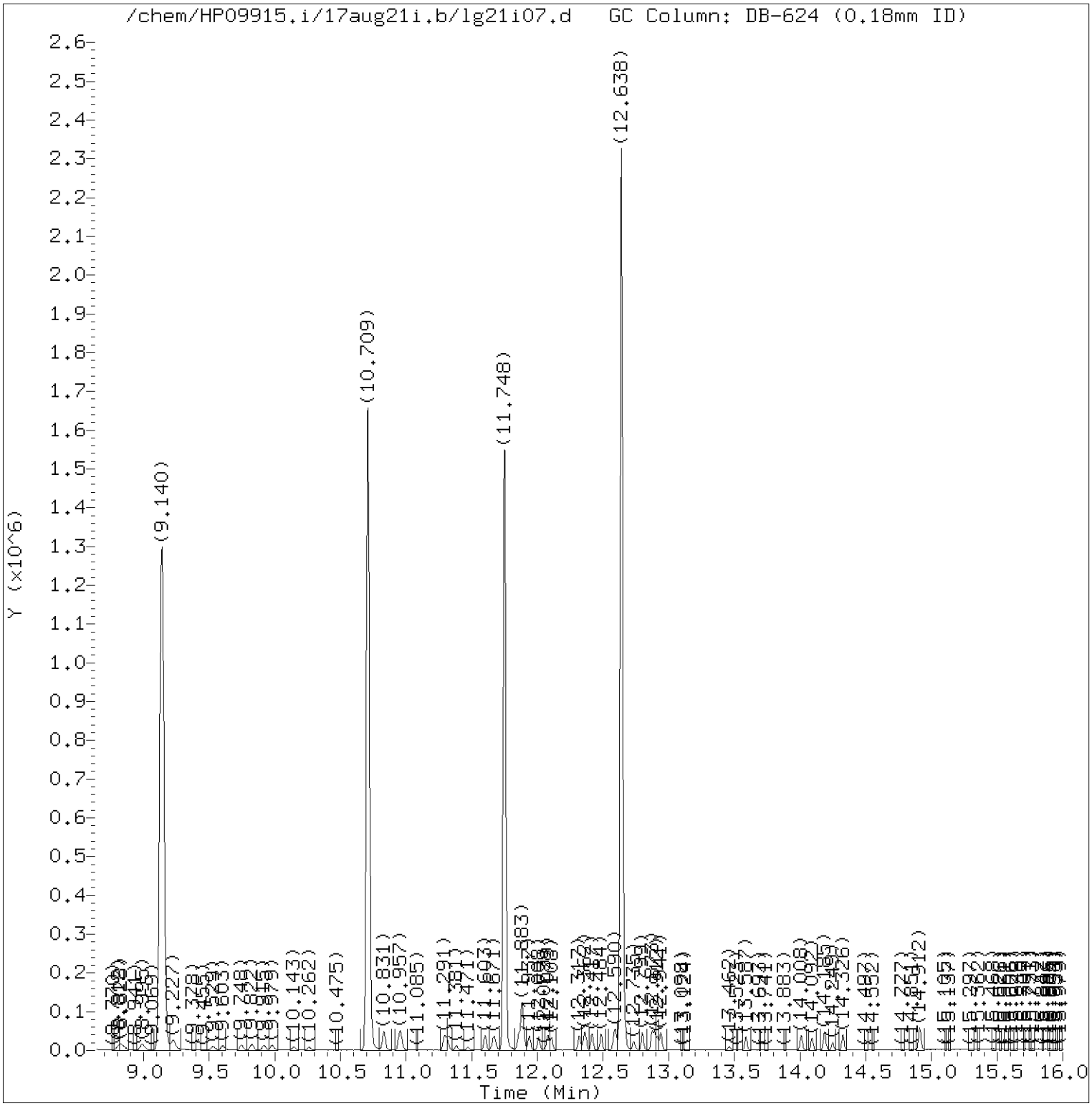
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.700 | 85 | 6416 | 0.808 |
| 4) Chloromethane | (2) | 1.803 | 50 | 7168 | 0.949 |
| 6) Vinyl Chloride | (2) | 1.919 | 62 | 6603 | 0.891 |
| 5) 1,3-Butadiene | (2) | 1.935 | 39 | 5130M | 0.971 |
| 8) Bromomethane | (2) | 2.198 | 94 | 5684M | 1.034 |
| 9) Chloroethane | (2) | 2.298 | 64 | 3898 | 0.949 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 9467 | 1.022 |
| 12) Trichlorofluoromethane | (2) | 2.536 | 101 | 8027 | 0.858 |
| 11) n-Pentane | (2) | 2.584 | 43 | 7113 | 0.909 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 4268 | 0.898 |
| 15) Freon 123a | (2) | 2.832 | 67 | 6939 | 1.100 |
| 16) Acrolein | (1) | 2.909 | 56 | 18869 | 10.300 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 96 | 3691 | 0.793 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 1832 | 0.836 |
| 18) Acetone | (1) | 3.044 | 58 | 1579M | 2.132 |
| 19) Freon 113 | (2) | 3.054 | 101 | 3454 | 0.700 |
| 21) 2-Propanol | (1) | 3.189 | 45 | 12445M | 23.183 |
| 22) Methyl Iodide | (2) | 3.189 | 142 | 8049 | 0.826 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 12860 | 0.806 |
| 27) Methyl Acetate | (2) | 3.401 | 43 | 5552 | 1.015 |
| 25) Allyl Chloride | (2) | 3.420 | 41 | 6397 | 0.835 |
| 28) Methylene Chloride | (2) | 3.574 | 84 | 5412 | 0.962 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 248975M | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.677 | 59 | 21466M | 21.543 |
| 31) Acrylonitrile | (2) | 3.864 | 53 | 2892 | 0.966 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 15826 | 0.912 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 4516 | 0.822 |
| 34) n-Hexane | (2) | 4.330 | 57 | 6387M | 0.822 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 7971 | 0.850 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 14990M | 0.895 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.677 | 53 | 6652 | 0.812 |
| 40) Ethyl t-butyl ether | (2) | 5.172 | 59 | 15465 | 0.909 |
| 44) 2-Butanone | (2) | 5.388 | 43 | 8517 | 2.184 |
| 42) cis-1,2-Dichloroethene | (2) | 5.414 | 96 | 5298 | 0.848 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 6938M | 0.858 |
| 47) Propionitrile | (1) | 5.475 | 54 | 21134 | 17.898 |
| 48) Methacrylonitrile | (2) | 5.687 | 67 | 29879 | 9.087 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 2741 | 0.831 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 50) Tetrahydrofuran | (1) | 5.783 | 71 | 2002 | 1.785 |
| 51) Chloroform | (2) | 5.922 | 83 | 7951 | 0.833 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 317461 | 49.680 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 111 | 327454 | 50.037 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 8602M | 0.910 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 9814 | 1.670 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 7725 | 0.836 |
| 54) Cyclohexane | (2) | 6.253 | 84 | 6217 | 0.770 |
| 54) Cyclohexane | (2) | 6.234 | 69 | 2151 | 0.746 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 5590 | 0.774 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 6048 | 0.809 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 17554 | 55.651 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 102 | 76875 | 49.548 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 65 | 365300 | 50.585 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.610 | 104 | 49912 | 50.136 |
| 60) Benzene | (2) | 6.632 | 78 | 18831 | 0.855 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 7956 | 1.021 |
| 61) 1,2-Dichloroethane | (2) | 6.732 | 98 | 709M | 0.933 |
| 65) t-Amyl methyl ether | (2) | 6.825 | 73 | 15653 | 0.891 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1255839 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 7594 | 0.943 |
| 69) n-Butanol | (1) | 7.430 | 56 | 22067 | 84.961 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 4779 | 0.804 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 7273 | 0.747 |
| 72) Methylcyclohexane | (2) | 7.860 | 98 | 3509 | 0.763 |
| 73) 1,2-Dichloropropane | (2) | 7.880 | 63 | 4885 | 0.859 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 3521 | 43.199 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 4729M | 0.891 |
| 74) Dibromomethane | (2) | 8.002 | 93 | 3478 | 0.861 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 5971 | 0.813 |
| 79) 2-Nitropropane | (2) | 8.504 | 41 | 4605 | 2.180 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.619 | 63 | 3683 | 0.834 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 7383 | 0.798 |
| 82) 4-Methyl-2-pentanone | (2) | 8.995 | 43 | 15433 | 1.895 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1240347 | 50.292 |
| 83)$Toluene-d8 | (3) | 9.140 | 100 | 810778 | 50.031 |
| 88) Toluene | (3) | 9.227 | 92 | 12146 | 0.843 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 6534 | 0.771 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 91) Ethyl Methacrylate | (3) | 9.603 | 69 | 7547 | 0.822 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 4845 | 0.864 |
| 93) Tetrachloroethene | (3) | 9.828 | 166 | 4993 | 0.781 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 8025 | 0.877 |
| 96) 2-Hexanone | (3) | 9.979 | 43 | 11584 | 1.945 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 13917 | 1.569 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 4513 | 0.730 |
| 99) 1,2-Dibromoethane | (3) | 10.262 | 107 | 5263 | 0.836 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 990561 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 8142 | 0.980 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 13966 | 0.831 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.825 | 131 | 4427 | 0.751 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 23308 | 0.841 |
| 106) m+p-Xylene | (3) | 10.957 | 106 | 17705 | 1.591 |
| 107) o-Xylene | (3) | 11.291 | 106 | 9026 | 0.806 |
| 109) Styrene | (3) | 11.310 | 104 | 14439 | 0.774 |
| 110) Bromoform | (3) | 11.471 | 173 | 3278 | 0.707 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 22001 | 0.784 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 14793 | 46.939 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 475525 | 50.432 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 174 | 413544 | 50.632 |
| 108) Xylene (Total) | (3) | | 106 | 26731 | 2.397 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 8297 | 0.888 |
| 115) Bromobenzene | (4) | 11.857 | 156 | 6413 | 0.818 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 20989 | 8.543 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 2527 | 0.889 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 26420 | 0.806 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 5657 | 0.796 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 20198 | 0.817 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 5881 | 0.793 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 4485 | 0.844 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 2979 | 0.664 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.365 | 105 | 20811 | 0.818 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 24687 | 0.805 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 12415 | 0.838 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 21195 | 0.778 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 548017 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 12864 | 0.841 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 22157 | 0.836 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 14042 | 0.744 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 12845 | 0.777 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 13655 | 0.792 |
| 139) n-Butylbenzene | (4) | 12.892 | 92 | 10767 | 0.806 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 12360 | 0.840 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 10709 | 0.777 |
| 141) Diethylbenzene (total) | (4) | | 100 | 37209 | 2.345 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.462 | 75 | 1695 | 0.832 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.584 | 180 | 9942 | 0.889 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 10662 | 0.961 |
| 147) Hexachlorobutadiene | (4) | 14.095 | 225 | 4792 | 1.011 |
| 148) Naphthalene | (4) | 14.188 | 128 | 33689 | 0.961 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 10674 | 1.002 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 25173 | 1.065 |



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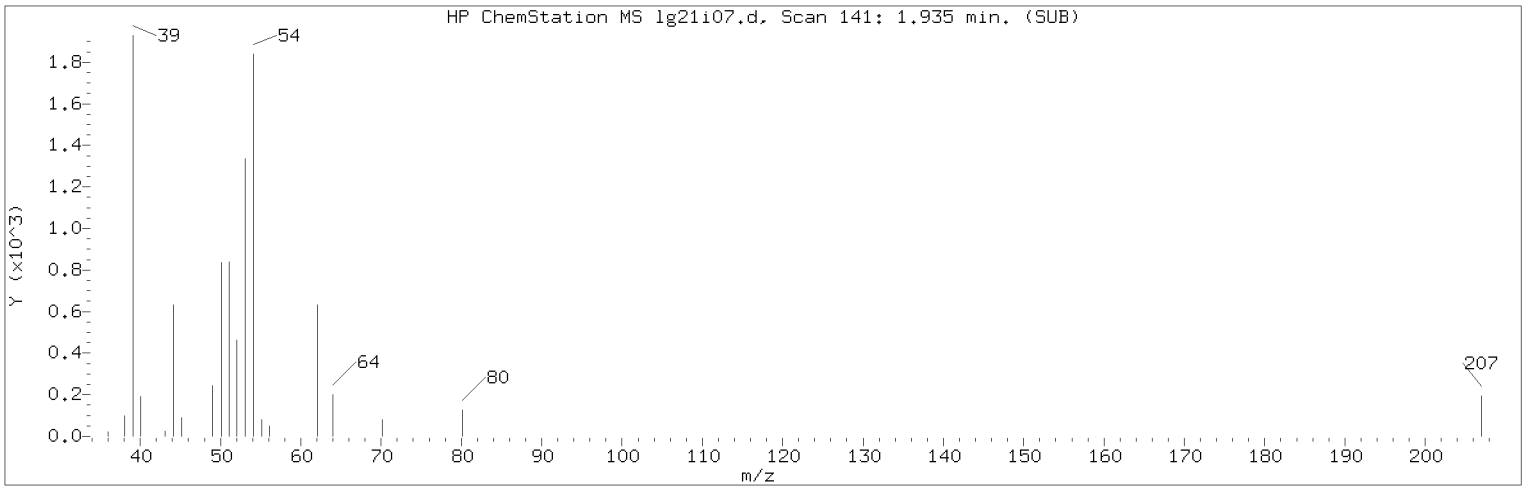
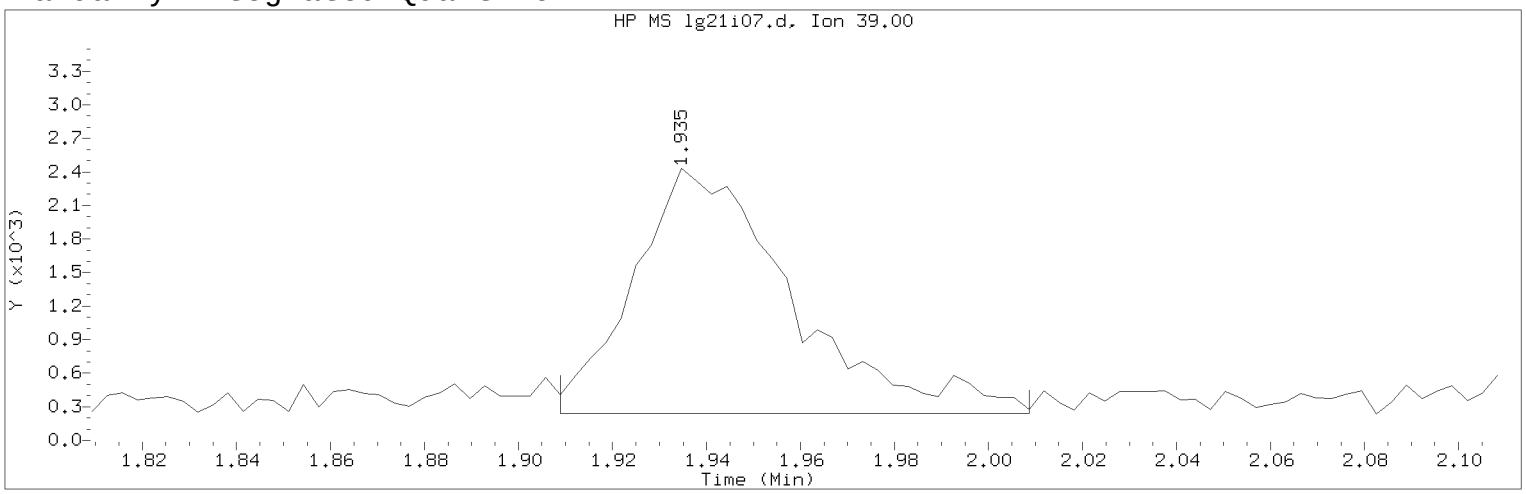
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

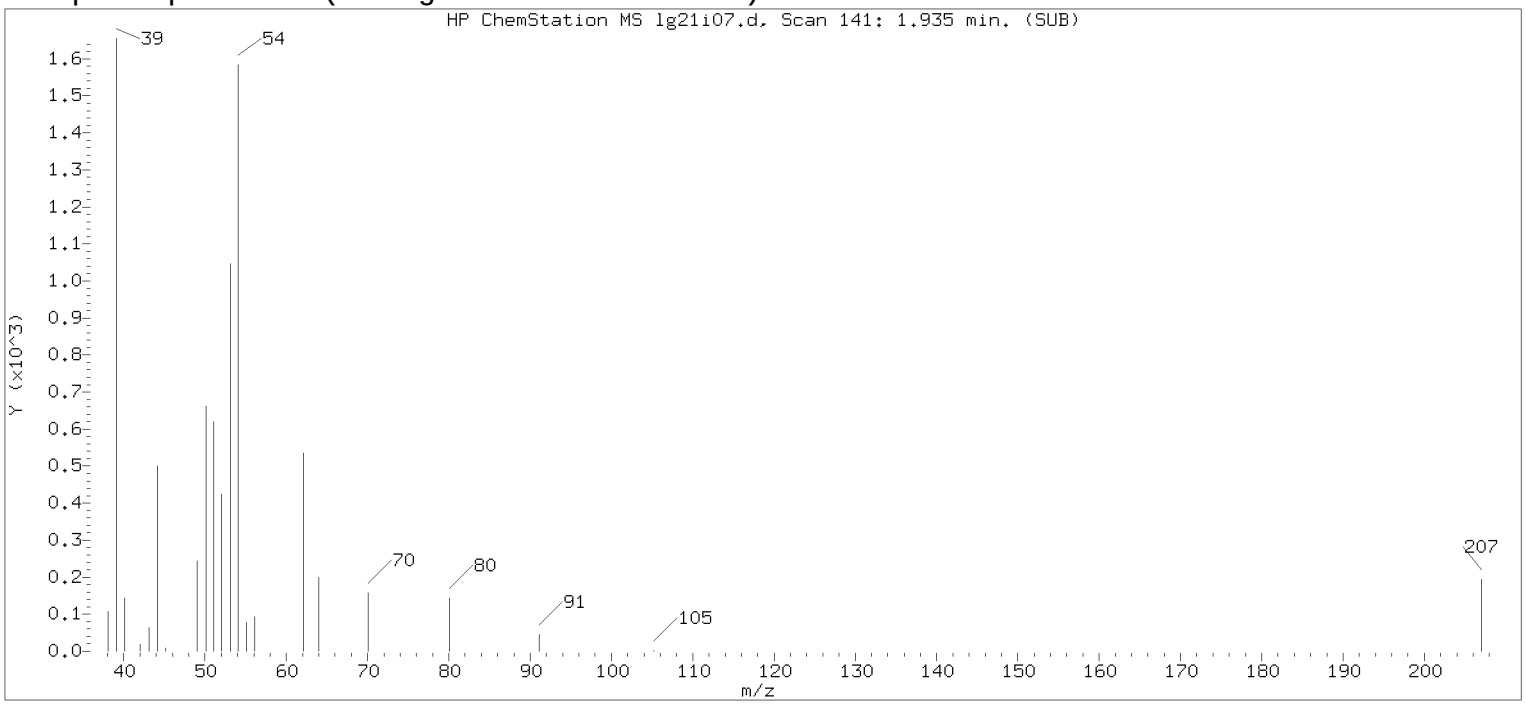
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 141
Retention Time (minutes): 1.935
Quant Ion : 39.00
Area (flag) : 5130M
On-Column Amount (ng) : 0.9711
Integration start scan : 132 Integration stop scan: 163
Y at integration start : 241 Y at integration end: 241

Reason for manual integration: improper integration

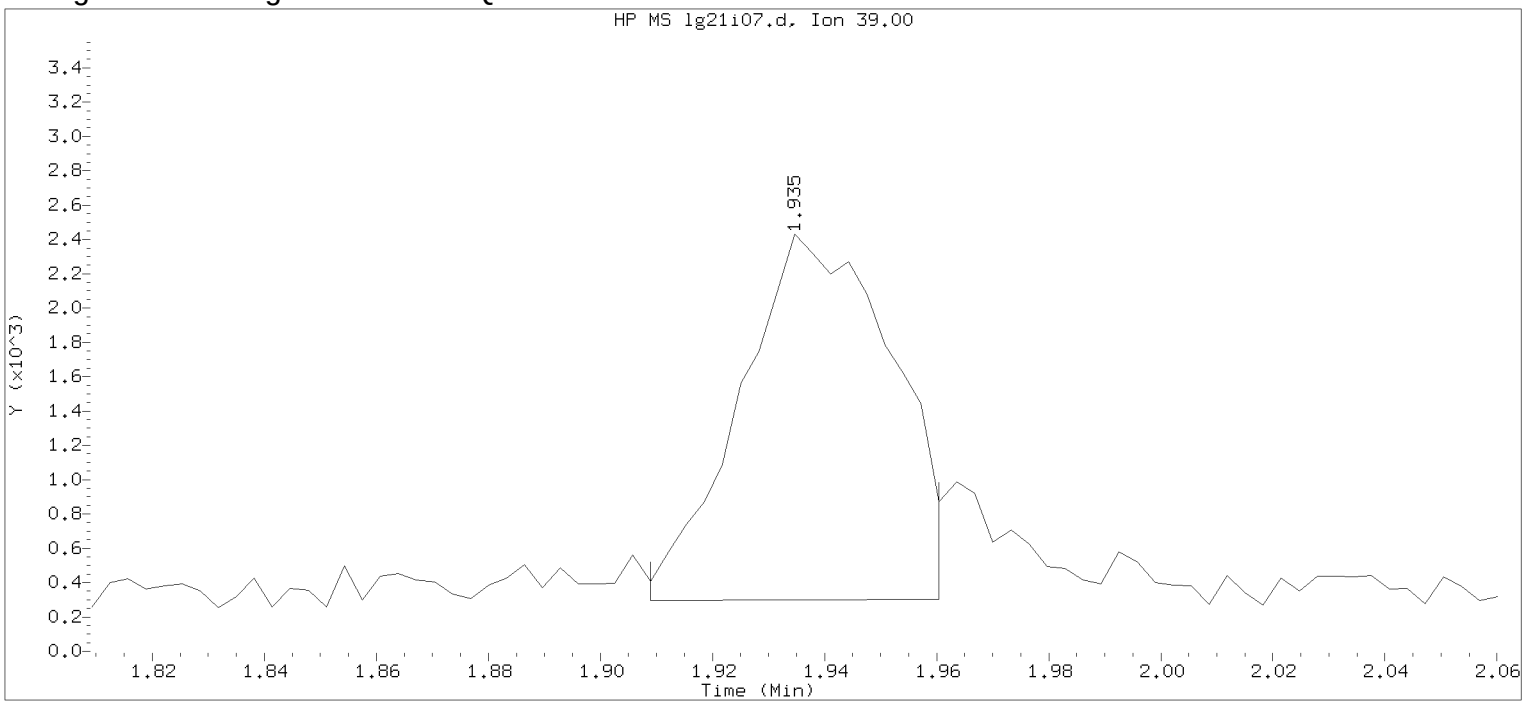
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 141
Retention Time (minutes): 1.935
Quant Ion : 39.00
Area : 3991
On-column Amount (ng) : 0.7796
Integration start scan : 132 Integration stop scan: 148
Y at integration start : 294 Y at integration end: 303

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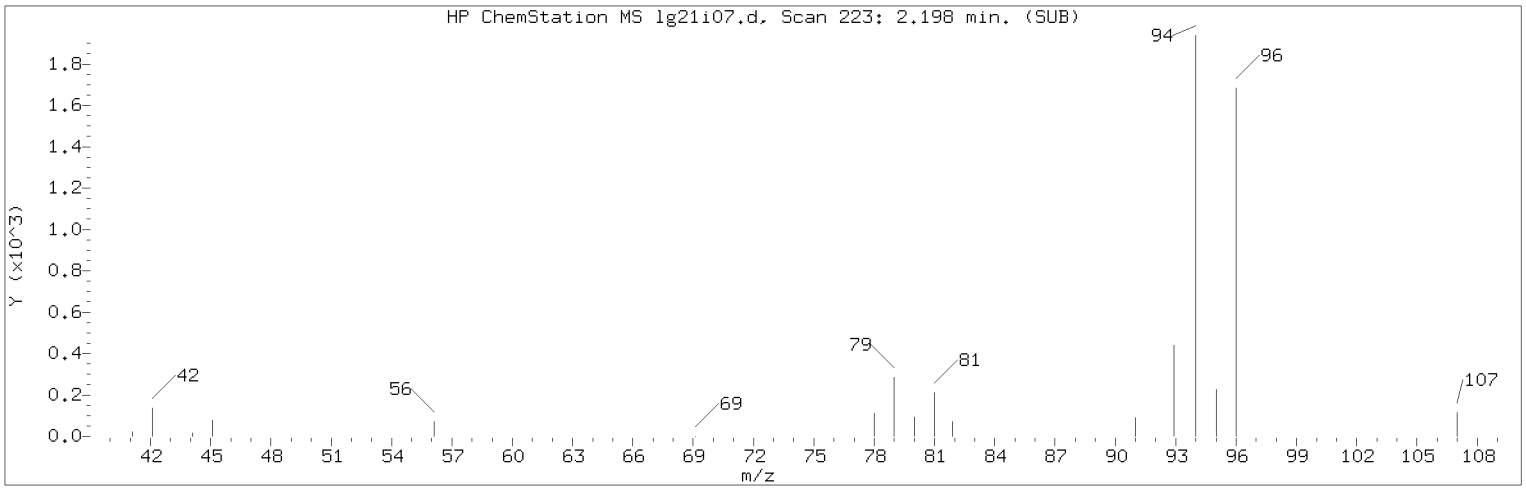
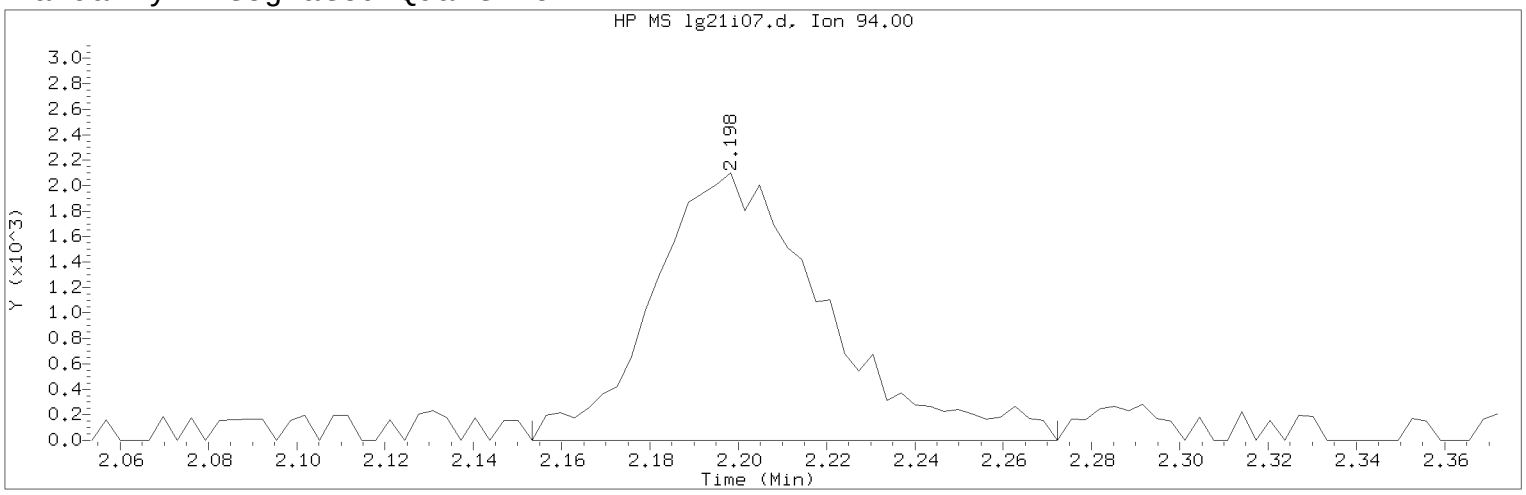
Target 3.5 esignature userKAS02648 Page 149

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

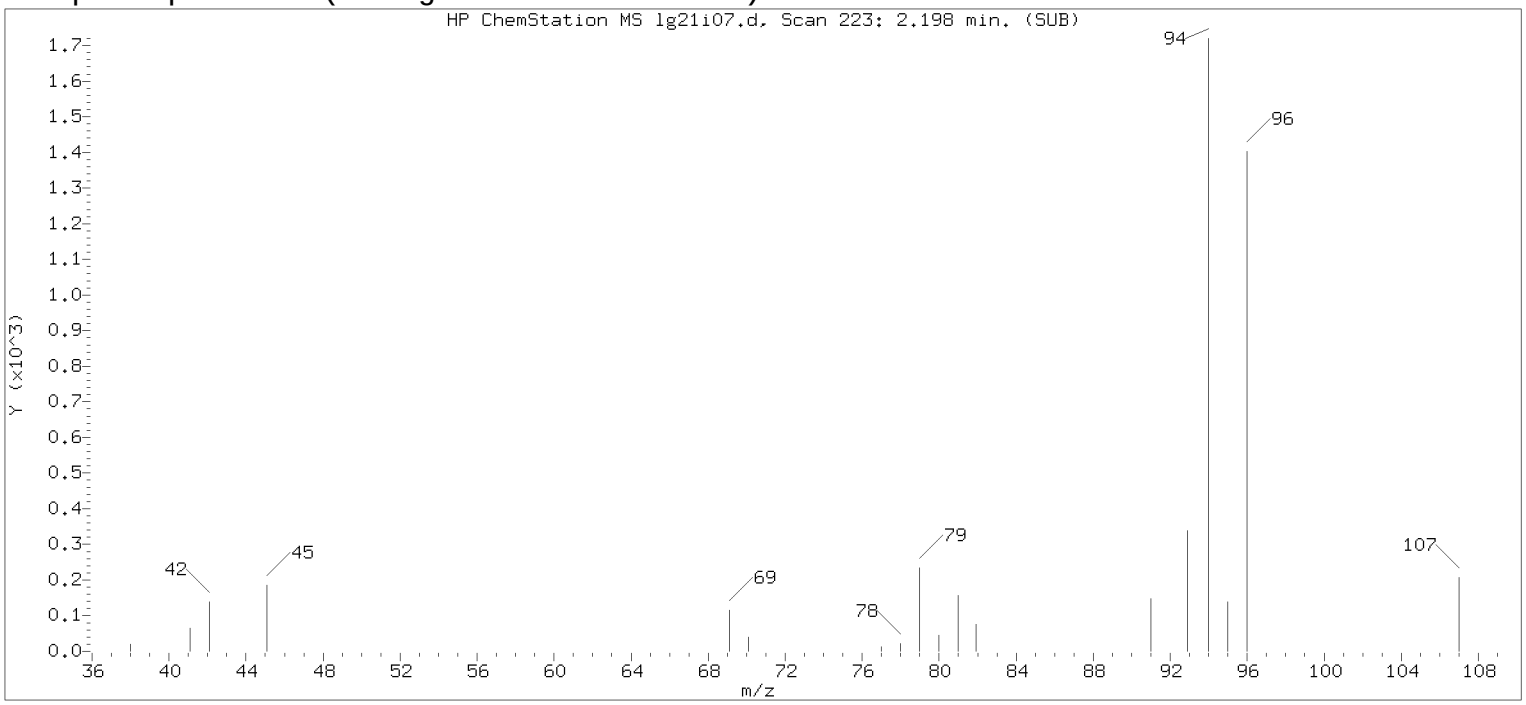
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area (flag) : 5684M
On-Column Amount (ng) : 1.0335
Integration start scan : 208 Integration stop scan: 245
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

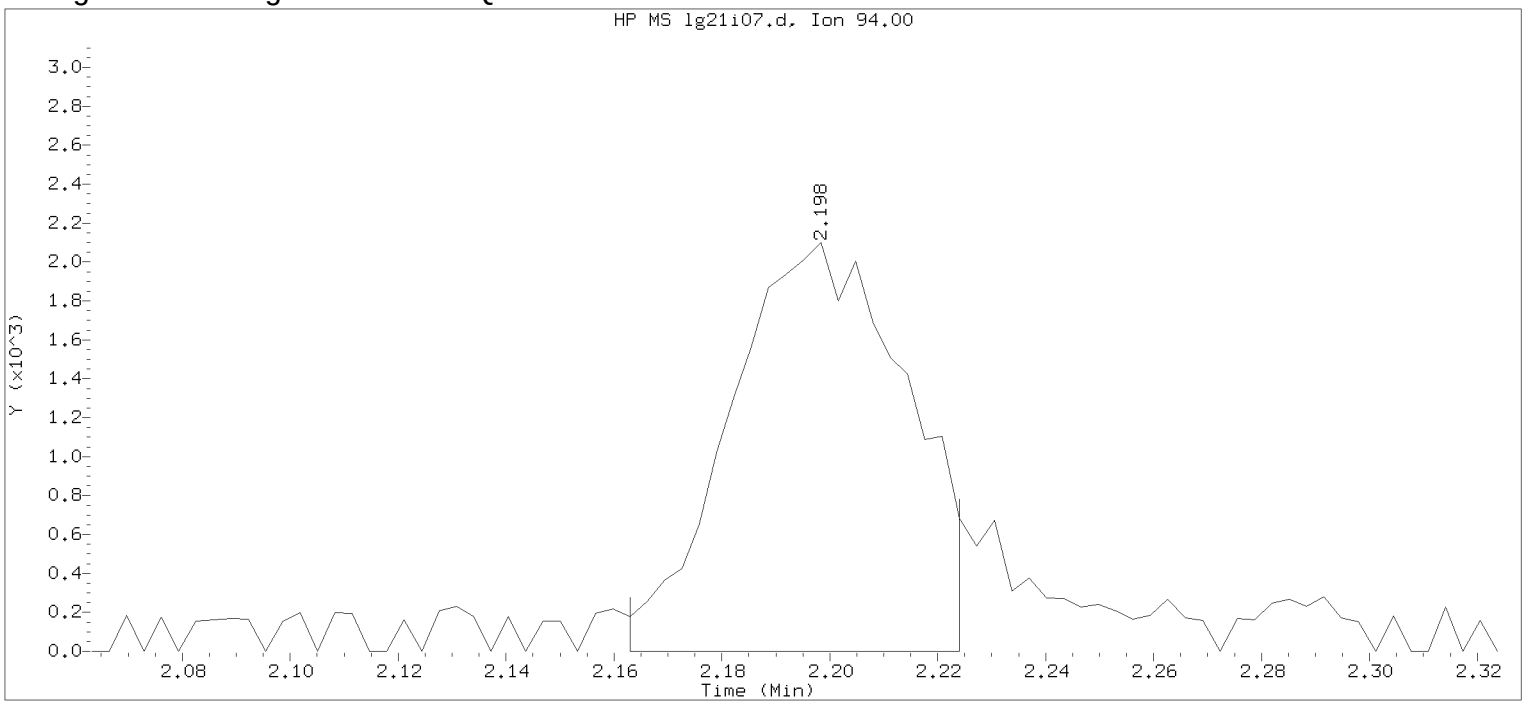
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 223
Retention Time (minutes): 2.198
Quant Ion : 94.00
Area : 4737
On-column Amount (ng) : 0.8832
Integration start scan : 211 Integration stop scan: 230
Y at integration start : 0 Y at integration end: 0

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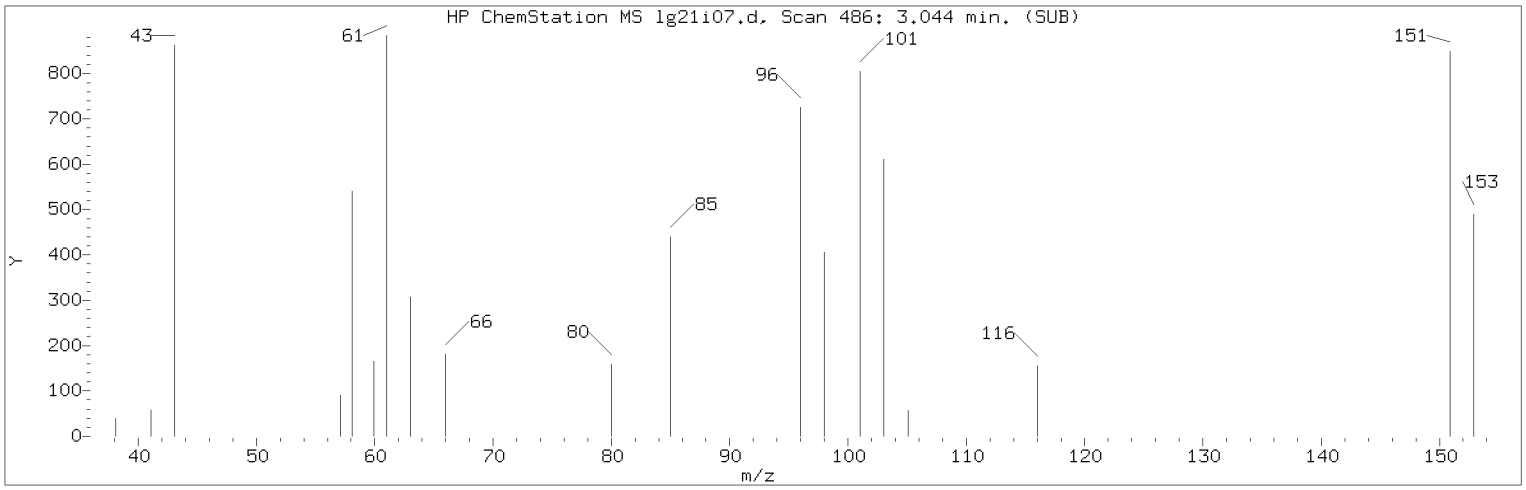
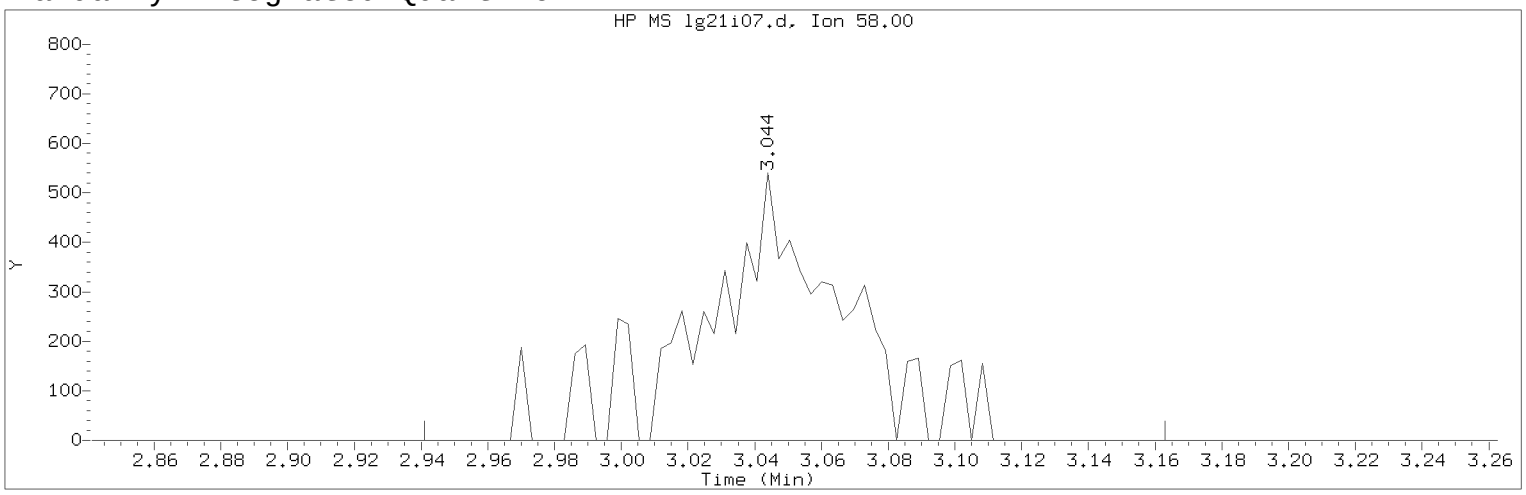
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

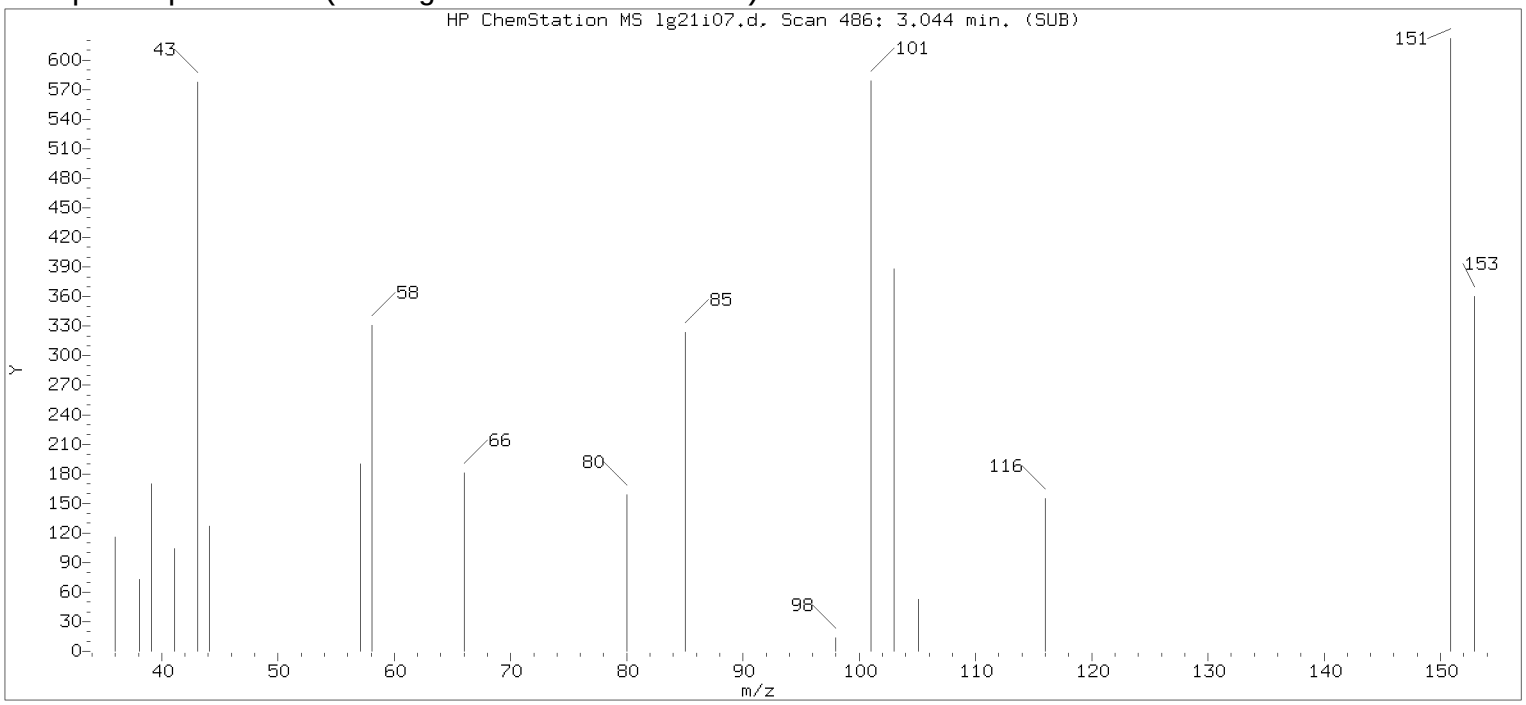
Compound Number : 18
Compound Name : Acetone
Scan Number : 486
Retention Time (minutes): 3.044
Quant Ion : 58.00
Area (flag) : 1579M
On-Column Amount (ng) : 2.1318
Integration start scan : 453 Integration stop scan: 522
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

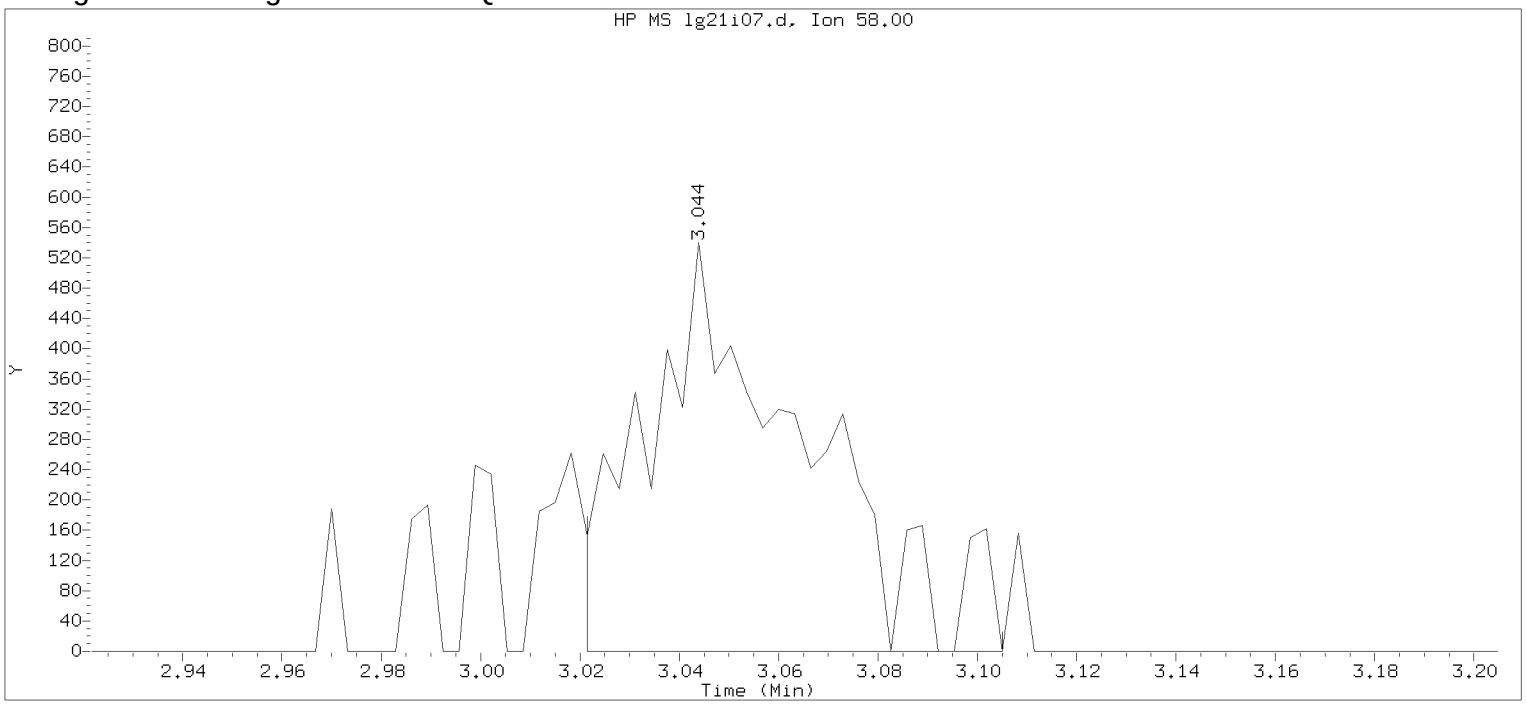
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 18
Compound Name : Acetone
Scan Number : 486
Retention Time (minutes): 3.044
Quant Ion : 58.00
Area : 1211
On-column Amount (ng) : 1.7084
Integration start scan : 478 Integration stop scan: 504
Y at integration start : 0 Y at integration end: 0

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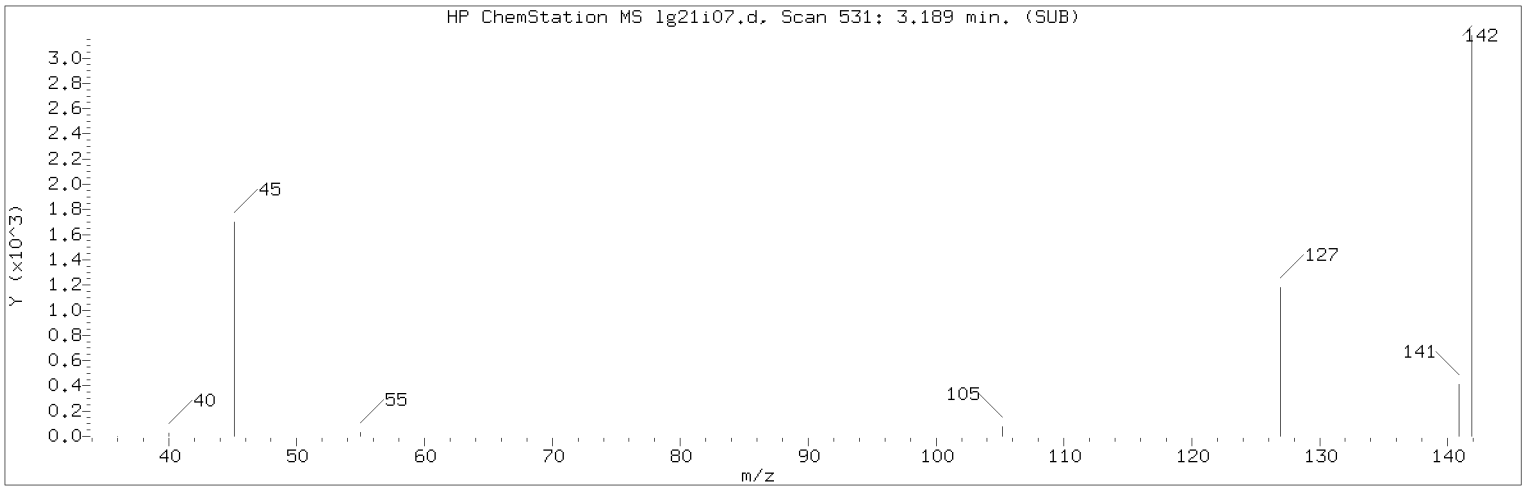
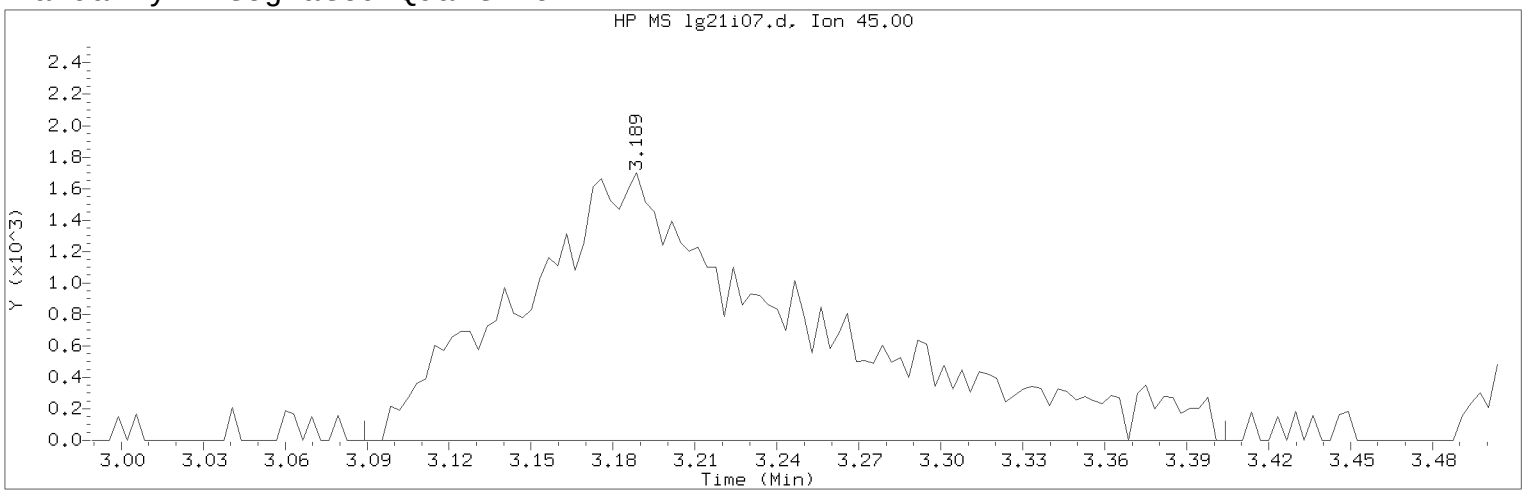
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

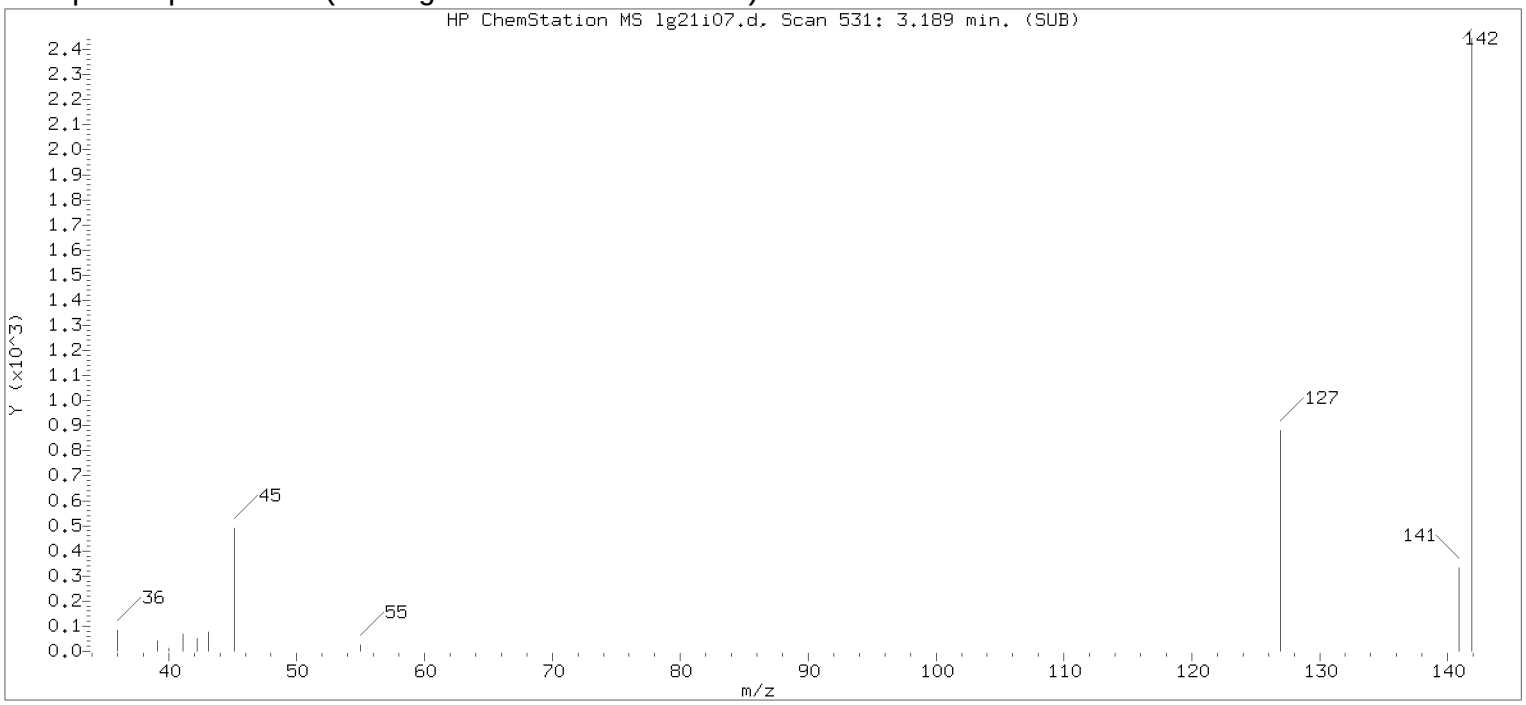
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area (flag) : 12445M
On-Column Amount (ng) : 23.1830
Integration start scan : 499 Integration stop scan: 597
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

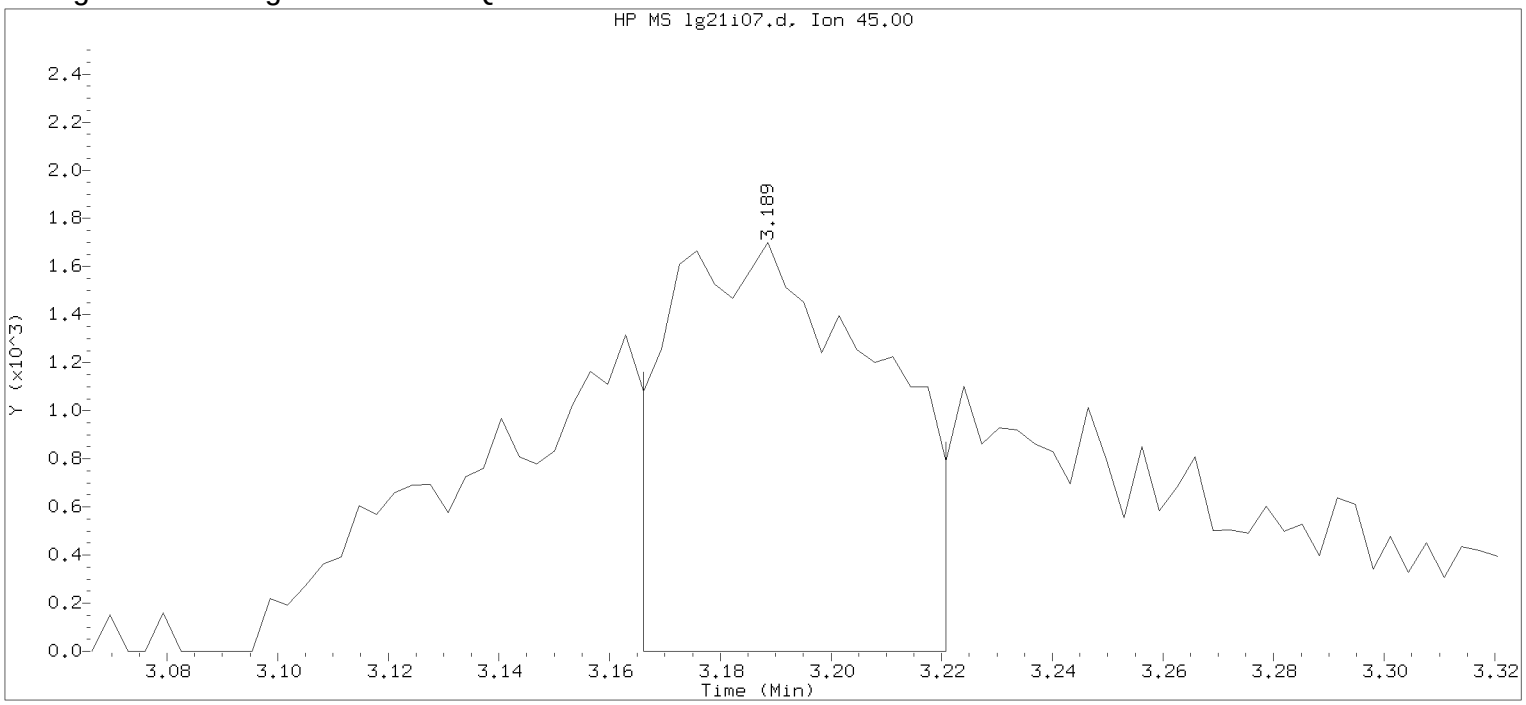
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 531
Retention Time (minutes): 3.189
Quant Ion : 45.00
Area : 4480
On-column Amount (ng) : 9.4128
Integration start scan : 523 Integration stop scan: 540
Y at integration start : 0 Y at integration end: 0

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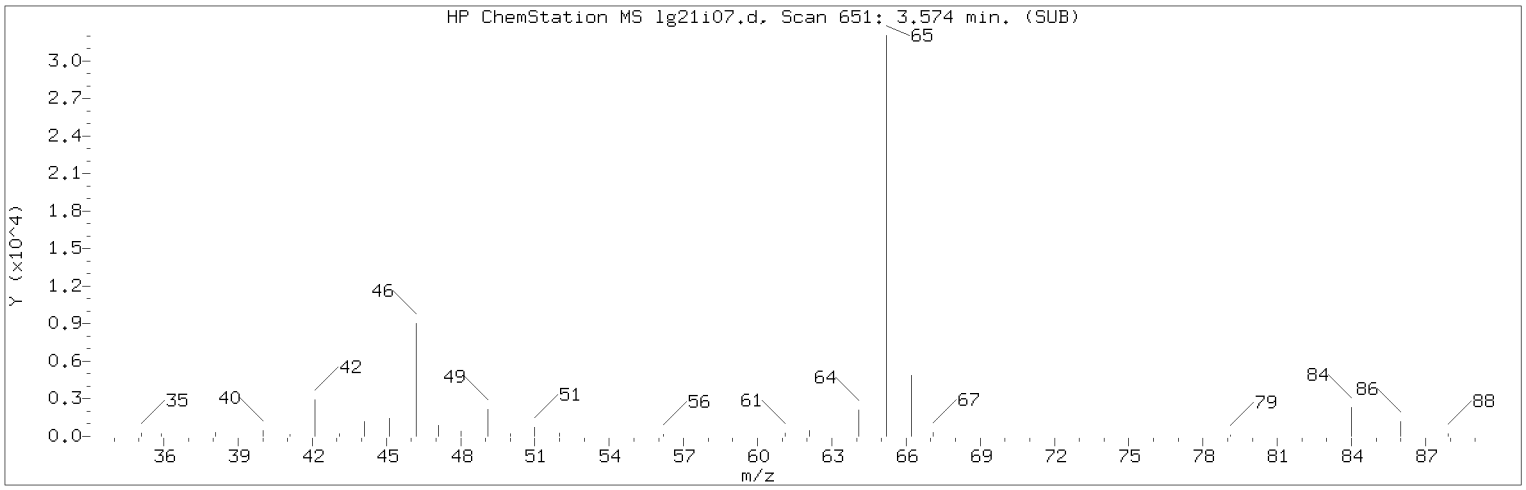
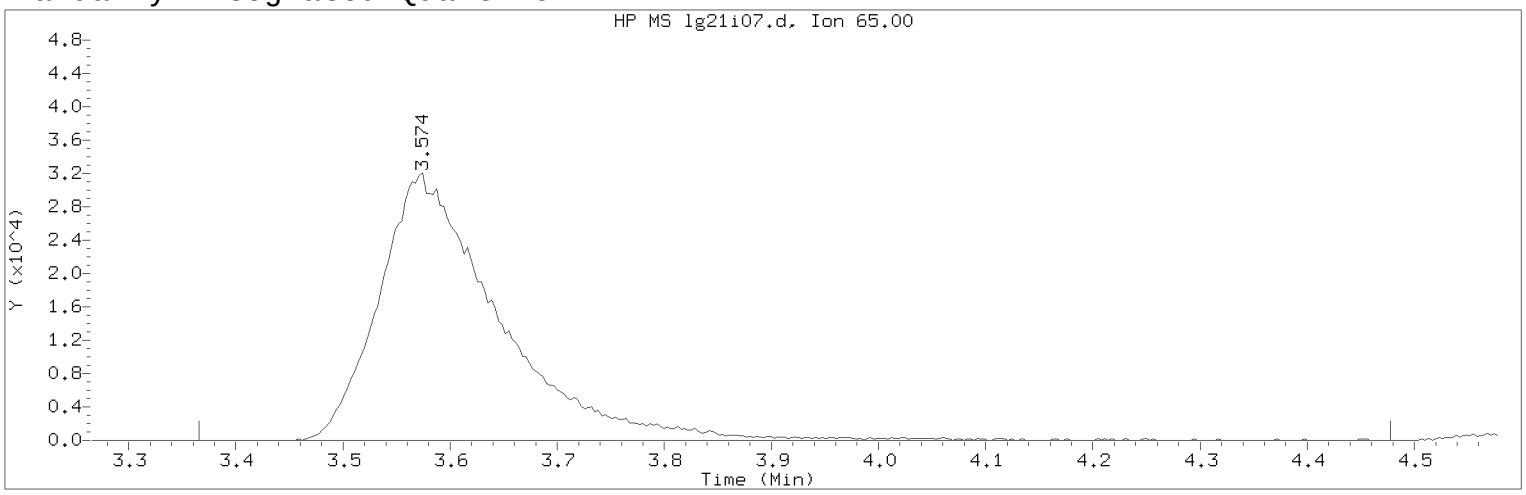
Target 3.5 esignature userKR195kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

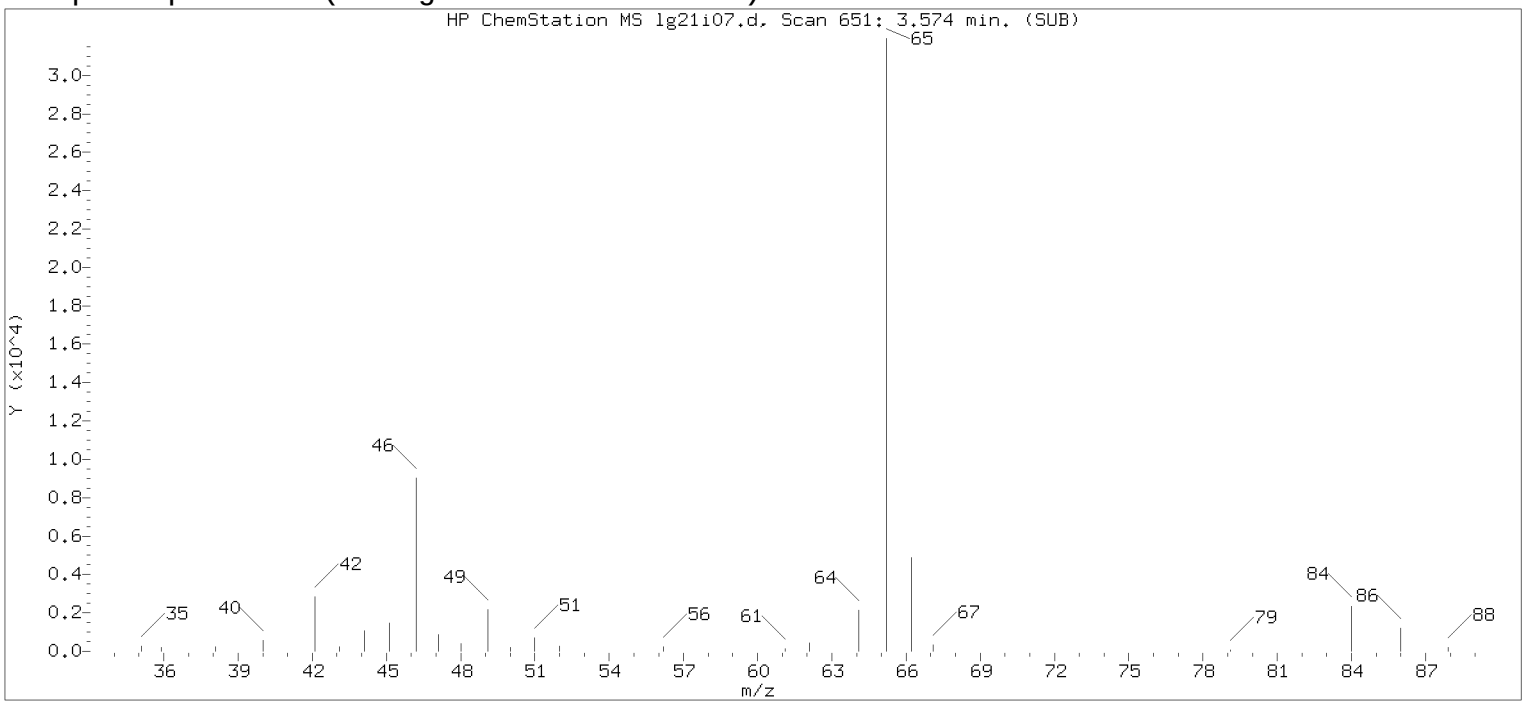
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 248975M
On-Column Amount (ng) : 250.0000
Integration start scan : 585 Integration stop scan: 931
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

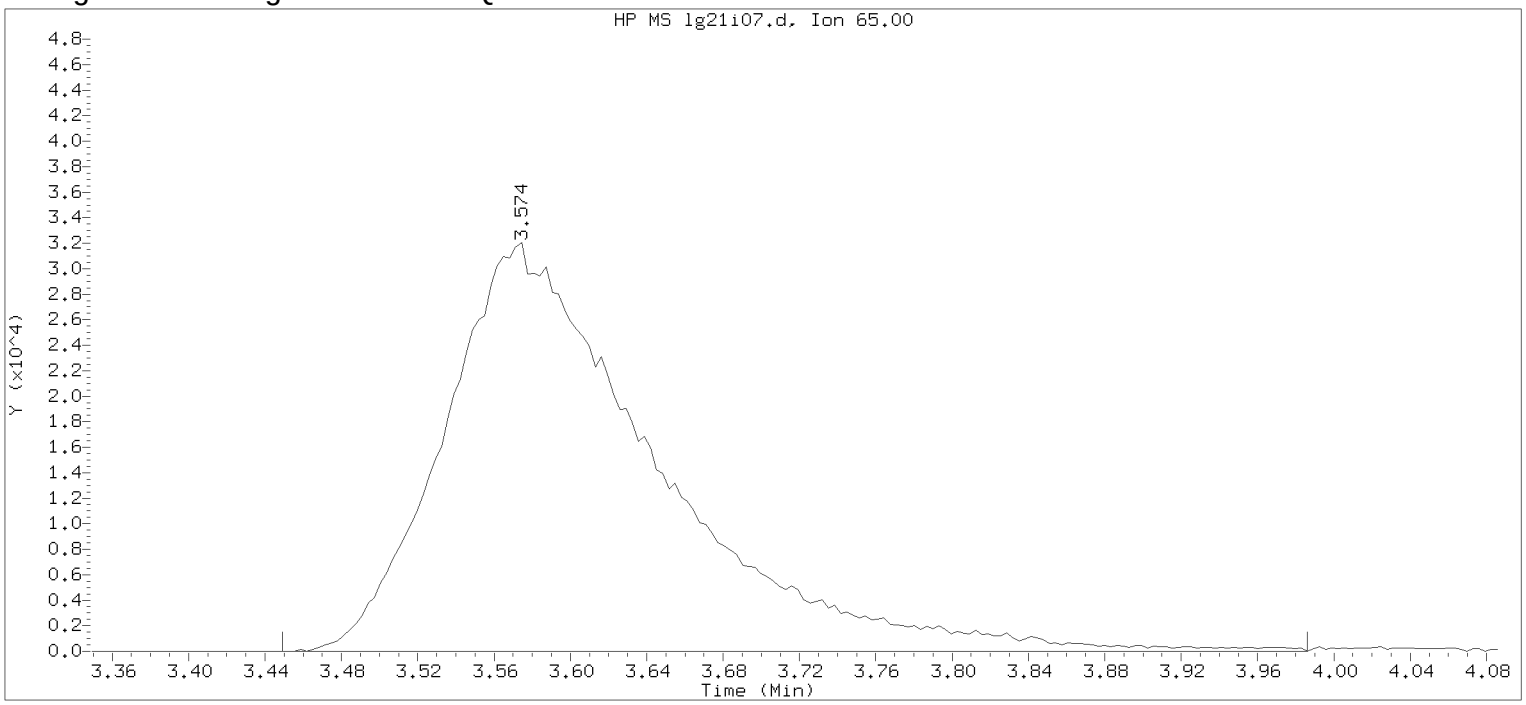
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

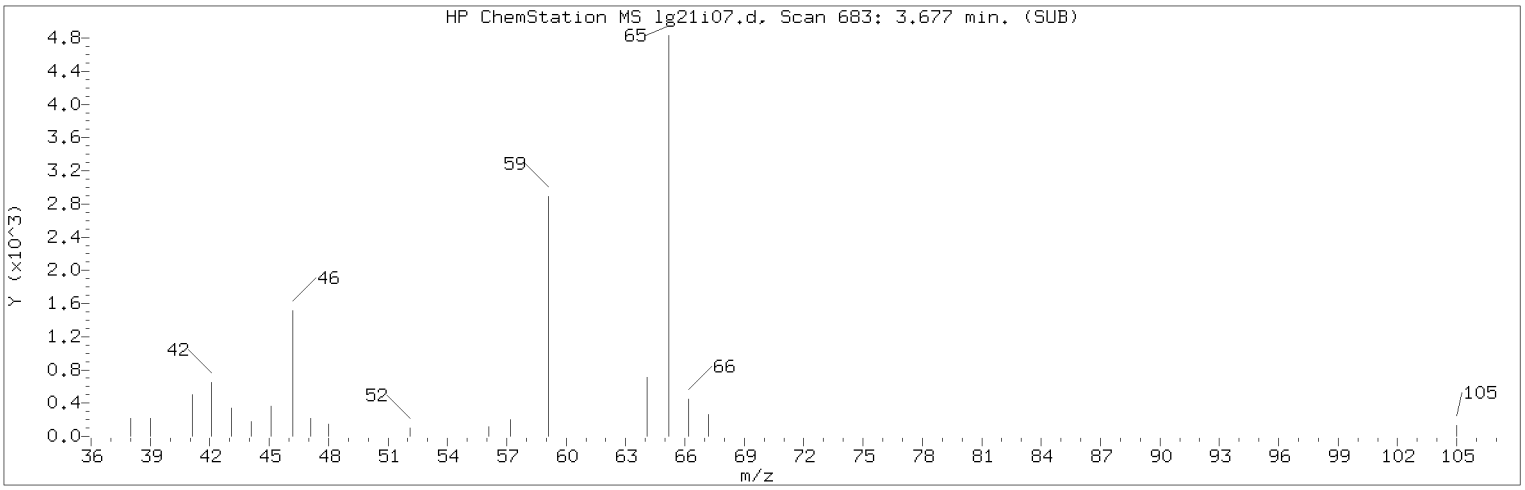
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

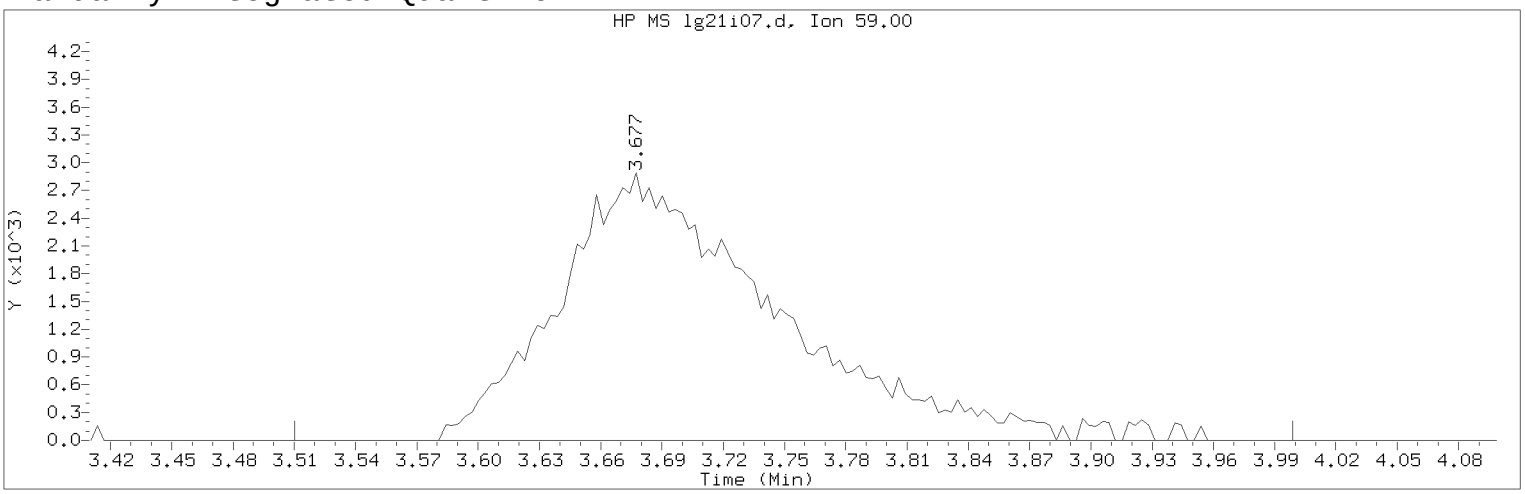
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area : 246788
On-column Amount (ng) : 250.0000
Integration start scan : 611 Integration stop scan: 778
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d  Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001  Lab Sample ID: VSTD001

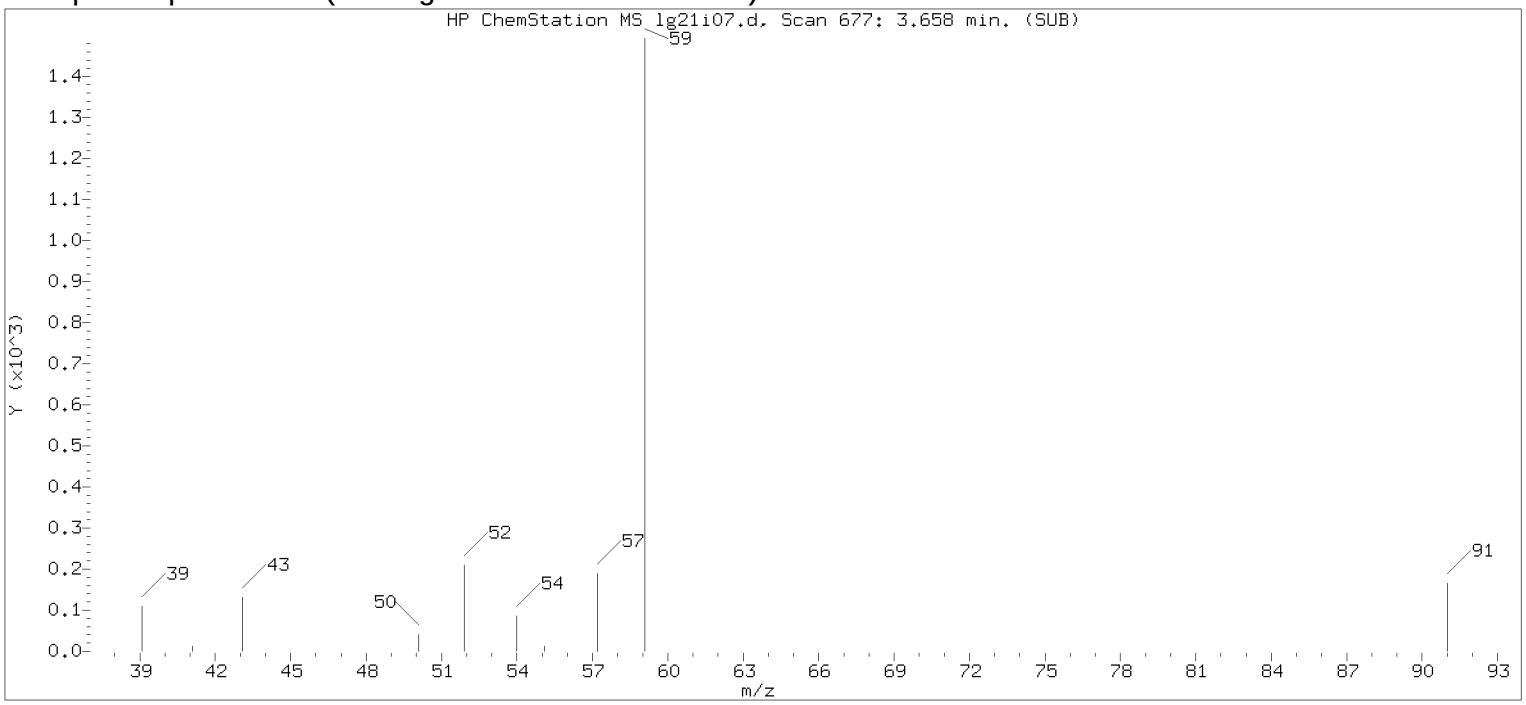
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 683
Retention Time (minutes): 3.677
Quant Ion : 59.00
Area (flag) : 21466M
On-Column Amount (ng) : 21.5428
Integration start scan : 630  Integration stop scan: 782
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

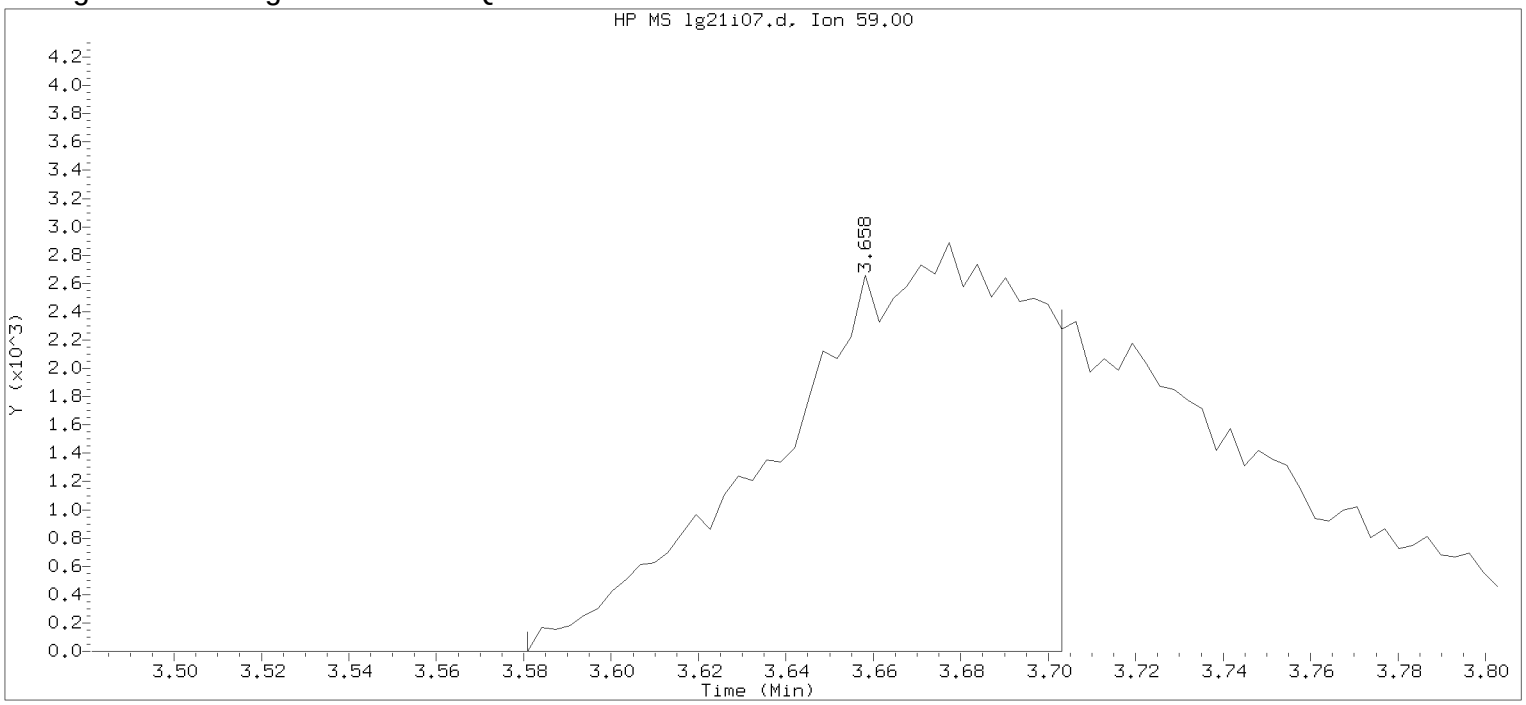
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

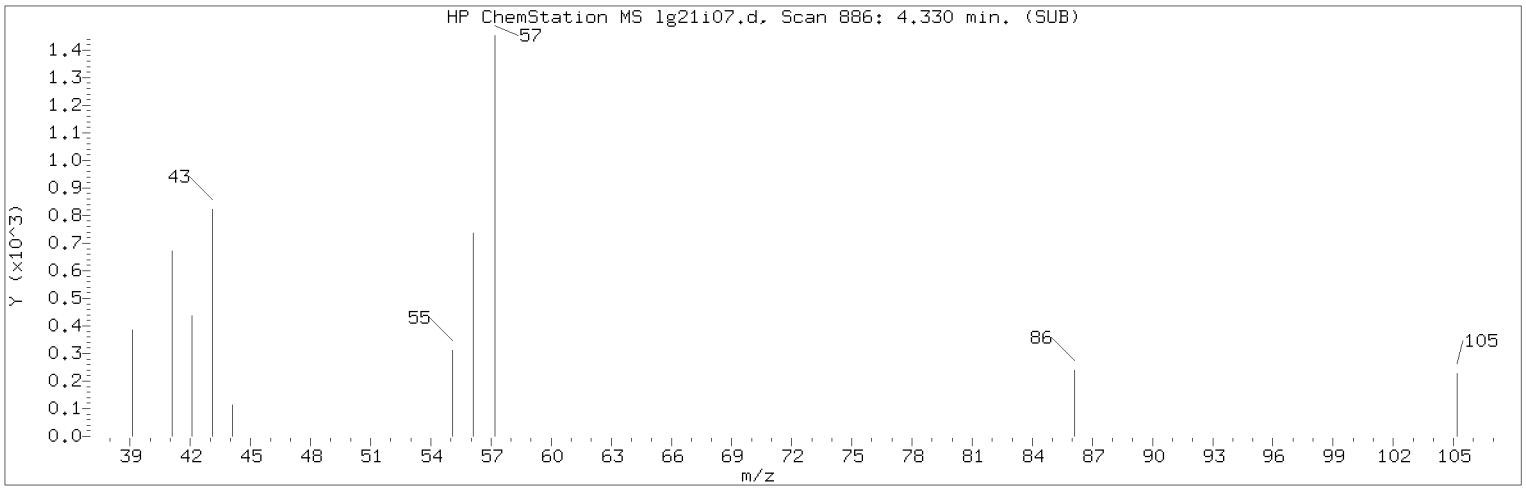
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

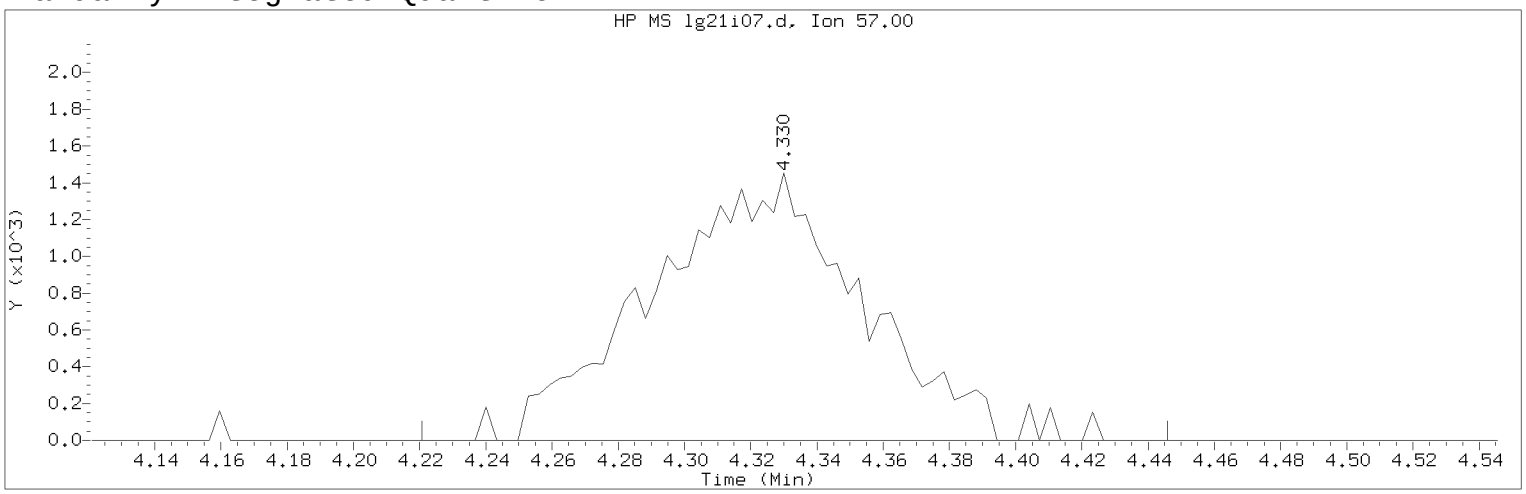
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 677
Retention Time (minutes): 3.658
Quant Ion : 59.00
Area : 11543
On-column Amount (ng) : 12.5723
Integration start scan : 652 Integration stop scan: 690
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

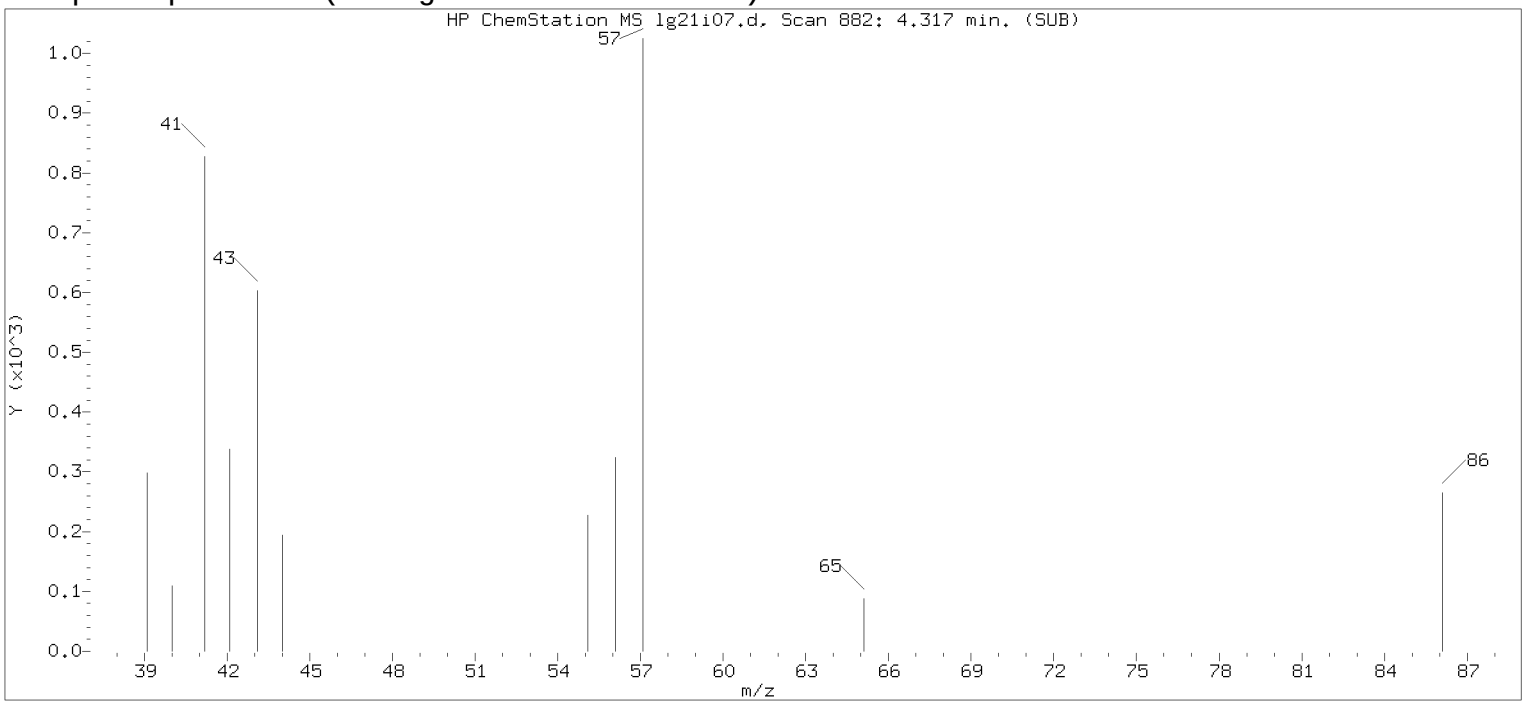
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 886
Retention Time (minutes): 4.330
Quant Ion : 57.00
Area (flag) : 6387M
On-Column Amount (ng) : 0.8222
Integration start scan : 851 Integration stop scan: 921
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

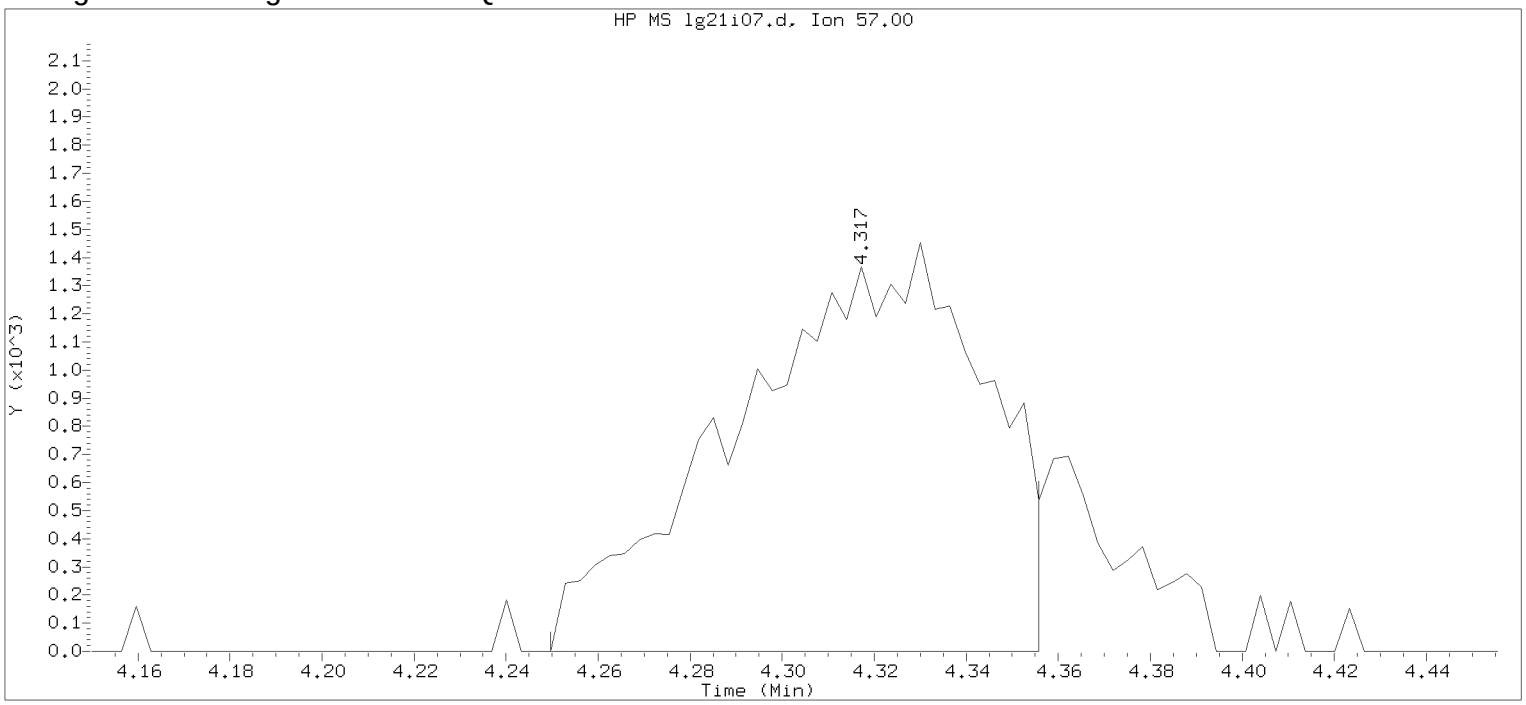
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

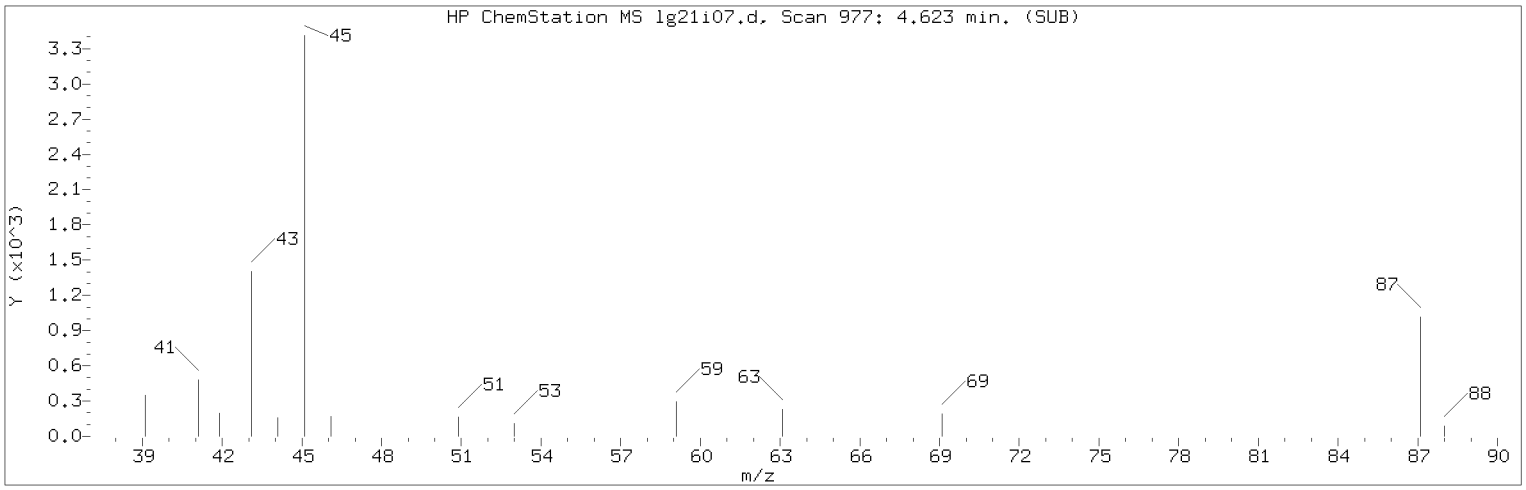
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

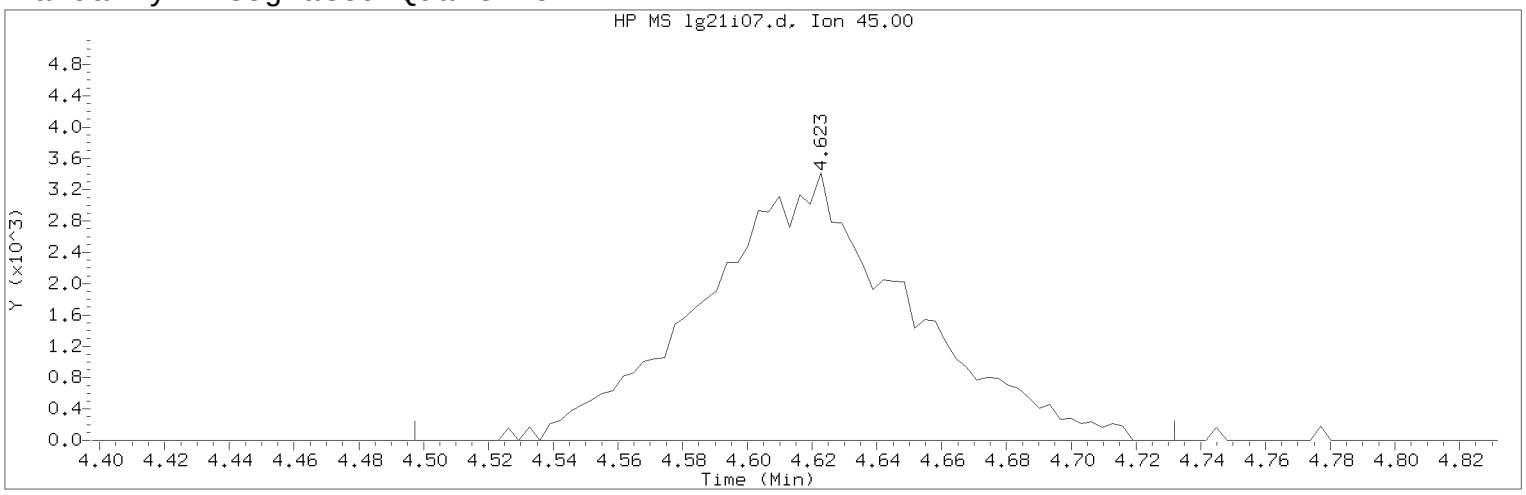
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area : 5374
On-column Amount (ng) : 0.7050
Integration start scan : 860 Integration stop scan: 893
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

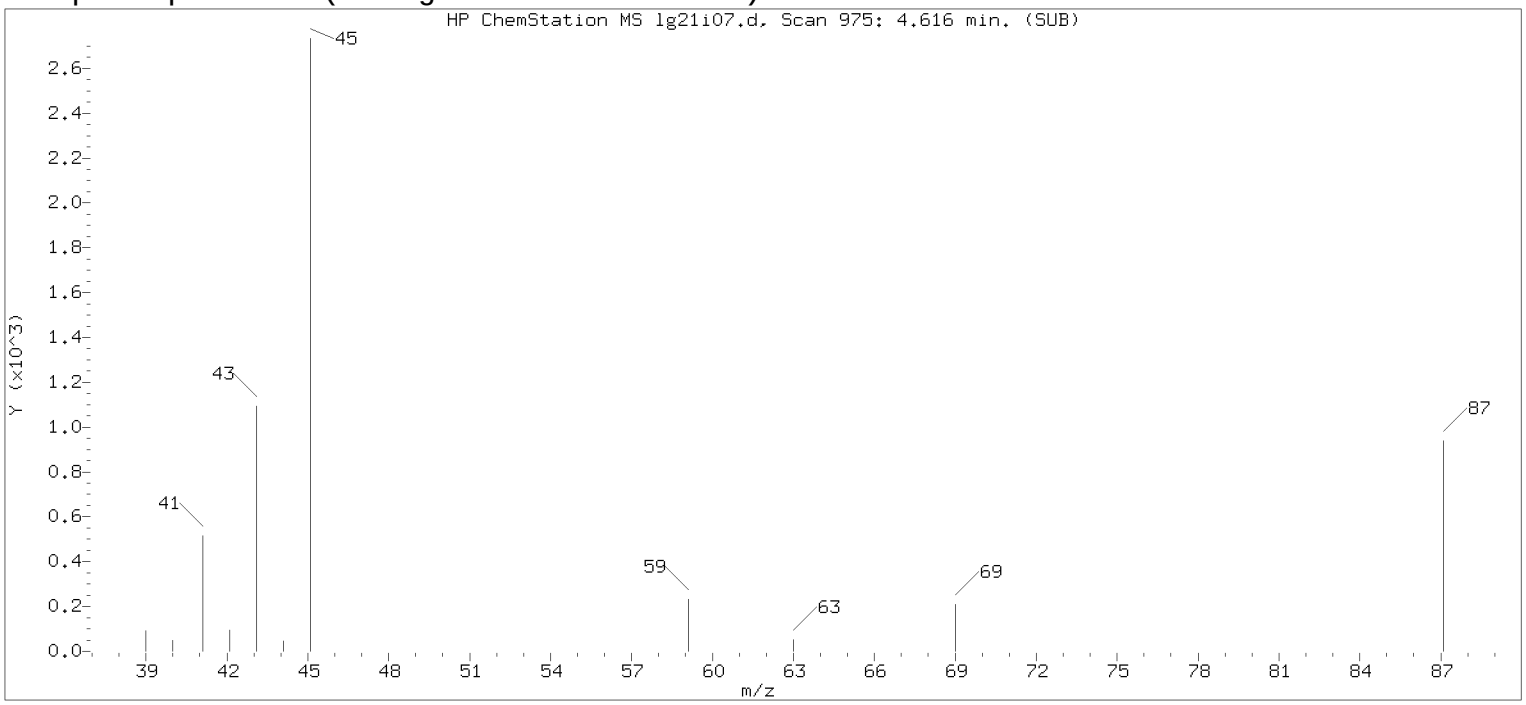
Compound Number : 38
Compound Name : di-Isopropyl ether
Scan Number : 977
Retention Time (minutes): 4.623
Quant Ion : 45.00
Area (flag) : 14990M
On-Column Amount (ng) : 0.8948
Integration start scan : 937 Integration stop scan: 1010
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

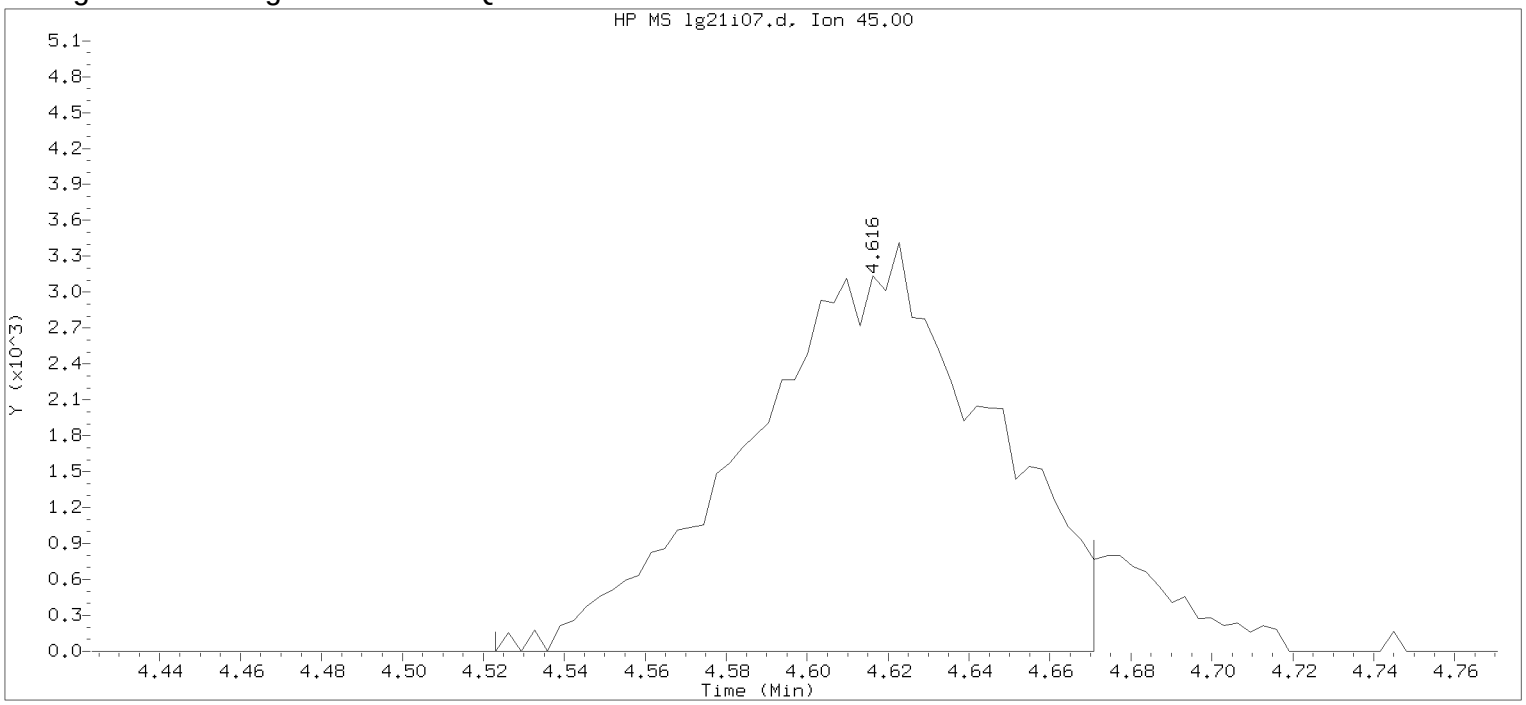
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

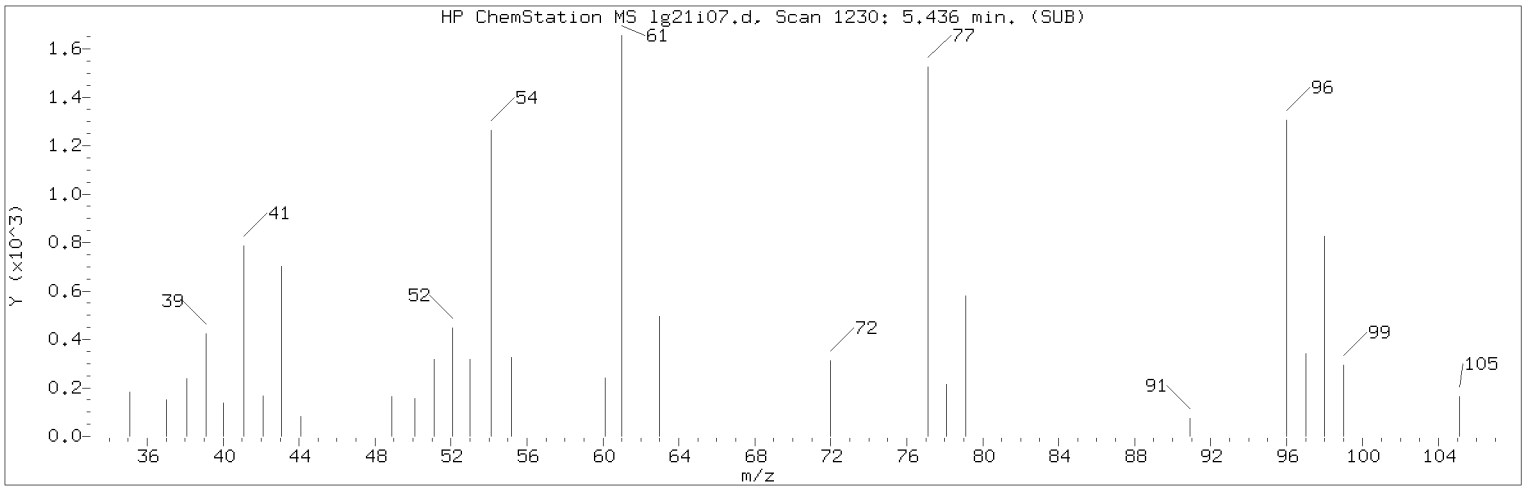
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

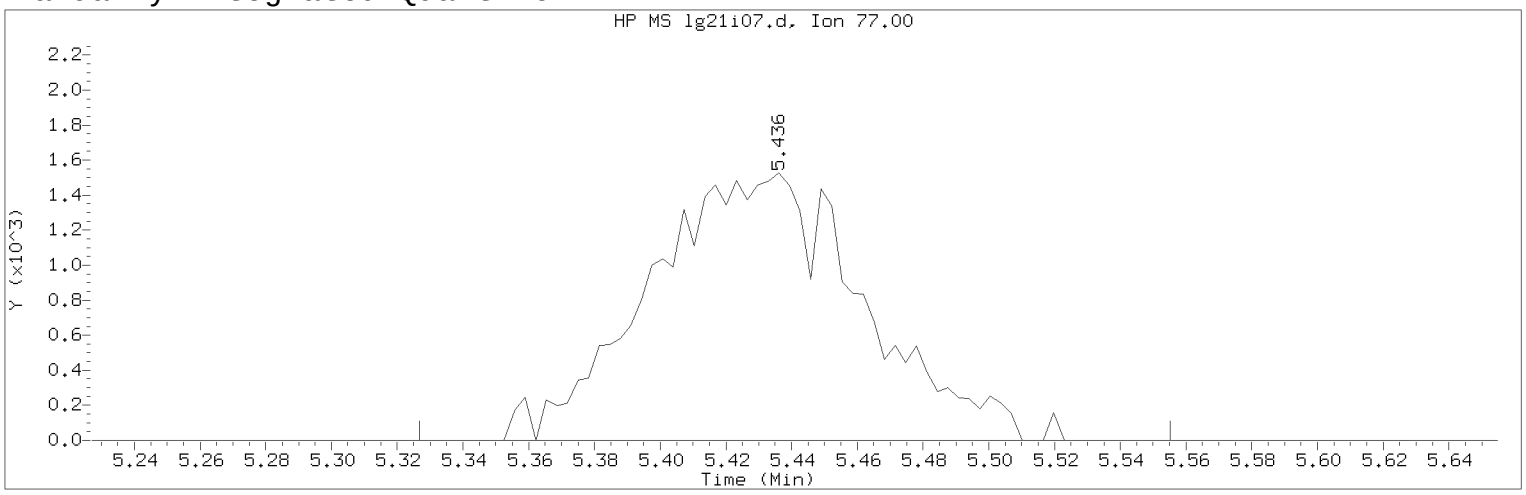
Compound Number : 38
Compound Name : di-Isopropyl ether
Scan Number : 975
Retention Time (minutes): 4.616
Quant Ion : 45.00
Area : 13772
On-column Amount (ng) : 0.8308
Integration start scan : 945 Integration stop scan: 991
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

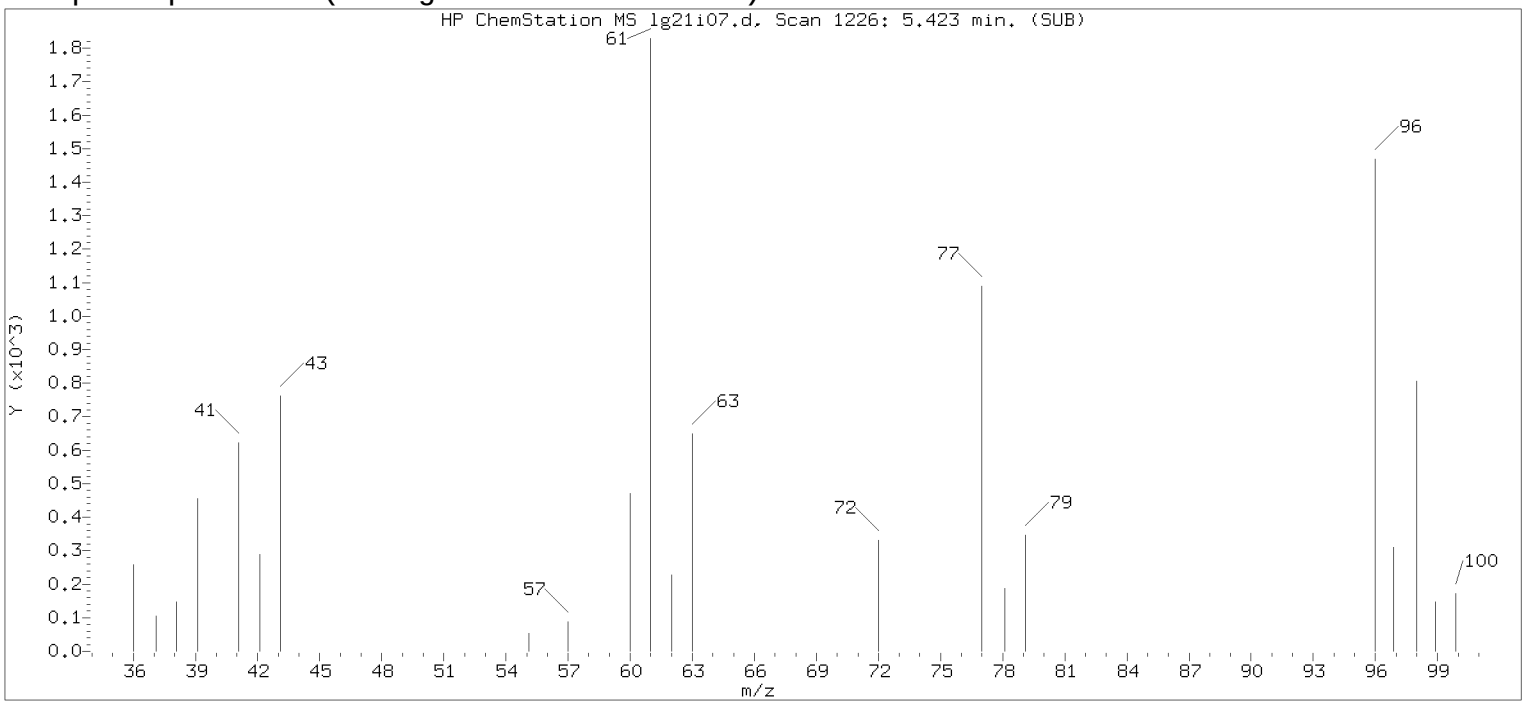
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1230
Retention Time (minutes): 5.436
Quant Ion : 77.00
Area (flag) : 6938M
On-Column Amount (ng) : 0.8580
Integration start scan : 1195 Integration stop scan: 1266
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

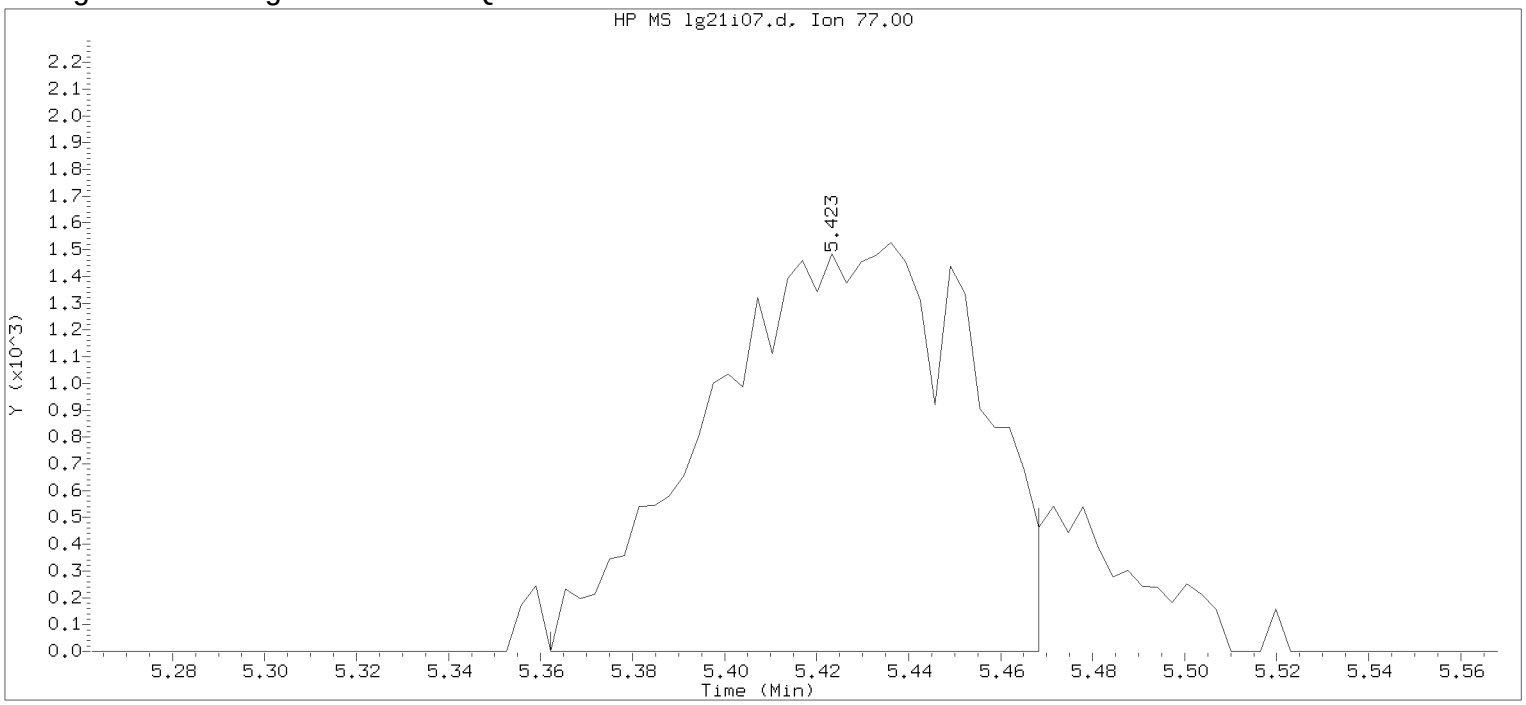
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

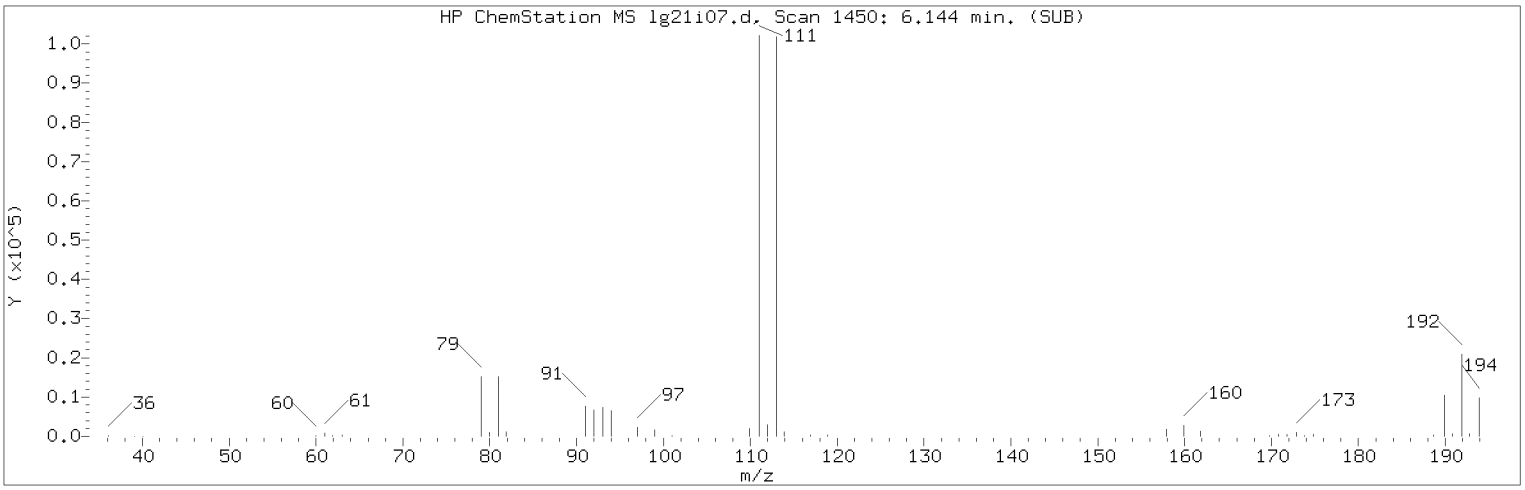
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

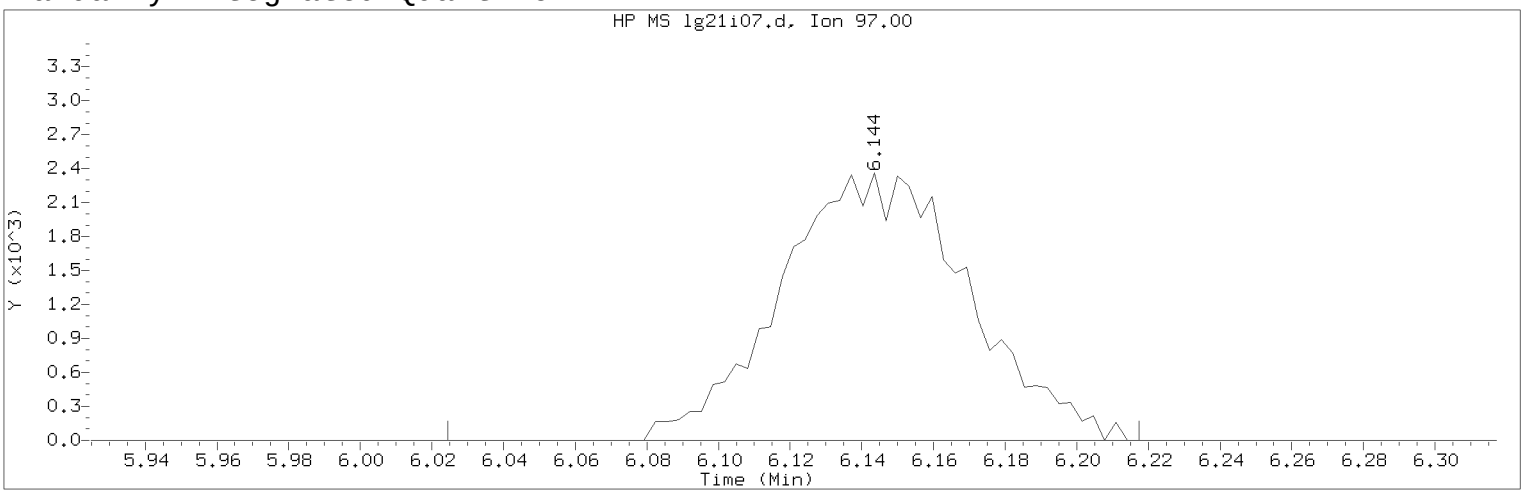
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1226
Retention Time (minutes): 5.423
Quant Ion : 77.00
Area : 6054
On-column Amount (ng) : 0.7607
Integration start scan : 1206 Integration stop scan: 1239
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

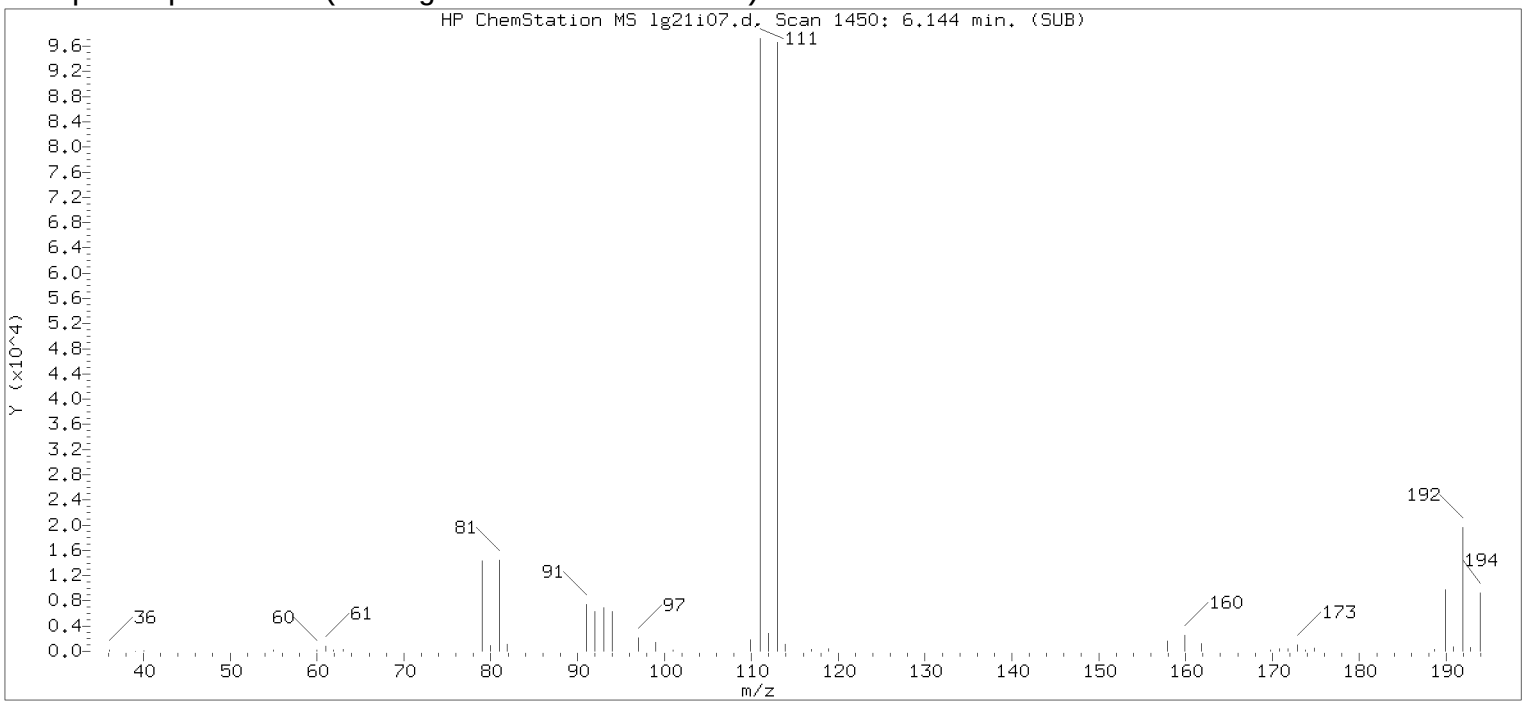
Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1450
Retention Time (minutes): 6.144
Quant Ion : 97.00
Area (flag) : 8602M
On-Column Amount (ng) : 0.9103
Integration start scan : 1412 Integration stop scan: 1472
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

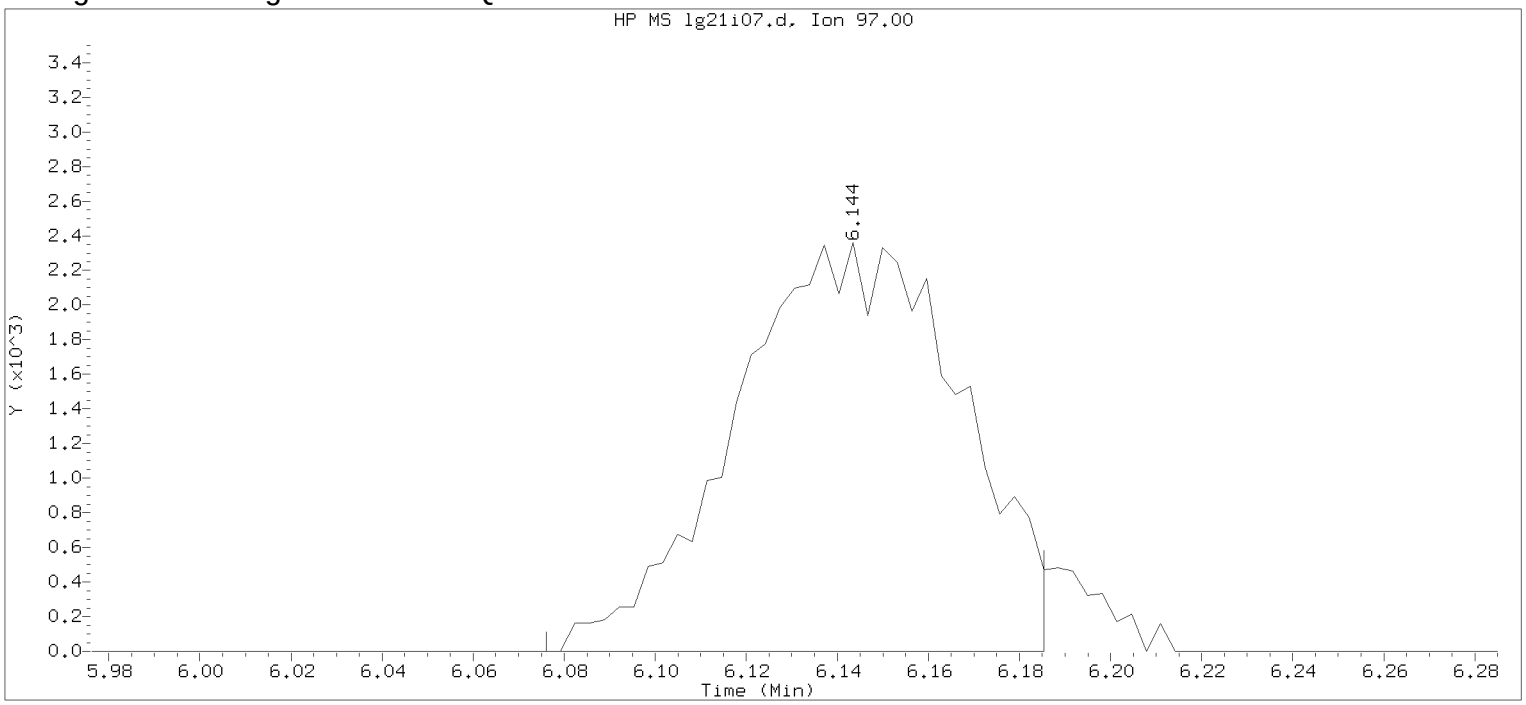
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 53
Compound Name : 1,1,1-Trichloroethane
Scan Number : 1450
Retention Time (minutes): 6.144
Quant Ion : 97.00
Area : 8143
On-column Amount (ng) : 0.8678
Integration start scan : 1428 Integration stop scan: 1462
Y at integration start : 0 Y at integration end: 0

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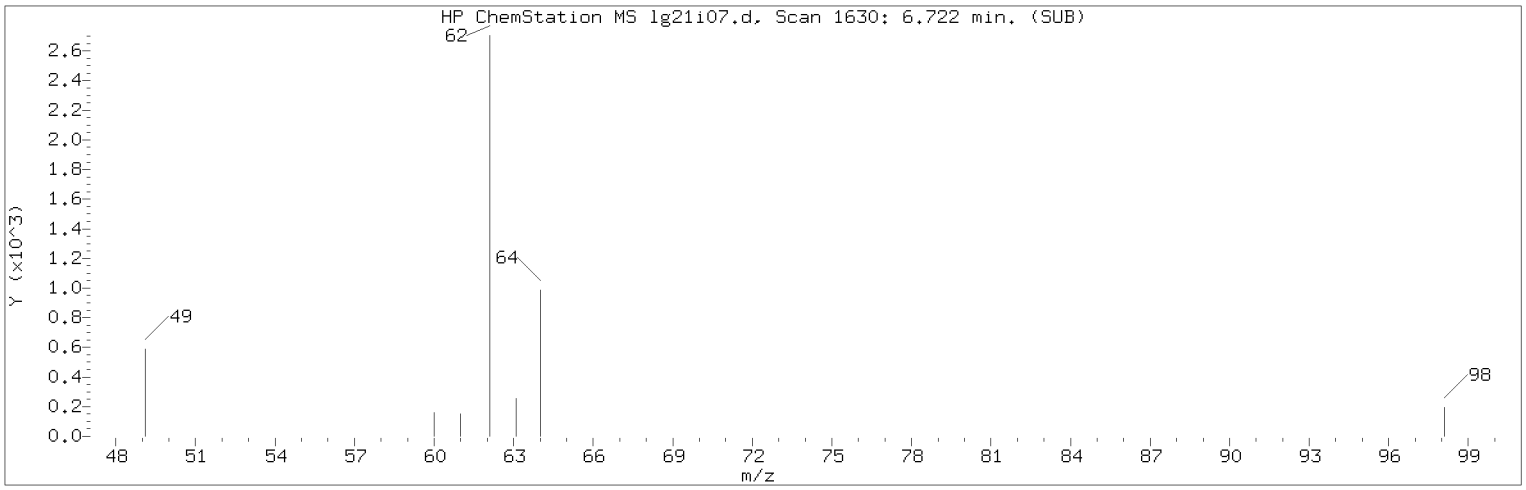
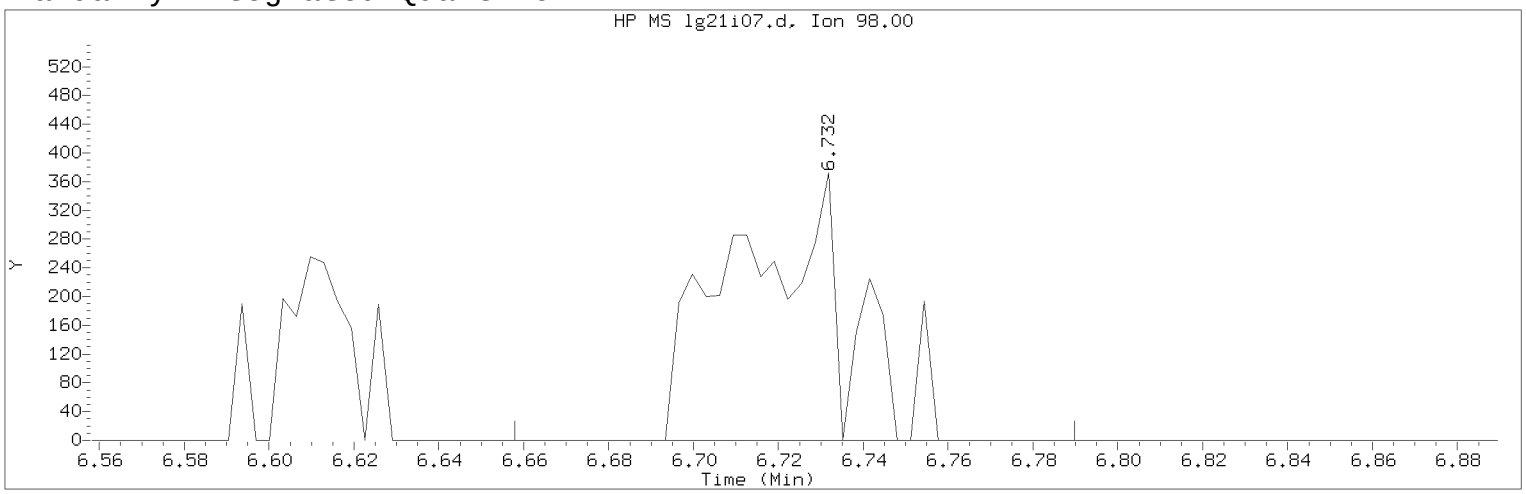
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

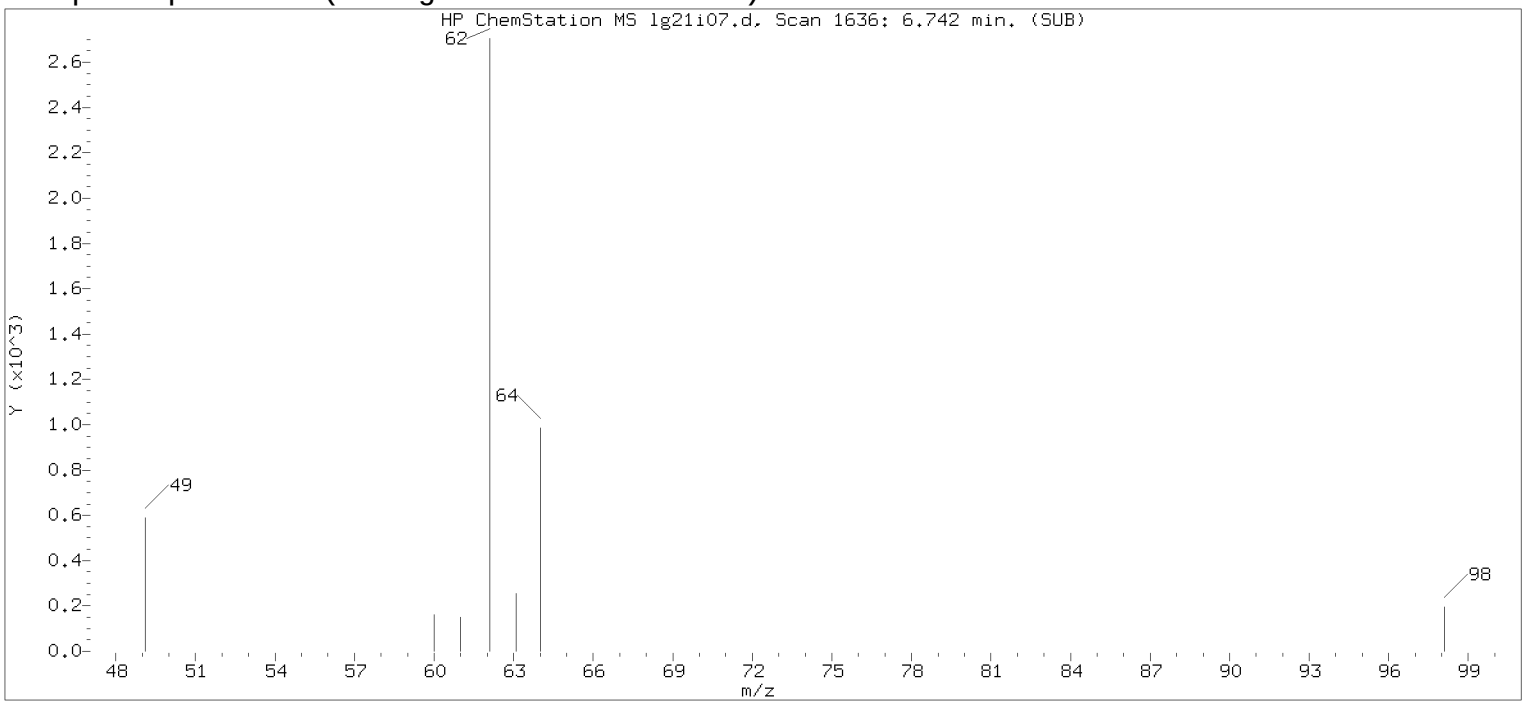
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1633
Retention Time (minutes): 6.732
Quant Ion : 98.00
Area (flag) : 709M
On-Column Amount (ng) : 0.9329
Integration start scan : 1609 Integration stop scan: 1650
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

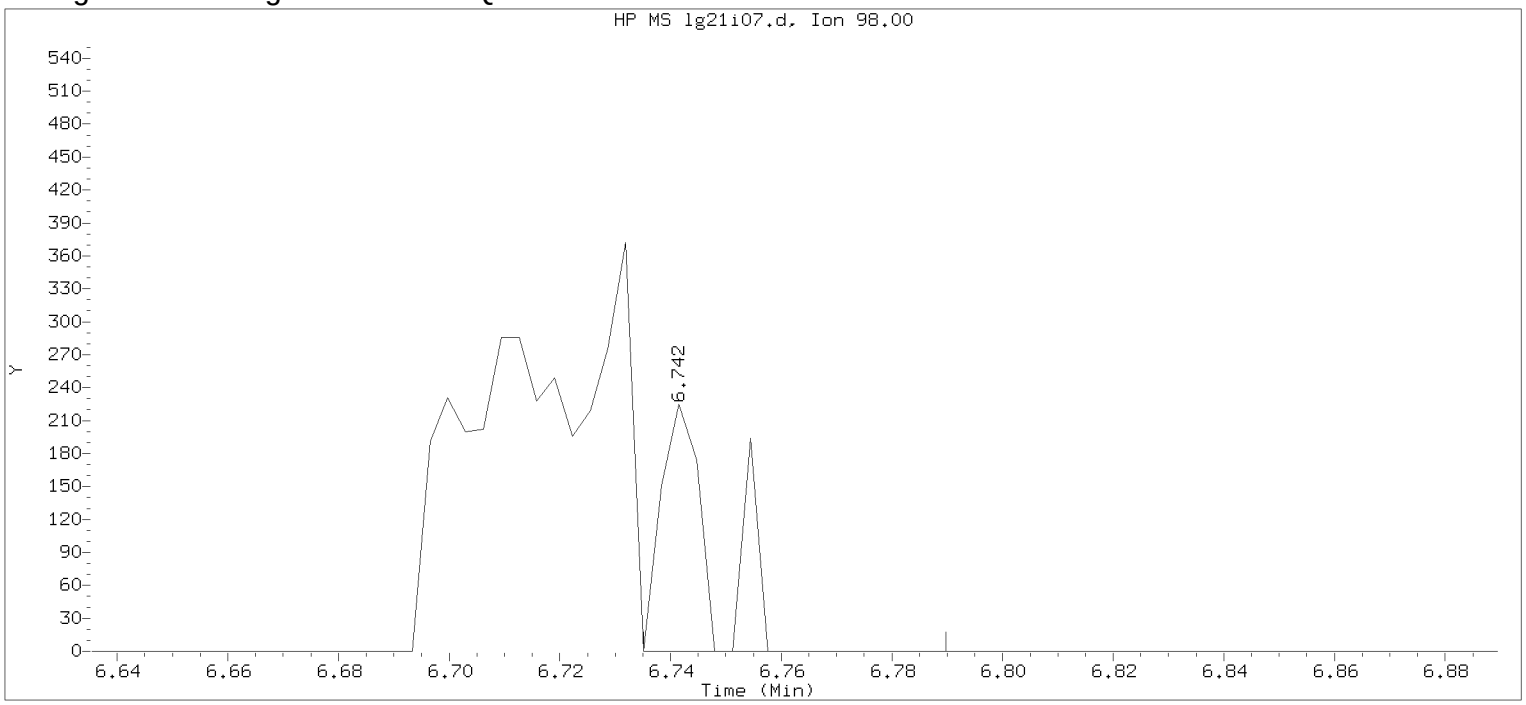
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

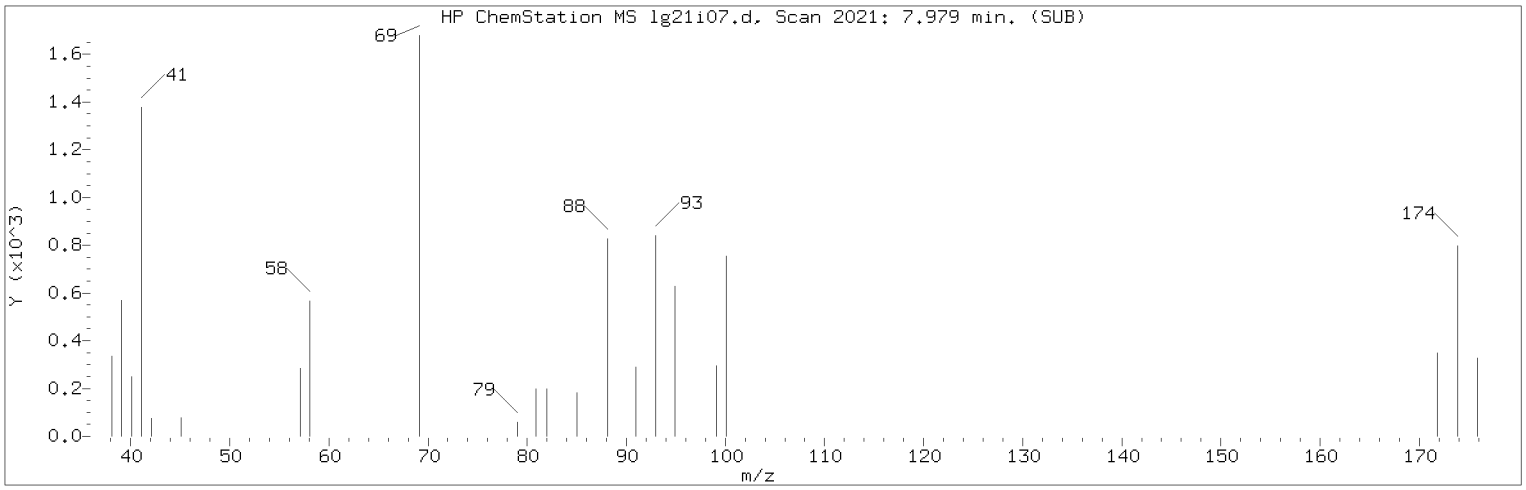
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

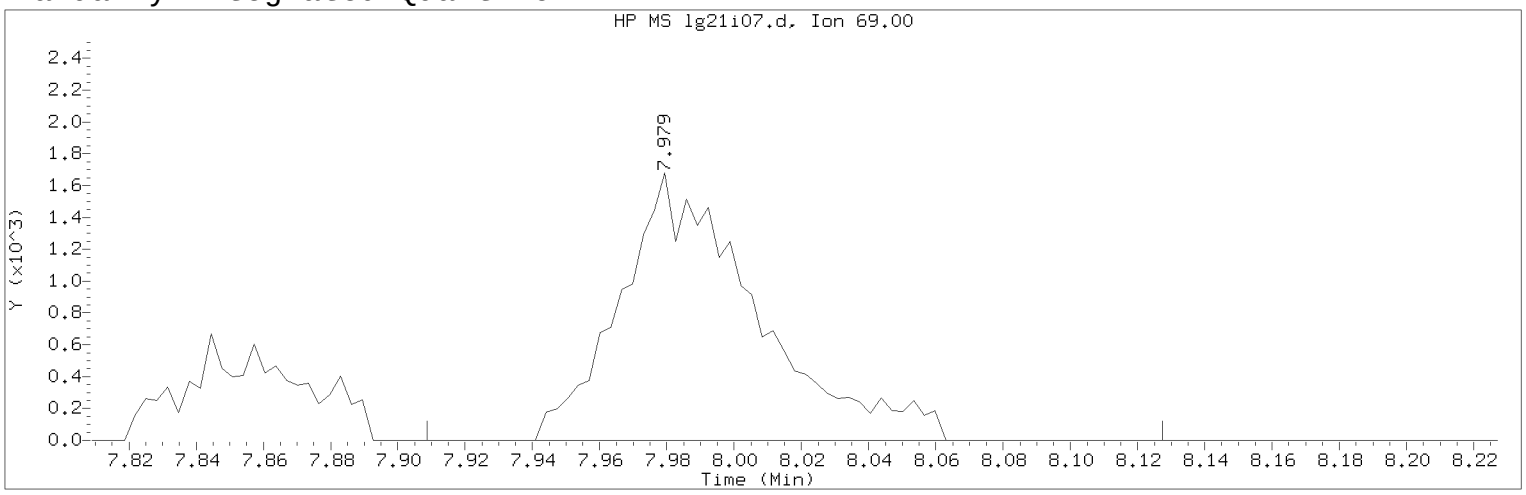
Compound Number : 61
Compound Name : 1,2-Dichloroethane
Scan Number : 1636
Retention Time (minutes): 6.742
Quant Ion : 98.00
Area : 143
On-column Amount (ng) : 0.2111
Integration start scan : 1633 Integration stop scan: 1650
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:23 kas02648

Sample Name: VSTD001 Lab Sample ID: VSTD001

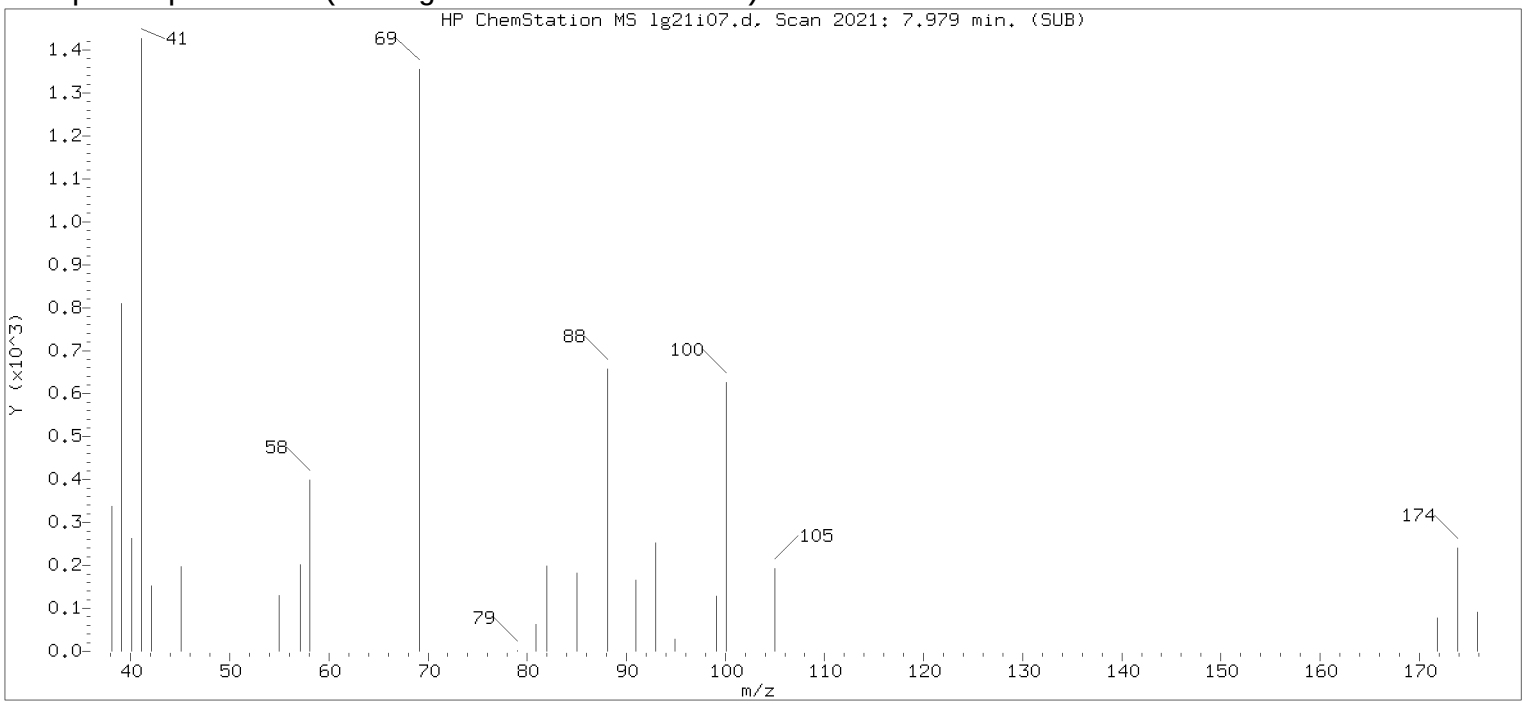
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 69.00
Area (flag) : 4729M
On-Column Amount (ng) : 0.8906
Integration start scan : 1998 Integration stop scan: 2066
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

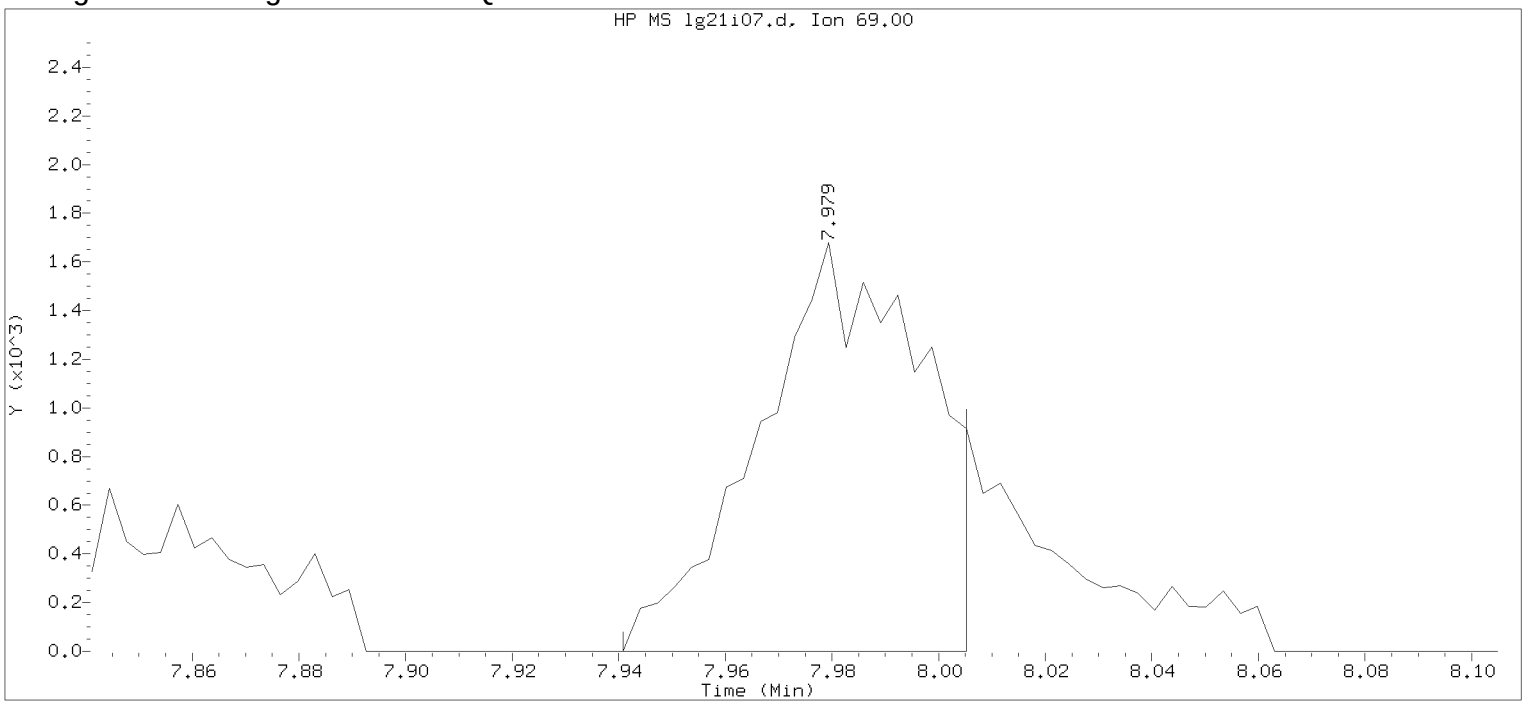
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 12:24.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:19.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



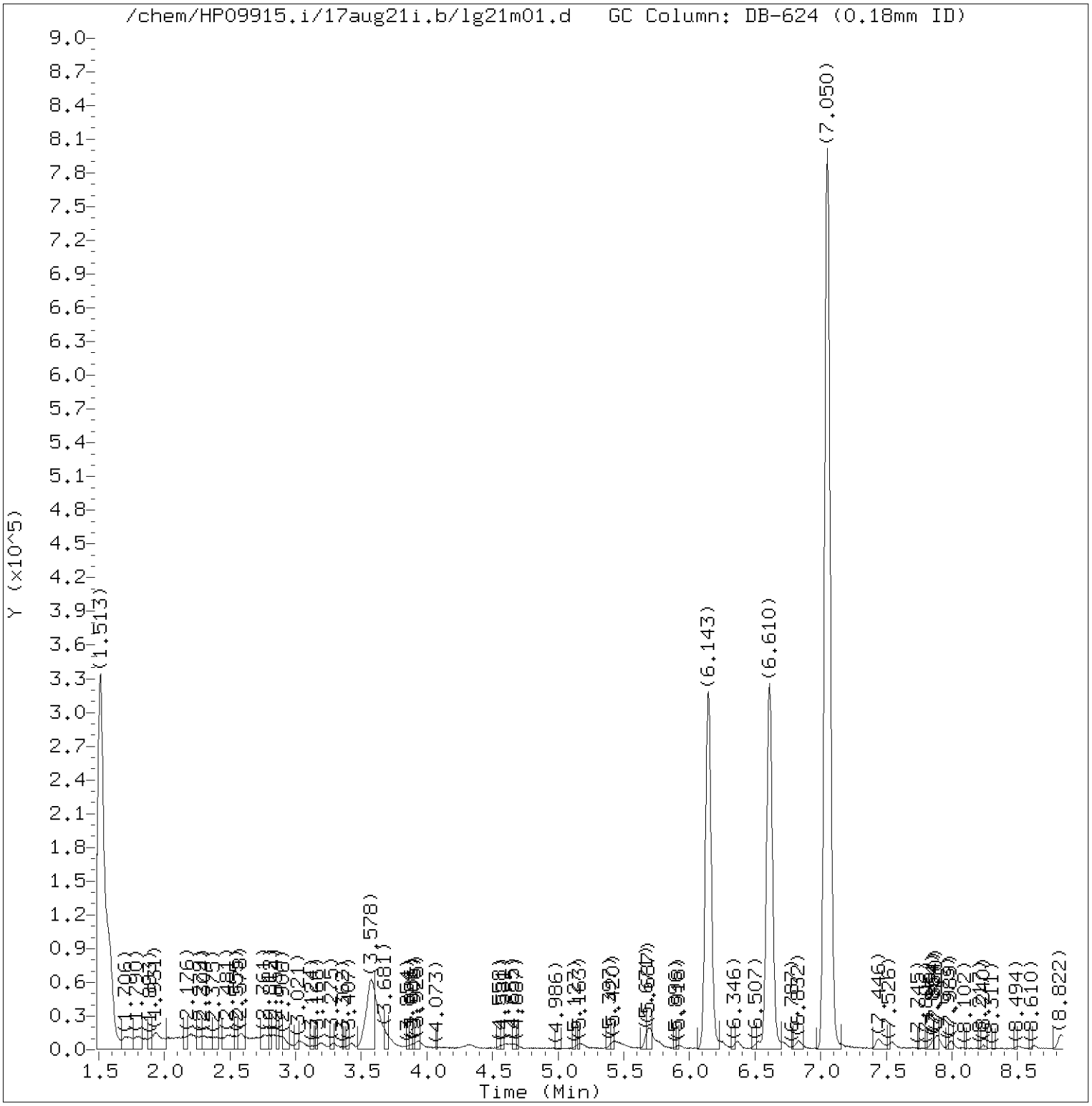

Data File: /chem/HP09915.i/17aug21i.b/lg21i07.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 11:51 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:09 Automation

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2021
Retention Time (minutes): 7.979
Quant Ion : 69.00
Area : 3568
On-column Amount (ng) : 0.6936
Integration start scan : 2008 Integration stop scan: 2028
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 12:24.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

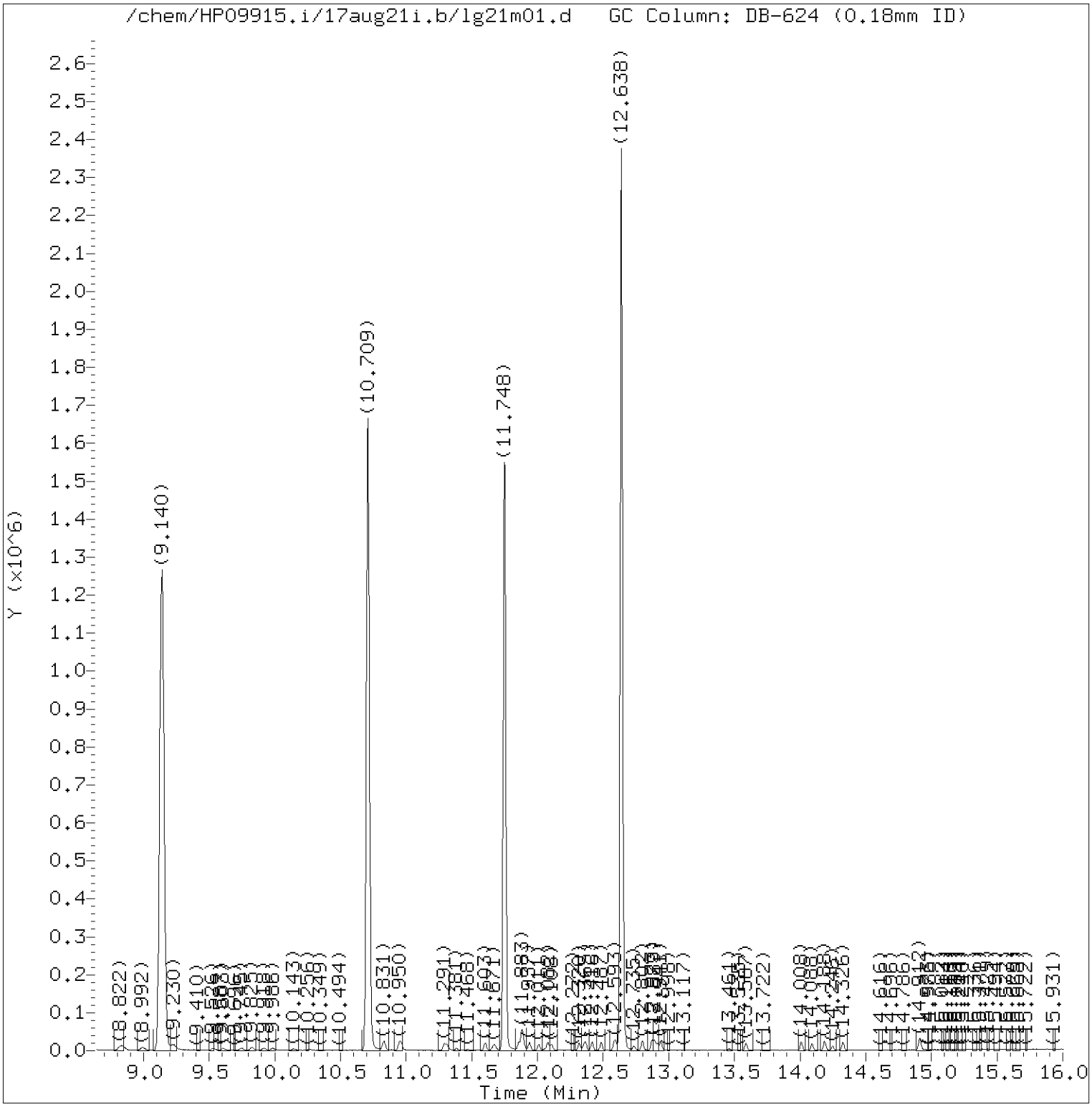
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.719 | 85 | 3300 | 0.424 |
| 4) Chloromethane | (2) | 1.796 | 50 | 4014 | 0.542 |
| 6) Vinyl Chloride | (2) | 1.919 | 62 | 3439 | 0.472 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 2255M | 0.435 |
| 8) Bromomethane | (2) | 2.208 | 94 | 3142M | 0.582 |
| 9) Chloroethane | (2) | 2.295 | 64 | 2073 | 0.514 |
| 10) Dichlorofluoromethane | (2) | 2.481 | 67 | 5773 | 0.635 |
| 12) Trichlorofluoromethane | (2) | 2.523 | 101 | 3839 | 0.418 |
| 11) n-Pentane | (2) | 2.584 | 43 | 3900 | 0.508 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 2201 | 0.472 |
| 15) Freon 123a | (2) | 2.819 | 67 | 4152 | 0.670 |
| 16) Acrolein | (1) | 2.902 | 56 | 8806 | 5.124 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 2033 | 0.445 |
| 19) Freon 113 | (2) | 3.034 | 101 | 1648 | 0.340 |
| 18) Acetone | (1) | 3.057 | 58 | 724M | 1.043 |
| 21) 2-Propanol | (1) | 3.185 | 45 | 7490M | 14.873 |
| 22) Methyl Iodide | (2) | 3.189 | 142 | 4006 | 0.419 |
| 23) Carbon Disulfide | (2) | 3.291 | 76 | 6684 | 0.427 |
| 27) Methyl Acetate | (2) | 3.404 | 43 | 2563M | 0.477 |
| 25) Allyl Chloride | (2) | 3.423 | 41 | 4941 | 0.657 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 233573 | 250.000 |
| 28) Methylene Chloride | (2) | 3.578 | 84 | 3060 | 0.554 |
| 30) t-Butyl alcohol | (1) | 3.684 | 59 | 10509M | 11.243 |
| 31) Acrylonitrile | (2) | 3.867 | 53 | 1159 | 0.394 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.925 | 73 | 7909 | 0.464 |
| 32) trans-1,2-Dichloroethene | (2) | 3.935 | 96 | 2196 | 0.407 |
| 34) n-Hexane | (2) | 4.317 | 57 | 3483M | 0.457 |
| 36) 1,1-Dichloroethane | (2) | 4.565 | 63 | 3921 | 0.426 |
| 38) di-Isopropyl ether | (2) | 4.623 | 45 | 7769 | 0.472 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.674 | 53 | 3273 | 0.407 |
| 40) Ethyl t-butyl ether | (2) | 5.160 | 59 | 7421 | 0.444 |
| 44) 2-Butanone | (2) | 5.410 | 43 | 4299 | 1.123 |
| 42) cis-1,2-Dichloroethene | (2) | 5.420 | 96 | 2565 | 0.418 |
| 45) 2,2-Dichloropropane | (2) | 5.436 | 77 | 3581M | 0.451 |
| 47) Propionitrile | (1) | 5.494 | 54 | 10369 | 9.360 |
| 48) Methacrylonitrile | (2) | 5.687 | 67 | 14225 | 4.407 |
| 49) Bromochloromethane | (2) | 5.767 | 128 | 1398 | 0.431 |
| 50) Tetrahydrofuran | (1) | 5.777 | 71 | 912 | 0.867 |

M = Compound was manually integrated.
* = Compound is an internal standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.925 | 83 | 3993 | 0.426 |
| 53) 1,1,1-Trichloroethane | (2) | 6.137 | 97 | 4426 | 0.477 |
| 52)$Dibromofluoromethane | (2) | 6.143 | 113 | 312527 | 49.820 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 4761 | 0.826 |
| 54) Cyclohexane | (2) | 6.246 | 56 | 4257 | 0.469 |
| 56) Carbon Tetrachloride | (2) | 6.352 | 117 | 2733 | 0.385 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 2755 | 0.375 |
| 58) Isobutyl Alcohol | (1) | 6.526 | 41 | 6931 | 23.422 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 76061 | 49.938 |
| 60) Benzene | (2) | 6.635 | 78 | 9389 | 0.434 |
| 61) 1,2-Dichloroethane | (2) | 6.725 | 62 | 4876 | 0.638 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 7554 | 0.438 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1232828 | 50.000 |
| 67) n-Heptane | (2) | 7.076 | 43 | 4464 | 0.565 |
| 69) n-Butanol | (1) | 7.436 | 56 | 11616 | 47.672 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 2556 | 0.438 |
| 72) Methylcyclohexane | (2) | 7.864 | 83 | 3892 | 0.407 |
| 73) 1,2-Dichloropropane | (2) | 7.889 | 63 | 2487 | 0.446 |
| 75) 1,4-Dioxane | (1) | 7.983 | 88 | 1226 | 16.034 |
| 76) Methyl Methacrylate | (2) | 7.989 | 69 | 2174M | 0.417 |
| 74) Dibromomethane | (2) | 7.995 | 93 | 1725 | 0.435 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 2963 | 0.411 |
| 79) 2-Nitropropane | (2) | 8.503 | 41 | 2472M | 1.192 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.629 | 63 | 1652 | 0.381 |
| 81) cis-1,3-Dichloropropene | (2) | 8.822 | 75 | 3597 | 0.396 |
| 82) 4-Methyl-2-pentanone | (2) | 8.992 | 43 | 7807 | 0.976 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1216395 | 50.393 |
| 88) Toluene | (3) | 9.230 | 92 | 6141 | 0.435 |
| 89) trans-1,3-Dichloropropene | (3) | 9.526 | 75 | 3261 | 0.393 |
| 91) Ethyl Methacrylate | (3) | 9.603 | 69 | 3681 | 0.410 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 2508 | 0.457 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 2635 | 0.421 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 3902 | 0.436 |
| 96) 2-Hexanone | (3) | 9.986 | 43 | 5996 | 1.028 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 6858 | 0.789 |
| 97) Dibromochloromethane | (3) | 10.146 | 129 | 2374 | 0.392 |
| 99) 1,2-Dibromoethane | (3) | 10.265 | 107 | 2708 | 0.440 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 969500 | 50.000 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.728 | 91 | 5559 | 0.684 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 7205 | 0.438 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.825 | 131 | 2203 | 0.382 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 11821 | 0.436 |
| 106) m+p-Xylene | (3) | 10.960 | 106 | 9466 | 0.869 |
| 107) o-Xylene | (3) | 11.291 | 106 | 4603 | 0.420 |
| 109) Styrene | (3) | 11.314 | 104 | 7232 | 0.396 |
| 110) Bromoform | (3) | 11.471 | 173 | 1417 | 0.312 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 12794 | 0.466 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 6764 | 22.878 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 460399 | 49.888 |
| 108) Xylene (Total) | (3) | | 106 | 14069 | 1.289 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.857 | 83 | 3874 | 0.429 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 3275 | 0.432 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.883 | 53 | 9963 | 4.195 |
| 117) 1,2,3-Trichloropropane | (4) | 11.902 | 110 | 1240 | 0.451 |
| 119) n-Propylbenzene | (4) | 11.937 | 91 | 14150 | 0.446 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 2882 | 0.420 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 10906 | 0.456 |
| 121) 4-Chlorotoluene | (4) | 12.108 | 126 | 3007 | 0.419 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 2260 | 0.440 |
| 125) Pentachloroethane | (4) | 12.352 | 167 | 1422 | 0.328 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.368 | 105 | 11614 | 0.472 |
| 127) sec-Butylbenzene | (4) | 12.487 | 105 | 13248 | 0.447 |
| 129) 1,3-Dichlorobenzene | (4) | 12.580 | 146 | 6274 | 0.438 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 11927 | 0.453 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 529748 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 6927 | 0.469 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 12596 | 0.492 |
| 135) Benzyl Chloride | (4) | 12.735 | 91 | 6800 | 0.373 |
| 136) 1,3-Diethylbenzene | (4) | 12.802 | 119 | 7130 | 0.446 |
| 137) 1,4-Diethylbenzene | (4) | 12.873 | 119 | 7702 | 0.462 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 5912 | 0.458 |
| 138) 1,2-Dichlorobenzene | (4) | 12.915 | 146 | 6702 | 0.471 |
| 140) 1,2-Diethylbenzene | (4) | 12.941 | 119 | 5695 | 0.428 |
| 141) Diethylbenzene (total) | (4) | | 100 | 20527 | 1.335 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.455 | 75 | 900 | 0.457 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.590 | 180 | 5459 | 0.505 |

* = Compound is an internal standard.
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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.011 | 180 | 6073 | 0.566 |
| 147) Hexachlorobutadiene | (4) | 14.088 | 225 | 2594 | 0.566 |
| 148) Naphthalene | (4) | 14.188 | 128 | 17969 | 0.530 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.330 | 180 | 6025 | 0.585 |
| 150) 2-Methylnaphthalene | (4) | 14.912 | 142 | 14364 | 0.629 |



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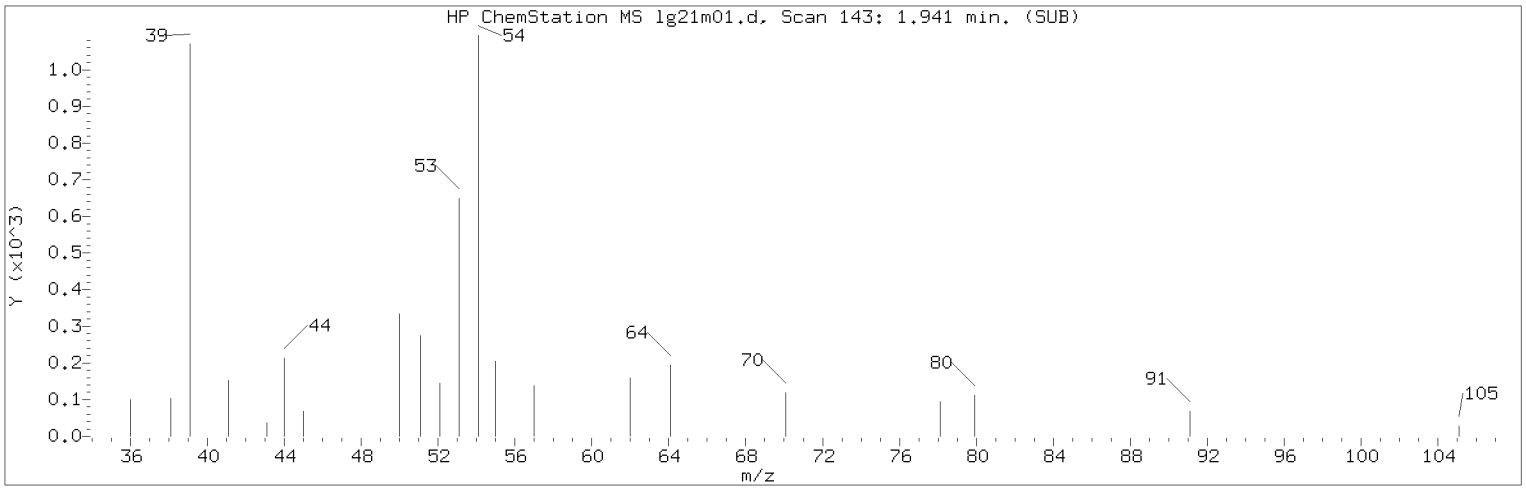
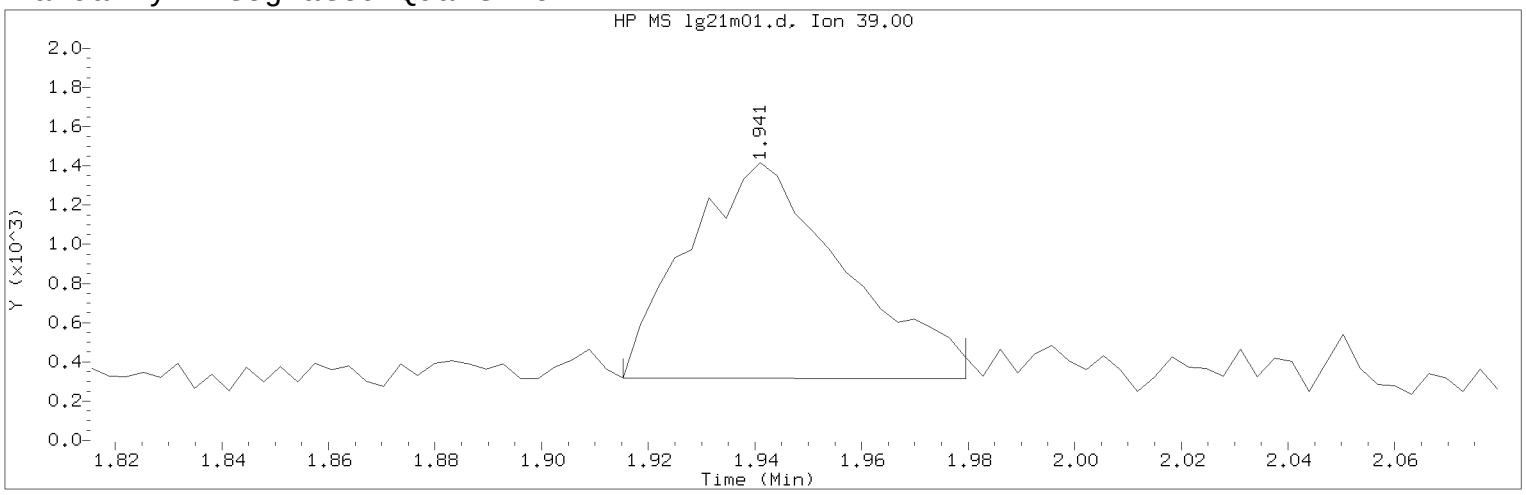
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

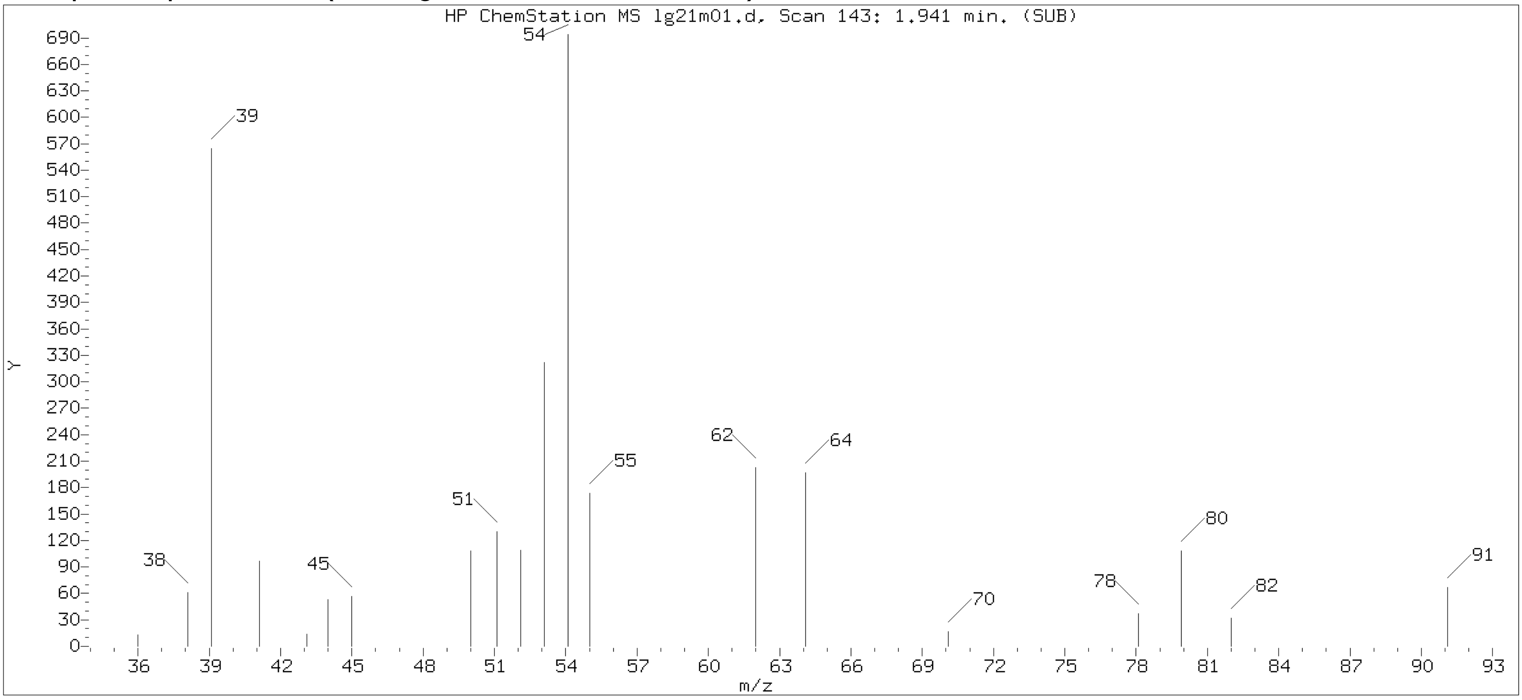
Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area (flag) : 2255M
On-Column Amount (ng) : 0.4349
Integration start scan : 134 Integration stop scan: 154
Y at integration start : 316 Y at integration end: 315

Reason for manual integration: improper integration

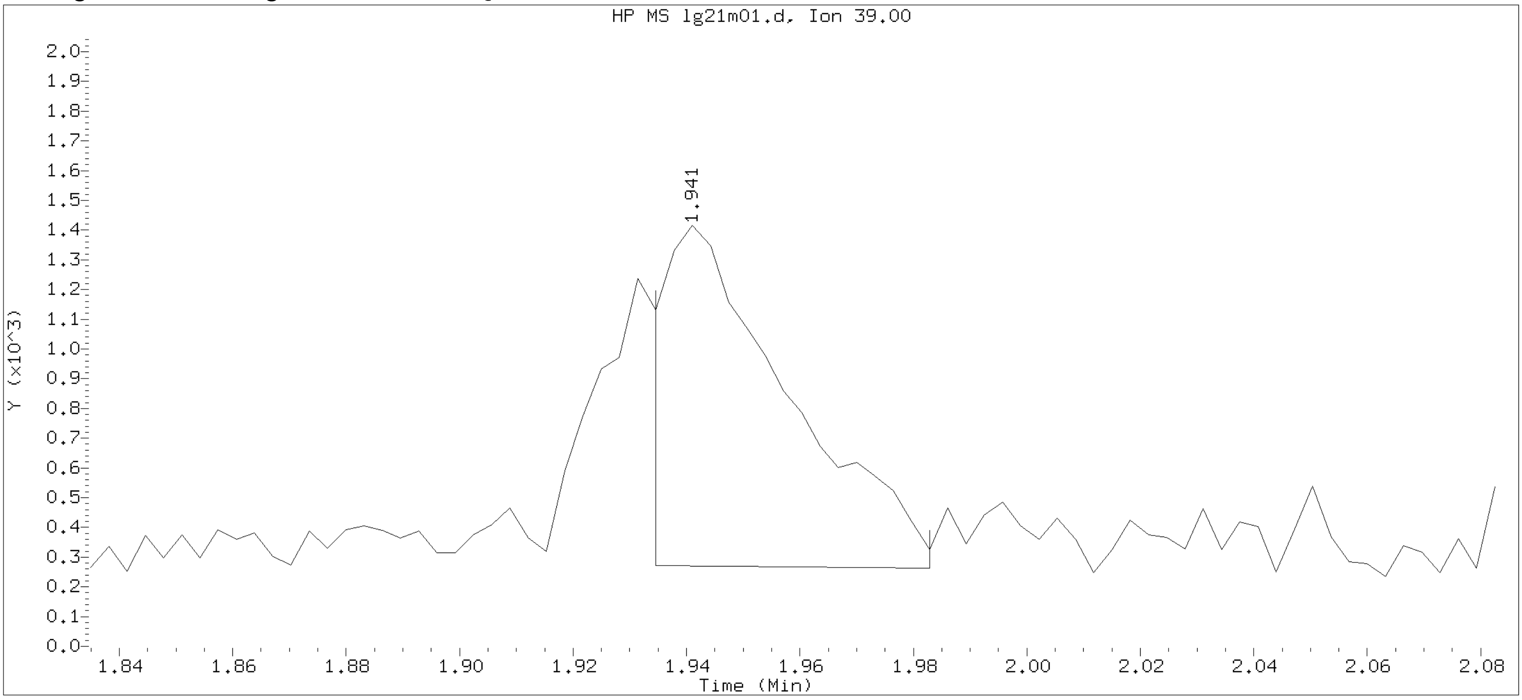
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 5
Compound Name : 1,3-Butadiene
Scan Number : 143
Retention Time (minutes): 1.941
Quant Ion : 39.00
Area : 1750
On-column Amount (ng) : 0.3376
Integration start scan : 140 Integration stop scan: 155
Y at integration start : 272 Y at integration end: 263

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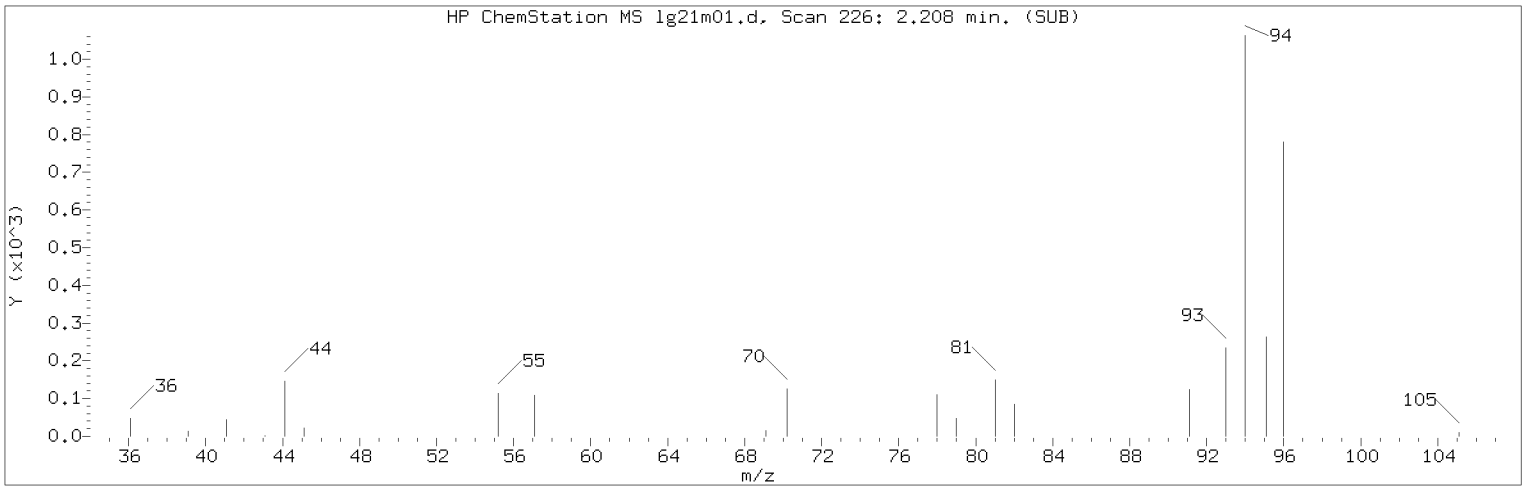
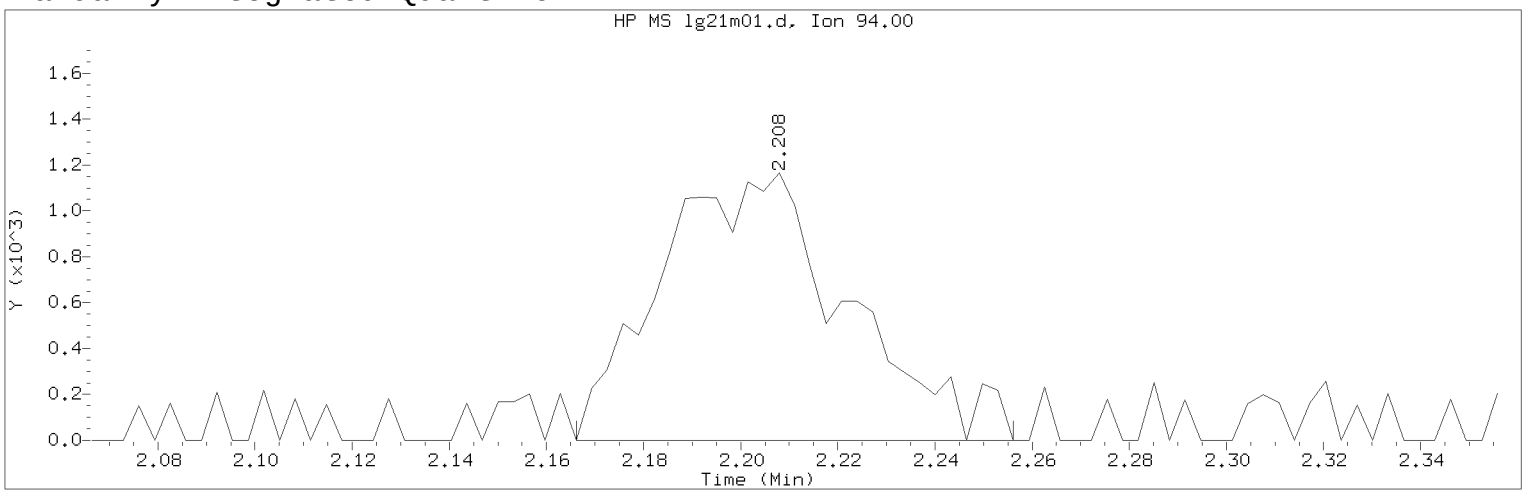
Target 3.5 esignature user kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

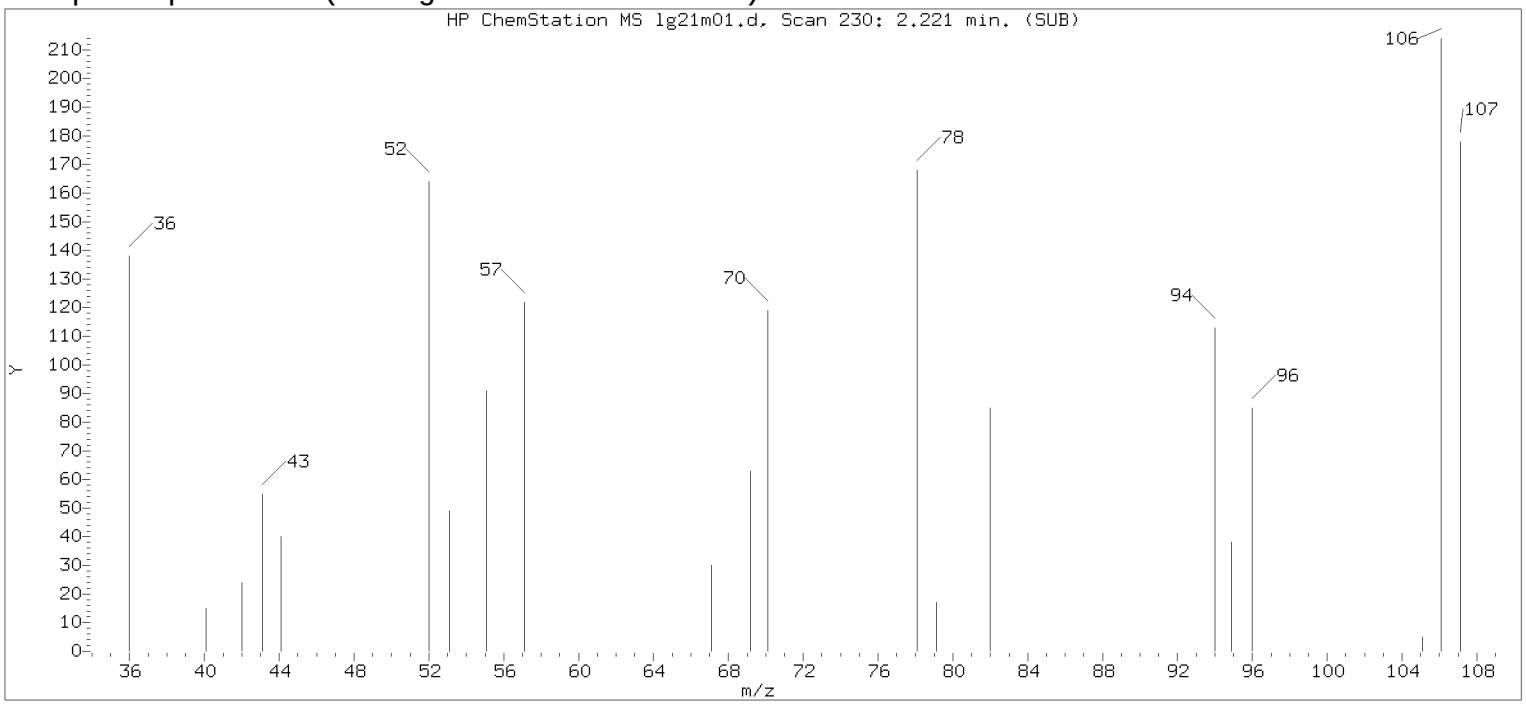
Compound Number : 8
Compound Name : Bromomethane
Scan Number : 226
Retention Time (minutes): 2.208
Quant Ion : 94.00
Area (flag) : 3142M
On-Column Amount (ng) : 0.5820
Integration start scan : 212 Integration stop scan: 240
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

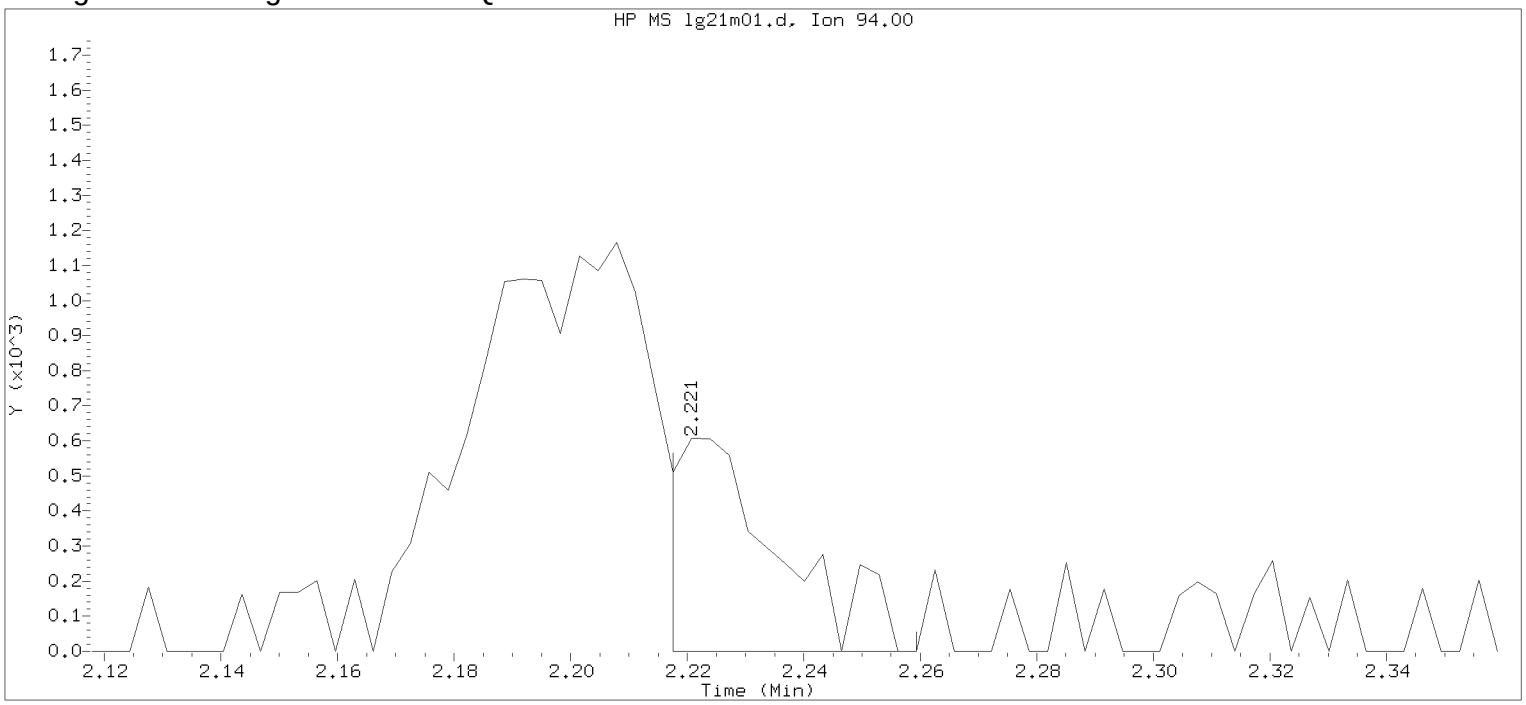
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 8
Compound Name : Bromomethane
Scan Number : 230
Retention Time (minutes): 2.221
Quant Ion : 94.00
Area : 744
On-column Amount (ng) : 0.1378
Integration start scan : 228 Integration stop scan: 241
Y at integration start : 0 Y at integration end: 0

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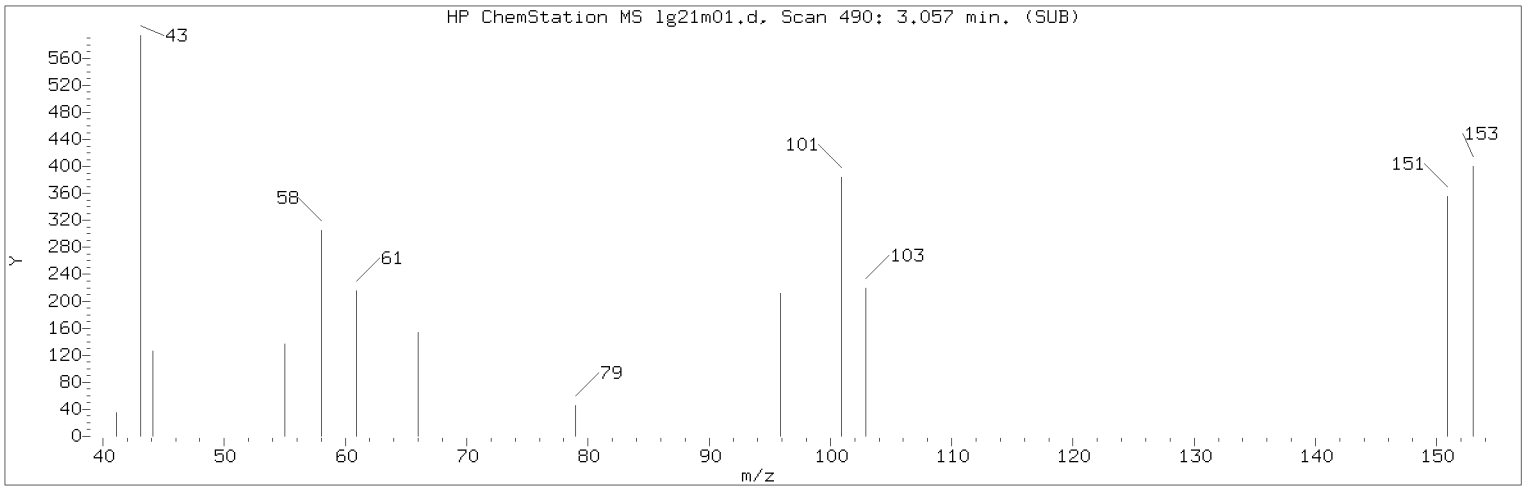
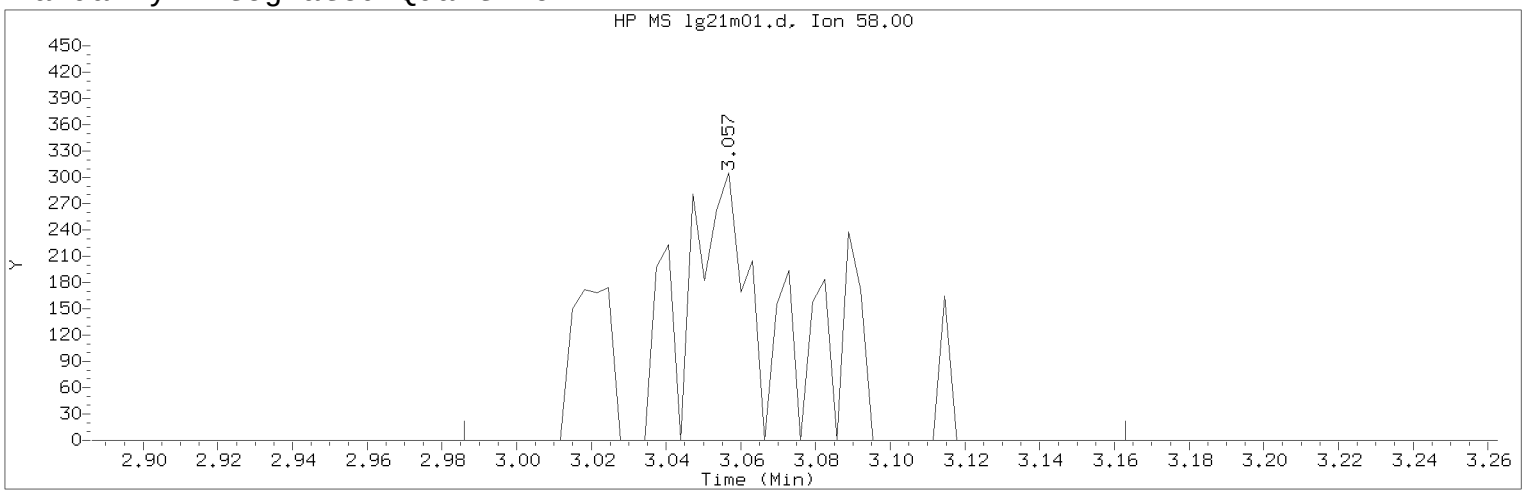
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d  Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

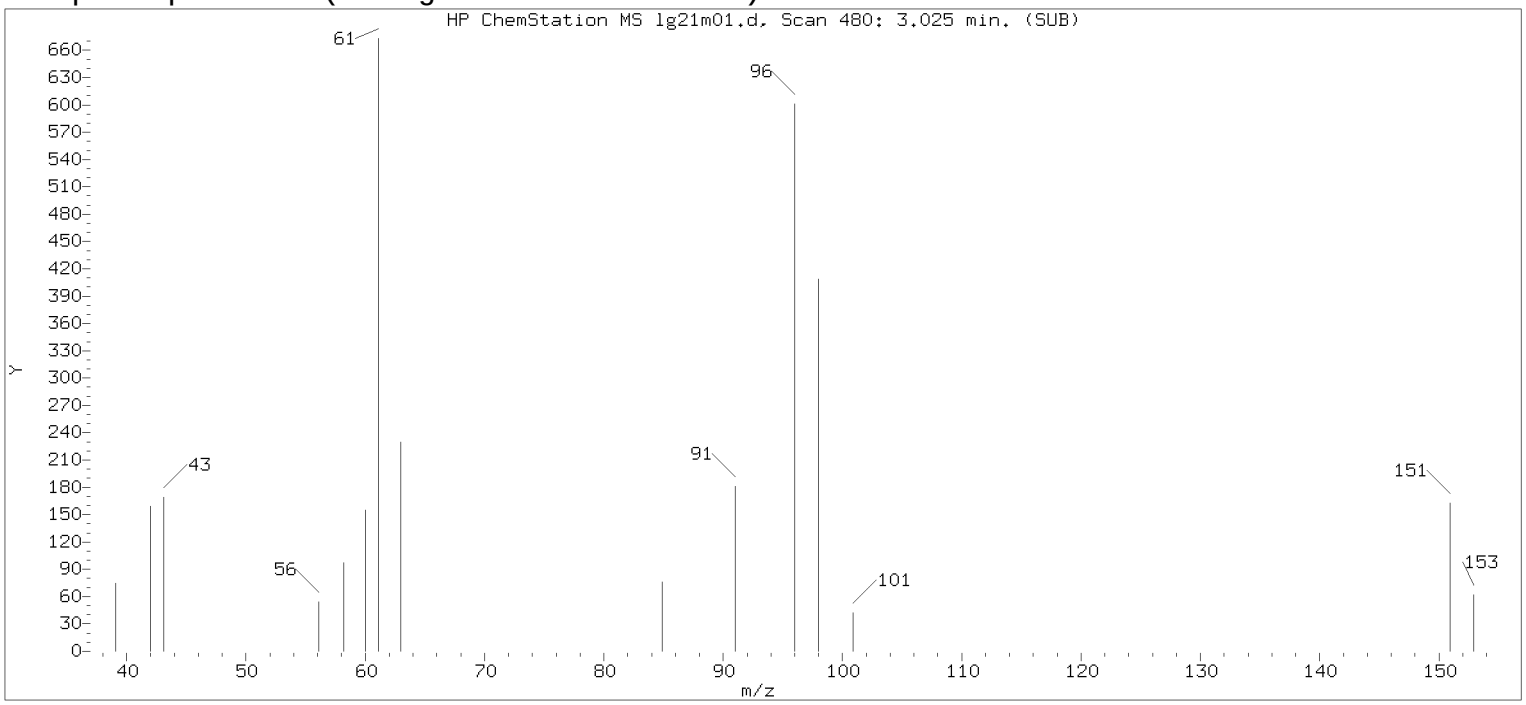
Compound Number : 18
Compound Name : Acetone
Scan Number : 490
Retention Time (minutes): 3.057
Quant Ion : 58.00
Area (flag) : 724M
On-Column Amount (ng) : 1.0425
Integration start scan : 467  Integration stop scan: 522
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

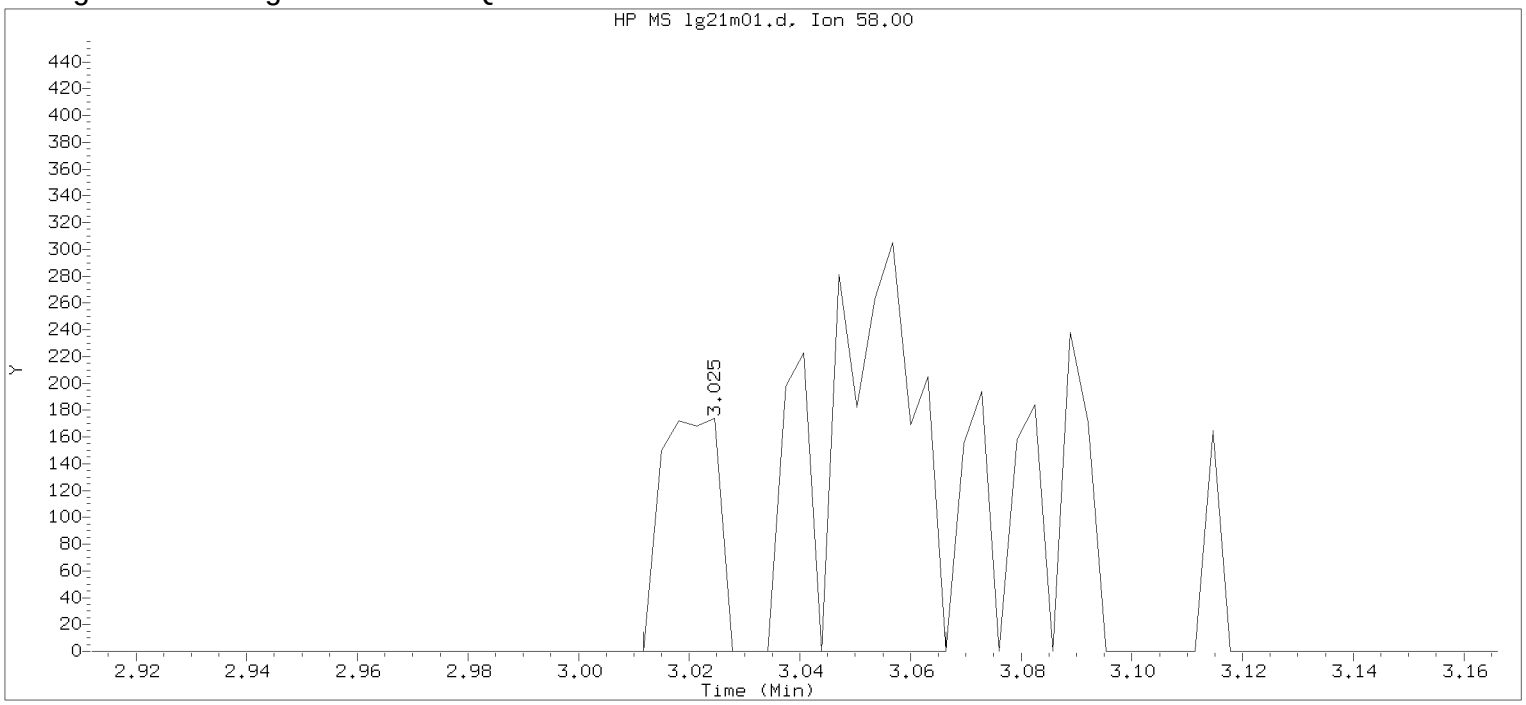
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 18
Compound Name : Acetone
Scan Number : 480
Retention Time (minutes): 3.025
Quant Ion : 58.00
Area : 480
On-column Amount (ng) : 0.6913
Integration start scan : 475 Integration stop scan: 492
Y at integration start : 0 Y at integration end: 0

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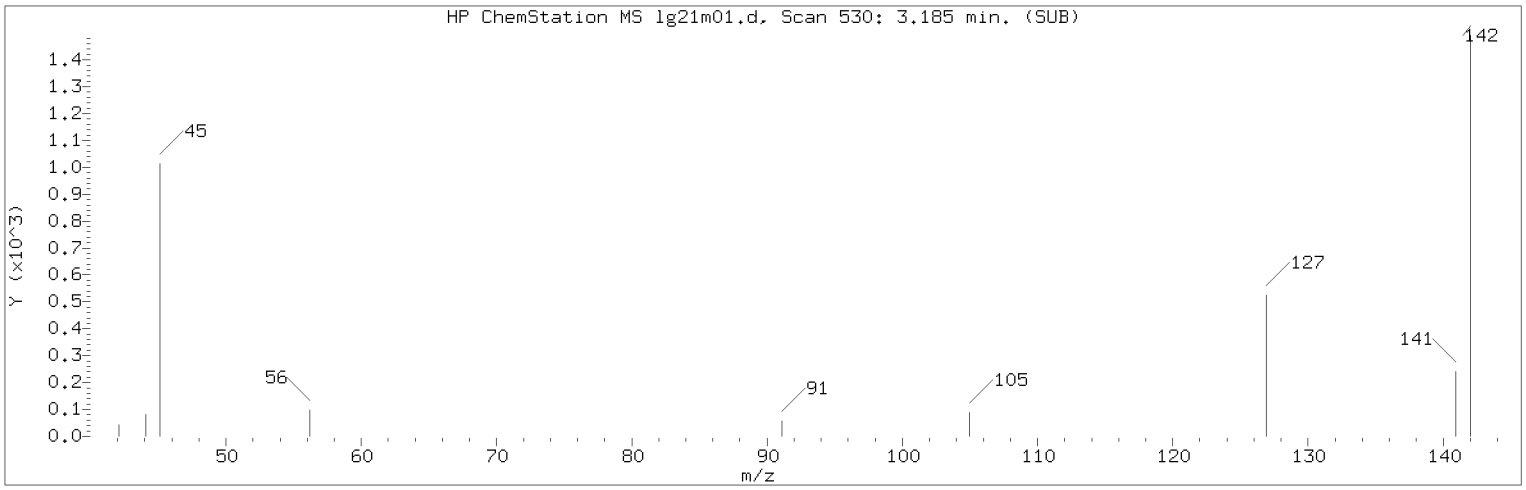
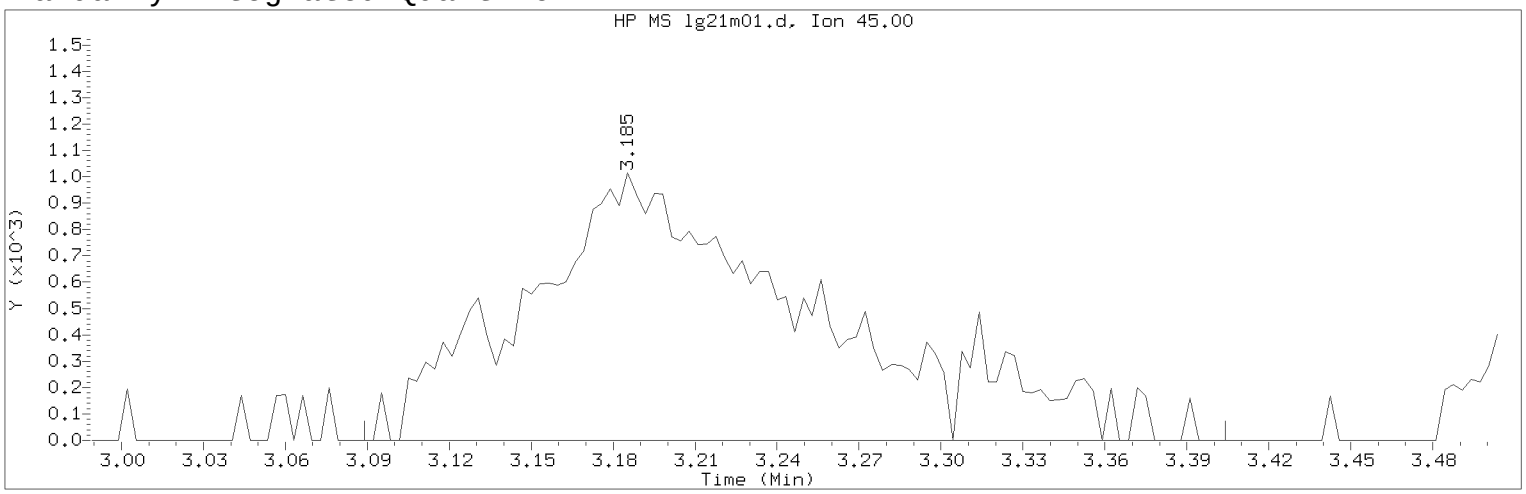
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d  Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

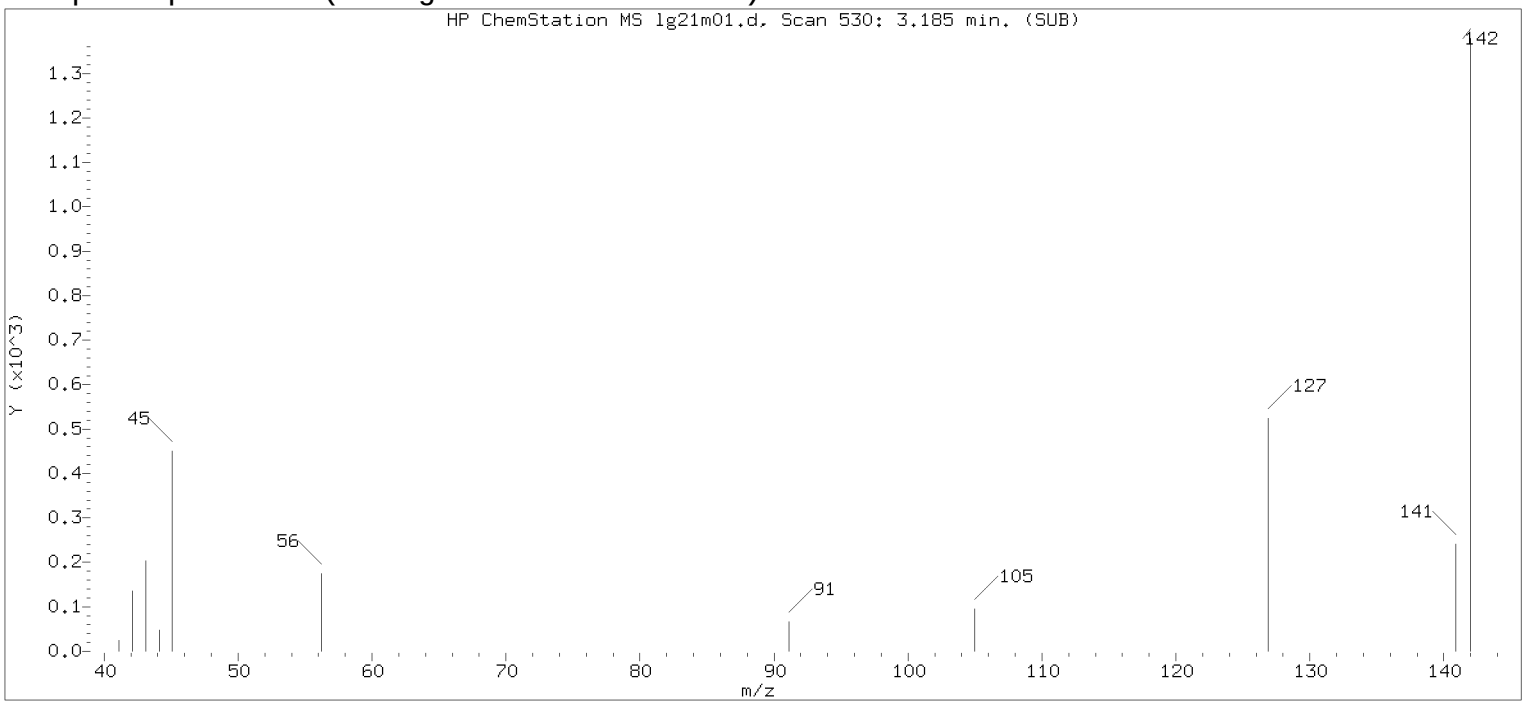
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 530
Retention Time (minutes): 3.185
Quant Ion : 45.00
Area (flag) : 7490M
On-Column Amount (ng) : 14.8734
Integration start scan : 499  Integration stop scan: 597
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

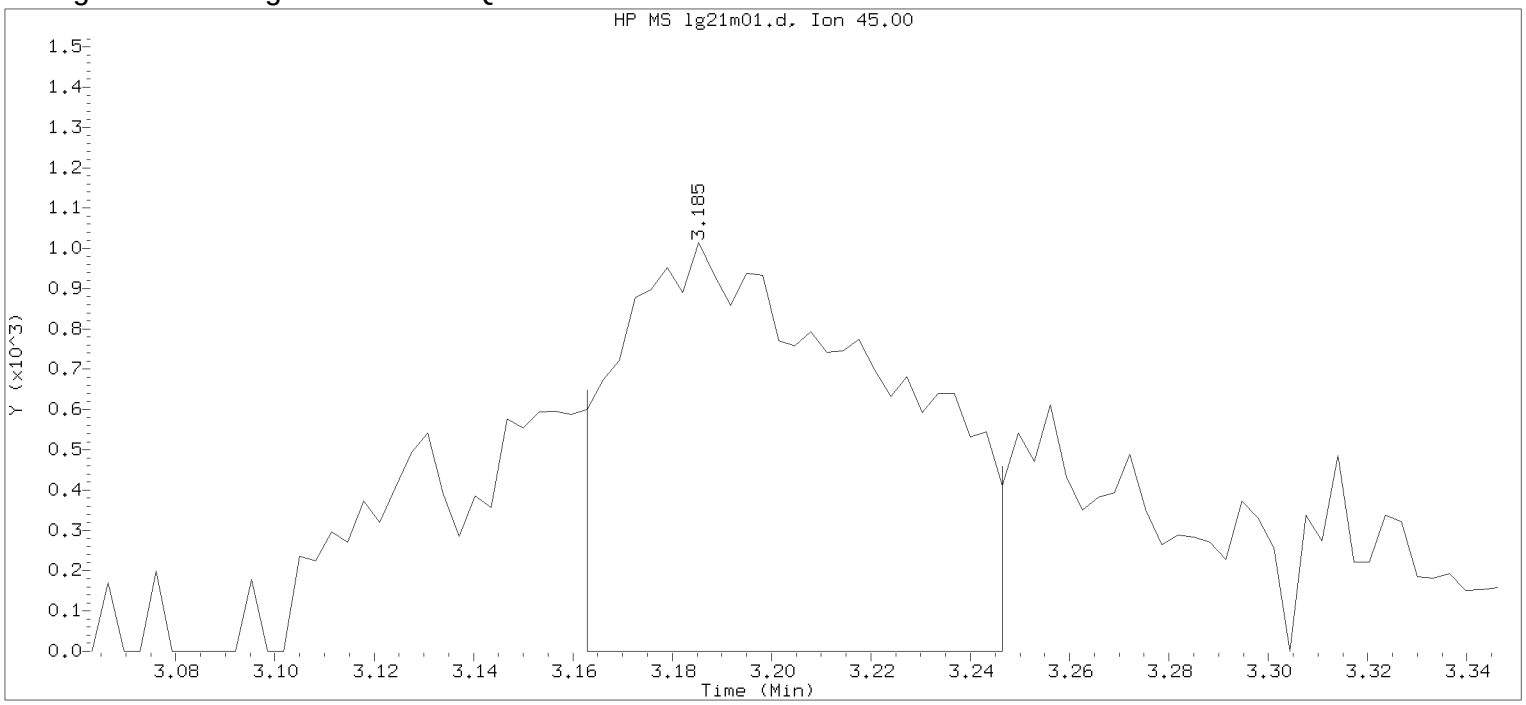
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

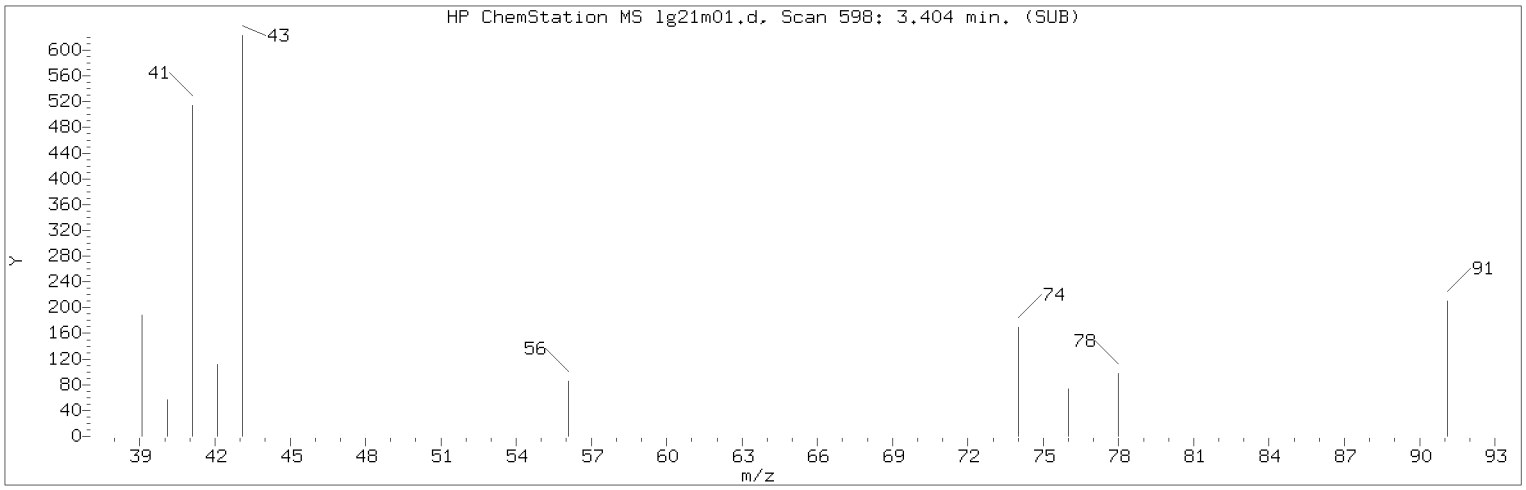
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

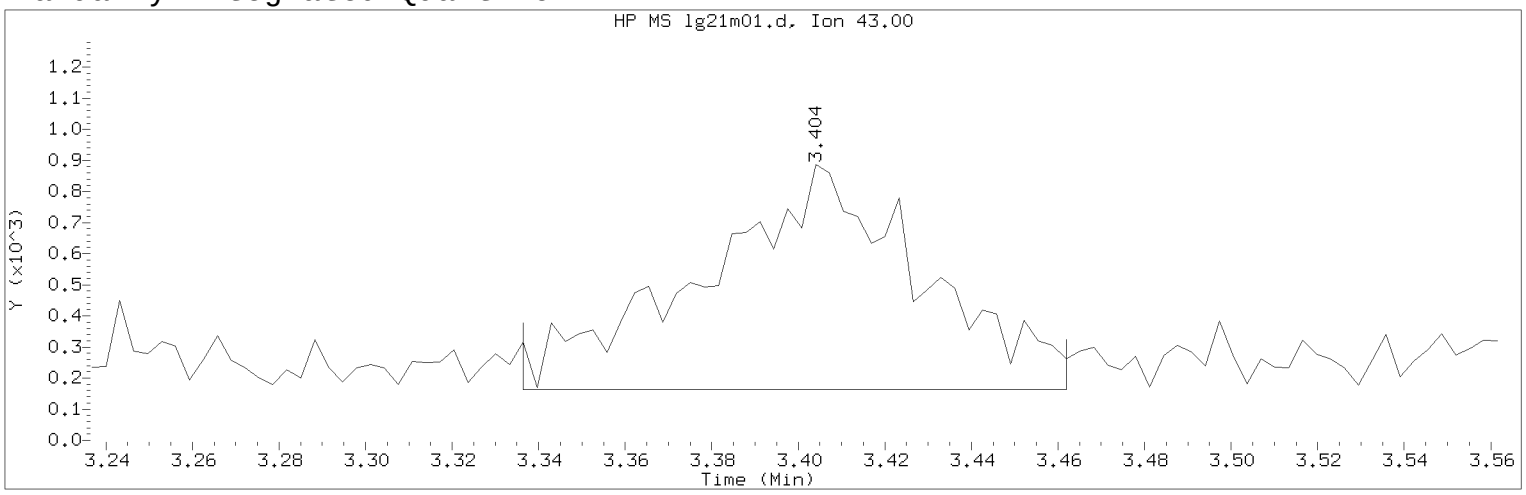
Compound Number : 21
Compound Name : 2-Propanol
Scan Number : 530
Retention Time (minutes): 3.185
Quant Ion : 45.00
Area : 3807
On-column Amount (ng) : 7.5613
Integration start scan : 522 Integration stop scan: 548
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d  Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13  Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m  Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5  Lab Sample ID: MDL0.5

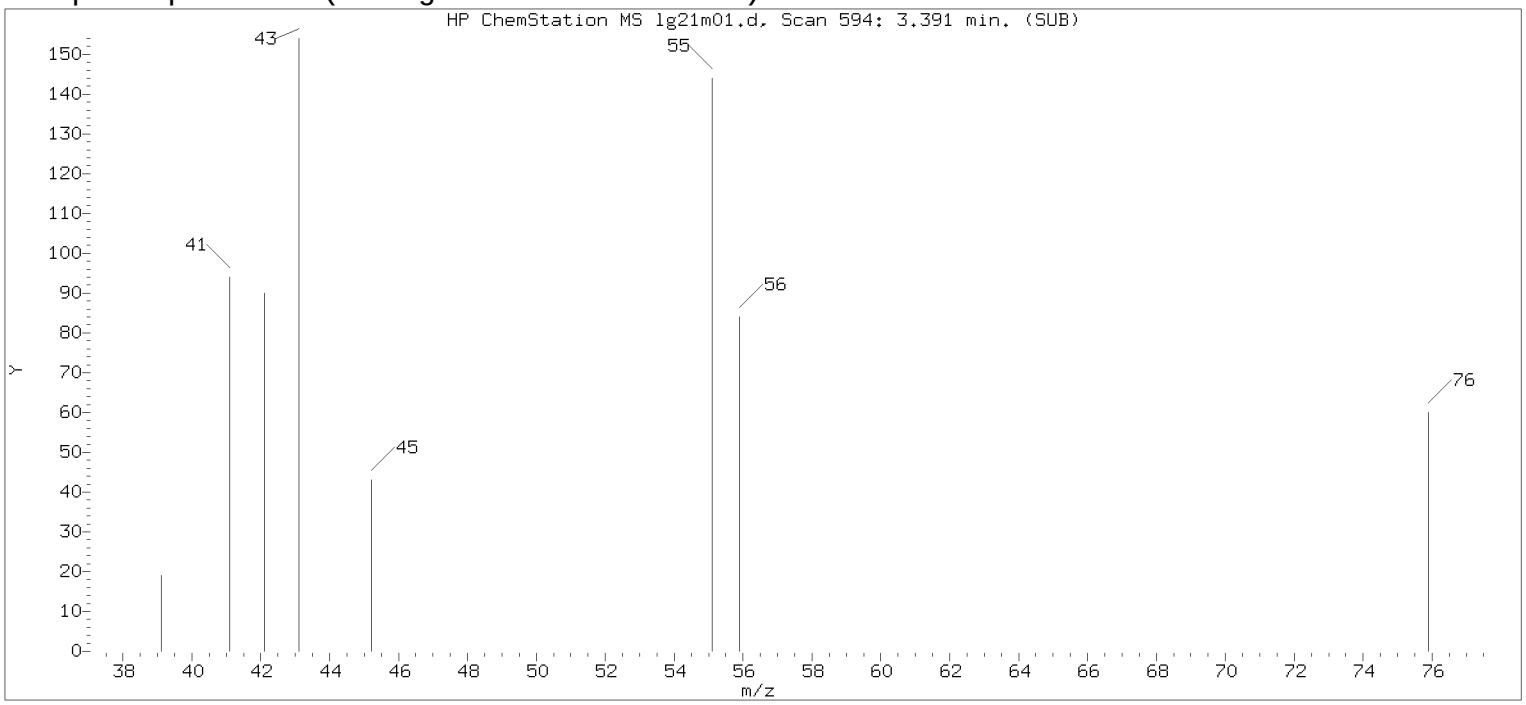
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 598
Retention Time (minutes): 3.404
Quant Ion : 43.00
Area (flag) : 2563M
On-Column Amount (ng) : 0.4774
Integration start scan : 576  Integration stop scan: 615
Y at integration start : 164  Y at integration end: 164

Reason for manual integration: improper integration

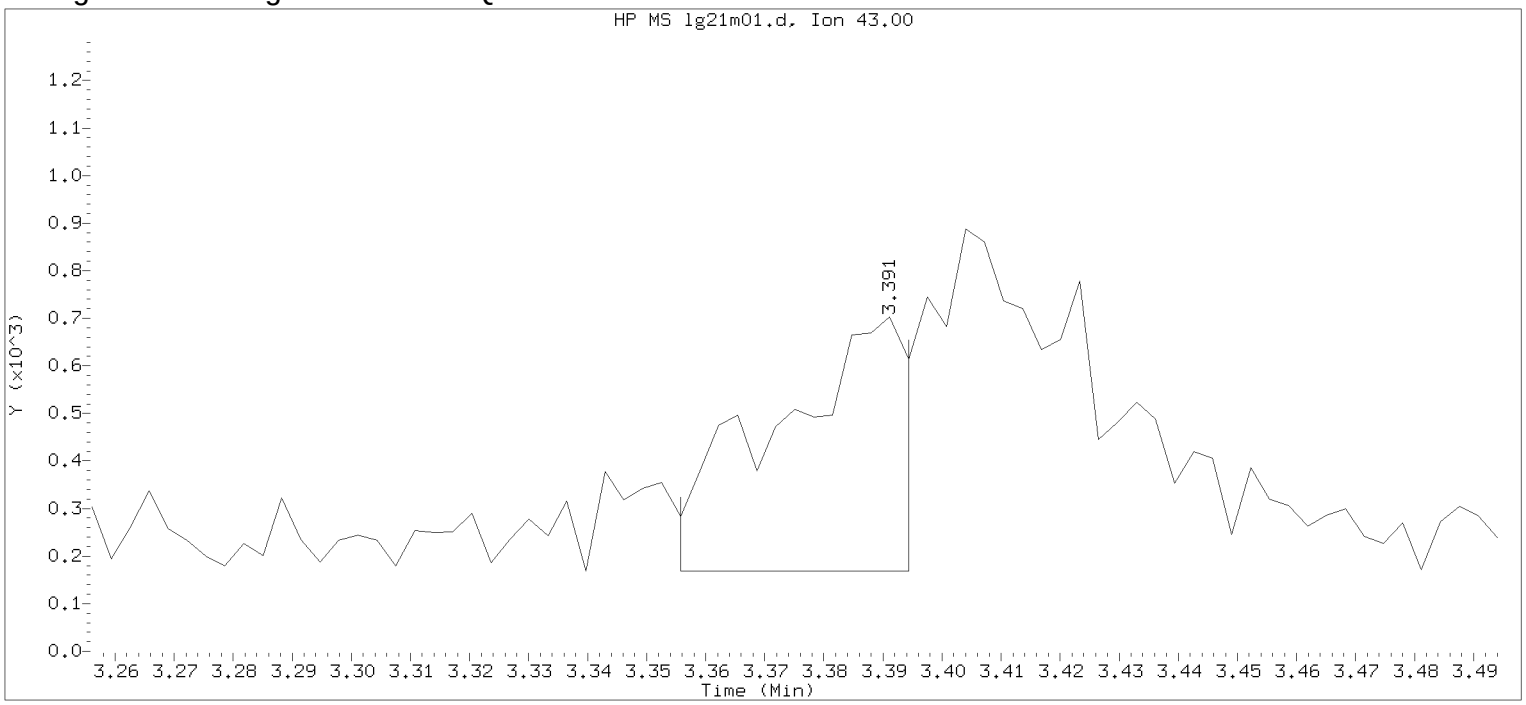
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

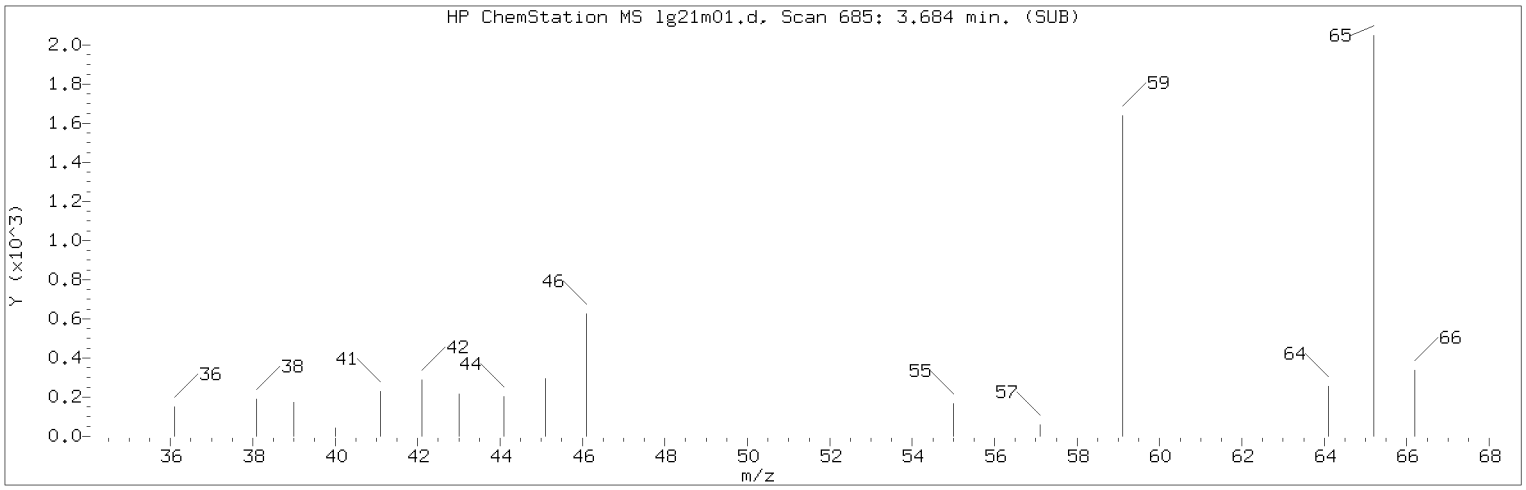
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

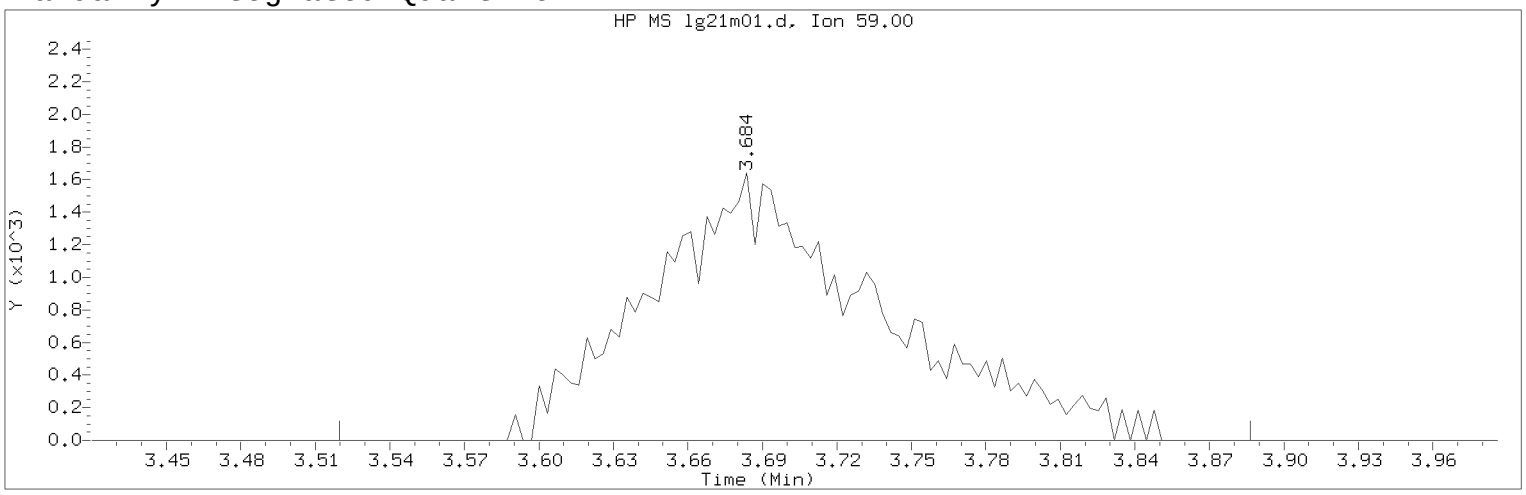
Compound Number : 27
Compound Name : Methyl Acetate
Scan Number : 594
Retention Time (minutes): 3.391
Quant Ion : 43.00
Area : 801
On-column Amount (ng) : 0.1493
Integration start scan : 582 Integration stop scan: 594
Y at integration start : 169 Y at integration end: 169

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

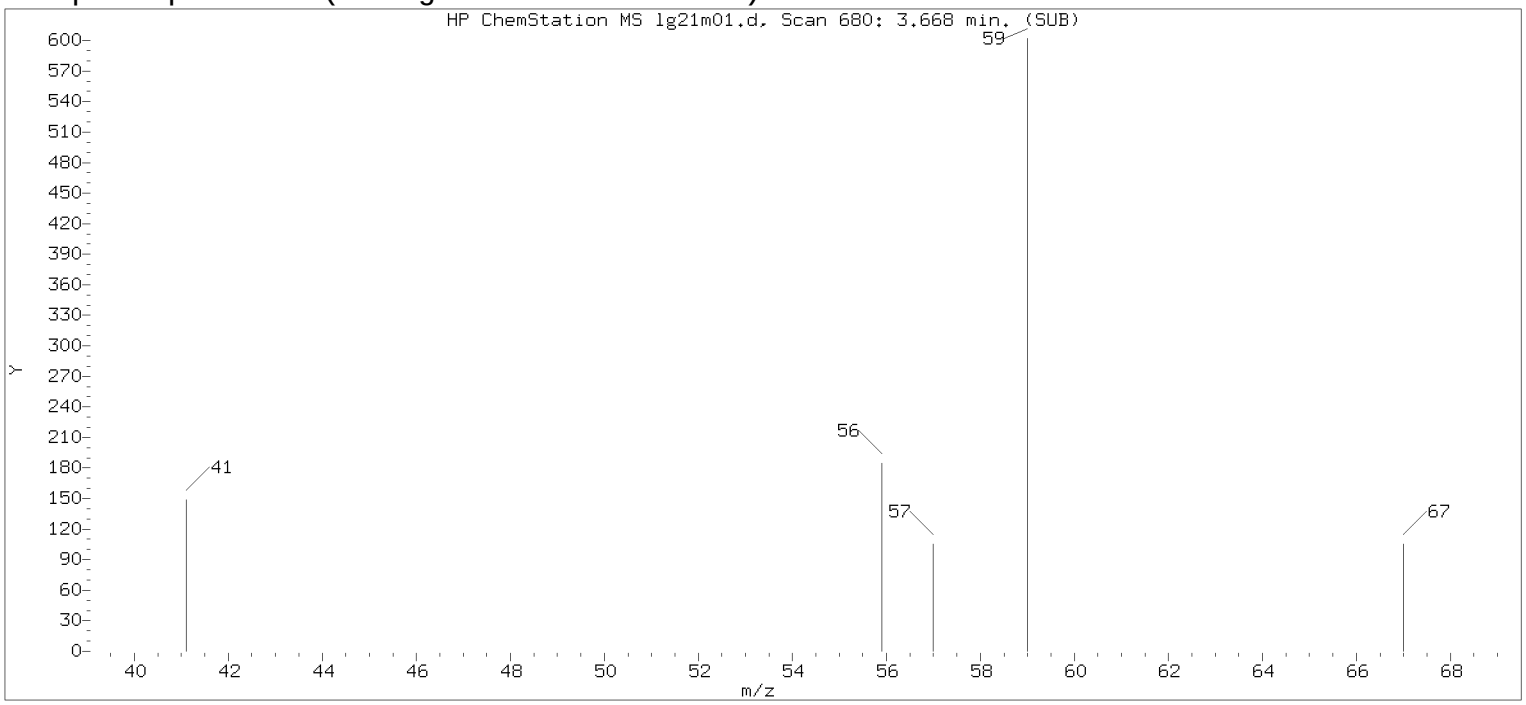
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 685
Retention Time (minutes): 3.684
Quant Ion : 59.00
Area (flag) : 10509M
On-Column Amount (ng) : 11.2426
Integration start scan : 633 Integration stop scan: 747
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

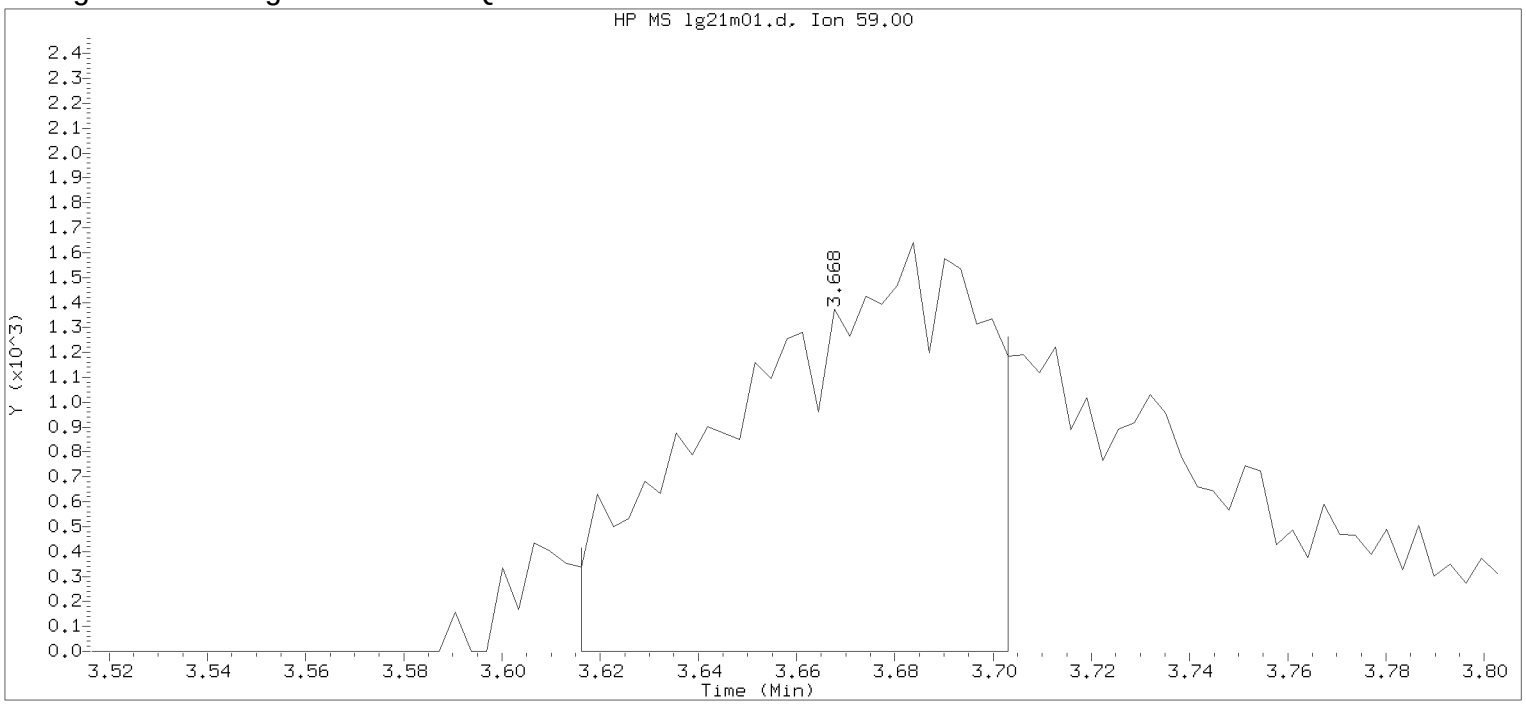
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

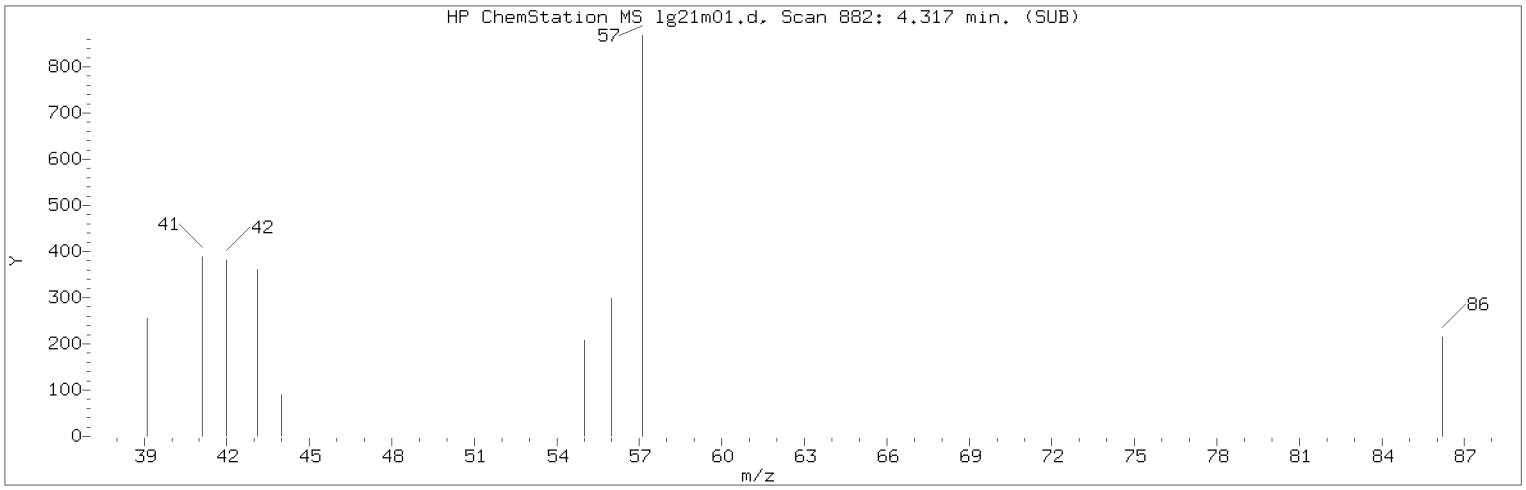
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

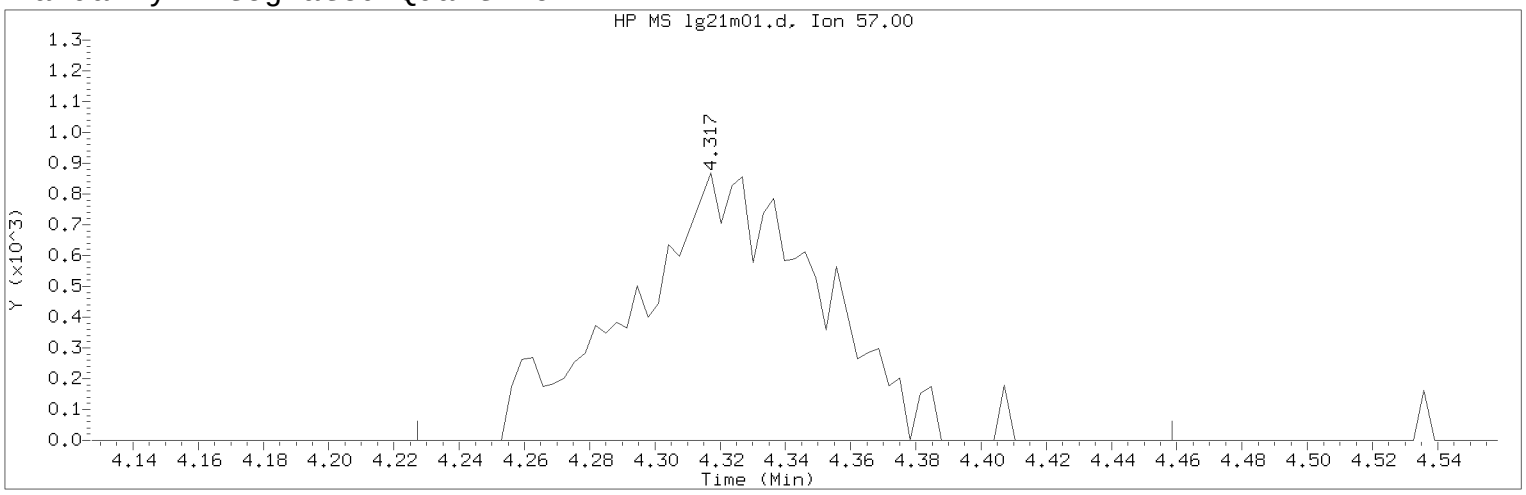
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 680
Retention Time (minutes): 3.668
Quant Ion : 59.00
Area : 5652
On-column Amount (ng) : 6.0473
Integration start scan : 663 Integration stop scan: 690
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

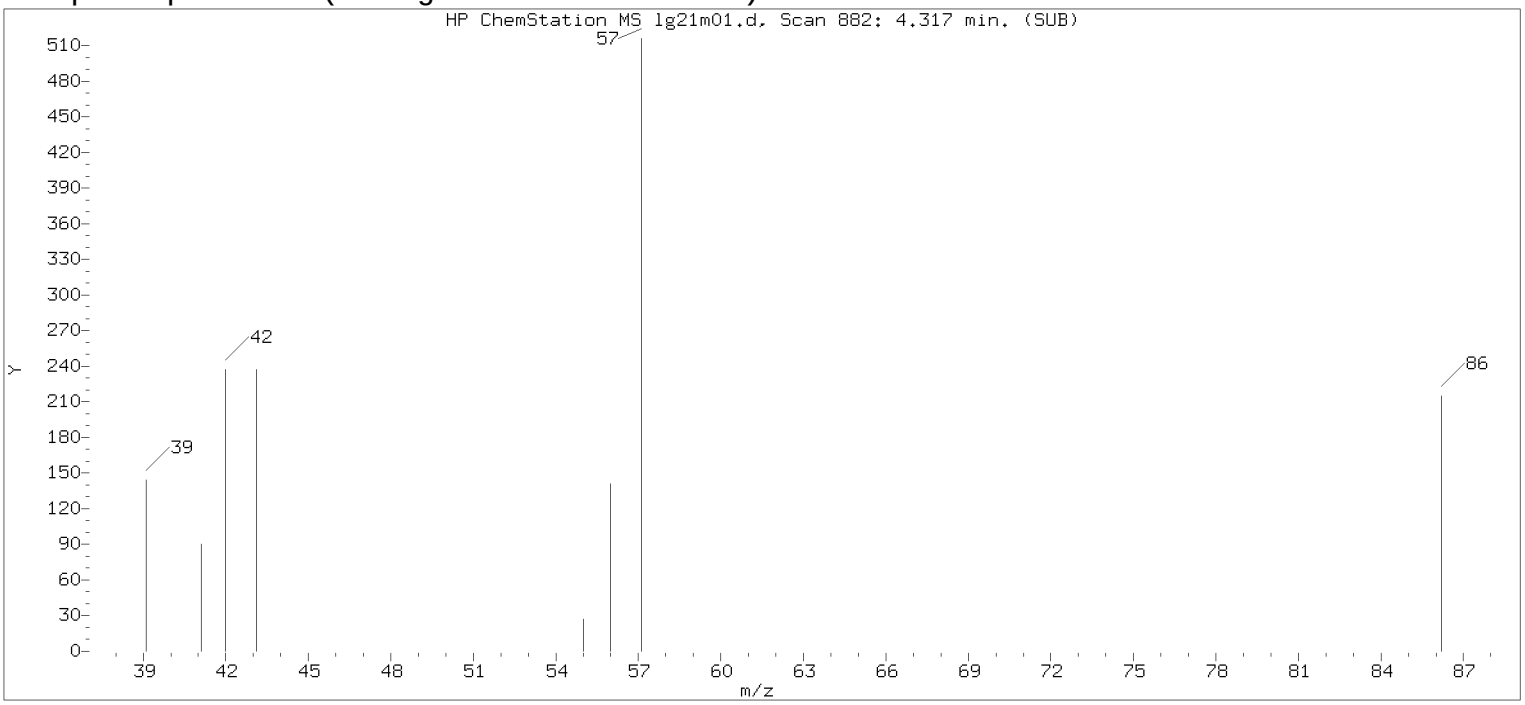
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area (flag) : 3483M
On-Column Amount (ng) : 0.4568
Integration start scan : 853 Integration stop scan: 925
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

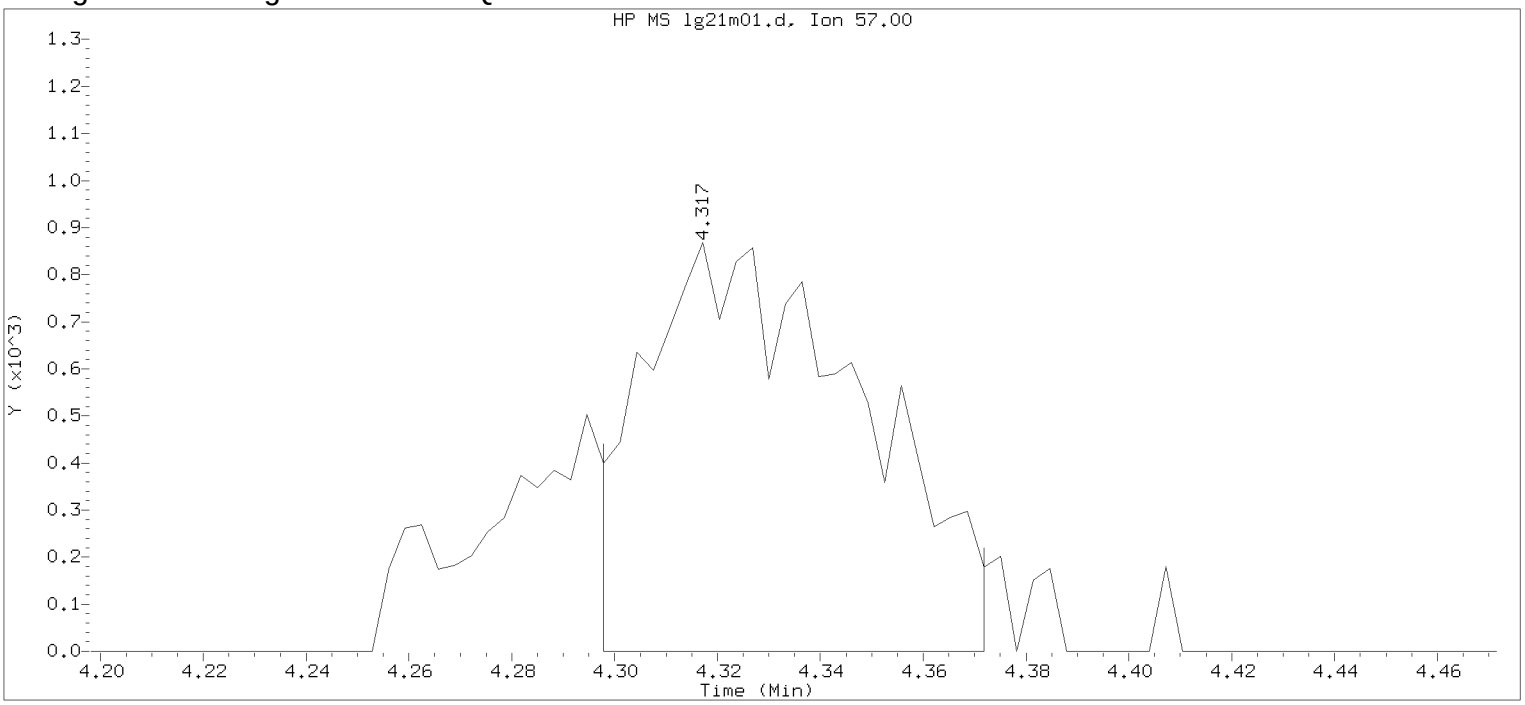
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

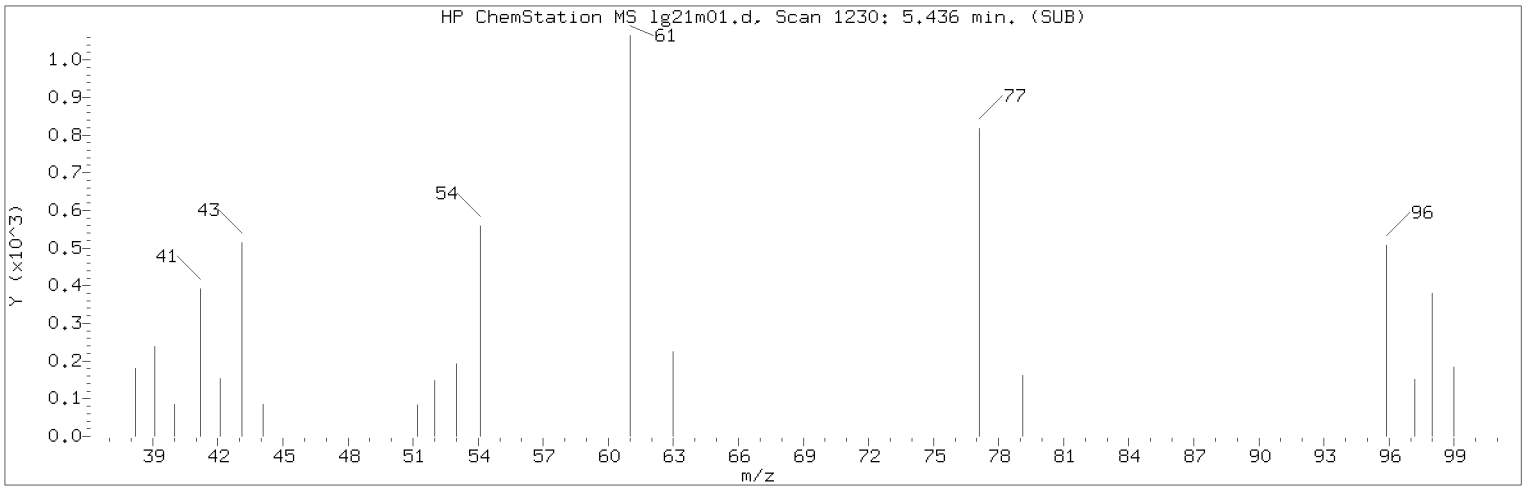
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

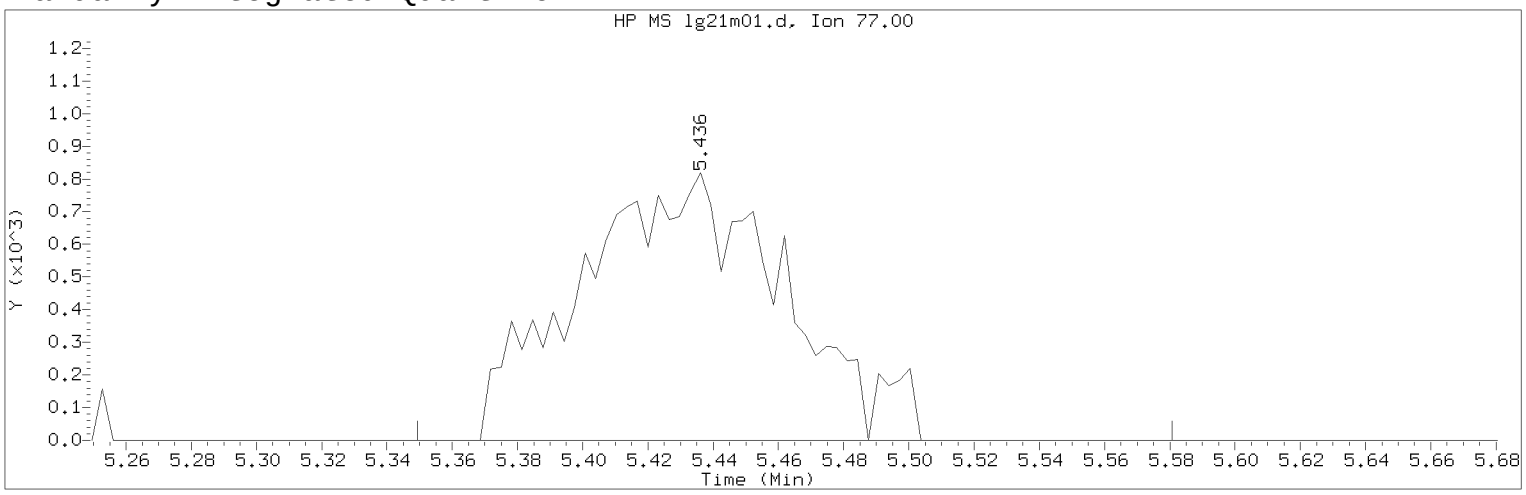
Compound Number : 34
Compound Name : n-Hexane
Scan Number : 882
Retention Time (minutes): 4.317
Quant Ion : 57.00
Area : 2562
On-column Amount (ng) : 0.3361
Integration start scan : 875 Integration stop scan: 898
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

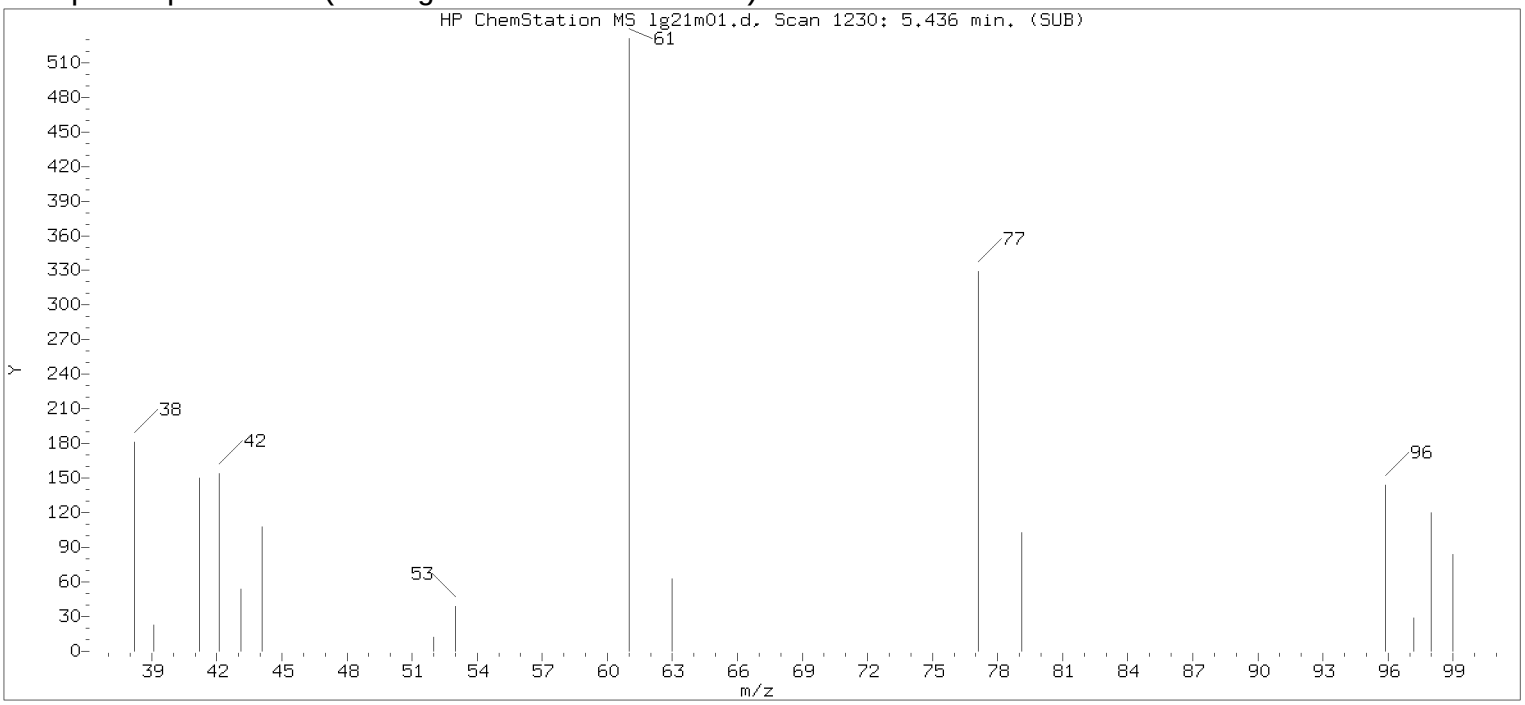
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1230
Retention Time (minutes): 5.436
Quant Ion : 77.00
Area (flag) : 3581M
On-Column Amount (ng) : 0.4512
Integration start scan : 1202 Integration stop scan: 1274
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

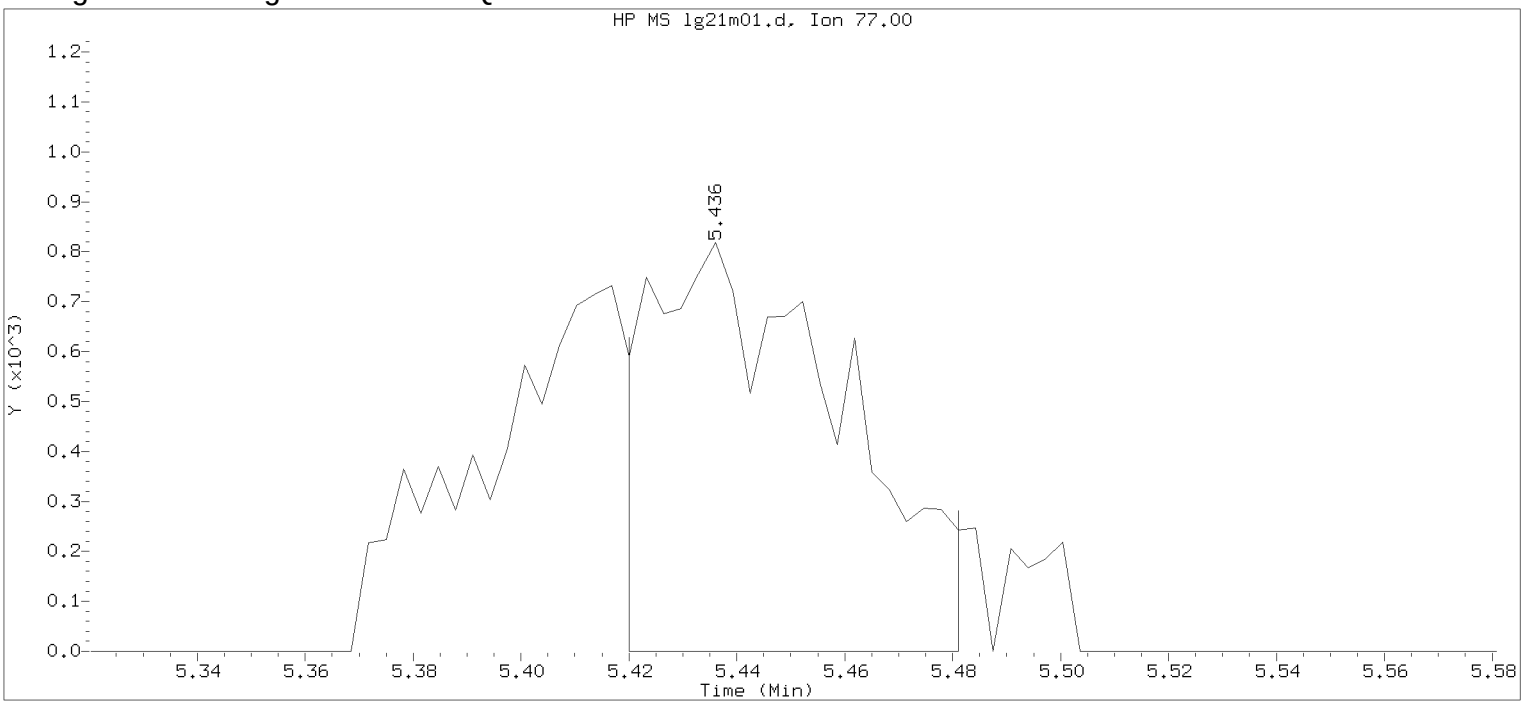
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

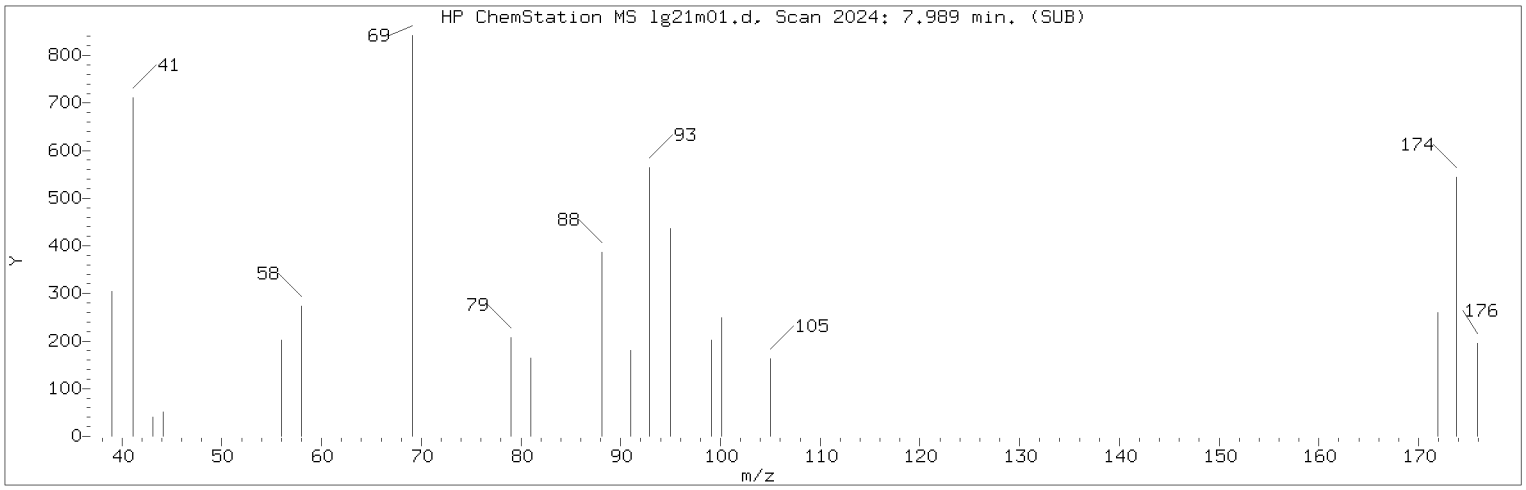
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

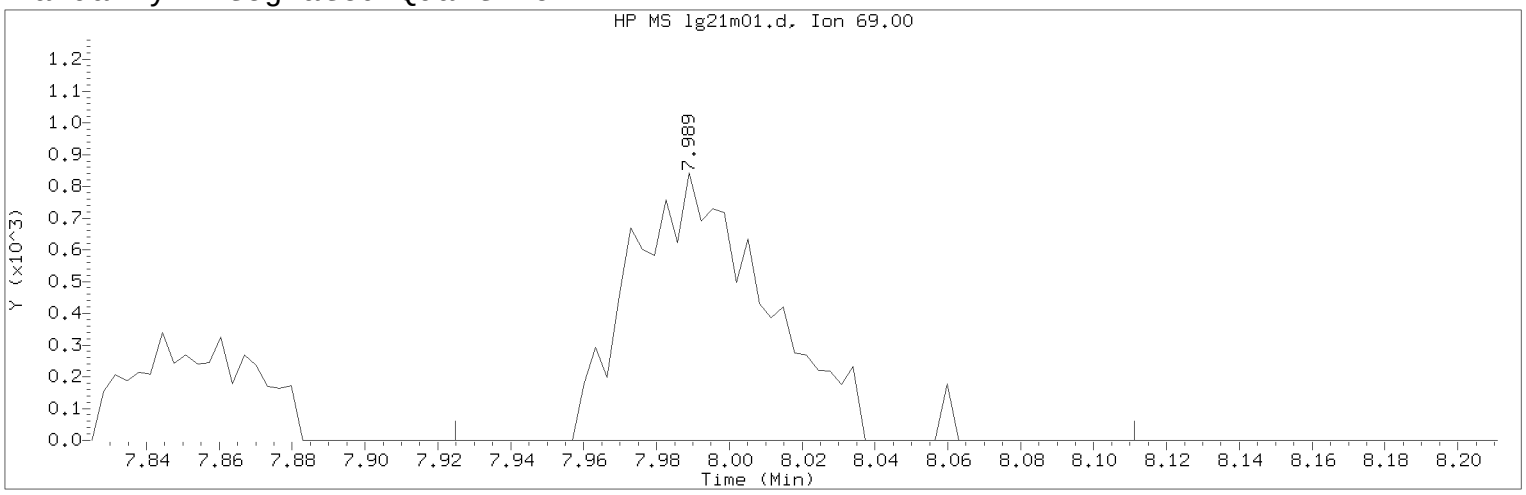
Compound Number : 45
Compound Name : 2,2-Dichloropropane
Scan Number : 1230
Retention Time (minutes): 5.436
Quant Ion : 77.00
Area : 2019
On-column Amount (ng) : 0.2545
Integration start scan : 1224 Integration stop scan: 1243
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

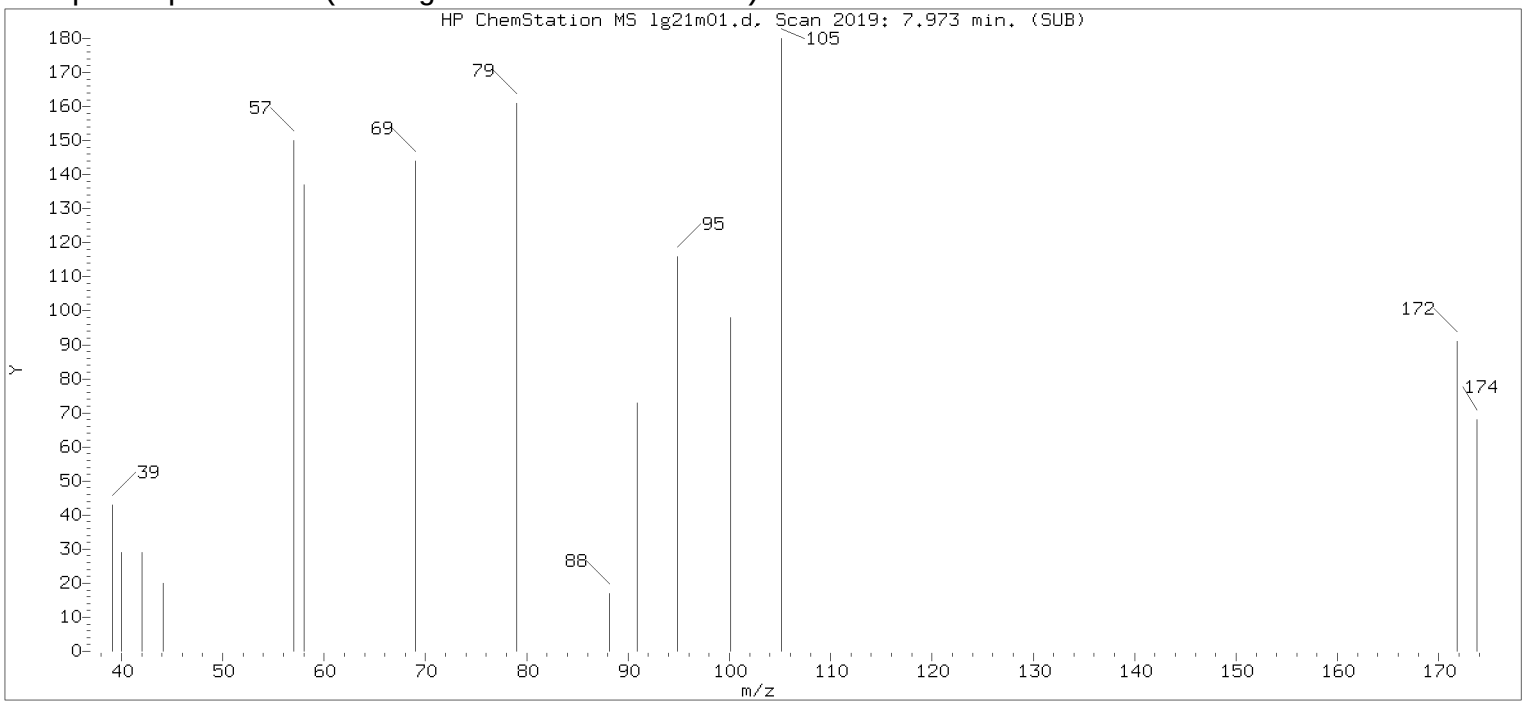
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2024
Retention Time (minutes): 7.989
Quant Ion : 69.00
Area (flag) : 2174M
On-Column Amount (ng) : 0.4172
Integration start scan : 2003 Integration stop scan: 2061
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

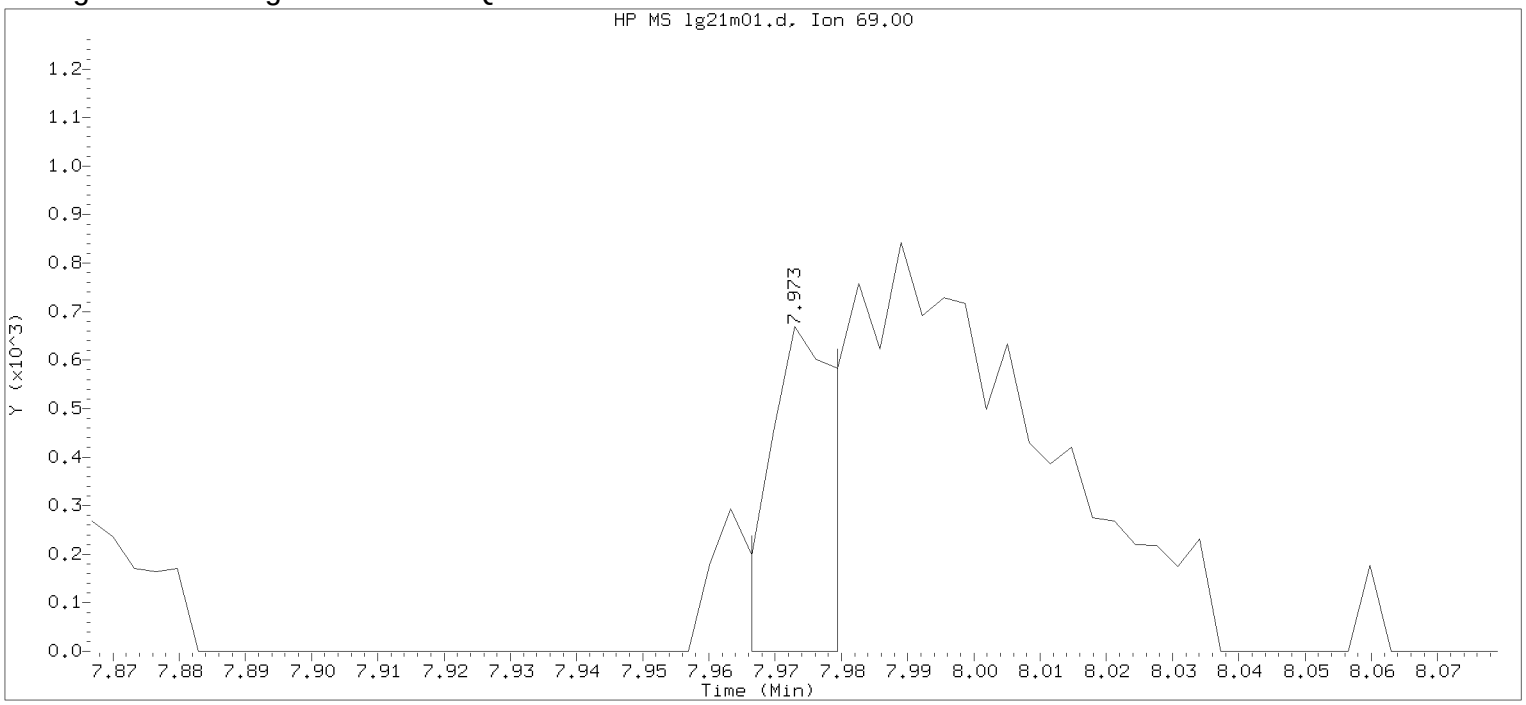
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

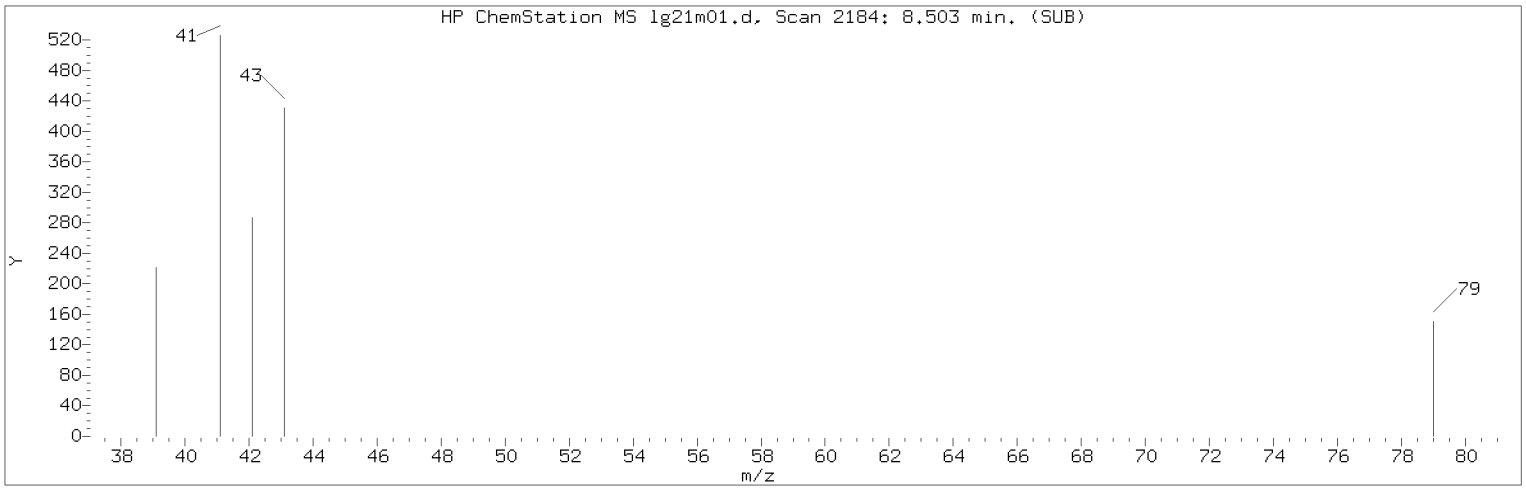
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

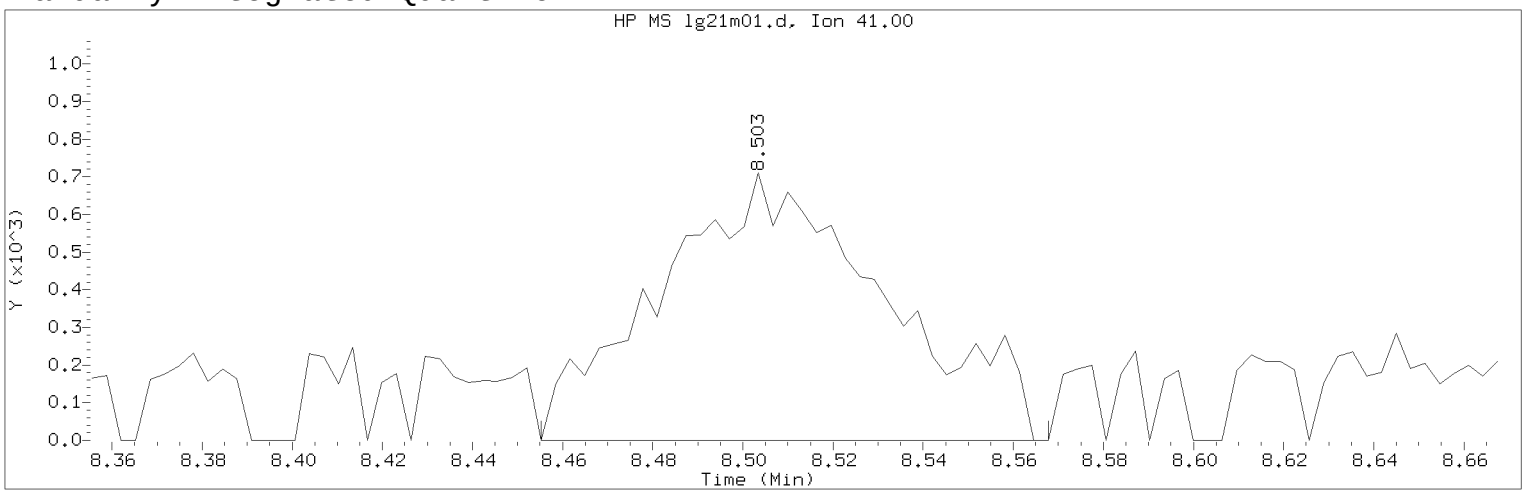
Compound Number : 76
Compound Name : Methyl Methacrylate
Scan Number : 2019
Retention Time (minutes): 7.973
Quant Ion : 69.00
Area : 408
On-column Amount (ng) : 0.0783
Integration start scan : 2016 Integration stop scan: 2020
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:03 kas02648

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

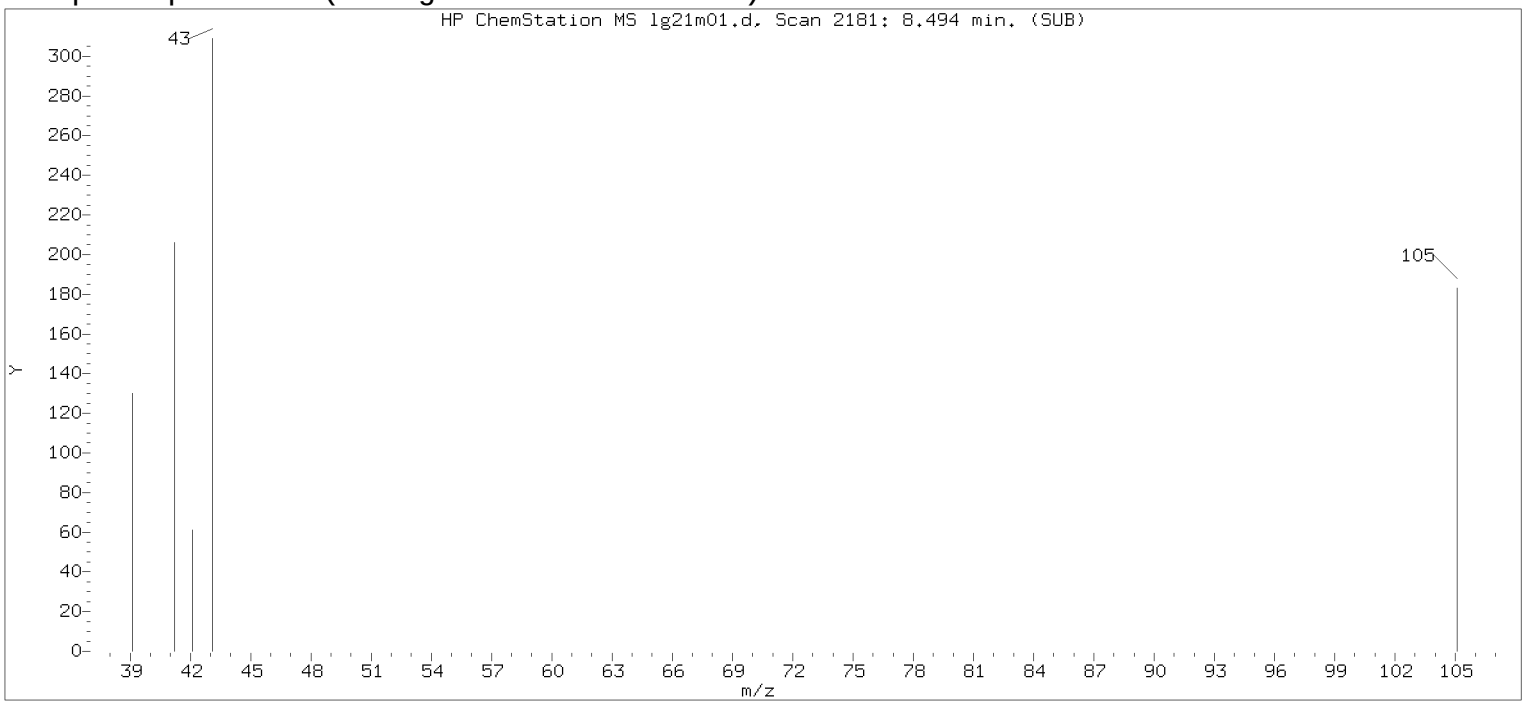
Compound Number : 79
Compound Name : 2-Nitropropane
Scan Number : 2184
Retention Time (minutes): 8.503
Quant Ion : 41.00
Area (flag) : 2472M
On-Column Amount (ng) : 1.1923
Integration start scan : 2168 Integration stop scan: 2203
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

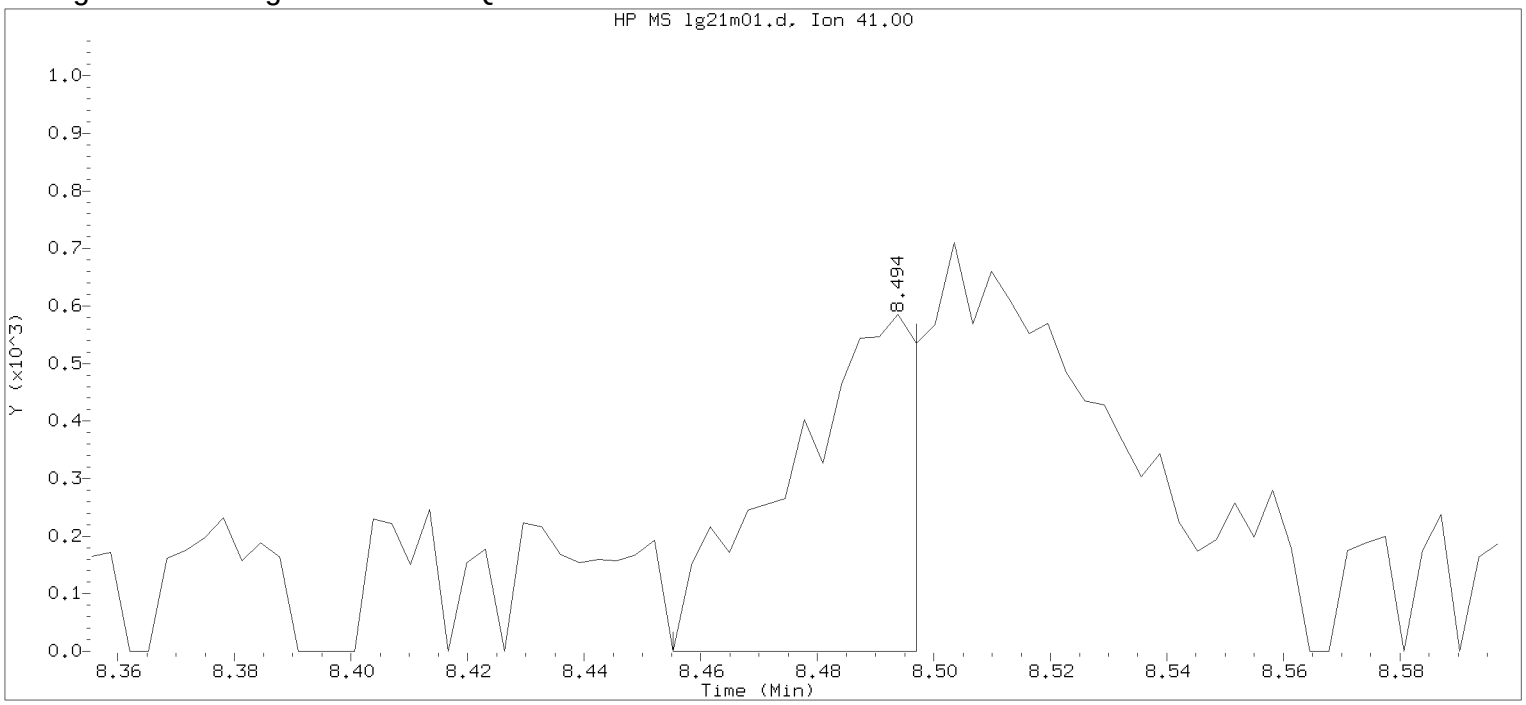
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:03.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion



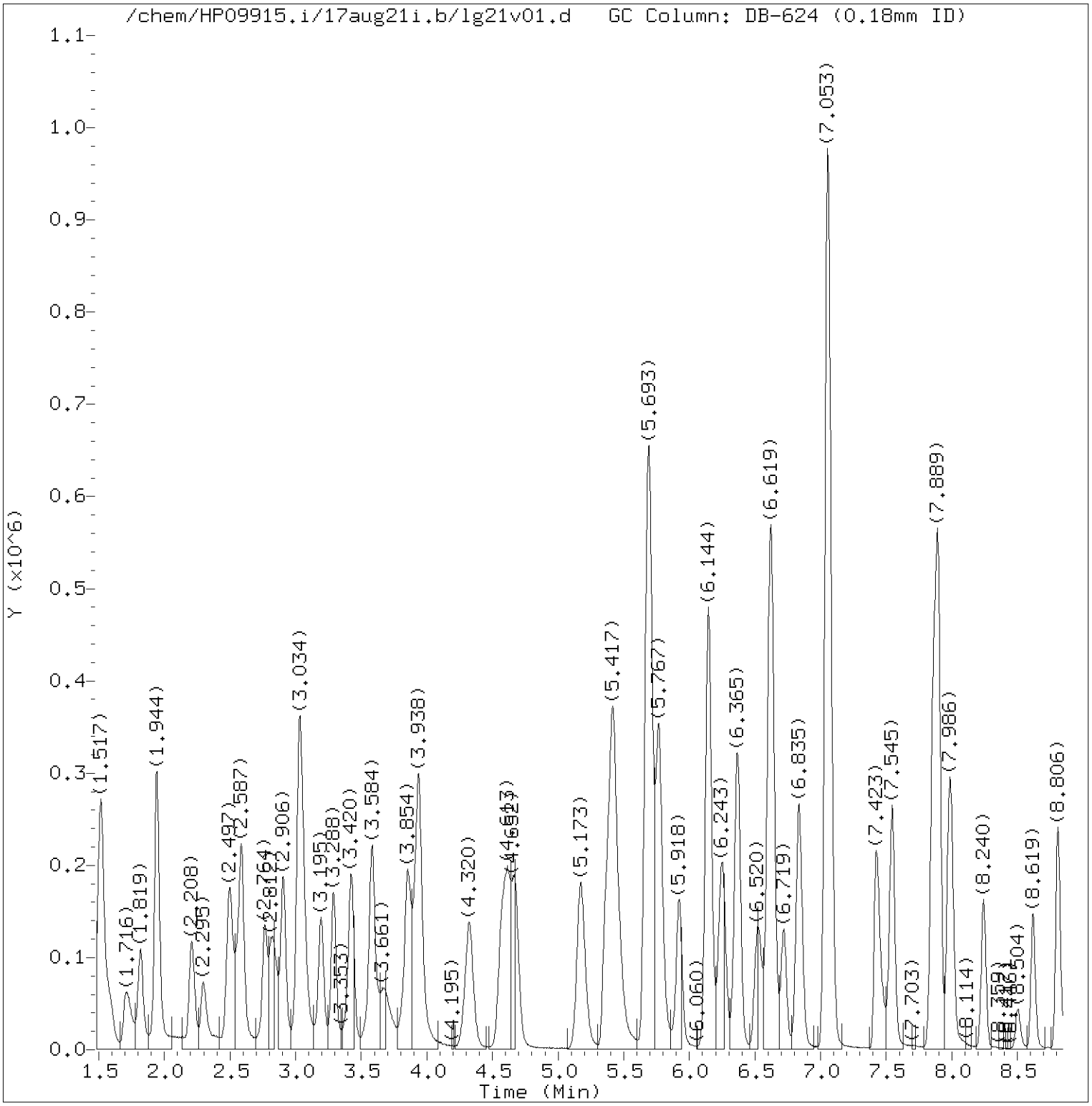

Data File: /chem/HP09915.i/17aug21i.b/lg21m01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:13 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:31 Automation

Sample Name: MDL0.5 Lab Sample ID: MDL0.5

Compound Number : 79
Compound Name : 2-Nitropropane
Scan Number : 2181
Retention Time (minutes): 8.494
Quant Ion : 41.00
Area : 856
On-column Amount (ng) : 0.4132
Integration start scan : 2168 Integration stop scan: 2181
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:03.
Target 3.5 esignature userKAS02648




Total Ion Chromatogram (TIC)

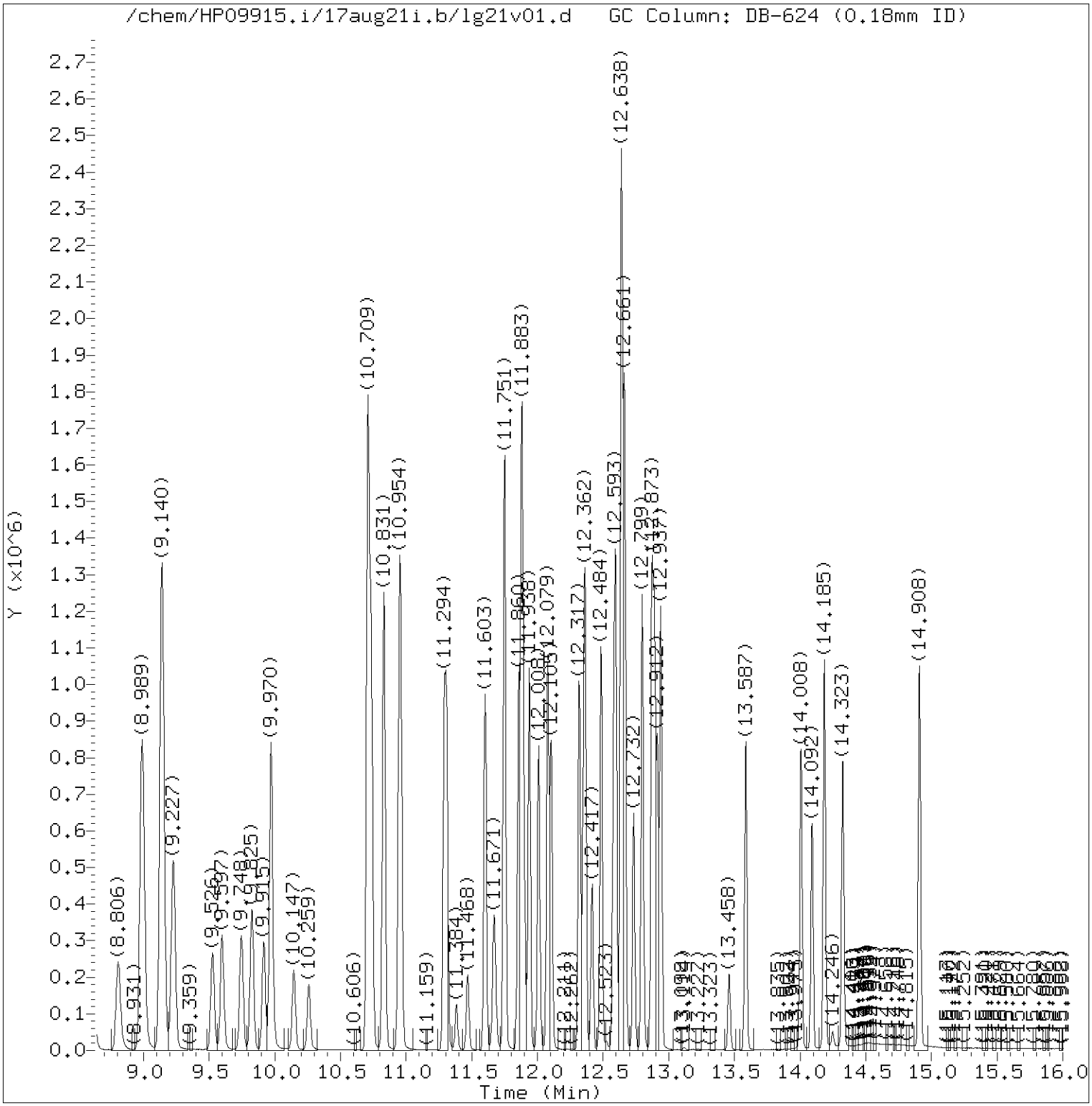
Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.710 | 85 | 149904 | 18.598 |
| 4) Chloromethane | (2) | 1.822 | 50 | 151846 | 19.805 |
| 6) Vinyl Chloride | (2) | 1.935 | 62 | 153220 | 20.351 |
| 5) 1,3-Butadiene | (2) | 1.944 | 39 | 129921 | 24.220 |
| 8) Bromomethane | (2) | 2.208 | 94 | 113071 | 20.247 |
| 9) Chloroethane | (2) | 2.301 | 64 | 84451 | 20.243 |
| 10) Dichlorofluoromethane | (2) | 2.494 | 67 | 194604 | 20.687 |
| 12) Trichlorofluoromethane | (2) | 2.552 | 101 | 199950 | 21.058 |
| 11) n-Pentane | (2) | 2.591 | 43 | 175286 | 22.056 |
| 14) Ethyl ether | (2) | 2.764 | 59 | 97733 | 20.244 |
| 15) Freon 123a | (2) | 2.819 | 67 | 122904 | 19.179 |
| 16) Acrolein | (1) | 2.906 | 56 | 250669 | 136.512 |
| 17) 1,1-Dichloroethene | (2) | 3.025 | 96 | 104050 | 22.027 |
| 18) Acetone | (1) | 3.044 | 58 | 105323 | 141.861 |
| 19) Freon 113 | (2) | 3.057 | 101 | 105709 | 21.106 |
| 21) 2-Propanol | (1) | 3.179 | 45 | 72838 | 135.364 |
| 22) Methyl Iodide | (2) | 3.195 | 142 | 201282 | 20.347 |
| 23) Carbon Disulfide | (2) | 3.288 | 76 | 335316 | 20.702 |
| 27) Methyl Acetate | (2) | 3.391 | 43 | 113304 | 20.395 |
| 25) Allyl Chloride | (2) | 3.427 | 41 | 163695 | 21.051 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.574 | 65 | 249565M | 250.000 |
| 28) Methylene Chloride | (2) | 3.584 | 84 | 117886 | 20.642 |
| 30) t-Butyl alcohol | (1) | 3.681 | 59 | 193210M | 193.443 |
| 31) Acrylonitrile | (2) | 3.854 | 53 | 292619 | 96.228 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 356933 | 20.258 |
| 32) trans-1,2-Dichloroethene | (2) | 3.941 | 96 | 118430 | 21.234 |
| 34) n-Hexane | (2) | 4.327 | 57 | 159390 | 20.206 |
| 36) 1,1-Dichloroethane | (2) | 4.568 | 63 | 193136 | 20.274 |
| 38) di-Isopropyl ether | (2) | 4.616 | 45 | 349208 | 20.529 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.674 | 53 | 165152 | 19.849 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 347480 | 20.109 |
| 44) 2-Butanone | (2) | 5.372 | 43 | 569750 | 143.858 |
| 42) cis-1,2-Dichloroethene | (2) | 5.417 | 96 | 132064 | 20.817 |
| 45) 2,2-Dichloropropane | (2) | 5.430 | 77 | 167773 | 20.433 |
| 47) Propionitrile | (1) | 5.468 | 54 | 177012 | 149.550 |
| 48) Methacrylonitrile | (2) | 5.687 | 67 | 500368 | 149.852 |
| 49) Bromochloromethane | (2) | 5.764 | 128 | 71224 | 21.252 |
| 50) Tetrahydrofuran | (1) | 5.771 | 71 | 111094 | 98.823 |

M = Compound was manually integrated.
* = Compound is an internal standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.925 | 83 | 197767 | 20.414 |
| 52)$Dibromofluoromethane | (2) | 6.144 | 113 | 325300 | 50.131 |
| 53) 1,1,1-Trichloroethane | (2) | 6.144 | 97 | 185337 | 19.315 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 250494 | 42.051 |
| 54) Cyclohexane | (2) | 6.253 | 56 | 181206 | 19.318 |
| 56) Carbon Tetrachloride | (2) | 6.365 | 117 | 147817 | 20.149 |
| 55) 1,1-Dichloropropene | (2) | 6.365 | 75 | 152469 | 20.075 |
| 58) Isobutyl Alcohol | (1) | 6.523 | 41 | 153726 | 486.203 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.613 | 102 | 79315 | 50.342 |
| 60) Benzene | (2) | 6.632 | 78 | 454614 | 20.336 |
| 61) 1,2-Dichloroethane | (2) | 6.722 | 62 | 156042 | 19.725 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 356832 | 20.013 |
| 66)*Fluorobenzene | (2) | 7.050 | 96 | 1275255 | 50.000 |
| 67) n-Heptane | (2) | 7.073 | 43 | 162022 | 19.820 |
| 69) n-Butanol | (1) | 7.423 | 56 | 260416 | 1000.259 |
| 71) Trichloroethene | (2) | 7.545 | 95 | 121353 | 20.109 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 216297 | 21.878 |
| 73) 1,2-Dichloropropane | (2) | 7.886 | 63 | 117061 | 20.281 |
| 75) 1,4-Dioxane | (1) | 7.979 | 88 | 41479 | 507.697 |
| 76) Methyl Methacrylate | (2) | 7.979 | 69 | 106268 | 19.708 |
| 74) Dibromomethane | (2) | 7.996 | 93 | 83047 | 20.240 |
| 78) Bromodichloromethane | (2) | 8.240 | 83 | 146386 | 19.620 |
| 79) 2-Nitropropane | (2) | 8.507 | 41 | 38906 | 18.140 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.616 | 63 | 89604 | 19.981 |
| 81) cis-1,3-Dichloropropene | (2) | 8.809 | 75 | 187936 | 20.003 |
| 82) 4-Methyl-2-pentanone | (2) | 8.989 | 43 | 816674 | 98.733 |
| 83)$Toluene-d8 | (3) | 9.140 | 98 | 1265761 | 50.387 |
| 88) Toluene | (3) | 9.227 | 92 | 297428 | 20.266 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 172119 | 19.951 |
| 91) Ethyl Methacrylate | (3) | 9.600 | 69 | 194285 | 20.785 |
| 92) 1,1,2-Trichloroethane | (3) | 9.745 | 97 | 118963 | 20.822 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 134358 | 20.630 |
| 94) 1,3-Dichloropropane | (3) | 9.918 | 76 | 187271 | 20.100 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 598101 | 98.568 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 360055 | 39.954 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 125684 | 19.961 |
| 99) 1,2-Dibromoethane | (3) | 10.259 | 107 | 130074 | 20.286 |
| 100)*Chlorobenzene-d5 | (3) | 10.709 | 117 | 1008955 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 101) 1-Chlorohexane | (3) | 10.732 | 91 | 166667 | 19.696 |
| 102) Chlorobenzene | (3) | 10.738 | 112 | 345134 | 20.158 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.828 | 131 | 120396 | 20.041 |
| 104) Ethylbenzene | (3) | 10.831 | 91 | 576287 | 20.408 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 469867 | 41.465 |
| 107) o-Xylene | (3) | 11.291 | 106 | 231178 | 20.264 |
| 109) Styrene | (3) | 11.311 | 104 | 394245 | 20.742 |
| 110) Bromoform | (3) | 11.468 | 173 | 89935 | 19.032 |
| 111) Isopropylbenzene | (3) | 11.603 | 105 | 599220 | 20.965 |
| 112) Cyclohexanone | (1) | 11.671 | 55 | 156101 | 494.148 |
| 114)$4-Bromofluorobenzene | (3) | 11.751 | 95 | 479817 | 49.959 |
| 108) Xylene (Total) | (3) | | 106 | 701045 | 61.730 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 191556 | 20.260 |
| 115) Bromobenzene | (4) | 11.860 | 156 | 160574 | 20.257 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 272118 | 109.486 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 59539 | 20.697 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 696820 | 21.006 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 147003 | 20.454 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 514613 | 20.579 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 152181 | 20.275 |
| 124) tert-Butylbenzene | (4) | 12.317 | 134 | 110820M | 20.605 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 93698 | 20.652 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 530536 | 20.612 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 663194 | 21.374 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 300596 | 20.065 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 587594 | 21.318 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 554369 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 318799 | 20.607 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.667 | 105 | 576765 | 21.512 |
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 392037 | 20.531 |
| 136) 1,3-Diethylbenzene | (4) | 12.799 | 119 | 350267 | 20.936 |
| 137) 1,4-Diethylbenzene | (4) | 12.870 | 119 | 371022 | 21.264 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 283643 | 21.001 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 303144 | 20.367 |
| 140) 1,2-Diethylbenzene | (4) | 12.937 | 119 | 297685 | 21.356 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1018974 | 63.556 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 41994 | 20.385 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 228252 | 20.172 |

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on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 217703 | 19.390 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 92540 | 19.295 |
| 148) Naphthalene | (4) | 14.185 | 128 | 711908 | 20.075 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.326 | 180 | 207731 | 19.286 |
| 150) 2-Methylnaphthalene | (4) | 14.908 | 142 | 440615 | 18.436 |



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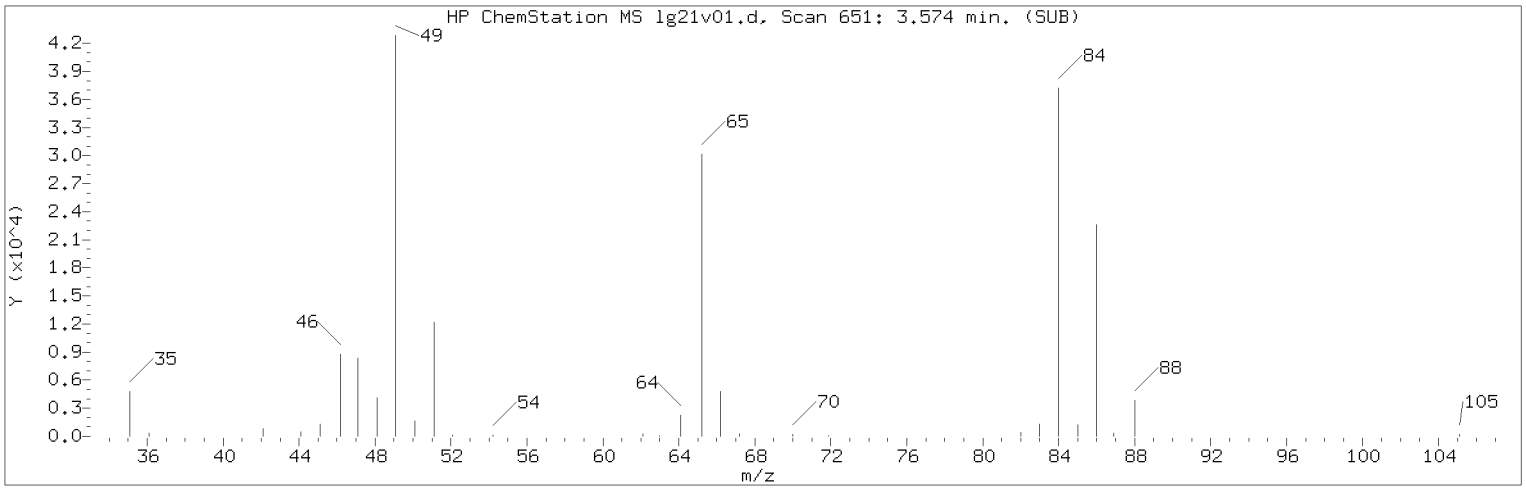
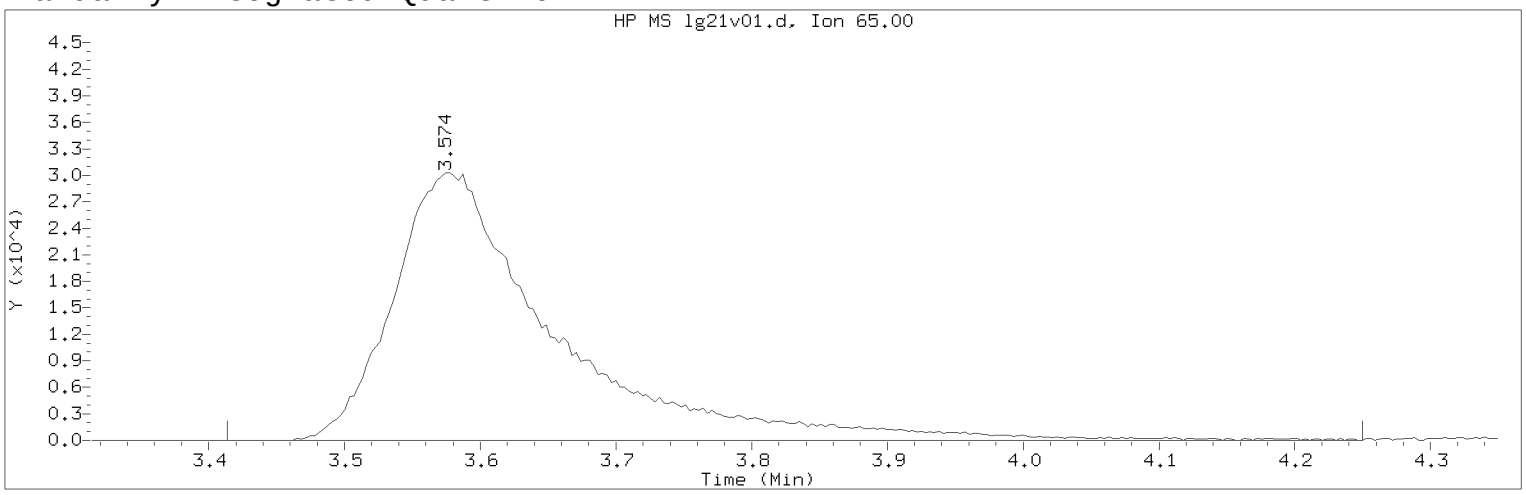
Target 3.5 esignature user ID: kas02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

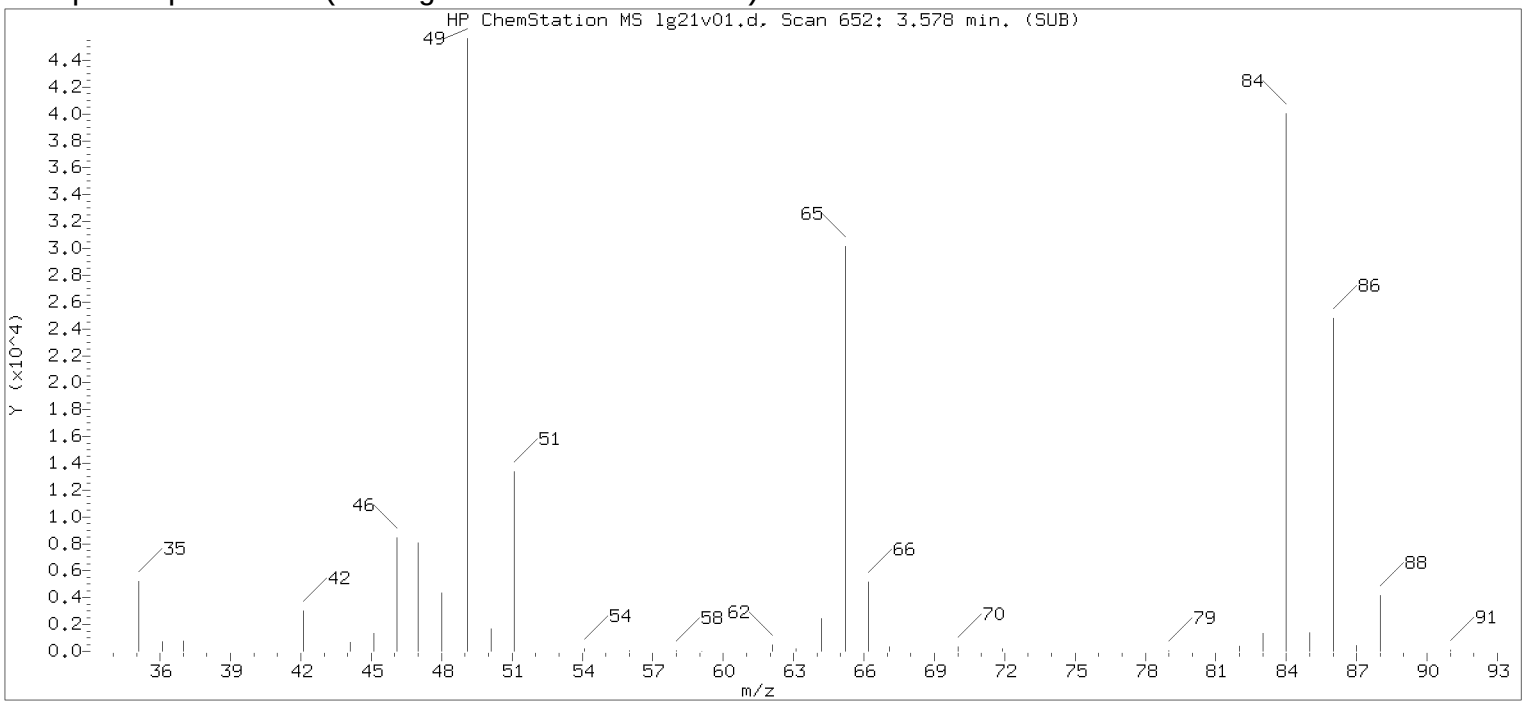
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 651
Retention Time (minutes): 3.574
Quant Ion : 65.00
Area (flag) : 249565M
On-Column Amount (ng) : 250.0000
Integration start scan : 600 Integration stop scan: 860
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

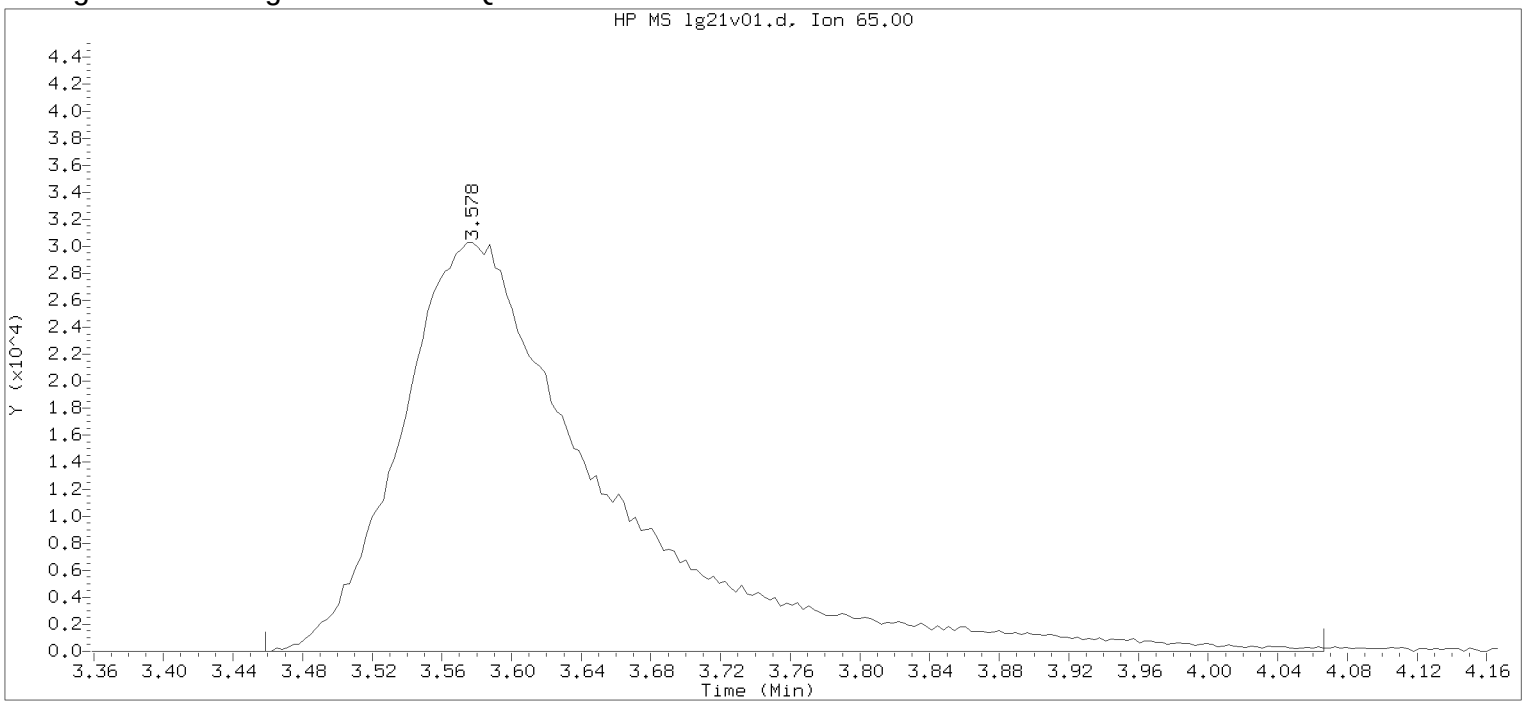
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

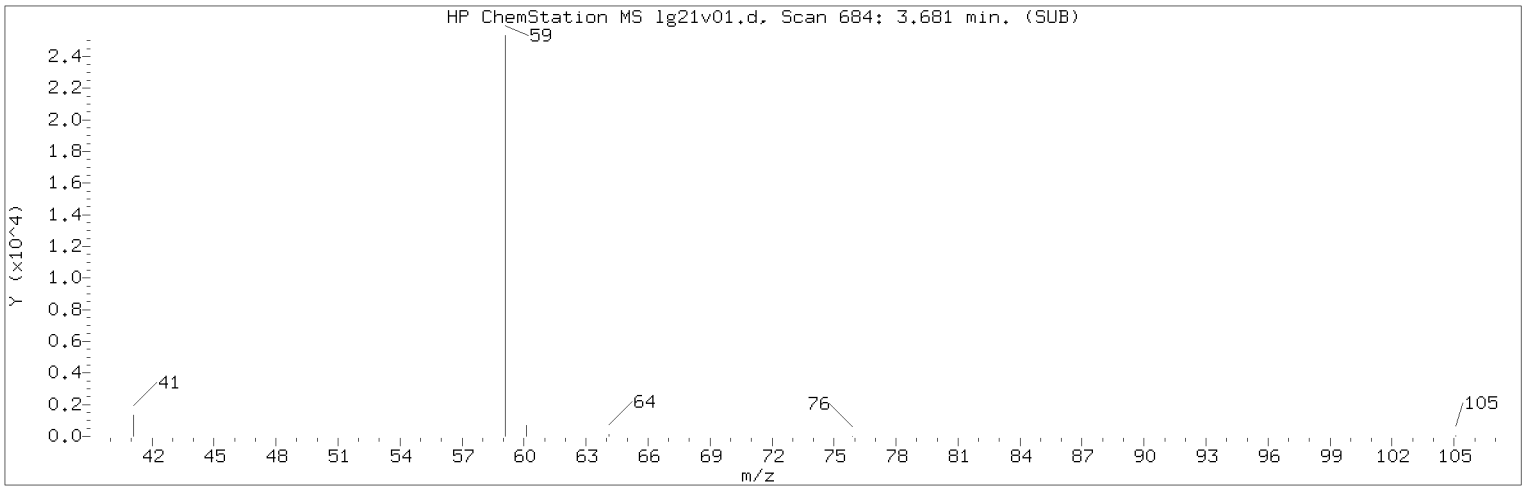
Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:53 Automation

Sample Name: LGCICV Lab Sample ID: LGCICV

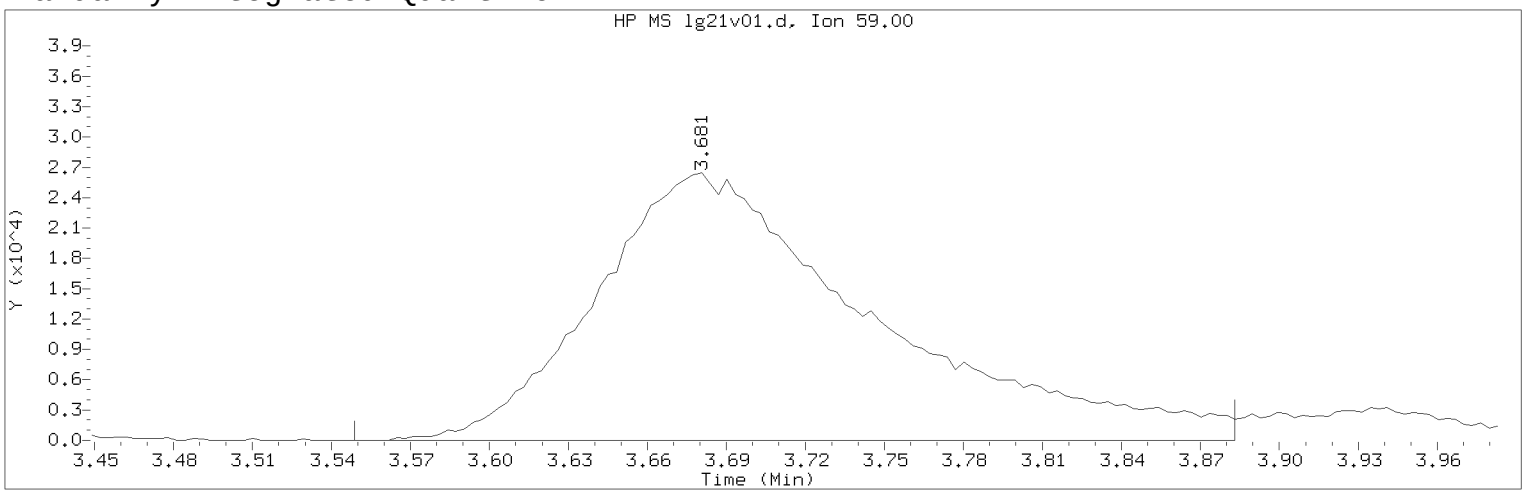
Compound Number : 29
Compound Name : t-Butyl alcohol-d10
Scan Number : 652
Retention Time (minutes): 3.578
Quant Ion : 65.00
Area : 247827
On-column Amount (ng) : 250.0000
Integration start scan : 614 Integration stop scan: 803
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:05.
Target 3.5 esignature userKAS02648

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

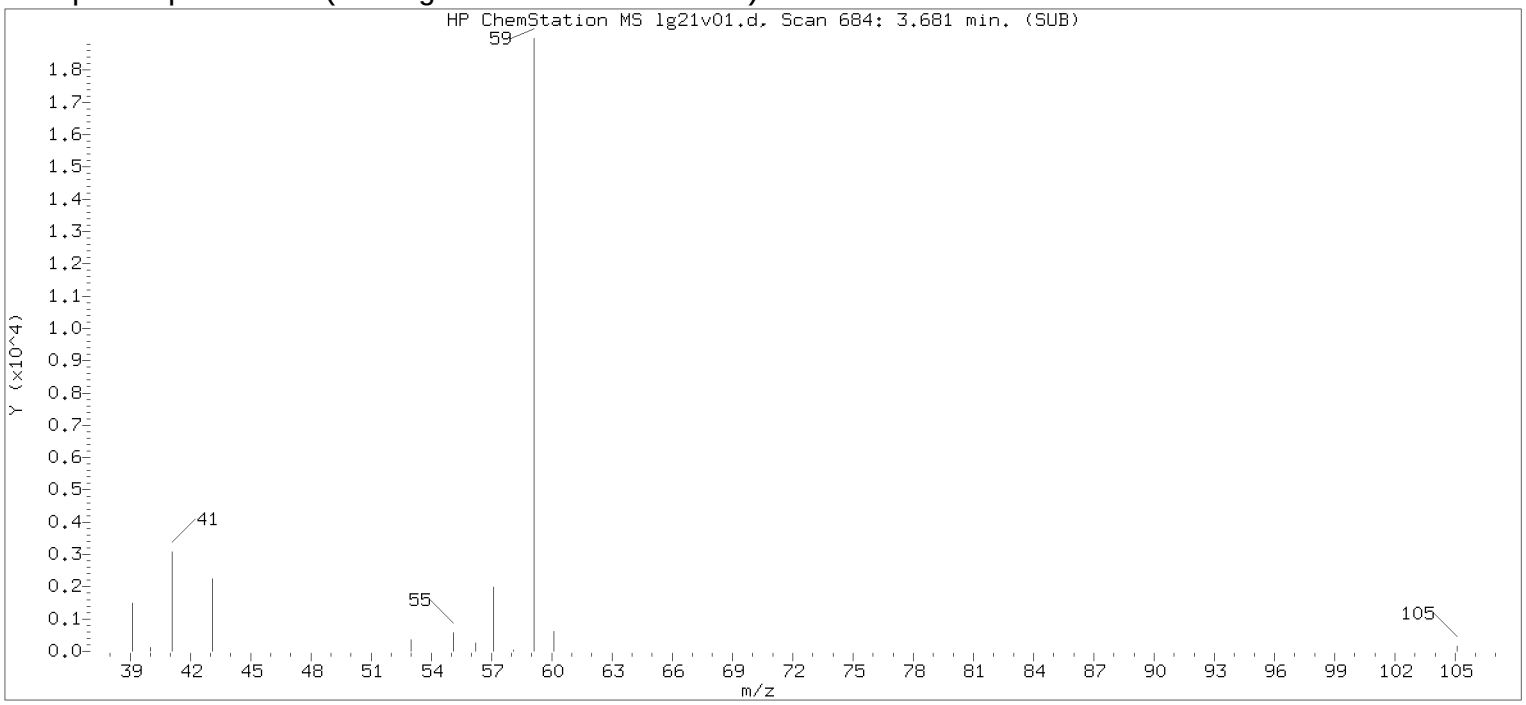
Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 684
Retention Time (minutes): 3.681
Quant Ion : 59.00
Area (flag) : 193210M
On-Column Amount (ng) : 193.4429
Integration start scan : 642 Integration stop scan: 746
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

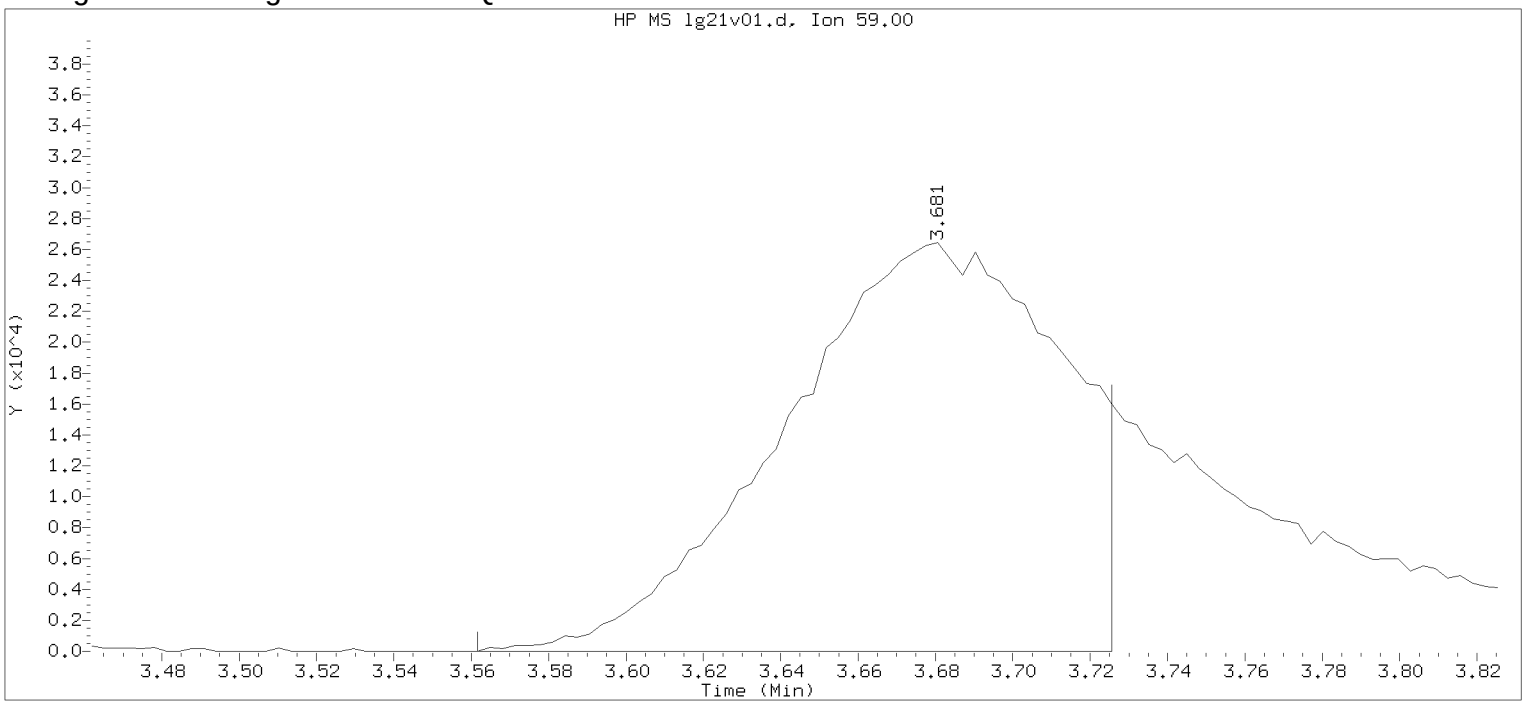
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:53 Automation

Sample Name: LGCICV Lab Sample ID: LGCICV

Compound Number : 30
Compound Name : t-Butyl alcohol
Scan Number : 684
Retention Time (minutes): 3.681
Quant Ion : 59.00
Area : 131226
On-column Amount (ng) : 132.3065
Integration start scan : 646 Integration stop scan: 697
Y at integration start : 0 Y at integration end: 0

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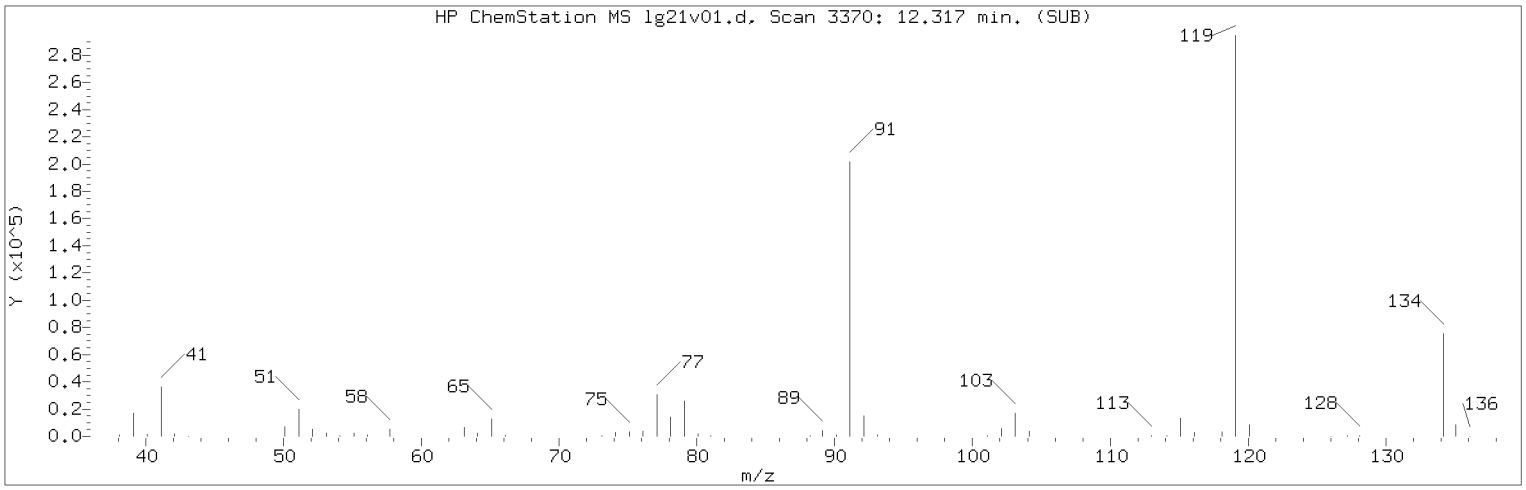
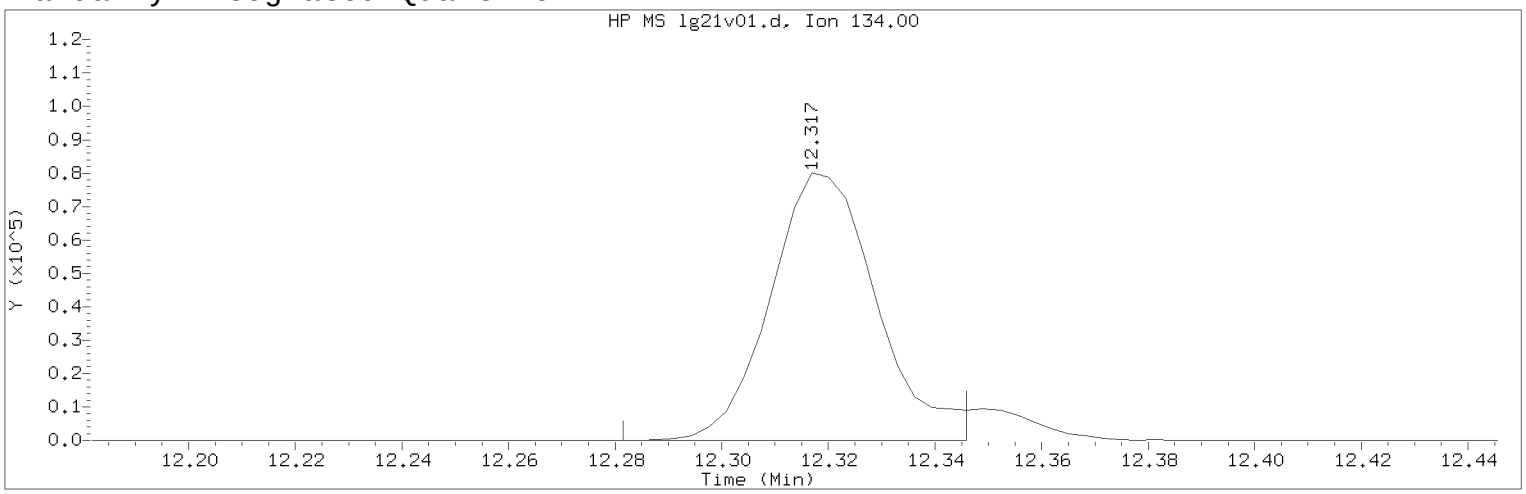
Target 3.5 esignature userKAS02648 Page 250 of 482

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 13:05 kas02648

Sample Name: LGCICV Lab Sample ID: LGCICV

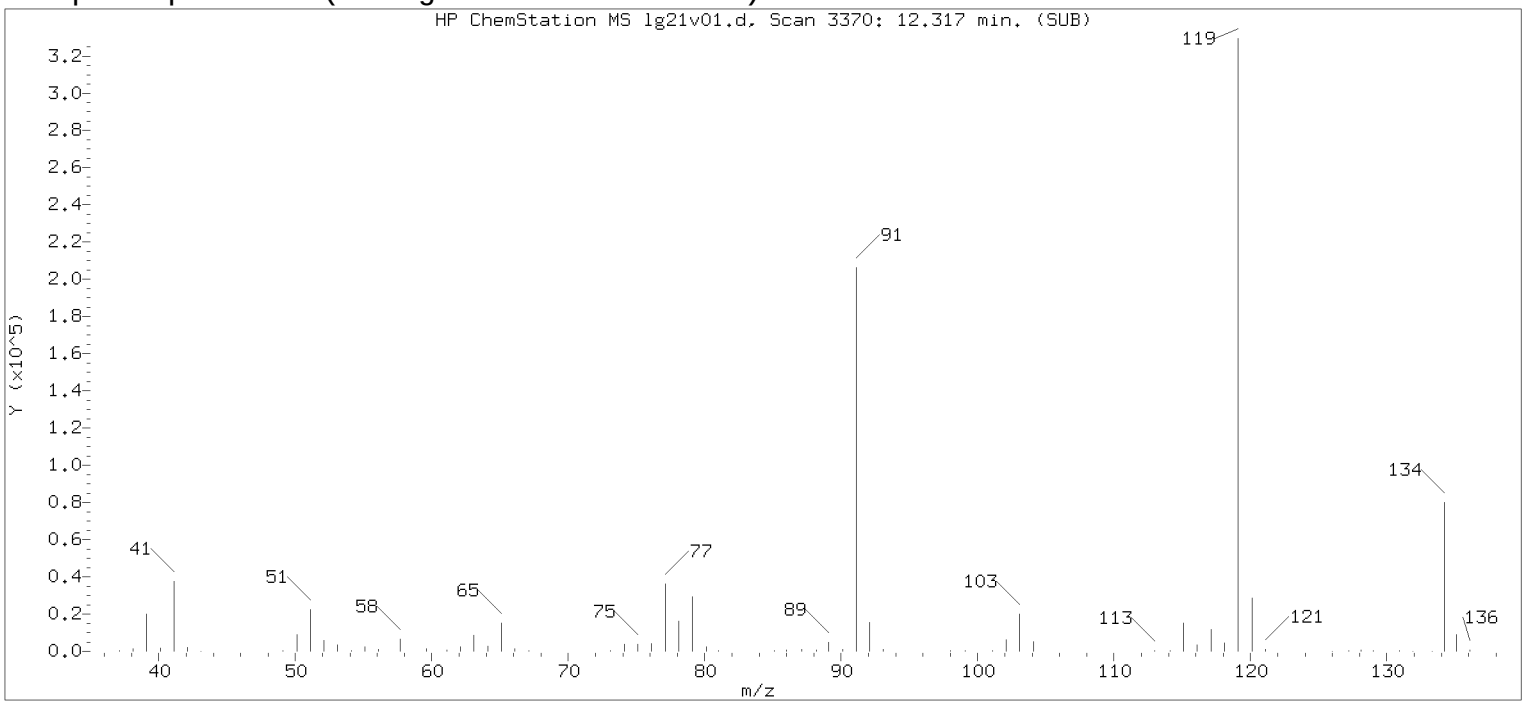
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area (flag) : 110820M
On-Column Amount (ng) : 20.6051
Integration start scan : 3358 Integration stop scan: 3378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

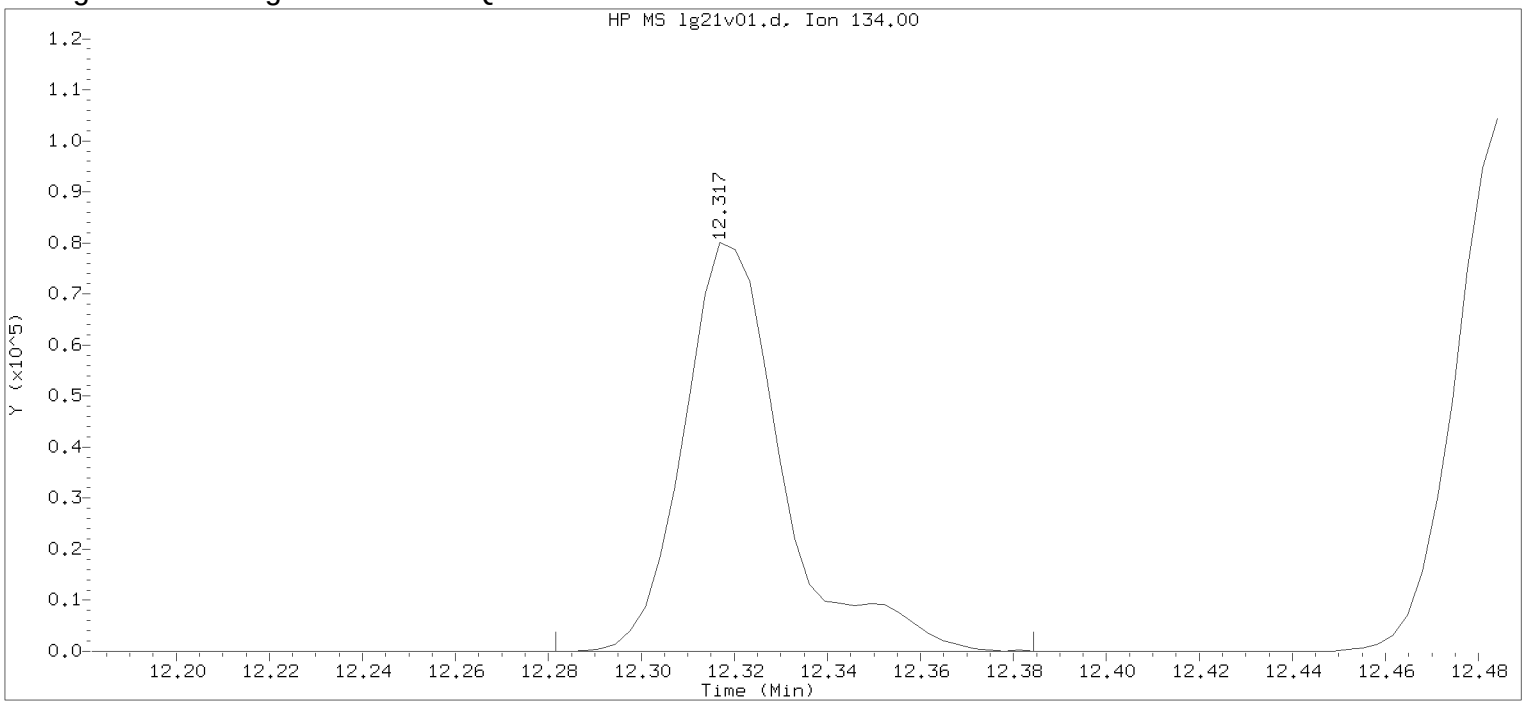
Analyst responsible for change: Digitally signed by Kevin A. Sposito
on 08/21/2017 at 13:05.
Target 3.5 esignature user ID: kas02648

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/22/2017 at 14:32.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17aug21i.b/lg21v01.d Instrument ID: HP09915.i
Injection date and time: 21-AUG-2017 12:35 Analyst ID: KAS02648

Method used: /chem/HP09915.i/17aug21i.b/m8260c5.m Sublist used: 8260W
Calibration date and time: 21-AUG-2017 12:09
Date, time and analyst ID of latest file update: 21-Aug-2017 12:53 Automation

Sample Name: LGCICV Lab Sample ID: LGCICV

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3370
Retention Time (minutes): 12.317
Quant Ion : 134.00
Area : 118362
On-column Amount (ng) : 22.0075
Integration start scan : 3358 Integration stop scan: 3390
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kevin A. Sposito on 08/21/2017 at 13:05.
Target 3.5 esignature userKAS02648

Data File: /chem/HP09915.i/17sep26a.b/ls26t01.d



Date : 26-SEP-2017 07:19

Client ID: BFBAug14-17

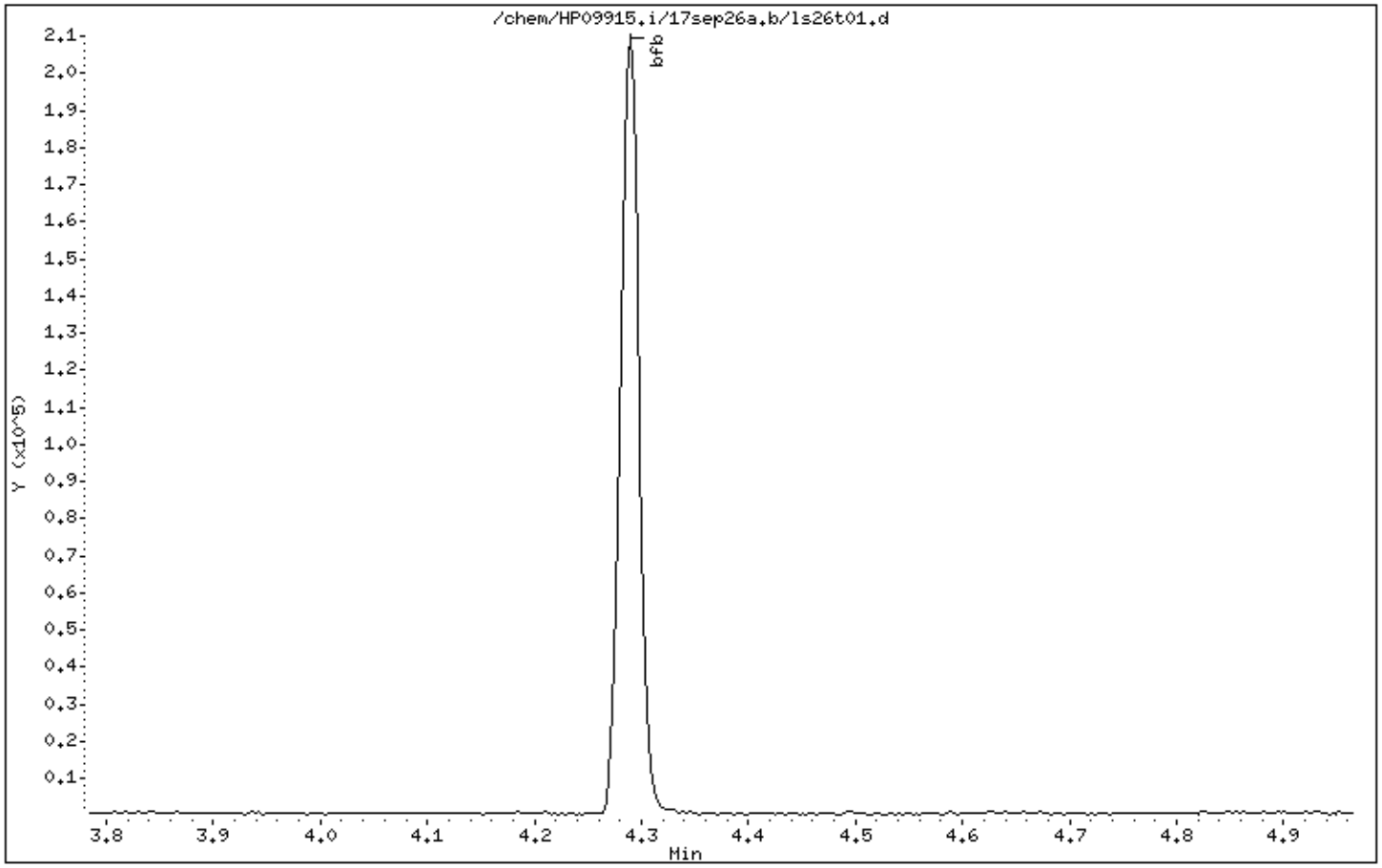
Instrument: HP09915.i

Sample Info: BFBAug14-17;50NG BFB;1;3;;;;;;

Operator: lcp00895

Column phase: Rxi-624Sil MS

Column diameter: 0.25




Digitally signed by Linda C. Pape on 09/26/2017 at 08:28.
Target 3.5 esignature user ID: lcp00895

Data File: /chem/HP09915.i/17sep26a.b/ls26t01.d

Date : 26-SEP-2017 07:19

Client ID: BFBAug14-17

Instrument: HP09915.i

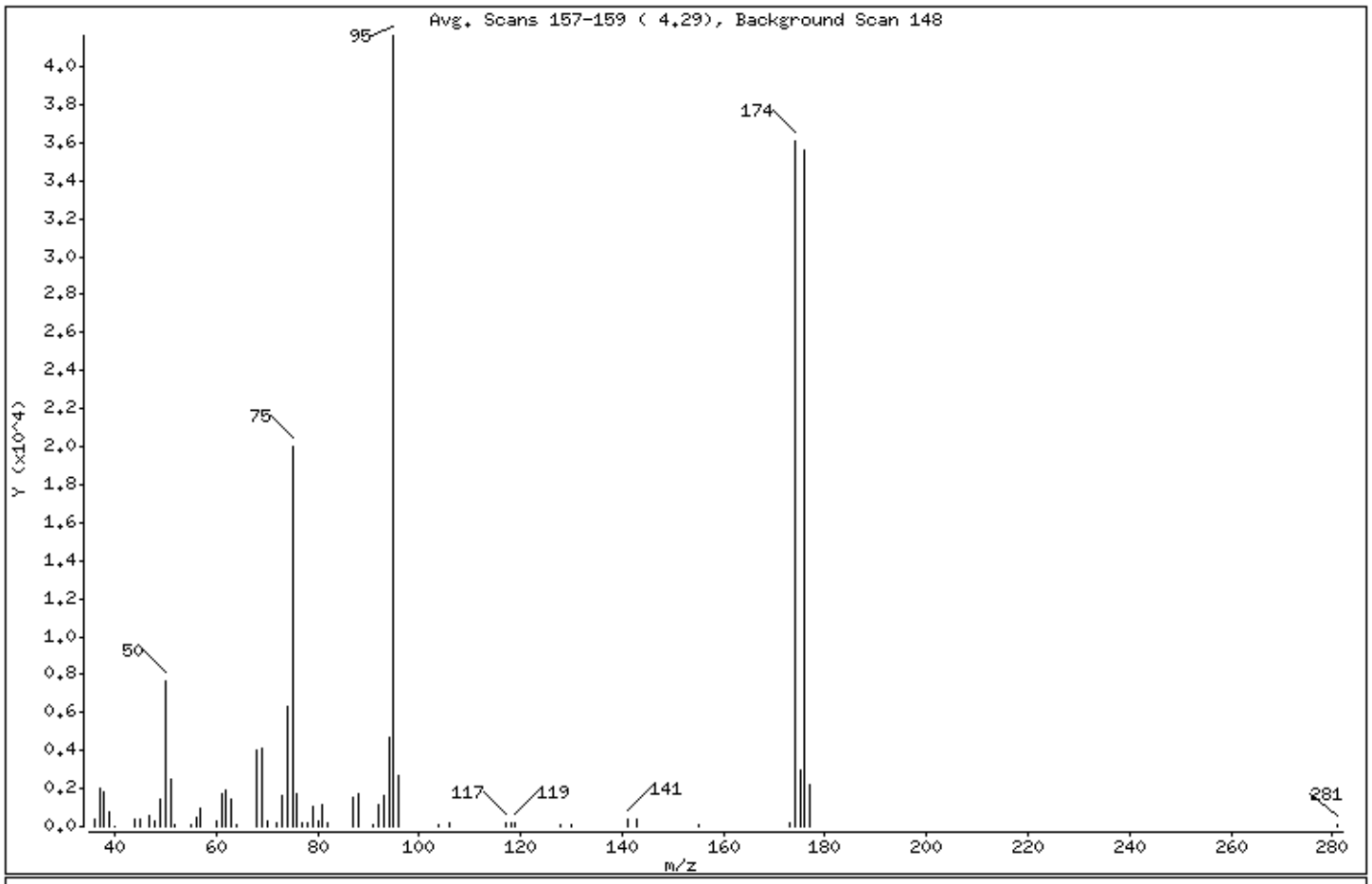
Sample Info: BFBAug14-17;50NG BFB;1;3;;;;;;

Operator: lcp00895

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb




| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 95 | Base Peak, 100% relative abundance | 100.00 |
| 50 | 15.00 - 40.00% of mass 95 | 18.48 |
| 75 | 30.00 - 60.00% of mass 95 | 48.09 |
| 96 | 5.00 - 9.00% of mass 95 | 6.46 |
| 173 | Less than 2.00% of mass 174 | 0.49 ( 0.56) |
| 174 | 50.00 - 100.00% of mass 95 | 86.60 |
| 175 | 5.00 - 9.00% of mass 174 | 7.01 ( 8.10) |
| 176 | 95.00 - 101.00% of mass 174 | 85.62 ( 98.87) |
| 177 | 5.00 - 9.00% of mass 176 | 5.29 ( 6.18) |

Digitally signed by Linda C. Pape on 09/26/2017 at 08:28.
Target 3.5 esignature user ID: lcp00895

Date : 26-SEP-2017 07:19

Client ID: BFBAug14-17 Instrument: HP09915.i

Sample Info: BFBAug14-17;50NG BFB;1;3;;;;;;

Operator: lcp00895

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: ls26t01.d
Spectrum: Avg. Scans 157-159 ( 4.29), Background Scan 148
Location of Maximum: 95.00
Number of points: 59

| m/z | Y | m/z | Y | m/z | Y | m/z | Y |
|---|---|---|---|---|---|---|---|
| 36.00 | 356 | 57.00 | 944 | 78.00 | 204 | 117.00 | 239 |
| 37.00 | 2001 | 60.00 | 309 | 79.00 | 1074 | 118.00 | 149 |
| 38.00 | 1781 | 61.00 | 1757 | 80.00 | 302 | 119.00 | 194 |
| 39.00 | 741 | 62.00 | 1877 | 81.00 | 1150 | 128.00 | 117 |
| 40.00 | 21 | 63.00 | 1471 | 82.00 | 176 | 130.00 | 77 |
| 44.00 | 339 | 64.00 | 53 | 87.00 | 1485 | 141.00 | 404 |
| 45.00 | 372 | 68.00 | 3995 | 88.00 | 1697 | 143.00 | 377 |
| 47.00 | 528 | 69.00 | 4159 | 91.00 | 52 | 155.00 | 103 |
| 48.00 | 258 | 70.00 | 269 | 92.00 | 1130 | 173.00 | 203 |
| 49.00 | 1453 | 72.00 | 228 | 93.00 | 1606 | 174.00 | 36056 |
| 50.00 | 7694 | 73.00 | 1628 | 94.00 | 4663 | 175.00 | 2921 |
| 51.00 | 2475 | 74.00 | 6326 | 95.00 | 41640 | 176.00 | 35648 |
| 52.00 | 50 | 75.00 | 20024 | 96.00 | 2688 | 177.00 | 2203 |
| 55.00 | 65 | 76.00 | 1676 | 104.00 | 139 | 281.00 | 57 |
| 56.00 | 525 | 77.00 | 216 | 106.00 | 162 | | |

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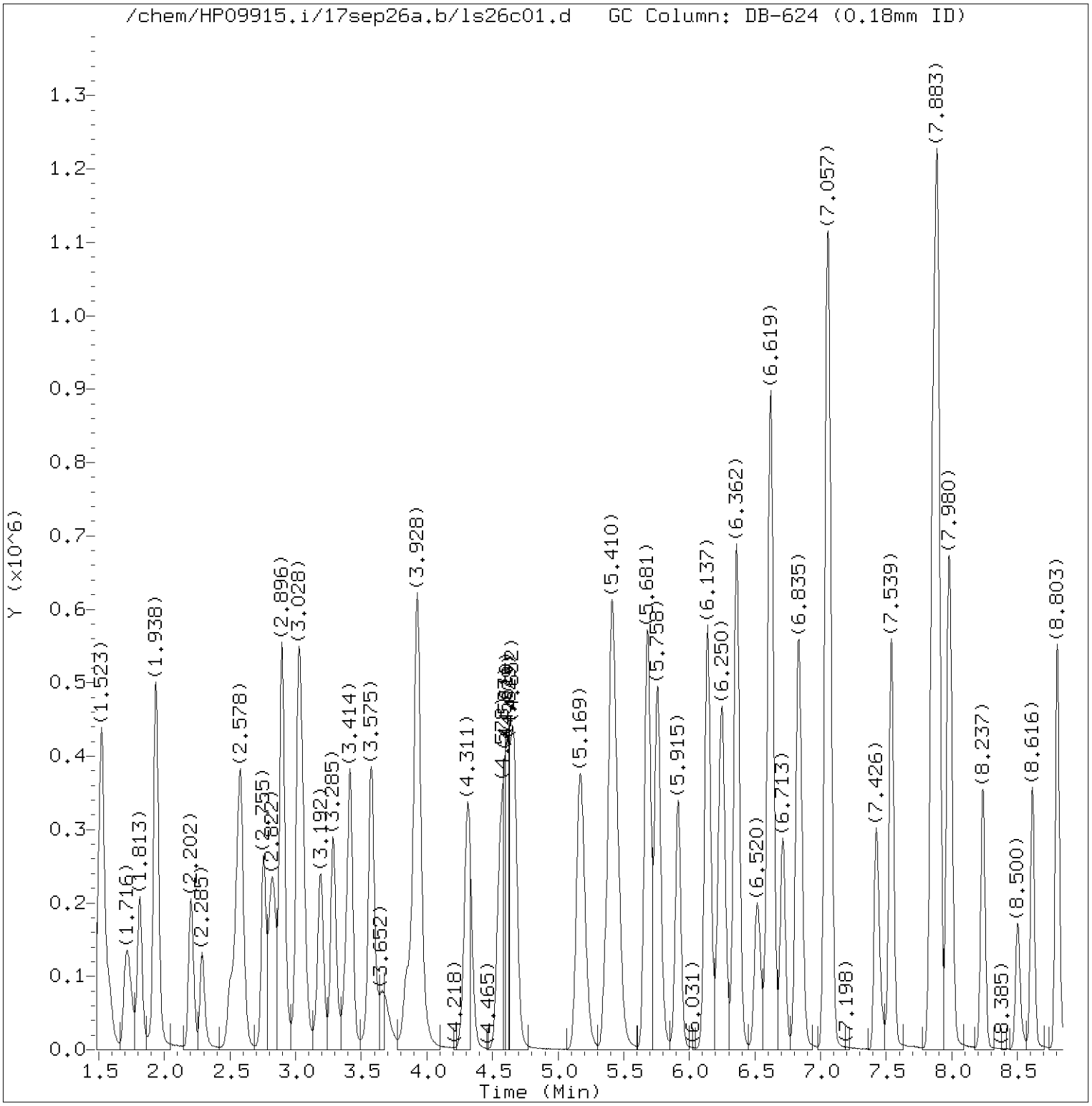
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:28 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

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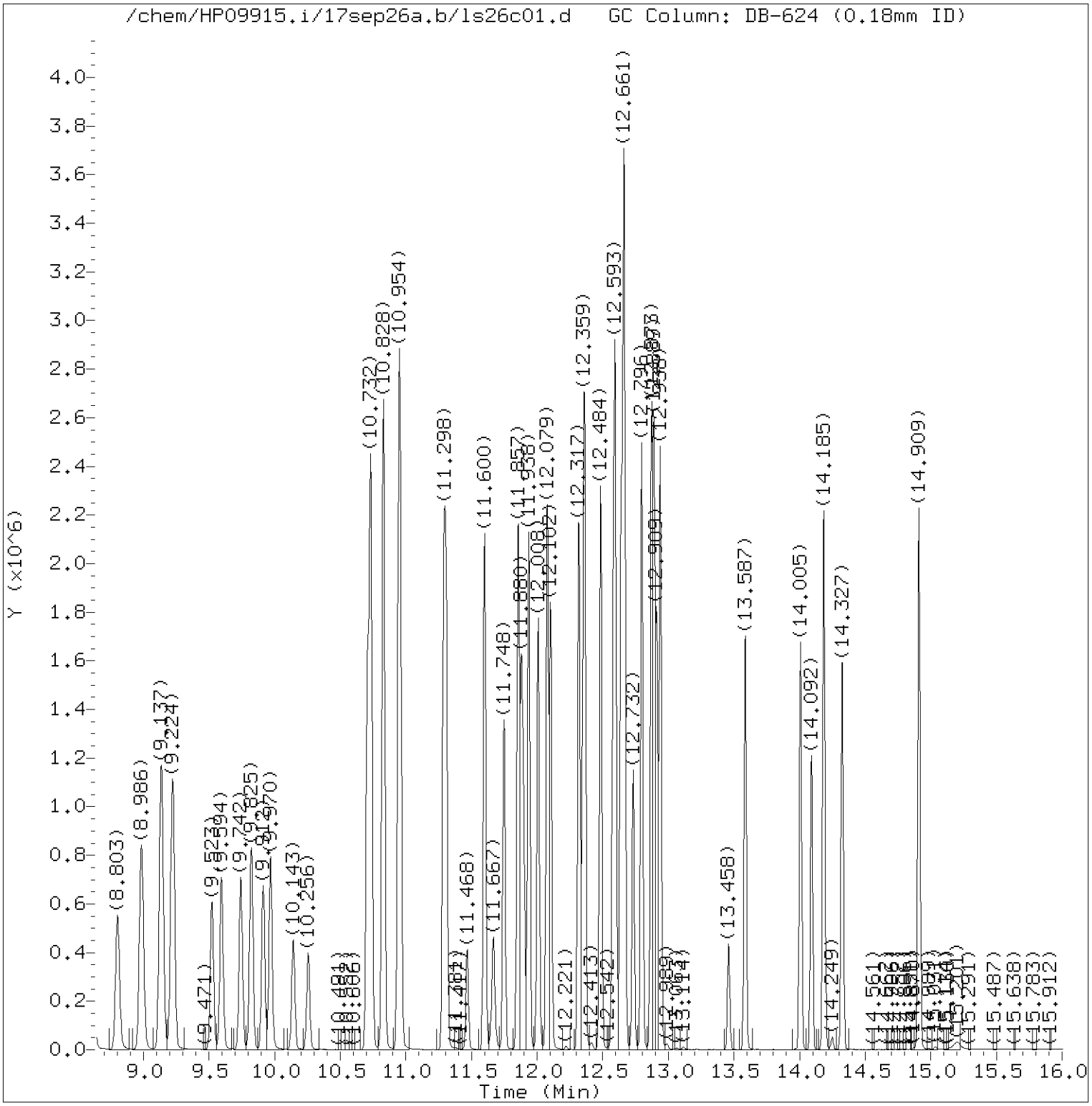
on 09/26/2017 at 08:28.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:28 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

Digitally signed by Linda C. Pape
on 09/26/2017 at 08:28.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:28 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 3) Dichlorodifluoromethane | (2) | 1.716 | 85 | 343704 | 52.669 |
| 4) Chloromethane | (2) | 1.813 | 50 | 295118 | 47.543 |
| 6) Vinyl Chloride | (2) | 1.925 | 62 | 288484 | 47.328 |
| 5) 1,3-Butadiene | (2) | 1.941 | 39 | 239523 | 55.153 |
| 8) Bromomethane | (2) | 2.202 | 94 | 206491 | 45.670 |
| 9) Chloroethane | (2) | 2.288 | 64 | 161277 | 47.750 |
| 12) Trichlorofluoromethane | (2) | 2.549 | 101 | 386032 | 50.217 |
| 11) n-Pentane | (2) | 2.581 | 43 | 312376 | 48.550 |
| 14) Ethyl ether | (2) | 2.755 | 59 | 203673 | 52.110 |
| 15) Freon 123a | (2) | 2.822 | 67 | 246892 | 47.589 |
| 16) Acrolein | (1) | 2.896 | 56 | 748227 | 533.395 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 96 | 190441 | 49.796 |
| 17) 1,1-Dichloroethene | (2) | 3.018 | 63 | 94270 | 52.321 |
| 18) Acetone | (1) | 3.031 | 58 | 68001 | 119.894 |
| 19) Freon 113 | (2) | 3.054 | 101 | 211753 | 52.223 |
| 21) 2-Propanol | (1) | 3.169 | 45 | 116264 | 282.836 |
| 22) Methyl Iodide | (2) | 3.192 | 142 | 381850 | 47.677 |
| 23) Carbon Disulfide | (2) | 3.285 | 76 | 645736 | 49.243 |
| 27) Methyl Acetate | (2) | 3.385 | 43 | 258576 | 57.490 |
| 25) Allyl Chloride | (2) | 3.417 | 41 | 341663 | 54.270 |
| 28) Methylene Chloride | (2) | 3.575 | 84 | 235524 | 50.940 |
| 29)*t-Butyl alcohol-d10 | (1) | 3.578 | 65 | 190652 | 250.000 |
| 30) t-Butyl alcohol | (1) | 3.668 | 59 | 200049 | 262.182 |
| 31) Acrylonitrile | (2) | 3.845 | 53 | 138321 | 56.184 |
| 33) Methyl Tertiary Butyl Ether | (2) | 3.915 | 73 | 742570 | 52.058 |
| 32) trans-1,2-Dichloroethene | (2) | 3.928 | 96 | 228525 | 50.610 |
| 34) n-Hexane | (2) | 4.311 | 57 | 344535 | 53.950 |
| 36) 1,1-Dichloroethane | (2) | 4.555 | 63 | 408802 | 53.005 |
| 38) di-Isopropyl ether | (2) | 4.610 | 45 | 777581 | 56.462 |
| 39) 2-Chloro-1,3-butadiene | (2) | 4.665 | 53 | 359742 | 53.404 |
| 40) Ethyl t-butyl ether | (2) | 5.169 | 59 | 723852 | 51.742 |
| 44) 2-Butanone | (2) | 5.372 | 43 | 362979 | 113.203 |
| 42) cis-1,2-Dichloroethene | (2) | 5.407 | 96 | 261240 | 50.862 |
| 45) 2,2-Dichloropropane | (2) | 5.427 | 77 | 307823 | 46.306 |
| 47) Propionitrile | (1) | 5.456 | 54 | 272666 | 301.549 |
| 48) Methacrylonitrile | (2) | 5.684 | 67 | 361723 | 133.806 |
| 50) Tetrahydrofuran | (1) | 5.761 | 71 | 92516 | 107.728 |
| 49) Bromochloromethane | (2) | 5.761 | 128 | 135106 | 49.793 |

* = Compound is an internal standard.



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Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:28 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 51) Chloroform | (2) | 5.912 | 83 | 409615 | 52.225 |
| 52)$Dibromofluoromethane | (2) | 6.134 | 113 | 261002 | 49.682 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 111 | 267150 | 49.655 |
| 53) 1,1,1-Trichloroethane | (2) | 6.137 | 97 | 355685 | 45.785 |
| 43) 1,2-Dichloroethene (Total) | (2) | | 96 | 489765 | 101.472 |
| 54) Cyclohexane | (2) | 6.250 | 56 | 411410 | 54.175 |
| 54) Cyclohexane | (2) | 6.250 | 84 | 349358 | 52.623 |
| 54) Cyclohexane | (2) | 6.246 | 69 | 122983 | 51.891 |
| 55) 1,1-Dichloropropene | (2) | 6.362 | 75 | 324881 | 52.837 |
| 56) Carbon Tetrachloride | (2) | 6.362 | 117 | 273740 | 46.088 |
| 58) Isobutyl Alcohol | (1) | 6.517 | 41 | 174916 | 724.175 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 65085 | 51.025 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.607 | 65 | 312122 | 52.573 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 104 | 40592 | 49.596 |
| 60) Benzene | (2) | 6.626 | 78 | 955927 | 52.817 |
| 61) 1,2-Dichloroethane | (2) | 6.709 | 62 | 333666 | 52.098 |
| 61) 1,2-Dichloroethane | (2) | 6.706 | 98 | 31397 | 50.204 |
| 65) t-Amyl methyl ether | (2) | 6.835 | 73 | 722541 | 50.054 |
| 66)*Fluorobenzene | (2) | 7.044 | 96 | 1032450 | 50.000 |
| 67) n-Heptane | (2) | 7.070 | 43 | 376995 | 56.963 |
| 69) n-Butanol | (1) | 7.426 | 56 | 277628 | 1395.892 |
| 71) Trichloroethene | (2) | 7.539 | 95 | 250295 | 51.229 |
| 72) Methylcyclohexane | (2) | 7.854 | 83 | 425751 | 53.193 |
| 72) Methylcyclohexane | (2) | 7.851 | 98 | 195836 | 51.778 |
| 73) 1,2-Dichloropropane | (2) | 7.883 | 63 | 254923 | 54.554 |
| 76) Methyl Methacrylate | (2) | 7.970 | 69 | 232327 | 53.219 |
| 75) 1,4-Dioxane | (1) | 7.976 | 88 | 51252M | 821.179 |
| 74) Dibromomethane | (2) | 7.992 | 93 | 173601 | 52.260 |
| 78) Bromodichloromethane | (2) | 8.237 | 83 | 304243 | 50.367 |
| 79) 2-Nitropropane | (2) | 8.500 | 41 | 86273 | 49.686 |
| 80) 2-Chloroethyl Vinyl Ether | (2) | 8.613 | 63 | 197839 | 54.493 |
| 81) cis-1,3-Dichloropropene | (2) | 8.803 | 75 | 390863 | 51.386 |
| 82) 4-Methyl-2-pentanone | (2) | 8.986 | 43 | 747599 | 111.637 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1024009 | 49.669 |
| 83)$Toluene-d8 | (3) | 9.137 | 100 | 665333 | 49.114 |
| 88) Toluene | (3) | 9.227 | 92 | 612484 | 50.851 |
| 89) trans-1,3-Dichloropropene | (3) | 9.523 | 75 | 350940 | 49.567 |
| 91) Ethyl Methacrylate | (3) | 9.594 | 69 | 401323 | 52.314 |

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.



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Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:28 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 92) 1,1,2-Trichloroethane | (3) | 9.742 | 97 | 243558 | 51.943 |
| 93) Tetrachloroethene | (3) | 9.825 | 166 | 278595 | 52.123 |
| 94) 1,3-Dichloropropane | (3) | 9.912 | 76 | 407900 | 53.347 |
| 96) 2-Hexanone | (3) | 9.970 | 43 | 546866 | 109.814 |
| 90) 1,3-Dichloropropene (total) | (3) | | 100 | 741803 | 100.953 |
| 97) Dibromochloromethane | (3) | 10.143 | 129 | 249274 | 48.239 |
| 99) 1,2-Dibromoethane | (3) | 10.256 | 107 | 273967 | 52.063 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 828047 | 50.000 |
| 101) 1-Chlorohexane | (3) | 10.729 | 91 | 341098 | 49.117 |
| 102) Chlorobenzene | (3) | 10.735 | 112 | 715859 | 50.945 |
| 103) 1,1,1,2-Tetrachloroethane | (3) | 10.825 | 131 | 243766 | 49.441 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 1219312 | 52.614 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 969187 | 104.216 |
| 107) o-Xylene | (3) | 11.288 | 106 | 483240 | 51.614 |
| 109) Styrene | (3) | 11.307 | 104 | 804115 | 51.550 |
| 110) Bromoform | (3) | 11.468 | 173 | 172721 | 44.537 |
| 111) Isopropylbenzene | (3) | 11.600 | 105 | 1221526 | 52.074 |
| 112) Cyclohexanone | (1) | 11.667 | 55 | 177118 | 733.935 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 386890 | 49.085 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 174 | 346837 | 50.799 |
| 108) Xylene (Total) | (3) | | 106 | 1452427 | 155.829 |
| 116) 1,1,2,2-Tetrachloroethane | (4) | 11.854 | 83 | 398502 | 50.084 |
| 115) Bromobenzene | (4) | 11.857 | 156 | 334766 | 50.184 |
| 118) trans-1,4-Dichloro-2-butene | (4) | 11.880 | 53 | 237268 | 113.440 |
| 117) 1,2,3-Trichloropropane | (4) | 11.899 | 110 | 120787 | 49.893 |
| 119) n-Propylbenzene | (4) | 11.938 | 91 | 1433712 | 51.359 |
| 120) 2-Chlorotoluene | (4) | 12.008 | 126 | 297152 | 49.131 |
| 122) 1,3,5-Trimethylbenzene | (4) | 12.079 | 105 | 1050791 | 49.933 |
| 121) 4-Chlorotoluene | (4) | 12.105 | 126 | 312566 | 49.485 |
| 124) tert-Butylbenzene | (4) | 12.320 | 134 | 226834M | 50.118 |
| 125) Pentachloroethane | (4) | 12.349 | 167 | 177148 | 46.396 |
| 126) 1,2,4-Trimethylbenzene | (4) | 12.362 | 105 | 1087811 | 50.221 |
| 127) sec-Butylbenzene | (4) | 12.484 | 105 | 1344068 | 51.474 |
| 129) 1,3-Dichlorobenzene | (4) | 12.581 | 146 | 635877 | 50.439 |
| 130) p-Isopropyltoluene | (4) | 12.597 | 119 | 1193927 | 51.471 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 466525 | 50.000 |
| 133) 1,4-Dichlorobenzene | (4) | 12.658 | 146 | 661221 | 50.790 |
| 134) 1,2,3-Trimethylbenzene | (4) | 12.664 | 105 | 1125231 | 49.870 |

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Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:28 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 135) Benzyl Chloride | (4) | 12.732 | 91 | 662291 | 41.215 |
| 136) 1,3-Diethylbenzene | (4) | 12.796 | 119 | 693190 | 49.235 |
| 137) 1,4-Diethylbenzene | (4) | 12.870 | 119 | 718513 | 48.933 |
| 139) n-Butylbenzene | (4) | 12.889 | 92 | 573219 | 50.433 |
| 138) 1,2-Dichlorobenzene | (4) | 12.912 | 146 | 624840 | 49.886 |
| 140) 1,2-Diethylbenzene | (4) | 12.938 | 119 | 581664 | 49.585 |
| 141) Diethylbenzene (total) | (4) | | 100 | 1993367 | 147.753 |
| 142) 1,2-Dibromo-3-chloropropane | (4) | 13.458 | 75 | 82411 | 47.537 |
| 144) 1,3,5-Trichlorobenzene | (4) | 13.587 | 180 | 457577 | 48.052 |
| 146) 1,2,4-Trichlorobenzene | (4) | 14.008 | 180 | 440024 | 46.570 |
| 147) Hexachlorobutadiene | (4) | 14.092 | 225 | 179612 | 44.502 |
| 148) Naphthalene | (4) | 14.185 | 128 | 1456145 | 48.793 |
| 149) 1,2,3-Trichlorobenzene | (4) | 14.327 | 180 | 421597 | 46.512 |
| 150) 2-Methylnaphthalene | (4) | 14.909 | 142 | 885112 | 44.007 |



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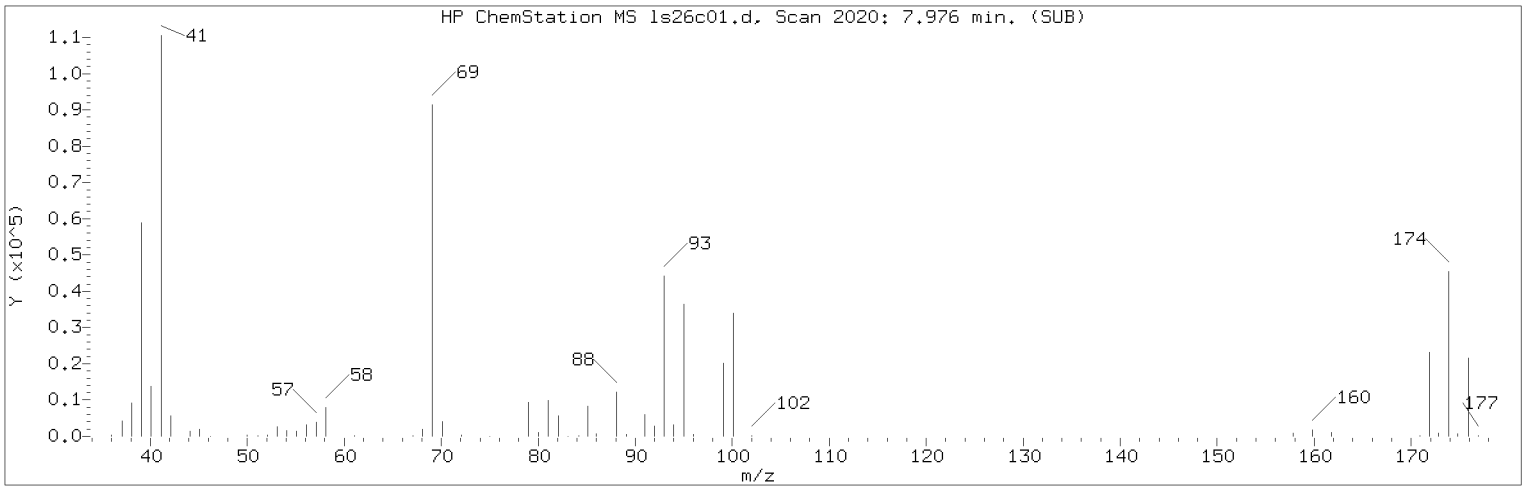
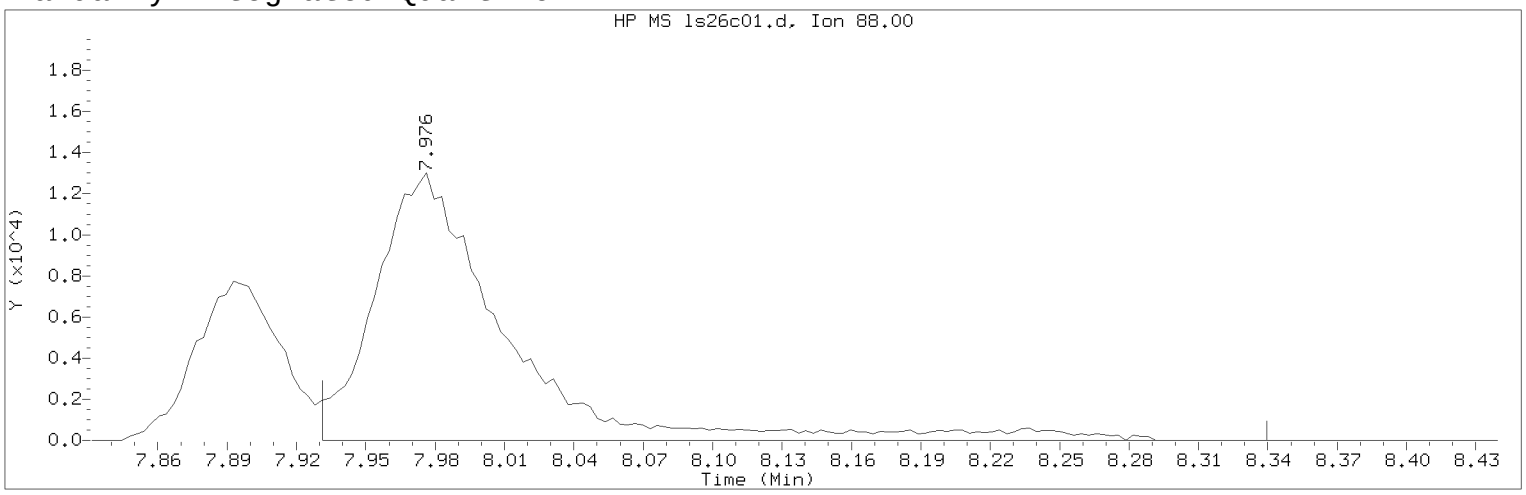
Target 3.5 esignature user ID: lcp00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:28 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

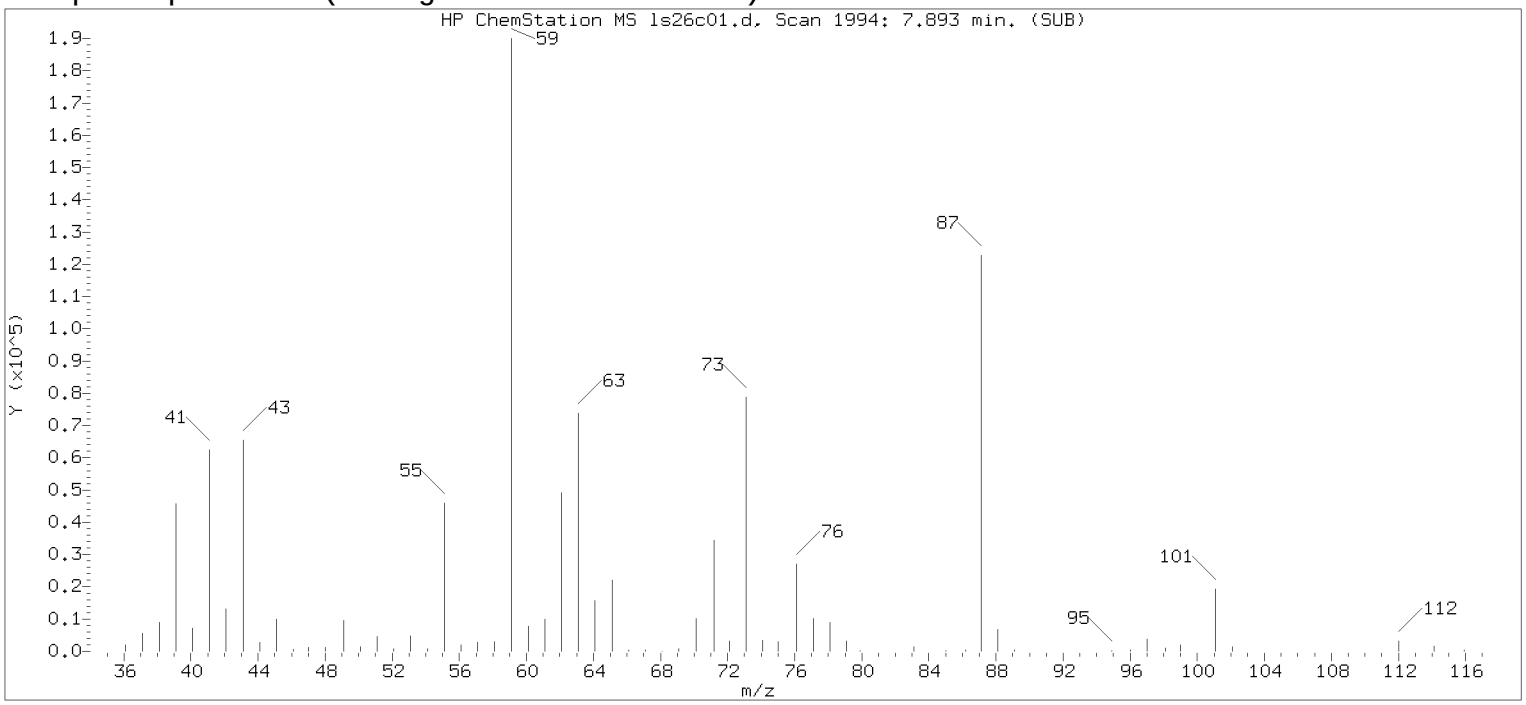
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 2020
Retention Time (minutes): 7.976
Quant Ion : 88.00
Area (flag) : 51252M
On-Column Amount (ng) : 821.1795
Integration start scan : 2005 Integration stop scan: 2132
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

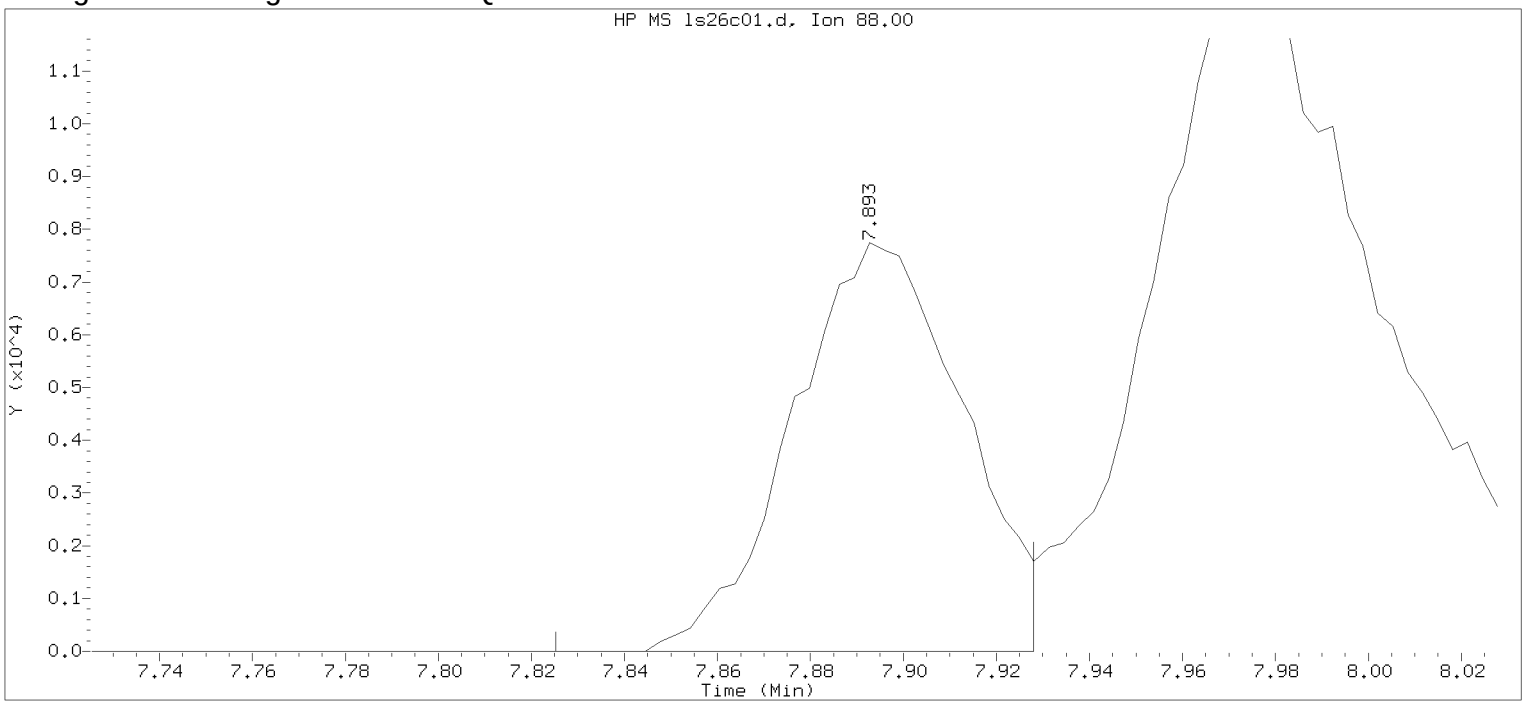
Analyst responsible for change: Digitally signed by Linda C. Pape
on 09/26/2017 at 08:28.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 09/26/2017 at 20:19.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

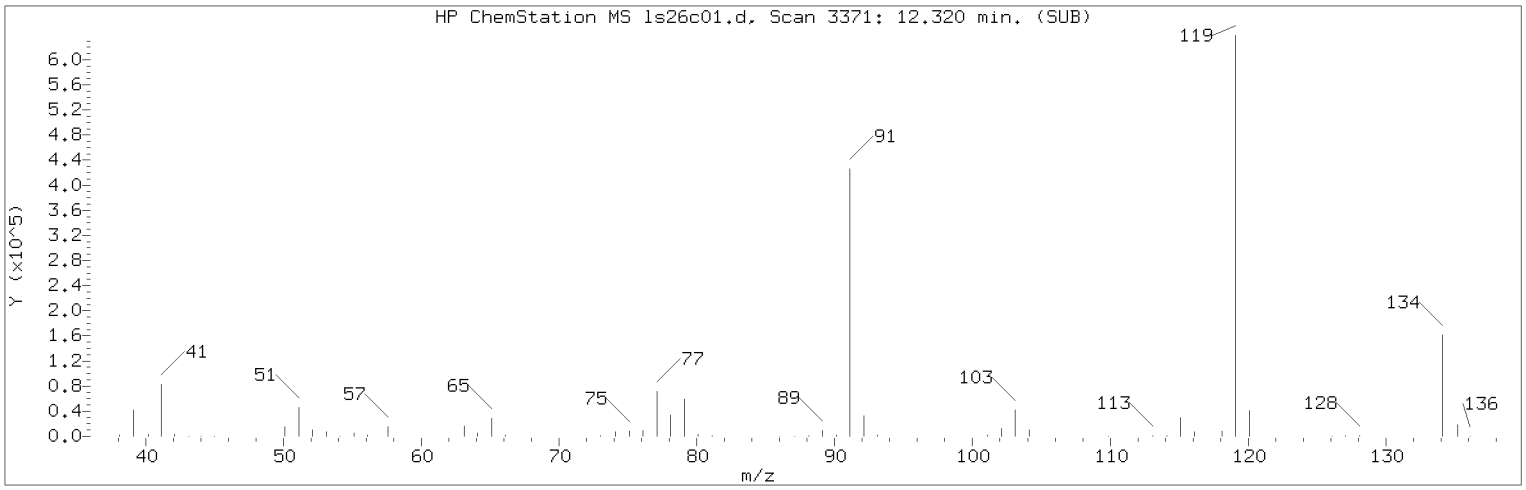
Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:26 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

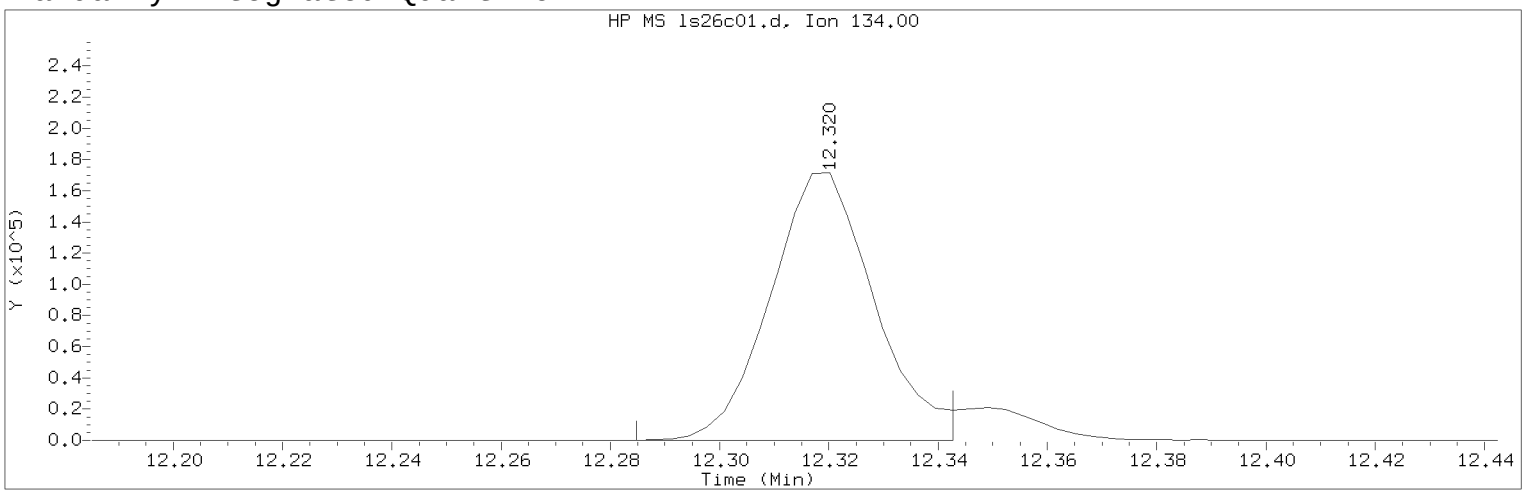
Compound Number : 75
Compound Name : 1,4-Dioxane
Scan Number : 1994
Retention Time (minutes): 7.893
Quant Ion : 88.00
Area : 19559
On-column Amount (ng) : 313.3907
Integration start scan : 1972 Integration stop scan: 2004
Y at integration start : 0 Y at integration end: 0

Digitally signed by Linda C. Pape on 09/26/2017 at 08:28.
Target 3.5 esignature userKD95lcp00895

Sample Spectrum (Background Subtracted)




Manually Integrated Quant Ion




Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d  Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07  Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m  Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:28 lcp00895

Sample Name: VSTD050  Lab Sample ID: VSTD050

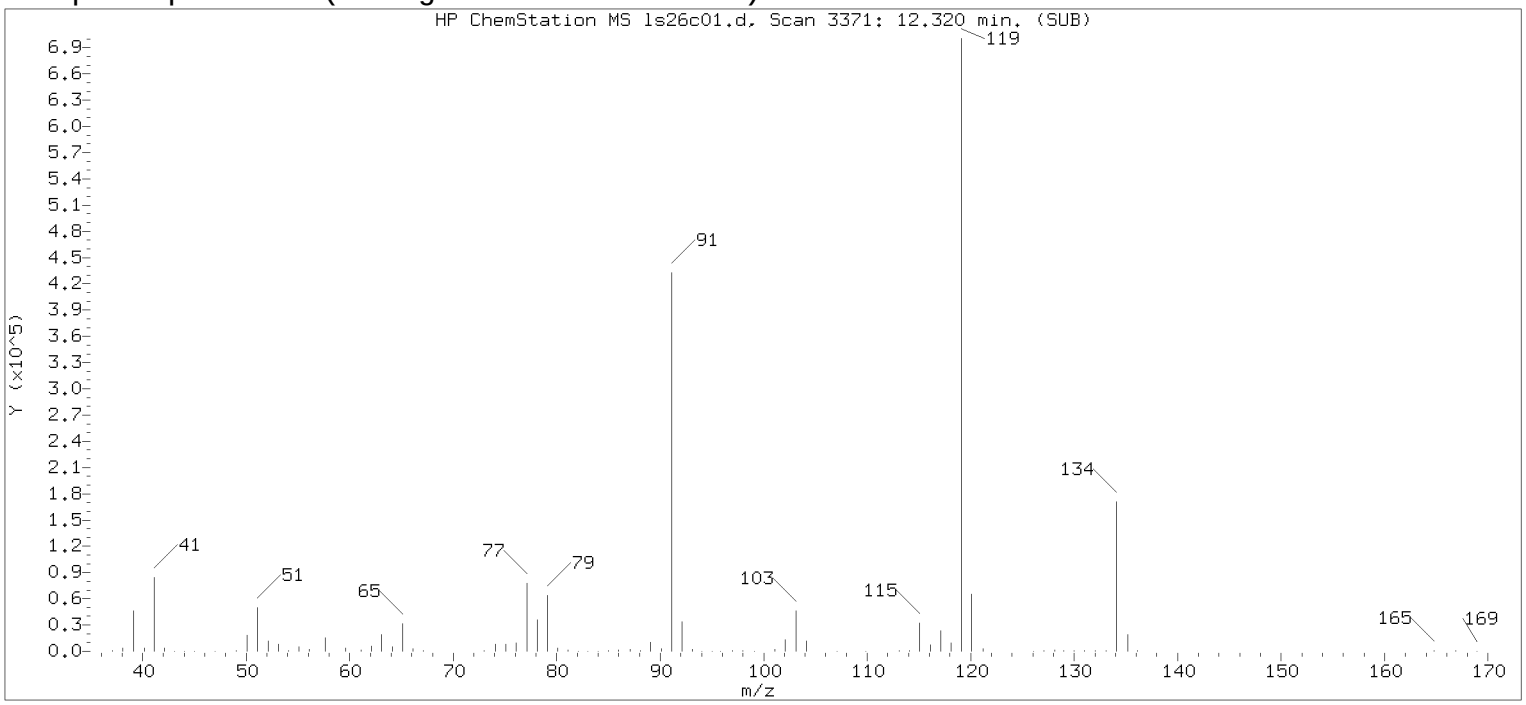
Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area (flag) : 226834M
On-Column Amount (ng) : 50.1175
Integration start scan : 3359  Integration stop scan: 3377
Y at integration start : 0  Y at integration end: 0

Reason for manual integration: improper integration

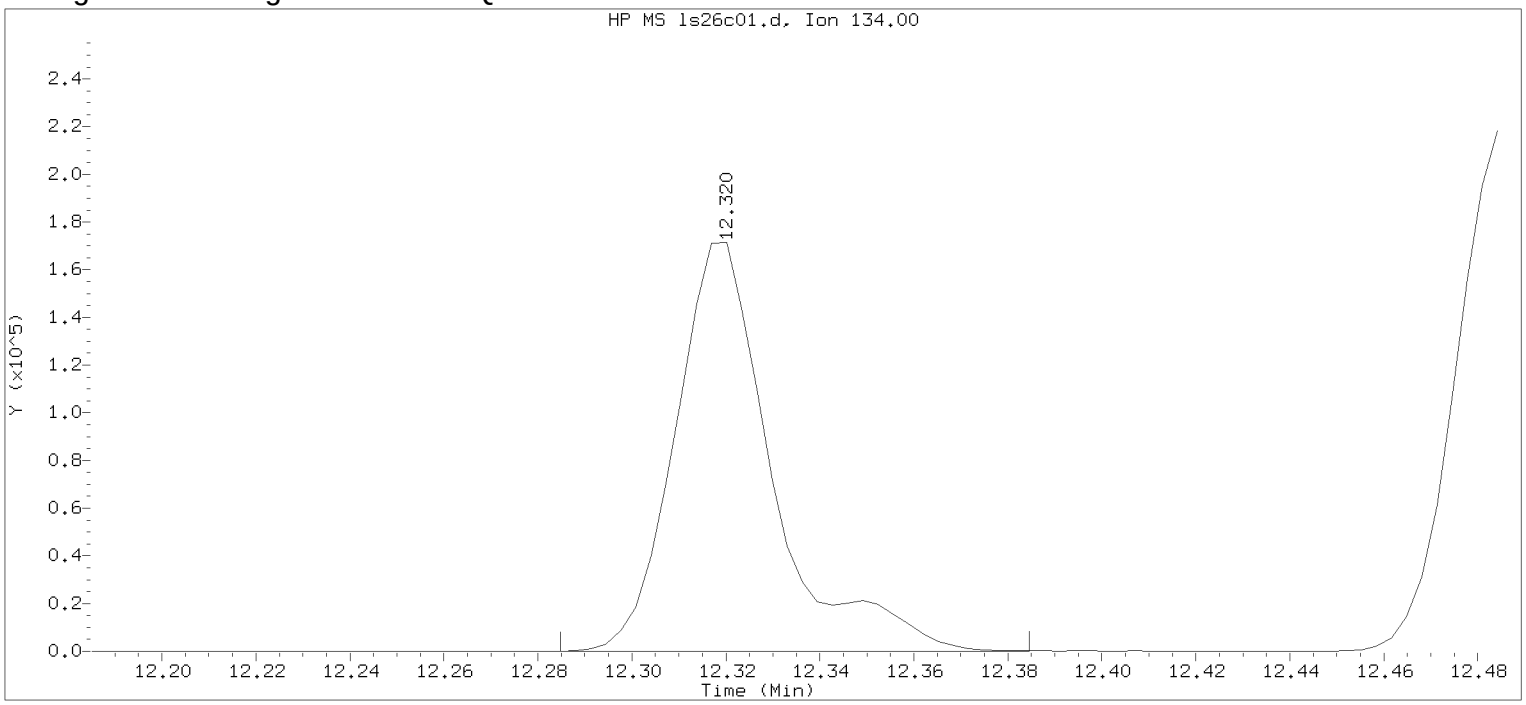
Analyst responsible for change: Digitally signed by Linda C. Pape
on 09/26/2017 at 08:28.
Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Joshua E. Berrios on 09/26/2017 at 20:19.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)




Original Integration of Quant Ion




Data File: /chem/HP09915.i/17sep26a.b/ls26c01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:07 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 8260W-D
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:26 lcp00895

Sample Name: VSTD050 Lab Sample ID: VSTD050

Compound Number : 124
Compound Name : tert-Butylbenzene
Scan Number : 3371
Retention Time (minutes): 12.320
Quant Ion : 134.00
Area : 246859
On-column Amount (ng) : 54.5418
Integration start scan : 3359 Integration stop scan: 3390
Y at integration start : 0 Y at integration end: 0

Digitally signed by Linda C. Pape on 09/26/2017 at 08:28.
Target 3.5 esignature userKD95lcp00872

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep26a.b/ls26ec1.d Injection date and time: **26-SEP-2017 14:03**
Data file Sample Info. Line: SECC050;SECC050;1;3;LCS;;;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 15:31 msk07970

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 15:31
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26ec1.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.558( 0.000) | 646 | 65 | 182603 ( 0) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 995360 ( 0) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 793367 ( 0) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 449444 ( 0) | 50.00 | |

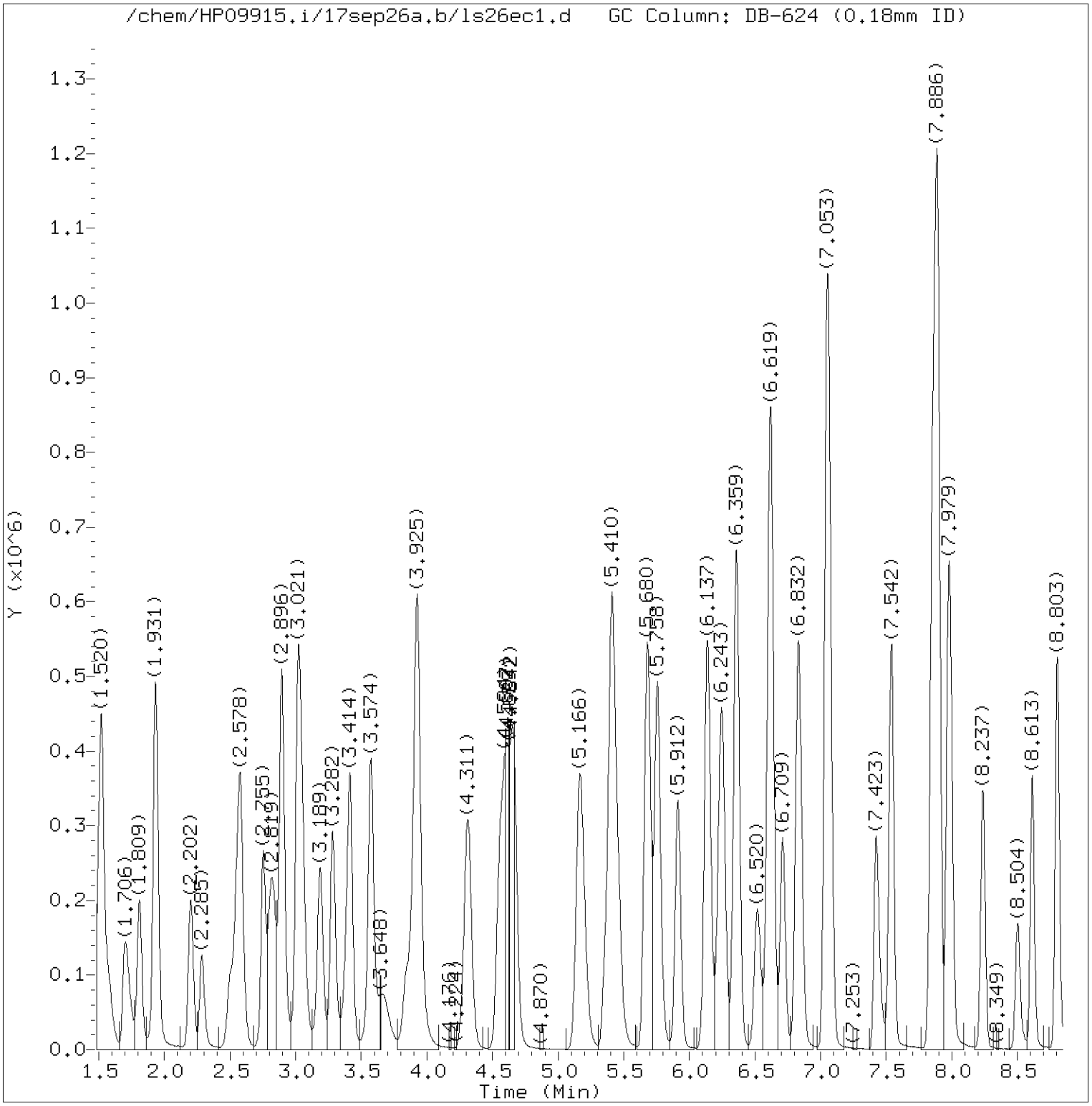
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.134( 0.000) | 113 | 253990 | 50.149 | 100% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.606( 0.000) | 102 | 62711 | 50.996 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 991165 | 50.178 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 378736 | 50.151 | 100% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.622( 0.000) | 78 | 946245 | 54.231 | 54.23 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.224( 0.000) | 92 | 611233 | 52.966 | 52.97 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.828( 0.000) | 91 | 1213055 | 54.632 | 54.63 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.954( 0.000) | 106 | 958963 | 107.624 | 107.62 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288( 0.000) | 106 | 477777 | 53.261 | 53.26 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 1436740 | 160.885 | 160.88 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Matthew S. Krause on 09/26/2017 at 15:32. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:57. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

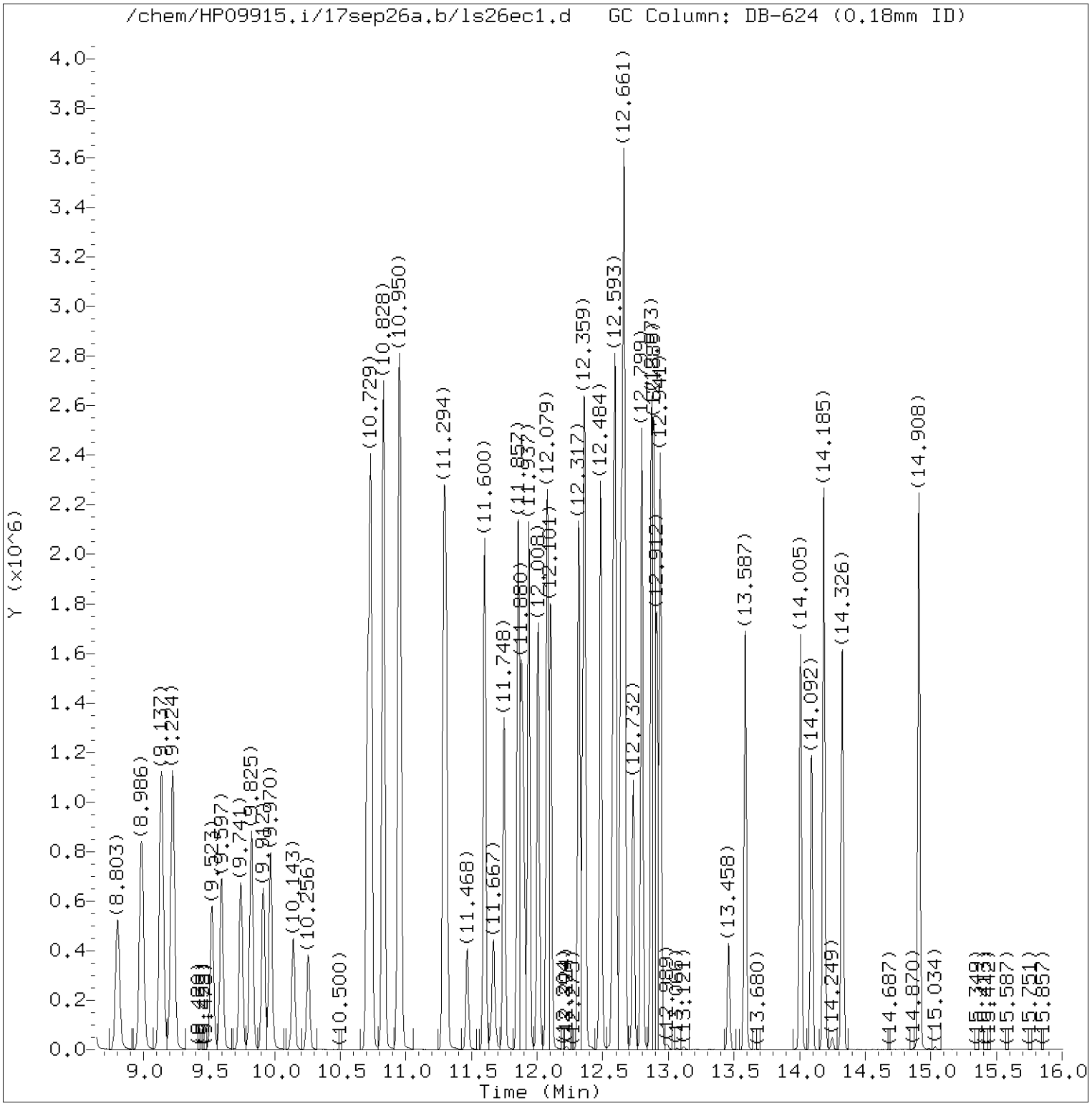
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26ec1.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 14:03 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 15:31
Date, time and analyst ID of latest file update: 26-Sep-2017 15:31 msk07970

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Matthew S. Krause
on 09/26/2017 at 15:32.
Target 3.5 esignature user ID: msk07970




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26ec1.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 14:03 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 15:31
Date, time and analyst ID of latest file update: 26-Sep-2017 15:31 msk07970

Sample Name: SECC050 Lab Sample ID: SECC050

Digitally signed by Matthew S. Krause
on 09/26/2017 at 15:32.
Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26ec1.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 14:03 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 15:31
Date, time and analyst ID of latest file update: 26-Sep-2017 15:31 msk07970

Sample Name: SECC050 Lab Sample ID: SECC050

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.558 | 65 | 182603 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.134 | 113 | 253990 | 50.149 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 62711 | 50.996 |
| 60) Benzene | (2) | 6.623 | 78 | 946245 | 54.231 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 995360 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 991165 | 50.178 |
| 88) Toluene | (3) | 9.224 | 92 | 611233 | 52.966 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 793367 | 50.000 |
| 104) Ethylbenzene | (3) | 10.828 | 91 | 1213055 | 54.632 |
| 106) m+p-Xylene | (3) | 10.954 | 106 | 958963 | 107.624 |
| 107) o-Xylene | (3) | 11.288 | 106 | 477777 | 53.261 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 378736 | 50.151 |
| 108) Xylene (Total) | (3) | | 106 | 1436740 | 160.885 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 449444 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Matthew S. Krause
on 09/26/2017 at 15:32.
Target 3.5 esignature user ID: msk07970

# Raw QC Data

# Volatiles by GC/MS

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep26a.b/ls26b01.d Injection date and time: **26-SEP-2017 08:29**
Data file Sample Info. Line: VBLKL72;VBLKL72;1;3;;;DODWW;;; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 08:47 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.007) | 650 | 65 | 185960 ( -2) | 250.00 | |
| 66) Fluorobenzene | 7.044( 0.000) | 1730 | 96 | 1004054 ( -3) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 786698 ( -5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 430214 ( -8) | 50.00 | |

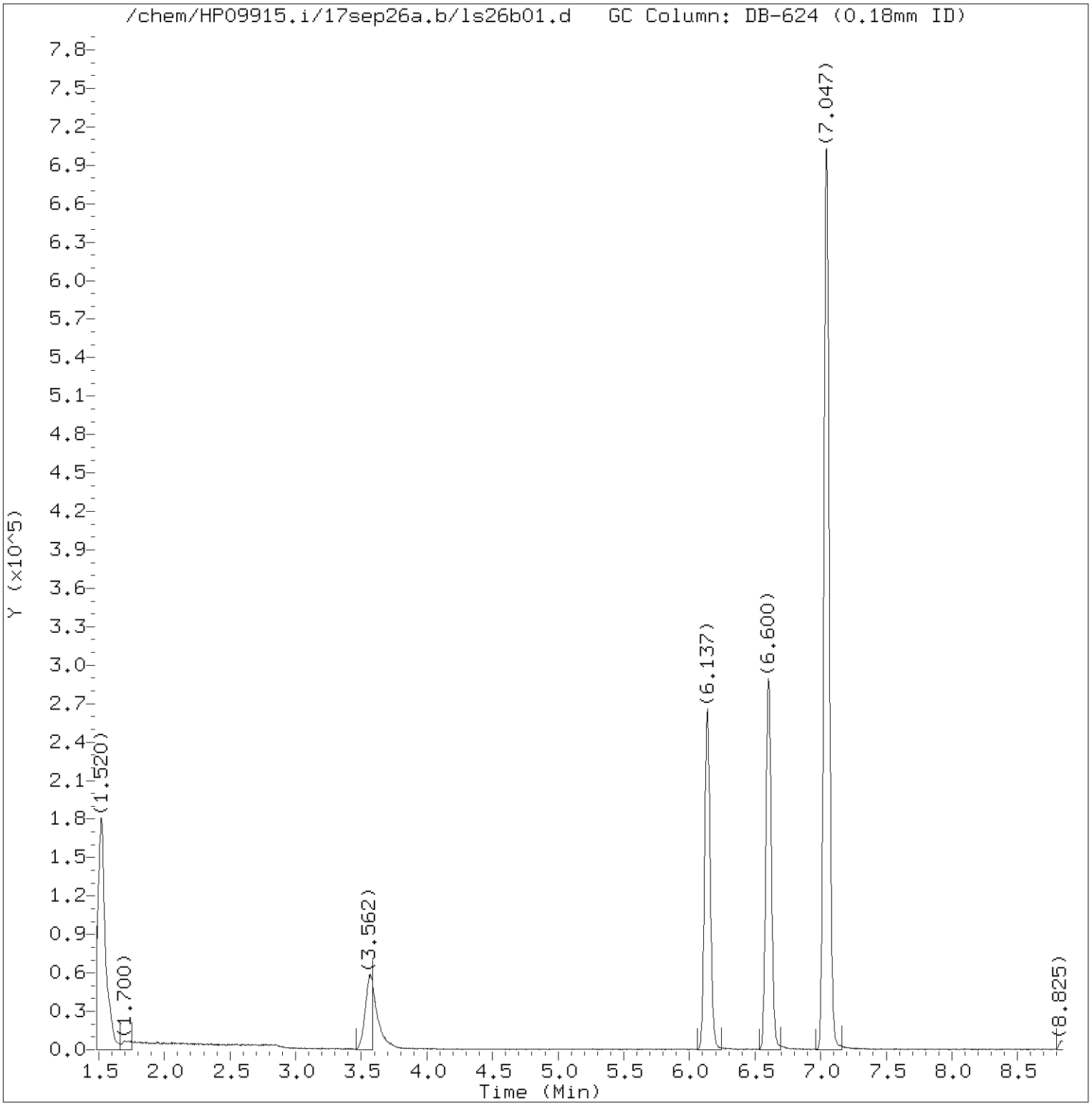
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 249922 | 48.918 | 98% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.606( 0.000) | 102 | 63142 | 50.902 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 978526 | 49.958 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 364046 | 48.614 | 97% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | | | Not Detected | | | | | 0.5 | 1 |
| 88) Toluene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 107) o-Xylene | (3) | | | Not Detected | | | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | | Not Detected | | | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 09:02. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:44. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

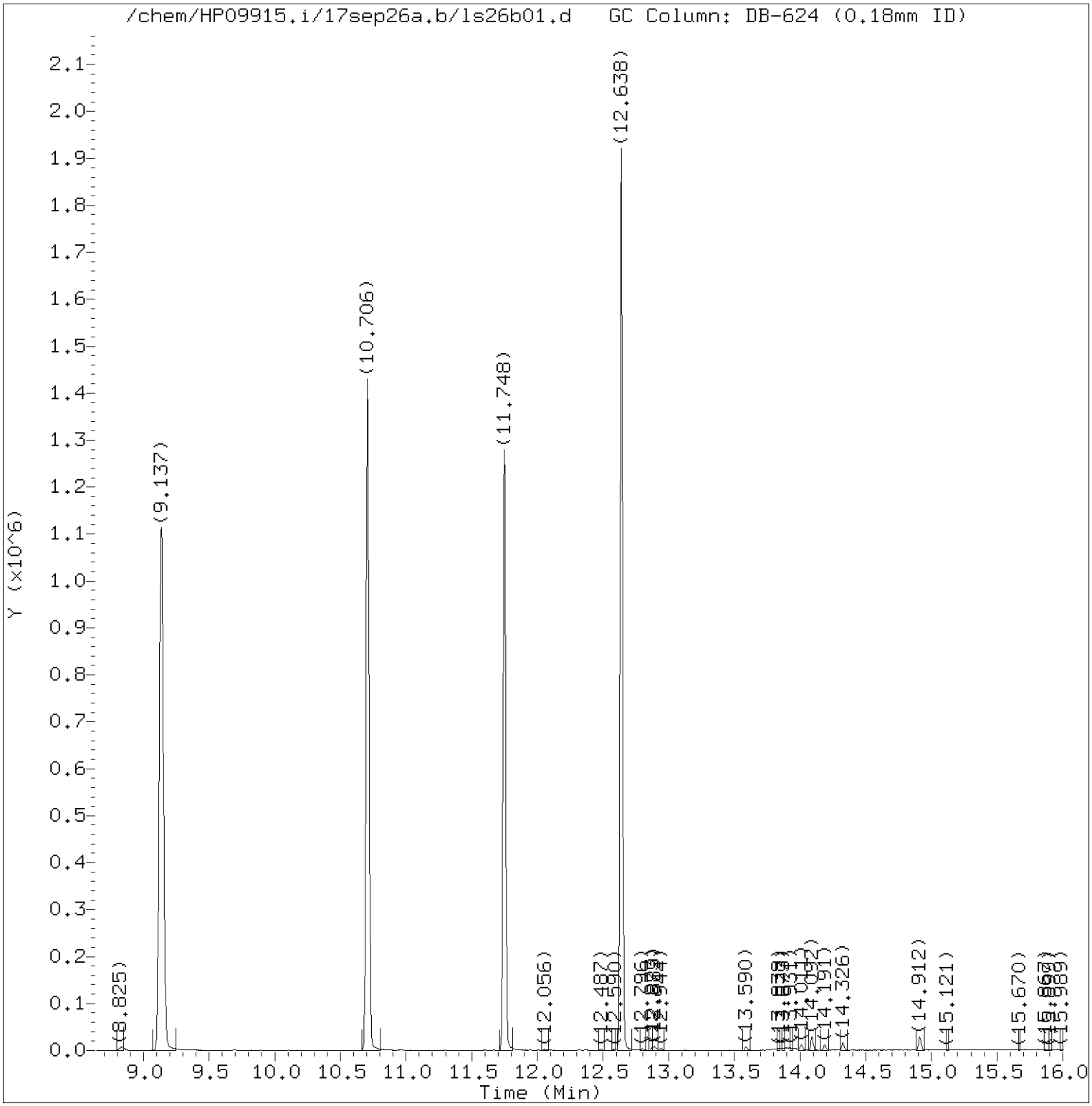
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26b01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:29 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:47 Automation

Sample Name: VBLKL72 Lab Sample ID: VBLKL72

Digitally signed by Linda C. Pape
on 09/26/2017 at 09:02.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26b01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:29 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:47 Automation

Sample Name: VBLKL72 Lab Sample ID: VBLKL72

Digitally signed by Linda C. Pape
on 09/26/2017 at 09:02.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26b01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:29 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 08:47 Automation

Sample Name: VBLKL72 Lab Sample ID: VBLKL72

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 185960 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 249922 | 48.918 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.606 | 102 | 63142 | 50.902 |
| 66)*Fluorobenzene | (2) | 7.044 | 96 | 1004054 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 978526 | 49.958 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 786698 | 50.000 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 364046 | 48.614 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 430214 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 09:02.
Target 3.5 esignature user ID: lcp00895

EF2--MS

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9224675MS

Data file: /chem/HP09915.i/17sep26a.b/ls26s03.d Injection date and time: **26-SEP-2017 10:03**
Data file Sample Info. Line: EF2--MS;9224675MS;1;3;MS;KR195;DODWW;;ls26b01 Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 10:20 Automation

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571( 0.006) | 650 | 65 | 193442 ( 1) | 250.00 | |
| 66) Fluorobenzene | 7.044( 0.000) | 1730 | 96 | 1011364 ( -2) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 801121 ( -3) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.639( 0.000) | 3470 | 152 | 440818 ( -6) | 50.00 | |

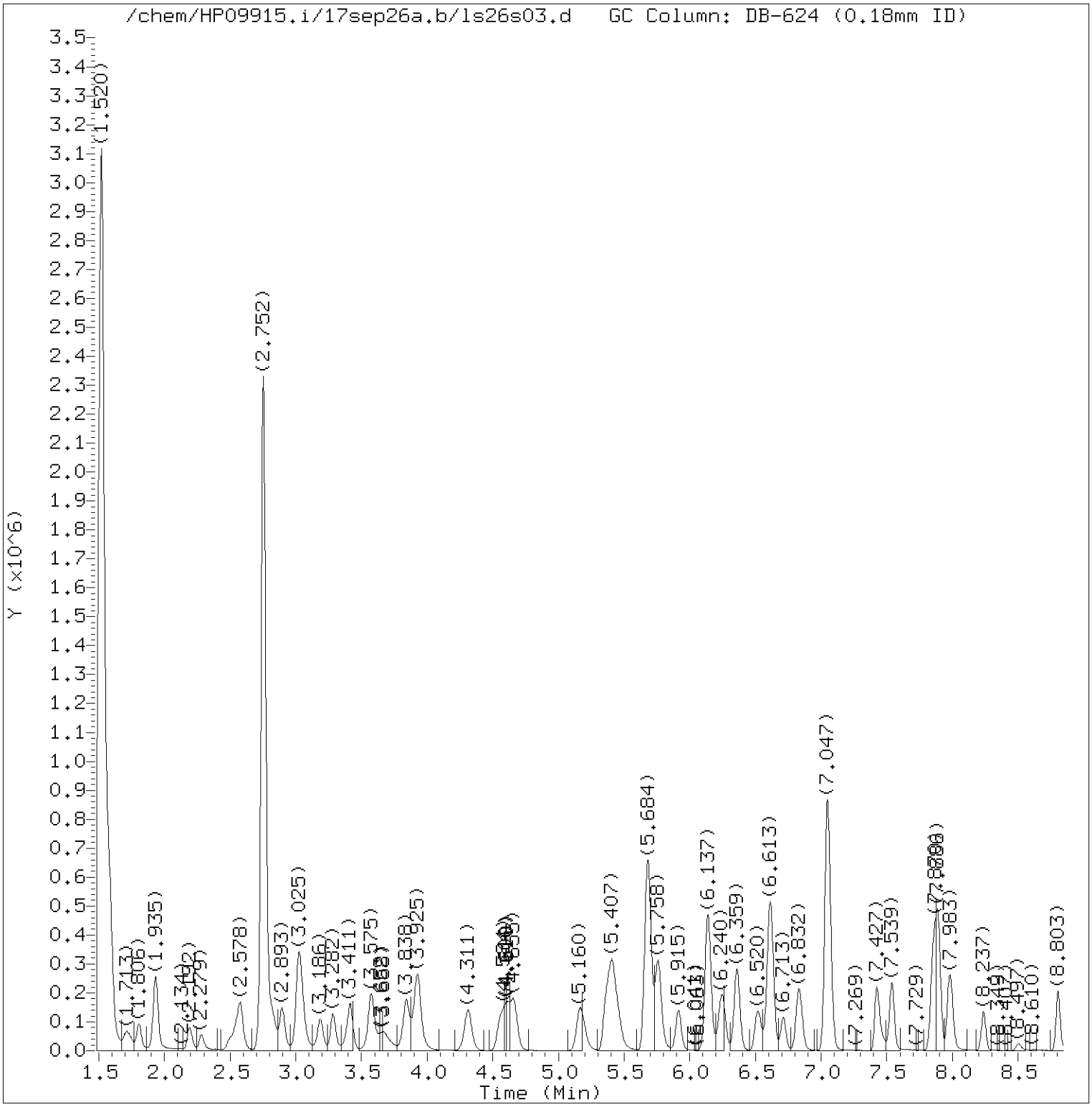
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.134( 0.000) | 113 | 255890 | 49.724 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 63501 | 50.821 | 102% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 999777 | 50.124 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 379360 | 49.747 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.626(-0.000) | 78 | 400050 | 22.565 | 22.56 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.224( 0.000) | 92 | 261810 | 22.467 | 22.47 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.832( 0.000) | 91 | 497443 | 22.186 | 22.19 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.950( 0.000) | 106 | 395325 | 43.938 | 43.94 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288( 0.000) | 106 | 190268 | 21.005 | 21.01 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 585593 | 64.943 | 64.94 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 13:14. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:46. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

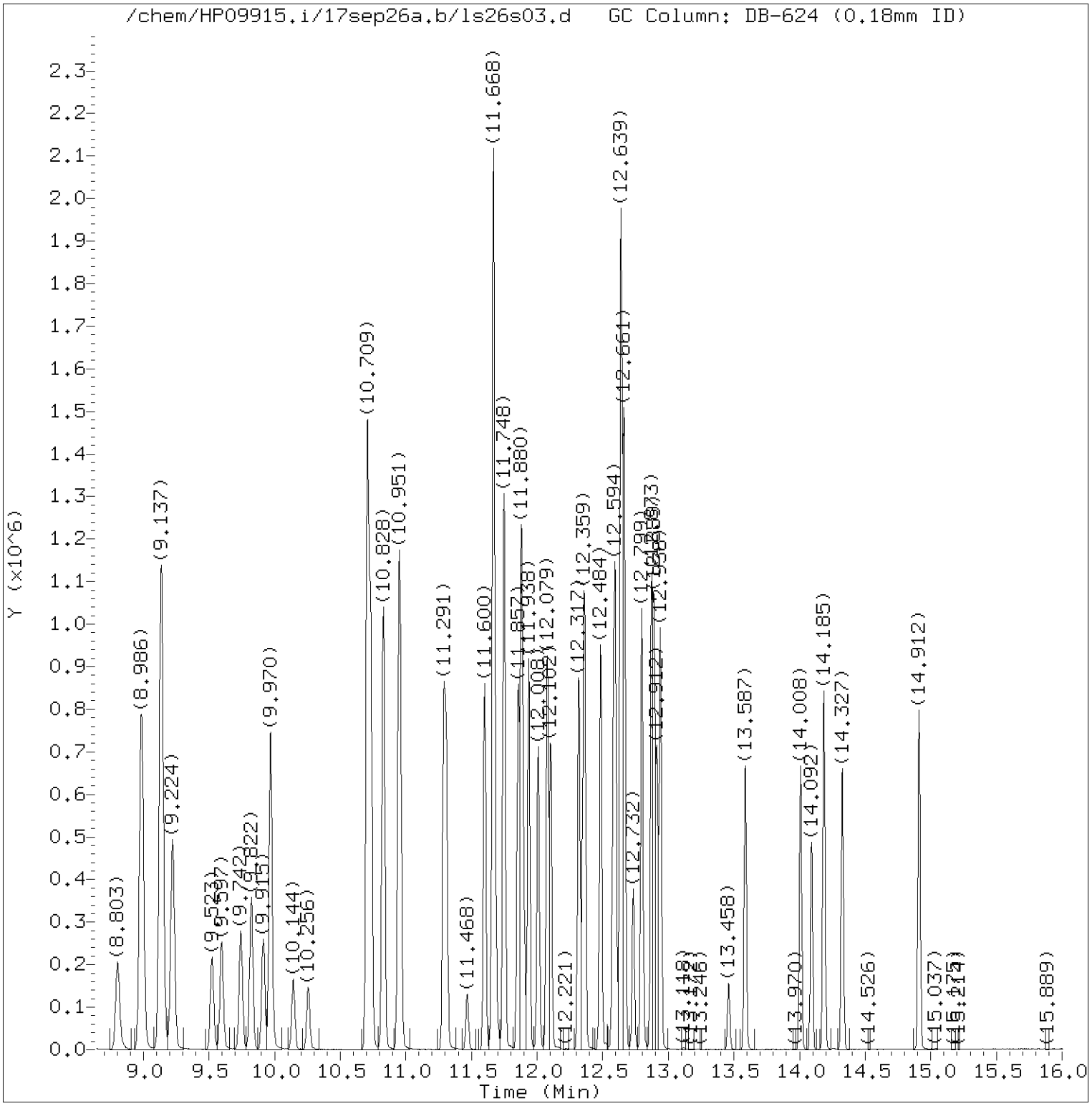
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s03.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:03 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 10:20 Automation

Sample Name: EF2--MS Lab Sample ID: 9224675MS

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:14.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s03.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:03 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 10:20 Automation

Sample Name: EF2--MS Lab Sample ID: 9224675MS

Digitally signed by Linda C. Pape
on 09/26/2017 at 13:14.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s03.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:03 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 10:20 Automation

Sample Name: EF2--MS Lab Sample ID: 9224675MS

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 193442 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.134 | 113 | 255890 | 49.724 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 63501 | 50.821 |
| 60) Benzene | (2) | 6.626 | 78 | 400050 | 22.565 |
| 66)*Fluorobenzene | (2) | 7.044 | 96 | 1011364 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 999777 | 50.124 |
| 88) Toluene | (3) | 9.224 | 92 | 261810 | 22.467 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 801121 | 50.000 |
| 104) Ethylbenzene | (3) | 10.832 | 91 | 497443 | 22.186 |
| 106) m+p-Xylene | (3) | 10.951 | 106 | 395325 | 43.938 |
| 107) o-Xylene | (3) | 11.288 | 106 | 190268 | 21.005 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 379360 | 49.747 |
| 108) Xylene (Total) | (3) | | 106 | 585593 | 64.943 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.639 | 152 | 440818 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 13:14.
Target 3.5 esignature user ID: lcp00895

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles



Data file: /chem/HP09915.i/17sep26a.b/ls26s04.d Injection date and time: **26-SEP-2017 10:25**
Data file Sample Info. Line: EF2--MSD;9224676MSD;1;3;MSD;KR195;DODWW;;ls26b01 Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 20:50 sej02002

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 15:31
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26ec1.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.571(-0.013) | 650 | 65 | 200222 ( 10) | 250.00 | |
| 66) Fluorobenzene | 7.047( 0.000) | 1731 | 96 | 1046317 ( 5) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 834089 ( 5) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 460824 ( 3) | 50.00 | |

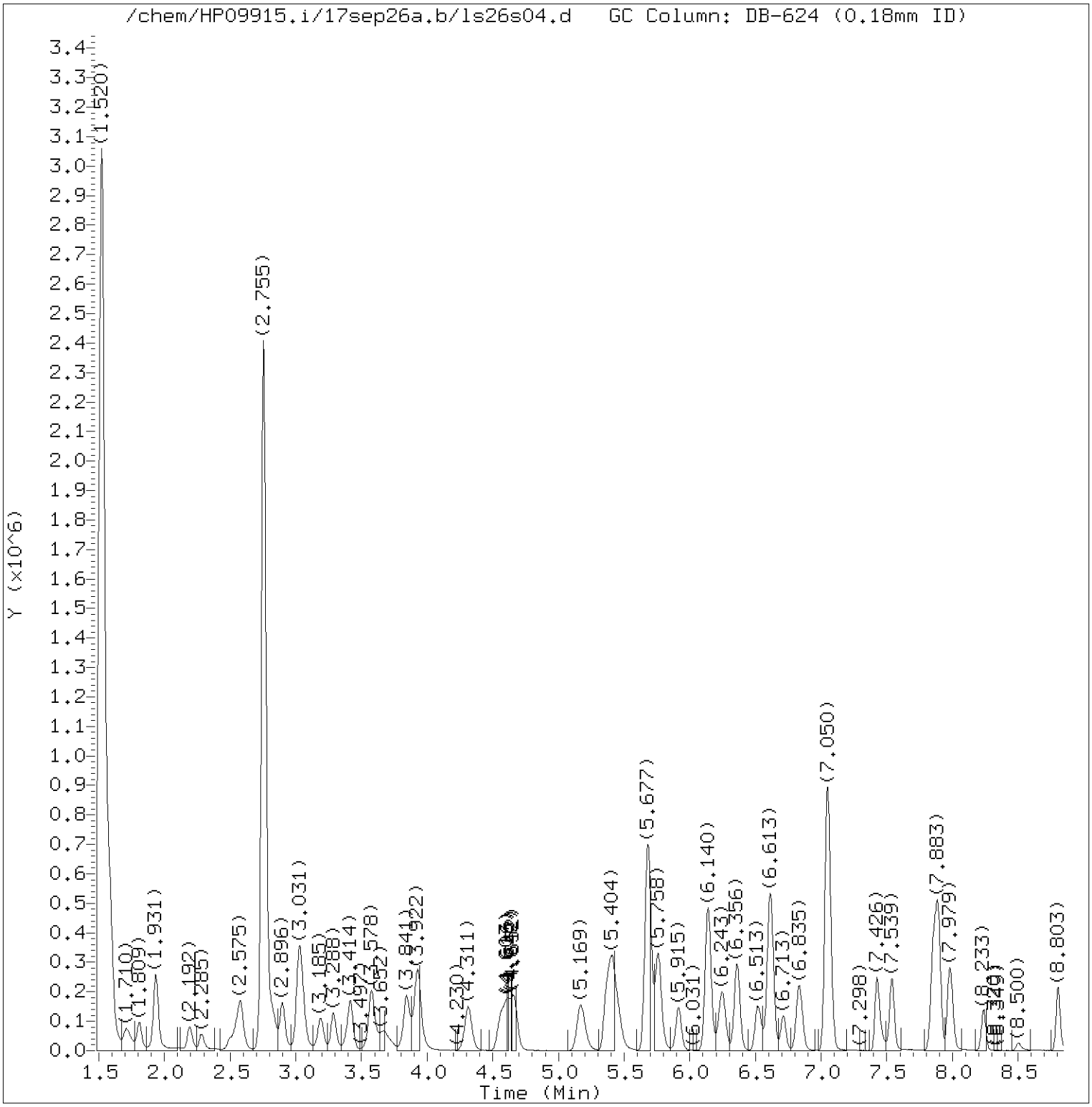
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.140(-0.001) | 113 | 265312 | 49.833 | 100% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.603( 0.000) | 102 | 64976 | 50.265 | 101% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1040510 | 50.104 | 100% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 394067 | 49.633 | 99% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.622(-0.000) | 78 | 412104 | 22.468 | 22.47 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.220( 0.000) | 92 | 271900 | 22.411 | 22.41 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.828(-0.000) | 91 | 516210 | 22.113 | 22.11 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.950( 0.000) | 106 | 407181 | 43.467 | 43.47 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288( 0.000) | 106 | 195739 | 20.755 | 20.75 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 602920 | 64.222 | 64.22 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Don V. Viray on 09/26/2017 at 20:52. Target 3.5 esignature user ID: dvv10203

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:55. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

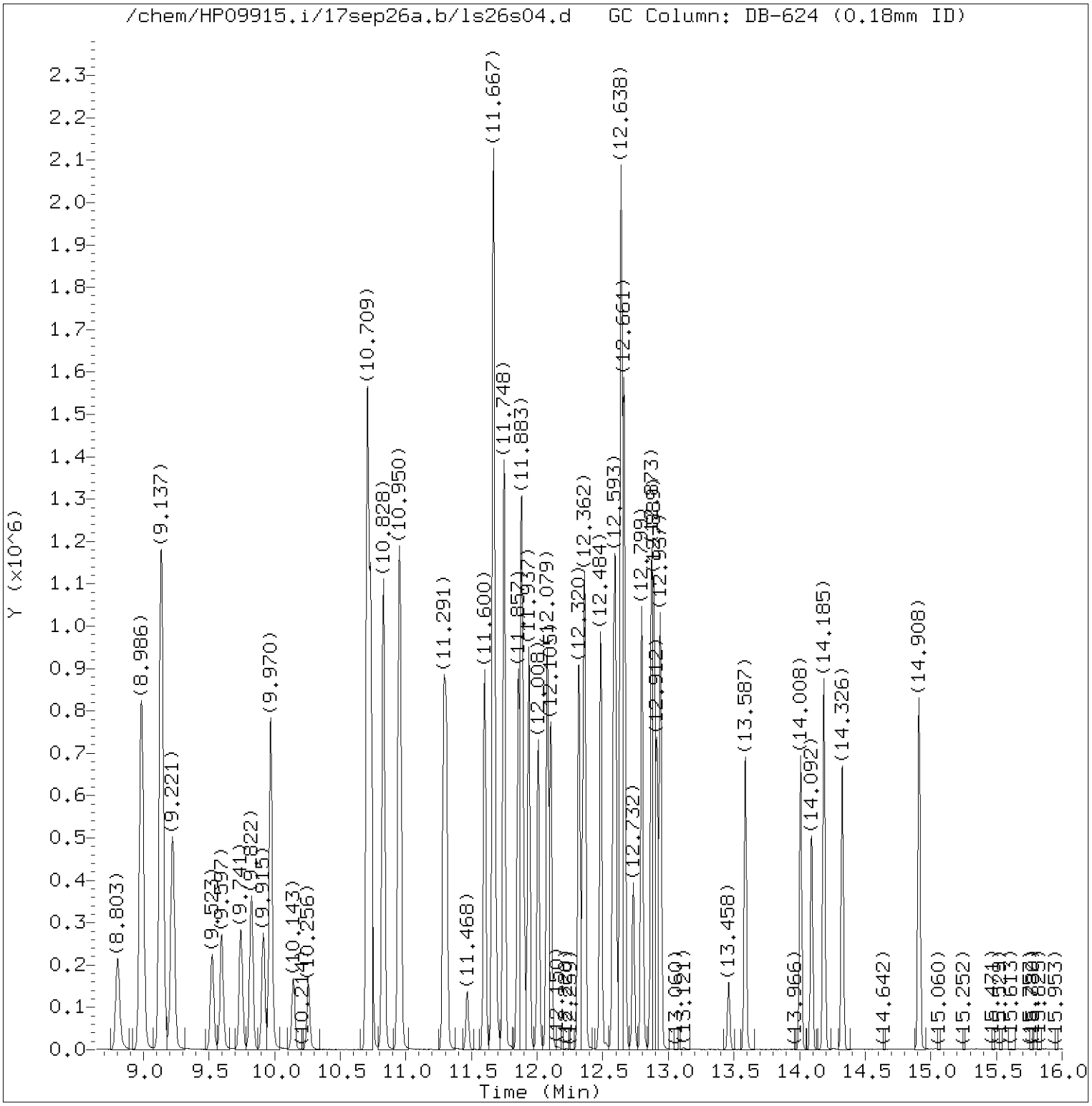
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s04.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:25 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 15:31
Date, time and analyst ID of latest file update: 26-Sep-2017 20:50 sej02002

Sample Name: EF2--MSD Lab Sample ID: 9224676MSD

Digitally signed by Don V. Viray
on 09/26/2017 at 20:52.
Target 3.5 esignature user ID: dvv10203




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s04.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:25 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 15:31
Date, time and analyst ID of latest file update: 26-Sep-2017 20:50 sej02002

Sample Name: EF2--MSD Lab Sample ID: 9224676MSD

Digitally signed by Don V. Viray
on 09/26/2017 at 20:52.
Target 3.5 esignature user ID: dvv10203

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s04.d  Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 10:25  Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 26-SEP-2017 15:31
Date, time and analyst ID of latest file update: 26-Sep-2017 20:50 sej02002

Sample Name: EF2--MSD  Lab Sample ID: 9224676MSD

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.571 | 65 | 200222 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.140 | 113 | 265312 | 49.833 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.603 | 102 | 64976 | 50.265 |
| 60) Benzene | (2) | 6.623 | 78 | 412104 | 22.468 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1046317 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1040510 | 50.104 |
| 88) Toluene | (3) | 9.221 | 92 | 271900 | 22.411 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 834089 | 50.000 |
| 104) Ethylbenzene | (3) | 10.828 | 91 | 516210 | 22.113 |
| 106) m+p-Xylene | (3) | 10.950 | 106 | 407181 | 43.467 |
| 107) o-Xylene | (3) | 11.288 | 106 | 195739 | 20.755 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 394067 | 49.633 |
| 108) Xylene (Total) | (3) | | 106 | 602920 | 64.222 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 460824 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Don V. Viray
on 09/26/2017 at 20:52.
Target 3.5 esignature user ID: dvv10203

# Analysis Summary for GC/MS Volatiles

Data file: /chem/HP09915.i/17sep26a.b/ls26s01.d Injection date and time: **26-SEP-2017 08:51**
Data file Sample Info. Line: LCSL72;LCSL72;1;3;LCS;;DODWW;;ls26b01; Instrument ID: **HP09915.i** Batch: **L172691AA**
Date, time and analyst ID of latest file update: 26-Sep-2017 09:25 lcp00895

Blank Data file reference: **/chem/HP09915.i/17sep26a.b/ls26b01.d**

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: **17639**
Calibration date and time (Last Method Edit): 26-SEP-2017 08:26
Mid Level Daily Calibration Standard Reference: **/chem/HP09915.i/17sep26a.b/ls26c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

**Analysis Comments:**

| Internal Standards | RT (+/-RT) | Scan | QIon | Area(+/- %Change) | Conc. (on-column) | QC Flag |
|---|---|---|---|---|---|---|
| 29) t-Butyl alcohol-d10 | 3.565( 0.013) | 648 | 65 | 190580 ( 0) | 250.00 | |
| 66) Fluorobenzene | 7.047(-0.003) | 1731 | 96 | 1020974 ( -1) | 50.00 | |
| 100) Chlorobenzene-d5 | 10.706( 0.000) | 2869 | 117 | 799684 ( -3) | 50.00 | |
| 131) 1,4-Dichlorobenzene-d4 | 12.638( 0.000) | 3470 | 152 | 448783 ( -4) | 50.00 | |

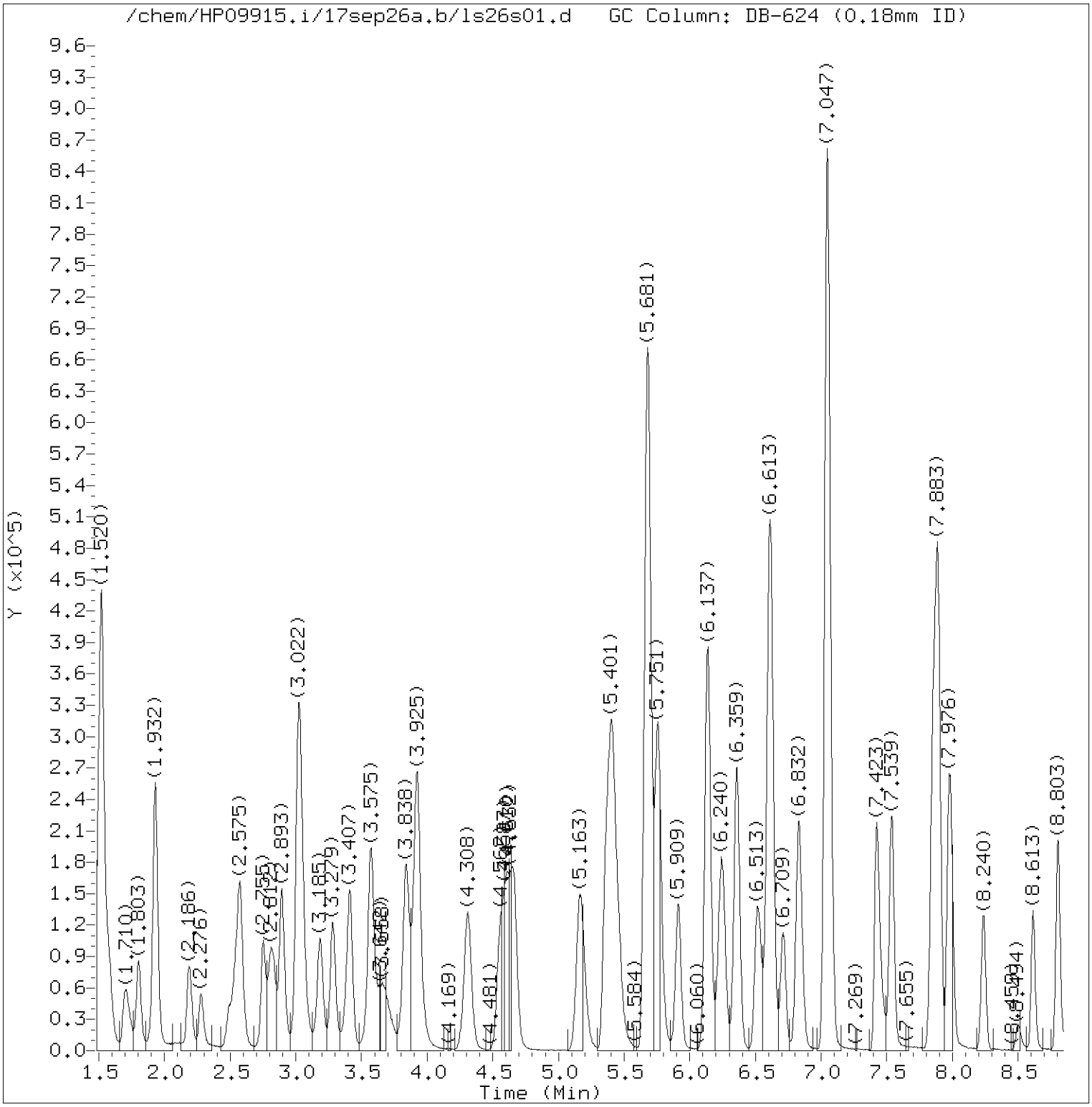
| Surrogate Standards | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | %Rec. | QC flags | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 52) Dibromofluoromethane | (2) | 6.137( 0.000) | 113 | 257027 | 49.475 | 99% | | 80 - 119 |
| 57) 1,2-Dichloroethane-d4 | (2) | 6.600( 0.001) | 102 | 63210 | 50.113 | 100% | | 81 - 118 |
| 83) Toluene-d8 | (3) | 9.137( 0.000) | 98 | 1006338 | 50.543 | 101% | | 89 - 112 |
| 114) 4-Bromofluorobenzene | (3) | 11.748( 0.000) | 95 | 380906 | 50.039 | 100% | | 85 - 114 |

| Target Compounds | I.S. Ref. | RT (+/-RRT) | QIon | Area | Conc. (on-column) | Conc. (in sample) | Blank Conc. | Qual. | Reporting Limit (in sample) | LOQ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60) Benzene | (2) | 6.623( 0.000) | 78 | 394501 | 22.042 | 22.04 | | | 0.5 | 1 |
| 88) Toluene | (3) | 9.221( 0.000) | 92 | 249886 | 21.483 | 21.48 | | | 0.5 | 1 |
| 104) Ethylbenzene | (3) | 10.828( 0.000) | 91 | 483698 | 21.612 | 21.61 | | | 0.5 | 1 |
| 106) m+p-Xylene | (3) | 10.950( 0.000) | 106 | 387626 | 43.159 | 43.16 | | | 0.5 | 1 |
| 107) o-Xylene | (3) | 11.288(-0.000) | 106 | 186752 | 20.654 | 20.65 | | | 0.5 | 1 |
| 108) Xylene (Total) | (3) | | 106 | 574378 | 63.813 | 63.81 | | | 0.5 | 1 |

Total number of targets = 6

Digitally signed by Linda C. Pape on 09/26/2017 at 09:48. Target 3.5 esignature user ID: lcp00895

Secondary review performed and digitally signed by Sara E. Johnson on 09/26/2017 at 20:44. PARALLAX ID: sej02002




Total Ion Chromatogram (TIC)

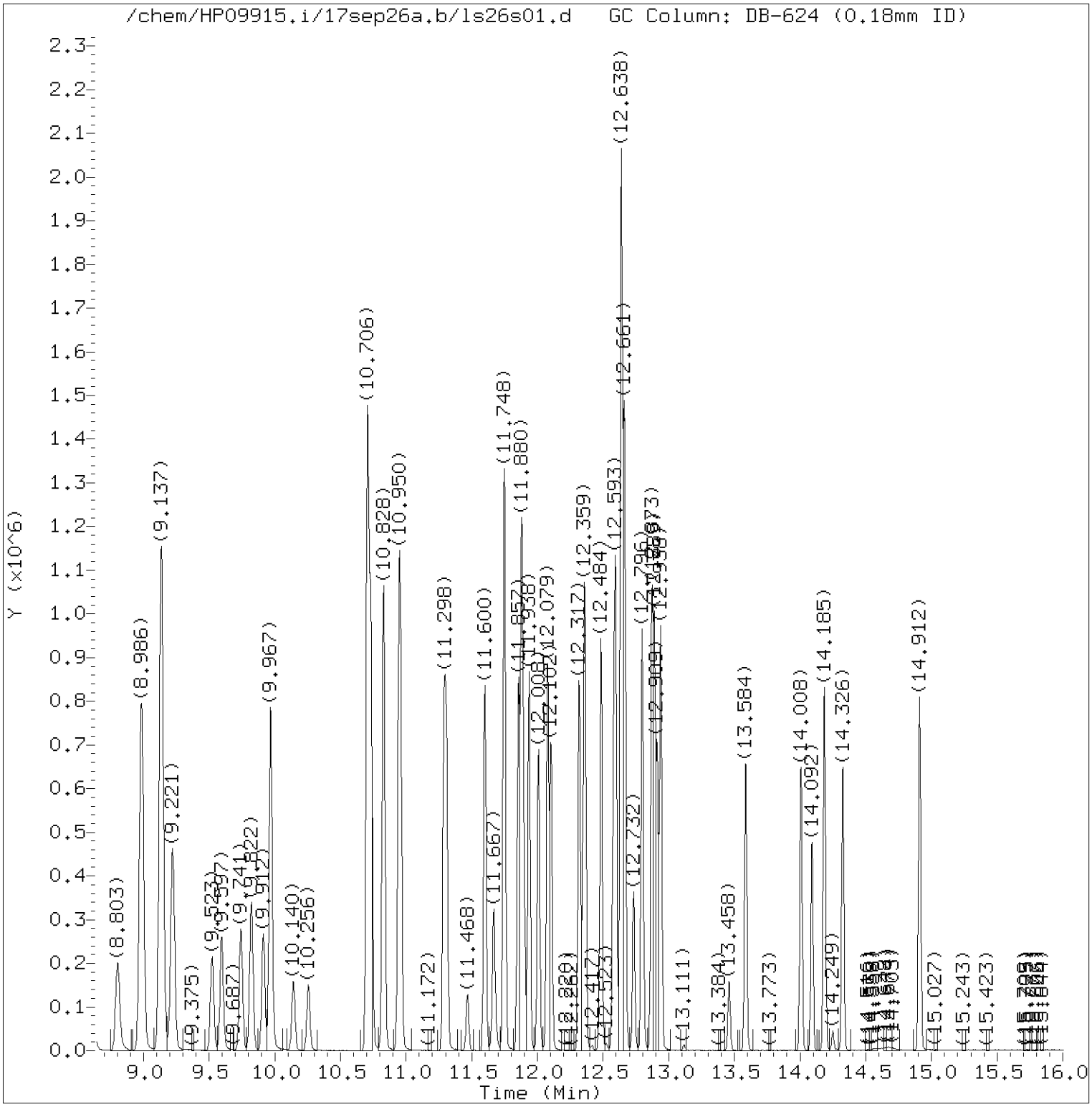
Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:51 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 09:25 lcp00895

Sample Name: LCSL72 Lab Sample ID: LCSL72

Digitally signed by Linda C. Pape
on 09/26/2017 at 09:48.
Target 3.5 esignature user ID: lcp00895




Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s01.d Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:51 Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 09:25 lcp00895

Sample Name: LCSL72 Lab Sample ID: LCSL72

Digitally signed by Linda C. Pape
on 09/26/2017 at 09:48.
Target 3.5 esignature user ID: lcp00895

Quant Report

Target Revision 3.5

Data File: /chem/HP09915.i/17sep26a.b/ls26s01.d  Instrument ID: HP09915.i
Injection date and time: 26-SEP-2017 08:51  Analyst ID: LCP00895

Method used: /chem/HP09915.i/17sep26a.b/m8260c5.m  Sublist used: 17639
Calibration date and time: 26-SEP-2017 08:26
Date, time and analyst ID of latest file update: 26-Sep-2017 09:25 lcp00895

Sample Name: LCSL72  Lab Sample ID: LCSL72

| Compounds | I.S. Ref. | RT | QIon | Area | On-Column Amount (ng) |
|---|---|---|---|---|---|
| 29)*t-Butyl alcohol-d10 | (1) | 3.565 | 65 | 190580 | 250.000 |
| 52)$Dibromofluoromethane | (2) | 6.137 | 113 | 257027 | 49.475 |
| 57)$1,2-Dichloroethane-d4 | (2) | 6.600 | 102 | 63210 | 50.113 |
| 60) Benzene | (2) | 6.623 | 78 | 394501 | 22.042 |
| 66)*Fluorobenzene | (2) | 7.047 | 96 | 1020974 | 50.000 |
| 83)$Toluene-d8 | (3) | 9.137 | 98 | 1006338 | 50.543 |
| 88) Toluene | (3) | 9.221 | 92 | 249886 | 21.483 |
| 100)*Chlorobenzene-d5 | (3) | 10.706 | 117 | 799684 | 50.000 |
| 104) Ethylbenzene | (3) | 10.828 | 91 | 483698 | 21.612 |
| 106) m+p-Xylene | (3) | 10.950 | 106 | 387626 | 43.159 |
| 107) o-Xylene | (3) | 11.288 | 106 | 186752 | 20.654 |
| 114)$4-Bromofluorobenzene | (3) | 11.748 | 95 | 380906 | 50.039 |
| 108) Xylene (Total) | (3) | | 106 | 574378 | 63.813 |
| 131)*1,4-Dichlorobenzene-d4 | (4) | 12.638 | 152 | 448783 | 50.000 |

* = Compound is an internal standard.
$ = Compound is a surrogate standard.



Digitally signed by Linda C. Pape
on 09/26/2017 at 09:48.
Target 3.5 esignature user ID: lcp00895

# EDB/DBCP Data

# Case Narrative/Conformance Summary

# EDB/DBCP

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR195**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9224669 | GWTS-EFF1-092117 | X | | 1 | |
| 9224670 | GWTS-EFF1DUP-092117 | X | | 1 | Field Duplicate Sample |
| 9224671 | GWTS-GAC1-092117 | X | | 1 | |
| 9224672 | GWTS-INF1-092117 | X | | 1 | |
| 9224673 | GWTS-TB01-092117 | X | | 1 | Trip Blank |
| 9224674 | GWTS-EFF2-092117 | X | | 1 | Unspiked |
| 9224675 | GWTS-EFF2-092117 MS | X | | 1 | Matrix Spike |
| 9224676 | GWTS-EFF2-092117 MSD | X | | 1 | Matrix Spike Duplicate |
| 9224678 | GWTS-GAC2-092117 | X | | 1 | |
| 9224679 | GWTS-INF2-092117 | X | | 1 | |
| 9224680 | GWTS-FB02-092117 | X | | 1 | Field Blank |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

(Sample number(s): 9224669-9224676, 9224678-9224680: Analysis: 10398)
For dual column analyses in which the calibration (initial and/or continuing) response is outside the acceptance criteria on one column and within criteria on the second column affected analytes are reported from the compliant column. The sample raw data identifies the column used to report each analyte.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR195**

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

**Abbreviation Key**

| | |
|---|---|
| UNSPK = Unspiked (for MS/MSD) | LOQ = Limit of Quantitation |
| +MS = Matrix Spike | MDL = Method Detection Limit |
| MSD = Matrix Spike Duplicate | ND = Not Detected |
| BKG = Background (for Duplicate) | J = Estimated Value |
| D = Duplicate (DUP) | E= out of calibration range |
| LCS = Lab Control Sample | RE = Repreparation/Reanalysis |
| LCSD = Lab Control Sample Duplicate | * = Out of Specification |

# Quality Control and Calibration Summary Forms

# EDB/DBCP

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# Quality Control Reference List
## Pesticide Residue Analysis

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR195**

**Fraction: EDB/DBCP**

| Analysis | Batch Number | Sample Number | Analysis Date |
|---|---|---|---|
| EDB 8011 Water | 172690027A | PBLK27269 | 09/28/2017 19:21:00 |
| | | LCS27269 | 09/28/2017 19:37:00 |
| | | LCSD27269 | 09/28/2017 19:53:00 |
| | | 9224669 | 09/28/2017 20:08:00 |
| | | 9224670 | 09/28/2017 20:24:00 |
| | | 9224671 | 09/28/2017 20:40:00 |
| | | 9224672 | 09/28/2017 20:56:00 |
| | | 9224673 | 09/28/2017 21:12:00 |
| | | 9224674 UNSPK | 09/28/2017 22:00:00 |
| | | 9224675 MS | 09/28/2017 22:16:00 |
| | | 9224676 MSD | 09/28/2017 22:32:00 |
| | | 9224678 | 09/28/2017 22:47:00 |
| | | 9224679 | 09/28/2017 23:03:00 |
| | | 9224680 | 09/28/2017 23:19:00 |

**Quality Control Summary**
**Method Blank**
**Pesticide Residue Analysis**
**SDG: KR195**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172690027A / PBLK27269<br>Analyte | Analysis Date | Blank Results | Units | DL | LOD | LOQ |
|---|---|---|---|---|---|---|
| Ethylene dibromide | 09/28/17 | N.D. | ug/l | 0.010 | 0.020 | 0.030 |

**Quality Control Summary**
**Surrogates**
**Pesticide Residue Analysis**
**SDG: KR195**
**Matrix: LIQUID**

**Fraction: EDB/DBCP**

| 172690027A | 1,1,2,2-Tetrachloroethane-D1 | | 1,1,2,2-Tetrachloroethane-D2 | |
|---|---|---|---|---|
| | Spike Added | 0.0704 ug/l | Spike Added | 0.0704 ug/l |
| Sample | % Recovery | Limits | % Recovery | Limits |
| PBLK27269 | 93 | 46 - 136 | 90 | 46 - 136 |
| LCS27269 | 86 | 46 - 136 | 82 | 46 - 136 |
| LCSD27269 | 90 | 46 - 136 | 85 | 46 - 136 |
| 9224669 | 104 | 46 - 136 | 95 | 46 - 136 |
| 9224670 | 100 | 46 - 136 | 93 | 46 - 136 |
| 9224671 | 87 | 46 - 136 | 83 | 46 - 136 |
| 9224672 | 97 | 46 - 136 | 89 | 46 - 136 |
| 9224673 | 92 | 46 - 136 | 86 | 46 - 136 |
| 9224674 UNSPK | 92 | 46 - 136 | 88 | 46 - 136 |
| 9224675 MS | 102 | 46 - 136 | 90 | 46 - 136 |
| 9224676 MSD | 110 | 46 - 136 | 90 | 46 - 136 |
| 9224678 | 94 | 46 - 136 | 89 | 46 - 136 |
| 9224679 | 111 | 46 - 136 | 90 | 46 - 136 |
| 9224680 | 90 | 46 - 136 | 89 | 46 - 136 |

## Pesticide Residue Analysis

**Fraction: EDB/DBCP**

| UNSPK: 9224674<br>MS: 9224675<br>MSD: 9224676<br>**Analyte** | Batch: **172690027A** (Sample number(s): 9224669-9224676, 9224678-9224680 ) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Spike Added ug/l MS/MSD** | **Unspiked Conc ug/l** | **MS Conc ug/l** | **MSD Conc ug/l** | **MS %Rec** | **MSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
| Ethylene dibromide | 0.123 / 0.122 | N.D. | 0.131 | 0.128 | 107 | 105 | 60-140 | 2 | 20 |

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

**Quality Control Summary**
**Laboratory Control Standard (LCS)**
**Laboratory Control Standard Duplicate(LCSD)**

**SDG: KR195**
**Matrix: LIQUID**

## Pesticide Residue Analysis
**Fraction: EDB/DBCP**

| LCS: LCS27269<br>LCSD: LCSD27269<br><br>**Analyte** | Batch: **172690027A** (Sample number(s): 9224669-9224676, 9224678-9224680 )<br>**Spike Added ug/l** | **LCS Conc ug/l** | **LCSD Conc ug/l** | **LCS %Rec** | **LCSD %Rec** | **%Rec Limits** | **%RPD** | **%RPD Limits** |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | 0.128 | 0.138 | 0.139 | 108 | 109 | 60-140 | 1 | 20 |

# 6D

## INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1727101

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 9/28/2017  9/28/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 | 3.83 | 3.80 | 3.86 |
| 1,1,2,2-TETRACHLOROETHANE | 5.31 | 5.31 | 5.31 | 5.31 | 5.31 | 5.31 | 5.31 | 5.28 | 5.34 |
| 1,2,3-Trichloropropane | 5.38 | 5.38 | 5.38 | 5.38 | 5.38 | 5.38 | 5.38 | 5.35 | 5.41 |
| 1,2-DIBROMO-3-CHLOROPROPA | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.03 | 7.09 |

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846A  Calibration File: 18EDBS1727101

GC Column (1) : ZB MR1  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 9/28/2017  9/28/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.17E+04 | 1.38E+04 | 1.36E+04 | 1.34E+04 | 1.26E+04 | 1.11E+04 | 1.27E+04 | 9 |
| 1,1,2,2-TETRACHLOROETHANE | 1.37E+04 | 1.49E+04 | 1.49E+04 | 1.44E+04 | 1.39E+04 | 1.29E+04 | 1.41E+04 | 5 |
| 1,2,3-Trichloropropane | 1.83E+03 | 2.05E+03 | 1.97E+03 | 1.86E+03 | 1.77E+03 | 1.65E+03 | 1.85E+03 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPA | 2.61E+04 | 2.85E+04 | 2.77E+04 | 2.68E+04 | 2.57E+04 | 2.53E+04 | 2.67E+04 | 5 |

Average % RSD: 7

10/11/17

File Name: V:\CP18\18EDBS1727101.CAL
Version: 8

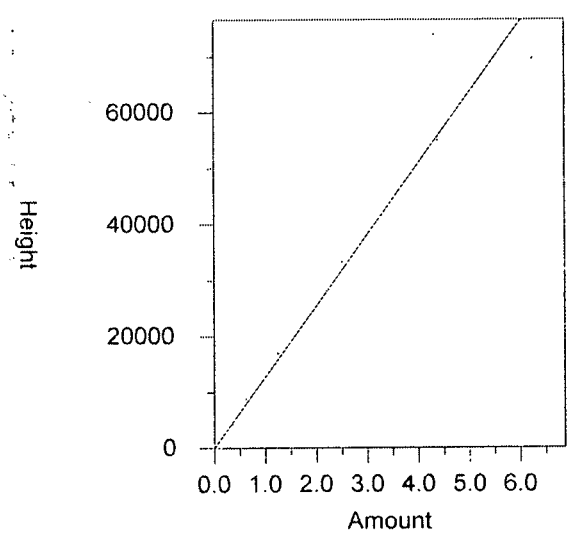
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 3.826 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

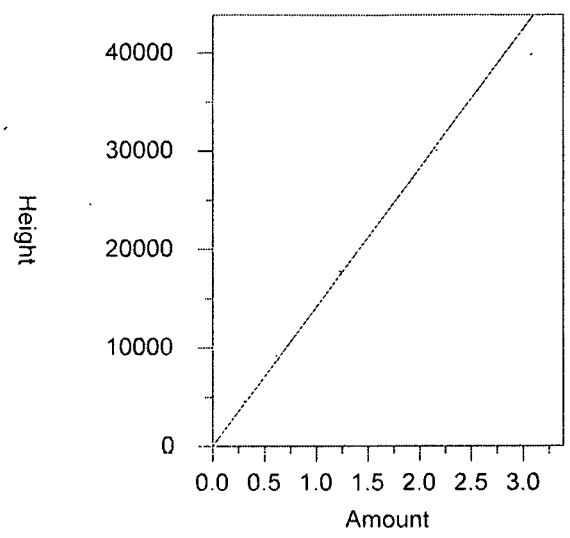
Single peak quantification by height

Y = 12706.9 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9713509
Average error: 6.968%
Average CF: 12706.9
RSD: 8.504%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 4112.263 | 11749.32 | -7.536 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.005.BND |
| 2 | 0.63 | 8714.894 | 13833.16 | 8.863 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.006.BND |
| 3 | 1.25 | 16979.57 | 13583.66 | 6.900 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.007.BND |
| 4 | 2.5 | 33400.1 | 13360.04 | 5.140 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.008.BND |
| 5 | 4.38 | 55056.63 | 12570.01 | -1.077 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.009.BND |
| 6 | 6.25 | 69657.52 | 11145.2 | -12.290 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.010.BND |

2 1,1,2,2-PCA




Expected retention time: 5.306 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

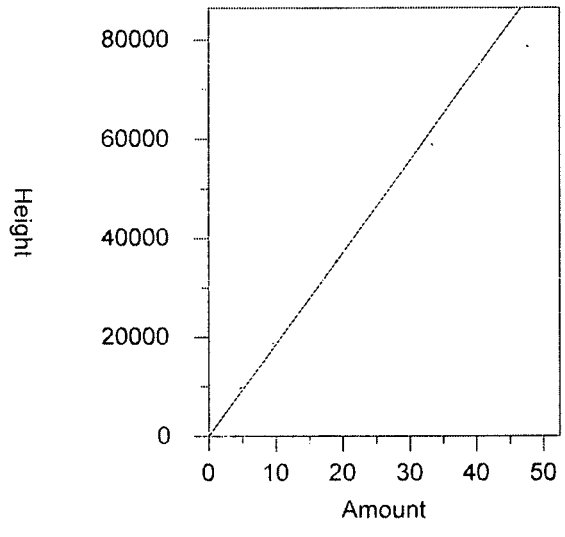
Single peak quantification by height

Y = 14127.54 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9875943
Average error: 4.168%
Average CF: 14127.54
RSD: 5.286%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 2376.513 | 13737.07 | -2.764 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.005 |
| 2 | 0.308 | 4582.07 | 14876.85 | 5.304 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.006 |
| 3 | 0.616 | 9160.415 | 14870.8 | 5.261 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.007 |
| 4 | 1.23 | 17713.92 | 14401.56 | 1.940 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.008 |
| 5 | 2.16 | 30109.6 | 13939.63 | -1.330 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.009 |
| 6 | 3.08 | 39853.13 | 12939.33 | -8.411 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.010 |

3 1,2,3-TCP




Expected retention time: 5.379 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

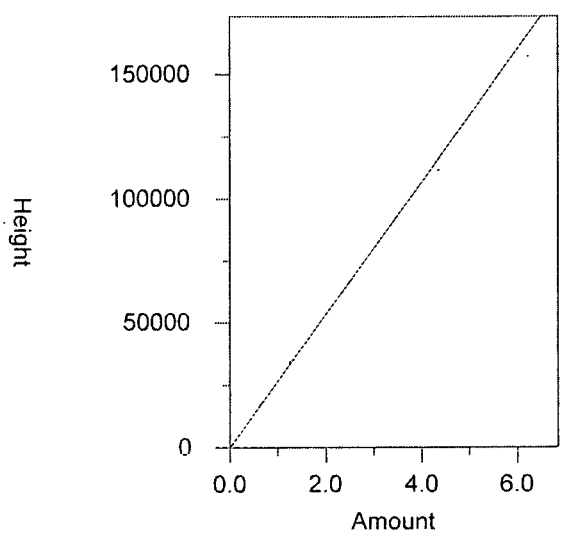
Single peak quantification by height

Y = 1854.336 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9753227
Average error: 5.741%
Average CF: 1854.336
RSD: 7.714%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 4880.501 | 1827.903 | -1.425 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.005 |
| 2 | 4.76 | 9761.425 | 2050.719 | 10.591 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.006 |
| 3 | 9.52 | 18754.97 | 1970.06 | 6.241 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.007 |
| 4 | 19.05 | 35462.98 | 1861.574 | 0.390 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.008 |
| 5 | 33.34 | 58868.88 | 1765.713 | -4.779 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.009 |
| 6 | 47.63 | 78591.76 | 1650.047 | -11.017 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.010 |

4 DBCP




| | |
|---|---|
| Expected retention time: | 7.664 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 26689.99 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9943836 |
| Average error: | 3.698% |
| Average CF: | 26689.99 |
| RSD: | 4.629% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 9140.395 | 26115.41 | -2.153 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.005 |
| 2 | 0.62 | 17677.88 | 28512.71 | 6.829 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.006 |
| 3 | 1.24 | 34367.64 | 27715.84 | 3.844 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.007 |
| 4 | 2.49 | 66737.24 | 26802.11 | 0.420 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.008 |
| 5 | 4.35 | 111709.1 | 25680.25 | -3.783 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.009 |
| 6 | 6.22 | 157450.6 | 25313.6 | -5.157 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.010 |

# 6D
# INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Calibration File: 18EDBS1727101B

GC Column (2) : ZB MR2 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 9/28/2017 9/28/2017

| COMPOUND | RT OF STANDARDS LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MIDPOINT RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.78 | 2.77 | 2.78 | 2.77 | 2.77 | 2.77 | 2.77 | 2.74 | 2.80 |
| 1,1,2,2-TETRACHLOROETHANE | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 | 4.03 | 4.00 | 4.06 |
| 1,2,3-Trichloropropane | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 | 4.15 | 4.12 | 4.18 |
| 1,2-DIBROMO-3-CHLOROPROPA | 6.42 | 6.42 | 6.42 | 6.42 | 6.42 | 6.42 | 6.42 | 6.39 | 6.45 |

HMM 10/11/17

# 6E

## INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories  Contract:

Lab Code:  Case No.:  SAS No.:  SDG No.:

Instrument: 19846B  Calibration File: 18EDBS1727101B

GC Column (2) : ZB MR2  ID: 0.32 (mm)

ICAL Date(s) Analyzed: 9/28/2017  9/28/2017

| COMPOUND | CALIBRATION FACTORS | | | | | | | %RSD |
|---|---|---|---|---|---|---|---|---|
| | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | LEVEL 5 | LEVEL 6 | MEAN | |
| ETHYLENE DIBROMIDE | 1.52E+04 | 1.88E+04 | 1.80E+04 | 1.73E+04 | 1.67E+04 | 1.45E+04 | 1.67E+04 | 10 |
| 1,1,2,2-TETRACHLOROETHANE | 2.03E+04 | 2.24E+04 | 1.96E+04 | 1.96E+04 | 1.79E+04 | 1.68E+04 | 1.95E+04 | 10 |
| 1,2,3-Trichloropropane | 2.30E+03 | 2.46E+03 | 2.46E+03 | 2.36E+03 | 2.20E+03 | 1.99E+03 | 2.29E+03 | 8 |
| 1,2-DIBROMO-3-CHLOROPROPA | 3.27E+04 | 3.46E+04 | 3.33E+04 | 3.13E+04 | 2.82E+04 | 2.64E+04 | 3.11E+04 | 10 |

Average % RSD: 10

File Name: V:\CP18\18EDBS1727101b.CAL
Version: 8

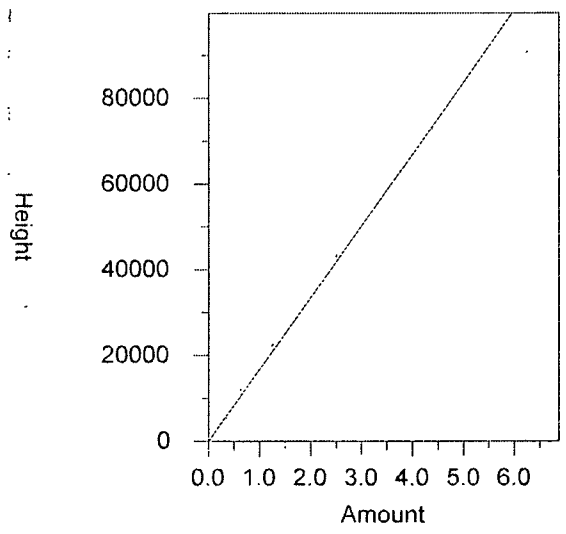
Creator:
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
No sample weight correction
Area reject threshold: 100
Reference peak area reject threshold: 1000
Amount units:
No default component

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 EDB




Expected retention time: 2.773 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

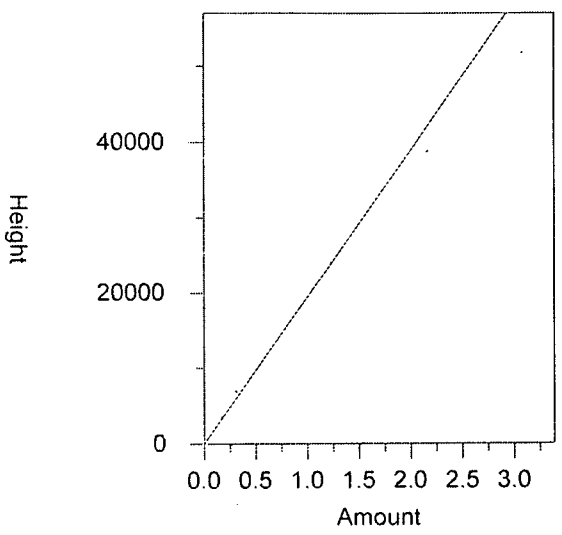
Single peak quantification by height

Y = 16735.86 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9666922
Average error: 7.552%
Average CF: 16735.86
RSD: 9.673%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 5334.601 | 15241.72 | -8.928 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.005.BN |
| 2 | 0.63 | 11830.47 | 18778.52 | 12.205 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.006.BN |
| 3 | 1.25 | 22439.3 | 17951.44 | 7.263 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.007.BN |
| 4 | 2.5 | 43172.78 | 17269.11 | 3.186 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.008.BN |
| 5 | 4.38 | 72966.08 | 16658.92 | -0.460 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.009.BN |
| 6 | 6.25 | 90721.48 | 14515.44 | -13.267 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.010.BN |

2 1,1,2,2-PCA




Expected retention time: 4.028 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

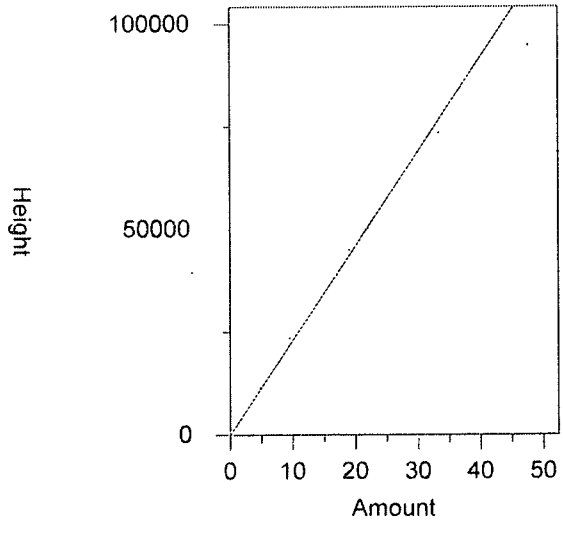
Single peak quantification by height

Y = 19452.72 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9581819
Average error: 7.081%
Average CF: 19452.72
RSD: 9.972%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.173 | 3518.23 | 20336.59 | 4.544 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 2 | 0.308 | 6906.749 | 22424.51 | 15.277 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 3 | 0.616 | 12083.64 | 19616.3 | 0.841 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 4 | 1.23 | 24065.75 | 19565.65 | 0.581 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 5 | 2.16 | 38763.43 | 17946.03 | -7.745 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 6 | 3.08 | 51827.96 | 16827.26 | -13.497 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.01 |

3 1,2,3-TCP




Expected retention time: 4.147 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

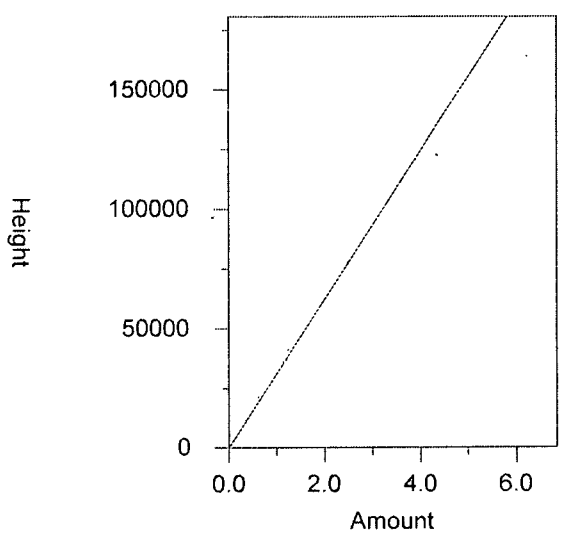
Single peak quantification by height

Y = 2294.996 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9640484
Average error: 5.813%
Average CF: 2294.996
RSD: 7.838%

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 2.67 | 6135.079 | 2297.782 | 0.121 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 2 | 4.76 | 11711.46 | 2460.391 | 7.207 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 3 | 9.53 | 23449.29 | 2460.576 | 7.215 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 4 | 19.05 | 44985.83 | 2361.461 | 2.896 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 5 | 33.34 | 73380.13 | 2200.964 | -4.097 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 6 | 47.63 | 94726.65 | 1988.802 | -13.342 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.01 |

4 DBCP




| | |
|---|---|
| Expected retention time: | 6.423 minutes |
| Search window: | 0.03 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by height

Y = 31077.04 X + 0

Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9445639 |
| Average error: | 8.111% |
| Average CF: | 31077.04 |
| RSD: | 10.182% |

| Level | Amount | Response | Cal Factor | Error, % | Source |
|---|---|---|---|---|---|
| 1 | 0.35 | 11435.51 | 32672.88 | 5.135 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 2 | 0.62 | 21449.35 | 34595.73 | 11.322 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 3 | 1.24 | 41292.78 | 33300.63 | 7.155 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 4 | 2.49 | 77938.17 | 31300.47 | 0.719 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 5 | 4.35 | 122570.7 | 28177.17 | -9.331 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.0( |
| 6 | 6.22 | 164303.4 | 26415.34 | -15.000 | \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.01 |

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 09/28/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 18:49

Lab File ID: 18EDBS17271001.013.RAW Initial Calibration: 18EDBS1727101

Lab Standard ID: EDB_3AA Init. Calib Date(s): 09/28/17 09/28/17

Calibration: 18EDBS1727101

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.83 | 3.80 | 3.86 | 1.38 | 1.25 | 11 |
| 1,1,2,2-TETRACHLOROETHANE | 5.31 | 5.28 | 5.34 | 0.68 | 0.62 | 10 |
| 1,2,3-Trichloropropane | 5.38 | 5.35 | 5.41 | 10.41 | 9.53 | 9 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.66 | 7.63 | 7.69 | 1.32 | 1.24 | 6 |

Compounds 4 Average of %D: 9

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 09/28/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 18:49

Lab File ID: 18EDBS17271001B.013.RAW Initial Calibration: 18EDBS1727101B

Lab Standard ID: EDB_3AA Init. Calib Date(s): 09/28/17 09/28/17

Calibration: 18EDBS1727101B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.78 | 2.74 | 2.80 | 1.42 | 1.25 | 13 |
| 1,1,2,2-TETRACHLOROETHANE | 4.03 | 4.00 | 4.06 | 0.65 | 0.62 | 6 |
| 1,2,3-Trichloropropane | 4.15 | 4.12 | 4.18 | 10.23 | 9.53 | 7 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.42 | 6.39 | 6.45 | 1.35 | 1.24 | 9 |

Compounds 4 Average of %D: 9

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX1724C** PIBLKAA ID: AA **Batchnumber: 1727099999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 19:05:25
Instrument : CP18--19846A
Result file : 18EDBS17271001.014.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.064167

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.28 | 5.31 | 5.34 | 15864 | 0.064167 |
| **1,2,3-TCP** | 5.35 | 5.36 | 5.41 | 466 | 0.014365 |
| **DBCP** | 7.63 | 7.67 | 7.69 | 571 | 0.001223 |

## Analysis Report (B)

Injected on : Sep 28, 2017 19:05:25
Instrument : CP18--19846B
Result file : 18EDBS17271001B.014.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063339

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.00 | 4.03 | 4.06 | 21562 | 0.063339 |
| **1,2,3-TCP** | 4.12 | 4.15 | 4.18 | 475 | 0.011815 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.064167 | | | | 1.30 | |
| ☑ 1,2,3-TCP | A | 0.014365 | <0.27 | <0.1 | | 19.48 | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: OCT 01 2017

Verified by: Shalinie Dowlatram
Specialist

Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 9/29/2017 14:28:37

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 09/28/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 21:28

Lab File ID: 18EDBS17271001.023.RAW Initial Calibration: 18EDBS1727101

Lab Standard ID: EDB_5PI Init. Calib Date(s): 09/28/17 09/28/17

Calibration: 18EDBS1727101

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.83 | 3.80 | 3.86 | 4.34 | 4.38 | -1 |
| 1,1,2,2-TETRACHLOROETHANE | 5.31 | 5.28 | 5.34 | 2.17 | 2.16 | 0 |
| 1,2,3-Trichloropropane | 5.38 | 5.35 | 5.41 | 33.07 | 33.34 | -1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.66 | 7.63 | 7.69 | 4.47 | 4.35 | 3 |

Compounds 4 Average of %D: 1

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 09/28/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 21:28

Lab File ID: 18EDBS17271001B.023.RAW Initial Calibration: 18EDBS1727101B

Lab Standard ID: EDB_5PI Init. Calib Date(s): 09/28/17 09/28/17

Calibration: 18EDBS1727101B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.78 | 2.74 | 2.80 | 4.27 | 4.38 | -2 |
| 1,1,2,2-TETRACHLOROETHANE | 4.03 | 4.00 | 4.06 | 2.06 | 2.16 | -4 |
| 1,2,3-Trichloropropane | 4.15 | 4.12 | 4.18 | 32.99 | 33.34 | -1 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.42 | 6.39 | 6.45 | 4.11 | 4.35 | -6 |

Compounds 4 Average of %D: 3

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX1724C** PIBLKHX ID: HX **Batchnumber: 1727099999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 21:44:14
Instrument : CP18--19846A
Result file : 18EDBS17271001.024.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 96% (46-136) Conc.: 0.064953

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.30 | 5.34 | 16058 | 0.064953 |
| 1,2,3-TCP | 5.35 | 5.39 | 5.41 | 343 | 0.010574 |

## Analysis Report (B)

Injected on : Sep 28, 2017 21:44:14
Instrument : CP18--19846B
Result file : 18EDBS17271001B.024.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.06394

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.00 | 4.03 | 4.06 | 21767 | 0.063940 |
| **1,2,3-TCP** | 4.12 | 4.15 | 4.18 | 646 | 0.016086 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.064953 | | | | 1.57 | |
| ☑ 1,2,3-TCP | A | 0.010574 | <0.27 | <0.1 | | 41.35 | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather M. Miller Chemist
Date: OCT 01 2017

Verified by: Shalinie Dowlatram Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

7E

# CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846A Date Analyzed: 09/29/17

GC Column (1) : ZB MR1 ID: .32 (mm) Time Analyzed: 0:39

Lab File ID: 18EDBS17271001.035.RAW Initial Calibration: 18EDBS1727101

Lab Standard ID: EDB_4TN Init. Calib Date(s): 09/28/17 09/28/17

Calibration: 18EDBS1727101

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 3.83 | 3.80 | 3.86 | 2.68 | 2.50 | 7 |
| 1,1,2,2-TETRACHLOROETHANE | 5.31 | 5.28 | 5.34 | 1.33 | 1.23 | 8 |
| 1,2,3-Trichloropropane | 5.38 | 5.35 | 5.41 | 19.51 | 19.05 | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 7.66 | 7.63 | 7.69 | 2.56 | 2.49 | 3 |

Compounds 4 Average of %D: 5

# 7E

## CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19846B Date Analyzed: 09/29/17

GC Column (2) : ZB MR2 ID: .32 (mm) Time Analyzed: 0:39

Lab File ID: 18EDBS17271001B.035.RAW Initial Calibration: 18EDBS1727101B

Lab Standard ID: EDB_4TN Init. Calib Date(s): 09/28/17 09/28/17

Calibration: 18EDBS1727101B

| COMPOUND | RT | RT WINDOW FROM | TO | CALC AMOUNT | NOM AMOUNT | %D |
|---|---|---|---|---|---|---|
| ETHYLENE DIBROMIDE | 2.78 | 2.74 | 2.80 | 2.67 | 2.50 | 7 |
| 1,1,2,2-TETRACHLOROETHANE | 4.03 | 4.00 | 4.06 | 1.26 | 1.23 | 2 |
| 1,2,3-Trichloropropane | 4.15 | 4.12 | 4.18 | 20.12 | 19.05 | 6 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 6.42 | 6.39 | 6.45 | 2.54 | 2.49 | 2 |

Compounds 4 Average of %D: 4

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **EIBKX1724C** PIBLKHY ID: HY **Batchnumber: 1727099999**
Sample Amount: 35 Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 29, 2017 00:55:05
Instrument : CP18--19846A
Result file : 18EDBS17271001.036.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.064277

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 15891 | 0.064277 |
| 1,2,3-TCP | 5.35 | 5.36 | 5.41 | 344 | 0.010602 |
| DBCP | 7.63 | 7.69 | 7.69 | 323 | 0.000691 |

## Analysis Report (B)

Injected on : Sep 29, 2017 00:55:05
Instrument : CP18--19846B
Result file : 18EDBS17271001B.036.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.062196

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 2.74 | 2.78 | 2.80 | 728 | 0.002485 |
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 21173 | 0.062196 |
| 1,2,3-TCP | 4.12 | 4.15 | 4.18 | 932 | 0.023216 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.064277 | | | | 3.29 | |
| ☑ 1,2,3-TCP | A | 0.010602 | <0.27 | <0.1 | | 74.60 | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 01 2017

Verified by: Shalinie Dowlatram
Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 9/29/2017 14:31:40

Eurofins Lancaster Laboratories
Pesticide Residue Analysis
Runlog for 18EDBS17271001
Instrument CP18--19846A

Data Directory Path is - \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17271001.001 | CONDITIONER | | 9/28/17 15:39 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.002 | CONDITIONER | | 9/28/17 15:54 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.003 | CONDITIONER | | 9/28/17 16:10 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.004 | EIBKX1724C | PIBLKAA | 9/28/17 16:26 | 1727099999 | 2.00 |
| 7848 | 18EDBS17271001.005 | EDB_11724FA | EDB_1AA | 9/28/17 16:42 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.006 | EDB_21724FA | EDB_2AA | 9/28/17 16:58 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.007 | EDB_31724FA | EDB_3AA | 9/28/17 17:14 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.008 | EDB_41724FA | EDB_4AA | 9/28/17 17:30 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.009 | EDB_51724FA | EDB_5AA | 9/28/17 17:46 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.010 | EDB_61724FA | EDB_6AA | 9/28/17 18:01 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.011 | MDEDX1724FA | MDEDXAA | 9/28/17 18:17 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.012 | DBCMX1724B | DBCMXAA | 9/28/17 18:33 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.013 | EDB_31724FA | EDB_3AA | 9/28/17 18:49 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.014 | EIBKX1724C | PIBLKAA | 9/28/17 19:05 | 1727099999 | 2.00 |
| 7848 | 18EDBS17271001.015 | BLANKA 9/27/17 | PBLK27269 | 9/28/17 19:21 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.016 | LCSA 9/27/17 | LCS27269 | 9/28/17 19:37 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.017 | LCSDA 9/27/17 | LCSD27269 | 9/28/17 19:53 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.018 | 9224669 | EFF1- | 9/28/17 20:08 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.019 | 9224670 | EFF1D | 9/28/17 20:24 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.020 | 9224671 | GAC1- | 9/28/17 20:40 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.021 | 9224672 | IN1-- | 9/28/17 20:56 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.022 | 9224673 | TB01- | 9/28/17 21:12 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.023 | EDB_51724FA | EDB_5PI | 9/28/17 21:28 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.024 | EIBKX1724C | PIBLKHX | 9/28/17 21:44 | 1727099999 | 2.00 |
| 7848 | 18EDBS17271001.025 | 9224674 | EF2-- | 9/28/17 22:00 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.026 | 9224675MS | EF2-- | 9/28/17 22:16 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.027 | 9224676MSD | EF2-- | 9/28/17 22:32 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.028 | 9224678 | GC2-- | 9/28/17 22:47 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.029 | 9224679 | IN2-- | 9/28/17 23:03 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.030 | 9224680 | FB2-- | 9/28/17 23:19 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.031 | 9221878 | MTWTB | 9/28/17 23:35 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.032 | 9221879 | MTW09 | 9/28/17 23:51 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.033 | 9221880 | MTW-A | 9/29/17 0:07 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.034 | 9221881 | MTW1D | 9/29/17 0:23 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.035 | EDB_41724FA | EDB_4TN | 9/29/17 0:39 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.036 | EIBKX1724C | PIBLKHY | 9/29/17 0:55 | 1727099999 | 2.00 |
| 7848 | 18EDBS17271001.037 | 9221882 | MTWFB | 9/29/17 1:11 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.038 | 9221883 | MTW08 | 9/29/17 1:26 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.039 | 9221884 | MTW04 | 9/29/17 1:42 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.040 | 9221885 | MTW06 | 9/29/17 1:58 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.041 | 9221886 | MTW01 | 9/29/17 2:14 | 172690027A | 2.00 |
| 7848 | 18EDBS17271001.042 | BLANKA 9/25/17 | PBLK01266 | 9/29/17 2:30 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.043 | LCSA 9/25/17 | LCS01266 | 9/29/17 2:46 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.044 | LCSDA 9/25/17 | LCSD01266 | 9/29/17 3:02 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.045 | 9215923 | ISFG2 | 9/29/17 3:18 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.046 | 9215924 | ISFG3 | 9/29/17 3:34 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.047 | EDB_31724FA | EDB_3YA | 9/29/17 3:50 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.048 | EIBKX1724C | PIBLKHZ | 9/29/17 4:06 | 1727099999 | 2.00 |
| 7848 | 18EDBS17271001.049 | 9215926 | ISFG5 | 9/29/17 4:22 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.050 | 9215927 | ISFG6 | 9/29/17 4:37 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.051 | 9215928 | ISFG7 | 9/29/17 4:53 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.052 | 9215929 | ISFG8 | 9/29/17 5:09 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.053 | 9215930 | ISFG9 | 9/29/17 5:25 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.054 | 9215931 | ISF10 | 9/29/17 5:41 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.055 | 9215932 | ISF11 | 9/29/17 5:57 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.056 | 9215933 | ISF12 | 9/29/17 6:13 | 172660001A | 2.00 |

| Operator | File | LLI# | Client ID | Analysis Date | Batch | Dilution Factor |
|---|---|---|---|---|---|---|
| 7848 | 18EDBS17271001.057 | 9215934 | ISFS1 | 9/29/17 6:29 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.058 | 9215935MS | ISFS1 | 9/29/17 6:45 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.059 | EDB_51724FA | EDB_5PJ | 9/29/17 7:01 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.060 | EIBKX1724C | PIBLKIA | 9/29/17 7:17 | 1727099999 | 2.00 |
| 7848 | 18EDBS17271001.061 | 9215936MSD | ISFS1 | 9/29/17 7:33 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.062 | 9215937 | ISFD1 | 9/29/17 7:48 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.063 | 9215938 | ISFD2 | 9/29/17 8:04 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.064 | 9215939 | ISFD3 | 9/29/17 8:20 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.065 | 9216139 | ALS06 | 9/29/17 8:36 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.066 | 9216140 | ALS09 | 9/29/17 8:52 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.067 | 9216141 | ALS12 | 9/29/17 9:08 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.068 | 9216142 | ALS13 | 9/29/17 9:24 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.069 | 9216143 | AL101 | 9/29/17 9:40 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.070 | 9216144 | AL104 | 9/29/17 9:55 | 172660001A | 2.00 |
| 7848 | 18EDBS17271001.071 | EDB_41724FA | EDB_4TO | 9/29/17 10:11 | 1727099999 | 1.00 |
| 7848 | 18EDBS17271001.072 | EIBKX1724C | PIBLKIB | 9/29/17 10:27 | 1727099999 | 2.00 |

# Sample Data

# EDB/DBCP

**Fraction: EDB/DBCP**

| 10398: EDB 8011 Water<br>Analyte Name | Default<br>DL | Default<br>LOD | Default<br>LOQ | Units |
|---|---|---|---|---|
| Ethylene dibromide | .01 | .02 | 0.030 | ug/l |

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9224669** EFF1- Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 37.07 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 20:08:54 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.018.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 104% ( 46 - 136 ) Conc: 0.069277

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 20:08:54 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.018.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 95% ( 46 - 136 ) Conc: 0.063029

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 18140 | 0.069277 |
| 1,2,3-Trichloropropane | 5.35 | 5.38 | 5.41 | 372 | 0.010828 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 22726 | 0.063029 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 593 | 0.013947 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0094 | <0.0189 | <0.0283 | D1 | | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.069277 | 0.0033 | 0.0066 | 0.0066 | | 9.44 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.069277 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.063029 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2549 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0094 | <0.0189 | <0.0283 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:25

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224669** EFF1- ID: AA **Batchnumber: 172690027A**
Sample Amount: 37.07 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 20:08:54
Instrument : CP18--19846A
Result file : 18EDBS17271001.018.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 104% (46-136) Conc.: 0.069277

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 18140 | 0.069277 |
| 1,2,3-TCP | 5.35 | 5.38 | 5.41 | 372 | 0.010828 |

## Analysis Report (B)

Injected on : Sep 28, 2017 20:08:54
Instrument : CP18--19846B
Result file : 18EDBS17271001B.018.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 95% (46-136) Conc.: 0.063029

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 22726 | 0.063029 |
| 1,2,3-TCP | 4.12 | 4.15 | 4.18 | 593 | 0.013947 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0283 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.069277 | | | | 9.44 | |
| ☐ 1,2,3-TCP | | | <0.2549 | <0.0944 | | | |
| ☐ DBCP | | | <0.0283 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist
Date: OCT 02 2017

Verified by: Valerie L. Tomayko Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

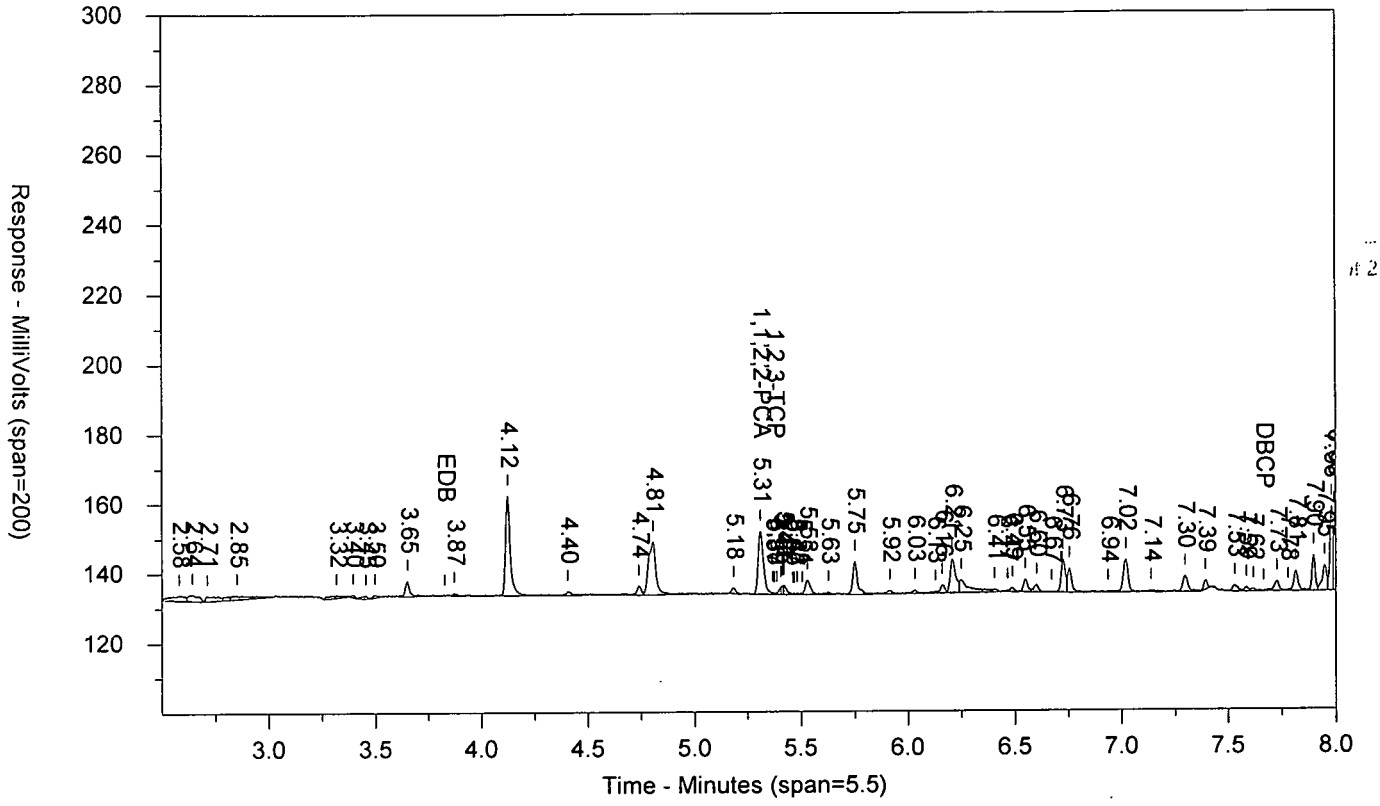
* Recovery outside QC Limits



Printed on: 9/29/2017 14:29:08

9224669 AAEFF1- T 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.018.RAW

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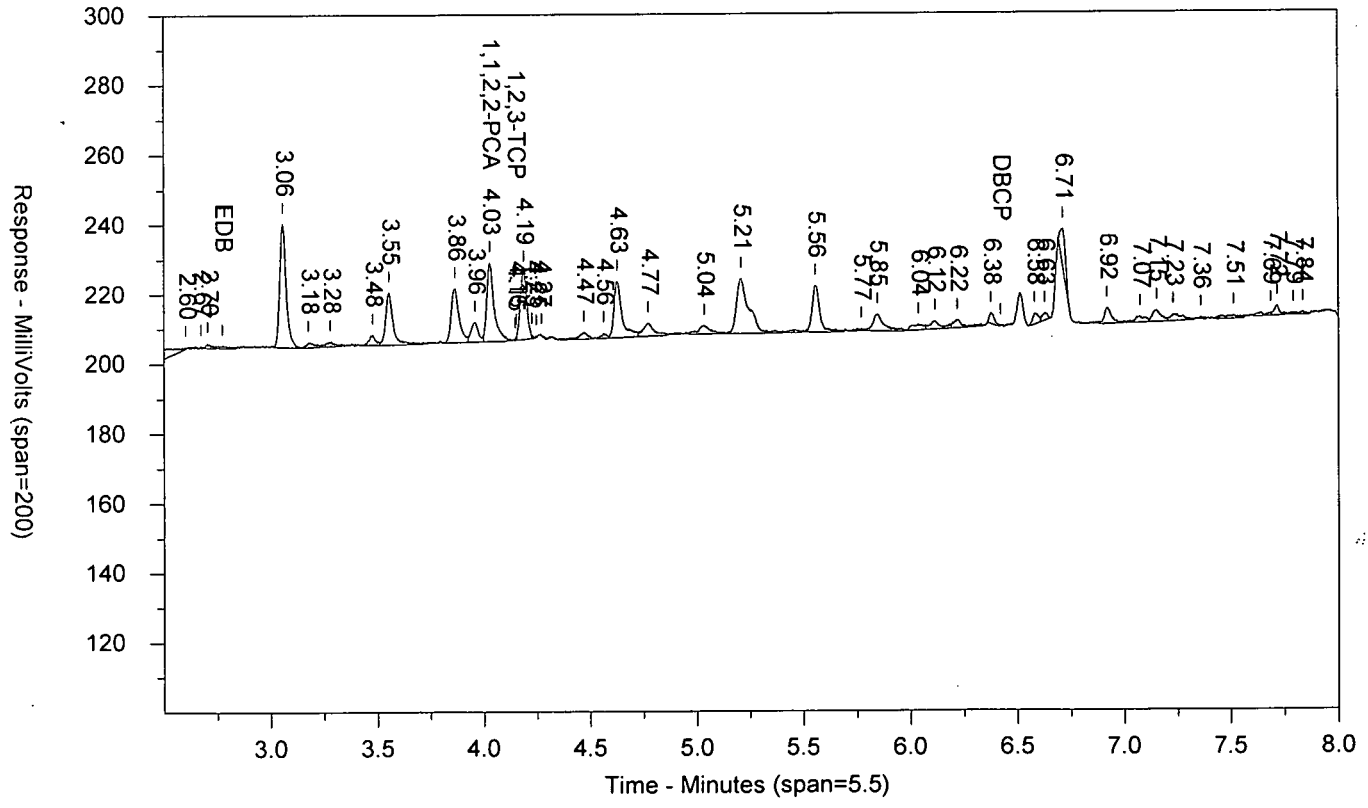


LANCASTER LABORATORIES

Sample Number: 9224669 AAEFF1- T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 8:08:54 PM Sample Weight: 37.07
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.31 | 18140 | .069 | 1,1,2,2-PCA | 4.028 | 22726 | .063 | 1,1,2,2-PCA |
| 5.376 | 372 | .011 | 1,2,3-TCP | 4.149 | 593 | .014 | 1,2,3-TCP |

Files:
Area File: 18edbs17271001.018.RAW
Area File: 18edbs17271001B.018.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 8:17:26 PM
File Reported On: 9/29/2017 at 1:47:47 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9224670** EFF1D Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.6 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 20:24:44 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.019.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 100% ( 46 - 136 ) Conc: 0.06739

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 20:24:44 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.019.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 93% ( 46 - 136 ) Conc: 0.062359

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 17423 | 0.06739 |
| 1,2,3-Trichloropropane | 5.35 | 5.39 | 5.41 | 570 | 0.016798 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 22199 | 0.062359 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 865 | 0.020603 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | D1 | | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.06739 | 0.0033 | 0.0067 | 0.0067 | | 7.75 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.06739 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.062359 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2582 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:27

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224670** EFF1D ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.6 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 20:24:44
Instrument : CP18--19846A
Result file : 18EDBS17271001.019.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 100% (46-136) Conc.: 0.06739

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 17423 | 0.067390 |
| 1,2,3-TCP | 5.35 | 5.39 | 5.41 | 570 | 0.016798 |

## Analysis Report (B)

Injected on : Sep 28, 2017 20:24:44
Instrument : CP18--19846B
Result file : 18EDBS17271001B.019.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 93% (46-136) Conc.: 0.062359

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 22199 | 0.062359 |
| 1,2,3-TCP | 4.12 | 4.15 | 4.18 | 865 | 0.020603 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.067390 | | | | 7.76 | |
| ☐ 1,2,3-TCP | | | <0.2582 | <0.0956 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

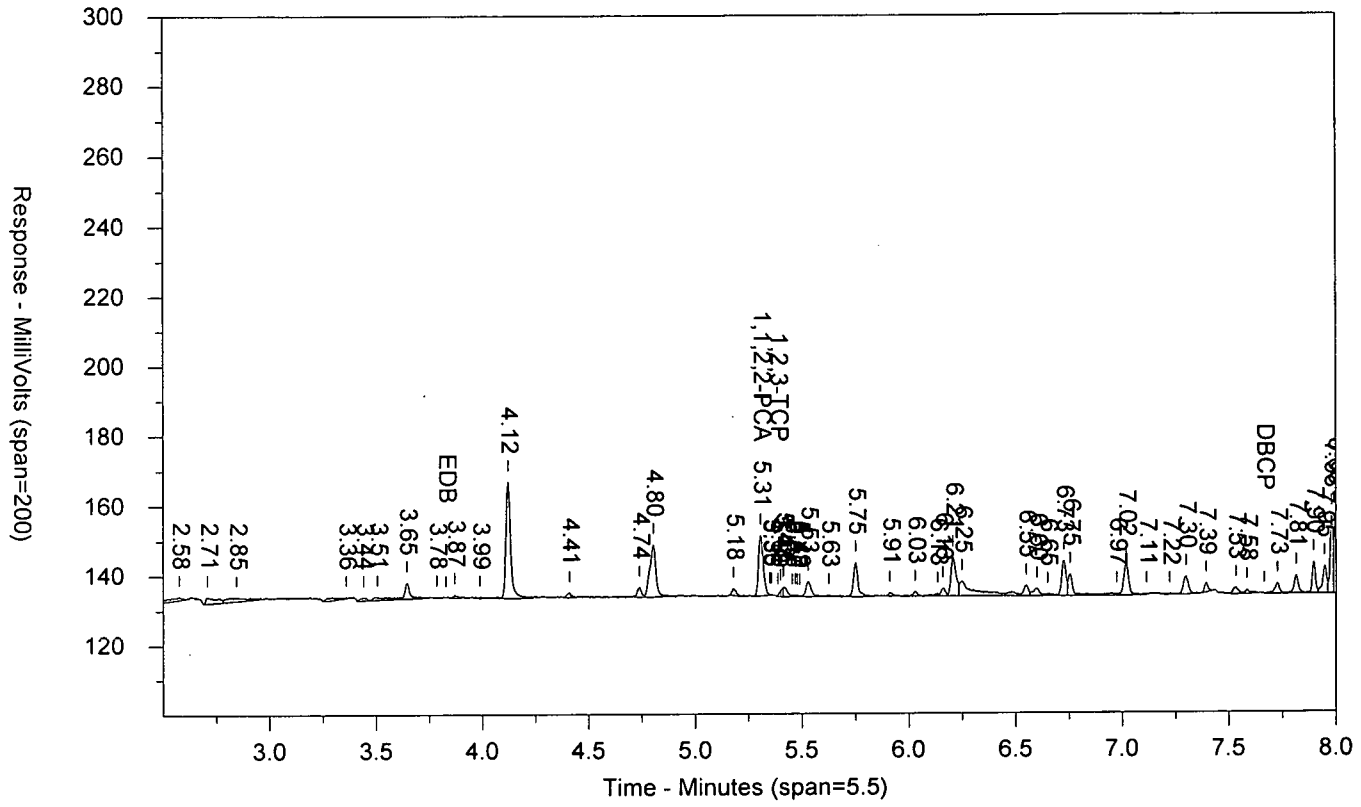
* Recovery outside QC Limits



Printed on: 9/29/2017 14:29:18

9224670 AAEFF1D T 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.019.RAW

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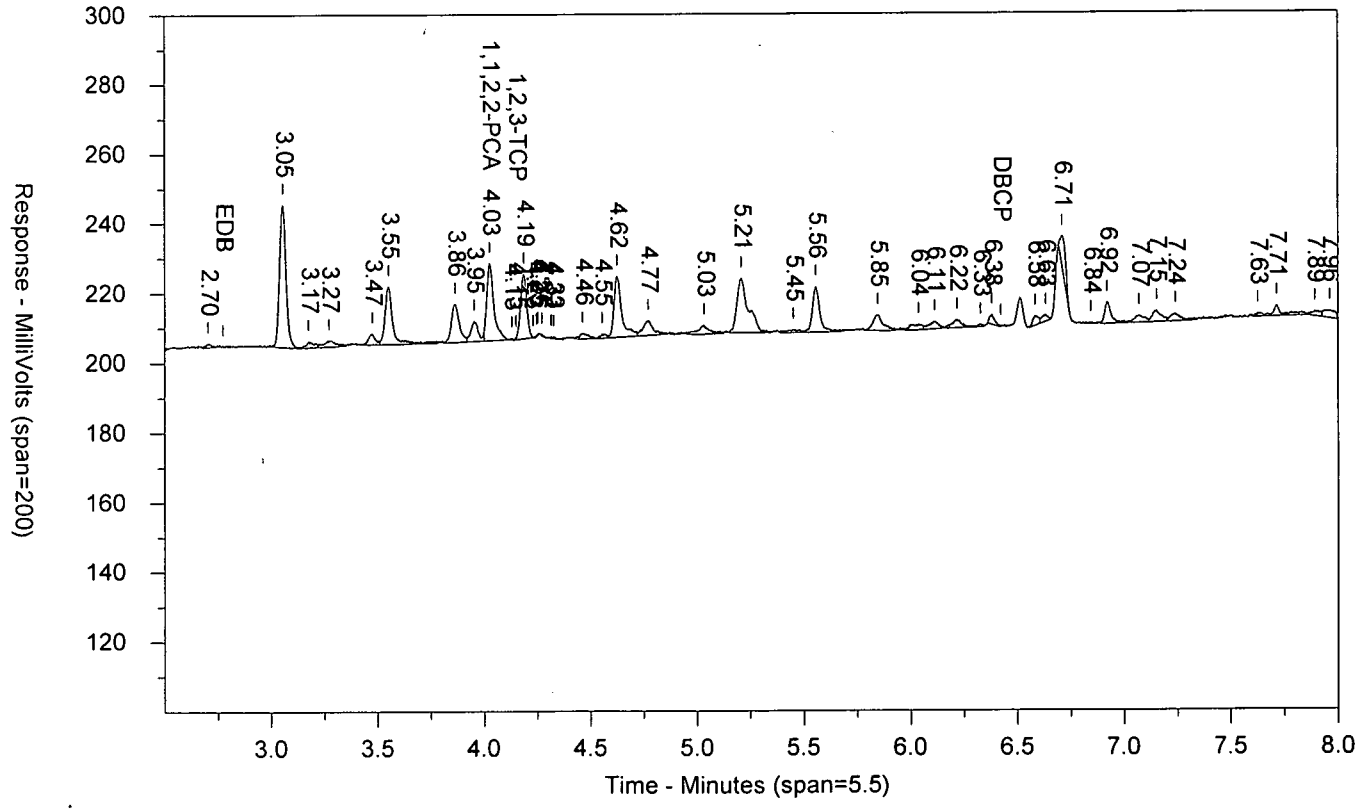

LANCASTER LABORATORIES

Sample Number: 9224670 AAEFF1D T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 8:24:44 PM Sample Weight: 36.6
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.307 | 17423 | .067 | 1,1,2,2-PCA | 4.026 | 22199 | .062 | 1,1,2,2-PCA |
| 5.387 | 570 | .017 | 1,2,3-TCP | 4.151 | 865 | .021 | 1,2,3-TCP |

Files:
Area File: 18edbs17271001.019.RAW
Area File: 18edbs17271001B.019.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 8:33:17 PM
File Reported On: 9/29/2017 at 1:48:03 PM

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# Data Summary

**Sample Name: 9224671** GAC1- Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.36 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 20:40:40 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.020.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 87% ( 46 - 136 ) Conc: 0.058998

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 20:40:40 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.020.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 83% ( 46 - 136 ) Conc: 0.056442

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 15153 | 0.058998 |
| 1,2,3-Trichloropropane | 5.35 | 5.37 | 5.41 | 299 | 0.008864 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 19961 | 0.056442 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 702 | 0.016814 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0193 | <0.0289 | D1 | | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.058998 | 0.0034 | 0.0067 | 0.0067 | | 4.43 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.058998 | 0.0034 | 0.0067 | 0.0067 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.056442 | 0.0034 | 0.0067 | 0.0067 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2599 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0096 | <0.0193 | <0.0289 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:29

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224671** GAC1- ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.36 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 20:40:40
Instrument : CP18--19846A
Result file : 18EDBS17271001.020.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 87% (46-136) Conc.: 0.058998

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 15153 | 0.058998 |
| 1,2,3-TCP | 5.35 | 5.37 | 5.41 | 299 | 0.008864 |

## Analysis Report (B)

Injected on : Sep 28, 2017 20:40:40
Instrument : CP18--19846B
Result file : 18EDBS17271001B.020.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 83% (46-136) Conc.: 0.056442

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.00 | 4.03 | 4.06 | 19961 | 0.056442 |
| **1,2,3-TCP** | 4.12 | 4.15 | 4.18 | 702 | 0.016814 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0289 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.058998 | | | | 4.43 | |
| ☐ 1,2,3-TCP | | | <0.2599 | <0.0963 | | | |
| ☐ DBCP | | | <0.0289 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

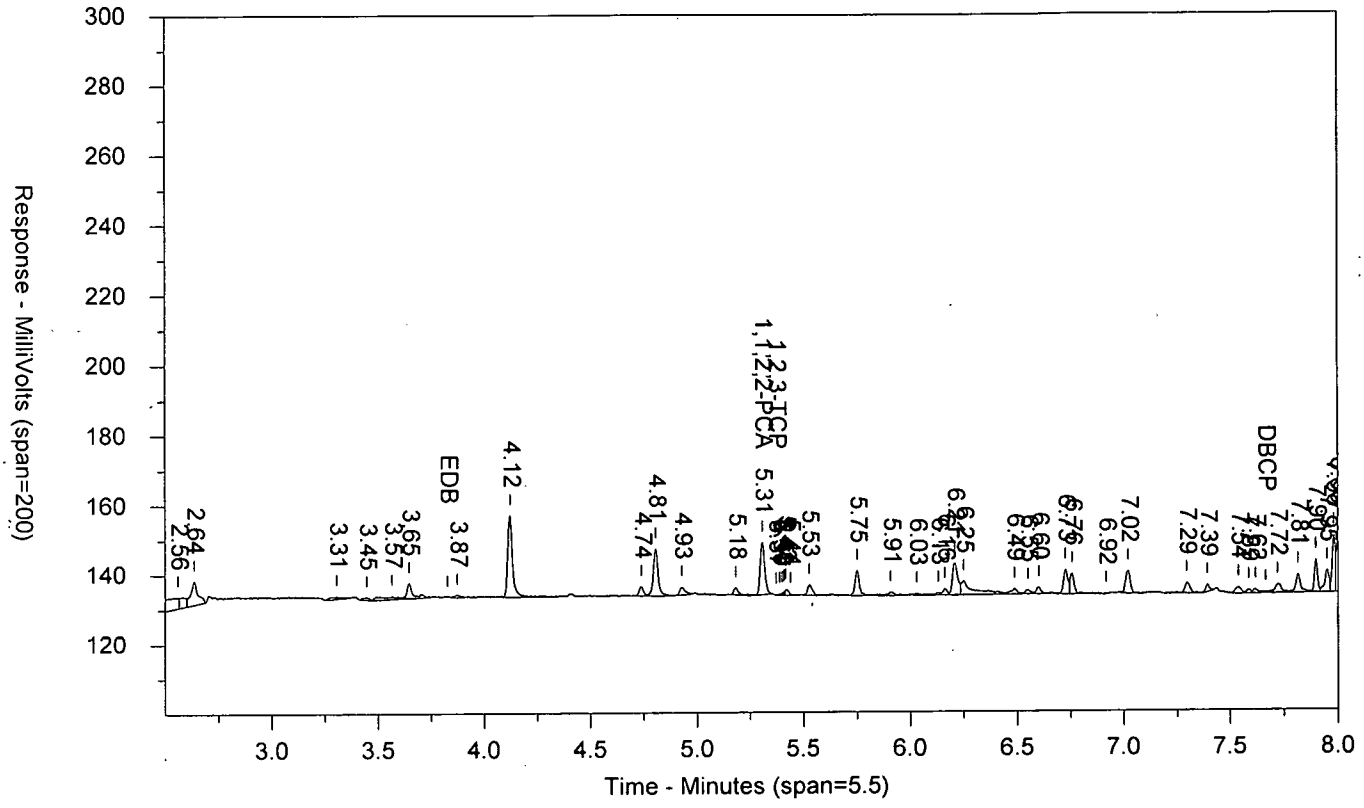
* Recovery outside QC Limits



Printed on: 9/29/2017 14:29:29

9224671 AAGAC1- T 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.020.RAW

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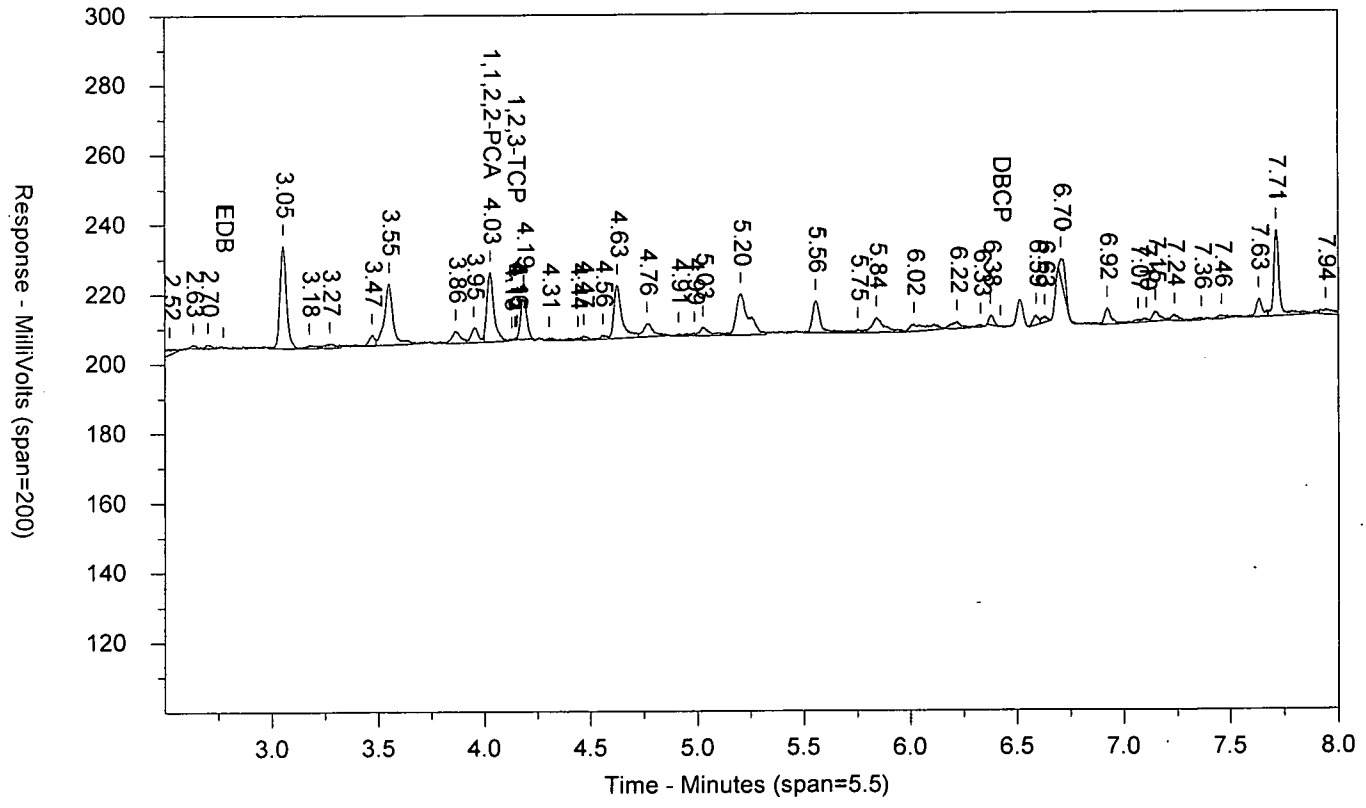


LANCASTER LABORATORIES

Sample Number: 9224671 AAGAC1- T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 8:40:40 PM Sample Weight: 36.36
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.307 | 15153 | .059 | 1,1,2,2-PCA | 4.029 | 19961 | .056 | 1,1,2,2-PCA |
| 5.372 | 299 | .009 | 1,2,3-TCP | 4.145 | 702 | .017 | 1,2,3-TCP |

Files:
Area File: 18edbs17271001.020.RAW
Area File: 18edbs17271001B.020.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 8:49:12 PM
File Reported On: 9/29/2017 at 1:48:21 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9224672** IN1-- Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.73 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 20:56:41 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.021.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 97% ( 46 - 136 ) Conc: 0.065055

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 20:56:41 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.021.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.060042

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.80 | 3.83 | 3.86 | 10975 | 0.04703 |
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 16879 | 0.065055 |
| 1,2,3-Trichloropropane | 5.35 | 5.38 | 5.41 | 355 | 0.010415 |
| 1,2-Dibromo-3-chloropro | 7.63 | 7.68 | 7.69 | 5097 | 0.010398 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.74 | 2.78 | 2.80 | 14687 | 0.047785 |
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 21450 | 0.060042 |
| 1,2,3-Trichloropropane | 4.12 | 4.14 | 4.18 | 541 | 0.012842 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.04703 | 0.0095 | 0.0191 | 0.0286 | D1 | 1.59 | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.065055 | 0.0033 | 0.0067 | 0.0067 | | 8.01 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.065055 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.060042 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2573 | | | |
| ☐ | 1,2-Dibromo-3-chloroprope | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:31

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224672** IN1-- ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.73 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 20:56:41
Instrument : CP18--19846A
Result file : 18EDBS17271001.021.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 97% (46-136) Conc.: 0.065055

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.80 | 3.83 | 3.86 | 10975 | 0.047030 |
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 16879 | 0.065055 |
| 1,2,3-TCP | 5.35 | 5.38 | 5.41 | 355 | 0.010415 |
| DBCP | 7.63 | 7.68 | 7.69 | 5097 | 0.010398 |

## Analysis Report (B)

Injected on : Sep 28, 2017 20:56:41
Instrument : CP18--19846B
Result file : 18EDBS17271001B.021.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.060042

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 2.74 | 2.78 | 2.80 | 14687 | 0.047785 |
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 21450 | 0.060042 |
| 1,2,3-TCP | 4.12 | 4.14 | 4.18 | 541 | 0.012842 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.047030 | 0.0286 | 0.0095 | | 1.59 | |
| ☐ 1,1,2,2-PCA | A | 0.065055 | | | | 8.01 | |
| ☐ 1,2,3-TCP | | | <0.2573 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: OCT 02 2017

Verified by: Valerie L. Tomayko
Principal Specialist

Date: OCT 02 2017

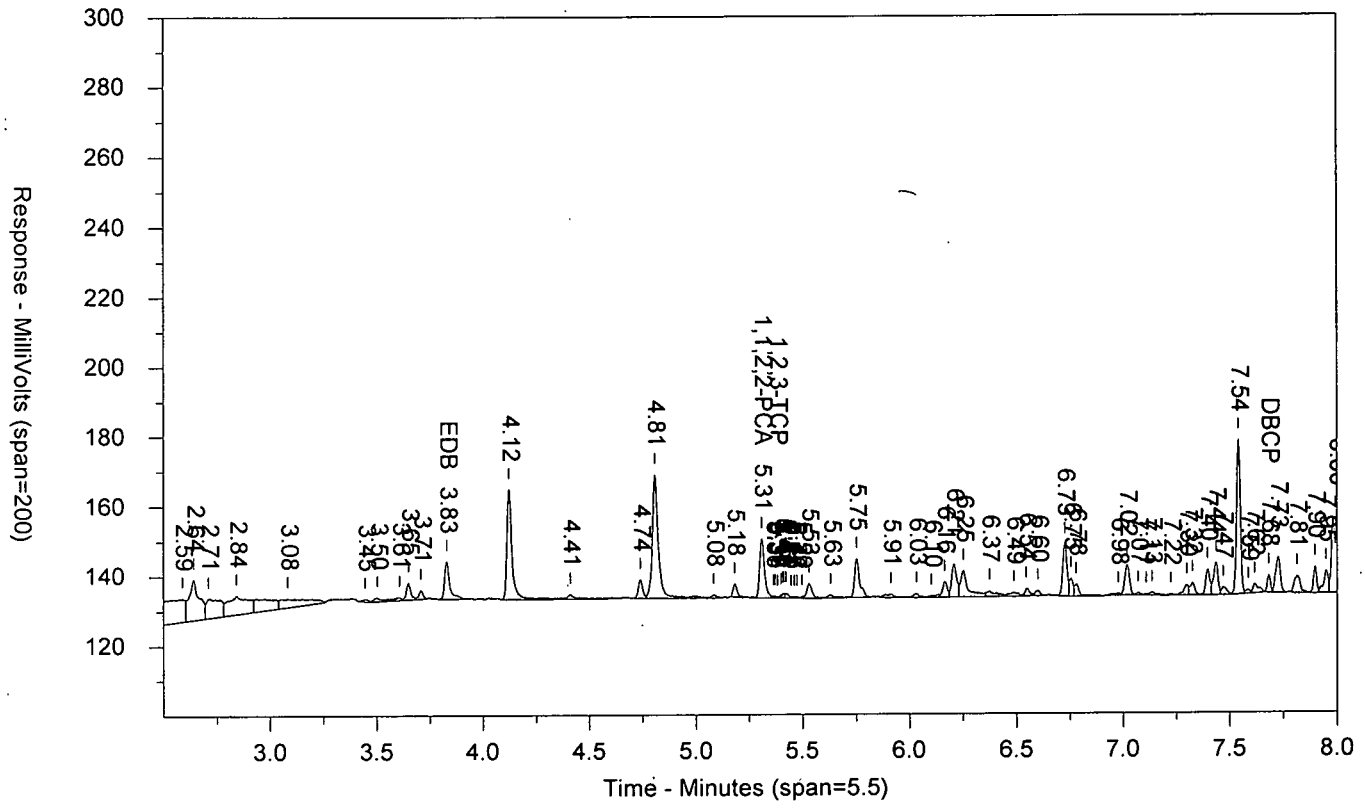
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

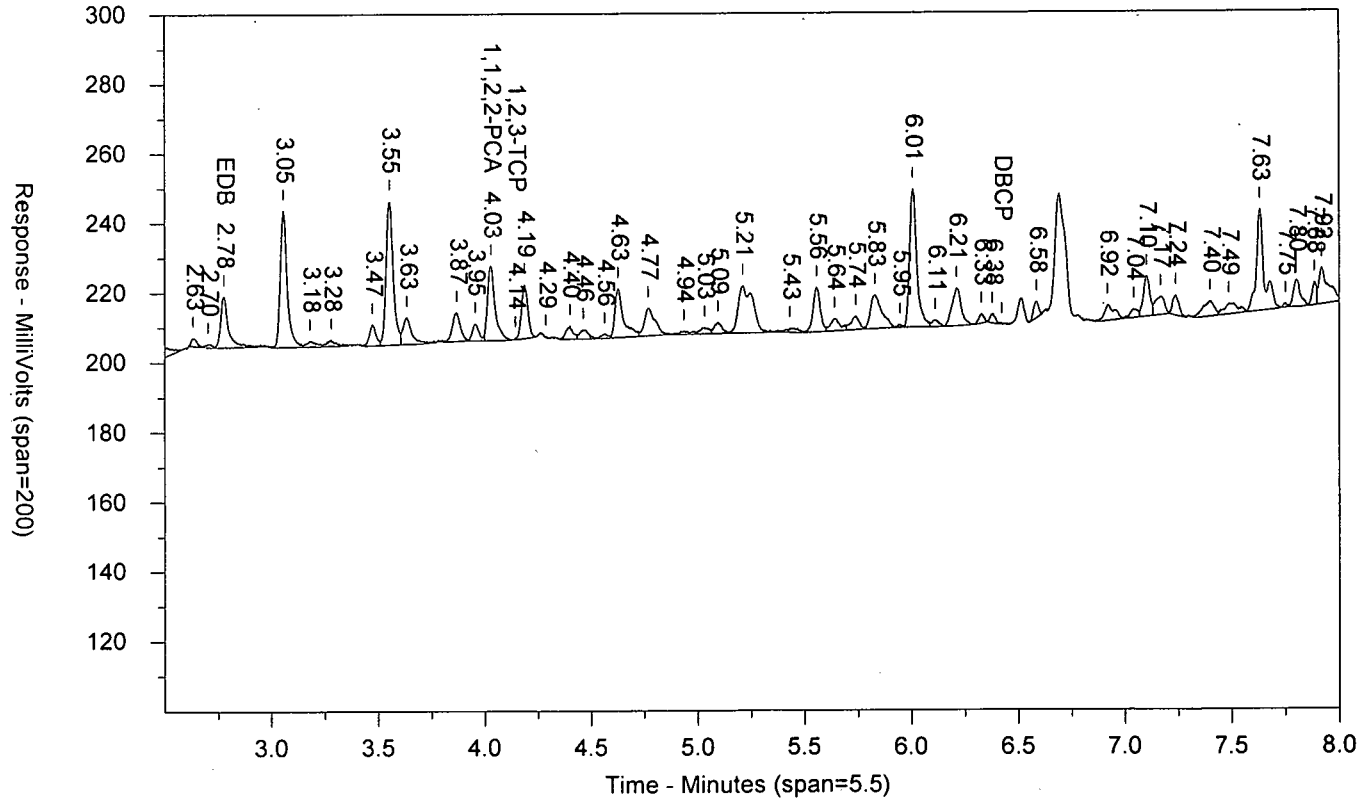
Printed on: 9/29/2017 14:29:42

9224672 AAIN1-- T 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.021.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.021.RAW



LANCASTER LABORATORIES

Sample Number: 9224672 AAIN1-- T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 8:56:41 PM Sample Weight: 36.73
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR 2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.828 | 10975 | .047 | EDB | 2.776 | 14687 | .048 | EDB |
| 5.307 | 16879 | .065 | 1,1,2,2-PCA | 4.03 | 21450 | .06 | 1,1,2,2-PCA |
| 5.381 | 355 | .01 | 1,2,3-TCP | 4.144 | 541 | .013 | 1,2,3-TCP |
| 7.681 | 5097 | .01 | DBCP | | 0 | | DBCP |

Files:
Area File: 18edbs17271001.021.RAW
Area File: 18edbs17271001B.021.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 9:05:11 PM
File Reported On: 9/29/2017 at 1:48:37 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: 9224673** TB01- Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 37.07 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 21:12:31 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.022.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.061496

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 21:12:31 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.022.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 86% ( 46 - 136 ) Conc: 0.057008

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 16103 | 0.061496 |
| 1,2,3-Trichloropropane | 5.35 | 5.37 | 5.41 | 367 | 0.010687 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 20555 | 0.057008 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 503 | 0.011828 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0094 | <0.0189 | <0.0283 | D1 | | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.061496 | 0.0033 | 0.0066 | 0.0066 | | 7.57 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.061496 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.057008 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2549 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0094 | <0.0189 | <0.0283 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerio L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:33

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224673** TB01- ID: AA **Batchnumber: 172690027A**
Sample Amount: 37.07 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 21:12:31
Instrument : CP18--19846A
Result file : 18EDBS17271001.022.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.061496

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 16103 | 0.061496 |
| 1,2,3-TCP | 5.35 | 5.37 | 5.41 | 367 | 0.010687 |

## Analysis Report (B)

Injected on : Sep 28, 2017 21:12:31
Instrument : CP18--19846B
Result file : 18EDBS17271001B.022.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 86% (46-136) Conc.: 0.057008

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.00 | 4.03 | 4.06 | 20555 | 0.057008 |
| **1,2,3-TCP** | 4.12 | 4.15 | 4.18 | 503 | 0.011828 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0283 | <0.0094 | | | |
| ☐ 1,1,2,2-PCA | A | 0.061496 | | | | 7.57 | |
| ☐ 1,2,3-TCP | | | <0.2549 | <0.0944 | | | |
| ☐ DBCP | | | <0.0283 | <0.0094 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: OCT 0 2 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist

Date: OCT 0 2 2017

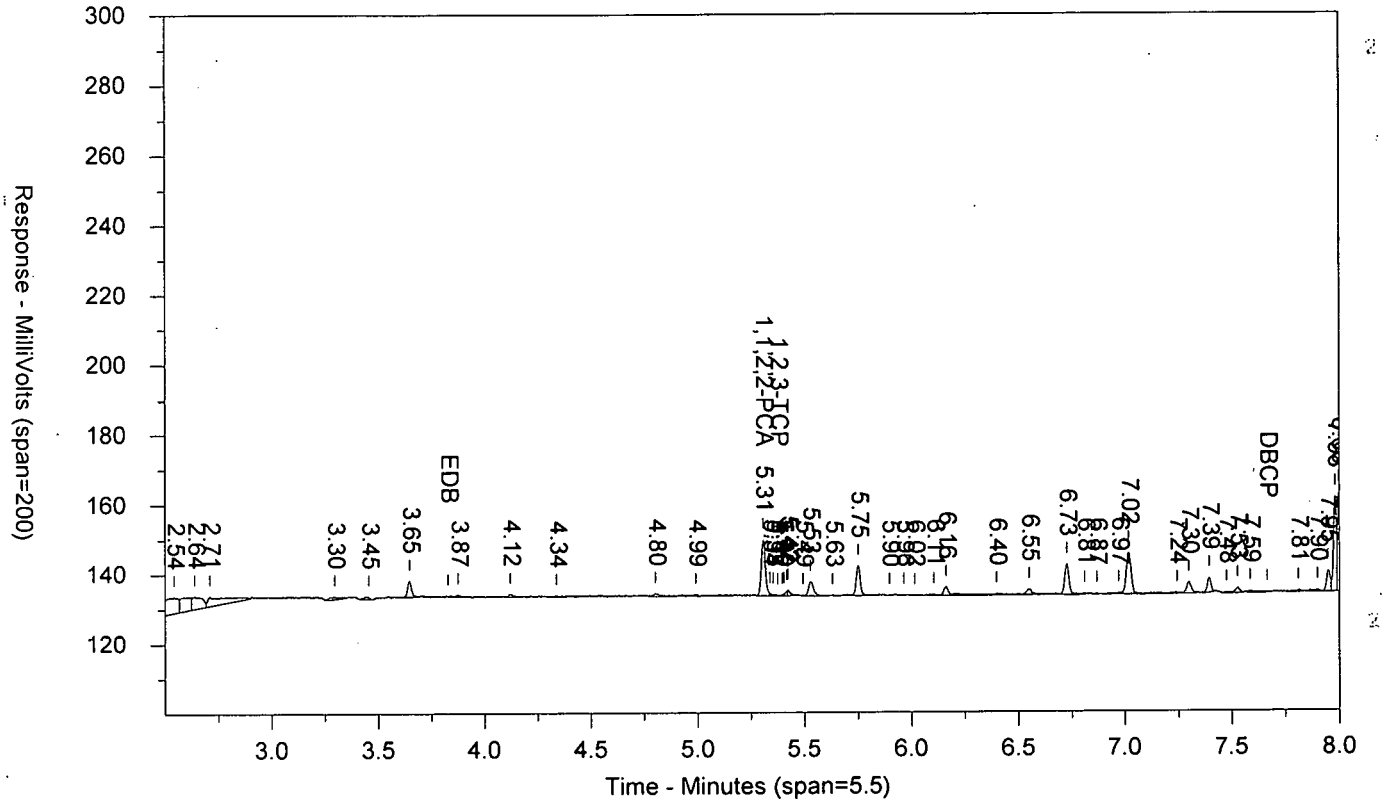
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

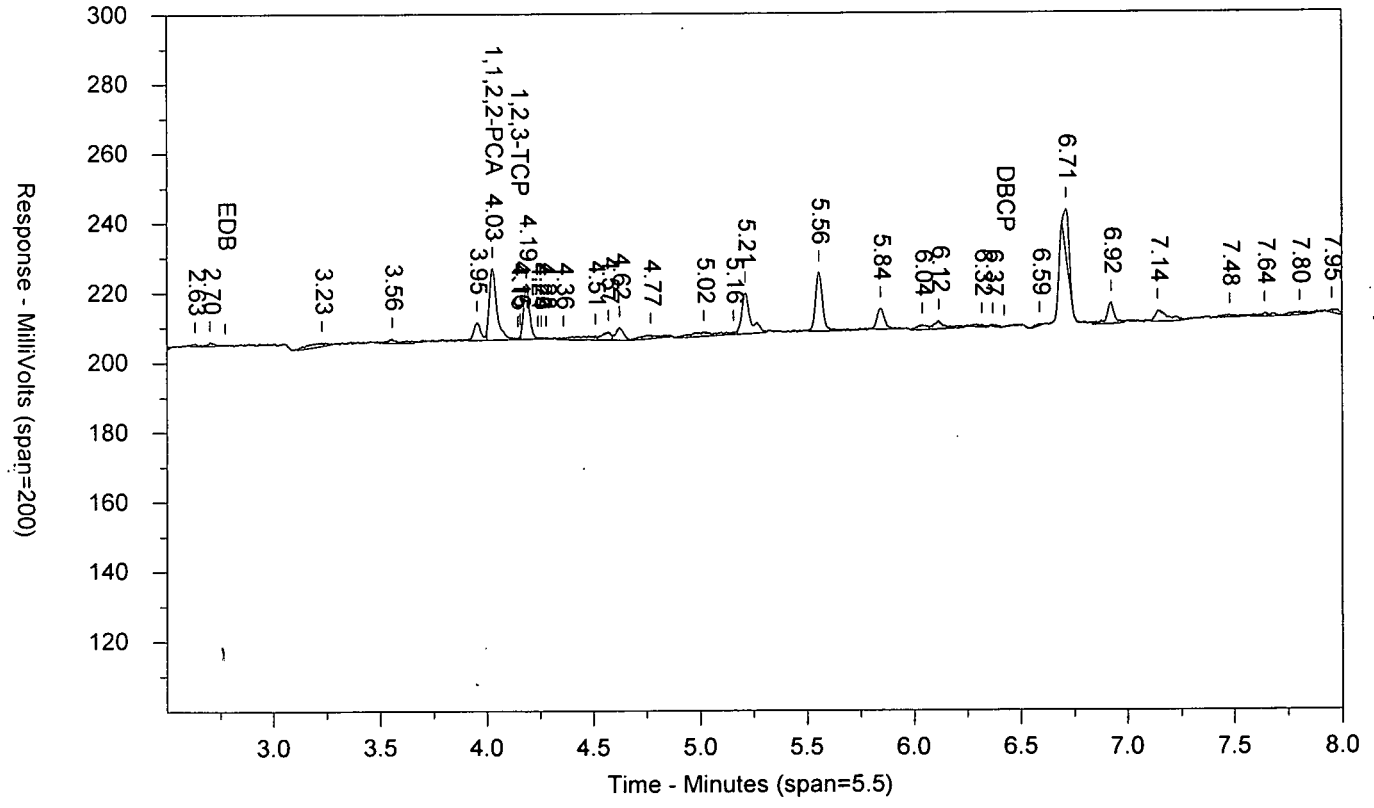
Printed on: 9/29/2017 14:29:52

9224673 AATB01- T 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.022.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.022.RAW



LANCASTER LABORATORIES

Sample Number: 9224673 AATB01- T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 9:12:31 PM Sample Weight: 37.07
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.306 | 16103 | .061 | 1,1,2,2-PCA | 4.027 | 20555 | .057 | 1,1,2,2-PCA |
| 5.373 | 367 | .011 | 1,2,3-TCP | 4.147 | 503 | .012 | 1,2,3-TCP |

Files:
Area File: 18edbs17271001.022.RAW
Area File: 18edbs17271001B.022.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 9:21:03 PM
File Reported On: 9/29/2017 at 1:48:53 PM

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# Data Summary

**Sample Name: 9224674** EF2-- Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.73 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 22:00:14 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.025.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 92% ( 46 - 136 ) Conc: 0.061424

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 22:00:14 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.025.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 88% ( 46 - 136 ) Conc: 0.058948

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 15937 | 0.061424 |
| 1,2,3-Trichloropropane | 5.35 | 5.39 | 5.41 | 541 | 0.015875 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 21059 | 0.058948 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.0191 | <0.0286 | D1 | | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.061424 | 0.0033 | 0.0067 | 0.0067 | | 4.11 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.061424 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.058948 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2573 | | | |
| ☐ | 1,2-Dibromo-3-chloropropa | | | <0.0095 | <0.0191 | <0.0286 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

OCT 02 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:36

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224674** EF2-- ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.73 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 22:00:14
Instrument : CP18--19846A
Result file : 18EDBS17271001.025.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 92% (46-136) Conc.: 0.061424

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 15937 | 0.061424 |
| 1,2,3-TCP | 5.35 | 5.39 | 5.41 | 541 | 0.015875 |

## Analysis Report (B)

Injected on : Sep 28, 2017 22:00:14
Instrument : CP18--19846B
Result file : 18EDBS17271001B.025.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 88% (46-136) Conc.: 0.058948

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 21059 | 0.058948 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0286 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.061424 | | | | 4.11 | |
| ☐ 1,2,3-TCP | | | <0.2573 | <0.0953 | | | |
| ☐ DBCP | | | <0.0286 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

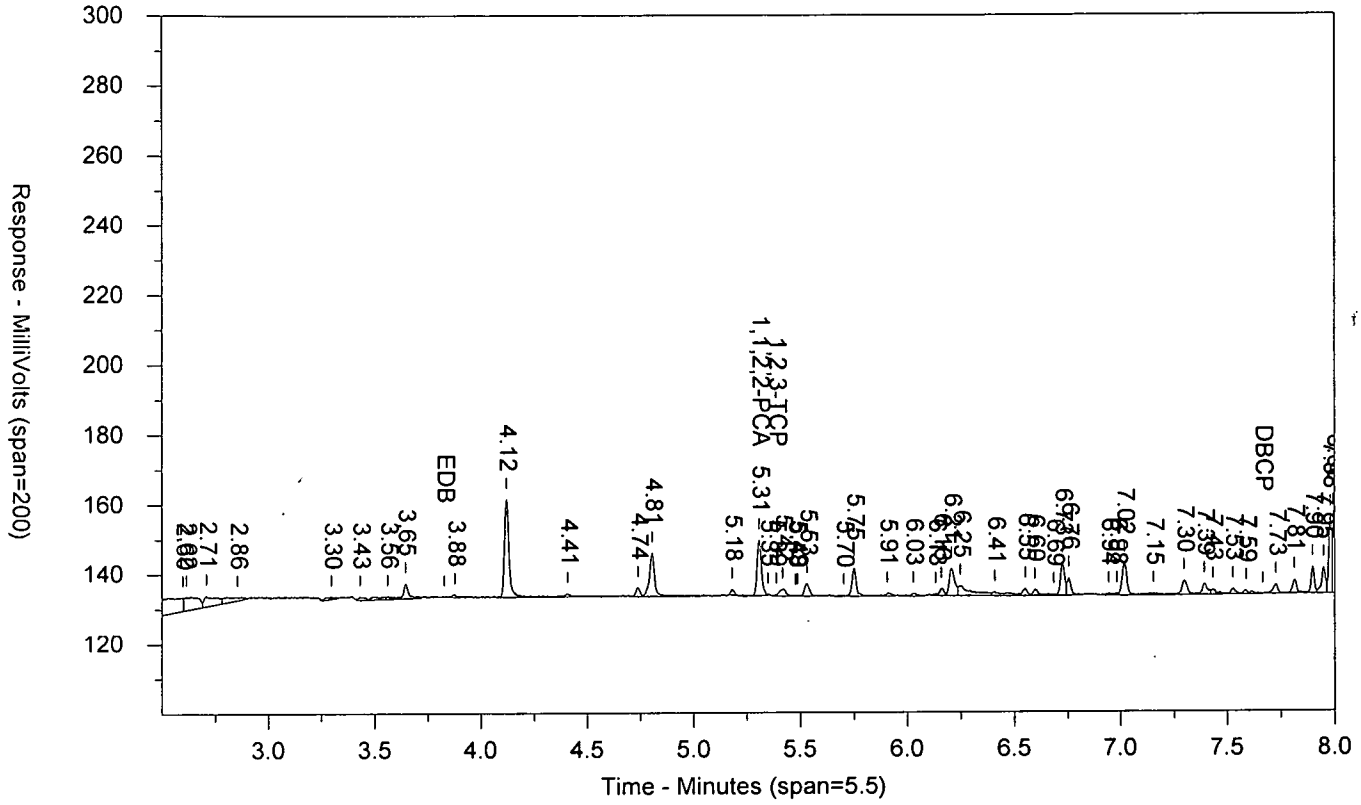
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

9224674 AAEF2-- T 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.025.RAW

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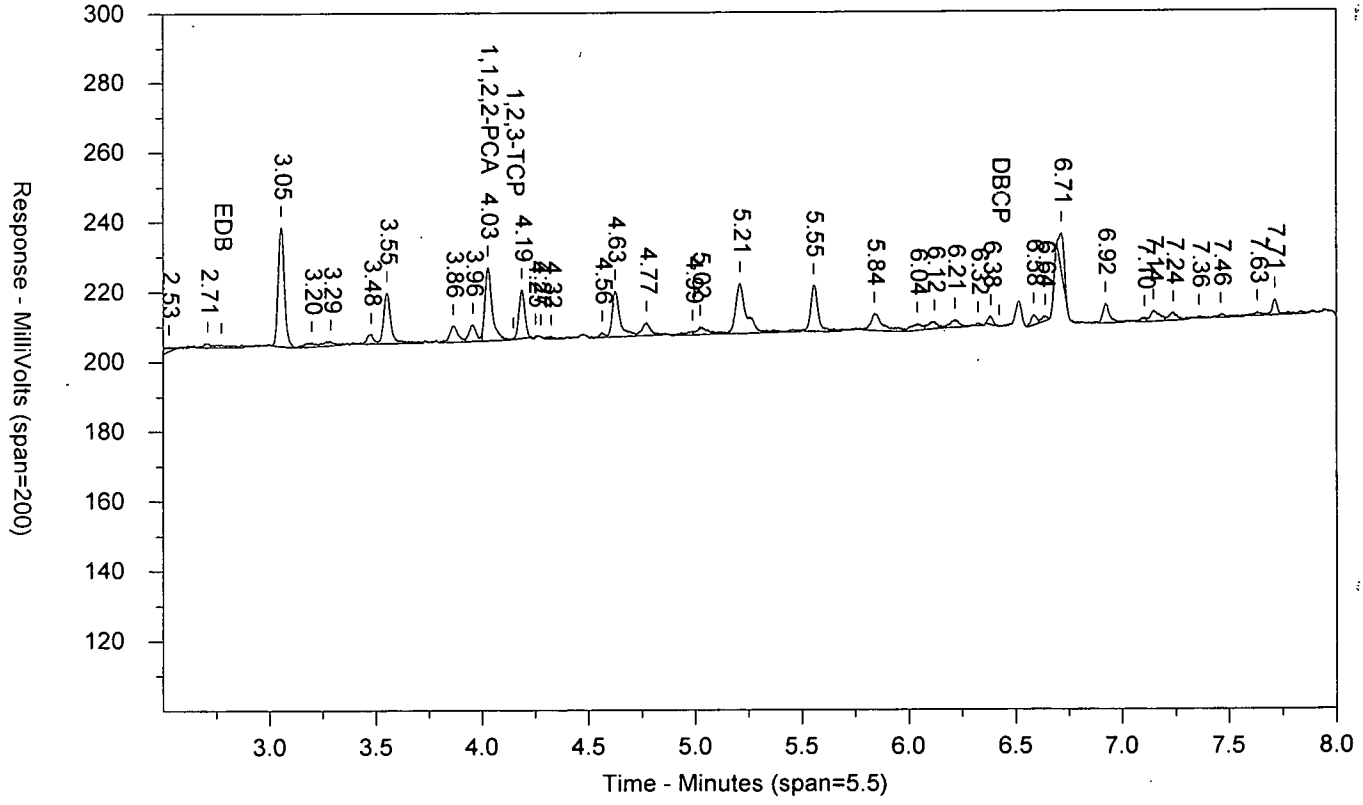

LANCASTER LABORATORIES

Sample Number: 9224674 AAEF2-- T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 10:00:14 PM Sample Weight: 36.73
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.307 | 15937 | .061 | 1,1,2,2-PCA | 4.028 | 21059 | .059 | 1,1,2,2-PCA |
| 5.388 | 541 | .016 | 1,2,3-TCP | | 0 | | 1,2,3-TCP |

Files:
Area File: 18edbs17271001.025.RAW
Area File: 18edbs17271001B.025.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 10:08:47 PM
File Reported On: 9/29/2017 at 1:49:44 PM

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# Data Summary

**Sample Name: 9224678** GC2-- Sample ID: AA **Batchnumber: 172690027A**

Sample Amount: 36.57 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM

**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 22:47:51 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.028.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 94% ( 46 - 136 ) Conc: 0.063677

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 22:47:51 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.028.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.059999

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 16449 | 0.063677 |
| 1,2,3-Trichloropropane | 5.35 | 5.38 | 5.41 | 378 | 0.011134 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.74 | 2.76 | 2.80 | 1045 | 0.003413 |
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 21341 | 0.059999 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 401 | 0.009548 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0096 | <0.0191 | <0.0287 | D1 | | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.063677 | 0.0033 | 0.0067 | 0.0067 | | 5.95 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.063677 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.059999 | 0.0033 | 0.0067 | 0.0067 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2584 | | | |
| ☐ | 1,2-Dibromo-3-chloroprope | | | <0.0096 | <0.0191 | <0.0287 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:41

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224678** GC2-- ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.57 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 22:47:51
Instrument : CP18--19846A
Result file : 18EDBS17271001.028.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 94% (46-136) Conc.: 0.063677

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 16449 | 0.063677 |
| 1,2,3-TCP | 5.35 | 5.38 | 5.41 | 378 | 0.011134 |

## Analysis Report (B)

Injected on : Sep 28, 2017 22:47:51
Instrument : CP18--19846B
Result file : 18EDBS17271001B.028.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.059999

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 2.74 | 2.76 | 2.80 | 1045 | 0.003413 |
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 21341 | 0.059999 |
| 1,2,3-TCP | 4.12 | 4.15 | 4.18 | 401 | 0.009548 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0287 | <0.0096 | | | |
| ☐ 1,1,2,2-PCA | A | 0.063677 | | | | 5.95 | |
| ☐ 1,2,3-TCP | | | <0.2584 | <0.0957 | | | |
| ☐ DBCP | | | <0.0287 | <0.0096 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

Verified by: Valerie L. Tomcyko
Valerie L. Tomcyko
Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

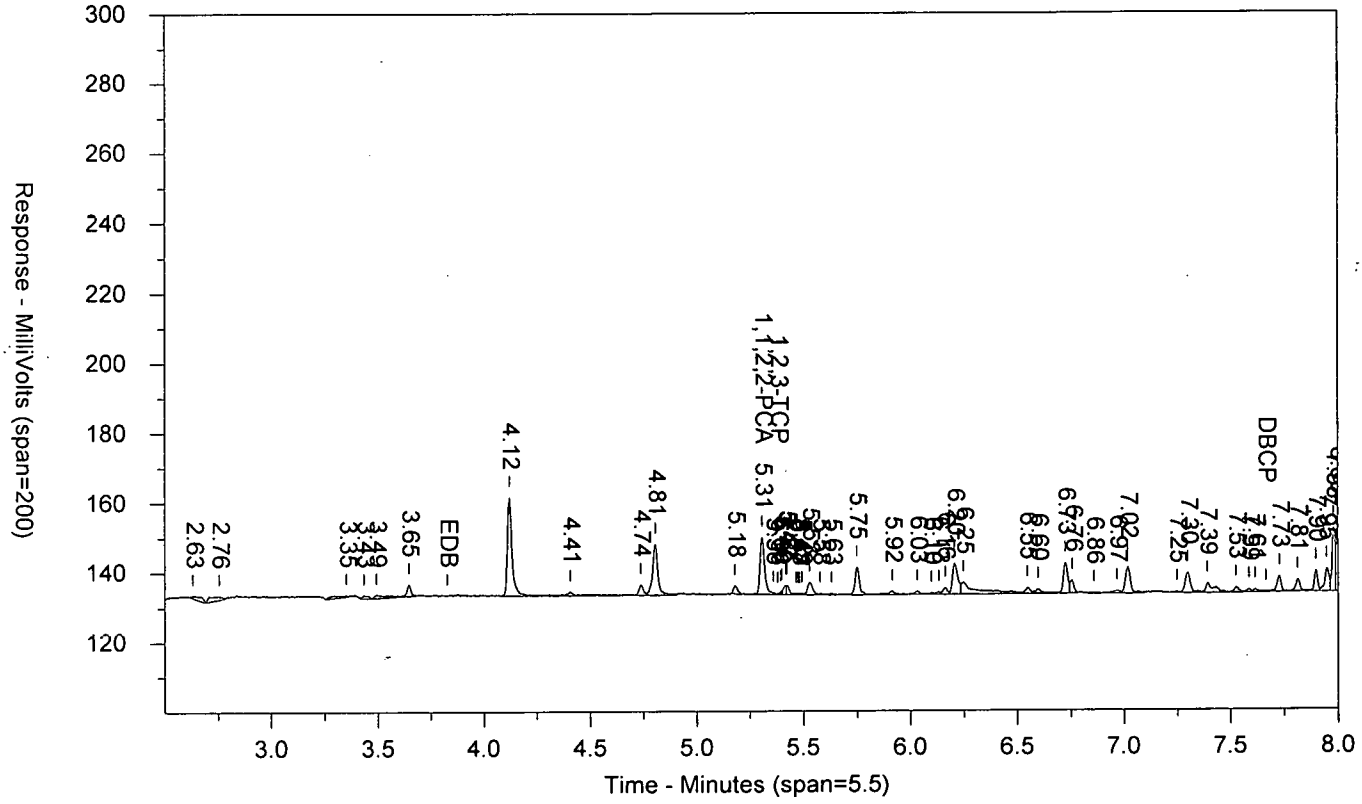
* Recovery outside QC Limits



Printed on: 9/29/2017 14:30:37

9224678 AAGC2-- T 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.028.RAW

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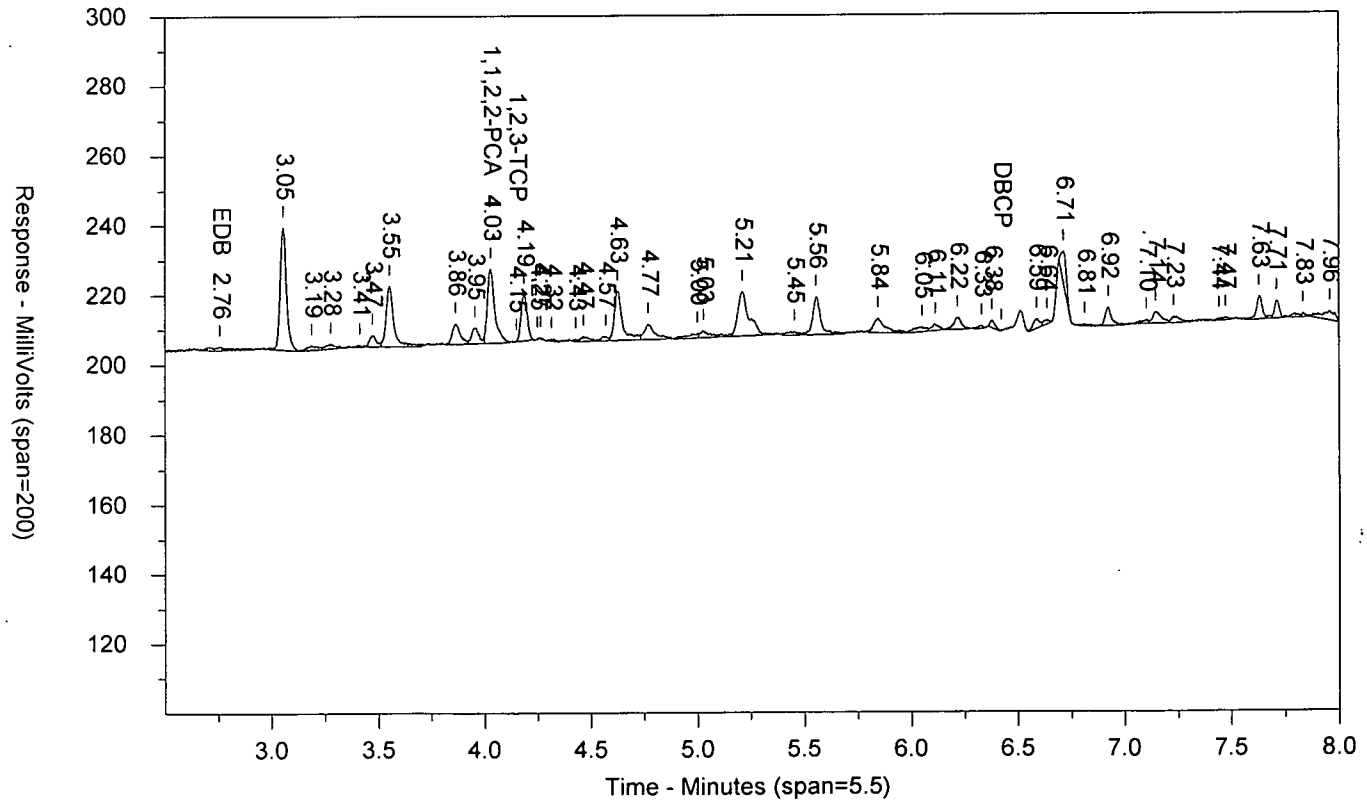

LANCASTER LABORATORIES

Sample Number: 9224678 AAGC2-- T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 10:47:51 PM Sample Weight: 36.57
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 2.756 | 1045 | .003 | EDB |
| 5.307 | 16449 | .064 | 1,1,2,2-PCA | 4.028 | 21341 | .06 | 1,1,2,2-PCA |
| 5.38 | 378 | .011 | 1,2,3-TCP | 4.152 | 401 | .01 | 1,2,3-TCP |

Files:
Area File: 18edbs17271001.028.RAW
Area File: 18edbs17271001B.028.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 10:56:24 PM
File Reported On: 9/29/2017 at 1:50:48 PM

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# Data Summary

**Sample Name: 9224679** IN2-- Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.92 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 23:03:50 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.029.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 111% ( 46 - 136 ) Conc: 0.074139

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 23:03:50 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.029.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.060249

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.80 | 3.83 | 3.86 | 12687 | 0.054085 |
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 19335 | 0.074139 |
| 1,2,3-Trichloropropane | 5.35 | 5.37 | 5.41 | 459 | 0.013396 |
| 1,2-Dibromo-3-chloropro | 7.63 | 7.68 | 7.69 | 2239 | 0.004544 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.74 | 2.77 | 2.80 | 16623 | 0.053805 |
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 21635 | 0.060249 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 1748 | 0.04127 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | A | 0.054085 | 0.0095 | 0.019 | 0.0284 | D1 | 0.52 | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.074139 | 0.0033 | 0.0066 | 0.0066 | | 20.67 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.074139 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.060249 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.256 | | | |
| ☐ | 1,2-Dibromo-3-chloroprope | | | <0.0095 | <0.019 | <0.0284 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:43

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224679** IN2-- ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.92 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 23:03:50
Instrument : CP18--19846A
Result file : 18EDBS17271001.029.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 111% (46-136) Conc.: 0.074139

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.80 | 3.83 | 3.86 | 12687 | 0.054085 |
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 19335 | 0.074139 |
| 1,2,3-TCP | 5.35 | 5.37 | 5.41 | 459 | 0.013396 |
| DBCP | 7.63 | 7.68 | 7.69 | 2239 | 0.004544 |

## Analysis Report (B)

Injected on : Sep 28, 2017 23:03:50
Instrument : CP18--19846B
Result file : 18EDBS17271001B.029.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060249

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 2.74 | 2.77 | 2.80 | 16623 | 0.053805 |
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 21635 | 0.060249 |
| 1,2,3-TCP | 4.12 | 4.15 | 4.18 | 1748 | 0.041270 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.054085 | 0.0284 | 0.0095 | | 0.52 | |
| ☐ 1,1,2,2-PCA | A | 0.074139 | | | | 20.67 | |
| ☐ 1,2,3-TCP | | | <0.256 | <0.0948 | | | |
| ☐ DBCP | | | <0.0284 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

Verified by: Valerie L Tomayko
Valerie L. Tomayko
Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

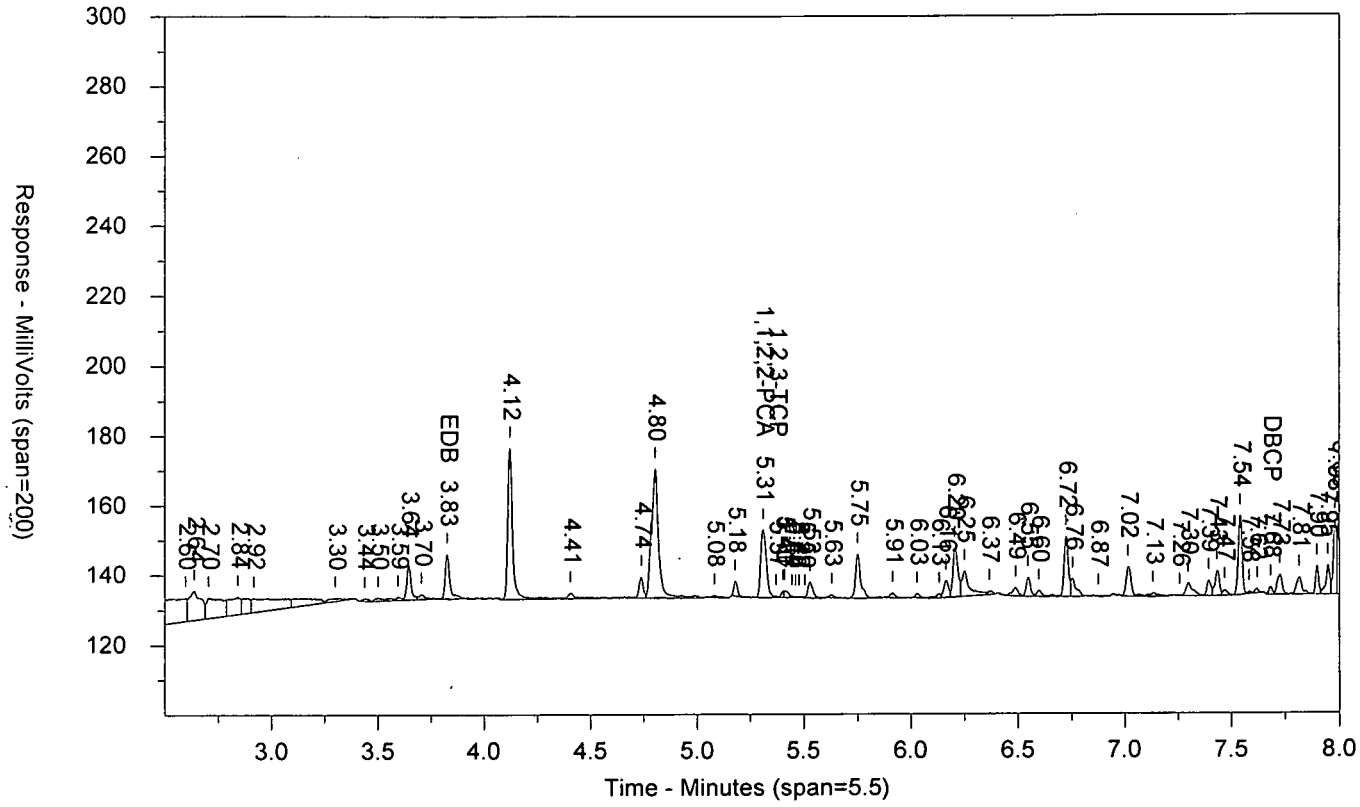
* Recovery outside QC Limits



Printed on: 9/29/2017 14:30:46

9224679 AAIN2-- T 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.029.RAW

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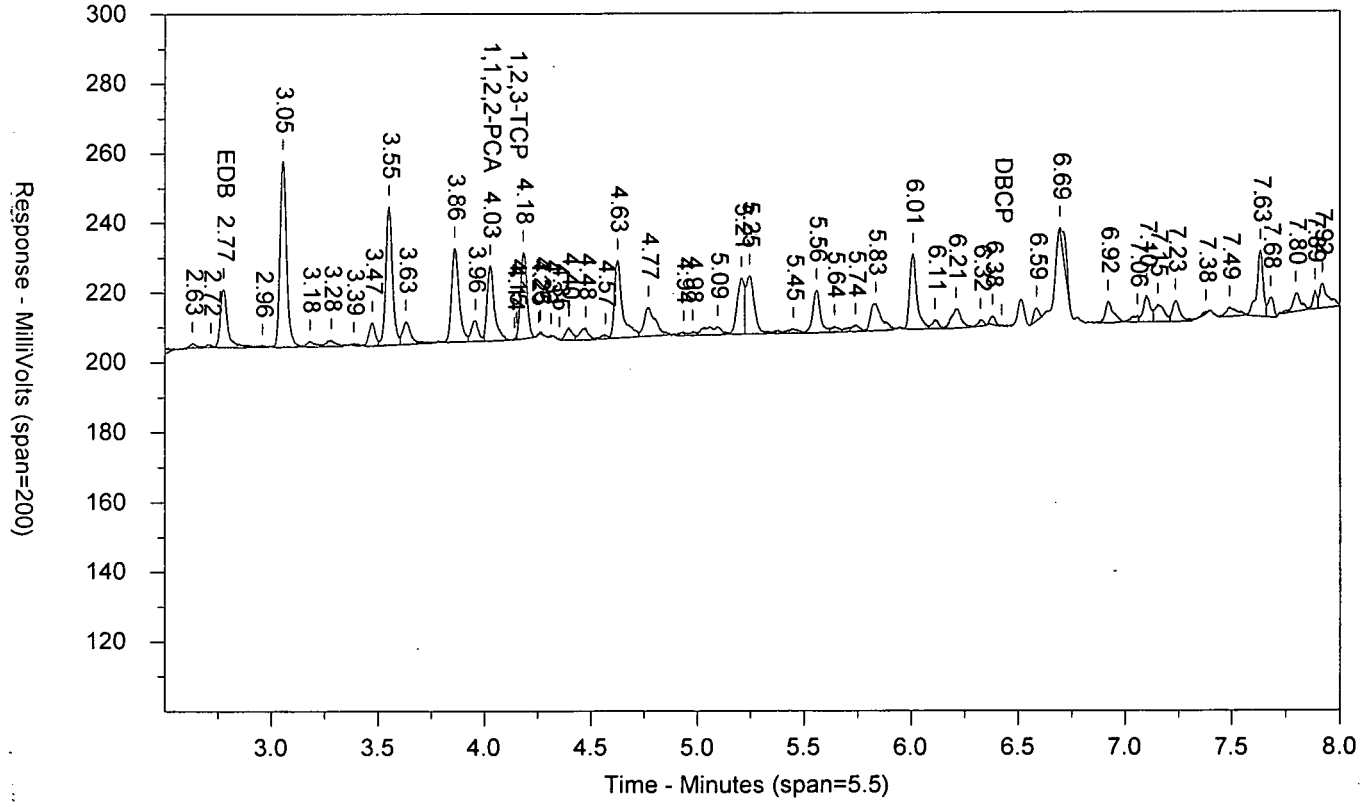

LANCASTER LABORATORIES

Sample Number: 9224679 AAIN2-- T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 11:03:50 PM Sample Weight: 36.92
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.825 | 12687 | .054 | EDB | 2.775 | 16623 | .054 | EDB |
| 5.31 | 19335 | .074 | 1,1,2,2-PCA | 4.027 | 21635 | .06 | 1,1,2,2-PCA |
| 5.37 | 459 | .013 | 1,2,3-TCP | 4.152 | 1748 | .041 | 1,2,3-TCP |
| 7.682 | 2239 | .005 | DBCP | | 0 | | DBCP |

Files:
Area File: 18edbs17271001.029.RAW
Area File: 18edbs17271001B.029.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 11:12:23 PM
File Reported On: 9/29/2017 at 1:51:08 PM

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# Data Summary

**Sample Name: 9224680** FB2-- Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.88 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 23:19:47 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.030.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.060267

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 23:19:47 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.030.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 89% ( 46 - 136 ) Conc: 0.059803

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 15700 | 0.060267 |
| 1,2,3-Trichloropropane | 5.35 | 5.39 | 5.41 | 278 | 0.008127 |
| 1,2-Dibromo-3-chloropro | 7.63 | 7.69 | 7.69 | 402 | 0.000816 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 21452 | 0.059803 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 403 | 0.009532 |
| 1,2-Dibromo-3-chloropro | 6.39 | 6.45 | 6.45 | 704 | 0.001228 |

## Single Component Summary

| | Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|---|
| ☑ | Ethylene dibromide | | | <0.0095 | <0.019 | <0.0285 | D1 | | |
| ☐ | 1,1,2,2-TETRACHLOROE | A | 0.060267 | 0.0033 | 0.0066 | 0.0066 | | 0.77 | |
| ☑ | 1,1,2,2-TETRACHLOROE | A | 0.060267 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☑ | 1,1,2,2-TETRACHLOROE | B | 0.059803 | 0.0033 | 0.0066 | 0.0066 | | | |
| ☐ | 1,2,3-Trichloropropane | | | | | <0.2562 | | | |
| ☐ | 1,2-Dibromo-3-chloroprop | | | <0.0095 | <0.019 | <0.0285 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:48

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224680** FB2-- ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.88 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 23:19:47
Instrument : CP18--19846A
Result file : 18EDBS17271001.030.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060267

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 15700 | 0.060267 |
| 1,2,3-TCP | 5.35 | 5.39 | 5.41 | 278 | 0.008127 |
| DBCP | 7.63 | 7.69 | 7.69 | 402 | 0.000816 |

## Analysis Report (B)

Injected on : Sep 28, 2017 23:19:47
Instrument : CP18--19846B
Result file : 18EDBS17271001B.030.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 89% (46-136) Conc.: 0.059803

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 21452 | 0.059803 |
| 1,2,3-TCP | 4.12 | 4.15 | 4.18 | 403 | 0.009532 |
| DBCP | 6.39 | 6.45 | 6.45 | 704 | 0.001228 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.0285 | <0.0095 | | | |
| ☐ 1,1,2,2-PCA | A | 0.060267 | | | | 0.77 | |
| ☐ 1,2,3-TCP | | | <0.2562 | <0.0949 | | | |
| ☐ DBCP | | | <0.0285 | <0.0095 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

Verified by: Valerio L. Tomayko
Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 9/29/2017 14:30:56

9224680 AAFB2-- T 172690027A 10398 SW-846 8011

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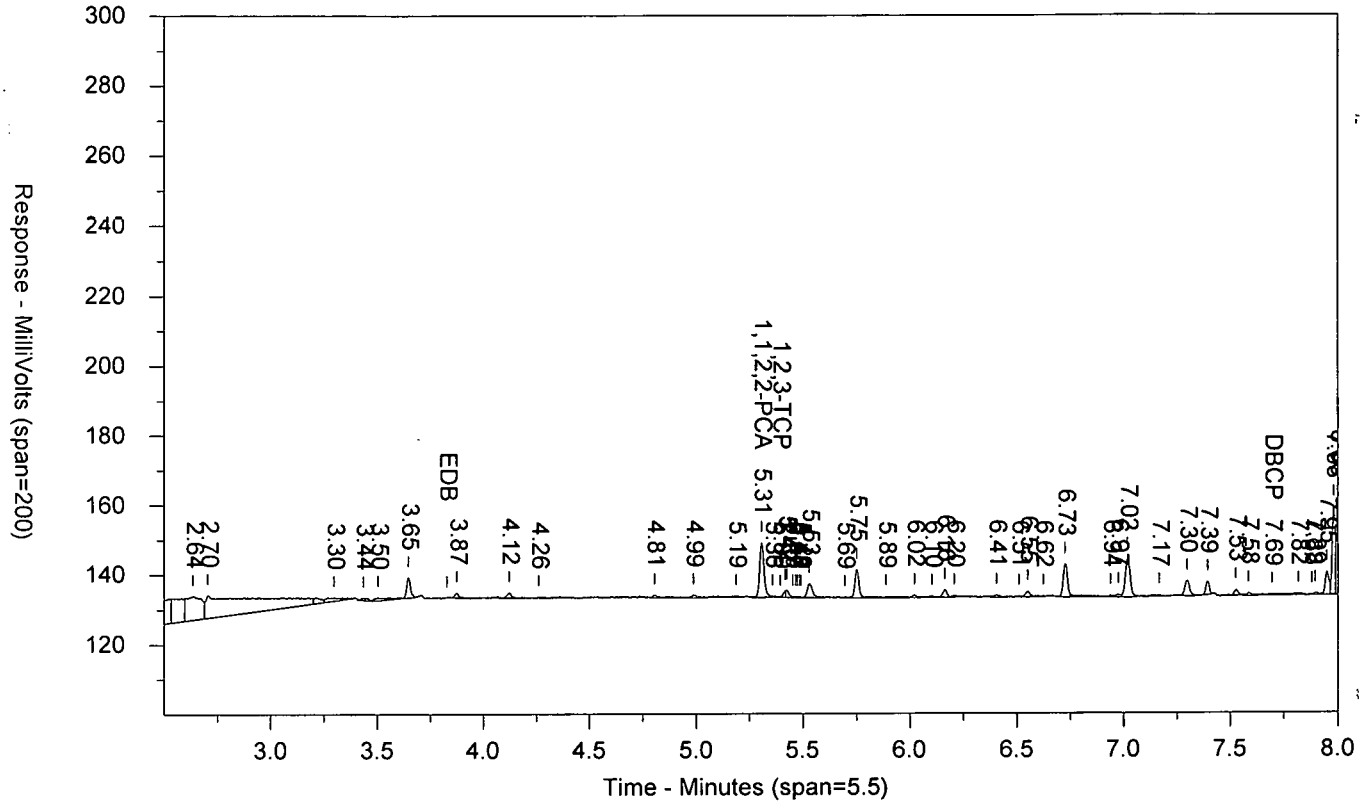


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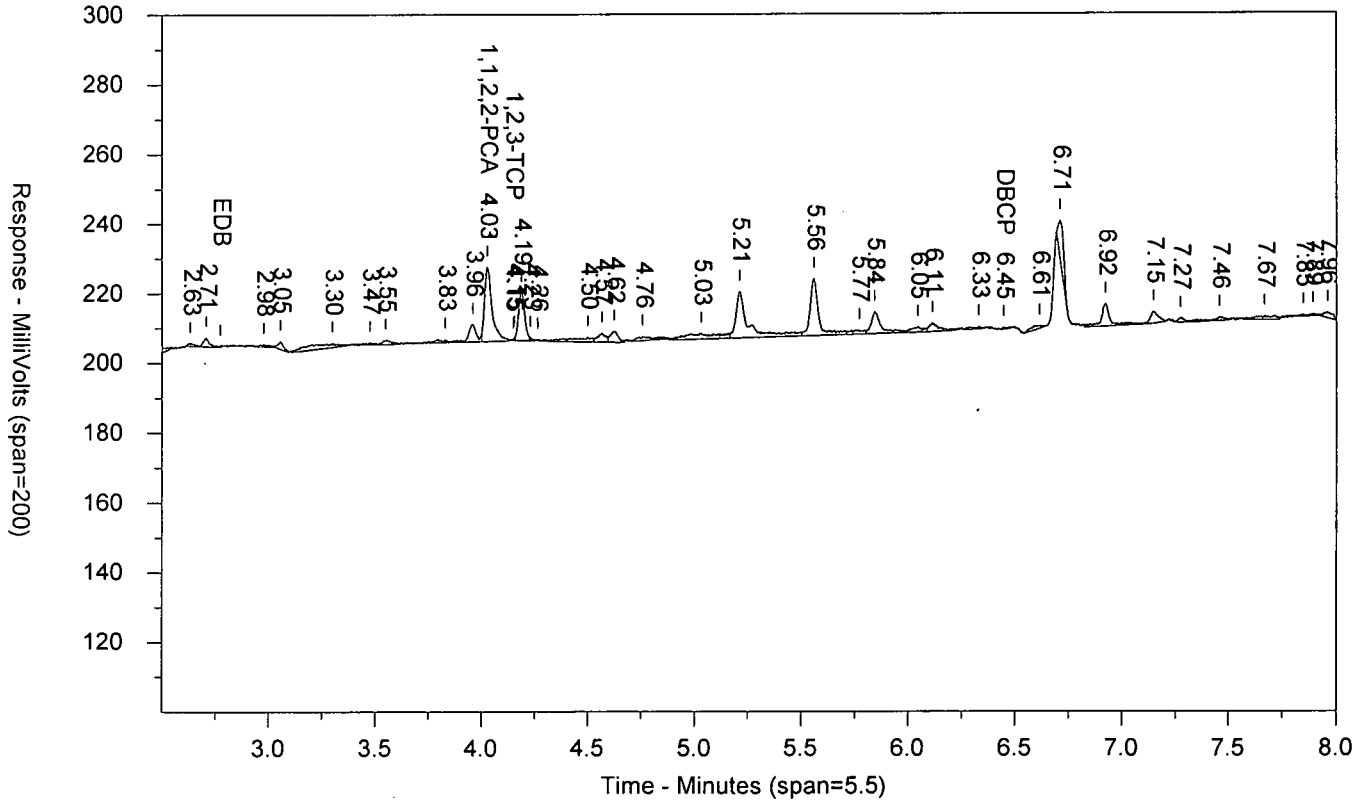


LANCASTER LABORATORIES

Sample Number: 9224680 AAFB2-- T 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 11:19:47 PM Sample Weight: 36.88
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.306 | 15700 | .06 | 1,1,2,2-PCA | 4.027 | 21452 | .06 | 1,1,2,2-PCA |
| 5.394 | 278 | .008 | 1,2,3-TCP | 4.148 | 403 | .01 | 1,2,3-TCP |
| 7.693 | 402 | .001 | DBCP | 6.447 | 704 | .001 | DBCP |

Files:
Area File: 18edbs17271001.030.RAW
Area File: 18edbs17271001B.030.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 11:28:20 PM
File Reported On: 9/29/2017 at 1:52:03 PM

# Standards Data

# EDB/DBCP

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18edbs17271001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 72

| | Samplename | VP | Code | ID | Method | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONDITIONER | 1 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | |
| 2 | CONDITIONER | 2 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | |
| 3 | CONDITIONER | 3 | MISC | AA | EPT-24\ACTIVE\CP18\18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | |
| 4 | EIBKX1724C | 4 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1727099999 | 10398 |
| 5 | EDB_11724FA | 5 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 1 | 1727099999 | 10398 |
| 6 | EDB_21724FA | 6 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 2 | 1727099999 | 10398 |
| 7 | EDB_31724FA | 7 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 3 | 1727099999 | 10398 |
| 8 | EDB_41724FA | 8 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 4 | 1727099999 | 10398 |
| 9 | EDB_51724FA | 9 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 5 | 1727099999 | 10398 |
| 10 | EDB_61724FA | 10 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 6 | 1727099999 | 10398 |
| 11 | MDEDX1724FA | 11 | ICAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | 10398 |
| 12 | DBCMX1724B | 12 | MISC | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | 10398 |
| 13 | EDB_31724FA | 13 | CCAL | AA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | 10398 |
| 14 | EIBKX1724C | 14 | PIBLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 1727099999 | 10398 |
| 15 | BLANKA 9/27/17 | 15 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172690027A | 10398 |
| 16 | LCSA 9/27/17 | 16 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172690027A | 10398 |
| 17 | LCSDA 9/27/17 | 17 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172690027A | 10398 |
| 18 | 9224669 | 18 | T | AA | 18EDBS.MET | 37.07 | 2 | 1 | 0 | 172690027A | 10398 |
| 19 | 9224670 | 19 | T | AA | 18EDBS.MET | 36.6 | 2 | 1 | 0 | 172690027A | 10398 |
| 20 | 9224671 | 20 | T | AA | 18EDBS.MET | 36.36 | 2 | 1 | 0 | 172690027A | 10398 |
| 21 | 9224672 | 21 | T | AA | 18EDBS.MET | 36.73 | 2 | 1 | 0 | 172690027A | 10398 |
| 22 | 9224673 | 22 | T | AA | 18EDBS.MET | 37.07 | 2 | 1 | 0 | 172690027A | 10398 |
| 23 | EDB_51724FA | 23 | CCAL | PI | 18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | 10398 |
| 24 | EIBKX1724C | 24 | PIBLK | HX | 18EDBS.MET | 35 | 2 | 1 | 0 | 1727099999 | 10398 |
| 25 | 9224674 | 25 | T | AA | 18EDBS.MET | 36.73 | 2 | 1 | 0 | 172690027A | 10398 |
| 26 | 9224675MS | 26 | MS | AA | 18EDBS.MET | 36.61 | 2 | 1 | 0 | 172690027A | 10398 |
| 27 | 9224676MSD | 27 | MSD | AA | 18EDBS.MET | 36.95 | 2 | 1 | 0 | 172690027A | 10398 |
| 28 | 9224678 | 28 | T | AA | 18EDBS.MET | 36.57 | 2 | 1 | 0 | 172690027A | 10398 |
| 29 | 9224679 | 29 | T | AA | 18EDBS.MET | 36.92 | 2 | 1 | 0 | 172690027A | 10398 |
| 30 | 9224680 | 30 | T | AA | 18EDBS.MET | 36.88 | 2 | 1 | 0 | 172690027A | 10398 |
| 31 | 9221878 | 31 | T | AA | 18EDBS.MET | 36.68 | 2 | 1 | 0 | 172690027A | 10398 |
| 32 | 9221879 | 32 | T | AA | 18EDBS.MET | 37.19 | 2 | 1 | 0 | 172690027A | 10398 |
| 33 | 9221880 | 33 | T | AA | 18EDBS.MET | 37.1 | 2 | 1 | 0 | 172690027A | 10398 |
| 34 | 9221881 | 34 | T | AA | 18EDBS.MET | 37.08 | 2 | 1 | 0 | 172690027A | 10398 |
| 35 | EDB_41724FA | 35 | CCAL | TN | 18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | 10398 |
| 36 | EIBKX1724C | 36 | PIBLK | HY | 18EDBS.MET | 35 | 2 | 1 | 0 | 1727099999 | 10398 |
| 37 | 9221882 | 37 | T | AA | 18EDBS.MET | 36.94 | 2 | 1 | 0 | 172690027A | 10398 |
| 38 | 9221883 | 38 | T | AA | 18EDBS.MET | 37.12 | 2 | 1 | 0 | 172690027A | 10398 |
| 39 | 9221884 | 39 | T | AA | 18EDBS.MET | 36.91 | 2 | 1 | 0 | 172690027A | 10398 |
| 40 | 9221885 | 40 | T | AA | 18EDBS.MET | 36.76 | 2 | 1 | 0 | 172690027A | 10398 |
| 41 | 9221886 | 41 | T | AA | 18EDBS.MET | 36.79 | 2 | 1 | 0 | 172690027A | 10398 |
| 42 | BLANKA 9/25/17 | 42 | BLK | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172660001A | 10398 |
| 43 | LCSA 9/25/17 | 43 | LCS | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172660001A | 10398 |
| 44 | LCSDA 9/25/17 | 44 | LCSD | AA | 18EDBS.MET | 35 | 2 | 1 | 0 | 172660001A | 10398 |
| 45 | 9215923 | 45 | T | AA | 18EDBS.MET | 36.49 | 2 | 1 | 0 | 172660001A | 10398 |
| 46 | 9215924 | 46 | T | AA | 18EDBS.MET | 36.19 | 2 | 1 | 0 | 172660001A | 10398 |
| 47 | EDB_31724FA | 47 | CCAL | YA | 18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | 10398 |
| 48 | EIBKX1724C | 48 | PIBLK | HZ | 18EDBS.MET | 35 | 2 | 1 | 0 | 1727099999 | 10398 |
| 49 | 9215926 | 49 | T | AA | 18EDBS.MET | 36.84 | 2 | 1 | 0 | 172660001A | 10398 |
| 50 | 9215927 | 50 | T | AA | 18EDBS.MET | 36.21 | 2 | 1 | 0 | 172660001A | 10398 |

# Eurofins Lancaster Laboratories

## CHROM PERFECT SEQUENCE FILE

Sequence File: \\Uslan-chromperfect\chromperfect-data\Dept-24\Active\CP18\18edbs17271001.seq

Chromatography Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Method Directory: \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18

Number of Entries: 72

| Samplename | VP | Code | ID | Method | | Samp Amt | DF | Int Std | C | Batch Number | Analysis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 9215928 | 51 | T | AA | | 18EDBS.MET | 36.23 | 2 | 1 | 0 | 172660001A | 10398 |
| 52 9215929 | 52 | T | AA | | 18EDBS.MET | 36.41 | 2 | 1 | 0 | 172660001A | 10398 |
| 53 9215930 | 53 | T | AA | | 18EDBS.MET | 36.33 | 2 | 1 | 0 | 172660001A | 10398 |
| 54 9215931 | 54 | T | AA | | 18EDBS.MET | 36.22 | 2 | 1 | 0 | 172660001A | 10398 |
| 55 9215932 | 55 | T | AA | | 18EDBS.MET | 36.23 | 2 | 1 | 0 | 172660001A | 10398 |
| 56 9215933 | 56 | T | AA | | 18EDBS.MET | 36.58 | 2 | 1 | 0 | 172660001A | 10398 |
| 57 9215934 | 57 | T | AA | | 18EDBS.MET | 36.59 | 2 | 1 | 0 | 172660001A | 10398 |
| 58 9215935MS | 58 | MS | AA | | 18EDBS.MET | 36.85 | 2 | 1 | 0 | 172660001A | 10398 |
| 59 EDB_51724FA | 59 | CCAL | PJ | | 18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | 10398 |
| 60 EIBKX1724C | 60 | PIBLK | IA | | 18EDBS.MET | 35 | 2 | 1 | 0 | 1727099999 | 10398 |
| 61 9215936MSD | 61 | MSD | AA | | 18EDBS.MET | 35.98 | 2 | 1 | 0 | 172660001A | 10398 |
| 62 9215937 | 62 | T | AA | | 18EDBS.MET | 36.42 | 2 | 1 | 0 | 172660001A | 10398 |
| 63 9215938 | 63 | T | AA | | 18EDBS.MET | 35.83 | 2 | 1 | 0 | 172660001A | 10398 |
| 64 9215939 | 64 | T | AA | | 18EDBS.MET | 36.61 | 2 | 1 | 0 | 172660001A | 10398 |
| 65 9216139 | 65 | T | AA | | 18EDBS.MET | 36.28 | 2 | 1 | 0 | 172660001A | 10398 |
| 66 9216140 | 66 | T | AA | | 18EDBS.MET | 36.77 | 2 | 1 | 0 | 172660001A | 10398 |
| 67 9216141 | 67 | T | AA | | 18EDBS.MET | 36.7 | 2 | 1 | 0 | 172660001A | 10398 |
| 68 9216142 | 68 | T | AA | | 18EDBS.MET | 36.06 | 2 | 1 | 0 | 172660001A | 10398 |
| 69 9216143 | 69 | T | AA | | 18EDBS.MET | 36.35 | 2 | 1 | 0 | 172660001A | 10398 |
| 70 9216144 | 70 | T | AA | | 18EDBS.MET | 36.54 | 2 | 1 | 0 | 172660001A | 10398 |
| 71 EDB_41724FA | 71 | CCAL | TO | | 18EDBS.MET | 1 | 1 | 1 | 0 | 1727099999 | 10398 |
| 72 EIBKX1724C | 72 | PIBLK | IB | | 18EDBS.MET | 35 | 2 | 1 | 0 | 1727099999 | 10398 |

2855 10ct17

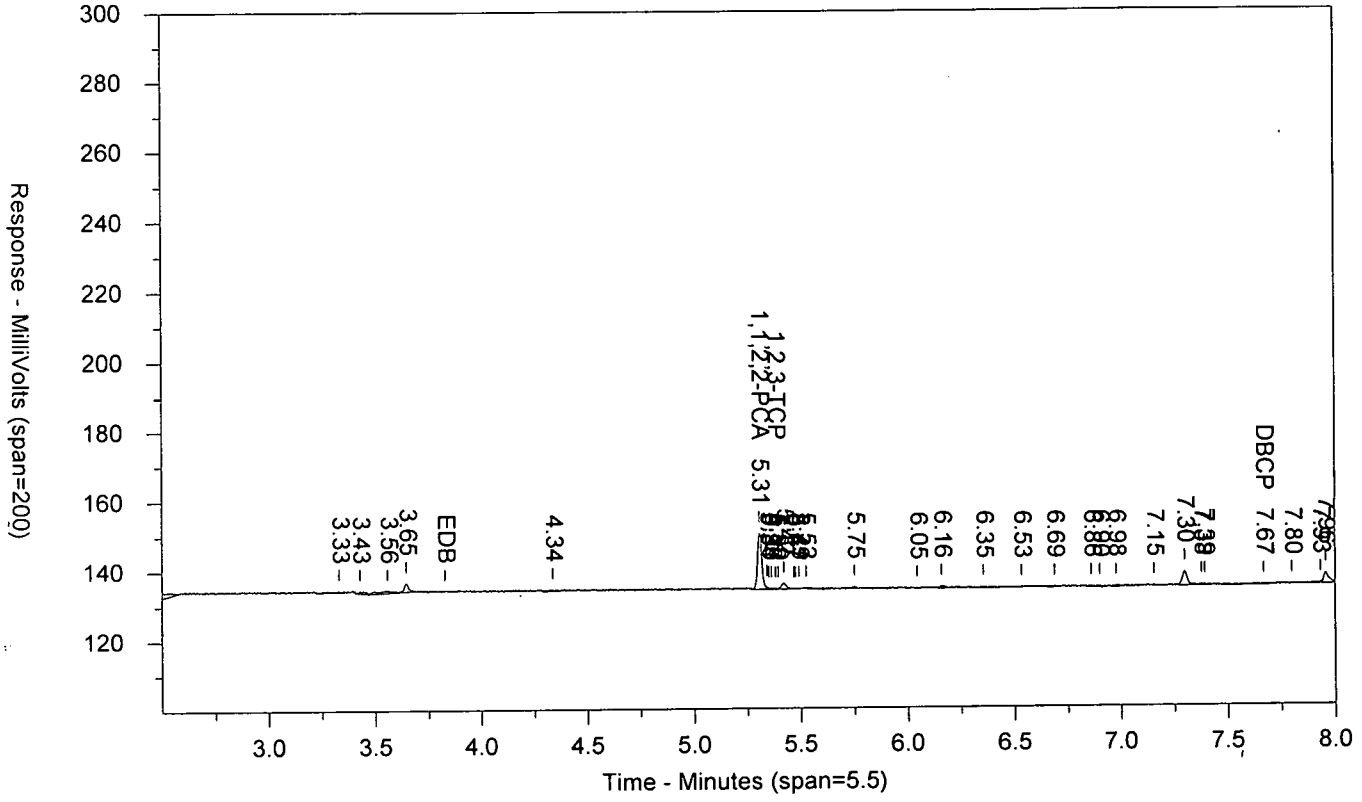
Heather Miller
Heather M. Miller
Chemist

Set-up by: _____ Date: SEP 28 2017

9/28/2017

EIBKX1724C AAPIBLKAA PIBLK1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.004.RAW

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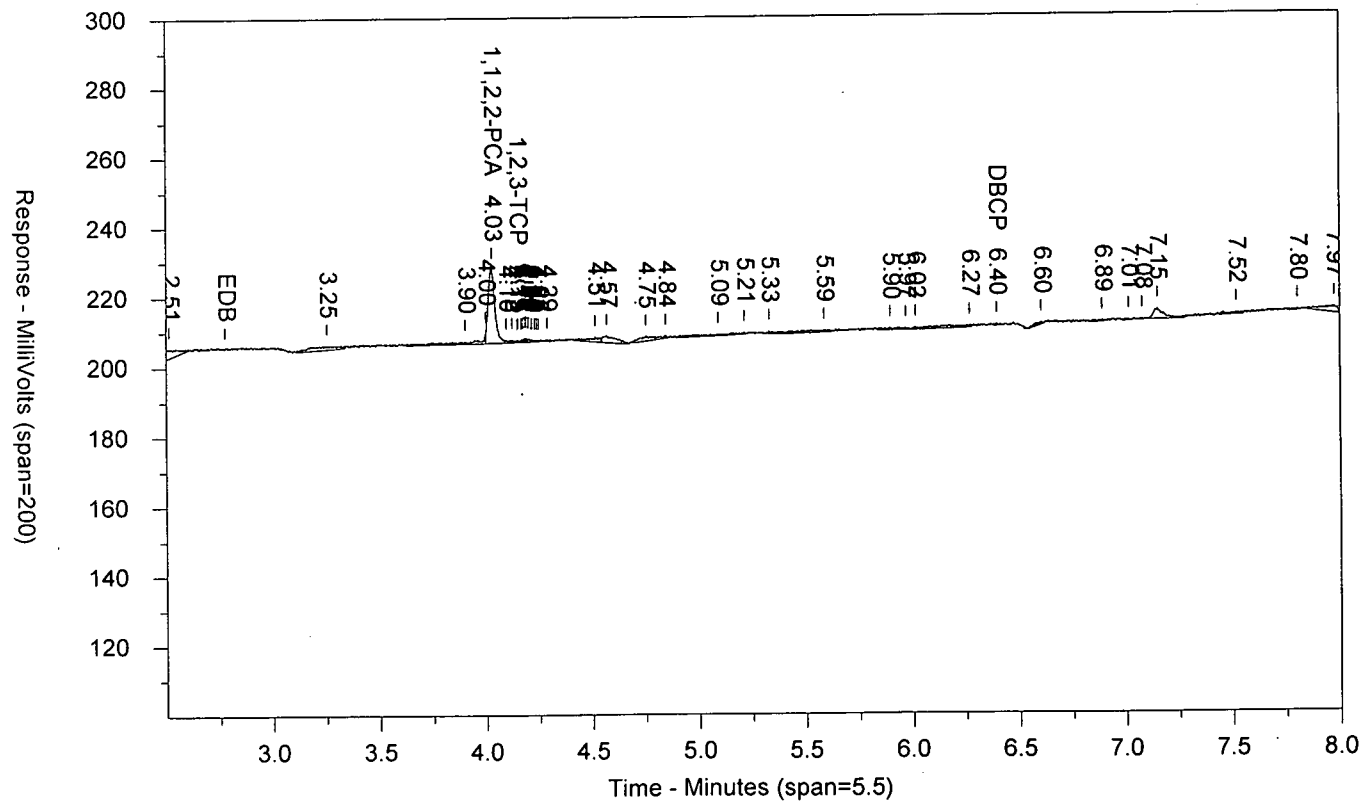

LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1727099999 10398 SW-846 8011
Injected On: 9/28/2017 4:26:32 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.306 | 16085 | .061 | 1,1,2,2-PCA | 4.028 | 21283 | .059 | 1,1,2,2-PCA |
| 5.382 | 388 | .011 | 1,2,3-TCP | 4.147 | 454 | .011 | 1,2,3-TCP |
| 7.668 | 424 | .001 | DBCP | 6.395 | 750 | .001 | DBCP |

Files:
Area File: 18edbs17271001.004.RAW
Area File: 18edbs17271001B.004.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 4:35:05 PM
File Reported On: 9/29/2017 at 1:26:59 PM

EDB_11724FA AAEDB_1AA ICAL 1727099999 10398 SW-846 8011

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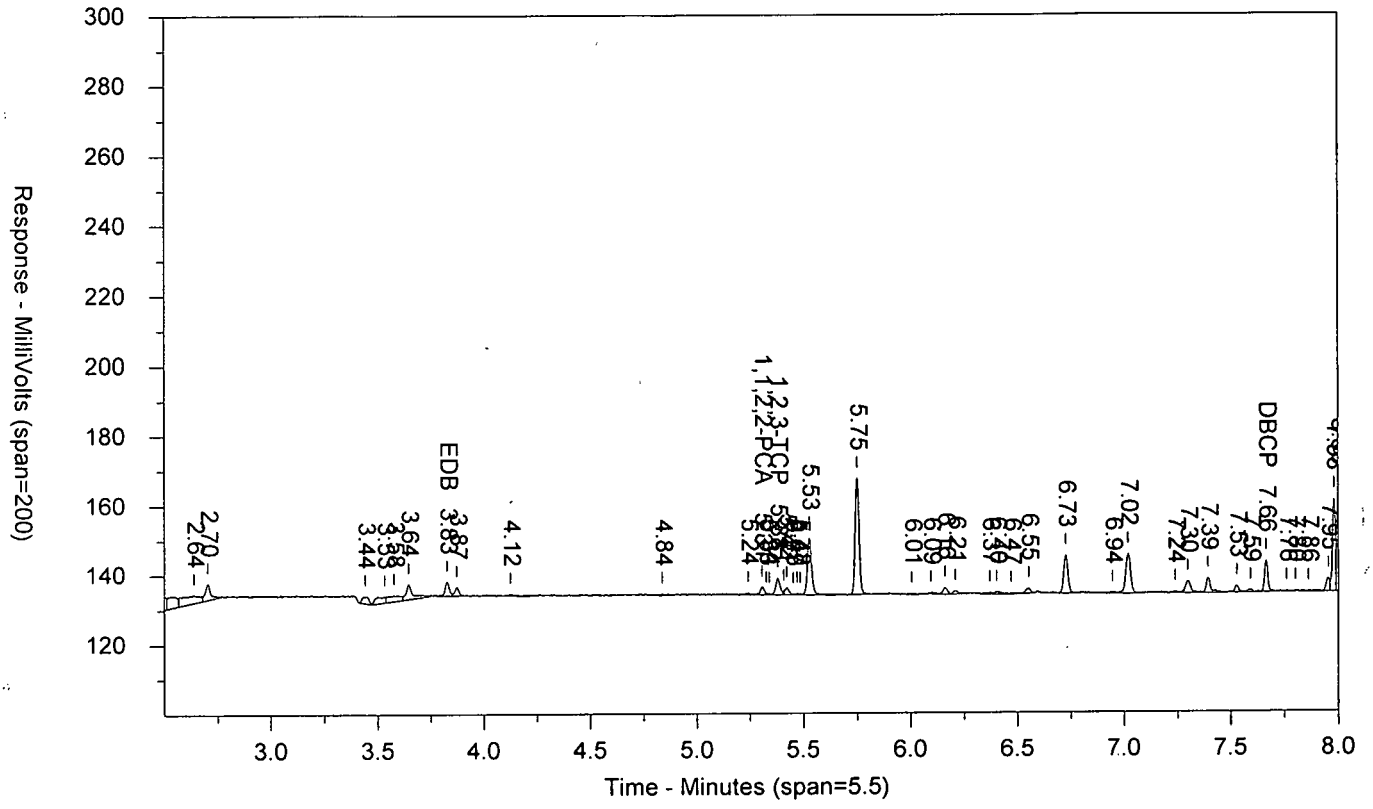


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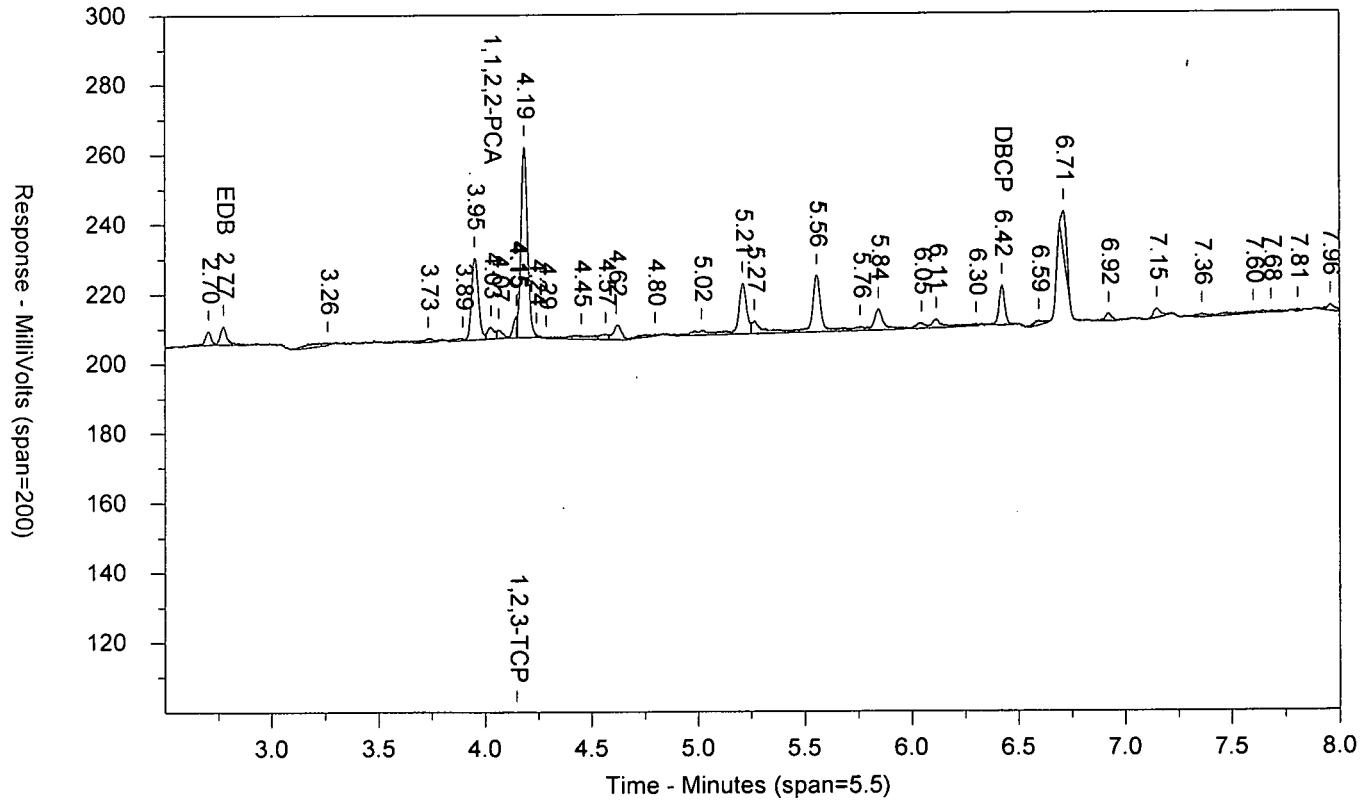

LANCASTER LABORATORIES

Sample Number: EDB_11724FA AAEDB_1AA ICAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 4:42:30 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.825 | 4112 | .307 | EDB | 2.775 | 5335 | .302 | EDB |
| 5.305 | 2377 | .158 | 1,1,2,2-PCA | 4.029 | 3518 | .172 | 1,1,2,2-PCA |
| 5.379 | 4881 | 2.507 | 1,2,3-TCP | 4.146 | 6135 | 2.531 | 1,2,3-TCP |
| 7.664 | 9140 | .327 | DBCP | 6.423 | 11436 | .375 | DBCP |

Files:
Area File: 18edbs17271001.005.RAW
Area File: 18edbs17271001B.005.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 4:51:03 PM
File Reported On: 9/29/2017 at 1:27:15 PM

EDB_21724FA AAEDB_2AA ICAL 1727099999 10398 SW-846 8011

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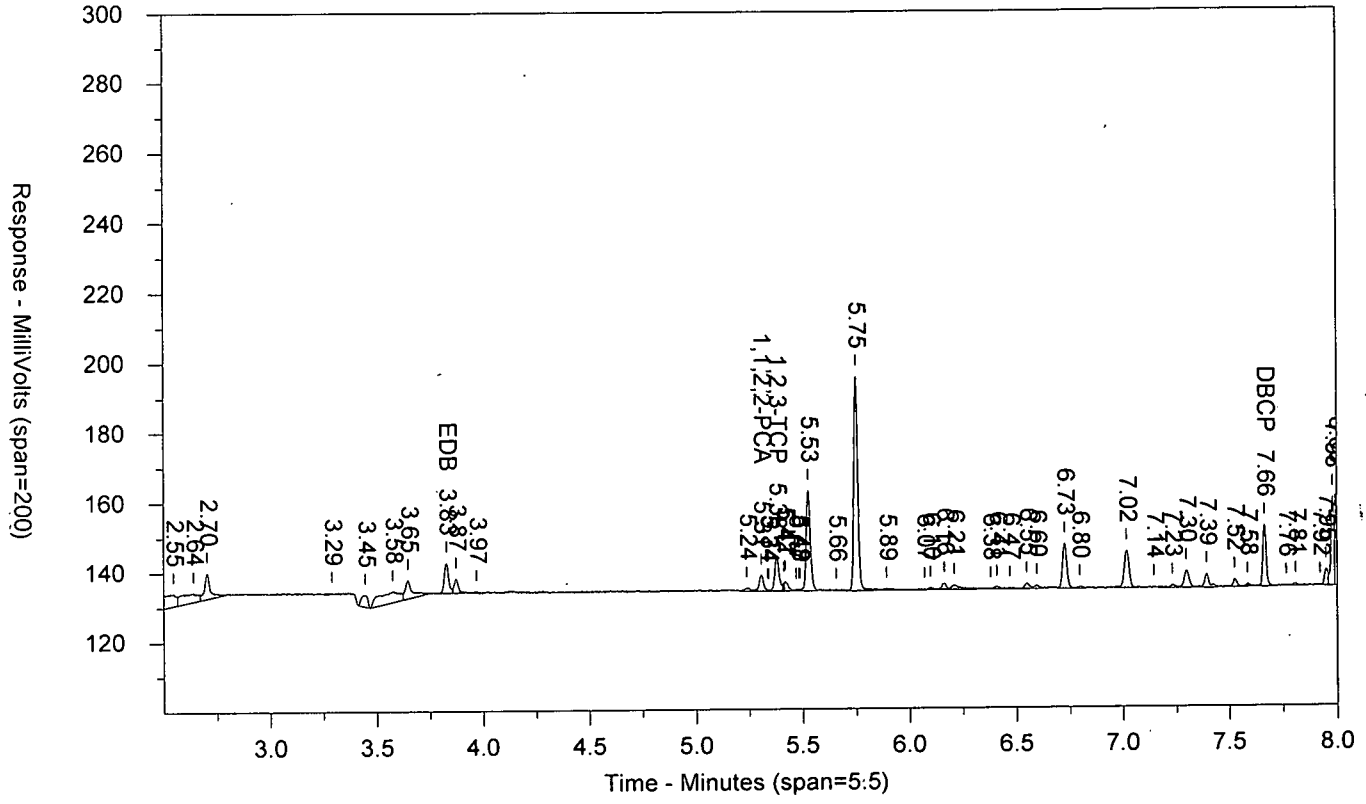


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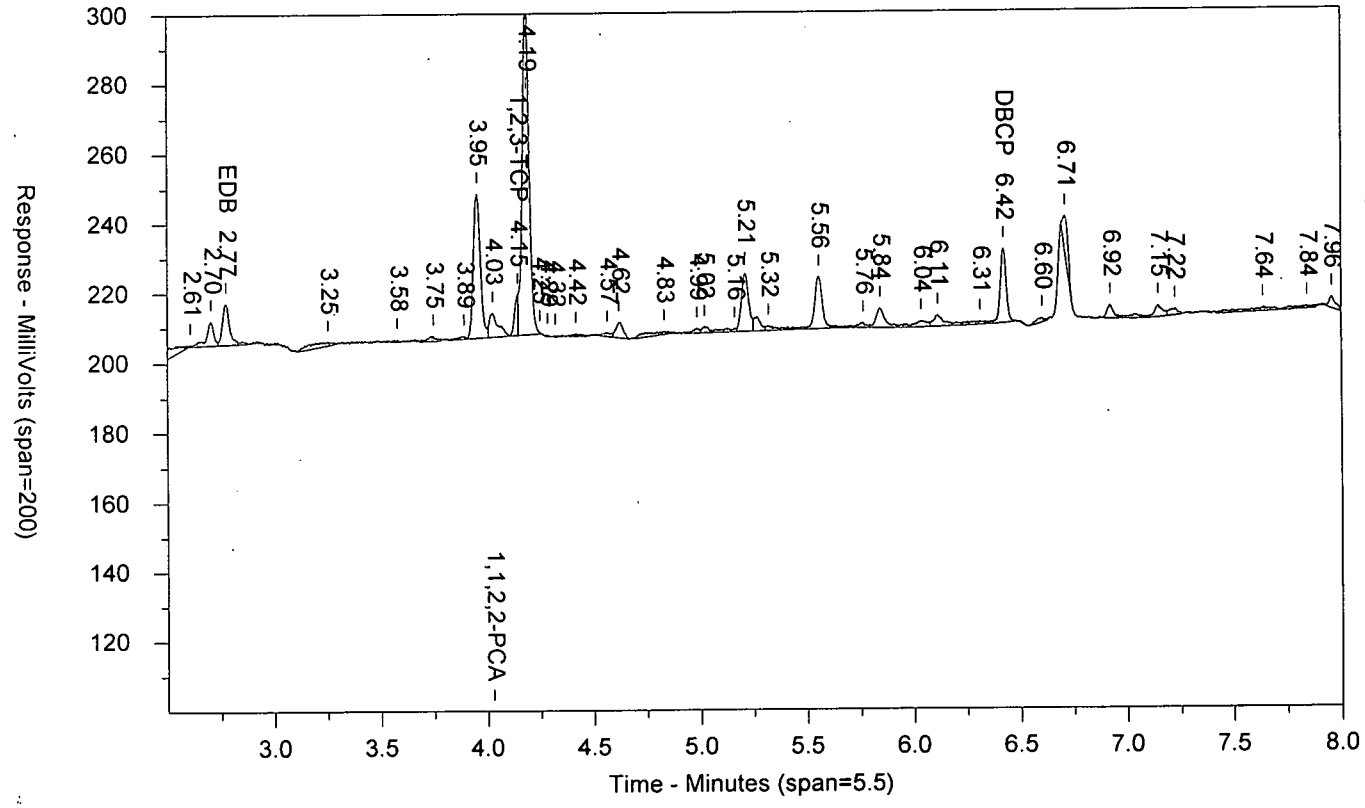


LANCASTER LABORATORIES

Sample Number: EDB_21724FA AAEDB_2AA ICAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 4:58:23 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

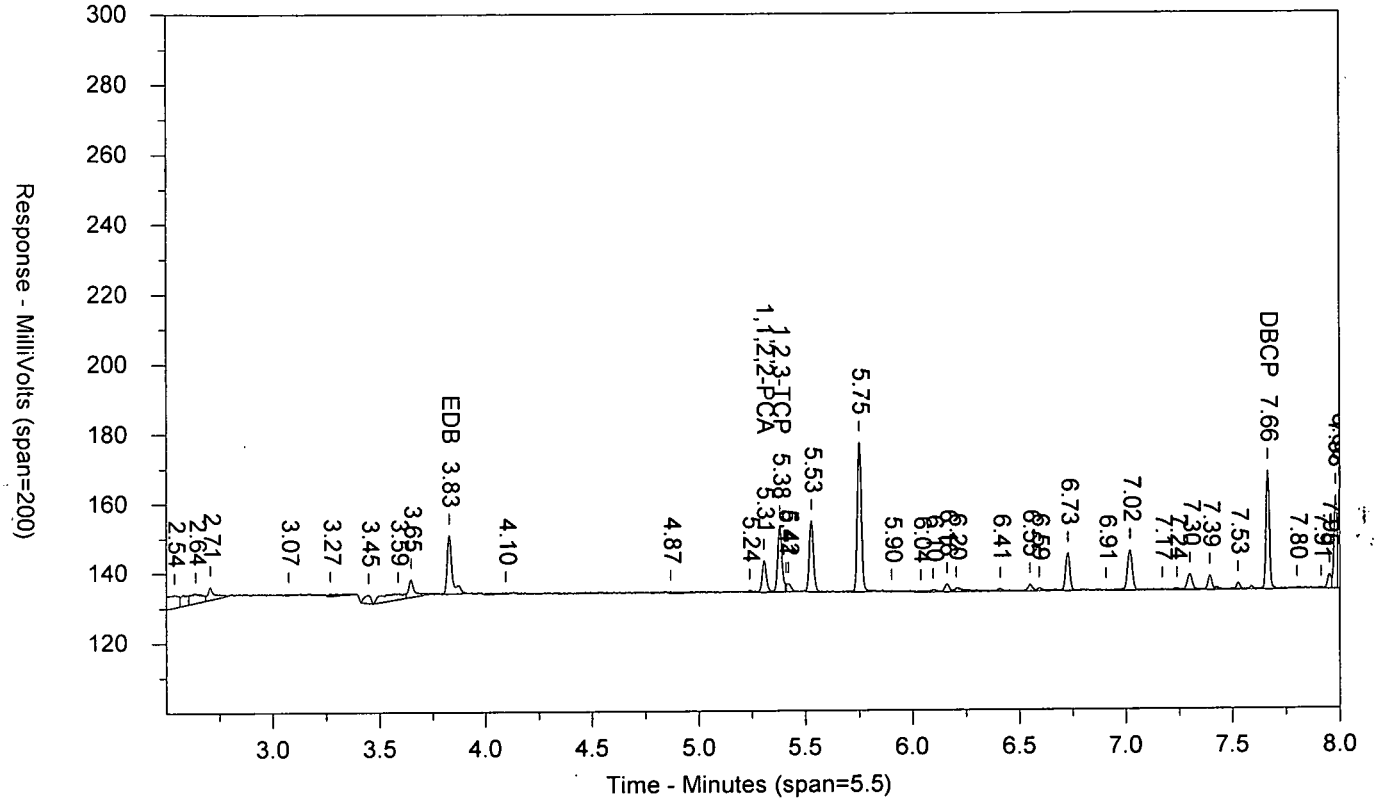
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.827 | 8715 | .671 | EDB | 2.774 | 11830 | .687 | EDB |
| 5.306 | 4582 | .315 | 1,1,2,2-PCA | 4.027 | 6907 | .35 | 1,1,2,2-PCA |
| 5.378 | 9761 | 5.137 | 1,2,3-TCP | 4.146 | 11711 | 4.915 | 1,2,3-TCP |
| 7.663 | 17678 | .647 | DBCP | 6.423 | 21449 | .701 | DBCP |

Files:
Area File: 18edbs17271001.006.RAW
Area File: 18edbs17271001B.006.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 5:06:56 PM
File Reported On: 9/29/2017 at 1:27:29 PM

EDB_31724FA AAEDB_3AA ICAL 1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.007.RAW

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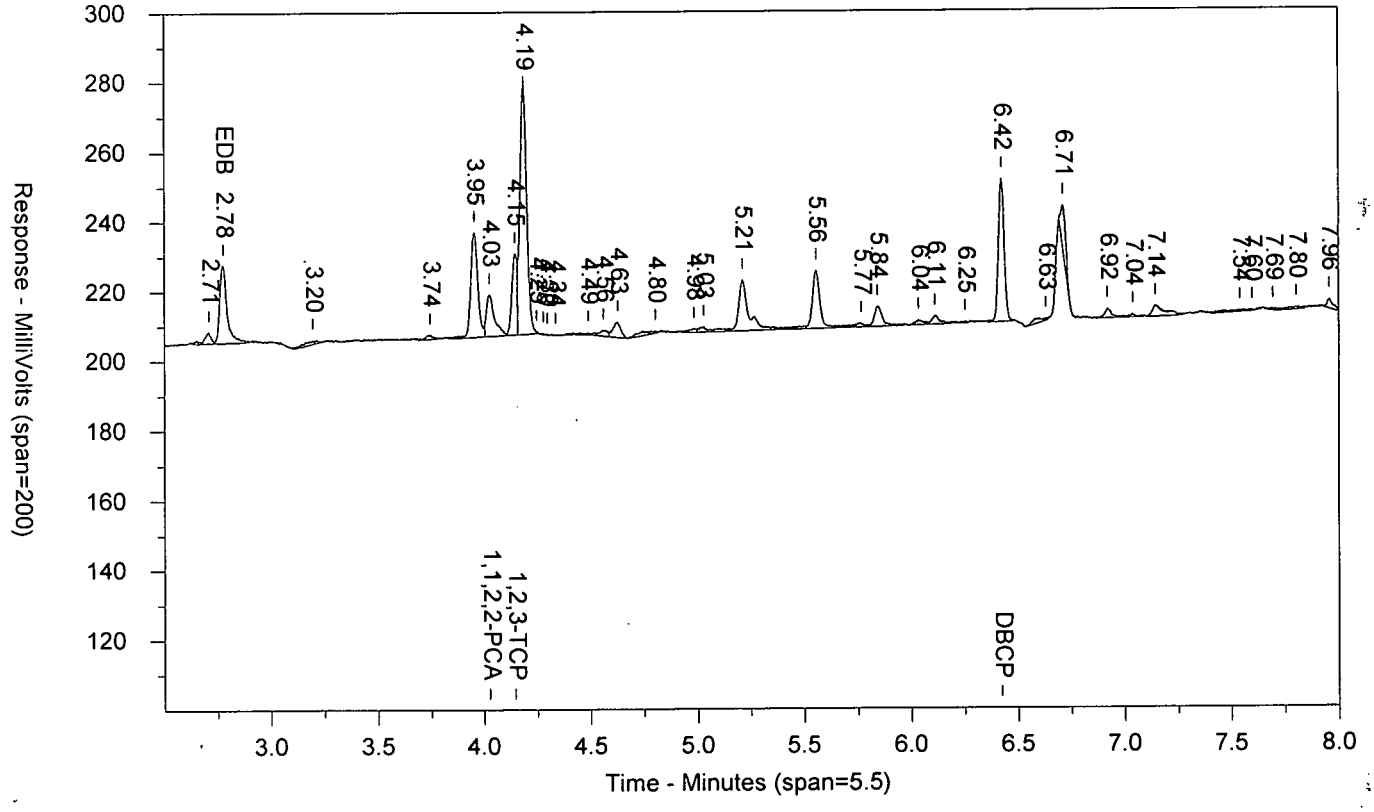

LANCASTER LABORATORIES

Sample Number: EDB_31724FA AAEDB_3AA ICAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 5:14:21 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.827 | 16980 | 1.293 | EDB | 2.776 | 22439 | 1.286 | EDB |
| 5.306 | 9160 | .626 | 1,1,2,2-PCA | 4.025 | 12084 | .599 | 1,1,2,2-PCA |
| 5.379 | 18755 | 9.762 | 1,2,3-TCP | 4.146 | 23449 | 9.82 | 1,2,3-TCP |
| 7.663 | 34368 | 1.246 | DBCP | 6.422 | 41293 | 1.323 | DBCP |

Files:
Area File: 18edbs17271001.007.RAW
Area File: 18edbs17271001B.007.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 5:22:51 PM
File Reported On: 9/29/2017 at 1:27:46 PM

EDB_41724FA AAEDB_4AA ICAL 1727099999 10398 SW-846 8011

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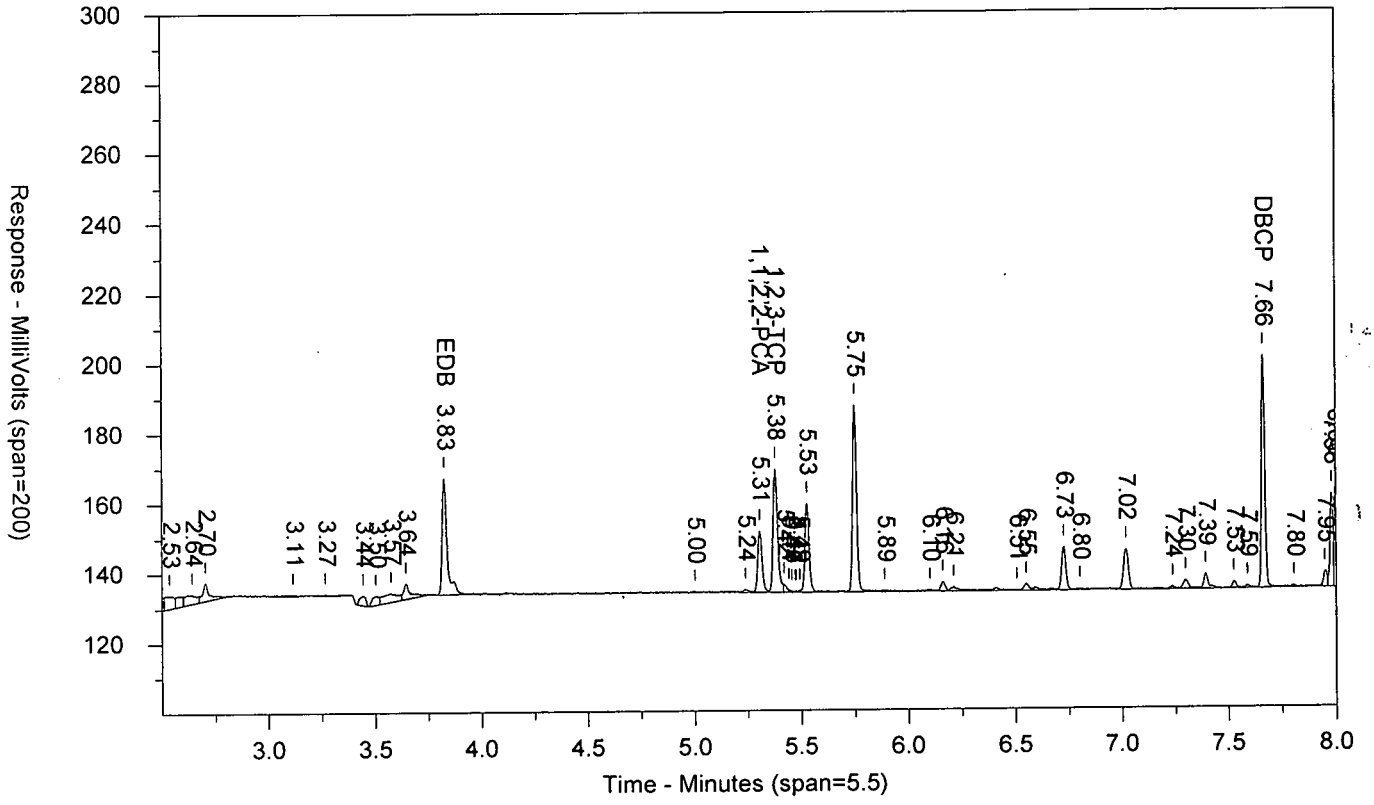


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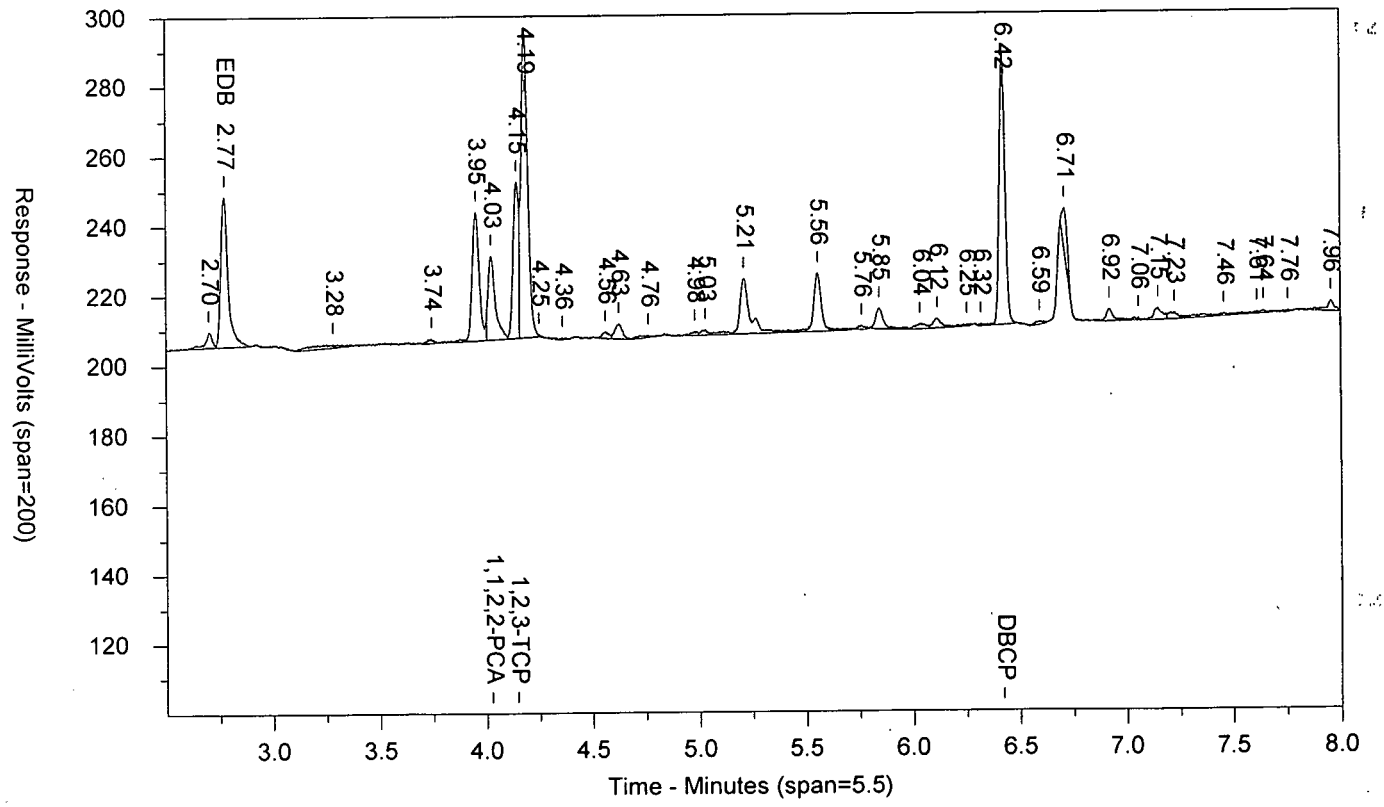


LANCASTER LABORATORIES

Sample Number: EDB_41724FA AAEDB_4AA ICAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 5:30:07 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

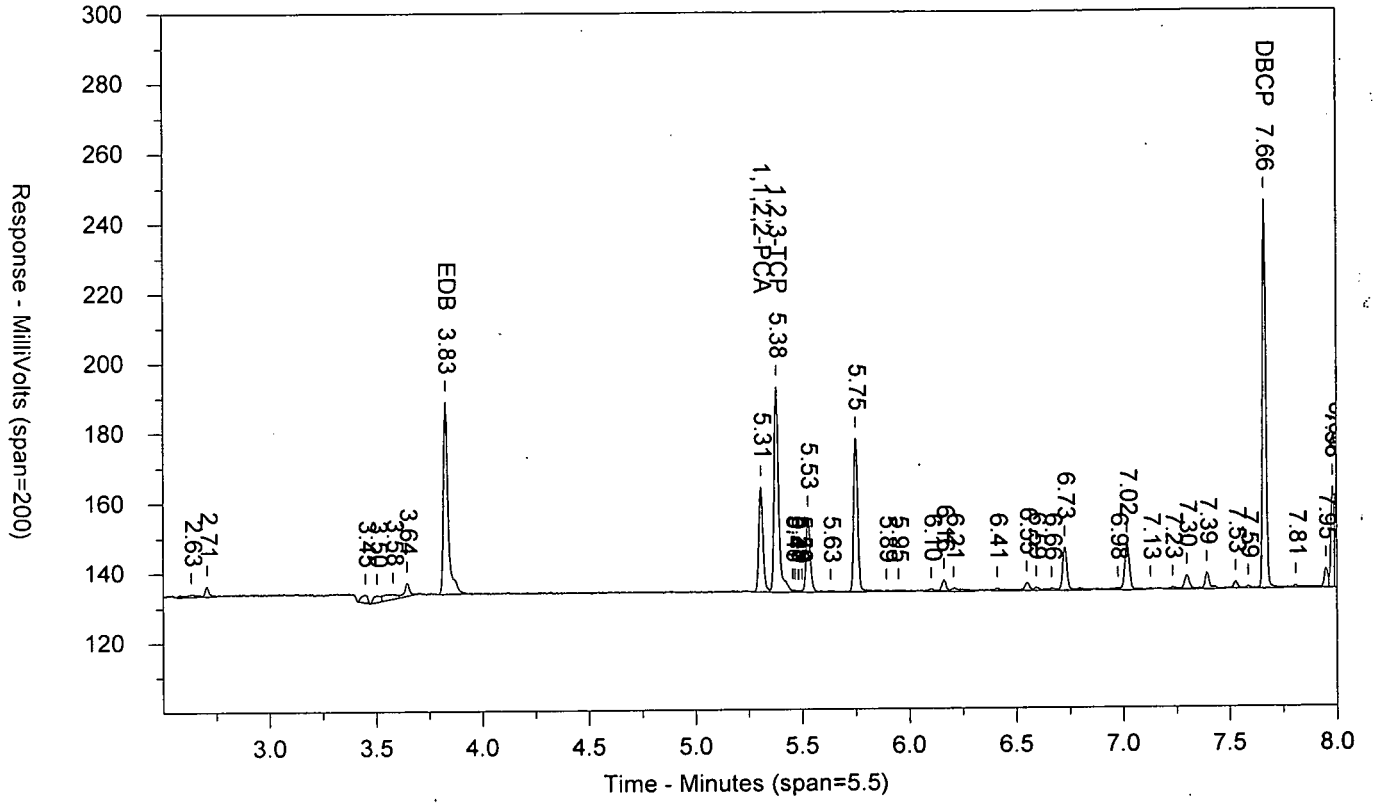
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.826 | 33400 | 2.555 | EDB | 2.774 | 43173 | 2.495 | EDB |
| 5.306 | 17714 | 1.216 | 1,1,2,2-PCA | 4.026 | 24066 | 1.202 | 1,1,2,2-PCA |
| 5.379 | 35463 | 18.501 | 1,2,3-TCP | 4.146 | 44986 | 18.944 | 1,2,3-TCP |
| 7.663 | 66737 | 2.416 | DBCP | 6.422 | 77938 | 2.477 | DBCP |

Files:
Area File: 18edbs17271001.008.RAW
Area File: 18edbs17271001B.008.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 5:38:39 PM
File Reported On: 9/29/2017 at 1:28:04 PM

EDB_51724FA AAEDB_5AA ICAL 1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.009.RAW

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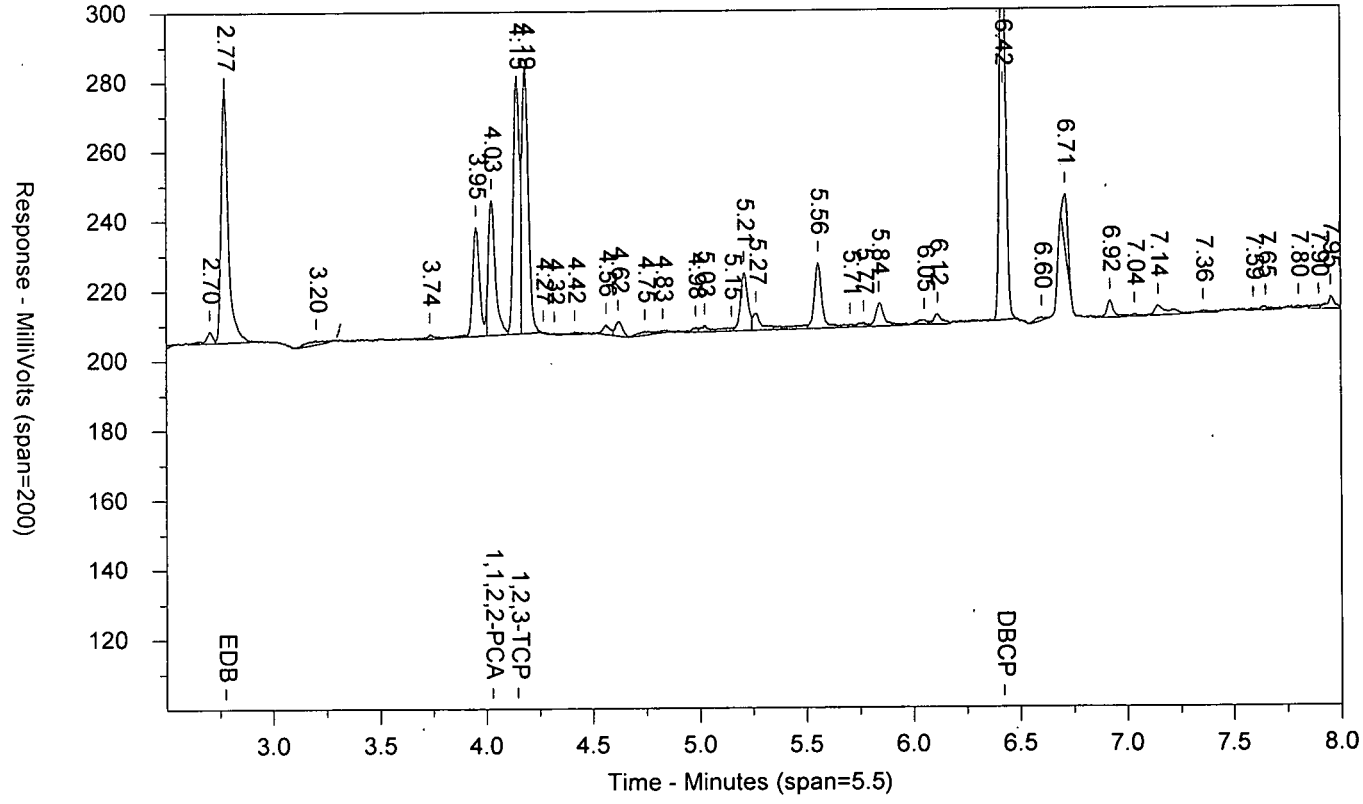

LANCASTER LABORATORIES

Sample Number: EDB_51724FA AAEDB_5AA ICAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 5:46:04 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.827 | 55057 | 4.293 | EDB | 2.774 | 72966 | 4.321 | EDB |
| 5.306 | 30110 | 2.118 | 1,1,2,2-PCA | 4.027 | 38763 | 1.975 | 1,1,2,2-PCA |
| 5.379 | 58869 | 31.377 | 1,2,3-TCP | 4.147 | 73380 | 31.702 | 1,2,3-TCP |
| 7.664 | 111709 | 4.137 | DBCP | 6.423 | 122571 | 3.959 | DBCP |

Files:
Area File: 18edbs17271001.009.RAW
Area File: 18edbs17271001B.009.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 5:54:37 PM
File Reported On: 9/29/2017 at 1:28:22 PM

EDB_61724FA AAEDB_6AA ICAL 1727099999 10398 SW-846 8011

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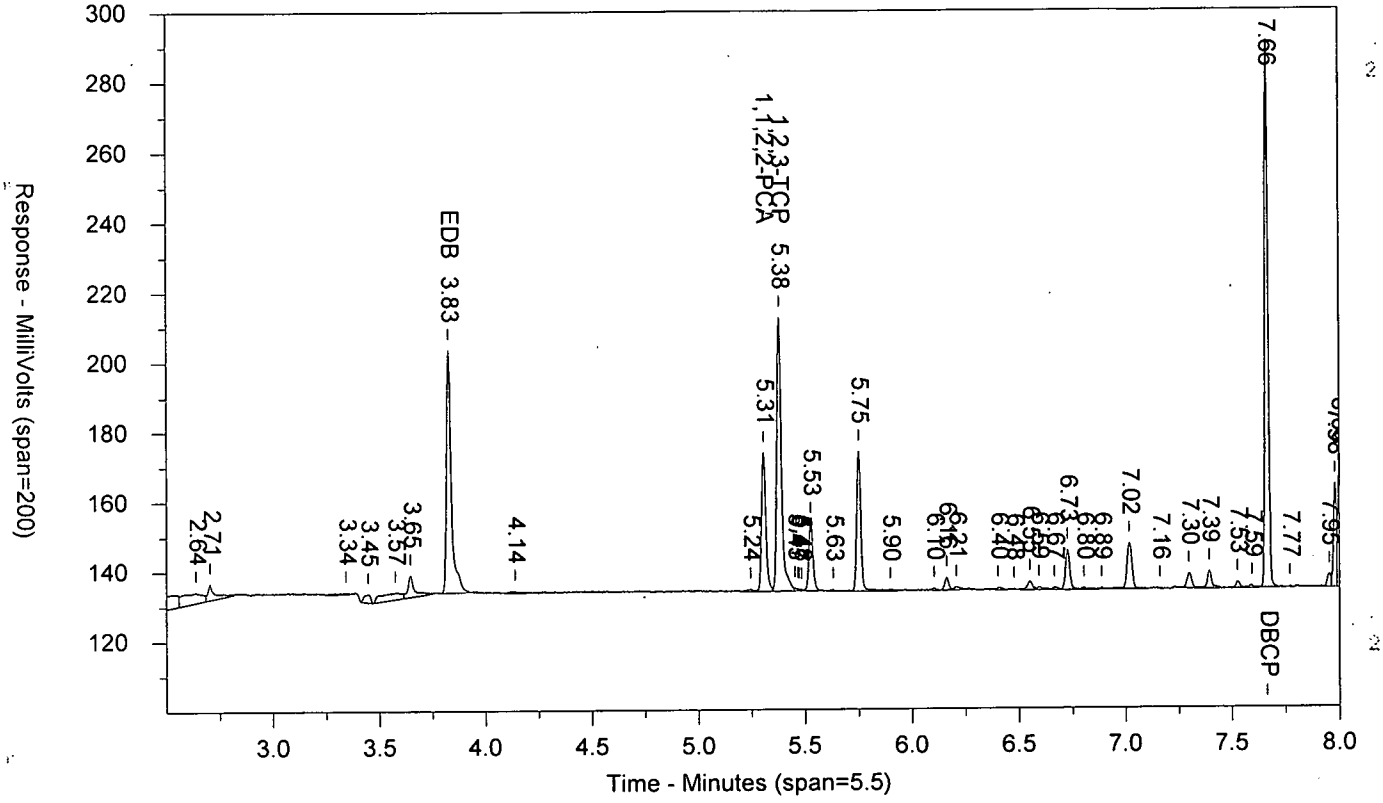


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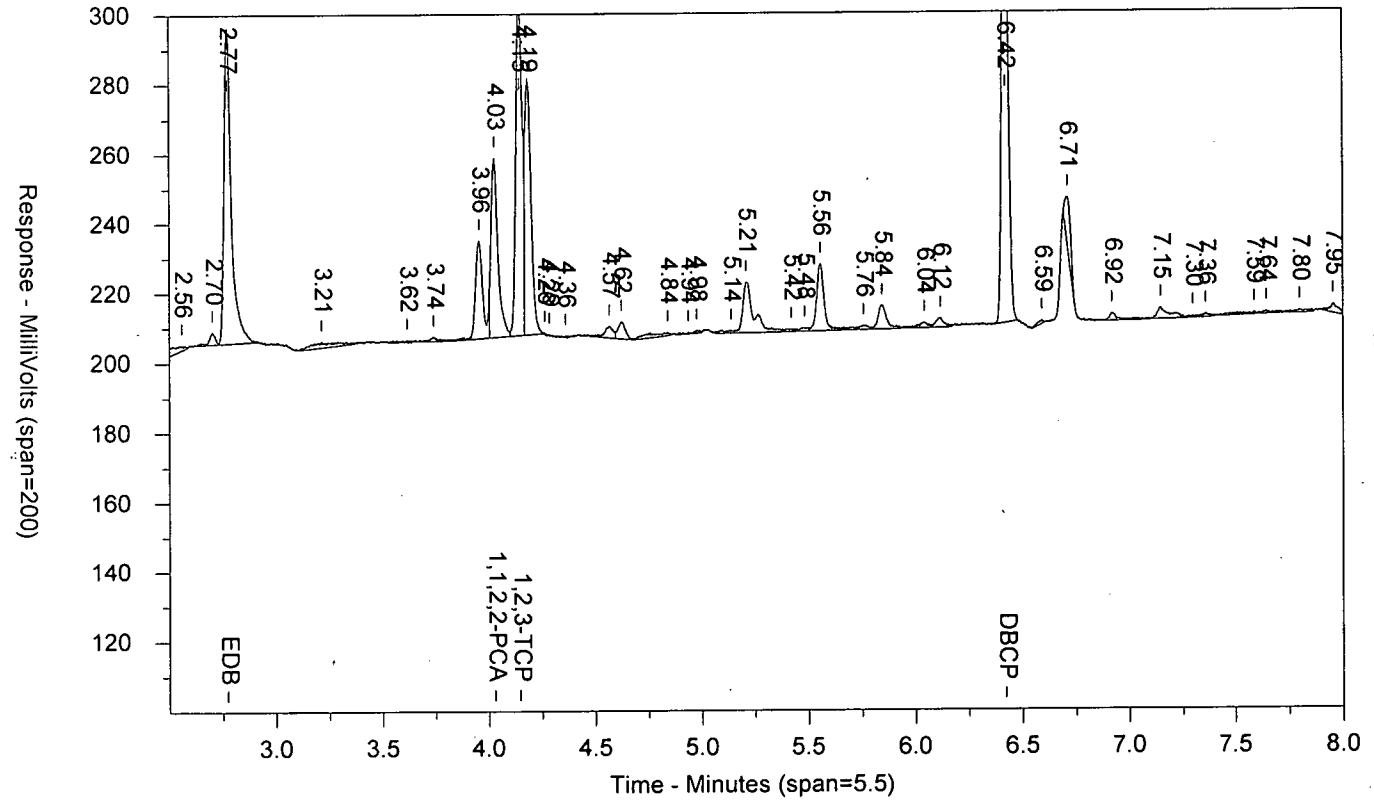


LANCASTER LABORATORIES

Sample Number: EDB_61724FA AAEDB_6AA ICAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 6:01:57 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

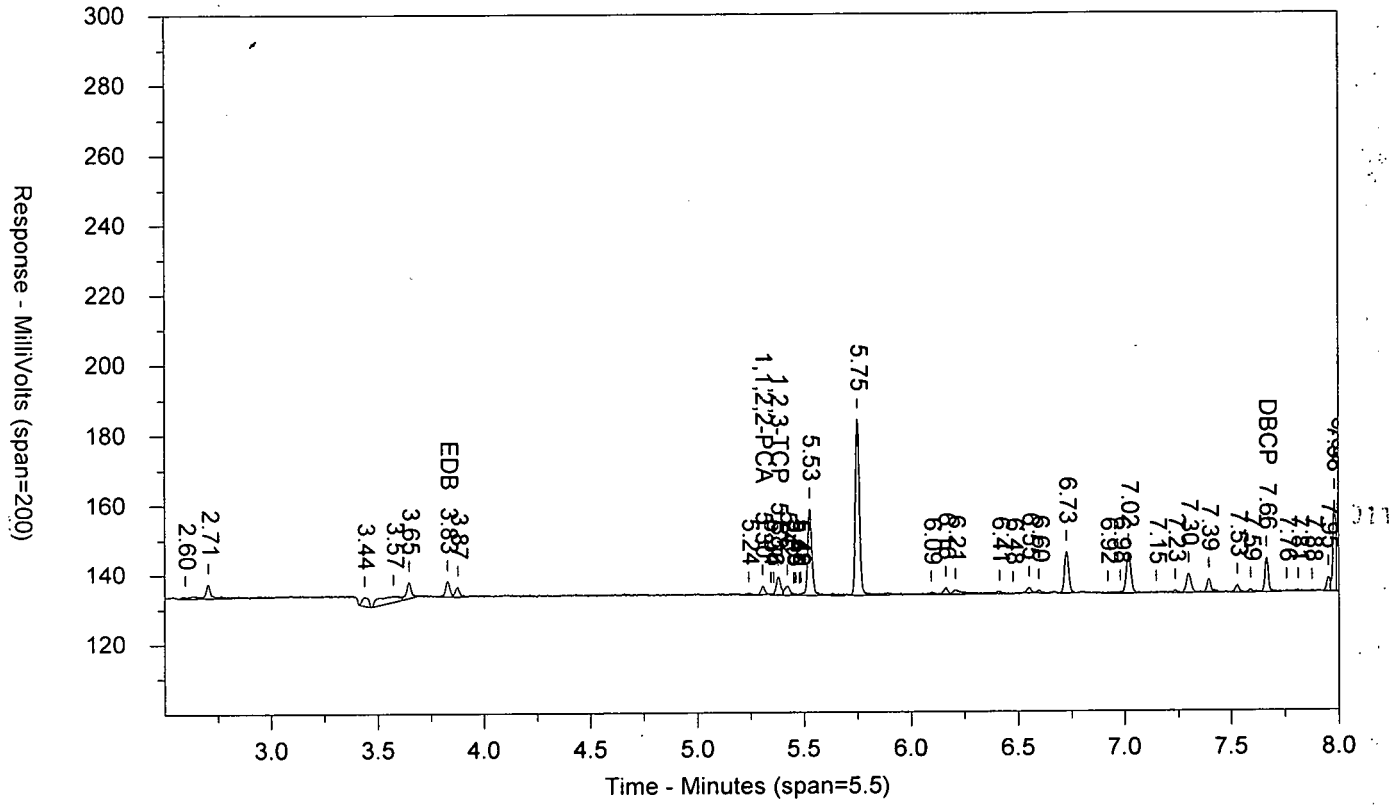
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.826 | 69658 | 5.43 | EDB | 2.773 | 90721 | 5.367 | EDB |
| 5.306 | 39853 | 2.807 | 1,1,2,2-PCA | 4.028 | 51828 | 2.656 | 1,1,2,2-PCA |
| 5.379 | 78592 | 42.119 | 1,2,3-TCP | 4.147 | 94727 | 41.028 | 1,2,3-TCP |
| 7.664 | 157451 | 5.902 | DBCP | 6.423 | 164303 | 5.304 | DBCP |

Files:
Area File: 18edbs17271001.010.RAW
Area File: 18edbs17271001B.010.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 6:10:31 PM
File Reported On: 9/29/2017 at 1:28:42 PM

MDEDX1724FA AAMDEDXAA ICAL 1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.011.RAW

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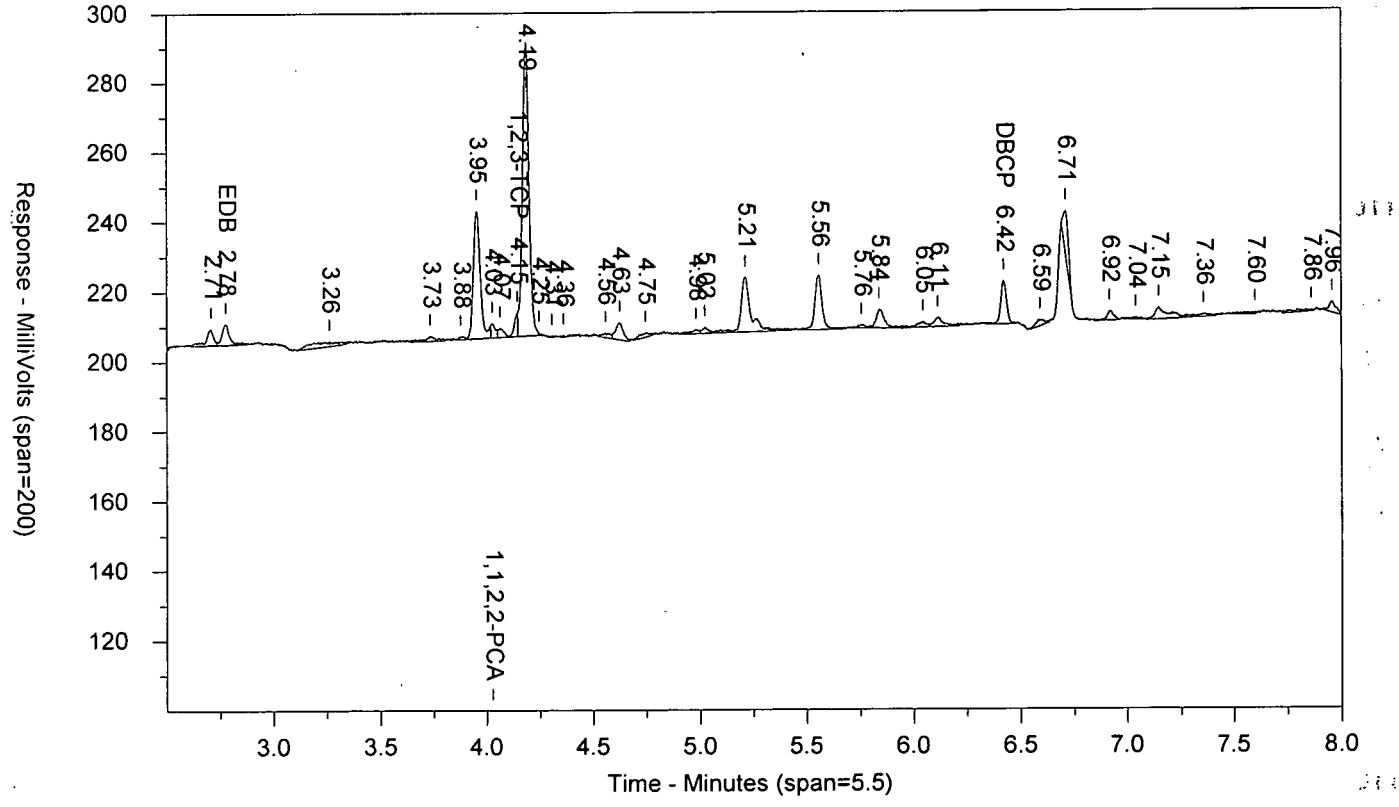


LANCASTER LABORATORIES

Sample Number: MDEDX1724FA AAMDEDXAA ICAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 6:17:54 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

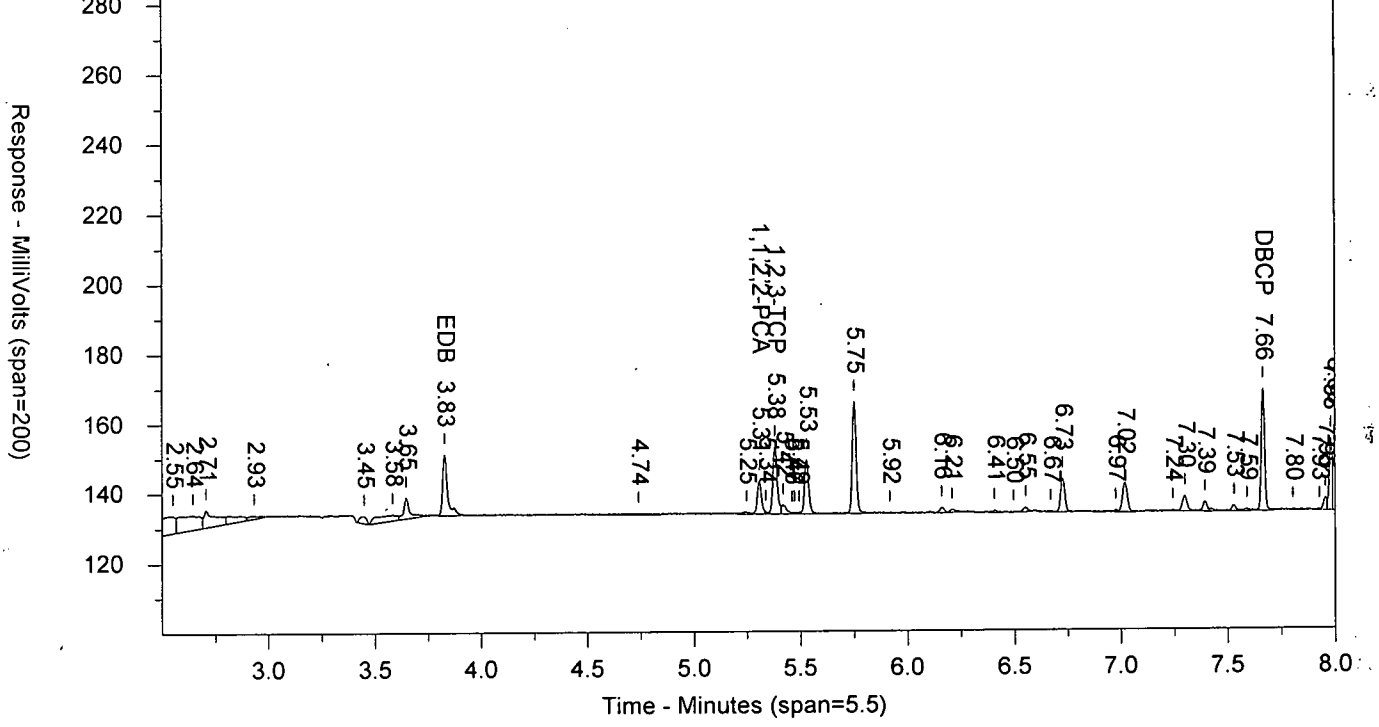
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.828 | 4508 | .355 | EDB | 2.776 | 5923 | .354 | EDB |
| 5.305 | 2490 | .176 | 1,1,2,2-PCA | 4.027 | 4165 | .214 | 1,1,2,2-PCA |
| 5.379 | 5349 | 2.885 | 1,2,3-TCP | 4.147 | 6879 | 2.997 | 1,2,3-TCP |
| 7.664 | 9883 | .37 | DBCP | 6.421 | 12410 | .399 | DBCP |

Files:
Area File: 18edbs17271001.011.RAW
Area File: 18edbs17271001B.011.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 6:26:25 PM
File Reported On: 9/29/2017 at 1:45:50 PM

EDB_31724FA AAEDB_3AA CCAL 1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.013.RAW

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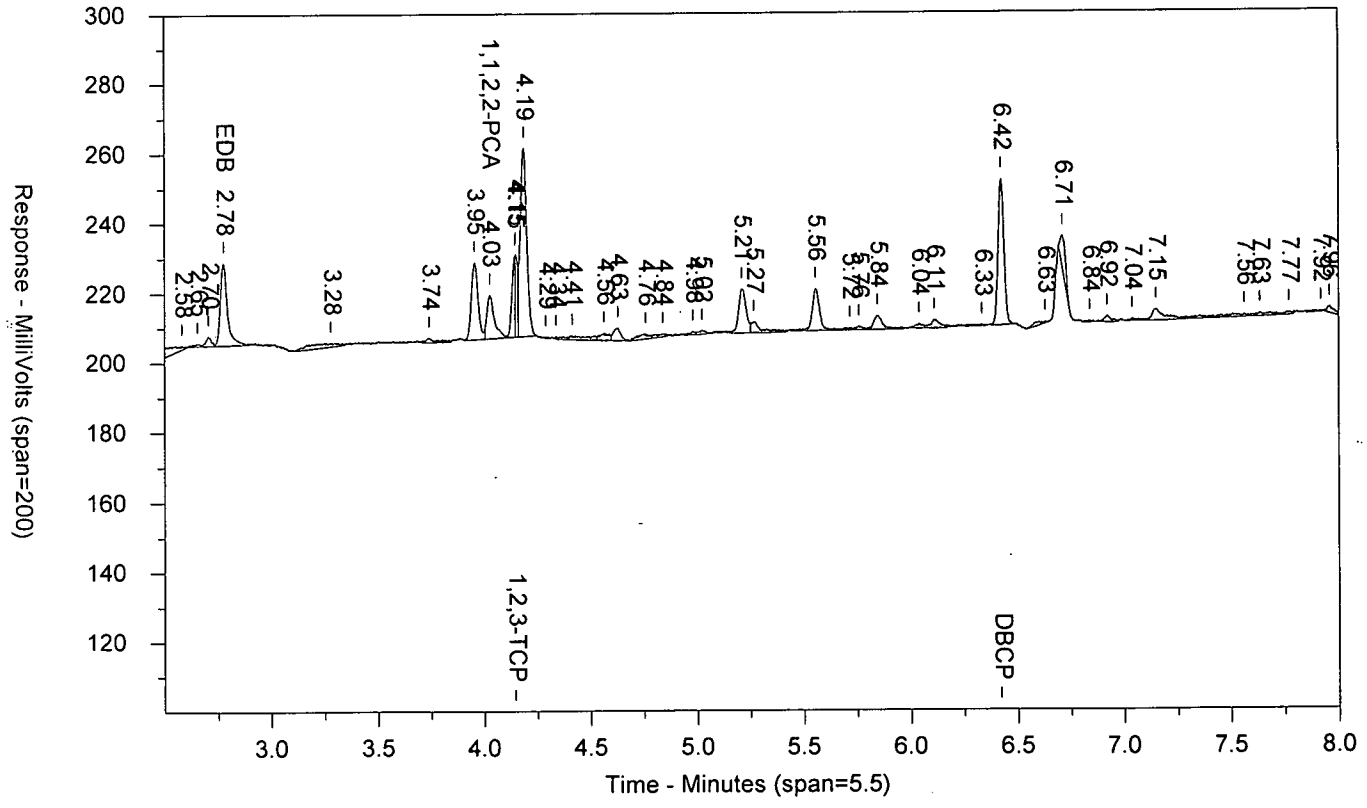


LANCASTER LABORATORIES

Sample Number: EDB_31724FA AAEDB_3AA CCAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 6:49:39 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

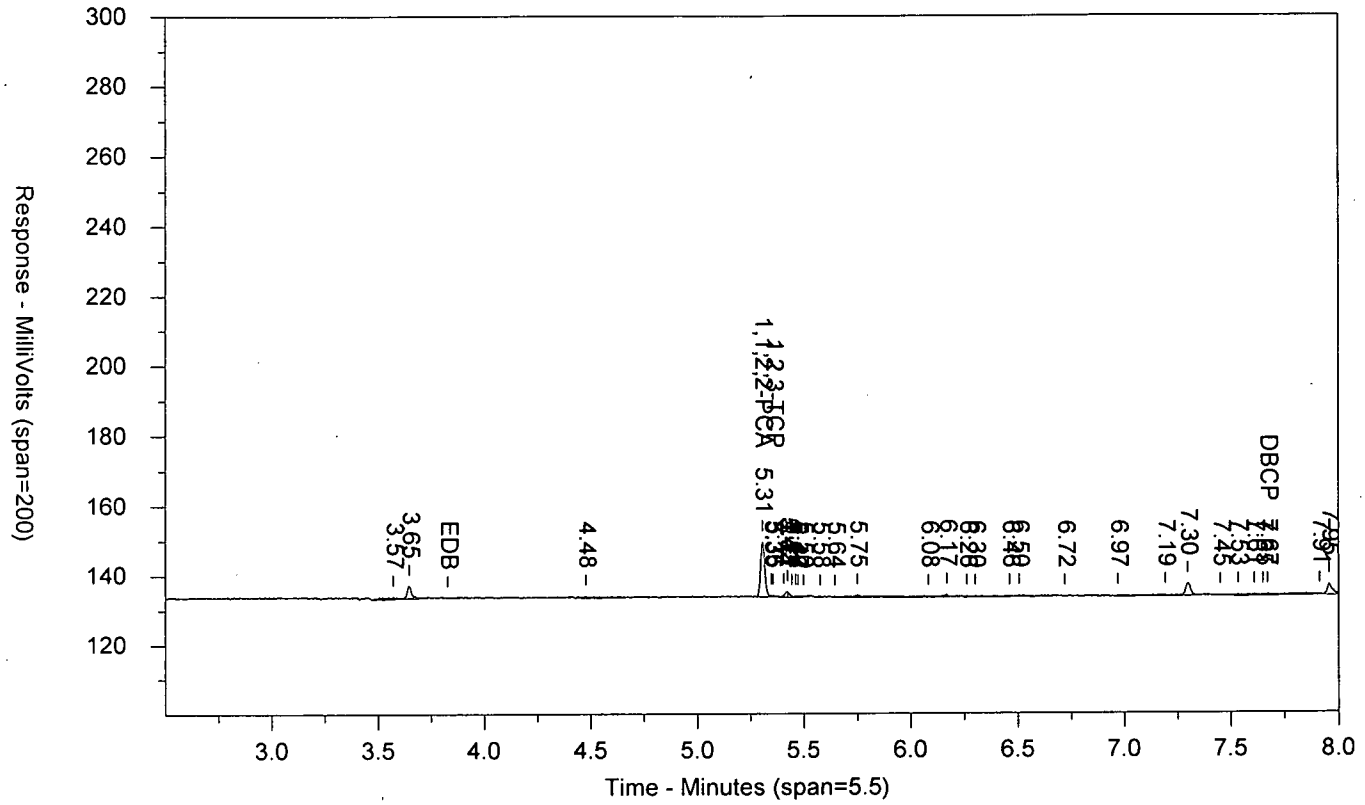
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.827 | 17588 | 1.384 | EDB | 2.776 | 23714 | 1.417 | EDB |
| 5.307 | 9583 | .678 | 1,1,2,2-PCA | 4.027 | 12726 | .654 | 1,1,2,2-PCA |
| 5.381 | 19311 | 10.414 | 1,2,3-TCP | 4.145 | 23468 | 10.226 | 1,2,3-TCP |
| 7.664 | 35143 | 1.317 | DBCP | 6.422 | 42063 | 1.354 | DBCP |

Files:
Area File: 18edbs17271001.013.RAW
Area File: 18edbs17271001B.013.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 6:58:09 PM
File Reported On: 9/29/2017 at 1:46:20 PM

EIBKX1724C AAPIBLKAA PIBLK1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.014.RAW

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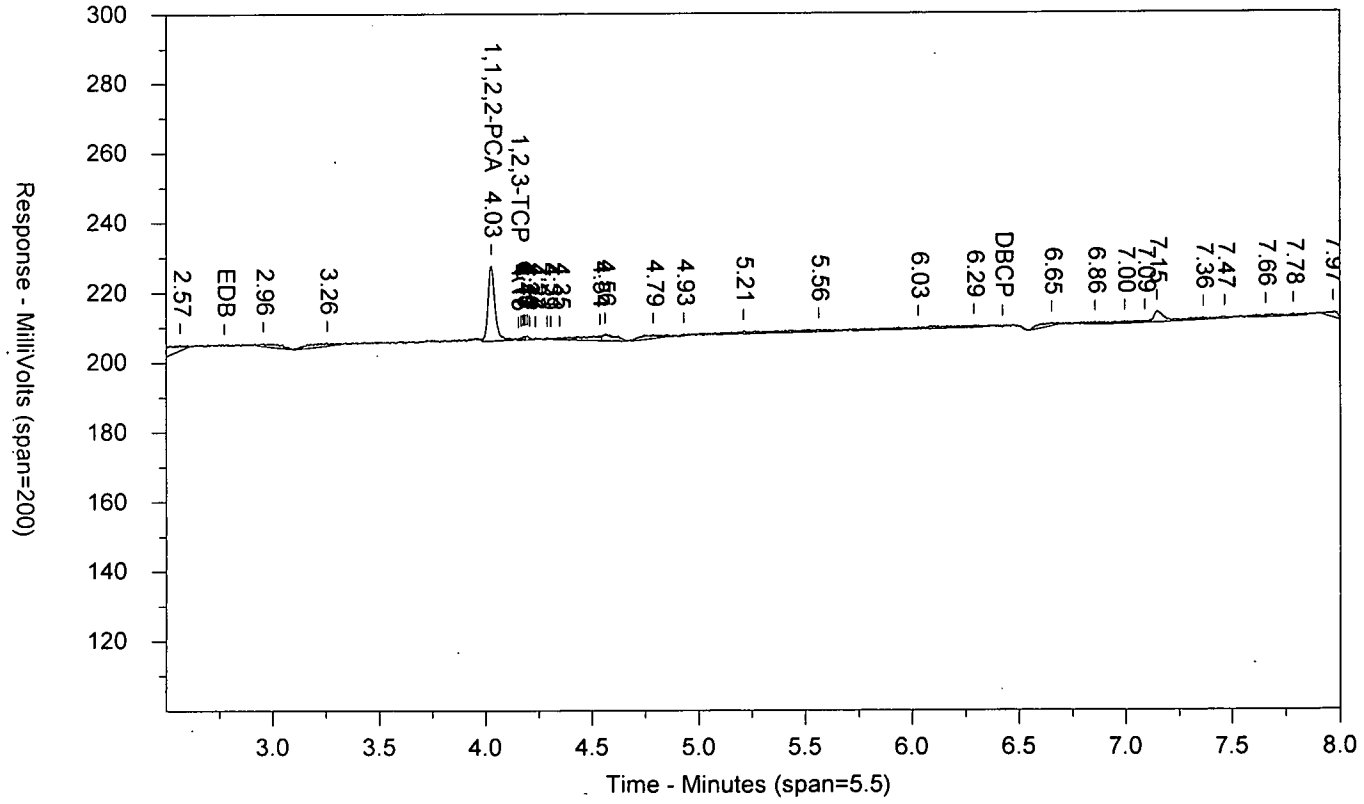


LANCASTER LABORATORIES

Sample Number: EIBKX1724C AAPIBLKAA PIBLK1727099999 10398 SW-846 8011
Injected On: 9/28/2017 7:05:25 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

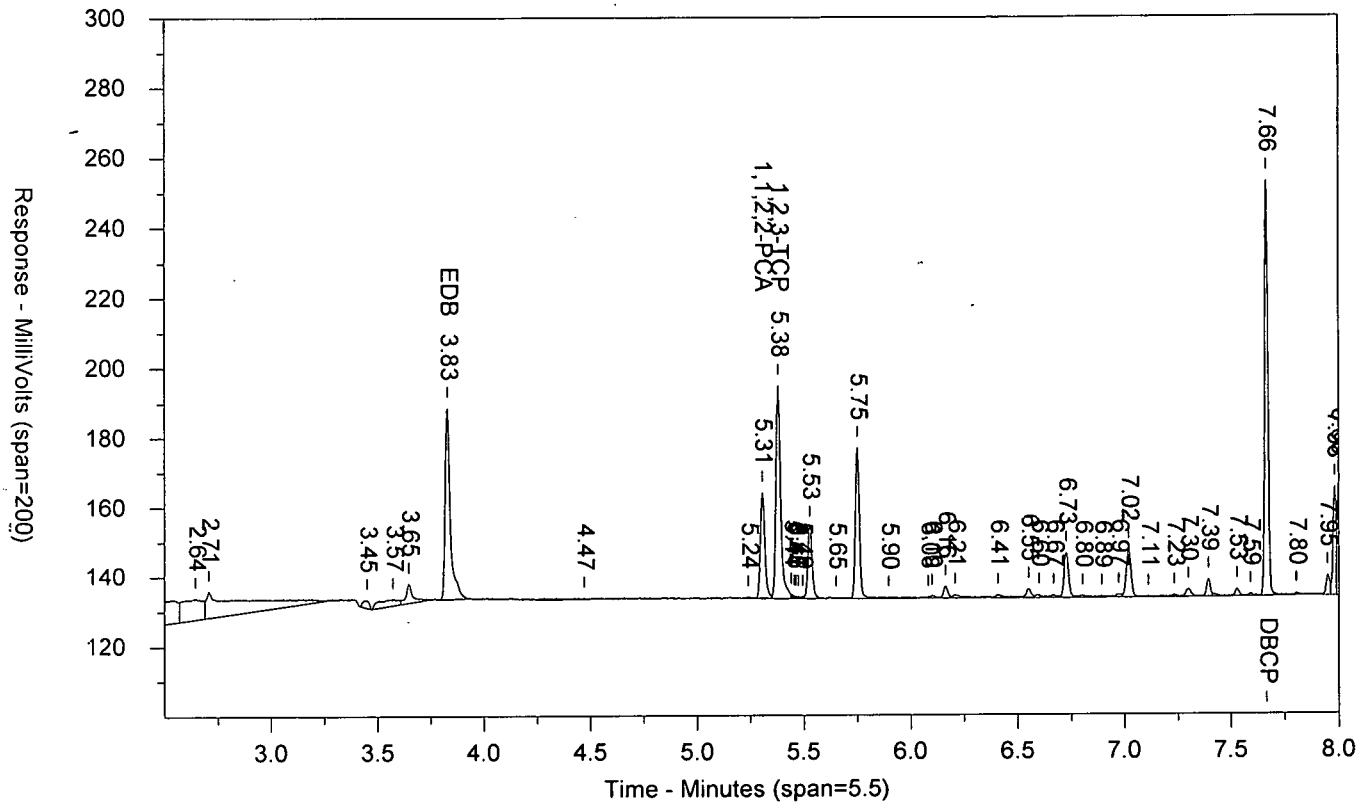
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.306 | 15864 | .064 | 1,1,2,2-PCA | 4.028 | 21562 | .063 | 1,1,2,2-PCA |
| 5.355 | 466 | .014 | 1,2,3-TCP | 4.155 | 475 | .012 | 1,2;3-TCP |
| 7.67 | 571 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18edbs17271001.014.RAW
Area File: 18edbs17271001B.014.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 7:13:58 PM
File Reported On: 9/29/2017 at 1:46:37 PM

EDB_51724FA PIEDB_5PI CCAL 1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.023.RAW

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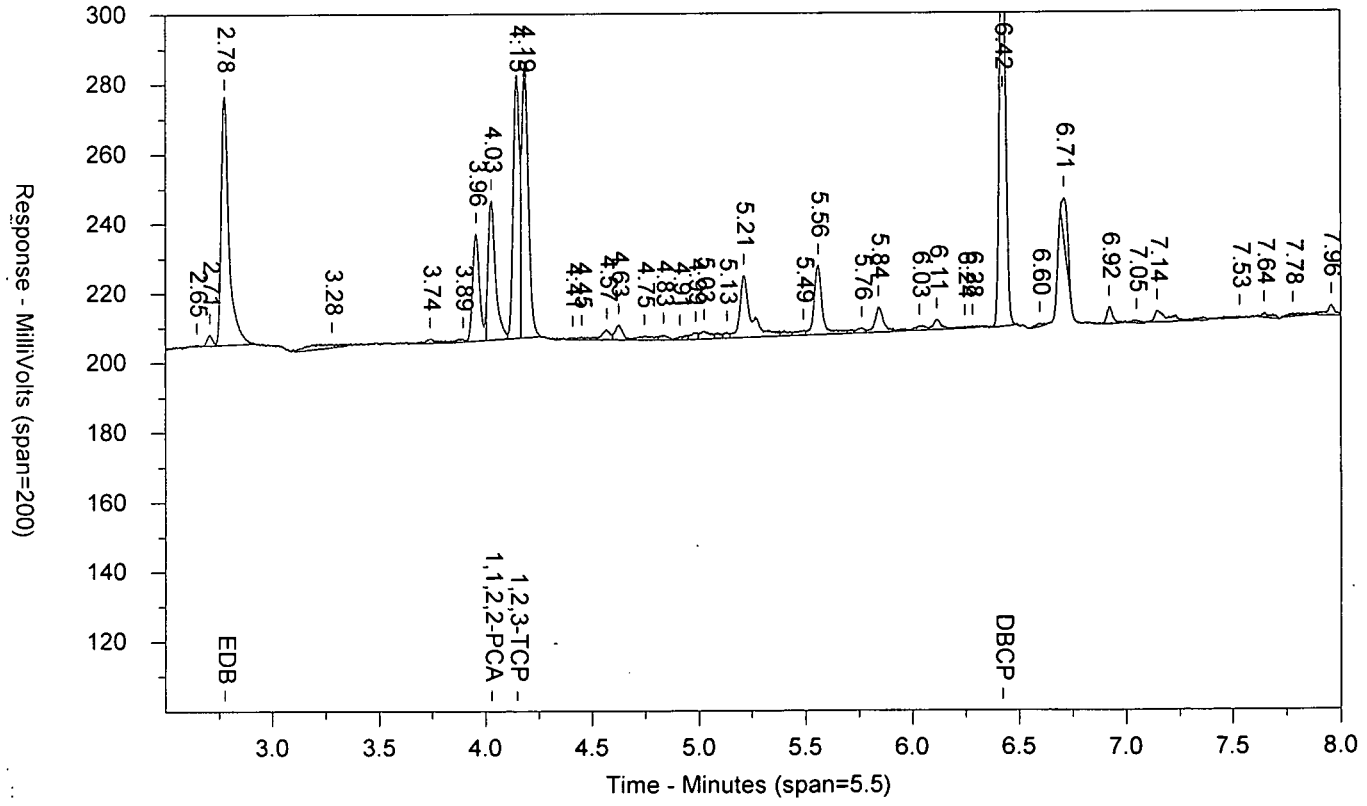


LANCASTER LABORATORIES

Sample Number: EDB_51724FA PIEDB_5PI CCAL 1727099999 10398 SW-846 8011
Injected On: 9/28/2017 9:28:24 PM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

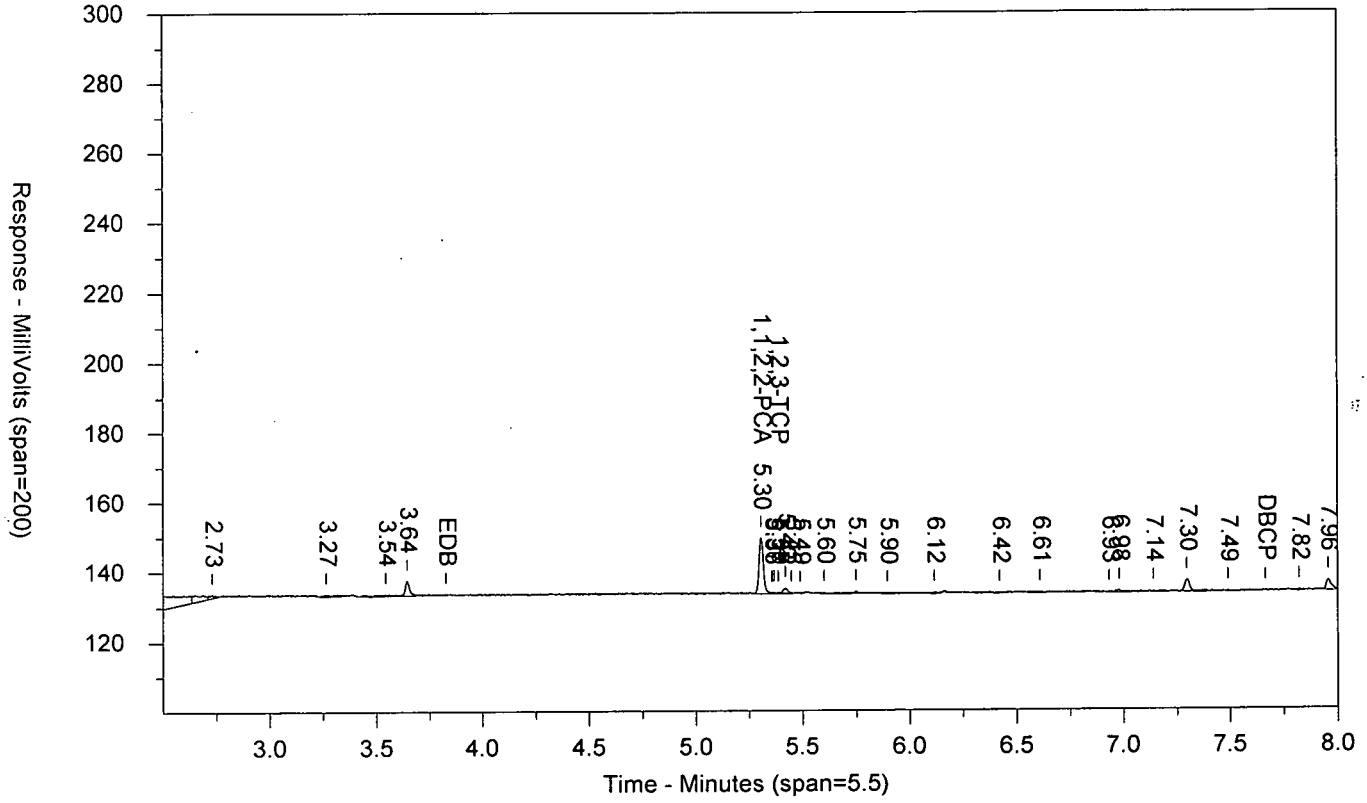
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.828 | 55110 | 4.337 | EDB | 2.776 | 71481 | 4.271 | EDB |
| 5.306 | 30605 | 2.166 | 1,1,2,2-PCA | 4.029 | 40133 | 2.063 | 1,1,2,2-PCA |
| 5.379 | 61327 | 33.072 | 1,2,3-TCP | 4.148 | 75715 | 32.991 | 1,2,3-TCP |
| 7.663 | 119431 | 4.475 | DBCP | 6.423 | 127809 | 4.113 | DBCP |

Files:
Area File: 18edbs17271001.023.RAW
Area File: 18edbs17271001B.023.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 9:36:57 PM
File Reported On: 9/29/2017 at 1:49:12 PM

EIBKX1724C HXPIBLKHX PIBLK1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.024.RAW

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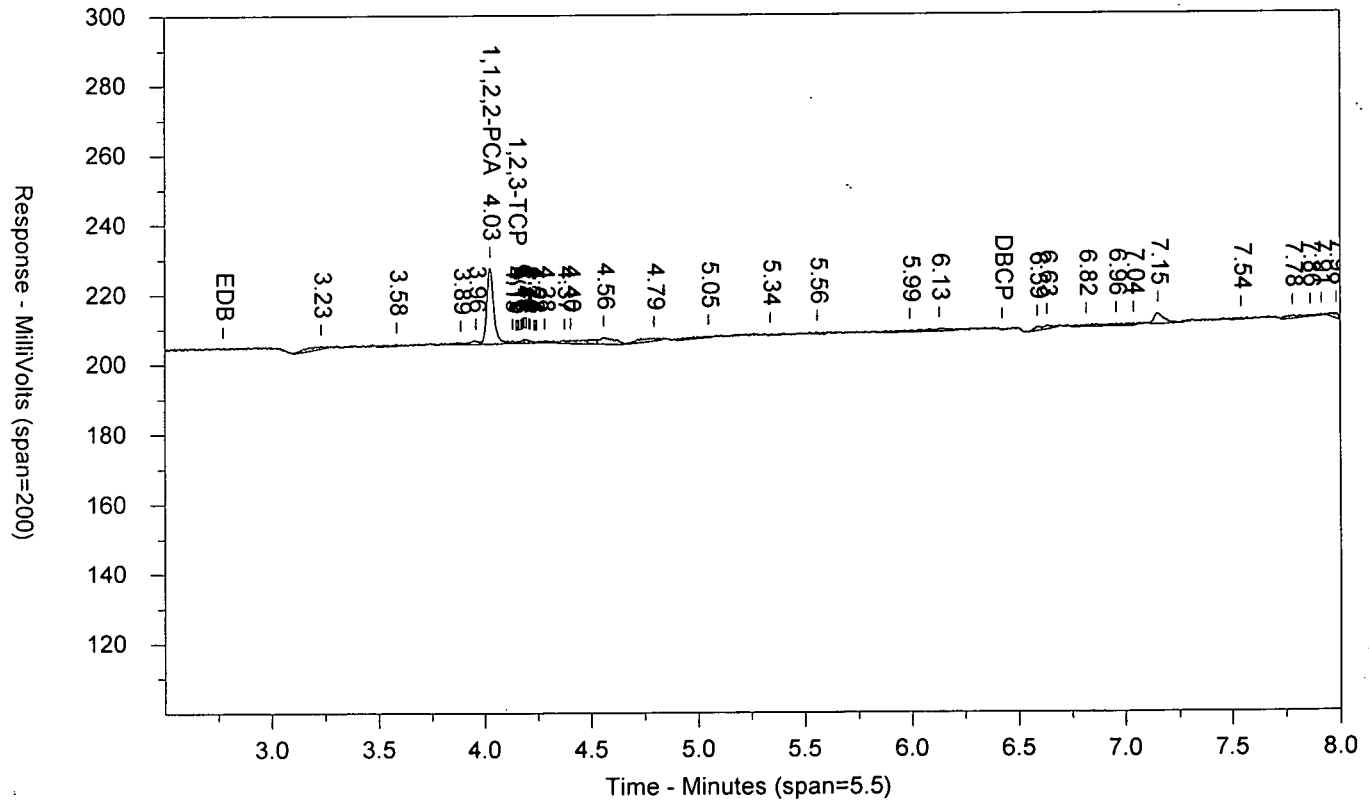


LANCASTER LABORATORIES

Sample Number: EIBKX1724C HXPIBLKHX PIBLK1727099999 10398 SW-846 8011
Injected On: 9/28/2017 9:44:14 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

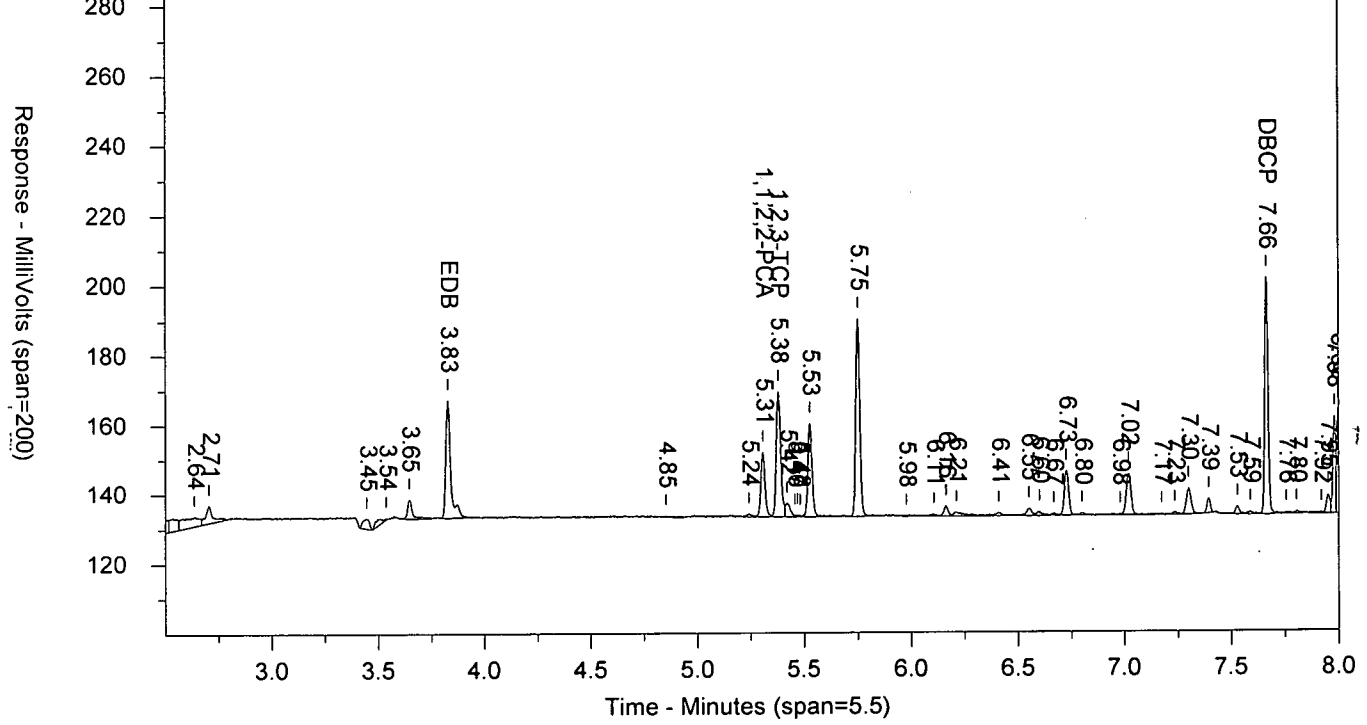
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.305 | 16058 | .065 | 1,1,2,2-PCA | 4.027 | 21767 | .064 | 1,1,2,2-PCA |
| 5.385 | 343 | .011 | 1,2,3-TCP | 4.149 | 646 | .016 | 1,2,3-TCP |

Files:
Area File: 18edbs17271001.024.RAW
Area File: 18edbs17271001B.024.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 9:52:48 PM
File Reported On: 9/29/2017 at 1:49:30 PM

EDB_41724FA TNEDB_4TN CCAL 1727099999 10398 SW-846 80

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.035.RAW

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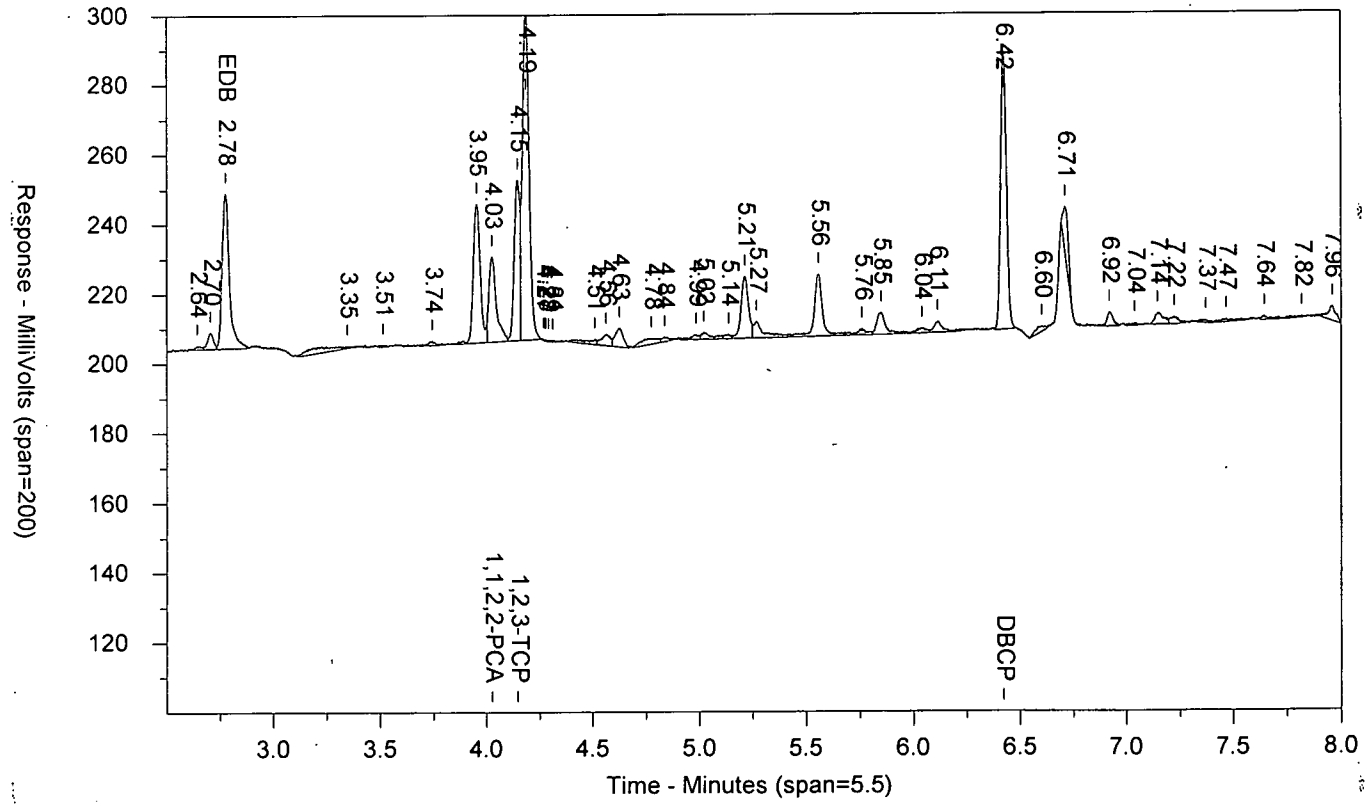


LANCASTER LABORATORIES

Sample Number: EDB_41724FA TNEDB_4TN CCAL 1727099999 10398 SW-846 8011
Injected On: 9/29/2017 12:39:15 AM Sample Weight: 1
Instrument ID: CP18-19846 Dilution Factor: 1
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

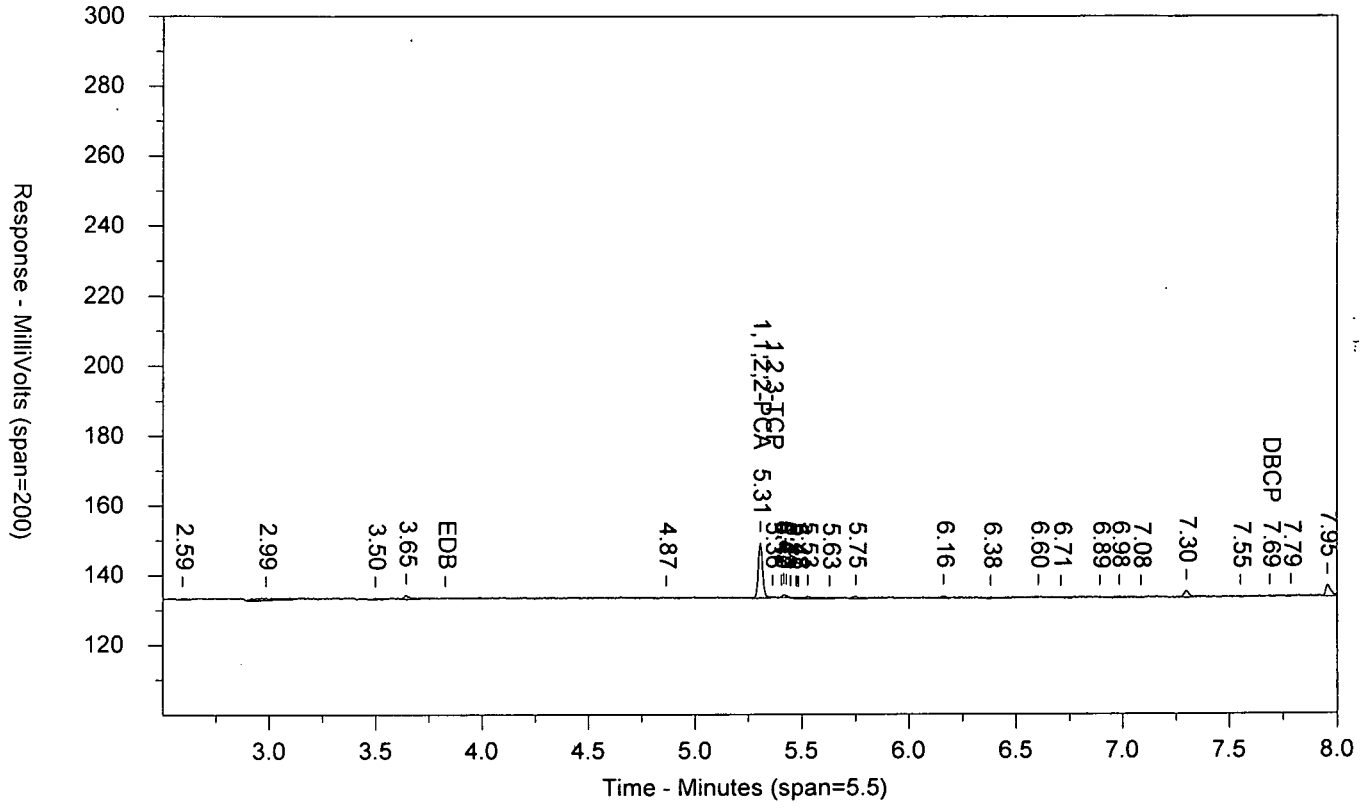
Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.827 | 34029 | 2.678 | EDB | 2.776 | 44649 | 2.668 | EDB |
| 5.306 | 18720 | 1.325 | 1,1,2,2-PCA | 4.027 | 24533 | 1.261 | 1,1,2,2-PCA |
| 5.378 | 36176 | 19.509 | 1,2,3-TCP | 4.146 | 46167 | 20.116 | 1,2,3-TCP |
| 7.663 | 68240 | 2.557 | DBCP | 6.422 | 78805 | 2.536 | DBCP |

Files:
Area File: 18edbs17271001.035.RAW
Area File: 18edbs17271001B.035.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/29/2017 12:47:49 AM
File Reported On: 9/29/2017 at 1:53:27 PM

EIBKX1724C HYPIBLKHY PIBLK1727099999 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.036.RAW

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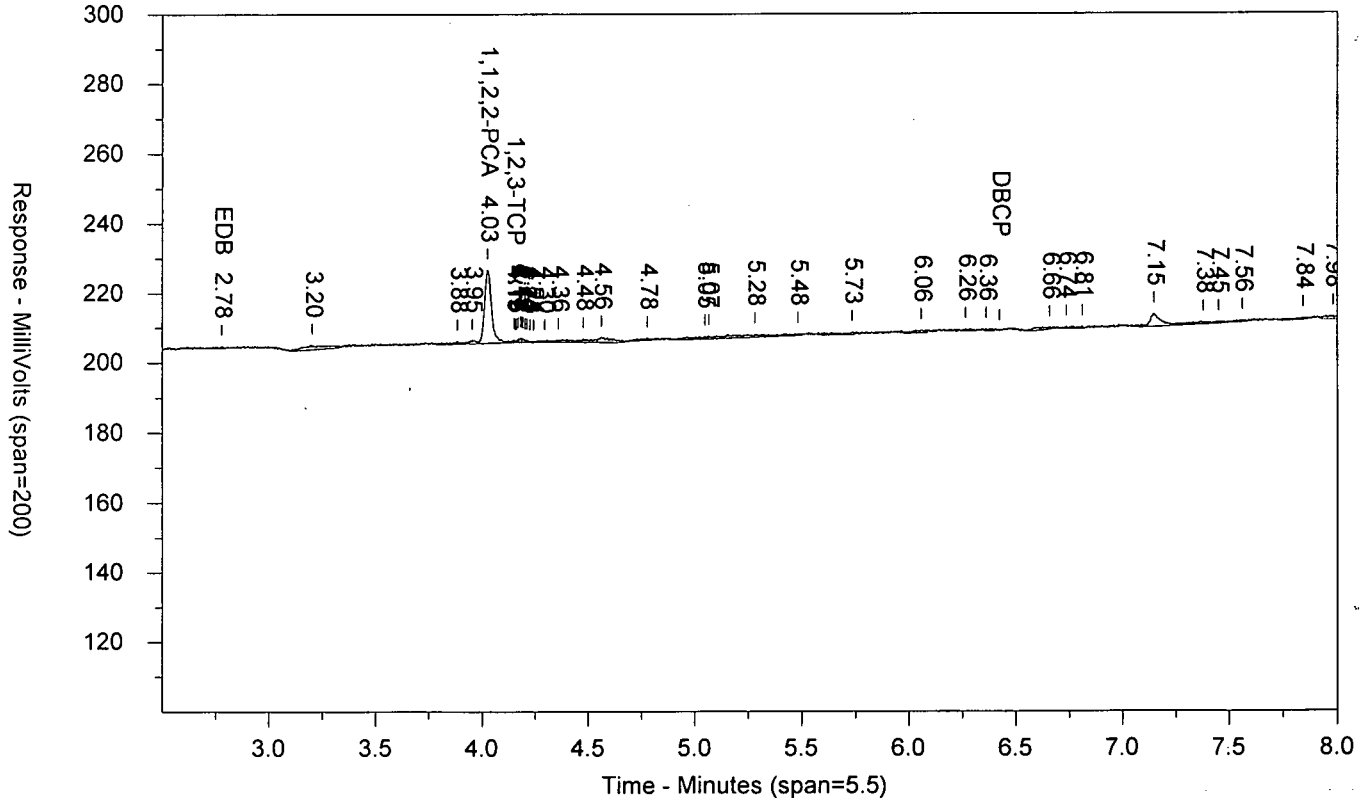

LANCASTER LABORATORIES

Sample Number: EIBKX1724C HYPIBLKHY PIBLK1727099999 10398 SW-846 8011
Injected On: 9/29/2017 12:55:05 AM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| | 0 | | EDB | 2.78 | 728 | .002 | EDB |
| 5.305 | 15891 | .064 | 1,1,2,2-PCA | 4.026 | 21173 | .062 | 1,1,2,2-PCA |
| 5.363 | 344 | .011 | 1,2,3-TCP | 4.152 | 932 | .023 | 1,2,3-TCP |
| 7.687 | 323 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18edbs17271001.036.RAW
Area File: 18edbs17271001B.036.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/29/2017 1:03:40 AM
File Reported On: 9/29/2017 at 1:53:45 PM

# Raw QC Data

# EDB/DBCP

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# Data Summary

**Sample Name: BLANKA** 9/27/17 PBLK27269 BLK Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 19:21:15 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.015.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 93% ( 46 - 136 ) Conc: 0.065461

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 19:21:15 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.015.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.063613

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 16184 | 0.065461 |
| 1,2,3-Trichloropropane | 5.35 | 5.38 | 5.41 | 324 | 0.009986 |
| 1,2-Dibromo-3-chloropro | 7.63 | 7.67 | 7.69 | 309 | 0.000662 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 21655 | 0.063613 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 573 | 0.01426 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | | | <0.01 | <0.02 | <0.03 | | | |
| 1,1,2,2-TETRACHLOROE | A | 0.065461 | 0.0035 | 0.007 | 0.007 | | 2.86 | |
| 1,1,2,2-TETRACHLOROE | A | 0.065461 | 0.0035 | 0.007 | 0.007 | | | |
| 1,1,2,2-TETRACHLOROE | B | 0.063613 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | | | | | <0.27 | | | |
| 1,2-Dibromo-3-chloroprope | | | <0.01 | <0.02 | <0.03 | | | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:19

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **BLANKA** 9/27/17 PBLK27269 ID: AA **Batchnumber: 172690027A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 19:21:15
Instrument : CP18--19846A
Result file : 18EDBS17271001.015.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 93% (46-136) Conc.: 0.065461

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 5.28 | 5.31 | 5.34 | 16184 | 0.065461 |
| **1,2,3-TCP** | 5.35 | 5.38 | 5.41 | 324 | 0.009986 |
| **DBCP** | 7.63 | 7.67 | 7.69 | 309 | 0.000662 |

## Analysis Report (B)

Injected on : Sep 28, 2017 19:21:15
Instrument : CP18--19846B
Result file : 18EDBS17271001B.015.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.063613

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **1,1,2,2-PCA** | 4.00 | 4.03 | 4.06 | 21655 | 0.063613 |
| **1,2,3-TCP** | 4.12 | 4.15 | 4.18 | 573 | 0.014260 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | | | <0.03 | <0.01 | | | |
| ☐ 1,1,2,2-PCA | A | 0.065461 | | | | 2.86 | |
| ☑ 1,2,3-TCP | | | <0.27 | <0.1 | | | |
| ☑ DBCP | | | <0.03 | <0.01 | | | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

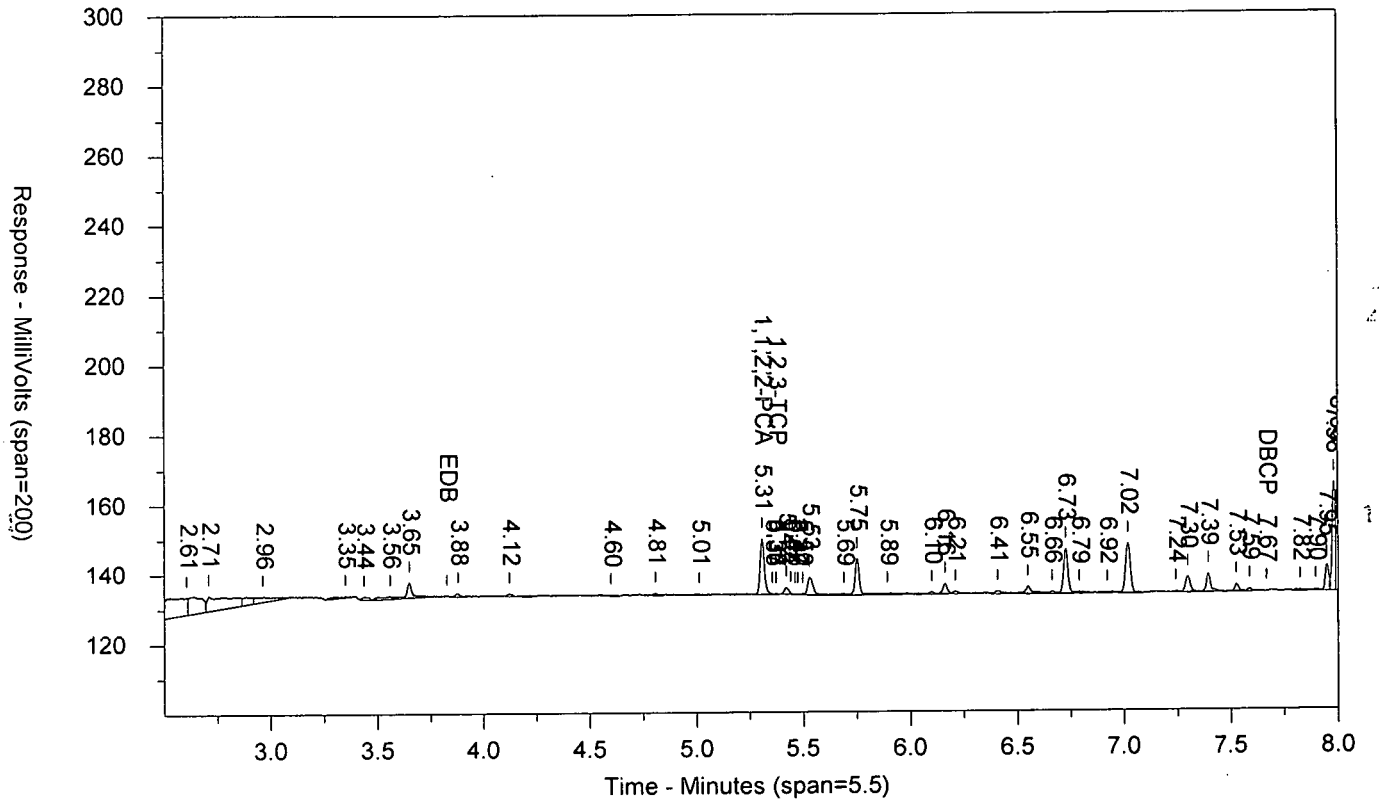
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

BLANKA 9/27/17 AAPBLK27269 BLK 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.015.RAW

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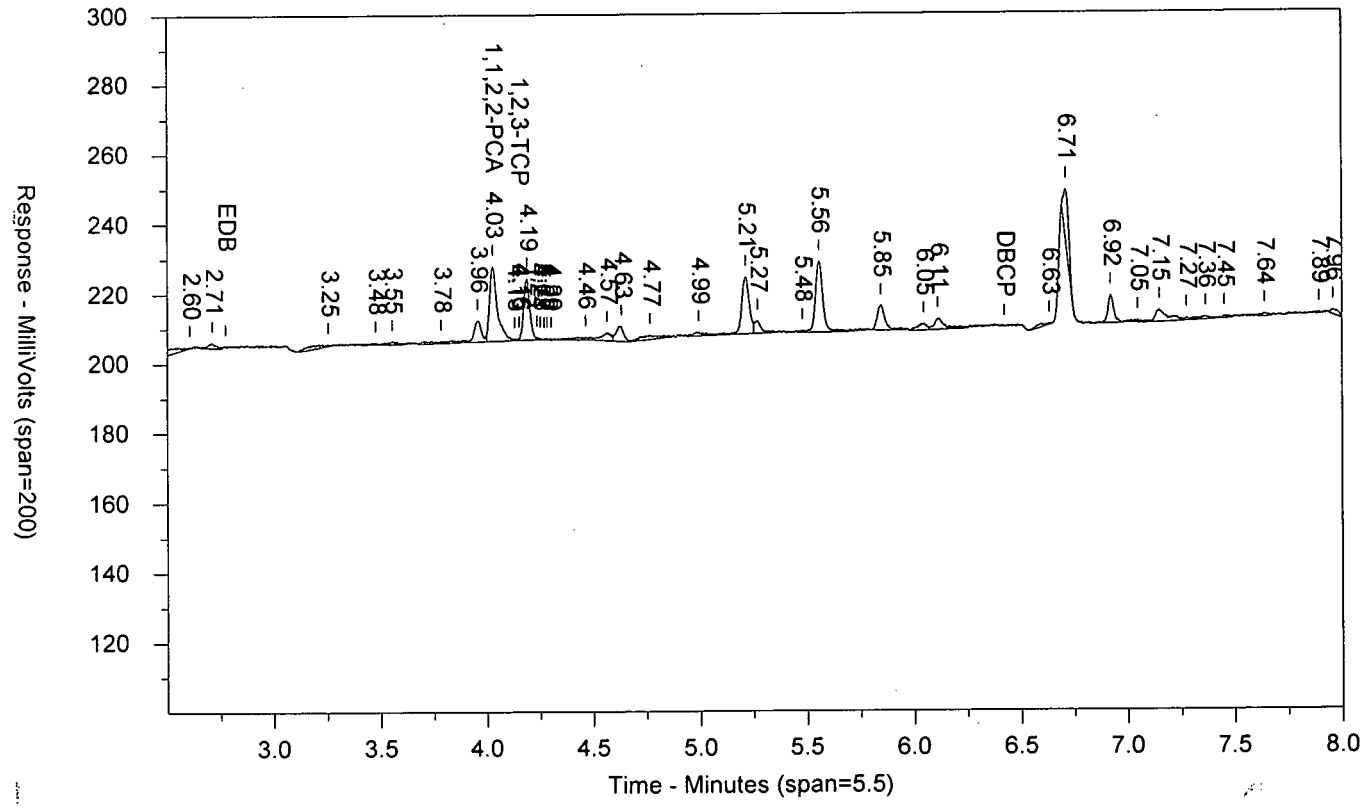

LANCASTER LABORATORIES

Sample Number: BLANKA 9/27/17 AAPBLK27269 BLK 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 7:21:15 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 5.307 | 16184 | .065 | 1,1,2,2-PCA | 4.029 | 21655 | .064 | 1,1,2,2-PCA |
| 5.376 | 324 | .01 | 1,2,3-TCP | 4.152 | 573 | .014 | 1,2,3-TCP |
| 7.668 | 309 | .001 | DBCP | | 0 | | DBCP |

Files:
Area File: 18edbs17271001.015.RAW
Area File: 18edbs17271001B.015.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 7:29:48 PM
File Reported On: 9/29/2017 at 1:46:55 PM

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# Data Summary

**Sample Name: 9224675** MS EF2-- MS Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.61 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 22:16:06 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.026.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 102% ( 46 - 136 ) Conc: 0.068634

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 22:16:06 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.026.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.060594

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.80 | 3.83 | 3.86 | 30538 | 0.131288 |
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 17749 | 0.068634 |
| 1,2,3-Trichloropropane | 5.35 | 5.38 | 5.41 | 32811 | 0.966622 |
| 1,2-Dibromo-3-chloropro | 7.63 | 7.66 | 7.69 | 66721 | 0.136567 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.74 | 2.78 | 2.80 | 41788 | 0.136407 |
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 21576 | 0.060594 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 42205 | 1.004641 |
| 1,2-Dibromo-3-chloropro | 6.39 | 6.42 | 6.45 | 76069 | 0.13372 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.131288 | 0.0096 | 0.0191 | 0.0287 | | 3.82 | |
| 1,1,2,2-TETRACHLOROE | A | 0.068634 | 0.0033 | 0.0067 | 0.0067 | | 12.44 | |
| 1,1,2,2-TETRACHLOROE | A | 0.068634 | 0.0033 | 0.0067 | 0.0067 | | | |
| 1,1,2,2-TETRACHLOROE | B | 0.060594 | 0.0033 | 0.0067 | 0.0067 | | | |
| 1,2,3-Trichloropropane | A | 0.966622 | | | 0.2581 | | 3.86 | |
| 1,2-Dibromo-3-chloroprope | A | 0.136567 | 0.0096 | 0.0191 | 0.0287 | | 2.11 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:38

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224675** MS EF2-- ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.61 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 22:16:06
Instrument : CP18--19846A
Result file : 18EDBS17271001.026.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 102% (46-136) Conc.: 0.068634

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.80 | 3.83 | 3.86 | 30538 | 0.131288 |
| **1,1,2,2-PCA** | 5.28 | 5.31 | 5.34 | 17749 | 0.068634 |
| **1,2,3-TCP** | 5.35 | 5.38 | 5.41 | 32811 | 0.966622 |
| **DBCP** | 7.63 | 7.66 | 7.69 | 66721 | 0.136567 |

## Analysis Report (B)

Injected on : Sep 28, 2017 22:16:06
Instrument : CP18--19846B
Result file : 18EDBS17271001B.026.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.060594

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.74 | 2.78 | 2.80 | 41788 | 0.136407 |
| **1,1,2,2-PCA** | 4.00 | 4.03 | 4.06 | 21576 | 0.060594 |
| **1,2,3-TCP** | 4.12 | 4.15 | 4.18 | 42205 | 1.004641 |
| **DBCP** | 6.39 | 6.42 | 6.45 | 76069 | 0.133720 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.131288 | 0.0287 | 0.0096 | | 3.82 | |
| ☐ 1,1,2,2-PCA | A | 0.068634 | | | | 12.44 | |
| ☐ 1,2,3-TCP | A | 0.966622 | 0.2581 | 0.0956 | | 3.86 | |
| ☐ DBCP | A | 0.136567 | 0.0287 | 0.0096 | | 2.11 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist

Date: OCT 02 2017

Verified by: Valerie L. Tomayko
Principal Specialist

Date: OCT 02 2017

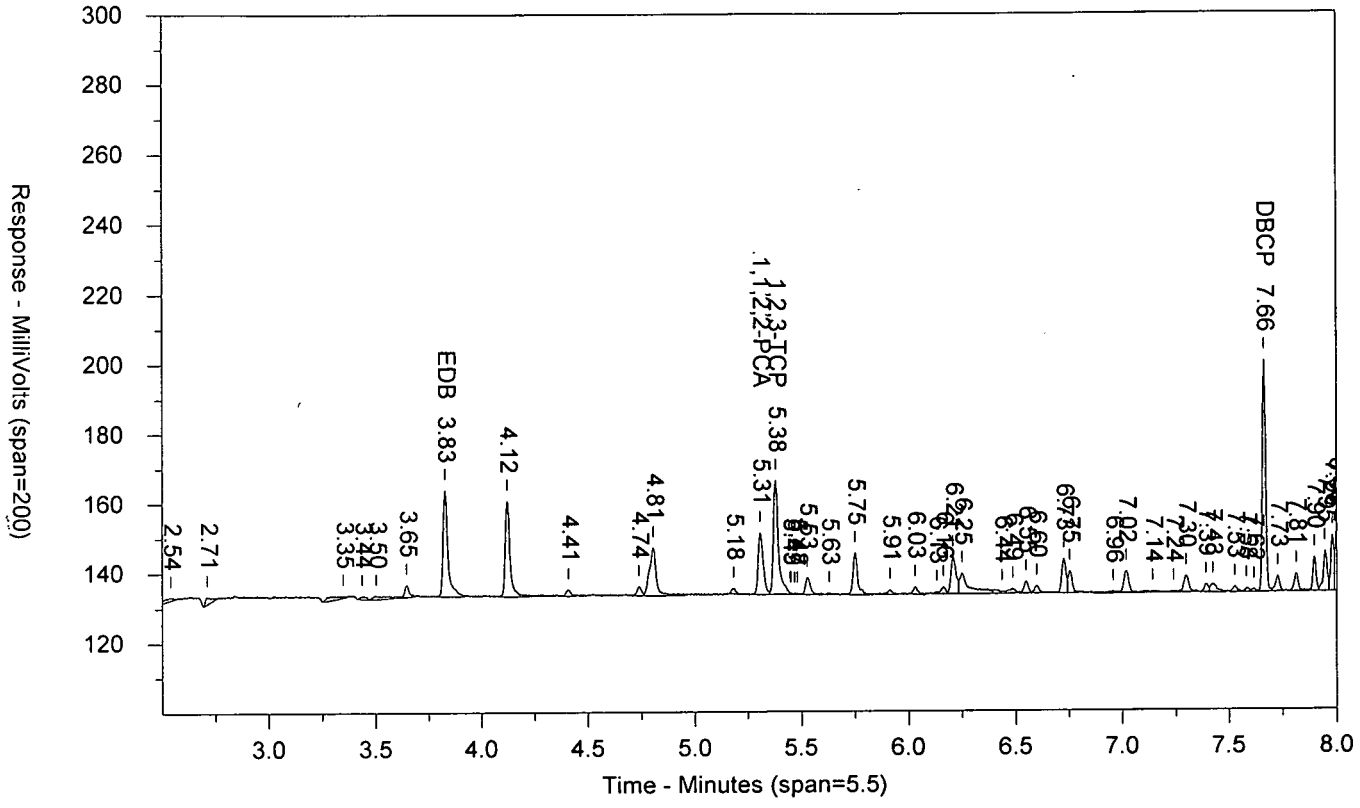
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

Printed on: 9/29/2017 14:30:20

9224675MS AAEF2-- MS 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.026.RAW

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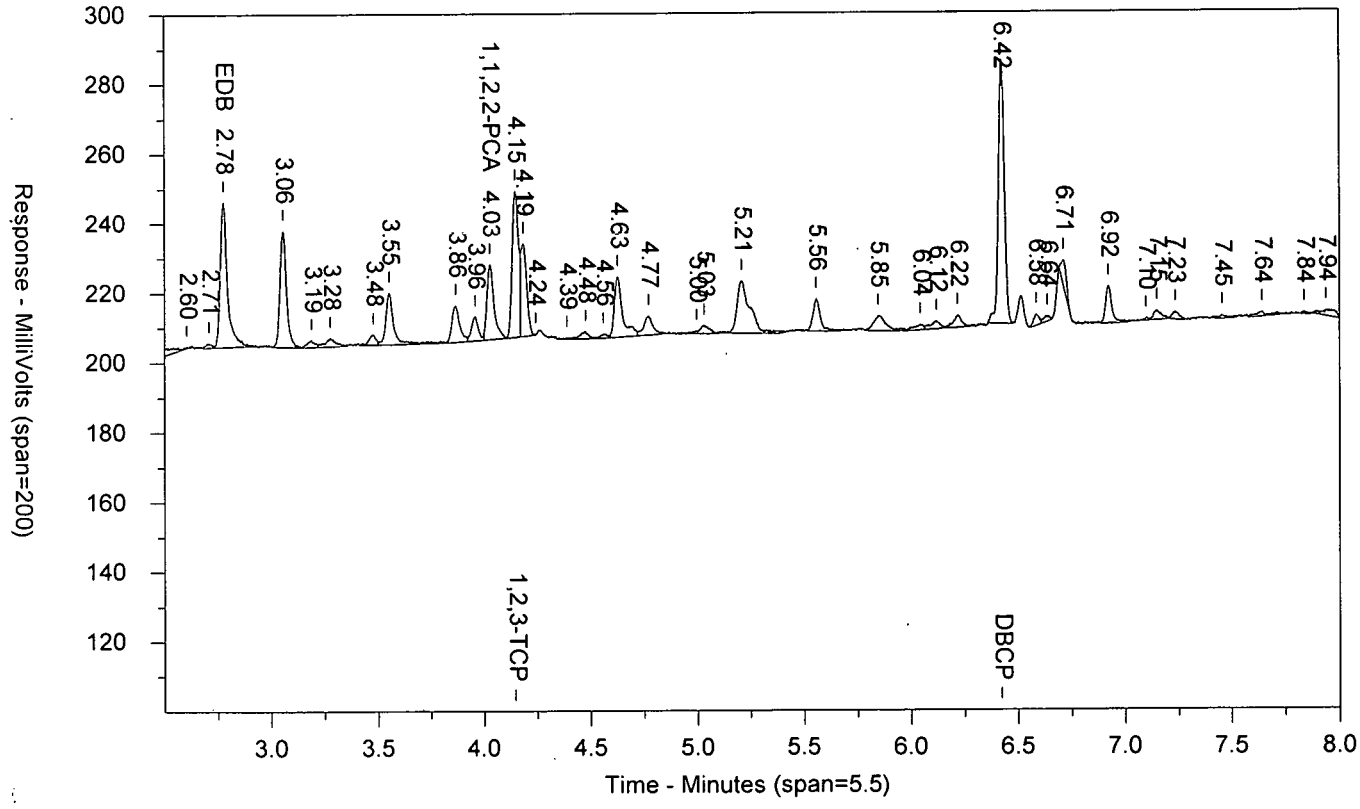

LANCASTER LABORATORIES

Sample Number: 9224675MS AAEF2-- MS 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 10:16:06 PM Sample Weight: 36.61
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.827 | 30538 | .131 | EDB | 2.776 | 41788 | .136 | EDB |
| 5.307 | 17749 | .069 | 1,1,2,2-PCA | 4.028 | 21576 | .061 | 1,1,2,2-PCA |
| 5.38 | 32811 | .967 | 1,2,3-TCP | 4.148 | 42205 | 1.005 | 1,2,3-TCP |
| 7.663 | 66721 | .137 | DBCP | 6.423 | 76069 | .134 | DBCP |

Files:
Area File: 18edbs17271001.026.RAW
Area File: 18edbs17271001B.026.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 10:24:38 PM
File Reported On: 9/29/2017 at 1:50:02 PM

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# Data Summary

**Sample Name: 9224676** MSD EF2-- MSD Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.95 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 22:32:03 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.027.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 110% ( 46 - 136 ) Conc: 0.073138

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 22:32:03 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.027.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.059712

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.80 | 3.83 | 3.86 | 30156 | 0.128454 |
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 19089 | 0.073138 |
| 1,2,3-Trichloropropane | 5.35 | 5.38 | 5.41 | 33320 | 0.972582 |
| 1,2-Dibromo-3-chloropro | 7.63 | 7.66 | 7.69 | 67024 | 0.135924 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.74 | 2.78 | 2.80 | 41106 | 0.132945 |
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 21460 | 0.059712 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 41716 | 0.983872 |
| 1,2-Dibromo-3-chloropro | 6.39 | 6.42 | 6.45 | 76206 | 0.132729 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.128454 | 0.0095 | 0.0189 | 0.0284 | | 3.44 | |
| 1,1,2,2-TETRACHLOROE | A | 0.073138 | 0.0033 | 0.0066 | 0.0066 | | 20.21 | |
| 1,1,2,2-TETRACHLOROE | A | 0.073138 | 0.0033 | 0.0066 | 0.0066 | | | |
| 1,1,2,2-TETRACHLOROE | B | 0.059712 | 0.0033 | 0.0066 | 0.0066 | | | |
| 1,2,3-Trichloropropane | A | 0.972582 | | | 0.2558 | | 1.15 | |
| 1,2-Dibromo-3-chloroprop | A | 0.135924 | 0.0095 | 0.0189 | 0.0284 | | 2.38 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:39

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **9224676** MSD EF2-- ID: AA **Batchnumber: 172690027A**
Sample Amount: 36.95 mL Total Volume: 2 ml Analyst: 7848 SDG: KR195 State: NM
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 22:32:03
Instrument : CP18--19846A
Result file : 18EDBS17271001.027.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 110% (46-136) Conc.: 0.073138

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.80 | 3.83 | 3.86 | 30156 | 0.128455 |
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 19089 | 0.073138 |
| 1,2,3-TCP | 5.35 | 5.38 | 5.41 | 33320 | 0.972582 |
| DBCP | 7.63 | 7.66 | 7.69 | 67024 | 0.135924 |

## Analysis Report (B)

Injected on : Sep 28, 2017 22:32:03
Instrument : CP18--19846B
Result file : 18EDBS17271001B.027.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.059712

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 2.74 | 2.78 | 2.80 | 41106 | 0.132945 |
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 21460 | 0.059712 |
| 1,2,3-TCP | 4.12 | 4.15 | 4.18 | 41716 | 0.983872 |
| DBCP | 6.39 | 6.42 | 6.45 | 76206 | 0.132729 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.128455 | 0.0284 | 0.0095 | | 3.44 | |
| ☐ 1,1,2,2-PCA | A | 0.073138 | | | | 20.21 | |
| ☐ 1,2,3-TCP | A | 0.972582 | 0.2558 | 0.0947 | | 1.15 | |
| ☐ DBCP | A | 0.135924 | 0.0284 | 0.0095 | | 2.38 | |

Units: ug/l

Reviewed by: Heather Miller Heather M. Miller Chemist

Date: OCT 02 2017

Verified by: Valerie L. Tomayko Valerie L. Tomayko Principal Specialist

Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits



Printed on: 9/29/2017 14:30:29

9224676MSD AAEF2-- MSD 172690027A 10398 SW-846 8011

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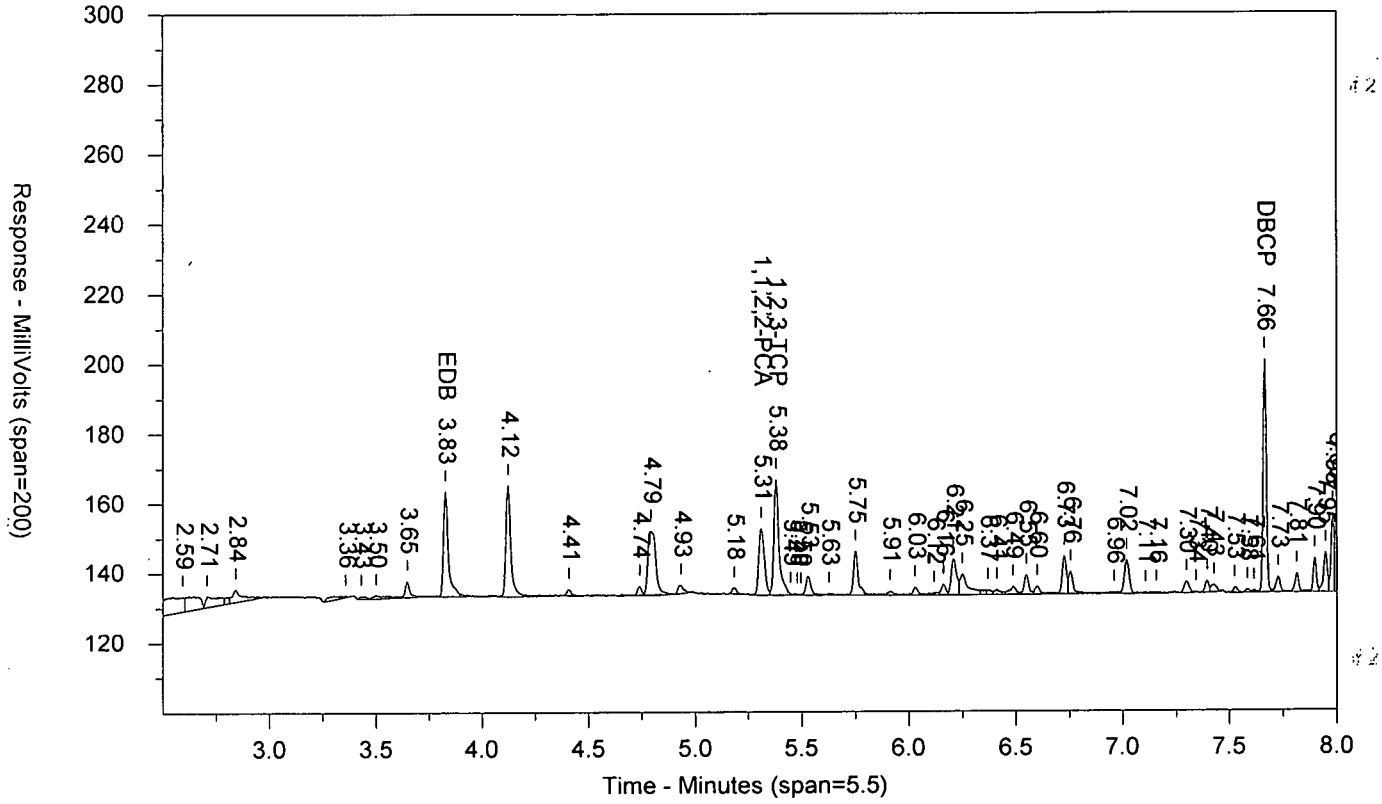


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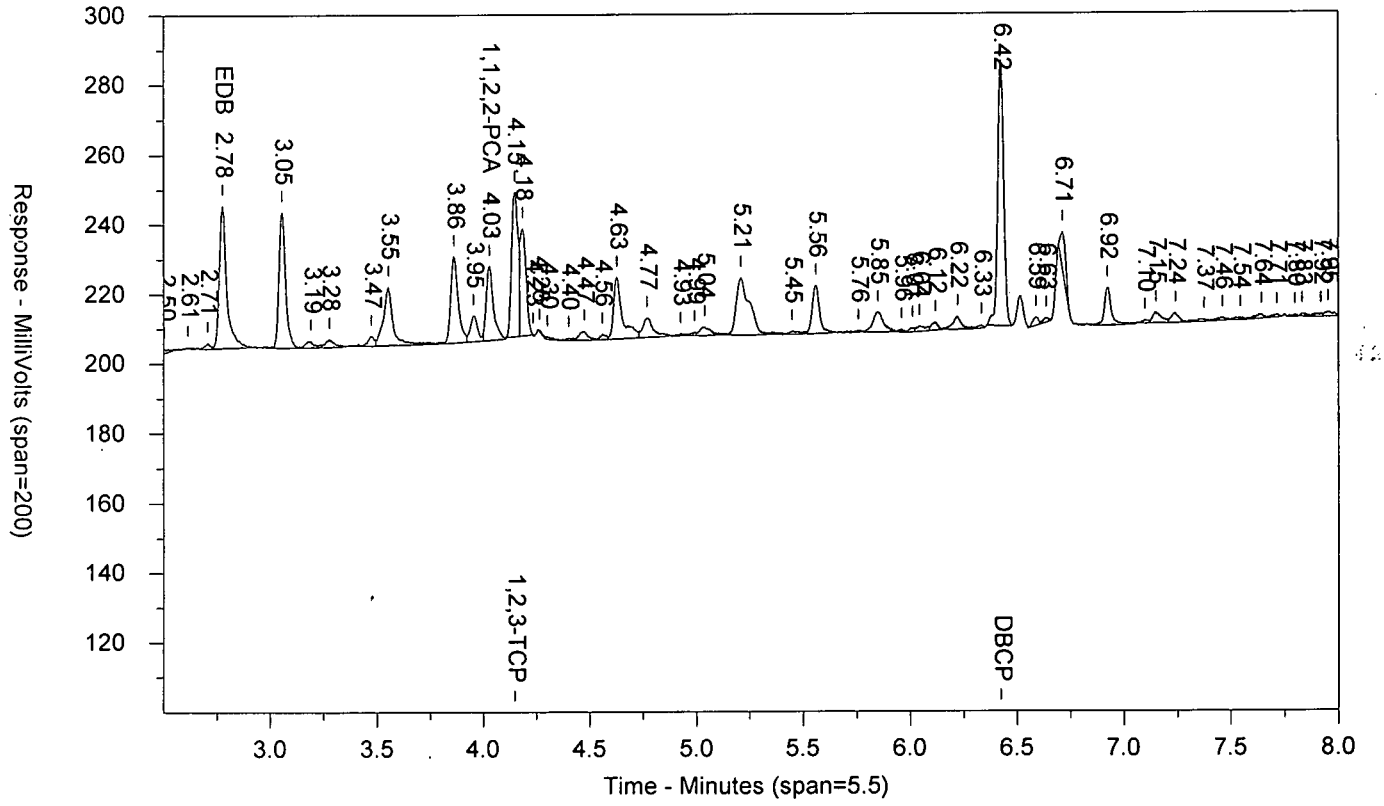

LANCASTER LABORATORIES

Sample Number: 9224676MSD AAEF2-- MSD 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 10:32:03 PM Sample Weight: 36.95
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR 2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.827 | 30156 | .128 | EDB | 2.776 | 41106 | .133 | EDB |
| 5.31 | 19089 | .073 | 1,1,2,2-PCA | 4.028 | 21460 | .06 | 1,1,2,2-PCA |
| 5.379 | 33320 | .973 | 1,2,3-TCP | 4.148 | 41716 | .984 | 1,2,3-TCP |
| 7.663 | 67024 | .136 | DBCP | 6.423 | 76206 | .133 | DBCP |

Files:
Area File: 18edbs17271001.027.RAW
Area File: 18edbs17271001B.027.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 10:40:33 PM
File Reported On: 9/29/2017 at 1:50:22 PM

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# Data Summary

**Sample Name: LCSA** 9/27/17 LCS27269 LCS Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 19:37:09 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.016.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 86% ( 46 - 136 ) Conc: 0.060254

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 19:37:09 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.016.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 82% ( 46 - 136 ) Conc: 0.057681

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.80 | 3.83 | 3.86 | 30608 | 0.137642 |
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 14897 | 0.060254 |
| 1,2,3-Trichloropropane | 5.35 | 5.38 | 5.41 | 33307 | 1.026388 |
| 1,2-Dibromo-3-chloropro | 7.63 | 7.66 | 7.69 | 65489 | 0.140211 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.74 | 2.78 | 2.80 | 40159 | 0.137119 |
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 19636 | 0.057681 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 41440 | 1.031804 |
| 1,2-Dibromo-3-chloropro | 6.39 | 6.42 | 6.45 | 74398 | 0.1368 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.137642 | 0.01 | 0.02 | 0.03 | | 0.38 | |
| 1,1,2,2-TETRACHLOROE | A | 0.060254 | 0.0035 | 0.007 | 0.007 | | 4.36 | |
| 1,1,2,2-TETRACHLOROE | A | 0.060254 | 0.0035 | 0.007 | 0.007 | | | |
| 1,1,2,2-TETRACHLOROE | B | 0.057681 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | A | 1.026388 | | | 0.27 | | 0.53 | |
| 1,2-Dibromo-3-chloroprop | A | 0.140211 | 0.01 | 0.02 | 0.03 | | 2.46 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerio L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:21

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSA** 9/27/17 LCS27269 ID: AA **Batchnumber: 172690027A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 19:37:09
Instrument : CP18--19846A
Result file : 18EDBS17271001.016.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 86% (46-136) Conc.: 0.060254

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 3.80 | 3.83 | 3.86 | 30608 | 0.137642 |
| **1,1,2,2-PCA** | 5.28 | 5.31 | 5.34 | 14897 | 0.060254 |
| **1,2,3-TCP** | 5.35 | 5.38 | 5.41 | 33307 | 1.026388 |
| **DBCP** | 7.63 | 7.66 | 7.69 | 65489 | 0.140211 |

## Analysis Report (B)

Injected on : Sep 28, 2017 19:37:09
Instrument : CP18--19846B
Result file : 18EDBS17271001B.016.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 82% (46-136) Conc.: 0.057681

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| **EDB** | 2.74 | 2.78 | 2.80 | 40159 | 0.137119 |
| **1,1,2,2-PCA** | 4.00 | 4.03 | 4.06 | 19636 | 0.057681 |
| **1,2,3-TCP** | 4.12 | 4.15 | 4.18 | 41440 | 1.031804 |
| **DBCP** | 6.39 | 6.42 | 6.45 | 74398 | 0.136800 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.137642 | 0.03 | 0.01 | | 0.38 | |
| ☐ 1,1,2,2-PCA | A | 0.060254 | | | | 4.36 | |
| ☑ 1,2,3-TCP | A | 1.026388 | 0.27 | 0.1 | | 0.53 | |
| ☑ DBCP | A | 0.140211 | 0.03 | 0.01 | | 2.46 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

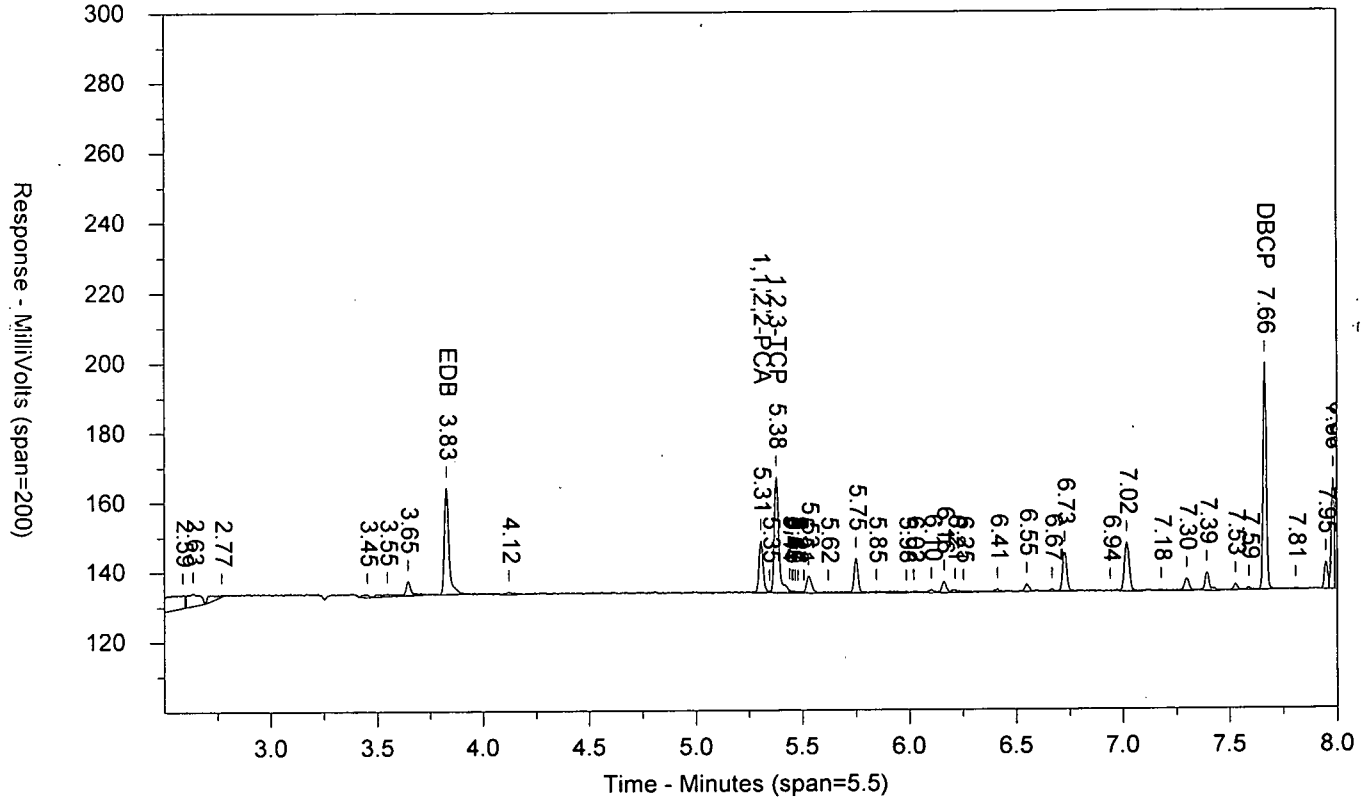
Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: OCT 02 2017

%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

LCSA 9/27/17 AALCS27269 LCS 172690027A 10398 SW-846 8011

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.016.RAW

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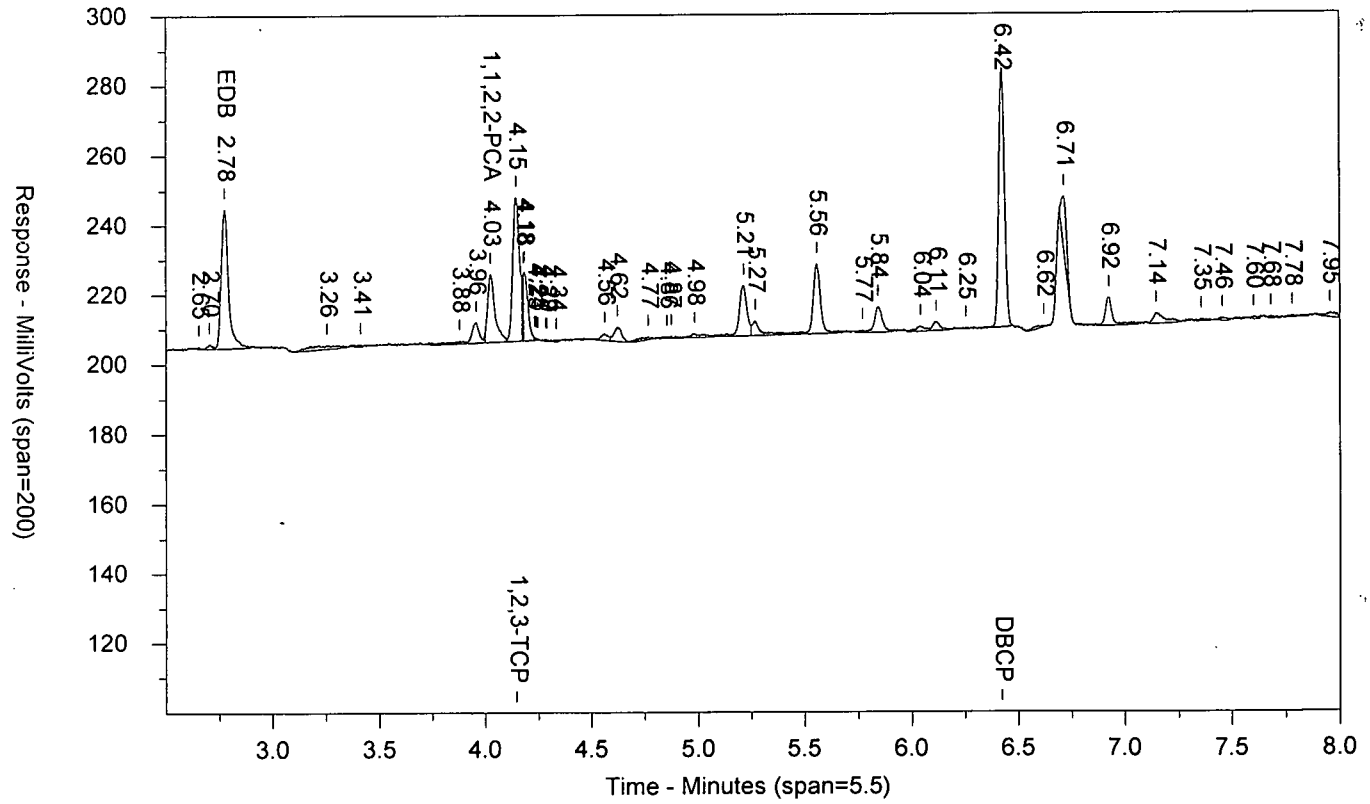


LANCASTER LABORATORIES

Sample Number: LCSA 9/27/17 AALCS27269 LCS 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 7:37:09 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A - PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.826 | 30608 | .138 | EDB | 2.776 | 40159 | .137 | EDB |
| 5.306 | 14897 | .06 | 1,1,2,2-PCA | 4.026 | 19636 | .058 | 1,1,2,2-PCA |
| 5.379 | 33307 | 1.026 | 1,2,3-TCP | 4.147 | 41440 | 1.032 | 1,2,3-TCP |
| 7.663 | 65489 | .14 | DBCP | 6.422 | 74398 | .137 | DBCP |

Files:
Area File: 18edbs17271001.016.RAW
Area File: 18edbs17271001B.016.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 7:45:43 PM
File Reported On: 9/29/2017 at 1:47:13 PM

eurofins | Lancaster Laboratories Environmental

# Data Summary

**Sample Name: LCSDA** 9/27/17 LCSD27269 LCSD Sample ID: AA **Batchnumber: 172690027A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
**Analyses:** 10398

## Analysis Report (A)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 19:53:04 |
| **Instrument** | 19846A |
| **Result file** | 18EDBS17271001.017.RAW |
| **Calibration file** | 18EDBS1727101 |
| **Method file** | 18EDBS |

%SSR(PCA) 90% ( 46 - 136 ) Conc: 0.063169

## Analysis Report (B)

| | |
|---|---|
| **Injected on** | Sep 28, 2017 19:53:04 |
| **Instrument** | 19846B |
| **Result file** | 18EDBS17271001B.017.RAW |
| **Calibration file** | 18EDBS1727101B |
| **Method file** | 18EDBSB |

%SSR(PCA) 85% ( 46 - 136 ) Conc: 0.059555

## Single Component Data

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 3.80 | 3.83 | 3.86 | 30887 | 0.138898 |
| 1,1,2,2-TETRACHLORO | 5.28 | 5.31 | 5.34 | 15617 | 0.063169 |
| 1,2,3-Trichloropropane | 5.35 | 5.38 | 5.41 | 33753 | 1.040111 |
| 1,2-Dibromo-3-chloropro | 7.63 | 7.66 | 7.69 | 66765 | 0.142943 |

| Compound | Min | RT | Max | Height | Amount |
|---|---|---|---|---|---|
| Ethylene dibromide | 2.74 | 2.78 | 2.80 | 42176 | 0.144005 |
| 1,1,2,2-TETRACHLORO | 4.00 | 4.03 | 4.06 | 20274 | 0.059555 |
| 1,2,3-Trichloropropane | 4.12 | 4.15 | 4.18 | 43863 | 1.092149 |
| 1,2-Dibromo-3-chloropro | 6.39 | 6.42 | 6.45 | 77948 | 0.143327 |

## Single Component Summary

| Compound Name | Column | Amount Found | DL | LOD | LOQ | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|---|
| Ethylene dibromide | A | 0.138898 | 0.01 | 0.02 | 0.03 | | 3.61 | |
| 1,1,2,2-TETRACHLOROE | A | 0.063169 | 0.0035 | 0.007 | 0.007 | | 5.89 | |
| 1,1,2,2-TETRACHLOROE | A | 0.063169 | 0.0035 | 0.007 | 0.007 | | | |
| 1,1,2,2-TETRACHLOROE | B | 0.059555 | 0.0035 | 0.007 | 0.007 | | | |
| 1,2,3-Trichloropropane | A | 1.040111 | | | 0.27 | | 4.88 | |
| 1,2-Dibromo-3-chloroprope | A | 0.142943 | 0.01 | 0.02 | 0.03 | | 0.27 | |

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Valerie L. Tomayko
Principal Specialist

OCT 0 2 2017

Reviewed and digitally signed by Heather M Miller on 10/2/2017 11:33:23

# Eurofins Lancaster Laboratories-Single Component Data Summary

**Sample Name:** **LCSDA** 9/27/17 LCSD27269 ID: AA **Batchnumber: 172690027A**
Sample Amount: 35 mL Total Volume: 2 ml Analyst: 7848 SDG: State:
Analyses: 10398

## Analysis Report (A)

Injected on : Sep 28, 2017 19:53:04
Instrument : CP18--19846A
Result file : 18EDBS17271001.017.RAW
Calibration file : 18EDBS1727101.CAL
Method file : 18EDBS.MET

%SSR(1,1,2,2-PCA) : 90% (46-136) Conc.: 0.063169

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 3.80 | 3.83 | 3.86 | 30887 | 0.138898 |
| 1,1,2,2-PCA | 5.28 | 5.31 | 5.34 | 15617 | 0.063169 |
| 1,2,3-TCP | 5.35 | 5.38 | 5.41 | 33753 | 1.040111 |
| DBCP | 7.63 | 7.66 | 7.69 | 66765 | 0.142943 |

## Analysis Report (B)

Injected on : Sep 28, 2017 19:53:04
Instrument : CP18--19846B
Result file : 18EDBS17271001B.017.RAW
Calibration file : 18EDBS1727101B.CAL
Method file : 18EDBSB.MET

%SSR(1,1,2,2-PCA) : 85% (46-136) Conc.: 0.059555

| Peak name | Min | R.T. | Max | Height | Amount |
|---|---|---|---|---|---|
| EDB | 2.74 | 2.78 | 2.80 | 42176 | 0.144005 |
| 1,1,2,2-PCA | 4.00 | 4.03 | 4.06 | 20274 | 0.059555 |
| 1,2,3-TCP | 4.12 | 4.15 | 4.18 | 43863 | 1.092149 |
| DBCP | 6.39 | 6.42 | 6.45 | 77948 | 0.143327 |

## Summary Report

| Compound Name | Column | Amount Found | LOQ | MDL | Qualifiers | %RPD | Comments |
|---|---|---|---|---|---|---|---|
| ☑ EDB | A | 0.138898 | 0.03 | 0.01 | | 3.61 | |
| ☐ 1,1,2,2-PCA | A | 0.063169 | | | | 5.89 | |
| ☑ 1,2,3-TCP | A | 1.040111 | 0.27 | 0.1 | | 4.88 | |
| ☑ DBCP | A | 0.142943 | 0.03 | 0.01 | | 0.27 | |

Units: ug/l

Reviewed by: Heather Miller
Heather M. Miller
Chemist
Date: OCT 02 2017

Verified by: Valerie L. Tomayko
Valerie L. Tomayko
Principal Specialist
Date: OCT 02 2017

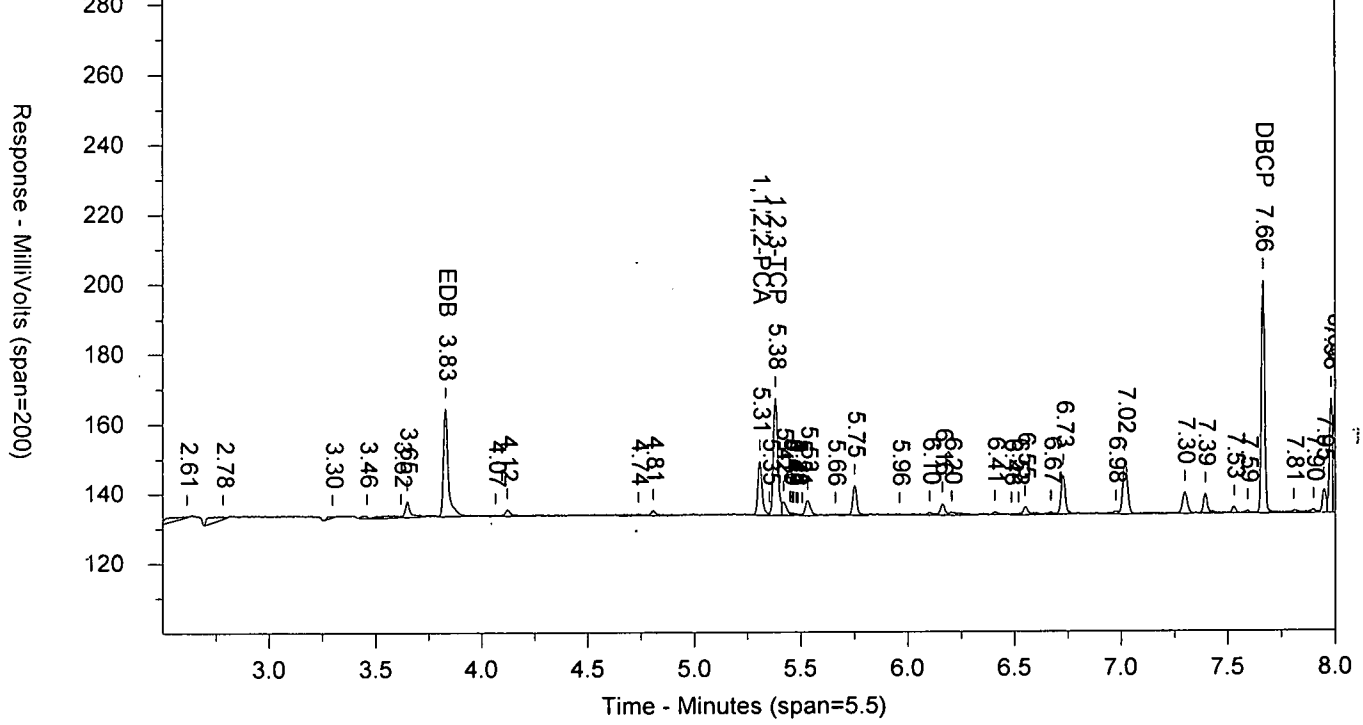
%RPD = High - Low Amount divided by the Average times 100

* Recovery outside QC Limits

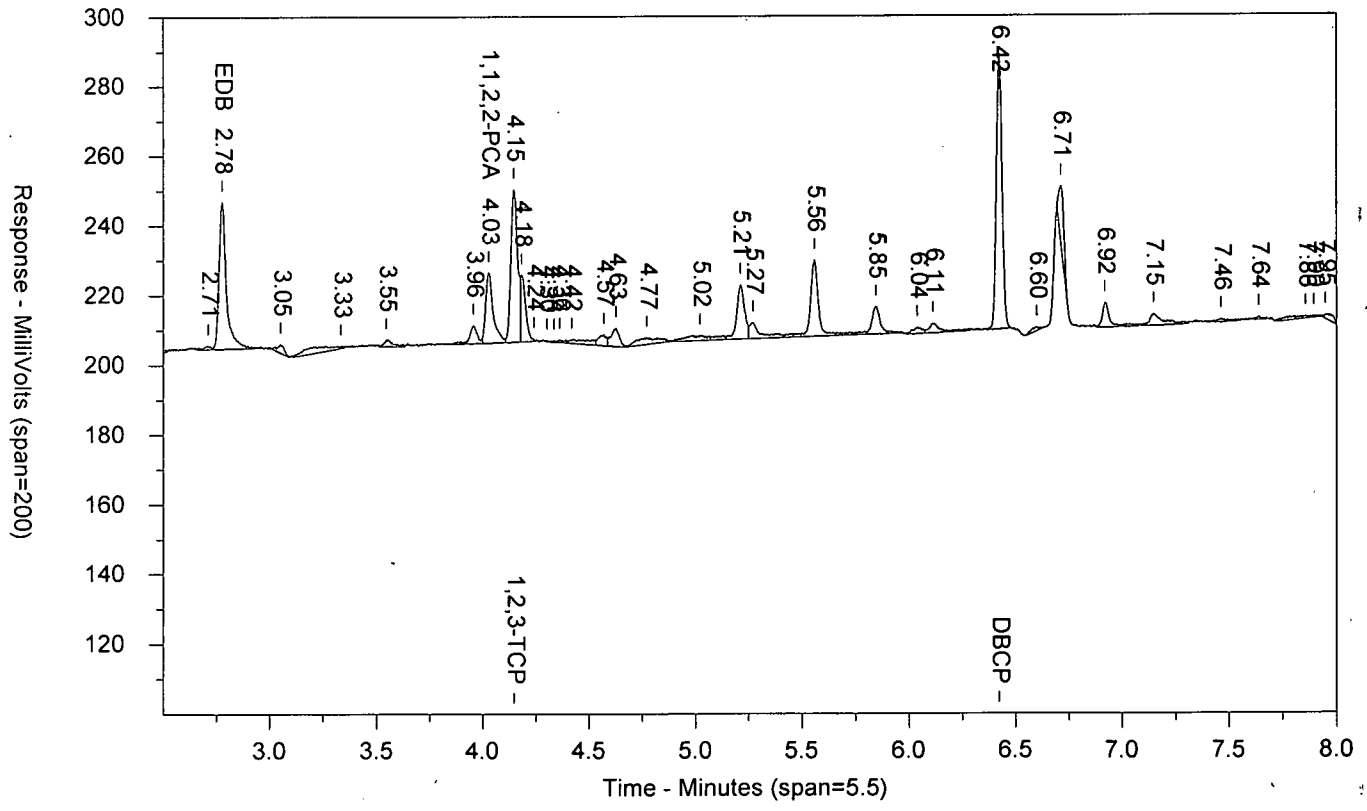
Printed on: 9/29/2017 14:28:59

LCSDA 9/27/17 AALCSD27269 LCSD 172690027A 10398 SW-846 801

\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001.017.RAW




\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP18\18edbs17271001B.017.RAW



LANCASTER LABORATORIES

Sample Number: LCSDA 9/27/17 AALCSD27269 LCSD 172690027A 10398 SW-846 8011
Injected On: 9/28/2017 7:53:04 PM Sample Weight: 35
Instrument ID: CP18-19846 Dilution Factor: 2
Oven Parameters: 45c for 1 min, to 120 @ 12c/min, to 280 @ 40c/min
Column A ID: ZB MR-1 30m x 0.32mm x 0.5um
Column B ID: ZB MR-2 30m x 0.32mm x 0.25um
Injection Volume: 1 ul

Threshold: 1
Calibration Type: external
Quantitation: Height

Analyst: 7848

| RT A | Height A | Amount A --PPB | Compound A | RT B | Height B | Amount B - PPB | Compound B |
|---|---|---|---|---|---|---|---|
| 3.828 | 30887 | .139 | EDB | 2.777 | 42176 | .144 | EDB |
| 5.307 | 15617 | .063 | 1,1,2,2-PCA | 4.029 | 20274 | .06 | 1,1,2,2-PCA |
| 5.38 | 33753 | 1.04 | 1,2,3-TCP | 4.148 | 43863 | 1.092 | 1,2,3-TCP |
| 7.664 | 66765 | .143 | DBCP | 6.423 | 77948 | .143 | DBCP |

Files:
Area File: 18edbs17271001.017.RAW
Area File: 18edbs17271001B.017.RAW
Method A: 18EDBS.MET
Method B: 18EDBSB.MET
Calibration File A: 18EDBS1727101.CAL
Calibration File B: 18EDBS1727101b.CAL
Format A: EDB18.FMTA
Format B: EDB18.FMTB
Area File Created On: 9/28/2017 8:01:37 PM
File Reported On: 9/29/2017 at 1:47:29 PM

# Extraction/Distillation/Digestion Logs

# EDB/DBCP

**Organic Extraction Batchlog** Assigned to: 9874 Kayla Yuditsky Reviewed by: HMM 9/29 Start Date: 09/27/2017 Start Time: 08:00

**172690027A** Tech 1: Ky 9874 Tech 2: —

Dept: 24 Prep Analysis: 07786 EDB Extraction (8011) 8011 Master Master

| QC | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | MS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9224675MS | EF2-- | 36.61 | SS1725724A | .1 | MS1726524A | .07 | 2 | N | 2 | 057a | CLEAR |
| 9224676MSD | EF2-- | 36.95 | SS1725724A | .1 | MS1726524A | .07 | 2 | N | 2 | 057a | CLEAR |
| BLANKA | PBLK27269 | 35 | SS1725724A | .1 | | | 2 | N | 2 | | DI H20 |
| LCSA | LCS27269 | 35 | SS1725724A | .1 | MS1726524A | .07 | 2 | N | 2 | | DI H20 |
| LCSDA | LCSD27269 | 35 | SS1725724A | .1 | MS1726524A | .07 | 2 | N | 2 | | DI H20 |

| Solvent Used | Lot No. |
|---|---|
| Hexane | 174465 |
| NaCl | 185083017A |
| Sodium Sulfate | 17255A |
| Vial Lot# | 2402 |
| Vial Preservative Lot# | 24028 |
| | |

Spike Solutions: Witness: N/A

MS1726524A EDB SPIKE

SS1725724A EDB SURROGATE STANDARD

| Sample # | Sample Code | Amt (mL) | SS/IS Sol. | Amt (mL) | FV (mL) | Cl- | pH | BC | Comments | Analyses | List | Due Date | Prio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9221878 | MTWTB | 36.68 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 1897 | 10/03/2017 | N |
| 2 9221879 | MTW09 | 37.19 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 1897 | 10/03/2017 | N |
| 3 9221880 | MTW-A | 37.10 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 1897 | 10/03/2017 | N |
| 4 9221881 | MTW1D | 37.08 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 1897 | 10/03/2017 | N |
| 5 9221882 | MTWFB | 36.94 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 1897 | 10/03/2017 | N |
| 6 9221883 | MTW08 | 37.12 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR W SED | 10398 | 1897 | 10/03/2017 | N |
| 7 9221884 | MTW04 | 36.91 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 1897 | 10/03/2017 | N |
| 8 9221885 | MTW06 | 36.76 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR W SED | 10398 | 1897 | 10/03/2017 | N |
| 9 9221886 | MTW01 | 36.79 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 1897 | 10/03/2017 | N |
| 10 9224669 | EFF1- | 37.07 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |
| 11 9224670 | EFF1D | 36.60 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |
| 12 9224671 | GAC1- | 36.36 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |
| 13 9224672 | IN1-- | 36.73 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |
| 14 9224673 | TB01- | 37.07 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |
| 15 9224674BKG | EF2-- | 36.73 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |
| 16 9224678 | GC2-- | 36.57 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |
| 17 9224679 | IN2-- | 36.92 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |
| 18 9224680 | FB2-- | 36.89 | SS1725724A | 0.10 | 2.00 | N | 2 | 057a | CLEAR | 10398 | 17641 | 10/02/2017 | S |

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N/A

| Rack ID: | | Work Station | EDBAcd |
|---|---|---|---|
| Internal Standard | | Balance # | 9331 |

| S-bath ID | C | S-bath ID | C | N-Evap | C | M-vap | C | 172690027A |
|---|---|---|---|---|---|---|---|---|

Documented temps are NIST corrected.

DF = Dilution Factor FV = Final Volume

# Metals in Liquid Data

# Case Narrative/Conformance Summary

# Metals in Liquid

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR195**

## ICP Metals

**Fraction: Metals in Liquid**

| Sample # | Client ID | Matrix Liquid | Matrix Solid | DF | Comments |
|---|---|---|---|---|---|
| 9224669 | GWTS-EFF1-092117 | X | | 1 | |
| 9224670 | GWTS-EFF1DUP-092117 | X | | 1 | Field Duplicate Sample |
| 9224671 | GWTS-GAC1-092117 | X | | 1 | |
| 9224672 | GWTS-INF1-092117 | X | | 1 | |
| 9224674 | GWTS-EFF2-092117 | X | | 1 | Background/Unspiked |
| 9224675 | GWTS-EFF2-092117 MS | X | | 1 | Matrix Spike |
| 9224676 | GWTS-EFF2-092117 MSD | X | | 1 | Matrix Spike Duplicate |
| 9224677 | GWTS-EFF2-092117 DUP | X | | 1 | Duplicate |
| 9224678 | GWTS-GAC2-092117 | X | | 1 | |
| 9224679 | GWTS-INF2-092117 | X | | 1 | |

All analyses have been performed in accordance with DOD QSM Version 5.0 unless otherwise noted below.
See QC Reference List for Associated Batch QC Samples

### SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

### HOLDING TIME:

All holding times were met.

### PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

### CALIBRATION/STANDARDIZATION:

All criteria were met.

### QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

**MS/MSD**

All QC is within specification.

### SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

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# Case Narrative/Conformance Summary

**CLIENT: EA Engineering, Science & Tech**
**SDG: KR195**

## ICP Metals

**Fraction: Metals in Liquid**

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

**Abbreviation Key**

| | |
|---|---|
| BKG – Background | AF - Cold Vapor Atomic Fluorescence |
| DUP – Duplicate | U - Below MDL |
| MS - Matrix Spike | B - Below LOQ |
| MSD - Matrix Spike Dup | N - Matrix Spike out of specifications |
| B – Blank | * - Duplicate out of specifications |
| Q - Laboratory Control Sample | E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution |
| Y - Laboratory Control Sample Duplicate | A - Post Digestion Spike |
| P - ICP Atomic Emission Spectrometer | L - Serial Dilution |
| MS - ICP Mass Spectrometry | R - Internal Standard Relative Intensity OOS |
| CV - Cold Vapor | NR - Not Required |

# Sample Data

# Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224669 % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224670 % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224671 % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224672 % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
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_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224674BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224675MS % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 945 | | | P |
| 7439-96-5 | Manganese | 510 | | | P |

Comments:

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_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224676MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 1010 | | | P |
| 7439-96-5 | Manganese | 504 | | | P |

Comments:

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_____
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_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224677DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224678 % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9224679 % Solids: 0.0
Concentration Units: UG/L Date Received: 09/22/2017

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7439-89-6 | Iron | 80.5 | U | | P |
| 7439-96-5 | Manganese | 1.6 | U | | P |

Comments:

_____
_____
_____
_____

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer<br>MS = ICP Mass Spectrometry<br>CV = Cold Vapor<br>AF = Cold Vapor Atomic Fluorescence<br>NR = Not Required | U = Below MDL,<br>B = Below LOQ |

# Quality Control and Calibration Summary Forms

# Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: KR195
Matrix: WATER

| Analyte | Batch Number | Lab Sample ID |
|---|---|---|
| Iron | 172701063504 | 9224669 |
| Manganese | | 9224670 |
| | | 9224671 |
| | | 9224672 |
| | | 9224674BKG |
| | | 9224675MS |
| | | 9224676MSD |
| | | 9224677DUP |
| | | 9224678 |
| | | 9224679 |
| | | P27063DB |
| | | P27063DQ |

LEGEND:

| | |
|---|---|
| BKG = Background | B = Blank |
| DUP = Duplicate | Q = Laboratory Control Sample |
| MS = Matrix Spike | Y = Laboratory Control Sample Duplicate |
| MSD = Matrix Spike Duplicate | |

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR195

Method: P
Run Name: 1727401T72
Calibration Date(s): 10/01/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration | | | Continuing Calibration | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | True | Found | %R(1) | True | Found | %R(2) | True | Found | %R(2) |
| Iron | | 30000.0 | 28879.90 | 96.3 | 25000.0 | 24437.62 | 97.8 | 25000.0 | 24538.19 | 98.2 |
| Manganese | | 600.0 | 589.42 | 98.2 | 500.0 | 496.39 | 99.3 | 500.0 | 496.15 | 99.2 |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: KR195

Method: P
Run Name: 1727401T72
Calibration Date(s): 10/01/2017
Concentration Units: UG/L

| Analyte | Mass | Initial Calibration True | Found | %R(1) | Continuing Calibration True | Found | %R(2) | True | Found | %R(2) |
|---|---|---|---|---|---|---|---|---|---|---|
| Iron | | | | | 25000.0 | 24512.10 | 98.0 | | | |
| Manganese | | | | | 500.0 | 494.12 | 98.8 | | | |

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: KR195

Method: P
Run Name: 1727401T72
Calibration Date(s): 10/01/2017
Concentration Units: UG/L

| Analyte | Mass | Initial True | Initial Found | Initial %R | Final Found | Final %R |
|---|---|---|---|---|---|---|
| Iron | | 400.0 | 414.42 | 103.6 | | |
| Manganese | | 10.0 | 10.64 | 106.4 | | |

Control limits: 80% - 120%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: KR195

Method: P
Run Name: 1727401T72
Calibration Date(s): 10/01/2017
Preparation Blank Matrix: WATER

| | | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank (UG/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | | C | 1 | C | 2 | C | 3 | C | Mass | | C | Batch Number |
| Iron | | -72.6 | B | 33.4 | U | 33.4 | U | 33.4 | U | | 80.500 | U | 172701063504 |
| Manganese | | 0.83 | U | 0.83 | U | 0.83 | U | 0.83 | U | | 1.600 | U | 172701063504 |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below IDL/MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: KR195

Instrument ID: 16417
Run Name: 1727401T72
Concentration Units: ug/L

| Analyte | True | | Initial Found | | | | Final Found | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sol. A | Sol. AB | Sol. A | %R | Sol. AB | %R | Sol. A | %R | Sol. AB | %R |
| Aluminum | 500000 | | 489145 | 97.8 | | | | | | |
| Calcium | 500000 | | 497201 | 99.4 | | | | | | |
| Iron | 200000 | | 200816 | 100.4 | | | | | | |
| Magnesium | 500000 | | 511343 | 102.3 | | | | | | |
| Manganese | 0 | | 4 | | | | | | | |

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9224674BKG Matrix Spike Lab Sample ID: 9224675MS Matrix Spike Duplicate Lab Sample ID: 9224676MSD
Batch Number(s): 172701063504

| | | BKG Sample | | MS Sample | | MSD Sample | | MS Spike | MSD Spike | | MS | | MSD | | | | Control Limit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | Mass | Result | C | Result | C | Result | C | Added | Added | Units | %R | Q | %R | Q | RPD | Q | %R | RPD | M |
| Iron | | 80.5000 | U | 944.7400 | | 1009.0000 | | 1000.0000 | 1000.0000 | UG/L | 94 | | 101 | | 7 | | 87 - 115 | 20 | P |
| Manganese | | 1.6000 | U | 510.4900 | | 503.6200 | | 500.0000 | 500.0000 | UG/L | 102 | | 101 | | 1 | | 90 - 114 | 20 | P |

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9224674BKG Duplicate Lab Sample ID: 9224677DUP
Batch Number(s): 172701063504
Concentration Units: UG/L

| Analyte | Mass | Control Limit | Samples (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Iron | | | 80.5000 | U | 80.5000 | U | | | P |
| Manganese | | | 1.6000 | U | 1.6000 | U | | | P |

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | FLAGS: |
| AF = Cold Vapor Atomic Fluorescence | * = Duplicate Out of Spec |

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: KR195
Matrix: WATER

| Analyte | Mass | Batch Number | Units | True | Found | C | Control Limits (%) | %R | M | In Spec |
|---|---|---|---|---|---|---|---|---|---|---|
| Iron | | 172701063504 | UG/L | 1000.000 | 983.150 | | 87 - 115 | 98 | P | Yes |
| Manganese | | 172701063504 | UG/L | 500.000 | 504.390 | | 90 - 114 | 101 | P | Yes |

| METHODS: | CONCENTRATION QUALIFIERS: |
|---|---|
| P = ICP Atomic Emission Spectrometer | U= Below MDL |
| MS = ICP Mass Spectrometry | B= Below LOQ |
| CV = Cold Vapor | |
| AF = Cold Vapor Atomic Fluorescence | |

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: KR195
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9224674BKG Serial Dilution Lab Sample ID: 9224674L
Batch Number(s): 172701063504
Concentration Units: UG/L

| Analyte | Mass | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Diff. | Q | M |
|---|---|---|---|---|---|---|---|---|
| Iron | | 80.5000 | U | 402.5000 | U | | | P |
| Manganese | | 1.6000 | U | 8.0000 | U | | | P |

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

Method: P
Instrument ID: 16417
Date: 07/2017

| Analyte | Wavelength (nm) | Background | IDL (UG/L) |
|---|---|---|---|
| Iron | 261.19 | | 33.4 |
| Manganese | 257.61 | | 0.83 |

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: KR195
Matrix: WATER

Method: P
Date: 06/2017

| Analyte | Wavelength (nm) | Background | LOQ (UG/L) | MDL (UG/L) |
|---|---|---|---|---|
| Iron | 261.19 | | 400 | 80.5 |
| Manganese | 257.61 | | 10.0 | 1.6 |

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 12
LINEAR RANGES
SDG No.: KR195

Method: P
Instrument ID: 16417
Date: 07/2017

| Analyte | Wavelength (nm) | Integration Time (Sec.) | Concentration (ug/L) |
|---|---|---|---|
| Iron | 261.19 | 10.00 | 300000.0 |
| Manganese | 257.61 | 10.00 | 20000.0 |

Comments:
_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Batch Number: 172701063504

| Lab Sample ID | Date | Initial Volume(ml) | Final Volume(ml) |
|---|---|---|---|
| 9224669 | 09/28/2017 | 50.00 | 50 |
| 9224670 | 09/28/2017 | 50.00 | 50 |
| 9224671 | 09/28/2017 | 50.00 | 50 |
| 9224672 | 09/28/2017 | 50.00 | 50 |
| 9224678 | 09/28/2017 | 50.00 | 50 |
| 9224679 | 09/28/2017 | 50.00 | 50 |
| 9224674BKG | 09/28/2017 | 50.00 | 50 |
| 9224677DUP | 09/28/2017 | 50.00 | 50 |
| 9224676MSD | 09/28/2017 | 50.00 | 50 |
| 9224675MS | 09/28/2017 | 50.00 | 50 |
| P27063DB | 09/28/2017 | 50.00 | 50 |
| P27063DQ | 09/28/2017 | 1.00 | 1 |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: KR195

Method: P
Instrument ID: 16417
Run Name: 1727401T72

Run Start Date: 10/01/2017
Run End Date: 10/01/2017

| Lab Sample ID | D/F | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FE | MN | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S0 | 1.00 | 12:22 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:26 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:29 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | 1.00 | 12:32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 12:35 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 12:39 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLC | 1.00 | 12:42 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICSA | 1.00 | 12:45 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 12:48 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 12:51 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P27063DB | 1.00 | 12:54 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P27063DQ | 1.00 | 12:57 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224674BKG | 1.00 | 13:01 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224674A | 1.00 | 13:04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224677DUP | 1.00 | 13:07 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224675MS | 1.00 | 13:10 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224676MSD | 1.00 | 13:13 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224674L | 5.00 | 13:17 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224669 | 1.00 | 13:20 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224670 | 1.00 | 13:23 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 13:26 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 13:29 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224671 | 1.00 | 13:32 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224672 | 1.00 | 13:35 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224678 | 1.00 | 13:39 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9224679 | 1.00 | 13:42 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 13:45 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 13:48 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

# Raw Data

# Metals in Liquid

# ICP Data

# Metals in Liquid

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# ICP-AES Run Data Report

Reviewed By
Elaine F Stoltzfus

Reviewed Date
10/01/2017 2:01PM

Data File Name 1727401T72.TXT
Run Name: 1727401T72

Method Reference Name(s):

Verified By:
Deborah A Krady

Verified Date
10/02/2017 8:04AM

Analyst Employee: 463

Instrument Parameters:

Individual Integration Time: 10.00 sec  Total Integration Time: 30.00 sec  Rinse Time: 15.00 sec

| Element | Analyte Name | Wavelength Value |
|---|---|---|
| AG | Silver | 328.06 |
| AL | Aluminum | 308.21 |
| AS | Arsenic | 189.04 |
| AU | Gold | 242.80 |
| B | Boron | 249.67 |
| BA | Barium | 455.40 |
| BE | Beryllium | 313.04 |
| CA | Calcium | 317.93 |
| CD | Cadmium | 226.50 |
| CO | Cobalt | 228.62 |
| CR | Chromium | 267.72 |
| CU | Copper | 327.40 |
| FE | Iron | 261.19 |
| K | Potassium | 766.49 |
| LI | Lithium | 670.78 |
| MG | Magnesium | 285.21 |
| MN | Manganese | 257.61 |
| MO | Molybdenum | 202.03 |
| NA | Sodium | 589.59 |
| NI | Nickel | 231.60 |
| P | Phosphorus | 177.49 |
| PB | Lead | 220.35 |
| SB | Antimony | 206.83 |
| SE | Selenium | 196.09 |
| SI | Silicon | 251.60 |
| SN | Tin | 189.99 |
| SR | Strontium | 421.55 |
| TE | Tellurium | 214.28 |
| TH | Thorium | 401.91 |
| TI | Titanium | 334.94 |
| TL | Thallium | 190.86 |
| V | Vanadium | 292.40 |
| W | Tungsten | 207.91 |
| Y1 | Yttrium | 224.31 |
| Y2 | Yttrium | 371.03 |
| ZN | Zinc | 213.86 |
| ZR | Zirconium | 339.19 |

The TRACE ICP utilizes Yttrium as an internal standard to compensate for fluctuations in nebulization and plasma conditions. All Yttrium readings are expressed in counts.

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 1 Date/Time: 10/01/2017 12:22

Sample Number: **S0**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 0.000 | -17.85506 | 2.717 | -0.00381 | -0.00365 | -0.00384 |
| AL | 0.000 | 13.01667 | 30.656 | 0.17985 | 0.11570 | 0.10401 |
| AS | 0.000 | -0.79667 | 87.302 | -0.01254 | -0.00156 | -0.02337 |
| B | 0.000 | -2.07957 | 51.902 | -0.00001 | -0.00001 | -0.00001 |
| BA | 0.000 | -19.27276 | 184.758 | -0.00007 | -0.00024 | 0.00006 |
| BE | 0.000 | -93.55477 | 6.388 | -0.02004 | -0.01837 | -0.02084 |
| CA | 0.000 | 18.10000 | 21.931 | 0.00301 | 0.00350 | 0.00460 |
| CD | 0.000 | 0.47667 | 400.891 | 0.03667 | 0.00874 | -0.02305 |
| CO | 0.000 | 3.79333 | 29.626 | 0.03980 | 0.07386 | 0.06445 |
| CR | 0.000 | 3.26590 | 203.420 | -0.00002 | 0.00002 | 0.00004 |
| CU | 0.000 | -118.35304 | 8.448 | -0.02411 | -0.02345 | -0.02739 |
| FE | 0.000 | 1.58333 | 118.426 | 0.00072 | -0.00005 | 0.00031 |
| K | 0.000 | 54.55000 | 30.678 | 0.37758 | 0.71829 | 0.57950 |
| LI | 0.000 | -29.26667 | 67.725 | -0.00814 | -0.00131 | -0.00852 |
| MG | 0.000 | -0.61667 | 86.802 | -0.00010 | -0.00003 | -0.00025 |
| MN | 0.000 | 36.47114 | 14.206 | 0.00879 | 0.00768 | 0.00661 |
| MO | 0.000 | -0.99967 | 17.261 | -0.01614 | -0.01274 | -0.01808 |
| NA | 0.000 | -185.66667 | 10.850 | -0.04102 | -0.03969 | -0.03330 |
| NI | 0.000 | 5.59667 | 17.335 | 0.10515 | 0.07808 | 0.07966 |
| P | 0.000 | 1.46000 | 21.941 | 0.00043 | 0.00037 | 0.00057 |
| PB | 0.000 | 3.29444 | 45.865 | 0.05537 | 0.02629 | 0.07318 |
| S | 0.000 | 1.71333 | 5.248 | 0.00054 | 0.00051 | 0.00056 |
| SB | 0.000 | -1.80000 | 88.664 | -0.00077 | 0.00001 | -0.00093 |
| SE | 0.000 | 0.16667 | 335.501 | 0.00846 | -0.00750 | 0.00690 |
| SI | 0.000 | 0.60833 | 246.127 | -0.00018 | 0.00043 | 0.00013 |
| SN | 0.000 | -0.41333 | 58.165 | -0.00689 | -0.00999 | -0.00251 |
| SR | 0.000 | -127.87801 | 10.158 | -0.00048 | -0.00059 | -0.00055 |
| TI | 0.000 | 13.63157 | 30.239 | 0.00297 | 0.00196 | 0.00370 |
| TL | 0.000 | 1.26000 | 64.102 | 0.03322 | 0.00812 | 0.01788 |
| V | 0.000 | 12.90377 | 71.705 | 0.00106 | 0.00225 | 0.00488 |
| Y1 | 0.000 | 3193.68267 | 0.224 | 3190.78800 | 3201.83200 | 3188.42800 |
| Y2A | 0.000 | 236871.65369 | 0.517 | 238283.61604 | 236232.68502 | 236098.66000 |
| Y2R | 0.000 | 4885.10667 | 0.145 | 4892.96000 | 4883.15000 | 4879.21000 |
| ZN | 0.000 | 7.61000 | 2.883 | 0.11533 | 0.12009 | 0.12200 |
| ZR | 0.000 | 4.65000 | 74.308 | 0.00162 | 0.00022 | 0.00101 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 2 Date/Time: 10/01/2017 12:26

Sample Number: **S1**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AL | 50.000 | 1053.35274 | 0.470 | 10.87095 | 10.90824 | 10.97246 |
| CA | 50.000 | 10661.03348 | 0.619 | 2.20075 | 2.20328 | 2.22560 |
| FE | 50.000 | 1380.46608 | 0.565 | 0.28548 | 0.28498 | 0.28799 |
| K | 50.000 | 11485.62304 | 0.516 | 118.44570 | 119.00295 | 119.67156 |
| MG | 50.000 | 10190.87401 | 0.688 | 2.10199 | 2.10627 | 2.12901 |
| NA | 50.000 | 43550.31623 | 0.661 | 8.97003 | 9.02298 | 9.08910 |
| S | 50.000 | 4300.80000 | 0.115 | 1.35845 | 1.36045 | 1.35737 |
| SI | 50.000 | 871.23706 | 0.256 | 0.18020 | 0.18110 | 0.18048 |
| Y1 | 50.000 | 3165.25467 | 0.207 | 3160.24600 | 3162.83800 | 3172.68000 |
| Y2R | 50.000 | 4824.32192 | 0.327 | 4839.74870 | 4824.98504 | 4808.23201 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 3 Date/Time: 10/01/2017 12:29

Sample Number: **S2**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| AG | 1.000 | 16790.83569 | 0.578 | 3.61657 | 3.57773 | 3.61006 |
| AS | 1.000 | 128.82392 | 1.182 | 2.03918 | 2.00780 | 1.99250 |
| B | 1.000 | 7630.62652 | 0.749 | 0.03284 | 0.03245 | 0.03291 |
| BA | 1.000 | 652395.62514 | 0.731 | 2.78915 | 2.78469 | 2.82213 |
| BE | 1.000 | 373474.87298 | 0.551 | 80.39607 | 79.59868 | 80.32439 |
| CD | 1.000 | 5823.62196 | 0.501 | 91.52237 | 90.83639 | 90.65836 |
| CO | 1.000 | 2419.71505 | 0.335 | 37.95472 | 37.71177 | 37.77183 |
| CU | 1.000 | 11174.42229 | 0.951 | 2.40714 | 2.37071 | 2.41262 |
| LI | 1.000 | 6366.16711 | 0.292 | 1.30877 | 1.30319 | 1.31050 |
| MN | 1.000 | 56214.41458 | 0.822 | 12.12160 | 11.94326 | 12.10755 |
| NI | 1.000 | 1481.15404 | 0.534 | 23.27606 | 23.02993 | 23.13229 |
| P | 1.000 | 162.39140 | 0.595 | 0.05110 | 0.05064 | 0.05052 |
| PB | 1.000 | 538.16132 | 0.335 | 8.42642 | 8.37725 | 8.42575 |
| SE | 1.000 | 151.50750 | 0.562 | 2.37255 | 2.37766 | 2.35249 |
| SR | 1.000 | 788283.86325 | 1.270 | 3.33407 | 3.39293 | 3.41769 |
| TL | 1.000 | 139.58117 | 1.292 | 2.20131 | 2.19336 | 2.14901 |
| Y1 | 1.000 | 3199.63701 | 0.526 | 3182.01160 | 3215.51469 | 3201.38475 |
| Y2A | 1.000 | 233114.88835 | 0.438 | 233118.45416 | 234134.05422 | 232092.15667 |
| Y2R | 1.000 | 4868.99243 | 0.535 | 4898.72051 | 4850.00997 | 4858.24681 |
| ZN | 1.000 | 3862.14696 | 0.589 | 60.75036 | 60.24705 | 60.06415 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 4 Date/Time: 10/01/2017 12:32

Sample Number: **S3**

| ELEMENT | CONC (ppm) | AVERAGE INTENSITY | % RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| CR | 1.000 | 10333.43604 | 0.291 | 0.04304 | 0.04306 | 0.04327 |
| MO | 1.000 | 864.68133 | 0.735 | 13.44051 | 13.41547 | 13.25916 |
| SB | 1.000 | 242.05000 | 0.877 | 0.07559 | 0.07469 | 0.07431 |
| SN | 1.000 | 255.15667 | 0.535 | 3.94025 | 3.96913 | 3.92801 |
| TI | 1.000 | 50508.65743 | 0.503 | 10.56895 | 10.47825 | 10.57113 |
| V | 1.000 | 13871.04368 | 0.193 | 2.88974 | 2.90060 | 2.89300 |
| Y1 | 1.000 | 3233.33067 | 0.573 | 3228.47400 | 3217.70400 | 3253.81400 |
| Y2A | 1.000 | 239615.73987 | 0.334 | 240531.53000 | 239059.14354 | 239256.54607 |
| Y2R | 1.000 | 5019.76000 | 0.924 | 5027.57000 | 5061.75000 | 4969.96000 |
| ZR | 1.000 | 538.61667 | 1.451 | 0.10552 | 0.10800 | 0.10839 |

LANCASTER LABORATORIES

Run Name: 1727401T72

Instrument ID: 16417

Tube: 5

Date/Time: 10/01/2017 12:35

Sample Number: **ICV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.59638 | 10 079.02 | 0.180 | 0.59753 | 0.59540 | 0.59621 |
| ____ AL | 29.39242 | 639.33 | 0.176 | 29.45218 | 29.36270 | 29.36238 |
| ____ AS | 0.59618 | 76.25 | 0.936 | 0.59926 | 0.59955 | 0.58974 |
| ____ B | 0.59052 | 4 625.22 | 0.239 | 0.58989 | 0.59214 | 0.58953 |
| ____ BA | 0.59880 | 391 589.43 | 0.469 | 0.60199 | 0.59670 | 0.59770 |
| ____ BE | 0.57096 | 213 699.21 | 1.700 | 0.56015 | 0.57382 | 0.57893 |
| ____ CA | 29.77011 | 6 521.35 | 0.551 | 29.85902 | 29.87063 | 29.58069 |
| ____ CD | 0.59362 | 3 465.30 | 0.484 | 0.59316 | 0.59669 | 0.59100 |
| ____ CO | 0.58059 | 1 406.60 | 0.350 | 0.58247 | 0.58086 | 0.57843 |
| ____ CR | 0.58403 | 5 878.17 | 0.165 | 0.58499 | 0.58306 | 0.58403 |
| ____ CU | 0.60144 | 6 706.14 | 0.575 | 0.60543 | 0.59920 | 0.59970 |
| ____ FE | 28.87990 | 824.50 | 0.411 | 28.79551 | 28.82839 | 29.01580 |
| ____ K | 29.71463 | 7 007.82 | 0.457 | 29.55785 | 29.79533 | 29.79071 |
| ____ LI | 0.58899 | 3 818.97 | 0.076 | 0.58898 | 0.58945 | 0.58855 |
| ____ MG | 29.28499 | 6 131.79 | 0.747 | 29.41939 | 29.40285 | 29.03272 |
| ____ MN | 0.58942 | 33 228.74 | 0.062 | 0.58900 | 0.58957 | 0.58968 |
| ____ MO | 0.59037 | 503.48 | 0.300 | 0.59007 | 0.59227 | 0.58876 |
| ____ NA | 28.91654 | 25 705.42 | 0.266 | 28.96181 | 28.95998 | 28.82784 |
| ____ NI | 0.58632 | 869.51 | 0.274 | 0.58499 | 0.58811 | 0.58586 |
| ____ P | 0.59769 | 97.54 | 0.865 | 0.60296 | 0.59264 | 0.59747 |
| ____ PB | 0.59801 | 324.91 | 0.541 | 0.59785 | 0.60133 | 0.59486 |
| ____ S | 29.97545 | 2 604.07 | 0.475 | 29.96324 | 30.12347 | 29.83964 |
| ____ SB | 0.61515 | 147.42 | 0.635 | 0.61494 | 0.61916 | 0.61135 |
| ____ SE | 0.58504 | 88.32 | 1.209 | 0.58934 | 0.57688 | 0.58890 |
| ____ SI | 29.92349 | 533.85 | 0.429 | 29.99168 | 30.00348 | 29.77530 |
| ____ SN | 0.59999 | 150.98 | 0.507 | 0.59931 | 0.60332 | 0.59734 |
| ____ SR | 0.58765 | 466 309.91 | 0.726 | 0.59242 | 0.58633 | 0.58420 |
| ____ TI | 0.60652 | 29 879.76 | 0.138 | 0.60617 | 0.60591 | 0.60747 |
| ____ TL | 0.59640 | 83.90 | 0.724 | 0.59514 | 0.59286 | 0.60121 |
| ____ V | 0.60738 | 8 229.64 | 0.213 | 0.60630 | 0.60701 | 0.60881 |
| ____ Y1 | 3195.97800 | 3 195.98 | 0.339 | 3207.14600 | 3185.54200 | 3195.24600 |
| ____ Y2A | 233674.66080 | 233 674.66 | 0.232 | 233815.33785 | 234132.13000 | 233076.51455 |
| ____ Y2R | 4937.13674 | 4 937.14 | 0.348 | 4955.94099 | 4922.31520 | 4933.15401 |
| ____ ZN | 0.58724 | 2 279.28 | 0.124 | 0.58757 | 0.58775 | 0.58641 |
| ____ ZR | 0.60227 | 320.93 | 0.785 | 0.60126 | 0.59812 | 0.60742 |

LANCASTER LABORATORIES

Run Name: 1727401T72

Instrument ID: 16417

Tube: 6

Date/Time: 10/01/2017 12:39

Sample Number: **ICB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00091 | -26.82 | 64.937 | -0.00073 | -0.00157 | -0.00043 |
| ____ AL | -0.15115 | 9.97 | 35.486 | -0.19013 | -0.08998 | -0.17334 |
| ____ AS | 0.00287 | -0.31 | 127.092 | 0.00437 | -0.00129 | 0.00552 |
| ____ B | 0.00188 | 12.09 | 0.452 | 0.00187 | 0.00188 | 0.00188 |
| ____ BA | 0.00006 | 19.72 | 73.376 | 0.00002 | 0.00005 | 0.00010 |
| ____ BE | 0.00012 | -83.64 | 6.426 | 0.00011 | 0.00013 | 0.00011 |
| ____ CA | -0.01010 | 16.13 | 166.830 | 0.00078 | -0.00157 | -0.02952 |
| ____ CD | -0.00014 | -1.31 | 136.954 | -0.00030 | -0.00018 | 0.00007 |
| ____ CO | -0.00003 | 3.72 | 1507.441 | 0.00000 | -0.00054 | 0.00044 |
| ____ CR | 0.00124 | 2.22 | 35.565 | 0.00117 | 0.00084 | 0.00171 |
| ____ CU | -0.00085 | -114.43 | 179.152 | -0.00228 | -0.00100 | 0.00074 |
| ____ FE | -0.07261 | -0.50 | 59.897 | -0.04332 | -0.12258 | -0.05192 |
| ____ K | 0.05515 | 68.23 | 156.389 | 0.14746 | -0.02335 | 0.04133 |
| ____ LI | -0.00276 | -4.53 | 8.807 | -0.00290 | -0.00248 | -0.00291 |
| ____ MG | 0.00487 | 0.40 | 220.350 | -0.00744 | 0.00981 | 0.01224 |
| ____ MN | -0.00015 | 28.10 | 40.977 | -0.00021 | -0.00009 | -0.00013 |
| ____ MO | 0.00163 | -1.31 | 27.818 | 0.00126 | 0.00150 | 0.00214 |
| ____ NA | -0.01466 | -180.67 | 81.822 | -0.00081 | -0.02136 | -0.02181 |
| ____ NI | 0.00054 | 6.41 | 119.847 | -0.00020 | 0.00086 | 0.00095 |
| ____ P | 0.00074 | 1.58 | 245.379 | -0.00068 | 0.00278 | 0.00011 |
| ____ PB | 0.00201 | 4.37 | 110.566 | 0.00445 | 0.00010 | 0.00149 |
| ____ S | 0.01641 | 3.15 | 26.860 | 0.02103 | 0.01225 | 0.01595 |
| ____ SB | -0.00687 | -1.51 | 15.823 | -0.00591 | -0.00664 | -0.00805 |
| ____ SE | 0.00302 | 0.63 | 87.568 | 0.00205 | 0.00602 | 0.00100 |
| ____ SI | 0.03643 | 1.08 | 279.721 | 0.14636 | 0.01786 | -0.05491 |
| ____ SN | -0.00241 | -1.47 | 89.412 | -0.00453 | -0.00247 | -0.00022 |
| ____ SR | 0.00002 | -94.74 | 77.843 | 0.00000 | 0.00002 | 0.00002 |
| ____ TI | 0.00010 | 18.82 | 33.988 | 0.00009 | 0.00014 | 0.00008 |
| ____ TL | 0.00045 | 1.33 | 898.629 | 0.00168 | 0.00376 | -0.00409 |
| ____ V | -0.00011 | 11.11 | 281.952 | -0.00023 | -0.00034 | 0.00024 |
| ____ Y1 | 3202.99733 | 3 203.00 | 0.298 | 3213.99400 | 3198.31000 | 3196.68800 |
| ____ Y2A | 236922.71802 | 236 922.72 | 0.490 | 237762.37752 | 235598.16110 | 237407.61543 |
| ____ Y2R | 4950.61667 | 4 950.62 | 0.391 | 4959.34000 | 4964.08000 | 4928.43000 |
| ____ ZN | 0.00102 | 11.53 | 32.353 | 0.00068 | 0.00134 | 0.00104 |
| ____ ZR | -0.00186 | 3.73 | 237.265 | -0.00506 | 0.00318 | -0.00370 |

LANCASTER LABORATORIES

Run Name: 1727401T72

Instrument ID: 16417

Tube: 7

Date/Time: 10/01/2017 12:42

Sample Number: **LLC**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00927 | 159.83 | 4.599 | 0.00904 | 0.00900 | 0.00976 |
| ____ AL | 0.22297 | 18.07 | 57.299 | 0.16791 | 0.36903 | 0.13197 |
| ____ AS | 0.04241 | 4.85 | 19.534 | 0.03380 | 0.05032 | 0.04311 |
| ____ B | 0.09828 | 772.54 | 1.522 | 0.09685 | 0.09816 | 0.09983 |
| ____ BA | 0.01037 | 6 946.80 | 1.142 | 0.01032 | 0.01027 | 0.01050 |
| ____ BE | 0.01033 | 3 845.45 | 0.851 | 0.01028 | 0.01027 | 0.01043 |
| ____ CA | 0.40231 | 107.35 | 4.732 | 0.41731 | 0.38089 | 0.40872 |
| ____ CD | 0.01056 | 61.73 | 0.486 | 0.01054 | 0.01062 | 0.01052 |
| ____ CO | 0.01053 | 29.61 | 2.534 | 0.01060 | 0.01024 | 0.01076 |
| ____ CR | 0.03140 | 314.77 | 1.870 | 0.03115 | 0.03097 | 0.03206 |
| ____ CU | 0.01943 | 119.46 | 1.452 | 0.01911 | 0.01960 | 0.01959 |
| ____ FE | 0.41442 | 13.67 | 5.407 | 0.43281 | 0.42097 | 0.38946 |
| ____ K | 1.02927 | 298.32 | 2.327 | 1.02456 | 1.00802 | 1.05523 |
| ____ LI | 0.03527 | 242.58 | 2.544 | 0.03504 | 0.03452 | 0.03627 |
| ____ MG | 0.20562 | 43.02 | 3.741 | 0.19851 | 0.21378 | 0.20457 |
| ____ MN | 0.01064 | 652.60 | 1.285 | 0.01050 | 0.01064 | 0.01077 |
| ____ MO | 0.02162 | 15.98 | 1.760 | 0.02199 | 0.02164 | 0.02123 |
| ____ NA | 1.96942 | 1 607.63 | 1.320 | 1.97440 | 1.94130 | 1.99258 |
| ____ NI | 0.02125 | 37.28 | 3.747 | 0.02194 | 0.02143 | 0.02038 |
| ____ P | 0.20385 | 34.57 | 0.603 | 0.20485 | 0.20423 | 0.20248 |
| ____ PB | 0.03046 | 19.74 | 10.614 | 0.03412 | 0.02926 | 0.02800 |
| ____ S | 1.05568 | 94.29 | 1.327 | 1.05361 | 1.07060 | 1.04282 |
| ____ SB | 0.03839 | 9.47 | 13.845 | 0.03729 | 0.04417 | 0.03371 |
| ____ SE | 0.04502 | 7.04 | 17.033 | 0.05387 | 0.04067 | 0.04050 |
| ____ SI | 0.09773 | 2.19 | 35.115 | 0.05854 | 0.11221 | 0.12243 |
| ____ SN | 0.03930 | 9.18 | 7.236 | 0.03616 | 0.04004 | 0.04170 |
| ____ SR | 0.01014 | 8 160.18 | 0.846 | 0.01013 | 0.01006 | 0.01023 |
| ____ TI | 0.02085 | 1 068.87 | 1.470 | 0.02065 | 0.02069 | 0.02120 |
| ____ TL | 0.05292 | 8.63 | 7.174 | 0.05691 | 0.05249 | 0.04935 |
| ____ V | 0.01012 | 151.67 | 5.000 | 0.00962 | 0.01011 | 0.01063 |
| ____ Y1 | 3227.68333 | 3 227.68 | 0.420 | 3239.68000 | 3230.38800 | 3212.98200 |
| ____ Y2A | 240148.26662 | 240 148.27 | 0.565 | 240769.77649 | 241083.14337 | 238591.88000 |
| ____ Y2R | 4976.51667 | 4 976.52 | 0.915 | 4940.90000 | 5027.82000 | 4960.83000 |
| ____ ZN | 0.04123 | 167.60 | 0.165 | 0.04129 | 0.04116 | 0.04125 |
| ____ ZR | 0.10341 | 59.47 | 5.126 | 0.09886 | 0.10214 | 0.10923 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 8 Date/Time: 10/01/2017 12:45

Sample Number: **ICSA**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00326 | -53.39 | 21.181 | 0.00290 | 0.00406 | 0.00283 |
| ____ AL | 489.14464 | 9 911.82 | 0.481 | 486.42919 | 490.45464 | 490.55009 |
| ____ AS | -0.00493 | -4.10 | 155.103 | -0.01279 | -0.00452 | 0.00250 |
| ____ B | 0.07506 | 1 406.93 | 2.628 | 0.07693 | 0.07526 | 0.07300 |
| ____ BA | 0.00056 | 321.88 | 3.462 | 0.00057 | 0.00057 | 0.00054 |
| ____ BE | 0.00007 | -91.32 | 34.055 | 0.00010 | 0.00006 | 0.00006 |
| ____ CA | 497.20129 | 95 390.35 | 0.553 | 494.02852 | 498.76724 | 498.80811 |
| ____ CD | 0.00089 | 86.24 | 58.012 | 0.00055 | 0.00148 | 0.00063 |
| ____ CO | -0.00050 | 2.47 | 80.608 | -0.00053 | -0.00008 | -0.00087 |
| ____ CR | 0.00298 | -0.46 | 22.128 | 0.00291 | 0.00236 | 0.00367 |
| ____ CU | -0.00602 | 20.27 | 22.165 | -0.00465 | -0.00731 | -0.00610 |
| ____ FE | 200.81642 | 4 950.84 | 0.754 | 199.14804 | 201.19682 | 202.10441 |
| ____ K | -0.04783 | 41.19 | 158.591 | -0.13324 | -0.02195 | 0.01169 |
| ____ LI | -0.00483 | 57.74 | 71.166 | -0.00562 | -0.00107 | -0.00780 |
| ____ MG | 511.34295 | 91 404.38 | 0.382 | 509.15879 | 511.94371 | 512.92636 |
| ____ MN | 0.00399 | 240.22 | 2.098 | 0.00396 | 0.00408 | 0.00392 |
| ____ MO | -0.00580 | -7.27 | 16.085 | -0.00523 | -0.00687 | -0.00529 |
| ____ NA | 0.01370 | -145.12 | 82.004 | 0.01308 | 0.00279 | 0.02524 |
| ____ NI | 0.00081 | 4.75 | 164.205 | -0.00066 | 0.00191 | 0.00117 |
| ____ P | 0.00561 | 2.24 | 49.801 | 0.00362 | 0.00442 | 0.00881 |
| ____ PB | -0.00366 | 59.75 | 117.436 | -0.00551 | 0.00125 | -0.00671 |
| ____ S | -0.00045 | 1.59 | 3374.676 | -0.00010 | -0.01572 | 0.01449 |
| ____ SB | -0.01436 | -2.17 | 34.836 | -0.00928 | -0.01451 | -0.01928 |
| ____ SE | 0.01428 | 0.31 | 64.554 | 0.02457 | 0.01147 | 0.00679 |
| ____ SI | 0.01143 | 0.59 | 595.180 | -0.04626 | -0.00593 | 0.08649 |
| ____ SN | 0.00325 | -0.03 | 100.865 | 0.00445 | 0.00576 | -0.00046 |
| ____ SR | -0.00113 | 11 895.20 | 16.001 | -0.00094 | -0.00114 | -0.00130 |
| ____ TI | 0.00103 | 59.23 | 16.053 | 0.00122 | 0.00094 | 0.00093 |
| ____ TL | -0.00557 | 2.07 | 64.043 | -0.00959 | -0.00437 | -0.00276 |
| ____ V | -0.00060 | 40.66 | 126.001 | 0.00020 | -0.00130 | -0.00071 |
| ____ Y1 | 3028.27533 | 3 028.28 | 0.323 | 3035.43600 | 3017.12200 | 3032.26800 |
| ____ Y2A | 215566.43670 | 215 566.44 | 0.848 | 214457.34678 | 214564.88831 | 217677.07502 |
| ____ Y2R | 4628.41281 | 4 628.41 | 0.256 | 4638.74053 | 4615.45000 | 4631.04790 |
| ____ ZN | 0.00559 | 97.28 | 2.553 | 0.00557 | 0.00574 | 0.00546 |
| ____ ZR | 0.00189 | 5.34 | 331.476 | 0.00620 | -0.00528 | 0.00473 |

LANCASTER LABORATORIES

Run Name: 1727401T72

Instrument ID: 16417

Tube: 9

Date/Time: 10/01/2017 12:48

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49551 | 8 450.25 | 0.568 | 0.49427 | 0.49873 | 0.49352 |
| ____ AL | 24.52048 | 530.70 | 0.930 | 24.75381 | 24.29837 | 24.50927 |
| ____ AS | 0.50910 | 65.42 | 0.841 | 0.51143 | 0.50416 | 0.51171 |
| ____ B | 0.49785 | 3 936.35 | 0.781 | 0.49496 | 0.50227 | 0.49633 |
| ____ BA | 0.49808 | 328 752.05 | 0.762 | 0.50113 | 0.49927 | 0.49383 |
| ____ BE | 0.48527 | 183 300.22 | 0.537 | 0.48447 | 0.48819 | 0.48316 |
| ____ CA | 24.68421 | 5 365.68 | 1.044 | 24.74716 | 24.40080 | 24.90468 |
| ____ CD | 0.50060 | 2 940.42 | 0.287 | 0.50225 | 0.49965 | 0.49989 |
| ____ CO | 0.49591 | 1 209.45 | 0.161 | 0.49593 | 0.49511 | 0.49671 |
| ____ CR | 0.49158 | 4 992.12 | 0.460 | 0.49025 | 0.49419 | 0.49030 |
| ____ CU | 0.50855 | 5 707.31 | 0.684 | 0.50539 | 0.51227 | 0.50800 |
| ____ FE | 24.43762 | 693.06 | 1.398 | 24.63289 | 24.04305 | 24.63691 |
| ____ K | 24.87431 | 5 822.62 | 2.071 | 25.09253 | 24.28597 | 25.24442 |
| ____ LI | 0.49640 | 3 192.01 | 1.359 | 0.50194 | 0.48889 | 0.49837 |
| ____ MG | 24.39490 | 5 066.61 | 1.323 | 24.42996 | 24.05612 | 24.69861 |
| ____ MN | 0.49639 | 28 250.56 | 0.719 | 0.49566 | 0.50027 | 0.49325 |
| ____ MO | 0.49983 | 428.50 | 0.309 | 0.50082 | 0.49806 | 0.50062 |
| ____ NA | 24.71432 | 21 749.22 | 1.176 | 24.77151 | 24.39933 | 24.97212 |
| ____ NI | 0.49321 | 736.87 | 0.404 | 0.49522 | 0.49124 | 0.49318 |
| ____ P | 0.49949 | 82.26 | 0.400 | 0.50178 | 0.49856 | 0.49812 |
| ____ PB | 0.49706 | 272.25 | 0.663 | 0.49927 | 0.49862 | 0.49327 |
| ____ S | 24.58545 | 2 149.41 | 0.263 | 24.64599 | 24.51748 | 24.59288 |
| ____ SB | 0.49679 | 119.79 | 1.822 | 0.50438 | 0.48677 | 0.49922 |
| ____ SE | 0.49735 | 75.57 | 0.710 | 0.50106 | 0.49402 | 0.49698 |
| ____ SI | 24.62788 | 435.54 | 0.596 | 24.47724 | 24.63592 | 24.77049 |
| ____ SN | 0.49570 | 125.37 | 0.351 | 0.49719 | 0.49613 | 0.49379 |
| ____ SR | 0.49684 | 397 906.48 | 0.465 | 0.49522 | 0.49949 | 0.49581 |
| ____ TI | 0.50457 | 25 091.12 | 0.539 | 0.50258 | 0.50766 | 0.50346 |
| ____ TL | 0.50406 | 71.55 | 0.788 | 0.50847 | 0.50076 | 0.50294 |
| ____ V | 0.50836 | 6 953.28 | 0.871 | 0.50726 | 0.51324 | 0.50459 |
| ____ Y1 | 3215.82267 | 3 215.82 | 0.066 | 3217.72600 | 3216.23000 | 3213.51200 |
| ____ Y2A | 235853.48070 | 235 853.48 | 0.376 | 236016.69998 | 234895.82087 | 236647.92125 |
| ____ Y2R | 4893.22998 | 4 893.23 | 0.780 | 4908.48624 | 4921.42288 | 4849.78083 |
| ____ ZN | 0.49696 | 1 941.97 | 0.380 | 0.49887 | 0.49509 | 0.49694 |
| ____ ZR | 0.50258 | 266.18 | 1.559 | 0.50148 | 0.49536 | 0.51091 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 10 Date/Time: 10/01/2017 12:51

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00029 | -16.45 | 41.811 | -0.00017 | -0.00041 | -0.00030 |
| ____ AL | 0.02868 | 13.65 | 696.195 | -0.18940 | 0.07299 | 0.20244 |
| ____ AS | -0.00082 | -0.80 | 360.593 | -0.00106 | -0.00363 | 0.00224 |
| ____ B | 0.00224 | 15.13 | 8.755 | 0.00243 | 0.00204 | 0.00225 |
| ____ BA | 0.00008 | 34.22 | 18.171 | 0.00008 | 0.00006 | 0.00009 |
| ____ BE | 0.00007 | -99.36 | 35.779 | 0.00004 | 0.00009 | 0.00010 |
| ____ CA | 0.02265 | 23.10 | 51.626 | 0.03613 | 0.01518 | 0.01664 |
| ____ CD | -0.00022 | -1.78 | 64.905 | -0.00029 | -0.00006 | -0.00031 |
| ____ CO | 0.00038 | 4.75 | 151.779 | -0.00027 | 0.00060 | 0.00082 |
| ____ CR | 0.00107 | 0.42 | 33.837 | 0.00074 | 0.00146 | 0.00100 |
| ____ CU | -0.00108 | -117.13 | 25.661 | -0.00081 | -0.00107 | -0.00136 |
| ____ FE | -0.02117 | 0.98 | 172.669 | 0.02103 | -0.04314 | -0.04141 |
| ____ K | 0.05204 | 66.82 | 155.759 | 0.05722 | 0.13037 | -0.03148 |
| ____ LI | -0.00353 | -9.38 | 61.645 | -0.00565 | -0.00361 | -0.00131 |
| ____ MG | 0.01374 | 2.25 | 68.696 | 0.01153 | 0.02408 | 0.00560 |
| ____ MN | -0.00021 | 24.54 | 12.695 | -0.00024 | -0.00020 | -0.00019 |
| ____ MO | 0.00083 | -2.02 | 26.613 | 0.00079 | 0.00107 | 0.00063 |
| ____ NA | -0.02584 | -188.75 | 102.018 | -0.00446 | -0.01777 | -0.05529 |
| ____ NI | 0.00033 | 6.15 | 265.329 | 0.00134 | -0.00002 | -0.00032 |
| ____ P | -0.00196 | 1.16 | 150.192 | -0.00533 | 0.00013 | -0.00068 |
| ____ PB | 0.00186 | 4.34 | 84.196 | 0.00365 | 0.00105 | 0.00086 |
| ____ S | 0.00723 | 2.36 | 95.119 | 0.01254 | 0.00969 | -0.00054 |
| ____ SB | -0.00791 | -1.77 | 64.139 | -0.01326 | -0.00728 | -0.00318 |
| ____ SE | 0.00559 | 1.02 | 193.400 | 0.01632 | 0.00573 | -0.00529 |
| ____ SI | 0.08020 | 1.84 | 46.324 | 0.04211 | 0.11634 | 0.08216 |
| ____ SN | -0.00136 | -1.21 | 78.373 | -0.00078 | -0.00072 | -0.00259 |
| ____ SR | 0.00000 | -104.77 | 3547.778 | 0.00000 | -0.00002 | 0.00001 |
| ____ TI | -0.00005 | 11.26 | 317.602 | -0.00013 | 0.00013 | -0.00014 |
| ____ TL | 0.00038 | 1.33 | 1095.564 | -0.00441 | 0.00254 | 0.00302 |
| ____ V | -0.00028 | 8.86 | 153.136 | -0.00024 | 0.00013 | -0.00073 |
| ____ Y1 | 3226.01533 | 3 226.02 | 0.382 | 3226.20200 | 3213.60000 | 3238.24400 |
| ____ Y2A | 237080.21790 | 237 080.22 | 0.629 | 238335.19296 | 235432.47052 | 237472.99023 |
| ____ Y2R | 4900.80667 | 4 900.81 | 0.417 | 4923.97000 | 4885.42000 | 4893.03000 |
| ____ ZN | 0.00100 | 11.54 | 3.079 | 0.00096 | 0.00102 | 0.00101 |
| ____ ZR | -0.00357 | 2.80 | 58.142 | -0.00303 | -0.00182 | -0.00587 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 11 Date/Time: 10/01/2017 12:54

Sample Number: **PBW** Class: **** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00045 | -19.74 | 120.137 | -0.00025 | -0.00105 | -0.00003 |
| ____ AL | 0.06859 | 14.82 | 122.732 | 0.11054 | 0.12355 | -0.02832 |
| ____ AS | -0.00133 | -0.88 | 300.042 | 0.00226 | -0.00562 | -0.00062 |
| ____ B | 0.00190 | 12.68 | 44.176 | 0.00120 | 0.00168 | 0.00283 |
| ____ BA | 0.00010 | 46.46 | 22.283 | 0.00010 | 0.00012 | 0.00007 |
| ____ BE | 0.00011 | -87.93 | 6.146 | 0.00010 | 0.00011 | 0.00012 |
| ____ CA | 0.00988 | 20.78 | 224.430 | -0.01522 | 0.01807 | 0.02679 |
| ____ CD | -0.00013 | -1.32 | 76.778 | -0.00004 | -0.00012 | -0.00024 |
| ____ CO | -0.00005 | 3.77 | 735.580 | 0.00010 | 0.00022 | -0.00046 |
| ____ CR | 0.00129 | 2.76 | 39.493 | 0.00075 | 0.00176 | 0.00136 |
| ____ CU | -0.00117 | -121.36 | 103.274 | -0.00109 | 0.00000 | -0.00242 |
| ____ FE | -0.05244 | 0.08 | 199.873 | -0.13775 | 0.06457 | -0.08415 |
| ____ K | -0.01572 | 52.22 | 137.882 | -0.03183 | 0.00892 | -0.02425 |
| ____ LI | -0.00260 | -3.48 | 78.881 | -0.00162 | -0.00495 | -0.00122 |
| ____ MG | 0.02981 | 5.75 | 45.537 | 0.01872 | 0.02575 | 0.04494 |
| ____ MN | -0.00018 | 26.92 | 56.215 | -0.00028 | -0.00008 | -0.00017 |
| ____ MO | 0.00153 | -1.43 | 48.861 | 0.00103 | 0.00117 | 0.00239 |
| ____ NA | 0.08318 | -94.03 | 42.683 | 0.11941 | 0.04846 | 0.08166 |
| ____ NI | 0.00044 | 6.43 | 185.610 | 0.00007 | 0.00138 | -0.00012 |
| ____ P | -0.00049 | 1.43 | 348.169 | -0.00100 | -0.00189 | 0.00142 |
| ____ PB | 0.00033 | 3.60 | 845.765 | 0.00285 | -0.00262 | 0.00075 |
| ____ S | 0.00764 | 2.45 | 112.578 | 0.00052 | 0.01719 | 0.00521 |
| ____ SB | -0.00414 | -0.87 | 36.397 | -0.00242 | -0.00520 | -0.00482 |
| ____ SE | -0.00179 | -0.11 | 319.988 | 0.00393 | -0.00175 | -0.00755 |
| ____ SI | 0.07713 | 1.83 | 63.598 | 0.03019 | 0.07314 | 0.12806 |
| ____ SN | -0.00145 | -1.26 | 136.170 | 0.00036 | -0.00357 | -0.00115 |
| ____ SR | 0.00012 | -7.35 | 23.525 | 0.00014 | 0.00009 | 0.00015 |
| ____ TI | 0.00005 | 16.35 | 149.748 | 0.00012 | 0.00002 | 0.00000 |
| ____ TL | -0.00314 | 0.86 | 155.157 | -0.00037 | -0.00876 | -0.00029 |
| ____ V | 0.00010 | 14.33 | 662.348 | -0.00051 | 0.00075 | 0.00005 |
| ____ Y1 | 3292.01867 | 3 292.02 | 1.488 | 3269.41800 | 3258.41800 | 3348.22000 |
| ____ Y2A | 243269.50644 | 243 269.51 | 0.246 | 243585.94093 | 242578.55287 | 243644.02553 |
| ____ Y2R | 5009.92333 | 5 009.92 | 0.782 | 4984.23000 | 4990.50000 | 5055.04000 |
| ____ ZN | -0.00052 | 5.77 | 35.275 | -0.00073 | -0.00044 | -0.00040 |
| ____ ZR | -0.00490 | 2.17 | 152.682 | -0.00159 | -0.01347 | 0.00035 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 12 Date/Time: 10/01/2017 12:57

Sample Number: **LCSW** Class: **** Batch: 172701063504

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04697 | 903.56 | 1.221 | 0.04755 | 0.04696 | 0.04641 |
| ____ AL | 2.01614 | 57.77 | 5.530 | 1.90374 | 2.01800 | 2.12669 |
| ____ AS | 0.14517 | 19.12 | 3.191 | 0.15027 | 0.14402 | 0.14122 |
| ____ B | 1.86546 | 14 603.00 | 0.356 | 1.86422 | 1.87263 | 1.85951 |
| ____ BA | 1.98403 | 1 327 413.83 | 0.703 | 1.96800 | 1.99341 | 1.99068 |
| ____ BE | 0.04793 | 18 234.78 | 0.470 | 0.04809 | 0.04803 | 0.04767 |
| ____ CA | 3.92269 | 886.56 | 0.734 | 3.91509 | 3.89846 | 3.95451 |
| ____ CD | 0.05061 | 297.53 | 1.104 | 0.05093 | 0.05094 | 0.04997 |
| ____ CO | 0.50253 | 1 235.21 | 0.514 | 0.50407 | 0.50398 | 0.49955 |
| ____ CR | 0.19876 | 2 040.43 | 0.201 | 0.19921 | 0.19861 | 0.19845 |
| ____ CU | 0.25718 | 2 828.03 | 0.840 | 0.25808 | 0.25875 | 0.25472 |
| ____ FE | 0.98315 | 30.25 | 6.343 | 0.91292 | 1.00448 | 1.03205 |
| ____ K | 10.23926 | 2 474.38 | 0.670 | 10.28830 | 10.16082 | 10.26865 |
| ____ LI | 1.00145 | 6 526.78 | 0.639 | 0.99689 | 0.99871 | 1.00876 |
| ____ MG | 1.97915 | 419.89 | 0.532 | 1.97442 | 1.97181 | 1.99123 |
| ____ MN | 0.50439 | 29 094.79 | 0.217 | 0.50549 | 0.50436 | 0.50331 |
| ____ MO | 2.01768 | 1 745.75 | 0.655 | 2.02388 | 2.02665 | 2.00251 |
| ____ NA | 9.84936 | 8 727.97 | 0.875 | 9.88887 | 9.75047 | 9.90874 |
| ____ NI | 0.51316 | 770.08 | 0.456 | 0.51442 | 0.51460 | 0.51046 |
| ____ P | 0.98624 | 161.70 | 1.043 | 0.98792 | 0.99559 | 0.97521 |
| ____ PB | 0.15210 | 83.72 | 0.655 | 0.15194 | 0.15120 | 0.15317 |
| ____ S | 1.00739 | 90.13 | 0.361 | 1.00530 | 1.01160 | 1.00528 |
| ____ SB | 0.52307 | 122.74 | 0.592 | 0.52067 | 0.52657 | 0.52199 |
| ____ SE | 0.14473 | 22.27 | 3.083 | 0.14444 | 0.14041 | 0.14932 |
| ____ SI | 1.12720 | 20.99 | 4.764 | 1.11432 | 1.18616 | 1.08111 |
| ____ SN | 3.98168 | 1 017.54 | 0.456 | 3.98608 | 3.99724 | 3.96172 |
| ____ SR | 0.98435 | 795 762.24 | 1.294 | 0.99815 | 0.98183 | 0.97305 |
| ____ TI | 0.99941 | 50 359.67 | 0.457 | 1.00313 | 1.00078 | 0.99432 |
| ____ TL | 0.14582 | 22.04 | 1.429 | 0.14342 | 0.14721 | 0.14682 |
| ____ V | 0.50664 | 6 742.00 | 0.512 | 0.50814 | 0.50814 | 0.50365 |
| ____ Y1 | 3230.17533 | 3 230.18 | 0.447 | 3228.95200 | 3216.38600 | 3245.18800 |
| ____ Y2A | 239054.33311 | 239 054.33 | 0.431 | 238154.26573 | 238828.83350 | 240179.90010 |
| ____ Y2R | 4984.38394 | 4 984.38 | 0.405 | 4983.27000 | 5005.11182 | 4964.77000 |
| ____ ZN | 0.49508 | 1 933.40 | 0.363 | 0.49449 | 0.49710 | 0.49365 |
| ____ ZR | 1.00105 | 535.40 | 0.313 | 0.99903 | 1.00466 | 0.99947 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 13 Date/Time: 10/01/2017 13:01

Sample Number: **9224674** Class: U*** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00013 | -14.34 | 556.501 | 0.00042 | -0.00096 | 0.00015 |
| ____ AL | 0.02163 | 13.79 | 521.851 | 0.15075 | -0.05843 | -0.02742 |
| ____ AS | -0.00095 | -0.82 | 446.507 | 0.00019 | 0.00262 | -0.00566 |
| ____ B | 0.06943 | 532.21 | 2.658 | 0.07109 | 0.06744 | 0.06977 |
| ____ BA | 0.10839 | 73 161.49 | 2.931 | 0.11078 | 0.10478 | 0.10960 |
| ____ BE | 0.00009 | -95.68 | 13.033 | 0.00008 | 0.00010 | 0.00009 |
| ____ CA | 40.50013 | 8 953.50 | 0.622 | 40.22246 | 40.71375 | 40.56419 |
| ____ CD | -0.00026 | -2.03 | 97.207 | -0.00032 | -0.00047 | 0.00002 |
| ____ CO | -0.00072 | 1.25 | 72.326 | -0.00117 | -0.00015 | -0.00084 |
| ____ CR | 0.00383 | 29.19 | 13.273 | 0.00365 | 0.00344 | 0.00441 |
| ____ CU | -0.00028 | -110.14 | 268.797 | 0.00015 | -0.00113 | 0.00016 |
| ____ FE | -0.03837 | 0.50 | 43.470 | -0.01975 | -0.05194 | -0.04343 |
| ____ K | 2.34326 | 610.37 | 1.765 | 2.38795 | 2.33551 | 2.30631 |
| ____ LI | 0.01205 | 91.85 | 18.864 | 0.01113 | 0.01463 | 0.01037 |
| ____ MG | 5.61142 | 1 193.07 | 0.583 | 5.57375 | 5.63283 | 5.62769 |
| ____ MN | 0.00018 | 47.71 | 30.822 | 0.00025 | 0.00015 | 0.00015 |
| ____ MO | 0.00406 | 0.78 | 20.427 | 0.00397 | 0.00327 | 0.00492 |
| ____ NA | 24.43314 | 21 941.76 | 0.673 | 24.33529 | 24.62285 | 24.34127 |
| ____ NI | -0.00042 | 5.05 | 364.078 | -0.00212 | 0.00008 | 0.00079 |
| ____ P | 0.00490 | 2.28 | 106.718 | 0.00915 | -0.00094 | 0.00648 |
| ____ PB | -0.00085 | 3.29 | 96.655 | -0.00092 | -0.00164 | 0.00001 |
| ____ S | 13.48756 | 1 188.98 | 0.693 | 13.47893 | 13.39875 | 13.58501 |
| ____ SB | -0.00868 | -1.97 | 50.634 | -0.01368 | -0.00540 | -0.00697 |
| ____ SE | 0.00133 | 0.37 | 380.908 | -0.00423 | 0.00567 | 0.00255 |
| ____ SI | 14.47311 | 261.34 | 1.370 | 14.44552 | 14.68380 | 14.29001 |
| ____ SN | -0.00198 | -1.37 | 133.625 | -0.00359 | 0.00107 | -0.00343 |
| ____ SR | 0.25733 | 209 842.96 | 2.829 | 0.26286 | 0.24908 | 0.26004 |
| ____ TI | 0.00311 | 171.53 | 10.602 | 0.00321 | 0.00274 | 0.00337 |
| ____ TL | 0.00018 | 1.31 | 1653.288 | -0.00304 | 0.00299 | 0.00060 |
| ____ V | 0.00805 | 126.09 | 8.108 | 0.00870 | 0.00739 | 0.00805 |
| ____ Y1 | 3240.49733 | 3 240.50 | 0.295 | 3248.47400 | 3243.11000 | 3229.90800 |
| ____ Y2A | 241369.33222 | 241 369.33 | 2.730 | 237140.62937 | 248961.23730 | 238006.13000 |
| ____ Y2R | 4993.70425 | 4 993.70 | 0.833 | 5032.55094 | 4949.80008 | 4998.76173 |
| ____ ZN | 0.01139 | 51.85 | 2.598 | 0.01105 | 0.01154 | 0.01159 |
| ____ ZR | -0.00468 | 2.26 | 102.244 | -0.00885 | -0.00572 | 0.00054 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 14 Date/Time: 10/01/2017 13:04

Sample Number: **9224674** Class: UP** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.01649 | 375.49 | 1.939 | 0.01633 | 0.01627 | 0.01685 |
| ____ AL | 1.05430 | 36.04 | 3.063 | 1.02843 | 1.09049 | 1.04397 |
| ____ AS | 0.48979 | 63.38 | 0.636 | 0.49111 | 0.49203 | 0.48623 |
| ____ B | 0.25792 | 1 998.83 | 0.400 | 0.25714 | 0.25753 | 0.25909 |
| ____ BA | 0.15749 | 105 043.39 | 0.640 | 0.15707 | 0.15676 | 0.15864 |
| ____ BE | 0.01912 | 7 175.86 | 0.716 | 0.01898 | 0.01912 | 0.01926 |
| ____ CA | 40.82167 | 8 999.74 | 0.803 | 41.02911 | 40.44359 | 40.99232 |
| ____ CD | 0.04841 | 284.14 | 0.613 | 0.04851 | 0.04807 | 0.04864 |
| ____ CO | 0.09618 | 237.97 | 1.050 | 0.09628 | 0.09714 | 0.09513 |
| ____ CR | 0.19707 | 2 017.21 | 0.401 | 0.19755 | 0.19615 | 0.19749 |
| ____ CU | 0.49697 | 5 621.89 | 0.384 | 0.49663 | 0.49526 | 0.49903 |
| ____ FE | 0.49003 | 15.87 | 19.346 | 0.46472 | 0.41046 | 0.59493 |
| ____ K | 4.33231 | 1 078.13 | 0.993 | 4.37604 | 4.29003 | 4.33085 |
| ____ LI | 0.98495 | 6 413.84 | 0.585 | 0.98428 | 0.97954 | 0.99101 |
| ____ MG | 6.43424 | 1 364.22 | 0.635 | 6.47939 | 6.39982 | 6.42351 |
| ____ MN | 0.05910 | 3 431.81 | 0.615 | 0.05912 | 0.05873 | 0.05946 |
| ____ MO | 0.19951 | 170.04 | 0.727 | 0.19825 | 0.20110 | 0.19917 |
| ____ NA | 25.81300 | 23 128.30 | 0.523 | 25.95423 | 25.68494 | 25.79985 |
| ____ NI | 0.14531 | 221.96 | 0.429 | 0.14580 | 0.14552 | 0.14461 |
| ____ P | 0.99289 | 162.68 | 0.362 | 0.98977 | 0.99681 | 0.99210 |
| ____ PB | 0.48566 | 265.74 | 0.324 | 0.48706 | 0.48596 | 0.48395 |
| ____ S | 14.19604 | 1 246.51 | 0.093 | 14.19287 | 14.18467 | 14.21059 |
| ____ SB | 0.38205 | 92.76 | 0.663 | 0.38298 | 0.37919 | 0.38399 |
| ____ SE | 0.72099 | 110.25 | 2.556 | 0.74156 | 0.70599 | 0.71542 |
| ____ SI | 15.14676 | 272.78 | 1.117 | 15.34121 | 15.03269 | 15.06640 |
| ____ SN | 0.59206 | 150.47 | 0.395 | 0.59210 | 0.58970 | 0.59437 |
| ____ SR | 0.27668 | 222 976.66 | 0.663 | 0.27553 | 0.27572 | 0.27880 |
| ____ TI | 0.10299 | 5 186.71 | 0.746 | 0.10217 | 0.10309 | 0.10369 |
| ____ TL | 1.07919 | 151.23 | 1.176 | 1.07055 | 1.07326 | 1.09376 |
| ____ V | 0.10740 | 1 476.64 | 0.915 | 0.10773 | 0.10629 | 0.10817 |
| ____ Y1 | 3227.94667 | 3 227.95 | 0.134 | 3232.93200 | 3225.70200 | 3225.20600 |
| ____ Y2A | 238363.53915 | 238 363.54 | 0.077 | 238513.29543 | 238417.82861 | 238159.49342 |
| ____ Y2R | 4980.21449 | 4 980.21 | 0.462 | 4965.39458 | 5006.69197 | 4968.55691 |
| ____ ZN | 0.12652 | 502.71 | 0.617 | 0.12741 | 0.12620 | 0.12596 |
| ____ ZR | 0.98253 | 525.11 | 1.437 | 0.99488 | 0.96713 | 0.98558 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 15 Date/Time: 10/01/2017 13:07

Sample Number: **9224677** Class: D*** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00022 | -14.65 | 236.257 | 0.00034 | -0.00033 | -0.00066 |
| ____ AL | -0.10418 | 10.98 | 184.639 | 0.03241 | -0.02079 | -0.32417 |
| ____ AS | 0.00258 | -0.35 | 144.635 | -0.00040 | 0.00137 | 0.00676 |
| ____ B | 0.06966 | 522.26 | 0.655 | 0.07008 | 0.06972 | 0.06918 |
| ____ BA | 0.11266 | 74 370.05 | 0.155 | 0.11284 | 0.11265 | 0.11249 |
| ____ BE | 0.00005 | -109.07 | 28.107 | 0.00003 | 0.00005 | 0.00006 |
| ____ CA | 40.87202 | 8 962.55 | 0.923 | 40.48028 | 41.23284 | 40.90295 |
| ____ CD | -0.00025 | -1.92 | 41.993 | -0.00036 | -0.00015 | -0.00023 |
| ____ CO | 0.00016 | 3.35 | 383.452 | -0.00037 | 0.00080 | 0.00003 |
| ____ CR | 0.00318 | 21.91 | 3.845 | 0.00331 | 0.00315 | 0.00307 |
| ____ CU | 0.00014 | -102.67 | 730.804 | -0.00003 | -0.00078 | 0.00123 |
| ____ FE | 0.02959 | 2.46 | 144.393 | 0.01682 | -0.00529 | 0.07725 |
| ____ K | 2.32949 | 602.19 | 2.559 | 2.32089 | 2.39293 | 2.27465 |
| ____ LI | 0.00995 | 77.68 | 8.627 | 0.00922 | 0.00974 | 0.01090 |
| ____ MG | 5.64581 | 1 190.75 | 0.562 | 5.61698 | 5.67977 | 5.64068 |
| ____ MN | 0.00030 | 53.15 | 33.226 | 0.00025 | 0.00041 | 0.00023 |
| ____ MO | 0.00350 | 0.30 | 22.511 | 0.00262 | 0.00413 | 0.00376 |
| ____ NA | 24.68795 | 21 994.58 | 0.563 | 24.56615 | 24.83948 | 24.65822 |
| ____ NI | -0.00099 | 4.17 | 35.635 | -0.00072 | -0.00138 | -0.00086 |
| ____ P | 0.00666 | 2.55 | 41.348 | 0.00879 | 0.00764 | 0.00355 |
| ____ PB | 0.00024 | 3.83 | 1171.768 | 0.00241 | 0.00118 | -0.00288 |
| ____ S | 13.65184 | 1 193.62 | 0.477 | 13.63454 | 13.72387 | 13.59711 |
| ____ SB | -0.00770 | -1.72 | 57.805 | -0.00298 | -0.00831 | -0.01182 |
| ____ SE | 0.00061 | 0.26 | 1275.103 | -0.00624 | -0.00098 | 0.00905 |
| ____ SI | 14.75511 | 264.29 | 1.577 | 14.48909 | 14.85585 | 14.92040 |
| ____ SN | 0.00022 | -0.80 | 1088.445 | 0.00184 | -0.00251 | 0.00132 |
| ____ SR | 0.26729 | 213 168.12 | 0.046 | 0.26733 | 0.26738 | 0.26715 |
| ____ TI | 0.00313 | 168.99 | 5.062 | 0.00327 | 0.00315 | 0.00296 |
| ____ TL | -0.00143 | 1.07 | 325.784 | -0.00644 | 0.00278 | -0.00063 |
| ____ V | 0.00782 | 120.35 | 10.832 | 0.00685 | 0.00819 | 0.00842 |
| ____ Y1 | 3214.00067 | 3 214.00 | 0.205 | 3212.77400 | 3221.11400 | 3208.11400 |
| ____ Y2A | 235925.20977 | 235 925.21 | 0.149 | 235942.54237 | 235564.72000 | 236268.36694 |
| ____ Y2R | 4953.55943 | 4 953.56 | 0.367 | 4973.32533 | 4937.53242 | 4949.82054 |
| ____ ZN | 0.01193 | 53.50 | 4.085 | 0.01246 | 0.01182 | 0.01150 |
| ____ ZR | 0.00136 | 5.42 | 401.663 | -0.00479 | 0.00558 | 0.00327 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 16 Date/Time: 10/01/2017 13:10

Sample Number: **9224675** Class: R*** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04766 | 894.79 | 2.094 | 0.04877 | 0.04734 | 0.04686 |
| ____ AL | 1.94909 | 56.07 | 8.073 | 2.01237 | 2.06493 | 1.76996 |
| ____ AS | 0.14803 | 19.39 | 1.923 | 0.14505 | 0.15072 | 0.14833 |
| ____ B | 2.01515 | 15 402.10 | 1.305 | 2.04476 | 2.00620 | 1.99449 |
| ____ BA | 2.12713 | 1 390 838.49 | 0.400 | 2.13566 | 2.12710 | 2.11862 |
| ____ BE | 0.04966 | 18 467.78 | 1.099 | 0.05029 | 0.04934 | 0.04935 |
| ____ CA | 44.65538 | 9 796.23 | 1.533 | 44.93742 | 45.15378 | 43.87494 |
| ____ CD | 0.05035 | 294.21 | 0.253 | 0.05049 | 0.05026 | 0.05029 |
| ____ CO | 0.50455 | 1 232.22 | 0.301 | 0.50403 | 0.50626 | 0.50336 |
| ____ CR | 0.20533 | 2 060.31 | 1.479 | 0.20883 | 0.20335 | 0.20382 |
| ____ CU | 0.26445 | 2 844.86 | 0.969 | 0.26720 | 0.26401 | 0.26213 |
| ____ FE | 0.94474 | 28.98 | 8.719 | 0.94846 | 1.02519 | 0.86058 |
| ____ K | 12.65998 | 3 030.71 | 0.361 | 12.69314 | 12.67890 | 12.60790 |
| ____ LI | 1.02698 | 6 658.70 | 0.806 | 1.03098 | 1.03250 | 1.01747 |
| ____ MG | 7.62097 | 1 608.73 | 0.881 | 7.62514 | 7.68592 | 7.55185 |
| ____ MN | 0.51049 | 28 777.17 | 1.105 | 0.51695 | 0.50796 | 0.50656 |
| ____ MO | 2.05320 | 1 766.11 | 0.233 | 2.05871 | 2.05081 | 2.05008 |
| ____ NA | 35.05689 | 31 337.25 | 0.577 | 35.09343 | 35.23835 | 34.83889 |
| ____ NI | 0.50772 | 757.51 | 0.414 | 0.50581 | 0.50739 | 0.50997 |
| ____ P | 1.03066 | 167.93 | 1.715 | 1.05042 | 1.02517 | 1.01638 |
| ____ PB | 0.15402 | 84.62 | 3.011 | 0.15690 | 0.14867 | 0.15649 |
| ____ S | 14.77313 | 1 290.37 | 0.364 | 14.81354 | 14.79368 | 14.71216 |
| ____ SB | 0.53682 | 125.26 | 0.324 | 0.53514 | 0.53671 | 0.53862 |
| ____ SE | 0.14929 | 22.83 | 3.000 | 0.14925 | 0.15378 | 0.14482 |
| ____ SI | 15.73881 | 282.47 | 0.205 | 15.75346 | 15.70183 | 15.76114 |
| ____ SN | 4.09310 | 1 039.90 | 0.273 | 4.10376 | 4.08145 | 4.09409 |
| ____ SR | 1.25632 | 992 584.66 | 1.036 | 1.27088 | 1.25229 | 1.24579 |
| ____ TI | 1.03540 | 50 987.20 | 1.038 | 1.04778 | 1.02846 | 1.02997 |
| ____ TL | 0.14727 | 22.12 | 3.705 | 0.14571 | 0.14277 | 0.15334 |
| ____ V | 0.53054 | 6 909.67 | 0.968 | 0.53647 | 0.52771 | 0.52744 |
| ____ Y1 | 3211.18533 | 3 211.19 | 0.264 | 3201.54400 | 3214.53400 | 3217.47800 |
| ____ Y2A | 233633.36330 | 233 633.36 | 0.877 | 231273.53646 | 234973.40659 | 234653.14685 |
| ____ Y2R | 4958.97954 | 4 958.98 | 0.269 | 4943.93970 | 4963.55392 | 4969.44500 |
| ____ ZN | 0.51448 | 1 996.47 | 0.223 | 0.51562 | 0.51332 | 0.51449 |
| ____ ZR | 1.00368 | 534.05 | 1.626 | 0.99650 | 1.02235 | 0.99218 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 17 Date/Time: 10/01/2017 13:13

Sample Number: **9224676** Class: M*** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.04723 | 903.08 | 1.303 | 0.04776 | 0.04738 | 0.04655 |
| ____ AL | 1.93840 | 56.16 | 3.608 | 2.00417 | 1.86491 | 1.94612 |
| ____ AS | 0.14677 | 19.37 | 2.219 | 0.14670 | 0.15006 | 0.14355 |
| ____ B | 1.98911 | 15 438.23 | 0.136 | 1.99018 | 1.99111 | 1.98603 |
| ____ BA | 2.08801 | 1 386 168.25 | 1.939 | 2.07882 | 2.13229 | 2.05291 |
| ____ BE | 0.04893 | 18 474.46 | 0.402 | 0.04894 | 0.04912 | 0.04873 |
| ____ CA | 44.22126 | 9 758.62 | 0.226 | 44.14637 | 44.18283 | 44.33458 |
| ____ CD | 0.04961 | 292.17 | 0.841 | 0.04921 | 0.05004 | 0.04959 |
| ____ CO | 0.49775 | 1 224.98 | 0.473 | 0.49889 | 0.49932 | 0.49504 |
| ____ CR | 0.20177 | 2 055.62 | 0.672 | 0.20153 | 0.20323 | 0.20055 |
| ____ CU | 0.26252 | 2 867.07 | 0.356 | 0.26196 | 0.26359 | 0.26200 |
| ____ FE | 1.00900 | 31.03 | 10.976 | 1.13619 | 0.95690 | 0.93392 |
| ____ K | 12.69243 | 3 056.17 | 0.528 | 12.70165 | 12.75434 | 12.62130 |
| ____ LI | 1.02916 | 6 711.93 | 0.309 | 1.02555 | 1.03153 | 1.03041 |
| ____ MG | 7.53729 | 1 600.40 | 0.242 | 7.51658 | 7.55111 | 7.54417 |
| ____ MN | 0.50362 | 28 827.73 | 0.588 | 0.50437 | 0.50614 | 0.50035 |
| ____ MO | 2.03450 | 1 763.42 | 0.324 | 2.03095 | 2.04211 | 2.03045 |
| ____ NA | 34.52723 | 31 042.00 | 0.148 | 34.58604 | 34.50301 | 34.49264 |
| ____ NI | 0.50276 | 755.91 | 0.250 | 0.50286 | 0.50146 | 0.50397 |
| ____ P | 1.01496 | 166.66 | 1.077 | 1.01887 | 1.02339 | 1.00261 |
| ____ PB | 0.14896 | 82.53 | 1.242 | 0.14728 | 0.15094 | 0.14866 |
| ____ S | 14.32877 | 1 261.21 | 0.531 | 14.31769 | 14.40973 | 14.25889 |
| ____ SB | 0.53031 | 124.68 | 0.636 | 0.53280 | 0.53166 | 0.52646 |
| ____ SE | 0.13965 | 21.53 | 1.298 | 0.13757 | 0.14090 | 0.14049 |
| ____ SI | 15.38466 | 277.75 | 0.684 | 15.43226 | 15.45763 | 15.26407 |
| ____ SN | 4.05485 | 1 038.07 | 0.408 | 4.05994 | 4.06826 | 4.03636 |
| ____ SR | 1.24351 | 997 593.94 | 0.886 | 1.25228 | 1.24710 | 1.23115 |
| ____ TI | 1.02061 | 51 032.96 | 0.711 | 1.02069 | 1.02782 | 1.01331 |
| ____ TL | 0.15602 | 23.50 | 6.192 | 0.16718 | 0.15059 | 0.15031 |
| ____ V | 0.52237 | 6 905.96 | 0.715 | 0.52080 | 0.52664 | 0.51969 |
| ____ Y1 | 3235.80533 | 3 235.81 | 0.100 | 3236.75400 | 3232.20600 | 3238.45600 |
| ____ Y2A | 237223.65698 | 237 223.66 | 0.573 | 236970.90909 | 236009.38185 | 238690.68000 |
| ____ Y2R | 4987.99672 | 4 988.00 | 0.418 | 4994.22081 | 5005.00300 | 4964.76637 |
| ____ ZN | 0.50862 | 1 989.03 | 0.542 | 0.50998 | 0.51044 | 0.50545 |
| ____ ZR | 1.02071 | 546.20 | 0.561 | 1.01816 | 1.01670 | 1.02726 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 18 Date/Time: 10/01/2017 13:17

Sample Number: **9224674** Class: UL** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00003 | -12.25 | 1175.931 | -0.00035 | 0.00040 | -0.00015 |
| ____ AL | 0.06715 | 14.72 | 122.156 | 0.05780 | 0.15346 | -0.00980 |
| ____ AS | 0.00348 | -0.24 | 99.495 | 0.00094 | 0.00208 | 0.00743 |
| ____ B | 0.01933 | 146.44 | 1.983 | 0.01944 | 0.01890 | 0.01964 |
| ____ BA | 0.02202 | 14 712.19 | 0.814 | 0.02192 | 0.02223 | 0.02191 |
| ____ BE | 0.00008 | -97.73 | 20.242 | 0.00010 | 0.00007 | 0.00008 |
| ____ CA | 7.93062 | 1 771.90 | 0.783 | 7.86194 | 7.94708 | 7.98283 |
| ____ CD | -0.00015 | -1.36 | 143.956 | -0.00012 | -0.00037 | 0.00005 |
| ____ CO | 0.00022 | 4.22 | 171.058 | 0.00003 | 0.00064 | -0.00002 |
| ____ CR | 0.00169 | 6.82 | 24.192 | 0.00146 | 0.00145 | 0.00216 |
| ____ CU | -0.00092 | -116.31 | 105.443 | -0.00103 | -0.00183 | 0.00010 |
| ____ FE | -0.01574 | 1.15 | 301.114 | -0.06392 | -0.01415 | 0.03085 |
| ____ K | 0.51649 | 177.70 | 19.846 | 0.62338 | 0.50706 | 0.41903 |
| ____ LI | -0.00103 | 6.73 | 184.213 | -0.00194 | 0.00115 | -0.00228 |
| ____ MG | 1.10300 | 233.68 | 1.195 | 1.09286 | 1.11790 | 1.09824 |
| ____ MN | -0.00005 | 33.85 | 353.734 | 0.00014 | -0.00006 | -0.00022 |
| ____ MO | 0.00253 | -0.54 | 25.508 | 0.00251 | 0.00319 | 0.00190 |
| ____ NA | 4.82991 | 4 192.50 | 0.819 | 4.78532 | 4.86078 | 4.84364 |
| ____ NI | 0.00059 | 6.57 | 161.370 | 0.00011 | 0.00170 | -0.00003 |
| ____ P | 0.00198 | 1.80 | 57.568 | 0.00079 | 0.00305 | 0.00208 |
| ____ PB | 0.00321 | 5.17 | 185.168 | -0.00336 | 0.00821 | 0.00478 |
| ____ S | 2.67784 | 237.40 | 0.776 | 2.70144 | 2.66987 | 2.66222 |
| ____ SB | -0.00551 | -1.19 | 58.323 | -0.00782 | -0.00184 | -0.00686 |
| ____ SE | 0.00146 | 0.39 | 214.841 | 0.00489 | -0.00124 | 0.00072 |
| ____ SI | 2.79727 | 50.75 | 3.988 | 2.78497 | 2.91446 | 2.69239 |
| ____ SN | 0.00141 | -0.50 | 150.643 | 0.00220 | 0.00302 | -0.00100 |
| ____ SR | 0.05152 | 41 546.37 | 0.416 | 0.05140 | 0.05177 | 0.05139 |
| ____ TI | 0.00115 | 71.74 | 12.820 | 0.00131 | 0.00112 | 0.00102 |
| ____ TL | 0.00019 | 1.31 | 5580.964 | 0.00230 | 0.00960 | -0.01133 |
| ____ V | 0.00073 | 22.81 | 37.830 | 0.00068 | 0.00103 | 0.00048 |
| ____ Y1 | 3239.74467 | 3 239.74 | 0.046 | 3240.02000 | 3241.09200 | 3238.12200 |
| ____ Y2A | 239054.27681 | 239 054.28 | 0.124 | 238804.38561 | 239381.15392 | 238977.29088 |
| ____ Y2R | 4982.55333 | 4 982.55 | 0.545 | 5011.96000 | 4977.26000 | 4958.44000 |
| ____ ZN | 0.00233 | 16.74 | 11.746 | 0.00246 | 0.00250 | 0.00201 |
| ____ ZR | -0.00428 | 2.47 | 113.165 | -0.00838 | 0.00107 | -0.00553 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 19 Date/Time: 10/01/2017 13:20

Sample Number: **9224669** Class: **** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00026 | -15.72 | 298.404 | 0.00064 | -0.00064 | -0.00079 |
| ____ AL | 0.07841 | 14.85 | 118.028 | -0.01793 | 0.16662 | 0.08653 |
| ____ AS | -0.00481 | -1.32 | 218.993 | -0.00061 | 0.00297 | -0.01679 |
| ____ B | 0.05112 | 382.37 | 0.677 | 0.05137 | 0.05073 | 0.05126 |
| ____ BA | 0.10009 | 66 707.96 | 0.890 | 0.10025 | 0.09914 | 0.10090 |
| ____ BE | 0.00005 | -110.88 | 59.266 | 0.00006 | 0.00006 | 0.00001 |
| ____ CA | 46.48092 | 10 170.69 | 0.488 | 46.72492 | 46.44184 | 46.27601 |
| ____ CD | -0.00039 | -2.80 | 27.402 | -0.00048 | -0.00027 | -0.00042 |
| ____ CO | -0.00057 | 1.59 | 27.677 | -0.00076 | -0.00048 | -0.00049 |
| ____ CR | 0.00300 | 20.24 | 18.002 | 0.00321 | 0.00238 | 0.00339 |
| ____ CU | 0.00007 | -104.59 | 882.538 | 0.00059 | -0.00060 | 0.00022 |
| ____ FE | -0.04041 | 0.43 | 13.863 | -0.04681 | -0.03802 | -0.03641 |
| ____ K | 2.55280 | 653.91 | 2.439 | 2.58625 | 2.48096 | 2.59120 |
| ____ LI | 0.01020 | 79.17 | 26.805 | 0.01286 | 0.01034 | 0.00740 |
| ____ MG | 6.40919 | 1 350.07 | 0.448 | 6.39991 | 6.44139 | 6.38626 |
| ____ MN | -0.00008 | 31.85 | 116.861 | 0.00000 | -0.00019 | -0.00006 |
| ____ MO | 0.00387 | 0.61 | 11.092 | 0.00342 | 0.00427 | 0.00391 |
| ____ NA | 24.73326 | 22 009.70 | 0.334 | 24.72175 | 24.82094 | 24.65709 |
| ____ NI | 0.00044 | 6.31 | 264.417 | 0.00124 | 0.00099 | -0.00090 |
| ____ P | 0.00714 | 2.63 | 6.707 | 0.00661 | 0.00755 | 0.00725 |
| ____ PB | 0.00297 | 5.36 | 130.316 | 0.00739 | 0.00131 | 0.00020 |
| ____ S | 16.58811 | 1 453.84 | 0.184 | 16.56808 | 16.62333 | 16.57293 |
| ____ SB | -0.00339 | -0.68 | 81.731 | -0.00148 | -0.00213 | -0.00658 |
| ____ SE | 0.00182 | 0.45 | 201.895 | 0.00400 | 0.00389 | -0.00242 |
| ____ SI | 14.77915 | 264.41 | 0.218 | 14.74247 | 14.80256 | 14.79242 |
| ____ SN | -0.00217 | -1.41 | 140.419 | -0.00367 | -0.00417 | 0.00134 |
| ____ SR | 0.29545 | 237 899.08 | 0.897 | 0.29612 | 0.29253 | 0.29769 |
| ____ TI | 0.00341 | 184.80 | 2.626 | 0.00341 | 0.00332 | 0.00350 |
| ____ TL | -0.00365 | 0.77 | 142.575 | -0.00876 | 0.00165 | -0.00386 |
| ____ V | 0.00646 | 102.45 | 9.319 | 0.00715 | 0.00617 | 0.00605 |
| ____ Y1 | 3222.59333 | 3 222.59 | 0.229 | 3228.97600 | 3214.52000 | 3224.28400 |
| ____ Y2A | 238206.18242 | 238 206.18 | 0.655 | 237958.35494 | 239875.70233 | 236784.49000 |
| ____ Y2R | 4947.79049 | 4 947.79 | 0.518 | 4971.18069 | 4920.42183 | 4951.76894 |
| ____ ZN | 0.01314 | 58.31 | 2.052 | 0.01289 | 0.01342 | 0.01310 |
| ____ ZR | -0.00018 | 4.61 | 3423.714 | -0.00527 | -0.00178 | 0.00652 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 20 Date/Time: 10/01/2017 13:23

Sample Number: **9224670** Class: **** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.00027 | -7.31 | 22.484 | 0.00020 | 0.00030 | 0.00030 |
| ____ AL | 0.00322 | 13.37 | 2426.880 | -0.08324 | 0.02439 | 0.06849 |
| ____ AS | -0.00162 | -0.90 | 150.975 | 0.00061 | -0.00424 | -0.00124 |
| ____ B | 0.05297 | 396.01 | 0.843 | 0.05347 | 0.05262 | 0.05282 |
| ____ BA | 0.10229 | 68 053.13 | 0.485 | 0.10243 | 0.10174 | 0.10271 |
| ____ BE | 0.00006 | -105.68 | 14.054 | 0.00007 | 0.00006 | 0.00005 |
| ____ CA | 47.05682 | 10 382.36 | 0.801 | 47.48910 | 46.88560 | 46.79577 |
| ____ CD | -0.00020 | -1.66 | 24.243 | -0.00021 | -0.00015 | -0.00025 |
| ____ CO | -0.00073 | 1.18 | 155.912 | -0.00205 | -0.00009 | -0.00006 |
| ____ CR | 0.00307 | 20.91 | 25.259 | 0.00287 | 0.00241 | 0.00392 |
| ____ CU | -0.00005 | -105.64 | 2371.686 | -0.00003 | 0.00105 | -0.00117 |
| ____ FE | 0.01026 | 1.91 | 515.152 | 0.03380 | 0.04723 | -0.05026 |
| ____ K | 2.66196 | 685.20 | 2.496 | 2.68217 | 2.71595 | 2.58778 |
| ____ LI | 0.01181 | 90.34 | 21.573 | 0.00979 | 0.01467 | 0.01096 |
| ____ MG | 6.46603 | 1 373.56 | 0.164 | 6.45377 | 6.47227 | 6.47205 |
| ____ MN | -0.00007 | 32.47 | 79.364 | -0.00005 | -0.00003 | -0.00014 |
| ____ MO | 0.00430 | 0.98 | 7.084 | 0.00424 | 0.00463 | 0.00403 |
| ____ NA | 25.05295 | 22 484.69 | 0.517 | 25.11707 | 24.90389 | 25.13788 |
| ____ NI | 0.00075 | 6.76 | 84.207 | 0.00092 | 0.00005 | 0.00127 |
| ____ P | 0.00599 | 2.44 | 15.108 | 0.00528 | 0.00568 | 0.00701 |
| ____ PB | -0.00124 | 3.07 | 187.195 | -0.00388 | -0.00038 | 0.00053 |
| ____ S | 16.82923 | 1 474.03 | 0.164 | 16.79730 | 16.84424 | 16.84616 |
| ____ SB | -0.00596 | -1.30 | 18.020 | -0.00493 | -0.00588 | -0.00707 |
| ____ SE | 0.00362 | 0.72 | 253.963 | 0.00335 | 0.01296 | -0.00544 |
| ____ SI | 15.09084 | 272.27 | 0.905 | 14.97558 | 15.05524 | 15.24169 |
| ____ SN | -0.00039 | -0.96 | 1024.776 | -0.00450 | -0.00020 | 0.00353 |
| ____ SR | 0.30132 | 242 205.66 | 0.435 | 0.30175 | 0.29985 | 0.30237 |
| ____ TI | 0.00328 | 177.97 | 5.761 | 0.00332 | 0.00344 | 0.00307 |
| ____ TL | -0.00476 | 0.61 | 74.113 | -0.00081 | -0.00760 | -0.00587 |
| ____ V | 0.00584 | 93.51 | 7.048 | 0.00631 | 0.00559 | 0.00560 |
| ____ Y1 | 3220.56733 | 3 220.57 | 0.108 | 3222.70400 | 3216.55000 | 3222.44800 |
| ____ Y2A | 237773.53081 | 237 773.53 | 0.296 | 238281.22000 | 238070.68345 | 236968.68898 |
| ____ Y2R | 4989.57360 | 4 989.57 | 0.304 | 4972.18787 | 5000.18000 | 4996.35292 |
| ____ ZN | 0.01357 | 59.95 | 3.086 | 0.01386 | 0.01309 | 0.01375 |
| ____ ZR | -0.00650 | 1.30 | 24.175 | -0.00621 | -0.00819 | -0.00509 |

LANCASTER LABORATORIES

Run Name: 1727401T72

Instrument ID: 16417

Tube: 21

Date/Time: 10/01/2017 13:26

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49513 | 8 404.55 | 0.302 | 0.49344 | 0.49566 | 0.49630 |
| ____ AL | 24.50567 | 531.18 | 0.479 | 24.52729 | 24.37910 | 24.61061 |
| ____ AS | 0.50063 | 64.36 | 1.341 | 0.50201 | 0.49334 | 0.50655 |
| ____ B | 0.50101 | 3 943.16 | 0.181 | 0.50043 | 0.50205 | 0.50054 |
| ____ BA | 0.50094 | 329 138.41 | 0.952 | 0.49907 | 0.49738 | 0.50635 |
| ____ BE | 0.48440 | 182 139.49 | 0.220 | 0.48368 | 0.48390 | 0.48562 |
| ____ CA | 24.83958 | 5 407.54 | 0.218 | 24.79025 | 24.83106 | 24.89743 |
| ____ CD | 0.49836 | 2 929.46 | 0.628 | 0.50038 | 0.49475 | 0.49995 |
| ____ CO | 0.49406 | 1 205.82 | 0.852 | 0.49830 | 0.48988 | 0.49400 |
| ____ CR | 0.49216 | 4 975.23 | 0.565 | 0.48896 | 0.49399 | 0.49352 |
| ____ CU | 0.50986 | 5 696.32 | 0.314 | 0.50818 | 0.51002 | 0.51137 |
| ____ FE | 24.53819 | 696.95 | 0.631 | 24.63373 | 24.62119 | 24.35965 |
| ____ K | 25.36105 | 5 944.89 | 0.483 | 25.44533 | 25.22060 | 25.41723 |
| ____ LI | 0.50174 | 3 231.08 | 0.198 | 0.50147 | 0.50092 | 0.50285 |
| ____ MG | 24.45879 | 5 087.71 | 0.285 | 24.46689 | 24.52418 | 24.38530 |
| ____ MN | 0.49615 | 28 108.83 | 0.202 | 0.49562 | 0.49553 | 0.49731 |
| ____ MO | 0.49597 | 425.48 | 0.381 | 0.49749 | 0.49385 | 0.49656 |
| ____ NA | 24.83758 | 21 892.45 | 0.301 | 24.92254 | 24.78147 | 24.80871 |
| ____ NI | 0.49462 | 739.49 | 0.568 | 0.49499 | 0.49164 | 0.49722 |
| ____ P | 0.50304 | 82.90 | 0.391 | 0.50173 | 0.50530 | 0.50209 |
| ____ PB | 0.50187 | 275.03 | 2.008 | 0.51350 | 0.49560 | 0.49651 |
| ____ S | 24.46912 | 2 140.79 | 0.524 | 24.53039 | 24.32180 | 24.55518 |
| ____ SB | 0.49051 | 118.36 | 1.380 | 0.49324 | 0.48280 | 0.49549 |
| ____ SE | 0.49174 | 74.77 | 0.352 | 0.49318 | 0.49222 | 0.48981 |
| ____ SI | 24.70539 | 437.57 | 0.484 | 24.62397 | 24.64949 | 24.84272 |
| ____ SN | 0.49808 | 126.06 | 0.099 | 0.49859 | 0.49761 | 0.49803 |
| ____ SR | 0.49973 | 398 403.24 | 0.494 | 0.50059 | 0.50167 | 0.49695 |
| ____ TI | 0.50492 | 24 994.63 | 0.329 | 0.50362 | 0.50435 | 0.50679 |
| ____ TL | 0.49790 | 70.75 | 1.644 | 0.50733 | 0.49372 | 0.49265 |
| ____ V | 0.50887 | 6 929.41 | 0.297 | 0.50871 | 0.50744 | 0.51045 |
| ____ Y1 | 3218.18733 | 3 218.19 | 0.447 | 3221.13600 | 3230.87800 | 3202.54800 |
| ____ Y2A | 234779.53743 | 234 779.54 | 0.285 | 235497.18731 | 234170.26000 | 234671.16497 |
| ____ Y2R | 4900.54393 | 4 900.54 | 0.306 | 4911.48082 | 4883.43650 | 4906.71448 |
| ____ ZN | 0.49479 | 1 935.06 | 0.688 | 0.49609 | 0.49092 | 0.49735 |
| ____ ZR | 0.49390 | 262.07 | 1.299 | 0.48899 | 0.49155 | 0.50116 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 22 Date/Time: 10/01/2017 13:29

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00040 | -18.24 | 228.626 | -0.00130 | 0.00052 | -0.00042 |
| ____ AL | -0.03006 | 12.48 | 231.099 | 0.03378 | -0.01991 | -0.10406 |
| ____ AS | 0.00057 | -0.62 | 774.982 | 0.00230 | -0.00443 | 0.00384 |
| ____ B | 0.00343 | 24.51 | 16.101 | 0.00291 | 0.00335 | 0.00401 |
| ____ BA | 0.00011 | 55.76 | 46.270 | 0.00006 | 0.00017 | 0.00011 |
| ____ BE | 0.00010 | -88.69 | 34.599 | 0.00010 | 0.00014 | 0.00007 |
| ____ CA | -0.00626 | 16.88 | 66.755 | -0.00277 | -0.00513 | -0.01089 |
| ____ CD | -0.00009 | -1.02 | 49.705 | -0.00010 | -0.00013 | -0.00004 |
| ____ CO | 0.00021 | 4.34 | 123.344 | -0.00004 | 0.00049 | 0.00020 |
| ____ CR | 0.00138 | 3.63 | 18.940 | 0.00146 | 0.00109 | 0.00159 |
| ____ CU | -0.00149 | -121.80 | 41.095 | -0.00204 | -0.00162 | -0.00083 |
| ____ FE | 0.00252 | 1.67 | 685.519 | 0.01077 | -0.01735 | 0.01415 |
| ____ K | 0.07752 | 73.13 | 86.501 | 0.09230 | 0.13595 | 0.00431 |
| ____ LI | -0.00323 | -7.47 | 34.646 | -0.00451 | -0.00267 | -0.00249 |
| ____ MG | -0.00198 | -1.03 | 488.816 | -0.00969 | 0.00889 | -0.00514 |
| ____ MN | -0.00020 | 25.12 | 10.708 | -0.00021 | -0.00021 | -0.00017 |
| ____ MO | 0.00122 | -1.67 | 46.957 | 0.00119 | 0.00181 | 0.00067 |
| ____ NA | -0.01208 | -177.48 | 180.945 | 0.01193 | -0.01735 | -0.03082 |
| ____ NI | 0.00074 | 6.73 | 29.730 | 0.00067 | 0.00056 | 0.00098 |
| ____ P | -0.00161 | 1.21 | 202.025 | -0.00390 | -0.00305 | 0.00212 |
| ____ PB | -0.00153 | 2.49 | 241.880 | 0.00091 | -0.00580 | 0.00029 |
| ____ S | 0.01098 | 2.69 | 31.624 | 0.00895 | 0.00900 | 0.01499 |
| ____ SB | -0.00246 | -0.44 | 338.854 | 0.00707 | -0.00836 | -0.00609 |
| ____ SE | 0.00503 | 0.93 | 114.866 | 0.00809 | -0.00163 | 0.00864 |
| ____ SI | -0.00513 | 0.33 | 1129.401 | 0.05777 | -0.05620 | -0.01695 |
| ____ SN | 0.00004 | -0.85 | 2398.526 | -0.00051 | 0.00102 | -0.00040 |
| ____ SR | 0.00003 | -76.64 | 91.941 | 0.00001 | 0.00007 | 0.00002 |
| ____ TI | -0.00006 | 10.61 | 180.332 | -0.00004 | -0.00018 | 0.00004 |
| ____ TL | -0.00084 | 1.15 | 783.130 | -0.00629 | -0.00269 | 0.00646 |
| ____ V | -0.00001 | 12.61 | 7978.430 | 0.00040 | -0.00063 | 0.00022 |
| ____ Y1 | 3218.68067 | 3 218.68 | 0.248 | 3219.13600 | 3226.43200 | 3210.47400 |
| ____ Y2A | 236925.86448 | 236 925.86 | 0.223 | 237277.43451 | 237180.48075 | 236319.67819 |
| ____ Y2R | 4925.65000 | 4 925.65 | 0.356 | 4912.08000 | 4945.45000 | 4919.42000 |
| ____ ZN | 0.00108 | 11.82 | 24.245 | 0.00078 | 0.00122 | 0.00123 |
| ____ ZR | -0.00270 | 3.27 | 146.482 | 0.00005 | -0.00724 | -0.00092 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 23 Date/Time: 10/01/2017 13:32

Sample Number: **9224671** Class: **** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00060 | -21.54 | 146.295 | -0.00021 | -0.00160 | 0.00001 |
| ____ AL | 0.03407 | 14.07 | 173.979 | -0.01801 | 0.09857 | 0.02165 |
| ____ AS | 0.00159 | -0.49 | 323.555 | -0.00421 | 0.00338 | 0.00559 |
| ____ B | 0.05055 | 379.42 | 1.258 | 0.05006 | 0.05127 | 0.05033 |
| ____ BA | 0.10425 | 69 770.15 | 0.694 | 0.10344 | 0.10483 | 0.10449 |
| ____ BE | 0.00003 | -116.77 | 35.350 | 0.00004 | 0.00004 | 0.00002 |
| ____ CA | 46.64653 | 10 323.40 | 0.934 | 47.02713 | 46.74138 | 46.17109 |
| ____ CD | -0.00034 | -2.49 | 52.267 | -0.00032 | -0.00052 | -0.00017 |
| ____ CO | -0.00018 | 2.54 | 194.984 | -0.00053 | 0.00019 | -0.00021 |
| ____ CR | 0.00319 | 22.37 | 13.228 | 0.00277 | 0.00319 | 0.00362 |
| ____ CU | 0.00108 | -93.33 | 44.464 | 0.00101 | 0.00063 | 0.00158 |
| ____ FE | -0.01734 | 1.12 | 245.571 | -0.06564 | 0.01472 | -0.00109 |
| ____ K | 2.62453 | 678.32 | 2.949 | 2.69331 | 2.63956 | 2.54072 |
| ____ LI | 0.01371 | 102.98 | 5.788 | 0.01462 | 0.01315 | 0.01336 |
| ____ MG | 6.32864 | 1 348.40 | 0.769 | 6.37237 | 6.33735 | 6.27620 |
| ____ MN | 0.00002 | 37.98 | 134.108 | -0.00001 | 0.00005 | 0.00002 |
| ____ MO | 0.00420 | 0.91 | 34.198 | 0.00531 | 0.00470 | 0.00258 |
| ____ NA | 24.70641 | 22 237.89 | 0.447 | 24.78967 | 24.74830 | 24.58126 |
| ____ NI | -0.00001 | 5.68 | 1931.991 | 0.00016 | 0.00080 | -0.00098 |
| ____ P | 0.00802 | 2.79 | 36.098 | 0.00763 | 0.01110 | 0.00534 |
| ____ PB | -0.00091 | 3.28 | 262.753 | 0.00177 | -0.00165 | -0.00285 |
| ____ S | 16.55924 | 1 461.33 | 0.253 | 16.56243 | 16.51580 | 16.59948 |
| ____ SB | -0.00983 | -2.26 | 15.432 | -0.01082 | -0.01059 | -0.00808 |
| ____ SE | 0.00141 | 0.39 | 211.705 | 0.00330 | 0.00294 | -0.00202 |
| ____ SI | 14.95506 | 270.62 | 0.971 | 15.08370 | 14.98377 | 14.79770 |
| ____ SN | -0.00198 | -1.38 | 197.195 | -0.00322 | 0.00240 | -0.00513 |
| ____ SR | 0.29647 | 239 715.88 | 0.717 | 0.29408 | 0.29813 | 0.29720 |
| ____ TI | 0.00328 | 179.10 | 4.114 | 0.00315 | 0.00327 | 0.00342 |
| ____ TL | 0.00227 | 1.60 | 106.066 | 0.00494 | 0.00157 | 0.00029 |
| ____ V | 0.00623 | 99.55 | 4.734 | 0.00626 | 0.00592 | 0.00650 |
| ____ Y1 | 3244.81600 | 3 244.82 | 0.340 | 3257.40600 | 3240.18800 | 3236.85400 |
| ____ Y2A | 239190.69190 | 239 190.69 | 0.509 | 240303.27019 | 237890.65551 | 239378.15000 |
| ____ Y2R | 5004.59986 | 5 004.60 | 0.528 | 4986.02311 | 4992.93131 | 5034.84515 |
| ____ ZN | 0.02414 | 101.42 | 0.920 | 0.02394 | 0.02410 | 0.02438 |
| ____ ZR | -0.00031 | 4.61 | 3165.620 | -0.01064 | 0.00064 | 0.00906 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 24 Date/Time: 10/01/2017 13:35

Sample Number: **9224672** Class: **** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00022 | -14.95 | 227.596 | 0.00017 | -0.00078 | -0.00005 |
| ____ AL | -0.07434 | 11.67 | 119.277 | -0.10497 | -0.14364 | 0.02558 |
| ____ AS | 0.00063 | -0.61 | 825.591 | 0.00384 | 0.00338 | -0.00534 |
| ____ B | 0.04822 | 360.44 | 1.332 | 0.04870 | 0.04749 | 0.04846 |
| ____ BA | 0.10581 | 70 687.05 | 0.417 | 0.10613 | 0.10531 | 0.10600 |
| ____ BE | 0.00008 | -99.10 | 40.528 | 0.00005 | 0.00011 | 0.00007 |
| ____ CA | 47.19922 | 10 380.96 | 0.659 | 47.52133 | 47.17597 | 46.90038 |
| ____ CD | -0.00023 | -1.88 | 41.368 | -0.00016 | -0.00034 | -0.00019 |
| ____ CO | -0.00039 | 2.05 | 144.696 | -0.00055 | -0.00085 | 0.00024 |
| ____ CR | 0.00320 | 22.37 | 15.117 | 0.00274 | 0.00315 | 0.00370 |
| ____ CU | 0.00115 | -92.38 | 36.051 | 0.00073 | 0.00115 | 0.00156 |
| ____ FE | -0.05030 | 0.15 | 83.324 | -0.09135 | -0.05194 | -0.00759 |
| ____ K | 2.62081 | 673.40 | 3.105 | 2.61802 | 2.54087 | 2.70354 |
| ____ LI | 0.01038 | 80.70 | 30.253 | 0.01154 | 0.01278 | 0.00683 |
| ____ MG | 6.50105 | 1 376.67 | 0.598 | 6.47824 | 6.47897 | 6.54593 |
| ____ MN | 0.00086 | 86.04 | 9.856 | 0.00095 | 0.00080 | 0.00082 |
| ____ MO | 0.00364 | 0.42 | 17.494 | 0.00296 | 0.00374 | 0.00422 |
| ____ NA | 24.79992 | 22 186.18 | 0.219 | 24.74053 | 24.84702 | 24.81222 |
| ____ NI | -0.00066 | 4.72 | 130.672 | -0.00026 | -0.00164 | -0.00007 |
| ____ P | 0.00629 | 2.52 | 7.024 | 0.00679 | 0.00608 | 0.00599 |
| ____ PB | 0.00027 | 3.92 | 1684.922 | -0.00460 | 0.00089 | 0.00453 |
| ____ S | 16.64539 | 1 473.03 | 0.360 | 16.57626 | 16.68052 | 16.67939 |
| ____ SB | -0.00655 | -1.46 | 23.867 | -0.00502 | -0.00649 | -0.00814 |
| ____ SE | 0.00733 | 1.30 | 113.847 | 0.00187 | 0.00318 | 0.01694 |
| ____ SI | 14.84956 | 267.08 | 0.250 | 14.88689 | 14.84899 | 14.81278 |
| ____ SN | -0.00014 | -0.90 | 3144.767 | 0.00155 | -0.00502 | 0.00306 |
| ____ SR | 0.29944 | 241 681.07 | 0.392 | 0.30007 | 0.29808 | 0.30016 |
| ____ TI | 0.00306 | 167.73 | 3.515 | 0.00310 | 0.00314 | 0.00294 |
| ____ TL | -0.00147 | 1.08 | 378.575 | 0.00496 | -0.00475 | -0.00462 |
| ____ V | 0.00565 | 91.40 | 8.886 | 0.00621 | 0.00550 | 0.00524 |
| ____ Y1 | 3253.89267 | 3 253.89 | 0.092 | 3254.29200 | 3250.70600 | 3256.68000 |
| ____ Y2A | 238760.79971 | 238 760.80 | 0.488 | 238335.46361 | 240078.79816 | 237868.13735 |
| ____ Y2R | 4973.92611 | 4 973.93 | 0.417 | 4975.03487 | 4952.64577 | 4994.09771 |
| ____ ZN | 0.00972 | 45.56 | 2.097 | 0.00990 | 0.00950 | 0.00976 |
| ____ ZR | 0.00038 | 4.94 | 759.859 | -0.00245 | 0.00025 | 0.00335 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 25 Date/Time: 10/01/2017 13:39

Sample Number: **9224678** Class: **** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00027 | -15.70 | 182.950 | -0.00014 | -0.00081 | 0.00014 |
| ____ AL | 0.00798 | 13.57 | 1571.878 | -0.03309 | -0.09169 | 0.14871 |
| ____ AS | -0.00031 | -0.73 | 760.316 | 0.00201 | -0.00264 | -0.00029 |
| ____ B | 0.05805 | 435.23 | 1.161 | 0.05728 | 0.05855 | 0.05831 |
| ____ BA | 0.11707 | 77 714.77 | 0.314 | 0.11739 | 0.11714 | 0.11667 |
| ____ BE | 0.00007 | -99.99 | 26.110 | 0.00009 | 0.00006 | 0.00007 |
| ____ CA | 40.64715 | 9 045.01 | 0.767 | 40.48582 | 41.00646 | 40.44918 |
| ____ CD | -0.00015 | -1.35 | 118.373 | -0.00031 | 0.00004 | -0.00017 |
| ____ CO | -0.00043 | 1.95 | 147.536 | -0.00035 | -0.00111 | 0.00016 |
| ____ CR | 0.00352 | 25.56 | 3.238 | 0.00362 | 0.00355 | 0.00340 |
| ____ CU | 0.00006 | -104.22 | 868.715 | 0.00054 | -0.00045 | 0.00008 |
| ____ FE | 0.03349 | 2.61 | 25.738 | 0.02955 | 0.04338 | 0.02755 |
| ____ K | 2.38300 | 623.76 | 5.813 | 2.28198 | 2.54092 | 2.32610 |
| ____ LI | 0.01066 | 83.48 | 7.550 | 0.01159 | 0.01016 | 0.01024 |
| ____ MG | 5.67232 | 1 213.97 | 0.379 | 5.66284 | 5.69695 | 5.65718 |
| ____ MN | 0.00052 | 66.45 | 6.127 | 0.00056 | 0.00050 | 0.00051 |
| ____ MO | 0.00422 | 0.92 | 28.872 | 0.00563 | 0.00346 | 0.00357 |
| ____ NA | 24.91962 | 22 529.78 | 0.550 | 24.78939 | 25.06264 | 24.90684 |
| ____ NI | -0.00057 | 4.83 | 176.980 | -0.00037 | -0.00166 | 0.00032 |
| ____ P | 0.00427 | 2.18 | 11.301 | 0.00373 | 0.00465 | 0.00443 |
| ____ PB | -0.00162 | 2.87 | 245.125 | 0.00112 | 0.00019 | -0.00616 |
| ____ S | 13.53967 | 1 193.05 | 0.471 | 13.47057 | 13.55199 | 13.59645 |
| ____ SB | -0.00391 | -0.81 | 79.702 | -0.00452 | -0.00667 | -0.00053 |
| ____ SE | -0.00189 | -0.12 | 266.039 | 0.00385 | -0.00398 | -0.00555 |
| ____ SI | 14.53068 | 264.11 | 0.350 | 14.52486 | 14.58424 | 14.48292 |
| ____ SN | -0.00356 | -1.78 | 29.839 | -0.00380 | -0.00240 | -0.00448 |
| ____ SR | 0.26634 | 213 604.73 | 0.350 | 0.26727 | 0.26634 | 0.26540 |
| ____ TI | 0.00305 | 166.30 | 2.634 | 0.00312 | 0.00296 | 0.00308 |
| ____ TL | -0.00661 | 0.36 | 167.757 | 0.00601 | -0.01105 | -0.01480 |
| ____ V | 0.00718 | 111.98 | 3.235 | 0.00744 | 0.00698 | 0.00712 |
| ____ Y1 | 3239.07133 | 3 239.07 | 0.122 | 3241.72600 | 3240.94000 | 3234.54800 |
| ____ Y2A | 237252.44757 | 237 252.45 | 0.219 | 236651.46853 | 237542.12418 | 237563.75000 |
| ____ Y2R | 5026.54941 | 5 026.55 | 0.305 | 5033.42332 | 5009.00658 | 5037.21834 |
| ____ ZN | 0.03343 | 137.23 | 0.797 | 0.03312 | 0.03362 | 0.03355 |
| ____ ZR | 0.00055 | 5.07 | 899.323 | 0.00217 | 0.00453 | -0.00504 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 26 Date/Time: 10/01/2017 13:42

Sample Number: **9224679** Class: **** Batch: 172701063504

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol Symbol: DU

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00009 | -13.52 | 303.826 | -0.00021 | 0.00023 | -0.00029 |
| ____ AL | -0.00488 | 13.18 | 3054.278 | -0.16064 | 0.13637 | 0.00962 |
| ____ AS | -0.00154 | -0.89 | 407.441 | -0.00621 | 0.00558 | -0.00398 |
| ____ B | 0.04916 | 365.91 | 0.706 | 0.04878 | 0.04923 | 0.04946 |
| ____ BA | 0.12083 | 80 250.38 | 0.449 | 0.12113 | 0.12115 | 0.12020 |
| ____ BE | 0.00004 | -111.67 | 39.144 | 0.00003 | 0.00006 | 0.00003 |
| ____ CA | 40.68306 | 8 985.36 | 0.883 | 40.70204 | 41.03244 | 40.31471 |
| ____ CD | -0.00027 | -2.11 | 91.789 | -0.00002 | -0.00027 | -0.00052 |
| ____ CO | -0.00076 | 1.16 | 42.096 | -0.00112 | -0.00051 | -0.00064 |
| ____ CR | 0.00339 | 24.23 | 17.704 | 0.00408 | 0.00306 | 0.00303 |
| ____ CU | -0.00073 | -113.38 | 67.704 | -0.00097 | -0.00106 | -0.00016 |
| ____ FE | -0.06169 | -0.18 | 72.945 | -0.01278 | -0.07094 | -0.10134 |
| ____ K | 2.31192 | 602.32 | 3.441 | 2.37427 | 2.33918 | 2.22233 |
| ____ LI | 0.01061 | 82.44 | 19.688 | 0.01295 | 0.00991 | 0.00895 |
| ____ MG | 5.54304 | 1 177.47 | 0.556 | 5.55363 | 5.56716 | 5.50833 |
| ____ MN | 0.00020 | 47.90 | 48.537 | 0.00015 | 0.00031 | 0.00014 |
| ____ MO | 0.00394 | 0.68 | 19.394 | 0.00348 | 0.00482 | 0.00351 |
| ____ NA | 24.23401 | 21 741.87 | 0.560 | 24.19021 | 24.38627 | 24.12555 |
| ____ NI | -0.00045 | 5.01 | 137.277 | 0.00010 | -0.00111 | -0.00032 |
| ____ P | 0.00624 | 2.50 | 68.638 | 0.01107 | 0.00289 | 0.00476 |
| ____ PB | -0.00386 | 1.66 | 61.342 | -0.00623 | -0.00150 | -0.00384 |
| ____ S | 13.29815 | 1 170.90 | 0.321 | 13.25025 | 13.31179 | 13.33240 |
| ____ SB | -0.00578 | -1.26 | 95.714 | -0.01084 | -0.00663 | 0.00013 |
| ____ SE | 0.00029 | 0.21 | 1225.572 | -0.00345 | 0.00346 | 0.00085 |
| ____ SI | 14.48042 | 261.23 | 1.814 | 14.61200 | 14.65131 | 14.17795 |
| ____ SN | -0.00150 | -1.25 | 198.072 | 0.00022 | 0.00021 | -0.00492 |
| ____ SR | 0.26299 | 211 007.38 | 0.542 | 0.26407 | 0.26351 | 0.26137 |
| ____ TI | 0.00290 | 158.63 | 9.069 | 0.00299 | 0.00311 | 0.00260 |
| ____ TL | -0.00172 | 1.04 | 217.504 | 0.00085 | 0.00001 | -0.00602 |
| ____ V | 0.00625 | 99.16 | 9.431 | 0.00647 | 0.00558 | 0.00670 |
| ____ Y1 | 3236.59333 | 3 236.59 | 0.243 | 3245.11400 | 3235.02200 | 3229.64400 |
| ____ Y2A | 237362.51004 | 237 362.51 | 0.174 | 237668.61416 | 236893.74127 | 237525.17469 |
| ____ Y2R | 4989.15175 | 4 989.15 | 0.738 | 4998.71488 | 4948.49060 | 5020.24975 |
| ____ ZN | 0.01249 | 56.02 | 1.413 | 0.01236 | 0.01241 | 0.01269 |
| ____ ZR | -0.00771 | 0.66 | 34.533 | -0.00698 | -0.01066 | -0.00548 |

LANCASTER LABORATORIES

Run Name: 1727401T72

Instrument ID: 16417

Tube: 27

Date/Time: 10/01/2017 13:45

Sample Number: **CCV**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | 0.49336 | 8 381.24 | 0.399 | 0.49109 | 0.49436 | 0.49462 |
| ____ AL | 24.41604 | 531.53 | 0.181 | 24.41884 | 24.45881 | 24.37046 |
| ____ AS | 0.50636 | 65.21 | 0.804 | 0.50961 | 0.50180 | 0.50769 |
| ____ B | 0.49971 | 3 935.85 | 0.295 | 0.49886 | 0.50141 | 0.49886 |
| ____ BA | 0.49708 | 326 838.62 | 0.934 | 0.49373 | 0.49513 | 0.50238 |
| ____ BE | 0.48459 | 182 342.86 | 0.398 | 0.48237 | 0.48585 | 0.48555 |
| ____ CA | 24.86852 | 5 436.70 | 0.202 | 24.91165 | 24.81347 | 24.88043 |
| ____ CD | 0.49736 | 2 928.12 | 0.383 | 0.49590 | 0.49951 | 0.49667 |
| ____ CO | 0.49737 | 1 215.72 | 0.053 | 0.49744 | 0.49759 | 0.49708 |
| ____ CR | 0.49509 | 5 008.65 | 0.176 | 0.49410 | 0.49572 | 0.49546 |
| ____ CU | 0.51065 | 5 709.40 | 0.670 | 0.50679 | 0.51182 | 0.51333 |
| ____ FE | 24.51210 | 699.15 | 0.620 | 24.50666 | 24.36286 | 24.66679 |
| ____ K | 25.15758 | 5 922.37 | 0.840 | 24.99955 | 25.07566 | 25.39754 |
| ____ LI | 0.49682 | 3 213.02 | 1.133 | 0.50031 | 0.49033 | 0.49983 |
| ____ MG | 24.29565 | 5 075.25 | 0.802 | 24.10038 | 24.29665 | 24.48993 |
| ____ MN | 0.49412 | 28 014.44 | 0.280 | 0.49254 | 0.49474 | 0.49509 |
| ____ MO | 0.49566 | 425.87 | 0.400 | 0.49400 | 0.49786 | 0.49512 |
| ____ NA | 24.67627 | 21 840.64 | 0.586 | 24.67304 | 24.53335 | 24.82243 |
| ____ NI | 0.49250 | 737.48 | 0.445 | 0.49315 | 0.49429 | 0.49006 |
| ____ P | 0.50528 | 83.39 | 1.564 | 0.51441 | 0.50081 | 0.50062 |
| ____ PB | 0.49565 | 272.09 | 0.454 | 0.49307 | 0.49671 | 0.49717 |
| ____ S | 24.46892 | 2 144.09 | 0.172 | 24.51087 | 24.46916 | 24.42673 |
| ____ SB | 0.49852 | 120.49 | 0.364 | 0.49925 | 0.49985 | 0.49645 |
| ____ SE | 0.49290 | 75.07 | 1.859 | 0.50177 | 0.48347 | 0.49344 |
| ____ SI | 24.81101 | 441.28 | 0.814 | 24.88079 | 24.58353 | 24.96872 |
| ____ SN | 0.49242 | 124.81 | 0.621 | 0.49587 | 0.49133 | 0.49006 |
| ____ SR | 0.49593 | 395 683.44 | 1.381 | 0.50360 | 0.49377 | 0.49042 |
| ____ TI | 0.50371 | 24 952.92 | 0.495 | 0.50101 | 0.50421 | 0.50592 |
| ____ TL | 0.50506 | 71.85 | 0.348 | 0.50371 | 0.50704 | 0.50442 |
| ____ V | 0.50473 | 6 877.56 | 0.416 | 0.50280 | 0.50697 | 0.50442 |
| ____ Y1 | 3223.13400 | 3 223.13 | 0.352 | 3224.04400 | 3211.34600 | 3234.01200 |
| ____ Y2A | 234951.23927 | 234 951.24 | 0.309 | 235582.89447 | 235111.13332 | 234159.69000 |
| ____ Y2R | 4921.29992 | 4 921.30 | 0.672 | 4925.14952 | 4952.27590 | 4886.47435 |
| ____ ZN | 0.50208 | 1 966.10 | 0.290 | 0.50136 | 0.50375 | 0.50112 |
| ____ ZR | 0.49981 | 266.26 | 0.792 | 0.50041 | 0.49558 | 0.50343 |

LANCASTER LABORATORIES

Run Name: 1727401T72 Instrument ID: 16417

Tube: 28 Date/Time: 10/01/2017 13:48

Sample Number: **CCB**

| ELEMENT | AVERAGE CONC (ppm) | AVERAGE INTENSITY | %RSD | INTEGRATIONS #1 | #2 | #3 |
|---|---|---|---|---|---|---|
| ____ AG | -0.00072 | -22.99 | 46.660 | -0.00101 | -0.00035 | -0.00079 |
| ____ AL | -0.05716 | 11.97 | 302.898 | -0.08065 | -0.21734 | 0.12652 |
| ____ AS | -0.00029 | -0.73 | 1330.688 | 0.00208 | 0.00185 | -0.00481 |
| ____ B | 0.00295 | 20.78 | 24.021 | 0.00247 | 0.00376 | 0.00262 |
| ____ BA | 0.00007 | 28.47 | 61.752 | 0.00011 | 0.00002 | 0.00008 |
| ____ BE | 0.00009 | -92.84 | 13.606 | 0.00009 | 0.00011 | 0.00009 |
| ____ CA | 0.00521 | 19.48 | 209.083 | 0.00630 | 0.01552 | -0.00619 |
| ____ CD | -0.00001 | -0.55 | 3204.248 | 0.00009 | 0.00021 | -0.00032 |
| ____ CO | -0.00046 | 2.72 | 89.910 | -0.00058 | 0.00000 | -0.00080 |
| ____ CR | 0.00110 | 0.79 | 54.212 | 0.00097 | 0.00058 | 0.00175 |
| ____ CU | -0.00103 | -117.24 | 67.900 | -0.00099 | -0.00035 | -0.00175 |
| ____ FE | -0.03009 | 0.73 | 190.489 | -0.06404 | -0.06230 | 0.03609 |
| ____ K | -0.04530 | 44.67 | 241.213 | -0.17078 | 0.00588 | 0.02899 |
| ____ LI | -0.00648 | -28.52 | 31.586 | -0.00418 | -0.00812 | -0.00713 |
| ____ MG | 0.00360 | 0.13 | 250.680 | 0.01340 | 0.00178 | -0.00437 |
| ____ MN | -0.00019 | 25.65 | 13.462 | -0.00021 | -0.00016 | -0.00020 |
| ____ MO | 0.00122 | -1.68 | 45.310 | 0.00176 | 0.00065 | 0.00125 |
| ____ NA | -0.01551 | -181.35 | 204.634 | -0.05153 | 0.00837 | -0.00337 |
| ____ NI | -0.00007 | 5.56 | 1397.583 | -0.00049 | 0.00104 | -0.00075 |
| ____ P | -0.00340 | 0.93 | 163.521 | -0.00405 | 0.00246 | -0.00860 |
| ____ PB | 0.00367 | 5.31 | 136.297 | -0.00105 | 0.00316 | 0.00892 |
| ____ S | 0.00744 | 2.39 | 72.027 | 0.00164 | 0.00846 | 0.01221 |
| ____ SB | -0.00543 | -1.17 | 121.948 | 0.00065 | -0.00445 | -0.01248 |
| ____ SE | 0.00195 | 0.47 | 336.163 | -0.00373 | 0.00045 | 0.00912 |
| ____ SI | 0.02234 | 0.83 | 832.896 | 0.22540 | -0.01839 | -0.13999 |
| ____ SN | 0.00077 | -0.67 | 226.202 | 0.00251 | -0.00096 | 0.00075 |
| ____ SR | 0.00002 | -88.58 | 53.924 | 0.00002 | 0.00001 | 0.00003 |
| ____ TI | 0.00003 | 14.99 | 770.134 | -0.00015 | 0.00023 | -0.00001 |
| ____ TL | 0.00127 | 1.45 | 375.274 | 0.00491 | 0.00304 | -0.00413 |
| ____ V | 0.00053 | 20.19 | 66.312 | 0.00090 | 0.00020 | 0.00049 |
| ____ Y1 | 3232.20800 | 3 232.21 | 0.195 | 3234.80800 | 3236.78200 | 3225.03400 |
| ____ Y2A | 238381.04420 | 238 381.04 | 0.861 | 236152.84943 | 238794.40000 | 240195.88317 |
| ____ Y2R | 4948.63667 | 4 948.64 | 0.127 | 4942.42000 | 4948.46000 | 4955.03000 |
| ____ ZN | 0.00093 | 11.27 | 13.559 | 0.00079 | 0.00103 | 0.00097 |
| ____ ZR | 0.00519 | 7.43 | 331.149 | 0.02225 | -0.01208 | 0.00538 |

# Extraction/Distillation/Digestion Logs

# Metals in Liquid

# LLENS Worksheet for 0635 SW846 Water

Batch# 17 270 10635 04

**Start Time:** 9/28/17 23:07 **End Time:** 9/28/17 2:30 **Hot Block:** DEENA 1

**Pipette ID:** W/1000

| Spike/Reagent | Lot# | Volume Added(mL) |
|---|---|---|
| 1:1 HCL | P17-216C | 5.00 |
| 1:1 HNO3 | P17-263B | 2.00 |
| ICP Spike 1A | 1714623#24 | 1.00 |
| ICP Spike 1B | 1714629#24 | 1.00 |
| LCS A1 | 1714623#24 | 1.00 |
| LCS B1 | 1714629#24 | 1.00 |

**Method Ref:**

| | SampleID | Date Due | ST | P | H | Balance | PH<2 | BC | Vessel Lot# | Location ID | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | PBW | . | | | | | | | 1705110 | | |
| 2) | LCSW | . | | | | | | | 1705110 | | |
| 3) | 9224669 | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B0909/ | |
| 4) | 9224670FD | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B0909/ | |
| 5) | 9224671 | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B1371/ | |
| 6) | 9224672 | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B1366/ | |
| 7) | **9224674U** | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B1366/ | |
| 8) | **9224675R** | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B1371/ | |
| 9) | **9224676M** | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B0909/ | |
| 10) | **9224677D** | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | | |
| 11) | 9224678 | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B0298/ | |
| 12) | 9224679 | 10/02/17 09:50 | WW | S5 | | | | 008A | 1705110 | B1371/ | |

Prep Employee:862 D/I _____

9/28/2017

# Batch# 17 270 1063 504

## LLENS Batch Chronology and Change Log - SW846 Water

| | Operation | Instrument | Operation Date | ANALYST |
|---|---|---|---|---|
| 1) | Batch Creation | | 9/27/17 10:50 | 862 |
| 2) | Sample Vol | | 9/28/17 3:28 | 862 |
| 3) | Final Vol | CLEAR | 9/28/17 3:28 | 862 |
| 4) | Trial | | 9/28/17 3:28 | 862 |
| 5) | Upload Prep | US19PCC0669 | 9/28/17 3:28 | 862 |

| Sample ID | Analysis | D | Operation | Measurement | Original Entry | | | | Data Changed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Date/Time | Data | Units | Analyst | Date/Time | Analyst | Reason |

Analysis: 0635 SW846 Water

Batch# 17 270 1063 504

| Sample ID | Due Date | P | EPA# | SDG# | Initial Volume | Final Volume | Trial |
|---|---|---|---|---|---|---|---|
| PBW | | | | | 50.0000 | 50.0000 | 1 |
| LCSW | | | | | 1.0000 | 1.0000 | 1 |
| 9224669 | 10/02/17 | S5 | EFF1- | KR195-01 | 50.0000 | 50.0000 | 1 |
| 9224670FD | 10/02/17 | S5 | EFF1D | KR195-02FD | 50.0000 | 50.0000 | 1 |
| 9224671 | 10/02/17 | S5 | GAC1- | KR195-03 | 50.0000 | 50.0000 | 1 |
| 9224672 | 10/02/17 | S5 | IN1-- | KR195-04 | 50.0000 | 50.0000 | 1 |
| **9224674U** | 10/02/17 | S5 | EF2-- | KR195-06BKG | 50.0000 | 50.0000 | 1 |
| **9224675R** | 10/02/17 | S5 | EF2-- | KR195-06MS | 50.0000 | 50.0000 | 1 |
| **9224676M** | 10/02/17 | S5 | EF2-- | KR195-06MSD | 50.0000 | 50.0000 | 1 |
| **9224677D** | 10/02/17 | S5 | EF2-- | KR195-06DUP | 50.0000 | 50.0000 | 1 |
| 9224678 | 10/02/17 | S5 | GC2-- | KR195-07 | 50.0000 | 50.0000 | 1 |
| 9224679 | 10/02/17 | S5 | IN2-- | KR195-08 | 50.0000 | 50.0000 | 1 |

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# APPENDIX J

# WASTE DISPOSAL DOCUMENTATION

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# APPENDIX J-1

# NON-HAZARDOUS WATER INVESTIGATION-DERIVED WASTE PROFILING AND DISPOSAL DOCUMENTATION

**Table J-1-1**
**Non-Hazardous Liquid Investigation-Derived Waste Disposed in Q3 2017**

| Collection Date | Well ID | Container Type | Number of Containers | Estimated Volume (Gallons) | Discharge Date | Effluent Discharge Location | Disposal Technician |
|---|---|---|---|---|---|---|---|
| 4/1/2017 | KAFB-106009 | Poly | 1 | 10 | 7/24/2017 | Gof Course | PF |
| 4/24/2017 | KAFB-106063 | Poly | 1 | 13 | 7/24/2017 | Gof Course | PF |
| | KAFB-106008 | | | 17 | | | |
| 4/20/2017 | KAFB-106082 | Poly | 1 | 17 | 7/24/2017 | Gof Course | PF |
| | KAFB-106083 | | | 14 | | | |
| 4/19/2017 | KAFB-106022 | Poly | 1 | 10 | 7/24/2017 | Gof Course | PF |
| | KAFB-106085 | | | 11 | | | |
| 4/13/2017 | KAFB-106065 | Poly | 1 | 7 | 7/24/2017 | Gof Course | PF |
| | KAFB-106079 | | | 14 | | | |
| | KAFB-106024 | | | 10 | | | |
| 4/17/2017 | KAFB-106017 | Poly | 1 | 35 | 7/24/2017 | Gof Course | PF |
| | KAFB-106070 | Poly | | | | | |
| | KAFB-106080 | Poly | | | | | |
| 4/20/2017 | KAFB-106075 | Poly | 1 | 15 | 7/24/2017 | Gof Course | PF |
| 4/27/2017 | KAFB-106014 | Poly | 1 | 40 | 7/24/2017 | Gof Course | PF |
| | KAFB-106076 | | | | | | |
| 4/18/2017 | KAFB-106235-463 | 5-Gal Bucket | 1 | 1 | 7/24/2017 | Gof Course | PF |
| | KAFB-106235-492 | | | | | | |
| | KAFB-106235-521 | | | | | | |
| 2/6/2017 | KAFB-106239 | Tote | 1 | 213 | 8/15/2017 | Golf Course | KM |
| 2/6/2017 | KAFB-106239 | Tote | 1 | 213 | 8/18/2017 | Golf Course | JM |
| 2/6/2017 | KAFB-106239 | Tote | 1 | 205 | 8/18/2017 | Golf Course | JM |
| 2/6/2017 | KAFB-106239 | Tote | 1 | 210 | 8/18/2017 | Golf Course | JM |
| 2/6/2017 | KAFB-106239 | Tote | 1 | 160 | 8/18/2017 | Golf Course | JM |
| 2/6/2017 | KAFB-106239 | Tote | 1 | 135 | 8/21/2017 | Golf Course | JM |
| 2/6/2017 | KAFB-106239 | Tote | 1 | 160 | 8/21/2017 | Golf Course | JM |
| 2/6/2017 | KAFB-106239 | Tote | 1 | 15 | 8/22/2017 | Golf Course | JM |
| 4/13/2017 | KAFB-106203 | Poly Drum | 1 | 35 | 8/21/2017 | Golf Course | PF |
| | KAFB-106204 | | | | | Golf Course | PF |
| | KAFB-106018 | | | | | Golf Course | PF |
| | KAFB-106094 | | | | | Golf Course | PF |
| 5/5/2017 | KAFB-106069 | Poly Drum | 2 | 100 | 8/21/2017 | Golf Course | PF |
| 8/3/2017 | VA and Southern Wells | 1-gal containers | 3 | 3 | 8/21/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 8/22/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 8/23/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 8/23/2017 | Golf Course | JM |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 8/23/2017 | Golf Course | JM |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 30 | 8/23/2017 | Golf Course | JM |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/12/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/12/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/12/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/12/2017 | Golf Course | PF |

**Table J-1-1**
**Non-Hazardous Liquid Investigation-Derived Waste Disposed in Q3 2017**

| Collection Date | Well ID | Container Type | Number of Containers | Estimated Volume (Gallons) | Discharge Date | Effluent Discharge Location | Disposal Technician |
|---|---|---|---|---|---|---|---|
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 40 | 9/12/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 45 | 9/12/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/12/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/13/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/13/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 30 | 9/13/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/13/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/13/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/13/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 25 | 9/13/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 55 | 9/13/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 45 | 9/14/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 60 | 9/14/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 40 | 9/14/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 60 | 9/14/2017 | Golf Course | PF |
| 5/26/2017 | KAFB-106233 AC Cleanout | Transfer from tote | 1 | 40 | 9/22/2017 | Golf Course | PF |
| 7/20/2017 | KAFB-106009 | Poly Drum | 3 | 150 | 9/22/2017 | Golf Course | SS |
| 7/12/2017 | KAFB-106009 | Poly Drum | 1 | 15 | 9/22/2017 | Golf Course | SS |
| 7/10/2017 | KAFB-106235-463<br>KAFB-106235-521<br>KAFB-106236-461 | Poly Drum | 1 | 5 | | Golf Course | SS |
| 7/19/2017 | KAFB-106102, 012R | Poly Drum | 1 | 35 | 9/22/2017 | Golf Course | SS |
| 7/20/2017 | KAFB-106004,100,099 | Poly Drum | 1 | 10 | 9/22/2017 | Golf Course | SS |
| 7/19/2017 | KAFB-106097,098 | Poly Drum | 1 | 40 | 9/22/2017 | Golf Course | SS |
| 7/18/2017 | KAFB-106003, 101 | Poly Drum | 1 | 30 | 9/22/2017 | Golf Course | SS |
| 7/12/2017 | KAFB-106013 | Poly Drum | 1 | 12 | 9/22/2017 | Golf Course | SS |
| 7/11/2017 | Well 2819 | 5 gal bucket | 2 | 9 | 9/22/2017 | Golf Course | SS |
| 7/11/2017 | KAFB-015 | 5 gal bucket | 2 | 7 | 9/22/2017 | Golf Course | SS |
| 7/11/2017 | KAFB-003 | 5 gal bucket | 1 | 2 | 9/22/2017 | Golf Course | SS |
| 7/18/2017 | KAFB-003 | 5 gal bucket | 1 | 2.5 | 9/22/2017 | Golf Course | SS |
| 7/18/2017 | ST106-VA-2 | 5 gal bucket | 1 | 2 | 9/22/2017 | Golf Course | SS |
| 8/8/2017 | KAFB-003 | 5 gal bucket | 1 | 2 | 9/22/2017 | Golf Course | SS |
| 8/8/2017 | ST106-VA-2 | 5 gal bucket | 1 | 2 | 9/22/2017 | Golf Course | SS |
| 8/8/2017 | KAFB-015 | 5 gal bucket | 1 | 2.5 | 9/22/2017 | Golf Course | SS |
| 9/6/2017 | KAFB-016 | 5 gal bucket | 1 | 1 | 9/22/2017 | Golf Course | SS |
| 9/6/2017 | ST106-VA-2 | 5 gal bucket | 1 | 4.5 | 9/22/2017 | Golf Course | SS |
| 9/6/2017 | KAFB-003 | 5 gal bucket | 1 | 1 | 9/22/2017 | Golf Course | SS |

**Table J-1-1**
**Non-Hazardous Liquid Investigation-Derived Waste Disposed in Q3 2017**

| Collection Date | Well ID | Container Type | Number of Containers | Estimated Volume (Gallons) | Discharge Date | Effluent Discharge Location | Disposal Technician |
|---|---|---|---|---|---|---|---|
| 9/6/2017 | KAFB-015 | 5 gal bucket | 1 | 2 | 9/22/2017 | Golf Course | SS |
| 7/10/2017 | KAFB-106029 | Poly Drum | 1 | 10 | 9/22/2017 | Golf Course | SS |
| | KAFB-106030 | | | | | | |
| | KAFB-106031 | | | | | | |
| | KAFB-106032 | | | | | | |
| | KAFB-106033 | | | | | | |
| | KAFB-106034 | | | | | | |
| | KAFB-106049 | | | | | | |
| | KAFB-106050 | | | | | | |
| | KAFB-106051 | | | | | | |
| | KAFB-106201 | | | | | | |
| | KAFB-106202 | | | | | | |
| | KAFB-106203 | | | | | | |
| | KAFB-106204 | | | | | | |
| | KAFB-106205 | | | | | | |
| | KAFB-106206 | | | | | | |
| | KAFB-106207 | | | | | | |
| | KAFB-106208 | | | | | | |
| | KAFB-106209 | | | | | | |
| | KAFB-106216 | | | | | | |
| | KAFB-106217 | | | | | | |
| | KAFB-106218 | | | | | | |
| | KAFB-106222 | | | | | | |
| | KAFB-106223 | | | | | | |
| | KAFB-106224 | | | | | | |
| | KAFB-106231 | | | | | | |
| | KAFB-106232 | | | | | | |
| | KAFB-106235-492 | | | | | | |
| | KAFB-106236-490 | | | | | | |
| | KAFB-106236-519 | | | | | | |
| 7/18/2017 | KAFB-106005 | Poly Drum | 1 | 20 | 9/26/2017 | Golf Course | PF |
| 7/17/2017 | KAFB-106157 | Steel Drum | 1 | 42 | 9/27/2017 | Golf Course | PF |

## Table J-1-2
## Non-Hazardous Liquid Investigation-Derived Waste Pending Disposal

| IDW Water Pending Disposal | | | | | |
|---|---|---|---|---|---|
| **Collection Date** | **Well ID** | **Container Type** | **Number of Containers** | **Estimated Volume (Gallons)** | **Anticipated Disposal Location** |
| | No IDW water pending | | | | |

| IDW Water Currently Pending Analysis | | | | | |
|---|---|---|---|---|---|
| 3/6/2017 | Calibration Fluid | Poly | 1 | 15 | To be determined |

ACT = Advance Chemical Transport, Inc.

GWTS = groundwater treatment system

ID = identification

IDW = investigation-derived waste

KAFB = Kirtland Air Force Base

Poly Drum = 55-gallon plastic drum sealed with plastic cover and locking-ring steel collar

Steel = 55 gallon steel drum with locking steel collar

Tote = 275-gallon plastic tank surrounded by galvanized steel frame with 6-inch diameter fill cap

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# APPENDIX J-2

# HAZARDOUS LIQUID INVESTIGATION-DERIVED WASTE PROFILING AND DISPOSAL DOCUMENTATION

**Table J-2-1**
**Non-Liquid Investigation-Derived Waste Storage and Disposal, Q3 2017**

| Accumulation Start Date | Location ID | Container ID | Matrix | Container Type | Number of Containers | Estimated Volume | Disposal Location | Disposal Date |
|---|---|---|---|---|---|---|---|---|
| 5/1/2017 | Pothole and KAFB-106233 DW-2 Rinse | Consolidated Sediment: Pothole and KAFB-106233 DW-2 Rinse | Soil/water | Poly Drum | 1 | 0.20 $yd^3$ | Offsite | 8/9/2017 |
| 5/1/2017 | Pothole and KAFB-106233 AC cleanout | Consolidated Sediment: Pothole and KAFB-106233 AC cleanout | Soil/water | Poly Drum | 1 | 0.26 $yd^3$ | Offsite | 8/9/2017 |
| 5/5/2017 | Pothole | Consolidated Sediment: Pothole | Soil/water | Poly Drum | 1 | 0.14 $yd^3$ | Offsite | 8/9/2017 |
| 7/12/2017 | Pond Coolant Spill | Pond #2 Spill | Soil | Steel Drum | 1 | 0.50 $yd^3$ | Offsite | 8/9/2017 |
| 8/22/2017 | 106239 Biototes | KAFB-106239 Biotote Consolidation | Soil/water | Tote | 2 | 1.5 yd3 | TBD | TBD |
| 4/18/2017 | KAFB-106239 G/H Biological water | KAFB-106239 G/H Biological water | Soil/water | Poly | 1 | 0.10 $yd^3$ | TBD | TBD |

| Material disposed as solid waste: |
|---|
| Geotech Filters |
| Passive Diffusion Bags |
| Nitrile Gloves |
| Plastic sampling equipment |

ID = identification
KAFB = Kirtland Air Force Base
Roll Off = 20 $yd^3$ bin lined with two sheets of poly liner and covered with a heavy duty tarp
KAFB C&D = Kirtland Air Force Base construction and demolition landfill
Steel Drum = 55 gallon steel drum with locking steel collar
TBD= To be determined
Tote= 275 gallon poly container with aluminum frame.

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# APPENDIX J-3

# SOLID INVESTIGATION-DERIVED WASTE PROFILING AND DISPOSAL DOCUMENTATION

## Table J-3-1
## Hazardous Wastewater Storage and Disposal, Q3 2017

| 90-Day Entry Date | 90-Day Deadline | Well Location ID | Associated Wells | Container Type | # of Containers | Estimated Volume* | Disposal Date | Transporter | Disposal Facility | Manifest Number |
|---|---|---|---|---|---|---|---|---|---|---|
| 5/4/2017 | 8/1/2017 | Q2 2017 HPW-2 | KAFB-106059 (15 gal)<br>KAFB-106010 (16 gal) | Steel | 1 | 31 | 7/14/2017 | ACT | Advance Chemical Treatment, 6133 Edith Blvd NE, Albuquerque, NM 87112 | 009006303FLE |

*Gallons

-- = unknown

ACT = Advance Chemical Transport, Inc.

ID = identification

IDW = investigation-derived waste

na = Not Applicable

KAFB = Kirtland Air Force Base

Poly Drum = 55-gallon plastic drum sealed with plastic cover and locking-ring steel collar

Steel = 55 gallon steel drum with locking steel collar

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